Appendix D
Existing Environmental Resource Permits

Selmon Reversable Express Lanes – multiple reports – SWFWMD ERP 19654.00
Selmon Expressway Slip Ramp 2 – SWFWMD ERP 20690.022
THEA Slip Ramp 3 – SWFWMD ERP 21031.008

SWFWMD ENGINEERING WORKSHEET

PERMIT NO. To be determined

PERMIT NAME: Selmon Crosstown Expressway Reversible Express Lanes

	BASIN NO. - POND NO. / O or C	Pond 2C O	Pond 2D O	Pond 2E O	150-149 O	149-148 O	148-147 O	147-146 O	146-145 O	145-144 O	Pond 3-2 O	135-134 O
POND DATA	POND BOTTOM ELEVATION	9.00	8.00	10.00	34.15	32.31	30.50	28.48	26.87	25.69	3.50	36.92
	SEASONAL HIGH WATER ELEVATION	6.98	7.47	7.47	11.40	10.40	10.20	10.00	8.00	8.00	4.50	8.50
	CONTROL DEVICE ELEVATION	9.00	8.00	10.00	34.15	32.31	30.50	28.48	26.87	25.69	3.50	36.92
	DESIGN LOW WATER ELEVATION	9.30	8.30	10.30	35.60	33.60	31.50	29.50	27.80	26.50	4.40	37.90
	WEIR INVERT ELEVATION	9.30	8.30	10.30	35.60	33.60	31.50	29.50	27.80	26.50	4.40	37.90
	DESIGN HIGH WATER ELEVATION	9.86	9.10	11.03	35.73	33.73	31.81	29.88	28.39	27.25	6.87	38.48
	TOP OF BANK ELEVATION	11.00	10.00	12.00	36.40	34.70	32.80	30.90	29.40	28.30	8.50	39.80
	AREA AT TOP OF BANK (Ac.)	1.051	3.826	2.117	0.033	0.056	0.055	0.055	0.055	0.065	0.408	0.067
	VOLUME AT DHW (Ac.-Ft.)	0.366	1.865	0.935	0.029	0.041	0.036	0.038	0.044	0.057	0.764	0.062
	VOLUME AT TOB (Ac.-Ft.)	1.237	4.576	2.511	0.041	0.069	0.064	0.066	0.073	0.095	1.229	0.095
QUANTITY	WEIR WIDTH (FT.)	4.08	4.08	4.08	14.33	14.33	2.25	1.42	0.58	0.42	3"l x 14"h	1.67
25YR/24HR DISCHARGE RATES	PRE-DEVELOPED (CFS)	5.9	22.4	12.0				8.4			1.6	
	POST-DEVELOPED (CFS)	5.4	9.1	8.0				8.3			1.5	
100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	REQUIRED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUALITY	TREATMENT AREA / OFW? Y OR N	1.80 N	5.71 Ac. N	3.52 Ac. N	0.44 Ac. N	0.46 Ac. N	0.26 Ac. N	0.24 Ac. N	0.22 Ac. N	0.25 Ac. N	1.81 Ac. N	0.52 Ac. N
	TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.054	0.155	0.122	0.011	0.011	0.005	0.005	0.004	0.004	0.068	0.009
	TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.110	0.420	0.228	0.019	0.020	0.011	0.010	0.010	0.011	0.108	0.022
	METHOD OF TREATMENT	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Wet Detention	Effluent Filtration
	CONTROL DEVICE TYPE	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Orifice	Slotted Pipe
	CONTROL DEVICE DIMENSIONS	Slotted Pipe - 6" Dia. X 150' Long. W/ 6"/hr Filter	Slotted Pipe - 6" Dia. X 430' Long. W/ 6"/hr Filter	Slotted Pipe - 6" Dia. X 310' Long. W/ 6"/hr Filter	Slotted Pipe - 6" Dia. X 38' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 37' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 25' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 25' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 23' Long. w/ 6"/hr Filter Sand	Orifice 3/4" Dia.	Slotted Pipe - 6" Dia. X 48' Long. w/ 6"/hr Filter Sand
	RECOVERY TIME (Hrs.)	30.8	30.9	30.9	30.8	30.8	31.0	30.9	31.2	31.2	60.0	31.1
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION TYPE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ENCROACHMENT RESULT (feet)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COMMENTS: Note 1 - Pre-development discharge was not calculated. Post-development discharge is directly to a tidal outfall.

Sta 671+80 +/-

Sta 724

Sta 732+35 +/-

	BASIN NO. - POND NO. / O or C	~~134-133~~ ~~O~~	~~133-132~~ O	121-120 O	120-119 O	119-118 O	118-117 O	117-116 O	116-115 O	115-114 O	114-113 O	113-112 O
POND DATA	POND BOTTOM ELEVATION	35.52	34.42	27.02	24.44	20.84	16.69	12.57	9.40	7.34	6.43	6.60
	SEASONAL HIGH WATER ELEVATION	8.80	9.20	7.40	7.20	7.00	6.30	6.10	6.00	6.10	6.00	6.00
	CONTROL DEVICE ELEVATION	35.52	34.42	27.02	24.44	20.84	16.69	12.57	9.40	7.34	6.43	6.60
	DESIGN LOW WATER ELEVATION	36.80	35.60	28.22	26.04	21.74	18.19	14.27	10.10	8.34	7.13	6.87
	WEIR INVERT ELEVATION	36.80	35.60	28.22	26.04	21.74	18.19	14.27	10.10	8.34	7.13	6.87
	DESIGN HIGH WATER ELEVATION	37.12	35.83	28.79	26.34	22.42	18.50	14.52	10.79	9.34	8.35	8.09
	TOP OF BANK ELEVATION	37.90	36.60	29.30	26.60	23.10	19.00	14.90	11.80	9.90	9.40	9.80
	AREA AT TOP OF BANK (Ac.)	0.059	0.033	0.014	0.035	0.029	0.026	0.027	0.037	0.052	0.064	0.067
	VOLUME AT DHW (Ac.-Ft.)	0.052	0.027	0.011	0.017	0.018	0.012	0.013	0.013	0.044	0.054	0.049
	VOLUME AT TOB (Ac.-Ft.)	0.077	0.041	0.014	0.019	0.016	0.015	0.015	0.022	0.045	0.084	0.094
QUANTITY	WEIR WIDTH (FT.)	4.08	4.08	0.583	4.083	0.167	2.083	4.083	0.083	0.167	0.083	0.083
25YR/24HR DISCHARGE RATES	PRE-DEVELOPED (CFS)	6.0		5.0								
	POST-DEVELOPED (CFS)	6.0		5.8								
100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	REQUIRED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUALITY	TREATMENT AREA / OFW? Y OR N	0.50 Ac. N	35.60 Ac. N	0.18 Ac. N	0.27 Ac. N	0.09 Ac. N	0.25 Ac. N	0.22 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N
	TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.011	0.005	0.000	0.005	0.001	0.005	0.006	0.005	0.005	0.005	0.005
	TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.021	0.013	0.007	0.011	0.004	0.012	0.010	0.010	0.010	0.011	0.010
	METHOD OF TREATMENT	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration
	CONTROL DEVICE TYPE	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe
	CONTROL DEVICE DIMENSIONS	Slotted Pipe - 6" Dia. X 44' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 27' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 22' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 22' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand
	RECOVERY TIME (Hrs.)	30.6	30.8	31.4	34.9	32.7	34.4	32.9	35.8	35.4	33.5	33.8
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION TYPE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ENCROACHMENT RESULT (feet)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Sta 742+45 +/-

Sta 749+55 +/-

		BASIN NO. - POND NO. / O or C	112-111 O	111-110 O	110-109 O	109-108 O	108-107 O	107-106 O	106-105 O	105-104 O	104-103 O	103-102 O	102-101 O
POND DATA		POND BOTTOM ELEVATION	6.37	6.37	6.70	7.41	8.44	9.42	10.56	11.99	12.29	12.28	12.28
		SEASONAL HIGH WATER ELEVATION	3.00	3.00	2.00	2.00	3.00	3.00	3.10	2.50	2.50	1.40	1.40
		CONTROL DEVICE ELEVATION	6.37	6.37	6.70	7.41	8.44	9.42	10.56	11.99	12.29	12.28	12.28
		DESIGN LOW WATER ELEVATION	7.37	6.87	7.30	8.11	9.14	10.22	11.46	12.49	12.79	12.78	12.75
		WEIR INVERT ELEVATION	7.37	6.87	7.30	8.11	9.14	10.22	11.46	12.49	12.79	12.78	12.75
		DESIGN HIGH WATER ELEVATION	8.84	8.09	8.53	9.38	10.39	11.45	12.72	13.69	14.01	14.00	13.98
		TOP OF BANK ELEVATION	9.40	9.40	9.50	10.20	11.20	12.20	13.30	14.20	15.00	15.20	15.20
		AREA AT TOP OF BANK (Ac.)	0.069	0.069	0.062	0.06	0.06	0.06	0.057	0.058	0.064	0.067	0.067
		VOLUME AT DHW (Ac.-Ft.)	0.075	0.052	0.050	0.051	0.051	0.054	0.053	0.043	0.054	0.051	0.050
		VOLUME AT TOB (Ac.-Ft.)	0.097	0.100	0.079	0.071	0.071	0.071	0.06	0.061	0.083	0.094	0.094
QUANTITY		WEIR WIDTH (FT.)	0.333	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083
	25YR/24HR DISCHARGE RATES	PRE-DEVELOPED (CFS)	4.4				2.9						
		POST-DEVELOPED (CFS)	4.0				1.8						
	100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		REQUIRED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUALITY	TREATMENT AREA	OFW? Y OR N	0.59 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N	0.20 Ac. N
		TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.016	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
		TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.027	0.010	0.009	0.009	0.009	0.011	0.010	0.011	0.010	0.010	0.010
		METHOD OF TREATMENT	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration
		CONTROL DEVICE TYPE	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe
		CONTROL DEVICE DIMENSIONS	Slotted Pipe - 6" Dia. X 52' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand
		RECOVERY TIME (Hrs.)	35.0	33.8	35.9	32.5	35.2	33.6	34.9	34.1	34.1	33.6	33.9
100-YEAR FLOODPLAIN		ENCROACHMENT (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		COMPENSATION (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		COMPENSATION TYPE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		ENCROACHMENT RESULT (feet)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	BASIN NO. - POND NO.	O or C	101-100	O	100-99	O	99-98	O	98-97	O	97-96	O	96-95	O	95-94	O	94-93	O	93-92	O	92-91	O	91-90	O
POND DATA	POND BOTTOM ELEVATION		12.28		12.28		12.28		12.28		12.28		12.28		12.65		13.97		16.27		19.14		21.89	
	SEASONAL HIGH WATER ELEVATION		9.10		9.10		8.30		8.30		8.90		8.90		7.60		8.40		8.40		8.40		8.50	
	CONTROL DEVICE ELEVATION		12.28		12.28		12.28		12.28		12.28		12.28		12.65		13.97		16.27		19.14		21.89	
	DESIGN LOW WATER ELEVATION		12.88		12.88		12.88		12.88		12.98		12.88		13.55		15.17		17.57		20.44		23.19	
	WEIR INVERT ELEVATION		12.88		12.88		12.88		12.88		12.98		12.88		13.55		15.17		17.57		20.44		23.19	
	DESIGN HIGH WATER ELEVATION		14.29		14.29		14.41		14.56		14.32		14.37		14.74		16.07		18.26		21.00		23.75	
	TOP OF BANK ELEVATION		15.20		15.10		15.10		15.10		15.10		15.10		15.30		16.60		18.80		21.50		24.30	
	AREA AT TOP OF BANK (Ac.)		0.067		0.065		0.065		0.065		0.065		0.065		0.058		0.051		0.041		0.039		0.041	
	VOLUME AT DHW (Ac.-Ft.)		0.059		0.058		0.061		0.066		0.059		0.060		0.052		0.045		0.034		0.030		0.031	
	VOLUME AT TOB (Ac.-Ft.)		0.094		0.088		0.088		0.088		0.088		0.088		0.062		0.044		0.028		0.024		0.026	
QUANTITY: 25YR/24HR DISCHARGE RATES	WEIR WIDTH (FT.)		0.083				0.083		0.083		0.167		0.083		0.167		0.333		0.583		0.833		0.833	
	PRE-DEVELOPED (CFS)		5.3												7.9									
	POST-DEVELOPED (CFS)		11.0																					
QUANTITY: 100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	REQUIRED (Ac.-Ft.)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
QUALITY	TREATMENT AREA	OFW? Y OR N	0.25 Ac.	N	0.25 Ac.	N	0.28 Ac.	N	0.32 Ac.	N	0.33 Ac.	N	0.27 Ac.	N	0.27 Ac.	N	0.27 Ac.	N	0.27 Ac.	N	0.27 Ac.	N	0.27 Ac.	N
	TREATMENT VOL. REQUIRED (Ac.-Ft.)		0.005		0.005		0.005		0.005		0.005		0.005		0.005		0.005		0.005		0.005		0.005	
	TREATMENT VOL. PROVIDED (Ac.-Ft.)		0.013		0.013		0.013		0.013		0.016		0.013		0.013		0.013		0.012		0.013		0.013	
	METHOD OF TREATMENT		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration	
	CONTROL DEVICE TYPE		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe	
	CONTROL DEVICE DIMENSIONS		Slotted Pipe - 6" Dia. X 30' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 30' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 30' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 30' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 30' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 30' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	
	RECOVERY TIME (Hrs.)		34.0		34.0		34.0		34.0		34.0		34.0		34.4		36.0		33.2		35.5		34.7	
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	COMPENSATION (Ac.-Ft.)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	COMPENSATION TYPE		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	ENCROACHMENT RESULT (feet)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	

Sta 770+85 +/-

	BASIN NO. - POND NO.	90-89	89-88	Pond 6	76-75	75-74	74-73	73-72	72-71	71-70	70-69	69-68
	O or C	O	O	O	O	O	O	O	O	O	O	O
POND DATA	POND BOTTOM ELEVATION	24.65	27.21	0.00	35.31	33.57	31.00	28.29	24.74	21.16	17.47	13.89
	SEASONAL HIGH WATER ELEVATION	8.60	6.50	5.00	4.70	3.70	2.80	5.00	7.30	3.00	4.00	2.00
	CONTROL DEVICE ELEVATION	24.65	27.21	5.00	35.31	33.57	31.00	28.29	24.74	21.16	17.47	13.89
	DESIGN LOW WATER ELEVATION	26.45	28.31	5.00	36.30	34.50	32.10	29.35	25.90	22.30	18.70	15.10
	WEIR INVERT ELEVATION	26.45	28.31	5.50	36.30	34.50	32.10	29.35	25.90	22.30	18.70	15.10
	DESIGN HIGH WATER ELEVATION	26.83	29.21	7.12	37.54	35.58	32.99	30.27	26.65	22.98	19.28	15.74
	TOP OF BANK ELEVATION	27.10	29.80	9.00	38.20	36.10	33.50	30.80	27.20	23.50	19.80	16.30
	AREA AT TOP OF BANK (Ac.)	0.045	0.029	0.980	0.075	0.057	0.051	0.047	0.038	0.033	0.032	0.035
	VOLUME AT DHW (Ac.-Ft.)	0.040	0.025	1.840	0.056	0.047	0.035	0.031	0.027	0.023	0.021	0.024
	VOLUME AT TOB (Ac.-Ft.)	0.032	0.030	3.470	0.101	0.072	0.059	0.054	0.041	0.034	0.033	0.037
QUANTITY	25YR/24HR DISCHARGE RATES — WEIR WIDTH (FT.)	4.000	0.250	1	0.25'l x 0.17'h	0.25'l x 0.29'h	0.25'l x 0.58'h	0.33'l x 0.33'h	0.33	0.38	0.50	0.42
	PRE-DEVELOPED (CFS)			17.8	7.7							
	POST-DEVELOPED (CFS)			6.5	5.8							
	100YR/24HR RETENTION VOLUMES — PROVIDED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	REQUIRED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUALITY	TREATMENT AREA	0.65 Ac.	0.19 Ac.	2.99 Ac.	0.21 Ac.	0.20 Ac.	0.20 Ac.	0.18 Ac.	0.18 Ac.	0.17 Ac.	0.17 Ac.	0.17 Ac.
	OFW? Y OR N	N	N	N	N	N	N	N	N	N	N	N
	TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.016	0	0.25	0.006	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.030	0.009	0.33	0.009	0.008	0.009	0.008	0.008	0.007	0.007	0.007
	METHOD OF TREATMENT	Effluent Filtration	Effluent Filtration	Wet Detention	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration
	CONTROL DEVICE TYPE	Slotted Pipe	Slotted Pipe	Orifice	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe
	CONTROL DEVICE DIMENSIONS	Slotted Pipe - 6" Dia. X 34' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Orifice 1.5" Dia.	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand
	RECOVERY TIME (Hrs.)	34.7	32.6	60.0	30.9	31.4	31.6	31.8	30.9	33.0	32.2	32.3
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION TYPE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ENCROACHMENT RESULT (feet)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section	BASIN NO. - POND NO.	68-67	67-66	66-65	65-64	63-62	62-61	61-60	60-59	59-58	58-57	57-56
	O or C	O	O	O	O	O	O	O	O	O	O	O
POND DATA	POND BOTTOM ELEVATION	10.34	8.11	6.90	6.84	6.83	6.67	6.69	7.07	8.03	9.63	11.91
	SEASONAL HIGH WATER ELEVATION	2.00	2.20	2.70	2.70	4.70	4.90	4.90	4.20	10.10	10.90	10.90
	CONTROL DEVICE ELEVATION	10.34	8.11	6.90	6.84	6.83	6.67	6.69	7.07	8.03	9.63	11.91
	DESIGN LOW WATER ELEVATION	11.50	9.10	7.70	7.60	7.40	7.20	7.20	7.80	9.00	10.70	13.10
	WEIR INVERT ELEVATION	11.50	9.10	7.70	7.60	7.40	7.20	7.20	7.80	9.00	10.70	13.10
	DESIGN HIGH WATER ELEVATION	12.39	10.14	8.88	8.87	8.81	8.64	8.67	9.28	10.20	11.79	13.88
	TOP OF BANK ELEVATION	12.90	10.70	9.60	9.60	9.40	9.50	9.50	9.80	10.70	12.30	14.40
	AREA AT TOP OF BANK (Ac.)	0.044	0.057	0.068	0.077	0.073	0.081	0.078	0.071	0.064	0.058	0.051
	VOLUME AT DHW (Ac.-Ft.)	0.034	0.046	0.068	0.096	0.089	0.095	0.092	0.086	0.066	0.050	0.033
	VOLUME AT TOB (Ac.-Ft.)	0.049	0.073	0.104	0.130	0.116	0.143	0.135	0.112	0.091	0.075	0.058
QUANTITY	WEIR WIDTH (FT.)	0.25	0.25'l x 0.33'h	3"l x 2"h	3"l x 12"h	0.17'l x 0.25'h	0.17'l x 0.25'h	0.17'l x 0.25'h	0.17'l x 0.25'h	0.17'l x 0.63'h	0.25'l x 0.54'h	0.42
25YR/24HR DISCHARGE RATES	PRE-DEVELOPED (CFS)											12.4
	POST-DEVELOPED (CFS)											10.8
100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	REQUIRED (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUALITY	TREATMENT AREA	0.20 Ac.	0.20 Ac.	0.20 Ac.	0.39 Ac.	0.24 Ac.	0.25 Ac.	0.25 Ac.	0.25 Ac.	0.25 Ac.	0.25 Ac.	0.25 Ac.
	OFW? Y OR N	N	N	N	N	N	N	N	N	N	N	N
	TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.005	0.005	0.005	0.011	0.005	0.005	0.005	0.005	0.005	0.005	0.005
	TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.008	0.009	0.011	0.018	0.011	0.014	0.010	0.011	0.012	0.011	0.011
	METHOD OF TREATMENT	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration	Effluent Filtration
	CONTROL DEVICE TYPE	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe	Slotted Pipe
	CONTROL DEVICE DIMENSIONS	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 40' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 24' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 22' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 22' Long. w/ 6"/hr Filter Sand	Slotted Pipe - 6" Dia. X 21' Long. w/ 6"/hr Filter Sand
	RECOVERY TIME (Hrs.)	31.1	32.7	32.7	31.4	31.3	31.6	31.6	32.0	32.3	31.3	31.7
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION (Ac.-Ft.)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	COMPENSATION TYPE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ENCROACHMENT RESULT (feet)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

BASIN NO. - POND NO.	O or C	56-55	O	55-54	O	54-53	O	53-52	O	52-51	O	51-50	O	49-48	O	48-47	O	West	O	29-28	O	28-27	O
POND DATA	POND BOTTOM ELEVATION	14.64		17.88		20.97		23.83		25.81		27.06		27.92		26.62		No Pond		8.93		8.31	
	SEASONAL HIGH WATER ELEVATION	10.80		10.50		10.40		10.40		10.20		10.60		6.00		6.00				8.90		6.30	
	CONTROL DEVICE ELEVATION	14.64		17.88		20.97		23.83		25.81		27.06		27.92		26.62				8.93		8.31	
	DESIGN LOW WATER ELEVATION	15.90		19.10		22.20		24.90		26.90		28.20		28.62		27.32				9.83		9.11	
	WEIR INVERT ELEVATION	15.90		19.10		22.20		24.90		26.90		28.20		28.62		27.32				9.83		9.11	
	DESIGN HIGH WATER ELEVATION	16.59		19.90		23.00		25.67		27.68		29.09		29.72		28.21				10.07		9.33	
	TOP OF BANK ELEVATION	17.10		20.40		23.50		26.20		28.20		29.60		30.50		29.30				10.50		9.70	
	AREA AT TOP OF BANK (Ac.)	0.044		0.047		0.049		0.054		0.061		0.066		0.033		0.054				0.035		0.034	
	VOLUME AT DHW (Ac.-Ft.)	0.032		0.037		0.032		0.038		0.057		0.068		0.029		0.034				0.031		0.014	
	VOLUME AT TOB (Ac.-Ft.)	0.048		0.053		0.056		0.063		0.081		0.094		0.042		0.057				0.043		0.019	
QUANTITY	WEIR WIDTH (FT.)	0.50		0.42		0.42		0.42		0.83		0.71		0.17		0.08				4.08		4.08	
25YR/24HR DISCHARGE RATES	PRE-DEVELOPED (CFS)													3.8				11.9					
	POST-DEVELOPED (CFS)													0.8				10.1					
100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	REQUIRED (Ac.-Ft.)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
QUALITY	TREATMENT AREA / OFW? Y OR N	0.23 Ac.	N	0.25 Ac.	N	0.25 Ac.	N	0.25 Ac.	N	0.45 Ac.	N	0.49 Ac.	N	0.19 Ac.	N	0.11 Ac.	N	2.12 Ac.	N	0.34 Ac.	N	0.30 Ac.	N
	TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.005		0.005		0.005		0.005		0.011		0.010		0.003		0.002				0.006		0.004	
	TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.011		0.011		0.011		0.012		0.019		0.026		0.010		0.006				0.012		0.011	
	METHOD OF TREATMENT	Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration				Effluent Filtration		Effluent Filtration	
	CONTROL DEVICE TYPE	Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe				Slotted Pipe		Slotted Pipe	
	CONTROL DEVICE DIMENSIONS	Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 21' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 21' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 22' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 39' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 42' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 20' Long. w/ 6"/hr Filter Sand				Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand	
	RECOVERY TIME (Hrs.)	32.0		32.0		31.9		31.7		31.6		31.4		35.1		33.8				35.8		34.1	
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	COMPENSATION (Ac.-Ft.)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	COMPENSATION TYPE	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	ENCROACHMENT RESULT (feet)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	

			27-26		26-25		25-24		24-23		Toll - East		Pond 9A		Pond 9B		TOTALS
	BASIN NO. - POND NO.	O or C	27-26	O	26-25	O	25-24	O	24-23	O	Toll - East	O	Pond 9A	O	Pond 9B	O	
POND DATA	POND BOTTOM ELEVATION		7.43		6.27		5.68		5.69		8.50		10.10		11.40		
	SEASONAL HIGH WATER ELEVATION		4.90		8.40		8.40		8.30		10.40		1.40		1.40		
	CONTROL DEVICE ELEVATION		7.43		6.27		5.68		5.69		8.50		10.10		11.40		
	DESIGN LOW WATER ELEVATION		8.13		7.27		6.98		7.19		9.00		10.90		12.20		
	WEIR INVERT ELEVATION		8.13		7.27		6.98		7.19		9.00		10.90		12.20		
	DESIGN HIGH WATER ELEVATION		8.47		8.00		7.99		8.08		9.94		11.54		12.42		
	TOP OF BANK ELEVATION		9.00		8.50		8.50		8.60		10.50		12.10		13.40		
	AREA AT TOP OF BANK (Ac.)		0.035		0.043		0.053		0.053		0.367		0.17		0.05		12.94
	VOLUME AT DHW (Ac.-Ft.)		0.014		0.029		0.032		0.057		0.044		0.166		0.032		
	VOLUME AT TOB (Ac.-Ft.)		0.020		0.037		0.069		0.070		0.132		0.23		0.063		
QUANTITY	25YR/24HR DISCHARGE RATES	WEIR WIDTH (FT.)	0.83		0.42		0.66		1.33		7.00		4.00		4.00		
		PRE-DEVELOPED (CFS)	See 1								16.1		See 1		See 1		
		POST-DEVELOPED (CFS)	10.3								15.1		13.5				
	100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		
		REQUIRED (Ac.-Ft.)	N/A		N/A		N/A		N/A		N/A		N/A		N/A		
QUALITY	TREATMENT AREA	OFW? Y OR N	0.25 Ac.	N	0.23 Ac.	N	0.44 Ac.	N	0.83 Ac.	N	4.08 Ac.	N	1.53 Ac.	N	0.29 Ac.	N	
	TREATMENT VOL. REQUIRED (Ac.-Ft.)		0.003		0.005		0.007		0.022		0.044		0.064		0.013		
	TREATMENT VOL. PROVIDED (Ac.-Ft.)		0.011		0.011		0.021		0.028		0.132		0.064		0.016		
	METHOD OF TREATMENT		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		Effluent Filtration		
	CONTROL DEVICE TYPE		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		Slotted Pipe		
	CONTROL DEVICE DIMENSIONS		Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 26' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 44' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 54' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 608' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 160' Long. w/ 6"/hr Filter Sand		Slotted Pipe - 6" Dia. X 60' Long. w/ 6"/hr Filter Sand		
	RECOVERY TIME (Hrs.)		33.5		33.8		35.3		35.3		35.9		35.8		35.8		
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		0.00
	COMPENSATION (Ac.-Ft.)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		0.00
	COMPENSATION TYPE		N/A		N/A		N/A		N/A		N/A		N/A		N/A		0.00
	ENCROACHMENT RESULT (feet)		N/A		N/A		N/A		N/A		N/A		N/A		N/A		0.00

SWFWMD ENGINEERING WORKSHEET

PERMIT NO. To be determined

PERMIT NAME: Selmon Crosstown Expressway Reversible Express Lanes

			O or C	TOTALS
	BASIN NO. - POND NO.	Pond 1	O	
POND DATA	POND BOTTOM ELEVATION	7.50		
POND DATA	SEASONAL HIGH WATER ELEVATION	13.50		
POND DATA	CONTROL DEVICE ELEVATION	13.50		
POND DATA	DESIGN LOW WATER ELEVATION	14.05		
POND DATA	WEIR INVERT ELEVATION	14.05		
POND DATA	DESIGN HIGH WATER ELEVATION	15.56		
POND DATA	TOP OF BANK ELEVATION	16.50		
POND DATA	AREA AT TOP OF BANK (Ac.)	1.09		1.09
POND DATA	VOLUME AT DHW (Ac.-Ft.)	1.99		
POND DATA	VOLUME AT TOB (Ac.-Ft.)	2.90		
QUANTITY – 25YR/24HR DISCHARGE RATES	WEIR WIDTH (FT.)	2.00		
QUANTITY – 25YR/24HR DISCHARGE RATES	PRE-DEVELOPED (CFS)	17.3		
QUANTITY – 25YR/24HR DISCHARGE RATES	POST-DEVELOPED (CFS)	12.4		
QUANTITY – 100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)	N/A		
QUANTITY – 100YR/24HR RETENTION VOLUMES	REQUIRED (Ac.-Ft.)	N/A		
QUALITY	TREATMENT AREA / OFW? Y OR N	6.30	N	
QUALITY	TREATMENT VOL. REQUIRED (Ac.-Ft.)	0.53		
QUALITY	TREATMENT VOL. PROVIDED (Ac.-Ft.)	0.53		
QUALITY	METHOD OF TREATMENT	Wet Detention		
QUALITY	CONTROL DEVICE TYPE	Orifice		
QUALITY	CONTROL DEVICE DIMENSIONS	Orifice 1.75" Dia.		
QUALITY	RECOVERY TIME (Hrs.)	60 (1/2 Vol.)		
100-YEAR FLOODPLAIN	ENCROACHMENT (Ac.-Ft.)	N/A		0.00
100-YEAR FLOODPLAIN	COMPENSATION (Ac.-Ft.)	N/A		0.00
100-YEAR FLOODPLAIN	COMPENSATION TYPE	N/A		0.00
100-YEAR FLOODPLAIN	ENCROACHMENT RESULT (feet)	N/A		0.00

COMMENTS:

SWFWMD ENGINEERING WORKSHEET

PERMIT NO. To be determined

PERMIT NAME: Selmon Crosstown Expressway Reversible Express Lanes

Section	Group	BASIN NO. - POND NO.	O or C	Pond 4A	O	Pond 4D	O	Pond X	O	TOTALS
POND DATA		POND BOTTOM ELEVATION		4.00		2.50		-1.50		
		SEASONAL HIGH WATER ELEVATION		6.42		6.42		1.41		
		CONTROL DEVICE ELEVATION		6.42		6.42		1.41		
		DESIGN LOW WATER ELEVATION		7.10		7.10		2.60		
		WEIR INVERT ELEVATION		7.10		7.10		2.60		
		DESIGN HIGH WATER ELEVATION		7.65		7.72		4.24		
		TOP OF BANK ELEVATION		9.00		9.00		5.20		
		AREA AT TOP OF BANK (Ac.)		1.76		1.15		1.17		4.08
		VOLUME AT DHW (Ac.-Ft.)		1.66		1.11		2.52		
		VOLUME AT TOB (Ac.-Ft.)		3.48		2.21		3.37		
QUANTITY	25YR/24HR DISCHARGE RATES	WEIR WIDTH (FT.)		19.17		19.17		19.17		
		PRE-DEVELOPED (CFS)		See 1		See 1		See 1		
		POST-DEVELOPED (CFS)		24.2		31.0		24.1		
	100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)		N/A		N/A		N/A		
		REQUIRED (Ac.-Ft.)		N/A		N/A		N/A		
QUALITY	TREATMENT AREA	OFW? Y OR N		11.30	N	*	N	8.22	N	
		TREATMENT VOL. REQUIRED (Ac.-Ft.)		0.94		*		0.69		
		TREATMENT VOL. PROVIDED (Ac.-Ft.)		1.06		*		0.83		
		METHOD OF TREATMENT		Wet Detention		*		Wet Detention		
		CONTROL DEVICE TYPE		Orifice		*		Orifice		
		CONTROL DEVICE DIMENSIONS		Orifice 2.25" Dia.		*		Orifice 1.75" Dia.		
		RECOVERY TIME (Hrs.)		60		*		60		
100-YEAR FLOODPLAIN		ENCROACHMENT (Ac.-Ft.)		N/A		N/A		N/A		0.00
		COMPENSATION (Ac.-Ft.)		N/A		N/A		N/A		0.00
		COMPENSATION TYPE		N/A		N/A		N/A		0.00
		ENCROACHMENT RESULT (feet)		N/A		N/A		N/A		0.00

COMMENTS: Note 1 - Pre-development discharge was not calculated. Post-development discharge is directly to a tidal outfall.

* Ponds 4A and 4D are interconnected and any place this symbol occurs, the numbers are combined and shown in the Pond 4A Column.

SWFWMD ENGINEERING WORKSHEET

PERMIT NO. ______________________

PERMIT NAME: **Brandon Parkway Roadway Construction Projects**

THCEA #50.30.001 A&B AND 51.30.06

		BASIN NO. - POND NO.	O or C	200	O	300	O	400	O	TOTALS
POND DATA		POND BOTTOM ELEVATION		11.00		22.00		27.00		
		SEASONAL HIGH WATER ELEVATION		18.74		25.00		29.40		
		CONTROL DEVICE ELEVATION		20.12		25.40		28.00		
		DESIGN LOW WATER ELEVATION		20.79		25.82		29.40		
		WEIR INVERT ELEVATION		20.79		25.82		29.02		
		DESIGN HIGH WATER ELEVATION **(100-YEAR)**		24.79		28.55		30.80		
		TOP OF BANK ELEVATION **(OUTER BERM)**		26.00		29.50		32.00		
		AREA AT TOP OF BANK (Ac.)		2.45		1.93		10.49		14.87
		VOLUME AT DHW (Ac.-Ft.)		10.21		4.55		23.29		
		VOLUME AT TOB (Ac.-Ft.)		12.88		6.18		35.46		
QUANTITY	25YR/24HR DISCHARGE RATES	WEIR WIDTH (FT.)		1.42' X 1.0'		0.67' X 0.5'		5' X 1'		
		PRE-DEVELOPED (CFS) **(10-YR)**		10.36		10.91		36.40		
		POST-DEVELOPED (CFS)**(100-YR)**		9.95		2.65		32.57		
	100YR/24HR RETENTION VOLUMES	PROVIDED (Ac.-Ft.)		2.93		1.03		4.82		
		REQUIRED (Ac.-Ft.)		2.93		1.03		4.82		
QUALITY	TREATMENT AREA	OFW? Y OR N		11.99	N	5.35	N	25.46	N	
		TREATMENT VOL. REQUIRED (Ac.-Ft.)		1.00		0.450		2.12		
		TREATMENT VOL. PROVIDED (Ac.-Ft.)		1.00		0.46		3.57		
		METHOD OF TREATMENT		WET DET.		WET. DET		WETLAND		
		CONTROL DEVICE TYPE		ORIFICE		ORIFICE		ORIFICE		
		CONTROL DEVICE DIMENSIONS		0.20' DIA		0.16' DIA		0.30' DIA.		
		RECOVERY TIME (Hrs.)		60/120		60/120		60/120		
100-YEAR FLOODPLAIN		ENCROACHMENT (Ac.-Ft.)		4.51		N/A		N/A		4.51
		COMPENSATION (Ac.-Ft.)		6.69		N/A		N/A		6.69
		COMPENSATION TYPE		CUP FOR CUP		N/A		N/A		0.00
		ENCROACHMENT RESULT (feet)								0.00

COMMENTS: **BASIN 200 - 400: DELANEY CREEK WATERSHED.**

1. RETAIN DIFFERENCE OF 100 YR RUNOFF VOLUME (POST - PRE).

2. Q(100 POST) </= Q(10 PRE).

3. Q(100 VOL.POST) </= Q(100 VOL.PRE).

BASIN 400: INCLUDES TREATMENT AND ATTENUATION FOR 16.2 ACRE CHURCH AND 3.0 ACRE OFFICE COMPLEX (GATEWAY).

DRAINAGE REPORT
Selmon Expressway (SR 618) – Slip Ramp 2:
From West of I-4 Interchange to West of N 39th Street

THEA Project No: O-02520

January 2022

Hillsborough County

Prepared for:

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

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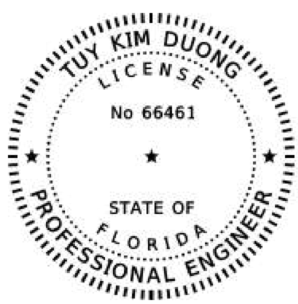

Digitally signed by Tuy K Duong
Date: 2022.01.05 13:44:30-05'00'

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Material contained within Appendix G & H of this report is included solely for reference purposes and is not incorporated under the seal of this document.

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EXECUTIVE SUMMARY

The Tampa Hillsborough Expressway Authority (THEA) is proposing to improve Selmon Expressway (SR 618) to include two new ramps between the I-4 Connector and I-75. Ramp 2 is an egress ramp onto the westbound General Use Lanes (GUL) from the Reversible Elevated Lanes (REL) east of the I-4 Connector, ending west of the CSX overpass bridge (Bridge No. 100447). Ramp 3 is an ingress ramp onto the REL from the northbound loop ramp of the I-75/ Selmon Expressway Interchange. The purpose of this report is to provide an overview of the proposed drainage design for the egress Ramp 2 of the Selmon Expressway (SR 618).

This section of Selmon Expressway, I-4/ Selmon Expressway Interchange roughly between 28th Street to 1,000 feet east of 34th Street, currently exists as a seven-lane interstate facility (two westbound travel lanes, three REL, and two eastbound travel lanes). Widening of the roadway to its current alignment was permitted in 2002 and 2008 by the Southwest Florida Water Management District (SWFWMD) to construct the REL and the I-4/ Selmon Expressway Interchange respectively. Two separate permits were issued for this work (SWFWMD permit no. 43-19654.001 and no. 43-020690.009). As part of these permits, several ponds were constructed to provide for treatment and attenuation of runoff (permitted ponds SMFE-1, SMFE-3, SMFG-3, SMF-4D, and SMF-RL-X).

SMF-4D and SMF-RL-X (renamed EX_SMF4D and EX_SMFRLX respectively), permitted under SWFWMD permit no. 43-19654.001, were existing stormwater management facilities constructed as part of the Tampa-Hillsborough Expressway Authority (THEA) Lee Roy Crosstown Expressway Project No. 51.30.03. These ponds were later modified under SWFWMD permit no. 43-02060.009. There is no proposed work within SMF-4D. Its contributing drainage basin is provided on the drainage maps for informational purposes only.

The proposed improvements from the slip Ramp 2 will increase the overall drainage areas to three (BSNE1, BSNE3, and BSNG3) out of the four basins within the improvement limits. Basin BSNRLX is the only basin that remain nearly the same (with an overall reduction in drainage area of approximately 0.005 acres). Although there is a minor increase in the overall drainage areas, basins BSNE3 and BSNG3 are within a tidally influenced water body, McKay Bay. As such, discharge rate is not a factor. However, the ponds these basins discharge to (EX_SMFE3 and EX_SMFG3 respectively) were permitted with surplus treatment volume available. As such, the additional contributing area will not require modification/ reconfiguration to the ponds.

Basin BSNE1 discharges into an existing storm water pond (EX_SMFE1) that outfalls to a small wetland system prior to discharging to the 34th Street Canal (McKay Bay). As such, attenuation for the SWFWMD 25-year/ 24-hour storm event is required. With an overall increase of approximately 0.037 acres and a surplus of approximately 8.4 cfs (post vs pre rate of discharge), the additional flow will not affect the downstream system. The existing pond EX_SMFE1 was permitted with surplus treatment volume; therefore, modification to the pond is not necessary to accommodate the additional impervious. The proposed slip Ramp 2 improvements will marginally decrease the drainage basin contributing to EX_SMFRLX: therefore, reducing/ resulting in no impact to the required treatment volume.

Storm sewer systems for the slip Ramp 2 project were designed in accordance with FDOT/ THEA and SWFWMD criteria and maintain existing drainage patterns (to the maximum extent possible). Existing drainage pipes within the project limits were reused where possible and this was accomplished by placing larger J-bottoms/ and or replacing inlet tops on existing barrier wall inlets to reuse existing pipes.

Existing ditches within the project limits that are impacted due to the widening were reanalyzed to ensure existing drainage patterns would be maintained and to ensure that minimum freeboard criteria are met.

Hydroplaning analyses, as needed, were conducted at critical sections along the project corridor including areas where ramp lanes and gores were present. At convergence of off-ramps or on-ramps onto the mainline, the original design speed of 60 mph (for the mainline) and a reduced driver anticipated speed of

50 to 55 mph (which is 10 to 15 mph higher than the design speed that was originally designed for these ramps) were used in the analyses. From the analysis, it was determined that hydroplaning was met for all segments using the original 60 mph design speed with the exception to one location on the existing Reversible Elevated Lanes (Station 414+55.00). At this location, the proposed Ramp 2 is in a superelevated transition and the ramp cross-slope is nearly zero. Utilizing a driver expected speed of 55 mph, hydroplaning was met based on the ramp 0.20% longitudinal slope and 0.04% cross slope. With a design speed of 60 mph and a 0.65% longitudinal slope of the existing Ramp 4 travel lane, hydroplaning is not met at the Ramp 2 travel lane, the REL travel lanes, and the existing Ramp 4 travel lane. Once the Ramp 2 cross slope reaches 0.50%, hydroplaning is met (between Stations 414+65 and 414+70).

1.0 Introduction

1.1 Purpose

The Tampa Hillsborough Expressway Authority (THEA) is proposing a new egress ramp (Ramp 2) onto the westbound General Use Lane (GUL) from the Reversible Elevated Lanes (REL) and a new ingress ramp (Ramp 3) onto the REL from the northbound loop ramp of the I-75/ Selmon Expressway Interchange. This project is being designed under the THEA Project ID (FPID) O-02520 and will be submitted and permitted as two separate packages: (1) Slip Ramp 3 and (2) Slip Ramp 2. The purpose of this report is to provide an overview of the proposed drainage design for the Slip Ramp 2 improvement area.

1.2 Project Location

The project limits stretch 0.80 miles of the Selmon Expressway (SR 618) mainline westbound. This project discharges to McKay Bay and is located within the Ybor Channel Basin, which falls into the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The project is located in Sections 16 and 17, Township 29S and Range 19E. A general location of the project has been provided in Figure 1. Additionally, an aerial photograph and a USGS quadrangle map has been provided in Figure 2 and Figure 3, respectively.

1.3 Project Description

The project consists of shoulder reconstruction of both the westbound travel lanes and the REL to accommodate an egress Ramp 2 onto the westbound travel lane from the REL. This project also includes the milling and resurfacing of the existing travel lanes and shoulders of the REL and Selmon Expressway westbound travel lanes, installation of wrong way driving gates, construction of drainage infrastructure to convey stormwater runoff, and widening to the westbound mainline bridges over the CSX rail line and 34th Street. This project will be designed using the NAVD 88 datum and elevations referenced will refer to this datum unless otherwise noted. Conversion from NGVD 29 datum to NAVD 88 datum is -0.845'.

Within the project limits, the existing Selmon Expressway mainline westbound consist of two lanes pitched to the outside shoulder. The existing Selmon Expressway REL consists of two travel lanes pitched toward the inside median barrier wall shared between the Selmon Expressway REL and eastbound mainline travel lanes. Construction of the slip Ramp 2 will involve inside WB shoulder reconstruction for nearly the entire length of the project limits, filling in an existing concrete conveyance ditch from station 282+80 to station 286+20 and from station 303+00 to station 309+40, narrowing the existing inside WB shoulder between stations 303+00 and 309+40, and reconstruction of the REL outside shoulder between stations 304+40 to 309+90.

Table 1 – Proposed Basin Naming Convention

Design Project/ FPID No.	Previously Permitted	Existing Conditions		Proposed Conditions	
	Basin/ Node Name	Basin Name	Node Name	Basin Name	Node Name
51.30.03 (2002)	Basin to Pond X	EX_BSNRLX	EX_SMFRLX	BSNRLX	Same as Existing
	---	---	---	---	
258415-1-52-01 (2008)	Basin to SMF-E-1	EX_BSNE1	EX_SMFE1	BSNE1	
	Basin to SMF-E-3	EX_BSNE3	EX_SMFE3	BSNE3	
	Basin to SMF-G-3	EX_BSNG3	EX_SMFG3	BSNG3	
	Basin to SMF-RL-X	EX_BSNRLX	EX_SMFRLX	BSNRLX	

Southwest Florida Water Management District (SWFWMD) Permit Numbers 43-19654.001 (Design Project 51.30.03 for the Lee Roy Selmon Crosstown Expressway - 2002) and 43-020690.009 (FPID 258415-1-52-01 for I-4/ Selmon Expressway Interchange - 2008) are affected by the proposed slip Ramp 2 improvements. However, the major reconstruction/ proposed improvements lie within

SWFWMD permit no. 43-020690.009. This permit will be modified, by Minor Environmental Resource Permit Modification, to include the construction of a new egress Ramp 2 and associated infrastructure. For clarity and to avoid any duplications, Table 1 defines the naming convention for the basins and nodes within the project limits of slip Ramp 2. In general, the naming convention for the existing stormwater facilities mimic the permitted facilities ID.

2.0 Existing Conditions

2.1 Existing Drainage Infrastructure

The existing drainage infrastructure, where it is accessible, was evaluated through visual inspection upon reviews in the field. In general, the existing drainage infrastructure that was within reach was in good condition. Video inspection of the existing pipes is currently ongoing. Pipe inspection and recommendations will be provided under separate cover letter at a later date. Any deficiencies and recommendations noted during the video pipe inspection will be provided, at a later date, in a table format.

A summary table is provided and included as part of Appendix C to document the remaining life of the existing pipes within the project limits. The table considers the design service life of the pipe, the year it was constructed, and the current year to determine the remaining life left in the pipe. Where there is limited information to document the remaining life of the existing pipe, video inspection as well as information from the lining manufacture will be provided to assist in estimating the remaining life of the pipe.

2.2 Soils

The soils within the project limits identified in Figure 4 and shown in Table 2, have been determined from the web soil survey from the Natural Resources Conservation Service (NRCS).

According to the soil survey, five different soil types have been identified within the project limits with Arents fine sand, nearly level being the most prevalent. In general, the majority of soils identified have a drainage class of poorly drained. No soil types identified in the soil survey within the project limits exhibit frequent flooding.

Table 2 – Soil types identified throughout project corridor according to NRCS Soil Survey

Symbol	Soil Type	Hydrologic Soil Group
4	Arents fine sand, nearly level at 0 to 5 percent slopes	A
22	Immokalee-Urban land complex, 0 to 2 percent slopes	B/D
43	Quartzipsamments fine sand, 0 to 2 percent slopes	A
56	Urban fine sand, 0 to 2 percent slopes	
99	Water	

2.3 Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM Panel Number 12057C0358H) for Hillsborough County, Florida was used to identify potential floodplains that may be associated with the project.

The FIRM map used for analyses is shown in Figure 5. Based on the FIRM map, the determined 100-year flood elevation (special flood hazard areas subject to inundation by the 1% annual chance flood) is established to be 10-ft (Zone AE). The Selmon Expressway Slip Ramp 2 project limits was constructed on fill and/ or elevated segment above elevation 10-ft. Therefore, the project is outside of the flood zone.

2.4 Cross Drains

There are two cross drains that fall within the project limits, but they are outside of the work area.

2.5 Drainage Patterns

The project site is located within the McKay Bay Watershed of Hillsborough County, Florida. McKay Bay flows from east to west with an ultimate outfall into Hillsborough Bay. McKay Bay is not considered to be an Outstanding Florida Waters, but it is a tidally influenced water body. The land use within this watershed is urbanized (ranging from heavy commercial and residential to industrial).

The Selmon Expressway Ramp 2 improvement project will affect four existing drainage basins (refer to Figures 6A and 6B) within the McKay Bay outfall. These existing drainage basins (renamed as EX_BSNE1, EX_BSNE3, EX_BSNG3, and EX_BSNRLX) were established based on historical construction plans (Design Project no. 51.30.03 and FPID no. 258415-1-52-01), current design survey, and available environmental resource permit documentation (refer to Appendix H). Basin EX_BSN4D, as illustrated in the Figures 6A an 6B, is not affected by the proposed improvements but is shown for informational purposes only.

Of the four existing drainage basins within the project limits, basin EX_BSNRLX is a part of the permitted Reversible Elevated Lanes Project (SWFWMD Permit # 43-019654.001). It was later modified under SWFWMD Permit # 43-020690.009 to include a portion of Ramp B and a shared use path. It was then again modified under SWFWMD Permit # 43-020690.016 as a post construction safety and maintenance issue. The remaining existing three basins (EX_BSNE1, EX_BSNE3, and EX_BSNG3) discharge into existing stormwater management facilities (EX_SMFE1, EX_SMFE3, and EX_SMFG3 respectively) permitted under SWFWMD Permit # 43-020690.009.

Information on drainage area, total impervious area, water surface area, pond area at weir crest, permitted treatment volume, and permitted provided treatment volume was attained from the previous environmental resource permit and confirmed with designed survey, if available.

2.5.1 Basin EX_BSNE1 to EX_SMFE1

Basin EX_BSNE1, as shown on Figure 6A, is a segment of Selmon Expressway between N 26th Street and the CSX railroads. Runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFE1 for treatment. Pond EX_SMFE1 is located south of the Expressway, east of 28th Street, and north of a residential development. It is a wet detention pond, based on historical documentation obtained from the SWFWMD website, designed to provide approximately 1.684 ac-ft of treatment volume. The required treatment volume for one-inch of runoff from the directly connected impervious area (11.56 ac) plus the SMF area at the weir elevation (2.45 ac) is equal to 1.168 ac-ft. This nets a surplus of approximately 0.516 ac-ft of treatment volume available in the existing pond. This 0.516 ac-ft of available treatment volume translates to approximately 6.192 ac of directly connected impervious area.

The runoff above and beyond the treatment volume discharges through a Type D control structure with a 12-inch wide vertical slot weir into an existing ditch to the east. From there, the runoff flows north through an existing 42-inch cross drain under Selmon Expressway and into a short existing wetland/ storm sewer/ and ditch system that outfalls to the 34th Street Canal (hydraulically connected to McKay Bay). Attenuation for the SWFWMD 25-year/ 24-hour storm event is required for this pond. Based on historical permitted documentation, the permitted post development rate of discharge (30.4-cfs) leaving pond EX_SMFE1 is less than the permitted existing rate of discharge (38.7-cfs) for the SWFWMD required 25-year/ 24-hour storm event. This nets a surplus of approximately 8.4-cfs of available discharge rates.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01) and is used to generate summary of comparison tables (refer to Appendix A).

2.5.2 Basin EX_BSNE3 to EX_SMFE3

Basin EX_BSNE3, as shown on Figure 6A and Figure 6B, is a segment of Selmon Expressway and the I-4/ Selmon Expressway interchange between N 34th Street and CSX railroads. Runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFE3 for treatment. Pond EX_SMFE3 is located south of the Adamo Drive and east of the CSX railroads. It is a wet detention pond, based on historical documentation obtained from the SWFWMD website, designed to provide approximately 0.771 ac-ft of treatment volume. The required treatment volume for one-inch of runoff from the directly connected impervious area (6.13 ac) plus the SMF area at the weir elevation (0.89 ac) is equal to 0.585 ac-ft. This nets a surplus of approximately 0.186 ac-ft of treatment volume available in the existing pond. This 0.186 ac-ft of available treatment volume translates to approximately 2.232 ac of directly connected impervious area.

The runoff above and beyond the treatment volume discharges through a Type H control structure with no grate, providing a horizontal weir length of 23.5-ft, directly into the 34th Street Canal (hydraulically connected to McKay Bay). Attenuation is not required for this pond as the channel (canal) is tidally influenced.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01) and is used to generate summary of comparison tables (refer to Appendix A).

2.5.3 Basin EX_BSNG3 to EX_SMFG3

Basin EX_BSNG3, as shown on Figure 6B, is a segment of Selmon Expressway WB between N 34th Street and N 39th Street. Runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFG3 for treatment. Pond EX_SMFG3 is located south of the Adamo Drive and west of N 39th Street. It is a wet detention pond, based on historical documentation obtained from the SWFWMD website, designed to provide approximately 0.55 ac-ft of treatment volume. The required treatment volume for one-inch of runoff from the directly connected impervious area (5.09 ac) plus the SMF area at the weir elevation (0.86 ac) is equal to 0.50 ac-ft. This nets a surplus of approximately 0.05 ac-ft of treatment volume available in the existing pond. This 0.05 ac-ft of available treatment volume translates to approximately 0.60 ac of directly connected impervious area.

The runoff above and beyond the treatment volume discharges through a Type H control structure with no grate, providing a horizontal weir length of 23.5-ft, directly into McKay Bay via a segment of outlet pipe system that includes overflow from existing pond EX_SMF-H-1 (located south of Adamo Drive and east of N 39th Street) and EX_SMFRLX. Attenuation is not required for this pond as McKay Bay is tidally influenced.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01) and is used to generate summary of comparison tables (refer to Appendix A).

2.5.4 Basin EX_BSNRLX to EX_SMFRLX

Basin EX_BSNRLX, as shown on Figure 6B, encompasses the segment of Selmon Expressway REL, EB, and Ramp B between N 34th Street and N 39th Street. Stormwater runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFRLX for treatment. Pond EX_SMFRLX is a wet detention constructed as a part of the permitted Reversible Elevated Lanes Project (SWFWMD Permit # 43-019654.001). It was later modified under SWFWMD Permit # 43-020690.009 to include a portion of Ramp B and a shared use path.

According to historical permit documentation obtained from the SWFWMD website, the existing stormwater management facility was physically modified to accommodate the shared use path. With its new configuration, the pond has a capacity to provide approximately 0.961 ac-ft of treatment volume. The required treatment volume for one-inch of runoff from the directly connected impervious area (9.37 ac) plus the SMF area at the weir elevation (1.03 ac) is equal to 0.867 ac-ft. This nets a surplus of approximately 0.094 ac-ft of treatment volume available in the existing pond. This 0.094 ac-ft of available treatment volume translates to approximately 1.128 ac of directly connected impervious area.

Under a later permit modification (SWFWMD Permit # 43-020690.016), the control structure was modified (lowering the weir elevation) as part of a post safety and maintenance issue to prevent existing structure tops adjacent to the pond from dislodging due to surcharge. This modification leaves only a surplus of approximately 0.043 ac-ft (translate to approximately 0.516 ac of directly connected impervious area) of treatment volume available.

The runoff above and beyond the treatment volume discharges through a Type H control structure with two weir cut-outs on each of the long sides directly into McKay Bay via a segment of outlet pipe system that includes overflow from existing pond EX_SMF-H-1 (located south of Adamo Drive and east of N 39th Street) and EX_SMFG3. Attenuation is not required for this pond as McKay Bay is tidally influenced.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01) and is used to generate summary of comparison tables (refer to Appendix A).

3.0 Proposed Conditions

3.1 Floodplain

There are no floodplain impacts within the project limits as all proposed work is above the 100-year floodplain elevation.

3.2 Cross Drains

The two cross drains within the project limits are outside of the proposed work area.

3.3 Drainage Conditions/ Patterns

In general, the proposed conditions (refer to Figures 7A and 7B) mirror the existing conditions. The project continues to be separated into four drainage basins (BSNE1, BSNE3, BSNG3, and BSNRLX) within the THEA Slip Ramp 2 project limits. The onsite drainage basin limits for the proposed conditions, to a certain extent, correspond to the existing condition. There are some minor deviations due to grading constraints or added impervious as a direct result to the bridge widening over the CSX railroads and N. 34th Street and widening within an existing grassy area that is currently under an existing elevated roadway.

Total impervious areas to three of the four stormwater management facilities (EX_SMFE1, EX_SMFE3, and EX_SMFG3) are marginally more in the proposed conditions as compared to the existing conditions. The impervious area to pond EX_SMFRLX is relatively the same in the proposed condition as in the existing condition (with a deduction of approximately 0.005 acres). This is insignificant when rounded to the nearest hundredth. Summary tables to compare the existing and proposed land use for each of the four drainage basins are provided in Appendix A of the report.

Of the four existing stormwater management facilities within the project limits, pond EX_SMFE1 is the only pond that discharges into a small wetland system prior to discharging into an existing channel that hydraulically connects to a tidally influenced water body (McKay Bay). As such, attenuation of the 25-year/ 24-hour storm is required for EX_SMFE1. The remaining three ponds (EX_SMFE3, EX_SMFG3, and EX_SMFRLX) directly discharge to McKay Bay, a tidally influenced water body. Therefore, these three ponds are not subjected to SWFWMD 25-year/ 24-hour attenuation criterion.

Information on drainage area, total impervious area, water surface area, pond area at weir crest, permitted treatment volume, and permitted provided treatment volume was attained from the previous environmental resource permit and adjusted, as needed, to reflect the proposed conditions.

3.3.1 Basin BSNE1 to EX_SMFE1

Basin BSNE1, as shown on Figure 7A, is a segment of Selmon Expressway between N 26th Street and the CSX railroads. Runoff from this basin is taken to existing pond EX_SMFE1 for treatment and attenuation of the 25-year/ 24-hour storm event. The improvements within this basin involve milling and resurfacing the existing pavement, shoulder reconstruction to accommodate the egress Ramp 2, and construction of a new shoulder gutter inlet west of the bridge over the CSX railroads to meet FDOT spread criteria, and adjustment to an existing manhole top to allow for the 10-year HGL to be within required tolerant. In general, the improvements are within the permitted limits of the basin except for the bridge widening over the CSX railroad. The bridge widening increases the overall basin area approximately 0.037 acres. The addition of 0.037 acres translates to an increase of 0.25% of the total area. Based on historical documentation, the post-condition rate of discharge (30.4 cfs) is less than the existing rate of discharge (38.7 cfs); a surplus of approximately 8.4 cfs. The addition of approximately 0.037 acres is so minor that it would not trip this surplus.

In addition to the overall basin increase of approximately 0.037 acres, the overall additional impervious area due to the improvements (shoulder widening within existing open areas and bridge widening) is approximately 0.17 acres. As previously discussed, pond EX_SMFE1 was designed to provide a surplus of approximately 0.516 ac-ft of treatment volume (translates to approximately 6.192 ac of additional impervious area). The additional 0.17 acres of impervious is within the translated 6.192 acres of impervious available.

From Figure 7A, it appears that pond EX_SMFE1 has more available treatment volume than 0.516 ac-ft as computed. Based on the area used to compute the required treatment volume (directly connected impervious area and SMF area at the weir elevation), it appears that the same area may have been accounted for twice in the permitted computation as there is existing pavement from ramps within the basin limits that cross over the area of EX_SMFE1 at the weir crest. From visual evaluation, these areas are more than the 0.17 acres of impervious area added for the Slip Ramp 2 improvements.

Based on the available storage within the existing pond EX_SMFE1 for treatment and the surplus pre vs. post rate of discharge into the existing wetland, no modification is necessary for this stormwater management facility and/ or the existing control structure to accept the additional 0.17 acres of impervious. As shown, the additional 0.17 acres of impervious (which includes the additional 0.037 acres of increase to the overall drainage basin) is not only within the translated 6.192 acres of impervious available, but it is also less than the overlapping areas (existing ramp and existing pond area). Additionally, with such a small deviation to the drainage basin, an ICPR-3 model and hydrologic calculations are not provided for this basin.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01), marginally adjusted, and is used to generate summary of comparison tables (refer to Appendix A).

3.3.2 Basin BSNE3 to EX_SMFE3

Basin BSNE3, as shown on Figure 7A and Figure 7B, is a segment of Selmon Expressway and the I-4/ Selmon Expressway interchange between N 34th Street and the CSX railroads. Runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFE3 for treatment. No attenuation is required for this pond as it discharges directly to an existing channel with hydraulic connection to a tidally influenced water body (McKay Bay). The improvements within this basin involve milling and resurfacing the existing pavement, shoulder reconstruction to accommodate the egress Ramp 2, and construction of two new shoulder inlets within the outside WB shoulder in order to comply with FDOT spread criteria. In general, the improvements are within the permitted limits of the basin with the exception to the bridge widening over the CSX railroad. The bridge widening increases the overall basin area approximately 0.037 acres. The addition of 0.037 acres translates to an increase of 0.46% of the total area. Although this pond is tidally influenced and rate is not a factor, the increase of approximately 0.037 acres is minor and would not make a significant increase in the overall rate of discharge to the 34th St Canal or McKay Bay.

Other than the additional 0.037 acres of impervious due to the bridge widening over the CSX railroads, no other additional impervious is being proposed within this basin. All improvements are within the existing impervious area and has been treated within pond EX_SMFE3. As discussed previously, pond EX_SMFE3 was designed to provide a surplus of approximately 0.186 ac-ft of treatment volume (translates to approximately 2.232 ac of additional impervious area). Based on the area used to compute the required treatment volume (directly connected impervious and SMF area at the weir elevation), it appears that the same area may have been accounted for twice in the computation.

From Figure 7A, there is existing pavement from ramps within the basin limits that cross over the area of EX_SMFE3 at the weir crest. These areas, from visual inspection, are more than the 0.037 acres of impervious added for the Ramp 2 improvements. As such, no modification is necessary for this stormwater management facility and/ or existing control structure to accommodate the additional 0.037 acres. With this facility discharging to a tidally influenced water body, an ICPR-3 model and hydrologic calculations are not provided for this basin.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01), marginally adjusted, and is used to generate summary of comparison tables (refer to Appendix A).

3.3.3 Basin BSNG3 to EX_SMFG3

Basin BSNG3, as shown on Figure 7B, is a segment of Selmon Expressway WB between N 34th Street and N 39th Street. Runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFG3 for treatment. No attenuation is required for this pond as it discharges directly to a tidally influenced water body (McKay Bay). The improvements within this basin involve milling and resurfacing the existing pavement, shoulder reconstruction to accommodate the egress Ramp 2, and construction of storm sewer system to accommodate Ramp 2. In general, the improvements are within the permitted limits of the basin except for the bridge widening over N 34th Street and diversion of impervious areas from one basin to the other due to grading constraints.

The bridge widening increases the overall basin area by approximately 0.143 acres, while the basins exchange area increases the overall basin by approximately 0.005 acres. Thus the total overall basin of 0.148 acres translates to an increase of 2.12% of the total area. Although this pond is tidally influenced and rate is not a factor, the increase of approximately 0.148 acres is minor and would not make a significant increase in the overall rate of discharge to McKay Bay. With this facility discharging to a tidally influenced water body, an ICPR-3 model and hydrologic calculations are not provided for this basin.

As mentioned, the addition of slip Ramp 2 required exchange of treated pavement areas between two basins (BSNG3 and BSNRLX). A segment of the existing impervious area (approximately 0.021 acres) will now drain to the existing storm sewer system within basin BSNRLX. To offset this diverted area, approximately 0.026 acres of impervious area from basin BSNRLX will be collected in a storm sewer collection system, extended to accommodate the slip Ramp 2 improvements, and taken to pond EX_SMFG3. Although all the exchanged areas are existing pavements, it will be denoted as proposed in the new basin that it will be taken to.

Pond EX_SMFG3 was designed, as previously discussed, to provide a surplus of approximately 0.05 ac-ft of treatment volume (translates to approximately 0.60 ac of additional impervious area). The additional areas from the bridge widening and the exchange of impervious areas with basin BSNRLX (an increase to the total basin area of 0.149 acres) is within this allotted surplus. As such, no modification to the existing stormwater management system and/ or the existing control structure is necessary.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01), marginally adjusted, and is used to generate summary of comparison tables (refer to Appendix A).

3.3.4 Basin BSNRLX to EX_SMFRLX

Basin BSNRLX, as shown on Figure 7B, encompassed the segment of Selmon Expressway REL, EB, and Ramp B between N 34th Street and N 39th Street. Stormwater runoff from this basin is collected in existing storm sewer collection systems and taken to existing pond EX_SMFRLX for treatment. No attenuation is required for this pond as it discharges directly to a tidally influenced water body (McKay Bay). The improvements within this basin involve milling and resurfacing the existing pavement and minor shoulder reconstruction to accommodate the egress Ramp 2. In general, the improvements are within the permitted limits of the basin apart from minor basin diversion (through a short segment of REL outside shoulder reworking) to minimize increasing the overall drainage area.

As discussed in Section 3.3.3, basin BSNRLX accepts approximately 0.021 acres of existing treated impervious area from basin BSNG3. In exchange, approximately 0.026 acres of existing treated impervious area is being diverted to basin BSNG3, resulting in a net deduction of approximately 0.005 acres for basin BSNRLX. As such, no modification to the existing stormwater management system and/ or the existing control structure is needed.

Information for this area was obtained from SWFWMD permit no. 43-020690.009 for the I-4 Lee Roy Selmon Expressway South of Selmon Expressway to 7th Avenue (FDOT FPID No 258415-2-52-01), marginally adjusted, and is used to generate summary of comparison tables (refer to Appendix A).

4.0 Proposed Design

4.1 Design Criteria

The following highlights the applicable criteria as set forth by the THEA and SWFWMD of the drainage systems and storm water management facilities. These criteria were drawn from the 2018

SWFWMD Applicant's Handbook, Volume II (AH), the 2021 FDOT Drainage Manual (DM) and the 2021 FDOT Drainage Design Guide (DDG).

4.1.1 Stormwater Management Facilities (Primary Systems)

- **Water Quantity - Attenuation (Open Basins and/or Tidal Influence): Informational purposes only as these existing facilities were not modeled as part of this project.**
  - Design Storm (SWFWMD AH VII, Section 3.1; F.S. Chapter 62-330) – The post development peak rate of discharge should not exceed the pre-development peak rate of discharge for the 25-year, 24-hour storm event unless the system outfalls to a tidally influenced water body. As such, rate is not a constraint.
  - Critical Duration Storms (FDOT DM, Chpt 5.2.1; FAC 14-86; Drainage HB Drainage Connection Permits, Chpt 4.0) – The post development peak rate of discharge for the storm events (3-year, 1-hour to 3-day; 5-year, 1-hour to 3-day; 10-year, 1-hour to 3-day; 25-year, 1-hour to 3-day; 50-year, 1-hour to 3-day; and 100-year, 1-hour to 3-day) shall not exceed the pre-development peak rate of discharge for project discharging to offsite areas subject to reported historical flooding and or into drainage systems with heightened public safety risk: (1) storm per storm (frequency and duration) comparison or (2) peak rate from a frequency.

- **Water Quality – Treatment (On-Line Wet Detention): Informational purposes only as these are existing facilities were not modeled as part of this project.**
  - SWFWMD AH VII, Section 4.2 – The system shall treat the runoff from the first one-inch of rainfall. As discussed at the Pre-Application Meeting, the approach for treatment will be to demonstrate that the additional area will not trip the existing pond capacity using criteria permitted. Refer to the Pre-Application Meeting Minutes in Appendix G.
  - THEA – As specified by SWFWMD.
  - FDEP Impaired Water Bodies (FAC 62-303) – McKay Bay is currently not impaired for nutrients.

- **Water Quality – Wet Detention Drawdown/ Recovery: Informational purposes only as these are existing facilities were not modeled as part of this project.**
  - SWFWMD AH VII, Section 5.2 – Discharge one-half of the detention volume required by Part III of Volume II within 24 hours.

The existing stormwater facilities within the Ramp 2 improvements were designed and permitted to provide surplus treatment volume. These existing facilities, whether or not it discharges into a tidally influenced water body, were designed to over attenuation the SWFWMD 25-year, 24-hour storm event. The additional impervious area resulting from the proposed improvements to each of these facilities are within the surplus treatment volume amount as well as the surplus attenuation rates.

4.1.2 Stormwater Conveyance (Secondary Systems)

- **Storm Sewers**
  - Hydraulic Gradient (DM, Section 3.6.2) - The hydraulic gradient shall be no greater than the theoretical gutter elevation when major and minor losses are included in analysis. Minor losses include entrance, exit, junction and manhole, expansion, contraction and bend.
  - Spread (DM, Section 3.9.1) - Shoulder gutter inlets shall be spaced to prevent spread from exceeding one foot, three inches outside the gutter toward the front slope and be limited to the face of the guardrail for the 10-yr frequency storm. For other inlets, spread will be analyzed for a 4 in/hr intensity for permanent and temporary conditions and will not be allowed to encroach into the travel lane.
  - Storm Drain Hydrology and Hydraulics (DM, Section 3.3) - Storm drain systems found within the on-site basins shall be designed in accordance with a 10-year design storm frequency. A 50-yr design storm shall be used for areas where

roadway runoff has no outlet other than a storm drain system such as a sag inlet or cut section. The time of concentration at the start of the system is 10-minute. In areas where there is ditch flow, the travel time in the ditch will be the time of concentration for that inlet.

    - Design Tailwater (DM, Section 3.4) – (1) For pipes discharging to ditches: the normal depth flow in a free-flowing ditch at the storm drain outlet for the storm drain design storm; (2) For pipes discharging to stormwater ponds: the peak stage at the coincidental storm event based on the calculated Tc for the Pond; and (3) Orifices and v-notches will be assumed as clogged for purpose of establishing tailwater.
    - Minimum Slope (DM, Section 3.6.1) - A physical slope that can produce a flow velocity of 2.5 feet per second (fps) and no greater than 15 fps when flowing full shall be used for the storm sewers. For pressure flow, a minimum slope of 0.1 percent is required.
    - Outlet Velocity (DM, Section 3.6.3) - Outlet velocity shall be based on the lowest anticipated tailwater condition that can be expected to occur during the storm event. If discharge exceeds 4 fps, special lining and/ or energy dissipation may be considered.
    - Minimum Pipe Size and Maximum Length (DM, Section 3.10.1) – A minimum pipe size for trunk lines and laterals is 18 inches. A pipe size of 18 inches will be used for maximum pipe length of 300 feet and pipe sizes of 24 inches to 36 inches may be used for maximum lengths of 400 feet. A 42-inch pipe size and larger may be used for a maximum pipe length of 500 feet.
    - Manning's Roughness Coefficients (DM, Section 3.6.4) - A Manning's roughness coefficient (n) of 0.012 shall be used in design for concrete pipes.
    - Longitudinal Grade (DM, Section 3.8.1) - A minimum longitudinal gutter grade of 0.3 percent shall be used for design.

- **Trench Drain (DM 3.9.2)**
    - Consider trench drains when traditional inlets are not feasible and only when approved by THEA.
    - Placement of trench drains shall not be in pedestrian paths unless ADA compliant grates are used.
    - Avoid conflicts with barrier wall foundation if placed adjacent to reinforced concrete barrier.
    - Identify in the plans the type, the design flow of the drains, begin and end locations of the drain and outlet pipe (if drain is not stubbed directly into a drainage structure).
    - Slope outlet pipes and preformed channel inverts at 0.6% or steeper toward the outlet regardless of the surface slope.

- **Ditches (DM 2.2)**
    - Design Frequency (DM, Section 2.2) – Roadside ditches shall be designed to collect and convey water without damage for a 10-year design storm frequency, while temporary ditches will be designed for a 2-year storm.
    - Minimum Slope (DM, Section 2.4.2) – For all conveyance ditches, a minimum physical slope of 0.0005 ft/ft shall be used.
    - Freeboard (DM, Sectio 2.4.5) – A minimum freeboard of one foot in a fill slope and 0.5 foot in a cut slope above the design stage for ditches that required regrading.

- **Hydroplaning Risk (DM 3.9.3)**
    - Hydroplaning will be analyzed at critical locations where the standard allowable typical sections per the FDM are not met such as locations with large gores and auxiliary lanes.
    - Accumulated runoff should be captured from mainline and ramps or other areas which may cause hydroplaning.
    - Inlet should be designed to capture 100 percent of the flow.

Storm sewer systems were designed in accordance with THEA/ FDOT criteria, utilizing the software program GEOPAK drainage, and were analyzed for the 10-yr storm event. Runoff coefficients of 0.95 and 0.20 were used in analyses for impervious and pervious areas, respectively. In general, a starting time of concentration of 10 minutes was used for analyses; and in locations where a ditch conveys flow to an inlet, the time of concentration determined in the ditch at the inlet location was used for analysis. Additionally, in locations of sags where there was no outlet other than the storm sewer, a 50-yr storm event was used for analysis. Tailwater elevations for systems discharging into ponds were obtained from historical data. Minor losses were included in the analyses and the hydraulic grade line (HGL) was kept at or below the gutter or grate elevation. For any existing inlets that are outside of the project limits, where designed survey is not available, historical information (sub-basin areas, inverts, pipe sizes, grate elevations, etc.) were used in the analysis.

Spread calculations were conducted where proposed improvements affected existing inlets and in locations with widening and new shoulder gutter. Design of storm sewer systems in the project included improvements to the existing storm sewer systems such as addition of shoulder gutter inlets and ditch bottom inlets. Proposed shoulder gutter inlets and barrier wall inlets were spaced to meet spread criteria for the 10-yr storm event and 4 in/hr intensity, respectively. Storm sewer design was accomplished in each basin to reuse existing drainage infrastructure and maintain existing drainage patterns to the greatest extent possible. This was accomplished by placing larger J-bottoms on proposed inlets to reuse existing pipes. Additional design elements include upsizing and/or plugging and filling pipes to accommodate the additional impervious area from the proposed improvements. Storm sewer, trench drain, and spread calculations can be found in Appendix B.

THEA is notified and is involved in the resolution to any design challenges. Meeting minutes of these are provided in Appendix G.

4.2 Hydroplaning

Hydroplaning analyses were conducted at critical sections along the project corridor including areas where ramp lanes and gores were present. Horizontal roadway geometry plays a key role in the hydroplaning analyses, especially since the design speed for on-ramps and off-ramps are typically much lower than the mainline design speed. The critical roadway section is at the convergence of the on/ off ramps and the mainlines. At this location, the driver will either accelerate from the ramp speed or decelerate from the mainline speed limits. At these locations, the original design speed (60 mph) was used for the mainline and a reduced anticipated driver speed (50 to 55 mph), as needed, was used for ramp lanes respectively. As mentioned, ramps are typically designed at a lower speed. Historically as-built plans documented the design speed for the ramps on Selmon Expressway to be 40 mph, a 10 to 15 mph lower than the value used in the analyses. From the analysis, it was determined that hydroplaning was met for all segments using the original 60 mph design speed with the exception to one location on the existing Reversible Elevated Lanes (Station 414+55.00). At this location, the proposed Ramp 2 is in a superelevated transition and the ramp cross-slope is nearly zero. Utilizing a driver expected speed of 55 mph, hydroplaning was met based on the ramp 0.20% longitudinal slope and 0.04% cross slope. With a design speed of 60 mph and a 0.65% longitudinal slope of the existing Ramp 4 travel lane, hydroplaning is not met at the Ramp 2 travel lane, the REL travel lanes, and the existing Ramp 4 travel lane. Once the Ramp 2 cross slope reaches 0.50%, hydroplaning is met (this occurs between Stations 414+65 and 414+70). The results from the hydroplaning analyses have been provided in Appendix D.

4.3 Optional Pipe Material Analysis

Soil borings were tested for environmental classification by Universal Engineering Sciences at varying locations along the project corridor and are included in Appendix H. The soil samples showed evidence of being slightly to moderately aggressive in nature. Based on the limited boring locations tested for environmental classification, the most similar corrosion test results for the soil stratum in which the proposed pipes were located were used for the optional pipe material analysis. The environmental classification of the soils was used in conjunction with the FDOT Culvert Service Life Estimator program to determine the design service life (DSL) of the proposed pipes. According to Section 6.6 of the Drainage Manual, pipes that are being extended are to be extended with the existing pipe material and therefore these pipes do not require an optional material analysis. Proposed storm drains, which required an analysis were analyzed for a DSL of 100 years. Additionally, an analysis was also performed on jack and bore pipes (if any) to determine the minimum casing thickness needed for corrosion resistance. Optional Pipe Materials Analysis can be found in Appendix E.

4.4 Temporary Drainage

In order to accommodate the inside widening to both the bridges over the CSX railroads and N 34th St, temporary pavement will be added to the outside WB shoulder to shift the traffic to the north. Type K temporary barrier wall will be installed and plugged 2-ft from the inside westbound travel lane. Spread was analyzed based on pavement width up to the temporary barrier wall as the existing shoulder is reduced in this area.

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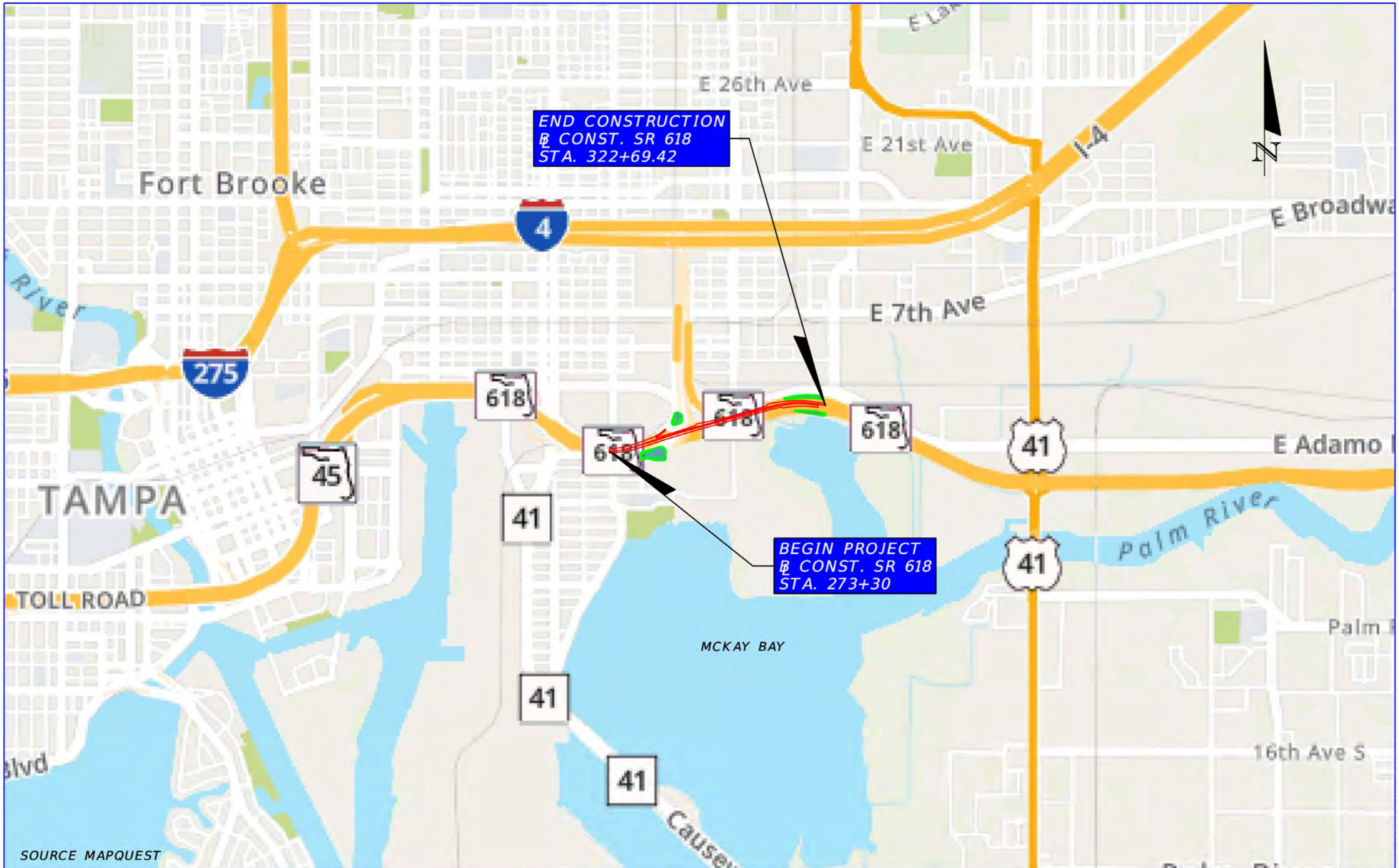

REVISIONS							
DATE	DESCRIPTION	DATE	DESCRIPTION	TUY KIM DUONG, P.E. P.E. NO.: 66461 Greenman-Pedersen, Inc. 1051 WINDERLEY PLACE, SUITE 400 MAITLAND, FL 32751	TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY ROAD NO.: 618 · COUNTY: HILLSBOROUGH · FINANCIAL PROJECT ID: O-02520	THEA: RAMP 2 LOCATION MAP	FIGURE NO. 1

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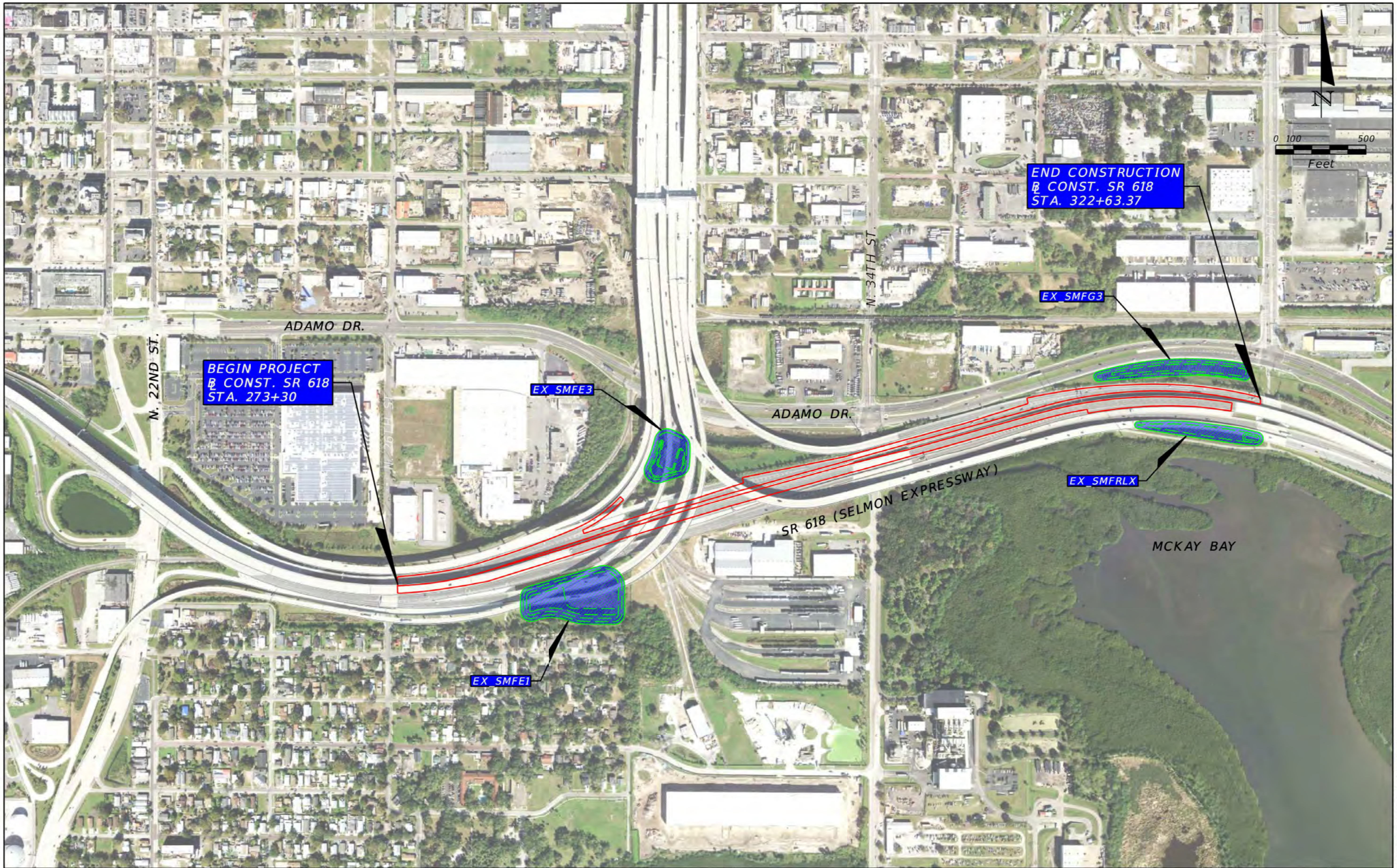

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 2
AERIAL MAP

FIGURE NO. 2

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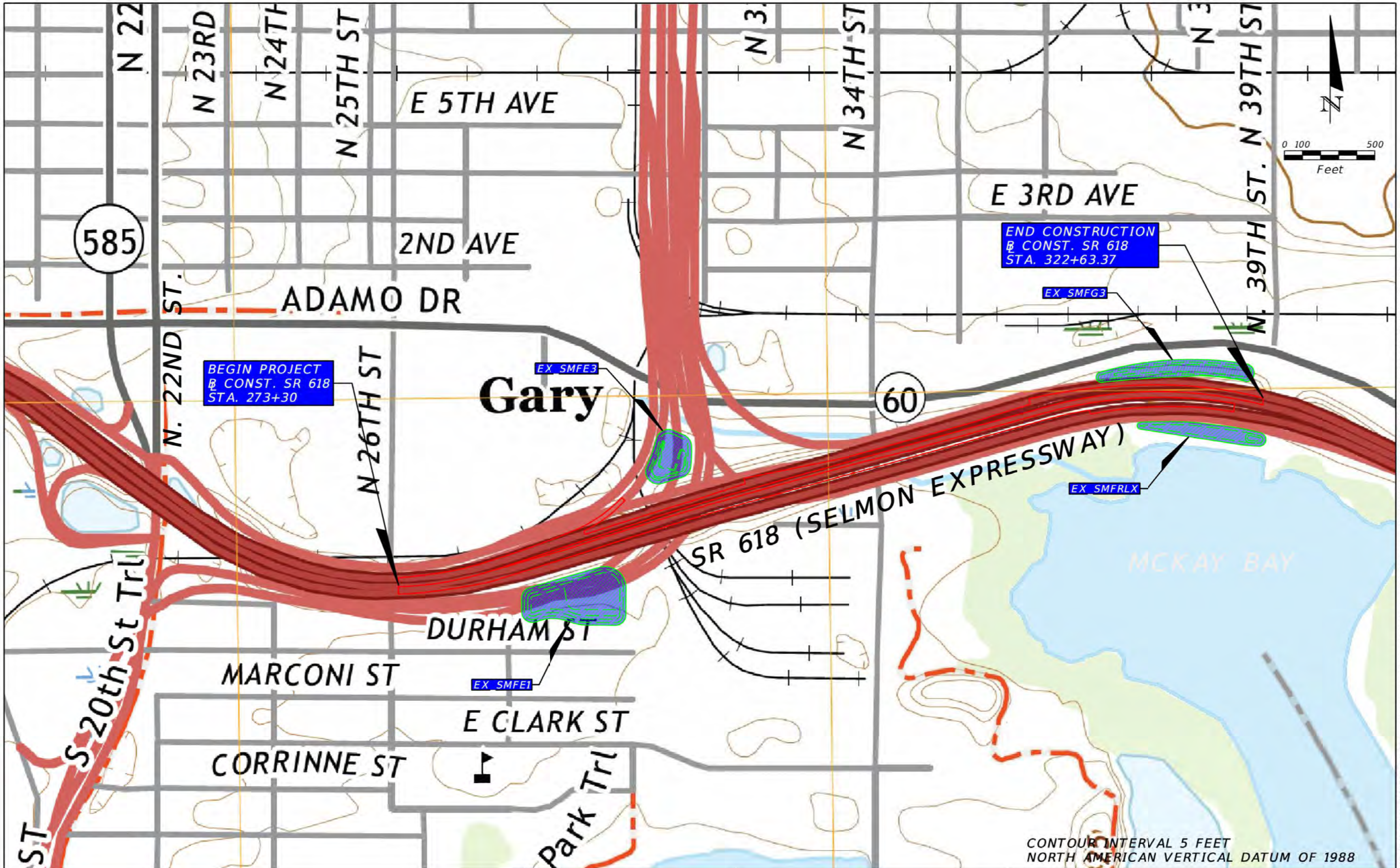

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	0-02520

THEA: RAMP 2
USGS QUANDRANGLE

FIGURE NO. 3

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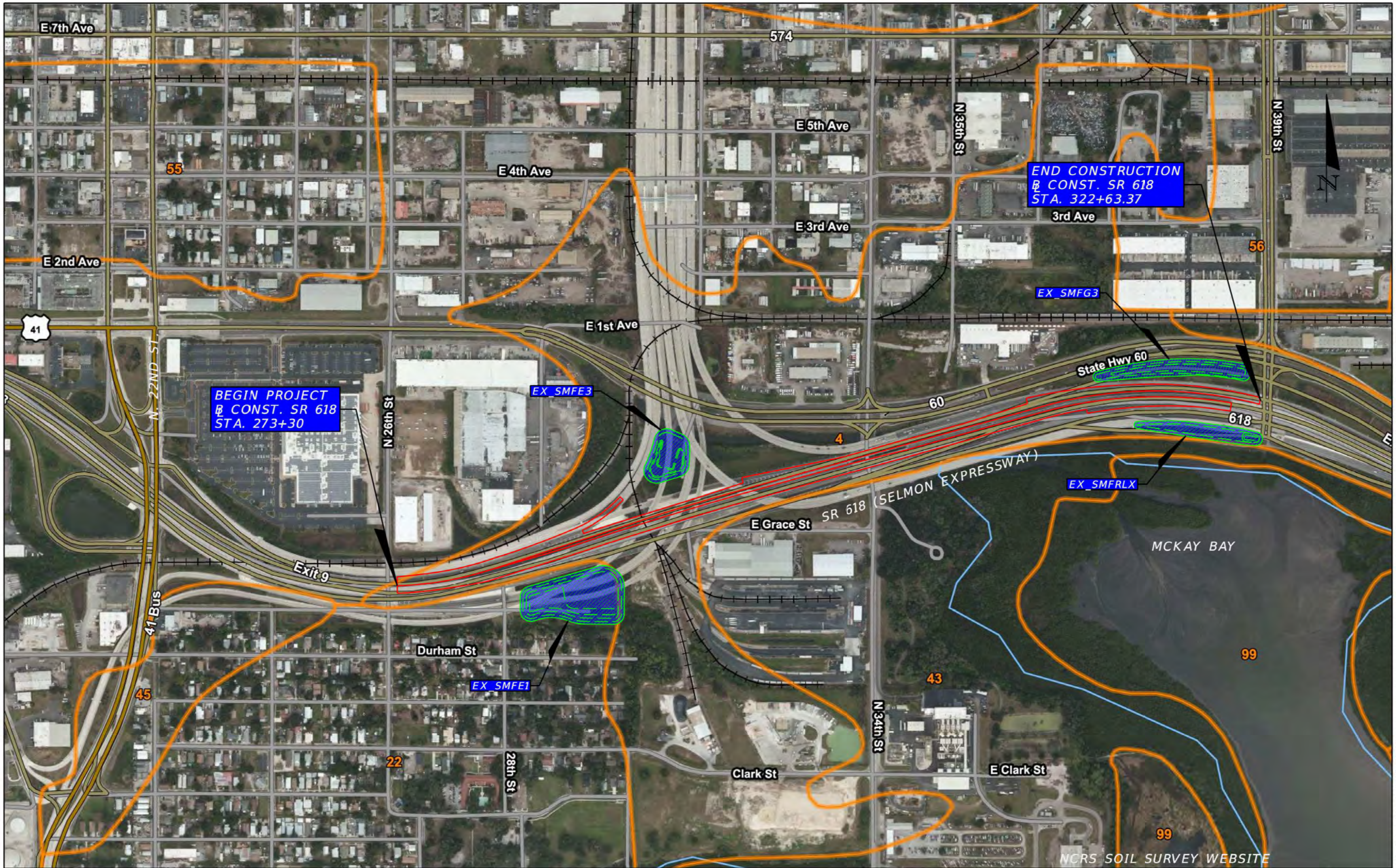

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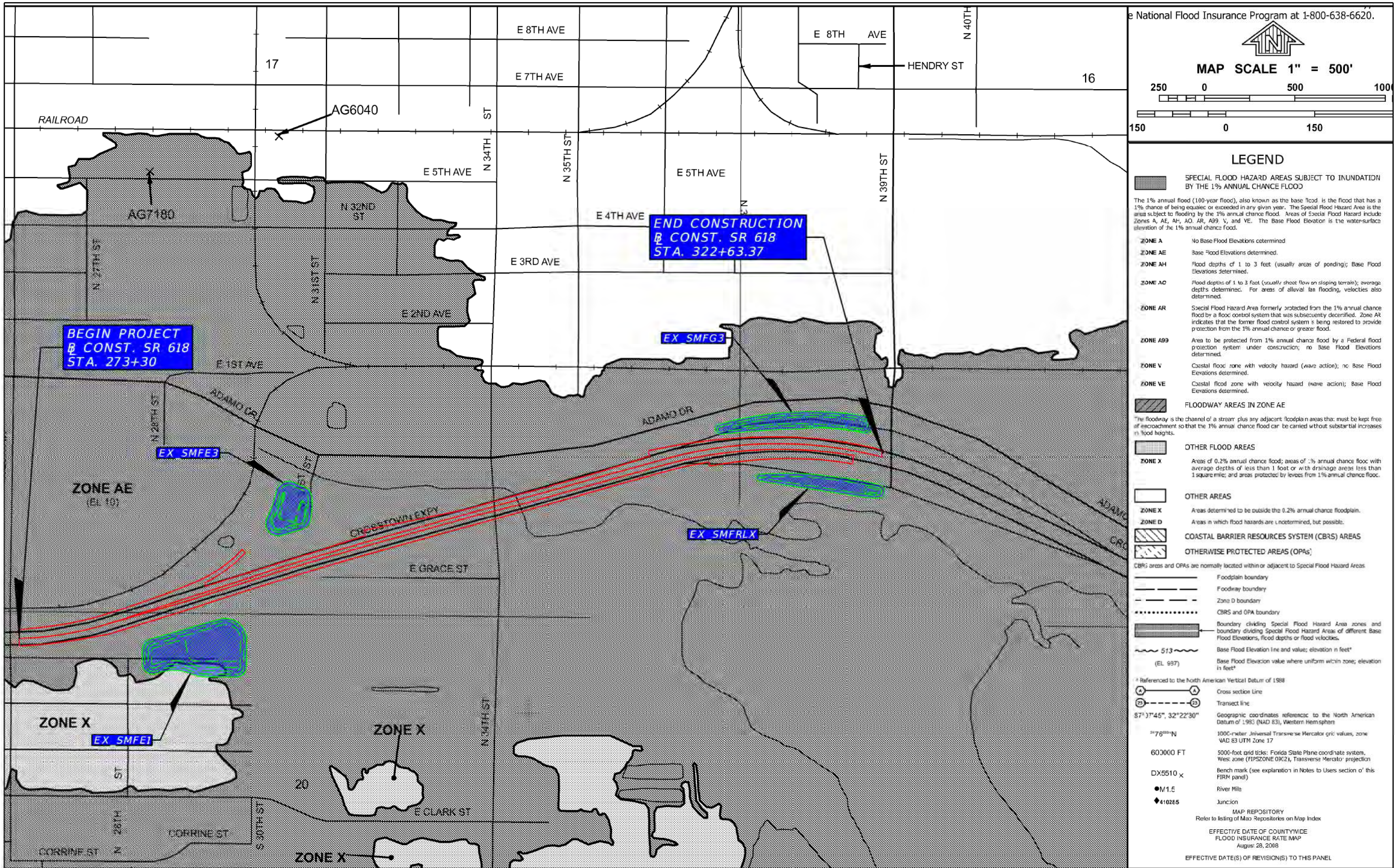

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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THEA: RAMP 2
FEMA MAP

FIGURE NO. 5

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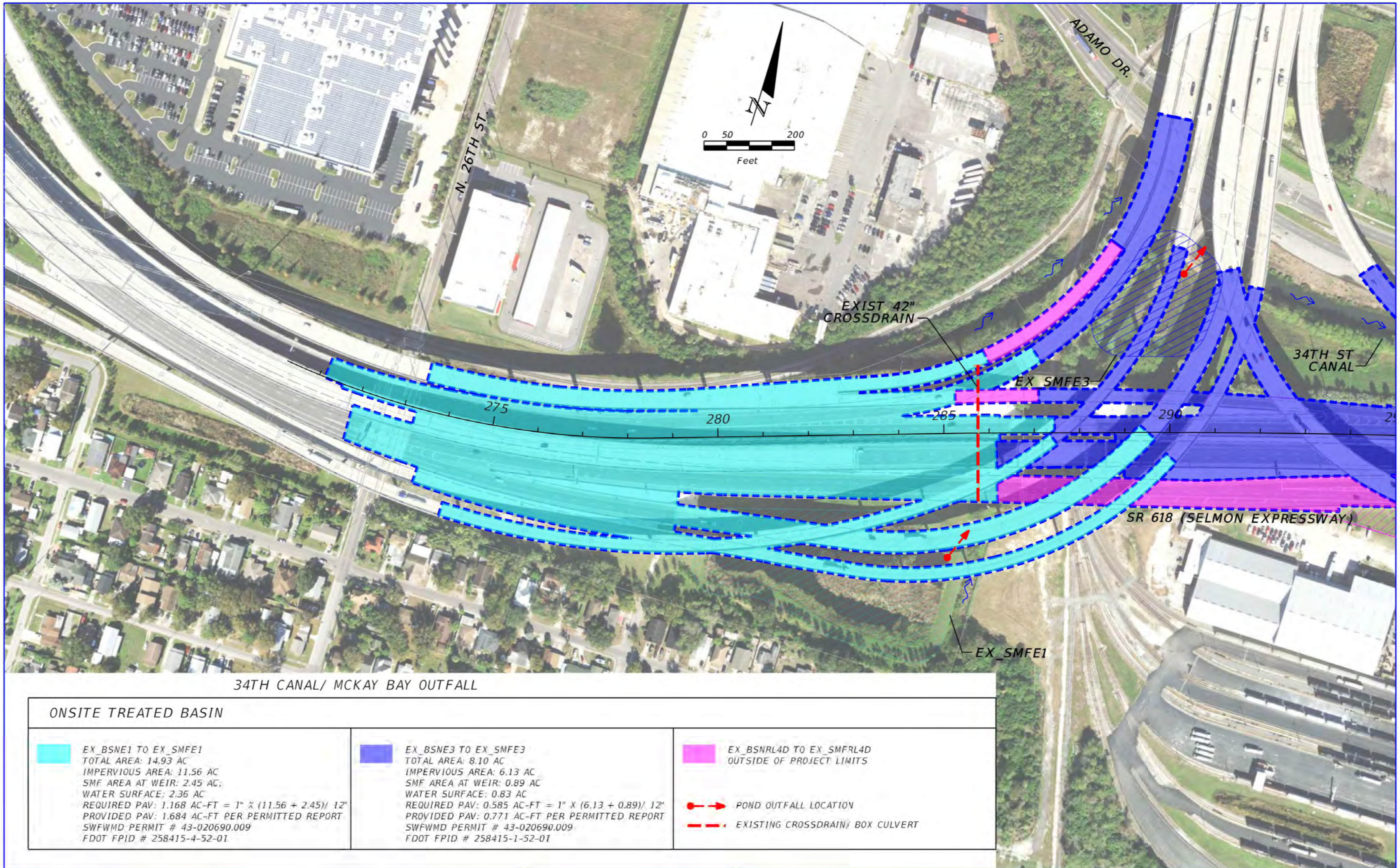

34TH CANAL/ MCKAY BAY OUTFALL

ONSITE TREATED BASIN

EX_BSNE1 TO EX_SMFE1
TOTAL AREA: 14.93 AC
IMPERVIOUS AREA: 11.56 AC
SMF AREA AT WEIR: 2.45 AC;
WATER SURFACE: 2.36 AC
REQUIRED PAV: 1.168 AC-FT = 1" X (11.56 + 2.45)/ 12"
PROVIDED PAV: 1.684 AC-FT PER PERMITTED REPORT
SWFWMD PERMIT # 43-020690.009
FDOT FPID # 258415-4-52-01

EX_BSNE3 TO EX_SMFE3
TOTAL AREA: 8.10 AC
IMPERVIOUS AREA: 6.13 AC
SMF AREA AT WEIR: 0.89 AC
WATER SURFACE: 0.83 AC
REQUIRED PAV: 0.585 AC-FT = 1" X (6.13 + 0.89)/ 12"
PROVIDED PAV: 0.771 AC-FT PER PERMITTED REPORT
SWFWMD PERMIT # 43-020690.009
FDOT FPID # 258415-1-52-01

EX_BSNRL4D TO EX_SMFRL4D
OUTSIDE OF PROJECT LIMITS

POND OUTFALL LOCATION

EXISTING CROSSDRAIN/ BOX CULVERT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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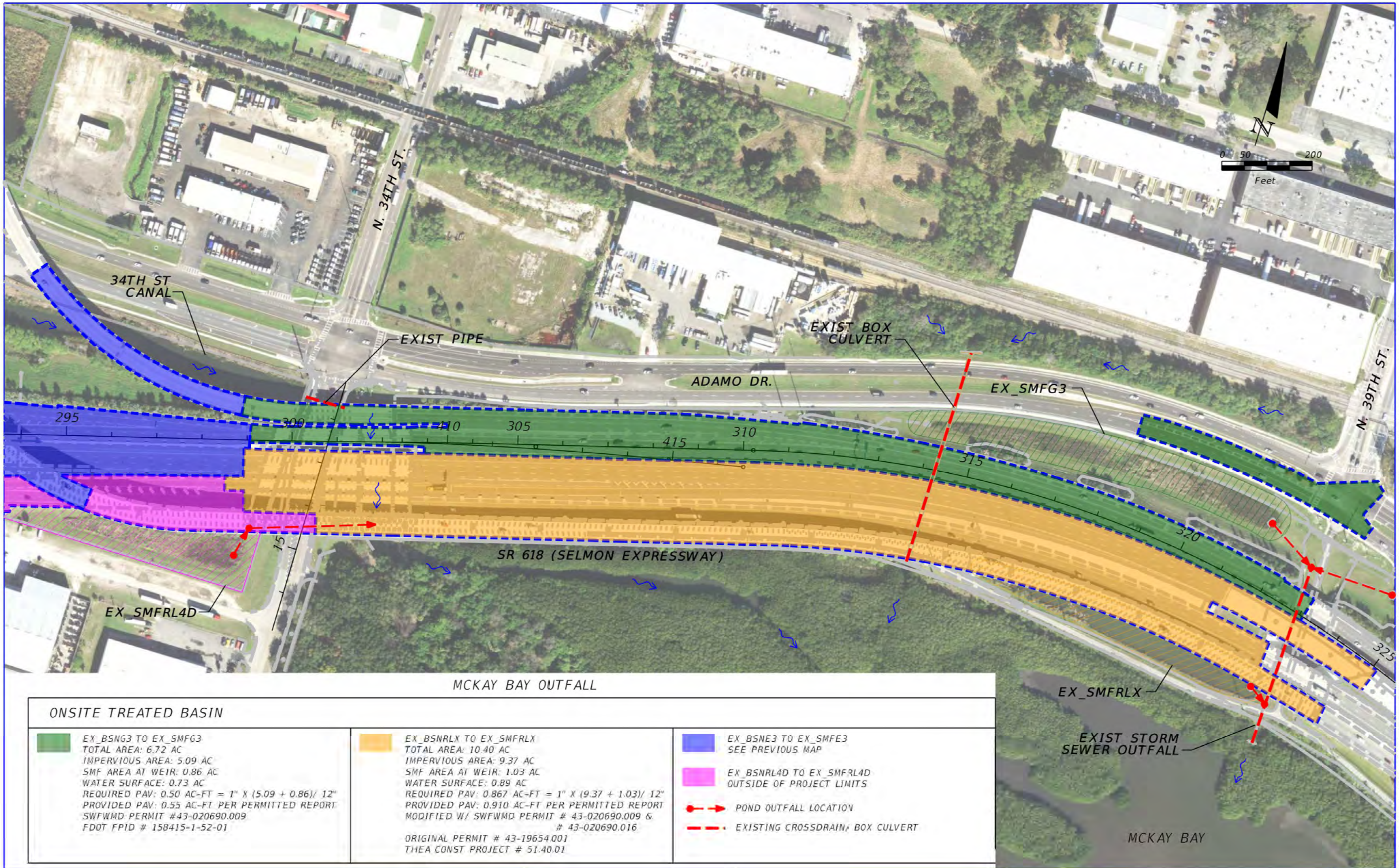
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	0-02520

THEA: RAMP 2
EXISTING DRAINAGE MAP

FIGURE NO.
6A



MCKAY BAY OUTFALL

ONSITE TREATED BASIN

EX_BSNG3 TO EX_SMFG3
TOTAL AREA: 6.72 AC
IMPERVIOUS AREA: 5.09 AC
SMF AREA AT WEIR: 0.86 AC
WATER SURFACE: 0.73 AC
REQUIRED PAV: 0.50 AC-FT = 1" X (5.09 + 0.86)/ 12"
PROVIDED PAV: 0.55 AC-FT PER PERMITTED REPORT
SWFWMD PERMIT #43-020690.009
FDOT FPID # 158415-1-52-01

EX_BSNRLX TO EX_SMFRLX
TOTAL AREA: 10.40 AC
IMPERVIOUS AREA: 9.37 AC
SMF AREA AT WEIR: 1.03 AC
WATER SURFACE: 0.89 AC
REQUIRED PAV: 0.867 AC-FT = 1" X (9.37 + 1.03)/ 12"
PROVIDED PAV: 0.910 AC-FT PER PERMITTED REPORT
MODIFIED W/ SWFWMD PERMIT # 43-020690.009 & # 43-020690.016
ORIGINAL PERMIT # 43-19654.001
THEA CONST PROJECT # 51.40.01

EX_BSNE3 TO EX_SMFE3
SEE PREVIOUS MAP

EX_BSNRL4D TO EX_SMFRL4D
OUTSIDE OF PROJECT LIMITS

POND OUTFALL LOCATION

EXISTING CROSSDRAIN/ BOX CULVERT

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1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

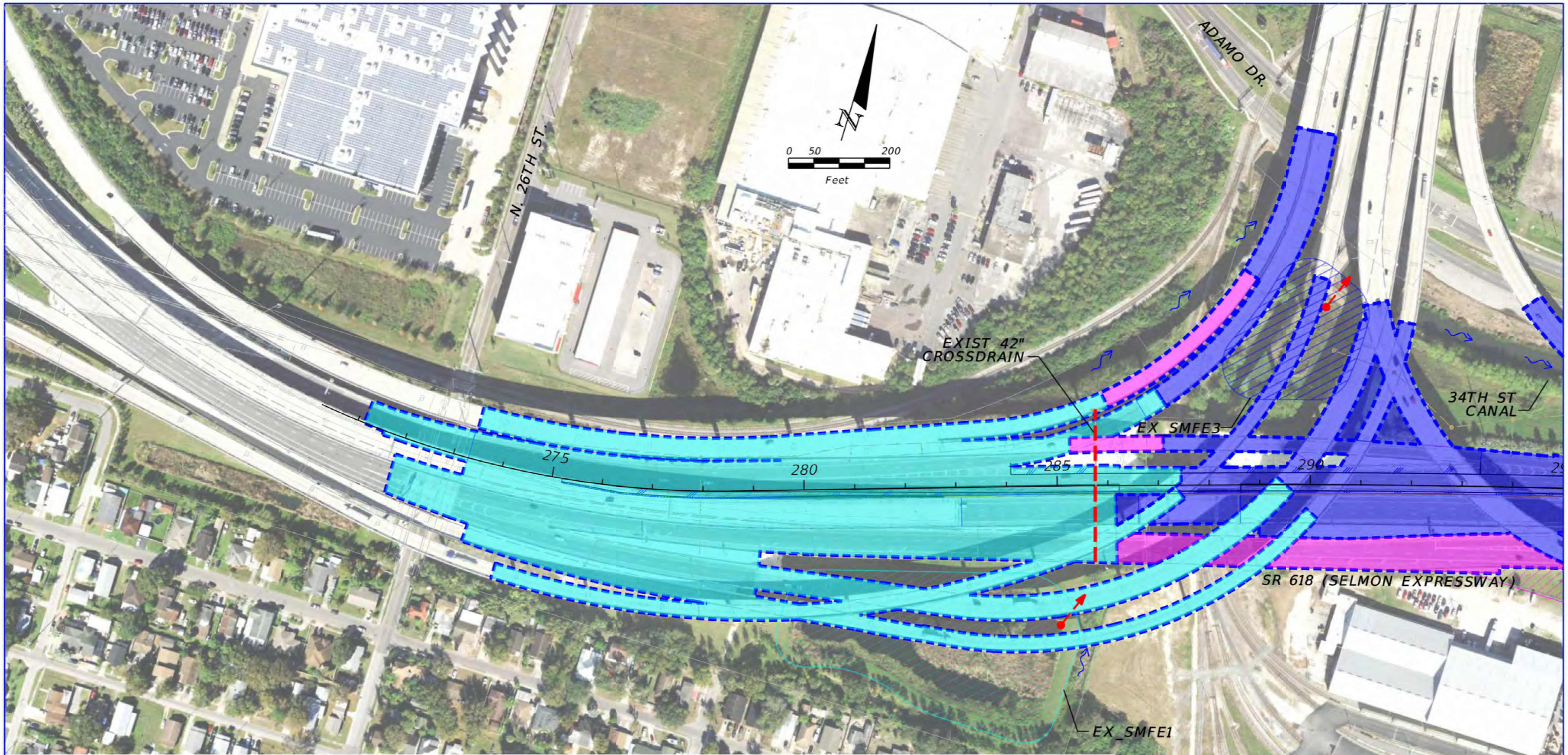
TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 2
EXISTING DRAINAGE MAP

FIGURE NO. 6B

kduong 12/29/2021 10:28:00 AM Default X:\7011621_THEA_Slip_Ramp_DB\CADD Files Not Delivered\O-02520\Drainage\Exhibits\DRMPRDRAMP22-EXIST_EXHIBIT.dgn



34TH CANAL/ MCKAY BAY OUTFALL

ONSITE TREATED BASIN

BSNE1 TO EX_SMFE1
TOTAL AREA: 14.97 AC
IMPERVIOUS AREA: 11.56 AC (EXIST)
0.17 AC (PROPOSED)
SMF AREA AT WEIR: 2.45 AC
WATER SURFACE: 2.36 AC
REQUIRED PAV: 1.182 AC-FT = 1" X (11.73 + 2.45)/ 12"
PROVIDED PAV: 1.684 AC-FT PER PERMITTED REPORT
SWFWMD PERMIT # 43-020690.009
FDOT FPID # 258415-4-52-01

BSNE3 TO EX_SMFE3
TOTAL AREA: 8.14 AC
IMPERVIOUS AREA: 6.13 AC (EXIST)
0.037 AC (PROPOSED)
SMF AREA AT WEIR: 0.89 AC
WATER SURFACE: 0.83 AC
REQUIRED PAV: 0.588 AC-FT = 1" X (6.167 + 0.89)/ 12"
PROVIDED PAV: 0.771 AC-FT PER PERMITTED REPORT
SWFWMD PERMIT # 43-020690.009
FDOT FPID # 258415-1-52-01

EX_BSNRL4D TO EX_SMFRL4D
OUTSIDE OF PROJECT LIMITS

POND OUTFALL LOCATION
EXISTING CROSSDRAIN/ BOX CULVERT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

TUY KIM DUONG, P.E.
P.E. NO.: 66461
Greenman-Pedersen, Inc.
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	0-02520

THEA: RAMP 2
PROPOSED DRAINAGE MAP

FIGURE NO. 7A

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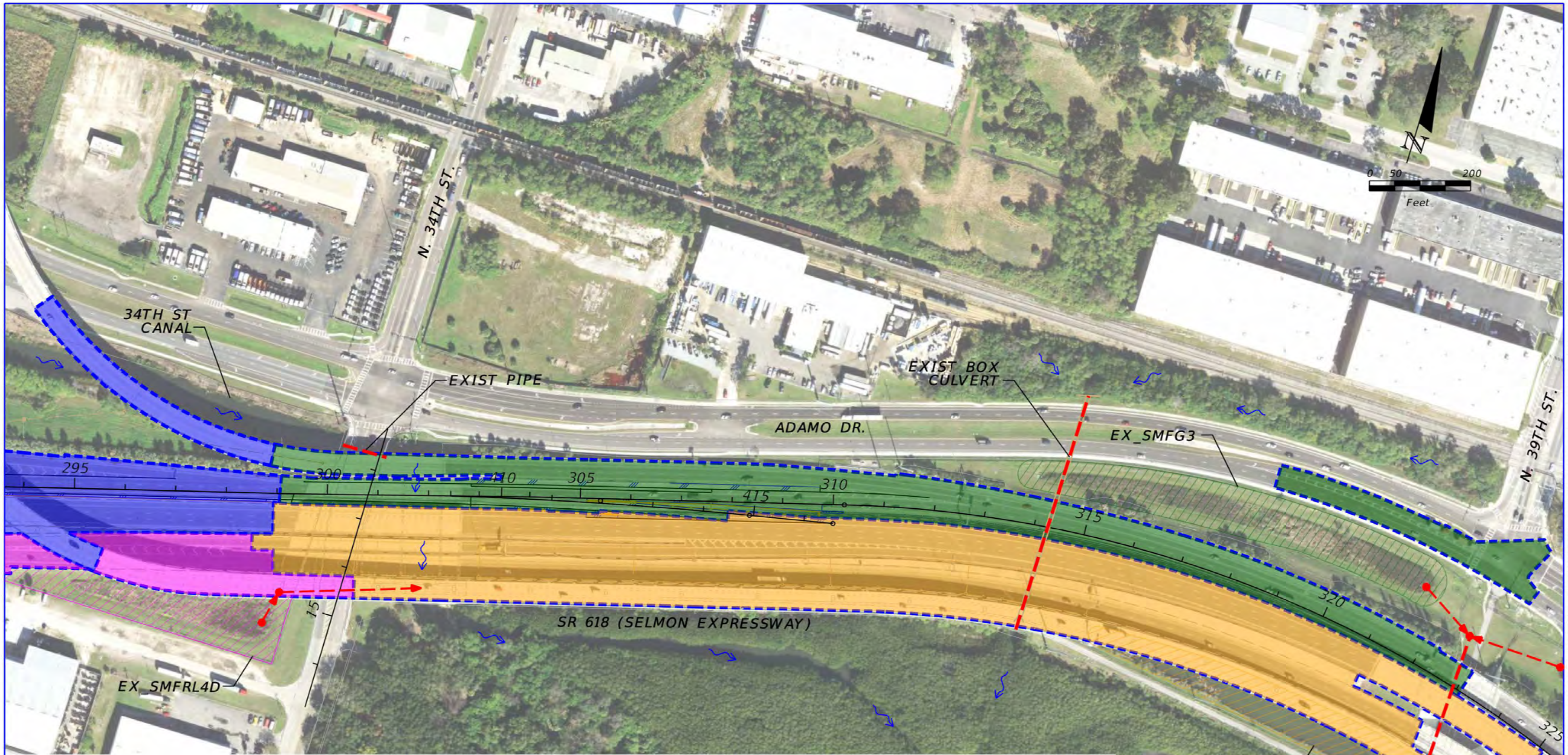


MCKAY BAY OUTFALL

ONSITE TREATED BASIN

BSNG3 TO EX_SMFG3
TOTAL AREA: 6.86 AC
IMPERVIOUS AREA: 5.048 AC (EXIST)
0.191 AC (PROPOSED)
SMF AREA AT WEIR: 0.86 AC
WATER SURFACE: 0.73 AC
REQUIRED PAV: 0.508 AC-FT = 1" X (5.239 + 0.86)/ 12"
PROVIDED PAV: 0.550 AC-FT PER PERMITTED REPORT
SWFWMD PERMIT #43-020690.009
FDOT FPID # 158415-1-52-01

BSNRLX TO EX_SMFRLX
TOTAL AREA: 10.39 AC
IMPERVIOUS AREA: 9.322 AC (EXIST)
0.042 AC (PROPOSED)
SMF AREA AT WEIR: 1.03 AC
WATER SURFACE: 0.89 AC
REQUIRED PAV: 0.866 AC-FT = 1" X (9.364 + 1.03)/ 12"
PROVIDED PAV: 0.910 AC-FT PER PERMITTED REPORT
MODIFIED W/ SWFWMD PERMIT # 43-020690.009
43-020690.016
ORIGINAL PERMIT # 43-19654.001
THEA CONST PROJECT # 51.40.01

BSNE3 TO EX_SMFE3
SEE PREVIOUS MAP

EX_BSNRL4D TO EX_SMFRL4D
OUTSIDE OF PROJECT LIMITS

POND OUTFALL LOCATION

EXISTING CROSSDRAIN/ BOX CULVERT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

TUY KIM DUONG, P.E.
P.E. NO.: 66461
Greenman-Pedersen, Inc.
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 2
PROPOSED DRAINAGE MAP

FIGURE NO. 7B

kduong 12/29/2021 10:31:31 AM Default X:\7011621_THEA_Slip_Ramp_DB\CADD Files Not Delivered\O-02520\Drainage\Exhibits\DRMPRDRAMP22-PROP_EXHIBIT.dgn

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

Plans & Relevant Calculations for Lee Roy Selmon Crosstown Expressway (Reversible Elevated Lanes)
Design No. 51.30.003 (2002/ 2003; Constructed 2009)
SWFWMD permit no.43019654.001 – Datum NGVD 29

COMPONENTS OF CONTRACT PLANS SET

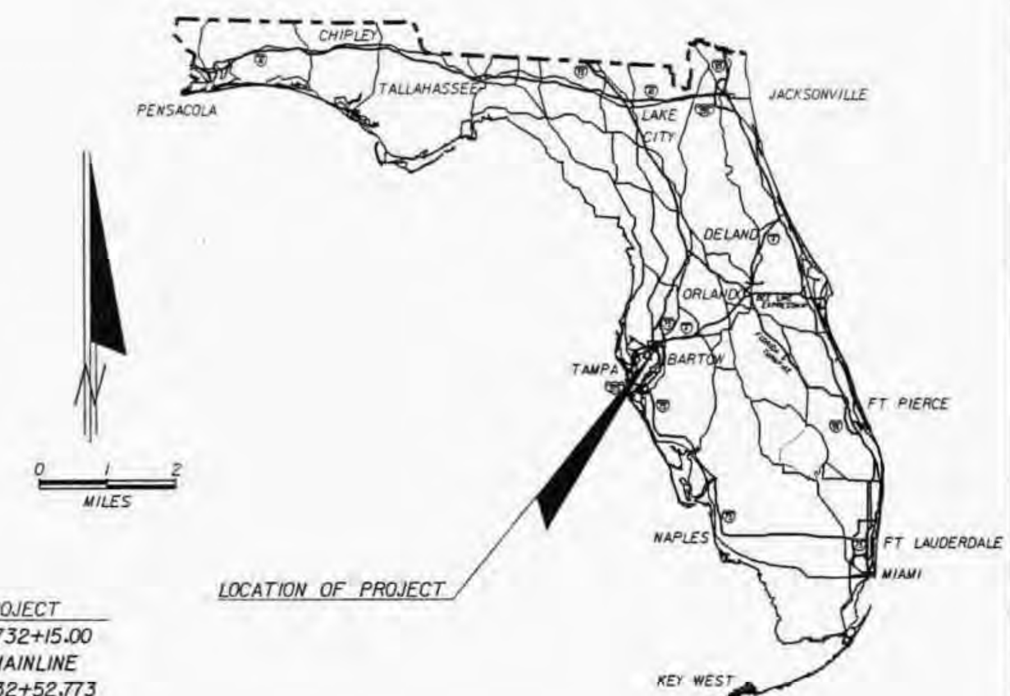
ROADWAY PLANS
PAVEMENT MARKING PLANS

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CONTRACT PLANS

CONSTRUCTION PROJECT NO. 51.40.01 *
DESIGN PROJECT NO. 51.30.03
HILLSBOROUGH COUNTY
LEE ROY SELMON CROSSTOWN EXPRESSWAY
STATE ROAD NO. 618

PROJECT LOCATION MAP

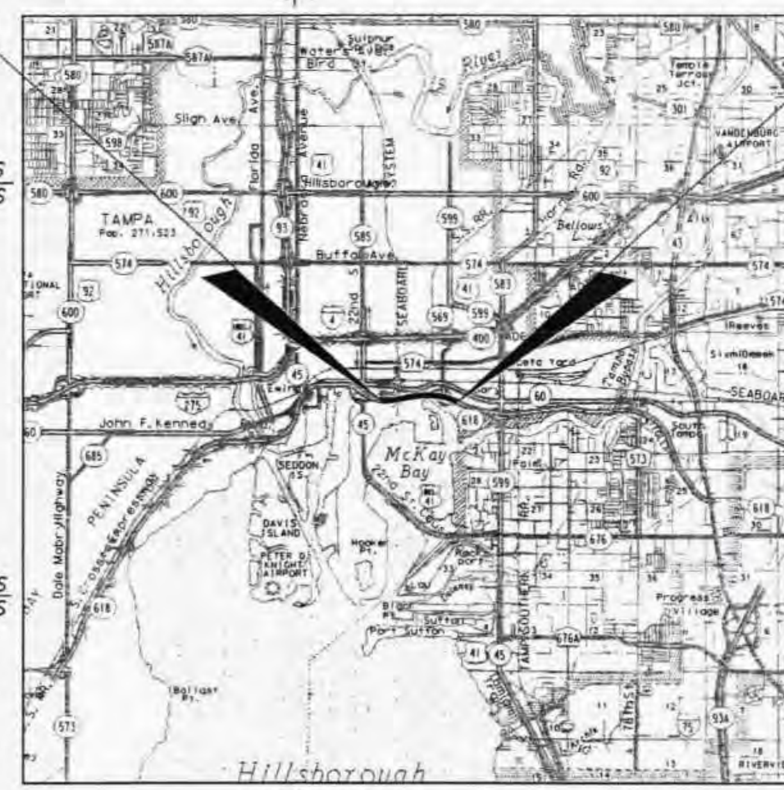


A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2 - 5	TYPICAL SECTIONS
6	REFERENCE POINTS
7	PROJECT LAYOUT
8 - 20	ROADWAY PLAN SHEETS
21 - 46	ROADWAY PROFILE SHEETS
47 - 90	POND SHEETS
91 - 134	DRAINAGE STRUCTURES
135 - 210	CROSS SECTIONS
211 - 217	EROSION CONTROL PLAN SHEETS

BEGIN PROJECT
STA. 3673+71.31
℄ EB MAINLINE
STA. 673+55.120
℄ SURVEY



END PROJECT
STA. 3732+15.00
℄ EB MAINLINE
STA. 732+52.773
℄ SURVEY

* IN CONJUNCTION WITH THE FOLLOWING DESIGN PROJECTS:

50.30.001
51.30.01
51.30.02
51.30.04
51.30.05
51.30.07

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

TS0420

ELB

PERMIT SUBMITTAL

DECEMBER, 2001

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO:
PETE C. KELLIHER, P.E.
PBS&J
5300 WEST CYPRESS STREET, SUITE 300
TAMPA, FL 33607

2/13/02

PLANS PREPARED BY:

PBSJ

5300 WEST CYPRESS STREET, SUITE 300
TAMPA, FL 33607
(813) 282-7275

FBPR CERTIFICATE OF AUTHORIZATION NO. 24

NOTE: THE SCALE OF THESE PLANS MAY HAVE BEEN CHANGED DUE TO REPRODUCTION.

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION.
ROADWAY AND TRAFFIC DESIGN STANDARDS
DATED JANUARY 2000, AND
STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED JANUARY 2000
AS AMENDED BY CONTRACT DOCUMENTS.

LENGTH OF PROJECT BASED ON ℄ EASTBOUND MAINLINE

LENGTH OF PROJECT	LIN. FT.	MILES
ROADWAY	5117.92	0.969
BRIDGES	725.77	0.137
NET LENGTH OF PROJ.	5843.69	1.107
EXCEPTIONS	0	0
GROSS LENGTH OF PROJ.	5843.69	1.107

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

REVISIONS

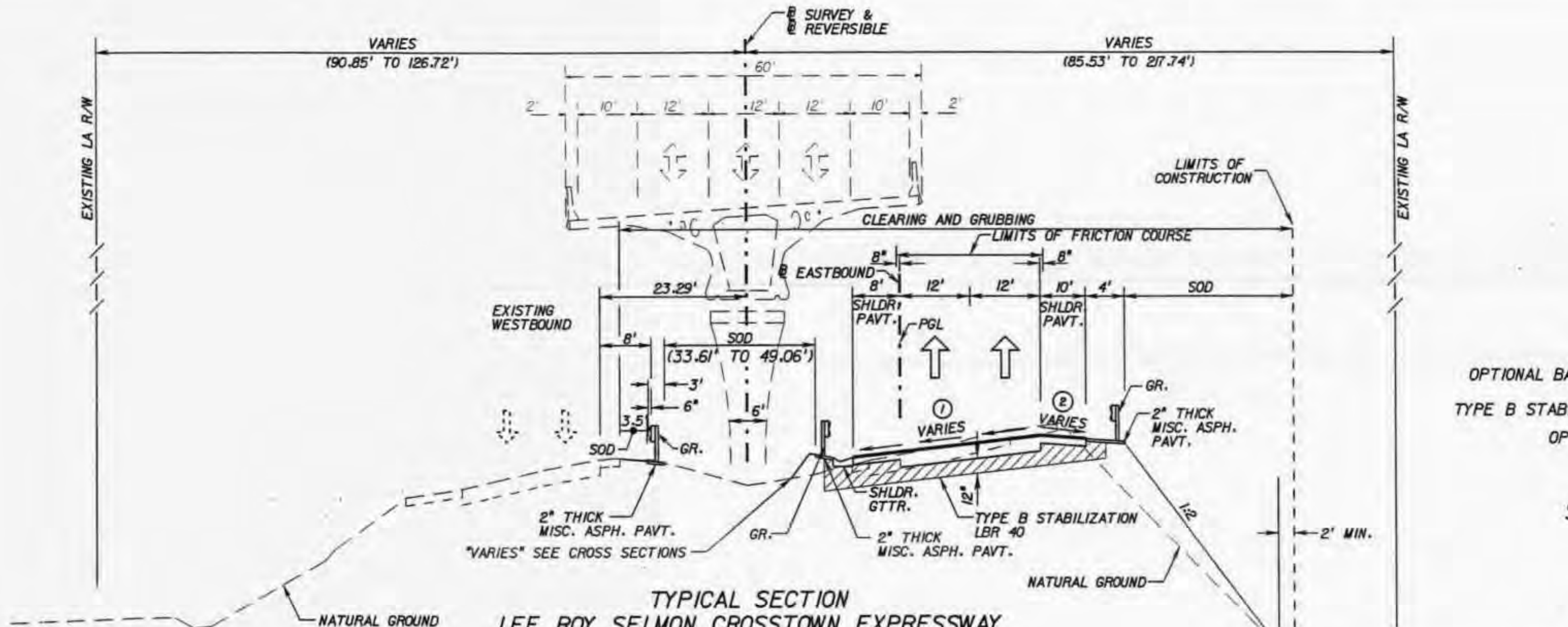
DRAINAGE PLANS
ENGINEER OF RECORD: MARK D. MICIKAS, P.E.
P.E. NUMBER: 56092

43196540001

THCEA PROJECT MANAGER : BENNETT L. MUNS P.E.

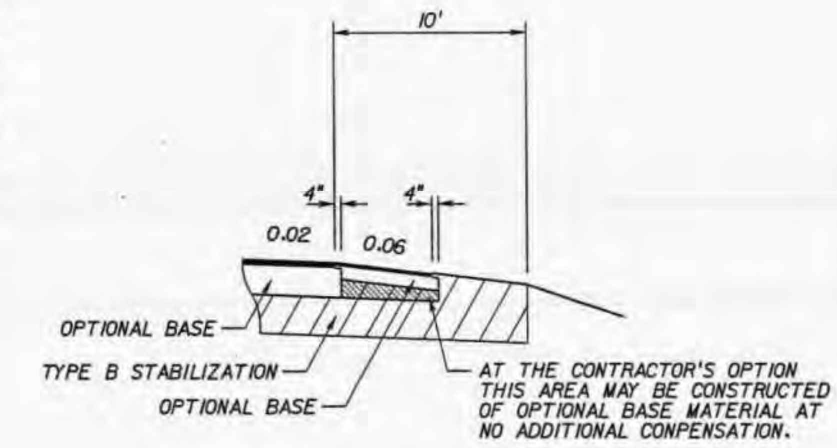
THIS DOES NOT CONTAIN EXEMPT INFO

FISCAL YEAR	SHEET NO.
	1



TYPICAL SECTION
LEE ROY SELMON CROSSTOWN EXPRESSWAY
℄ SURVEY S.R. 618

STA. 673+74.96 TO STA. 679+29.24



SHOULDER PAVEMENT DETAIL

SOUTHWEST FLORIDA WATER
MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION
DRAWINGS

FIELD PLANS

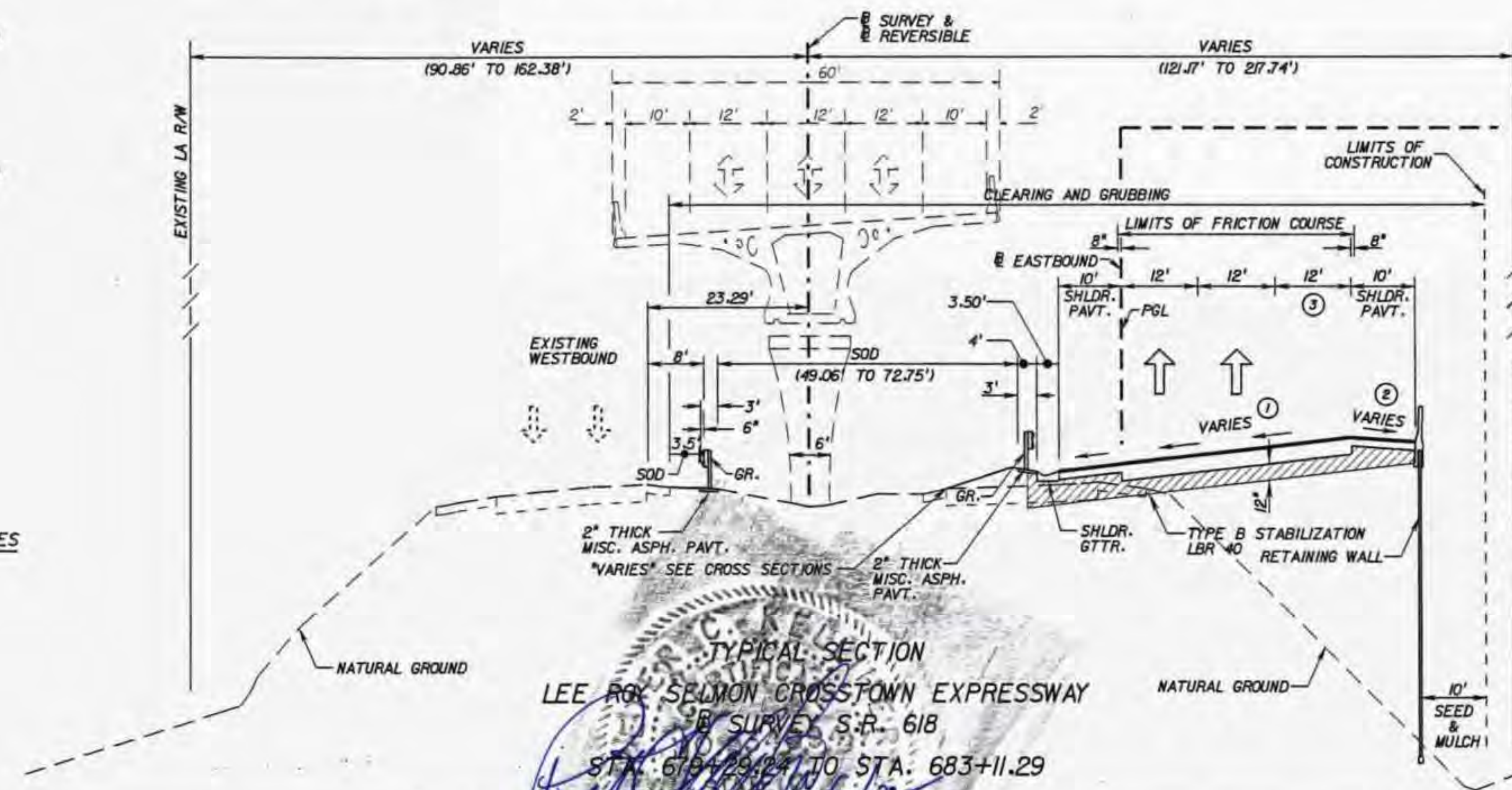
Southwest Florida Water Management District
Received
FEB 8 2002
BRD-TAMPA

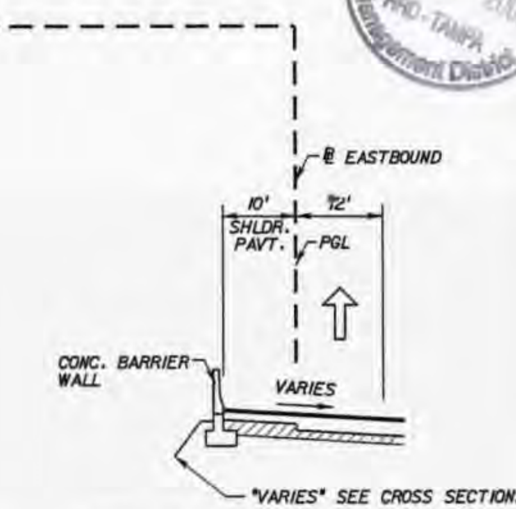
NEW CONSTRUCTION - MAINLINE

OPTIONAL BASE GROUP 9 WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (300 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

SHOULDER PAVEMENT - -MAINLINE

OPTIONAL BASE GROUP I WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (200 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)





FROM STA. 683+00 TO STA. 683+11.29

1. SEE PROFILE SHEETS FOR LANES AND LEFT SHOULDER CROSS SLOPES.
2. UNLESS SPECIFIED ON PROFILE SHEETS, USE 0.06 FOR RIGHT SHOULDER ON NORMAL SECTIONS. SEE INDEX 510 FOR TRANSITIONS ON SUPERELEVATED SECTIONS.
3. EXTRA LANE TO BE USED IN FUTURE PROJECT (FROM STA. 674+29.24 TO STA. 693+77.36

TRAFFIC DATA FOR EASTBOUND & WESTBOUND LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 42,100
DESIGN YEAR ESTIMATE = 2020 AADT = 64,700
K = 13% D = 70% T = 2.6% (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

TRAFFIC DATA FOR REVERSIBLE LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 0
DESIGN YEAR ESTIMATE = 2020 AADT = 22,900
K = 13% D = 100% T = 2.6 % (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

TYPICAL SECTION
LEE ROY SELMON CROSSTOWN EXPRESSWAY
℄ SURVEY S.R. 618

STA. 679+29.24 TO STA. 683+11.29

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Peter C. Kelliher, P.E. #34994

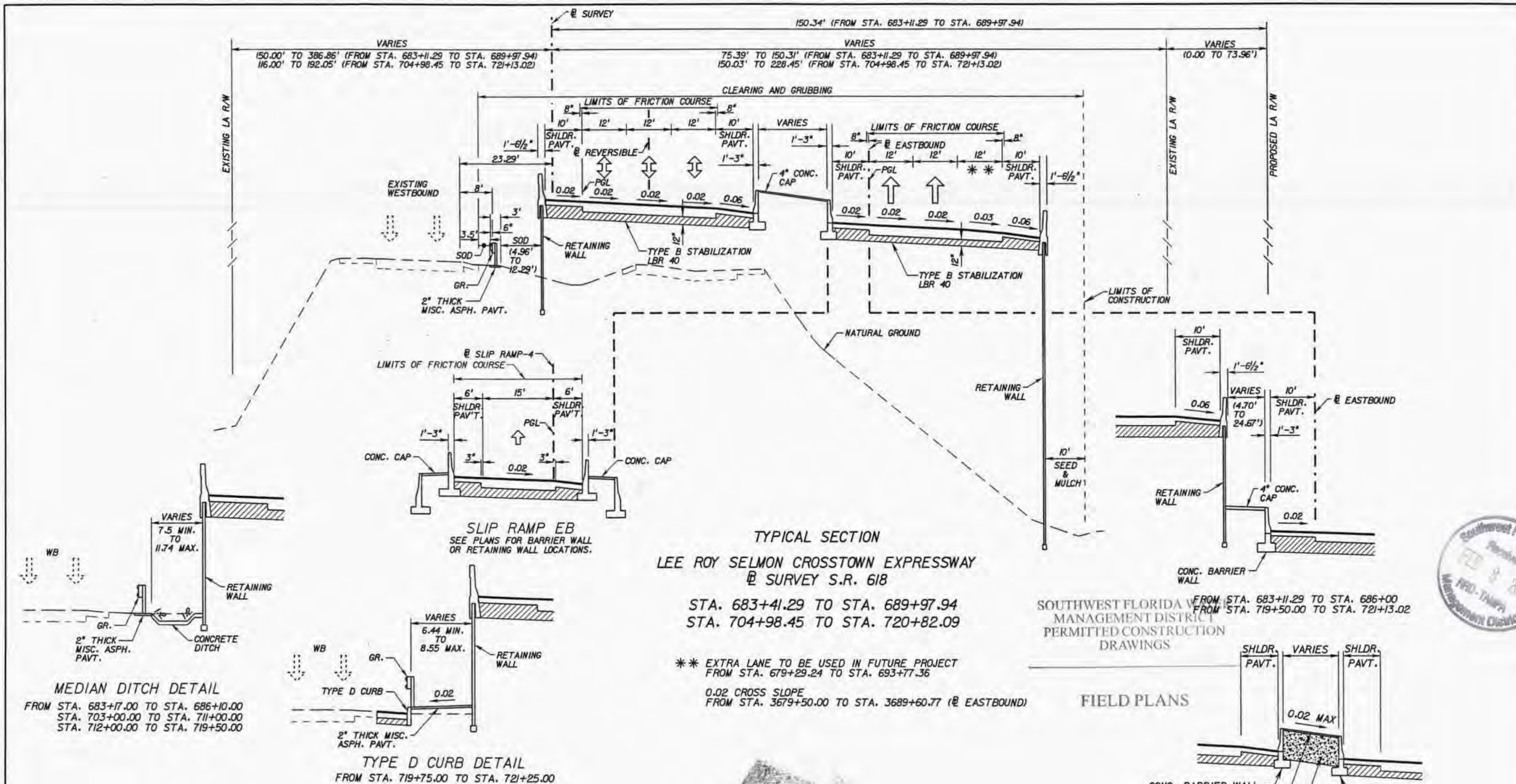
TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

4319654001

TYPICAL SECTIONS (1 OF 4)

SHEET NO.
2



TYPICAL SECTION
LEE ROY SELMON CROSSTOWN EXPRESSWAY
℄ SURVEY S.R. 618

STA. 683+41.29 TO STA. 689+97.94
STA. 704+98.45 TO STA. 720+82.09

** EXTRA LANE TO BE USED IN FUTURE PROJECT FROM STA. 679+29.24 TO STA. 693+77.36

0.02 CROSS SLOPE FROM STA. 3679+50.00 TO STA. 3689+60.77 (℄ EASTBOUND)

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

1. GRANULAR FILL SHALL BE FREE OF DELETERIOUS AND CEMENTATIOUS MATERIALS.
2. SEE PROFILE SHEETS FOR ANY VARIATION TO THE SHOULDER CROSS SLOPES.

TRAFFIC DATA FOR EASTBOUND & WESTBOUND LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 42,100
DESIGN YEAR ESTIMATE = 2020 AADT = 64,700
K = 13% D = 70% T = 2.6% (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

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DESIGN YEAR ESTIMATE = 2020 AADT = 22,900
K = 13% D = 100% T = 2.6 % (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

NEW CONSTRUCTION - MAINLINE

OPTIONAL BASE GROUP 9 WITH TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (300 LB/SY) AND FRICTION FC-5 COURSE (80 LB/SY) (RUBBER)

SHOULDER PAVEMENT - MAINLINE

OPTIONAL BASE GROUP 1 WITH TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (200 LB/SY) AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

NEW CONSTRUCTION - REVERSIBLE LANES

OPTIONAL BASE GROUP 9 WITH TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC B) (200 LB/SY) AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

SHOULDER PAVEMENT - REVERSIBLE LANES

OPTIONAL BASE GROUP 1 WITH TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC B) (200 LB/SY) AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

Southwest Florida Water Management District Received FEB 3 2003 PRO-TAMPA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

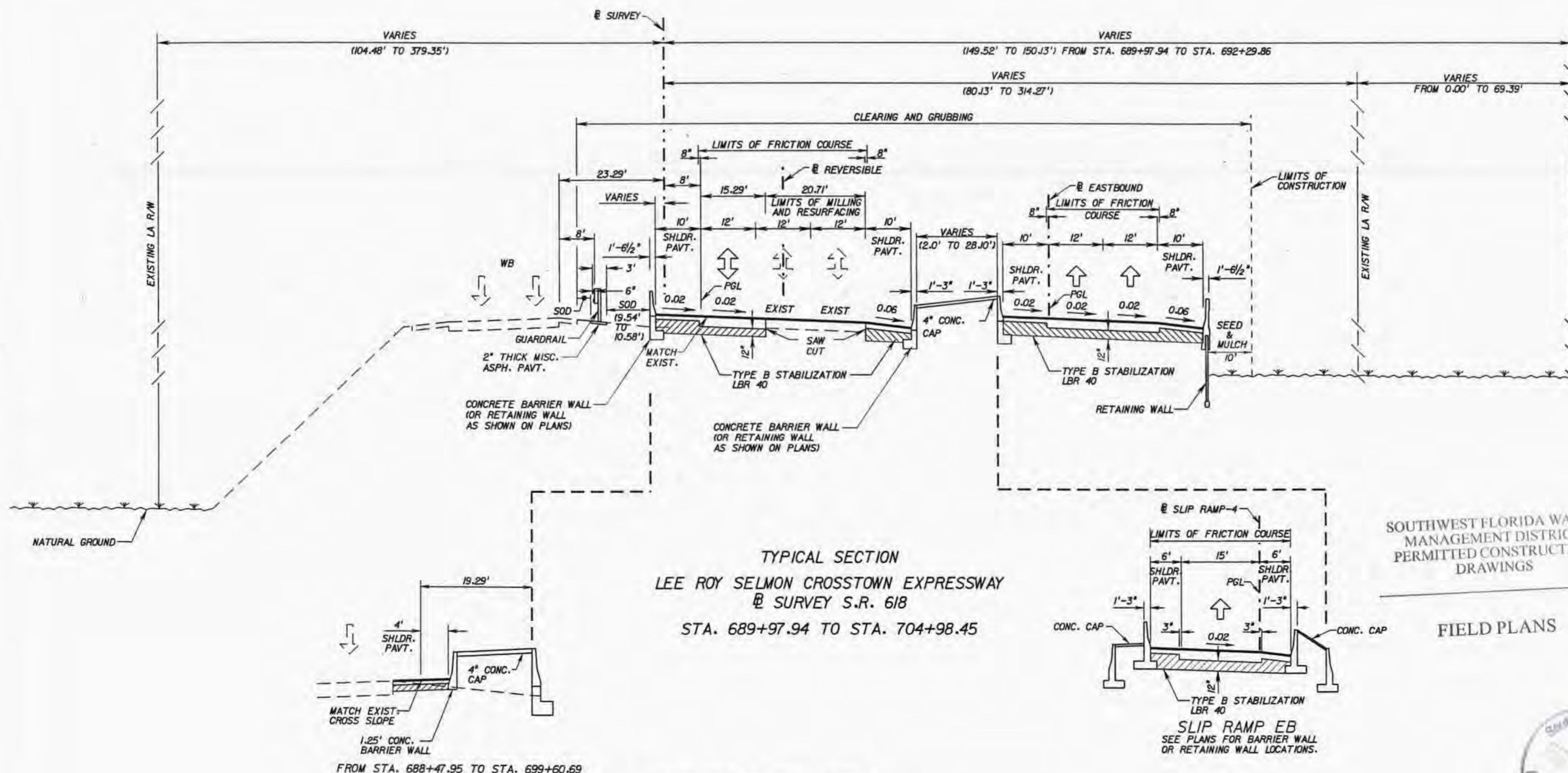
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

TYPICAL SECTIONS (2 OF 4)

43196540001

SHEET NO. 3



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

TRAFFIC DATA FOR EASTBOUND & WESTBOUND LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 42,100
DESIGN YEAR ESTIMATE = 2020 AADT = 64,700
K = 13% D = 70% T = 2.6% (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

TRAFFIC DATA FOR REVERSIBLE LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 0
DESIGN YEAR ESTIMATE = 2020 AADT = 22,900
K = 13% D = 100% T = 2.6 % (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

MILLING AND RESURFACING - MAINLINE

MILL EXISTING ASPHALT PAVEMENT (1.5" AVG. DEPTH)
RESURFACE WITH TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (100 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

NEW CONSTRUCTION - MAINLINE

OPTIONAL BASE GROUP 9 WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (300 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

SHOULDER PAVEMENT - MAINLINE

OPTIONAL BASE GROUP 1 WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) 200 LB/SY
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

NEW CONSTRUCTION - REVERSIBLE LANES

OPTIONAL BASE GROUP 9 WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC B) (200 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

SHOULDER PAVEMENT - REVERSIBLE LANES

OPTIONAL BASE GROUP 1 WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC B) (200 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

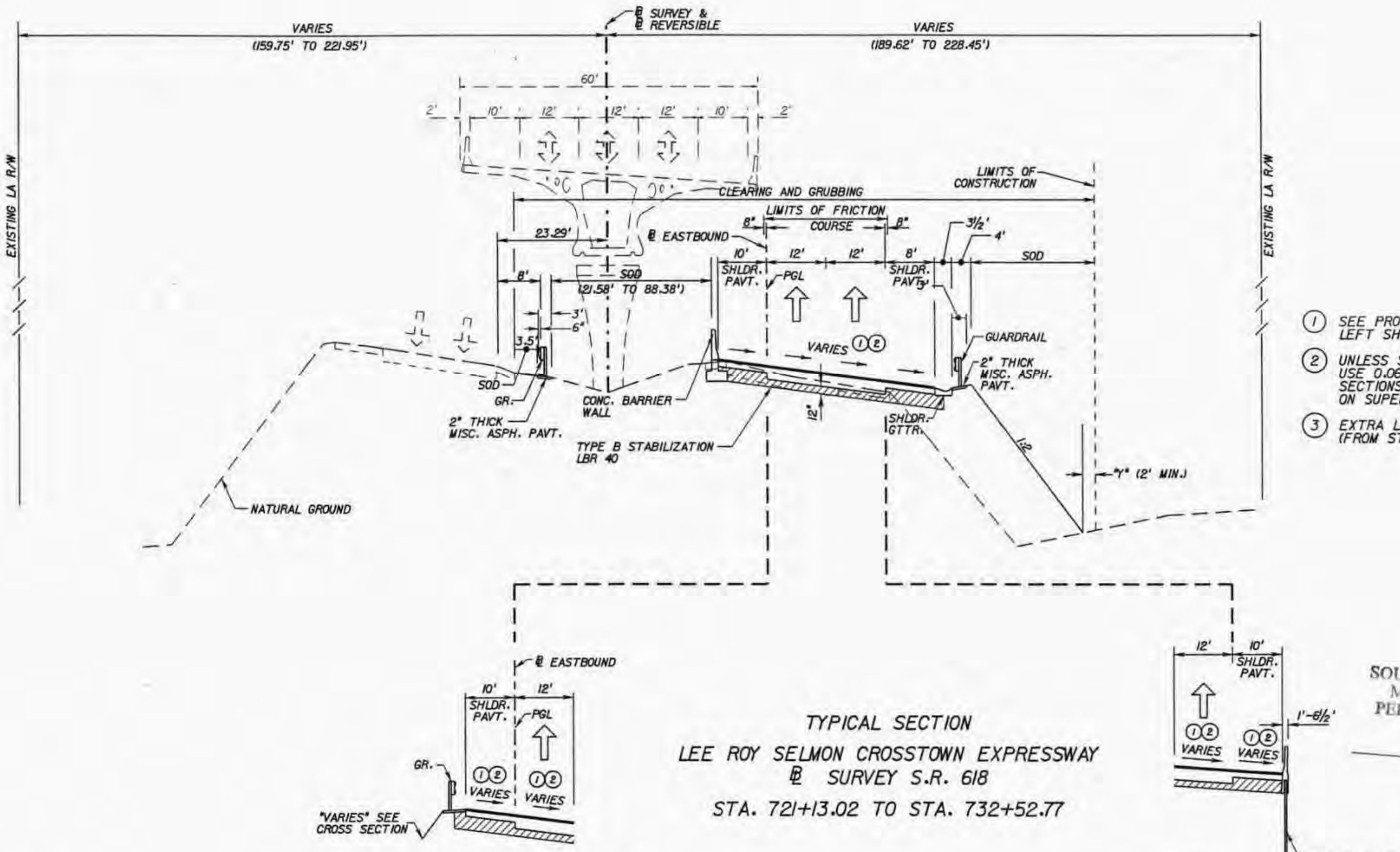
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

4319654001

TYPICAL SECTIONS (3 OF 4)

SHEET NO. 4



FROM STA. 724+64.44 TO STA. 732+52.77

FROM STA. 721+13.02 TO STA. 727+01.02

TYPICAL SECTION
LEE ROY SELMON CROSSTOWN EXPRESSWAY
℄ SURVEY S.R. 618
STA. 721+13.02 TO STA. 732+52.77

1. SEE PROFILE SHEETS FOR LANES AND LEFT SHOULDER CROSS SLOPES.
2. UNLESS SPECIFIED ON PROFILE SHEETS, USE 0.06 FOR RIGHT SHOULDER ON NORMAL SECTIONS. SEE INDEX 510 FOR TRANSITIONS ON SUPERELEVATED SECTIONS.
3. EXTRA LANE TO BE USED IN FUTURE PROJECT (FROM STA. 674+29.24 TO STA. 693+77.36

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

TRAFFIC DATA FOR EASTBOUND & WESTBOUND LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 42,100
DESIGN YEAR ESTIMATE = 2020 AADT = 64,700
K = 13% D = 70% T = 2.6% (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

TRAFFIC DATA FOR REVERSIBLE LANES

CURRENT YEAR ESTIMATE = 1999 AADT = 0
DESIGN YEAR ESTIMATE = 2020 AADT = 22,900
K = 13% D = 100% T = 2.6 % (24 HOUR)
DESIGN HOUR T = 2.6%
DESIGN SPEED = 60 MPH

NEW CONSTRUCTION - MAINLINE

OPTIONAL BASE GROUP 9 WITH
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (200 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

SHOULDER PAVEMENT - -MAINLINE

OPTIONAL BASE GROUP 1
TYPE SP 9.5 STRUCTURAL COURSE (TRAFFIC C) (200 LB/SY)
AND FRICTION COURSE FC-5 (80 LB/SY) (RUBBER)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Peter C. Kelliher, P.E. #34994

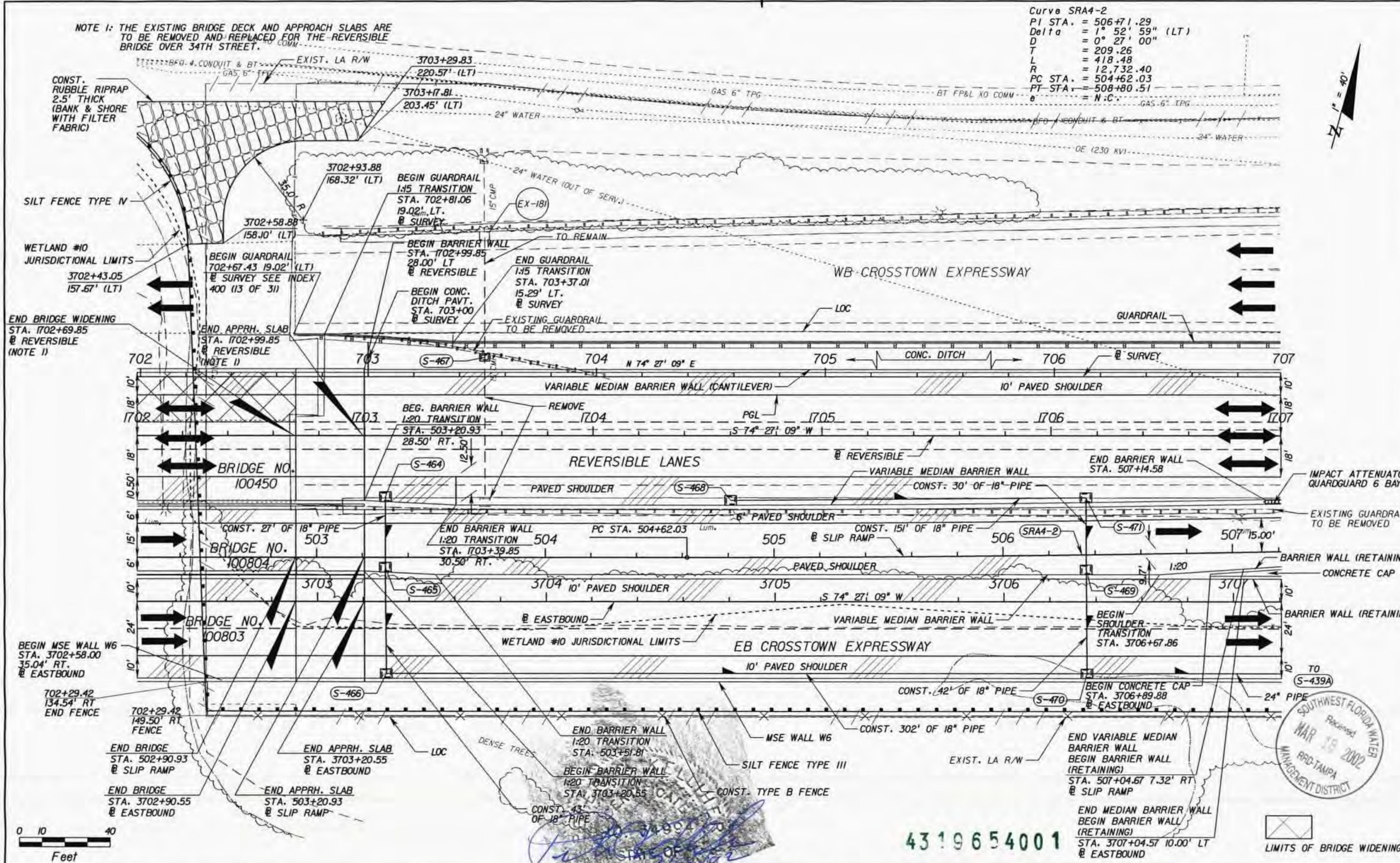
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

4319654001

TYPICAL SECTIONS (4 OF 4)

SHEET NO. 5



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

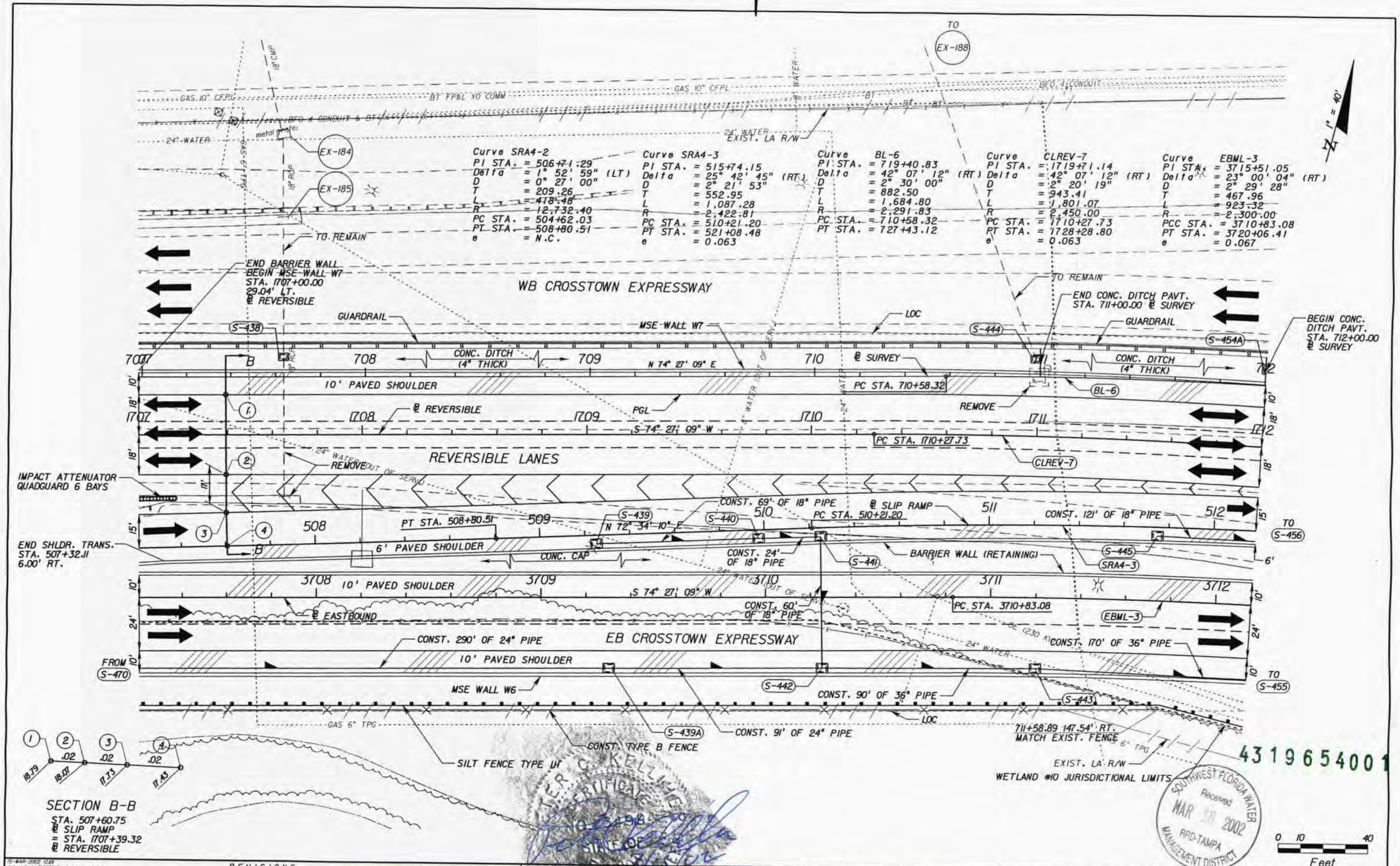
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1702 TO STA. 1707 (7 OF 13)

SHEET NO. 14



4319654001

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
MAR 18 2002
BRD-TAMPA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

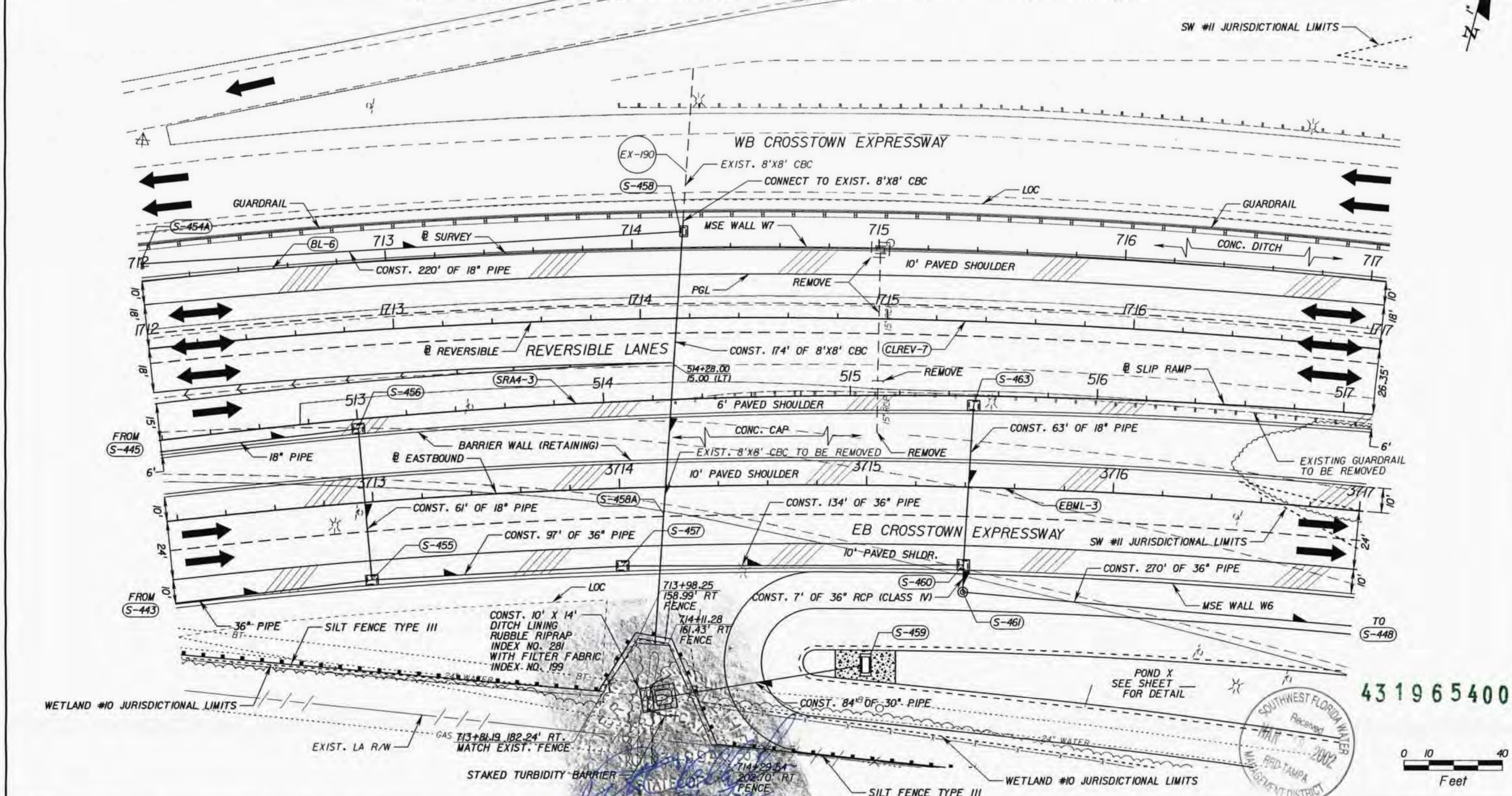
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1707 TO STA. 1712 (8 OF 13)

SHEET NO.
15

Curve	SRA4-3	Curve	CLREV-7	Curve	BL-6	Curve	EBML-3
PI STA.	= 515+74.15	PI STA.	= 1719+71.14	PI STA.	= 719+40.83	PI STA.	= 3715+51.05
Delta	= 25° 42' 45" (RT)	Delta	= 42° 07' 12" (RT)	Delta	= 42° 07' 12" (RT)	Delta	= 23° 00' 04" (RT)
D	= 2° 21' 53"	D	= 2° 20' 19"	D	= 2° 30' 00"	D	= 2° 29' 28"
T	= 552.95	T	= 943.41	T	= 882.50	T	= 467.96
L	= 1,087.28	L	= 1,801.07	L	= 1,684.80	L	= 923.32
R	= 2,422.81	R	= 2,450.00	R	= 2,291.83	R	= 2,300.00
PC STA.	= 510+21.20	PC STA.	= 1710+27.73	PC STA.	= 710+58.32	PC STA.	= 3710+83.08
PT STA.	= 521+08.48	PT STA.	= 1728+28.80	PT STA.	= 727+43.12	PCC STA.	= 3720+06.41
e	= 0.063	e	= 0.063			e	= 0.067



4319654001

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
MAR 1? 2002
BRD-TAMPA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Peter C. Kelliher, P.E. #34994

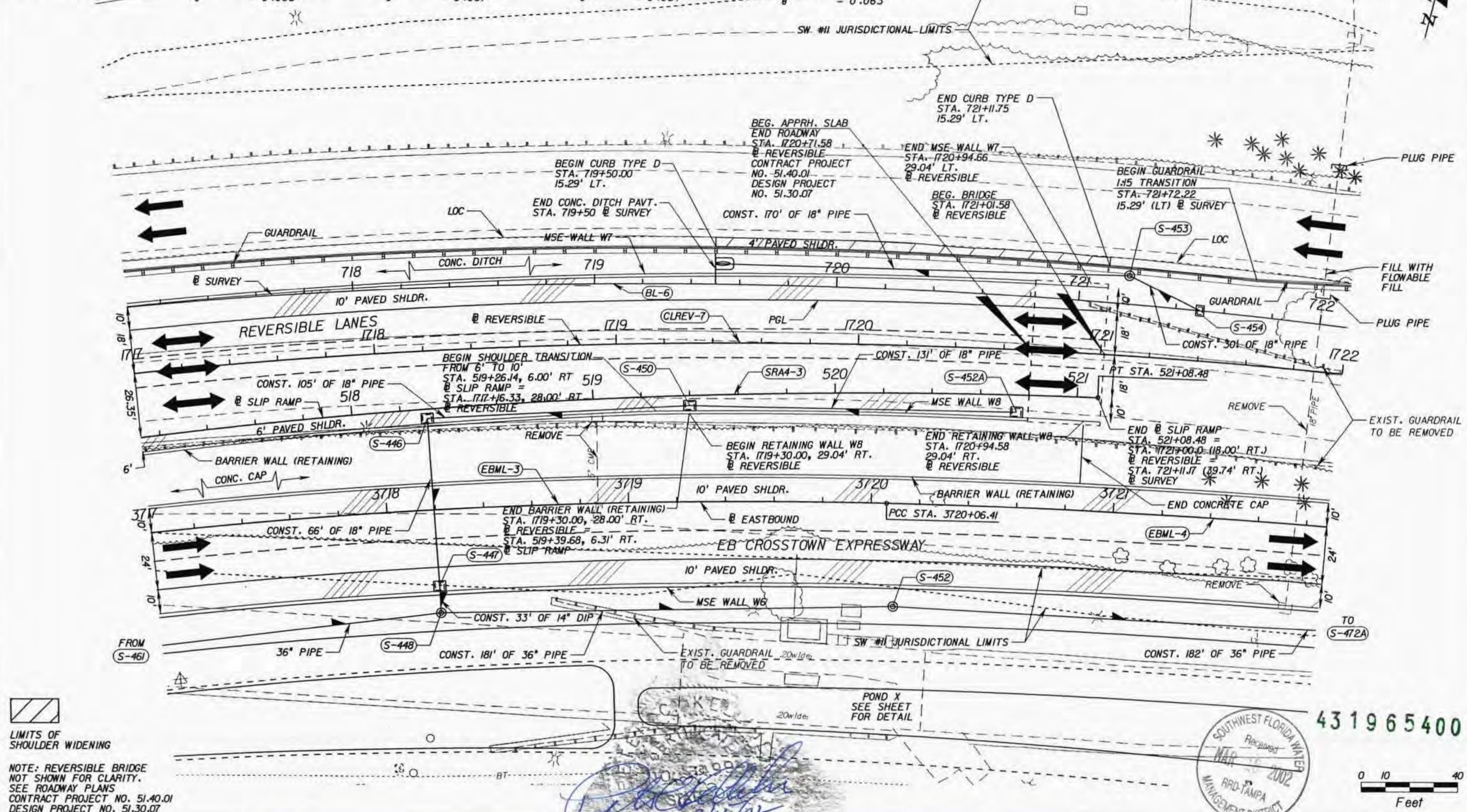
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1712 TO STA. 1717 (9 OF 13)

SHEET NO. 16

Curve	BL-6	Curve	CLREV-7	Curve	EBML-3	Curve	EBML-4	Curve	SRA4-3
PI STA.	= 719+40.83	PI STA.	= 1719+71.14	PI STA.	= 3715+51.05	PI STA.	= 3725+35.21	PI STA.	= 515+74.15
Delta	= 42° 07' 12" (RT)	Delta	= 42° 07' 12" (RT)	Delta	= 23° 00' 04" (RT)	Delta	= 19° 07' 08" (RT)	Delta	= 25° 42' 45" (RT)
D	= 2° 30' 00"	D	= 2° 20' 19"	D	= 2° 29' 28"	D	= 1° 49' 29"	D	= 2° 21' 53"
T	= 882.50	T	= 943.41	T	= 467.96	T	= 528.81	T	= 552.95
L	= 1,684.80	L	= 1,801.07	L	= 923.32	L	= 1,047.78	L	= 1,087.28
R	= 2,291.83	R	= 2,450.00	R	= 2,300.00	R	= 3,140.00	R	= 2,422.81
PC STA.	= 710+58.32	PC STA.	= 1710+27.73	PC STA.	= 3710+83.08	PCC STA.	= 3720+06.41	PC STA.	= 510+21.20
PT STA.	= 727+43.12	PT STA.	= 1728+28.80	PCC STA.	= 3720+06.41	PT STA.	= 3730+54.19	PT STA.	= 521+08.48
		e	= 0.063	e	= 0.067	e	= 0.051	e	= 0.063



LIMITS OF SHOULDER WIDENING

NOTE: REVERSIBLE BRIDGE NOT SHOWN FOR CLARITY. SEE ROADWAY PLANS CONTRACT PROJECT NO. 51.40.01 DESIGN PROJECT NO. 51.30.07

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT Received MAR 2002 RRD-TAMPA

4319654001

0 10 40 Feet

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

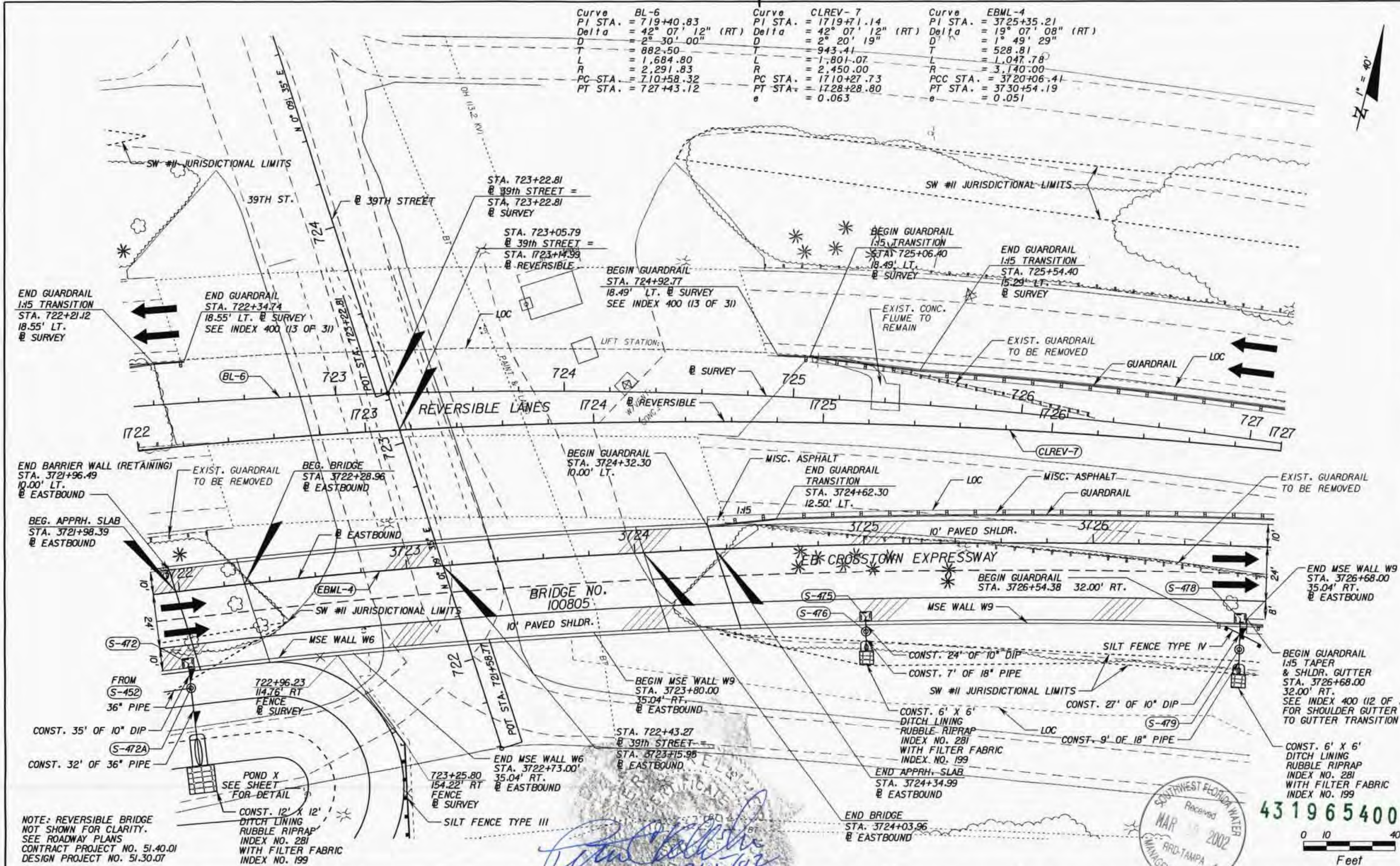
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1717 TO STA. 1722 (10 OF 13)

SHEET NO. 17



NOTE: REVERSIBLE BRIDGE NOT SHOWN FOR CLARITY. SEE ROADWAY PLANS CONTRACT PROJECT NO. 51.40.01 DESIGN PROJECT NO. 51.30.07

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT Received MAR 2002 BRD-TAMPA

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Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

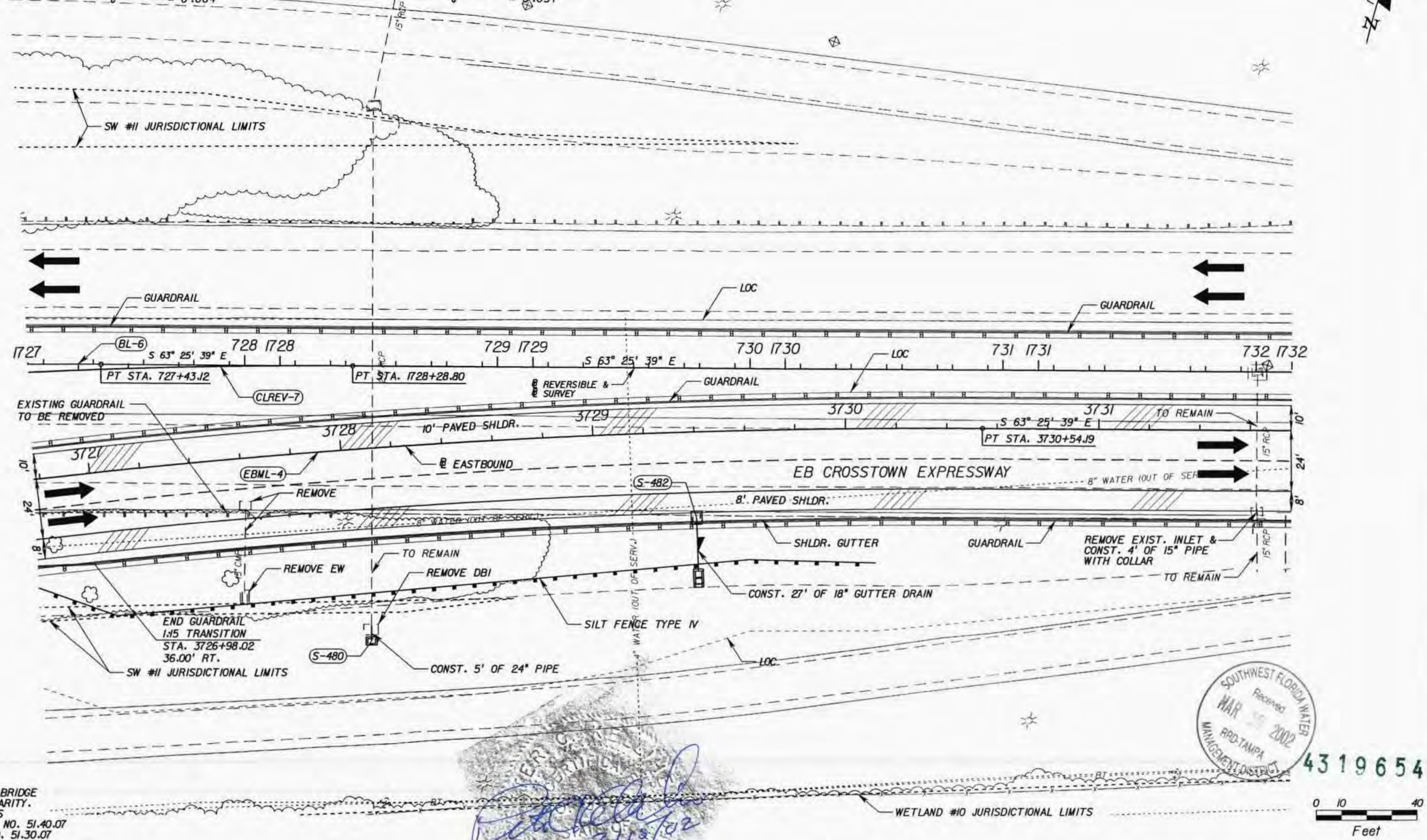
LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1722 TO STA. 1727 (11 OF 13)

SHEET NO. 18

Curve	BL-6
PI STA.	= 719+40.83
Delta	= 42° 07' 12" (RT)
D	= 2° 30' 00"
T	= 882.50
L	= 1,684.80
R	= 2,291.83
PC STA.	= 710+58.32
PT STA.	= 727+43.12

Curve	CLREV-7
PI STA.	= 1719+71.14
Delta	= 42° 07' 12" (RT)
D	= 2° 20' 19"
T	= 943.41
L	= 1,801.07
R	= 2,450.00
PC STA.	= 1710+27.73
PT STA.	= 1728+28.80
e	= 0.064

Curve	EBML-4
PI STA.	= 3725+35.21
Delta	= 19° 07' 08" (RT)
D	= 1° 49' 29"
T	= 528.81
L	= 1,047.78
R	= 3,140.00
PCC STA.	= 3720+06.41
PT STA.	= 3730+54.19
e	= 0.051



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
MAR 2002
RRD-TAMPA

4319654001

NOTE: REVERSIBLE BRIDGE
NOT SHOWN FOR CLARITY.
SEE ROADWAY PLANS
CONTRACT PROJECT NO. 51.40.07
DESIGN PROJECT NO. 51.30.07

3/20/02

REVISIONS					
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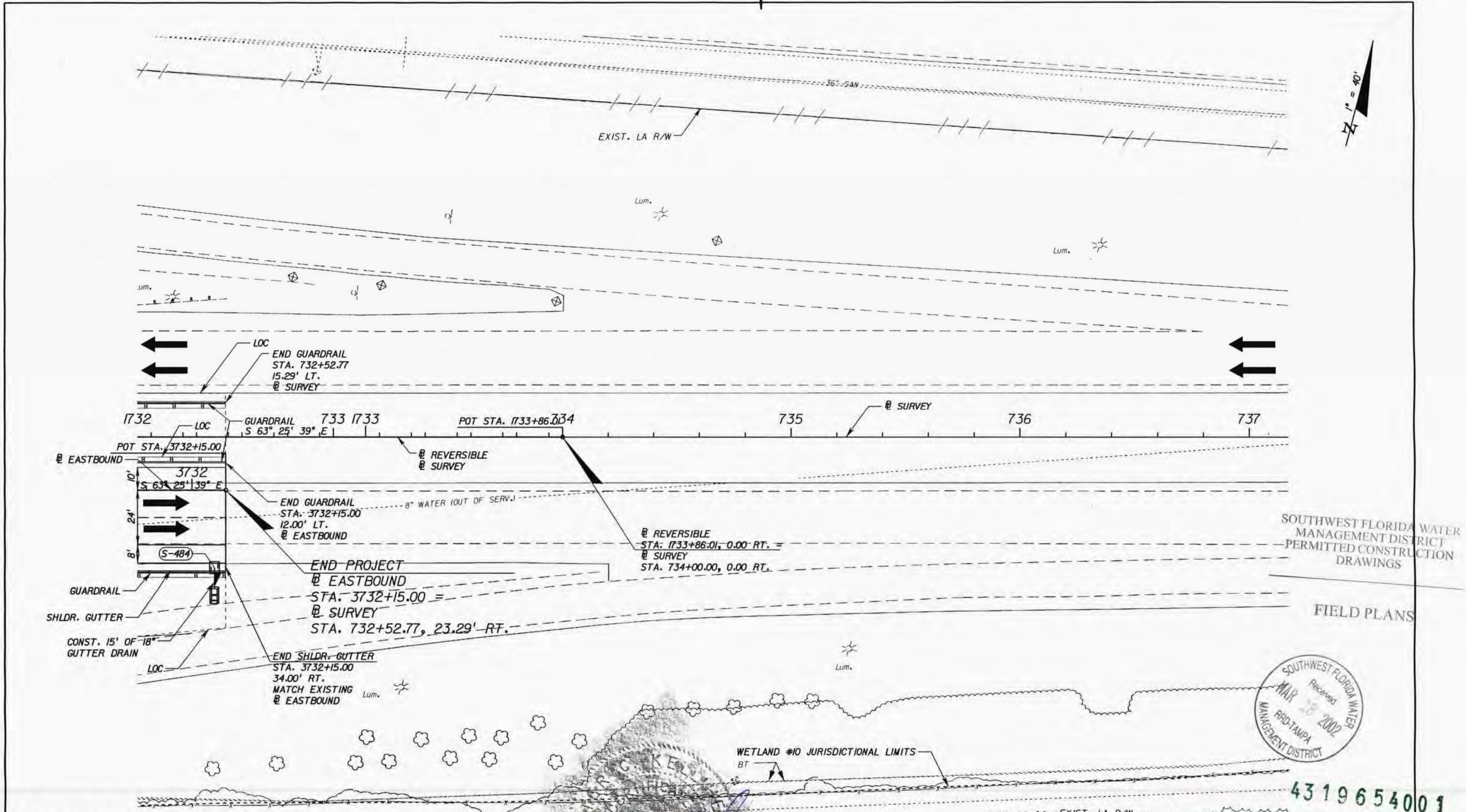
PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1727 TO STA. 1732 (12 OF 13)

SHEET NO. 19



NOTE: REVERSIBLE BRIDGE
NOT SHOWN FOR CLARITY.
SEE ROADWAY PLANS
CONTRACT PROJECT NO. 51.40.01
DESIGN PROJECT NO. 51.30.07

15-MAR-2002 12:01

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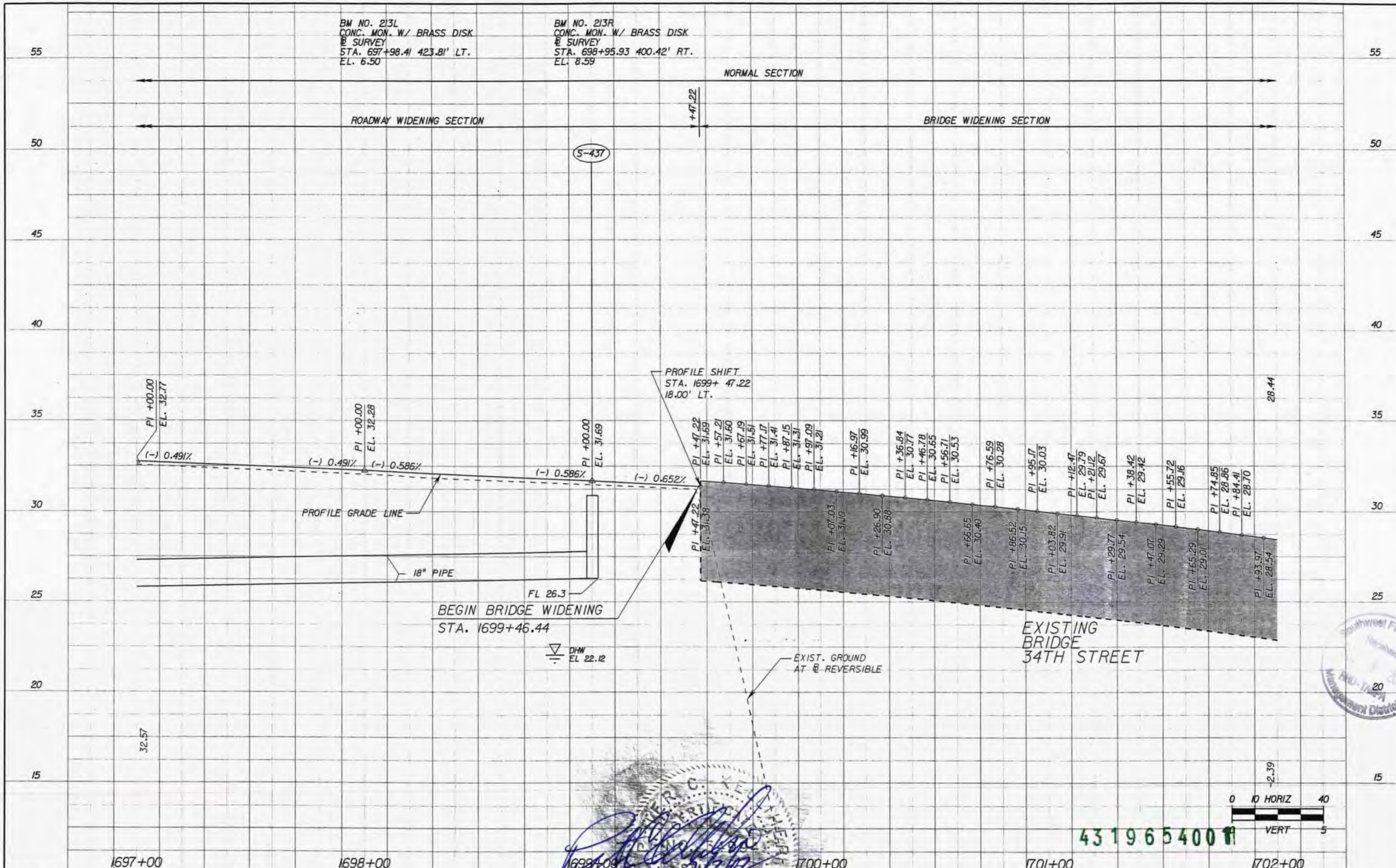
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB & WB MAINLINE PLAN SHEET
STA. 1732 TO STA. 1734 (13 OF 13)

SHEET NO. 20



43196540011

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBS&J
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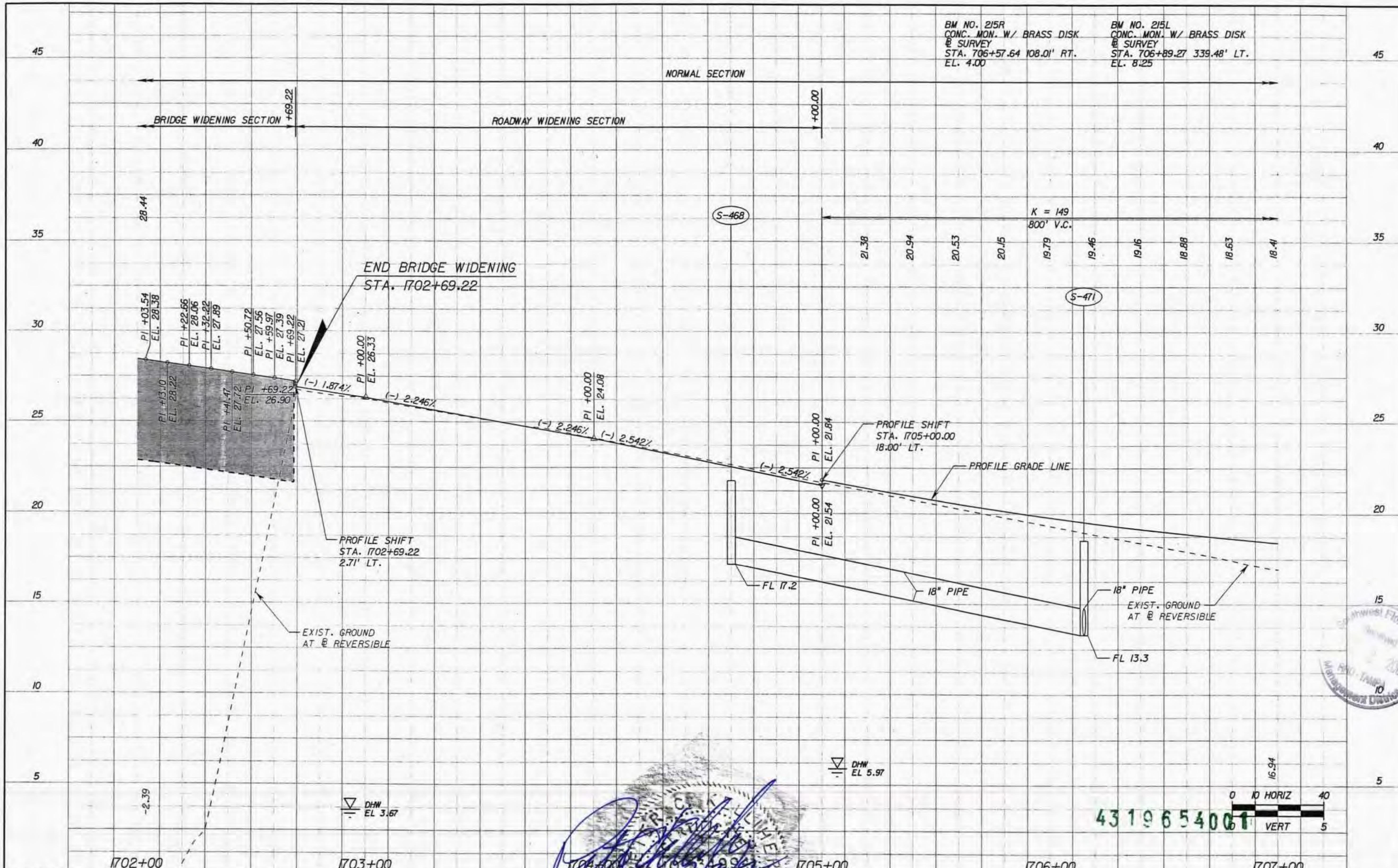
Tampa, Florida 33607-1168
FBPR Certificate of
Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
REVERSIBLE PROFILE SHEET
STA. 1697 TO STA. 1702 (4 OF 8)

SHEET NO.
24



43196540061

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

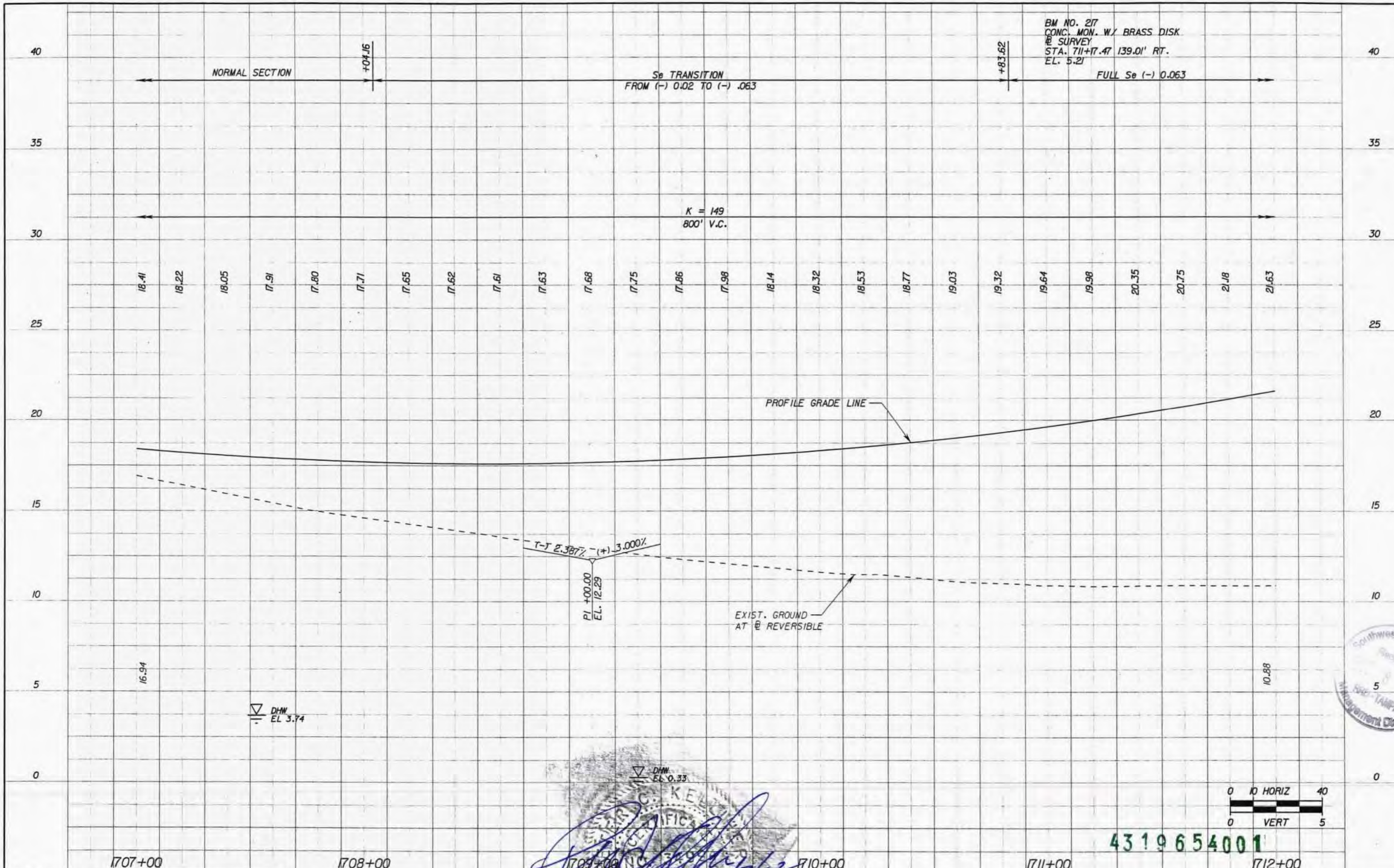
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1066
FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
REVERSIBLE PROFILE SHEET
STA. 1702 TO STA. 1707 (5 OF 8)

SHEET NO. 25



4319654001

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FBPR Certificate of Authorization No. 24
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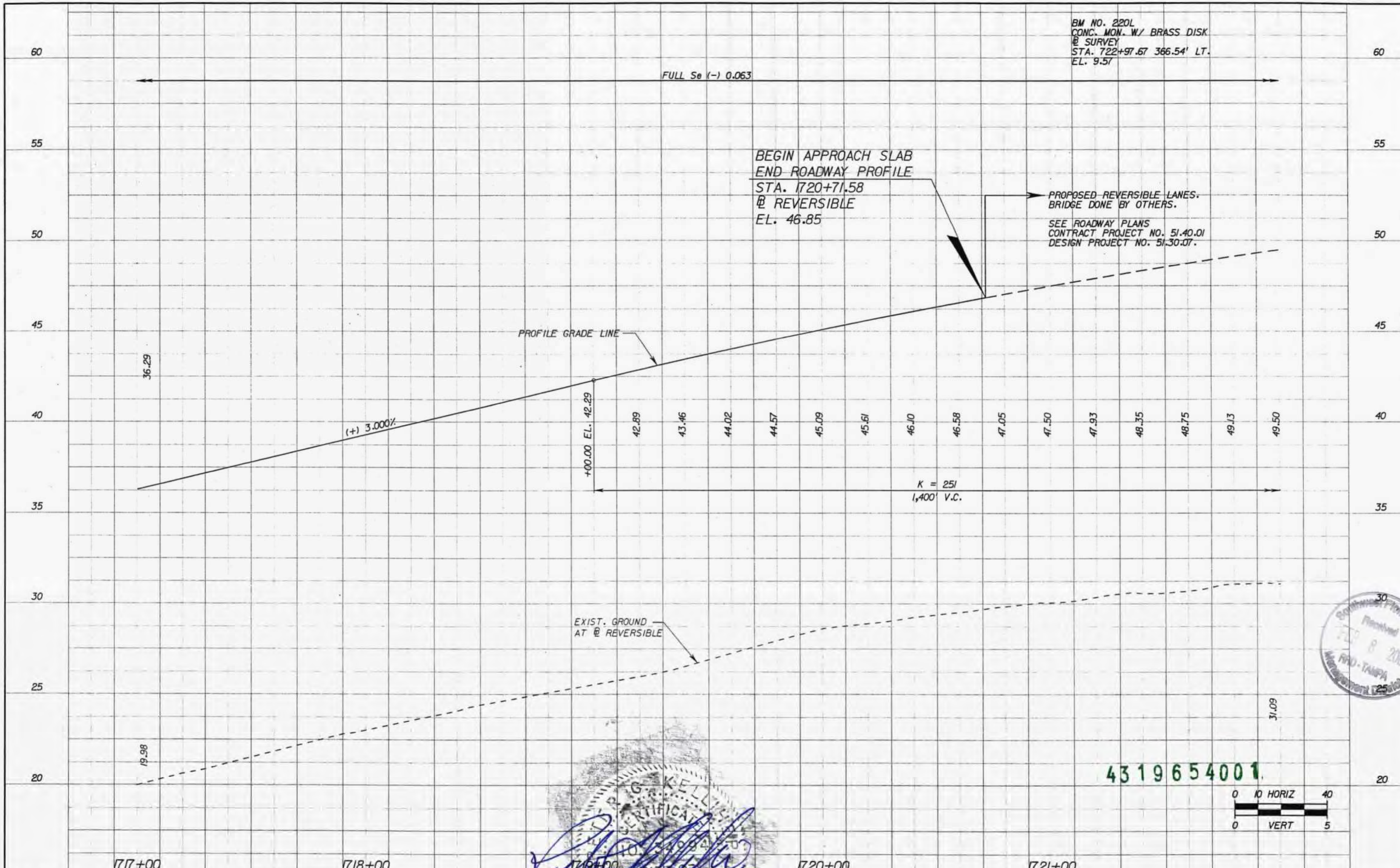
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
REVERSIBLE PROFILE SHEET
STA. 1707 TO STA. 1712 (6 OF 8)

SHEET NO. 26



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5300 West Cypress Street
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Tampa, Florida 33607-1168
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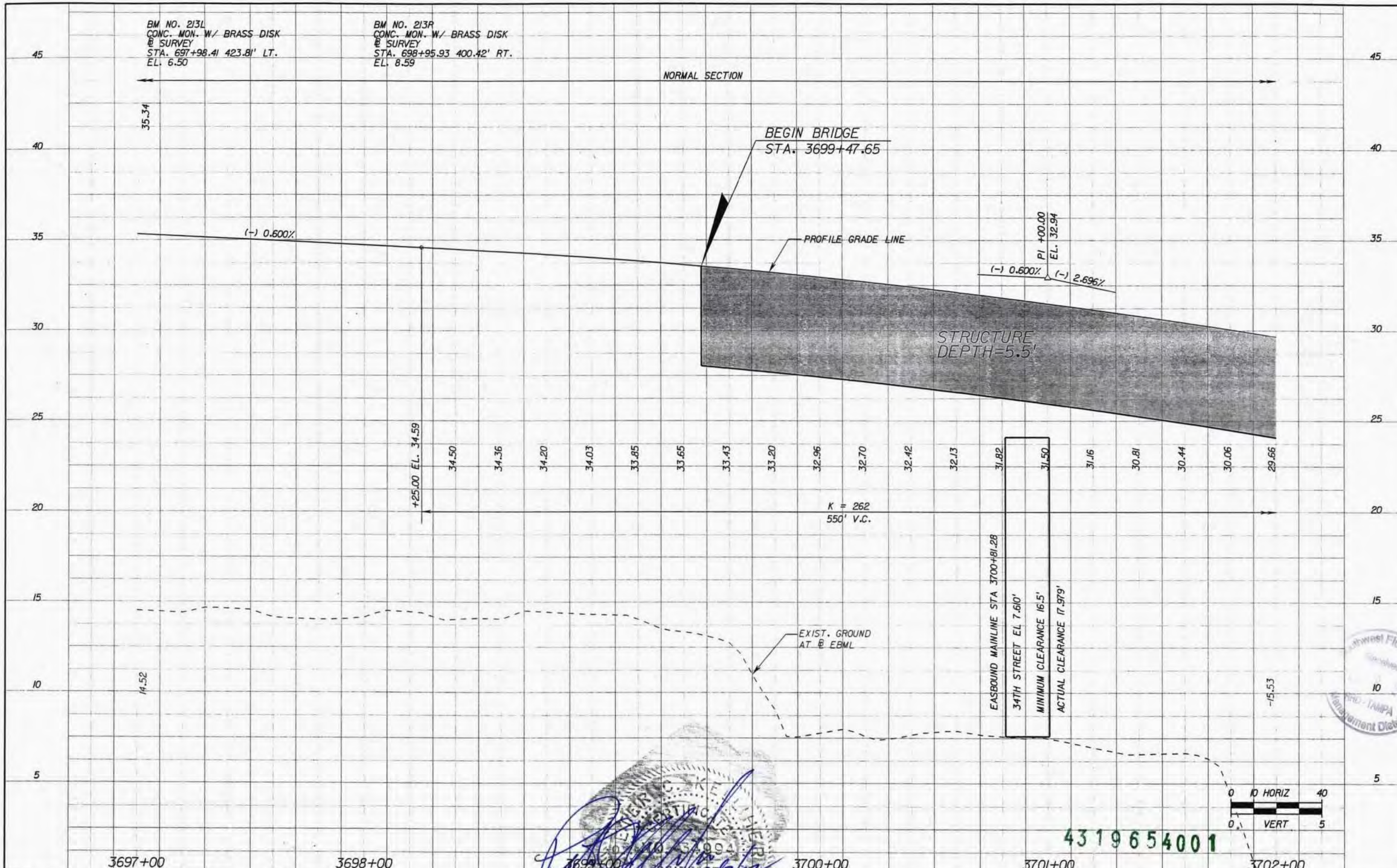
Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
REVERSIBLE PROFILE SHEET
STA. 1717 TO STA. 1721 (8 OF 8)

SHEET NO. 28



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REVISIONS					
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FBPR Certificate of Authorization No. 24
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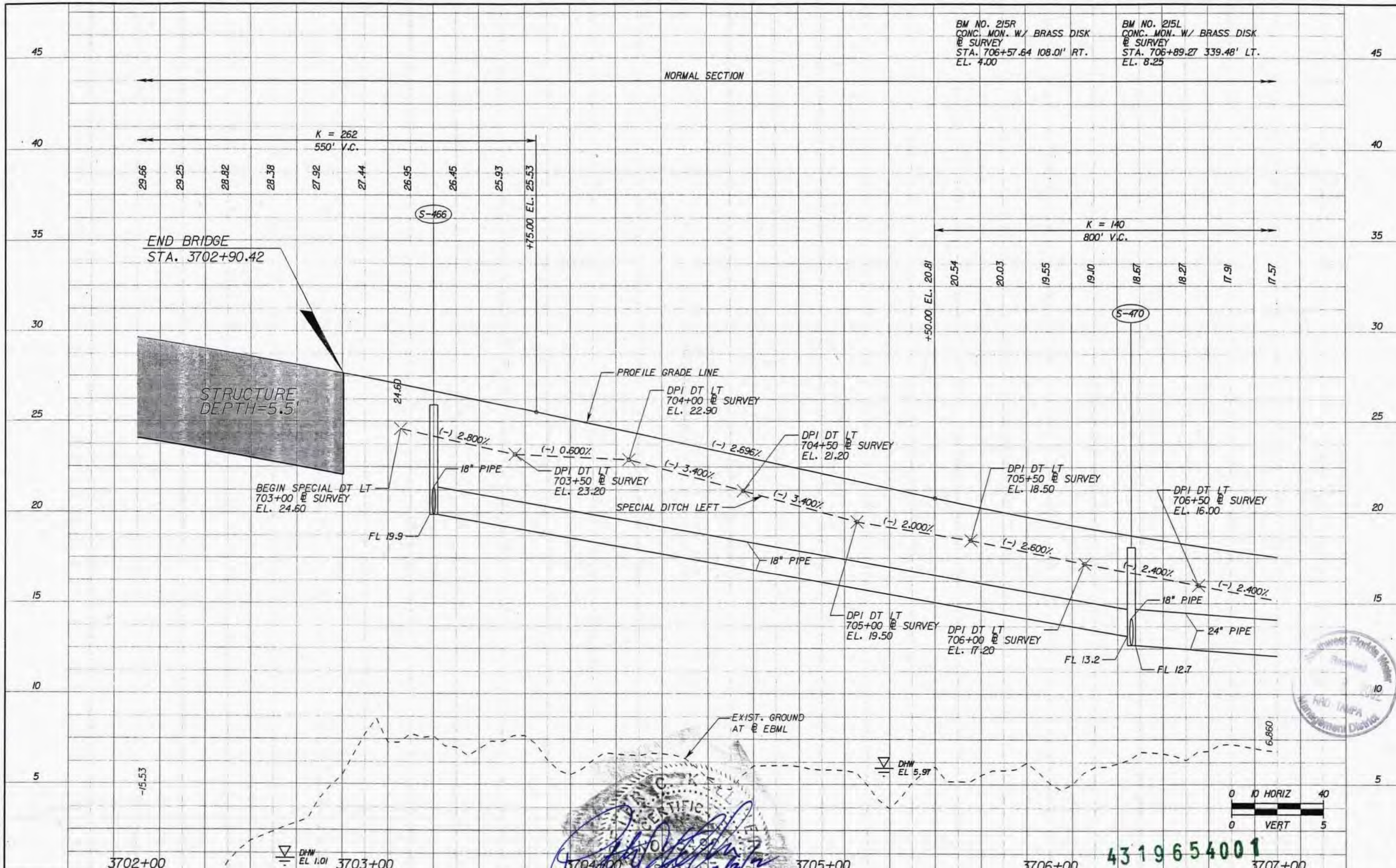
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3697 TO STA. 3702 (6 OF 12)

SHEET NO. 34



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Tampa, Florida 33607-1768
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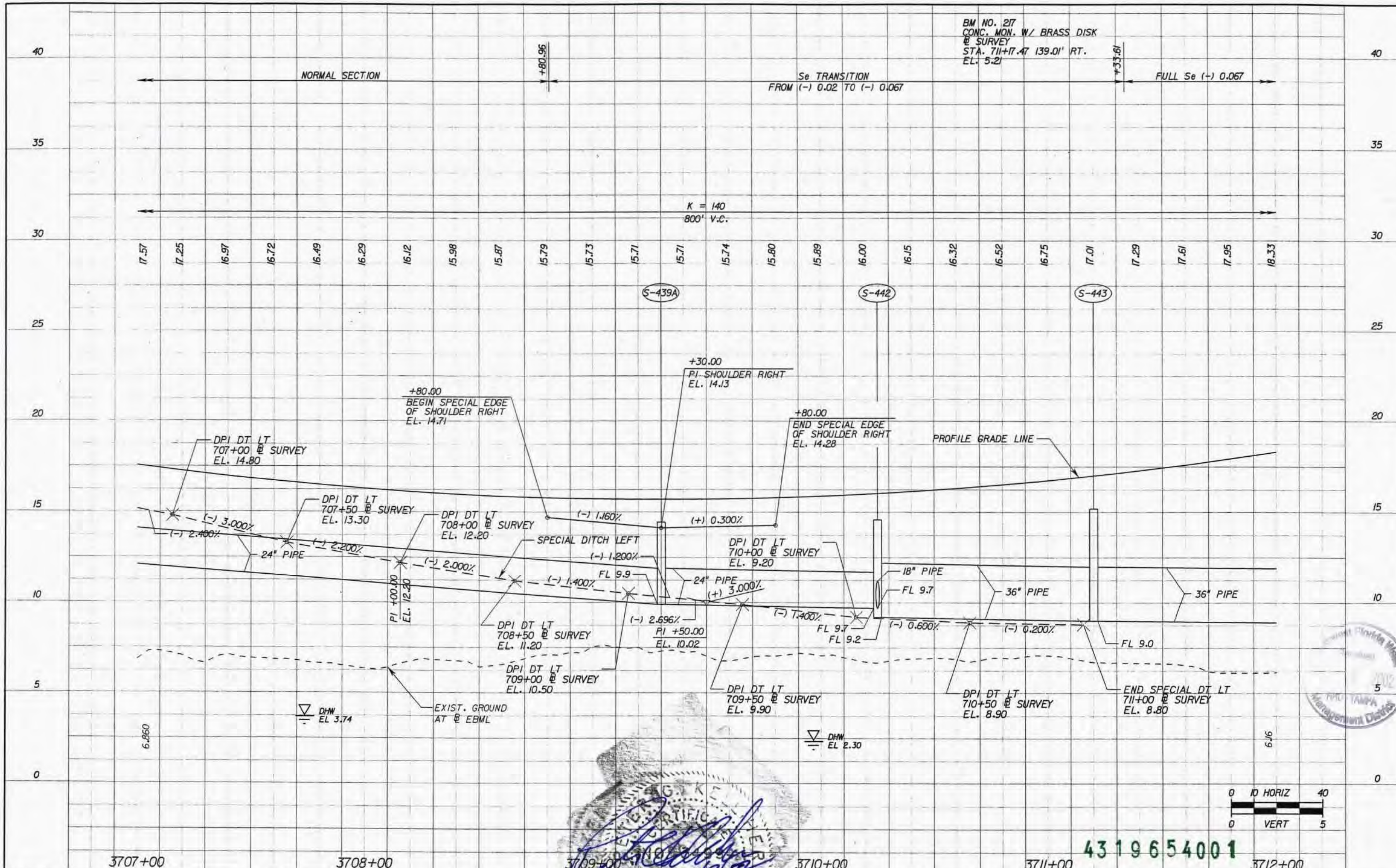
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3702 TO STA. 3707 (7 OF 12)

SHEET NO. 35



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REVISIONS					
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FBPR Certificate of
Authorization No. 24
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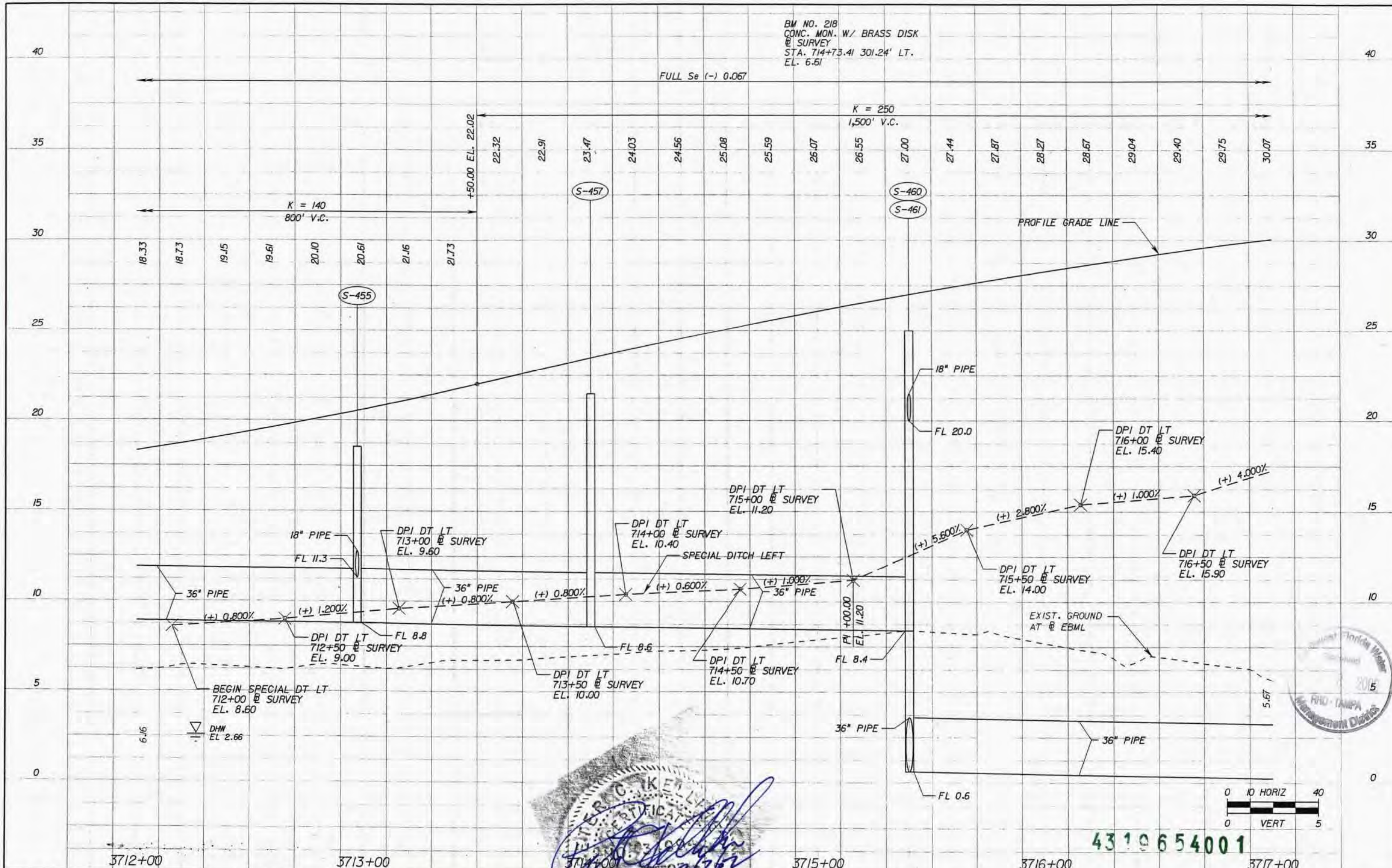
TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3707 TO STA. 3712 (8 OF 12)

SHEET NO. 36



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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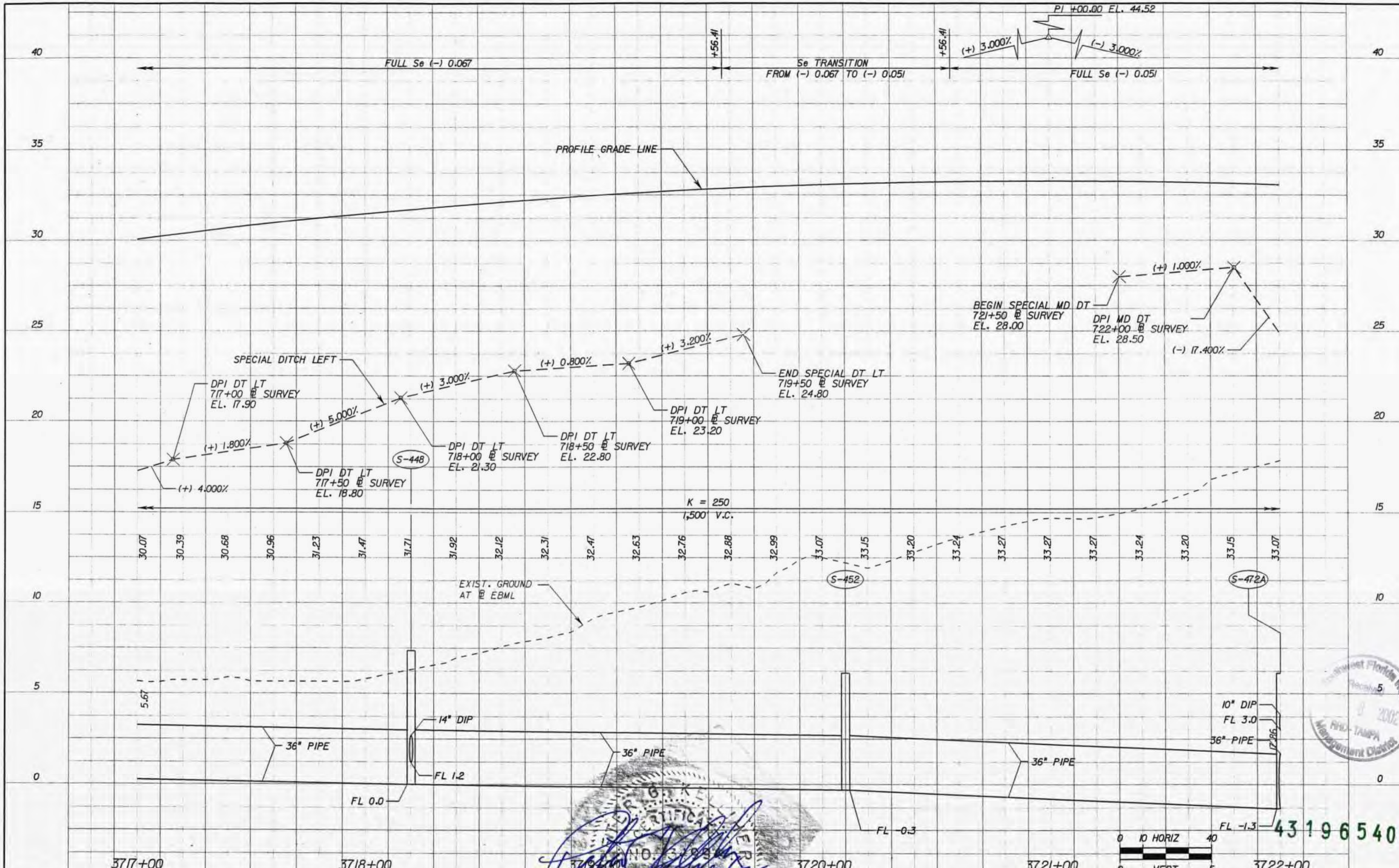
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3712 TO STA. 3717 (9 OF 12)

SHEET NO. 37



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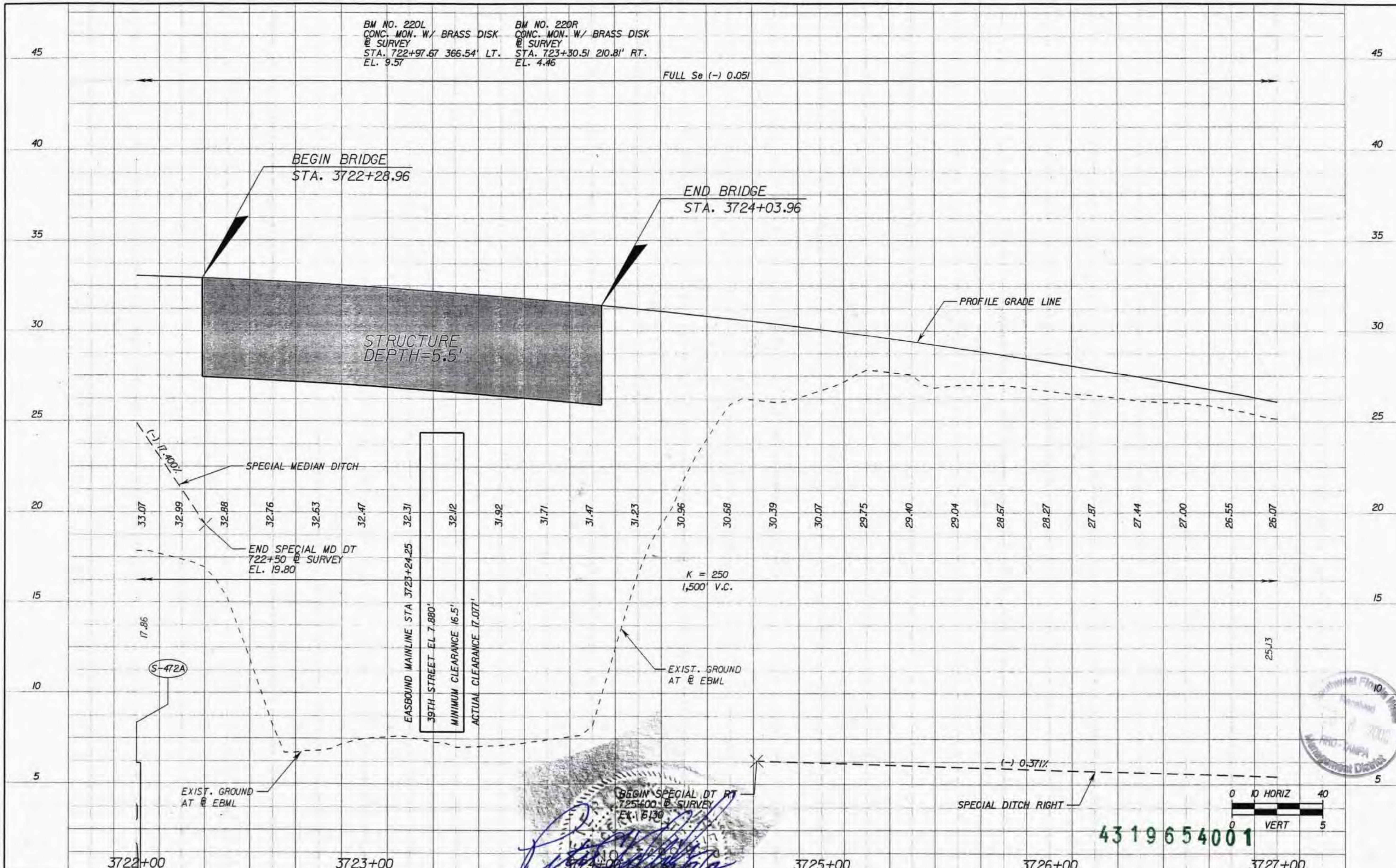
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3717 TO STA. 3722 (10 OF 12)

SHEET NO. 38



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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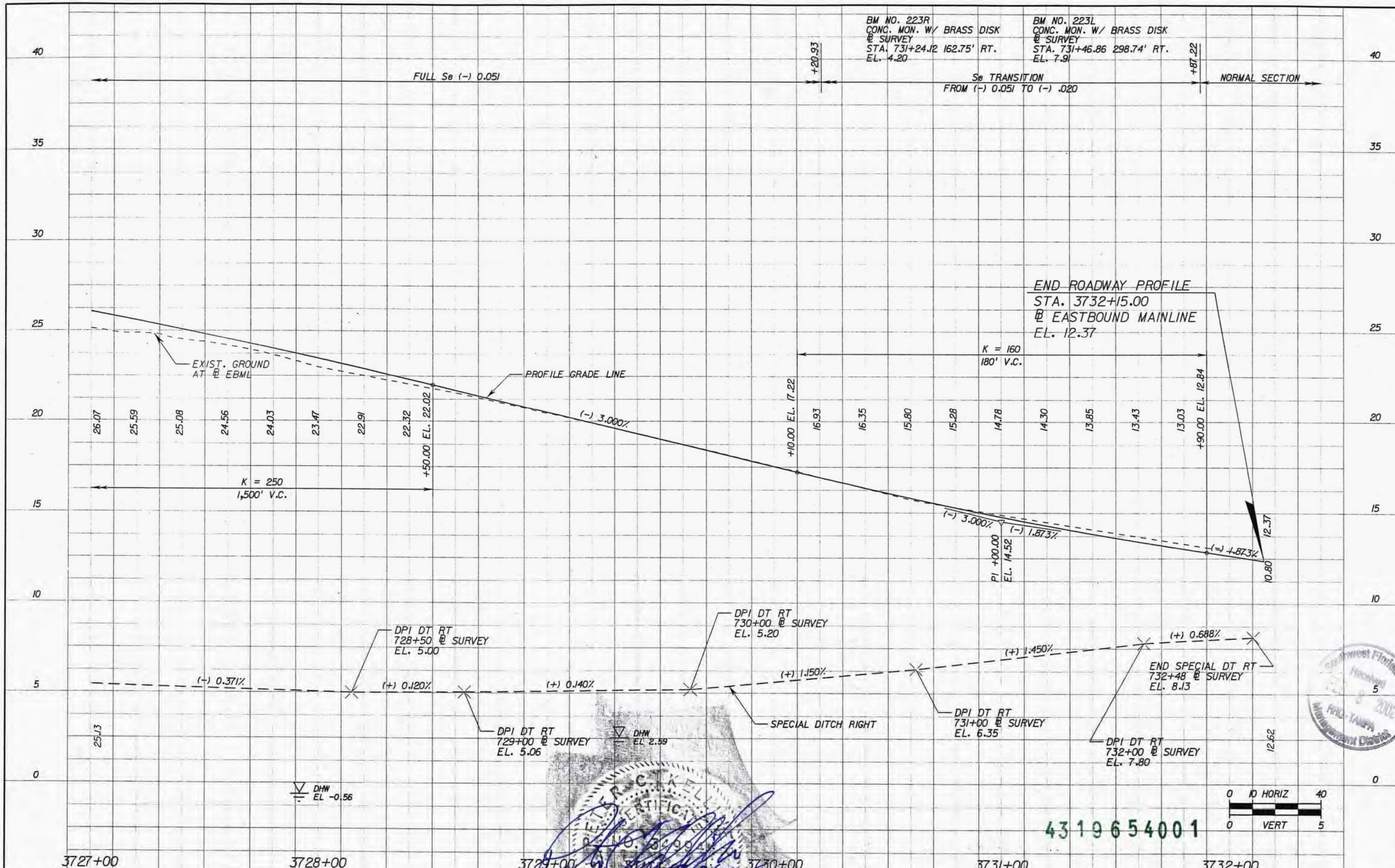
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Peter C. Kellner, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3722 TO STA. 3727 (11 OF 12)

SHEET NO. 39



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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5300 West Cypress Street
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Tampa, Florida 33607-1768
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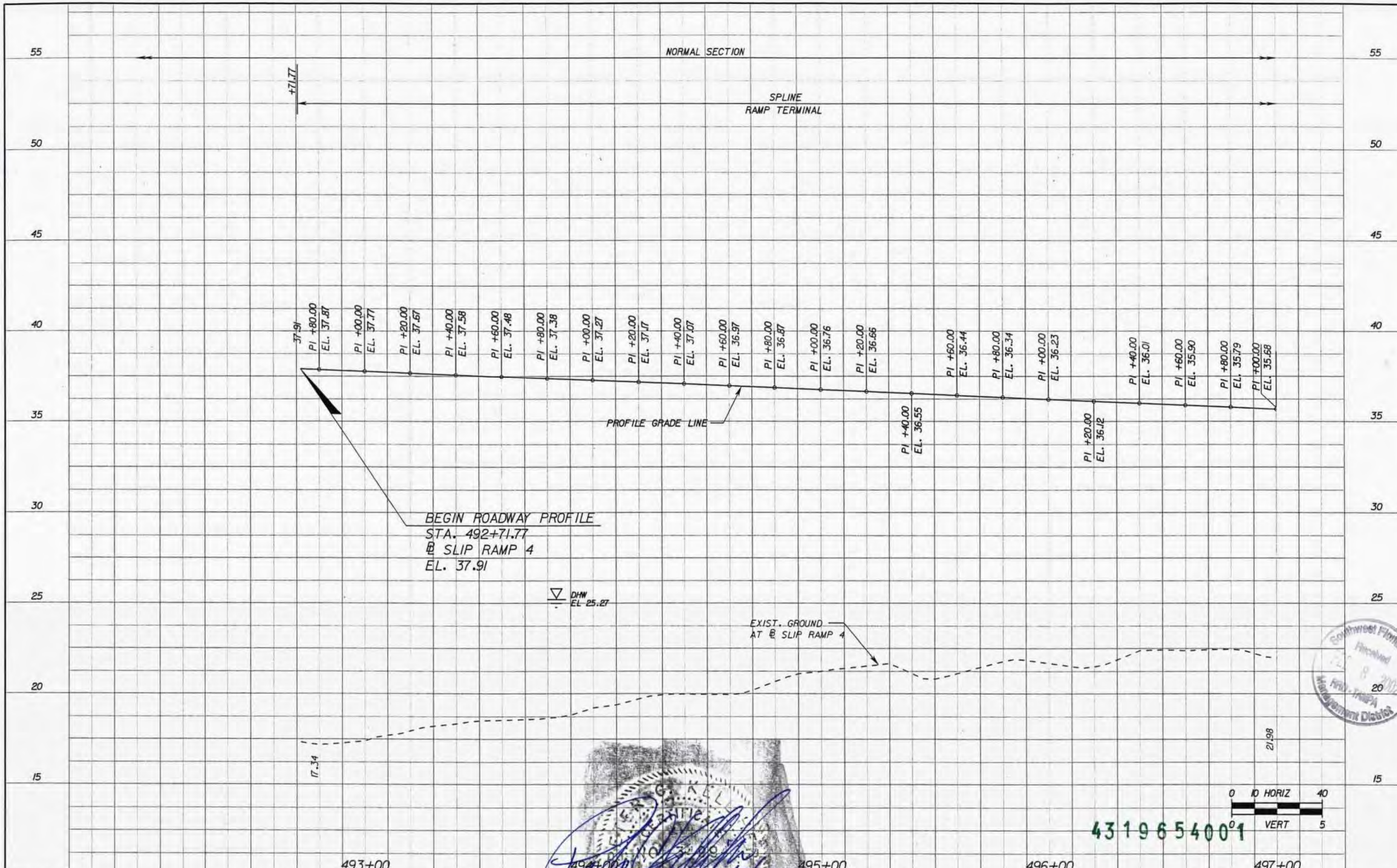
Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
EB MAINLINE PROFILE SHEET
STA. 3727 TO STA. 3732 (12 OF 12)

SHEET NO. 40



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Authorization No. 24
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TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
SLIP RAMP 4 PROFILE SHEET
STA. 493 TO STA. 497 (1 OF 6)

SHEET NO.
41

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Suite 300
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Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
SLIP RAMP 4 PROFILE SHEET
STA. 497 TO STA. 502 (2 OF 6)

SHEET NO. 42

Southwest Florida Water Management District
Received
FEB 6 2002
RRD - TAMPA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Authorization No. 24
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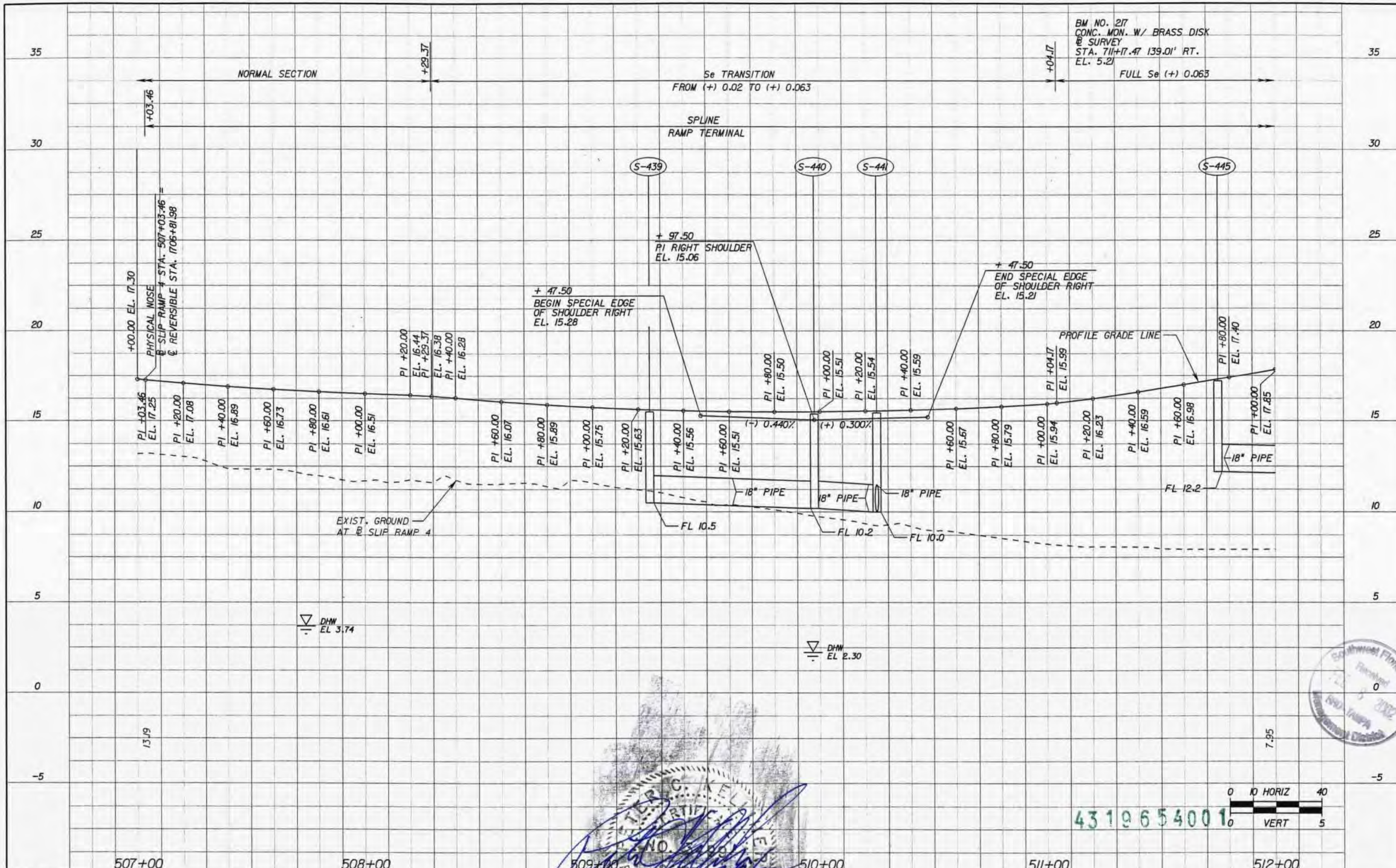
TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
SLIP RAMP 4 PROFILE SHEET
STA. 502 TO STA. 507 (3 OF 6)

SHEET NO. 43



4319654001

Southwest Florida Water Management District
Received
FEB 8 2002
Tampa

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PLOT NAME

PBSJ
5300 West Cypress Street
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Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
SLIP RAMP 4 PROFILE SHEET
STA. 507 TO STA. 512 (4 OF 6)

SHEET NO. 44

4319654001

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
REVISIONS					

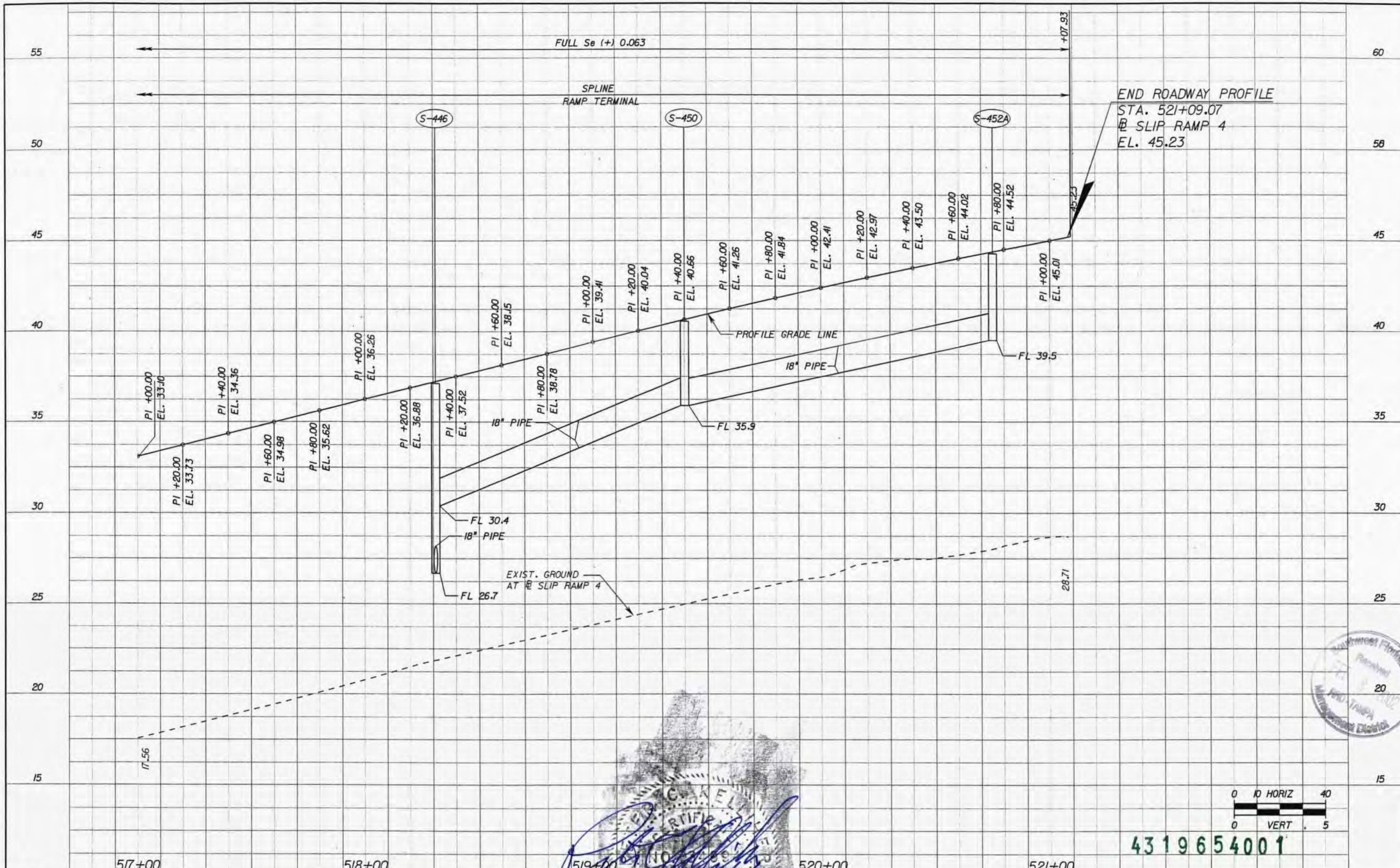
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
SLIP RAMP 4 PROFILE SHEET
STA. 512 TO STA. 517 (5 OF 6)

SHEET NO.
45



4319654001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

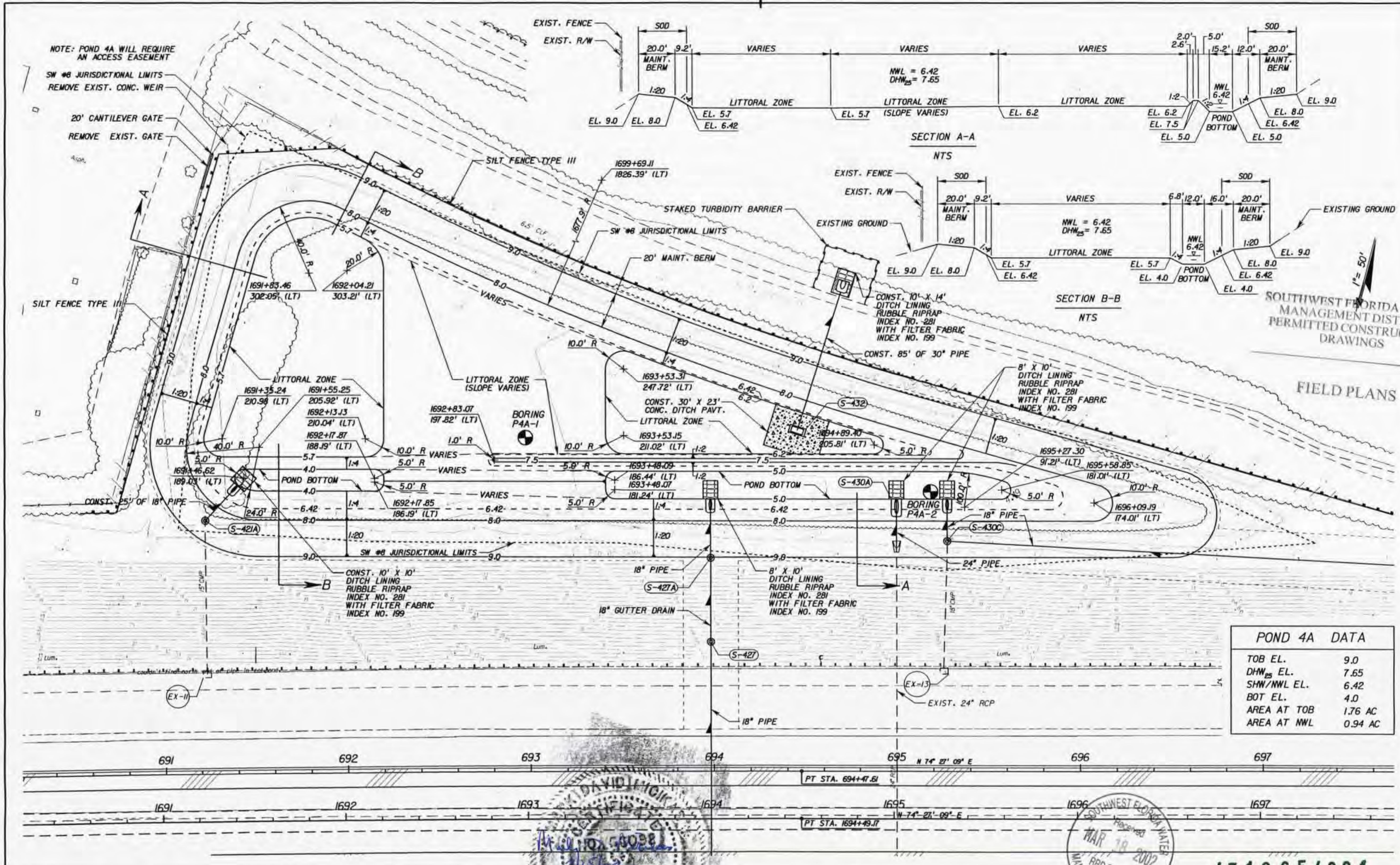
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Peter C. Kelliher, P.E. #34994

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON EXPRESSWAY
SLIP RAMP 4 PROFILE SHEET
STA. 517 TO STA. 521 (6 OF 6)

SHEET NO. 46



POND 4A DATA	
TOB EL.	9.0
DHW_{25} EL.	7.65
SHW/NWL EL.	6.42
BOT EL.	4.0
AREA AT TOB	1.76 AC
AREA AT NWL	0.94 AC

43196540 01

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

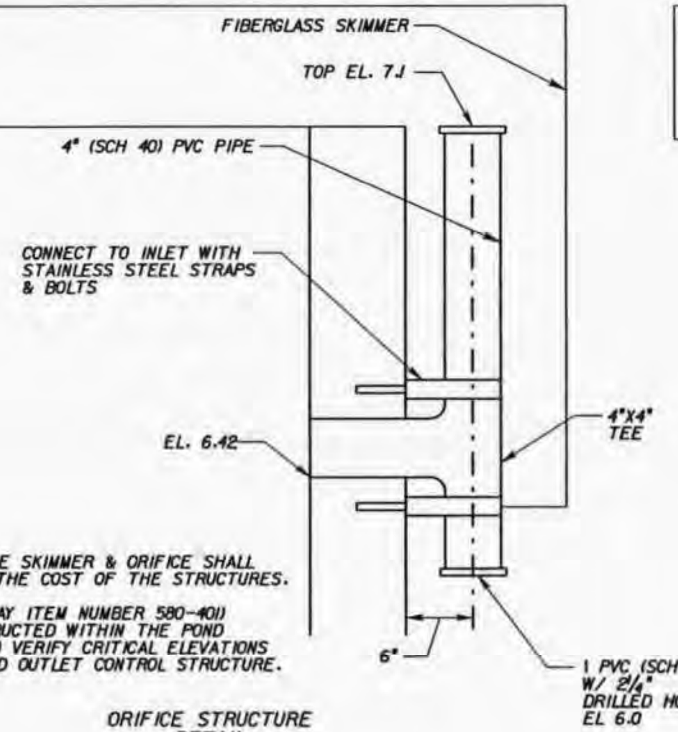
PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Mark D. Mialkos, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
POND 4A

SHEET NO. 48

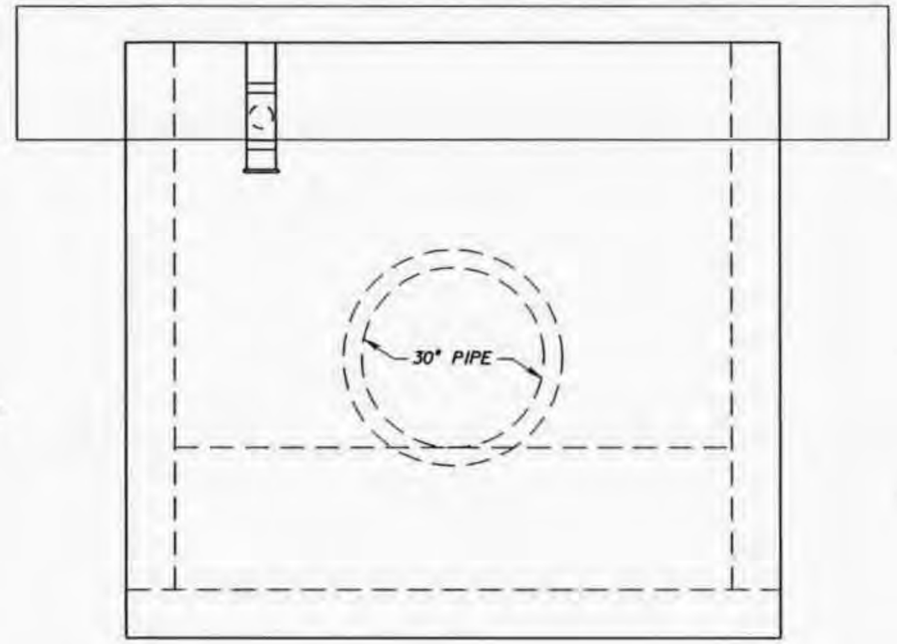


NOTE:

1. THE COST OF THE SKIMMER & ORIFICE SHALL BE INCLUDED IN THE COST OF THE STRUCTURES.
2. A BENCHMARK (PAY ITEM NUMBER 580-401) IS TO BE CONSTRUCTED WITHIN THE POND RIGHT OF WAY TO VERIFY CRITICAL ELEVATIONS OF THE POND AND OUTLET CONTROL STRUCTURE.

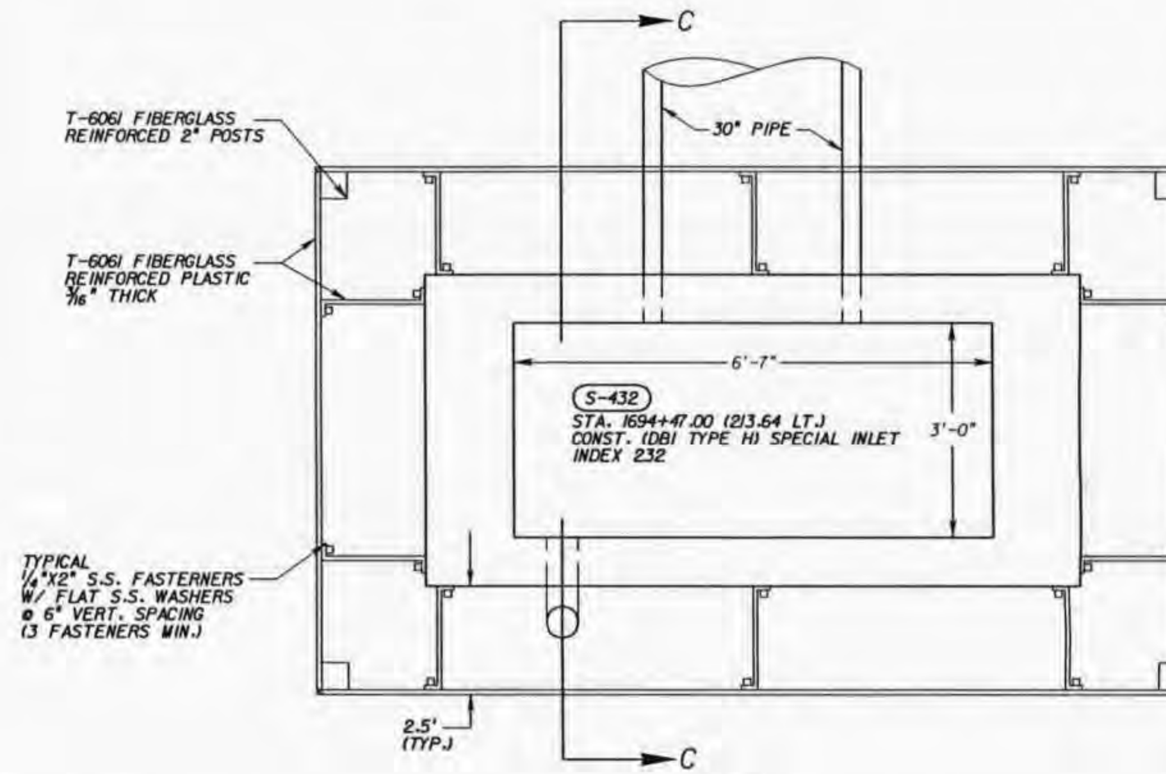
ORIFICE STRUCTURE DETAIL

NTS



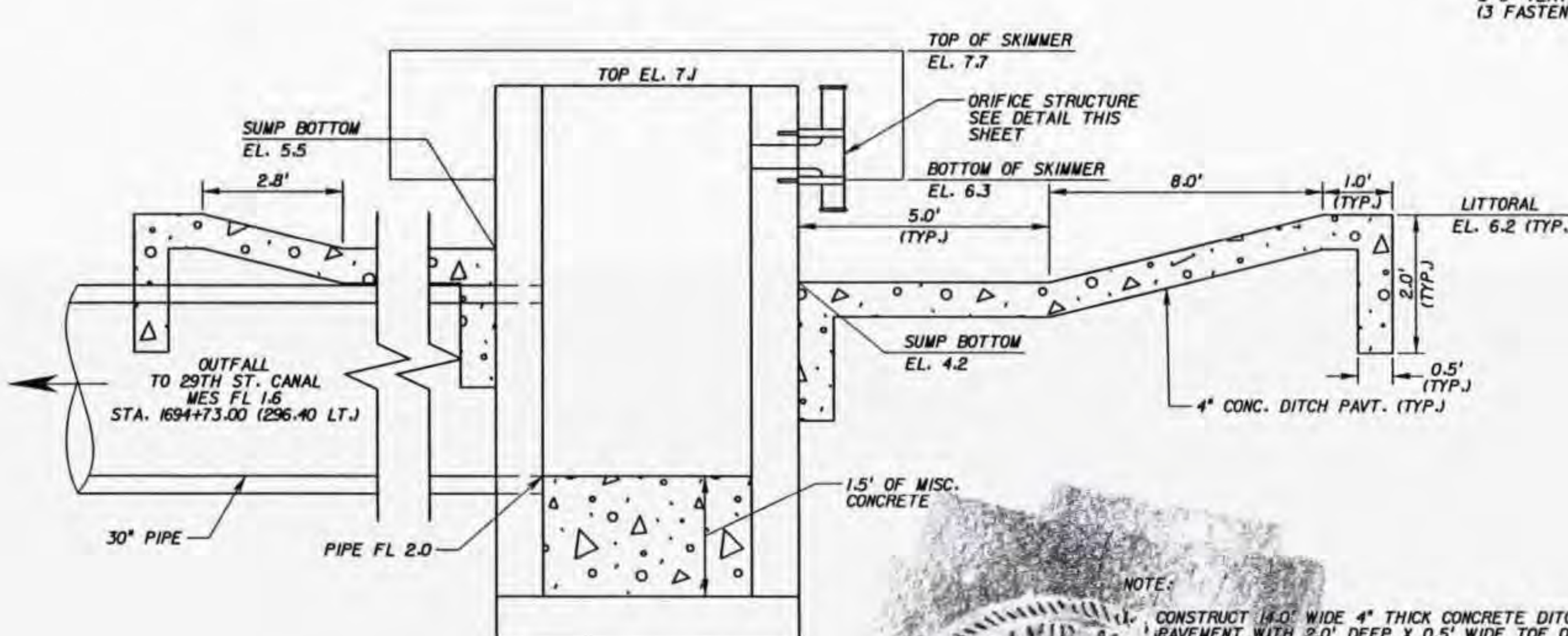
FRONT VIEW

NTS



PLAN VIEW

NTS



SECTION C-C

NTS

NOTE:

1. CONSTRUCT 14.0' WIDE 4" THICK CONCRETE DITCH PAVEMENT WITH 2.0' DEEP X 0.5' WIDE TOE ON ALL SIDES OF S-432.
2. FOR ADDITIONAL SKIMMER DETAILS SEE INDEX NO. 240.
3. DO NOT PROVIDE GRATE FOR S-432.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT Received MAR 18 2002 BRD-TAMPA

4319654001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

MARK DAVID MICKAS CERTIFICATE NO. 56092 STATE OF

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

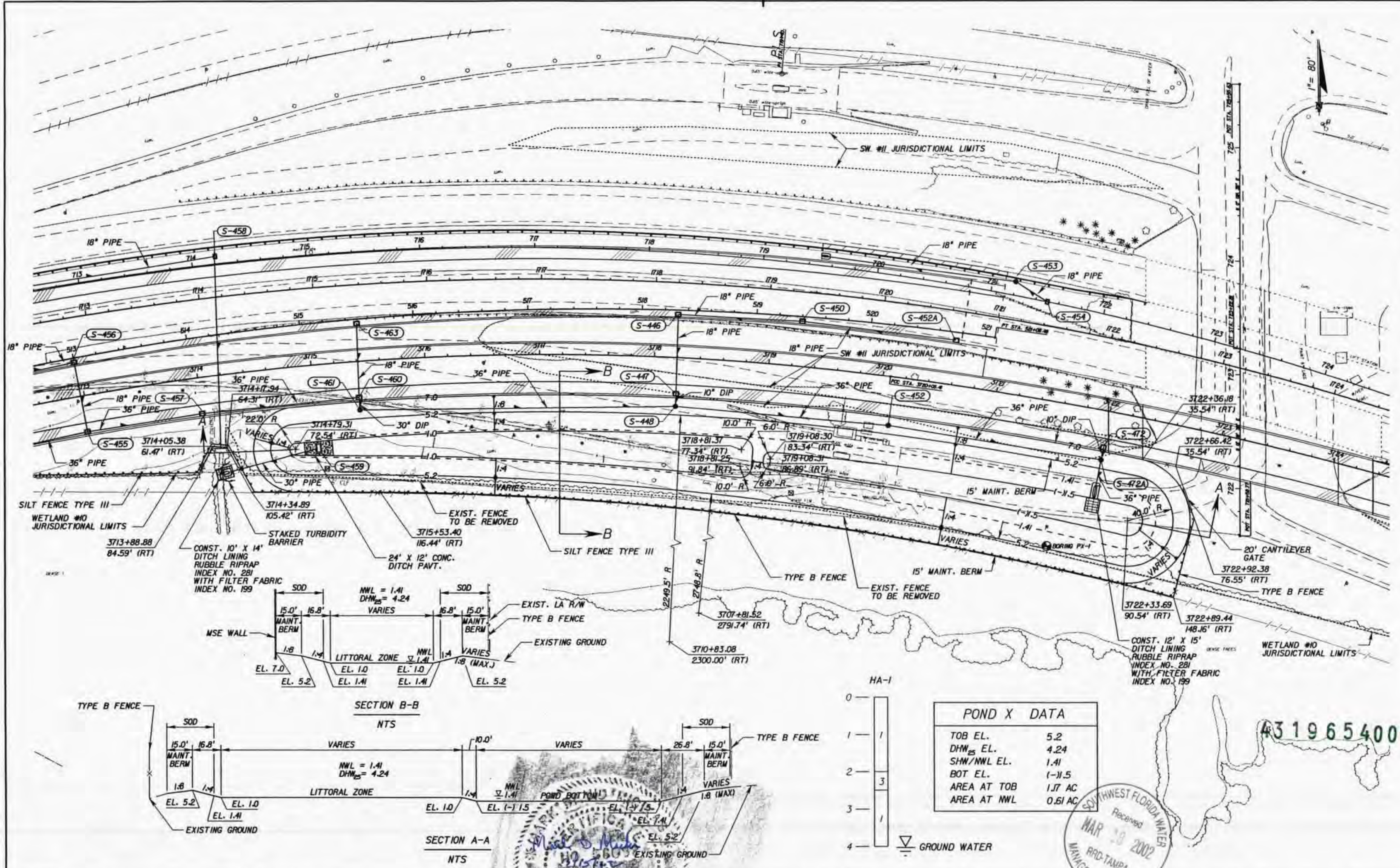
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND 4A DETAILS

SHEET NO. 49



POND X DATA

TOB EL.	5.2
DHW_{25} EL.	4.24
SHW/NWL EL.	1.41
BOT EL.	(-)1.5
AREA AT TOB	1.17 AC
AREA AT NWL	0.61 AC

43196540001

15-MAR-2002 12:56

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

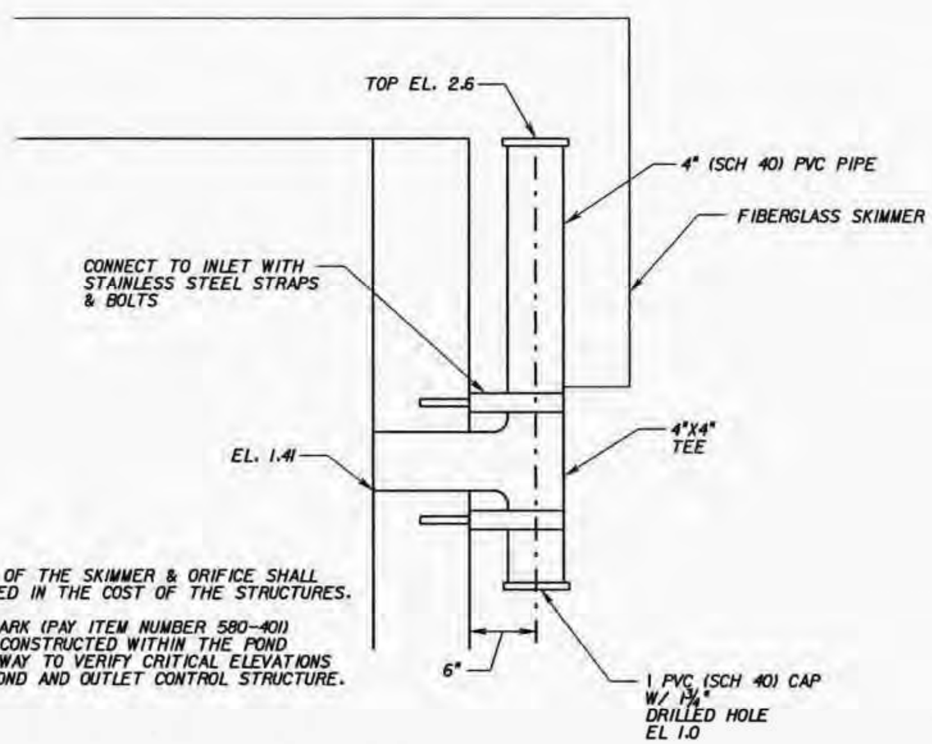
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Mark D. Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X

SHEET NO. 74

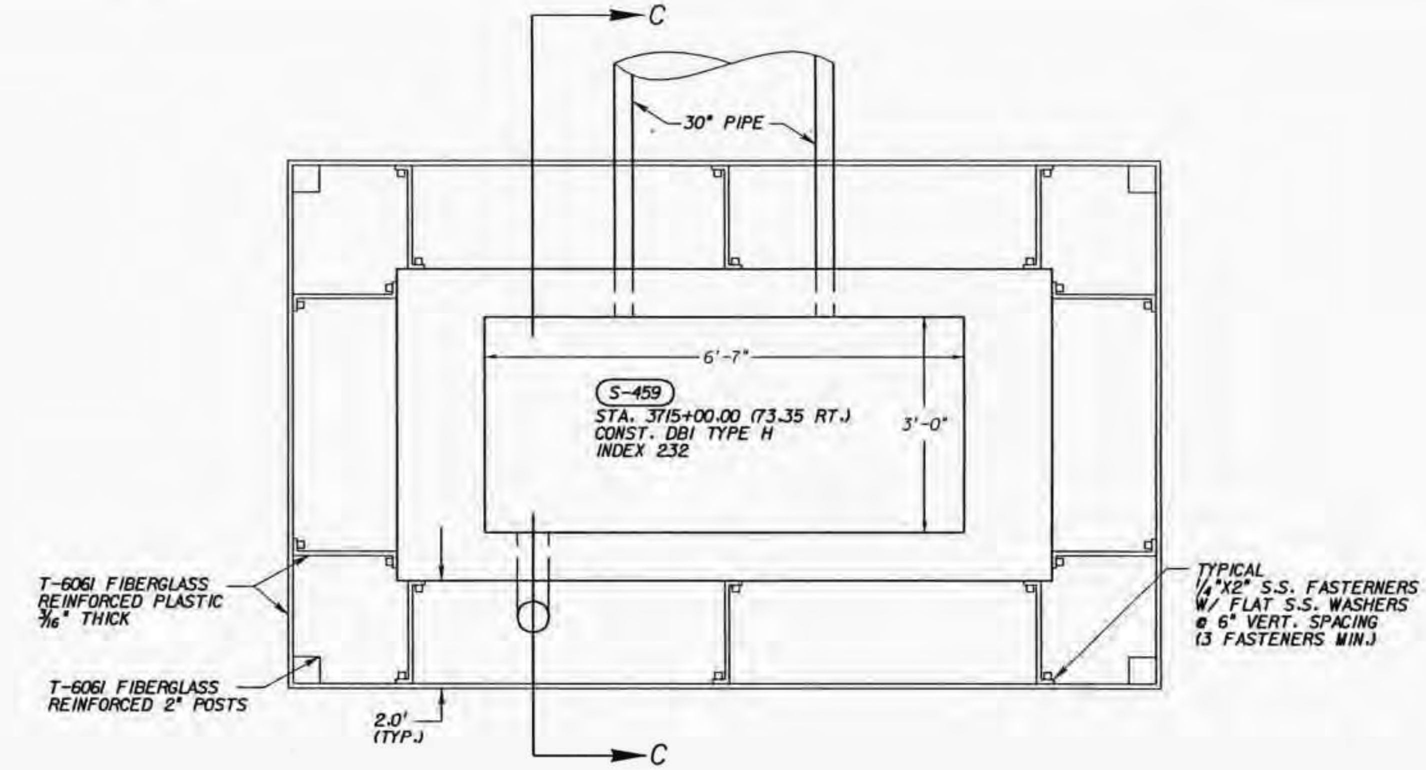


NOTE:

1. THE COST OF THE SKIMMER & ORIFICE SHALL BE INCLUDED IN THE COST OF THE STRUCTURES.
2. A BENCHMARK (PAY ITEM NUMBER 580-401) IS TO BE CONSTRUCTED WITHIN THE POND RIGHT OF WAY TO VERIFY CRITICAL ELEVATIONS OF THE POND AND OUTLET CONTROL STRUCTURE.

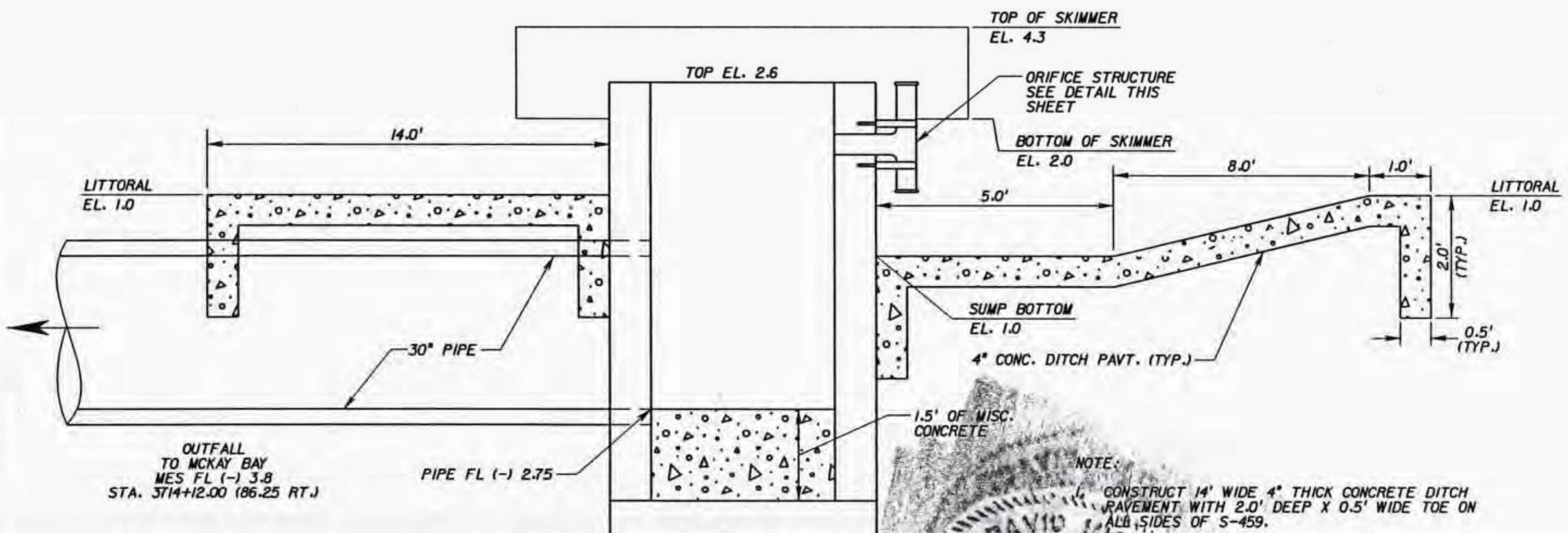
ORIFICE STRUCTURE DETAIL

NTS



PLAN VIEW

NTS

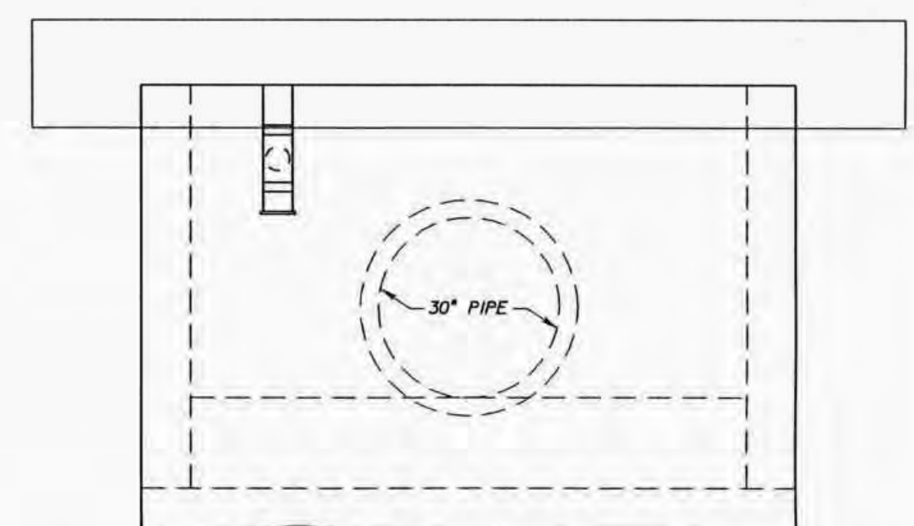


SECTION C-C

NTS

NOTE:

1. CONSTRUCT 14' WIDE 4" THICK CONCRETE DITCH PAVEMENT WITH 2.0' DEEP X 0.5' WIDE TOE ON ALL SIDES OF S-459.
2. FOR ADDITIONAL SKIMMER DETAILS SEE INDEX NO. 240.
3. DO NOT PROVIDE GRATES FOR S-459.



FRONT VIEW

NTS

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
MAR 18 2002
BRD-TAMPA

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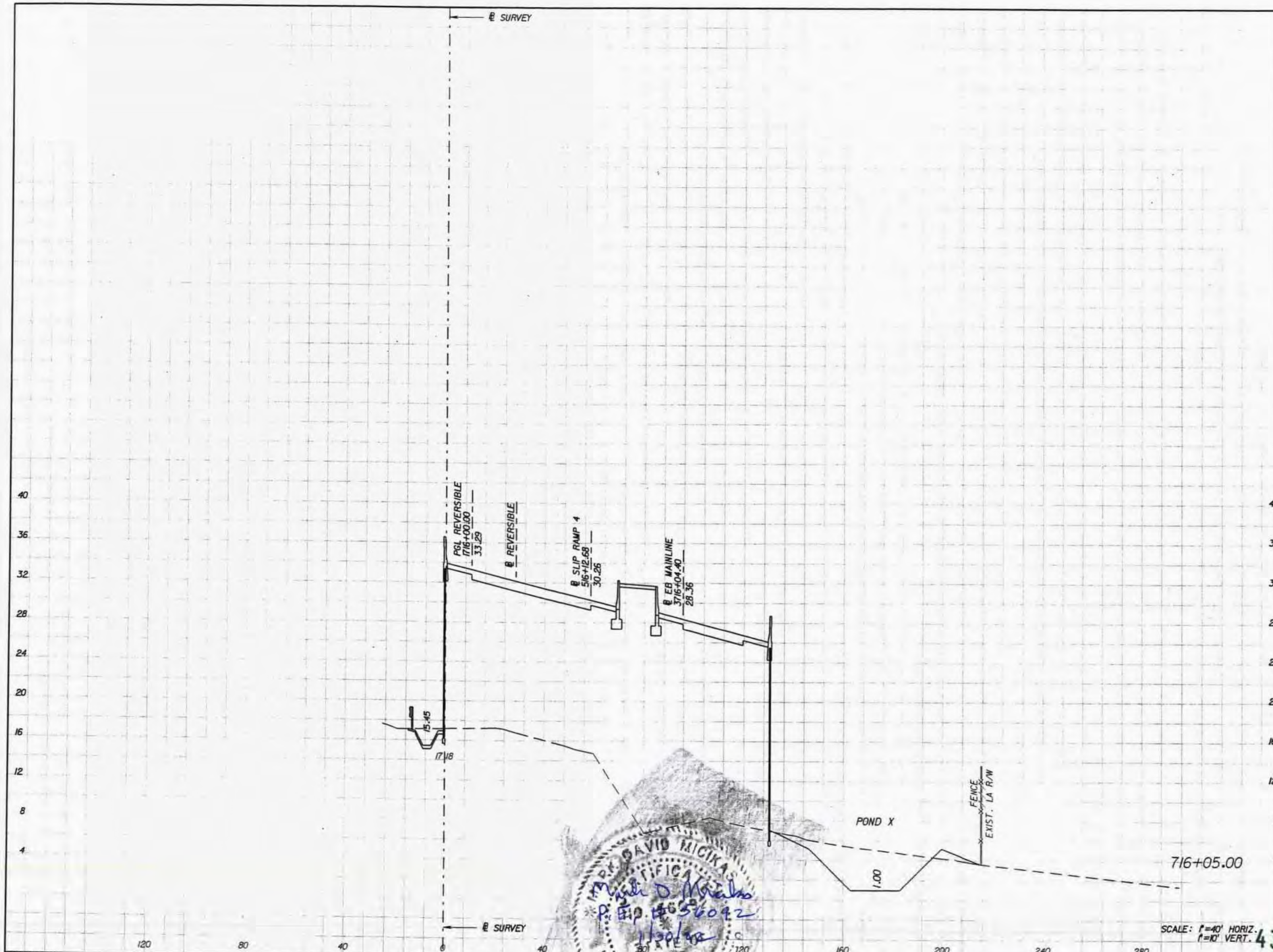
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X DETAILS

SHEET NO. 75



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

SCALE: 1"=40' HORIZ. 1"=10' VERT.

4319654001

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Mark D Micikas, P.E. #56092

Mark D Micikas P.E. #56092 1/30/02

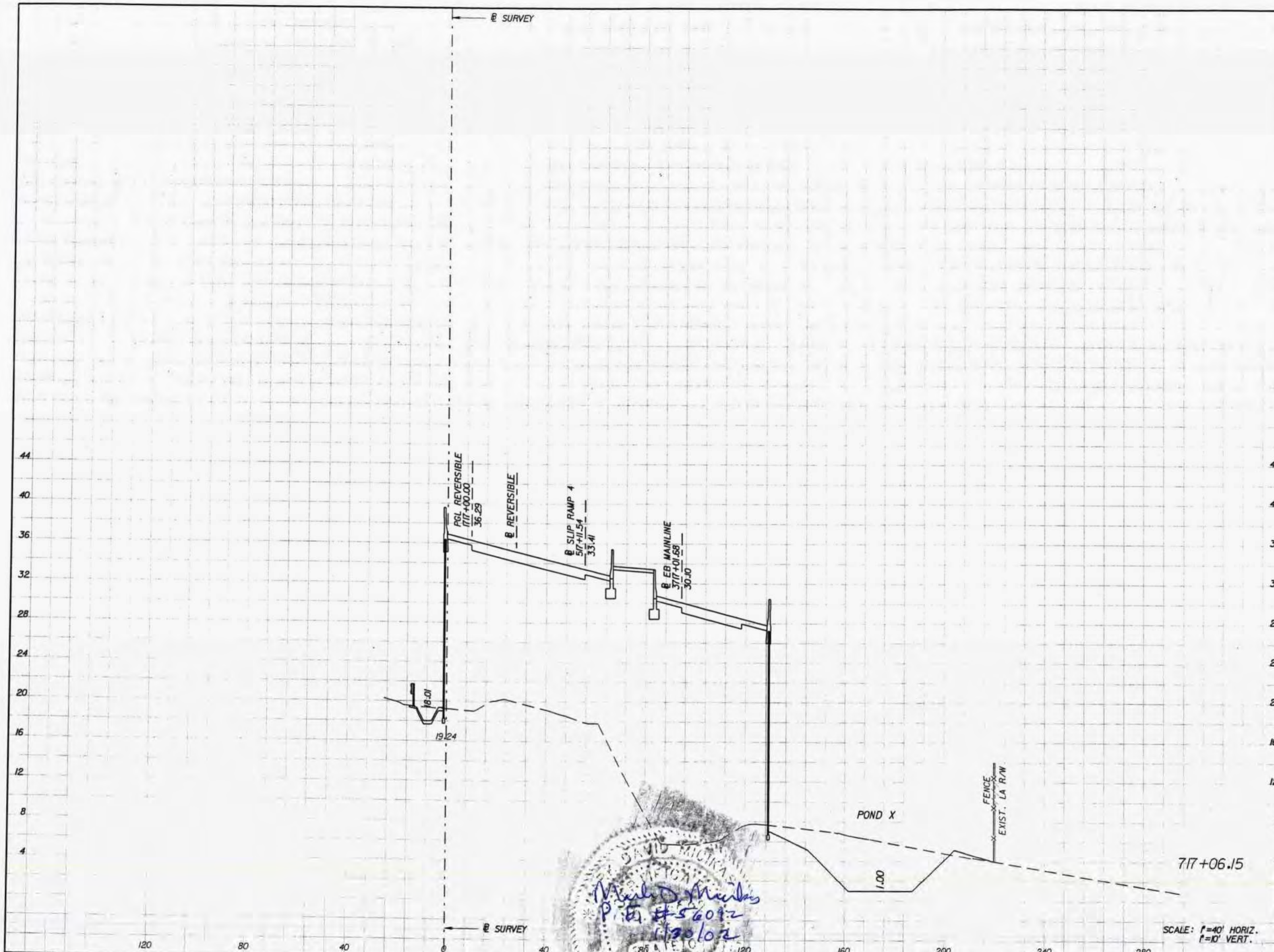
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 78

Southwest Florida Water Management District Received FEB 8 2002 BRV-TAMPA



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

4319654001

Southwest Florida Water Management District Received ... 8 2002 RIO-TAMPA

Mark D. Miclkas P.E. #56092 1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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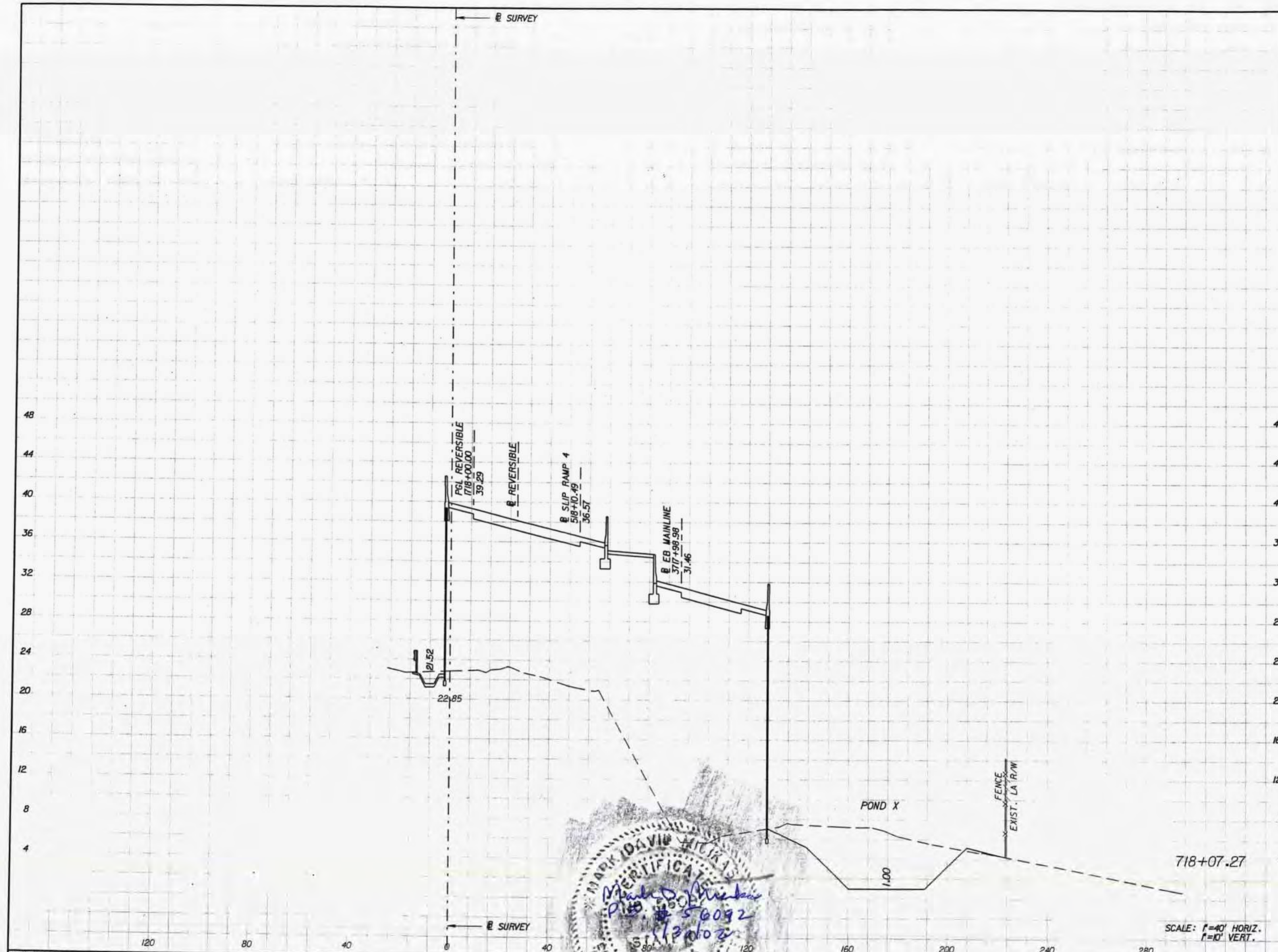
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
POND X CROSS SECTIONS

SHEET NO. 79



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

4319654001

Southwest Florida Water Management District
Received FEB 8 2002
RID-TAMPA

REVISIONS					
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RETAXSOI4

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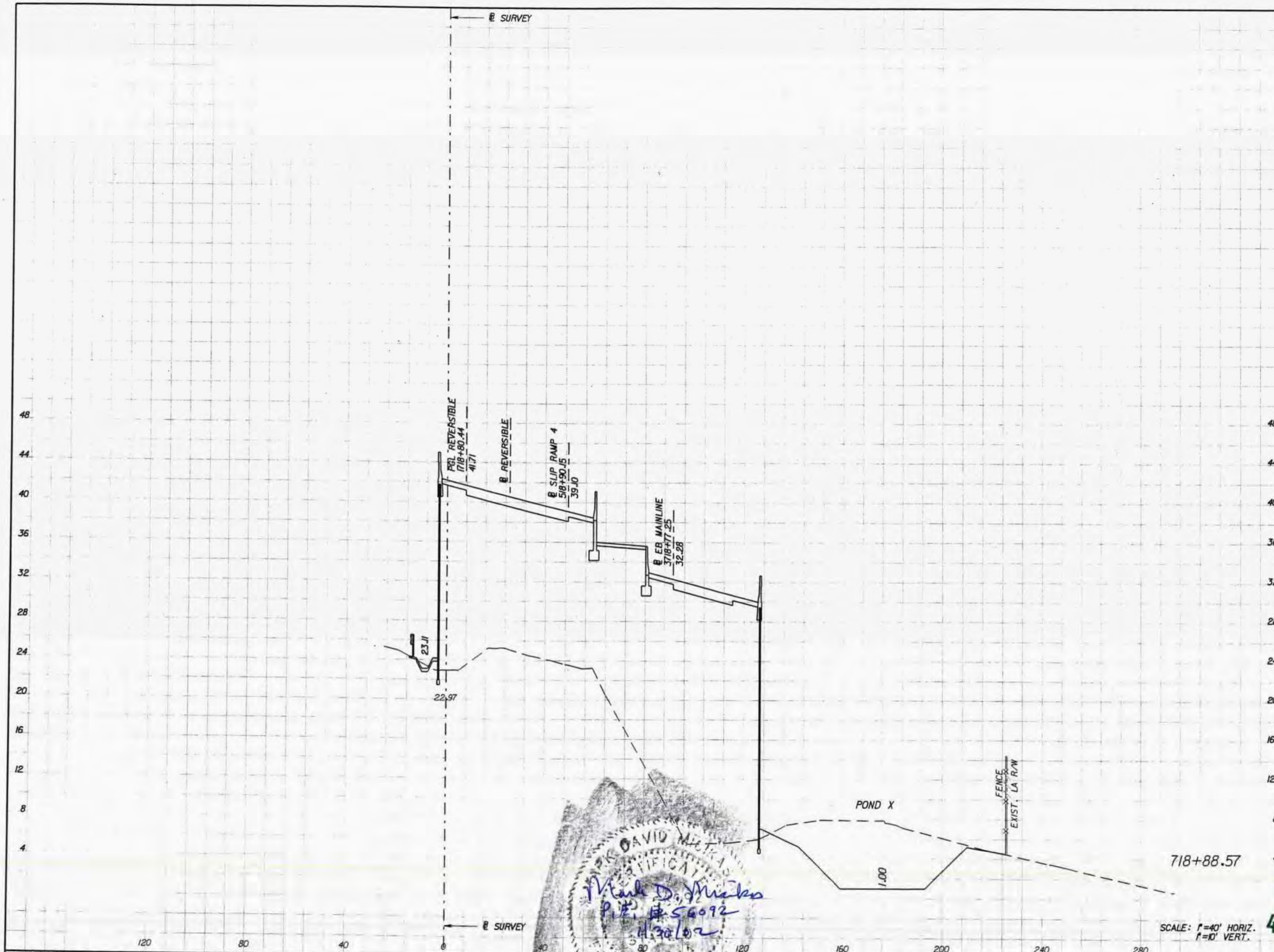
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 80



SCALE: 1"=40' HORIZ.
1"=10' VERT.

4319654001

Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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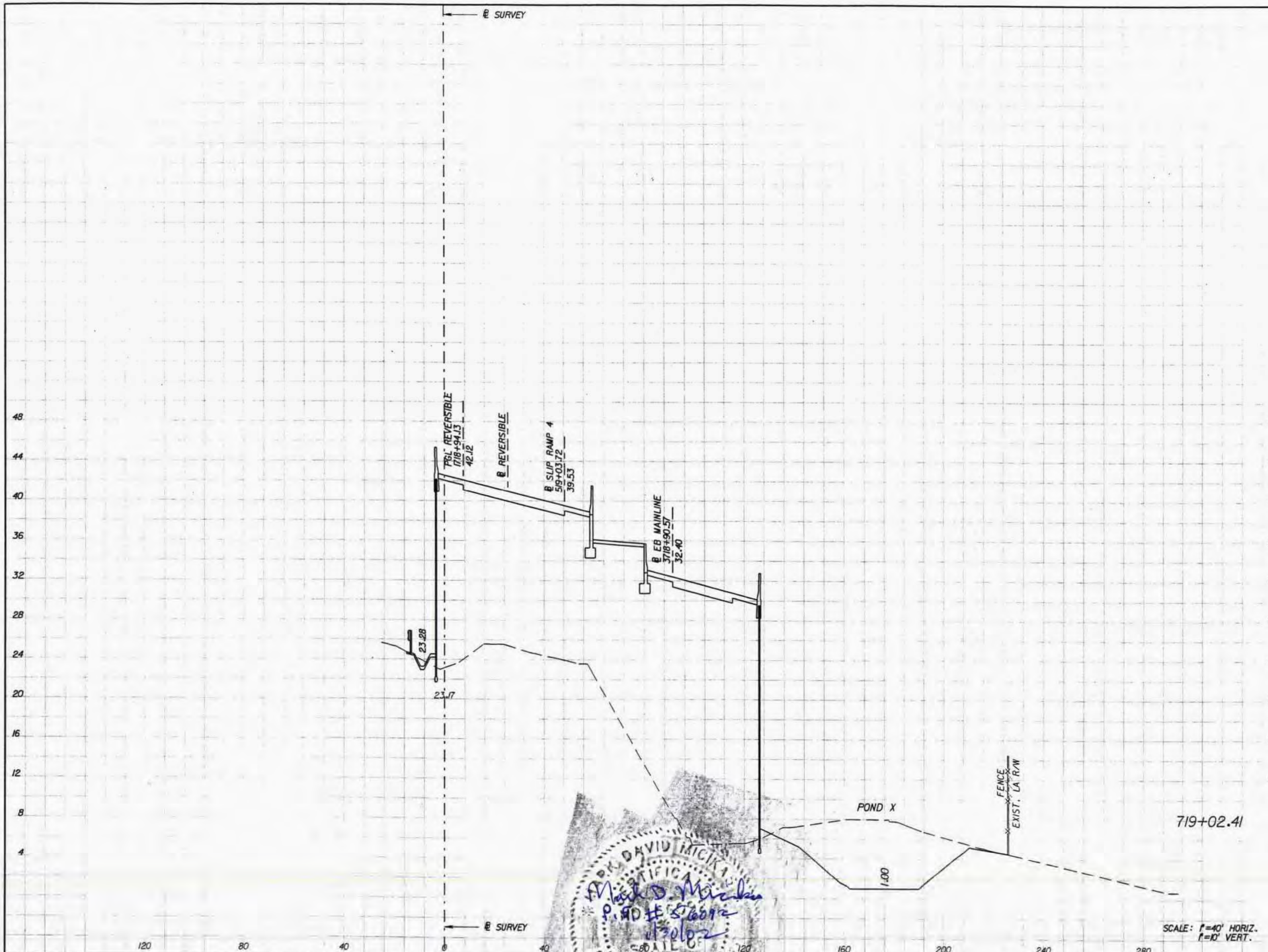
Mark D. Micikas
P.E. # 56092
11/30/02

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
POND X CROSS SECTIONS

SHEET NO.
81



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

43196 54001

Southwest Florida Water Management District Received FEB 8 2002 PRO-TAMPA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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Mark D Micikas, P.E. #56092

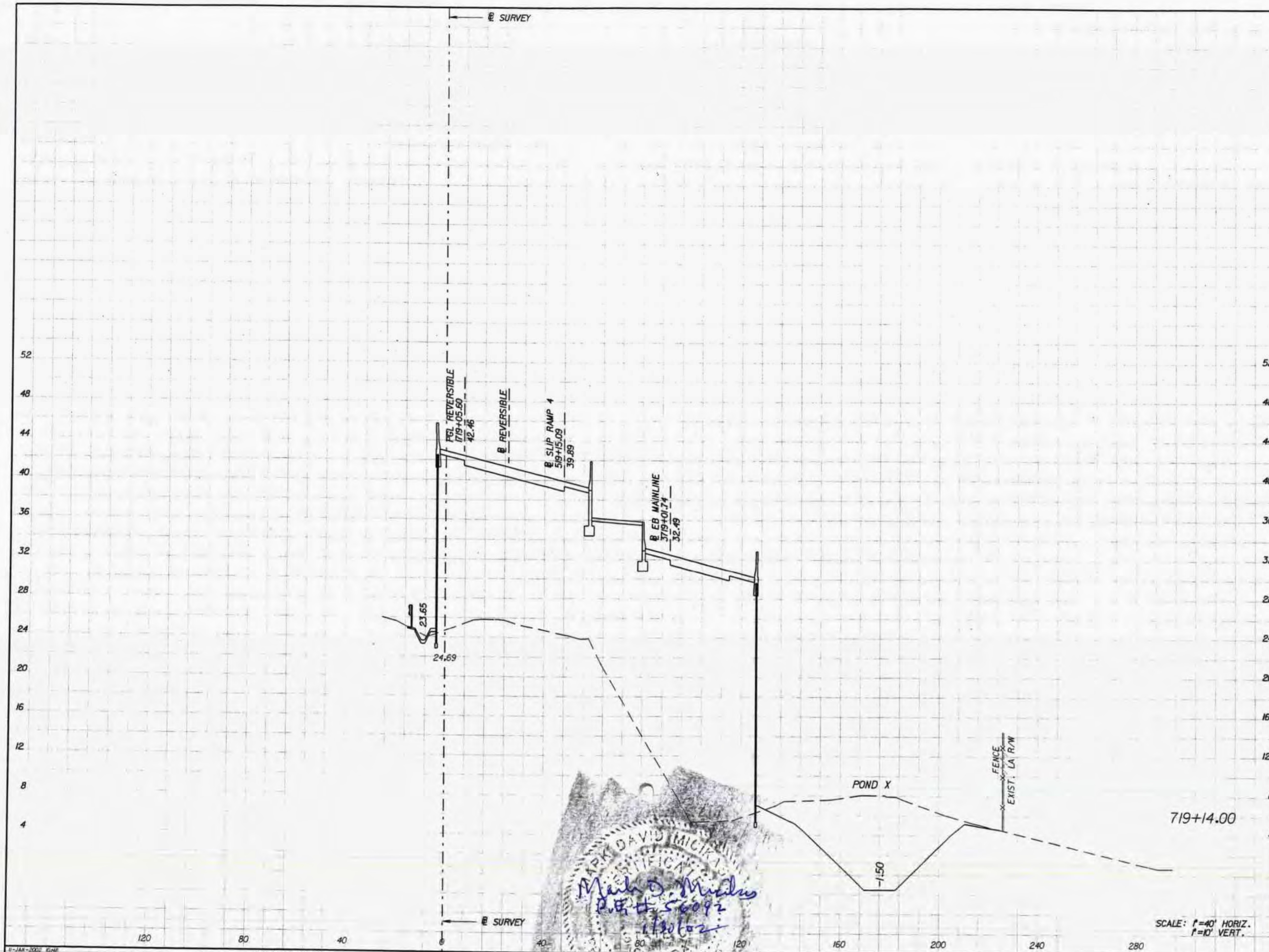
Mark D. Micikas P.E. # 56092 1/30/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
POND X CROSS SECTIONS

SHEET NO. 82



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

43196540001

Southwest Florida Water Management District Received FEB 8 2002 RIO - TAMPA

Mark D. Micikas P.E. # 56092 1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
REVISIONS					

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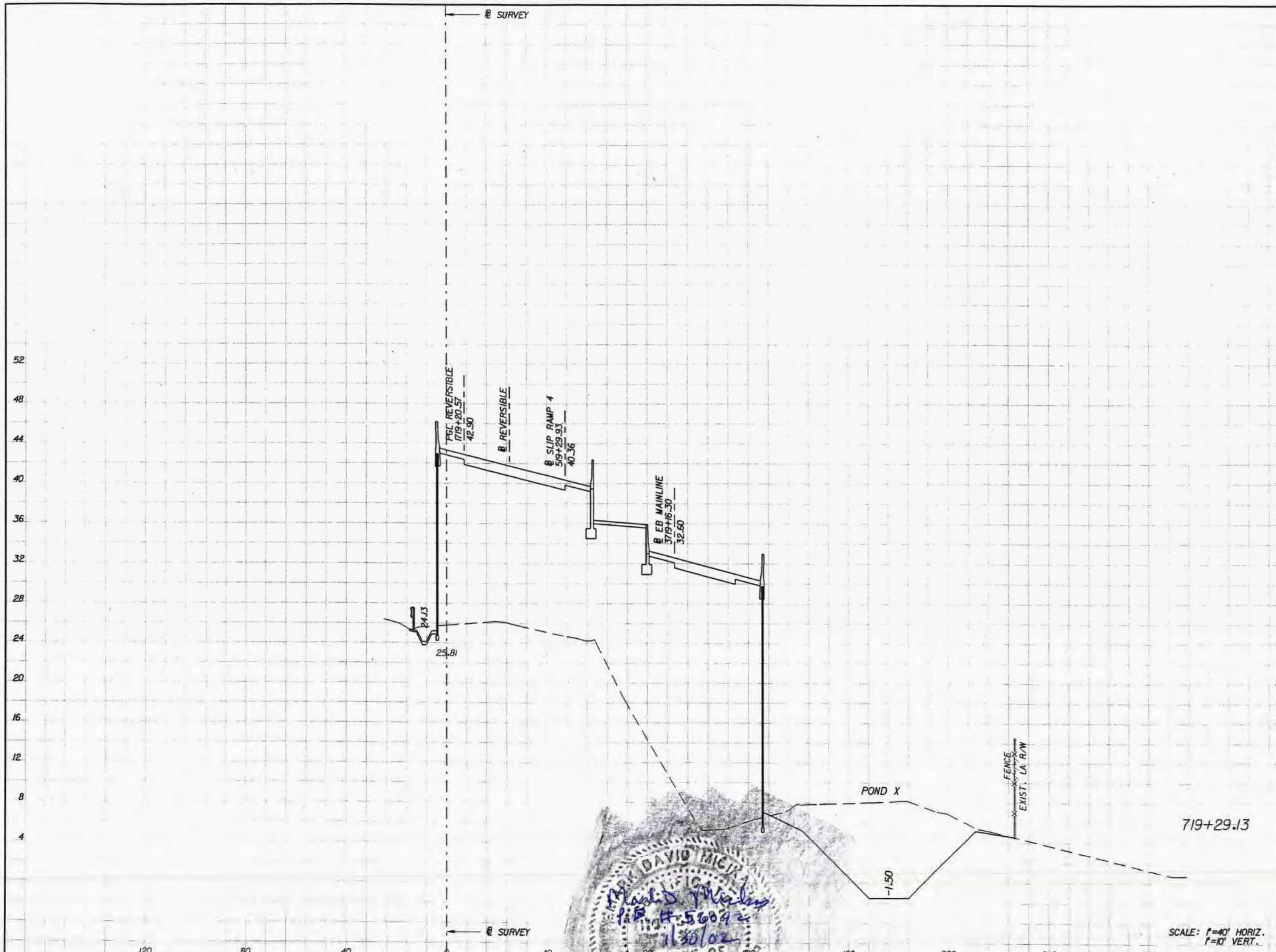
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 83



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

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Southwest Florida Water Management District
Received
FEB 8 2002
PRD-TAMPA

REVISIONS					
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RETAXS018

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Authorization No. 24

Mark D Miclkas , P.E. #56092

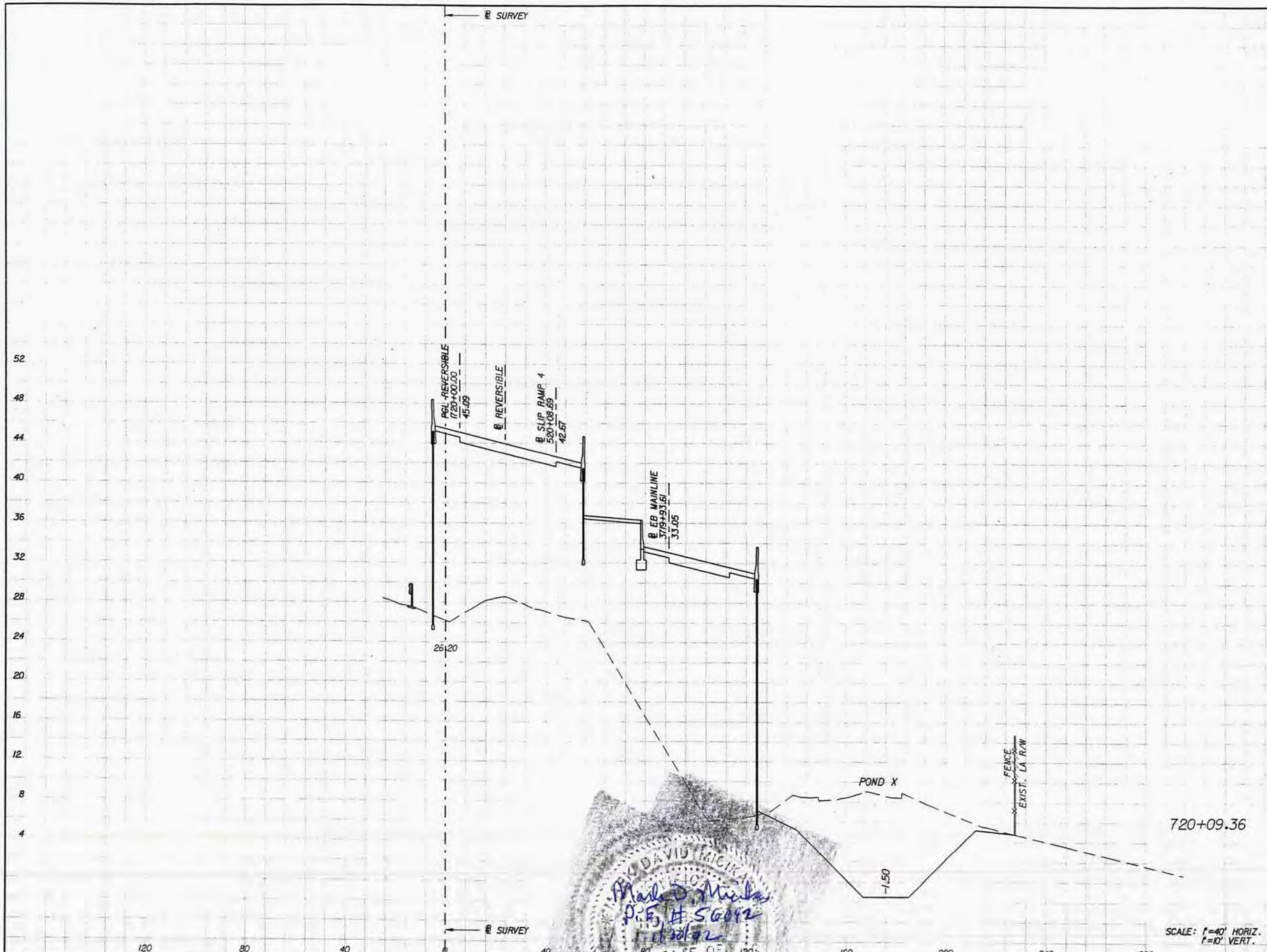
MARK DAVID MICIKAS
STATE OF
Mark D. Micikas
P.E. # 56092
1/30/02

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 84



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

43196540001

Southwest Florida Water Management District
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FEB 8 2002
PRO-TAMPA

Mark D. Miclkas
P.E. # 56092
1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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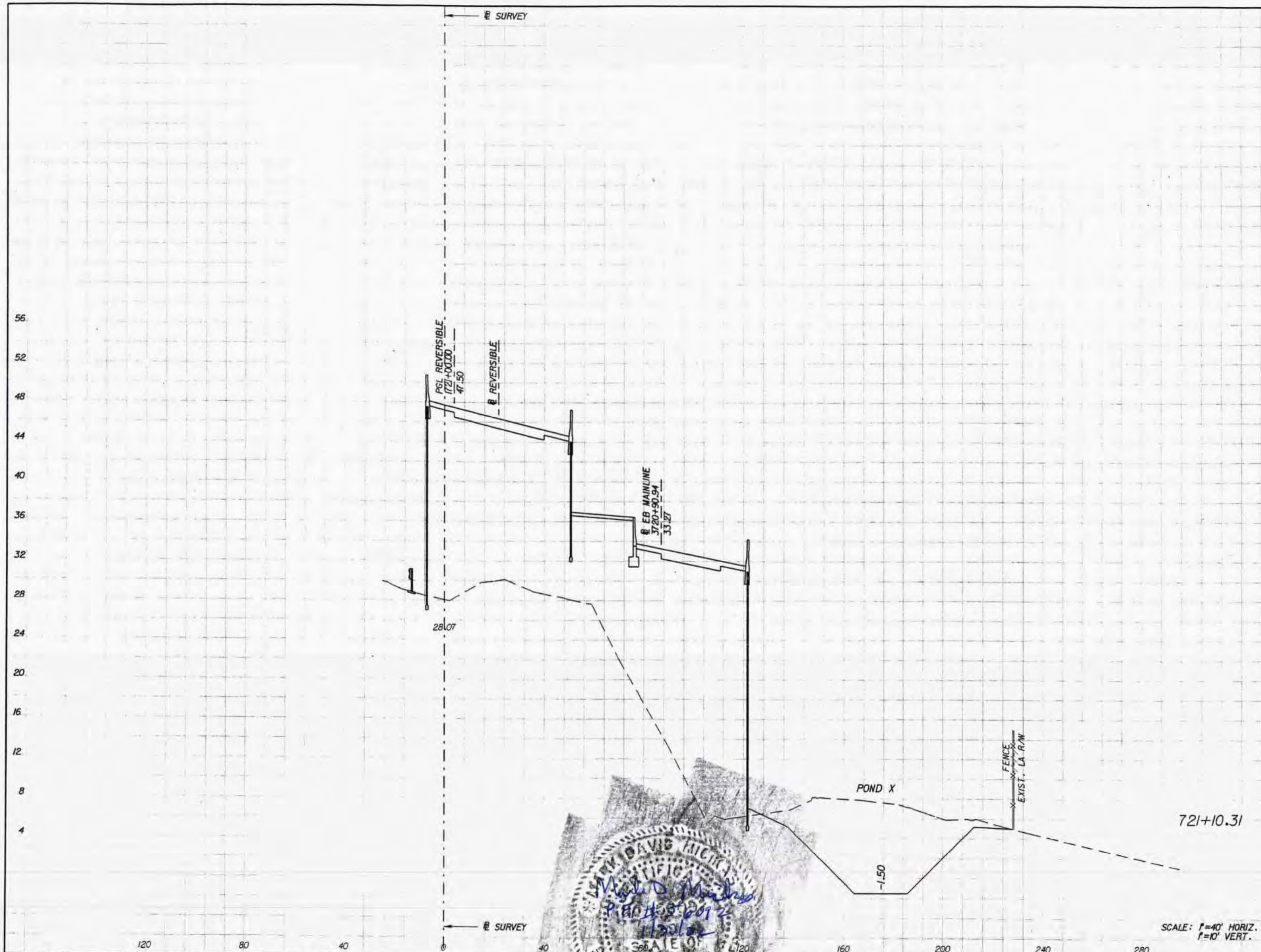
Mark D Miclkas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 85



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

43196540001

Southwest Florida Water Management District Received FEB 8 2002 RRD - TAMPA

Mark D. Miclkas P.E. # 56092 1/30/02

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RETAXS0110

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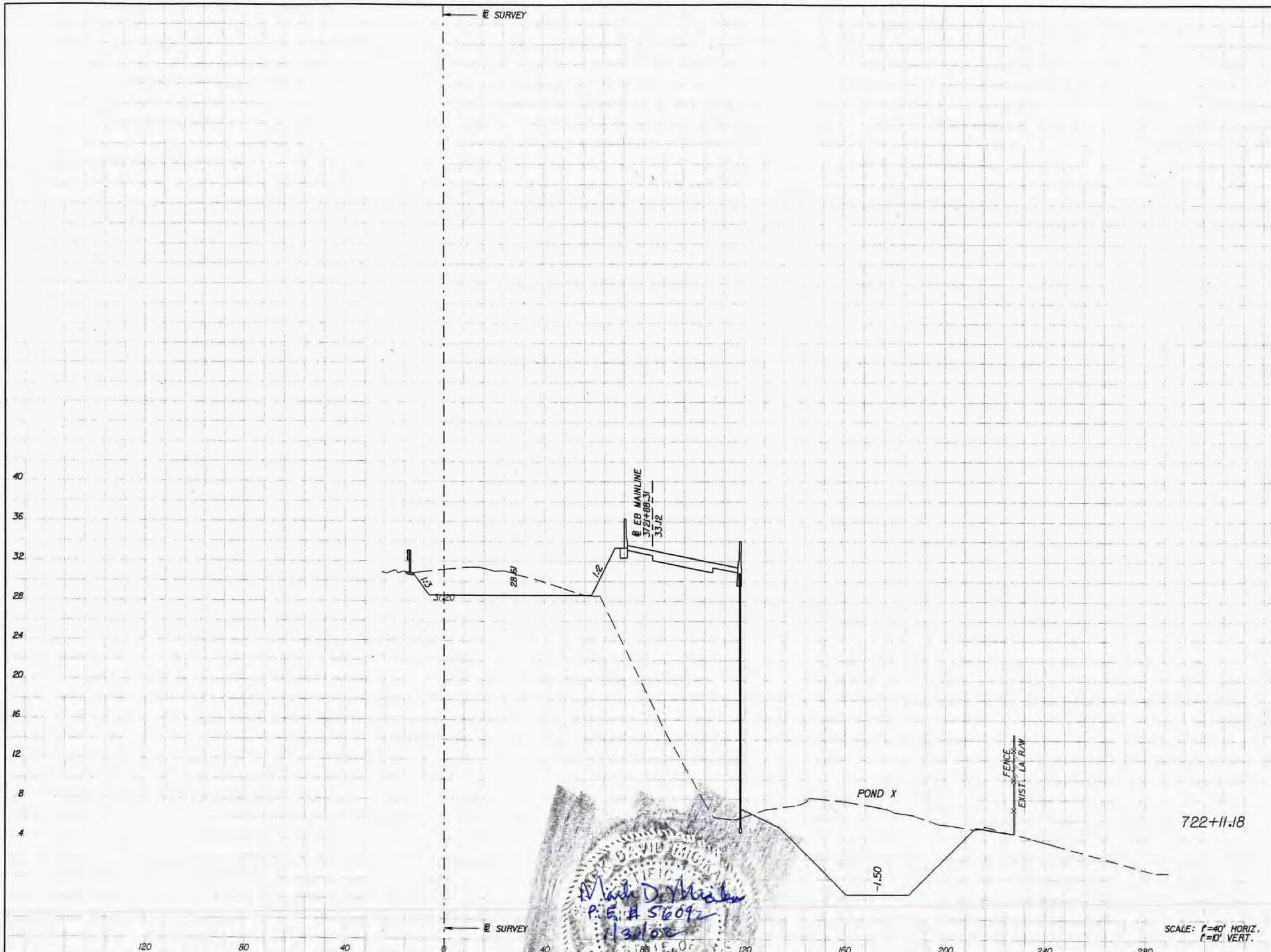
Mark D Miclkas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
POND X CROSS SECTIONS

SHEET NO. 86



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

43196540001

Southwest Florida Water Management District
Received
FEB 13 2002
RIO-TAMPA

Mark D. Micikas
P.E. # 56092
1/30/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RETAXSO111

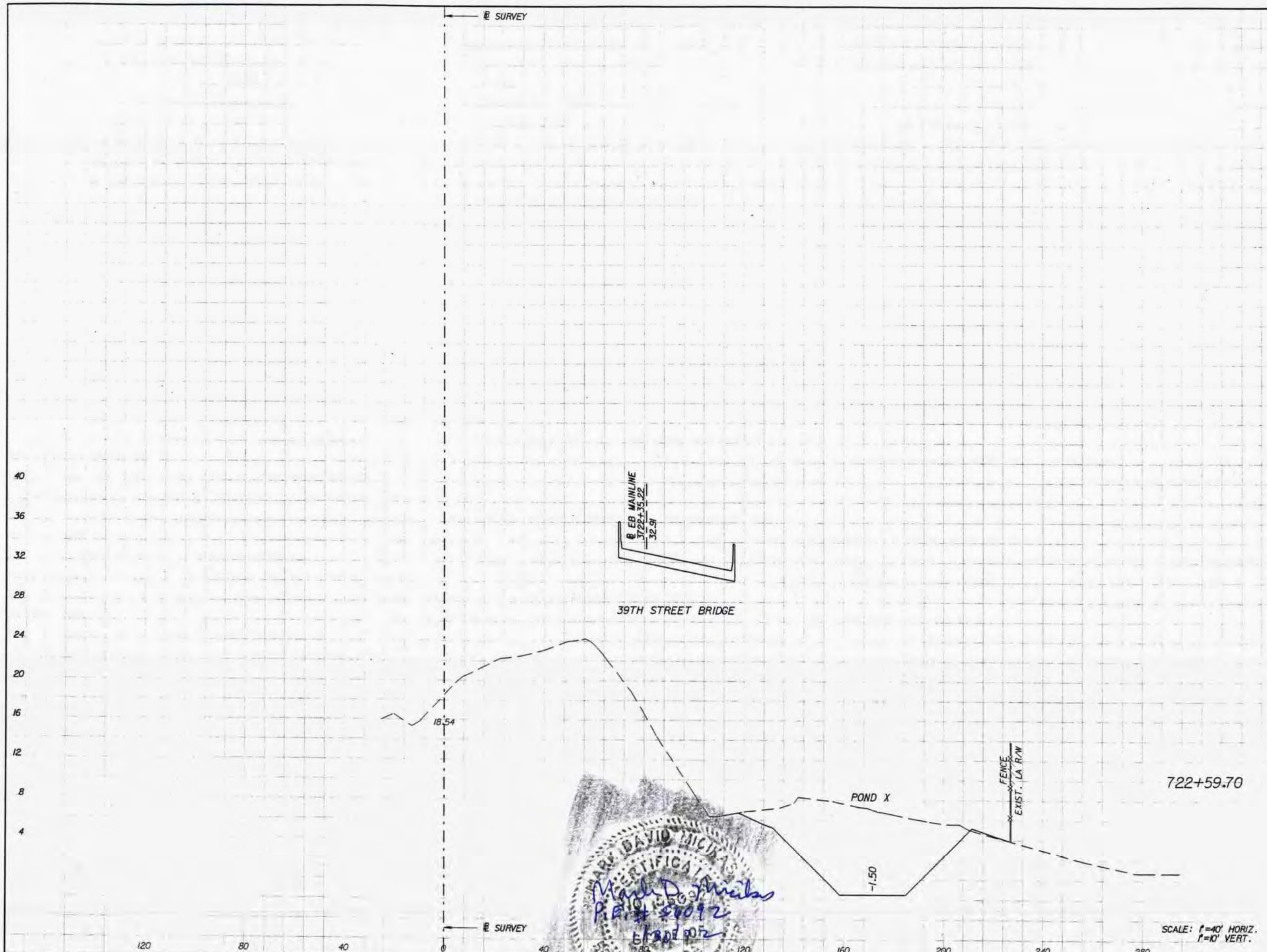
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 87



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

4319654001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RETAXS0112

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

Mark D Micikas , P.E. #56092

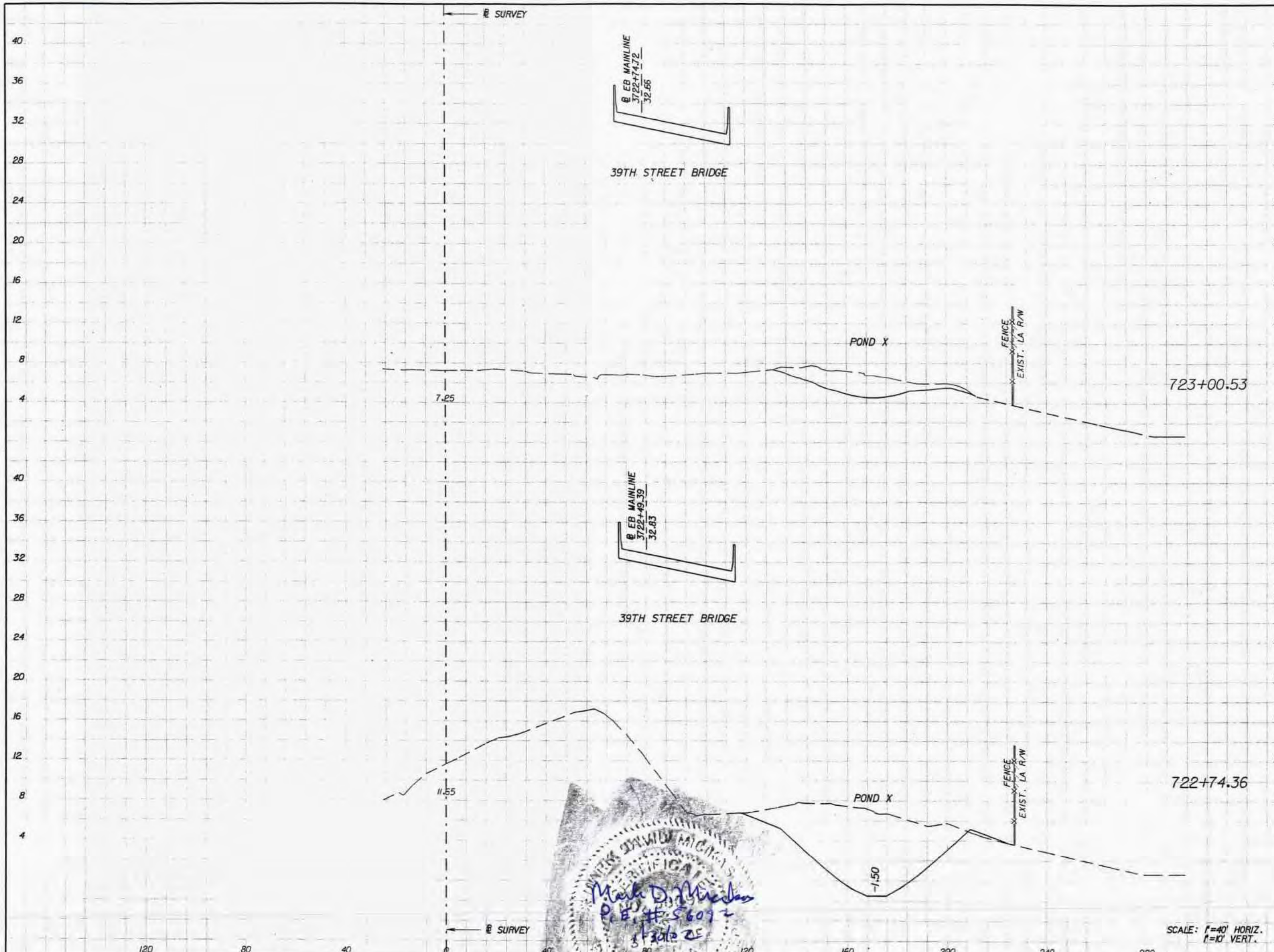
Mark D. Micikas P.E.# 56092 6/3/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 88



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

43196540001

Mark D. Miclkas
P.E. # 56092
1/30/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RETAXS0113

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768
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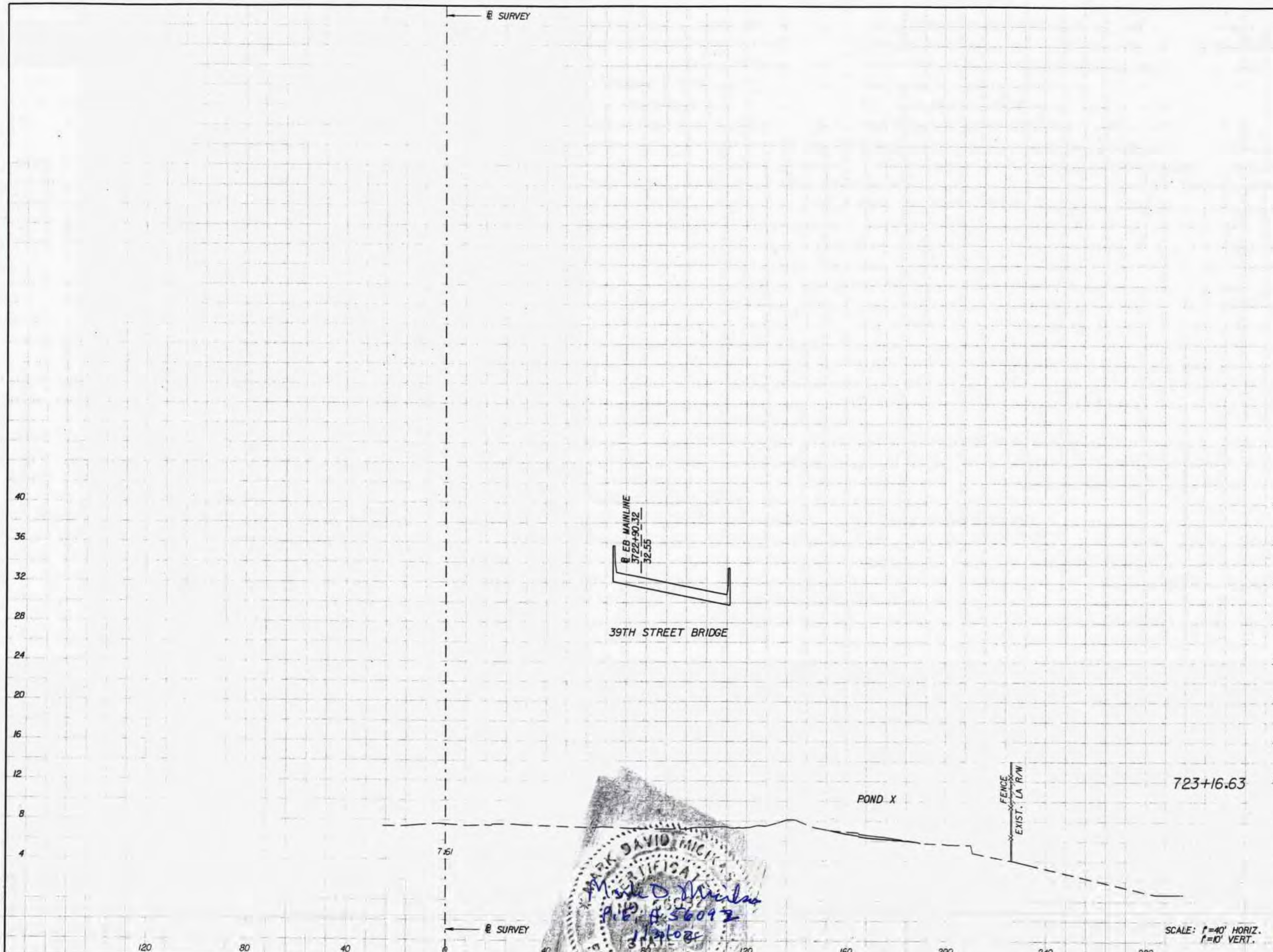
Mark D Miclkas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY POND X CROSS SECTIONS

SHEET NO. 89



Subsoil Exc.		Regular Exc.		Embk.	
A	V	A	V	A	V

4319654001

Southwest Florida Water Management District Received SEP 8 2002 BRO-TAMPA

MARK DAVID MICIKAS CERTIFICATE

Mark D. Micikas P.E. # 56092 3/14/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RETAXS0114

PBSJ

5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

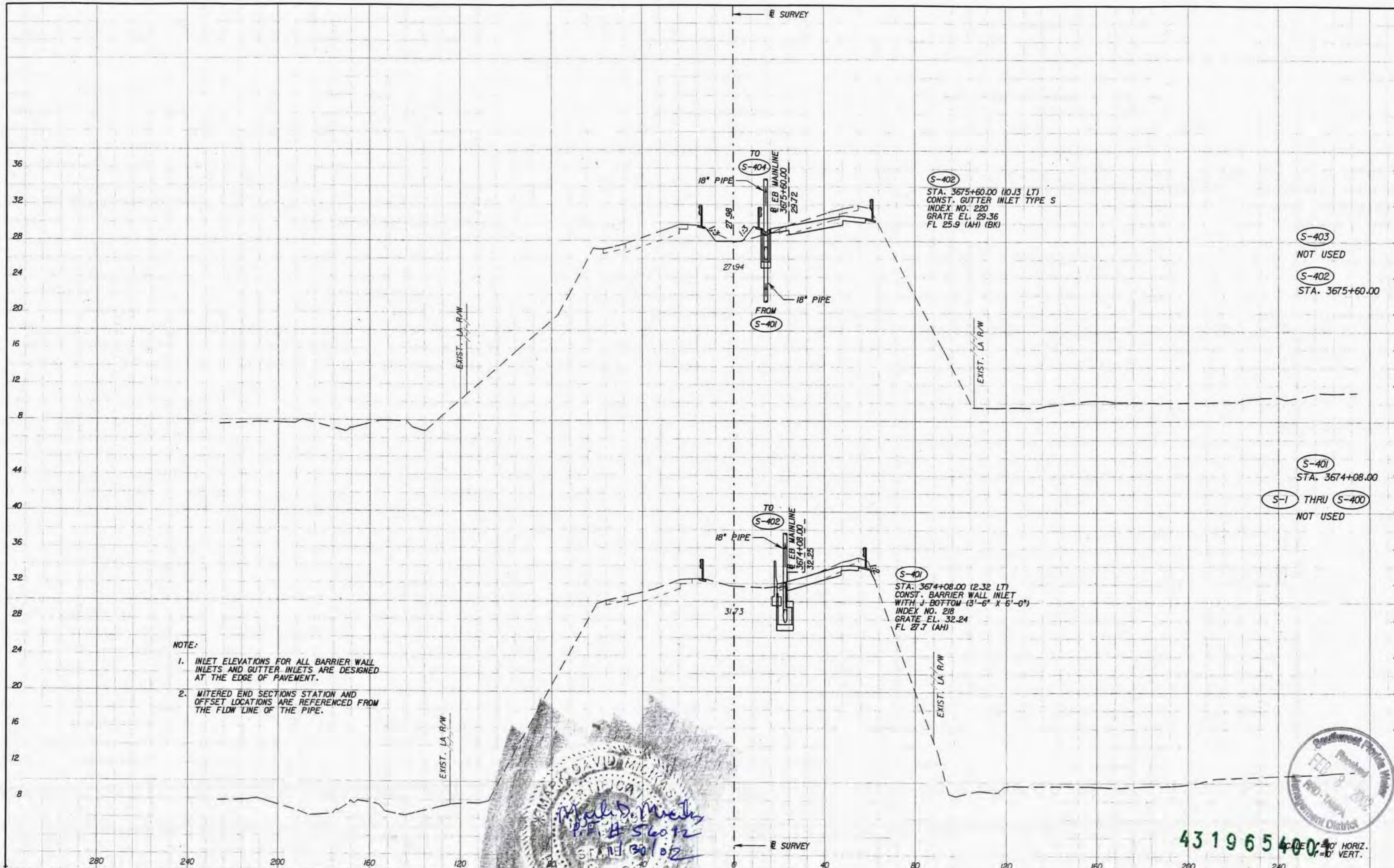
Mark D Micikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
POND X CROSS SECTIONS

SHEET NO. 90



NOTE:

1. INLET ELEVATIONS FOR ALL BARRIER WALL INLETS AND GUTTER INLETS ARE DESIGNED AT THE EDGE OF PAVEMENT.
2. MITERED END SECTIONS STATION AND OFFSET LOCATIONS ARE REFERENCED FROM THE FLOW LINE OF THE PIPE.

43196540001

Southwest Florida Water Management District
Received
FEB 8 2002
PRD-TAMPA

Mark D. Micikas
P.E. # 56092
11/30/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd01

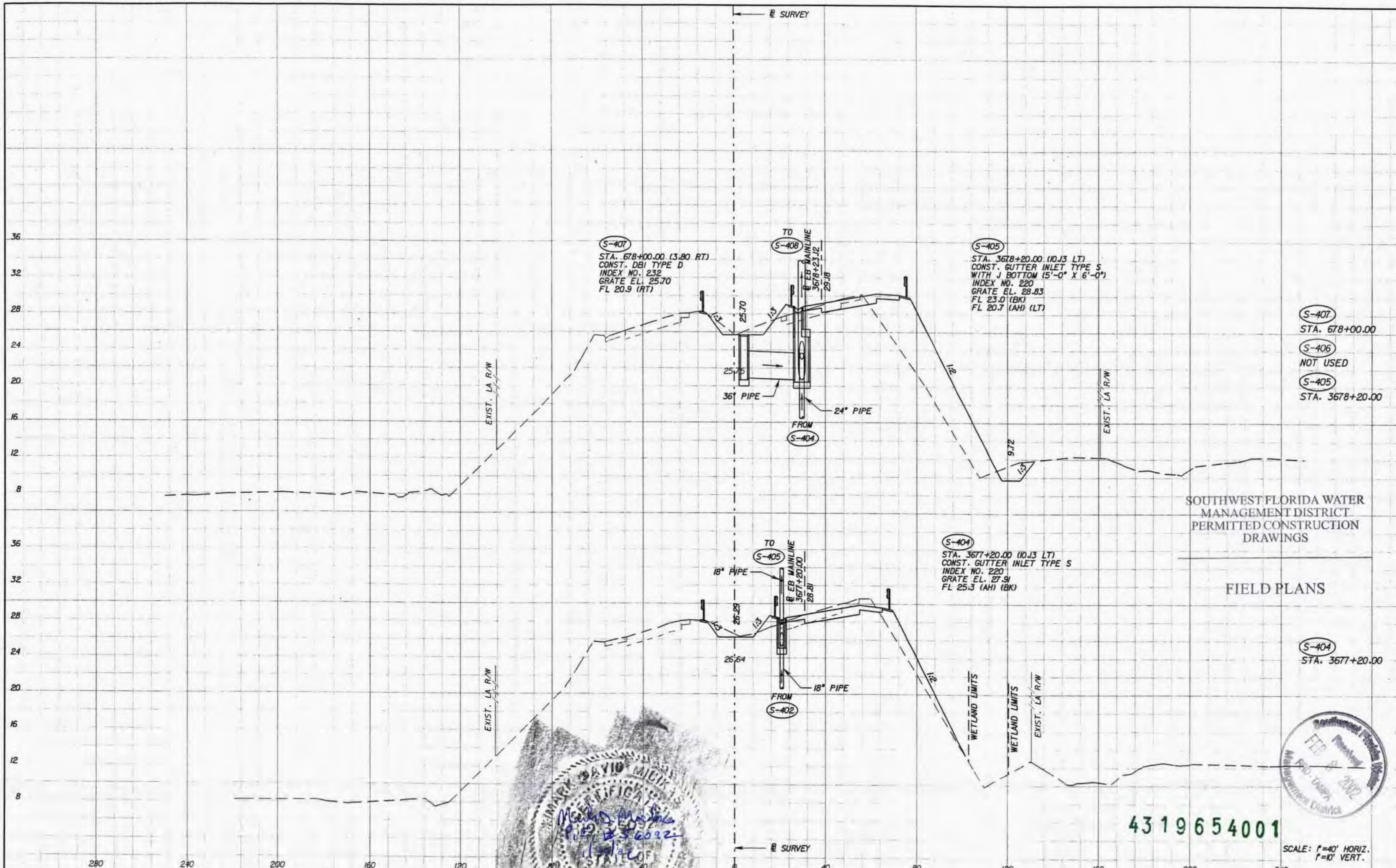
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 91



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

Southwest Florida Water Management District Received FEB 8 2002 PRD - TAMPA

4319654001

Mark David Mlcikas P.E. 56092

REVISIONS					
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Drstrd011

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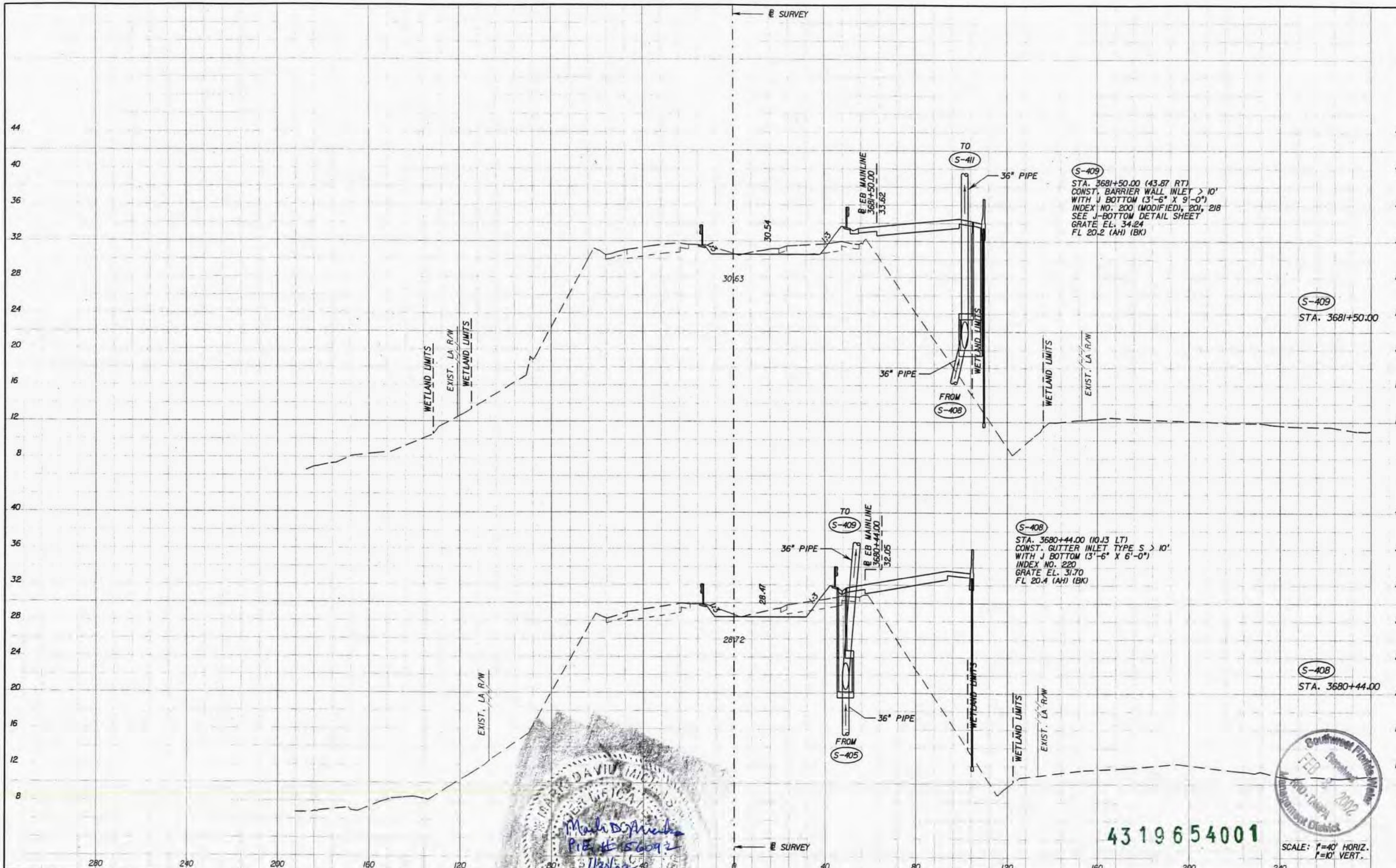
Mark D Mlcikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 92



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Southwest Florida Water Management District
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FEB 2002
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Mark D Micikas
P.E. # 56092
11/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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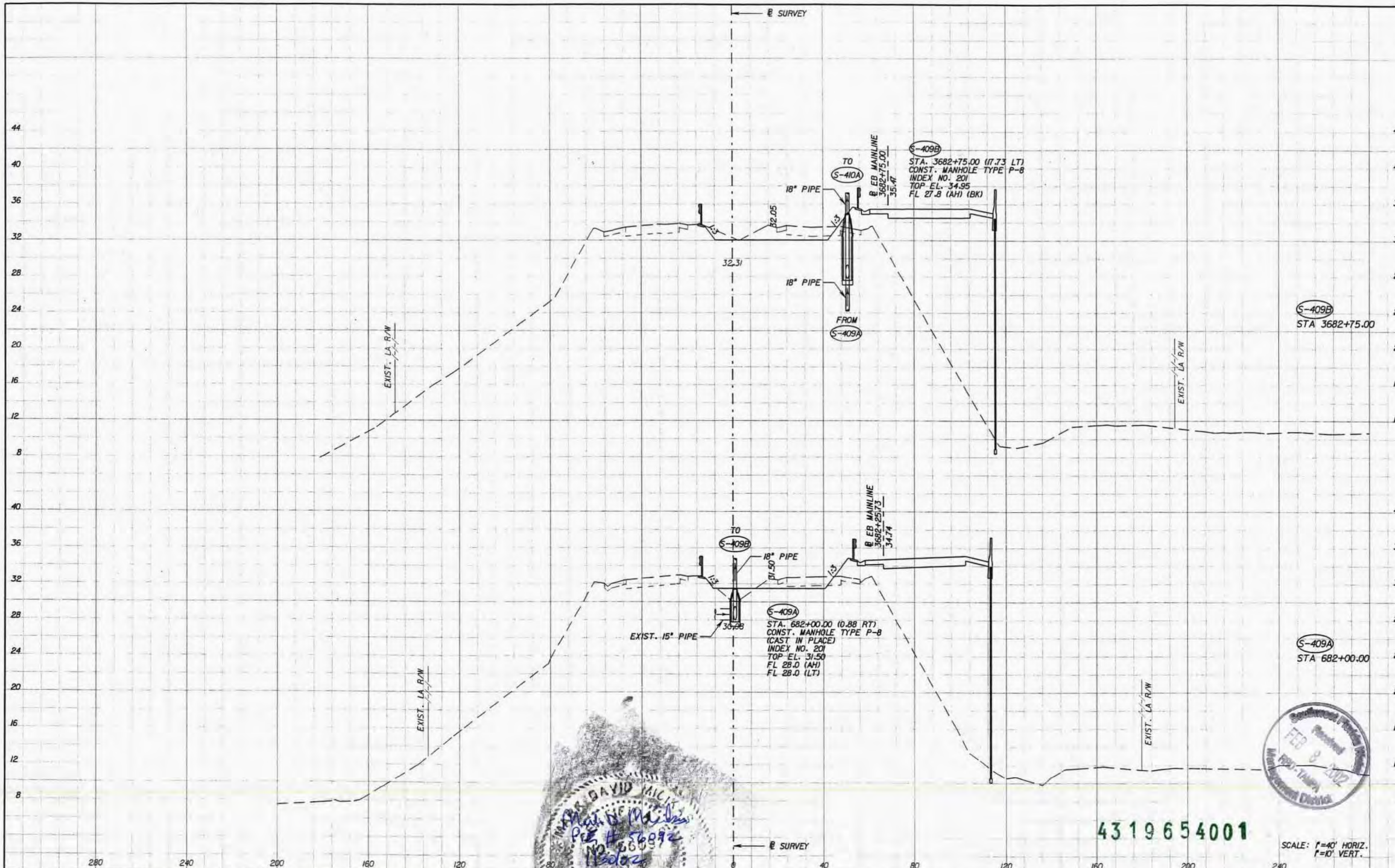
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 93



4319654001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
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Tampa, Florida 33607-1768
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Mark D Micikas, P.E. #56092

Mark D. Micikas
P.E. # 56092
1/30/02

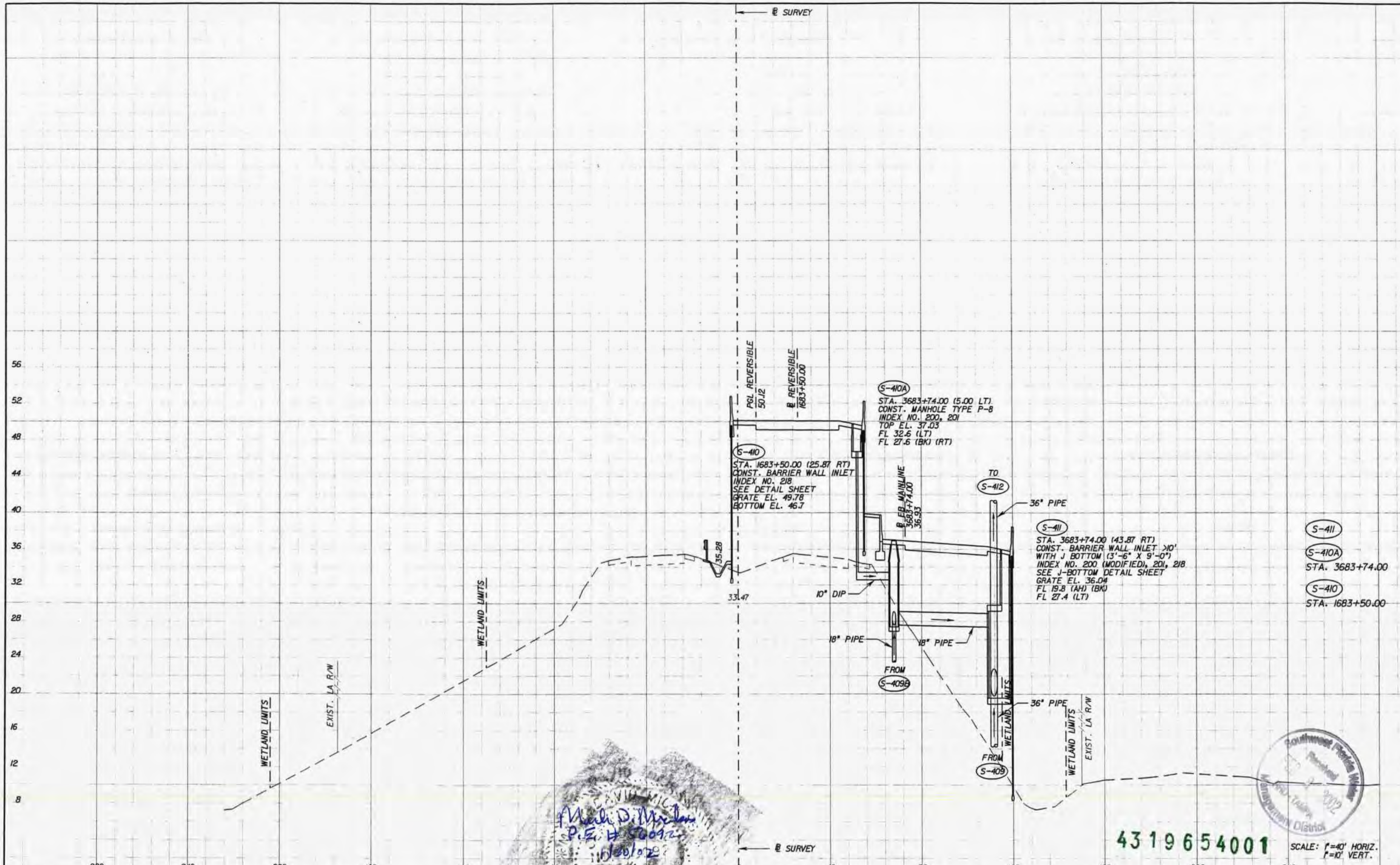
TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 94

Southwest Florida Water Management District
Received
FEB 8 2002
BRO-TAMPA



4319654001

Mark D. Mielkas P.E. # 56092 1/30/02

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd014

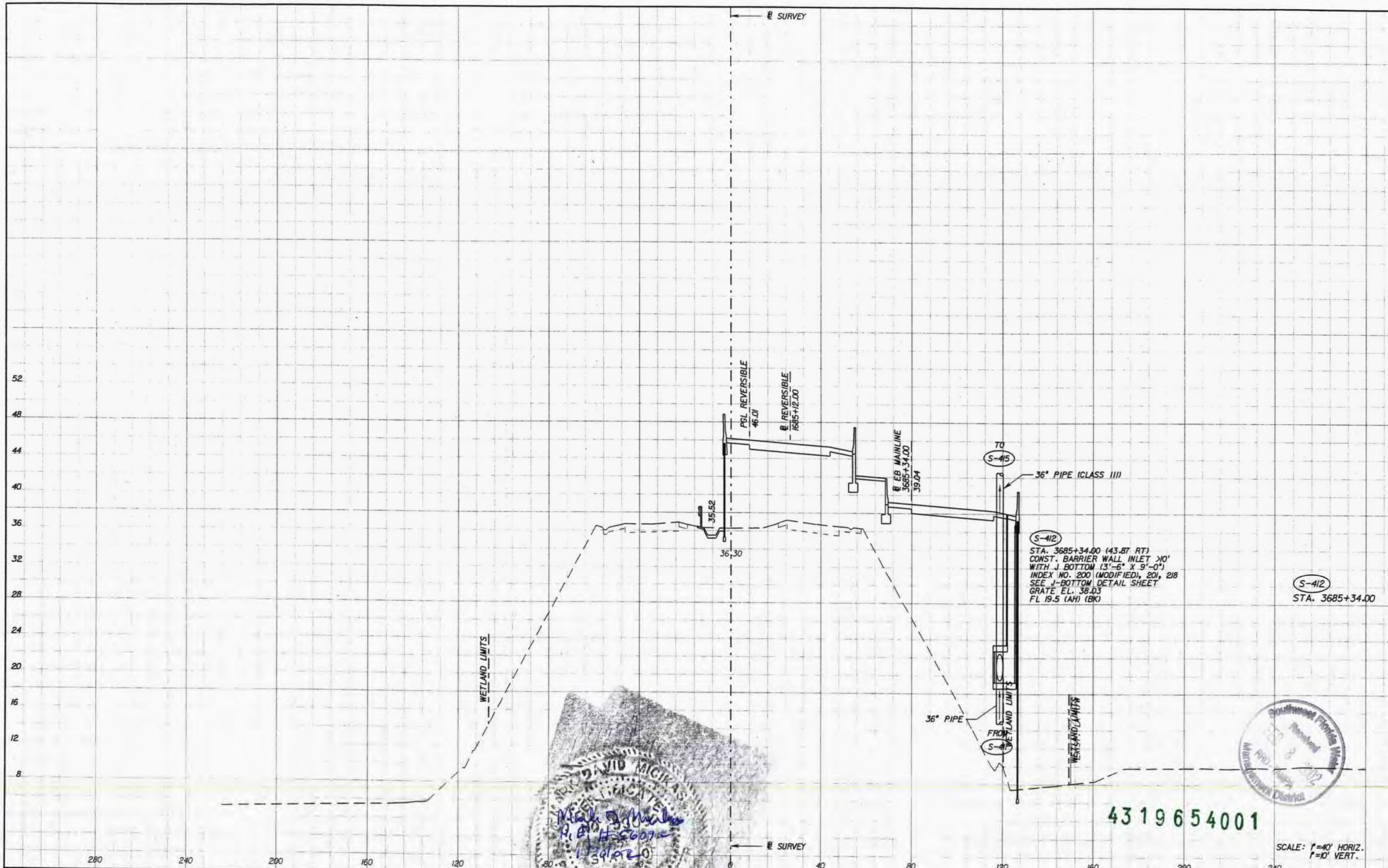
PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Mark D Mielkas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 95



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Southwest Florida Water Management District
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FEB 8 2002
PRO. Tampa

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
REVISIONS					Drstrd015

PBSJ
5300 West Cypress Street
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Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Micikas, P.E. #56092

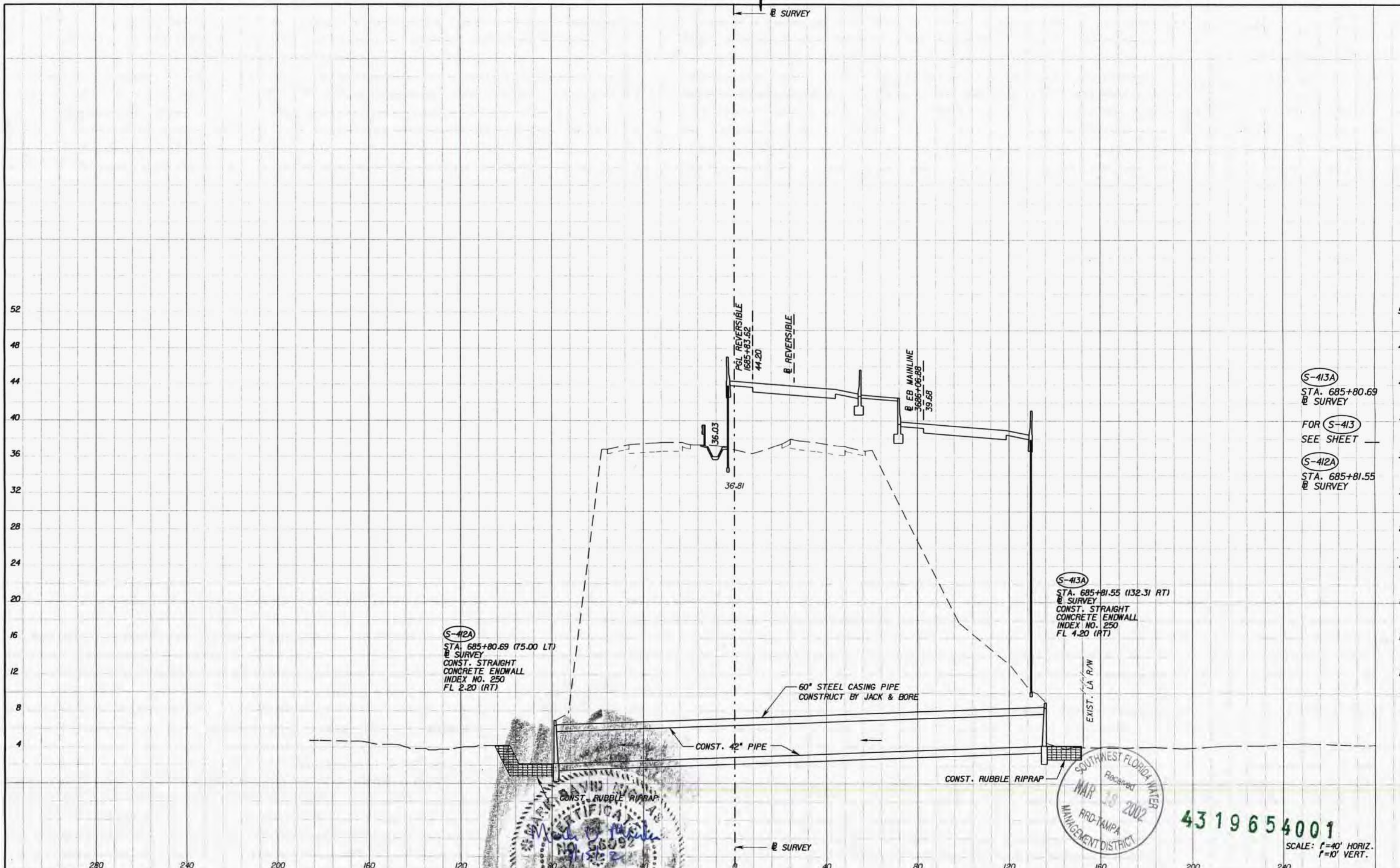
DAVID MICIKAS
CERTIFICATE
Mark D Micikas
P.E. #56092
1/31/02

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
96



15-MAR-2002 12:02

REVISIONS						Drstrd016
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

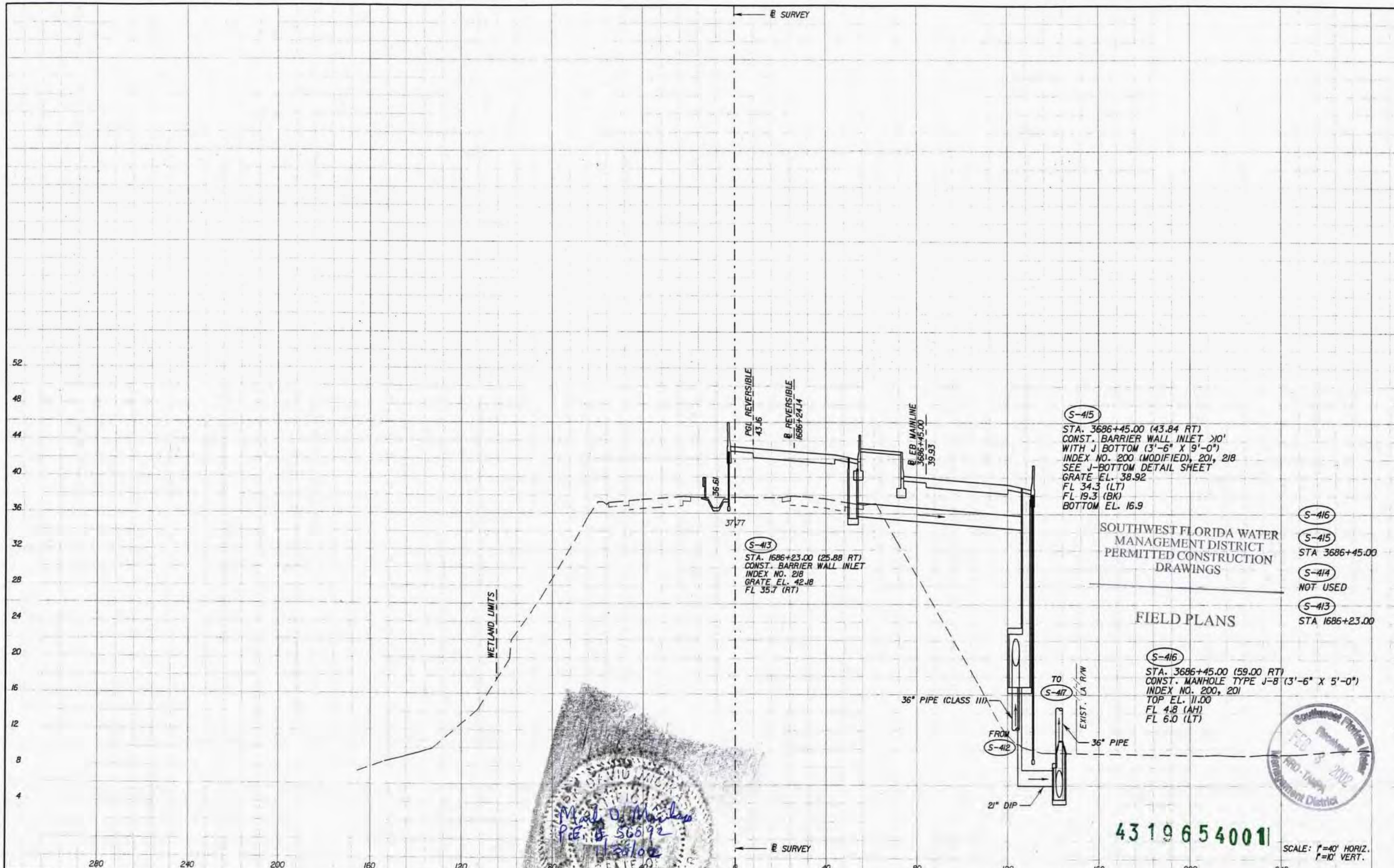
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
96A



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS

Southwest Florida Water Management District Received FEB 8 2002 PRD - TAMPA

43196540011

SCALE: 1"=40' HORIZ. 1"=10' VERT.

11-JAN-2002 10:50

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		REVISIONS			Drstrd016

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

Mark D Mickas, P.E. #56092

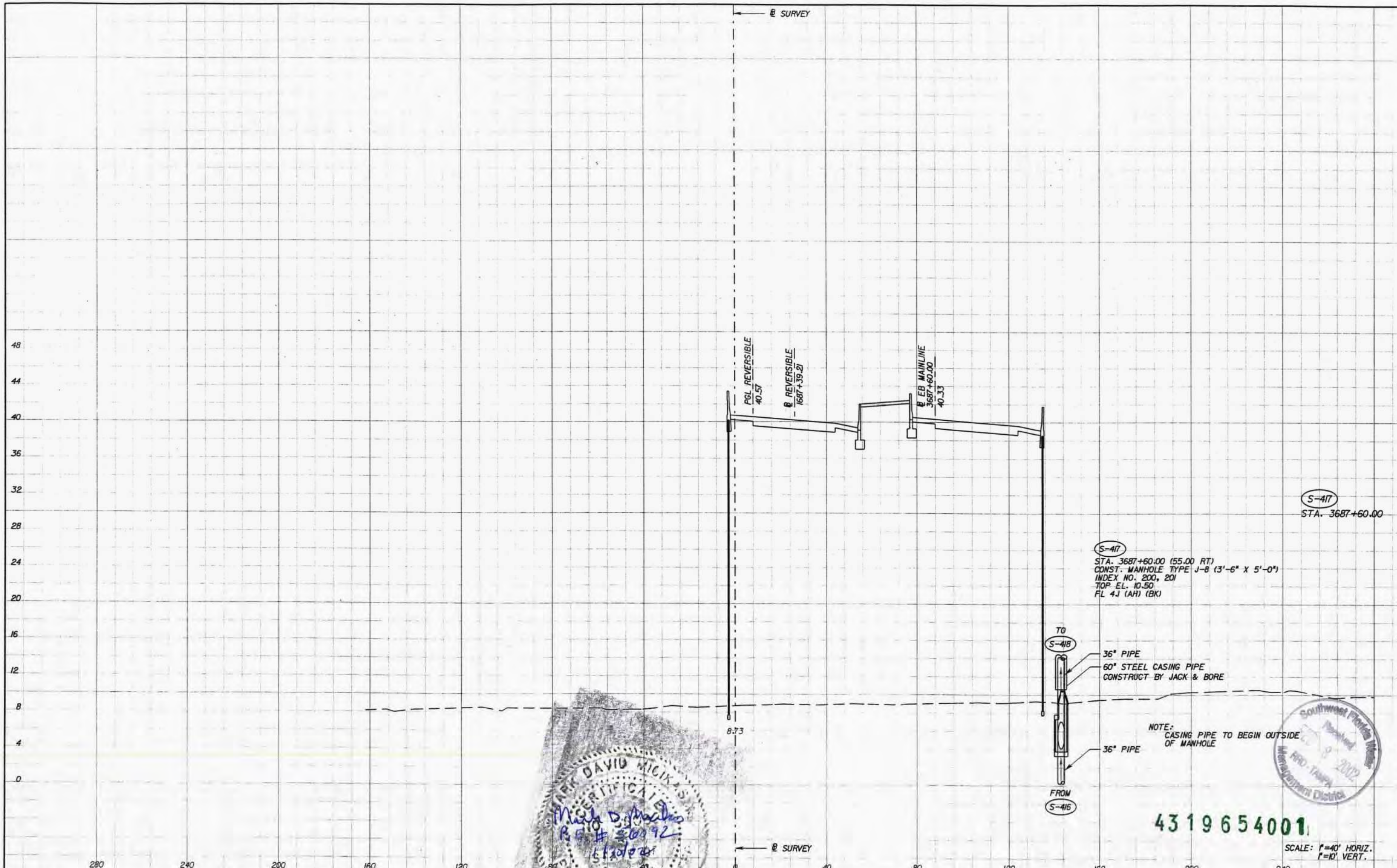
Mark D. Mickas P.E. # 56092 1/30/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 97



4319654001

Southwest Florida Water Management District Received 8 2002 BRO - TAMPA

MARK DAVID MICIKAS CERTIFICATE
Mark D. Micikas
P.E. # 56092
1/10/02

9-JAN-2002 10:50
N:\projects\51003\Drainage\Drainls\Drstrd0.dgn

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd017

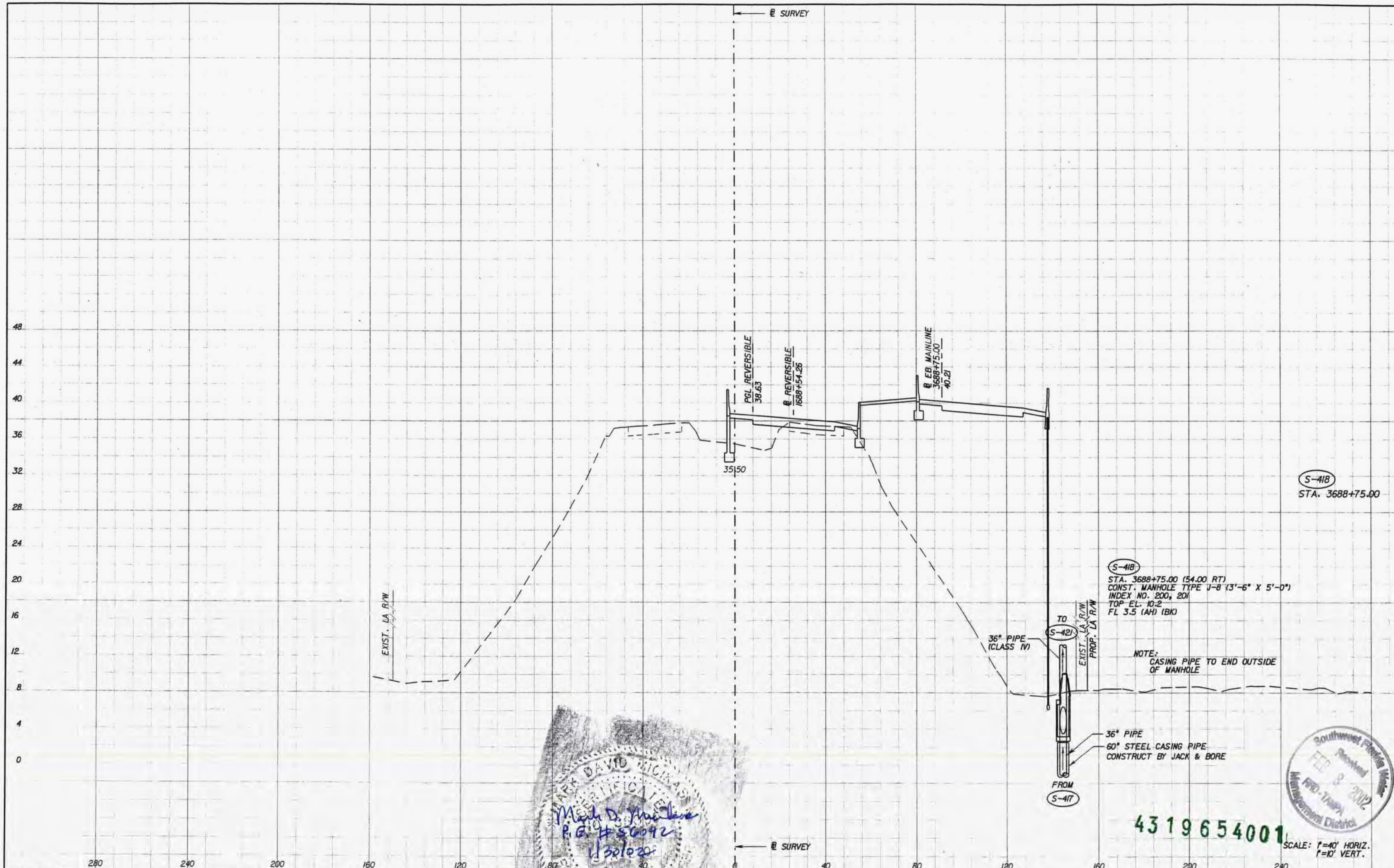
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Micikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
98



4319654001

Southwest Florida Water Management District
Received
FEB 8 2002
RFD-TAMPA

Mark D. Micikas
P.E. #56092
1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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Suite 300
Tampa, Florida 33607-1768
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Authorization No. 24

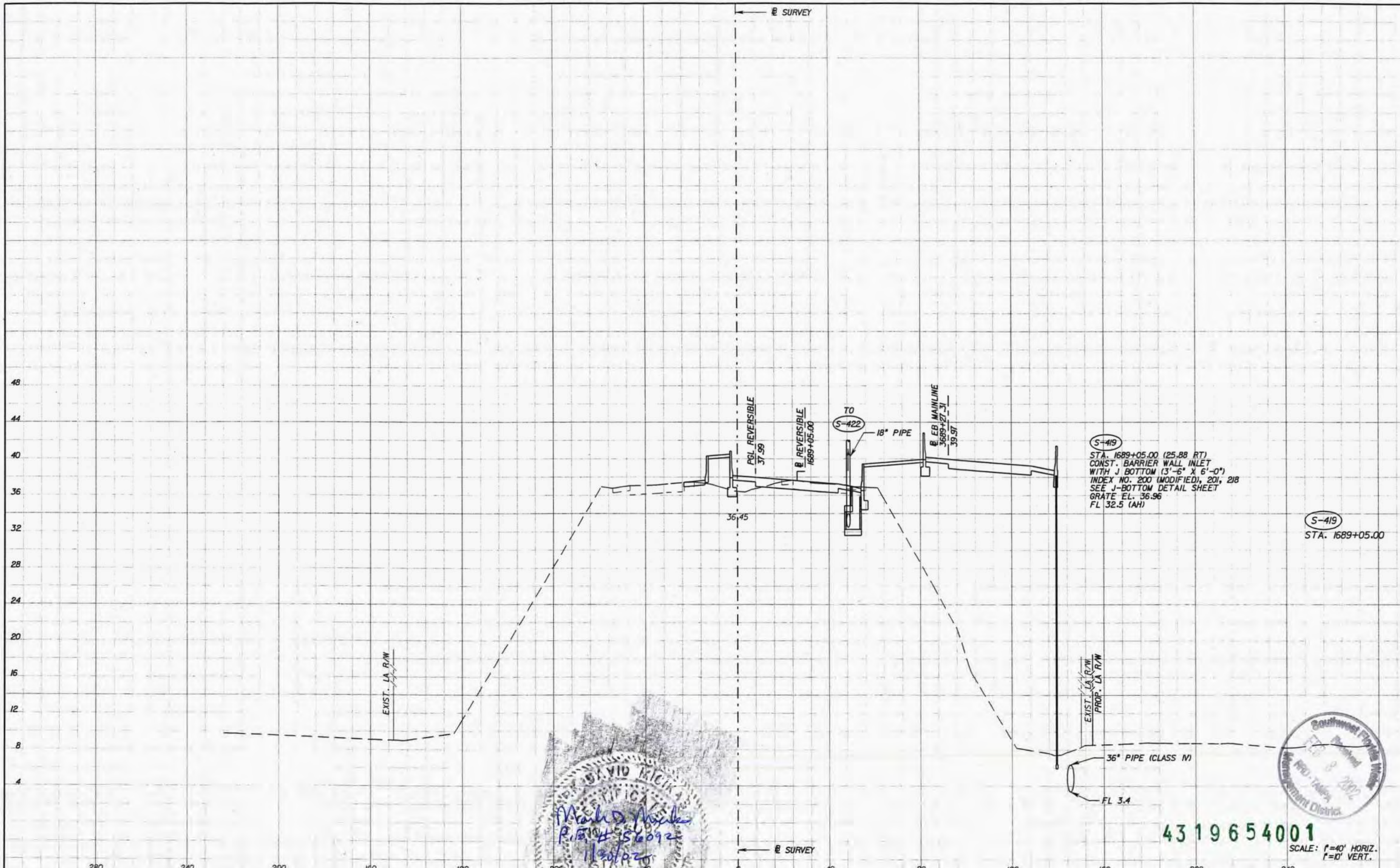
Mark D Micikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
99



Southwest Florida Water Management District
Received
FEB 8 2002
PRO - TAMPA

43 1 9 6 5 4 0 0 1

Mark D Micikas
P.E. # 56092
1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
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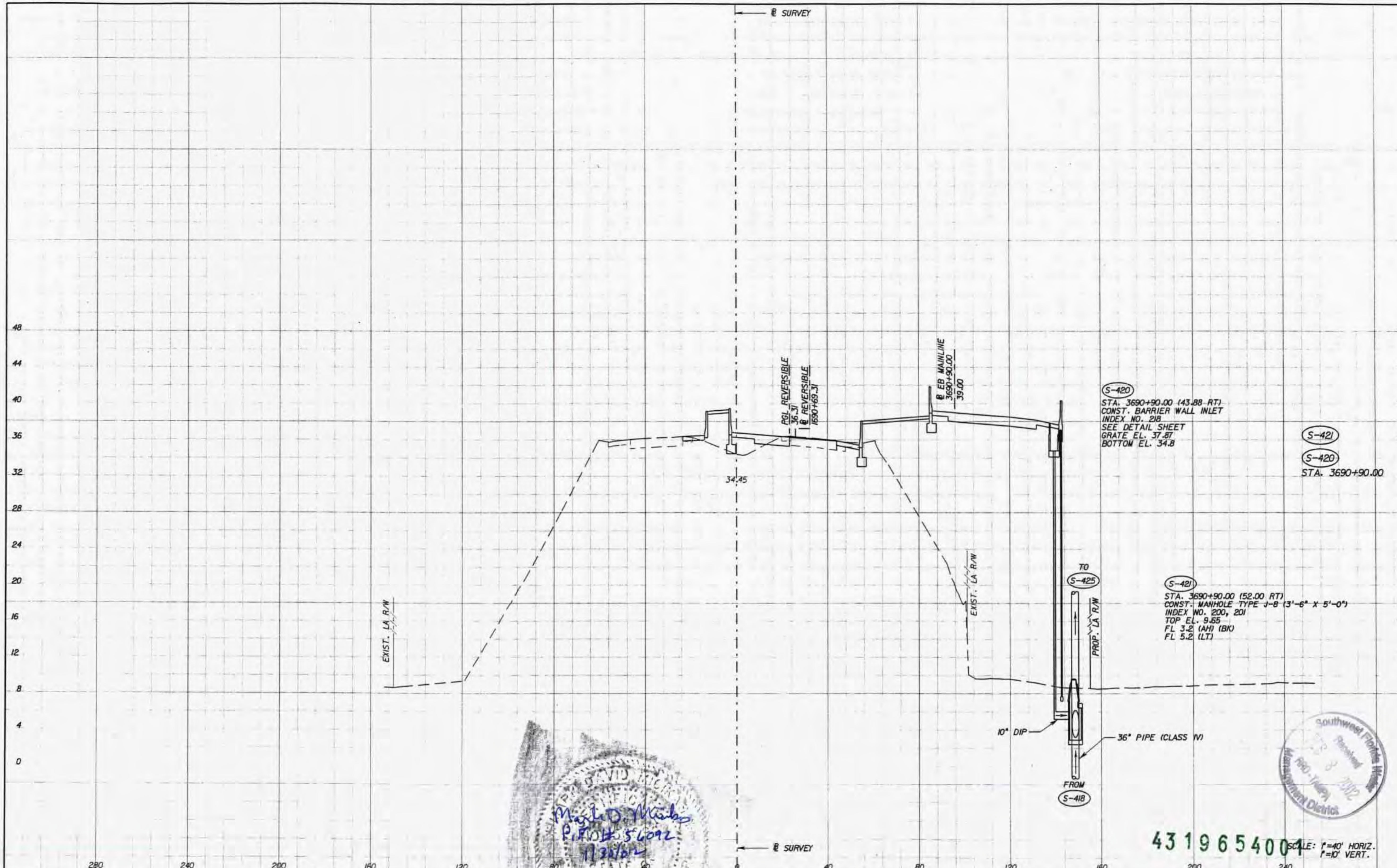
PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 100



Southwest Florida Water Management District Received FEB 8 2002 RRD - Tampa

4319654004

Mark D. Micikas P.E.# 56092 11/30/01

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DrstrdO110

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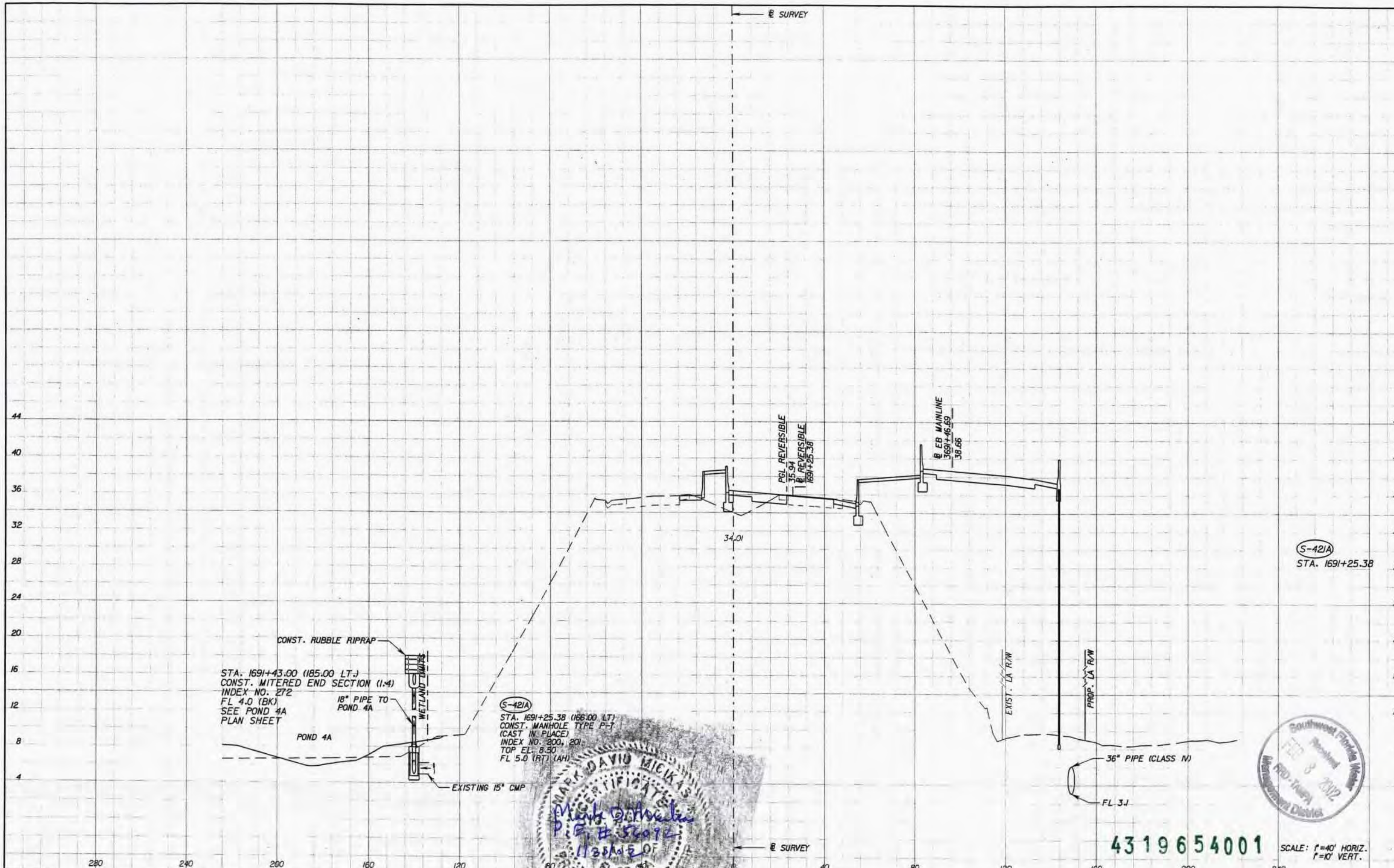
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 101



4319654001

Southwest Florida Water Management District
Received
FEB 8 2002
PRD-TAMPA

MARK DAVID MICIKAS
CERTIFICATE
STATE OF FLORIDA

Mark D Micikas
P.E. # 56092
1/30/02

REVISIONS						DrstrdOIII
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

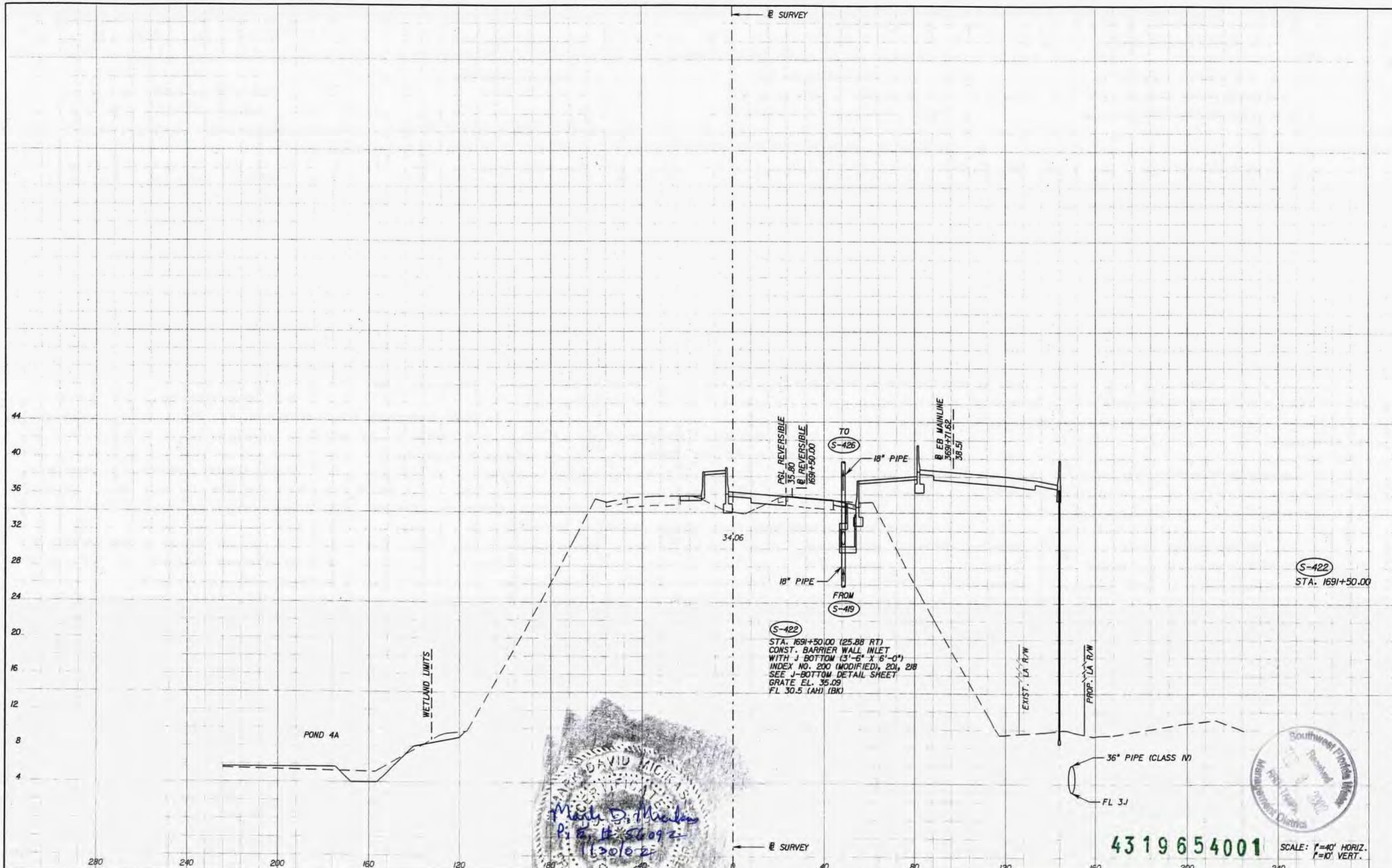
Mark D Micikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 102



4319654001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0112

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768. FBPR Certificate of Authorization No. 24

Mark D Micikas, P.E. #56092

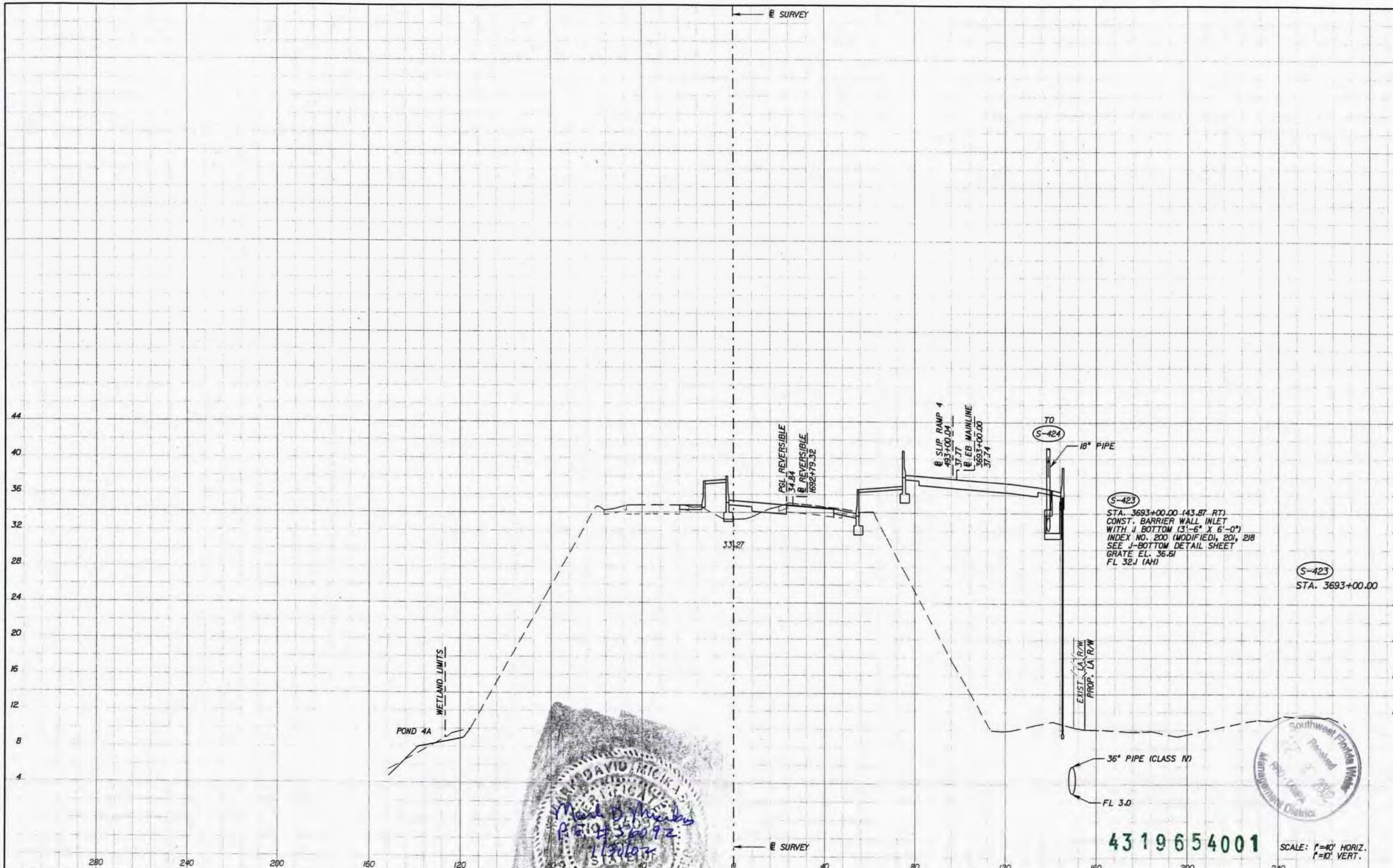
Mark D. Micikas P.E. # 56092 11/30/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 103



4319654001

SCALE: 1"=40' HORIZ. 1"=10' VERT.

Southwest Florida Water Management District Received

Mark D. Micikas P.E. #56092 1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		REVISIONS			Drstrd0113

PBS&J 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

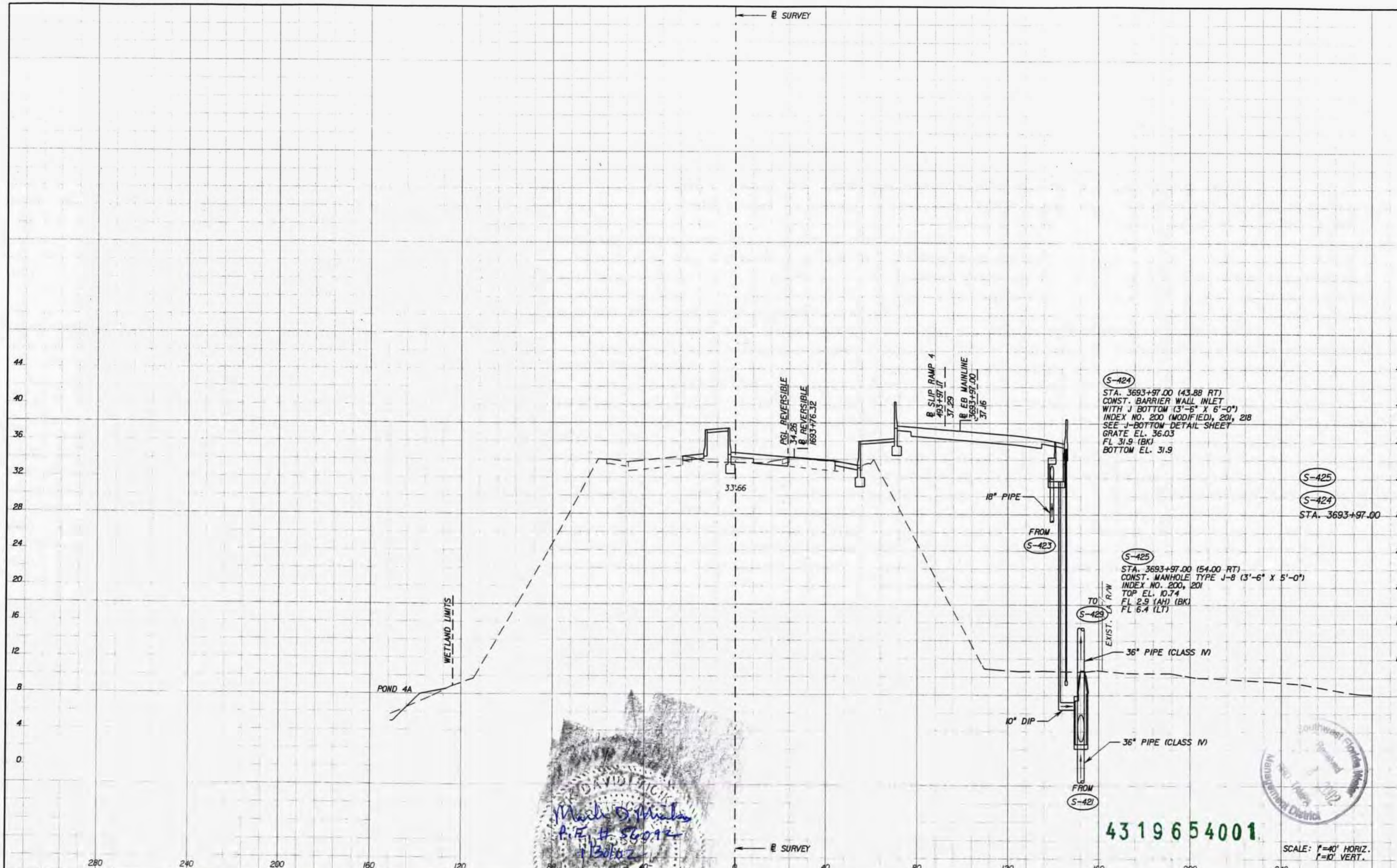
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 104



4319654001

SCALE: 1"=40' HORIZ. 1"=10' VERT.

Southwest Florida Water Management District Received 2002

Mark D. Micikas P.E. # 56092 1/30/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0114

PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24

Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 105

Mark D. Micikas P.E. # 56092 1/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		REVISIONS			Drstrd0115

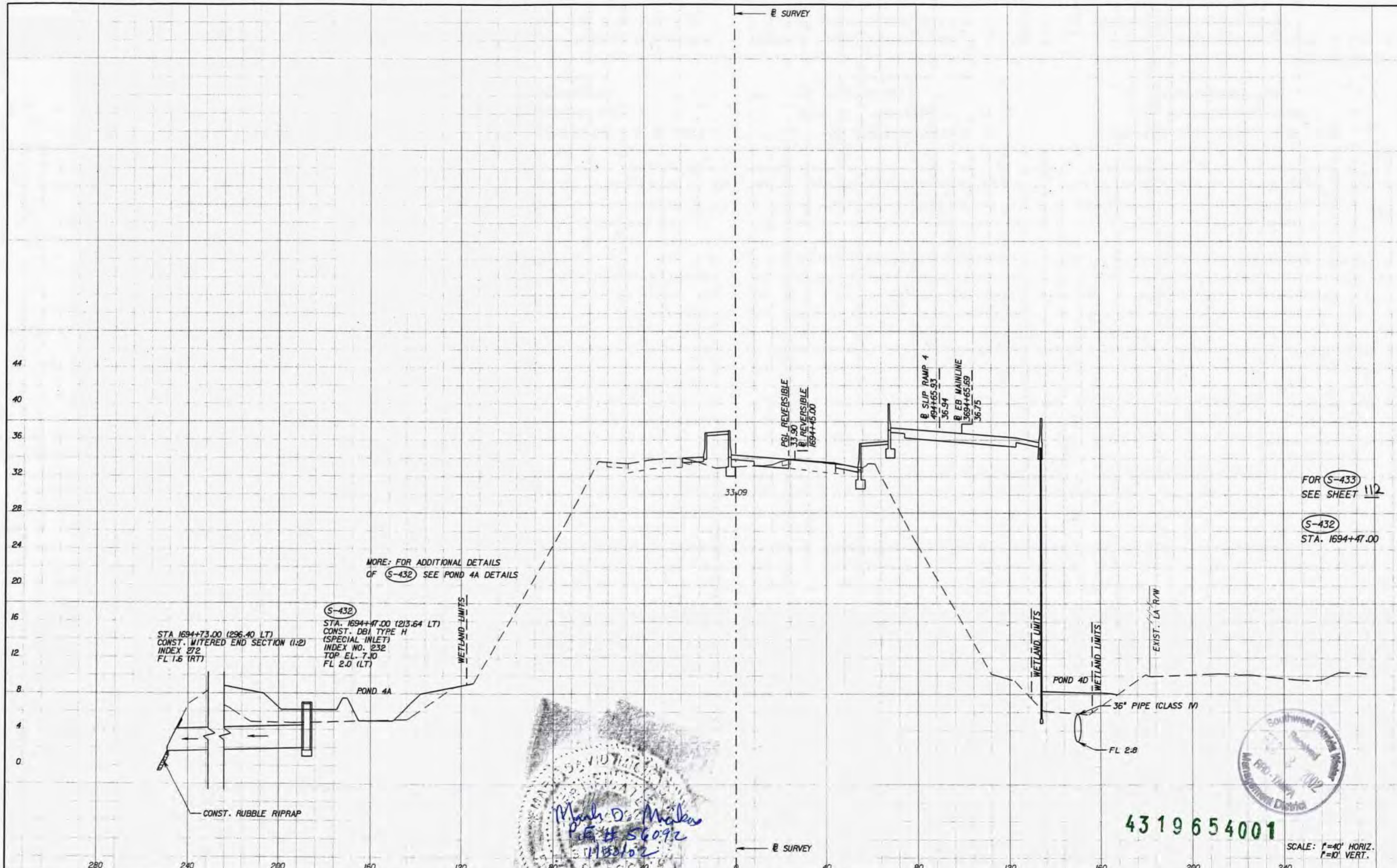
PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Mark D. Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 106



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

DrstrdO116

Mark D. Mickas
P.E. # 56092
1/30/02

PBSJ 5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
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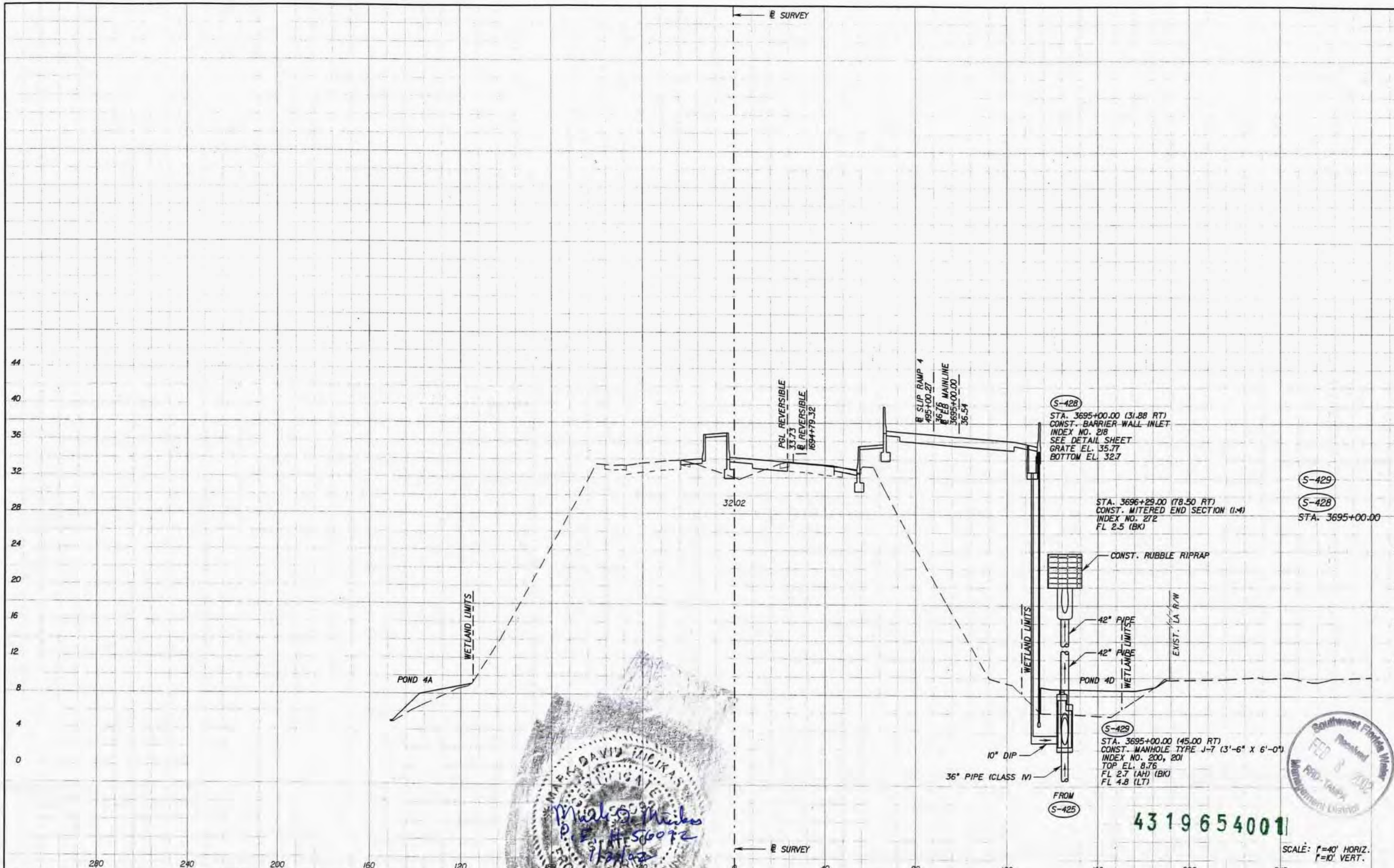
Authorization No. 24
Mark D Mickas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
107



4319654001

Southwest Florida Water Management District Received FEB 8 2002 RRD-TAMPA

Mark D. Miclkas P.E. #56092 1/31/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		REVISIONS			Drstrd0117

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TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

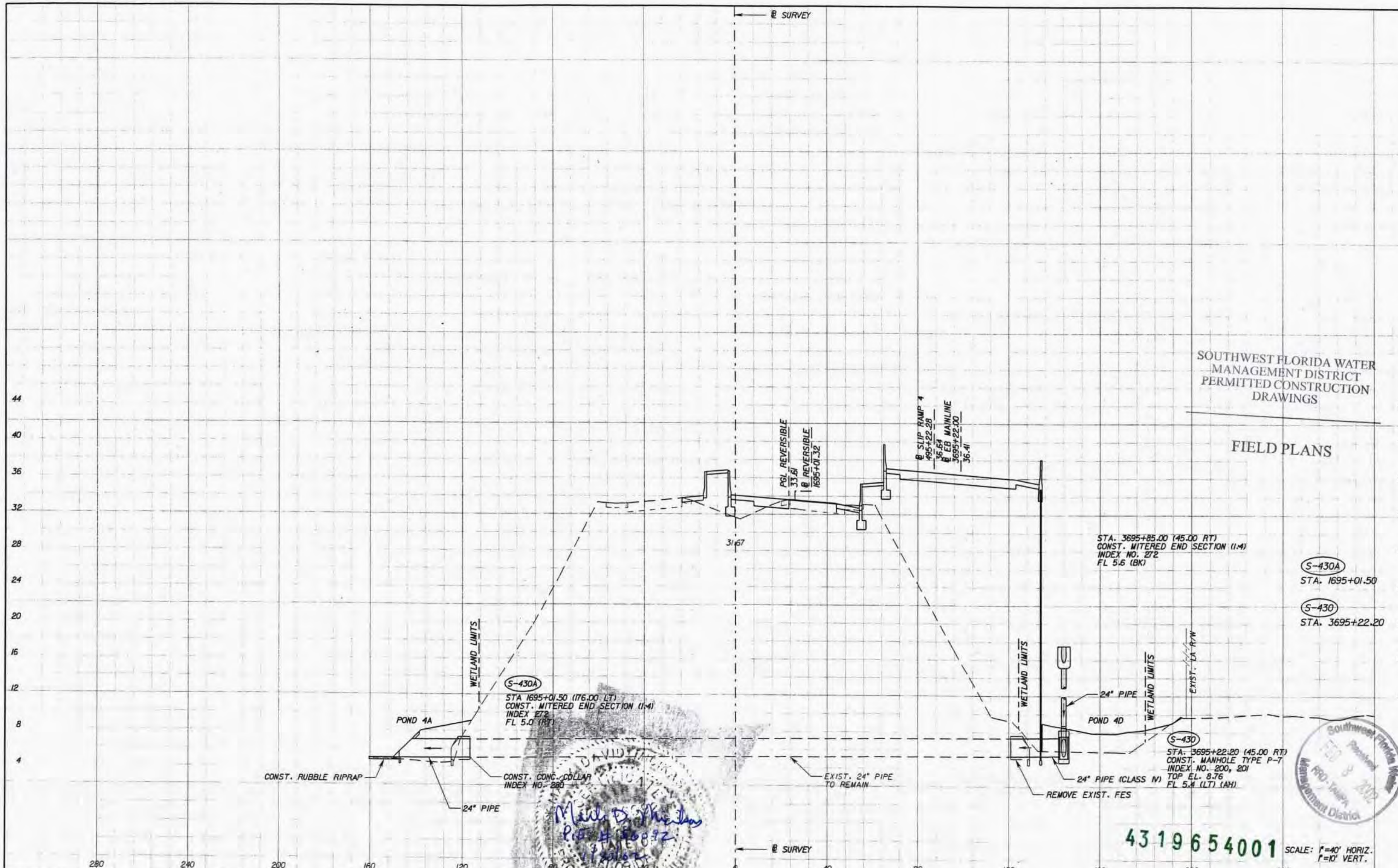
ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 108

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
PERMITTED CONSTRUCTION DRAWINGS

FIELD PLANS



S-430A
STA. 1695+01.50

S-430
STA. 3695+22.20

Southwest Florida Water Management District
Received
FEB 8 2002
BRD-TAMPA

4319654001

SCALE: 1"=40' HORIZ.
1"=10' VERT.

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd01l8

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Micikas , P.E. #56092

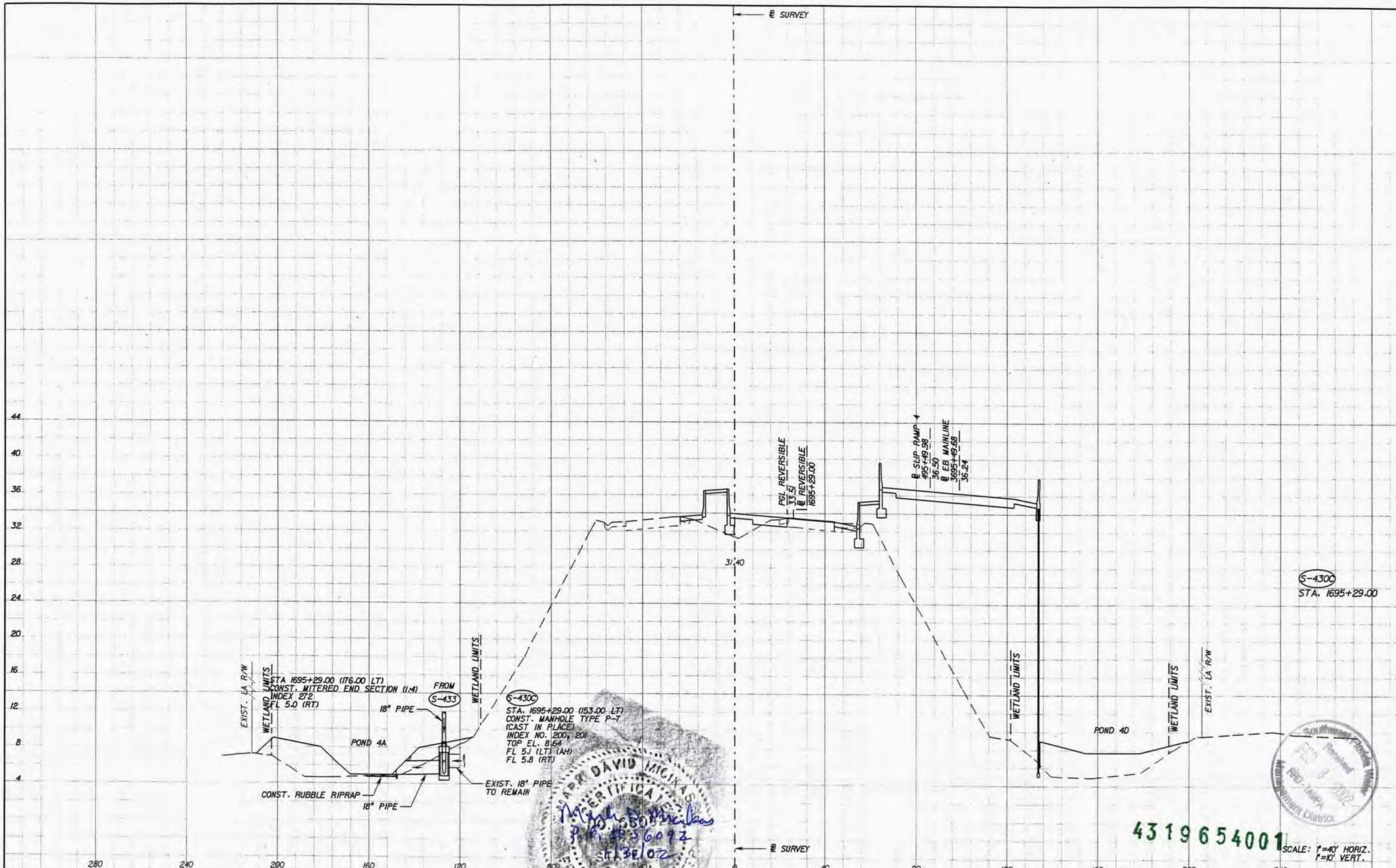
Mark D. Micikas
P.E. # 56092
1/31/2002

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
109



4319654001

Southwest Florida Water Management District Received FEB 8 2002 BRD - TAMPA

Mark D. Miclkas P.E. #56092 4/30/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		REVISIONS			Drstrd0119

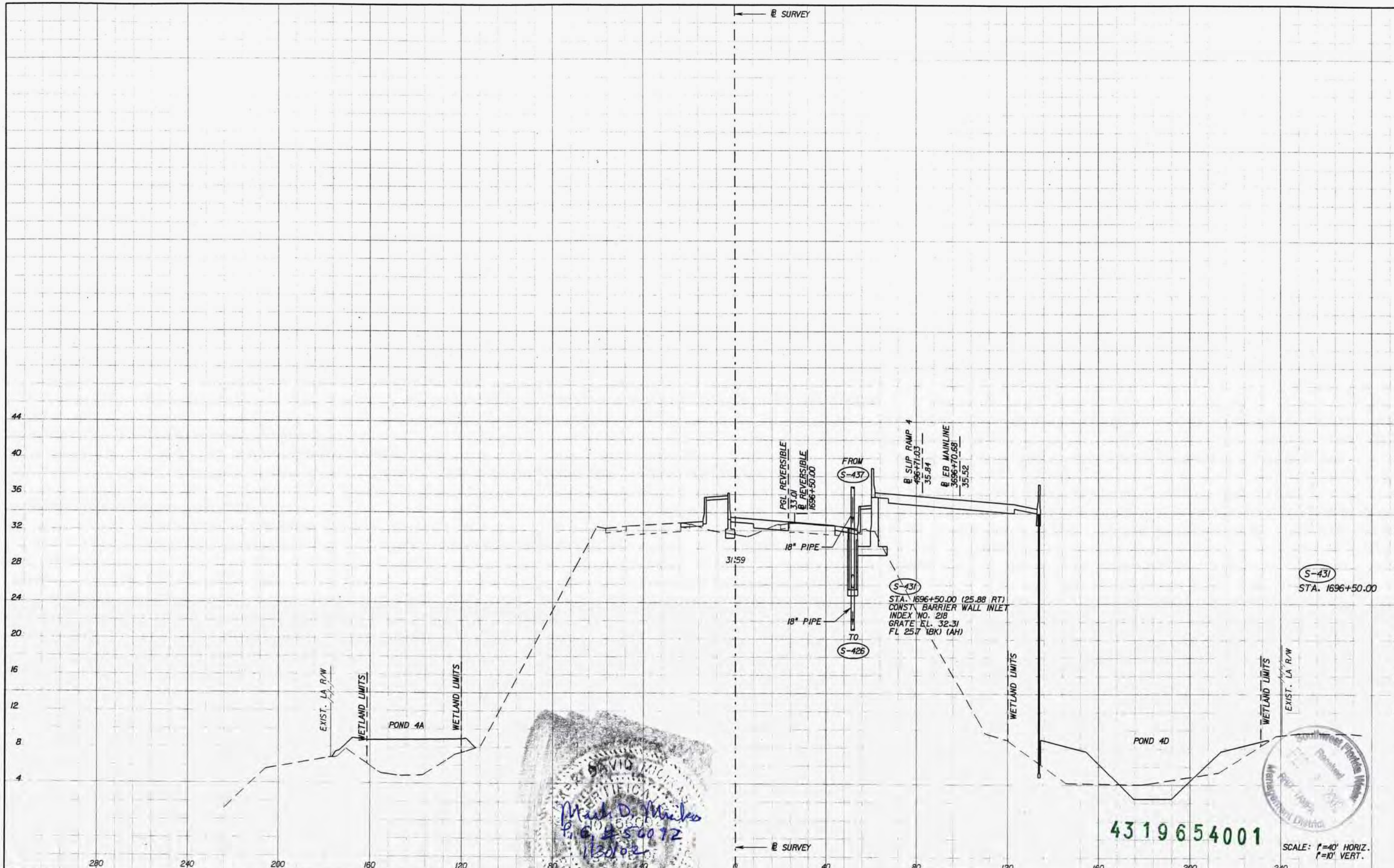
PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768. FBPR Certificate of Authorization No. 24. Mark D. Miclkas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 110



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
REVISIONS					Drstrd0120

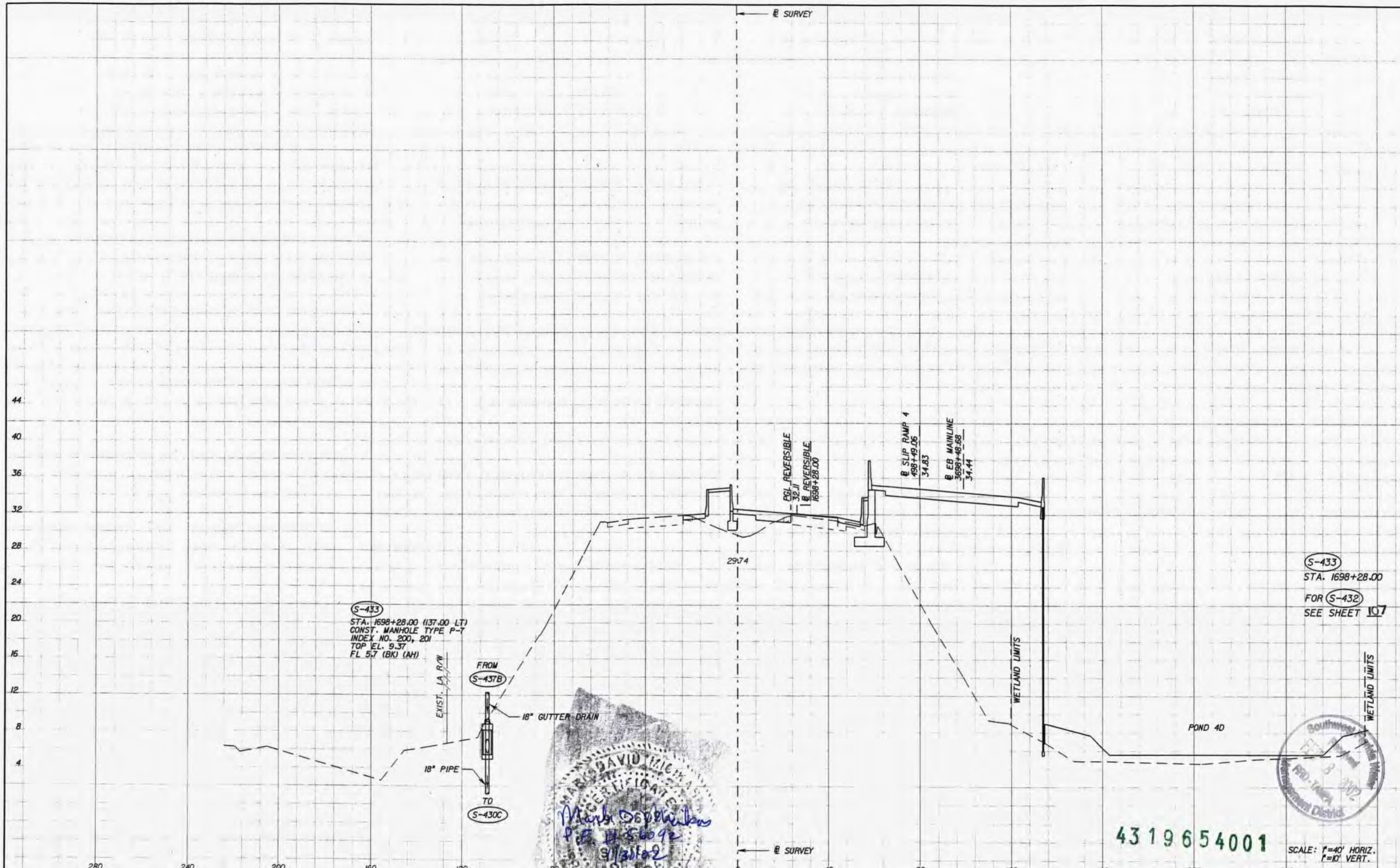
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Miclkas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 111



REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	Drstrd0121

PBS&J
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Mickas, P.E. #56092

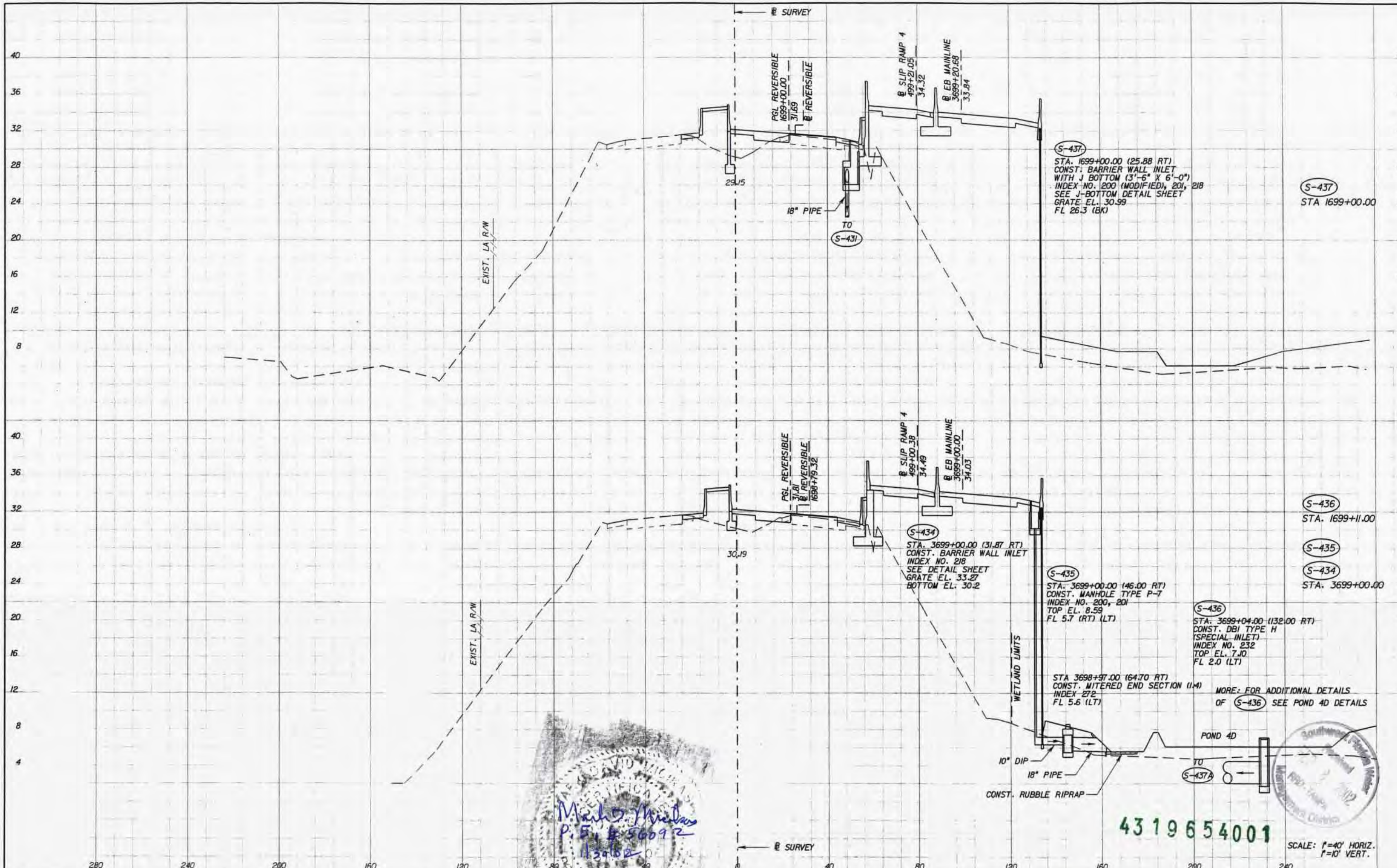
Mark D. Mickas
P.E. #56092
1/30/02

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
112



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
		REVISIONS			Drstrd0122

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Mialkos , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
113

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS — Drstrd0123

PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

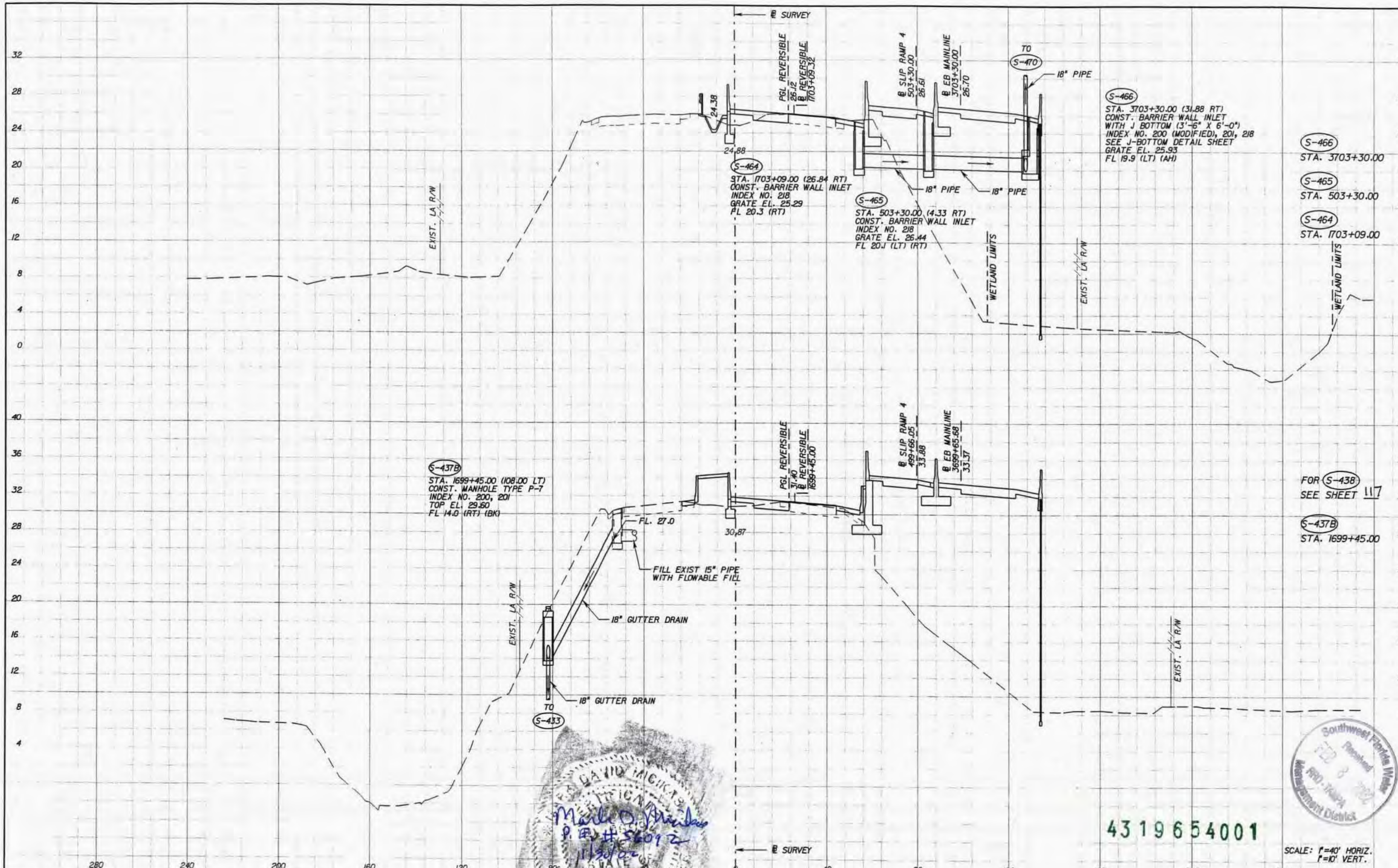
Mark D. Micikas
P.E. # 56092
1/30/2002

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 114



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

1-JAN-2002 10:51 … Drstrd0124

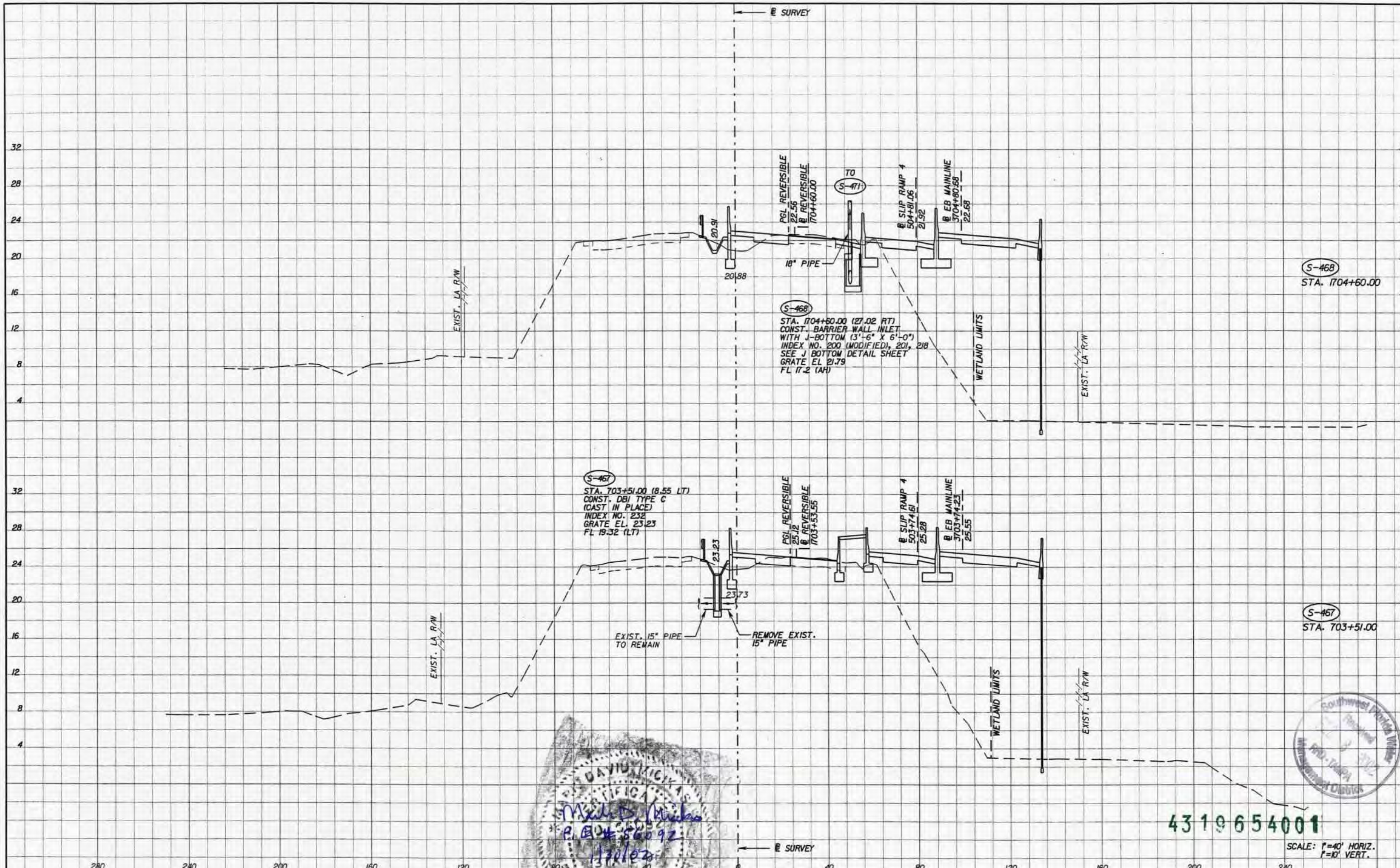
PBS&J 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 115



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

25-JAN-2002 08:58

Drstrd0125

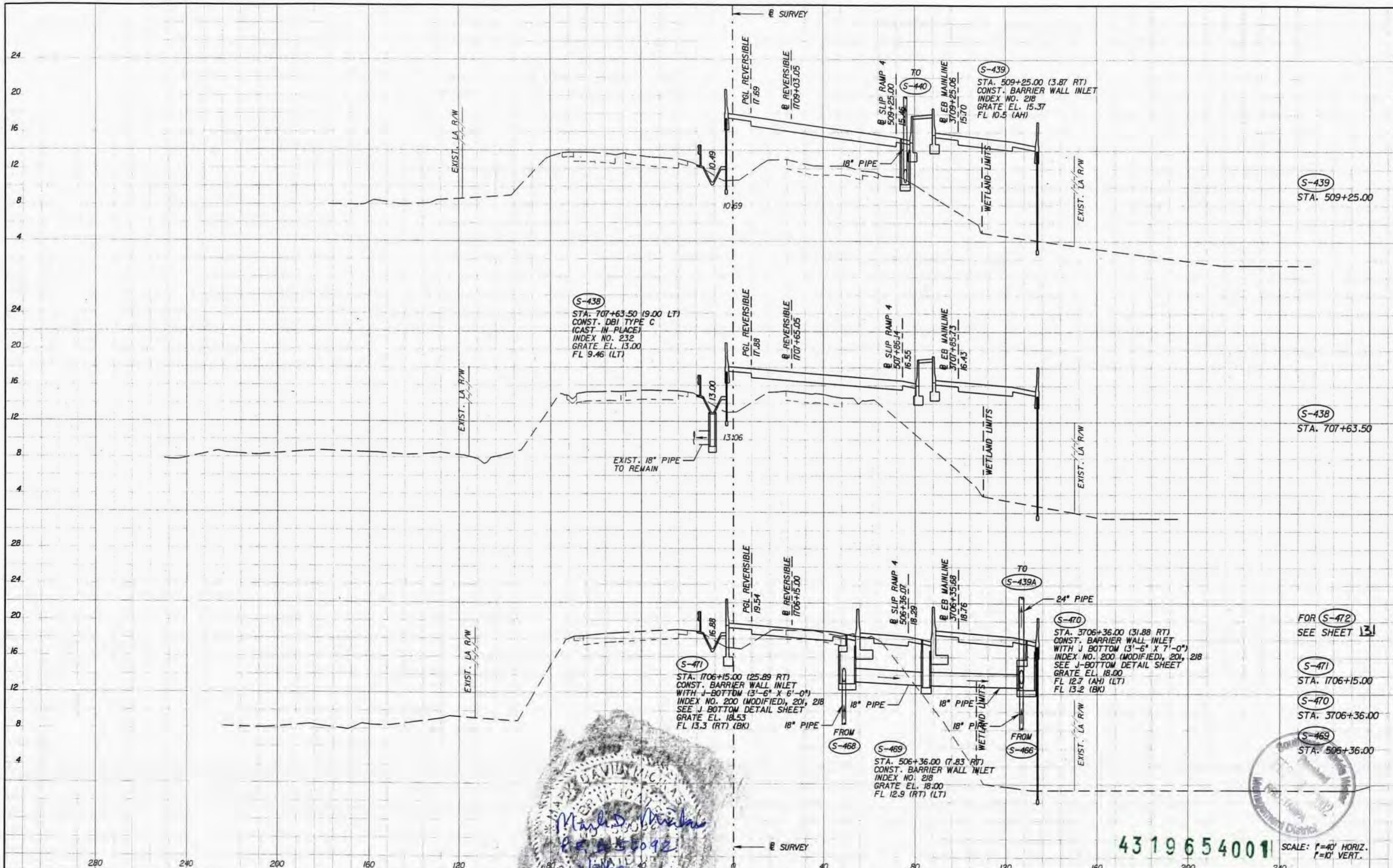
PBSJ
5300 West Cypress Street
Suite 380
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 116



4319654001

DATE	BY	REVISIONS DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0126

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24

Mark D Micikas, P.E. #56092

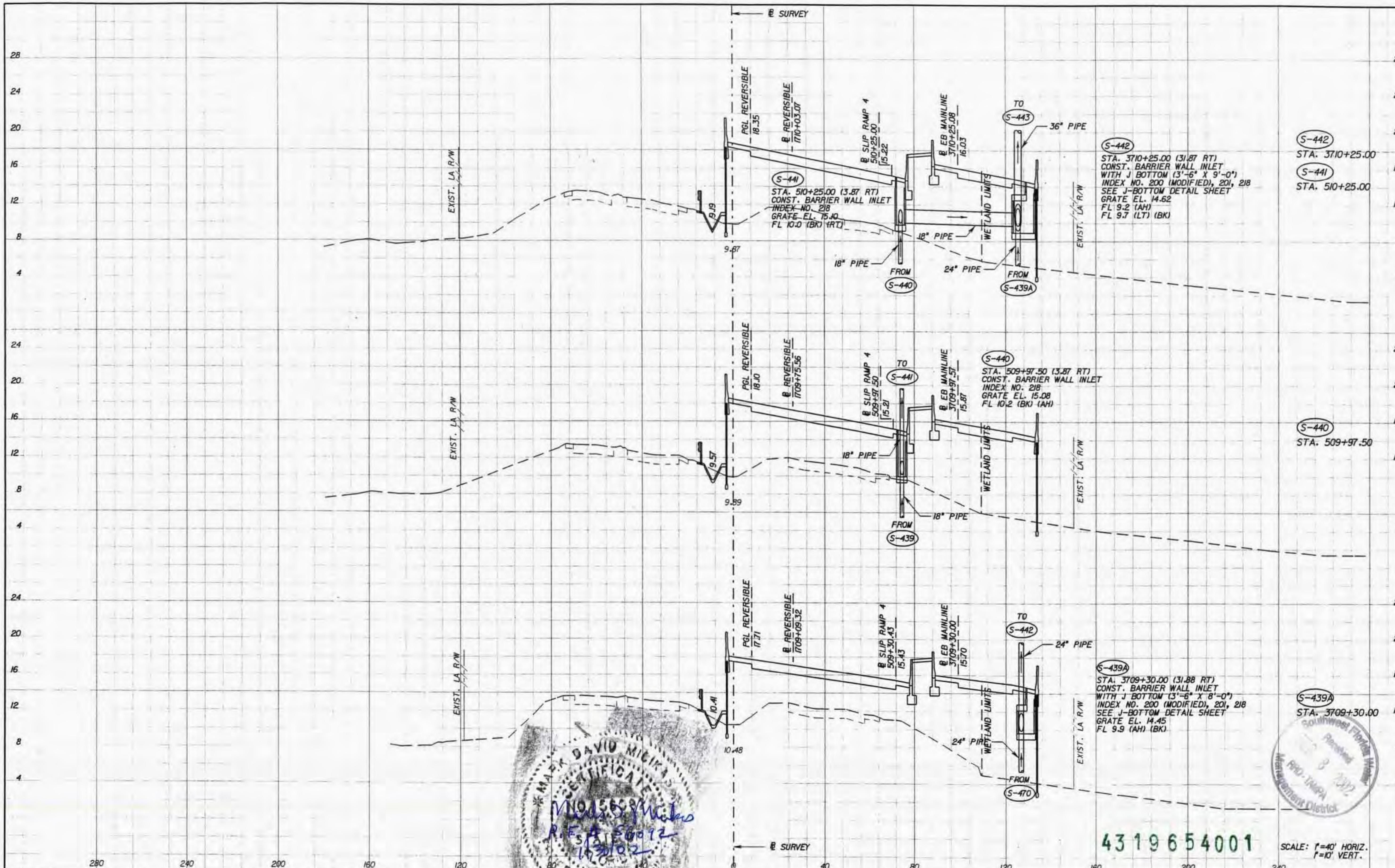
Mark D. Micikas P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 117



Southwest Florida Water Management District Received 8 2002 RRD-TAMPA

MARK DAVID MICIKAS CERTIFICATE 56092

Mark D Micikas P.E. 56092 1/31/02

4319654001

SCALE: 1"=40' HORIZ. 1"=10' VERT.

8-JAN-2002 10:51 N:\projects\513003\Drainage\Dreinkx\Drstrd0.dgn

REVISIONS						Drstrd0127
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

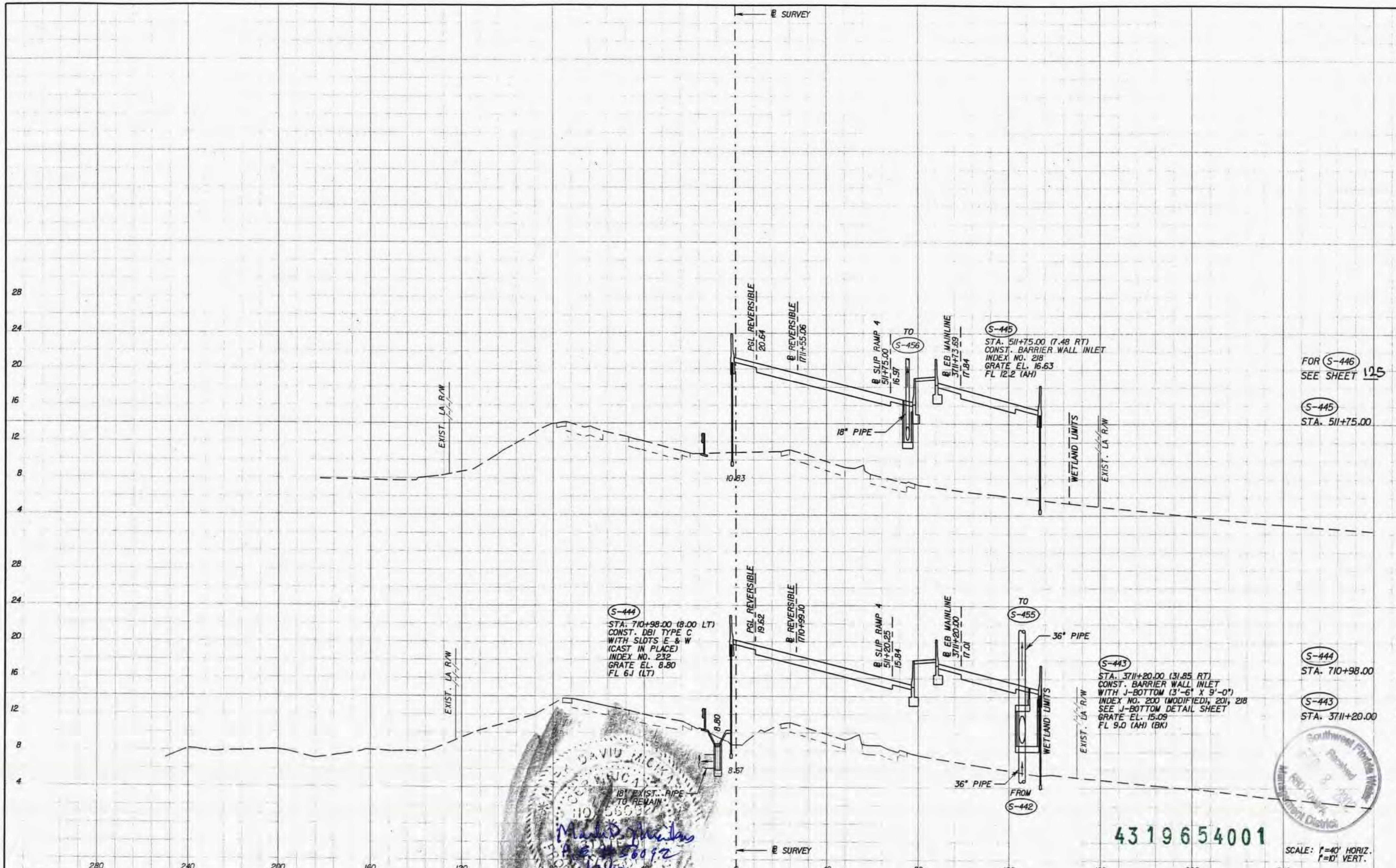
PBSJ 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Mark D Micikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 118



43 19 65 4001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0128

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24

Mark D Mickas, P.E. #56092

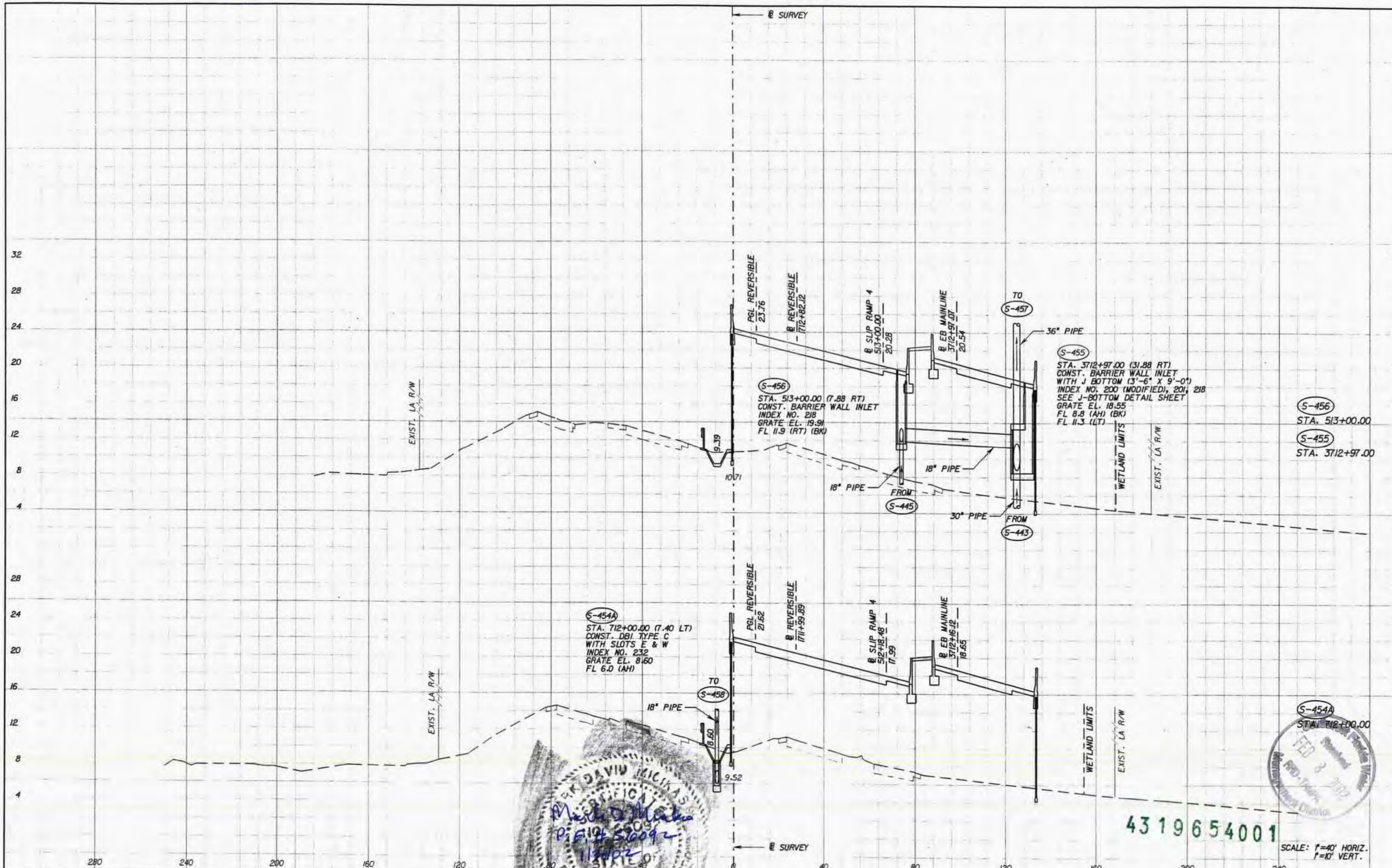
Mark D. Mickas P.E. #56092 1/30/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 119



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0129

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768. FBPR Certificate of Authorization No. 24

Mark D Micikas , P.E. #56092

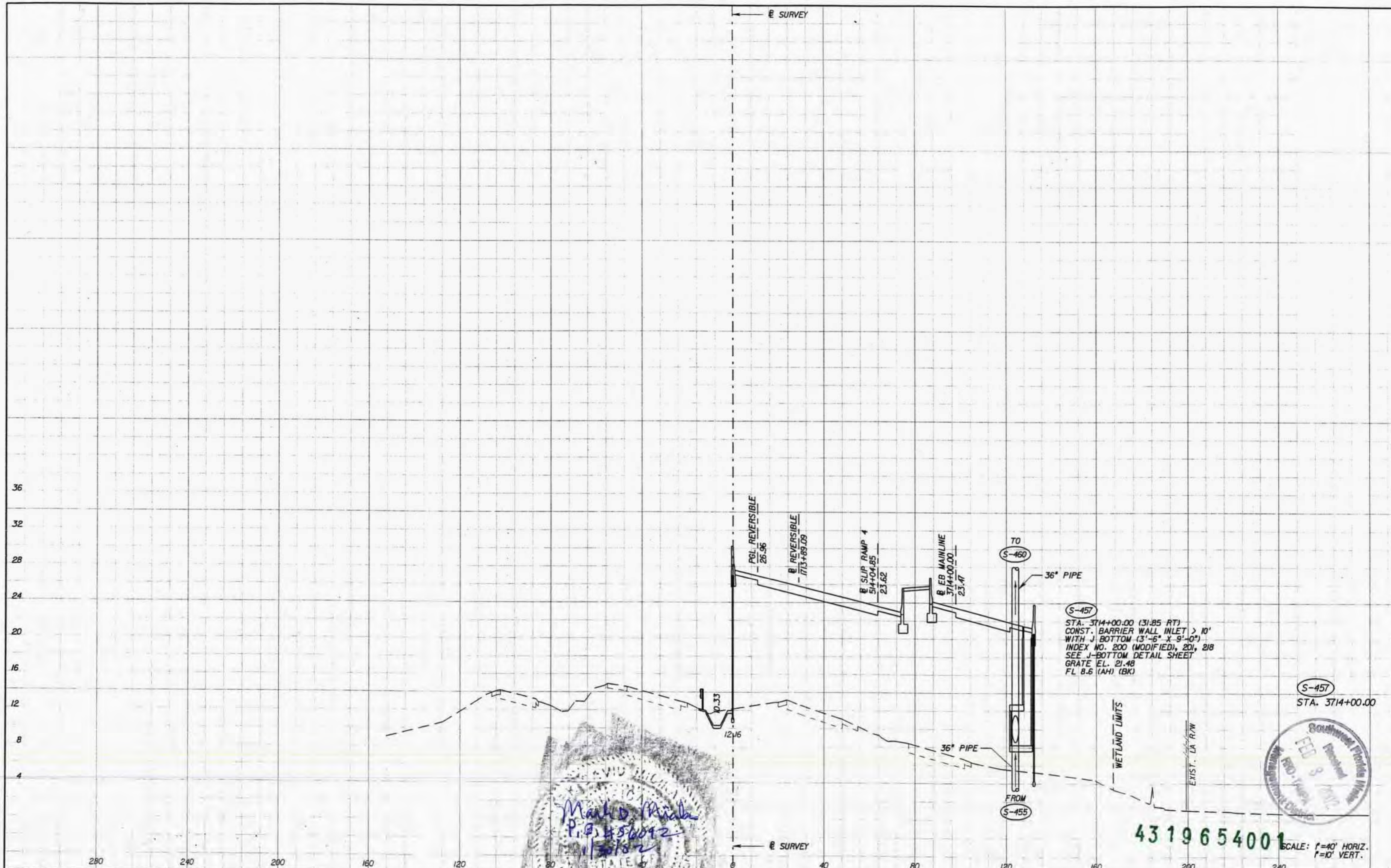
Mark D. Micikas P.E. # 56092 1/31/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 120



4319654001

Mark D. Micikas
P.E. #56092
1/30/02

Southwest Florida Water Management District
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FEB 8 2002
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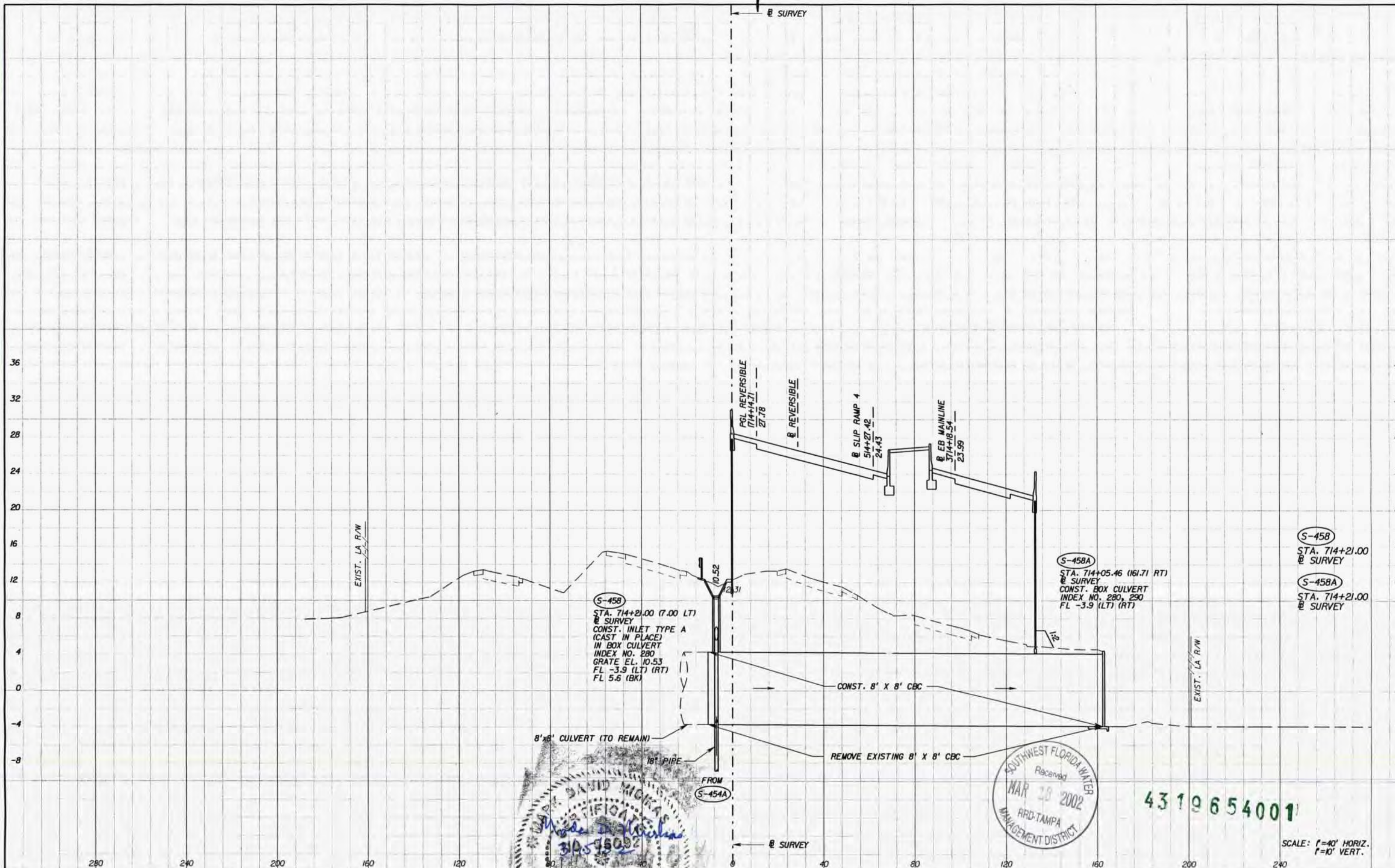
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
121



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
MAR 28 2002
RRD-TAMPA

4319654001

15-MAR-2002 12:02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
					Drstrd0133

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5300 West Cypress Street
Suite 300
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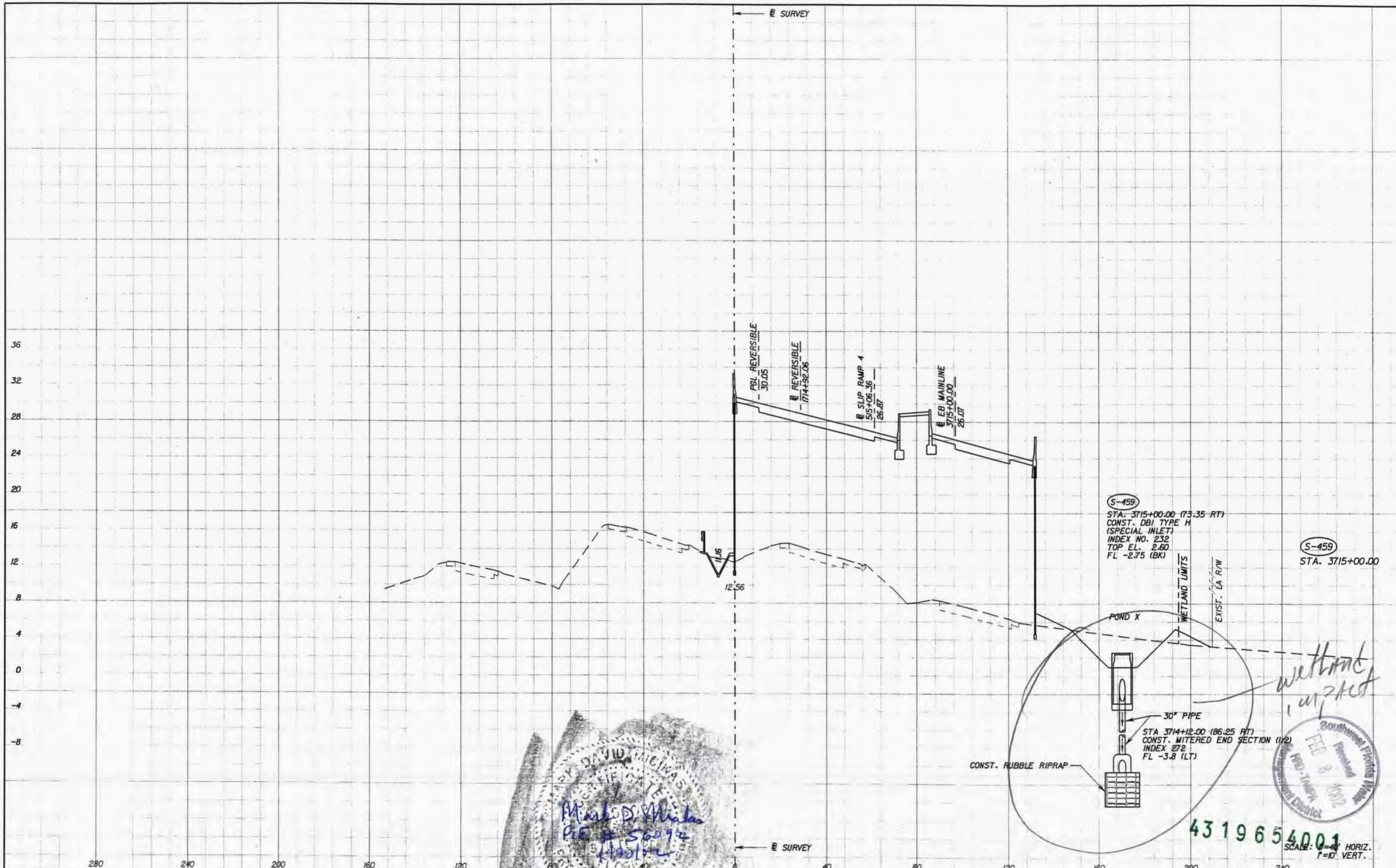
FBPR Certificate of Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 122



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0132

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24

Mark D Micikas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 123

4319654001

25-JAN-2002 08:46 Drstrd0133

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBS&J
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of Authorization No. 24
Mark D Miclkas , P.E. #56092

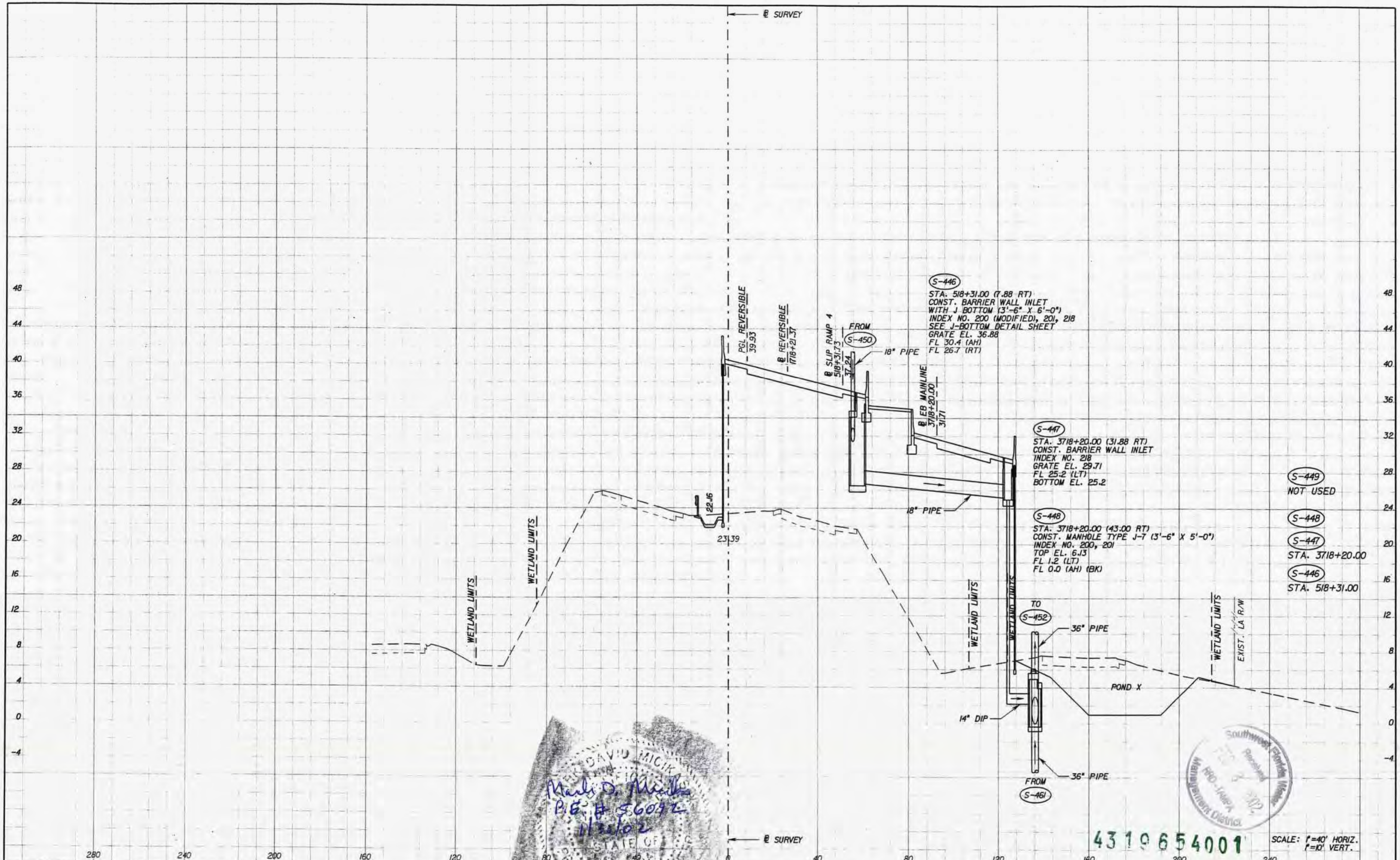
Mark D. Miclkas
P.E. # 56092
1/31/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 124



4319654001

Mark D. Micikas
P.E. # 56092
1/31/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

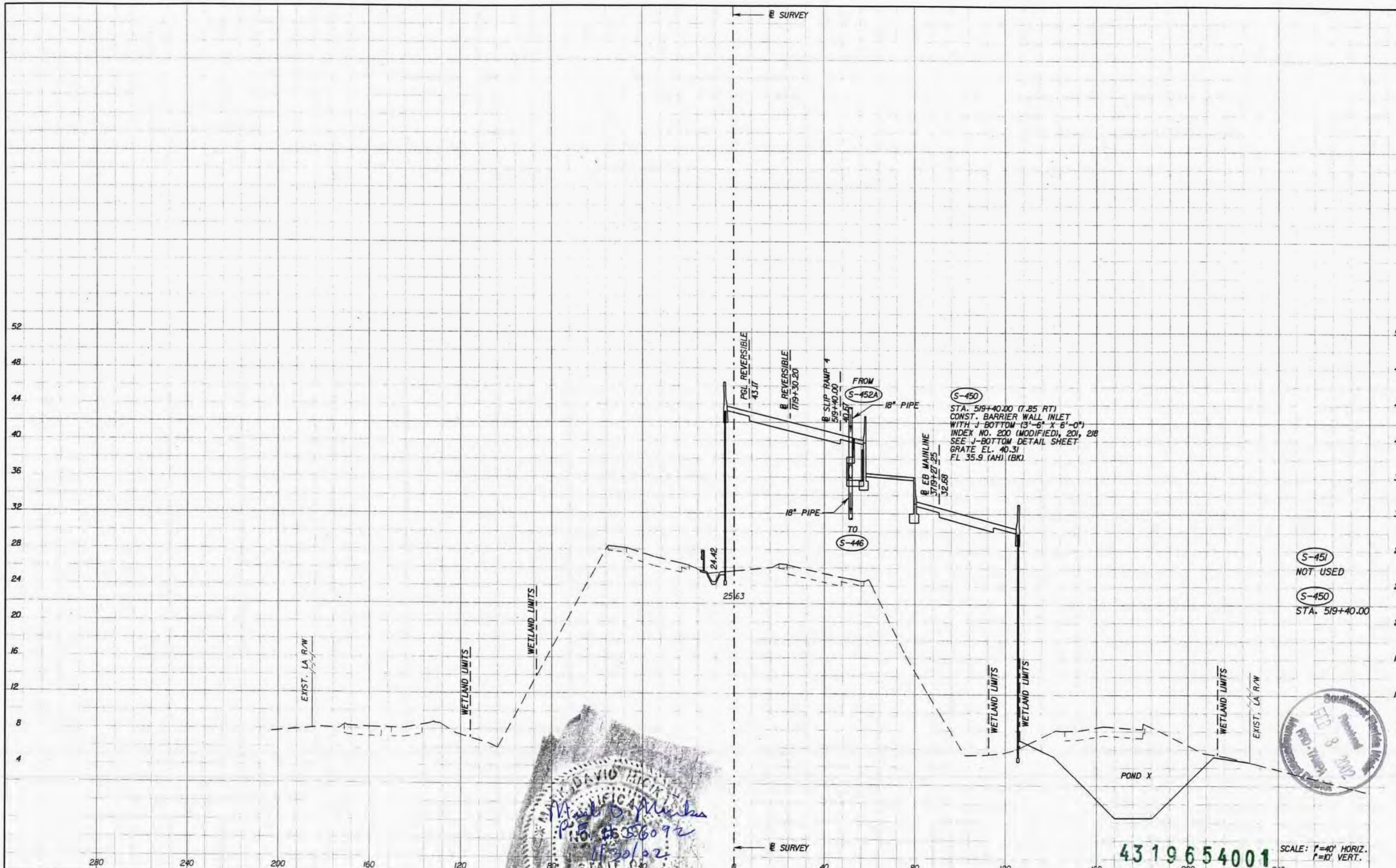
PBSJ
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1768
FBPR Certificate of
Authorization No. 24
Mark D Micikas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 125



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Southwest Florida Water Management District
Received
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Mark D. Micikas
P.E. #56092
11/30/02

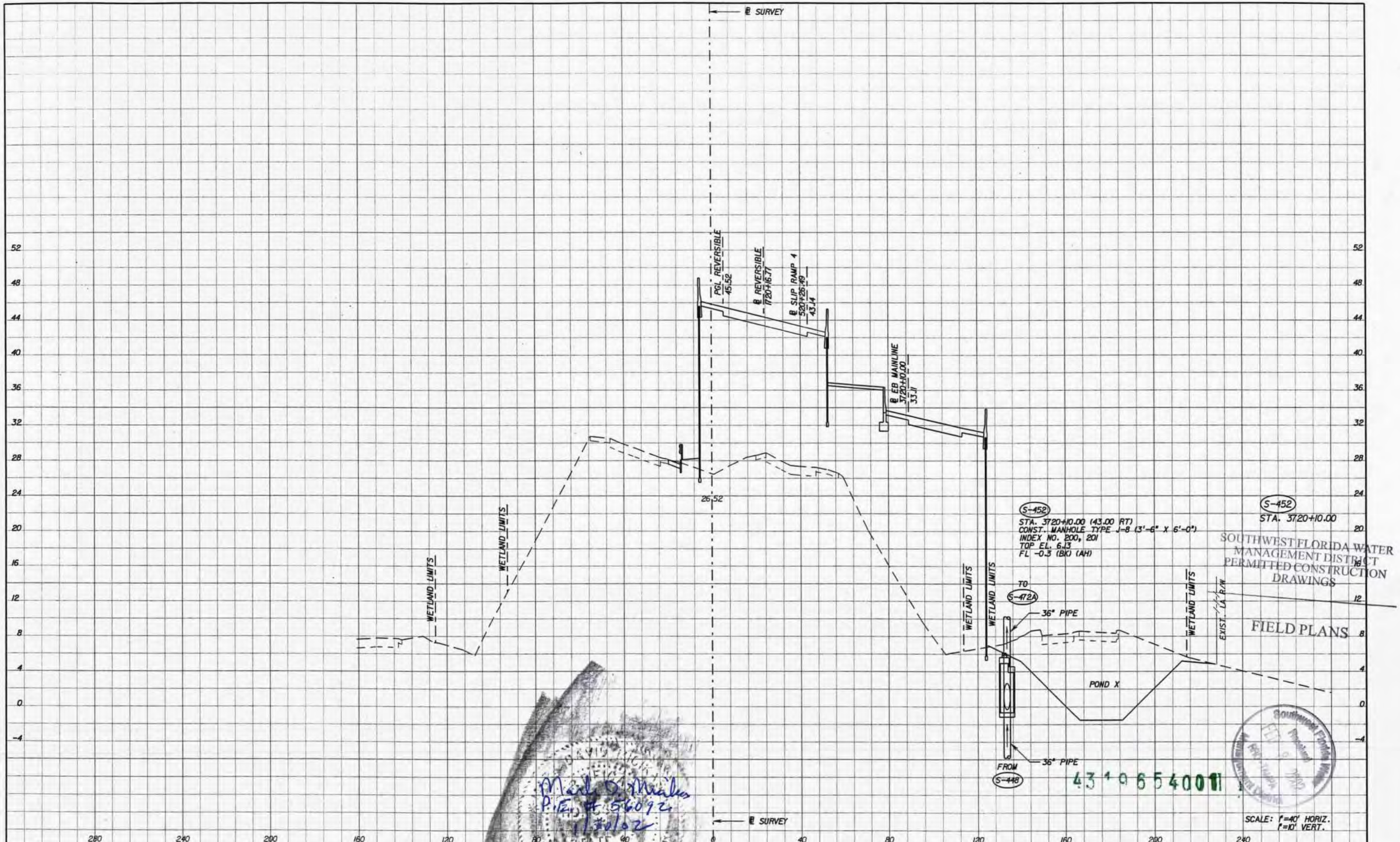
MARK DAVID MICIKAS
STATE OF

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO.
126



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25-JAN-2002 08:46 REVISIONS Drstrd0136

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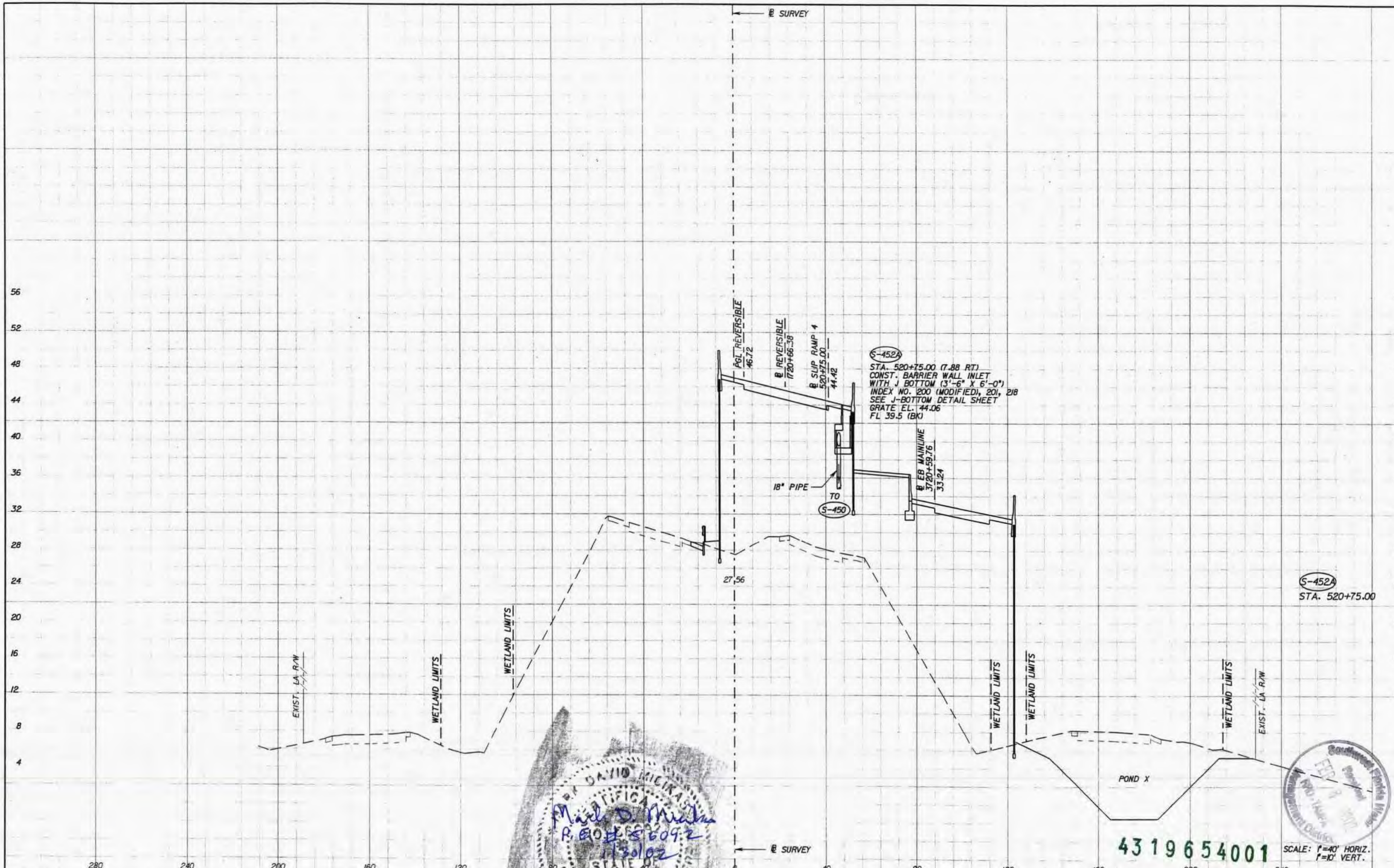
ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 127



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Mark D Miclkas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 128

Mark D. Mickas
P.E.# 56092
11/20/02

4319654001

Southwest Florida Water Management District Received

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0138

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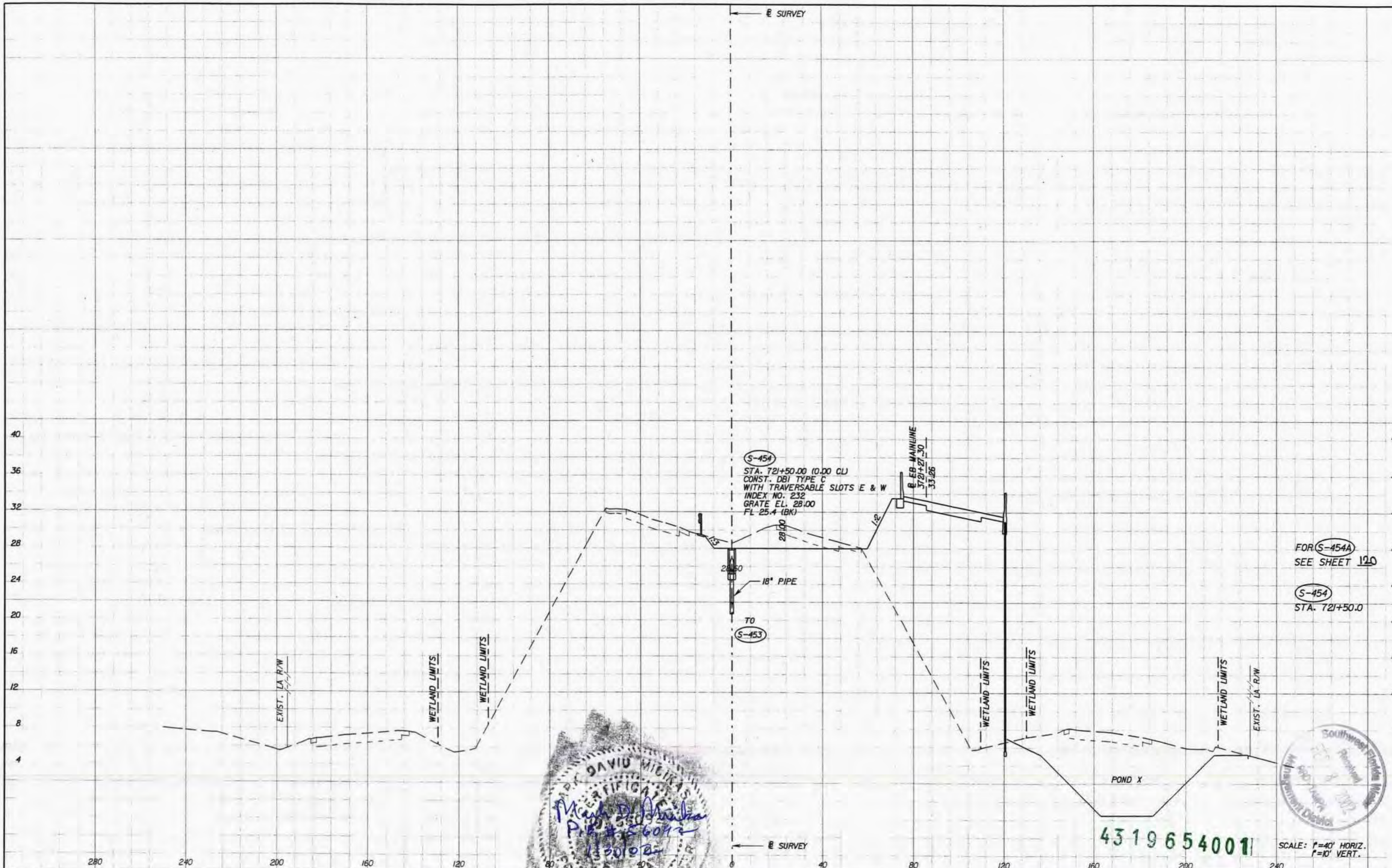
Mark D Mickas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
DRAINAGE STRUCTURES

SHEET NO. 129



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PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24

Mark D Miclkas, P.E. #56092

Mark D. Miclkas P.E. #56092 1/30/02

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

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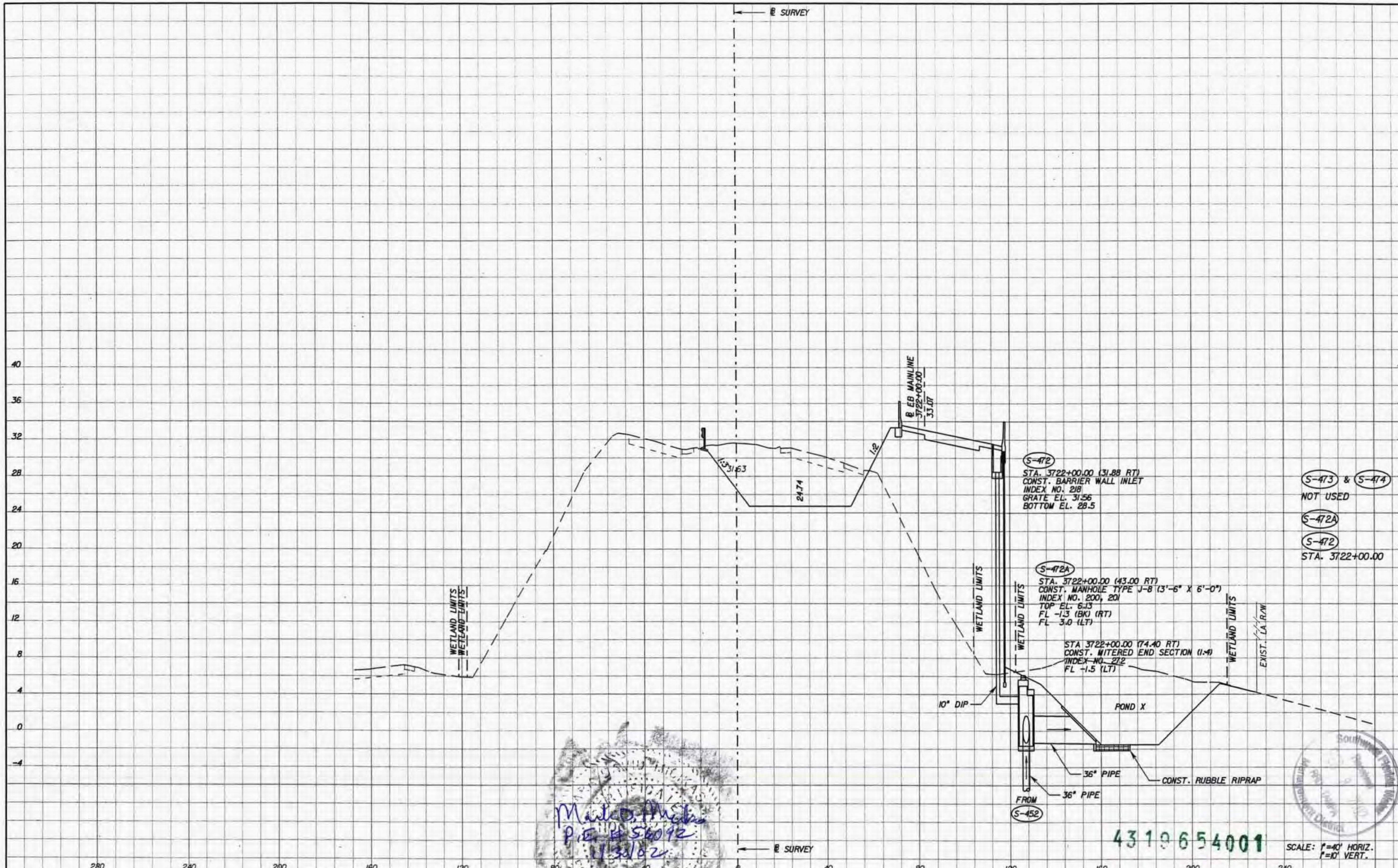

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Mark D. Micklas
P.E. # 56092
11/30/02

25-JAN-2002	REVISIONS			Drstrd0140	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mark D Micklas, P.E. #56092

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ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

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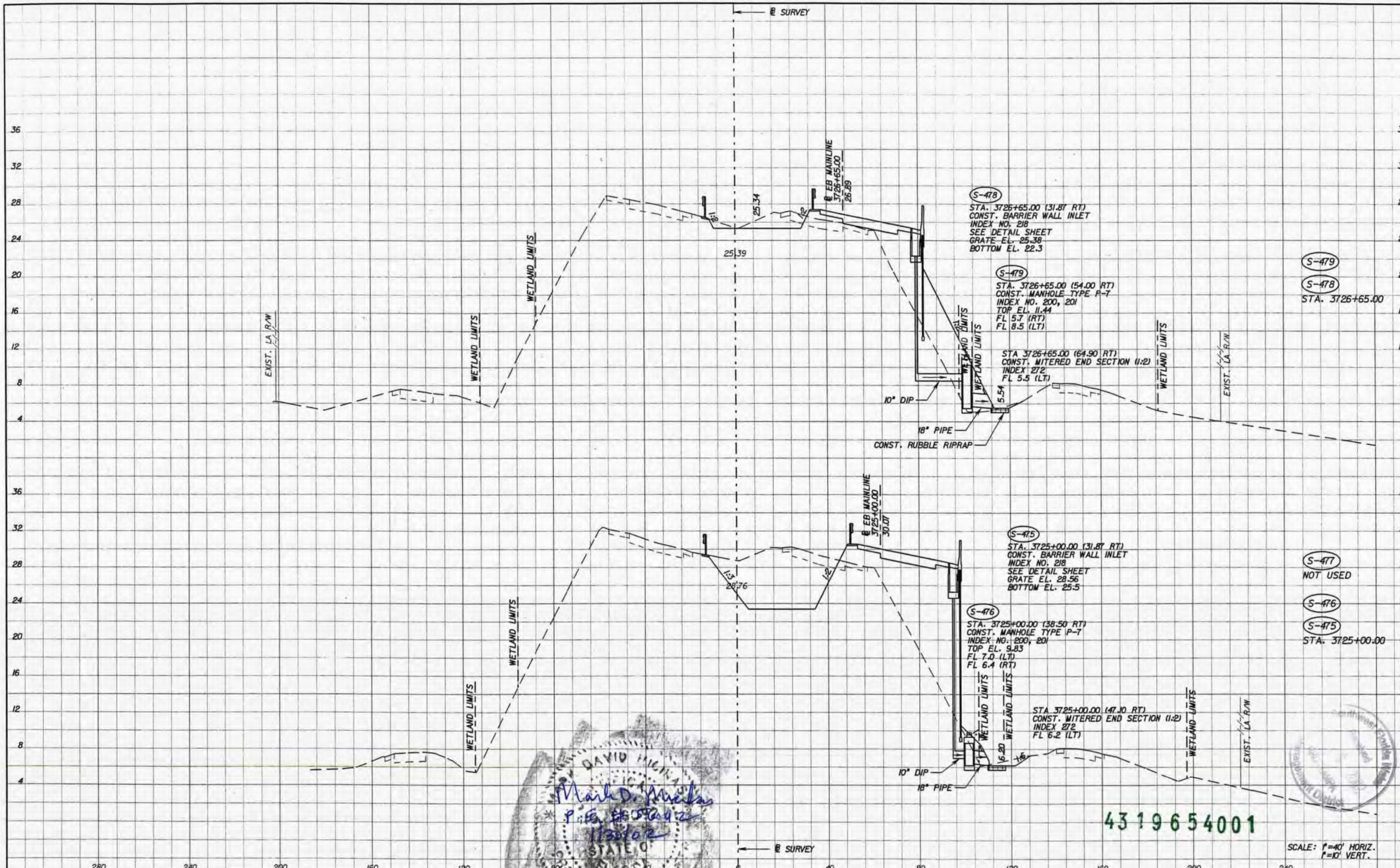

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Mark D. Mielkas P.E. #56092 11/30/02

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

25-JAN-2002 08:16 Drstrd0141

PBSJ 5300 West Cypress Street, Suite 300, Tampa, Florida 33607-1768, FBPR Certificate of Authorization No. 24

Mark D Mielkas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

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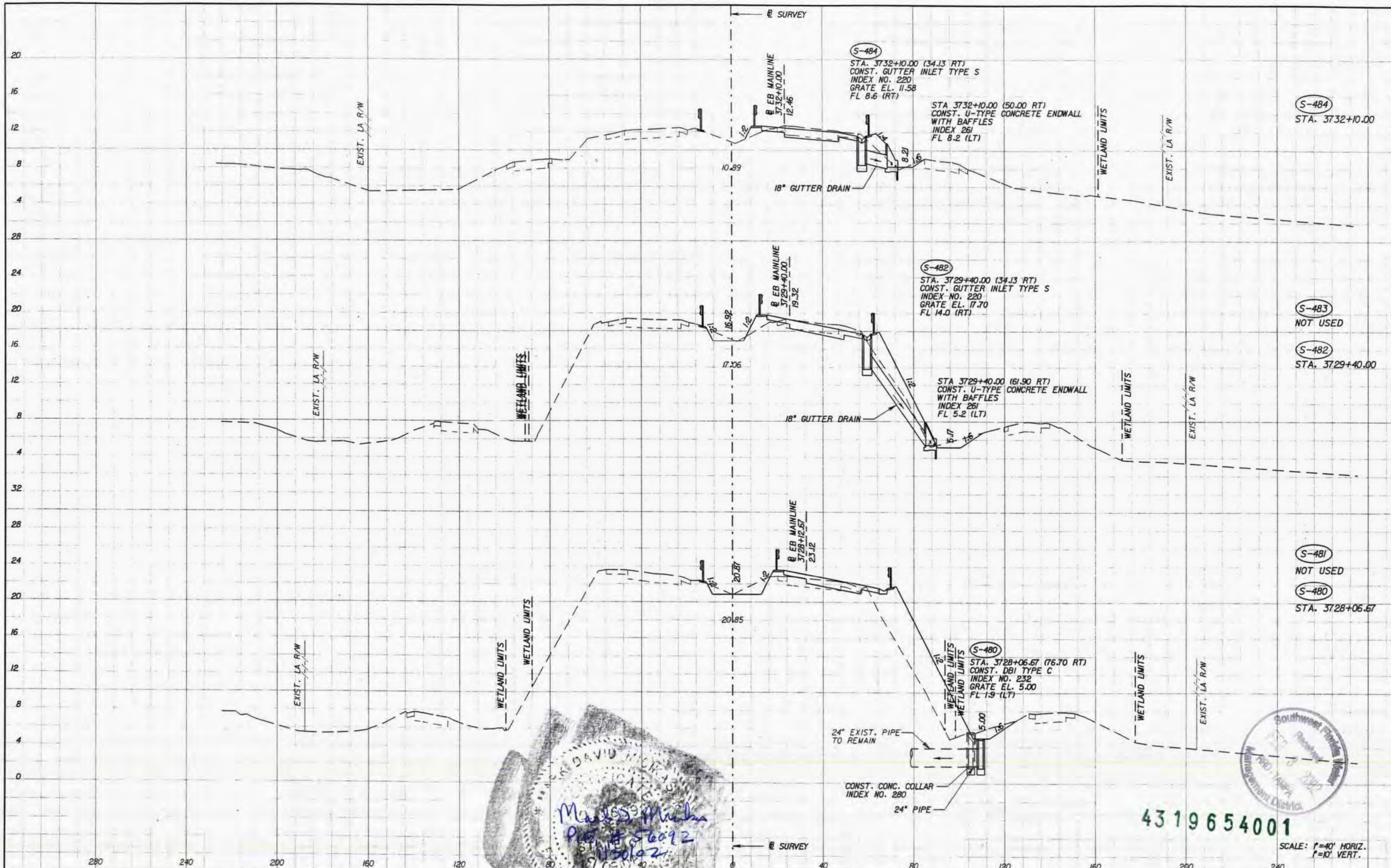

Southwest Florida Water Management District Received FEB 8 2002 PRO - TAMPA

4319654001

Mark D. Mickas P.E. # 56092 1/30/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

Drstrd0142

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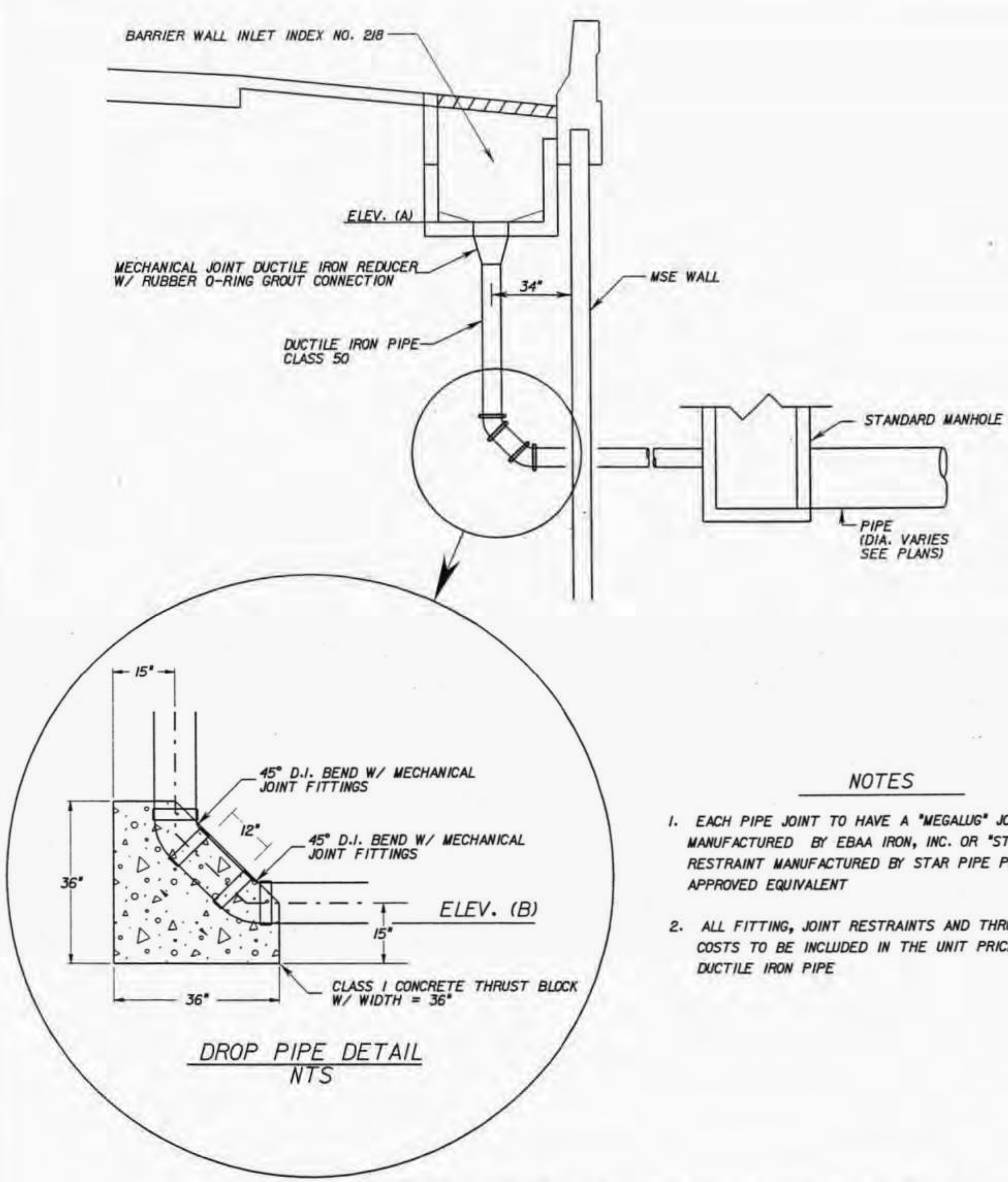
Mark D Mickas, P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

LEE ROY SELMON CROSSTOWN EXPRESSWAY DRAINAGE STRUCTURES

SHEET NO. 133

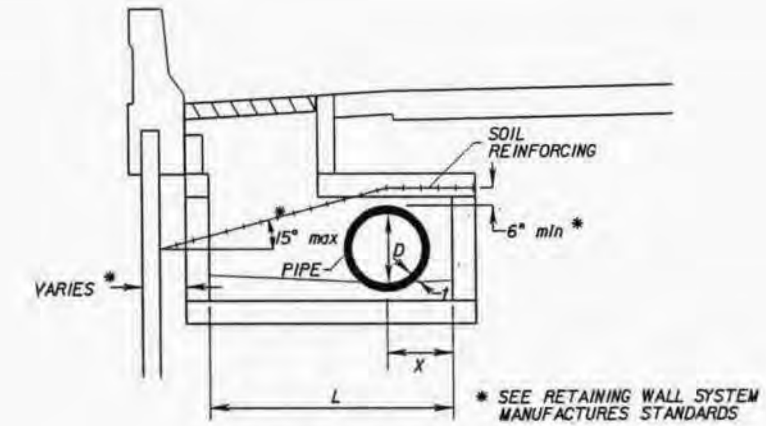


DROP PIPE DETAIL
NTS

NOTES

1. EACH PIPE JOINT TO HAVE A "MEGALUG" JOINT RESTRAINT MANUFACTURED BY EBAA IRON, INC. OR "STARGRIP" JOINT RESTRAINT MANUFACTURED BY STAR PIPE PRODUCTS OR APPROVED EQUIVALENT
2. ALL FITTING, JOINT RESTRAINTS AND THRUST BLOCKS COSTS TO BE INCLUDED IN THE UNIT PRICE FOR THE DUCTILE IRON PIPE

STR	B/L	STATION	SIDE	PIPE SIZE (IN)	REDUCER (IN X IN)	PIPE LENGTH (FT)	EL.'A' (FT)	EL. 'B' (FT)
S-410	CLREV	1683+50.00	RT	10	18 X 10	28	46.7	32.6
S-415	EBML	3686+45.00	RT	21	30 X 21	27	16.9	6.0
S-420	EBML	3690+90.00	RT	10	18 X 10	36	34.8	5.2
S-424	EBML	3693+97.00	RT	10	18 X 10	34	31.9	6.4
S-428	EBML	3695+00.00	RT	10	18 X 10	39	32.7	4.8
S-434	EBML	3699+00.00	RT	10	18 X 10	37	30.2	5.7
S-447	EBML	3718+20.00	RT	14	24 X 14	33	25.2	1.2
S-472	EBML	3722+00.00	RT	10	18 X 10	35	28.5	3.0
S-475	EBML	3725+00.00	RT	10	18 X 10	24	25.5	6.4
S-478	EBML	3726+65.00	RT	10	18 X 10	36	22.3	6.7



MODIFIED J BOTTOM DETAIL
NTS

SIZE (D) (IN)	t (IN)	L (FT)	X (MAX) (IN)
18	2.25	6	15
24	3.0	7	18
30	3.5	8	22
36	4.0	9	25

Mark D. Mickas
P.E. # 56092
1/30/02

43196 54001

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBS&J 5300 West Cypress Street Suite 300 Tampa, Florida 33607-1768 FBPR Certificate of Authorization No. 24
Mark D Mickas , P.E. #56092

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

DRAINAGE STRUCTURE DETAILS

SHEET NO. 134

Building the Future
Tampa-Hillsborough County Expressway Authority

T50 420
$2500.00

February 8, 2002

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
FEB 8 2002
RRD-TAMPA

Attn: Ms. Michelle Hopkins, P.E.
Southwest Florida Water Management District
Tampa Resource Regulation
7601 Highway 301 North
Tampa, Florida 33637

EJB

Re: **ERP Application**
Selmon Crosstown Expressway Reversible Express Lanes
THCEA Construction Projects 51.40.01 and 51.40.02

Dear Ms. Hopkins:

Enclosed please find an application for an Individual Environmental Resource Permit (ERP). Five copies of the following items are enclosed:

- Application Sections A and E (5 copies)
- Application Section C (5 copies)
- Drainage Reports (5 copies)
- Environmental Report (5 copies)
- Roadway Construction Plans (5 copies)

Additionally, an application fee check in the amount of $2500 is enclosed.

Please note that this permit application is for five separate design projects. A single set of application forms and a single environmental report are inclusive of all five design projects. However, separate construction plans and drainage reports are provided for each of the five design projects. The construction plans and drainage reports are labeled with the appropriate design project number.

Design Project No.	Consultant	Description
51.30.02	RS&H	Roadway from Twiggs St. to west of 12th Str.
51.30.03	PBS&J	Roadway from 26th St. to east of 39th St.
51.30.06	ICON	Roadway from 78th St. to Palm River Rd.
51.30.07	URS	Bridge from west of 12th St. to east of 26th St. and from west of 39th St. to east of 78th St.
50.30.001B	ICON	Roadway from Palm River Rd. to west of I-75

412 E. MADISON STREET
SUITE 800
TAMPA, FLORIDA 33602
PHONE: (813) 272-6740
FAX: (813) 273-3730

WWW.TAMPA-XWAY.COM

43019654.001

We look forward to working with you and your staff on the processing of this application. Based on our previous discussions, we anticipate having meetings with Sam Chehab and Pat Franz during their review to quickly address their concerns. If you need any assistance, please do not hesitate to call me at (813) 272-5987, Paul Schmid at (813) 675-6682, or Kevin Connor at (813) 387-7907.

Sincerely,

Tampa-Hillsborough County Expressway Authority

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
FEB 8 2002
RRD-TAMPA

Bennett L. Muns, PE
Chief Engineer

Enclosures

cc: Paul Schmid, PE
Kevin Connor
Proj. Files: 51.30.02.4.02
51.30.03.4.02
51.30.06.4.02
51.30.07.4.02
50.30.001B.4.02

43019654.001

TS0420

PERMIT NARRATIVE

SR 618
LEE ROY SELMON CROSSTOWN EXPRESSWAY
PROJECT 51.30.03
HILLSBOROUGH COUNTY

Prepared For:

Tampa – Hillsborough County Expressway Authority

Tampa, Florida

Prepared By:

PBS&J

S.W.F.W.M.D.
FEB 12 2002
ARR
RECORDS & DATA

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
FEB 8 2002
RRD-TAMPA

EZB

By: John Stone

Checked By: Mark Micikas

5300 W. Cypress Street, Suite 300
Tampa, Florida 33607-1712

FBPR No.: 24

Mark D. Micikas P.E. #56092 2/6/02
Mark D. Micikas, P.E. #56092 Date

MARK DAVID MICIKAS
No. 56092
STATE OF FLORIDA
PROFESSIONAL ENGINEER

February 2002

43019654.001

Permit Narrative
THCEA 51.40.01
February 2002

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Permit Narrative
THCEA 51.40.01
February 2002

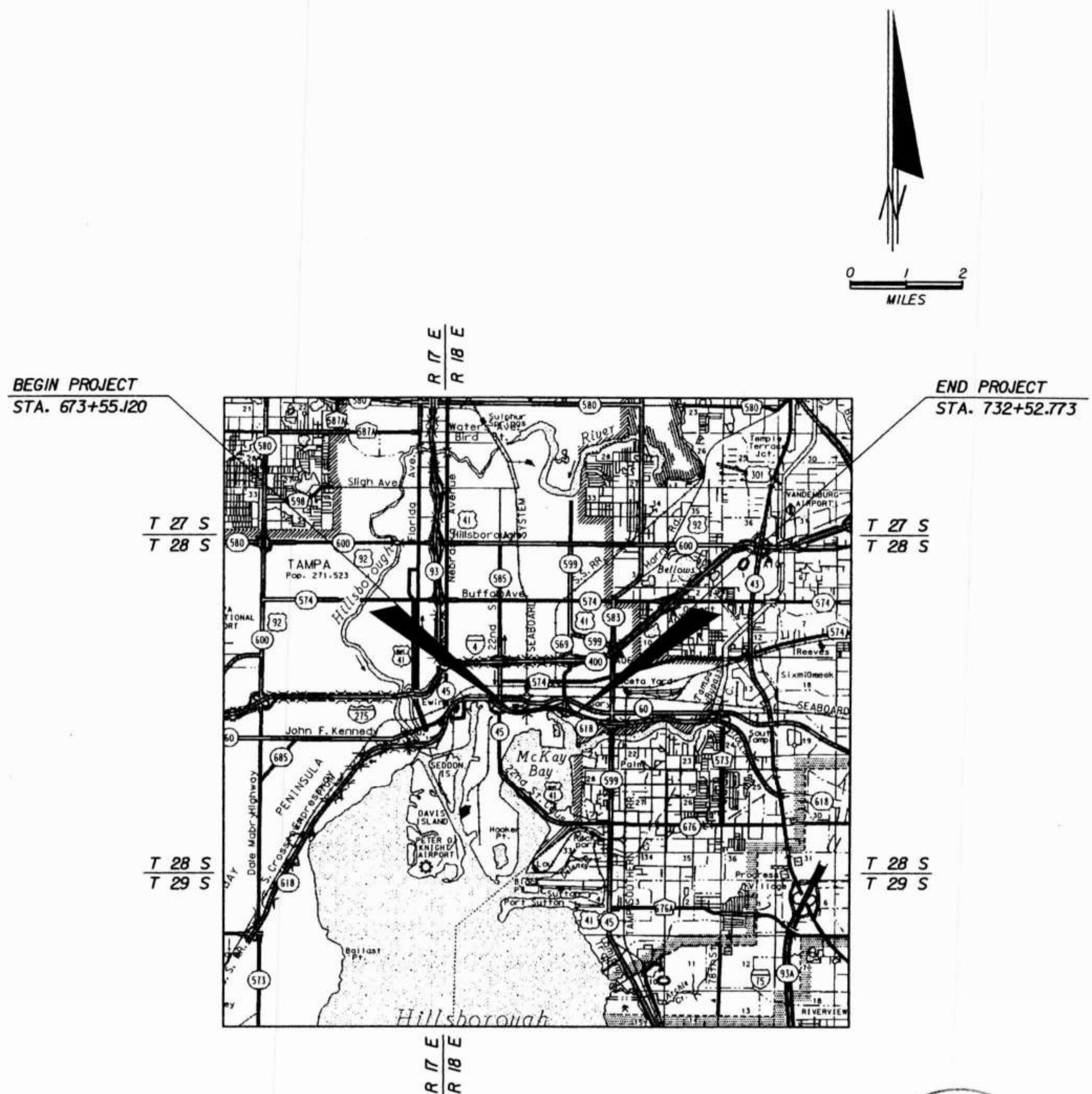
I. PROJECT DESCRIPTION

The Tampa-Hillsborough County Expressway Authority (THCEA) is proposing the construction of three (3) reversible lanes on the Lee Roy Selmon Crosstown Expressway (SR 618) from Brandon to Mariner Boulevard in Hillsborough County Florida. This report addresses the proposed drainage design for one portion of the overall project, Project Number 51.40.01. The limits of Project Number 51.40.01 are from east of 26th Street (Station 673+55.12, B/L Survey SR 618), to east of 39th Street (Station 732+52.77, B/L Survey SR 618). Project Number 51.40.01 is located in Sections 16 and 17, Township 28 South, Range 18 East. For project location, see Figure No. 1.

For most sections of the overall project, the proposed reversible lanes are elevated over the existing expressway and expressway median. Within the limits of Project Number 51.40.01, a future interchange with an Interstate 4 Connector Expressway is planned. For the future interchange, the reversible lanes will be brought to near the existing roadway elevation to minimize the height of the future ramp bridges and the ramp lengths. The proposed reversible lanes will be aligned over the existing eastbound lanes, necessitating the reconstruction of the existing eastbound lanes. The existing westbound lanes of the expressway will remain in place for the length of this project. Minor shoulder reconstruction will be required on portions of the existing westbound lanes due to required guard rail construction to protect the westbound traffic from proposed walls.

Project Number 51.40.01 also proposes construction of a slip ramp (Slip Ramp No. 4) connecting the existing westbound expressway with the reversible lanes. For project typical sections, see Figure No. 2.

Construction of the reversible lanes and relocated eastbound lanes by Project Number 51.40.01 will require construction of bridges over the 34th Street Outfall Canal. This canal, although tidally influenced, carries flow from northwest to southeast, discharging at McKay Bay. A Bridge Hydraulics Report for these crossings has been prepared and submitted under a separate cover. All other bridge construction proposed by this project are for bridges over land.

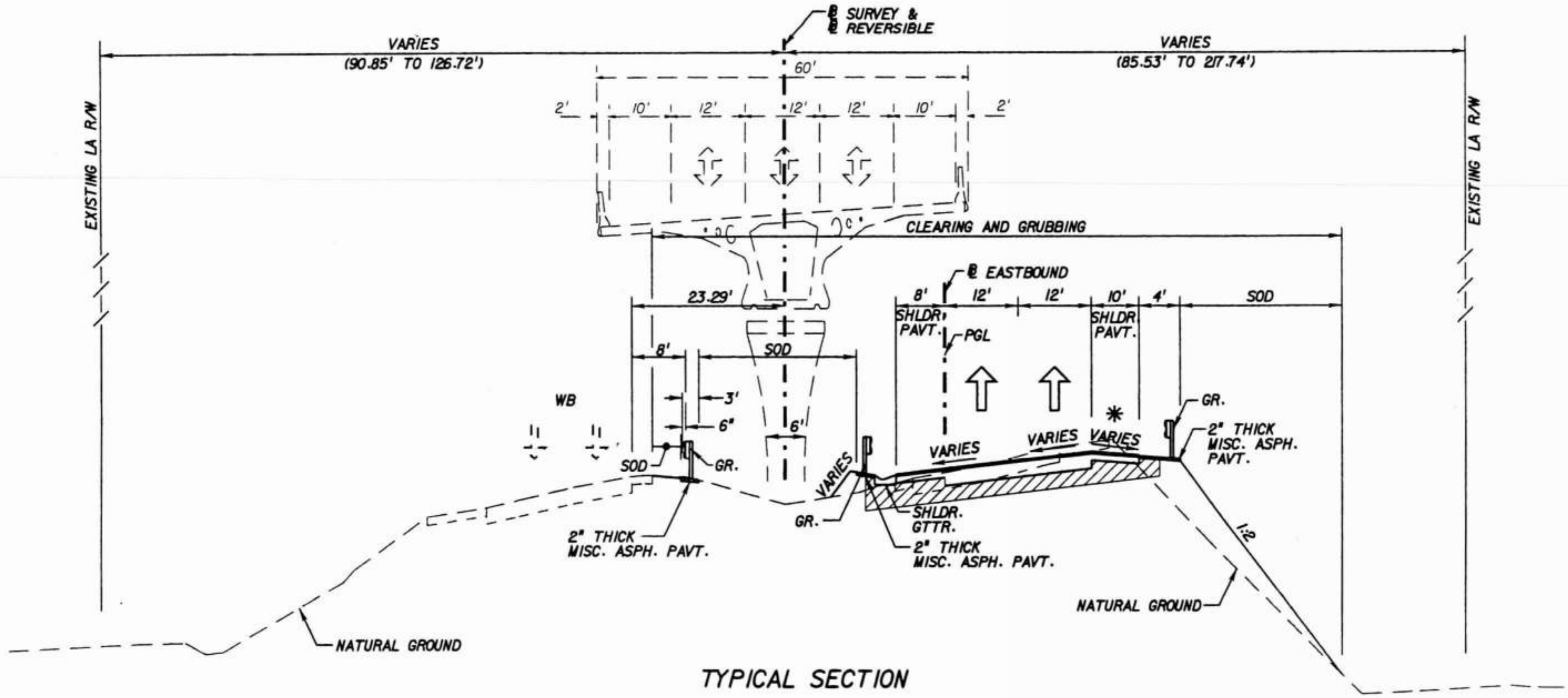


PROJECT LOCATION MAP

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No. 1



TYPICAL SECTION

LEE ROY SELMON CROSSTOWN EXPRESSWAY
℄ SURVEY S.R. 618

STA. 673+55 TO STA. 679+29.24

TYPICAL SECTIONS
SHEET 1 OF 5

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No.2

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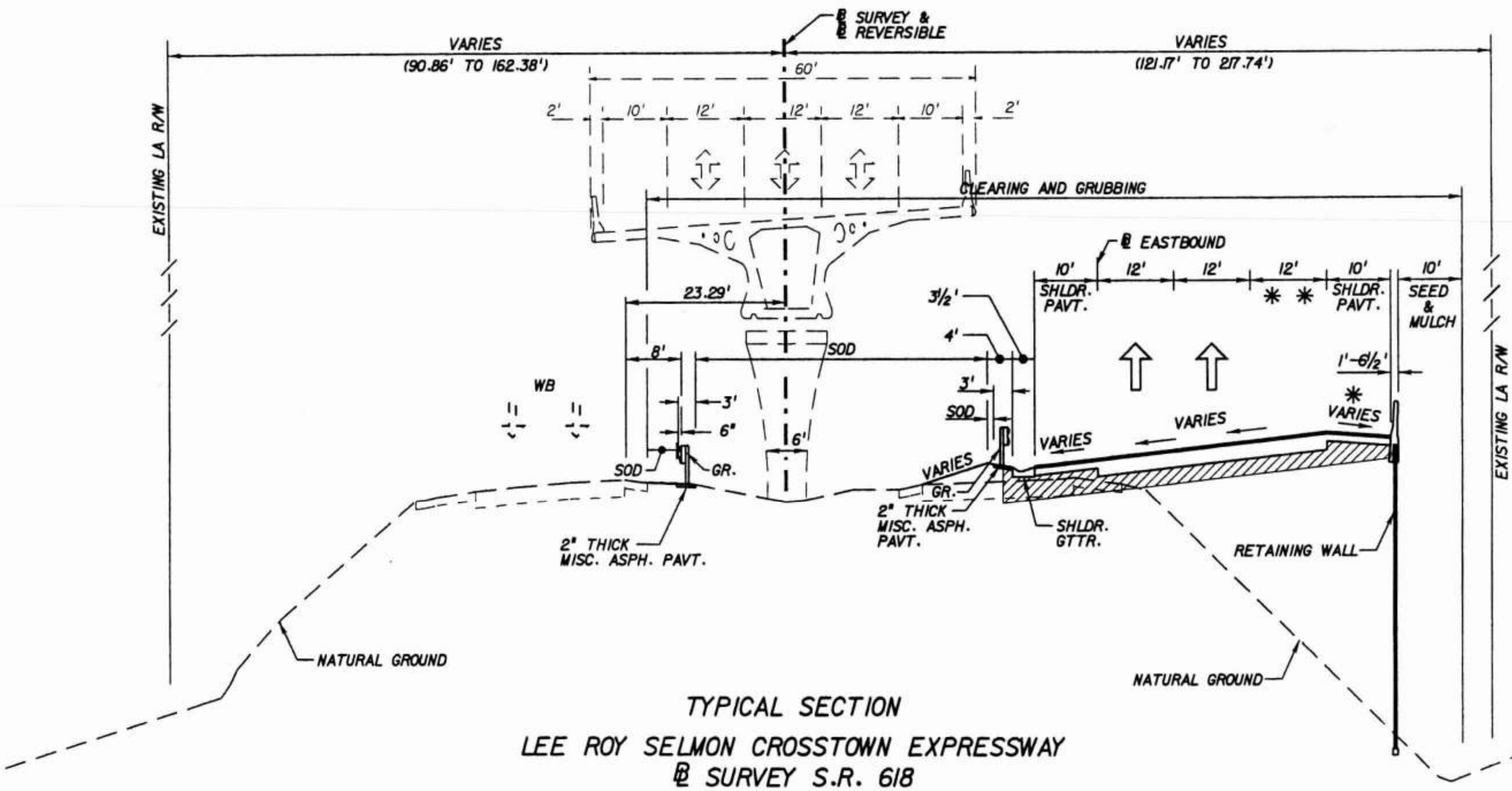

TYPICAL SECTION

LEE ROY SELMON CROSSTOWN EXPRESSWAY
℄ SURVEY S.R. 618

STA. 679+29.24 TO STA. 683+11.29

TYPICAL SECTIONS
SHEET 2 OF 5

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No.2

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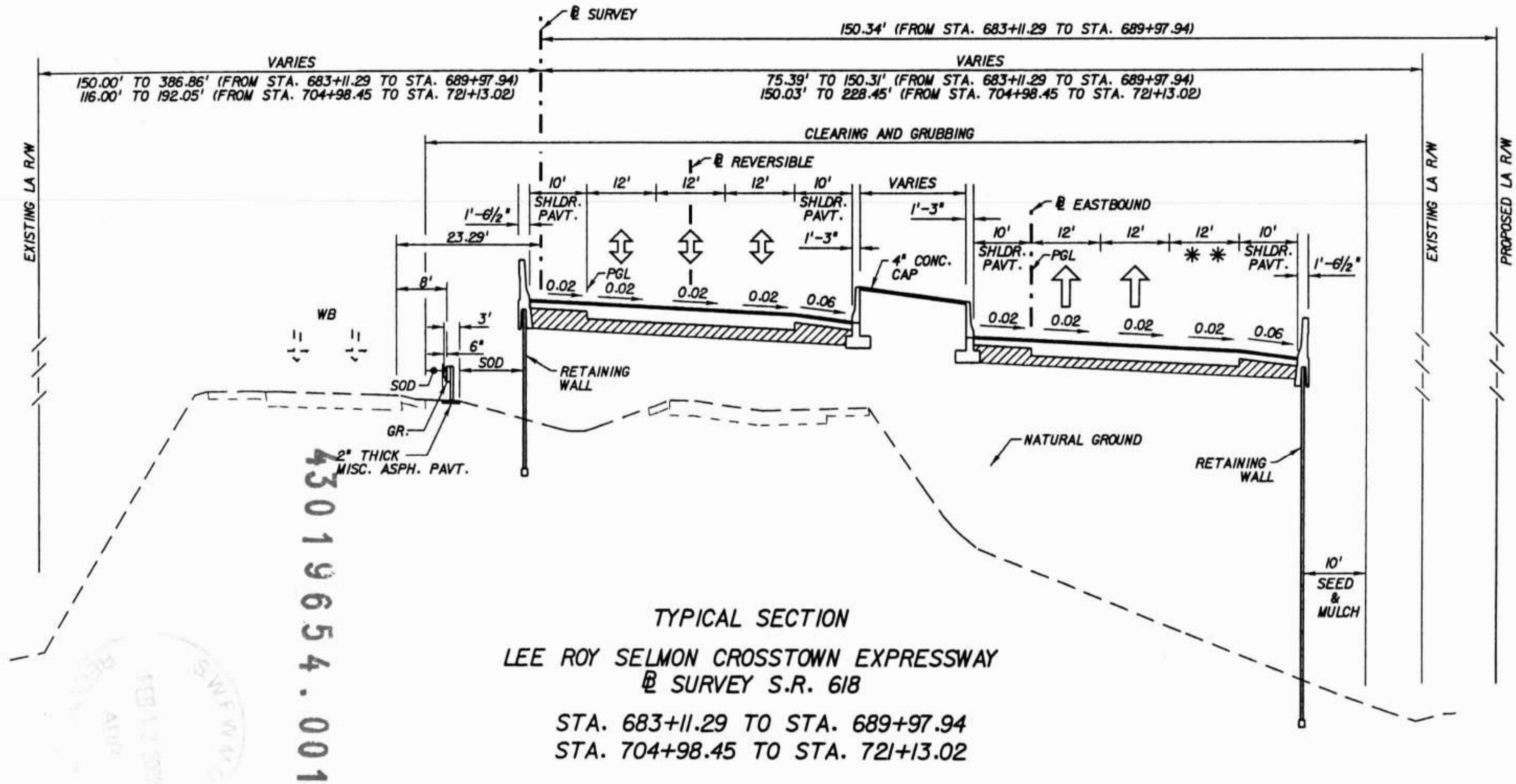

TYPICAL SECTIONS
SHEET 3 OF 5

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No.2

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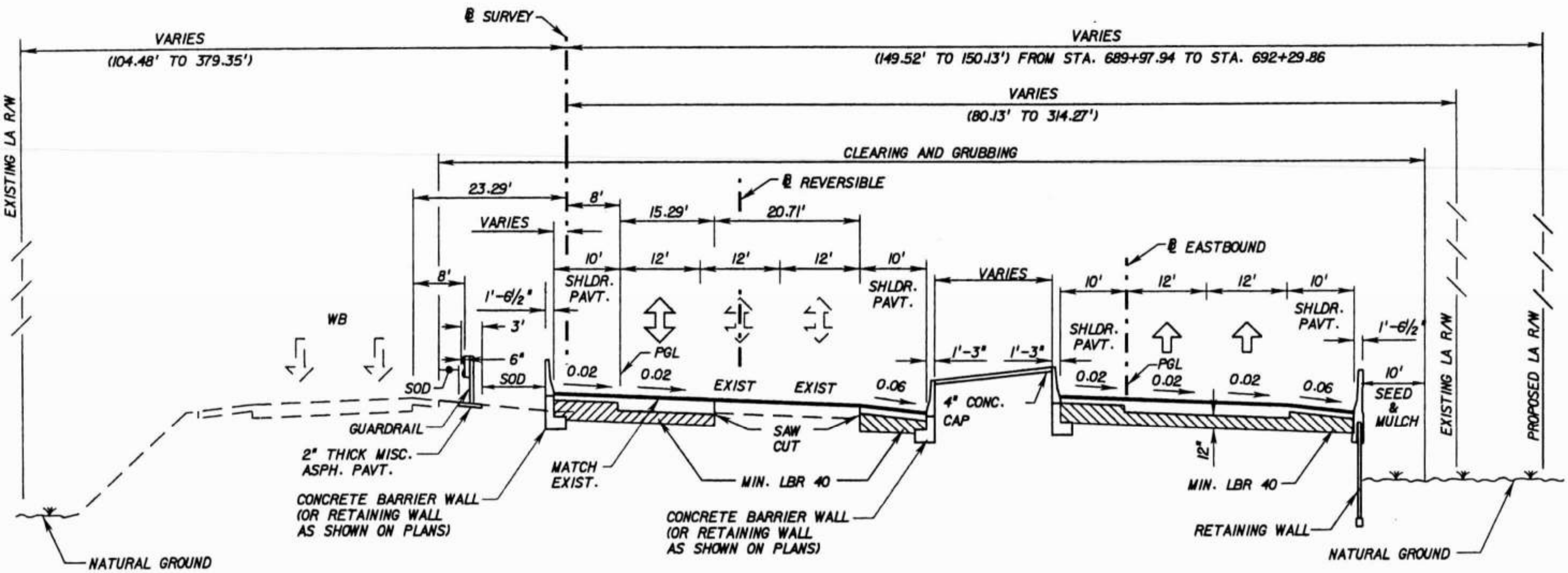

TYPICAL SECTION

LEE ROY SELMON CROSSTOWN EXPRESSWAY

℄ SURVEY S.R. 618

STA. 689+97.94 TO STA. 704+98.45

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
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FEB 8 2002
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TYPICAL SECTIONS
SHEET 4 OF 5

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No.2

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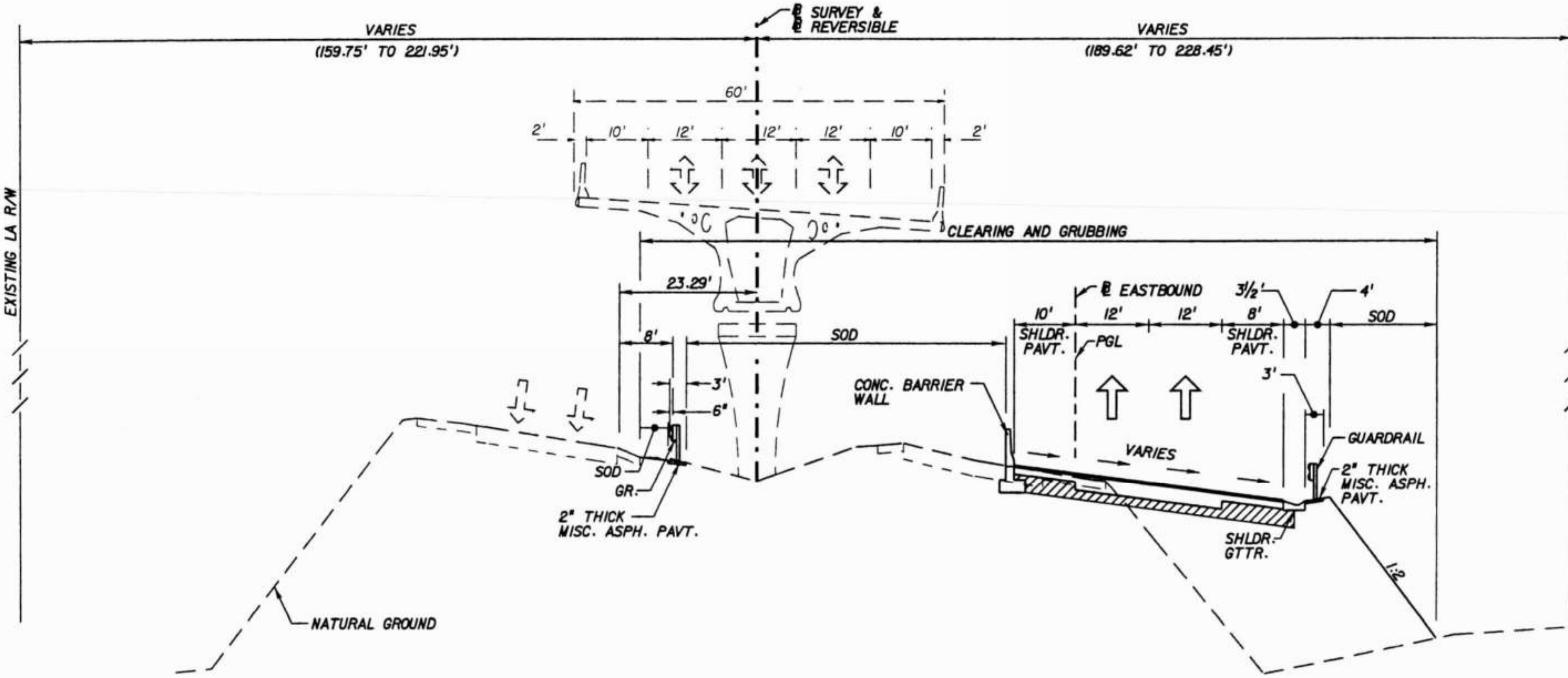

TYPICAL SECTION

LEE ROY SELMON CROSSTOWN EXPRESSWAY

℄ SURVEY S.R. 618

STA. 721+13.02 TO STA. 732+52.77

TYPICAL SECTIONS
SHEET 5 OF 5

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No.2

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II DESIGN CRITERIA REFERENCES

The following drainage design criteria references are listed in order of precedence:

1. Florida Department of Transportation Drainage Manual (FDOT DM, 2000) and related Handbook publications.

2. Federal-Aid Policy Guide, December 9, 1991, Transmittal 1: 23 CFR 650A (Vol. 1, Appendix A, FDOT DM, 2000).

3. Environmental Resources Permit Information Manual.

III DATA SOURCES

Hydrologic analysis will utilize the following information:

1. Aerial topographic information
2. Ground survey information obtained by PBS&J survey crews
3. As-built plans
4. United States Geological Service (USGS) 72 minute quadrangle maps
5. Southwest Florida Water Management District (SWFWMD) aerial topographic maps
6. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps
7. Local Government Drainage Studies
8. FDOT files and drainage maps

IV REGULATORY AGENCIES

Coordination by the THCEA is anticipated with the following agencies:

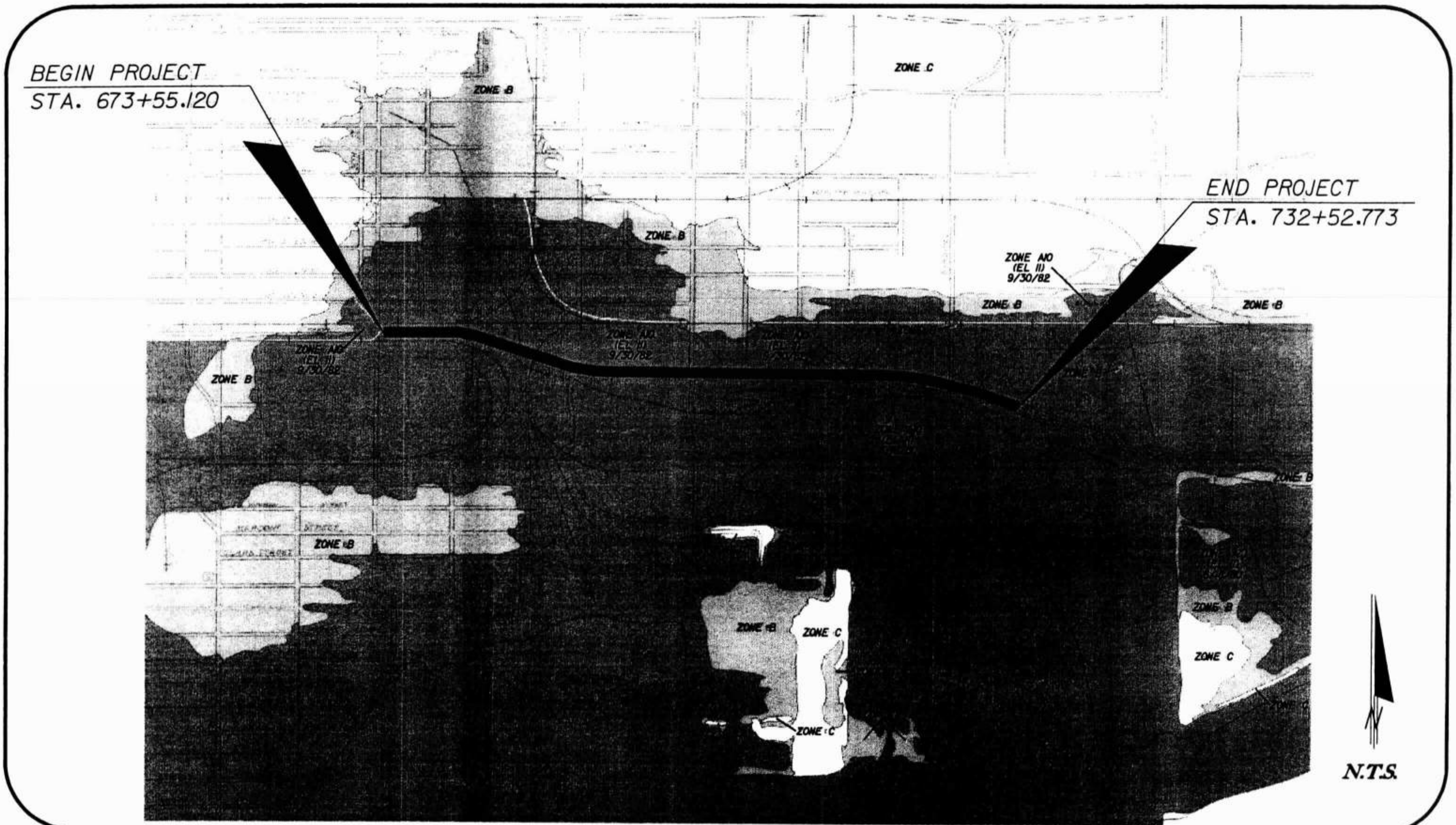
1. Southwest Florida Water Management District (SWFWMD) - Governs permitting of new surface water management systems (for storage, treatment and dredge and fill activities). A pre-application meetings was held with SWFWMD on 5/17/01.

2. United States Environmental Protection Agency (EPA) - Issues National Pollution Discharge Elimination System (NPDES) permits concerning stormwater discharges from state facilities.

3. Hillsborough County Environmental Protection Commission (HCEPC) - Primarily concerned with wetland protection.

V FLOODPLAIN INFORMATION

The project is in an area subject to hurricane surge flooding for a Class III hurricane (100-year event) (Source: Flood Insurance Rate Mapping, Community Panel Nos. 120114 0025C, see Figure No. 3). The surge elevation predicted for this event is 11.0 NGVD '29. Although embankment construction is proposed in the flooding areas, compensation for hurricane surge flooding impacts is not required.



FEMA PANEL NO. 120114 0025 C
MAP REVISED SEPTEMBER 30, 1982

THCEA

LEE ROY SELMON
CROSSTOWN EXPRESSWAY
PROJECT No. 51.40.01

FIGURE No.3

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VI EXISTING CONDITIONS DRAINAGE

The project area has one (1) basin outfall, McKay Bay. McKay Bay is tidally influenced. Drainage from the existing expressway flows to one of three (3) existing detention ponds. The existing pond 7 is located north of the expressway and south of the CSX Railroad at approximately Station 685+00, left, B/L Survey SR 618. Pond 8 is located north of the expressway and south of the 34th Street Outfall Canal at approximately Station 693+00, left, B/L Survey SR 618. Pond 9 is located south of the expressway and west of 34th Street at approximately Station 696+00, right, B/L Survey SR 618. Pond 7 outfalls via an existing 3' x 3' concrete box culvert to a series of interconnected ditches and wetlands that flow south and east to an ultimate discharge at McKay Bay. Pond 8 discharges via a broad crested weir at elevation 7.5 to the 34th Street Outfall Canal, with an ultimate discharge at McKay Bay. Pond 9 discharges to the north via an existing 24" cross drain under the Expressway to Pond 8. None of the existing ponds are permitted for stormwater treatment or attenuation.

Expressway Drainage

The existing drainage conveyance of the Expressway is a system of barrier wall inlets, shoulder gutter inlets near the overpasses, roadside ditches, ditch bottom inlets, and storm drain pipes. The closed conveyance systems discharge to the roadside ditches and/or existing cross drains with ultimate discharge at McKay Bay.

From 26th Street to the CSX overpass near Station 687+00, B/L Survey SR 618, the westbound Expressway lanes are conveyed by a storm drain system utilizing shoulder gutter inlets and median ditch bottom inlets to convey flow to Pond 7. The eastbound lanes in this area are super-elevated from 26th Street to approximately Station 682+00, B/L Survey SR 618 and flow to the median ditch. The median ditch is collected by a ditch bottom inlet near Station 677+80, B/L Survey SR 618 and conveyed by storm drain pipes to Pond 7. For the remainder of this area, the eastbound lanes are collected by shoulder gutter inlets and discharge to the right roadside ditch.

From the CSX overpass near Station 687+00, B/L SR 618, to 34th Street, the existing westbound lanes sheet flow to the north Expressway ditch system and are conveyed to Pond 8. The exceptions to the sheet flow conveyance are near Station 695+30, B/L Survey SR 618 and near Station 699+40, B/L SR 618, where the runoff is collected by shoulder gutter inlets. At Station 695+30, B/L SR 618, flow collected by the shoulder gutter inlet is conveyed by storm drain pipe to Pond 8. At Station 699+40, B/L SR 618, the flow collected by the shoulder gutter inlet is conveyed by storm drain pipes to the right roadside ditch. The existing eastbound lanes in this area sheet flow to the right roadside ditch except near the bridge overpasses where flow is collected by shoulder gutter inlets and conveyed by storm drain pipes to the right roadside ditch system.

Between 34th Street and 39th Street, all Expressway runoff is to the roadside ditches that flow to the existing 8' x 8' concrete box culvert near Station 714+20, B/L SR 618. This cross drain discharges directly to McKay Bay.

From 39th street to the east end of the project, westbound Expressway runoff sheet flows to the north roadside ditch. Flow from the north roadside ditch is captured by ditch bottom inlets and conveyed north to the SR 60 ditch system that outlets at the 8' x 8' concrete box culvert noted above. The eastbound Expressway runoff is conveyed by the south roadside ditch system to a ditch bottom inlet near Station 728+40, right, B/L SR 618. From this ditch bottom inlet, flow is conveyed by an existing 24" pipe to join with the north roadside ditch flow and outfall as previously noted.

Offsite Drainage

Offsite areas flow southward toward the project from south of SR 60. This offsite flow is captured by the north Expressway ditch system or the 34th Street Outfall Canal. The ultimate discharge for all offsite flow is to McKay Bay.

VII STORMWATER MANAGEMENT AND TREATMENT

Stormwater treatment will be provided in accordance with the rules and regulations of the SWFWMD, the Florida Department of Environmental Protection (FDEP), the EPA, and the HCEPC. SWFWMD rules will be met via the Environmental Resources Permit process. FDEP has generally deferred jurisdiction of non-coastal roadway projects to SWFWMD, but confirmation of this will be obtained by THCEA as design progresses. The US-EPA regulations will be met via the NPDES permit process. HCEPC generally is tasked to oversee wetland issues and usually defers to SWFWMD on issues of water quality.

Three (3) stormwater management ponds are proposed for this project. The ponds are designated as Pond 4A, Pond 4D, and Pond X. Pond 4A is located at the site of existing Pond 8 at approximately Station 693+00, left, B/L SR 618. Pond 4D is located at the site of existing Pond 9 at approximately Station 696+00, right, B/L Survey SR 618. The project proposes to remove the existing exit ramp from the eastbound Expressway to 39th Street and the toll plaza at this ramp. Pond X is located in the area where the ramp and toll plaza are proposed to be removed.

Treatment will be provided for the first inch of directly connected impervious area runoff from the proposed construction, in accordance with SWFWMD ERP rules and regulations. Treatment will also be provided for the pond areas at the weir crest elevations. The receiving water for this project (McKay Bay) is not classified as an Outstanding Florida Water. Therefore the additional 50% treatment volume for runoff discharging to Outstanding Florida Waters does not apply to this project.

Two stormwater models were used for design on this project. The first model includes both Pond 4A and Pond 4D. These ponds are interconnected in the existing and proposed conditions. Because both ponds discharge to the 34th Street Outfall Canal, a tidally influenced water, attenuation is not required. Therefore, no existing conditions model was designed. The second model is for Pond X. Pond X discharges directly to McKay Bay, a tidally controlled water body. Again, attenuation is not required and no existing conditions model was run. The time of concentration used in all modeling was based approximately on data from the storm drain tabulations. The pond areas were input as separate nodes due to the relatively short time of concentrations for these areas. A time of concentration of 10 minutes (0.17 hour) was used for the pond areas. The pond areas were weighted for CN determination, using the pond area at the weir crest as CN = 100.0 and the remaining pond area at CN = 39.0. The initial stage at each pond is set equal to the weir elevation for that facility, i.e., assuming the pond treatment volume is occupied by water.

The following narrative describes the proposed treatment required and provided for the project:

Station 671+78 to Station 699+40, B/L SR 618: The relocated eastbound and the reversible lanes will be collected by barrier wall inlets and shoulder gutter inlets and conveyed to Ponds 4A and 4D. The proposed reversible lanes bridge from Station 671+78 to Station 688+67 will also be conveyed to these ponds for treatment. The existing westbound pavement runoff between the CSX Railroad and 34th Street will be conveyed to Pond 4A (existing Pond 7) as in the existing conditions. Because the existing eastbound lanes (2.80 acres) are being replaced in kind and the existing westbound lanes (and westbound lanes runoff conveyance) will be unaltered, treatment is required only for the reversible lanes roadway section. However, in this basin, treatment is being provided for the portion of the existing westbound lanes that drains to Pond 4A, the relocated eastbound lanes and the reversible lane roadway. The reversible lanes bridge section begins at Station 1671+78, B/L Reversible and ends at Station 1683+44, B/L Reversible. Treatment is proposed for the area of the reversible lanes from Station 1683+44 to Station 1699+40, B/L Reversible. The impervious area from the reversible lanes bridge and roadway section is 3.06 acres. All of this area is required to be treated. The eastbound relocated lanes from Station 3671+78 to Station 3699+40, B/L Eastbound (5.35 acres) and the existing westbound lanes from Station 682+00 to Station 685+00 and from Station 687+50 to Station 699+40, B/L SR 618 (1.26 acres combined), are not required to be treated but are also proposed for treatment. The total impervious area runoff to be treated in Basin 4 is 9.67 acres. Note: Treatment for the bridge section of the reversible lanes west of Station 1671+78 is being designed under a separate THCEA design project.

Station 699+40 to Station 723+86, B/L SR 618: The relocated eastbound, slip ramp (Slip Ramp 4) and the reversible lanes will be collected by barrier wall inlets and shoulder gutter inlets and conveyed to Pond X. Because the existing eastbound lanes (2.78 acres) are being replaced in kind and the westbound lanes will remain as in the existing condition, treatment is required only for the reversible lanes roadway and slip ramp pavement (4.47 acres). However, 2.97 acres of the relocated eastbound lanes are also proposed for treatment, bringing the total impervious area proposed for treatment in Basin X to 7.44 acres. Treatment is proposed for the reversible lanes roadway from Station 1699+15 to Station 1723+86, B/L Reversible and the reversible lanes bridge from Station 1721+01.58, B/L Reversible to Station 1723+86, B/L Reversible, a total of 2.24 acres. Treatment for the bridge section from Station 1721+01.58 to Station 1723+86 is captured at proposed Structure S-452A and conveyed to Pond X for treatment. The eastbound lanes from Station 3699+00 to Station 3722+00, B/L Eastbound (2.97 acres), and the entire slip ramp area (2.23 acres) are proposed for treatment. Treatment of the reversible lanes east of Station 1723+86 is being designed under a separate THCEA design project.

Station 3722+00 to Station 3732+15, B/L Eastbound: The only construction proposed in this area is the re-construction of the eastbound lanes. The proposed outfall for the barrier wall inlet and shoulder gutter inlet drainage collection system in these limits is the roadside ditch south of the Expressway. This is the same outfall location as is present in the existing conditions. Because there is no increased impervious in this area and there is no change of existing outfall or secondary treatment provided for this outfall, no treatment is required or proposed for this area of 0.84 acres of impervious runoff.

For a summary of the above required and proposed treatment areas, see Table VII-I, below.

Table VII-I

Treatment Summary

Location Station to Station	Pond	Existing Impervious (Acres)	Proposed Impervious (Acres)	Increased Impervious (Acres)	Area at Weir Crest (Acres)	Volume Required (Ac. Ft.)*	Area Proposed for Treatment (Acres)	Volume Proposed (Ac. Ft.)*	Volume Provided (Ac. Ft.)
671+78 to 699+40	4A & 4D	4.06	8.41	4.35	1.63	0.50	9.67	0.94	1.06
699+40 to 723+86	X	2.78	7.44	4.66	0.78	0.45	7.44	0.69	0.83
3722+00 to 3732+15	N/A	0.84	0.84	0.00	N/A	0.00	0.00	0.00	0.00

* Volumes include treatment for Pond Areas at the Weir Crest Elevation.

The proposed pond geometry is summarized in Table VII-II, below.

Table VII-II

Pond Design Summary

Pond	Weir Elev.	Weir Length (Feet)	Area at Weir Crest (Acres)	SHW / NWL Elev. (Orifice Elev.)	Orifice Size (Inches)	Area at SHW / NWL Elev. (Acres)	Top of Bank Elev.	Area at Top of Bank (Acres)	25-Year 24-hour DHW
4A	7.10	19.17	1.01	6.42	2.25	0.94	9.0	1.76	7.58
4D	7.10	19.17	0.62	6.42	*	0.56	9.0	1.15	7.69
X	2.60	19.17	0.78	1.41	1.75	0.61	5.2	1.17	3.29

* Pond 4D is interconnected with Pond 4A and shares a common orifice.

VIII INLET SPACING

Barrier wall inlets and shoulder gutter inlets were designed to meet FDOT criteria for spread. These inlets were designed to maintain spread from a 10-year (7.4" intensity) rainfall within the shoulder area (6.0' on Slip Ramp 4 and 10' on the Eastbound roadway and the Reversible lanes).

IX STORM DRAIN DESIGN

Closed storm drain systems were designed in accordance with FDOT criteria for conveyance of a 10-year rational runoff adequate to provide a minimum hydraulic gradient to edge of pavement clearance of 1.0' without minor losses considered and to provide clearance to the edge of pavement elevation with minor losses considered. Exit losses at the ponds were considered in all cases. All sags were designed to contain the resultant 50-year rational runoff within the storm drain system. Beginning tailwater elevations for systems draining to Ponds 4A, 4D, and X were established by routing the FDOT 1-hour (3.1" – 10-year, 4.0" – 50-year) rainfall events through the ponds. The peak stage reached in the respective ponds was used as the beginning tailwater elevation for the storm drain system. The 1 hour event was used due to the relatively short time of concentration of the storm drain systems. For the beginning tailwater elevation summary, see Table IX-I, below.

Table IX-I

Beginning Storm Drain Tailwater Elevations

Pond	10-year	50-year
4A	7.46	7.58
4D	7.54	7.69
X	3.20	3.40

For storm drain systems that do not outfall to a pond, the beginning tailwater elevation was assumed to be the inside crown of the pipe. This assumption is reasonable as these pipes outfall to roadside ditches from high fill sections.

X PONDS 4A AND 4D BASIN DESIGN

Ponds 4A and 4D are interconnected ponds. These ponds are interconnected by a 24" cross drain under the Expressway. The ponds directly outfall to the 34th Street Outfall Canal, a tidally influenced body of water, each by a 30" pipe. Thus, attenuation is not required. The ponds control structure are each Ditch Bottom Inlets, Type H, providing a weir length of 19.17' each. All front slopes from the berm to the pond bottoms are 1:4 from the inside of the berm. Pond 4A provides a littoral shelf of approximately 0.64 acres, providing approximately 90% littoral zone of the control elevation area. Pond 4D provides a littoral shelf of approximately 0.30 acres, providing approximately 48% littoral zone of the control elevation area. A 2.25" diameter orifice is proposed at the Pond 4A control structure providing drawdown of ½ of the treatment volume in approximately 68 hours and total drawdown of the treatment volume in greater than 120 hours, meeting SWFWMD criteria. This orifice is designed to function for draw down of both ponds.

Pond 4A is a wet treatment facility with an area of 1.76 acres at the top of the pond bank (the outside of the 20' wide maintenance berm). The berm is sloped at a 1:20 cross slope toward the pond bottom. The Seasonal High Water (SHW) elevation for this pond was determined by biological indicators at elevation 6.42. The SHW area is 0.94 acres. The 25-year 24-hour rainfall event has a peak stage of elevation 7.59 providing approximately 1.4' of freeboard to the top of pond elevation of 9.0.

Pond 4D is a wet treatment facility with an area of 1.15 acres at the top of the pond bank (the outside of the 20' wide maintenance berm). The berm is sloped at a 1:15 cross slope toward the pond bottom. The Seasonal High Water (SHW) elevation for this pond is controlled by Pond 4A at elevation 6.42. The SHW area is 0.56 acres. The 25-year 24-hour rainfall event has a peak stage of elevation 7.69 providing approximately 1.3' of freeboard to the top of pond elevation of 9.0.

Treatment for runoff from the reconstructed Eastbound lanes, the Reversible lanes, and existing westbound lanes (9.67 total acres) and the 1.63 acre pond areas at the weir crest elevation is provided by biological assimilation. The treatment depth of 0.68' is provided between the weir crest elevation of 7.10 and the orifice elevation of 6.42. This provides 1.06 acre-feet of treatment versus the required treatment volume of 0.50 acre-feet (1" for 4.35 acres of increased impervious runoff).

A tailwater elevation of 1.60 was used in the BRN modeling for these ponds. This elevation, representing the historic high water elevation in the 29th Street Canal at the discharge pipes for the ponds, was taken from the existing FDOT Drainage Map for State Project Number 10002-3524.

XI POND X BASIN DESIGN

Pond X outfalls directly to McKay Bay, a tidally influenced body of water, by a 30" pipe. Thus, attenuation is not required. The ponds control structure is a Ditch Bottom Inlet, Type H, providing a weir length of 19.2'. All front slopes from the berm to the pond bottoms are 1:4 from the inside of the berm. Pond X is a wet treatment facility with an area of 1.17 acres at the top of the pond bank (the inside of the 20' wide maintenance berm). The Seasonal High Water (SHW) elevation for this pond was determined by soil borings to be highly variable due to the presence of Arents soils that have been disturbed and re-worked by the construction of the existing toll plaza. The soils report notes that SHW is likely controlled by McKay Bay due to the proximity of the pond site to the bay. A SHW elevation of 1.41, equal to the Mean Water elevation of the bay, was selected for this site. This may result in lowering the physical SHW elevation in the Arents soils, but will have no adverse impact on the surrounding lands (the Expressway). The only wetlands near the site are those at the bay which are already controlled by the tidal water elevation in the bay. The SHW area is 0.78 acres. The 25-year 24-hour rainfall event has a peak stage of elevation 3.30 providing approximately 1.9' of freeboard to the top of pond elevation of 5.2. The pond provide a littoral shelf of 0.48 acres, providing approximately 62% littoral zone of the control elevation area. A 1.75" diameter orifice is proposed at the control structure providing drawdown of ½ of the treatment volume in 67.5 hours and total drawdown of the treatment volume in greater than 120 hours, meeting SWFWMD criteria.

A tailwater elevation of 1.41 was used in the BRN modeling for this pond. This elevation represents the Mean Water elevation in McKay Bay.

Pond Design

Crosstown Expressway
Contract No. 51.30.03

By: DKA Date: 8/14/01
C'ked by: JJS Date: 9/6/01

Pond 4A & 4D Treatment Volume Calculations

Pond 4A Geometry					
Description	**Area (ft^2)**	**Area (Ac)**	**Side Slope (Rise:Run)**	**Distance (ft)**	**Elevation (ft)**
Outside Top of Berm	76666.40	1.76	1:20	20.0	9.0
Inside Top of Berm	48216.94	1.11		4.0	8.0
Top of Treatment	43995.6	1.01	1:4	2.32	7.1
Bottom of Treatment	40731.29	0.94			6.42

Pond 4D Geometry					
Description	**Area (ft^2)**	**Area (Ac)**	**Side Slope (Rise:Run)**	**Distance (ft)**	**Elevation (ft)**
Outside Top of Berm	50250.42	1.15	1:15.4	20.0	9.0
Inside Top of Berm	28976.51	0.67		2.8	7.7
Top of Treatment	27007.2	0.62	1:4	2.32	7.1
Bottom of Treatment	24260.58	0.56			6.42

Pond 4A & 4D Volume Totals		
Description	**Area (ft^2)**	**Area (Ac)**
Outside Top of Berm	126916.82	2.91
Inside Top of Berm	77193.45	1.77
Top of Treatment	71002.8	1.63
Bottom of Treatment	64991.87	1.49

Impervious Areas		
Existing West Bound Lanes	= 1.26 Ac.	Note: Existing undisturbed lanes, treatment provided in the existing condition in an un-permitted pond. Proposed treatment to be provided.
Proposed Reversible Lanes	= 3.06 Ac.	Note: Treatment to be provided.
Existing East Bound Lanes	= 2.80 Ac.	
Proposed East Bound Lanes	= 5.35 Ac.	Note: Treatment to be provided.

Existing Impervious Area = 4.06 Ac.
Total Proposed Area = 8.41 Ac.
Increased Impervious Area **= 4.35 Ac.**

Treatment Required = 4.35 Ac. (Basin 4A & 4D Increased Impervious) + 1.63 Ac. (Top of Treatment) = 5.98 Ac. @ 1" of Runoff = **0.498 Ac.ft.**

Treatment Proposed = 8.41 Ac. (EB & Rev.) + 1.26 (Existing Westbound Lanes) + 1.63 Ac. (Top of Treatment) = 11.30 Ac. @ 1" of Runoff = **0.942 Ac.ft.**

Treatment Provided = 46238.2 cu. ft. (Volume between Top of Treatment and Bottom of Treatment) = **1.061 Ac.ft.**

Excess Treatment Provided = (Treatment Provided - Treatment Required) = **0.563 Ac.ft.**

Crosstown Expressway

Contract No. 51.30.03

By: DKA　　Date: 9/6/01
C'ked by: JJS　　Date: 9/6/01

Basin 4A & 4D Impervious Area

Basin 4A & 4D Impervious Area				
Description	**Station**	**to**	**Station**	**Area**
Existing East Bound Lanes (SR 615)	671+75.20	to	699+15.00	2.80 Ac.
Proposed Reversible Lanes	1671+78.00	to	1699+15.00	3.06 Ac.
Proposed East Bound Lanes	3671+75.00	to	3699+00.00	5.35 Ac.
Existing West Bound Lanes (SR 615)	682+00.00	to	685+00.00	0.20 Ac.
Existing West Bound Lanes (SR 615)	687+50.00	to	699+40.00	1.06 Ac.

Crosstown Expressway

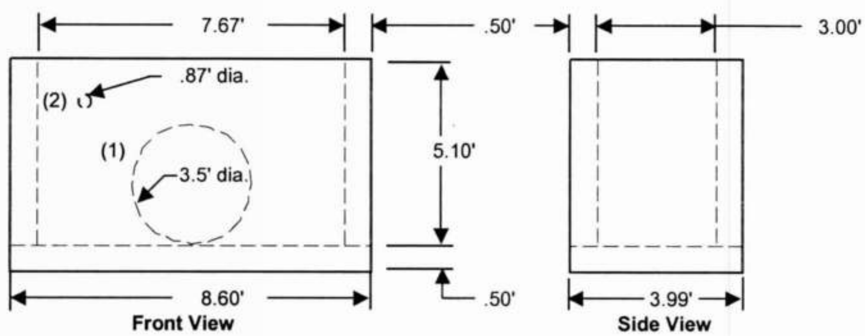
Contract No. 51.30.03

Pond 4A Weir Floatation Calculations

By: DKA Date: 7/31/01
C'ked by: JJS Date: 8/1/01

Constant	lbs/cf
Weight of Concrete	150
Weight of Seawater	64
Weight of Grout	100

Note: Grout depth not indicated in sketches.



Grout Depth From Pipe FL: 1.5 ft

Volume of Front & Back Sides

SIDE	LENGTH ft	HEIGHT ft	THICKNESS ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
Front	8.60	6.60	0.5	3.5	0.87	23.27
Back	8.60	6.60	0.5	0	0	28.38

Volume Sub-Total: 51.65

Volume of Left & Right Sides

SIDE	LENGTH ft	HEIGHT ft	THICKNESS ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
Left	3.00	6.60	0.5	0	0	9.90
Right	3.00	6.60	0.5	0	0	9.90

Volume Sub-Total: 19.80

Volume of Bottom Slab

SIDE	LENGTH ft	WIDTH ft	THICKNESS ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
Bottom	8.60	3.99	0.5	0	0	17.16

Volume Sub-Total: 17.16

Total Structure Volume: 88.61

Total Structure Weight: 13291.39

Volume of Grout

SIDE	LENGTH ft	WIDTH ft	DEPTH ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
All	7.67	3	1.50	0	0	34.52

Volume Total: 34.52

Total Weight of Grout: 3451.50

Total Weight of Structure & Grout: 16743

H_2O Displaced

SIDE	LENGTH ft	WIDTH ft	HEIGHT ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
All	8.60	3.99	7.10*	0	0	243.63

Volume Total: 243.63

* Height of Displaced Water is From the bottom to top of structure

Total Displaced Weight: 15592

Safety Factor: 1.1

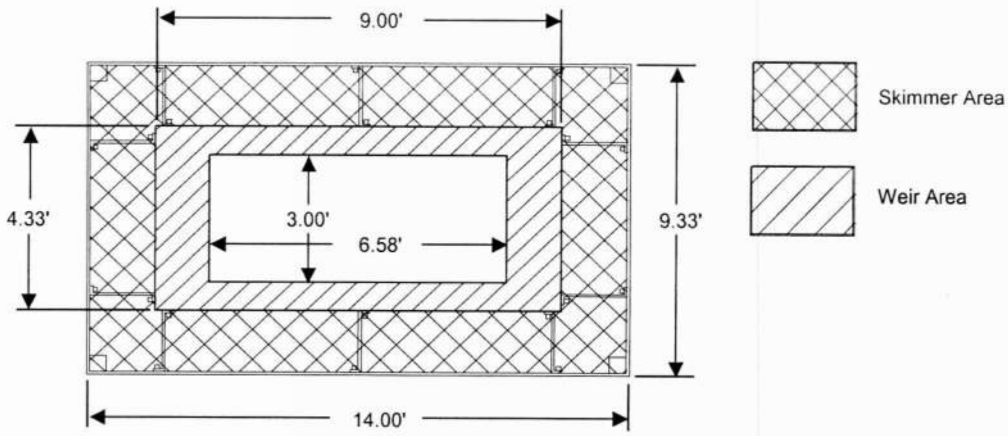
Project

Contract No.

Pond 4A Skimmer Area Calculations

By: DKA Date: 8/3/01

C'ked by: JJS Date: 9/6/01



Structure Information: DBI Type H
Std. Index No. 232

Skimmer Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Inside Skimmer Area	14.00	9.33	130.62
Outside Structure Area	9.00	4.33	38.97

Skimmer Area: 91.65

Weir Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Outside Structure Area	9.00	4.33	38.97
Inside Structure Area	6.58	3.00	19.74

Weir Area: 19.23

Safety Factor: 4.8

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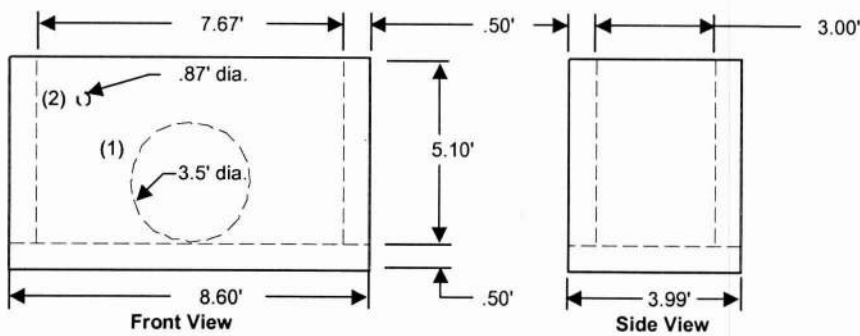
Crosstown Expressway
Contract No. 51.30.03

Pond 4D Weir Floatation Calculations

By: DKA Date: 7/31/01
C'ked by: JJS Date: 8/1/01

Constant	lbs/cf
Weight of Concrete	150
Weight of Seawater	64
Weight of Grout	100

Note: Grout depth not indicated in sketches.



Grout Depth From Pipe FL: 1.5 ft

Volume of Front & Back Sides

SIDE	LENGTH ft	HEIGHT ft	THICKNESS ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
Front	8.60	6.60	0.5	3.5	0.87	23.27
Back	8.60	6.60	0.5	0	0	28.38

Volume Sub-Total: 51.65

Volume of Left & Right Sides

SIDE	LENGTH ft	HEIGHT ft	THICKNESS ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
Left	3.00	6.60	0.5	0	0	9.90
Right	3.00	6.60	0.5	0	0	9.90

Volume Sub-Total: 19.80

Volume of Bottom Slab

SIDE	LENGTH ft	WIDTH ft	THICKNESS ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
Bottom	8.60	3.99	0.5	0	0	17.16

Volume Sub-Total: 17.16

Total Structure Volume: 88.61

Total Structure Weight: 13291.39

Volume of Grout

SIDE	LENGTH ft	WIDTH ft	DEPTH ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
All	7.67	3	1.50	0	0	34.52

Volume Total: 34.52

Total Weight of Grout: 3451.50

Total Weight of Structure & Grout: 16743

H_2O Displaced

SIDE	LENGTH ft	WIDTH ft	HEIGHT ft	PIPE HOLES (1)	PIPE HOLES (2)	VOLUME ft^3
All	8.60	3.99	7.10*	0	0	243.63

Volume Total: 243.63

* Height of Displaced Water is From the bottom to top of structure

Total Displaced Weight: 15592

Safety Factor: 1.1

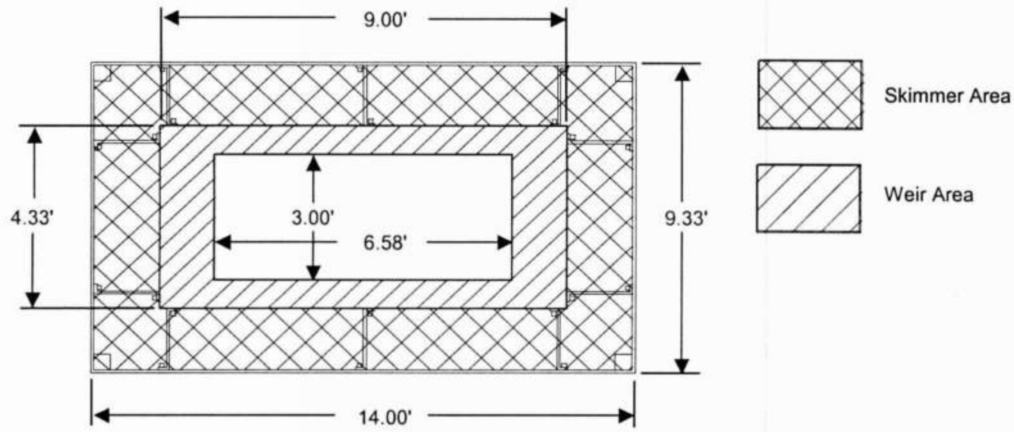
A-4 A

Project

Contract No.

Pond 4D Skimmer Area Calculations

By: DKA Date: 8/3/01
C'ked by: JJS Date: 9/6/01



Structure Information: DBI Type H
Std. Index No. 232

Skimmer Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Inside Skimmer Area	14.00	9.33	130.62
Outside Structure Area	9.00	4.33	38.97

Skimmer Area: 91.65

Weir Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Outside Structure Area	9.00	4.33	38.97
Inside Structure Area	6.58	3.00	19.74

Weir Area: 19.23

Safety Factor: 4.8

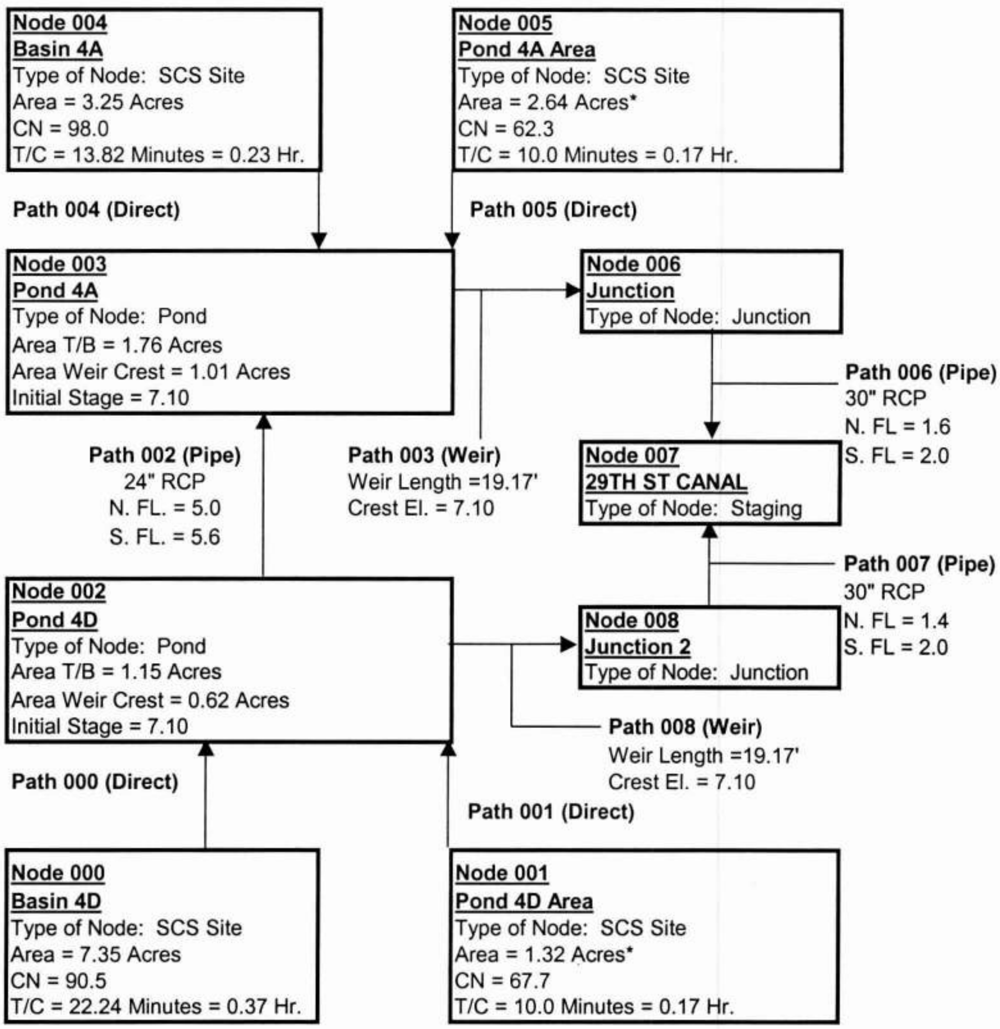
A - 4B

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/14/01

C'ked by: JJS Date: 9/6/01



* Pond 4A and Pond 4D areas include roadway slope that drains into the ponds

PONDS 4A & 4D PROPOSED CONDITIONS

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/14/01
C'ked by: JJS Date: 9/6/01

Crosstown Expressway
PROPOSED DRAINAGE AREA (BASIN-4A)

BASELINE	STRUCTURE	AREA				CN
		FT^2	AC	IMPERVIOUS	PERVIOUS	AVG
REV	S-419	18,295.27	0.42	0.42		98
REV	S-422	22,215.69	0.51	0.51		98
REV	S-426	19,602.08	0.45	0.45		98
REV	S-431	18,295.27	0.42	0.42		98
REV	S-437	16,988.47	0.39	0.39		98
WB	EX-11	14,810.46	0.34	0.34		98
WB	EX-13	15,246.06	0.35	0.35		98
WB	EX-15	16,117.26	0.37	0.37		98
	TOTAL:	**141,570.5663**	**3.25**	**3.25**	**0.00**	**98.0**

Total Acerage Existing WB = 1.06
Total Acerage WB (from Basin 4D) = 0.20
Grand Total Acerage WB = 1.26
Total Acerage REV = 2.19
Total Acerage REV (from Basin 4D) = 0.87
Grand Total Acerage REV = 3.06

Crosstown Expressway
PROPOSED DRAINAGE AREA (POND-4A)

	STRUCTURE	AREA				CN
		FT^2	AC	IMPERVIOUS	PERVIOUS	AVG
1	ELEV. '7.1'	43,579.2700	1.01	1.01		100
2	ELEV. '7.1 - 9.0'		0.75		0.75	39
3	RDWY. SLOPE	38,478.2018	0.88		0.88	39
	TOTAL:	**82,057.4718**	**2.64**	**1.01**	**1.63**	**62.3**

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Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/14/01

C'ked by: JJS Date: 9/6/01

Crosstown Expressway
PROPOSED DRAINAGE AREA (BASIN-4D)

BASELINE	STRUCTURE	AREA				CN
		FT^2	AC	IMPERVIOUS	PERVIOUS	AVG
EB	S-401	25,264.90	0.58	0.58		98
EB	S-402	6,969.63	0.16	0.16		98
EB	S-404	10,454.44	0.24	0.24		98
EB	S-405	13,503.65	0.31	0.31		98
EB	S-407*	118,919.28	2.73	1.80	0.93	78
EB	S-408	11,325.65	0.26	0.26		98
EB	S-409	9,583.24	0.22	0.22		98
REV	S-410	20,037.68	0.46	0.46		98
EB	S-411	10,890.04	0.25	0.25		98
EB	S-412	16,552.87	0.38	0.38		98
EB	S-413	14,810.46	0.34	0.34		98
EB	S-415	8,276.43	0.19	0.19		98
REV	S-420	17,859.67	0.41	0.41		98
EB	S-423	13,068.05	0.30	0.30		98
EB	S-424	7,405.23	0.17	0.17		98
EB	S-428	6,534.03	0.15	0.15		98
WB	EX-9	8,712.03	0.20	0.20		98
	TOTAL:	**320,167.2807**	**7.35**	**6.42**	**0.93**	**90.5**

*1.59 acre impervious from bridge; 0.21 acre impervious from ditch; 0.93 acre pervious from ditch

Total Acerage EB = 6.28 Acres: 5.35 Acres Impervious; 0.93 Acres Pervious

Total Acerage WB = 0.20 Acres Impervious

Total Acerage REV = 0.87 Acres Impervious

Crosstown Expressway
PROPOSED DRAINAGE AREA (POND-4D)

	STRUCTURE	AREA				CN
		FT^2	AC	IMPERVIOUS	PERVIOUS	AVG
1	ELEV. '7.1'	26,464.8500	0.62	0.62		100
2	ELEV. '7.1' - 9.0'		0.53		0.53	39
3	RDWY SLOPE	7,296.7601	0.17		0.17	39
	TOTAL:	**33,761.6101**	**1.32**	**0.62**	**0.70**	**67.7**

PATHS AND NODES FOR ALL BASIN 4 MODELING

Project C:\HSS\X_TOWN.WBS\POND4PRO.BRN
Last Revised on Fri Dec 14 10:44:28 2001
Run of Fri Dec 14 10:44:42 2001 (Status = CONVERGED)

Project Contains 9 Paths.
Project Contains 9 Nodes.

Path	Up Stream Node Name	Down Stream Node Name	Path Type
0	BASIN 4D	POND 4D	DIRECT
1	POND 4D AREA	POND 4D	DIRECT
2	POND 4D	POND 4A	PIPE
3	POND 4A	JUNCTION	RECT WEIR
4	BASIN 4A	POND 4A	DIRECT
5	POND 4A AREA	POND 4A	DIRECT
6	JUNCTION	29 ST CANAL	PIPE
7	JUNCTION 2	29 ST CANAL	PIPE
8	POND 4D	JUNCTION 2	RECT WEIR

Node	Name	Node Type
0	BASIN 4D	SCS SITE
1	POND 4D AREA	SCS SITE
2	POND 4D	POND
3	POND 4A	POND
4	BASIN 4A	SCS SITE
5	POND 4A AREA	SCS SITE
6	JUNCTION	JUNCTION
7	29 ST CANAL	STAGING
8	JUNCTION 2	JUNCTION

SWFWMD 25-YR 24-HR (8.0" RAINFALL) FL TYPE II MODIFIED

Node	Name	Node Type	Min El.	at Hr.	Max El.	at Hr.	Flooded
0	BASIN 4D	SCS SITE	10.99	0.00	10.99	0.00	NO
1	POND 4D AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
2	POND 4D	POND	7.10	1.70	7.69	12.40	NO
3	POND 4A	POND	7.10	0.60	7.59	12.40	NO
4	BASIN 4A	SCS SITE	10.99	0.00	10.99	0.00	NO
5	POND 4A AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
6	JUNCTION	JUNCTION	2.00	0.00	4.18	12.40	NO
7	29 ST CANAL	STAGING	1.60	0.00	1.60	0.00	NO
8	JUNCTION 2	JUNCTION	2.00	0.00	5.84	12.40	NO

SWFWMD 25-YR 24-HR (8.0" RAINFALL) FL TYPE II MODIFIED

Node	Name	Maximum CFS Inflow	Maximum CFS Outflow
0	BASIN 4D	27.39 @ 12.30 Hours	27.39 @ 12.30 Hours
1	POND 4D AREA	4.08 @ 12.10 Hours	4.08 @ 12.10 Hours
2	POND 4D	31.17 @ 12.30 Hours	29.47 @ 12.40 Hours
3	POND 4A	24.29 @ 12.20 Hours	20.38 @ 12.40 Hours
4	BASIN 4A	14.91 @ 12.20 Hours	14.91 @ 12.20 Hours
5	POND 4A AREA	6.83 @ 12.10 Hours	6.83 @ 12.10 Hours
6	JUNCTION	20.38 @ 12.40 Hours	20.29 @ 12.40 Hours
7	29 ST CANAL	46.99 @ 12.40 Hours	0.00 @ 0.00 Hours
8	JUNCTION 2	26.63 @ 12.40 Hours	26.70 @ 12.40 Hours

:port on Paths of Project POND4PRO.
SWFWMD 25-YR 24-HR (8.0" RAINFALL)
'L TYPE II MODIFIED

Path...... 000, DIRECT
'Ipper Node 000, BASIN 4D
,ower Node 002, POND 4D

ⁿIRECT..		INPUT ID	997812075
		T0 CFS..	0.00
		T0 CF...	0.00
		MAX IN..	27.39
		MIN IN..	0.00
		MAX OUT.	27.39
		MIN OUT.	0.00
[W PE/KE	NO	FWD K...	0.00
'TW PE/KE	YES	REV K...	0.00
"W EL...	10.990	FWD X...	0.00
'W EL...	9.000	REV X...	0.00

ath...... 001, DIRECT
Upper Node 001, POND 4D AREA
,ower Node 002, POND 4D

DIRECT..		INPUT ID	997812091
		T0 CFS..	0.00
		T0 CF...	0.00
		MAX IN..	4.08
		MIN IN..	0.00
		MAX OUT.	4.08
		MIN OUT.	0.00
[W PE/KE	NO	FWD K...	0.00
'W PE/KE	YES	REV K...	0.00
HW EL...	10.990	FWD X...	0.00
'W EL...	9.000	REV X...	0.00

'ath...... 002, PIPE
_'pper Node 002, POND 4D
Lower Node 003, POND 4A

EN, FT.	381.000	INPUT ID	1008344668
MANN N..	0.012	TO CFS..	0.00
ISE, FT	2.000	TO CF...	0.00
PAN, FT	2.000	MAX IN..	2.83
NLET—		MIN IN..	-0.89
NVERT..	5.600	MAX OUT.	2.83
NT KE..	1.300	MIN OUT.	-0.89
UTLET—			
INVERT..	5.000		
NT KE..	1.700		
BW STEPS	0		
HW PE/KE	YES	FWD K...	0.00
W PE/KE	YES	REV K...	0.00
AX HW..	9.000	FWD X...	0.00
MAX TW..	9.000	REV X...	0.00

ath...... 003, RECT WEIR
pper Node 003, POND 4A
ower Node 006, JUNCTION

REST EL	7.100	INPUT ID	1008344136
IDTH...	19.170	TO CFS..	0.00
WEIR C..	3.100	TO CF...	0.00
UM ENDS	0	MAX IN..	20.38
		MIN IN..	0.00
BREADTH.		MAX OUT.	20.38
		MIN OUT.	0.00
HW PE/KE	YES	FWD K...	0.00
W PE/KE	NO	REV K...	0.00
AX HW..	9.000	FWD X...	0.00
AX TW..	10.990	REV X...	0.00

Path...... 004, DIRECT
pper Node 004, BASIN 4A
ower Node 003, POND 4A

IRECT..		INPUT ID	997812171
		TO CFS..	0.00
		TO CF...	0.00
		MAX IN..	14.91
		MIN IN..	0.00
		MAX OUT.	14.91
		MIN OUT.	0.00

..W PE/KE NO		FWD K...	0.00
TW PE/KE YES		REV K...	0.00
W EL...	10.990	FWD X...	0.00
W EL...	9.000	REV X...	0.00

Path...... 005, DIRECT
Upper Node 005, POND 4A AREA
ower Node 003, POND 4A

DIRECT..		INPUT ID	997812188
		T0 CFS..	0.00
		T0 CF...	0.00
		MAX IN..	6.83
		MIN IN..	0.00
		MAX OUT.	6.83
		MIN OUT.	0.00
W PE/KE NO		FWD K...	0.00
TW PE/KE YES		REV K...	0.00
TW EL...	10.990	FWD X...	0.00
W EL...	9.000	REV X...	0.00

ath...... 006, PIPE
Upper Node 006, JUNCTION
ower Node 007, 29 ST CANAL

LEN, FT.	80.000	INPUT ID	1007669514
MANN N..	0.012	T0 CFS..	0.00
ISE, FT	2.500	T0 CF...	0.00
PAN, FT	2.500	MAX IN..	20.29
INLET—		MIN IN..	0.00
NVERT..	2.000	MAX OUT.	20.29
NT KE..	1.000	MIN OUT.	0.00
OUTLET—			
NVERT..	1.600		
NT KE..	0.700		
PW STEPS	0		
W PE/KE NO		FWD K...	0.00

AX HW..	10.990	FWD X...	0.00
MAX TW..	10.990	REV X...	0.00

ath...... 007, PIPE
pper Node 008, JUNCTION 2
ower Node 007, 29 ST CANAL

EN, FT.	357.000	INPUT ID	1010762101
ANN N..	0.012	TO CFS..	0.00
RISE, FT	2.500	TO CF...	0.00
PAN, FT	2.500	MAX IN..	26.64
NLET—		MIN IN..	0.00
NVERT..	2.000	MAX OUT.	26.64
NT KE..	1.700	MIN OUT.	0.00
UTLET—			
NVERT..	-3.000		
ENT KE..	1.700		
W STEPS	0		
HW PE/KE NO		FWD K...	0.00
W PE/KE NO		REV K...	0.00
AX HW..	10.990	FWD X...	0.00
AX TW..	10.990	REV X...	0.00

Path...... 008, RECT WEIR
pper Node 002, POND 4D
ower Node 008, JUNCTION 2

REST EL	7.100	INPUT ID	1008344143
IDTH...	19.170	TO CFS..	0.00
EIR C..	3.100	TO CF...	0.00
NUM ENDS	1	MAX IN..	26.64
		MIN IN..	0.00
READTH.		MAX OUT.	26.64
		MIN OUT.	0.00
W PE/KE YES		FWD K...	0.00
TW PE/KE NO		REV K...	0.00
AX HW..	9.000	FWD X...	0.00
AX TW..	10.990	REV X...	0.00

port on Nodes of Project POND4PRO.

ode...... 000, SCS SITE

FLOOD EL.	10.990			INPUT ID....................	100592544
				FLOOD ELEVATION REACHED......	NO
STORM....	SCS_IIM	FREEZE...	YES	INITIAL STAGE ELEVATION......	10.99
RAINFALL.	8.000	FREEZE...	YES	INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	10.99
REA, AC.	7.350			MINIMUM STAGE REACHED........	10.99
CURVE NO.	90.500			MAXIMUM GROSS STORAGE, CF....	0.00
HG FILE.	SCS_323			MAXIMUM DETENTION STORAGE, CF	0.00
A FACTOR	0.200			FINAL STAGE ELEVATION........	10.99
ıC, HOURS	0.370			TIME OF MAXIMUM STAGE, HOURS.	0.00
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	27.39
				TIME OF PEAK INTAKE, HOURS...	12.30
				PEAK NODAL OUTPUT, CFS.......	27.39
				TIME OF PEAK OUTPUT, HOURS...	12.30
ASE FLOW	0.000			POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

ode...... 001, SCS SITE

LOOD EL.	10.990			INPUT ID....................	100766957
				FLOOD ELEVATION REACHED......	NO
STORM....	SCS_IIM	FREEZE...	YES	INITIAL STAGE ELEVATION......	10.99
AINFALL.	8.000	FREEZE...	YES	INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	10.99
AREA, AC.	1.320			MINIMUM STAGE REACHED........	10.99
CURVE NO.	67.700			MAXIMUM GROSS STORAGE, CF....	0.00
HG FILE.	SCS_323			MAXIMUM DETENTION STORAGE, CF	0.00
A FACTOR	0.200			FINAL STAGE ELEVATION........	10.99
TC, HOURS	0.170			TIME OF MAXIMUM STAGE, HOURS.	0.00
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	4.08
				TIME OF PEAK INTAKE, HOURS...	12.10
				PEAK NODAL OUTPUT, CFS.......	4.08
				TIME OF PEAK OUTPUT, HOURS...	12.10
ASE FLOW	0.000			POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

Node...... 002, POND

OP EL...	9.000	TOP AREA.	1.150	INPUT ID....................	100766958
L.......	7.700	AREA.....	0.670	FLOOD ELEVATION REACHED......	NO
EL.......	7.100	AREA.....	0.620	INITIAL STAGE ELEVATION......	7.10
L.......		AREA.....		INITIAL STORAGE, CUBIC FEET..	17476.30
L.......		AREA.....		MAXIMUM STAGE REACHED........	7.69
EL.......		AREA.....		MINIMUM STAGE REACHED........	7.10
L.......		AREA.....		MAXIMUM GROSS STORAGE, CF....	33964.80

L.......		AREA.....		MAXIMUM DETENTION STORAGE, CF	16488.50
EL.......		AREA.....		FINAL STAGE ELEVATION........	7.14
L.......		AREA.....		TIME OF MAXIMUM STAGE, HOURS.	12.40
OT EL...	6.420	BOT AREA.	0.560	TIME OF MINIMUM STAGE, HOURS.	1.70
TOP LF...		SIDE %PER			
ID LF...		BASE %PER		PEAK NODAL INTAKE, CFS.......	31.17
OT LF...				TIME OF PEAK INTAKE, HOURS...	12.30
				PEAK NODAL OUTPUT, CFS.......	29.47
				TIME OF PEAK OUTPUT, HOURS...	12.40
ASE CFS.	0.000	STAGE TO.	7.100	POINTS OUT OF TOLERANCE......	0
X COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.01

Node...... 003, POND

OP EL...	9.000	TOP AREA.	1.760	INPUT ID....................	100583828
EL.......	8.000	AREA.....	1.110	FLOOD ELEVATION REACHED......	NO
L.......	7.100	AREA.....	1.010	INITIAL STAGE ELEVATION......	7.10
L.......		AREA.....		INITIAL STORAGE, CUBIC FEET..	28880.30
EL.......		AREA.....		MAXIMUM STAGE REACHED........	7.59
L.......		AREA.....		MINIMUM STAGE REACHED........	7.10
L.......		AREA.....		MAXIMUM GROSS STORAGE, CF....	51501.00
EL.......		AREA.....		MAXIMUM DETENTION STORAGE, CF	22620.80
L.......		AREA.....		FINAL STAGE ELEVATION........	7.13
L.......		AREA.....		TIME OF MAXIMUM STAGE, HOURS.	12.40
OT EL...	6.420	BOT AREA.	0.940	TIME OF MINIMUM STAGE, HOURS.	0.60
OP LF...		SIDE %PER			
ID LF...		BASE %PER		PEAK NODAL INTAKE, CFS.......	24.29
BOT LF...				TIME OF PEAK INTAKE, HOURS...	12.20
				PEAK NODAL OUTPUT, CFS.......	20.38
				TIME OF PEAK OUTPUT, HOURS...	12.40
BASE CFS.	0.000	STAGE TO.	7.100	POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

ode...... 004, SCS SITE

FLOOD EL.	10.990			INPUT ID....................	100583823
				FLOOD ELEVATION REACHED......	NO
TORM....	SCS_IIM	FREEZE...	YES	INITIAL STAGE ELEVATION......	10.99
RAINFALL.	8.000	FREEZE...	YES	INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	10.99
REA, AC.	3.250			MINIMUM STAGE REACHED........	10.99
URVE NO.	98.000			MAXIMUM GROSS STORAGE, CF....	0.00
UHG FILE.	SCS_323			MAXIMUM DETENTION STORAGE, CF	0.00
A FACTOR	0.200			FINAL STAGE ELEVATION........	10.99
C, HOURS	0.230			TIME OF MAXIMUM STAGE, HOURS.	0.00
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	14.91
				TIME OF PEAK INTAKE, HOURS...	12.20
				PEAK NODAL OUTPUT, CFS.......	14.91
				TIME OF PEAK OUTPUT, HOURS...	12.20
BASE FLOW	0.000			POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

ode...... 005, SCS SITE

LOOD EL.	10.990			INPUT ID....................	100583824
				FLOOD ELEVATION REACHED......	NO
TORM....	SCS_IIM	FREEZE...	YES	INITIAL STAGE ELEVATION......	10.99
AINFALL.	8.000	FREEZE...	YES	INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	10.99
REA, AC.	2.640			MINIMUM STAGE REACHED........	10.99
CURVE NO.	62.300			MAXIMUM GROSS STORAGE, CF....	0.00
HG FILE.	SCS_323			MAXIMUM DETENTION STORAGE, CF	0.00
A FACTOR	0.200			FINAL STAGE ELEVATION........	10.99
TC, HOURS	0.170			TIME OF MAXIMUM STAGE, HOURS.	0.00
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	6.83
				TIME OF PEAK INTAKE, HOURS...	12.10
				PEAK NODAL OUTPUT, CFS.......	6.83
				TIME OF PEAK OUTPUT, HOURS...	12.10
ASE FLOW	0.000			POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

..ode...... 006, JUNCTION

LOOD EL.	10.990			INPUT ID....................	997817767
				FLOOD ELEVATION REACHED......	NO
				INITIAL STAGE ELEVATION......	2.00
				INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	4.18
				MINIMUM STAGE REACHED........	2.00
				MAXIMUM GROSS STORAGE, CF....	0.00
				MAXIMUM DETENTION STORAGE, CF	0.00
				FINAL STAGE ELEVATION........	2.28
				TIME OF MAXIMUM STAGE, HOURS.	12.40
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	20.38
				TIME OF PEAK INTAKE, HOURS...	12.40
				PEAK NODAL OUTPUT, CFS.......	20.29
				TIME OF PEAK OUTPUT, HOURS...	12.40
ASE CFS.	0.000			POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.04

Node...... 007, STAGING

LOOD EL.	10.990	PE TO KE.	NO	INPUT ID....................	997817824
				FLOOD ELEVATION REACHED......	NO
TIME, HRS		STAGE EL.		INITIAL STAGE ELEVATION......	1.60
IME, HRS		STAGE EL.		INITIAL STORAGE, CUBIC FEET..	0.00
IME, HRS		STAGE EL.		MAXIMUM STAGE REACHED........	1.60
TIME, HRS		STAGE EL.		MINIMUM STAGE REACHED........	1.60
IME, HRS		STAGE EL.		MAXIMUM GROSS STORAGE, CF....	0.00

:IME, HRS		STAGE EL.		MAXIMUM DETENTION STORAGE, CF	0.00
TIME, HRS		STAGE EL.		FINAL STAGE ELEVATION........	1.60
:IME, HRS		STAGE EL.		TIME OF MAXIMUM STAGE, HOURS.	0.00
:IME, HRS		STAGE EL.		TIME OF MINIMUM STAGE, HOURS.	0.00
rIME, HRS		STAGE EL.			
TIME, HRS		STAGE EL.			
				PEAK NODAL INTAKE, CFS.......	46.99
				TIME OF PEAK INTAKE, HOURS...	12.40
				PEAK NODAL OUTPUT, CFS.......	0.00
				TIME OF PEAK OUTPUT, HOURS...	0.00
		STAGE TO.	1.600	POINTS OUT OF TOLERANCE......	0
X COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

Node...... 008, JUNCTION

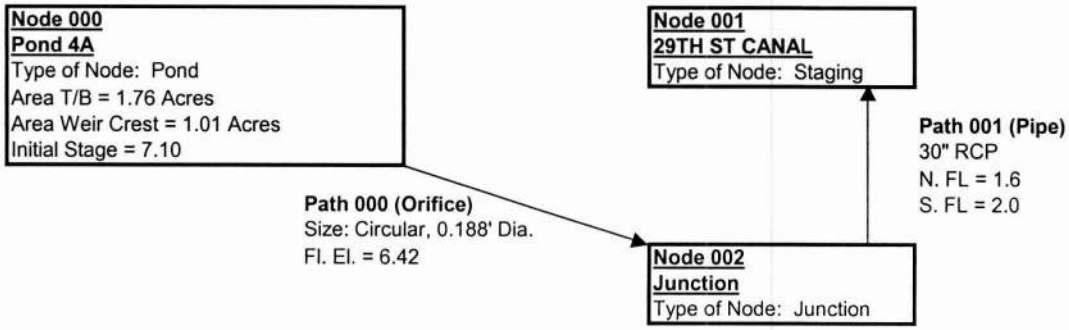
FLOOD EL.	10.990			INPUT ID....................	100834445
				FLOOD ELEVATION REACHED......	NO
				INITIAL STAGE ELEVATION......	2.00
				INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	5.84
				MINIMUM STAGE REACHED........	2.00
				MAXIMUM GROSS STORAGE, CF....	0.00
				MAXIMUM DETENTION STORAGE, CF	0.00
				FINAL STAGE ELEVATION........	2.44
				TIME OF MAXIMUM STAGE, HOURS.	12.40
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	26.63
				TIME OF PEAK INTAKE, HOURS...	12.40
				PEAK NODAL OUTPUT, CFS.......	26.70
				TIME OF PEAK OUTPUT, HOURS...	12.40
BASE CFS.	0.000			POINTS OUT OF TOLERANCE......	0
X COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.06

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/14/01

C'ked by: JJS Date: 9/6/01



POND 4A DRAWDOWN

43019654.001

:port on Paths of Project POND4DRD.

'ath...... 000, ORIFICE
Upper Node 000, POND 4A
ıower Node 002, JUNCTION

ᒍREST EL	6.420	INPUT ID	998327391
ᵀ,ENGTH..	0.188	TO CFS..	0.11
'IDTH...	0.188	TO CF...	0.00
:HAPE...	CIRCULAR	MAX IN..	0.11
PCT OPEN	100.000	MIN IN..	0.05
'EIR C..	3.100	MAX OUT.	0.11
›RFC C..	0.600	MIN OUT.	0.05
HANDLE..			
:W PE/KE	YES	FWD K...	0.00
'W PE/KE	NO	REV K...	0.00
HW EL...	9.000	FWD X...	0.00
¯W EL...	10.990	REV X...	0.00

'ath...... 001, PIPE
'pper Node 002, JUNCTION
Lower Node 001, 29TH ST CANAL

ıEN, FT.	80.000	INPUT ID	998321969
MANN N..	0.012	TO CFS..	0.10
¯ISE, FT	2.500	TO CF...	0.00
PAN, FT	2.500	MAX IN..	0.10
ıNLET—		MIN IN..	0.04
ᵀNVERT..	2.000	MAX OUT.	0.10
NT KE..	0.200	MIN OUT.	0.04
UTLET—			
INVERT..	1.600		
:NT KE..	0.200		
BW STEPS	0		
HW PE/KE	NO	FWD K...	0.00
'W PE/KE	NO	REV K...	0.00
IAX HW..	10.990	FWD X...	0.00
MAX TW..	10.990	REV X...	0.00

43019654.001

A-20

port on Nodes of Project POND4DRD.

ode...... 000, POND

⌐OP EL...	9.000	TOP AREA.	2.910	INPUT ID....................	100584240
L.......	8.000	AREA.....	1.770	FLOOD ELEVATION REACHED......	NO
L.......	7.100	AREA.....	1.630	INITIAL STAGE ELEVATION......	7.10
FL.......		AREA.....		INITIAL STORAGE, CUBIC FEET..	46208.40
L.......		AREA.....		MAXIMUM STAGE REACHED........	7.10
L.......		AREA.....		MINIMUM STAGE REACHED........	6.58
EL.......		AREA.....		MAXIMUM GROSS STORAGE, CF....	46208.40
L.......		AREA.....		MAXIMUM DETENTION STORAGE, CF	0.00
L.......		AREA.....		FINAL STAGE ELEVATION........	6.58
EL.......		AREA.....		TIME OF MAXIMUM STAGE, HOURS.	0.00
⌐OT EL...	6.420	BOT AREA.	1.490	TIME OF MINIMUM STAGE, HOURS.	120.00
OP LF...		SIDE %PER			
MID LF...		BASE %PER		PEAK NODAL INTAKE, CFS.......	0.00
OT LF...				TIME OF PEAK INTAKE, HOURS...	0.00
				PEAK NODAL OUTPUT, CFS.......	0.11
				TIME OF PEAK OUTPUT, HOURS...	0.00
ASE CFS.	0.000	STAGE TO.	7.100	POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

ode...... 001, STAGING

LOOD EL.	10.990	PE TO KE.	NO	INPUT ID....................	997886734
				FLOOD ELEVATION REACHED......	NO
TIME, HRS		STAGE EL.		INITIAL STAGE ELEVATION......	1.60
IME, HRS		STAGE EL.		INITIAL STORAGE, CUBIC FEET..	0.00
IME, HRS		STAGE EL.		MAXIMUM STAGE REACHED........	1.60
IME, HRS		STAGE EL.		MINIMUM STAGE REACHED........	1.60
IME, HRS		STAGE EL.		MAXIMUM GROSS STORAGE, CF....	0.00
IME, HRS		STAGE EL.		MAXIMUM DETENTION STORAGE, CF	0.00
IME, HRS		STAGE EL.		FINAL STAGE ELEVATION........	1.60
TIME, HRS		STAGE EL.		TIME OF MAXIMUM STAGE, HOURS.	0.00
IME, HRS		STAGE EL.		TIME OF MINIMUM STAGE, HOURS.	0.00
IME, HRS		STAGE EL.			
TIME, HRS		STAGE EL.			
				PEAK NODAL INTAKE, CFS.......	0.10
				TIME OF PEAK INTAKE, HOURS...	0.00
				PEAK NODAL OUTPUT, CFS.......	0.00
				TIME OF PEAK OUTPUT, HOURS...	0.00
		STAGE TO.	1.600	POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

Node...... 002, JUNCTION

LOOD EL.	10.990	INPUT ID....................	998322012
		FLOOD ELEVATION REACHED......	NO
		INITIAL STAGE ELEVATION......	2.06
		INITIAL STORAGE, CUBIC FEET..	0.00
		MAXIMUM STAGE REACHED........	2.06
		MINIMUM STAGE REACHED........	2.03
		MAXIMUM GROSS STORAGE, CF....	0.00

		MAXIMUM DETENTION STORAGE, CF	0.00
		FINAL STAGE ELEVATION........	2.03
		TIME OF MAXIMUM STAGE, HOURS.	0.00
		TIME OF MINIMUM STAGE, HOURS.	120.00
		PEAK NODAL INTAKE, CFS.......	0.11
		TIME OF PEAK INTAKE, HOURS...	0.00
		PEAK NODAL OUTPUT, CFS.......	0.10
		TIME OF PEAK OUTPUT, HOURS...	0.00
ASE CFS. 0.000		POINTS OUT OF TOLERANCE......	0
X COORD..	Y COORD..	MAXIMUM STAGE ERROR..........	0.00

53.00	6.827	0.0	18544.8	27663.6	
54.00	6.822	0.0	18849.3	27359.2	
55.00	6.818	0.0	19152.1	27056.4	
56.00	6.814	0.0	19453.1	26755.3	
57.00	6.809	0.0	19752.5	26455.9	
58.00	6.805	0.0	20050.2	26158.2	
59.00	6.800	0.0	20346.2	25862.2	
60.00	6.796	0.0	20640.5	25567.9	
61.00	6.792	0.0	20933.1	25275.3	
62.00	6.788	0.0	21224.1	24984.4	
63.00	6.783	0.0	21513.3	24695.1	
64.00	6.779	0.0	21800.8	24407.6	
65.00	6.775	0.0	22086.7	24121.8	
66.00	6.771	0.0	22370.8	23837.6	
67.00	6.766	0.0	22653.3	23555.2	
68.00	6.762	0.0	22934.0	23274.4	← 23,104 = 1/2 Vol.
69.00	6.758	0.0	23212.9	22995.5	
70.00	6.754	0.0	23490.1	22718.4	
71.00	6.750	0.0	23765.3	22443.1	
72.00	6.746	0.0	24038.8	22169.6	
73.00	6.742	0.0	24310.4	21898.0	
74.00	6.738	0.0	24580.3	21628.2	
75.00	6.734	0.0	24848.3	21360.2	
76.00	6.730	0.0	25114.5	21094.0	
77.00	6.726	0.0	25378.9	20829.6	
78.00	6.723	0.0	25641.5	20567.0	
79.00	6.719	0.0	25902.3	20306.2	
80.00	6.715	0.0	26161.3	20047.1	
81.00	6.711	0.0	26418.5	19789.9	
82.00	6.707	0.0	26674.0	19534.4	
83.00	6.704	0.0	26927.7	19280.7	
84.00	6.700	0.0	27179.6	19028.8	
85.00	6.696	0.0	27429.8	18778.6	
86.00	6.693	0.0	27678.2	18530.2	
87.00	6.689	0.0	27924.9	18283.5	
88.00	6.685	0.0	28169.9	18038.5	
89.00	6.682	0.0	28413.1	17795.3	
90.00	6.678	0.0	28654.7	17553.8	
91.00	6.675	0.0	28894.5	17314.0	
92.00	6.671	0.0	29132.6	17075.8	
93.00	6.668	0.0	29369.0	16839.4	
94.00	6.664	0.0	29603.8	16604.7	
95.00	6.661	0.0	29836.8	16371.6	
96.00	6.657	0.0	30068.2	16140.2	
97.00	6.654	0.0	30298.0	15910.4	
98.00	6.651	0.0	30526.1	15682.3	
99.00	6.647	0.0	30752.6	15455.9	
100.00	6.644	0.0	30977.4	15231.0	
101.00	6.641	0.0	31200.6	15007.8	
102.00	6.637	0.0	31422.3	14786.2	
103.00	6.634	0.0	31642.3	14566.1	
104.00	6.631	0.0	31860.7	14347.7	
105.00	6.628	0.0	32077.6	14130.8	
106.00	6.625	0.0	32292.9	13915.6	
107.00	6.621	0.0	32506.6	13701.8	
108.00	6.618	0.0	32718.8	13489.6	

109.00	6.615	0.0	32929.5	13279.0
110.00	6.612	0.0	33138.6	13069.8
111.00	6.609	0.0	33346.2	12862.2
112.00	6.606	0.0	33552.3	12656.1
113.00	6.603	0.0	33756.9	12451.5
114.00	6.600	0.0	33960.1	12248.4
115.00	6.597	0.0	34161.7	12046.7
116.00	6.594	0.0	34361.9	11846.5
117.00	6.591	0.0	34560.6	11647.8
118.00	6.588	0.0	34757.7	11450.7
119.00	6.585	0.0	34953.1	11255.3
120.00	6.583	0.0	35146.9	11061.6

Crosstown Expressway
Contract No. 51.30.03

By: DKA Date: 8/14/01
C'ked by: JJS Date: 9/6/01

Pond X Treatment Volume Calculations

Pond X Geometry					
Description	**Area (ft^2)**	**Area (Ac)**	**Side Slope (Rise:Run)**	**Distance (ft)**	**Elevation (ft)**
Outside Top of Berm	76753.44	1.77	1:8	15.0	7.0
Inside Top of Berm	50952.96	1.17	1:4	10.4	5.2
Top of Treatment	34084.47	0.78		4.76	2.6
Bottom of Treatment	26590.60	0.61			1.41

Impervious Areas		
Proposed Reversible Lanes	= 2.24 Ac.	Note: Treatment to be provided.
Existing East Bound Lanes Eastbound Ramp & Toll Plaza	= 2.78 Ac.	
Proposed East Bound Lanes	= 2.97 Ac.	Note: Treatment to be provided.
Proposed Slip Ramp Lanes	= 2.23 Ac.	Note: Treatment to be provided.

Existing Impervious Area = 2.78 Ac.
Total Proposed Area = 7.44 Ac.
Increased Impervious Area = 4.66 Ac.

Treatment Required	= 4.66 Ac. (Basin X) + 0.78 Ac. (Top of Treatment) = 5.44 Ac. @ 1" of Runoff =	**0.453 Ac.ft.**
Treatment Proposed	= 7.44 Ac. (Basin X) + 0.78 Ac. (Top of Treatment) = 8.22 Ac. @ 1" of Runoff =	**0.685 Ac.ft.**
Treatment Provided	= 36101.7 cu. ft. (Volume between Top of Treatment and Bottom of Treatment) =	**0.829 Ac.ft.**
Excess Treatment Provided	= (Treatment Provided - Treatment Required) =	**0.376 Ac.ft.**

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 9/6/01
C'ked by: JJS Date: 9/6/01

Basin X Impervious Area

Basin X Impervious Area				
Description	**Station**	**to**	**Station**	**Area**
Existing East Bound Lanes (SR 615)	699+15.00	to	721+13.00	2.78 Ac.
Proposed Reversible Lanes	1699+15.00	to	1721+01.58	2.24 Ac.
Proposed East Bound Lanes	3699+00.00	to	3722+00.00	2.97 Ac.
Proposed Slip Ramp	-	to	-	2.23 Ac.

Crosstown Expressway
Contract No. 51.30.03

By: DKA — Date: 8/14/01
C'ked by: JJS — Date: 9/6/01

Basin X Existing Impervious Area

Crosstown Expressway
Existing Impervious Area for Basin X

STATION	to	STATION	LENGTH (ft)	WIDTH (ft)	AREA (ft^2)	AREA (acres)	COMMENTS
699+15.00	to	722+20.00	2305.0	36	82980.00	1.90	Eastbound Lane, Constant Width
707+93.00	to	722+20.00	1427.0	varies	38256.31	0.88	Eastbound Ramp & Toll Plaza, Varying Width, Area by Microstation
					TOTAL	2.78	

Crosstown Expressway

Contract No. 51.30.03

Pond X Weir Floatation Calculations

Constant	lbs/cf
Weight of Concrete	150
Weight of Seawater	64
Weight of Grout	100

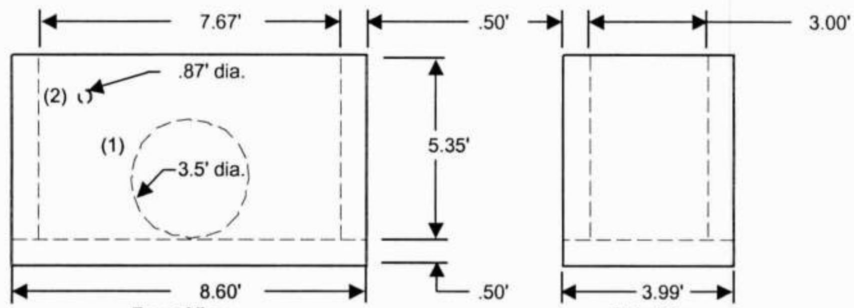
By: DKA Date: 7/31/01

C'ked by: JJS Date: 8/1/01

Note:

1) Grout depth not indicated in sketches.

2) Mean tide elev. (1.8' depth of standing water in structure) was not accounted for in the weir floatation calculations.



Front View **Side View**

Grout Depth From Pipe FL: 1.5 ft

Volume of Front & Back Sides

SIDE	LENGTH ft	HEIGHT ft	THICKNESS ft	PIPE HOLES (1)	(2)	VOLUME ft^3
Front	8.60	6.85	0.5	3.5	0.87	24.35
Back	8.60	6.85	0.5	0	0	29.46

Volume Sub-Total: 53.80

Volume of Left & Right Sides

SIDE	LENGTH ft	HEIGHT ft	THICKNESS ft	PIPE HOLES (1)	(2)	VOLUME ft^3
Left	3.00	6.85	0.5	0	0	10.28
Right	3.00	6.85	0.5	0	0	10.28

Volume Sub-Total: 20.55

Volume of Bottom Slab

SIDE	LENGTH ft	WIDTH ft	THICKNESS ft	PIPE HOLES (1)	(2)	VOLUME ft^3
Bottom	8.60	3.99	0.5	0	0	17.16

Volume Sub-Total: 17.16

Total Structure Volume: 91.51

Total Structure Weight: 13726.39

Volume of Grout

SIDE	LENGTH ft	WIDTH ft	DEPTH ft	PIPE HOLES (1)	(2)	VOLUME ft^3
All	7.67	3	1.50	0	0	34.52

Volume Total: 34.52

Total Weight of Grout: 3451.50

Total Weight of Structure & Grout: 17178

H_20 Displaced

SIDE	LENGTH ft	WIDTH ft	HEIGHT ft	PIPE HOLES (1)	(2)	VOLUME ft^3
All	8.60	3.99	7.35*	0	0	252.21

Volume Total: 252.21

* Height of Displaced Water is From the bottom to top of structure

Total Displaced Weight: 16141

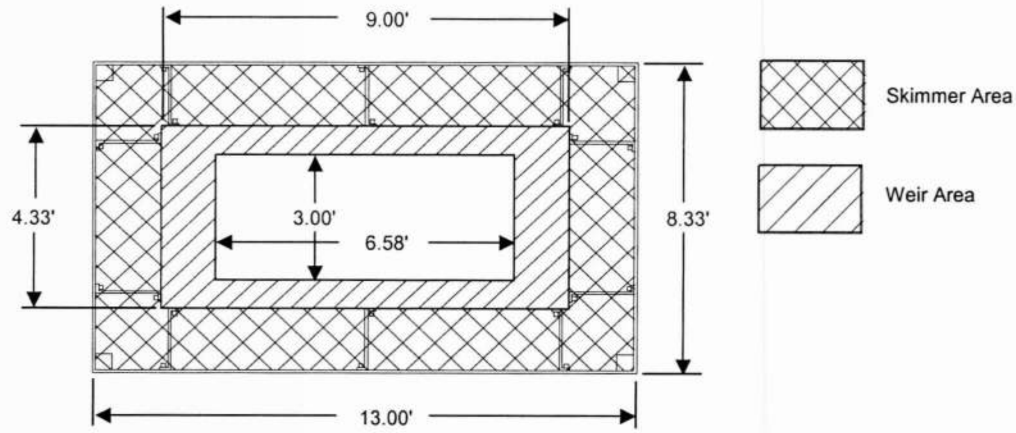
Safety Factor: 1.1

Project

Contract No.

Pond X Skimmer Area Calculations

By: DKA　　Date: 8/3/01
C'ked by: JJS　　Date: 9/6/01



Structure Information: DBI Type H
Std. Index No. 232

Skimmer Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Inside Skimmer Area	13.00	8.33	108.29
Outside Structure Area	9.00	4.33	38.97

Skimmer Area: **69.32**

Weir Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Outside Structure Area	9.00	4.33	38.97
Inside Structure Area	6.58	3.00	19.74

Weir Area: **19.23**

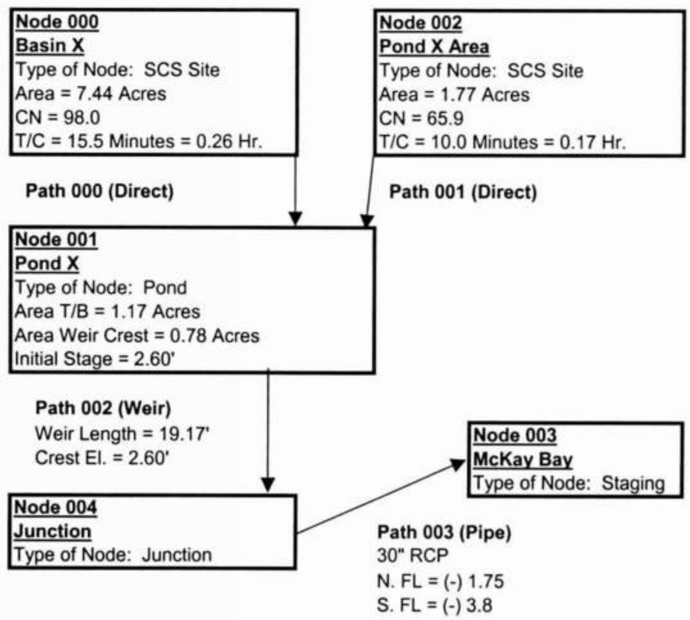
Safety Factor: **3.6**

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 7/12/01

C'ked by: JJS Date: 9/6/01



POND X PROPOSED CONDITIONS

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/14/01

C'ked by: JJS Date: 9/6/01

Crosstown Expressway
PROPOSED DRAINAGE AREA (BASIN-X)

BASELINE	STRUCTURE	AREA				CN
		FT^2	AC	IMPERVIOUS	PERVIOUS	AVG
SLIP RAMP	S-439	24,829.30	0.57	0.57		98
EB	S-439A	19,602.08	0.45	0.45		98
EB	S-440	8,276.43	0.19	0.19		98
SLIP RAMP	S-441	12,196.85	0.28	0.28		98
SLIP RAMP	S-442	4,356.02	0.10	0.10		98
EB	S-443	11,325.65	0.26	0.26		98
SLIP RAMP	S-445	10,018.84	0.23	0.23		98
REV	S-446	7,840.83	0.18	0.18		98
EB	S-447	19,166.48	0.44	0.44		98
SLIP RAMP	S-450	9,583.24	0.22	0.22		98
REV	S-452A	21,780.09	0.50	0.50		98
EB	S-455	10,018.84	0.23	0.23		98
SLIP RAMP	S-456	18,730.87	0.43	0.43		98
EB	S-457	6,534.03	0.15	0.15		98
EB	S-460	17,859.67	0.41	0.41		98
REV	S-463	14,374.86	0.33	0.33		98
REV	S-464	24,829.30	0.57	0.57		98
SLIP RAMP	S-465	13,939.26	0.32	0.32		98
EB	S-466	20,037.68	0.46	0.46		98
REV	S-468	10,018.84	0.23	0.23		98
SLIP RAMP	S-469	9,147.64	0.21	0.21		98
EB	S-470	15,681.66	0.36	0.36		98
REV	S-471	9,147.64	0.21	0.21		98
EB	S-472	4,791.62	0.11	0.11		98
	TOTAL:	**324,087.6963**	**7.44**	**7.44**	**0.00**	**98.0**

Total Acerage EB = 3.06 Acres Impervious
Total Acerage SLIP RAMP = 2.36 Acres Impervious
Total Acerage REV = 2.02 Acres Impervious

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
FEB 8 2002
RRD-TAMPA

Crosstown Expressway
PROPOSED DRAINAGE AREA (POND-X)

	DESCRIPTION	AREA				CN
		FT^2	AC	IMPERVIOUS	PERVIOUS	AVG
1	ELEV. '2.6'	34,084.4700	0.78	0.78		100
2	ELEV. '2.6 - 7.0'		0.99		0.99	39
	TOTAL:	**34,084.4700**	**1.77**	**0.78**	**0.99**	**65.9**

43019654.001

A-31A

Pond X 25 yr. 24 hr. Event

Project D:\HSS\X_TOWN.WBS\PONDXPRO.BRN
Last Revised on Thu Sep 13 07:17:07 2001
Run of Thu Sep 13 07:17:12 2001 (Status = CONVERGED)

Project Contains 4 Paths.
Project Contains 5 Nodes.

Path	Up Stream Node Name	Down Stream Node Name	Path Type
0	BASIN X	POND X	DIRECT
1	POND X AREA	POND X	DIRECT
2	POND X	JUNCTION	RECT WEIR
3	JUNCTION	MCKAY BAY	PIPE

Node	Name	Node Type
0	BASIN X	SCS SITE
1	POND X	POND
2	POND X AREA	SCS SITE
3	MCKAY BAY	STAGING
4	JUNCTION	JUNCTION

Pond X 25yr. 24hr. Event

Node	Name	Node Type	Min El.	at Hr.	Max El.	at Hr.	Flooded
0	BASIN X	SCS SITE	20.00	0.00	20.00	0.00	NO
1	POND X	POND	2.60	0.50	3.29	12.40	NO
2	POND X AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
3	MCKAY BAY	STAGING	1.41	0.00	1.41	0.00	NO
4	JUNCTION	JUNCTION	1.41	1.00	2.65	12.40	NO

Pond X 25yr. 24hr. Event

Node	Name	Maximum CFS Inflow	Maximum CFS Outflow
0	BASIN X	34.12 @ 12.20 Hours	34.12 @ 12.20 Hours
1	POND X	39.23 @ 12.20 Hours	34.03 @ 12.40 Hours
2	POND X AREA	5.18 @ 12.10 Hours	5.18 @ 12.10 Hours
3	MCKAY BAY	33.98 @ 12.40 Hours	0.00 @ 0.00 Hours
4	JUNCTION	33.98 @ 12.40 Hours	33.98 @ 12.40 Hours

Report on Paths of Project PONDXPRO.

Path...... 000, DIRECT
Upper Node 000, BASIN X
Lower Node 001, POND X

DIRECT..		INPUT ID	994937187
		TO CFS..	0.00
		TO CF...	0.00
		MAX IN..	34.12
		MIN IN..	0.00
		MAX OUT.	34.12
		MIN OUT.	0.00
HW PE/KE NO		FWD K...	0.00
TW PE/KE YES		REV K...	0.00
HW EL...	20.000	FWD X...	0.00
TW EL...	5.200	REV X...	0.00

Path...... 001, DIRECT
Upper Node 002, POND X AREA
Lower Node 001, POND X

DIRECT..		INPUT ID	994937213
		TO CFS..	0.00
		TO CF...	0.00
		MAX IN..	5.18
		MIN IN..	0.00
		MAX OUT.	5.18
		MIN OUT.	0.00
HW PE/KE NO		FWD K...	0.00
TW PE/KE YES		REV K...	0.00
HW EL...	10.990	FWD X...	0.00
TW EL...	5.200	REV X...	0.00

Path...... 002, RECT WEIR
Upper Node 001, POND X
Lower Node 004, JUNCTION

CREST EL	2.600	INPUT ID	994937321
WIDTH...	19.200	TO CFS..	0.00
WEIR C..	3.100	TO CF...	0.00

NUM ENDS	1	MAX IN..	33.98
		MIN IN..	0.00
BREADTH.		MAX OUT.	33.98
		MIN OUT.	0.00
HW PE/KE YES		FWD K...	0.00
TW PE/KE NO		REV K...	0.00
MAX HW..	5.200	FWD X...	0.00
MAX TW..	10.990	REV X...	0.00

Path...... 003, PIPE
Upper Node 004, JUNCTION
Lower Node 003, MCKAY BAY

LEN, FT.	84.000	INPUT ID	1000379827
MANN N..	0.012	TO CFS..	0.00
RISE, FT	2.500	TO CF...	0.00
SPAN, FT	2.500	MAX IN..	33.98
INLET—		MIN IN..	0.00
INVERT..	-2.750	MAX OUT.	33.98
ENT KE..	1.000	MIN OUT.	0.00
OUTLET—			
INVERT..	-3.800		
ENT KE..	0.700		
BW STEPS	0		
HW PE/KE NO		FWD K...	0.00
TW PE/KE NO		REV K...	0.00
MAX HW..	10.990	FWD X...	0.00
MAX TW..	10.990	REV X...	0.00

port on Nodes of Project PONDXPRO.
SWFWMD 25-YR 24 HR (8.0" RAINFALL)

ode...... 000, SCS SITE

LOOD EL.	20.000			INPUT ID....................	100773648
				FLOOD ELEVATION REACHED......	NO
TORM....	SCS_IIM	FREEZE...	YES	INITIAL STAGE ELEVATION......	20.00
RAINFALL.	8.000	FREEZE...	YES	INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	20.00
REA, AC.	7.440			MINIMUM STAGE REACHED........	20.00
CURVE NO.	98.000			MAXIMUM GROSS STORAGE, CF....	0.00
HG FILE.	SCS_323			MAXIMUM DETENTION STORAGE, CF	0.00
A FACTOR	0.200			FINAL STAGE ELEVATION........	20.00
TC, HOURS	0.260			TIME OF MAXIMUM STAGE, HOURS.	0.00
				TIME OF MINIMUM STAGE, HOURS.	0.00
				PEAK NODAL INTAKE, CFS.......	33.12
				TIME OF PEAK INTAKE, HOURS...	12.20
				PEAK NODAL OUTPUT, CFS.......	33.12
				TIME OF PEAK OUTPUT, HOURS...	12.20
ASE FLOW	0.000			POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

ode...... 001, POND

OP EL...	5.200	TOP AREA.	1.170	INPUT ID....................	996594022
L.......	2.600	AREA.....	0.780	FLOOD ELEVATION REACHED......	NO
EL.......		AREA.....		INITIAL STAGE ELEVATION......	2.60
L.......		AREA.....		INITIAL STORAGE, CUBIC FEET..	36026.30
L.......		AREA.....		MAXIMUM STAGE REACHED........	3.28
EL.......		AREA.....		MINIMUM STAGE REACHED........	2.60
L.......		AREA.....		MAXIMUM GROSS STORAGE, CF....	65018.30
L.......		AREA.....		MAXIMUM DETENTION STORAGE, CF	28992.10
L.......		AREA.....		FINAL STAGE ELEVATION........	2.64
EL.......		AREA.....		TIME OF MAXIMUM STAGE, HOURS.	12.40
OT EL...	1.410	BOT AREA.	0.610	TIME OF MINIMUM STAGE, HOURS.	0.60
TOP LF...		SIDE %PER			
ID LF...		BASE %PER		PEAK NODAL INTAKE, CFS.......	38.23
OT LF...				TIME OF PEAK INTAKE, HOURS...	12.20
				PEAK NODAL OUTPUT, CFS.......	33.21
				TIME OF PEAK OUTPUT, HOURS...	12.40
ASE CFS.	0.000	STAGE TO.	2.600	POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

Node...... 002, SCS SITE

LOOD EL.	10.990			INPUT ID....................	994945250
				FLOOD ELEVATION REACHED......	NO
TORM....	SCS_IIM	FREEZE...	YES	INITIAL STAGE ELEVATION......	10.99
AINFALL.	8.000	FREEZE...	YES	INITIAL STORAGE, CUBIC FEET..	0.00
				MAXIMUM STAGE REACHED........	10.99
AREA, AC.	1.770			MINIMUM STAGE REACHED........	10.99
URVE NO.	65.900			MAXIMUM GROSS STORAGE, CF....	0.00

REA, AC.	1.770	MINIMUM STAGE REACHED........	10.99
CURVE NO.	65.900	MAXIMUM GROSS STORAGE, CF....	0.00
HG FILE.	SCS_323	MAXIMUM DETENTION STORAGE, CF	0.00
A FACTOR	0.200	FINAL STAGE ELEVATION........	10.99
TC, HOURS	0.170	TIME OF MAXIMUM STAGE, HOURS.	0.00
		TIME OF MINIMUM STAGE, HOURS.	0.00
		PEAK NODAL INTAKE, CFS.......	5.18
		TIME OF PEAK INTAKE, HOURS...	12.10
		PEAK NODAL OUTPUT, CFS.......	5.18
		TIME OF PEAK OUTPUT, HOURS...	12.10
ASE FLOW	0.000	POINTS OUT OF TOLERANCE......	0
.. COORD..	Y COORD..	MAXIMUM STAGE ERROR..........	0.00

Node...... 003, STAGING

LOOD EL.	10.990	PE TO KE.	NO	INPUT ID.....................	994937659
				FLOOD ELEVATION REACHED......	NO
"TIME, HRS		STAGE EL.		INITIAL STAGE ELEVATION......	1.41
IME, HRS		STAGE EL.		INITIAL STORAGE, CUBIC FEET..	0.00
.IME, HRS		STAGE EL.		MAXIMUM STAGE REACHED........	1.41
TIME, HRS		STAGE EL.		MINIMUM STAGE REACHED........	1.41
IME, HRS		STAGE EL.		MAXIMUM GROSS STORAGE, CF....	0.00
IME, HRS		STAGE EL.		MAXIMUM DETENTION STORAGE, CF	0.00
TIME, HRS		STAGE EL.		FINAL STAGE ELEVATION........	1.41
IME, HRS		STAGE EL.		TIME OF MAXIMUM STAGE, HOURS.	0.00
IME, HRS		STAGE EL.		TIME OF MINIMUM STAGE, HOURS.	0.00
ıIME, HRS		STAGE EL.			
"TIME, HRS		STAGE EL.			
				PEAK NODAL INTAKE, CFS.......	33.98
				TIME OF PEAK INTAKE, HOURS...	12.40
				PEAK NODAL OUTPUT, CFS.......	0.00
				TIME OF PEAK OUTPUT, HOURS...	0.00
		STAGE T0.	1.410	POINTS OUT OF TOLERANCE......	0
X COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

"ode...... 004, JUNCTION

LOOD EL.	10.990	INPUT ID.....................	994946052
		FLOOD ELEVATION REACHED......	NO
		INITIAL STAGE ELEVATION......	1.41
		INITIAL STORAGE, CUBIC FEET..	0.00
		MAXIMUM STAGE REACHED........	2.65
		MINIMUM STAGE REACHED........	1.41
		MAXIMUM GROSS STORAGE, CF....	0.00
		MAXIMUM DETENTION STORAGE, CF	0.00
		FINAL STAGE ELEVATION........	1.41
		TIME OF MAXIMUM STAGE, HOURS.	12.40
		TIME OF MINIMUM STAGE, HOURS.	1.00

				PEAK NODAL INTAKE, CFS.......	33.98
				TIME OF PEAK INTAKE, HOURS...	12.40
				PEAK NODAL OUTPUT, CFS.......	33.98
				TIME OF PEAK OUTPUT, HOURS...	12.40
BASE CFS.	0.000			POINTS OUT OF TOLERANCE......	0
" COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.01

Crosstown Expressway

Contract No. 51.30.03

By: DKA   Date: 8/14/01

C'ked by: JJS   Date: 9/6/01

Node 000
Pond X
Type of Node: Pond
Area T/B = 1.17 Acres
Area Weir Crest = 0.78 Acres
Initial Stage = 2.60'

Path 000 (Orifice)
FI = 1.41
Diameter = 0.146'

↓

Node 001
McKay Bay
Type of Node: Staging

POND X DRAWDOWN

:port on Paths of Project PONDXDRD.

'ath...... 000, ORIFICE
Upper Node 000, POND X
'.ower Node 001, MCKAY BAY

;REST EL	1.410	INPUT ID	994947710
LENGTH..	0.146	TO CFS..	0.09
/IDTH...	0.146	TO CF...	0.00
;HAPE...	CIRCULAR	MAX IN..	0.09
PCT OPEN	100.000	MIN IN..	0.04
/EIR C..	3.100	MAX OUT.	0.09
)RFC C..	0.600	MIN OUT.	0.04
HANDLE..			
IW PE/KE	YES	FWD K...	0.00
:W PE/KE	NO	REV K...	0.00
HW EL...	7.000	FWD X...	0.00
TW EL...	10.990	REV X...	0.00

:port on Nodes of Project PONDXDRD.
Pond X Drawdown Calculations

[ode...... 000, POND

TOP EL...	7.000	TOP AREA.	1.770	INPUT ID.....................	994945122
:L.......	2.600	AREA.....	0.780	FLOOD ELEVATION REACHED......	NO
:L.......		AREA.....		INITIAL STAGE ELEVATION......	2.60
EL.......		AREA.....		INITIAL STORAGE, CUBIC FEET..	36026.30
:L.......		AREA.....		MAXIMUM STAGE REACHED........	2.60
:L.......		AREA.....		MINIMUM STAGE REACHED........	1.67
EL.......		AREA.....		MAXIMUM GROSS STORAGE, CF....	36026.30
:L.......		AREA.....		MAXIMUM DETENTION STORAGE, CF	0.00
:L.......		AREA.....		FINAL STAGE ELEVATION........	1.67
EL.......		AREA.....		TIME OF MAXIMUM STAGE, HOURS.	0.00
BOT EL...	1.410	BOT AREA.	0.610	TIME OF MINIMUM STAGE, HOURS.	120.00
'OP LF...		SIDE %PER			
MID LF...		BASE %PER		PEAK NODAL INTAKE, CFS.......	0.00
3OT LF...				TIME OF PEAK INTAKE, HOURS...	0.00
				PEAK NODAL OUTPUT, CFS.......	0.09
				TIME OF PEAK OUTPUT, HOURS...	0.00
BASE CFS.	0.000	STAGE TO.	2.600	POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

'ode...... 001, STAGING

'LOOD EL.	10.990	PE TO KE.	NO	INPUT ID.....................	994937659
				FLOOD ELEVATION REACHED......	NO
TIME, HRS		STAGE EL.		INITIAL STAGE ELEVATION......	1.41
TIME, HRS		STAGE EL.		INITIAL STORAGE, CUBIC FEET..	0.00
'IME, HRS		STAGE EL.		MAXIMUM STAGE REACHED........	1.41
IME, HRS		STAGE EL.		MINIMUM STAGE REACHED........	1.41
TIME, HRS		STAGE EL.		MAXIMUM GROSS STORAGE, CF....	0.00
'IME, HRS		STAGE EL.		MAXIMUM DETENTION STORAGE, CF	0.00
'IME, HRS		STAGE EL.		FINAL STAGE ELEVATION........	1.41
TIME, HRS		STAGE EL.		TIME OF MAXIMUM STAGE, HOURS.	0.00
'IME, HRS		STAGE EL.		TIME OF MINIMUM STAGE, HOURS.	0.00
'IME, HRS		STAGE EL.			
TIME, HRS		STAGE EL.			
				PEAK NODAL INTAKE, CFS.......	0.09
				TIME OF PEAK INTAKE, HOURS...	0.00
				PEAK NODAL OUTPUT, CFS.......	0.00
				TIME OF PEAK OUTPUT, HOURS...	0.00
		STAGE TO.	1.410	POINTS OUT OF TOLERANCE......	0
COORD..		Y COORD..		MAXIMUM STAGE ERROR..........	0.00

Drawdown Pond X 25yr 24hr Event

BRN 3.2 Project PONDXDRD
Node 0, POND X, POND

0.00	2.600	0.0	0.0	36026.3
1.00	2.590	0.0	315.8	35710.5
2.00	2.579	0.0	630.1	35396.2
3.00	2.569	0.0	943.1	35083.2
4.00	2.559	0.0	1254.7	34771.6
5.00	2.548	0.0	1564.8	34461.5
6.00	2.538	0.0	1873.6	34152.7
7.00	2.528	0.0	2181.0	33845.3
8.00	2.518	0.0	2487.0	33539.3
9.00	2.508	0.0	2791.6	33234.7
10.00	2.498	0.0	3094.8	32931.4
11.00	2.488	0.0	3396.7	32629.6
12.00	2.478	0.0	3697.2	32329.1
13.00	2.468	0.0	3996.3	32030.0
14.00	2.458	0.0	4294.0	31732.3
15.00	2.448	0.0	4590.3	31436.0
16.00	2.439	0.0	4885.2	31141.1
17.00	2.429	0.0	5178.8	30847.5
18.00	2.419	0.0	5471.0	30555.3
19.00	2.410	0.0	5761.8	30264.5
20.00	2.400	0.0	6051.2	29975.1
21.00	2.390	0.0	6339.2	29687.1
22.00	2.381	0.0	6625.8	29400.5
23.00	2.372	0.0	6911.0	29115.3
24.00	2.362	0.0	7194.9	28831.4
25.00	2.353	0.0	7477.3	28549.0
26.00	2.344	0.0	7758.4	28267.9
27.00	2.334	0.0	8038.1	27988.2
28.00	2.325	0.0	8316.4	27709.9
29.00	2.316	0.0	8593.2	27433.1
30.00	2.307	0.0	8868.7	27157.6
31.00	2.298	0.0	9142.8	26883.5
32.00	2.289	0.0	9415.5	26610.7
33.00	2.280	0.0	9686.9	26339.4
34.00	2.271	0.0	9956.8	26069.5
35.00	2.262	0.0	10225.3	25801.0
36.00	2.253	0.0	10492.4	25533.9
37.00	2.244	0.0	10758.2	25268.1
38.00	2.236	0.0	11022.5	25003.8
39.00	2.227	0.0	11285.4	24740.9
40.00	2.218	0.0	11547.0	24479.3
41.00	2.210	0.0	11807.1	24219.2
42.00	2.201	0.0	12065.9	23960.4
43.00	2.193	0.0	12323.2	23703.1
44.00	2.184	0.0	12579.1	23447.1
45.00	2.176	0.0	12833.7	23192.6
46.00	2.167	0.0	13086.8	22939.5
47.00	2.159	0.0	13338.6	22687.7
48.00	2.151	0.0	13588.9	22437.4
49.00	2.143	0.0	13837.8	22188.5
50.00	2.134	0.0	14085.1	21941.2
51.00	2.126	0.0	14330.9	21695.4
52.00	2.118	0.0	14575.2	21451.1

53.00	2.110	0.0	14818.0	21208.3
54.00	2.102	0.0	15059.3	20967.0
55.00	2.094	0.0	15299.1	20727.2
56.00	2.086	0.0	15537.4	20488.9

57.00	2.079	0.0	15774.3	20252.0	
58.00	2.071	0.0	16009.6	20016.7	
59.00	2.063	0.0	16243.5	19782.8	
60.00	2.055	0.0	16475.8	19550.5	
61.00	2.048	0.0	16706.7	19319.6	
62.00	2.040	0.0	16936.2	19090.1	
63.00	2.033	0.0	17164.1	18862.2	
64.00	2.025	0.0	17390.6	18635.7	
65.00	2.018	0.0	17615.7	18410.6	
66.00	2.010	0.0	17839.3	18187.0	½ Volume = 18,013
67.00	2.003	0.0	18061.5	17964.8	
68.00	1.996	0.0	18282.2	17744.1	
69.00	1.988	0.0	18501.5	17524.8	
70.00	1.981	0.0	18719.3	17306.9	
71.00	1.974	0.0	18935.8	17090.5	
72.00	1.967	0.0	19150.8	16875.5	
73.00	1.960	0.0	19364.5	16661.8	
74.00	1.953	0.0	19576.7	16449.6	
75.00	1.946	0.0	19787.5	16238.8	
76.00	1.939	0.0	19997.0	16029.3	
77.00	1.932	0.0	20205.0	15821.3	
78.00	1.925	0.0	20411.7	15614.6	
79.00	1.919	0.0	20617.0	15409.3	
80.00	1.912	0.0	20821.0	15205.3	
81.00	1.905	0.0	21023.6	15002.7	
82.00	1.898	0.0	21224.9	14801.4	
83.00	1.892	0.0	21424.8	14601.5	
84.00	1.885	0.0	21623.4	14402.9	
85.00	1.879	0.0	21820.7	14205.6	
86.00	1.872	0.0	22016.7	14009.6	
87.00	1.866	0.0	22211.3	13815.0	
88.00	1.859	0.0	22404.7	13621.6	
89.00	1.853	0.0	22596.7	13429.6	
90.00	1.847	0.0	22787.5	13238.8	
91.00	1.841	0.0	22977.0	13049.3	
92.00	1.834	0.0	23165.3	12861.0	
93.00	1.828	0.0	23352.2	12674.1	
94.00	1.822	0.0	23537.9	12488.4	
95.00	1.816	0.0	23722.4	12303.9	
96.00	1.810	0.0	23905.7	12120.6	
97.00	1.804	0.0	24087.7	11938.6	
98.00	1.798	0.0	24268.4	11757.9	
99.00	1.792	0.0	24448.0	11578.3	
100.00	1.786	0.0	24626.4	11399.9	
101.00	1.780	0.0	24803.5	11222.8	
102.00	1.774	0.0	24979.3	11047.0	
103.00	1.769	0.0	25153.7	10872.6	
104.00	1.763	0.0	25326.7	10699.6	
105.00	1.757	0.0	25498.3	10528.0	
106.00	1.752	0.0	25668.6	10357.7	
107.00	1.746	0.0	25837.4	10188.9	
108.00	1.741	0.0	26004.9	10021.4	

109.00	1.735	0.0	26170.9	9855.4
110.00	1.730	0.0	26335.6	9690.7
111.00	1.724	0.0	26498.9	9527.4
112.00	1.719	0.0	26660.8	9365.5
113.00	1.714	0.0	26821.3	9205.0
114.00	1.708	0.0	26980.4	9045.9
115.00	1.703	0.0	27138.1	8888.2
116.00	1.698	0.0	27294.4	8731.9
117.00	1.693	0.0	27449.4	8576.9
118.00	1.688	0.0	27602.9	8423.4
119.00	1.683	0.0	27755.1	8271.2
120.00	1.678	0.0	27905.8	8120.5

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/14/01

C'ked by: JJS Date: 9/6/01

Basin Existing Impervious Area

Crosstown Expressway
Existing Impervious Area for Basin

STATION	to	STATION	LENGTH (ft)	WIDTH (ft)	AREA (ft^2)	AREA (acres)	COMMENTS
3722+00.00	to	3732+15.00	1015.0	36	36540.00	0.84	Eastbound Lane, Constant Width
					TOTAL	**0.84**	

Storm Drain Design

Crosstown Expressway

By: DKA Date: 8/16/01

Contract No. 51.30.03

Q=ca(2gh)^.5

C'ked by: JS Date: 8/16/01

h=Q^2/(c^2*a^2*2*g)

Structure No.	Q (CFS)	Drop Pipe Diameter (Inches)	Drop Pipe Area (a) (Square Feet)	Inlet Bottom Elevation	Inlet Grate Elevation	Head (h) (ft)	Clearance (ft)	Head Elev.
S-410	3.3	10	0.55	46.70	49.78	1.54	**1.54**	48.24
S-415	33.5	21	2.41	16.90	38.96	8.37	**13.69**	25.27
S-420	2.9	10	0.55	34.80	37.87	1.23	**1.84**	36.03
S-424	3.3	10	0.55	31.90	36.03	1.55	**2.58**	33.45
S-428	1.1	10	0.55	31.20	35.77	0.16	**4.41**	31.36
S-434	4.8	10	0.55	28.70	33.27	3.27	**1.30**	31.97

Note: On the ASAD storm drain tabulations, the Head Elevations calculated on this sheet have been written as the HGL for the drop structures. The calculations from this sheet were then used and hand written as the tailwater control for all upstream pipes until the system HGL is no longer controlled by the drop structure hydraulics.

Crosstown Expressway

Contract No. 51.30.03

Q=ca(2gh)^.5
h=Q^2/(c^2*a^2*2*g)

By: DKA Date: 8/3/01

C'ked by: JS Date: 8/3/01

Structure No.	Q (CFS)	Drop Pipe Diameter (Inches)	Drop Pipe Area (a) (Square Feet)	Inlet Bottom Elevation	Inlet Grate Elevation	Head (h) (ft)	Clearance (ft)	Head Elev.
S-447	9.3	14	1.07	25.20	29.71	3.26	1.25	28.46

Note: On the ASAD storm drain tabulations, the Head Elevations calculated on this sheet have been written as the HGL for the drop structures. The calculations from this sheet were then used and hand written as the tailwater control for all upstream pipes until the system HGL is no longer controlled by the drop structure hydraulics.

Crosstown Expressway

Contract No. 51.30.03

By: DKA Date: 8/16/01

C'ked by: JS Date: 8/16/01

Q=ca(2gh)^.5

h=Q^2/(c^2*a^2*2*g)

Structure No.	Q (CFS)	Drop Pipe Diameter (Inches)	Drop Pipe Area (a) (Square Feet)	Inlet Bottom Elevation	Inlet Grate Elevation	Head (h) (ft)	Clearance (ft)	Head Elev.
S-475	2.3	10	0.55	25.50	28.56	0.75	**2.31**	26.25
S-478	1.3	10	0.55	22.30	25.38	0.24	**2.84**	22.54

Note: On the ASAD storm drain tabulations, the Head Elevations calculated on this sheet have been written as the HGL for the drop structures. The calculations from this sheet were then used and hand written as the tailwater control for all upstream pipes until the system HGL is no longer controlled by the drop structure hydraulics.

FDOT 10-YR 1-HR BEGINNING TAILWATER FOR STORM DRAIN DESIGN - BASIN 4

Node	Name	Node Type	Min El.	at Hr.	Max El.	at Hr.	Flooded
0	BASIN 4D	SCS SITE	10.99	0.00	10.99	0.00	NO
1	POND 4D AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
2	POND 4D	POND	7.10	0.20	7.54	0.90	NO
3	POND 4A	POND	7.10	0.10	7.46	0.90	NO
4	BASIN 4A	SCS SITE	10.99	0.00	10.99	0.00	NO
5	POND 4A AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
6	JUNCTION	JUNCTION	2.00	0.00	3.68	0.90	NO
7	29 ST CANAL	STAGING	1.60	0.00	1.60	0.00	NO
8	JUNCTION 2	JUNCTION	2.00	0.00	4.53	0.90	NO

FDOT 50-YR 1-HR TAILWATER FOR STORM DRAIN CHECK - BASIN 4

Node	Name	Node Type	Min El.	at Hr.	Max El.	at Hr.	Flooded
0	BASIN 4D	SCS SITE	10.99	0.00	10.99	0.00	NO
1	POND 4D AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
2	POND 4D	POND	7.10	0.10	7.69	0.90	NO
3	POND 4A	POND	7.10	0.00	7.58	0.90	NO
4	BASIN 4A	SCS SITE	10.99	0.00	10.99	0.00	NO
5	POND 4A AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
6	JUNCTION	JUNCTION	2.00	0.00	4.15	0.90	NO
7	29 ST CANAL	STAGING	1.60	0.00	1.60	0.00	NO
8	JUNCTION 2	JUNCTION	2.00	0.00	5.88	0.90	NO

FDOT 10-YR 1-HR (3.1" RAINFALL) STORM DRAIN BEGINNING HGL BASIN X

Node	Name	Node Type	Min El.	at Hr.	Max El.	at Hr.	Flooded
0	BASIN X	SCS SITE	20.00	0.00	20.00	0.00	NO
1	POND X	POND	2.60	0.00	3.20	0.80	NO
2	POND X AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
3	MCKAY BAY	STAGING	1.41	0.00	1.41	0.00	NO
4	JUNCTION	JUNCTION	1.40	0.00	2.36	0.80	NO

FDOT 50-YR 1-HR (4.0" RAINFALL) STORM DRAIN CHECK BEGINNING HGL BASIN X

Node	Name	Node Type	Min El.	at Hr.	Max El.	at Hr.	Flooded
0	BASIN X	SCS SITE	20.00	0.00	20.00	0.00	NO
1	POND X	POND	2.60	24.00	3.40	0.90	NO
2	POND X AREA	SCS SITE	10.99	0.00	10.99	0.00	NO
3	MCKAY BAY	STAGING	1.41	0.00	1.41	0.00	NO
4	JUNCTION	JUNCTION	1.40	0.00	2.93	0.90	NO

12/20/01

STORM SEWER HYDRAULICS

System: **Pond4A**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		Storm Event		CONDITIONS Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	7.46	6	10	0.95	0.20	0.50
Exit Loss at Outfall:	0.94					
Storm Sewer Control Elevatio	8.40					

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-419	**S-422**	0.42	0.42	0.40					0.00	0.00	36.96	33.05	33.05	32.00	1.049	18	0.4288	Partial	5.08		
1689+05.00	25.88	0.00	0.00	0.00	10.00	0.80	7.47	0.40		2.98			34.00	32.00				sub		10.37	0.0120
BW218J 1	244.72	0.00	0.00	0.00						**2.98**	3.91	0.00	32.50	30.50	2.000	18	0.8308		5.87		
S-422	**S-426**	0.51	0.93	0.88					0.00	0.00	35.09	31.42	31.42	29.82	1.600	18	0.6407	Partial	5.63		
1691+50.00	25.88	0.00	0.00	0.00	10.80	0.74	7.26	0.88		6.41			32.00	30.40				critical		9.18	0.0120
BW218J 1	249.72	0.00	0.00	0.00						**6.41**	3.67	0.00	30.50	28.90	1.600	18	0.6512		5.20		
S-426	**S-427**	0.45	2.19	2.08					0.00	0.00	33.42	27.43	27.43	25.60	1.829	18	1.4858	Full	7.85		
1694+00.00	25.88	0.00	0.00	0.00	13.46	0.26	6.67	2.08		13.87			26.70	25.60						10.91	0.0120
BW218J 1	123.12	0.00	0.00	0.00						**13.87**	6.00	0.00	25.20	24.10	1.100	18	0.9196		6.18		
S-427	**S-427A**	0.00	2.19	2.08					0.00	0.00	29.10	24.67	24.67	8.87	15.797	18	34.0006	Partial	22.35		
1694+00.00	-97.24	0.00	0.00	0.00	13.72	0.03	6.62	2.08		13.77			25.60	6.90				sub		46.18	0.0200
MHP-7T 1	46.46	0.00	0.00	0.00						**13.77**	4.43	0.00	24.10	5.40	18.700	18	43.0281		25.66		
S-427A	**S-9427**	0.00	2.19	2.08					0.00	0.00	9.26	8.87	8.87	8.40	0.472	18	1.4603	Full	7.78		
1694+00.00	-143.70	0.00	0.00	0.00	13.76	0.00	6.61	2.08		13.75			6.90	6.50						12.97	0.0120
MHP-7T 1	32.30	0.00	0.00	0.00						**13.75**	0.39	0.00	5.40	5.00	0.400	18	1.2987		7.34		
S-431	**S-426**	0.42	0.81	0.77					0.00	0.00	32.31	27.98	27.98	27.43	0.553	18	0.2211	Full	3.03		
1696+50.00	25.88	0.00	0.00	0.00	12.08	1.38	6.95	0.77		5.35			27.20	26.70						5.13	0.0120
BW218 1	249.94	0.00	0.00	0.00						**5.35**	4.32	0.00	25.70	25.20	0.500	18	0.2033		2.90		
S-437	**S-431**	0.39	0.39	0.37					0.00	0.00	30.99	28.13	28.13	27.98	0.148	18	0.0591	Full	1.57		
1699+00.00	25.88	0.00	0.00	0.00	10.00	2.08	7.47	0.37		2.77			27.80	27.20						5.62	0.0120
BW218J 1	250.00	0.00	0.00	0.00						**2.77**	2.86	0.00	26.30	25.70	0.600	18	0.2439		3.18		

MES AT POND4A

TW = 10YR 1 HR PEAK STAGE IN POND 4A

4301 9654.001

A-52

Units: ENGLISH

STORM SEWER HYDRAULICS

System: **Pond4A1**

PROJECT							
Number: 513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	7.46	Storm Event		CONDITIONS Runoff Coefficients		
Description: Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.03	Zone	Freq	Area 1	Area 2	Area 3
County: Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	7.49	6	10	0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
EX-11	**S-421A**	0.34	0.34	0.32					0.00	0.00	35.05	32.37	32.37	7.50	24.868	15	29.2499	Partial	12.46		
1691+25.38	-80.98	0.00	0.00	0.00	10.00	0.11	7.47	0.32		2.41			33.35	6.25				sub		23.22	0.0200
GUT-S 1	85.02	0.00	0.00	0.00						**2.41**	2.68	0.00	32.10	5.00	27.100	15	32.9403		19.35		
S-421A	**S-9421A**	0.00	0.34	0.32					0.00	0.00	8.50	7.50	7.50	7.49	0.012	18	0.0446	Full	1.36		
1691+25.38	-166.00	0.00	0.00	0.00	10.11	0.00	7.44	0.32		2.40			6.50	5.50						22.99	0.0120
MHP-7T 1	26.01	0.00	0.00	0.00						**2.40**	1.00	0.00	5.00	4.00	1.000	18	4.0803		13.01		

MES AT POND 4A

TW = 10YR 1HR PEAK STAGE IN POND 4A

Units: ENGLISH

12/20/01

STORM SEWER HYDRAULICS

System: **Pond4A2**

PROJECT	
Number:	513003
Description:	Lee Roy Selmon Expressway
County:	Hillsborough

Organization:	Post Buckley Schuh and Jernigan
Designed by:	Dwayne Allgire
Checked by:	John Stone

Outfall Tailwater Elevation:	7.46
Exit Loss at Outfall:	0.11
Storm Sewer Control Elevatio	7.57

CONDITIONS				
Storm Event		Runoff Coefficients		
Zone	Freq	Area 1	Area 2	Area 3
6	10	0.95	0.20	0.50

FROM / Station / Type	TO / Offset / Brls Len	Drainage Areas Inc.	Drainage Areas Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) / CIA / TOTAL	Inlet Elevations Inlet / Clear.	Inlet Elevations HGL / Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
EX-13	**S-430C**	0.35	0.35	0.33					0.00	0.00	32.60	29.75	29.75	7.61	22.146	18	30.8769	Partial	12.68		
1695+27.18	-81.30	0.00	0.00	0.00	10.00	0.09	7.47	0.33		2.48			31.00	7.30				sub		41.27	0.0200
GUT-S	1 71.72	0.00	0.00	0.00						**2.48**	2.85	0.00	29.50	5.80	23.700	18	34.3613		22.93		
EX-15	**S-437B**	0.37	0.37	0.35					0.00	0.00	30.60	27.23	27.23	15.50	11.734	18	43.9822	Partial	14.88		
1699+42.82	-81.41	0.00	0.00	0.00	10.00	0.03	7.47	0.35		2.62			28.50	15.50				sub		51.89	0.0200
GUT-S	1 26.68	0.00	0.00	0.00						**2.62**	3.37	0.00	27.00	14.00	13.000	18	54.3255		28.83		
S-430C	**S-9430C**	0.00	0.72	0.68					0.00	0.00	8.64	7.61	7.61	7.57	0.038	18	0.1671	Full	2.63		
1695+29.00	-153.00	0.00	0.00	0.00	12.80	0.00	6.80	0.68		4.65			6.60	6.50						7.76	0.0120
MHP-7T	1 23.00	0.00	0.00	0.00						**4.65**	1.03	0.00	5.10	5.00	0.100	18	0.4651		4.39		
S-433	**S-430C**	0.00	0.37	0.35					0.00	0.00	9.37	7.76	7.76	7.61	0.156	18	0.0520	Full	1.47		
1698+28.00	-137.00	0.00	0.00	0.00	10.30	2.50	7.39	0.35		2.60			7.20	6.60						5.12	0.0120
MHP-7T	1 299.43	0.00	0.00	0.00						**2.60**	1.61	0.00	5.70	5.10	0.600	18	0.2024		2.90		
S-437B	**S-433**	0.00	0.37	0.35					0.00	0.00	29.60	14.38	14.38	7.76	6.622	18	5.4934	Partial	7.35		
1699+45.00	-108.00	0.00	0.00	0.00	10.03	0.27	7.46	0.35		2.62			15.50	7.20				sub		18.71	0.0200
MHP-7T	1 120.54	0.00	0.00	0.00						**2.62**	15.22	0.00	14.00	5.70	8.300	18	7.0614		10.39		

MES IN POND 4A

TW = 10 YR 1HR PEAK STAGE IN POND 4A

Units: ENGLISH

12/20/01

STORM SEWER HYDRAULICS

System: **Pond4D**

MINOR LOSSES INCLUDED

PROJECT	
Number:	513003
Description:	Lee Roy Selmon Expressway
County:	Hillsborough

Organization:	Post Buckley Schuh and Jernigan
Designed by:	Dwayne Allgire
Checked by:	John Stone

Outfall Tailwater Elevation:	7.54
Exit Loss at Outfall:	0.23
Storm Sewer Control Elevatio	7.77

CONDITIONS				
Storm Event		Runoff Coefficients		
Zone	Freq	Area 1	Area 2	Area 3
6	10	0.95	0.20	0.50

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
EX-9		**S-409A**	0.20	0.20	0.19					0.00	0.00	32.00	29.34	29.34	29.31	0.023	15	0.0411	Full	1.16		
681+99.60		-54.98	0.00	0.00	0.00	10.00	0.47	7.47	0.19		1.42			29.85	29.25						7.44	0.0120
GUT-S	1	55.86	0.00	0.00	0.00						**1.42**	2.66	0.00	28.60	28.00	0.600	15	1.1297		6.06		
S-401		**S-402**	0.58	0.58	0.55					0.00	0.00	32.24	28.42	28.29	27.40	0.892	18	0.5872	Partial	6.35		
3674+08.00		-2.32	0.00	0.00	0.00	10.00	0.40	7.47	0.55		4.11			29.20	27.40				sub		12.52	0.0120
BW218J	1	151.86	0.00	0.00	0.00						**4.11**	3.82	0.13	27.70	25.90	1.800	18	1.2112		7.09		
S-402		**S-404**	0.16	0.74	0.70					0.00	0.00	29.36	26.90	26.86	26.26	0.600	18	0.3761	Partial	4.36		
3675+60.00		-10.13	0.00	0.00	0.00	10.40	0.61	7.36	0.70		5.17			27.40	26.80				critical		7.03	0.0120
GUT-S	1	159.55	0.00	0.00	0.00						**5.17**	2.46	0.04	25.90	25.30	0.600	18	0.3820		3.98		
S-404		**S-405**	0.24	0.98	0.93					0.00	0.00	27.91	26.06	25.87	25.00	0.870	24	0.8727	Partial	9.08		
3677+20.00		-10.13	0.00	0.00	0.00	11.01	0.18	7.21	0.93		6.71			27.30	25.00				sub		37.69	0.0120
GUT-S	1	99.72	0.00	0.00	0.00						**6.71**	1.85	0.19	25.30	23.00	2.300	24	2.3657		12.00		
S-405		**S-408**	0.27	3.05	2.90					0.00	0.00	28.83	23.63	23.61	23.40	0.209	36	0.0934	Full	3.12		
3678+20.00		-10.13	0.00	0.93	0.19	11.19	1.19	7.16	3.08		22.08			23.70	23.40						26.68	0.0120
GUT-S	1	223.35	0.00	0.00	0.00						**22.08**	5.20	0.02	20.70	20.40	0.300	36	0.1363		3.77		
S-407		**S-405**	1.80	1.80	1.71					0.00	0.00	25.70	23.72	23.71	23.70	0.009	36	0.0384	Full	2.00		
678+00.00		3.80	0.93	0.93	0.19	10.00	0.20	7.47	1.90		14.16			23.90	23.70						69.57	0.0120
DBI-D	1	24.32	0.00	0.00	0.00						**14.16**	1.98	0.01	20.90	20.70	0.200	36	0.9270		9.84		
S-408		**S-409**	0.26	3.31	3.14					0.00	0.00	31.70	23.34	23.32	23.20	0.120	36	0.1008	Full	3.25		
3680+44.00		-10.13	0.00	0.93	0.19	12.38	0.61	6.89	3.33		22.94			23.40	23.20						30.12	0.0120
GUT-S(J)	1	119.09	0.00	0.00	0.00						**22.94**	8.36	0.02	20.40	20.20	0.200	36	0.1738		4.26		
S-409		**S-411**	0.22	3.53	3.35					0.00	0.00	34.24	23.07	23.05	22.80	0.246	36	0.1097	Full	3.39		
3681+50.00		43.87	0.00	0.93	0.19	13.00	1.10	6.76	3.54		23.93			23.20	22.80						30.81	0.0120
BW218J	1	224.00	0.00	0.00	0.00						**23.93**	11.17	0.03	20.20	19.80	0.400	36	0.1818		4.36		
S-409A		**S-409B**	0.00	0.20	0.19					0.00	0.00	31.50	29.31	29.31	29.30	0.011	18	0.0150	Full	0.79		
682+00.00		0.88	0.00	0.00	0.00	10.47	0.59	7.34	0.19		1.40			29.50	29.30						6.19	0.0120
MHP-8	1	70.62	0.00	0.00	0.00						**1.40**	2.19	0.00	28.00	27.80	0.200	18	0.2958		3.50		
S-409B		**S-410A**	0.00	0.20	0.19					0.00	0.00	34.95	29.12	29.11	29.10	0.014	18	0.0144	Full	0.77		
3682+75.00		-17.73	0.00	0.00	0.00	11.05	0.83	7.19	0.19		1.37			29.30	29.10						5.17	0.0120
MHP-8	1	99.82	0.00	0.00	0.00						**1.37**	5.83	0.00	27.80	27.60	0.200	18	0.2066		2.93		
S-410		**S-410A**	0.46	0.46	0.44					0.00	0.00	49.78	~~47.01~~ 48.38	~~40.87~~ 48.24	32.77	14.100	~~18~~ DROP STR.	88.0131	Partial	29.56		
1683+50.00		25.87	0.00	0.00	0.00	10.00	0.01	7.47	0.44		3.26	1.40		48.20	34.10		10'		sub		120.76	0.0120
BW218	1	16.02	0.00	0.00	0.00						**3.26**	~~2.77~~	0.14	46.70	32.60	14.100	~~18~~	112.616		68.34		
S-410A		**S-411**	0.00	0.66	0.63					0.00	0.00	37.03	28.46	28.42	28.22	0.200	18	0.4093	Partial	4.45		
3683+74.00		-5.00	0.00	0.00	0.00	11.89	0.18	7.00	0.63		4.39			29.10	28.90				critical		7.56	0.0120
MHP-8	1	48.87	0.00	0.00	0.00						**4.39**	8.57	0.05	27.60	27.40	0.200	18	0.4408		4.28		

Units: ENGLISH

12/20/01

STORM SEWER HYDRAULICS

System: **Pond4D**

PROJECT							CONDITIONS		
Number: 513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	7.54	Storm Event			Runoff Coefficients		
Description: Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.23	Zone	Freq		Area 1	Area 2	Area 3
County: Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	7.77	6	10		0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Drainage Areas Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	Inlet Elevations HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-411	**S-412**	0.25	4.44	4.22					0.00	0.00	36.04	~~22.79~~ 26.32	~~22.75~~	~~22.50~~	0.255	36	0.1591	Full	4.08		
3683+74.00	43.87	0.00	0.93	0.19	14.10	0.65	6.55	4.40		28.82	9.72	26.28	22.80	22.50	26.03					31.69	0.0120
BW218J	1 160.00	0.00	0.00	0.00						**28.82**	~~13.25~~	0.04	19.80	19.50	0.300	36	0.1923		4.48		
S-412	**S-415**	0.38	4.82	4.58					0.00	0.00	38.03	~~21.96~~ 26.03	~~21.90~~	~~21.70~~	0.200	36	0.1802	Partial	5.05		
3685+34.00	43.87	0.00	0.93	0.19	14.75	0.37	6.43	4.76		30.62	12.00	25.97	22.50	22.30	25.77			super		31.24	0.0120
BW218J	1 111.00	0.00	0.00	0.00						**30.62**	~~16.07~~	0.06	19.50	19.30	0.200	36	0.1869		4.42		
S-413	**S-415**	0.34	0.34	0.32					0.00	0.00	42.18	36.23	36.10	34.70	1.400	18	1.8404	Partial	6.48		
1686+23.00	25.88	0.00	0.00	0.00	10.00	0.20	7.47	0.32		2.41			37.20	35.80				sub		15.86	0.0120
BW218	1 76.07	0.00	0.00	0.00						**2.41**	5.95	0.13	35.70	34.30	1.400	18	1.9425		8.98		
S-415	**S-416**	0.19	5.35	5.08					0.00	0.00	38.92	~~20.21~~	~~19.72~~ 25.27	10.41	9.309	~~36~~ DROP STR. 21"	61.4081	Partial	56.51		
3686+45.00	43.84	0.00	0.93	0.19	15.12	0.00	6.36	5.27		33.52	13.15	25.77	22.30	9.00				sub		807.09	0.0120
BW218J	1 15.16	0.00	0.00	0.00						**33.52**	~~18.71~~	0.50	19.30	6.00	13.300	~~36~~	124.765		114.18		
S-416	**S-417**	0.00	5.35	5.08					0.00	0.00	11.00	10.41	10.13	9.88	0.248	36	0.2152	Full	4.74		
3686+45.00	59.00	0.00	0.93	0.19	15.12	0.40	6.36	5.27		33.52			7.80	7.10						57.62	0.0120
MHJ-8	1 115.07	0.00	0.00	0.00						**33.52**	0.59	0.28	4.80	4.10	0.700	36	0.6360		8.15		
S-417	**S-418**	0.00	5.35	5.08					0.00	0.00	10.50	9.88	9.83	9.59	0.242	36	0.2106	Full	4.69		
3687+60.00	55.00	0.00	0.93	0.19	15.53	0.41	6.29	5.27		33.16			7.10	6.50						53.36	0.0120
MHJ-8	1 115.00	0.00	0.00	0.00						**33.16**	0.62	0.05	4.10	3.50	0.600	36	0.5454		7.55		
S-418	**S-421**	0.00	5.35	5.08					0.00	0.00	10.20	9.59	9.54	9.09	0.443	36	0.2061	Full	4.64		
3688+75.00	54.00	0.00	0.93	0.19	15.94	0.77	6.23	5.27		32.80			6.50	6.20						27.31	0.0120
MHJ-8	1 215.01	0.00	0.00	0.00						**32.80**	0.61	0.05	3.50	3.20	0.300	36	0.1429		3.86		
S-420	**S-421**	0.41	0.41	0.39					0.00	0.00	37.87	~~35.34~~ 36.47	~~34.81~~ 36.83	9.09	25.813	~~18~~ DROP STR 10"	317.894	Partial	53.14		
3690+90.00	43.88	0.00	0.00	0.00	10.00	0.00	7.47	0.39		2.91	1.40		36.30	6.70				sub		325.40	0.0120
BW218	1 8.12	0.00	0.00	0.00						**2.91**	~~2.33~~	0.44	34.80	5.20	29.600	~~18~~	817.679		184.14		
S-421	**S-425**	0.00	5.76	5.47					0.00	0.00	9.65	9.09	9.04	8.34	0.702	36	0.2285	Full	4.89		
3690+90.00	52.00	0.00	0.93	0.19	16.71	1.05	6.10	5.66		34.54			6.20	5.90						22.77	0.0120
MHJ-8	1 307.01	0.00	0.00	0.00						**34.54**	0.56	0.06	3.20	2.90	0.300	36	0.0993		3.22		
S-423	**S-424**	0.30	0.30	0.28					0.00	0.00	36.61	32.79	32.76	32.56	0.200	18	0.2062	Partial	2.83		
3693+00.00	43.87	0.00	0.00	0.00	10.00	0.57	7.47	0.28		2.13			33.60	33.40				super		5.28	0.0120
BW218J	1 97.00	0.00	0.00	0.00						**2.13**	3.82	0.02	32.10	31.90	0.200	18	0.2151		2.99		
S-424	**S-425**	0.17	0.47	0.45					0.00	0.00	36.03	~~32.42~~ 33.86	~~32.02~~ 33.45	8.34	23.682	~~18~~ DROP STR 10"	234.012	Partial	51.08		
3693+97.00	43.88	0.00	0.00	0.00	10.57	0.00	7.32	0.45		3.27	2.17		33.40	7.90				sub		242.40	0.0120
BW218J	1 10.12	0.00	0.00	0.00						**3.27**	~~3.61~~	0.41	31.90	6.40	25.500	~~18~~	453.736		137.17		
S-425	**S-429**	0.00	6.23	5.92					0.00	0.00	10.74	8.34	8.27	8.01	0.261	36	0.2527	Full	5.14		
3693+97.00	54.00	0.00	0.93	0.19	17.75	0.34	5.95	6.10		36.32			5.90	5.70						32.58	0.0120
MHJ-8	1 103.39	0.00	0.00	0.00						**36.32**	2.40	0.06	2.90	2.70	0.200	36	0.2033		4.61		

Units: ENGLISH

T60v11.RPT 6/3/97

STORM SEWER HYDRAULICS

System: **Pond4D**

PROJECT							CONDITIONS					
Number:	513003	Organization:	Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	7.54	Storm Event		Runoff Coefficients		
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire	Exit Loss at Outfall:	0.23	Zone	Freq	Area 1	Area 2	Area 3
County:	Hillsborough	Checked by:	John Stone	Storm Sewer Control Elevatio	7.77	6	10	0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-428	**S-429**	0.15	0.15	0.14					0.00	0.00	35.77	~~32.97~~	~~32.77~~ 31.36	8.01	24.758	~~18~~ DROP STR	188.704	Partial	35.45		
3695+00.00	31.88	0.00	0.00	0.00	10.00	0.01	7.47	0.14		1.06	4.21	31.56	34.20	6.30		10'		sub		204.73	0.0120
BW218	1 13.12	0.00	0.00	0.00						**1.06**	~~2.80~~	0.20	32.70	4.80	27.900	~~18~~	323.665		115.85		
S-429	**S-429A**	0.00	6.38	6.06					0.00	0.00	8.76	8.01	7.92	7.77	0.153	42	0.1145	Full	3.83		
3695+00.00	45.00	0.00	0.93	0.19	18.09	0.00	5.90	6.25		36.88			6.20	6.00						42.62	0.0120
MHJ-7T	1 133.28	0.00	0.00	0.00						**36.88**	0.75	0.09	2.70	2.50	0.200	42	0.1529		4.43		

MES IN POND 4D

TW = 10YR 1HR PEAK STAGE IN POND 4D

Units: ENGLISH

STORM SEWER HYDRAULICS

MINOR LOSSES INCLUDED

System: **Pond4D1**

PROJECT									CONDITIONS	
Number:	513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	7.54	Storm Event		Runoff Coefficients			
Description:	Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.11	Zone	Freq	Area 1	Area 2	Area 3	
County:	Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	7.65	6	10	0.95	0.20	0.50	

FROM / Station / Type	TO / Brls / Offset / Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-434	**S-435**	0.67	0.67	0.64					0.00	0.00	33.27	~~30.66~~ 32.26	~~30.37~~	7.70	22.668	~~18~~ DROP STR 10"	160.421	Partial	43.05		
3699+00.00	31.87	0.00	0.00	0.00	10.00	0.01	7.47	0.64		4.75	1.01	31.47	31.70	7.20				sub		172.76	0.0120
BW218	1 14.13	0.00	0.00	0.00						**4.75**	~~2.61~~	0.29	30.20	5.70	24.500	~~18~~	230.479		97.76		
S-435	**S-9435**	0.00	0.67	0.64					0.00	0.00	8.59	7.70	7.69	7.65	0.033	18	0.1744	Full	2.69		
3699+00.00	46.00	0.00	0.00	0.00	10.01	0.00	7.47	0.64		4.75			7.20	7.10						8.62	0.0120
MHP-7T	1 18.94	0.00	0.00	0.00						**4.75**	0.89	0.02	5.70	5.60	0.100	18	0.5734		4.88		

MES IN POND 4D

TW = 10YR 1HR PEAK STAGE IN POND 4D

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Received
FEB 8 2002
RRD-TAMPA

Units: ENGLISH

1/17/02

STORM SEWER HYDRAULICS

MINOR LOSSES INCLUDED

System: **PondX**

PROJECT					
Number:	513003	Organization:	Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	3.20
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire	Exit Loss at Outfall:	0.60
County:	Hillsborough	Checked by:	John Stone	Storm Sewer Control Elevatio	3.80

CONDITIONS				
Storm Event		Runoff Coefficients		
Zone	Freq	Area 1	Area 2	Area 3
6	10	0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-439	**S-440**	0.57	0.57	0.54					0.00	0.00	15.52	13.08	13.06	12.97	0.091	18	0.1263	Full	2.29		
509+25.00	3.87	0.00	0.00	0.00	10.00	0.53	7.47	0.54		4.04			12.00	11.70						7.54	0.0120
BW218 1	72.43	0.00	0.00	0.00						**4.04**	2.44	0.02	10.50	10.20	0.300	18	0.4384		4.26		
S-439A	**S-442**	0.45	2.81	2.67					0.00	0.00	14.45	13.06	12.98	12.43	0.550	24	0.5794	Full	5.94		
3709+30.00	31.88	0.00	0.00	0.00	11.93	0.27	6.99	2.67		18.66			11.90	11.70						11.49	0.0120
BW218J 1	95.00	0.00	0.00	0.00						**18.66**	1.39	0.08	9.90	9.70	0.200	24	0.2198		3.66		
S-440	**S-441**	0.19	0.76	0.72					0.00	0.00	15.38	12.97	12.95	12.89	0.059	18	0.2161	Full	2.99		
509+97.5	3.87	0.00	0.00	0.00	10.53	0.15	7.33	0.72		5.29			11.70	11.50						10.51	0.0120
BW218 1	27.46	0.00	0.00	0.00						**5.29**	2.41	0.02	10.20	10.00	0.200	18	0.8526		5.95		
S-441	**S-442**	0.28	1.04	0.99					0.00	0.00	15.44	12.89	12.68	12.43	0.254	18	0.4003	Full	4.07		
510+25.00	3.87	0.00	0.00	0.00	10.68	0.26	7.29	0.99		7.20			11.50	11.20						8.08	0.0120
BW218 1	63.50	0.00	0.00	0.00						**7.20**	2.55	0.21	10.00	9.70	0.300	18	0.5042		4.57		
S-442	**S-443**	0.10	3.95	3.75					0.00	0.00	14.62	12.43	12.40	12.28	0.122	36	0.1295	Full	3.68		
3710+25.00	31.87	0.00	0.00	0.00	12.20	0.43	6.93	3.75		26.00			12.20	12.00						33.97	0.0120
BW218J 1	94.49	0.00	0.00	0.00						**26.00**	2.19	0.03	9.20	9.00	0.200	36	0.2210		4.81		
S-443	**S-455**	0.26	4.21	4.00					0.00	0.00	15.09	12.28	12.24	11.99	0.250	36	0.1432	Full	3.87		
3711+20.00	31.85	0.00	0.00	0.00	12.63	0.75	6.84	4.00		27.34			12.00	11.80						24.75	0.0120
BW218J 1	174.50	0.00	0.00	0.00						**27.34**	2.81	0.03	9.00	8.80	0.200	36	0.1173		3.50		
S-445	**S-456**	0.23	0.23	0.22					0.00	0.00	17.19	13.43	13.43	13.40	0.026	18	0.0206	Full	0.92		
511+75.00	3.87	0.00	0.00	0.00	10.00	1.04	7.47	0.22		1.63			13.70	13.40						5.67	0.0120
BW218 1	124.79	0.00	0.00	0.00						**1.63**	3.76	0.00	12.20	11.90	0.300	18	0.2484		3.21		
S-446	**S-447**	0.18	0.90	0.86					0.00	0.00	37.18	~~34.50~~ 28.86	~~34.34~~ 28.70	~~34.12~~	0.214	18	0.3051	Full	3.56		
518+31.00	3.87	0.00	0.00	0.00	10.43	0.33	7.35	0.86		6.29	8.32		28.20	26.70	28.49					17.15	0.0120
BW218J 1	70.02	0.00	0.00	0.00						**6.29**	~~2.68~~	0.16	26.70	25.20	1.500	18	2.2719		9.71		
S-447	**S-448**	0.44	1.34	1.27					0.00	0.00	29.71	~~34.12~~ 28.49	~~35.41~~ 28.46	5.96	19.447	~~18~~ DROP STR	174.881	Partial	61.13		
3718+20.00	31.88	0.00	0.00	0.00	10.76	0.00	7.27	1.27		9.25	1.22	0.03	26.70	2.70		14'		sub		216.67	0.0120
BW218J 1	11.12	0.00	0.00	0.00						**9.25**	~~4.41~~	~~8.71~~	25.20	1.20	24.000	~~18~~	362.537		122.61		
S-448	**S-452**	0.00	7.33	6.96					0.00	0.00	6.13	5.96	5.87	5.17	0.700	36	0.3754	Full	6.26		
3718+20.00	43.00	0.00	0.00	0.00	15.15	0.50	6.36	6.96		44.27			3.00	2.70						29.38	0.0120
MHJ-7T 1	186.41	0.00	0.00	0.00						**44.27**	0.17	0.09	0.00	-0.30	0.300	36	0.1654		4.16		
S-450	**S-446**	0.22	0.72	0.68					0.00	0.00	40.56	36.65	36.35	34.50	1.853	18	1.7028	Partial	11.40		
519+40.00	4.16	0.00	0.00	0.00	10.27	0.16	7.39	0.68		5.06			37.40	31.90				sub		26.07	0.0120
BW218J 1	108.82	0.00	0.00	0.00						**5.06**	3.91	0.30	35.90	30.40	5.500	18	5.2473		14.75		
S-452	**S-472A**	0.00	7.33	6.96					0.00	0.00	6.13	5.17	5.08	4.40	0.685	36	0.3656	Full	6.18		
3720+10.00	43.00	0.00	0.00	0.00	15.64	0.51	6.27	6.96		43.69			2.70	1.70						53.51	0.0120
MHJ-8 1	187.37	0.00	0.00	0.00						**43.69**	0.96	0.09	-0.30	-1.30	1.000	36	0.5483		7.57		

Units: ENGLISH

T60v11.RPT 6/3/97

1/17/02

STORM SEWER HYDRAULICS

System: **PondX**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		Storm Event		CONDITIONS Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	3.20					
Exit Loss at Outfall:	0.60					
Storm Sewer Control Elevatio	3.80	6	10	0.95	0.20	0.50

FROM	TO	Drainage Areas			Tc	Travel	Inten.	Total	Flow (cfs)		Inlet Elevations		Pipe Elevations		Fall	Pipe	HGL	Flow	Velocity	Capacity	Mann'g
Station	Offset	Inc.	Sub-Total	Sub-Total		Time		CA	(Qb)	Sum(Qb)	Inlet	HGL	HGL			Height	(%)	Type	Actual		'N'
Type Brls	Len			CA						CIA			Crown Line			Width	FL		Physical		
					(min)	(min)	(in/hr)	(ac)		TOTAL	Clear.	Jnc Loss	Flow Line		(ft)	(in)	(%)		(fps)	(cfs)	
S-452A	**S-450**	0.50	0.50	0.47					0.00	0.00	44.18	40.15	39.94	37.40	2.539	18	1.8851	Partial	8.22		
520+75.00	7.11	0.00	0.00	0.00	10.00	0.27	7.47	0.47		3.55			41.00	37.40				sub		18.89	0.0120
BW218J 1	134.71	0.00	0.00	0.00						**3.55**	4.03	0.21	39.50	35.90	3.600	18	2.7542		10.69		
S-455	**S-457**	0.23	5.10	4.84					0.00	0.00	18.55	11.99	11.94	11.74	0.204	36	0.2008	Full	4.58		
3712+97.00	31.88	0.00	0.00	0.00	13.38	0.37	6.68	4.84		32.38			11.80	11.60						32.71	0.0120
BW218J 1	101.56	0.00	0.00	0.00						**32.38**	6.56	0.05	8.80	8.60	0.200	36	0.2050		4.63		
S-456	**S-455**	0.43	0.66	0.63					0.00	0.00	20.43	12.92	12.90	12.80	0.101	18	0.1573	Full	2.55		
513+00.00	3.87	0.00	0.00	0.00	11.04	0.42	7.20	0.63		4.51			13.40	12.80						11.34	0.0120
BW218 1	64.44	0.00	0.00	0.00						**4.51**	7.51	0.02	11.90	11.30	0.600	18	0.9926		6.42		
S-457	**S-460**	0.15	5.25	4.99					0.00	0.00	21.48	11.74	11.69	11.40	0.287	36	0.2083	Full	4.66		
3714+00.00	31.85	0.00	0.00	0.00	13.75	0.49	6.61	4.99		32.97			11.60	11.40						27.91	0.0120
BW218J 1	138.04	0.00	0.00	0.00						**32.97**	9.74	0.05	8.60	8.40	0.200	36	0.1492		3.95		
S-460	**S-461**	0.41	5.99	5.69					0.00	0.00	25.00	7.12	7.06	7.03	0.029	36	0.2636	Full	5.25		
3715+40.00	31.88	0.00	0.00	0.00	14.24	0.04	6.52	5.69		37.10			3.80	3.60						125.59	0.0120
BW218J 1	11.12	0.00	0.00	0.00						**37.10**	17.88	0.06	0.80	0.60	0.200	36	3.0211		17.77		
S-461	**S-448**	0.00	5.99	5.69					0.00	0.00	6.13	7.03	6.69	5.96	0.722	36	0.2630	Full	5.24		
3715+40.00	43.00	0.00	0.00	0.00	14.28	0.87	6.51	5.69		37.06	*		3.60	3.00						34.09	0.0120
MHJ-8 1	274.60	0.00	0.00	0.00						**37.06**	-0.90	0.34	0.60	0.00	0.600	36	0.2226		4.82		
S-463	**S-460**	0.33	0.33	0.31					0.00	0.00	28.29	21.92	21.77	20.38	1.400	18	2.1135	Partial	6.78		
515+50.00	3.87	0.00	0.00	0.00	10.00	0.16	7.47	0.31		2.34			22.90	21.50				sub		17.07	0.0120
BW218 1	66.24	0.00	0.00	0.00						**2.34**	6.37	0.14	21.40	20.00	1.400	18	2.2493		9.66		
S-464	**S-465**	0.57	0.57	0.54					0.00	0.00	25.29	22.14	22.12	22.08	0.039	18	0.1263	Full	2.29		
1703+09.00	26.84	0.00	0.00	0.00	10.00	0.23	7.47	0.54		4.04			21.80	21.60						9.80	0.0120
BW218 1	30.99	0.00	0.00	0.00						**4.04**	3.15	0.02	20.30	20.10	0.200	18	0.7410		5.54		
S-465	**S-466**	0.32	0.89	0.85					0.00	0.00	26.44	22.08	22.05	21.91	0.142	18	0.3028	Full	3.54		
503+30.00	4.33	0.00	0.00	0.00	10.23	0.22	7.41	0.85		6.26			21.60	21.40						7.76	0.0120
BW218 1	47.05	0.00	0.00	0.00						**6.26**	4.36	0.03	20.10	19.90	0.200	18	0.4646		4.39		
S-466	**S-470**	0.46	1.35	1.28					0.00	0.00	25.93	21.91	20.70	14.70	5.997	18	1.9598	Partial	9.88		
3703+30.00	31.88	0.00	0.00	0.00	10.45	0.52	7.35	1.28		9.42			21.40	14.70				sub		16.95	0.0120
BW218J 1	306.00	0.00	0.00	0.00						**9.42**	4.02	1.21	19.90	13.20	6.700	18	2.2185		9.59		
S-468	**S-471**	0.23	0.23	0.22					0.00	0.00	21.79	17.63	17.50	14.80	2.702	18	1.7430	Partial	6.43		
1704+60.00	27.02	0.00	0.00	0.00	10.00	0.40	7.47	0.22		1.63			18.70	14.80				sub		18.29	0.0120
BW218J 1	155.00	0.00	0.00	0.00						**1.63**	4.16	0.13	17.20	13.30	3.900	18	2.5827		10.35		
S-469	**S-470**	0.21	0.65	0.62					0.00	0.00	18.00	14.49	14.48	14.40	0.071	18	0.1564	Full	2.55		
506+36.00	7.83	0.00	0.00	0.00	10.68	0.30	7.29	0.62		4.50			14.40	14.20						7.90	0.0120
BW218 1	45.49	0.00	0.00	0.00						**4.50**	3.51	0.02	12.90	12.70	0.200	18	0.4821		4.47		

Units: ENGLISH

T60v11.RPT 6/3/97

* MH LOCATED IN POND BERM. STORM DRAIN POP-OFF DRAINS TO POND

STORM SEWER HYDRAULICS

System: **PondX**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		CONDITIONS				
		Storm Event		Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	3.20	6	10	0.95	0.20	0.50
Exit Loss at Outfall:	0.60					
Storm Sewer Control Elevatio	3.80					

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-470	**S-439A**	0.36	2.36	2.24					0.00	0.00	18.00	14.40	14.34	13.06	1.280	24	0.4354	Full	5.15		
3706+36.00	31.88	0.00	0.00	0.00	10.98	0.95	7.21	2.24		16.17			14.70	11.90						24.08	0.0120
BW218J	1 294.00	0.00	0.00	0.00						**16.17**	3.60	0.06	12.70	9.90	2.800	24	0.9655		7.67		
S-471	**S-469**	0.21	0.44	0.42					0.00	0.00	18.53	14.55	14.52	14.49	0.024	18	0.0731	Full	1.74		
1706+15.00	25.89	0.00	0.00	0.00	10.40	0.28	7.36	0.42		3.08			14.80	14.40						13.25	0.0120
BW218J	1 33.50	0.00	0.00	0.00						**3.08**	3.98	0.04	13.30	12.90	0.400	18	1.3558		7.50		
S-472	**S-472A**	0.11	0.11	0.10					0.00	0.00	31.56	30.67	28.57	4.50	24.070	18	216.459	Partial	26.00		
3722+00.00	31.88	0.00	0.00	0.00	10.00	0.01	7.47	0.10		0.78			30.00	4.50				sub		223.34	0.0120
BW218	1 11.12	0.00	0.00	0.00						**0.78**	0.89	2.10	28.50	3.00	25.500	18	385.196		126.39		
S-472A	**S-9472**	0.00	7.44	7.07					0.00	0.00	6.13	4.40	3.92	3.80	0.126	36	0.3669	Full	6.19		
3722+00.00	43.00	0.00	0.00	0.00	16.15	0.00	6.19	7.07		43.77			1.70	1.50						57.27	0.0120
MHJ-8	1 34.34	0.00	0.00	0.00						**43.77**	1.73	0.48	-1.30	-1.50	0.200	36	0.6281		8.10		

MES IN POND X

TW = 10YR 1HR PEAK STAGE IN POND X

12/7/01

STORM SEWER HYDRAULICS

System: **SysLT**

Page: 1/1

PROJECT								CONDITIONS	
Number: 513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	9.52	Storm Event		Runoff Coefficients			
Description: Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.00	Zone	Freq	Area 1	Area 2	Area 3	
County: Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	9.52	6	10	0.95	0.50	0.20	

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Drainage Areas Sub-Total	Drainage Areas Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Flow (cfs) Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	Inlet Elevations HGL Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
EX-181	**EX-180**	0.00	0.04	0.04					0.01	0.01	23.62	19.01	19.01	9.52	9.488	15	25.1541	Partial	9.07		
703+50.84	-60.70	0.00	0.00	0.00	10.40	0.00	7.36	0.04		0.28			20.18	9.52				sub		37.83	0.0120
GUT-S 1	37.72	0.00	0.00	0.00						**0.29**	4.61	0.00	18.93	8.27	10.660	15	29.2295		30.83		
S-467	**EX-181**	0.04	0.04	0.04					0.00	0.00	23.23	19.53	19.53	19.30	0.230	15	0.4410	Partial	2.16		
703+51.00	-8.55	0.00	0.00	0.00	10.00	0.40	7.47	0.04		0.28			20.57	20.34				critical		4.75	0.0120
DBI-C 1	52.15	0.00	0.00	0.00						**0.28**	3.70	0.00	19.32	19.09	0.230	15	0.4609		3.87		

TW = Pipe Crown At Ex. 180

Units: ENGLISH

12/7/01

STORM SEWER HYDRAULICS

System: **SysLT1**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		Storm Event		CONDITIONS Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	6.03					
Exit Loss at Outfall:	0.00					
Storm Sewer Control Elevatio	6.03	6	10	0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
EX-185	**EX-184**	0.00	0.14	0.13					0.01	0.01	13.00	7.40	7.40	6.03	1.372	18	3.9204	Partial	8.13		
707+63.50	-71.65	0.00	0.00	0.00	10.38	0.00	7.36	0.13		0.98			8.72	6.03				sub		32.13	0.0120
GUT-S	1 34.99	0.00	0.00	0.00						**0.99**	5.60	0.00	7.22	4.53	2.690	18	7.9734		18.18		
S-438	**EX-185**	0.14	0.14	0.13					0.00	0.00	13.00	9.85	9.85	9.64	0.210	18	0.3352	Partial	2.72		
707+63.50	-9.00	0.00	0.00	0.00	10.00	0.38	7.47	0.13		0.99			10.96	10.75				critical		6.71	0.0120
DBI-C	1 62.65	0.00	0.00	0.00						**0.99**	3.15	0.00	9.46	9.25	0.210	18	0.3477		3.80		

TW = Pipe Crown at Ex. 184

Units: ENGLISH

T60v11.RPT 6/3/97

STORM SEWER HYDRAULICS

System: **SysLT2**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		Storm Event		CONDITIONS: Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	7.10	6	10	0.95	0.20	0.50
Exit Loss at Outfall:	0.00					
Storm Sewer Control Elevatio	7.10					

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-444		**EX-188**	0.42	0.42	0.40					0.00	0.00	8.80	7.22	7.22	7.10	0.120	18	0.0686	Full	1.69		
710+98.00		-8.00	0.00	0.00	0.00	10.00	0.00	7.47	0.40		2.98			7.60	7.10						6.11	0.0120
DBI-C	1	174.54	0.00	0.00	0.00						**2.98**	1.58	0.00	6.10	5.60	0.500	18	0.2881		3.46		

TW = Pipe Crown at Ex 188

Units: ENGLISH

STORM SEWER HYDRAULICS

System: **SysLT3**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		Storm Event		CONDITIONS Runoff Coefficients		
Outfall Tailwater Elevation:	1.41	Zone	Freq	Area 1	Area 2	Area 3
Exit Loss at Outfall:	0.00	6	10	0.95	0.20	0.50
Storm Sewer Control Elevatio	4.10					

FROM / Station / Type	TO / Offset / Brls Len	Drainage Areas Inc.	Drainage Areas Sub-Total	Drainage Areas Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Flow (cfs) Sum(Qb) / CIA / TOTAL	Inlet Elevations Inlet / Clear.	Inlet Elevations HGL / Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-454A	**S-458**	0.42	0.42	0.40					0.00	0.00	8.60	6.85	6.85	6.45	0.400	18	0.1805	Partial	2.89		
712+00.00	-7.40	0.00	0.00	0.00	10.00	1.28	7.47	0.40		2.98			7.50	7.10				super		4.86	0.0120
DBI-C	1 221.61	0.00	0.00	0.00						**2.98**	1.75	0.00	6.00	5.60	0.400	18	0.1821		2.75		
S-458	**EX-190**	0.91	1.33	1.26					0.00	0.00	10.53	4.10	4.10	4.10	0.000	96	0.0000	Full	0.14		
714+21.00	-7.00	0.00	0.00	0.00	11.28	0.00	7.14	1.26		9.02			4.30	4.10						390.76	0.0120
DBI-A	1 287.09	0.00	0.00	0.00						**9.02**	6.43	0.00	-3.70	-3.90	0.200	96	0.0699		6.11		

TW = Box Culvert Crown at Ex. 190
Conservative. TC Box > 11.3 min.
True HGL control vs pipe crown
from S-454A to S-458

Units: ENGLISH

STORM SEWER HYDRAULICS

System: **SysLT4**

PROJECT						CONDITIONS					
						Storm Event		Runoff Coefficients			
Number:	513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	24.80		Zone	Freq	Area 1	Area 2	Area 3	
Description:	Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.00		6	10	0.95	0.20	0.50	
County:	Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	25.24							

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-453		**S-9453**	0.00	0.15	0.14					0.00	0.00	29.22	25.64	25.64	25.24	0.400	18	0.2338	Partial	2.42		
721+20.00		-17.00	0.00	0.00	0.00	10.29	0.00	7.39	0.14		1.05			26.70	26.30				critical		5.53	0.0120
MHP-7T	1	171.12	0.00	0.00	0.00						**1.05**	3.58	0.00	25.20	24.80	0.400	18	0.2358		3.13		
S-454		**S-453**	0.15	0.15	0.14					0.00	0.00	28.60	26.70	26.70	26.70	0.003	18	0.0087	Full	0.60		
721+50.00		0.00	0.00	0.00	0.00	10.00	0.29	7.47	0.14		1.06			26.90	26.70						8.99	0.0120
DBI-C	1	34.58	0.00	0.00	0.00						**1.06**	1.90	0.00	25.40	25.20	0.200	18	0.6235		5.08		

TW= Pipe Crown at Outfall.
Conservate: > normal flow in ditch.

Units: ENGLISH

12/20/01

STORM SEWER HYDRAULICS
System: **SysRT**

PROJECT							CONDITIONS		
Number:	513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	6.30	Storm Event		Runoff Coefficients		
Description:	Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.00	Zone	Freq	Area 1	Area 2	Area 3
County:	Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	6.55	6	10	0.95	0.20	0.50

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-475		**S-476**	0.32	0.32	0.30					0.00	0.00	28.56	~~25.59~~	~~25.59~~	~~7.09~~	18.500	~~18~~	279.034	Partial	49.37		
3725+00.00		31.87	0.00	0.00	0.00	10.00	0.00	7.47	0.30		2.27	2.31	26.25	27.00	8.50	7.90	DROP STR 10'		sub		276.66	0.0120
BW218	1	6.63	0.00	0.00	0.00						**2.27**	~~2.07~~	0.00	25.50	7.00	18.500	~~18~~	591.054		156.56		
S-476		**S-9476**	0.00	0.32	0.30					0.00	0.00	9.83	~~6.75~~	~~6.75~~	~~6.55~~	0.200	18	2.3256	Partial	7.28		
3725+00.00		38.50	0.00	0.00	0.00	10.00	0.00	7.47	0.30		2.27	1.93	7.90	7.90	7.70	7.70			sub		19.10	0.0120
MHP-7T	1	8.60	0.00	0.00	0.00						**2.27**	~~3.08~~	0.00	6.40	6.20	0.200	18	2.8169		10.81		

MES AT RT. DITCH

TW = PIPE CROWN AT OUTLET

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT Received FEB 8 2002 RRD-TAMPA

A-67

Units: ENGLISH

12/20/01

STORM SEWER HYDRAULICS

System: **SysRT1**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		CONDITIONS				
		Storm Event		Runoff Coefficients		
Outfall Tailwater Elevation:	5.10	Zone	Freq	Area 1	Area 2	Area 3
Exit Loss at Outfall:	0.00	6	10	0.95	0.20	0.50
Storm Sewer Control Elevatio	5.78					

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-478	**S-479**	0.18	0.18	0.17					0.00	0.00	25.38	~~24.62~~	~~21.82~~	~~8.62~~	13.000	~~18~~ DROP STR	58.7438	Partial	19.97		
3726+65.00	31.87	0.00	0.00	0.00	10.00	0.02	7.47	0.17		1.28	2.84	22.54	23.00	10.00	7.20	10'		sub		95.06	0.0120
BW218 1	22.13	0.00	0.00	0.00						**1.28**	~~3.78~~	0.00	21.50	8.50	13.000	~~18~~	69.7799		53.79		
S-479	**S-9479**	0.00	0.18	0.17					0.00	0.00	11.44	~~5.98~~	~~5.98~~	~~5.78~~	0.200	18	1.8349	Partial	5.56		
3726+65.00	54.00	0.00	0.00	0.00	10.02	0.00	7.46	0.17		1.28	4.24	7.20	7.20	7.00	7.00			sub		16.60	0.0120
MHP-7T 1	10.90	0.00	0.00	0.00						**1.28**	~~5.46~~	0.00	5.70	5.50	0.200	18	2.1277		9.39		

MES AT RT. DITCH

TW = PIPE CROWN AT OUTLET

Units: ENGLISH

T60v11.RPT 6/3/97

12/7/01

STORM SEWER HYDRAULICS

System: **SysRT2**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

CONDITIONS		Storm Event		Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	5.20					
Exit Loss at Outfall:	0.00					
Storm Sewer Control Elevatio	5.43	6	10	0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-482	**S-9482**	0.30	0.30	0.28					0.00	0.00	17.70	~~14.23~~ 15.50	~~14.93~~ 15.50	~~5.43~~ 6.70	8.800	18	31.6889	Partial	12.07		
3729+40.00	34.13	0.00	0.00	0.00	10.00	0.00	7.47	0.28		2.13	~~8.47~~ 2.20		15.50	6.70				sub		40.56	0.0200
GUT-S	1 27.77	0.00	0.00	0.00						**2.13**		0.00	14.00	5.20	8.800	18	33.1825		22.53		

TW = Pipe Crown at Outlet

Units: ENGLISH

T60v11.RPT 6/3/97

12/7/01

STORM SEWER HYDRAULICS

System: **SysRT3**

Page: 1/1

PROJECT				CONDITIONS					
Number: 513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	8.00	Storm Event		Runoff Coefficients			
Description: Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.00	Zone	Freq	Area 1	Area 2	Area 3	
County: Hillsborough	Checked by: John STone	Storm Sewer Control Elevatio	8.64	6	10	0.95	0.20	0.50	

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL / Crown Line	Flow Line	Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-484	**S-9484**	0.30	0.30	0.28					0.00	0.00	11.58	9.04	~~9.04~~ 8.70	~~9.04~~ 9.10	0.400	18	2.5205	Partial	4.93		
3732+10.00	34.13	0.00	0.00	0.00	10.00	0.00	7.47	0.28		2.13	1.48		10.10	9.70				sub		11.65	0.0200
GUT-S 1	15.87	0.00	0.00	0.00						**2.13**	~~2.54~~	0.00	8.60	8.20	0.400	18	2.7360		6.47		

TW = Crown of Pipe at Outlet

Units: ENGLISH

Storm Drain Tabulations – 50-year Check

1/18/02

STORM SEWER HYDRAULICS

MINOR LOSSES INCLUDED
50 YR EVENT

System: **Pond4D**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		CONDITIONS				
		Storm Event		Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	7.69					
Exit Loss at Outfall:	0.37					
Storm Sewer Control Elevatio	8.06	6	50	0.95	0.20	0.50

FROM Station Type	TO Offset Brls Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
EX-9	**S-409A**	0.20	0.20	0.19					0.00	0.00	32.00	29.35	29.35	29.32	0.034	15	0.0603	Full	1.40		
681+99.60	-54.98	0.00	0.00	0.00	10.00	0.47	9.04	0.19		1.72			29.85	29.25						7.44	0.0120
GUT-S	1 55.86	0.00	0.00	0.00						**1.72**	2.65	0.00	28.60	28.00	0.600	15	1.1297		6.06		
S-401	**S-402**	0.58	0.58	0.55					0.00	0.00	32.24	28.50	28.36	27.40	0.956	18	0.6297	Partial	6.70		
3674+08.00	-2.32	0.00	0.00	0.00	10.00	0.38	9.04	0.55		4.98			29.20	27.40				sub		12.52	0.0120
BW218J	1 151.86	0.00	0.00	0.00						**4.98**	3.74	0.14	27.70	25.90	1.800	18	1.2112		7.09		
S-402	**S-404**	0.16	0.74	0.70					0.00	0.00	29.36	27.05	27.00	26.40	0.600	18	0.3761	Partial	4.51		
3675+60.00	-10.13	0.00	0.00	0.00	10.38	0.59	8.93	0.70		6.28			27.40	26.80				super		7.03	0.0120
GUT-S	1 159.55	0.00	0.00	0.00						**6.28**	2.31	0.05	25.90	25.30	0.600	18	0.3820		3.98		
AG **S-404**	**S-405**	0.24	0.98	0.93					0.00	0.00	27.91	26.15	25.93	25.00	0.931	24	0.9334	Partial	9.60		
3677+20.00	-10.13	0.00	0.00	0.00	10.97	0.17	8.77	0.93		8.16			27.30	25.00				sub		37.69	0.0120
GUT-S	1 99.72	0.00	0.00	0.00						**8.16**	1.76	0.22	25.30	23.00	2.300	24	2.3657		12.00		
S-405	**S-408**	0.27	3.05	2.90					0.00	0.00	28.83	24.11	24.08	23.77	0.309	36	0.1384	Full	3.80		
3678+20.00	-10.13	0.00	0.93	0.19	11.14	0.98	8.72	3.08		26.88			23.70	23.40						26.68	0.0120
GUT-S	1 223.35	0.00	0.00	0.00						**26.88**	4.72	0.03	20.70	20.40	0.300	36	0.1363		3.77		
S-407	**S-405**	1.80	1.80	1.71					0.00	0.00	25.70	24.14	24.13	24.11	0.014	36	0.0563	Full	2.43		
678+00.00	3.80	0.93	0.93	0.19	10.00	0.17	9.04	1.90		17.14			23.90	23.70						69.57	0.0120
DBI-D	1 24.32	0.00	0.00	0.00						**17.14**	1.56	0.02	20.90	20.70	0.200	36	0.9270		9.84		
S-408	**S-409**	0.26	3.31	3.14					0.00	0.00	31.70	23.77	23.73	23.55	0.181	36	0.1523	Full	3.99		
3680+44.00	-10.13	0.00	0.93	0.19	12.12	0.50	8.47	3.33		28.20			23.40	23.20						30.12	0.0120
GUT-S(J)	1 119.09	0.00	0.00	0.00						**28.20**	7.93	0.04	20.40	20.20	0.200	36	0.1738		4.26		
S-409	**S-411**	0.22	3.53	3.35					0.00	0.00	34.24	23.55	23.51	23.13	0.375	36	0.1673	Full	4.18		
3681+50.00	43.87	0.00	0.93	0.19	12.62	0.89	8.35	3.54		29.55			23.20	22.80						30.81	0.0120
BW218J	1 224.00	0.00	0.00	0.00						**29.55**	10.69	0.04	20.20	19.80	0.400	36	0.1818		4.36		
S-409A	**S-409B**	0.00	0.20	0.19					0.00	0.00	31.50	29.32	29.32	29.30	0.016	18	0.0221	Full	0.96		
682+00.00	0.88	0.00	0.00	0.00	10.47	0.59	8.90	0.19		1.69			29.50	29.30						6.19	0.0120
MHP-8	1 70.62	0.00	0.00	0.00						**1.69**	2.18	0.00	28.00	27.80	0.200	18	0.2958		3.50		
S-409B	**S-410A**	0.00	0.20	0.19					0.00	0.00	34.95	29.12	29.12	29.10	0.021	18	0.0213	Full	0.94		
3682+75.00	-17.73	0.00	0.00	0.00	11.05	0.83	8.74	0.19		1.66			29.30	29.10						5.17	0.0120
MHP-8	1 99.82	0.00	0.00	0.00						**1.66**	5.83	0.00	27.80	27.60	0.200	18	0.2066		2.93		
S-410	**S-410A**	0.46	0.46	0.44					0.00	0.00	49.78	47.04	46.89	32.79	14.100	18	88.0131	Partial	30.99		
1683+50.00	25.87	0.00	0.00	0.00	10.00	0.01	9.04	0.44		3.95			48.20	34.10				sub		120.76	0.0120
BW218	1 16.02	0.00	0.00	0.00						**3.95**	2.74	0.15	46.70	32.60	14.100	18	112.616		68.34		
S-410A	**S-411**	0.00	0.66	0.63					0.00	0.00	37.03	28.58	28.53	28.33	0.200	18	0.4093	Partial	4.64		
3683+74.00	-5.00	0.00	0.00	0.00	11.89	0.18	8.53	0.63		5.35			29.10	28.90				critical		7.56	0.0120
MHP-8	1 48.87	0.00	0.00	0.00						**5.35**	8.45	0.05	27.60	27.40	0.200	18	0.4408		4.28		

Units: ENGLISH

T60v11.RPT 6/3/97

STORM SEWER HYDRAULICS

System: **Pond4D**

PROJECT	
Number:	513003
Description:	Lee Roy Selmon Expressway
County:	Hillsborough

Organization:	Post Buckley Schuh and Jernigan
Designed by:	Dwayne Allgire
Checked by:	John Stone

Outfall Tailwater Elevation:	7.69
Exit Loss at Outfall:	0.37
Storm Sewer Control Elevatio	8.06

CONDITIONS				
Storm Event		Runoff Coefficients		
Zone	Freq	Area 1	Area 2	Area 3
6	50	0.95	0.20	0.50

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Drainage Areas Sub-Total	Drainage Areas Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Flow (cfs) Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	Inlet Elevations HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-411		**S-412**	0.25	4.44	4.22					0.00	0.00	36.04	23.13	23.07	22.68	0.395	36	0.2466	Full	5.08		
3683+74.00		43.87	0.00	0.93	0.19	13.51	0.53	8.15	4.40		35.88			22.80	22.50						31.69	0.0120
BW218J	1	160.00	0.00	0.00	0.00						**35.88**	12.91	0.06	19.80	19.50	0.300	36	0.1923		4.48		
S-412		**S-415**	0.38	4.82	4.58					0.00	0.00	38.03	22.68	22.61	22.30	0.312	36	0.2808	Full	5.42		
3685+34.00		43.87	0.00	0.93	0.19	14.03	0.34	8.03	4.76		38.29			22.50	22.30						31.24	0.0120
BW218J	1	111.00	0.00	0.00	0.00						**38.29**	15.35	0.07	19.50	19.30	0.200	36	0.1869		4.42		
S-413		**S-415**	0.34	0.34	0.32					0.00	0.00	42.18	36.28	36.14	34.74	1.400	18	1.8404	Partial	6.83		
1686+23.00		25.88	0.00	0.00	0.00	10.00	0.19	9.04	0.32		2.92			37.20	35.80				sub		15.86	0.0120
BW218	1	76.07	0.00	0.00	0.00						**2.92**	5.90	0.15	35.70	34.30	1.400	18	1.9425		8.98		
S-415		**S-416**	0.19	5.35	5.08					0.00	0.00	38.92	20.33	19.76	12.26	7.506	36	49.5107	Partial	60.30		
3686+45.00		43.84	0.00	0.93	0.19	14.38	0.00	7.96	5.27		41.96			22.30	9.00				sub		807.09	0.0120
BW218J	1	15.16	0.00	0.00	0.00						**41.96**	18.59	0.57	19.30	6.00	13.300	36	124.765		114.18		
S-416		**S-417**	0.00	5.35	5.08					0.00	0.00	11.00	12.26	11.82	11.43	0.388	36	0.3371	Full	5.94		
3686+45.00		59.00	0.00	0.93	0.19	14.38	0.32	7.96	5.27		41.95			7.80	7.10						57.62	0.0120
MHJ-8	1	115.07	0.00	0.00	0.00						**41.95**	-1.26	0.44	4.80	4.10	0.700	36	0.6360		8.15		
S-417		**S-418**	0.00	5.35	5.08					0.00	0.00	10.50	11.43	11.35	10.97	0.381	36	0.3317	Full	5.89		
3687+60.00		55.00	0.00	0.93	0.19	14.70	0.33	7.90	5.27		41.61			7.10	6.50						53.36	0.0120
MHJ-8	1	115.00	0.00	0.00	0.00						**41.61**	-0.93	0.08	4.10	3.50	0.600	36	0.5454		7.55		
S-418		**S-421**	0.00	5.35	5.08					0.00	0.00	10.20	10.97	10.89	10.19	0.702	36	0.3263	Full	5.84		
3688+75.00		54.00	0.00	0.93	0.19	15.03	0.61	7.83	5.27		41.27			6.50	6.20						27.31	0.0120
MHJ-8	1	215.01	0.00	0.00	0.00						**41.27**	-0.77	0.08	3.50	3.20	0.300	36	0.1429		3.86		
S-420		**S-421**	0.41	0.41	0.39					0.00	0.00	37.87	35.55	34.91	10.19	24.716	18	304.388	Partial	64.33		
3690+90.00		43.88	0.00	0.00	0.00	10.00	0.00	9.04	0.39		3.52			36.30	6.70				sub		325.40	0.0120
BW218	1	8.12	0.00	0.00	0.00						**3.52**	2.32	0.64	34.80	5.20	29.600	18	817.679		184.14		
S-421		**S-425**	0.00	5.76	5.47					0.00	0.00	9.65	10.19	10.10	8.98	1.121	36	0.3652	Full	6.18		
3690+90.00		52.00	0.00	0.93	0.19	15.64	0.83	7.72	5.66		43.66			6.20	5.90						22.77	0.0120
MHJ-8	1	307.01	0.00	0.00	0.00						**43.66**	-0.54	0.09	3.20	2.90	0.300	36	0.0993		3.22		
S-423		**S-424**	0.30	0.30	0.28					0.00	0.00	36.61	32.87	32.84	32.64	0.200	18	0.2062	Partial	2.98		
3693+00.00		43.87	0.00	0.00	0.00	10.00	0.54	9.04	0.28		2.58			33.60	33.40				super		5.28	0.0120
BW218J	1	97.00	0.00	0.00	0.00						**2.58**	3.74	0.03	32.10	31.90	0.200	18	0.2151		2.99		
S-424		**S-425**	0.17	0.47	0.45					0.00	0.00	36.03	32.43	32.03	8.98	23.056	18	227.824	Partial	50.48		
3693+97.00		43.88	0.00	0.00	0.00	10.54	0.00	8.88	0.45		3.97			33.40	7.90				sub		242.40	0.0120
BW218J	1	10.12	0.00	0.00	0.00						**3.97**	3.60	0.40	31.90	6.40	25.500	18	453.736		137.17		
S-425		**S-429**	0.00	6.23	5.92					0.00	0.00	10.74	8.98	8.88	8.46	0.423	36	0.4087	Full	6.54		
3693+97.00		54.00	0.00	0.93	0.19	16.47	0.26	7.57	6.10		46.19			5.90	5.70						32.58	0.0120
MHJ-8	1	103.39	0.00	0.00	0.00						**46.19**	1.76	0.10	2.90	2.70	0.200	36	0.2033		4.61		

Units: ENGLISH

A-71A

STORM SEWER HYDRAULICS

System: **Pond4D**

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		CONDITIONS				
		Storm Event		Runoff Coefficients		
Outfall Tailwater Elevation:	7.69	Zone	Freq	Area 1	Area 2	Area 3
Exit Loss at Outfall:	0.37	6	50	0.95	0.20	0.50
Storm Sewer Control Elevatio	8.06					

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-428		**S-429**	0.15	0.15	0.14					0.00	0.00	35.77	32.96	32.78	8.46	24.325	18	185.405	Partial	34.14		
3695+00.00		31.88	0.00	0.00	0.00	10.00	0.01	9.04	0.14		1.29			34.20	6.30				sub		204.73	0.0120
BW218	1	13.12	0.00	0.00	0.00						**1.29**	2.81	0.18	32.70	4.80	27.900	18	323.665		115.85		
S-429		**S-429A**	0.00	6.38	6.06					0.00	0.00	8.76	8.46	8.31	8.06	0.248	42	0.1858	Full	4.88		
3695+00.00		45.00	0.00	0.93	0.19	16.73	0.00	7.52	6.25		46.99			6.20	6.00						42.62	0.0120
MHJ-7T	1	133.28	0.00	0.00	0.00						**46.99**	0.30	0.15	2.70	2.50	0.200	42	0.1529		4.43		

MES AT POND 4D

TW = 50 YR 1HR PEAK STAGE IN POND 4D

Units: ENGLISH

1/18/02

MINOR LOSSES INCLUDED

STORM SEWER HYDRAULICS

50 YR EVENT

System: **PondX**

Page: 1 /3

PROJECT			
Number:	513003	Organization:	Post Buckley Schuh and Jernigan
Description:	Lee Roy Selmon Expressway	Designed by:	Dwayne Allgire
County:	Hillsborough	Checked by:	John Stone

		Storm Event		CONDITIONS: Runoff Coefficients		
		Zone	Freq	Area 1	Area 2	Area 3
Outfall Tailwater Elevation:	3.40	6	50	0.95	0.20	0.50
Exit Loss at Outfall:	0.95					
Storm Sewer Control Elevatio	4.35					

FROM Station Type Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-439	**S-440**	0.57	0.57	0.54					0.00	0.00	15.52	13.94	13.92	13.78	0.134	18	0.1851	Full	2.77		
509+25.00	3.87	0.00	0.00	0.00	10.00	0.44	9.04	0.54		4.90			12.00	11.70						7.54	0.0120
BW218 1	72.43	0.00	0.00	0.00						**4.90**	1.58	0.02	10.50	10.20	0.300	18	0.4384		4.26		
AG **S-439A**	**S-442**	0.45	2.81	2.67					0.00	0.00	14.45	13.93	13.81	12.98	0.830	24	0.8732	Full	7.29		
3709+30.00	31.88	0.00	0.00	0.00	11.67	0.22	8.58	2.67		22.90			11.90	11.70						11.49	0.0120
BW218J 1	95.00	0.00	0.00	0.00						**22.90**	0.52	0.12	9.90	9.70	0.200	24	0.2198		3.66		
AG **S-440**	**S-441**	0.19	0.76	0.72					0.00	0.00	15.38	13.78	13.75	13.66	0.088	18	0.3198	Full	3.64		
509+97.5	3.87	0.00	0.00	0.00	10.44	0.13	8.91	0.72		6.44			11.70	11.50						10.51	0.0120
BW218 1	27.46	0.00	0.00	0.00						**6.44**	1.60	0.03	10.20	10.00	0.200	18	0.8526		5.95		
S-441	**S-442**	0.28	1.04	0.99					0.00	0.00	15.44	13.66	13.36	12.98	0.377	18	0.5941	Full	4.96		
510+25.00	3.87	0.00	0.00	0.00	10.56	0.21	8.88	0.99		8.77			11.50	11.20						8.08	0.0120
BW218 1	63.50	0.00	0.00	0.00						**8.77**	1.78	0.31	10.00	9.70	0.300	18	0.5042		4.57		
S-442	**S-443**	0.10	3.95	3.75					0.00	0.00	14.62	12.98	12.93	12.75	0.185	36	0.1960	Full	4.53		
3710+25.00	31.87	0.00	0.00	0.00	11.89	0.35	8.52	3.75		31.99			12.20	12.00						33.97	0.0120
BW218J 1	94.49	0.00	0.00	0.00						**31.99**	1.64	0.05	9.20	9.00	0.200	36	0.2210		4.81		
S-443	**S-455**	0.26	4.21	4.00					0.00	0.00	15.09	12.75	12.69	12.31	0.381	36	0.2182	Full	4.77		
3711+20.00	31.85	0.00	0.00	0.00	12.24	0.61	8.44	4.00		33.75			12.00	11.80						24.75	0.0120
BW218J 1	174.50	0.00	0.00	0.00						**33.75**	2.34	0.05	9.00	8.80	0.200	36	0.1173		3.50		
S-445	**S-456**	0.23	0.23	0.22					0.00	0.00	17.19	13.44	13.44	13.40	0.038	18	0.0301	Full	1.12		
511+75.00	3.87	0.00	0.00	0.00	10.00	1.04	9.04	0.22		1.98			13.70	13.40						5.67	0.0120
BW218 1	124.79	0.00	0.00	0.00						**1.98**	3.75	0.00	12.20	11.90	0.300	18	0.2484		3.21		
S-446	**S-447**	0.18	0.90	0.86					0.00	0.00	37.18	35.49	35.25	34.94	0.315	18	0.4492	Full	4.32		
518+31.00	3.87	0.00	0.00	0.00	10.41	0.27	8.92	0.86		7.63			28.20	26.70						17.15	0.0120
BW218J 1	70.02	0.00	0.00	0.00						**7.63**	1.69	0.23	26.70	25.20	1.500	18	2.2719		9.71		
S-447	**S-448**	0.44	1.34	1.27					0.00	0.00	29.71	34.94	25.43	7.79	17.641	18	158.645	Partial	63.84		
3718+20.00	31.88	0.00	0.00	0.00	10.68	0.00	8.84	1.27		11.26			26.70	2.70				sub		216.67	0.0120
BW218J 1	11.12	0.00	0.00	0.00						**11.26**	-5.23	9.51	25.20	1.20	24.000	18	362.537		122.61		
S-448	**S-452**	0.00	7.33	6.96					0.00	0.00	6.13	7.79	7.65	6.54	1.104	36	0.5923	Full	7.87		
3718+20.00	43.00	0.00	0.00	0.00	14.27	0.39	7.99	6.96		55.61			3.00	2.70						29.38	0.0120
MHJ-7T 1	186.41	0.00	0.00	0.00						**55.61**	-1.66	0.14	0.00	-0.30	0.300	36	0.1654		4.16		
S-450	**S-446**	0.22	0.72	0.68					0.00	0.00	40.56	36.73	36.40	35.49	0.909	18	0.8353	Partial	12.05		
519+40.00	4.16	0.00	0.00	0.00	10.26	0.15	8.96	0.68		6.13			37.40	31.90				sub		26.07	0.0120
BW218J 1	108.82	0.00	0.00	0.00						**6.13**	3.83	0.34	35.90	30.40	5.500	18	5.2473		14.75		
S-452	**S-472A**	0.00	7.33	6.96					0.00	0.00	6.13	6.54	6.40	5.32	1.088	36	0.5805	Full	7.79		
3720+10.00	43.00	0.00	0.00	0.00	14.66	0.40	7.91	6.96		55.05			2.70	1.70						53.51	0.0120
MHJ-8 1	187.37	0.00	0.00	0.00						**55.05**	-0.41	0.14	-0.30	-1.30	1.000	36	0.5483		7.57		

Units: ENGLISH

T60v11.RPT 6/3/97

A-72

STORM SEWER HYDRAULICS

System: **PondX**

PROJECT							CONDITIONS		
Number: 513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	3.40	Storm Event		Runoff Coefficients			
Description: Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.95	Zone	Freq	Area 1	Area 2	Area 3	
County: Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	4.35	6	50	0.95	0.20	0.50	

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL / Crown Line / Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-452A		**S-450**	0.50	0.50	0.47					0.00	0.00	44.18	40.22	39.99	37.40	2.586	18	1.9199	Partial	8.65		
520+75.00		7.11	0.00	0.00	0.00	10.00	0.26	9.04	0.47		4.29			41.00	37.40				sub		18.89	0.0120
BW218J	1	134.71	0.00	0.00	0.00						**4.29**	3.96	0.23	39.50	35.90	3.600	18	2.7542		10.69		
S-455		**S-457**	0.23	5.10	4.84					0.00	0.00	18.55	12.31	12.24	11.92	0.314	36	0.3094	Full	5.69		
3712+97.00		31.88	0.00	0.00	0.00	12.85	0.30	8.29	4.84		40.19			11.80	11.60						32.71	0.0120
BW218J	1	101.56	0.00	0.00	0.00						**40.19**	6.24	0.08	8.80	8.60	0.200	36	0.2050		4.63		
S-456		**S-455**	0.43	0.66	0.63					0.00	0.00	20.43	12.97	12.95	12.80	0.150	18	0.2322	Full	3.10		
513+00.00		3.87	0.00	0.00	0.00	11.04	0.35	8.75	0.63		5.48			13.40	12.80						11.34	0.0120
BW218	1	64.44	0.00	0.00	0.00						**5.48**	7.46	0.02	11.90	11.30	0.600	18	0.9926		6.42		
S-457		**S-460**	0.15	5.25	4.99					0.00	0.00	21.48	11.92	11.85	11.40	0.445	36	0.3225	Full	5.81		
3714+00.00		31.85	0.00	0.00	0.00	13.15	0.40	8.23	4.99		41.03			11.60	11.40						27.91	0.0120
BW218J	1	138.04	0.00	0.00	0.00						**41.03**	9.56	0.08	8.60	8.40	0.200	36	0.1492		3.95		
S-460		**S-461**	0.41	5.99	5.69					0.00	0.00	25.00	9.60	9.50	9.45	0.046	36	0.4109	Full	6.55		
3715+40.00		31.88	0.00	0.00	0.00	13.54	0.03	8.14	5.69		46.32			3.80	3.60						125.59	0.0120
BW218J	1	11.12	0.00	0.00	0.00						**46.32**	15.40	0.10	0.80	0.60	0.200	36	3.0211		17.77		
S-461		**S-448**	0.00	5.99	5.69					0.00	0.00	6.13	9.45	8.92	7.79	1.127	36	0.4103	Full	6.55		
3715+40.00		43.00	0.00	0.00	0.00	13.57	0.70	8.13	5.69		46.28			3.60	3.00						34.09	0.0120
MHJ-8	1	274.60	0.00	0.00	0.00						**46.28**	-3.32	0.53	0.60	0.00	0.600	36	0.2226		4.82		
S-463		**S-460**	0.33	0.33	0.31					0.00	0.00	28.29	21.97	21.81	20.41	1.400	18	2.1135	Partial	7.16		
515+50.00		3.87	0.00	0.00	0.00	10.00	0.15	9.04	0.31		2.83			22.90	21.50				sub		17.07	0.0120
BW218	1	66.24	0.00	0.00	0.00						**2.83**	6.32	0.16	21.40	20.00	1.400	18	2.2493		9.66		
S-464		**S-465**	0.57	0.57	0.54					0.00	0.00	25.29	22.46	22.44	22.38	0.057	18	0.1851	Full	2.77		
1703+09.00		26.84	0.00	0.00	0.00	10.00	0.19	9.04	0.54		4.90			21.80	21.60						9.80	0.0120
BW218	1	30.99	0.00	0.00	0.00						**4.90**	2.83	0.02	20.30	20.10	0.200	18	0.7410		5.54		
S-465		**S-466**	0.32	0.89	0.85					0.00	0.00	26.44	22.38	22.34	22.13	0.210	18	0.4457	Full	4.30		
503+30.00		4.33	0.00	0.00	0.00	10.19	0.18	8.99	0.85		7.60			21.60	21.40						7.76	0.0120
BW218	1	47.05	0.00	0.00	0.00						**7.60**	4.06	0.04	20.10	19.90	0.200	18	0.4646		4.39		
S-466		**S-470**	0.46	1.35	1.28					0.00	0.00	25.93	22.13	20.80	15.92	4.878	18	1.5941	Partial	10.32		
3703+30.00		31.88	0.00	0.00	0.00	10.37	0.49	8.93	1.28		11.46			21.40	14.70				sub		16.95	0.0120
BW218J	1	306.00	0.00	0.00	0.00						**11.46**	3.80	1.32	19.90	13.20	6.700	18	2.2185		9.59		
S-468		**S-471**	0.23	0.23	0.22					0.00	0.00	21.79	17.68	17.53	16.14	1.391	18	0.8973	Partial	6.74		
1704+60.00		27.02	0.00	0.00	0.00	10.00	0.38	9.04	0.22		1.98			18.70	14.80				sub		18.29	0.0120
BW218J	1	155.00	0.00	0.00	0.00						**1.98**	4.11	0.14	17.20	13.30	3.900	18	2.5827		10.35		
S-469		**S-470**	0.21	0.65	0.62					0.00	0.00	18.00	16.05	16.03	15.92	0.105	18	0.2308	Full	3.09		
506+36.00		7.83	0.00	0.00	0.00	10.65	0.25	8.85	0.62		5.47			14.40	14.20						7.90	0.0120
BW218	1	45.49	0.00	0.00	0.00						**5.47**	1.95	0.02	12.90	12.70	0.200	18	0.4821		4.47		

Units: ENGLISH

STORM SEWER HYDRAULICS

System: **PondX**

PROJECT									
Number: 513003	Organization: Post Buckley Schuh and Jernigan	Outfall Tailwater Elevation:	3.40	Storm Event		CONDITIONS		
Description: Lee Roy Selmon Expressway	Designed by: Dwayne Allgire	Exit Loss at Outfall:	0.95	Zone	Freq	Runoff Coefficients Area 1	Area 2	Area 3
County: Hillsborough	Checked by: John Stone	Storm Sewer Control Elevatio	4.35	6	50	0.95	0.20	0.50

FROM Station Type	Brls	TO Offset Len	Drainage Areas Inc.	Sub-Total	Sub-Total CA	Tc (min)	Travel Time (min)	Inten. (in/hr)	Total CA (ac)	Flow (cfs) (Qb)	Sum(Qb) CIA TOTAL	Inlet Elevations Inlet Clear.	HGL Jnc Loss	Pipe Elevations HGL Crown Line Flow Line		Fall (ft)	Pipe Height Width (in)	HGL (%) FL (%)	Flow Type	Velocity Actual Physical (fps)	Capacity (cfs)	Mann'g 'N'
S-470		**S-439A**	0.36	2.36	2.24					0.00	0.00	18.00	15.92	15.83	13.93	1.899	24	0.6459	Full	6.27		
3706+36.00		31.88	0.00	0.00	0.00	10.89	0.78	8.79	2.24		19.70			14.70	11.90						24.08	0.0120
BW218J	1	294.00	0.00	0.00	0.00						**19.70**	2.08	0.09	12.70	9.90	2.800	24	0.9655		7.67		
S-471		**S-469**	0.21	0.44	0.42					0.00	0.00	18.53	16.14	16.09	16.05	0.036	18	0.1076	Full	2.11		
1706+15.00		25.89	0.00	0.00	0.00	10.38	0.26	8.93	0.42		3.73			14.80	14.40						13.25	0.0120
BW218J	1	33.50	0.00	0.00	0.00						**3.73**	2.39	0.06	13.30	12.90	0.400	18	1.3558		7.50		
S-472		**S-472A**	0.11	0.11	0.10					0.00	0.00	31.56	31.65	28.57	5.32	23.255	18	209.126	Partial sub	31.48		
3722+00.00		31.88	0.00	0.00	0.00	10.00	0.01	9.04	0.10		0.94			30.00	4.50						223.34	0.0120
BW218	1	11.12	0.00	0.00	0.00						**0.94**	-0.09	3.08	28.50	3.00	25.500	18	385.196		126.39		
S-472A		**S-9472**	0.00	7.44	7.07					0.00	0.00	6.13	5.32	4.55	4.35	0.201	36	0.5862	Full	7.83		
3722+00.00		43.00	0.00	0.00	0.00	15.07	0.00	7.83	7.07		55.32			1.70	1.50						57.27	0.0120
MHJ-8	1	34.34	0.00	0.00	0.00						**55.32**	0.81	0.76	-1.30	-1.50	0.200	36	0.6281		8.10		

MES AT POND X

TW = 50 YR 1 HR PEAK STAGE IN POND X

Spread Calculations

Crosstown Expressway
Contract No. 51.40.01

PBS&J

SPREAD CALCULATIONS - SHOULDER GUTTER INLETS

Designed By: JS
Date: 5/18/01
Checked By: MM
Date: 9/6/01

Manning's n = 0.016
C impervious = 0.95
Index #220
Width of Grate 1.54 ft
Length of Grate 4.25 ft
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E	
S-402	EB	3675+60	LT	10.00	0.16	1.1	0.0	1.1	3.1	0.079	0.0114	1.1	0.0	2.15	1.00	0.78	0.84	0.96	
S-408	EB	3680+44	LT	10.00	0.26	1.8	0.0	1.8	5.1	0.045	0.0148	1.5	0.4	3.40	1.00	0.47	0.62	0.80	
S-405	EB	3678+20	LT	10.00	0.27	1.9	0.4	2.3	4.8	0.079	0.0049	2.1	0.1	1.87	1.00	0.82	0.65	0.94	
S-404	EB	3677+20	LT	10.00	0.24	1.7	0.3	2.0	6.1	0.079	SAG	2.0	0.0						
S-482	EB	3729+40	RT	10.00	0.30	2.1	0.0	2.1	3.9	0.06	0.0300	1.8	0.3	4.07	1.00	0.46	0.74	0.86	
S-484	EB	3732+10	RT	10.00	0.30	2.1	0.3	2.4	4.5	0.06	0.0187	2.0	0.4	3.52	1.00	0.52	0.67	0.84	BYPASS TO RIGHT SWALE

Crosstown Expressway
Contract No. 51.40.01
SPREAD CALCULATIONS - BARRIER WALL INLETS

PBS&J

Designed By: JS
Date: 5/18/01
Checked By: MM
Date: 6/4/01

Manning's n = 0.016
C impervious = 0.95
Index #217 and 218
Width of Grate 1.583 ft - Index 217
Length of Grate 4.333 ft - Index 217
Width of Grate 3.248 ft - Index 218
Length of Grate 3.675 ft - Index 218
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Index No.	Type	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E
S-410	218	CONTINUOUS	MAINLINE	1683+50	RT	10.00	0.46	3.2	0.0	3.2	4.8	0.06	0.0253	3.1	0.1	4.25	1.00	0.36	0.95	0.97
S-413	218	CONTINUOUS	MAINLINE	1686+23	RT	10.00	0.34	2.4	0.1	2.5	4.3	0.06	0.0253	2.5	0.0	3.98	1.00	0.39	0.98	0.99
S-419	218	CONTINUOUS	MAINLINE	1689+05	RT	10.00	0.42	3.0	0.0	3.0	5.3	0.06	0.0123	2.9	0.1	3.18	1.00	0.49	0.92	0.96
S-422	218	CONTINUOUS	MAINLINE	1691+50	RT	10.00	0.51	3.6	0.1	3.7	6.4	0.06	0.0065	3.5	0.2	2.64	1.00	0.57	0.85	0.93
S-426	218	CONTINUOUS	MAINLINE	1694+00	RT	10.00	0.45	3.2	0.2	3.4	6.5	0.06	0.0054	3.2	0.2	2.42	1.00	0.61	0.84	0.94
S-431	218	CONTINUOUS	MAINLINE	1696+50	RT	10.00	0.42	3.0	0.2	3.2	6.0	0.06	0.0069	3.0	0.2	2.60	1.00	0.58	0.87	0.95
S-437	218	CONTINUOUS	MAINLINE	1699+00	RT	10.00	0.39	2.7	0.2	2.9	6.0	0.06	0.0057	2.8	0.1	2.37	1.00	0.62	0.87	0.95
S-464	218	CONTINUOUS	MAINLINE	1703+09	RT	10.00	0.57	4.0	0.1	4.1	5.5	0.06	0.0195	3.9	0.2	4.10	1.00	0.37	0.91	0.94
S-468	218	CONTINUOUS	MAINLINE	1704+60	RT	10.00	0.23	1.6	0.2	1.9	4.0	0.06	0.0218	1.8	0.0	3.49	1.00	0.44	0.99	0.99
S-471	218	CONTINUOUS	MAINLINE	1706+15	RT	10.00	0.21	1.5	0.0	1.5	3.9	0.06	0.0155	1.5	0.0	2.91	1.00	0.53	0.99	1.00

Crosstown Expressway
Contract No. 51.40.01

SPREAD CALCULATIONS - BARRIER WALL INLETS

PBS&J

Designed By: JS
Date: 5/18/01
Checked By: MM
Date: 6/4/01

Manning's n = 0.016
C impervious = 0.95
Index #217 and 218
Width of Grate 1.583 ft - Index 217
Length of Grate 4.333 ft - Index 217
Width of Grate 3.248 ft - Index 218
Length of Grate 3.675 ft - Index 218
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Index No.	Type	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E
S-465	218	CONTINUOUS	RAMP 4	503+30	RT	6.00	0.32	2.2	0.0	2.2	4.1	0.06	0.0286	2.2	0.0	4.06	1.00	0.38	0.99	0.99
S-469	218	CONTINUOUS	RAMP 4	506+36	RT	6.00	0.21	1.5	0.0	1.5	3.8	0.06	0.0168	1.5	0.0	3.00	1.00	0.51	0.99	1.00
S-439	218	CONTINUOUS	RAMP 4	509+25	RT	6.00	0.57	4.0	0.0	4.0	7.2	0.06	0.0041	5.0	0.0	2.27	1.41	0.63	0.80	1.25
S-452A	218	CONTINUOUS	RAMP 4	520+75	RT	9.90	0.50	3.5	0.0	3.5	4.9	0.06	0.0250	3.4	0.1	4.32	1.00	0.35	0.94	0.96
S-450	218	CONTINUOUS	RAMP 4	519+40	RT	9.00	0.22	1.5	0.1	1.6	3.5	0.06	0.0321	1.6	0.0	3.92	1.00	0.39	1.00	1.00
S-446	218	CONTINUOUS	RAMP 4	518+31	RT	9.00	0.18	1.3	0.0	1.3	3.2	0.06	0.0321	1.3	0.0	3.67	1.00	0.42	1.00	1.00
S-463	218	CONTINUOUS	RAMP 4	515+50	RT	8.50	0.33	2.3	0.0	2.3	4.0	0.06	0.0316	2.3	0.0	4.25	1.00	0.36	0.99	0.99
S-456	218	CONTINUOUS	RAMP 4	513+00	RT	8.00	0.43	3.0	0.0	3.0	4.5	0.06	0.0300	3.0	0.1	4.46	1.00	0.34	0.97	0.98
S-445	218	CONTINUOUS	RAMP 4	511+75	RT	7.00	0.23	1.6	0.1	1.7	3.8	0.06	0.0220	1.7	0.0	3.42	1.00	0.45	0.99	1.00
S-441	218	CONTINUOUS	RAMP 4	510+25	RT	6.00	0.28	2.0	0.1	2.0	4.3	0.06	0.0161	2.0	0.0	3.19	1.00	0.48	0.97	0.99
S-440	218	SAG	RAMP 4	509+97.50	RT	6.00	0.19	1.3	0.0	1.3	5.8	0.06	SAG	1.3	0.0					

Crosstown Expressway
Contract No. 51.40.01

PBS&J

Designed By: JS
Date: 5/17/01
Checked By: MM
Date: 9/6/01

SPREAD CALCULATIONS - BARRIER WALL INLETS

Manning's n = 0.016
C impervious = 0.95
Index #217 and 218
Width of Grate 1.583 ft - Index 217
Length of Grate 4.333 ft - Index 217
Width of Grate 3.248 ft - Index 218
Length of Grate 3.675 ft - Index 218
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Index No.	Type	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E
S-401	218	CONTINUOUS	EB	3674+08	LT	10.00	0.58	4.1	0.0	4.1	4.5	0.079	0.0206	4.0	0.1	3.72	1.00	0.48	0.97	0.98
S-415	218	CONTINUOUS	EB	3686+45	RT	10.00	0.19	1.3	0.0	1.3	4.5	0.06	0.0056	1.3	0.0	1.94	1.00	0.70	0.97	0.99
S-412	218	CONTINUOUS	EB	3685+34	RT	10.00	0.38	2.7	0.0	2.7	5.3	0.06	0.0096	2.6	0.1	2.82	1.00	0.54	0.92	0.96
S-411	218	CONTINUOUS	EB	3683+74	RT	10.00	0.25	1.8	0.1	1.9	4.3	0.06	0.0148	1.8	0.0	3.02	1.00	0.51	0.98	0.99
S-409	218	CONTINUOUS	EB	3682+78	RT	10.00	0.22	1.5	0.0	1.6	4.0	0.06	0.0148	1.6	0.0	2.90	1.00	0.53	0.99	0.99
S-420	218	CONTINUOUS	EB	3690+90	RT	10.00	0.41	2.9	0.0	2.9	6.0	0.06	0.0060	2.7	0.1	2.41	1.00	0.61	0.88	0.95
S-423	218	CONTINUOUS	EB	3693+00	RT	10.00	0.30	2.1	0.1	2.2	5.4	0.06	0.0060	2.2	0.1	2.26	1.00	0.64	0.91	0.97
S-424	218	CONTINUOUS	EB	3693+97	RT	10.00	0.17	1.2	0.1	1.3	4.4	0.06	0.0060	1.3	0.0	1.96	1.00	0.69	0.97	0.99
S-428	218	CONTINUOUS	EB	3695+00	RT	10.00	0.15	1.1	0.0	1.1	4.1	0.06	0.0060	1.1	0.0	1.88	1.00	0.71	0.98	1.00
S-434	218	CONTINUOUS	EB	3699+00	RT	10.00	0.67	4.7	0.4	5.1	7.4	0.06	0.0060	5.1	0.0	2.78	1.36	0.55	0.79	1.19
S-466	218	CONTINUOUS	EB	3703+30	RT	10.00	0.46	3.2	0.4	3.6	3.2	0.06	0.2530	3.6	0.0	10.37	1.00	0.10	1.00	1.00
S-470	218	CONTINUOUS	EB	3706+36	RT	10.00	0.36	2.5	0.0	2.5	4.3	0.06	0.0270	2.5	0.0	4.09	1.00	0.37	0.98	0.99
S-447	218	CONTINUOUS	EB	3718+20	RT	10.00	0.44	3.1	0.7	3.8	5.1	0.06	0.0236	3.6	0.2	4.31	1.00	0.35	0.93	0.96
S-460	218	CONTINUOUS	EB	3715+40	RT	10.00	0.41	2.9	0.2	3.1	4.7	0.06	0.0236	3.0	0.1	4.09	1.00	0.38	0.96	0.97
S-457	218	CONTINUOUS	EB	3414+00	RT	10.00	0.15	1.1	0.1	1.2	3.3	0.06	0.0236	1.2	0.0	3.20	1.00	0.48	1.00	1.00
S-455	218	CONTINUOUS	EB	3712+97	RT	10.00	0.23	1.6	0.0	1.6	3.7	0.06	0.0236	1.6	0.0	3.48	1.00	0.45	1.00	1.00
S-443	218	CONTINUOUS	EB	3711+20	RT	10.00	0.26	1.8	0.0	1.8	3.9	0.06	0.0236	1.8	0.0	3.59	1.00	0.43	0.99	1.00
S-442	218	CONTINUOUS	EB	3710+25	RT	10.00	0.10	0.7	0.0	0.7	3.9	0.06	0.0036	0.7	0.0	1.40	1.00	0.81	0.99	1.00
S-439A	218	SAG	EB	3709+30	RT	10.00	0.45	3.2	0.0	2.8	8.8	0.06	SAG	3.3	0.0					
S-472	218	CONTINUOUS	EB	3722+00	RT	10.00	0.11	0.8	0.1	0.9	3.2	0.06	0.0160	0.9	0.0	2.58	1.00	0.58	1.00	1.00
S-475	218	CONTINUOUS	EB	3725+00	RT	10.00	0.32	2.2	0.1	2.3	4.6	0.06	0.0160	2.3	0.0	3.30	1.00	0.47	0.96	0.98
S-478	218	CONTINUOUS	EB	3726+65	RT	10.00	0.18	1.3	0.0	1.3	3.5	0.06	0.0226	1.3	0.0	3.25	1.00	0.48	1.00	1.00

Crosstown Expressway
Contract No. 51.40.01

PBS&J

Designed By: JS
Date: 5/18/01
Checked By: MM
Date: 9/6/01

SPREAD CALCULATIONS - SHOULDER GUTTER INLETS

Manning's n = 0.016
C impervious = 0.95
Index #220
Width of Grate 1.54 ft
Length of Grate 4.25 ft
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E	
S-402	EB	3675+60	LT	10.00	0.16	1.1	0.0	1.1	3.1	0.079	0.0114	1.1	0.0	2.15	1.00	0.78	0.84	0.96	
S-408	EB	3680+44	LT	10.00	0.26	1.8	0.0	1.8	5.1	0.045	0.0148	1.5	0.4	3.40	1.00	0.47	0.62	0.80	
S-405	EB	3677+90	LT	10.00	0.31	2.2	0.4	2.6	5.0	0.079	0.0049	2.4	0.2	1.93	1.00	0.81	0.63	0.93	
S-404	EB	3677+40	LT	10.00	0.24	1.7	0.3	2.0	6.1	0.079	SAG	2.0	0.0						
S-482	EB	3729+40	RT	10.00	0.30	2.1	0.0	2.1	3.9	0.06	0.0300	1.8	0.3	4.07	1.00	0.46	0.74	0.86	
S-484	EB	3732+10	RT	10.00	0.30	2.1	0.3	2.4	4.5	0.06	0.0187	2.0	0.4	3.52	1.00	0.52	0.67	0.84	BYPASS TO RIGHT SWALE

Crosstown Expressway
Contract No. 51.40.01

PBS&J

Designed By: JS
Date: 5/18/01
Checked By: MM
Date: 6/4/01

SPREAD CALCULATIONS - BARRIER WALL INLETS

Manning's n = 0.016
C impervious = 0.95
Index #217 and 218
Width of Grate 1.583 ft - Index 217
Length of Grate 4.333 ft - Index 217
Width of Grate 3.248 ft - Index 218
Length of Grate 3.675 ft - Index 218
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Index No.	Type	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E
S-410	218	CONTINUOUS	MAINLINE	1683+50	RT	10.00	0.46	3.2	0.0	3.2	4.8	0.06	0.0253	3.1	0.1	4.25	1.00	0.36	0.95	0.97
S-413	218	CONTINUOUS	MAINLINE	1686+23	RT	10.00	0.34	2.4	0.1	2.5	4.3	0.06	0.0253	2.5	0.0	3.98	1.00	0.39	0.98	0.99
S-419	218	CONTINUOUS	MAINLINE	1689+05	RT	10.00	0.42	3.0	0.0	3.0	5.3	0.06	0.0123	2.9	0.1	3.18	1.00	0.49	0.92	0.96
S-422	218	CONTINUOUS	MAINLINE	1691+50	RT	10.00	0.51	3.6	0.1	3.7	6.4	0.06	0.0065	3.5	0.2	2.64	1.00	0.57	0.85	0.93
S-428	218	CONTINUOUS	MAINLINE	1694+00	RT	10.00	0.45	3.2	0.2	3.4	6.5	0.06	0.0054	3.2	0.2	2.42	1.00	0.61	0.84	0.94
S-431	218	CONTINUOUS	MAINLINE	1696+50	RT	10.00	0.42	3.0	0.2	3.2	6.0	0.06	0.0069	3.0	0.2	2.60	1.00	0.58	0.87	0.95
S-437	218	CONTINUOUS	MAINLINE	1699+00	RT	10.00	0.39	2.7	0.2	2.9	6.0	0.06	0.0057	2.8	0.1	2.37	1.00	0.62	0.87	0.95
S-464	218	CONTINUOUS	MAINLINE	1703+09	RT	10.00	0.57	4.0	0.1	4.1	5.5	0.06	0.0195	3.9	0.2	4.10	1.00	0.37	0.91	0.94
S-468	217	CONTINUOUS	MAINLINE	1704+60	RT	10.00	0.23	1.6	0.2	1.9	4.0	0.06	0.0218	1.6	0.2	3.49	1.00	0.54	0.74	0.88
S-471	217	CONTINUOUS	MAINLINE	1706+15	RT	10.00	0.21	1.5	0.2	1.7	4.1	0.06	0.0155	1.5	0.2	3.01	1.00	0.60	0.73	0.89

Crosstown Expressway
Contract No. 51.40.01

SPREAD CALCULATIONS - BARRIER WALL INLETS

PBS&J

Designed By: JS
Date: 5/18/01
Checked By: MM
Date: 6/4/01

Manning's n = 0.016
C impervious = 0.95
Index #217 and 218
Width of Grate 1.583 ft - Index 217
Length of Grate 4.333 ft - Index 217
Width of Grate 3.248 ft - Index 218
Length of Grate 3.675 ft - Index 218
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Index No.	Type	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E
S-465	218	CONTINUOUS	RAMP 4	503+30	RT	6.00	0.32	2.2	0.0	2.2	4.1	0.06	0.0286	2.2	0.0	4.06	1.00	0.38	0.99	0.99
S-469	218	CONTINUOUS	RAMP 4	506+36	RT	6.00	0.21	1.5	0.0	1.5	3.8	0.06	0.0168	1.5	0.0	3.00	1.00	0.51	0.99	1.00
S-439	218	CONTINUOUS	RAMP 4	509+25	RT	6.00	0.57	4.0	0.0	4.0	7.2	0.06	0.0041	5.0	0.0	2.27	1.41	0.63	0.80	1.25
S-452A	218	CONTINUOUS	RAMP 4	520+75	RT	9.90	0.50	3.5	0.0	3.5	4.9	0.06	0.0250	3.4	0.1	4.32	1.00	0.35	0.94	0.96
S-450	218	CONTINUOUS	RAMP 4	519+40	RT	9.00	0.22	1.5	0.1	1.6	3.5	0.06	0.0321	1.6	0.0	3.92	1.00	0.39	1.00	1.00
S-446	218	CONTINUOUS	RAMP 4	518+31	RT	9.00	0.18	1.3	0.0	1.3	3.2	0.06	0.0321	1.3	0.0	3.67	1.00	0.42	1.00	1.00
S-463	218	CONTINUOUS	RAMP 4	515+50	RT	8.50	0.33	2.3	0.0	2.3	4.0	0.06	0.0316	2.3	0.0	4.25	1.00	0.36	0.99	0.99
S-456	218	CONTINUOUS	RAMP 4	513+00	RT	8.00	0.43	3.0	0.0	3.0	4.5	0.06	0.0300	3.0	0.1	4.46	1.00	0.34	0.97	0.98
S-445	218	CONTINUOUS	RAMP 4	511+75	RT	7.00	0.23	1.6	0.1	1.7	3.8	0.06	0.0220	1.7	0.0	3.42	1.00	0.45	0.99	1.00
S-441	218	CONTINUOUS	RAMP 4	510+25	RT	6.00	0.28	2.0	0.1	2.0	4.3	0.06	0.0161	2.0	0.0	3.19	1.00	0.48	0.97	0.99
S-440	218	SAG	RAMP 4	509+97.50	RT	6.00	0.19	1.3	0.0	1.3	5.8	0.06	SAG	1.3	0.0					

Crosstown Expressway
Contract No. 51.40.01

SPREAD CALCULATIONS - BARRIER WALL INLETS

PBS&J

Designed By: JS
Date: 5/17/01
Checked By: MM
Date: 9/6/01

Manning's n = 0.016
C impervious = 0.95
Index #217 and 218
Width of Grate 1.583 ft - Index 217
Length of Grate 4.333 ft - Index 217
Width of Grate 3.248 ft - Index 218
Length of Grate 3.675 ft - Index 218
T = ((Q*n)/(0.56*Sx ^ (5/3) * S ^ (1/2)))^ 0.375
Intensity = 7.4 10-year
c = 0.95 pavement

From HEC-12 Chapter 7:
From Chart 2: Velocity in triangular gutter sections
Rf=1-0.09*(V-Vo)
Vo = 6.8
Rs=1/(1+(0.158*V^1.8)/(Sx*L^2.3))
Eo=1-(1-W/T)^2.67
E=Rf*Eo+Rs*(1-Eo)
Qi=E*Q
Qby=Q total - Qi

Structure No.	Index No.	Type	Baseline	Station	Side	Allowable Spread	Area	Q	Q-bypass (from upstr.)	Total Q	Spread T	Cross Slope	Longitudinal Slope	Intercepted Flow	Q By-pass	V	Rf	Rs	Eo	E
S-401	218	CONTINUOUS	EB	3674+08	LT	10.00	0.58	4.1	0.0	4.1	4.5	0.079	0.0206	4.0	0.1	3.72	1.00	0.48	0.97	0.98
S-415	218	CONTINUOUS	EB	3686+45	RT	10.00	0.19	1.3	0.0	1.3	4.5	0.06	0.0056	1.3	0.0	1.94	1.00	0.70	0.97	0.99
S-412	218	CONTINUOUS	EB	3685+34	RT	10.00	0.38	2.7	0.0	2.7	5.3	0.06	0.0096	2.6	0.1	2.82	1.00	0.54	0.92	0.96
S-411	218	CONTINUOUS	EB	3683+74	RT	10.00	0.25	1.8	0.1	1.9	4.3	0.06	0.0148	1.8	0.0	3.02	1.00	0.51	0.98	0.99
S-409	218	CONTINUOUS	EB	3682+78	RT	10.00	0.22	1.5	0.0	1.6	4.0	0.06	0.0148	1.6	0.0	2.90	1.00	0.53	0.99	0.99
S-420	218	CONTINUOUS	EB	3690+90	RT	10.00	0.41	2.9	0.0	2.9	6.0	0.06	0.0060	2.7	0.1	2.41	1.00	0.61	0.88	0.95
S-423	218	CONTINUOUS	EB	3693+00	RT	10.00	0.30	2.1	0.1	2.2	5.4	0.06	0.0060	2.2	0.1	2.26	1.00	0.64	0.91	0.97
S-424	218	CONTINUOUS	EB	3693+97	RT	10.00	0.17	1.2	0.1	1.3	4.4	0.06	0.0060	1.3	0.0	1.96	1.00	0.69	0.97	0.99
S-428	218	CONTINUOUS	EB	3695+00	RT	10.00	0.15	1.1	0.0	1.1	4.1	0.06	0.0060	1.1	0.0	1.88	1.00	0.71	0.98	1.00
S-466	218	CONTINUOUS	EB	3703+30	RT	10.00	0.46	3.2	0.4	3.6	3.2	0.06	0.2530	3.6	0.0	10.37	1.00	0.10	1.00	1.00
S-470	218	CONTINUOUS	EB	3706+36	RT	10.00	0.36	2.5	0.0	2.5	4.3	0.06	0.0270	2.5	0.0	4.09	1.00	0.37	0.98	0.99
S-447	218	CONTINUOUS	EB	3718+20	RT	10.00	0.44	3.1	0.7	3.8	5.1	0.06	0.0236	3.6	0.2	4.31	1.00	0.35	0.93	0.96
S-460	218	CONTINUOUS	EB	3715+40	RT	10.00	0.41	2.9	0.2	3.1	4.7	0.06	0.0236	3.0	0.1	4.09	1.00	0.38	0.96	0.97
S-457	218	CONTINUOUS	EB	3414+00	RT	10.00	0.15	1.1	0.1	1.2	3.3	0.06	0.0236	1.2	0.0	3.20	1.00	0.48	1.00	1.00
S-455	218	CONTINUOUS	EB	3712+90	RT	10.00	0.23	1.6	0.0	1.6	3.7	0.06	0.0236	1.6	0.0	3.48	1.00	0.45	1.00	1.00
S-443	218	CONTINUOUS	EB	3711+20	RT	10.00	0.26	1.8	0.0	1.8	3.9	0.06	0.0236	1.8	0.0	3.59	1.00	0.43	0.99	1.00
S-442	218	CONTINUOUS	EB	3710+25	RT	10.00	0.10	0.7	0.0	0.7	3.9	0.06	0.0036	0.7	0.0	1.40	1.00	0.81	0.99	1.00
S-439A	218	SAG	EB	3709+30	RT	10.00	0.45	3.2	0.0	2.8	8.8	0.06	SAG	3.3	0.0					
S-472	218	CONTINUOUS	EB	3722+00	RT	10.00	0.11	0.8	0.1	0.9	3.2	0.06	0.0160	0.9	0.0	2.58	1.00	0.58	1.00	1.00
S-475	218	CONTINUOUS	EB	3725+00	RT	10.00	0.32	2.2	0.1	2.3	4.6	0.06	0.0160	2.3	0.0	3.30	1.00	0.47	0.96	0.98
S-478	218	CONTINUOUS	EB	3726+65	RT	10.00	0.18	1.3	0.0	1.3	3.5	0.06	0.0226	1.3	0.0	3.25	1.00	0.48	1.00	1.00

Ditch Calculations

Crosstown Expressway
Contract No. 51.40.01

Designed B JS
Date: 5/24/01
Checked B\ MM
Date: 9/6/01

UNIFORM OPEN CHANNEL FLOW CALCULATIONS

Q = (1.49/n)*A*R^2/3*s^1/2) = CIA

* Side Slopes and Bottom Widths are Averaged for Ditch Run Segments

Location Station to	Station	Side	Area (AC.)	Total Area (AC.)	Intensity **	"c"	Q-Req. (CFS)	Upstream F/L	Downstream F/L	Distance (FT)	Front Slope*	Bottom Width*	Back Slope*	Long. Slope	"n"	Proposed Grassing	Remarks
674+50	675+00	C/L					**1.6**	29.8	28.9	50	3	14	3	1.80%	0.06	Sodding	Begin Ditch
675+00	675+50	C/L					**3.2**	28.9	27.8	50	3	14	3	2.20%	0.06	Sodding	Flows include elevated structure
675+50	676+00	C/L					**4.8**	27.8	27.1	50	3	16	3	1.40%	0.06	Sodding	runoff
676+00	676+50	C/L					**6.4**	27.1	26.8	50	3	16	3	0.60%	0.06	Sodding	
676+50	677+00	C/L					**8.0**	26.8	26.3	50	3	18	3	1.00%	0.06	Sodding	
677+00	677+50	C/L					**9.6**	26.3	25.8	50	3	18	3	1.00%	0.06	Sodding	
677+50	678+00	C/L					**11.2**	25.8	25.7	50	3	18	3	0.20%	0.06	Sodding	S-407
683+00	681+00	C/L					**1.3**	33.0	30.0	200	3	52	3	6.00%	0.06	Sodding	Flows include elevated structure
681+00	680+50	C/L					**1.6**	30.0	28.8	50	3	43	3	2.40%	0.06	Sodding	
680+50	680+00	C/L					**1.9**	28.8	28.2	50	3	35	3	1.20%	0.06	Sodding	
680+00	679+50	C/L					**2.2**	28.2	27.4	50	3	33	3	1.60%	0.06	Sodding	
679+50	679+00	C/L					**2.5**	27.4	27.2	50	3	31	3	0.40%	0.06	Sodding	
679+00	678+50	C/L					**2.8**	27.2	26.1	50	3	25	3	2.20%	0.06	Sodding	
678+50	678+00	C/L					**3.2**	26.1	25.7	50	3	20	3	0.80%	0.06	Sodding	S-407
686+00	685+50	LT	0.05	0.05	7.4	0.55	**0.2**	36.3	35.6	50	3	53	3	1.40%	0.060	Sodding	S-467
685+50	685+00	LT	0.05	0.10	7.4	0.55	**0.4**	35.6	35.5	50	3	49	3	0.20%	0.060	Sodding	
685+00	384+50	LT	0.05	0.15	7.4	0.55	**0.6**	35.5	34.8	50	3	27	3	1.40%	0.060	Sodding	
384+50	684+00	LT	0.05	0.20	7.4	0.55	**0.8**	34.8	34.7	50	3	27	3	0.20%	0.060	Sodding	
684+00	683+50	LT	0.05	0.25	7.4	0.55	**1.0**	34.7	33.3	50	3	27	3	2.80%	0.060	Sodding	To 683+00 Median
686+00	686+50	C/L	0.04	0.04	7.4	0.95	**0.3**	36.3	32.5	50	3	8.5	3	7.60%	0.06	Sodding	S-467
703+00	703+50	C/L	0.02	0.02	7.4	0.95	**0.2**	24.6	23.2	50	2	3	2	2.80%	0.016	Paved	
703+50	704+00	C/L	0.02	0.02	7.4	0.95	**0.3**	23.2	22.90	50	2	3	2	0.60%	0.016	Paved	
704+00	704+50	C/L	0.02	0.02	7.4	0.95	**0.4**	22.9	21.2	50	2	2	2	3.40%	0.016	Paved	
704+50	705+00	C/L	0.06	0.08	7.4	0.95	**0.6**	21.2	19.5	50	2	2	2	3.40%	0.016	Paved	
705+00	705+50	C/L	0.02	0.10	7.4	0.95	**0.7**	19.5	18.5	50	2	2	2	2.00%	0.016	Paved	
705+50	706+00	C/L	0.01	0.11	7.4	0.95	**0.8**	18.5	17.2	50	2	2	2	2.60%	0.016	Paved	
706+00	706+50	C/L	0.01	0.12	7.4	0.95	**0.8**	17.2	16.0	50	2	3	2	2.40%	0.016	Paved	
706+50	707+00	C/L	0.02	0.14	7.4	0.95	**1.0**	16.0	14.8	50	2	3	2	2.40%	0.016	Paved	S-438
707+00	707+50	C/L	0.03	0.03	7.4	0.95	**0.2**	14.8	13.3	50.0	2	2	2	3.00%	0.016	Paved	
707+50	708+00	C/L	0.03	0.06	7.4	0.95	**0.4**	13.3	12.2	50	2	2	2	2.20%	0.016	Paved	
708+00	708+50	C/L	0.09	0.15	7.4	0.95	**1.1**	12.2	11.2	50	2	2	2	2.00%	0.016	Paved	
708+50	709+00	C/L	0.06	0.21	7.4	0.95	**1.5**	11.2	10.5	50	2	2	2	1.40%	0.016	Paved	
709+00	709+50	C/L	0.06	0.27	7.4	0.95	**1.9**	10.5	9.9	50	2	3	2	1.20%	0.016	Paved	
709+50	710+00	C/L	0.05	0.32	7.4	0.95	**2.2**	9.9	9.2	50	2	3	2	1.40%	0.016	Paved	
710+00	710+50	C/L	0.05	0.37	7.4	0.95	**2.6**	9.2	8.9	50	2	3	2	0.60%	0.016	Paved	
710+50	711+00	C/L	0.05	0.42	7.4	0.95	**3.0**	8.9	8.8	50	2	3	2	0.20%	0.016	Paved	S-444
719+50	719+00	C/L	0.02	0.02	7.4	0.95	**0.1**	24.8	23.2	50	2	3	2	3.20%	0.016	Paved	
719+00	718+50	C/L	0.02	0.04	7.4	0.95	**0.3**	23.2	22.8	50	2	3	2	0.80%	0.016	Paved	
718+50	718+00	C/L	0.02	0.06	7.4	0.95	**0.4**	22.8	21.3	50	2	2	2	3.00%	0.016	Paved	
718+00	717+50	C/L	0.03	0.09	7.4	0.95	**0.6**	21.3	18.8	50	2	2	2	5.00%	0.016	Paved	
717+50	717+00	C/L	0.03	0.12	7.4	0.95	**0.8**	18.8	17.9	50	2	3	2	1.80%	0.016	Paved	
717+00	716+50	C/L	0.03	0.15	7.4	0.95	**1.1**	17.9	15.9	50	2	2	2	4.00%	0.016	Paved	
716+50	716+00	C/L	0.03	0.18	7.4	0.95	**1.3**	15.9	15.4	50	2	2	2	1.00%	0.016	Paved	
716+00	715+50	C/L	0.03	0.21	7.4	0.95	**1.5**	15.4	14.0	50	2	2	2	2.80%	0.016	Paved	
715+50	715+00	C/L	0.03	0.24	7.4	0.95	**1.7**	14.0	11.2	50	2	2	2	5.60%	0.016	Paved	
715+00	714+50	C/L	0.03	0.27	7.4	0.95	**1.9**	11.2	10.7	50	2	2	2	1.00%	0.016	Paved	
714+50	714+00	C/L	0.03	0.30	7.4	0.95	**2.1**	10.7	10.4	50	2	2	2	0.60%	0.016	Paved	
714+00	713+50	C/L	0.03	0.33	7.4	0.95	**2.3**	10.4	10.0	50	2	3	2	0.80%	0.016	Paved	
713+50	713+00	C/L	0.03	0.36	7.4	0.95	**2.5**	10.0	9.6	50	2	3	2	0.80%	0.016	Paved	
713+00	712+50	C/L	0.03	0.39	7.4	0.95	**2.7**	9.6	9.0	50	2	3	2	1.20%	0.016	Paved	
712+50	712+00	C/L	0.03	0.42	7.4	0.95	**3.0**	9.0	8.6	50	2	3	2	0.80%	0.016	Paved	S-454A
722+00	721+50	C/L	0.15	0.15	7.4	0.95	**1.1**	28.5	28.0	50	3	35	3	1.00%	0.06	Sodding	
722+00	722+50	C/L	0.15	0.15	7.4	0.95	**1.1**	28.5	19.8	50	3	35	3	17.40%	0.06	Sodding	
725+00	728+50	RT	0.53	0.53	7.4	0.40	**1.6**	6.3	5.0	350	2	5	4	2.60%	0.06	Sodding	
732+50	732+00	RT	0.15	0.15	7.4	0.40	**0.4**	8.13	7.80	50	2	5	4	0.66%	0.06	Sodding	
732+00	731+50	RT	0.15	0.30	7.4	0.40	**0.9**	7.80	7.08	50	2	5	4	1.45%	0.06	Sodding	
731+50	731+00	RT	0.15	0.45	7.4	0.40	**1.3**	7.08	6.35	50	2	5	4	1.45%	0.06	Sodding	
731+00	730+50	RT	0.15	0.60	7.4	0.40	**1.8**	6.35	5.78	50	2	5	4	1.15%	0.06	Sodding	
730+50	730+00	RT	0.15	0.75	7.4	0.40	**2.2**	5.78	5.20	50	2	5	4	1.15%	0.06	Sodding	
730+00	729+50	RT	0.15	0.90	7.4	0.40	**2.7**	5.20	5.13	50	2	5	4	0.14%	0.06	Sodding	
729+50	729+00	RT	0.15	1.05	7.4	0.40	**3.1**	5.13	5.06	50	2	5	4	0.14%	0.06	Sodding	
729+00	728+50	RT	0.15	1.20	7.4	0.40	**3.6**	5.06	5.00	50	2	5	4	0.12%	0.06	Sodding	

Ditch Calculations

Velocity & Depth Calculation
on Sheets Following.

****

DITCH DESIGN

Mannings n = .06
Grade in % = .2
Bottom width = 18
Side slope (Z1) = 3
Side slope (Z2) = 3

Q = 11.2 CFS DEPTH = .69 ft. Velocity = .8

Q for 674+50 To 678+00
Geometry for 677+50 to 678+00

****

1 DITCH DESIGN

Mannings n = .06
Grade in % = .8
Bottom width = 20
Side slope (Z1) = 3
Side slope (Z2) = 3

Q = 3.2 CFS DEPTH = .2 ft. Velocity = .75

Q for 683+00 to 678+00
Geometry for 678+50 to 678+00

****

DITCH DESIGN

Mannings n = .06
Grade in % = 2.8
Bottom width = 27
Side slope (Z1) = 3
Side slope (Z2) = 3

Q = 1 CFS   DEPTH = .06 ft.   Velocity = .64

Q for 686+00 To 683+50
Geometry for 684+00 to 683+50

43019654.001 A-79c

****

DITCH DESIGN

Mannings n = .06
Grade in % = 7.6
Bottom width = 8.5
Side slope (Z1) = 3
Side slope (Z2) = 3

Q = .3 CFS DEPTH = .04 ft. Velocity = .86

Q & Geometry for 686+00 to 686+50

****

DITCH DESIGN

Mannings n = .016
Grade in % = 2.4
Bottom width = 3
Side slope (Z1) = 2
Side slope (Z2) = 2

Q = 1 CFS DEPTH = .1 ft. Velocity = 3.09

Q for 703+00 to 707+00
Geometry for 706+50 to 707+00

****

DITCH DESIGN

Mannings n = .016
Grade in % = .2
Bottom width = 3
Side slope (Z1) = 2
Side slope (Z2) = 2

Q = 3 CFS DEPTH = .4 ft. Velocity = 1.94

Q is for 707+00 to 710+50
Geometry is for 710+00 to 710+50

****

DITCH DESIGN

Mannings n = .016
Grade in % = .8
Bottom width = 3
Side slope (Z1) = 2
Side slope (Z2) = 2

Q = 3 CFS DEPTH = .27 ft. Velocity = 3.1

Q is for 719+50 to 712+00
Geometry is for 712+50 TO 712+00

****

DITCH DESIGN

Mannings n = .06
Grade in % = 1
Bottom width = 35
Side slope (Z1) = 3
Side slope (Z2) = 3

Q = 1.1 CFS DEPTH = .07 ft. Velocity = .43

Q & Geometry for 722+00 to 721+50

****

1 DITCH DESIGN

Mannings n = .06
Grade in % = 17.4
Bottom width = 35
Side slope (Z1) = 3
Side slope (Z2) = 3

Q = 1.1 CFS DEPTH = .03 ft. Velocity = 1.01

Q & Geometry for 722+00 to 722+50

****

DITCH DESIGN

Mannings n = .06
Grade in % = 2.6
Bottom width = 5
Side slope (Z1) = 2
Side slope (Z2) = 4

Q = 1.6 CFS   DEPTH = .21 ft.   Velocity = 1.32

Q & Geometry for 725+00 To 728+50

43019654.001

A-79

****

DITCH DESIGN

Mannings n = .06
Grade in % = .12
Bottom width = 5
Side slope (Z1) = 2
Side slope (Z2) = 4

Q = 3.6 CFS DEPTH = .81 ft. Velocity = .6

Q is for 732+50 to 728+50
Geometry is for 729+00 to 728+50

Correspondence

PBS&J

MINUTES OF MEETING

Date: April 27, 2001

Place/Time: URS Conference Room / 9:00 a.m.

Subject: Lee Roy Selmon Crosstown Expressway
From 26th Street to 39th Street
Contract No. 51.30.03
Roadway and Drainage Criteria

Attendees:

THCEA:	Ben Muns
URS:	Thomas Presby, Webb Jones, Jimmie Gill, Paul Schmid, Daren Carriere
PBS&J:	Pete Kelliher, Nydia Lugo, David Rast, John Stone,

Written by: Peter C. Kelliher, P.E.

Copies: Attendees, Mark Micikas, Carolyn Wirth, Steve Malecki, File: 100718.01

A meeting was held to review the proposed geometrics (as provided by URS), obtain concurrence on PBSJ's recommendations, discuss schedule, drainage, and related design issues. The following is our understanding of the decisions made at this meeting.

ROADWAY

PBS&J revised the westbound slip ramp alignment at Sta 706+00 +/- to facilitate the placement of the PC outside the limits of the bridge over 34th Street. The tapered approach to the ramp was also revised, resulting in a longer parallel ramp and a shorter gore area. URS stated that the limits of the gore area were set to facilitate the placement of the reversible safety gates and the Dragnet attenuator. URS also stated that the number of gates could be reduced if the ramp taper was reduced to less than 1200 feet, but recommended that the design provide 1000'-1200' of ramp gore area.

Bridge structure depths given in the 30% plans were 6.5'+/-. Pete Kelliher questioned whether this dimension was a "rule of thumb" depth for preliminary design or if the structure depths had been formally developed. The concern was the proposed profile and the bridge clearance heights. URS stated that they would check with their Structures Department. Pete stated that PBS&J would confirm with their Structures engineers as well.

Vertical clearance to the bottom of the support structures for the elevated reversible lanes was discussed. URS stated that the reversible lanes support piers were elevated high enough to provide clearances of 19' to 30'.

From Sta 3679+50.00 to 3694+00 eastbound, a third outside lane is to be designed and paved with miscellaneous asphalt and separated by guardrail to provide for the future interchange. Various concepts of how to terminate the additional lane were discussed. No concurrence was reached, except that the wall truncation will remain as shown in the 30% plans and drainage will need to be addressed.

URS provided PBS&J with the design criteria used in the development of the 30% plans.

Pete Kelliher asked URS to confirm that the desired normal cross slope of all three reversible lanes would be 2%. Due to the nature of the reversible lanes, URS concurred.

DRAINAGE & PERMITTING

URS stated that the THCEA has identified several areas for potential pond sites and will finalize locations once treatment and storage needs are identified.

The WB ramp at 39th Street will remain, however the EB ramp is being removed and has been identified as a potential pond site.

The water table to be used to determine the pond design is not currently known. URS stated that Williams Earth Sciences is currently performing their geotechincal investigations and there is a chance that they will not be complete with both the pond borings and the roadway borings before the 60% plans submittal.

John Stone discussed the treatment requirements with Paul Schmid. According to URS, SWFWMD is going to require treatment of both the new pavement areas and some of the existing pavement areas. John stated that this was a change in scope and will require additional drainage and roadway effort on PBS&J's part.

URS stated that once they have completed their basin studies, additional pavement for adjoining projects may have to be treated in our ponds due to the location of several large ponds in PBS&J's section.

URS stated that they would have guidance for the above issues to PBS&J within two weeks (May 11, 2001). Mr. Stone said that he would proceed with his design as though additional treatment and collection will be required.

SCHEDULE

PBS&J presented a preliminary schedule for URS to review. Submittal of Final plans is indicated as January 8, 2002. Although this date does not reflect the Final plans date in the scope, it was agreed that this schedule was still very aggressive. Several critical issues could further affect the final plans submittal date, such as permitting and drainage.

URS requested that comments be directed to Daren Carriere and Paul Schmid with copies to Jimmie Gill and Ben Muns.
URS also requested that transmittals to THCEA be address to Pat McCue, with attention to Ben Muns, and cc: Jimmie Gill.
The meeting adjourned at 11:00 a.m.

As-built Plans & Relevant Calculations for I-4/ Selmon Expressway South of Selmon Expressway to 7th Avenue FDOT FPID No. 258415-1-52-01 (Certified 2017) SWFWMD permit no.43020690.009 – Datum NGVD 29

Transferred to Operation

43020690.009

I-4/Selmon Expressway Interchange

Submitted As-builts

Page 1 thru 101

Pkg 1 of 4

Transferred to Operation

AS-BUILT SURVEY
FINANCIAL PROJECT ID 258415-1-52-01
I-4/SELMON EXPRESSWAY
SOUTH OF SELMON EXPRESSWAY TO 7TH AVENUE

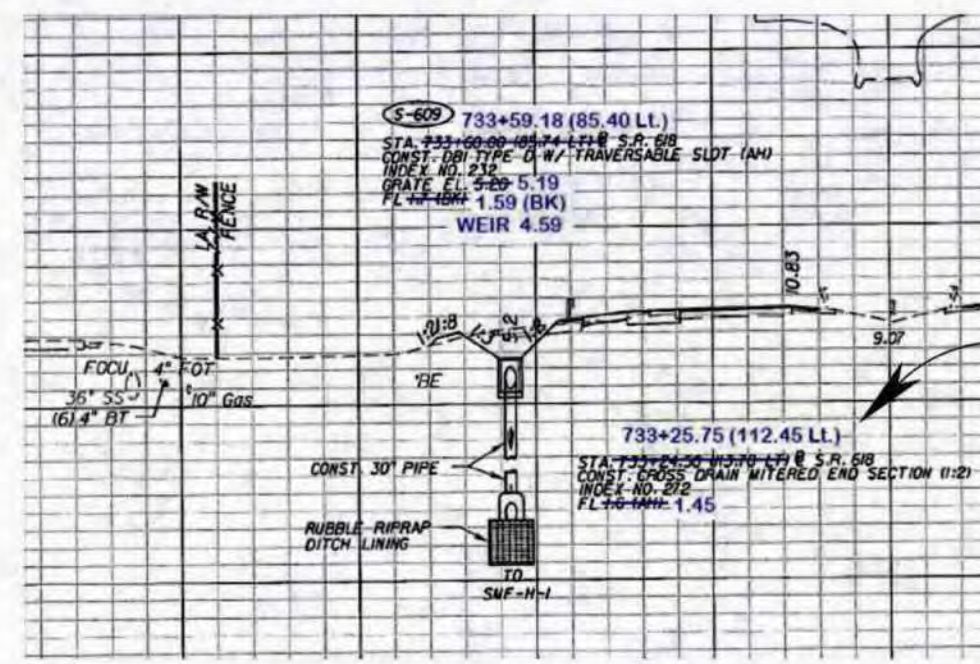
SURVEYOR'S NOTES

1. Type of Survey: As-Built Survey (Chapter 5J-17.050 10(i), Florida Administrative Code, and Department of Agriculture and Consumer Services requirements set forth in Chapter 5J-17.052 (1)) to survey the existing locations and elevations of newly constructed drainage structures and retention ponds along the corridors of Interstate 4, the Lee Roy Selmon Cross Town Expressway, and the I-4 and Lee Roy Selmon Expressway Connector encompassed by Florida Department of Transportation Financial Project ID. 258415-1.
2. Last day of Field Survey: July 1, 2014.
   Date of Computations: May 2013-July 2014.
   Field Books: 003624, 003625, 003626, 003347
3. Units of Measurement for this survey are shown in the U.S. Survey Foot.
4. The horizontal datum used for this survey is the North American Datum of 1983, adjustment of 1990 (NAD 83/90), and coordinates are referenced to the Florida State Plane West Zone. Global Positioning Systems (GPS) were used to establish horizontal control and horizontal locations of surveyed features for this survey. Real Time Kinematic (RTK) methods were used and two (2) National Geodetic Survey (NGS) control points served as the base stations. The NGS control is more particularly described as follows:

   - Point Designation: FLGPS 59 AZ MK
   - Northing: 1311582.05
   - Easting: 510972.49

   - Point Designation: Q 18
   - Northing: 1317807.98
   - Easting: 512276.47
5. Bearing Basis: N 00° 15' 26" E being the bearing of the Connector baseline from station 10017+09.91 to station 10038+02.61. The geometry for all baselines referenced in this survey are based on the Contract Plans for Financial Project ID 258415-1-52-01, I-4/Selmon Expressway South of Selmon Expressway to 7th Avenue.
6. Elevations used on this survey are referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29). Vertical control bench mark data used to establish elevations for this survey is found in FDOT District 7 field book number 002389, W.P.I.S. Number 258415, dated October 26, 2009.
7. Accuracy Statement: All measurements shown were performed in strict accordance with the Minimum Technical Standards set forth in Chapter 5J-17, Florida Administrative Codes, Department of Agriculture and Consumer Services.
8. This as-built plan set contains field measured elevations and station and offset information for retention ponds and drainage structures found in the Contract Plans for Financial Project ID 258415-1-52-01, the I-4/Selmon Expressway to 7th Ave. As-built information is shown in blue next to plan dimensions that are marked through with a blue line. Any other information shown in the plan set was not produced by this survey.
9. Survey Technicians: Louis Vertalics, Andy Trayner, PSM, William Pyle, PSM.
10. Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper.
11. Additions or deletions to survey maps or reports by anyone other than the signing party or parties is prohibited without written consent of the signing party or parties.

EXAMPLE



AS-BUILT DATA IN BLUE

FOR
Southwest Florida Water Management District
OCT 13 2017
Received Tampa RSB
USM 1:12

THIS SURVEY MEETS THE REQUIREMENTS OF THE MINIMUM TECHNICAL STANDARDS PURSUANT TO CHAPTER 5J-17.051 AND 5J-17.052 FLORIDA ADMINISTRATIVE CODE

4/7/15

ANDREW J. TRAYNER, P.S.M., FLORIDA LICENSE NO. 6504
NOTICE: NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

Imaged As Is

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
02/13/15	AJT	UPDATED AS BUILTS ON PAGE 459A AND 460A			
04/06/15	WMP	SURVEYED AND AS-BUILT DITCH ELEVATIONS ON SHEETS 616-618, 633, 693, 695, 697, 702, 713, 715, 719, 721, 724, 728-732, 734, 737, 738, 740, 741, 743, 745, 754, 778-780, 782			

CARDNO
4803 George Road, Suite 350, Tampa, FL 33634
(727) 531-3505
Licensed Business No. LB 6668

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

RECORD SURVEY

SHEET NO. 1A

COMPONENTS OF CONTRACT PLANS SET

ROADWAY PLANS
SIGNING & PAVEMENT MARKING PLANS (NOT INCLUDED)
SIGNALIZATION PLANS (NOT INCLUDED)
INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PLANS (NOT INCLUDED)
LIGHTING PLANS (NOT INCLUDED)
LANDSCAPE PLANS
ARCHITECTURAL PLANS (NOT INCLUDED)
STRUCTURE PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

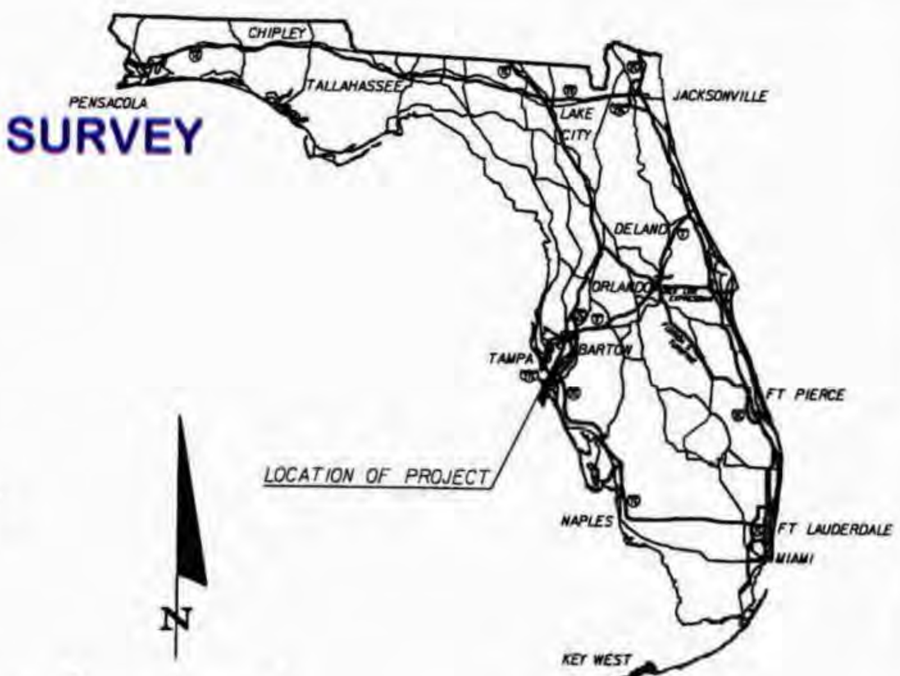
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

Transferred to Operation

~~CONTRACT PLANS~~ AS-BUILT SURVEY

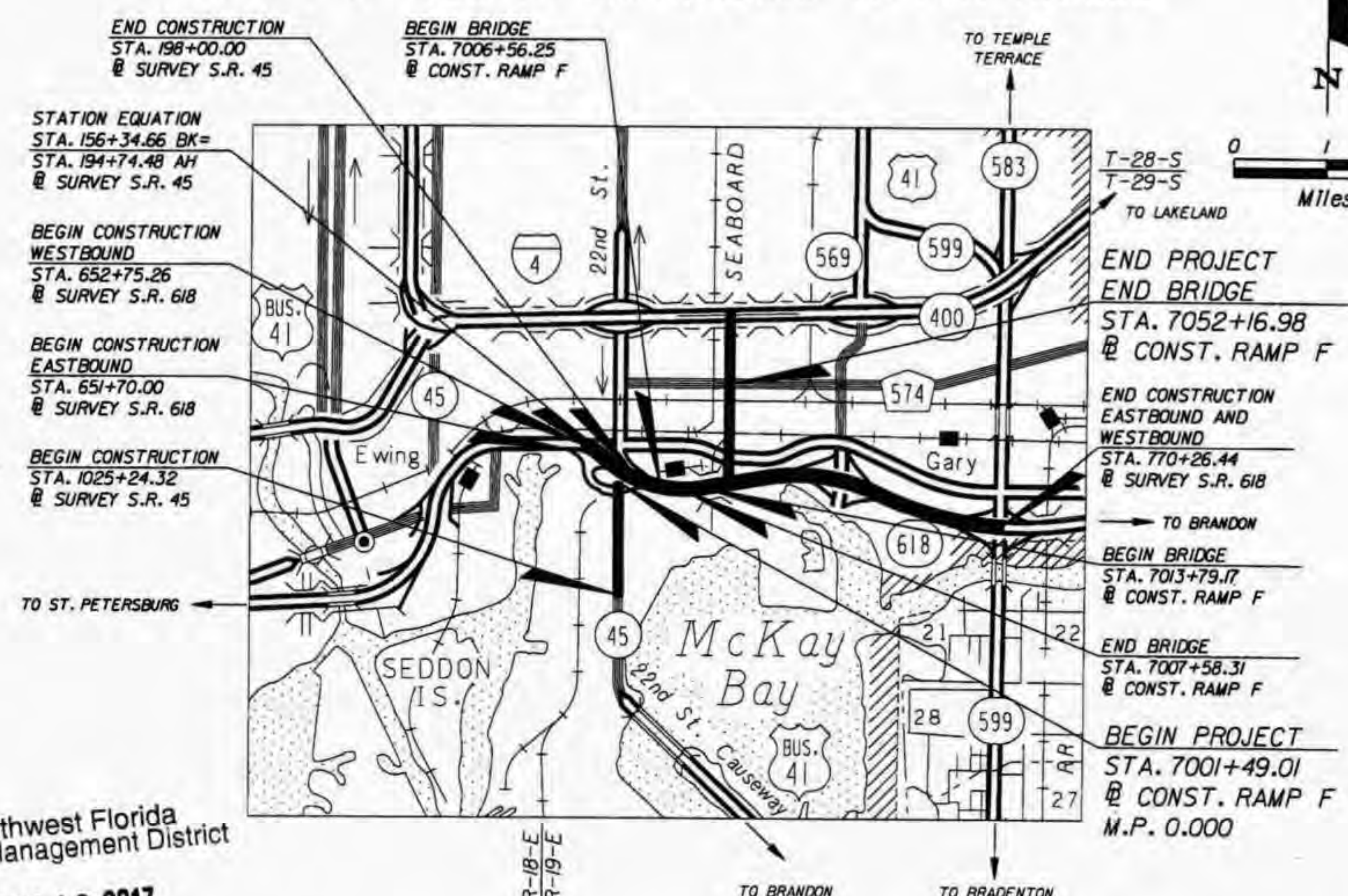
FINANCIAL PROJECT ID 258415-1-52-01
(FEDERAL FUNDS)
HILLSBOROUGH COUNTY (10190)
STATE ROAD NO. 400

I-4/SELMON EXPRESSWAY
SOUTH OF SELMON EXPRESSWAY TO 7TH AVENUE



INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2-10	DRAINAGE MAPS
11	SUPPLEMENTAL DRAINAGE MAP
12-13	EXISTING DRAINAGE STRUCTURES
14-34	TYPICAL SECTIONS
35-40	PROJECT LAYOUT
41	FUTURE RAILROAD LAYOUT
42-81	ROADWAY PLAN SHEETS
82	CUL-DE-SAC DETAIL
83-171	ROADWAY PROFILE SHEETS
172-330	DRAINAGE STRUCTURES
331-336	DRAINAGE DETAILS
337-340	LATERAL DITCH PLAN VIEW
341-342	LATERAL DITCH PROFILE VIEW
343-351	LATERAL DITCH CROSS SECTIONS
352-436	RETENTION / DETENTION POND DETAILS
437-444	ROADWAY SOIL SURVEY
445-619	CROSS SECTIONS
620-621	SWPPP
622-654	EROSION CONTROL PLAN SHEETS
655-671	PERMANENT EROSION CONTROL PLAN SHEETS



PERMIT SUBMITTAL

MAY 2008

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO: **TS0704**

JOSEPH R. GARRITY, P.E.
PBS&J
5300 WEST CYPRESS STREET, SUITE 200
TAMPA, FL 33607

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RECEIVED
MAY 13 2008
RRD-TAMPA

PLANS PREPARED BY:

PBSJ

5300 WEST CYPRESS STREET, SUITE 200
TAMPA, FL 33607
(813) 282-7275
CONTRACT NO. C-6826
CONSULTANT VENDOR NO. F-590-896-138-001
FBPR NO.: 24

NOTE: THIS PROJECT TO BE LET TO CONTRACT WITH FINANCIAL PROJECT ID 258415-2-52-01.

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

NOTE: BRIDGE NUMBERS AND RAILROAD CROSSING NUMBERS NOT YET ASSIGNED.

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION, DESIGN STANDARDS DATED JANUARY 2008, AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2007, AS AMENDED BY CONTRACT DOCUMENTS.

Southwest Florida Water Management District
OCT 13 2017
Received Tampa RSB

APPLICABLE DESIGN STANDARDS MODIFICATIONS JULY 1, 2008:

For Design Standards Modifications click on "Design Standards" at the following web site:
http://www.dot.state.fl.us/rddesign/

5/12/08

PROJECT LENGTH IS BASED ON ℄ OF CONSTRUCTION RAMP F

LENGTH OF PROJECT		
	LINEAR FEET	MILES
ROADWAY	1128.10	0.213
BRIDGES	3939.76	0.746
NET LENGTH OF PROJECT	5067.97	0.959
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJECT	5067.97	0.959

FDOT PROJECT MANAGER: ADAM PEREZ, P.E.

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

PERMITTEE SHALL NOTIFY IN WRITING THE TAMPA REGULATION DEPARTMENT SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, WHEN CONSTRUCTION BEGINS.
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMITTED CONSTRUCTION DRAWINGS

Not Sealed

Joseph R. Garrity 5/5/08

ROADWAY PLANS ENGINEER OF RECORD: JOSEPH R. GARRITY, P.E.

P.E. NO.: 41909

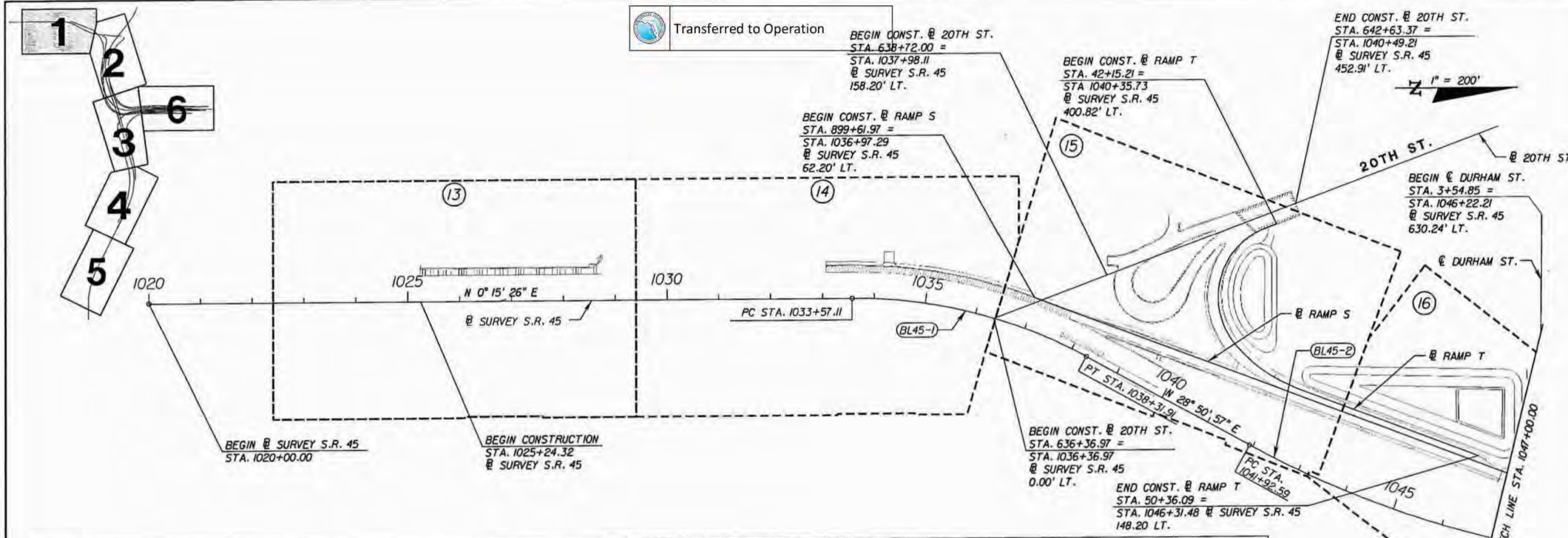
Imaged As Is

43020690.009

	FISCAL YEAR	SHEET NO.
	10	1

REVISIONS

Transferred to Operation



		BRIDGE INFORMATION				
BRIDGE NO.	DESCRIPTION OF LOCATION	BEGIN APPROACH SLAB	BEGIN BRIDGE	END BRIDGE	END APPROACH SLAB	CONSTRUCTION TYPE
100443	WB S.R. 618 @ 22ND ST.	1656+42.60	1656+80.46	1667+55.78	1668+50.36	PARTIAL DECK REPLACEMENT, WIDENING
100444	EB S.R. 618 @ 22ND ST.	2656+74.64	2657+12.45	2666+31.09	2667+11.04	DECK REPLACEMENT, WIDENING
100447	WB S.R. 618 @ CSX	1686+05.52	1686+25.52	1688+25.52	1688+45.52	DECK REPLACEMENT
100449	WB S.R. 618 @ 34TH ST.	1699+17.07	1699+37.87	1702+46.48	1702+66.48	DECK REPLACEMENT
100694	RAMP K ALONG S.R. 618	507+32.77	507+62.77	524+78.25	ABUTS BRIDGE NO. 100714 & 100718	NEW CONSTRUCTION
100711	RAMP S FROM S.R. 45 TO CONNECTOR	909+34.00	909+64.00	960+23.64	TOLL GANTRY	NEW CONSTRUCTION
100713	RAMP N @ 26TH ST.	810+97.63	811+27.89	814+41.39	814+71.72	NEW CONSTRUCTION
100714	RAMP J	ABUTS BRIDGE NO. 100694	44+79.88	51+45.45	51+75.48	NEW CONSTRUCTION
100715	RAMP N FROM S.R. 618 TO CONNECTOR	819+89.42	820+19.42	848+30.05	ABUTS BRIDGE NO. 100723	NEW CONSTRUCTION
100716	RAMP E OVER S.R. 60	6007+60.20	6007+90.20	6018+59.74	ABUTS BRIDGE NO. 100720	NEW CONSTRUCTION
100717	RAMP F FROM S.R. 618 TO CONNECTOR	7013+49.17	7013+79.17	7040+36.94	ABUTS BRIDGE NO. 100723	NEW CONSTRUCTION
100718	RAMP K OVER S.R. 60	ABUTS BRIDGE NO. 100694	524+78.25	539+01.41	ABUTS BRIDGE NO. 100720	NEW CONSTRUCTION
100719	RAMP B FROM CONNECTOR TO S.R. 618	TOLL GANTRY	8062+44.91	8110+30.39	8110+60.46	NEW CONSTRUCTION
100720	RAMPS K & E ALONG CONNECTOR	ABUTS BRIDGE NO. 100716 & 100718	6018+59.74	6024+22.69	TOLL GANTRY	NEW CONSTRUCTION
100721	RAMP D FROM CONNECTOR TO S.R. 618	ABUTS BRIDGE NO. 100723	5048+78.23	5068+61.33	5068+91.33	NEW CONSTRUCTION
100722	RAMPS K, E, S, SB & B ONE BRIDGE	ABUTS BRIDGE NO. 100724 & 100726	8054+76.74	8061+02.99	TOLL GANTRY	NEW CONSTRUCTION
100723	RAMPS F, N, ND & D ONE BRIDGE	TOLL GANTRY	5047+36.31	5048+78.23	ABUTS BRIDGE NO. 100715, 100717 & 100721	NEW CONSTRUCTION
100724	RAMPS E & S ALONG CONNECTOR TO END PROJECT	ABUTS BRIDGE NO. 100722	967+91.88	970+59.13	MATCH FPID 258415-2-52-01	NEW CONSTRUCTION
100726	RAMP B ALONG CONNECTOR TO END PROJECT	MATCH FPID 258415-2-52-01	8052+09.49	8054+76.74	ABUTS BRIDGE NO. 100722	NEW CONSTRUCTION
100727	RAMP D FROM GANTRY TO END PROJECT	MATCH FPID 258415-2-52-01	5037+00.88	5041+95.13	ABUTS BRIDGE NO. 100725	NEW CONSTRUCTION
100729	RAMPS F & N FROM GANTRY TO END PROJECT	ABUTS BRIDGE NO. 100725	7047+19.98	7052+14.23	MATCH FPID 258415-2-52-01	NEW CONSTRUCTION
100834	EB S.R. 618 @ 26TH ST. = RAMP F	2672+06.81 = 7006+19.07	2672+36.84 = 7006+49.77	2673+38.59 = 7007+53.91	2673+68.60 = 7007+84.67	NEW CONSTRUCTION
100835	WB S.R. 618 @ 26TH ST.	1671+78.95	1672+08.98	1673+10.73	1673+40.74	NEW CONSTRUCTION
100836	WB S.R. 618 @ 39TH ST.	1722+23.44	1722+54.36	1723+61.28	1723+92.73	NEW CONSTRUCTION
105612	34TH ST. BRIDGE	17+91.95	18+06.95	18+63.45	18+78.45	MODIFICATION
109918	SHARED USE PATH OVER 34TH ST. CANAL	2006+45.50	2006+55.50	2007+44.50	2007+54.50	NEW CONSTRUCTION
100725	RAMPS F, N, ND & D ALONG CONNECTOR AT TOLL GANTRY	ABUTS BRIDGE NO. 100727 & 100729	5041+95.13	5045+94.38	TOLL GANTRY	NEW CONSTRUCTION

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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

PBS&J
5300 West Cypress Street
Suite 200
Tampa, Florida 33607-1768
FBPE Certificate of
Authorization No. 24
Joseph R. Garrity, P.E. #41909

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

PROJECT LAYOUT SHEET (1)

SHEET NO. 124

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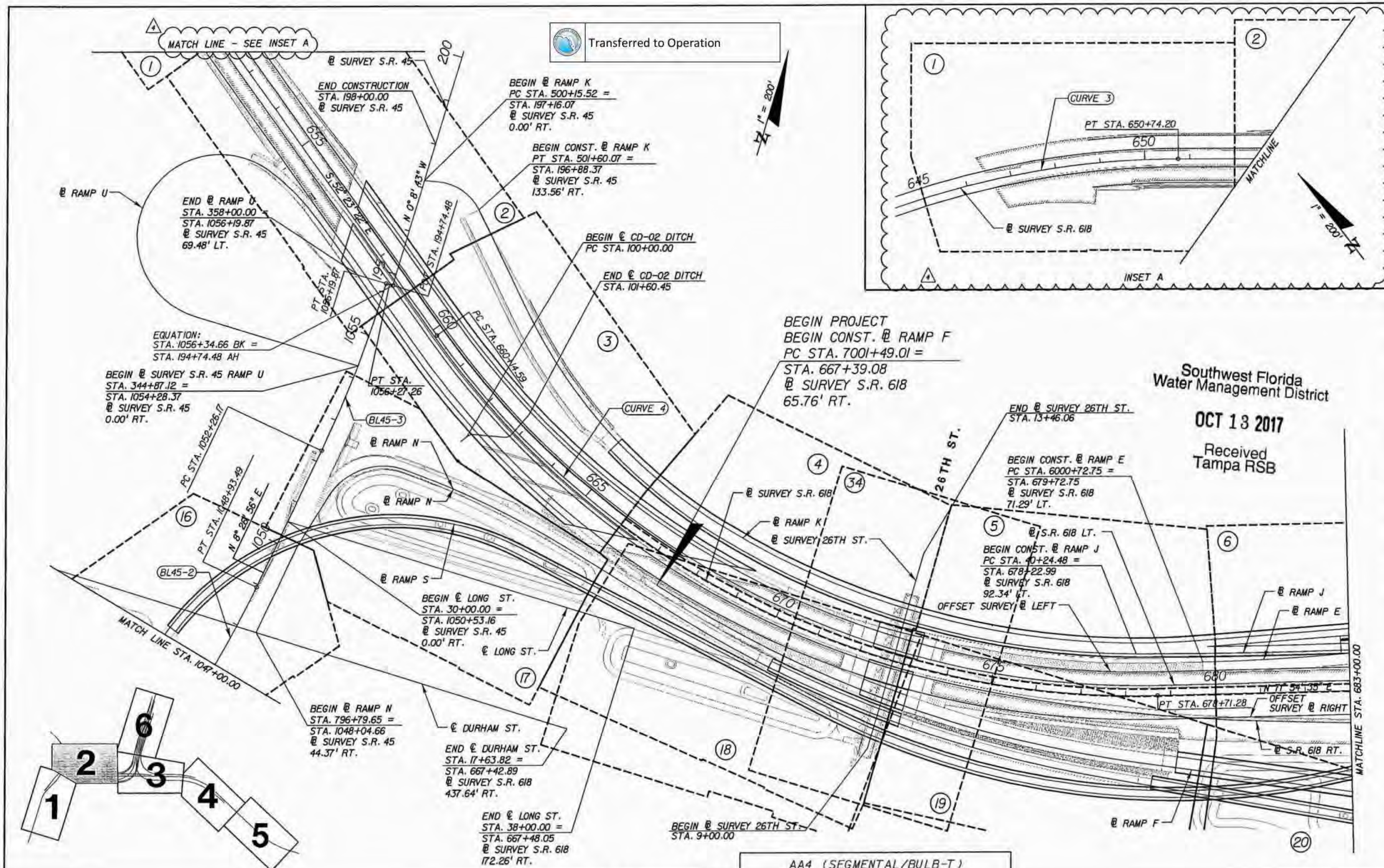

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 ADDED MATCH LINE AND INSET A TO SHOW SHEET 1		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

PROJECT LAYOUT SHEET (2)

SHEET NO. 125

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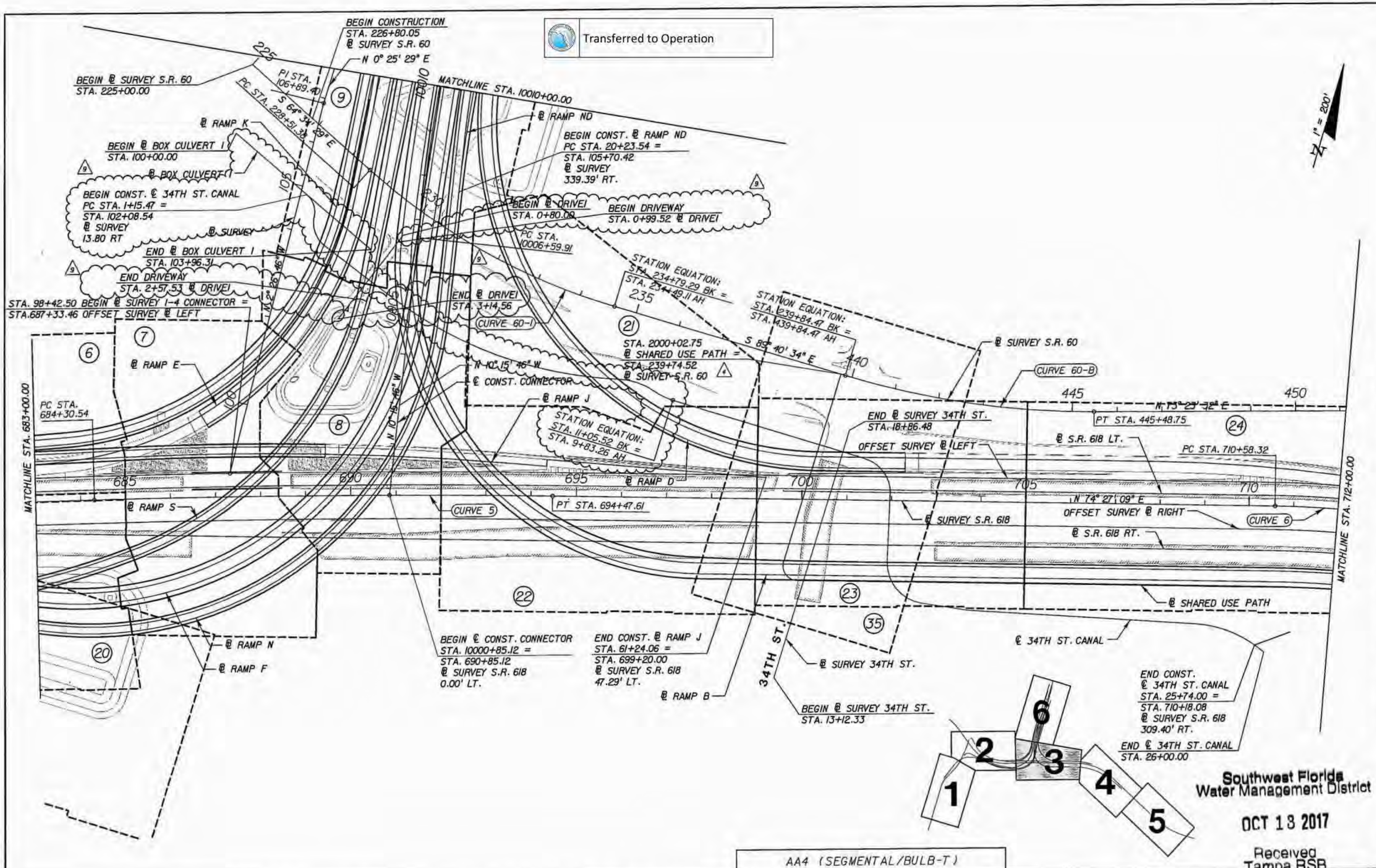

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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 REVISED ℄ SURVEY S.R. 60 STATIONING IN LABEL		
11/05/12	9 REVISED 34TH ST. CANAL ALIGNMENT & STATIONING LABELS. ADDED DRIVEWAY LABELS.		

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

PROJECT LAYOUT SHEET (3)

SHEET NO. 126

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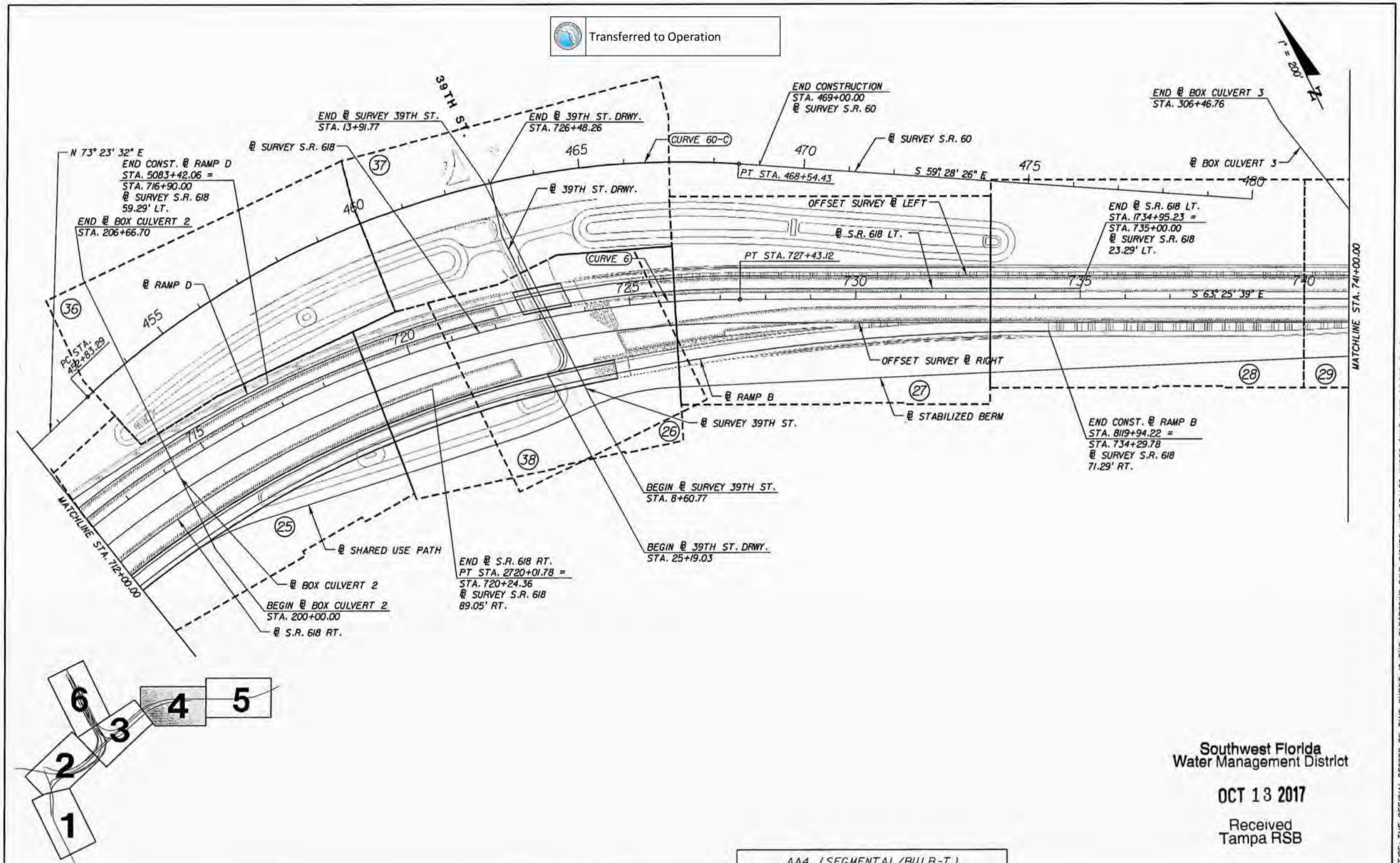

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AA4 (SEGMENTAL/BULB-T)

REVISIONS							
DATE	DESCRIPTION	DATE	DESCRIPTION	PBSJ 5300 West Cypress Street Suite 200 Tampa, Florida 33607-1768 FBPE Certificate of Authorization No. 24 Joseph R. Garrity, P.E. #41909	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	PROJECT LAYOUT SHEET (4)	SHEET NO.
					ROAD NO.: SR 400 / COUNTY: HILLSBOROUGH / FINANCIAL PROJECT ID: 258415-1-52-01		127

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CURVE AND COORDINATE DATA

* TRANSITION THROUGH CURVE, (-)e DOWNWARD SLOPE FROM PGL, (+)e UPWARD SLOPE FROM PGL

RC: REVERSE CROWN NC: NORMAL CROWN

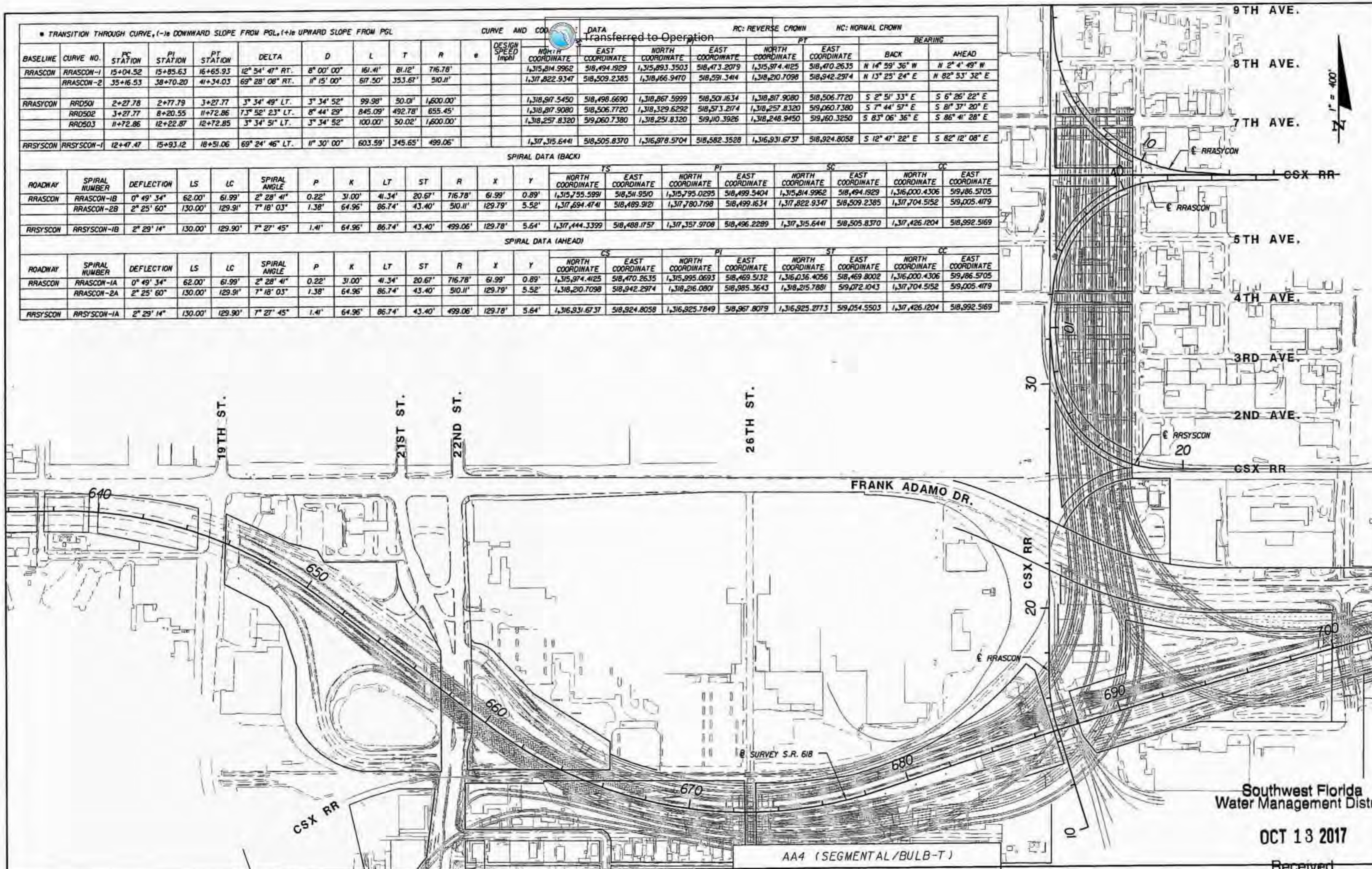
BASELINE	CURVE NO.	PC STATION	PI STATION	PT STATION	DELTA	D	L	T	R	e	DESIGN SPEED (mph)			PI		PT		BEARING	
												NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE	BACK	AHEAD
RRASCON	RRASCON-1	15+04.52	15+85.63	16+65.93	12° 54' 47" RT.	8° 00' 00"	161.41'	81.12'	716.78'			1,315,814.9962	518,494.1929	1,315,893.3503	518,473.2079	1,315,974.4125	518,470.2635	N 14° 59' 36" W	N 2° 4' 49" W
	RRASCON-2	35+16.53	38+70.20	41+34.03	69° 28' 08" RT.	11° 15' 00"	617.50'	353.67'	510.11'			1,317,822.9347	518,509.2385	1,318,166.9470	518,591.3414	1,318,210.7098	518,942.2974	N 13° 25' 24" E	N 82° 53' 32" E
RRASYCON	RRD501	2+27.78	2+77.79	3+27.77	3° 34' 49" LT.	3° 34' 52"	99.98'	50.01'	1,600.00'			1,318,917.5450	518,498.6690	1,318,867.5999	518,501.1634	1,318,817.9080	518,506.7720	S 2° 51' 33" E	S 6° 26' 22" E
	RRD502	3+27.77	8+20.55	11+72.86	73° 52' 23" LT.	8° 44' 29"	845.09'	492.78'	655.45'			1,318,817.9080	518,506.7720	1,318,329.6292	518,573.2174	1,318,257.8320	519,060.7380	S 7° 44' 57" E	S 81° 37' 20" E
	RRD503	11+72.86	12+22.87	12+72.85	3° 34' 51" LT.	3° 34' 52"	100.00'	50.02'	1,600.00'			1,318,257.8320	519,060.7380	1,318,251.8320	519,110.3926	1,318,248.9450	519,160.3250	S 83° 06' 36" E	S 86° 41' 28" E
RRSYSCON	RRSYSCON-1	12+47.47	15+93.12	18+51.06	69° 24' 46" LT.	11° 30' 00"	603.59'	345.65'	499.06'			1,317,315.6441	518,505.8370	1,316,978.5704	518,582.3528	1,316,931.6737	518,924.8058	S 12° 47' 22" E	S 82° 12' 08" E

SPIRAL DATA (BACK)

ROADWAY	SPIRAL NUMBER	DEFLECTION	LS	LC	SPIRAL ANGLE	P	K	LT	ST	R	X	Y	TS		PI		SC		CC	
													NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE
RRASCON	RRASCON-1B	0° 49' 34"	62.00'	61.99'	2° 28' 41"	0.22'	31.00'	41.34'	20.67'	716.78'	61.99'	0.89'	1,315,755.5991	518,511.9510	1,315,795.0295	518,499.5404	1,315,814.9962	518,494.1929	1,316,000.4306	519,186.5705
	RRASCON-2B	2° 25' 60"	130.00'	129.91'	7° 18' 03"	1.38'	64.96'	86.74'	43.40'	510.11'	129.79'	5.52'	1,317,694.4741	518,489.9121	1,317,780.7198	518,499.1634	1,317,822.9347	518,509.2385	1,317,704.5152	519,005.4179
RRSYSCON	RRSYSCON-1B	2° 29' 14"	130.00'	129.90'	7° 27' 45"	1.41'	64.96'	86.74'	43.40'	499.06'	129.78'	5.64'	1,317,444.3399	518,488.1757	1,317,357.9708	518,496.2289	1,317,315.6441	518,505.8370	1,317,426.1204	518,992.5169

SPIRAL DATA (AHEAD)

ROADWAY	SPIRAL NUMBER	DEFLECTION	LS	LC	SPIRAL ANGLE	P	K	LT	ST	R	X	Y	CS		PI		ST		CC	
													NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE	NORTH COORDINATE	EAST COORDINATE
RRASCON	RRASCON-1A	0° 49' 34"	62.00'	61.99'	2° 28' 41"	0.22'	31.00'	41.34'	20.67'	716.78'	61.99'	0.89'	1,315,974.4125	518,470.2635	1,315,995.0693	518,469.5132	1,316,036.4056	518,469.8002	1,316,000.4306	519,186.5705
	RRASCON-2A	2° 25' 60"	130.00'	129.91'	7° 18' 03"	1.38'	64.96'	86.74'	43.40'	510.11'	129.79'	5.52'	1,318,210.7098	518,942.2974	1,318,216.0801	518,985.3643	1,318,215.7881	519,072.1043	1,317,704.5152	519,005.4179
RRSYSCON	RRSYSCON-1A	2° 29' 14"	130.00'	129.90'	7° 27' 45"	1.41'	64.96'	86.74'	43.40'	499.06'	129.78'	5.64'	1,316,931.6737	518,924.8058	1,316,925.7849	518,967.8079	1,316,925.2773	519,054.5503	1,317,426.1204	518,992.5169



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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5300 West Cypress Street
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Joseph R. Garrity, P.E. #41909

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

FUTURE RAILROAD
LAYOUT

SHEET NO.
130

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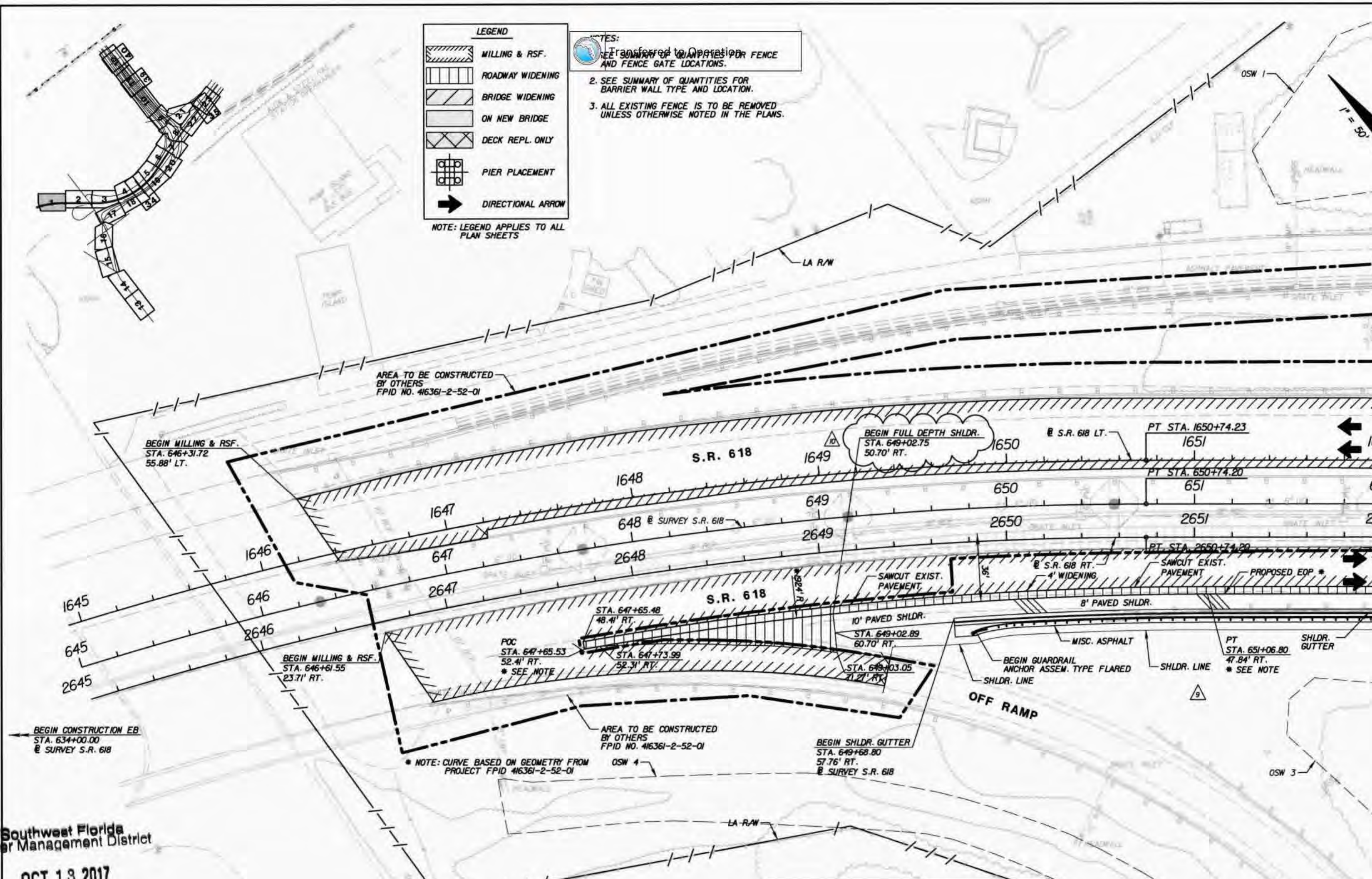

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REVISIONS				
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REVISED ROADWAY TO COORDINATE WITH ADJACENT PROJECT FPID NO. 416361-2-52-01		
08/26/13	10 REVISED FULL DEPTH SHLDR. STATIONING		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (1)

SHEET NO. 139

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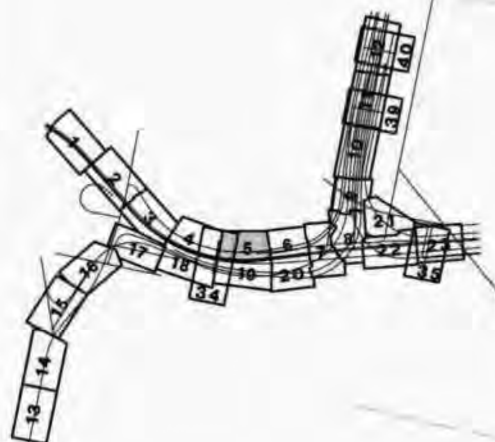
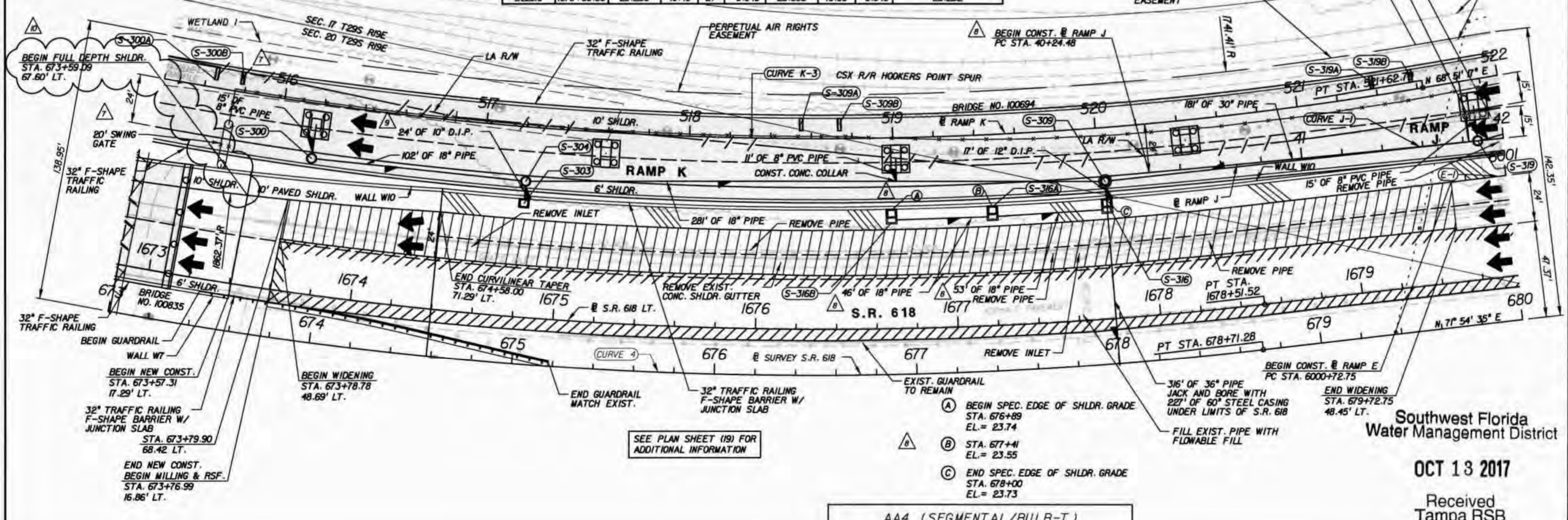
S.R. 618 WESTBOUND PROPOSED ELEVATIONS

ALIGNMENT	STATION	EL[illegible]	OFFSET	SIDE	CROSS SLOPE	OUTSIDE EOP ELEVATION	OFFSET	CROSS SLOPE	OUTSIDE SHOULDER/ GUTTER ELEVATION
BLL618	1673+20.00	33.633	43.28	LT	-0.079	30.214	10.01	-0.079	29.361
BLL618	1673+40.00	33.198	44.08	LT	-0.078	29.759	10.01	-0.078	28.916
BLL618	1673+60.00	32.756	44.88	LT	-0.077	29.300	10.01	-0.077	28.467
BLL618	1673+80.00	32.309	45.69	LT	-0.076	28.837	10.01	-0.076	28.013
BLL618	1674+00.00	31.887	46.49	LT	-0.076	28.354	10.01	-0.076	27.531
BLL618	1674+20.00	31.473	47.28	LT	-0.076	27.879	10.01	-0.076	27.056
BLL618	1674+40.00	31.106	48.08	LT	-0.078	27.356	10.00	-0.078	26.513
BLL618	1674+60.00	30.747	48.12	LT	-0.079	26.945	10.00	-0.079	26.092
BLL618	1674+80.00	30.424	48.17	LT	-0.078	26.667	10.00	-0.078	25.824
BLL618	1675+00.00	30.114	48.22	LT	-0.079	26.305	10.00	-0.079	25.452
BLL618	1675+20.00	29.788	48.27	LT	-0.079	25.975	10.00	-0.079	25.122
BLL618	1675+40.00	29.466	48.33	LT	-0.077	25.745	10.00	-0.077	24.912
BLL618	1675+60.00	29.183	48.38	LT	-0.077	25.458	10.00	-0.077	24.625
BLL618	1675+80.00	28.931	48.43	LT	-0.076	25.250	10.00	-0.076	24.427
BLL618	1676+00.00	28.713	48.49	LT	-0.073	25.173	10.00	-0.073	24.381
BLL618	1676+20.00	28.523	48.55	LT	-0.074	24.931	10.00	-0.074	24.128
BLL618	1676+40.00	28.365	48.60	LT	-0.075	24.719	10.00	-0.075	23.907
BLL618	1676+60.00	28.241	48.66	LT	-0.075	24.591	10.00	-0.075	23.779
BLL618	1676+80.00	28.148	48.72	LT	-0.075	24.494	10.00	-0.075	23.681
BLL618	1677+00.00	28.086	48.78	LT	-0.075	24.427	10.00	-0.075	23.615
BLL618	1677+20.00	28.035	48.85	LT	-0.075	24.372	10.00	-0.075	23.559
BLL618	1677+40.00	28.016	48.91	LT	-0.075	24.348	10.00	-0.068	23.600
BLL618	1677+60.00	28.018	48.97	LT	-0.076	24.296	10.00	-0.055	23.680
BLL618	1677+80.00	28.054	49.04	LT	-0.076	24.327	10.00	-0.051	23.750
BLL618	1678+00.00	28.048	49.11	LT	-0.072	24.512	10.00	-0.059	23.860
BLL618	1678+20.00	28.099	49.17	LT	-0.069	24.706	10.00	-0.065	8 23.990
BLL618	1678+40.00	28.156	49.24	LT	-0.066	24.906	10.00	-0.064	24.200
BLL618	1678+60.00	28.255	49.29	LT	-0.062	25.198	10.00	-0.062	24.516
BLL618	1678+80.00	28.419	49.33	LT	-0.061	25.410	10.00	-0.061	24.737
BLL618	1679+00.00	28.594	49.37	LT	-0.059	25.681	10.00	-0.059	25.029
BLL618	1679+20.00	28.776	49.40	LT	-0.056	26.010	10.00	-0.056	25.387
BLL618	1679+40.00	28.986	49.44	LT	-0.052	26.415	10.00	-0.052	25.833
BLL618	1679+60.00	29.230	49.49	LT	-0.049	26.805	10.00	-0.049	26.252





SEE PLAN SHEET (19) FOR ADDITIONAL INFORMATION

Ⓐ BEGIN SPEC. EDGE OF SHLDR. GRADE
STA. 676+89
EL.= 23.74

Ⓑ STA. 677+41
EL.= 23.55

Ⓒ END SPEC. EDGE OF SHLDR. GRADE
STA. 678+00
EL.= 23.73

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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
05/23/11	7 RELOCATED SCUPPER INLET AND ADDED FENCE LABEL.	11/05/12	9 REVISED PIPE LENGTH
01/27/12	8 REVISED DRAINAGE & SPEC. EDGE OF SHLDR. STATIONS, ELEVATIONS, AND PIPE LENGTHS	08/26/13	10 REVISED FULL DEPTH SHLDR. STATIONING

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (5)

SHEET NO. 143

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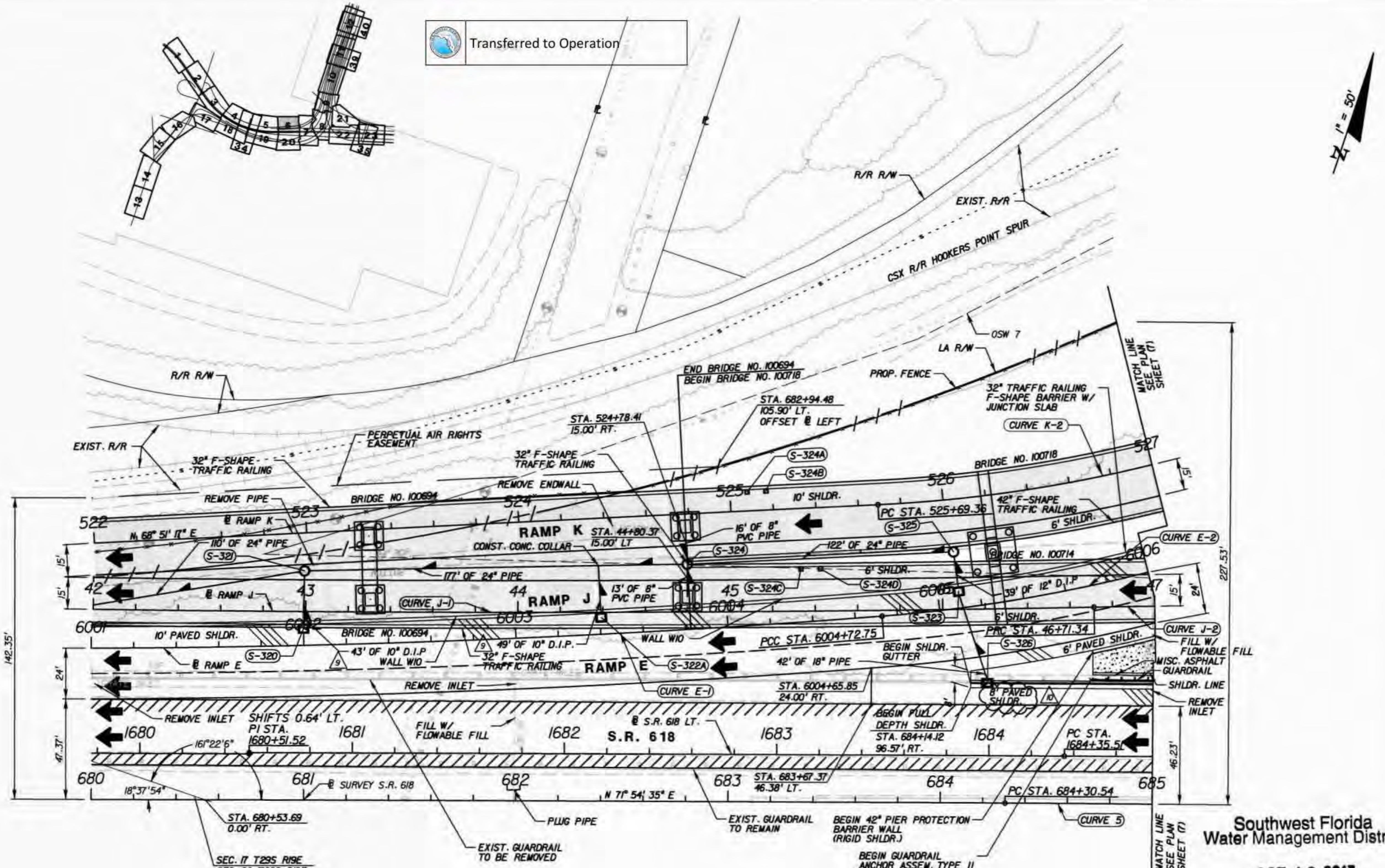

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SEE PLAN SHEET (20) FOR ADDITIONAL INFORMATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
05/23/11	7 ADDED/REVISED BARRIER WALL LABEL		
11/05/12	9 REVISED PIPE LENGTHS		
08/26/13	10 REVISED FULL DEPTH SHLDR. LABELS		

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Authorization No. 24
Joseph R. Garrity, P.E. #41909

AA4 (SEGMENTAL/BULB-T)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (6)

SHEET NO. 144

USER: 16588 10/3/2013 9:59:56 AM K:\258415\520\AA4\roadway\PLANRD06_REVID.DGN

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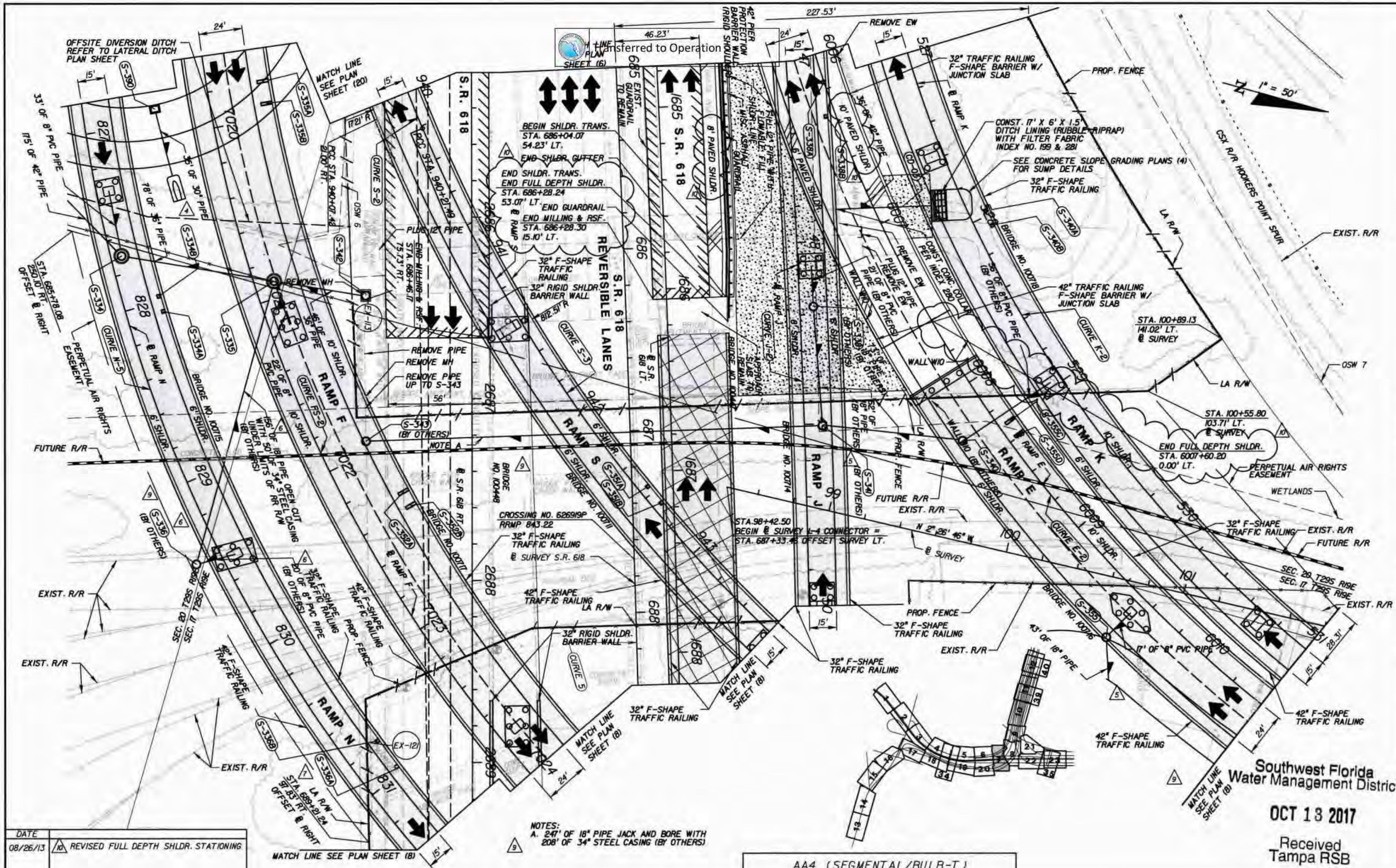

NOTES:
A. 247' OF 18" PIPE JACK AND BORE WITH 208' OF 34" STEEL CASING (BY OTHERS)

DATE		
08/26/13	10	REVISED FULL DEPTH SHLDR. STATIONING

REVISIONS

DATE		DESCRIPTION	DATE		DESCRIPTION
04/30/10	4	REVISED PIPE SIZE	12/09/10	6	REVISED PIER FOOTING; RELOCATED MANHOLE S-336 AND PIPES; REVISED PIPE LENGTHS
08/11/10	5	DELETED SCUPPER INLETS	05/23/11	7	RELOCATED SCUPPER INLET ADDED/REVISED BARRIER WALL LABEL
08/11/10	5	REVISED PIER FOOTING, RELOCATED MANHOLE AND PIPES, AND REVISED PIPE LABELS	11/05/12	9	REVISED LOCATION OF S-341 & S-343 REDESIGN SMF-E-3, ADDED J&B AND BY OTHERS

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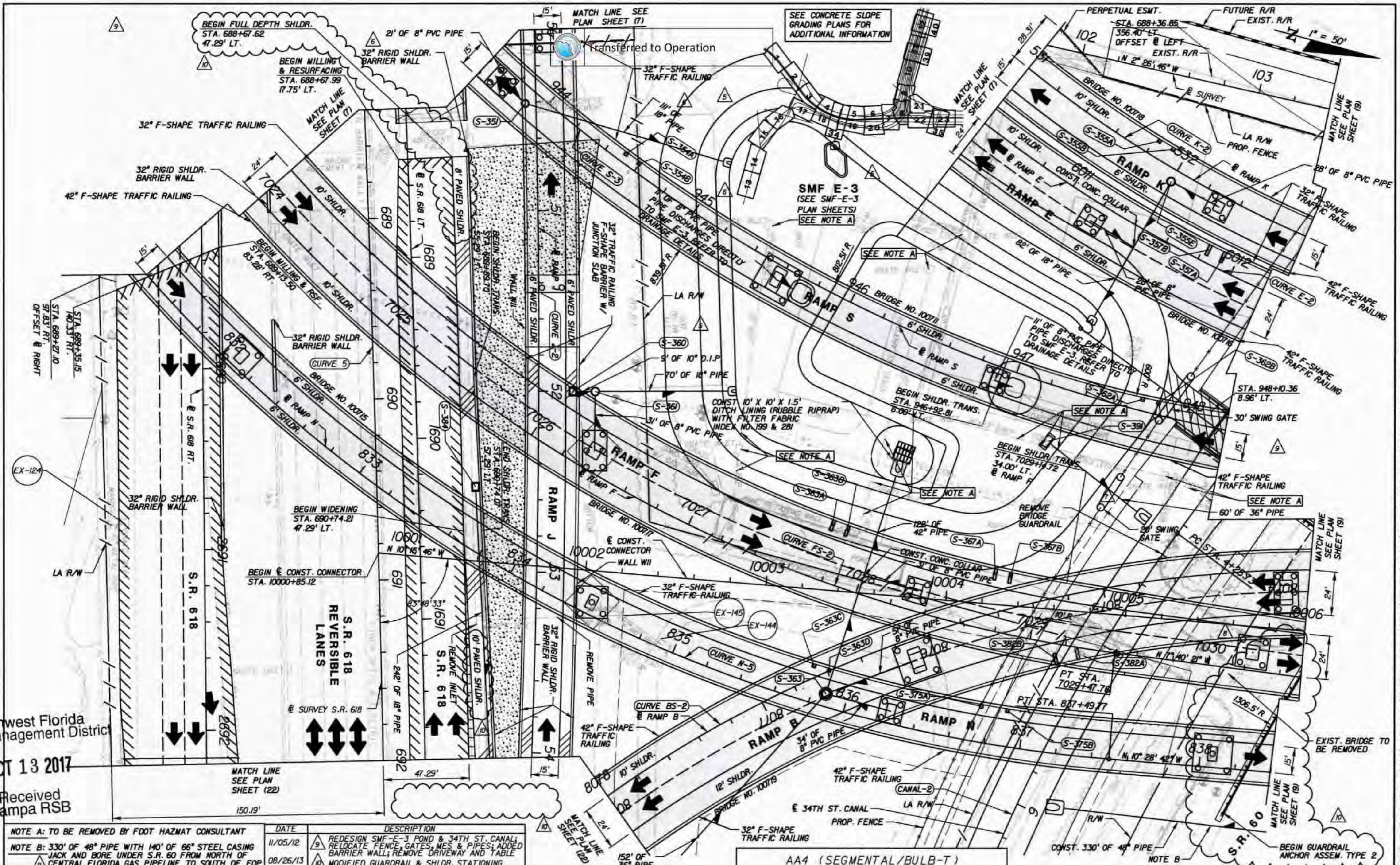
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (7)

SHEET NO.
145

USER: 16588 10/3/2013 10:00:00 AM K:\258415\520\AA4\roadway\PLANRD07_rev10.DGN



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NOTE A: TO BE REMOVED BY FDOT HAZMAT CONSULTANT

NOTE B: 330' OF 48" PIPE WITH 140' OF 66" STEEL CASING JACK AND BORE UNDER S.R. 60 FROM NORTH OF CENTRAL FLORIDA GAS PIPELINE TO SOUTH OF EOP

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 REVISED PIER FOUNDATIONS; RELOCATED MANHOLES S-351, S-361, PIPES, MES, AND SUMP; REVISED PIPE LENGTHS	05/23/11	7 ADDED FENCE LABEL ADDED/REVISED BARRIER WALL LABEL
12/09/10	6 REVISED PIER FOUNDATION; RELOCATED MANHOLE S-351, PIPES, AND MES; REVISED PIPE LENGTHS	01/27/12	8 DELETED PIPE AND MES
		11/05/12	9 REDESIGN SMF-E-3 POND & 34TH ST. CANAL; RELOCATE FENCE, GATES, MES & PIPES; ADDED BARRIER WALL; REMOVE DRIVEWAY AND TABLE
		08/26/13	10 MODIFIED GUARDRAIL & SHLDR. STATIONING

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (8)

SHEET NO. 146

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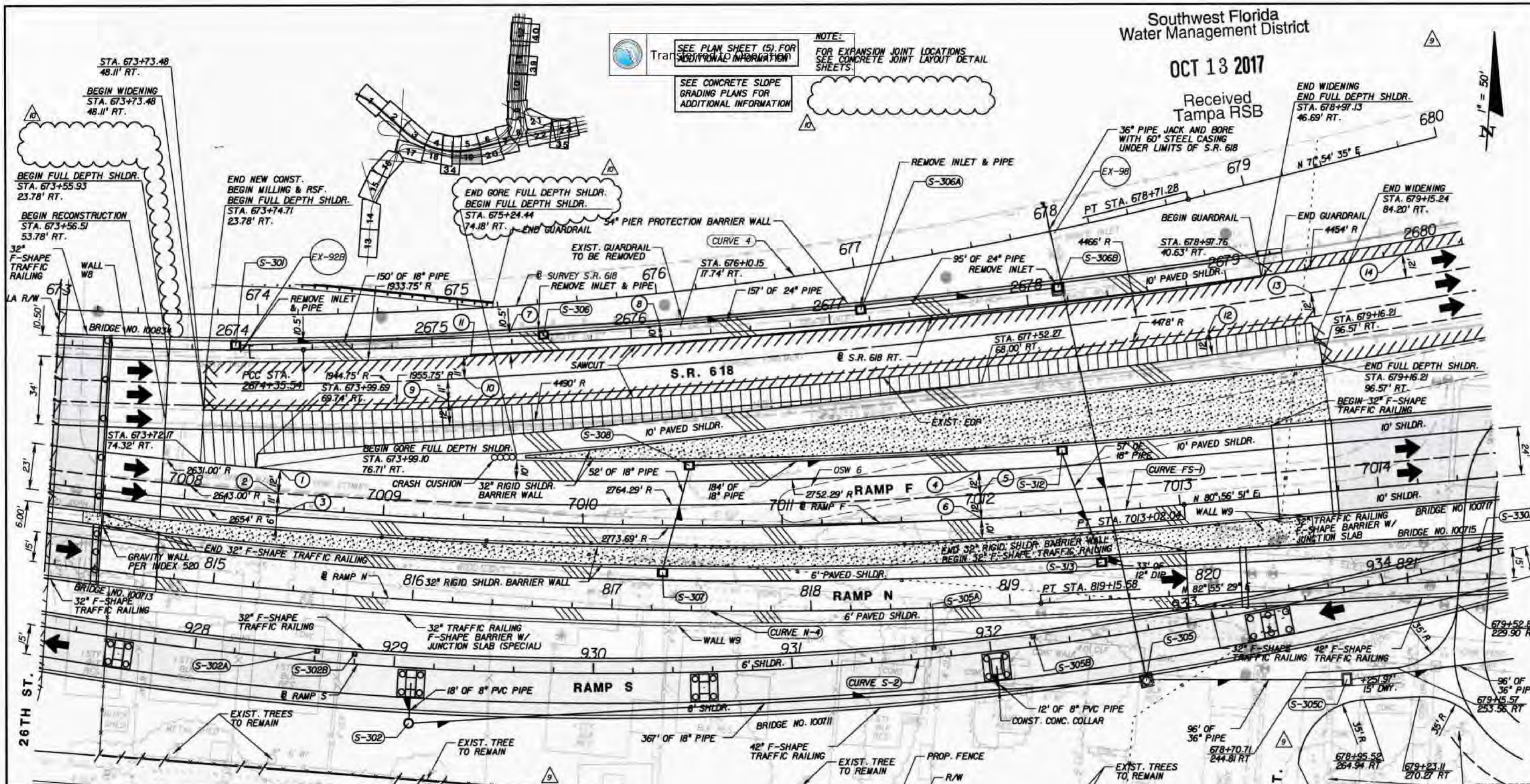

TRANSITION TABLE

NO.	TYPE	STATION	OFFSET	SIDE	NO.	TYPE	STATION	OFFSET	SIDE
1	BEGIN LANE TRANS.	7008+46.55	19.00'	LT.	8	END SHLDR. TRANS.	676+00.00	15.03'	RT.
2	BEGIN LANE TRANS.	7008+46.65	7.00'	LT.	9	BEGIN LANE TRANS.	674+93.18	45.79'	RT.
3	BEGIN SHLDR. TRANS. BEGIN LANE TRANS.	7008+46.71	4.00'	RT.	10	BEGIN LANE TRANS.	675+01.52	34.79'	RT.
4	END LANE TRANS.	7012+00.00	24.00'	LT.	11	BEGIN LANE TRANS.	675+05.17	23.79'	RT.
5	END LANE TRANS.	7012+00.07	12.00'	LT.	12	END LANE TRANS.	678+65.06	66.80'	RT.
6	END LANE TRANS. END SHLDR. TRANS.	7012+00.00	0.00'	RT.	13	END LANE TRANS.	679+19.47	60.50'	RT.
7	BEGIN SHLDR. TRANS.	675+25.00	13.33'	RT.	14	END LANE TRANS.	679+68.73	52.97'	RT.

REVISIONS

DATE		DESCRIPTION	DATE		DESCRIPTION
04/30/10	4	REVISED PIPE LENGTH; REMOVED UNNECESSARY CONC. COLLAR LABEL; ADDED FENCE LABEL	11/05/12	9	ADDED S-305C; REVISED LANE AND SHOULDER WIDTH CONFIGURATION; REVISED S-306, S-306A, S-306B, S-308 & S-312 LOCATIONS; REVISED PIPE LENGTHS
05/23/11	7	ADDED/REVISED BARRIER WALL LABEL	08/26/13	10	REMOVED BARRIER LABEL, REV. SHLDR. LABEL

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (19)

SHEET NO. 157

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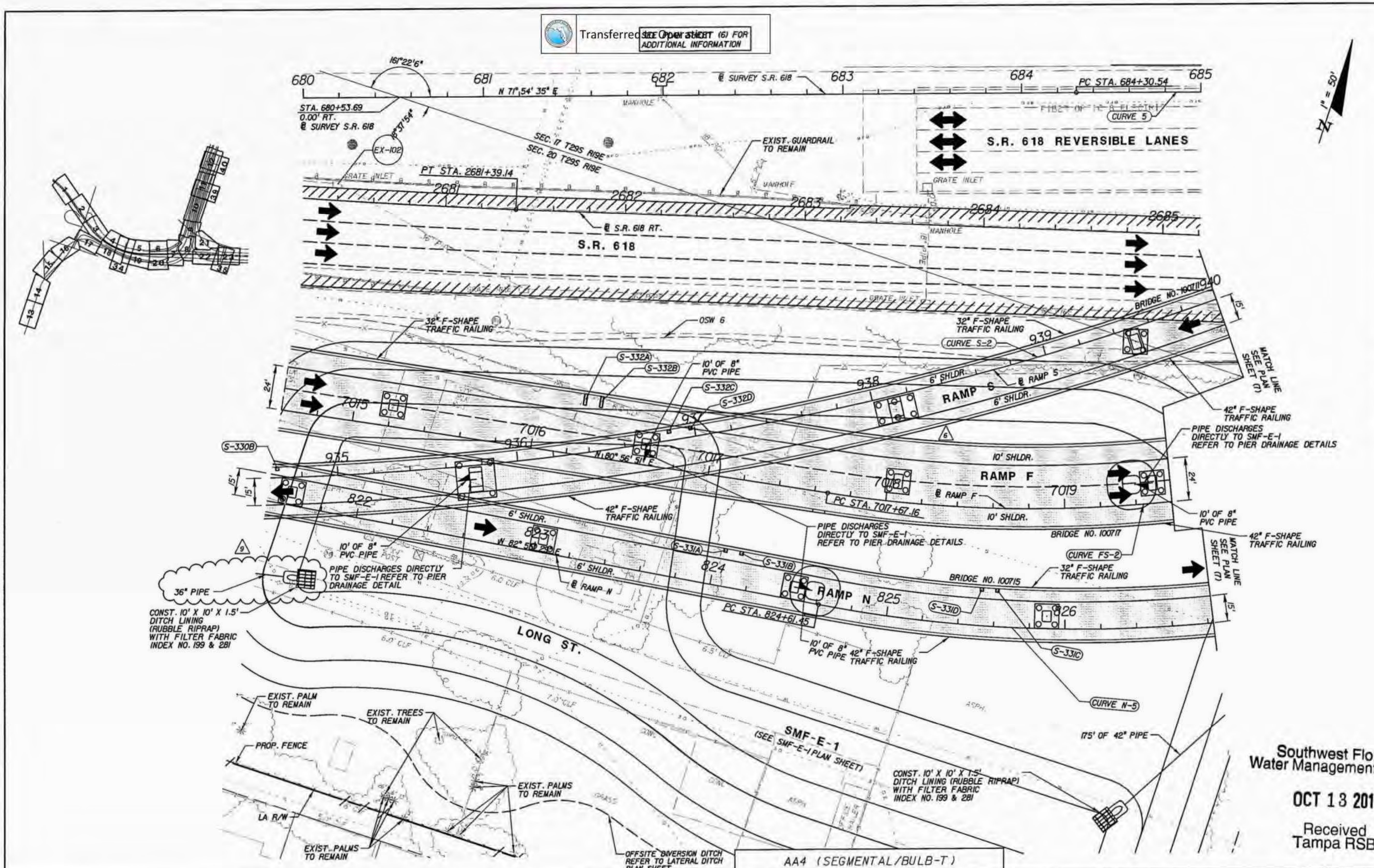

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/09/10	6 REVISED PIER FOUNDATION AND DELETED MES, PIPE, AND SUMP		
05/23/11	7 ADDED/REVISED BARRIER WALL LABEL		
11/05/12	9 REVISED MES AND PIPE ANGLE		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (20)

SHEET NO. 158

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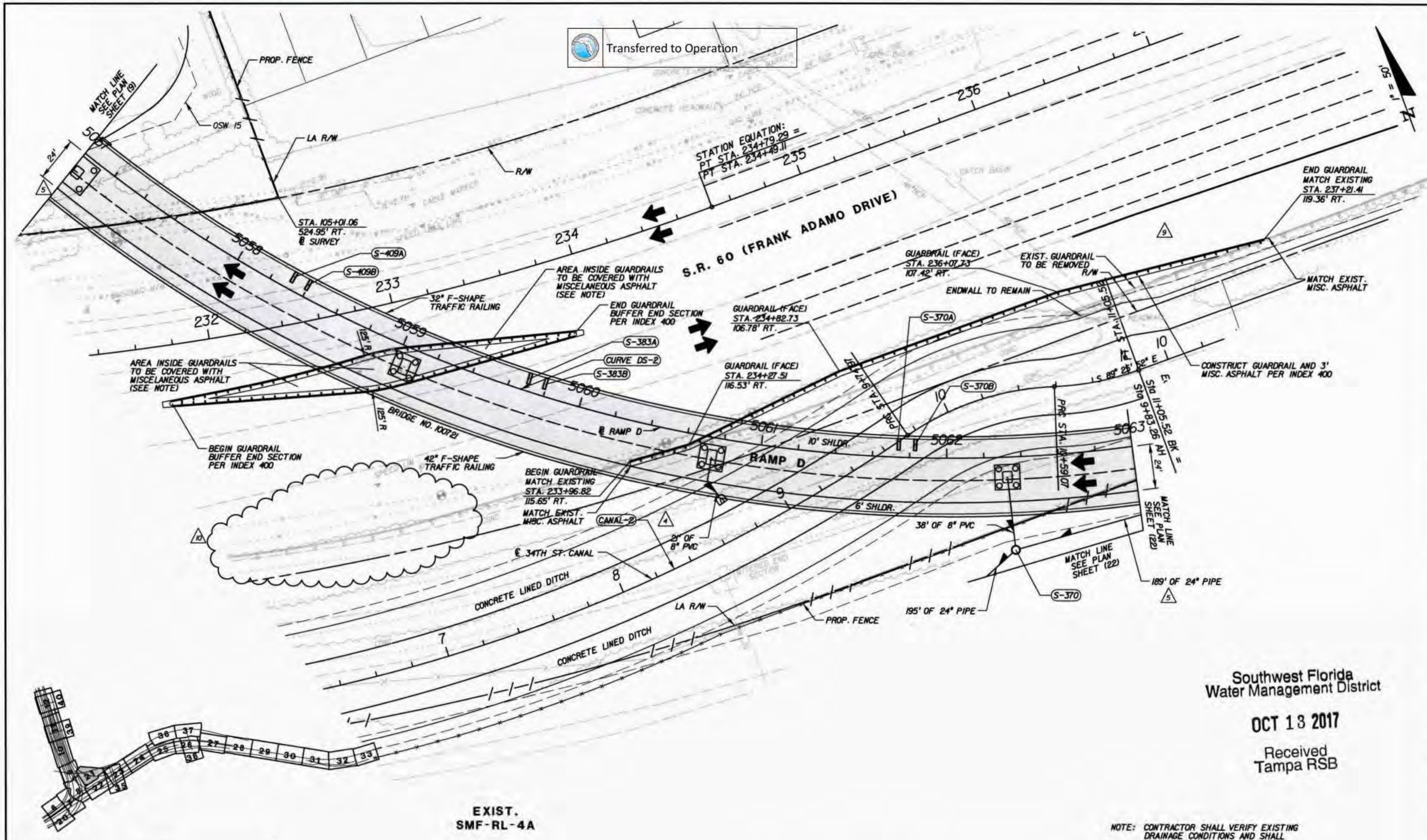

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NOTE: CONTRACTOR SHALL VERIFY EXISTING DRAINAGE CONDITIONS AND SHALL PROVIDE POSITIVE DRAINAGE FOR THE PROPOSED MISCELLANEOUS ASPHALT AREA.

DATE	DESCRIPTION
08/26/13	10 MODIFIED GUARDRAIL

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 REVISED PIPE LENGTH	05/23/11	7 ADDED/REVISED BARRIER WALL LABEL
08/11/10	5 REVISED FOUNDATION 16-6	11/05/12	9 REALIGN 34TH STREET CANAL; RELOCATE MES & PIPE AND GUARDRAIL
08/11/10	5 REVISED PIPE LENGTH		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (21)

SHEET NO.
159

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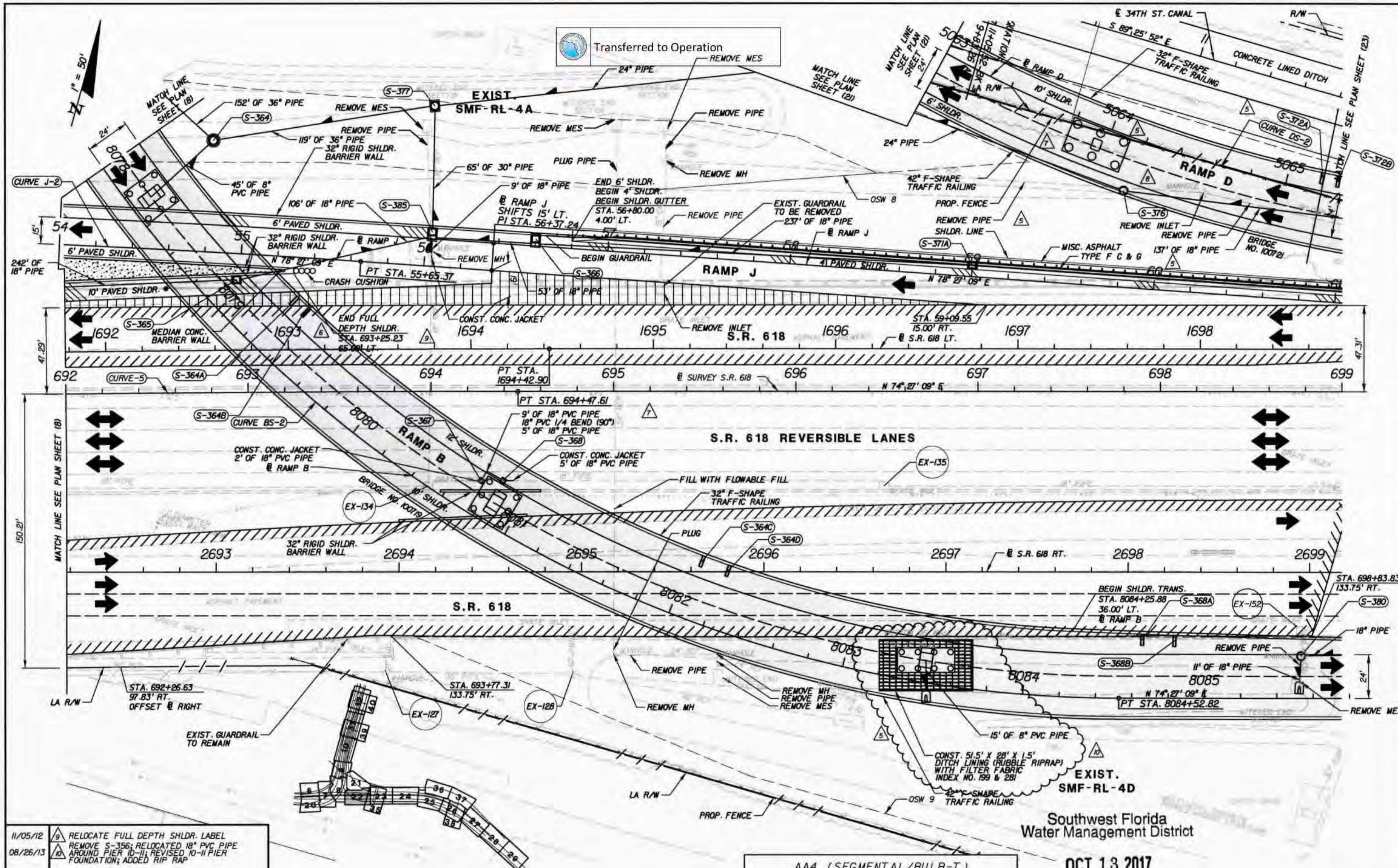

DATE		DESCRIPTION
11/05/12	9	RELOCATE FULL DEPTH SHLDR. LABEL
08/26/13	10	REMOVE S-356; RELOCATED 18" PVC PIPE AROUND PIER 10-11; REVISED 10-11 PIER FOUNDATION; ADDED RIP RAP

REVISIONS

DATE		DESCRIPTION	DATE		DESCRIPTION
08/11/10	5	REVISED PIER FOUNDATION 16-10; ADDED MANHOLES S-356, S-376; RELOCATED MANHOLE S-372 AND PIPES; REVISED PIPE LENGTHS	5/23/11	7	RELOCATED 18" PVC PIPE AROUND PIER 10-10 AND ADDED DRAIN. STRUCTURES; REVISED 16-10 PIER FOUNDATION
12/09/10	6	RELOCATED SCUPPER INLETS S-364A, S-364B			ADDED/REVISED BARRIER WALL LABEL
			01/27/12	8	DELETED MANHOLE AND PIPES

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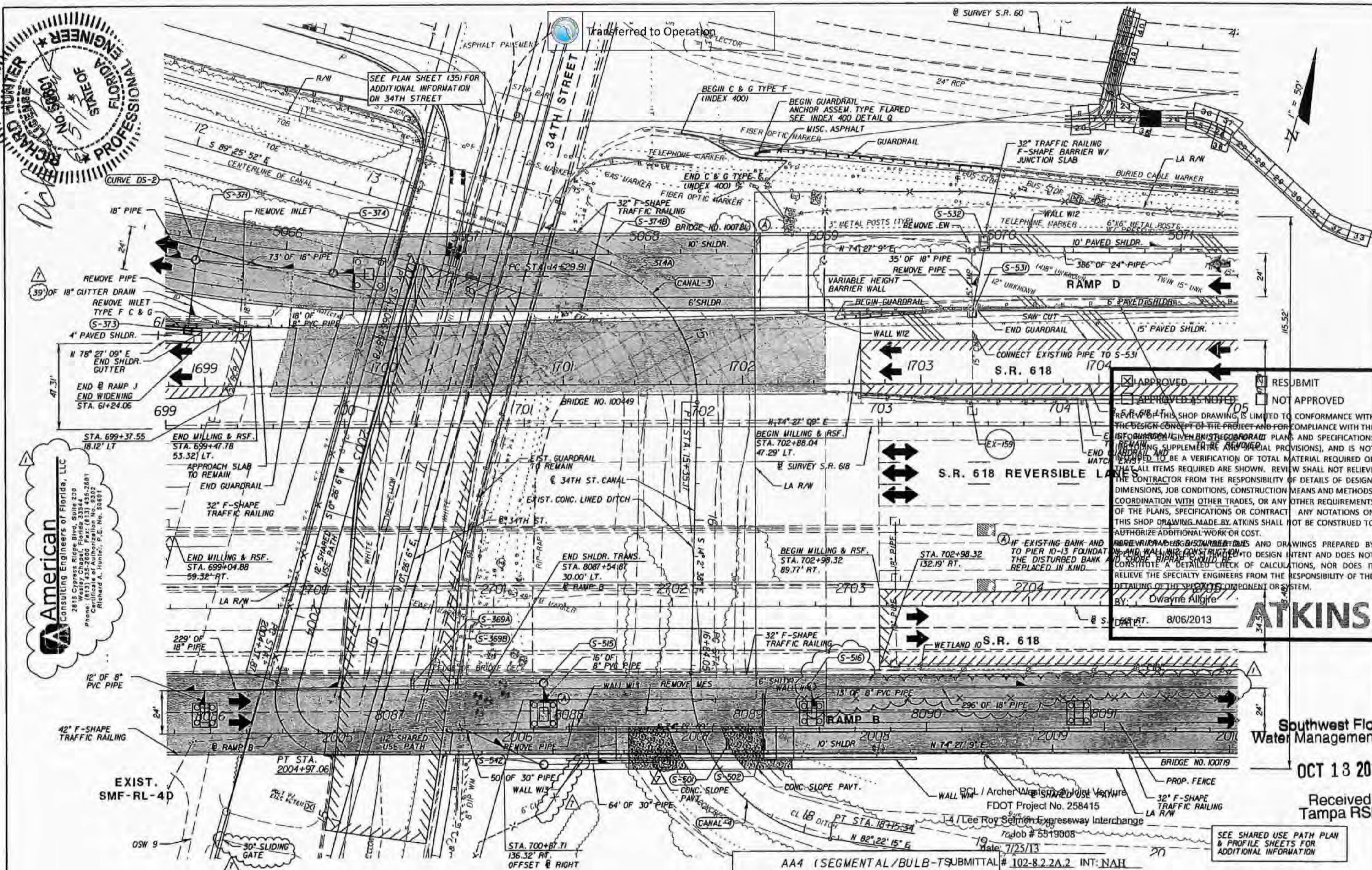
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (22)

SHEET NO. 160



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☐ APPROVED AS NOTED
☒ RESUBMIT
☐ NOT APPROVED

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REVIEW OF SPECIALTY ENGINEERING CALCULATIONS AND DRAWINGS PREPARED BY THE SPECIALTY ENGINEER IS LIMITED TO DESIGN INTENT AND DOES NOT CONSTITUTE A DETAILED CHECK OF CALCULATIONS, NOR DOES IT RELIEVE THE SPECIALTY ENGINEERS FROM THE RESPONSIBILITY OF THE DETAILING OF THE SPECIALTY COMPONENT OR SYSTEM.

BY: Dwayne Allgire

DATE: 8/06/2013

ATKINS

Southwest Florida Water Management District

OCT 13 2017

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PCL / Archer Western Joint Venture
FDOT Project No. 258415
I-4 / Lee Roy Selmon Expressway Interchange
Job # 5519008
Date: 7/25/13

AA4 (SEGMENTAL/BULB-T) SUBMITTAL # 102-8.2.2A.2 INT: NAH

APPROVED FOR SUBMISSION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 REVISED FOUNDATION 16-11	5/31/13	1 REVISED SHARED USED PATH PROFILE REVISED CONVEYANCE SYSTEM
05/23/11	7 REVISED GUTTER DRAIN LENGTH AND MES LOCATION; ADDED FENCE LABEL; ADDED/REVISED BARRIER WALL LABEL		

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (23)

SHEET NO. 161

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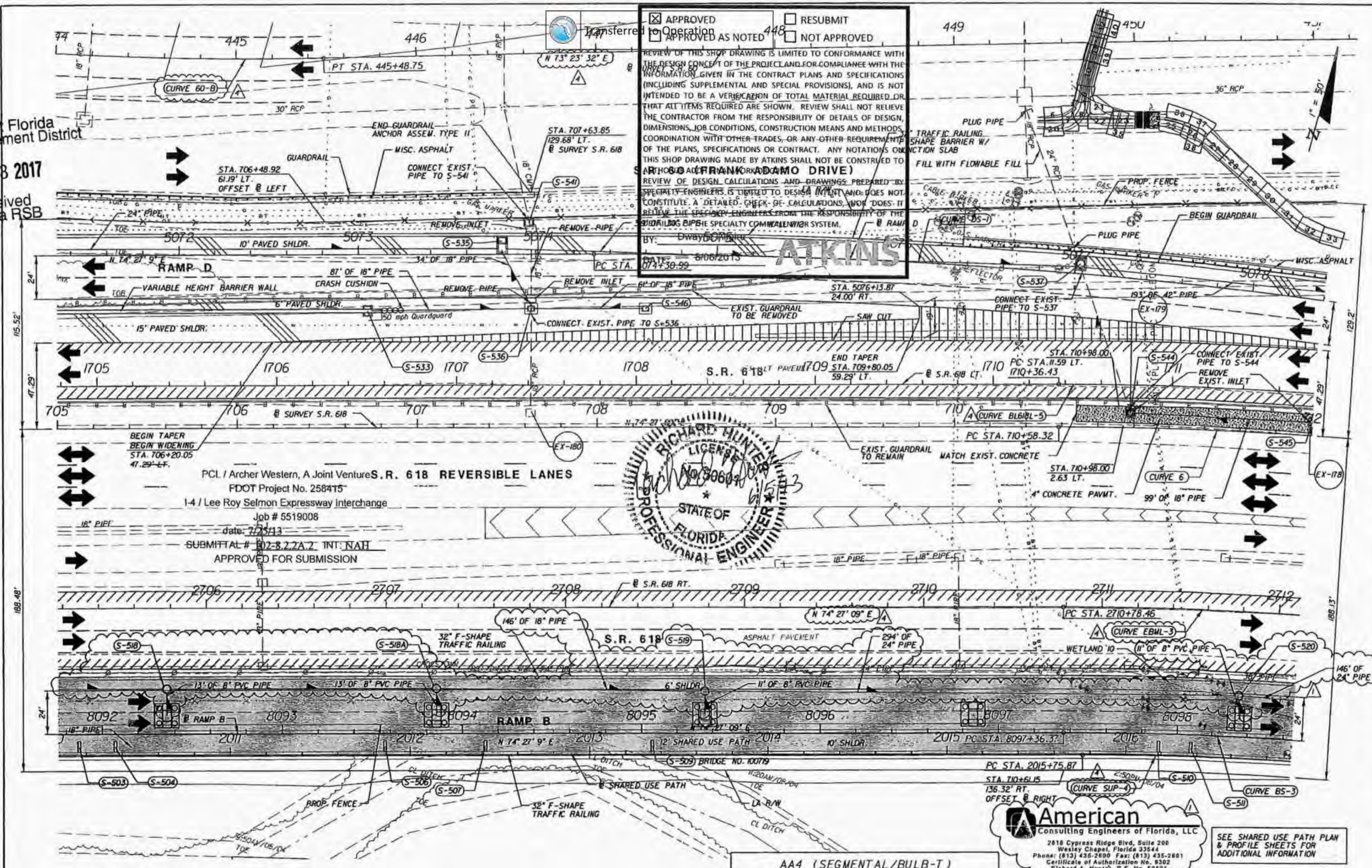
USER: 5garwor 6/4/2013 8:57:19 AM F:\PROJECT\5107577\CADD\struct\079-Raising SUP along Ramp B\roadway\PLANRD23_Rev_Amer.DX

102-8.2.2A.2

07/25/2013



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BY: Dwayne
DATE: 8/06/2013
ATKINS

PCL / Archer Western, A Joint Venture
FDOT Project No. 258415
I-4 / Lee Roy Selmon Expressway Interchange
Job # 5519008
date: 7/25/13
SUBMITTAL # 102-8.2.2A.2 INT: NAH
APPROVED FOR SUBMISSION

RICHARD HUNTER LICENSE No. 50601 STATE OF FLORIDA PROFESSIONAL ENGINEER

American Consulting Engineers of Florida, LLC
2818 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Certificate of Authorization No. 9302
Richard A. Hunter, P.E. No. 50601

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	4 ADDED BEARINGS AND LABELS	5/31/13	1 REVISED SHARED USED PATH PROFILE REVISED CONVEYANCE SYSTEM
05/23/11	7 ADDED/REVISED BARRIER WALL LABEL		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (24)

SHEET NO. 162

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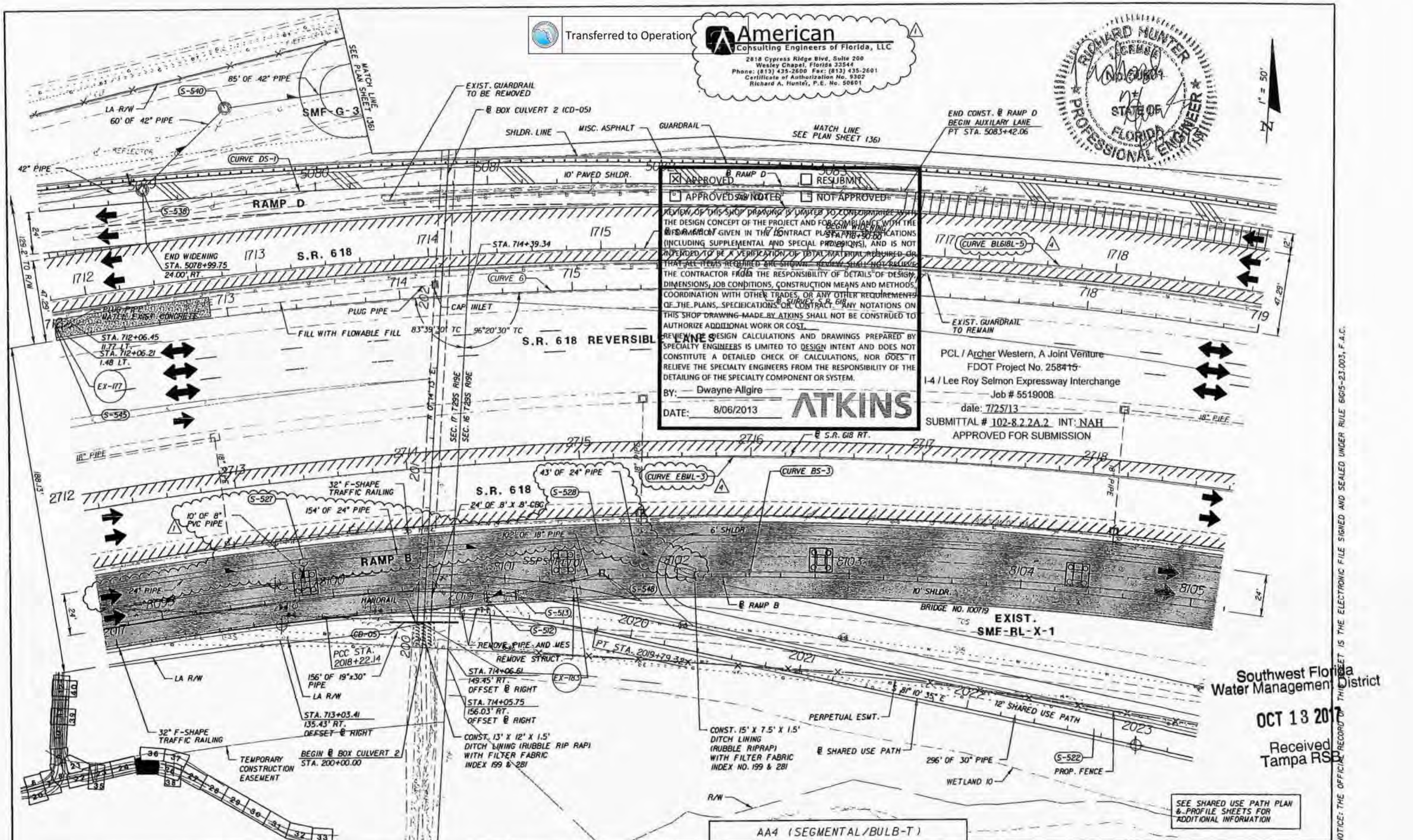
USER: Sgerwer 6/4/2013 8:35:05 AM F:\PROJECT\5107577\CADD\struct\079-Raising SUP along Ramp B\roadway\PLANRD24_Rev_Amer.DX

102-8.2.2A.2
07/25/2013



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BY: Dwayne Allgire

DATE: 8/06/2013

ATKINS

PCL / Archer Western, A Joint Venture
FDOT Project No. 258415
I-4 / Lee Roy Selmon Expressway Interchange
Job # 5519008
date: 7/25/13
SUBMITTAL # 102-8.2.2A.2 INT: NAH
APPROVED FOR SUBMISSION

SEE SHARED USE PATH PLAN & PROFILE SHEETS FOR ADDITIONAL INFORMATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 ADDED CURVE NAME LABELS		
5/31/13	1 REVISED SHARED USED PATH PROFILE REVISED CONVEYANCE SYSTEM		

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (25)

SHEET NO. 163

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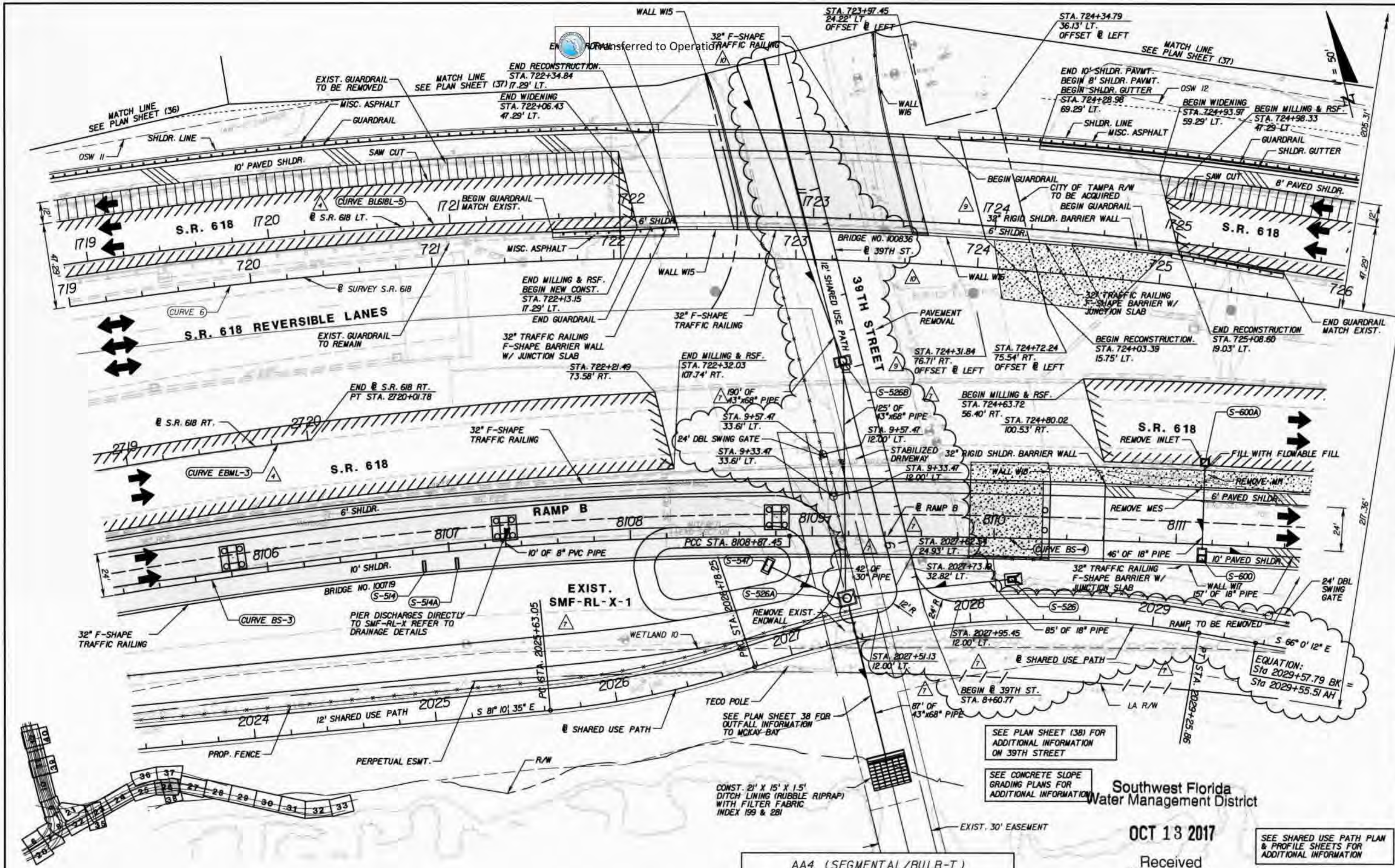

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 ADDED CURVE LABELS	11/05/12	9 ADDED S-526B, ADDED RIGID SHOULDER BARRIER WALL AND REVISED GUARDRAIL ALONG WB SR 618 BEFORE BRIDGE
05/23/11	7 REVISED SHARED USE PATH/ STABILIZED BERM ALIGNMENT. RELOCATED DRAINAGE STRUCTURES AND FENCE; REVISED PIPE LENGTHS; ADDED FENCE LABEL	08/26/13	10 39TH ST. SHARED USE PATH EXTENSION

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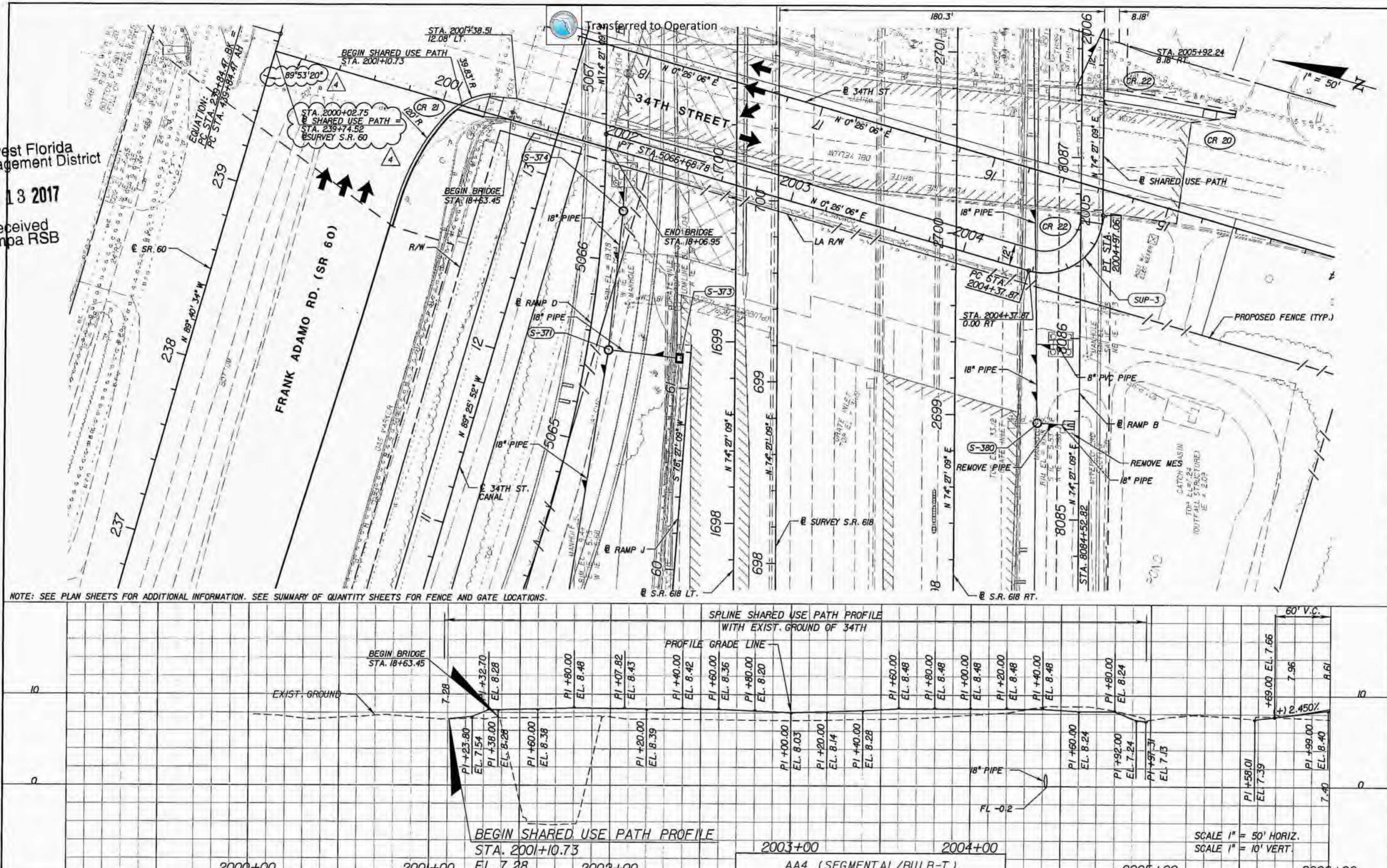
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

ROADWAY PLAN SHEET (26)

SHEET NO. 164

USER: I6588 10/3/2013 10:00:49 AM K:\258415\520\AA4\roadway\PLANRD26_REV10.DGN



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 ADDED STATIONING AND GEOMETRY LABELS.		

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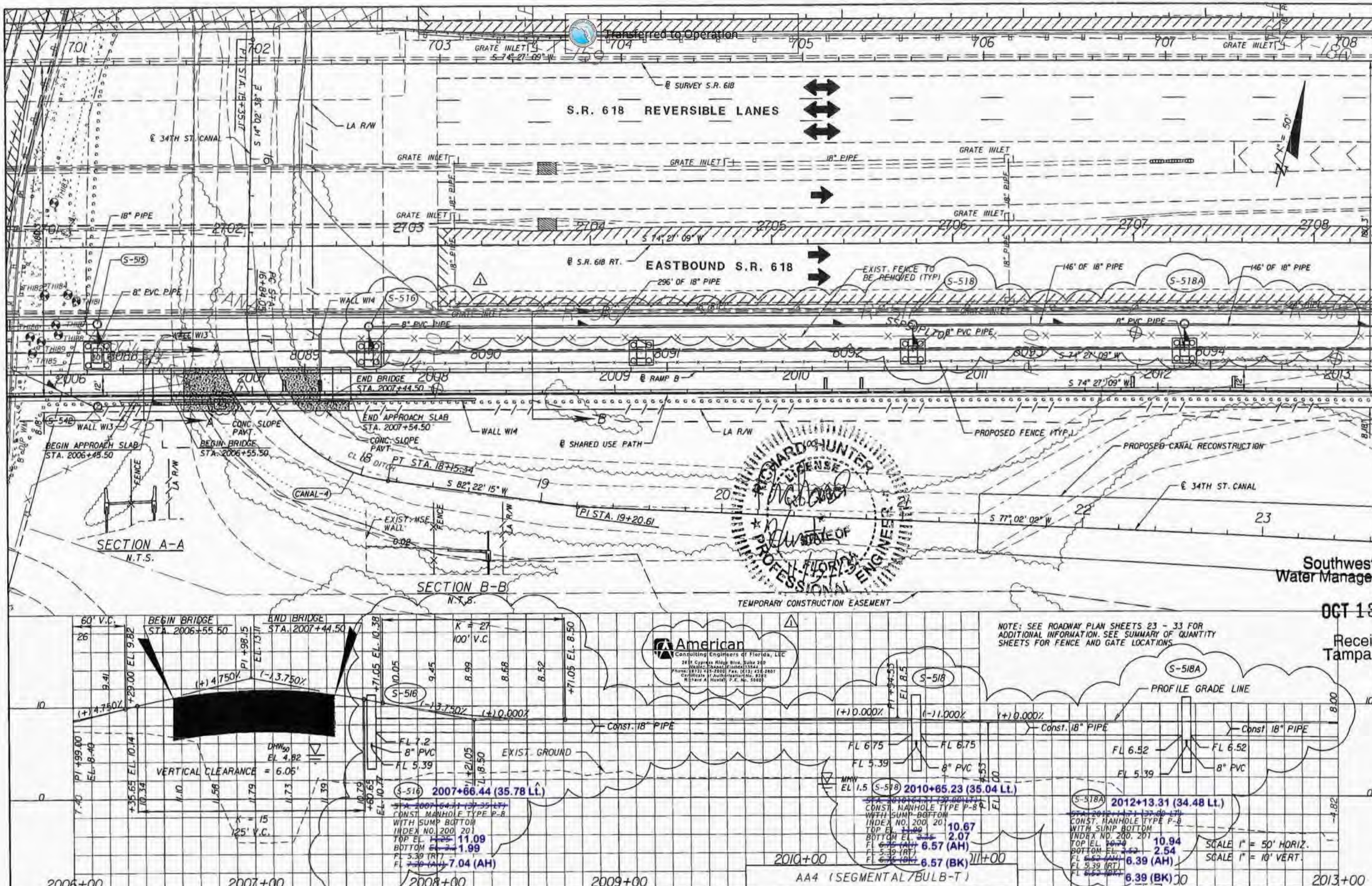
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

SHARED USE PATH PLAN AND PROFILE (1)

SHEET NO. 179

USER: 21871 5/19/2010 3:32:15 PM K:\2584151520\AA4\roadway\PLPRRD_SUP01_REV4.DGN

I-4 / Lee Roy Selmon Expressway Interchange
PCL / Archer Western, A Joint Venture
FDOT Project No. 258415
Job # 5519008
date: 11/6/13
SUBMITTAL #120-8.2.2A $\#$ GH
APPROVED FOR SUBMISSION



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American Consulting Engineers of Florida, LLC

RICHARD HUNTER LICENSE STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
10/16/12	REVISED SHARED USE PATH PROFILE REVISED CONVEYANCE SYSTEM		

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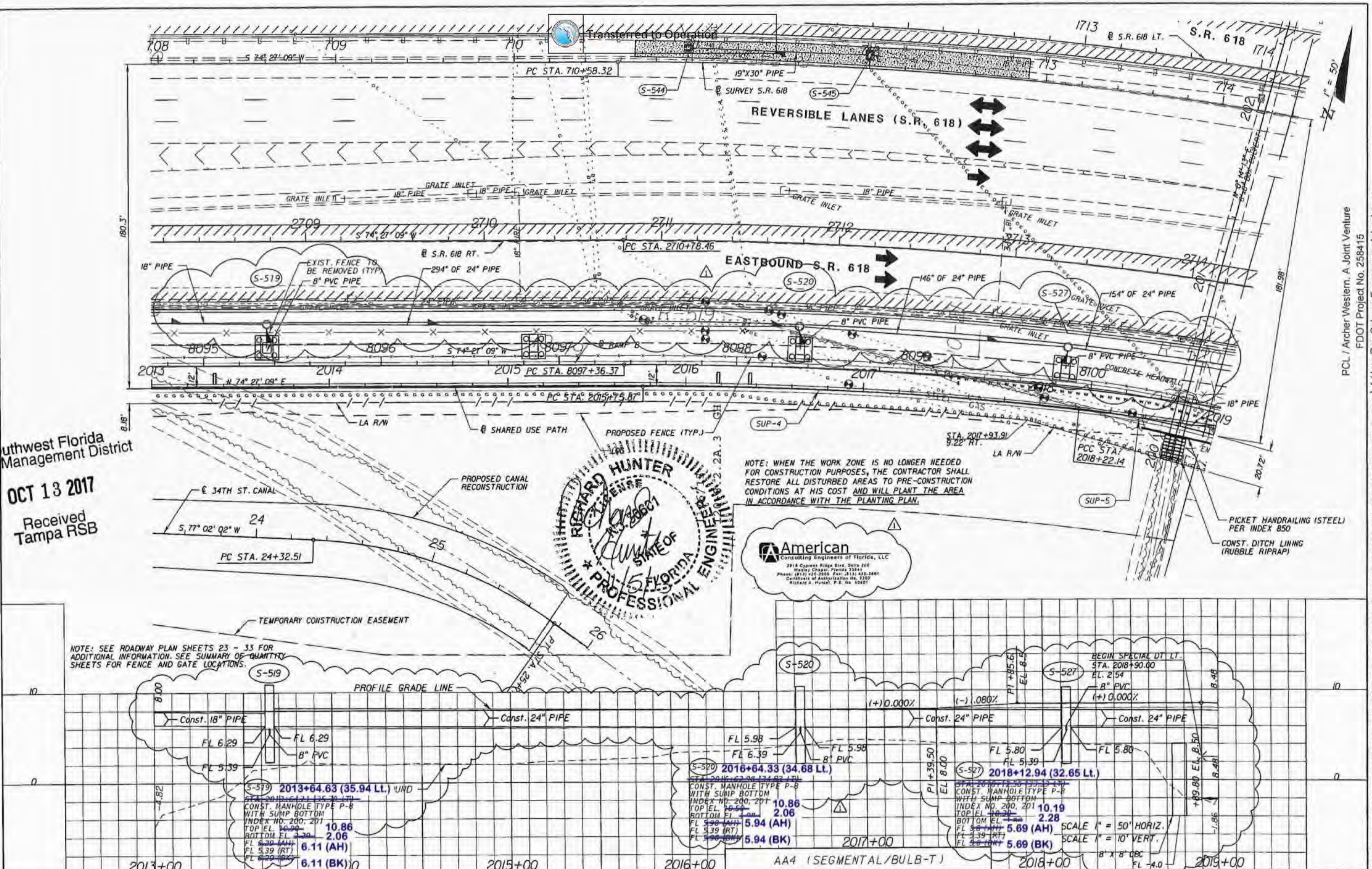
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

SHARED USE PATH
PLAN AND PROFILE (2)

SHEET NO. 180

USER: Sgarwar 11/5/2013 3:24:29 PM



PCL / Archer Western, A Joint Venture
FDOT Project No. 258415
6G15-L4 Lee Roy Selmon Expressway Interchange
Job # 5519008
date: 11/6/13
SUBMITTAL # 20-R 2 2A INT. GH
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
10/16/12	REVISED SHARED USE PATH PROFILE; REVISED CONVEYANCE SYSTEM		

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

SHARED USE PATH PLAN AND PROFILE (3)

SHEET NO. 181

USER: 5garwor 11/5/2013 3:30:53 PM F:\PROJECT\5017377\CADD\struct\079-Rotating SUP along Ramp B\roadway\PLPRHD_SUP03.DGN

☒ APPROVED ☐ RESUBMIT 5082
☐ APPROVED AS NOTED ☐ NOT APPROVED

REVIEW OF THIS SHOP DRAWING IS LIMITED TO CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND FOR COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT PLANS AND SPECIFICATIONS (INCLUDING SUPPLEMENTAL AND SPECIAL PROVISIONS) AND IS NOT INTENDED TO BE A VERIFICATION OF TOTAL MATERIAL REQUIRED OR THAT ALL ITEMS REQUIRED ARE SHOWN. REVIEW SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF DETAILS OF DESIGN, DIMENSIONS, JOB CONDITIONS, CONSTRUCTION MEANS AND METHODS, COORDINATION WITH OTHER TRADES, OR ANY OTHER REQUIREMENTS OF THE PLANS, SPECIFICATIONS OR CONTRACT. ANY NOTATIONS ON THIS SHOP DRAWING MADE BY ATKINS SHALL NOT BE CONSTRUED TO AUTHORIZE ADDITIONAL WORK OR COST.
REVIEW OF DESIGN CALCULATIONS AND DRAWINGS PREPARED BY SPECIALTY ENGINEERS IS LIMITED TO DESIGN INTENT AND DOES NOT CONSTITUTE A DETAILED CHECK OF CALCULATIONS, NOR DOES IT RELIEVE THE SPECIALTY ENGINEERS FROM THE RESPONSIBILITY OF THE DETAILING OF THE SPECIALTY COMPONENT OR SYSTEM.

BY: Dwayne Allgire
DATE: 8/06/2013
ATKINS

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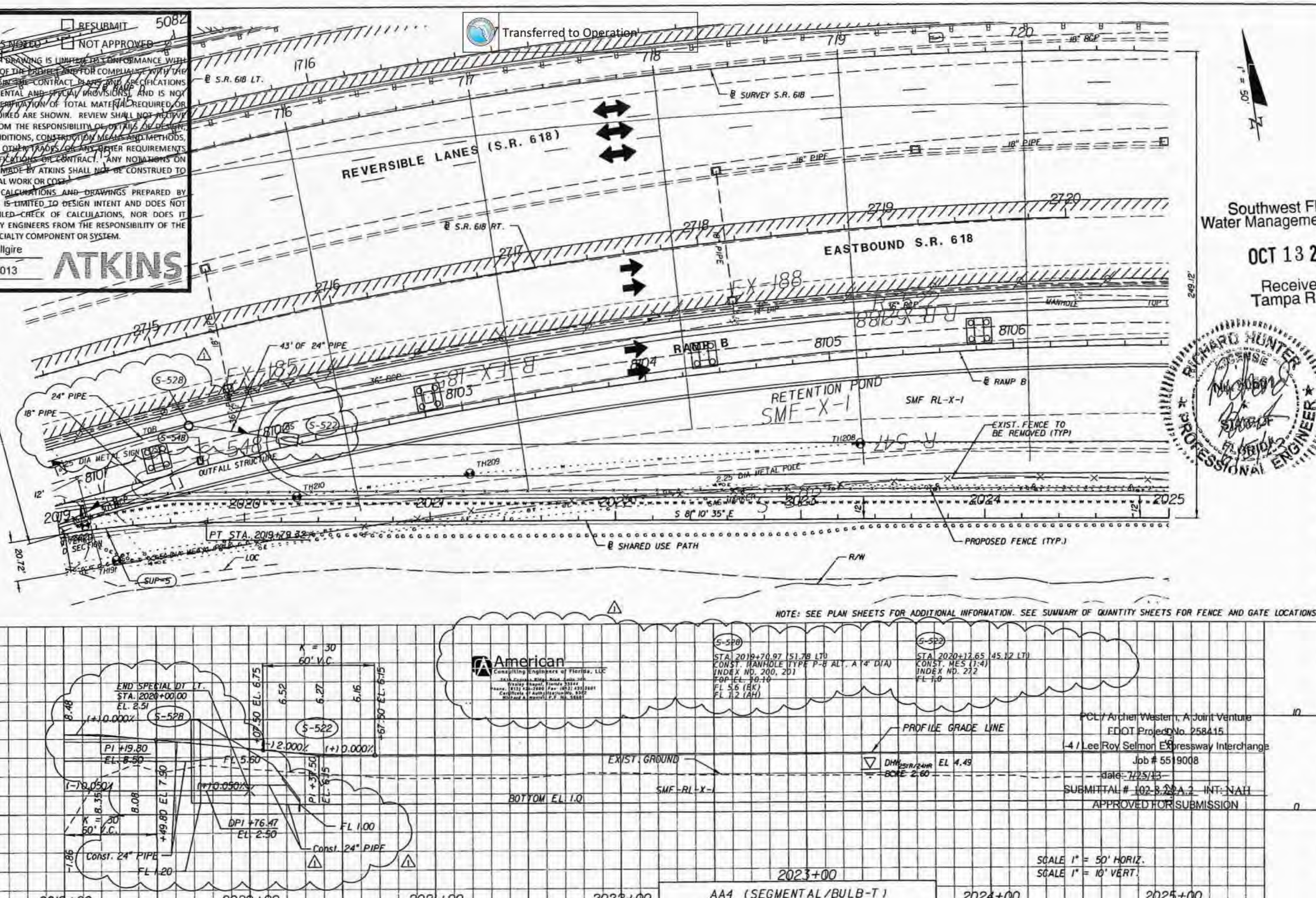

NOTE: SEE PLAN SHEETS FOR ADDITIONAL INFORMATION. SEE SUMMARY OF QUANTITY SHEETS FOR FENCE AND GATE LOCATIONS.

American Consulting Engineers of Florida, LLC

PCL / Archer Western, A Joint Venture
FDOT Project No. 258415
-4 / Lee Roy Selmon Expressway Interchange
Job # 5519008
date: 7/25/13
SUBMITTAL # 102-8.2.2A.2 INT: NAH
APPROVED FOR SUBMISSION

SCALE 1" = 50' HORIZ.
SCALE 1" = 10' VERT.

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
10/16/12	△ REVISED SHARED USE PATH PROFILE REVISED CONVEYANCE SYSTEM		

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Joseph R. Garrity, P.E. #41909

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

SHARED USE PATH
PLAN AND PROFILE (4)

SHEET NO. 182

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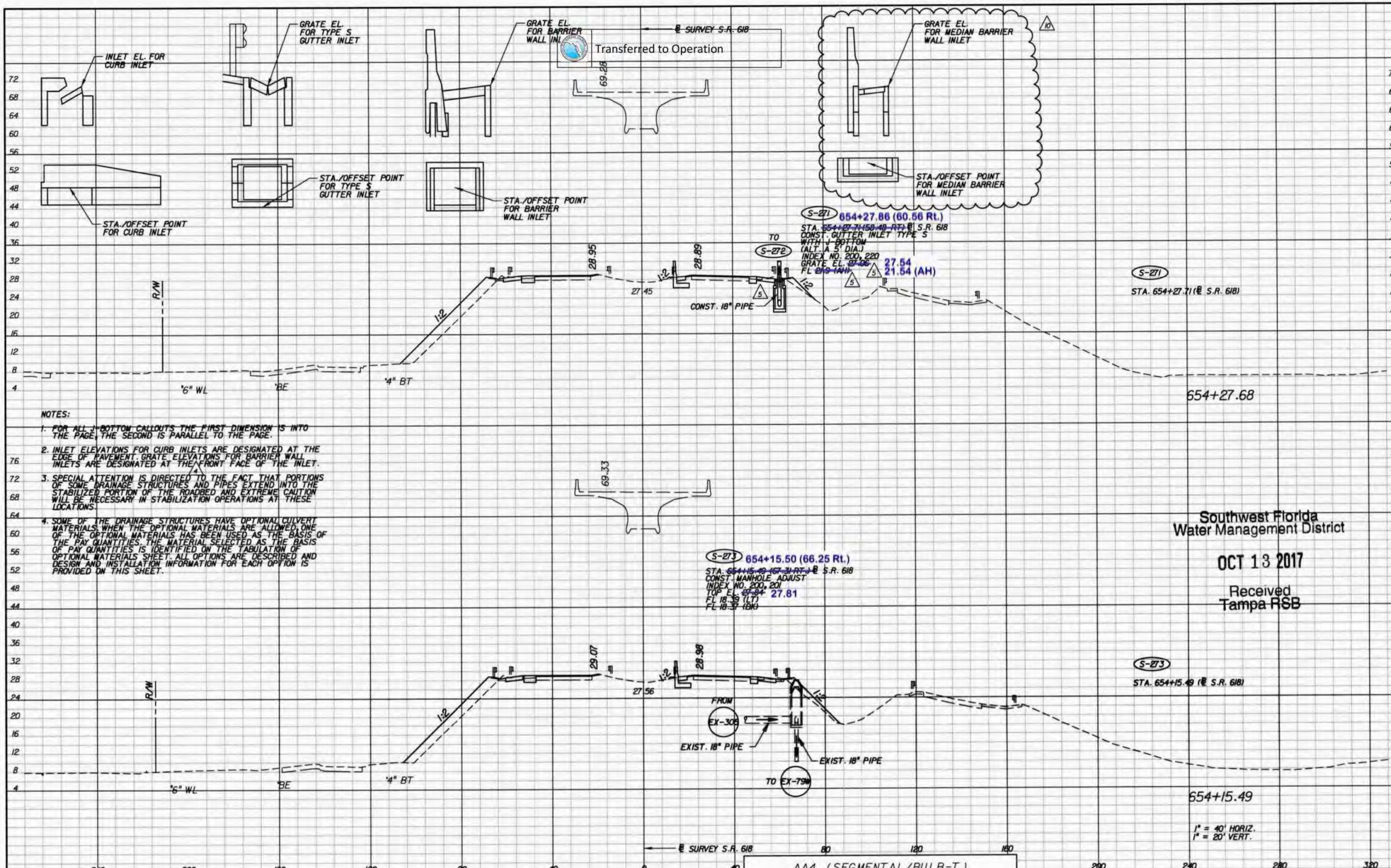
RICHARD HUNTER, LICENSE No. 56067, STATE OF FLORIDA, PROFESSIONAL ENGINEER

USER: Sgarwar 6/4/2013 8:36:28 AM F:\PROJECT\S07577\CADD\struct\079-Raising SUP along Ramp B\roadway\PLPRRD_SUP04.DGN



NOTES:

1. FOR ALL J-BOTTOM CALLOUTS THE FIRST DIMENSION IS INTO THE PAGE, THE SECOND IS PARALLEL TO THE PAGE.
2. INLET ELEVATIONS FOR CURB INLETS ARE DESIGNATED AT THE EDGE OF PAVEMENT. GRATE ELEVATIONS FOR BARRIER WALL INLETS ARE DESIGNATED AT THE FRONT FACE OF THE INLET.
3. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES AND PIPES EXTEND INTO THE STABILIZED PORTION OF THE ROADBED AND EXTREME CAUTION WILL BE NECESSARY IN STABILIZATION OPERATIONS AT THESE LOCATIONS.
4. SOME OF THE DRAINAGE STRUCTURES HAVE OPTIONAL CULVERT MATERIALS. WHEN THE OPTIONAL MATERIALS ARE ALLOWED, ONE OF THE OPTIONAL MATERIALS HAS BEEN USED AS THE BASIS OF THE PAY QUANTITIES. THE MATERIAL SELECTED AS THE BASIS OF PAY QUANTITIES IS IDENTIFIED ON THE TABULATION OF OPTIONAL MATERIALS SHEET. ALL OPTIONS ARE DESCRIBED AND DESIGN AND INSTALLATION INFORMATION FOR EACH OPTION IS PROVIDED ON THIS SHEET.

AA4 (SEGMENTAL/BULB-T)

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 REVISED NOTE		
08/11/10	5 REVISED INLET ELEVATION AND PIPE DIRECTION		
08/26/13	10 ADDED DETAIL		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (1)

SHEET NO. 328

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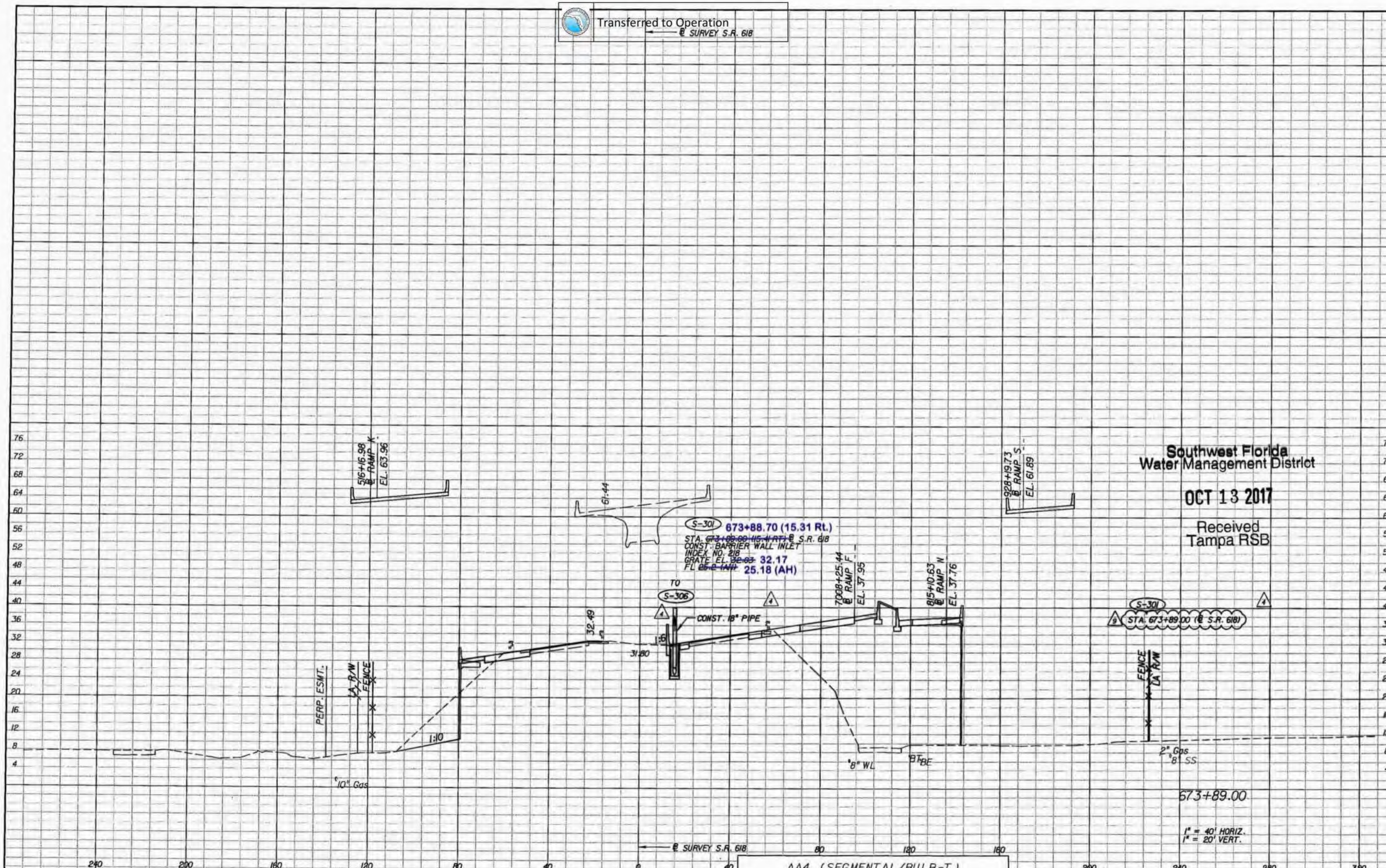

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
03/15/10	4 CORRECTED PIPE SIZE & ℄ LABEL		
11/05/12	9 CORRECTED STA. LABEL		

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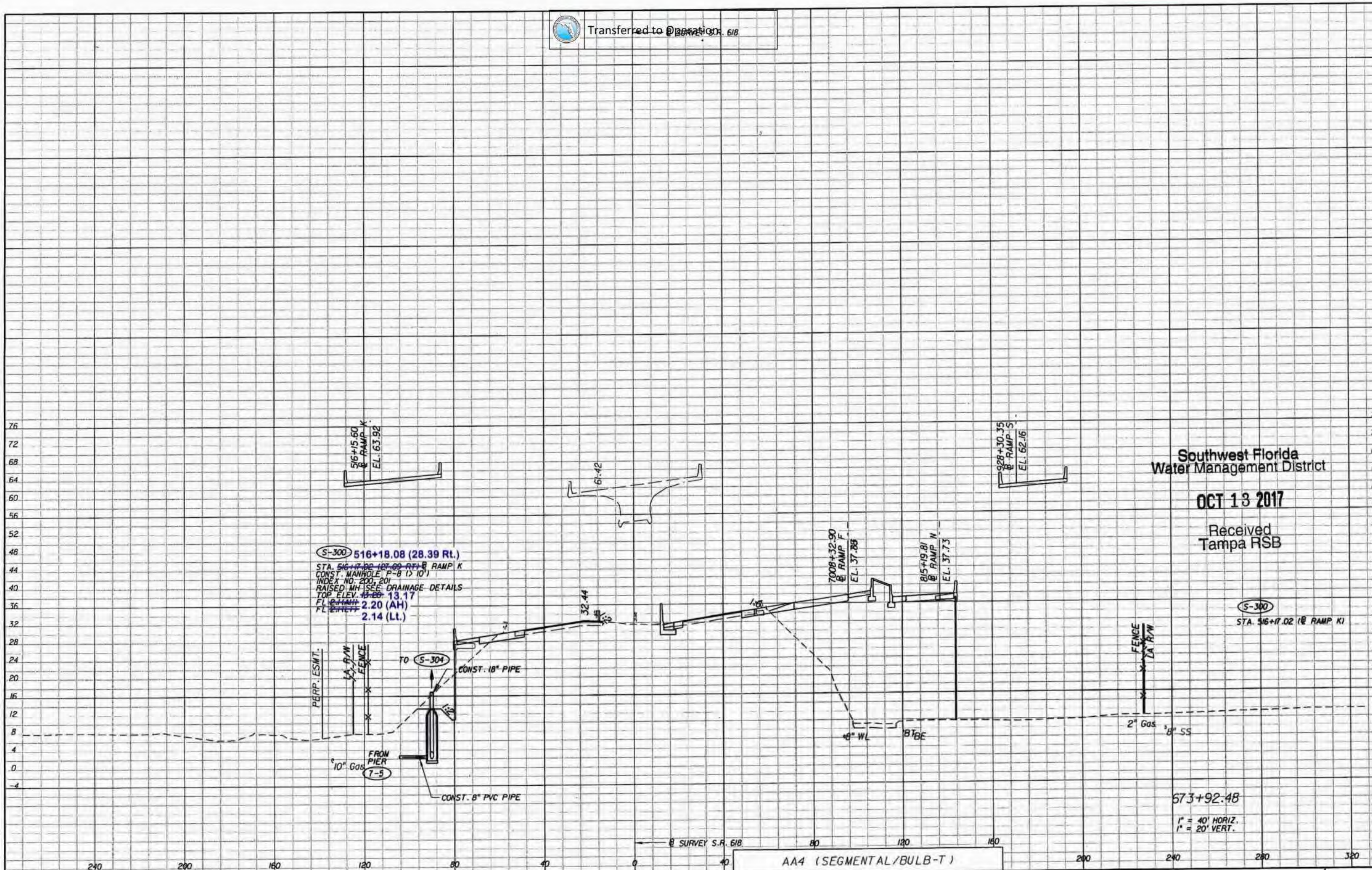
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (38)

SHEET NO. 365



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (39)

SHEET NO. 366

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REVISIONS			
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (40)

SHEET NO. 367

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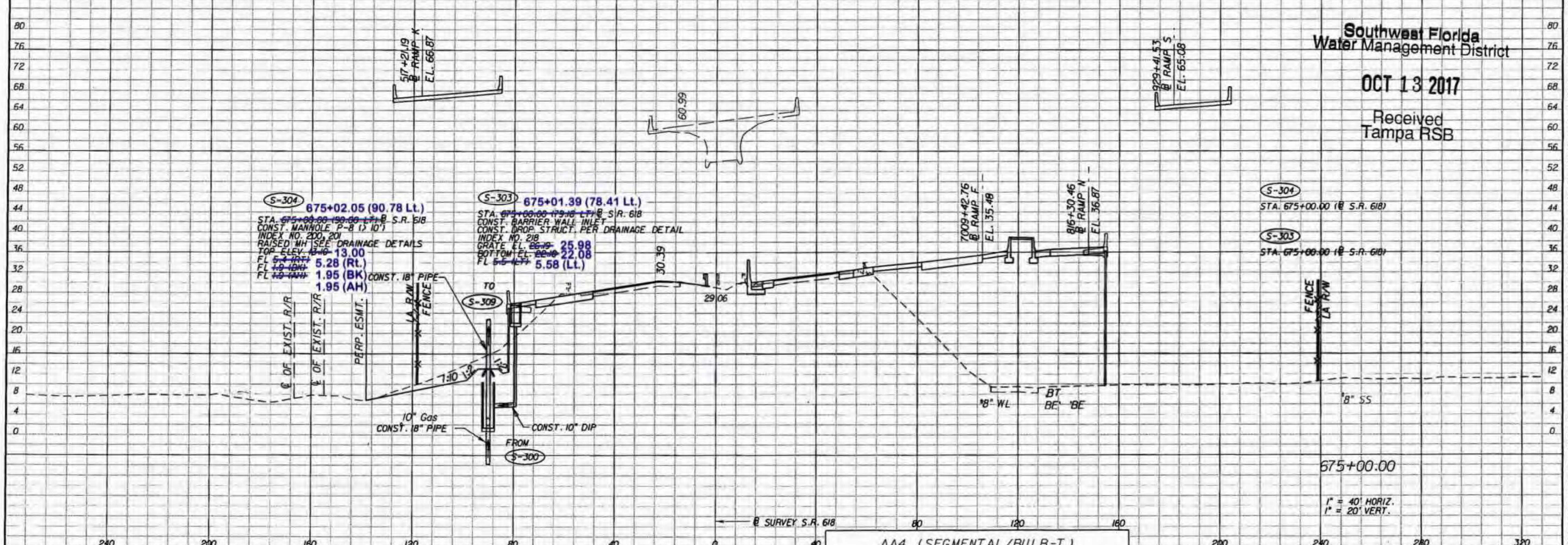

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (41)

SHEET NO.
368

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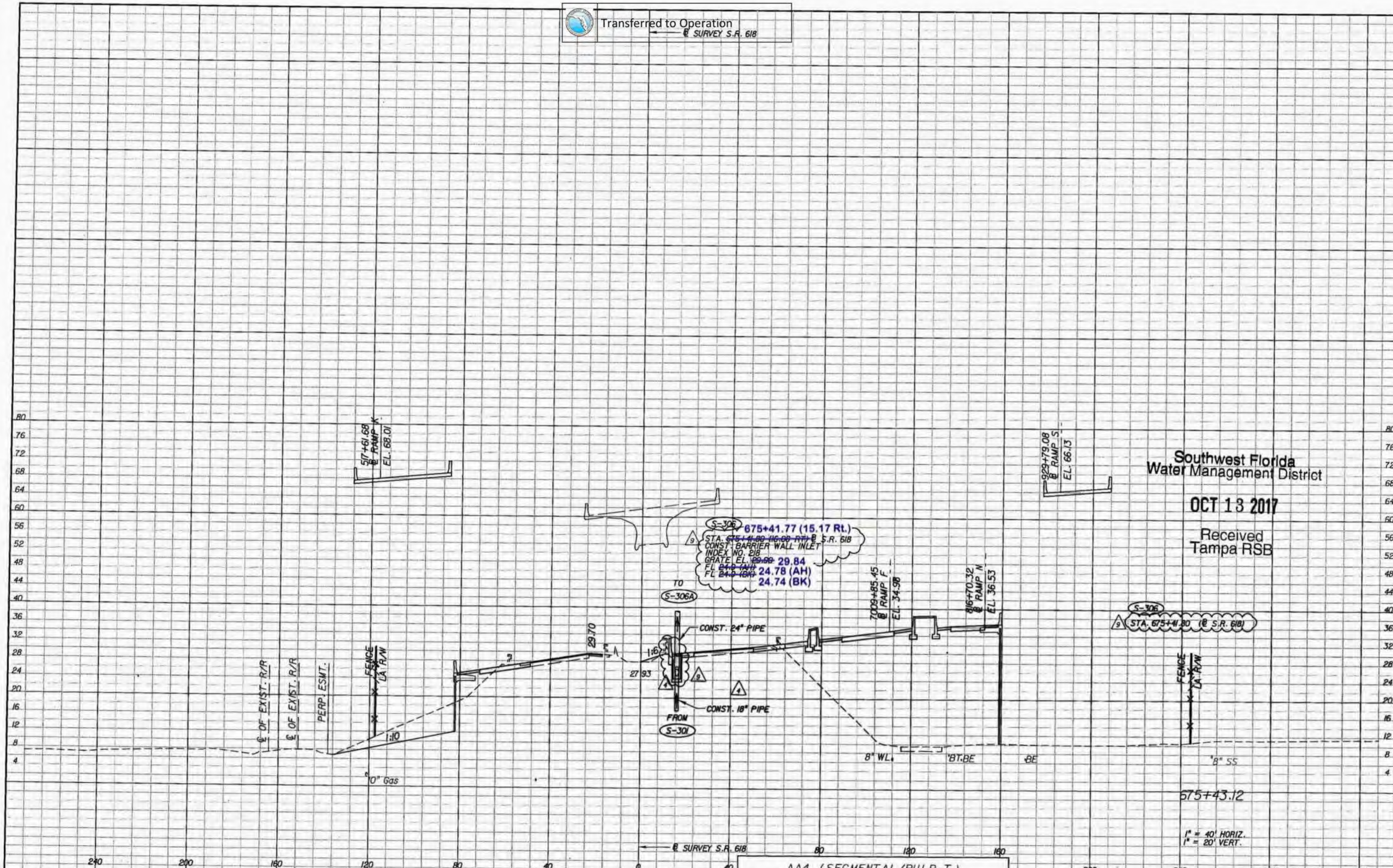

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
03/15/10	4 CORRECTED PIPE SIZE		
11/05/12	9 REVISED S-306		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (42)

SHEET NO. 369

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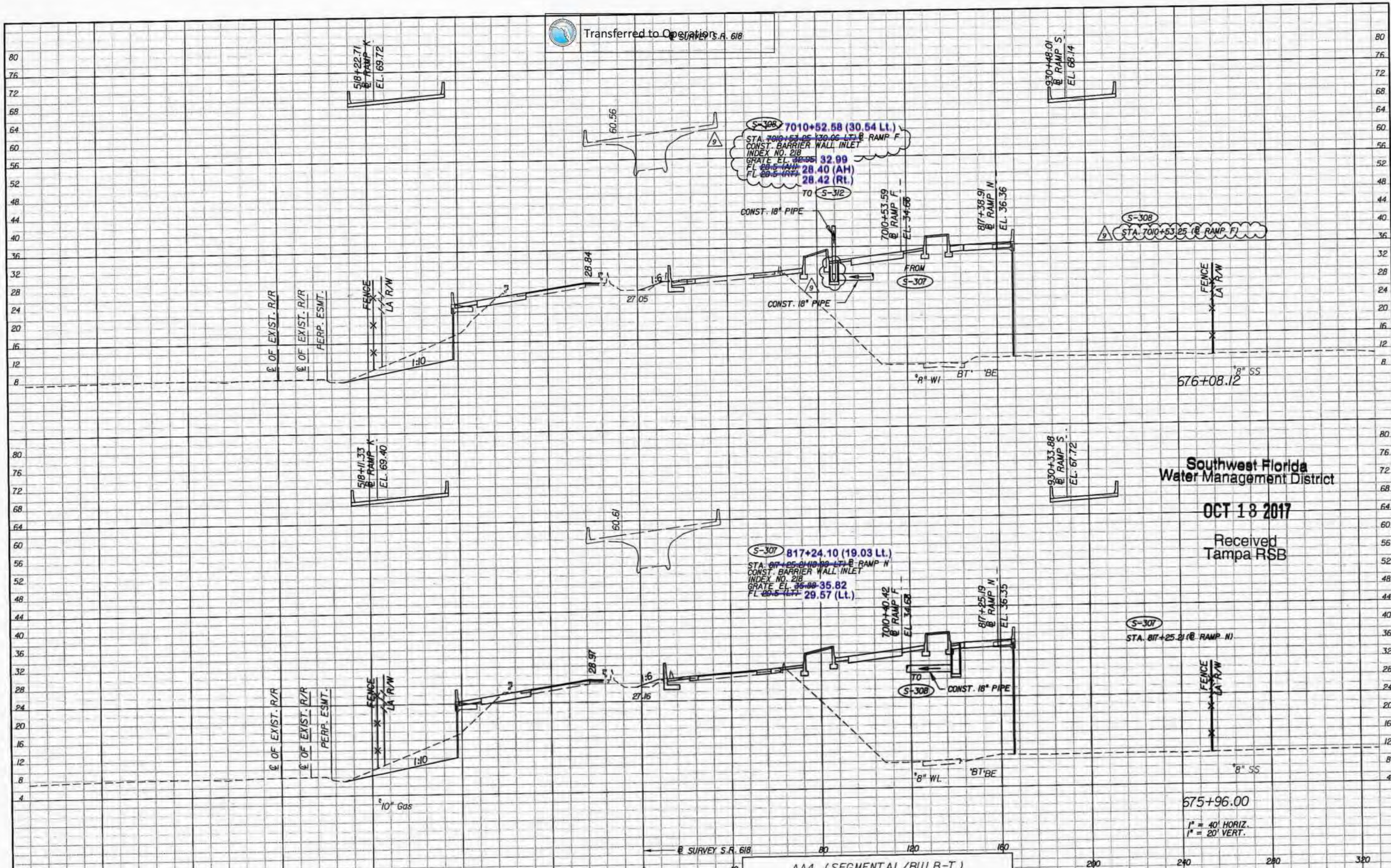

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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REVISED S-308		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (43)

SHEET NO. 370

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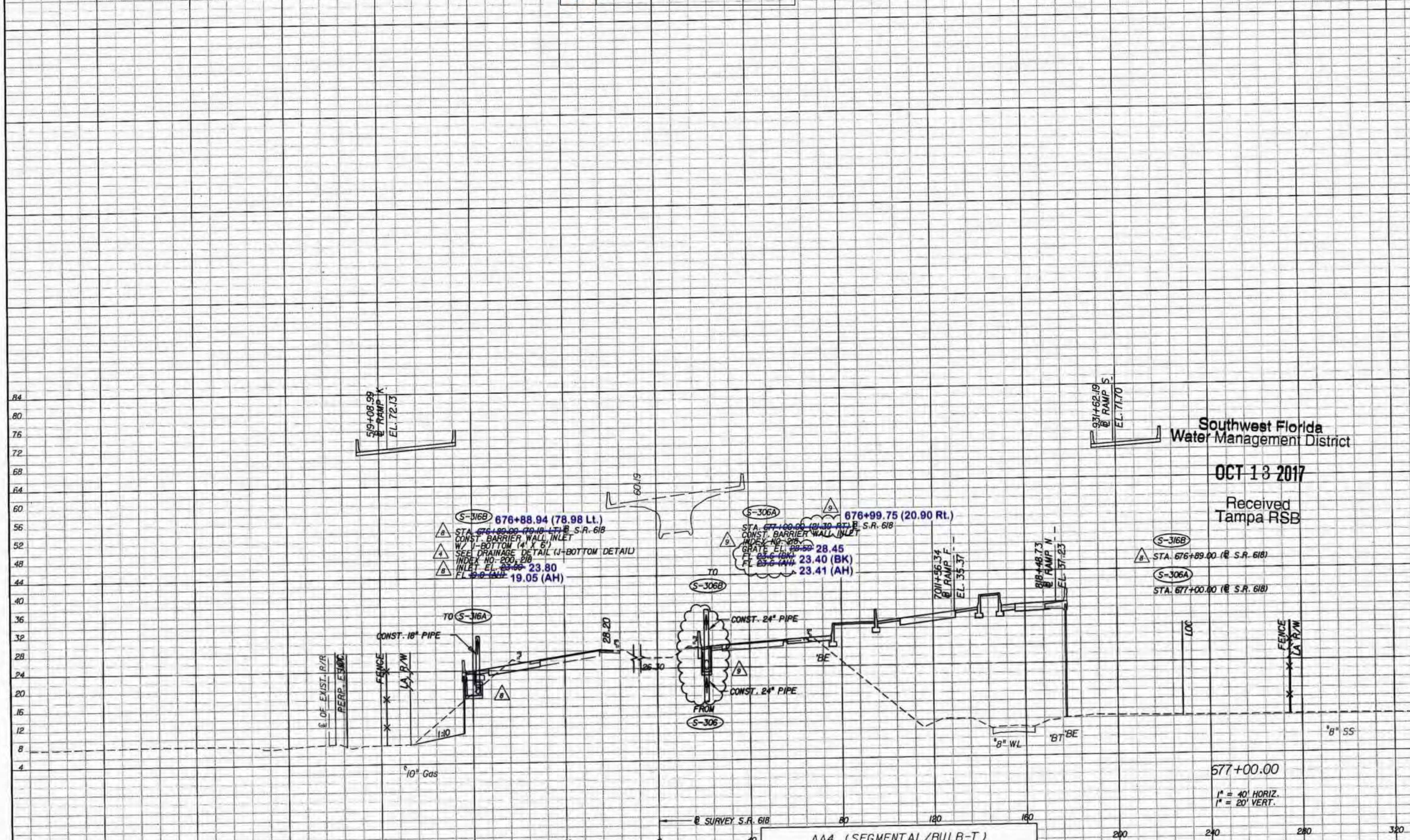
Transferred to Operations



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REVISIONS

DATE		DESCRIPTION	DATE	DESCRIPTION
04/30/10	4	REVISED J-BOTTOM CALL OUT		
01/27/12	8	REVISED INLET STATION AND ELEVATION		
11/05/12	9	REVISED S-306A OFFSET, GRATE & FLOW LINES		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (44)

SHEET NO. 371

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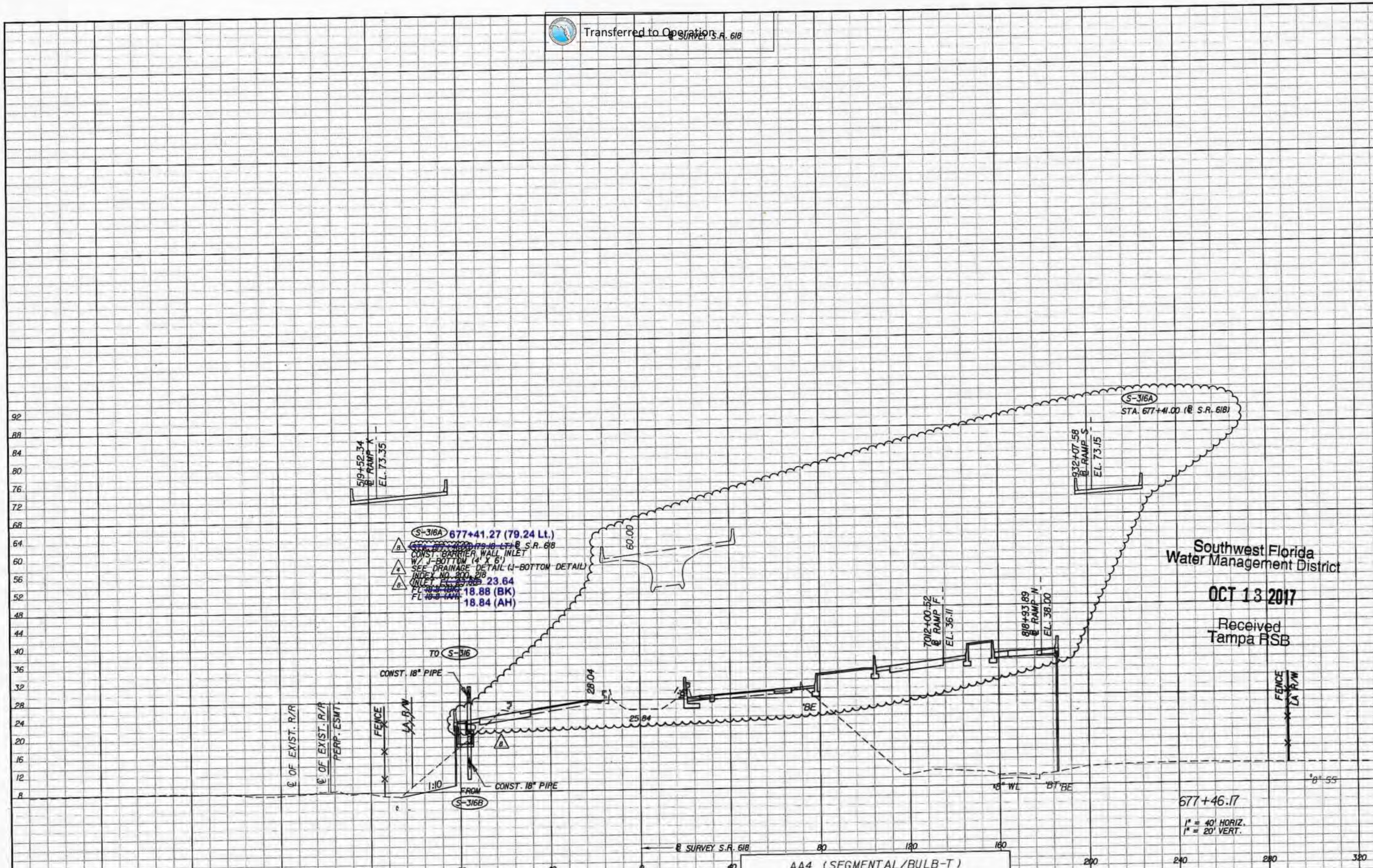

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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	A REVISED J-BOTTOM CALL OUT		
01/27/12	B REVISED INLET STATION AND ELEVATION		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (45)

SHEET NO. 372

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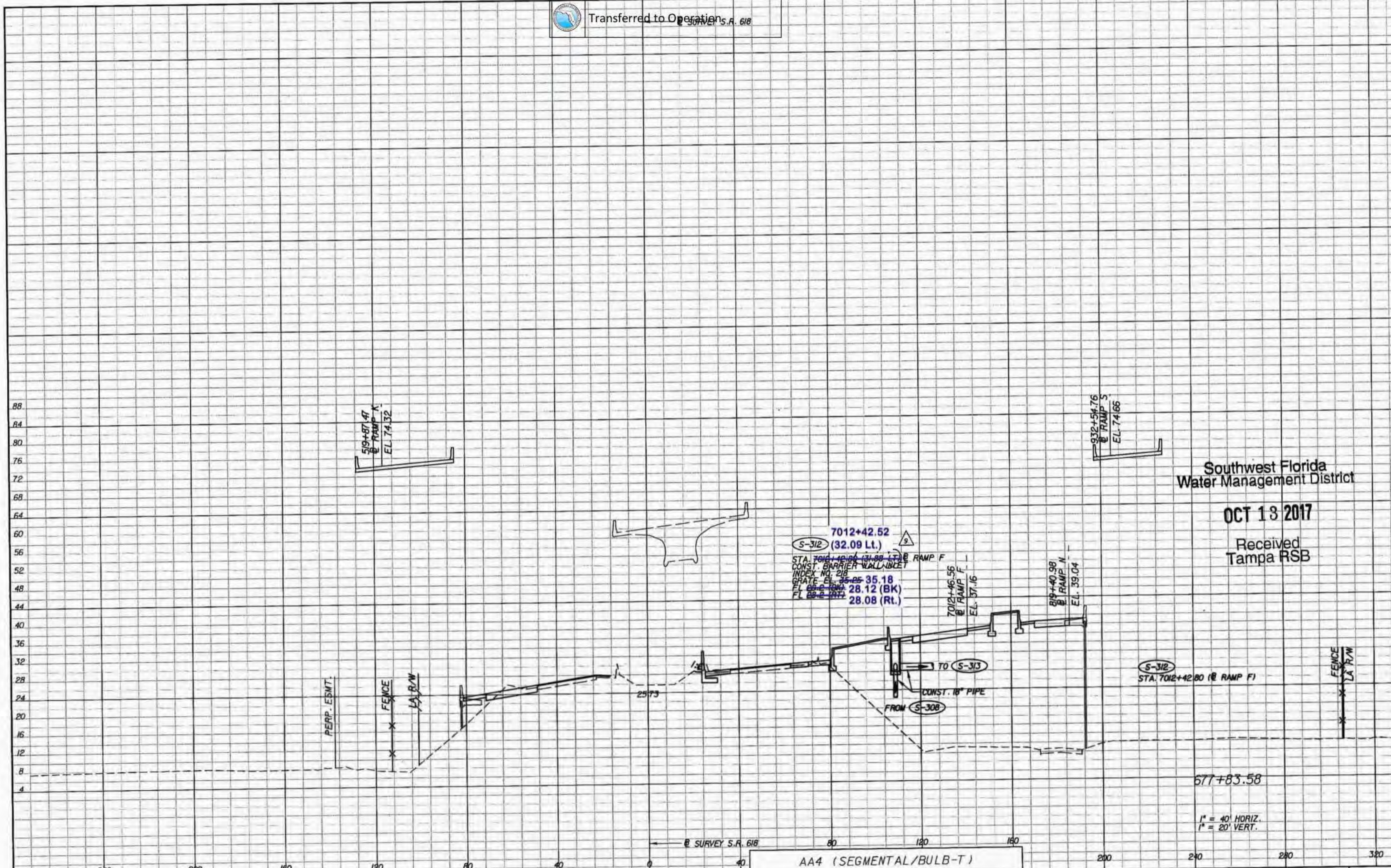

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REVISED S-312 OFFSET		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (46)

SHEET NO. 373

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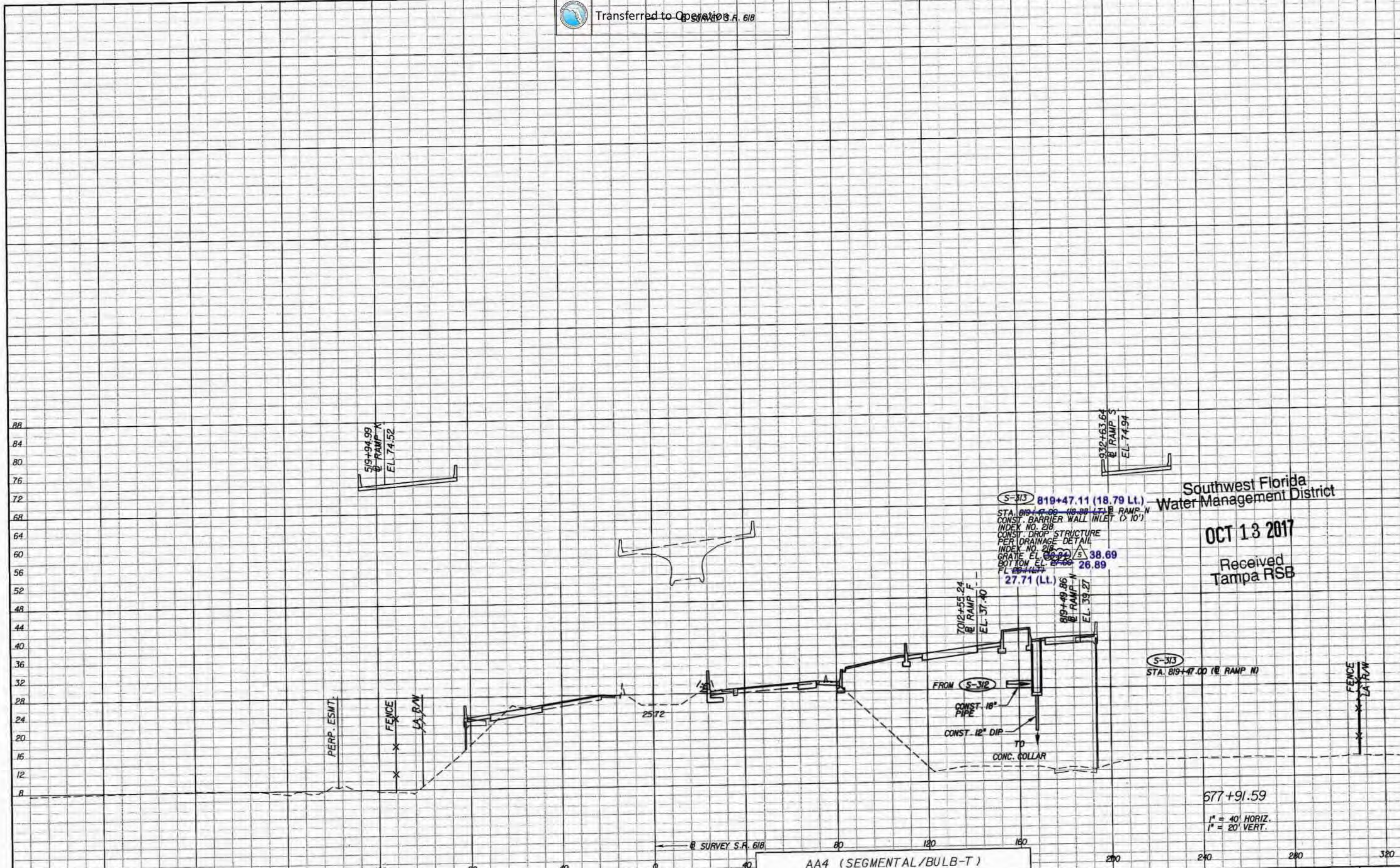
Transferred to Operations



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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 REVISED INLET ELEVATION		

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (47)

SHEET NO. 374

USER: 1589 9/7/2010 1:38:09 PM K:\258415\5201AA4\drainage\DRXSRD01_rev5.DGN

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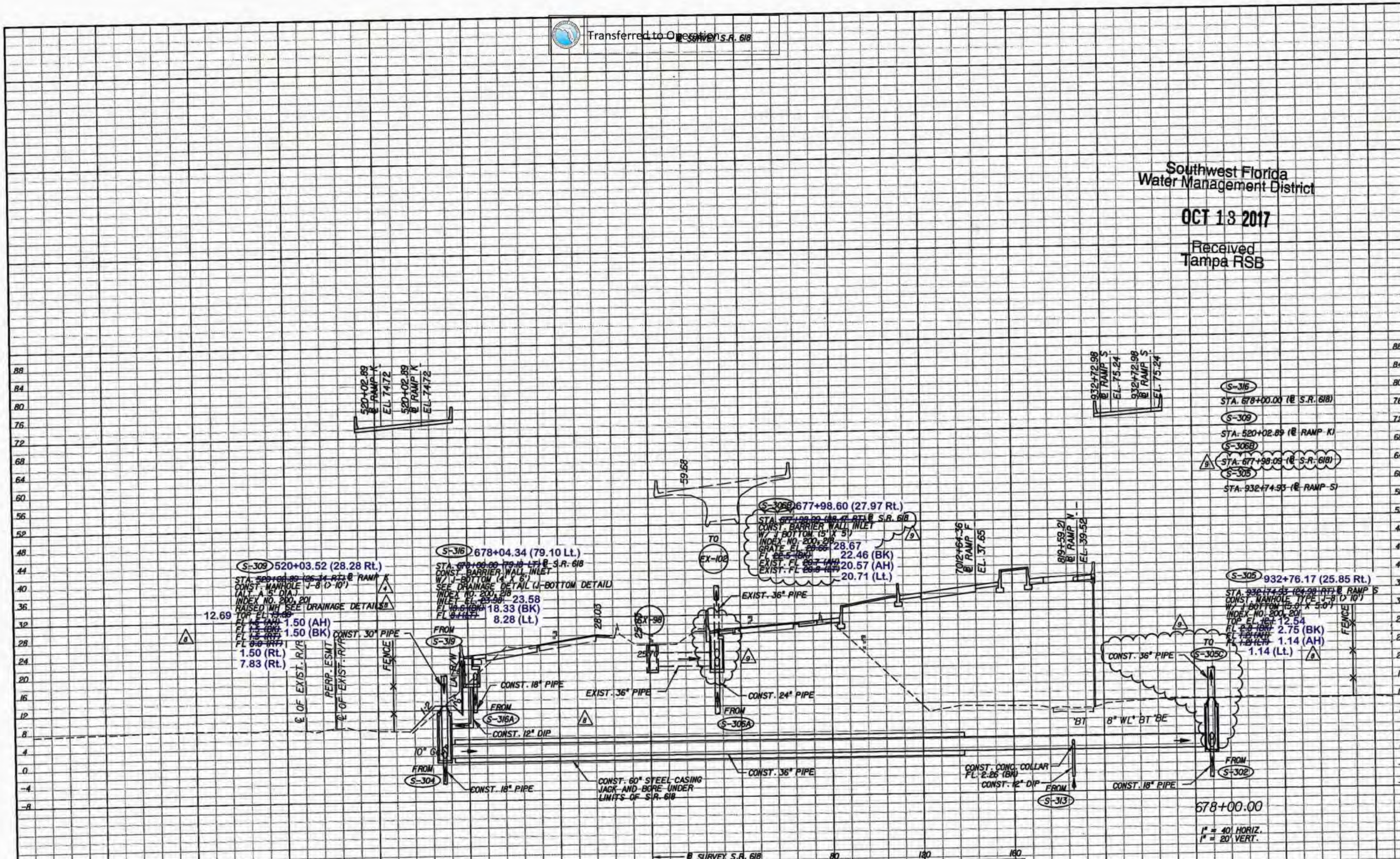

DATE		DESCRIPTION
04/30/10	4	REVISED J-BOTTOM CALL OUT
01/27/12	8	REVISED INLET ELEVATION & PIPE FLOWLINES
11/05/12	9	ADDED S-305C, REVISED S-306B

REVISIONS

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AA4 (SEGMENTAL/BULB-T)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (48)

SHEET NO. 375

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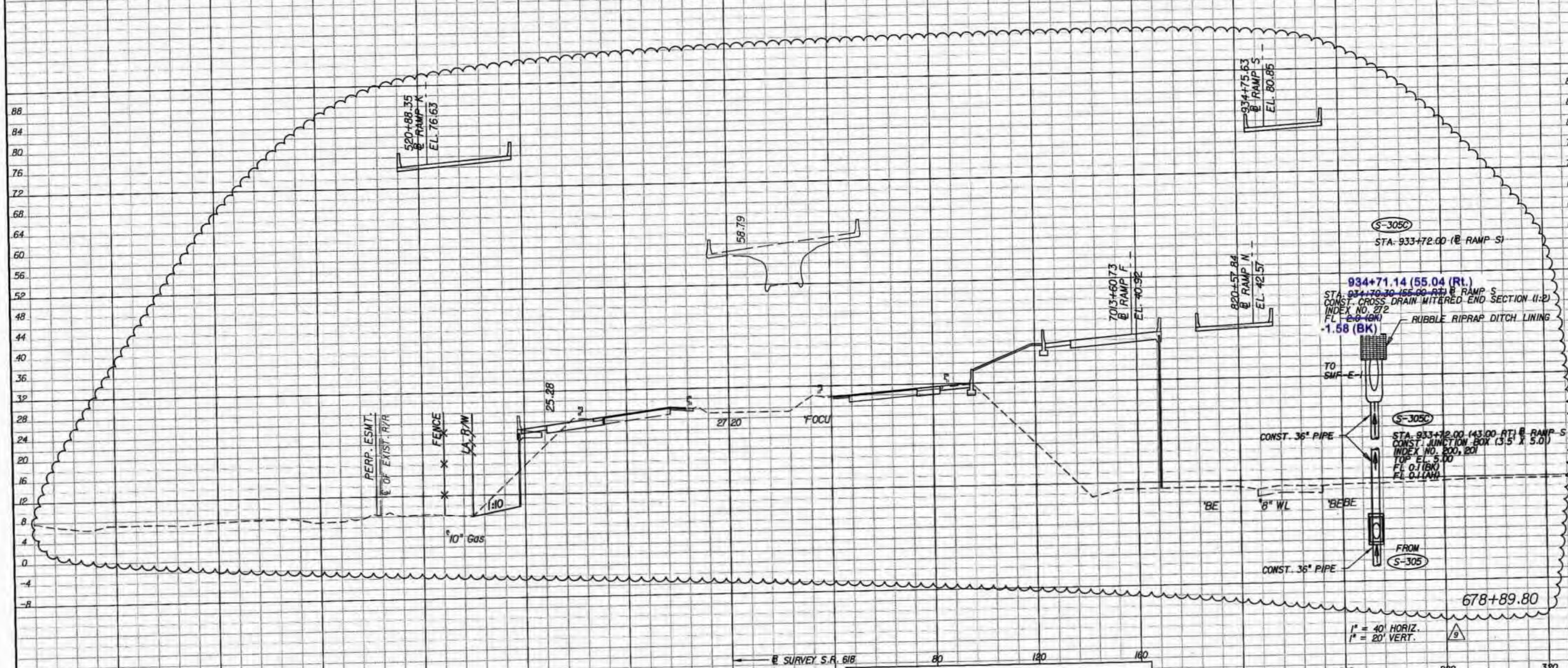

AA4 (SEGMENTAL/BULB-T)

DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 NEW SHEET, ADDED S-305C, MOVED MES		

REVISIONS

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (48A)

SHEET NO. 375A

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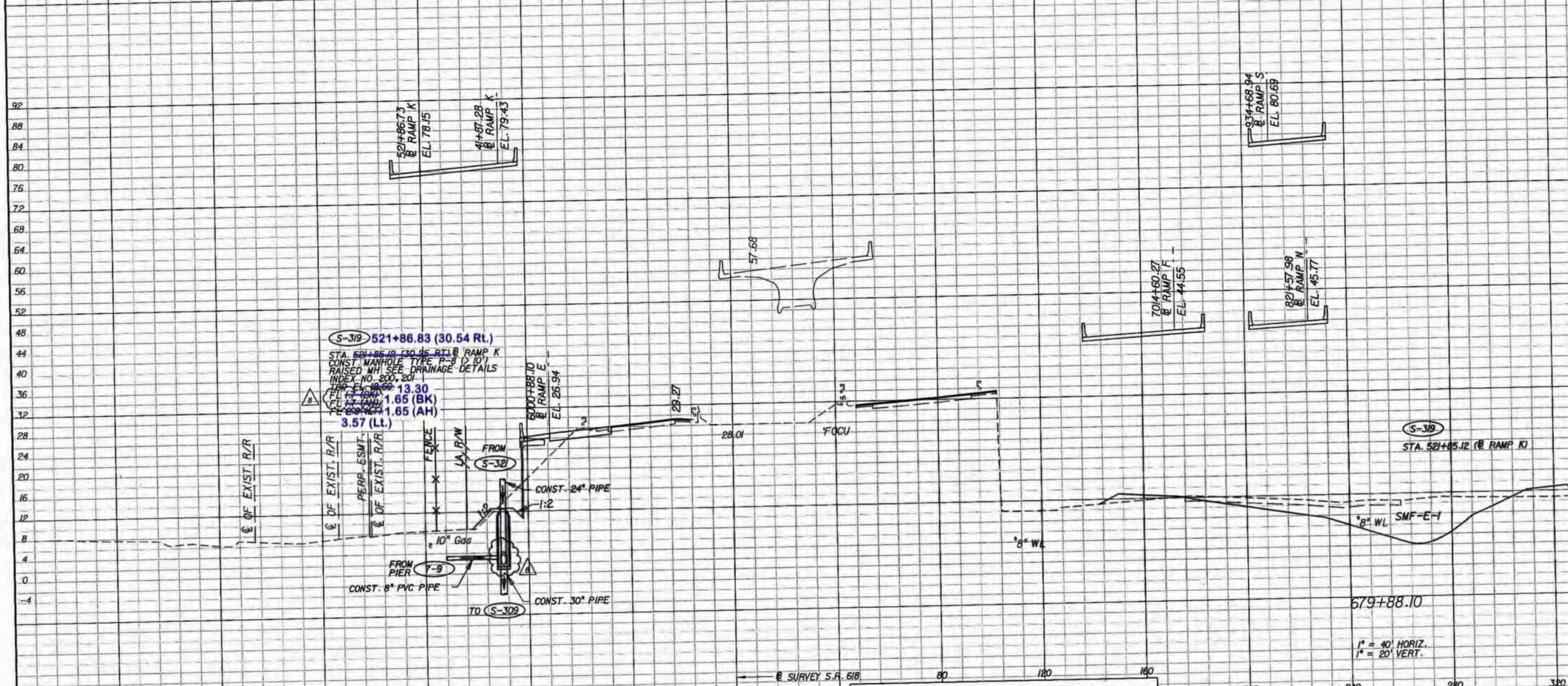

DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	8 REVISED PIPE FLOWLINES		

REVISIONS

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (49)

SHEET NO. 376

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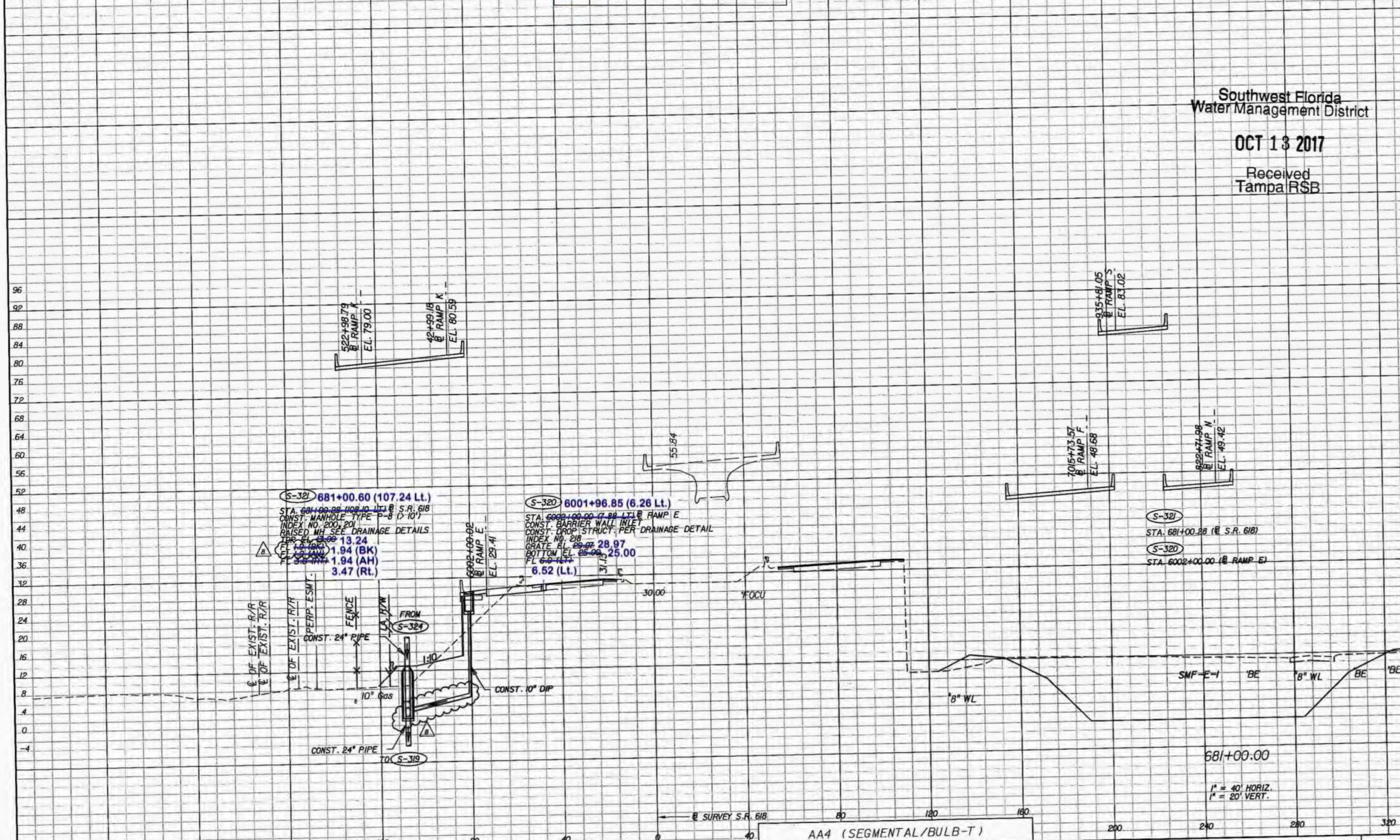

AA4 (SEGMENTAL/BULB-T)

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	B REVISED PIPE FLOWLINES		

PBSJ
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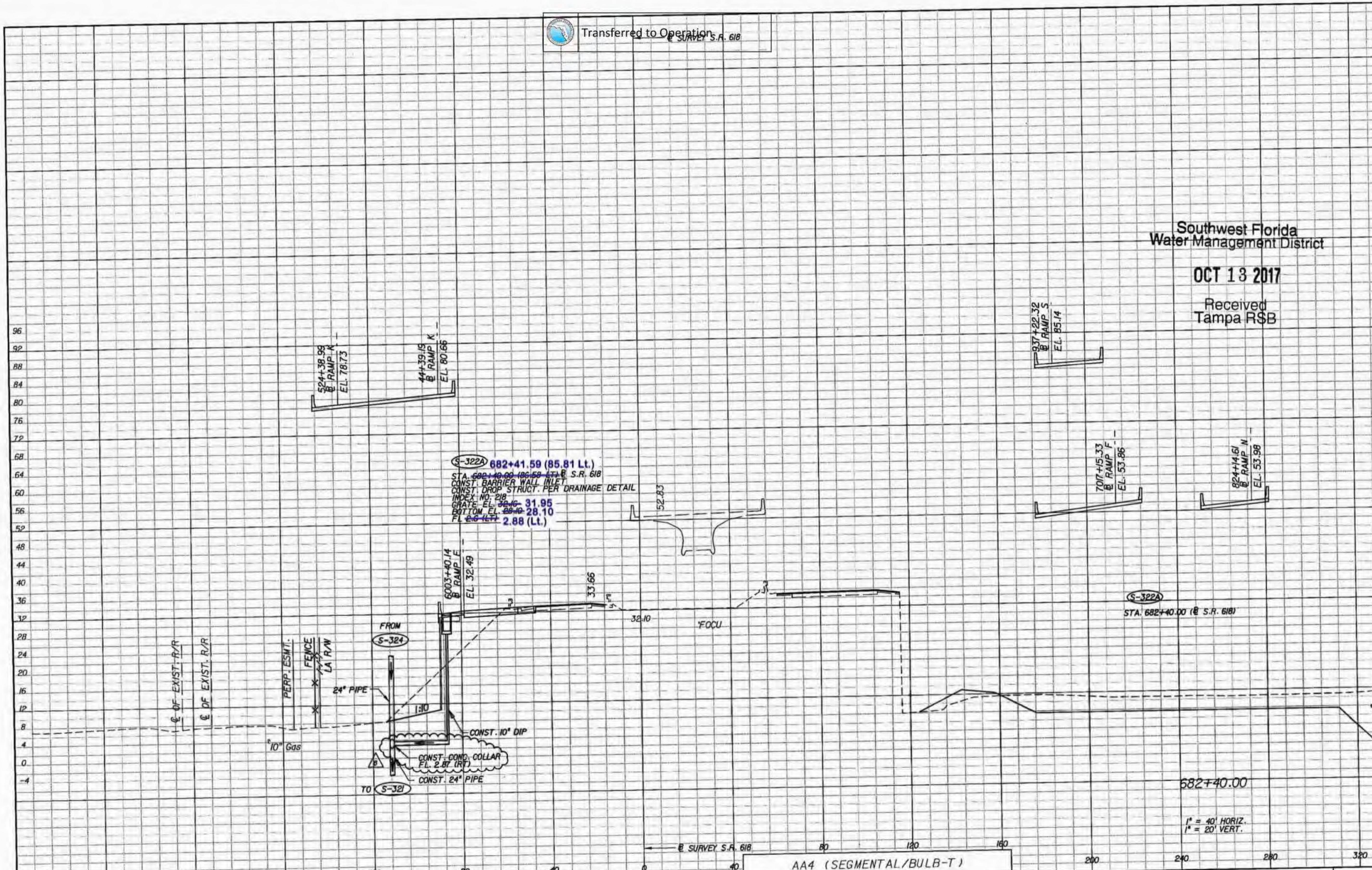
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (50)

SHEET NO. 377



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	8 REVISED PIPE FLOWLINES		

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (51)

SHEET NO.
378

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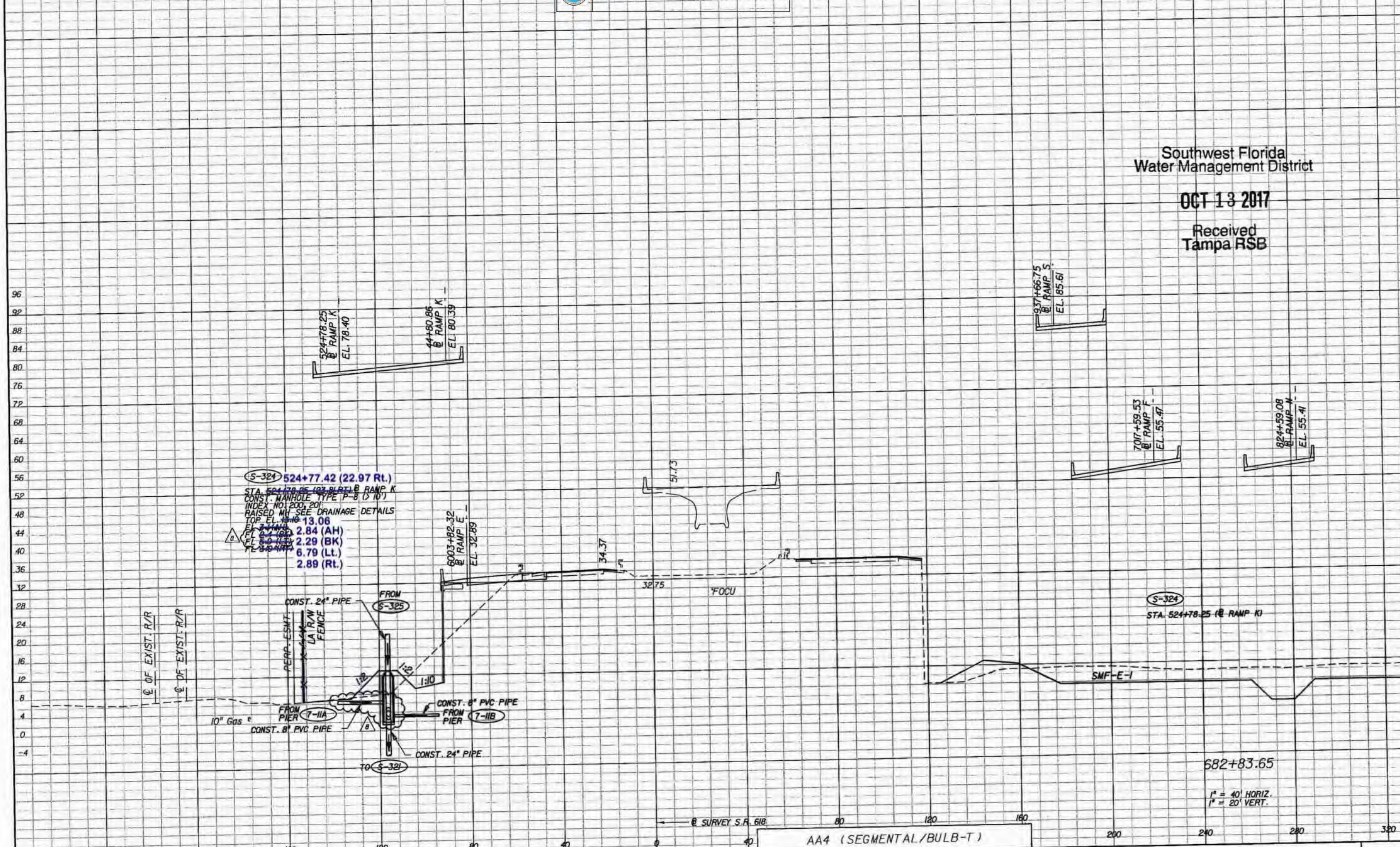

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	8 REVISED PIPE FLOWLINES		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (52)

SHEET NO. 379

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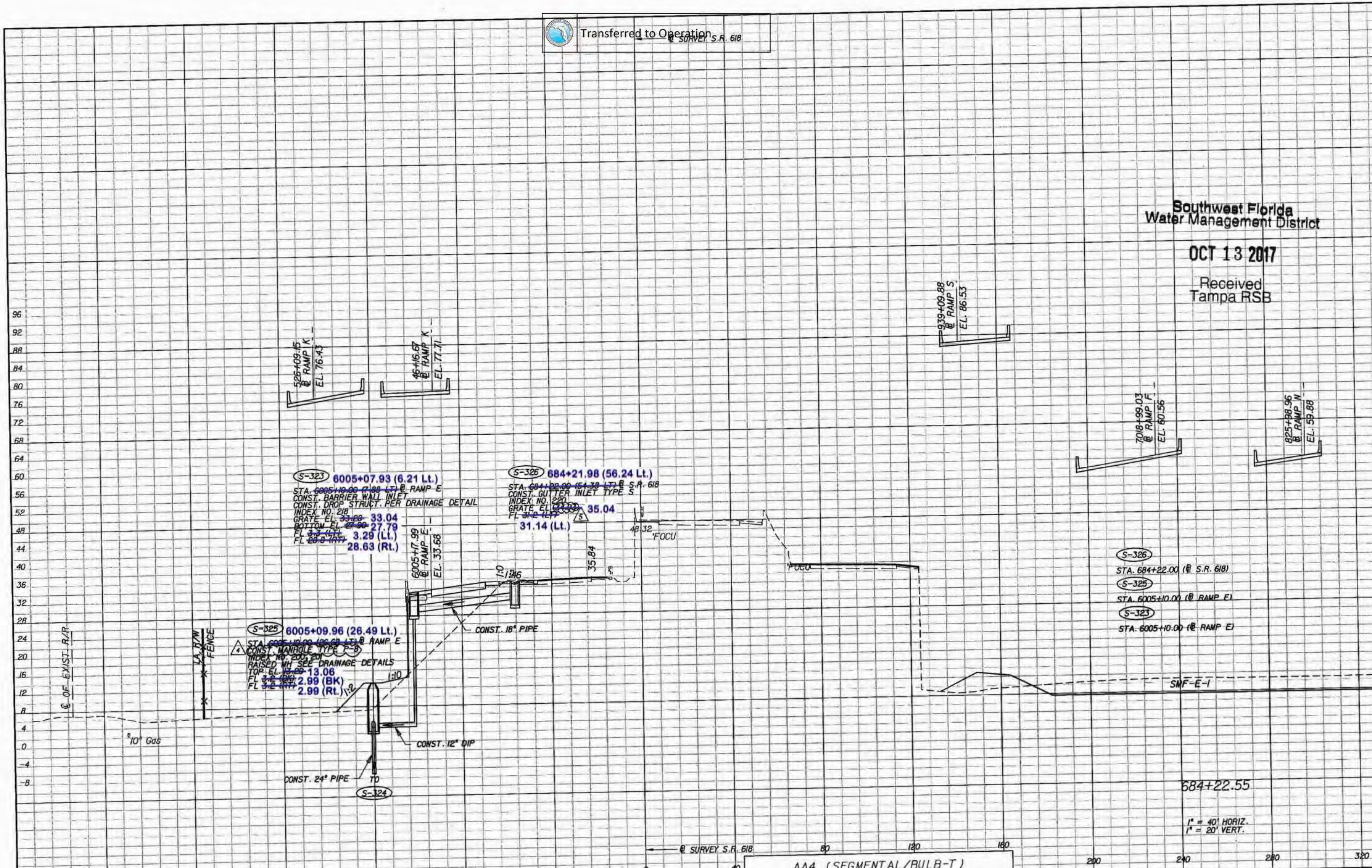

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
04/30/10	4 REVISED STRUCTURE TYPE		
08/11/10	5 REVISED INLET ELEVATION		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (53)

SHEET NO. 380

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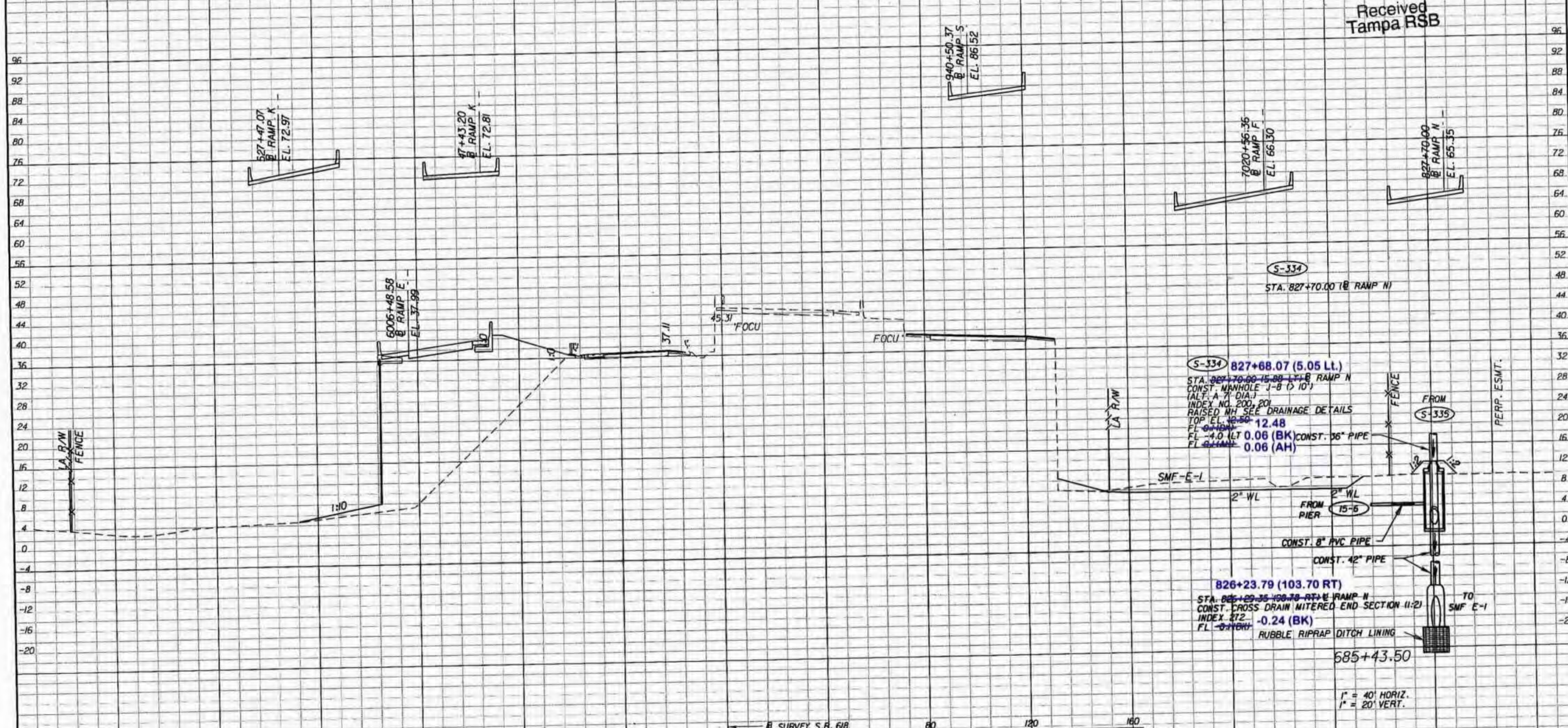

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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AA4 (SEGMENTAL/BULB-T)

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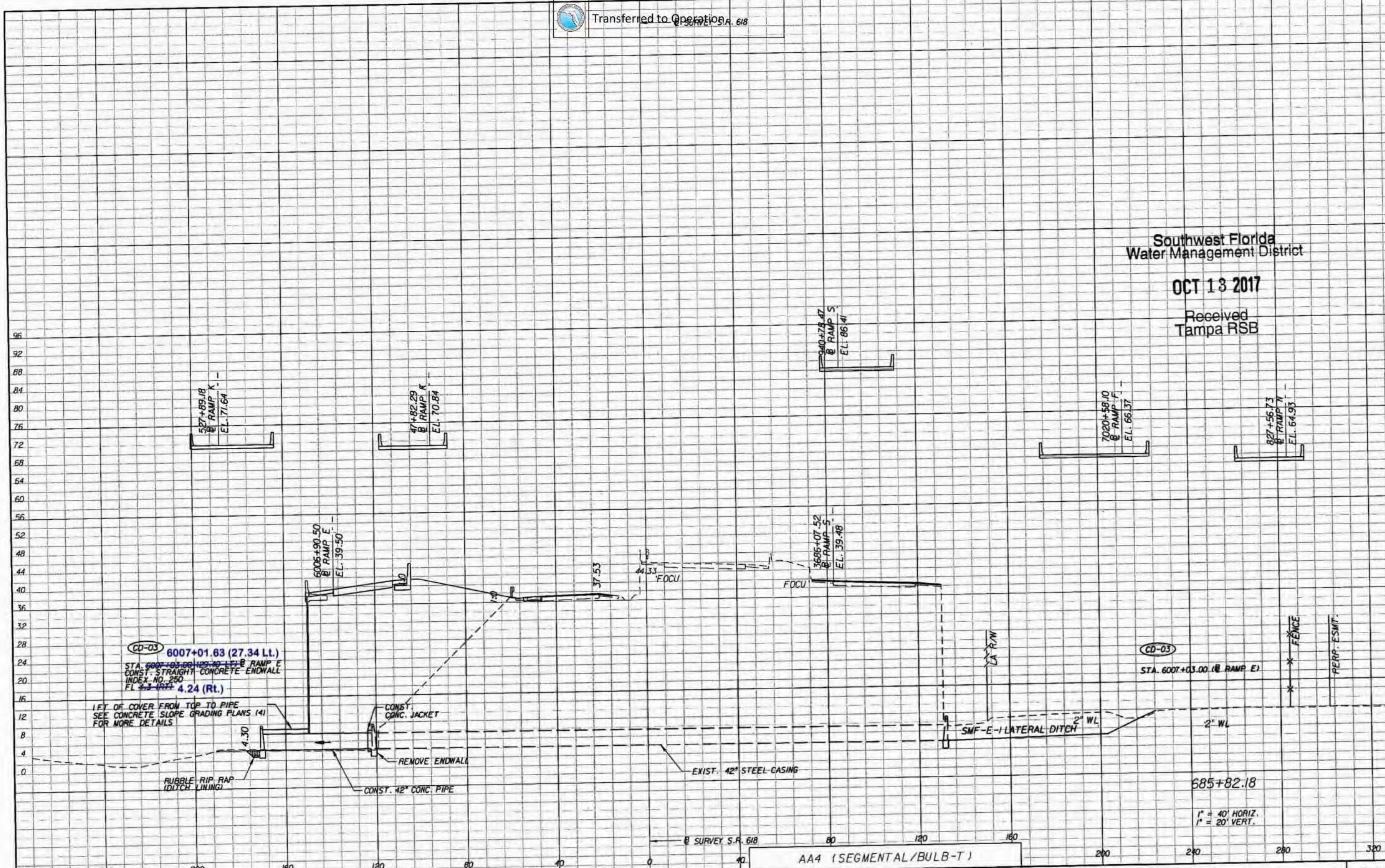
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (54)

SHEET NO. 381

USER: 21871 3/31/2009 1:18:01 PM K:\258415\520\AA4\drainage\DRXSRD01.DGN



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (55)

SHEET NO. 382

USER: 2IB71 3/31/2009 1:18:03 PM K:\258415\520\AA4\drainage\DRXSRD01.DGN

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REVISED S-342 & S-335, ADDED "BY OTHERS"		

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Shayne M. Paynter, P.E. #58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (56)

SHEET NO. 383

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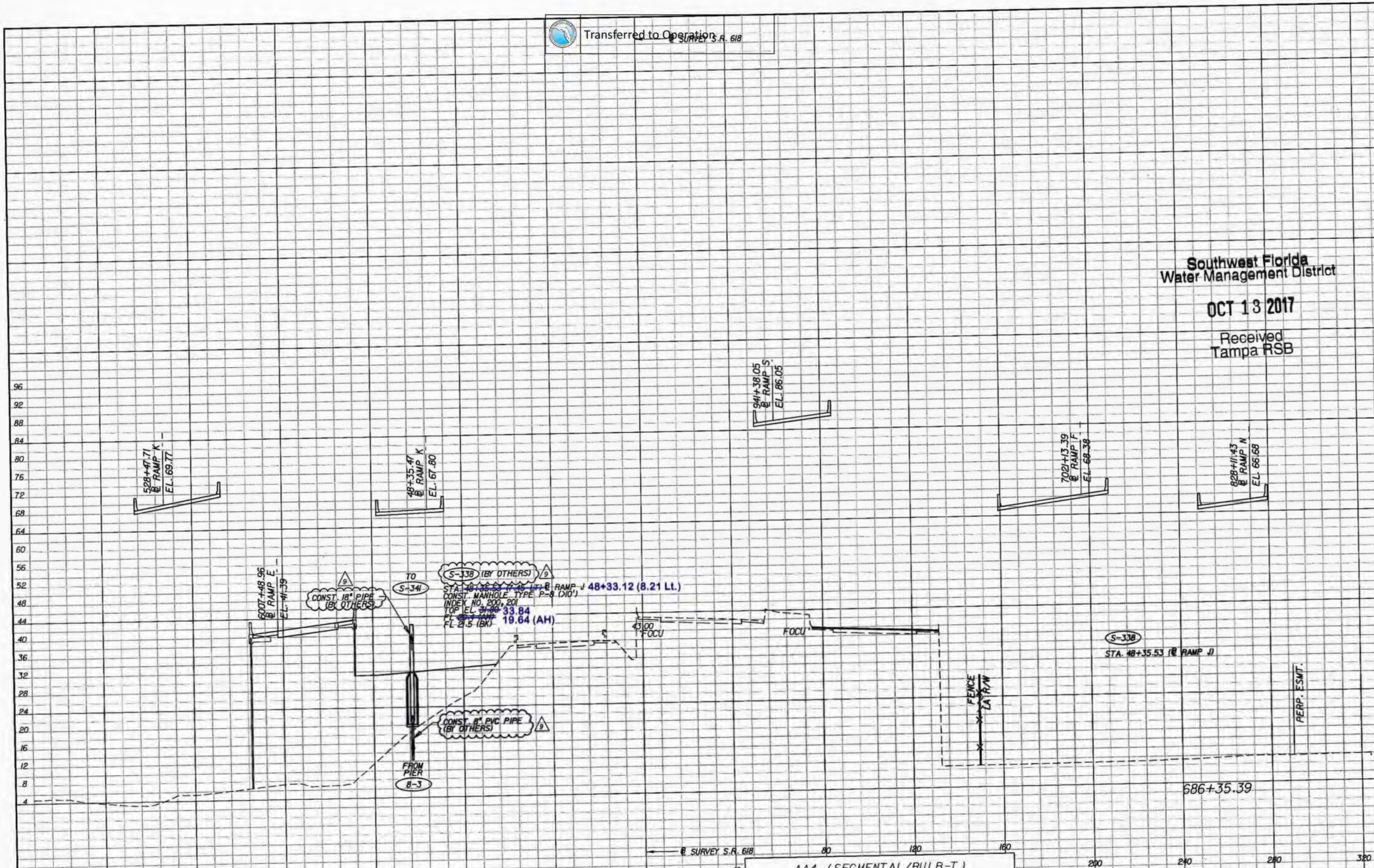

REVISIONS		
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 ADDED "BY OTHERS"		

PBSJ
5300 West Cypress Street
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Tampa, Florida 33607-1768
FBPE Certificate of
Authorization No. 24
Shayne M. Poynter, P.E. #58136

AA4 (SEGMENTAL/BULB-T)

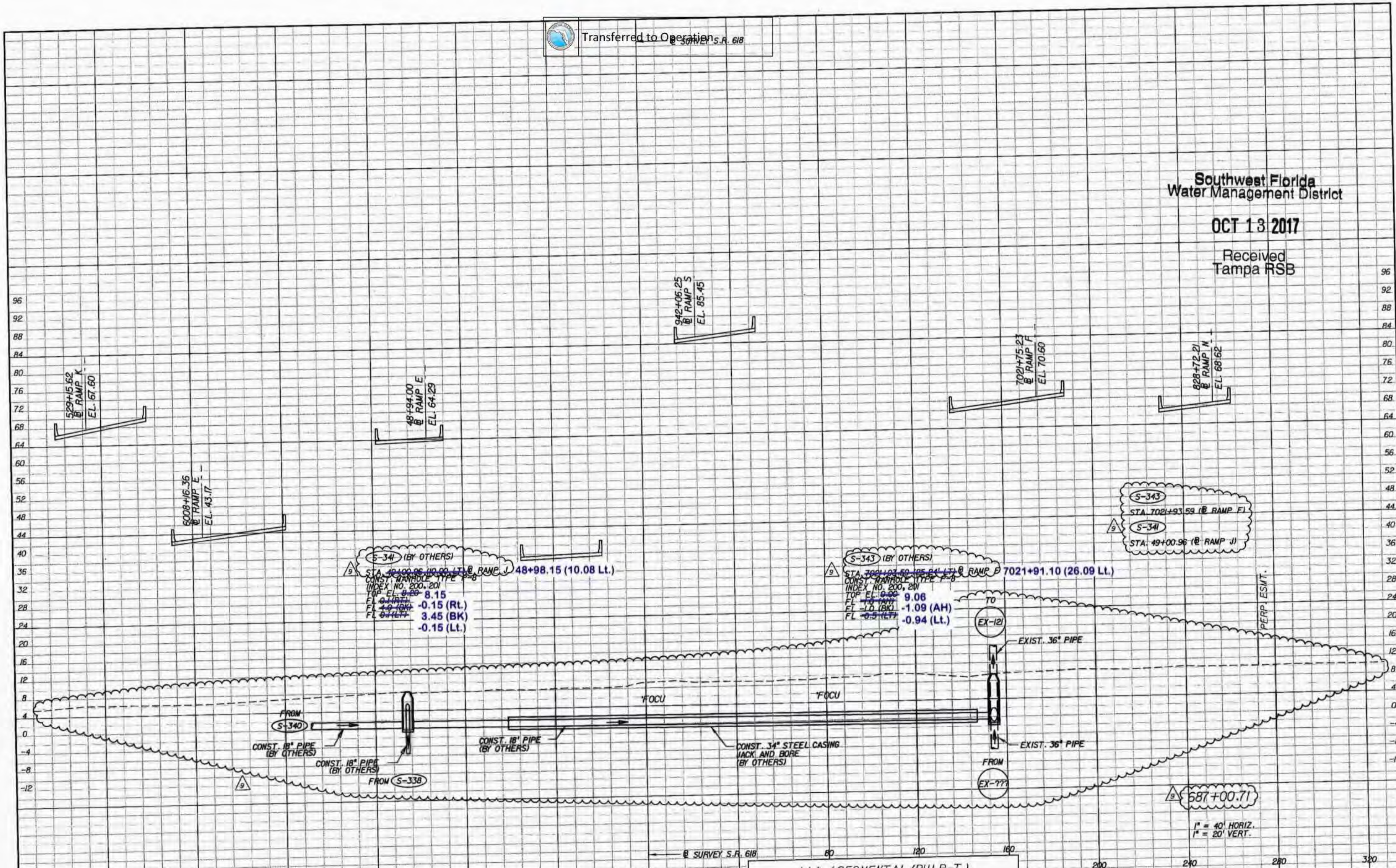
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

USER: 24734 11/28/2012 10:36:20 AM K:\E-Delivery\Revision_9\258415152\01AA4\drainage\DRXSRD01_REV9.DGN

DRAINAGE STRUCTURES
SR 618 (57)

SHEET NO. 384



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REVISED LOCATION OF S-341 & S-343, ADDED "BY OTHERS"		

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AA4 (SEGMENTAL/BULB-T)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (58)

SHEET NO. 385

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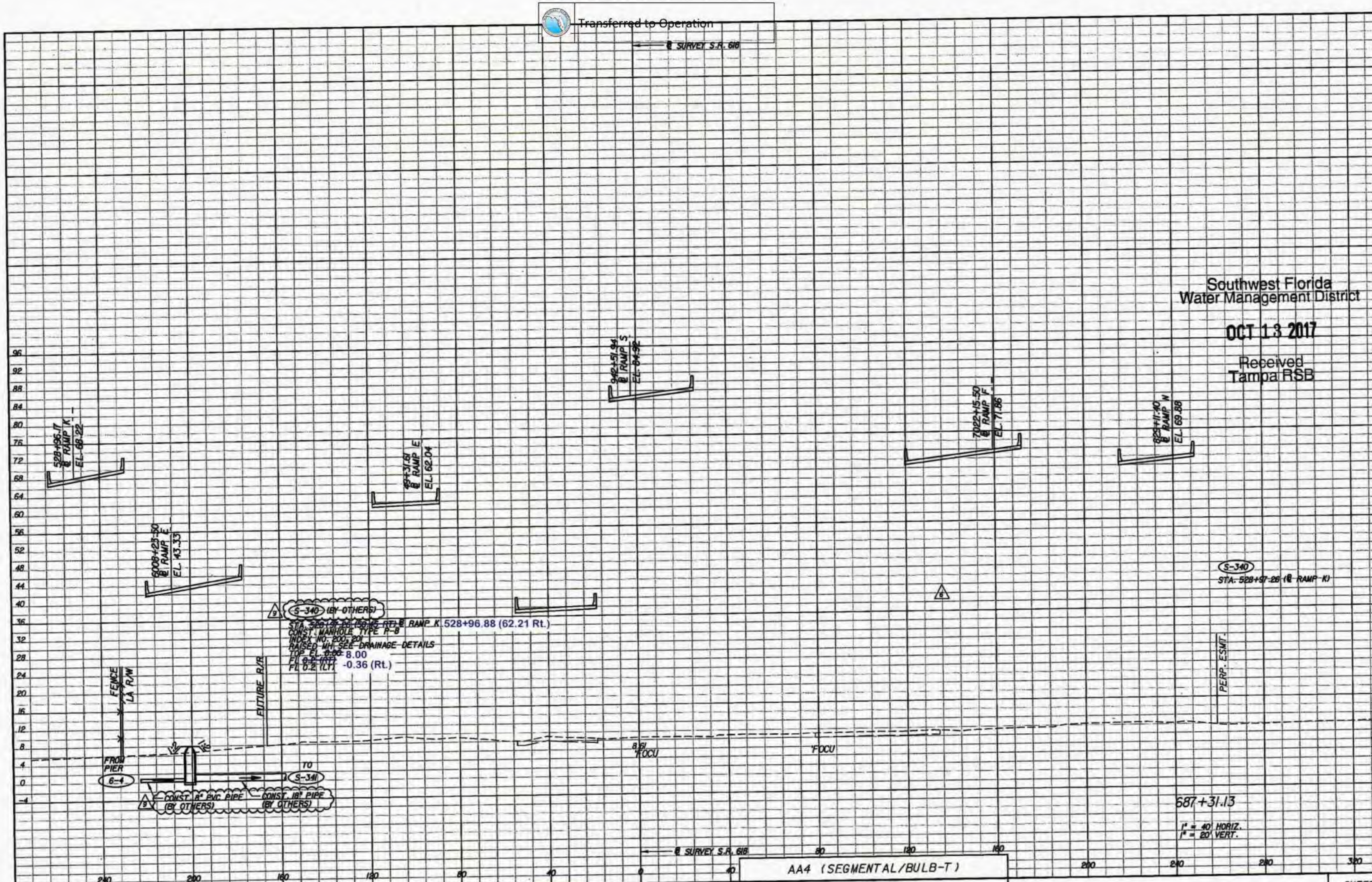

Southwest Florida Water Management District
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/09/10	6 RELOCATED MANHOLE		
11/05/12	9 ADDED "BY OTHERS"		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (59)

SHEET NO. 386

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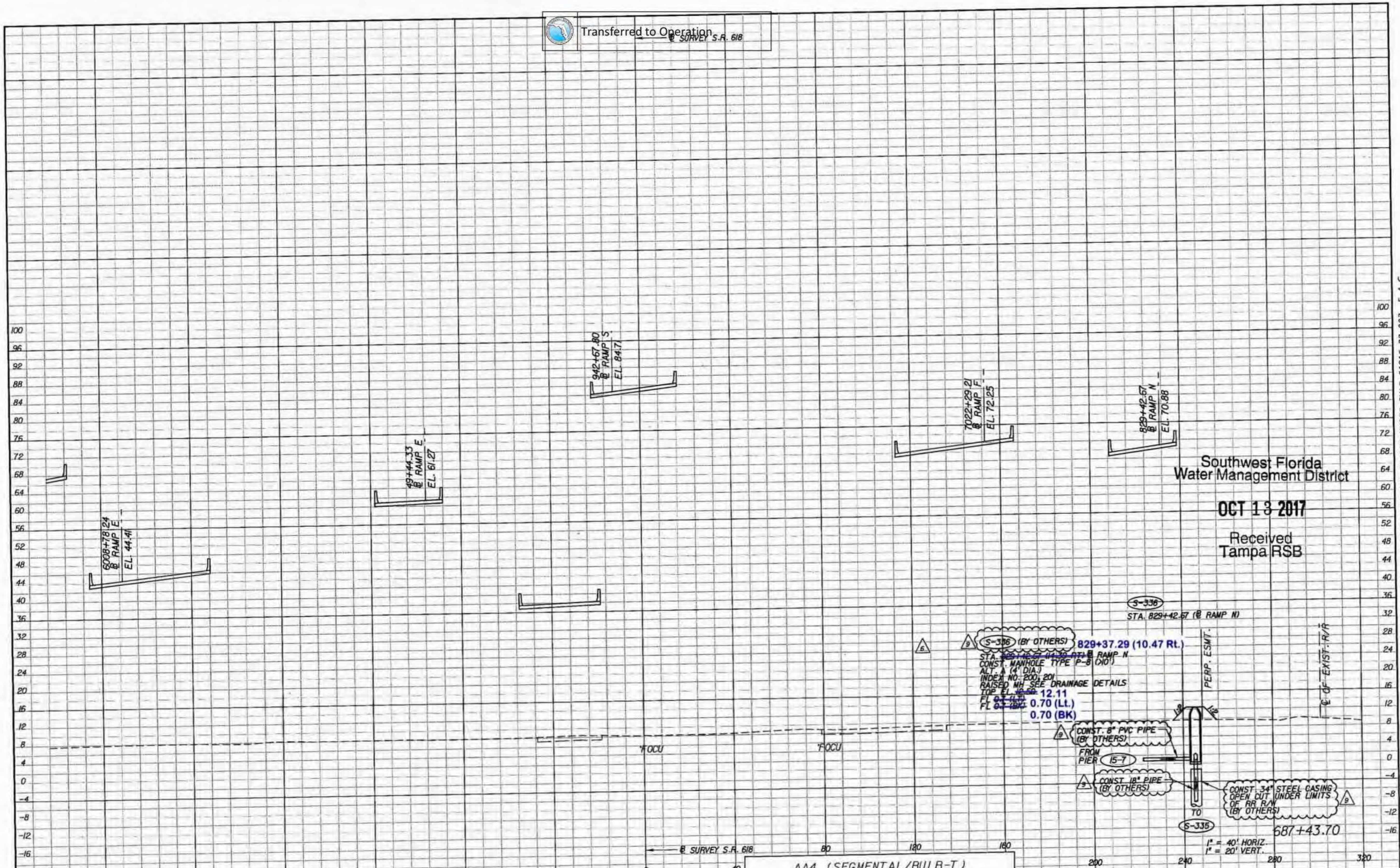

AA4 (SEGMENTAL/BULB-T)

REVISIONS

DATE		DESCRIPTION	DATE	DESCRIPTION
12/09/10	6	ADDED NEW SHEET. RELOCATED MANHOLE AND PIPES.		
11/05/12	9	ADDED "BY OTHERS"		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (59A)

SHEET NO. 386A

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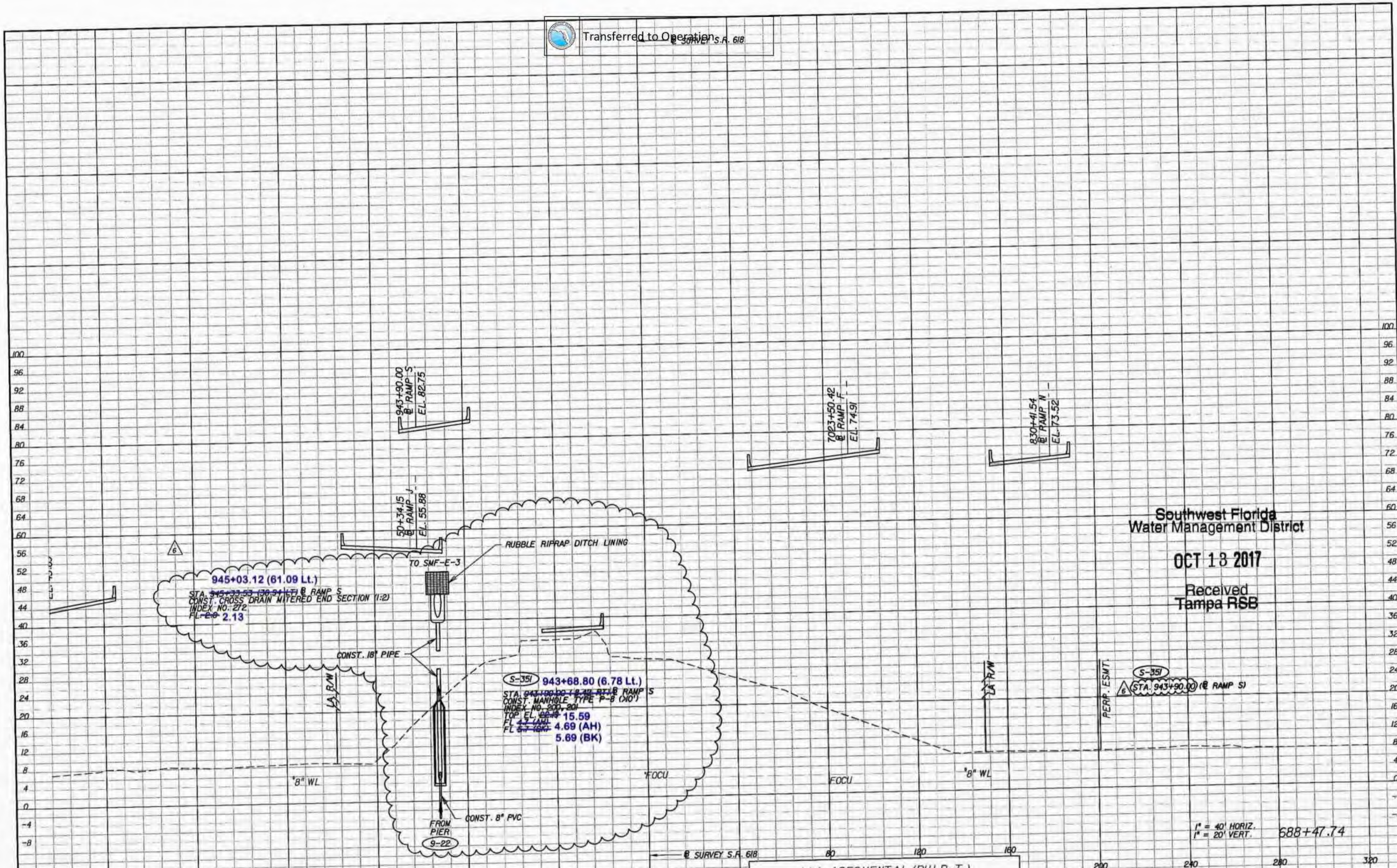

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AA4 (SEGMENTAL/BULB-T)

DATE	DESCRIPTION	DATE	DESCRIPTION
12/09/10	6 RELOCATED MANHOLE, MES & PIPES; RAISED MANHOLE TOP ELEVATION		

REVISIONS

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Shayne M. Paynter, P.E. #58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (60)

SHEET NO. 387

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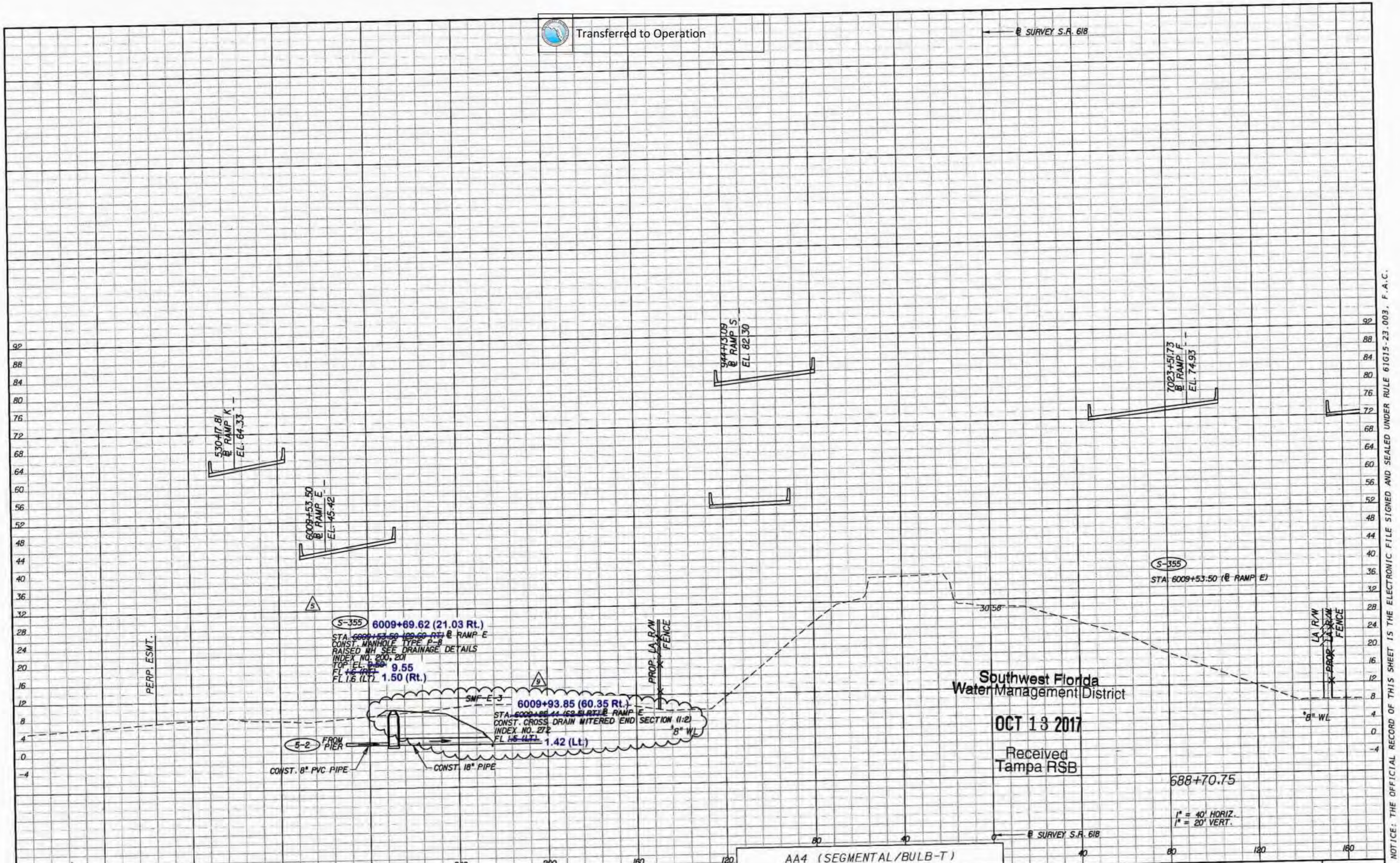

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 RELOCATED MANHOLE AND MES		
11/05/12	9 REDESIGN SMF-E-3 POND; RELOCATE MES		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (61)

SHEET NO. 388

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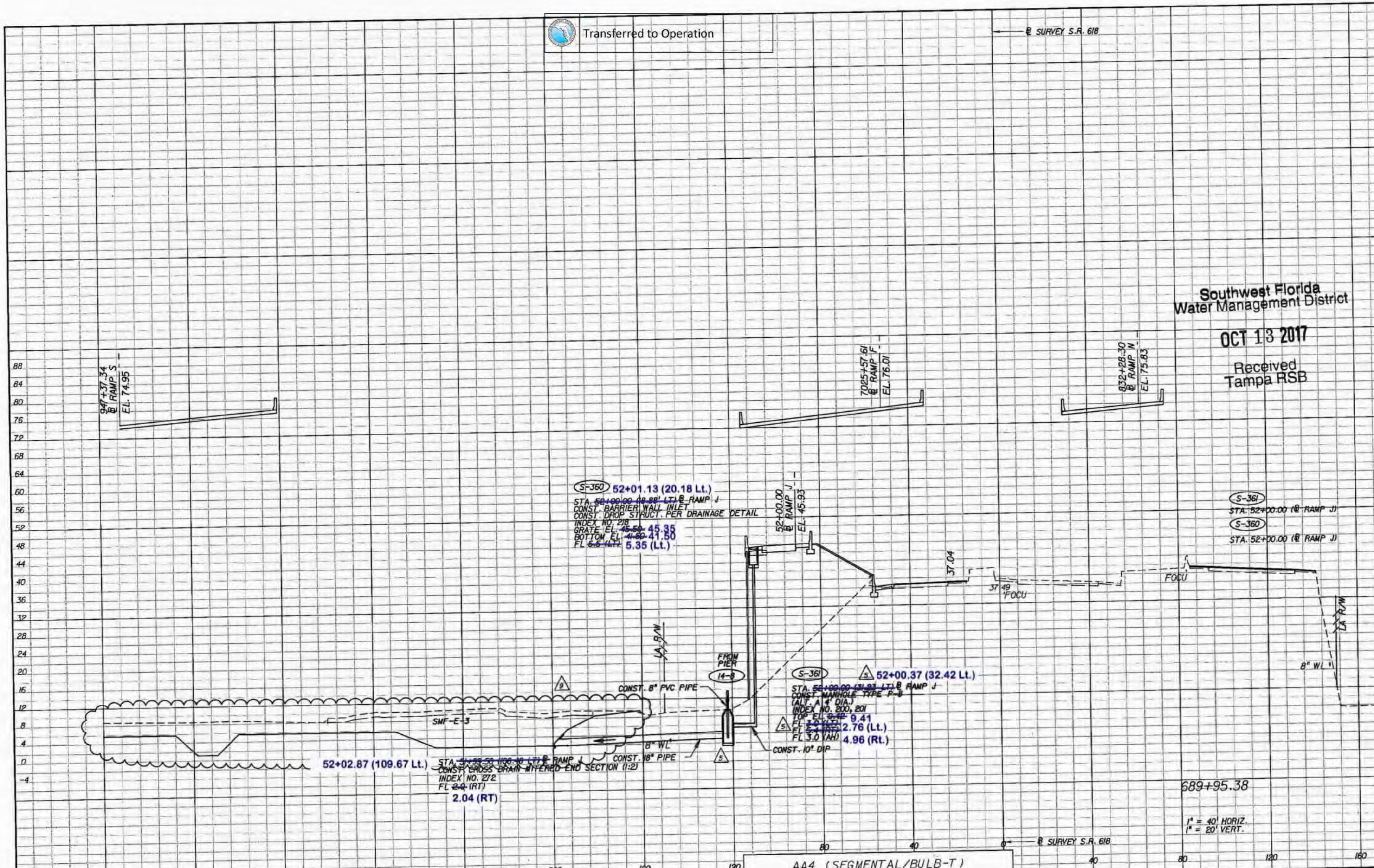
Transferred to Operation



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OCT 13 2017

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AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 RELOCATED MANHOLE; REVISED OFFSET AND PIPE FLOWLINE		
11/05/12	9 REDESIGN SMF-E-3 POND; RELOCATE MES		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

USER: 24734

DRAINAGE STRUCTURES
SR 618 (62)

SHEET NO. 389

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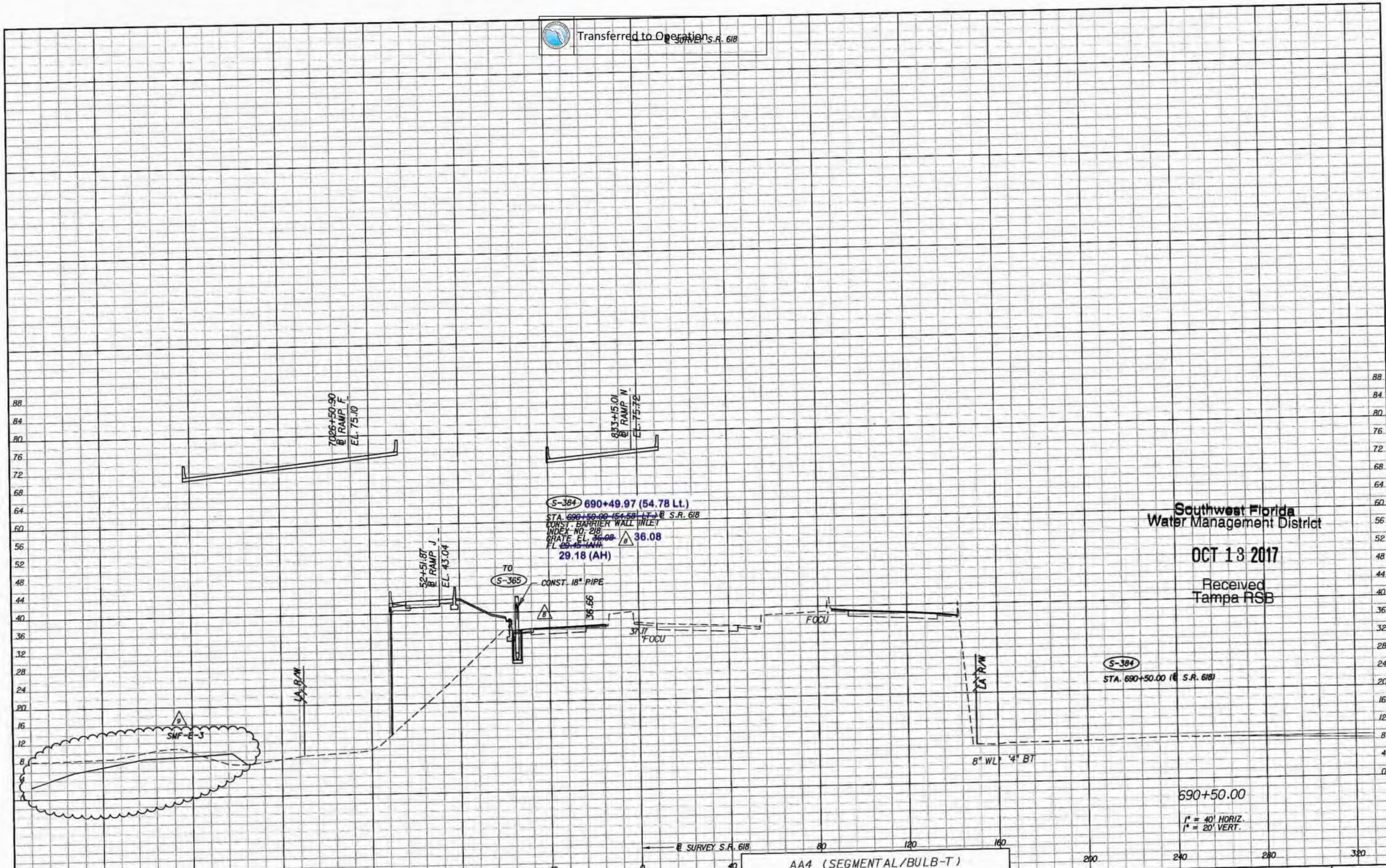

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	8 REVISED GRATE ELEVATION, PIPE FL & SHOULDER. SLOPE TO 3%		
11/05/12	9 REDESIGN SMF-E-3 POND		

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DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

USER: 24734

DRAINAGE STRUCTURES
SR 618 (63)

SHEET NO. 390

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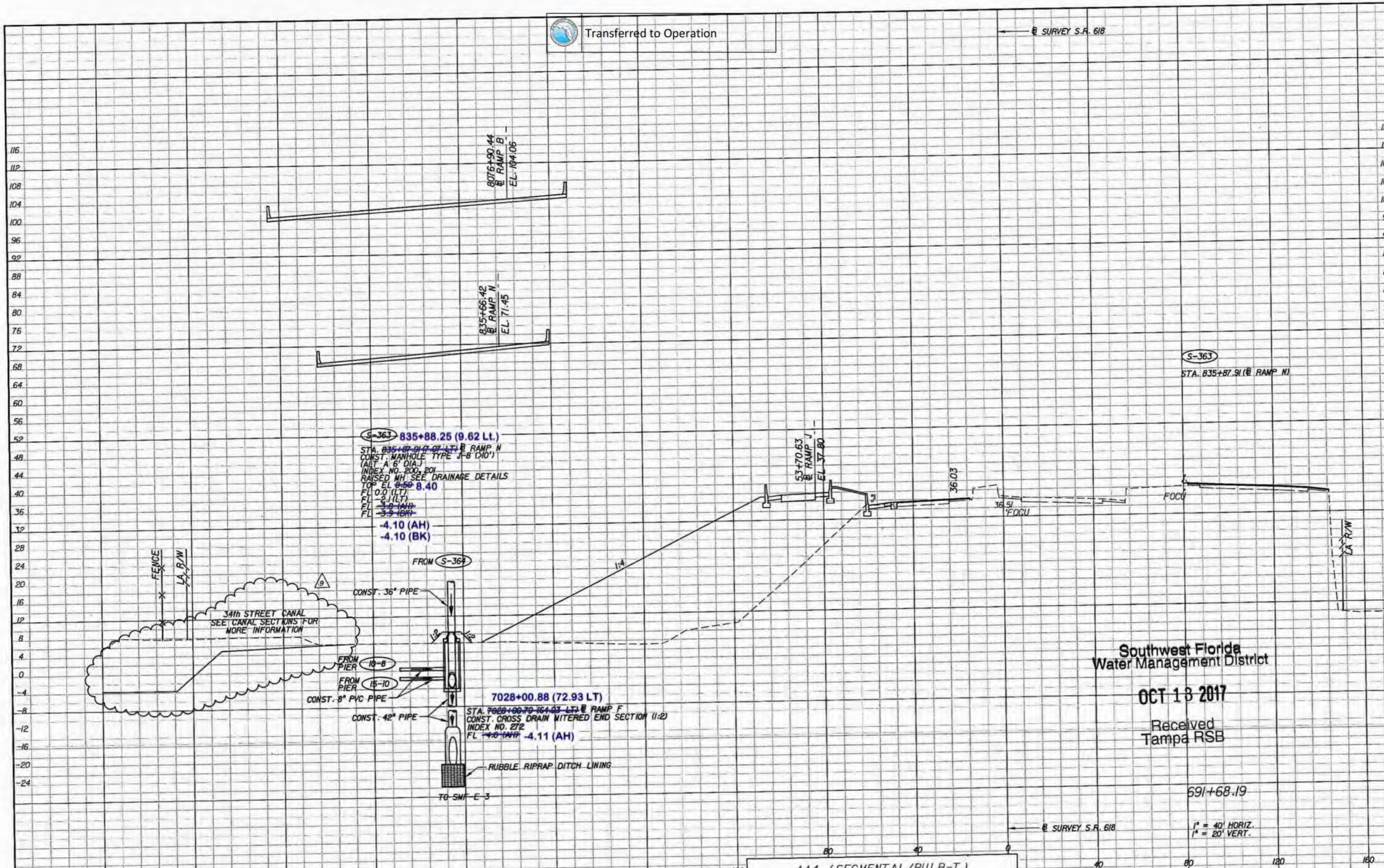
Transferred to Operation



DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REDESIGN 34TH STREET CANAL		

REVISIONS

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5300 West Cypress Street
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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (64)

SHEET NO.
391

USER: 24734 11/28/2012 10:39:54 AM K:\E-Delivery\Revision_9\258415\5201AA4\drainage\DRXSRD01_REV9.DGN

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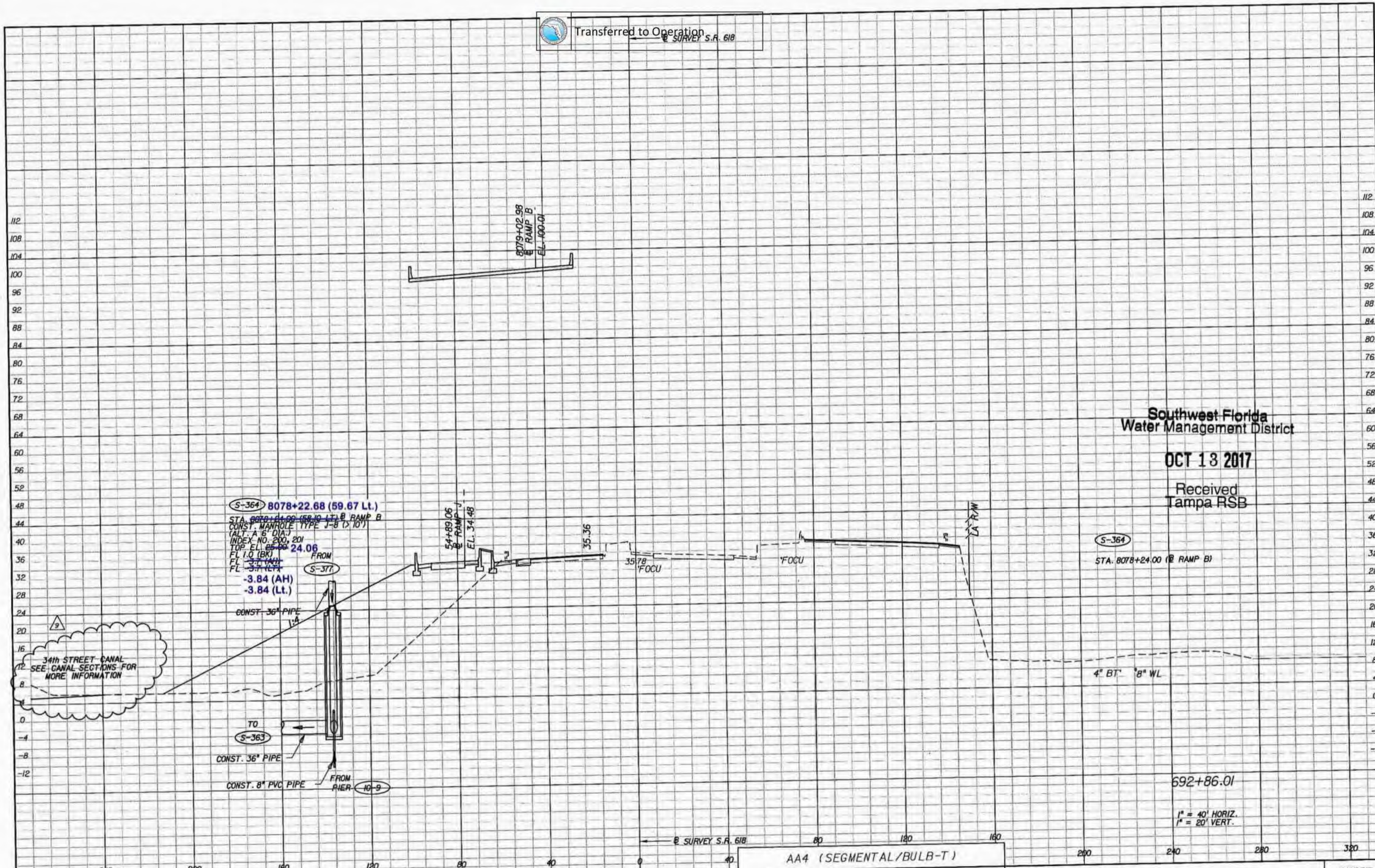

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OCT 13 2017
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AA4 (SEGMENTAL/BULB-T)

REVISIONS				
DATE	DESCRIPTION	DATE	DESCRIPTION	
11/05/12	9 REDESIGN 34TH STREET CANAL			

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (65)

SHEET NO. 392

USER: 24734 11/28/2012 10:41:31 AM K:\E-Delivery\Revision_9\25841515201AA4\drainage\DRXSRD01_REV9.DGN

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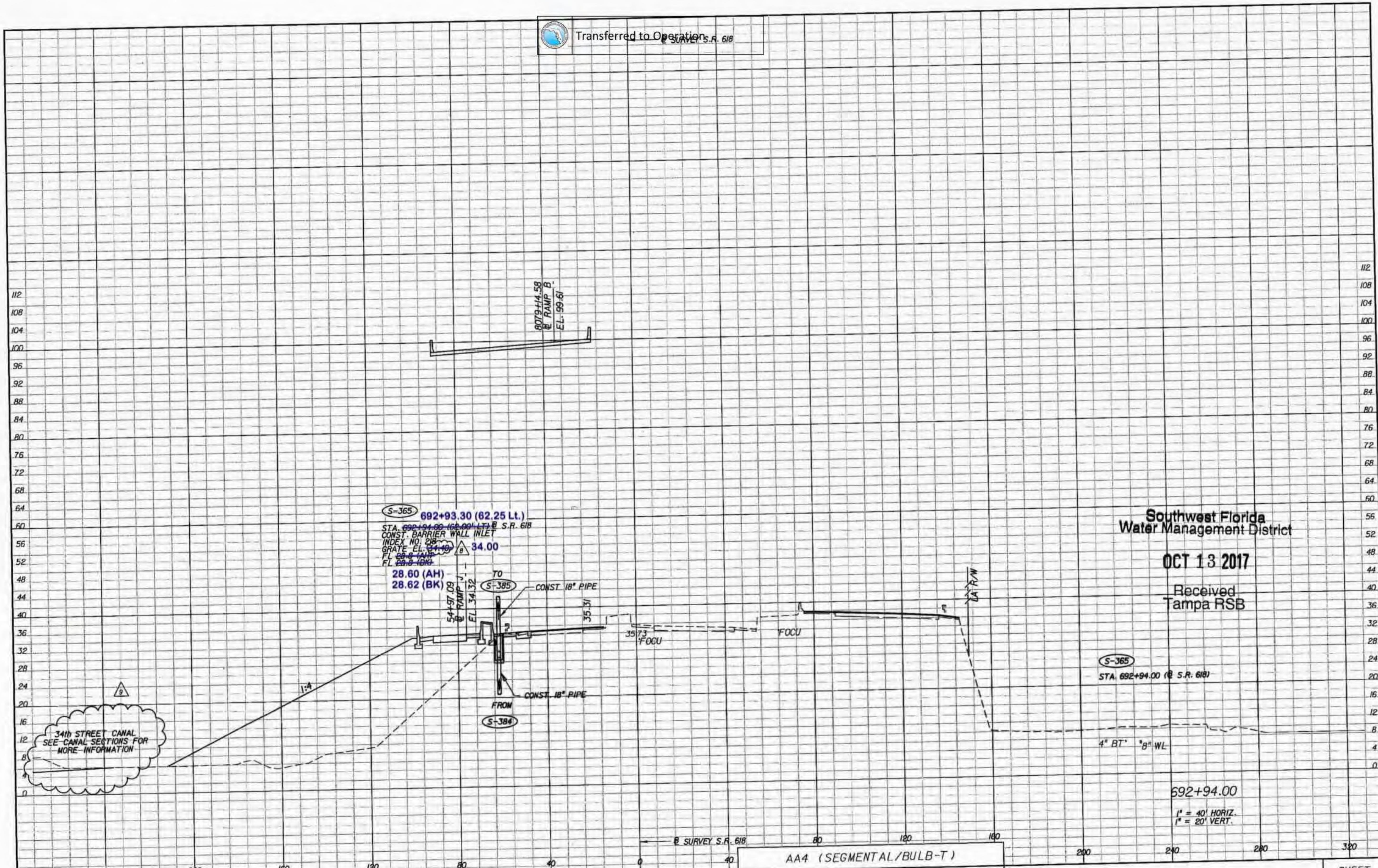

AA4 (SEGMENTAL/BULB-T)

DATE		DESCRIPTION	DATE	DESCRIPTION
01/27/12	8	REVISED GRATE ELEVATION		
11/05/12	9	REDESIGN 34TH STREET CANAL		

REVISIONS

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (66)

SHEET NO. 393

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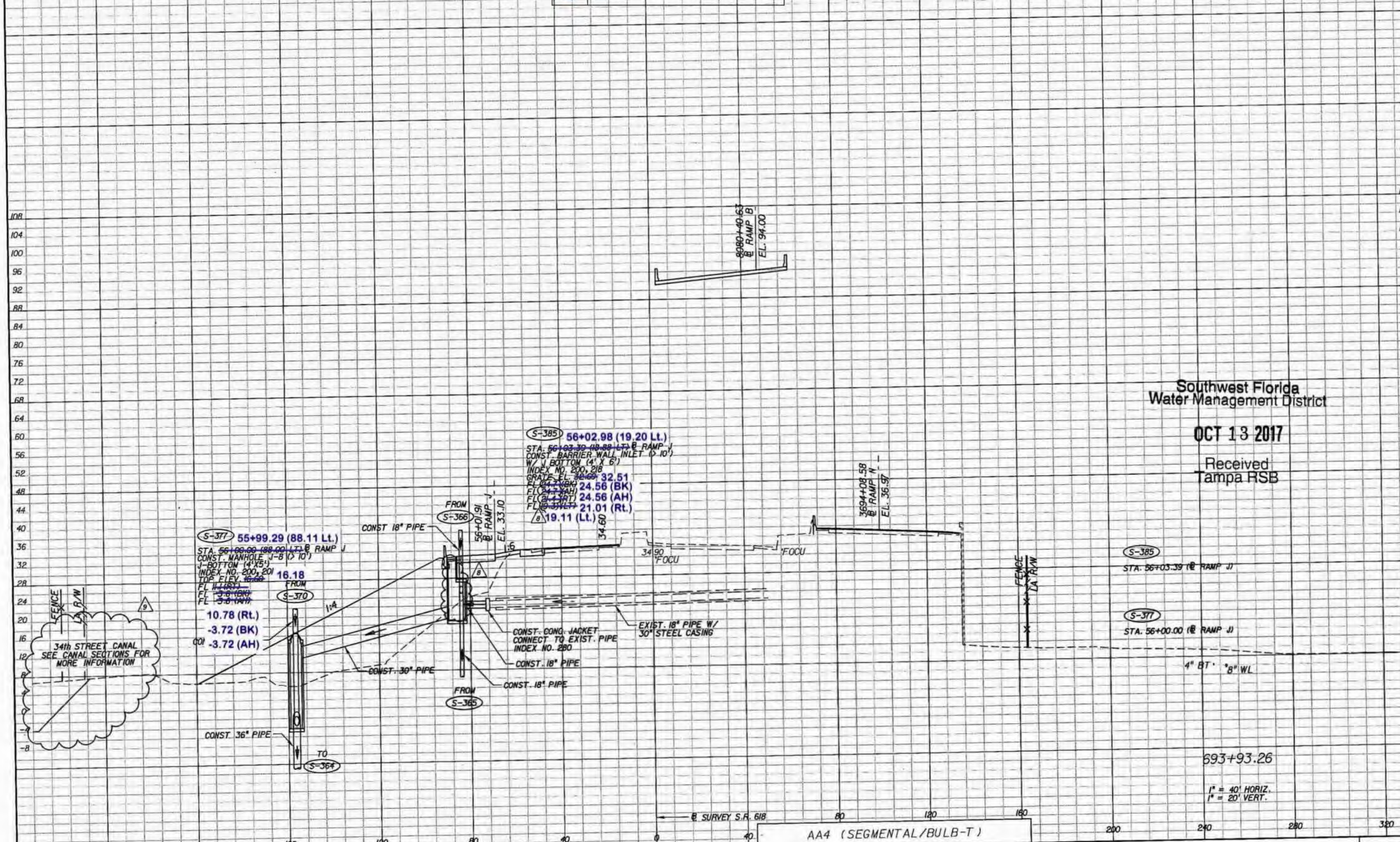
Transferred to Operation



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	8 REVISED PIPE FLOWLINES		
11/05/12	9 REDESIGN 34TH STREET CANAL		

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

USER: 24734

DRAINAGE STRUCTURES
SR 618 (67)

SHEET NO. 394

11/28/2012 10:42:37 AM K:\E-Delivery\Revision_9\25841515201AA4\drainage\DRXSRD01_REV9.DGN

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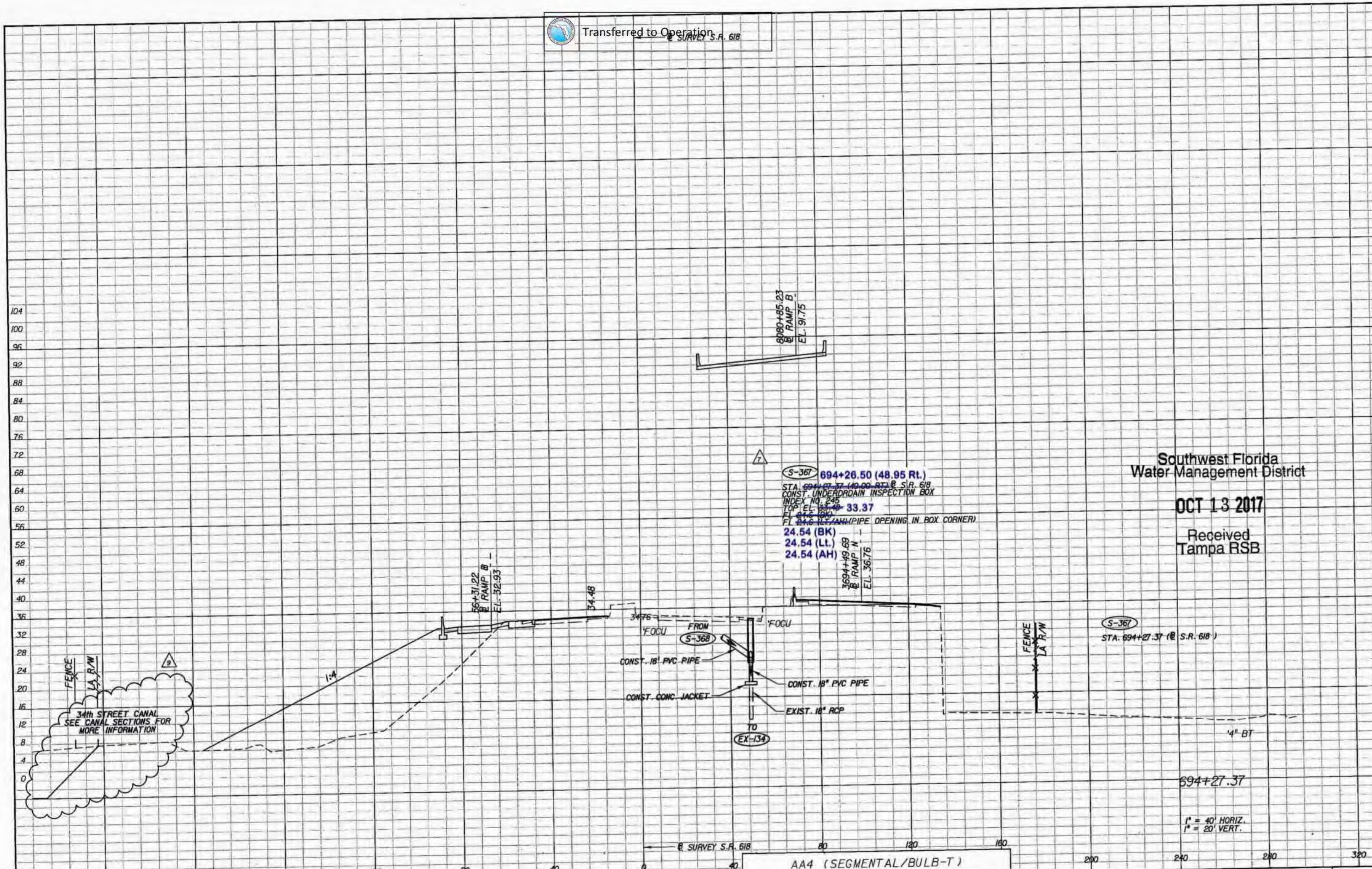

Southwest Florida Water Management District

OCT 13 2017

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REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
05/23/11	7 ADDED NEW SHEET; ADDED UNDERDRAIN INSPECTION BOX AND PVC PIPE.		
11/05/12	9 REDESIGN 34TH STREET CANAL		

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AA4 (SEGMENTAL/BULB-T)

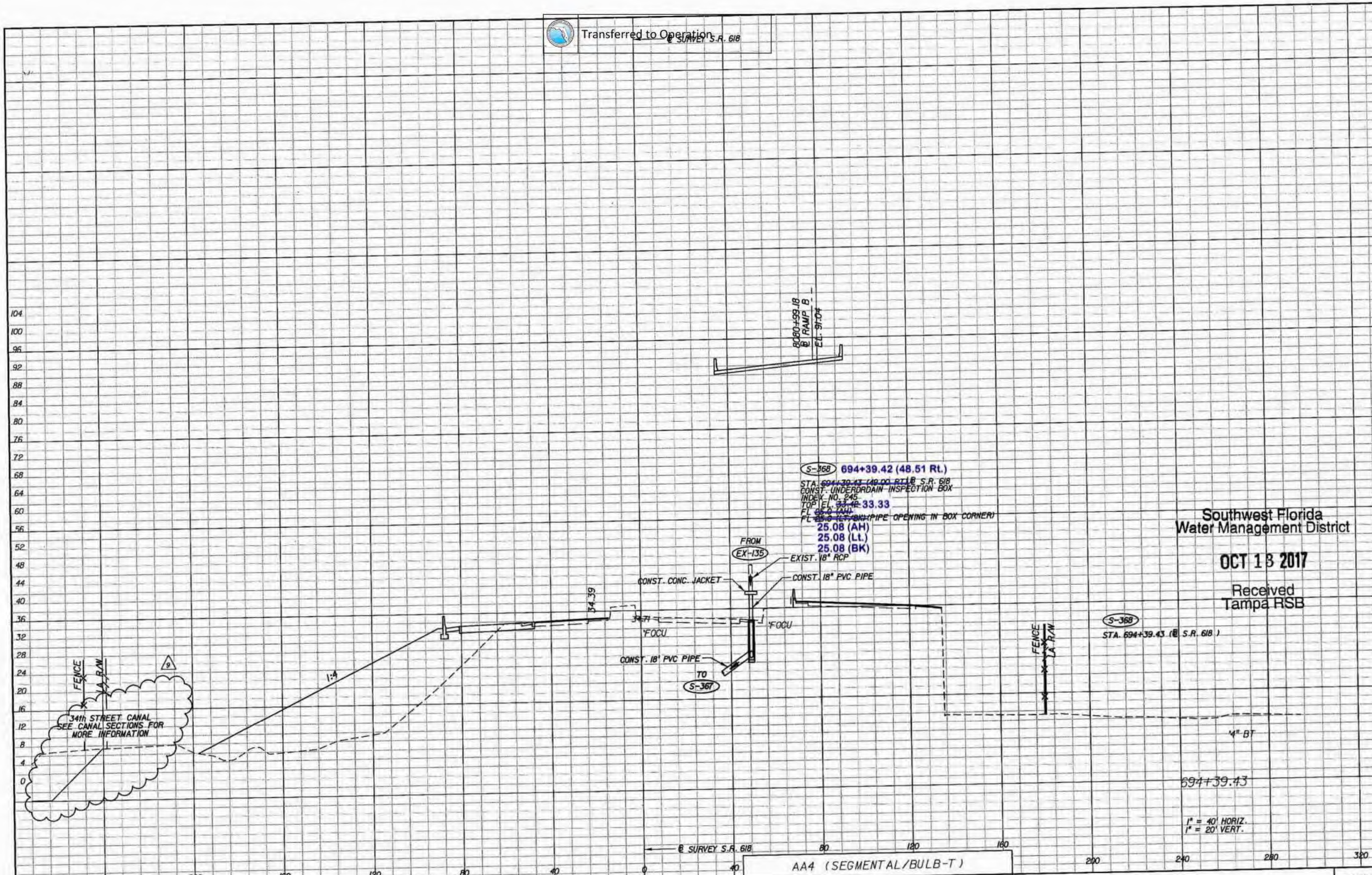
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

USER: 24734 11/28/2012

DRAINAGE STRUCTURES
SR 618 (67A)

SHEET NO. 394A



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
05/23/11	7 ADDED NEW SHEET; ADDED UNDERDRAIN INSPECTION BOX AND PVC PIPE.		
11/05/12	9 REDESIGN 34TH STREET CANAL		

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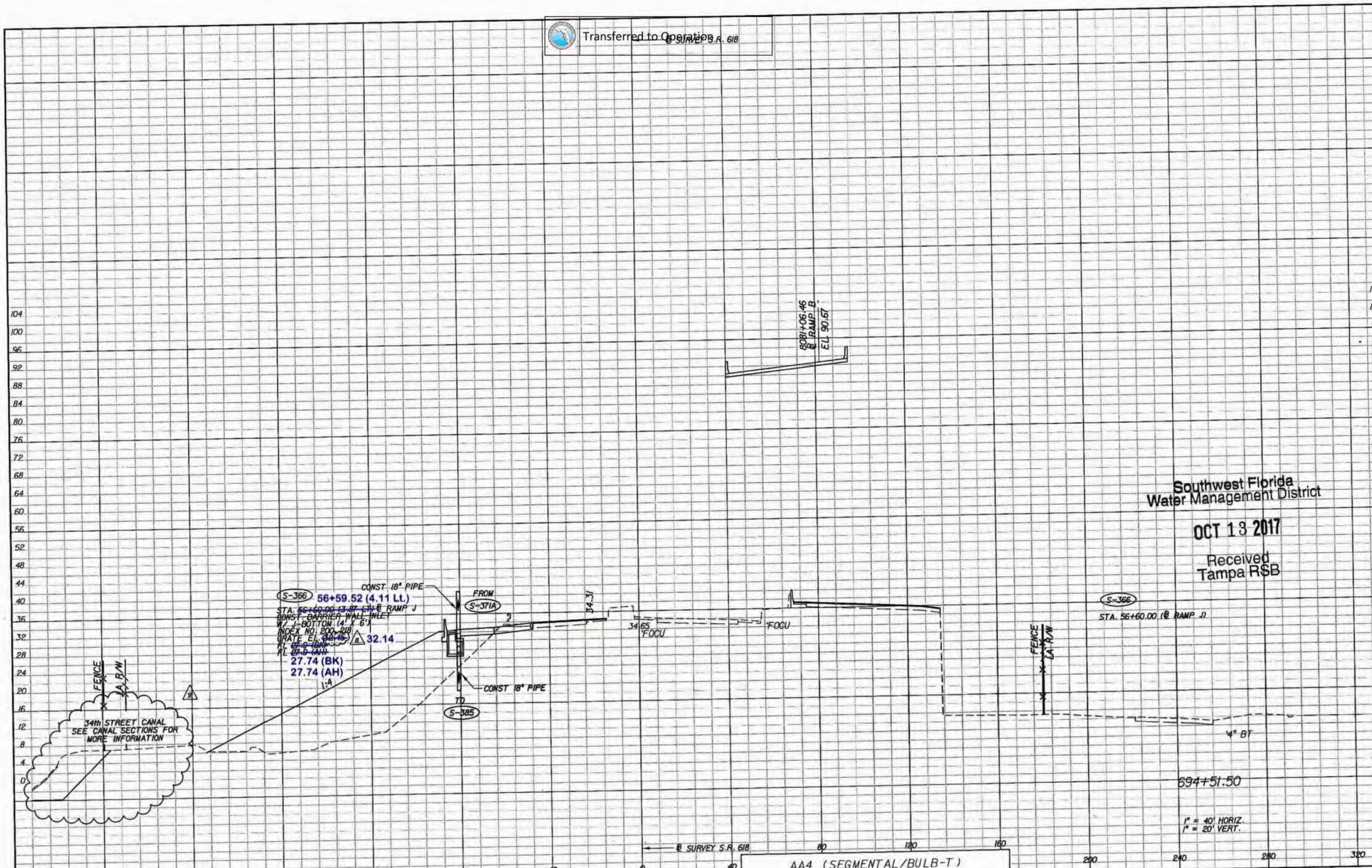
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

USER: 24734 11/28/2012

DRAINAGE STRUCTURES
SR 618 (67B)

SHEET NO. 394B



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
01/27/12	8 REVISED GRATE ELEVATION		
11/05/12	9 REDESIGN 34TH STREET CANAL		

PBSJ
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (68)

SHEET NO. 395

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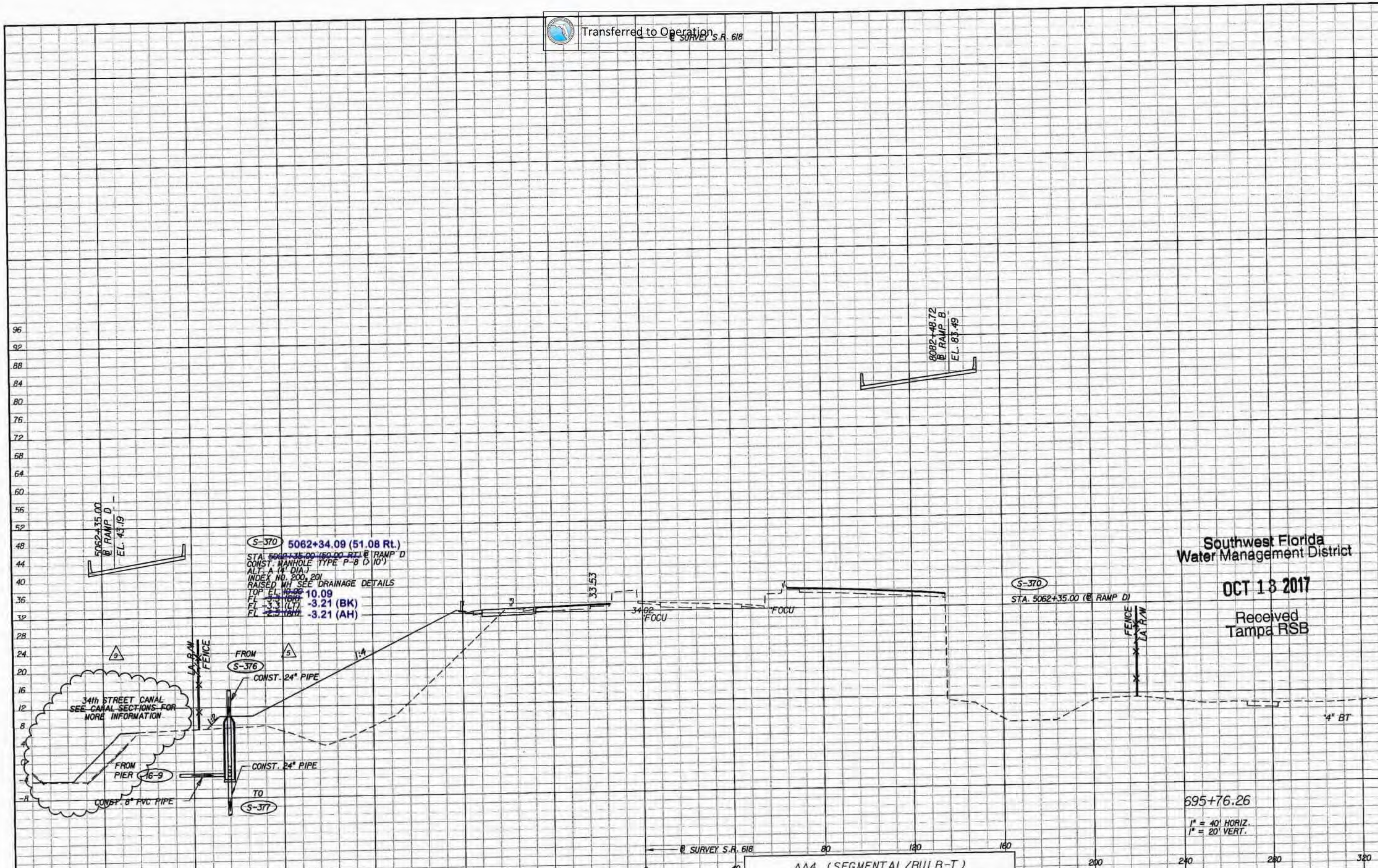

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 REVISED STRUCT. NUMBER		
11/05/12	9 REDESIGN 34TH STREET CANAL		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (69)

SHEET NO.
396

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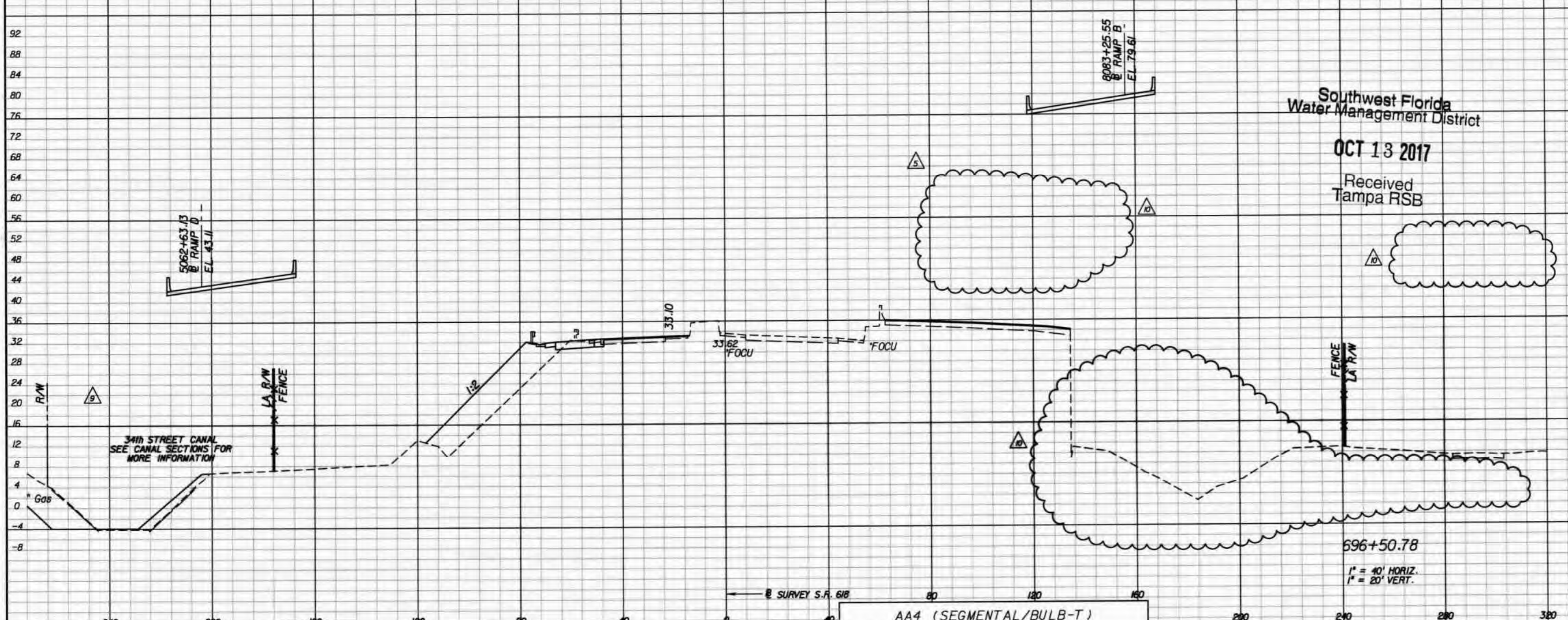
Transferred to Operation



Southwest Florida Water Management District
OCT 13 2017
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REVISIONS				
DATE	DESCRIPTION	DATE	DESCRIPTION	
08/11/10	5 ADDED NEW SHEET. ADDED MANHOLE AND PVC PIPE, REVISED PIPE FLOWLINES AND RELOCATED MES	08/26/13	10 REMOVE S-356, PIPE AND MES	
11/05/12	9 REDESIGN 34TH STREET CANAL			

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AA4 (SEGMENTAL/BULB-T)

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (69A)

SHEET NO. 396A

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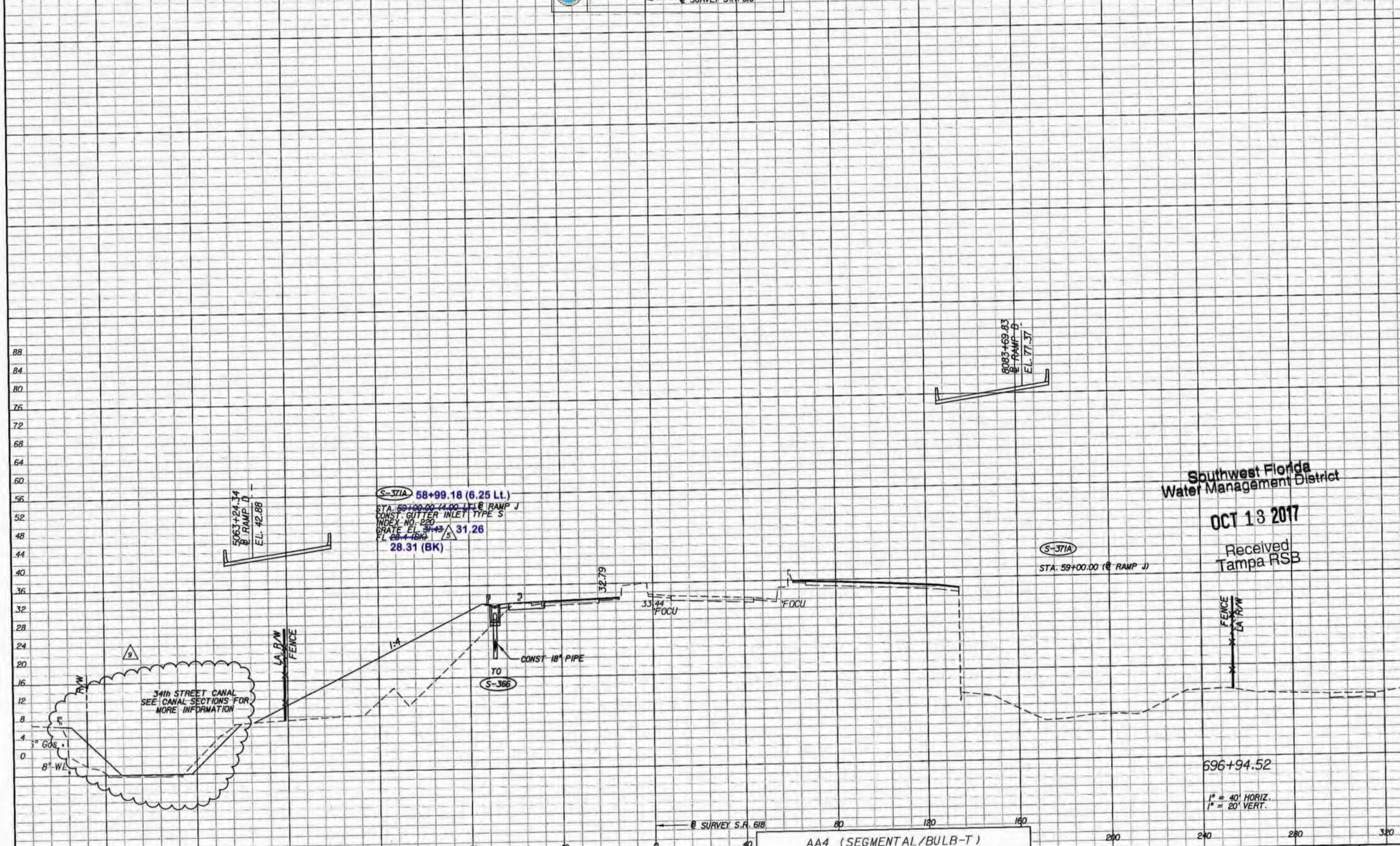

REVISIONS

DATE		DESCRIPTION	DATE	DESCRIPTION
08/11/10	5	REVISED INLET ELEVATION		
11/05/12	9	REDESIGN 34TH STREET CANAL		

PBSJ
5300 West Cypress Street
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AA4 (SEGMENTAL/BULB-T)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (70)

SHEET NO. 397

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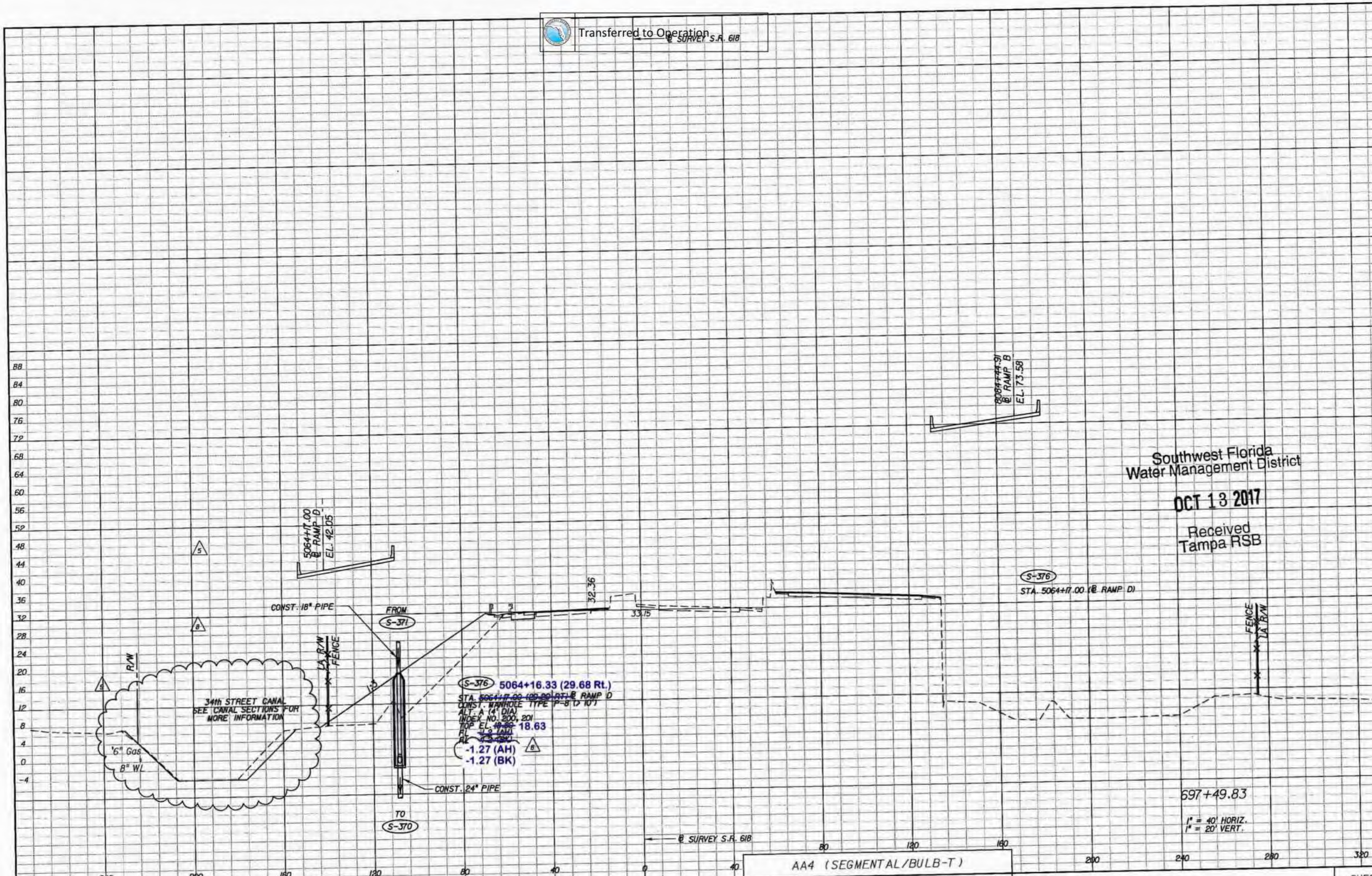
Transferred to Operation



AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
08/11/10	5 ADDED & RELOCATED MANHOLE	11/05/12	9 REDESIGN 34TH STREET CANAL
01/27/12	8 REMOVED MANHOLE & PIPE		

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (71)

SHEET NO. 398

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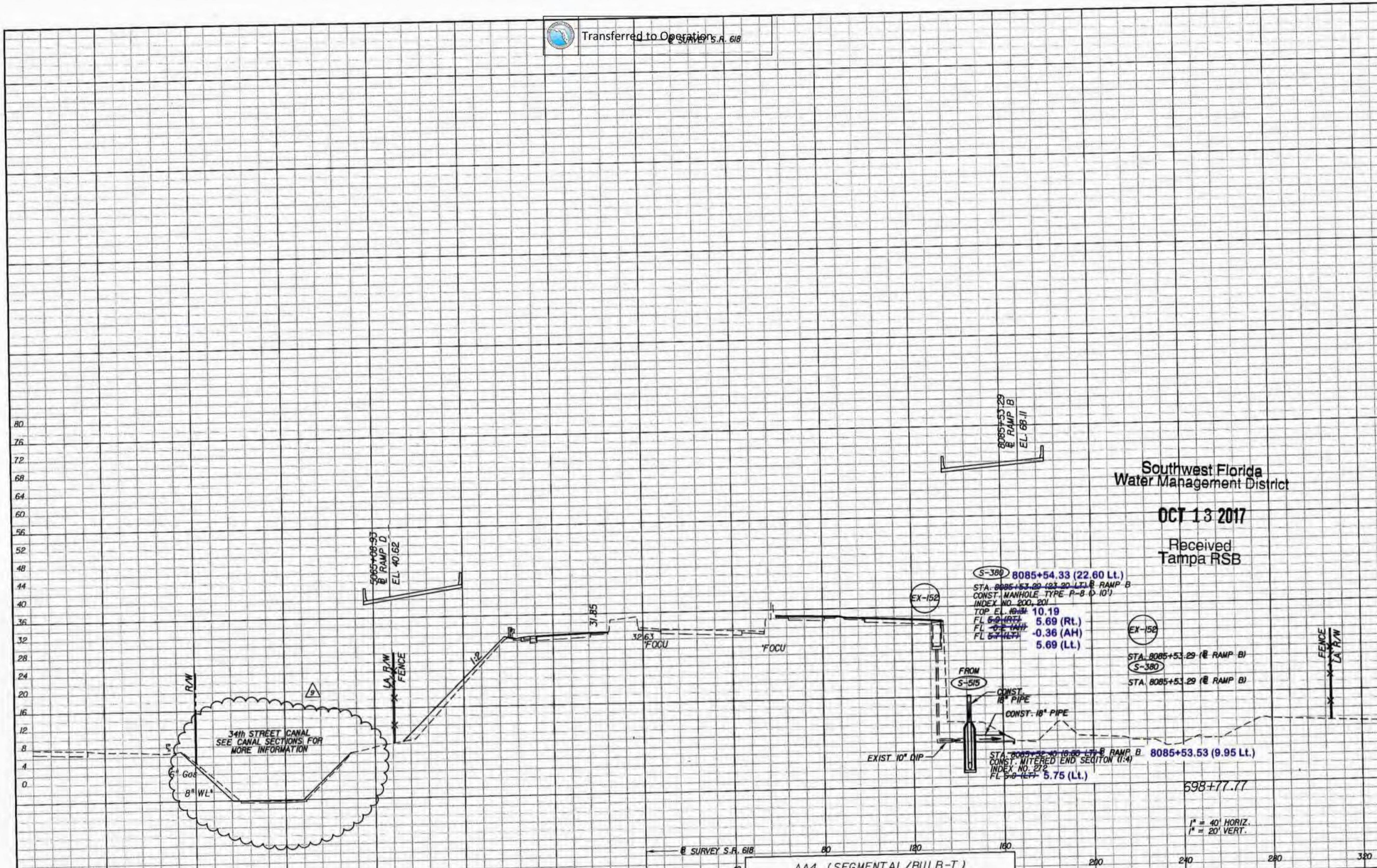

AA4 (SEGMENTAL/BULB-T)

DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REDESIGN 34TH STREET CANAL		

REVISIONS

PBS&J 5300 West Cypress Street, Suite 200, Tampa, Florida 33607-1768, FBPE Certificate of Authorization No. 24

Shayne M. Paynter, P.E. #58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (72)

SHEET NO. 399

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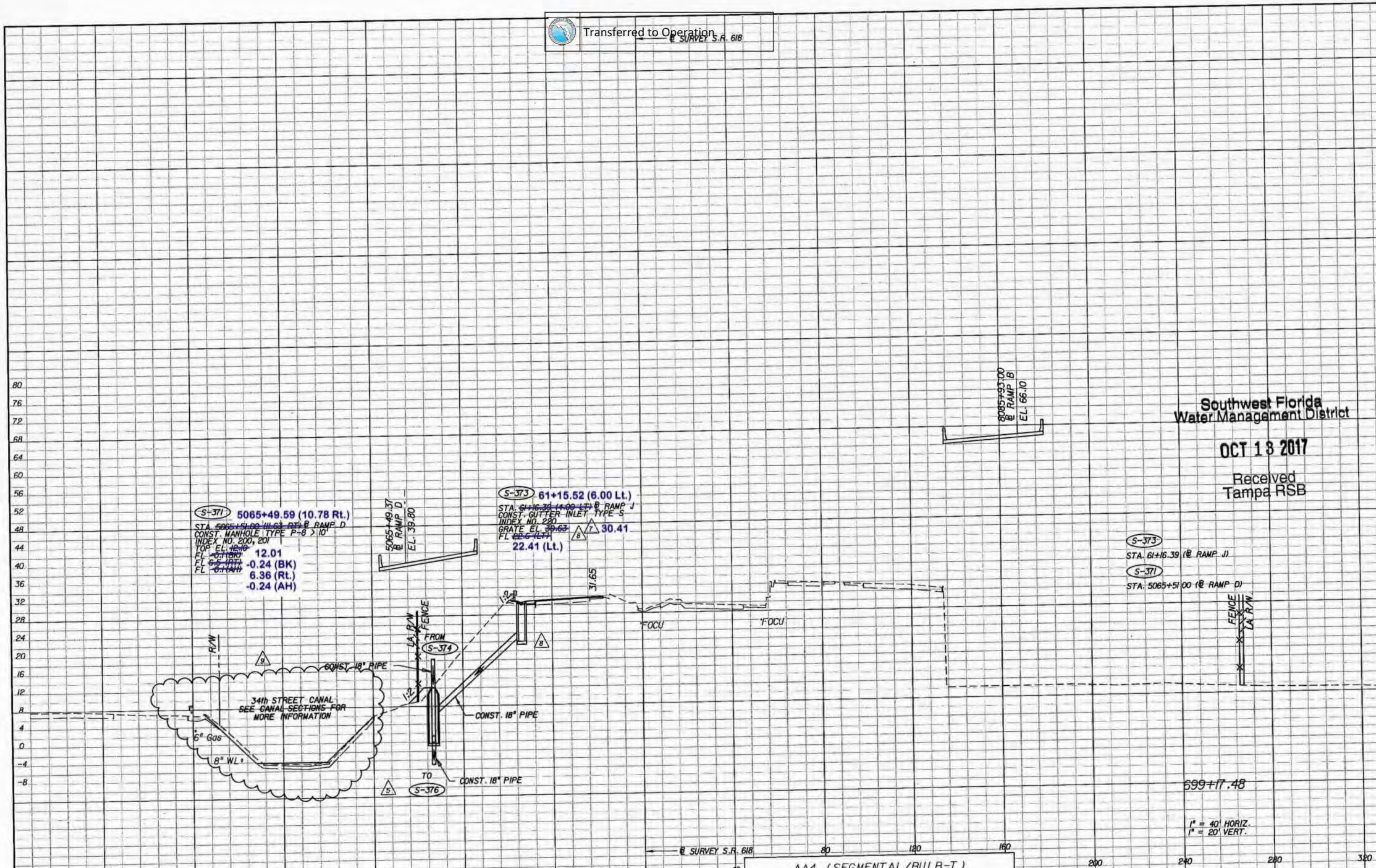

AA4 (SEGMENTAL/BULB-T)

DATE		DESCRIPTION	DATE		DESCRIPTION
08/11/10	5	REVISED STRUCT. NUMBER	11/05/12	9	REDESIGN 34TH STREET CANAL
05/23/11	7	UPDATED GRATE ELEVATION			
01/27/12	8	UPDATED GRATE & FL ELEVATION			

REVISIONS

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (73)

SHEET NO. 400

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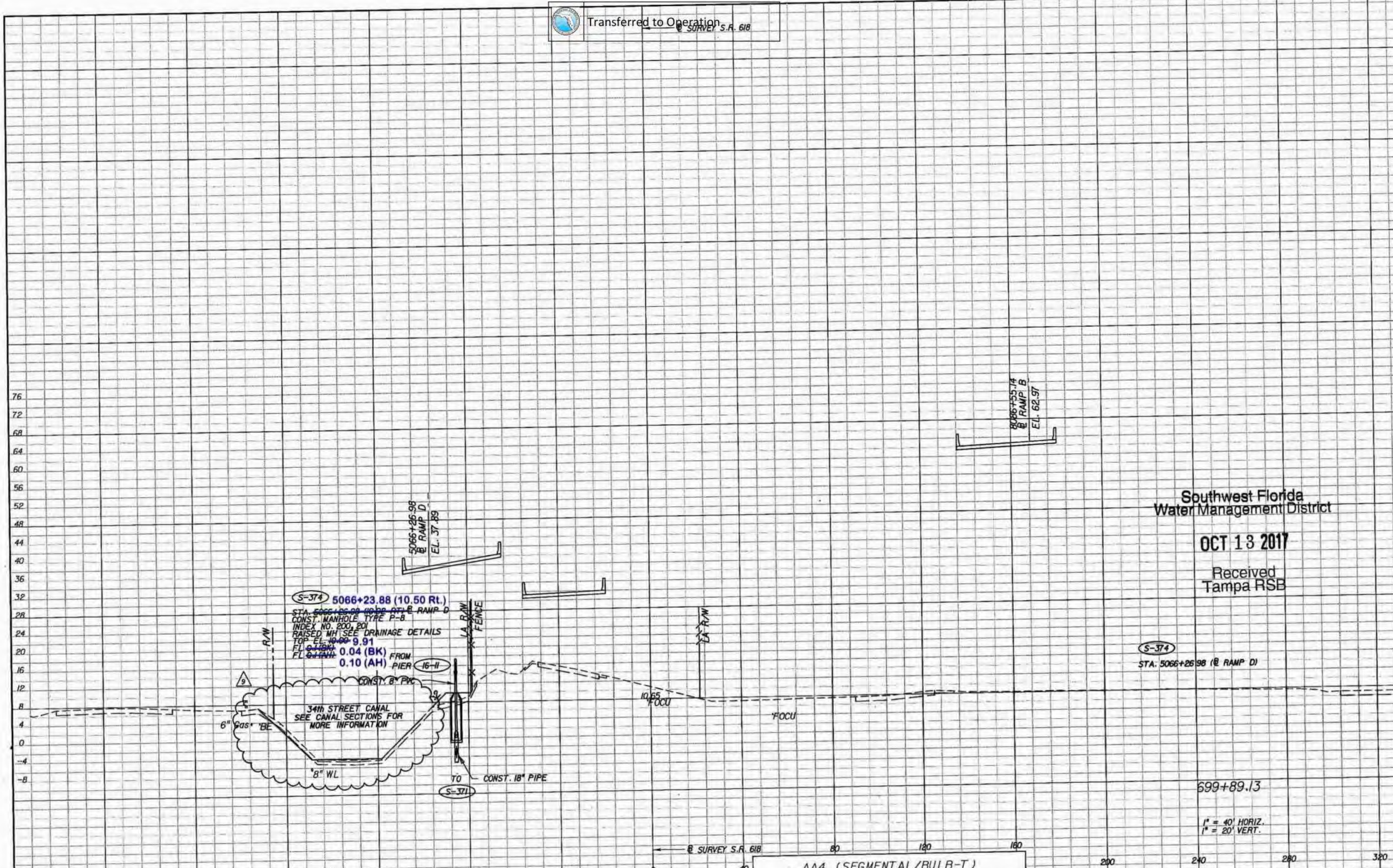

AA4 (SEGMENTAL/BULB-T)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
11/05/12	9 REDESIGN 34TH STREET CANAL		

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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SR 618 (74)

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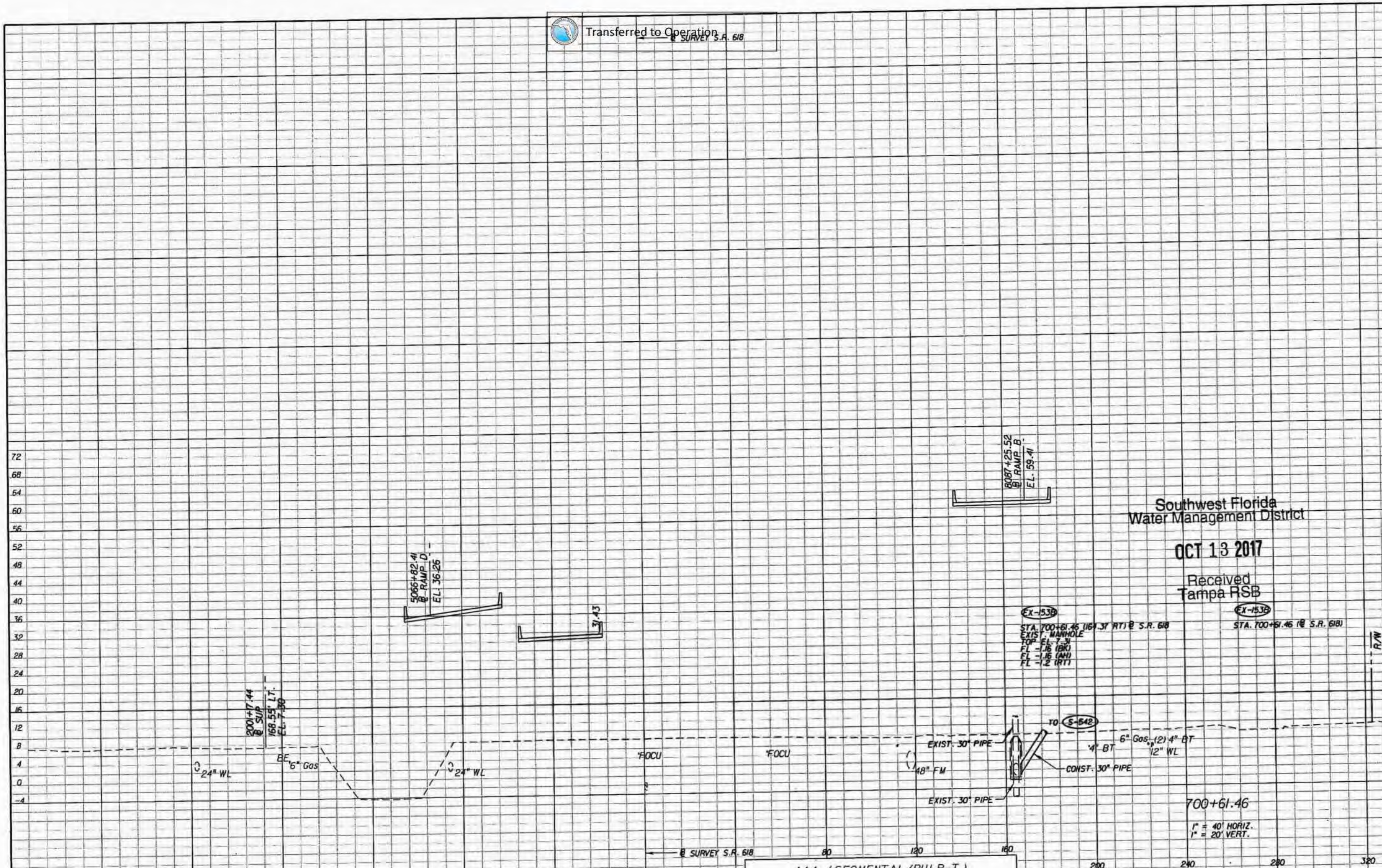

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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DRAINAGE STRUCTURES
SR 618 (75)

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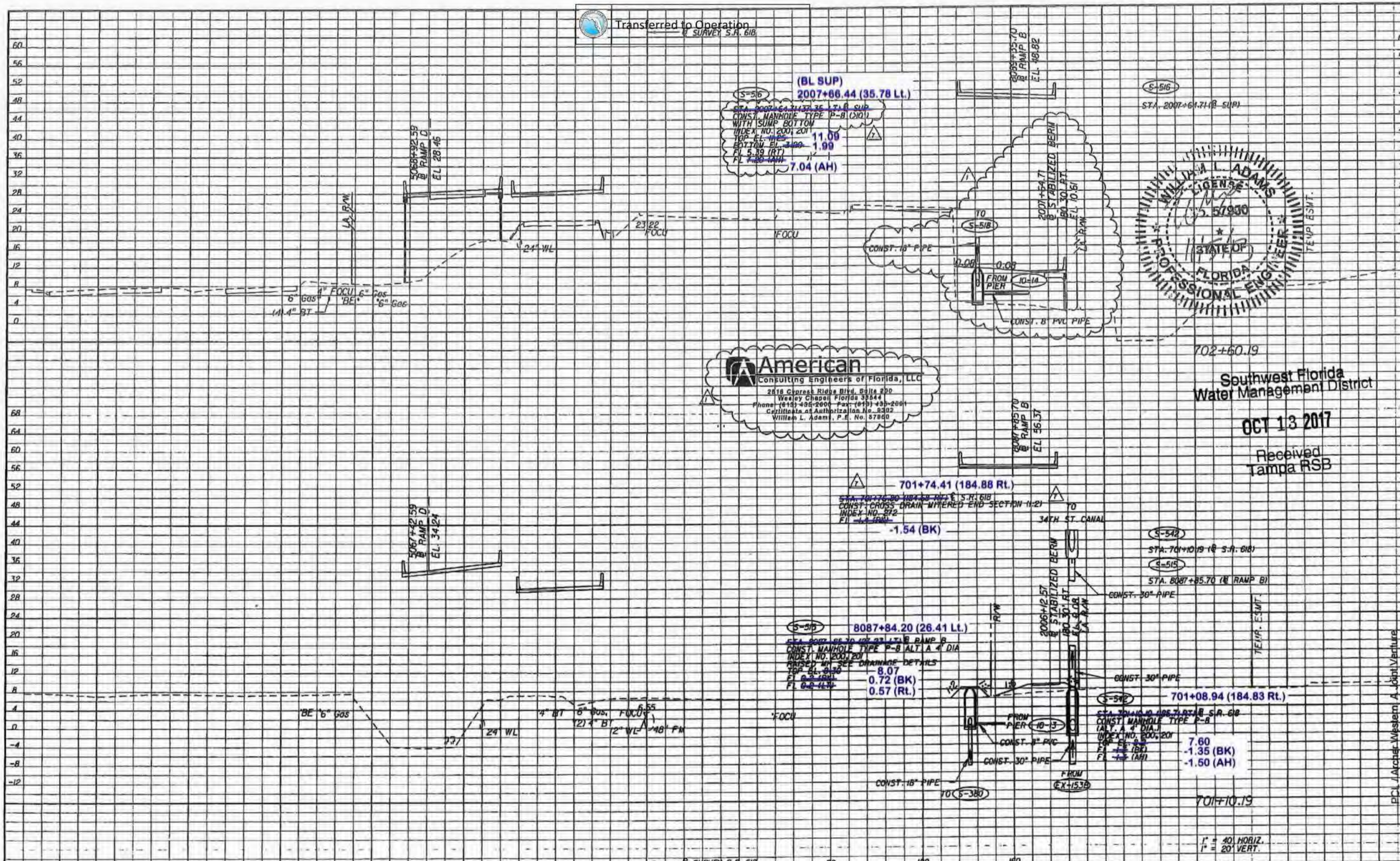

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (76)

SHEET NO. 403

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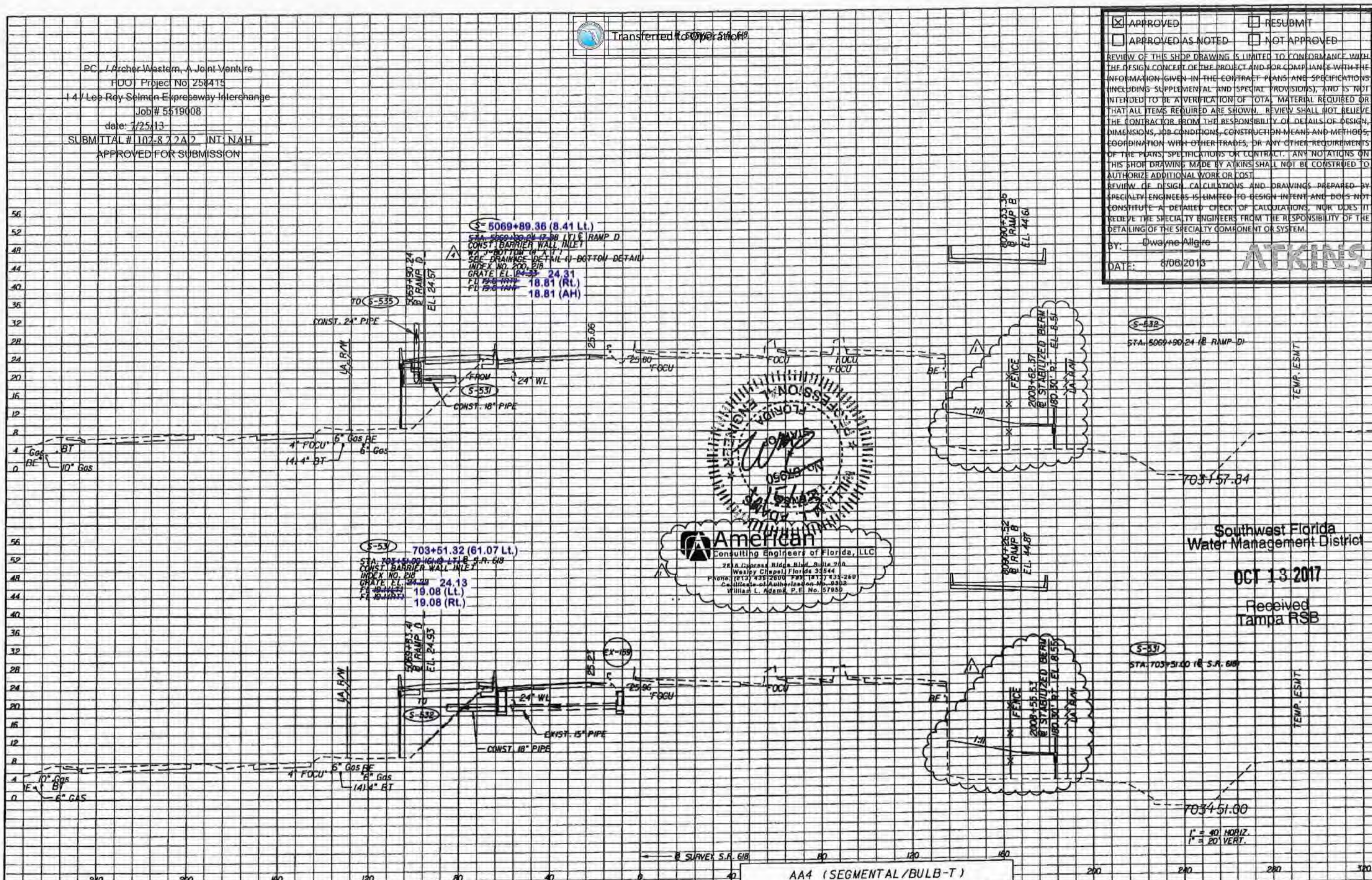
FDOT Project No. 258415
Job # 5519008
date: 11/6/13
SUBMITTAL #20-8_2_2A INT: GH
APPROVED FOR SUBMISSION



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04/10/13	△ REVISED SHARED USED PATH PROFILE REVISED CONVEYANCE SYSTEM		

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SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (77)

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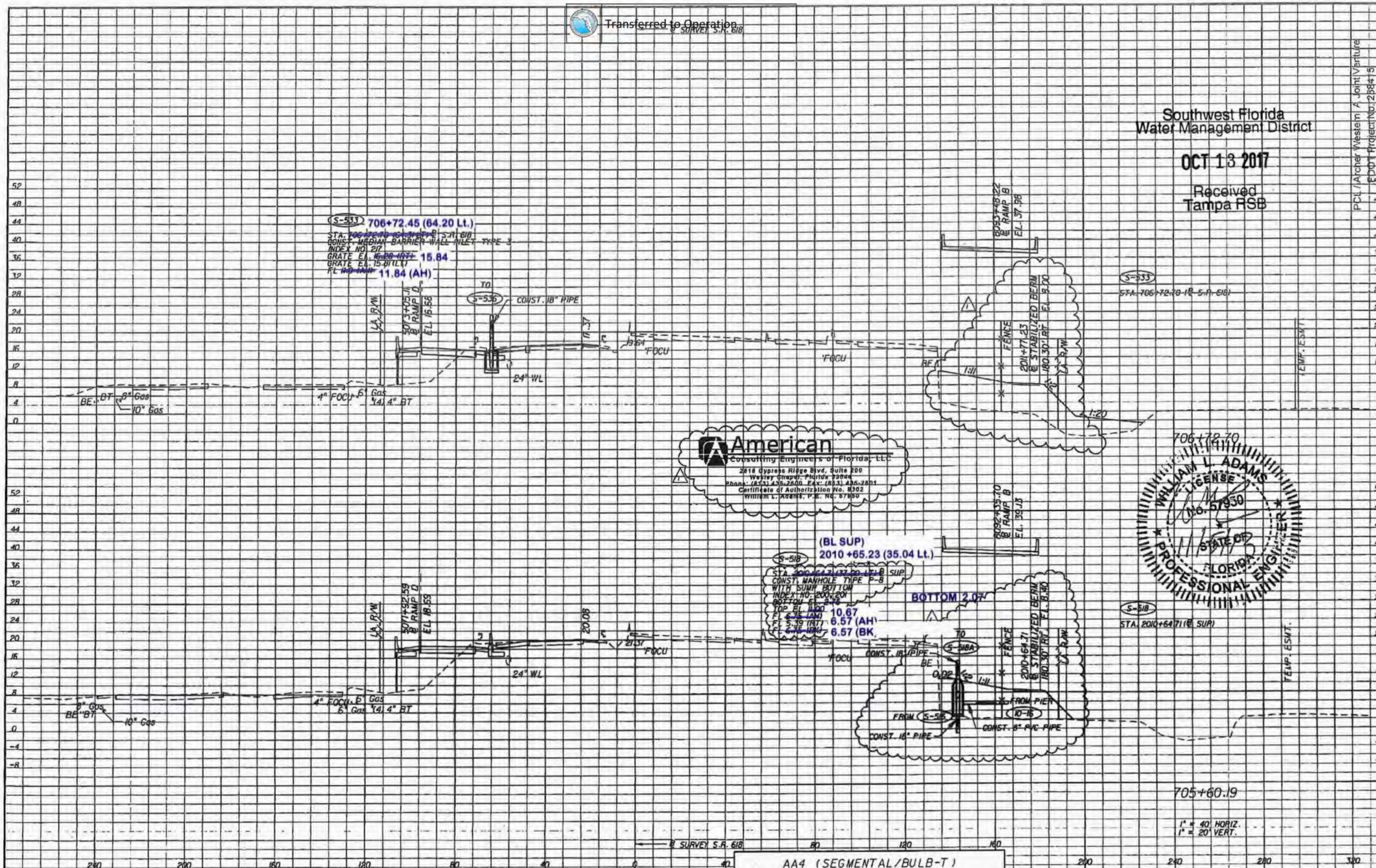

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FDOT Project No. 25845
I-4 Selmon Expressway Interchange
Job # 5519008
date: 11/6/13
SUBMITTAL # 20-8.2.2A INT GH
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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DRAINAGE STRUCTURES
SR 618 (78)

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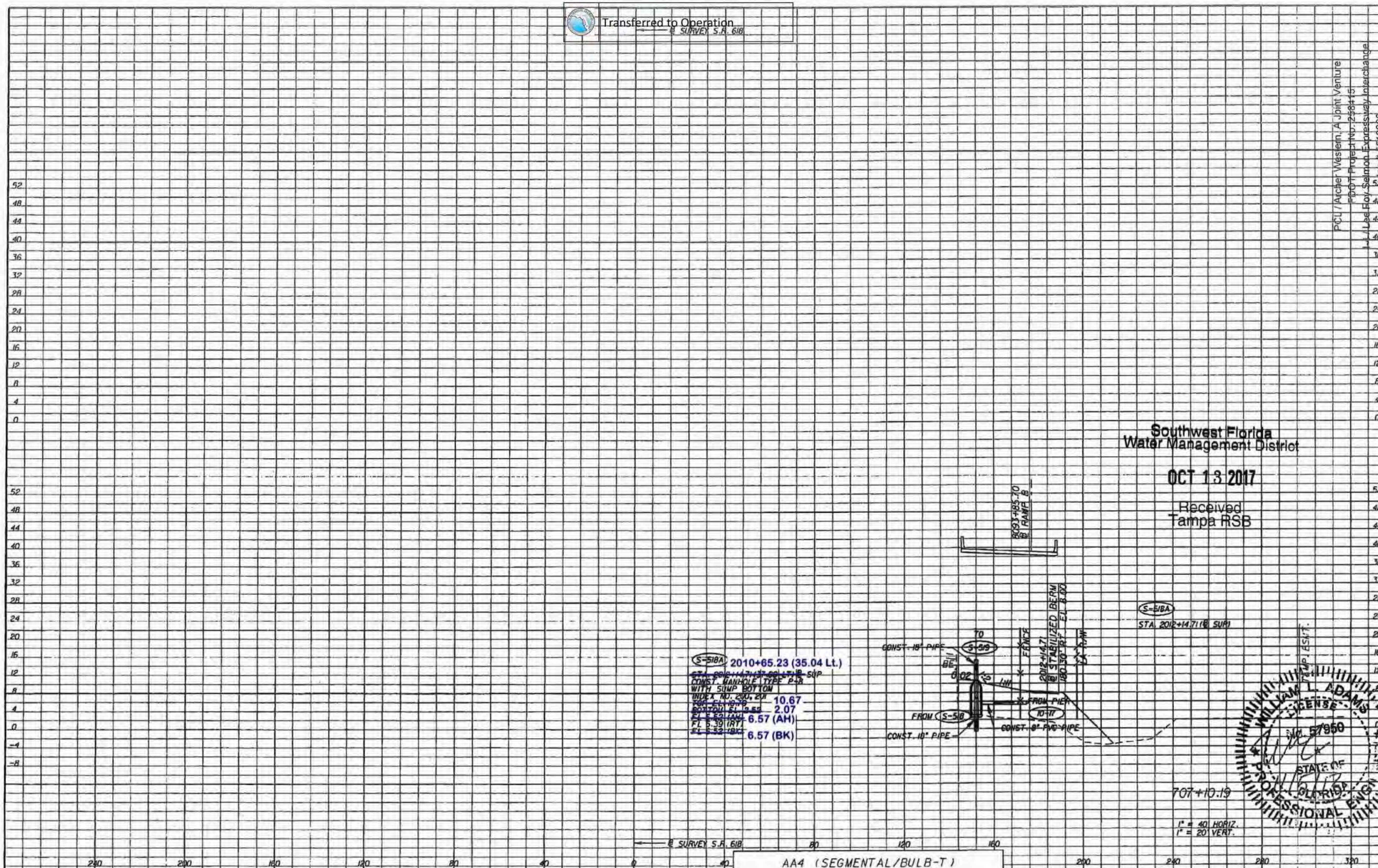

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FDOT Project No. 258415
I-4 / Lee Roy Selmon Expressway Interchange
Job # 5519008
date: 11/6/13
SUBMITTAL # 20-8 2 2A INT: GH
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LICENSE
No. 57950
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PROFESSIONAL ENGINEER

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William L. Adams, P.E. No. 57950
7

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (78A)

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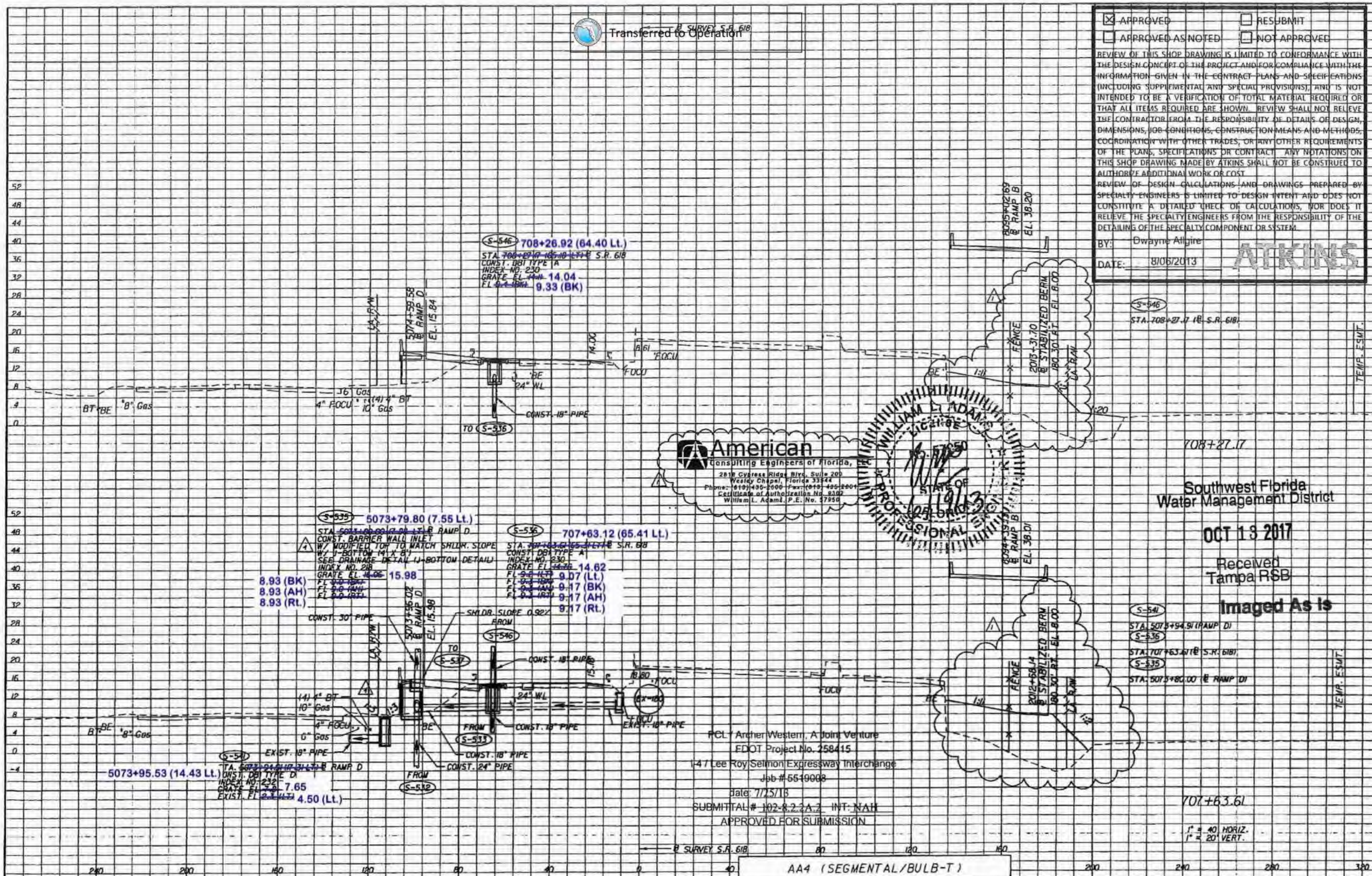

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BY: Dwayne Allgire
DATE: 8/06/2013
ATKINS

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Job # 5519008
date: 7/25/13
SUBMITTAL # 102-8.2.2A.2 INT: NAH
APPROVED FOR SUBMISSION

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DRAINAGE STRUCTURES
SR 618 (79)

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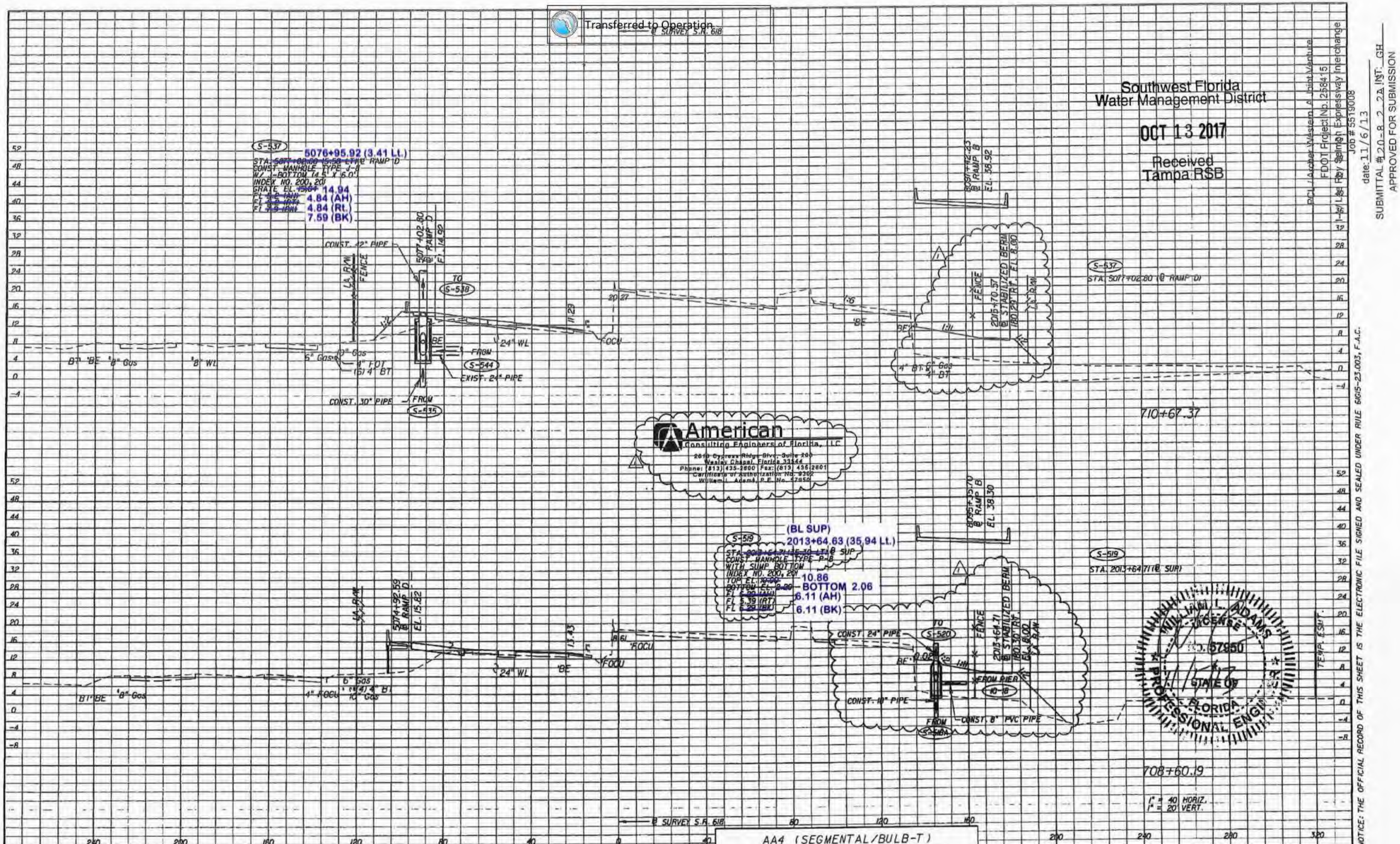

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SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (80)

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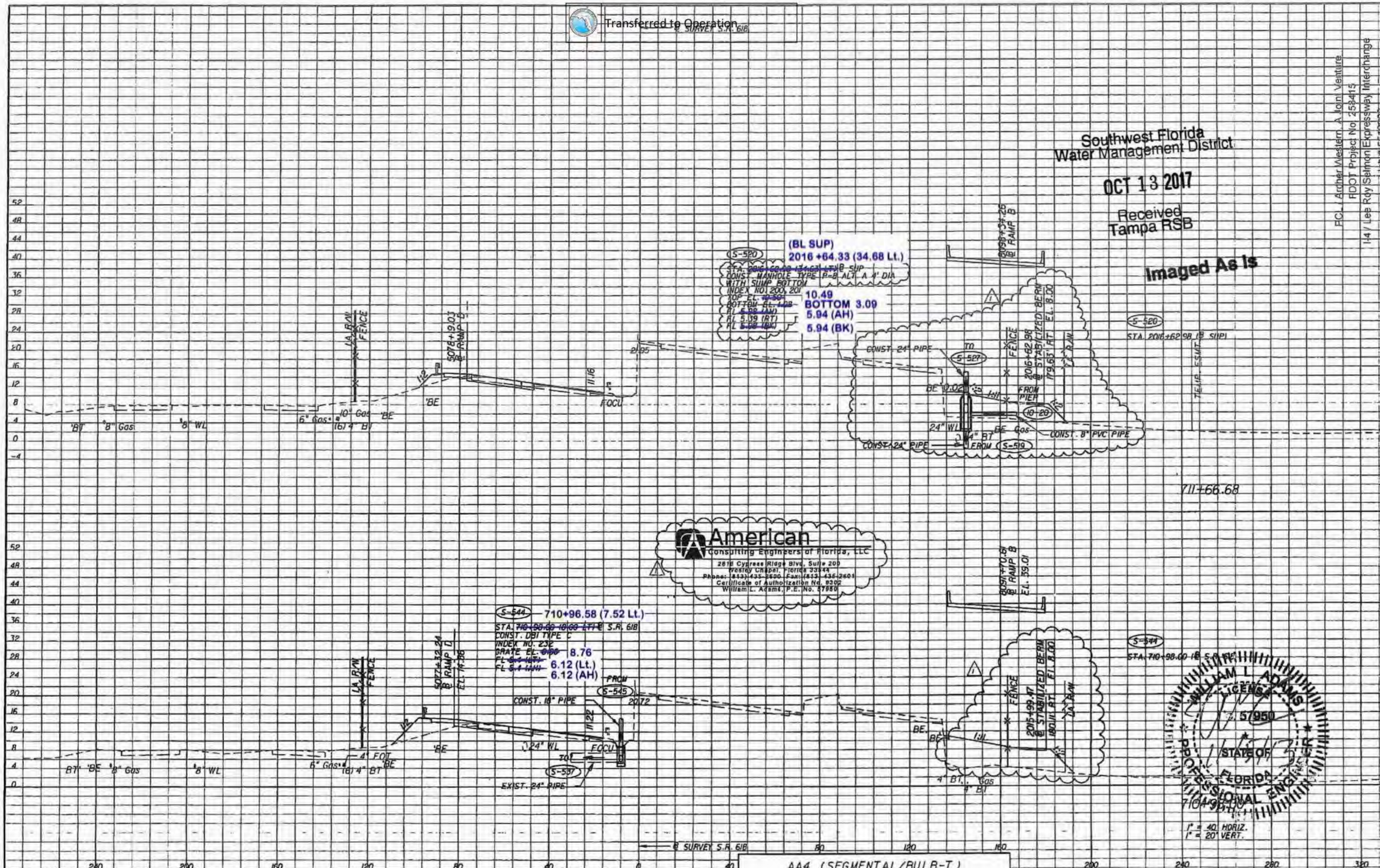

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (81)

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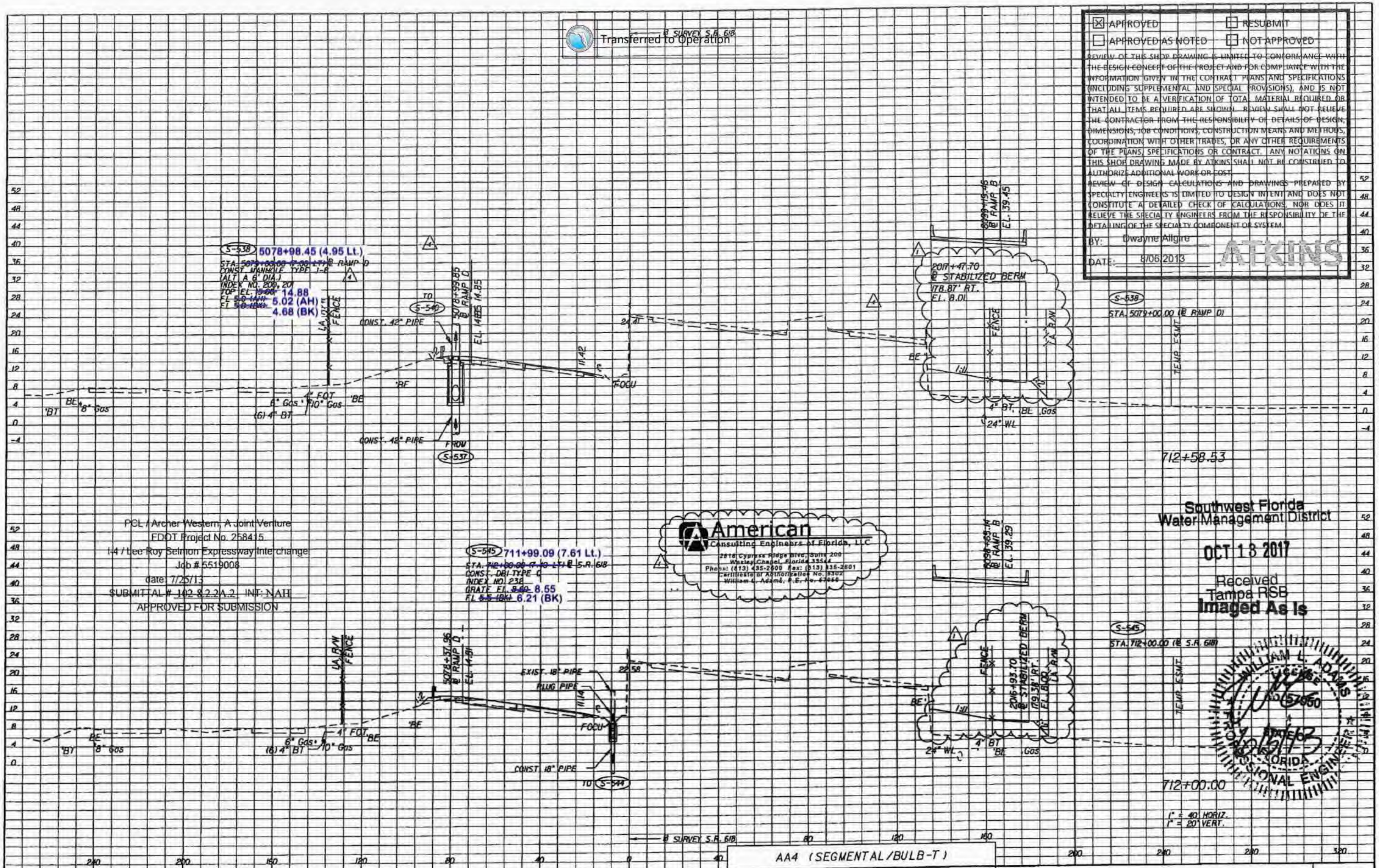

PCL / Archer Western, A Joint Venture
FDOT Project No. 258415
I-4 / Lee Roy Selmon Expressway Interchange
Job # 5519008
date: 7/25/13
SUBMITTAL # 102-8.2.2A.2 INT: NAH
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BY: Dwayne Allgire
DATE: 8/06/2013
ATKINS

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (82)

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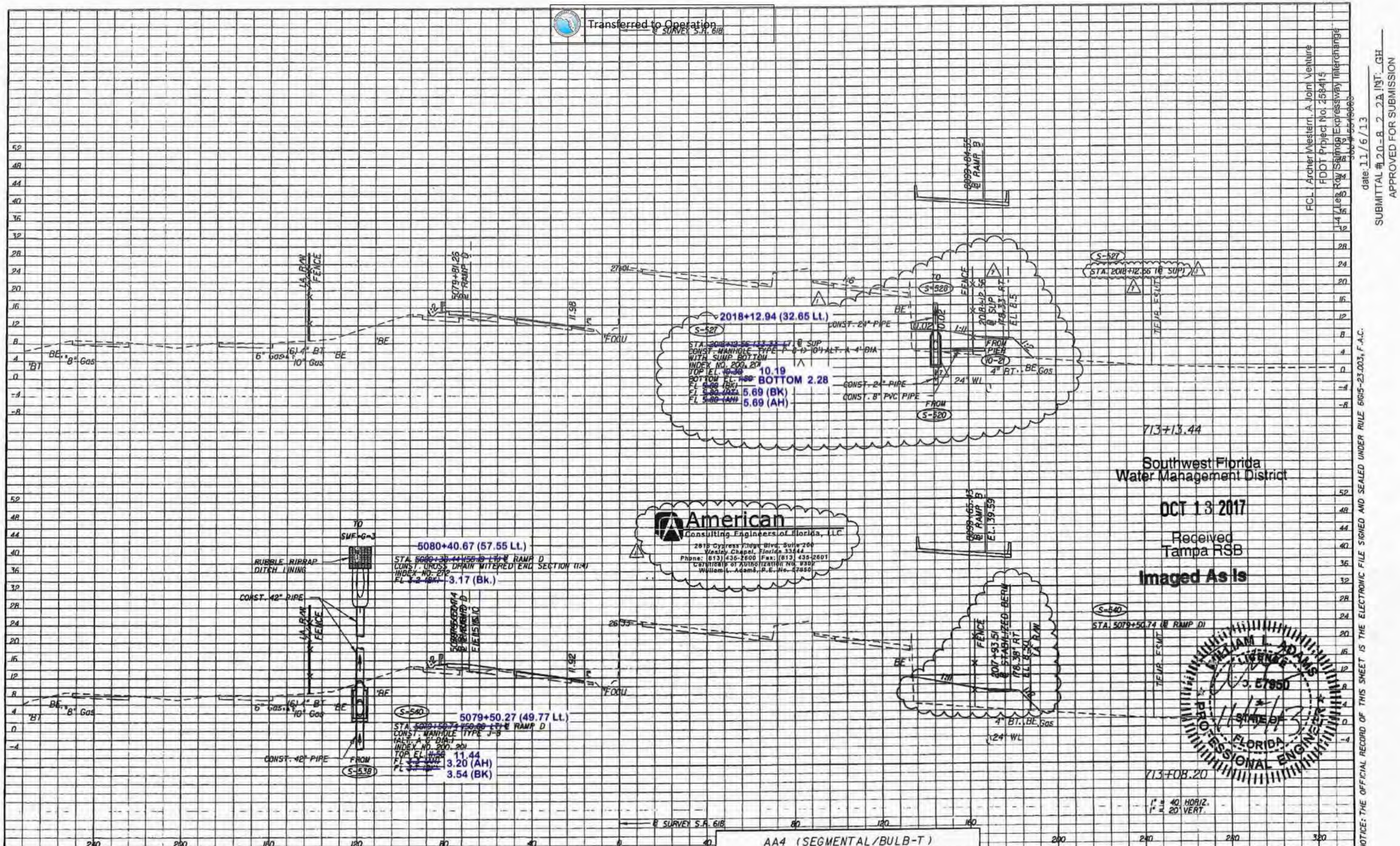

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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DRAINAGE STRUCTURES
SR 618 (83)

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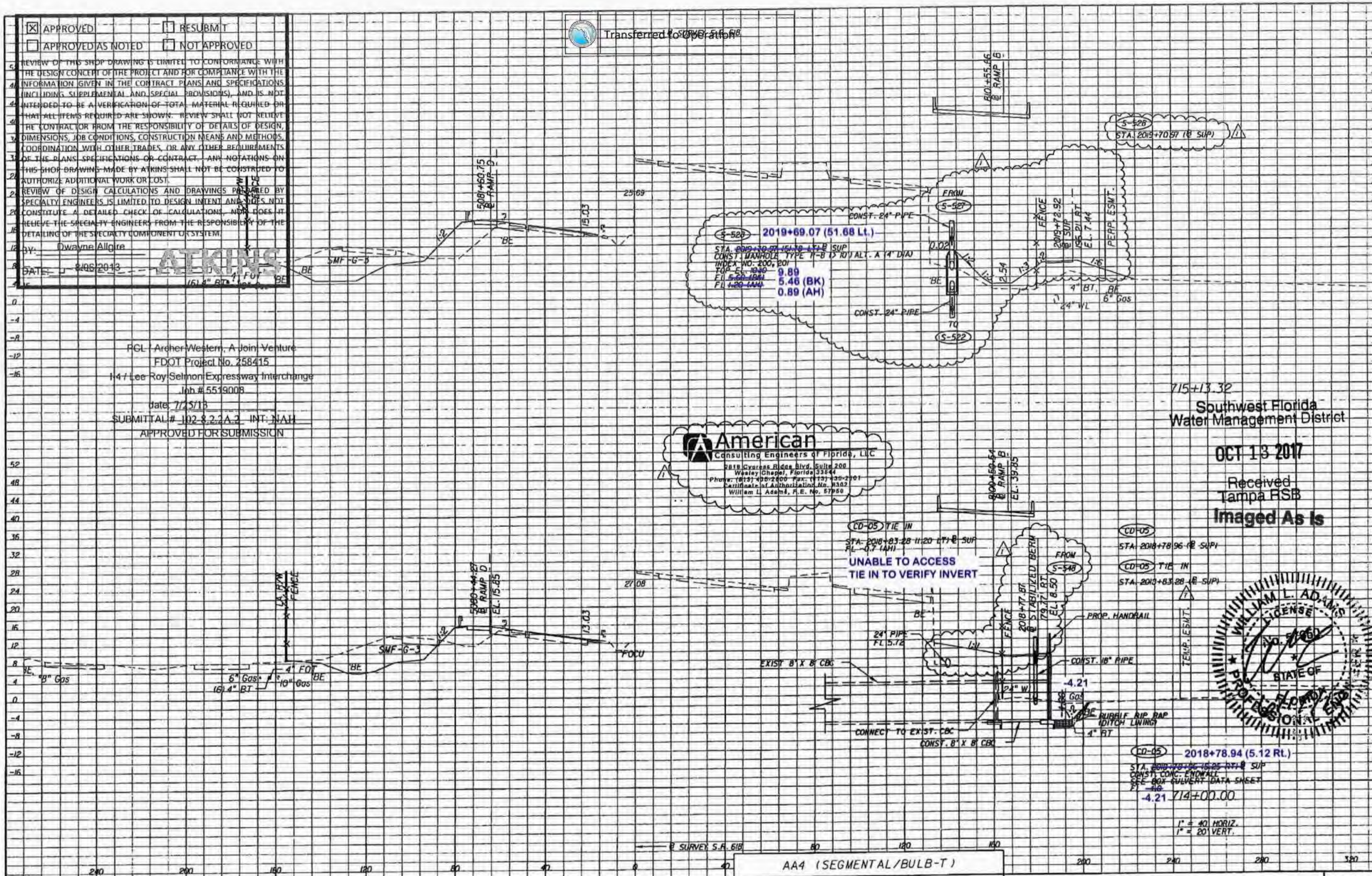

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

DRAINAGE STRUCTURES
SR 618 (84)

SHEET NO. 411

JOINT APPLICATION FOR
ENVIRONMENTAL RESOURCE PERMIT/

AUTHORIZATION TO USE
STATE OWNED SUBMERGED LANDS/

FEDERAL DREDGE AND FILL PERMIT

Attachment 8
Design Hydraulics Study

(Under Separate Cover)

I-4/SELMON EXPRESSWAY INTERCHANGE
FPID NO. 258415-1-52-01

DESIGN HYDRAULICS STUDY

I-4 / SELMON EXPRESSWAY INTERCHANGE

FROM SOUTH OF THE LEE ROY SELMON EXPRESSWAY TO 7TH AVENUE

TS0704

FPID No. 258415-1-32-01
HILLSBOROUGH COUNTY

FILE OF RECORD
PERMIT NO. 43020690.009

Prepared By:

PBSJ

MB HD

5300 W. Cypress Street, Suite 200
Tampa, Florida 33607-1712
FBPR No. 24

Prepared For:

Florida Department of Transportation (FDOT)

Tampa, Florida

April 2008

5/10/08

EXECUTIVE SUMMARY

This study summarizes the drainage design for the Interstate 4/Lee Roy Selmon Crosstown Connector project (Connector) in Tampa, Florida, in District 7 of the Florida Department of Transportation. This report addresses the Connector between 7th Ave. south and the Lee Roy Selmon Crosstown Expressway (Expressway). The Connector itself is totally comprised of elevated ramps up to 7th Ave. The Connector corridor includes the entire city block that lies to the west of 31st St. The project includes widening to the eastbound expressway from station 651+80.48 to station 677+63.27 and westbound expressway from station 652+75.26 to station 679+72.75. This project also includes improvements to the Expressway associated with ramp tie-ins from station 734+29.76 to station 755+00.00 on the eastbound expressway and from station 716+90.00 to station 753+20.00 on the westbound expressway. Also a pedestrian trail is proposed along McKay Bay from 34th St. to 50th St. The project location and basin limits are depicted in **Figures 1.2.1** and **1.2.2**.

The proposed elevated ramps will be drained by scupper inlets, which will be detailed in the structures plans. These inlets will convey runoff down the piers into a conventional subsurface storm drain system. The remainder of the proposed project drainage consists of barrier wall, gutter, and curb inlets, some open ditches, and closed storm drain. The stormwater management facilities (SMFs) for this project have one ultimate outfall—Hillsborough Bay. This project uses two intermediate outfalls to Hillsborough Bay—Ybor Channel and McKay Bay (including the 34th St. Canal). All outfalls are tidally influenced waters. From SWFWMD pre-application meetings, attenuation will not be considered in areas with unrestricted discharges to these outfalls. It should be noted that improvements to the 34th St. canal are proposed as part of this project. All SMFs on this project will be wet detention facilities that will treat the first one inch (in) of runoff from the directly connected impervious areas.

The project will include the extension of 3 cross drains CD-05, CD-06, and CD-08. CD-05 is located between 34^{th} St. and 39^{th} St., CD-06 is located between 39^{th} St. and 50^{th} St., and CD-08 is located at the head of the 34^{th} St. Canal.

There are 10 proposed SMF's (SMF-C-1, SMF-C-2, SMF-D-1, SMF-D-2, SMF-E-1, SMF-E-3, SMF-F-1, SMF-G-3, SMF-H-1, SMF-I-1) and 3 existing ponds (SMF-RL-4A, SMF-RL-4D, and SMF-RL-X) that will be modified as part of this project.

A bridge hydraulics report was prepared under separate cover to ensure no impacts to the design high water and to evaluate scour in the 34^{th} St. Canal. Also, a Shared-Used Bridge hydraulics technical memorandum was prepared under separate cover to ensure no impacts to the design water and to evaluate scour issues at the proposed path bridge.

I-4 / LEE ROY SELMON EXPRESSWAY INTERCHANGE

SOUTH OF 7TH AVE.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

Refer to the Table of Contents found at the beginning of the Appendices for a more detailed description of the Appendices.

1.0 GENERAL PROJECT INFORMATION

1.1 INTRODUCTION

The purpose of this Design Hydraulics Study is to detail the methodology as well as the analysis used in the preparation of the design. Analysis includes the modeling of the existing drainage conditions (where applicable) as well as the proposed, required treatment computations, storm drain tabulations, spread calculations, and the explanation of engineering design decisions.

1.2 SITE LOCATION AND DESCRIPTION

The Connector project is located in Tampa, Florida (S16-S21, T29S, R19E) and lies between Interstate 4 (I-4) and the Lee Roy Selmon Crosstown Expressway (Expressway). This project, FPID 258415-1-32-01, includes the Connector from 7th Ave. south to the Expressway. The Connector itself is comprised entirely of elevated structures throughout the limits of this project and will tie into the existing Expressway, necessitating widening and other roadway improvements. The western limits of the project are west of S.R. 45 (Causeway Blvd.) and the eastern limits are 50th Street. The project includes widening to the eastbound expressway from station 651+80.48 to station 677+63.27 and westbound expressway from station 652+75.26 to station 679+72.75. Also a shared use path is proposed along McKay Bay from 34th St. to 50th St. Refer to **Figure 1.2.1** for project location and **Figure 1.2.2** for basin limits.

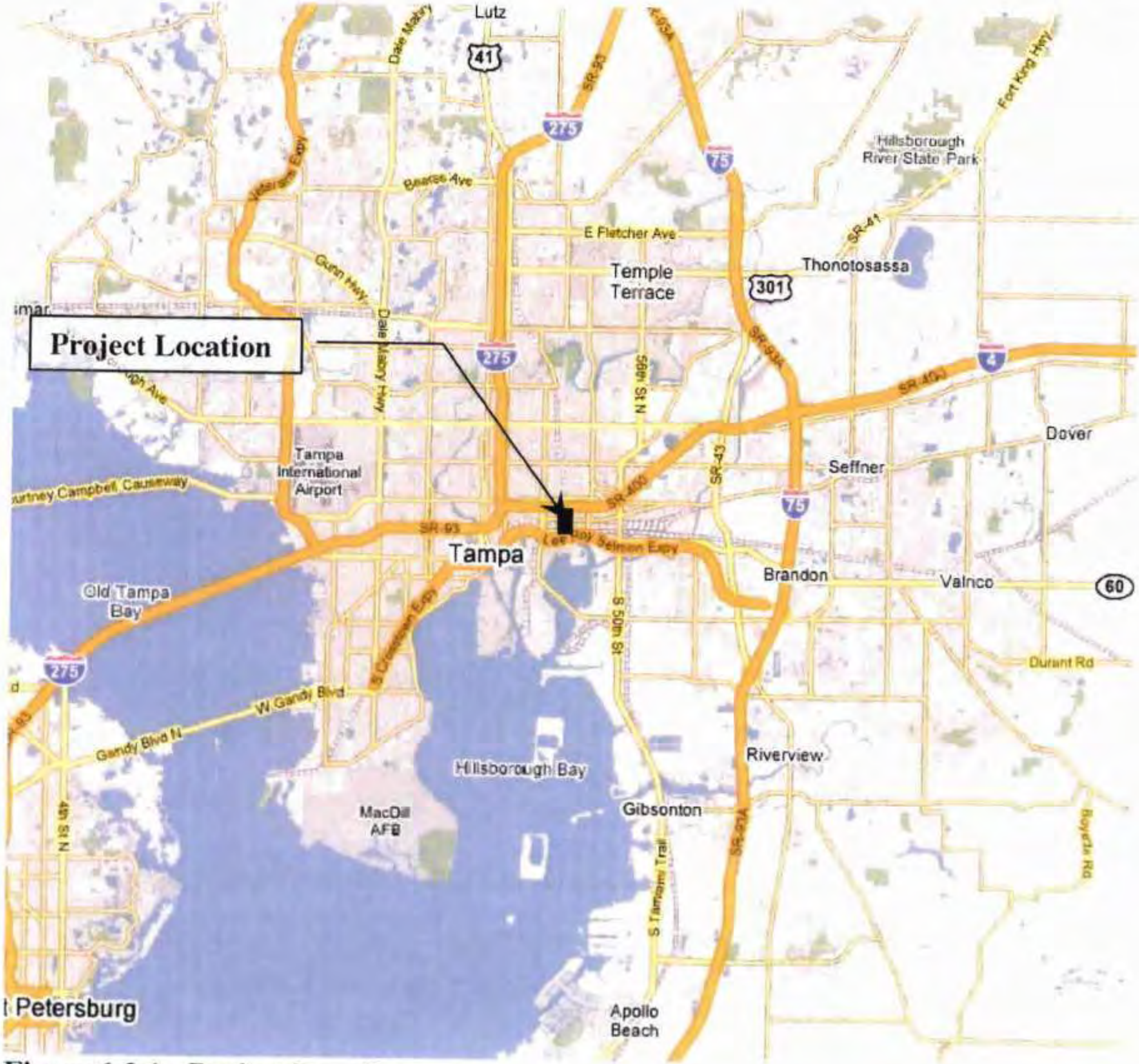


Figure 1.2.1 - Project Location

Figure 1.2.2 – Project Basin Limits

1.3 EXISTING AND PROPOSED TYPICAL SECTIONS

Three main areas are affected by the Connector: S.R. 45, the Expressway, and the Connector corridor.

The existing typical section for S.R. 45 is six-lane rigid pavement with edgedrain as well as underdrain. The configuration of S.R. 45 will remain unaltered by this project, other than the addition of an auxiliary lane where Ramp S ties back into S.R. 45 and widening on the east side where Ramp N ties in.

The existing typical section for the Expressway is four-lane flexible pavement with three reversible lanes between the eastbound and westbound roadways. These reversible lanes are flexible pavement on embankment from east of 28^{th} St. to west of 39^{th} St. The reversible lanes through the remainder of the project limits are on an elevated structure. There will be substantial widening and other roadway improvements to the eastbound and westbound Expressways due to the Connector project. An additional lane is proposed to the westbound Expressway from station 652+75.26 to station 679+72.75. An additional lane is also proposed to the eastbound Expressway from station 651+80.48 to station 677+63.27. There will also be widening associated with ramp tie-ins at certain locations. Most notably, an auxiliary lane will be added to the westbound Expressway from station 716+90.00 to station 753+20.00. Also, an auxiliary lane will be added to the eastbound Expressway from station 734+29.76 to station 755+00.00. The eastbound and westbound bridges on 26^{th} St. and the westbound bridge on 39^{th} St. will be replaced. There will be deck panel replacements on the 22^{nd} St., CSX, and 34^{th} St. bridges.

For the Connector corridor, there is no existing typical section as the Connector is on new alignment. The proposed typical section is a collection of elevated ramps totaling up to 12 lanes in some locations.

2.0 DRAINAGE REFERENCE AND RESOURCE INFORMATION

2.1 MEETINGS

2.1.1 SWFWMD PRE-APPLICATION MEETING

The Southwest Florida Water Management District (SWFWMD) Environmental Resource Permit (ERP) Pre-Application Meeting Notes can be found in **Appendix C**.

2.2 DESIGN CRITERIA REFERENCES

The resources used for analysis include:

- FDOT Drainage Manual
- FDOT Stormwater Management Handbook
- FDOT Hydrology Handbook
- FDOT Storm Drain Handbook
- SWFWMD Environmental Resource Permitting Information Manual
- Urban Hydrology for Small Watersheds (TR-55)
- NRCS Soils Survey for Hillsborough County
- CSX Crossing Agreement Requirements

2.3 DATA SOURCES

For project specific information, existing plans for the area were available for use, including:

- FDOT project for S.R. 45 (Causeway Blvd.) from Maritime Blvd. to SR 60 – FPID 255734-1-52-01, SWFWMD ERP No. 13736.001.
- The as-built plans for he Expressway – SWFWMD ERP No. 44020690.007

- The Reversible Lanes project – Tampa Hillsborough Expressway Authority (THEA) Project No. 51.40.01., SWFWMD ERP No. 43019654.001.
- The original Alternative Stormwater Management Facility Report (ASMFR) for the Connector project that was started several years ago. That project was put on the shelf after 30% plans and an approved ASMFR was completed.

Also used for analysis in this report were the following data sources:

- Aerial photography from 2006.
- The survey information obtained for this project.
- SWFWMD Aerial Contour Maps (refer to **Appendix H**).
- City of Tampa Drainage Atlas (refer to **Appendix G**).

2.4 REGULATORY AGENCIES

Coordination is anticipated with the following agencies:

- SWFWMD – Governs the permitting of new SMF systems. Pre-application meetings were held on March 9, 2005 and May 10, 2006.
- United States Environmental Protection Agency (EPA) – Issues National Pollution Discharge Elimination System (NPDES) permits concerning discharges from state facilities.
- Hillsborough County Environmental Protection Commission (HCEPC) – primarily concerned with wetland protection.

3.0 EXISTING DRAINAGE CHARACTERISTICS

3.1 EXISTING DRAINAGE CONDITIONS

The majority of the project presently drains to McKay Bay. A portion of the western end of the project, primarily from S.R. 45, drains to the Ybor Channel and a portion of the eastern end of the project drains to the Tampa Bypass Canal (Palm River). The majority of the urbanized area north of the Expressway is drained by storm drains that are either conveyed to the 34th St. canal or to a cross drain that runs under the Expressway and discharges to McKay Bay or the Palm River. Refer to **Appendix F** for drainage maps.

S.R. 45 and the Expressway (from the western end of the project to 39th St.) are drained primarily by closed storm drains, including barrier wall, curb, and gutter inlets. The Expressway from 39th St. to the eastern end of the project is drained primarily by ditch bottom inlets and open roadside ditches. The city streets and businesses within the Connector corridor are currently drained by closed storm drain systems, which will be adjusted as necessary to maintain the current condition.

3.2 EXISTING STORMWATER MANAGEMENT

The S.R. 45 runoff, after the recent realignment project (FPID 255734-1-52-01), is being treated within one of two SMFs. The Connector project will impact the existing Pond No. 4 (SMF-22ND-4), as it is referred to in the S.R. 45 plans and the approved SWFWMD permit. This SMF only treats the runoff from the railroad north to the northern limits of the S.R 45 project and discharges to the existing Expressway infield SMF (SMF-OX-3, refer to section **5.11.4**), which discharges to the railroad north ditch.

The runoff between the 20th St. connection and the railroad is untreated. This runoff was not collected in a SMF because of the high SHWT elevations. A good portion of this runoff was instead conveyed to a ditch water quality mitigation site at the northeast corner of S.R. 45 and Corrine St. This site was designed with the S.R. 45 project to replace the characteristics of the ditch that ran along S.R. 45 in the pre-realignment condition. This ditch water quality mitigation site was not designed to provide formal treatment.

The original Expressway project constructed several SMFs as well. Notably, a large SMF is located in the infield of the southwest quadrant of the Expressway/Causeway Blvd. interchange. This existing SMF is referred to as SMF-OX-3 in this study. This SMF is not permitted and does not provide any formal treatment. SMF-OX-3 discharges to the railroad north ditch.

The Reversible Lanes project also included the permitting and construction of SMFs. Existing Pond 4A (SMF-RL-4A) and existing Pond 4D (SMF-RL-4D) are located within the proposed Expressway interchange. They are connected by a cross drain under the Expressway. They treat the runoff from the Expressway and the new at-grade reversible lanes from 26th St. to 34th St. These SMFs have two discharges: SMF-RL-4A into the 34th St. Canal and SMF-RL-4D directly into McKay Bay.

Existing Pond X (SMF-RL-X) is the other existing SMF for the Reversible Lanes project and is located south of the Expressway, west of 39th St. This SMF treats the runoff from the Expressway and the at-grade reversible lanes from 34th St. to 39th St.

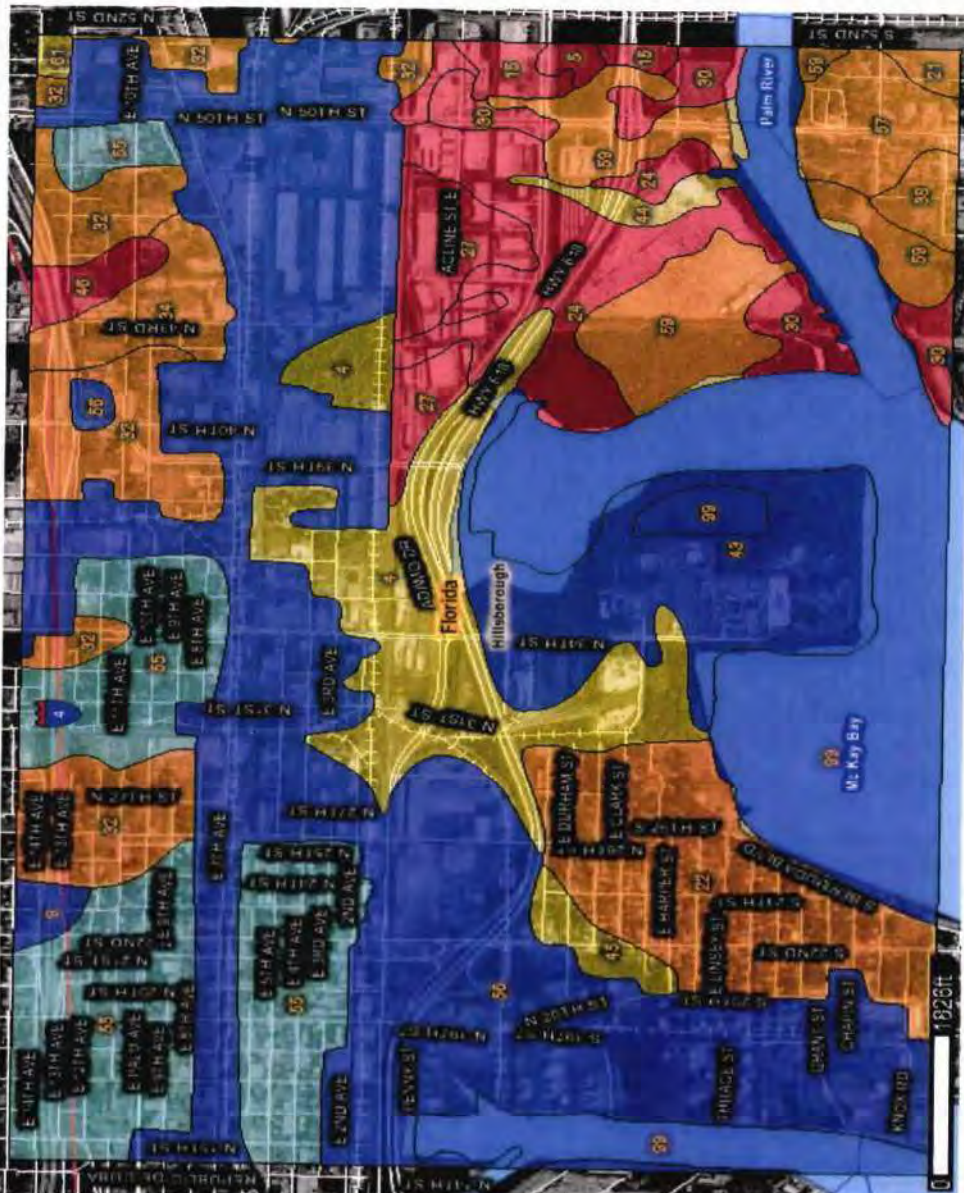
In areas of the Expressway where the reversible lanes are on elevated structure the runoff is generally treated and attenuated for in the median of the Expressway general use lanes. In addition, a portion of the Expressway and reversible lanes at the western end of the project is treated and attenuated in existing Pond 3-2 (SMF-RL-3-2). There are locations on the project where runoff from the proposed roadway will be conveyed to these median SMFs due to superelevation. While there is limited excess treatment volume in these median SMFs, there are significant freeboard depths.

In general, the runoff from the Expressway general use lanes east of 39th St. is not receiving any formal treatment.

3.3 SOIL CHARACTERISTICS

The soil types encountered along this project are classified according to the National Resource Conservation Service (NRCS) Soil Survey for Hillsborough County. Refer to **Figure 3.3.1** for a NRCS Soil Survey Map.

The area of the project west of the Connector is primarily comprised of St. Augustine Urban Land (soil type 45), Tavares Urban Land (soil type 56), and Immokalee Urban Land (soil type 22). The area along the Connector corridor is primarily comprised of Arents soil (soil type 4) and was assumed to be a part of Hydrologic Soil Group (HSG) D. The area of the project east of the Connector is primarily made up of Arents soil and Kesson muck (soil types 24 and 27). There have been developments in these areas of muck, however, since the development of this soil survey. The geotechnical investigation performed for SMF-I-1 found no muck to a depth of five feet.



Short MUID, Soil Name, Hydric Condition
4, ARENTS; NEARLY LEVEL, Not hydric
5, BASINGER; HOLOPAW AND SAMSULA SOILS; DEPRESSIONAL, Partially hydric
15, FELDA FINE SAND, Partially hydric
22, IMMOKALEE-URBAN LAND COMPLEX, Unknown
24, KESSON MUCK; FREQUENTLY FLOODED, All hydric
27, MALABAR FINE SAND, Partially hydric
30, MYAKKA FINE SAND; FREQUENTLY FLOODED, All hydric
32, MYAKKA-URBAN LAND COMPLEX, Partially hydric
43, QUARTZIPSAMENTS; NEARLY LEVEL, Partially hydric
44, ST. AUGUSTINE FINE SAND, Partially hydric
45, ST. AUGUSTINE URBAN LAND COMPLEX, Partially hydric
55, TAVARES-URBAN LAND COMPLEX; 0 TO 5 PERCENT SLOPES, Unknown
56, URBAN LAND, Unknown
59, WINDER FINE SAND, Partially hydric

Figure 3.3.1 - NRCS Soil Survey Map

3.4 FLOODPLAIN AND WETLAND INFORMATION

The entire project area is subject to tidal surge flooding. Per the SWFWMD pre-application meeting, no net fill in the non-tidal 100-year floodplain must be demonstrated. However, the PBS&J portion of the project is only subject to tidal flooding and floodplain compensation will not be required. Refer to **Figure 3.4.1** for the FEMA Flood Insurance Rate Map (FIRM).

There are wetland and surface water impacts with this project. Compensation for wetland impacts will be provided through the FDOT Wetland Mitigation Program (Ch. 373.4137 F.S.). The Mobbly Bayou Wilderness Preserve in Pinellas County has been selected as the proposed mitigation site. Quantification of these impacts is provided under separate cover with the environmental permit package.

3.5 BRIDGE HYDRAULICS

The Connector proposes several bridges over the 34th St. canal. While the bridges are sufficiently high, the piers associated with these bridges encroach into the canal and are subject to scour. A bridge hydraulics report quantifying scour has been prepared and submitted under separate cover. The 34th St. canal is being realigned and improved to offset pier encroachments and to accommodate increased flows from proposed SMFs. A bridge associated with the trail is being constructed over the 34th St. Canal. This bridge is being built above the 100 yr elevation and has no piers in the channel.

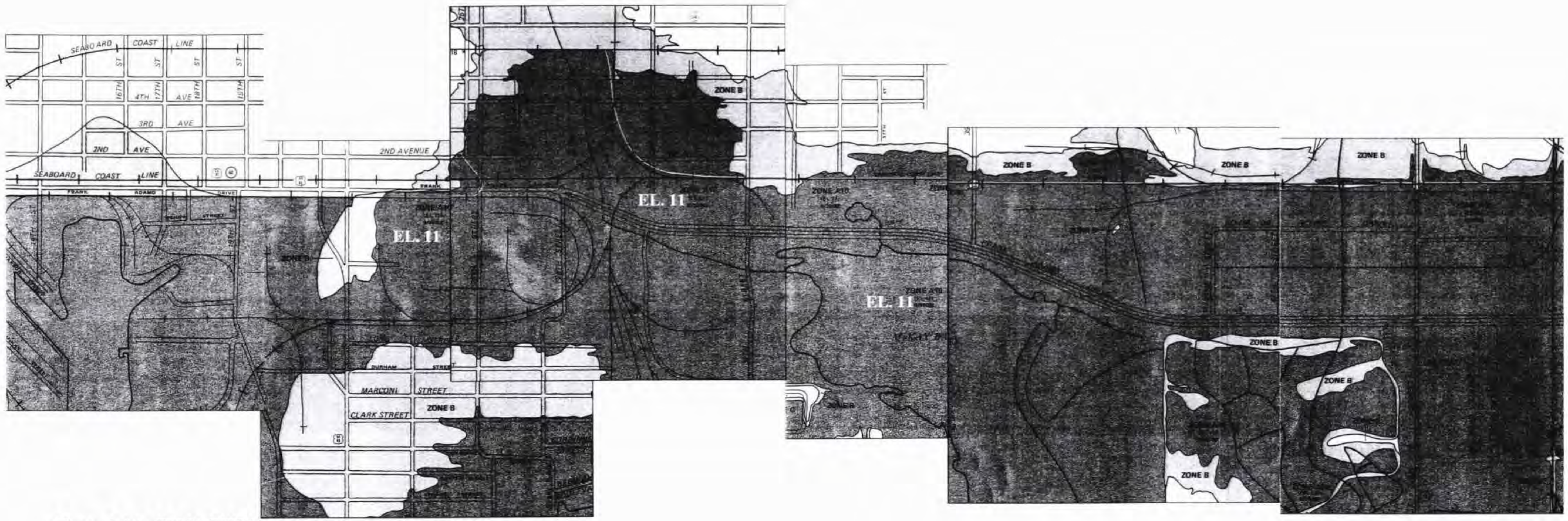


Figure 3.4.1 - FEMA FIRM

4.0 PROPOSED DRAINAGE DESIGN

4.1 DRAINAGE DESIGN CRITERIA

The drainage criteria to be used in the design of this project are found below in **Table 4.1.1**:

Table 4.1.1 – Summary of Drainage Design Criteria

Item	SWFWMD	FDOT
[illegible]	N/A	10-year design frequency on Expressway, Connector, and Ramps proper. 3-year design frequency for S.R. 45, S.R. 60, and 20th St.
[illegible]	N/A	2.5 fps
[illegible]	N/A	10 minutes (minimum)
[illegible]	N/A	10-year
[illegible]	N/A	25-year
[illegible]	N/A	25-year
[illegible]	Post ≤ Pre for 25-yr/24-hr	Rule 14-86 Peak Discharge Approach
[illegible]	First one inch of runoff	N/A
[illegible]	N/A	50-year
[illegible]	N/A	Intensity = 4.0 in/hr Shoulder gutter intensity = 7.4 in/hr (10-year event)
[illegible]	N/A	No encroachment into the travel lane

4.2 STORMWATER MANAGEMENT DESIGN APPROACH

Due to the generally high SHWT elevations, wet detention is used for SMF design in all basins. Although dry retention is feasible in Basins E and F despite the SHWT elevations, due to the ample hydraulic clearances, wet detention was selected for all SMFs. Wet detention facilities tend to be more reliable and are more appropriate for the conditions of this area. In the case of SMF-C-1, C-2, and D-1, a high seasonal high water table necessitated the use of a liner. The two outfalls for the SMFs—Ybor Channel and McKay Bay—are not Outstanding Florida Waters. Therefore, all SMFs will provide water quality treatment for the first one inch (in) of runoff from the new directly connected impervious areas (DCIA). As per SWFWMD pre-application meetings, in cases where roads fly over other roads, only the total footprint of pavement needs to be treated. However, in some areas, due to the difficulty in separating runoff, treatment is provided for multiple levels of pavement.

All SMFs were modeled using the Interconnected Channel & Pond Routing (ICPR) software. Since all basins on this project are open basins, all SMFs were modeled for the SWFWMD 25-year, 24-hour storm event and all SMFs requiring attenuation were modeled for FDOT Critical Duration under Rule 14-86, using the Peak Discharge Approach. Only the post-development condition was analyzed for SMFs where attenuation is not being considered—SMF-E-3, F-1, G-3, H-1, I-1 and X-1. These models were created to develop 3-year, 10-year and 50-year (sag inlets) tailwater elevations for the storm drain systems and to verify that one ft minimum freeboard is available in the SMF.

This project proposes at least one SMF for each basin. There is no significant economic benefit (from a R/W standpoint) to divert runoff from one basin to another, because all SMFs, except for a small portion of SMF-F-1, required no additional funds for acquisition. All SMFs are located on property remnants left from roadway acquisition.

Refer to **Figure 1.2.2** for the proposed basin limits. The basins were named to reflect the original PSR that was submitted to the FDOT and the Expressway Authority in July 1997. The basic basin limits are as follows:

- Basin C – Ramps S and T, and SB S.R. 45 from Corrine St. to Durham St.
- Basin D – Expressway from S.R. 45 to 26th St.
- Basin E – Expressway from 26th St. to 34th St. Northern limits are S.R. 60 (Frank Adamo Drive)
- Basin F – Connector from Adamo Drive to 7th Ave. (South to North)
- Basin G – Expressway from 34th St. to 39th St.
- Basin H – Expressway from 39th St. to an existing cross drain at approximate Sta. 742+00.
- Basin I – Expressway from an existing cross drain at approximate Sta. 742+00 to 50th St.

This project adds impervious area, by means of new pavement and standing water in SMFs, such that 0.88 ac-ft of treatment volume is required for the SMFs discharging to the Ybor Channel (SMF-C-1, C-2, D-1, and D-2) and 5.546 ac-ft of treatment volume is required for the SMFs discharging to McKay Bay, either directly or via the 34th St. canal (SMF-E-1, E-3, F-1, G-3, H-1, I-1, and existing SMF-RL-4D, and RL-X). In a few limited areas, it is either hydraulically or economically unfeasible to drain DCIA to proposed ponds. In these areas, runoff was maintained as it is in the existing condition. In many cases of simple widening, large areas of existing pavement, currently untreated, are treated in proposed ponds as DCIA. The Ybor Channel SMFs total 1.598 ac-ft of treatment volume, an excess of 0.718 ac-ft, and the McKay Bay SMFs total 6.782 ac-ft of treatment volume, an excess of 1.296 ac-ft.

Refer to Section 5.0 for descriptions of the areas to receive formal treatment in proposed stormwater management facilities. All impacts to existing storm drain systems have been investigated to ensure no flooding or violation of drainage criteria will occur. The vast majority of DCIA is collected in proposed ponds. A summary of areas that could not be collected in proposed or modified ponds can be found in **Table 4.2.1** below.

Table 4.2.1 – Summary of Untreated Areas

Basin	* Untreated Area (ac)	Exist. Untreated DCIA to be Treated in Proposed SMF	
		Area (ac)	Description
C	1.32	1.49	Existing Untreated Offsite area north of SMF-C-1 will now be treated as Compensatory Treatment in SMF-C-1.
		0.76	Existing Untreated Area in the southbound lane of SR 45 from approx. sta. 1039+20 to 1047+20 that is currently being discharged to the DWQMS will now be treated as Compensatory Treatment in SMF-C-2.
D	0.55	1.29	Existing Untreated DCIA from eastbound and westbound Expressway and Ramp K from approx. sta. 661+00 to 667+25 that is currently being discharged to North Rail road Ditch will now be treated in SMF-D-1.
E	1.03	0.96	Existing Untreated DCIA from westbound Expressway from approx. sta. 671+50 to 682+00 and from sta. 685+00 to 687+65 that is currently being discharged to 34th Canal will now be treated in SMF-E-1.
I	0.51	0.74	Existing Untreated DCIA from eastbound Expressway from approx. sta. 732+50 to 742+50 that is currently draining to Mackay Bay will now be treated in SMF-H-1.
		0.56	Existing Untreated DCIA from eastbound Expressway from approx. sta. 744+60 to 752+50 that is currently draining to Mackay Bay will now be treated in SMF-I-1.
TOTAL	**3.41**	**5.80**	

*** For Untreated Area locations please refer to the Post Model Treatment Graphic for each correspondent Basin in Appendix A.**

4.3 INLET SPACING

Embankment portions

The spacing of the barrier wall, curb, and gutter inlets located on the embankment portions of this project is controlled by either spread width or by maximum maintainable length of pipe where applicable. Refer to **Appendix B** for spread calculations.

Elevated portions

The spacing of the scupper inlets located on the elevated portions of this project is controlled by either spread width or the hydraulic capacity of the pipe(s) that convey the runoff from the scupper inlet to the pier. Pipe sizes in the elevated sections were largely controlled by structural considerations. Inlets were placed and pipes sized to ensure no encroachment of runoff into the travel lanes.

Areas controlled by spread width on this project are those where the cross slope of the bridge is changing direction and an inlet is required as close to the point of zero cross slope as possible, whereby the spread width is maximized. The scupper inlet spacing in the area of the Connector portion of the project is also controlled by spread width. While scupper inlets are most easily constructible near the piers, due to the longitudinal piping required within the bridge superstructure, mild longitudinal slopes (0.3%), cross slopes (3%), and 6-ft shoulders required several scupper inlets to be located away from the pier (up to 100 ft in some locations). The slip ramp portions of the connector are also of concern for spread width, because there is approximately 100 ft draining to a 6-ft shoulder. Due to guidance from the bridge engineers for this project, the use of trench drain within the gore areas of these slip ramps is not being considered. Instead, additional scupper inlets are proposed along the shoulder as spread requires. Refer to **Appendix B** for spread calculations.

Areas controlled by hydraulic capacity on this project are those with steep longitudinal grades, steep cross slope, and wide 10 and 12 ft shoulders. The elevated ramps in the interchange are controlled by hydraulic capacity. For example, Ramp F in the interchange has an approximately 680 ft length where there is a longitudinal slope of 3.65%, a cross slope of 8.1%, and a 10-ft shoulder width. These parameters theoretically allow for the entire 680 ft length (and much more), a drainage area of 0.69 acres (ac), to be collected by one inlet. However, this drainage area would result in a 10-year flow rate of approximately 4.9 cubic feet per second (cfs), which exceeds the capacity of the pipes connecting the scupper inlets to the piers. So instead, maximum areas were determined based on the orifice equation by calculating the flow rate that would produce a head over the down pipe resulting in water staging up to the grate elevation of the inlet. These areas were used as guidelines in determining which piers would be used for drainage. A maximum 12-in down pipe was calculated as necessary to accommodate the larger bridge spans as well as minimize the number of piers used for drainage. One exception is in the 22nd St Expressway bridge, where a 14-in down pipe is required. Refer to **Appendix B** for scupper inlet capacity calculations. As the pier columns cannot accommodate a pipe greater than 8 in. in size, reducer pipes have been used for the 10 in. and 12 in. pipes before they enter the column.

The capacity-controlled scupper inlets are located in pairs, 10 ft on either side of the piers. Some bridge spans are short enough so that a pier can be skipped. The capacity-controlled scupper inlets are proposed in pairs to account for any bypass flow due to blockage of the grate.

In areas where inlets can not accommodate flows without encroaching into travel lanes, emergency overflow holes will be placed in the barrier wall; high enough to ensure required treatment volume cannot bypass the collection system, but low enough to keep flooding out of the travel at large events.

4.4 TAILWATER CONDITIONS

Tailwater elevations for the storm drain systems draining to proposed SMFs were determined from the critical FDOT 3-year, 10-year and 50-year (sag inlets) stages from the ICPR model for the respective SMF.

Tailwater conditions for the SMF outfalls were determined with conservative engineering judgment based on the available resources, including the City of Tampa Drainage Atlases (refer to **Appendix G**), SWFWMD Aerial Contour Maps (refer to **Appendix H**), field reviews, existing plans, and survey of the existing drainage structures.

Basin C

The outfall for Basin C, from SMF-C-2 and SMF-C-1, is an existing 6 ft x 3 ft concrete box culvert that discharges to a small grassed ditch referred to in this study as the Corrine St. Outfall (refer to **Figure 4.4.1**). According to the analysis performed for this project, the conveyance features along the flow path for this outfall are undersized. This is especially true at the most downstream end of the outfall, where more than 100 cfs (for storm events less frequent than 10 years) must flow through triple 36-in pipes before entering the Ybor Channel. The mean high water (MHW) elevation for the Ybor Channel (1.54 ft) is provided in **Appendix A**. The conveyance restraints of this outfall path control the hydraulic grade line (HGL). This HGL will result in localized flooding, particularly at the aforementioned small grassed ditch. During a field review, an employee at the business located just to the north of the small grassed ditch was interviewed on the historic drainage capacity of the ditch. He reported that the parking lot floods "every time it rains hard". This flood elevation was estimated at 5.5 from the project survey. The SWFWMD contour maps also show significant storage at this elevation and the potential for this outfall to pop over to adjacent outfalls to Ybor Channel during extreme events.

It appears 5.5 is a maximum reasonable elevation and is conservative for higher frequency events. (Refer to **Appendix A** for ICPR Model).

Since the field review to the Corrine St. outfall and the interview with the employee, the property owner north of the small grassed ditch has made claims of flooding to the FDOT. The property owner is claiming that the recently completed construction of the S.R. 45 realignment (FPID 255734-1) has caused the flooding. No formal complaint has been filed yet. Data resulting from this flood investigation will be obtained in case the FDOT decides to improve the outfall or in case the results of the investigation demonstrate a tailwater elevation higher than 5.5

It is important to note that this project proposes a net decrease in the discharge rate to the Corrine St. Outfall (refer to Sections 5.1 and 5.2). The design does not include any means to fully remedy any of the existing flooding; however, the design does not in any way worsen the condition and does attenuate as much of the flow as possible. Refer to Section 4.8 for further discussion on this issue.

Figure 4.4.1 – Outfalls to Ybor Channel

Basin D

The outfall for Basin D, from SMF-D-1, is an existing storm drain system that discharges to an existing railroad ditch referred to in this study as the Railroad Ditch Outfall (refer to **Figure 4.4.1**). This outfall discharges directly to the Ybor Channel. The existing storm system from Ybor Channel to Railroad Ditch Outfall was modeled in ICPR to develop accurate tailwater conditions for each event in the post condition. The proposed storm system from SMF-D-2 and SMF-D-1 was modeled in ICPR to existing structure 82A. Existing structure 82A is manhole at the junction before runoff from the south railroad ditch and basins south of the railroad tie into the cross drain conveying flow from the north railroad ditch. The stages for existing structure 82A at each event from the existing model were incorporated into the proposed model at this structure for tailwater conditions.

Basin E (SMF-E-1)

The outfall for SMF-E-1 is a proposed ditch that flows to an existing 42-in steel pipe cross drain (CD-03) and 12-in PVC pipe cross drain (CD-04) under the Expressway (refer to **Figure 4.4.2**). CD-04 is proposed to be plugged and filled and a portion removed due to the location of Pier 8-2 on Ramp J. Refer to Section 4.5 for further discussion of CD-04. CD-03 will continue to flow north into a wetland that discharges to the head of the 34th St. Canal. This wetland is bounded on the north and east by railroad and on the south by the Expressway. The railroad on the north has a popover elevation of 6.7 based on the project survey and SWFWMD contour maps. The wetland pops over into another small wetland that flows into a storm drain system at the head of the 34th St. Canal. Therefore, a static tailwater elevation of 6.7 is used in the ICPR model.

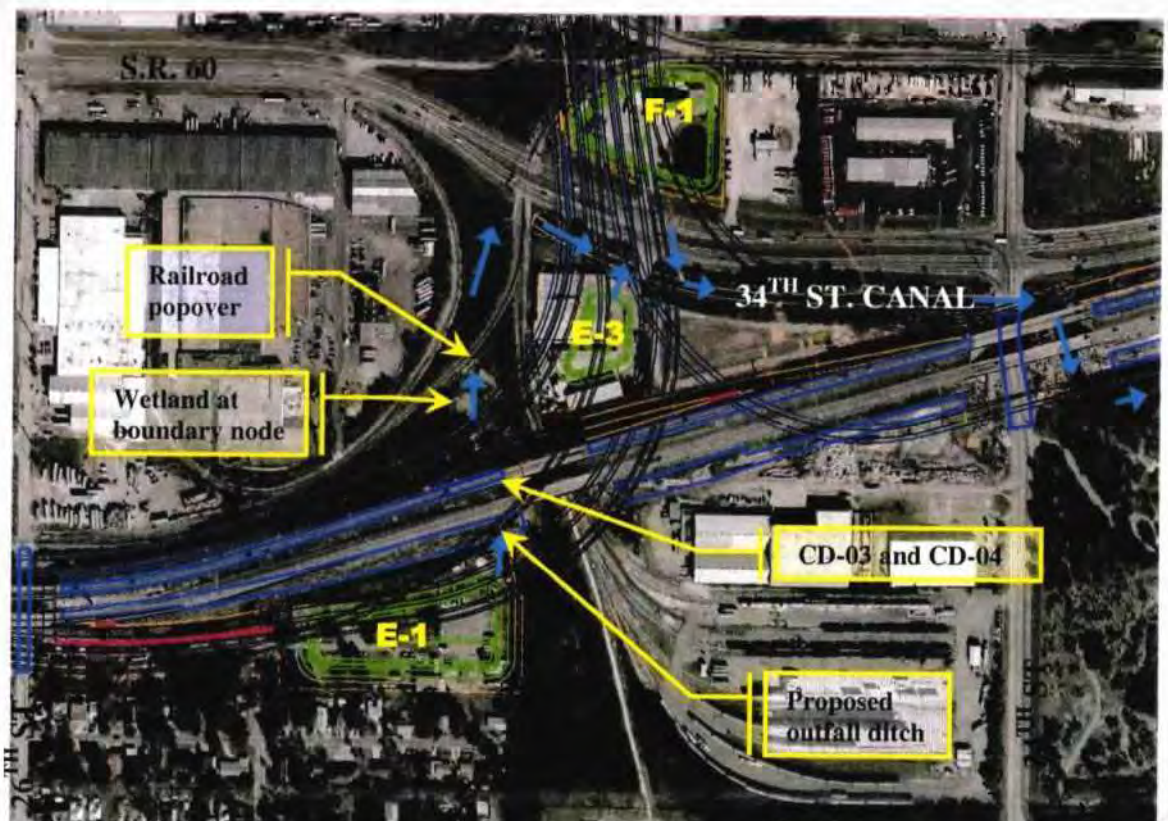


Figure 4.4.2 – Outfalls to 34th St. Canal

Basin E (SMF-E-3) & Basin F

The outfalls for SMF-E-3 and SMF-F-1 are direct discharges to the 34th St. Canal (refer to **Figure 4.4.2**). The static tailwater elevation of 5.0 was extracted from the HEC-RAS model that was created for the Bridge Hydraulic Report for the 34th St. Canal.

Basins G, H, & I

The outfalls for SMF-G-3, SMF-H-1, and SMF-I-1 are direct discharges to McKay Bay. SMF-G-3 and SMF-H-1 share an outfall that discharges to McKay Bay at 39th St. via an existing FDOT-owned drainage easement that extends south from the roadway R/W into McKay Bay. An existing storm drain system that was abandoned with the original construction of the Expressway will have to be removed to construct the new outfall (43"x68" pipe) in its place. The proposed outfall will extend south into the easement to below elevation 1.5 ft, the MHW elevation of McKay Bay will control the tailwater and not the ground elevations around the outfall sump. SMF-I-1 discharges at the downstream end of CD-06 that flows into McKay Bay (refer to **Figure 4.4.3**). Therefore, the MHW tidal elevation of 1.5 is used as the tailwater elevation for this model. This elevation was found at the LABINS Web site and was converted from the NAVD of 1988 to the NGVD of 1929 using the Corpscon program from the U.S. Army Corps of Engineers. Refer to **Appendix A** for documentation of the datum conversion.

Figure 4.4.3 – Outfalls to McKay Bay

4.5 CROSS DRAINS

The existing cross drains that are within the limits of this project are as follows:

- CD-01: 6-ft x 3-ft concrete box culvert (CBC) at approximately station 1040+00 (B/L S.R. 45) runs under S.R. 45 and 20th St. flowing from the east side of S.R. 45 to a ditch on the west side of 20th St. The discharge from this cross drain ultimately flows into the Ybor Channel. No modifications are necessary, however analysis of this cross drain was performed due to the modification of drainage area to the cross drain. This analysis is incorporated in the ICPR model for Basin C.
- CD-02: Double 48-in pipes at approximately station 505+80 (B/L Ramp K) runs under the Expressway westbound off ramp at S.R. 45 (Ramp K) flowing from north of Ramp K to south, discharging under the Expressway viaduct. The discharge from CD-02 flows to the northerly railroad ditch that turns and flows approximately 230 ft west and under S.R. 45 through an existing storm drain system to the Ybor Channel. A short extension of CD-

02 to the north is proposed due to the relocation of Ramp K. This extension was analyzed for the 25 yr, 50 yr, and 100 yr storm events. The flow rates for these events were calculated using the Rational method. The entire basin for this crossdrain is currently redeveloped by IKEA. Flows from the IKEA site SMF were verified to match existing rates.

- CD-03: 42-in steel pipe at approximately station 685+80 (B/L S.R. 618) runs under the Expressway flowing from the south side of the Expressway to the north side. The discharge from this cross drain flows to the 34th St. canal, which flows into McKay Bay. Extension of CD-03 to the north is proposed due to the Ramp E construction. The analysis of this cross drain extension is incorporated into the ICPR model for SMF-E-1. Peak stages in this cross drain are being reduced due to attenuation in SMF-E-1.
- CD-04: 12-in PVC pipe grouted inside a 3-ft x 3-ft CBC at approximately station 685+97 (B/L S.R. 618) runs under the Expressway flowing from south to north. The proposed location of Pier 8-2 (sta. 48+15.68) on Ramp J requires the removal (or abandonment) or realignment of CD-04. Since the property to the south of the cross drain headwaters is being purchased by the FDOT for SMF-E-1, an increase in the headwater elevation is acceptable if the proposed elevation does not encroach outside the right-of-way. The analysis of the removal of this cross drain is incorporated into the ICPR model for SMF-E-1. The removal of CD-04 does not impact the stages in CD-03 because of over-attenuation in SMF-E-1.
- CD-05: 8-ft x 8-ft CBC at approximately station 714+20 (B/L S.R. 618) runs under Adamo Dr. (S.R. 60) and the Expressway flowing from the north side of S.R. 60 to McKay Bay on the south side of the Expressway. Extension of CD-05 to the south is proposed due to the construction of the Shared Use Path. This extension was analyzed for the 25 yr, 50 yr, and 100 yr storm events to ensure a negligible impact on headwater. The flow rates for these events were calculated using the Rational method.

- CD-06: Double 8-ft x 7-ft CBC at approximately station 742+20 (B/L S.R. 618) runs under S.R. 60 and the Expressway flowing from the north side of S.R. 60 to McKay Bay on the south side of the Expressway. Extension of CD-06 to the south is proposed due to the construction of the Shared Use Path. This extension was analyzed for the 25 yr, 50 yr, and 100 yr storm events to ensure a negligible impact on headwater. The flow rates for these events were calculated using the Regression method.
- CD-07: Double 9-ft x 8-ft CBC at approximately station 769+80 (B/L S.R. 618) runs under the Expressway on and off ramps for 50th St. and the Expressway itself, flowing from the north side of the Expressway on ramp to the south side of the Expressway off ramp. The discharge from this cross drain flows into the 50th St Canal which ultimately discharges into the Palm River, just upstream of McKay Bay. There will be a slight increase in drainage area to the outlet end of the cross drain due to the collection of runoff from the Shared Use Path. The analysis of the 50th St Canal has been incorporated into the ICPR model for Basin I Swale to ensure a negligible impact on headwater.
- CD-08: Triple 10-ft x 6-ft CBC located at the head of the 34th St. Canal runs under S.R. 60 and the CSX railroad. The discharge from this box culvert flows into the 34th St. Canal which ultimately discharges into McKay Bay. The 34th St. Canal is a concrete lined canal and is not well maintained. There is over grown vegetation and a thick layer of silt on top of the concrete lining. The canal bottom is proposed to be widened from 20 ft to 25 ft from the beginning of the canal to just upstream of the 34th St. bridge. In the process of constructing the canal, the silt and over grown vegetation will be removed in order to improve conveyance. Furthermore, a small bridge immediately downstream of the CBC, accessing the prior Dixie Plywood site at approx sta. 3+50 (34ST CANAL) will be removed. Access to SMF-E-3 will be over the box culvert extension. The proposed canal will match the grade of the existing canal. The water surface elevations for the existing and

RAS. According to the results produced by HEC-RAS, the canal improvements will offset the additional head created by the extension of the box culvert.

Table 4.5.1 – Peak Stage Comparison for Cross Drains
(for 50 and 100 year peak events)

Cross Drains	*50 Yr Pre Stage*	*50 Yr Post Stage*	[illegible]	[illegible]
CD-02	6.94 ft	6.95 ft	7.73 ft	7.74 ft
CD-03	8.13 ft	7.46 ft	8.65 ft	7.70 ft
CD-05	3.35 ft	3.38 ft	3.69 ft	3.72 ft
CD-06	5.32 ft	5.40 ft	6.34 ft	6.45 ft
CD-08	12.82 ft	12.67 ft	14.57 ft	14.43 ft

There are jack and bore operations proposed on this project, primarily those going under the CSX railroads. The CSX pipeline installation guidelines as well as FDOT standard index 205 were used to set flow line elevations for the jacked and bored pipes proposed under these railroads.

4.6 STORM DRAIN DESIGN

Closed storm drain systems were designed in accordance with FDOT criteria for conveyance of a 10-year frequency runoff with a minimum hydraulic grade line (HGL) clearance of one ft to the pavement elevation without considering minor losses and a minimum HGL clearance of zero ft considering minor losses. These 10-year criteria are also applied to inlets that are on roadways that would not normally require the 10-year criteria, yet are connected to a proposed storm drain system on the Expressway or one of the proposed ramps. Proposed storm drain systems that are tying into existing storm drain systems on roadways other than the Expressway, Connector, or any of the proposed ramps (e.g. S.R. 45) are designed for a 3-year frequency with the same HGL criteria as mentioned above.

Spread at inlets, using 4 in/hr intensity, generally does not control inlet spacing. Spacing is generally controlled by pipe capacity. The bridge scupper inlets are designed for the 10-year frequency runoff with the water surface elevation in the inlet, calculated with the orifice equation, at or below the pavement elevation at the face of the inlet. The size of the bridge piping conveying flow from the inlet was determined by calculating the orifice flow head for a given pipe size and comparing it to the elevation difference between the pavement elevation at the face of the inlet and the bottom of the inlet. This elevation difference varies according to the roadway cross slope at the inlet. Refer to **Appendix B** for the scupper inlet calculations. The longitudinal bridge piping was also checked for conveyance adequacy with Manning's equation by calculating the capacity of the pipe based on the minimum 2% slope (as stated in the plans) and the pipe size. If the capacity is larger than the runoff, then the pipe size is adequate. Generalized calculations are provided in **Appendix B**. These generalized calculations show that the capacity provided by the "Manning's" flow (under the specified conditions, i.e. 2% slope) exceeds that provided by orifice flow (based on the dimensions of the scupper inlet). Therefore, pipe sizes determined by the orifice equation would suffice for the Manning's flow and individual Manning's calculations are only provided where flow from supplemental scupper inlets (inlets at locations other than 10 ft on either side of the pier) combines with flow from another supplemental scupper inlet or a standard scupper inlet. Refer to **Appendix B** for these calculations.

4.7 DITCH DESIGN

All proposed ditches were designed to ensure that normal depth for the critical 10-year event would not encroach into the travel lanes. Ditches are proposed along the existing Expressway for the collection of runoff from the Expressway and the Shared Use Path. Ditches are also proposed under the Connector where the bridges above leave space for rain to fall to the ground. Ditch calculations were not performed for these ditches due to the insignificant drainage areas. These ditches are designed with a minimum 18-in depth, 2-ft bottom, and as mild a grade as possible. Refer to **Appendix B** for ditch calculations.

4.8 DESIGN ISSUES

- As discussed in Section 4.4, the outfall for Basin C, the Corrine St. outfall, floods during extreme events, according to field reviews and hydraulic models performed for this project. A conservative approach has been taken in the stormwater modeling by modeling this outfall with a peak stage of 5.5, which is based on project survey, field review, and engineering judgment.

  The pavement elevations for the proposed cul-de-sac at 20th St. are not lower than the existing pavement elevations and the proposed storm drain system does not incorporate any additional inlets that are not presently connected to this outfall. Therefore, while the modeling shows minor flooding during extreme events, the proposed condition does not worsen the existing flooding condition. Raising the grade or increasing the storm drain capacity was determined to be an uneconomically feasible solution to this flooding problem.

- The toll gantry system will be accommodated in an area of fill (the plug) from approx. sta. 10017+33 to sta. 10018+75. Because of the extensive electrical system under the pavement, a stair wall, and associated architectural features, inlet and pipe placement is limited. Due to the potential cost issues associated with future repair and or replacement of the trunk line pipe under the plug, the pipe will be sleeved with steel casing.

- Proposed flow from widening the eastbound Expressway/Ramp F from Expressway station 666+45 to Ramp F station 7006+20 (approximately 540 ft.) will be collected in structures S-290 and S-291 to a storm drain system that discharges to SMF-D-2. Treatment for the Expressway runoff is provided in SMF-D-2. The proposed widening is an area of superelevation on the Expressway and encroaches upon the reversible lanes pier setback distance as defined by the LRFD. This encroachment requires there to be pier protection for the reversible lane piers in the form of barrier wall along the inside edge of pavement on the eastbound Expressway. The barrier wall allows Expressway runoff to drain through the proposed storm drain system to SMF-D-2. The existing Expressway median serves as a SMF for the existing eastbound Expressway and the reversible lanes. Widening to the existing eastbound Expressway/Ramp transgresses into the existing median SMFs. Runoff to the median SMFs decreases to only the reversible lanes because the Expressway runoff is diverted to SMF-D-2. There will be no adverse impacts to the median SMFs because runoff to the median SMFs will decrease more than the required/proposed treatment volumes. Please refer to **Table 4.8.2** and **Table 4.8.3** for quantification of impacts to runoff volumes and median SMF volumes. Spread is not a concern since the runoff flows to the median shoulder. The median SMFs were modeled in ICPR based on the URS Drainage Design Documentation. Proposed changes to median SMFs were incorporated into the model to obtain proposed design high waters. Please refer to **Table 4.8.1-4.8.3** for a design high water comparison for the median SMFs between the existing and proposed conditions.

Table 4.8.1 – Summary of Existing Conditions for Median SMFs Impacted

Median SMF Between Stations	*Existing Runoff Area*	*Existing Required Treatment Volume*	*Existing Provided Treatment Volume*
667+52 – 668+94	0.52 ac	0.022 ac-ft	0.022 ac-ft
668+94 – 670+36	0.50 ac	0.021 ac-ft	0.024 ac-ft
670+36 – 671+20	0.30 ac	0.012 ac-ft	0.014 ac-ft

Table 4.8.2 – Summary of Proposed Conditions for Median SMFs Impacted

Median SMF	*Proposed Runoff Area*	*Proposed Required Treatment Volume*	[illegible]
667+52 – 668+94	0.31 ac	0.013 ac-ft	0.021 ac-ft
668+94 – 670+36	0.40 ac	0.017 ac-ft	0.023 ac-ft
670+36 – 671+20	0.20 ac	0.008 ac-ft	0.013 ac-ft

Table 4.8.3 – Design High Water Comparison for Median SMFs
(for SWFWMD 25-year 24-hour storm event)

[illegible]	[illegible]	[illegible]
667+52 – 668+94	38.48 ft	38.31 ft
668+94 – 670+36	37.12 ft	37.08 ft
670+36 – 671+20	35.83 ft	35.78 ft

4.9 BRIDGE DRAINAGE

All of the proposed ramp bridges are drained by scupper inlets as described in Section 4.6. The widening of the Expressway viaduct over S.R. 45 and the Railroad will also be drained by scupper inlets, but in a fashion more similar to how it is currently being drained. Portions of the ramps in the plug area will be drained by barrier wall inlets. The Expressway bridges over 26th St., CSX railroad, 34th St., and 39th St. will continue to be drained longitudinally to the ends of the bridge to be collected by barrier wall or shoulder gutter inlets.

5.0 SMF DESIGN

5.1 SMF-C-1 DESIGN

SMF-C-1 is located north of Ramp T where it ties into 20th St. and is a wet detention facility. SMF-C-1 in conjunction with SMF-C-2 provides treatment for the Basin C runoff. SMF-C-1 treats the DCIA of 1.49 ac from the offsite area of 2.44 ac draining into this facility. SMF-C-1 provides 0.19 ac-ft of treatment versus a required treatment volume of 0.14 ac-ft (1 in for 1.49 ac plus 0.17 ac for SMF area at the weir elevation). Refer to **Table 5.1.1** for a summary of the SMF characteristics.

Table 5.1.1 – SMF-C-1 Characteristics

Description	[illegible]	[illegible]	[illegible]
Top of variable width maint. berm	6.5	0.37	1:10
Toe of variable width maint. berm	5.5	0.25	1:4
Weir crest	3.3	0.17	1:4
Control Elev.	2.0	0.13	1:4
Littoral Shelf	1.0	0.10	N/A
Treatment depth (ft) 1.3			
Littoral Shelf % 77%			

The purpose of SMF-C-1 is to provide treatment for the offsite area draining into this facility, 2.44 Ac from which 1.49 Ac is considered impervious area. Treating this area will more than compensate for the end of Ramp T and the 20th St. cul-de-sac runoff (0.82 Ac) which is being released with no treatment (refer to Section 4.2).

The SMF-C-1 control structure is a Type D Ditch Bottom Inlet (DBI) with a 49-in wide vertical slot weir. The pipe from this control structure (S-152) is sloped from S-152 to S-121; then to S-120, both curb inlets which pick up combines with flow from SMF-C-2, which ties into CD-01, the existing 6-ft x 3-ft CBC. CD-01 flows west to the Corrine St. outfall, which flows west to Ybor Channel. Refer to Section 4.4 for further discussion on the tailwater conditions of this outfall.

The SHW elevation for SMF-C-1 is 4.7 ft; therefore, a liner is necessary for this site to utilize a lower control elevation of 2.0 ft. The liner is designed to prevent failures due to flotation caused by the groundwater table. The liner top elevation is at SHW elevation for the site at 4.7 ft. The liner bottom is at -2.0 ft to prevent liner flotation. Please refer to **Appendix A-104** for SMF-C-1 Liner Flotation Calculations.

On the east side of Ramp T, there are base water clearance violations due to the high SHW elevation. In order to drawdown the SWH of 4.7 ft to prevent instability in the stabilization of Ramp T, Type III underdrains are being added between SMF-C-1 maintenance berm and part of Ramp T. Please refer to **SMF-C-1 Plan Sheet** for details on underdrain locations and elevations.

5.2 SMF-C-2 DESIGN

SMF-C-2 is located west of Ramp S and south Durham St. and is a wet detention facility. SMF-C-2 treats the runoff from Ramp S and southbound S.R. 45 from Durham St. to Corrine St. Treatment is provided for existing southbound S.R. 45 to compensate for the uncollected runoff from the proposed widening to southbound S.R. 45 further south (refer to Section 4.2). SMF-C-2 provides 0.587 ac-ft of treatment versus a required treatment volume of 0.189 ac-ft (1 in for 1.52 ac plus 0.49 ac for SMF area at the weir elevation). Refer to **Table 5.2.1** for a summary of the SMF characteristics.

Table 5.2.1 – SMF-C-2 Characteristics

Description	Elevation (ft)	Area (ac)	Downward Slope ([illegible])
Top of 15 ft maintenance berm	7.5	1.07	1:10
Toe of 15 ft maintenance berm	6.0	0.72	1:4
Weir crest	3.3	0.50	1:4
Control Elev.	2.0	0.40	1:4
Littoral Shelf	1.0	0.15	1.4
SMF sump	0.0	0.18	N/A
Treatment depth (ft) 1.3			
Littoral Shelf % 45%			

The SMF-C-2 control structure is a Type D Ditch Bottom Inlet (DBI) with a 49-in wide vertical slot weir. This control structure (S-150) discharges south to S-151. S-151 flows south to S-153, a DBI that picks up runoff from the grassed area between Ramp T, Ramp S, and the 20th St. cul-de-sac. S-153 flows south to tie into S-122, a curb inlet that picks up runoff from the 20th St. cul-de-sac. S-122 flows south to S-122A, a manhole in which flows combines with flow coming from SMF-C-1, which ties directly into CD-01.

The SHW elevation for SMF-C-2 is 5.8 ft; therefore, a liner is necessary for this site to utilize a lower control elevation of 2.0 ft. The liner is designed to prevent failures due to flotation caused by the groundwater table. The liner top elevation is at SHW elevation for the site at 5.8 ft. The liner bottom is at -4.0 ft to prevent liner flotation even in the deepest sumps of SMF-C-2. Please refer to **Appendix A-104A** for SMF-C-2 Liner Flotation Calculations.

The pre-development discharge rate for the SWFWMD 25-year, 24-hour storm event at the boundary node, TO YBOR CHAN, is 154.7 cubic feet per second (cfs), while the post development discharge rate is 154.3 cfs. A comparison of the stages in the DWQMS in pre- and post-development conditions shows lower stages in the post condition. Refer to **Table 5.13.2** for a summary of the attenuation provided by SMF-C-1 and SMF-C-2.

5.3 SMF-D-1 DESIGN

SMF-D-1 is located south of Ramp N and north of Long St. and is a wet detention facility. SMF-D-1 treats the runoff from Ramp S from Pier 9-4 to Pier 9-10 (station 914+25.10 to 923+18.96); Ramp N from east of S.R. 45 at station 805+500 to approximately station 809+40; eastbound and westbound Expressway widening from approximately station 661+00 to 665+00; Ramp K from station 503+20 to 511+80; as well as the runoff collected by SMF-D-2 (refer to Section 5.4). The widened pavement on S.R. 45 for Ramp N is too low to be collected in SMF-D-1. The additional 0.28 ac of runoff from this pavement will be added to the existing storm drain system for S.R. 45 (refer to Section 4.2 for discussion of this additional runoff of the existing system). SMF-D-1 provides the treatment volume for all runoff collected in the pond. SMF-D-1 provides 0.413 ac-ft of treatment versus a required treatment volume of 0.285 ac-ft (1 in for 2.885 ac plus 0.526 ac for SMF area at the weir elevation). Refer to **Table 5.3.1** for a summary of the SMF characteristics.

Table 5.3.1 – SMF-D-1 Characteristics

Top of 11 ft maintenance berm	8.5	1.54	1:8
Toe of 11 ft maintenance berm	6.6	1.19	1:4
Weir crest	3.5	0.85	1:4
SHW	3.0	0.80	1:2
Littoral Shelf	1.0	0.58	N/A
SMF bottom	-2.8	0.02	N/A
Treatment depth (ft) 0.5			
Littoral Shelf % 73%			

The SHW elevation for SMF-D-1 is 6.5 ft; therefore, a liner is necessary for this site to utilize a lower control elevation of 3.0 ft. The liner is designed to prevent failures due to flotation caused by the groundwater table. The liner top elevation is at SHW elevation for the site at 6.5 ft. The liner bottom is at -6.3 ft to prevent liner flotation even in the deepest sumps of SMF-D-1. Please refer to **Appendix A-104C** for SMF-D-1 Liner Flotation Calculations.

At the intersection of S.R. 45 and Ramp N there are base water clearance violations due to the high SHW elevation. In order to drawdown the SHW elevation of 6.5 ft to prevent instability in the stabilization of Ramp N and S.R.45, Type III underdrains are being added under parts of Ramp N and S.R. 45. Please refer to **SMF-D-1 Plan Sheet** for details on underdrain locations and elevations.

The SMF-D-1 control structure is a Type D Ditch Bottom Inlet (DBI) with a 8-in wide vertical slot weir. This control structure (S-252) discharges northwest to S-267, S-253 then to EX-82C which flows north and west to discharge to the northerly railroad ditch that flows west to Ybor Channel.

5.4 SMF-D-2 DESIGN

SMF-D-2 is located south of Ramp N and north of the existing city alley between Long St. and Durham St. and is a wet detention facility. SMF-D-2 collects the runoff from Ramp K from station 511+80 to Pier 7-5 (just east of 26th St.); westbound and eastbound Expressway from station 666+40 to just west of 26th St.; Ramp N from station 809+20 to just east of 26th St.; and Ramp S from Pier 9-10 to Pier 9-13 (station 923+18.96 to 928+03.96) . SMF-D-2 provides the treatment volume for all runoff collected in the pond. SMF-D-2 provides 0.4258 ac-ft of treatment versus a required treatment volume of 0.269 ac-ft (1 in for 2.347 ac plus 0.877 ac for SMF area at the weir elevation) Refer to **Table 5.4.1** for a summary of the SMF characteristics.

Table 5.4.1 – SMF-D-2 Characteristics

Description	Elevation (ft)	Area (ac)	[illegible] Slope ([illegible])
Top of 20 ft maintenance berm	12.0	1.58	1:20
Toe of 20 ft maintenance berm	9.5	1.01	1:4
Weir crest	8.2	0.88	1:4
SHW	7.7	0.82	1:2
Littoral Shelf	5.6	0.53	N/A
SMF sump	0.0	0.01	N/A
Treatment depth (ft) 0.50			
Littoral Shelf % 74%			

The SMF-D-2 control structure is a Type D Ditch Bottom Inlet (DBI) with a 4-in wide vertical slot weir. This control structure (S-250) discharges west to S-209, a manhole that collects the runoff from Pier 9-8. S-209 flows west to discharge to SMF-D-1.

The pre-development discharge rate for the SWFWMD 25-year, 24-hour storm event at the boundary node, EX-82A, is 37.2 cfs, while the post development discharge rate is 22.7 cfs. Refer to **Table 5.13.2** for a summary of the attenuation provided by SMF-D-1 and SMF-D-2.

In the existing condition, the area to the south of the pond is generally flat with no drainage facilities. It appears runoff can flow north towards the railroad ditch or west towards S.R. 45. The proposed pond will block this flow. Therefore, a small swale with DBIs is proposed alongside SMF-D-1 that will carry the runoff to the railroad ditch.

5.5 SMF-E-1 DESIGN

SMF-E-1 is located south of the Expressway, east of 28th St., and north of the existing city alley between Long St. and Durham St. and is a wet detention facility. SMF-E-1 collects the runoff from the existing eastbound Expressway from just west of 26th St. to the bridge over CSX railroad, the existing Reversible Lanes from just west of 26th St. to just west of CSX railroad, Ramp N from just east of 26th St. to approximately station 832+60 (high point), Ramp F from divergence from Expressway to Pier 14-7 (sta. 7023+73), Ramp S from Pier 9-13 (sta. 928+04 just east of 26th St.) to approximately station 939+80 (high point), Ramp K from Pier 7-5 (sta. 515-63 just east of 26th St.) to Pier 6-2 (sta. 575+20 high point), Ramp E from the convergence with westbound Expressway to approximately station 6006+60 (high point), and the widened westbound Expressway from just west of 26th St. to the convergence with Ramp E. SMF-E-1 provides 1.684 ac-ft of treatment versus a required treatment volume of 1.168 ac-ft (1 in for 11.56 ac plus 2.45 ac for SMF area at the weir elevation). Refer to **Table 5.5.1** for a summary of the SMF characteristics.

Table 5.5.1 – SMF-E-1 Characteristics

[illegible]	[illegible]	[illegible]	[illegible]
Top of 15 ft maintenance berm	13.0	3.37	1:20
Toe of 15 ft maintenance berm	12.25	2.84	1:4
Weir crest	9.3	2.45	1:4
SHW	8.6	2.36	1:4
Littoral Shelf	7.6	1.05	N/A
SMF sump	-2.0	0.65	N/A
Treatment depth (ft) 0.70			
Littoral Shelf % 45%			

The SMF-E-1 control structure is a Type D Ditch Bottom Inlet (DBI) with a 12-in wide vertical slot weir. This control structure (S-390) discharges east to the proposed outfall ditch that flows to CD-03. CD-03 flows north to an existing wetland that pops over to a short existing system of storm sewer and ditches that discharges to the 34th St. canal.

A lateral ditch is proposed along the southern and eastern ends of SMF-E-1 to intercept the offsite flow from adjacent offsite areas. The flow from this offsite diversion ditch combines with the discharge from SMF-E-1 just south of CD-03 and CD-04 (node called SMF Outfall in ICPR). This portion of the ditch that conveys the combined offsite and SMF discharge is designed for the 25-year frequency and is modeled in ICPR only.

The pre-development discharge rate for the SWFWMD 25-year, 24-hour storm event at the boundary node, Wetland, is 38.7 cfs, while the post development discharge rate is 28.5 cfs. Refer to **Table 5.13.2** for a summary of the attenuation provided by SMF-E-1.

5.6 SMF-E-3 DESIGN

SMF-E-3 is located north of the Expressway, east of the CSX railroads, and south of the 34th St. canal and is a wet detention facility. SMF-E-3 collects the runoff from Ramp K from Pier 6-3 (sta. 529+00) to Pier 6-4 (sta. 530+60), Ramp E from Pier 5-2 (sta. 6009+55.20) to Pier 4-1B (Pier 5-5 sta. 6015+77.50), Ramp F from approximately station 7025+10 (high point) to Pier 14-10 (sta. 7028+43), Ramp S from Pier 9-20 (sta. 941+40) to Pier 9-23 (sta. 947+17), and Ramp J from Pier 8-2 (sta. 48+15.68) to station 52+60 (S-360), Ramp B from approximately station 8076+60.00 (high point) to Pier 10-10 (sta. 8080+84.74), and Ramp D from Pier 16-6 (sta. 5057+22.73) to Pier 16-11 (sta. 5066+45.23). SMF-E-3 provides 0.771 ac-ft of treatment versus a required treatment volume of 0.585 ac-ft (1 in for 6.13 ac plus 0.89 ac for SMF area at the weir elevation). Refer to **Table 5.6.1** for a summary of the SMF characteristics.

Table 5.6.1 – SMF-E-3 Characteristics

Description	Elevation (ft)	Area (ac)	[illegible]
Top of 20 ft maintenance berm	9.5	1.33	1:20
Toe of 20 ft maintenance berm	8.5	0.95	1:4
Weir crest	7.6	0.89	1:4
SHW	6.7	0.83	1:4
Littoral Shelf	5.7	0.47	N/A
SMF sump	2.0	0.17	N/A
Treatment depth (ft) 0.90			
Littoral Shelf % 57%			

The SMF-E-3 control structure is a Type H DBI with no grate, providing a horizontal weir length of 23.5 ft. This control structure (S-391) discharges north directly to the 34th St. canal; attenuation is not required due to proposed channel improvements in the tidally influenced area.

5.7 SMF-F-1 DESIGN

SMF-F-1 is located north of S.R. 60, south of the CSX railroads and is a wet detention facility. SMF-F-1 collects the runoff from all ramps within the Connector. The southern limits of collection are Pier 6-6 (sta. 534+03) on Ramp K, Pier 4-1B (sta. 6015+77.50) on Ramp E, Pier 9-24 (sta. 949+10) on Ramp S, Pier 10-8 (sta. 8076+20.41) on Ramp B, Pier 14-11 (sta. 7030+33) on Ramp F, Pier 15-10 (sta. 838+05) on Ramp N, and Pier 16-6 (sta. 5057+22.73) on Ramp D. The northern limits of collection are approximately station 6034+00 (high point over 7th Ave.) on Ramp E, Pier AB1 (north side of 7th Ave.) on Ramp B, Pier 11-5 (south side of 7th Ave.) on Ramp F, and Pier CD1 (north side of 7th Ave.) on Ramp D. SMF-F-1 also collects runoff from the Driveway proposed for the Plug. SMF-F-1 provides 1.301 ac-ft of treatment versus a required treatment volume of 1.178 ac-ft (1 in for 12.57 ac plus 1.57 ac for SMF area at the weir elevation). Refer to **Table 5.7.1** for a summary of the SMF characteristics.

Table 5.7.1 – SMF-F-1 Characteristics

Description	Elevation (ft)	Area (ac)	[illegible]
Top of 20 ft maintenance berm	8.1	2.25	1:20
Toe of 20 ft maintenance berm	7.1	1.73	1:4
Weir crest	5.45	1.57	1:4
SHW	4.6	1.49	1:4
Littoral Shelf	3.6	0.66	N/A
SMF sump	-5.0	0.56	N/A
Treatment depth (ft)	0.85		
Littoral Shelf %	44%		

The SMF-F-1 control structure is a Type H DBI with no grate, providing a horizontal weir length of 23.5 ft. This control structure (S-490) discharges south, under S.R. 60, directly to the 34th St. canal, thus attenuation is not required.

5.8 SMF-G-3 DESIGN

SMF-G-3 is located north of the Expressway, south of S.R. 60, west of 39th St. and is a linear wet detention facility. SMF-G-3 collects the runoff from Ramp D from Pier 16-11 (sta. 5066+45.23) to its divergence from the westbound Expressway, and the westbound Expressway (including widening for Ramp D) from just west of 34th St. to 39th St. SMF-G-3 provides 0.55 ac-ft of treatment versus a required treatment volume of 0.50 ac-ft (1 in for 5.09 ac plus 0.86 ac for SMF area at the weir elevation). The runoff from Ramp B is accommodated in SMF-RL-X—refer to Section 5.11.2. Refer to **Table 5.8.1** for a summary of the SMF characteristics.

Table 5.8.1 – SMF-G-3 Characteristics

Description	Elevation (ft)	Area (ac)	[illegible]
Top of 15 ft maintenance berm	8.8	1.77	1:20
Toe of 15 ft maintenance berm	8.1	1.15	1:4
Weir crest	6.3	0.86	1:4
SHW	5.6	0.73	1:4
Littoral Shelf	4.6	0.57	N/A
SMF sump	3.0	0.01	N/A
Treatment depth (ft) 0.70			
Littoral Shelf % 78%			

CD-05 passes through SMF-G-3 with a top elevation of approximately 5.1, which intercepts the SMF bottom elevation of 4.6. To ensure adequate cover over the existing box culvert, the SMF bottom is proposed to be bermed up to elevation 5.6 over CD-05. This berm was modeled in ICPR as a broad-crested weir to determine the effect it would have on the water stages in the SMF and the SMF was split into two stage/area nodes—SMF-G-3A and SMF-G-3B, with SMF-G-3A being upstream of the weir and SMF-G-3B being downstream. The maximum stage for SMF-G-3A is used as the tailwater elevation for the storm drain systems.

The SMF-G-3 control structure is a Type H DBI with no grate, providing a horizontal weir length of 23.5 ft. This control structure (S-550) discharges east to S-551, where flow is combined with the discharge from SMF-H-1. Flow is then turned south along 39^{th} St. down through an existing FDOT drainage easement directly to McKay Bay, thus attenuation is not required.

On the west side of S.R 60, there are base water clearance violations due to SMF-G-3 water level. In order to drawdown the water table from the weir elevation of 6.3 ft to prevent instability in the stabilization of the existing road

S.R. 60, Type III underdrains are being added between SMF-G-3 maintenance berm and part of S.R. 60. Please refer to **SMF-G-3 Plan Sheet** for details on underdrain locations and elevations

5.9 SMF-H-1 DESIGN

SMF-H-1 is located north of the Expressway, south of S.R. 60, east of 39th St. and is a linear wet detention facility. SMF-H-1 collects the runoff from Ramp B from Pier 10-26 (sta. 8108+80.39) to its convergence from the eastbound Expressway, the eastbound Expressway (including widening for Ramp B) from 39th St. to approximately station 742+20, the westbound Expressway (including the widening for Ramp D) from 39th St. to approximately station 753+20, and the Shared Use Path from approximately station 2031+40.00 to station 2046+00.00. SMF-H-1 provides 0.835 ac-ft of treatment versus a required treatment volume of 0.669 ac-ft (1 in for 7.10 ac plus 0.93 ac for SMF area at the weir elevation). Refer to **Table 5.9.1** for a summary of the SMF characteristics.

Table 5.9.1 – SMF-H-1 Characteristics

[illegible]	[illegible]	[illegible]	[illegible]
Top of 15 ft maintenance berm	7.25	1.98	1:20
Toe of 15 ft maintenance berm	6.5	1.29	1:4
Weir crest	4.5	0.93	1:4
SHW	3.5	0.74	1:4
Littoral Shelf	2.5	0.55	N/A
SMF sump	-0.1	0.02	N/A
Treatment depth (ft) 1.00			
Littoral Shelf % 74%			

The existing storm drain system between EX-207, EX-208, and EX-209 passes through SMF-H-1 with a top elevation of approximately 3.9, which intercepts the SMF bottom elevation of 2.5. To ensure adequate cover over the existing pipe, the SMF bottom is proposed to be bermed up to elevation 4.2 over the existing pipe. This berm was modeled in ICPR as a broad-crested weir to determine the effect it would have on the water stages in the SMF and the SMF was split into two stage/area nodes—SMF-H-1A and SMF-H-1B, with SMF-H-1A being upstream of the weir and SMF-H-1B being downstream. Since the discharges into the SMF are all upstream of this weir, the maximum stage for SMF-H-1A is used as the tailwater elevation for the storm drain systems.

The SMF-H-1 control structure is a Type H DBI with no grate, providing a horizontal weir length of 23.5 ft. This control structure (S-650) discharges west to S-551, where flow is combined with the discharge from SMF-G-3 and then flows to S-526A, where flow is combined with the discharge from existing pond SMF-RL-X and S-526. Refer to Section 5.8 for the description of the remainder of the outfall path. Attenuation is not required for SMF-H-1.

5.10 SMF-I-1 DESIGN

SMF-I-1 is located south of the Expressway, east of CD-06 and approximately 2000 ft west of 50th St. and is a linear wet detention facility. SMF-I-1 collects the runoff from the eastbound Expressway (including widening for Ramp B) from approximately station 744+60 to approximately station 753+00, eastbound Expressway shoulder from approximately station 753+00.00 to station 755+00.00, Ramp L from divergence from the eastbound Expressway to the existing toll plaza approach, and the Shared Use Path from approximately station 2048+20.00 to station 2061+30.00. SMF-I-1 provides 0.280 ac-ft of treatment versus a required treatment volume of 0.236 ac-ft (1 in for 2.23 ac plus 0.60 ac for SMF area at the weir elevation). Refer to **Table 5.10.1** for a summary of the SMF characteristics.

Table 5.10.1 – SMF-I-1 Characteristics

Description	Elevation (ft)	Area (ac)	Downward Slope (run:rise)
Top of 15 ft maintenance berm	12.5-16.5*	1.61	1:8*
Weir crest	10.6	0.60	1:4
SHW	10.0	0.52	N/A
Littoral Shelf	9.0	0.36	N/A
SMF sump	5.0	0.01	N/A
Treatment depth (ft)	0.60		
Littoral Shelf %	69%		

**Refer to paragraph below*

The southern maintenance berm for SMF-I-1 is currently proposed to serve as the location for the 12-ft Shared Use Path that is proposed to run along the southern Expressway R/W. The northern maintenance berm will have a slope of 1:8 and a width of 15 ft, with varying elevations based on the profile of the shoulder of the Shared Use Path.

The SMF-I-1 control structure is a Type H DBI with no grate, providing a horizontal weir length of 23.5 ft. This control structure (S-704) discharges west to the downstream end of CD-06, directly to McKay Bay, thus attenuation is not required.

5.11 EXISTING SMFs

The proposed drainage design calls for treatment to be provided for proposed runoff in existing SMF-RL-4D, and SMF-RL-X. Proposed discharge is also being sent to existing SMF-OX-3 and SMF-22ND-4. No additional treatment volume is required for the proposed runoff to these ponds. The existing SMF-RL-4A will be eliminated due to the construction of Ramp J.

5.11.1 SMF-RL-4A

SMF-RL-4A is located north of the Expressway, south of S.R. 60, and west of 34th St. in Basin E. SMF-RL-4A was permitted and constructed with the Reversible Lanes project and is a wet detention facility that provides no substantial attenuation to its outfall to the 34th St. canal. In the pre-development condition, SMF-RL-4A collected the runoff from the westbound Expressway and the Reversible Lanes from the bridge over the CSX railroads to just west of 34th St. The construction of Ramp J requires the elimination of SMF-RL-4A. The runoff that was treated in this pond will be treated in SMF-E-3 which also outfalls to the 34th St. canal.

5.11.2 SMF-RL-4D

SMF-RL-4D is located south of the Expressway, north of the CSX property, and west of 34th St. in Basin E. SMF-RL-4D was permitted and constructed with the Reversible Lanes project and is a wet detention facility that provides no substantial attenuation to its outfall to McKay Bay. In the pre-development condition, SMF-RL-4D collected the runoff from the eastbound Expressway from just east of 26th St. to just west of 34th St., the Reversible Lanes from just west of 26th St. to the bridge over the CSX railroads, and the westbound Expressway for a short segment west of the bridge over the CSX railroads. In the post-development condition, SMF-RL-4D collects the runoff from the eastbound Expressway from the bridge over CSX railroads to just west of 34th St., Ramp K from Pier 7-11A (sta. 525+60) to Pier 6-3 (sta. 529+00), Ramp J from Pier 7-11B (sta. 42+62.15) to Pier 8-2 (sta. 48+15.68), Ramp S from approximately station 939+80 (high point over Expressway) to Pier 9-20 (sta. 941+40), Ramp F from Pier 14-7 (sta. 7023+73) to approximately station 7025+10 (high point over Expressway), and Ramp B from Pier 10-10 (sta. 8080+84.74) to Pier 10-14 (sta. 8089+75.40 just east of 34th St.). In the pre-development condition, SMF-RL-4D is connected to SMF-

RL-4A by a cross drain under the expressway. The 2.25" diameter orifice at SMF-RL-4A was designed to function for drawdown in both ponds. In the post-development condition, due to the elimination of SMF-RL-4A, a 1.5" diameter orifice is proposed for drawdown in SMF-RL-4D. The pre-development impervious area for SMF-RL-4D, according to the permit, is 6.42 ac plus 0.62 ac for SMF area at the weir elevation for a total pre-development impervious area of 7.04 ac. This area translates to a treatment volume of 0.587 ac-ft. The post development impervious area has been reduced to 2.78 ac plus 0.62 ac for SMF area at the weir elevation for a total post-development impervious area of 3.40 ac. This area translates to a treatment volume of 0.283 ac-ft, which is less than what is permitted. Therefore, the diversion of runoff to and from existing SMF-RL-4D results in a net reduction in required treatment volume of 0.304 ac-ft.

5.11.3 SMF-RL-X

SMF-RL-X is located south of the Expressway and west of 39th St. in Basin G. SMF-RL-X was permitted and constructed with the Reversible Lanes project and is a wet detention facility that provides no substantial attenuation to its outfall to McKay Bay. In the pre-development condition, SMF-RL-X collected the runoff from the Reversible Lanes and the eastbound Expressway from just west of 34th St. to just west of 39th St. The pre-development impervious area for SMF-RL-X, according to the permit, is 7.44 ac plus 0.78 ac for SMF area at the weir elevation for a total pre-development impervious area of 8.22 ac. This area translates to a treatment volume of 0.685 ac-ft. In the post-development condition, SMF-RL-X collects runoff from the same pre-development area, Ramp B from Pier 10-14 (just east of 34th St.) to Pier 10-26 (west of 39th St.), and runoff from the Shared Use Path. The pond is physically modified to accommodate the Shared Use Path on the south side and the additional runoff from Ramp B. The post development impervious area is 9.37 ac plus 1.03 ac for SMF area at the weir elevation for a total post-development impervious area of 10.40 ac. This area translates to a treatment volume of 0.867 ac-ft, which is less than the treatment volume of 0.961 ac-ft, provided by the proposed SMF geometry.

5.11.4 SMF-OX-3

SMF-OX-3 is located in the infield area of the eastbound Expressway on-ramp at S.R. 45 (22^{nd} St.) in Basin D. SMF-OX-3 was constructed with the original Crosstown Expressway project. The pond is a part of a large interconnected system consisting of wet and dry ponds discharging through an outfall structure and ditch/pipe outfall to Ybor Channel. Partial widening to westbound Expressway from station 653+00 to station 658+40 for a lane drop and eastbound Expressway from station 651+70 to station 659+00 for a lane add generates 0.27 ac of proposed pavement discharging into SMF-OX-3, which 0.27 ac of existing pavement east of S.R. 45 has been diverted away from SMF-OX-3 to SMF-22^{ND}-4.

The proposed pavement runoff is collected in proposed modifications to an existing storm drain system that discharges to SMF-OX-3. It is not economically feasible to construct a separate storm drain system to convey this runoff to a proposed SMF. 0.27 ac of the existing Expressway areas east of S.R. 45 draining to SMF-OX-3 is being diverted to scupper inlets S-275, S-275A, S-236C, and S-236D through a modified existing outfall that discharges to SMF-22ND-4. Spread calculations for these scupper inlets are provided in **Appendix B**. From the Expressway widening, 0.27 ac of proposed runoff will be collected in structures in S-270, S-271, and S-272 as part of the existing storm drain system outfalling into SMF-OX-3 at existing structure 80C. There are no adverse impacts to SMF-OX-3 because the removed areas from SMF-OX-3 equals to the areas added to SMF-OX-3. The additional runoff will not cause spread problems at the proposed structures. Please refer **Appendix B** for spread calculations for proposed structures S-270 through S-272.

5.11.5 SMF-22ND-4

SMF-22ND-4D is located at the southeast corner at the intersection of S.R. 45 (22nd St.) and the Expressway in Basin D. SMF-22ND-4D was permitted and constructed with the S.R. 45 (22nd St.) realignment project. The pond is a wet detention facility discharging into SMF-OX-3, which in turn discharges into an existing outfall pipe/ditch system that conveys flow towards the west Ybor Channel.

The flows from partial widening to westbound Expressway from station 658+40 to station 660+80 and eastbound Expressway from station 659+00 to 661+35 are collected in scupper inlets S-275, S-275A, S-236, S-236A, S-236C, and S-236D. The 0.46 ac of additional runoff collected in these scupper inlets drains through a proposed storm drain system tying into a modified existing outfall into SMF-22ND-4 at structure 81H.

The runoff from partial widening to Ramp K from station 501+60 to station 503+25 for lane drop will be collected in existing structure 84 and conveyed through an existing storm drain system discharging to SMF-22ND-4. Of the 0.21 ac draining to existing structure 84, 0.20 ac is existing pavement. The widening of Ramp K is reducing .03 ac of pavement runoff to SMF-22ND-4.

The additional 0.46 ac and reduction of 0.03 ac will not have adverse impacts to SMF-22ND-4 treatment or attenuation volumes, because 0.50 ac of the existing Expressway is diverted to scupper inlets S-276, S-276A, S-237, and S-237A to the proposed storm drain system that discharges to SMF-D-1. Spread calculations for all scupper inlets are provided in **Appendix B**.

5.12 SHARED USE PATH DRAINAGE DESIGN

As per SWFWMD pre-application meeting on 01/30/08, the Shared Use Path does not require treatment except in areas where the Path directly discharges to a permitted or a proposed stormwater treatment facility. Portions of the Shared Use Path directly discharge into SMF-RL-X and SMF-I-1. Runoff from the other portions is collected in swales that run along the sides of the trail. In some areas, runoff collected in these swales is sent to nearby ponds for treatment because they also collect water from the Expressway. In other areas, the swales that collect runoff just from the Shared Use Path are connected to existing box culverts which ultimately discharge into McKay Bay.

5.13 TREATMENT AND ATTENUATION SUMMARY

The required and provided treatment volumes are provided in **Table 5.13.1**. The *required treatment* volume represents the minimum volume required by Section 5.8 of the SWFWMD Basis of Review for all the DCIA routed to the ponds. There are a total of 3.41 ac which are either hydraulically or economically unfeasible to bring into the SMFs. However, 2.25 ac of compensatory treatment and 3.55 ac of existing pavement which currently receives no treatment but will be widened or otherwise altered will be treated in the proposed, refer to **Table 4.2.1** for locations of these areas. The *provided treatment* volume represents the volume provided by the geometry of the SMF determined by an average end area calculation between the area at the orifice elevation (SHWT elevation) and the weir elevation.

Table 5.13.1 – Treatment Summary

SMF	Required Treatment Volume (ac-ft)	Provided Treatment Volume (ac-ft)
SMF-C-1	0.140	0.190
SMF-C-2	0.189	0.587
SMF-D-1	0.292	0.453
SMF-D-2	0.259	0.368
Ybor Channel Subtotal	**0.880**	**1.598**
SMF-E-1	1.168	1.684
SMF-E-3	0.585	0.771
SMF-F-1	1.178	1.301
SMF-G-3	0.500	0.550
SMF-H-1	0.669	0.835
SMF-I-1	0.236	0.280
SMF-RL-4D	0.283	0.400
SMF-RL-X	0.867	0.961
McKay Bay Subtotal	**5.486**	**6.782**

The attenuation provided in Basins C, D, and E (SMF-E-1 only) is summarized in **Table 5.13.2** below. All of these SMFs comply with SWFWMD water quantity requirements. Basins C, D, and E comply with the Rule 14-86 Peak Discharge Approach. The critical durations for the pre and post conditions are bolded in Table 5.13.2.

Table 5.13.2 – Attenuation Summary

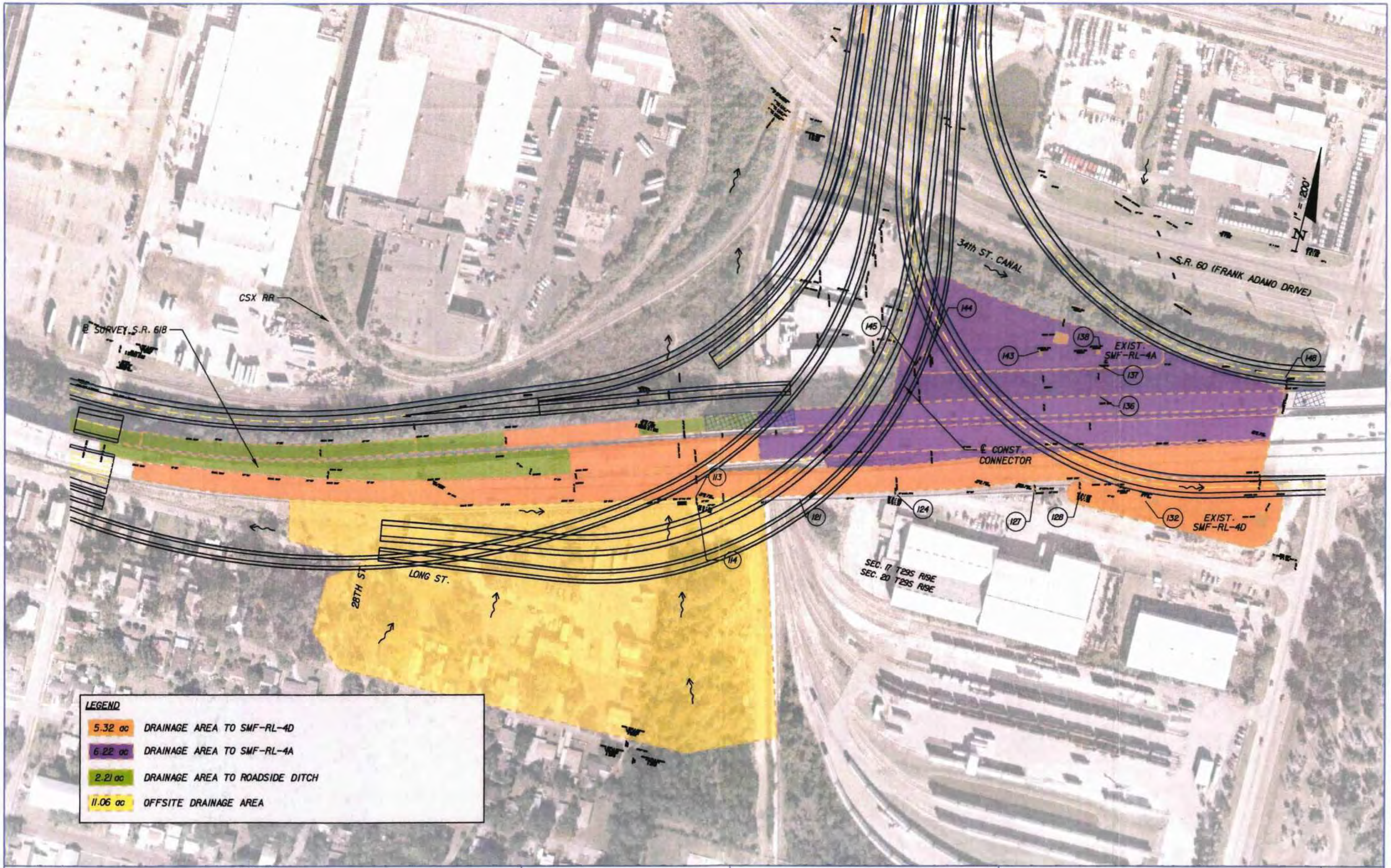
Storm Event	SMF-C-1/C-2		SMF-D-1/D-2		SMF-E-1	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
SWFWMD – Type II Florida Modified SCS Rainfall Distribution						
25-yr, 24-hr	**154.7**	**154.3**	**37.2**	**22.7**	**38.7**	**30.4**
FDOT Critical Duration Rule 14-86 – FDOT Distributions						
2-yr, 1-hr	**80.2**	**65.3**	**26.9**	**16.6**	**18.4**	12.2
2-yr, 2-hr	77.6	**65.3**	26.6	16.0	17.8	12.5
2-yr, 4-hr	56.3	55.4	24.9	10.9	12.7	11.1
2-yr, 8-hr	65.4	64.1	24.6	11.9	14.9	**12.8**
2-yr, 24-hr	24.7	26.1	7.8	6.0	5.5	6.8
2-yr, 3-day	21.0	21.0	4.6	3.9	3.4	4.6
2-yr, 7-day	16.3	20.7	3.4	3.9	2.5	4.2
2-yr, 10-day	21.0	18.7	4.5	4.3	3.3	5.4
5-yr, 1-hr	**103.2**	**88.7**	**29.6**	**20.1**	**24.8**	16.6
5-yr, 2-hr	94.8	82.9	27.6	18.5	22.3	15.8
5-yr, 4-hr	77.4	75.7	25.9	13.1	17.3	15.5
5-yr, 8-hr	88.9	87.7	25.4	14.0	20.3	**17.8**
5-yr, 24-hr	33.8	33.9	10.4	8.1	7.4	9.4
5-yr, 3-day	22.1	24.4	6.5	5.5	4.6	6.4
5-yr, 7-day	21.3	19.7	5.3	4.7	3.6	5.9
5-yr, 10-day	22.4	25.1	6.4	6.2	4.7	7.9
10-yr, 1-hr	**117.0**	102.8	**32.1**	**21.6**	**28.7**	19.3
10-yr, 2-hr	111.8	100.6	30.7	20.4	26.9	19.2
10-yr, 4-hr	101.4	99.7	28.7	15.5	22.5	20.6
10-yr, 8-hr	104.9	**103.8**	28.6	15.2	23.9	**21.3**
10-yr, 24-hr	41.1	41.3	16.3	9.6	8.9	11.5
10-yr, 3-day	25.5	27.9	7.4	6.4	5.4	7.6
10-yr, 7-day	21.8	22.0	5.2	5.4	4.0	6.7
10-yr, 10-day	25.9	28.4	7.4	7.3	5.4	9.2

Table 5.13.2 – Attenuation Summary

Storm Event	SMF-C-1/C-2		SMF-D-1/D-2		SMF-E-1	
	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)	Pre (cfs)	Post (cfs)
25-yr, 1-hr	**141.9**	**128.5**	**36.7**	**24.1**	**36.0**	24.4
25-yr, 2-hr	135.4	126.3	35.2	22.5	33.5	24.1
25-yr, 4-hr	111.4	109.9	30.9	16.2	24.7	22.8
25-yr, 8-hr	125.4	124.5	32.8	16.7	28.7	**25.9**
25-yr, 24-hr	50.9	51.2	17.3	11.6	10.9	14.4
25-yr, 3-day	32.7	33.3	9.2	8.2	6.9	9.8
25-yr, 7-day	25.1	27.7	7.2	7.1	5.2	9.0
25-yr, 10-day	33.2	33.8	9.2	9.3	6.9	11.9
50-yr, 1-hr	**157.6**	144.6	**39.4**	**25.5**	**40.7**	27.6
50-yr, 2-hr	155.1	**147.6**	38.9	23.9	39.2	28.2
50-yr, 4-hr	127.3	125.8	34.4	17.3	28.2	26.3
50-yr, 8-hr	140.8	140.1	35.9	22.0	32.3	**29.5**
50-yr, 24-hr	56.2	56.5	17.3	12.7	12.0	15.9
50-yr, 3-day	36.7	37.4	10.3	9.2	7.7	11.1
50-yr, 7-day	28.1	29.1	7.9	8.0	5.9	10.1
50-yr, 10-day	36.6	37.2	10.1	10.3	7.6	13.2
100-yr, 1-hr	**179.6**	167.6	**43.3**	**27.4**	**47.5**	32.4
100-yr, 2-hr	177.7	**171.4**	43.1	25.6	45.9	33.3
100-yr, 4-hr	146.4	145.3	38.4	18.4	32.8	30.7
100-yr, 8-hr	163.3	163.0	40.4	19.3	37.8	**34.9**
100-yr, 24-hr	64.0	64.4	22.0	14.2	13.6	18.3
100-yr, 3-day	41.6	42.3	11.6	10.4	8.7	12.6
100-yr, 7-day	30.5	31.1	8.5	8.7	6.4	11.1
100-yr, 10-day	42.2	43.0	11.7	11.9	8.8	15.4

APPENDICES TABLE OF CONTENTS

APPENDIX F – PROPOSED & HISTORIC DRAINAGE MAPS
APPENDIX G – CITY OF TAMPA DRAINAGE ATLASES
APPENDIX H – SWFWMD AERIAL CONTOUR MAPS



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ 5300 West Cypress Street Suite 200 Tampa, Florida 33607-1768 FBPE Certificate of Authorization No. 24

Sharye Poynter, P.E. 58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 618	HILLSBOROUGH	258415-1-52-01

BASIN E PRE DEVELOPMENT CONDITION

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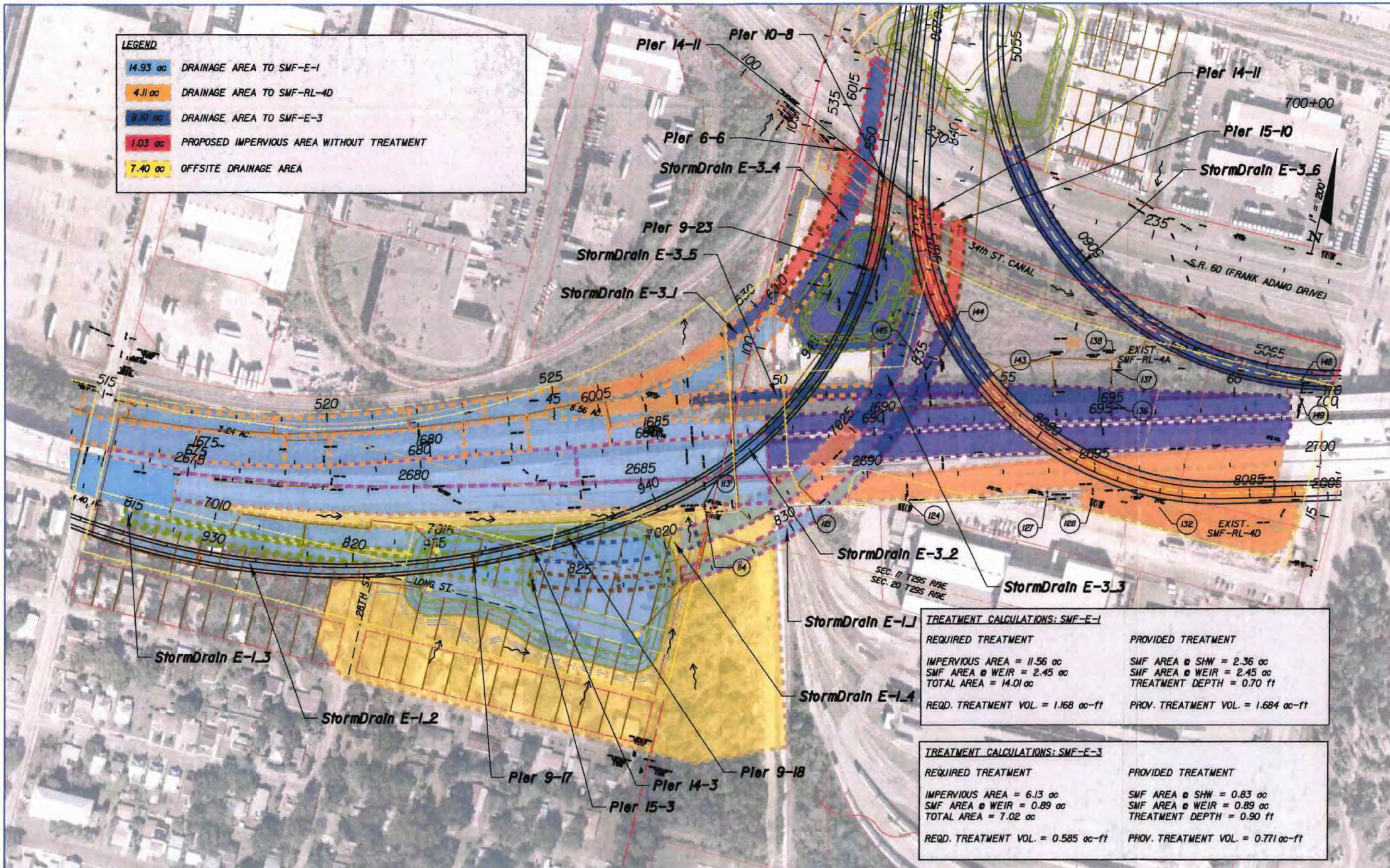

LEGEND

14.93 ac	DRAINAGE AREA TO SMF-E-1
4.11 ac	DRAINAGE AREA TO SMF-RL-4D
8.10 ac	DRAINAGE AREA TO SMF-E-3
1.03 ac	PROPOSED IMPERVIOUS AREA WITHOUT TREATMENT
7.40 ac	OFFSITE DRAINAGE AREA

TREATMENT CALCULATIONS: SMF-E-1

REQUIRED TREATMENT	PROVIDED TREATMENT
IMPERVIOUS AREA = 11.56 ac SMF AREA @ WEIR = 2.45 ac TOTAL AREA = 14.01 ac	SMF AREA @ SHW = 2.36 ac SMF AREA @ WEIR = 2.45 ac TREATMENT DEPTH = 0.70 ft
REQD. TREATMENT VOL. = 1.168 ac-ft	PROV. TREATMENT VOL. = 1.684 ac-ft

TREATMENT CALCULATIONS: SMF-E-3

REQUIRED TREATMENT	PROVIDED TREATMENT
IMPERVIOUS AREA = 6.13 ac SMF AREA @ WEIR = 0.89 ac TOTAL AREA = 7.02 ac	SMF AREA @ SHW = 0.83 ac SMF AREA @ WEIR = 0.89 ac TREATMENT DEPTH = 0.90 ft
REQD. TREATMENT VOL. = 0.585 ac-ft	PROV. TREATMENT VOL. = 0.771 ac-ft

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Shanye Poynter, P.E. 58136

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 618	HILLSBOROUGH	258415-1-52-01

BASIN E POST DEVELOPMENT CONDITION

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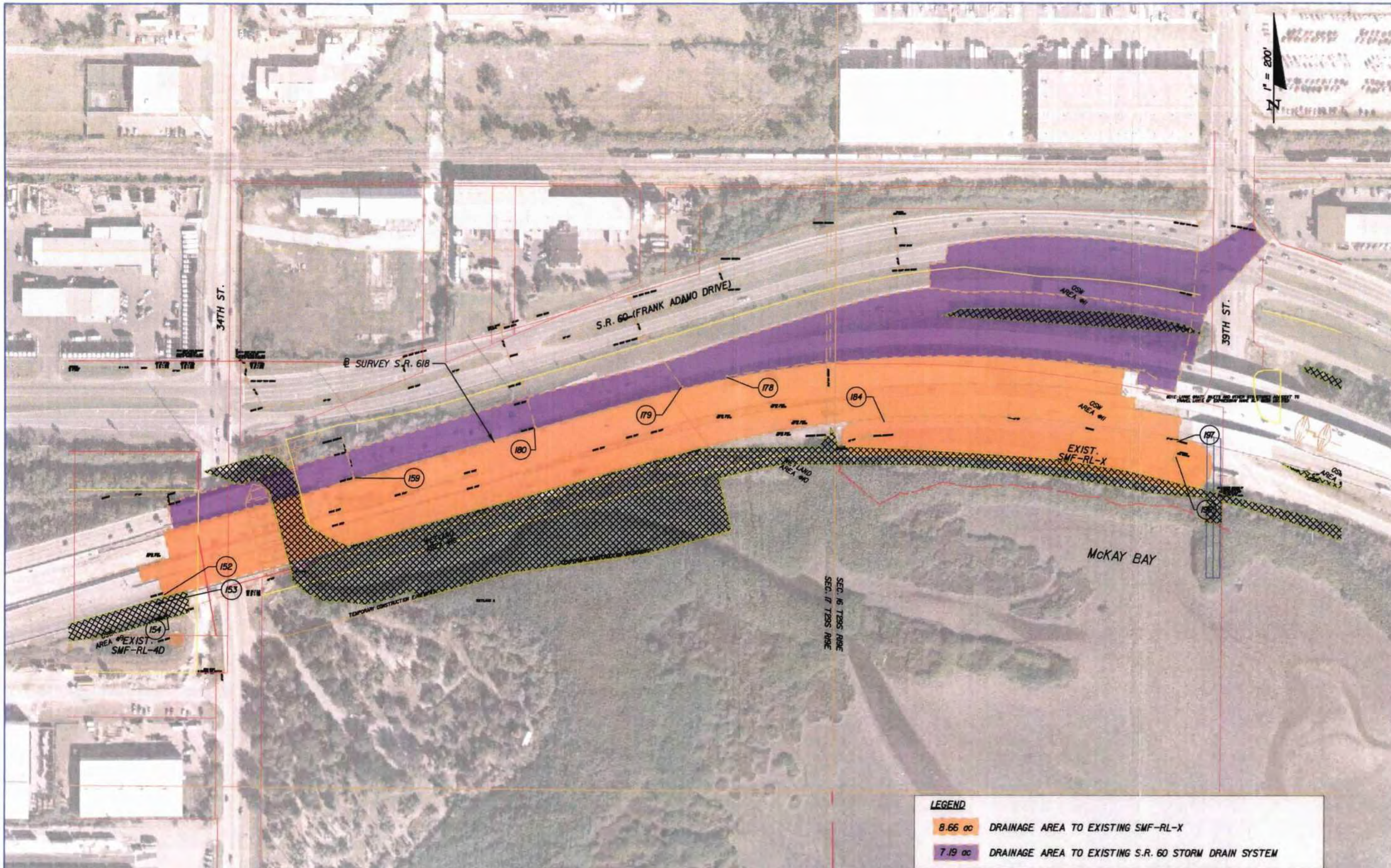

LEGEND

8.66 ac	DRAINAGE AREA TO EXISTING SMF-RL-X
7.19 ac	DRAINAGE AREA TO EXISTING S.R. 60 STORM DRAIN SYSTEM

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PBS&J
5300 West Cypress Street
Suite 200
Tampa, Florida 33607-1768
FBPE Certificate of Authorization No. 24
Shayne Paynter, P.E. 58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

BASIN G PRE DEVELOPMENT CONDITION

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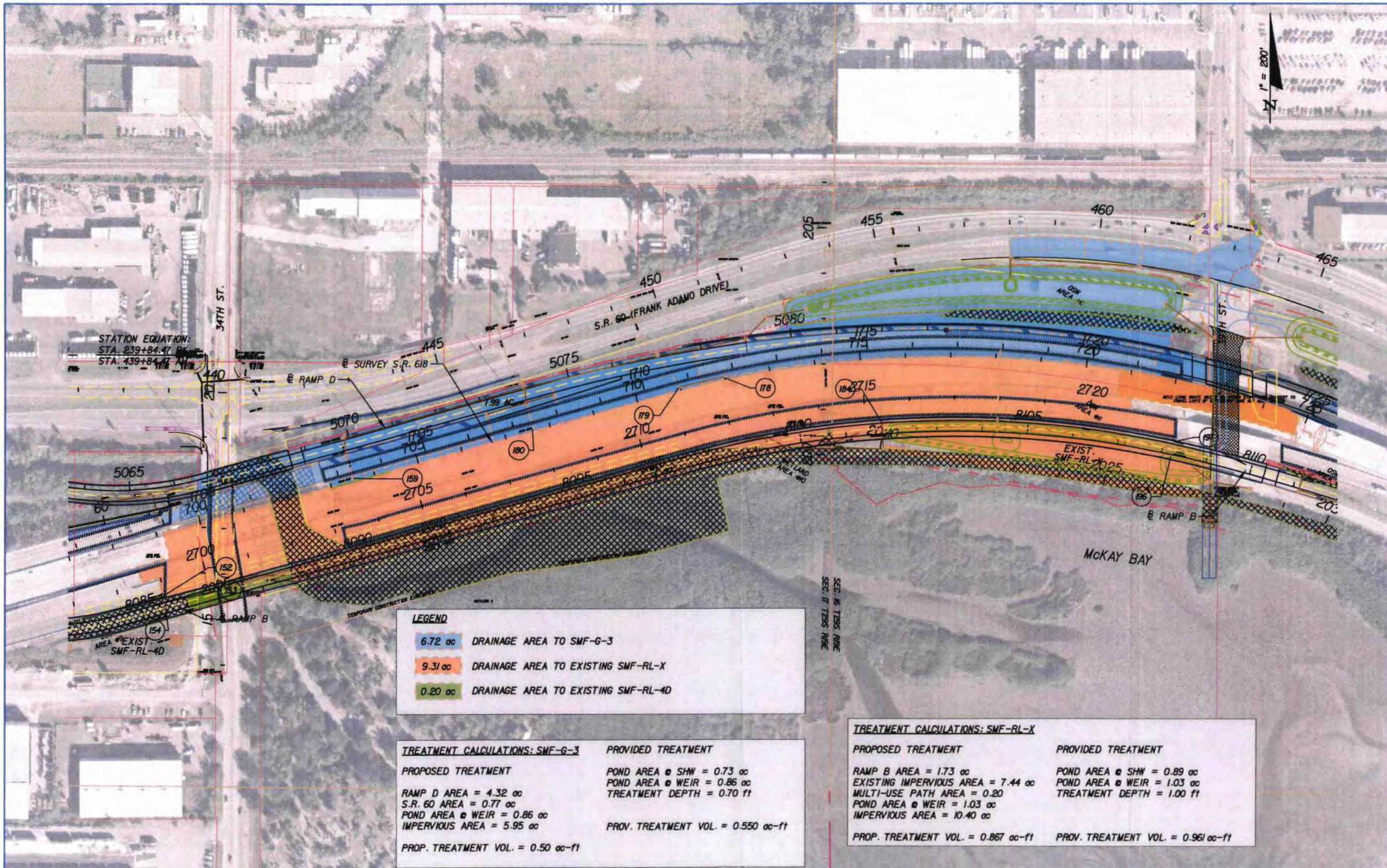

TREATMENT CALCULATIONS: SMF-G-3

PROPOSED TREATMENT	PROVIDED TREATMENT
RAMP D AREA = 4.32 ac	POND AREA @ SHW = 0.73 ac
S.R. 60 AREA = 0.77 ac	POND AREA @ WEIR = 0.86 ac
POND AREA @ WEIR = 0.86 ac	TREATMENT DEPTH = 0.70 ft
IMPERVIOUS AREA = 5.95 ac	
PROP. TREATMENT VOL. = 0.50 ac-ft	PROV. TREATMENT VOL. = 0.550 ac-ft

TREATMENT CALCULATIONS: SMF-RL-X

PROPOSED TREATMENT	PROVIDED TREATMENT
RAMP B AREA = 1.73 ac	POND AREA @ SHW = 0.89 ac
EXISTING IMPERVIOUS AREA = 7.44 ac	POND AREA @ WEIR = 1.03 ac
MULTI-USE PATH AREA = 0.20	TREATMENT DEPTH = 1.00 ft
POND AREA @ WEIR = 1.03 ac	
IMPERVIOUS AREA = 10.40 ac	
PROP. TREATMENT VOL. = 0.867 ac-ft	PROV. TREATMENT VOL. = 0.961 ac-ft

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REVISIONS					
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PBS&J 5300 West Cypress Street Suite 200 Tampa, Florida 33607-1768 FBPE Certificate of Authorization No. 24
Shayne Paynter, P.E. 58136

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

BASIN G POST DEVELOPMENT CONDITION

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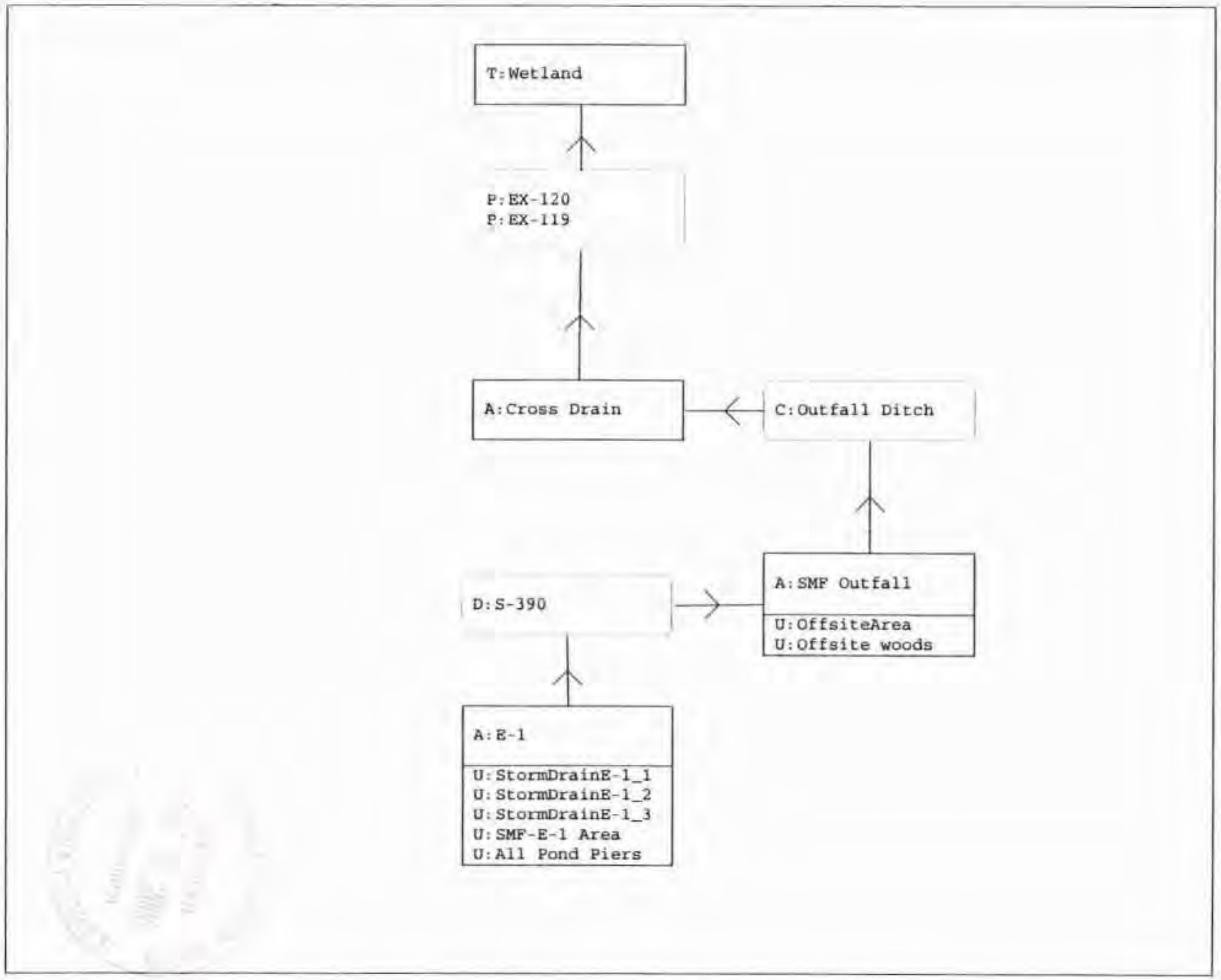
ICPR MODELS

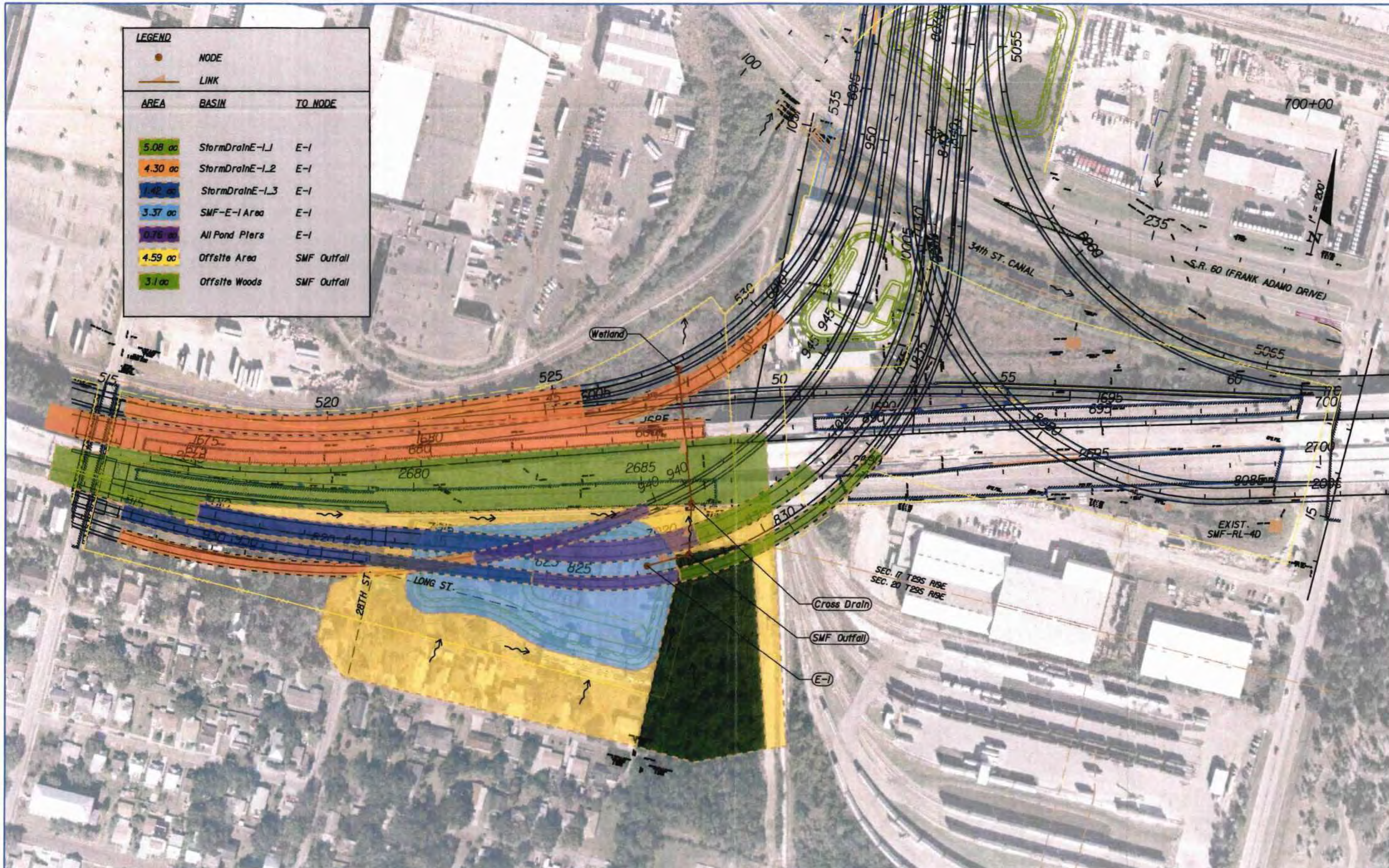
BASIN E-1 POST-DEVELOPMENT MODEL

Selmon Expressway
FPN NO. 258415-1-52-01 - Basin E Post

BasinE1 Post Model

Nodes	Basins	Links
A Stage/Area	O Overland Flow	P Pipe
V Stage/Volume	U SCS Unit Hydro	W Weir
T Time/Stage	S Santa Barbara	C Channel
M Manhole		D Drop Structure
		B Bridge
		R Rating Curve
		H Breach





REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBS&J 5300 West Cypress Street Suite 200 Tampa, Florida 33607-1768 FBPE Certificate of Authorization No. 24
Shanye Poynter, P.E. 58136

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 618	HILLSBOROUGH	258415-1-52-01

SUPPLEMENTAL BASIN E1 POST NODE DIAGRAM

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A-226A

PBS&J

COMP. BY:	BCB
CHK. BY:	GMG
DATE:	12/1/2006

Subject: I-4/LRSEI Connector - Basin E1
Tc calculations for OFFSITE WOODS Basin in Post condition

Time Of Concentration

Sheet Flow

Surface Description	Short Grass Prairie	
Manning's roughness coef. (n)	0.2	
Flow length (L)	300	ft
2 yr 24 hr rainfall (P_2)	4.8	in
Land slope (s)	0.010	ft/ft
$T_{t1} = \dfrac{0.007\ (nL)^{0.8}}{P_2^{0.5} * s^{0.4}}$	**0.53**	**hr**

Shallow Concentrated Flow

Watercourse Slope	0.0060	ft/ft
velocity (V) V(unpaved) = $16.1 * s^{0.5}$	1.247100637	ft/s
Flow length (L)	245	ft
$T_{t2} = \dfrac{L}{3600\ (v)}$	**0.05**	**hr**

Total Tc (T_{t1}+T_{t2})	**0.58 hr**	**35 min.**

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A-222

PBS&J

COMP. BY:	BCB
CHK. BY:	GMG
DATE:	12/1/2006

Subject: I-4/LRSEI Connector - Basin E1
Tc calculations for OFFSITE AREA Basin Post condition (1)

Time Of Concentration

Sheet Flow

Surface Description		Pavement
Manning's roughness coef. (n)		0.016
Flow length (L)		300 ft
2 yr 24 hr rainfall (P_2)		4.8 in
Land slope (s)		0.003 ft/ft
T_{t1} =	$\frac{0.007\,(nL)^{0.8}}{P_2^{0.5} * s^{0.4}}$	**0.11 hr**

Shallow Concentrated Flow

Watercourse Slope		0.0010 ft/ft
velocity (V)	$V(paved) = 20.3 * s^{0.5}$	1.2 ft/s
Flow length (L)		864 ft
T_{t2} =	$\frac{L}{3600\,(v)}$	**0.20 hr**

Total Tc (T_{t1}+T_{t2})	**0.31 hr**	**19 min.**

PBS&J

COMP. BY:	BCB
CHK. BY:	GMG
DATE:	12/1/2006

Subject: I-4/LRSEI Connector - Basin E1
Tc calculations for OFFSITE AREA Basin Post condition (2)

Time Of Concentration

Channel Flow

Top Width of Ditch		11 ft
Bottom Width of Ditch		5 ft
Depth of Ditch		1 ft
Cross sectional flow area (a)		8 ft^2
Wetted Perimeter (Pw)		11.32 ft
Hydraulic Radius (r)	r=a/Pw	0.706 ft
Channel slope (s)		0.0020 ft/ft
Manning's roughness coef. (n)		0.06
velocity (V) V=(1.49*r^2/3*s^1/2)/n		0.88 ft/s
Flow length (L)		933 ft
$T_{t1} = \frac{L}{3600\,(V)}$		0.29 hr

Total Tc (T_{t1})	**0.29 hr**	**18 min.**

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A-229

BasinE1 Post Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Cross Drain	BASE	!025Y024H	12.24	7.460	9.000	0.0003	1820	12.21	30.461	12.24	30.413
Cross Drain	BASE	002Y001H	0.88	6.818	9.000	-0.0001	1956	0.88	12.244	0.88	12.207
Cross Drain	BASE	002Y002H	1.03	6.824	9.000	-0.0001	1956	1.02	12.500	1.03	12.490
Cross Drain	BASE	002Y004H	2.65	6.799	9.000	-0.0001	1957	2.63	11.149	2.65	11.144
Cross Drain	BASE	002Y008H	4.13	6.830	9.000	-0.0001	1956	4.13	12.822	4.13	12.804
Cross Drain	BASE	002Y024H	12.13	6.737	9.000	-0.0001	1958	12.13	6.806	12.13	6.805
Cross Drain	BASE	002Y072H	60.00	6.717	9.000	-0.0001	1958	60.00	4.597	60.00	4.596
Cross Drain	BASE	002Y168H	159.99	6.714	9.000	-0.0001	1958	160.05	4.289	159.99	4.172
Cross Drain	BASE	002Y240H	184.00	6.723	9.000	-0.0001	1958	184.02	5.477	184.00	5.427
Cross Drain	BASE	003Y001H	0.88	6.863	9.000	-0.0001	1955	0.88	14.410	0.88	14.363
Cross Drain	BASE	003Y002H	1.03	6.851	9.000	-0.0001	1955	1.02	13.811	1.03	13.798
Cross Drain	BASE	003Y004H	2.65	6.834	9.000	-0.0001	1956	2.63	13.027	2.65	13.020
Cross Drain	BASE	003Y008H	4.13	6.878	9.000	-0.0001	1954	4.13	15.036	4.13	15.013
Cross Drain	BASE	003Y024H	12.13	6.752	9.000	-0.0001	1958	12.13	8.099	12.13	8.097
Cross Drain	BASE	003Y072H	60.00	6.723	9.000	-0.0001	1958	60.00	5.329	60.00	5.328
Cross Drain	BASE	003Y168H	159.98	6.719	9.000	-0.0001	1958	160.02	4.973	159.98	4.880
Cross Drain	BASE	003Y240H	184.00	6.733	9.000	-0.0001	1958	184.00	6.400	184.00	6.399
Cross Drain	BASE	005Y001H	0.88	6.917	9.000	-0.0001	1952	0.88	16.631	0.88	16.573
Cross Drain	BASE	005Y002H	1.03	6.897	9.000	-0.0001	1953	1.01	15.813	1.03	15.792
Cross Drain	BASE	005Y004H	2.65	6.890	9.000	-0.0001	1954	2.63	15.519	2.65	15.508
Cross Drain	BASE	005Y008H	4.13	6.950	9.000	-0.0001	1950	4.13	17.805	4.13	17.775
Cross Drain	BASE	005Y024H	12.13	6.770	9.000	-0.0001	1957	12.13	9.409	12.13	9.407
Cross Drain	BASE	005Y072H	60.00	6.733	9.000	-0.0001	1958	60.00	6.450	60.00	6.448
Cross Drain	BASE	005Y168H	160.00	6.728	9.000	-0.0001	1958	160.05	5.952	160.00	5.932
Cross Drain	BASE	005Y240H	184.00	6.749	9.000	-0.0001	1958	184.00	7.859	184.00	7.858
Cross Drain	BASE	010Y001H	0.88	6.994	9.000	0.0002	1946	0.88	19.356	0.88	19.283
Cross Drain	BASE	010Y002H	1.04	6.991	9.000	0.0001	1946	1.01	19.224	1.04	19.189
Cross Drain	BASE	010Y004H	2.65	7.036	9.000	-0.0001	1941	2.63	20.629	2.65	20.608
Cross Drain	BASE	010Y008H	4.13	7.058	9.000	-0.0001	1938	4.13	21.323	4.13	21.281
Cross Drain	BASE	010Y024H	12.13	6.805	9.000	-0.0001	1957	12.13	11.495	12.13	11.492
Cross Drain	BASE	010Y072H	60.00	6.746	9.000	-0.0001	1958	60.00	7.591	60.00	7.589
Cross Drain	BASE	010Y168H	160.00	6.736	9.000	-0.0001	1958	160.00	6.736	160.00	6.735
Cross Drain	BASE	010Y240H	184.00	6.767	9.000	-0.0001	1957	184.00	9.163	184.00	9.161
Cross Drain	BASE	025Y001H	0.89	7.171	9.000	0.0002	1916	0.88	24.479	0.89	24.370
Cross Drain	BASE	025Y002H	1.04	7.159	9.000	0.0002	1919	1.01	24.114	1.04	24.054
Cross Drain	BASE	025Y004H	2.65	7.112	9.000	-0.0001	1929	2.63	22.830	2.65	22.805
Cross Drain	BASE	025Y008H	4.14	7.235	9.000	-0.0001	1895	4.13	25.964	4.14	25.900
Cross Drain	BASE	025Y024H	12.13	6.864	9.000	-0.0001	1955	12.13	14.380	12.13	14.375
Cross Drain	BASE	025Y072H	60.01	6.777	9.000	-0.0001	1957	60.00	9.835	60.01	9.831
Cross Drain	BASE	025Y168H	160.00	6.764	9.000	-0.0001	1957	160.00	8.989	160.00	8.987
Cross Drain	BASE	025Y240H	184.00	6.812	9.000	-0.0001	1957	184.00	11.903	184.00	11.900
Cross Drain	BASE	050Y001H	0.89	7.316	9.000	0.0003	1848	0.88	27.786	0.89	27.628
Cross Drain	BASE	050Y002H	1.06	7.354	9.000	0.0003	1801	1.01	28.312	1.06	28.212
Cross Drain	BASE	050Y004H	2.66	7.254	9.000	-0.0001	1887	2.63	26.369	2.66	26.333
Cross Drain	BASE	050Y008H	4.14	7.415	9.000	-0.0001	1812	4.13	29.579	4.14	29.500
Cross Drain	BASE	050Y024H	12.13	6.901	9.000	-0.0001	1953	12.13	15.933	12.13	15.927
Cross Drain	BASE	050Y072H	60.01	6.798	9.000	-0.0001	1957	60.00	11.107	60.01	11.102
Cross Drain	BASE	050Y168H	160.00	6.782	9.000	-0.0001	1957	160.00	10.140	160.00	10.138
Cross Drain	BASE	050Y240H	184.00	6.838	9.000	-0.0001	1956	184.00	13.195	184.00	13.190
Cross Drain	BASE	100Y001H	0.89	7.564	9.000	0.0004	1839	0.88	32.616	0.89	32.427
Cross Drain	BASE	100Y002H	1.05	7.611	9.000	0.0004	1848	1.01	33.419	1.05	33.299
Cross Drain	BASE	100Y004H	2.66	7.476	9.000	-0.0001	1823	2.63	30.781	2.66	30.737
Cross Drain	BASE	100Y008H	4.14	7.703	9.000	0.0002	1864	4.13	35.058	4.14	34.941
Cross Drain	BASE	100Y024H	12.13	6.964	9.000	-0.0001	1948	12.13	18.279	12.13	18.271
Cross Drain	BASE	100Y072H	60.01	6.827	9.000	-0.0001	1956	60.00	12.650	60.01	12.643
Cross Drain	BASE	100Y168H	160.00	6.797	9.000	-0.0001	1957	160.00	11.053	160.00	11.051

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Cross Drain	BASE	100Y240H	184.00	6.887	9.000	-0.0001	1954	184.00	15.358	184.00	15.353
E-1	BASE	025Y024H	13.14	11.469	12.000	0.0003	119245	12.08	67.473	13.14	10.219
E-1	BASE	002Y001H	1.51	10.250	12.000	0.0002	112283	0.63	50.384	1.51	2.964
E-1	BASE	002Y002H	2.17	10.496	12.000	0.0002	113686	0.87	43.678	2.17	4.184
E-1	BASE	002Y004H	3.69	10.593	12.000	0.0001	114239	2.00	24.467	3.69	4.702
E-1	BASE	002Y008H	5.43	10.686	12.000	0.0001	114772	4.00	25.720	5.43	5.221
E-1	BASE	002Y024H	16.05	10.507	12.000	0.0000	113748	12.00	8.524	16.05	4.242
E-1	BASE	002Y072H	64.03	10.166	12.000	0.0000	111803	59.75	4.760	64.03	2.580
E-1	BASE	002Y168H	160.37	10.150	12.000	0.0000	111709	159.00	3.531	160.37	2.507
E-1	BASE	002Y240H	184.38	10.310	12.000	0.0000	112625	183.00	4.653	184.38	3.248
E-1	BASE	003Y001H	1.49	10.354	12.000	0.0003	112875	0.63	56.125	1.49	3.462
E-1	BASE	003Y002H	2.16	10.572	12.000	0.0002	114125	0.87	46.682	2.16	4.593
E-1	BASE	003Y004H	3.67	10.735	12.000	0.0001	115052	2.00	27.421	3.67	5.499
E-1	BASE	003Y008H	5.39	10.843	12.000	0.0001	115669	4.00	28.960	5.39	6.132
E-1	BASE	003Y024H	15.83	10.644	12.000	0.0000	114535	12.00	9.785	15.83	4.988
E-1	BASE	003Y072H	64.03	10.253	12.000	0.0000	112301	59.75	5.426	64.03	2.979
E-1	BASE	003Y168H	160.35	10.246	12.000	0.0000	112261	159.00	4.067	160.35	2.946
E-1	BASE	003Y240H	184.36	10.432	12.000	-0.0000	113323	183.00	5.385	184.36	3.855
E-1	BASE	005Y001H	1.48	10.457	12.000	0.0003	113462	0.63	61.874	1.48	3.980
E-1	BASE	005Y002H	2.15	10.687	12.000	0.0002	114776	0.87	51.187	2.15	5.225
E-1	BASE	005Y004H	3.64	10.916	12.000	0.0001	116090	2.00	31.264	3.64	6.576
E-1	BASE	005Y008H	5.36	11.032	12.000	0.0001	116751	4.00	32.947	5.36	7.295
E-1	BASE	005Y024H	15.50	10.778	12.000	0.0000	115299	12.00	11.046	15.50	5.750
E-1	BASE	005Y072H	64.01	10.380	12.000	0.0000	113023	59.75	6.435	64.01	3.590
E-1	BASE	005Y168H	160.33	10.383	12.000	0.0000	113041	159.00	4.861	160.33	3.606
E-1	BASE	005Y240H	184.33	10.605	12.000	0.0000	114312	183.00	6.470	184.33	4.772
E-1	BASE	010Y001H	1.47	10.579	12.000	0.0003	114161	0.62	68.784	1.47	4.628
E-1	BASE	010Y002H	2.14	10.874	12.000	0.0003	115847	0.87	58.703	2.14	6.319
E-1	BASE	010Y004H	3.60	11.270	12.000	0.0002	118108	2.00	38.956	3.60	8.846
E-1	BASE	010Y008H	5.33	11.263	12.000	0.0001	118071	4.00	37.931	5.33	8.801
E-1	BASE	010Y024H	15.35	10.980	12.000	0.0000	116453	12.00	13.027	15.35	6.968
E-1	BASE	010Y072H	64.01	10.501	12.000	0.0000	113716	59.75	7.452	64.01	4.212
E-1	BASE	010Y168H	160.31	10.482	12.000	0.0000	113607	159.00	5.459	160.31	4.111
E-1	BASE	010Y240H	184.31	10.752	12.000	0.0000	115149	183.00	7.431	184.31	5.597
E-1	BASE	025Y001H	1.45	10.800	12.000	0.0004	115424	0.63	81.470	1.45	5.878
E-1	BASE	025Y002H	2.12	11.131	12.000	0.0003	117316	0.87	69.234	2.12	7.928
E-1	BASE	025Y004H	3.59	11.415	12.000	0.0002	118941	2.00	42.212	3.59	9.845
E-1	BASE	025Y008H	5.30	11.555	12.000	0.0002	119739	4.00	44.408	5.30	10.836
E-1	BASE	025Y024H	15.24	11.242	12.000	-0.0000	117948	12.00	15.728	15.24	8.657
E-1	BASE	025Y072H	61.06	10.729	12.000	-0.0000	115019	59.75	9.425	61.06	5.466
E-1	BASE	025Y168H	160.28	10.742	12.000	0.0000	115091	159.00	7.120	160.28	5.539
E-1	BASE	025Y240H	184.28	11.040	12.000	0.0000	116795	183.00	9.429	184.28	7.344
E-1	BASE	050Y001H	1.44	10.939	12.000	0.0004	116218	0.62	89.556	1.44	6.713
E-1	BASE	050Y002H	2.11	11.347	12.000	0.0003	118548	0.88	78.261	2.11	9.369
E-1	BASE	050Y004H	3.57	11.643	12.000	0.0002	120242	2.00	47.392	3.57	11.477
E-1	BASE	050Y008H	5.27	11.774	12.000	0.0002	120989	4.00	49.389	5.27	12.451
E-1	BASE	050Y024H	15.21	11.375	12.000	-0.0000	118712	12.00	17.168	15.21	9.567
E-1	BASE	050Y072H	60.87	10.854	12.000	0.0000	115733	59.75	10.531	60.87	6.199
E-1	BASE	050Y168H	160.27	10.866	12.000	-0.0000	115805	159.00	7.961	160.27	6.274
E-1	BASE	050Y240H	184.27	11.168	12.000	0.0000	117529	183.00	10.363	184.27	8.172
E-1	BASE	100Y001H	1.43	11.135	12.000	0.0004	117337	0.63	101.113	1.43	7.953
E-1	BASE	100Y002H	2.09	11.593	12.000	0.0004	119958	0.88	88.802	2.09	11.113
E-1	BASE	100Y004H	3.55	11.917	12.000	0.0002	121806	2.00	53.755	3.55	13.546
E-1	BASE	100Y008H	5.25	12.094	12.000	0.0002	122817	4.00	56.859	5.25	14.941
E-1	BASE	100Y024H	15.18	11.570	12.000	-0.0000	119822	12.00	19.327	15.18	10.941

BasinE1 Post Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
E-1	BASE	100Y072H	60.73	11.000	12.000	-0.0000	116570	59.75	11.860	60.73	7.096
E-1	BASE	100Y168H	160.26	10.962	12.000	0.0000	116352	159.00	8.626	160.26	6.858
E-1	BASE	100Y240H	184.25	11.375	12.000	0.0000	118709	183.00	11.920	184.25	9.563
SMF Outfall	BASE	025Y024H	12.24	7.468	12.000	0.0003	1587	12.17	30.734	12.21	30.461
SMF Outfall	BASE	002Y001H	0.88	6.825	12.000	0.0001	1472	0.88	12.286	0.88	12.244
SMF Outfall	BASE	002Y002H	1.03	6.830	12.000	0.0001	1473	1.00	12.551	1.02	12.500
SMF Outfall	BASE	002Y004H	2.65	6.804	12.000	0.0001	1468	2.63	11.164	2.63	11.149
SMF Outfall	BASE	002Y008H	4.13	6.837	12.000	0.0001	1474	4.13	12.841	4.13	12.822
SMF Outfall	BASE	002Y024H	12.13	6.740	12.000	0.0001	1456	12.13	6.808	12.13	6.806
SMF Outfall	BASE	002Y072H	60.00	6.718	12.000	0.0001	1453	60.00	4.598	60.00	4.597
SMF Outfall	BASE	002Y168H	160.00	6.715	12.000	0.0001	1452	160.00	4.170	160.05	4.289
SMF Outfall	BASE	002Y240H	184.00	6.725	12.000	0.0001	1454	184.00	5.427	184.02	5.477
SMF Outfall	BASE	003Y001H	0.88	6.871	12.000	0.0001	1480	0.87	14.462	0.88	14.410
SMF Outfall	BASE	003Y002H	1.03	6.858	12.000	0.0001	1478	1.00	13.874	1.02	13.811
SMF Outfall	BASE	003Y004H	2.65	6.841	12.000	0.0001	1475	2.63	13.047	2.63	13.027
SMF Outfall	BASE	003Y008H	4.13	6.886	12.000	0.0001	1483	4.13	15.060	4.13	15.036
SMF Outfall	BASE	003Y024H	12.13	6.756	12.000	0.0001	1459	12.13	8.101	12.13	8.099
SMF Outfall	BASE	003Y072H	60.00	6.724	12.000	0.0001	1454	60.00	5.330	60.00	5.329
SMF Outfall	BASE	003Y168H	160.00	6.720	12.000	0.0001	1453	160.00	4.878	160.02	4.973
SMF Outfall	BASE	003Y240H	184.00	6.735	12.000	0.0001	1456	184.00	6.401	184.00	6.400
SMF Outfall	BASE	005Y001H	0.88	6.926	12.000	0.0002	1490	0.87	16.693	0.88	16.631
SMF Outfall	BASE	005Y002H	1.03	6.906	12.000	0.0001	1486	1.00	15.896	1.01	15.813
SMF Outfall	BASE	005Y004H	2.65	6.899	12.000	0.0001	1485	2.62	15.545	2.63	15.519
SMF Outfall	BASE	005Y008H	4.13	6.959	12.000	0.0001	1496	4.13	17.836	4.13	17.805
SMF Outfall	BASE	005Y024H	12.13	6.775	12.000	0.0001	1463	12.12	9.412	12.13	9.409
SMF Outfall	BASE	005Y072H	60.00	6.736	12.000	0.0001	1456	60.00	6.452	60.00	6.450
SMF Outfall	BASE	005Y168H	160.00	6.730	12.000	0.0001	1455	160.00	5.934	160.05	5.952
SMF Outfall	BASE	005Y240H	184.00	6.752	12.000	0.0001	1459	184.00	7.861	184.00	7.859
SMF Outfall	BASE	010Y001H	0.88	7.003	12.000	0.0002	1504	0.87	19.433	0.88	19.356
SMF Outfall	BASE	010Y002H	1.04	7.000	12.000	0.0001	1503	1.00	19.348	1.01	19.224
SMF Outfall	BASE	010Y004H	2.65	7.045	12.000	0.0001	1511	2.63	20.671	2.63	20.629
SMF Outfall	BASE	010Y008H	4.13	7.068	12.000	0.0001	1515	4.12	21.366	4.13	21.323
SMF Outfall	BASE	010Y024H	12.13	6.811	12.000	0.0001	1469	12.12	11.499	12.13	11.495
SMF Outfall	BASE	010Y072H	60.00	6.749	12.000	0.0001	1458	60.00	7.594	60.00	7.591
SMF Outfall	BASE	010Y168H	160.00	6.739	12.000	0.0001	1456	160.00	6.737	160.00	6.736
SMF Outfall	BASE	010Y240H	184.00	6.771	12.000	0.0001	1462	184.00	9.165	184.00	9.163
SMF Outfall	BASE	025Y001H	0.88	7.181	12.000	0.0002	1536	0.87	24.594	0.88	24.479
SMF Outfall	BASE	025Y002H	1.04	7.169	12.000	0.0002	1533	1.00	24.313	1.01	24.114
SMF Outfall	BASE	025Y004H	2.65	7.121	12.000	0.0001	1525	2.62	22.880	2.63	22.830
SMF Outfall	BASE	025Y008H	4.14	7.244	12.000	0.0001	1547	4.13	26.031	4.13	25.964
SMF Outfall	BASE	025Y024H	12.13	6.871	12.000	0.0001	1480	12.12	14.385	12.13	14.380
SMF Outfall	BASE	025Y072H	60.01	6.782	12.000	0.0001	1464	60.00	9.840	60.00	9.835
SMF Outfall	BASE	025Y168H	160.00	6.768	12.000	0.0001	1462	160.00	8.991	160.00	8.989
SMF Outfall	BASE	025Y240H	184.00	6.819	12.000	0.0001	1471	184.00	11.907	184.00	11.903
SMF Outfall	BASE	050Y001H	0.89	7.325	12.000	0.0003	1562	0.87	27.954	0.88	27.786
SMF Outfall	BASE	050Y002H	1.06	7.362	12.000	0.0003	1568	1.00	28.664	1.01	28.312
SMF Outfall	BASE	050Y004H	2.66	7.264	12.000	0.0001	1551	2.62	26.438	2.63	26.369
SMF Outfall	BASE	050Y008H	4.14	7.423	12.000	0.0001	1579	4.13	29.669	4.13	29.579
SMF Outfall	BASE	050Y024H	12.13	6.909	12.000	0.0001	1487	12.12	15.940	12.13	15.933
SMF Outfall	BASE	050Y072H	60.01	6.804	12.000	0.0001	1468	60.00	11.114	60.00	11.107
SMF Outfall	BASE	050Y168H	160.00	6.787	12.000	0.0001	1465	160.00	10.142	160.00	10.140
SMF Outfall	BASE	050Y240H	184.00	6.845	12.000	0.0001	1475	184.00	13.199	184.00	13.195
SMF Outfall	BASE	100Y001H	0.89	7.571	12.000	0.0004	1606	0.87	32.833	0.88	32.616
SMF Outfall	BASE	100Y002H	1.05	7.618	12.000	0.0004	1614	1.00	33.826	1.01	33.419
SMF Outfall	BASE	100Y004H	2.66	7.484	12.000	0.0001	1590	2.63	30.870	2.63	30.781

BasinE1 Post Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
SMF Outfall	BASE	100Y008H	4.14	7.710	12.000	0.0002	1631	4.12	35.192	4.13	35.058
SMF Outfall	BASE	100Y024H	12.13	6.973	12.000	0.0001	1498	12.13	18.288	12.13	18.279
SMF Outfall	BASE	100Y072H	60.01	6.833	12.000	0.0001	1473	60.00	12.658	60.00	12.650
SMF Outfall	BASE	100Y168H	160.00	6.803	12.000	0.0001	1468	160.00	11.056	160.00	11.053
SMF Outfall	BASE	100Y240H	184.00	6.895	12.000	0.0001	1484	184.00	15.364	184.00	15.358
Wetland	BASE	025Y024H	0.00	6.700	7.000	0.0000	446	12.24	30.413	0.00	0.000
Wetland	BASE	002Y001H	0.00	6.700	7.000	0.0000	446	0.88	12.207	0.00	0.000
Wetland	BASE	002Y002H	0.00	6.700	7.000	0.0000	446	1.03	12.490	0.00	0.000
Wetland	BASE	002Y004H	0.00	6.700	7.000	0.0000	446	2.65	11.144	0.00	0.000
Wetland	BASE	002Y008H	0.00	6.700	7.000	0.0000	446	4.13	12.804	0.00	0.000
Wetland	BASE	002Y024H	0.00	6.700	7.000	0.0000	446	12.13	6.805	0.00	0.000
Wetland	BASE	002Y072H	0.00	6.700	7.000	0.0000	446	60.00	4.596	0.00	0.000
Wetland	BASE	002Y168H	0.00	6.700	7.000	0.0000	446	159.99	4.172	0.00	0.000
Wetland	BASE	002Y240H	0.00	6.700	7.000	0.0000	446	184.00	5.427	0.00	0.000
Wetland	BASE	003Y001H	0.00	6.700	7.000	0.0000	446	0.88	14.363	0.00	0.000
Wetland	BASE	003Y002H	0.00	6.700	7.000	0.0000	446	1.03	13.798	0.00	0.000
Wetland	BASE	003Y004H	0.00	6.700	7.000	0.0000	446	2.65	13.020	0.00	0.000
Wetland	BASE	003Y008H	0.00	6.700	7.000	0.0000	446	4.13	15.013	0.00	0.000
Wetland	BASE	003Y024H	0.00	6.700	7.000	0.0000	446	12.13	8.097	0.00	0.000
Wetland	BASE	003Y072H	0.00	6.700	7.000	0.0000	446	60.00	5.328	0.00	0.000
Wetland	BASE	003Y168H	0.00	6.700	7.000	0.0000	446	159.98	4.880	0.00	0.000
Wetland	BASE	003Y240H	0.00	6.700	7.000	0.0000	446	184.00	6.399	0.00	0.000
Wetland	BASE	005Y001H	0.00	6.700	7.000	0.0000	446	0.88	16.573	0.00	0.000
Wetland	BASE	005Y002H	0.00	6.700	7.000	0.0000	446	1.03	15.792	0.00	0.000
Wetland	BASE	005Y004H	0.00	6.700	7.000	0.0000	446	2.65	15.508	0.00	0.000
Wetland	BASE	005Y008H	0.00	6.700	7.000	0.0000	446	4.13	17.775	0.00	0.000
Wetland	BASE	005Y024H	0.00	6.700	7.000	0.0000	446	12.13	9.407	0.00	0.000
Wetland	BASE	005Y072H	0.00	6.700	7.000	0.0000	446	60.00	6.448	0.00	0.000
Wetland	BASE	005Y168H	0.00	6.700	7.000	0.0000	446	160.00	5.932	0.00	0.000
Wetland	BASE	005Y240H	0.00	6.700	7.000	0.0000	446	184.00	7.858	0.00	0.000
Wetland	BASE	010Y001H	0.00	6.700	7.000	0.0000	446	0.88	19.283	0.00	0.000
Wetland	BASE	010Y002H	0.00	6.700	7.000	0.0000	446	1.04	19.189	0.00	0.000
Wetland	BASE	010Y004H	0.00	6.700	7.000	0.0000	446	2.65	20.608	0.00	0.000
Wetland	BASE	010Y008H	0.00	6.700	7.000	0.0000	446	4.13	21.281	0.00	0.000
Wetland	BASE	010Y024H	0.00	6.700	7.000	0.0000	446	12.13	11.492	0.00	0.000
Wetland	BASE	010Y072H	0.00	6.700	7.000	0.0000	446	60.00	7.589	0.00	0.000
Wetland	BASE	010Y168H	0.00	6.700	7.000	0.0000	446	160.00	6.735	0.00	0.000
Wetland	BASE	010Y240H	0.00	6.700	7.000	0.0000	446	184.00	9.161	0.00	0.000
Wetland	BASE	025Y001H	0.00	6.700	7.000	0.0000	446	0.89	24.370	0.00	0.000
Wetland	BASE	025Y002H	0.00	6.700	7.000	0.0000	446	1.04	24.054	0.00	0.000
Wetland	BASE	025Y004H	0.00	6.700	7.000	0.0000	446	2.65	22.805	0.00	0.000
Wetland	BASE	025Y008H	0.00	6.700	7.000	0.0000	446	4.14	25.900	0.00	0.000
Wetland	BASE	025Y024H	0.00	6.700	7.000	0.0000	446	12.13	14.375	0.00	0.000
Wetland	BASE	025Y072H	0.00	6.700	7.000	0.0000	446	60.01	9.831	0.00	0.000
Wetland	BASE	025Y168H	0.00	6.700	7.000	0.0000	446	160.00	8.987	0.00	0.000
Wetland	BASE	025Y240H	0.00	6.700	7.000	0.0000	446	184.00	11.900	0.00	0.000
Wetland	BASE	050Y001H	0.00	6.700	7.000	0.0000	446	0.89	27.628	0.00	0.000
Wetland	BASE	050Y002H	0.00	6.700	7.000	0.0000	446	1.06	28.212	0.00	0.000
Wetland	BASE	050Y004H	0.00	6.700	7.000	0.0000	446	2.66	26.333	0.00	0.000
Wetland	BASE	050Y008H	0.00	6.700	7.000	0.0000	446	4.14	29.500	0.00	0.000
Wetland	BASE	050Y024H	0.00	6.700	7.000	0.0000	446	12.13	15.927	0.00	0.000
Wetland	BASE	050Y072H	0.00	6.700	7.000	0.0000	446	60.01	11.102	0.00	0.000
Wetland	BASE	050Y168H	0.00	6.700	7.000	0.0000	446	160.00	10.138	0.00	0.000
Wetland	BASE	050Y240H	0.00	6.700	7.000	0.0000	446	184.00	13.190	0.00	0.000
Wetland	BASE	100Y001H	0.00	6.700	7.000	0.0000	446	0.89	32.427	0.00	0.000

BasinE1 Post Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Wetland	BASE	100Y002H	0.00	6.700	7.000	0.0000	446	1.05	33.299	0.00	0.000
Wetland	BASE	100Y004H	0.00	6.700	7.000	0.0000	446	2.66	30.737	0.00	0.000
Wetland	BASE	100Y008H	0.00	6.700	7.000	0.0000	446	4.14	34.941	0.00	0.000
Wetland	BASE	100Y024H	0.00	6.700	7.000	0.0000	446	12.13	18.271	0.00	0.000
Wetland	BASE	100Y072H	0.00	6.700	7.000	0.0000	446	60.01	12.643	0.00	0.000
Wetland	BASE	100Y168H	0.00	6.700	7.000	0.0000	446	160.00	11.051	0.00	0.000
Wetland	BASE	100Y240H	0.00	6.700	7.000	0.0000	446	184.00	15.353	0.00	0.000

Selmon Expressway
FPN NO. 258415-1-52-01 - Basin E Post

BasinE1 Post Model

==== Basins ====

```
        Name: All Pond Piers           Node: E-1                     Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 0.760                  Time Shift(hrs): 0.00
        Curve Number: 98.00           Max Allowable Q(cfs): 999999.000
             DCIA(%): 100.00
```

15-3, 9-17, 14-3, 9-18

```
        Name: Offsite woods            Node: SMF Outfall             Status: Offsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000               Time of Conc(min): 35.00
            Area(ac): 3.100                  Time Shift(hrs): 0.00
        Curve Number: 84.00           Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

Area Description: Wooded area on east side of pond
Time of Concentration worksheet provided behind model input

```
        Name: OffsiteArea              Node: SMF Outfall             Status: Offsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000               Time of Conc(min): 18.00
            Area(ac): 4.300                  Time Shift(hrs): 0.00
        Curve Number: 87.00           Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

Time of Concentration calculated to be 18 minutes
Total Drainage Basin Area = 10.77 AC
Area excluding pond draining from offsite to cross drain = 10.77 AC - 3.37 AC = 7.40 AC
(3.37 AC is top of pond area)
7.40 AC - 3.1AC (wooded area) = 4.3 AC
Of 4.3 AC - 1.0 AC pavement (CN = 98) and 3.3 AC open space (CN = 84)
Weighted CN = 87

```
        Name: SMF-E-1 Area             Node: E-1                     Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
            Area(ac): 3.370                  Time Shift(hrs): 0.00
        Curve Number: 84.00           Max Allowable Q(cfs): 999999.000
             DCIA(%): 73.00
```

Time of Concentration assumed to be 10 minutes.
Top of Pond at Elevation 13.0' area = 3.37 AC (CN = 84)
Area at weir slot elevation 9.4' = 2.46 AC (CN = 100)

```
        Name: StormDrainE-1_1          Node: E-1                     Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000               Time of Conc(min): 11.37
            Area(ac): 5.080                  Time Shift(hrs): 0.00
        Curve Number: 98.00           Max Allowable Q(cfs): 999999.000
             DCIA(%): 100.00
```

Existing impervious area = 4.42 ac
Proposed impervious area = 0.657 ac
Total area = 5.077 ac
DCIA = 5.08 ac
% = 5.08 ac / 5.08 ac = 100%

.. => from ASAD = 11.37 min

```
        Name: StormDrainE-1_2            Node: E-1                    Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 23.13
              Area(ac): 4.300                   Time Shift(hrs): 0.00
          Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 100.00
```

Total area == 4.30
non-DCIA = 0.00 ac
DCIA% = 4.30 ac / 4.30 ac = 1.000% = 100%
Tc => from ASAD = 23.13 min

```
        Name: StormDrainE-1_3            Node: E-1                    Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                    Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 12.12
              Area(ac): 1.420                   Time Shift(hrs): 0.00
          Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 100.00
```

From ASAD:
Total area = 1.42 ac
non-DCIA = 0.00 ac
DCIA% = 1.42 ac / 1.42 ac = 1.000% = 100%
Tc => from ASAD = 12.12 min

==== Nodes ====

```
     Name: Cross Drain        Base Flow(cfs): 0.000          Init Stage(ft): 6.700
    Group: BASE                                              Warn Stage(ft): 9.000
     Type: Stage/Area
```

Stage(ft)	Area(ac)

```
     Name: E-1                Base Flow(cfs): 0.000          Init Stage(ft): 9.300
    Group: BASE                                              Warn Stage(ft): 12.000
     Type: Stage/Area
```

SHWT = 8.6'
Treatment Depth = 0.7'
Weir Slot Elevation = 8.6' + 0.7' = 9.3'

Stage(ft)	Area(ac)
7.600	2.2300
12.250	2.8400
13.000	3.3700

```
     Name: SMF Outfall        Base Flow(cfs): 0.000          Init Stage(ft): 6.700
    Group: BASE                                              Warn Stage(ft): 12.000
     Type: Stage/Area
```

Stage(ft)	Area(ac)

```
     Name: Wetland            Base Flow(cfs): 0.000          Init Stage(ft): 6.700
    Group: BASE                                              Warn Stage(ft): 7.000
     Type: Time/Stage
```

Time(hrs)	Stage(ft)

```
      0.00          6.700
    999.00          6.700

==========================================================================================
==== Operating Tables ====================================================================
==========================================================================================

      Name:                      Group: BASE
      Type: Bottom Clip
  Function: Time vs. Depth of Clip


      Time(hrs)  Clip Depth(in)
---------------- ---------------

==========================================================================================
==== Pipes ===============================================================================
==========================================================================================

         Name: EX-119             From Node: Cross Drain        Length(ft): 287.00
        Group: BASE                 To Node: Wetland                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM          DOWNSTREAM              Solution Algorithm: Automatic
     Geometry: Circular          Circular                              Flow: Both
     Span(in): 42.00             42.00                   Entrance Loss Coef: 0.50
     Rise(in): 42.00             42.00                       Exit Loss Coef: 1.00
   Invert(ft): 3.850             4.280                       Bend Loss Coef: 0.00
  Manning's N: 0.012000          0.012000                 Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000             0.000                     Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000             0.000                   Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
C--cular Concrete: Square edge w/ headwall

   . and Bore was used to place this pipe adjacent to the existing 3' x 3' box culvert.
Information regarding this pipe was obtained from RFI 166 (10079.XX) Lee Roy Selmon Crosstown Post Design

----------------------------------------------------------------------------------------------------------
         Name: EX-120             From Node: Cross Drain        Length(ft): 264.00
        Group: BASE                 To Node: Wetland                 Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM          DOWNSTREAM              Solution Algorithm: Automatic
     Geometry: Circular          Circular                              Flow: None
     Span(in): 12.00             12.00                   Entrance Loss Coef: 0.50
     Rise(in): 12.00             12.00                       Exit Loss Coef: 1.00
   Invert(ft): 6.000             4.700                       Bend Loss Coef: 0.00
  Manning's N: 0.012000          0.012000                 Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000             0.000                     Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000             0.000                   Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

This pipe was jacked inside the existing 3' x 3' box culvert adjacent to the 42" pipe.
Information regarding this pipe was obtained from RFI 166 (10079.XX) Lee Roy Selmon Crosstown Post Design

==========================================================================================
==== Channels ============================================================================
==========================================================================================

         Name: Outfall Ditch      From Node: SMF Outfall        Length(ft): 90.00
        Group: BASE                 To Node: Cross Drain             Count: 1

               UPSTREAM          DOWNSTREAM               Friction Equation: Automatic
     Geometry: Trapezoidal       Trapezoidal             Solution Algorithm: Automatic
   Invert(ft): 5.800             4.700                                 Flow: Both
TClpInitZ(ft): 9999.000          9999.000                  Contraction Coef: 0.000
  Manning's N: 0.042000          0.042000                    Expansion Coef: 0.000
 Top Clip(ft): 0.000             0.000                   Entrance Loss Coef: 0.000
 Bot Clip(ft): 0.000             0.000                       Exit Loss Coef: 1.000
```

```
    Main XSec:                                      Outlet Ctrl Spec: Use dc or tw
 AuxElev1(ft):                                       Inlet Ctrl Spec: Use dn
    Aux XSec1:                                      Stabilizer Option: None
 AuxElev2(ft):
    Aux XSec2:
Top Width(ft):
    Depth(ft):
Bot Width(ft): 25.000        25.000
 LtSdSlp(h/v): 2.00          2.00
 RtSdSlp(h/v): 2.00          2.00
```

```
=====================================================================================
==== Drop Structures ================================================================
=====================================================================================

       Name: S-390              From Node: E-1               Length(ft): 35.00
      Group: BASE                 To Node: SMF Outfall            Count: 1

            UPSTREAM        DOWNSTREAM              Friction Equation: Average Conveyance
   Geometry: Circular       Circular               Solution Algorithm: Automatic
   Span(in): 36.00          36.00                                Flow: Both
   Rise(in): 36.00          36.00                  Entrance Loss Coef: 0.500
 Invert(ft): 6.100          5.800                      Exit Loss Coef: 1.000
Manning's N: 0.012000       0.012000                 Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                     Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000         0.000                      Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 2 for Drop Structure S-390 ***
                                                                           TABLE
                Count: 1                    Bottom Clip(in): 0.000
                 Type: Horizontal              Top Clip(in): 0.000
                 Flow: Both                  Weir Disc Coef: 3.200
             Geometry: Rectangular         Orifice Disc Coef: 0.600

             Span(in): 49.00                     Invert(ft): 12.100
             Rise(in): 37.00               Control Elev(ft): 12.100

*** Weir 2 of 2 for Drop Structure S-390 ***
                                                                           TABLE
                Count: 1                    Bottom Clip(in): 0.000
                 Type: Vertical: Mavis         Top Clip(in): 0.000
                 Flow: Both                  Weir Disc Coef: 3.200
             Geometry: Rectangular         Orifice Disc Coef: 0.600

             Span(in): 12.00                     Invert(ft): 9.300
             Rise(in): 9999.00             Control Elev(ft): 9.300
```

```
=====================================================================================
==== Hydrology Simulations ==========================================================
=====================================================================================

       Name: !025Y024H
   Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\POST\!025Y024H.R32

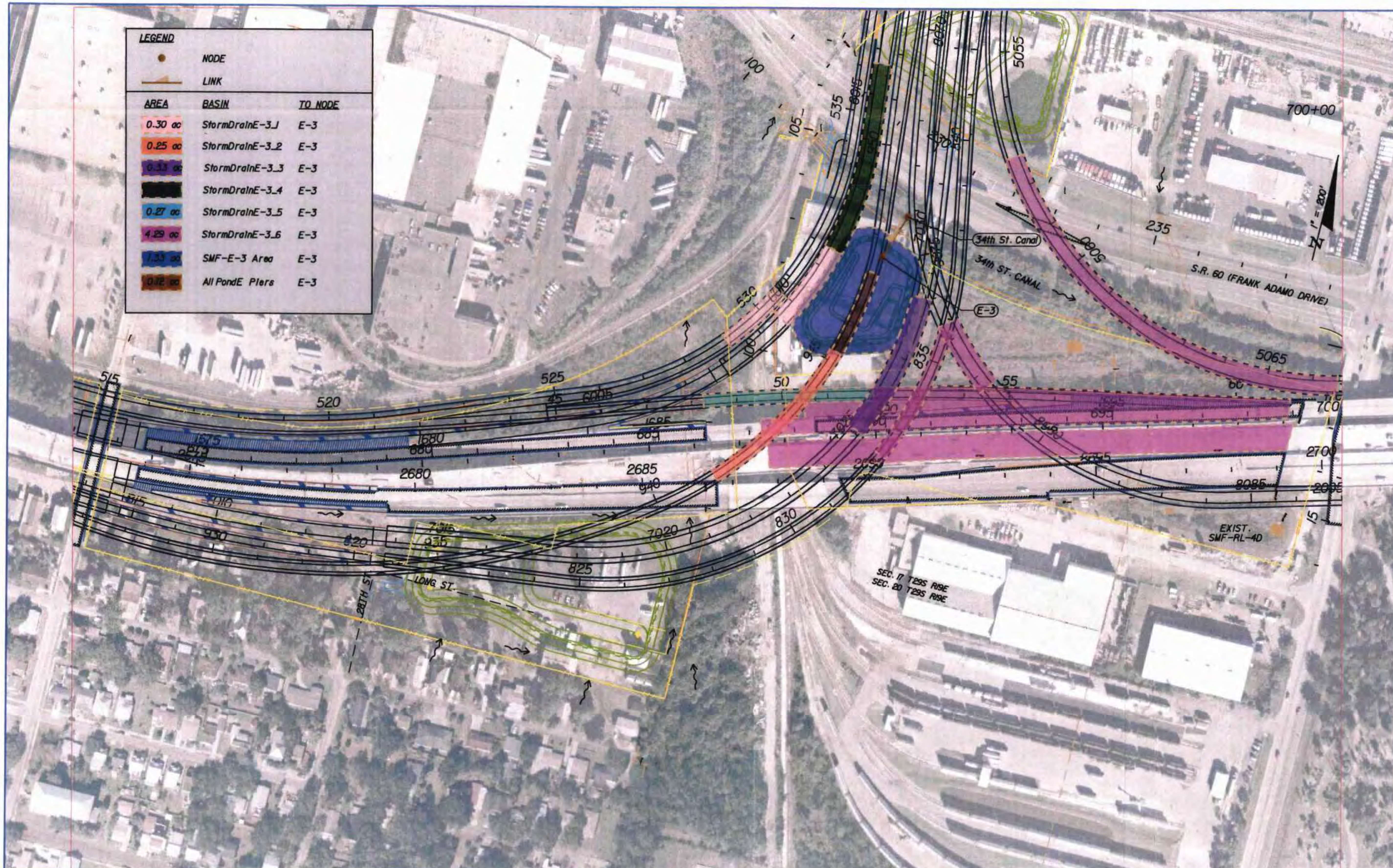
     Override Defaults: Yes
   Storm Duration(hrs): 24.00
        Rainfall File: Flmod
   Rainfall Amount(in): 8.00

Time(hrs)        Print Inc(min)
---------------  ---------------
30.000           5.00

-----------------------------------------------------------------------------------------------
       Name: 002Y001H
   Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\POST\002Y001H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 1.00
        Rainfall File: FDOT-1
   Rainfall Amount(in): 2.30
```

BASINS E-3 AND F
POST-DEVELOPMENT MODEL



LEGEND

NODE

LINK

AREA	BASIN	TO NODE
0.30 ac	StormDrainE-3_1	E-3
0.25 ac	StormDrainE-3_2	E-3
0.33 ac	StormDrainE-3_3	E-3
	StormDrainE-3_4	E-3
0.27 ac	StormDrainE-3_5	E-3
4.29 ac	StormDrainE-3_6	E-3
1.33 ac	SMF-E-3 Area	E-3
0.12 ac	All PondE Piers	E-3

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBS&J
5300 West Cypress Street
Suite 200
Tampa, Florida 33607-1768
FBPE Certificate of
Authorization No. 24
Sharye Poynter, P.E. 58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

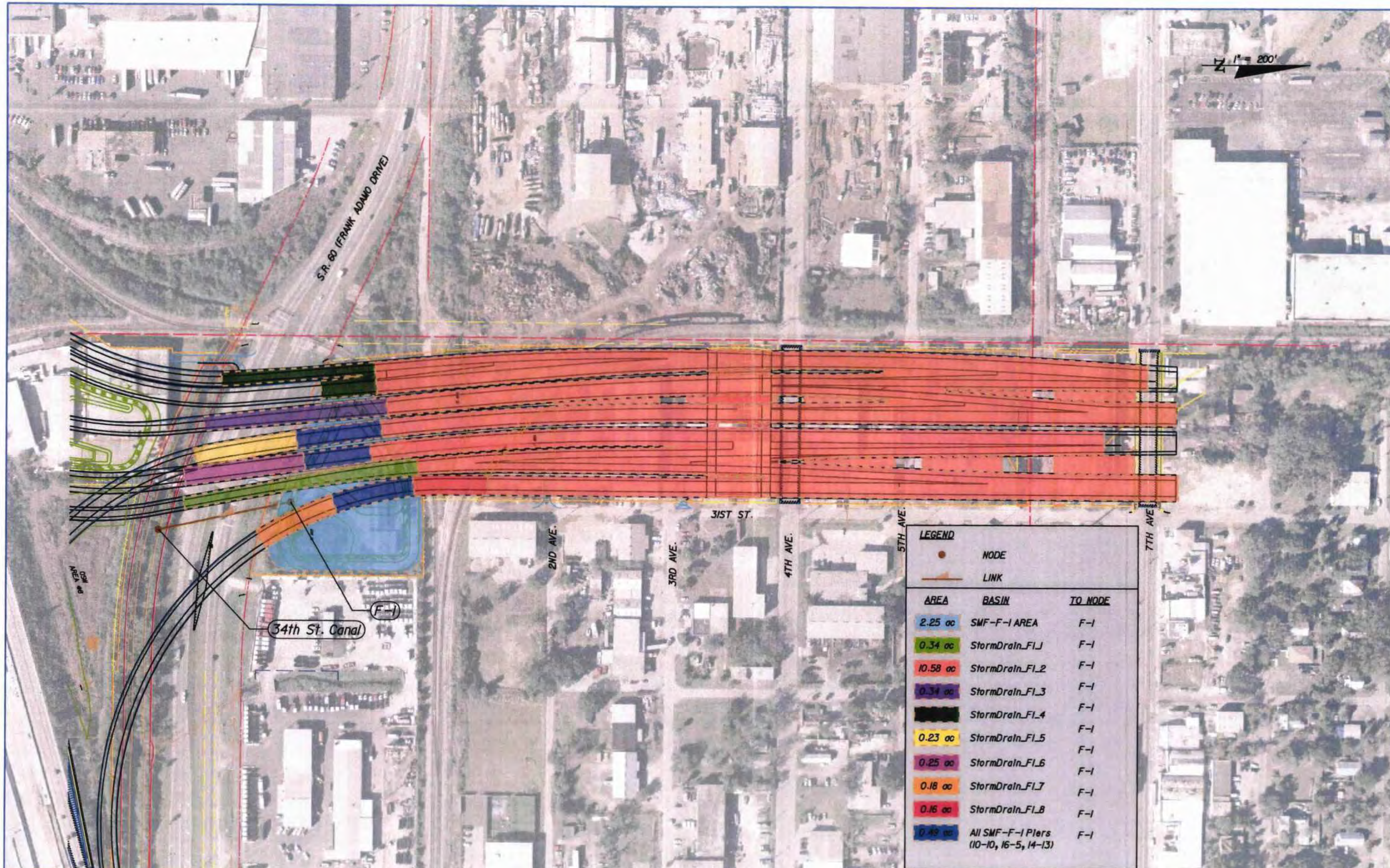
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 618	HILLSBOROUGH	258415-1-52-01

SUPPLEMENTAL BASIN E3 POST NODE DIAGRAM

SHEET NO.

USER: 21136 04/23/2008 3:01:45 PM

A-239A



NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBSJ
5300 West Cypress Street
Suite 200
Tampa, Florida 33607-1768
FBPE Certificate of Authorization No. 24
Shayne Paynter, P.E. 58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	258415-1-52-01

SUPPLEMENTAL BASIN F POST NODAL DIAGRAM

SHEET NO.

A-239B

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
34th St. Canal	BASE	025Y024H	0.00	5.000	7.100	0.0000	0	12.21	81.524	0.00	0.000
34th St. Canal	BASE	010Y001H	0.00	5.000	7.100	0.0000	0	0.84	78.060	0.00	0.000
34th St. Canal	BASE	010Y002H	0.00	5.000	7.100	0.0000	0	0.99	72.445	0.00	0.000
34th St. Canal	BASE	010Y004H	0.00	5.000	7.100	0.0000	0	2.23	55.142	0.00	0.000
34th St. Canal	BASE	010Y008H	0.00	5.000	7.100	0.0000	0	4.04	54.970	0.00	0.000
34th St. Canal	BASE	010Y024H	0.00	5.000	7.100	0.0000	0	12.04	19.177	0.00	0.000
34th St. Canal	BASE	010Y072H	0.00	5.000	7.100	0.0000	0	59.81	11.202	0.00	0.000
34th St. Canal	BASE	010Y168H	0.00	5.000	7.100	0.0000	0	159.02	8.207	0.00	0.000
34th St. Canal	BASE	010Y240H	0.00	5.000	7.100	0.0000	0	183.05	11.172	0.00	0.000
34th St. Canal	BASE	050Y001H	0.00	5.000	7.100	0.0000	0	0.83	99.397	0.00	0.000
34th St. Canal	BASE	050Y002H	0.00	5.000	7.100	0.0000	0	0.98	94.411	0.00	0.000
34th St. Canal	BASE	050Y004H	0.00	5.000	7.100	0.0000	0	2.21	67.033	0.00	0.000
34th St. Canal	BASE	050Y008H	0.00	5.000	7.100	0.0000	0	4.04	71.229	0.00	0.000
34th St. Canal	BASE	050Y024H	0.00	5.000	7.100	0.0000	0	12.03	25.368	0.00	0.000
34th St. Canal	BASE	050Y072H	0.00	5.000	7.100	0.0000	0	59.78	15.832	0.00	0.000
34th St. Canal	BASE	050Y168H	0.00	5.000	7.100	0.0000	0	159.02	11.970	0.00	0.000
34th St. Canal	BASE	050Y240H	0.00	5.000	7.100	0.0000	0	183.02	15.582	0.00	0.000
34th St. Canal	BASE	100Y001H	0.00	5.000	7.100	0.0000	0	0.83	110.404	0.00	0.000
34th St. Canal	BASE	100Y002H	0.00	5.000	7.100	0.0000	0	0.98	105.389	0.00	0.000
34th St. Canal	BASE	100Y004H	0.00	5.000	7.100	0.0000	0	2.22	75.390	0.00	0.000
34th St. Canal	BASE	100Y008H	0.00	5.000	7.100	0.0000	0	4.04	81.212	0.00	0.000
34th St. Canal	BASE	100Y024H	0.00	5.000	7.100	0.0000	0	12.03	28.600	0.00	0.000
34th St. Canal	BASE	100Y072H	0.00	5.000	7.100	0.0000	0	59.77	17.832	0.00	0.000
34th St. Canal	BASE	100Y168H	0.00	5.000	7.100	0.0000	0	159.00	12.969	0.00	0.000
34th St. Canal	BASE	100Y240H	0.00	5.000	7.100	0.0000	0	183.01	17.922	0.00	0.000
E-3	BASE	025Y024H	12.15	8.143	8.500	0.0001	40328	12.08	34.239	12.15	30.127
E-3	BASE	010Y001H	0.79	8.136	8.500	0.0002	40305	0.62	35.255	0.79	29.482
E-3	BASE	010Y002H	0.94	8.097	8.500	0.0001	40191	0.87	29.719	0.94	26.362
E-3	BASE	010Y004H	2.16	7.993	8.500	0.0000	39884	2.00	19.371	2.16	18.548
E-3	BASE	010Y008H	4.02	7.991	8.500	0.0001	39878	4.00	18.786	4.02	18.404
E-3	BASE	010Y024H	12.02	7.792	8.500	0.0000	39288	12.00	6.387	12.02	6.311
E-3	BASE	010Y072H	59.78	7.733	8.500	0.0000	39114	59.74	3.639	59.78	3.639
E-3	BASE	010Y168H	159.01	7.708	8.500	0.0000	39041	158.99	2.665	159.01	2.665
E-3	BASE	010Y240H	183.04	7.733	8.500	0.0000	39113	182.99	3.628	183.04	3.628
E-3	BASE	050Y001H	0.78	8.248	8.500	0.0003	40637	0.62	45.872	0.78	39.219
E-3	BASE	050Y002H	0.93	8.210	8.500	0.0001	40523	0.87	39.607	0.93	35.783
E-3	BASE	050Y004H	2.15	8.049	8.500	0.0001	40050	2.00	23.563	2.15	22.648
E-3	BASE	050Y008H	4.01	8.068	8.500	0.0001	40104	4.00	24.460	4.01	24.055
E-3	BASE	050Y024H	12.02	7.831	8.500	-0.0000	39404	12.00	8.417	12.02	8.335
E-3	BASE	050Y072H	59.76	7.767	8.500	0.0000	39216	59.75	5.142	59.76	5.142
E-3	BASE	050Y168H	159.00	7.739	8.500	0.0000	39132	159.00	3.887	159.00	3.887
E-3	BASE	050Y240H	183.02	7.765	8.500	0.0000	39211	183.00	5.060	183.02	5.060
E-3	BASE	100Y001H	0.77	8.307	8.500	0.0003	40810	0.63	51.779	0.77	44.671
E-3	BASE	100Y002H	0.93	8.266	8.500	0.0002	40691	0.87	44.933	0.93	40.882
E-3	BASE	100Y004H	2.14	8.089	8.500	0.0001	40168	2.00	26.726	2.14	25.745
E-3	BASE	100Y008H	4.01	8.114	8.500	0.0001	40242	4.00	28.159	4.01	27.740
E-3	BASE	100Y024H	12.02	7.850	8.500	-0.0000	39460	12.00	9.476	12.02	9.391
E-3	BASE	100Y072H	59.76	7.781	8.500	0.0000	39257	59.74	5.791	59.76	5.791
E-3	BASE	100Y168H	159.00	7.746	8.500	0.0000	39154	158.99	4.212	159.00	4.212
E-3	BASE	100Y240H	183.01	7.782	8.500	0.0000	39259	183.00	5.820	183.01	5.820
F-1	BASE	025Y024H	12.27	6.287	7.100	0.0002	71918	12.08	67.720	12.27	52.344
F-1	BASE	010Y001H	0.89	6.240	7.100	0.0003	71720	0.63	67.544	0.89	49.531
F-1	BASE	010Y002H	1.03	6.196	7.100	0.0002	71533	0.87	58.896	1.03	46.725
F-1	BASE	010Y004H	2.28	6.071	7.100	0.0001	71003	2.00	39.244	2.28	36.766
F-1	BASE	010Y008H	4.06	6.069	7.100	0.0001	70996	4.00	38.583	4.06	36.622
F-1	BASE	010Y024H	12.06	5.758	7.100	-0.0000	69681	12.00	13.229	12.06	12.873

BasinsE3F Post Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
F-1	BASE	010Y072H	59.83	5.666	7.100	0.0000	69292	59.74	7.565	59.83	7.563
F-1	BASE	010Y168H	159.02	5.626	7.100	0.0000	69121	158.99	5.542	159.02	5.542
F-1	BASE	010Y240H	183.05	5.666	7.100	-0.0000	69290	182.99	7.544	183.05	7.544
F-1	BASE	050Y001H	0.90	6.471	7.100	0.0003	72698	0.63	88.015	0.90	61.946
F-1	BASE	050Y002H	1.05	6.429	7.100	0.0002	72519	0.87	78.604	1.05	59.933
F-1	BASE	050Y004H	2.28	6.165	7.100	0.0001	71403	2.00	47.763	2.28	44.629
F-1	BASE	050Y008H	4.06	6.204	7.100	0.0001	71568	4.00	50.261	4.06	47.289
F-1	BASE	050Y024H	12.05	5.822	7.100	-0.0000	69950	12.00	17.439	12.05	17.040
F-1	BASE	050Y072H	59.78	5.722	7.100	0.0000	69529	59.75	10.691	59.78	10.690
F-1	BASE	050Y168H	159.02	5.676	7.100	0.0000	69333	159.00	8.083	159.02	8.083
F-1	BASE	050Y240H	183.03	5.720	7.100	-0.0000	69517	183.00	10.522	183.03	10.522
F-1	BASE	100Y001H	0.91	6.612	7.100	0.0004	73295	0.63	99.409	0.91	68.039
F-1	BASE	100Y002H	1.07	6.570	7.100	0.0002	73116	0.87	89.218	1.07	66.290
F-1	BASE	100Y004H	2.33	6.249	7.100	0.0001	71758	2.00	54.191	2.33	50.101
F-1	BASE	100Y008H	4.08	6.310	7.100	0.0001	72017	4.00	57.874	4.08	53.681
F-1	BASE	100Y024H	12.05	5.853	7.100	0.0000	70081	12.00	19.634	12.05	19.216
F-1	BASE	100Y072H	59.77	5.745	7.100	-0.0000	69624	59.74	12.041	59.77	12.041
F-1	BASE	100Y168H	159.00	5.688	7.100	-0.0000	69386	158.99	8.758	159.00	8.758
F-1	BASE	100Y240H	183.03	5.746	7.100	0.0000	69629	183.00	12.102	183.03	12.102

==== Basins ====

```
        Name: All PondE Piers            Node: E-3                      Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 0.120                    Time Shift(hrs): 0.00
          Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 100.00
```

From Drainage Map (runoff drains directly from pier 9-23 to SMF):
Total Area = 0.12 ac == 0.12 ac
non-DCIA = 0.0 ac
DCIA% = 0.12 ac / 0.12 ac = 1.000% == 100%
Tc => assumed to be = 10.00 min

```
        Name: All SMF Piers              Node: F-1                      Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 0.490                    Time Shift(hrs): 0.00
          Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 100.00
```

From Drainage Map (runoff drains directly from pier to SMF): 10-6, 14-13, 16-5
Total Area = 0.49 ac
non-DCIA = 0.0 ac
DCIA% = 0.49 ac / 0.49 ac = 1.000% == 100%
Tc => assumed to be = 10.00 min

```
        Name: SMF-E-3 Area               Node: E-3                      Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 1.330                    Time Shift(hrs): 0.00
          Curve Number: 84.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 67.00
```

SMF-E-3:
Pond Total Area is 1.33 AC
Impervious area at weir elevation = 0.89 AC
DCIA% = 0.89ac / 1.33 ac = 0.669 * 100 == 67%

```
        Name: SMF-F-1 Area               Node: F-1                      Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
              Area(ac): 2.250                    Time Shift(hrs): 0.00
          Curve Number: 84.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 68.00
```

SMF-F-1:
Pond Total Area is 2.25 AC
Impervious area at weir elevation = 1.53 AC
Open Space @ CN 84 = .72 AC
DCIA = (1.53/2.25)*100 = 68%

```
        Name: StormDrainE-3_1            Node: E-3                      Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
         Rainfall File:                      Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 10.19
              Area(ac): 0.300                    Time Shift(hrs): 0.00
          Curve Number: 98.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 100.00
```

From ASAD:
Total Area = 0.3 ac
non-DCIA = 0.00 ac
DCIA% = 0.30ac / 0.30 ac = 1.000% == 100%
Tc => from ASAD = 10.19 min

```
        Name: StormDrainE-3_2          Node: E-3                   Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                 Time of Conc(min): 11.35
            Area(ac): 0.250                   Time Shift(hrs): 0.00
       Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
            DCIA(%): 100.00
```

From ASAD:
Total Area = 0.245 ac == 0.25 ac
non-DCIA = 0.0 ac
DCIA% = 0.25 ac / 0.25 ac = 1.000% == 100%
Tc => from ASAD = 11.35 min

```
        Name: StormDrainE-3_3          Node: E-3                   Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.330                   Time Shift(hrs): 0.00
       Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
            DCIA(%): 100.00
```

From Geopak:
Total Area = 0.334 ac == 0.33 ac
non-DCIA = 0.0 ac
DCIA% = 0.33 ac / 0.33 ac = 1.000% == 100%
=> from ASAD = 10.0 min

```
        Name: StormDrainE-3_4          Node: E-3                   Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
            Area(ac): 0.400                   Time Shift(hrs): 0.00
       Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
            DCIA(%): 100.00
```

From ASAD:
Total Area = 0.40 ac == 0.40 ac
non-DCIA = 0.0 ac
DCIA% = 0.40 ac / 0.40 ac = 1.000% == 100%
Tc => from ASAD = 10.0 min

```
        Name: StormDrainE-3_5          Node: E-3                   Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                 Time of Conc(min): 10.04
            Area(ac): 0.270                   Time Shift(hrs): 0.00
       Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
            DCIA(%): 100.00
```

From ASAD:
Total Area = 0.27 ac
non-DCIA = 0.0 ac
DCIA% = 0.27 ac / 0.27 ac = 1.000% == 100%
Tc => from ASAD = 10.04 min

```
        Name: StormDrainE-3_6          Node: E-3                   Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                   Peaking Factor: 323.0
        Rainfall File:                    Storm Duration(hrs): 0.00
  Rainfall Amount(in): 0.000                 Time of Conc(min): 14.90
```

```
          Area(ac): 4.290                 Time Shift(hrs): 0.00
      Curve Number: 98.00            Max Allowable Q(cfs): 999999.000
           DCIA(%): 100.00
```

From ASAD:
Total Area = 4.29 ac
Proposed impervious area = 2.91 ac
Existing impervious area = 1.38 ac
non-DCIA = 0.0 ac
DCIA% = 4.29 ac / 4.29 ac = 1.000% == 100%
Tc => from ASAD = 14.90 min

```
        Name: StormDrainF-1_1         Node: F-1                  Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
            Area(ac): 0.340                  Time Shift(hrs): 0.00
        Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
             DCIA(%): 100.00
```

From ASAD:
Total Area = 0.34 ac == 0.34 ac
non-DCIA = 0.0 ac
DCIA% = 0.34 ac / 0.34 ac = 1.000% == 100%
Tc => from ASAD = 10.00 min

```
        Name: StormDrainF-1_2         Node: F-1                  Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000                Time of Conc(min): 17.52
            Area(ac): 10.580                 Time Shift(hrs): 0.00
        Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
             DCIA(%): 97.00
```

om ASAD:
Total Area = 10.58 ac
non-DCIA = 0.35 ac
DCIA% = 10.23 ac / 10.58 ac = 0.967% == 97%
Tc => from ASAD = 17.52 min

```
        Name: StormDrainF-1_3         Node: F-1                  Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
            Area(ac): 0.340                  Time Shift(hrs): 0.00
        Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
             DCIA(%): 100.00
```

From ASAD:
Total Area = 0.335 ac == 0.34 ac
non-DCIA = 0.0 ac
DCIA% = 0.34 ac / 0.34 ac = 1.000% == 100%
Tc => from ASAD = 10.00 min

```
        Name: StormDrainF-1_4         Node: F-1                  Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph

     Unit Hydrograph: Uh323                  Peaking Factor: 323.0
       Rainfall File:                    Storm Duration(hrs): 0.00
 Rainfall Amount(in): 0.000                Time of Conc(min): 10.08
            Area(ac): 0.340                  Time Shift(hrs): 0.00
        Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
             DCIA(%): 100.00
```

From ASAD:
Total Area = 0.337 ac
non-DCIA = 0.0 ac
DCIA% = 0.34 ac / 0.34 ac = 1.000% == 100%
Tc => from ASAD = 10.08 min

```
        Name: StormDrainF-1_5         Node: F-1                  Status: Onsite
```

```
        Group: BASE                      Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.230                  Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

From ASAD:
Total Area = 0.228 ac == 0.23 ac
non-DCIA = 0.0 ac
DCIA% = 0.23 ac / 0.23 ac = 1.000% == 100%
Tc => from ASAD = 10.00  min

----------------------------------------------------------------------------------
         Name: StormDrainF-1_6          Node: F-1                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.250                  Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

From ASAD:
Total Area = 0.246 ac == 0.25 ac
non-DCIA = 0.0 ac
DCIA% = 0.25 ac / 0.25 ac = 1.000% == 100%
Tc => from ASAD = 10.00 min

----------------------------------------------------------------------------------
         Name: StormDrainF-1_7          Node: F-1                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.180                  Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

From ASAD:
Total Area = 0.179 ac == 0.18 ac
non-DCIA = 0.0 ac
DCIA% = 0.18 ac / 0.18 ac = 1.000% == 100%
Tc => from ASAD = 10.00 min

----------------------------------------------------------------------------------
         Name: StormDrainF-1_8          Node: F-1                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.160                  Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

From ASAD:
Total Area = 0.159 ac == 0.16 ac
non-DCIA = 0.0 ac
DCIA% = 0.16 ac / 0.16 ac = 1.000% == 100%
Tc => from ASAD = 10.00 min

==================================================================================
==== Nodes =======================================================================
==================================================================================

     Name: 34th St. Canal      Base Flow(cfs): 0.000         Init Stage(ft): 5.000
    Group: BASE                                              Warn Stage(ft): 7.100
     Type: Time/Stage

Tailwater condition set at 5' based on HEC-RAS steady-state model for 34th Street Canal

      Time(hrs)        Stage(ft)
   --------------- ---------------
           0.00           5.000
         999.00           5.000

----------------------------------------------------------------------------------
```

```
     Name: E-3              Base Flow(cfs): 0.000          Init Stage(ft): 7.600
    Group: BASE                                            Warn Stage(ft): 8.500
     Type: Stage/Area

Treatment depth is 0.9'
SHWT = 6.7'
Weir Slot Elevation = 6.7'+0.9' = 7.6'

     Stage(ft)       Area(ac)
--------------- ---------------
         5.700          0.7600
         8.500          0.9500
         9.500          1.3300

------------------------------------------------------------------------------------
     Name: F-1              Base Flow(cfs): 0.000          Init Stage(ft): 5.450
    Group: BASE                                            Warn Stage(ft): 7.100
     Type: Stage/Area

Treatment depth is 0.85'
SHWT = 4.6'
Weir Slot Elevation = 4.6'+0.85' = 5.45'

     Stage(ft)       Area(ac)
--------------- ---------------
         3.600          1.3900
         7.100          1.7300
         8.100          2.2500

====================================================================================
==== Operating Tables ==============================================================
====================================================================================

     Name:                    Group: BASE
     Type: Bottom Clip
  Function: Time vs. Depth of Clip


     Time(hrs)  Clip Depth(in)
  ------------- ---------------

====================================================================================
==== Drop Structures ===============================================================
====================================================================================

       Name: S-391              From Node: E-3              Length(ft): 65.00
      Group: BASE                 To Node: 34th St. Canal        Count: 1

            UPSTREAM        DOWNSTREAM                 Friction Equation: Automatic
    Geometry: Circular      Circular                 Solution Algorithm: Automatic
    Span(in): 36.00         36.00                                  Flow: Both
    Rise(in): 36.00         36.00                    Entrance Loss Coef: 0.500
  Invert(ft): -0.900        -1.000                       Exit Loss Coef: 1.000
 Manning's N: 0.012000      0.012000                  Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                      Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000         0.000                       Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure S-391 ***
                                                                      TABLE
             Count: 1                      Bottom Clip(in): 0.000
              Type: Horizontal                Top Clip(in): 0.000
              Flow: Both                  Weir Disc Coef: 3.200
          Geometry: Rectangular        Orifice Disc Coef: 0.600

          Span(in): 105.00                     Invert(ft): 7.600
          Rise(in): 36.00                Control Elev(ft): 7.600

------------------------------------------------------------------------------------
       Name: S-490              From Node: F-1              Length(ft): 289.00
      Group: BASE                 To Node: 34th St. Canal        Count: 1

            UPSTREAM        DOWNSTREAM                 Friction Equation: Automatic
```

```
     Geometry: Circular        Circular                Solution Algorithm: Automatic
     Span(in): 48.00           48.00                                 Flow: Both
     Rise(in): 48.00           48.00                   Entrance Loss Coef: 0.500
   Invert(ft): -0.900          -1.000                      Exit Loss Coef: 1.000
   Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000           0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000           0.000                       Solution Incs: 10
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

```
*** Weir 1 of 1 for Drop Structure S-490 ***
                                                                         TABLE
              Count: 1                        Bottom Clip(in): 0.000
               Type: Horizontal                  Top Clip(in): 0.000
               Flow: Both                      Weir Disc Coef: 3.200
           Geometry: Rectangular             Orifice Disc Coef: 0.600

           Span(in): 105.00                        Invert(ft): 5.450
           Rise(in): 36.00                   Control Elev(ft): 5.450

=====================================================================================
==== Hydrology Simulations ==========================================================
=====================================================================================

        Name: !025Y024H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsE3F\POST\!025Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
         Rainfall File: Flmod
    Rainfall Amount(in): 8.00

 me(hrs)         Print Inc(min)
--------------- ---------------
30.000           5.00

-----------------------------------------------------------------------------------------------
        Name: 010Y001H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsE3F\POST\010Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
         Rainfall File: FDOT-1
    Rainfall Amount(in): 3.10

Time(hrs)        Print Inc(min)
--------------- ---------------
4.000            7.50

-----------------------------------------------------------------------------------------------
        Name: 010Y002H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsE3F\POST\010Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
         Rainfall File: FDOT-2
    Rainfall Amount(in): 4.00

Time(hrs)        Print Inc(min)
--------------- ---------------
4.000            7.50

-----------------------------------------------------------------------------------------------
        Name: 010Y004H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsE3F\POST\010Y004H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
         Rainfall File: FDOT-4
    Rainfall Amount(in): 5.36

Time(hrs)        Print Inc(min)
--------------- ---------------
'.000            7.50
```

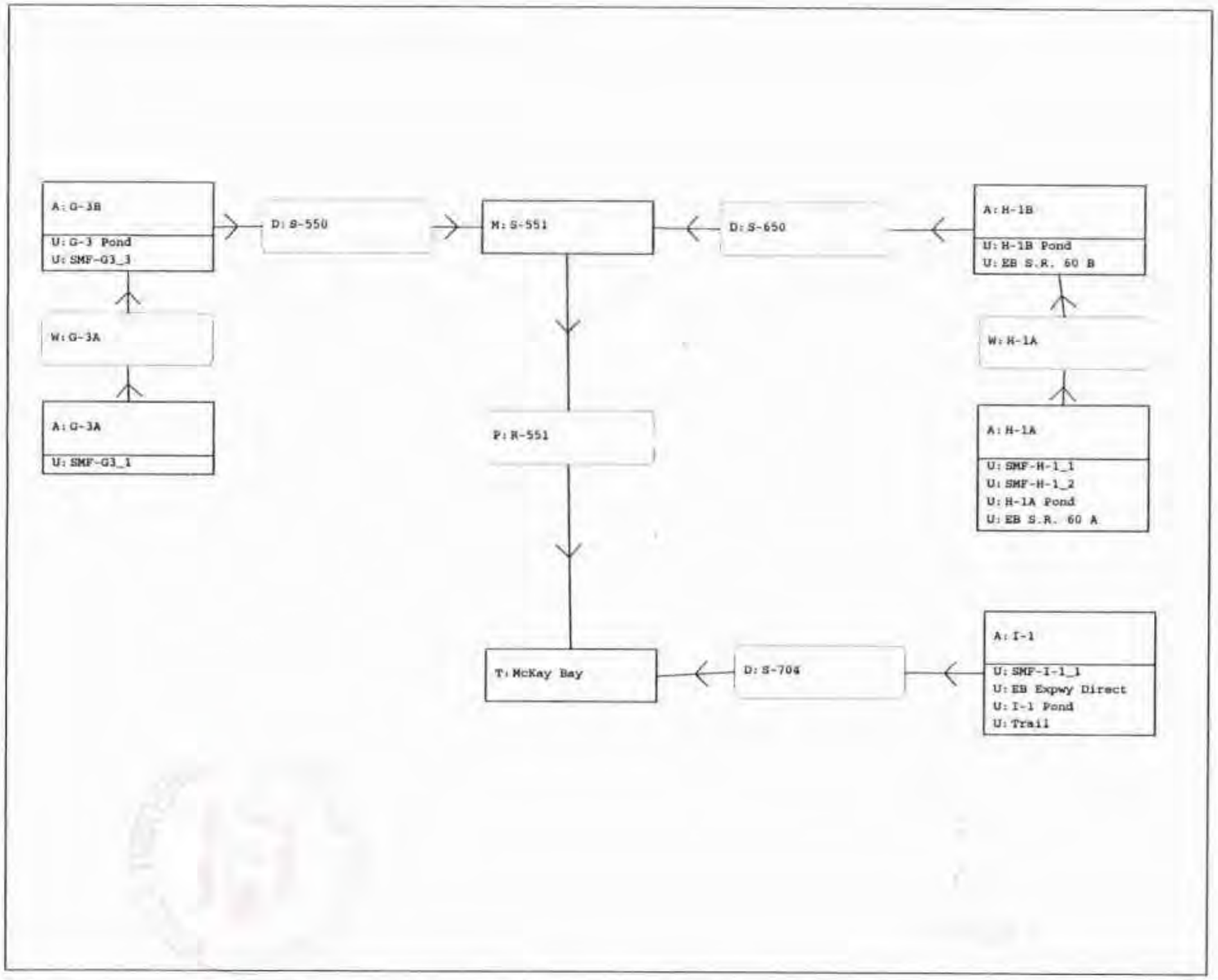
BASINS G, H, AND I
POST-DEVELOPMENT MODEL

Basins G, H, and I Post Condition Model

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit Hydro
S Santa Barbara

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach



Basins G, H, and I Post Condition Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
G-3A	BASE	!E025Y024H	12.14	6.888	7.800	0.0001	1323	12.08	20.401	12.08	20.225
G-3A	BASE	E003Y001H	0.80	6.778	7.800	0.0002	1245	0.63	17.321	0.63	16.982
G-3A	BASE	E003Y002H	0.95	6.739	7.800	0.0001	1218	0.88	14.373	0.88	14.238
G-3A	BASE	E003Y004H	2.18	6.623	7.800	-0.0000	1136	2.00	8.227	2.00	8.185
G-3A	BASE	E003Y008H	4.01	6.644	7.800	0.0000	1151	4.00	8.616	4.00	8.603
G-3A	BASE	E010Y001H	0.79	6.859	7.800	0.0002	1303	0.63	21.120	0.63	20.722
G-3A	BASE	E010Y002H	0.94	6.823	7.800	0.0001	1277	0.88	17.985	0.88	17.830
G-3A	BASE	E010Y004H	2.16	6.716	7.800	-0.0000	1202	2.00	11.604	2.00	11.552
G-3A	BASE	E010Y008H	4.01	6.718	7.800	0.0001	1203	4.00	11.245	4.00	11.231
G-3A	BASE	E010Y024H	12.01	6.503	7.800	-0.0000	1052	12.00	3.810	12.00	3.808
G-3A	BASE	E010Y072H	59.68	6.441	7.800	-0.0000	1008	57.25	2.161	58.01	2.195
G-3A	BASE	E010Y168H	159.08	6.415	7.800	0.0000	989	154.00	1.582	159.08	1.600
G-3A	BASE	E010Y240H	183.01	6.441	7.800	-0.0000	1008	178.00	2.153	178.96	2.173
G-3A	BASE	E050Y001H	0.77	6.984	7.800	0.0003	1391	0.63	27.328	0.63	26.839
G-3A	BASE	E050Y002H	0.93	6.948	7.800	0.0001	1366	0.88	23.854	0.88	23.669
G-3A	BASE	E050Y004H	2.15	6.779	7.800	0.0001	1246	2.00	14.072	2.00	14.013
G-3A	BASE	E050Y008H	4.01	6.803	7.800	0.0001	1263	4.00	14.604	4.00	14.589
G-3A	BASE	E050Y024H	12.01	6.546	7.800	0.0000	1082	12.00	5.010	11.97	5.006
G-3A	BASE	E050Y072H	59.77	6.478	7.800	-0.0000	1034	57.25	3.051	58.05	3.074
G-3A	BASE	E050Y168H	159.06	6.448	7.800	0.0000	1013	154.00	2.305	154.99	2.328
G-3A	BASE	E050Y240H	182.96	6.477	7.800	-0.0000	1033	178.00	3.001	180.07	3.033
G-3A	BASE	E100Y001H	0.77	7.050	7.800	0.0003	1437	0.63	30.777	0.63	30.238
G-3A	BASE	E100Y002H	0.92	7.012	7.800	0.0002	1411	0.88	27.014	0.88	26.815
G-3A	BASE	E100Y004H	2.14	6.824	7.800	0.0001	1278	2.00	15.934	2.00	15.870
G-3A	BASE	E100Y008H	4.00	6.855	7.800	0.0001	1300	4.00	16.794	4.00	16.779
G-3A	BASE	E100Y024H	12.00	6.567	7.800	-0.0000	1097	12.00	5.637	12.00	5.634
G-3A	BASE	E100Y072H	59.68	6.493	7.800	-0.0000	1045	57.25	3.435	59.47	3.456
G-3A	BASE	E100Y168H	158.92	6.456	7.800	-0.0000	1019	154.00	2.497	154.99	2.517
G-3A	BASE	E100Y240H	183.01	6.494	7.800	-0.0000	1045	178.00	3.451	179.03	3.482
G-3B	BASE	!E025Y024H	12.15	6.859	7.800	0.0001	39939	12.08	35.579	12.15	31.471
G-3B	BASE	E003Y001H	0.81	6.754	7.800	0.0002	39262	0.63	27.839	0.81	23.023
G-3B	BASE	E003Y002H	0.96	6.718	7.800	0.0001	39027	0.88	23.500	0.96	20.305
G-3B	BASE	E003Y004H	2.20	6.609	7.800	0.0000	38328	2.00	13.587	2.20	12.916
G-3B	BASE	E003Y008H	4.02	6.630	7.800	0.0000	38463	4.00	14.662	4.02	14.255
G-3B	BASE	E010Y001H	0.80	6.831	7.800	0.0002	39759	0.63	34.618	0.80	29.136
G-3B	BASE	E010Y002H	0.95	6.797	7.800	0.0001	39538	0.88	29.965	0.95	26.365
G-3B	BASE	E010Y004H	2.17	6.698	7.800	0.0000	38898	2.00	19.692	2.17	18.861
G-3B	BASE	E010Y008H	4.02	6.699	7.800	0.0001	38909	4.00	19.397	4.02	18.975
G-3B	BASE	E010Y024H	12.02	6.496	7.800	-0.0000	37604	12.00	6.623	12.02	6.547
G-3B	BASE	E010Y072H	59.78	6.437	7.800	-0.0000	37221	59.55	3.836	59.78	3.808
G-3B	BASE	E010Y168H	159.05	6.411	7.800	0.0000	37058	159.08	2.816	159.05	2.798
G-3B	BASE	E010Y240H	183.60	6.437	7.800	-0.0000	37221	182.04	3.822	183.60	3.808
G-3B	BASE	E050Y001H	0.78	6.949	7.800	0.0003	40516	0.63	45.828	0.78	39.338
G-3B	BASE	E050Y002H	0.94	6.916	7.800	0.0001	40303	0.88	40.531	0.94	36.365
G-3B	BASE	E050Y004H	2.16	6.757	7.800	0.0001	39280	2.00	24.169	2.16	23.232
G-3B	BASE	E050Y008H	4.01	6.780	7.800	0.0001	39427	4.00	25.440	4.01	25.005
G-3B	BASE	E050Y024H	12.02	6.537	7.800	-0.0000	37868	12.00	8.775	12.02	8.699
G-3B	BASE	E050Y072H	59.78	6.473	7.800	0.0000	37451	59.63	5.416	59.78	5.397
G-3B	BASE	E050Y168H	159.02	6.443	7.800	-0.0000	37264	154.99	4.107	159.02	4.088
G-3B	BASE	E050Y240H	183.16	6.471	7.800	-0.0000	37441	181.01	5.348	183.16	5.319
G-3B	BASE	E100Y001H	0.78	7.011	7.800	0.0003	40913	0.63	52.098	0.78	45.078
G-3B	BASE	E100Y002H	0.93	6.976	7.800	0.0002	40688	0.88	46.234	0.93	41.794
G-3B	BASE	E100Y004H	2.15	6.799	7.800	0.0001	39552	2.00	27.547	2.15	26.535
G-3B	BASE	E100Y008H	4.01	6.829	7.800	0.0001	39743	4.00	29.375	4.01	28.931

Basins G, H, and I Post Condition Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
G-3B	BASE	E100Y024H	12.01	6.557	7.800	-0.0000	37996	12.00	9.901	12.01	9.820
G-3B	BASE	E100Y072H	59.78	6.487	7.800	0.0000	37544	59.47	6.103	59.78	6.083
G-3B	BASE	E100Y168H	159.03	6.451	7.800	-0.0000	37314	154.99	4.447	159.03	4.430
G-3B	BASE	E100Y240H	183.10	6.488	7.800	0.0000	37549	179.03	6.146	183.10	6.121
H-1A	BASE	!E025Y024H	12.16	5.359	6.500	0.0002	23407	12.00	50.011	12.07	44.508
H-1A	BASE	E003Y001H	0.79	5.157	6.500	0.0003	22614	0.63	38.403	0.75	32.077
H-1A	BASE	E003Y002H	0.94	5.106	6.500	0.0001	22412	0.88	31.789	0.88	28.371
H-1A	BASE	E003Y004H	2.18	4.947	6.500	0.0001	21789	2.00	18.361	2.13	17.446
H-1A	BASE	E003Y008H	4.01	4.983	6.500	0.0001	21931	4.00	19.777	4.00	19.446
H-1A	BASE	E010Y001H	0.78	5.276	6.500	0.0003	23081	0.63	47.950	0.75	40.609
H-1A	BASE	E010Y002H	0.93	5.229	6.500	0.0002	22894	0.88	40.692	0.88	36.939
H-1A	BASE	E010Y004H	2.15	5.083	6.500	0.0001	22321	2.00	26.763	2.09	25.637
H-1A	BASE	E010Y008H	4.01	5.088	6.500	0.0001	22343	4.00	26.225	4.00	25.905
H-1A	BASE	E010Y024H	12.01	4.788	6.500	0.0000	21165	12.00	8.965	12.00	8.911
H-1A	BASE	E010Y072H	59.88	4.700	6.500	-0.0000	20821	59.75	5.158	59.76	5.158
H-1A	BASE	E010Y168H	159.07	4.662	6.500	-0.0000	20674	159.00	3.791	159.00	3.791
H-1A	BASE	E010Y240H	183.17	4.700	6.500	-0.0000	20821	183.00	5.159	183.02	5.159
H-1A	BASE	E050Y001H	0.85	5.606	6.500	0.0004	24372	0.63	63.747	0.63	50.689
H-1A	BASE	E050Y002H	0.99	5.502	6.500	-0.0002	23964	0.88	55.229	0.88	46.857
H-1A	BASE	E050Y004H	2.14	5.173	6.500	0.0001	22675	2.00	32.915	2.08	31.657
H-1A	BASE	E050Y008H	4.01	5.210	6.500	0.0001	22820	4.00	34.445	4.00	34.136
H-1A	BASE	E050Y024H	12.01	4.849	6.500	0.0000	21406	12.00	11.894	12.00	11.840
H-1A	BASE	E050Y072H	59.81	4.753	6.500	-0.0000	21029	59.75	7.314	59.75	7.313
H-1A	BASE	E050Y168H	159.03	4.710	6.500	-0.0000	20860	159.00	5.540	159.00	5.540
H-1A	BASE	E050Y240H	183.07	4.751	6.500	-0.0000	21020	183.00	7.209	183.00	7.209
H-1A	BASE	E100Y001H	0.88	5.857	6.500	0.0004	25358	0.63	72.575	0.63	54.077
H-1A	BASE	E100Y002H	1.04	5.740	6.500	-0.0003	24900	0.88	63.070	0.88	50.596
H-1A	BASE	E100Y004H	2.13	5.237	6.500	0.0001	22928	2.00	37.555	2.07	36.205
H-1A	BASE	E100Y008H	4.01	5.283	6.500	0.0001	23109	4.00	39.795	4.00	39.491
H-1A	BASE	E100Y024H	12.01	4.879	6.500	0.0000	21523	12.00	13.419	12.00	13.364
H-1A	BASE	E100Y072H	59.79	4.774	6.500	0.0000	21113	59.75	8.243	59.75	8.243
H-1A	BASE	E100Y168H	159.03	4.721	6.500	-0.0000	20906	159.00	6.004	159.00	6.004
H-1A	BASE	E100Y240H	183.05	4.775	6.500	-0.0000	21118	183.00	8.296	183.00	8.296
H-1B	BASE	!E025Y024H	12.16	5.319	6.500	0.0002	23686	12.06	55.681	12.22	50.735
H-1B	BASE	E003Y001H	0.80	5.123	6.500	0.0003	22917	0.74	38.631	0.80	37.002
H-1B	BASE	E003Y002H	0.95	5.075	6.500	0.0001	22728	0.88	34.626	0.95	32.802
H-1B	BASE	E003Y004H	2.19	4.926	6.500	0.0000	22141	2.10	21.098	2.19	20.873
H-1B	BASE	E003Y008H	4.02	4.960	6.500	0.0001	22276	4.00	23.738	4.02	23.454
H-1B	BASE	E010Y001H	0.79	5.236	6.500	0.0003	23358	0.73	49.206	0.79	47.476
H-1B	BASE	E010Y002H	0.94	5.191	6.500	0.0002	23183	0.88	45.325	0.94	43.215
H-1B	BASE	E010Y004H	2.16	5.054	6.500	0.0001	22644	2.06	31.274	2.16	30.992
H-1B	BASE	E010Y008H	4.01	5.059	6.500	0.0001	22665	4.00	31.725	4.01	31.444
H-1B	BASE	E010Y024H	12.02	4.775	6.500	-0.0000	21553	12.00	10.921	12.02	10.872
H-1B	BASE	E010Y072H	59.89	4.692	6.500	0.0000	21227	59.76	6.335	59.89	6.335
H-1B	BASE	E010Y168H	159.08	4.657	6.500	-0.0000	21087	159.00	4.660	159.08	4.660
H-1B	BASE	E010Y240H	183.18	4.692	6.500	-0.0000	21227	183.02	6.342	183.18	6.342
H-1B	BASE	E050Y001H	0.86	5.570	6.500	0.0004	24667	0.63	63.896	1.04	53.048
H-1B	BASE	E050Y002H	1.00	5.465	6.500	-0.0002	24254	0.88	58.790	1.17	52.065
H-1B	BASE	E050Y004H	2.14	5.139	6.500	0.0001	22979	2.05	38.754	2.14	38.421
H-1B	BASE	E050Y008H	4.01	5.174	6.500	0.0001	23116	4.00	41.893	4.01	41.616
H-1B	BASE	E050Y024H	12.01	4.834	6.500	-0.0000	21781	12.00	14.535	12.01	14.486
H-1B	BASE	E050Y072H	59.81	4.743	6.500	0.0000	21425	59.75	8.990	59.81	8.990
H-1B	BASE	E050Y168H	159.04	4.702	6.500	0.0000	21264	159.00	6.814	159.04	6.814
H-1B	BASE	E050Y240H	183.08	4.740	6.500	-0.0000	21416	183.00	8.866	183.08	8.866

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Basins G, H, and I Post Condition Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
H-1B	BASE	E100Y001H	0.89	5.825	6.500	-0.0004	25667	0.63	69.411	1.12	55.398
H-1B	BASE	E100Y002H	1.04	5.707	6.500	-0.0003	25204	0.88	64.401	1.30	54.287
H-1B	BASE	E100Y004H	2.13	5.200	6.500	0.0001	23217	2.04	44.404	2.13	44.027
H-1B	BASE	E100Y008H	4.01	5.244	6.500	0.0001	23389	4.00	48.501	4.01	48.227
H-1B	BASE	E100Y024H	12.01	4.862	6.500	-0.0000	21892	12.00	16.416	12.01	16.366
H-1B	BASE	E100Y072H	59.80	4.763	6.500	0.0000	21504	59.75	10.135	59.80	10.135
H-1B	BASE	E100Y168H	159.03	4.713	6.500	-0.0000	21308	159.00	7.385	159.03	7.385
H-1B	BASE	E100Y240H	183.06	4.764	6.500	0.0000	21508	183.00	10.205	183.06	10.204
I-1	BASE	!E025Y024H	12.14	10.950	11.000	0.0001	29285	12.08	24.912	12.14	22.720
I-1	BASE	E003Y001H	0.80	10.837	11.000	0.0001	28521	0.63	16.869	0.80	14.722
I-1	BASE	E003Y002H	0.96	10.811	11.000	0.0001	28346	0.88	14.845	0.96	13.053
I-1	BASE	E003Y004H	2.22	10.735	11.000	0.0000	27830	2.00	8.841	2.22	8.556
I-1	BASE	E003Y008H	4.02	10.758	11.000	0.0000	27985	4.00	10.127	4.02	9.839
I-1	BASE	E010Y001H	0.79	10.900	11.000	0.0002	28947	0.63	21.529	0.79	19.041
I-1	BASE	E010Y002H	0.95	10.877	11.000	0.0001	28789	0.88	19.448	0.95	17.390
I-1	BASE	E010Y004H	2.18	10.810	11.000	0.0000	28335	2.00	13.334	2.18	12.951
I-1	BASE	E010Y008H	4.02	10.816	11.000	0.0000	28379	4.00	13.665	4.02	13.366
I-1	BASE	E010Y024H	12.02	10.658	11.000	-0.0000	27311	12.00	4.765	12.02	4.720
I-1	BASE	E010Y072H	60.00	10.611	11.000	0.0000	26997	59.75	2.795	60.00	2.795
I-1	BASE	E010Y168H	159.17	10.591	11.000	-0.0000	26859	159.00	2.064	159.17	2.064
I-1	BASE	E010Y240H	183.29	10.612	11.000	0.0000	26999	183.00	2.808	183.29	2.808
I-1	BASE	E050Y001H	0.78	10.997	11.000	0.0002	29600	0.63	29.366	0.78	26.340
I-1	BASE	E050Y002H	0.93	10.975	11.000	0.0001	29453	0.88	27.054	0.93	24.630
I-1	BASE	E050Y004H	2.17	10.859	11.000	0.0000	28672	2.00	16.652	2.17	16.204
I-1	BASE	E050Y008H	4.01	10.884	11.000	0.0001	28835	4.00	18.180	4.01	17.871
I-1	BASE	E050Y024H	12.01	10.692	11.000	-0.0000	27542	12.00	6.381	12.01	6.335
I-1	BASE	E050Y072H	59.86	10.641	11.000	0.0000	27197	59.75	3.982	59.86	3.981
I-1	BASE	E050Y168H	159.07	10.617	11.000	0.0000	27037	159.00	3.025	159.07	3.024
I-1	BASE	E050Y240H	183.11	10.640	11.000	0.0000	27189	183.00	3.934	183.11	3.934
I-1	BASE	E100Y001H	0.77	11.048	11.000	0.0002	29942	0.63	33.791	0.77	30.474
I-1	BASE	E100Y002H	0.93	11.025	11.000	0.0001	29788	0.88	31.181	0.93	28.584
I-1	BASE	E100Y004H	2.16	10.895	11.000	0.0000	28912	2.00	19.161	2.16	18.666
I-1	BASE	E100Y008H	4.01	10.925	11.000	0.0001	29111	4.00	21.116	4.01	20.800
I-1	BASE	E100Y024H	12.01	10.709	11.000	-0.0000	27655	12.00	7.221	12.01	7.174
I-1	BASE	E100Y072H	59.83	10.653	11.000	0.0000	27277	59.75	4.493	59.83	4.492
I-1	BASE	E100Y168H	159.05	10.624	11.000	0.0000	27081	159.00	3.279	159.05	3.279
I-1	BASE	E100Y240H	183.08	10.654	11.000	0.0000	27283	183.00	4.531	183.08	4.531
McKay Bay	BASE	!E025Y024H	0.00	1.500	1.500	0.0000	711	12.15	104.811	0.00	0.000
McKay Bay	BASE	E003Y001H	0.00	1.500	1.500	0.0000	711	0.80	74.738	0.00	0.000
McKay Bay	BASE	E003Y002H	0.00	1.500	1.500	0.0000	711	0.96	66.155	0.00	0.000
McKay Bay	BASE	E003Y004H	0.00	1.500	1.500	0.0000	711	2.20	42.337	0.00	0.000
McKay Bay	BASE	E003Y008H	0.00	1.500	1.500	0.0000	711	4.02	47.547	0.00	0.000
McKay Bay	BASE	E010Y001H	0.00	1.500	1.500	0.0000	711	0.79	95.637	0.00	0.000
McKay Bay	BASE	E010Y002H	0.00	1.500	1.500	0.0000	711	0.94	86.962	0.00	0.000
McKay Bay	BASE	E010Y004H	0.00	1.500	1.500	0.0000	711	2.17	62.795	0.00	0.000
McKay Bay	BASE	E010Y008H	0.00	1.500	1.500	0.0000	711	4.02	63.785	0.00	0.000
McKay Bay	BASE	E010Y024H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E010Y072H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E010Y168H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E010Y240H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E050Y001H	0.00	1.500	1.500	0.0000	711	0.79	117.189	0.00	0.000
McKay Bay	BASE	E050Y002H	0.00	1.500	1.500	0.0000	711	0.95	111.893	0.00	0.000
McKay Bay	BASE	E050Y004H	0.00	1.500	1.500	0.0000	711	2.15	77.844	0.00	0.000
McKay Bay	BASE	E050Y008H	0.00	1.500	1.500	0.0000	711	4.01	84.490	0.00	0.000

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Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
McKay Bay	BASE	E050Y024H	0.00	1.500	1.500	0.0000	711	12.02	29.520	0.00	0.000
McKay Bay	BASE	E050Y072H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E050Y168H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E050Y240H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E100Y001H	0.00	1.500	1.500	0.0000	711	0.79	127.931	0.00	0.000
McKay Bay	BASE	E100Y002H	0.00	1.500	1.500	0.0000	711	0.94	122.593	0.00	0.000
McKay Bay	BASE	E100Y004H	0.00	1.500	1.500	0.0000	711	2.14	89.214	0.00	0.000
McKay Bay	BASE	E100Y008H	0.00	1.500	1.500	0.0000	711	4.01	97.957	0.00	0.000
McKay Bay	BASE	E100Y024H	0.00	1.500	1.500	0.0000	711	12.01	33.360	0.00	0.000
McKay Bay	BASE	E100Y072H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E100Y168H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
McKay Bay	BASE	E100Y240H	0.00	1.500	1.500	0.0000	711	0.00	23.969	0.00	0.000
S-551	BASE	!E025Y024H	12.16	2.829	6.000	-0.0100	317	12.15	82.119	12.16	82.117
S-551	BASE	E003Y001H	0.80	2.226	6.000	-0.0100	317	0.80	60.014	0.80	60.015
S-551	BASE	E003Y002H	0.95	2.065	6.000	-0.0100	592	0.95	53.102	0.96	53.102
S-551	BASE	E003Y004H	2.19	1.736	6.000	-0.0100	876	2.19	33.788	2.20	33.788
S-551	BASE	E003Y008H	4.02	1.798	6.000	-0.0100	840	4.02	37.708	4.02	37.708
S-551	BASE	E010Y001H	0.79	2.659	6.000	-0.0100	317	0.79	76.596	0.79	76.596
S-551	BASE	E010Y002H	0.94	2.464	6.000	-0.0100	317	0.94	69.572	0.94	69.572
S-551	BASE	E010Y004H	2.16	2.002	6.000	-0.0100	667	2.16	49.849	2.16	49.850
S-551	BASE	E010Y008H	4.02	2.014	6.000	-0.0100	654	4.02	50.419	4.02	50.418
S-551	BASE	E010Y024H	0.00	1.576	6.000	-0.0100	946	12.02	17.419	0.00	23.969
S-551	BASE	E010Y072H	0.00	1.576	6.000	-0.0100	946	59.85	10.142	0.00	23.969
S-551	BASE	E010Y168H	0.00	1.576	6.000	-0.0100	946	159.07	7.458	0.00	23.969
S-551	BASE	E010Y240H	0.00	1.576	6.000	-0.0100	946	183.23	10.150	0.00	23.969
S-551	BASE	E050Y001H	0.81	3.079	6.000	-0.0100	317	0.80	90.936	0.80	90.924
S-551	BASE	E050Y002H	0.96	2.971	6.000	-0.0100	317	0.95	87.324	0.95	87.314
S-551	BASE	E050Y004H	2.15	2.273	6.000	-0.0100	317	2.15	61.647	2.15	61.647
S-551	BASE	E050Y008H	4.01	2.392	6.000	-0.0100	317	4.01	66.620	4.01	66.619
S-551	BASE	E050Y024H	12.02	1.616	6.000	-0.0100	931	12.01	23.185	0.00	23.969
S-551	BASE	E050Y072H	0.00	1.576	6.000	-0.0100	946	59.80	14.387	0.00	23.969
S-551	BASE	E050Y168H	0.00	1.576	6.000	-0.0100	946	159.03	10.901	0.00	23.969
S-551	BASE	E050Y240H	0.00	1.576	6.000	-0.0100	946	183.07	14.185	0.00	23.969
S-551	BASE	E100Y001H	0.81	3.284	6.000	-0.0100	317	0.80	97.564	0.80	97.548
S-551	BASE	E100Y002H	0.96	3.178	6.000	-0.0100	317	0.95	94.093	0.95	94.080
S-551	BASE	E100Y004H	2.14	2.491	6.000	-0.0100	317	2.14	70.554	2.14	70.555
S-551	BASE	E100Y008H	4.01	2.680	6.000	-0.0100	317	4.01	77.157	4.01	77.156
S-551	BASE	E100Y024H	12.01	1.647	6.000	-0.0100	919	12.01	26.187	12.01	26.187
S-551	BASE	E100Y072H	0.00	1.576	6.000	-0.0100	946	59.78	16.218	0.00	23.969
S-551	BASE	E100Y168H	0.00	1.576	6.000	-0.0100	946	159.03	11.815	0.00	23.969
S-551	BASE	E100Y240H	0.00	1.576	6.000	-0.0100	946	183.10	16.326	0.00	23.969

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==
==== Basins ==
==

```
        Name: EB Expwy Direct          Node: I-1                     Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.830                  Time Shift(hrs): 0.00
           Curve Number: 98.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00
```

Time of Concentration assumed to be 10 minutes
Pavement area = 0.83 AC

```
        Name: EB S.R. 60 A             Node: H-1A                    Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.480                  Time Shift(hrs): 0.00
           Curve Number: 95.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00
```

Time of Concentration assumed to be 10 minutes
Open Space = 0.15 AC
Paved Area = 0.37 AC
Total Area = 0.52 AC

```
        Name: EB S.R. 60 B             Node: H-1B                    Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.720                  Time Shift(hrs): 0.00
           Curve Number: 91.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00
```

Time of Concentration assumed to be 10 minutes
Open Space = 0.33 AC
Paved Area = 0.30 AC
Total Area = 0.63 AC

```
        Name: G-3 Pond                 Node: G-3B                    Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 2.590                  Time Shift(hrs): 0.00
           Curve Number: 84.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 33.00
```

Time of Concentration assumed to be 10 minutes

Area at top of berm = 1.77 AC
Impervious area from at weir (elevation 6.3') = 0.86 AC
Open space from pond = 1.77 - .86 = .91 AC

Includes area between Ramp D and pond
Pervious area between Ramp D and pond = .82 AC
Total Area = 1.77 + 0.82 = 2.59AC

DCIA% = 0.86ac/ (1.77ac +0.82ac) = 0.332 * 100 = 33%

```
        Name: H-1A Pond                Node: H-1A                    Status: Onsite
       Group: BASE                     Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
```


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```
    Rainfall Amount(in): 0.000                  Time of Conc(min): 10.00
             Area(ac): 1.250                    Time Shift(hrs): 0.00
         Curve Number: 89.00               Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

Time of Concentration assumed to be 10 minutes

Pond area at top of berm = 0.99 AC
Pond area at weir = 0.45 AC
Open space = 0.99 - 0.45 = 0.54 AC

Open space area between Ramp D and Pond = 0.26 AC

TOTAL OPEN SPACE AREA = 0.80 AC
TOTAL IMPERVIOUS AREA = 0.45 AC
TOTAL AREA = 1.25 AC

```
----------------------------------------------------------------------------------------------------
       Name: H-1B Pond                Node: H-1B                  Status: Onsite
      Group: BASE                     Type: SCS Unit Hydrograph

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                       Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
             Area(ac): 1.680                   Time Shift(hrs): 0.00
         Curve Number: 88.00              Max Allowable Q(cfs): 999999.000
             DCIA(%): 0.00
```

Time of Concentration assumed to be 10 minutes

Pond area at top of berm = 0.99 AC
Pond area at weir = 0.47 AC
Open space = 0.99 - 0.47 = 0.52 AC

Open space area between Ramp D and Pond = 0.69 AC

TOTAL OPEN SPACE AREA = 1.21 AC
TOTAL IMPERVIOUS AREA = 0.47 AC
TOTAL AREA = 1.68 AC

```
----------------------------------------------------------------------------------------------------
       Name: I-1 Pond                 Node: I-1                   Status: Onsite
      Group: BASE                     Type: SCS Unit Hydrograph

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                       Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
             Area(ac): 1.610                   Time Shift(hrs): 0.00
         Curve Number: 84.00              Max Allowable Q(cfs): 999999.000
             DCIA(%): 37.00
```

Area at top of berm = 1.61 AC
Area at weir = 0.60 AC
Open space = 1.61 - 0.60 = 1.01 AC
DCIA% = 0.62/1.61 = 0.39 * 100= 39%
Time of Concentration Assumed to be 10 minutes

```
----------------------------------------------------------------------------------------------------
       Name: SMF-G3_1                 Node: G-3A                  Status: Onsite
      Group: BASE                     Type: SCS Unit Hydrograph

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
        Rainfall File:                       Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 13.51
             Area(ac): 4.320                   Time Shift(hrs): 0.00
         Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
             DCIA(%): 100.00
```

Time of Concentration from Storm Tabs = 13.51
Impervious area from pavement = 4.32AC
DCIA% = 4.32ac/ 4.32ac = 1.00 * 100 = 100%

```
----------------------------------------------------------------------------------------------------
       Name: SMF-G3_3                 Node: G-3B                  Status: Onsite
      Group: BASE                     Type: SCS Unit Hydrograph

      Unit Hydrograph: Uh323                    Peaking Factor: 323.0
```

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```
          Rainfall File:                        Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                    Time of Conc(min): 13.69
               Area(ac): 0.770                     Time Shift(hrs): 0.00
          Curve Number: 98.00                 Max Allowable Q(cfs): 999999.000
               DCIA(%): 100.00
```

Area from S.R. 60
From ASAD:
Area = 0.77 ac
DCIA% = 0.77ac /0.77 ac = 1.00 * 100 = 100%
Tc = 13.69 min

```
           Name: SMF-H-1_1             Node: H-1A                   Status: Onsite
          Group: BASE                  Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                   Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
               Area(ac): 3.200                 Time Shift(hrs): 0.00
           Curve Number: 84.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 75.00
```

Time of Concnentration from storm tabs = 10
Impervious area from pavement = 2.39 ac
Open space = 0.81 ac
Total area = 3.2 ac
SMF-H-1_1 outlet node/MES

```
           Name: SMF-H-1_2             Node: H-1A                   Status: Onsite
          Group: BASE                  Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                   Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000               Time of Conc(min): 12.53
               Area(ac): 5.480                 Time Shift(hrs): 0.00
           Curve Number: 84.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 80.00
```

Time of Concentration from Storm Tabs
Impervious area from pavement = 4.41 ac
Open space = 1.07 ac
Total area = 5.48 ac
SMF-H-1_2 outlet node/MES

```
           Name: SMF-I-1_1             Node: I-1                    Status: Onsite
          Group: BASE                  Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                   Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000               Time of Conc(min): 16.73
               Area(ac): 3.000                 Time Shift(hrs): 0.00
           Curve Number: 84.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 39.00
```

Time of Concentration from Storm Tabs
Impervious area from pavement (Ramp L and expy shldr) = 1.04 AC
Open Space (median ditch) = 1.38 ac
Impervious area from ditch (trail and exwy shldr) = 0.12 ac
Open space from ditch = 0.46 ac
Total Area = 3.00 Ac
DCIA% = (1.04+0.12)/3.00 = 0.387 * 100 = 39%

```
           Name: Trail                 Node: I-1                    Status: Onsite
          Group: BASE                  Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                  Peaking Factor: 323.0
          Rainfall File:                   Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000               Time of Conc(min): 10.00
               Area(ac): 0.260                 Time Shift(hrs): 0.00
           Curve Number: 98.00            Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00
```

Impervious area (directly draining into pond) = 0.26 ac
Tc= Assumed to be 10 mins

==== Nodes ====

Name: G-3A   Base Flow(cfs): 0.000   Init Stage(ft): 6.300
Group: BASE   Warn Stage(ft): 7.800
Type: Stage/Area

Stage(ft)	Area(ac)
3.200	0.0014
5.600	0.0103
6.000	0.0120
6.000	0.0160
8.100	0.0500
8.800	0.1120

Name: G-3B   Base Flow(cfs): 0.000   Init Stage(ft): 6.300
Group: BASE   Warn Stage(ft): 7.800
Type: Stage/Area

Stage(ft)	Area(ac)
4.600	0.5800
6.000	0.7800
6.000	0.7900
8.100	1.1000
8.800	1.6600

Name: H-1A   Base Flow(cfs): 0.000   Init Stage(ft): 4.500
Group: BASE   Warn Stage(ft): 6.500
Type: Stage/Area

Stage(ft)	Area(ac)
-0.100	0.0100
2.500	0.2800
3.500	0.3600
4.200	0.4300
4.500	0.4600
6.500	0.6400
7.250	0.9900

Name: H-1B   Base Flow(cfs): 0.000   Init Stage(ft): 4.500
Group: BASE   Warn Stage(ft): 6.500
Type: Stage/Area

Stage(ft)	Area(ac)
2.500	0.2900
3.500	0.3800
4.200	0.4400
4.500	0.4700
6.500	0.6500
7.250	0.9900

Name: I-1   Base Flow(cfs): 0.000   Init Stage(ft): 10.500
Group: BASE   Warn Stage(ft): 11.000
Type: Stage/Area

Stage(ft)	Area(ac)
9.000	0.3700
11.000	0.6800

Name: McKay Bay Base Flow(cfs): 0.000 Init Stage(ft): 1.500
Group: BASE Warn Stage(ft): 1.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	1.500
999.00	1.500

Name: S-551 Base Flow(cfs): 0.000 Init Stage(ft): 1.576
Group: BASE Plunge Factor: 1.00 Warn Stage(ft): 6.000
Type: Manhole, Flat Floor

Stage(ft)	Area(ac)

==== Pipes ====

Name: R-551 From Node: S-551 Length(ft): 394.00
Group: BASE To Node: McKay Bay Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.70
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Horz Ellipse	Horz Ellipse
Span(in):	68.00	68.00
Rise(in):	43.00	43.00
Invert(ft):	-1.400	-1.800
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

==== Drop Structures ====

Name: S-550 From Node: G-3B Length(ft): 128.00
Group: BASE To Node: S-551 Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 0.500
Exit Loss Coef: 0.000
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dc
Solution Incs: 10

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	36.00	36.00
Rise(in):	36.00	36.00
Invert(ft):	-0.300	-0.400
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure S-550 *** TABLE

Count: 1 Bottom Clip(in): 0.000
Type: Horizontal Top Clip(in): 0.000
Flow: Both Weir Disc Coef: 3.200
Geometry: Rectangular Orifice Disc Coef: 0.600

Span(in): 36.00 Invert(ft): 6.300

```
            Rise(in): 105.00                        Control Elev(ft): 6.300

--------------------------------------------------------------------------------------------
       Name: S-650                  From Node: H-1B             Length(ft): 191.00
      Group: BASE                     To Node: S-551                 Count: 1

            UPSTREAM        DOWNSTREAM                     Friction Equation: Average Conveyance
   Geometry: Circular       Circular                      Solution Algorithm: Automatic
   Span(in): 36.00          36.00                                       Flow: Both
   Rise(in): 36.00          36.00                         Entrance Loss Coef: 0.500
 Invert(ft): -0.300         -0.400                            Exit Loss Coef: 0.000
Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                           Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000         0.000                             Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure S-650 ***
                                                                          TABLE
               Count: 1                      Bottom Clip(in): 0.000
                Type: Horizontal                Top Clip(in): 0.000
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 36.00                      Invert(ft): 4.500
            Rise(in): 105.00               Control Elev(ft): 4.500

--------------------------------------------------------------------------------------------
       Name: S-704                  From Node: I-1              Length(ft): 267.00
      Group: BASE                     To Node: McKay Bay             Count: 1

            UPSTREAM        DOWNSTREAM                     Friction Equation: Average Conveyance
   Geometry: Circular       Circular                      Solution Algorithm: Automatic
   Span(in): 30.00          30.00                                       Flow: Both
   Rise(in): 30.00          30.00                         Entrance Loss Coef: 0.500
 Invert(ft): 1.200          1.000                             Exit Loss Coef: 1.000
Manning's N: 0.012000       0.012000                       Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000         0.000                           Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000         0.000                             Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure S-704 ***
                                                                          TABLE
               Count: 1                      Bottom Clip(in): 0.000
                Type: Horizontal                Top Clip(in): 0.000
                Flow: Both                    Weir Disc Coef: 3.200
            Geometry: Rectangular          Orifice Disc Coef: 0.600

            Span(in): 36.00                      Invert(ft): 10.500
            Rise(in): 105.00               Control Elev(ft): 10.500

==========================================================================================
==== Weirs ===============================================================================
==========================================================================================

       Name: G-3A                From Node: G-3A
      Group: BASE                  To Node: G-3B
       Flow: Both                    Count: 1
       Type: Vertical: Fread      Geometry: Trapezoidal

        Bottom Width(ft): 19.70
    Left Side Slope(h/v): 4.00
   Right Side Slope(h/v): 4.00
              Invert(ft): 5.600
```

...sins G, H, and I Post Condition Model

```
       Control Elevation(ft): 5.600
      Struct Opening Dim(ft): 9999.00
                                                  TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
         Weir Discharge Coef: 2.600
      Orifice Discharge Coef: 0.600

-----------------------------------------------------------------------------------------------------
         Name: H-1A                    From Node: H-1A
        Group: BASE                      To Node: H-1B
         Flow: Both                        Count: 1
         Type: Vertical: Fread          Geometry: Trapezoidal

           Bottom Width(ft): 40.00
       Left Side Slope(h/v): 4.00
      Right Side Slope(h/v): 4.00
                 Invert(ft): 4.200
      Control Elevation(ft): 4.200
     Struct Opening Dim(ft): 9999.00
                                                  TABLE
            Bottom Clip(ft): 0.000
               Top Clip(ft): 0.000
        Weir Discharge Coef: 2.600
     Orifice Discharge Coef: 0.600

==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: !025Y024H
     Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\!025Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
         Rainfall File: Flmod
    Rainfall Amount(in): 8.00

Time(hrs)        Print Inc(min)
---------------  ---------------
30.000           5.00

-----------------------------------------------------------------------------------------------------
         Name: 003Y001H
     Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\003Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: FDOT-1
    Rainfall Amount(in): 2.55

Time(hrs)        Print Inc(min)
---------------  ---------------
4.000            7.50

-----------------------------------------------------------------------------------------------------
         Name: 003Y002H
     Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\003Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: FDOT-2
    Rainfall Amount(in): 3.20

Time(hrs)        Print Inc(min)
---------------  ---------------
4.000            7.50

-----------------------------------------------------------------------------------------------------
         Name: 003Y004H
     Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\003Y004H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: FDOT-4
    Rainfall Amount(in): 3.80
```

Time(hrs)	Print Inc(min)
6.000	7.50

Name: 003Y008H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\003Y008H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: FDOT-8
Rainfall Amount(in): 4.72

Time(hrs)	Print Inc(min)
10.000	7.50

Name: 010Y001H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y001H.R32

Override Defaults: Yes
Storm Duration(hrs): 1.00
Rainfall File: FDOT-1
Rainfall Amount(in): 3.10

Time(hrs)	Print Inc(min)
4.000	7.50

Name: 010Y002H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y002H.R32

Override Defaults: Yes
Storm Duration(hrs): 2.00
Rainfall File: FDOT-2
Rainfall Amount(in): 4.00

Time(hrs)	Print Inc(min)
4.000	7.50

Name: 010Y004H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y004H.R32

Override Defaults: Yes
Storm Duration(hrs): 4.00
Rainfall File: FDOT-4
Rainfall Amount(in): 5.36

Time(hrs)	Print Inc(min)
6.000	7.50

Name: 010Y008H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y008H.R32

Override Defaults: Yes
Storm Duration(hrs): 8.00
Rainfall File: FDOT-8
Rainfall Amount(in): 6.16

Time(hrs)	Print Inc(min)
10.000	7.50

Name: 010Y024H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y024H.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: FDOT-24
Rainfall Amount(in): 8.76

...me(hrs) Print Inc(min)

```
--------------- ---------------
26.000          7.50

-----------------------------------------------------------------------------------------------
        Name: 010Y072H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y072H.R32

   Override Defaults: Yes
  Storm Duration(hrs): 72.00
       Rainfall File: FDOT-72
  Rainfall Amount(in): 10.01

Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.00

-----------------------------------------------------------------------------------------------
        Name: 010Y168H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y168H.R32

   Override Defaults: Yes
  Storm Duration(hrs): 168.00
       Rainfall File: FDOT-168
  Rainfall Amount(in): 12.35

Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.00

-----------------------------------------------------------------------------------------------
        Name: 010Y240H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\010Y240H.R32

   Override Defaults: Yes
  Storm Duration(hrs): 240.00
       Rainfall File: FDOT-240
  Rainfall Amount(in): 14.35

 me(hrs)        Print Inc(min)
--------------- ---------------
242.000         60.00

-----------------------------------------------------------------------------------------------
        Name: 050Y001H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y001H.R32

   Override Defaults: Yes
  Storm Duration(hrs): 1.00
       Rainfall File: Fdot-1
  Rainfall Amount(in): 4.00

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

-----------------------------------------------------------------------------------------------
        Name: 050Y002H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y002H.R32

   Override Defaults: Yes
  Storm Duration(hrs): 2.00
       Rainfall File: Fdot-2
  Rainfall Amount(in): 5.30

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

-----------------------------------------------------------------------------------------------
        Name: 050Y004H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y004H.R32

   Override Defaults: Yes
  Storm Duration(hrs): 4.00
       Rainfall File: Fdot-4
  Rainfall Amount(in): 6.50

Time(hrs)       Print Inc(min)
--------------- ---------------
 000            7.50
```

```
---------------------------------------------------------------------------------
        Name: 050Y008H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y008H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 8.00
         Rainfall File: Fdot-8
   Rainfall Amount(in): 8.00

Time(hrs)        Print Inc(min)
---------------  ---------------
10.000           7.50

---------------------------------------------------------------------------------
        Name: 050Y024H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y024H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 24.00
         Rainfall File: Fdot-24
   Rainfall Amount(in): 11.52

Time(hrs)        Print Inc(min)
---------------  ---------------
26.000           7.50

---------------------------------------------------------------------------------
        Name: 050Y072H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y072H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 72.00
         Rainfall File: Fdot-72
   Rainfall Amount(in): 14.13

Time(hrs)        Print Inc(min)
---------------  ---------------
..000            15.00

---------------------------------------------------------------------------------
        Name: 050Y168H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y168H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 168.00
         Rainfall File: Fdot-168
   Rainfall Amount(in): 18.00

Time(hrs)        Print Inc(min)
---------------  ---------------
170.000          60.00

---------------------------------------------------------------------------------
        Name: 050Y240H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\050Y240H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 240.00
         Rainfall File: Fdot-240
   Rainfall Amount(in): 20.00

Time(hrs)        Print Inc(min)
---------------  ---------------
242.000          60.00

---------------------------------------------------------------------------------
        Name: 100Y001H
    Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\100Y001H.R32

     Override Defaults: Yes
   Storm Duration(hrs): 1.00
         Rainfall File: Fdot-1
   Rainfall Amount(in): 4.50

Time(hrs)        Print Inc(min)
---------------  ---------------
4.000            7.50

---------------------------------------------------------------------------------
```

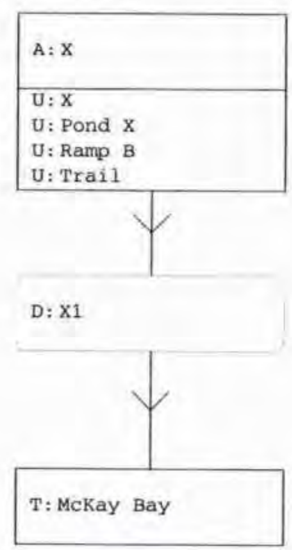
BASIN G (SMF-RL-X)
POST-DEVELOPMENT MODEL

Selmon Expressway
FPN No. 258415-1-52-01   Basin G SMF-RL-X
Post Model

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit Hydro
S Santa Barbara

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach



Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
McKay Bay	BASE	E025Y024H	0.00	1.410	1.410	0.0000	0	0.00	0.114	0.00	0.000
McKay Bay	BASE	E002Y001H	0.00	1.410	1.410	0.0000	0	0.83	29.187	0.00	0.000
McKay Bay	BASE	E002Y002H	0.00	1.410	1.410	0.0000	0	0.97	26.960	0.00	0.000
McKay Bay	BASE	E002Y004H	0.00	1.410	1.410	0.0000	0	2.21	16.589	0.00	0.000
McKay Bay	BASE	E002Y008H	0.00	1.410	1.410	0.0000	0	4.03	17.794	0.00	0.000
McKay Bay	BASE	E002Y024H	0.00	1.410	1.410	0.0000	0	12.04	5.939	0.00	0.000
McKay Bay	BASE	E002Y072H	0.00	1.410	1.410	0.0000	0	59.78	3.366	0.00	0.000
McKay Bay	BASE	E002Y168H	0.00	1.410	1.410	0.0000	0	159.01	2.495	0.00	0.000
McKay Bay	BASE	E002Y240H	0.00	1.410	1.410	0.0000	0	183.29	3.288	0.00	0.000
McKay Bay	BASE	E003Y001H	0.00	1.410	1.410	0.0000	0	0.82	32.851	0.00	0.000
McKay Bay	BASE	E003Y002H	0.00	1.410	1.410	0.0000	0	0.97	28.960	0.00	0.000
McKay Bay	BASE	E003Y004H	0.00	1.410	1.410	0.0000	0	2.21	18.631	0.00	0.000
McKay Bay	BASE	E003Y008H	0.00	1.410	1.410	0.0000	0	4.03	20.078	0.00	0.000
McKay Bay	BASE	E003Y024H	0.00	1.410	1.410	0.0000	0	12.04	6.825	0.00	0.000
McKay Bay	BASE	E003Y072H	0.00	1.410	1.410	0.0000	0	59.78	3.835	0.00	0.000
McKay Bay	BASE	E003Y168H	0.00	1.410	1.410	0.0000	0	159.01	2.873	0.00	0.000
McKay Bay	BASE	E003Y240H	0.00	1.410	1.410	0.0000	0	183.20	3.805	0.00	0.000
McKay Bay	BASE	E005Y001H	0.00	1.410	1.410	0.0000	0	0.82	36.531	0.00	0.000
McKay Bay	BASE	E005Y002H	0.00	1.410	1.410	0.0000	0	0.97	31.968	0.00	0.000
McKay Bay	BASE	E005Y004H	0.00	1.410	1.410	0.0000	0	2.20	21.291	0.00	0.000
McKay Bay	BASE	E005Y008H	0.00	1.410	1.410	0.0000	0	4.03	22.891	0.00	0.000
McKay Bay	BASE	E005Y024H	0.00	1.410	1.410	0.0000	0	12.03	7.712	0.00	0.000
McKay Bay	BASE	E005Y072H	0.00	1.410	1.410	0.0000	0	59.76	4.548	0.00	0.000
McKay Bay	BASE	E005Y168H	0.00	1.410	1.410	0.0000	0	159.01	3.433	0.00	0.000
McKay Bay	BASE	E005Y240H	0.00	1.410	1.410	0.0000	0	183.13	4.571	0.00	0.000
McKay Bay	BASE	E010Y001H	0.00	1.410	1.410	0.0000	0	1.86	0.203	0.00	0.000
McKay Bay	BASE	E010Y002H	0.00	1.410	1.410	0.0000	0	1.65	0.212	0.00	0.000
McKay Bay	BASE	E010Y004H	0.00	1.410	1.410	0.0000	0	0.00	0.114	0.00	0.000
McKay Bay	BASE	E010Y008H	0.00	1.410	1.410	0.0000	0	0.00	0.114	0.00	0.000
McKay Bay	BASE	E010Y024H	0.00	1.410	1.410	0.0000	0	0.00	0.114	0.00	0.000
McKay Bay	BASE	E010Y072H	0.00	1.410	1.410	0.0000	0	59.76	5.265	0.00	0.000
McKay Bay	BASE	E010Y168H	0.00	1.410	1.410	0.0000	0	159.01	3.855	0.00	0.000
McKay Bay	BASE	E010Y240H	0.00	1.410	1.410	0.0000	0	183.10	5.248	0.00	0.000
McKay Bay	BASE	E025Y001H	0.00	1.410	1.410	0.0000	0	0.84	45.335	0.00	0.000
McKay Bay	BASE	E025Y002H	0.00	1.410	1.410	0.0000	0	0.97	43.215	0.00	0.000
McKay Bay	BASE	E025Y004H	0.00	1.410	1.410	0.0000	0	2.18	28.881	0.00	0.000
McKay Bay	BASE	E025Y008H	0.00	1.410	1.410	0.0000	0	4.02	30.985	0.00	0.000
McKay Bay	BASE	E025Y024H	0.00	1.410	1.410	0.0000	0	12.03	11.008	0.00	0.000
McKay Bay	BASE	E025Y072H	0.00	1.410	1.410	0.0000	0	59.76	6.657	0.00	0.000
McKay Bay	BASE	E025Y168H	0.00	1.410	1.410	0.0000	0	159.01	5.028	0.00	0.000
McKay Bay	BASE	E025Y240H	0.00	1.410	1.410	0.0000	0	183.06	6.659	0.00	0.000
McKay Bay	BASE	E050Y001H	0.00	1.410	1.410	0.0000	0	0.87	47.158	0.00	0.000
McKay Bay	BASE	E050Y002H	0.00	1.410	1.410	0.0000	0	1.00	45.765	0.00	0.000
McKay Bay	BASE	E050Y004H	0.00	1.410	1.410	0.0000	0	2.18	32.478	0.00	0.000
McKay Bay	BASE	E050Y008H	0.00	1.410	1.410	0.0000	0	4.02	34.503	0.00	0.000
McKay Bay	BASE	E050Y024H	0.00	1.410	1.410	0.0000	0	12.02	12.022	0.00	0.000
McKay Bay	BASE	E050Y072H	0.00	1.410	1.410	0.0000	0	59.76	7.437	0.00	0.000
McKay Bay	BASE	E050Y168H	0.00	1.410	1.410	0.0000	0	159.00	5.622	0.00	0.000
McKay Bay	BASE	E050Y240H	0.00	1.410	1.410	0.0000	0	183.04	7.318	0.00	0.000
McKay Bay	BASE	E100Y001H	0.00	1.410	1.410	0.0000	0	0.89	49.352	0.00	0.000
McKay Bay	BASE	E100Y002H	0.00	1.410	1.410	0.0000	0	1.04	48.172	0.00	0.000
McKay Bay	BASE	E100Y004H	0.00	1.410	1.410	0.0000	0	2.17	36.895	0.00	0.000
McKay Bay	BASE	E100Y008H	0.00	1.410	1.410	0.0000	0	4.02	39.783	0.00	0.000
McKay Bay	BASE	E100Y024H	0.00	1.410	1.410	0.0000	0	12.02	13.544	0.00	0.000
McKay Bay	BASE	E100Y072H	0.00	1.410	1.410	0.0000	0	59.75	8.376	0.00	0.000
McKay Bay	BASE	E100Y168H	0.00	1.410	1.410	0.0000	0	159.00	6.090	0.00	0.000
McKay Bay	BASE	E100Y240H	0.00	1.410	1.410	0.0000	0	183.03	8.417	0.00	0.000

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
X	BASE	E025Y024H	0.00	2.600	5.200	-0.0000	37897	0.00	0.000	0.00	0.114
X	BASE	E002Y001H	0.83	4.342	5.200	0.0002	48070	0.63	36.547	0.83	29.187
X	BASE	E002Y002H	0.97	4.314	5.200	0.0001	47904	0.87	31.769	0.97	26.960
X	BASE	E002Y004H	2.21	4.171	5.200	0.0000	47060	2.00	17.570	2.21	16.589
X	BASE	E002Y008H	4.03	4.189	5.200	-0.0000	47166	4.00	18.438	4.03	17.794
X	BASE	E002Y024H	12.04	3.986	5.200	-0.0000	45964	12.00	6.061	12.04	5.939
X	BASE	E002Y072H	59.78	3.926	5.200	0.0000	45611	59.75	3.366	59.78	3.366
X	BASE	E002Y168H	159.01	3.902	5.200	-0.0000	45472	159.00	2.495	159.01	2.495
X	BASE	E002Y240H	183.29	3.924	5.200	-0.0000	45599	183.01	3.288	183.29	3.288
X	BASE	E003Y001H	0.82	4.386	5.200	0.0002	48334	0.63	40.671	0.82	32.851
X	BASE	E003Y002H	0.97	4.339	5.200	0.0001	48053	0.87	33.934	0.97	28.960
X	BASE	E003Y004H	2.21	4.201	5.200	0.0000	47238	2.00	19.671	2.21	18.631
X	BASE	E003Y008H	4.03	4.222	5.200	0.0001	47360	4.00	20.746	4.03	20.078
X	BASE	E003Y024H	12.04	4.004	5.200	-0.0000	46073	12.00	6.953	12.04	6.825
X	BASE	E003Y072H	59.78	3.938	5.200	0.0000	45681	59.73	3.836	59.78	3.835
X	BASE	E003Y168H	159.01	3.913	5.200	0.0000	45534	159.00	2.873	159.01	2.873
X	BASE	E003Y240H	183.20	3.937	5.200	-0.0000	45677	183.00	3.805	183.20	3.805
X	BASE	E005Y001H	0.82	4.430	5.200	0.0002	48590	0.63	44.801	0.82	36.531
X	BASE	E005Y002H	0.97	4.376	5.200	0.0001	48271	0.88	37.181	0.97	31.968
X	BASE	E005Y004H	2.20	4.239	5.200	-0.0000	47460	2.00	22.405	2.20	21.291
X	BASE	E005Y008H	4.03	4.260	5.200	0.0001	47589	4.00	23.587	4.03	22.891
X	BASE	E005Y024H	12.03	4.022	5.200	-0.0000	46176	12.00	7.845	12.03	7.712
X	BASE	E005Y072H	59.76	3.955	5.200	-0.0000	45782	59.75	4.548	59.76	4.548
X	BASE	E005Y168H	159.01	3.928	5.200	-0.0000	45621	158.99	3.433	159.01	3.433
X	BASE	E005Y240H	183.13	3.955	5.200	0.0000	45785	183.00	4.571	183.13	4.571
X	BASE	E010Y001H	1.86	5.155	5.200	0.0006	52878	0.63	52.205	1.86	0.203
X	BASE	E010Y002H	1.65	5.504	5.200	0.0005	55940	0.87	44.753	1.65	0.212
X	BASE	E010Y004H	0.00	2.600	5.200	0.0000	37897	0.00	0.000	0.00	0.114
X	BASE	E010Y008H	0.00	2.600	5.200	0.0000	37897	0.00	0.000	0.00	0.114
X	BASE	E010Y024H	0.00	2.600	5.200	0.0000	37897	0.00	0.000	0.00	0.114
X	BASE	E010Y072H	59.76	3.971	5.200	0.0000	45878	59.75	5.265	59.76	5.265
X	BASE	E010Y168H	159.01	3.938	5.200	-0.0000	45684	159.00	3.855	159.01	3.855
X	BASE	E010Y240H	183.10	3.971	5.200	-0.0000	45876	183.00	5.248	183.10	5.248
X	BASE	E025Y001H	0.84	4.600	5.200	0.0003	49598	0.62	58.862	0.84	45.335
X	BASE	E025Y002H	0.97	4.518	5.200	0.0002	49111	0.87	50.185	0.97	43.215
X	BASE	E025Y004H	2.18	4.338	5.200	0.0001	48048	2.00	30.189	2.18	28.881
X	BASE	E025Y008H	4.02	4.364	5.200	0.0001	48201	4.00	31.755	4.02	30.985
X	BASE	E025Y024H	12.03	4.082	5.200	0.0000	46532	12.00	11.157	12.03	11.008
X	BASE	E025Y072H	59.76	4.001	5.200	0.0000	46052	59.74	6.657	59.76	6.657
X	BASE	E025Y168H	159.01	3.966	5.200	-0.0000	45846	158.99	5.028	159.01	5.028
X	BASE	E025Y240H	183.06	4.001	5.200	0.0000	46052	183.00	6.659	183.06	6.659
X	BASE	E050Y001H	0.87	4.703	5.200	0.0003	50204	0.62	64.656	0.87	47.158
X	BASE	E050Y002H	1.00	4.621	5.200	0.0002	49722	0.87	56.694	1.00	45.765
X	BASE	E050Y004H	2.18	4.382	5.200	0.0001	48307	2.00	33.872	2.18	32.478
X	BASE	E050Y008H	4.02	4.406	5.200	0.0001	48450	4.00	35.305	4.02	34.503
X	BASE	E050Y024H	12.02	4.099	5.200	0.0000	46634	12.00	12.177	12.02	12.022
X	BASE	E050Y072H	59.76	4.016	5.200	0.0000	46145	59.74	7.438	59.76	7.437
X	BASE	E050Y168H	159.00	3.979	5.200	-0.0000	45924	158.98	5.622	159.00	5.622
X	BASE	E050Y240H	183.04	4.014	5.200	0.0000	46131	182.99	7.318	183.04	7.318
X	BASE	E100Y001H	0.89	4.871	5.200	0.0004	51200	0.63	72.942	0.89	49.352
X	BASE	E100Y002H	1.04	4.777	5.200	0.0002	50645	0.88	64.283	1.04	48.172
X	BASE	E100Y004H	2.17	4.434	5.200	0.0001	48615	2.00	38.397	2.17	36.895
X	BASE	E100Y008H	4.02	4.467	5.200	0.0001	48810	4.00	40.630	4.02	39.783
X	BASE	E100Y024H	12.02	4.124	5.200	-0.0000	46781	12.00	13.705	12.02	13.544
X	BASE	E100Y072H	59.75	4.034	5.200	-0.0000	46252	59.75	8.376	59.75	8.376
X	BASE	E100Y168H	159.00	3.989	5.200	-0.0020	45983	159.00	6.090	159.00	6.090
X	BASE	E100Y240H	183.03	4.035	5.200	-0.0025	46256	183.00	8.417	183.03	8.417

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs

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```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: Pond X                    Node: X                        Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 1.220                   Time Shift(hrs): 0.00
           Curve Number: 84.00               Max Allowable Q(cfs): 999999.000
                DCIA(%): 84.00

Outside Top of Berm @ 5.2' = 1.22ac
Impervious area at weir elevation = 1.03 ac
DCIA% = 1.03 ac / 1.22 ac = 0.84 * 100 = 84%

------------------------------------------------------------------------------------------
         Name: Ramp B                    Node: X                        Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 1.450                   Time Shift(hrs): 0.00
           Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

Impervious Area from Ramp B = 1.45AC
DCIA% = 1.45ac/ 1.45ac = 1.00 * 100 = 100%

Time of Concentration is assumed to be 10 minutes.

------------------------------------------------------------------------------------------
         Name: Trail                     Node: X                        Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 0.430                   Time Shift(hrs): 0.00
           Curve Number: 84.00               Max Allowable Q(cfs): 999999.000
                DCIA(%): 47.00

Impervious area = 0.20 ac
Pervious area (including the 10' berm and ditch) = 0.23 ac
Total area = 0.43 ac
DCIA% = 0.20ac/ 0.43ac = 0.465 * 100 = 47%

------------------------------------------------------------------------------------------
         Name: X                         Node: x                        Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.60
               Area(ac): 7.440                   Time Shift(hrs): 0.00
           Curve Number: 98.00               Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

BEFORE ADDITION OF RAMP B

Existing Impervious Area (Eastbound Lanes, Eastbound Ramp, & Toll Plaza) = 6.903ac
Bridge Impervious Area = 0.511ac
Total Area = 7.44 ac
Total Impervious Area = 7.44 ac
DCIA% = 7.44ac / 7.44ac = 1.00 * 100 = 100%

==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

     Name: McKay Bay           Base Flow(cfs): 0.000            Init Stage(ft): 1.410
    Group: BASE                                                 Warn Stage(ft): 1.410
     Type: Time/Stage
```

Time(hrs)	Stage(ft)
0.00	1.410
999.00	1.410

```
Name: X                  Base Flow(cfs): 0.000        Init Stage(ft): 3.800
Group: BASE                                           Warn Stage(ft): 5.200
Type: Stage/Area
```

Inside Top of Berm 1.22ac @ 5.2'
Top of Treatment 1.03ac @ 3.8'
Bottom of Treatment 0.89ac @ 2.8'

Stage(ft)	Area(ac)
1.000	0.6600
2.800	0.8900
3.800	1.0300
5.200	1.2200

==== Drop Structures ====

```
        Name: X1                 From Node: X                 Length(ft): 45.50
       Group: BASE                 To Node: McKay Bay              Count: 1

              UPSTREAM       DOWNSTREAM               Friction Equation: Average Conveyance
    Geometry: Circular       Circular                Solution Algorithm: Automatic
    Span(in): 30.00          30.00                                 Flow: Both
    Rise(in): 30.00          30.00                   Entrance Loss Coef: 0.700
  Invert(ft): -1.600         -1.800                      Exit Loss Coef: 1.000
 Manning's N: 0.012000       0.012000                 Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                     Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                      Solution Incs: 10
```

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

wnstream FHWA Inlet Edge Description:
rcular Concrete: Square edge w/ headwall

```
*** Weir 1 of 2 for Drop Structure X1 ***
                                                                  TABLE
        Count: 1                       Bottom Clip(in): 0.000
         Type: Horizontal                 Top Clip(in): 0.000
         Flow: Both                     Weir Disc Coef: 3.100
     Geometry: Rectangular           Orifice Disc Coef: 0.600

     Span(in): 105.00                       Invert(ft): 3.800
     Rise(in): 36.00                  Control Elev(ft): 3.800

*** Weir 2 of 2 for Drop Structure X1 ***
                                                                  TABLE
        Count: 1                       Bottom Clip(in): 0.000
         Type: Horizontal                 Top Clip(in): 0.000
         Flow: Both                     Weir Disc Coef: 3.200
     Geometry: Circular              Orifice Disc Coef: 0.600

     Span(in): 2.00                         Invert(ft): 2.700
     Rise(in): 2.00                   Control Elev(ft): 2.800
```

==== Hydrology Simulations ====

```
    Name: !025Y024H
Filename: K:\25841515201AA1\drainage\ICPR\BasinsGHI\CrosstownSMFX\!025Y024H.R32

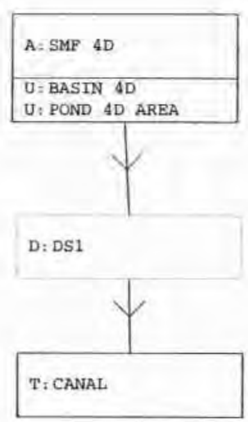
    Override Defaults: Yes
  Storm Duration(hrs): 24.00
        Rainfall File: Flmod
  Rainfall Amount(in): 8.00
```

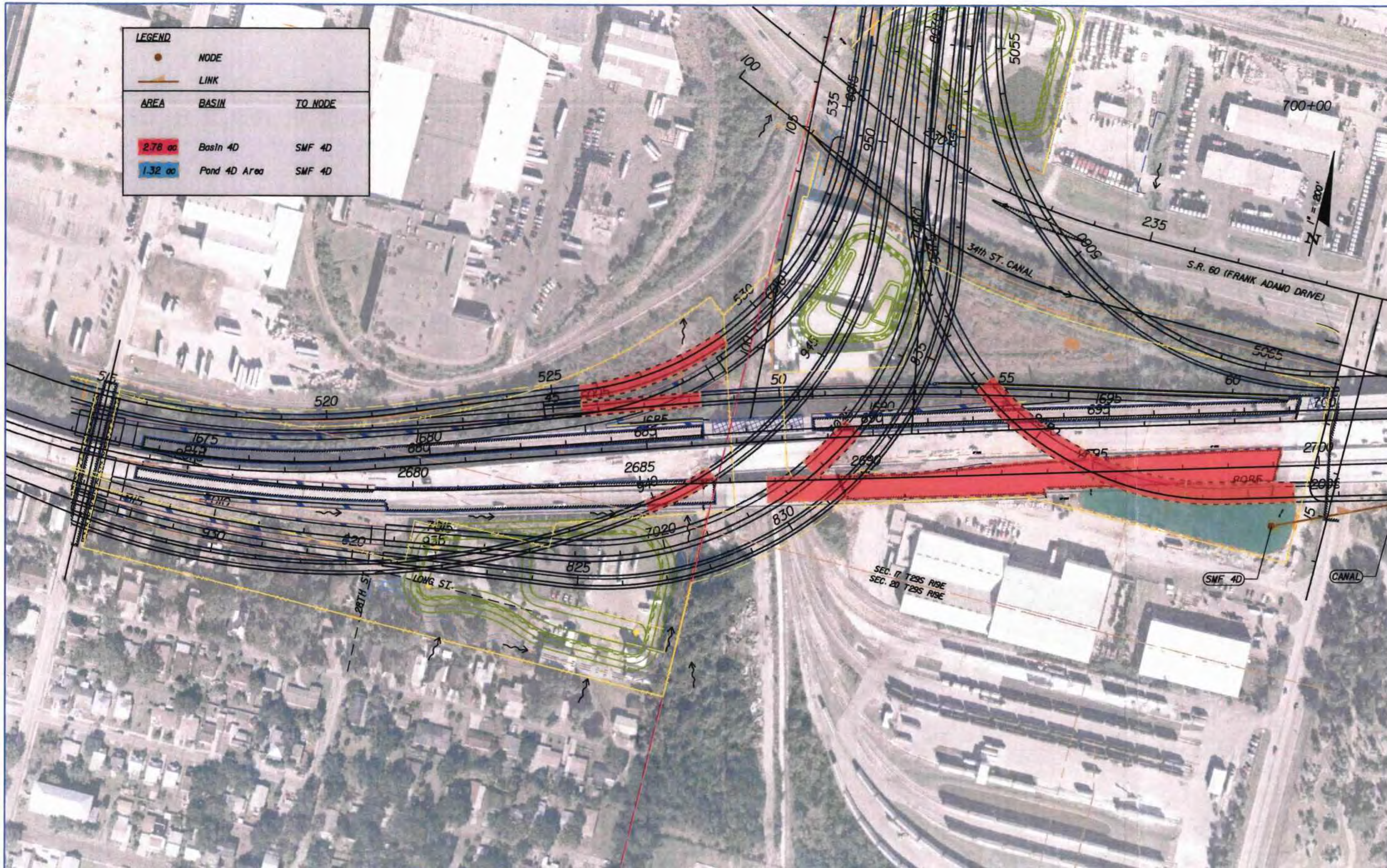
Time(hrs)	Print Inc(min)
30.000	5.00

EXISTING SMF-RL-4D POST-DEVELOPMENT MODEL

Selmon Expressway
FPN No. 258415-1-52-01
Exist. SMF-RL-4D Post Model

Nodes	Basins	Links
A Stage/Area	O Overland Flow	P Pipe
V Stage/Volume	U SCS Unit Hydro	W Weir
T Time/Stage	S Santa Barbara	C Channel
M Manhole		D Drop Structure
		B Bridge
		R Rating Curve
		H Breach





REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

PBS&J
5300 West Cypress Street
Suite 200
Tampa, Florida 33607-1768
FBPE Certificate of
Authorization No. 24
Shanye Poynter, P.E. 58136

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 618	HILLSBOROUGH	258415-1-52-01

SMF-RL-4D SUPPLEMENTAL POST NODE DIAGRAM

SHEET NO.
$PAGE

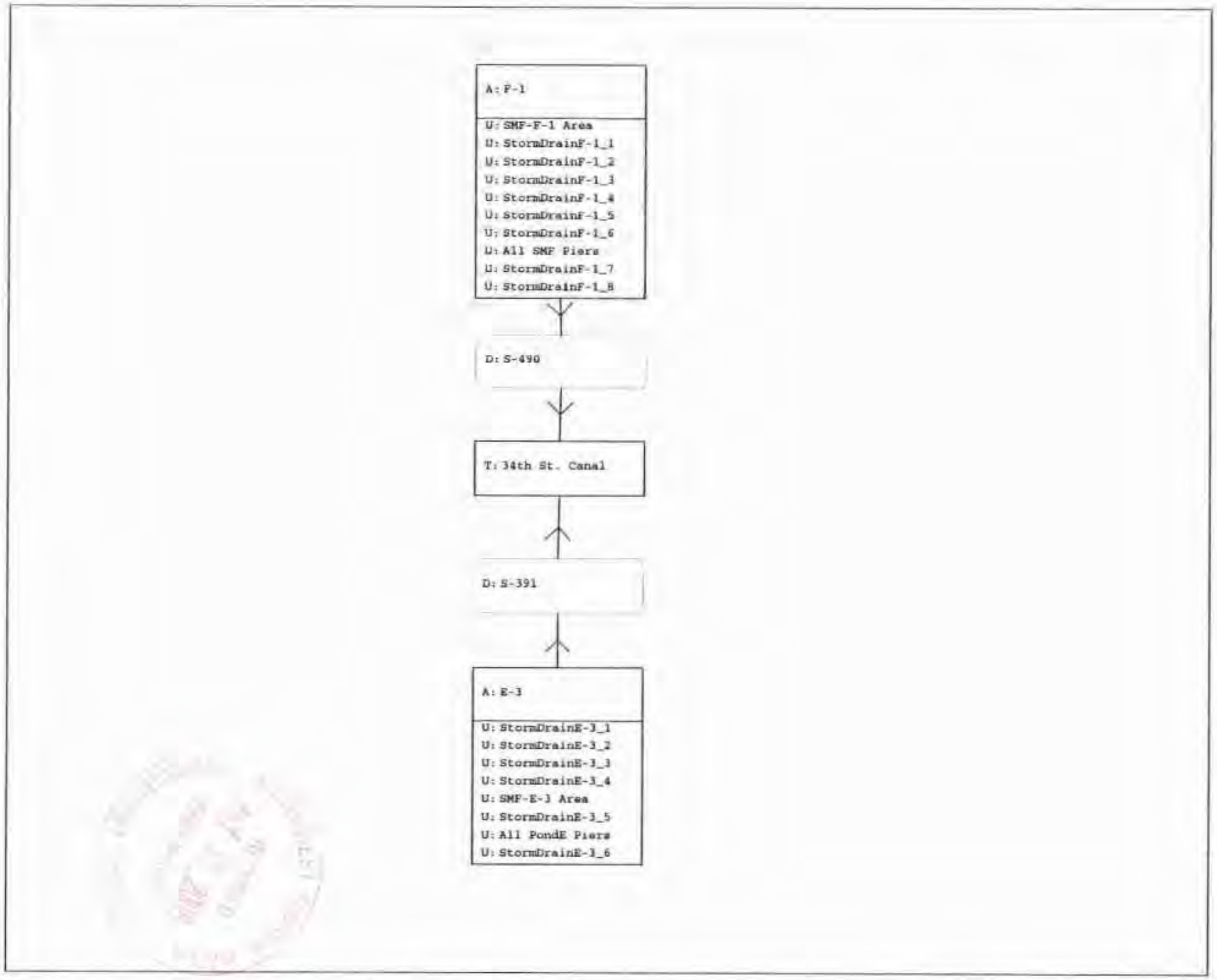
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

A-293A

Selmon Expressway
FPN NO. 258415-1-52-01 Basin E-3 and F Post Model

BasinsE3F Post Model

Nodes	Basins	Links
A Stage/Area	O Overland Flow	P Pipe
V Stage/Volume	U SCS Unit Hydro	W Weir
T Time/Stage	S Santa Barbara	C Channel
M Manhole		D Drop Structure
		B Bridge
		R Rating Curve
		H Breach



A-239B

Selmon Expressway
FPN No. 258415-1-52-01
Exist. SMF-RL-4D Post Model

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
CANAL	BASE	!025YR024HR	0.00	1.600	2.000	0.0000	0	12.20	13.921	0.00	0.000
SMF 4D	BASE	!025YR024HR	12.20	7.472	9.000	0.0001	23619	12.08	15.452	12.20	13.921
CANAL	BASE	010YR01HR	0.00	1.600	2.000	0.0000	0	12.20	13.921	0.00	0.000
SMF 4D	BASE	010YR01HR	12.20	7.472	9.000	0.0001	23619	12.08	15.452	12.20	13.921
CANAL	BASE	010YR024HR	0.00	1.600	2.000	0.0000	0	12.20	13.921	0.00	0.000
SMF 4D	BASE	010YR024HR	12.20	7.472	9.000	0.0001	23619	12.08	15.452	12.20	13.921
CANAL	BASE	010YR02HR	0.00	1.600	2.000	0.0000	0	12.20	13.921	0.00	0.000
SMF 4D	BASE	010YR02HR	12.20	7.472	9.000	0.0001	23619	12.08	15.452	12.20	13.921
CANAL	BASE	010YR04HR	0.00	1.600	2.000	0.0000	0	12.20	13.921	0.00	0.000
SMF 4D	BASE	010YR04HR	12.20	7.472	9.000	0.0001	23619	12.08	15.452	12.20	13.921
CANAL	BASE	010YR08HR	0.00	1.600	2.000	0.0000	0	12.20	13.921	0.00	0.000
SMF 4D	BASE	010YR08HR	12.20	7.472	9.000	0.0001	23619	12.08	15.452	12.20	13.921

A-294

```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

        Name: BASIN 4D                   Node: SMF 4D                 Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 20.00
              Area(ac): 2.780                   Time Shift(hrs): 0.00
          Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Existing Imp. area = 6.42 ac
Existing Per. area = 0.93 ac
Total existing area = 7.35 ac
Existing area being removed from SMF 4D = 6.28 ac (Imp - 5.35ac, Per - 0.93 ac)
New imp. area being added to SMF 4D = 1.71 ac
Therefore, total area going to SMF 4D in the proposed condition = 7.35-6.28+1.71 = 2.78 ac

------------------------------------------------------------------------------------------
        Name: POND 4D AREA               Node: SMF 4D                 Status: Onsite
       Group: BASE                       Type: SCS Unit Hydrograph

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File:                     Storm Duration(hrs): 0.00
   Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
              Area(ac): 1.320                   Time Shift(hrs): 0.00
          Curve Number: 67.70              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

Pond area includes roadway slope/embankment

==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: CANAL            Base Flow(cfs): 0.000          Init Stage(ft): 1.600
     Group: BASE                                            Warn Stage(ft): 2.000
      Type: Time/Stage


      Time(hrs)       Stage(ft)
   --------------- ---------------
           0.00           1.600
         999.00           1.600

------------------------------------------------------------------------------------------
      Name: SMF 4D           Base Flow(cfs): 0.000          Init Stage(ft): 7.100
     Group: BASE                                            Warn Stage(ft): 9.000
      Type: Stage/Area


      Stage(ft)        Area(ac)
   --------------- ---------------
          5.600          0.1600
          8.000          0.6500
          9.000          1.1500

==========================================================================================
==== Drop Structures =====================================================================
==========================================================================================

        Name: DS1               From Node: SMF 4D           Length(ft): 333.00
       Group: BASE                To Node: CANAL                 Count: 1

              UPSTREAM       DOWNSTREAM               Friction Equation: Average Conveyance
    Geometry: Circular       Circular                Solution Algorithm: Automatic
    Span(in): 30.00          30.00                                 Flow: Both
    Rise(in): 30.00          30.00                   Entrance Loss Coef: 0.500
  Invert(ft): 2.000          1.400                       Exit Loss Coef: 1.000
 Manning's N: 0.012000       0.012000               Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                   Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                    Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

wnstream FHWA Inlet Edge Description:
```

cular Concrete: Square edge w/ headwall

*** Weir 1 of 1 for Drop Structure DS1 ***

TABLE

Count:	1	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.200
Geometry:	Rectangular	Orifice Disc Coef:	0.600
Span(in):	79.00	Invert(ft):	7.100
Rise(in):	36.00	Control Elev(ft):	7.100

==== Hydrology Simulations ====

Name: !025YR024HR
Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\PRE\!025YR024HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.00

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 010YR01HR
Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\PRE\010YR01HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.00

me(hrs)	Print Inc(min)
30.000	5.00

Name: 010YR024HR
Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\PRE\010YR024HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.00

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 010YR02HR
Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\PRE\010YR02HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.00

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 010YR04HR
Filename: K:\25841515201AA1\drainage\ICPR\BasinE1\PRE\010YR04HR.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.00

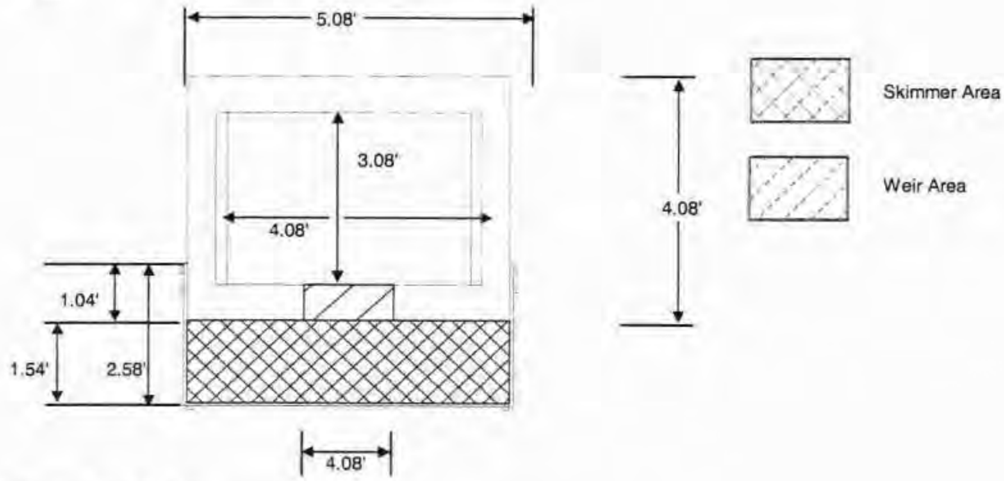
Time(hrs)	Print Inc(min)
30.000	5.00

SKIMMER CALCULATIONS

Project Selmon Expressway/Crosstown Connector
FPID: 258415-1-52-01

SMF-C1 Skimmer Area Calculations

By: MFR Date: 11/20/2007
C'ked by: SP Date: 3/14/2008



Structure Information: DBI Type D
Std. Index No. 232

Skimmer Area (Height of Panel x Length of Panel)

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Skimmer	5.08	1.54	7.84

Skimmer Area: 7.84 ft2

Weir Area (Height x Width of Slot)

DESCRIPTION	HEIGHT ft	WIDTH ft	AREA ft^2
Structure Area	1.90	4.08	7.75

Weir Area: 7.75 ft2

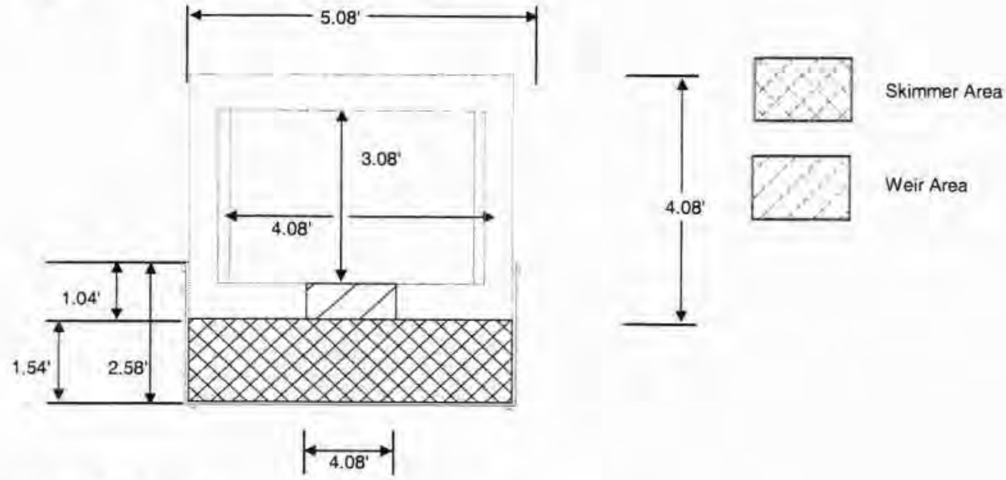
Skimmer Area / Weir Area has to be at least 3
7.84 ft2 / 7.75 ft2 = 1.01

Skimmer does not control flow through weir.

Project Selmon Expressway/Crosstown Connector
FPID: 258415-1-52-01

SMF-C-2 Skimmer Area Calculations

By: MFR Date: 11/20/2007
C'ked by: SP Date: 3/14/2008



Structure Information: DBI Type D
Std. Index No. 232

Skimmer Area (Height of Panel x Length of Panel)

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Skimmer	5.08	1.54	7.84

Skimmer Area: 7.84 ft2

Weir Area (Height x Width of Slot)

DESCRIPTION	HEIGHT ft	WIDTH ft	AREA ft^2
Structure Area	1.90	4.08	7.75

Weir Area: 7.75 ft2

Skimmer Area / Weir Area has to be at least 3
7.84 ft2 / 7.75 ft2 = 1.01

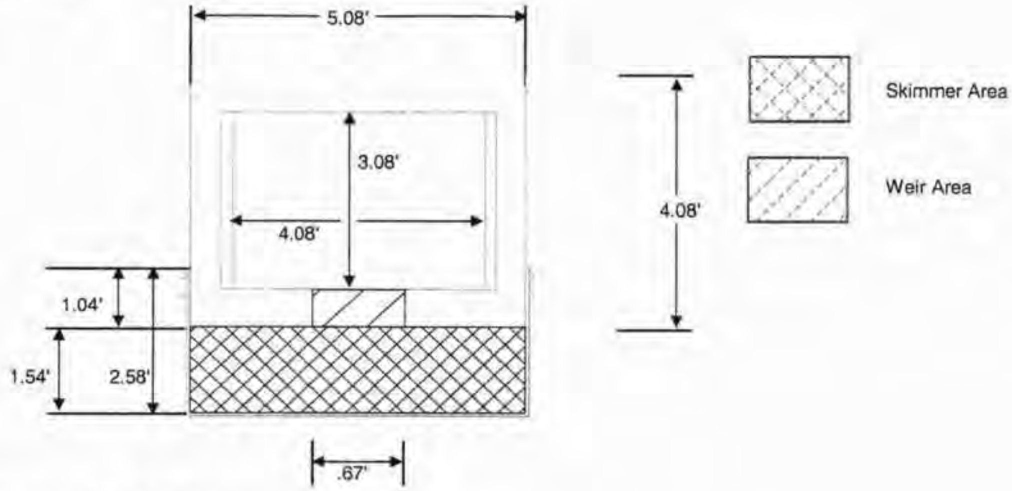
Skimmer does not control flow through weir.

A-325

Project Selmon Expressway/Crosstown Connector
FPID: 258415-1-52-01

SMF-D-1 Skimmer Area Calculations

By: HP Date: 10/3/2006
C'ked by: SP Date: 3/14/2008



Structure Information: DBI Type D
Std. Index No. 232

Skimmer Area (Height of Panel x Length of Panel)

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft²
Skimmer	5.08	1.54	7.84

Skimmer Area: 07.84 ft2

Weir Area (Height x Width of Slot)

DESCRIPTION	HEIGHT ft	WIDTH ft	AREA ft²
Structure Area	3.10	0.67	2.07

Weir Area: 2.07 ft2

Skimmer Area / Weir Area has to be at least 3
7.84 ft2 / 2.06666666666667 ft2 = 3.79

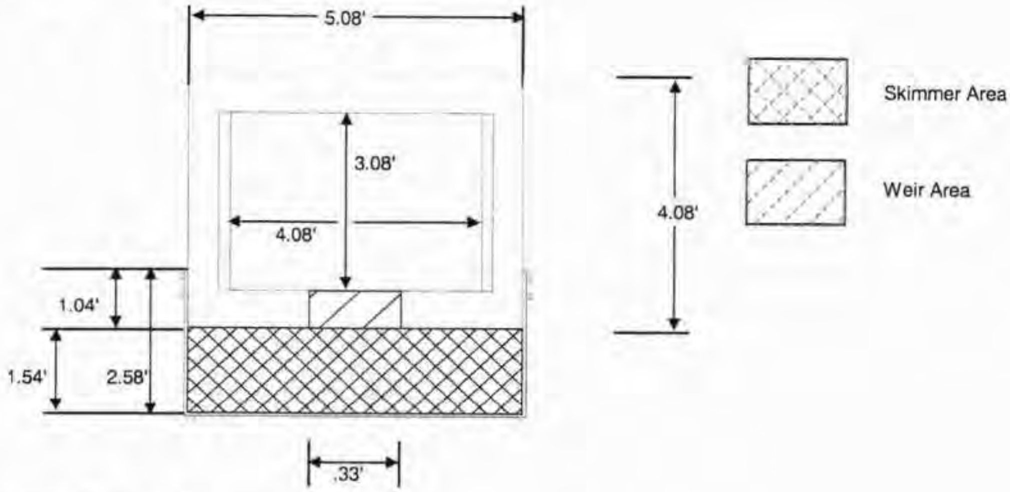
Skimmer does not control flow through weir.

A-326

Project Selmon Expressway/Crosstown Connector
FPID: 258415-1-52-01

SMF-D-2 Skimmer Area Calculations

By: HP Date: 10/3/2006
C'ked by: SP Date: 3/14/2008



Structure Information: DBI Type D
Std. Index No. 232

Skimmer Area (Height of Panel x Length of Panel)

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Skimmer	5.08	1.54	7.84

Skimmer Area: 07.84 ft2

Weir Area (Height x Width of Slot)

DESCRIPTION	HEIGHT ft	WIDTH ft	AREA ft^2
Structure Area	2.50	0.33	0.83

Weir Area: .83 ft2

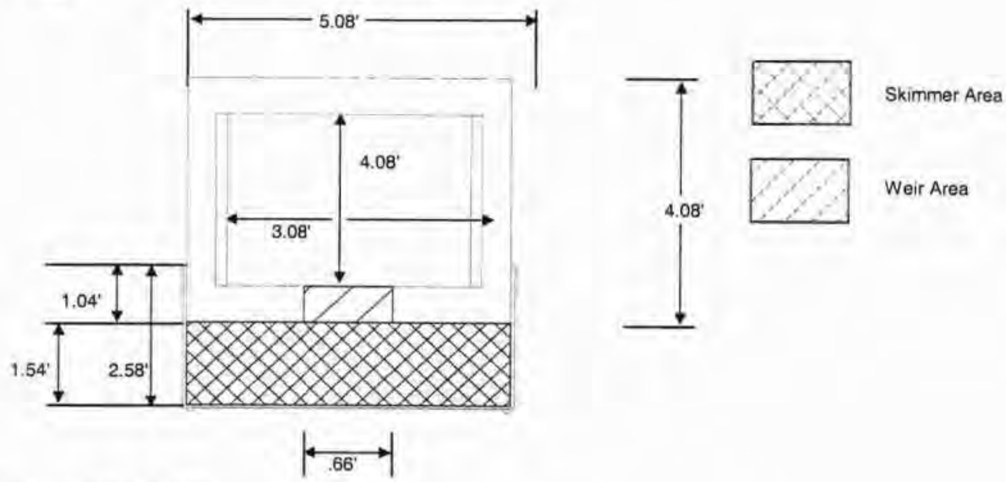
Skimmer Area / Weir Area has to be at least 3
7.84 ft2 / 0.833333333333333 ft2 = 9.41

Skimmer does not control flow through weir.

Project Selmon Expressway/Crosstown Connector
FPID: 258415-1-52-01

Pond E-1 Skimmer Area Calculations

By: MFR Date: 11/20/2007
C'ked by: SP Date: 3/14/2008



Structure Information: DBI Type D
Std. Index No. 232

Skimmer Area (Height of Panel x Length of Panel)

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Skimmer	5.08	1.54	7.84

Skimmer Area: 7.84 ft2

Weir Area (Height x Width of Slot)

DESCRIPTION	HEIGHT ft	WIDTH ft	AREA ft^2
Structure Area	1.90	0.66	1.25

Weir Area: 1.25 ft2

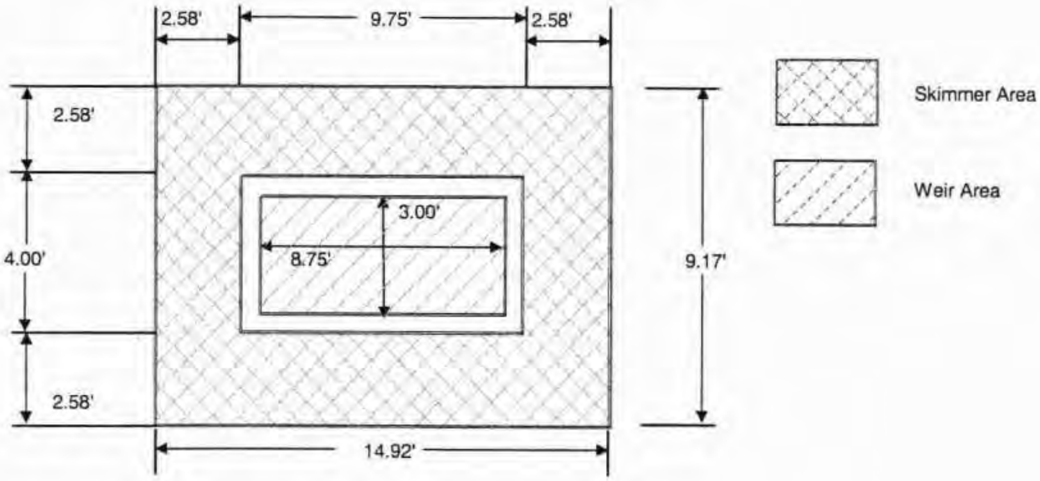
Skimmer Area / Weir Area has to be at least 3
7.84 ft2 / 1.25 ft2 = 6.25

Skimmer does not control flow through weir.

Project Selmon Expressway/Crosstown Connector
FPID: 258415-1-52-01

SMF-E-3, F-1, G-3, H-1, I-1 & X-1 Skimmer Area Calculations

By: MFR Date: 3/12/2008
C'ked by: SP Date: 3/14/2008



Structure Information: DBI Type H (4-GRATE INLET)
Std. Index No. 232

Skimmer Area

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Long Side	14.92	2.58	77.06
Short Side	4.00	2.58	20.66

Skimmer Area: 97.72 ft2

Weir Area in Orifice Flow

DESCRIPTION	LENGTH ft	WIDTH ft	AREA ft^2
Structure Area	8.75	3.00	26.25

Weir Area: 26.25 ft2

Skimmer Area / Weir Area has to be at least 3
97.72 ft2 / 26.25 ft2 = 3.72

Skimmer does not control flow through weir.

APPENDIX B

DESIGN INFORMATION

STORM DRAIN DESIGN

DROP STRUCTURE CALCULATIONS

CROSSTOWN CONNECTOR - Drop Structure Hydraulics

By: HP   Date: 10/4/2006
C'ked by: MFR   Date: 3/28/2008

Q=ca(2gh)^.5   **10-year**
h=Q^2/(c^2*a^2*2*g)
Where h=head, Q=flow, c=coefficient of discharge, g=acceleration due to gravity, a=pipe area

Structure No.	Q(10-yr) (CFS)	Drop Pipe Diameter (Inches)	Drop Pipe Area (a) (Square Feet)	Inlet Bottom Elevation	Inlet Grate Elevation	Head (h) (ft)	HW Elev.	Clearance (ft)
S-108	1.0	**10**	0.55	28.00	32.07	0.13	28.13	**3.94**
S-200	1.9	**10**	0.55	14.60	18.66	0.52	15.12	**3.54**
S-210	2.5	**10**	0.55	26.00	31.44	0.93	26.93	**4.51**
S-233	3.8	**10**	0.55	28.30	33.79	2.06	30.36	**3.43**
S-283	5.95*	**12**	0.79	26.10	34.56	2.48	28.58	**5.98**
S-291	6.3	**12**	0.79	30.10	35.47	2.78	32.88	**2.59**
S-303	3.6	**10**	0.55	22.10	26.16	1.83	23.93	**2.23**
S-316B	6.3	**12**	0.79	17.90	23.95	2.73	20.63	**3.32**
S-320	1.7	**10**	0.55	25.00	29.08	0.41	25.41	**3.67**
S-322A	2.3	**10**	0.55	28.10	32.10	0.76	28.86	**3.24**
S-323	5.5	**12**	0.79	27.90	33.31	2.08	29.98	**3.33**
S-360	1.9	**10**	0.55	41.50	45.53	0.53	42.03	**3.50**
S-442A	12.0	**12**	0.79	36.00	48.77	10.07	46.07	**2.70**

*Q taken from Drainage Documentation for Reversible Lanes (URS portion)

B-1

STORM DRAIN TABULATIONS
DESIGN YEAR

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_1** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			#	PIPE SIZE (in.)	SLOPE %	ACTUAL VEL.	FULL FLOW CAP.	NOTES & REMARKS
						C=	0.95											CROWN			B					ZONE: 6
						C=	0.20						SUMM BASE					FLOWLINE			R		HGL	PHYS.		FREQ. (Yrs): 10
ALIGNMENT NAME			UPPER			C=	0.00											UPPER	LOWER	FALL	L	RISE	PHYS	VEL.		MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	S	SPAN	MIN.	(fps)	(cfs)	TAILW EL (ft): 11.26
RF			**14-5**			0.30	0.30	0.28										12.47	11.82	0.65		8.00	2.809	6.18		
				PIER	23.17	0.00	0.00	0.00	10.00	0.06	7.47	0.28	0.00	**2.11**	0.00	66.22	**53.75**	6.27	6.17		1		0.432		0.83	
7020+75.00	10.00	Lt.	S-335			0.00	0.00	0.00					0.00					5.60	5.50	0.10		8.00	0.442	2.42		
RN			**15-5**			0.14	0.14	0.13										12.74	11.64	1.10		6.00	2.670	5.06		
				PIER	41.17	0.00	0.00	0.00	10.00	0.14	7.47	0.13	0.00	**0.99**	0.00	64.70	**51.96**	4.50	4.40		1		0.243		0.30	
827+27.00	6.30	Lt.	S-334			0.00	0.00	0.00					0.00					4.00	3.90	0.10		6.00	0.649	1.53		
RN			**15-6**			0.22	0.22	0.21										12.28	11.85	0.44		8.00	1.541	4.58		
				PIER	28.26	0.00	0.00	0.00	10.00	0.10	7.47	0.21	0.00	**1.56**	0.00	70.75	**58.47**	6.37	6.27		1		0.354		0.75	
829+45.00	6.30	Lt.	S-336			0.00	0.00	0.00					0.00					5.70	5.60	0.10		8.00	0.442	2.20		
CL			**EX-113**			4.42	4.42	4.20										12.10	11.91	0.20		24.00	1.637	9.98		
				?BWI21	11.97	0.00	0.00	0.00	10.00	0.02	7.47	4.20	0.00	**31.36**	0.00	38.92	**26.82**	8.10	8.00		1		0.835		22.40	
686+18.00	127.91	Rt.	S-342			0.00	0.00	0.00					0.00					6.10	6.00	0.10		24.00	0.102	7.13		
RN			**S-334**			0.00	5.08	0.00										11.64	11.46	0.18		42.00	0.099	3.57		
				MHP-8	180.12	0.00	0.00	0.00	11.37	0.00	7.12	4.82	0.00	**34.33**	0.00	12.50	**0.86**	3.50	3.40		1		0.056		25.68	
827+70.00	5.88	Lt.	MFE_1_			0.00	0.00	0.00					0.00					0.00	-0.10	0.10		42.00	0.048	2.67		
RF			**S-335**			0.00	4.94	0.00										11.82	11.64	0.19		36.00	0.218	4.77		
				MHP-8	85.70	0.00	0.00	0.00	11.07	0.30	7.19	4.69	0.00	**33.72**	0.00	12.50	**0.68**	6.80	6.70		1		0.117		24.68	
7021+00.00	10.00	Lt.	S-334			0.00	0.00	0.00					0.00					3.80	3.70	0.10		36.00	0.059	3.49		
RN			**S-336**			0.00	0.22	0.00										11.85	11.82	0.02		18.00	0.019	0.88		
				MHP-8	115.99	0.00	0.00	0.00	10.10	0.97	7.44	0.21	0.00	**1.55**	0.00	12.50	**0.65**	6.20	6.10		1		0.086		3.34	
829+15.00	6.34	Lt.	S-335			0.00	0.00	0.00					0.00					4.70	4.60	0.10		18.00	0.150	1.89		
CL			**S-342**			0.00	4.42	0.00										11.91	11.82	0.08		36.00	0.188	4.43		
				MHP-8	44.79	0.00	0.00	0.00	10.02	0.17	7.46	4.20	0.00	**31.33**	0.00	12.10	**0.19**	6.90	6.80		1		0.223		34.14	
686+17.50	143.00	Rt.	S-335			0.00	0.00	0.00					0.00					3.90	3.80	0.10		36.00	0.059	4.83		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** | County: **HILLSBOROUGH** | Network: **SMFE_1_2** | Designed by **Divya Pasupuleti** | Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** | Organization **PBSJ - Tampa** | State Road: **SR 400** | Checked by: **Shayne Paynter** | Date: 4/3/2008

NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILW EL (ft): 11.26

LOCATION OF UPPER END: ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BBLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP (cfs)	NOTES & REMARKS
RK			7-11A			0.22	0.22	0.21										12.90	12.71	0.19		8.00	1.598	4.66		
				PIER	11.88	0.00	0.00	0.00	10.00	0.04	7.47	0.21	0.00	**1.59**	0.00	78.04	**65.14**	3.87	3.77		1		0.842		1.15	
525+60.00	10.62	Rt.	S-324			0.00	0.00	0.00					0.00					3.20	3.10	0.10		8.00	0.442	3.39		
RJ1			7-11B			0.05	0.05	0.05										12.75	12.71	0.04		6.00	0.354	1.84		
				PIER	9.94	0.00	0.00	0.00	10.00	0.08	7.47	0.05	0.00	**0.36**	0.00	78.70	**65.95**	5.80	5.70		1		1.006		0.61	
45+62.15	14.20	Lt.	S-324			0.00	0.00	0.00					0.00					5.30	5.20	0.10		6.00	0.649	3.11		
RK			7-5			0.30	0.30	0.29										12.45	11.74	0.71		8.00	2.866	6.25		
				PIER	24.74	0.00	0.00	0.00	10.00	0.07	7.47	0.28	0.00	**2.13**	0.00	62.88	**50.42**	1.67	1.57		1		0.404		0.80	
515+63.00	10.75	Rt.	S-300			0.00	0.00	0.00					0.00					1.00	0.90	0.10		8.00	0.442	2.35		
RK			7-7			0.30	0.30	0.29										12.36	11.99	0.37		8.00	2.866	6.25		
				PIER	12.97	0.00	0.00	0.00	10.00	0.03	7.47	0.28	0.00	**2.13**	0.00	71.84	**59.48**	2.77	2.67		1		0.771		1.10	
518+83.00	10.75	Rt.	CC-304			0.00	0.00	0.00					0.00					2.10	2.00	0.10		8.00	0.442	3.24		
RK			7-9			0.19	0.19	0.18										12.36	12.19	0.17		8.00	1.149	3.96		
				PIER	14.70	0.00	0.00	0.00	10.00	0.06	7.47	0.18	0.00	**1.35**	0.00	78.50	**66.14**	5.27	5.17		1		0.680		1.04	
521+80.00	13.80	Rt.	S-319			0.00	0.00	0.00					0.00					4.60	4.50	0.10		8.00	0.442	3.04		
RS1			9-13			0.11	0.11	0.10										11.68	11.61	0.07		8.00	0.385	2.29		
				PIER	18.95	0.00	0.00	0.00	10.00	0.14	7.47	0.10	0.00	**0.78**	0.00	61.77	**50.09**	6.17	6.07		1		0.528		0.91	
928+04.00	7.50	Rt.	S-302			0.00	0.00	0.00					0.00					5.50	5.40	0.10		8.00	0.442	2.68		
RS1			9-14			0.22	0.22	0.21										11.88	11.54	0.34		8.00	1.541	4.58		
				PIER	22.00	0.00	0.00	0.00	10.00	0.08	7.47	0.21	0.00	**1.56**	0.00	66.40	**54.52**	6.77	6.67		1		0.455		0.85	
929+79.00	8.00	Rt.	S-305			0.00	0.00	0.00					0.00					6.10	6.00	0.10		8.00	0.442	2.49		
RS1			9-16			0.17	0.17	0.16										11.60	11.40	0.20		8.00	0.920	3.54		
				PIER	21.90	0.00	0.00	0.00	10.00	0.10	7.47	0.16	0.00	**1.21**	0.00	77.25	**65.65**	7.37	7.27		1		0.457		0.85	
933+27.01	8.10	Rt.	S-315			0.00	0.00	0.00					0.00					6.70	6.60	0.10		8.00	0.442	2.49		
RK			CC-300			0.00	3.50	0.00										11.75	11.74	0.01		36.00	0.079	2.87		
				MHP-8	14.35	0.00	0.00	0.00	16.61	0.08	6.12	3.32	0.00	**20.32**	0.00	12.00	**0.25**	3.91	3.90		1		0.070		19.07	
515+63.00	29.74	Rt.	S-300			0.00	0.00	0.00					0.00					0.91	0.90	0.01		36.00	0.059	2.70		
RK			CC-304			0.00	3.00	0.00										11.99	11.89	0.10		36.00	0.064	2.59		
				MHP-8	162.57	0.00	0.00	0.00	14.66	1.04	6.44	2.85	0.00	**18.33**	0.00	12.20	**0.21**	4.09	4.00		1		0.055		17.00	
518+83.00	25.22	Rt.	S-304			0.00	0.00	0.00					0.00					1.09	1.00	0.09		36.00	0.059	2.41		
RK			S-300			0.00	3.80	0.00										11.74	11.63	0.11		42.00	0.041	2.29		
				MH8J60	269.27	0.00	0.00	0.00	16.69	1.96	6.11	3.61	0.00	**22.02**	0.00	12.00	**0.26**	3.80	3.60		1		0.074		29.70	
515+45.00	31.00	Rt.	S-301			0.00	0.00	0.00					0.00					0.30	0.10	0.20		42.00	0.048	3.09		
RS1			S-301			0.00	3.80	0.00										11.63	11.61	0.03		42.00	0.037	2.18		
				?MHJ35	70.10	0.00	0.00	0.00	18.65	0.54	5.83	3.61	0.00	**21.00**	0.00	12.00	**0.37**	3.60	3.50		1		0.143		41.17	
927+35.00	25.00	Rt.	S-302			0.00	0.00	0.00					0.00					0.10	0.00	0.10		42.00	0.048	4.28		
RN			S-302			0.00	3.90	0.00										11.61	11.54	0.07		42.00	0.038	2.22		
				?MHJ35	177.78	0.00	0.00	0.00	19.19	1.34	5.75	3.71	0.00	**21.35**	0.00	12.00	**0.39**	3.50	3.40		1		0.056		25.85	
814+97.86	60.00	Rt.	S-305			0.00	0.00	0.00					0.00					0.00	-0.10	0.10		42.00	0.048	2.69		
CL			S-303			0.50	0.50	0.47										12.09	11.89	0.21		10.00	2.233	6.50		
				?BWI21	9.20	0.00	0.00	0.00	10.00	0.02	7.47	0.47	0.00	**3.55**	0.00	26.16	**14.07**	8.53	8.43		1		1.087		2.47	
675+00.00	79.18	Lt.	S-304			0.00	0.00	0.00					0.00					7.70	7.60	0.10		10.00	0.328	4.54		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

B-2.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_2** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END: ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % MIN. / HGL / PHYS	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
CL			S-304			0.00	3.50	0.00										11.89	11.75	0.13		36.00	0.083	2.94	
				MH8J50	159.27	0.00	0.00	0.00	15.71	0.90	6.26	3.32	0.00	**20.80**	0.00	12.40	**0.51**	4.00	3.91		1		0.057		17.18
675+00.00	90.00	Lt.	CC-300			0.00	0.00	0.00					0.00					1.00	0.91	0.09		36.00	0.059	2.43	
RS1			S-305			0.00	4.13	0.00										11.54	11.40	0.14		42.00	0.040	2.28	
				?MHJ35	353.57	0.00	0.00	0.00	20.52	2.59	5.59	3.92	0.00	**21.90**	0.00	11.80	**0.26**	3.40	3.20		1		0.057		25.92
929+78.96	30.00	Rt.	S-315			0.00	0.00	0.00					0.00					-0.10	-0.30	0.20		42.00	0.048	2.69	
CL			S-309			0.00	2.70	0.00										12.00	11.99	0.01		36.00	0.053	2.34	
				MH8J50	24.92	0.00	0.00	0.00	14.48	0.18	6.47	2.56	0.00	**16.58**	0.00	12.50	**0.50**	4.10	4.09		1		0.040		14.48
677+00.00	90.00	Lt.	CC-304			0.00	0.00	0.00					0.00					1.10	1.09	0.01		36.00	0.059	2.05	
RS1			S-315			0.00	4.30	0.00										11.40	11.34	0.06		42.00	0.039	2.25	
				?MHJ35	144.69	0.00	0.00	0.00	23.11	0.00	5.30	4.08	0.00	**21.61**	0.00	11.60	**0.20**	3.20	3.10		1		0.069		28.65
933+27.01	30.00	Rt.	MFE_1			0.00	0.00	0.00					0.00					-0.30	-0.40	0.10		42.00	0.048	2.98	
CL			S-316			0.45	0.45	0.43										19.93	19.90	0.04		18.00	0.080	1.82	
				BW-218	44.93	0.00	0.00	0.00	10.00	0.37	7.47	0.43	0.00	**3.21**	0.00	23.78	**3.85**	20.50	20.40		1		0.223		5.37
678+00.00	79.18	Lt.	S-316A			0.00	0.00	0.00					0.00					19.00	18.90	0.10		18.00	0.150	3.04	
CL			S-316A			0.15	0.60	0.14										19.90	19.80	0.10		18.00	0.223	3.37	
				BW-218	44.93	0.00	0.00	0.00	10.37	0.22	7.37	0.57	0.00	**4.20**	0.00	23.85	**3.95**	20.40	20.30		1		0.223		5.37
677+50.00	79.18	Lt.	S-316B			0.00	0.00	0.00					0.00					18.90	18.80	0.10		18.00	0.150	3.04	
CL			S-316B			0.30	0.90	0.29										12.24	12.00	0.23		12.00	2.513	7.86	
				BW-218	9.32	0.00	0.00	0.00	10.60	0.02	7.31	0.86	0.00	**6.25**	0.00	23.95	**11.72**	6.70	6.60		1		1.072		4.08
677+00.00	79.18	Lt.	S-309			0.00	0.00	0.00					0.00					5.70	5.60	0.10		12.00	0.257	5.13	
RK			S-319			0.00	1.80	0.00										12.19	12.00	0.19		30.00	0.069	2.38	
				MHP-8	273.29	0.00	0.00	0.00	12.57	1.91	6.85	1.71	0.00	**11.68**	0.00	12.60	**0.41**	4.40	4.20		1		0.073		12.02
521+80.00	30.00	Rt.	S-309			0.00	0.00	0.00					0.00					1.90	1.70	0.20		30.00	0.076	2.45	
RE			S-320			0.24	0.24	0.23										12.46	12.41	0.06		10.00	0.502	3.08	
				?BWI21	11.03	0.00	0.00	0.00	10.00	0.06	7.47	0.23	0.00	**1.68**	0.00	29.08	**16.62**	6.83	6.73		1		0.906		2.26
6002+00.00	7.88	Lt.	S-321			0.00	0.00	0.00					0.00					6.00	5.90	0.10		10.00	0.328	4.14	
CL			S-321			0.00	1.61	0.00										12.41	12.19	0.21		24.00	0.188	3.38	
				MHP-8	114.14	0.00	0.00	0.00	12.01	0.56	6.97	1.52	0.00	**10.63**	0.00	13.00	**0.59**	4.70	4.50		1		0.175		10.26
681+00.00	95.00	Lt.	S-319			0.00	0.00	0.00					0.00					2.70	2.50	0.20		24.00	0.102	3.27	
RK			S-322			0.00	1.37	0.00										12.60	12.41	0.20		24.00	0.144	2.96	
				MHP-8	136.40	0.00	0.00	0.00	11.24	0.77	7.15	1.30	0.00	**9.29**	0.00	13.00	**0.40**	4.90	4.70		1		0.147		9.38
524+36.50	34.00	Rt.	S-321			0.00	0.00	0.00					0.00					2.90	2.70	0.20		24.00	0.102	2.99	
CL			S-322A			0.32	0.32	0.31										12.69	12.60	0.09		10.00	0.932	4.20	
				?BWI21	9.81	0.00	0.00	0.00	10.00	0.04	7.47	0.31	0.00	**2.29**	0.00	32.10	**19.41**	6.53	6.43		1		1.020		2.40
682+40.00	86.58	Lt.	S-322			0.00	0.00	0.00					0.00					5.70	5.60	0.10		10.00	0.328	4.39	
RE			S-323			0.47	0.77	0.45										13.11	12.82	0.29		12.00	1.910	6.85	
				?BWI21	15.00	0.00	0.00	0.00	10.08	0.04	7.45	0.73	0.00	**5.45**	0.00	33.31	**20.20**	6.80	6.70		1		0.667		3.22
6005+18.00	7.88	Lt.	S-325			0.00	0.00	0.00					0.00					5.80	5.70	0.10		12.00	0.257	4.05	
RK			S-324			0.00	1.04	0.00										12.71	12.60	0.11		24.00	0.089	2.33	
				MHP-8	120.90	0.00	0.00	0.00	10.37	0.87	7.37	0.99	0.00	**7.31**	0.00	13.10	**0.39**	5.10	4.90		1		0.165		9.97
525+60.00	24.00	Rt.	S-322			0.00	0.00	0.00					0.00					3.10	2.90	0.20		24.00	0.102	3.17	

NOTES & REMARKS:
- ZONE: 6
- FREQ. (Yrs): 10
- MANNINGS n: 0.0120
- TAILW EL (ft): 11.26

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_2** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END / ALIGNMENT NAME: STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00: INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE: UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS	
																										ZONE:	6
																										FREQ. (Yrs):	10
																										MANNINGS n:	0.0120
RE			S-325			0.00	0.77	0.00										12.82	12.71	0.11		18.00	0.229	3.08		TAILW EL (ft):	11.26
				MHP-8	48.45	0.00	0.00	0.00	10.11	0.26	7.44	0.73	0.00	5.44	0.00	13.20	0.38	7.20	7.10		1		0.206		5.17		
6005+18.00	26.00	Lt.	S-324			0.00	0.00	0.00					0.00					5.70	5.60	0.10		18.00	0.150	2.93			
CL			S-326			0.30	0.30	0.29										31.48	29.08	2.40		18.00	5.741	9.28			
				GUT-S	41.81	0.00	0.00	0.00	10.00	0.08	7.47	0.28	0.00	2.13	0.00	35.30	3.82	32.70	30.30		1		5.741		27.27		
684+22.00	56.50	Lt.	S-323			0.00	0.00	0.00					0.00					31.20	28.80	2.40		18.00	0.150	15.43			

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Page: 1

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_3** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW SUMM BASE	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE CROWN FLOWLINE			# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS VEL.	FULL FLOW CAP.	NOTES & REMARKS
ALIGNMENT NAME			UPPER			C= 0.95																				ZONE: 6
						C= 0.20																				FREQ. (Yrs): 10
						C= 0.00																				MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	UPPER (ft.)	LOWER (ft.)	FALL (ft.)				(fps)	(cfs)	TAILW EL (ft): 11.26
RN			**S-307**			0.28	0.28	0.27										31.00	29.74	1.26		18.00	2.511	8.05		
				?BWI21	50.14	0.00	0.00	0.00	10.00	0.10	7.47	0.27	0.00	**1.99**	0.00	35.90	**4.91**	32.20	30.10		1		4.188		23.29	
817+25.21	18.88	Lt.	S-308			0.00	0.00	0.00					0.00					30.70	28.60	2.10		18.00	0.150	13.18		
RF			**S-308**			0.23	0.51	0.22										29.74	29.59	0.14		18.00	0.100	2.04		
				?BWI21	141.59	0.00	0.00	0.00	10.10	1.16	7.44	0.48	0.00	**3.60**	0.00	33.10	**3.36**	30.10	29.80		1		0.212		5.24	
7010+53.60	27.88	Lt.	S-312			0.00	0.00	0.00					0.00					28.60	28.30	0.30		18.00	0.150	2.96		
RF			**S-312**			0.14	1.03	0.14										29.59	29.39	0.20		24.00	0.142	3.24		
				?BWI21	140.66	0.00	0.00	0.00	11.26	0.72	7.14	0.98	0.00	**6.97**	0.00	34.54	**4.95**	30.30	30.10		1		0.142		9.24	
7012+00.00	27.88	Lt.	S-312A			0.00	0.00	0.00					0.00					28.30	28.10	0.20		24.00	0.102	2.94		
RF			**S-312A**			0.39	1.42	0.37										29.10	29.00	0.10		24.00	0.575	5.94		
				?BWI21	17.40	0.00	0.00	0.00	11.98	0.05	6.98	1.35	0.00	**9.39**	0.00	39.38	**10.28**	30.10	30.00		1		0.575		18.58	
7013+45.00	27.88	Lt.	S-314			0.00	0.00	0.00					0.00					28.10	28.00	0.10		24.00	0.102	5.91		
RN			**S-313**			0.37	0.37	0.36										32.72	30.12	2.60		18.00	5.239	9.52		
				?BWI21	49.63	0.00	0.00	0.00	10.00	0.09	7.47	0.36	0.00	**2.65**	0.00	37.42	**4.70**	33.90	31.30		1		5.239		26.05	
818+87.50	18.88	Lt.	S-312			0.00	0.00	0.00					0.00					32.40	29.80	2.60		18.00	0.150	14.74		
RF			**S-314**			0.00	1.42	0.00										16.46	11.49	4.97		24.00	5.401	16.92		
				MHP-8	92.06	0.00	0.00	0.00	12.03	0.09	6.97	1.35	0.00	**9.38**	0.00	36.00	**19.54**	18.00	8.50		1		10.319		78.73	
7013+45.00	48.40	Lt.	S-314A			0.00	0.00	0.00					0.00					16.00	6.50	9.50		24.00	0.102	25.06		
RF			**S-314A**			0.00	1.42	0.00										11.49	11.40	0.09		24.00	0.146	2.98		
				MHP-8	65.19	0.00	0.00	0.00	12.12	0.00	6.95	1.35	0.00	**9.35**	0.00	12.00	**0.51**	5.10	5.00		1		0.153		9.60	
7014+40.00	45.00	Lt.	MFE_1			0.00	0.00	0.00					0.00					3.10	3.00	0.10		24.00	0.102	3.06		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **E_Ditch** Designed by **Divia Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 / INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
RF			S-390			0.00	0.00	0.00										7.69	7.59	0.10		30.00	0.241	4.87	
				DBI-D	41.43	0.00	0.00	0.00	10.00	0.00	7.47	0.00	16.00	**16.00**	0.00	11.24	**3.55**	8.60	8.50		1		0.241		21.83
7019+84.30	30.00	Rt.	DITCH			0.00	0.00	0.00					16.00					6.10	6.00	0.10		30.00	0.076	4.45	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILW EL (ft):	7.17

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_3_1** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF			STR. NO.	TYPE OF	LEN.	AREAS (Ac)		SUB-	TIME OF	TIME OF	INTEN	TOTAL	BASE FLOW	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			#	PIPE SIZE	SLOPE %	ACTUAL VEL.	FULL FLOW	NOTES & REMARKS	
UPPER END				STR.		C=	0.95	TOTAL	CONC	FLOW		(C*A)						CROWN			B	(in.)	HGL	PHYS. VEL.	CAP.	ZONE:	6
ALIGNMENT NAME			UPPER			C=	0.20	(C*A)		SECT.			SUMM BASE					FLOWLINE			R	RISE	PHYS			FREQ. (Yrs):	10
						C=	0.00											UPPER	LOWER	FALL	L	SPAN	MIN.			MANNINGS n:	0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	S			(fps)	(cfs)	TAILW EL (ft):	7.99
RE			**5-2**			0.17	0.17	0.17										8.44	8.03	0.41		8.00	0.975	3.64			
				PIER	41.95	0.00	0.00	0.00	10.00	0.19	7.47	0.17	0.00	**1.24**	0.00	46.26	**37.82**	4.37	4.27		1		0.238		0.61		
6009+55.20	11.50	Rt.	S-355			0.00	0.00	0.00					0.00					3.70	3.60	0.10		8.00	0.442	1.80			
RK			**6-4**			0.13	0.13	0.12										8.91	8.03	0.89		6.00	2.162	4.55			
				PIER	41.11	0.00	0.00	0.00	10.00	0.15	7.47	0.12	0.00	**0.89**	0.00	63.50	**54.59**	3.90	3.80		1		0.243		0.30		
530+60.00	7.00	Rt.	S-355			0.00	0.00	0.00					0.00					3.40	3.30	0.10		6.00	0.649	1.53			
RE			**S-355**			0.00	0.30	0.00										8.03	8.01	0.01		18.00	0.035	1.20			
				MHP-8	39.23	0.00	0.00	0.00	10.19	0.00	7.42	0.29	0.00	**2.12**	0.00	9.00	**0.97**	3.60	3.50		1		0.255		5.75		
6009+98.00	10.00	Rt.	MFE_3			0.00	0.00	0.00					0.00					2.10	2.00	0.10		18.00	0.150	3.25			

B-27

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_3_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL	BASE FLOW	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			#	PIPE SIZE	SLOPE	ACTUAL VEL	FULL FLOW	NOTES & REMARKS
						C=	0.95	TOTAL				(C*A)	FLOW	FLOW				CROWN			B	SIZE	%	VEL	FLOW	ZONE: 6
UPPER END						C=	0.20	(C*A)	CONC	FLOW			SUMM					FLOWLINE			R	(in.)	HGL	PHYS.	CAP.	FREQ. (Yrs): 10
ALIGNMENT NAME			UPPER			C=	0.00			SECT.			BASE					UPPER	LOWER	FALL	L	RISE	PHYS	VEL		MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	S	SPAN	MIN	(fps)	(cfs)	TAILW EL (ft): 7.99
RS1			**9-21**			0.14	0.14	0.13										12.07	8.02	4.05		8.00	18.404	14.03		
				PIER	22.00	0.00	0.00	0.00	10.00	0.03	7.47	0.13	0.00	**0.96**	0.00	83.85	**71.78**	12.57	5.47		1		32.273		7.14	
943+60.00	8.50	Rt.	S-351			0.00	0.00	0.00					0.00					11.90	4.80	7.10		8.00	0.442	20.96		
RS1			**9-22**			0.11	0.11	0.10										8.37	8.01	0.36		6.00	1.648	3.97		
				PIER	22.00	0.00	0.00	0.00	10.00	0.09	7.47	0.10	0.00	**0.78**	0.00	80.32	**71.95**	6.30	6.20		1		0.455		0.41	
945+25.00	8.50	Rt.	S-354			0.00	0.00	0.00					0.00					5.80	5.70	0.10		6.00	0.649	2.09		
RS1			**S-351**			0.00	0.14	0.00										8.02	8.01	0.01		18.00	0.007	0.54		
				MHP-8	158.70	0.00	0.00	0.00	10.03	1.32	7.46	0.13	0.00	**0.96**	0.00	9.20	**1.18**	5.40	5.10		1		0.189		4.95	
943+59.97	15.00	Lt.	S-354			0.00	0.00	0.00					0.00					3.90	3.60	0.30		18.00	0.150	2.80		
RS1			**S-354**			0.00	0.25	0.00										8.01	8.00	0.00		18.00	0.021	0.94		
				MHP-8	13.12	0.00	0.00	0.00	11.35	0.00	7.12	0.23	0.00	**1.66**	0.00	8.60	**0.59**	3.60	3.50		1		0.762		9.93	
945+24.97	15.00	Lt.	MFE_3			0.00	0.00	0.00					0.00					2.10	2.00	0.10		18.00	0.150	5.62		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_3_3** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 — INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE — UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) / RISE / SPAN	SLOPE % / HGL / PHYS / MIN	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS
RF			**14-10**			0.33	0.33	0.32										8.73	8.28	0.45		10.00	0.997	4.34		ZONE: 6
				PIER	44.70	0.00	0.00	0.00	10.00	0.00	7.47	0.32	0.00	**2.37**	0.00	70.06	**61.34**	5.63	2.83		1		6.264		5.94	FREQ. (Yrs): 10
7028+43.00	10.50	Lt.	MFE_3			0.00	0.00	0.00					0.00					4.80	2.00	2.80		10.00	0.328	10.89		MANNINGS n: 0.0120
																										TAILWEL (ft): 7.99

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_3_4** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
RE			5-3			0.40	0.40	0.38										8.39	8.19	0.21		12.00	0.518	3.57	
				PIER	39.60	0.00	0.00	0.00	10.00	0.00	7.47	0.38	0.00	**2.84**	0.00	47.30	**38.91**	8.20	3.00		1		13.131		14.28
6011+45.20	11.50	Rt.	MFE_3			0.00	0.00	0.00					0.00					7.20	2.00	5.20		12.00	0.257	17.96	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILW EL (ft):	7.99

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

 T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01**
Description: **I-4/SELMON EXPRESSWAY**
County: **HILLSBOROUGH**
Organization **PBSJ - Tampa**
Network: **SMFE_3_5**
State Road: **SR 400**
Designed by **Divya Pasupuleti** Date: 4/15/2008
Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
RJ1			**S-360**			0.27	0.27	0.26										8.09	8.04	0.05		10.00	0.651	3.51	
				?BWI21	8.00	0.00	0.00	0.00	10.00	0.04	7.47	0.26	0.00	**1.92**	0.00	45.53	**37.44**	6.33	6.23		1		1.250		2.65
52+00.00	18.88	Lt.	S-361			0.00	0.00	0.00					0.00					5.50	5.40	0.10		10.00	0.328	4.87	
RJ1			**S-361**			0.00	0.27	0.00										8.04	8.01	0.03		18.00	0.028	1.08	
				MHP-8	100.90	0.00	0.00	0.00	10.04	0.00	7.46	0.26	0.00	**1.91**	0.00	9.42	**1.38**	5.70	3.50		1		2.180		16.80
52+00.00	30.00	Lt.	MFE_3			0.00	0.00	0.00					0.00					4.20	2.00	2.20		18.00	0.150	9.51	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILW EL (ft):	7.99

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_3_6** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW SUMM BASE	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE CROWN FLOWLINE			# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL.	FULL FLOW CAP.	NOTES & REMARKS
ALIGNMENT NAME			UPPER			C=	0.95																			ZONE: 6
						C=	0.20																			FREQ. (Yrs): 10
						C=	0.00																			MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	UPPER (ft.)	LOWER (ft.)	FALL (ft.)				(fps)	(cfs)	TAILW EL (ft): 7.99
RB			10-10			0.18	0.18	0.17										16.65	16.17	0.48		8.00	1.032	3.75		
				PIER	46.42	0.00	0.00	0.00	10.00	0.21	7.47	0.17	0.00	**1.28**	0.00	101.00	**84.35**	16.27	16.17		1		0.215		0.58	
8078+23.40	11.30	Lt	S-364			0.00	0.00	0.00					0.00					15.60	15.50	0.10		8.00	0.442	1.71		
RN			15-9			0.22	0.22	0.21										8.60	8.25	0.34		8.00	1.541	4.58		
				PIER	22.31	0.00	0.00	0.00	10.00	0.08	7.47	0.21	0.00	**1.56**	0.00	70.81	**62.21**	2.87	2.77		1		0.448		0.84	
835+75.00	6.30	Lt	S-363			0.00	0.00	0.00					0.00					2.20	2.10	0.10		8.00	0.442	2.47		
RD			16-10			0.19	0.19	0.18										9.82	9.61	0.21		8.00	1.149	3.96		
				PIER	18.50	0.00	0.00	0.00	10.00	0.08	7.47	0.18	0.00	**1.35**	0.00	42.71	**32.89**	4.07	3.97		1		0.541		0.92	
5064+40.23	10.00	Rt.	S-372			0.00	0.00	0.00					0.00					3.40	3.30	0.10		8.00	0.442	2.71		
RD			16-11			0.19	0.19	0.18										10.01	9.73	0.28		8.00	1.149	3.96		
				PIER	23.96	0.00	0.00	0.00	10.00	0.10	7.47	0.18	0.00	**1.35**	0.00	38.25	**28.24**	3.87	3.77		1		0.417		0.81	
5066+45.12	10.00	Rt.	S-374			0.00	0.00	0.00					0.00					3.20	3.10	0.10		8.00	0.442	2.38		
RD			16-9			0.50	0.50	0.47										9.52	9.22	0.30		12.00	0.810	4.46		
				PIER	36.77	0.00	0.00	0.00	10.00	0.14	7.47	0.47	0.00	**3.55**	0.00	44.16	**34.64**	2.80	2.70		1		0.272		2.06	
5062+35.23	11.73	Rt.	S-370			0.00	0.00	0.00					0.00					1.80	1.70	0.10		12.00	0.257	2.58		
RN			S-363			0.00	2.91	0.00										8.25	8.16	0.10		42.00	0.083	3.27		
				MH8J60	115.02	0.00	0.00	0.00	14.90	0.00	6.40	2.76	0.00	**31.46**	0.00	8.50	**0.25**	4.60	3.30		1		1.130		115.88	
835+50.00	5.90	Lt.	MFE_3			0.00	0.00	0.00					13.77					1.10	-0.20	1.30		42.00	0.048	12.04		
RB			S-364			0.00	2.69	0.00										8.51	8.25	0.25		36.00	0.177	4.30		
				MH8J60	143.86	0.00	0.00	0.00	14.34	0.56	6.50	2.55	0.00	**30.37**	0.00	19.30	**10.79**	4.40	4.30		1		0.070		19.05	
8078+28.26	60.00	Lt.	S-363			0.00	0.00	0.00					13.77					1.40	1.30	0.10		36.00	0.059	2.70		
CL			S-365			0.34	0.74	0.32										29.81	29.71	0.10		18.00	0.307	3.97		
				?BWI21	32.57	0.00	0.00	0.00	11.34	0.14	7.12	0.70	0.00	**5.02**	0.00	34.30	**4.49**	30.30	30.20		1		0.307		6.31	
692+94.00	61.88	Lt.	S-366			0.00	0.00	0.00					0.00					28.80	28.70	0.10		18.00	0.150	3.57		
RJ1			S-366			0.15	0.89	0.15										15.86	15.00	0.86		12.00	2.340	7.58		
				GUT-S	36.58	0.00	0.00	0.00	11.48	0.08	7.09	0.85	0.00	**6.03**	0.00	33.43	**17.57**	15.10	15.00		1		0.273		2.06	
54+97.00	21.12	Lt.	S-364			0.00	0.00	0.00					0.00					14.10	14.00	0.10		12.00	0.257	2.59		
RD			S-370			0.00	1.22	0.00										9.22	8.86	0.37		18.00	0.478	4.45		
				MHP-8	76.47	0.00	0.00	0.00	12.86	0.29	6.79	1.16	0.00	**7.87**	0.00	9.50	**0.28**	3.20	3.10		1		0.131		4.12	
5062+35.00	50.00	Rt.	S-376			0.00	0.00	0.00					0.00					1.70	1.60	0.10		18.00	0.150	2.33		
RD			S-371			0.00	0.53	0.00										9.72	9.61	0.12		18.00	0.104	2.08		
				40x40	112.48	0.00	0.00	0.00	10.66	0.90	7.29	0.50	0.00	**3.67**	0.00	12.10	**2.38**	4.50	4.30		1		0.178		4.80	
5065+51.00	11.63	Rt.	S-372			0.00	0.00	0.00					0.00					3.00	2.80	0.20		18.00	0.150	2.72		
RJ2			S-371A			0.39	0.39	0.37										8.89	8.86	0.04		18.00	0.060	1.58		
				GUT-S	61.25	0.00	0.00	0.00	10.00	0.51	7.47	0.37	0.00	**2.80**	0.00	32.67	**23.78**	5.30	5.20		1		0.163		4.60	
57+29.00	6.13	Lt.	S-376			0.00	0.00	0.00					0.00					3.80	3.70	0.10		18.00	0.150	2.60		
RD			S-372			0.00	0.72	0.00										9.61	9.22	0.39		18.00	0.181	2.74		
				MHP-8	213.31	0.00	0.00	0.00	11.56	1.30	7.07	0.68	0.00	**4.84**	0.00	18.28	**8.67**	4.30	4.00		1		0.141		4.27	
5064+40.00	30.00	Rt.	S-370			0.00	0.00	0.00					0.00					2.80	2.50	0.30		18.00	0.150	2.41		
RJ2			S-373			0.34	0.34	0.32										9.74	9.72	0.02		18.00	0.045	1.36		
				GUT-S	36.76	0.00	0.00	0.00	10.00	0.31	7.47	0.32	0.00	**2.41**	0.00	30.86	**21.12**	9.10	9.00		1		0.272		5.94	
61+16.39	6.13	Lt.	S-371			0.00	0.00	0.00					0.00					7.60	7.50	0.10		18.00	0.150	3.36		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01**
Description: **I-4/SELMON EXPRESSWAY**

County: **HILLSBOROUGH**
Organization **PBSJ - Tampa**

Network: **SMFE_3_6**
State Road: **SR 400**

Designed by **Divya Pasupuleti** Date: 4/15/2008
Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			#	PIPE SIZE	SLOPE	ACTUAL VEL.	FULL FLOW CAP.	NOTES & REMARKS
						C= 0.95												CROWN			B	(in.)	%			ZONE: 6
						C= 0.20												FLOWLINE			R	RISE	HGL	PHYS.		FREQ. (Yrs): 10
ALIGNMENT NAME			UPPER			C= 0.00							SUMM BASE								L		PHYS	VEL.		MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	UPPER (ft.)	LOWER (ft.)	FALL (ft.)	S	SPAN	MIN.	(fps)	(cfs)	TAILW EL (ft): 7.99
RD			**S-374**			0.00	0.19	0.00										9.73	9.72	0.01		18.00	0.014	0.76		
				MHP-8	66.99	0.00	0.00	0.00	10.10	0.56	7.44	0.18	0.00	**1.34**	0.00	10.00	**0.27**	4.60	4.50		1		0.149		4.40	
5066+20.00	9.00	Rt.	S-371			0.00	0.00	0.00					0.00					3.10	3.00	0.10		18.00	0.150	2.49		
RJ2			**S-376**			0.00	1.61	0.00										8.86	8.63	0.23		24.00	0.177	3.28		
				MHP-8	128.51	0.00	0.00	0.00	13.15	0.65	6.73	1.53	0.00	**10.32**	0.00	9.10	**0.24**	3.60	3.50		1		0.078		6.84	
57+25.00	70.00	Lt.	S-377			0.00	0.00	0.00					0.00					1.60	1.50	0.10		24.00	0.102	2.18		
RJ1			**S-377**			0.00	1.61	0.00										8.63	8.51	0.12		36.00	0.109	3.38		
				MH8J50	110.68	0.00	0.00	0.00	13.80	0.55	6.60	1.53	0.00	**23.89**	0.00	9.00	**0.37**	4.50	4.40		1		0.090		21.72	
55+95.00	83.50	Lt.	S-364			0.00	0.00	0.00					13.77					1.50	1.40	0.10		36.00	0.059	3.07		
CL			**S-384**			0.40	0.40	0.38										30.09	29.81	0.28		18.00	0.117	3.00		
				?BW21	241.48	0.00	0.00	0.00	10.00	1.34	7.47	0.38	0.00	**2.84**	0.00	35.93	**5.84**	30.80	30.30		1		0.207		5.18	
690+50.00	54.58	Lt.	S-365			0.00	0.00	0.00					0.00					29.30	28.80	0.50		18.00	0.150	2.93		
RJ1			**S-385**			0.00	0.00	0.00										17.92	8.63	9.30		12.00	12.203	17.31		
				MHP-8	76.18	0.00	0.00	0.00	10.00	0.07	7.47	0.00	13.77	**13.77**	0.00	32.96	**15.03**	4.30	4.20		1		0.131		1.43	
56+03.84	6.32	Lt.	S-377			0.00	0.00	0.00					13.77					3.30	3.20	0.10		12.00	0.257	1.80		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **RL_EX132** Designed by **Divia Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

NOTES & REMARKS: ZONE: 6 | FREQ. (Yrs): 10 | MANNINGS n: 0.0120 | TAILWEL (ft): 7.54

AREAS (Ac): C= 0.95, C= 0.20, C= 0.00

LOCATION OF UPPER END: ALIGNMENT NAME / STATION, DIST, SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS INC	AREAS TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
RF	14-7			0.14	0.14	0.13										19.57	7.60	11.97		8.00	28.335	14.03	
		PIER	42.25	0.00	0.00	0.00	10.00	0.05	7.47	0.13	0.00	**0.96**	0.00	74.24	**54.67**	20.07	7.17		1		30.532		6.95
7023+73.00 10.50 Lt.	S-352C			0.00	0.00	0.00					0.00					19.40	6.50	12.90		8.00	0.442	20.39	
RK	6-3			0.25	0.25	0.23										8.49	7.85	0.64		8.00	1.911	5.10	
		PIER	33.60	0.00	0.00	0.00	10.00	0.11	7.47	0.23	0.00	**1.74**	0.00	68.62	**60.13**	2.77	2.67		1		0.298		0.69
529+00.00 6.90 Rt.	S-340			0.00	0.00	0.00					0.00					2.10	2.00	0.10		8.00	0.442	2.01	
RJ1	8-2			0.15	0.15	0.14										14.35	14.17	0.19		8.00	0.716	3.12	
		PIER	25.86	0.00	0.00	0.00	10.00	0.14	7.47	0.14	0.00	**1.06**	0.00	69.56	**55.21**	14.27	14.17		1		0.387		0.78
48+15.68 7.08 Lt.	S-338			0.00	0.00	0.00					0.00					13.60	13.50	0.10		8.00	0.442	2.29	
RS1	9-20			0.10	0.10	0.10										11.09	7.75	3.34		6.00	6.163	10.55	
		PIER	54.16	0.00	0.00	0.00	10.00	0.09	7.47	0.09	0.00	**0.71**	0.00	86.50	**75.41**	11.40	3.30		1		14.955		2.35
941+40.00 8.50 Rt.	S-337			0.00	0.00	0.00					0.00					10.90	2.80	8.10		6.00	0.649	11.97	
RN	EX-121			0.00	0.63	0.00										7.59	7.59	0.01		36.00	0.003	0.55	
		MHP-8	192.14	0.00	0.00	0.00	14.46	1.60	6.48	0.60	0.00	**3.88**	0.00	10.44	**2.85**	2.00	1.50		1		0.260		36.86
830+77.13 15.93 Lt.	EX-124			0.00	0.00	0.00					0.00					-1.00	-1.50	0.50		36.00	0.059	5.21	
CL	EX-124			0.00	0.63	0.00										7.59	7.56	0.03		36.00	0.008	0.94	
		MHP-8	304.01	0.00	0.00	0.00	16.06	2.53	6.21	0.60	2.91	**6.62**	0.00	9.65	**2.06**	1.50	1.30		1		0.066		18.53
690+65.00 148.00 Rt.	EX-127			0.00	0.00	0.00					2.91					-1.50	-1.70	0.20		36.00	0.059	2.62	
CL	EX-127			0.00	0.63	0.00										7.56	7.55	0.01		36.00	0.008	0.91	
		MHP-8	100.51	0.00	0.00	0.00	18.59	0.84	5.83	0.60	0.00	**6.40**	0.00	10.74	**3.18**	1.30	1.00		1		0.297		39.41
693+74.00 153.00 Rt.	EX-128			0.00	0.00	0.00					2.91					-1.70	-2.00	0.30		36.00	0.059	5.58	
CL	EX-128			0.00	0.63	0.00										7.55	7.55	0.00		42.00	0.003	0.66	
		MHP-8	147.64	0.00	0.00	0.00	19.43	0.00	5.72	0.60	0.00	**6.34**	0.00	8.76	**1.21**	1.50	1.50		1		0.001		2.84
694+78.00 154.00 Rt.	L_EX13			0.00	0.00	0.00					2.91					-2.00	-2.00	0.00		42.00	0.048	0.29	
RS1	S-337			0.00	0.50	0.00										7.75	7.66	0.09		18.00	0.083	1.85	
		MHP-8	103.13	0.00	0.00	0.00	12.08	0.86	6.96	0.47	0.00	**3.27**	0.00	9.08	**1.33**	3.20	3.10		1		0.097		3.54
941+95.00 10.50 Rt.	S-343			0.00	0.00	0.00					0.00					1.70	1.60	0.10		18.00	0.150	2.01	
RJ1	S-338			0.00	0.15	0.00										12.76	7.83	4.93		18.00	8.063	10.65	
		MHP-8	61.12	0.00	0.00	0.00	10.14	0.10	7.43	0.14	0.00	**1.06**	0.00	18.80	**6.04**	14.10	5.00		1		14.889		43.91
48+35.53 7.46 Lt.	S-341			0.00	0.00	0.00					0.00					12.60	3.50	9.10		18.00	0.150	24.85	
RK	S-340			0.00	0.25	0.00										7.85	7.83	0.02		18.00	0.023	0.98	
		MHP-8	94.18	0.00	0.00	0.00	10.11	0.78	7.44	0.23	0.00	**1.73**	0.00	8.00	**0.15**	3.50	3.40		1		0.106		3.71
529+00.00 42.00 Rt.	S-341			0.00	0.00	0.00					0.00					2.00	1.90	0.10		18.00	0.150	2.10	
RJ1	S-341			0.00	0.40	0.00										7.83	7.75	0.08		18.00	0.057	1.54	
		MHP-8	141.73	0.00	0.00	0.00	10.89	1.18	7.23	0.38	0.00	**2.71**	0.00	8.20	**0.37**	3.40	3.20		1		0.141		4.27
48+94.00 10.00 Lt.	S-337			0.00	0.00	0.00					0.00					1.90	1.70	0.20		18.00	0.150	2.42	
RF	S-343			0.00	0.50	0.00										7.66	7.64	0.03		18.00	0.078	1.80	
		MHP-8	35.09	0.00	0.00	0.00	12.94	0.29	6.77	0.47	0.00	**3.18**	0.00	9.00	**1.34**	3.10	2.80		1		0.855		10.52
7021+86.00 28.50 Lt.	S-344			0.00	0.00	0.00					0.00					1.60	1.30	0.30		18.00	0.150	5.95	
RF	S-344			0.00	0.50	0.00										7.64	7.59	0.04		18.00	0.077	1.79	
		MHP-8	57.61	0.00	0.00	0.00	13.23	0.48	6.71	0.47	0.00	**3.16**	0.00	9.80	**2.16**	2.80	2.50		1		0.521		8.21
7022+00.00 7.00 Rt.	S-345			0.00	0.00	0.00					0.00					1.30	1.00	0.30		18.00	0.150	4.65	

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01**
Description: **I-4/SELMON EXPRESSWAY**
County: **HILLSBOROUGH**
Organization **PBSJ - Tampa**
Network: **RL_EX132**
State Road: **SR 400**
Designed by **Divia Pasupuleti** Date: 4/3/2008
Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 / INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE: UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILW EL (ft): 7.54
RF			**S-345**			0.00	0.50	0.00										7.59	7.59	0.00		36.00	0.002	0.44		
				MHP-8	89.88	0.00	0.00	0.00	13.71	0.75	6.62	0.47	0.00	**3.11**	0.00	9.26	**1.67**	2.00	2.00		1		0.001		2.41	
7022+60.00	8.50	Rt.	EX-121			0.00	0.00	0.00					0.00					-1.00	-1.00	0.00		36.00	0.059	0.34		
RF			**S-352C**			0.00	0.14	0.00										7.60	7.59	0.00		18.00	0.007	0.54		
				MHP-8	61.88	0.00	0.00	0.00	10.05	0.52	7.45	0.13	0.00	**0.96**	0.00	11.50	**3.90**	7.10	7.00		1		0.162		4.57	
7023+29.00	6.00	Lt.	EX-121			0.00	0.00	0.00					0.00					5.60	5.50	0.10		18.00	0.150	2.59		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

B-35

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **G_RL_4D1** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END ALIGNMENT NAME STATION	DIST	SD	STR. NO. UPPER LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 C= 0.20 C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILW EL (ft): 7.54
RB			**10-13**			0.26	0.26	0.25										8.06	7.98	0.08		10.00	0.618	3.42		
				PIER	12.50	0.00	0.00	0.00	10.00	0.06	7.47	0.25	0.00	**1.87**	0.00	65.74	**57.68**	7.13	7.03		1		0.800		2.12	
8085+92.74	10.00	Lt.	S-378			0.00	0.00	0.00					0.00					6.30	6.20	0.10		10.00	0.328	3.89		
RB			**10-14**			0.24	0.24	0.23										9.07	8.02	1.05		8.00	1.788	4.93		
				PIER	58.85	0.00	0.00	0.00	10.00	0.20	7.47	0.23	0.00	**1.68**	0.00	54.13	**45.06**	0.47	0.37		1		0.170		0.52	
8088+30.42	10.27	Lt.	S-515			0.00	0.00	0.00					0.00					-0.20	-0.30	0.10		8.00	0.442	1.52		
RB			**EX-152**			0.67	0.67	0.64										8.39	7.95	0.44		10.00	4.010	8.71		
				?BWI21	10.90	0.00	0.00	0.00	10.00	0.02	7.47	0.64	0.00	**4.75**	0.00	33.12	**24.73**	6.63	6.53		1		0.917		2.27	
8085+53.29	37.23	Lt.	S-380			0.00	0.00	0.00					0.00					5.80	5.70	0.10		10.00	0.328	4.17		
RB			**S-378**			0.00	0.50	0.00										7.98	7.95	0.03		18.00	0.087	1.89		
				MHP-8	36.72	0.00	0.00	0.00	11.67	0.31	7.05	0.47	0.00	**3.35**	0.00	10.31	**2.33**	0.90	0.80		1		0.272		5.94	
8085+93.00	24.00	Lt.	S-380			0.00	0.00	0.00					0.00					-0.60	-0.70	0.10		18.00	0.150	3.36		
RB			**S-380**			0.00	1.17	0.00										7.95	7.84	0.11		18.00	0.465	4.39		
				MHP-8	23.73	0.00	0.00	0.00	11.98	0.00	6.98	1.11	0.00	**7.76**	0.00	10.31	**2.37**	0.80	0.70		1		0.421		7.39	
8085+53.29	23.20	Lt.	S-386			0.00	0.00	0.00					0.00					-0.70	-0.80	0.10		18.00	0.150	4.18		
RB			**S-515**			0.00	0.24	0.00										8.02	7.98	0.04		18.00	0.022	0.94		
				MHP-8	176.47	0.00	0.00	0.00	10.20	1.47	7.41	0.23	0.00	**1.67**	0.00	8.30	**0.28**	1.20	0.90		1		0.170		4.69	
8087+72.44	27.01	Lt.	S-378			0.00	0.00	0.00					0.00					-0.30	-0.60	0.30		18.00	0.150	2.66		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

 T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01**
Description: **I-4/SELMON EXPRESSWAY**
County: **HILLSBOROUGH**
Organization **PBSJ - Tampa**
Network: **SMFF_1_1**
State Road: **SR 400**
Designed by **Divya Pasupuleti** Date: 4/15/2008
Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END ALIGNMENT NAME STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
RN			**15-12**			0.34	0.34	0.32										6.37	6.21	0.15		12.00	0.374	3.03	
				PIER	40.72	0.00	0.00	0.00	10.00	0.00	7.47	0.32	0.00	**2.41**	0.00	54.14	**47.77**	6.20	1.00		1		12.770		14.09
843+25.02	3.53	Lt.	MFF_1			0.00	0.00	0.00					0.00					5.20	0.00	5.20		12.00	0.257	17.71	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILWEL (ft):	6.07

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILWEL (ft): 6.07
RE			1-2B			0.27	0.27	0.26										9.55	9.12	0.43		8.00	2.321	5.62		
				PIER	18.50	0.00	0.00	0.00	10.00	0.05	7.47	0.26	0.00	**1.92**	0.00	51.76	**42.21**	9.57	8.57		1		5.404		2.92	
6031+22.09	41.60	Rt.	S-466D			0.00	0.00	0.00					0.00					8.90	7.90	1.00		8.00	0.442	8.58		
RE			1-3			0.16	0.16	0.15										9.86	9.39	0.47		8.00	2.596	9.23		
				PIER	18.00	0.00	0.00	0.00	10.00	0.03	7.47	0.15	0.00	**1.14**	0.00	52.79	**42.94**	10.27	8.87		1		7.779		3.51	
6032+91.06	20.12	Rt.	S-465E			0.00	0.00	0.00					0.00					9.60	8.20	1.40		8.00	0.442	10.29		
RB			10-3			0.17	0.17	0.16										8.47	8.17	0.30		8.00	0.915	3.53		
				PIER	33.18	0.00	0.00	0.00	10.00	0.16	7.47	0.16	0.00	**1.20**	0.00	50.91	**42.44**	8.27	8.17		1		0.301		0.69	
8063+87.88	9.50	Lt.	S-471D			0.00	0.00	0.00					0.00					7.60	7.50	0.10		8.00	0.442	2.03		
RB			10-4			0.19	0.19	0.18										7.83	7.57	0.26		8.00	1.149	3.96		
				PIER	23.00	0.00	0.00	0.00	10.00	0.10	7.47	0.18	0.00	**1.35**	0.00	57.77	**49.93**	6.87	5.57		1		5.652		2.99	
8065+72.71	10.00	Lt.	S-472D			0.00	0.00	0.00					0.00					6.20	4.90	1.30		8.00	0.442	8.77		
RB			10-5			0.17	0.17	0.16										7.26	7.08	0.18		8.00	0.920	3.54		
				PIER	19.91	0.00	0.00	0.00	10.00	0.09	7.47	0.16	0.00	**1.21**	0.00	68.68	**61.42**	6.37	3.67		1		13.560		4.63	
8067+89.74	10.00	Lt.	S-475B			0.00	0.00	0.00					0.00					5.70	3.00	2.70		8.00	0.442	13.59		
RF			11-2B			0.52	0.52	0.49										10.10	8.55	1.55		8.00	8.610	10.83		
				PIER	18.00	0.00	0.00	0.00	10.00	0.03	7.47	0.49	0.00	**3.69**	0.00	51.60	**41.50**	7.77	6.57		1		6.666		3.25	
7045+04.98	14.71	Rt.	S-468B			0.00	0.00	0.00					0.00					7.10	5.90	1.20		8.00	0.442	9.53		
RF			11-3			0.17	0.17	0.16										9.14	8.76	0.38		8.00	2.017	10.69		
				PIER	19.00	0.00	0.00	0.00	10.00	0.03	7.47	0.16	0.00	**1.21**	0.00	52.68	**43.54**	9.57	7.57		1		10.526		4.08	
7047+05.98	1.43	Lt.	S-467B			0.00	0.00	0.00					0.00					8.90	6.90	2.00		8.00	0.442	11.97		
RF			11-4			0.16	0.16	0.15										10.16	9.76	0.40		8.00	2.162	5.81		
				PIER	18.51	0.00	0.00	0.00	10.00	0.05	7.47	0.15	0.00	**1.14**	0.00	53.21	**43.04**	10.47	10.07		1		2.162		1.85	
7048+75.98	3.10	Lt.	S-466B			0.00	0.00	0.00					0.00					9.80	9.40	0.40		8.00	0.442	5.43		
RF			11-5			0.13	0.13	0.12										10.36	9.66	0.70		8.00	5.000	7.30		
				PIER	14.00	0.00	0.00	0.00	10.00	0.03	7.47	0.12	0.00	**0.92**	0.00	53.05	**42.69**	10.77	10.07		1		5.000		2.81	
7050+41.48	4.54	Lt.	S-465C			0.00	0.00	0.00					0.00					10.10	9.40	0.70		8.00	0.442	8.25		
RD			12-2			0.21	0.21	0.20										9.56	9.39	0.18		8.00	1.404	4.37		
				PIER	12.50	0.00	0.00	0.00	10.00	0.05	7.47	0.20	0.00	**1.49**	0.00	50.90	**41.33**	8.57	8.47		1		0.800		1.12	
5038+45.13	18.10	Rt.	S-465A			0.00	0.00	0.00					0.00					7.90	7.80	0.10		8.00	0.442	3.30		
RD			12-3			0.24	0.24	0.23										10.07	9.87	0.20		8.00	2.353	6.49		
				PIER	8.50	0.00	0.00	0.00	10.00	0.02	7.47	0.23	0.00	**1.70**	0.00	50.35	**40.28**	10.27	10.07		1		2.353		1.93	
5040+28.13	19.31	Rt.	S-466A			0.00	0.00	0.00					0.00					9.60	9.40	0.20		8.00	0.442	5.66		
RD			12-4			0.25	0.25	0.24										9.88	8.78	1.10		8.00	5.963	12.67		
				PIER	18.50	0.00	0.00	0.00	10.00	0.02	7.47	0.24	0.00	**1.77**	0.00	49.88	**40.00**	10.27	7.77		1		13.514		4.62	
5042+09.13	21.59	Rt.	S-467A			0.00	0.00	0.00					0.00					9.60	7.10	2.50		8.00	0.442	13.57		
RD			12-5B			0.31	0.31	0.29										10.96	8.58	2.38		8.00	13.588	17.41		
				PIER	17.50	0.00	0.00	0.00	10.00	0.02	7.47	0.29	0.00	**2.20**	0.00	49.38	**38.42**	11.37	6.57		1		27.429		6.58	
5044+10.13	9.46	Rt.	S-468A			0.00	0.00	0.00					0.00					10.70	5.90	4.80		8.00	0.442	19.33		
RN			13-3B			0.27	0.27	0.26										8.25	7.85	0.40		8.00	2.321	5.62		
				PIER	17.41	0.00	0.00	0.00	10.00	0.05	7.47	0.26	0.00	**1.92**	0.00	49.25	**41.00**	7.97	6.17		1		10.341		4.04	
848+30.01	10.00	Rt.	S-471B			0.00	0.00	0.00					0.00					7.30	5.50	1.80		8.00	0.442	11.87		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

AREAS (Ac): C= 0.95, C= 0.20, C= 0.00

NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILWEL (ft): 6.07

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) INC	AREAS (Ac) TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS
RF			14-14			0.18	0.18	0.17										7.21	7.03	0.18		8.00	1.032	3.75		
				PIER	17.30	0.00	0.00	0.00	10.00	0.08	7.47	0.17	0.00	**1.28**	0.00	53.23	**46.02**	5.77	3.17		1		15.028		4.87	
7036+28.00	10.00	Lt.	S-475A			0.00	0.00	0.00					0.00					5.10	2.50	2.60		8.00	0.442	14.31		
RF			14-15			0.36	0.36	0.34										8.46	7.57	0.89		8.00	4.079	7.45		
				PIER	21.78	0.00	0.00	0.00	10.00	0.05	7.47	0.34	0.00	**2.54**	0.00	50.60	**42.15**	6.97	5.37		1		7.348		3.41	
7038+54.45	10.00	Lt.	S-472D			0.00	0.00	0.00					0.00					6.30	4.70	1.60		8.00	0.442	10.00		
RF			14-16			0.15	0.15	0.14										8.18	7.97	0.21		8.00	0.690	3.07		
				PIER	31.00	0.00	0.00	0.00	10.00	0.17	7.47	0.14	0.00	**1.04**	0.00	50.69	**42.51**	8.07	7.97		1		0.323		0.71	
7040+36.89	8.72	Lt.	S-471C			0.00	0.00	0.00					0.00					7.40	7.30	0.10		8.00	0.442	2.10		
RN			15-13			0.26	0.26	0.25										7.82	7.51	0.31		8.00	2.152	5.41		
				PIER	14.33	0.00	0.00	0.00	10.00	0.04	7.47	0.25	0.00	**1.84**	0.00	50.17	**42.35**	3.57	3.47		1		0.698		1.05	
845+31.50	1.33	Rt.	S-473B			0.00	0.00	0.00					0.00					2.90	2.80	0.10		8.00	0.442	3.08		
RN			15-14			0.28	0.28	0.26										8.16	7.70	0.47		8.00	2.408	5.73		
				PIER	19.48	0.00	0.00	0.00	10.00	0.06	7.47	0.26	0.00	**1.95**	0.00	49.07	**40.90**	7.27	5.97		1		6.674		3.25	
846+71.65	19.18	Rt.	S-472B			0.00	0.00	0.00					0.00					6.60	5.30	1.30		8.00	0.442	9.53		
RD			16-1			0.17	0.17	0.16										8.00	7.85	0.15		8.00	0.909	3.52		
				PIER	16.08	0.00	0.00	0.00	10.00	0.08	7.47	0.16	0.00	**1.20**	0.00	47.80	**39.80**	8.07	6.17		1		11.813		4.32	
5048+78.23	12.51	Rt.	S-471A			0.00	0.00	0.00					0.00					7.40	5.50	1.90		8.00	0.442	12.68		
RD			16-2			0.16	0.16	0.15										7.87	7.70	0.17		8.00	0.815	3.33		
				PIER	20.61	0.00	0.00	0.00	10.00	0.10	7.47	0.15	0.00	**1.14**	0.00	46.91	**39.04**	7.67	6.37		1		6.308		3.16	
5050+35.12	10.00	Rt.	S-472A			0.00	0.00	0.00					0.00					7.00	5.70	1.30		8.00	0.442	9.27		
RD			16-3			0.17	0.17	0.16										7.82	7.52	0.30		8.00	0.920	3.54		
				PIER	32.19	0.00	0.00	0.00	10.00	0.15	7.47	0.16	0.00	**1.21**	0.00	46.78	**38.97**	6.67	5.37		1		4.039		2.53	
5052+13.23	10.00	Rt.	S-473A			0.00	0.00	0.00					0.00					6.00	4.70	1.30		8.00	0.442	7.42		
RB			2-2			0.22	0.22	0.21										10.11	9.38	0.73		8.00	3.931	9.93		
				PIER	18.50	0.00	0.00	0.00	10.00	0.03	7.47	0.21	0.00	**1.56**	0.00	50.12	**40.01**	10.47	9.07		1		7.568		3.46	
8053+78.24	3.80	Lt.	S-465D			0.00	0.00	0.00					0.00					9.80	8.40	1.40		8.00	0.442	10.15		
RB			2-3B			0.28	0.28	0.27										9.66	9.10	0.56		8.00	3.031	10.35		
				PIER	18.50	0.00	0.00	0.00	10.00	0.03	7.47	0.27	0.00	**1.99**	0.00	49.75	**40.09**	9.97	8.67		1		7.028		3.33	
8055+47.74	12.59	Lt.	S-466C			0.00	0.00	0.00					0.00					9.30	8.00	1.30		8.00	0.442	9.78		
RE			3-1B			0.28	0.28	0.27										9.26	8.78	0.48		8.00	2.567	10.17		
				PIER	18.74	0.00	0.00	0.00	10.00	0.03	7.47	0.27	0.00	**1.99**	0.00	51.82	**42.56**	9.57	8.27		1		6.938		3.31	
6029+51.35	50.68	Rt.	S-467E			0.00	0.00	0.00					0.00					8.90	7.60	1.30		8.00	0.442	9.72		
RB			3-1C			0.34	0.34	0.32										9.45	8.76	0.68		8.00	3.681	7.08		
				PIER	18.50	0.00	0.00	0.00	10.00	0.04	7.47	0.32	0.00	**2.41**	0.00	49.40	**39.96**	6.57	6.47		1		0.541		0.92	
8057+17.74	13.04	Lt.	S-467C			0.00	0.00	0.00					0.00					5.90	5.80	0.10		8.00	0.442	2.71		
RE			3-2A			0.07	0.07	0.07										8.62	8.51	0.12		6.00	0.667	2.53		
				PIER	17.52	0.00	0.00	0.00	10.00	0.12	7.47	0.07	0.00	**0.50**	0.00	51.43	**42.81**	7.50	6.10		1		7.991		1.72	
6027+49.06	25.15	Rt.	S-468D			0.00	0.00	0.00					0.00					7.00	5.60	1.40		6.00	0.649	8.75		
RSB			3-2B			0.18	0.18	0.17										8.68	8.51	0.18		8.00	1.020	3.73		
				PIER	17.49	0.00	0.00	0.00	10.00	0.08	7.47	0.17	0.00	**1.27**	0.00	50.22	**41.53**	7.67	7.17		1		2.858		2.13	
76+47.26	17.17	Lt.	S-440			0.00	0.00	0.00					0.00					7.00	6.50	0.50		8.00	0.442	6.24		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

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Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS
																										ZONE: 6
																										FREQ. (Yrs): 10
																										MANNINGS n: 0.0120
																										TAILW EL (ft): 6.07
RB			3-2C			0.46	0.46	0.43										9.65	8.50	1.15		8.00	6.592	9.47		
				PIER	17.50	0.00	0.00	0.00	10.00	0.03	7.47	0.43	0.00	**3.23**	0.00	48.80	**39.15**	7.77	5.37		1		13.716		4.66	
8059+18.74	6.25	Rt.	S-468C			0.00	0.00	0.00					0.00					7.10	4.70	2.40		8.00	0.442	13.67		
RE			4-2B			0.53	0.53	0.50										8.56	7.19	1.37		8.00	8.944	11.04		
				PIER	15.32	0.00	0.00	0.00	10.00	0.02	7.47	0.50	0.00	**3.76**	0.00	48.41	**39.85**	4.37	3.97		1		2.611		2.03	
6017+89.00	10.00	Rt.	S-475C			0.00	0.00	0.00					0.00					3.70	3.30	0.40		8.00	0.442	5.96		
RE			4-3B			0.36	0.36	0.34										8.17	7.29	0.88		8.00	4.127	7.50		
				PIER	21.31	0.00	0.00	0.00	10.00	0.05	7.47	0.34	0.00	**2.55**	0.00	49.16	**40.99**	5.17	5.07		1		0.469		0.86	
6020+00.00	11.00	Rt.	S-474C			0.00	0.00	0.00					0.00					4.50	4.40	0.10		8.00	0.442	2.53		
RE			4-4			0.21	0.21	0.20										8.07	7.84	0.23		8.00	1.404	4.37		
				PIER	16.46	0.00	0.00	0.00	10.00	0.06	7.47	0.20	0.00	**1.49**	0.00	50.43	**42.36**	5.87	5.37		1		3.038		2.19	
6022+74.00	2.80	Rt.	S-471F			0.00	0.00	0.00					0.00					5.20	4.70	0.50		8.00	0.442	6.43		
RS1			9-27			0.21	0.21	0.20										7.63	7.24	0.38		8.00	1.395	4.36		
				PIER	27.54	0.00	0.00	0.00	10.00	0.11	7.47	0.20	0.00	**1.48**	0.00	56.62	**48.99**	4.97	4.87		1		0.363		0.76	
955+19.97	10.96	Rt.	S-444			0.00	0.00	0.00					0.00					4.30	4.20	0.10		8.00	0.442	2.22		
RS1			9-28			0.21	0.21	0.20										8.04	7.64	0.39		8.00	1.431	4.41		
				PIER	27.36	0.00	0.00	0.00	10.00	0.10	7.47	0.20	0.00	**1.50**	0.00	51.84	**43.81**	7.27	6.17		1		4.020		2.52	
957+34.97	11.00	Rt.	S-472E			0.00	0.00	0.00					0.00					6.60	5.50	1.10		8.00	0.442	7.40		
RS1			9-29			0.14	0.14	0.13										7.96	7.83	0.13		8.00	0.624	2.92		
				PIER	20.46	0.00	0.00	0.00	10.00	0.12	7.47	0.13	0.00	**0.99**	0.00	49.89	**41.93**	7.87	7.77		1		0.489		0.88	
958+79.97	11.00	Rt.	S-471E			0.00	0.00	0.00					0.00					7.20	7.10	0.10		8.00	0.442	2.58		
RD			S-404A			0.38	0.47	0.36										43.49	43.46	0.03		18.00	0.081	1.83		
				?BWI21	39.75	0.00	0.00	0.00	10.74	0.33	7.27	0.45	0.00	**3.24**	0.00	48.03	**4.54**	43.60	43.40		1		0.503		8.07	
5046+19.13	5.00	Lt.	S-420A			0.00	0.00	0.00					0.00					42.10	41.90	0.20		18.00	0.150	4.57		
RD			S-404C			0.09	0.09	0.08										43.49	43.49	0.00		18.00	0.003	0.35		
				?BWI21	88.66	0.00	0.00	0.00	10.00	0.74	7.47	0.08	0.00	**0.62**	0.00	47.59	**4.10**	43.80	43.60		1		0.226		5.40	
5047+11.00	7.88	Lt.	S-404A			0.00	0.00	0.00					0.00					42.30	42.10	0.20		18.00	0.150	3.06		
RN			S-420A			0.05	0.72	0.04										43.46	43.24	0.22		18.00	0.186	2.78		
				?BWI21	117.61	0.00	0.00	0.00	11.07	0.71	7.19	0.68	0.00	**4.91**	0.00	49.21	**5.75**	43.40	43.20		1		0.170		4.69	
850+83.00	43.88	Rt.	S-433C			0.00	0.00	0.00					0.00					41.90	41.70	0.20		18.00	0.150	2.66		
RN			S-420B			0.20	0.20	0.19										44.91	44.41	0.50		18.00	0.604	3.71		
				?BWI21	82.82	0.00	0.00	0.00	10.00	0.37	7.47	0.19	0.00	**1.45**	0.00	49.01	**4.10**	46.00	45.50		1		0.604		8.84	
849+97.00	40.42	Rt.	S-420A			0.00	0.00	0.00					0.00					44.50	44.00	0.50		18.00	0.150	5.00		
RB			S-433C			0.23	1.09	0.22										43.24	43.00	0.24		18.00	0.411	4.13		
				?BWI21	57.58	0.00	0.00	0.00	11.78	0.23	7.02	1.04	0.00	**7.30**	0.00	47.26	**4.02**	43.20	43.00		1		0.347		6.71	
8061+30.00	27.00	Lt.	S-441B			0.00	0.00	0.00					0.00					41.70	41.50	0.20		18.00	0.150	3.80		
RB			S-434A			0.14	0.14	0.14										43.25	43.24	0.01		18.00	0.014	3.30		
				?BWI21	86.75	0.00	0.00	0.00	10.00	0.44	7.47	0.14	0.00	**1.03**	0.00	47.48	**4.23**	44.40	43.90		1		0.576		8.64	
8062+20.00	27.88	Lt.	S-433C			0.00	0.00	0.00					0.00					42.90	42.40	0.50		18.00	0.150	4.89		
CLCON			S-440			0.00	0.25	0.00										8.51	8.50	0.01		18.00	0.023	0.98		
				MHP-8	40.50	0.00	0.00	0.00	10.52	0.34	7.33	0.24	0.00	**1.73**	0.00	11.87	**3.36**	5.60	5.50		1		0.247		5.65	
10020+40.00	86.50	Lt.	S-468C			0.00	0.00	0.00					0.00					4.10	4.00	0.10		18.00	0.150	3.20		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

 T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END ALIGNMENT NAME / STATION	DIST SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95, C= 0.20, C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BBLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILW EL (ft): 6.07
RS1		S-441B			0.18	1.46	0.17										42.89	42.69	0.20		24.00	0.226	4.16		
			?BWI21	88.35	0.00	0.00	0.00	12.01	0.35	6.97	1.39	0.00	**9.67**	0.00	49.08	**6.19**	43.50	43.30		1		0.226		11.66	
961+40.00	33.72 Rt.	S-442A			0.00	0.00	0.00					0.00					41.50	41.30	0.20		24.00	0.102	3.71		
RS1		S-442A			0.26	1.81	0.25										12.52	9.00	3.52		12.00	9.002	14.87		
			?BWI21	39.10	0.00	0.00	0.00	12.36	0.04	6.89	1.72	0.00	**11.83**	0.00	48.77	**36.25**	9.10	9.00		1		0.256		1.99	
960+48.00	33.36 Rt.	S-464			0.00	0.00	0.00					0.00					8.10	8.00	0.10		12.00	0.257	2.51		
CLCON		S-444			0.00	0.57	0.00										7.24	7.19	0.05		18.00	0.118	2.22		
			MHP-8	45.79	0.00	0.00	0.00	10.88	0.34	7.24	0.54	0.00	**3.91**	0.00	9.33	**2.09**	3.70	3.60		1		0.218		5.32	
10012+37.72	46.50 Lt.	S-474			0.00	0.00	0.00					0.00					2.20	2.10	0.10		18.00	0.150	3.01		
RE		S-454B			0.18	0.18	0.17										45.12	45.02	0.10		18.00	0.187	2.36		
			?BWI21	53.56	0.00	0.00	0.00	10.00	0.38	7.47	0.17	0.00	**1.30**	0.00	50.77	**5.65**	46.10	46.00		1		0.187		4.92	
6025+39.00	27.00 Rt.	S-441B			0.00	0.00	0.00					0.00					44.60	44.50	0.10		18.00	0.150	2.78		
RE		S-455A			0.09	0.09	0.08										44.65	44.55	0.10		18.00	0.191	1.91		
			?BWI21	52.32	0.00	0.00	0.00	10.00	0.46	7.47	0.08	0.00	**0.61**	0.00	50.39	**5.73**	45.80	45.70		1		0.191		4.98	
6024+47.30	27.88 Rt.	S-442A			0.00	0.00	0.00					0.00					44.30	44.20	0.10		18.00	0.150	2.82		
CLCON		S-464			0.00	6.05	0.00										7.99	7.90	0.10		42.00	0.113	3.81		
			MHP-8	84.26	0.00	0.29	0.00	15.42	0.37	6.31	5.81	0.00	**36.64**	0.00	11.97	**3.98**	6.40	6.30		1		0.119		37.55	
10017+16.00	68.00 Lt.	S-470			0.00	0.00	0.00					0.00					2.90	2.80	0.10		42.00	0.048	3.90		
CLCON		S-465			0.00	0.72	0.00										9.36	9.07	0.28		18.00	0.192	2.82		
			35x35	147.00	0.00	0.09	0.00	11.44	0.87	7.10	0.70	0.00	**4.98**	0.00	13.20	**3.84**	5.50	5.30		1		0.136		4.20	
10025+50.00	0.00 Rt.	S-466			0.00	0.00	0.00					0.00					4.00	3.80	0.20		18.00	0.150	2.38		
CLCON		S-465A			0.00	0.21	0.00										9.39	9.37	0.02		18.00	0.017	0.84		
			MHP-8	100.30	0.00	0.00	0.00	10.05	0.84	7.45	0.20	0.00	**1.49**	0.00	15.20	**5.81**	8.90	8.70		1		0.199		5.08	
10026+10.00	130.85 Rt.	S-465C			0.00	0.00	0.00					0.00					7.40	7.20	0.20		18.00	0.150	2.88		
CLCON		S-465C			0.00	0.34	0.00										9.37	9.36	0.02		18.00	0.042	1.31		
			MHP-8	40.86	0.00	0.00	0.00	11.10	0.34	7.18	0.32	0.00	**2.32**	0.00	13.70	**4.33**	8.70	8.50		1		0.489		7.96	
10025+80.00	32.00 Rt.	S-465			0.00	0.00	0.00					0.00					7.20	7.00	0.20		18.00	0.150	4.51		
CLCON		S-465D			0.00	0.38	0.00										9.38	9.36	0.02		18.00	0.059	1.56		
			DBI-C	42.10	0.09	0.09	0.02	10.71	0.35	7.28	0.38	0.00	**2.76**	0.00	12.00	**2.62**	9.00	8.50		1		1.188		12.40	
10025+80.00	33.00 Lt.	S-465			0.00	0.00	0.00					0.00					7.50	7.00	0.50		18.00	0.150	7.02		
CLCON		S-465E			0.00	0.16	0.00										9.39	9.38	0.01		18.00	0.010	0.64		
			MHP-8	80.50	0.00	0.00	0.00	10.03	0.67	7.46	0.15	0.00	**1.13**	0.00	13.40	**4.01**	9.20	9.00		1		0.248		5.67	
10025+80.00	116.00 Lt.	S-465D			0.00	0.00	0.00					0.00					7.70	7.50	0.20		18.00	0.150	3.21		
CLCON		S-466			0.00	1.67	0.00										9.07	8.73	0.34		24.00	0.204	3.53		
			35x35	167.00	0.00	0.09	0.00	12.31	0.79	6.90	1.60	0.00	**11.08**	0.00	13.10	**4.03**	5.80	5.60		1		0.120		8.48	
10024+00.00	0.00 Rt.	S-467			0.00	0.00	0.00					0.00					3.80	3.60	0.20		24.00	0.102	2.70		
CLCON		S-466A			0.00	0.24	0.00										9.11	9.09	0.02		18.00	0.022	0.96		
			MHP-8	95.91	0.00	0.00	0.00	10.02	0.80	7.46	0.23	0.00	**1.70**	0.00	13.80	**4.69**	8.90	8.70		1		0.209		5.20	
10024+31.00	129.65 Rt.	S-466B			0.00	0.00	0.00					0.00					7.40	7.20	0.20		18.00	0.150	2.94		
CLCON		S-466B			0.00	0.40	0.00										9.09	9.07	0.02		18.00	0.059	1.56		
			MHP-8	31.48	0.00	0.00	0.00	10.82	0.26	7.25	0.38	0.00	**2.76**	0.00	13.50	**4.41**	8.70	8.50		1		0.635		9.07	
10024+10.00	33.00 Rt.	S-466			0.00	0.00	0.00					0.00					7.20	7.00	0.20		18.00	0.150	5.13		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION DIST SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6 FREQ. (Yrs): 10 MANNINGS n: 0.0120 TAILW EL (ft): 6.07
CLCON	**S-466C**			0.00	0.55	0.00										9.10	9.07	0.03		18.00	0.112	2.15		
		MHP-8	22.84	0.00	0.00	0.00	10.70	0.18	7.28	0.52	0.00	**3.81**	0.00	13.10	**4.00**	8.60	8.50		1		0.438		7.53	
10024+10.00 23.82 Lt.	S-466			0.00	0.00	0.00					0.00					7.10	7.00	0.10		18.00	0.150	4.26		
CLCON	**S-466D**			0.00	0.27	0.00										9.12	9.10	0.02		18.00	0.028	1.08		
		MHP-8	77.18	0.00	0.00	0.00	10.05	0.64	7.45	0.26	0.00	**1.91**	0.00	13.00	**3.88**	8.80	8.60		1		0.259		5.79	
10024+10.00 104.00 Lt.	S-466C			0.00	0.00	0.00					0.00					7.30	7.10	0.20		18.00	0.150	3.28		
CLCON	**S-467**			0.00	2.71	0.00										8.73	8.42	0.31		30.00	0.158	3.59		
		40x40	196.00	0.00	0.22	0.00	13.10	0.91	6.74	2.62	0.00	**17.65**	0.00	12.20	**3.47**	6.10	5.90		1		0.102		14.19	
10022+30.00 0.00 Rt.	S-468			0.00	0.00	0.00					0.00					3.60	3.40	0.20		30.00	0.076	2.89		
CLCON	**S-467A**			0.00	0.25	0.00										8.78	8.76	0.02		18.00	0.024	1.00		
		MHP-8	89.87	0.00	0.00	0.00	10.03	0.75	7.46	0.24	0.00	**1.77**	0.00	13.40	**4.62**	7.90	7.70		1		0.223		5.37	
10022+40.00 127.37 Rt.	S-467B			0.00	0.00	0.00					0.00					6.40	6.20	0.20		18.00	0.150	3.04		
CLCON	**S-467B**			0.00	0.42	0.00										8.76	8.73	0.02		18.00	0.072	1.72		
		DBI-C	33.90	0.10	0.10	0.02	10.78	0.28	7.26	0.42	0.00	**3.04**	0.00	11.30	**2.54**	7.70	7.50		1		0.590		8.74	
10022+40.00 35.00 Rt.	S-467			0.00	0.00	0.00					0.00					6.20	6.00	0.20		18.00	0.150	4.95		
CLCON	**S-467C**			0.00	0.62	0.00										8.76	8.73	0.03		18.00	0.145	2.45		
		MHP-8	22.50	0.00	0.03	0.00	10.67	0.15	7.29	0.60	0.00	**4.34**	0.00	12.30	**3.54**	7.30	7.20		1		0.444		7.59	
10022+40.00 23.46 Lt.	S-467			0.00	0.00	0.00					0.00					5.80	5.70	0.10		18.00	0.150	4.29		
CLCON	**S-467E**			0.00	0.28	0.00										8.78	8.76	0.02		18.00	0.032	1.15		
		DBI-C	59.69	0.03	0.03	0.01	10.03	0.50	7.46	0.27	0.00	**2.03**	0.00	12.00	**3.22**	7.70	7.60		1		0.168		4.66	
10022+61.00 82.00 Lt.	S-467C			0.00	0.00	0.00					0.00					6.20	6.10	0.10		18.00	0.150	2.64		
CLCON	**S-468**			0.00	4.24	0.00										8.42	8.23	0.20		36.00	0.138	3.80		
		MH-8-J	142.93	0.00	0.29	0.00	14.01	0.63	6.56	4.09	0.00	**26.84**	0.00	12.20	**3.78**	6.40	6.20		1		0.140		27.03	
10020+30.00 0.00 Rt.	S-469			0.00	0.00	0.00					0.00					3.40	3.20	0.20		36.00	0.059	3.82		
CLCON	**S-468A**			0.00	0.31	0.00										8.58	8.55	0.03		18.00	0.037	1.24		
		MHP-8	86.00	0.00	0.00	0.00	10.02	0.72	7.46	0.29	0.00	**2.20**	0.00	14.00	**5.42**	6.90	6.70		1		0.233		5.49	
10020+40.00 139.50 Rt.	S-468B			0.00	0.00	0.00					0.00					5.40	5.20	0.20		18.00	0.150	3.11		
CLCON	**S-468B**			0.00	0.83	0.00										8.55	8.42	0.13		18.00	0.263	3.30		
		DBI-C	48.47	0.07	0.07	0.01	10.74	0.24	7.27	0.80	0.00	**5.84**	0.00	9.60	**1.05**	6.70	6.50		1		0.413		7.31	
10020+40.00 51.00 Rt.	S-468			0.00	0.00	0.00					0.00					5.20	5.00	0.20		18.00	0.150	4.14		
CLCON	**S-468C**			0.00	0.70	0.00										8.50	8.42	0.07		18.00	0.181	2.74		
		MHP-8	40.15	0.00	0.00	0.00	10.86	0.24	7.24	0.67	0.00	**4.84**	0.00	11.95	**3.45**	5.50	5.40		1		0.249		5.68	
10020+40.00 43.00 Lt.	S-468			0.00	0.00	0.00					0.00					4.00	3.90	0.10		18.00	0.150	3.21		
CLCON	**S-468D**			0.00	0.07	0.00										8.51	8.51	0.00		18.00	0.002	0.28		
		MHP-8	40.50	0.00	0.00	0.00	10.19	0.34	7.42	0.07	0.00	**0.49**	0.00	11.54	**3.03**	5.70	5.60		1		0.247		5.65	
10020+40.00 130.00 Lt.	S-440			0.00	0.00	0.00					0.00					4.20	4.10	0.10		18.00	0.150	3.20		
CLCON	**S-469**			0.00	4.24	0.00										8.23	7.99	0.23		36.00	0.133	3.73		
		MHP-8	176.28	0.00	0.29	0.00	14.64	0.79	6.45	4.09	0.00	**26.37**	0.00	9.96	**1.73**	6.20	5.90		1		0.170		29.81	
10018+95.00 58.00 Lt.	S-464			0.00	0.00	0.00					0.00					3.20	2.90	0.30		36.00	0.059	4.22		
CLCON	**S-470**			0.00	6.05	0.00										7.90	7.78	0.12		42.00	0.111	3.77		
		MH-8-J	105.00	0.00	0.29	0.00	15.79	0.46	6.25	5.81	0.00	**36.29**	0.00	11.00	**3.10**	6.10	5.80		1		0.286		58.26	
10016+60.00 0.00 Rt.	S-471			0.00	0.00	0.00					0.00					2.60	2.30	0.30		42.00	0.048	6.06		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

AREAS (Ac): C= 0.95 / C= 0.20 / C= 0.00

NOTES & REMARKS: ZONE: 6 | FREQ. (Yrs): 10 | MANNINGS n: 0.0120 | TAILWEL (ft): 6.07

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) INC	AREAS (Ac) TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN	ACTUAL VEL. / PHYS VEL (fps)	FULL FLOW CAP. (cfs)
CLCON			**S-470B**			0.00	0.00	0.00										7.90	7.90	0.00		18.00	0.000	0.00	
				MHP-8	103.00	0.00	0.00	0.00	10.04	0.86	7.46	0.00	0.00	**0.01**	0.00	11.38	**3.48**	6.70	6.50		1		0.194		5.01
10016+60.00	107.00	Rt.	S-470			0.00	0.00	0.00					0.00					5.20	5.00	0.20		18.00	0.150	2.84	
CLCON			**S-471**			0.00	7.16	0.00										7.78	7.63	0.14		42.00	0.151	4.40	
				MH-8-J	96.00	0.00	0.29	0.00	16.26	0.36	6.18	6.86	0.00	**42.34**	0.00	10.90	**3.12**	5.80	5.50		1		0.313		60.93
10015+50.00	0.00	Rt.	S-472			0.00	0.00	0.00					0.00					2.30	2.00	0.30		42.00	0.048	6.33	
CLCON			**S-471A**			0.00	0.17	0.00										7.85	7.85	0.01		18.00	0.011	0.68	
				MHP-8	51.18	0.00	0.00	0.00	10.08	0.43	7.45	0.16	0.00	**1.20**	0.00	11.10	**3.25**	6.50	6.30		1		0.391		7.11
10015+70.00	135.18	Rt.	S-471B			0.00	0.00	0.00					0.00					5.00	4.80	0.20		18.00	0.150	4.03	
CLCON			**S-471B**			0.00	0.44	0.00										7.85	7.81	0.04		18.00	0.072	1.73	
				MHP-8	52.74	0.00	0.00	0.00	10.50	0.44	7.33	0.42	0.00	**3.06**	0.00	11.20	**3.35**	6.30	6.20		1		0.190		4.96
10015+70.00	81.00	Rt.	S-471C			0.00	0.00	0.00					0.00					4.80	4.70	0.10		18.00	0.150	2.80	
CLCON			**S-471C**			0.00	0.59	0.00										7.81	7.78	0.03		18.00	0.125	2.28	
				MHP-8	23.69	0.00	0.00	0.00	10.94	0.17	7.22	0.56	0.00	**4.02**	0.00	11.10	**3.29**	6.20	6.10		1		0.422		7.39
10015+57.64	26.62	Rt.	S-471			0.00	0.00	0.00					0.00					4.70	4.60	0.10		18.00	0.150	4.18	
CLCON			**S-471D**			0.00	0.52	0.00										7.80	7.78	0.02		18.00	0.098	2.01	
				MHP-8	23.79	0.00	0.00	0.00	10.98	0.20	7.21	0.49	0.00	**3.56**	0.00	11.20	**3.40**	5.10	5.00		1		0.420		7.38
10015+56.10	27.11	Lt.	S-471			0.00	0.00	0.00					0.00					3.60	3.50	0.10		18.00	0.150	4.17	
CLCON			**S-471E**			0.00	0.35	0.00										7.83	7.80	0.03		18.00	0.046	1.38	
				MHP-8	55.60	0.00	0.00	0.00	10.52	0.46	7.33	0.33	0.00	**2.44**	0.00	11.20	**3.37**	5.30	5.10		1		0.360		6.83
10015+70.00	84.00	Lt.	S-471D			0.00	0.00	0.00					0.00					3.80	3.60	0.20		18.00	0.150	3.86	
CLCON			**S-471F**			0.00	0.21	0.00										7.84	7.83	0.01		18.00	0.017	0.84	
				MHP-8	55.00	0.00	0.00	0.00	10.06	0.46	7.45	0.20	0.00	**1.49**	0.00	8.70	**0.86**	5.50	5.30		1		0.364		6.86
10015+70.00	142.00	Lt.	S-471E			0.00	0.00	0.00					0.00					4.00	3.80	0.20		18.00	0.150	3.88	
CLCON			**S-472**			0.00	7.80	0.00										7.63	7.57	0.07		42.00	0.176	4.76	
				MH-8-J	37.06	0.00	0.35	0.00	16.62	0.13	6.12	7.48	0.00	**45.79**	0.00	10.84	**3.21**	3.00	2.90		1		0.270		56.62
10014+49.00	0.00	Rt.	S-472D			0.00	0.00	0.00					0.00					-0.50	-0.60	0.10		42.00	0.048	5.89	
CLCON			**S-472A**			0.00	0.16	0.00										7.70	7.70	0.00		18.00	0.010	0.64	
				MHP-8	40.07	0.00	0.00	0.00	10.10	0.33	7.44	0.15	0.00	**1.13**	0.00	10.90	**3.20**	6.30	6.10		1		0.499		8.04
10014+50.00	132.00	Rt.	S-472B			0.00	0.00	0.00					0.00					4.80	4.60	0.20		18.00	0.150	4.55	
CLCON			**S-472B**			0.00	0.44	0.00										7.70	7.63	0.06		18.00	0.071	1.72	
				MHP-8	84.94	0.00	0.00	0.00	10.44	0.71	7.35	0.41	0.00	**3.04**	0.00	10.90	**3.20**	6.10	5.90		1		0.235		5.52
10014+50.00	88.93	Rt.	S-472			0.00	0.00	0.00					0.00					4.60	4.40	0.20		18.00	0.150	3.12	
CLCON			**S-472D**			0.00	8.35	0.00										7.57	7.46	0.11		42.00	0.201	5.07	
				MH-8-J	52.63	0.00	0.35	0.00	16.75	0.17	6.10	8.00	0.00	**48.81**	0.00	10.47	**2.90**	2.90	2.80		1		0.190		47.51
10014+06.96	1.00	Lt.	S-473			0.00	0.00	0.00					0.00					-0.60	-0.70	0.10		42.00	0.048	4.94	
CLCON			**S-472E**			0.00	0.21	0.00										7.64	7.63	0.01		18.00	0.019	0.90	
				DBI-C	48.51	0.06	0.06	0.01	10.10	0.40	7.44	0.21	0.00	**1.59**	0.00	8.90	**1.26**	5.90	5.70		1		0.412		7.31
10014+50.00	52.00	Lt.	S-472			0.00	0.00	0.00					0.00					4.40	4.20	0.20		18.00	0.150	4.13	
CLCON			**S-473**			0.00	8.78	0.00										7.46	7.19	0.27		42.00	0.220	5.31	
				MH-8-J	125.15	0.00	0.35	0.00	16.92	0.39	6.07	8.41	0.00	**51.08**	0.00	9.40	**1.94**	2.80	2.70		1		0.080		30.81
10013+50.00	8.00	Rt.	S-474			0.00	0.00	0.00					0.00					-0.70	-0.80	0.10		42.00	0.048	3.20	

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_2** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW SUMM BASE	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE CROWN FLOWLINE			# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL.	FULL FLOW CAP.	NOTES & REMARKS
ALIGNMENT NAME			UPPER			C= 0.95												UPPER	LOWER	FALL						ZONE: 6
						C= 0.20																				FREQ. (Yrs): 10
						C= 0.00																				MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)				(fps)	(cfs)	TAILW EL (ft): 6.07
CLCON			S-473A			0.00	0.17	0.00										7.52	7.51	0.01		18.00	0.011	0.68		
				MHP-8	52.79	0.00	0.00	0.00	10.15	0.44	7.43	0.16	0.00	**1.20**	0.00	9.80	**2.28**	4.10	4.00		1		0.189		4.95	
10012+80.00	122.00	Rt.	S-473B			0.00	0.00	0.00					0.00					2.60	2.50	0.10		18.00	0.150	2.80		
CLCON			S-473B			0.00	0.43	0.00										7.51	7.46	0.05		18.00	0.069	1.69		
				MHP-8	74.41	0.00	0.00	0.00	10.59	0.62	7.31	0.41	0.00	**2.99**	0.00	10.10	**2.59**	4.00	3.80		1		0.269		5.90	
10013+03.00	71.00	Rt.	S-473			0.00	0.00	0.00					0.00					2.50	2.30	0.20		18.00	0.150	3.34		
CLCON			S-474			0.00	9.35	0.00										7.19	7.02	0.16		42.00	0.244	5.60		
				MH-8-J	67.50	0.00	0.35	0.00	17.31	0.20	6.01	8.95	0.00	**53.84**	0.00	8.20	**1.01**	2.70	2.60		1		0.148		41.95	
10012+20.00	0.00	Rt.	S-475			0.00	0.00	0.00					0.00					-0.80	-0.90	0.10		42.00	0.048	4.36		
CLCON			S-474C			0.00	0.36	0.00										7.29	7.24	0.05		18.00	0.050	1.44		
				MHP-8	96.03	0.00	0.00	0.00	10.08	0.80	7.45	0.34	0.00	**2.55**	0.00	8.90	**1.61**	3.90	3.80		1		0.104		3.67	
10013+20.00	100.00	Lt.	S-444			0.00	0.00	0.00					0.00					2.40	2.30	0.10		18.00	0.150	2.08		
CLCON			S-475			0.00	10.23	0.00										7.02	6.65	0.38		42.00	0.289	6.09		
				MHJ4X6	130.64	0.00	0.35	0.00	17.52	0.00	5.98	9.79	0.00	**58.59**	0.00	9.00	**1.98**	2.60	2.50		1		0.077		30.16	
10011+50.00	0.00	Rt.	MFF_1			0.00	0.00	0.00					0.00					-0.90	-1.00	0.10		42.00	0.048	3.13		
CLCON			S-475A			0.00	0.18	0.00										7.03	7.02	0.00		18.00	0.013	0.72		
				MHP-8	22.66	0.00	0.00	0.00	10.08	0.19	7.45	0.17	0.00	**1.27**	0.00	8.80	**1.77**	3.80	3.60		1		0.883		10.69	
10011+60.00	22.00	Rt.	S-475			0.00	0.00	0.00					0.00					2.30	2.10	0.20		18.00	0.150	6.05		
CLCON			S-475B			0.00	0.70	0.00										7.08	7.02	0.06		18.00	0.180	2.73		
				MHP-8	32.13	0.00	0.00	0.00	10.80	0.20	7.26	0.67	0.00	**4.83**	0.00	7.67	**0.59**	3.80	3.60		1		0.622		8.98	
10011+70.00	27.00	Lt.	S-475			0.00	0.00	0.00					0.00					2.30	2.10	0.20		18.00	0.150	5.08		
CLCON			S-475C			0.00	0.53	0.00										7.19	7.08	0.11		18.00	0.109	2.13		
				MHP-8	97.52	0.00	0.00	0.00	10.03	0.76	7.46	0.50	0.00	**3.76**	0.00	8.00	**0.81**	4.10	3.80		1		0.308		6.31	
10011+30.00	119.00	Lt.	S-475B			0.00	0.00	0.00					0.00					2.60	2.30	0.30		18.00	0.150	3.57		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01**
Description: **I-4/SELMON EXPRESSWAY**

County: **HILLSBOROUGH**
Organization **PBSJ - Tampa**

Network: **SMFF_1_3**
State Road: **SR 400**

Designed by **Divya Pasupuleti** Date: 4/15/2008
Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END ALIGNMENT NAME STATION	DIST	SD	STR. NO. UPPER LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6 FREQ. (Yrs): 10 MANNINGS n: 0.0120
PGLRS-S			9-26			0.34	0.34	0.32										6.41	6.21	0.20		12.00	0.374	3.03		TAILWEL (ft): 6.07
				PIER	53.60	0.00	0.00	0.00	10.00	0.00	7.47	0.32	0.00	**2.41**	0.00	61.59	**55.18**	1.90	1.00		1		1.679		5.11	
953+05.00	9.92	Rt.	MFF_1			0.00	0.00	0.00					0.00					0.90	0.00	0.90		12.00	0.257	6.42		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_4** Designed by **Mariger Figueroa** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME: STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95, C= 0.20, C= 0.00: INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE: UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS
RK			**4-1A**			0.22	0.22	0.21										6.48	6.13	0.35		8.00	1.541	4.58		ZONE: 6
				PIER	22.74	0.00	0.00	0.00	10.00	0.08	7.47	0.21	0.00	**1.56**	0.00	49.38	**42.90**	3.47	3.37		1		0.440		0.83	FREQ. (Yrs): 10
536+19.07	13.00	Rt.	S-476			0.00	0.00	0.00					0.00					2.80	2.70	0.10		8.00	0.442	2.45		MANNINGS n: 0.0120
RE			**4-1B**			0.12	0.12	0.11										6.45	6.13	0.32		6.00	1.961	4.34		TAILW EL (ft): 6.07
				PIER	16.52	0.00	0.00	0.00	10.00	0.06	7.47	0.11	0.00	**0.85**	0.00	47.81	**41.36**	3.50	3.40		1		0.605		0.47	
6015+77.46	10.06	Rt.	S-476			0.00	0.00	0.00					0.00					3.00	2.90	0.10		6.00	0.649	2.41		
CLCON			**S-476**			0.00	0.34	0.00										6.13	6.10	0.03		18.00	0.045	1.36		
				MHP-8	61.42	0.00	0.00	0.00	10.08	0.00	7.45	0.32	0.00	**2.40**	0.00	7.06	**0.93**	4.20	0.50		1		6.024		27.93	
10009+20.00	140.00	Lt.	MFF_1			0.00	0.00	0.00					0.00					2.70	-1.00	3.70		18.00	0.150	15.80		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_5** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS	
																										ZONE:	6
																										FREQ. (Yrs):	10
																										MANNINGS n:	0.0120
																										TAILWEL (ft):	6.07
RB			**10-7**			0.23	0.23	0.22										6.61	6.21	0.41		10.00	0.465	2.97			
				PIER	87.26	0.00	0.00	0.00	10.00	0.00	7.47	0.22	0.00	**1.62**	0.00	87.76	**81.15**	2.53	0.83		1		1.948		3.31		
8071+64.41	10.17	Lt.	MFF_1			0.00	0.00	0.00					0.00					1.70	0.00	1.70		10.00	0.328	6.07			

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

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Financial Prj Id: **258415-1-52-01**
Description: **I-4/SELMON EXPRESSWAY**

County: **HILLSBOROUGH**
Organization **PBSJ - Tampa**

Network: **SMFF_1_6**
State Road: **SR 400**

Designed by **Divya Pasupuleti** Date: 4/15/2008
Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac)	INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS
RF			14-12			C= 0.95	0.25	0.25	0.24										6.63	6.23	0.39		10.00	0.558	3.25		ZONE: 6
7032+53.00	10.00	Lt	MFF_1	PIER	70.02	C= 0.20	0.00	0.00	0.00	10.00	0.00	7.47	0.24	0.00	**1.77**	0.00	61.77	**55.15**	2.33	0.83		1		2.142		3.47	FREQ. (Yrs): 10
						C= 0.00	0.00	0.00	0.00					0.00					1.50	0.00	1.50		10.00	0.328	6.37		MANNINGS n: 0.0120; TAILW EL (ft): 6.07

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

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Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

T60v3FDOT.RPT 11/25/2007

B-414

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_7** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL (fps)	FULL FLOW CAP. (cfs)
RD			16-6			0.18	0.18	0.17										6.90	6.29	0.62		8.00	1.032	3.75	
				PIER	59.67	0.00	0.00	0.00	10.00	0.00	7.47	0.17	0.00	**1.28**	0.00	45.56	**38.66**	2.07	1.97		1		0.168		0.51
5057+22.73	11.45	Rt.	MFF_1			0.00	0.00	0.00					0.00					1.40	1.30	0.10		8.00	0.442	1.51	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILW EL (ft):	6.07

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFF_1_8** Designed by **Divya Pasupuleti** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END ALIGNMENT NAME STATION	DIST	SD	STR. NO. UPPER LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 C= 0.20 C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6 FREQ. (Yrs): 10 MANNINGS n: 0.0120 TAILW EL (ft): 6.07
RD			16-4			0.16	0.16	0.15										6.65	6.24	0.41		8.00	0.805	3.31		
				PIER	51.04	0.00	0.00	0.00	10.00	0.00	7.47	0.15	0.00	**1.13**	0.00	46.72	**40.07**	0.77	0.67		1		0.196		0.56	
5053+70.23	10.00	Rt.	MFF_1			0.00	0.00	0.00					0.00					0.10	0.00	0.10		8.00	0.442	1.63		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFG_3_1** Designed by **Mariger Figueroa** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

LOCATION OF UPPER END: ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95, C= 0.02, C= 0.00: INC	AREAS TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE: UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILWEL (ft): 6.72
CL			EX-159			0.04	0.04	0.04										19.87	19.87	0.00		15.00	0.002	0.23		
				DBI-C	49.97	0.00	0.00	0.00	10.00	0.42	7.47	0.04	0.00	0.28	0.00	23.40	3.53	20.57	20.34		1		0.460		4.75	
703+51.01	8.59	Lt	S-531			0.00	0.00	0.00					0.00					19.32	19.09	0.23		15.00	0.191	3.87		
CL			EX-180			0.13	0.13	0.12										10.28	10.27	0.00		18.00	0.007	0.52		
				DBI-C	54.31	0.00	0.00	0.00	10.00	0.45	7.47	0.12	0.00	0.92	0.00	13.00	2.72	10.96	10.75		1		0.387		7.08	
707+63.50	9.00	Lt	S-536			0.00	0.00	0.00					0.00					9.46	9.25	0.21		18.00	0.150	4.00		
CL			S-531			0.38	0.42	0.36										19.87	19.77	0.10		18.00	0.244	3.23		
				?BWI21	40.93	0.00	0.00	0.00	10.42	0.21	7.36	0.40	0.00	2.94	0.00	24.24	4.37	20.60	20.50		1		0.244		5.62	
703+51.00	61.19	Lt	S-532			0.00	0.00	0.00					0.00					19.10	19.00	0.10		18.00	0.150	3.18		
RD			S-532			0.32	0.74	0.30										19.49	10.17	9.32		24.00	2.275	8.50		
				BW4x7J	409.76	0.00	0.00	0.00	10.63	0.80	7.30	0.70	0.00	5.10	0.00	24.33	4.84	21.00	11.00		1		2.440		38.29	
5069+90.24	7.88	Lt	S-535			0.00	0.00	0.00					0.00					19.00	9.00	10.00		24.00	0.102	12.19		
CL			S-533			0.50	0.50	0.47										12.33	10.27	2.06		18.00	2.341	8.46		
				?BWI21	87.92	0.00	0.00	0.00	10.00	0.17	7.47	0.47	0.00	3.55	0.00	16.21	3.88	13.40	10.80		1		2.957		19.57	
706+72.70	64.31	Lt	S-536			0.00	0.00	0.00					0.00					11.90	9.30	2.60		18.00	0.150	11.07		
RD			S-535			0.18	1.78	0.17										10.17	9.07	1.10		30.00	0.366	5.33		
				?BW4.2	300.75	0.00	0.00	0.00	11.43	0.94	7.10	1.69	0.00	12.01	0.00	15.93	5.76	11.50	10.40		1		0.366		26.87	
5074+00.00	7.88	Lt	S-537			0.00	0.00	0.00					0.00					9.00	7.90	1.10		30.00	0.076	5.47		
CL			S-536			0.16	0.86	0.15										10.27	10.17	0.10		18.00	0.277	3.39		
				DBI-A	37.09	0.00	0.00	0.00	10.51	0.18	7.33	0.82	0.00	5.99	0.00	14.76	4.48	10.70	10.50		1		0.539		8.36	
707+63.61	65.31	Lt	S-535			0.00	0.00	0.00					0.00					9.20	9.00	0.20		18.00	0.150	4.73		
RD			S-537			0.00	4.32	0.00										7.57	7.37	0.20		42.00	0.104	4.07		
				MH8J60	192.63	0.00	0.00	0.00	12.37	0.79	6.89	4.10	0.00	28.28	0.00	15.03	7.46	8.70	8.50		1		0.104		35.12	
5077+02.80	5.50	Lt	S-538			0.00	0.00	0.00					0.00					5.20	5.00	0.20		42.00	0.048	3.65		
RD			S-538			0.00	4.32	0.00										6.94	6.90	0.04		42.00	0.064	2.87		
				MH8J60	60.59	0.00	0.00	0.00	13.16	0.35	6.73	4.10	0.00	27.61	0.00	15.04	8.10	8.50	7.20		1		2.146		159.66	
5079+00.00	9.00	Lt	S-540			0.00	0.00	0.00					0.00					5.00	3.70	1.30		42.00	0.048	16.59		
RD			S-540			0.00	4.32	0.00										6.90	6.85	0.05		42.00	0.063	2.84		
				MH8J60	84.83	0.00	0.00	0.00	13.51	0.00	6.66	4.10	0.00	27.32	0.00	11.50	4.60	6.80	6.70		1		0.118		37.42	
5079+50.74	50.00	Lt	MFG_3			0.00	0.00	0.00					0.00					3.30	3.20	0.10		42.00	0.048	3.89		
CL			S-544			0.78	2.54	0.74										8.00	7.57	0.43		24.00	0.524	5.65		
				DBI-CJ	81.99	0.00	0.00	0.00	10.43	0.24	7.35	2.41	0.00	17.74	0.00	8.80	0.80	7.40	7.20		1		0.244		12.10	
710+98.00	8.00	Lt	S-537			0.00	0.00	0.00					0.00					5.40	5.20	0.20		24.00	0.102	3.85		
CL			S-545			1.76	1.76	1.67										8.23	8.00	0.22		18.96	0.226	3.78		LEOP @ 10.5'
				DBI-CJ	98.34	0.00	0.00	0.00	10.00	0.43	7.47	1.67	0.00	12.49	0.00	8.60	0.37	7.08	6.98		1		0.102		8.37	
712+00.00	7.40	Lt	S-544			0.00	0.00	0.00					0.00					5.50	5.40	0.10		30.00	0.140	2.54		
CL			S-546			0.07	0.07	0.07										10.27	10.27	0.00		18.00	0.002	0.28		
				DBI-A	61.56	0.00	0.00	0.00	10.00	0.51	7.47	0.07	0.00	0.50	0.00	14.11	3.84	10.90	10.80		1		0.162		4.59	
708+27.17	65.18	Lt	S-536			0.00	0.00	0.00					0.00					9.40	9.30	0.10		18.00	0.150	2.60		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

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Portions of ASAD were developed by Kenneth J. Leeming, P.E. at International Engineering Consultants, Inc.

T60v3FDOT.RPT 11/25/2007

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FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFG_3_3** Designed by **Mariger Figueroa** Date: 4/15/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/15/2008

NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 10; MANNINGS n: 0.0120; TAILW EL (ft): 6.72

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS VEL. (fps)	FULL FLOW CAP. (cfs)
SR603			**S-560**			0.18	0.77	0.17										6.92	6.84	0.08		18.00	0.181	2.74	
				P-5	44.98	0.00	0.00	0.00	13.69	0.00	6.62	0.73	0.00	**4.84**	0.00	7.63	**0.71**	4.60	4.50		1		0.222		5.37
458+00.00	74.27	Rt.	MFG_3			0.00	0.00	0.00					0.00					3.10	3.00	0.10		18.00	0.150	3.04	
SR603			**S-561**			0.14	0.59	0.13										7.26	6.92	0.35		18.00	0.121	2.24	
				P-5	284.54	0.00	0.00	0.00	11.57	2.11	7.07	0.56	0.00	**3.96**	0.00	7.91	**0.65**	4.80	4.60		1		0.070		3.02
461+00.00	74.27	Rt.	S-560			0.00	0.00	0.00					0.00					3.30	3.10	0.20		18.00	0.150	1.71	
SR603			**S-562**			0.45	0.45	0.43										7.41	7.26	0.15		18.00	0.079	1.81	
				P-6	188.64	0.00	0.00	0.00	10.00	1.57	7.47	0.43	0.00	**3.19**	0.00	7.68	**0.27**	5.00	4.80		1		0.106		3.71
463+00.00	74.26	Rt.	S-561			0.00	0.00	0.00					0.00					3.50	3.30	0.20		18.00	0.150	2.10	

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

 T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **G_S525** Designed by **Jonathan Sanek** Date: 4/11/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/11/2008

LOCATION OF UPPER END			STR. NO.	TYPE OF STR.	LEN.	AREAS (Ac)		SUB-TOTAL (C*A)	TIME OF CONC	TIME OF FLOW SECT.	INTEN	TOTAL (C*A)	BASE FLOW	TOTAL FLOW	MINOR LOSS	INLET ELEV.	HGL CLEAR	HYDRAULIC GRADE			#	PIPE SIZE	SLOPE %	ACTUAL VEL.	FULL FLOW CAP.	NOTES & REMARKS
ALIGNMENT NAME			UPPER			C= 0.95												CROWN			B	(in.)	HGL	PHYS.		ZONE: 6
						C= 0.20							SUMM BASE					FLOWLINE			R	RISE	PHYS	VEL.		FREQ. (Yrs): 10
						C= 0.00												UPPER	LOWER	FALL	L					MANNINGS n: 0.0120
STATION	DIST	SD	LOWER		(ft.)	INC	TOTAL		(min)	(min)	(in/hr)		(cfs)	(cfs)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	(ft.)	S	SPAN	MIN.	(fps)	(cfs)	TAILW EL (ft): 4.31
RB			10-15			0.13	0.13	0.12										6.53	6.45	0.09		8.00	0.538	2.71		
				PIER	16.53	0.00	0.00	0.00	10.00	0.10	7.47	0.12	0.00	**0.92**	0.00	47.18	**40.65**	0.17	0.07		1		0.605		0.98	
8089+75.39	10.00	Lt.	S-516			0.00	0.00	0.00					0.00					-0.50	-0.60	0.10		8.00	0.442	2.87		
RB			10-17			0.30	0.30	0.29										6.60	6.42	0.17		12.00	1.044	5.06		
				PIER	16.53	0.00	0.00	0.00	10.00	0.05	7.47	0.28	1.90	**4.03**	0.00	38.46	**31.86**	-0.40	-0.50		1		0.605		3.07	
8093+05.39	10.00	Lt.	S-518			0.00	0.00	0.00					1.90					-1.40	-1.50	0.10		12.00	0.257	3.85		
RB			10-19			0.28	0.28	0.27										5.93	5.88	0.04		12.00	0.263	2.54		
				PIER	16.53	0.00	0.00	0.00	10.00	0.11	7.47	0.27	0.00	**2.02**	0.00	38.74	**32.81**	-0.50	-0.60		1		0.605		3.07	
8096+15.39	10.00	Lt.	S-519			0.00	0.00	0.00					0.00					-1.50	-1.60	0.10		12.00	0.257	3.85		
RB			10-21			0.30	0.30	0.29										5.72	5.67	0.05		12.00	0.299	2.71		
				PIER	16.53	0.00	0.00	0.00	10.00	0.10	7.47	0.29	0.00	**2.16**	0.00	39.82	**34.10**	4.80	4.40		1		2.420		6.13	
8099+25.39	10.00	Lt.	S-520			0.00	0.00	0.00					0.00					3.80	3.40	0.40		12.00	0.257	7.71		
RB			S-516			0.00	0.13	0.00										6.45	6.43	0.01		18.00	0.007	0.52		
				MHP-8	162.00	0.00	0.00	0.00	10.10	1.35	7.44	0.12	0.00	**0.92**	0.00	6.00	**-0.45**	0.90	0.80		1		0.062		2.83	
8089+75.39	28.03	Lt.	S-517			0.00	0.00	0.00					0.00					-0.60	-0.70	0.10		18.00	0.150	1.60		
RB			S-517			0.00	0.13	0.00										6.43	6.42	0.01		18.00	0.006	0.50		
				MHP-8	162.00	0.00	0.00	0.00	11.45	1.35	7.10	0.12	0.00	**0.88**	0.00	6.00	**-0.43**	0.80	0.70		1		0.062		2.83	
8091+40.39	28.03	Lt.	S-518			0.00	0.00	0.00					0.00					-0.70	-0.80	0.10		18.00	0.150	1.60		
RB			S-518			0.00	0.43	0.00										6.42	5.88	0.54		18.00	0.176	2.65		
				MHP-8	307.00	0.00	0.00	0.00	12.80	1.93	6.80	0.41	0.00	**4.68**	0.02	6.00	**-0.42**	0.00	-0.10		1		0.033		2.05	
8093+05.39	28.03	Lt.	S-519			0.00	0.00	0.00					1.90					-1.50	-1.60	0.10		18.00	0.150	1.16		
RB			S-519			0.00	0.72	0.00										5.88	5.67	0.21		24.00	0.069	1.99		
				MHP-8	309.25	0.00	0.00	0.00	14.73	2.58	6.43	0.68	0.00	**6.27**	0.01	5.90	**0.02**	0.40	0.30		1		0.032		4.41	
8096+15.39	28.03	Lt.	S-520			0.00	0.00	0.00					1.90					-1.60	-1.70	0.10		24.00	0.102	1.40		
RB			S-520			0.00	1.02	0.00										5.67	5.56	0.11		24.00	0.202	2.46		
				MHP-8	54.64	0.00	0.00	0.00	17.31	0.37	6.01	0.97	0.00	**7.72**	0.06	5.50	**-0.17**	0.30	0.20		1		0.183		10.48	
8099+25.39	28.03	Lt.	S-527			0.00	0.00	0.00					1.90					-1.70	-1.80	0.10		24.00	0.102	3.34		
RB			S-521			0.00	1.02	0.00										5.18	4.80	0.38		48.00	0.141	4.28		
				MH8J60	269.60	0.00	0.00	0.00	19.48	1.05	5.72	0.97	46.32	**53.75**	0.06	6.34	**1.16**	-4.00	-4.10		1		0.037		29.97	
8101+79.56	26.10	Lt.	S-522			0.00	0.00	0.00					48.22					-8.00	-8.10	0.10		48.00	0.041	2.38		
RB			S-522			0.00	1.02	0.00										4.80	4.57	0.23		54.00	0.998	4.08		
				MH8J60	22.87	0.00	0.00	0.00	20.53	0.00	5.59	0.97	11.26	**64.89**	0.21	6.40	**1.60**	-3.60	-3.70		1		0.437		140.88	
8104+51.15	26.10	Lt.	SMF-X-1			0.00	0.00	0.00					59.48					-8.10	-8.20	0.10		54.00	0.035	8.86		
SUP			S-527			0.00	1.02	0.00										5.56	5.30	0.26		24.00	0.125	2.44		
				MHP-8	206.20	0.00	0.00	0.00	17.68	1.41	5.96	0.97	0.00	**7.67**	0.06	7.10	**1.54**	-5.70	-5.90		1		0.097		7.63	
2017+95.50	2.50	Lt.	S-528			0.00	0.00	0.00					1.90					-7.70	-7.90	0.20		24.00	0.102	2.43		
SUP			S-528			0.00	1.02	0.00										5.30	5.18	0.12		24.00	0.220	2.38		
				MHP-8	55.47	0.00	0.00	0.00	19.09	0.39	5.77	0.97	0.00	**7.48**	0.07	6.70	**1.40**	-5.90	-6.00		1		0.180		10.41	
2020+05.20	2.50	Lt.	S-521			0.00	0.00	0.00					1.90					-7.90	-8.00	0.10		24.00	0.102	3.31		

Units: ENGLISH **HGL method: Do NOT jump to pipe crown.**

T60v3FDOT.RPT 11/25/2007

B-521

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Page: 1

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **S-548** Designed by **Mariger Figueroa** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# B R L S	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
SUP			**S-548**			0.03	0.03	0.03										-0.23	-0.43	0.20		18.00	0.250	1.89	
				DBI-C	79.87	0.13	0.13	0.03	10.00	0.00	7.47	0.05	0.00	**0.41**	0.00	2.50	**2.73**	1.00	0.80		1		0.250		5.69
2019+50.00	30.84	Lt.	CD-05			0.00	0.00	0.00					0.00					-0.50	-0.70	0.20		18.00	0.150	3.22	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILW EL (ft):	-0.70

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFX_1** Designed by: **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization: **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END / ALIGNMENT NAME: STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE: UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)
SUP			S-526			0.09	0.09	0.09										-1.08	-1.28	0.20		18.00	0.230	2.34	
				DBI-C	86.97	0.23	0.23	0.05	10.54	0.00	7.32	0.13	0.00	**0.96**	0.00	4.50	**5.58**	0.00	-0.20		1		0.230		5.46
2028+20.00	23.00	Lt.	S-526A			0.00	0.00	0.00					0.00					-1.50	-1.70	0.20		18.00	0.150	3.09	

NOTES & REMARKS	
ZONE:	6
FREQ. (Yrs):	10
MANNINGS n:	0.0120
TAILWEL (ft):	-1.70

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

STORM DRAIN TABULATIONS
50-YEAR CHECK

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_2** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END ALIGNMENT NAME STATION	DIST	SD	STR. NO. UPPER LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 C= 0.20 C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN.	ACTUAL VEL. PHYS VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6 FREQ. (Yrs): 50 MANNINGS n: 0.0120 TAILWEL (ft): 11.26
RK			7-11A			0.22	0.22	0.21										13.83	13.55	0.28		8.00	2.342	5.65		
				PIER	11.88	0.00	0.00	0.00	10.00	0.04	9.04	0.21	0.00	**1.92**	0.00	78.04	**64.21**	3.87	3.77		1		0.842		1.15	
525+60.00	10.62	Rt.	S-324			0.00	0.00	0.00					0.00					3.20	3.10	0.10		8.00	0.442	3.39		
RJ1			7-11B			0.05	0.05	0.05										13.60	13.55	0.05		6.00	0.519	2.23		
				PIER	9.94	0.00	0.00	0.00	10.00	0.07	9.04	0.05	0.00	**0.44**	0.00	78.70	**65.10**	5.80	5.70		1		1.006		0.61	
45+62.15	14.20	Lt.	S-324			0.00	0.00	0.00					0.00					5.30	5.20	0.10		6.00	0.649	3.11		
RK			7-5			0.30	0.30	0.29										13.11	12.07	1.04		8.00	4.200	7.56		
				PIER	24.74	0.00	0.00	0.00	10.00	0.05	9.04	0.28	0.00	**2.58**	0.00	62.88	**49.77**	1.67	1.57		1		0.404		0.80	
515+63.00	10.75	Rt.	S-300			0.00	0.00	0.00					0.00					1.00	0.90	0.10		8.00	0.442	2.35		
RK			7-7			0.30	0.30	0.29										13.00	12.46	0.54		8.00	4.200	7.56		
				PIER	12.97	0.00	0.00	0.00	10.00	0.03	9.04	0.28	0.00	**2.58**	0.00	71.84	**58.84**	2.77	2.67		1		0.771		1.10	
518+83.00	10.75	Rt.	CC-304			0.00	0.00	0.00					0.00					2.10	2.00	0.10		8.00	0.442	3.24		
RK			7-9			0.19	0.19	0.18										13.02	12.77	0.25		8.00	1.685	4.79		
				PIER	14.70	0.00	0.00	0.00	10.00	0.05	9.04	0.18	0.00	**1.63**	0.00	78.50	**65.48**	5.27	5.17		1		0.680		1.04	
521+80.00	13.80	Rt.	S-319			0.00	0.00	0.00					0.00					4.60	4.50	0.10		8.00	0.442	3.04		
RS1			9-13			0.11	0.11	0.10										11.95	11.85	0.11		8.00	0.565	2.77		
				PIER	18.95	0.00	0.00	0.00	10.00	0.11	9.04	0.10	0.00	**0.94**	0.00	61.77	**49.82**	6.17	6.07		1		0.528		0.91	
928+04.00	7.50	Rt.	S-302			0.00	0.00	0.00					0.00					5.50	5.40	0.10		8.00	0.442	2.68		
RS1			9-14			0.22	0.22	0.21										12.23	11.73	0.50		8.00	2.259	5.55		
				PIER	22.00	0.00	0.00	0.00	10.00	0.07	9.04	0.21	0.00	**1.89**	0.00	66.40	**54.17**	6.77	6.67		1		0.455		0.85	
929+79.00	8.00	Rt.	S-305			0.00	0.00	0.00					0.00					6.10	6.00	0.10		8.00	0.442	2.49		
RS1			9-16			0.17	0.17	0.16										11.79	11.49	0.30		8.00	1.349	4.29		
				PIER	21.90	0.00	0.00	0.00	10.00	0.09	9.04	0.16	0.00	**1.46**	0.00	77.25	**65.46**	7.37	7.27		1		0.457		0.85	
933+27.01	8.10	Rt.	S-315			0.00	0.00	0.00					0.00					6.70	6.60	0.10		8.00	0.442	2.49		
RK			CC-300			0.00	3.50	0.00										12.08	12.07	0.02		36.00	0.128	3.65		
				MHP-8	14.35	0.00	0.00	0.00	15.35	0.07	7.77	3.32	0.00	**25.80**	0.00	12.00	**-0.08**	3.91	3.90		1		0.070		19.07	
515+63.00	29.74	Rt.	S-300			0.00	0.00	0.00					0.00					0.91	0.90	0.01		36.00	0.059	2.70		
RK			CC-304			0.00	3.00	0.00										12.46	12.30	0.16		36.00	0.101	3.25		
				MHP-8	162.57	0.00	0.00	0.00	13.81	0.83	8.08	2.85	0.00	**23.00**	0.00	12.20	**-0.26**	4.09	4.00		1		0.055		17.00	
518+83.00	25.22	Rt.	S-304			0.00	0.00	0.00					0.00					1.09	1.00	0.09		36.00	0.059	2.41		
RK			S-300			0.00	3.80	0.00										12.07	11.89	0.18		42.00	0.066	2.91		
				MH8J60	269.27	0.00	0.00	0.00	15.42	1.54	7.76	3.61	0.00	**27.98**	0.00	12.00	**-0.07**	3.80	3.60		1		0.074		29.70	
515+45.00	31.00	Rt.	S-301			0.00	0.00	0.00					0.00					0.30	0.10	0.20		42.00	0.048	3.09		
RS1			S-301			0.00	3.80	0.00										11.89	11.85	0.04		42.00	0.061	2.80		
				?MHJ35	70.10	0.00	0.00	0.00	16.96	0.42	7.48	3.61	0.00	**26.98**	0.00	12.00	**0.11**	3.60	3.50		1		0.143		41.17	
927+35.00	25.00	Rt.	S-302			0.00	0.00	0.00					0.00					0.10	0.00	0.10		42.00	0.048	4.28		
RN			S-302			0.00	3.90	0.00										11.85	11.73	0.11		42.00	0.064	2.86		
				?MHJ35	177.78	0.00	0.00	0.00	17.38	1.04	7.41	3.71	0.00	**27.50**	0.00	12.00	**0.15**	3.50	3.40		1		0.056		25.85	
814+97.86	60.00	Rt.	S-305			0.00	0.00	0.00					0.00					0.00	-0.10	0.10		42.00	0.048	2.69		
CL			S-303			0.50	0.50	0.47										12.60	12.30	0.30		10.00	3.273	7.87		
				?BWI21	9.20	0.00	0.00	0.00	10.00	0.02	9.04	0.47	0.00	**4.29**	0.00	26.16	**13.56**	8.53	8.43		1		1.087		2.47	
675+00.00	79.18	Lt.	S-304			0.00	0.00	0.00					0.00					7.70	7.60	0.10		10.00	0.328	4.54		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

B-59

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_2** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END / ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 / C= 0.20 / C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6 / FREQ. (Yrs): 50 / MANNINGS n: 0.0120 / TAILWEL (ft): 11.26
CL			S-304			0.00	3.50	0.00										12.30	12.08	0.21		36.00	0.132	3.72		
				MH8J50	159.27	0.00	0.00	0.00	14.64	0.71	7.91	3.32	0.00	**26.27**	0.00	12.40	**0.10**	4.00	3.91		1		0.057		17.18	
675+00.00	90.00	Lt.	CC-300			0.00	0.00	0.00					0.00					1.00	0.91	0.09		36.00	0.059	2.43		
RS1			S-305			0.00	4.13	0.00										11.73	11.49	0.24		42.00	0.068	2.95		
				?MHJ35	353.57	0.00	0.00	0.00	18.41	2.00	7.25	3.92	0.00	**28.39**	0.00	11.80	**0.07**	3.40	3.20		1		0.057		25.92	
929+78.96	30.00	Rt.	S-315			0.00	0.00	0.00					0.00					-0.10	-0.30	0.20		42.00	0.048	2.69		
CL			S-309			0.00	2.70	0.00										12.48	12.46	0.02		36.00	0.083	2.94		
				MH8J50	24.92	0.00	0.00	0.00	13.66	0.14	8.11	2.56	0.00	**20.77**	0.00	12.50	**0.02**	4.10	4.09		1		0.040		14.48	
677+00.00	90.00	Lt.	CC-304			0.00	0.00	0.00					0.00					1.10	1.09	0.01		36.00	0.059	2.05		
RS1			S-315			0.00	4.30	0.00										11.49	11.40	0.10		42.00	0.068	2.95		
				?MHJ35	144.69	0.00	0.00	0.00	20.41	0.00	6.95	4.08	0.00	**28.36**	0.00	11.60	**0.11**	3.20	3.10		1		0.069		28.65	
933+27.01	30.00	Rt.	MFE_1			0.00	0.00	0.00					0.00					-0.30	-0.40	0.10		42.00	0.048	2.98		
CL			S-316			0.45	0.45	0.43										20.12	20.06	0.05		18.00	0.117	2.20		
				BW-218	44.93	0.00	0.00	0.00	10.00	0.34	9.04	0.43	0.00	**3.89**	0.00	23.78	**3.66**	20.50	20.40		1		0.223		5.37	
678+00.00	79.18	Lt.	S-316A			0.00	0.00	0.00					0.00					19.00	18.90	0.10		18.00	0.150	3.04		
CL			S-316A			0.15	0.60	0.14										20.06	19.96	0.10		18.00	0.223	3.47		SAG INLET
				BW-218	44.93	0.00	0.00	0.00	10.34	0.22	8.94	0.57	0.00	**5.10**	0.00	23.85	**3.78**	20.40	20.30		1		0.223		5.37	
677+50.00	79.18	Lt.	S-316B			0.00	0.00	0.00					0.00					18.90	18.80	0.10		18.00	0.150	3.04		
CL			S-316B			0.30	0.90	0.29										12.83	12.48	0.35		12.00	3.709	9.54		
				BW-218	9.32	0.00	0.00	0.00	10.56	0.02	8.88	0.86	0.00	**7.59**	0.00	23.95	**11.13**	6.70	6.60		1		1.072		4.08	
677+00.00	79.18	Lt.	S-309			0.00	0.00	0.00					0.00					5.70	5.60	0.10		12.00	0.257	5.13		
RK			S-319			0.00	1.80	0.00										12.77	12.48	0.29		30.00	0.106	2.94		
				MHP-8	273.29	0.00	0.00	0.00	12.12	1.55	8.47	1.71	0.00	**14.44**	0.00	12.60	**-0.17**	4.40	4.20		1		0.073		12.02	
521+80.00	30.00	Rt.	S-309			0.00	0.00	0.00					0.00					1.90	1.70	0.20		30.00	0.076	2.45		
RE			S-320			0.24	0.24	0.23										13.18	13.09	0.08		10.00	0.735	3.73		
				?BWI21	11.03	0.00	0.00	0.00	10.00	0.05	9.04	0.23	0.00	**2.04**	0.00	29.08	**15.90**	6.83	6.73		1		0.906		2.26	
6002+00.00	7.88	Lt.	S-321			0.00	0.00	0.00					0.00					6.00	5.90	0.10		10.00	0.328	4.14		
CL			S-321			0.00	1.61	0.00										13.09	12.77	0.33		24.00	0.285	4.17		
				MHP-8	114.14	0.00	0.00	0.00	11.66	0.46	8.58	1.52	0.00	**13.09**	0.00	13.00	**-0.09**	4.70	4.50		1		0.175		10.26	
681+00.00	95.00	Lt.	S-319			0.00	0.00	0.00					0.00					2.70	2.50	0.20		24.00	0.102	3.27		
RK			S-322			0.00	1.37	0.00										13.39	13.09	0.29		24.00	0.215	3.62		
				MHP-8	136.40	0.00	0.00	0.00	11.03	0.63	8.75	1.30	0.00	**11.37**	0.00	13.00	**-0.39**	4.90	4.70		1		0.147		9.38	
524+36.50	34.00	Rt.	S-321			0.00	0.00	0.00					0.00					2.90	2.70	0.20		24.00	0.102	2.99		
CL			S-322A			0.32	0.32	0.31										13.52	13.39	0.13		10.00	1.366	5.09		
				?BWI21	9.81	0.00	0.00	0.00	10.00	0.03	9.04	0.31	0.00	**2.77**	0.00	32.10	**18.58**	6.53	6.43		1		1.020		2.40	
682+40.00	86.58	Lt.	S-322			0.00	0.00	0.00					0.00					5.70	5.60	0.10		10.00	0.328	4.39		
RE			S-323			0.47	0.77	0.45										14.13	13.71	0.42		12.00	2.802	8.30		
				?BWI21	15.00	0.00	0.00	0.00	10.07	0.03	9.02	0.73	0.00	**6.60**	0.00	33.31	**19.18**	6.80	6.70		1		0.667		3.22	
6005+18.00	7.88	Lt.	S-325			0.00	0.00	0.00					0.00					5.80	5.70	0.10		12.00	0.257	4.05		
RK			S-324			0.00	1.04	0.00										13.55	13.39	0.16		24.00	0.131	2.83		
				MHP-8	120.90	0.00	0.00	0.00	10.32	0.71	8.95	0.99	0.00	**8.88**	0.00	13.10	**-0.45**	5.10	4.90		1		0.165		9.97	
525+60.00	24.00	Rt.	S-322			0.00	0.00	0.00					0.00					3.10	2.90	0.20		24.00	0.102	3.17		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_2** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

LOCATION OF UPPER END ALIGNMENT NAME STATION	DIST SD	STR. NO. UPPER LOWER	TYPE OF STR.	LEN. (ft.)	AREAS (Ac) C= 0.95 C= 0.20 C= 0.00 INC	TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE CROWN FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE SPAN	SLOPE % HGL PHYS MIN	ACTUAL VEL. PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS ZONE: 6 FREQ. (Yrs): 50 MANNINGS n: 0.0120 TAILW EL (ft): 11.26
RE		**S-325**			0.00	0.77	0.00										13.71	13.55	0.16		18.00	0.335	3.73		
			MHP-8	48.45	0.00	0.00	0.00	10.10	0.22	9.01	0.73	0.00	**6.59**	0.00	13.20	**-0.51**	7.20	7.10		1		0.206		5.17	
6005+18.00	26.00 Lt.	S-324			0.00	0.00	0.00					0.00					5.70	5.60	0.10		18.00	0.150	2.93		
CL		**S-326**			0.30	0.30	0.29										31.51	29.11	2.40		18.00	5.741	9.75		
			GUT-S	41.81	0.00	0.00	0.00	10.00	0.07	9.04	0.28	0.00	**2.58**	0.00	35.30	**3.79**	32.70	30.30		1		5.741		27.27	
684+22.00	56.50 Lt.	S-323			0.00	0.00	0.00					0.00					31.20	28.80	2.40		18.00	0.150	15.43		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

FLORIDA DEPARTMENT OF TRANSPORTATION
STORM DRAIN TABULATION FORM

Financial Prj Id: **258415-1-52-01** County: **HILLSBOROUGH** Network: **SMFE_1_3** Designed by **Divya Pasupuleti** Date: 4/3/2008
Description: **I-4/SELMON EXPRESSWAY** Organization **PBSJ - Tampa** State Road: **SR 400** Checked by: **Shayne Paynter** Date: 4/3/2008

AREAS (Ac): C= 0.95, C= 0.20, C= 0.00

NOTES & REMARKS: ZONE: 6; FREQ. (Yrs): 50; MANNINGS n: 0.0120; TAILW EL (ft): 11.26

LOCATION OF UPPER END — ALIGNMENT NAME / STATION	DIST	SD	STR. NO. UPPER / LOWER	TYPE OF STR.	LEN. (ft.)	AREAS INC	AREAS TOTAL	SUB-TOTAL (C*A)	TIME OF CONC (min)	TIME OF FLOW SECT. (min)	INTEN (in/hr)	TOTAL (C*A)	BASE FLOW / SUMM BASE (cfs)	TOTAL FLOW (cfs)	MINOR LOSS (ft.)	INLET ELEV. (ft.)	HGL CLEAR (ft.)	HYDRAULIC GRADE / CROWN / FLOWLINE UPPER (ft.)	LOWER (ft.)	FALL (ft.)	# BRLS	PIPE SIZE (in.) RISE / SPAN	SLOPE % HGL / PHYS / MIN.	ACTUAL VEL. / PHYS. VEL. (fps)	FULL FLOW CAP. (cfs)	NOTES & REMARKS
RN			**S-307**			0.28	0.28	0.27										31.03	30.02	1.01		18.00	2.004	8.52		
				?BWI21	50.14	0.00	0.00	0.00	10.00	0.10	9.04	0.27	0.00	**2.40**	0.00	35.90	**4.88**	32.20	30.10		1		4.188		23.29	SAG INLET
817+25.21	18.88	Lt.	S-308			0.00	0.00	0.00					0.00					30.70	28.60	2.10		18.00	0.150	13.18		
RF			**S-308**			0.23	0.51	0.22										30.02	29.81	0.21		18.00	0.147	2.47		
				?BWI21	141.59	0.00	0.00	0.00	10.10	0.96	9.01	0.48	0.00	**4.37**	0.00	33.10	**3.08**	30.10	29.80		1		0.212		5.24	SAG INLET
7010+53.60	27.88	Lt.	S-312			0.00	0.00	0.00					0.00					28.60	28.30	0.30		18.00	0.150	2.96		
RF			**S-312**			0.14	1.03	0.14										29.81	29.61	0.20		24.00	0.142	3.35		
				?BWI21	140.66	0.00	0.00	0.00	11.05	0.70	8.74	0.98	0.00	**8.53**	0.00	34.54	**4.73**	30.30	30.10		1		0.142		9.24	
7012+00.00	27.88	Lt.	S-312A			0.00	0.00	0.00					0.00					28.30	28.10	0.20		24.00	0.102	2.94		
RF			**S-312A**			0.39	1.42	0.37										29.24	29.14	0.10		24.00	0.575	6.24		
				?BWI21	17.40	0.00	0.00	0.00	11.75	0.05	8.56	1.35	0.00	**11.52**	0.00	39.38	**10.15**	30.10	30.00		1		0.575		18.58	
7013+45.00	27.88	Lt.	S-314			0.00	0.00	0.00					0.00					28.10	28.00	0.10		24.00	0.102	5.91		
RN			**S-313**			0.37	0.37	0.36										32.75	30.15	2.60		18.00	5.239	10.07		
				?BWI21	49.63	0.00	0.00	0.00	10.00	0.08	9.04	0.36	0.00	**3.21**	0.00	37.42	**4.67**	33.90	31.30		1		5.239		26.05	
818+87.50	18.88	Lt.	S-312			0.00	0.00	0.00					0.00					32.40	29.80	2.60		18.00	0.150	14.74		
RF			**S-314**			0.00	1.42	0.00										16.52	11.61	4.91		24.00	5.328	17.94		
				MHP-8	92.06	0.00	0.00	0.00	11.80	0.09	8.55	1.35	0.00	**11.51**	0.00	36.00	**19.48**	18.00	8.50		1		10.319		78.73	
7013+45.00	48.40	Lt.	S-314A			0.00	0.00	0.00					0.00					16.00	6.50	9.50		24.00	0.102	25.06		
RF			**S-314A**			0.00	1.42	0.00										11.61	11.47	0.14		24.00	0.219	3.65		
				MHP-8	65.19	0.00	0.00	0.00	11.89	0.00	8.53	1.35	0.00	**11.48**	0.00	12.00	**0.39**	5.10	5.00		1		0.153		9.60	
7014+40.00	45.00	Lt.	MFE_1			0.00	0.00	0.00					0.00					3.10	3.00	0.10		24.00	0.102	3.06		

Units: ENGLISH

HGL method: Do NOT jump to pipe crown.

T60v3FDOT.RPT 11/25/2007

ANALYSIS OF EXISTING SYSTEMS

1,155 m − 1,134 m = 0.021 m.
= 0.0689 ft

H. W. LOCHNER, INC.

DESIGN STORM - 3 YEAR
DATE: 04/17/2000 PROJECT: S.R. 45 (676), LICATA BRIDGE TO S.R. 60

(GRANT ST. OUTFALL)
STORM SEWER TABULATIONS

SHEET No. 2 OF 3
BY: TES (ST-GRANT.WK4)
JOB No. 10250-3527

FLOW FROM / FLOW TO	TYPE No. STR.	LINE TYPE	LENG. (M1) (FT.)	DRAINAGE AREA (AC) C = 0.95 / C = 0.20 / C = 0.00 INCR.	SUBTO.	C*A SUBTO.	Tc (MIN)	TIME OF FLOW (MIN)	I ("/HR)	C*A TOTAL	TOTAL RUNOFF (CFS)	IN.ELEV. (M) MAX.H.G. DIFF.(FT) GUT. FL.	ELEV. OF H.G. / CROWN ELEV. / FLOW LINE ELEV. (M) UP.-END	(M) LOW-END	FALL (M)	PIPE SIZE (MM) (IN)	SLOPE (%)	VEL. (FPS) FULL @%D FULL	CAPAC. (CFS) FULL / PART.	REMARKS STATION DEPTH FLOW FR.
79A	'C'			0.372	0.372	0.353							1.212	1.203	0.009		0.090%	1.93	3.41	100+00 LT
	S-?		10.5	0.817	0.817	0.163						0.81	0.850	0.833	0.017	450	0.160%	2.84	FULL	65%
78A	DBI	RCP	34.4	0.000	0.000	0.000	10.0	0.3	6.60	0.517	3.41	1.46	0.393	0.378	0.017	18	0.160%	2.58	4.55	-
78A	'C'			0.261	0.633	0.601							1.203	1.159	0.044		0.239%	3.15	5.55	100+00 LT
	S-?		18.5	0.442	1.259	0.252						0.94	0.833	0.487	0.346	450	1.870%	7.98	FULL	42%
77	DBI	RCP	60.7	0.000	0.000	0.000	10.3	0.3	6.51	0.853	5.55	1.49	0.378	0.030	0.346	18	1.870%	8.81	15.55	79A
77				0.000	0.786	0.747							1.159	1.088	0.071		0.293%	3.49	8.16	100+00 LT
	S-?		24.1	0.000	1.269	0.254						2.17	0.415	0.366	0.049	450	0.205%	2.92	FULL	100%
76	MH	RCP	79.1	0.000	0.000	0.000	11.7	0.4	6.15	1.001	8.16	1.82	-0.042	-0.091	0.049	18	0.205%	2.92	5.15	78A, 79
75 → EX-6			0.781	~~0.701~~	~~0.701~~ 0.781	~~0.666~~ 0.742							1.155 ~~1.194~~	~~1.088~~ 1.101	0.048		0.154%	~~2.62~~ 2.81	4.46	100+00 LT
	S-?		30.0	0.046	0.046	0.009				0.751	4.96	1.40	~~0.757~~	0.366	0.391	450	1.303%	6.59	FULL	41%
76	CI	RCP	98.4	0.000	0.000	0.000	10.0	0.6	6.60	~~0.675~~	~~4.46~~	1.56	0.300	-0.091	0.391	18	1.303%	7.35	12.98	-
76 → EX-7				0.290	~~1.777~~ 1.857	~~1.688~~ 1.764							1.101 ~~1.088~~	~~0.962~~ 0.987	0.126		0.235%	~~3.79~~ 3.93	11.86	100+00 LT
	S-?		53.4	0.016	1.331	0.266				2.030	12.34	1.61	0.519	0.459	0.060	600	0.112%	2.61	FULL	100%
72	CI	RCP	175.2	0.000	0.000	0.000	12.1	0.8	6.08	~~1.954~~	~~11.86~~	1.56	-0.091	-0.151	0.060	24	0.112%	2.61	8.19	75, 77
74A	'C'			0.512	0.512	0.486							1.052	1.036	0.015		0.199%	2.87	5.07	100+00 LT
	S-?		7.8	1.406	1.406	0.281						1.77	0.830	0.692	0.138	450	1.770%	7.63	FULL	41%
74	DBI	RCP	25.6	0.000	0.000	0.000	10.0	0.1	6.60	0.768	5.07	1.59	0.373	0.235	0.138	18	1.770%	8.57	15.13	-
74				0.058	0.570	0.542							1.036	1.015	0.021		0.243%	3.17	5.60	100+00 LT
	S-?		8.5	0.160	1.566	0.313						1.98	0.692	0.679	0.013	450	0.155%	2.54	FULL	100%
73	CI	RCP	27.9	0.000	0.000	0.000	10.1	0.1	6.56	0.855	5.60	1.64	0.235	0.222	0.013	18	0.155%	2.54	4.48	74A
73A	'C'			0.271	0.271	0.257							1.021	1.015	0.006		0.056%	1.52	2.68	100+00 LT
	S-?		10.5	0.743	0.743	0.149						1.87	0.850	0.679	0.171	450	1.629%	6.04	FULL	30%
73	DBI	RCP	34.4	0.000	0.000	0.000	10.0	0.4	6.60	0.406	2.68	1.59	0.393	0.222	0.171	18	1.629%	8.22	14.51	-
73				0.151	0.992	0.942							1.015	0.962	0.053		0.664%	5.25	9.26	100+00 LT
	S-?		8.0	0.090	2.399	0.480						2.05	0.679	0.633	0.046	450	0.575%	5.48	FULL	94%
72	CI	RCP	26.2	0.000	0.000	0.000	10.3	0.1	6.51	1.422	9.26	1.64	0.222	0.176	0.046	18	0.575%	4.88	8.62	73A, 74
72	X-5			0.000	2.681 ~~2.769~~	~~2.631~~ 2.707							0.967 ~~0.962~~	0.809 ✓	0.153		0.203%	4.164 ~~4.06~~	20.01	100+00 LT
	S-?		75.5	0.000	3.730	0.746				3.453	20.44	3.04	0.607	0.546	0.061	750	0.081%	2.58	FULL	100%
69	MH	RCP	247.7	0.000	0.000	0.000	12.9	1.0	5.92	~~3.377~~	~~20.01~~	1.89	-0.155	-0.216	0.061	30	0.081%	2.58	12.63	73, 76

~~76~~ B63

H. W. LOCHNER, INC. (GRANT ST. OUTFALL)

STORM SEWER TABULATIONS

SHEET No. 3 OF 3

DESIGN STORM - 3 YEAR

BY: TES (ST-GRANT.WK4)

DATE 04/17/2000 PROJECT: S.R. 45 (678), LICATA BRIDGE TO S.R. 60

JOB No. 10250-3527

FLOW FROM FLOW TO	TYPE No. STR.	LINE TYPE	LENG. (M1) (FT.)	DRAINAGE AREA (AC) C = 0.95 C = 0.20 C = 0.00 INCR.	SUBTO.	C*A SUBTO.	Tc (MIN)	TIME OF FLOW (MIN)	I ("/HR)	C*A TOTAL	TOTAL RUNOFF (CFS)	IN.ELEV. (M) MAX.H.G. DIFF.(FT) GUT. FL.	ELEV. OF H.G. CROWN ELEV. FLOW LINE ELEV. (M) UP.-END	(M) LOW-END	FALL (M)	PIPE SIZE (MM) (IN)	SLOPE (%)	VEL. (FPS) FULL @%D FULL	CAPAC. (CFS) FULL / PART.	REMARKS STATION DEPTH FLOW FR.
69			EX.	0.000	~~7.617~~ 7.897	~~7.426~~ 7.502	EXISTING 43 " x 68 " (1095 x 17300) ERCP						0.809	0.801	0.008	EQV.	0.050%	~~3.00~~ 3.02	47.68	100+00 LT
EX. PIPE	S-? MH	RCP	16.0 52.5	0.000 0.000	4.533 0.000	0.907 0.000	ASSUME 3 YR.DHW @ CROWN - CONSERV.- CITY DESIGN 5 YR. 13.9	0.3	5.72	~~8.333~~ 8.409	~~47.68~~ 48.10	1.80	0.822 -0.270	0.815 -0.277	0.007 0.007	1350 54	0.042% 0.042%	2.75 2.75	FULL 43.62	100% 65, 67, 72
71 EX. PIPE	S-? CI	RCP	8.0 26.2	0.453 1.244 0.000	0.453 1.244 0.000	0.430 0.249 0.000	10.0	0.2	6.60	0.679	4.48	1.88 1.39	0.818 0.512 0.055	0.806 0.496 0.039	0.012 0.016 0.016	450 18	0.155% 0.200% 0.200%	2.54 3.29 2.88	4.48 FULL 5.08	100+00 LT 73% -
68 EX. PIPE	S-? CI	RCP	1.0 3.3	1.213 0.180 0.000	1.213 0.180 0.000	1.152 0.036 0.000	10.0	0.0	6.60	1.188	7.84	1.92 1.39	0.806 0.498 0.041	0.801 0.496 0.039	0.005 0.002 0.002	450 18	0.476% 0.200% 0.200%	4.44 2.88 2.88	7.84 FULL 5.08	100+00 LT 100% -
EX. PIPE OUTFALL		RCP		0.000 0.000 0.000	~~9.463~~ 9.563 5.957 0.000	~~9.009~~ 9.085 1.191 0.000	EXISTING 43 " x 68 " (1095 x 1730) ERCP ASSUME 3 YR.DHW @ CROWN - CONSERV.- CITY DESIGN 5 YR. 14.2		5.68	~~10.200~~ 10.276	~~57.96~~ 58.37		0.801 0.818 -0.274	0.801 0.818 -0.274	0.000 0.000 0.000	EQV. 1350 54	0.074% 0.042% 0.042%	3.65 2.75 2.75	57.96 FULL 43.62	100+00 LT 100% 68,69,71

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① 0.966 m − 0.960 m = 0.006 = 0.02 ft

② 0.960 m − 0.959 m = 0.001 m = 0.003 ft

H. W. LOCHNER, INC.

(CORRINE ST. OUTFALL) STORM SEWER TABULATIONS

SHEET No. 3 OF 6

DESIGN STORM - 3 YEAR

BY: TES (ST7CORRI.WK4)

DATE: 07/11/2000 PROJECT: S.R. 45 (676), LICATA BRIDGE TO S.R. 60

JOB No. 10250-3527

FLOW FROM / FLOW TO	TYPE No. STR.	LINE TYPE	LENG. (M1) (FT.)	DRAINAGE AREA (AC) C = 0.95, C = 0.20, C = 0.40 INCR.	SUBTO.	C*A SUBTO.	Tc (MIN)	TIME OF FLOW (MIN)	I ("/HR)	C*A TOTAL	TOTAL RUNOFF (CFS)	IN.ELEV. (M) MAX.H.G. DIFF.(FT) GUT. FL.	ELEV. OF H.G. / CROWN ELEV. / FLOW LINE ELEV. (M) UP.-END	(M) LOW-END	FALL (M)	PIPE SIZE (MM) (IN)	SLOPE (%)	VEL. (FPS) FULL @%D FULL	CAPAC. (CFS) FULL / PART.	REMARKS STATION +/- DEPTH FLOW FR.
97				0.000	1.017	0.966							1.074	0.965	0.109		0.591%	4.95	8.74	100+00 LT
			18.5	0.000	1.991	0.398						2.87	0.916	0.897	0.019	450	0.103%	2.50	FULL	69.3%
94A	MH	RCP	60.7	0.000	0.000	0.000	10.7	0.2	6.40	1.364	8.74	1.95	0.459	0.440	0.019	18	0.103%	2.07	3.65	95
94				0.262	0.262	0.249							0.965	0.965	0.001		0.024%	0.99	1.75	100+00 LT
			3.0	0.079	0.079	0.016						2.74	0.902	0.897	0.005	450	0.151%	2.83	FULL	45%
94A	CI	RCP	9.8	0.000	0.000	0.000	10.0	0.2	6.60	0.265	1.75	1.80	0.445	0.440	0.005	18	0.151%	2.50	4.42	-
94A				0.000	4.473	4.249		USE DBL.29" x 45" (730 x 1150) ERCP HE IV					0.965	0.959	0.006	EQV. DBL.	0.052%	2.32	32.83	100+00 LT
			11.5	0.000	7.525	1.505						3.17	1.177	1.170	0.007	900	0.060%	2.83	FULL	77%
93	MH	RCP	37.7	0.000	0.000	0.000	14.0	0.3	5.70	5.754	32.83	1.93 ①	0.440	0.433 0.960	0.007	36	0.060%	2.50	35.37	92,94, 97
94C → EX-43				0.296 ~~0.203~~	0.296 ~~0.203~~	~~0.193~~ 0.281							0.966 ~~0.960~~	~~0.959~~ 0.960	0.001		0.004%	0.39	1.37	100+00 LT
			39.0	0.071	0.071	0.014				0.295 ~~0.207~~	1.95 ~~1.97~~	4.69	~~1.133~~	1.071	0.062	450	0.159%	2.90	PART.	27%
93	CI	RCP	128.0	0.000	0.000 5.389	0.000	10.0	0.7	6.60			2.39	0.676 ②	0.614	0.062	18	0.159%	2.57	9.07	-
93 → EX-37				0.626 ~~0.497~~	~~5.173~~	~~4.914~~ 5.120		USE DBL.34" x 53" (855 x 1345) ERCP HE IV					0.960 ~~0.959~~	~~0.952~~ 0.953	0.007	EQV. DBL.	0.028%	~~1.91~~ 1.97	36.65	100+00 LT
			24.5	0.121	7.717	1.543				6.663	37.85	4.43	~~1.297~~	1.285	0.012	1050	0.049%	2.76	PART.	60%
93A	CI	RCP	80.4	0.000	0.000 5.389	0.000	14.2	0.5	5.68	~~8.458~~	~~38.65~~	2.31	0.433	0.422	0.012	42	0.049%	2.49	47.96	94A, 94C
93A				0.000	~~5.173~~	4.914 5.120		USE DBL.34" x 53" (855 x 1345) ERCP					0.953 ~~0.952~~	0.933✓	0.018	EQV. DBL.	0.028%	1.91	36.65	100+00 LT
			67.0	0.000	7.717	1.543				6.663	37.85	3.60	1.285	1.251	0.034	1050	0.051%	2.80	PART.	60.0%
93B	MH	RCP	219.8	0.000	0.000	0.000	14.2	1.3	5.68	~~8.458~~	~~38.65~~	2.05	0.422	0.388	0.034	42 EQV.	0.051%	2.55	48.94	93
				0.148	0.148	0.141							0.933	0.933	0.000		0.002%	0.29	1.02	100+00 LT
93E			8.0	0.066	0.066	0.013						2.02	0.857	0.845	0.012	450	0.151%	2.83	PART.	23%
93B	CI	RCP	26.2	0.000	0.000 5.537	0.000	10.0	0.2	6.60	0.154	1.02	1.55	0.400	0.388	0.012	18	0.151%	2.50	8.84	-
93B				0.000	~~6.321~~	~~5.055~~ 5.260		USE TRIPLE 36" (900) PVC					0.933✓	0.929✓	0.004	EQV. TRP.	0.030%	1.77	37.52	100+00 LT
			13.0	0.000	7.783	1.557		H.G.L. - USE 6' x 3' CBC H.G.L.			38.72 ~~37.52~~	3.57	1.302	1.294	0.008	900	0.060%	1.87	PART.	60.0%
93D	MH	PVC	42.7	0.000	0.000 5.537	0.000	14.2	0.4	5.68	~~6.811~~ 6.817		2.02	0.388	0.380	0.008	36	0.060%	2.50	53.05	93A, 93E
93D				0.000	~~5.321~~	~~5.055~~ 5.260		USE 8' x 3' CBC (2440 x 915), EX. 4'x 2' CBC TIES IN					0.929✓	0.928	0.001	EQV. DBL.	0.021%	1.70	37.52	100+00 LT
			3.9	0.000	7.783	1.557		H.G.L. - USE 8' x 3' CBC (1830 x 915) H.G.L.				2.50	0.944	0.942	0.002	1125	0.049%	1.87	PART.	76.6%
93C	MH	RCP	12.8	0.000	0.000 5.537	0.000	14.2	0.1	5.68	~~6.811~~ 6.817	~~37.52~~ 38.72	1.69	0.030	0.028	0.002	45	0.049%	2.63	57.95	93B,EX.CBC
93C → EX-56				0.000	~~6.321~~	~~5.055~~ 5.260		USE 8' x 3' CBC (2440 x 915)					0.928	0.928	0.000	EQV. DBL.	0.018%	1.60	35.35	100+00 LT
			0.0	0.000	7.783	1.557		DBL. 45" (1143) PIPE EQUIV.			36.47 ~~35.35~~		0.942	0.942	0.000	1125	0.049%	1.87	PART.	76.6%
	EW	RCP	0.0	0.000	0.000	0.000	18.5	0.0	5.35	~~6.811~~ 6.817			0.028	0.028	0.000	45	0.049%	2.63	57.95	93D
													1.281	1.273	0.007		0.072%	1.73	3.06	100+00 LT
119			10.0	0.450 / 0.179	0.450 / 0.179	0.428 / 0.036						2.03	1.487	1.472	0.015	450	0.151%	2.69	FULL	62%
~~8~~ 120	CI	RCP	32.8	0.000	0.000	0.000	10.0	0.3	6.60	0.463	3.06	1.90	1.030	1.015	0.015	18	0.151%	2.50	4.42	-

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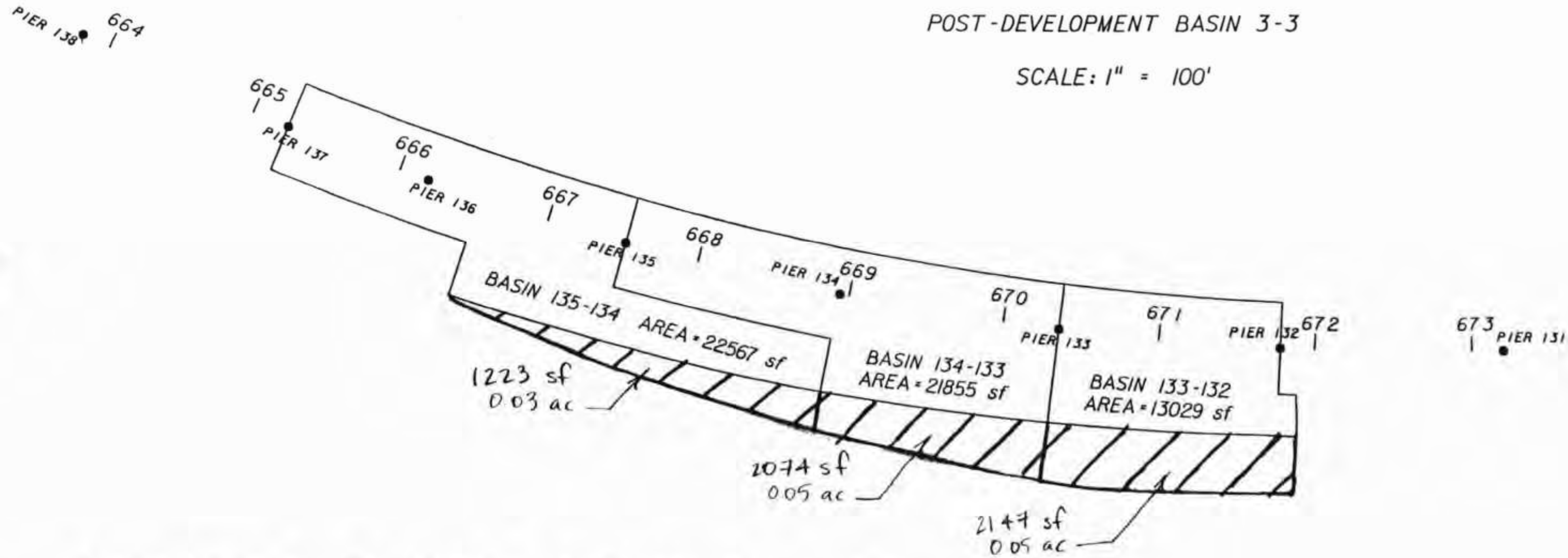
CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE

POST-DEVELOPMENT BASIN 3-3

SCALE: 1" = 100'



Total Area = 57,451 sf = 1.32 ac, CN = 98

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CROSSTOWN EXPRESSWAY
REVERSIBLE LANES BRIDGE

BASIN 3-3 POST-DEVELOPMENT

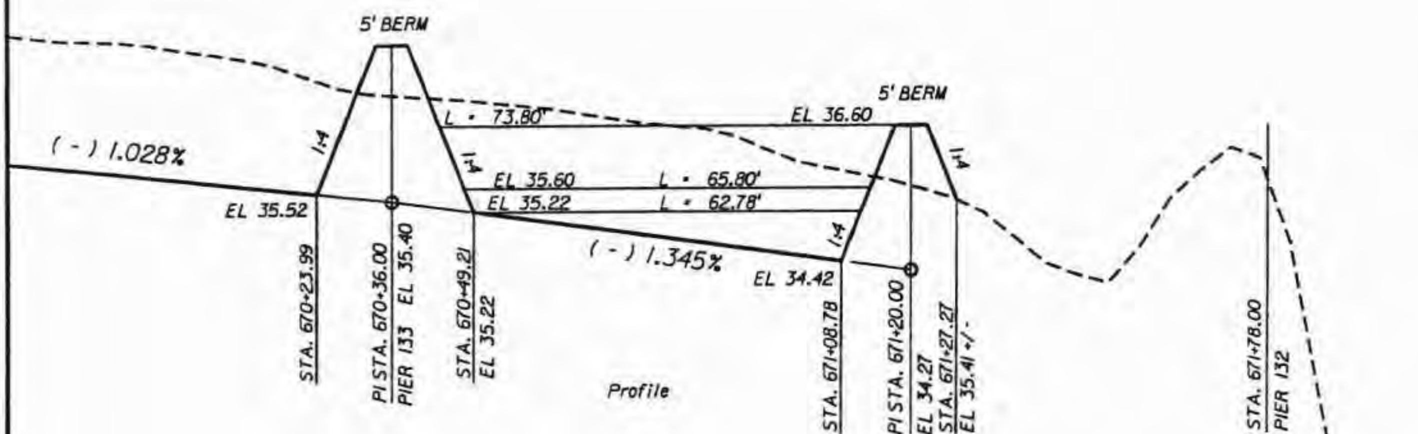
WATER QUALITY CALCULATIONS

SHEET ___ OF ___ PROJ. NO. C100003821

COMPUTED BY JH DATE 12/4/01

CHECKED BY RM DATE 2-6-02

PIER 133-132



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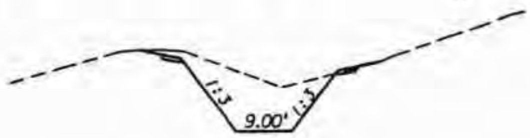
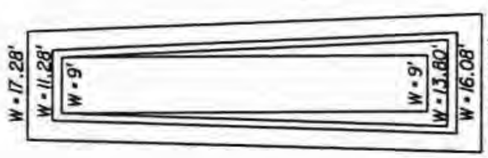


Typical Ditch Cross Section



Plan View

Post-development
Pier 133-132
Area = 13,029 sf = 0.30 ac, CN = 98
Treatment Volume = ~~13,029~~ 15,176 sf x 0.5" / 12" = ~~543~~ 632 cf

Stage (ft)	Area (sf)	Area (ac)	Storage (cf)
34.42	0	0	0
35.22	716	0.01644	286
35.60	900	0.02066	593 ~~more~~ than ~~543~~ cf
36.60	1452	0.03333	1769 less 632

Weir elevation = 35.60

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [5]

CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT
URS CORPORATION DECEMBER 2001

```
********** Input Report ********************************************************
--------Class: Drop Structure---------------------------------------------------
     Name: 133-132        From Node: 133-132         Length(ft): 10
    Group: BASE             To Node: S-331               Count: 1

    Outlet Cntrl Spec: Use dc or tw      Inlet Cntrl Spec: Use dn
    Upstream Geometry: Circular       Downstream Geometry: Circular
                              UPSTREAM              DOWNSTREAM
              Span(in): 18                      18
              Rise(in): 18                      18
            Invert(ft): 30.5                    30.4
           Manning's N: 0.012                   0.012
          Top Clip(in): 0                       0
       Bottom Clip(in): 0                       0

     Entrance Loss Coef: 0.5                   Flow: Both
         Exit Loss Coef: 0                 Equation: Aver Conveyance

     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                   1     1
     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                   1     1

 *** Weir 1 of 1 for Drop Structure 133-132 ***                [TABLE]
   Count: 1                  Bottom Clip(in): 0
    Type: Fread                 Top Clip(in): 0
    Flow: Both           Weir Discharge Coef: 3.13
Geometry: Rectangular  Orifice Discharge Coef: 0.6

        Span(in): 49                        Invert(ft): 35.6
        Rise(in): 999                 Control Elev(ft): 35.6
```

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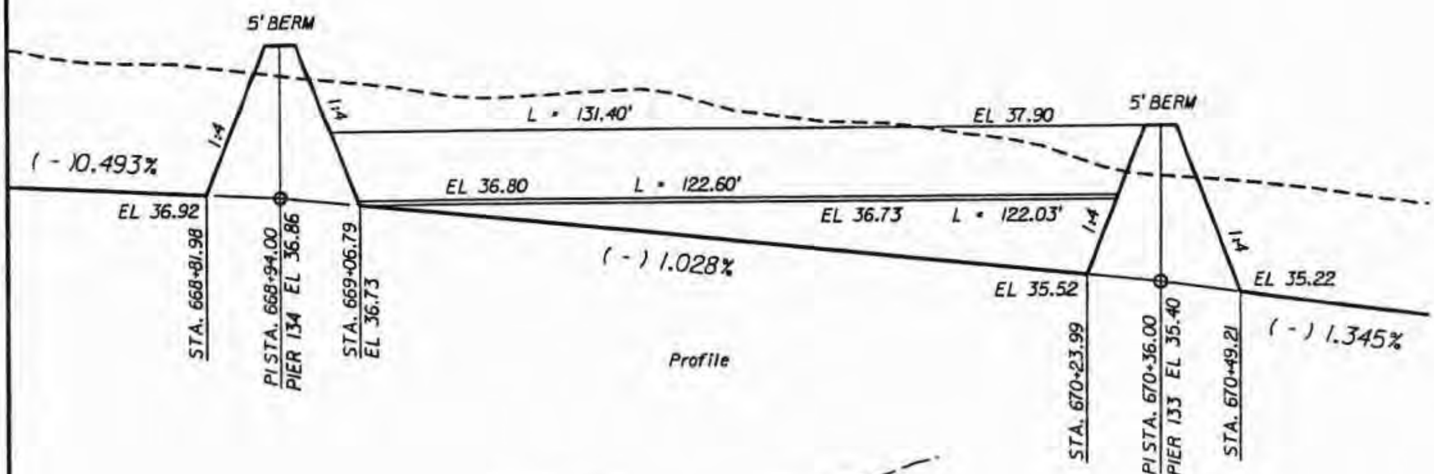
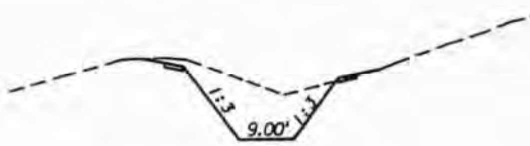
CROSSTOWN EXPRESSWAY
REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT
WATER QUALITY CALCULATIONS

SHEET ___ OF ___ PROJ. NO. C100003821
COMPUTED BY JH DATE 12/4/01
CHECKED BY RM DATE 2-6-02

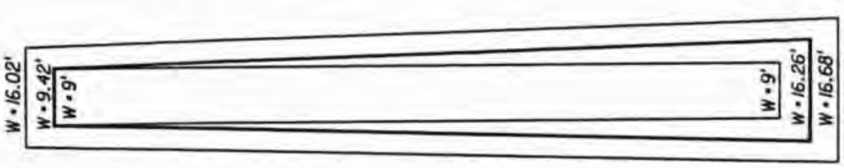
PIER 134-133



Profile



Typical Ditch Cross Section



Plan View

Post-development
Pier 134-133
Area = 21,855 sf = 0.50 ac, CN = 98
Treatment Volume = ~~21,855~~ sf x 0.5" / 12" = ~~911~~ cf
23,929 997

Stage (ft)	Area (sf)	Area (ac)	Storage (cf)	
35.52	0	0	0	
36.73	1541	0.03538	932	
36.80	1600	0.03673	1042	more than ~~911~~ cf
37.90	2582	0.05927	3342	997

Weir elevation = 36.80

```
Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [6]
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CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT
URS CORPORATION              DECEMBER 2001

********** Input Report *****************************************************
--------Class: Drop Structure-------------------------------------------------
    Name: 134-133        From Node: 134-133        Length(ft): 10
   Group: BASE             To Node: S-329               Count: 1

   Outlet Cntrl Spec: Use dc or tw     Inlet Cntrl Spec: Use dn
   Upstream Geometry: Circular      Downstream Geometry: Circular
                          UPSTREAM               DOWNSTREAM
             Span(in): 18                    18
             Rise(in): 18                    18
           Invert(ft): 31.6                  31.5
          Manning's N: 0.012                 0.012
         Top Clip(in): 0                     0
      Bottom Clip(in): 0                     0

    Entrance Loss Coef: 0.5                     Flow: Both
        Exit Loss Coef: 0                   Equation: Aver Conveyance

     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1
     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

 *** Weir 1 of 1 for Drop Structure 134-133 ***              [TABLE]
   Count: 1                    Bottom Clip(in): 0
    Type: Fread                   Top Clip(in): 0
    Flow: Both              Weir Discharge Coef: 3.13
Geometry: Rectangular  Orifice Discharge Coef: 0.6

        Span(in): 49                        Invert(ft): 36.8
        Rise(in): 999                 Control Elev(ft): 36.8
```

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CROSSTOWN EXPRESSWAY
REVERSIBLE LANES BRIDGE

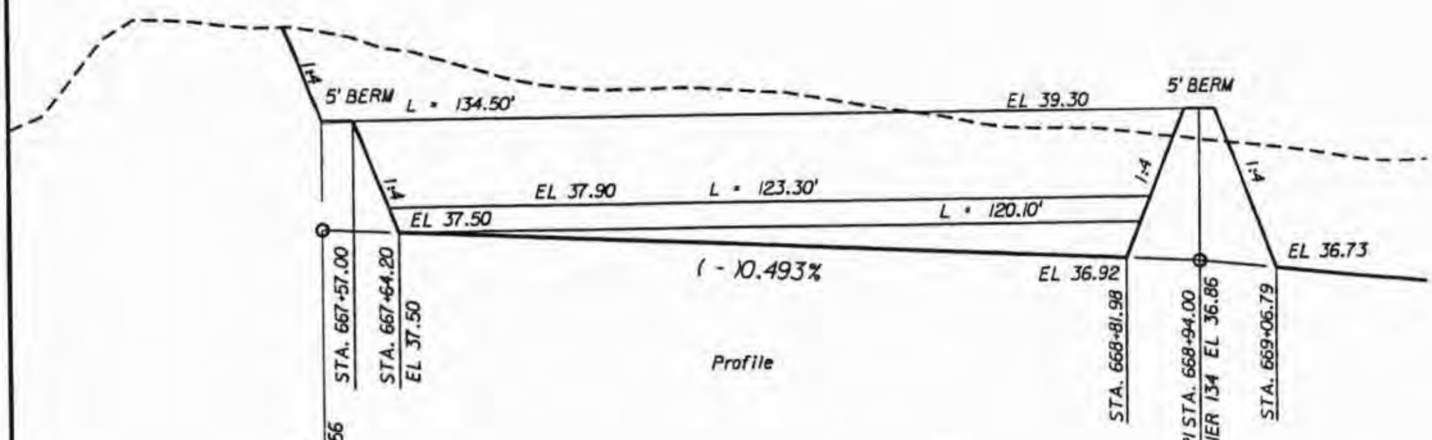
BASIN 3-3 POST-DEVELOPMENT

WATER QUALITY CALCULATIONS

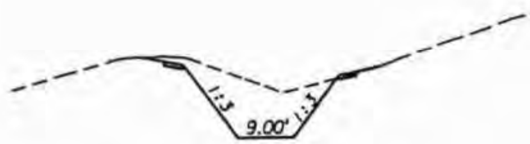
COMPUTED BY JH DATE 12/4/01

CHECKED BY RM DATE 2-6-02

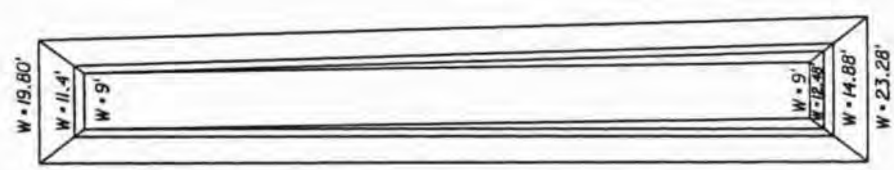
PIER 135-134



Profile



Typical Ditch Cross Section



Plan View

Post-development
Pier 135-134
Area = 22,567 sf = 0.52 ac, CN = 98
Treatment Volume = ~~22,567~~ 23,790 sf x 0.5" / 12" = ~~940~~ 991 cf

Stage (ft)	Area (sf)	Area (ac)	Storage (cf)
36.92	0	0	0
37.50	1290	0.02961	374
37.90	1620	0.03719	956 ~~more~~ less than ~~940~~ 991 cf
39.30	2897	0.06651	4118

Weir elevation = 37.90' NGVD

```
Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [7]
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CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT
URS CORPORATION              DECEMBER 2001

********** Input Report ****************************************************
--------Class: Drop Structure-----------------------------------------------
    Name: 135-134        From Node: 135-134        Length(ft): 10
   Group: BASE             To Node: S-327               Count: 1

   Outlet Cntrl Spec: Use dc or tw     Inlet Cntrl Spec: Use dn
   Upstream Geometry: Circular      Downstream Geometry: Circular
                                UPSTREAM            DOWNSTREAM
              Span(in): 18                    18
              Rise(in): 18                    18
            Invert(ft): 32.9                  32.8
           Manning's N: 0.012                 0.012
          Top Clip(in): 0                     0
       Bottom Clip(in): 0                     0

     Entrance Loss Coef: 0.5                      Flow: Both
         Exit Loss Coef: 0.7                  Equation: Aver Conveyance

     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                 1     1
     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                 1     1

 *** Weir 1 of 1 for Drop Structure 135-134 ***               [TABLE]
   Count: 1                     Bottom Clip(in): 0
    Type: Fread                    Top Clip(in): 0
    Flow: Both              Weir Discharge Coef: 3.13
Geometry: Rectangular    Orifice Discharge Coef: 0.6

        Span(in): 20                         Invert(ft): 37.9
        Rise(in): 999                  Control Elev(ft): 37.9
```

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20)

CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT 10 YEAR / 24 HOUR
URS CORPORATION DECEMBER 2001

********** Basin Summary - 10YR24HR **

***

Basin Name:	135-134	134-133	133-132
Group Name:	BASE	BASE	BASE
Node Name:	135-134	134-133	133-132
Hydrograph Type:	UH	UH	UH
Unit Hydrograph:	UH256	UH256	UH256
Peaking Factor:	256.00	256.00	256.00
Spec Time Inc (min):	1.33	1.33	1.33
Comp Time Inc (min):	1.33	1.33	1.33
Rainfall File:	FLMOD	FLMOD	FLMOD
Rainfall Amount (in):	7.00	7.00	7.00
Storm Duration (hr):	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00
Area (acres):	~~0.52~~ 0.55	~~0.50~~ 0.55	~~0.30~~ 0.35
Vol of Unit Hyd (in):	1.00	1.00	1.00
Curve Number:	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00
Time Max (hrs):	12.04	12.04	12.04
Flow Max (cfs):	~~2.18~~ 2.31	~~2.10~~ 2.31	~~1.26~~ 1.47
Runoff Volume (in):	6.76	6.76	6.76
Runoff Volume (cf):	~~12758~~ 13496	~~12267~~ 13496	~~7360~~ 8589

APPROXIMATE DHW CALCULATION $\longrightarrow Q = C_w L H_w^{3/2}$

$$H_w = \left[\frac{Q}{C_w L}\right]^{2/3}$$

DHW = WEIR ELEV. + H_w

135-134 $DHW_{10\text{-}yr} = \left[\frac{2.31}{(3.13)(1.667)}\right]^{2/3} + 37.90 = \underline{\underline{38.48'}} \Rightarrow \boxed{+0.05'}$

134-133 $DHW_{10\text{-}yr} = \left[\frac{2.31}{(3.13)(4.083)}\right]^{2/3} + 36.80 = \underline{\underline{37.12'}} \Rightarrow \boxed{+0.03'}$

133-132 $DHW_{10\text{-}yr} = \left[\frac{1.47}{(3.13)(4.083)}\right]^{2/3} + 35.60 = \underline{\underline{35.84'}} \Rightarrow \boxed{+0.03'}$

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CROSSTOWN EXPRESSWAY
REVERSIBLE LANES BRIDGE

BASIN 3-3 POST-DEVELOPMENT

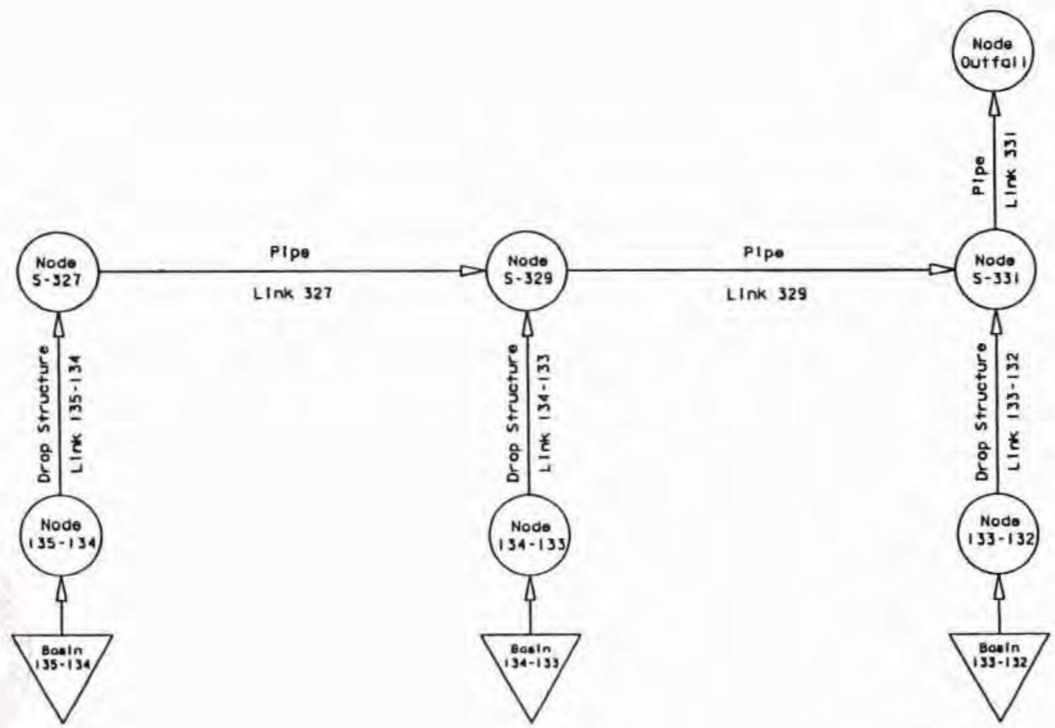
ICPR SCHEMATIC DIAGRAM

SHEET ___ OF ___ PROJ. NO. C100003821

COMPUTED BY ______ DATE ___________

CHECKED BY _______ DATE ___________

BASIN - NODE - LINK SCHEMATIC DIAGRAM



Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]

CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT 25 YEAR / 24 HOUR
URS CORPORATION DECEMBER 2001

********** Node Maximum Conditions - 25YR24HR **********

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
133-132	BASE	12.07	35.83	36.10	0.0015	1029.35	12.04	1.43	12.07	1.42
134-133	BASE	12.08	37.12	37.40	0.0020	1889.14	12.04	2.39	12.08	2.33
135-134	BASE	12.11	38.48	38.80	0.0035	2145.71	12.04	2.49	12.11	2.28
OUTFALL	BASE	0.00	8.50	8.50	0.0000	5.03	12.11	5.95	0.00	0.00
S-327	BASE	12.12	33.59	40.00	0.0044	217.39	12.11	2.28	12.12	2.28
S-329	BASE	12.11	32.71	38.60	0.0068	267.02	12.09	4.58	12.11	4.57
S-331	BASE	12.11	31.72	37.50	0.0082	242.52	12.09	5.95	12.11	5.95

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20) [1]

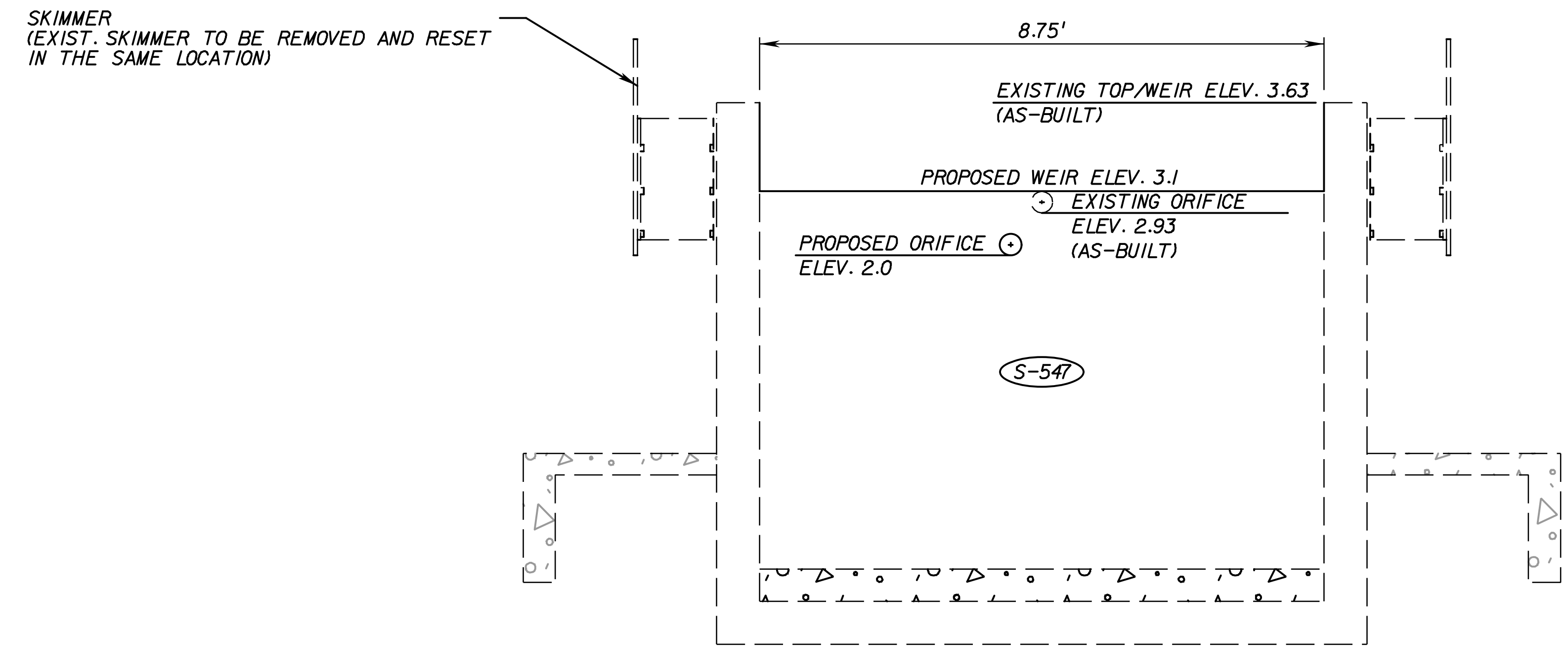
CROSSTOWN EXPRESSWAY REVERSIBLE LANES BRIDGE
BASIN 3-3 POST-DEVELOPMENT 10 YEAR / 24 HOUR
URS CORPORATION DECEMBER 2001

********** Node Maximum Conditions - 10YR24HR **********

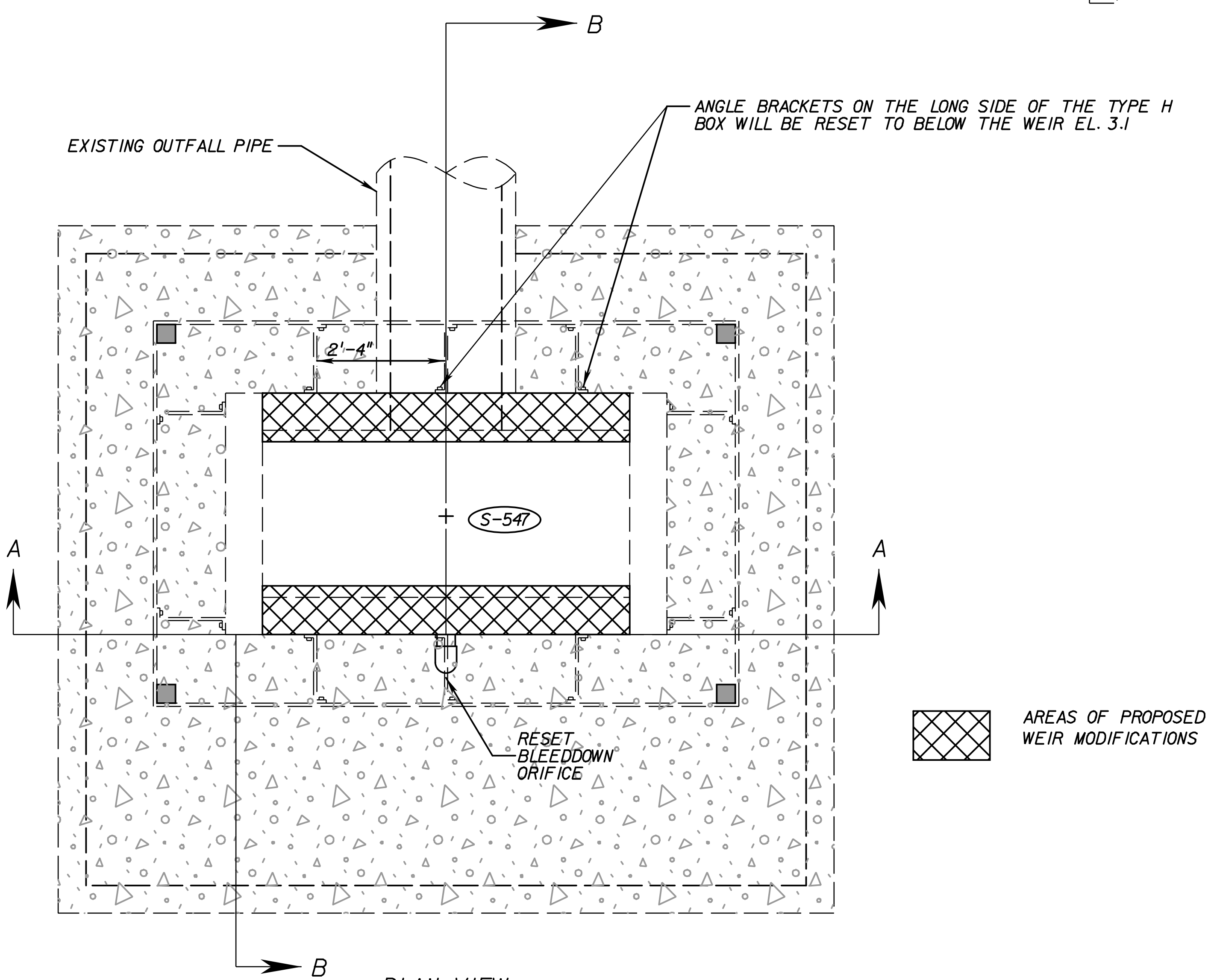
(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
133-132	BASE	12.07	35.81	36.10	0.0014	1018.43	12.04	1.25	12.07	1.24
134-133	BASE	12.08	37.09	37.40	0.0019	1864.39	12.04	2.09	12.08	2.03
135-134	BASE	12.11	38.43	38.80	0.0032	2099.60	12.04	2.17	12.11	1.99
OUTFALL	BASE	0.00	8.50	8.50	0.0000	5.03	12.11	5.18	0.00	0.00
S-327	BASE	12.12	33.53	40.00	0.0040	216.99	12.11	1.99	12.12	1.99
S-329	BASE	12.11	32.61	38.60	0.0062	269.60	12.10	3.99	12.11	3.98
S-331	BASE	12.11	31.59	37.50	0.0074	255.18	12.10	5.19	12.11	5.18

Plans & Relevant Calculations for I-4/ Selmon Expressway
Post Construction Safety & Maintenance Request (2016)
SWFWMD permit no.43020690.016 – Datum NGVD 29

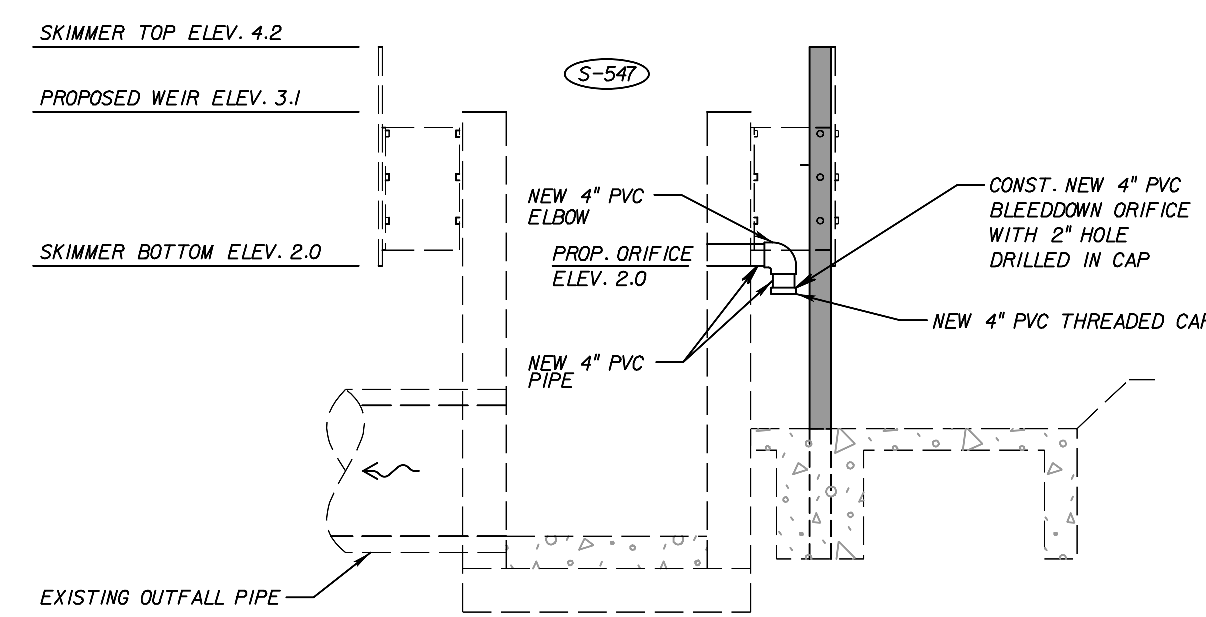


SECTION A-A
N.T.S.



PLAN VIEW
N.T.S.

NOTES:
1. SAW CUT WEIR OPENINGS ON BOTH LONG SIDES OF THE TYPE H BOX TO EL. 3.1
2. LOWER ORIFCE FROM EL. 2.8 TO EL. 2.0. GROUT EXISTING ORIFICE OPENING. SHIFT THE ORIFICE LOCATION HORIZONTALLY AS NEEDED TO AVOID CONFLICT WITH OLD LOCATION.
3. FOR ADDITIONAL DETAILS OF TYPE H INLETS, REFER TO INDEX 232.
4. REMOVE AND RESET EXISTING SKIMMER PER DETAIL.



SECTION B-B
N.T.S.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

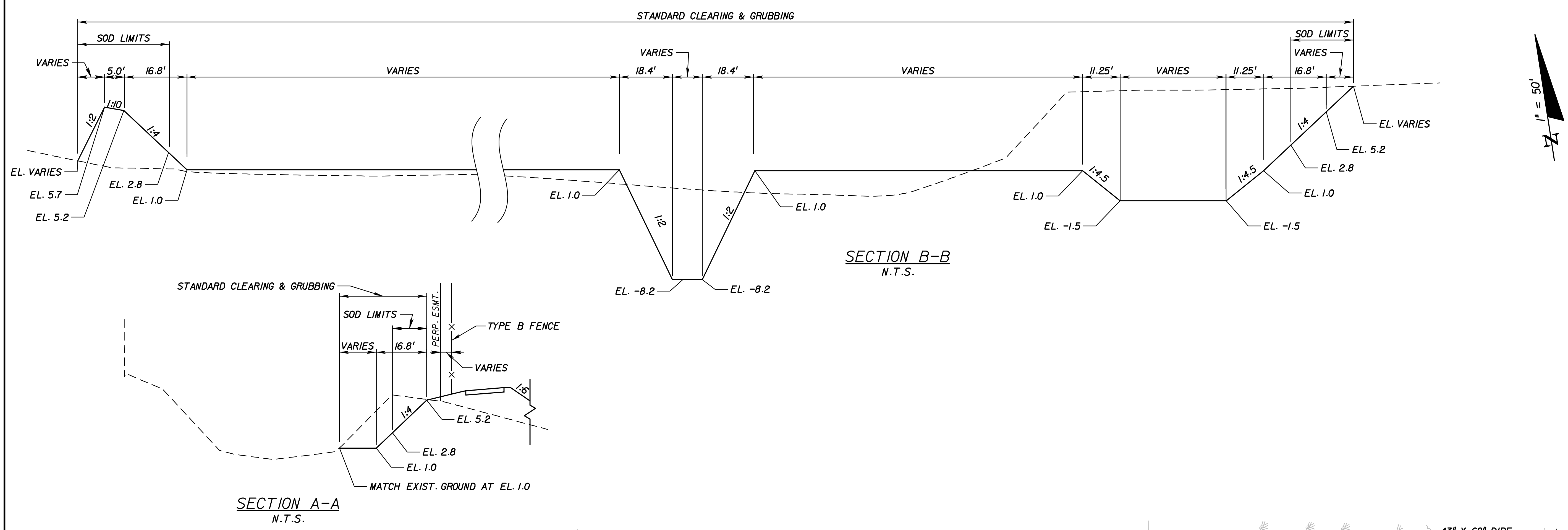
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

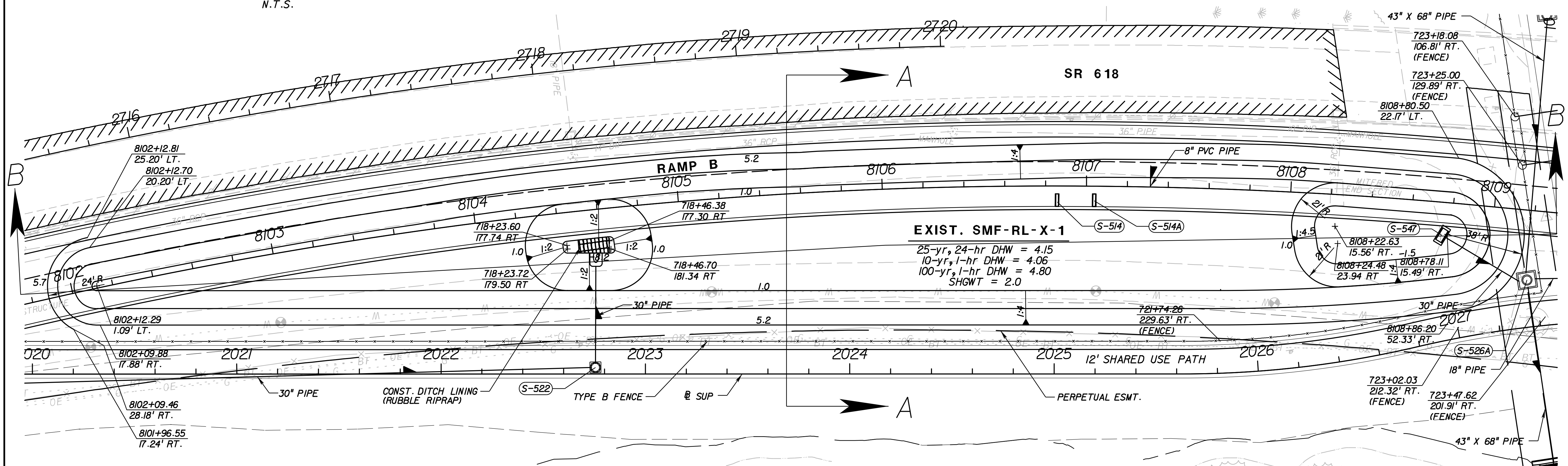
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	

ALTERNATIVE 2: CONTROL STRUCTURE MODIFICATION

SHEET NO. 460

USER: OVER6846 4/6/2016 9:03:36 AM K:\2584151520IAA4\drainage\DRDTRD04_Thea Modify.dgn





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	

SMF-RL-X-1
PLAN SHEET (1)

SHEET NO.
594

USER: OVER6846 4/6/2016 9:05:27 AM K:\2584151520\AA4\drainage\pdplrd801_manhole.dgn

MEMORANDUM

To: SWFWMD **Date:** April 6, 2016

From: Richard D. Uptegraff, P.E.
richard.uptegraff@atkinsglobal.com
(941) 447-4415

Project: S.R. 400 I-4 /SELMON EXPRESSWAY (SOUTH OF SELMON EXPRESSWAY TO 7TH AVENUE)

Subject: **SWFWMD ERP Modification Short Form Application**
App ID/ Permit No: 673499 / 43020690.009
County: HILLSBOROUGH
Sec/Twp/Rge: S16/S17/S18/S19/S20/S21/T29S/R19E

The Southwest Florida Water Management District (SWFWMD) previously approved the permit for the proposed reconstruction of S.R. 400 (I-4/ Selmon Expressway) I-4 Lee Roy Selmon Expressway Interchange. Permit Number 43020690.009 was issued December 16, 2008 to the Florida Department of Transportation (FDOT). We are requesting a minor modification to SMF RL-X-1.

The attached documents support a proposed change to the existing control structure in SMF RL-X-1 which was constructed with the subject project and permit, see the Project Location Map. The purpose of the change is to resolve a post construction safety and maintenance issue. Existing structures EX-187 and EX-184 are adjacent to the pond and have had the manhole lids dislodged due to surcharge several times during storm events. The proposed modifications to the existing control structure in SMF RL-X-1 (pond X) will reduce the design high water in the pond thus lowering the hydraulic grade line in the storm drain system to help prevent these existing manhole lids from dislodging.

Modifications will include lowering the weir elevation by cutting two new weir cut-outs on each of the long sides of the existing FDOT Type H DBI and lowering the control elevation to maintain the treatment volume provided in the pond. The existing skimmer will also be removed and reset. The table below and the attached control structure modification detail describe the proposed changes. Lowering the control elevation to 2.0 still keeps the orifice above the mean high water tidal elevation of 1.5 in McKay Bay.

With this modification to the control elevation and the weir elevation SMF RL-X-1 will maintain the required treatment volume, and the design high water in the pond is lowered which provides additional freeboard to the pond top of bank. The pond discharges to McKay Bay and does not provide attenuation.

Permitted and Proposed Comparison										
	SMF RL-X-1						**Treatment Requirements (ac-ft)**		**Treatment Requirements (ac-ft)**	
	Permitted (4320690.009)			Proposed						
	Weir/ Top El.	Skimmer Bot. El.	Orifice El.	Weir El./ Top El.	Skimmer Bot. El.	Orifice El.	Permitted (4320690.009) Required Treatment	Permitted (4320690.009) Provided Treatment	Proposed Required Treatment	Proposed Provided Treatment
S-547	3.8	2.8	2.8	3.1 / 3.63[1]	2.0	2.0	0.867	0.961	0.867	0.910

1. As Built Elevation

The following items are included for your reference:

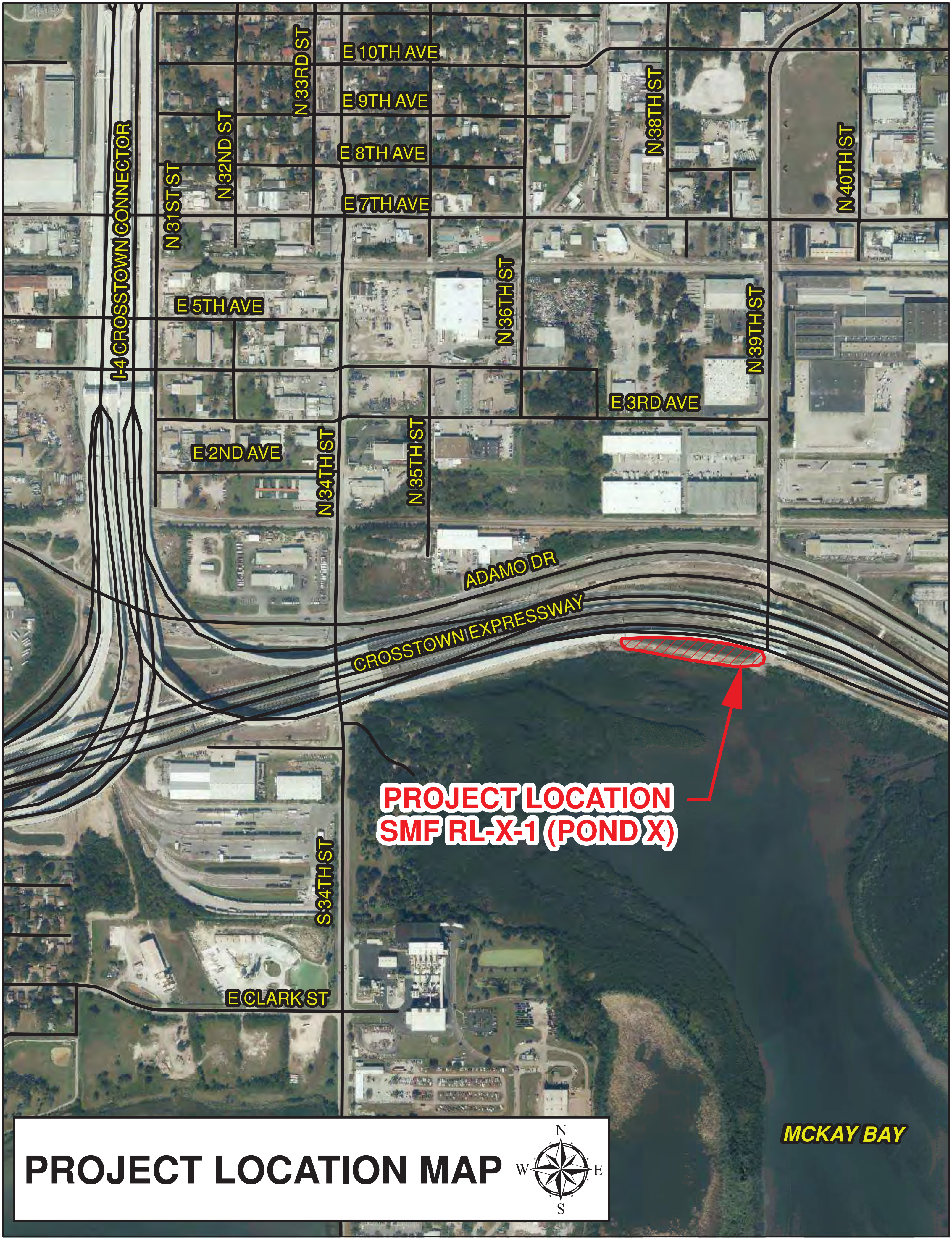
(1) 11" x 17" control structure modification detail for the revised SMF RL-X-1 control structure and SMF plan sheet with revised design high water elevations.
(2) Revised SMF RL-X-1 treatment calculations.
(3) Revised ICPR Calculation with the revised control structure dimensions.

If you have any questions, please feel free to call (941) 926-6598.

Sincerely,

Richard D. Uptegraff, P.E.
Enclosures

RICHARD D. UPTEGRAFF State of Florida, Professional Engineer, License No. 58789 This item has been electronically signed and sealed by Richard D. Uptegraff, PE on 04/06/16 using a SHA-1 authentication code. Printed copies of this document are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies.

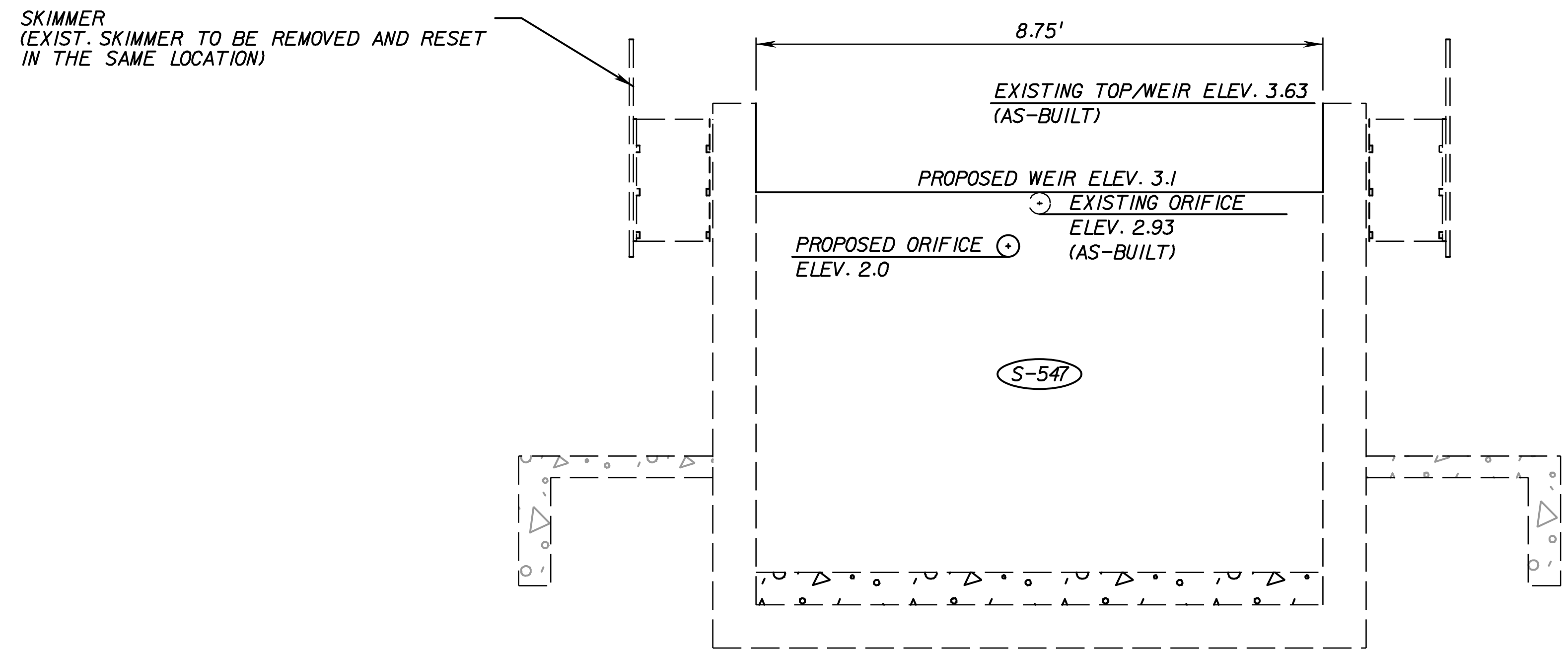


PROJECT LOCATION MAP

CONTROL STRUCTURE MODIFICATION DETAIL

AND

SMF PLAN SHEET



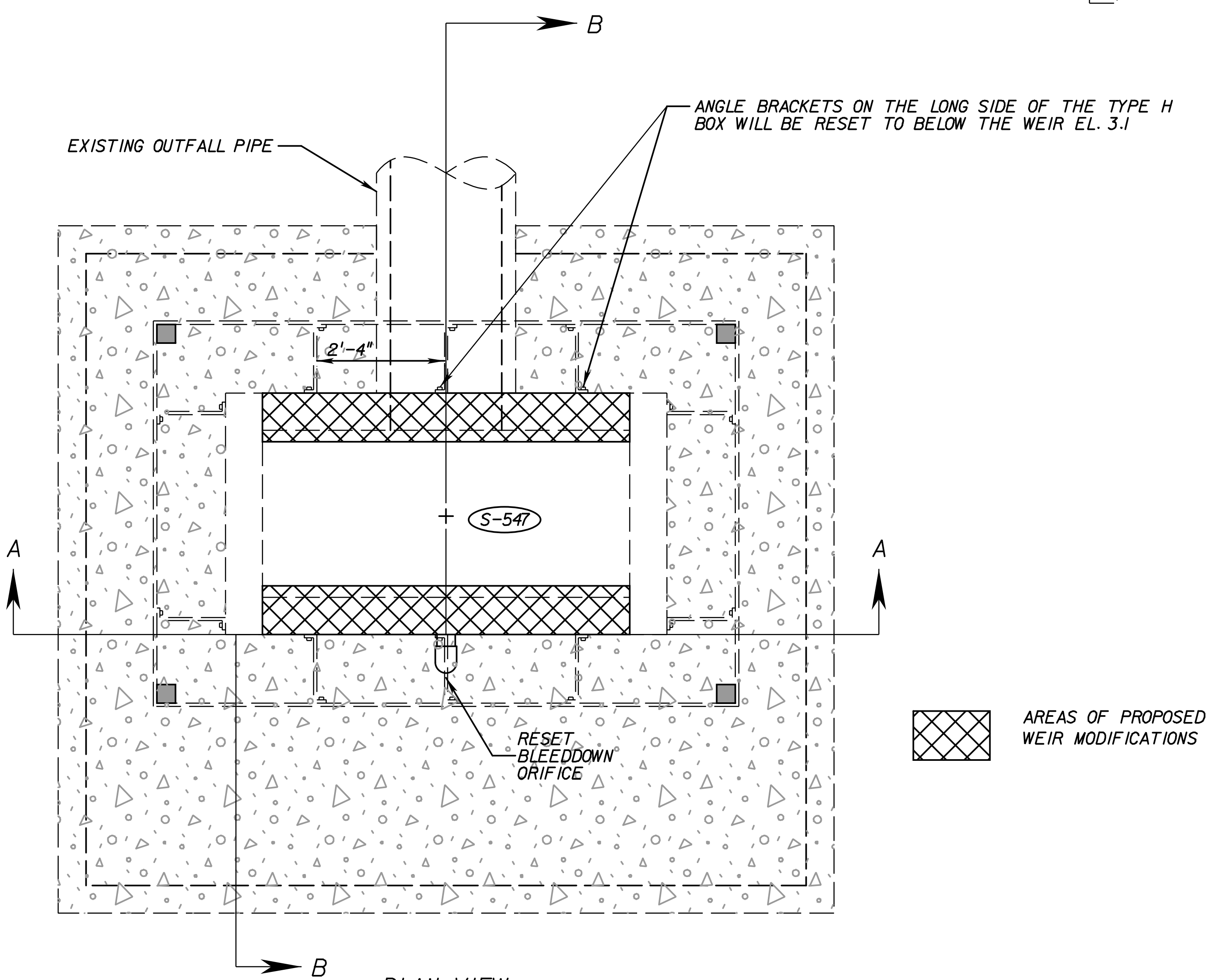
SECTION A-A
N.T.S.

NOTES:
1. SAW CUT WEIR OPENINGS ON BOTH LONG SIDES OF THE TYPE H BOX TO EL. 3.1

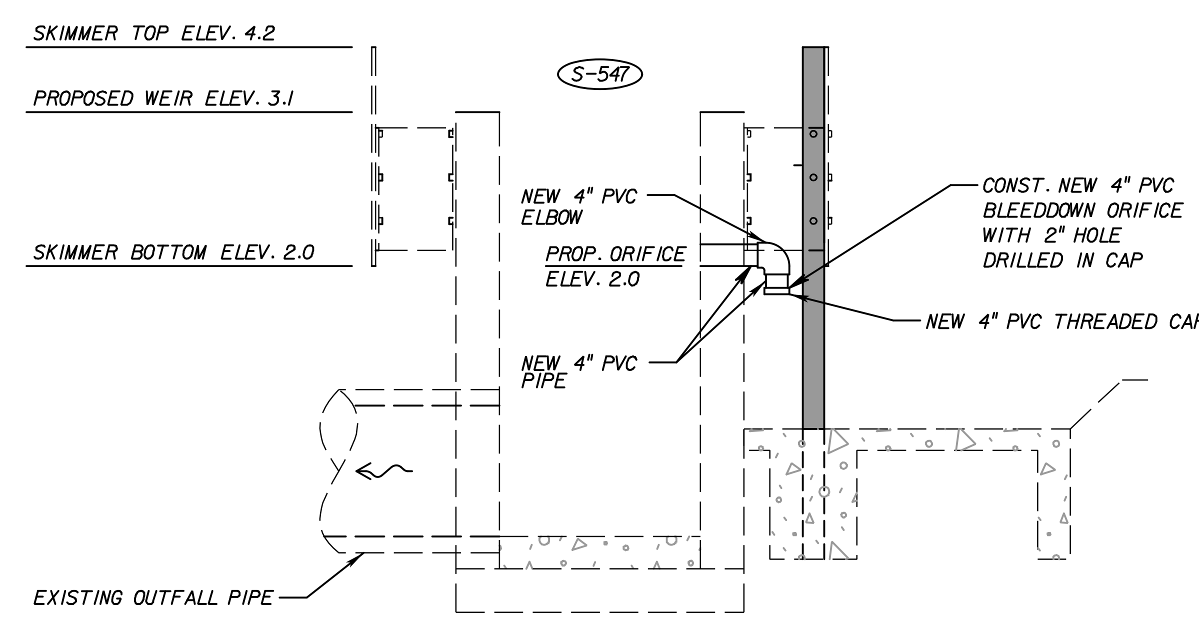
2. LOWER ORIFCE FROM EL. 2.8 TO EL. 2.0. GROUT EXISTING ORIFICE OPENING. SHIFT THE ORIFICE LOCATION HORIZONTALLY AS NEEDED TO AVOID CONFLICT WITH OLD LOCATION.

3. FOR ADDITIONAL DETAILS OF TYPE H INLETS, REFER TO INDEX 232.

4. REMOVE AND RESET EXISTING SKIMMER PER DETAIL.



PLAN VIEW
N.T.S.



SECTION B-B
N.T.S.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

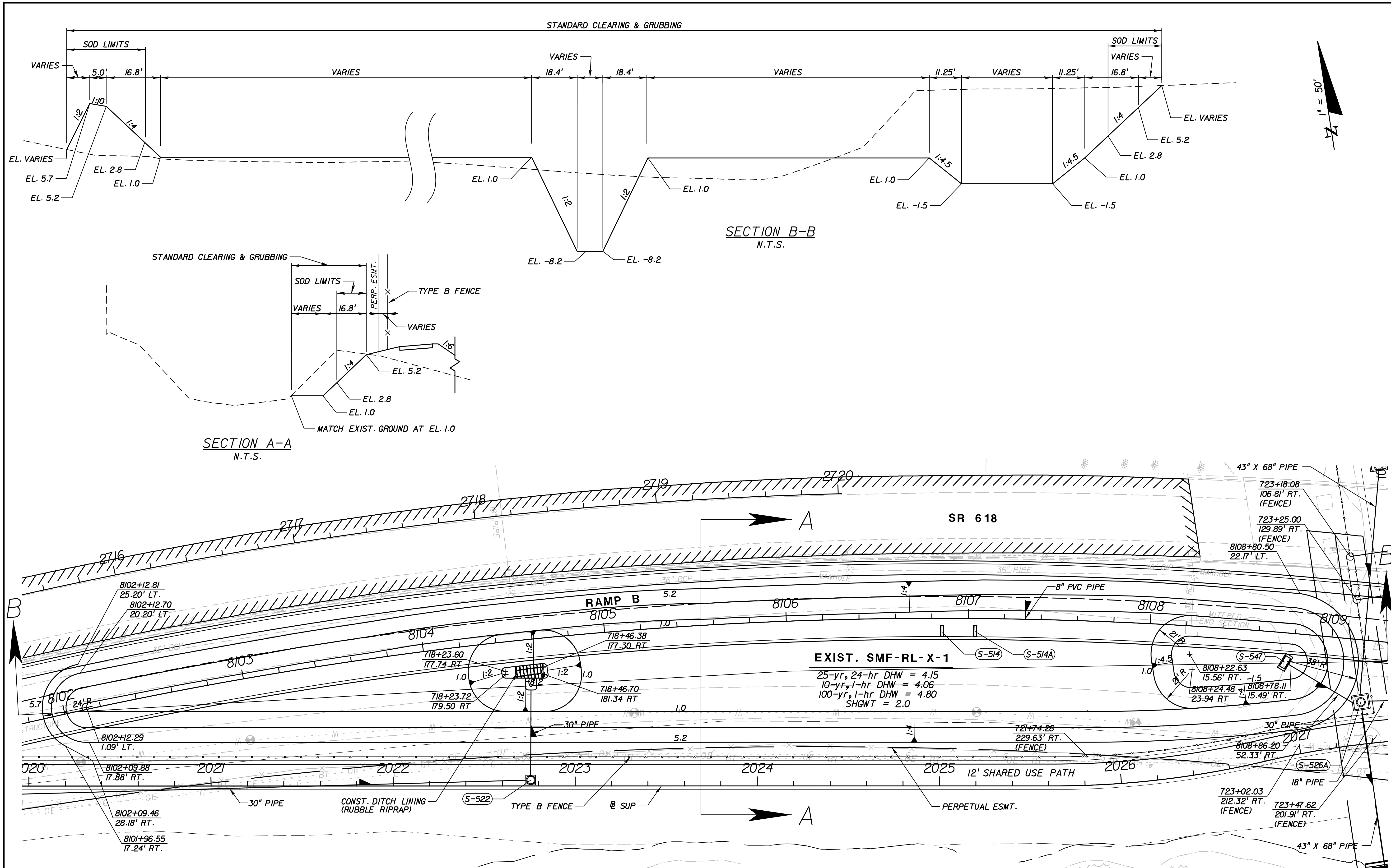
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	

ALTERNATIVE 2: CONTROL STRUCTURE MODIFICATION

SHEET NO. 460

USER: OVER6846 4/6/2016 9:03:36 AM K:\258415\5201AA4\drainage\DRDTRD04_Thea Modify.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 400	HILLSBOROUGH	

SMF-RL-X-1
PLAN SHEET (1)

SHEET NO. 594

USER: OVER6846 4/6/2016 9:05:27 AM K:\258415\5201AA4\drainage\pdplrd801_manhole.dgn

RICHARD D. UPTEGRAFF State of Florida, Professional Engineer, License No. 58789. This item has been electronically signed and sealed by Richard D. Uptegraff, P.E on 04/06/16 using a SHA-1 authentication code. Printed copies of this document are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies.

TREATMENT CALCULATIONS

TABLE 1. Treatment Volume Calculations Permit Modification # 43020690.009

REQUIRED TREATMENT			0.87 ac-ft
Description	Elevation	Area	Provided Treatment
Bottom of Treatment	2.0 ft	0.77 ac	0.91 ac-ft
Top of Treatment (Weir El.)	3.1 ft	0.88 ac	
Inside Edge of Maint. Berm	5.2 ft	1.22 ac	

REVISE ICPR CALCULATIONS
FOR SMF RL-X-1

ICPR RESULTS

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
G-3A	BASE	!E025Y024H	12.14	6.888	7.800	0.0001	1323	12.08	20.401	12.08	20.224
G-3A	BASE	E003Y001H	0.80	6.778	7.800	0.0002	1245	0.63	17.321	0.63	16.982
G-3A	BASE	E003Y002H	0.95	6.739	7.800	0.0001	1218	0.88	14.373	0.88	14.238
G-3A	BASE	E003Y004H	2.18	6.623	7.800	0.0000	1136	2.00	8.227	2.00	8.185
G-3A	BASE	E003Y008H	4.01	6.644	7.800	0.0000	1151	4.00	8.616	4.00	8.603
G-3A	BASE	E010Y001H	0.79	6.859	7.800	0.0002	1303	0.63	21.120	0.63	20.722
G-3A	BASE	E010Y002H	0.94	6.823	7.800	0.0001	1277	0.88	17.985	0.88	17.830
G-3A	BASE	E010Y004H	2.16	6.716	7.800	0.0000	1202	2.00	11.604	2.00	11.552
G-3A	BASE	E010Y008H	4.01	6.718	7.800	0.0001	1203	4.00	11.245	4.00	11.231
G-3A	BASE	E010Y024H	12.01	6.503	7.800	0.0000	1052	12.00	3.810	12.00	3.808
G-3A	BASE	E010Y072H	59.79	6.441	7.800	-0.0000	1008	57.25	2.161	59.75	2.161
G-3A	BASE	E010Y168H	159.04	6.414	7.800	-0.0000	989	154.00	1.582	158.99	1.582
G-3A	BASE	E010Y240H	183.68	6.441	7.800	-0.0000	1008	178.00	2.153	184.00	2.153
G-3A	BASE	E050Y001H	0.77	6.984	7.800	0.0003	1391	0.63	27.328	0.63	26.839
G-3A	BASE	E050Y002H	0.93	6.948	7.800	0.0001	1366	0.88	23.854	0.88	23.669
G-3A	BASE	E050Y004H	2.15	6.779	7.800	0.0001	1246	2.00	14.072	2.00	14.013
G-3A	BASE	E050Y008H	4.01	6.803	7.800	0.0001	1263	4.00	14.604	4.00	14.589
G-3A	BASE	E050Y024H	12.01	6.546	7.800	0.0000	1082	12.00	5.011	12.00	5.008
G-3A	BASE	E050Y072H	59.76	6.478	7.800	-0.0000	1034	57.25	3.051	59.75	3.051
G-3A	BASE	E050Y168H	159.01	6.448	7.800	-0.0000	1013	154.00	2.305	158.99	2.305
G-3A	BASE	E050Y240H	183.19	6.477	7.800	-0.0000	1033	178.00	3.001	184.00	3.001
G-3A	BASE	E100Y001H	0.77	7.050	7.800	0.0003	1437	0.63	30.777	0.63	30.238
G-3A	BASE	E100Y002H	0.92	7.012	7.800	0.0002	1411	0.88	27.014	0.88	26.815
G-3A	BASE	E100Y004H	2.14	6.824	7.800	0.0001	1278	2.00	15.934	2.00	15.870
G-3A	BASE	E100Y008H	4.00	6.855	7.800	0.0001	1300	4.00	16.794	4.00	16.779
G-3A	BASE	E100Y024H	12.01	6.567	7.800	-0.0000	1097	12.00	5.637	12.00	5.634
G-3A	BASE	E100Y072H	59.76	6.493	7.800	-0.0000	1045	57.25	3.435	59.75	3.435
G-3A	BASE	E100Y168H	159.01	6.456	7.800	-0.0000	1019	154.00	2.497	159.00	2.497
G-3A	BASE	E100Y240H	183.13	6.494	7.800	-0.0000	1045	178.00	3.451	184.00	3.451
G-3B	BASE	!E025Y024H	12.15	6.859	7.800	0.0001	39939	12.08	35.579	12.15	31.471
G-3B	BASE	E003Y001H	0.81	6.754	7.800	0.0002	39262	0.63	27.839	0.81	23.023
G-3B	BASE	E003Y002H	0.96	6.718	7.800	0.0001	39027	0.88	23.500	0.96	20.305
G-3B	BASE	E003Y004H	2.20	6.609	7.800	0.0000	38328	2.00	13.587	2.20	12.916
G-3B	BASE	E003Y008H	4.02	6.630	7.800	0.0000	38463	4.00	14.662	4.02	14.255
G-3B	BASE	E010Y001H	0.80	6.831	7.800	0.0002	39759	0.63	34.618	0.80	29.136
G-3B	BASE	E010Y002H	0.95	6.797	7.800	0.0001	39538	0.88	29.965	0.95	26.365
G-3B	BASE	E010Y004H	2.17	6.698	7.800	0.0000	38898	2.00	19.692	2.17	18.861
G-3B	BASE	E010Y008H	4.02	6.699	7.800	0.0001	38909	4.00	19.397	4.02	18.975
G-3B	BASE	E010Y024H	12.02	6.496	7.800	0.0000	37604	12.00	6.623	12.02	6.547
G-3B	BASE	E010Y072H	59.81	6.437	7.800	-0.0000	37221	59.75	3.808	59.81	3.808
G-3B	BASE	E010Y168H	159.05	6.411	7.800	-0.0000	37058	159.00	2.798	159.05	2.798
G-3B	BASE	E010Y240H	183.68	6.437	7.800	-0.0000	37221	183.00	3.808	183.68	3.808
G-3B	BASE	E050Y001H	0.78	6.949	7.800	0.0003	40516	0.63	45.828	0.78	39.338
G-3B	BASE	E050Y002H	0.94	6.916	7.800	0.0001	40303	0.88	40.531	0.94	36.365
G-3B	BASE	E050Y004H	2.16	6.757	7.800	0.0001	39280	2.00	24.169	2.16	23.232
G-3B	BASE	E050Y008H	4.01	6.780	7.800	0.0001	39427	4.00	25.440	4.01	25.005
G-3B	BASE	E050Y024H	12.02	6.537	7.800	0.0000	37868	12.00	8.778	12.02	8.699
G-3B	BASE	E050Y072H	59.78	6.473	7.800	-0.0000	37451	59.75	5.398	59.78	5.397
G-3B	BASE	E050Y168H	159.02	6.443	7.800	-0.0000	37264	159.00	4.088	159.02	4.088
G-3B	BASE	E050Y240H	183.18	6.471	7.800	0.0000	37441	183.00	5.320	183.18	5.319
G-3B	BASE	E100Y001H	0.78	7.011	7.800	0.0003	40913	0.63	52.098	0.78	45.078
G-3B	BASE	E100Y002H	0.93	6.976	7.800	0.0002	40688	0.88	46.234	0.93	41.794
G-3B	BASE	E100Y004H	2.15	6.799	7.800	0.0001	39552	2.00	27.547	2.15	26.535
G-3B	BASE	E100Y008H	4.01	6.829	7.800	0.0001	39743	4.00	29.375	4.01	28.931
G-3B	BASE	E100Y024H	12.01	6.557	7.800	-0.0000	37996	12.00	9.901	12.01	9.820
G-3B	BASE	E100Y072H	59.77	6.487	7.800	-0.0000	37544	59.75	6.083	59.77	6.083
G-3B	BASE	E100Y168H	159.02	6.451	7.800	-0.0000	37314	159.00	4.430	159.02	4.430
G-3B	BASE	E100Y240H	183.13	6.488	7.800	-0.0000	37549	183.00	6.122	183.13	6.121
H-1A	BASE	!E025Y024H	12.25	5.490	6.500	-0.0002	23919	12.00	50.011	12.08	40.008
H-1A	BASE	E003Y001H	0.79	5.157	6.500	0.0003	22614	0.63	38.403	0.75	32.077
H-1A	BASE	E003Y002H	0.94	5.106	6.500	0.0001	22412	0.88	31.789	0.88	28.371
H-1A	BASE	E003Y004H	2.18	4.947	6.500	0.0001	21789	2.00	18.361	2.13	17.446
H-1A	BASE	E003Y008H	4.01	4.983	6.500	0.0001	21931	4.00	19.776	4.00	19.446

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
H-1A	BASE	E010Y001H	0.84	5.333	6.500	0.0003	23304	0.63	47.950	0.66	38.794
H-1A	BASE	E010Y002H	0.96	5.246	6.500	0.0002	22960	0.88	40.692	0.88	36.108
H-1A	BASE	E010Y004H	2.15	5.083	6.500	0.0001	22321	2.00	26.763	2.09	25.637
H-1A	BASE	E010Y008H	4.01	5.088	6.500	0.0001	22343	4.00	26.225	4.00	25.905
H-1A	BASE	E010Y024H	12.01	4.788	6.500	0.0000	21165	12.00	8.965	12.00	8.911
H-1A	BASE	E010Y072H	59.88	4.700	6.500	-0.0000	20821	59.75	5.158	59.76	5.158
H-1A	BASE	E010Y168H	159.07	4.662	6.500	-0.0000	20674	159.00	3.791	159.00	3.791
H-1A	BASE	E010Y240H	183.17	4.700	6.500	-0.0000	20821	183.00	5.159	183.02	5.159
H-1A	BASE	E050Y001H	0.91	5.815	6.500	0.0004	25192	0.63	63.747	0.63	46.024
H-1A	BASE	E050Y002H	1.07	5.705	6.500	0.0003	24761	0.88	55.229	0.88	42.423
H-1A	BASE	E050Y004H	2.14	5.173	6.500	0.0001	22675	2.00	32.915	2.08	31.657
H-1A	BASE	E050Y008H	4.03	5.230	6.500	0.0001	22898	4.00	34.445	4.00	33.436
H-1A	BASE	E050Y024H	12.01	4.849	6.500	0.0000	21406	12.00	11.894	12.00	11.840
H-1A	BASE	E050Y072H	59.81	4.753	6.500	0.0000	21029	59.75	7.314	59.75	7.313
H-1A	BASE	E050Y168H	159.03	4.710	6.500	-0.0000	20860	159.00	5.540	159.00	5.540
H-1A	BASE	E050Y240H	183.07	4.751	6.500	-0.0000	21020	183.00	7.209	183.00	7.209
H-1A	BASE	E100Y001H	0.94	6.136	6.500	0.0005	26450	0.63	72.575	0.63	49.328
H-1A	BASE	E100Y002H	1.12	6.036	6.500	0.0004	26060	0.88	63.070	0.88	45.185
H-1A	BASE	E100Y004H	2.28	5.296	6.500	-0.0001	23157	2.00	37.555	2.01	34.756
H-1A	BASE	E100Y008H	4.08	5.459	6.500	-0.0002	23798	4.00	39.795	4.00	36.583
H-1A	BASE	E100Y024H	12.01	4.879	6.500	0.0000	21523	12.00	13.419	12.00	13.364
H-1A	BASE	E100Y072H	59.79	4.774	6.500	0.0000	21113	59.75	8.243	59.75	8.243
H-1A	BASE	E100Y168H	159.02	4.721	6.500	-0.0000	20906	159.00	6.004	159.00	6.004
H-1A	BASE	E100Y240H	183.05	4.775	6.500	-0.0000	21118	183.00	8.296	183.00	8.296
H-1B	BASE	!E025Y024H	12.25	5.460	6.500	0.0002	24235	12.01	51.453	12.40	43.336
H-1B	BASE	E003Y001H	0.80	5.123	6.500	0.0003	22917	0.74	38.631	0.80	37.002
H-1B	BASE	E003Y002H	0.95	5.075	6.500	0.0001	22728	0.88	34.626	0.95	32.802
H-1B	BASE	E003Y004H	2.19	4.926	6.500	0.0000	22141	2.10	21.098	2.19	20.873
H-1B	BASE	E003Y008H	4.02	4.960	6.500	0.0001	22276	4.00	23.737	4.02	23.453
H-1B	BASE	E010Y001H	0.84	5.300	6.500	0.0003	23611	0.65	47.987	0.90	41.249
H-1B	BASE	E010Y002H	0.97	5.211	6.500	0.0002	23262	0.88	44.556	0.98	40.283
H-1B	BASE	E010Y004H	2.15	5.054	6.500	0.0001	22644	2.06	31.274	2.15	30.992
H-1B	BASE	E010Y008H	4.01	5.059	6.500	0.0001	22665	4.00	31.725	4.01	31.444
H-1B	BASE	E010Y024H	12.02	4.775	6.500	0.0000	21553	12.00	10.921	12.02	10.872
H-1B	BASE	E010Y072H	59.89	4.692	6.500	-0.0000	21227	59.76	6.335	59.89	6.335
H-1B	BASE	E010Y168H	159.08	4.657	6.500	-0.0000	21087	159.00	4.660	159.08	4.660
H-1B	BASE	E010Y240H	183.18	4.692	6.500	-0.0000	21227	183.02	6.342	183.18	6.342
H-1B	BASE	E050Y001H	0.91	5.789	6.500	0.0004	25526	0.63	59.233	1.12	45.768
H-1B	BASE	E050Y002H	1.08	5.677	6.500	0.0003	25089	0.88	54.361	1.30	44.958
H-1B	BASE	E050Y004H	2.14	5.139	6.500	0.0001	22979	2.05	38.754	2.14	38.421
H-1B	BASE	E050Y008H	4.03	5.196	6.500	0.0001	23201	4.00	41.193	4.04	40.203
H-1B	BASE	E050Y024H	12.01	4.834	6.500	0.0000	21781	12.00	14.536	12.01	14.486
H-1B	BASE	E050Y072H	59.81	4.743	6.500	0.0000	21425	59.75	8.990	59.81	8.990
H-1B	BASE	E050Y168H	159.04	4.702	6.500	-0.0000	21264	159.00	6.814	159.04	6.814
H-1B	BASE	E050Y240H	183.08	4.740	6.500	-0.0000	21416	183.00	8.866	183.08	8.866
H-1B	BASE	E100Y001H	0.94	6.113	6.500	0.0005	26796	0.63	64.694	1.17	48.129
H-1B	BASE	E100Y002H	1.12	6.012	6.500	0.0004	26402	0.88	58.997	1.39	47.348
H-1B	BASE	E100Y004H	2.29	5.263	6.500	-0.0001	23463	2.00	43.106	2.38	41.231
H-1B	BASE	E100Y008H	4.08	5.428	6.500	-0.0002	24113	4.00	45.594	4.22	43.001
H-1B	BASE	E100Y024H	12.01	4.862	6.500	0.0000	21892	12.00	16.416	12.01	16.366
H-1B	BASE	E100Y072H	59.80	4.763	6.500	0.0000	21504	59.75	10.135	59.80	10.135
H-1B	BASE	E100Y168H	159.03	4.713	6.500	-0.0000	21308	159.00	7.385	159.03	7.385
H-1B	BASE	E100Y240H	183.06	4.764	6.500	0.0000	21508	183.00	10.205	183.06	10.204
I-1	BASE	!E025Y024H	12.14	10.950	11.000	0.0001	29285	12.08	24.912	12.14	22.720
I-1	BASE	E003Y001H	0.80	10.837	11.000	0.0001	28521	0.63	16.869	0.80	14.722
I-1	BASE	E003Y002H	0.96	10.811	11.000	0.0001	28346	0.88	14.845	0.96	13.053
I-1	BASE	E003Y004H	2.22	10.735	11.000	0.0000	27830	2.00	8.841	2.22	8.556
I-1	BASE	E003Y008H	4.02	10.758	11.000	0.0000	27985	4.00	10.126	4.02	9.839
I-1	BASE	E010Y001H	0.79	10.900	11.000	0.0002	28947	0.63	21.529	0.79	19.041
I-1	BASE	E010Y002H	0.95	10.877	11.000	0.0001	28789	0.88	19.448	0.95	17.390
I-1	BASE	E010Y004H	2.18	10.810	11.000	0.0000	28335	2.00	13.334	2.18	12.951
I-1	BASE	E010Y008H	4.02	10.816	11.000	0.0000	28379	4.00	13.665	4.02	13.366
I-1	BASE	E010Y024H	12.02	10.658	11.000	0.0000	27311	12.00	4.765	12.02	4.720

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
I-1	BASE	E010Y072H	60.00	10.611	11.000	-0.0000	26997	59.75	2.795	60.00	2.795
I-1	BASE	E010Y168H	159.16	10.591	11.000	-0.0000	26859	159.00	2.064	159.16	2.064
I-1	BASE	E010Y240H	183.29	10.612	11.000	-0.0000	26999	183.00	2.808	183.29	2.808
I-1	BASE	E050Y001H	0.78	10.997	11.000	0.0002	29600	0.63	29.366	0.78	26.340
I-1	BASE	E050Y002H	0.93	10.975	11.000	0.0001	29453	0.88	27.054	0.93	24.630
I-1	BASE	E050Y004H	2.17	10.859	11.000	0.0000	28672	2.00	16.652	2.17	16.204
I-1	BASE	E050Y008H	4.01	10.884	11.000	0.0001	28835	4.00	18.180	4.01	17.871
I-1	BASE	E050Y024H	12.01	10.692	11.000	0.0000	27542	12.00	6.381	12.01	6.334
I-1	BASE	E050Y072H	59.86	10.641	11.000	0.0000	27197	59.75	3.982	59.86	3.981
I-1	BASE	E050Y168H	159.06	10.617	11.000	-0.0000	27037	159.00	3.025	159.06	3.024
I-1	BASE	E050Y240H	183.11	10.640	11.000	-0.0000	27189	183.00	3.934	183.11	3.934
I-1	BASE	E100Y001H	0.77	11.048	11.000	0.0002	29942	0.63	33.791	0.77	30.474
I-1	BASE	E100Y002H	0.93	11.025	11.000	0.0001	29788	0.88	31.181	0.93	28.584
I-1	BASE	E100Y004H	2.16	10.895	11.000	0.0000	28912	2.00	19.161	2.16	18.666
I-1	BASE	E100Y008H	4.01	10.925	11.000	0.0001	29111	4.00	21.116	4.01	20.800
I-1	BASE	E100Y024H	12.01	10.709	11.000	-0.0000	27655	12.00	7.221	12.01	7.174
I-1	BASE	E100Y072H	59.83	10.653	11.000	0.0000	27277	59.75	4.493	59.83	4.492
I-1	BASE	E100Y168H	159.05	10.624	11.000	-0.0000	27081	159.00	3.279	159.05	3.279
I-1	BASE	E100Y240H	183.08	10.654	11.000	0.0000	27283	183.00	4.531	183.08	4.531
McKay Bay	BASE	!E025Y024H	0.00	1.410	1.410	0.0000	168	12.17	125.956	0.00	0.000
McKay Bay	BASE	E003Y001H	0.00	1.410	1.410	0.0000	168	0.81	103.959	0.00	0.000
McKay Bay	BASE	E003Y002H	0.00	1.410	1.410	0.0000	168	1.03	98.698	0.00	0.000
McKay Bay	BASE	E003Y004H	0.00	1.410	1.410	0.0000	168	2.21	61.266	0.00	0.000
McKay Bay	BASE	E003Y008H	0.00	1.410	1.410	0.0000	168	4.03	68.008	0.00	0.000
McKay Bay	BASE	E010Y001H	0.00	1.410	1.410	0.0000	168	0.82	119.156	0.00	0.000
McKay Bay	BASE	E010Y002H	0.00	1.410	1.410	0.0000	168	0.97	113.703	0.00	0.000
McKay Bay	BASE	E010Y004H	0.00	1.410	1.410	0.0000	168	2.17	90.087	0.00	0.000
McKay Bay	BASE	E010Y008H	0.00	1.410	1.410	0.0000	168	4.02	90.915	0.00	0.000
McKay Bay	BASE	E010Y024H	0.00	1.410	1.410	0.0000	168	12.03	31.497	0.00	0.000
McKay Bay	BASE	E010Y072H	0.00	1.410	1.410	0.0000	168	59.85	18.386	0.00	0.000
McKay Bay	BASE	E010Y168H	0.00	1.410	1.410	0.0000	168	159.04	13.532	0.00	0.000
McKay Bay	BASE	E010Y240H	0.00	1.410	1.410	0.0000	168	183.24	18.362	0.00	0.000
McKay Bay	BASE	E050Y001H	0.00	1.410	1.410	0.0000	168	0.81	137.480	0.00	0.000
McKay Bay	BASE	E050Y002H	0.00	1.410	1.410	0.0000	168	0.96	133.636	0.00	0.000
McKay Bay	BASE	E050Y004H	0.00	1.410	1.410	0.0000	168	2.18	107.532	0.00	0.000
McKay Bay	BASE	E050Y008H	0.00	1.410	1.410	0.0000	168	4.03	113.625	0.00	0.000
McKay Bay	BASE	E050Y024H	0.00	1.410	1.410	0.0000	168	12.02	41.864	0.00	0.000
McKay Bay	BASE	E050Y072H	0.00	1.410	1.410	0.0000	168	59.80	26.043	0.00	0.000
McKay Bay	BASE	E050Y168H	0.00	1.410	1.410	0.0000	168	159.10	19.736	0.00	0.000
McKay Bay	BASE	E050Y240H	0.00	1.410	1.410	0.0000	168	183.10	25.657	0.00	0.000
McKay Bay	BASE	E100Y001H	0.00	1.410	1.410	0.0000	168	0.81	146.417	0.00	0.000
McKay Bay	BASE	E100Y002H	0.00	1.410	1.410	0.0000	168	0.96	142.827	0.00	0.000
McKay Bay	BASE	E100Y004H	0.00	1.410	1.410	0.0000	168	2.22	117.210	0.00	0.000
McKay Bay	BASE	E100Y008H	0.00	1.410	1.410	0.0000	168	4.04	124.106	0.00	0.000
McKay Bay	BASE	E100Y024H	0.00	1.410	1.410	0.0000	168	12.02	47.271	0.00	0.000
McKay Bay	BASE	E100Y072H	0.00	1.410	1.410	0.0000	168	59.81	29.350	0.00	0.000
McKay Bay	BASE	E100Y168H	0.00	1.410	1.410	0.0000	168	159.07	21.393	0.00	0.000
McKay Bay	BASE	E100Y240H	0.00	1.410	1.410	0.0000	168	183.07	29.526	0.00	0.000
S-526A	BASE	!E025Y024H	12.20	2.834	6.800	0.0100	208	12.21	103.612	12.21	103.617
S-526A	BASE	E003Y001H	0.81	2.447	6.800	0.0100	208	0.81	89.244	0.93	89.776
S-526A	BASE	E003Y002H	1.03	2.329	6.800	0.0100	208	0.96	82.006	1.03	86.050
S-526A	BASE	E003Y004H	2.27	1.805	6.800	0.0043	521	2.20	52.712	2.21	52.713
S-526A	BASE	E003Y008H	4.03	1.833	6.800	0.0045	440	4.03	58.169	4.03	58.169
S-526A	BASE	E010Y001H	0.83	2.740	6.800	0.0100	208	0.83	100.291	0.83	100.295
S-526A	BASE	E010Y002H	0.97	2.634	6.800	0.0100	208	0.98	96.386	0.98	96.390
S-526A	BASE	E010Y004H	2.17	2.173	6.800	0.0100	208	2.17	77.139	2.17	77.140
S-526A	BASE	E010Y008H	4.02	2.183	6.800	0.0100	208	4.02	77.549	4.02	77.549
S-526A	BASE	E010Y024H	12.03	1.494	6.800	0.0005	913	12.02	26.760	12.03	26.778
S-526A	BASE	E010Y072H	59.85	1.438	6.800	-0.0005	955	59.25	15.588	59.85	15.592
S-526A	BASE	E010Y168H	159.04	1.425	6.800	-0.0005	963	156.00	11.454	159.04	11.468
S-526A	BASE	E010Y240H	183.24	1.438	6.800	-0.0005	955	183.02	15.592	183.24	15.554
S-526A	BASE	E050Y001H	0.84	3.118	6.800	0.0100	170	0.85	111.595	0.85	111.601
S-526A	BASE	E050Y002H	0.99	3.021	6.800	0.0100	170	1.00	109.345	1.00	109.351

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
S-526A	BASE	E050Y004H	2.17	2.498	6.800	0.0100	208	2.18	91.329	2.65	91.741
S-526A	BASE	E050Y008H	4.03	2.611	6.800	0.0100	208	4.04	95.785	4.04	95.787
S-526A	BASE	E050Y024H	12.02	1.559	6.800	-0.0005	854	12.02	35.530	12.02	35.530
S-526A	BASE	E050Y072H	59.80	1.467	6.800	0.0006	934	59.74	22.066	59.80	22.062
S-526A	BASE	E050Y168H	159.10	1.443	6.800	-0.0005	952	159.02	16.719	159.10	16.711
S-526A	BASE	E050Y240H	183.10	1.465	6.800	-0.0005	935	182.97	21.744	183.10	21.723
S-526A	BASE	E100Y001H	0.85	3.332	6.800	0.0100	170	0.86	116.741	0.86	116.749
S-526A	BASE	E100Y002H	0.99	3.246	6.800	0.0100	170	1.01	114.760	1.00	114.766
S-526A	BASE	E100Y004H	2.24	2.687	6.800	0.0100	208	2.29	98.713	2.29	98.716
S-526A	BASE	E100Y008H	4.05	2.813	6.800	0.0100	208	4.06	103.407	4.06	103.409
S-526A	BASE	E100Y024H	12.02	1.609	6.800	-0.0006	803	12.02	40.098	12.02	40.098
S-526A	BASE	E100Y072H	59.81	1.482	6.800	0.0007	922	59.74	24.859	59.81	24.858
S-526A	BASE	E100Y168H	159.07	1.448	6.800	-0.0005	948	159.00	18.105	159.07	18.114
S-526A	BASE	E100Y240H	183.07	1.483	6.800	-0.0005	921	183.06	25.013	183.07	24.996
S-551	BASE	!E025Y024H	12.19	3.773	6.000	-0.0057	158	12.17	73.443	12.17	73.430
S-551	BASE	E003Y001H	0.80	3.086	6.000	0.0055	158	0.80	60.014	0.80	60.007
S-551	BASE	E003Y002H	1.01	2.796	6.000	0.0057	158	0.95	53.102	0.95	53.097
S-551	BASE	E003Y004H	2.27	2.004	6.000	0.0013	493	2.19	33.788	2.20	33.785
S-551	BASE	E003Y008H	4.03	2.084	6.000	0.0013	399	4.02	37.708	4.02	37.704
S-551	BASE	E010Y001H	0.82	3.600	6.000	0.0052	158	0.81	70.044	0.81	70.031
S-551	BASE	E010Y002H	0.96	3.424	6.000	0.0057	158	0.95	66.614	0.95	66.605
S-551	BASE	E010Y004H	2.17	2.616	6.000	0.0049	158	2.16	49.849	2.16	49.848
S-551	BASE	E010Y008H	4.02	2.636	6.000	0.0049	158	4.02	50.419	4.02	50.418
S-551	BASE	E010Y024H	12.02	1.559	6.000	-0.0004	805	12.02	17.419	12.02	17.419
S-551	BASE	E010Y072H	59.81	1.462	6.000	0.0004	839	59.85	10.142	59.25	10.170
S-551	BASE	E010Y168H	159.01	1.438	6.000	0.0004	846	159.07	7.458	154.99	7.486
S-551	BASE	E010Y240H	183.02	1.462	6.000	0.0003	839	183.23	10.150	183.02	10.187
S-551	BASE	E050Y001H	0.83	4.196	6.000	-0.0051	158	0.80	80.374	0.80	80.347
S-551	BASE	E050Y002H	0.98	4.047	6.000	0.0051	158	0.96	77.842	0.96	77.820
S-551	BASE	E050Y004H	2.16	3.175	6.000	0.0059	158	2.15	61.647	2.15	61.642
S-551	BASE	E050Y008H	4.03	3.375	6.000	0.0056	158	4.02	65.192	4.02	65.187
S-551	BASE	E050Y024H	12.02	1.667	6.000	0.0004	759	12.01	23.185	12.02	23.185
S-551	BASE	E050Y072H	59.74	1.512	6.000	0.0004	822	59.80	14.387	59.74	14.406
S-551	BASE	E050Y168H	159.02	1.469	6.000	-0.0003	837	159.03	10.901	159.02	10.928
S-551	BASE	E050Y240H	183.03	1.509	6.000	0.0003	823	183.10	14.185	182.97	14.206
S-551	BASE	E100Y001H	0.82	4.536	6.000	-0.0056	158	0.81	84.827	0.81	84.809
S-551	BASE	E100Y002H	0.99	4.374	6.000	-0.0057	158	0.96	82.639	0.96	82.623
S-551	BASE	E100Y004H	2.22	3.498	6.000	-0.0060	158	2.18	67.448	2.18	67.441
S-551	BASE	E100Y008H	4.05	3.712	6.000	0.0055	158	4.03	71.307	4.03	71.300
S-551	BASE	E100Y024H	12.02	1.742	6.000	-0.0004	719	12.01	26.186	12.02	26.186
S-551	BASE	E100Y072H	59.74	1.539	6.000	0.0004	813	59.79	16.218	59.74	16.232
S-551	BASE	E100Y168H	159.00	1.479	6.000	-0.0003	833	159.03	11.815	155.01	11.832
S-551	BASE	E100Y240H	183.06	1.541	6.000	0.0003	812	183.07	16.326	183.06	16.343
X	BASE	!E025Y024H	12.36	4.151	5.200	0.0002	46939	12.08	48.711	12.56	32.363
X	BASE	E003Y001H	0.87	3.816	5.200	0.0003	44963	0.63	40.673	0.92	29.825
X	BASE	E003Y002H	0.98	3.731	5.200	0.0001	44224	0.88	33.934	1.01	28.435
X	BASE	E003Y004H	2.22	3.576	5.200	0.0001	42776	2.00	19.672	2.22	18.512
X	BASE	E003Y008H	4.04	3.601	5.200	0.0001	43007	4.00	20.746	4.04	19.963
X	BASE	E010Y001H	0.92	4.063	5.200	0.0003	46421	0.63	49.760	1.03	32.072
X	BASE	E010Y002H	1.07	3.957	5.200	0.0002	45794	0.88	42.599	1.17	31.277
X	BASE	E010Y004H	2.18	3.699	5.200	0.0001	43927	2.00	27.874	2.19	26.628
X	BASE	E010Y008H	4.03	3.697	5.200	0.0001	43902	4.00	27.139	4.03	26.423
X	BASE	E010Y024H	12.03	3.395	5.200	0.0000	41086	12.00	9.247	12.03	9.090
X	BASE	E010Y072H	59.77	3.304	5.200	-0.0000	40234	59.75	5.265	59.77	5.265
X	BASE	E010Y168H	159.01	3.265	5.200	-0.0000	39870	159.00	3.855	159.01	3.855
X	BASE	E010Y240H	183.10	3.303	5.200	-0.0000	40230	183.00	5.248	183.10	5.248
X	BASE	E050Y001H	0.97	4.528	5.200	0.0004	49168	0.63	64.660	1.35	34.939
X	BASE	E050Y002H	1.17	4.456	5.200	0.0003	48748	0.88	56.694	1.42	34.305
X	BASE	E050Y004H	2.44	3.875	5.200	-0.0001	45308	2.00	33.872	2.59	30.456
X	BASE	E050Y008H	4.13	3.968	5.200	-0.0001	45862	4.00	35.306	4.23	31.373
X	BASE	E050Y024H	12.03	3.456	5.200	-0.0000	41653	12.00	12.177	12.03	12.002
X	BASE	E050Y072H	59.76	3.358	5.200	-0.0000	40737	59.75	7.438	59.76	7.437
X	BASE	E050Y168H	159.00	3.313	5.200	-0.0000	40321	159.00	5.622	159.00	5.622

SWFWMD 25 yr / 24 hr

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
X	BASE	E050Y240H	183.05	3.355	5.200	0.0000	40711	183.00	7.318	183.05	7.318
X	BASE	E100Y001H	0.99	4.801	5.200	0.0005	50782	0.63	72.945	1.20	36.279
X	BASE	E100Y002H	1.21	4.762	5.200	0.0004	50552	0.88	64.286	1.46	36.090
X	BASE	E100Y004H	2.59	4.125	5.200	-0.0002	46788	2.00	38.397	2.76	32.679
X	BASE	E100Y008H	4.17	4.246	5.200	-0.0002	47505	4.00	40.630	4.38	33.130
X	BASE	E100Y024H	12.03	3.485	5.200	-0.0000	41930	12.00	13.705	12.03	13.521
X	BASE	E100Y072H	59.76	3.379	5.200	-0.0000	40938	59.75	8.376	59.76	8.376
X	BASE	E100Y168H	159.00	3.325	5.200	-0.0000	40432	159.00	6.090	159.00	6.090
X	BASE	E100Y240H	183.04	3.380	5.200	-0.0000	40946	183.00	8.417	183.04	8.417

ICPR INPUT

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==========================================================================================
==== Basins ==============================================================================
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         Name: EB Expwy Direct          Node: I-1                    Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.830                  Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

Time of Concentration assumed to be 10 minutes
Pavement area = 0.83 AC

----------------------------------------------------------------------------------------------------
         Name: EB S.R. 60 A             Node: H-1A                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.480                  Time Shift(hrs): 0.00
           Curve Number: 95.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

Time of Concentration assumed to be 10 minutes
Open Space = 0.15 AC
Paved Area = 0.37 AC
Total Area = 0.52 AC

----------------------------------------------------------------------------------------------------
         Name: EB S.R. 60 B             Node: H-1B                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 0.720                  Time Shift(hrs): 0.00
           Curve Number: 91.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

Time of Concentration assumed to be 10 minutes
Open Space = 0.33 AC
Paved Area = 0.30 AC
Total Area = 0.63 AC

----------------------------------------------------------------------------------------------------
         Name: G-3 Pond                 Node: G-3B                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 2.590                  Time Shift(hrs): 0.00
           Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 33.00

Time of Concentration assumed to be 10 minutes

Area at top of berm = 1.77 AC
Impervious area from at weir (elevation 6.3') = 0.86 AC
Open space from pond = 1.77 - .86 = .91 AC

Includes area between Ramp D and pond
Pervious area between Ramp D and pond = .82 AC
Total Area = 1.77 + 0.82 = 2.59AC

DCIA% = 0.86ac/ (1.77ac +0.82ac) = 0.332 * 100 = 33%


----------------------------------------------------------------------------------------------------
         Name: H-1A Pond                Node: H-1A                   Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 1.250                  Time Shift(hrs): 0.00
           Curve Number: 89.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00

Time of Concentration assumed to be 10 minutes

Pond area at top of berm = 0.99 AC
Pond area at weir = 0.45 AC
```

Open space = 0.99 - 0.45 = 0.54 AC

Open space area between Ramp D and Pond = 0.26 AC

TOTAL OPEN SPACE AREA = 0.80 AC
TOTAL IMPERVIOUS AREA = 0.45 AC
TOTAL AREA = 1.25 AC

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-----------------------------------------------------------------------------------------------------
         Name: H-1B Pond               Node: H-1B                    Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 1.680                  Time Shift(hrs): 0.00
           Curve Number: 88.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00
```

Time of Concentration assumed to be 10 minutes

Pond area at top of berm = 0.99 AC
Pond area at weir = 0.47 AC
Open space = 0.99 - 0.47 = 0.52 AC

Open space area between Ramp D and Pond = 0.69 AC

TOTAL OPEN SPACE AREA = 1.21 AC
TOTAL IMPERVIOUS AREA = 0.47 AC
TOTAL AREA = 1.68 AC

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-----------------------------------------------------------------------------------------------------
         Name: I-1 Pond                Node: I-1                     Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 1.610                  Time Shift(hrs): 0.00
           Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 37.00
```

Area at top of berm = 1.61 AC
Area at weir = 0.60 AC
Open space = 1.61 - 0.60 = 1.01 AC
DCIA% = 0.62/1.61 = 0.39 * 100= 39%
Time of Concentration Assumed to be 10 minutes

```
-----------------------------------------------------------------------------------------------------
         Name: pond x                  Node: X                       Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 1.220                  Time Shift(hrs): 0.00
           Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 84.00



-----------------------------------------------------------------------------------------------------
         Name: RAMP B                  Node: X                       Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 1.450                  Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00



-----------------------------------------------------------------------------------------------------
         Name: S-526 area              Node: S-526A                  Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.54
               Area(ac): 0.320                  Time Shift(hrs): 0.00
           Curve Number: 85.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00



-----------------------------------------------------------------------------------------------------
         Name: SMF-G3_1                Node: G-3A                    Status: Onsite
```

```
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.51
               Area(ac): 4.320                   Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

Time of Concentration from Storm Tabs = 13.51
Impervious area from pavement = 4.32AC
DCIA% = 4.32ac/ 4.32ac = 1.00 * 100 = 100%

----------------------------------------------------------------------------------------------------
         Name: SMF-G3_3                 Node: G-3B                    Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.69
               Area(ac): 0.770                   Time Shift(hrs): 0.00
           Curve Number: 98.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

Area from S.R. 60
From ASAD:
Area = 0.77 ac
DCIA% = 0.77ac /0.77 ac = 1.00 * 100 = 100%
Tc = 13.69 min

----------------------------------------------------------------------------------------------------
         Name: SMF-H-1_1                Node: H-1A                    Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 3.200                   Time Shift(hrs): 0.00
           Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 75.00

Time of Concnentration from storm tabs = 10
Impervious area from pavement = 2.39 ac
Open space = 0.81 ac
Total area =  3.2 ac
SMF-H-1_1 outlet node/MES

----------------------------------------------------------------------------------------------------
         Name: SMF-H-1_2                Node: H-1A                    Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 12.53
               Area(ac): 5.480                   Time Shift(hrs): 0.00
           Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 80.00

Time of Concentration from Storm Tabs
Impervious area from pavement = 4.41 ac
Open space = 1.07 ac
Total area = 5.48 ac
SMF-H-1_2 outlet node/MES

----------------------------------------------------------------------------------------------------
         Name: SMF-I-1_1                Node: I-1                     Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 16.73
               Area(ac): 3.000                   Time Shift(hrs): 0.00
           Curve Number: 84.00             Max Allowable Q(cfs): 999999.000
                DCIA(%): 39.00

Time of Concentration from Storm Tabs
Impervious area from pavement (Ramp L and expy shldr) = 1.04 AC
Open Space (median ditch) = 1.38 ac
Impervious area from ditch (trail and exwy shldr) = 0.12 ac
Open space from ditch = 0.46 ac
Total Area = 3.00 Ac
DCIA% = (1.04+0.12)/3.00 = 0.387 * 100 = 39%

----------------------------------------------------------------------------------------------------
         Name: Trail                    Node: I-1                     Status: Onsite
```

```
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 0.260                   Time Shift(hrs): 0.00
           Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

Impervious area (directly draining into pond) = 0.26 ac
Tc= Assumed to be 10 mins

----------------------------------------------------------------------------------------------------
         Name: TRAIL_1                  Node: X                        Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 10.00
               Area(ac): 0.430                   Time Shift(hrs): 0.00
           Curve Number: 84.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 47.00

----------------------------------------------------------------------------------------------------
         Name: X                        Node: X                        Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.60
               Area(ac): 7.440                   Time Shift(hrs): 0.00
           Curve Number: 98.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 100.00

==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: G-3A              Base Flow(cfs): 0.000         Init Stage(ft): 6.300
     Group: BASE                                            Warn Stage(ft): 7.800
      Type: Stage/Area


      Stage(ft)         Area(ac)
--------------- ---------------
          3.200          0.0014
          5.600          0.0103
          6.000          0.0120
          6.000          0.0160
          8.100          0.0500
          8.800          0.1120

------------------------------------------------------------------------------------------
      Name: G-3B              Base Flow(cfs): 0.000         Init Stage(ft): 6.300
     Group: BASE                                            Warn Stage(ft): 7.800
      Type: Stage/Area


      Stage(ft)         Area(ac)
--------------- ---------------
          4.600          0.5800
          6.000          0.7800
          6.000          0.7900
          8.100          1.1000
          8.800          1.6600

------------------------------------------------------------------------------------------
      Name: H-1A              Base Flow(cfs): 0.000         Init Stage(ft): 4.500
     Group: BASE                                            Warn Stage(ft): 6.500
      Type: Stage/Area


      Stage(ft)         Area(ac)
--------------- ---------------
         -0.100          0.0100
          2.500          0.2800
          3.500          0.3600
          4.200          0.4300
          4.500          0.4600
          6.500          0.6400
          7.250          0.9900
```

```
-------------------------------------------------------------------------------------------
      Name: H-1B                Base Flow(cfs): 0.000          Init Stage(ft): 4.500
     Group: BASE                                               Warn Stage(ft): 6.500
      Type: Stage/Area



      Stage(ft)        Area(ac)
--------------- ---------------
          2.500          0.2900
          3.500          0.3800
          4.200          0.4400
          4.500          0.4700
          6.500          0.6500
          7.250          0.9900

-------------------------------------------------------------------------------------------
      Name: I-1                 Base Flow(cfs): 0.000          Init Stage(ft): 10.500
     Group: BASE                                               Warn Stage(ft): 11.000
      Type: Stage/Area



      Stage(ft)        Area(ac)
--------------- ---------------
          9.000          0.3700
         11.000          0.6800

-------------------------------------------------------------------------------------------
      Name: McKay Bay           Base Flow(cfs): 0.000          Init Stage(ft): 1.410
     Group: BASE                                               Warn Stage(ft): 1.410
      Type: Time/Stage

1

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00           1.410
         999.00           1.410

-------------------------------------------------------------------------------------------
      Name: S-526A              Base Flow(cfs): 0.000          Init Stage(ft): 1.410
     Group: BASE                 Plunge Factor: 1.00           Warn Stage(ft): 6.800
      Type: Manhole, Flat Floor



      Stage(ft)        Area(ac)
--------------- ---------------

-------------------------------------------------------------------------------------------
      Name: S-551               Base Flow(cfs): 0.000          Init Stage(ft): 1.410
     Group: BASE                 Plunge Factor: 1.00           Warn Stage(ft): 6.000
      Type: Manhole, Flat Floor



      Stage(ft)        Area(ac)
--------------- ---------------

-------------------------------------------------------------------------------------------
      Name: X                   Base Flow(cfs): 0.000          Init Stage(ft): 3.100
     Group: BASE                                               Warn Stage(ft): 5.200
      Type: Stage/Area

.

      Stage(ft)        Area(ac)
--------------- ---------------
          1.000          0.6600
          3.100          0.8800
          3.800          1.0300
          5.200          1.2200

===========================================================================================
==== Pipes ================================================================================
===========================================================================================

         Name: R-526A              From Node: S-526A           Length(ft): 87.00
        Group: BASE                  To Node: McKay Bay             Count: 1
                                                        Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM               Solution Algorithm: Most Restrictive
     Geometry: Horz Ellipse   Horz Ellipse                           Flow: Both
     Span(in): 68.00          68.00                    Entrance Loss Coef: 0.00
     Rise(in): 43.00          43.00                        Exit Loss Coef: 1.00
   Invert(ft): -1.700         -1.800                       Bend Loss Coef: 0.00
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
```

```
 Bot Clip(in): 0.000          0.000                        Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall


----------------------------------------------------------------------------------------------------
         Name: R-551              From Node: S-551              Length(ft): 315.00
        Group: BASE                 To Node: S-526A                  Count: 1
                                                          Friction Equation: Average Conveyance
              UPSTREAM       DOWNSTREAM                  Solution Algorithm: Automatic
     Geometry: Horz Ellipse   Horz Ellipse                              Flow: Both
     Span(in): 68.00          68.00                      Entrance Loss Coef: 0.00
     Rise(in): 43.00          43.00                          Exit Loss Coef: 1.00
   Invert(ft): -1.400         -1.700                         Bend Loss Coef: 0.70
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall

Downstream FHWA Inlet Edge Description:
Horizontal Ellipse Concrete: Square edge with headwall


==========================================================================================
==== Drop Structures =====================================================================
==========================================================================================

         Name: S-550              From Node: G-3B               Length(ft): 124.00
        Group: BASE                 To Node: S-551                   Count: 1

              UPSTREAM       DOWNSTREAM                   Friction Equation: Average Conveyance
     Geometry: Circular       Circular                   Solution Algorithm: Automatic
     Span(in): 36.00          36.00                                    Flow: Both
     Rise(in): 36.00          36.00                      Entrance Loss Coef: 0.500
   Invert(ft): -0.300         -0.400                         Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure S-550 ***
                                                                                   TABLE
                  Count: 1                        Bottom Clip(in): 0.000
                   Type: Horizontal                  Top Clip(in): 0.000
                   Flow: Both                      Weir Disc Coef: 3.200
               Geometry: Rectangular            Orifice Disc Coef: 0.600

               Span(in): 36.00                        Invert(ft): 6.300
               Rise(in): 105.00                 Control Elev(ft): 6.300

----------------------------------------------------------------------------------------------------
         Name: S-650              From Node: H-1B               Length(ft): 189.00
        Group: BASE                 To Node: S-551                   Count: 1

              UPSTREAM       DOWNSTREAM                   Friction Equation: Average Conveyance
     Geometry: Circular       Circular                   Solution Algorithm: Automatic
     Span(in): 36.00          36.00                                    Flow: Both
     Rise(in): 36.00          36.00                      Entrance Loss Coef: 0.500
   Invert(ft): -0.300         -0.400                         Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                     Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                         Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

```
*** Weir 1 of 1 for Drop Structure S-650 ***
                                                                                    TABLE
                 Count: 1                        Bottom Clip(in): 0.000
                  Type: Horizontal                  Top Clip(in): 0.000
                  Flow: Both                       Weir Disc Coef: 3.200
              Geometry: Rectangular              Orifice Disc Coef: 0.600

              Span(in): 36.00                          Invert(ft): 4.500
              Rise(in): 105.00                   Control Elev(ft): 4.500

----------------------------------------------------------------------------------------------------
         Name: S-704                From Node: I-1                 Length(ft): 267.00
        Group: BASE                   To Node: McKay Bay                Count: 1

              UPSTREAM        DOWNSTREAM                Friction Equation: Average Conveyance
     Geometry: Circular       Circular                 Solution Algorithm: Automatic
     Span(in): 30.00          30.00                                  Flow: Both
     Rise(in): 30.00          30.00                    Entrance Loss Coef: 0.500
   Invert(ft): 1.200          1.000                        Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure S-704 ***
                                                                                    TABLE
                 Count: 1                        Bottom Clip(in): 0.000
                  Type: Horizontal                  Top Clip(in): 0.000
                  Flow: Both                       Weir Disc Coef: 3.200
              Geometry: Rectangular              Orifice Disc Coef: 0.600

              Span(in): 36.00                          Invert(ft): 10.500
              Rise(in): 105.00                   Control Elev(ft): 10.500
```

```
----------------------------------------------------------------------------------------------------
         Name: X1                   From Node: X                   Length(ft): 45.50
        Group: BASE                   To Node: S-526A                   Count: 1

              UPSTREAM        DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 30.00          30.00                                  Flow: Both
     Rise(in): 30.00          30.00                    Entrance Loss Coef: 0.700
   Invert(ft): -1.600         -1.700                       Exit Loss Coef: 1.000
  Manning's N: 0.012000       0.012000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure X1 ***
                                                                                    TABLE
                 Count: 1                        Bottom Clip(in): 0.000
                  Type: Horizontal                  Top Clip(in): 0.000
                  Flow: Both                       Weir Disc Coef: 3.200
              Geometry: Rectangular              Orifice Disc Coef: 0.600

              Span(in): 105.00                         Invert(ft): 3.630
              Rise(in): 36.00                    Control Elev(ft): 3.630

*** Weir 2 of 3 for Drop Structure X1 ***
                                                                                    TABLE
                 Count: 1                        Bottom Clip(in): 0.000
                  Type: Vertical: Mavis             Top Clip(in): 0.000
                  Flow: Both                       Weir Disc Coef: 3.200
              Geometry: Circular                 Orifice Disc Coef: 0.600

              Span(in): 2.00                           Invert(ft): 2.000
              Rise(in): 2.00                     Control Elev(ft): 2.000

*** Weir 3 of 3 for Drop Structure X1 ***
                                                                                    TABLE
                 Count: 2                        Bottom Clip(in): 0.000
```

```
                 Type: Vertical: Mavis           Top Clip(in): 0.000
                 Flow: Both                   Weir Disc Coef: 3.200
             Geometry: Rectangular          Orifice Disc Coef: 0.600

             Span(in): 105.00                      Invert(ft): 3.100
             Rise(in): 6.36                  Control Elev(ft): 3.100

===========================================================================================
==== Weirs ================================================================================
===========================================================================================

         Name: G-3A                From Node: G-3A
        Group: BASE                  To Node: G-3B
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Trapezoidal

            Bottom Width(ft): 19.70
        Left Side Slope(h/v): 4.00
       Right Side Slope(h/v): 4.00
                  Invert(ft): 5.600
       Control Elevation(ft): 5.600
      Struct Opening Dim(ft): 9999.00
                                              TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.600
      Orifice Discharge Coef: 0.600



-----------------------------------------------------------------------------------------------------
         Name: H-1A                From Node: H-1A
        Group: BASE                  To Node: H-1B
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Trapezoidal

            Bottom Width(ft): 40.00
        Left Side Slope(h/v): 4.00
       Right Side Slope(h/v): 4.00
                  Invert(ft): 4.200
       Control Elevation(ft): 4.200
      Struct Opening Dim(ft): 9999.00
                                              TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 2.600
      Orifice Discharge Coef: 0.600



===========================================================================================
==== Hydrology Simulations ================================================================
===========================================================================================

         Name: !025Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\!025Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-----------------------------------------------------------------------------------------------------
         Name: 003Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\003Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: FDOT-1
    Rainfall Amount(in): 2.55

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

-----------------------------------------------------------------------------------------------------
         Name: 003Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\003Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: FDOT-2
    Rainfall Amount(in): 3.20
```

```
Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 003Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\003Y004H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: FDOT-4
    Rainfall Amount(in): 3.80

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 003Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\003Y008H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: FDOT-8
    Rainfall Amount(in): 4.72

Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.50

----------------------------------------------------------------------------------------------------
         Name: 010Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: FDOT-1
    Rainfall Amount(in): 3.10

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 010Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: FDOT-2
    Rainfall Amount(in): 4.00

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 010Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y004H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: FDOT-4
    Rainfall Amount(in): 5.36

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 010Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y008H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: FDOT-8
    Rainfall Amount(in): 6.16

Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.50

----------------------------------------------------------------------------------------------------
         Name: 010Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: FDOT-24
```

```
    Rainfall Amount(in): 8.76

Time(hrs)       Print Inc(min)
--------------- ---------------
26.000          7.50

---------------------------------------------------------------------------------------------------
         Name: 010Y072H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y072H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: FDOT-72
    Rainfall Amount(in): 10.01

Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.00

---------------------------------------------------------------------------------------------------
         Name: 010Y168H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y168H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 168.00
          Rainfall File: FDOT-168
    Rainfall Amount(in): 12.35

Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.00

---------------------------------------------------------------------------------------------------
         Name: 010Y240H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\010Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: FDOT-240
    Rainfall Amount(in): 14.35

Time(hrs)       Print Inc(min)
--------------- ---------------
242.000         60.00

---------------------------------------------------------------------------------------------------
         Name: 050Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Fdot-1
    Rainfall Amount(in): 4.00

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

---------------------------------------------------------------------------------------------------
         Name: 050Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: Fdot-2
    Rainfall Amount(in): 5.30

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

---------------------------------------------------------------------------------------------------
         Name: 050Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y004H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: Fdot-4
    Rainfall Amount(in): 6.50

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.50

---------------------------------------------------------------------------------------------------
         Name: 050Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y008H.R32

      Override Defaults: Yes
```

```
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 8.00

Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.50

----------------------------------------------------------------------------------------------------
         Name: 050Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Fdot-24
    Rainfall Amount(in): 11.52

Time(hrs)       Print Inc(min)
--------------- ---------------
26.000          7.50

----------------------------------------------------------------------------------------------------
         Name: 050Y072H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y072H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Fdot-72
    Rainfall Amount(in): 14.13

Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.00

----------------------------------------------------------------------------------------------------
         Name: 050Y168H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y168H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 168.00
          Rainfall File: Fdot-168
    Rainfall Amount(in): 18.00

Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.00

----------------------------------------------------------------------------------------------------
         Name: 050Y240H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\050Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 20.00

Time(hrs)       Print Inc(min)
--------------- ---------------
242.000         60.00

----------------------------------------------------------------------------------------------------
         Name: 100Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Fdot-1
    Rainfall Amount(in): 4.50

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 100Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: Fdot-2
    Rainfall Amount(in): 6.00

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 100Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y004H.R32
```

```
      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: Fdot-4
    Rainfall Amount(in): 7.36

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.50

----------------------------------------------------------------------------------------------------
         Name: 100Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y008H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 9.20

Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.50

----------------------------------------------------------------------------------------------------
         Name: 100Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Fdot-24
    Rainfall Amount(in): 12.96

Time(hrs)       Print Inc(min)
--------------- ---------------
26.000          7.50

----------------------------------------------------------------------------------------------------
         Name: 100Y072H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y072H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 72.00
          Rainfall File: Fdot-72
    Rainfall Amount(in): 15.91

Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.00

----------------------------------------------------------------------------------------------------
         Name: 100Y168H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y168H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 168.00
          Rainfall File: Fdot-168
    Rainfall Amount(in): 19.50

Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.00

----------------------------------------------------------------------------------------------------
         Name: 100Y240H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\100Y240H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 240.00
          Rainfall File: Fdot-240
    Rainfall Amount(in): 23.00

Time(hrs)       Print Inc(min)
--------------- ---------------
242.000         60.00

==========================================================================================
==== Routing Simulations =================================================================
==========================================================================================

         Name: !E025Y024H          Hydrology Sim: !025Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\!E025Y024H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 30.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
```

```
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          15.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E003Y001H           Hydrology Sim: 003Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E003Y001H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E003Y002H           Hydrology Sim: 003Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E003Y002H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E003Y004H           Hydrology Sim: 003Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E003Y004H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 6.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E003Y008H           Hydrology Sim: 003Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E003Y008H.I32
```

```
      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 10.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E010Y001H           Hydrology Sim: 010Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y001H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E010Y002H           Hydrology Sim: 010Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y002H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E010Y004H           Hydrology Sim: 010Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y004H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 6.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.500

Group           Run
--------------- -----
```

```
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E010Y008H           Hydrology Sim: 010Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y008H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 10.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E010Y024H           Hydrology Sim: 010Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y024H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 26.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
26.000          7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E010Y072H           Hydrology Sim: 010Y072H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y072H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 74.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E010Y168H           Hydrology Sim: 010Y168H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y168H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 170.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:
```

```
Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.000

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E010Y240H          Hydrology Sim: 010Y240H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E010Y240H.I32

      Execute: Yes          Restart: No             Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 242.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
242.000         60.000

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E050Y001H          Hydrology Sim: 050Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y001H.I32

      Execute: Yes          Restart: No             Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E050Y002H          Hydrology Sim: 050Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y002H.I32

      Execute: Yes          Restart: No             Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E050Y004H          Hydrology Sim: 050Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y004H.I32

      Execute: Yes          Restart: No             Patch: No
  Alternative: No
```

```
        Max Delta Z(ft): 0.01                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 6.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E050Y008H          Hydrology Sim: 050Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y008H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 10.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E050Y024H          Hydrology Sim: 050Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y024H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 26.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
26.000          7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E050Y072H          Hydrology Sim: 050Y072H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y072H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 74.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.000

Group           Run
--------------- -----
BASE            Yes
```

```
----------------------------------------------------------------------------------------------------
         Name: E050Y168H          Hydrology Sim: 050Y168H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y168H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 170.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E050Y240H          Hydrology Sim: 050Y240H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E050Y240H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 242.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
242.000         60.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E100Y001H          Hydrology Sim: 100Y001H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y001H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           7.500

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E100Y002H          Hydrology Sim: 100Y002H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y002H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 4.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
```

```
4.000           7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E100Y004H          Hydrology Sim: 100Y004H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y004H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 6.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E100Y008H          Hydrology Sim: 100Y008H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y008H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 10.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E100Y024H          Hydrology Sim: 100Y024H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y024H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 26.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
26.000          7.500

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: E100Y072H          Hydrology Sim: 100Y072H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y072H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 74.00
```

```
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
74.000          15.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E100Y168H           Hydrology Sim: 100Y168H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y168H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 170.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
170.000         60.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: E100Y240H           Hydrology Sim: 100Y240H
     Filename: K:\25841515201AA4_ND\drainage\ICPR\BasinsGHI\Manhole (Thea) RL-X-1 Mod\E100Y240H.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 0.01                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 242.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
242.000         60.000

Group           Run
--------------- -----
BASE            Yes
```

DRAINAGE REPORT
THEA – Slip Ramp 3: From West of Falkenburg to West of I-75

THEA Project No: O-02520

October 2021

Hillsborough County (10003)

Prepared for:

Tampa Hillsborough County Expressway Authority
THEA
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Tampa, Florida 33602
813-272-5987
Prepared by:

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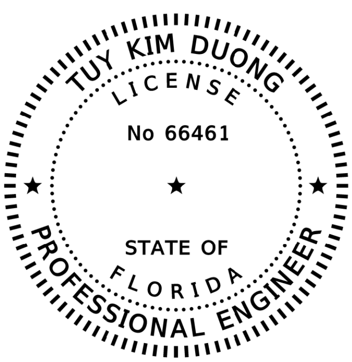
Maitland, Florida 32751
407.644.7755
Tuy Kim Duong, P.E. No. 66461



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Material contained within Appendix H of this report is included solely for reference purposes and is not incorporated under the seal of this document.

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EXECUTIVE SUMMARY

The Tampa Hillsborough Expressway Authority (THEA) is proposing to improve Selmon Expressway (SR 618) to include two new ramps between the I-4 Connector and I-75. Ramp 2 is an egress ramp onto the westbound General Use Lanes (GUL) from the Reversible Elevated Lanes (REL) east of the I-4 Connector, ending west of the CSX overpass bridge (Bridge No. 100447). Ramp 3 is an ingress ramp onto the REL from the northbound loop ramp of the I-75/ Selmon Expressway Interchange. The purpose of this report is to provide an overview of the proposed drainage design for the ingress Ramp 3 of the Selmon Expressway (SR 618).

This section of Selmon Expressway, from west of Falkenburg Road to I-75, currently exists as a six-lane interstate facility (two westbound travel lanes, two reversible elevated lanes/ REL, and two eastbound travel lanes). Widening of the roadway to its current alignment was permitted in 2002 by the Southwest Florida Water Management District (SWFWMD) to reconstruct/ shift the eastbound travel lanes to the south in order to fill in the existing median swale to construct the REL travel lanes. Two separate permits were issued for this work (SWFWMD permit no. 43-19654.001 and No. 44-021031.001). As part of these permits, several ponds were constructed to provide for treatment and attenuation of runoff as well as floodplain compensation (permitted ponds 200, 300, 400, and OSW-A).

OSW-A (renamed EX_OSW-A), permitted under SWFWMD permit no. 44-021031.001, was an existing wetland that has been retrofitted with a control structure to provide treatment and attenuation of runoff for the existing basins (EX_BSNOSWA & EX_BSNSW3A) that encompassed the westbound and REL travel lanes just east of the east approach slab of the existing bridge over Falkenburg Road, the WB on ramp from SB I-75, part of the existing bridge over I-75 WB, and the small open area between the westbound SR 618 and REL (north and south side respectively) and I-75 to the east. Existing storm sewer collection systems collect and convey the runoff from the roadway directly to OSW-A or into existing conveyance ditches with connectivity to OSW-A.

The proposed improvements from the slip Ramp 3 will not increase the overall drainage areas and will only affect pond EX_OSW-A. Additionally, there will be minor area diversions (between two storm sewer collection system with same ultimate discharge point as well as compensatory areas between an existing stormwater management facility – EX_OSW-A and a new treatment swale area – SW-3A) that will be taking place within the limits of the slip Ramp 3 project.

The proposed slip Ramp 3 improvements will marginally decrease the drainage basin contributing to OSW-A. As the sub-basin BSNSW3A will be directed to a newly constructed treatment swale SW-3A for treatment and attenuation prior to discharging into OSW-A in lieu of discharging directly to OSW-A; thus, limiting the overall discharge entering Delaney Creek.

There are several areas, based on historical plans, within the roadway that direct discharge without having to be taken into one of the four permitted ponds noted for treatment and attenuation. One such area is between stations 1208+50 to 1218+70 of westbound SR 618 and between stations 1110+00 to 1118+80 of REL. Runoff from this segment of the roadway, from historical documentation (SWFWMD permit no. 43-027435.007), discharges directly into a ditch (north of the Falkenburg Road on ramp) or into a shallow in field swale that outfalls into the same ditch with hydraulic connectivity to Delaney Creek. As the work is confined within the limits of the existing roadway, the drainage areas to this ditch will be the same from existing to proposed conditions. The only difference is the diversion of approximately 0.02 acres that was previously going to the existing in field swale will now be directed to the swale to the north of the Falkenburg Road on ramp to WB SR 618. The existing collection system for this area was reevaluated to make sure the additional 0.02 acres will not adversely affect the hydraulic grade line.

Storm sewer systems for the slip Ramp 3 project were designed in accordance with FDOT/ THEA and SWFWMD criteria and maintain existing drainage patterns (to the maximum extent). Existing drainage structures within the project limits were reused where possible and this was accomplished by placing larger J-bottoms/ and or replacing inlet tops on existing barrier wall inlets to reuse existing pipes.

Ditches within the project limits, if any, were analyzed and proposed to ensure existing drainage patterns would be maintained due to impacts caused by widening. Analyses were conducted to ensure that ditches could convey runoff and meet minimum freeboard criteria.

Hydroplaning analyses were conducted at critical sections along the project corridor including areas where ramp lanes and gores were present. For analyses, a design speed of 65 mph was used for the mainline and a reduced design speed was used based on the horizontal roadway geometry, which included ramp lanes. From analysis, it was determined that hydroplaning was met.

1.0 Introduction

1.1 Purpose

The Tampa Hillsborough Expressway Authority (THEA) is proposing a new egress ramp (Ramp 2) onto the westbound General Use Lane (GUL) from the Reversible Elevated Lanes (REL) and a new ingress ramp (Ramp 3) onto the REL from the northbound loop ramp of the I-75/ Selmon Expressway Interchange. This project is being designed under the THEA Project ID (FPID) O-02520 and will be submitted/ permitted as two separate packages: (1) Slip Ramp 3 and (2) Slip Ramp 2. The purpose of this report is to provide an overview of the proposed drainage design for the Ramp 3 improvement area.

1.2 Project Location

The project limits stretch 0.52 miles to the west of the I-75/SR 618 Interchange along the SR 618 mainline. This project is located within the Delaney Creek Basin, which falls into the jurisdiction of the Southwest Florida Water Management District (SWFWMD). The project is located in Sections 29 and 30, Township 29S and Range 20E. A general location of the project has been provided in Figure 1. Additionally, an aerial photograph and a USGS quadrangle map has been provided in Figure 2 and Figure 3, respectively.

1.3 Project Description

The project consists of outside widening with shoulder reconstruction of both the westbound travel lanes and the REL to accommodate an ingress Ramp 3 from the westbound travel lane to the REL. This project also consists of milling and resurfacing the existing travel lanes and shoulders (REL and Selmon Expressway westbound travel lanes), installation of wrong way driving gates, construction of drainage infrastructure to convey stormwater runoff, partial reconstruction to an existing bridge over Falkenburg Road, and construction of a treatment swale to provide treatment and attenuation for the additional impervious. This project will be designed using the NAVD 88 datum and elevations referenced will refer to this datum unless otherwise noted. Conversion between NGVD 29 datum to NAVD 88 datum is -0.845'.

Within the project limits, the existing Selmon Expressway mainline westbound consist of two lanes pitched to the outside shoulder. The existing Selmon Expressway REL consists of two travel lanes pitched toward the outside median barrier wall shared between the Selmon Expressway REL and westbound mainline travel lanes. Construction of the slip Ramp 3 will use overbuild to narrow the existing gore area between the I-75 on ramp to Selmon Expressway westbound lanes and widen the outside between stations 1224+00 to 1233+41.06 to the westbound travel lanes in order to shift the roadway to the north.

Table 1 – Proposed Basin Naming Convention

Design Project No.	Previously Permitted	Existing Conditions		Proposed Conditions	
	Basin/ Node Name	Basin Name	Node Name	Basin Name	Node Name
50.30.001B (2002)	---	EX_BSNFB1	Delaney	BSNFB1	Refer to exist
	---	EX_BSNFB2	Delaney	BSNFB2	
50.30.001A (2006)	NW BASIN/ OSW-A	EX_BSNOSWA	EX_OSWA	BSNOSWA	
		EX_BSNSW3A		BSNSW3A	SW3A
	SW BASIN/ OSW-B	EX_BSNOSWB	EX_OSWB	Refer to exist	Refer to exist

Two Southwest Florida Water Management District (SWFWMD) Permit Numbers, 43-19654.001 (Design Project 50.30.001B, 2002) for the Lee Roy Selmon Crosstown Expressway and 44-021031.001 (Design Project 50.30.001A, 2006) for also the Lee Roy Selmon Crosstown Expressway, are affected by the proposed slip Ramp 3 improvements. However, the major reconstruction/ proposed improvements lie within SWFWMD permit no. 44-021031.001. This permit will be modified to include construction of a new treatment swale to accommodate the additional impervious areas. For clarity and avoid any duplications, Table 1 defines the naming convention for the basins and nodes within the project limits of slip Ramp 3.

2.0 Existing Conditions

2.1 Existing Drainage Infrastructure

The existing drainage infrastructure, where it is accessible, was evaluated through visual inspection upon reviews in the field. In general, the existing drainage infrastructure that was within reach was in good condition. Video inspection of the existing pipes is currently ongoing. Pipe inspection and recommendations will be provided in the next submittal. Any deficiencies and recommendations noted during the video pipe inspection will be provided in a table format included as part of Appendix C of this report.

Additionally, a summary table will also be provided as part of Appendix C to document the remaining life of the existing pipes within the project limits. The table takes into account the design service life of the pipe, the year it was constructed, and the current year to determine the remaining life left in the pipe. Where there is limited information to document the remaining life of the existing pipe, video inspection as well as information from the lining manufactures will be provided as an estimate to the remaining life.

2.2 Soils

The soils within the project limits identified in Figure 4 and shown in Table 2, have been determined from the web soil survey from the Natural Resources Conservation Service (NRCS).

According to the soil survey, five different soil types have been identified within the project limits with Ona find sand, 0 to 2 percent slopes being the most prevalent. In general, the majority of soils identified have a drainage class of poorly drained. No soil types identified in the soil survey within the project limits exhibit frequent flooding.

Please refer to the provided Geotechnical Exploration, as performed by Universal Engineering Sciences, for further discussion on the soils within the proposed swale SW-3A and/ or surrounding areas.

Table 2 – Soil types identified throughout project corridor according to NRCS Soil Survey

Symbol	Soil Type	Hydrologic Soil Group
27	Malabar sand, 0 to 2 percent slopes	A/D
29	Myakka sand, 0 to 2 percent slopes	A/D
33	Ona fine sand, 0 to 2 percent slopes	B/D
52	Smyrna fine sand, 0 to 2 percent slopes	A/D
99	Water	

2.3 Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM Panel Number 12057C0387J) for Hillsborough County, Florida was used to identify potential floodplains that may be associated with the project. The FIRM map used for analyses is shown in Figure 5.

As identified from the FIRM Map, much of the project falls outside of the floodplains, however locations at the water surface of existing stormwater ponds were identified to fall into Zone A, with no base flood elevation (BFE) determined.

2.4 Cross Drains

There are no cross drains that fall within the project limits.

2.5 Drainage Patterns

The project site is located within the Delaney Creek Watershed (WBID 1605) of Hillsborough County, Florida. Delaney Creek flows from east to west with an ultimate outfall into the East Bay portion of Hillsborough Bay. The land uses within this watershed range from heavy commercial and residential to industrial. The natural characteristics of this watershed include relatively flat terrain including pasture lands with scattered marsh and forested wetland systems.

The project area is separated into five drainage basins (refer to Figure 6) for the purposes of analysis and reference. These existing drainage basins (EX_BSNFB1, EX_BSNFB2, EX_BSNOSWA, EX_BSNOSWB, and EX_BSNSW3A) were established based on historical construction plans (Design Project no. 50.30.001A and 50.30.001B as well as the Falkenburg Road Improvements Project), current designed survey, and available environmental resource permit documentation (refer to Appendix H). Based on historical documentation, basins EX_BSNOSWA and EX_BSNSW3A are a part of the permitted basin A that contribute stormwater runoff to permitted pond EX_OSW-A.

Information on total impervious area, permitted treatment volume, and time of concentration was attained from the previous environmental resource permit and confirmed with designed survey, as needed for modeling purposes.

An existing ICPR-3 model is developed for the Delaney Creek Outfall (more specific, the inflow into existing pond EX_OSW-A). Although, there are two basins that contribute runoff to EX_OSW-A, the model is limited, as discussed at the Pre-Application Meeting with SWFWMD, to the drainage area that will encompass the new treatment area and slip Ramp 3. The purpose for this approach is to accurately compare the existing and proposed rate of discharge contributing to pond EX_OSW-A from the design storm. Results from the ICPR Version 3.1 model are included along with the Hydrologic calculations for the Existing condition in Appendix A of the report.

The approved UCF software program BMP Trains Version 4.2.3 was utilized to establish an existing annual total phosphorus (TP) loading for basin EX_BSNSW3A into existing pond EX_OSW-A. The information for this analysis is provided in Appendix A of the report.

2.5.1 Basin EX_BSNFB1

Basin EX_BSNFB1 is a segment of Selmon Expressway between stations 1211+50 to 1218+70 which encompasses the westbound bridge over Falkenburg Road. Runoff from this portion of the roadway sheet flows away from the roadway and into existing shoulder gutter inlets that discharge into a shallow dry infield area at the northwest quadrant of the Falkenburg Rd interchange. Based on historical plans, the infield then discharges to an existing ditch (basin EX_BSNFB2 discharge point) that is hydraulically connected to Delaney Creek. There is no available documentation which suggest that the infield area was permitted. As such, the approach taken for this basin is to maintain the existing drainage patterns and drainage area as much as possible.

Information for this area was obtained from SWFWMD permit no. 43-19654.001 for the Lee Roy Selmon Crosstown Expressway (THEA Design Project No. 50.30.001B) and SWFWMD permit no. 43-027435.007 for the Falkenburg Road improvement project and is used to generate summary of comparison tables (refer to Appendix A).

2.5.2 Basin EX_BSNFB2

Basin EX_BSNFB2 is a segment of Selmon Expressway between stations 1208+50 to 1211+50 (of westbound Selmon Expressway), between stations 1110+00 to 1118+80 (of REL), and encompasses the REL bridge over Falkenburg Road. Runoff from this portion of the roadway sheet flows away from the roadway and into existing median barrier wall inlets and shoulder gutter inlet that direct discharge into an existing ditch with hydraulic connectivity to Delaney Creek. With limited information, the approach taken for this basin is similar to basin EX_BSNFB1 (to the maximum extent, maintain the existing drainage patterns and drainage area).

Information for this area was obtained from SWFWMD permit no. 43-19654.001 for the Lee Roy Selmon Crosstown Expressway (THEA Design Project No. 50.30.001B) and is used to generate summary of comparison tables (refer to Appendix A).

2.5.3 Basin EX_BSNOSWA

Southwest Florida Water Management District issued Permit No. 44-021031.001 to THEA in 2002 to retrofit an existing wetland (northwest quadrant of I-75 and Selmon Expressway interchange) to provide treatment and attenuation for a drainage area called Basin A. This permitted basin A encompassed a majority of the I-75 on ramp to Selmon Expressway west bound, the retrofitted wetland/ pond EX_OSWA at the northwest quadrant of I-75 and Selmon Expressway interchange, westbound travel lanes between stations 1218+70 to the I-75 bridge, REL between stations 1118+80 to the I-75 bridge, the existing median swale between the REL and westbound travel lanes as well as a bigger contributing area that is not within the slip Ramp 3 project limits. For this project, the portion within the slip Ramp 3 project limits of permitted basin A is subdivided into two drainage sub-basins (EX_BSNOSWA and EX_BSNSW3A).

Basin EX_BSNOSWA accounts for nearly all, but approximately 1.05 ac, of the portion of permitted basin A that discharges into the retrofitted wetland EX_OSW-A. It also encompasses the existing EX_OSW-A pond area.

Information for this area was obtained from SWFWMD permit no. 44-021031.001 for the Lee Roy Selmon Crosstown Expressway (THEA Design Project No. 50.30.001A) and is used to generate the existing ICPR-3 model to establish the existing condition peak flow rates into existing pond EX_OSW-A for both the SWFWMD design storm and the FDOT critical storms duration. The hydrologic calculations and ICPR results are included in Appendix A of the report. A volumetric comparison table, utilizing the SCS runoff curve number method, into existing pond EX_OSW-A is also provided in Appendix A of the report.

2.5.4 Basin EX_BSNSW3A

Basin EX_BSNSW3A is a 1.05 acre of existing roadway that currently drains into pond EX_OSW-A for treatment and attenuation. As discussed, above, Basin EX_BSNSW3A is a part of a bigger basin that was permitted under SWFWMD permit no. 44-021031.001 as basin A. This basin encompasses a short segment of westbound and REL travel lanes west of I-75 bridge as well as the infield area between the two.

Information for this area was obtained from SWFWMD permit no. 44-021031.001 for the Lee Roy Selmon Crosstown Expressway (THEA Design Project No. 50.30.001A) and is used to generate the existing ICPR-3 model to establish the existing condition peak flow rates into existing pond EX_OSW-A for both the SWFWMD design storm and the FDOT critical storms duration. A volumetric comparison table, utilizing the SCS runoff curve number method, into existing pond EX_OSW-A is also provided in Appendix A of the report.

2.5.5 Basin EX_BSNOSWB

Basin EX_BSNOWB, as discussed under Section 2 – Existing Conditions of the Gateway Bridge Project Drainage Report (SWFWMD permit no. 44-021031.001 Basin A), is an area that encompasses surface water/ wetland OSWB (southwest quadrant of I-75 and Selmon Expressway interchange), Ramp B, and Ramp E. This water body is hydraulically connected to EX_OSWA via an existing 30” pipe under Selmon Expressway. Limited information is available for this basin and no work is proposed within this drainage basin. As such, the basin is visually displayed to show connectivity only.

Information for this area was obtained from SWFWMD permit no. 44-021031.001 for the Lee Roy Selmon Crosstown Expressway (THEA Design Project No. 50.30.001A). This information is used to generate summary of comparison tables (refer to Appendix A).

3.0 Proposed Conditions

3.1 Floodplain

There are no floodplain impacts within the project limits. All proposed works are outside of the floodplains.

3.2 Cross Drains

There are no cross drains that falls within the project limits.

3.3 Drainage Patterns

In general, the proposed conditions (refer to Figure 7) mirror the existing conditions. The project continues to be separated into five drainage basins (BSNFB1, BSNFB2, BSNOSWA, BSNSW3A, and EX_BSNOSWB) within the THEA Slip Ramp 3 project limits.

The onsite drainage basin limits for the proposed conditions, to a certain extent, correspond to the existing condition. There are some minor deviations due to grading constraints for all but basin EX_BSNOSWB. This basin is included as it is hydraulically connected to pond EX_OSW-A. Otherwise, there is no proposed work within this basin.

Total impervious areas, either direct discharge into Delaney Creek or to existing pond EX_OSW-A, are the same in the proposed conditions as they are in existing. However, the total basin contributing to pond EX_OSW-A is reduced by 1.05 acres (contributing area from basin EX_BSNSW3A/ BSNSW3A). The runoff from basin BSNSW3A will be taken to a new treatment swale SW-3A for treatment and attenuation prior to discharging to EX_OSW-A.

Summary tables to compare the existing and proposed land use for each of the five drainage basins and Hydrologic calculations (basin/ basins that will be included in the ICPR-3 model) are provided in Appendix A of the report. Comparison results to existing pond EX_OSW-A are also provided in Appendix A.

An ICPR Version 3.1 model was performed for the project limits to establish a maximum peak rate of discharge into existing EX_OSW-A and the peak stage for SW-3A. The printout for the ICPR results is included in Appendix A of the report.

Additionally, the approved UCF software program BMP Trains Version 4.2.3 was utilized to establish the proposed annual total phosphorus (TP) loading leaving SW-3A and into EX_OSW-A. The information for this analysis is also provided in Appendix A of the report.

3.3.1 Basin BSNFB1

Basin BSNFB1 is a segment of Selmon Expressway between stations 1211+50 to 1218+70 which encompasses the westbound bridge over Falkenburg Road. Runoff from this portion of the roadway sheet flows, as it did in the existing condition, away from the roadway and into existing shoulder gutter inlets that discharges into a shallow dry infield area at the northwest quadrant of Falkenburg Rd and Selmon Expressway interchange with hydraulic connectivity to Delaney Creek.

With the proposed ingress Ramp 3 from the westbound Selmon Expressway to the reversible elevated lanes (REL), the existing westbound bridge will require minor reconstruction and restriping to eliminate the gore area and shift the right shoulder to the north. The inside shoulder (right shoulder) between stations 1212+33 and the approach slab will slope away from the new barrier wall and will now be intercepted in the existing shoulder gutter inlets and taken to the existing infield ditch. This minor improvement to the bridge and inside shoulder reduced the overall impervious area (from Selmon Expressway) in this basin marginally (from 1.02 acres in existing condition to 1.00 acres in proposed condition).

With the drainage area being relatively the same between the existing and the proposed condition, the hydraulic of the storm system would not need to be updated and/ or evaluated. However, spread computations for the existing structures were performed, based on historical data and current design survey, to make sure that they still meet FDOT criteria. The information is included in Appendix B of the report.

With such a small deviation to the drainage basin, an ICPR-3 model and hydrologic calculations are not provided for this basin.

3.3.2 Basin BSNFB2

Basin BSNFB2 is a segment of Selmon Expressway between stations 1208+50 to 1211+50 (of westbound Selmon Expressway), between stations 1110+00 to 1118+80 (of REL), and encompasses the REL bridge over Falkenburg Road. Runoff from this portion of the roadway, as it did in existing conditions, sheet flows away from the roadway and into existing median barrier wall inlets and a shoulder gutter inlet that direct discharge into an existing ditch with hydraulic connectivity to Delaney Creek.

Similar to basin BSNFB1, the proposed ingress Ramp 3 from the westbound Selmon Expressway to the reversible elevated lanes (REL) marginally affected the overall drainage basin (increasing the impervious from from 1.26 acres in the existing to 1.28 acres in the proposed conditions). The additional 0.02 acres of impervious does not affect the hydraulics of the storm sewer system. However, the shoulder rework to accommodate the slip Ramp 3 requires modification to two of the existing barrier wall inlets. As such, the system will be evaluated (using information from the design survey as well as historical data) to make sure that it still functions properly (refer to Appendix B for the storm sewer analysis). Spread computations for the new structures were also performed and are provided as part of Appendix B of the report.

With such a small deviation to the drainage basin, an ICPR-3 model and hydrologic calculations are not provided for this basin.

3.3.3 Basin BSNOSWA

As mentioned in Section 2 of this report, Southwest Florida Water Management District issued Permit No. 44-021031.001 to THEA in 2002 to retrofit an existing wetland (northwest quadrant of I-75 and Selmon Expressway interchange) to provide treatment and attenuate a drainage area that encompasses this drainage basin. While a segment of the new impervious area resulted from the addition of slip Ramp 3 is being directed to pond EX_OSW-A, some of the existing impervious area is being redirected to pond SW-3A resulting in a net zero change in impervious area overall to EX_OSW-A.

As shown, the addition of slip Ramp 3 would require some rework between stations 1218+60 to 1224+00 of I-75 and Selmon Expressway westbound travel lanes gore area, outside widening/ shoulder reconstruction to Selmon Expressway westbound travel lanes between stations 1224+00 to 1233+41, inside shoulder reconstruction to Selmon Expressway westbound travel lanes between stations 1218+60 to 1228+00, and inside shoulder reconstruction to Selmon Expressway REL between stations 1118+80 to 1130+20.

New storm water collection systems, including trench drains, will be constructed to collect/ convey the runoff from the roadway to existing pond EX_OSW-A as it currently does today. New inlets are proposed within the outside widening to replace impacted shoulder gutter inlets and will tie into existing gutter drains to avoid encroachment into EX_OSW-A top of bank. All system outfalls will remain as in existing conditions.

Although the impervious areas being collected within the basin differ from the existing to the proposed, the total impervious with the outside widening and the addition of slip Ramp 3 to pond EX_OSW-A remain the same. As shown, the existing impervious from basin EX_SW3A that originally went to EX_OSW-A is now being taken into treatment swale SW-3A for treatment and attenuation to compensate for the increase in impervious area of this basin.

To demonstrate that the changes taken place within this basin will not affect the total inflow into existing pond EX_OSW-A, an ICPR-3 model is developed to determine the peak rate of discharge to compare to the existing conditions. The hydrologic calculations and ICPR results are included in Appendix A of the report. A volumetric comparison table, utilizing the SCS runoff curve number method, into existing pond EX_OSW-A is also provided in Appendix A of the report.

3.3.4 Basin BSNSW3A

Basin BSNSW3A is a 1.05 acre within the project limits that will discharge to the newly constructed dry swale for treatment and attenuation prior to overflowing into existing pond EX_OSW-A, as it did in the existing condition. This basin encompasses approximately 0.30 acres of existing pavement (that originally direct discharged into pond EX_OSW-A) and 0.28 acres of new pavement from slip Ramp 3. A new collection system will be constructed to direct the roadway/ ramp runoff to a proposed new treatment swale SW-3A for treatment and attenuation. The swale is designed in accordance with SWFWMD and FDOT criteria.

To demonstrate that there is no increase in runoff contributing to existing pond EX_OSW-A, an ICPR-3 model is developed to determine the peak rate of discharge leaving swale SW-3A/ entering existing pond EX_OSW-A. The model will demonstrate that the maximum stage in swale SW-3A will not overtop the proposed top of swale elevation; and that at one foot of freeboard is provided. The hydrologic calculations and ICPR results are included in Appendix A of the report.

3.3.5 Basin EX_BSNOWB

There is no proposed work within this basin limits. It is included as it was part of the overall contributing basin to existing pond EX_OSWA.

Information for this area was obtained from SWFWMD permit no. 44-021031.001 for the Lee Roy Selmon Crosstown Expressway (THEA Design Project No. 50.30.001A).

There is no ICPR-3 model for this basin. As such, no hydrologic calculations are included for this basin.

4.0 Proposed Design

4.1 Design Criteria

The following highlights the applicable criteria as set forth by the THEA/ FDOT and SWFWMD for the drainage systems and storm water management facilities. These criteria were drawn from the 2018 SWFWMD Applicant's Handbook, Volume II (AH), the 2021 THEA/ FDOT Drainage Manual (DM) and the 2021 THEA/ FDOT Drainage Design Guide (DDG).

4.1.1 Stormwater Management Facilities (Primary Systems)

- **Water Quantity - Attenuation (Open Basins)**
  - Design Storm (SWFWMD AH VII, Section 3.1; F.S. Chapter 62-330) – The post development peak rate of discharge should not exceed the pre-development peak rate of discharge for the 25-year, 24-hour storm event.
  - Critical Duration Storms (FDOT DM, Chpt 5.2.1; FAC 14-86; Drainage HB Drainage Connection Permits, Chpt 4.0) – The post development peak rate of discharge for the storm events (3-year, 1-hour to 3-day; 5-year, 1-hour to 3-day; 10-year, 1-hour to 3-day; 25-year, 1-hour to 3-day; 50-year, 1-hour to 3-day; and 100-year, 1-hour to 3-day) shall not exceed the pre-development peak rate of discharge for project discharging to offsite areas subject to reported historical flooding and or into drainage systems with heightened public safety risk: (1) storm per storm (frequency and duration) comparison or (2) peak rate from a frequency. The approach for the design of this facility is following FDOT critical duration storms; but it will be design per open channel criteria with respect to side slopes (1:3 max), minimum bottom width (5-ft min), and freeboard (1-ft). A berm is not required, but a 10-ft vehicular access at 1:10 slope is required on one side of the treatment swale.

- **Water Quality – Treatment (On-Line Dry Retention)**
  - SWFWMD AH VII, Section 4.1 – The system shall treat the runoff from the first one-inch of rainfall; or as an option for the projects or project sub-units with drainage areas less than 100 acres, the first one-half inch of run-off. In determining the runoff from one inch of rainfall, the applicant must provide calculations determining runoff from the directly connected impervious and semi-impervious areas separately from any other contributing area. As discussed at the Pre-Application Meeting, the approach for treatment will be one half inch over the contributing basin area.
  - THEA/ FDOT – As specified by SWFWMD.
  - FDEP Impaired Water Bodies (FAC 62-303) – Delaney Creek (WBID 1605) is impaired for macrophytes and E-Coli. As it is not impaired for nutrients, typically pre/ post loading evaluation is not required. However, SWFWMD required that the proposed condition nutrients (phosphorus and nitrogen) leaving the proposed facility shall be less than or equal to the existing condition nutrients loadings.

- **Water Quality – Dry Retention Drawdown/ Recovery**
  - SWFWMD AH VII, Section 5.2 – The total treatment volume shall be available again within 72-hours after. Additionally, only that volume which can again be available within 36 hours may be counted as part of the volume required for water quantity storage.

The treatment swale SW-3A was designed in accordance with THEA/ FDOT and SWFWMD criteria, utilizing the approved software program ICPR V3.1 (water quantity analysis), PONDS V3.2 (water quality recovery analysis), and BMP Trains V4.2.3 (for nutrient loading analysis). Runoff curve numbers of 98, 89, and 100 were used in the analyses for impervious, hydrologic soils group A/D and B/D pervious, and water surface areas respectively. A minimum 10 minutes time of concentration or permitted time of concentration is used for the existing condition to establish the basis of the peak rate of discharge for comparison. In the proposed condition, the time of concentration generated from a ditch or storm sewer network computation shall be used in the routing. The treatment swale was analyzed for both SWFWMD 25-year/ 24-hour design storm and FDOT critical duration storms.

Delaney rainfall distribution will be used to evaluate the SWFWMD 25-year/ 24-hour storm event to be consistent with the previous permit for this area. FDOT rainfall distribution will be utilized to analyze the FDOT critical duration storms. Downstream permitted DHW will be used as a tailwater elevation for the system.

4.1.2 Stormwater Conveyance (Secondary Systems)

- **Storm Sewers**
  - Hydraulic Gradient (DM, Section 3.6.2) - The hydraulic gradient shall be no greater than the theoretical gutter elevation when major and minor losses are included in analysis. Minor losses include entrance, exit, junction and manhole, expansion, contraction and bend.
  - Spread (DM, Section 3.9.1) - Shoulder gutter inlets shall be spaced to prevent spread from exceeding one foot, three inches outside the gutter toward the front slope and be limited to the face of the guardrail for the 10-yr frequency storm. For other inlets, spread will be analyzed for a 4 in/hr intensity for permanent and temporary conditions and will not be allowed to encroach into the travel lane.
  - Storm Drain Hydrology and Hydraulics (DM, Section 3.3) - Storm drain systems found within the on-site basins shall be designed in accordance with a 10-year design storm frequency. A 50-yr design storm shall be used for areas where roadway runoff has no outlet other than a storm drain system such as a sag inlet or cut section. The time of concentration at the start of the system is 10-minute. In area where there is ditch flow, the travel time in the ditch will be the time of concentration for that inlet.
  - Design Tailwater (DM, Section 3.4) – (1) For pipes discharging to ditches: the normal depth flow in a free-flowing ditch at the storm drain outlet for the storm drain design storm; (2) For pipes discharging to stormwater ponds: the peak stage at the coincidental storm event based on the calculated Tc for the Pond; and (3) Orifices and v-notches will be assumed as clogged for purpose of establishing tailwater.
  - Minimum Slope (DM, Section 3.6.1) - A physical slope that can produce a flow velocity of 2.5 feet per second (fps) and no greater than 15 fps when flowing full shall be used for the storm sewers. For pressure flow, a minimum slope of 0.1 percent is required.
  - Outlet Velocity (DM, Section 3.6.3) - Outlet velocity shall be based on the lowest anticipated tailwater condition that can be expected to occur during the storm event. If discharge exceeds 4 fps, special lining may be considered.
  - Minimum Pipe Size and Maximum Length (DM, Section 3.10.1) - A pipe size of 18 inches will be used for maximum pipe length of 300 feet and pipe sizes of 24 inches to 36 inches may be used for maximum lengths of 400 feet. A 42-inch pipe size and larger may be used for a maximum pipe length of 500 feet.
  - Manning’s Roughness Coefficients (DM, Section 3.6.4) - A Manning’s roughness coefficient (n) of 0.012 shall be used in design for concrete pipes.
  - Longitudinal Grade (DM, Section 3.8.1) - A minimum longitudinal gutter grade of 0.3 percent shall be used for design.

- **Trench Drain (DM 3.9.2)**
  - Consider trench drains when traditional inlets are not feasible.
  - Placement of trench drains shall not be in pedestrian paths unless ADA compliant grates are used.
  - Avoid conflicts with barrier wall foundation if places adjacent to reinforced concrete barrier.

- Identify in the plans the type, the design flow of the drains, begin and end locations of the drain and outlet pipe (if drain is not stubbed directly into a drainage structure).
- Slope outlet pipes and performed channel inverts at 0.6% or steeper toward the outlet regardless of the surface slope.

- **Ditches (DM 2.2)**
  - Design Frequency (DM, Section 2.2) – Roadside ditches shall be designed to collect and convey water without damage for a 10-year design storm frequency, while temporary ditches will be designed for a2-year storm.
  - Minimum Slope (DM, Section 2.4.2) – For all conveyance ditches, a minimum physical slope of 0.0005 ft/ft shall be used.
  - Freeboard (DM, Sectio 2.4.5) – A minimum freeboard of one foot in a fill slope and 0.5 foot in a cut slope above the design stage for ditches that required regrading.

- **Hydroplaning Risk (DM 3.9.3)**
  - Hydroplaning will be analyzed at critical locations where the standard allowable typical sections per the FDM are not met such as locations with large gores and auxiliary lanes.
  - Accumulated runoff should be captured from driveways, side streets, and ramps or other areas which may cause hydroplaning.
  - Inlet should be designed to capture 100 percent of the flow.

Storm sewer systems were designed in accordance to FDOT criteria, utilizing the software program GEOPAK drainage, and were analyzed for the 10-yr storm event. Runoff coefficients of 0.95 and 0.20 were used in analyses for impervious and pervious areas, respectively. In general, a starting time of concentration of 10 minutes was used for analyses; and in locations where a ditch conveys flow to an inlet, the time of concentration determined in the ditch at the inlet location was used for analysis. Additionally, in locations of sags where there was no outlet other than the storm sewer, a 50-yr storm event was used for analysis. Tailwater elevations for systems discharging into ponds were determined through a time of concentration method in which the calculated Tc for each pond was used to select the coincidental storm event based on the rainfall distribution hydrograph. Minor losses were included in the analyses and the hydraulic grade line (HGL) was kept at or below the gutter or grate elevation.

To avoid reconstruction of the existing shoulder and maintain the flow of traffic along the existing I-75 on ramp to Selmon Expressway WB travel lanes, a system of trench drain, as approved by The Hillsborough Expressway Authority, was designed to intercept runoff from the westbound travel lanes between stations 1219+00 to roughly 1224+00 and convey it to a ditch upstream of the existing pond EX_OSW-A. The trench system is proposed to replace an existing storm sewer system consist of a combination of ditch bottom inlets and CMP pipes within a narrow gore area.

Spread calculations were conducted where proposed improvements affected existing inlets and in locations with widening and new shoulder gutter. Design of storm sewer systems in the project included improvements to the existing storm sewer systems such as addition of shoulder gutter inlets and ditch bottom inlets. Proposed shoulder gutter inlets and barrier wall inlets were spaced to meet spread criteria for the 10-yr storm event and 4 in/hr intensity, respectively. Storm sewer design was accomplished in each basin to reuse existing drainage infrastructure and maintain existing drainage patterns to the greatest extent possible. This was accomplished by placing larger J-bottoms on proposed inlets to reuse existing pipes. Additional design elements include upsizing and/or plugging and filling pipes to accommodate the additional impervious area from the proposed improvements. Storm sewer, trench drain, and spread calculations can be found in Appendix B.

4.2 Hydroplaning

Hydroplaning analyses were conducted at critical sections along the project corridor including areas where ramp lanes and gores were present. For analyses, a design speed of 65 mph was used for the mainline and a reduced design speed was used based on the horizontal roadway geometry, which included ramp lanes. From analysis, it was determined that hydroplaning criteria was met and the results from the hydroplaning analyses have been provided in Appendix D.

4.3 Optional Pipe Material Analysis

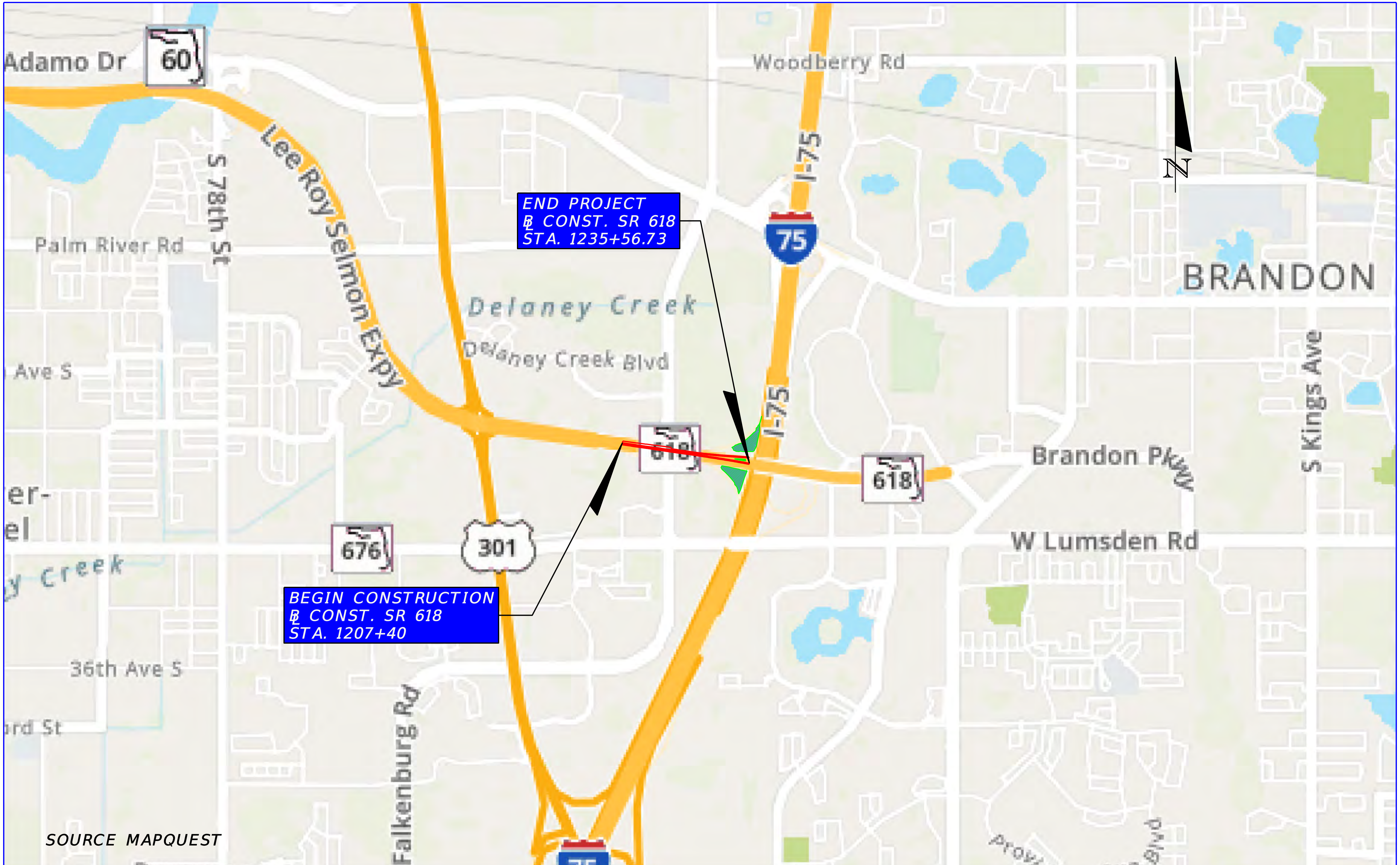
Soil borings were tested for environmental classification by Universal Engineering Sciences at varying locations along the project corridor and are included in Appendix H. The soil samples showed evidence of being slightly to moderately aggressive in nature. Based on the limited boring locations tested for environmental classification, the most similar corrosion test results for the soil stratum in which the proposed pipes were located were used for the optional pipe material analysis. The environmental classification of the soils was tested in conjunction with the THEA/ FDOT Culvert Service Life Estimator to determine the design service life (DSL) of the proposed pipes. According to Section 6.6 of the Drainage Manual, pipes that are being extended are to be extended with the existing pipe material and therefore these pipes do not require an optional material analysis. Proposed storm drains, which required an analysis were analyzed for a DSL of 100 years. Additionally, an analysis was also performed on jack and bore pipes to determine the minimum casing thickness needed for corrosion resistance. Optional Pipe Materials Analysis can be found in Appendix E.

4.4 Temporary Drainage

In order to accommodate the widening to the outside of the Selmon Expressway westbound, temporary pavement will be added to the inside shoulder between the east approach slab of Falkenburg Road Bridge to station 1235+82 to allow traffic to shift to the south. The I-75 on ramp to Selmon Expressway will be restriped to allow for an extra 2-ft outside shoulder, an 11-ft lane, and a 2-ft inside shoulder. Type K temporary barrier wall will be installed 2-ft from the outside westbound travel lane as well as the inside I-75 on ramp shoulder. The temporary barrier wall will be plugged on the ramp side. As such, spread will not be analyzed within the existing shoulder inlets for this phase. Spread calculations will be provided along the outside westbound to assure that the K temporary barrier wall slots are adequate. The existing shoulder on the bridge over Falkenburg Road will not be affected by this lane shift.

In order to accommodate the construction of the slip Ramp 3 (within the existing median) and before the construction of the trench drain within the new gore area (to collect and convey runoff from the westbound travel lanes), traffic will be shifted to the north. Type K temporary barrier wall will be installed 2-ft from the inside REL lanes as well as 2-ft from the inside westbound travel lane. The temporary barrier wall will be plugged on the westbound travel lanes to minimize the runoff draining to the existing gutter inlets. Sandbags will be provided along the existing guardrail of the I-75 ramp between the approach slab to station 1225+00 to allow water to spread in the wider shoulder in lieu of overflowing over the shoulder gutter. Spread calculations will be provided for these shoulder gutter inlets to assure that it would not encroach onto the ramp travel lane. Additionally, spread calculations will be provided along the inside REL lanes to assure that the K temporary barrier wall slots are adequate. Again, the existing shoulder on the bridge over Falkenburg Road will not be affected by this lane shift.

X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.02 Reports\Drainage Report\THEA_DrngRpt.docx



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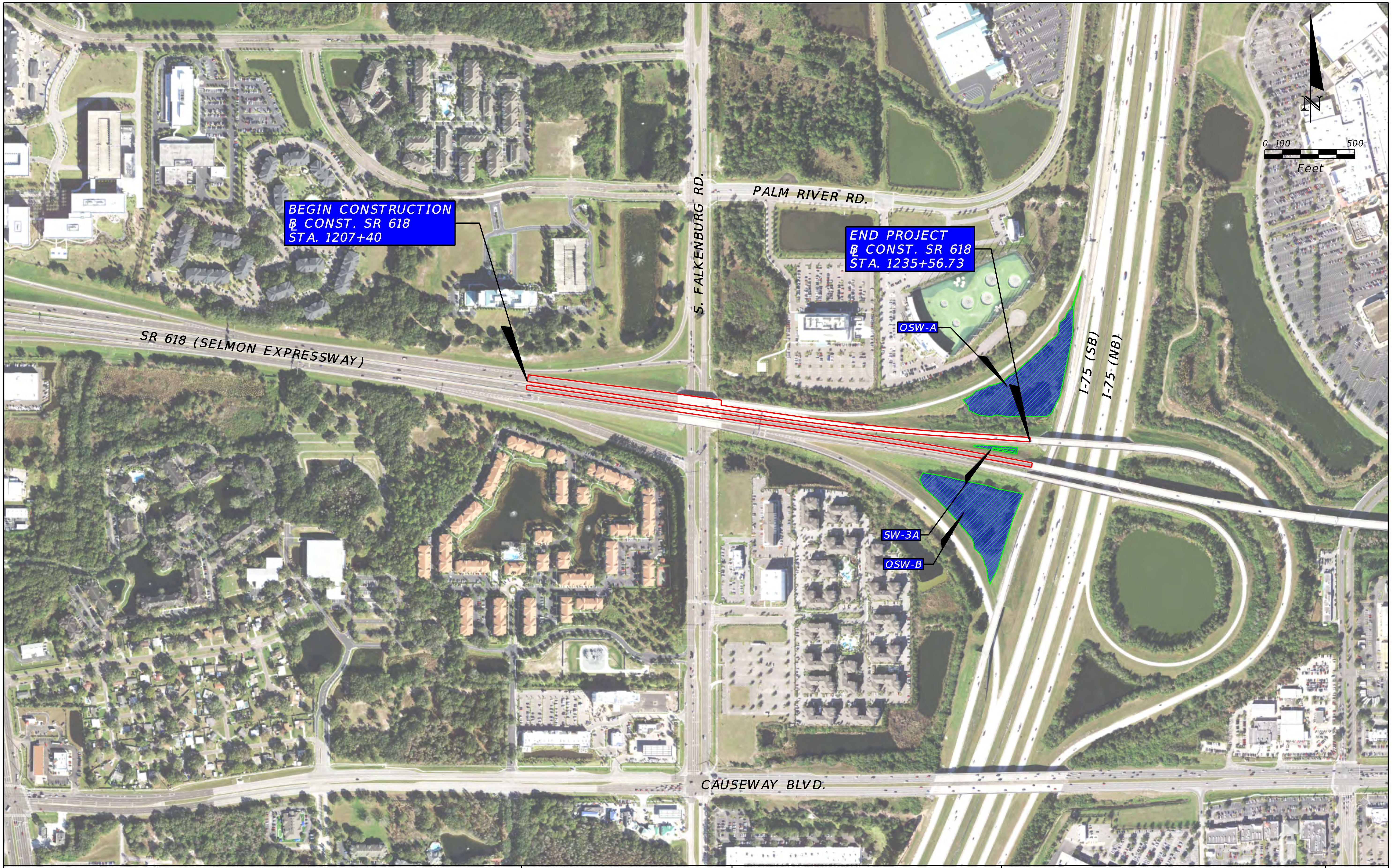
TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3
LOCATION MAP

FIGURE NO.
1

mwswanson 9/28/2021 9:35:38 AM KEY_MAP_Ramp3 X:\7011621_THEA_Slip_Ramp_DB\O-02520\drainage\Exhibits\Exhibit_Drainage_Report.dgn



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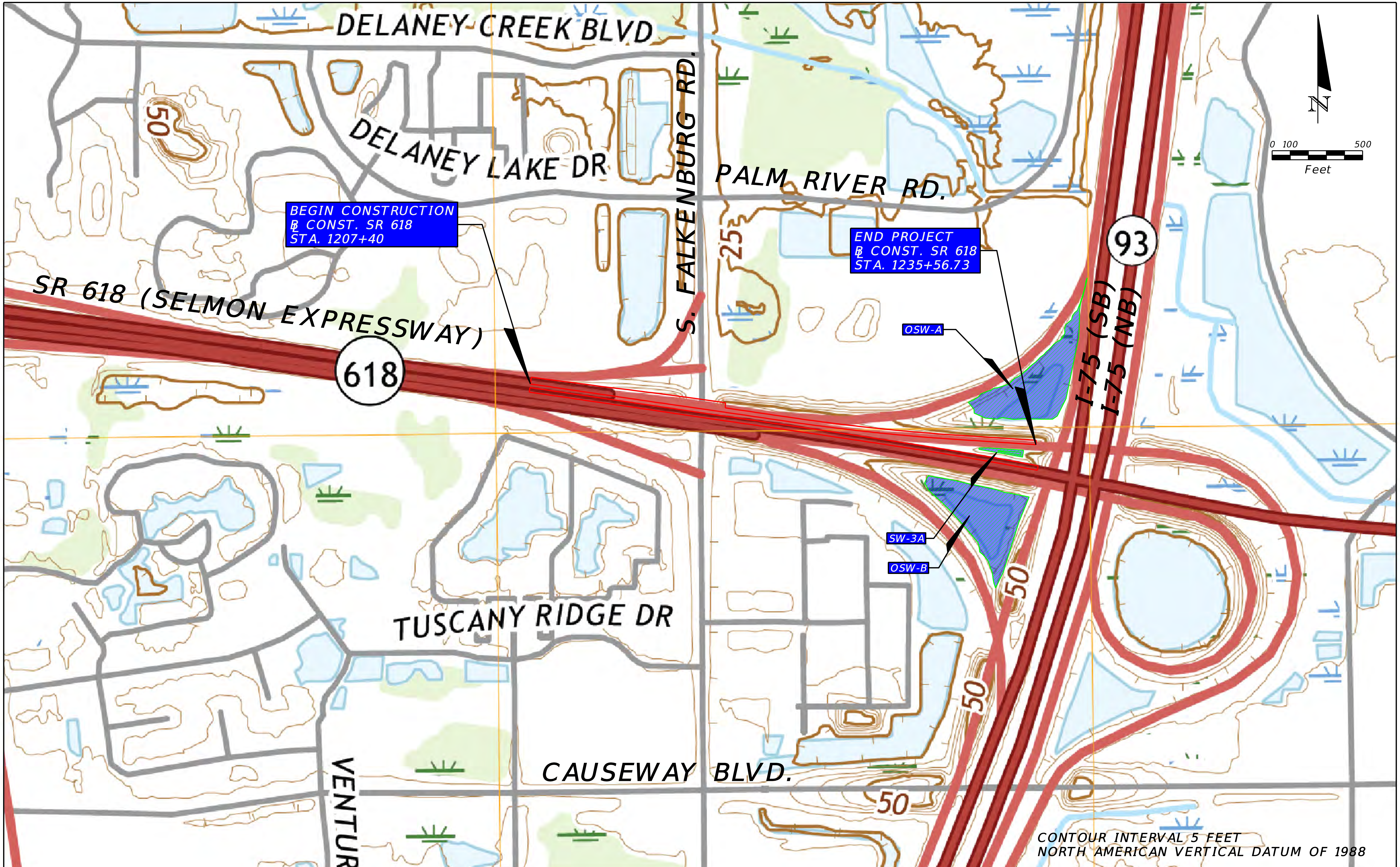
TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3 AERIAL MAP

FIGURE NO. 2

mwswanson 9/28/2021 9:35:39 AM Aerial_Ramp-3 X:\7011621_THEA_Slip_Ramp_DB\O-02520\drainage\Exhibits\Exhibit_Drainage_Report.dgn



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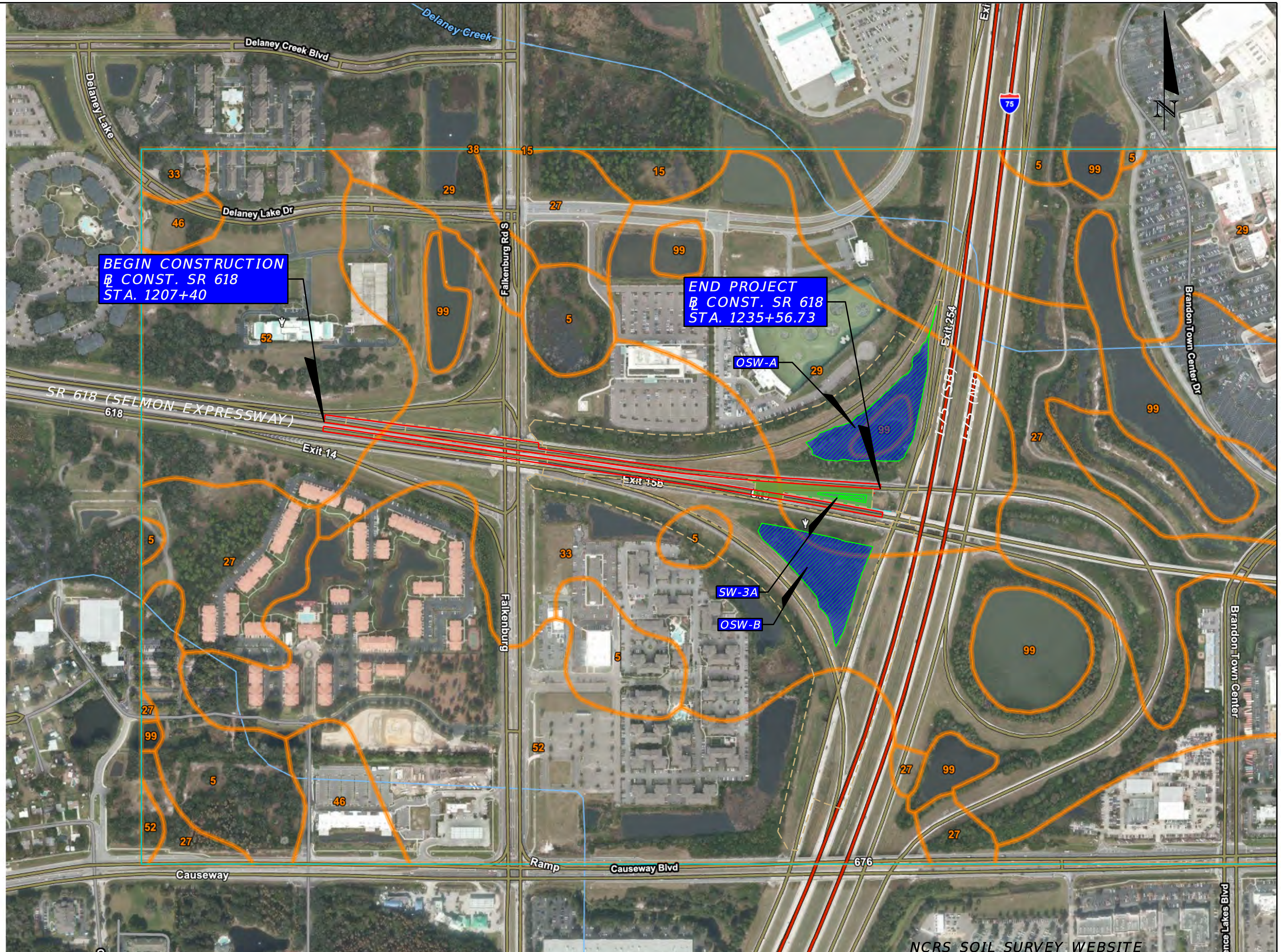
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3
USGS QUANDRANGLE

FIGURE NO.
3

mwswanson 9/28/2021 9:36:08 AM USGS_Ramp-3 X:\7011621_THEA_Slip_Ramp_DB\O-02520\drainage\Exhibits\Exhibit_Drainage_Report.dgn



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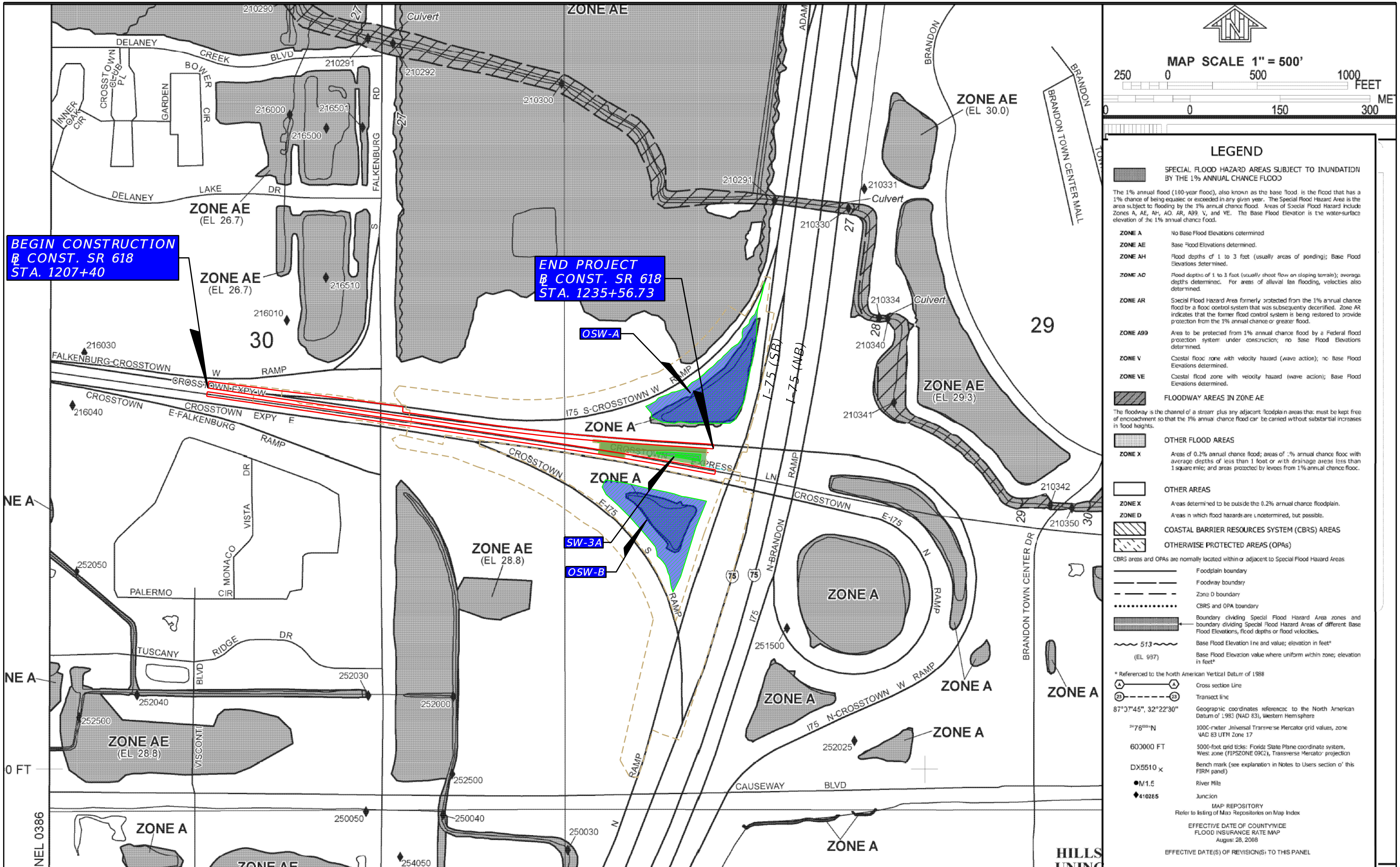
TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3
SOIL MAP

FIGURE NO. 4

mwswanson 9/28/2021 9:36:24 AM SOIL_Ramp-3 X:\7011621_THEA_Slip_Ramp_DB\O-02520\drainage\Exhibits\Exhibit_Drainage_Report.dgn



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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TAMPA HILLSBOROUGH
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3
FEMA MAP

FIGURE NO.
5

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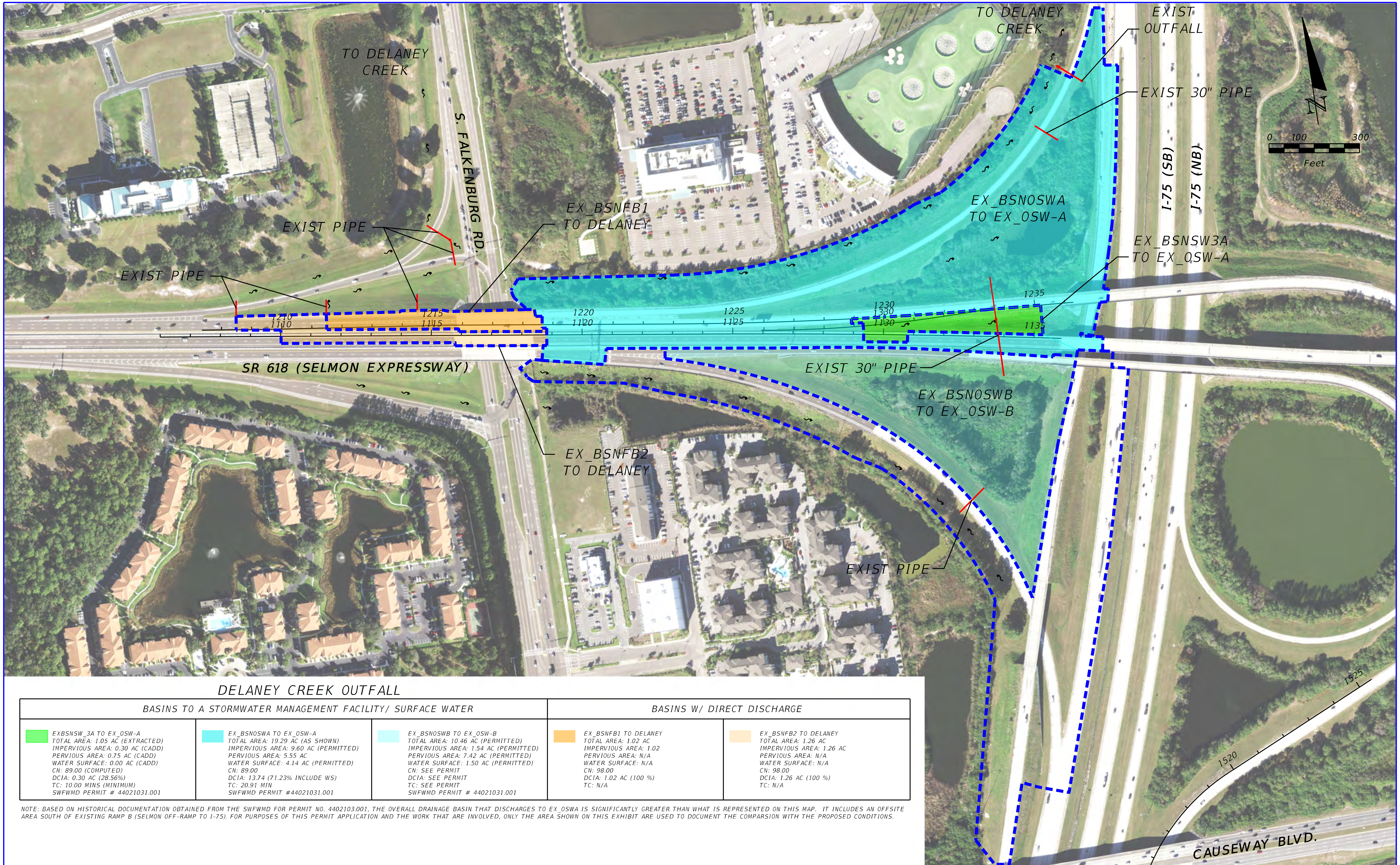

DELANEY CREEK OUTFALL

BASINS TO A STORMWATER MANAGEMENT FACILITY/ SURFACE WATER			BASINS W/ DIRECT DISCHARGE	
EXBSNSW_3A TO EX_OSW-A TOTAL AREA: 1.05 AC (EXTRACTED) IMPERVIOUS AREA: 0.30 AC (CADD) PERVIOUS AREA: 0.75 AC (CADD) WATER SURFACE: 0.00 AC (CADD) CN: 89.00 (COMPUTED) DCIA: 0.30 AC (28.56%) TC: 10.00 MINS (MINIMUM) SWFWMD PERMIT # 44021031.001	EX_BSNOSWA TO EX_OSW-A TOTAL AREA: 19.29 AC (AS SHOWN) IMPERVIOUS AREA: 9.60 AC (PERMITTED) PERVIOUS AREA: 5.55 AC WATER SURFACE: 4.14 AC (PERMITTED) CN: 89.00 DCIA: 13.74 (71.23% INCLUDE WS) TC: 20.91 MIN SWFWMD PERMIT #44021031.001	EX_BSNOSWB TO EX_OSW-B TOTAL AREA: 10.46 AC (PERMITTED) IMPERVIOUS AREA: 1.54 AC (PERMITTED) PERVIOUS AREA: 7.42 AC (PERMITTED) WATER SURFACE: 1.50 AC (PERMITTED) CN: SEE PERMIT DCIA: SEE PERMIT TC: SEE PERMIT SWFWMD PERMIT # 44021031.001	EX_BSNFB1 TO DELANEY TOTAL AREA: 1.02 AC IMPERVIOUS AREA: 1.02 PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.02 AC (100 %) TC: N/A	EX_BSNFB2 TO DELANEY TOTAL AREA: 1.26 AC IMPERVIOUS AREA: 1.26 AC PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.26 AC (100 %) TC: N/A

NOTE: BASED ON HISTORICAL DOCUMENTATION OBTAINED FROM THE SWFWMD FOR PERMIT NO. 4402103.001, THE OVERALL DRAINAGE BASIN THAT DISCHARGES TO EX_OSWA IS SIGNIFICANTLY GREATER THAN WHAT IS REPRESENTED ON THIS MAP. IT INCLUDES AN OFFSITE AREA SOUTH OF EXISTING RAMP B (SELMON OFF-RAMP TO I-75). FOR PURPOSES OF THIS PERMIT APPLICATION AND THE WORK THAT ARE INVOLVED, ONLY THE AREA SHOWN ON THIS EXHIBIT ARE USED TO DOCUMENT THE COMPARSION WITH THE PROPOSED CONDITIONS.

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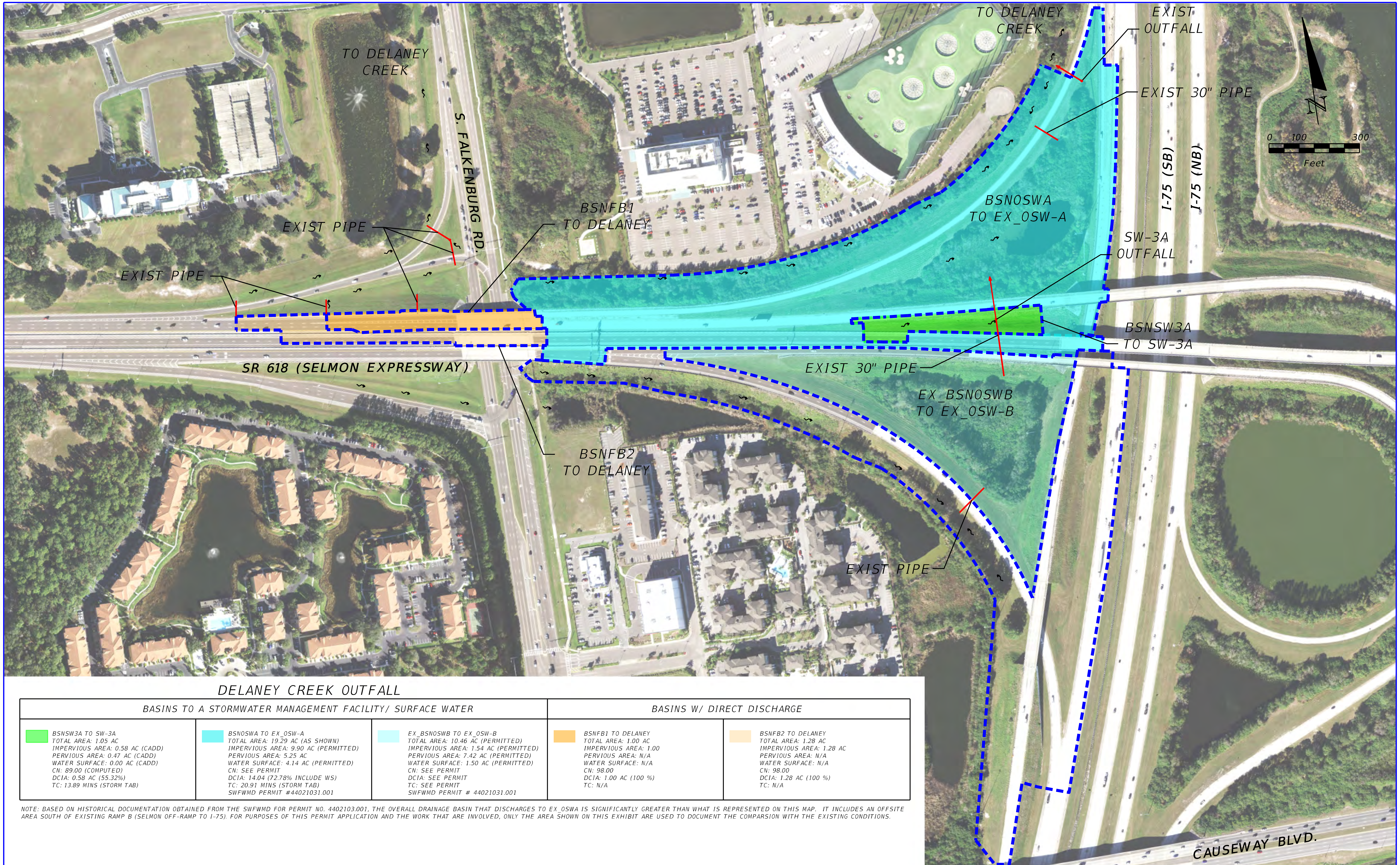
TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3
EXISTING DRAINAGE MAP

FIGURE NO
6



DELANEY CREEK OUTFALL

BASINS TO A STORMWATER MANAGEMENT FACILITY/ SURFACE WATER			BASINS W/ DIRECT DISCHARGE	
BSNSW3A TO SW-3A TOTAL AREA: 1.05 AC IMPERVIOUS AREA: 0.58 AC (CADD) PERVIOUS AREA: 0.47 AC (CADD) WATER SURFACE: 0.00 AC (CADD) CN: 89.00 (COMPUTED) DCIA: 0.58 AC (55.32%) TC: 13.89 MINS (STORM TAB)	BSNOSWA TO EX_OSW-A TOTAL AREA: 19.29 AC (AS SHOWN) IMPERVIOUS AREA: 9.90 AC (PERMITTED) PERVIOUS AREA: 5.25 AC WATER SURFACE: 4.14 AC (PERMITTED) CN: SEE PERMIT DCIA: 14.04 (72.78% INCLUDE WS) TC: 20.91 MINS (STORM TAB) SWFWMD PERMIT #44021031.001	EX_BSNOSWB TO EX_OSW-B TOTAL AREA: 10.46 AC (PERMITTED) IMPERVIOUS AREA: 1.54 AC (PERMITTED) PERVIOUS AREA: 7.42 AC (PERMITTED) WATER SURFACE: 1.50 AC (PERMITTED) CN: SEE PERMIT DCIA: SEE PERMIT TC: SEE PERMIT SWFWMD PERMIT # 44021031.001	BSNFB1 TO DELANEY TOTAL AREA: 1.00 AC IMPERVIOUS AREA: 1.00 PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.00 AC (100 %) TC: N/A	BSNFB2 TO DELANEY TOTAL AREA: 1.28 AC IMPERVIOUS AREA: 1.28 AC PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.28 AC (100 %) TC: N/A

NOTE: BASED ON HISTORICAL DOCUMENTATION OBTAINED FROM THE SWFWMD FOR PERMIT NO. 4402103.001, THE OVERALL DRAINAGE BASIN THAT DISCHARGES TO EX_OSWA IS SIGNIFICANTLY GREATER THAN WHAT IS REPRESENTED ON THIS MAP. IT INCLUDES AN OFFSITE AREA SOUTH OF EXISTING RAMP B (SELMON OFF-RAMP TO I-75). FOR PURPOSES OF THIS PERMIT APPLICATION AND THE WORK THAT ARE INVOLVED, ONLY THE AREA SHOWN ON THIS EXHIBIT ARE USED TO DOCUMENT THE COMPARSION WITH THE EXISTING CONDITIONS.

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REVISIONS			
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TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	0-02520

THEA: RAMP 3 PROPOSED DRAINAGE MAP

FIGURE NO 7

Appendix A – Pond Calculations

Summary of Results

HORIZON engineering group, inc.

PROJECT	East Selmon Expressway - Slip Ramp 3	SHEET	OF
SUBJECT	Basin Comparison Summary	JOB NO.	O-02520
		DATE	September 29, 2021
		COMPUTED BY	KTD
		CHECKED BY	LMHO

Summary of Results

Basin Comparison Summary

Basin ID	**Node ID**	**Existing Condition Area (ac)**			**Proposed Condition Area (ac)**		
		D.A.	**Imperv**	**Water**	**D.A.**	**Imperv**	**Water**
EX_BSNFB1	DELANEY	1.02	1.02	0.00			
EX_BSNFB2		1.26	1.26	0.00			
BSNFB1	DELANEY				1.00	1.00	0.00
BSNFB2					1.28	1.28	0.00
	Total direct to Delaney (1):	**2.28**	**2.28**	**0.00**	**2.28**	**2.28**	**0.00**
EX_BSNSW3A (2)	EX_OSWA	1.05	0.30	0.00			
EX_BSNOSWA (2)		19.29	9.60	4.14			
BSNOSWA	EX_OSWA				19.29	9.90	4.14
	Total to EX_OSWA:	**20.34**	**9.90**	**4.14**	**19.29**	**9.90**	**4.14**
BSNSW3A	SW-3A				1.05	0.58	0.00
	Total to SW-3A:	**0.00**	**0.00**	**0.00**	**1.05**	**0.58**	**0.00**
EX_BSNOSWB (3)	EX_OSWB	10.46	1.54	1.50	Not affected by the proposed improvement		

NOTE:
(1) The information used for this comparsion is taken directly from CADD for the segment of roadway that is affected by the slip Ramp 3 Improvements. The areas for these basins are part of a larger sub-basin as denoted in SWFWMD Permit # 43027435.007.
(2) The information for these basins were taken from CADD based upon linework obtained from SWFWMD Permit # 44021031.001 associated/ affected by the slip Ramp 3 Improvements. The actual areas contributing runoff to Node EX_OSWA is greater than what is shown for permitted Basin A. The impervious area provided for basin EX_BSNOSWA was taken from permitted documentation (9.90 ac of treated area) and adjusted to exclude the 0.30 acres of basin EX_BSNSW3A impervious area. Impervious area for EX_BSNOSWA is equal to 9.90 ac minus the 0.30 ac. that is being redirected to Basin EX_BSNSW3A.
(3) The information provided is based on historical documentation obtained from SWFWMD Permit # 44021031.001 and is presented to show how it is connected to node EX_OSWA and Delaney Creek. There is no work performed within this basin.

As shown above, the overall drainage area contributing to node EX_OSWA is less in the proposed condition. The total impervious contributing and used for the permitted treatment computation under SWFWMD #44021031.001 remain the same.

ICPR Modeling Results

Node ID	**Existing Condition**				**Proposed Condition**			
	(ft)		(cfs)		(ft)		(cfs)	
	025Y024H		025Y024H		025Y024H		025Y024H	
SW-3A	---		---		53.39		---	
EX_OSWA	---		33.28		---		33.20	

NOTE:
As shown above, the rate of discharge contributing to node EX_OSWA is less in the proposed conditions.

Storm Sewer Tailwater Elevation

Node ID	Maximum Inflow		Stage at Maximum Inflow		Maximum Inflow		Stage at Maximum Inflow	
	010Y001H	010Y002H	010Y001H	010Y002H	050Y001H	050Y002H	050Y001H	050Y002H
SW-3A	4.18	3.69	52.94	53.29	5.59	5.04	53.18	53.39

NOTE:
As shown above, the rate of discharge contributing to node EX_OSWA is less in the proposed conditions.

HORIZON engineering group, inc.

PROJECT	East Selmon Expressway - Slip Ramp 3
SUBJECT	Basin Comparison Summary

SHEET	OF
JOB NO.	O-02520
DATE	September 29, 2021
COMPUTED BY	KTD
CHECKED BY	LMHO

SCS Summary of Result

Basin	Existing Condition to Node EX_OSW-A				Proposed Condition to EX_OSW-A			
	Area (ac)	CN	Runoff - Q		Area (ac)	CN	Runoff - Q	
			in	ac-ft			in	ac-ft
EX_BSNOSWA	19.29	95.84	7.50	12.06				
EX_BSNSW3A	1.05	91.57	6.99	0.61				
BSNOSWA					19.29	95.98	7.52	12.09
Total:				**12.67**				**12.09**

NOTE:
As shown above, the runoff contributing to node EX_OSWA is less in the proposed conditions.

PONDS Modeling Results: Slugload

Node ID	Required PAV (ac-ft)	Provided PAV (ac-ft)	Required Recovery Time (hr)	Provided Recovery Time (hr)
SW-3A	1910.65	2515.59	72.00	36.00

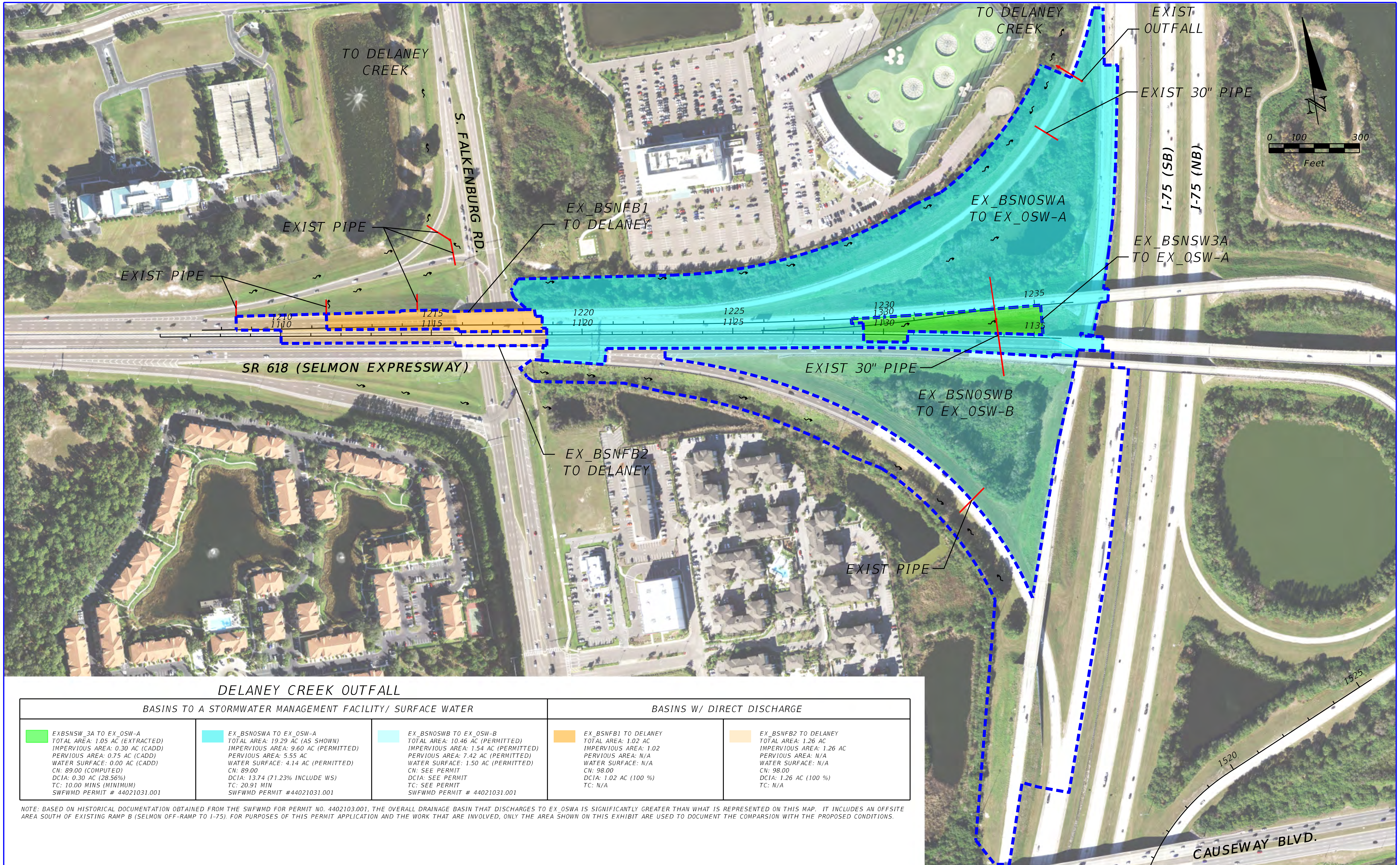
NOTE:
As shown above, the provided treatment volume can be recovered within 36 hours after a storm event. As such a factor of safety of 2 is applied to the overall analysis

BMP Trains Modeling Results to Node EX_OSW-A

Basin ID	Existing Condition		Proposed Condition					
	Total (kg/year)		Nitrogen (kg/year)			Phosphorus (kg/year)		
	Nitrogen	Phosphorus	Total	Removal	Discharge	Total	Removal	Discharge
EX_BSNSW3A	3.46	0.46						
BSNSW3A			4.74	2.79	1.95	0.62	0.37	0.26

NOTE:
As shown above, the total nitrogen and phosphorus discharging to EX_OSWA is less in the proposed condition. Currently basin EX_BSNSW3A direct discharge to pond EX_OSW-A.
In the proposed condition, basin BSNSW3A discharges into swale SW-3A where nutrients are being removed before it enters pond EX_OSW-A.

Drainage Calculations



DELANEY CREEK OUTFALL

BASINS TO A STORMWATER MANAGEMENT FACILITY/ SURFACE WATER			BASINS W/ DIRECT DISCHARGE	
EXBSNSW_3A TO EX_OSW-A TOTAL AREA: 1.05 AC (EXTRACTED) IMPERVIOUS AREA: 0.30 AC (CADD) PERVIOUS AREA: 0.75 AC (CADD) WATER SURFACE: 0.00 AC (CADD) CN: 89.00 (COMPUTED) DCIA: 0.30 AC (28.56%) TC: 10.00 MINS (MINIMUM) SWFWMD PERMIT # 44021031.001	EX_BSNOSWA TO EX_OSW-A TOTAL AREA: 19.29 AC (AS SHOWN) IMPERVIOUS AREA: 9.60 AC (PERMITTED) PERVIOUS AREA: 5.55 AC WATER SURFACE: 4.14 AC (PERMITTED) CN: 89.00 DCIA: 13.74 (71.23% INCLUDE WS) TC: 20.91 MIN SWFWMD PERMIT #44021031.001	EX_BSNOSWB TO EX_OSW-B TOTAL AREA: 10.46 AC (PERMITTED) IMPERVIOUS AREA: 1.54 AC (PERMITTED) PERVIOUS AREA: 7.42 AC (PERMITTED) WATER SURFACE: 1.50 AC (PERMITTED) CN: SEE PERMIT DCIA: SEE PERMIT TC: SEE PERMIT SWFWMD PERMIT # 44021031.001	EX_BSNFB1 TO DELANEY TOTAL AREA: 1.02 AC IMPERVIOUS AREA: 1.02 PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.02 AC (100 %) TC: N/A	EX_BSNFB2 TO DELANEY TOTAL AREA: 1.26 AC IMPERVIOUS AREA: 1.26 AC PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.26 AC (100 %) TC: N/A

NOTE: BASED ON HISTORICAL DOCUMENTATION OBTAINED FROM THE SWFWMD FOR PERMIT NO. 4402103.001, THE OVERALL DRAINAGE BASIN THAT DISCHARGES TO EX_OSWA IS SIGNIFICANTLY GREATER THAN WHAT IS REPRESENTED ON THIS MAP. IT INCLUDES AN OFFSITE AREA SOUTH OF EXISTING RAMP B (SELMON OFF-RAMP TO I-75). FOR PURPOSES OF THIS PERMIT APPLICATION AND THE WORK THAT ARE INVOLVED, ONLY THE AREA SHOWN ON THIS EXHIBIT ARE USED TO DOCUMENT THE COMPARSION WITH THE PROPOSED CONDITIONS.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

TUY KIM DUONG, P.E.
P.E. NO.: 66461
HORIZON ENGINEERING GROUP, INC.
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	0-02520

THEA: RAMP 3 EXISTING DRAINAGE MAP

FIGURE NO 6

HORIZON engineering group, inc.

PROJECT	East Selmon Expressway - Slip Ramp 3	SHEET	OF
SUBJECT	Basin EXBSNOSW-A	JOB NO.	O-02520
		DATE	September 27, 2021
		COMPUTED BY	KTD
		CHECKED BY	

EXISTING CONDITION

Basin EXBSNOSW-A is a 19.29 acre area that is part of a larger basin (permitted as Basin A: western half of the Selmon Expressway/ I-75 Interchange) that currently discharges into an existing wet detention pond EX_OSW-A for treatment and attenuation. Pond EX_OSW-A was permitted/ modified under SWFWMD pemit # 44021031.001 to the Tampa-Hillsborough County Expressway Authority Gateway Bridge Project (2001). At the time, this was an existing wetland that was retrofitted with a control structure to provide the water quality and water quantity volumes as required by the SWFWMD and FDOT.

Pond EX_OSW-A is a part of a series of wet detention systems at the I-75/ SR 618 interchange that discharge into Delaney Creek. Delaney Creek (WBID 1605) is impaired for macrophytes and E-coli.

Basin: *EXBSNOSW-A* *Node:* *EX_OSW-A* *Tc:* *20.91 minutes (storm tab - post condition)*

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE				
Water Surface (NWL/ Wetland)		100	4.14	414.00
				0.00
		TOTALS	**4.14**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)				
Existing Roadway		98	9.60	940.80
New Roadway		98	0.00	0.00
		TOTALS	**9.60**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)				
Existing Roadway		98	0.00	0.00
Existing Building		98	0.00	0.00
				0.00
		TOTALS	**0.00**	
PERVIOUS AREA				
Open Space (Grass Cover > 75%)	D	89	5.55	493.95
	D	89		0.00
				0.00
		TOTALS	**5.55**	

ICPR DATA					
* Based on total drng area		* Based on the total drng area		* Based on NDCIA and pervious areas	
TOTAL DCIA (ac)	**13.74**	**TOTAL BASIN AREA (ac)**	**19.29**	**COMPOSITE CN**	**89.00**
Percent DCIA	**71.23**				

MODELING DESIGN STORMS		
Agency	Design Storm Frequency	Rainfall Volume (in)
SWFWMD	025YR024HR	8.00
FDOT	Critical Storms for Open Basins	Zone 6 intensity * storm duration

SCS RUNOFF COMPUTATION					
RAINFALL VOLUME - P (in)	**8.00**	**TOTAL BASIN AREA - A (ac):**	**19.29**	**COMPOSITE CN***	**95.84**
S =	$\frac{1000}{CN^*} - 10$			=	**0.43**
I_a =	0.2S			=	**0.09**
Q (in) =	$\frac{(P - I_a)^2}{(P + 0.8S)}$			=	**7.50**
Q (ac-ft) =	$\frac{Q(in) * A}{12}$			=	**12.06**

EXISTING CONDITION

Basin EXBSNW-3A is a 1.05 acre sliver of existing SR 618 that is part of a larger basin (permitted as Basin A: western half of the Selmon Expressway/ I-75 Interchange) that currently discharges into an existing wet detention pond EX_OSW-A for treatment and attenuation. Pond EX_OSW-A was permitted/ modified under SWFWMD pemit # 44021031.001 to the Tampa-Hillsborough County Expressway Authority Gateway Bridge Project (2001). At the time, this was an existing wetland that was retrofitted with a control structure to provide the water quality and water quantity volumes as required by the SWFWMD and FDOT.

Pond EX_OSW-A is a part of a series of wet detention systems at the I-75/ SR 618 interchange that discharge into Delaney Creek. Delaney Creek (WBID 1605) is impaired for macrophytes and E-coli.

Basin: *EXBSNSW3A* *Node:* *EX_OSW-A* *Tc:* *10 minutes*

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE				
Water Surface (NWL/ Wetland)		100	0.00	0.00
				0.00
		TOTALS	**0.00**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)				
Existing Roadway		98	0.30	29.47
New Roadway		98	0.00	0.00
		TOTALS	**0.30**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)				
Existing Roadway		98	0.00	0.00
Existing Building		98	0.00	0.00
				0.00
		TOTALS	**0.00**	
PERVIOUS AREA				
Open Space (Grass Cover > 75%)	D	89	0.00	0.00
Pond Open Space (Grass Cover > 75%)	D	89	0.75	66.93
				0.00
		TOTALS	**0.75**	

ICPR DATA					
*** Based on total drng area**		*** Based on the total drng area**		*** Based on NDCIA and pervious areas**	
TOTAL DCIA (ac)	**0.30**	**TOTAL BASIN AREA (ac)**	**1.05**	**COMPOSITE CN**	**89.00**
Percent DCIA	**28.56**				

MODELING DESIGN STORMS		
Agency	Design Storm Frequency	Rainfall Volume (in)
SWFWMD	025YR024HR	8.00
FDOT	Critical Storms for Open Basins	Zone 6 intensity * storm duration

SCS RUNOFF COMPUTATION					
RAINFALL VOLUME - P (in)	**8.00**	**TOTAL BASIN AREA - A (ac):**	**1.05**	**COMPOSITE CN***	**91.57**
S =	$\frac{1000}{CN^*} - 10$			**=**	**0.92**
I_a =	0.2S			**=**	**0.18**
Q (in) =	$\frac{(P - I_a)^2}{(P + 0.8S)}$			**=**	**6.99**
Q (ac-ft) =	$\frac{Q(in) * A}{12}$			**=**	**0.61**

THEA Ramp 3: Existing Condition
FPID No. O-02520
Delaney Creek Outfall: Nodal Network Diagram

<u>Nodes</u>
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

<u>Basins</u>
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

<u>Links</u>
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench

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==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: EXBSNOSWA               Node: EX_OSW-A              Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 20.91
               Area(ac): 19.290                 Time Shift(hrs): 0.00
           Curve Number: 89.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 71.23


----------------------------------------------------------------------------------------------------
         Name: EXBSNSW3A               Node: EX_OSW-A              Status: Onsite
        Group: BASE                    Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                   Peaking Factor: 323.0
          Rainfall File:                    Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                Time of Conc(min): 10.00
               Area(ac): 1.050                  Time Shift(hrs): 0.00
           Curve Number: 89.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 28.56


==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: EX_OSW-A           Base Flow(cfs): 0.000          Init Stage(ft): 28.230
     Group: BASE                                              Warn Stage(ft): 28.230
      Type: Time/Stage

INFORMATION FOR THE STAGE IS TAKEN TO BE THE 100 DHW ELEVATION OF OSW-A PER SFWMD
PERMIT 4421031.01. DATUM AT THE TIME IS IN NGVD. A CONVERSION FACTOR OF -0.845' IS
NECESSARY TO DETERMINE THE ELEVATION IN NAVD. FOR THE PURPOSE OF THE ROUTING,
THE EXACT ELEVATION W/O CONVERSION FACTOR WAS APPLIED TO BE CONSERVATIVE.

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          28.230
          72.00          28.230

==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: 002Y001HE
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y001HE.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Fdot-1
    Rainfall Amount(in): 2.30

Time(hrs)       Print Inc(min)
--------------- ---------------
2.000           5.00

----------------------------------------------------------------------------------------------------
         Name: 002Y002HE
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y002HE.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: Fdot-2
    Rainfall Amount(in): 3.00

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           5.00

----------------------------------------------------------------------------------------------------
         Name: 002Y004HE
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y004HE.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: Fdot-4
    Rainfall Amount(in): 3.40

Time(hrs)       Print Inc(min)
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Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	002Y001HE	002Y001HE	002Y002HE	002Y002HE	002Y004HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-1	Fdot-1	Fdot-2	Fdot-2	Fdot-4
Rain Amount(in):	2.300	2.300	3.000	3.000	3.400
Duration(hrs):	1.00	1.00	2.00	2.00	4.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	0.74	0.64	0.93	0.84	2.14
Flow Max(cfs):	51.61	3.14	47.02	2.89	28.69
Runoff Volume(in):	1.934	1.544	2.613	2.186	3.003
Runoff Volume(ft3):	135414	5886	182955	8333	210277

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	002Y004HE	002Y008HE	002Y008HE	002Y024HE	002Y024HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-4	Fdot-8	Fdot-8	Fdot-24	Fdot-24
Rain Amount(in):	3.400	4.200	4.200	5.760	5.760
Duration(hrs):	4.00	8.00	8.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	2.04	4.04	4.00	11.99	12.00
Flow Max(cfs):	1.55	31.38	1.70	10.71	0.57
Runoff Volume(in):	2.562	3.787	3.324	5.328	4.836
Runoff Volume(ft3):	9764	265206	12668	373091	18431

Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	002Y072HE	002Y072HE	005Y001HE	005Y001HE	005Y002HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-72	Fdot-72	Fdot-1	Fdot-1	Fdot-2
Rain Amount(in):	6.410	6.410	2.800	2.800	3.500
Duration(hrs):	72.00	72.00	1.00	1.00	2.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	59.99	59.98	0.74	0.64	0.93
Flow Max(cfs):	6.11	0.33	64.26	4.05	55.71
Runoff Volume(in):	5.973	5.472	2.416	2.001	3.101
Runoff Volume(ft3):	418269	20855	169162	7626	217115

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	005Y002HE	005Y004HE	005Y004HE	005Y008HE	005Y008HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-2	Fdot-4	Fdot-4	Fdot-8	Fdot-8
Rain Amount(in):	3.500	4.320	4.320	5.360	5.360
Duration(hrs):	2.00	4.00	4.00	8.00	8.00

Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	0.84	2.14	2.04	4.04	4.00
Flow Max(cfs):	3.50	37.19	2.06	40.57	2.24
Runoff Volume(in):	2.656	3.906	3.439	4.932	4.446
Runoff Volume(ft3):	10124	273499	13107	345363	16945

Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	005Y024HE	005Y024HE	005Y072HE	005Y072HE	010Y001HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-24	Fdot-24	Fdot-72	Fdot-72	Fdot-1
Rain Amount(in):	7.440	7.440	8.650	8.650	3.100
Duration(hrs):	24.00	24.00	72.00	72.00	1.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	11.99	12.00	59.99	59.98	0.74
Flow Max(cfs):	13.98	0.75	8.28	0.45	71.90
Runoff Volume(in):	6.995	6.484	8.200	7.678	2.707
Runoff Volume(ft3):	489842	24714	574203	29266	189556

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y001HE	010Y002HE	010Y002HE	010Y004HE	010Y004HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-1	Fdot-2	Fdot-2	Fdot-4	Fdot-4
Rain Amount(in):	3.100	4.000	4.000	5.360	5.360
Duration(hrs):	1.00	2.00	2.00	4.00	4.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	0.64	0.93	0.84	2.14	2.02
Flow Max(cfs):	4.60	64.44	4.11	46.81	2.65
Runoff Volume(in):	2.280	3.591	3.132	4.933	4.446
Runoff Volume(ft3):	8689	251447	11937	345393	16945

Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y008HE	010Y008HE	010Y024HE	010Y024HE	010Y072HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-8	Fdot-8	Fdot-24	Fdot-24	Fdot-72
Rain Amount(in):	6.160	6.160	8.760	8.760	10.010
Duration(hrs):	8.00	8.00	24.00	24.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	4.04	4.00	11.99	12.00	59.99
Flow Max(cfs):	46.90	2.61	16.53	0.89	9.60
Runoff Volume(in):	5.725	5.227	8.309	7.787	9.555
Runoff Volume(ft3):	400850	19922	581795	29681	669070

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y072HE	025Y001HE	025Y001HE	025Y002HE	025Y002HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-72	Fdot-1	Fdot-1	Fdot-2	Fdot-2
Rain Amount(in):	10.010	3.650	3.650	4.700	4.700
Duration(hrs):	72.00	1.00	1.00	2.00	2.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	59.98	0.74	0.64	0.93	0.82
Flow Max(cfs):	0.52	85.96	5.62	76.69	4.96
Runoff Volume(in):	9.025	3.244	2.798	4.280	3.805
Runoff Volume(ft3):	34398	227145	10666	299715	14504

Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	025Y004HE	025Y004HE	025Y008HE	025Y008HE	025Y024HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-4	Fdot-4	Fdot-8	Fdot-8	Fdot-24
Rain Amount(in):	5.800	5.800	7.200	7.200	10.560
Duration(hrs):	4.00	4.00	8.00	8.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	2.14	2.02	4.04	4.00	11.99
Flow Max(cfs):	50.88	2.89	55.11	3.08	20.01
Runoff Volume(in):	5.368	4.875	6.757	6.248	10.102
Runoff Volume(ft3):	375897	18580	473140	23814	707369

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	025Y024HE	025Y072HE	025Y072HE	050Y001HE	050Y001HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-24	Fdot-72	Fdot-72	Fdot-1	Fdot-1
Rain Amount(in):	10.560	12.650	12.650	4.000	4.000
Duration(hrs):	24.00	72.00	72.00	1.00	1.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	12.00	59.99	59.98	0.74	0.64
Flow Max(cfs):	1.09	12.15	0.66	94.93	6.27
Runoff Volume(in):	9.570	12.188	11.647	3.587	3.132
Runoff Volume(ft3):	36478	853447	44392	251168	11938

Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	050Y002HE	050Y002HE	050Y004HE	050Y004HE	050Y008HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-2	Fdot-2	Fdot-4	Fdot-4	Fdot-8
Rain Amount(in):	5.300	5.300	6.500	6.500	8.000

Duration(hrs):	2.00	2.00	4.00	4.00	8.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	0.93	0.82	2.14	2.02	4.04
Flow Max(cfs):	87.20	5.70	57.36	3.29	61.43
Runoff Volume(in):	4.873	4.387	6.062	5.560	7.552
Runoff Volume(ft3):	341222	16722	424502	21192	528835

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	050Y008HE	050Y024HE	050Y024HE	050Y072HE	050Y072HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-8	Fdot-24	Fdot-24	Fdot-72	Fdot-72
Rain Amount(in):	8.000	11.520	11.520	14.130	14.130
Duration(hrs):	8.00	24.00	24.00	72.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	4.00	11.99	12.00	59.99	59.98
Flow Max(cfs):	3.44	21.87	1.19	13.59	0.74
Runoff Volume(in):	7.036	11.059	10.524	13.665	13.120
Runoff Volume(ft3):	26819	774399	40111	956893	50005

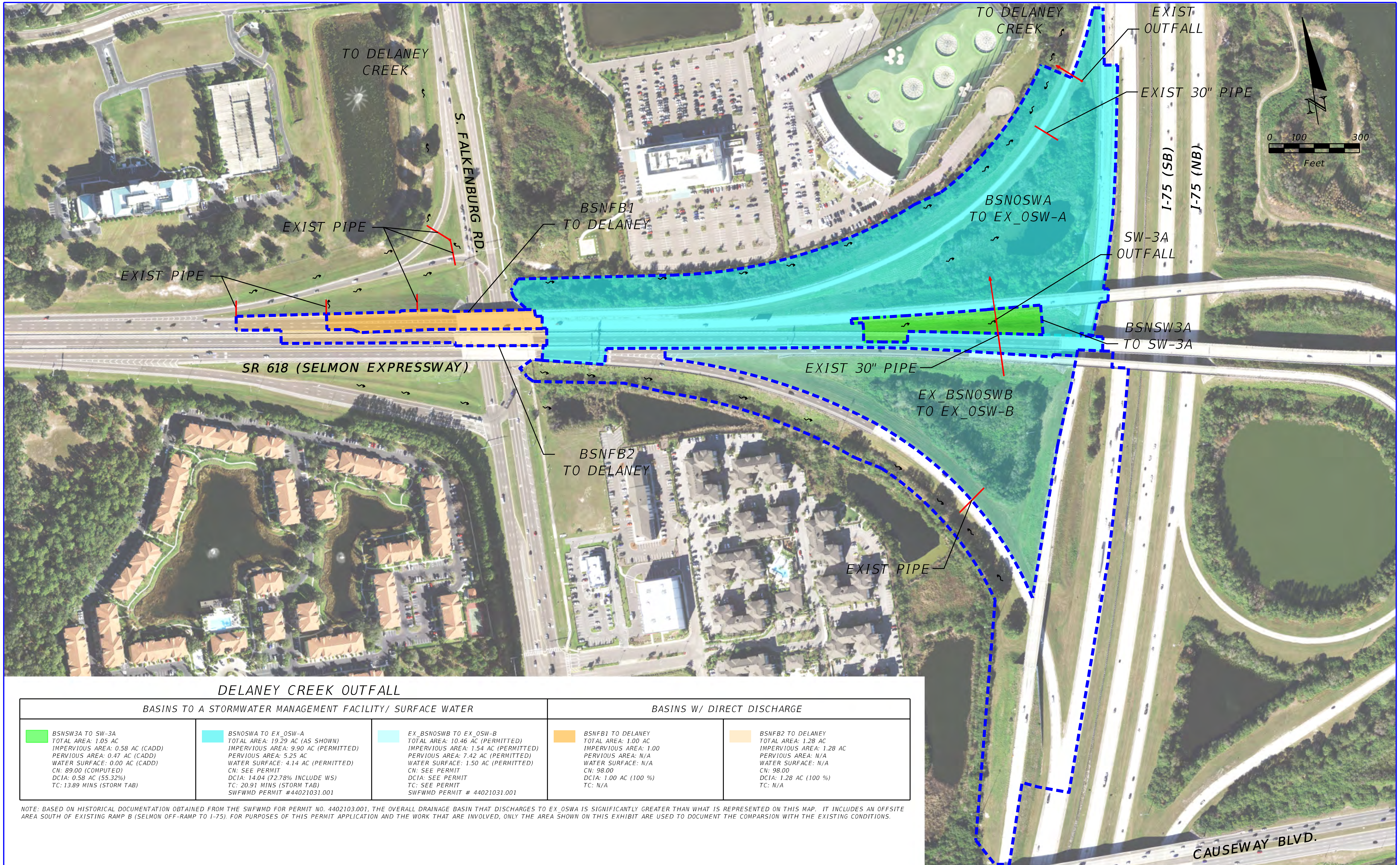
Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y001HE	100Y001HE	100Y002HE	100Y002HE	100Y004HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Comp Time Inc(min):	2.79	1.33	2.79	1.33	2.79
Rain File:	Fdot-1	Fdot-1	Fdot-2	Fdot-2	Fdot-4
Rain Amount(in):	4.500	4.500	6.000	6.000	7.360
Duration(hrs):	1.00	1.00	2.00	2.00	4.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560	71.230
Time Max(hrs):	0.74	0.64	0.93	0.82	2.14
Flow Max(cfs):	107.77	7.20	99.47	6.56	65.31
Runoff Volume(in):	4.079	3.612	5.566	5.070	6.917
Runoff Volume(ft3):	285590	13768	389759	19325	484315

Name:	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y004HE	100Y008HE	100Y008HE	100Y024HE	100Y024HE
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Comp Time Inc(min):	1.33	2.79	1.33	2.79	1.33
Rain File:	Fdot-4	Fdot-8	Fdot-8	Fdot-24	Fdot-24
Rain Amount(in):	7.360	9.200	9.200	12.960	12.960
Duration(hrs):	4.00	8.00	8.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	10.00	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	28.560	71.230	28.560	71.230	28.560
Time Max(hrs):	2.02	4.04	4.00	11.99	12.00
Flow Max(cfs):	3.77	70.88	3.99	24.65	1.35
Runoff Volume(in):	6.405	8.747	8.222	12.496	11.955
Runoff Volume(ft3):	24414	612475	31340	874997	45567

Name:	EXBSNOSWA	EXBSNSW3A	EXBSNOSWA	EXBSNSW3A
Group:	BASE	BASE	BASE	BASE
Simulation:	100Y072HE	100Y072HE	SFWMD025024E	SFWMD025024E
Node:	EX_OSW-A	EX_OSW-A	EX_OSW-A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.33	2.79	1.33
Comp Time Inc(min):	2.79	1.33	2.79	1.33
Rain File:	Fdot-72	Fdot-72	Delaney	Delaney
Rain Amount(in):	15.910	15.910	8.000	8.000
Duration(hrs):	72.00	72.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	10.00	20.91	10.00
Time Shift(hrs):	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000
DCIA(%):	71.230	28.560	71.230	28.560
Time Max(hrs):	59.99	59.98	13.01	13.00
Flow Max(cfs):	15.31	0.83	31.58	1.73
Runoff Volume(in):	15.443	14.893	7.554	7.036
Runoff Volume(ft3):	1081359	56764	528955	26819

THEA Ramp 3: Existing Condition
FPID No. O-02520
Delaney Creek Outfall: Node Maximum Condition Reports

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
EX_OSW-A	BASE	002Y001HER	0.00	28.23	28.23	0.0000	0	0.75	54.24	0.00	0.00
EX_OSW-A	BASE	002Y002HER	0.00	28.23	28.23	0.0000	0	0.92	49.35	0.00	0.00
EX_OSW-A	BASE	002Y004HER	0.00	28.23	28.23	0.0000	0	2.16	30.06	0.00	0.00
EX_OSW-A	BASE	002Y008HER	0.00	28.23	28.23	0.0000	0	4.00	33.02	0.00	0.00
EX_OSW-A	BASE	002Y024HER	0.00	28.23	28.23	0.0000	0	12.00	11.28	0.00	0.00
EX_OSW-A	BASE	002Y072HER	0.00	28.23	28.23	0.0000	0	59.91	6.44	0.00	0.00
EX_OSW-A	BASE	005Y001HER	0.00	28.23	28.23	0.0000	0	0.75	67.61	0.00	0.00
EX_OSW-A	BASE	005Y002HER	0.00	28.23	28.23	0.0000	0	0.92	58.55	0.00	0.00
EX_OSW-A	BASE	005Y004HER	0.00	28.23	28.23	0.0000	0	2.08	39.01	0.00	0.00
EX_OSW-A	BASE	005Y008HER	0.00	28.23	28.23	0.0000	0	4.00	42.74	0.00	0.00
EX_OSW-A	BASE	005Y024HER	0.00	28.23	28.23	0.0000	0	12.00	14.72	0.00	0.00
EX_OSW-A	BASE	005Y072HER	0.00	28.23	28.23	0.0000	0	59.91	8.73	0.00	0.00
EX_OSW-A	BASE	010Y001HER	0.00	28.23	28.23	0.0000	0	0.75	75.69	0.00	0.00
EX_OSW-A	BASE	010Y002HER	0.00	28.23	28.23	0.0000	0	0.92	67.77	0.00	0.00
EX_OSW-A	BASE	010Y004HER	0.00	28.23	28.23	0.0000	0	2.08	49.19	0.00	0.00
EX_OSW-A	BASE	010Y008HER	0.00	28.23	28.23	0.0000	0	4.00	49.44	0.00	0.00
EX_OSW-A	BASE	010Y024HER	0.00	28.23	28.23	0.0000	0	12.00	17.42	0.00	0.00
EX_OSW-A	BASE	010Y072HER	0.00	28.23	28.23	0.0000	0	59.91	10.12	0.00	0.00
EX_OSW-A	BASE	025Y001HER	0.00	28.23	28.23	0.0000	0	0.75	90.54	0.00	0.00
EX_OSW-A	BASE	025Y002HER	0.00	28.23	28.23	0.0000	0	0.92	80.72	0.00	0.00
EX_OSW-A	BASE	025Y004HER	0.00	28.23	28.23	0.0000	0	2.08	53.49	0.00	0.00
EX_OSW-A	BASE	025Y008HER	0.00	28.23	28.23	0.0000	0	4.00	58.13	0.00	0.00
EX_OSW-A	BASE	025Y024HER	0.00	28.23	28.23	0.0000	0	12.00	21.10	0.00	0.00
EX_OSW-A	BASE	025Y072HER	0.00	28.23	28.23	0.0000	0	59.91	12.81	0.00	0.00
EX_OSW-A	BASE	050Y001HER	0.00	28.23	28.23	0.0000	0	0.75	100.03	0.00	0.00
EX_OSW-A	BASE	050Y002HER	0.00	28.23	28.23	0.0000	0	0.92	91.83	0.00	0.00
EX_OSW-A	BASE	050Y004HER	0.00	28.23	28.23	0.0000	0	2.08	60.34	0.00	0.00
EX_OSW-A	BASE	050Y008HER	0.00	28.23	28.23	0.0000	0	4.00	64.81	0.00	0.00
EX_OSW-A	BASE	050Y024HER	0.00	28.23	28.23	0.0000	0	12.00	23.05	0.00	0.00
EX_OSW-A	BASE	050Y072HER	0.00	28.23	28.23	0.0000	0	59.91	14.32	0.00	0.00
EX_OSW-A	BASE	100Y001HER	0.00	28.23	28.23	0.0000	0	0.75	113.60	0.00	0.00
EX_OSW-A	BASE	100Y002HER	0.00	28.23	28.23	0.0000	0	0.92	104.80	0.00	0.00
EX_OSW-A	BASE	100Y004HER	0.00	28.23	28.23	0.0000	0	2.08	68.75	0.00	0.00
EX_OSW-A	BASE	100Y008HER	0.00	28.23	28.23	0.0000	0	4.00	74.81	0.00	0.00
EX_OSW-A	BASE	100Y024HER	0.00	28.23	28.23	0.0000	0	12.00	25.99	0.00	0.00
EX_OSW-A	BASE	100Y072HER	0.00	28.23	28.23	0.0000	0	59.91	16.14	0.00	0.00
EX_OSW-A	BASE	SFWMD025024ER	0.00	28.23	28.23	0.0000	0	13.00	33.28	0.00	0.00



DELANEY CREEK OUTFALL

BASINS TO A STORMWATER MANAGEMENT FACILITY/ SURFACE WATER			BASINS W/ DIRECT DISCHARGE	
BSNSW3A TO SW-3A TOTAL AREA: 1.05 AC IMPERVIOUS AREA: 0.58 AC (CADD) PERVIOUS AREA: 0.47 AC (CADD) WATER SURFACE: 0.00 AC (CADD) CN: 89.00 (COMPUTED) DCIA: 0.58 AC (55.32%) TC: 13.89 MINS (STORM TAB)	BSNOSWA TO EX_OSW-A TOTAL AREA: 19.29 AC (AS SHOWN) IMPERVIOUS AREA: 9.90 AC (PERMITTED) PERVIOUS AREA: 5.25 AC WATER SURFACE: 4.14 AC (PERMITTED) CN: SEE PERMIT DCIA: 14.04 (72.78% INCLUDE WS) TC: 20.91 MINS (STORM TAB) SWFWMD PERMIT #44021031.001	EX_BSNOSWB TO EX_OSW-B TOTAL AREA: 10.46 AC (PERMITTED) IMPERVIOUS AREA: 1.54 AC (PERMITTED) PERVIOUS AREA: 7.42 AC (PERMITTED) WATER SURFACE: 1.50 AC (PERMITTED) CN: SEE PERMIT DCIA: SEE PERMIT TC: SEE PERMIT SWFWMD PERMIT # 44021031.001	BSNFB1 TO DELANEY TOTAL AREA: 1.00 AC IMPERVIOUS AREA: 1.00 PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.00 AC (100 %) TC: N/A	BSNFB2 TO DELANEY TOTAL AREA: 1.28 AC IMPERVIOUS AREA: 1.28 AC PERVIOUS AREA: N/A WATER SURFACE: N/A CN: 98.00 DCIA: 1.28 AC (100 %) TC: N/A

NOTE: BASED ON HISTORICAL DOCUMENTATION OBTAINED FROM THE SWFWMD FOR PERMIT NO. 4402103.001, THE OVERALL DRAINAGE BASIN THAT DISCHARGES TO EX_OSWA IS SIGNIFICANTLY GREATER THAN WHAT IS REPRESENTED ON THIS MAP. IT INCLUDES AN OFFSITE AREA SOUTH OF EXISTING RAMP B (SELMON OFF-RAMP TO I-75). FOR PURPOSES OF THIS PERMIT APPLICATION AND THE WORK THAT ARE INVOLVED, ONLY THE AREA SHOWN ON THIS EXHIBIT ARE USED TO DOCUMENT THE COMPARSION WITH THE EXISTING CONDITIONS.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

TUY KIM DUONG, P.E.
P.E. NO.: 66461
HORIZON ENGINEERING GROUP, INC.
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

THEA: RAMP 3
PROPOSED DRAINAGE MAP

FIGURE NO
7

kduong 9/27/2021 11:23:13 AM Default X:\7011621_THEA_Slip_Ramp_DB\O-02520\drainage\Exhibits\DRMPRDRAMP31-PROP_EXHIBIT.dgn

		SHEET	OF
		JOB NO.	O-02520
		DATE	September 27, 2021
PROJECT	East Selmon Expressway - Slip Ramp 3	COMPUTED BY	KTD
SUBJECT	Basin BSNOSW-A	CHECKED BY	

PROPOSED CONDITION

Basin BSNOSW-A is a 19.29 acre area that is part of a larger basin (permitted as Basin A: western half of the Selmon Expressway/ I-75 Interchange) that currently discharges into an existing wet detention pond EX_OSW-A for treatment and attenuation. Pond EX_OSW-A was permitted/ modified under SWFWMD pemit # 44021031.001 to the Tampa-Hillsborough County Expressway Authority Gateway Bridge Project (2001). At the time, this was an existing wetland that was retrofitted with a control structure to provide the water quality and water quantity volumes as required by the SWFWMD and FDOT.

Pond EX_OSW-A is a part of a series of wet detention systems at the I-75/ SR 618 interchange that discharge into Delaney Creek. Delaney Creek (WBID 1605) is impaired for macrophytes and E-coli.

Basin: *BSNOSW-A* *Node:* *EX_OSW-A* *Tc: 20.91 minutes (storm tab - post condition)*

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE				
Water Surface (NWL/ Wetland)		100	4.14	414.00
				0.00
		TOTALS	**4.14**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)				
Existing Roadway		98	9.60	940.80
New Roadway		98	0.30	29.40
		TOTALS	**9.90**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)				
Existing Roadway		98	0.00	0.00
Existing Building		98	0.00	0.00
				0.00
		TOTALS	**0.00**	
PERVIOUS AREA				
Open Space (Grass Cover > 75%)	D	89	5.25	467.25
	D	89		0.00
				0.00
		TOTALS	**5.25**	

ICPR DATA					
*** Based on total drng area**		*** Based on the total drng area**		*** Based on NDCIA and pervious areas**	
TOTAL DCIA (ac)	**14.04**	**TOTAL BASIN AREA (ac)**	**19.29**	**COMPOSITE CN**	**89.00**
Percent DCIA	**72.78**				
MODELING DESIGN STORMS					
Agency		Design Storm Frequency		Rainfall Volume (in)	
SWFWMD		025YR024HR		8.00	
FDOT		Critical Storms for Open Basins		Zone 6 intensity * storm duration	
SCS RUNOFF COMPUTATION					
RAINFALL VOLUME - P (in)	**8.00**	**TOTAL BASIN AREA - A (ac):**	**19.29**	**COMPOSITE CN***	**95.98**
S =	$\frac{1000}{CN^*} - 10$			**=**	**0.42**
I_a =	0.2S			**=**	**0.08**
Q (in) =	$\frac{(P - I_a)^2}{(P + 0.8S)}$			**=**	**7.52**
Q (ac-ft) =	$\frac{Q(in) * A}{12}$			**=**	**12.09**

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HORIZON engineering group, inc.

PROJECT East Selmon Expressway - Slip Ramp 3

SUBJECT Basin BSNSW3A

PROPOSED CONDITION

Basin BSNSW3A is a 1.05 acres drainage basin area that encompasses the new Reversible Elevated Lanes ingress Ramp 3 from the Selmon Expressway westbound General Use Lane. Runoff from this basin will be directed to a dry retention swale for treatment and attenuation prior to discharging through a modified Type D ditch bottom inlet to an existing retrofitted wetland into stormwater management facility with hydraulic connection to Delaney Creek. The proposed treatment swale will be designed to treat one half inch of runoff from the drainage area and attenuation for the 25-year/ 24-hour storms. As part of the Tampa-Hillsborough Expressway Authority (THEA) criteria, FDOT critical duration storms were also analyzed.

The approved software program ICPR V3.1 will be used to analyzed the hydrology/ hydraulic of the proposed treatment swale to demonstrate that the post rate of discharge for both the FDOT critical storms and the SWFWMD 25-year/ 24-hour storms are less than the existing rate of discharge into the existing EX_OSW-A. By taking this approach, the total rate of discharge leaving EX_OSW-A will not be affected.

As Delaney Creek is nutrient impaired for macrophytes, net loading will be demonstrated through the use of the approved Software Program BMP Trains. A summary of the results is prorvided below.

Note: The limits of the widening within this area extends beyond the basin BSNSW-3A boundaries. Due to grading constraints, some of the proposed widening could not be directed to the newly constructed treatment swale for treatment and attenuation. As such, the same amount of existing impervious or greater (than is currently being treated in OSW-A) will be directed to the proposed swale to compensate for the new impervious that is being directed to EX_OSW-A.

Basin: BSNSW3A *Node: SW-3A* *Tc: 13.89 minutes*

LAND-USE DESCRIPTION	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE				
Water Surface (NWL/ Wetland)		100	0.00	0.00
				0.00
		TOTALS	**0.00**	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)				
Existing Roadway		98	0.30	29.47
New Roadway		98	0.28	27.61
		TOTALS	**0.58**	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)				
Existing Roadway		98	0.00	0.00
Existing Building		98	0.00	0.00
				0.00
		TOTALS	**0.00**	
PERVIOUS AREA				
Open Space (Grass Cover > 75%)	D	89	0.27	24.41
Pond Open Space (Grass Cover > 75%)	D	89	0.20	17.44
				0.00
		TOTALS	**0.47**	

ICPR DATA					
*** Based on total drng area**		*** Based on the total drng area**		*** Based on NDCIA and pervious areas**	
TOTAL DCIA (ac)	**0.58**	**TOTAL BASIN AREA (ac)**	**1.05**	**COMPOSITE CN**	**89.00**
Percent DCIA	**55.32**				

MODELING DESIGN STORMS

Agency	Design Storm Frequency	Rainfall Volume (in)
SWFWMD	025YR024HR	8.00
FDOT	Critical Storms for Open Basins	Zone 6 intensity * storm duration

HORIZON engineering group, inc.

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PROJECT East Selmon Expressway - Slip Ramp 3
SUBJECT Basin BSNSW3A

SW-3A

Swale SW-3A is a proposed treatment swale designed to provide treatment and attenuation for the portion of the new impervious and some existing impervious to compensate for the impervious that could not be taken into the newly graded treatment swale for treatment. The existing swale is designed to be dry retention.

Stage Storage Calculations

Elevation (ft)		Area (ac)	Ave. Area (ac)	Delta Depth (ft)	Deta Storage (ac-ft)	Total Storage (ac-ft)
Top of Swale	55.00	0.1960				0.384
			0.173	1.000	0.173	
	54.00	0.1507				0.211
			0.139	0.500	0.070	
	53.50	0.1280				0.141
			0.126	0.110	0.014	
025Y024H DHW	53.39	0.1230				0.127
			0.111	0.540	0.060	
	52.85	0.0985				0.067
			0.096	0.100	0.010	
Provided PAV	**52.75**	0.0940				**0.058**
			0.083	0.500	0.041	
	52.25	0.0713				0.016
			0.066	0.250	0.016	
Swale Bottom	52.00	0.0600				0.000

Water Quality Calculations

	BSNSW3A		Total	
Total Basin Area =	1.05		= **1.05**	ac
Pond Area at NWL =	0.00		= **0.00**	ac
Inpervious Area =	0.58		= **0.58**	ac

A. Water Quality (PAV) Calculations (SWFWMD AH Vol II Section 4.1): dry retention

0.50 in Over total basin area = 0.044 ac-ft

Required PAV = 0.044 ac-ft On-line Retention Treatment Systems.

B. Provided Water quality.

Provided PAV = 0.058 ac-ft
Required PAV = 0.044 ac-ft

Surplus Provided PAV = 0.014 ac-ft

As shown the amount of treatment volume provided is greater than the amount of treatment volume required based on the computation provided above.

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PROJECT East Selmon Expressway - Slip Ramp 3

SUBJECT Basin BSNSW3A

Skimmer Check/ Design:

Design Note: Flow area beneath the skimmer must be 3-times larger than the area of the weir.

A.	DHW (designed high water elev):	53.39 ft	
B.	H_{NWL} (NWL):	N/A	
	H_R (weir notch elev):	52.75 ft	Proposed
	H_G (grate elev):	55.00 ft	Proposed
C.	H_{DHW1} (DHW - H_R):	0.64 ft	
	H_{DHW2} (H_R - H_{NWL}):	N/A	
	H_{DHW3} (DHW - H_G):	N/A	
D.	W_V (weir width):	0.00 ft	
	W_R (weir width):	1.00 ft	Proposed
	W_G (weir width):	N/A	
F.	A_V (1/2 x W_1 x H_{DHW2}):	0.00 sf	V-notch
	A_R (weir area):	0.64 sf	Rectangular
	A_G (weir area):	0.00 sf	Grate

Skimmer Dimensions:

A.	FDOT DBI Type:	D	Proposed
B.	DBI width:	3.08 ft	
	DBI length:	4.08 ft	
	Wall thickness:	0.50 ft	
C.	L_1 (Skimmer length - long side):	5.08 ft	
	L_2 (Skimmer length - short side):	4.08 ft	
	L_3 (Skimmer length for grate):	0.00 ft	
D.	W_1 (front width):	0.00 ft	
	W_2 (side width):	1.50 ft	Proposed
	W_3 (grate width):	0.00 ft	
E.	D_V (skimmer clearance):	0.50 ft	Proposed
F.	A1 (front):	0.00 sf	
	A2 (lt side):	6.13 sf	
	A3 (rt side):	0.00 sf	
G.	Clearance Area :	2.04 sf	

Verification:

A.	**Flow area of weir:**	**0.64 sf**	
B.	**Req'd flow area beneath skimmer:**	**1.92 sf**	
C.	**Flow area between DBI & skimmer clearance:**	**2.04 sf**	**YES**
D.	**Flow area beneath skimmer:**	**6.13 sf**	**YES**

Based on the above calculations, the proposed skimmer is adequately designed.

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PROJECT	East Selmon Expressway - Slip Ramp 3	COMPUTED BY	KTD
SUBJECT	Basin BSNSW3A	CHECKED BY	

SW-3A Recovery Analysis Modeling Parameters

The aquifer data provided below were taken from information provided by Universal Engineering Sciences.

An average of the two boring will be used in the analysis. The maximum vertical conductivity for the analysis will be based on 2/3 of the maximum horizontal conductivity provided or as provided by Universal Engineering Sciences.

Stage Storage Calculations

Elevation (ft)		Area (SF)	Ave. Area (SF)	Delta Depth (ft)	Deta Storage (cu-ft)	Total Storage (cu-ft)
Top of Swale	55.00	8537.7600				16727.04
			7550.40	1.00	7550.40	
	54.00	6563.0400				9176.64
			6069.36	0.50	3034.68	
	53.50	5575.6800				6141.96
			5467.07	0.11	601.38	
025Y024H DHW	53.39	5358.4608				5540.58
			4825.29	0.54	2605.65	
	52.85	4292.1120				2934.93
			4193.38	0.10	419.34	
Provided PAV	**52.75**	4094.6400				**2515.59**
			3600.96	0.50	1800.48	
	52.25	3107.2800				715.11
			2860.44	0.25	715.11	
Swale Bottom	52.00	2613.6000				0.00

Aquifer Data:

Boring ID:	PA1	PA2	Average	PONDS Model
Station:				
Offset:				
Existing Ground Elev. - "EG" (ft):	55.00	48.00		
Depth to confining layer - "D_a" (ft):	6.50	0.00		
Base of Aquifer Elev - "B" (ft) = EG - D_a:	48.50	48.00	48.25	48.25
Depth to water table - "D_w" (ft):	0.00	6.00		
onal High Water Table Elev - "SHWT" (ft) = EG - D_w:	55.00	42.00	48.50	50.50
Horizontal Hydraulic Conductivity - "Kh" (ft/day):	1.72	2.01	1.87	1.87
Vertical Hydraulic Conductivity - "Kv" (ft/day):		1.64	1.64	1.64
Fillable Porosity - "n" (%):	25.00	25.00	25.00	25.00

* Boring log provide by Universal Engineering Sciences indicate that the depth to confining layer is approximately six and one half to zero feet below existing ground for borings PA1 and PA2 respectively; and a perched water condition is encountered at a depth of zero to six feet below existing ground for borings PA1 and PA2 respectively. With the ground at the borings being at 55 and 48 feet for borings PA1 and PA2 respectively, the average Base of aquifer and seasonal high water table are computed to be at 48.25 and 48.50 feet. To be conservative, the seasonal high used in the analysis is at 50.50-ft below the swale bottom (2-ft higher than the average).

Discussion with Univeral Engineering Sciences indicate that a 25% fillable porosity would be adequate to use in the analysis. Refer to geotechnical report for supporting documentation.

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SUBJECT Basin BSNSW3A	CHECKED BY

BMP Trains Modeling Parameters:

The project is located in Hillsborough County, within the Meteorological Regions Zone 4 -Central Area, Florida. The mean annual rainfall is approximately 51 inches.

General Information:

Meteorological Zone:	**Zone 4**	
Mean Annyal Rainfall:	51.00	
Type of Discharge Analysis:	Net	
Groundwater Discharge Analysis:	NO	
Catchment Information:	**Existing**	**Proposed**
Catchment Area (ac):	1.05	1.05
Non DCIA Curve Number (CN):	89.00	89.00
DCIA Percentage (0-100%):	28.56	55.32
Wet Pond Area (No loading from this area) (ac):	0.00	0.00
Treatment Options: Retention Basin		
Provided retention depth (in over catchment):		0.66

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PROJECT East Selmon Expressway - Slip Ramp 3

SUBJECT Basin BSNSW3A

Summary of Results

ICPR Modeling Output:

Storm Event	Node EX_OSW-A Inflow Rate (cfs)		Pre/ Post Diff		Node SW-3A Elev. (ft)	
	Existing	Proposed	Storm per storm	Peak Discharge	DHW	Freeboard
002Y001H	**54.24**	**52.17**	-2.07	-2.07	53.26	1.74
002Y002H	49.35	47.78	-1.57		53.31	1.69
002Y004H	30.06	29.55	-0.51		53.28	1.72
002Y008H	33.02	32.75	-0.27		53.34	1.66
002Y024H	11.28	11.27	-0.01		53.06	1.94
002Y072H	6.44	6.44	0.00		52.97	2.03
005Y001H	**67.61**	**65.27**	-2.34	-2.34	53.41	1.59
005Y002H	58.55	56.88	-1.67		53.42	1.58
005Y004H	39.01	38.55	-0.46		53.41	1.59
005Y008H	42.74	42.47	-0.27		53.47	1.53
005Y024H	14.72	14.71	-0.01		53.12	1.88
005Y072H	8.73	8.73	0.00		53.02	1.98
010Y001H	**75.69**	**73.20**	-2.49	-2.49	53.50	1.50
010Y002H	67.77	66.03	-1.74		53.53	1.47
010Y004H	49.19	48.69	-0.50		53.54	1.46
010Y008H	49.44	49.15	-0.29		53.56	1.44
010Y024H	17.42	17.40	-0.02		53.17	1.83
010Y072H	10.12	10.12	0.00		53.05	1.95
025Y001H	**90.54**	**87.81**	-2.73	-2.73	53.65	1.35
025Y002H	80.72	78.87	-1.85		53.66	1.34
025Y004H	53.49	52.98	-0.51		53.59	1.41
025Y008H	58.13	57.80	-0.33		53.66	1.34
025Y024H	21.10	21.07	-0.03		53.23	1.77
025Y072H	12.81	12.82	0.01		53.10	1.90
050Y001H	**100.03**	**97.14**	-2.89	-2.89	53.73	1.27
050Y002H	91.83	89.88	-1.95		53.77	1.23
050Y004H	60.34	59.78	-0.56		53.67	1.33
050Y008H	64.81	64.45	-0.36		53.73	1.27
050Y024H	23.05	23.02	-0.03		53.26	1.74
050Y072H	14.32	14.32	0.00		53.13	1.87
100Y001H	**113.60**	**110.49**	-3.11	-3.11	53.85	1.15
100Y002H	104.80	102.74	-2.06		53.89	1.11
100Y004H	68.75	68.13	-0.62		53.76	1.24
100Y008H	74.81	74.41	-0.40		53.83	1.17
100Y024H	25.99	25.94	-0.05		53.30	1.70
100Y072H	16.14	16.14	0.00		53.16	1.84
SWFWMD025Y024H	33.28	33.20	-0.08		53.39	1.61

Note:
1. A negative value in the Pre/ Post Column represent that the proposed rate of discharge is less than the existing rate of discharge into the boundary node EX_OSW-A. In general all but one storm's post rate of dicharge into node EX_OSW-A is less than the pre rate of discharge into node EX_OSW-A when comparing storm per storm method. However, the increase in the post rate of discharge in teh 25-year/ 72-hour is minimal overall and is less than a tenth percent (approximately 0.08%) increase.
2. The Freeboard depth is taken from the outside top of swale elevation of 55.00' for treatment swale SW-3A
3. ICPR V3.2 supporting documentation is provided in Appendix A of the report.

HORIZON engineering group, inc.

PROJECT	East Selmon Expressway - Slip Ramp 3	SHEET	7 OF 7
SUBJECT	Basin BSNSW3A	JOB NO.	O-02520
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POND V3.3 Modelling Output:

Storm Event	SW-3A		
	Provided PAV (cu-ft)	Recovery Time (hr)	
		Required	Provided
Slugload	2515.59	72.00	36.00

Note:
1. As shown, the treatment volume will recovered within half of the required time.
2. With the recovery time of 36-hours, the safety factor apply to the treatment swale is 2, which is conservative in the approach.
3. PONDS V3.3 supporting documentation is provided in Appendix A of the report.

BMP Trains V4.2.3 Modelling Output:

Basin	Existing	Proposed	Load Reduction		Total Load Efficiency	
			Required (%)	Provided (%)	Removal (kg/year)	Discharge (kg/year)
Nitrogen	3.46	4.74	27.00	59.00	2.79	1.95
Phosphorus	0.46	0.62	27.00	59.00	0.37	0.26

Note:
1. As shown, the total nitrogen and phosphorus discharge into the existing OSW-A in the proposed condition is less than the existing condition.
2. The provided nutrient removal, as shown, is more than double the required reduction.
3. UCF BMP Trains V4.2.3 supporting documentation is provided in Appendix A of the report.

Compensatory Computation Summary

Basin	Impervious to Node OSWA		Impervious to Node SW3A	
	Existing (ac)	Proposed (ac)	Existing (ac)	Proposed (ac)
EX_BSNSW3A	0.30	0.00	0.00	0.00
EX_BSNOSWA	9.60	0.00	0.00	0.00
BSNSW3A	0.00	0.00	0.00	0.58
BSNOSWA	0.00	9.90	0.00	0.00
Total:	**9.90**	**9.90**	**0.00**	**0.58**

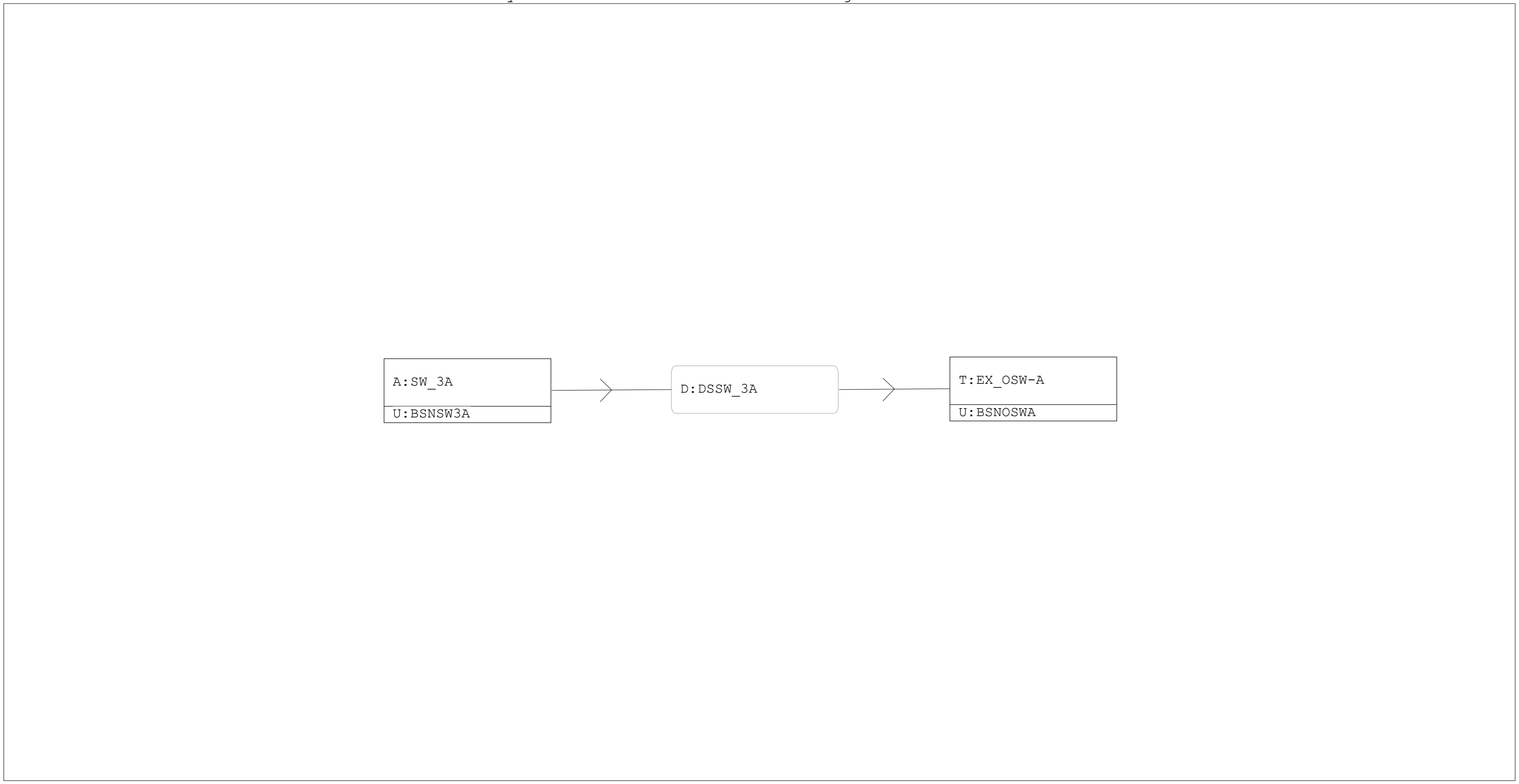
Note:
1. As shown, the total impervious to EX_OSW-A in the proposed condition is equal or less than the existing condition.
2. The overall basin to EX_OSW-A is reduced because the drainage area from EX_BSNSW3A/ BSNSW3A is redirected to swale SW-3A.

THEA Ramp 3: Proposed Condition
FPID No. O-02520
Delaney Creek Outfall: Nodal Network Diagram

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



```
==========================================================================================
==== Basins ==============================================================================
==========================================================================================

         Name: BSNOSWA                  Node: EX_OSW-A             Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 20.91
               Area(ac): 19.290                  Time Shift(hrs): 0.00
           Curve Number: 89.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 72.78



----------------------------------------------------------------------------------------------------
         Name: BSNSW3A                  Node: SW_3A                Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File:                     Storm Duration(hrs): 0.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.89
               Area(ac): 1.050                   Time Shift(hrs): 0.00
           Curve Number: 89.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 55.32



==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: EX_OSW-A           Base Flow(cfs): 0.000         Init Stage(ft): 40.510
     Group: BASE                                             Warn Stage(ft): 40.510
      Type: Time/Stage

INFORMATION FOR THE STAGE IS TAKEN AT THE CROWN OF THE DOWNSTREAM INVERT OF THE
18" OUTFALL PIPE. PIPE INFORMATION WAS TAKEN FROM DESIGN SURVEY.

      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          40.510
          72.00          40.510

------------------------------------------------------------------------------------------
      Name: SW_3A              Base Flow(cfs): 0.000         Init Stage(ft): 52.000
     Group: BASE                                             Warn Stage(ft): 54.000
      Type: Stage/Area



      Stage(ft)        Area(ac)
--------------- ---------------
         52.000          0.0600
         52.750          0.0940
         54.000          0.1507
         55.000          0.1960

==========================================================================================
==== Drop Structures =====================================================================
==========================================================================================

         Name: DSSW_3A            From Node: SW_3A            Length(ft): 144.00
        Group: BASE                 To Node: EX_OSW-A              Count: 1

               UPSTREAM       DOWNSTREAM               Friction Equation: Automatic
     Geometry: Circular       Circular                Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                 Flow: Both
     Rise(in): 18.00          18.00                   Entrance Loss Coef: 0.500
   Invert(ft): 39.870         39.010                      Exit Loss Coef: 0.000
  Manning's N: 0.012000       0.012000                  Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                      Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                        Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

INVERT PROVIDED FOR THE EXISTING PIPE IS TAKEN FROM HISTORICAL PLANS (PERMIT 4421031.01)
THEA CONTRACT NO 50.30.001A - LEE ROY SELMON CROSSTOWN EXPRESSWAY GATEWAY BRIGE
CONSTRUCTION PROJECT.

*** Weir 1 of 2 for Drop Structure DSSW_3A ***
```

```
                                                                                     TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Vertical: Mavis           Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 12.00                      Invert(ft): 52.750
              Rise(in): 27.00                Control Elev(ft): 52.750

*** Weir 2 of 2 for Drop Structure DSSW_3A ***
                                                                                     TABLE
                 Count: 1                      Bottom Clip(in): 0.000
                  Type: Horizontal                Top Clip(in): 0.000
                  Flow: Both                    Weir Disc Coef: 3.200
              Geometry: Rectangular          Orifice Disc Coef: 0.600

              Span(in): 49.00                      Invert(ft): 55.000
              Rise(in): 37.00                Control Elev(ft): 55.000


==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: 002Y001H
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y001H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 1.00
          Rainfall File: Fdot-1
    Rainfall Amount(in): 2.30

Time(hrs)       Print Inc(min)
--------------- ---------------
2.000           5.00

----------------------------------------------------------------------------------------------------
         Name: 002Y002H
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y002H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 2.00
          Rainfall File: Fdot-2
    Rainfall Amount(in): 3.00

Time(hrs)       Print Inc(min)
--------------- ---------------
4.000           5.00

----------------------------------------------------------------------------------------------------
         Name: 002Y004H
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y004H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 4.00
          Rainfall File: Fdot-4
    Rainfall Amount(in): 3.40

Time(hrs)       Print Inc(min)
--------------- ---------------
6.000           5.00

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         Name: 002Y008H
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y008H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 8.00
          Rainfall File: Fdot-8
    Rainfall Amount(in): 4.20

Time(hrs)       Print Inc(min)
--------------- ---------------
10.000          5.00

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         Name: 002Y024H
     Filename: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Ponds\ICPR\002Y024H.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Fdot-24
    Rainfall Amount(in): 5.76

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00
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Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	002Y001H	002Y001H	002Y002H	002Y002H	002Y004H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-1	Fdot-1	Fdot-2	Fdot-2	Fdot-4
Rain Amount(in):	2.300	2.300	3.000	3.000	3.400
Duration(hrs):	1.00	1.00	2.00	2.00	4.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	0.74	0.68	0.93	0.86	2.14
Flow Max(cfs):	51.95	3.14	47.27	2.85	28.82
Runoff Volume(in):	1.948	1.789	2.628	2.447	3.019
Runoff Volume(ft3):	136412	6819	184041	9327	211401

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	002Y004H	002Y008H	002Y008H	002Y024H	002Y024H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-4	Fdot-8	Fdot-8	Fdot-24	Fdot-24
Rain Amount(in):	3.400	4.200	4.200	5.760	5.760
Duration(hrs):	4.00	8.00	8.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	2.07	4.04	4.01	11.99	12.01
Flow Max(cfs):	1.60	31.45	1.75	10.73	0.58
Runoff Volume(in):	2.836	3.804	3.614	5.346	5.144
Runoff Volume(ft3):	10811	266388	13776	374347	19608

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	002Y072H	002Y072H	005Y001H	005Y001H	005Y002H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-72	Fdot-72	Fdot-1	Fdot-1	Fdot-2
Rain Amount(in):	6.410	6.410	2.800	2.800	3.500
Duration(hrs):	72.00	72.00	1.00	1.00	2.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	59.99	59.97	0.74	0.68	0.93
Flow Max(cfs):	6.11	0.33	64.62	3.95	55.97
Runoff Volume(in):	5.992	5.786	2.431	2.261	3.117
Runoff Volume(ft3):	419547	22054	170226	8620	218247

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	005Y002H	005Y004H	005Y004H	005Y008H	005Y008H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-2	Fdot-4	Fdot-4	Fdot-8	Fdot-8
Rain Amount(in):	3.500	4.320	4.320	5.360	5.360
Duration(hrs):	2.00	4.00	4.00	8.00	8.00

Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	0.86	2.14	2.07	4.04	3.98
Flow Max(cfs):	3.40	37.31	2.09	40.64	2.27
Runoff Volume(in):	2.927	3.923	3.729	4.950	4.751
Runoff Volume(ft3):	11156	274689	14213	346604	18107

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	005Y024H	005Y024H	005Y072H	005Y072H	010Y001H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-24	Fdot-24	Fdot-72	Fdot-72	Fdot-1
Rain Amount(in):	7.440	7.440	8.650	8.650	3.100
Duration(hrs):	24.00	24.00	72.00	72.00	1.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	11.99	11.98	59.99	59.97	0.74
Flow Max(cfs):	13.99	0.76	8.29	0.45	72.26
Runoff Volume(in):	7.014	6.805	8.219	8.005	2.723
Runoff Volume(ft3):	491147	25936	575533	30513	190652

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y001H	010Y002H	010Y002H	010Y004H	010Y004H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-1	Fdot-2	Fdot-2	Fdot-4	Fdot-4
Rain Amount(in):	3.100	4.000	4.000	5.360	5.360
Duration(hrs):	1.00	2.00	2.00	4.00	4.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	0.68	0.93	0.86	2.14	2.07
Flow Max(cfs):	4.44	64.70	3.96	46.93	2.65
Runoff Volume(in):	2.548	3.608	3.411	4.950	4.748
Runoff Volume(ft3):	9713	252616	13000	346633	18096

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y008H	010Y008H	010Y024H	010Y024H	010Y072H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-8	Fdot-8	Fdot-24	Fdot-24	Fdot-72
Rain Amount(in):	6.160	6.160	8.760	8.760	10.010
Duration(hrs):	8.00	8.00	24.00	24.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	4.04	3.98	11.99	11.98	59.99
Flow Max(cfs):	46.96	2.64	16.55	0.90	9.60
Runoff Volume(in):	5.743	5.539	8.328	8.114	9.574
Runoff Volume(ft3):	402119	21111	583127	30927	670421

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	010Y072H	025Y001H	025Y001H	025Y002H	025Y002H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-72	Fdot-1	Fdot-1	Fdot-2	Fdot-2
Rain Amount(in):	10.010	3.650	3.650	4.700	4.700
Duration(hrs):	72.00	1.00	1.00	2.00	2.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	59.97	0.74	0.68	0.93	0.86
Flow Max(cfs):	0.52	86.33	5.35	76.94	4.74
Runoff Volume(in):	9.357	3.260	3.078	4.298	4.092
Runoff Volume(ft3):	35665	228289	11733	300925	15598

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	025Y004H	025Y004H	025Y008H	025Y008H	025Y024H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-4	Fdot-4	Fdot-8	Fdot-8	Fdot-24
Rain Amount(in):	5.800	5.800	7.200	7.200	10.560
Duration(hrs):	4.00	4.00	8.00	8.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	2.14	2.07	4.04	3.98	11.99
Flow Max(cfs):	50.99	2.89	55.17	3.10	20.03
Runoff Volume(in):	5.386	5.181	6.776	6.567	10.121
Runoff Volume(ft3):	377154	19746	474440	25030	708727

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	025Y024H	025Y072H	025Y072H	050Y001H	050Y001H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-24	Fdot-72	Fdot-72	Fdot-1	Fdot-1
Rain Amount(in):	10.560	12.650	12.650	4.000	4.000
Duration(hrs):	24.00	72.00	72.00	1.00	1.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	11.98	59.99	59.97	0.74	0.68
Flow Max(cfs):	1.10	12.16	0.66	95.30	5.93
Runoff Volume(in):	9.904	12.208	11.986	3.604	3.418
Runoff Volume(ft3):	37748	854827	45685	252337	13027

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	050Y002H	050Y002H	050Y004H	050Y004H	050Y008H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-2	Fdot-2	Fdot-4	Fdot-4	Fdot-8
Rain Amount(in):	5.300	5.300	6.500	6.500	8.000

Duration(hrs):	2.00	2.00	4.00	4.00	8.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	0.93	0.86	2.14	2.07	4.04
Flow Max(cfs):	87.45	5.41	57.46	3.27	61.48
Runoff Volume(in):	4.891	4.680	6.081	5.871	7.571
Runoff Volume(ft3):	342460	17837	425783	22377	530152

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	050Y008H	050Y024H	050Y024H	050Y072H	050Y072H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-8	Fdot-24	Fdot-24	Fdot-72	Fdot-72
Rain Amount(in):	8.000	11.520	11.520	14.130	14.130
Duration(hrs):	8.00	24.00	24.00	72.00	72.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	3.98	11.99	11.98	59.99	59.97
Flow Max(cfs):	3.46	21.88	1.20	13.59	0.74
Runoff Volume(in):	7.360	11.079	10.859	13.685	13.462
Runoff Volume(ft3):	28052	775768	41390	958285	51309

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y001H	100Y001H	100Y002H	100Y002H	100Y004H
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Comp Time Inc(min):	2.79	1.85	2.79	1.85	2.79
Rain File:	Fdot-1	Fdot-1	Fdot-2	Fdot-2	Fdot-4
Rain Amount(in):	4.500	4.500	6.000	6.000	7.360
Duration(hrs):	1.00	1.00	2.00	2.00	4.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89	20.91
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050	19.290
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000	1.001
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320	72.780
Time Max(hrs):	0.74	0.68	0.93	0.86	2.14
Flow Max(cfs):	108.14	6.76	99.72	6.19	65.41
Runoff Volume(in):	4.096	3.905	5.584	5.367	6.935
Runoff Volume(ft3):	286789	14885	391023	20458	485618

Name:	BSNSW3A	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	100Y004H	100Y008H	100Y008H	100Y024H	100Y024H
Node:	SW_3A	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0	323.0
Spec Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Comp Time Inc(min):	1.85	2.79	1.85	2.79	1.85
Rain File:	Fdot-4	Fdot-8	Fdot-8	Fdot-24	Fdot-24
Rain Amount(in):	7.360	9.200	9.200	12.960	12.960
Duration(hrs):	4.00	8.00	8.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	13.89	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	1.050	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.000	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000	89.000
DCIA(%):	55.320	72.780	55.320	72.780	55.320
Time Max(hrs):	2.07	4.04	3.98	11.99	11.98
Flow Max(cfs):	3.73	70.93	4.00	24.66	1.35
Runoff Volume(in):	6.721	8.766	8.551	12.516	12.294
Runoff Volume(ft3):	25618	613814	32593	876380	46859

Name:	BSNOSWA	BSNSW3A	BSNOSWA	BSNSW3A
Group:	BASE	BASE	BASE	BASE
Simulation:	100Y072H	100Y072H	SFWMD025024	SFWMD025024
Node:	EX_OSW-A	SW_3A	EX_OSW-A	SW_3A
Type:	SCS	SCS	SCS	SCS
Unit Hydrograph:	Uh323	Uh323	Uh323	Uh323
Peaking Factor:	323.0	323.0	323.0	323.0
Spec Time Inc(min):	2.79	1.85	2.79	1.85
Comp Time Inc(min):	2.79	1.85	2.79	1.85
Rain File:	Fdot-72	Fdot-72	Delaney	Delaney
Rain Amount(in):	15.910	15.910	8.000	8.000
Duration(hrs):	72.00	72.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite
TC(min):	20.91	13.89	20.91	13.89
Time Shift(hrs):	0.00	0.00	0.00	0.00
Area(ac):	19.290	1.050	19.290	1.050
Vol of Unit Hyd(in):	1.001	1.000	1.001	1.000
Curve Num:	89.000	89.000	89.000	89.000
DCIA(%):	72.780	55.320	72.780	55.320
Time Max(hrs):	59.99	59.97	13.01	12.99
Flow Max(cfs):	15.31	0.83	31.61	1.74
Runoff Volume(in):	15.463	15.238	7.573	7.361
Runoff Volume(ft3):	1082762	58078	530272	28056

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
EX_OSW-A	BASE	002Y001HR	0.00	40.51	40.51	0.0000	0	0.75	52.17	0.00	0.00
EX_OSW-A	BASE	002Y002HR	0.00	40.51	40.51	0.0000	0	0.92	47.78	0.00	0.00
EX_OSW-A	BASE	002Y004HR	0.00	40.51	40.51	0.0000	0	2.17	29.55	0.00	0.00
EX_OSW-A	BASE	002Y008HR	0.00	40.51	40.51	0.0000	0	4.00	32.75	0.00	0.00
EX_OSW-A	BASE	002Y024HR	0.00	40.51	40.51	0.0000	0	12.00	11.27	0.00	0.00
EX_OSW-A	BASE	002Y072HR	0.00	40.51	40.51	0.0000	0	59.91	6.44	0.00	0.00
EX_OSW-A	BASE	005Y001HR	0.00	40.51	40.51	0.0000	0	0.75	65.27	0.00	0.00
EX_OSW-A	BASE	005Y002HR	0.00	40.51	40.51	0.0000	0	0.92	56.88	0.00	0.00
EX_OSW-A	BASE	005Y004HR	0.00	40.51	40.51	0.0000	0	2.17	38.55	0.00	0.00
EX_OSW-A	BASE	005Y008HR	0.00	40.51	40.51	0.0000	0	4.00	42.47	0.00	0.00
EX_OSW-A	BASE	005Y024HR	0.00	40.51	40.51	0.0000	0	12.00	14.71	0.00	0.00
EX_OSW-A	BASE	005Y072HR	0.00	40.51	40.51	0.0000	0	59.91	8.73	0.00	0.00
EX_OSW-A	BASE	010Y001HR	0.00	40.51	40.51	0.0000	0	0.75	73.20	0.00	0.00
EX_OSW-A	BASE	010Y002HR	0.00	40.51	40.51	0.0000	0	0.92	66.03	0.00	0.00
EX_OSW-A	BASE	010Y004HR	0.00	40.51	40.51	0.0000	0	2.17	48.69	0.00	0.00
EX_OSW-A	BASE	010Y008HR	0.00	40.51	40.51	0.0000	0	4.00	49.15	0.00	0.00
EX_OSW-A	BASE	010Y024HR	0.00	40.51	40.51	0.0000	0	12.00	17.40	0.00	0.00
EX_OSW-A	BASE	010Y072HR	0.00	40.51	40.51	0.0000	0	59.91	10.12	0.00	0.00
EX_OSW-A	BASE	025Y001HR	0.00	40.51	40.51	0.0000	0	0.75	87.81	0.00	0.00
EX_OSW-A	BASE	025Y002HR	0.00	40.51	40.51	0.0000	0	0.92	78.87	0.00	0.00
EX_OSW-A	BASE	025Y004HR	0.00	40.51	40.51	0.0000	0	2.17	52.98	0.00	0.00
EX_OSW-A	BASE	025Y008HR	0.00	40.51	40.51	0.0000	0	4.00	57.80	0.00	0.00
EX_OSW-A	BASE	025Y024HR	0.00	40.51	40.51	0.0000	0	12.00	21.07	0.00	0.00
EX_OSW-A	BASE	025Y072HR	0.00	40.51	40.51	0.0000	0	59.91	12.82	0.00	0.00
EX_OSW-A	BASE	050Y001HR	0.00	40.51	40.51	0.0000	0	0.75	97.14	0.00	0.00
EX_OSW-A	BASE	050Y002HR	0.00	40.51	40.51	0.0000	0	0.92	89.88	0.00	0.00
EX_OSW-A	BASE	050Y004HR	0.00	40.51	40.51	0.0000	0	2.17	59.78	0.00	0.00
EX_OSW-A	BASE	050Y008HR	0.00	40.51	40.51	0.0000	0	4.00	64.45	0.00	0.00
EX_OSW-A	BASE	050Y024HR	0.00	40.51	40.51	0.0000	0	12.00	23.02	0.00	0.00
EX_OSW-A	BASE	050Y072HR	0.00	40.51	40.51	0.0000	0	59.91	14.32	0.00	0.00
EX_OSW-A	BASE	100Y001HR	0.00	40.51	40.51	0.0000	0	0.75	110.49	0.00	0.00
EX_OSW-A	BASE	100Y002HR	0.00	40.51	40.51	0.0000	0	0.92	102.74	0.00	0.00
EX_OSW-A	BASE	100Y004HR	0.00	40.51	40.51	0.0000	0	2.17	68.13	0.00	0.00
EX_OSW-A	BASE	100Y008HR	0.00	40.51	40.51	0.0000	0	4.00	74.41	0.00	0.00
EX_OSW-A	BASE	100Y024HR	0.00	40.51	40.51	0.0000	0	12.00	25.94	0.00	0.00
EX_OSW-A	BASE	100Y072HR	0.00	40.51	40.51	0.0000	0	59.91	16.14	0.00	0.00
EX_OSW-A	BASE	SFWMD025024R	0.00	40.51	40.51	0.0000	0	13.00	33.20	0.00	0.00
SW_3A	BASE	002Y001HR	1.07	53.26	54.00	0.0010	5100	0.67	3.13	1.07	1.16
SW_3A	BASE	002Y002HR	1.30	53.31	54.00	-0.0010	5210	0.83	2.82	1.30	1.36
SW_3A	BASE	002Y004HR	2.69	53.28	54.00	0.0010	5150	2.08	1.59	2.69	1.25
SW_3A	BASE	002Y008HR	4.16	53.34	54.00	0.0010	5253	4.00	1.75	4.16	1.44
SW_3A	BASE	002Y024HR	12.12	53.06	54.00	0.0008	4705	12.00	0.58	12.12	0.55
SW_3A	BASE	002Y072HR	60.01	52.97	54.00	0.0006	4529	59.91	0.33	60.01	0.33
SW_3A	BASE	005Y001HR	1.02	53.41	54.00	0.0010	5403	0.67	3.94	1.02	1.72
SW_3A	BASE	005Y002HR	1.24	53.42	54.00	0.0010	5427	0.83	3.37	1.24	1.77
SW_3A	BASE	005Y004HR	2.63	53.41	54.00	0.0010	5406	2.08	2.09	2.63	1.73
SW_3A	BASE	005Y008HR	4.13	53.47	54.00	0.0010	5522	4.00	2.27	4.13	1.96
SW_3A	BASE	005Y024HR	12.11	53.12	54.00	0.0010	4829	12.00	0.76	12.11	0.73
SW_3A	BASE	005Y072HR	60.00	53.02	54.00	0.0008	4628	59.91	0.45	60.00	0.45
SW_3A	BASE	010Y001HR	1.01	53.50	54.00	0.0010	5572	0.67	4.43	1.01	2.07
SW_3A	BASE	010Y002HR	1.21	53.53	54.00	0.0010	5632	0.83	3.92	1.21	2.20
SW_3A	BASE	010Y004HR	2.60	53.54	54.00	0.0010	5660	2.08	2.64	2.60	2.26
SW_3A	BASE	010Y008HR	4.12	53.56	54.00	0.0010	5687	4.00	2.63	4.12	2.31
SW_3A	BASE	010Y024HR	12.11	53.17	54.00	0.0010	4919	12.00	0.90	12.11	0.86
SW_3A	BASE	010Y072HR	60.00	53.05	54.00	0.0009	4683	59.91	0.52	60.00	0.52
SW_3A	BASE	025Y001HR	0.98	53.65	54.00	0.0010	5864	0.67	5.34	0.98	2.71
SW_3A	BASE	025Y002HR	1.17	53.66	54.00	0.0010	5900	0.83	4.70	1.17	2.79
SW_3A	BASE	025Y004HR	2.59	53.59	54.00	0.0010	5760	2.08	2.88	2.59	2.48
SW_3A	BASE	025Y008HR	4.12	53.66	54.00	0.0010	5886	4.00	3.10	4.12	2.76

THEA Ramp 3: Proposed Condition
FPID No. O-02520
Delaney Creek Outfall: Node Maximum Condition Report

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
SW_3A	BASE	025Y024HR	12.10	53.23	54.00	0.0010	5035	12.00	1.10	12.10	1.05
SW_3A	BASE	025Y072HR	59.99	53.10	54.00	0.0010	4784	59.92	0.66	59.99	0.66
SW_3A	BASE	050Y001HR	0.97	53.73	54.00	0.0010	6038	0.67	5.92	0.97	3.12
SW_3A	BASE	050Y002HR	1.15	53.77	54.00	0.0010	6116	0.83	5.36	1.15	3.31
SW_3A	BASE	050Y004HR	2.57	53.67	54.00	0.0010	5911	2.08	3.25	2.57	2.82
SW_3A	BASE	050Y008HR	4.11	53.73	54.00	-0.0010	6030	4.00	3.46	4.11	3.10
SW_3A	BASE	050Y024HR	12.10	53.26	54.00	0.0010	5094	12.00	1.20	12.10	1.15
SW_3A	BASE	050Y072HR	59.97	53.13	54.00	0.0010	4838	59.91	0.74	59.97	0.74
SW_3A	BASE	100Y001HR	0.96	53.85	54.00	0.0010	6276	0.67	6.76	0.96	3.71
SW_3A	BASE	100Y002HR	1.13	53.89	54.00	0.0010	6354	0.83	6.14	1.13	3.91
SW_3A	BASE	100Y004HR	2.55	53.76	54.00	0.0010	6088	2.08	3.71	2.55	3.24
SW_3A	BASE	100Y008HR	4.11	53.83	54.00	0.0010	6236	4.00	4.00	4.11	3.61
SW_3A	BASE	100Y024HR	12.10	53.30	54.00	0.0010	5179	12.00	1.35	12.10	1.30
SW_3A	BASE	100Y072HR	59.96	53.16	54.00	0.0010	4899	59.91	0.83	59.96	0.83
SW_3A	BASE	SFWMD025024R	13.06	53.39	54.00	0.0010	5353	13.00	1.74	13.06	1.63

THEA Ramp 3: Proposed Condition
FPID No. O-02520
Delaney Creek Outfall: Node Time Series By Node Report

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010Y001HR	SW_3A	BASE	0.00	52.00	54.00	2614	0.00	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.09	52.00	54.00	2614	0.00	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.17	52.00	54.00	2617	0.03	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.25	52.02	54.00	2653	0.29	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.33	52.09	54.00	2782	0.90	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.42	52.23	54.00	3069	1.95	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.50	52.46	54.00	3531	3.19	0.00	0.0	0.0
010Y001HR	SW_3A	BASE	0.58	52.75	54.00	4095	4.10	0.00	0.1	0.0
010Y001HR	SW_3A	BASE	0.67	53.03	54.00	4648	4.43	0.47	0.1	0.0
010Y001HR	SW_3A	BASE	0.75	53.25	54.00	5077	4.20	1.12	0.1	0.0
010Y001HR	SW_3A	BASE	0.83	53.39	54.00	5365	3.66	1.65	0.1	0.0
010Y001HR	SW_3A	BASE	0.92	53.47	54.00	5522	2.90	1.97	0.2	0.0
010Y001HR	SW_3A	BASE	1.00	53.50	54.00	5572	2.10	2.07	0.2	0.0
010Y001HR	SW_3A	BASE	1.09	53.48	54.00	5544	1.50	2.01	0.2	0.1
010Y001HR	SW_3A	BASE	1.17	53.45	54.00	5474	1.07	1.87	0.2	0.1
010Y001HR	SW_3A	BASE	1.25	53.40	54.00	5380	0.76	1.68	0.2	0.1
010Y001HR	SW_3A	BASE	1.33	53.35	54.00	5276	0.52	1.48	0.2	0.1
010Y001HR	SW_3A	BASE	1.42	53.29	54.00	5168	0.35	1.28	0.2	0.1
010Y001HR	SW_3A	BASE	1.50	53.24	54.00	5063	0.21	1.10	0.2	0.1
010Y001HR	SW_3A	BASE	1.58	53.19	54.00	4963	0.12	0.93	0.2	0.1
010Y001HR	SW_3A	BASE	1.67	53.14	54.00	4870	0.06	0.79	0.2	0.1
010Y001HR	SW_3A	BASE	1.75	53.10	54.00	4787	0.03	0.66	0.2	0.1
010Y001HR	SW_3A	BASE	1.83	53.06	54.00	4713	0.01	0.56	0.2	0.1
010Y001HR	SW_3A	BASE	1.92	53.03	54.00	4648	0.00	0.47	0.2	0.1
010Y001HR	SW_3A	BASE	2.00	53.00	54.00	4592	0.00	0.40	0.2	0.1
010Y001HR	SW_3A	BASE	2.00	53.00	54.00	4592	0.00	0.40	0.2	0.1
010Y002HR	SW_3A	BASE	0.00	52.00	54.00	2614	0.00	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.09	52.00	54.00	2616	0.03	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.17	52.01	54.00	2643	0.22	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.25	52.06	54.00	2728	0.56	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.33	52.14	54.00	2892	1.00	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.42	52.26	54.00	3133	1.45	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.50	52.42	54.00	3437	1.92	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.58	52.60	54.00	3794	2.46	0.00	0.0	0.0
010Y002HR	SW_3A	BASE	0.67	52.80	54.00	4195	2.94	0.04	0.1	0.0
010Y002HR	SW_3A	BASE	0.75	53.01	54.00	4600	3.49	0.41	0.1	0.0
010Y002HR	SW_3A	BASE	0.83	53.20	54.00	4976	3.92	0.95	0.1	0.0
010Y002HR	SW_3A	BASE	0.92	53.35	54.00	5278	3.76	1.48	0.1	0.0
010Y002HR	SW_3A	BASE	1.00	53.45	54.00	5477	3.22	1.87	0.2	0.0
010Y002HR	SW_3A	BASE	1.08	53.50	54.00	5585	2.78	2.10	0.2	0.0
010Y002HR	SW_3A	BASE	1.17	53.53	54.00	5628	2.35	2.19	0.2	0.1
010Y002HR	SW_3A	BASE	1.25	53.53	54.00	5627	2.01	2.18	0.2	0.1
010Y002HR	SW_3A	BASE	1.34	53.51	54.00	5596	1.73	2.12	0.2	0.1
010Y002HR	SW_3A	BASE	1.42	53.49	54.00	5548	1.52	2.02	0.2	0.1
010Y002HR	SW_3A	BASE	1.50	53.46	54.00	5492	1.34	1.90	0.2	0.1
010Y002HR	SW_3A	BASE	1.58	53.42	54.00	5428	1.17	1.77	0.3	0.1
010Y002HR	SW_3A	BASE	1.67	53.39	54.00	5362	1.04	1.64	0.3	0.1
010Y002HR	SW_3A	BASE	1.75	53.36	54.00	5293	0.90	1.51	0.3	0.1
010Y002HR	SW_3A	BASE	1.83	53.32	54.00	5226	0.79	1.39	0.3	0.2
010Y002HR	SW_3A	BASE	1.92	53.29	54.00	5160	0.70	1.27	0.3	0.2
010Y002HR	SW_3A	BASE	2.00	53.26	54.00	5094	0.60	1.15	0.3	0.2
010Y002HR	SW_3A	BASE	2.08	53.22	54.00	5029	0.48	1.04	0.3	0.2
010Y002HR	SW_3A	BASE	2.17	53.19	54.00	4960	0.33	0.93	0.3	0.2
010Y002HR	SW_3A	BASE	2.25	53.15	54.00	4887	0.22	0.81	0.3	0.2
010Y002HR	SW_3A	BASE	2.33	53.12	54.00	4818	0.15	0.71	0.3	0.2
010Y002HR	SW_3A	BASE	2.42	53.08	54.00	4752	0.10	0.61	0.3	0.2
010Y002HR	SW_3A	BASE	2.50	53.05	54.00	4690	0.07	0.53	0.3	0.2
010Y002HR	SW_3A	BASE	2.58	53.02	54.00	4635	0.05	0.46	0.3	0.2
010Y002HR	SW_3A	BASE	2.67	53.00	54.00	4584	0.03	0.39	0.3	0.2

THEA Ramp 3: Proposed Condition
FPID No. O-02520
Delaney Creek Outfall: Node Time Series By Node Report

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
010Y002HR	SW_3A	BASE	2.75	52.98	54.00	4540	0.02	0.34	0.3	0.2
010Y002HR	SW_3A	BASE	2.83	52.96	54.00	4500	0.01	0.30	0.3	0.2
010Y002HR	SW_3A	BASE	2.92	52.94	54.00	4463	0.00	0.26	0.3	0.2
010Y002HR	SW_3A	BASE	3.00	52.92	54.00	4432	0.00	0.23	0.3	0.2
010Y002HR	SW_3A	BASE	3.09	52.91	54.00	4403	0.00	0.20	0.3	0.2
010Y002HR	SW_3A	BASE	3.17	52.89	54.00	4378	0.00	0.17	0.3	0.2
010Y002HR	SW_3A	BASE	3.25	52.88	54.00	4356	0.00	0.15	0.3	0.2
010Y002HR	SW_3A	BASE	3.33	52.87	54.00	4336	0.00	0.14	0.3	0.2
010Y002HR	SW_3A	BASE	3.42	52.86	54.00	4319	0.00	0.12	0.3	0.2
010Y002HR	SW_3A	BASE	3.50	52.86	54.00	4303	0.00	0.11	0.3	0.2
010Y002HR	SW_3A	BASE	3.58	52.85	54.00	4288	0.00	0.10	0.3	0.2
010Y002HR	SW_3A	BASE	3.67	52.84	54.00	4275	0.00	0.09	0.3	0.2
010Y002HR	SW_3A	BASE	3.75	52.84	54.00	4264	0.00	0.08	0.3	0.2
010Y002HR	SW_3A	BASE	3.83	52.83	54.00	4253	0.00	0.07	0.3	0.2
010Y002HR	SW_3A	BASE	3.92	52.83	54.00	4243	0.00	0.07	0.3	0.2
010Y002HR	SW_3A	BASE	4.00	52.82	54.00	4235	0.00	0.06	0.3	0.2
010Y002HR	SW_3A	BASE	4.00	52.82	54.00	4235	0.00	0.06	0.3	0.2
050Y001HR	SW_3A	BASE	0.00	52.00	54.00	2614	0.00	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.09	52.00	54.00	2614	0.00	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.17	52.00	54.00	2621	0.07	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.25	52.03	54.00	2678	0.44	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.33	52.12	54.00	2858	1.26	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.42	52.32	54.00	3243	2.69	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.50	52.62	54.00	3831	4.34	0.00	0.0	0.0
050Y001HR	SW_3A	BASE	0.58	52.97	54.00	4519	5.52	0.32	0.1	0.0
050Y001HR	SW_3A	BASE	0.67	53.27	54.00	5131	5.92	1.21	0.1	0.0
050Y001HR	SW_3A	BASE	0.75	53.50	54.00	5583	5.58	2.09	0.2	0.0
050Y001HR	SW_3A	BASE	0.83	53.65	54.00	5871	4.85	2.73	0.2	0.0
050Y001HR	SW_3A	BASE	0.92	53.72	54.00	6014	3.83	3.06	0.2	0.1
050Y001HR	SW_3A	BASE	1.00	53.73	54.00	6032	2.76	3.11	0.2	0.1
050Y001HR	SW_3A	BASE	1.08	53.70	54.00	5968	1.99	2.95	0.3	0.1
050Y001HR	SW_3A	BASE	1.17	53.64	54.00	5854	1.42	2.69	0.3	0.1
050Y001HR	SW_3A	BASE	1.25	53.57	54.00	5719	1.00	2.38	0.3	0.1
050Y001HR	SW_3A	BASE	1.33	53.50	54.00	5574	0.69	2.07	0.3	0.1
050Y001HR	SW_3A	BASE	1.42	53.43	54.00	5429	0.46	1.78	0.3	0.2
050Y001HR	SW_3A	BASE	1.50	53.35	54.00	5288	0.28	1.50	0.3	0.2
050Y001HR	SW_3A	BASE	1.58	53.29	54.00	5156	0.16	1.26	0.3	0.2
050Y001HR	SW_3A	BASE	1.67	53.23	54.00	5036	0.08	1.05	0.3	0.2
050Y001HR	SW_3A	BASE	1.75	53.17	54.00	4927	0.03	0.88	0.3	0.2
050Y001HR	SW_3A	BASE	1.83	53.12	54.00	4833	0.01	0.73	0.3	0.2
050Y001HR	SW_3A	BASE	1.92	53.08	54.00	4751	0.00	0.61	0.3	0.2
050Y001HR	SW_3A	BASE	2.00	53.05	54.00	4681	0.00	0.52	0.3	0.2
050Y001HR	SW_3A	BASE	2.00	53.05	54.00	4681	0.00	0.52	0.3	0.2
050Y002HR	SW_3A	BASE	0.00	52.00	54.00	2614	0.00	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.09	52.00	54.00	2619	0.05	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.17	52.03	54.00	2664	0.36	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.25	52.09	54.00	2792	0.84	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.33	52.21	54.00	3025	1.45	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.42	52.37	54.00	3351	2.07	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.50	52.58	54.00	3753	2.72	0.00	0.0	0.0
050Y002HR	SW_3A	BASE	0.58	52.81	54.00	4209	3.44	0.04	0.1	0.0
050Y002HR	SW_3A	BASE	0.67	53.05	54.00	4679	4.08	0.51	0.1	0.0
050Y002HR	SW_3A	BASE	0.75	53.27	54.00	5115	4.80	1.19	0.1	0.0
050Y002HR	SW_3A	BASE	0.83	53.47	54.00	5508	5.36	1.94	0.2	0.0
050Y002HR	SW_3A	BASE	0.92	53.62	54.00	5817	5.12	2.61	0.2	0.0
050Y002HR	SW_3A	BASE	1.00	53.72	54.00	6009	4.38	3.05	0.2	0.1
050Y002HR	SW_3A	BASE	1.08	53.76	54.00	6097	3.77	3.27	0.3	0.1
050Y002HR	SW_3A	BASE	1.17	53.77	54.00	6114	3.17	3.31	0.3	0.1

Simulation	Node	Group	Time hrs	Stage ft	Warning Stage ft	Surface Area ft2	Total Inflow cfs	Total Outflow cfs	Total Vol In af	Total Vol Out af
050Y002HR	SW_3A	BASE	1.25	53.76	54.00	6082	2.71	3.23	0.3	0.1
050Y002HR	SW_3A	BASE	1.33	53.72	54.00	6020	2.34	3.08	0.3	0.1
050Y002HR	SW_3A	BASE	1.42	53.68	54.00	5942	2.05	2.89	0.3	0.2
050Y002HR	SW_3A	BASE	1.50	53.64	54.00	5855	1.80	2.69	0.3	0.2
050Y002HR	SW_3A	BASE	1.58	53.59	54.00	5761	1.57	2.48	0.4	0.2
050Y002HR	SW_3A	BASE	1.67	53.55	54.00	5669	1.39	2.28	0.4	0.2
050Y002HR	SW_3A	BASE	1.75	53.50	54.00	5576	1.21	2.08	0.4	0.2
050Y002HR	SW_3A	BASE	1.83	53.45	54.00	5486	1.06	1.89	0.4	0.2
050Y002HR	SW_3A	BASE	1.92	53.41	54.00	5399	0.93	1.72	0.4	0.3
050Y002HR	SW_3A	BASE	2.00	53.37	54.00	5314	0.80	1.55	0.4	0.3
050Y002HR	SW_3A	BASE	2.08	53.32	54.00	5228	0.63	1.39	0.4	0.3
050Y002HR	SW_3A	BASE	2.17	53.28	54.00	5140	0.44	1.23	0.4	0.3
050Y002HR	SW_3A	BASE	2.25	53.23	54.00	5049	0.30	1.07	0.4	0.3
050Y002HR	SW_3A	BASE	2.33	53.19	54.00	4960	0.20	0.93	0.4	0.3
050Y002HR	SW_3A	BASE	2.42	53.15	54.00	4877	0.14	0.80	0.4	0.3
050Y002HR	SW_3A	BASE	2.50	53.11	54.00	4800	0.09	0.68	0.4	0.3
050Y002HR	SW_3A	BASE	2.58	53.07	54.00	4731	0.06	0.58	0.4	0.3
050Y002HR	SW_3A	BASE	2.67	53.04	54.00	4669	0.04	0.50	0.4	0.3
050Y002HR	SW_3A	BASE	2.75	53.01	54.00	4613	0.02	0.43	0.4	0.3
050Y002HR	SW_3A	BASE	2.83	52.99	54.00	4564	0.01	0.37	0.4	0.3
050Y002HR	SW_3A	BASE	2.92	52.97	54.00	4520	0.00	0.32	0.4	0.3
050Y002HR	SW_3A	BASE	3.00	52.95	54.00	4481	0.00	0.28	0.4	0.3
050Y002HR	SW_3A	BASE	3.08	52.93	54.00	4447	0.00	0.24	0.4	0.3
050Y002HR	SW_3A	BASE	3.17	52.91	54.00	4417	0.00	0.21	0.4	0.3
050Y002HR	SW_3A	BASE	3.25	52.90	54.00	4389	0.00	0.18	0.4	0.3
050Y002HR	SW_3A	BASE	3.33	52.89	54.00	4366	0.00	0.16	0.4	0.3
050Y002HR	SW_3A	BASE	3.42	52.88	54.00	4346	0.00	0.14	0.4	0.3
050Y002HR	SW_3A	BASE	3.50	52.87	54.00	4327	0.00	0.13	0.4	0.3
050Y002HR	SW_3A	BASE	3.58	52.86	54.00	4310	0.00	0.12	0.4	0.3
050Y002HR	SW_3A	BASE	3.67	52.85	54.00	4295	0.00	0.10	0.4	0.3
050Y002HR	SW_3A	BASE	3.75	52.84	54.00	4281	0.00	0.09	0.4	0.3
050Y002HR	SW_3A	BASE	3.83	52.84	54.00	4269	0.00	0.08	0.4	0.3
050Y002HR	SW_3A	BASE	3.92	52.83	54.00	4258	0.00	0.08	0.4	0.3
050Y002HR	SW_3A	BASE	4.00	52.83	54.00	4248	0.00	0.07	0.4	0.3
050Y002HR	SW_3A	BASE	4.00	52.83	54.00	4248	0.00	0.07	0.4	0.3

PONDS Version 3.3.0276
Retention Pond Recovery - Refined Method

Devo Seereeram, Ph.D., P.E.

Project Data

Project Name:	THEA: RAMP 3 SW-3A
Simulation Description:	DRAWDOWN ANALYSIS
Project Number:	O-02520
Engineer :	Kim Duong
Supervising Engineer:	
Date:	08-27-2021

Aquifer Data

Base Of Aquifer Elevation, [B] (ft datum):	48.25
Water Table Elevation, [WT] (ft datum):	50.50
Horizontal Saturated Hydraulic Conductivity, [Kh] (ft/day):	1.87
Fillable Porosity, [n] (%):	25.00
Unsaturated Vertical Infiltration Rate, [Iv] (ft/day):	1.64
Maximum Area For Unsaturated Infiltration, [Av] (ft^2):	4094.6

Geometry Data

Equivalent Pond Length, [L] (ft):	198.3
Equivalent Pond Width, [W] (ft):	14.8

Ground water mound is expected to intersect the pond bottom

Stage vs Area Data

Stage (ft datum)	Area (ft^2)
52.00	2613.6
52.25	3107.3
52.75	4094.6
52.85	4292.1
53.42	5417.7
53.50	5575.7
54.00	6563.0
55.00	8537.8

Scenario Input Data

Scenario 1 :: SW-3A Recovery Analysis

Hydrograph Type: Slug Load
Modflow Routing: Routed with infiltration

Treatment Volume (ft^3) 2515.59

Initial ground water level (ft datum) 50.50 (default)

Time After Storm Event (days)	Time After Storm Event (days)
0.100	2.000
0.250	2.500
0.500	3.000
1.000	3.500
1.500	4.000

Modflow Log

MODFLOW CONTROL PARAMETERS
Perimeter boundary condition: constant head
Maximum iterations of outer loop: 150
Maximum iterations of inner loop: 60
Horizontal conductivity within pond: 1000000 (if ground water mound is expected to intersect pond bottom)
Instantanerous storage coefficient: Volumetric balance
Default head closure tolerance: .01
Default residual closure tolerance: .5
Target water budget error: 1
On failure to converge: Rerun limiting inner loop to one iteration
> Maximum number of iterations of outer loop: 500
Running Average Porosity is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Running Average Pond Stage (for discharge structures with tailwater) is active
> Starting on pass: 2
> When outer iteration reaches: 50
> Number of data points: 4
Grid size: 1000 ft (from pond centerline)
Mound Output: none

Begin Scenario 1 9/23/2021 18:43:10
End Scenario   1 9/23/2021 18:43:10

Detailed Results *:: Scenario 1 :: SW-3A Recovery Analysis*

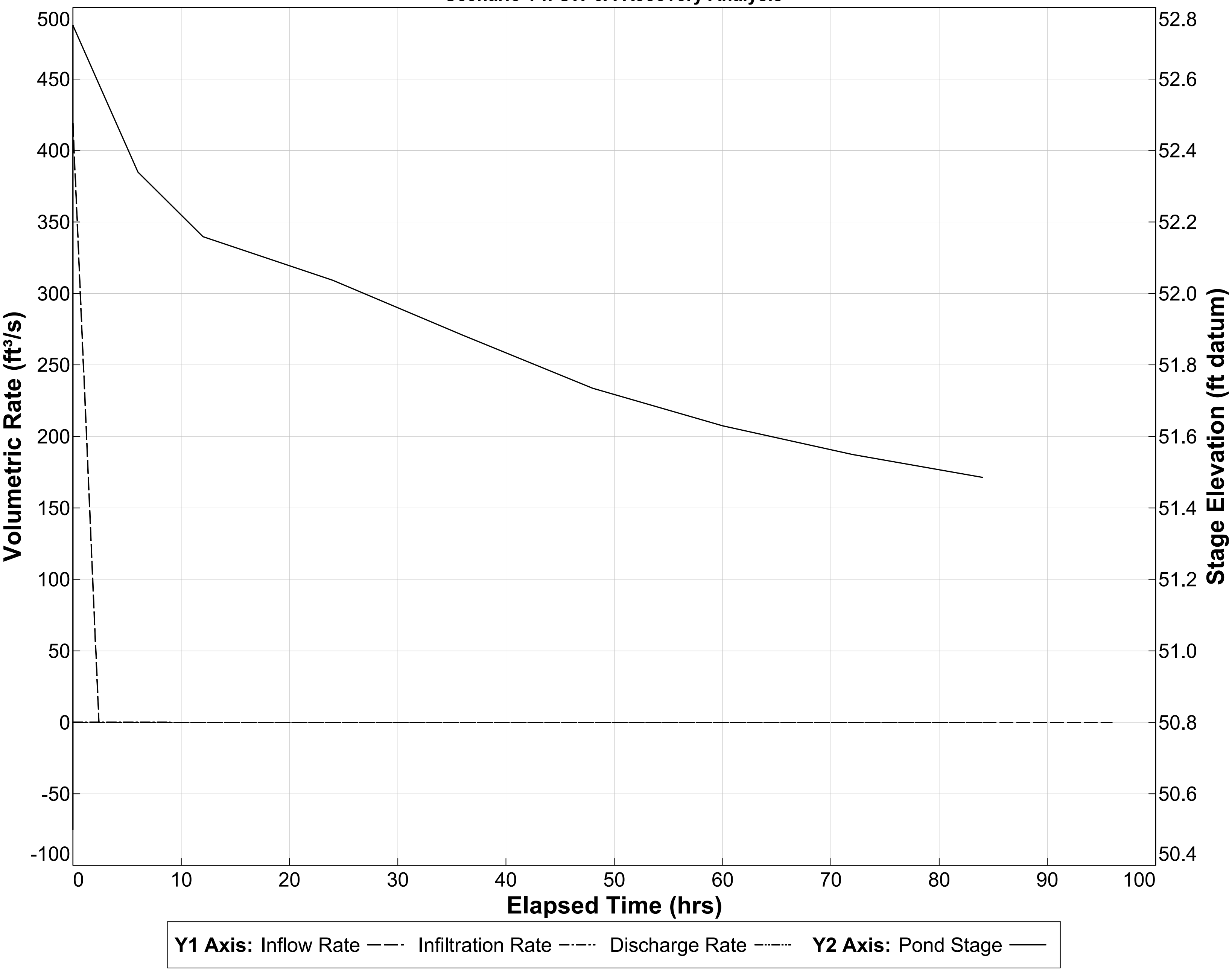
Elapsed Time	Instantaneous Inflow Rate	Outside Recharge	Stage Elevation	Infiltration Rate	Combined Instantaneous Discharge	Cumulative Inflow	Cumulative Infiltration	Combined Cumulative	
0.000	419.2650	0.00000	50.50000	0.00000	0	0.000	0.00000	0	N.A.
0.002	419.2650	0.00000	52.74989	0.07772	0	2515.590	0.46633	0	U/P
2.400	0.0000	0.00000	52.58572	0.07169	0	2515.590	646.02690	0	U/P
6.000	0.0000	0.00000	52.33924	0.05164	0	2515.590	1515.30300	0	U/P
12.000	0.0000	0.00000	52.15906	0.01991	0	2515.590	2074.89100	0	U/S
24.000	0.0000	0.00000	52.03712	0.00510	0	2515.590	2417.19800	0	S
36.000	0.0000	0.00000	51.88303	0.00114	0	2515.590	2515.59000	0	S
48.000	0.0000	0.00000	51.73451	0.00000	0	2515.590	2515.59000	0	S
60.000	0.0000	0.00000	51.62982	0.00000	0	2515.590	2515.59000	0	S
72.000	0.0000	0.00000	51.54976	0.00000	0	2515.590	2515.59000	0	S
84.000	0.0000	0.00000	51.48550	0.00000	0	2515.590	2515.59000	0	S
96.000	0.0000	0.00000	51.43222	----	----	2515.590	2515.59000	0	N.A.

Summary of Results *:: Scenario 1 :: SW-3A Recovery Analysis*

	Time (hours)	Stage (ft datum)	Rate (ft^3/s)	Volume (ft^3)
Stage				
Minimum	0.000	50.50		
Maximum	0.002	52.75		
Inflow				
Rate - Maximum - Positive	0.002		419.2650	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	0.002			2515.6
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			2515.6
Infiltration				
Rate - Maximum - Positive	0.002		0.0777	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	36.000			2515.6
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			2515.6
Combined Discharge				
Rate - Maximum - Positive	None		None	
Rate - Maximum - Negative	None		None	
Cumulative Volume - Maximum Positive	None			None
Cumulative Volume - Maximum Negative	None			None
Cumulative Volume - End of Simulation	96.000			0.0
Discharge Structure 1 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 2 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Discharge Structure 3 - inactive				
Rate - Maximum - Positive	disabled		disabled	
Rate - Maximum - Negative	disabled		disabled	
Cumulative Volume - Maximum Positive	disabled			disabled
Cumulative Volume - Maximum Negative	disabled			disabled
Cumulative Volume - End of Simulation	disabled			disabled
Pollution Abatement:				
36 Hour Stage and Infiltration Volume	36.000	51.88		2515.6
72 Hour Stage and Infiltration Volume	72.000	51.55		2515.6

Plot of Flow Rates and Pond Stage vs Elapsed Time

Scenario 1 :: SW-3A Recovery Analysis



Complete Report (not including cost) Ver 4.2.3

Project: THEA: RAMP 3
Date: 8/27/2021 12:45:43 PM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	BSNSW-3A
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	51.00

Pre-Condition Landuse Information

Landuse	Highway: TN=1.520 TP=0.200
Area (acres)	1.05
Rational Coefficient (0-1)	0.41
Non DCIA Curve Number	89.00
DCIA Percent (0-100)	28.60
Nitrogen EMC (mg/l)	1.520
Phosphorus EMC (mg/l)	0.200
Runoff Volume (ac-ft/yr)	1.845
Nitrogen Loading (kg/yr)	3.457
Phosphorus Loading (kg/yr)	0.455

Post-Condition Landuse Information

Landuse	Highway: TN=1.520 TP=0.200
Area (acres)	1.05
Rational Coefficient (0-1)	0.57
Non DCIA Curve Number	89.00
DCIA Percent (0-100)	55.30
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	1.520
Phosphorus EMC (mg/l)	0.200
Runoff Volume (ac-ft/yr)	2.530
Nitrogen Loading (kg/yr)	4.741
Phosphorus Loading (kg/yr)	0.624

Catchment Number: 1 Name: BSNSW-3A

Project: THEA: RAMP 3
Date: 8/27/2021

Retention Design

Retention Depth (in)	0.660
Retention Volume (ac-ft)	0.058

Watershed Characteristics

Catchment Area (acres)	1.05
Contributing Area (acres)	1.050
Non-DCIA Curve Number	89.00
DCIA Percent	55.30
Rainfall Zone	Florida Zone 4
Rainfall (in)	51.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	27
Provided TN Treatment Efficiency (%)	59
Required TP Treatment Efficiency (%)	27
Provided TP Treatment Efficiency (%)	59

Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	2.786
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.367
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)

Load N: 4.74 kg/yr P: 0.62 kg/yr	→	Treatment N: 59 % P: 59 %	→	Surface Discharge N: 1.95 kg/yr P: 0.26 kg/yr
		↓		Mass Reduction N: 2.79 kg/yr P: 0.37 kg/yr

Load Diagram for Retention (As Used In Routing)

Upstream Nodes None	Load N: 4.74 kg/yr P: 0.62 kg/yr Q: 2.53 ac-ft	→	Treatment N: 58.8 % P: 58.8 %	→	Mass Discharged N: 1.95 kg/yr P: 0.26 kg/yr Q: 1.04 ac-ft
			↓		
			Mass Removed N: 2.79 kg/yr P: 0.37 kg/yr		

Summary Treatment Report Version: 4.2.3

Project: THEA: RAMP 3

Analysis Type: Net Improvement

Date:8/27/2021

BMP Types:

Catchment 1 - (BSNSW-3A) Retention

Based on % removal values to the nearest percent

Routing Summary

Catchment 1 Routed to Outlet

Total nitrogen target removal met? **Yes**

Total phosphorus target removal met? **Yes**

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	3.46 kg/yr	
Total N post load	4.74 kg/yr	
Target N load reduction	27 %	
Target N discharge load	3.46 kg/yr	
Percent N load reduction	59 %	
Provided N discharge load	1.95 kg/yr	4.31 lb/yr
Provided N load removed	2.79 kg/yr	6.14 lb/yr

Phosphorus

Surface Water Discharge

Total P pre load	.455 kg/yr	
Total P post load	.624 kg/yr	
Target P load reduction	27 %	
Target P discharge load	.455 kg/yr	
Percent P load reduction	59 %	
Provided P discharge load	.257 kg/yr	.57 lb/yr
Provided P load removed	.367 kg/yr	.808 lb/yr

Appendix B – Storm Sewer, Spread, and Trench Drain Calculations

GeoPak Drainage (Storm tabs)

```
Units
=====
Drainage Area = Acres
Length = Feet
Dimension = Feet
Depth = Feet
Discharge = Cubic Feet per Second
Velocity = Feet per Second
Intensity = Inches per Hour

Project Components
==================
Drainage Library File (DLB): W:\FDOTSS10\geopak\databases\FDOTSS10.dlb
GPK Job Number: 0
Drainage Cell Library: W:\FDOTSS10\RESOURCES\cell\drplan.cel
Criteria Directory: W:\FDOTSS10\GEOPAK\criteria\Drainage\
DDB: X:\7011621_THEA_Slip_Ramp_DB\O-02520\symb\fdotss4.ddb
Water and Sewer Project:
Superelevation Shapes File:
Original Ground TIN File:
Design Surface TIN File:

Rainfall Parameters
====================
Rational Method Rainfall Source: Zone 6
SCS Method Rainfall Source: None Available
Antecedent Moisture Condition II
Hydrograph Time Interval: 0.000

Land Use Options
================
Rational Method Single Land Use Item: Land Use

SCS Method Single Land Use Item: Land Use

Frequency Options
=================
Data Type: Equation
i = f(a,b,c,d,ln(Tc))
Computation Frequency: 10.00 Year
Runoff Coefficient Peak Factor: 1.000
SCS Cumulative Hydrograph
Computation Frequency: 0.00 Depth
Runoff Coefficient Peak Factor: 1.000

Intensity Option
=================
Minimum Time of Concentration: 10.000
Accumulate Pipe Flow Time by: Iterative Velocity
Compute Intensity from Library Rainfall Data Source
```

Weight Time of Concentration: OFF
Inlet Computation Only
Absolute Intensity: 4.000

Junction Losses
===============
Junction Loss Computations: ON
Loss Velocity: Actual
Pressure Expansion: 0.300 (K)
Free Surface Expansion: 0.100 (K)
Pressure Contraction: 0.500 (K)
Free Surface Contraction: 0.300 (K)
Bend Loss: Method 1
Terminal Inlet/Junction: 1.000 (K)
Simple Junction: Method 2
Complex Junction: Method 2

Inlet Options
=============
Inlet By Pass Options: By Pass as Total Discharge
Link By Pass Flow Options: Do Not Allow Inlet By Pass in Link Discharges
Default Spread n Value: 0.016
Extend Superelevation Shapes to Inlet at Shape Slope: OFF

Node Options
============
Default Node ID Prefix: S-
Scale Node Cells: OFF
Minimum Freeboard: 0.000

Link Options
============
Default Link ID Prefix: R-
Link Profile Options
Design Optimization: Minimize Depth of Cover
Elevation Option: at Actual Link End
Link Design Options
Design for Full Capacity
Link Slope Decimal: No Rounding
Link Criteria File: pipe.x
Hydraulic GradeLine Options
Hydraulic Gradeline Basis: Equal Hydraulic Gradeline

STORM SEWER TABULATION FORM

Road: SR 618	Project Limits:	Network: EX069	Sheet: 1	of 1
Project #: O-02520	County: Hillsborough		Prepared by: SKH	Date: 9/28/2021
			Checked by: KTD	Date: 9/28/2021

LOCATION OF UPPER END / CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE) UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 10; MANNING'S N: 0.012; TAILWATER (FT): 28.44 / REMARKS
BLREL_3			EX070	GUTTER INLET TYPE S	56.45	0.950	0.330	0.314	11.66	0.09	7.05	0.00	0.04	8.71	34.09	3.13	30.96	27.58	3.38	1	17	5.991	10.23	23.98	Existing pipe 18" to be lined; The HGL computed is lower than the TW elev providewd because the system is in critical flow
1108+52.45	66.30	Lt.	EX069			0.950	1.301	1.236				0.00					30.84	28.36	2.48		17	4.393	13.03	20.54	
																	29.42	26.94	2.48			0.162			
BLREL_3			EX071	Junction	62.32	0.000	0.000	0.000	11.44	0.22	7.17	0.00	0.50	6.61	35.12	3.52	31.60	30.96	0.64	1	17	1.029	4.72	9.94	Existing pipe 18" to be lined
1108+53.16	5.90	Lt.	EX070			0.950	0.970	0.922				0.00					31.40	31.11	0.29		17	0.465	4.24	6.68	
																	29.98	29.69	0.29			0.162			
BLREL_3			EX072	MEDIAN BARRIER INLET-DOUBLE	147.91	0.950	0.318	0.302	11.14	0.30	7.17	0.00	0.09	6.61	37.32	3.24	34.08	31.53	2.55	1	17	1.724	8.27	12.86	Existing pipe 18" to be lined
1110+00.99	9.75	Lt.	EX071			0.950	0.970	0.922				0.00					34.33	32.23	2.10		17	1.420	7.41	11.67	
																	32.91	30.81	2.10			0.162			
BLREL_3			S-501	BARRIER WALL INLET	299.99	0.950	0.225	0.214	10.56	0.98	7.32	0.00	0.06	4.54	45.14	3.61	41.54	33.45	8.09	1	17	2.695	5.08	16.08	Existing pipe 18" to be lined
1113+00.83	12.34	Lt.	EX072			0.950	0.652	0.619				0.00					41.95	34.37	7.58		17	2.527	9.88	15.57	
																	40.53	32.95	7.58			0.162			
BLREL_3			S-502	BARRIER WALL INLET	242.80	0.950	0.428	0.407	10.00	1.10	7.47	0.00	0.15	3.03	50.77	4.38	46.39	41.03	5.36	1	17	2.208	3.69	14.56	Existing pipe 18" to be lined
1115+40.68	18.02	Lt.	S-501			0.950	0.428	0.407				0.00					46.82	42.02	4.80		17	1.977	8.74	13.78	
																	45.40	40.60	4.80			0.162			

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: OSWA | Prepared by: SKH | Date: 9/28/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/28/2021

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE) UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) PHYS / HGL / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES / REMARKS
																									ZONE OR COUNTY: 6; FREQUENCY (YR): 10; MANNING'S N: 0.012; TAILWATER (FT): 52.88
BLWB_3			S-522	GUTTER INLET TYPE S	21.77	0.950	0.197	0.187	15.04	0.15	6.38	0.00	0.14	4.31	56.65	3.62	53.04	52.88	0.16	1	18	0.721	2.47	9.69	
1226+65.00	32.13	Lt.	S-521			0.950	0.711	0.675				0.00					52.95	52.88	0.07		18	0.331	3.71	6.56	
																	51.45	51.38	0.07			0.150			
BLWB_3			S-514	MH TYPE P-7	271.01	0.000	0.000	0.000	12.65	2.38	6.83	0.00	0.03	3.33	56.73	3.45	53.28	53.04	0.24	1	18	0.090	1.89	3.42	Area provided is the area contributed from the Trench Drain
1223+96.35	32.13	Lt.	S-522			0.950	0.514	0.488				0.00					53.35	52.95	0.40		18	0.148	2.48	4.38	
																	51.85	51.45	0.40			0.150			
BLWB_3			S-509	GUTTER INLET TYPE V	199.54	0.950	0.000	0.000	10.08	2.57	7.47	0.00	0.01	2.11	56.74	3.40	53.34	53.28	0.07	1	18	0.033	1.29	2.08	
1222+00.00	29.00	Lt.	S-514			0.950	0.297	0.282				0.00					53.64	53.35	0.29		18	0.145	2.46	4.35	
																	52.14	51.85	0.29			0.150			
BLWB_3			TD-2	MH TYPE P-7	7.08	0.950	0.217	0.206	10.00	0.02	7.47	0.00	0.11	1.54	56.48	2.80	53.68	53.09	0.60	1	12	8.445	5.33	11.25	Inflow to 12" PVC connector pipe
1223+91.32	37.12	Lt.	S-514			0.950	0.217	0.206				0.00					53.88	53.73	0.15		12	2.118	7.17	5.63	
																	52.88	52.73	0.15			0.257			
BLWB_3			TD-1	MH TYPE P-7	20.68	0.950	0.297	0.282	10.00	0.08	7.47	0.12	0.23	2.10	56.79	2.43	54.37	53.92	0.44	1	12	2.137	4.27	5.66	Inflow to 12" PVC connector pipe
1221+82.33	28.79	Lt.	S-509			0.950	0.297	0.282				0.00					54.41	54.32	0.09		12	0.435	3.25	2.55	
																	53.41	53.32	0.09			0.257			

TAILWATER: Crown of Pipe to be conservative

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: OSWA2 | Prepared by: SKH | Date: 9/30/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/30/2021

LOCATION OF UPPER END			STRUCTURE NO.	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs)	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS			BARRELS	PIPE SIZE (in)	SLOPE (%)	VELOCITY (fps)	CAPACITY (cfs)	NOTES
																	HYDRAULIC GRADE LINE								ZONE OR COUNTY: 6
																	CROWN								FREQUENCY (YR): 10
						INCREMENTAL											FLOWLINE					HGL			MANNING'S N: 0.012
CHAIN NAME			UPPER			CUMULATIVE						INC					UPPER (ft)	LOWER (ft)	FALL (ft)		RISE	PHYS	ACTUAL	ACTUAL	TAILWATER (FT): 46.23
STATION	DIST	SD	LOWER			C	AREA	C*A				CUM									SPAN	MIN	PHYS	PHYS	REMARKS
BLWB_3			S-526	GUTTER INLET TYPE S	48.24	0.950	0.114	0.108	10.00	0.14	7.47	0.00	0.01	0.81	56.74	1.80	54.94	45.12	9.82	1	15	20.363	5.92	31.66	Video inspect and desilt
																	54.42	46.23	8.19			16.979			
1227+99.31	32.13	Lt.	EX-107			0.950	0.114	0.108				0.00					53.17	44.98	8.19		15	0.191	23.56	28.91	

TAILWATER: Crown of Pipe to be conservative

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: OSWA3 | Prepared by: SKH | Date: 9/28/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/28/2021

NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 10; MANNING'S N: 0.012; TAILWATER (FT): 39.64

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLWB_3			S-530	GUTTER INLET TYPE S	55.36	0.950	0.126	0.120	14.23	0.09	6.52	0.00	0.02	1.45	56.77	3.92	52.85	38.30	14.55	1	18	26.277	10.15	58.49	
1229+50.00	32.13	Lt.	S-529			0.950	0.234	0.222				0.00					52.10	39.64	12.46		18	22.506	30.63	54.13	
																	50.60	38.14	12.46			0.150			
BLWB_3			S-535	GUTTER INLET TYPE S	146.10	0.950	0.109	0.104	10.00	4.23	7.47	0.00	0.01	0.77	56.81	3.94	52.87	52.85	0.01	1	18	0.010	0.58	1.12	
1230+90.00	32.13	Lt.	S-530			0.950	0.109	0.104				0.00					53.40	53.15	0.25		18	0.171	2.67	4.72	
																	51.90	51.65	0.25			0.150			

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Road: SR 618	Project Limits:	Network: OSWA4	Sheet: 1 of 1		
Project #: O-02520	County: Hillsborough		Prepared by: SKH	Date: 9/30/2021	
			Checked by: KTD	Date: 9/30/2021	

LOCATION OF UPPER END			STRUCTURE NO.	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac)			TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs)	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS: HYDRAULIC GRADE LINE / CROWN / FLOWLINE			BARRELS	PIPE SIZE (in)	SLOPE (%) / HGL	VELOCITY (fps)	CAPACITY (cfs)	NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 10; MANNING'S N: 0.012; TAILWATER (FT): 27.38
CHAIN NAME			UPPER			INCREMENTAL / CUMULATIVE						INC					UPPER (ft)	LOWER (ft)	FALL (ft)		RISE	PHYS	ACTUAL	ACTUAL	
STATION	DIST	SD	LOWER			C	AREA	C*A				CUM									SPAN	MIN	PHYS	PHYS	REMARKS
BLWB_3			S-536	GUTTER INLET TYPE S	77.54	0.950	0.126	0.120	10.00	0.10	7.47	0.00	0.01	0.89	56.67	1.41	55.26	26.26	29.01	1	15	37.411	13.03	42.92	Video inpsect existing pipe and desilt
																	53.50	27.38	26.12			33.687			
1232+00.00	32.13	Lt.	EX-116			0.950	0.126	0.120				0.00					52.25	26.13	26.12		15	0.191	33.19	40.73	

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Road: SR 618 | Project Limits: | Network: OSWA5 | Sheet: 1 of 2
Project #: O-02520 | County: Hillsborough | Prepared by: SKH Date: 9/28/2021
Checked by: KTD Date: 9/28/2021

ZONE OR COUNTY: 6
FREQUENCY (YR): 10
MANNING'S N: 0.012
TAILWATER (FT): 28.23

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES / REMARKS
BLREL_3			S-540			0.000	0.000	0.000				0.00					28.91	28.23	0.68		30	0.381	3.97	27.49	
1133+78.26	21.91	Lt.	EX-100	MH TYPE P-7	178.40	0.950	3.093	2.938	20.89	0.75	5.54	1.61	0.34	19.51	57.87	28.96	27.27	26.62	0.65	1	30	0.362	5.46	26.79	Video inspect existing pipe and desilt
																	24.77	24.12	0.65			0.076			
BLREL_3			S-539			0.950	0.001	0.001				1.61					41.45	39.65	1.80		18	4.955	9.48	25.40	
1133+72.34	57.64	Lt.	S-540	DBI TYPE D	36.24	0.950	0.450	0.428	11.86	0.06	7.00	1.61	0.51	6.21	55.00	13.55	41.37	40.51	0.86	1	18	2.373	9.95	17.58	Video inspect existing pipe and desilt
																	39.87	39.01	0.86			0.150			
BLREL_3			EX-096			0.950	0.358	0.340				0.00					46.14	44.59	1.56		24	12.150	14.12	85.66	
1133+79.87	9.66	Lt.	S-540	MEDIAN BARRIER INLET-SINGLE	12.80	0.950	2.643	2.511	20.88	0.02	5.55	0.00	0.56	13.92	58.56	12.42	46.10	45.65	0.45	1	24	3.516	14.67	46.08	Video inspect existing pipe and desilt
																	44.10	43.65	0.45			0.102			
BLREL_3			EX-101			0.950	0.450	0.428				0.00					41.66	41.45	0.21		18	0.097	1.91	3.56	
1135+85.67	65.07	Lt.	S-539	DBI TYPE D	213.85	0.950	0.450	0.428	10.00	1.86	7.47	0.00	0.06	3.19	44.25	2.59	41.81	41.58	0.23	1	18	0.108	2.12	3.74	Video inspect existing pipe and desilt
																	40.31	40.08	0.23			0.150			
BLREL_3			EX-094			0.950	0.228	0.217				0.00					49.94	49.22	0.72		24	0.486	4.78	17.13	
1132+31.62	10.58	Lt.	EX-096	MEDIAN BARRIER INLET-SINGLE	148.30	0.950	2.087	1.983	20.36	0.52	5.61	0.00	0.10	11.12	58.46	8.52	50.41	50.02	0.39	1	24	0.263	4.01	12.60	Video inspect existing pipe and desilt
																	48.41	48.02	0.39			0.102			
BLREL_3			EX-095			0.950	0.197	0.187				0.00					54.95	54.52	0.43		18	0.820	3.42	10.33	
1133+79.80	43.18	Rt.	EX-096	DBI TYPE D	52.43	0.950	0.197	0.187	10.00	0.26	7.47	0.00	0.15	1.40	57.76	2.81	55.85	55.60	0.25	1	18	0.477	4.46	7.88	Video inspect existing pipe and desilt
																	54.35	54.10	0.25			0.150			
BLREL_3			S-528			0.000	0.000	0.000				0.00					50.58	49.94	0.64		23	0.194	3.52	9.66	
1129+00.58	10.95	Lt.	EX-094	MH TYPE J-7	331.21	0.950	1.780	1.691	18.83	1.57	5.80	0.00	0.10	9.81	58.30	7.72	50.66	50.15	0.51	1	23	0.154	2.98	8.61	Existing pipe to be lined
																	48.74	48.23	0.51			0.108			
BLREL_3			EX-093			0.950	0.079	0.075				0.00					54.90	54.50	0.40		17	0.935	3.08	9.47	
1132+31.53	33.15	Rt.	EX-094	MEDIAN BARRIER INLET-SINGLE	42.89	0.950	0.079	0.075	10.00	0.23	7.47	0.00	0.08	0.56	59.13	4.22	55.94	55.67	0.27	1	17	0.618	4.89	7.70	Existing pipe to be lined
																	54.52	54.26	0.27			0.162			
BLRAMP3			S-527			0.950	0.202	0.192				0.00					50.66	50.58	0.08		24	0.336	2.95	14.25	
1328+80.00	6.00	Lt.	S-528	BARRIER WALL INLET	24.98	0.950	1.634	1.552	18.69	0.14	5.82	0.00	0.06	9.03	57.48	6.82	50.78	50.74	0.04	1	24	0.160	3.13	9.83	
																	48.78	48.74	0.04			0.102			
BLREL_3			EX-091			0.950	0.147	0.140				0.00					54.35	54.04	0.31		17	0.675	3.07	8.05	
1129+00.58	35.54	Rt.	S-528	MEDIAN BARRIER INLET-DOUBLE	45.49	0.950	0.147	0.140	10.00	0.25	7.47	0.00	0.13	1.04	57.45	3.10	55.24	55.08	0.16	1	17	0.352	3.69	5.81	Existing pipe to be lined
																	53.82	53.66	0.16			0.162			
BLRAMP3			S-524			0.950	0.106	0.101				0.00					50.80	50.66	0.13		24	0.103	2.65	7.89	
1327+50.00	6.00	Lt.	S-527	BARRIER WALL INLET	129.89	0.950	1.431	1.359	17.87	0.82	5.93	0.00	0.02	8.07	57.63	6.83	50.98	50.78	0.20	1	24	0.154	3.07	9.64	
																	48.98	48.78	0.20			0.102			
BLRAMP3			S-520			0.950	0.165	0.157				0.00					51.89	50.89	1.00		18	0.656	4.29	9.24	
1325+97.75	6.00	Lt.	S-524	BARRIER WALL INLET	152.09	0.950	1.325	1.259	17.28	0.59	6.02	0.00	0.15	7.58	57.45	5.57	51.62	51.32	0.30	1	18	0.197	2.87	5.07	
																	50.12	49.82	0.30			0.150			
BLREL_3			S-518			0.950	0.094	0.089				0.00					52.11	51.89	0.23		18	0.290	3.40	6.15	
1125+23.56	18.00	Lt.	S-520	BARRIER WALL INLET	77.45	0.950	1.041	0.989	16.90	0.38	6.08	0.00	0.01	6.01	57.48	5.37	51.77	51.62	0.15	1	18	0.194	2.84	5.02	
																	50.27	50.12	0.15			0.150			

STORM SEWER TABULATION FORM

Sheet: 2 of 2

Road: SR 618 | Project Limits: | Network: OSWA5 | Prepared by: SKH | Date: 9/28/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/28/2021

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES / REMARKS
BLREL_3			EX-089	MEDIAN BARRIER INLET-DOUBLE	51.55	0.950	0.120	0.114	10.00	0.16	7.47	0.00	0.06	0.85	57.22	3.38	53.84	52.44	1.40	1	17	2.710	5.45	16.13	Existing pipe to be lined
1126+00.44	36.67	Rt.	S-520			0.950	0.120	0.114				0.00					54.75	53.64	1.11		17	2.153	9.12	14.38	
																	53.33	52.22	1.11			0.162			
BLREL_3			S-516	BARRIER WALL INLET	123.62	0.950	0.157	0.149	16.24	0.66	6.18	0.00	0.01	5.56	57.33	4.92	52.41	52.11	0.30	1	18	0.246	3.15	5.66	
1124+00.00	18.00	Lt.	S-518			0.950	0.947	0.900				0.00					52.01	51.77	0.24		18	0.194	2.85	5.03	
																	50.51	50.27	0.24			0.150			
BLREL_3			S-513	BARRIER WALL INLET	100.00	0.950	0.066	0.063	15.62	0.63	6.28	0.00	0.06	4.71	57.14	4.49	52.65	52.41	0.23	1	18	0.233	2.67	5.51	
1123+00.00	18.00	Lt.	S-516			0.950	0.790	0.751				0.00					52.16	52.01	0.15		18	0.150	2.50	4.42	
																	50.66	50.51	0.15			0.150			
BLREL_3			S-511	BARRIER WALL INLET	50.00	0.950	0.120	0.114	15.21	0.41	6.35	0.00	0.00	3.60	57.12	4.42	52.70	52.65	0.05	1	18	0.102	2.02	3.64	
1122+50.00	18.00	Lt.	S-513			0.950	0.597	0.567				0.00					52.24	52.16	0.08		18	0.160	2.58	4.56	
																	50.74	50.66	0.08			0.150			
BLREL_3			EX-087	MEDIAN BARRIER INLET-DOUBLE	50.88	0.950	0.127	0.121	10.00	0.20	7.47	0.00	0.09	0.90	57.05	3.14	53.91	53.15	0.76	1	17	1.488	4.30	11.95	Existing pipe to be lined
1123+00.47	36.00	Rt.	S-513			0.950	0.127	0.121				0.00					54.83	54.30	0.53		17	1.042	6.34	10.00	
																	53.41	52.88	0.53			0.162			
BLREL_3			S-508	BARRIER WALL INLET	170.00	0.950	0.142	0.135	13.53	1.67	6.65	0.00	0.04	3.01	56.97	4.11	52.86	52.70	0.16	1	18	0.093	1.70	3.48	
1120+80.00	18.00	Lt.	S-511			0.950	0.476	0.452				0.00					52.50	52.24	0.26		18	0.153	2.53	4.46	
																	51.00	50.74	0.26			0.150			
BLREL_3			S-504	BARRIER WALL INLET	197.25	0.950	0.232	0.220	10.00	3.53	7.47	0.00	0.01	1.65	55.72	2.81	52.91	52.86	0.05	1	18	0.028	0.93	1.91	
1118+82.75	18.00	Lt.	S-508			0.950	0.232	0.220				0.00					52.80	52.50	0.30		18	0.152	2.52	4.45	
																	51.30	51.00	0.30			0.150			
BLREL_3			EX-085	MEDIAN BARRIER INLET-DOUBLE	50.99	0.950	0.102	0.097	10.00	1.47	7.47	0.00	0.01	0.72	56.95	4.08	52.86	52.86	0.01	1	17	0.012	0.58	1.06	Existing pipe to be lined
1120+80.32	36.12	Rt.	S-508			0.950	0.102	0.097				0.00					53.43	52.89	0.54		17	1.059	6.40	10.08	
																	52.01	51.47	0.54			0.162			

NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 10; MANNING'S N: 0.012; TAILWATER (FT): 28.23

TAILWATER: DHW in EX_OSW-A as taken from historical documentation w/o datum conversion (NGVD - 0.845') to be conservative.

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: S638O | Prepared by: SKH | Date: 9/28/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/28/2021

LOCATION OF UPPER END / CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE) UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) PHYS / HGL / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLRAMP3			S-537	BARRIER WALL INLET	16.13	0.950	0.030	0.029	13.89	0.13	6.58	0.00	0.10	3.29	57.31	3.92	53.39	53.29	0.10	1	18	0.633	2.11	9.08	
1333+20.00	21.00	Rt.	S-538			0.950	0.527	0.501				0.00					53.60	53.50	0.10		18	0.620	5.08	8.99	
																	52.10	52.00	0.10			0.150			
BLRAMP3			S-537A	BARRIER WALL INLET	40.00	0.950	0.101	0.096	13.57	0.32	6.65	0.00	0.01	3.13	57.24	3.82	53.42	53.39	0.03	1	18	0.065	2.06	2.91	
1332+80.00	21.00	Rt.	S-537			0.950	0.496	0.471				0.00					53.77	53.60	0.17		18	0.425	4.21	7.44	
																	52.27	52.10	0.17			0.150			
BLRAMP3			S-534	GUTTER INLET TYPE V	195.23	0.950	0.132	0.125	11.92	1.65	6.99	0.00	0.02	2.63	57.29	3.73	53.56	53.42	0.14	1	18	0.074	1.97	3.10	
1330+90.00	6.97	Lt.	S-537A			0.950	0.395	0.375				0.00					54.06	53.77	0.29		18	0.149	2.49	4.40	
																	52.56	52.27	0.29			0.150			
BLRAMP3			S-533	BARRIER WALL INLET	102.92	0.950	0.116	0.110	10.86	1.06	7.24	0.00	0.05	1.81	57.45	3.80	53.65	53.56	0.09	1	18	0.085	1.61	3.32	
1329+90.00	6.00	Lt.	S-534			0.950	0.263	0.250				0.00					54.26	54.06	0.20		18	0.194	2.85	5.03	
																	52.76	52.56	0.20			0.150			
BLRAMP3			S-531	GUTTER INLET TYPE V	32.98	0.950	0.090	0.086	10.00	0.85	7.47	0.00	0.01	0.64	57.81	4.15	53.66	53.65	0.01	1	18	0.024	0.64	1.78	
1329+80.00	22.20	Rt.	S-533			0.950	0.090	0.086				0.00					54.36	54.26	0.10		18	0.303	3.56	6.28	
																	52.86	52.76	0.10			0.150			
BLWB_3			S-532	BARRIER WALL INLET	11.92	0.950	0.057	0.054	10.00	0.53	7.47	0.00	0.00	0.40	57.49	3.84	53.65	53.65	0.00	1	18	0.025	0.38	1.81	
1229+90.00	10.00	Rt.	S-533			0.950	0.057	0.054				0.00					54.30	54.26	0.04		18	0.336	3.74	6.61	
																	52.80	52.76	0.04			0.150			

NOTES:
- ZONE OR COUNTY: 6
- FREQUENCY (YR): 10
- MANNING'S N: 0.012
- TAILWATER (FT): 53.29

TAILWATER: Taken at stage at maximum inflow for a 10-year/2-hr storm

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: EX069 | Prepared by: SKH | Date: 9/27/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/27/2021

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 50; MANNING'S N: 0.012; TAILWATER (FT): 28.44; REMARKS
BLREL_3			EX070	GUTTER INLET TYPE S	56.45	0.950	0.330	0.314	11.97	0.09	8.51	0.00	0.06	10.51	34.09	3.02	31.07	27.66	3.41	1	17	6.046	10.79	24.09	Existing pipe to be lined; The HGL computed is lower than the TW elev provided because the system is in critical flow.
1108+52.45	66.30	Lt.	EX069			0.950	1.301	1.236				0.00					30.84	28.36	2.48		17	4.393	13.03	20.54	
																	29.42	26.94	2.48			0.162			
BLREL_3			EX071	Junction	62.32	0.000	0.000	0.000	11.76	0.21	8.63	0.00	0.53	7.96	35.12	3.22	31.90	31.07	0.82	1	17	1.324	5.06	11.27	Existing pipe to be lined
1108+53.16	5.90	Lt.	EX070			0.950	0.970	0.922				0.00					31.40	31.11	0.29		17	0.465	4.24	6.68	
																	29.98	29.69	0.29			0.162			
BLREL_3			EX072	MEDIAN BARRIER INLET-DOUBLE	147.91	0.950	0.318	0.302	11.48	0.29	8.63	0.00	0.11	7.96	37.32	3.13	34.20	31.62	2.58	1	17	1.742	8.61	12.93	Existing pipe to be lined
1110+00.99	9.75	Lt.	EX071			0.950	0.970	0.922				0.00					34.33	32.23	2.10		17	1.420	7.41	11.67	
																	32.91	30.81	2.10			0.162			
BLREL_3			S-501	BARRIER WALL INLET	299.99	0.950	0.225	0.214	10.54	0.77	8.89	0.00	0.07	5.51	45.14	3.51	41.64	33.50	8.13	1	17	2.711	6.49	16.13	Existing pipe to be lined
1113+00.83	12.34	Lt.	EX072			0.950	0.652	0.619				0.00					41.95	34.37	7.58		17	2.527	9.88	15.57	
																	40.53	32.95	7.58			0.162			
BLREL_3			S-502	BARRIER WALL INLET	242.80	0.950	0.428	0.407	10.00	0.91	9.04	0.00	0.18	3.67	50.77	4.26	46.51	41.07	5.44	1	17	2.239	4.45	14.66	Existing pipe to be lined
1115+40.68	18.02	Lt.	S-501			0.950	0.428	0.407				0.00					46.82	42.02	4.80		17	1.977	8.74	13.78	
																	45.40	40.60	4.80			0.162			

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Road: SR 618	Project Limits:	Network: OSWA	Sheet: 1	of 1	
Project #: O-02520	County: Hillsborough		Prepared by: SKH	Date: 9/27/2021	
			Checked by: KTD	Date: 9/27/2021	

NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 50; MANNING'S N: 0.012; TAILWATER (FT): 52.88

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE) UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLWB_3			S-522	GUTTER INLET TYPE S	21.77	0.950	0.197	0.187	14.37	0.12	7.97	0.00	0.21	5.38	56.65	3.53	53.12	52.88	0.25	1	18	1.130	3.06	12.13	
1226+65.00	32.13	Lt.	S-521			0.950	0.711	0.675				0.00					52.95	52.88	0.07		18	0.331	3.71	6.56	
																	51.45	51.38	0.07			0.150			
BLWB_3			S-514	MH TYPE P-7	271.01	0.000	0.000	0.000	12.39	1.98	8.40	0.00	0.04	4.10	56.73	3.21	53.52	53.12	0.39	1	18	0.145	2.29	4.35	Area provided is the area contricbuted from the trench drain
1223+96.35	32.13	Lt.	S-522			0.950	0.514	0.488				0.00					53.35	52.95	0.40		18	0.148	2.48	4.38	
																	51.85	51.45	0.40			0.150			
BLWB_3			S-509	GUTTER INLET TYPE V	199.54	0.950	0.000	0.000	10.08	2.31	9.04	0.00	0.02	2.55	56.74	3.11	53.63	53.52	0.12	1	18	0.058	1.44	2.75	
1222+00.00	29.00	Lt.	S-514			0.950	0.297	0.282				0.00					53.64	53.35	0.29		18	0.145	2.46	4.35	
																	52.14	51.85	0.29			0.150			
BLWB_3			TD-2	MH TYPE P-7	7.08	0.950	0.217	0.206	10.00	0.03	9.04	0.00	0.14	1.86	56.23	2.47	53.76	53.13	0.64	1	12	8.982	4.61	11.60	Inflow to 12" PVC connector pipe
1223+91.32	37.12	Lt.	S-514			0.950	0.217	0.206				0.00					53.88	53.73	0.15		12	2.118	7.17	5.63	
																	52.88	52.73	0.15			0.257			
BLWB_3			TD-1	MH TYPE P-7	20.68	0.950	0.297	0.282	10.00	0.08	9.04	0.00	0.27	2.55	55.79	1.29	54.50	54.00	0.50	1	12	2.418	4.41	6.02	Inflow to 12" PVC connector pipe
1221+82.33	28.79	Lt.	S-509			0.950	0.297	0.282				0.00					54.41	54.32	0.09		12	0.435	3.25	2.55	
																	53.41	53.32	0.09			0.257			

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: OSWA2 | Prepared by: SKH | Date: 9/30/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/30/2021

LOCATION OF UPPER END / CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE) UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES / REMARKS
BLWB_3			S-526	GUTTER INLET TYPE S	48.24	0.950	0.114	0.108	10.00	0.10	9.04	0.00	0.01	0.98	56.74	1.76	54.98	45.13	9.85	1	15	20.423	8.36	31.71	Video inspect and desilt
																	54.42	46.23	8.19			16.979			
1227+99.31	32.13	Lt.	EX-107			0.950	0.114	0.108				0.00					53.17	44.98	8.19		15	0.191	23.56	28.91	

ZONE OR COUNTY: 6

FREQUENCY (YR): 50

MANNING'S N: 0.012

TAILWATER (FT): 46.23

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: OSWA3 | Prepared by: SKH | Date: 9/28/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/28/2021

NOTES

ZONE OR COUNTY: 6

FREQUENCY (YR): 50

MANNING'S N: 0.012

TAILWATER (FT): 39.64

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLWB_3			S-530	GUTTER INLET TYPE S	55.36	0.950	0.126	0.120	13.72	0.08	8.10	0.00	0.02	1.80	56.77	3.86	52.92	38.32	14.59	1	18	26.358	12.15	58.58	
1229+50.00	32.13	Lt.	S-529			0.950	0.234	0.222				0.00					52.10	39.64	12.46		18	22.506	30.63	54.13	
																	50.60	38.14	12.46			0.150			
BLWB_3			S-535	GUTTER INLET TYPE S	146.10	0.950	0.109	0.104	10.00	3.72	9.04	0.00	0.01	0.93	56.81	3.88	52.93	52.92	0.02	1	18	0.012	0.66	1.27	
1230+90.00	32.13	Lt.	S-530			0.950	0.109	0.104				0.00					53.40	53.15	0.25		18	0.171	2.67	4.72	
																	51.90	51.65	0.25			0.150			

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Road: SR 618	Project Limits:	Network: OSWA4	Sheet: 1 of 1
Project #: O-02520	County: Hillsborough		Prepared by: SKH Date: 9/28/2021
			Checked by: KTD Date: 9/28/2021

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE) UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) PHYS / MIN / HGL	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	NOTES / REMARKS
BLWB_3			S-536	GUTTER INLET TYPE S	77.54	0.950	0.126	0.120	10.00	0.09	9.04	0.00	0.01	1.08	56.67	1.37	55.31	26.27	29.04	1	15	37.451	13.77	42.94	Video inspect existing pipe and desilt
1232+00.00	32.13	Lt.	EX-116			0.950	0.126	0.120				0.00					53.50	27.38	26.12		15	33.687	33.19	40.73	
																	52.25	26.13	26.12			0.191			

NOTES:
ZONE OR COUNTY: 6
FREQUENCY (YR): 50
MANNING'S N: 0.012
TAILWATER (FT): 27.38

TAILWATER: Crown of Pipe

STORM SEWER TABULATION FORM

Sheet: 1 of 2

Road: SR 618 | Project Limits: | Network: OSWA5 | Prepared by: SKH | Date: 9/27/2021

Project #: O-02520 | County: Hillsborough | 3.66 5.27 | Checked by: KTD | Date: 9/27/2021

NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 50; MANNING'S N: 0.012; TAILWATER (FT): 28.23

LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) PHYS / HGL / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLREL_3			S-540	MH TYPE P-7	178.40	0.000	0.000	0.000				0.00					29.29	28.23	1.06		30	0.592	4.94	34.28	
1133+78.26	21.91	Lt.	EX-100			0.950	3.093	2.938	18.89	0.60	7.17	1.61	0.52	24.29	57.87	28.58	27.27	26.62	0.65	1	30	0.362	5.46	26.79	Video inspect existing pipe and desilt
																	24.77	24.12	0.65			0.076			
BLREL_3			S-539	DBI TYPE D	36.24	0.950	0.001	0.001				1.61					41.55	39.69	1.86		18	5.126	9.73	25.83	
1133+72.34	57.64	Lt.	S-540			0.950	0.450	0.428	11.69	0.06	8.63	1.61	0.56	6.89	55.00	13.45	41.37	40.51	0.86	1	18	2.373	9.95	17.58	Video inspect existing pipe and desilt
																	39.87	39.01	0.86			0.150			
BLREL_3			EX-096	MEDIAN BARRIER INLET-SINGLE	12.80	0.950	0.358	0.340				0.00					46.51	44.75	1.77		24	13.815	15.16	91.34	
1133+79.87	9.66	Lt.	S-540			0.950	2.643	2.511	18.88	0.01	7.17	0.00	0.75	18.01	58.56	12.05	46.10	45.65	0.45	1	24	3.516	14.67	46.08	Video inspect existing pipe and desilt
																	44.10	43.65	0.45			0.102			
BLREL_3			EX-101	DBI TYPE D	213.85	0.950	0.450	0.428				0.00					41.85	41.55	0.29		18	0.138	2.12	4.24	
1135+85.67	65.07	Lt.	S-539			0.950	0.450	0.428	10.00	1.68	9.04	0.00	0.08	3.87	44.25	2.40	41.81	41.58	0.23	1	18	0.108	2.12	3.74	Video inspect existing pipe and desilt
																	40.31	40.08	0.23			0.150			
BLREL_3			EX-094	MEDIAN BARRIER INLET-SINGLE	148.30	0.950	0.228	0.217				0.00					50.25	49.39	0.86		24	0.581	5.25	18.73	
1132+31.62	10.58	Lt.	EX-096			0.950	2.087	1.983	18.41	0.47	7.25	0.00	0.11	14.37	58.46	8.21	50.41	50.02	0.39	1	24	0.263	4.01	12.60	Video inspect existing pipe and desilt
																	48.41	48.02	0.39			0.102			
BLREL_3			EX-095	DBI TYPE D	52.43	0.950	0.197	0.187				0.00					55.02	54.57	0.45		18	0.858	3.61	10.57	
1133+79.80	43.18	Rt.	EX-096			0.950	0.197	0.187	10.00	0.24	9.04	0.00	0.17	1.70	57.76	2.74	55.85	55.60	0.25	1	18	0.477	4.46	7.88	Video inspect existing pipe and desilt
																	54.35	54.10	0.25			0.150			
BLREL_3			S-528	MH TYPE J-7	331.21	0.000	0.000	0.000				0.00					51.33	50.25	1.08		23	0.327	4.37	12.54	
1129+00.58	10.95	Lt.	EX-094			0.950	1.780	1.691	17.14	1.26	7.45	0.00	0.16	12.60	58.30	6.97	50.66	50.15	0.51	1	23	0.154	2.98	8.61	Existing pipe to be lined
																	48.74	48.23	0.51			0.108			
BLREL_3			EX-093	MEDIAN BARRIER INLET-SINGLE	42.89	0.950	0.079	0.075				0.00					54.94	54.52	0.41		17	0.968	3.24	9.64	
1132+31.53	33.15	Rt.	EX-094			0.950	0.079	0.075	10.00	0.22	9.04	0.00	0.10	0.68	59.13	4.19	55.94	55.67	0.27	1	17	0.618	4.89	7.70	Existing pipe to be lined
																	54.52	54.26	0.27			0.162			
BLRAMP3			S-527	BARRIER WALL INLET	24.98	0.950	0.202	0.192				0.00					51.46	51.33	0.13		24	0.520	3.69	17.73	
1328+80.00	6.00	Lt.	S-528			0.950	1.634	1.552	17.03	0.11	7.47	0.00	0.07	11.59	57.48	6.02	50.78	50.74	0.04	1	24	0.160	3.13	9.83	
																	48.78	48.74	0.04			0.102			
BLREL_3			EX-091	MEDIAN BARRIER INLET-DOUBLE	45.49	0.950	0.147	0.140				0.00					54.40	54.08	0.32		17	0.706	3.21	8.23	
1129+00.58	35.54	Rt.	S-528			0.950	0.147	0.140	10.00	0.24	9.04	0.00	0.14	1.26	57.45	3.04	55.24	55.08	0.16	1	17	0.352	3.69	5.81	Existing pipe to be lined
																	53.82	53.66	0.16			0.162			
BLRAMP3			S-524	BARRIER WALL INLET	129.89	0.950	0.106	0.101				0.00					51.72	51.46	0.26		24	0.201	3.28	11.02	
1327+50.00	6.00	Lt.	S-527			0.950	1.431	1.359	16.37	0.66	7.59	0.00	0.03	10.31	57.63	5.91	50.98	50.78	0.20	1	24	0.154	3.07	9.64	
																	48.98	48.78	0.20			0.102			
BLRAMP3			S-520	BARRIER WALL INLET	152.09	0.950	0.165	0.157				0.00					53.06	51.72	1.34		18	0.882	5.46	10.72	
1325+97.75	6.00	Lt.	S-524			0.950	1.325	1.259	15.91	0.46	7.67	0.00	0.25	9.66	57.45	4.39	51.62	51.32	0.30	1	18	0.197	2.87	5.07	
																	50.12	49.82	0.30			0.150			
BLREL_3			S-518	BARRIER WALL INLET	77.45	0.950	0.094	0.089				0.00					53.43	53.06	0.36		18	0.470	4.32	7.82	
1125+23.56	18.00	Lt.	S-520			0.950	1.041	0.989	15.61	0.30	7.72	0.00	0.02	7.64	57.48	4.05	51.77	51.62	0.15	1	18	0.194	2.84	5.02	
																	50.27	50.12	0.15			0.150			

STORM SEWER TABULATION FORM

Sheet: 2 of 2

Road: SR 618 | Project Limits: | Network: OSWA5 | Prepared by: SKH | Date: 9/27/2021

Project #: O-02520 | County: Hillsborough | 3.66 5.27 | Checked by: KTD | Date: 9/27/2021

NOTES: ZONE OR COUNTY: 6; FREQUENCY (YR): 50; MANNING'S N: 0.012; TAILWATER (FT): 28.23

LOCATION OF UPPER END — CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	C	AREA (INCREMENTAL / CUMULATIVE)	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS UPPER (ft) (HGL / CROWN / FLOWLINE)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) HGL / PHYS / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLREL_3			EX-089	MEDIAN BARRIER INLET-DOUBLE	51.55	0.950	0.120	0.114	10.00	0.23	9.04	0.00	0.08	1.03	57.22	3.34	53.88	52.46	1.42	1	17	2.756	3.76	16.27	Existing pipe to be lined
1126+00.44	36.67	Rt.	S-520			0.950	0.120	0.114				0.00					54.75	53.64	1.11		17	2.153	9.12	14.38	
																	53.33	52.22	1.11			0.162			
BLREL_3			S-516	BARRIER WALL INLET	123.62	0.950	0.157	0.149	15.09	0.52	7.82	0.00	0.02	7.04	57.33	3.42	53.92	53.43	0.49	1	18	0.395	3.98	7.17	
1124+00.00	18.00	Lt.	S-518			0.950	0.947	0.900				0.00					52.01	51.77	0.24		18	0.194	2.85	5.03	
																	50.51	50.27	0.24			0.150			
BLREL_3			S-513	BARRIER WALL INLET	100.00	0.950	0.066	0.063	14.59	0.50	7.92	0.00	0.10	5.94	57.14	2.85	54.29	53.92	0.37	1	18	0.371	3.36	6.95	
1123+00.00	18.00	Lt.	S-516			0.950	0.790	0.751				0.00					52.16	52.01	0.15		18	0.150	2.50	4.42	
																	50.66	50.51	0.15			0.150			
BLREL_3			S-511	BARRIER WALL INLET	50.00	0.950	0.120	0.114	14.26	0.33	7.99	0.00	0.00	4.53	57.12	2.75	54.37	54.29	0.08	1	18	0.162	2.51	4.59	
1122+50.00	18.00	Lt.	S-513			0.950	0.597	0.567				0.00					52.24	52.16	0.08		18	0.160	2.58	4.56	
																	50.74	50.66	0.08			0.150			
BLREL_3			EX-087	MEDIAN BARRIER INLET-DOUBLE	50.88	0.950	0.127	0.121	10.00	1.00	9.04	0.00	0.02	1.09	57.05	2.75	54.30	54.29	0.01	1	17	0.024	0.85	1.50	Existing pipe to be lined
1123+00.47	36.00	Rt.	S-513			0.950	0.127	0.121				0.00					54.83	54.30	0.53		17	1.042	6.34	10.00	
																	53.41	52.88	0.53			0.162			
BLREL_3			S-508	BARRIER WALL INLET	170.00	0.950	0.142	0.135	12.92	1.34	8.28	0.00	0.06	3.75	56.97	2.36	54.61	54.37	0.24	1	18	0.144	2.11	4.32	
1120+80.00	18.00	Lt.	S-511			0.950	0.476	0.452				0.00					52.50	52.24	0.26		18	0.153	2.53	4.46	
																	51.00	50.74	0.26			0.150			
BLREL_3			S-504	BARRIER WALL INLET	197.25	0.950	0.232	0.220	10.00	2.92	9.04	0.00	0.02	1.99	55.72	1.03	54.69	54.61	0.08	1	18	0.041	1.13	2.31	
1118+82.75	18.00	Lt.	S-508			0.950	0.232	0.220				0.00					52.80	52.50	0.30		18	0.152	2.52	4.45	
																	51.30	51.00	0.30			0.150			
BLREL_3			EX-085	MEDIAN BARRIER INLET-DOUBLE	50.99	0.950	0.102	0.097	10.00	1.53	9.04	0.00	0.01	0.88	56.95	2.33	54.62	54.61	0.01	1	17	0.018	0.56	1.30	Existing pipe to be lined
1120+80.32	36.12	Rt.	S-508			0.950	0.102	0.097				0.00					53.43	52.89	0.54		17	1.059	6.40	10.08	
																	52.01	51.47	0.54			0.162			

TAILWATER: Permitted DHW for existing pond EX_OSW-A with no conversion to be conservative

STORM SEWER TABULATION FORM

Sheet: 1 of 1

Road: SR 618 | Project Limits: | Network: S638O | Prepared by: SKH | Date: 9/28/2021

Project #: O-02520 | County: Hillsborough | Checked by: KTD | Date: 9/28/2021

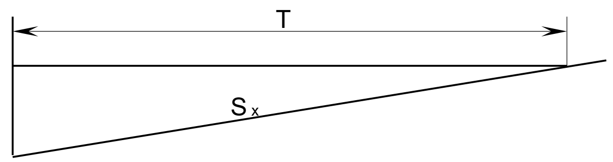
LOCATION OF UPPER END: CHAIN NAME / STATION	DIST	SD	STRUCTURE NO. UPPER / LOWER	STRUCTURE TYPE	LENGTH (ft)	DRAINAGE AREA (ac) INCREMENTAL / CUMULATIVE: C	AREA	C*A	TIME OF CONCENTRATION (min)	TIME OF FLOW IN SECTION (min)	INTENSITY (in/hr)	BASE FLOW (cfs) INC / CUM	JUNCTION LOSS (ft)	TOTAL RUNOFF (cfs)	INLET ELEVATION (ft)	CLEARANCE (ft)	ELEVATIONS (HYDRAULIC GRADE LINE / CROWN / FLOWLINE): UPPER (ft)	LOWER (ft)	FALL (ft)	BARRELS	PIPE SIZE (in) RISE / SPAN	SLOPE (%) PHYS / HGL / MIN	VELOCITY (fps) ACTUAL / PHYS	CAPACITY (cfs) ACTUAL / PHYS	REMARKS
BLRAMP3			S-537	BARRIER WALL INLET	16.13	0.950	0.030	0.029	13.79	0.11	8.09	0.00	0.13	4.05	57.31	3.78	53.53	53.39	0.14	1	18	0.850	2.43	10.52	
1333+20.00	21.00	Rt.	S-538			0.950	0.527	0.501				0.00					53.60	53.50	0.10		18	0.620	5.08	8.99	
																	52.10	52.00	0.10			0.150			
BLRAMP3			S-537A	BARRIER WALL INLET	40.00	0.950	0.101	0.096	13.50	0.29	8.15	0.00	0.01	3.84	57.24	3.67	53.57	53.53	0.04	1	18	0.105	2.29	3.70	
1332+80.00	21.00	Rt.	S-537			0.950	0.496	0.471				0.00					53.77	53.60	0.17		18	0.425	4.21	7.44	
																	52.27	52.10	0.17			0.150			
BLRAMP3			S-534	GUTTER INLET TYPE V	195.23	0.950	0.132	0.125	11.94	1.56	8.51	0.00	0.02	3.20	57.29	3.56	53.73	53.57	0.16	1	18	0.081	2.09	3.26	
1330+90.00	6.97	Lt.	S-537A			0.950	0.395	0.375				0.00					54.06	53.77	0.29		18	0.149	2.49	4.40	
																	52.56	52.27	0.29			0.150			
BLRAMP3			S-533	BARRIER WALL INLET	102.92	0.950	0.116	0.110	10.88	1.06	8.79	0.00	0.05	2.20	57.45	3.64	53.81	53.73	0.09	1	18	0.083	1.61	3.28	
1329+90.00	6.00	Lt.	S-534			0.950	0.263	0.250				0.00					54.26	54.06	0.20		18	0.194	2.85	5.03	
																	52.76	52.56	0.20			0.150			
BLRAMP3			S-531	GUTTER INLET TYPE V	32.98	0.950	0.090	0.086	10.00	0.88	9.04	0.00	0.01	0.78	57.81	3.99	53.82	53.81	0.01	1	18	0.024	0.63	1.78	
1329+80.00	22.20	Rt.	S-533			0.950	0.090	0.086				0.00					54.36	54.26	0.10		18	0.303	3.56	6.28	
																	52.86	52.76	0.10			0.150			
BLWB_3			S-532	BARRIER WALL INLET	11.92	0.950	0.057	0.054	10.00	0.53	9.04	0.00	0.00	0.49	57.49	3.67	53.82	53.81	0.00	1	18	0.025	0.37	1.81	
1229+90.00	10.00	Rt.	S-533			0.950	0.057	0.054				0.00					54.30	54.26	0.04		18	0.336	3.74	6.61	
																	52.80	52.76	0.04			0.150			

NOTES:
- ZONE OR COUNTY: 6
- FREQUENCY (YR): 50
- MANNING'S N: 0.012
- TAILWATER (FT): 53.39

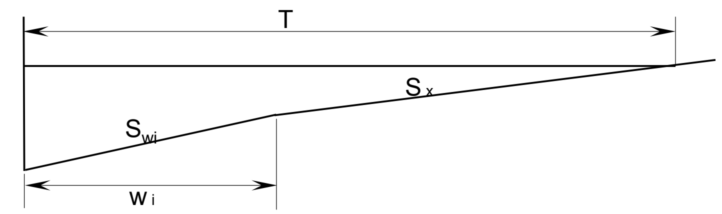
TAILWATER: Taken at stage at maximum inflow for a 50-year/2-hr storm

Spread Calculations

PROJECT THEA - Slip Ramp 3
SUBJECT Spread - Median Barrier Walls (Index 425-030)



Section immediately upstream of inlet



Section at inlet

This spreadsheet will compute the interception capacity of an on grade barrier wall inlet and determine the total flow bypassed to the next downstream inlet. The interception capacity of the opening in the barrier wall adjacent to the inlet is neglected and these equations only consider the interception capacity of the inlet grate.

Inlet width, w_i = 1.42 ft
Inlet length, L_i = 3.33 ft
Inlet cross slope, S_{wi} = 0.17 ft/ft
Splash over velocity, v_o = 8.50 fps from Chart 5B, Appendix A HEC-22 for a 3.33 ft long Reticuline grate
Basin Area, A = (Basin Length) (Roadway Width)/43560
Flow from basin, Q = c i A, where i = 4.00 in/hr and values of c and A from stormtabs

Spread just upstream of inlet depression, $T = \left[\dfrac{Q\,n}{K_u\,S_x^{1.67}\,S_L^{0.5}}\right]^{0.375}$, where Ku = 0.560 and n =0.016 Eqn. 4-2, HEC-22

Velocity, $v = Q/A_{x\text{-sect}} = Q/(0.5\,T^2\,S_x)$
Ratio of frontal flow to total flow, $E_o = 1 - (1 - w_i/T)^{2.67}$ Eqn. 4-16, HEC-22
Frontal Flow, $Q_f = Q\,E_o$
Ratio of frontal flow intercepted by inlet to total frontal flow, $R_f = 1 - K_u\,(v - v_o)$, where Ku =0.090 Eqn. 4-18, HEC-22
Frontal flow Intercepted by Inlet, $Q_{fi} = Q_f\,R_f$
Side Flow, $Q_s = Q - Q_f$
Equivalent cross slope of pavement, $S_e = S_x + (S_{wi} - S_x)\,E_o$ Eqn. 4-24, HEC-22
Ratio of side flow intercepted by inlet to total side flow, $R_s = 1 / (1+(K_u\,v^{1.8} / S_e\,L_i^{2.3}))$, where Ku = 0.150 Eqn. 4-19, HEC-22
Side flow Intercepted by Inlet, $Q_{si} = Q_s\,R_s$
Total Flow Intercepted by Inlet, $Q_i = Q_{fi} + Q_{si}$
Bypass flow, $Q_b = Q - Q_i$

* 2 Foot Shoulder
* 6 Foot allowable spread

Structure Number	Station	Side	Area (ac)	T_{allow} (ft)	Q_{inlet} (cfs)	Q_{total} (including bypass) (cfs)	Shoulder Cross Slope, S_x (ft/ft)	Long. Slope, S_L (ft/ft)	T (ft)	v (fps)	E_o	Q_f (cfs)	R_f	Q_{fi} (cfs)	Q_s (cfs)	S_e (ft/ft)	R_s	Q_{si} (cfs)	Q_i (cfs)	Q_b (cfs)	Bypass to
S-501	1113+00.00	LT	0.23	10.00	0.87	1.09	0.060	0.0250	3.17	3.63	0.79	0.87	1.00	0.87	0.23	0.145	0.60	0.14	1.00	0.09	
S-502	1115+40.00	LT	0.43	6.00	1.63	1.71	0.060	0.0189	3.96	3.65	0.69	1.19	1.00	1.19	0.52	0.134	0.58	0.30	1.49	0.22	S-501
*	1115+60.00	LT	0.32	6.00	1.20	1.28	0.030	0.0185	5.49												
S-504	1118+82.75	LT	0.23	6.00	0.87	0.87	0.030	0.0061	5.86	1.70	0.52	0.46	1.00	0.46	0.42	0.101	0.81	0.34	0.79	0.08	S-502
S-508BK	1120+80.00	LT	0.02	6.00	0.08	0.08	0.061	0.0130	1.30	1.46	1.00	0.08	1.00	0.08	0.00	0.167	0.90	0.00	0.08	0.00	Sag Inlet
S-508AH	1120+80.00	LT	0.12	6.00	0.46	0.46	0.061	0.0030	3.36	1.32	0.77	0.35	1.00	0.35	0.11	0.142	0.90	0.10	0.45	0.01	
S-511BK	1122+50.00	LT	0.07	6.00	0.27	0.27	0.063	0.0030	2.69	1.16	0.86	0.23	1.00	0.23	0.04	0.153	0.92	0.03	0.26	0.00	Sag Inlet
S-511AH	1122+50.00	LT	0.06	6.00	0.23	0.23	0.063	0.0030	2.56	1.12	0.88	0.20	1.00	0.20	0.03	0.155	0.93	0.02	0.23	0.00	
S-513	1123+00.00	LT	0.07	6.00	0.27	0.27	0.054	0.0030	2.97	1.12	0.82	0.22	1.00	0.22	0.05	0.147	0.93	0.04	0.26	0.00	S-511AH

JOB NO. O-02520
DATE 8/18/2021
COMPUTED BY ALW
CHECKED BY KTD

HORIZON engineering group, inc.

PROJECT THEA - Slip Ramp 3
SUBJECT Spread - Median Barrier Walls (Index 425-030)

S-516BK	1124+00.00	LT	0.05	6.00	0.19	0.19	0.061	0.0030	2.42	1.06	0.90	0.17	1.00	0.17	0.02	0.157	0.94	0.02	0.19	0.00	Sag Inlet
S-516AH	1124+00.00	LT	0.11	6.00	0.42	0.42	0.061	0.0030	3.26	1.29	0.78	0.33	1.00	0.33	0.09	0.144	0.91	0.08	0.41	0.01	
S-518BK	1125+23.56	LT	0.03	6.00	0.11	0.11	0.060	0.0064	1.75	1.24	0.99	0.11	1.00	0.11	0.00	0.165	0.92	0.00	0.11	0.00	Sag Inlet
S-518AH	1125+23.56	LT	0.07	6.00	0.27	0.27	0.060	0.0030	2.78	1.15	0.85	0.23	1.00	0.23	0.04	0.151	0.93	0.04	0.26	0.00	
S-520BK	1325+97.75	LT	0.02	6.00	0.08	0.08	0.058	0.0095	1.43	1.28	1.00	0.08	1.00	0.08	0.00	0.167	0.92	0.00	0.08	0.00	Sag Inlet
S-520AH	1325+97.75	LT	0.14	6.00	0.53	0.53	0.058	0.0030	3.68	1.36	0.73	0.39	1.00	0.39	0.15	0.137	0.89	0.13	0.52	0.02	
S-524BK	1327+50.00	LT	0.05	6.00	0.19	0.19	0.060	0.0040	2.32	1.18	0.92	0.17	1.00	0.17	0.02	0.158	0.93	0.01	0.19	0.00	Sag Inlet
S-524AH	1327+50.00	LT	0.05	6.00	0.19	0.19	0.060	0.0030	2.45	1.06	0.90	0.17	1.00	0.17	0.02	0.156	0.94	0.02	0.19	0.00	
S-527BK	1328+80.00	LT	0.13	6.00	0.49	0.49	0.063	0.0030	3.40	1.36	0.76	0.38	1.00	0.38	0.12	0.142	0.90	0.10	0.48	0.01	Sag Inlet
S-527AH	1328+80.00	LT	0.08	6.00	0.30	0.30	0.063	0.0030	2.83	1.20	0.84	0.26	1.00	0.26	0.05	0.150	0.92	0.04	0.30	0.00	
S-533BK	1329+90.00	LT	0.09	6.00	0.34	0.34	0.050	0.0030	3.42	1.17	0.76	0.26	1.00	0.26	0.08	0.139	0.92	0.08	0.34	0.01	Sag Inlet
S-533AH	1329+90.00	LT	0.02	6.00	0.08	0.08	0.050	0.0030	1.95	0.80	0.97	0.07	1.00	0.07	0.00	0.163	0.96	0.00	0.08	0.00	
S-537ABK	1332+80.00	RT	0.08	6.00	0.30	0.30	0.060	0.0030	2.92	1.19	0.83	0.25	1.00	0.25	0.05	0.149	0.92	0.05	0.30	0.00	Sag Inlet
S-537AAH	1332+80.00	RT	0.02	6.00	0.06	0.06	0.060	0.0030	1.63	0.81	1.00	0.06	1.00	0.06	0.00	0.166	0.96	0.00	0.06	0.00	
S-537	1333+20.00	RT	0.02	6.00	0.08	0.08	0.060	0.0030	1.74	0.84	0.99	0.08	1.00	0.08	0.00	0.166	0.96	0.00	0.08	0.00	S-537AAH
S-532BK	1229+90.00	RT	0.03	10.00	0.11	0.11	0.051	0.0030	2.24	0.89	0.93	0.11	1.00	0.11	0.01	0.159	0.95	0.01	0.11	0.00	Sag Inlet
S-532AH	1229+90.00	RT	0.03	10.00	0.11	0.11	0.051	0.0030	2.24	0.89	0.93	0.11	1.00	0.11	0.01	0.159	0.95	0.01	0.11	0.00	

* Spread check at end of bridge approach

Horizon engineering group, inc.

PROJECT THEA - Slip Ramp 3

SUBJECT Spread - Type V Inlet (Index 425-041)

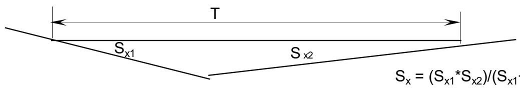
SHEET 1 OF 1

JOB NO. O-02520

DATE 8/18/2021

COMPUTED BY ALW

CHECKED BY KTD



$S_x = (S_{x1} * S_{x2})/(S_{x1}+S_{x2})$ (from Figure 6.3-8, FDOT Drainage Design Guide)

Section immediately upstream of inlet

Spread just upstream of inlet depression, $T = \left[\frac{Q\,n}{K_u\, S_x^{1.67}\, S_L^{0.5}}\right]^{0.375}$, where Ku = 0.560 and n =0.016 Eqn. 4-2, HEC-22

Structure Number	Station	Side	Area (ac)	T_{allow} (ft)	Q_{inlet} (cfs)	Q_{total} (including bypass) (cfs)	S_{x1} (ft/ft)	S_{x2} (ft/ft)	Shoulder Cross Slope, S_x (ft/ft)	Long. Slope, S_L (ft/ft)	T (ft)
S-534AH	1330+90	LT	0.04	12.80	0.15	0.15	0.07	0.06	0.032	0.0030	3.32
S-534BK	1330+90	LT	0.09	12.80	0.35	0.35	0.07	0.06	0.032	0.0030	4.51
check	1331+50		0.05	6.00	0.19	0.19	0.05	0.06	0.027	0.0030	4.01
check	1332+00		0.01	3.80	0.05	0.05	0.05	0.06	0.027	0.0030	2.49
S-531BK	1329+80	RT	0.01	10.40	0.04	0.04	0.03	0.06	0.020	0.0180	1.90
S-531AH	1329+80		0.08	10.40	0.30	0.30	0.03	0.06	0.020	0.0380	3.61

HORIZON engineering group, inc.

SHEET 1 OF 1
JOB NO. O-02520
DATE 9/27/2021
COMPUTED BY ALW
CHECKED BY KTD

PROJECT THEA - Slip Ramp 3
SUBJECT Spread - Shoulder Gutter Inlets

Spread for Shoulder Gutter Inlets is limited to K=28 which limits the spread to 1.25' to the back of the shoulder gutter. For terminal inlets, K is limited to 15 which limits the spread to the width of the shoulder gutter.

Qactual = c * i * A, where i = 7.47 in/hr

$Q_{bypass} = Q_{actual} - Q_{int}$

$\Sigma\ Q_{inlet} = Q_{actual} + Q_{bypass}$

$Q_{max} = K*S^{0.5}$

Inlet Number	Station	Area (Ac)		Q_{actual}	$\Sigma\ Q_{Inlet}$	Terminal Inlet	K	S	Q_{max}	OK	Q_{int}**	Q_{bypass}	Bypass To Inlet Number
		Impervious c = 0.95	Pervious c = 0.20	(cfs)	(cfs)	Y/N		(ft/ft)	(cfs)		(cfs)	(cfs)	
Ramp 3: I-75/ WB 618													
Exist-1	1211+50.00	0.42	0.00	2.95	3.16	N	28	0.013	3.19	Yes	3.90	0.00	Existing
Exist-2	1214+50.00	0.58	0.00	4.12	4.12	N	28	0.0217	4.12	Yes	3.90	0.22	Exist-1
Exist-3	1218+60.00	0.17	0.00	1.21	1.21	N	28	0.013	3.19	Yes	1.21	0.00	Exist-2
Exist-4	1224+00.00	0.25	0.00	1.77	1.77	N	28	0.012	3.07	Yes	1.77	0.00	Exist-5
Exist-5	1227+00.00	0.20	0.00	1.42	1.42	N	28	0.012	3.07	Yes	1.42	0.00	Existing
S-522 BK	1226+70.00	0.07	0.00	0.50	0.50	N	28	0.003	1.53	Yes	0.50	0.00	Sag
S-522 AH	1226+70.00	0.13	0.00	0.92	0.92	N	28	0.003	1.53	Yes	0.92	0.00	Sag
S-526 BK	1228+00.00	0.02	0.00	0.14	0.14	N	28	0.013	3.19	Yes	0.14	0.00	Sag
S-526 AH	1228+00.00	0.09	0.00	0.64	0.64	N	28	0.003	1.53	Yes	0.64	0.00	Sag
S-530 BK	1229+50.00	0.05	0.00	0.35	0.35	N	28	0.004	1.77	Yes	0.35	0.00	Sag
S-530 AH	1229+50.00	0.08	0.00	0.57	0.57	N	28	0.003	1.53	Yes	0.57	0.00	Sag
S-535 BK	1230+90.00	0.04	0.00	0.28	0.28	N	28	0.004	1.77	Yes	0.28	0.00	Sag
S-535 AH	1230+90.00	0.08	0.00	0.57	0.57	N	28	0.003	1.53	Yes	0.57	0.00	Sag
S-536 BK	1232+00.00	0.02	0.00	0.14	0.14	N	28	0.003	1.53	Yes	0.14	0.00	Sag
S-536 AH	1232+00.00	0.11	0.00	0.78	0.78	N	28	0.014	3.31	Yes	0.78	0.00	Sag

**Intercepted flow values were determined from Drainage Design Guide, Figure I-16

Trench Drain Calculations

HYDRAULIC WORKSHEET FOR TRENCH DRAIN

Road: **THEA - Slip Ramp 3**

Project Number: **O-02520**

Rainfall Zone: **6**

Prepared by: **KTD** Date: **8/4/2021**

Checked by: **ALW** Date: **9/27/2021**

Basin BSNOSWA SB STA. 1219+00.00

Station to Station	Side	Bottom Elev.	Grate Elev.	Bottom of Grate Elev.	% Slope	Area (ac) c=0.95	Area (ac) c=0.25	Base Flow (cfs)	T_c (min)	i_{10} (in/hr)	Q_{10} (cfs)	Ditch Section FS	BW	BS	n	d_n (ft)	d_{allow} (ft)	τ (psf)	Vel (fps)	Ditch Lining	Flow Path/ Outlet	Side Drain (in)	Remarks
Basin H SB STA. 1000+00 to 998+07																							
1219+00.00 to 1219+50.00	LT	55.10 54.80	55.79 56.22	55.64 56.07	+0.600	0.05	0.00	0.00	10.0	7.47	0.33	0.0	1.0	0.0	0.013	0.16	0.54	0.06	2.1				d_{allow} = Elev from Grate Bottom to Bottom Elev
1219+50.00 to 1220+00.00	LT	54.80 54.50	56.22 56.52	56.07 56.37	+0.600	0.09	0.00	0.00	10.4	7.36	0.66	0.0	1.0	0.0	0.013	0.25	1.27	0.09	2.7				
1220+00.00 to 1220+50.00	LT	54.50 54.20	56.52 56.72	56.37 56.57	+0.600	0.14	0.00	0.00	10.7	7.28	0.99	0.0	1.0	0.0	0.013	0.33	1.87	0.12	3.0				
1220+50.00 to 1221+00.00	LT	54.20 53.90	56.72 56.87	56.57 56.72	+0.600	0.19	0.00	0.00	11.0	7.21	1.33	0.0	1.0	0.0	0.013	0.41	2.37	0.15	3.3				
1221+00.00 to 1221+50.00	LT	53.90 53.60	56.87 56.92	56.72 56.77	+0.600	0.24	0.00	0.00	11.2	7.15	1.66	0.0	1.0	0.0	0.013	0.48	2.82	0.18	3.5				
1221+50.00 to 1221+82.00	LT	53.60 53.41	56.92 56.79	56.77 56.64	+0.600	0.28	0.00	0.00	11.5	7.09	1.87	0.0	1.0	0.0	0.013	0.52	3.17	0.20	3.6		S-509		

Note: FS = Front Slope BW = Bottom Width BS = Back Slope

File: X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\13. Drainage\13.01 Calculations\Storm Sewer\Ramp3\TrenchDrain\Ramp3_TrenchCalc.xlsm; *Printed on 10/1/2021 at 11:55 AM*

Sheet: BasinBSNA3 SB STA. 1219+00

HYDRAULIC WORKSHEET FOR TRENCH DRAIN

Road: **THEA - Slip Ramp 3**

Project Number: **O-02520**

Rainfall Zone: **6**

Prepared by: **KTD** Date: **8/4/2021**

Checked by: **ALW** Date: **9/27/2021**

Basin BSNOSWA SB STA. 1222+00.00

Station to Station	Side	Bottom Elev.	Grate Elev.	Bottom of Grate Elev.	% Slope	Area (ac) c=0.95	Area (ac) c=0.25	Base Flow (cfs)	T_c (min)	i_{10} (in/hr)	Q_{10} (cfs)	Ditch Section FS	BW	BS	n	d_n (ft)	d_{allow} (ft)	τ (psf)	Vel (fps)	Ditch Lining	Flow Path/ Outlet	Side Drain (in)	Remarks
Basin H SB STA. 1000+00 to 998+07																							
1222+13.32 to 1222+50.00	LT	56.05 55.83	56.74 56.87	56.59 56.72	+0.600	0.04	0.00	0.00	10.0	7.47	0.28	0.0	1.0	0.0	0.013	0.14	0.54	0.05	2.0				d_{allow} = Elev from Grate Bottom to Bottom Elev
1222+50.00 to 1223+00.00	LT	55.83 55.53	56.87 56.80	56.72 56.65	+0.600	0.09	0.00	0.00	10.3	7.39	0.66	0.0	1.0	0.0	0.013	0.25	0.89	0.09	2.7				
1223+00.00 to 1223+50.00	LT	55.53 55.23	56.80 56.59	56.65 56.44	+0.600	0.15	0.00	0.00	10.6	7.30	1.04	0.0	1.0	0.0	0.013	0.34	1.12	0.13	3.1				
1223+50.00 to 1223+91.32	LT	55.23 54.98	56.59 56.23	56.44 56.08	+0.600	0.20	0.00	0.00	10.9	7.24	1.40	0.0	1.0	0.0	0.013	0.42	1.21	0.16	3.3		S-514		

Note: FS = Front Slope BW = Bottom Width BS = Back Slope

Florida Department of Transportation
Project: O-02520

Prepared by: KTD Date: 10/1/21
Checked by: LMHO Date: 10/1/21

Trench Drain Segment 1219+00 to 1221+82.33

Input Variables

Beginning Sta. = **1219+00**
Grate Elev. = **55.79**
Input Trench FL **55.10**
Trench FL = 55.10

Ending Sta. = **1221+82** 282.00 LF Total Trench Length
Grate Elev. = **56.79** 0.355% avg slope
Input Trench FL **53.41**
Trench FL = 53.41 -0.599% avg slope

Tail water Elev. = **53.63** at Str. **S-509**
ABT Trench Drain Product **MHD12**
www.abtdrains.com

Rainfall Intensity= **7.5 in/hr**
Runoff Coefficient= **0.95**
Minimum Velocity= **3.0 fps**

Initial basin area = **0.05 ac**
Input Trench Basin Area **0.23** **ac**

Trench Basin Area = 0.23 ac
Avg Basin Width = 36 ft

Grate Intercept: grate capacity: **0.566 cfs/lf** ‹ sheet flow to grate: **0.035 cfs/lf** **6%** % of inflow capacity used

Station	Grate		Trench Invert			Width	Area	Q	Actual			Physical			used	L
									Flow	Freeboard	V	Full Flow	Freeboard	V		
(ft)	Elev.	Slope	Depth	FL	Slope	Avg	(acres)	(cfs)	depth	check	(fps)	depth	check	(fps)	% Q	(ft)
1219+00	55.79	0.355%	8.3 in	55.10	-0.599%	36	0.05	0.4	2.8 in	3.3 in	2.42	6.2 in	0.0 in	3.56	24%	0
1219+50	55.97	0.355%	14.0 in	54.80	-0.599%	36	0.09	0.6	4.0 in	7.9 in	2.90	11.9 in	0.0 in	4.36	17%	50
1220+00	56.14	0.355%	19.7 in	54.50	-0.599%	36	0.13	0.9	5.0 in	12.7 in	3.22	15.5 in	2.1 in	4.60	17%	100
1220+50	56.32	0.355%	25.5 in	54.20	-0.599%	36	0.17	1.2	5.7 in	17.6 in	3.44	19.1 in	4.3 in	4.77	17%	150
1221+00	56.50	0.355%	31.2 in	53.90	-0.599%	36	0.21	1.5	6.3 in	22.7 in	3.59	22.7 in	6.4 in	4.88	17%	200
1221+50	56.68	0.355%	36.9 in	53.60	-0.599%	36	0.25	1.8	7.4 in	27.4 in	3.80	26.3 in	8.5 in	4.97	17%	250
1221+82	56.79	0.355%	40.6 in	53.41	-0.599%	36	0.28	2.0	8.0 in	30.5 in	3.91	28.6 in	9.9 in	5.01	17%	282
				53.41												

FDOT requires a minimum Trench Invert slope 0.6% or a minimum cleaning velocity of 3.0 FPS.

Florida Department of Transportation
Project: O-02520

Prepared by: KTD Date: 10/1/21
Checked by: LMHO Date: 10/1/21

Trench Drain Segment 1222+12.67 to 1223+91.32

Input Variables

Beginning Sta. = 1222+13 | Ending Sta. = 1223+91 | 178.00 LF Total Trench Length | Tail water Elev. = 53.52 at Str. S-514

Grate Elev. = 56.74 | Grate Elev. = 56.23 | -0.287% avg slope

Input Trench FL 56.05 | Input Trench FL 54.98 | ABT Trench Drain Product MHD12

Trench FL = 56.05 | Trench FL = 54.98 | -0.601% avg slope | www.abtdrains.com

Rainfall Intensity= 7.5 in/hr | Initial basin area = 0.04 ac | Trench Basin Area = 0.16 ac

Runoff Coefficient= 0.95 | Input Trench Basin Area 0.16 ac | Avg Basin Width = 39 ft

Minimum Velocity= 3.0 fps

Grate Intercept: grate capacity: **0.566 cfs/lf** ‹ sheet flow to grate: **0.028 cfs/lf** **5%** % of inflow capacity used

Station	Grate		Trench Invert			Width	Area	Q	Actual			Physical			used	L
(ft)	Elev.	Slope	Depth	FL	Slope	Avg	(acres)	(cfs)	Flow depth	Freeboard check	V (fps)	Full Flow depth	Freeboard check	V (fps)	% Q	(ft)
1222+13	56.74	-0.287%	8.3 in	56.05	-0.601%	39	0.04	0.3	2.6 in	3.6 in	2.32	6.2 in	0.0 in	3.57	19%	0
1222+50	56.63	-0.287%	9.7 in	55.83	-0.601%	39	0.07	0.5	3.6 in	3.9 in	2.74	7.6 in	0.0 in	3.84	26%	37
1223+00	56.49	-0.287%	11.6 in	55.53	-0.601%	39	0.12	0.8	4.5 in	4.9 in	3.08	9.4 in	0.0 in	4.12	30%	87
1223+50	56.35	-0.287%	13.4 in	55.23	-0.601%	39	0.16	1.2	5.4 in	5.9 in	3.37	11.3 in	0.0 in	4.32	32%	137
1223+91	56.23	-0.287%	15.0 in	54.98	-0.601%	39	0.20	1.4	6.2 in	6.7 in	3.56	12.9 in	0.0 in	4.45	33%	178

FDOT requires a minimum Trench Invert slope 0.6% or a minimum cleaning velocity of 3.0 FPS.

Appendix C – Existing Infrastructure

Summary Tables: Pipe Remaining Service Life

Summary of Remaining Design Service Life for Existing Pipes

Proposed ID	Historical Designed ID	Current Surveyed ID	Station	Side	Pipe Size	Pipe Material	Project	Action
	RAMP 3							
	EX-27 surveyed	N/A	1208+45	RT	15	RCP	Palm River to I-75: 50.30.001B	Pipe required to be Video Inspect/Lining; but is plugged or removed based on historical plans
	EX-228A	EX-71	1208+45	RT	18	RCP		Video Inspect/Lining
	EX-27 surveyed	EX-70	1208+45	LT	18	RCP		Video Inspect/Lining
	EX-229 as-built	EX-72	1210+00	RT	18	RCP	Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-28 surveyed	EX-75	1211+50	LT	18	CMP		Video Inspect
S-501	EX-233 as-built	EX-73	1212+95	RT	18	RCP	Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-29 surveyed	EX-77	1214+50	LT	15	CMP		Video Inspect
S-502	EX-236 as-built	EX-74	1215+35	RT	18	RCP	Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-238 as-built/ surveyed	EX-79	1218+60	RT	15	RCP		Video Inspect/Lining
S-503A	EX-33 surveyed	EX-80	1218+60	LT	15	RCP		Video Inspect/Lining
	EX-33 surveyed	EX-81	1218+60	LT	15	CMP		Video Inspect/Lining
	EX-241 as-built	EX-85	1220+80	RT	18		Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-244 as-built	EX-87	1223+00	RT	18		Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-35	EX-102	1224+05	LT	15	CMP		Video Inspect
	EX-247 as-built	EX-89	1226+00	RT	18		Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-42 surveyed	EX-110	1228+00	LT	15			Video Inspect
	EX-252 as-built	EX-91	1228+95	RT	18		Palm River to I-75: 50.30.001B	Video Inspect/Lining
S-528	EX-251 as-built	EX-92	1228+95	RT	24		Palm River to I-75: 50.30.001B	Video Inspect/Lining
	EX-02 surveyed	EX-115	1232+00	LT	15	CMP		Video Inspect
	EX-001 as-built 2002	EX-94	1232+20	RT	24	RCP	Gateway Bridge: 50.30.001A	Video Inspect/Lining
	EX-002 as-built 2002	EX-93	1232+20	RT	18	RCP	Gateway Bridge: 50.30.001A	Video Inspect/Lining
S-539	EX-003 as-built 2002	EX-98	1233+65	RT	30	RCP	Gateway Bridge: 50.30.001A	Video Inspect
	EX-004 as-built 2002	EX-96	1233+80	RT	24	RCP	Gateway Bridge: 50.30.001A	Video Inspect
	EX-005 as-built 2002	EX-95	1233+60	RT	18	RCP	Gateway Bridge: 50.30.001A	Video Inspect/Lining
	EX-04 surveyed	EX-97	1233+95	RT	30	RCP		Video Inspect
	EX-06 surveyed	EX-121	1235+00	LT	15	CMP		Video Inspect
	EX-006 as-built 2002	EX-101	1235+80	RT	18	RCP	Gateway Bridge: 50.30.001A	Video Inspect
S-540	EX-010 as-built 2002	EX-99	1233+80	RT	24	RCP	Gateway Bridge: 50.30.001A	Video Inspect

I-4/Selmon Expressway- South of Selmon Expressway to 7th Avenue - FPID 258415-1-52-01, Permit Submittal Plans 2008

Lee Roy Selmon Crosstown Expressway - Palm River to I-75, S&S Plans 2003

Lee Roy Selmon Crosstown Expressway - Gateway Bridge Construction Project - Phase III Submittal 2001

All pipes constructed with the three projects listed above were required to have DSL of at least 100 years at time of construction.

All three projects were constructed well less than 25 years ago; therefore all pipes have DSL remaining of over 75 years.

Original Construction of Lee Roy Selmon Crosstown Expressway occurred between 1976-1987

Design Service Life for 18" RCP for I-4/Selmon project is 241 years; therefore, DSL remaining is well over 75 years for all existing RCP for Ramp 2.

Waiting on soil borings to perform DSL calculations for Ramp 3 to evaluate pipes constructed during original construction of the Expressway.

Summary Tables: Pipe Video Inspection/ Recommendations

Appendix D – Hydroplaning Analyses

Mainline Westbound

Hydroplaning Analysis Tool

General Inputs

FPID	O-02520	Roadway Section Number	SR 618
District No.	THEA	Station	1212+54.00
County	Hillsborough	(Please Select Milepost or Station above)	
		Direction	West

Note: This analysis was performed at STA. 1212+54, just before the inside shoulder begin to break toward the median barrier wall of mainline SR 618.

Analysis Options

Select Analysis Option	Deterministic (Default)	Show intermediate outputs? (e.g., Drainage Path Length)	Yes
Risk Analysis? (Per FDOT's Design Guidance)	Yes		

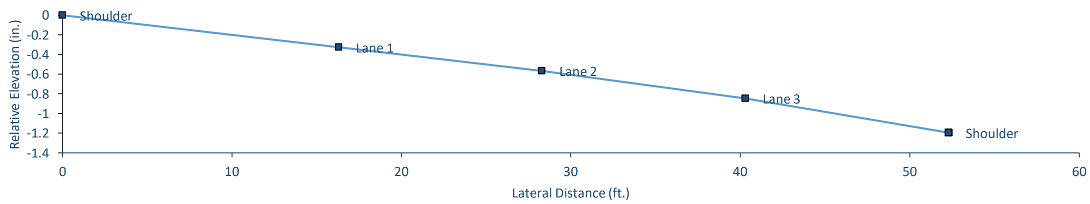
Pavement Inputs

Deterministic Analysis

Pavement Texture (Please Select MTD or MPD below)
Mean Texture Depth (in.) 0.067

Longitudinal Grade (%)	2.4
Surface Type	Open Graded Friction Course
Permeability (in/hr)	0

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Description	Shoulder	Lane 1	Lane 2	Lane 3	Shoulder							
Design Speed (mph)		60	60	60								
Cross Slope (%)	2	2	2.34	2.9								
Width (ft.)	16.3	12	12	12								



Risk Analysis Results

(Based on Gallaway WFT and PAVDRN HPS Models)

Predicted Water Film Thickness (in.)

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Intensity (in/hr)	Shoulder	Lane 1	Lane 2	Lane 3	Shoulder							
0.1		-0.049	-0.046	-0.044								
0.25		-0.036	-0.031	-0.029								
0.5		-0.022	-0.015	-0.010								
1		0.000	0.011	0.017								
2		0.032	0.047	0.056								
3		0.057	0.077	0.088								
4		0.079	0.102	0.115								

Predicted Driver Speed (mph)

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Intensity (in/hr)	Shoulder	Lane 1	Lane 2	Lane 3	Shoulder							
0.1		60.0	60.0	60.0								
0.25		60.0	60.0	60.0								
0.5		54.0	54.0	54.0								
1		52.0	52.0	52.0								
2		48.0	48.0	48.0								
3		45.0	45.0	45.0								
4		45.0	45.0	45.0								

Predicted Hydroplaning Speed (mph)

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Intensity (in/hr)	Shoulder	Lane 1	Lane 2	Lane 3	Shoulder							
0.1		999.0	999.0	999.0								
0.25		999.0	999.0	999.0								
0.5		999.0	999.0	999.0								
1		331.3	84.7	75.3								
2		63.5	57.4	54.8								
3		54.6	50.6	48.9								
4		50.2	53.7	53.2								

Hydroplaning Analysis Tool

General Inputs

FPID	O-02520	Roadway Section Number	SR 618
District No.	THEA	Station	1218+60
County	Hillsborough	(Please Select Milepost or Station above)	
		Direction	West

Note: This analysis was performed at STA. 1218+60, right before the proposed trench drain.

Analysis Options

Select Analysis Option	Deterministic (Default)	: Show intermediate outputs? (e.g., Drainage Path Length)	Yes
Risk Analysis? (Per FDOT's Design Guidance)	Yes		

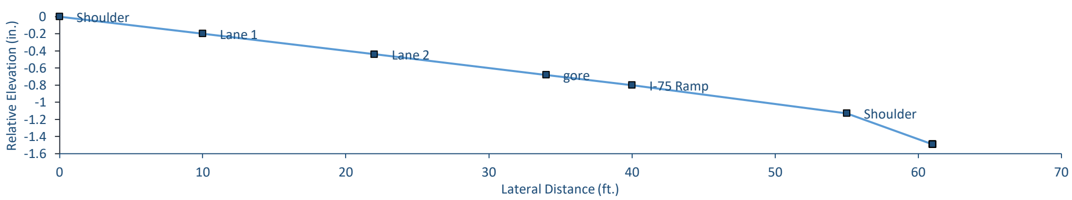
Pavement Inputs

Deterministic Analysis

Pavement Texture (Please Select MTD or MPD below)

Longitudinal Grade (%)	2.15	Mean Texture Depth (in.)	0.035
Surface Type	PCC (LGD)		
Permeability (in/hr)	0		

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Description	Shoulder	Lane 1	Lane 2	gore	I-75 Ramp	Shoulder						
Design Speed (mph)		60	60		60							
Cross Slope (%)	2	2	2	2	2.2	6						
Width (ft.)	10	12	12	6	15	6						



Risk Analysis Results

(Based on Gallaway WFT and PAVDRN HPS Models)

Predicted Water Film Thickness (in.)

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Intensity (in/hr)	Shoulder	Lane 1	Lane 2	gore	I-75 Ramp	Shoulder						
0.1		-0.020	-0.017		-0.012							
0.25		-0.010	-0.004		0.004							
0.5		0.001	0.011		0.022							
1		0.019	0.032		0.049							
2		0.044	0.064		0.090							
3		0.065	0.090		0.122							
4		0.082	0.112		0.149							

Predicted Driver Speed (mph)

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Intensity (in/hr)	Shoulder	Lane 1	Lane 2	gore	I-75 Ramp	Shoulder						
0.1		60.0	60.0		60.0							
0.25		60.0	60.0		60.0							
0.5		54.0	54.0		54.0							
1		52.0	52.0		52.0							
2		48.0	48.0		48.0							
3		45.0	45.0		45.0							
4		45.0	45.0		45.0							

Predicted Hydroplaning Speed (mph)

Plane Number	1	2	3	4	5	6	7	8	9	10	11	12
Intensity (in/hr)	Shoulder	Lane 1	Lane 2	gore	I-75 Ramp	Shoulder						
0.1		999.0	999.0		999.0							
0.25		999.0	999.0		110.8							
0.5		142.9	84.5		69.8							
1		73.0	63.3		56.7							
2		58.4	53.0		48.6							
3		52.9	48.6		48.4							
4		49.8	48.7		47.6							

Appendix E – Optional Pipe Material Analysis

Culvert Service Life Estimator

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-504
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1118+82.75	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	53.04	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL II

(PP) Polypropylene

(PVC) Polyvinyl Chloride, ASTM F-949

(SRAP) Aluminum - Spiral Rib

(SRSP) Galvanized Steel - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-508
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1120+80.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	71.64	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-509
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1222+00.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	55.2	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-511
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1122+50.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	76.56	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-513
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1123+00.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	77.76	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-514
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1223+96.35	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	58.56	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-516
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1124+00.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	81.84	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-518
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1125+23.56	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	86.52	**Sulfates**	6

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/14/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-520
County:	Hillsborough	**Boring Number/Location**	14251 West Exit
Station	1325+97.75	**Designer**	JEA

Design Life (Years)	100	**pH**	8.51
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	3780
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	87.92	**Sulfates**	6

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
14	(SRASP) Aluminized Steel - Spiral Rib	119	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(SRAP) Aluminum - Spiral Rib

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-522
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1226+65.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	62.4	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-524
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1327+50.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	24	**Chlorides**	15
Depth to Invert (d)	103.8	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
12	(SRSP) Galvanized Steel - Spiral Rib	122	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-527
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1328+80.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	24	**Chlorides**	15
Depth to Invert (d)	104.4	**Sulfates**	3

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
12	(SRSP) Galvanized Steel - Spiral Rib	122	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-530
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1229+50.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	74.04	**Sulfates**	3

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(CAP) Aluminum 3 x 1 in. UNAVAILABLE

(SRSP) Galvanized Steel - Spiral Rib 2-2/3 x 1/2 in. UNAVAILABLE

(CASP) Aluminized Steel 2-2/3 x 1/2 in. UNAVAILABLE

(CSP) Corrugated Galvanized Steel

(CAP) Aluminum

(HDPE) High Density Polyethylene, CL I

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-531
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1329+80.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	62.88	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-532
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1229+90.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	56.4	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-533
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1329+90.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	56.28	**Sulfates**	3

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-534
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1330+90.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	56.76	**Sulfates**	3

Gauge	Type of Culvert	Service Life	Environmental	Structural Check
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-535
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1230+90.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	58.92	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-537
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1333+20.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	63.12	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

Florida Department of Transportation

Culvert Service Life Estimator

09/03/2021

Project Name:	THEA Selmon Expressway: Ramp 3	**FM Number:**	O-02520
Section Number:		**Structure Number:**	S-537A
County:	Hillsborough	**Boring Number/Location**	Boring 1/STA. 1232+77.26
Station	1332+80.00	**Designer**	JEA

Design Life (Years)	100	**pH**	8.1
All Pipes or Smooth Bore:	< 0.017	**Resistivity**	7650
Diameter (inches)	18	**Chlorides**	15
Depth to Invert (d)	59.64	**Sulfates**	3

Gauge	**Type of Culvert**	**Service Life**	**Environmental**	**Structural Check**
	(NRCP) Non-Reinforced Concrete	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete (Round)	360	Pass	Pass
	(RCP) Steel-Reinforced Concrete Elliptical Only	360	Pass	Pass
16	(SRAP) Aluminum - Spiral Rib	142	Pass	Pass
16	(SRASP) Aluminized Steel - Spiral Rib	106	Pass	Pass
	(HDPE) High Density Polyethylene, CL II	100	Pass	Pass
	(PP) Polypropylene	100	Pass	Pass
	(PVC) Polyvinyl Chloride, ASTM F-949	100	Pass	Pass

Failed

(HDPE) High Density Polyethylene, CL I

(SRSP) Galvanized Steel - Spiral Rib

(SRPE) Steel Reinforced Polyethylene Pipe

1) HDPE not allowed in the Florida Keys for 100 year service life. No restrictions for 50 year service life

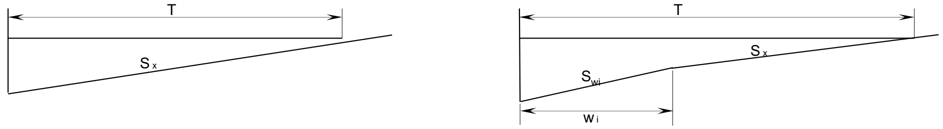
Appendix F – Temporary Drainage Calculations

Temporary Spread

HORIZON engineering group, inc.

PROJECT THEA - Slip Ramp 3
SUBJECT Phase IIB Temp Drainage

SHEET ______ OF ______
JOB NO. O-02520
DATE 8/18/2021
COMPUTED BY ALW
CHECKED BY KTD



Section immediately upstream of inlet

Section at inlet

This spreadsheet will compute the interception capacity of an on grade barrier wall inlet and determine the total flow bypassed to the next downstream inlet. The interception capacity of the opening in the barrier wall adjacent to the inlet is neglected and these equations only consider the interception capacity of the inlet grate.

Inlet width, w_i = 1.42 ft
Inlet length, L_i = 3.33 ft
Inlet cross slope, S_{wi} = 0.17 ft/ft
Splash over velocity, v_o = 8.50 fps from Chart 5B, Appendix A HEC-22 for a 3.33 ft long Reticuline grate
Basin Area, A = (Basin Length) (Roadway Width)/43560
Flow from basin, Q = c i A, where i = 4.00 in/hr and values of c and A from stormtabs

Spread just upstream of inlet depression, $T = \left[\dfrac{Q\,n}{K_u\, S_x^{1.67}\, S_L^{0.5}}\right]^{0.375}$, where Ku = 0.560 and n =0.016 Eqn. 4-2, HEC-22

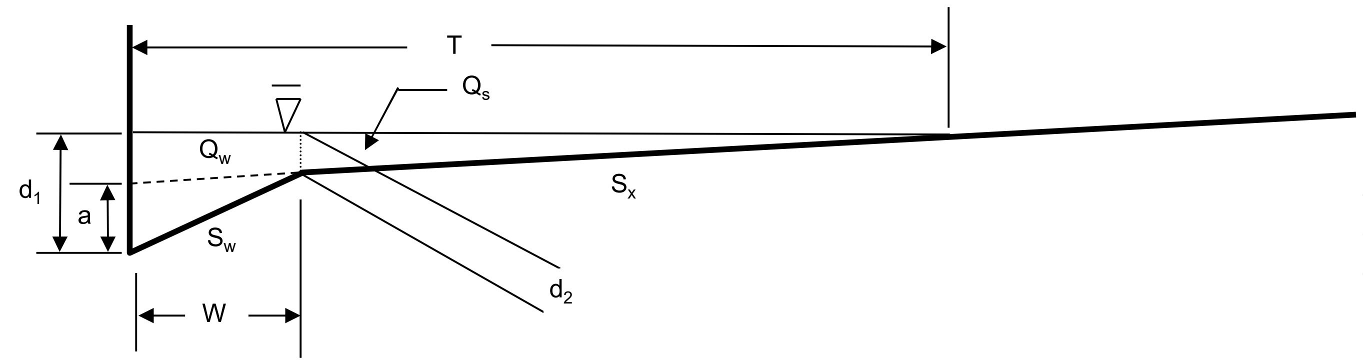
Structure Number	Station	Side	Area (ac)	T_{allow} (ft)	Q_{inlet} (cfs)	Q_{total} (including bypass) (cfs)	Shoulder Cross Slope, S_x (ft/ft)	Long. Slope, S_L (ft/ft)	T (ft)
	1218+65.00	LT	0.42	9.25	1.60	1.60	0.030	0.0080	6.98
	1224+05.00	LT	0.52	9.25	1.98	1.98	0.060	0.0140	4.41

2.25 foot (center of shoulder gutter to EOP) + 4 foot exisitng shoulder + 3 foot additional

HORIZON engineering group, inc.

PROJECT Selmon Expressway Slip Ramp 3
SUBJECT Spread Calculations - Temporary Drainage

JOB NO. O-02520
DATE 9/17/2021
COMPUTED BY SRH
CHECKED BY



Flow Depth in Gutter, $d_1 = (w)(S_w) + d_2$

Flow Depth Above Gutter, $d_2 = (T - w)(S_x)$

Flow Area in Gutter, $A_w = (^1/_2)(w)(d_1 - d_2) + (w)(d_2)$

Flow Area on Pavement, $A_s = (^1/_2)(T - w)(d_2)$

Total Flow Area, $A = A_w + A_s$

Total Section Hydraulic Radius, $R = A / (d_1 + T)$

Total Section Flow, $Q = (1.49 / n) * A * R^{2/3} * S^{1/2}$

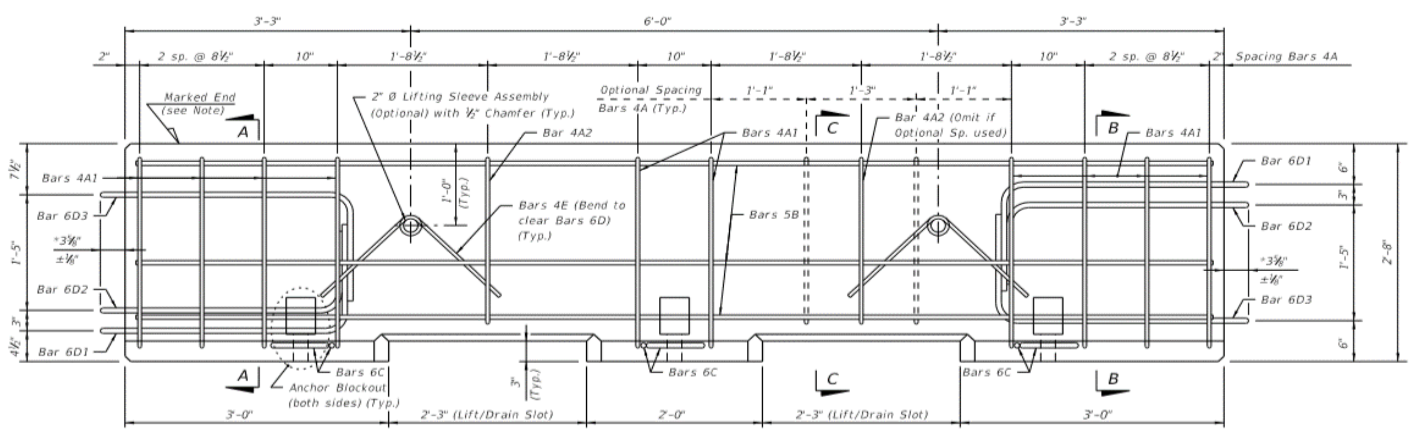
Ratio of Gutter Flow to Total Flow, $E_o = 1 / \{1 + ([S_w / S_x] / [\{1 + [(S_w / S_x) / ((T / w) - 1)]\}^{2.67} - 1])\}$

Equivalent Cross Slope, $S_e = S_x - [(S_w - S_x) * E_o]$

Length of Inlet Required for 100% Interception, $L_T = 0.6 * Q^{0.42} * S_l^{0.3} * [1 / (n * S_e)]^{0.6}$

Efficiency of Curb Inlet Opening, $E = 1 - [1 - (L / L_T)]^{1.8}$, where L = Length of Inlet Opening

Intercepted Flow, $Q_i = Q * E$



ELEVATION VIEW

From Station	To Station	Flow	Side	Gutter W (ft)	Gutter S_w (ft/ft)	Roadway S_x (ft/ft)	Roadway S_l (ft/ft)	n	Drainage Area Imperv (ac) 0.95	Drainage Area Perv (ac) c = 0.20	Drainage Area Other c = 0.15	E_o	S_e (ft/ft)	L_T (ft)	L (ft)	E	Flow Rate, Q Actual (cfs)	Flow Rate, Q Intercepted (cfs)	Flow Rate, Q Bypass (cfs)	T (ft)	T_{allow} (ft)	Bypass to Barrier Wall Section
Phase 2A: Westbound Sta 1218+50 to 1235+70																						
Start	1235+69.46			Critical Area within the segment is between Stations 1222+00 to 1233+50 where longitudinal grade is less than 0.14%. Worst Case at 1224+54.66 to 1224+84.67 where slope is nearly zero. Proposed reducing the lane width to 11-ft to allow for a 4-ft shoulder																		
1235+69.46	1235+51.72		LT	0.00	0.0500	0.050	0.0011	0.016	0.011	0.00	0.00	0	0.050	1.45	2.25	1.00	0.04	0.04	0.00	1.95	3.50	1235+51.72
1233+59.97	1233+51.72		LT	0.00	0.0200	0.020	0.0014	0.016	0.005	0.00	0.00	0	0.020	1.96	2.25	1.00	0.02	0.02	0.00	2.00	3.50	1233+51.72
1233+51.72	1233+47.47		LT	0.00	0.0200	0.020	0.0014	0.016	0.003	0.00	0.00	0	0.020	1.49	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1233+47.47
1233+47.47	1233+39.22		LT	0.00	0.0200	0.020	0.0013	0.016	0.005	0.00	0.00	0	0.020	1.92	2.25	1.00	0.02	0.02	0.00	2.02	3.50	1233+39.22
1233+39.22	1233+34.97		LT	0.00	0.0200	0.020	0.0011	0.016	0.003	0.00	0.00	0	0.020	1.39	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1233+34.97
1233+34.97	1233+26.72		LT	0.00	0.0200	0.020	0.0010	0.016	0.005	0.00	0.00	0	0.020	1.79	2.25	1.00	0.02	0.02	0.00	2.11	3.50	1233+26.72

From Station	To Station	Flow	Side	Gutter		Roadway		n	Drainage Area			E_o	S_e (ft/ft)	L_T (ft)	L (ft)	E	Flow Rate, Q			T (ft)	T_{allow} (ft)	Bypass to Barrier Wall Section
				W (ft)	S_w (ft/ft)	S_x (ft/ft)	S_l (ft/ft)		Imperv (ac) 0.95	Perv (ac) c = 0.20	Other c = 0.15						Actual (cfs)	Intercepted (cfs)	Bypass (cfs)			
1233+26.72	1233+22.47		LT	0.00	0.0200	0.020	0.0008	0.016	0.003	0.00	0.00	0	0.020	1.28	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1233+22.47
1233+22.47	1233+14.22		LT	0.00	0.0200	0.020	0.0008	0.016	0.005	0.00	0.00	0	0.020	1.63	2.25	1.00	0.02	0.02	0.00	2.25	3.50	1233+14.22
1233+14.22	1233+09.97		LT	0.00	0.0200	0.020	0.0006	0.016	0.003	0.00	0.00	0	0.020	1.14	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1233+09.97
1233+09.97	1233+01.72		LT	0.00	0.0200	0.020	0.0005	0.016	0.005	0.00	0.00	0	0.020	1.42	2.25	1.00	0.02	0.02	0.00	2.44	3.50	1233+01.72
1233+01.72	1232+97.47		LT	0.00	0.0200	0.020	0.0005	0.016	0.003	0.00	0.00	0	0.020	1.08	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1232+97.47
1232+97.47	1232+89.22		LT	0.00	0.0200	0.020	0.0005	0.016	0.005	0.00	0.00	0	0.020	1.42	2.25	1.00	0.02	0.02	0.00	2.87	3.50	1232+89.22
Phase 2A: Westbound Sta 1218+50 to 1235+70																						
1224+89.22	1224+84.97		LT	0.00	0.0200	0.020	0.0005	0.016	0.003	0.00	0.00	0	0.020	1.09	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1224+84.97
1224+84.97	1224+76.72		LT	0.00	0.0200	0.020	0.0001	0.016	0.005	0.00	0.00	0	0.020	0.89	2.25	1.00	0.02	0.02	0.00	3.27	3.50	1224+76.72
1224+76.72	1224+72.47		LT	0.00	0.0200	0.020	0.0001	0.016	0.003	0.00	0.00	0	0.020	0.67	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1224+72.47
1224+72.47	1224+64.22		LT	0.00	0.0200	0.020	0.0001	0.016	0.005	0.00	0.00	0	0.020	0.89	2.25	1.00	0.02	0.02	0.00	3.27	3.50	1224+64.22
1224+64.22	1224+59.97		LT	0.00	0.0200	0.020	0.0001	0.016	0.003	0.00	0.00	0	0.020	0.67	2.25	1.00	0.01	0.01	0.00	1.65	3.50	1224+59.97
1224+59.97	1224+51.72		LT	0.00	0.0200	0.020	0.0001	0.016	0.005	0.00	0.00	0	0.020	0.89	2.25	1.00	0.02	0.02	0.00	3.27	3.50	1224+51.72
1218+64.22	1218+59.97		LT	0.00	0.0200	0.020	0.0002	0.016	0.003	0.00	0.00	0	0.020	0.83	2.25	1.00	0.01	0.01	0.00	1.65	3.50	End K Segment

From Station	To Station	Flow	Side	Gutter		Roadway		n	Drainage Area			E_o	S_e (ft/ft)	L_T (ft)	L (ft)	E	Flow Rate, Q			T (ft)	T_{allow} (ft)	Bypass to Barrier Wall Section
				W (ft)	S_w (ft/ft)	S_x (ft/ft)	S_l (ft/ft)		Imperv (ac) 0.95	Perv (ac) c = 0.20	Other c = 0.15						Actual (cfs)	Intercepted (cfs)	Bypass (cfs)			
Phase 2B: REL Sta 1111+27 to 1130+24																						
High Point	1130+23.27			Critical Area within the segment varies where longitudinal grade is less than 0.08%. Worst Case at 1121+80 to 1222+20 where slope is nearly zero. Proposed reducing the lane width adjacent to the shoulder to an 11-ft lane to allow for a 3-ft shoulder																		
1130+23.27	1130+05.53		LT	0.00	0.0200	0.020	0.0006	0.016	0.011	0.00	0.00	0	0.020	2.05	2.25	1.00	0.04	0.04	0.00	3.58	5.41	1130+05.53
1130+05.53	1130+01.28		LT	0.00	0.0200	0.020	0.0006	0.016	0.003	0.00	0.00	0	0.020	1.12	2.25	1.00	0.01	0.01	0.00	0.50	4.41	1130+01.28
1130+01.28	1129+93.03		LT	0.00	0.0200	0.020	0.0006	0.016	0.005	0.00	0.00	0	0.020	1.48	2.25	1.00	0.02	0.02	0.00	2.25	3.41	1129+93.03
1129+93.03	1129+88.78		LT	0.00	0.0200	0.020	0.0006	0.016	0.003	0.00	0.00	0	0.020	1.12	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1129+88.78
1129+88.78	1129+80.53		LT	0.00	0.0200	0.020	0.0006	0.016	0.005	0.00	0.00	0	0.020	1.48	2.25	1.00	0.02	0.02	0.00	2.25	3.00	1129+80.53
1129+80.53	1129+76.28		LT	0.00	0.0200	0.020	0.0006	0.016	0.003	0.00	0.00	0	0.020	1.12	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1129+76.28
1129+76.28	1129+68.03		LT	0.00	0.0200	0.020	0.0004	0.016	0.005	0.00	0.00	0	0.020	1.35	2.25	1.00	0.02	0.02	0.00	2.38	3.00	1129+68.03
1129+68.03	1129+63.78		LT	0.00	0.0200	0.020	0.0004	0.016	0.003	0.00	0.00	0	0.020	1.02	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1129+63.78
1129+63.78	1129+55.53		LT	0.00	0.0200	0.020	0.0004	0.016	0.005	0.00	0.00	0	0.020	1.35	2.25	1.00	0.02	0.02	0.00	2.38	3.00	1129+55.53
1129+55.53	1129+51.28		LT	0.00	0.0200	0.020	0.0004	0.016	0.003	0.00	0.00	0	0.020	1.02	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1129+51.28
1129+51.28	1129+43.03		LT	0.00	0.0200	0.020	0.0004	0.016	0.005	0.00	0.00	0	0.020	1.35	2.25	1.00	0.02	0.02	0.00	2.38	3.00	1129+43.03
Phase 2B: REL Sta 1111+27 to 1130+24																						
1122+43.03	1122+38.78		LT	0.00	0.0200	0.020	0.0010	0.016	0.002	0.00	0.00	0	0.020	1.31	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1122+38.78
1122+38.78	1122+30.53		LT	0.00	0.0200	0.020	0.0010	0.016	0.005	0.00	0.00	0	0.020	1.73	2.25	1.00	0.02	0.02	0.00	2.02	3.00	1122+30.53
1122+30.53	1122+26.28		LT	0.00	0.0200	0.020	0.0010	0.016	0.002	0.00	0.00	0	0.020	1.31	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1122+26.28
1122+26.28	1122+18.03		LT	0.00	0.0200	0.020	0.0009	0.016	0.005	0.00	0.00	0	0.020	1.69	2.25	1.00	0.02	0.02	0.00	2.05	3.00	1122+18.03
1122+18.03	1122+13.78		LT	0.00	0.0200	0.020	0.0008	0.016	0.002	0.00	0.00	0	0.020	1.24	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1122+13.78
1122+13.78	1122+05.53		LT	0.00	0.0200	0.020	0.0008	0.016	0.005	0.00	0.00	0	0.020	1.64	2.25	1.00	0.02	0.02	0.00	2.09	3.00	1122+05.53
1122+05.53	1122+01.28		LT	0.00	0.0200	0.020	0.0008	0.016	0.002	0.00	0.00	0	0.020	1.24	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1122+01.28
1122+01.28	1121+93.03		LT	0.00	0.0200	0.020	0.0001	0.016	0.005	0.00	0.00	0	0.020	0.88	2.25	1.00	0.02	0.02	0.00	2.99	3.00	1121+93.03
1121+93.03	1121+88.78		LT	0.00	0.0200	0.020	0.0001	0.016	0.002	0.00	0.00	0	0.020	0.66	2.25	1.00	0.01	0.01	0.00	0.50	3.00	1121+88.78
1121+88.78	1121+80.53		LT	0.00	0.0200	0.020	0.0001	0.016	0.005	0.00	0.00	0	0.020	0.88	2.25	1.00	0.02	0.02	0.00	3.00	3.00	1121+80.53
1121+80.53	1121+76.28		LT	0.00	0.0200	0.020	0.0001	0.016	0.002	0.00	0.00	0	0.020	0.66	2.25	1.00	0.01	0.01	0.00	2.45	3.00	1121+76.28
1121+76.28	1121+68.03		LT	0.00	0.0200	0.020	0.0001	0.016	0.005	0.00	0.00	0	0.020	0.88	2.25	1.00	0.02	0.02	0.00	3.00	3.00	1121+68.03
1121+68.03	1121+63.78		LT	0.00	0.0200	0.020	0.0050	0.016	0.002	0.00	0.00	0	0.020	2.14	2.25	1.00	0.01	0.01	0.00	1.50	3.00	1121+63.78

Note: Areas used for analysis were taken at the worst-case scenario along the westbound and REL of Selmon Expressway. These areas were used to produce a conservative estimate.

Temporary Storm Sewer Calculations

Appendix G – Correspondence

THEA - Meeting

Horizon Engineering Group, Inc.
1051 Winderley Place, Suite 400
Maitland, Florida 32751
407.644.7755 Ph
407.644.7855 Fax

Project Memo

To: File
From: Shavonne Hoyte-Rene
Date: 08/09/2021

Re: East Selmon Expressway Slip Ramps – THEA Drainage Coordination Meeting
Project Number: O-02520

A meeting was held on 08/09/2021 with THEA representatives, Middlesex staff, and Horizon Engineering staff to discuss the drainage design approach for the proposed slip ramps on the East Selmon Expressway. The following issues were addressed:

- The required gore variation for Ramp 2 can be added to the variation that address the area for the shoulder width. A standalone variation will be needed for Ramp 3.
- There is to be no spread in the travel lane
- In the westbound lane of SR 618 at Ramp 3 there is an existing manhole that was originally in the gore but will now be in the travel lane due to the widening. A variation request was made to allow the manhole to remain, but THEA representatives discussed either removing the lid and adding a slab to the structure or capping the structure and forming in place. Adding the slab is the preferred approach.
- A trench drain memo will be required for the non-standard gore at Ramp 3.
- The question was asked about THEA's preferred FDOT rainfall depth criteria for the proposed treatment swale at Ramp 3. They were given the option of using the NOAA Atlas 14 Rainfall Data or the FDOT rainfall curves to determine rainfall distribution. THEA representatives decided to discuss this amongst themselves and would let Horizon staff know their final decision.
- On Ramp 2 the issue of not being able to meet the spread criteria in the temporary condition was discussed. THEA representatives reiterated that there is to be no spread encroachment into the travel lanes. It was explained that the lanes will be reduced to 10' lanes in this area. Although bypass will be collected in a new inlet at the bridge approach slab, there will still be a spread issue. THEA says that they will accept no more than 2' of spread encroachment in the temporary condition. A variation will be required.
- THEA representatives requested that they be invited to the SWFWMD pre-application meeting scheduled for 8/29/2021.
- The current design for the treatment swale shows a 1:8 access slope. THEA representatives stated that access slope is a concern because of the 1:10 maintenance berm side slopes in the swale.
- THEA would prefer a 12' wide maintenance access for at the treatment swale.

cc: File

X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\01. Project Management\01.08 Correspondence\File Memos

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

DESIGN STATUS MEETING
MEETING MINUTES
Meeting No. 02

EAST SELMON EXPRESSWAY (SR 618) SLIP RAMPS
Project No: O-02520
July 14, 2021 – 10:00 am

Original Contract Amount:	**$ 23,988,955.00**	**Current Contract End Date:**	**05/30/21**
Current Contract Amount:	**$ 23,988,955.00**	**Original Time:**	**700 days**
Contract Amount Earned:	**$ 0.00**	**Current Time:**	**700 days**
% of Contract Earned:	**0.00%**	**Contract Day:**	**Day 3**
		% of Contract Time:	**0.43%**

NOTE: THIS MEETING WAS DIGITALLY RECORDED AND HAS BECOME PART OF THE PROJECT FILES

I) Sign-In - *Attached*

II) Status of Project

a) NTP: July 12, 2021

b) Design Phase Status – *Lisa Propps stated that there was a meeting two weeks ago to specifically address progress on THEA requested changes at Ramp 2. Quang Le of Horizon summarized the progress as follows: Ramp 2 inside shoulders have been modified to 2' inside shoulder on the ramp and 8' outside shoulder on REL at crash cushion at top of ramp; using a tangent between the compound 2400' R curves at approximately 312+80 (local WB lanes) creates issues with the cross slope. Therefore, by tying in a slightly flatter curve to the existing radius of ~2390', they are to avoid cross slope corrections. The question remaining is whether or not a design variation is required for the length of curve which is shorter than AASHTO allows. This is the same question for the 24,000' R compound curve at the west end of Ramp 2; the aesthetic lights on the MSE wall along the WB lanes at the west approach from the bridge over CSX tracks will encroach into the shoulder. Once determined how much they overhang into the lane, two options would be to reduce the WB local lanes from 10' (not ideal) or to remove or modify the aesthetic light fixtures. James Wills of Middlesex noted that this issue needs to be quickly resolved to keep moving forward with the design. David Hubbard of HNTB noted that reducing the shoulder width only as a resolution is not in THEA's best interest. Kevin Carey of Faller Davis stated that survey will be in the field tomorrow and will determine how much the lights will encroach on the shoulder*

c) Construction Phase – *James Wills stated they are still on track to start milling and resurfacing, most likely at the Ramp 3 area, by late November/early December. They will* *also consider miscellaneous drilled shafts for sign structures and drainage work outside of the roadway for early works. In late August or early September, Middlesex will also start videotaping the pipe starting in the Ramp 3 area and moving to Ramp 2.*

III) Design Coordination – *Lisa Propps stated that she will send a distribution list of THEA and HNTB personnel to include on all e-mail correspondence related to design issues. James Wills wants to ensure minutes and summaries of discussions get memorialized and distributed to the group.*

a) Structural – *Lisa Propps explained there was correspondence between Randy Miner and of Horizon and Peter Rogas of HNTB regarding a few clarifications for the structural design including the load rating for the bridge over 34th St; confirmation of the elimination of median barrier on 34th St bridge; the overhang at bridges over Falkenburg Rd; and H-pile qualifications per SDG and any standing variations related to the bridges on the project. Peter Rogas summarized to follow the flow chart in SDG 6.7.1 A-4 related to the overhangs on Technical Proposal Sheet B3-2 and flow chart in Table 3-1.1, Note 2 related to load ratings. Peter explained that there are no standing variations. However, if the flow charts lead to the need for a variation, they need to submit the paperwork.*
b) Roadway – *See discussion above under* ***II). b).***
c) Drainage
d) Lighting
e) Utilities – *An introductory utility coordination meeting is being held directly after this meeting*
f) Environmental/Permits

We further discussed the need to set up specific design discipline meetings and will be looking at dates to coordinate Teams Meetings or In-Person meetings as necessary for the major components. Roadway/Drainage will be a combined meeting.

IV) Cost/Claim Issues – *no issues to discuss at this time. As the DB team develops the design, they will submit the cost proposals for modifying the merge length and ramp with per AJAX ATC and increasing the fiber backbone count to 144*

V) Submittals

a) **Design**
   1) Quality Management Plan – Due 15 days after NTP (August 2, 2021)
b) **Other**
   1) CPM Schedule – First 20% of time – *The full design schedule was submitted today. They will submit the entire package with narrative and P6 files.*
   2) Schedule of Submittals/Shop Drawings – Due within 60 days of start of construction
   3) Schedule of Values – *Lisa Propps noted that there is one small issue on the Schedule of Values that needs correction. She will discuss with Jordan West after the meeting.*

VI) Traffic Impacts

a) Contractor operations – *Daniel Guest stated that the activities shown on the three-week look ahead will not impact traffic. James Wills stated that they would like to place the permanent advanced warning signs soon as they have personnel out there now. Terry Opdyke of HNTB was concerned that permanent signs would conflict with other crews, specifically HSD working on the aesthetic pier lighting. He stated they plan to be complete in November 2021. Jordan West and James Wills decided to continue using temporary signage that will be removed at the end of the operation.*
b) Special Events

VII) Other

a) An introductory utility meeting will be held directly following this meeting at 11 am
b) Upcoming Holidays – *Next holiday is Labor Day Holiday, September 3 -6, 2021; CPM schedule should reflect the days the DB Team will <u>not</u> be working*
c) *We briefly discussed the method for design reviews. We agreed to set up a separate meeting to discuss further*
d) *James Wills asked that we set up a partnering meeting in the near future*
e) *Lisa Propps will forward a copy of the combined RFP to Jordan West*

VIII) Action Items

Meeting Date	Action Item	Responsible Party	Date Resolved
6/10/21	The collective team will decide on the format for review comments and number of paper copies in an upcoming design meeting	All	
6/10/21	CEI and THEA to review Schedule of Values submitted with proposal	CEI/THEA	
~~7/1/21~~	~~Judith Villegas to send latest aesthetic pier lighting plans. *Lisa Propps forwarded plans through FTP site.*~~	~~Judith Villegas~~	~~7/7/2021~~
7/1/21	Middlesex/Horizon to submit any cost increases for the requested changes after considering all comments	MS/H	Pending
~~7/14/21~~	~~Lisa Propps to send distribution list for e-mails related to design issues~~	~~Lisa Propps~~	~~7/20/2021~~
7/14/21	Coordinate schedules for the design meetings for the specific components	Lisa Propps	
7/14/21	Schedule partnering meeting	Lisa Propps	
7/14/21	Schedule meeting to discuss distribution of design submittals for review	Lisa Propps	

IX) Open Discussion

Next Meeting will be Thursday, July 29, 2021 in THEA's Innovation Conference Room, 10:00 am.

SWFWMD

Horizon Engineering Group, Inc.
1051 Winderley Place, Suite 400
Maitland, Florida 32751
407.644.7755 Ph
407.644.7855 Fax

Meeting Minutes

Preparer: Shavonne Hoyte-Rene
Date of Document: August 26, 2021

Meeting Date & Time: August 26th, 2021, 9:00 am
Meeting Location: Microsoft TEAMS

Re: O-02520
East Selmon Slip Ramps Design Build

Horizon Project Number: 701.162.1

Attendees:			
	Beth Geurink	SWFWMD	Beth.Geurink@swfwmd.state.fl.us
	Al Gagne	SWFWMD	Albert.Gagne@ swfwmd.state.fl.us
	Al Stewart	HNTB	astrwart@hntb.com
	David Hubbard	HNTB	dhubbard@hntb.com
	Ed Ponce	HNTB	eponce@hntb.com
	Judith Villegas	THEA	judith.villegas@tampa-xway.com
	Jordan West	TMC	jwest@middlesexco.com
	Lisa Propps	CONSOR Engineers	lpropps@consoreng.com
	Thomas Curley	CONSOR Engineers	tcurley@consoreng.com
	Tia Norman	Faller, Davis & Assoc	tnorman@fallerdavis.com
	Randy Miner	Horizon Engineering Group	rminer@horizoncivil.com
	Kim Duong	Horizon Engineering Group	kduong@horizoncivil.com
	Joey Roselli	Horizon Engineering Group	jrroselli@horizoncivil.com
	Shavonne Hoyte-Rene	Horizon Engineering Group	skhoyte-rene@horzoncivil.com

The following notes set forth the understanding of the writer. The parties shall rely on the contents unless the writer receives notice of specific discrepancies for the proposed revised wording within five business days of the transmittal date of this document.

The following are the statements that were made during the meeting.

- This project is the design of slip ramps on the East Selmon Expressway (SR 618) at two locations referenced as Ramp 2 and Ramp 3. The limits for Ramp 2 are just east of the I-4 interchange connector and the limits of Ramp 3 are from west of the Falkenburg Road bridge to I-75. It was explained that the project would be permitted as two separate projects and that the intention was to apply for a minor permit modification of Ramp 2 and a major permit modification for Ramp 3.

- Discussion started with the permitting that is required for Ramp 2. The work being done in the area was described. It was explained that there is currently an existing permit for the area that will be modified. The WMD was asked if the work in the area can be processed as a minor modification. It was determined that as long as there will be no physical modification to the existing ponds and the changes (added impervious) to the system were clearly demonstrated that it is within permitted values, a minor modification could be applied for based on the work described.

- Ramp 2 surface water and wetland impacts were discussed. It was confirmed that no work would be done over surface waters during construction and that the work under the bridge is outside of the surface water. It was also noted that the existing 34th canal at this location is concrete lined with rip rap. No wetlands were observed in the area.

- It was also determined that the small addition of impervious area (bridge over 34th street) generated by Ramp 2, will be going to pond SMF-G-3, would not require treatment if receiving pond has capacity. Additionally, it was explained that there will be a minor impervious exchange between the area contributing to SMF-G-3 and SMR-RL-X (issued under the same permit). The WMD was asked if this was an acceptable approach. The

WMD confirmed that it was an acceptable approach as long as the pond, that the volume will be diverted to, has the additional capacity to accept it. They asked that the approach was clearly stated in the report writeup.

- It was noted by the WMD that Ramp 2 has an ultimate discharge to Ybor City Drain. It is a 0.6 mile stream with headwaters just south of Alamo Dr.. That system is potentially impaired due the low dissolved oxygen levels. Currently they are assessing the system, and it has not been confirmed. However, there is a possibility that Nutrient Loading Analysis will be required in the near future. It was further discussed that if a permit modification is requested by the December, nutrient analysis may not be required. However, it is unknown at the present moment.

- The design approach for Ramp 3 was explained to the WMD. It was noted that there will be a dry swale designed to treat and attenuate the runoff collected in this area before it is discharged to OSW-A. It was explained that OSW-A was an existing wetland that was retrofitted to provide treatment and attenuation for the Tampa-Hillsborough County Expressway Authority Gateway Bridge Project. The pond has an ultimate discharge to Delaney Creek, an impaired water body for macrophytes and E-Coli. It was also noted that there is a small portion of runoff from the Ramp 3 improvements that will flow directly to OSW-A however we will now treat an existing portion of SR 618 that previously went directly to OSW-A to compensate for the proposed area going to the existing pond. The WMD agreed with this design approach.

- The criteria that will be used for the dry swale on Ramp 3 is for online retention. Beth G. noted that we can use ½" over the DCIA of the contributing basin area.

- Beth G. confirmed that Delaney Creek is an impaired water body and will require a Nutrient Loading Analysis.

- It was confirmed that the proposed work for Ramp 3 will required a major modification (less than 10-acres with no wetland or surface water impact).

- The WMD would like to see all documents that would be required for a full submittal, which includes a complete plan set for both minor and major modifications.

Action Items:
Horizon will send the Exhibits and Attendees list to Beth G.

End of Meeting

Cc: File
Attendees

X:\7011621_THEA_Slip_Ramp_DB\Slip Ramp DB\09. Permits\09.01 Envir Permits\Permit Applications\2021-8-26_swfwmd_PreAppMtgMinutes.docx

DESIGN STATUS MEETING
MEETING MINUTES
Meeting No. 04

EAST SELMON EXPRESSWAY (SR 618) SLIP RAMPS
Project No: O-02520
August 12, 2021 – 10:00 am

Original Contract Amount:	**$ 23,988,955.00**	**Current Contract End Date:**	**05/30/21**
Current Contract Amount:	**$ 23,988,955.00**	**Original Time:**	**700 days**
Contract Amount Earned:	**$ 0.00**	**Current Time:**	**700 days**
% of Contract Earned:	**0.00%**	**Contract Day:**	**Day 32**
		% of Contract Time:	**4.57%**

NOTE: THIS MEETING WAS DIGITALLY RECORDED AND HAS BECOME PART OF THE PROJECT FILES

I) Sign-In

II) Status of Project (see attached Two-Week Look Ahead) – 2-*week look-ahead is provided and shows upcoming preliminary work in the field. Daniel Guest of Middlesex stated that they will continue survey for drainage, geotechnical investigation and SUE for the next 3 weeks. An attenuator truck will be used for survey of drainage structures on the shoulder of local lanes and one structure on the REL. Jim Drapp of HNTB asked that they survey the structure on the REL first because of the switchover at 12:30 – 1:00 pm. Coordinate with HSD as they typically set up a daytime left lane closure.*

a) Design Phase Status – *Joey Roselli of Horizon stated that the typical sections and pavement design packages will be sent on 8/13 or 8/16. Variations are also expected to be sent next week.*

b) Construction Phase –

III) Coordination of Design Issues (see attached log) –

Existing Issues

- *Design Issue No. 1 – Lengths of compound curves; Joey stated that the variation will be sent next week.*
- *Design Issue No. 2 – Shoulder rocking; Joey clarified that the shoulder rocking will occur only in the Ramp 3 area where it exists today and only at inlets. The variation will be sent next week.*
- *Design Issue No. 3 – Aesthetic lighting conflict at MSE walls and Ramp 2; Joey said there were bar lights that tuck under the bottom edge of the coping and are directed downward on MSE walls on I-4 Ultimate at Kirkman & 436. HNTB and Horizon will look into getting cut sheets for the lights. Lisa Propps asked*

for the limits of the lighting conflict at the top of Ramp 2 as it comes off of the REL.

- *Design Issue No. 4 – Drainage in gore between end of Ramp 3 and REL (see additional discussion under "Drainage" heading. Horizon will submit a cut sheet of the trench drain product they are proposing at this gore.*
- *Design Issue No. 5 – Cross slope variations at Ramp 2; Joey explained that due to widening at Ramp 2, the shoulder will steepen to tie down to barrier wall. Variations will be sent for these occurrences.*
- *Design Issue No. 6 – Spread at bridge over 34th St; Joey explained that there is currently a 100' – 150' section where spread will encroach into outside lane in temporary condition by 2' – 3'. They were able to pick up all the water before the bridge and minimize the width needed to perform substructure work underneath, however, moving the temporary barrier wall adds more water falling on the deck. Jim Drapp confirmed that at least one lane needs to be 12' wide in the temporary configuration and 1' encroachment would be acceptable for a short distance and timeframe. Horizon will provide calculations showing the minimum amount of spread for this section.*

a) Structural – *Randy Miner stated that they will send the variation for the H-piles related to soil classification. Also, he will send details for the attachment of the single face barrier on the cantilever at the WB Falkenburg Rd bridge prior to submitting 90% design; Lisa Propps is coordinating with Terry Opdyke for the color codes for class V finish.*

b) Roadway – *Peter Rogas of HNTB asked about the manhole east of Falkenburg Rd bridge in gore between EB local lanes and ramp to I-75 SB; he asked if Horizon was able to modify the widening to avoid a temporary critical wall. Joey explained they will place a lid slab over the opening as opposed to a collar, so there is no need for sheet pile.*

c) Drainage – ***Critical storm criteria*** *(statistical rainfall depth); Kim Duong of Horizon will request confirmation of the statistical rainfall depth date and if it is consistent with FDOT Drainage Manual as discussed at the drainage design meeting earlier in the week. (This was submitted and the coordinated response from Al Stewart of HNTB and THEA is to use the same criteria that was used in previously permitted SWFWMD projects covering the same area).* ***Treatment swale side slopes at Ramp 3****; Kim also inquired about permissible side slopes at the narrow treatment swale behind guardrail. (This was submitted and the coordinated response from Al Stewart and THEA is to provide at least a 1:3 sodded slope behind the guardrail, although 1:4 is preferable. On the other side, however, a 10-ft wide berm shall be provided with a slope no steeper than 1:10 for maintenance access)*

d) Lighting/ITS – *Lighting/ITS/Reversible Gate Meeting set for 3:00pm this afternoon; new lighting luminaires are to be LED; THEA directed Faller Davis to look at the new LED's on South Selmon Expressway. THEA does not specify proprietary products, however, they prefer the same gates as currently in use as they need to be replaced* *often. Follow Standard Index 700-001 for placement of DMS signs. THEA provided ITS generator specification (8/12/21)*

e) Utilities – *Joey explained SUE work is on-going and they will present the results to UAO's. He said it is expected that the disposition of most of the utilities on this project will be witness and hold*

f) Environmental/Permits – *Lisa Propps forwarded THEA and HNTB the invitation for the Teams meeting with SWFWMD on Thursday, August 26 at 9:00 am.*

g) CSX – *Kickoff meeting (virtual) scheduled with Steve Price on Wednesday, August 18 to discuss the preliminary design and application process. Jordan West of Middlesex will forward the invitation to the CEI*

IV) Cost/Claim Issues – *Jordan West stated that they will submit the cost impacts by the end of August 2021*

- *Cost Issue No. 1 – Request to incorporate AJAX ATC related to width and length at Ramp 2*
- *Cost Issue No. 2 – Request increase in FOC backbone from 96-ct to 144-ct*

V) Submittals (see attached log)

a) **Design**

1) *CPM 20% Schedule – Received, under review by CEI; response is due by 8/16. Jordan West stated they plan to submit the full CPM schedule by the end of August*

b) **Other**

1) Schedule of Submittals/Shop Drawings – *Due within 60 days of start of construction*

VI) Traffic Impacts

a) Contractor operations – *Lisa Propps will forward the comments discussed in this meeting for the shoulder closures for survey of the drainage structures*

b) Special Events – *No impacts*

VII) Other

a) Upcoming Holidays – *Next holiday is Labor Day Holiday, September 6, 2021*

b) Partnering Meeting – *Middlesex proposed 9/9 for the partnering session to take place after the design meeting. Lisa will confirm with the group that this is a good date. Middlesex is working on the agenda and will provide lunch for this meeting*

c) Invoice – *Invoice will be submitted this week; Lisa Propps reminded Jordan and Daniel to include the SBE Form with the invoice*

d) *Pre-construction/Pre-paving Meetings – Tentative date at the end of October; Jordan West anticipates construction starting on December 1, 2021. CONSOR will schedule*

VIII) Action Items

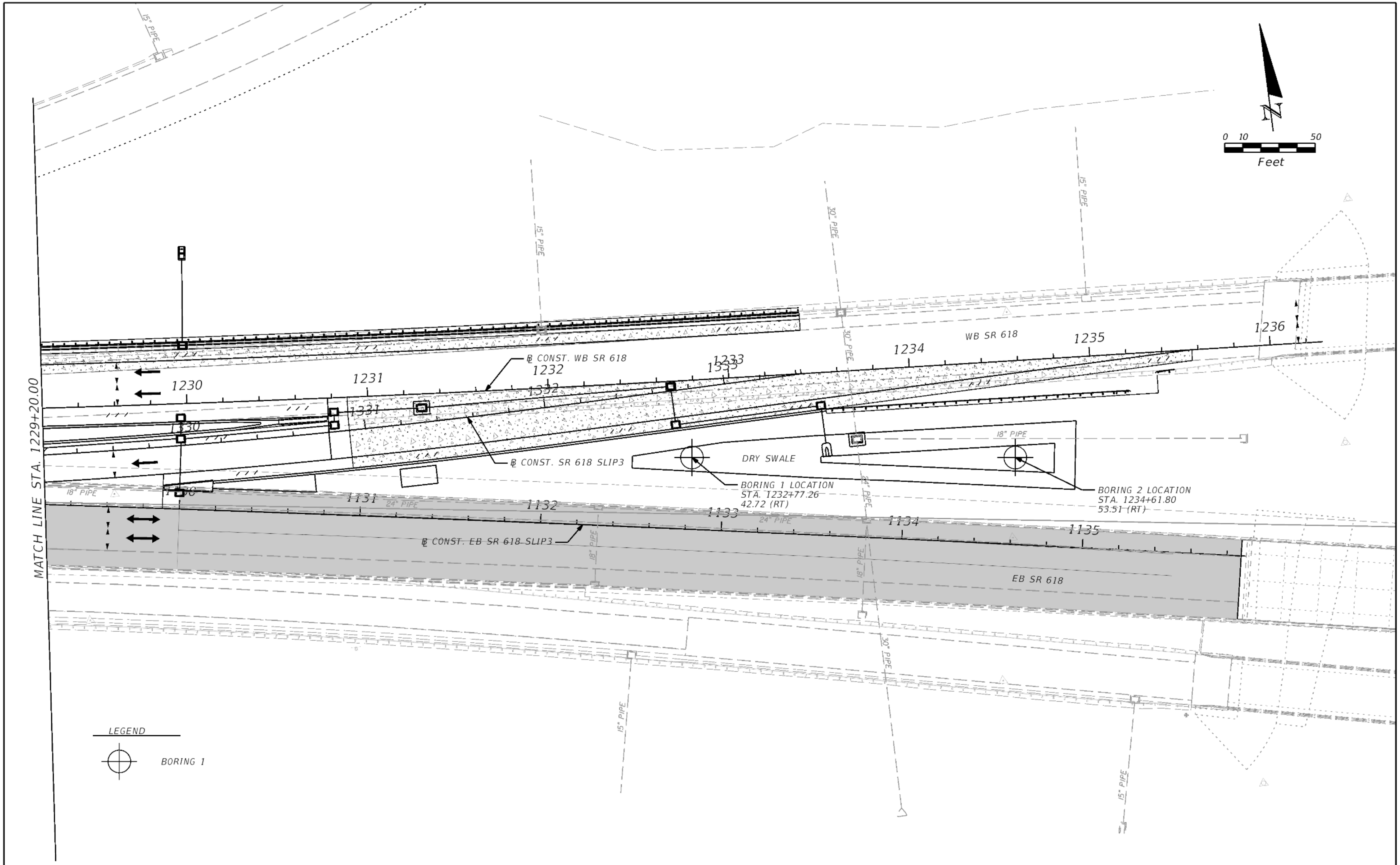
Meeting Date	Action Item	Responsible Party	Date Resolved
7/1/21	Middlesex/Horizon to submit any cost increases for the requested changes after considering all comments	MS/H	Pending
7/14/21	Schedule partnering meeting	Project Team	8/24/2021
7/29/21	Send color codes for structures	Terry Opdyke	8/20/2021
7/29/21	Horizon to submit cut sheets for trench drain at gore between Ramp 3 and REL	Horizon	
8/12/21	Provide limits of conflict with proposed aesthetic lights on MSE wall at top of Ramp 2 at departure from REL	Horizon	
8/12/21	Submit calculations showing spread at bridge over 34th St in temporary configuration	Horizon	
8/12/21	Horizon to submit variations for the following: • Compound curves • Shoulder rocking at Ramp 3 inlets • Cross slope variations • H-pile variation	Horizon	
8/12/21	Horizon to submit typical section and pavement design packages	Horizon	8/16/2021
8/12/21	Schedule partnering meeting	Lisa Propps	8/24/2021
8/12/21	Schedule pre-construction; pre-paving meetings	Tom Curley	
8/12/21	Horizon to submit the details for the single face barrier on the cantilever of WB Falkenburg Rd. bridge for review prior to 90% design submittal	Randy Miner (Horizon)	8/20/2021
8/20/21	Confirm buffer tubes and fibers to be used for each device	Faller Davis	
8/20/21	HNTB will provide guidance for splicing into fiber backbone	HNTB	pending
8/12/21	THEA to provide ITS generator specifications to design team	THEA	8/12/2021
8/12/21	Faller Davis to submit PSEMP documentation on or before the 90% plan submittal	Faller Davis	

IX) Open Discussion – *No other discussion prior to adjournment*

Next Meeting will be Thursday, August 26, 2021 in THEA's Innovation Conference Room, 10:00 am

Appendix H – Reference Materials

Excerpts from Universal Engineering Report
For Swale Borings



THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

JOSEPH ROSELLI, P.E.
P.E. NO.: 72227
HORIZON ENGINEERING GROUP, INC.
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

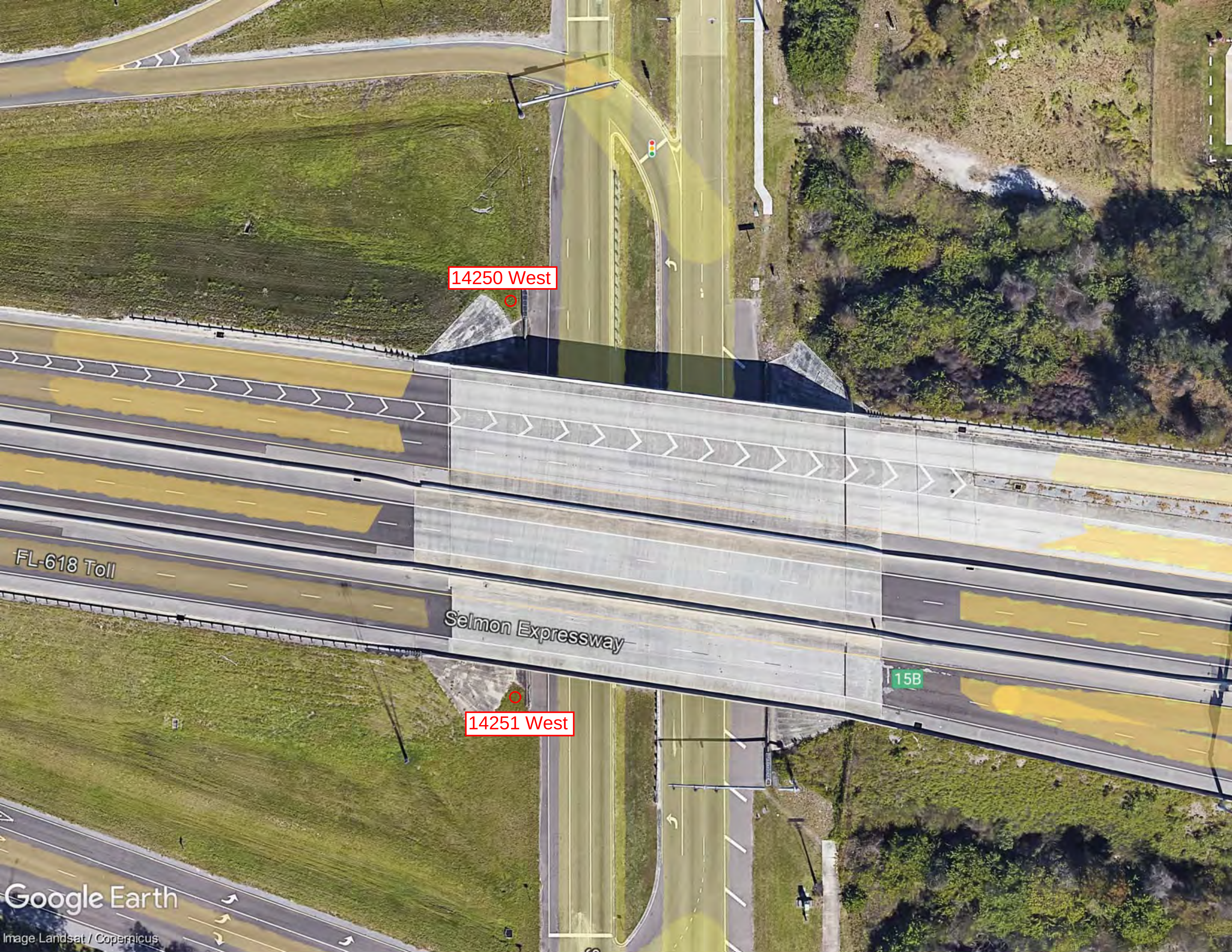
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

RAMP 3 - DRY SWALE BORING LOCATION

SHEET NO.

skhoyte-rene 6/15/2021 10:09:30 AM Default image\Working\SKR Working\Boring Location.dgn

Excerpts from Universal Engineering Report
Optional Pipe Material


14250 West
14251 West
FL-618 Toll
Selmon Expressway
15B
Google Earth
Image Landsat / Copernicus

UNIVERSAL ENGINEERING SCIENCES
Consultants In: Geotechnical Engineering • Environmental Sciences
Geophysical Services • Construction Materials Testing • Threshold Inspection
Building Inspection • Plan Review • Building Code Administration

Project No.: 2230.2100001.0000
Report No.: CORR#2
Report Date: September 9, 2021

CORROSION SERIES OF SOIL AND WATER
FM 5-550; FM5-551; FM5-552; FM 5-553

Client: Horizon Engineering Group, Inc.
2500 Maitland Center Pkwy.
Maitland, Florida
Project: East Selmon Slip Ramps
West Entrance

Date Sampled: 9/2/2021 **Tested By (TIN):** E21076196
Date Tested: 9/7/2021 **Sample No:** 14250 West
MAC ID: **Material No:**

FDOT Requirements (Specification 548)	
pH (FM 5-550)	5.0 - 9.0
Resistivity (FM 5-551)	> 3000 ohm·cm
Chloride (FM5-552)	< 100 ppm
Sulfate (FM 5-553)	< 200 ppm

pH (FM 5-550)	
Units	Results
pH	7.56
Temp °C	18.9
Slope	95.9%

Resistivity (FM 5-551)	
Units	Results
ohm·cm	7.33K
Temp °C	19

Chloride (FM 5-552)	
Units	Results
ppm	6

Sufates (FM5-553)	
Units	Results
ppm	Undetectable

Reviewed By,
Universal Engineering Sciences, Inc.
Certificate of Authorization No. 00000549

Mark K. Hardy, P.E.
Tampa Branch Manager
Professional Engineer No. 57233
Date: ______________________

UNIVERSAL ENGINEERING SCIENCES
Consultants In: Geotechnical Engineering • Environmental Sciences
Geophysical Services • Construction Materials Testing • Threshold Inspection
Building Inspection • Plan Review • Building Code Administration

Project No.: 2230.2100001.0000
Report No.: CORR#3
Report Date: September 9, 2021

CORROSION SERIES OF SOIL AND WATER
FM 5-550; FM5-551; FM5-552; FM 5-553

Client: Horizon Engineering Group, Inc.
2500 Maitland Center Pkwy.
Maitland, Florida
Project: East Selmon Slip Ramps
West Exit

Date Sampled: 9/2/2021 **Tested By (TIN):** E21076196
Date Tested: 9/7/2021 **Sample No:** 14251 West Exit
MAC ID: **Material No:**

FDOT Requirements (Specification 548)	
pH (FM 5-550)	5.0 - 9.0
Resistivity (FM 5-551)	> 3000 ohm·cm
Chloride (FM5-552)	< 100 ppm
Sulfate (FM 5-553)	< 200 ppm

pH (FM 5-550)	
Units	Results
pH	8.51
Temp °C	19.6
Slope	95.9%

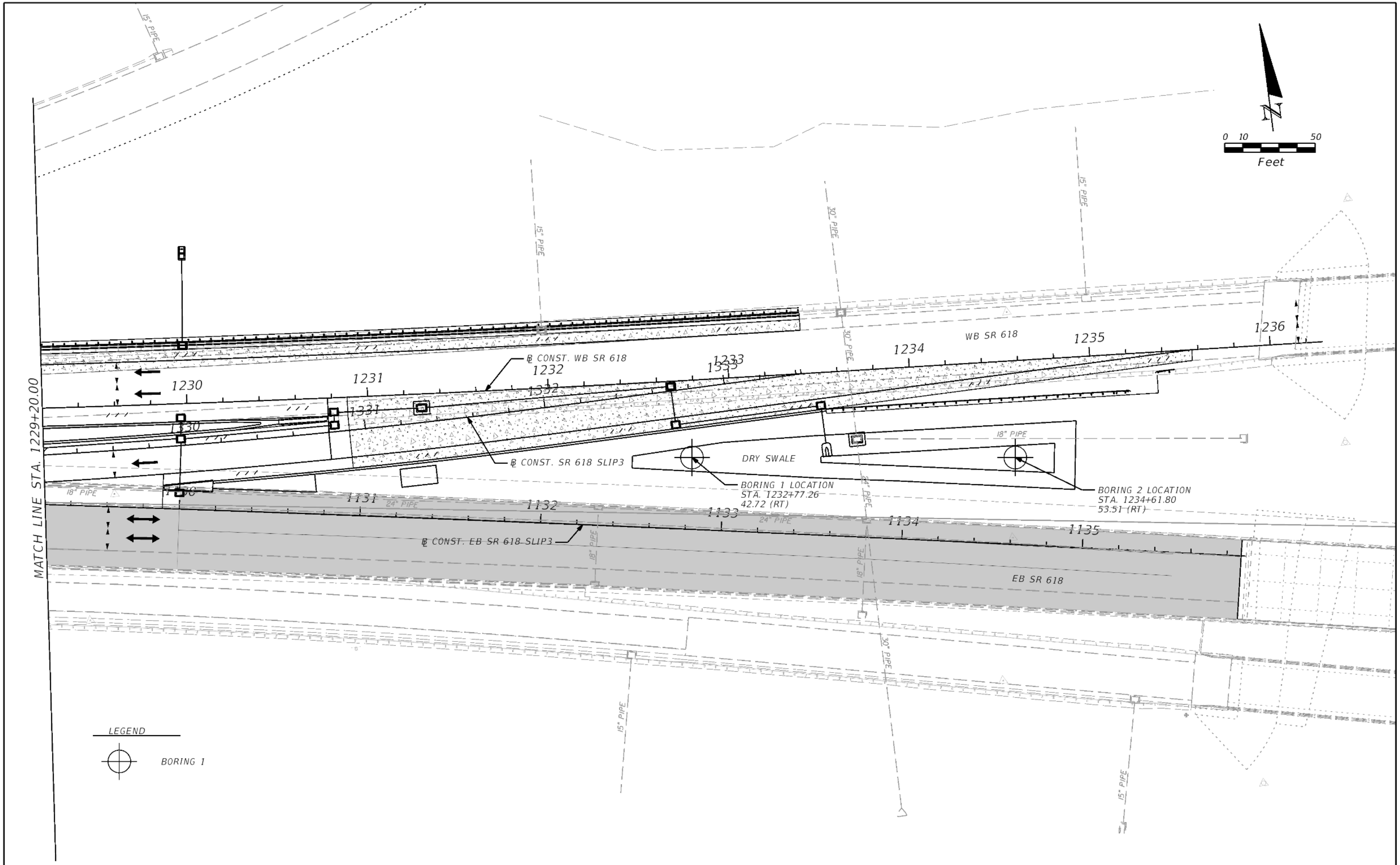
Resistivity (FM 5-551)	
Units	Results
ohm·cm	3.78k
Temp °C	20

Chloride (FM 5-552)	
Units	Results
ppm	15

Sufates (FM5-553)	
Units	Results
ppm	6

Reviewed By,
Universal Engineering Sciences, Inc.
Certificate of Authorization No. 00000549

Mark K. Hardy, P.E.
Tampa Branch Manager
Professional Engineer No. 57233
Date: ____________________



THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

JOSEPH ROSELLI, P.E.
P.E. NO.: 72227
HORIZON ENGINEERING GROUP, INC.
1051 WINDERLEY PLACE, SUITE 400
MAITLAND, FL 32751

TAMPA HILLSBOROUGH EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
618	HILLSBOROUGH	O-02520

RAMP 3 - DRY SWALE BORING LOCATION

SHEET NO.

skhoyte-rene 6/15/2021 10:09:30 AM Default image\Working\SKR Working\Boring Location.dgn

UNIVERSAL
ENGINEERING SCIENCES

Consultants In: Geotechnical Engineering • Environmental Sciences
Geophysical Services • Construction Materials Testing • Threshold Inspection
Building Inspection • Plan Review • Building Code Administration

Project No.:
Report No.:
Report Date:

CORROSION SERIES OF SOIL AND WATER
FM 5-550; FM5-551; FM5-552; FM 5-553

Client:

Project: East Selmon Slip Ramps

Date Sampled:
Date Tested: 8/19/2021
MAC ID:

Tested By (TIN): E21076196
Sample No:
Material No:

FDOT Requirements (Specification 548)	
pH (FM 5-550)	5.0 - 9.0
Resistivity (FM 5-551)	> 3000 ohm·cm
Chloride (FM5-552)	< 100 ppm
Sulfate (FM 5-553)	< 200 ppm

pH (FM 5-550)	
Units	Results
pH	8.1
Temp °C	18.1
Slope	96.4%

Resistivity (FM 5-551)	
Units	Results
ohm·cm	7.65k
Temp °C	21

Chloride (FM 5-552)	
Units	Results
ppm	15

Sufates (FM5-553)	
Units	Results
ppm	3

Reviewed By,

As-built Plans for Selmon Expressway
Dessign No. 50.30.001B (2002/ 2003; Constructed 2007)
SWFWMD permit no.4319654.001 – Datum NGVD

FISCAL YEAR	SHEET NO.
02	1

F

THIS CONTRACT PLAN SET INCLUDES

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS
LIGHTING PLANS
LANDSCAPE PLANS
RETAINING WALL PLANS
STRUCTURE PLANS
TRAFFIC CONTROL PLANS (INCLUDES DESIGN PROJECT No. 51.30.06)

4/11/07

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

FINAL ~~CONTRACT~~ PLANS

CONSTRUCTION PROJECT No. 51.40.02*
DESIGN PROJECT No. 50.30.001B
HILLSBOROUGH COUNTY
LEE ROY SELMON CROSSTOWN EXPRESSWAY
STATE ROAD 618

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS.

THIS PROJECT WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THESE PLANS AS PROVIDED BY THE ENGINEER OF RECORD. IF CHANGES WERE MADE, THOSE CHANGES ARE INDICATED BY INK REVISION AND BEAR THE SEAL & SIGNATURE OF THE RESPONSIBLE ENGINEER.

4/11/07
SR. PROJECT ENGINEER — DATE
HARMON C. BENNETT, P.E.
FL. REG. # 53130

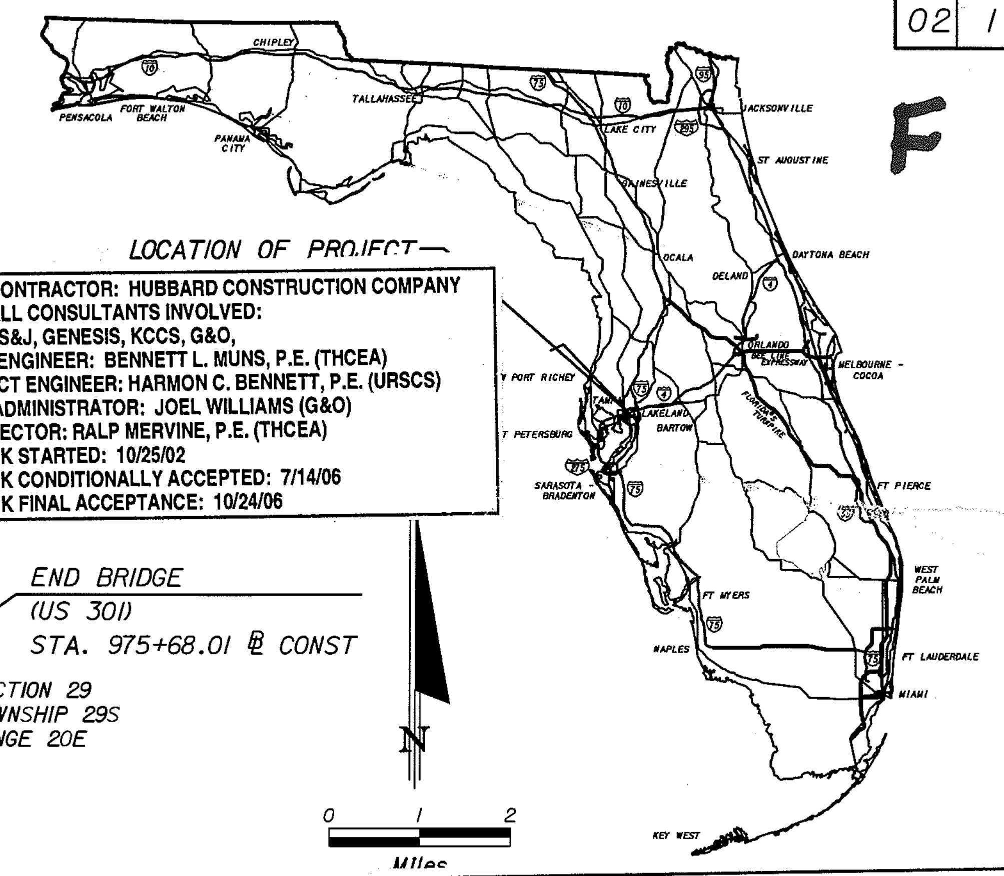
INDEX OF ROADWAY PLANS

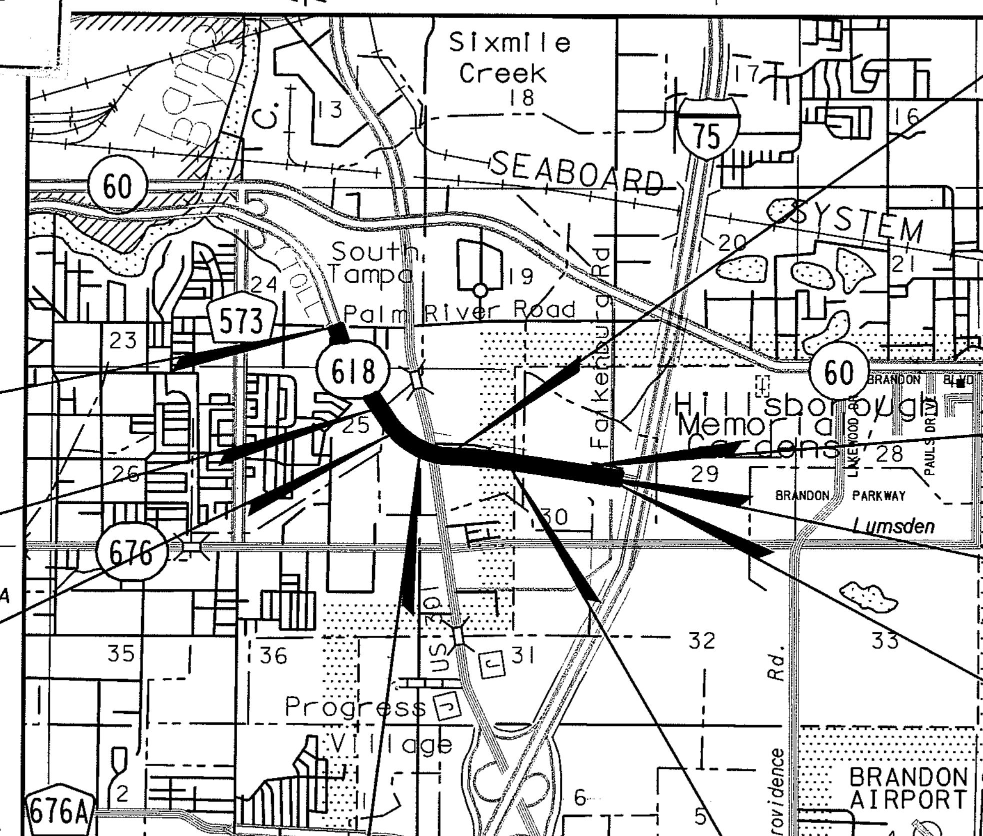
* IN CONJUNCTION WITH THE FOLLOWING DESIGN PROJECTS:

51.30.06
50.30.03

LOCATION OF PROJECT

NAME OF CONTRACTOR: HUBBARD CONSTRUCTION COMPANY
NAME OF ALL CONSULTANTS INVOLVED:
URSCS, PBS&J, GENESIS, KCCS, G&O,
RESIDENT ENGINEER: BENNETT L. MUNS, P.E. (THCEA)
SR. PROJECT ENGINEER: HARMON C. BENNETT, P.E. (URSCS)
PROJECT ADMINISTRATOR: JOEL WILLIAMS (G&O)
THCEA DIRECTOR: RALP MERVINE, P.E. (THCEA)
DATE WORK STARTED: 10/25/02
DATE WORK CONDITIONALLY ACCEPTED: 7/14/06
DATE WORK FINAL ACCEPTANCE: 10/24/06





SECTION 29
TOWNSHIP 29S
RANGE 20E

0 1 2
Miles

BEGIN DESIGN PROJECT
No. 50.30.001B
STA. 926+00.00 ℄ CONST

BEGIN BRIDGE
(DELANEY CREEK)
STA. 957+08.53 ℄ CONST

END BRIDGE
(DELANEY CREEK)
STA. 957+97.93 ℄ CONST

BEGIN BRIDGE
(US 301)
STA. 973+19.28 ℄ CONST

END BRIDGE
(US 301)
STA. 975+68.01 ℄ CONST

BEGIN BRIDGE
(FALKENBURG RD)
STA. 1015+93.17 ℄ CONST

END BRIDGE
(FALKENBURG RD)
STA. 1018+14.17 ℄ CONST

END DESIGN PROJECT
No. 50.30.001B
STA. 1032+25.67 ℄ CONST BK =
STA. 1006+00.00 ℄ CONST AH

STA. EQUATION (℄ CONST)
STA. 988+42.98 BK =
STA. 988+47.01 AH

SEE PLAN SHEET 3 FOR LIST OF SOURCE DOCUMENTS AND PAY ITEM REFERENCES

SEE PLAN SHEET 3 FOR LIST OF PLANS INCLUDED WITH THIS CONSTRUCTION PROJECT

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO :
R. DENNIS MURRAY, P.E
ICON CONSULTANT GROUP, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FLORIDA 33618
(813) 962-8689

PLANS PREPARED BY:

ICON CONSULTANT GROUP INCORPORATED
10006 N. DALE MABRY HIGHWAY
SUITE 201
TAMPA, FLORIDA 33618
(813) 962-8689

VF 59-3576100
ENGINEERING BUSINESS LIC. #8230

NOTE: THIS PROJECT TO BE LET TO CONTRACT WITH DESIGN CONTRACT NO. 51.30.06

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 2000, SUPPLEMENTS AND SPECIAL PROVISIONS THERETO IF NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT.

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY, USING STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ENGLISH ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY, 2000) AND THE AASHTO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (1990).

REVISIONS
SEE SHEET 1A FOR REVISIONS

7/9/03

LENGTH OF PROJECT	LINEAR FEET	MILES
ROADWAY	10062.51	1.905
BRIDGES	559.13	0.105
NET LENGTH OF PROJ.	10621.64	2.010
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJ.	10621.64	2.010

KEY SHEET REVISIONS

DATE	BY	DESCRIPTION
12-10-02	MF	3 ADDED SHEET 1A
7-8-03	DL	10 ADDED SHEET 172A

ROADWAY PLANS ENGINEER OF RECORD : R. DENNIS MURRAY, P.E.

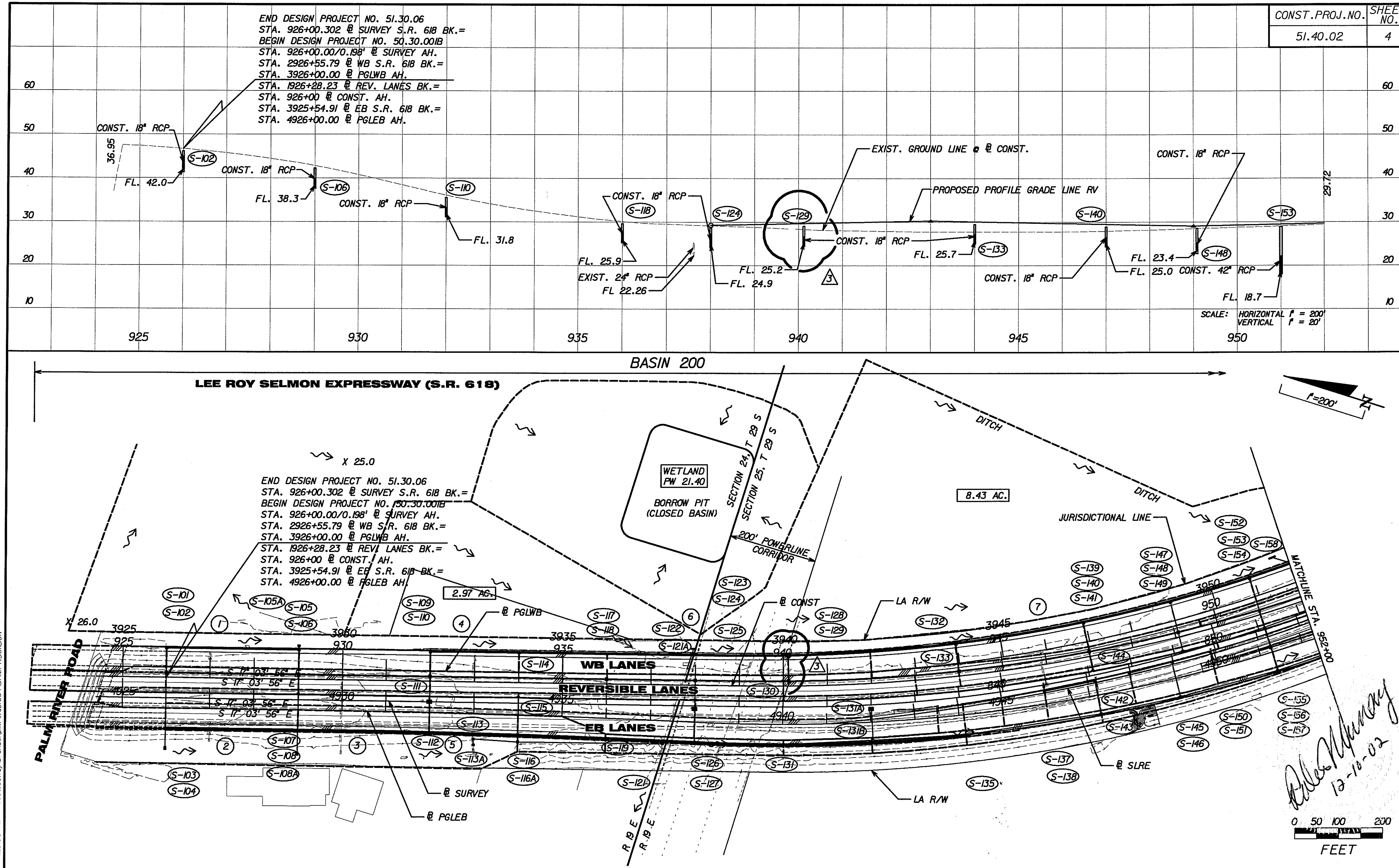
DATE:

P.E. NO.: 42672

THCEA CHIEF ENGINEER : BENNETT L. MUNS, P.E.

7/9/2003 9:15:47 AM F:\Roadway\brandonpkwWest00-AKEYSRD01.DGN

CONST.PROJ.NO.	SHEET NO.
51.40.02	4



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REVISIONS

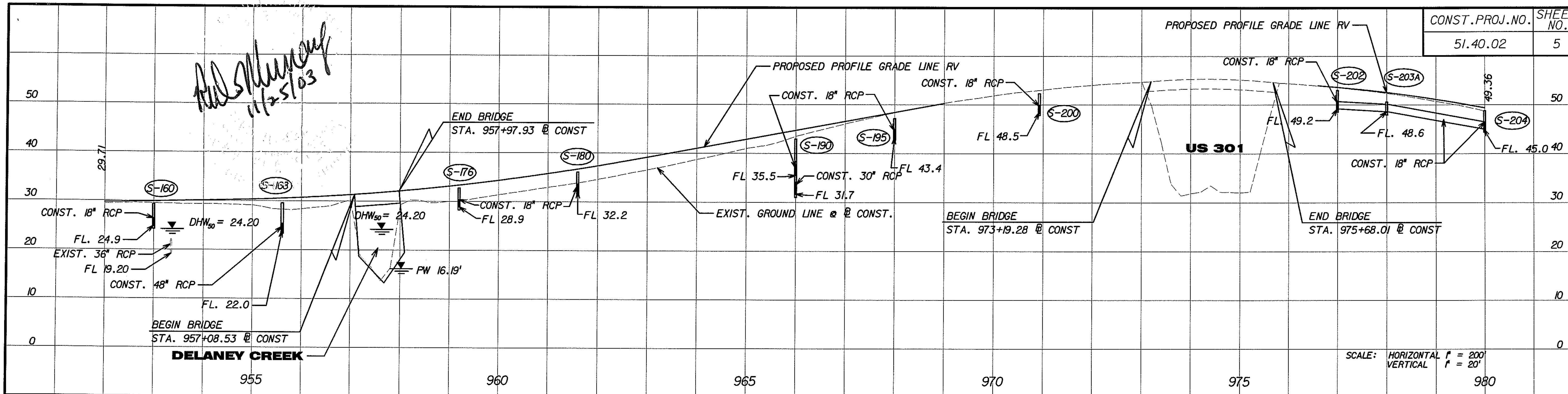
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
12-12-02	MF	3 MOVED DRAINAGE STRUCTURES S-128 & S-129									

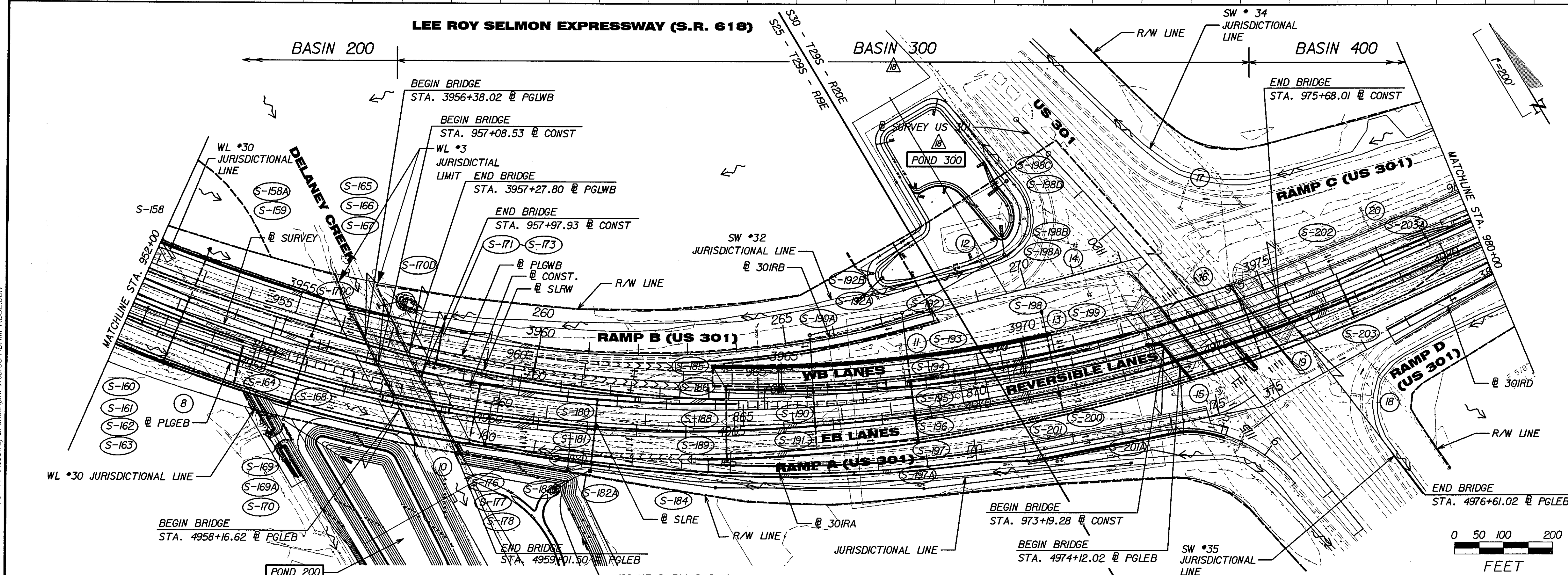
ICON
CONSULTANT GROUP
INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE MAP (1)

CONST.PROJ.NO.	SHEET NO.
51.40.02	5





DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
11-24-03	JAO	18 CHANGED MAINT. BERM TO 10'. SLOPE TO 1:2 AND ADD FENCE									

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE MAP (2)

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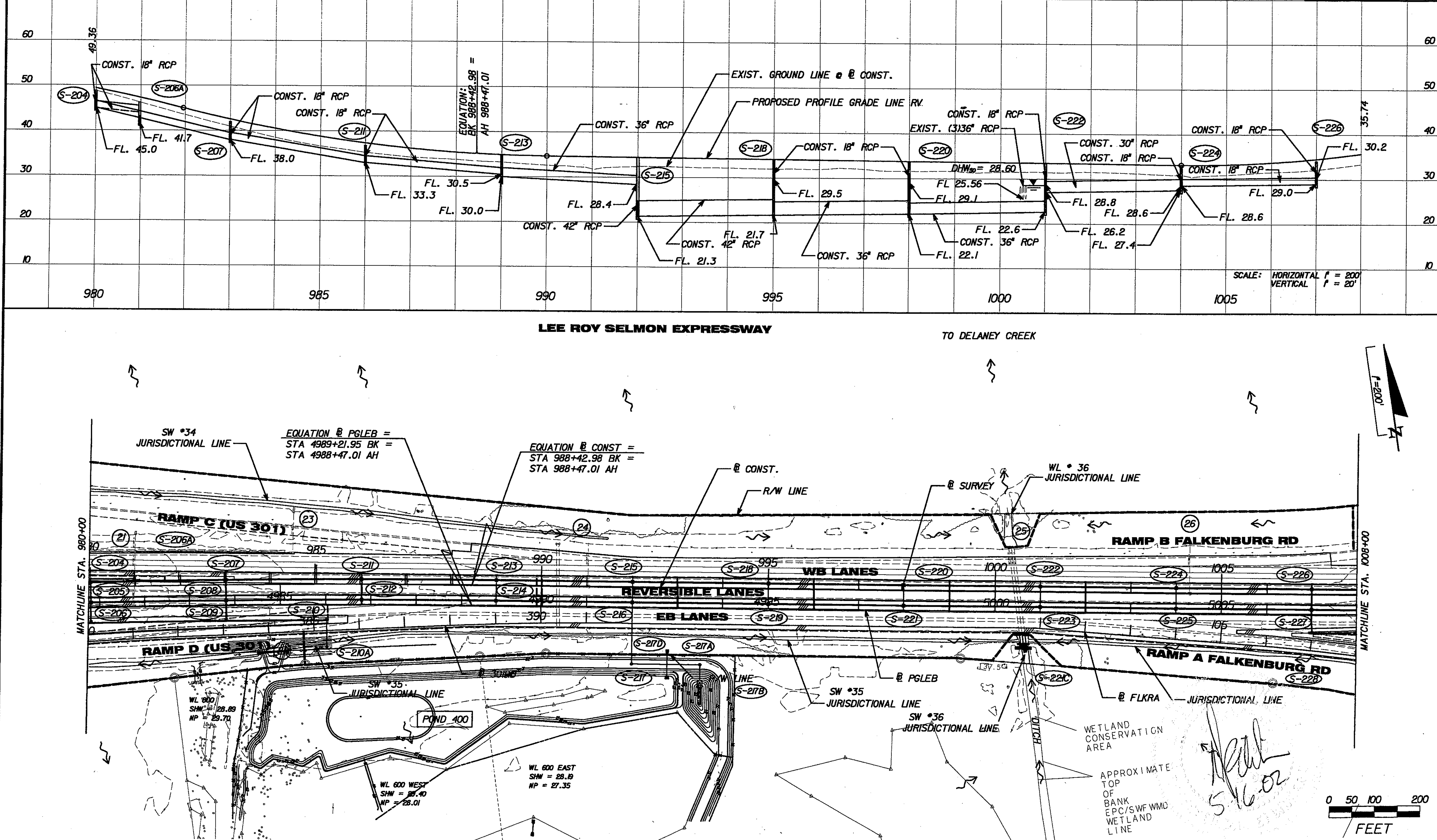
CONST.PROJ.NO.	SHEET NO.
51.40.02	6



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE MAP (3)

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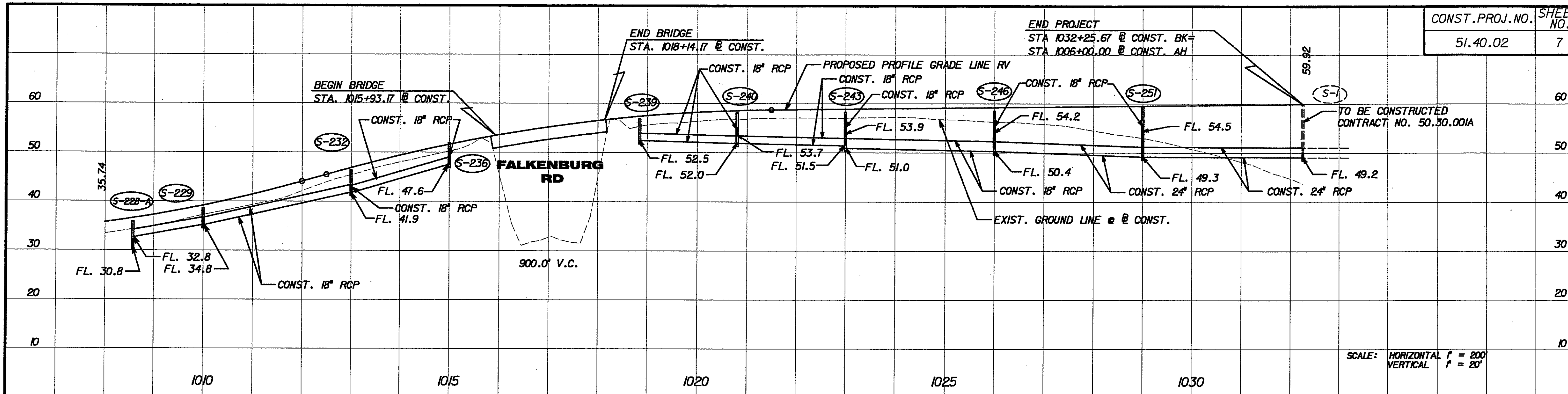
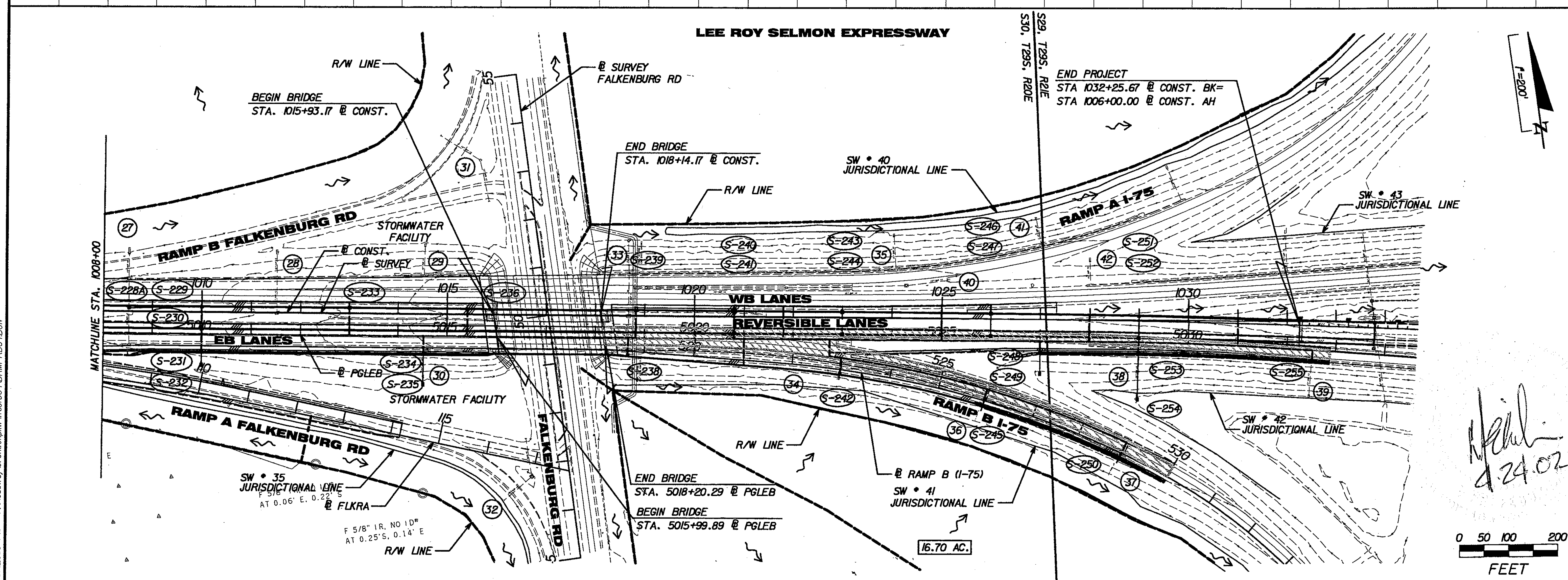
CONST.PROJ.NO.	SHEET NO.
51.40.02	7





DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE MAP (4)

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CONST.PROJ.NO.	SHEET NO.
51.40.02	8

EXISTING DRAINAGE STRUCTURE SCHEDULE

(1)
INLET / UWALL
15" CMP
FL 41.37 (E)
FL 25.05 (W)

(2)
INLET / UWALL
15" CMP
FL 42.10 (SW)
FL 25.89 (NE)

(3)
INLET
15" RCP
FL 35.93 (SW)
DBI
15" RCP
FL 35.69 (NE)
FL 35.68 (SW)
INLET / UWALL
15" CMP
FL 35.45 (SW)
FL 24.63 (NE)

(4)
INLET / UWALL
15" CMP
FL 25.52 (SW)
FL 28.93 (NE)

(5)
INLET / UWALL
15" CMP
FL 28.95 (SW)
FL 25.21 (NE)

(6)
INLET
24" RCP
FL 22.20 (E)
FL 22.33 (W)

(7)
DBI
18" RCP
FL 23.50 (NE)
FL 23.27 (SW)

(8)
DBI
36" RCP (N)
FL 19.10 (N)
FL 19.24 (S)
36" RCP (S)
FL 19.03 (S)
FL 18.37 (N)

(9)
DBI / EW
24" RCP
FL 17.65 (W)
FL 17.30 (E)

(10)
DBI
18" RCP
FL 20.82 (SW)
DBI
18" RCP
FL 17.72 (NE)
FL 17.75 (NW)
EW
FL 17.36 (SE)

(11)
DBI
15" CMP
FL 42.59 (NE)
INLET / UWALL
15" CMP
FL 42.47 (SW)
FL 42.41 (NE)
FL 34.54 (SW)

(12)
INLET
15" RCP
FL 25.80 (S)
FL 25.69 (N)

(13)
INLET / UWALL
15" CMP
FL 47.16 (NE)
FL 29.39 (SW)

(14)
DBI
21" RCP
FL 26.13 (NE)
DBI / END PIPE
21" RCP
FL 25.87 (SW)
FL 25.79 (NW)
FL 25.67 (SE)

(15)
DBI
15" RCP
FL 27.21 (W)
DBI
15" RCP
FL 26.80 (E)
FL 26.78 (N)
MES
FL 27.24 (S)

(16)
CURB INLET / MES
15" RCP
FL 28.18 (NE)
FL 27.81 (SW)

(17)
DBI
18" RCP (S)
FL 27.81 (N)
FL 27.39 (S)
18" RCP (N)
FL 27.37 (NE)
FL 26.74 (SW)

(18)
15" RCP
FL 28.44 (SE)
FL 28.47 (NW)

(19)
15" RCP
FL 28.96 (N)
FL 29.07 (S)

(20)
INLET
18" CMP
FL 47.29 (N)
FL 29.99 (S)

(21)
INLET
15" RCP
FL 42.05 (N)
DBI
15" RCP
FL 41.78 (S)
FL 41.76 (N)
INLET / UWALL
18" CMP
FL 41.43 (S)
FL 41.45 (N)
FL 32.97 (S)

(22)
INLET / UWALL
15" CMP
FL 30.91 (S)
FL 28.39 (N)

(23)
INLET / UWALL
15" RCP
FL 30.83 (N)
FL 21.69 (S)

(24)
DBI
15" RCP
FL 27.80 (N)
FL 27.35 (S)

(25)
(3) 36" RCP / EWS
FL 22.47 (W-S)
FL 25.24 (MID-S)
FL 25.29 (E-S)
FL 26.03 (W-N)
FL 25.88 (MID-N)
FL 25.83 (E-N)

(26)
DBI
18" RCP
FL 27.70 (N)
FL 27.40 (S)

(27)
INLET
15" CMP
FL 31.22 (N)
INLET
FL 30.70 (S)
FL 30.50 (N)
UWALL
15" RCP
FL 27.85 (S)

(28)
INLET
18" CMP
FL 36.53 (N)
UWALL
FL 28.79 (S)

(29)
INLET
15" CMP
FL 45.81 (N)
UWALL
FL 28.51 (S)

(30)
INLET
15" CMP
FL 46.20 (S)
UWALL
FL 29.43 (N)

(31)
DBI
18" RCP (NW)
FL 28.51 (NW)
FL 25.63 (SE)
18" RCP (S)
FL 26.66 (S)
FL 27.36 (N)

(32)
DBI
18" RCP (N)
FL 27.32 (N)
FL 27.58 (S)
18" RCP (SW)
FL 27.40 (SW)
FL 26.26 (NE)

(33)
INLET
15" RCP
FL 50.96 (N)
DBI
15" RCP
FL 50.66 (S)
FL 50.30 (N)
INLET
15" CMP
FL 50.14 (S)
FL 50.31 (N)
MES
FL 27.06 (S)

(34)
INLET / UWALL
18" CMP
FL 51.43 (SW)
FL 28.34 (NE)

(35)
INLET / MES
15" CMP
FL 51.11 (N)
FL 27.33 (S)

(36)
INLET / MES
15" CMP
FL 47.71 (SW)
FL 27.54 (NE)

(37)
INLET / MES
15" CMP
FL 40.80 (SW)
FL 27.91 (NE)

(38)
INLET / MES
15" CMP
FL 54.18 (S)
FL 29.05 (N)

(39)
INLET / MES
15" CMP
FL 54.17 (S)
FL 28.16 (N)

(40)
INLET
15" RCP
FL 54.94 (E)
INLET
15" CMP
FL 54.68 (W)
FL 54.61 (E)
DBI
15" CMP
FL 54.11 (W)
FL 53.98 (E)
MES
FL 53.46 (W)

(41)
INLET
15" CMP
FL 46.48 (N)
FL 26.60 (S)

(42)
INLET
15" CMP
FL 54.12 (N)
FL 46.01 (S)

STRUCTURE NO.	STATION	DESIGN FLOOD		BASE FLOOD		OVERTOPPING FLOOD				GREATEST FLOOD			
		2% PROB.	50 YR.FREQ.	1% PROB.	100 YR.FREQ.								
		DISCHARGE	STAGE	DISCHARGE	STAGE	DISCHARGE	STAGE	PROB. %	FREQ. YR.	DISCHARGE	STAGE	PROB. %	FREQ. YR.
	937+50	23	25.79	26	26.38					45	36.76		
S-122	938+00	22	25.28	26						44			
S-158	953+64	50	23.03	60						101			
BRIDGE	9571	729	24.20	829	24.65								
S-221C	1000+47	155	29.34	179						304			

NOTE: THE HYDRAULIC DATA IS SHOWN FOR INFORMATIONAL PURPOSES ONLY, TO INDICATE THE FLOOD DISCHARGES AND WATER SURFACE ELEVATIONS WHICH MAY BE ANTICIPATED IN ANY GIVEN YEAR. THIS DATA WAS GENERATED USING HIGHLY VARIABLE FACTORS DETERMINED BY A STUDY OF THE WATERSHED. MANY JUDGEMENTS AND ASSUMPTIONS ARE REQUIRED TO ESTABLISH THESE FACTORS. THE RESULTANT HYDRAULIC DATA IS SENSITIVE TO CHANGES, PARTICULARLY OF ANTECEDENT CONDITIONS, URBANIZATION, CHANNELIZATION, AND LAND USE. USERS OF THIS DATA ARE CAUTIONED AGAINST THE ASSUMPTION OF PRECISION WHICH CAN NOT BE ATTAINED. DISCHARGES ARE IN CUBIC FEET PER SECOND AND STAGES ARE IN FEET, NGVD, 1929.

DEFINITIONS:

DESIGN FLOOD: THE FLOOD SELECTED BY F.D.O.T. TO BE UTILIZED TO ASSURE A STANDARD LEVEL OF HYDRAULIC PERFORMANCE.

BASE FLOOD: THE FLOOD HAVING A 1% CHANCE OF BEING EXCEEDED IN ANY YEAR. (100 YR. FREQUENCY)

OVERTOPPING FLOOD: THE FLOOD WHERE FLOW OCCURS (A) OVER THE HIGHWAY (B) OVER A WATERSHED DIVIDE OR (C) THRU EMERGENCY RELIEF STRUCTURES.

GREATEST FLOOD: THE MOST SEVERE FLOOD WHICH CAN BE PREDICTED WHERE OVERTOPPING IS NOT PRACTICABLE, NORMALLY ONE WITH A 0.2% CHANCE OF BEING EXCEEDED IN ANY YEAR. (500 YR. FREQUENCY)

DATA ADAPTED FROM:

PREPARED BY:

DATE:

APPROVED FOR USE ON THIS PROJECT BY:

DATE:

4.24.02

04/22/02 07:25:50 PM f:\Roadway\brandonpkwWest004\DRMPRD05.dgn

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE MAP
EXISTING AND PROPOSED
DRAINAGE STRUCTURE SCHEDULE

CONST.PROJ.NO.	SHEET NO.
51.40.02	9

PROPOSED DRAINAGE AREAS

Str. No.	AREA (Ac)
S-101	0.32
S-102	0.34
S-103	0.31
S-105	0.33
S-106	0.33
S-107	0.15
S-108	0.33
S-109	0.33
S-110	0.32
S-111	0.60
S-112	0.33
S-114	0.23
S-115	0.12
S-116	0.23
S-117	0.22
S-118	0.41
S-119	0.22
S-123	0.42
S-124	0.44
S-125	0.15
S-126	0.79
S-127	0.36
S-128	0.21
S-129	0.35
S-130	0.07
S-131	0.19
S-131A	0.83
S-131B	0.00
S-132	0.21
S-133	0.12
S-135	0.17
S-137	0.63
S-138	0.15
S-139	0.36
S-140	0.34
S-141	0.10
S-142	0.19
S-143	0.22
S-144	0.14
S-145	0.33
S-146	0.21
S-147	0.53
S-148	0.41
S-149	0.10
S-150	0.13
S-151	0.16
S-152	0.26
S-153	0.16
S-154	0.10
S-155	0.18
S-156	0.25
S-157	0.06
S-159	0.43
S-160	0.26
S-161	0.14
S-162	0.27
S-163	0.07
S-165	0.36
S-166	0.35
S-167	0.54
S-168	0.51
S-169	0.06
S-172	0.12
S-173	0.25
S-176	0.33
S-177	0.35
S-178	0.04
S-180	0.35
S-181	0.50

Str. No.	AREA (Ac)
S-182	0.09
S-185	0.40
S-186	0.37
S-187	0.33
S-188	0.19
S-189	0.21
S-190	0.33
S-191	0.22
S-192	0.00
S-193	0.28
S-194	0.41
S-195	0.37
S-196	0.33
S-197	0.09
S-199	0.09
S-200	0.33
S-201	0.29
S-202	0.21
S-203	0.33
S-204	0.24
S-205	0.33
S-206	0.20
S-207	0.37
S-208	0.18
S-209	0.24
S-210	0.18
S-211	0.34
S-212	0.15
S-213	0.42
S-214	0.20
S-215	0.32
S-216	0.15
S-218	0.32
S-219	0.15
S-220	0.32
S-221	0.15
S-222	0.32
S-223	0.15
S-224	0.53
S-225	0.25
S-226	0.40
S-227	0.15
S-228	0.28
S-229	0.24
S-230	0.27
S-231	0.40
S-232	0.00
S-233	0.25
S-234	0.34
S-236	0.34
S-237	0.08
S-238	0.30
S-239	0.21
S-241	0.16
S-242	0.05
S-244	0.15
S-245	0.00
S-246	0.31
S-248	0.12
S-249	0.00
S-250	0.14
S-251	0.24
S-254	0.00
S-1	0.23
S-2	0.09
S-190A	0.00
S-198A	0.00

Str. No.	AREA (Ac)
S-240	0.11
S-243	0.21
S-247	0.14
S-252	0.14
S-203A	0.19

4.24.02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

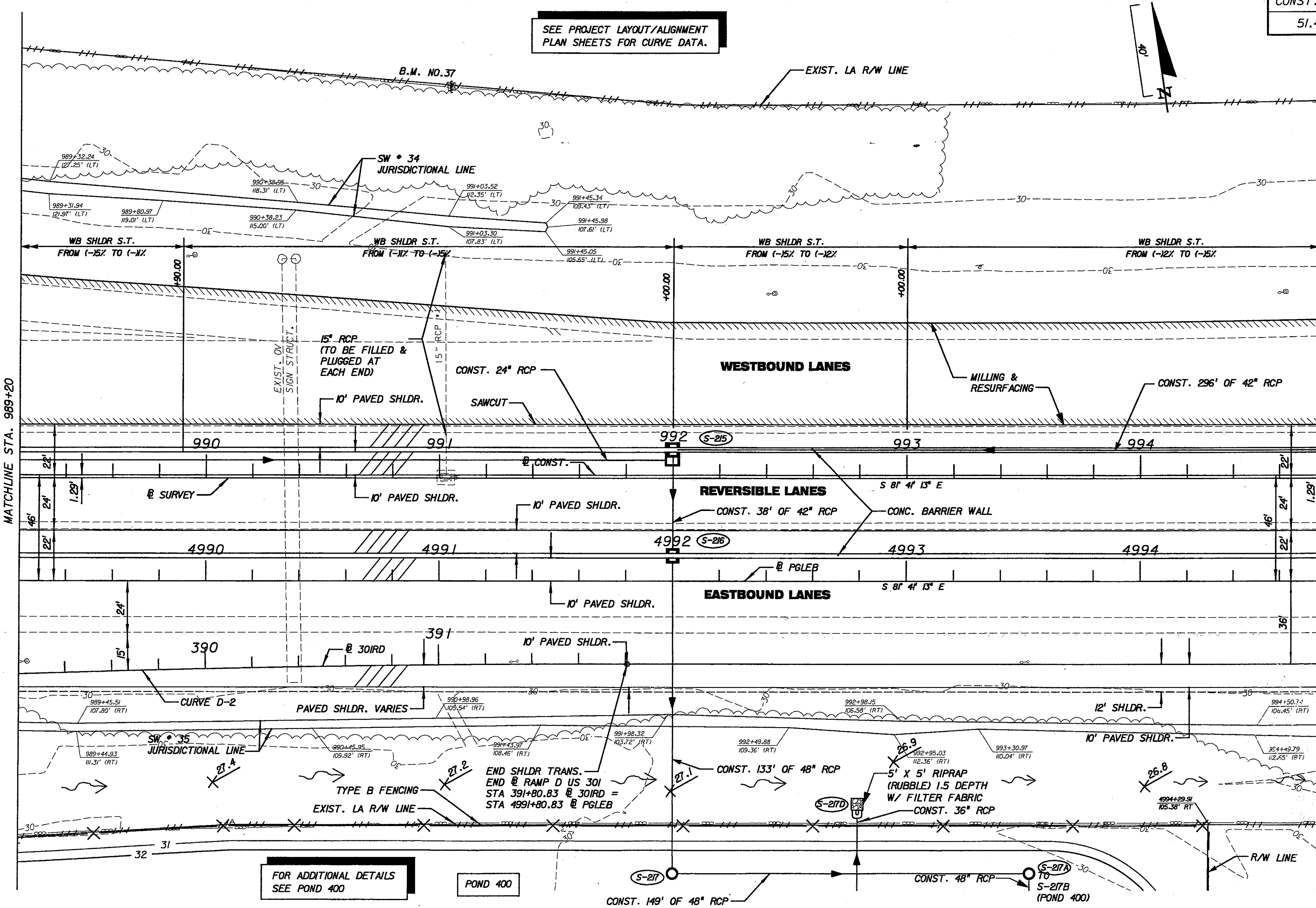
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROPOSED DRAINAGE AREAS FOR PROPOSED DRAINAGE STRUCTURES

04/22/02 07:26:48 PM f:\Roadway\brandonpkw\West004\exlstnotes.dgn

CONST.PROJ.NO.	SHEET NO.
51.40.02	43



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03:15:41 PM

05/16/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

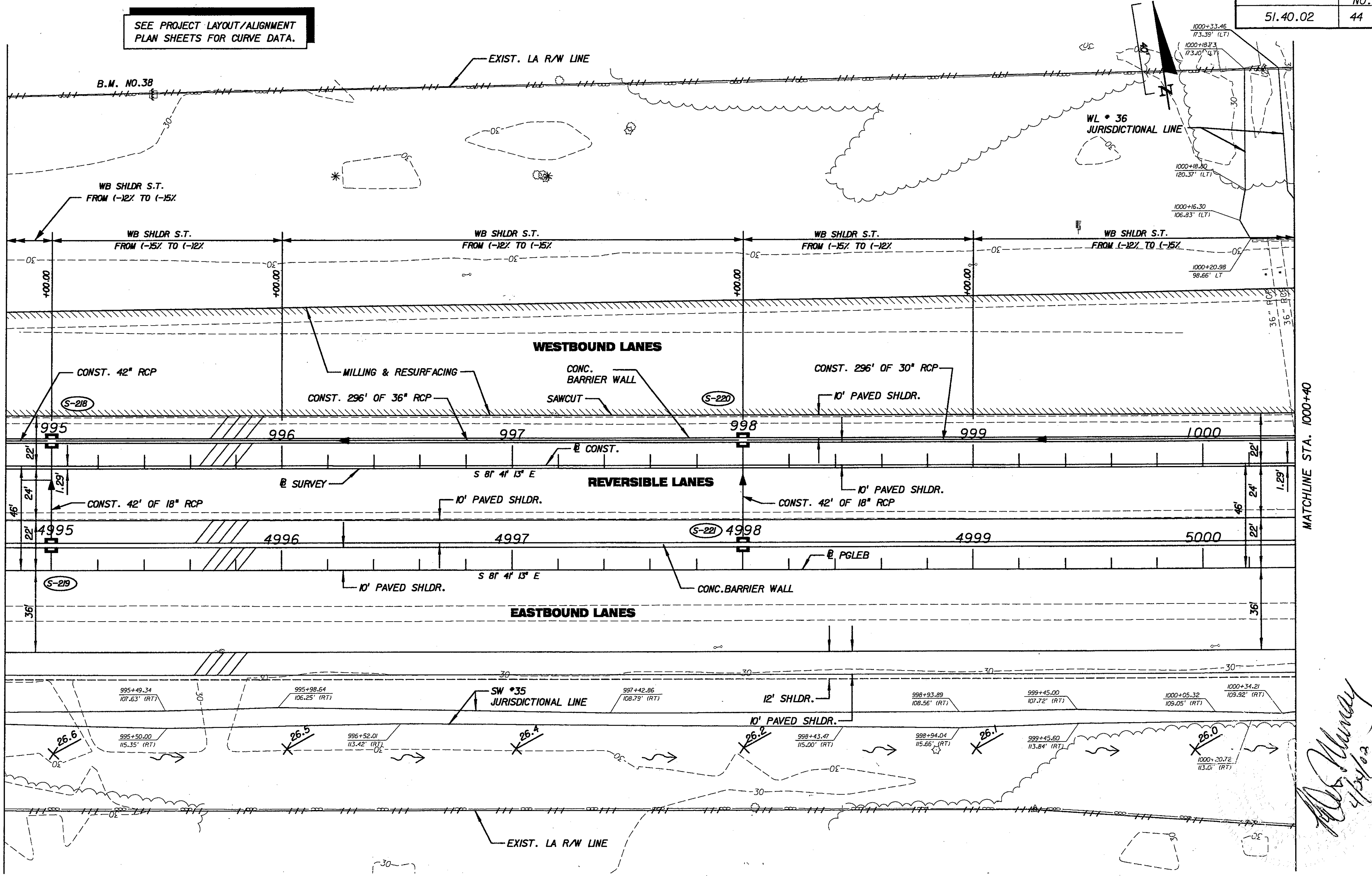
REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (13)

CONST.PROJ.NO.	SHEET NO.
51.40.02	44



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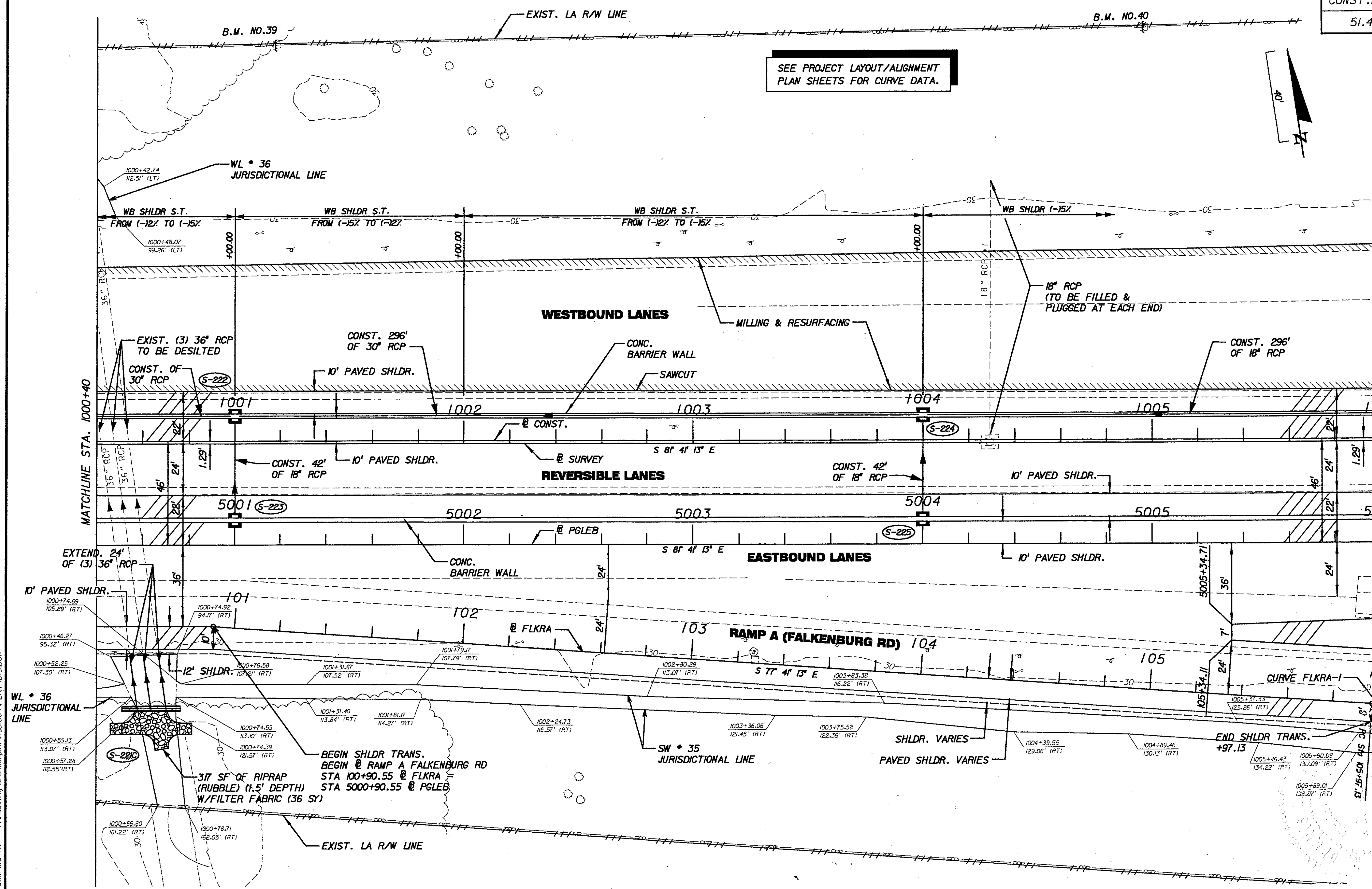
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (14)

CONST.PROJ.NO.	SHEET NO.
51.40.02	45



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (15)

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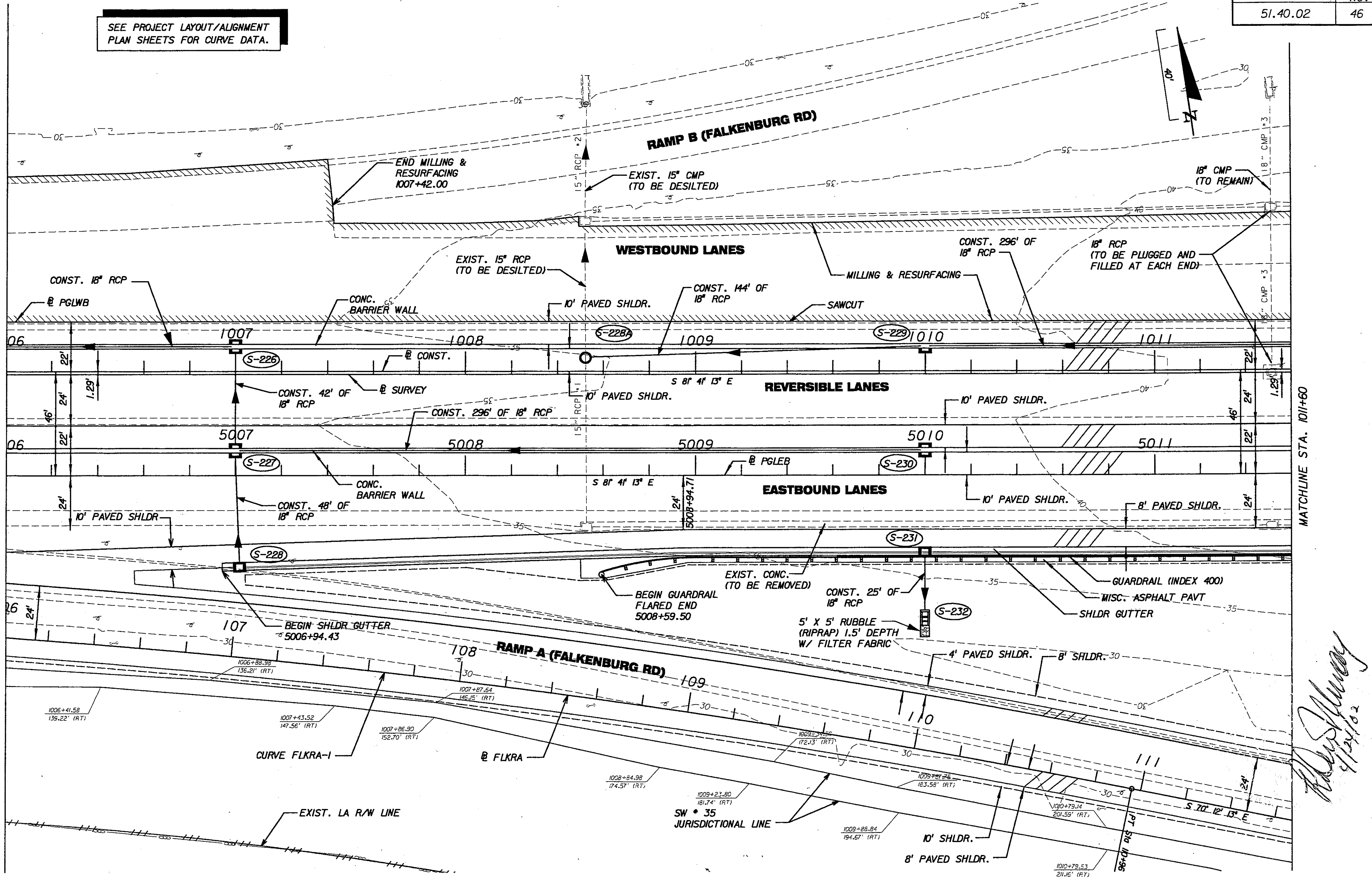
4/24/02

CONST.PROJ.NO.	SHEET NO.
51.40.02	46



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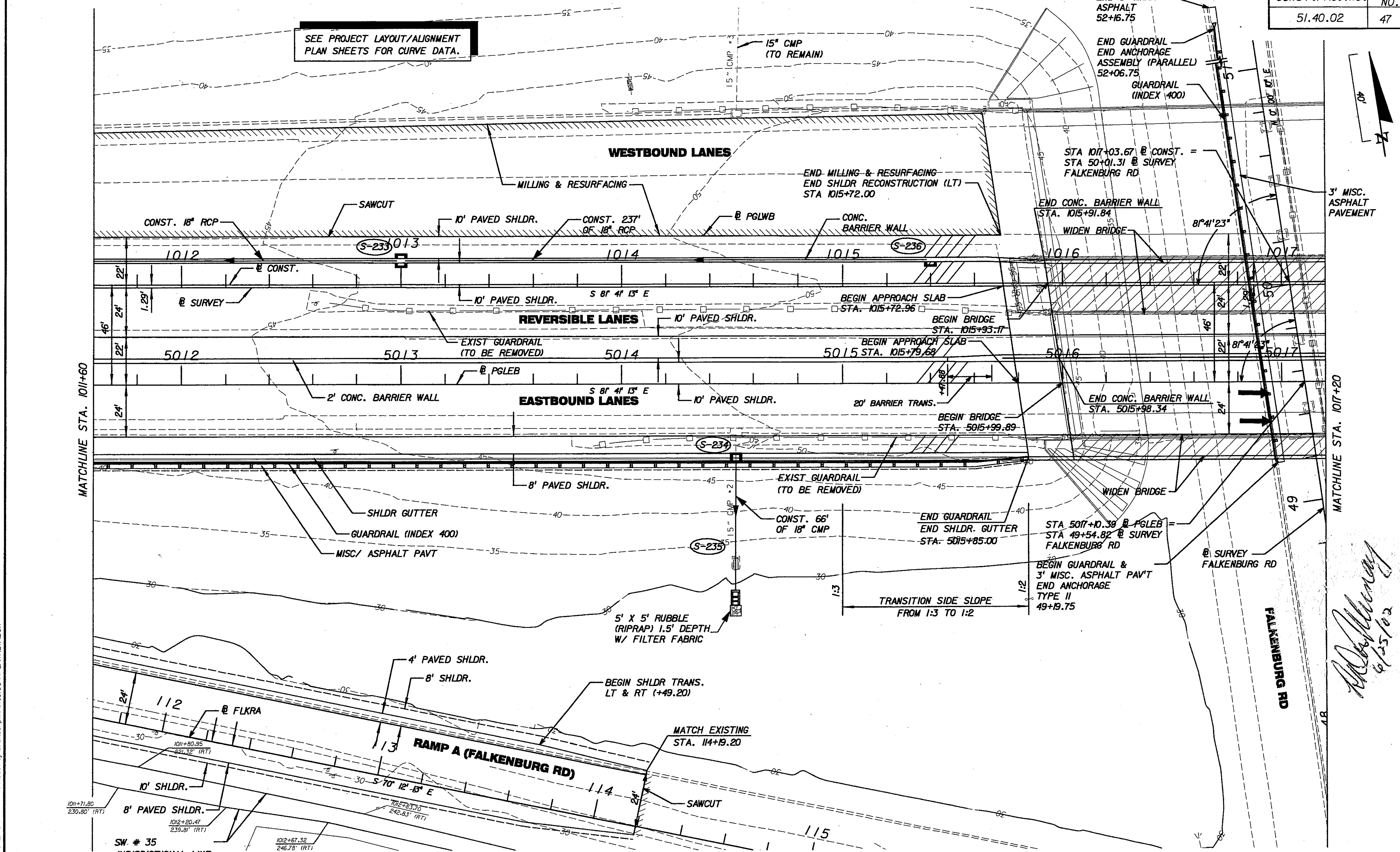
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (16)

CONST.PROJ.NO.	SHEET NO.
51.40.02	47



REVISIONS								
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (17)

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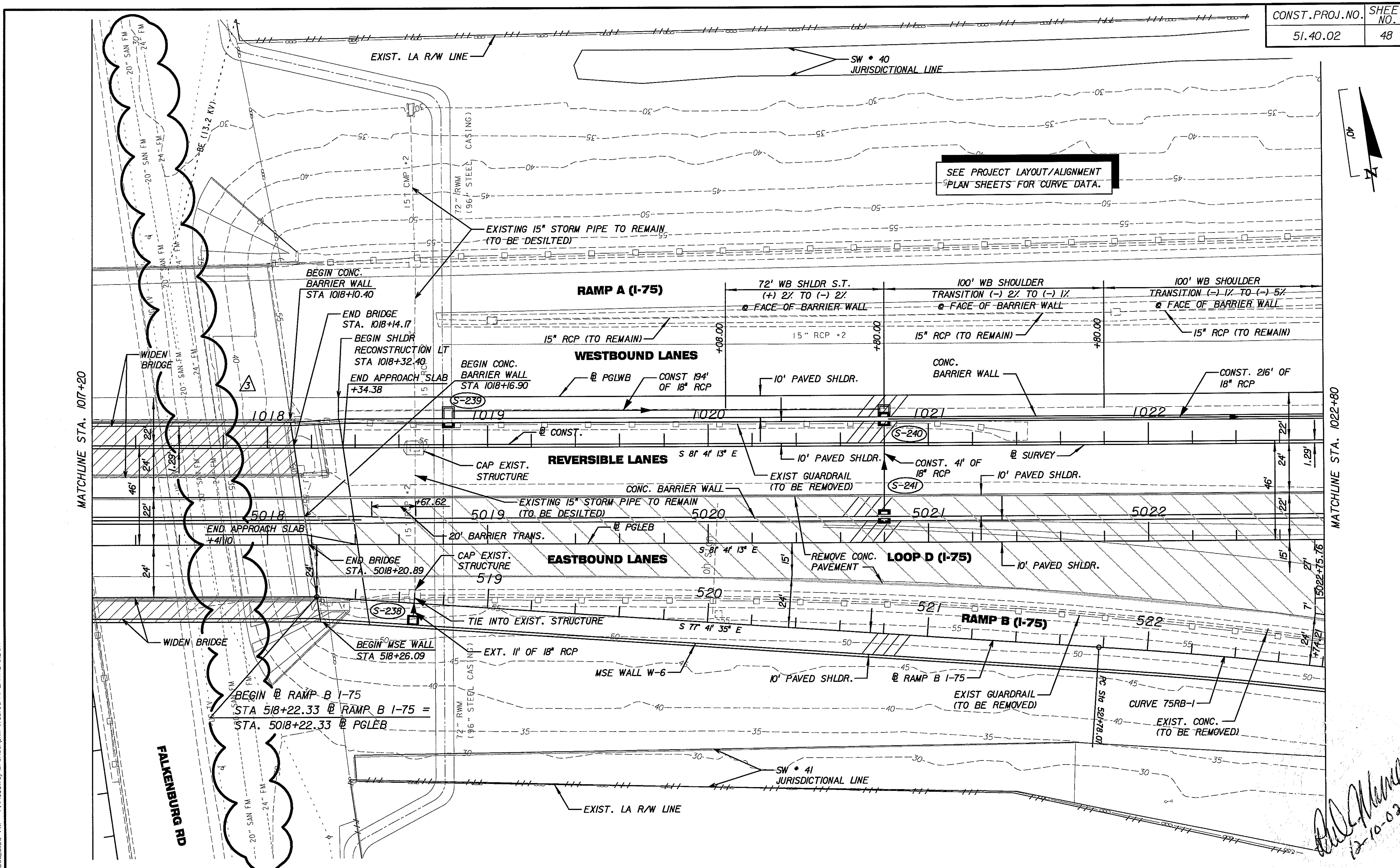
CONST.PROJ.NO.	SHEET NO.
51.40.02	48



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12/11/02

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
12-10-02	MF	3 CHANGED 24" FM TO 20" SAN FM & ADDED 24" FM									

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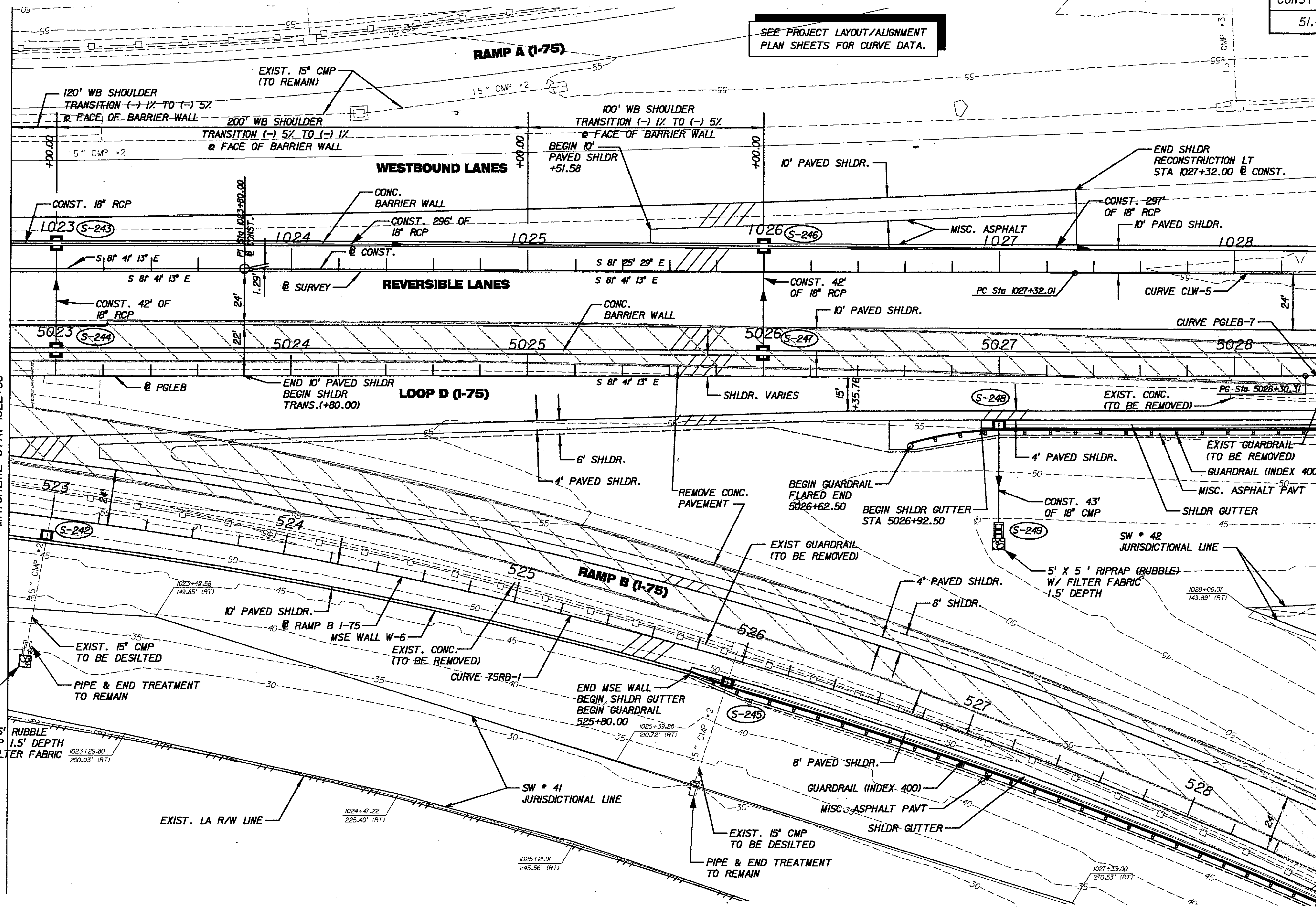
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (18)

CONST. PROJ. NO.	SHEET NO.
51.40.02	49



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (19)

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CONST.PROJ.NO.	SHEET NO.
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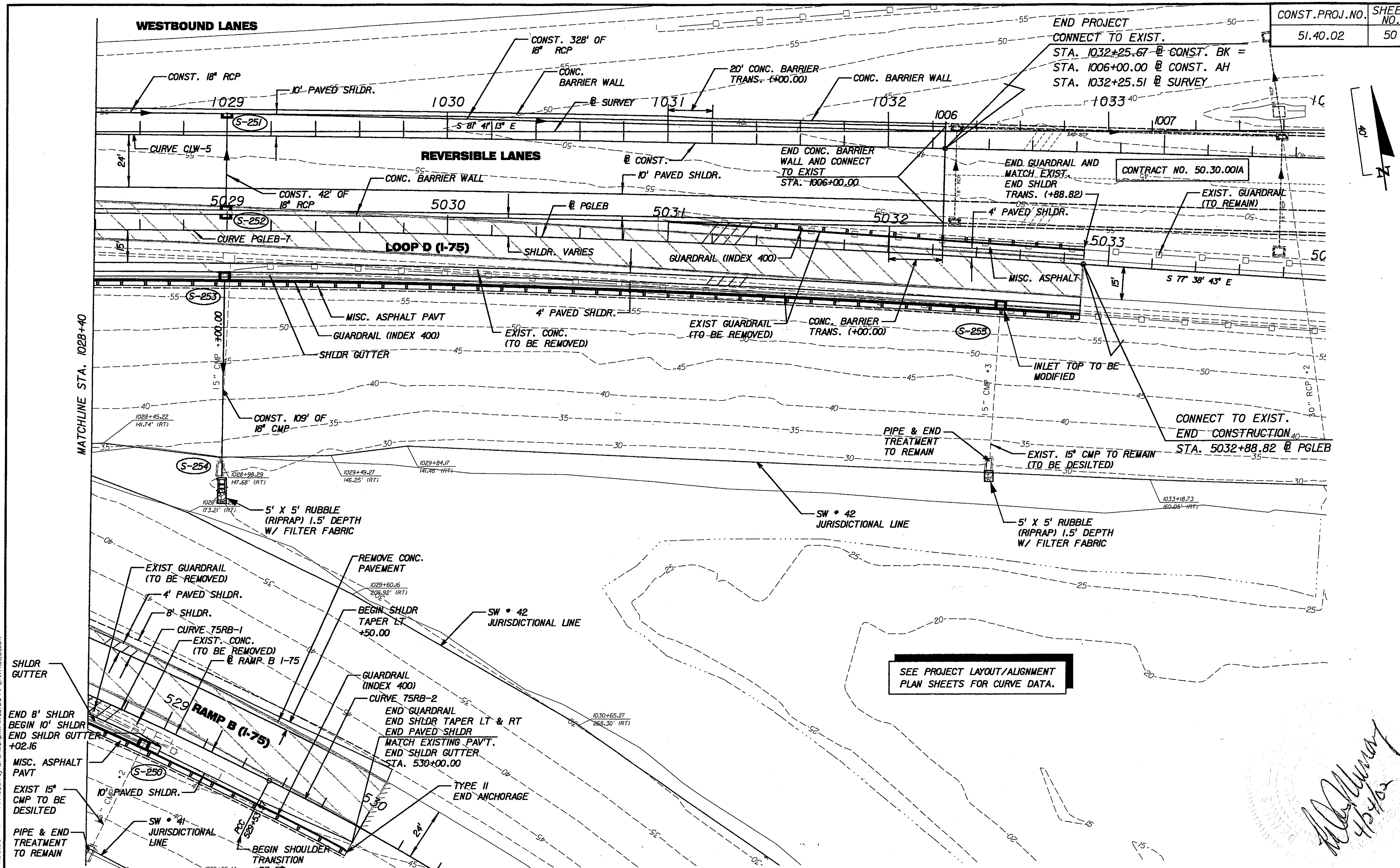

f:\Roadway\brandonpkw\West004\PLANRD20.DGN 11:56:36 AM 04/23/02

REVISIONS											
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TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (20)

CONST.PROJ.NO.	SHEET NO.
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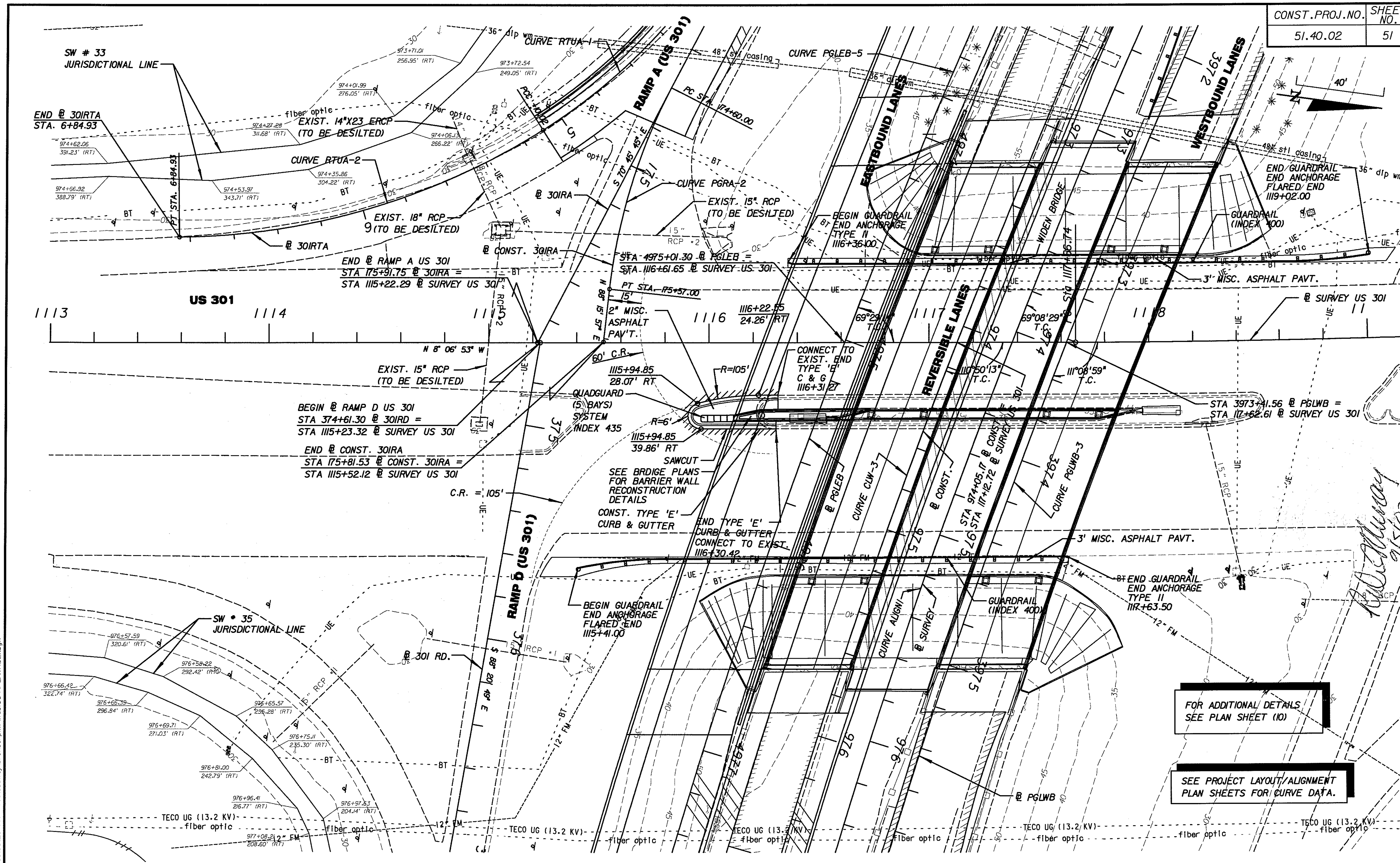

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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CONSULTANT GROUP
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TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PLAN SHEET (21)

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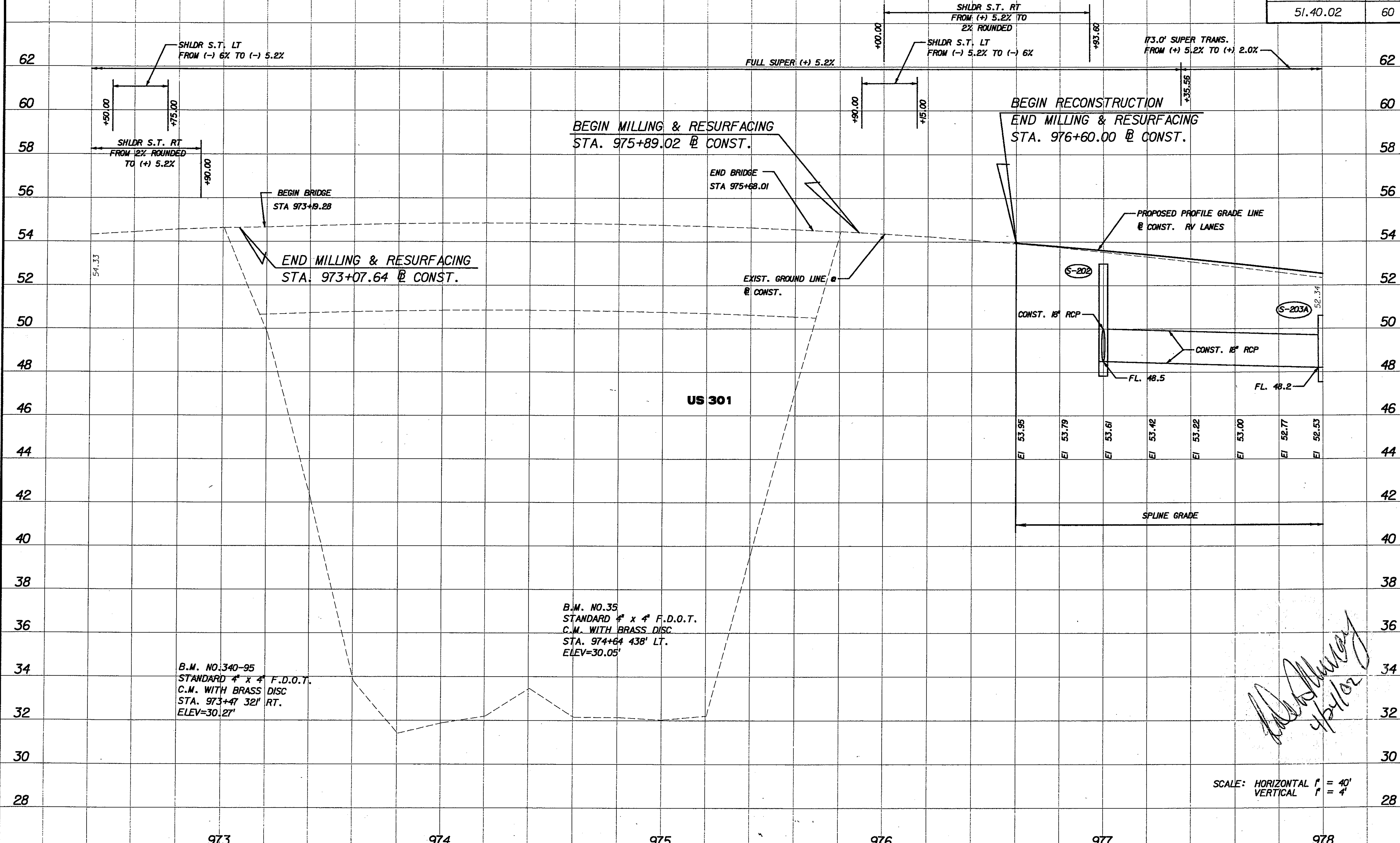


08:59:21 AM f:\Roadway\brandonpkw\West004\PROFRD09.dgn
04/24/02

REVISIONS

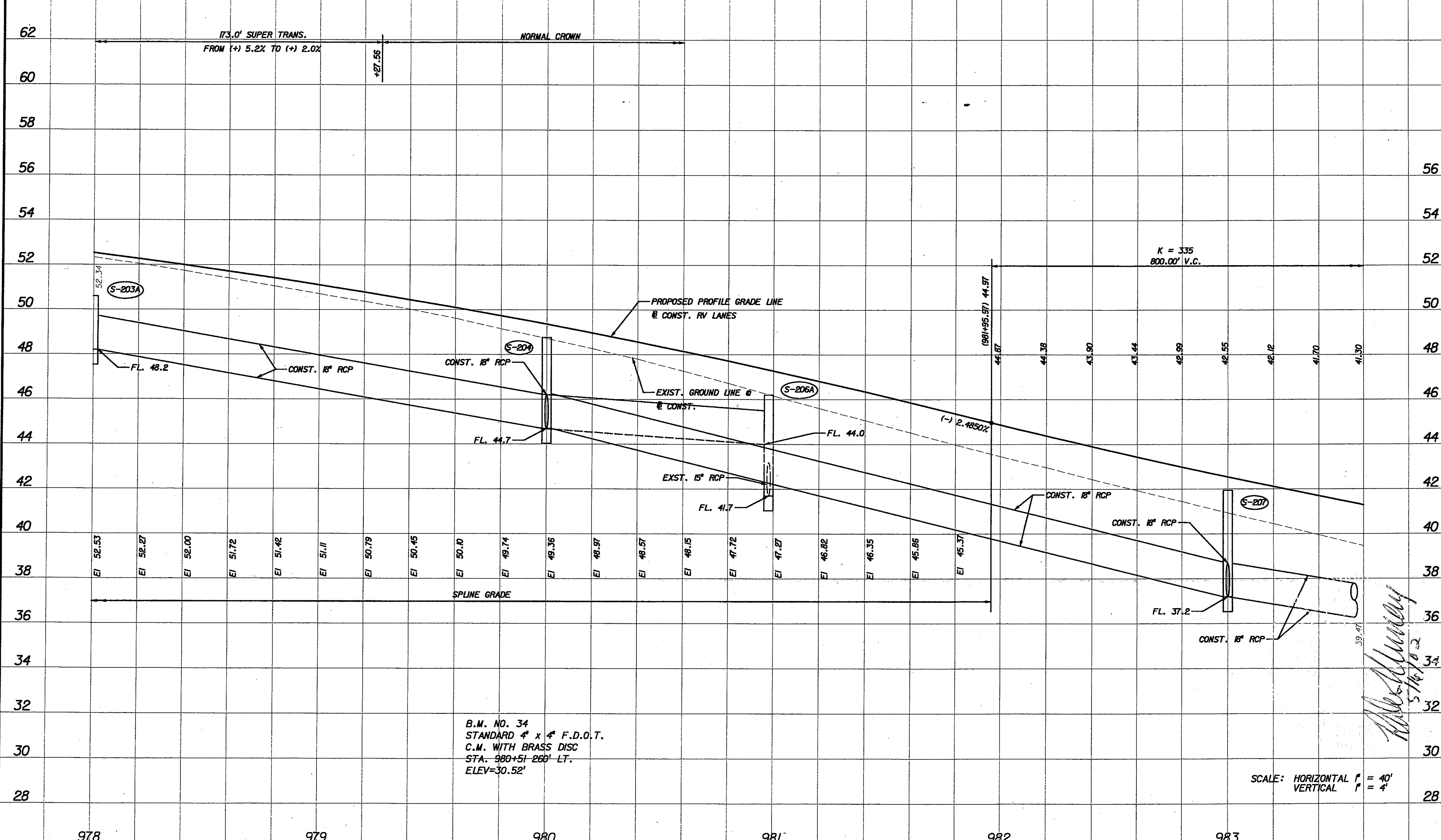
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (9)
REVERSIBLE LANES

CONST.PROJ.NO.	SHEET NO.
51.40.02	61



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REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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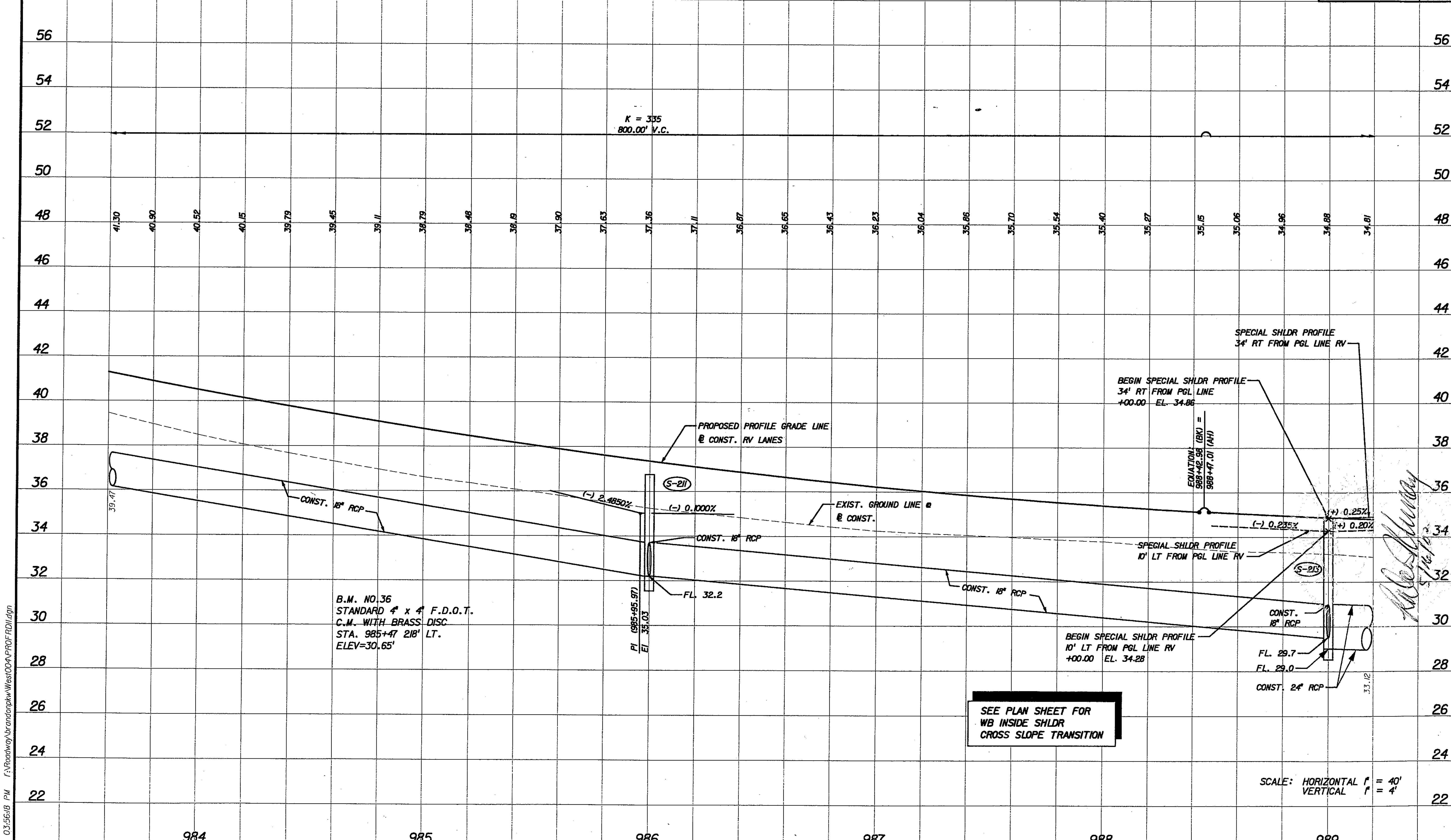
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (10)
REVERSIBLE LANES

CONST.PROJ.NO.	SHEET NO.
51.40.02	62



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05/16/02

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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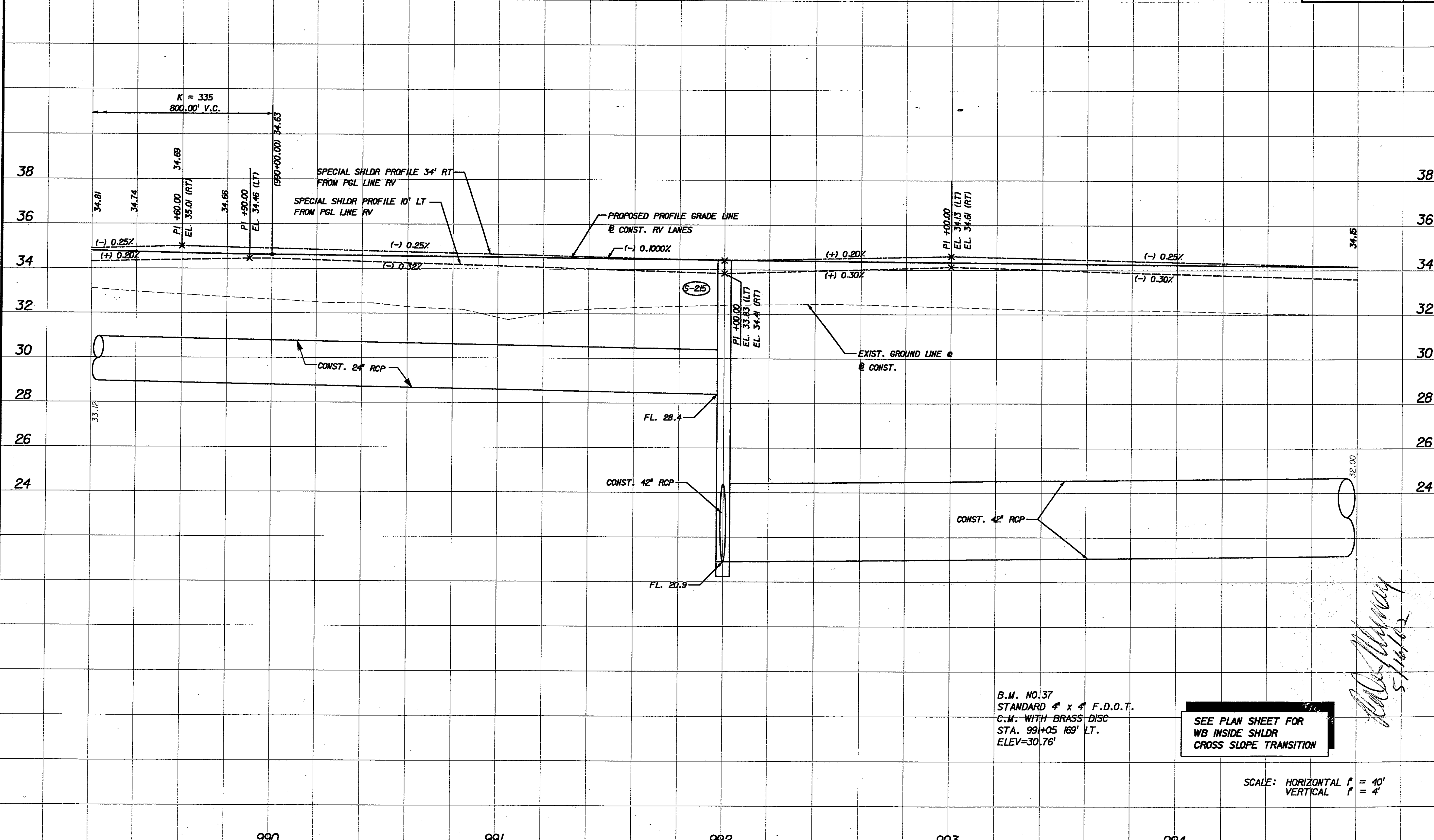
INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (11)
REVERSIBLE LANES

CONST.PROJ.NO.	SHEET NO.
51.40.02	63



B.M. NO. 37
STANDARD 4" x 4" F.D.O.T.
C.M. WITH BRASS DISC
STA. 991+05 169' LT.
ELEV=30.76'

SEE PLAN SHEET FOR
WB INSIDE SHLDR
CROSS SLOPE TRANSITION

SCALE: HORIZONTAL 1" = 40'
VERTICAL 1" = 4'

5/16/02

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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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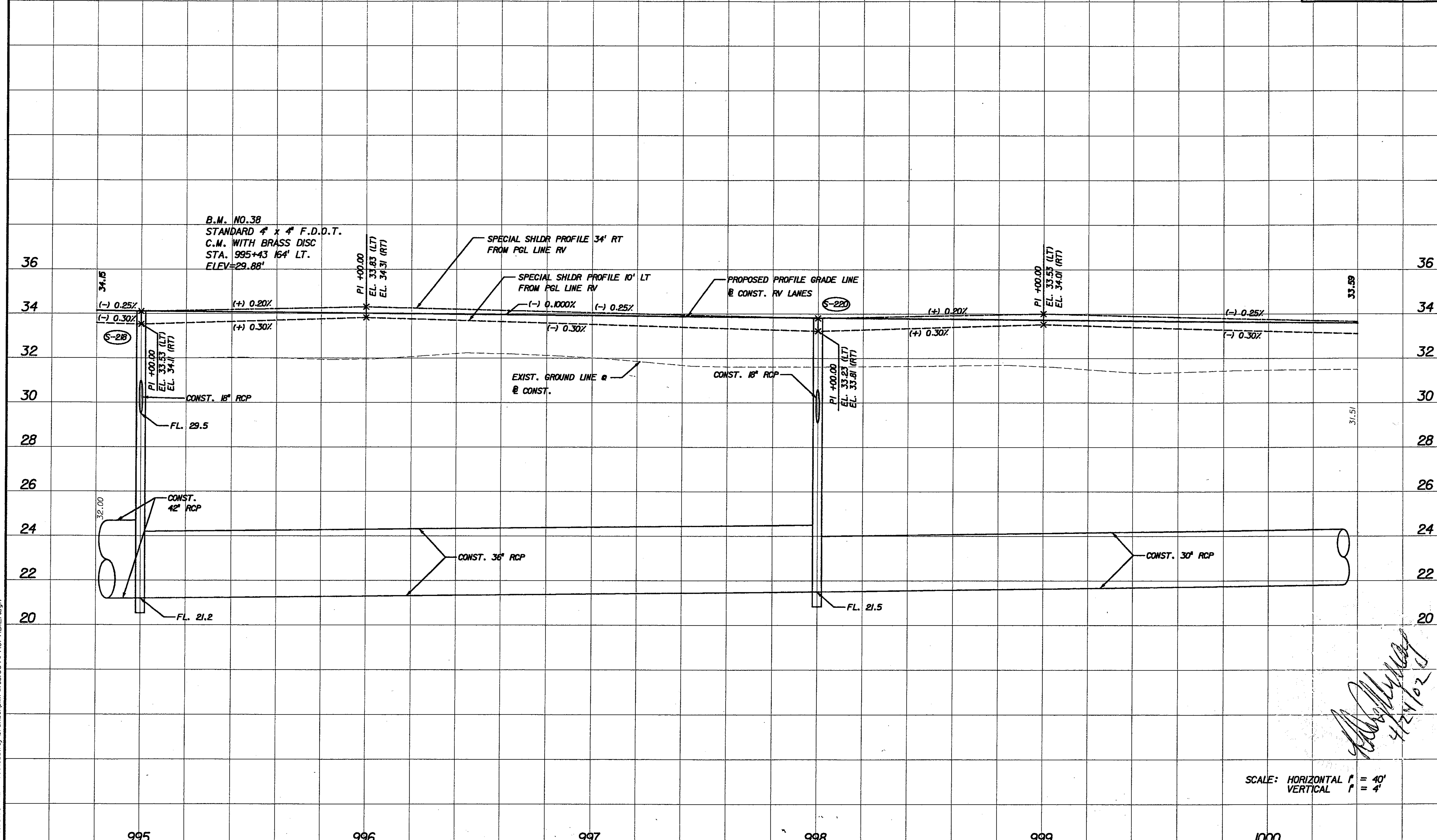
AUTHORITY

PROFILE SHEET (12)
REVERSIBLE LANES

CONST.PROJ.NO.	SHEET NO.
51.40.02	64



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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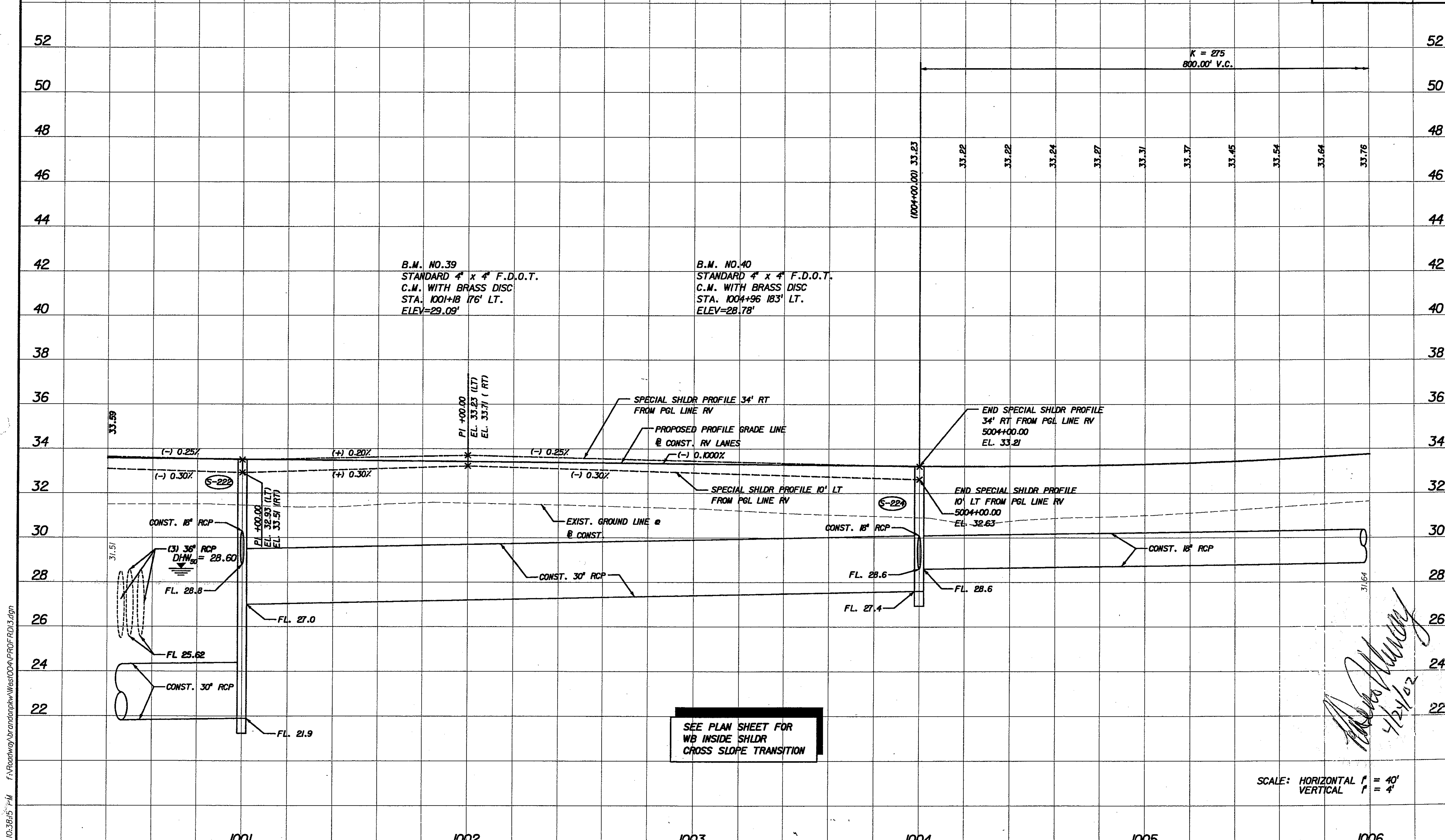
COUNTY EXPRESSWAY
AUTHORITY

PROFILE SHEET (12A)
REVERSIBLE LANES

CONST.PROJ.NO.	SHEET NO.
51.40.02	65



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

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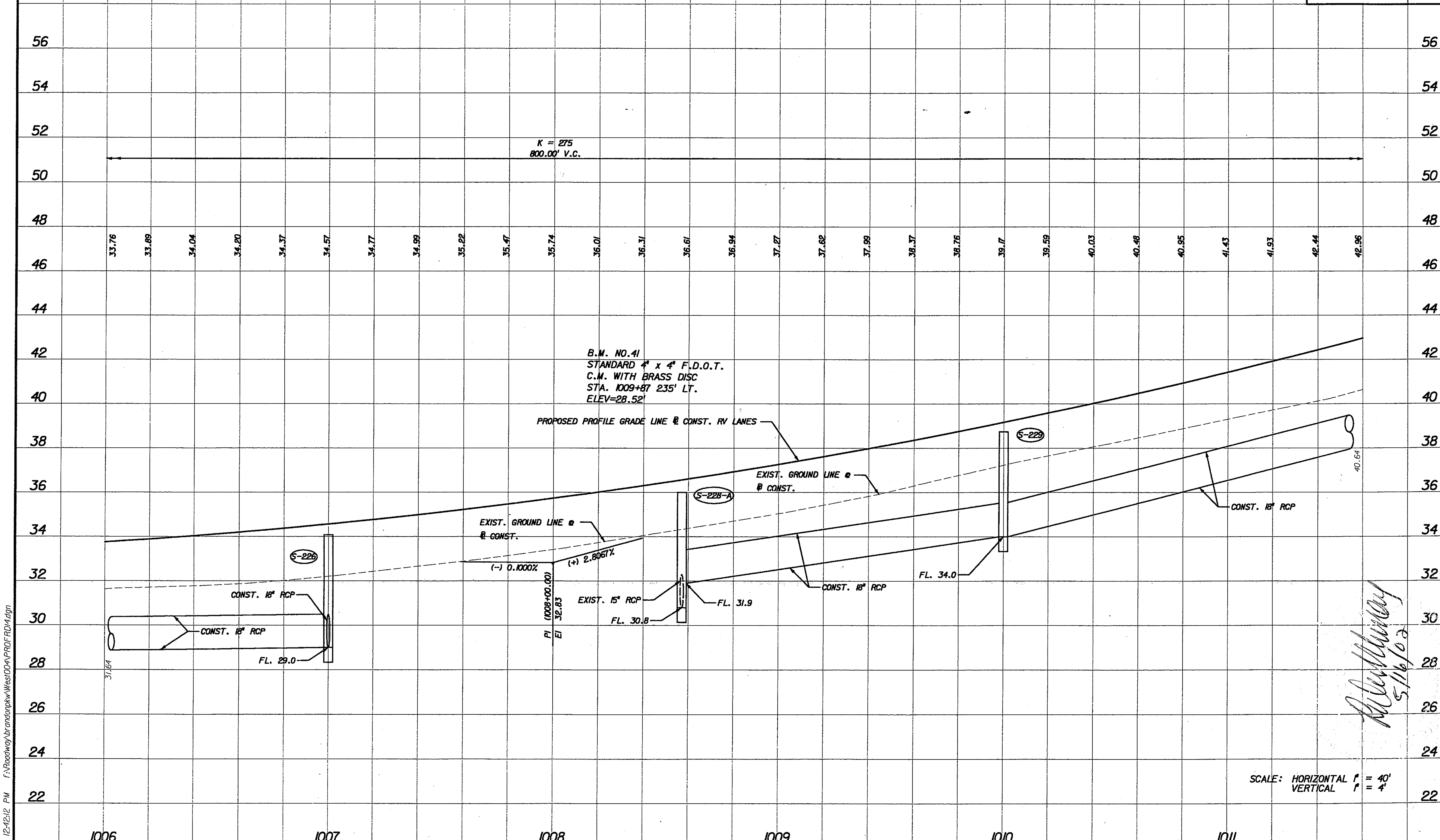
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (13)
REVERSIBLE LANES

CONST.PROJ.NO.	SHEET NO.
51.40.02	66



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (14)
REVERSIBLE LANES

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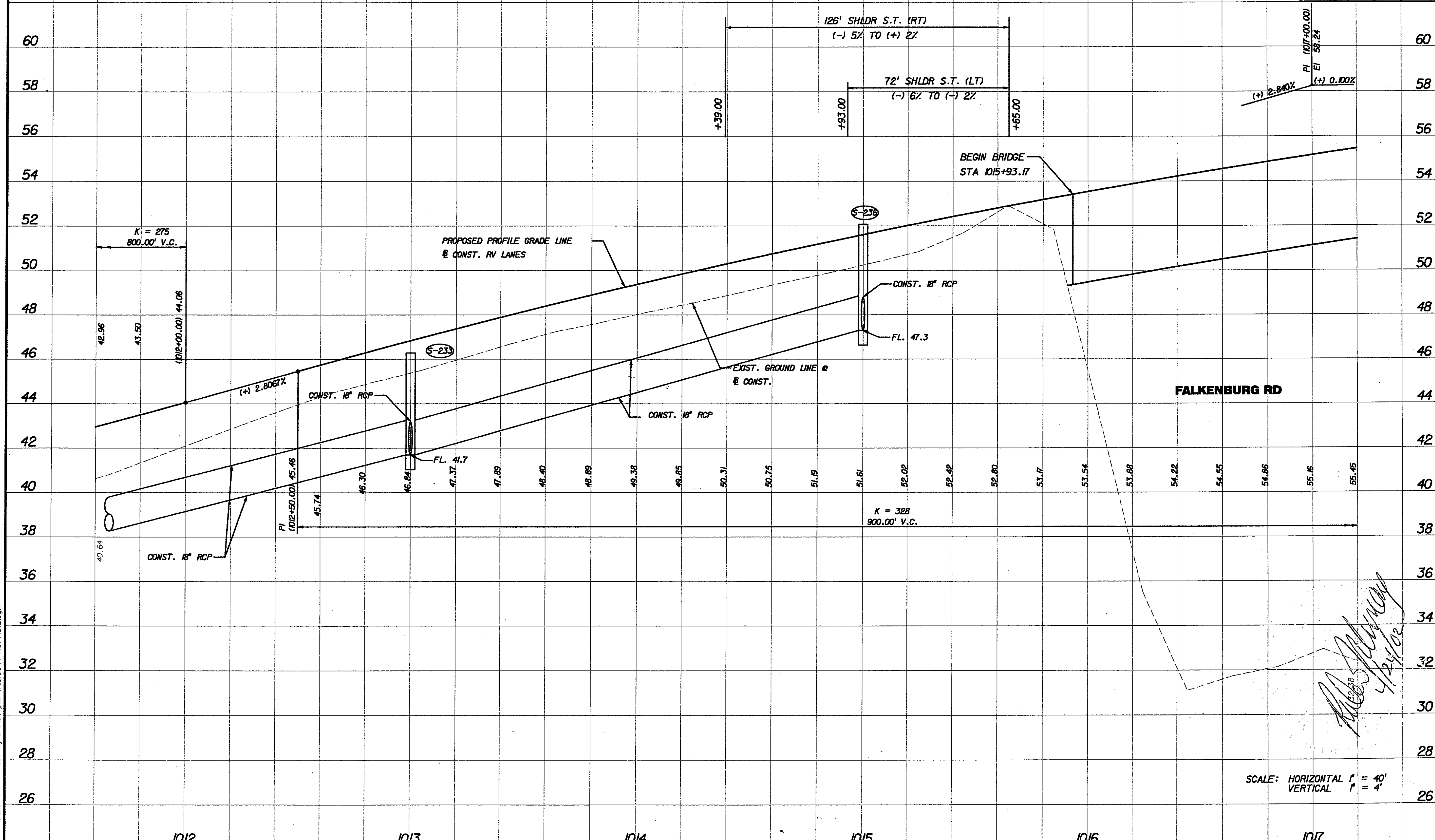
CONST.PROJ.NO.	SHEET NO.
51.40.02	67



f:\Roadway\brandonpkw\West004\PROFRD15.dgn 09:02:22 AM 04/24/02

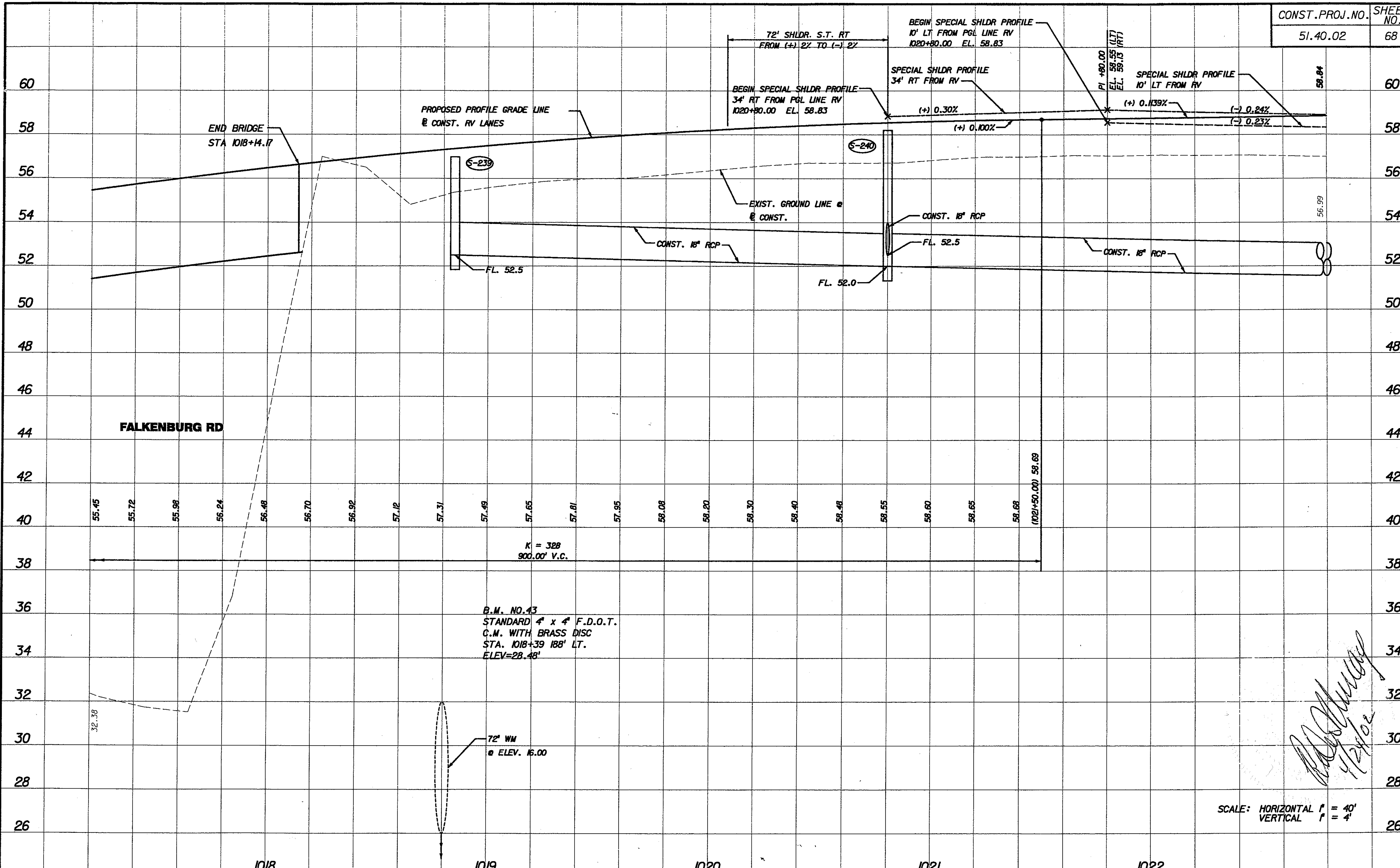
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (15)
REVERSIBLE LANES



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (16)
REVERSIBLE LANES

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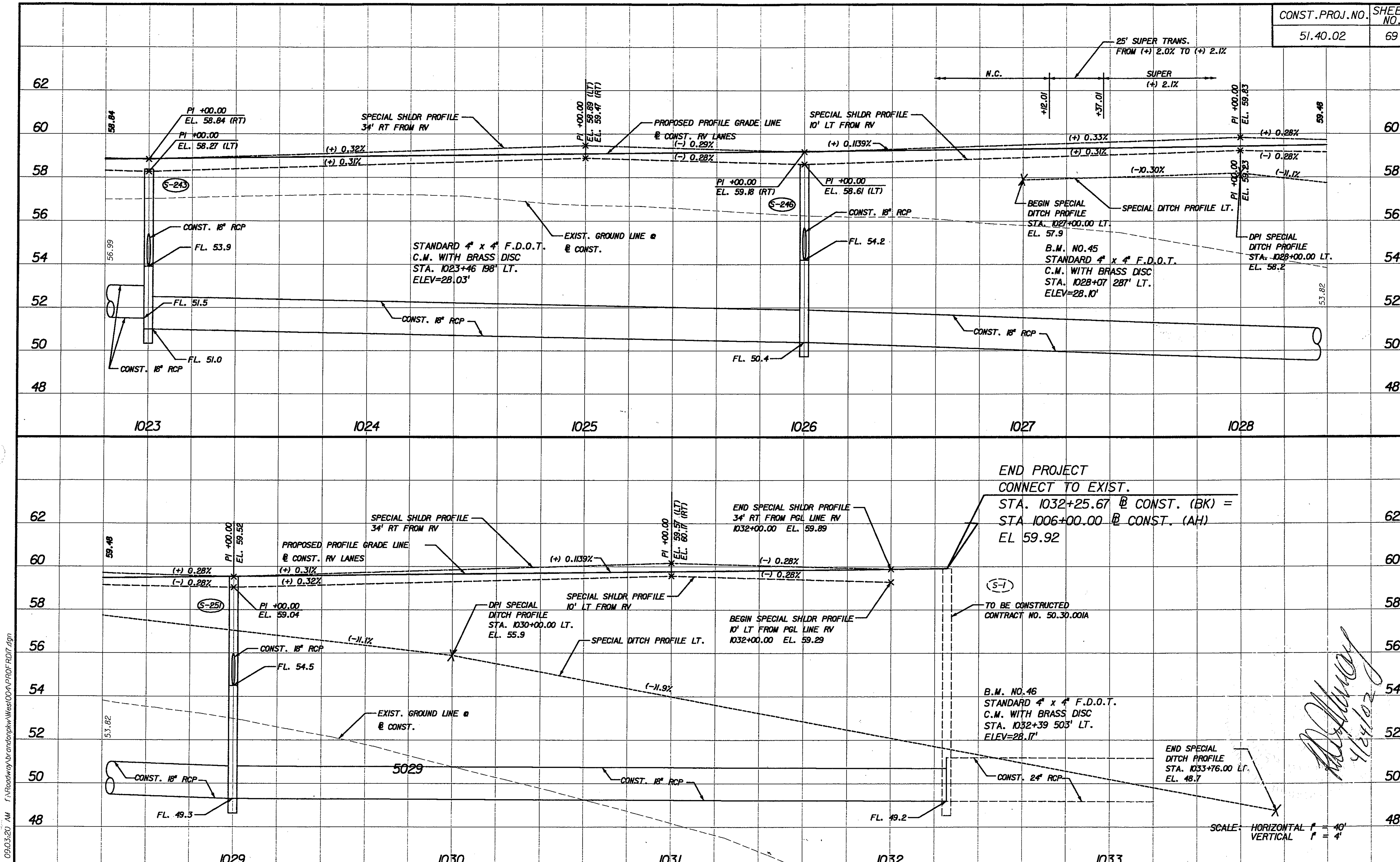
CONST.PROJ.NO.	SHEET NO.
51.40.02	69



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

PROFILE SHEET (17)
REVERSIBLE LANES

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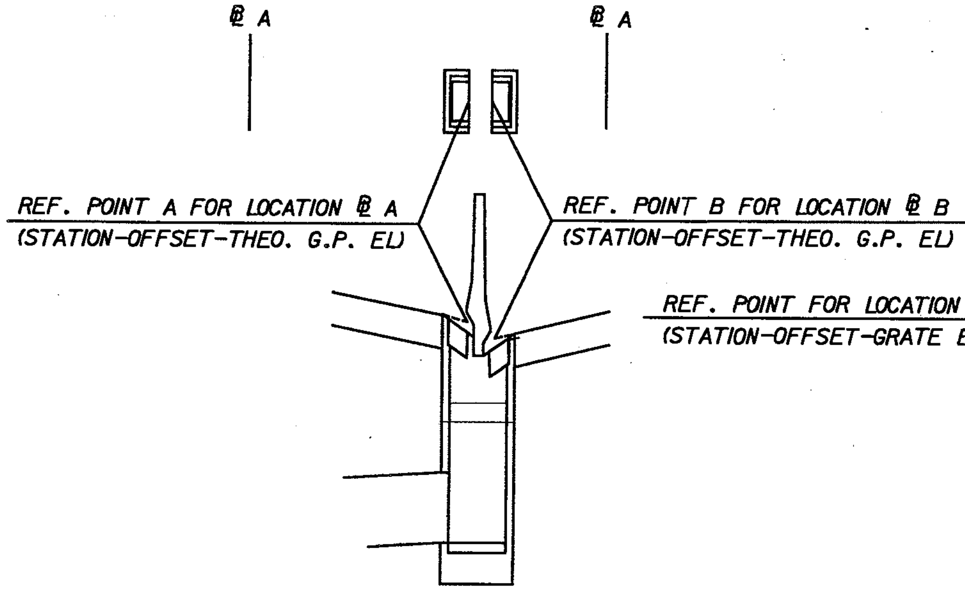
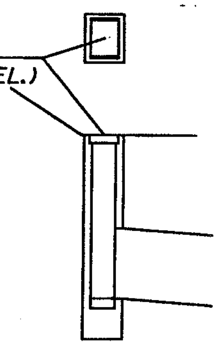
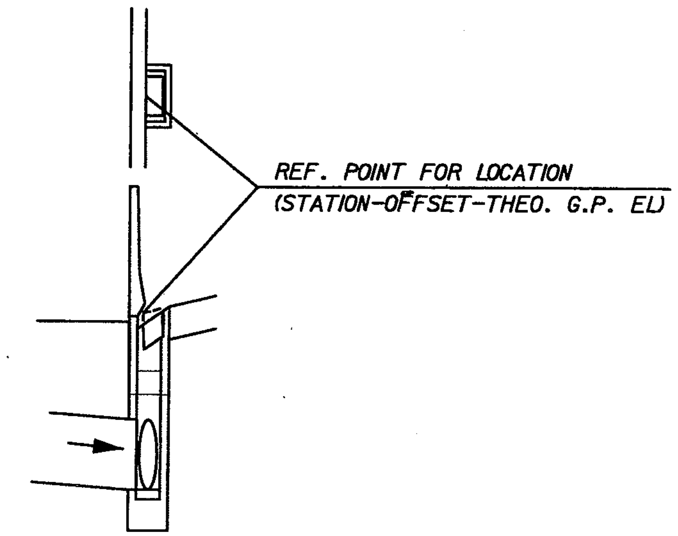


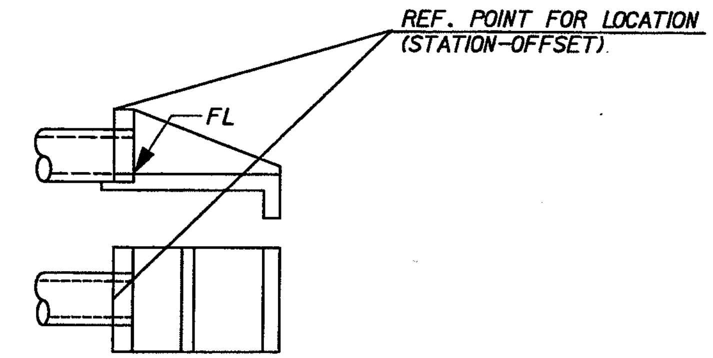
MEDIAN BARRIER INLET TYPES 3 & 4
FDOT INDEX NO. 200,201 & 217



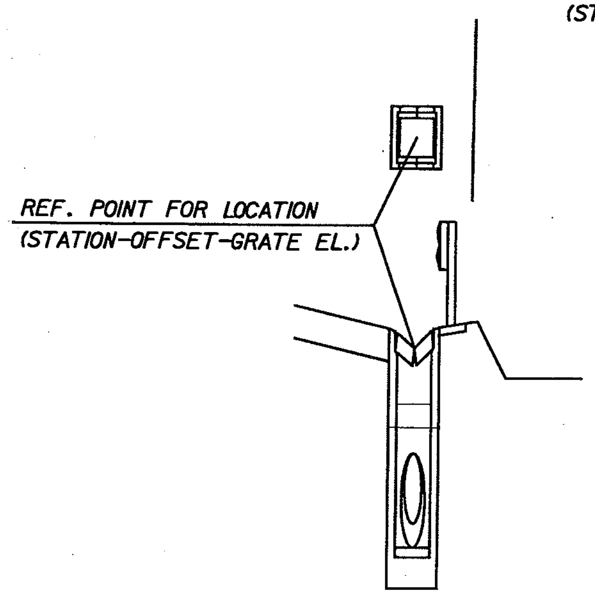
D.B.I.
FDOT INDEX NO. 200,201,230,231 & 232



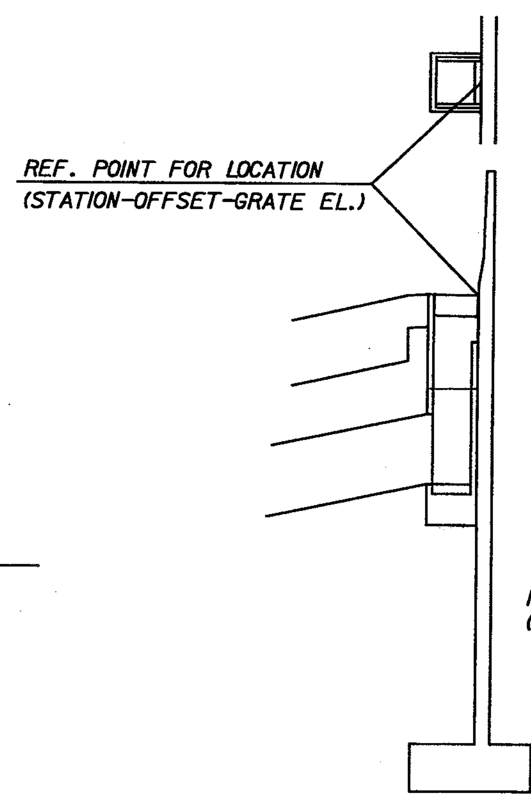
MEDIAN BARRIER INLET TYPES 1 & 2
FDOT INDEX NO. 200,201 & 217



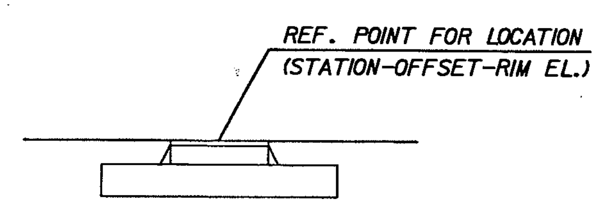
U-TYPE CONCRETE ENDWALLS
FDOT INDEX NO. 261



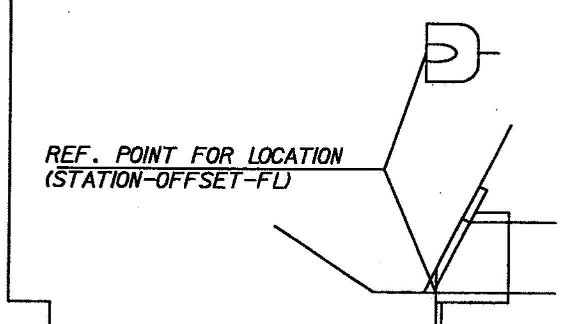
GUTTER INLET TYPE S
FDOT INDEX NO. 200,201 & 220



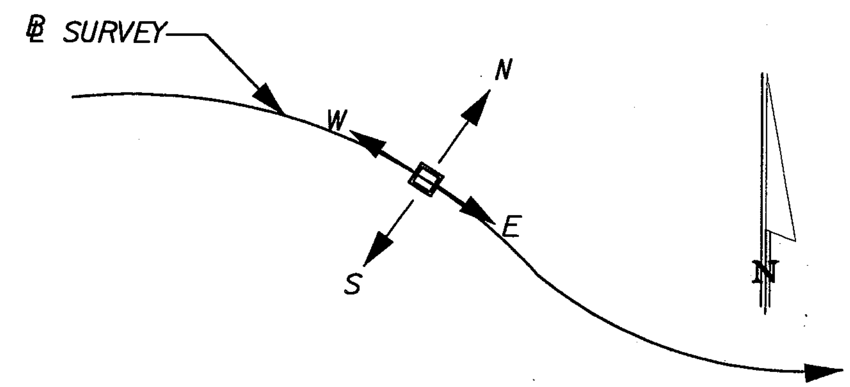
BARRIER WALL INLET
FDOT INDEX NO. 200,201 & 218



MANHOLE



M.E.S.
FDOT INDEX NO. 272



* STRUCTURE CALLOUTS ARE LABELED BASED ON RELATIONSHIP TO ℄ SURVEY AND ARE NOT BASED ON TRUE "NORTH" CALLOUTS.

NOTE:

1. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES EXTEND INTO THE STABILIZED PORTION OF THE ROAD BED. EXTREME CAUTION IS REQUIRED DURING STABILIZATION OPERATIONS AT THESE LOCATIONS. (SEE INDEX NO. 205 FOR EXTRA DETAILS)

2. TEMPORARY SHEETING, TRENCH BOXES & DEWATERING MAY BE REQUIRED TO CONSTRUCT SOME SEGMENTS OF THE STORM SEWER. ALL ASSOCIATED COSTS SHALL BE INCLUDED IN THE COST OF THE STORM SEWER.

5-16-02

05/16/2002 09:36:07 AM f:\Roadway\brandonpkwy\West004\DRDTEM01.dgn

REVISIONS

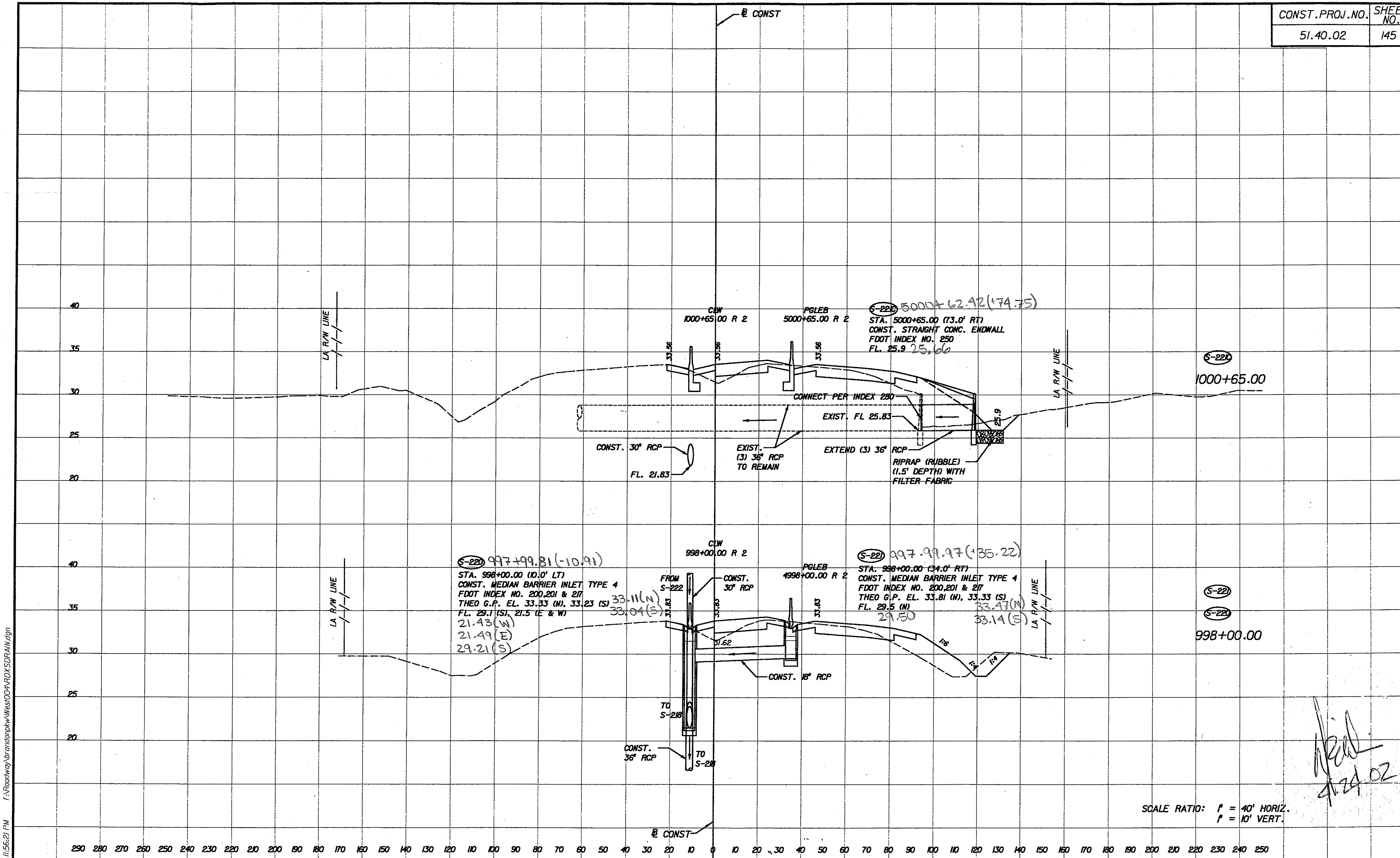
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE DETAILS SHEET (1)

CONST.PROJ.NO.	SHEET NO.
51.40.02	145



04/23/2002 11:56:21 PM f:\Roadway\brandonpkw\West004\RDXSDRAIN.dgn

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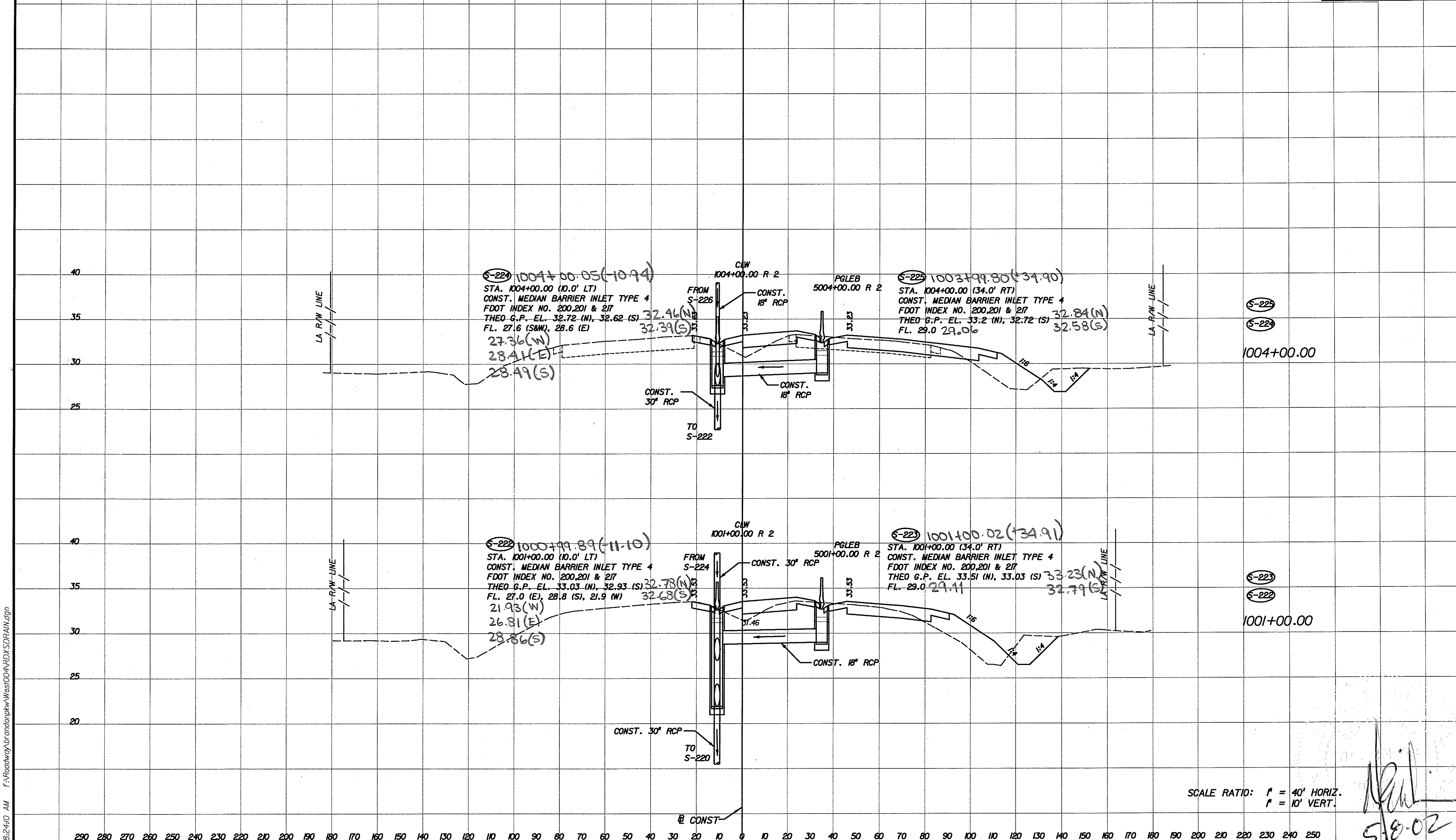
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONST. PROJ. NO.	SHEET NO.
51.40.02	146



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

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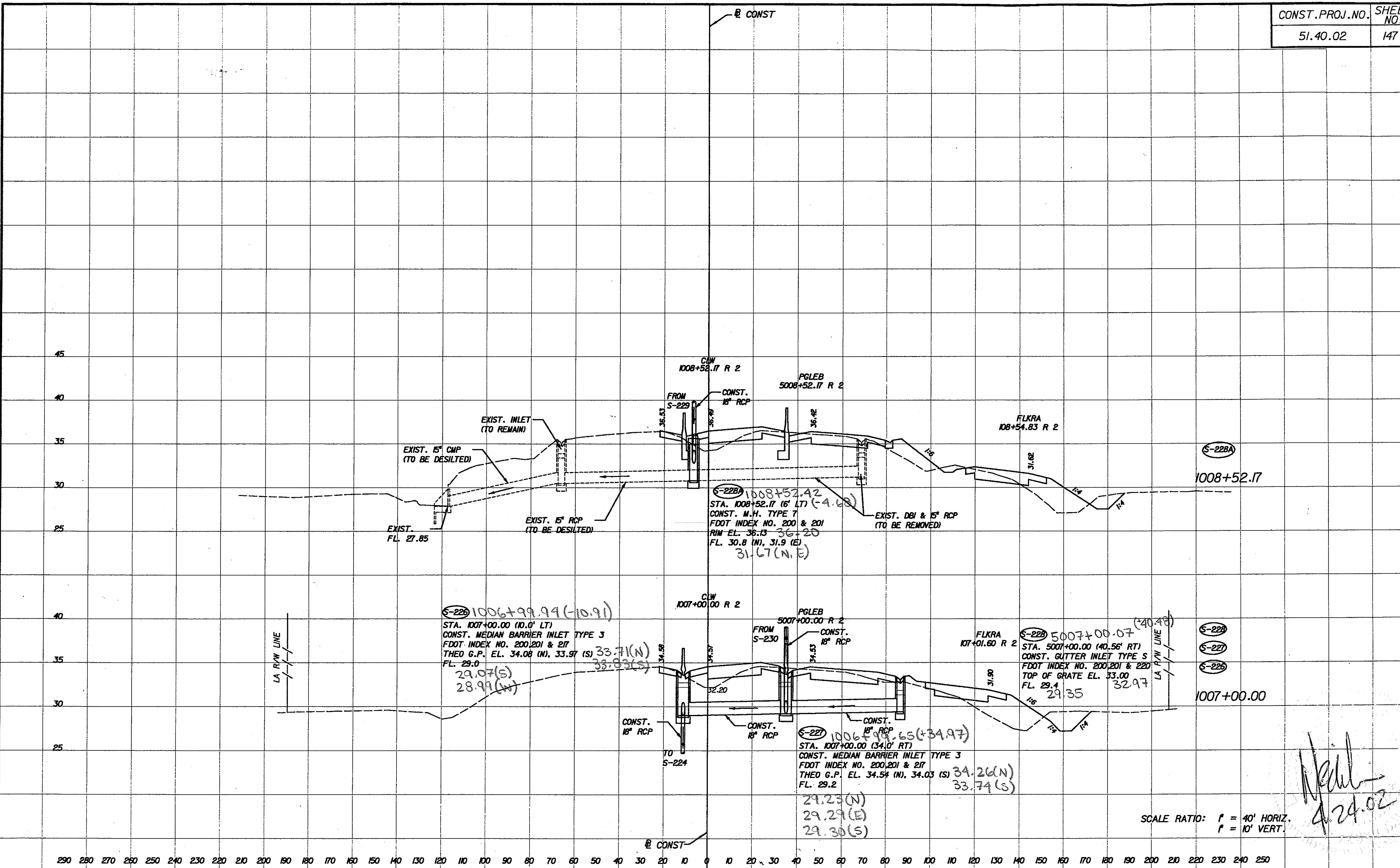
CONST.PROJ.NO.	SHEET NO.
51.40.02	147



REVISIONS											
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CONSULTANT GROUP
INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

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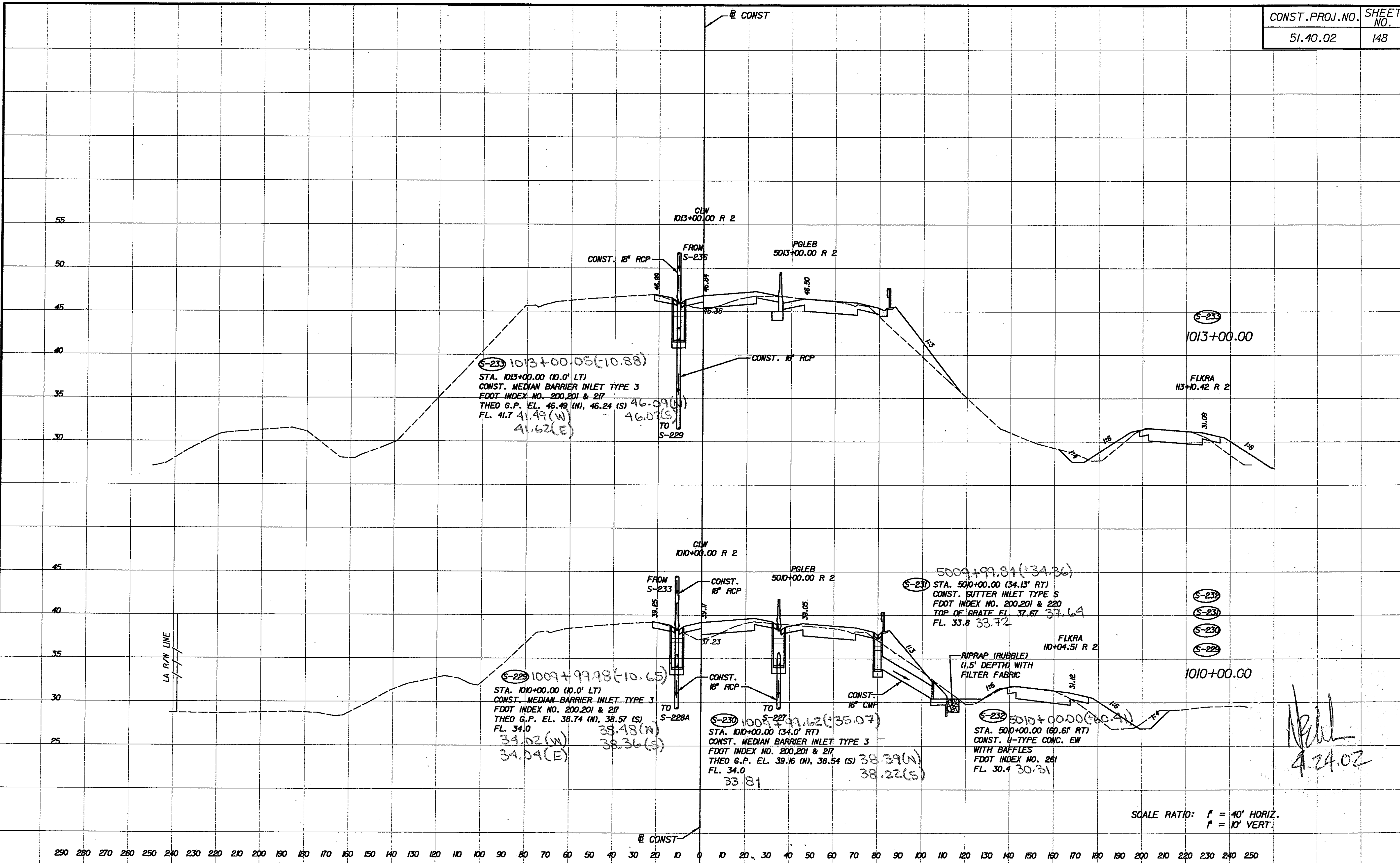
CONST. PROJ. NO.	SHEET NO.
51.40.02	148



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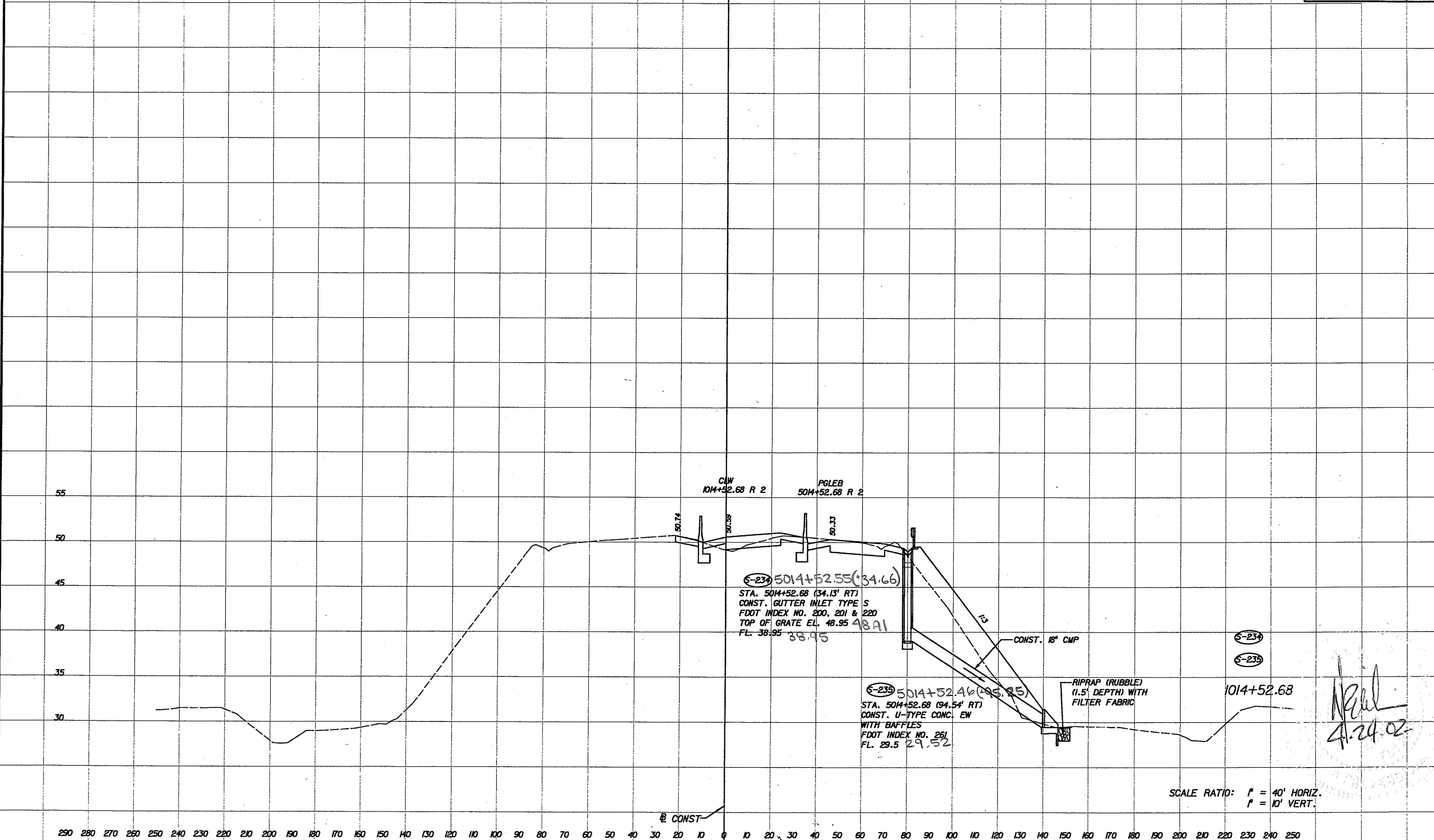
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONST.PROJ.NO.	SHEET NO.
51.40.02	149



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DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

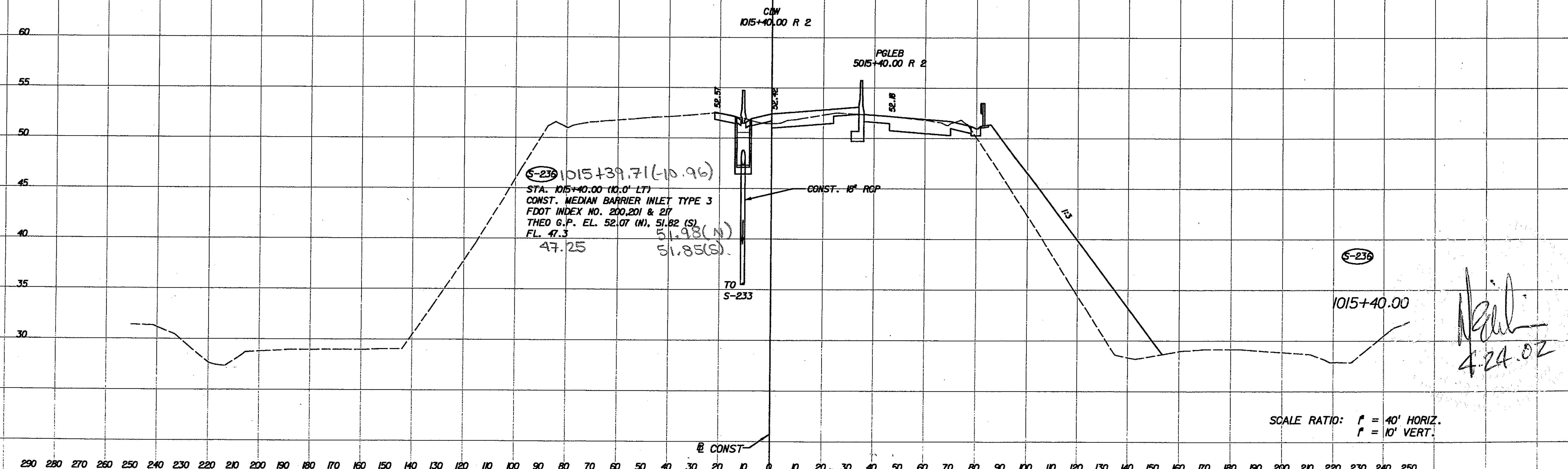
REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONST.PROJ.NO.	SHEET NO.
51.40.02	150



REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

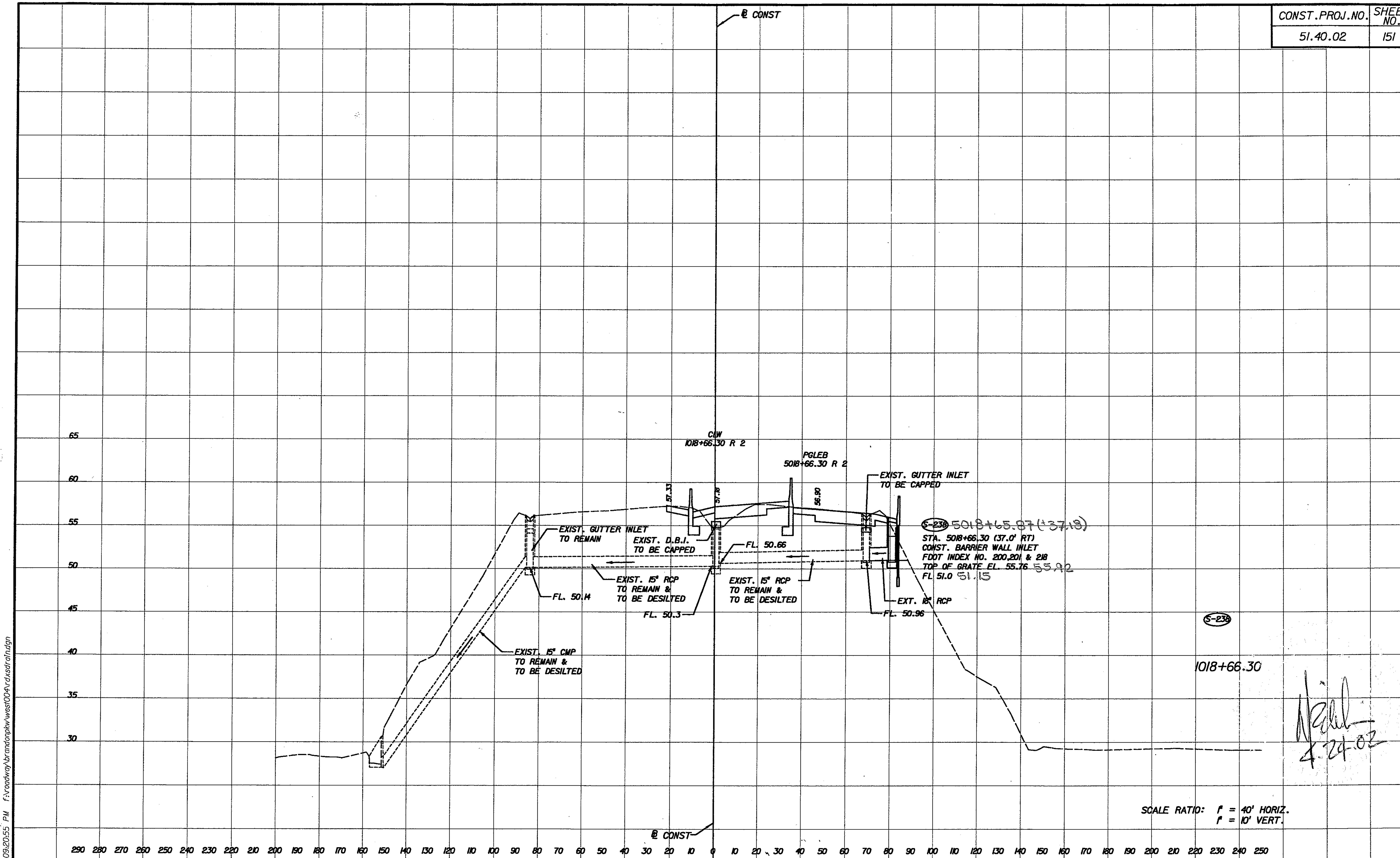
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

04/24/2002 07:21:33 AM f:\Roadway\brandonpkwy\West\00A\RDXSDRAIN.dgn

CONST.PROJ.NO.	SHEET NO.
51.40.02	151



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REVISIONS

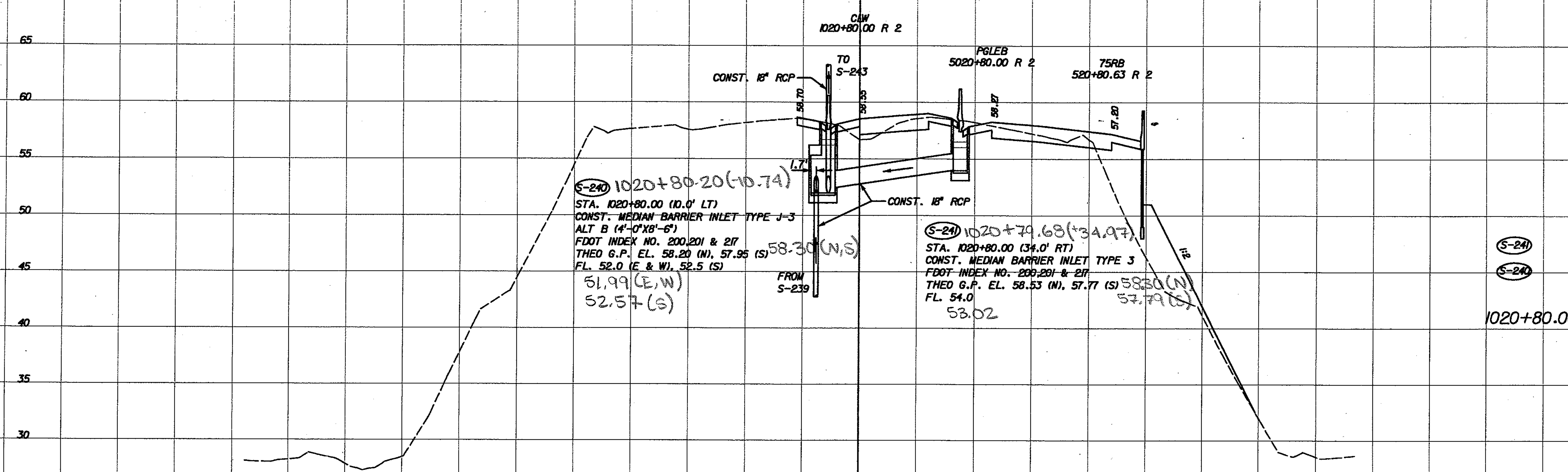
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

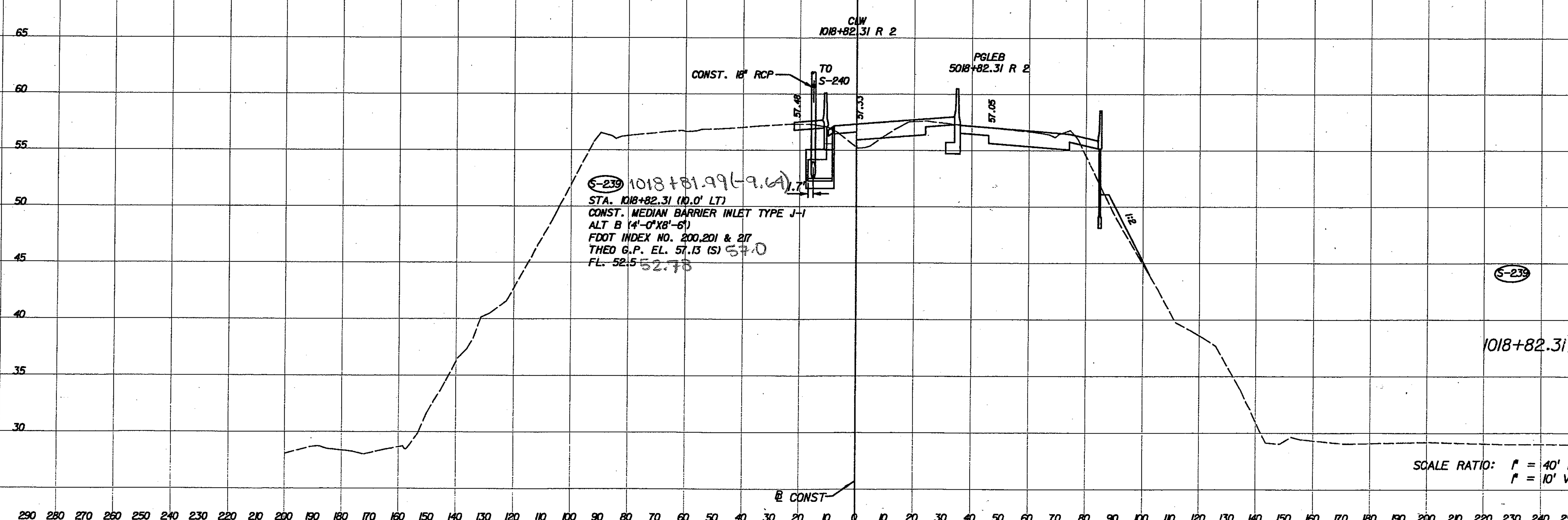
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONST.PROJ.NO.	SHEET NO.
51.40.02	152





5.16.02

SCALE RATIO: 1" = 40' HORIZ.
1" = 10' VERT.

03:44:50 PM f:\Roadway\brandonpkwy\West004\RDXSDRAIN.dgn
05/16/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

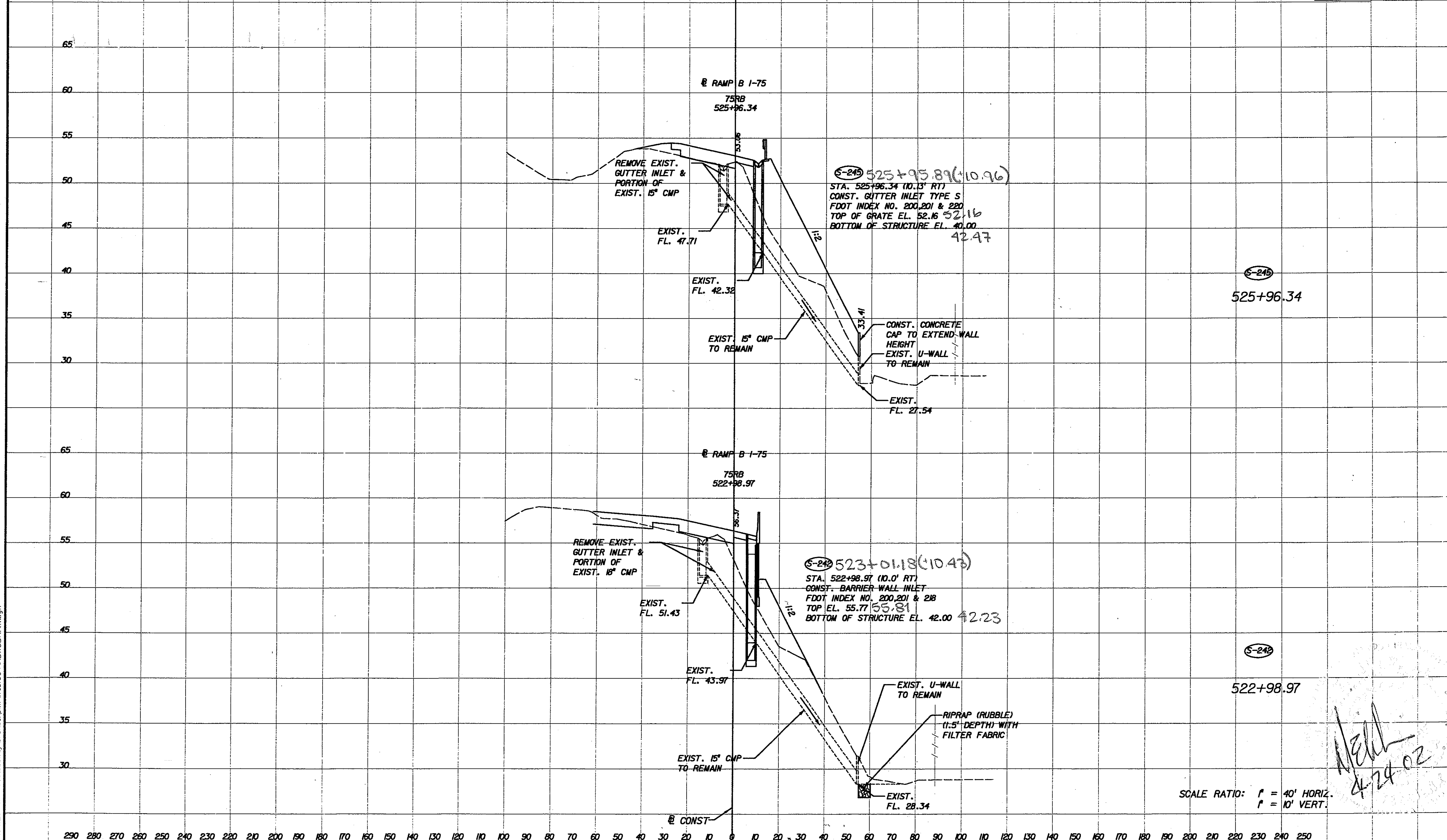
REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONST.PROJ.NO.	SHEET NO.
51.40.02	153



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REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

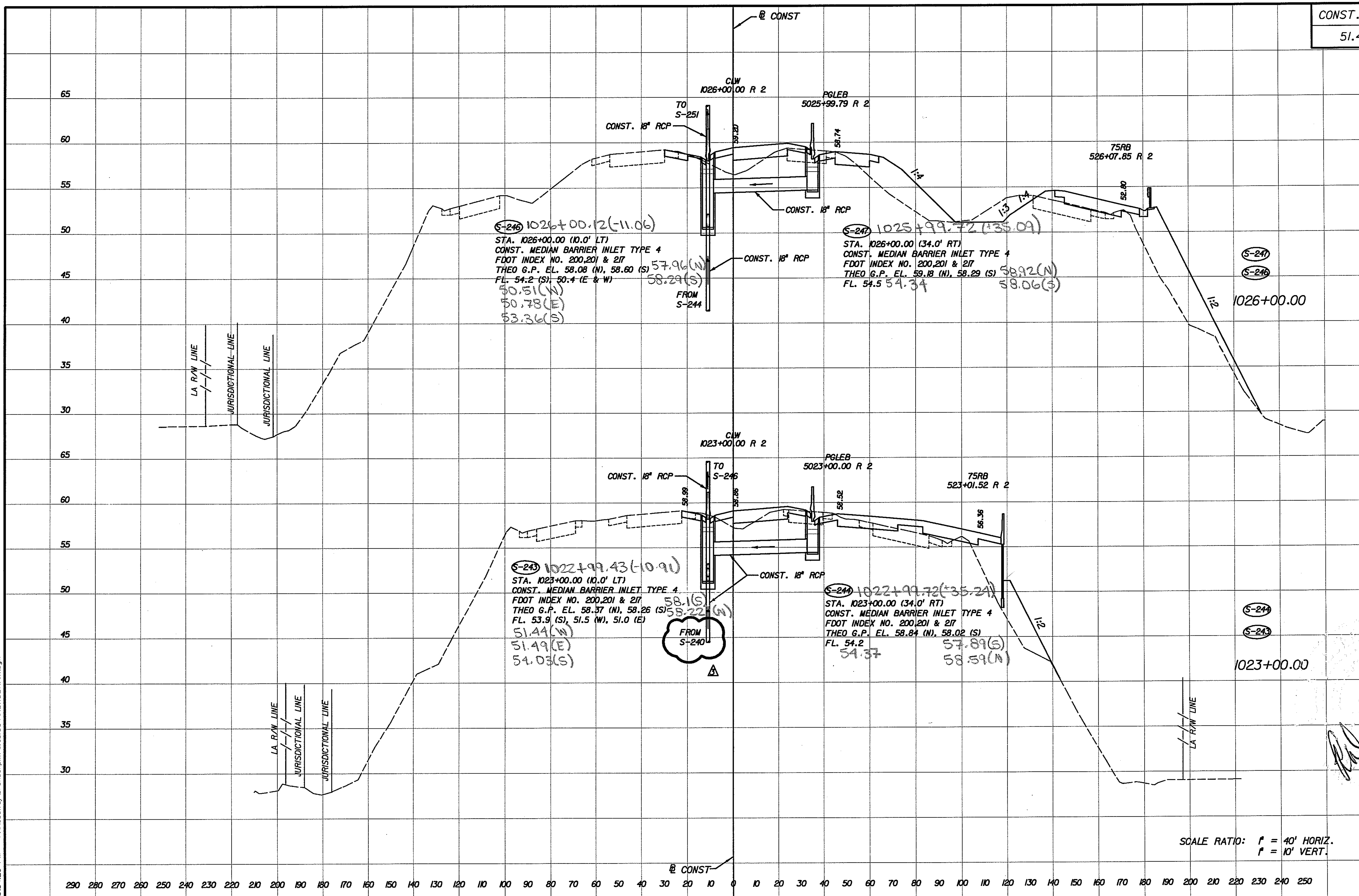
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONST. PROJ. NO.	SHEET NO.
51.40.02	154

REGULAR EXC.		EMBK.	
A	V	A	V



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REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
12-10-02	MF	3 REVISED CALLOUT S-241 TO S-240									

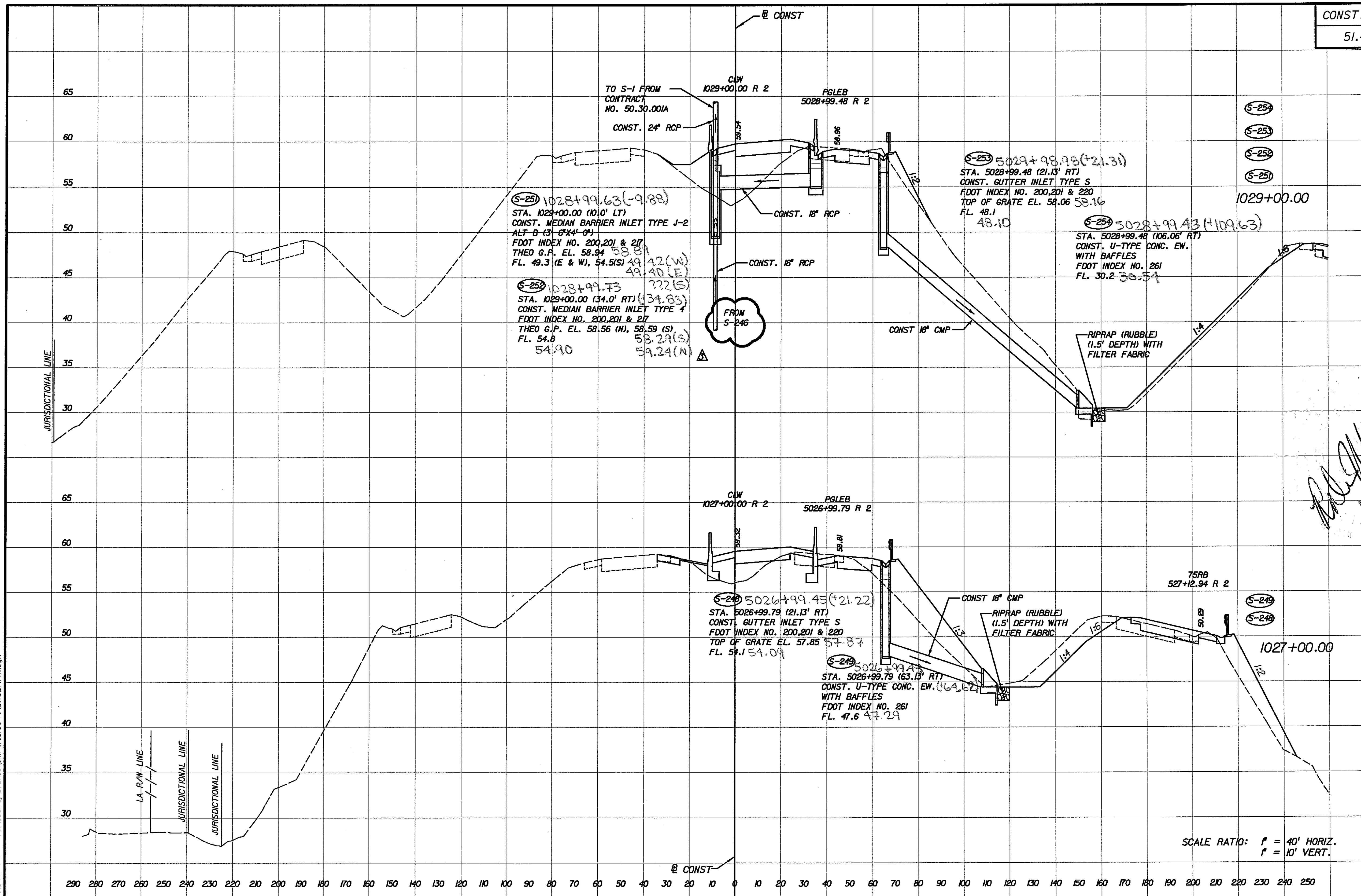
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CROSS SECTIONS

CONST.PROJ.NO.	SHEET NO.
51.40.02	155

REGULAR EXC.		EMBK.	
A	V	A	V



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REVISIONS

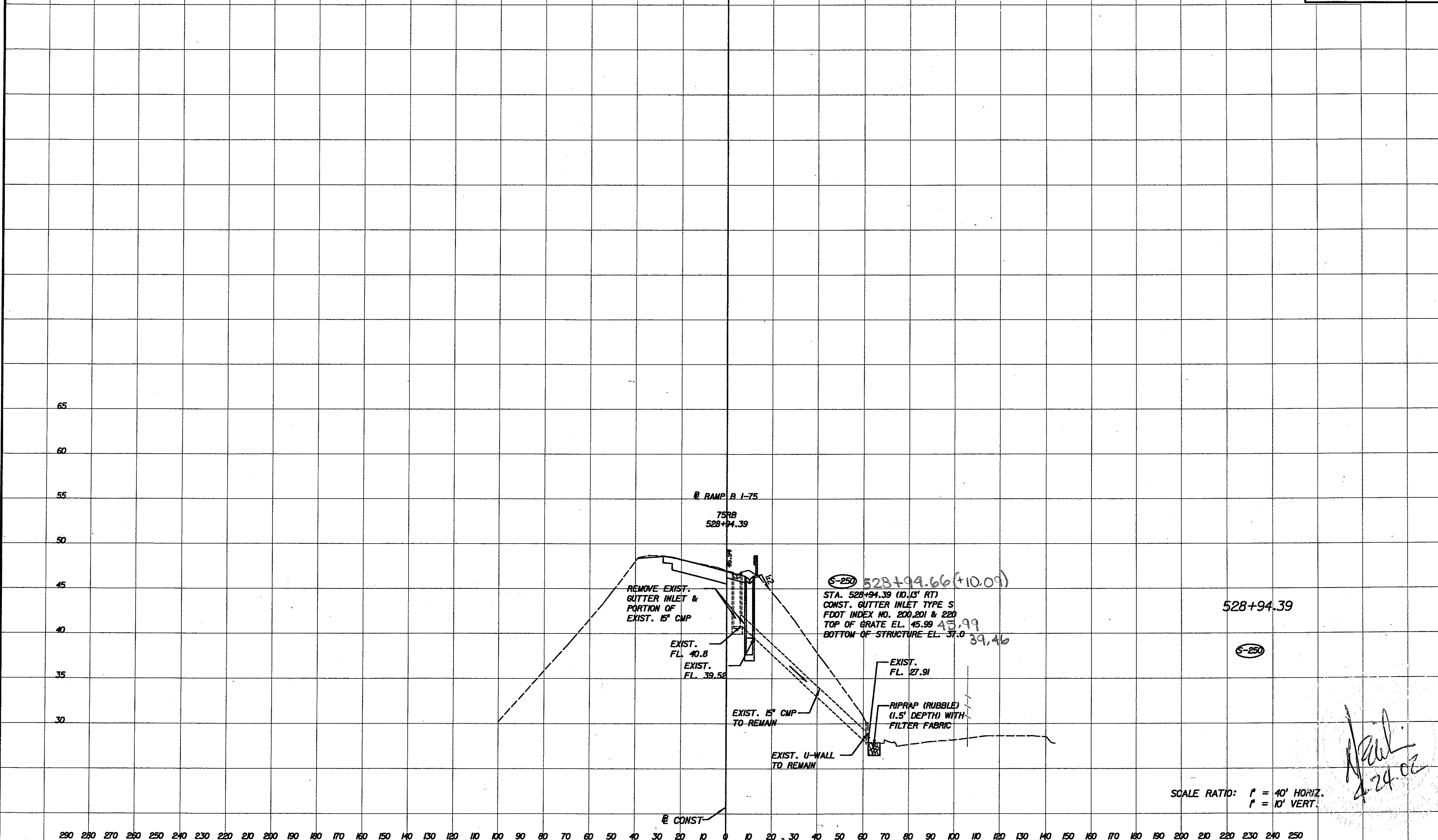
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
12-10-02	MF	△3 REVISED CALLOUT S-249 TO S-246									

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CROSS SECTIONS

CONST.PROJ.NO.	SHEET NO.
51.40.02	156



04/22/2002 09:21:43 PM f:\roadway\brandonpkwy\west004\rdxsdrainage.dgn

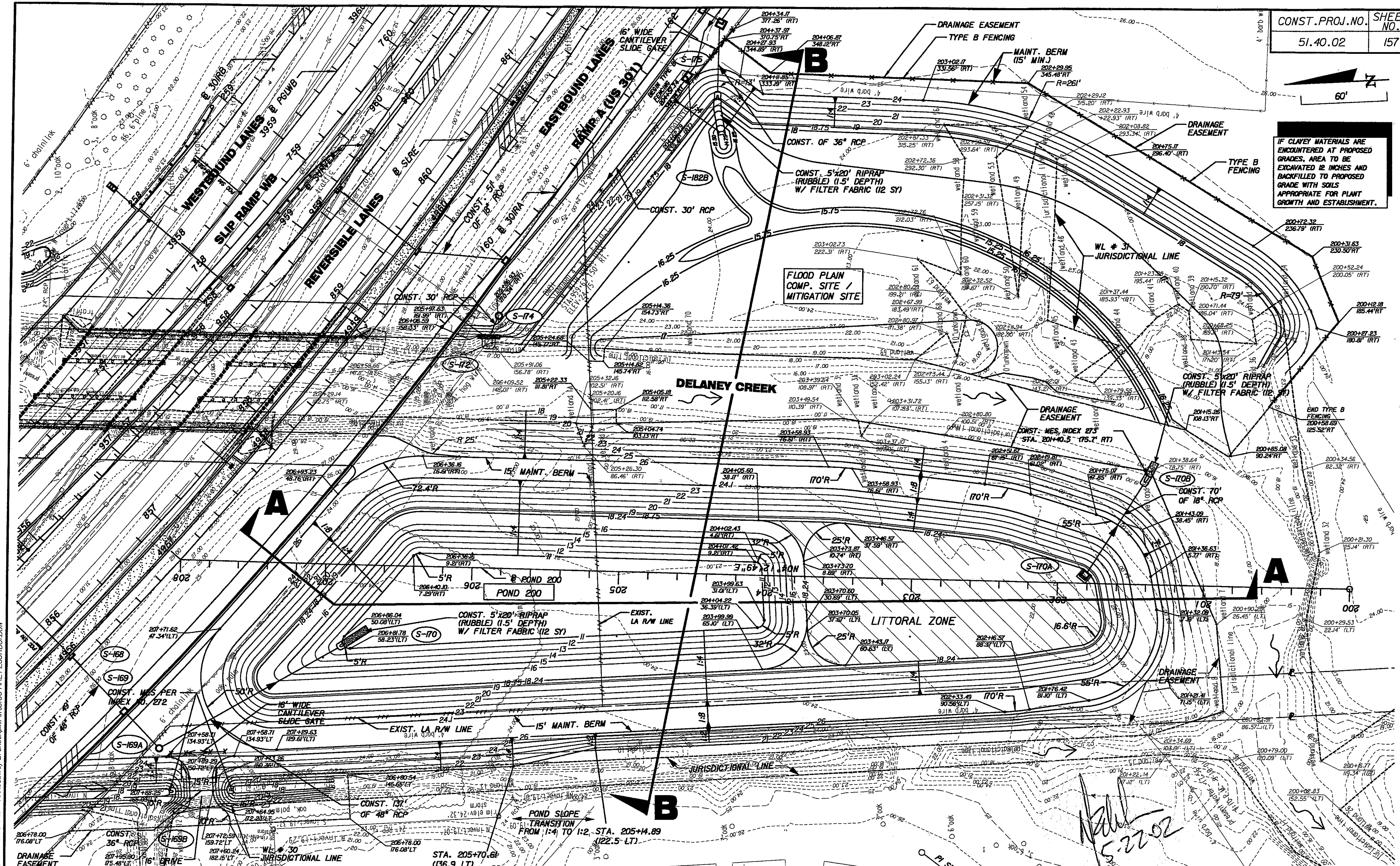
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES



05/22/2002 03:08:36 PM f:\Roadway\brandonpkwWest004\RET200RD01.DGN

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

POND 200 & FLOOD PLAIN COMP. SITE / MITIGATION SITE

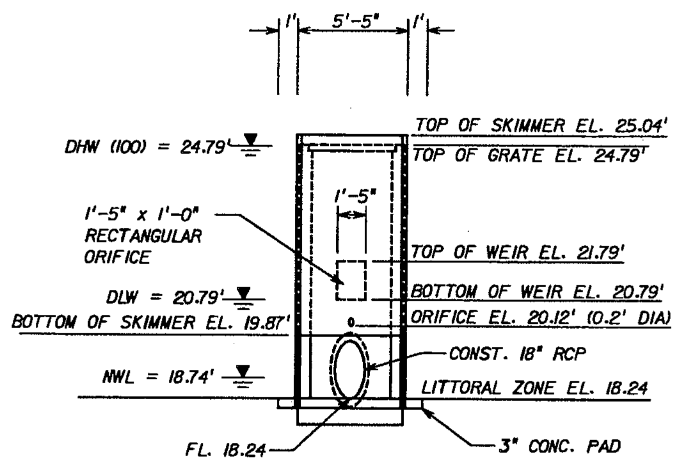
CONST.PROJ.NO.	SHEET NO.
51.40.02	158

PAY ITEM NOTES:

1. COST OF ORIFICE WITH WEIR, SKIMMER, AND OTHER APPURTENANCES TO BE INCLUDED IN COST OF STRUCTURE.

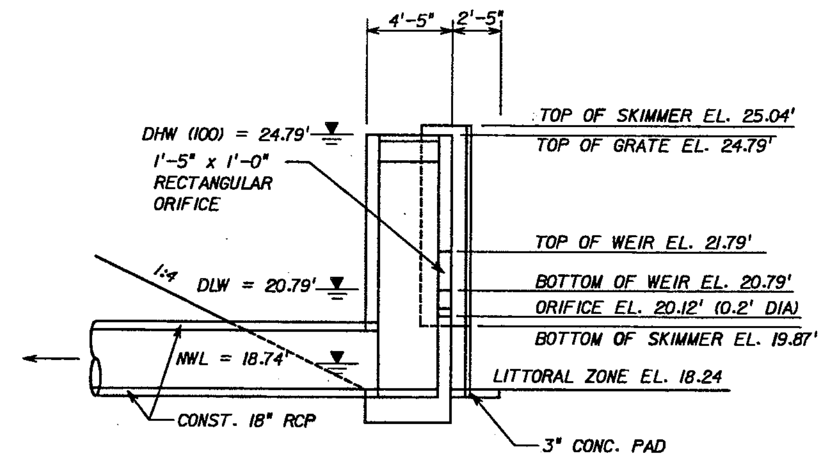
GENERAL NOTES:

2. ALL TREES WITHIN THE RIGHT-OF-WAY ARE TO BE REMOVED UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL STAKE ALL SOD PLACED AT SLOPES 1:2 OR STEEPER.



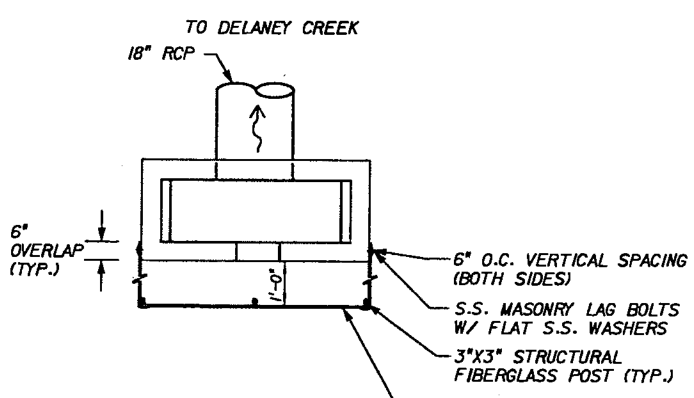
FRONT VIEW

N.T.S.



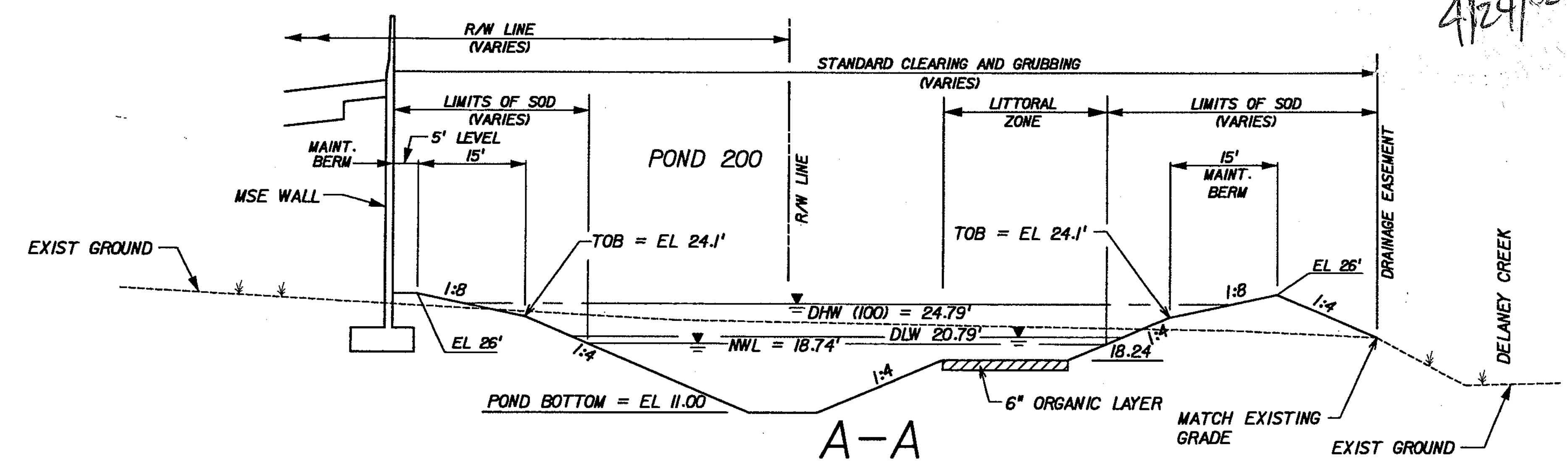
SIDE VIEW

N.T.S.



PLAN VIEW

N.T.S.

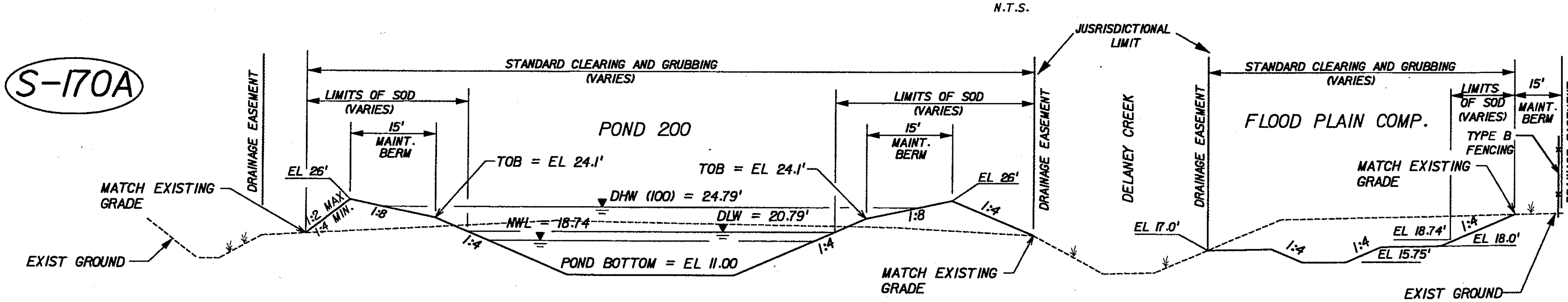


A-A

N.T.S.

CONTROL STRUCTURE (S-170A)

DITCH BOTTOM INLET
TYPE D-MODIFIED
(SEE INDEX No. 232)
STA. 201+81.34 (6.0' RT) ℄ POND 200



B-B

N.T.S.

4/24/02

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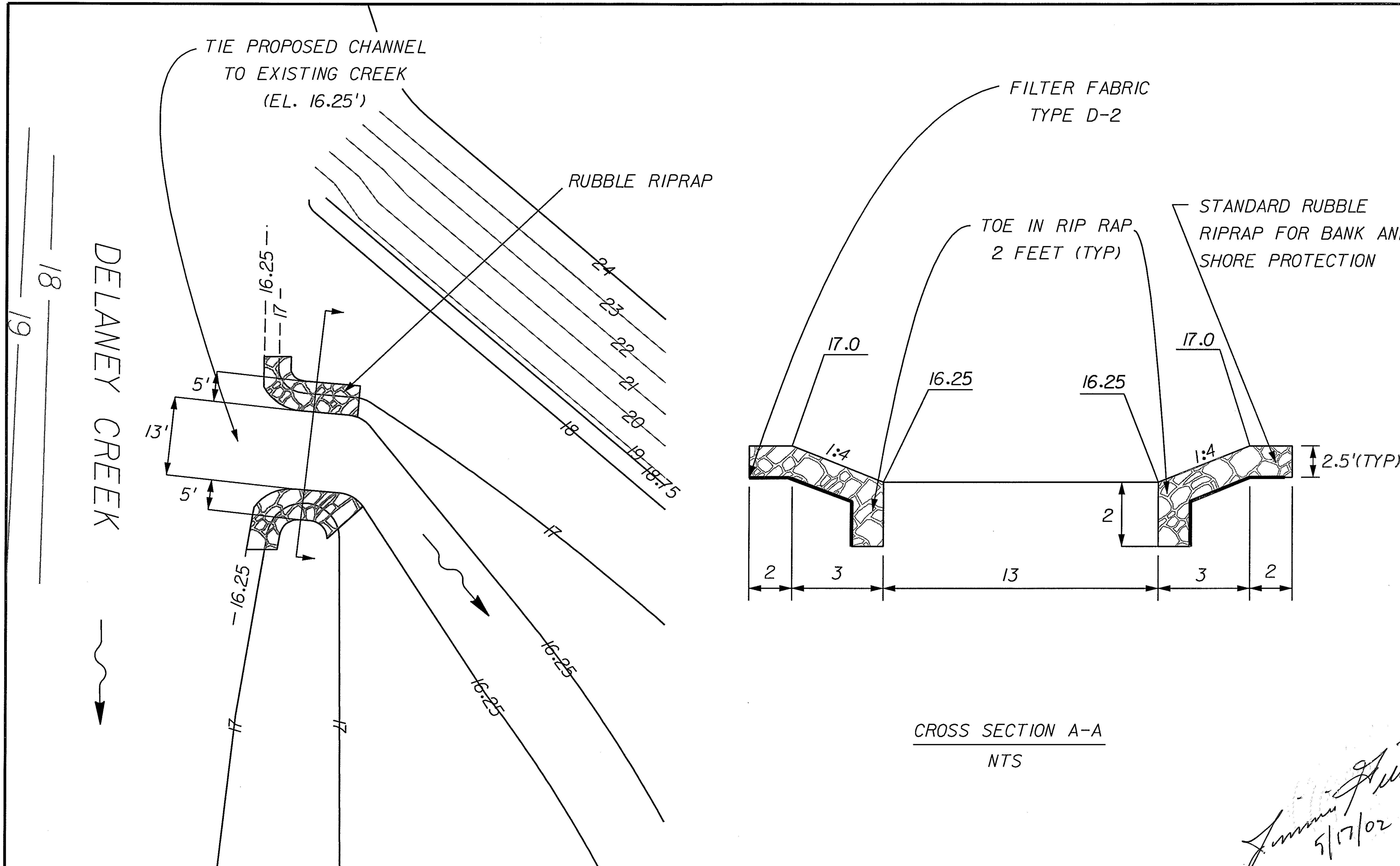
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

POND 200 & FLOOD PLAIN COMP. SITE



CROSS SECTION A-A

NTS

Jimmie Gill 5/17/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL , P.E. NO. 31959

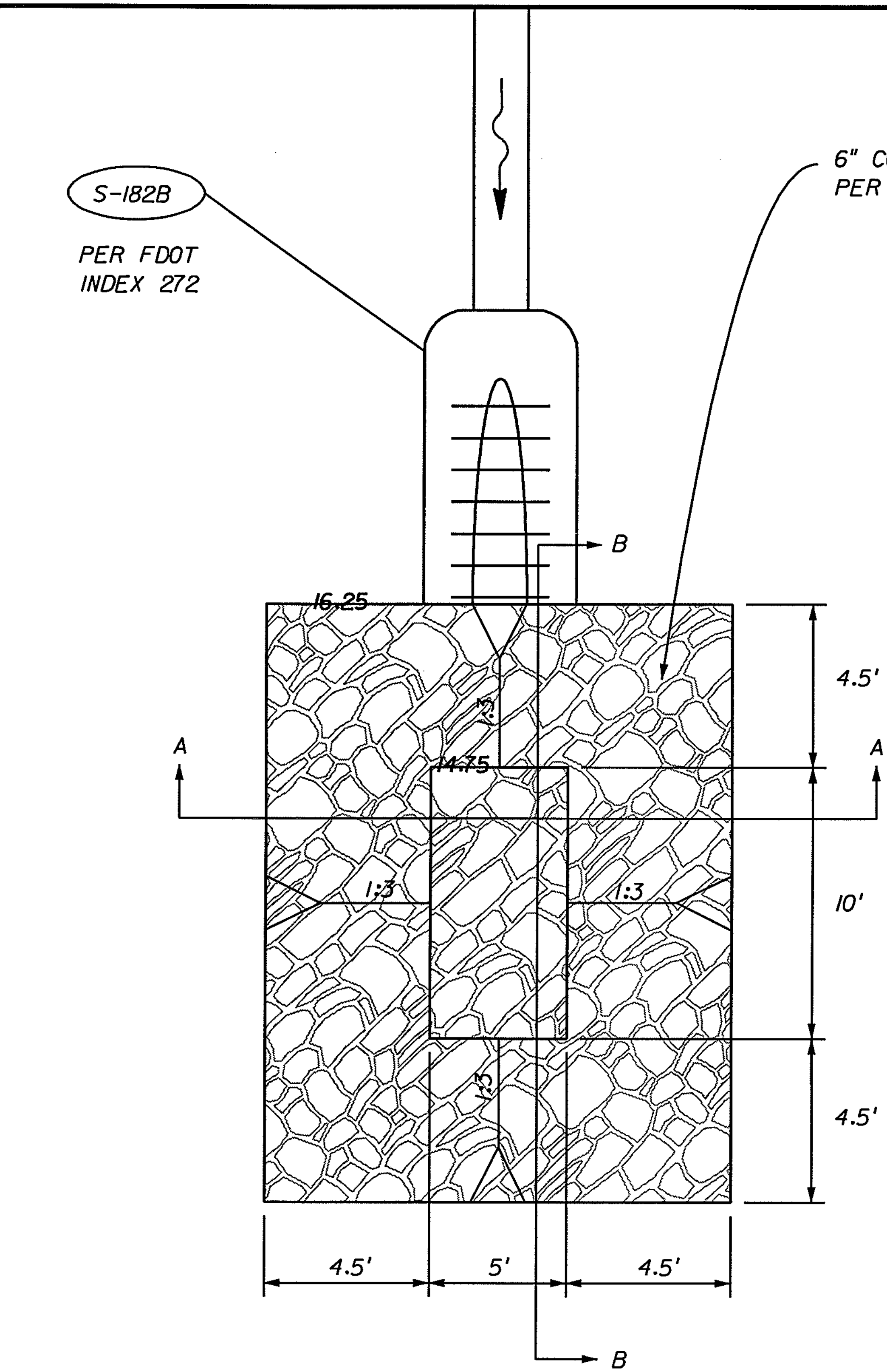
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

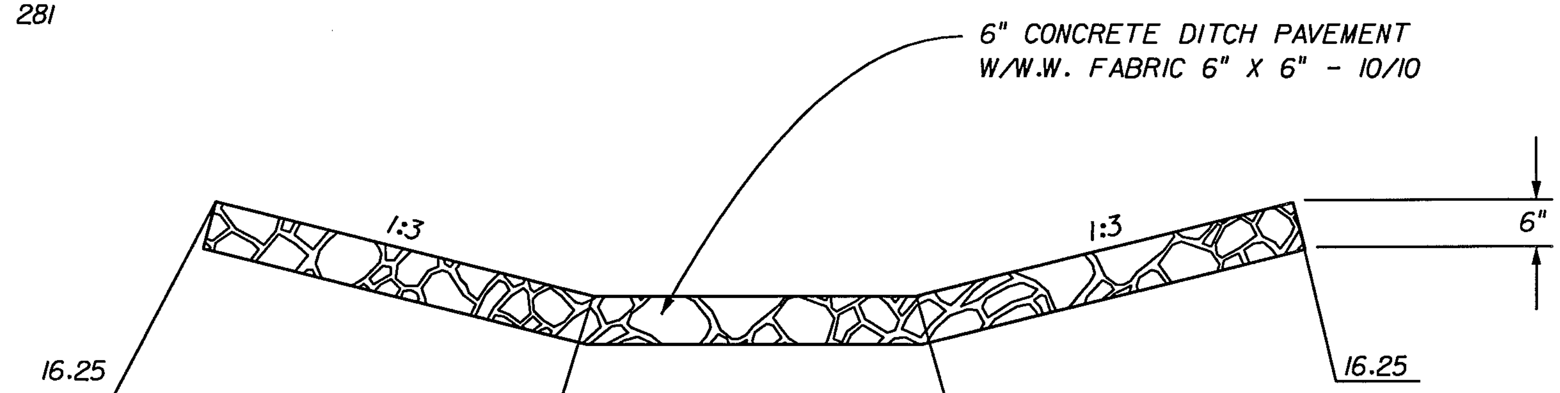
ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

DELANEY CREEK
MITIGATION SITE
INFLOW DETAIL

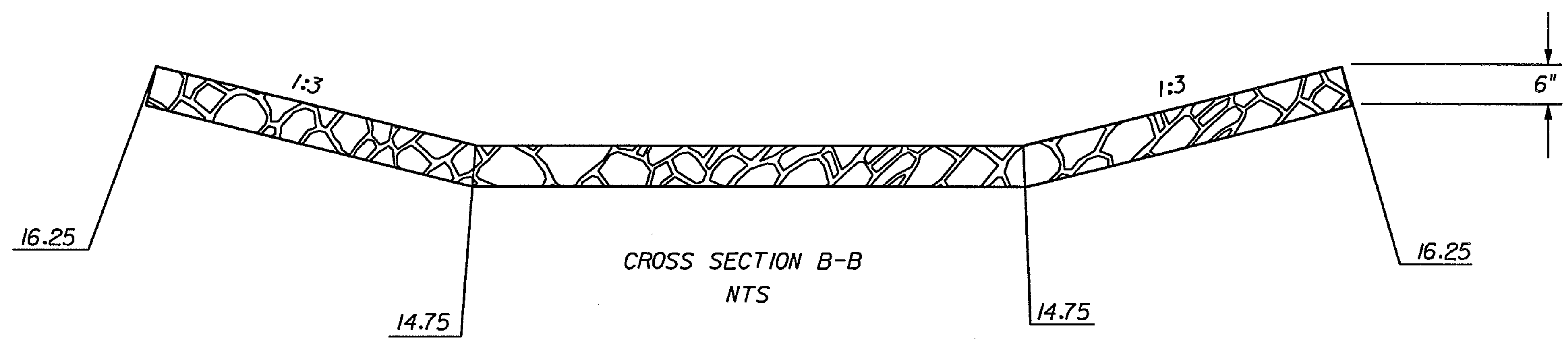
SHEET NO. 159

05/14/2002 01:52:19 PM e:\c10000382I\design\DRAINAGE\sheets\MITRDDETAIL02b.dgn





CROSS SECTION A-A
NTS



CROSS SECTION B-B
NTS

5/17/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL , P.E. NO. 31959

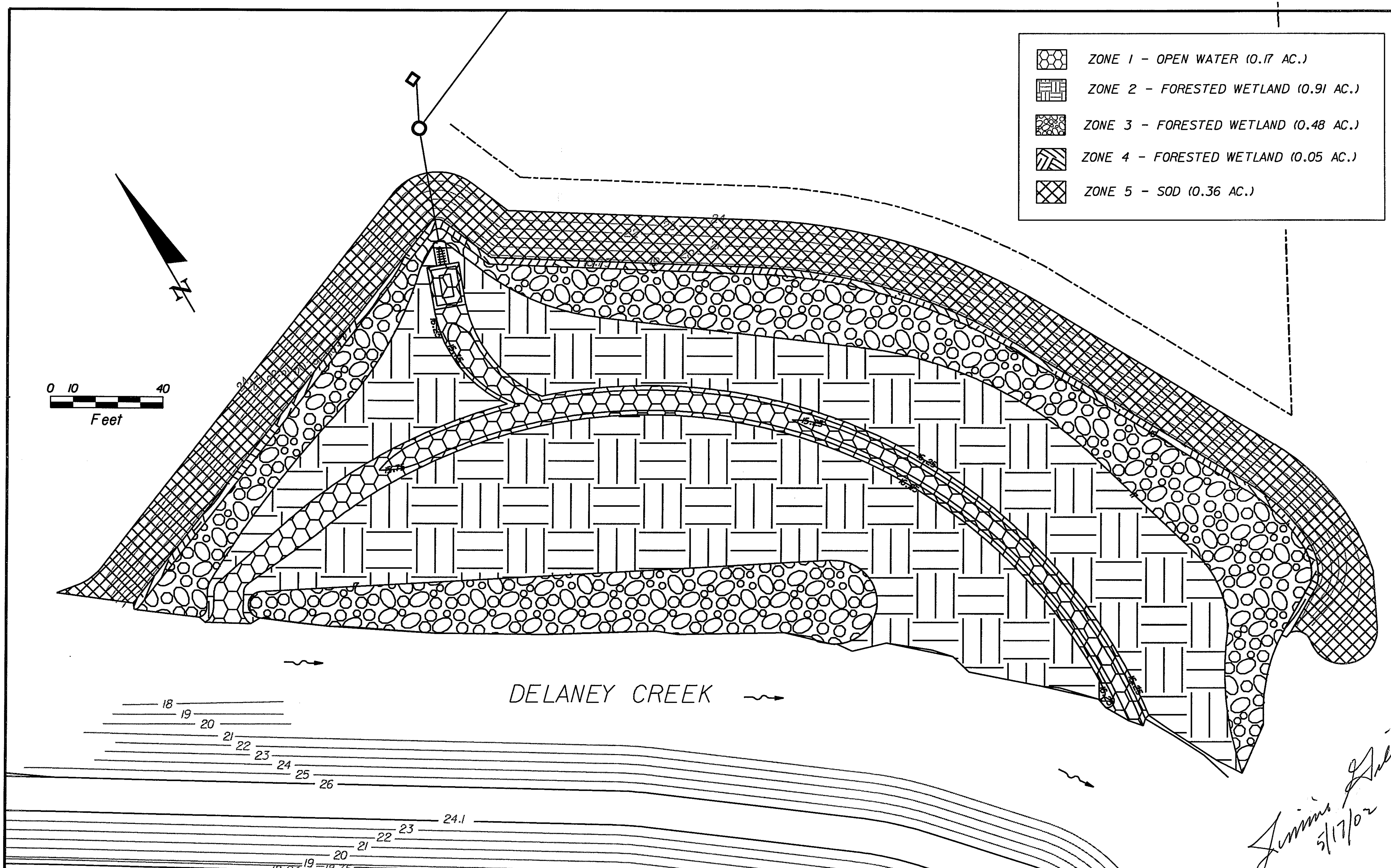
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

DELANEY CREEK
MITIGATION SITE
SUMP DETAIL SHEET

SHEET NO. 160

05/14/2002 01:49:46 PM e:\c100003821\design\DRAINAGE\sheets\MITRDDETAIL02a.dgn



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL , P.E. NO. 31959

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

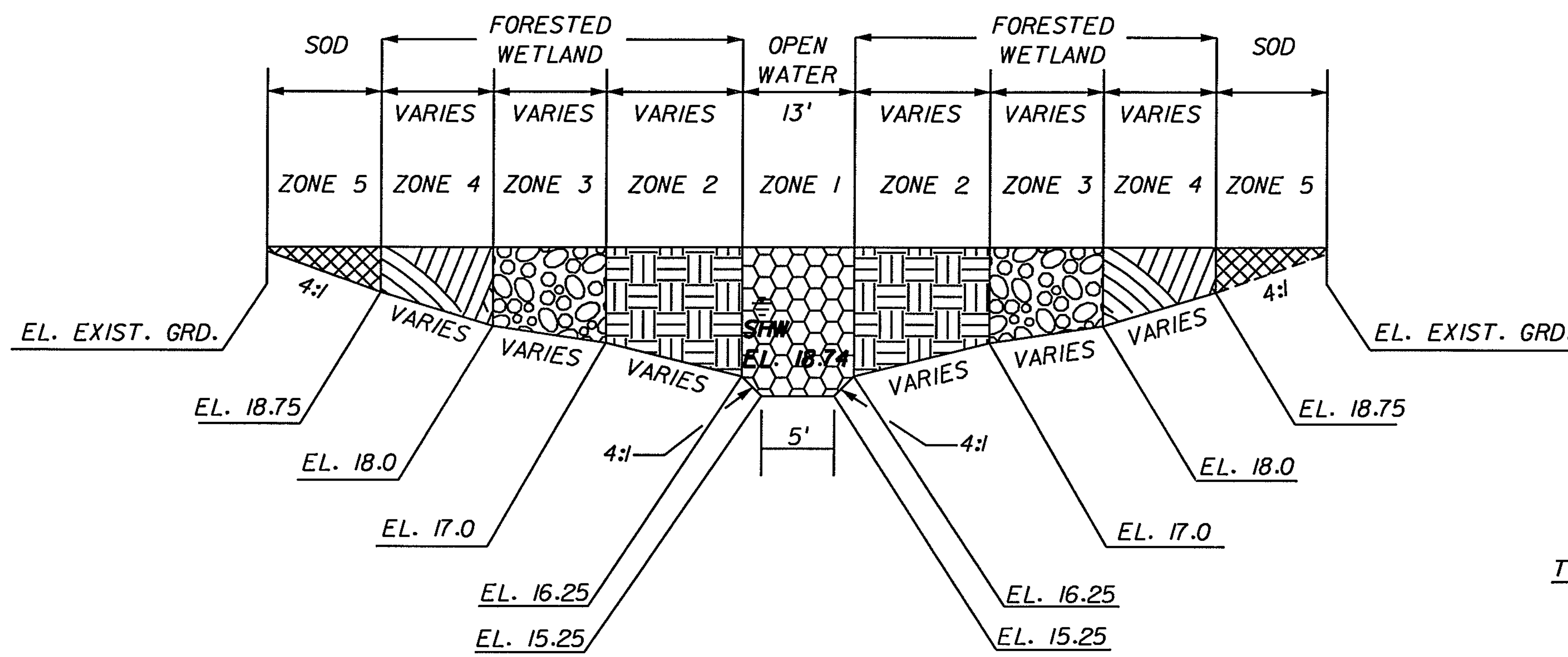
DELANEY CREEK
MITIGATION SITE
PLANTING PLAN

SHEET NO.
161

05/14/2002 01:51:45 PM e:\cl00003821\design\DRAINAGE\sheets\MITRDPL02.dgn

PLANTING SPECIFICATIONS

PATTERN	ZONE	ACREAGE	SCIENTIFIC NAME	COMMON NAME	PLANTING ELEVATION	PLANT SIZE	PLANT QUANTITY
	1	0.17 AC.	—	OPEN WATER	15.25 TO 16.25	—	—
	2	0.91 AC.	TAXODIUM DISTICHUM PONTEDERIA CORDATA SAGITTARIA LANCIFOLIA	BALD CYPRESS PICKERELWEED ARROWHEAD	16.25 TO 17.0 16.25 TO 17.0 16.25 TO 17.0	5 GAL, 10' O.C. 4" POTS, 3' O.C. 4" POTS, 3' O.C.	450 2,310 2,310
	3	0.48 AC.	TAXODIUM DISTICHUM FRAXINUS CAROLINIANA PONTEDERIA CORDATA IRIS VIRGINICA CANNA FLACCIDA	BALD CYPRESS POP ASH PICKERELWEED BLUE FLAG GOLDEN CANNA	17.0 TO 18.0 17.0 TO 18.0 17.0 TO 18.0 17.0 TO 18.0 17.0 TO 18.0	5 GAL, 10' O.C. 5 GAL, 10' O.C. 4" POTS, 3' O.C. 1 GAL, 3' O.C. 1 GAL, 3' O.C.	140 140 860 860 860
	4	0.05 AC.	ACER RUBRUM ILEX CASSINE SPARTINA BAKERI	RED MAPLE DAHOON HOLLY SAND CORDGRASS	18.0 TO 18.75 18.0 TO 18.75 18.0 TO 18.75	5 GAL, 10' O.C. 5 GAL, 10' O.C. 1 GAL, 4' O.C.	25 25 160
	5	0.36 AC.	—	SOD	18.75 TO EXIST.GROUND	—	—
TOTAL		1.97 AC.					



TYPICAL PLANTING SECTION

N.T.S.

Jimmie Gill 5/17/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL, P.E. NO. 31959

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

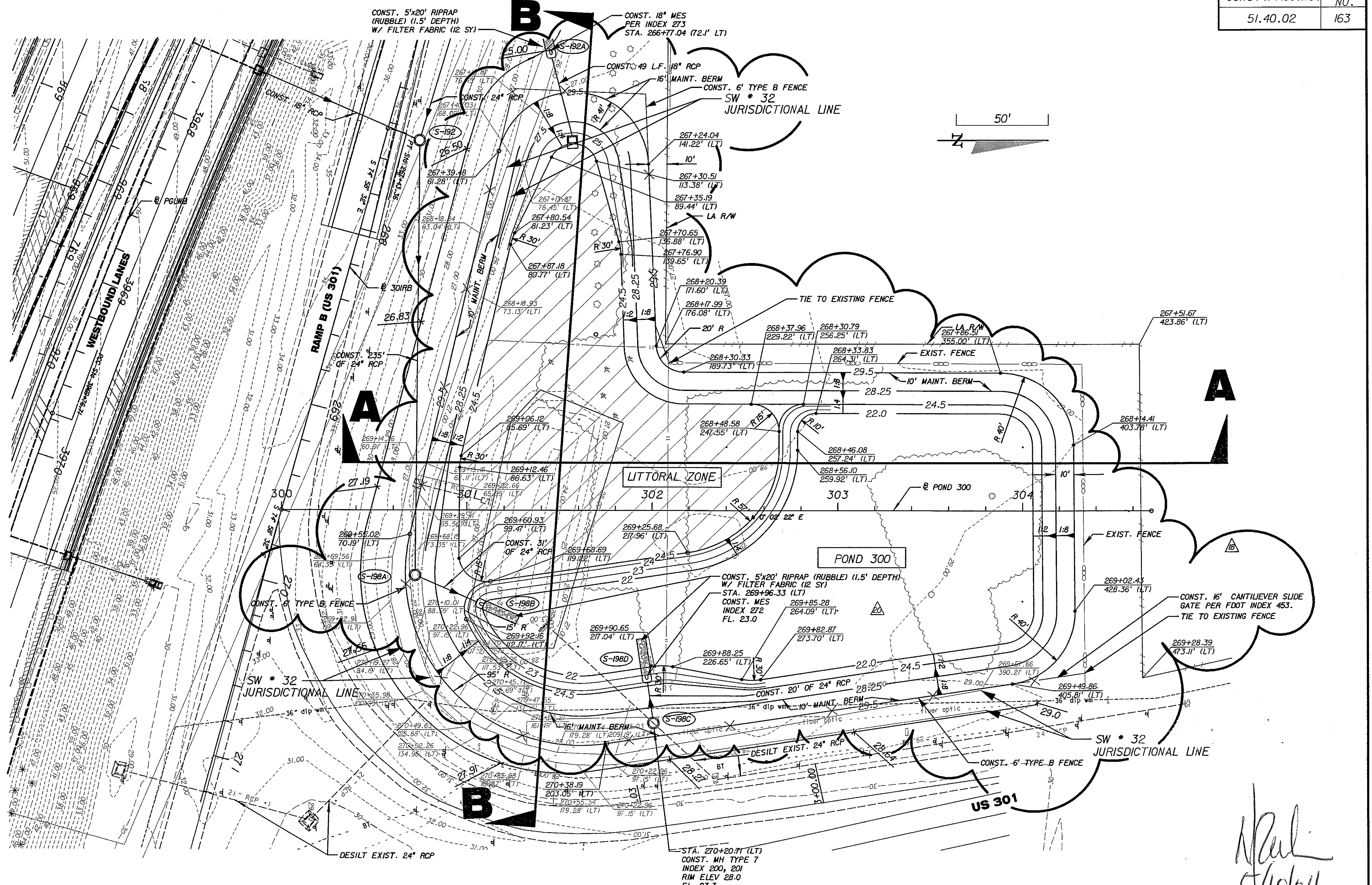
ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

DELANEY CREEK
MITIGATION SITE
PLANTING SPECIFICATIONS

SHEET NO. 162

05/14/2002 01:53:26 PM e:\c\0000382\design\DRAINAGE\sheets\MITRDPLSP02.dgn

CONST.PROJ.NO.	SHEET NO.
51.40.02	163



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
11-24-03	JAO	18 CHANGED MAINT. BERM TO 10', SLOPE TO 1:2 AND ADD FENCE	5-03-04	DL	20 REVISED POND STATION AND OFFSETS						

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

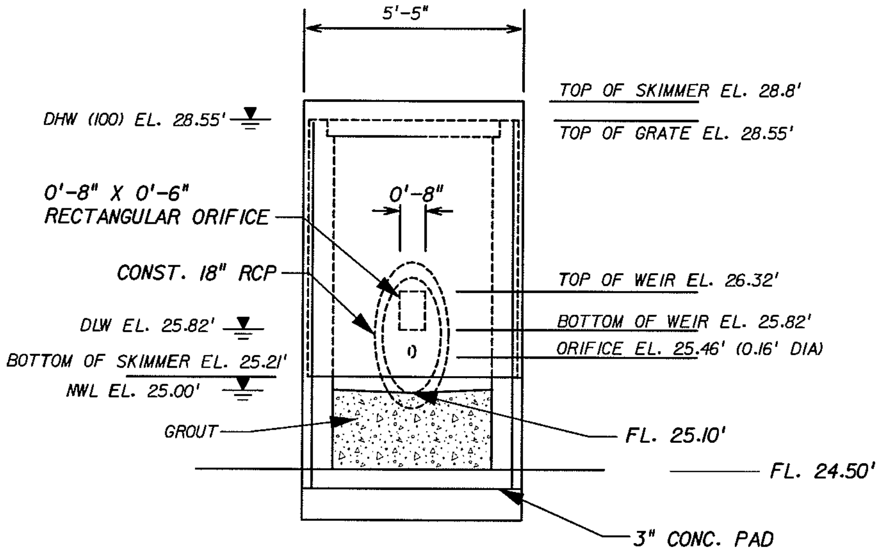
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

POND 300

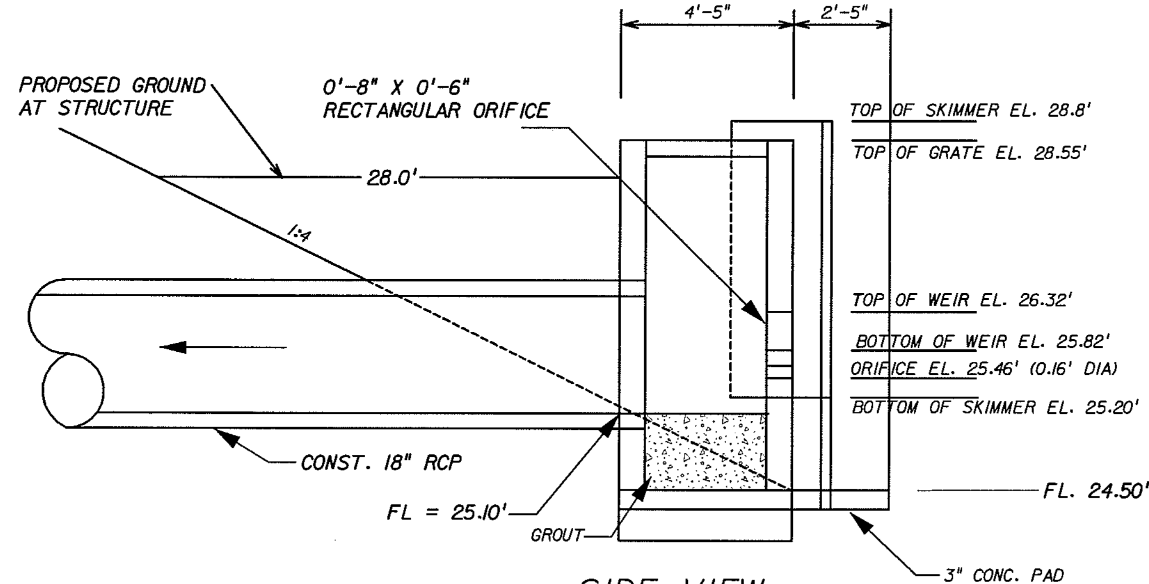
5/10/04

5/7/2004 2:38:00 PM \\Srv\F\Roadway\brandon\pw\West004\RET300RD01.DGN

CONST.PROJ.NO.	SHEET NO.
51.40.02	164



FRONT VIEW
N.T.S.



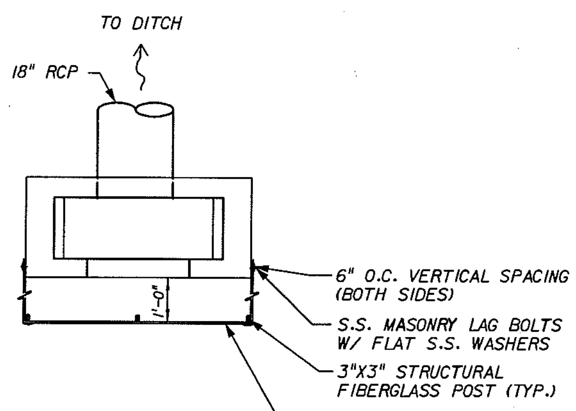
SIDE VIEW
N.T.S.

PAY ITEM NOTES:

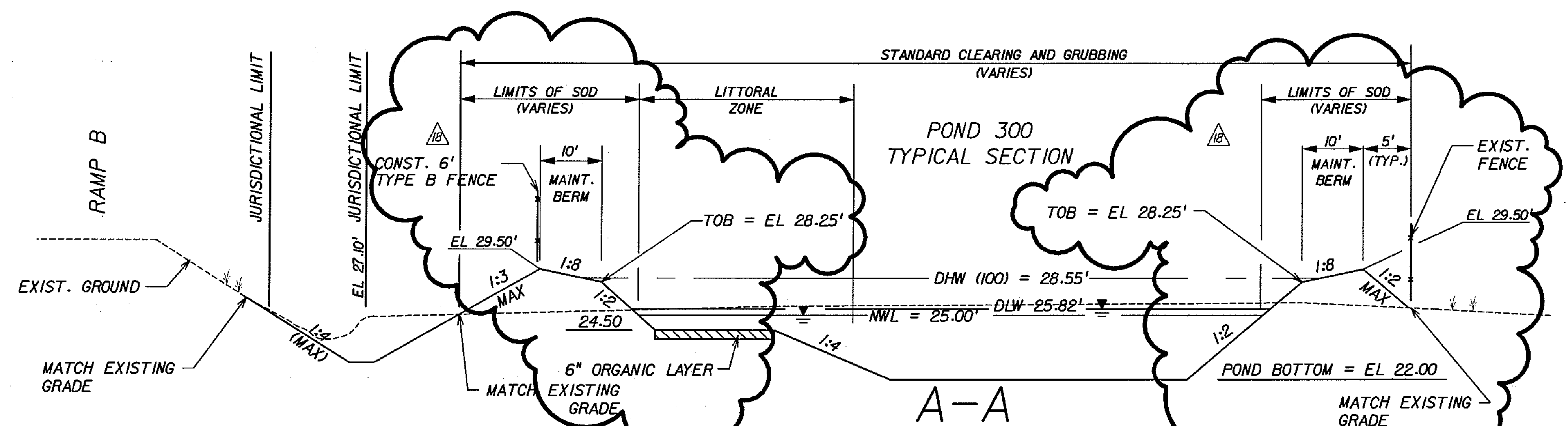
1. COST OF ORIFICE WITH WEIR, SKIMMER, AND OTHER APPURTENANCES TO BE INCLUDED IN COST OF STRUCTURE.

GENERAL NOTES:

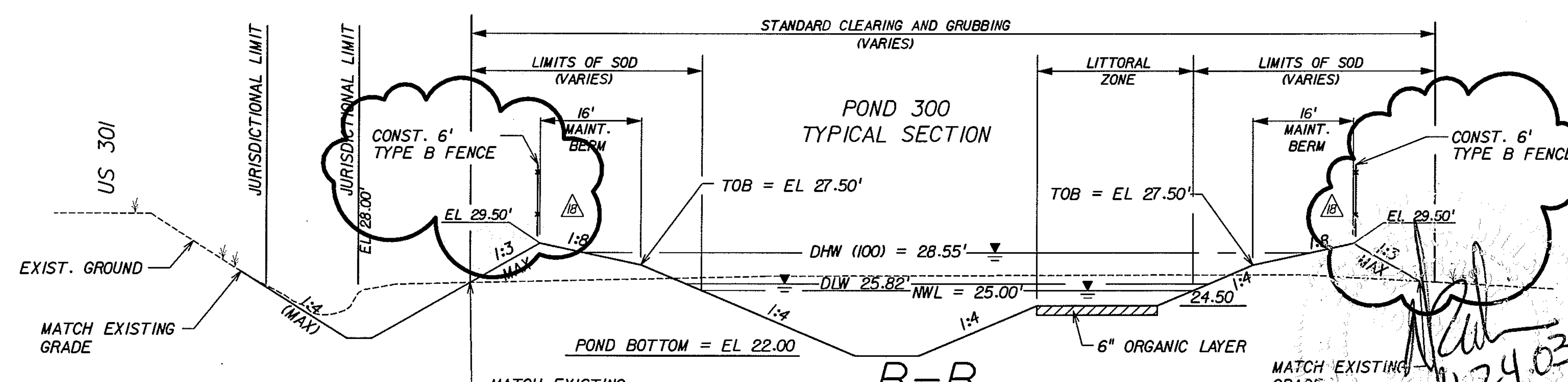
2. ALL TREES WITHIN THE RIGHT-OF-WAY ARE TO BE REMOVED UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL STAKE ALL SOD PLACED AT SLOPES 1:2 OR STEEPER.



PLAN VIEW
N.T.S.



A-A
N.T.S.



B-B
N.T.S.

CONTROL STRUCTURE S-192B

DITCH BOTTOM INLET
TYPE D-MODIFIED
(SEE INDEX No. 232)
267+22.00 (97.53 LT.)

11/24/2003 9:59:48 AM \\Srv\F\Roadway\brandonpkwWest004\RET300RD02.DGN

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
11-24-03	JAO	18 CHANGED MAINT. BERM TO 10', SLOPE TO 1:2 AND ADD FENCE									

REVISIONS

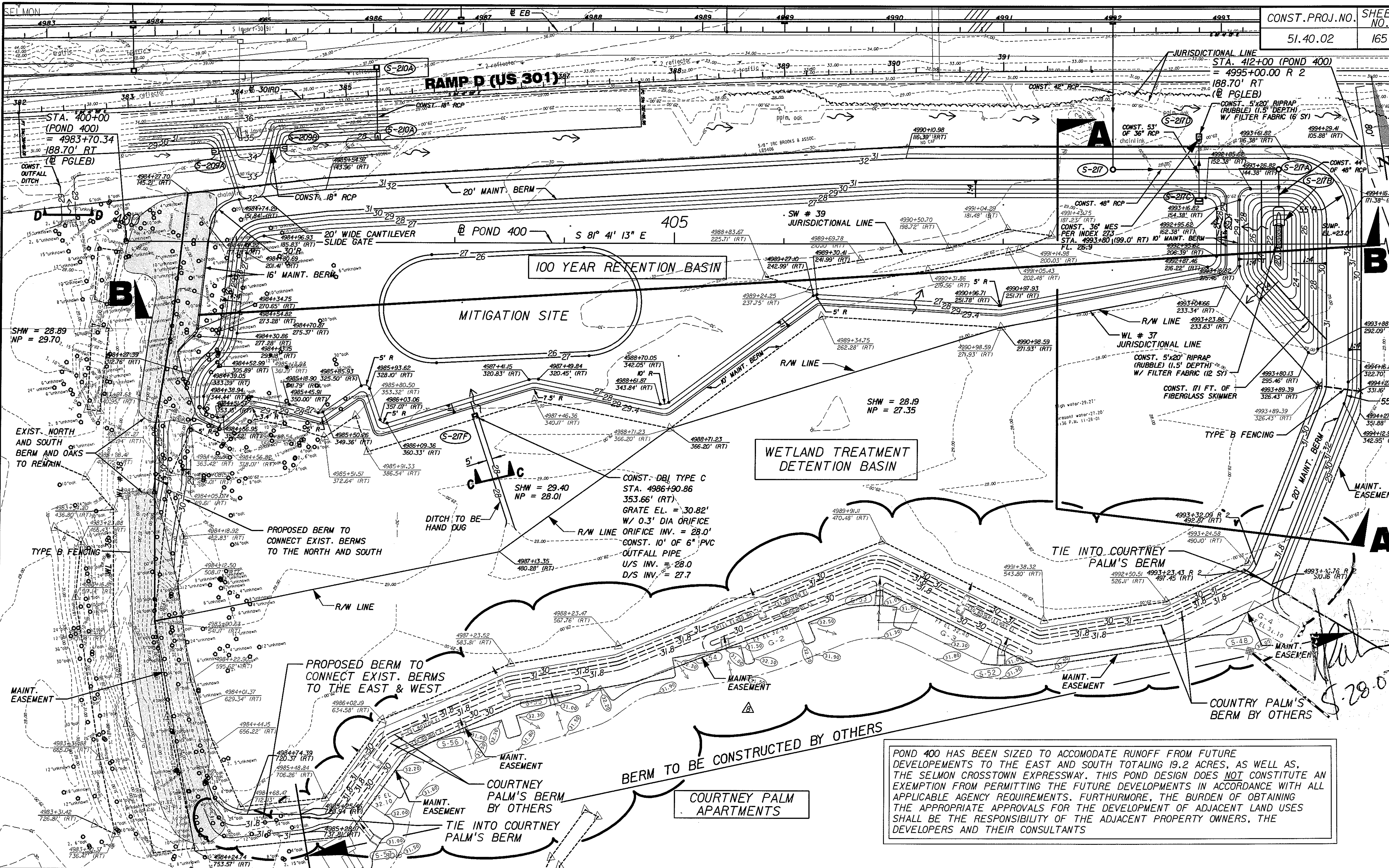
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

POND 300

11-24-03

CONST. PROJ. NO.	SHEET NO.
51.40.02	165



POND 400 HAS BEEN SIZED TO ACCOMODATE RUNOFF FROM FUTURE DEVELOPEMENTS TO THE EAST AND SOUTH TOTALING 19.2 ACRES, AS WELL AS, THE SELMON CROSSTOWN EXPRESSWAY. THIS POND DESIGN DOES NOT CONSTITUTE AN EXEMPTION FROM PERMITTING THE FUTURE DEVELOPMENTS IN ACCORDANCE WITH ALL APPLICABLE AGENCY REQUIREMENTS. FURTHURMORE, THE BURDEN OF OBTAINING THE APPROPRIATE APPROVALS FOR THE DEVELOPMENT OF ADJACENT LAND USES SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNERS, THE DEVELOPERS AND THEIR CONSULTANTS

REVISIONS

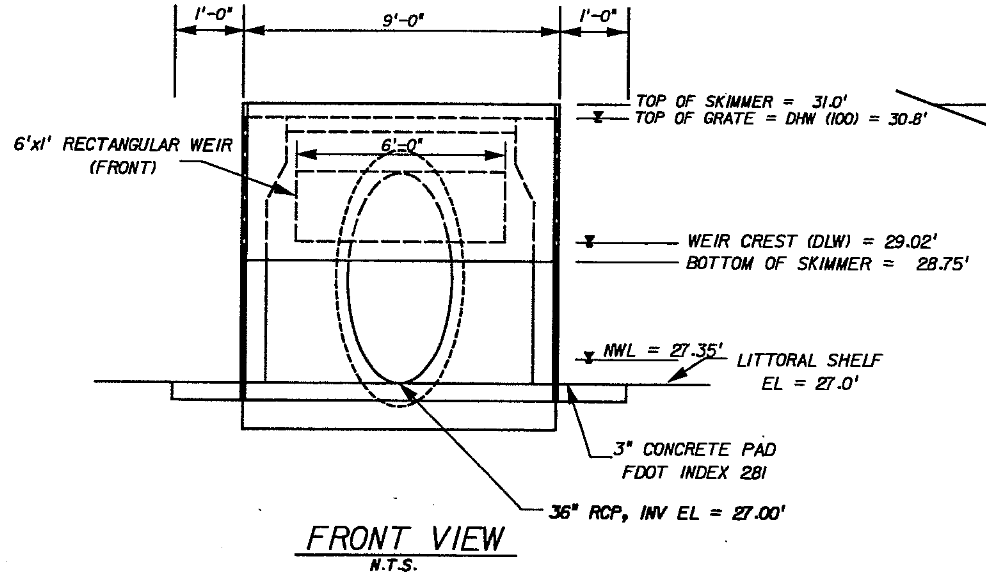
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
5-27-03	DML	REVISED SOUTHERN POND BERM									

ICON CONSULTANT GROUP INCORPORATED

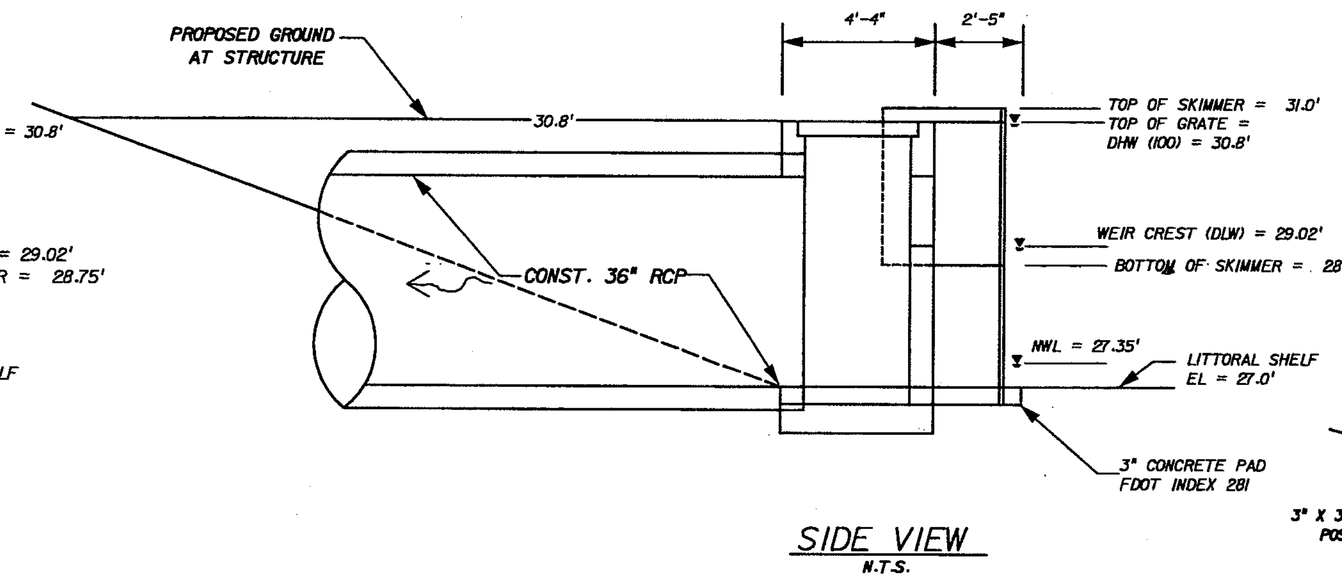
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

POND 400

CONST.PROJ.NO.	SHEET NO.
51.40.02	166



FRONT VIEW
N.T.S.



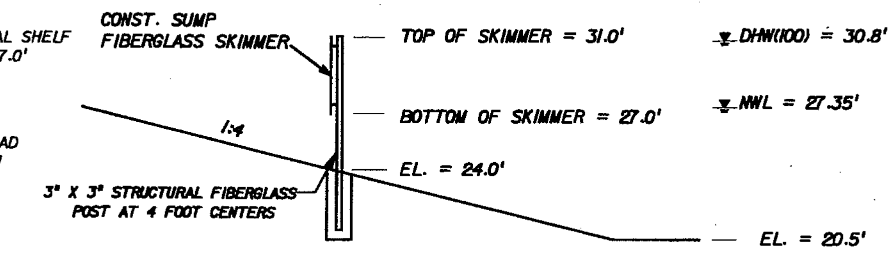
SIDE VIEW
N.T.S.

PAY ITEM NOTES:

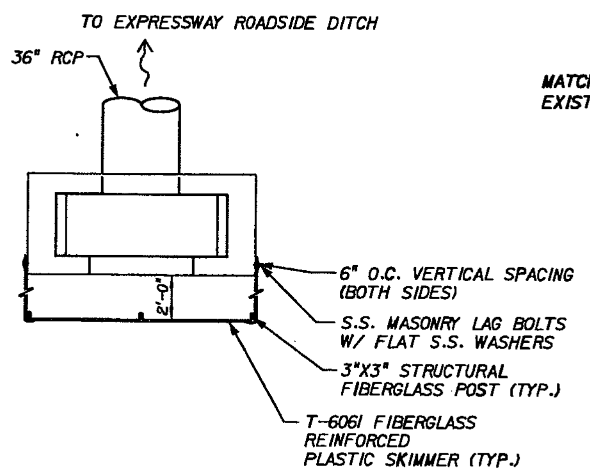
1. COST OF ORIFICE WITH WEIR, FIBERGLASS SKIMMER, AND OTHER APPURTENANCES TO BE INCLUDED IN COST OF CONTROL STRUCTURE S-217C.
2. ORGANIC MUCK LAYER TO BE PAID FOR UNDER PAY ITEM 162-2, TOPSOIL.
3. COST OF SUMP FIBERGLASS AND ALL APPURTENANCES TO BE INCLUDED IN THE COST OF STRUCTURE NO. 217B.

GENERAL NOTES:

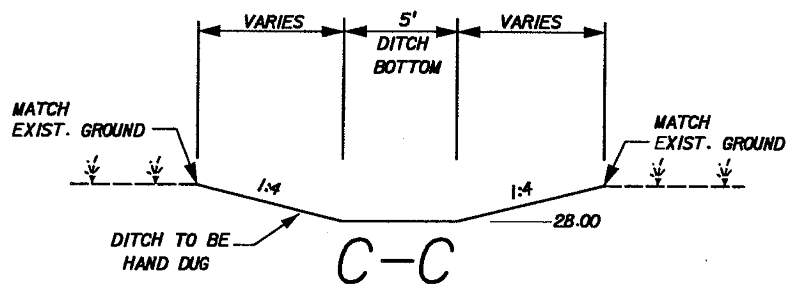
1. ALL TREES WITHIN THE RIGHT-OF-WAY ARE TO BE REMOVED UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL STAKE ALL SOD PLACED AT SLOPES 1:2 OR STEEPER



POND 400 SUMP
N.T.S.

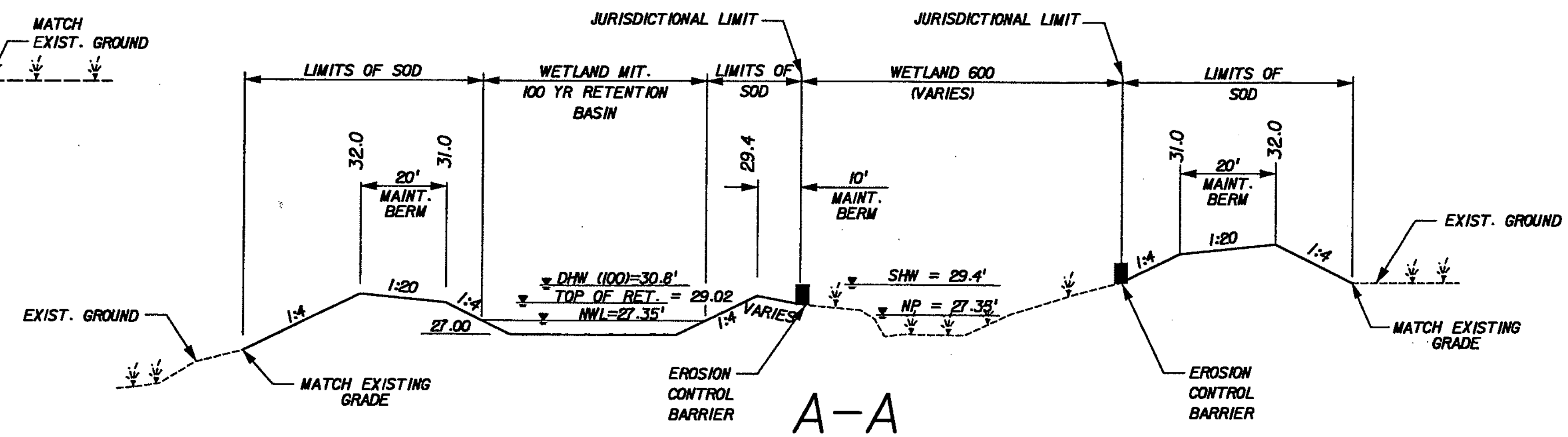


PLAN VIEW
N.T.S.



C–C
N.T.S.

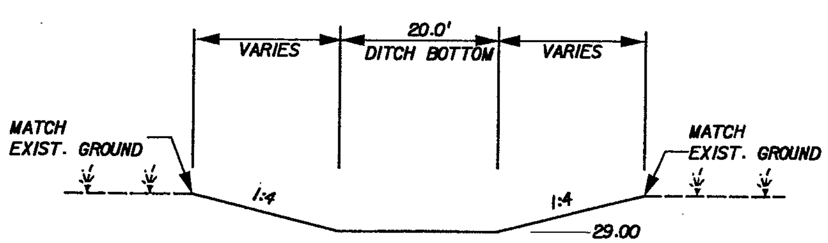
POND 400 DITCH
TYPICAL SECTION



A–A
N.T.S.

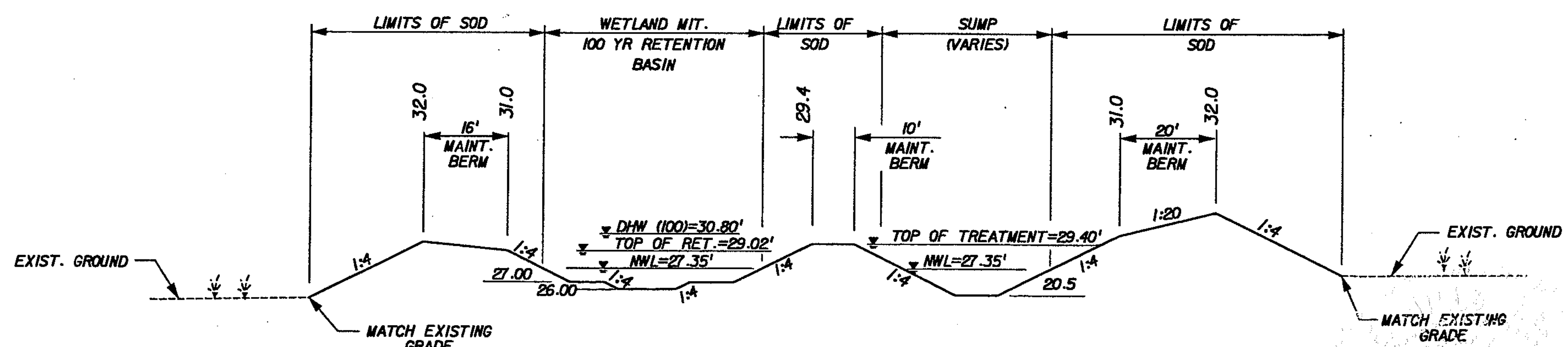
CONTROL STRUCTURE S-217C

DITCH BOTTOM INLET
TYPE H-MODIFIED
(SEE INDEX No. 232)
STA. 4992+80 (156 RT)



D–D
N.T.S.

DITCH
TYPICAL SECTION



B–B
N.T.S.

POND 400
TYPICAL SECTION

5-16-02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

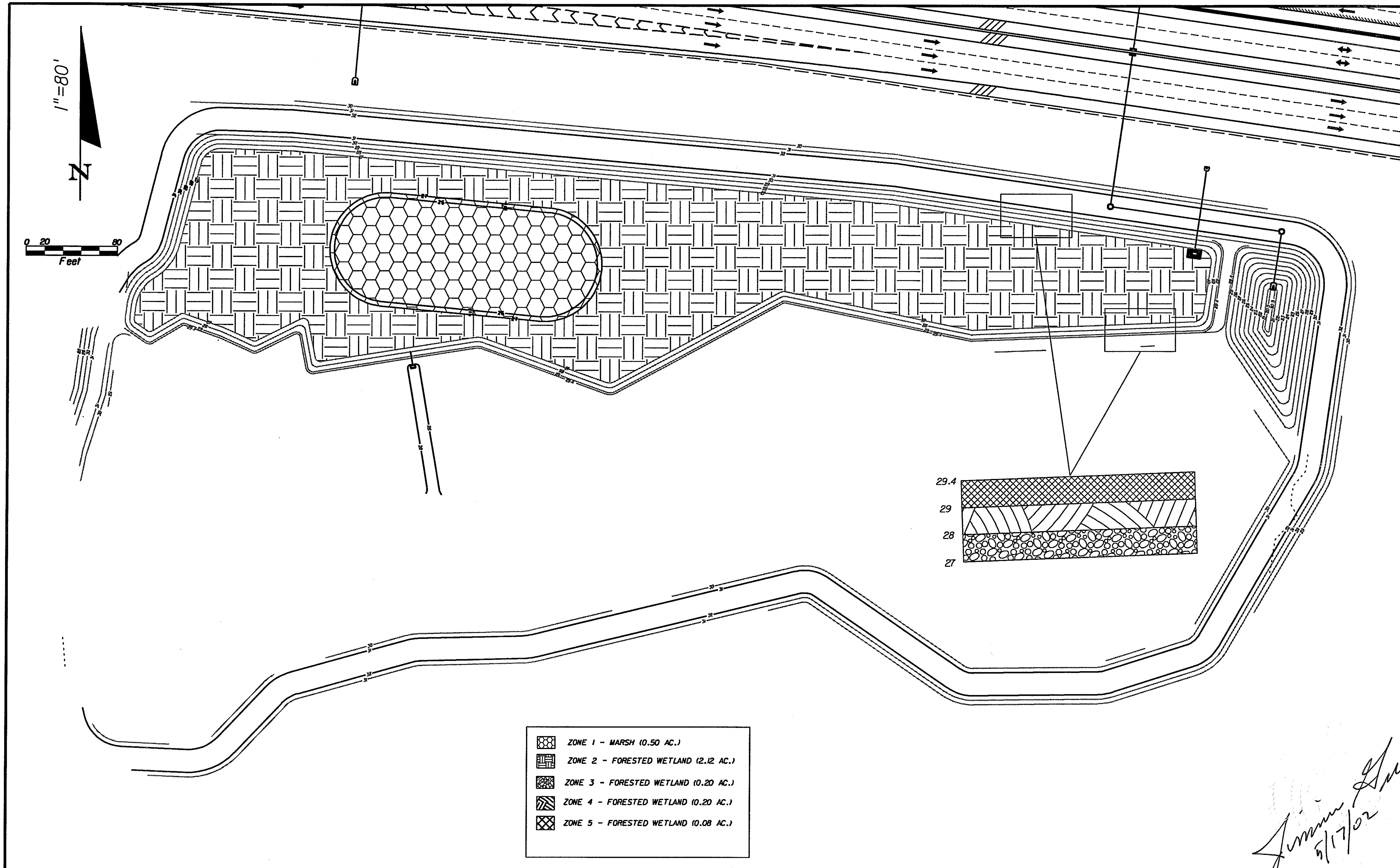
REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

POND 400

05/15/02 02:41:43 PM f:\Roadway\brandonpkw\West004\RET400RD02.DGN



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL , P.E. NO. 31959

TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

COMMUNITY CHURCH
MITIGATION SITE
PLANTING PLAN

SHEET NO.
167

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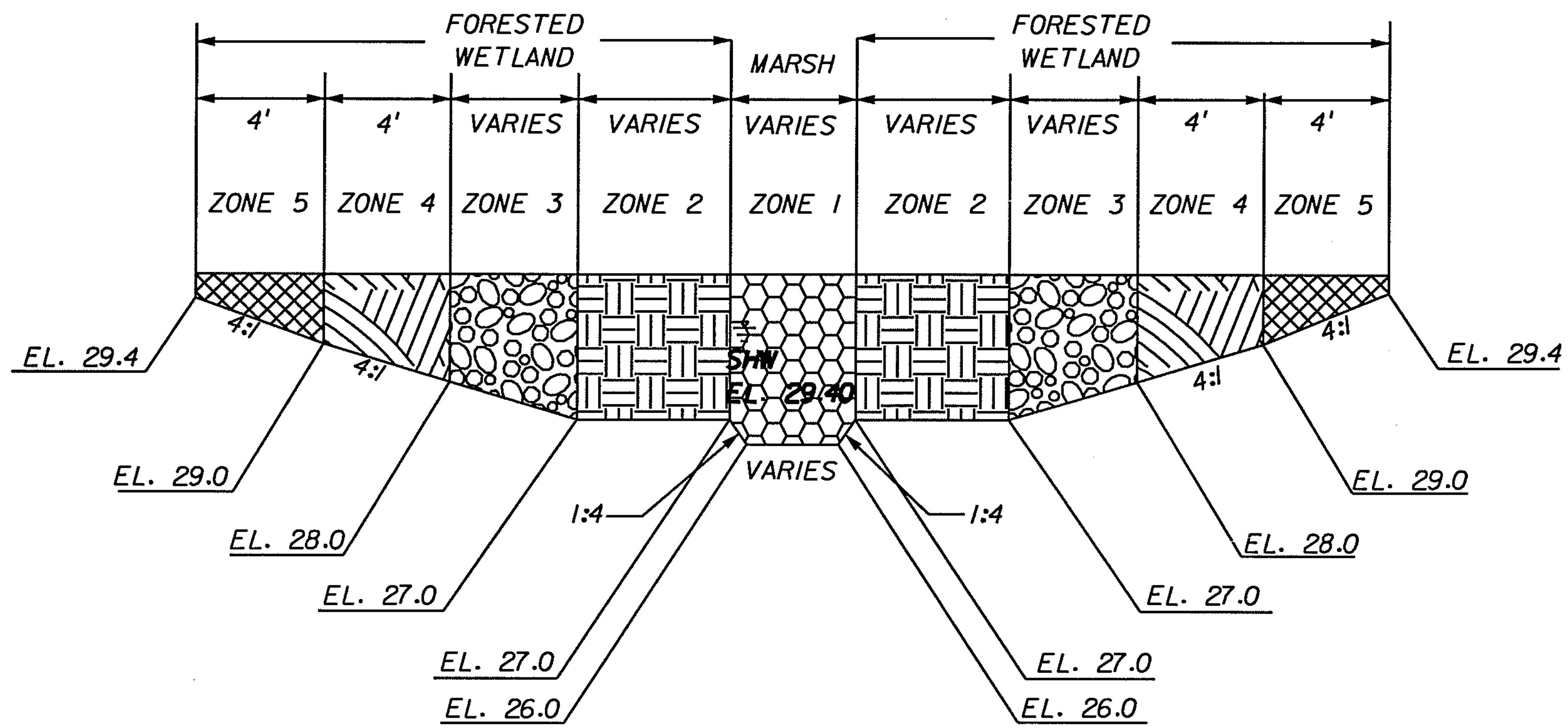
PLANTING SPECIFICATIONS

PATTERN	ZONE	ACREAGE	SCIENTIFIC NAME	COMMON NAME	PLANTING ELEVATION	PLANT SIZE	PLANT QUANTITY
	1	0.50 AC.	THALIA GENICULATA SCIRPUS VALIDUS	FIRE FLAG BULLRUSH	26.0 TO 27.0	1 GAL , 3' O.C. 1 GAL , 3' O.C.	1,290 1,290
	2	2.12 AC.	TAXODIUM DISTICHUM PONTEDERIA CORDATA SAGITTARIA LANCIFOLIA	BALD CYPRESS PICKERELWEED ARROWHEAD	27.0 27.0 27.0	5 GAL, 10' O.C. 4" POTS, 3' O.C. 4" POTS, 3' O.C.	1,020 5,375 5,375
	3	0.20 AC.	TAXODIUM DISTICHUM FRAXINUS CAROLINIANA IRIS VIRGINICA CANNA FLACCIDA	BALD CYPRESS POP ASH BLUE FLAG GOLDEN CANNA	27.0 TO 28.0 27.0 TO 28.0 27.0 TO 28.0 27.0 TO 28.0	5 GAL, 10' O.C. 5 GAL, 10' O.C. 1 GAL, 3' O.C. 1 GAL, 3' O.C.	65 65 540 540
	4	0.20 AC.	ACER RUBRUM ULMUS AMERICANA JUNCUS EFFUSUS SAURURUS CERNUUS	RED MAPLE AMERICAN ELM SOFT RUSH LIZARD'S TAIL	28.0 TO 29.0 28.0 TO 29.0 28.0 TO 29.0 28.0 TO 29.0	5 GAL, 10' O.C. 5 GAL, 10' O.C. 1 GAL, 3' O.C. 1 GAL, 3' O.C.	65 65 540 540
	5	0.08 AC.	QUERCUS LAURIFOLIA ILEX CASSINE SPARTINA BAKERI	LAUREL OAK DAHOON HOLLY SAND CORDGRASS	29.0 TO 29.4 29.0 TO 29.4 29.0 TO 29.4	5 GAL, 10' O.C. 5 GAL, 10' O.C. 1 GAL, 4' O.C.	30 30 255
TOTAL		3.10 AC.					



TYPICAL PLANTING SECTION

N.T.S.

5/17/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
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SHEET NO. 168

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GENERAL NOTES

1. THE CONTRACTOR SHALL ACQUAINT HIMSELF WITH THE SITE GEOMETRY AND GRADING PLANS IN THE VICINITY OF THE MITIGATION AREA IN ORDER TO PRECLUDE ANY MISUNDERSTANDING AND/OR POTENTIAL CONFLICTS AND TO ENSURE A TROUBLE FREE INSTALLATION.
2. THE CONTRACTOR SHALL REMOVE ALL ABANDONED UTILITY LINES, PIPES, STRUCTURES, AND OTHER SUBTERRANEAN OBJECTS TO A MINIMUM DEPTH OF FOUR (4) FEET BELOW PROPOSED GRADE, OR AS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. THE REMOVAL OF THE INDICATED STRUCTURES WILL BE PAID UNDER CLEARING AND GRUBBING.
3. THE CONSTRUCTION LENGTHS INDICATED IN THESE PLANS ARE APPROXIMATE. ACTUAL LIMITS MAY BE SET IN THE FIELD AS DIRECTED BY THE PROJECT ENGINEER.
4. SPECIAL CARE IS REQUIRED TO PREVENT DAMAGE TO TREES WHICH ARE TO REMAIN WITHIN AREAS ADJACENT TO THE MITIGATION SITE.
5. CAUTION: OFF-SITE DISPOSAL OF CONSTRUCTION DEBRIS MAY OCCUR ONLY AFTER WRITTEN APPROVAL HAS BEEN GIVEN IN ADVANCE BY THE PROJECT ENGINEER, AND THE OWNER OF THE DISPOSAL AREA. DISPOSAL OF MATERIAL SHALL COMPLY WITH ALL LOCAL AND FEDERAL REGULATIONS.
6. THESE PLANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MORE STRINGENT TECHNICAL SPECIFICATIONS AS FOUND IN THE CONTRACT DOCUMENTS PREPARED SPECIFICALLY FOR THIS PROJECT.
7. LOCATION OF EXISTING UTILITIES ARE APPROXIMATE AS SHOWN ON PLANS, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE.
8. THE CONTRACTOR SHALL MAINTAIN COPIES OF ALL APPLICABLE PERMITS ON-SITE, AND SHALL BE RESPONSIBLE TO ADHERE TO ALL PERMIT CONDITIONS DURING CONSTRUCTION.
9. EXISTING OFF-SITE DRAINAGE PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.
10. ALL PIPE LENGTHS ARE PLUS OR MINUS LENGTHS SHOWN IN PLANS.
11. CONSTRUCTION OF THE PROJECT SHALL PROCEED AS DESCRIBED BELOW:
    - A. THE CONTRACTOR SHALL FIRST LOCATE AND LAYOUT THE BASELINES SHOWN FOR CONSTRUCTION OF THE MITIGATION SITE IN THE FIELD.
    - B. THE CONTRACTOR SHALL DEVELOP PRE-CONSTRUCTION CROSS SECTIONS FOR THE MITIGATION SITE AT 50 FOOT INTERVALS USING THE BASELINE SHOWN IN THE PLANS. THIS INFORMATION SHALL BE TRANSFERRED TO THE PROJECT ENGINEER BOTH ON DISK AND IN PLANS FORM AT THE SAME SCALE AS THE SECTIONS FOUND IN THE PLANS. THIS INFORMATION SHALL BE USED TO DETERMINE PRE-CONSTRUCTION GRADES. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION WITHOUT WRITTEN APPROVAL OF THE PRE-CONSTRUCTION CROSS SECTIONS BY THE PROJECT ENGINEER.
    - C. UPON COMPLETION AND ACCEPTANCE OF THE REQUIRED SURVEY INFORMATION, THE CONTRACTOR SHALL CONSTRUCT THE MITIGATION SITE.
    - D. AFTER CONSTRUCTION AND FINE GRADING OF THE MITIGATION SITE, THE CONTRACTOR SHALL FIRST DISC THE SITE TO REMOVE ANY COMPACTION WHICH HAS OCCURRED AS A RESULT OF CONSTRUCTION. DISCING OF THE SITE SHALL BE PAID AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE PAY ITEM FOR UNCLASSIFIED EXCAVATION. UPON COMPLETION OF DISCING, THE CONTRACTOR SHALL THEN DEVELOP AS-BUILT DRAWINGS USING THE SAME CROSS SECTION LOCATIONS USED IN THE DEVELOPMENT OF PRE-CONSTRUCTION CROSS SECTIONS. POST-CONSTRUCTION CROSS SECTIONS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE PLANTING OF THE SITE. POST CONSTRUCTION INFORMATION SHALL BE PROVIDED BOTH ON DISK AND IN PLAN FORM AT THE SAME SCALE AS THE SECTIONS FOUND IN THE PLANS. THE PRE-CONSTRUCTION AND POST-CONSTRUCTION CROSS SECTIONS SHALL BE USED TO DETERMINE THE AMOUNT TO EARTH WORK PERFORMED BY THE CONTRACTOR.
    - E. DURING THE DEVELOPMENT OF THE POST CONSTRUCTION CROSS SECTIONS, THE CONTRACTOR SHALL STAKE THE LIMITS OF THE SITE'S VARIOUS PLANTING ZONES. THIS SHALL BE DONE BY PLACING LATHS ALONG EACH CROSS SECTION AT PLANTING ZONE LIMITS.
12. CONSTRUCTION OF THE SITE TO DESIGN ELEVATIONS IS CRITICAL TO THE SUCCESS OF THIS PROJECT. BECAUSE OF THIS, ANY ELEVATION DEVIATION OF MORE THAN 0.3 FEET (PLUS OR MINUS) FROM DESIGN ELEVATIONS SHALL BE REGRADED AND RE-CROSS SECTIONED AS DIRECTED BY THE PROJECT ENGINEER.
13. GATES AND FENCES WILL BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS AND/OR SPECIFIED BY THE PROJECT ENGINEER.
14. INSTALLATION OF ALL EROSION CONTROL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH THE MODELS FOUND WITHIN FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION, INDEX NOS. 102 TO 104. THE CONTRACTOR SHALL MAINTAIN SEDIMENT AND EROSION CONTROL MEASURES AT ALL TIMES AND THESE MEASURES SHALL BE KEPT IN PLACE UNTIL THE PROJECT ENGINEER HAS APPROVED THEIR REMOVAL.

MITIGATION PLAN NOTES

1. THE INTENT OF THESE PLANS IS TO PROVIDE GUIDELINES FOR PLANTING HERBACEOUS AND WOODY PLANTS (SHRUBS AND TREES) BASED ON THEIR GENERAL HYDROLOGIC REQUIREMENTS (ZONATION). ANY FIELD CONDITIONS THAT REQUIRE CHANGES IN THE MITIGATION SITE MUST BE SUBMITTED TO THE APPROVED BY THE PROJECT ENGINEER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN UP OF PREMISES AND REMOVAL OF ALL DISCARDED AND SURPLUS MATERIALS AND RUBBISH.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION OF PLANS TO DETERMINE WATERING REQUIREMENTS TO ENSURE SURVIVABILITY OF PLANTED MATERIA.
4. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE ENVIRONMENTAL PERMITS WHICH MAY CONTAIN SPECIFIC CONDITIONS ON HOW THE MITIGATION SITE IS TO BE CONSTRUCTED AND MAINTAINED.
5. THE CONTRACTOR SHALL INSTALL SIGNS AND POSTS WARNING THE PUBLIC THAT THE MITIGATION SITE IS NOT TO BE ENTERED AND REMOVAL OR DESTRUCTION OF VEGETATION IS PROHIBITED.
6. THE WORK SHALL CONSIST OF FURNISHING AND INSTALLING THE COMPLETE PLANT MATERIALS AS SPECIFIED AND SHOWN ON THE PLANS. THE WORK SHALL INCLUDE THE FURNISHING OF ALL LABOR, EQUIPMENT, MATERIALS, AND APPLIANCES REQUIRED FOR THE INSTALLATION AS SHOWN ON THE PLANS. THE WORK SHALL INCLUDE THE MAINTENANCE OF ALL PLANTS AND PLANTING AREAS UNTIL FINAL ACCEPTANCE BY THE AUTHORITY AND UNTIL FULFILLMENT OF ALL GUARANTEE PROVISIONS ARE COMPLETED AS SPECIFIED.
7. THE WORK SHALL INCLUDE THE WATERING AND MAINTAINING OF ALL PLANTS AND PLANTING AREAS TO ENSURE SURVIVAL UNTIL PLANTS ARE ESTABLISHED, HAVE BEEN ACCEPTED BY THE PROJECT ENGINEER AND FULFILLMENT OF ALL GUARANTEE PROVISIONS ARE COMPLETED AS STATED WITHIN THE PROJECT SPECIFICATIONS AND REGULATORY AGENCY PERMITS. WATERING SHALL BE CONSIDERED AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE VARIOUS PAY ITEMS FOR PLANTS.
8. THE CONTRACTOR SHALL PHASE HIS CONSTRUCTION OPERATIONS SO THAT MITIGATION AREAS WHICH REQUIRE PLANTING WILL BE PREPARED FOR INSTALLATION OF PLANTS AS EARLY AS POSSIBLE IN THE FIRST OPTIMUM PLANTING SEASON. PLANTING SHALL COMMENCE IMMEDIATELY UPON APPROVAL OF THE POST CONSTRUCTION CROSS SECTIONS OF THE MITIGATION AREA BY THE PROJECT ENGINEER. OPTIMUM PLANTING SEASON IS DESIGNATED AS THE TIME PERIOD FROM MAY THROUGH OCTOBER.
9. THE CONTRACTOR SHALL REMOVE NUISANCE/EXOTIC SPECIES FROM THE MITIGATION SITE AND SHALL DISPOSE OF THEM IN A MANNER WHICH IS ACCEPTABLE TO THE PROJECT ENGINEER AND IN A MANNER WHICH WILL NOT RESULT IN REINFESTATION OF THE MITIGATION SITE. FOR THE PURPOSE OF THIS PROJECT, NUISANCE/EXOTIC SPECIES ARE DEFINED AS SPECIES WHICH RAPIDLY EXPAND, INVADE, AND DISRUPT NATIVE VEGETATION AND/OR PLANT COMMUNITIES. THESE SPECIES ARE TYPICALLY INDICATED BY AGGRESSIVE WEEDINESS, A TENDENCY TO DISRUPT NATURAL SUCCESSIONAL PROCESSES, AND/OR A TENDENCY TO FORM LARGE MONOTYPIC COLONIES. EXAMPLES OF NUISANCE/EXOTIC SPECIES INCLUDE, BUT ARE NOT LIMITED TO, BRAZILIAN PEPPER (SCHINUS TEREBINTHIFOLIUS), CHINESE TALLOW (SAPIUM SEBIFERUM), PRIMROSE WILLOW (LUDWIGIA PERUVIANA), TORPEDO GRASS (PANICUM REPENS), CATTAILS (TYPHA SPP.), AND ALL OTHERS AS SPECIFIED, DETERMINED, AND/OR IDENTIFIED BY THE ENGINEER.
10. THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGE TO PLANTED SPECIES THAT OCCUR AS A RESULT OF HIS CONTROLLING NUISANCE/EXOTIC SPECIES.

MITIGATION PLANTING NOTES

I. GENERAL

A. SUBMITTALS

1. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL PROVIDE A LIST OF WETLAND MITIGATION PROJECTS COMPLETED IN THE PAST TWO YEARS WITH NAMES AND LOCATIONS OF THE PROJECTS, THEIR OWNERS, THE OWNERS REPRESENTATIVES IN CHARGE OF THE PROJECTS, AND NAME AND PHONE NUMBER OF EACH PROJECT'S DESIGN PROFESSIONAL (E.G., ENGINEER). THIS INFORMATION MUST PROVE THE CONTRACTOR IS QUALIFIED TO COMPLETE THIS PROJECT.
2. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL PROVIDE EVIDENCE OF THE ON-SITE PLANTING FOREMAN'S EXPERIENCE. SHOULD THERE BE A CHANGE OF FOREMAN, ADDITIONAL EVIDENCE OF EXPERIENCE SHALL BE PROVIDED.
3. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL SUBMIT A PLANTING SCHEDULE SHOWING SCHEDULED DATES FOR EACH TYPE OF PLANTING IN EACH AREA OF THE SITE. THE CONTRACTOR SHALL SUBMIT REVISED SCHEDULE(S) WHEN DEPARTURE FROM THE SCHEDULE IS NECESSARY.
4. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL PROVIDE A LIST OF ALL PLANT SPECIES SHOWN IN THE PLANS AND INDICATE THE PROPOSED SOURCE OF THE PLANTS, HOW THEY WILL BE TRANSPORTED TO THE SITE, THE METHOD(S) TO BE USED TO INSTALL THE PLANTS, AND HOW EACH SPECIES WILL BE MAINTAINED UNTIL ACCEPTED BY THE PROJECT ENGINEER. AT THE DISCRETION OF THE CONTRACTOR AND AFTER CONSULTATION WITH THE PROJECT ENGINEER, SUBSTITUTION OF PLANT SPECIES WILL BE ACCEPTABLE IF THEY CAN BE SHOWN AS VIGOROUS UNDER THE PROPOSED ENVIRONMENTAL CONDITIONS AND AS COST EFFECTIVE. THE PROJECT ENGINEER RESERVES THE RIGHT OF FINAL APPROVAL FOR TYPE AND QUANTITY OF ALL PLANT SPECIES.
5. MAINTENANCE INSTRUCTION: THE CONTRACTOR SHALL SUBMIT TYPE WRITTEN INSTRUCTIONS RECOMMENDING PROCEDURES TO BE ESTABLISHED BY THE PROJECT ENGINEER FOR MAINTENANCE OF MITIGATION WORK FOR ONE FULL YEAR. THESE INSTRUCTIONS SHALL BE SUBMITTED TEN (10) DAYS PRIOR TO THE FINAL INSPECTION DATE.
6. RECORD DRAWINGS: THE CONTRACTOR SHALL SUBMIT DRAWINGS CLEARLY SHOWING ALL CHANGES MADE DURING EXECUTION OF THE WORK. THESE DRAWINGS SHALL BE SUBMITTED WITHIN 10 DAYS AFTER FINAL ACCEPTANCE OF THE PROJECT BY THE PROJECT ENGINEER.

B. DELIVERY, STORAGE, AND HANDLING OF MATERIALS

1. TRANSPORTATION AND INSPECTION: PLANT TRANSPORTATION SHALL COMPLY WITH ALL FEDERAL AND STATE REGULATIONS, AND UPON DELIVERY AT THE SITE, ALL PLANTS SHALL BE INSPECTED FOR CONFORMITY TO SPECIFICATIONS AND FOR HANDLING DAMAGE. REJECTED PLANTS SHALL BE IMMEDIATELY REMOVED FROM THE SITE BY THE CONTRACTOR. IN ADDITION, ANY REQUIRED INSPECTION CERTIFICATES SHALL ACCOMPANY EACH SHIPMENT, AND SHALL BE FILED WITH THE PROJECT ENGINEER.
2. BALLED AND BURLAPPED: THE ROOT BALL OF THESE PLANTS SHALL BE PROPERLY PROTECTED UNTIL THEY ARE PLANTED. THE PLANT SHALL BE HANDLED AND DELIVERED WITH ROOTS ADEQUATELY PROTECTED AGAINST DRYING OUT BY MEANS OF MOIST STRAW OR OTHER APPROVED MATERIALS. SHIPPING CONTAINERS SHALL BE OPENED AND INSPECTED BY THE CONTRACTOR UPON ARRIVAL AND SHALL BE DAMPENED IF NECESSARY. PLANTS WHICH ARE NOT IMMEDIATELY PLANTED SHALL BE "HEELED-IN" IN AN APPROVED MANNER, IN MOIST EARTH OR OTHER SUITABLE MEDIUM, AND SHALL BE PROPERLY CARED FOR UNTIL PLANTING.

C. SUBSTITUTIONS / DEPARTURES

1. PLANTS SPECIFIED IN THE PLANS SHALL BE USED UNLESS SUFFICIENT EVIDENCE IS SUBMITTED TO THE PROJECT ENGINEER INDICATING THE PLANT IS UNAVAILABLE. ALTERNATE MATERIAL MAY BE USED UPON RECEIPT OF FIELD ORDER OR CHANGE ORDER AUTHORIZATION. THE PROJECT ENGINEER RESERVES THE RIGHT OF FINAL APPROVAL OF ALL REQUESTED CHANGE ORDERS.
2. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE PROJECT ENGINEER.
3. FROM TIME TO TIME AS WORK PROGRESSES, DEPARTURES FROM THE SCHEDULE MAY RESULT IN CHANGES IN THE WORK OR DELAYS OR ACCELERATIONS OF ONE OR MORE ACTIVITIES. THE CONTRACTOR SHALL RECEIVE NO COMPENSATION FOR THOSE DEPARTURES OTHER THAN A TIME EXTENSION, IF APPLICABLE AND APPROVED.

D. ADJUSTMENTS AND ALTERATIONS

1. CONTAINER GROWN MATERIAL MAY BE SUBSTITUTED FOR USING ANY OTHER ROOT CLASSIFICATION TYPES OF EQUAL VALUE WITH APPROVAL BY THE PROJECT ENGINEER. HOWEVER, ALL OTHER REQUIREMENTS AND SPECIFICATIONS MUST BE ADHERED TO.
2. QUANTITY ADJUSTMENTS: SHOULD MATERIALS IN EXCESS OF QUANTITIES ESTIMATED BE REQUIRED, IN THE OPINION OF THE PROJECT ENGINEER, THE CONTRACTOR SHALL PROVIDE EXTRAS AT THE SAME UNIT PRICE. SHOULD QUANTITIES LESS THAN ESTIMATED BE REQUIRED, SIMILARLY, CREDITS SHALL BE GIVEN BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT INSTALL EXTRA OR OMIT EXCESS MATERIALS UNLESS AUTHORIZED BY THE PROJECT ENGINEER IN WRITING.
3. ALTERNATION: THE PROJECT ENGINEER RESERVES THE RIGHT TO MAKE ALTERNATIONS TO THE DRAWINGS AND WORK THROUGHOUT THE CONTRACT.

E. GUARANTEE

1. THE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE HUNDRED TWENTY (120) DAYS AFTER THE DATE OF PLANTING ACCEPTANCE BY THE PROJECT ENGINEER. PLANTING ACCEPTANCE SHALL BE CONSIDERED THE TIME AT WHICH ALL REQUIRED PLANTS HAVE BEEN INSTALLED WITHIN THE MITIGATION SITE. THE ONE HUNDRED TWENTY (120) DAY PLANT GUARANTEE PERIOD SHALL ALSO BE CONSIDERED THE PLANT ESTABLISHMENT PERIOD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF AT LEAST ONE HUNDRED (100) PERCENT OF EACH TREE, SHRUB, AND HERBACEOUS PLANT SPECIES PLANTED. BEFORE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REPLACE, AT NO COST TO THE AUTHORITY, ANY PLANT MATERIAL NECESSARY TO MEET THE ABOVE CRITERIA. IN THE EVENT THE CONTRACTOR MUST REPLACE PLANT MATERIAL, THE PLANT GUARANTEE PERIOD SHALL BE EXTENDED FOR AN ADDITIONAL ONE HUNDRED TWENTY (120) DAYS. THE CONTRACTOR SHALL BE PAID FOR ONLY THOSE PLANTS ESTABLISHED AND HEALTHY AT THE END OF THE ONE HUNDRED TWENTY (120) DAY ESTABLISHMENT PERIOD, AND ONLY AFTER ACCEPTANCE OF THE PLANTS BY THE PROJECT ENGINEER.
3. HERBACEOUS VEGETATION SURVIVORSHIP DETERMINATIONS

   STEP 1 - THE INITIAL STEP OF THE ASSESSMENT OF HERBACEOUS VEGETATION SHALL CONSIST OF THE ESTABLISHMENT OF A SERIES OF TRANSECT THROUGHOUT THE MITIGATION SITE. TRANSECTS SHALL BE ESTABLISHED AT 100 FOOT INTERVALS STARTING AT ONE END OF THE SITE AND PROGRESSING TOWARDS THE OTHER END OF THE SITE. ALONG EACH TRANSECT PVC PIPE SHALL BE PLACE AT 50 FOOT INTERVALS. THESE PIPES SHALL BE USED TO ESTABLISH THE DIRECTION AND LIMITS OF THE TRANSECT AND THE LINE ON WHICH TRANSECTS SHALL BE SAMPLED.

   STEP 2 - THE VEGETATION LOCATED ALONG EACH TRANSECT SHALL THEN SAMPLED USING A ONE METER SQUARE QUADRAT. ALONG EACH TRANSECT THE ONE METER QUADRAT SHALL BE PLACED ON THE GROUND AND THE VEGETATION WITHIN IT ASSESSED. BECAUSE CONSTRUCTION PLANS REQUIRED THAT HERBACEOUS PLANT SPECIES BE INSTALLED ON THREE FOOT CENTERS, IT IS ASSUMED THAT IF ONE ACCEPTABLE PLANT IS FOUND WITHIN A QUADRAT, THAT THE PERCENT SURVIVAL OF ACCEPTABLE PLANT SPECIES WITHIN THAT ONE SQUARE METER AREAS IS 100%.

   QUADRATS SHALL BE SAMPLED END TO END ALONG EACH TRANSECT. ON NOTE SHEETS DEVELOPED OF THE PROJECT, AN X SHALL BE USED TO DENOTES THE PRESENCE OF AT LEAST ONE ACCEPTABLE PLANT, WHILE AN OPEN BOX SHALL DENOTE THE ABSENCE OF AN ACCEPTABLE PLANT WITHIN INDIVIDUAL QUADRATS.

   STEP 3 - THE APPROXIMATE LOCATION OF EACH TRANSECT AND PVC PIPE SHALL THEN BE PLACED ON A PLANTING PLAN VIEW OF THE MITIGATION SITE. USING THIS FIGURE, THE APPROXIMATE LOCATION OF THOSE QUADRATS WHICH DID NOT HAVE AT LEAST ONE ACCEPTABLE PLANT WITHIN THEM SHALL BE DETERMINED. THE PURPOSE OF THIS ACTION IS TO DETERMINE THE APPROXIMATE PERCENT SURVIVORSHIP WITHIN EACH PLANTING ZONE OF THE MITIGATION SITE. THE PERCENT SURVIVORSHIP WITHIN EACH PLANTING ZONE SHALL THEN BE DETERMINED BY:

   1) ESTIMATING THE NUMBER OF QUADRATS PRESENT WITHIN THE PLANTING ZONE,
   2) DETERMINING THE NUMBER OF QUADRATS WITHIN THE PLANTING ZONE WHICH HAD AT LEAST ONE ACCEPTABLE PLANT PRESENT, AND
   3) DETERMINING THE APPROXIMATE PERCENT SURVIVAL WITHIN THE PLANTING ZONE BY DIVIDING THE NUMBER OF QUADRATS WITH AT LEAST ONE ACCEPTABLE PLANT PRESENT BY THE TOTAL NUMBER OF QUADRATS WITHIN THE PLANTING ZONE.

Jimmie Gill
5/17/02

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MITIGATION NOTES (1)

STEP 4 - USING THE PERCENT SURVIVORSHIP DETERMINED FOR EACH PLANTING ZONE, IT WILL THEN BE POSSIBLE TO DETERMINE THE APPROXIMATE NUMBER OF PLANTS WHICH SURVIVED WITHIN EACH ZONE. THIS SHALL BE DONE BY MULTIPLYING THE TOTAL NUMBER OF PLANTS WITHIN THE PLANTING ZONE BY THE PERCENT SURVIVORSHIP FOR THE ZONE. THE APPROXIMATE NUMBER OF PLANTS WHICH DIED SHALL THEN DETERMINED BY SUBTRACTING THE NUMBER OF PLANTS WHICH SURVIVED FROM THE TOTAL PLANTS INSTALLED. AN EXAMPLE OF THIS DETERMINATION IS SHOWN BELOW.

(NUMBER OF PLANTS INSTALLED) X (PERCENT SURVIVORSHIP) = (NUMBER OF PLANTS WHICH SURVIVED)
(NUMBER OF PLANTS INSTALLED) - (NUMBER OF PLANTS WHICH SURVIVED) = (NUMBER OF PLANTS WHICH DIED)

STEP 5 - USING THE TOTAL NUMBER OF PLANTS WHICH DIED WITHIN EACH PLANTING ZONE, THE COST ASSOCIATED WITH THOSE PLANTS SHALL BE DETERMINED. THIS SHALL BE DONE BY MULTIPLYING THE AVERAGE COST OF A PLANT WITHIN THE PLANTING ZONE BY THE TOTAL NUMBER OF PLANTS WHICH DIED WITHIN THAT PLANTING ZONE. AN EXAMPLE OF THIS DETERMINATION IS SHOWN BELOW.

(NUMBER OF PLANTS WHICH DIED) X (AVERAGE COST OF PLANTS WITHIN THE PLANTING ZONE) = (DEAD PLANTS VALUE)

STEP 6 - AFTER THE VALUE OF THE DEAD PLANTS WITHIN EACH ZONE IS DETERMINED, THE TOTAL AMOUNT TO BE PAID TO THE CONTRACTOR SHALL THEN BE DETERMINED BY SUBTRACTING THE TOTAL VALUE OF THE DEAD PLANTS WITHIN ALL ZONES FROM THE CONTRACT BID PRICE.

4. TREE AND SHRUB VEGETATION SURVIVORSHIP DETERMINATIONS:

SURVIVORSHIP OF FORESTED AND SHRUB VEGETATION SHALL BE DETERMINED BY DIRECT COUNT OF THE INDIVIDUAL PLANTS INSTALLED AND MEETING THE ESTABLISHMENT CRITERIA AT THE END OF THE GRANTEE PERIOD.

5. THE CONTRACTOR SHALL MAINTAIN THE MITIGATION SITE THROUGHOUT THE LENGTH OF THE PROJECT AND UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE PROJECT ENGINEER. THIS MAINTENANCE SHALL INCLUDE THE WEEDING OF PLANTING AREAS, WATERING OF PLANTS, USE OF INSECTICIDES, ETC. MAINTENANCE OF THE SITE SHALL NOT BE CONSIDERED TO BE SYNONYMOUS WITH THE PLANT ESTABLISHMENT PERIOD BUT SHALL BE CONSIDERED AN INDEPENDENT ACTION CONDUCTED BY THE CONTRACTOR AS PART OF THE PROJECT REQUIREMENTS. ANY PLANTS DESTROYED AS A RESULT OF MAINTENANCE OF THE PROJECT SITE BY THE CONTRACTOR SHALL BE REPLACED AT NO ADDITIONAL COST TO THE AUTHORITY.

II. PRODUCTS

A. GENERAL

1. PLANTS REQUIRED: THE CONTRACTOR SHALL FURNISH ALL TREES, SHRUBS, AND HERBACEOUS MATERIAL OF THE SPECIES AND IN THE QUANTITIES SHOWN IN THE PLANS AND LISTED IN THE PROPOSAL.

2. NOMENCLATURE: ALL TREES, SHRUBS, AND HERBACEOUS MATERIAL SHALL BE TRUE TO NAME AS ESTABLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE PUBLICATION "STANDARD PLANT NAMES". THE DESIGNATED AUTHORITY FOR THE IDENTIFICATION OF ALL MATERIAL SHALL BE THE TWO PUBLICATIONS OF L.H. BAILEY "HORTUS II" AND "MANUAL OF CULTIVATED PLANTS", AND ALL SPECIMENS SHALL BE TRUE TO TYPE, NAME, ETC. AS DESCRIBED THEREIN.

3. GRADE STANDARDS AND QUALITY: ALL NURSERY GROWN PLANTS SHALL COMPLY WITH ALL REQUIRED INSPECTION, GRADING, STANDARDS, AND PLANT REGULATIONS AS SET FORTH IN THE FLORIDA DEPARTMENT OF AGRICULTURE "GRADES AND STANDARDS FOR NURSERY PLANTS" OR EQUIVALENT, INCLUDING REVISIONS, UNLESS THE CONTRACTOR CAN SHOW PLANTS TAKEN FROM NATURAL DONOR SITES TO BE OF EQUAL VIGOR AND MORE COST EFFECTIVE.

   a. THE MINIMUM GRADE FOR ALL TREES, SHRUBS AND HERBACEOUS PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND SHAPED WITHIN NORMAL HABIT OF GROWTH, OF PROPER COLOR AND DENSELY FOLIATED WHEN IN LEAF. THEY SHOULD HAVE HEALTHY, WELL DEVELOPED ROOT SYSTEMS, AND SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS, OR LARVAE.

   b. ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED OR INDICATED IN THE PLANS. PLANTS LARGER THAN SPECIFIED MAY BE USED IF APPROVED BY THE PROJECT ENGINEER, BUT USE OF SUCH PLANTS SHALL NOT INCREASE THE CONTRACT PRICE. THE SPREAD OF ROOTS OR BALL OF EARTH FOR LARGER PLANTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

   c. IN THE EVENT THAT IT BECOMES APPARENT THAT ANY NURSERY SUPPLING PLANTS FOR THIS WORK HAS KNOWINGLY AND CONSISTENTLY REPRESENTED THE GRADE OF PLANTS AS BEING HIGHER THAN THE ACTUAL GRADE AS DETERMINED BY THE PLANT LIST ACCORDING TO "GRADES AND STANDARDS FOR NURSERY PLANTS", ALL PLANTS ALREADY DELIVERED FROM SUCH SOURCE SHALL BE REMOVED FROM THE PROJECT SITE AT THE EXPENSE OF THE CONTRACTOR. NO FURTHER PLANTS WILL BE ACCEPTABLE FROM SUCH NURSERY UNTIL WRITTEN EVIDENCE IS SUBMITTED AND CONFIRMED THAT ALL MATERIAL FOR DELIVERY HAS BEEN INSPECTED AND APPROVED BY THE PROJECT ENGINEER AS BEING OF THE GRADE REPRESENTED.

4. MATERIALS LIST: MAJOR MATERIALS AND COMPONENTS OF WORK HAVE BEEN CATEGORIZED AND LISTED N THE PLANS AND SPECIFICATIONS. OTHER MATERIALS INDICATED IN THE SPECIFICATIONS AND/OR PLANS MAY BE NECESSARY TO COMPLETE COMPONENTS LISTED AND/OR TO COMPLETE THE ENTIRE PROJECT.

5. DISCREPANCIES: EACH ITEM OR COMPONENT HAS BEEN ESTABLISHED IN QUANTITY UNITS COMMON TO THE CONSTRUCTION TRADE. IF QUANTITIES OF PLANTS OR OTHER MATERIALS APPEAR TO BE IN CONFLICT, INSUFFICIENT, OR IN EXCESS, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PROMPTLY FOR CLARIFICATION PRIOR TO SUBMITTING BID PROPOSALS.

6. PLANT MATERIAL TAKEN FROM NATURAL OR MAN-MADE WETLANDS OTHER THAN PREVIOUSLY IDENTIFIED DONOR SITES MUST BE APPROVED BY THE PROJECT ENGINEER. THE PROJECT ENGINEER SHALL BE GIVEN AT LEAST FOURTEEN (14) DAYS NOTICE BEFORE INITIATION OF PLANT COLLECTIONS FROM THE AFOREMENTIONED SITES. ALL PLANT MATERIAL TRANSPLANTED TO THE SITE MUST COMPLY WITH THE PLANS AND SPECIFICATIONS, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING OR ASSURING CONTROL OF ALL EXTRANEOUS, NOXIOUS, AND NUISANCE PLANTS INTRODUCED WITH TRANSPLANTED WETLANDS MATERIAL.

B. PLANT MATERIALS

1. DESIGNATION: WITH REFERENCE TO THE METHOD OF CULTIVATION, ROOT SYSTEM STATUS, ETC., PLANTS FOR MITIGATION SHALL BE CLASSIFIED UNDER THE FOLLOWING DESIGNATIONS:

   A. CONTAINER GROWN
   B. COLLECTED PLANTS
   C. BARE ROOT EQUIVALENT

2. CONTAINER GROWN PLANTS

   a. CONTAINER GROWN PLANTS SHALL HAVE BEEN GROWN IN A CONTAINER LARGE ENOUGH AND FOR SUFFICIENT TIME FOR THE ROOT SYSTEM TO HAVE DEVELOPED ENOUGH TO HOLD ITS SOIL TOGETHER, FIRM AND WHOLE. NO PLANTS SHALL BE LOOSE IN THE CONTAINER. PLANTS WHICH HAVE BECOME POT BOUND OR FOR WHICH THE TOP SYSTEM IS TOO LARGE FOR THE SIZE OF THE CONTAINER WILL NOT BE ACCEPTED.

   b. ALL CONTAINERS SHALL BE CUT AND OPENED FULLY, IN A MANNER SUCH AS WILL NOT DAMAGE THE ROOT SYSTEM. CONTAINER GROWN PLANTS SHALL NOT BE REMOVED FROM THE CONTAINER UNTIL IMMEDIATELY BEFORE PLANTING WHEN ALL DUE CARE SHALL BE TAKEN TO PREVENT DAMAGE AND/OR DEHYDRATION TO THE ROOT SYSTEM.

3. COLLECTED PLANTS: WHEN COLLECTED PLANTS ARE USED, THE PROJECT ENGINEER SHALL BE GIVEN AT LEAST FOURTEEN (14) DAYS NOTICE BEFORE PLANTS ARE HARVESTED. COLLECTED PLANTS SHALL BE DUG WITH A ROOT SPREAD AT LEAST 1/3 GREATER THAN NURSERY GROWN PLANTS OF THE SAME SPECIES AND SIZE. NO COLLECTED PLANT SHALL BE PLANTED BEFORE THE PROJECT ENGINEER'S INSPECTION AND ACCEPTANCE AT THE PLANTING SITE.

4. BARE ROOT PLANTS

   a. PLANT MATERIAL REMOVED FROM NATURAL OR MAN-MADE WETLANDS MAY BE TRANSPORTED TO THE SITE AS BARE ROOT PLANTS. HOWEVER, SOME PROVISION MUST BE MADE TO PROTECT THIS MATERIAL, ESPECIALLY THE ROOTS, FROM DESICCATION. ALL PLANT MATERIAL TRANSPORTED IN THIS MANNER MUST BE APPROVED IN WRITING BY THE PROJECT ENGINEER PRIOR TO INSTALLATION. OTHERWISE, NO BARE ROOT PLANTS SHALL BE USED UNLESS SPECIFICALLY REQUIRED BY THE PROJECT ENGINEER.

   b. PLANTS DESIGNATED AS BARE-ROOT SHALL HAVE A ROOT SPREAD AT LEASE 1/3 GREATER THAN THE EQUIVALENT CONTAINER GROWN PLANT. THE ROOT SYSTEM SHALL BE WELL SPREAD, FIBROUS, AND TYPICAL OF A HEALTHY SPECIMEN OF THE SPECIES. THESE PLANTS SHALL BE DUG AND DELIVERED WITH ROOTS ADEQUATELY PROTECTED AGAINST DRYING OUT BY MEANS OF MOIST STRAW OR OTHER APPROVED MATERIALS. SHIPPING CONTAINERS SHALL BE OPENED AND INSPECTED BY THE CONTRACTOR UPON ARRIVAL, AND SHALL BE DAMPENED IF NECESSARY. PLANTS WHICH ARE NOT TO BE IMMEDIATELY PLANTED SHALL BE "HEELED-IN" IN AN APPROVED MANNER, IN MOIST EARTH OR OTHER SUITABLE MEDIUM, AND SHALL BE PROPERLY CARED FOR UNTIL PLANTED.

   c. DECIDUOUS BARE ROOT PLANTS SHALL BE HANDLED ONLY WHEN IN A DORMANT OR STRIPPED CONDITION, AND ANY EVIDENCE OF FRESH GROWTH SHALL BE CAUSE FOR REJECTION.

   d. BARE ROOT OR COLLECTED PLANTS SHALL NOT BE SUBSTITUTED WITHOUT WRITTEN APPROVAL OF THE PROJECT ENGINEER AND WITHOUT A CHANGE ORDER.

C. PLANTING MATERIALS

1. FERTILIZER: THE CONTRACTOR SHALL FURNISH AND INSTALL THE NECESSARY MATERIALS, LABOR, AND EQUIPMENT TO DISTRIBUTE CONTROLLED RELEASED FERTILIZER TABLETS IN EACH TREE, SHRUB, AND HERBACEOUS MATERIAL PLANTING. TABLETS ARE TO BE GRACE SIERRA OR EQUIVALENT AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. THERE IS TO BE NO BROADCASTING OF FERTILIZERS IN THE MITIGATION SITE.

2. WATERING: WATER SHALL BE CLEAN AND FREE OF OIL, SALT, ACID, ALKALI, SUGAR, VEGETABLE, OR OTHER SUBSTANCE HARMFUL TO PLANTS. IF WATER IS REQUIRED, IT SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR, WHO SHALL ALSO FURNISH ADEQUATE WATERING EQUIPMENT. WATERING WILL NOT BE MEASURED DIRECTLY FOR PAYMENT, BUT SHALL BE PAID AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE VARIOUS PAY ITEMS FOR PLANTS.

3. WRAPPING MATERIAL: WRAPPING MATERIAL SHALL BE FIRST QUALITY, HEAVY, WATER PROOF CRAPE PAPER, OR OTHER APPROVED MATERIAL MANUFACTURED FOR THIS PURPOSE.

4. WIRE: WIRE FOR BRACING AND GUYING SHALL BE PLIABLE NUMBER 12 OR 14-GAUGE GALVANIZED SOFT STEEL WIRE.

III. EXECUTION

A. PREPARATION

1. THE CONTRACTOR SHALL FULLY ACQUAINT HIMSELF WITH THE RELATED SITE GRADING, WATER SUPPLY, AND OTHER UTILITIES TO PRECLUDE ANY MISUNDERSTANDING AND TO FACILITATE A TROUBLE FREE INSTALLATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL SUCH INFORMATION AS IS AVAILABLE.

2. IN THE EVENT THAT ROCK, UNDERGROUND CONSTRUCTION WORK, UTILITY LINES, OR OBSTRUCTIONS OUT OF THE ORDINARY ARE ENCOUNTERED IN ANY PLANT PIT EXCAVATION, ALTERATIVE PLANT LOCATIONS SHALL BE SELECTED BY THE PROJECT ENGINEER. WHERE LOCATIONS CANNOT BE CHANGED AND THE OBSTRUCTIONS MAY BE REMOVED, THE OBSTRUCTION SHALL BE REMOVED WITH APPROVAL BY THE PROJECT ENGINEER TO A DEPTH OF NOT LESS THAN THREE (3) FEET BELOW GRADE AND NOT LESS THAN SIX (6) INCHES BELOW THE BOTTOM OF ROOTS WHEN THE PLANT IS PROPERLY SET AT THE REQUIRED GRADE.

3. TREES, SHRUBS AND HERBACEOUS MATERIAL DESIGNATED IN THE PLANS TO REMAIN IN THEIR EXISTING LOCATIONS SHALL NOT BE DISTURBED.

B. PLANTING

1. TIME OF PLANTING: PLANTING SHOULD OCCUR UNDER FAVORABLE WEATHER CONDITIONS. AT THE OPTION OF AND UNDER THE FULL RESPONSIBILITY OF THE CONTRACTOR, PLANTING OPERATION MAY BE CONDUCTED UNDER UNREASONABLE CONDITIONS WITHOUT ADDITIONAL COMPENSATION.

2. REMOVAL FROM CONTAINERS:

   a. ALL CONTAINERS SHALL BE CUT AND OPENED FULLY IN A MANNER WHICH WILL NOT DAMAGE THE ROOT SYSTEM OF THE PLANT.

   b. CONTAINER GROWN PLANTS SHALL NOT BE REMOVED ROM THE CONTAINER UNTIL IMMEDIATELY BEFORE PLANTING, AND WITH ALL DUE CARE TO PREVENT DAMAGE TO THE ROOT SYSTEM.

3. STAKING AND GUYING OF TREES: THE CONTRACTOR IS WHOLLY RESPONSIBLE FOR THE STABILITY AND PLUMB CONDITION OF ALL TREES AND SHRUBS. STAKING OF TREES SHALL BE AT THE DISCRETION OF THE CONTRACTOR, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. ALL STAKING SHALL BE AS DETAILED IN THE PLANS OR AS SPECIFIED HEREIN.

   a. SMALL TREES: FOR TREES AND SHRUBS OF LESS THAN ONE (1) INCH CALIPER, THE SIZE OF STAKES AND THE METHOD OF TYING SHALL BE SUCH AS TO RIGIDLY SUPPORT THE STAKED PLANT AGAINST DAMAGE CAUSED BY WIND ACTION OR OTHER EFFECTS.

   b. LARGER TREES: FOR TREES AND SHRUBS LARGER THAN ONE (1) INCH AND SMALLER THAN TWO (2) INCH CALIPER, TWO (2) INCH STAKES, SET AT LEAST 24 INCHES IN THE GROUND AND EXTENDING TO THE CROWN OF THE PLANT SHALL BE USED. THE PLANT SHALL BE FIRMLY FASTENED TO THE STAKE WITH TWO STRANDS OF GALVANIZED 12 OR 14 GAUGE SOFT WIRE, ENCLOSED IN A RUBBER HOSE, OR OTHER APPROVED COVERING. THE WIRE SHALL BE NAILED OR STAPLED TO THE STAKE TO PREVENT SLIPPAGE.

4. ANTI-TRANSPARENT: A POWER SPRAY SHALL BE USED TO PROVIDE AN ADEQUATE FILM OVER TRUNKS, BRANCHES, STEMS, TWIGS AND FOLIAGE OF PLANTS.

5. WATERING: THE CONTRACTOR SHALL CONTINUE WATERING FOR AS LONG AS NECESSARY TO PROPERLY ESTABLISH THE PLANTS.

C. FIELD QUALITY CONTROL

1. CONTRACTOR'S RESPONSIBILITIES:

   a. BEFORE PLANTING: THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE LOCATION OF ALL UNDERGROUND AND ABOVE GROUND IMPROVEMENT AND TAKE CARE NOT TO DISTURB IMPROVEMENTS DURING HIS INSTALLATION OPERATIONS. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY DAMAGED IMPROVEMENTS AT HIS SOLE EXPENSE.

   b. DURING PLANTING:

      1. REPORTING OF UNFAVORABLE CONDITIONS: THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF INADEQUATE SOIL DEPTH, UTILITY LINE CONFLICTS, OR OTHER ADEQUATE ADVERSE CONDITION FOR PLANT MATERIALS.

      2. THE CONTRACTOR SHALL REMOVE DEAD AND UNSATISFACTORY PLANTS PROMPTLY UPON DISCOVERY DURING PERIODIC VISITS AND SHALL MARK LOCATIONS CLEARLY TO FACILITATE FUTURE REPLACEMENT, IF NECESSARY.

      3. THE CONTRACTOR SHALL REQUEST THE PROJECT ENGINEER=S INSPECTION NEAR THE END OF THE GUARANTEE PERIOD (ESTABLISHMENT PERIOD). WHEN ALL PLANTINGS ARE ACCEPTABLE, THE CONTRACTOR WILL BE NOTIFIED OF GUARANTEE PERIOD COMPLIANCE.

      4. CLEANING

         a. DURING WORK, THE CONTRACTOR SHALL STORE MATERIALS AND EQUIPMENT WHERE DIRECTED AND SHALL KEEP WORK AREAS CLEAN AND IN AN ORDERLY CONDITION.

         b. THE CONTRACTOR SHALL PROTECT WORK AND MATERIALS FROM DAMAGE DUE TO PLANTING OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES AND TRESPASSERS, AND SHALL MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. THE CONTRACTOR SHALL TREAT, REPAIR OR REPLACE DAMAGED WORK.

   C. AFTER PLANTING

      1. MAINTENANCE

         a. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS PLANTED AND SHALL CONTINUE UNTIL THE COMPLETION OF THE CONTRACT OR FINAL ACCEPTANCE, WHICHEVER IS LATEST. PLANTS SHALL BE WATERED, WEEDED, FERTILIZED, CULTIVATED, AND OTHERWISE MAINTAINED AND PROTECTED UNTIL COMPLETION OF THE CONTRACT OR FINAL ACCEPTANCE, WHICHEVER IS LATEST.

         b. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT. UPON COMPLETION OF PLANTING, THE CONTRACTOR SHALL REMOVE FROM THE SITE EXCESS SOIL AND DEBRIS, AND REPAIR ANY DAMAGE TO STRUCTURES, ETC. RESULTING FROM THE PLANTING OPERATION.

         c. RESPONSIBILITY FOR PROTECTION AGAINST MECHANICAL DAMAGE SHALL INCLUDE THE PROVIDING OF PROTECTION FROM VEHICLES INCLUDING THE POSTING OF APPROVED WARNING SIGNS AND BARRICADES AS MIGHT BE NECESSARY. THE CONTRACTOR SHALL REPAIR, RESTORE, OR REPLACE ANY PLANTS OR PLANTING AREAS WHICH MIGHT BECOME DAMAGED AS A RESULT OF ANY NEGLIGENCE BY HIM IN COMPLYING WITH THESE REQUIREMENTS. AS A SPECIFIC REQUIREMENT OF THESE CONDITIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT ALL PLANTS AT THE TIME OF FINAL INSPECTION EXHIBIT THE CHARACTERISTICS AND QUALIFICATIONS REQUIRED FOR THE GRADE OF PLANT AS ORIGINALLY SPECIFIED.

5/17/02

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL, P.E. NO. 31959

TAMPA - HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

MITIGATION NOTES (2)

SHEET NO. 170

05/14/2002 01:33:38 PM e:\c10000382I\design\DRAINAGE\sheets\MITNOTES.dgn

2. NUISANCE / EXOTIC VEGETATION TREATMENT AND CONTROL

a. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PREVENTING THE SPREAD OF NUISANCE/EXOTIC VEGETATION WITHIN THE MITIGATION AREA UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE EXACT METHOD OF VEGETATION CONTROL SHALL BE DETERMINED BY THE CONTRACTOR AND MUST BE APPROVED BY THE PROJECT ENGINEER. ALL MAINTENANCE PROCEDURES AND/OR CHEMICALS TO BE USED MUST BE DESCRIBED IN WRITING AND SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INITIATION OF ACTIVITIES. SPECIFIC METHODS LISTED BELOW ARE PROVIDED AS EXAMPLE METHODS AND MAY BE USED BY THE CONTRACTOR. HOWEVER, WHICH METHODS ARE USED WILL BE DETERMINED BY THE CONTRACTOR AND THE REMOVAL OF NUISANCE/EXOTIC VEGETATION WILL BE THE CONTRACTOR=S RESPONSIBILITY. REMOVAL OF NUISANCE/EXOTIC VEGETATION WILL NOT BE MEASURED DIRECTLY FOR PAYMENT BUT SHALL BE PAID AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE VARIOUS PAY ITEMS FOR PLANTS.

I. CHEMICAL/HERBICIDE APPLICATIONS: THE USE OF APPROVED HERBICIDES WILL BE ACCEPTABLE FOR THE CONTROL OF NUISANCE/EXOTIC SPECIES, WITH THE EXCEPTION OF SPECIFIC AREAS WHICH MAY BE INDICATED BY THE PROJECT ENGINEER. ALL APPLICATIONS ARE TO BE IN ACCORDANCE WITH THE MANUFACTURER=S RECOMMENDATIONS, UNDER APPROPRIATE WEATHER CONDITIONS, AND APPLIED BY APPROVED AND LICENSED HERBICIDE APPLICATORS. ACCEPTABLE APPLICATION METHODS MAY INCLUDE: 1) SPOT SPRAY APPLICATIONS, 2) WICKING, AND 3) BROADCAST SPRAYING.

II. MANUAL REMOVAL: THE USE OF MANUAL REMOVAL OF NUISANCE/EXOTIC SPECIES MAY BE NECESSARY IN SOME AREAS. THIS METHOD MAY ALSO BE REQUIRED WITHIN THE PLANTED SITE TO PREVENT THE LOSS OF PLANTED SPECIES ASSOCIATED WITH HERBICIDE APPLICATIONS.

3. INSECT TREATMENT AND CONTROL

a. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PREVENTING THE SPREAD OF NUISANCE INSECTS AND THEIR LARVAE WITHIN THE MITIGATION AREA UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE EXACT METHOD OF INSECT CONTROL SHALL BE DETERMINED BY THE CONTRACTOR AND MUST BE APPROVED BY THE PROJECT ENGINEER. ALL MAINTENANCE PROCEDURES AND/OR CHEMICALS TO BE USED MUST BE DESCRIBED IN WRITING AND SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INITIATION OF ACTIVITIES. REMOVAL OF NUISANCE INSECTS AND THEIR LARVAE WILL BE THE CONTRACTOR'S RESPONSIBILITY. REMOVAL OF NUISANCE INSECTS AND THEIR LARVAE WILL NOT BE MEASURED DIRECTLY FOR PAYMENT BUT SHALL BE PAID AS A SUBSIDIARY OBLIGATION OF THE CONTRACTOR UNDER THE VARIOUS PAY ITEMS FOR PLANTS.

4. PROVISIONAL INSPECTION

a. OBSERVATIONS OF PLANT MATERIALS

I. MATERIALS SPECIFIED AS REQUIRING APPROVAL: THE CONTRACTOR SHALL SECURE REPRESENTATIVE SAMPLES OF MATERIALS SPECIFIED AS REQUIRING APPROVAL AND ARRANGE FOR THE PROJECT ENGINEER TO REVIEW THEM. IF DISAPPROVED, THE CONTRACTOR SHALL SUBMIT ADDITIONAL SAMPLES UNTIL APPROVED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL KEEP APPROVED SAMPLES FOR REFERENCE UNTIL NEAR THE END OF THE PROJECT BEFORE INCORPORATING THEM INTO THE WORK. SAMPLE APPROVAL DOES NOT ASSURE APPROVAL OF THE MATERIAL AS INSTALLED.

II. OTHER MATERIALS: OTHER MATERIALS WILL BE REVIEWED BY THE PROJECT ENGINEER UPON THE CONTRACTOR'S REQUEST, OTHERWISE, OBSERVATION MAY TAKE PLACE ANYTIME. THE CONTRACTOR SHALL MAINTAIN SAMPLES FOR REFERENCE.

b. RIGHT OF REJECTION: THE PROJECT ENGINEER SHALL HAVE THE RIGHT TO REJECT ANY AND ALL WORK MATERIALS WHICH, IN HIS OPINION, DO NOT MEET THE REQUIREMENTS OF THESE SPECIFICATIONS.

c. OBSERVATION AND PROVISIONAL ACCEPTANCE:

I. OBSERVATION: WHEN THE PLANTING WORK IS COMPLETED, INCLUDING MAINTENANCE, THE PROJECT ENGINEER WILL, UPON REQUEST, MAKE AN INSPECTION TO DETERMINE ACCEPTABILITY.

II. NONCOMPLIANCE: WHERE PLANTING WORK DOES NOT COMPLY WITH THE REQUIREMENTS, THE CONTRACTOR SHALL REPLACE REJECTED WORK AND CONTINUE SPECIFIED MAINTENANCE UNTIL INSPECTED BY THE PROJECT ENGINEER AND FOUND TO BE ACCEPTABLE. THE CONTRACTOR SHALL REMOVE REJECTED PLANTS AND MATERIALS PROMPTLY FOR THE PROJECT SITE.

III. STANDARD FOR ACCEPTANCE OF PLANTINGS: EACH PLANT SHALL BE OF PROPER TYPE, ETC., PROPERLY INSTALLED AND MAINTAINED IN GOOD HEALTH.

5. FINAL INSPECTION

a. UPON COMPLETION OF THE PROJECT AND AT THE ENDO OF ALL GUARANTEE PERIODS, AN INSPECTION OF THE MITIGATION SITE WILL BE MADE BY THE PROJECT ENGINEER. THIS INSPECTION WILL BE CONDUCTED ONLY UPON WRITTEN NOTICE REQUESTING SUCH INSPECTION SUBMITTED BY THE CONTRACTOR AT LEAST SEVEN (7) DAYS BEFORE THE ANTICIPATED INSPECTION.

6. PROJECT CONSTRUCTION MILESTONES

a. OTHER THAN THOSE MILESTONES NOTED ELSEWHERE WITHIN THE CONTRACT DOCUMENTS, THE FOLLOWING SPECIFIC CONSTRUCTION SCHEDULE MILESTONES ARE PART OF THIS WORK, AND SHALL BE INCORPORATED INTO THE PROJECT SCHEDULE BY THE CONTRACTOR. A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A PROJECT SCHEDULE, WHICH INCORPORATES THE FOLLOWING MILESTONES TO THE PROJECT ENGINEER FOR HIS REVIEW AND APPROVAL. NO CONSTRUCTION SHALL BE UNDERTAKEN UNTIL THE PROJECT SCHEDULE HAS BEEN REVIEWED AND APPROVED BY THE PROJECT ENGINEER.

1. NOTICE TO PROCEED,
2. MAINTENANCE OF PROJECT SITE,
3. CLEARING AND GRUBBING OF PROJECT SITE,
4. SURVEY OF EXISTING CROSS SECTIONS,
5. SUBMITTAL OF EXISTING CROSS SECTIONS FOR APPROVAL BY THE PROJECT ENGINEER,
6. EXCAVATION OF PROJECT SITE,
7. ACQUISITION OF ALL WOODY PLANT SPECIES,
8. SUBMITTAL OF AS-BUILT CROSS SECTIONS FOR APPROVAL BY THE PROJECT ENGINEER,
9. COORDINATION OF PROJECT ENGINEER=S REVIEW OF WOODY PLANT MATERIAL PRIOR TO DELIVERY TO PROJECT SITE,
10. DELIVERY INSPECTION OF WOODY PLANT MATERIALS,
11. PLANTING OF WOODY PLANT SPECIES,
12. ACQUISITION OF HERBACEOUS PLANT MATERIAL,
13. COORDINATION OF PROJECT ENGINEER=S REVIEW OF HERBACEOUS PLANT MATERIAL PRIOR TO DELIVERY TO PROJECT SITE,
14. DELIVERY INSPECTION OF HERBACEOUS PLANT MATERIAL,
15. PLANTING OF HERBACEOUS PLANT MATERIAL,
16. PLANTING ACCEPTANCE,
17. ONE HUNDRED TWENTY (120) DAY GUARANTEE PERIOD,
18. FINAL ACCEPTANCE OF PLANTS,
19. COMPLETION OF PROJECT, AND
20. FINAL ACCEPTANCE OF PROJECT BY THE PROJECT ENGINEER.

Jimmie L. Gill 5/17/02

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

URS
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
C.A. No. 00000002
JIMMIE L. GILL, P.E. NO. 31959

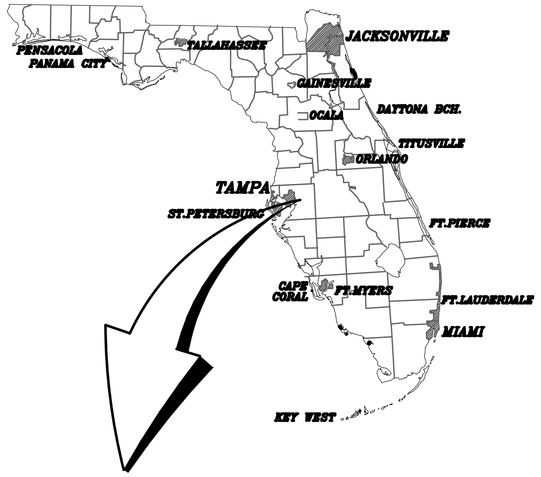
TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

ROAD NO.	COUNTY	CONSTRUCTION PROJECT NO.
S.R. 618	HILLSBOROUGH	51.40.01

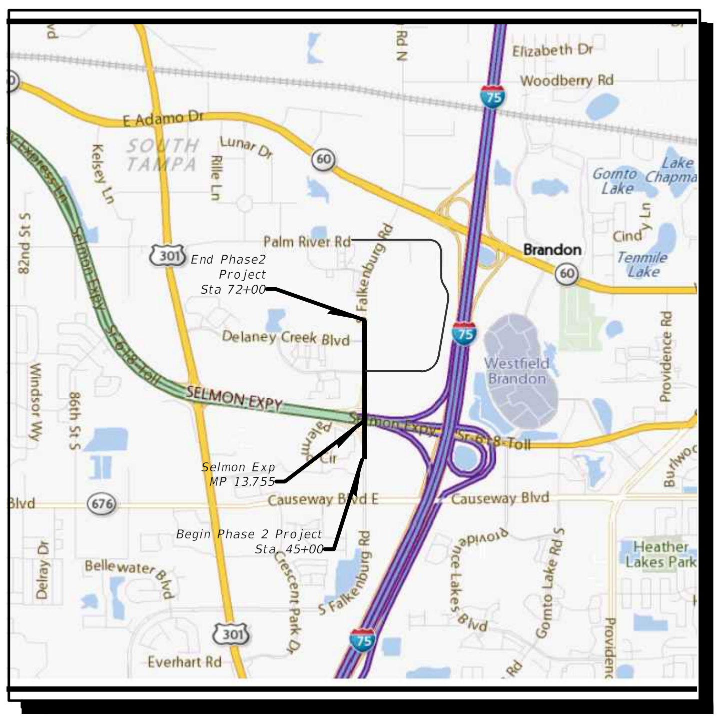
MITIGATION NOTES (3)

SHEET NO. 171

As-built Plans & Relevant Calculations
for Selmon Expressway (Gateway Bridge)
Design No. 50.30.001A (Certified 2006)
SWFWMD permit no.44021031.001 – Datum NGVD



PROJECT SITE



VICINITY MAP

SECTION 30, TOWNSHIP 29 SOUTH, RANGE 20 EAST
HILLSBOROUGH COUNTY, FLORIDA

SELMON EXPRESSWAY (SR 618) MP 13.755
SECTION 1000-2000

Phase 2 Construction Plans

FOR

Falkenburg Rd. Improvements Selmon Expy to Delaney Creek Blvd

Hillsborough County, Florida

PREPARED FOR

I-75/ Palm River Road, LLC

516 Commons Drive
Palm Beach Gardens, Florida 33416
(Attn: David Verado)

PERMIT NUMBERS:
HILLSBOROUGH COUNTY #: 2084
SWFWMD APPLICATION #: 714908

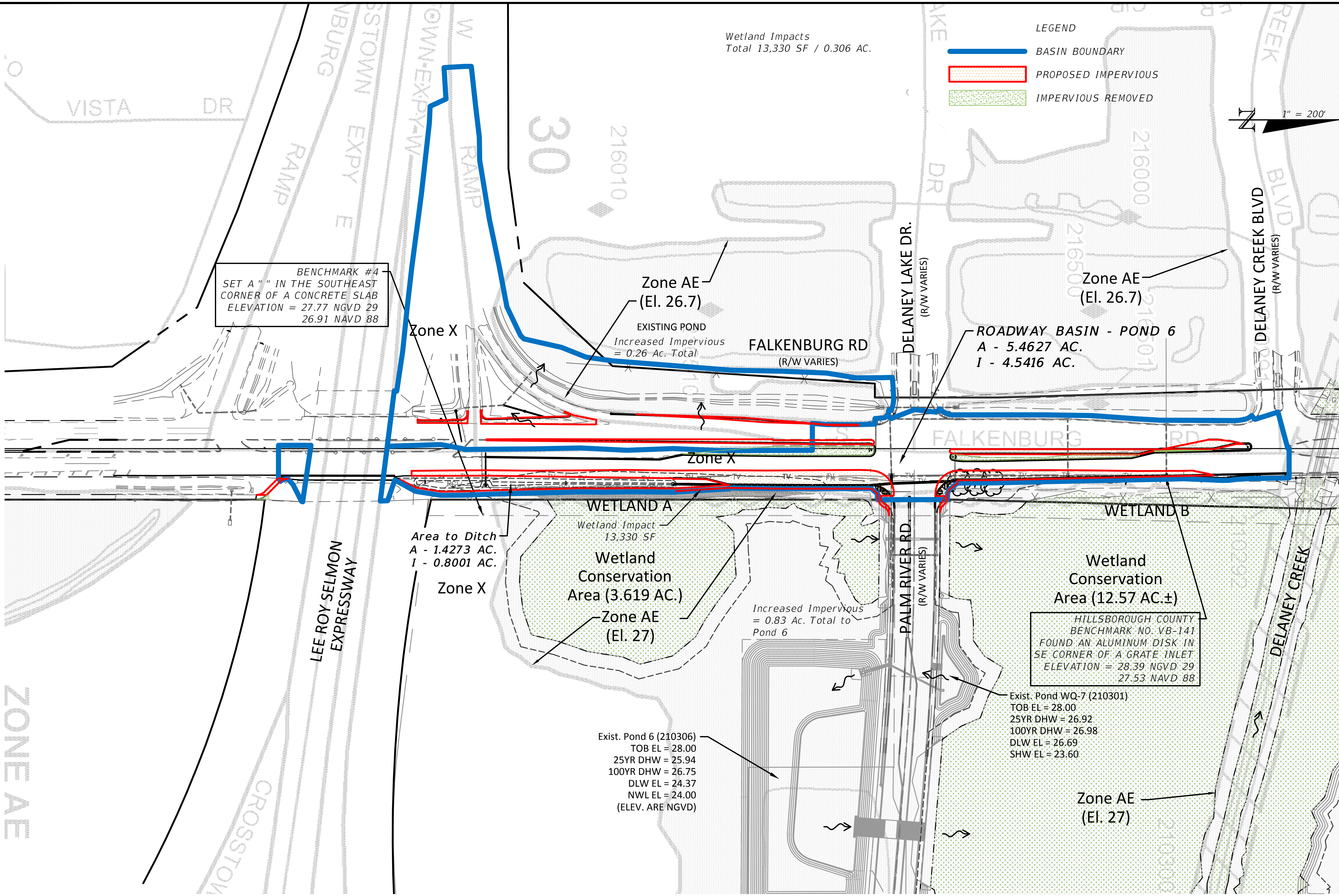
David W. Desilet State of Florida, Professional Engineer, License No. 24760
This item has been electronically signed and sealed by David W. Desilet
on 2/26/2016 using a SHA-1 authentication code.

LINCKS & ASSOCIATES, INC.
ENGINEERS PLANNERS
5023 WEST LAUREL STREET
TAMPA, FLORIDA 33607
PH. (813) 289-0039
Lic. No. EB0004638

INDEX

DATE: 06/22/2015	SIGNED:	JOB NO: 14097
REVISION 10/19/2015 01/29/2016	David W. Desilet PE No. 24760	SHEET 1 OF

PERMITTED DRAWINGS SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD)
For construction permits, the Permittee shall notify the District in writing when construction begins.



David W. Desilet State of Florida, Professional Engineer, License No. 24760
This item has been electronically signed and sealed by David W. Desilet on 2/26/2016 using a SHA-1 authentication code.

LINCKS & ASSOCIATES, INC.
5023 West Laurel Street
Tampa, Florida 33607
Tel (813) 289-0039
Fax (813) 287-0674
Lic. No. EB0004638
Engineers
Planners

DATE	06/22/2015
DESIGNED	DWD
DRAWN	DWM
CHECKED	DWD
JOB NO.	14097

Falkenburg Road Phase 2 Improvements

Proposed Basin Map

REVISIONS
01/29/16 REVISED PER HC COMMENTS

SHEET 2

Permitted Plans for Falkenburg Rd Improvements
I-75/ Palm River Road (2016)
SWFWMD permit no.43027435.007 – Datum NGVD

FISCAL YEAR	SHEET NO.
02	1

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CONTRACT PLANS

CONSTRUCTION PROJECT No. 51.40.01 *
DESIGN PROJECT No. 50.30.001A
HILLSBOROUGH COUNTY
LEE ROY SELMON CROSSTOWN EXPRESSWAY
STATE ROAD No. 618

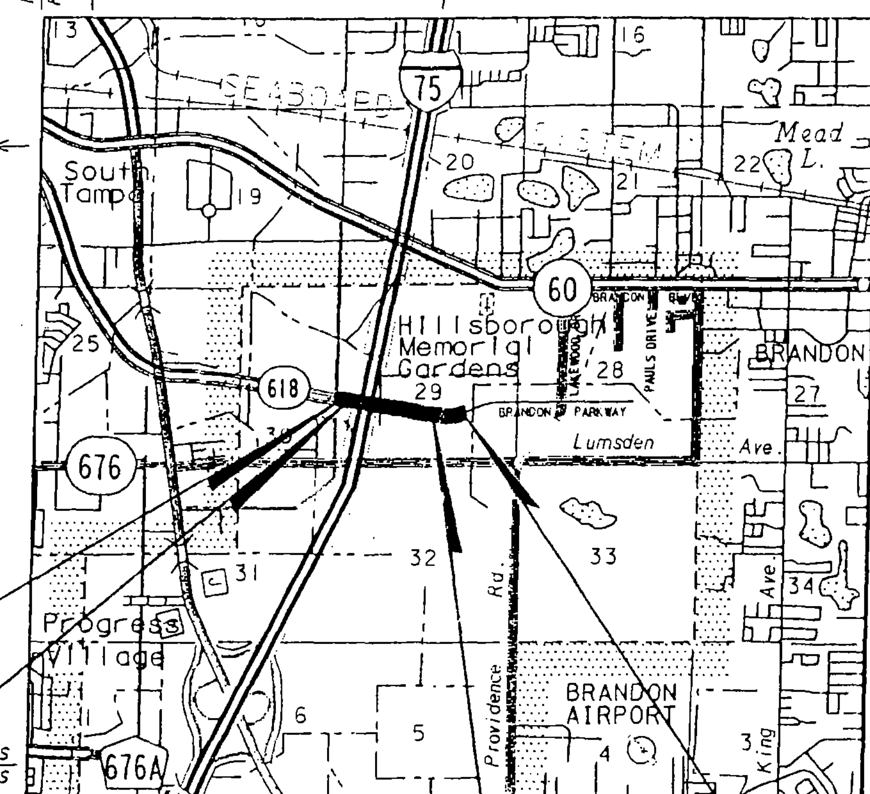
THIS CONTRACT PLAN SET INCLUDES

- ROADWAY PLANS
- SIGNING AND PAVEMENT MARKING PLANS
- LIGHTING PLANS
- LANDSCAPE PLANS
- RETAINING WALL PLANS
- STRUCTURE PLANS
- INTELLIGENT TRANSPORTATION SYSTEM CONDUIT PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS.

AS BUILT DATA (IN RED) WAS PROVIDED BY:
AIM ENGINEERING & SURVEYING, INC.
5300 LEE BLVD.
LEHIGH ACRE, FL 33971
LB # 3114
FIELD DATE 12/11/2006

INDEX OF ROADWAY PLANS

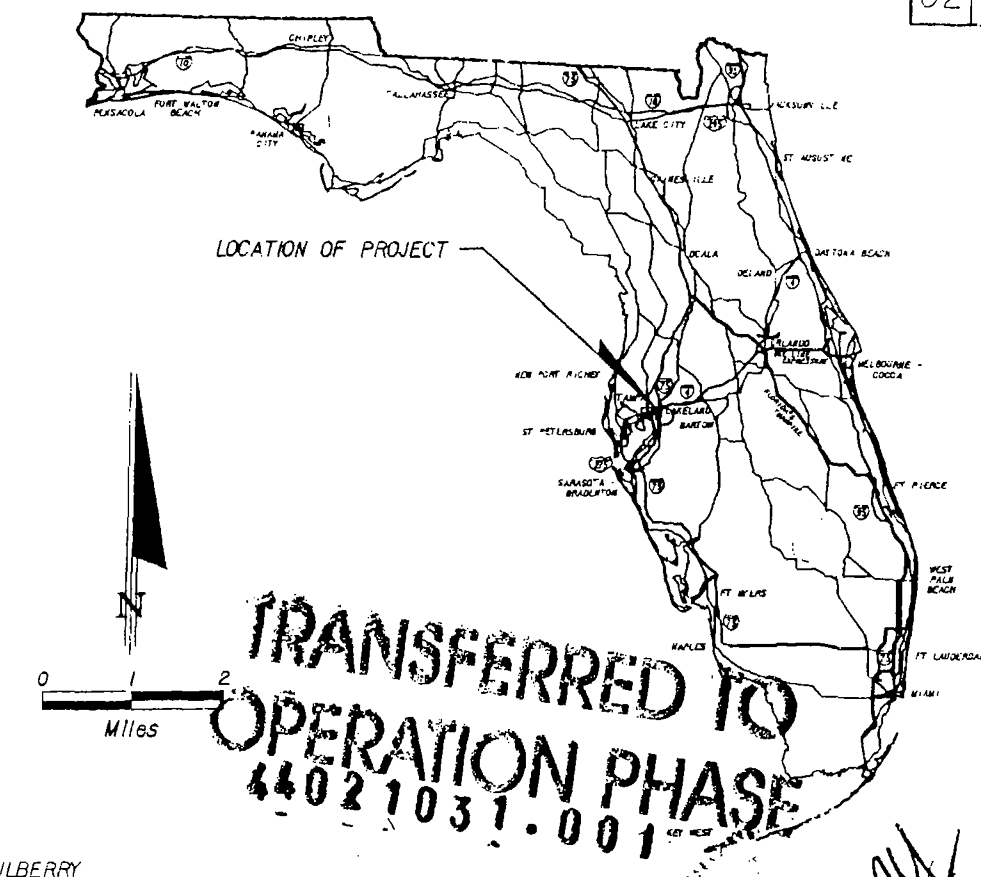


BEGIN GATEWAY BRIDGE CONSTRUCTION PROJECT
STA. 1006+00.00
℄ CONSTRUCTION

BEGIN BRIDGE
STA. 1009+65.37
℄ CONSTRUCTION

END BRIDGE
STA. 1042+13.21
℄ CONSTRUCTION

END GATEWAY BRIDGE CONSTRUCTION PROJECT
STA. 1047+34.04
℄ CONSTRUCTION



TRANSFERRED TO OPERATION PHASE
44021031.001

RECEIVED
JAN 10 2007
By EK

ARD 2/5/7

☑ INSPECTION CONDUCTED BY DISTRICT

☐ INSPECTION NOT CONDUCTED BY DISTRICT RIGHT RESERVED FOR FUTURE INSPECTION

44021031.001

R. Dennis Murray Oct 13 2005

ROADWAY SHOP DRAWINGS TO BE SUBMITTED TO :
R. DENNIS MURRAY, P.E.
ICON CONSULTANT GROUP, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FLORIDA 33618
(813) 962-8689

PLANS PREPARED BY:

ICON CONSULTANT GROUP INCORPORATED
10006 N. DALE MABRY HIGHWAY
SUITE 201
TAMPA, FLORIDA 33618
(813) 962-8689
VF 59-3576100

SOUTHWEST FLORIDA ... RECEIVED

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE TAMPA - HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY, USING STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ENGLISH ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY, 2000) AND THE AASHTO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (1990).

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION. STANDARD SPECIFICATIONS. DATED 2000, SUPPLEMENTS AND SPECIAL PROVISIONS THERETO IF NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT.

REVISIONS

REVISION 52 (10/4/05) : ROADWAY PLAN SHEETS 1, 3, 4, 8, 19, 102 & 107 (REVISED) 42A & 42B (ADDED)

* IN CONJUNCTION WITH THE FOLLOWING DESIGN PROJECTS:
51.30.01
51.30.02
51.30.03
51.30.07

1/9/07
BOB L. POTTER PSM 5688
NOTE: NOT VALID UNLESS SIGNED & EMBOSSED WITH SURVEYORS SEAL.

LENGTH OF PROJECT	LINEAR FEET	MILES
ROADWAY	886.20	0.168
BRIDGES	3247.84	0.615
NET LENGTH OF PROJ.	4134.04	0.783
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJ.	4134.04	0.783

THCEA CHIEF ENGINEER : BENNETT L. MUNS, P.E.

KEY SHEET REVISIONS

DATE	BY	DESCRIPTION
10/4/05	RDM	52 REVISED INDEX OF ROADWAY PLANS.

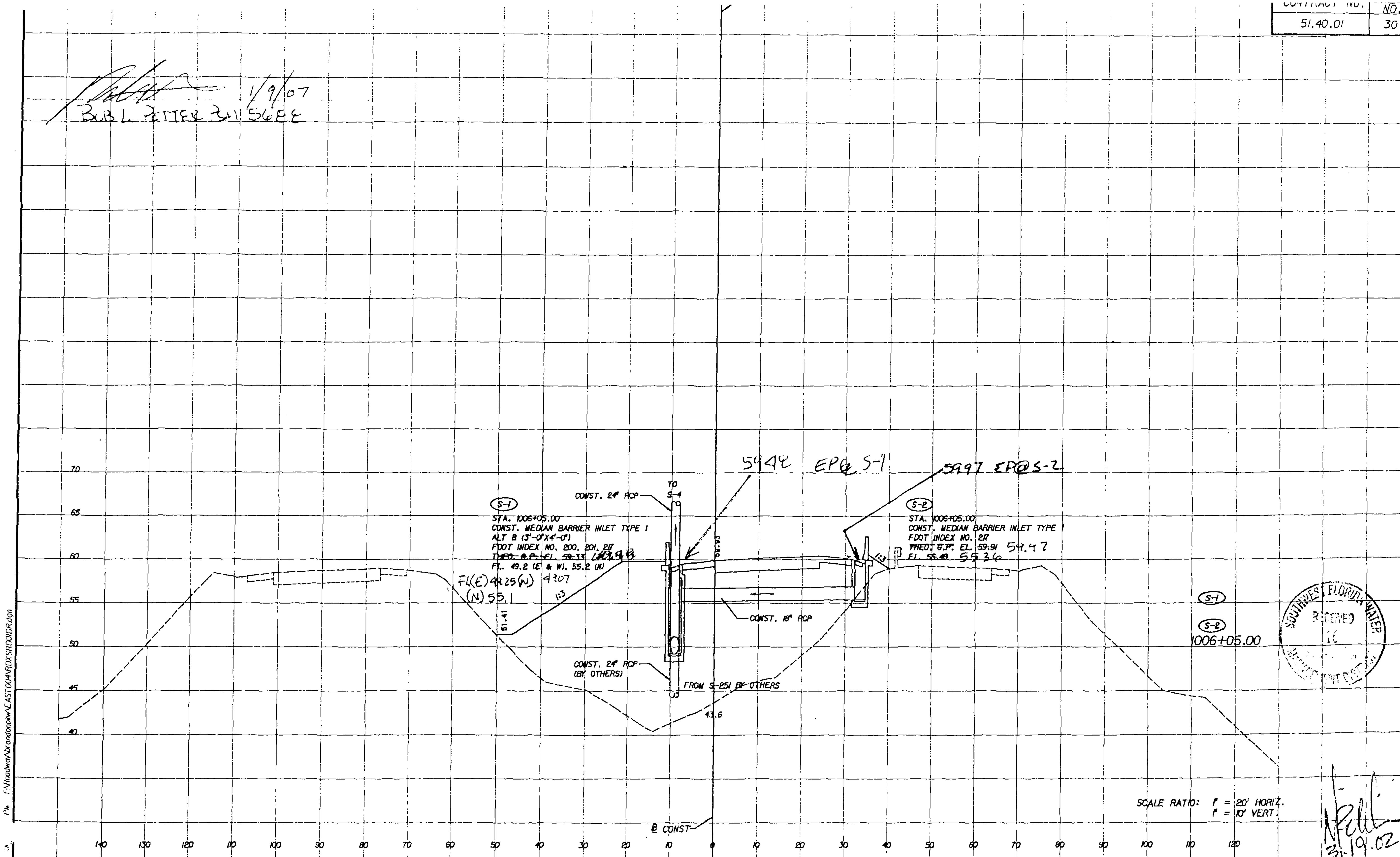
ROADWAY PLANS ENGINEER OF RECORD : R. DENNIS MURRAY, P.E.

DATE: ________

P.E. NO.: 42672

10/11/2005 15:52 ...\Roadway\Brandon\EASTCOAKEYSRD01.DGN

CONTRACT NO.	SHEET NO.
51.40.01	30



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

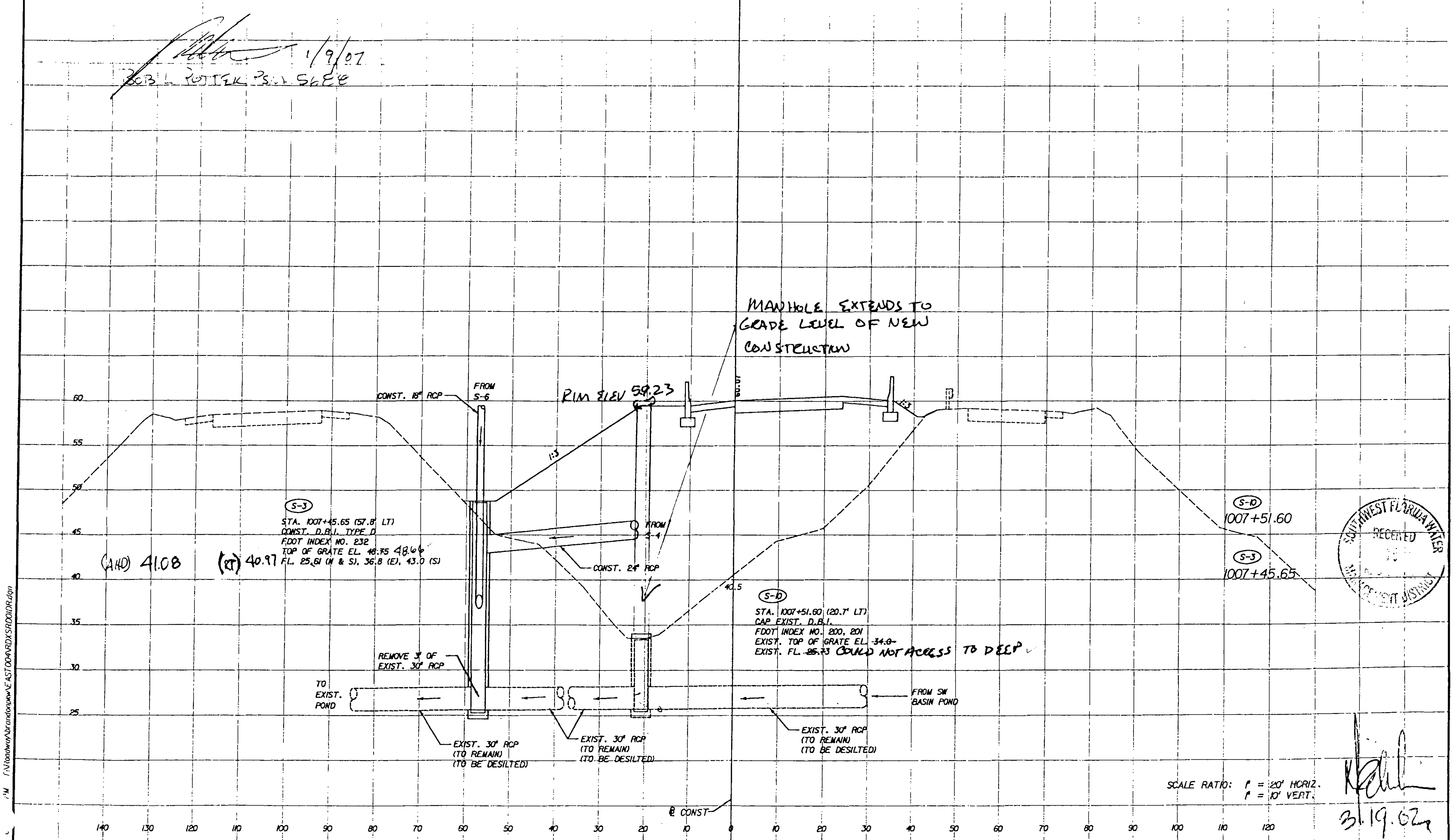
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

03/13/02 F:\Roadway\brandonaw\EAST004\RDXSR001DR.dgn

51.40.01 NO. 31



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

03/18/02 PM F:\roadway\brandonpw\EAST004\RDXSRD01DR.dgn

CONTRACT NO.	SHEET NO.
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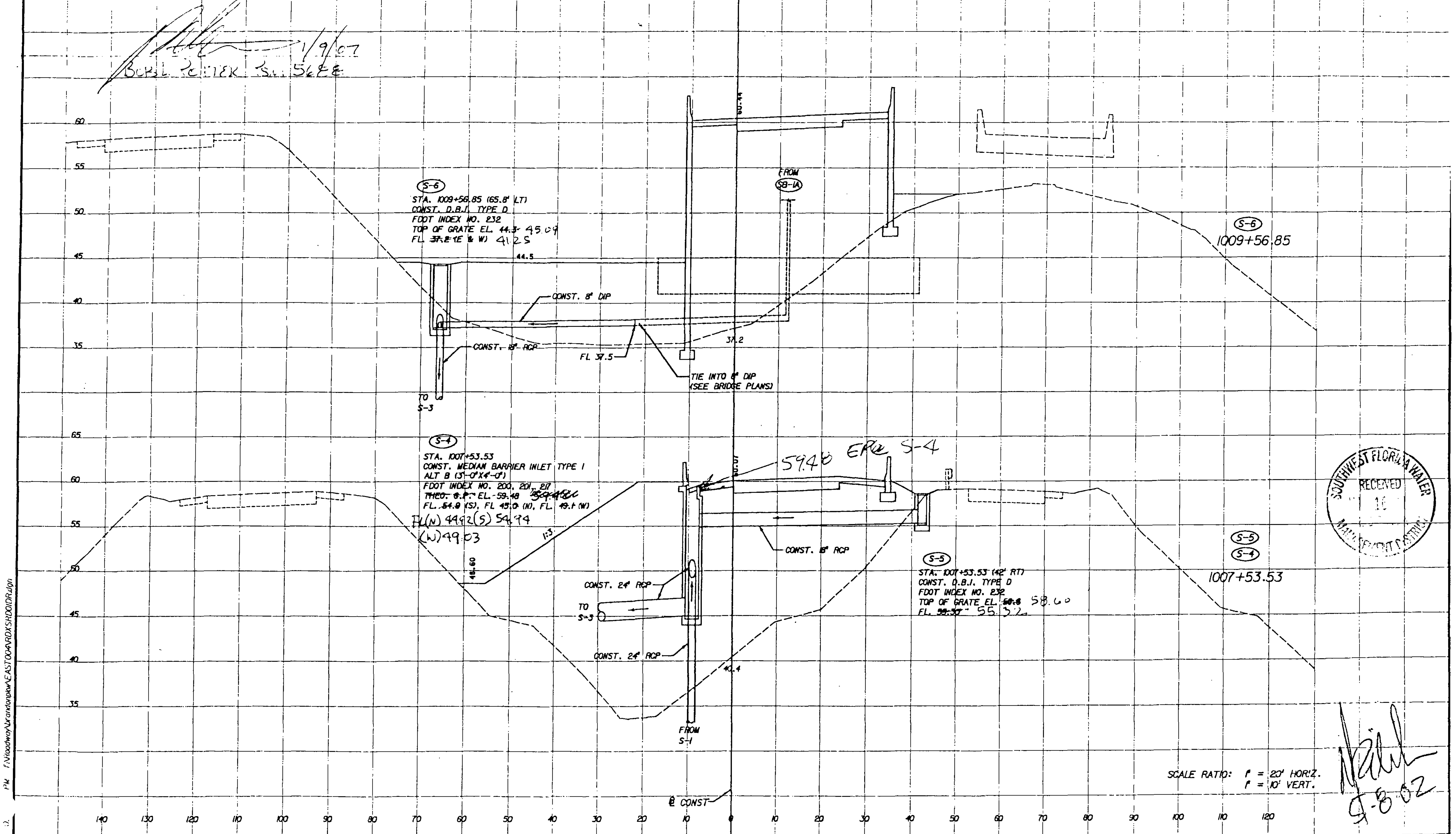

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON
CONSULTANT GROUP
INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

CONTRACT NO.	SHEET NO.
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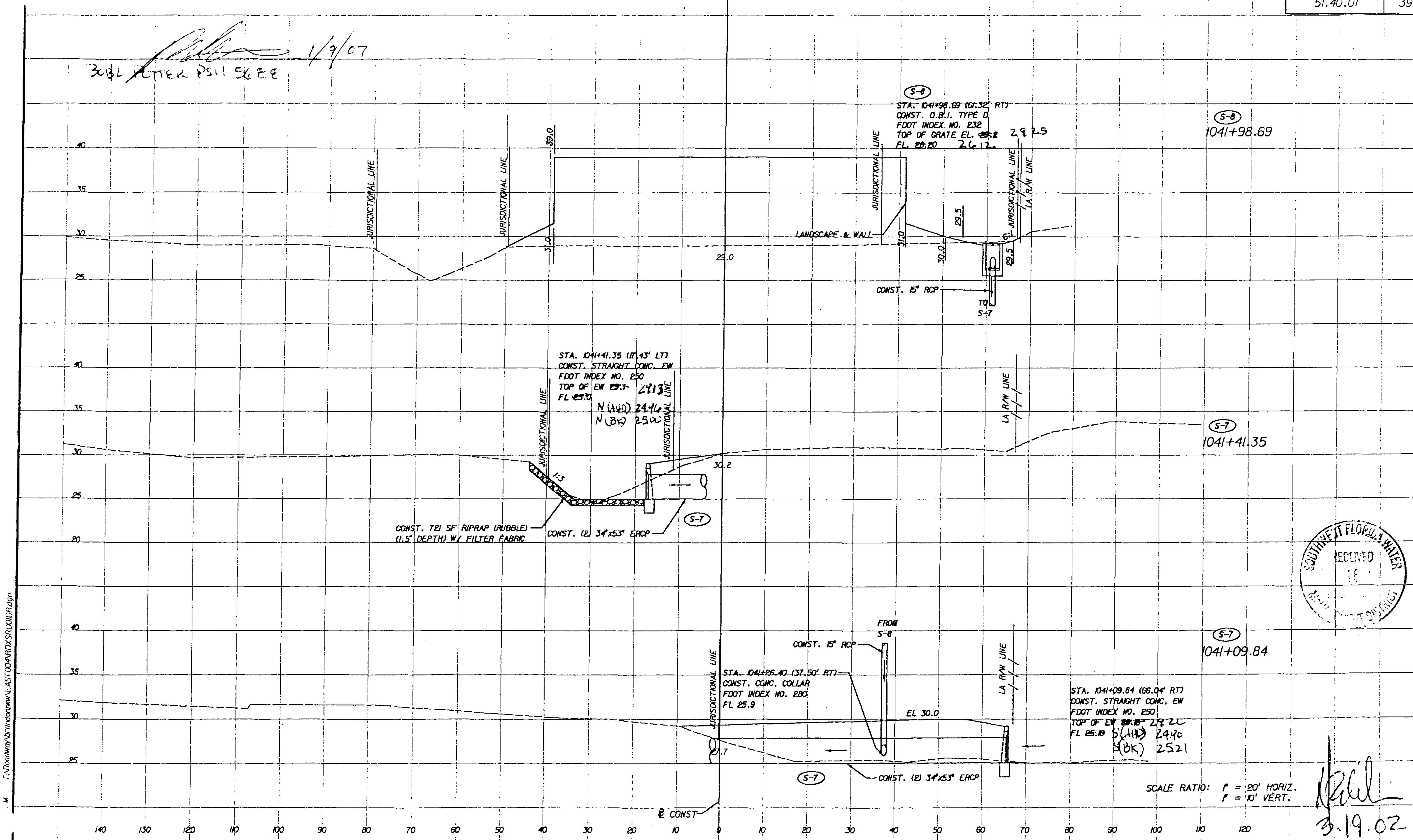

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

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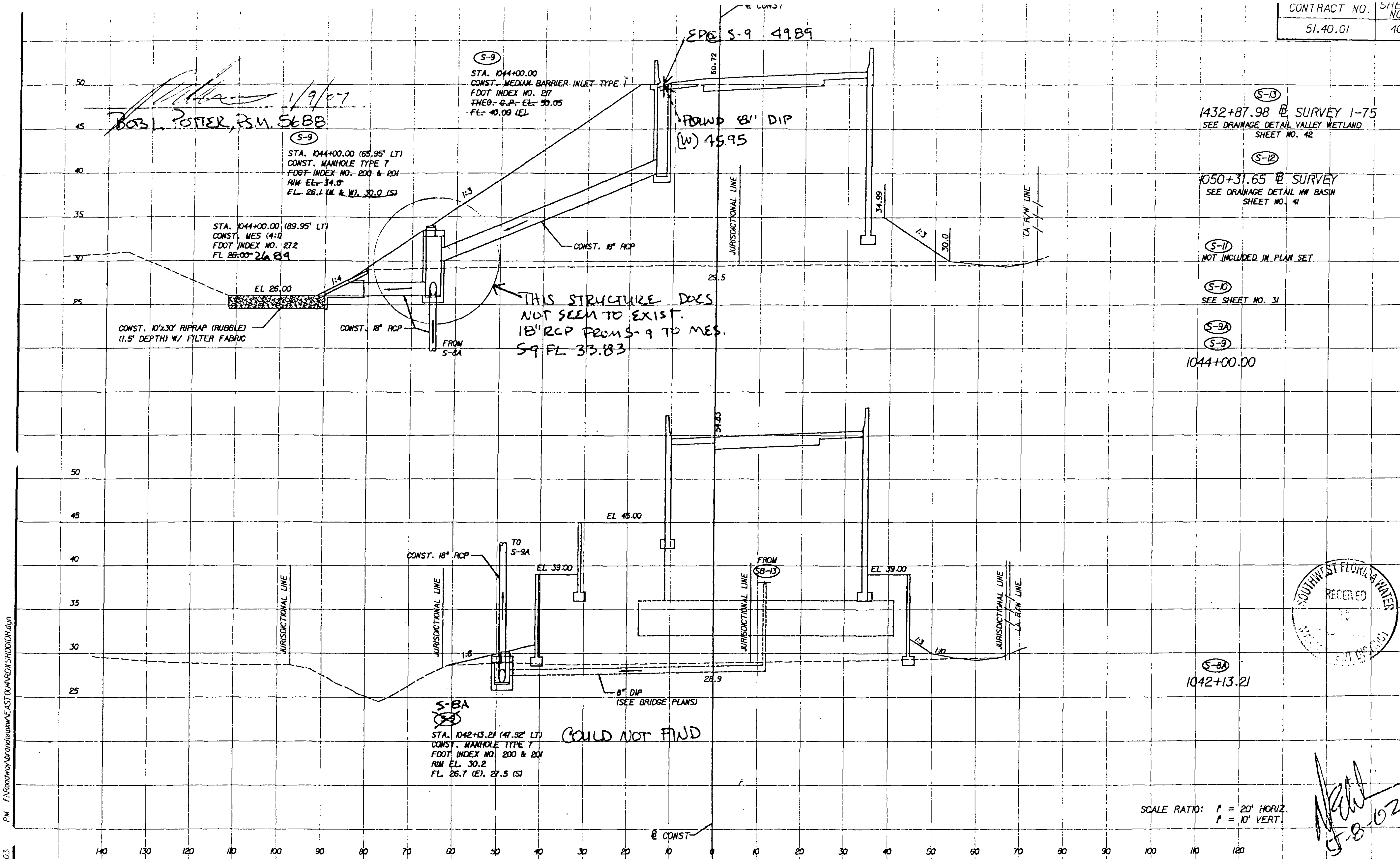


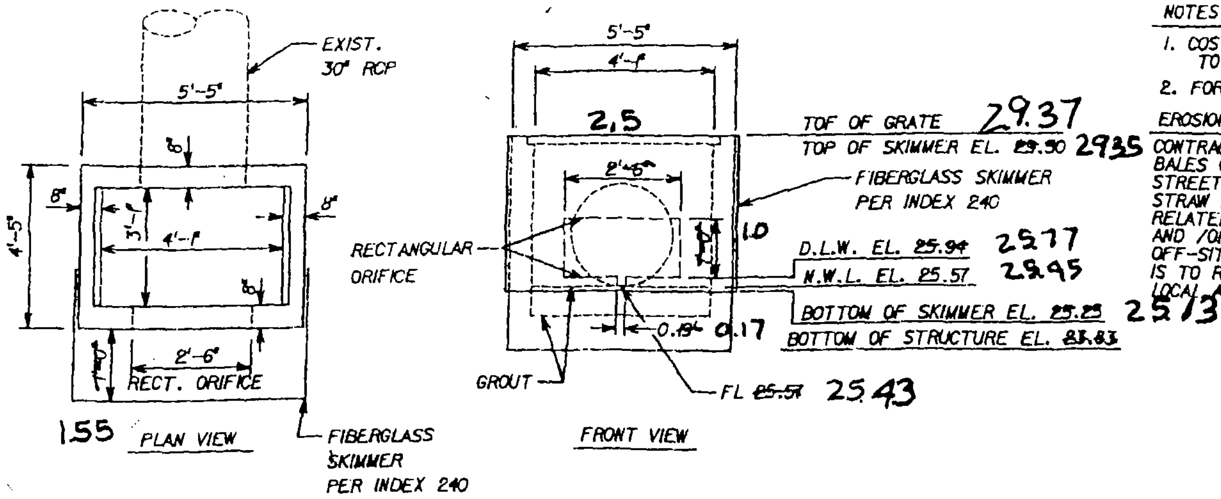
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE STRUCTURES

05/06/2002 03: PM f:\Roadway\brandonatw\EAST004\RDXSRD01DR.dgn



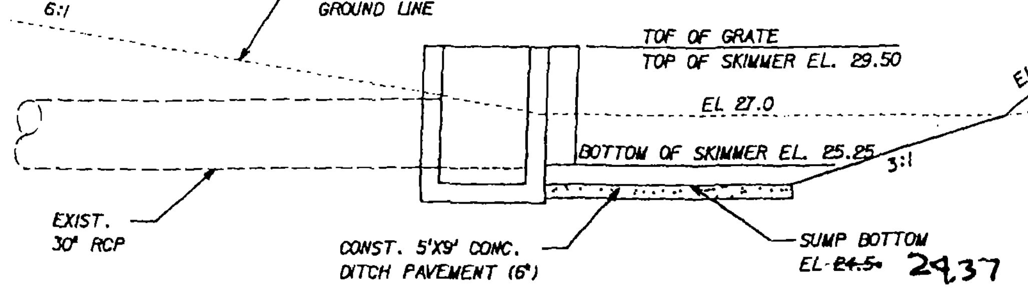
(S-12) TYPE D - MOD. (INDEX NO. 232)
N.T.S.
STA. 1010+04+/- (858'+/-)

NOTES:

1. COST OF ORIFICE WITH WEIR, SKIMMER, AND OTHER APPURTENANCES TO BE INCLUDED IN COST OF S-12
2. FOR ADDITIONAL DETAILS SEE F.D.O.T. INDEX NO. 232.

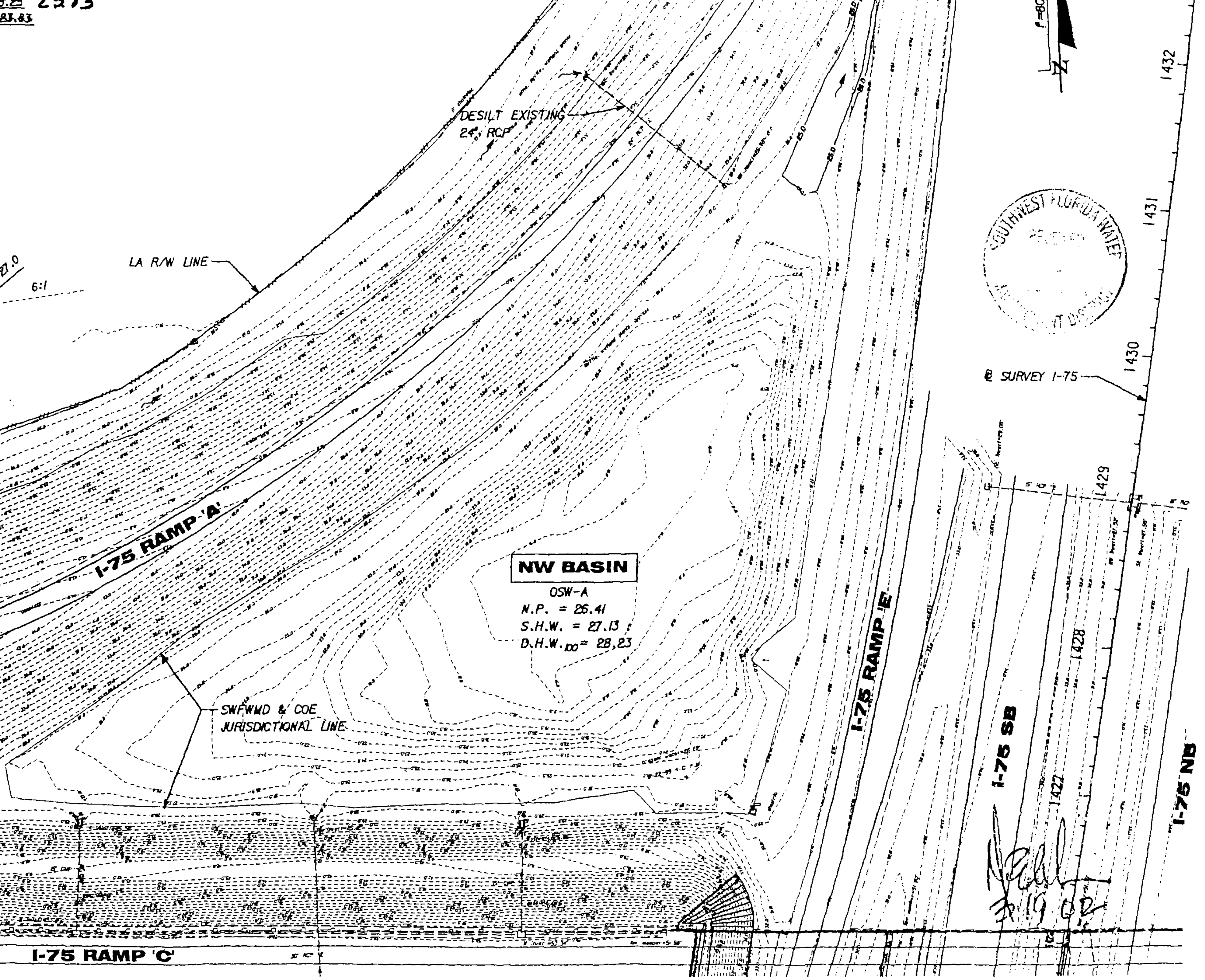
EROSION / SEDIMENT CONTROL

CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS. IN ADDITION, CONTRACTOR SHALL PLACE STRAW MULCH OR OTHER SUITABLE MATERIAL ON GROUND IN AREAS WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER AND EXIT SITE. IF, IN THE OPINION OF THE ENGINEER AND /OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR BY VEHICULAR TRAFFIC, THE CONTRACTOR IS TO REMOVE AND CLEAN SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR LOCAL AUTHORITIES.



TYPICAL SECTION A-A
N.T.S.

1/9/07
BOB L. POTTER, PSM. 5688



CONTRACT NO.	SHEET NO.
51.40.01	41

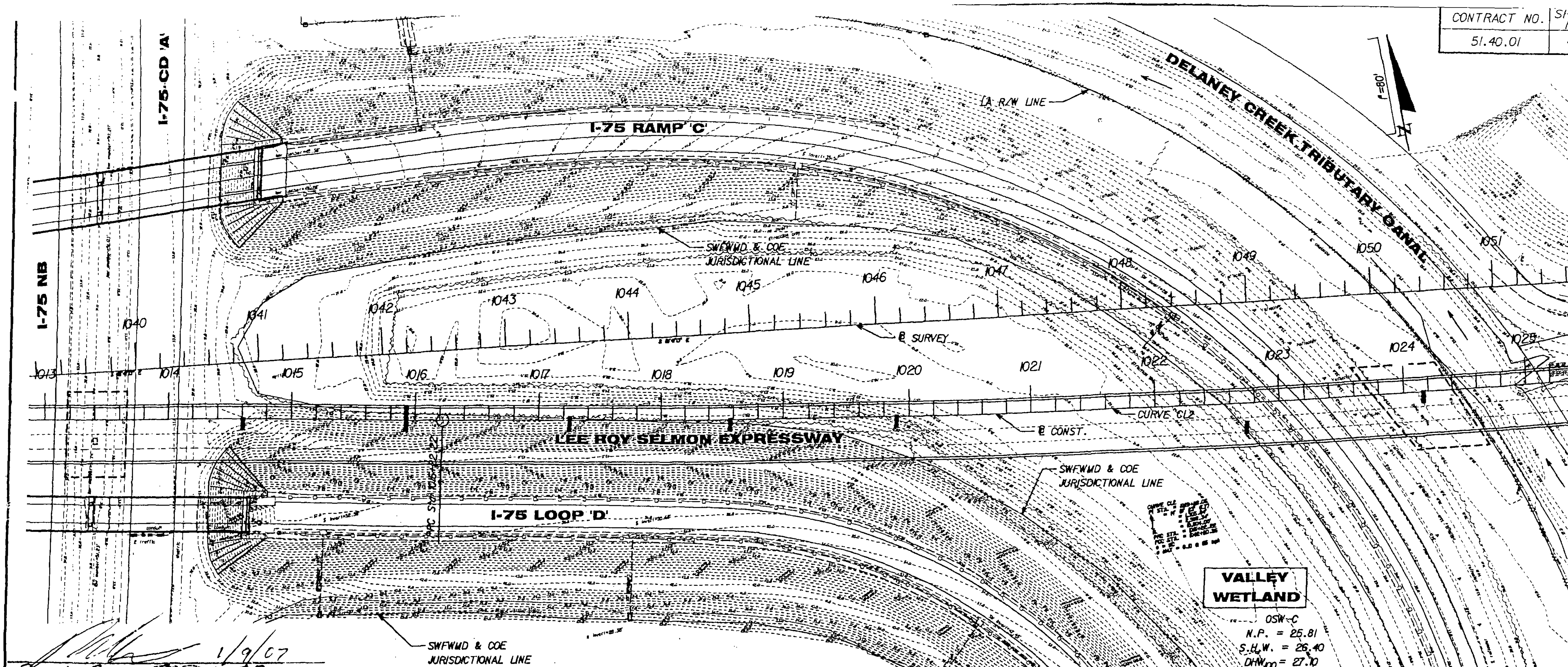
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

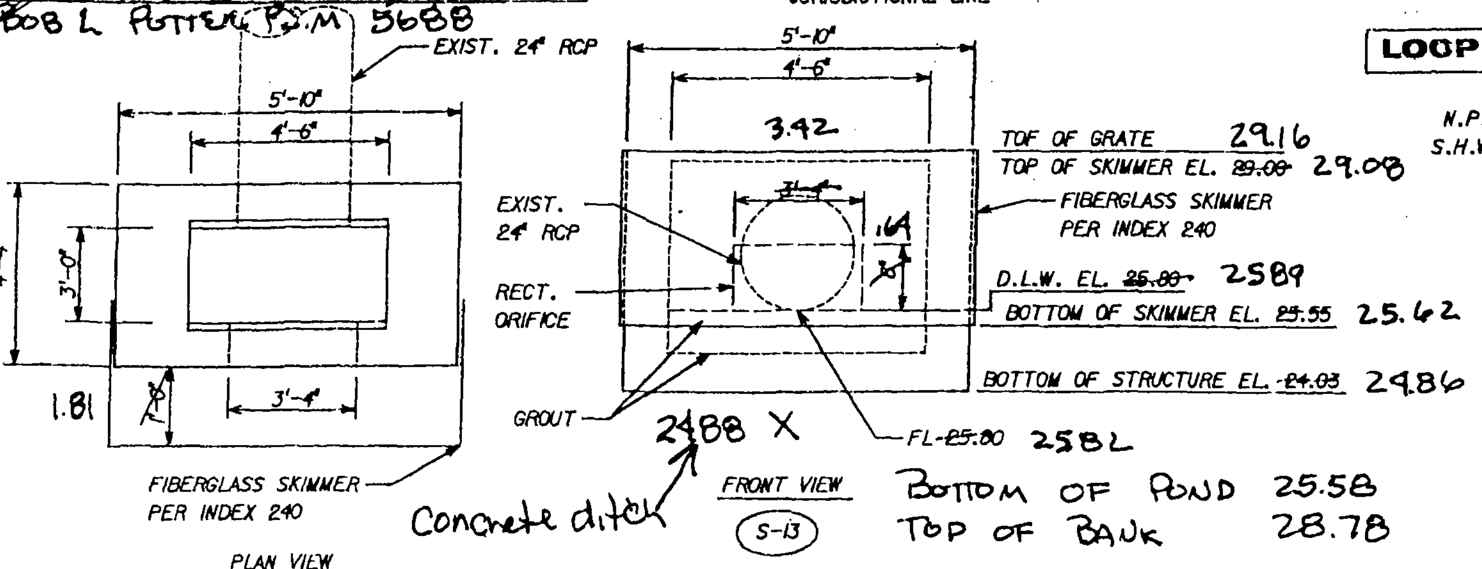
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE DETAIL
NW BASIN

CONTRACT NO.	SHEET NO.
51.40.01	42



Bob L Potter P.S.M 5688 1/9/07



TYPE D - MOD. (INDEX NO. 232)
N.T.S.

STA. 1024+06+/- (340'+/-)

LOOP D POND

OSW-D
N.P. = 26.92
S.H.W. = 27.05

NOTES:

1. COST OF ORIFICE WITH WEIR, SKIMMER, AND OTHER APPURTENANCES TO BE INCLUDED IN COST OF S-13
2. FOR ADDITIONAL DETAILS SEE F.D.O.T. INDEX NO. 232.

EROSION / SEDIMENT CONTROL

CONTRACTOR IS TO PROVIDE EROSION CONTROL/SEDIMENTATION BARRIER (HAY BALES OR SILTATION CURTAIN) TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS. IN ADDITION, CONTRACTOR SHALL PLACE STRAW MULCH OR OTHER SUITABLE MATERIAL ON GROUND IN AREAS WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER AND EXIT SITE. IF, IN THE OPINION OF THE ENGINEER AND /OR LOCAL AUTHORITIES, EXCESSIVE QUANTITIES OF EARTH ARE TRANSPORTED OFF-SITE EITHER BY NATURAL DRAINAGE OR BY VEHICULAR TRAFFIC, THE CONTRACTOR IS TO REMOVE AND CLEAN SAID EARTH TO THE SATISFACTION OF THE ENGINEER AND/OR LOCAL AUTHORITIES.

3.19.02

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE DETAIL
VALLEY WETLAND

03/14/02

CONTRACT NO.	SHEET NO.
51.40.01	42A

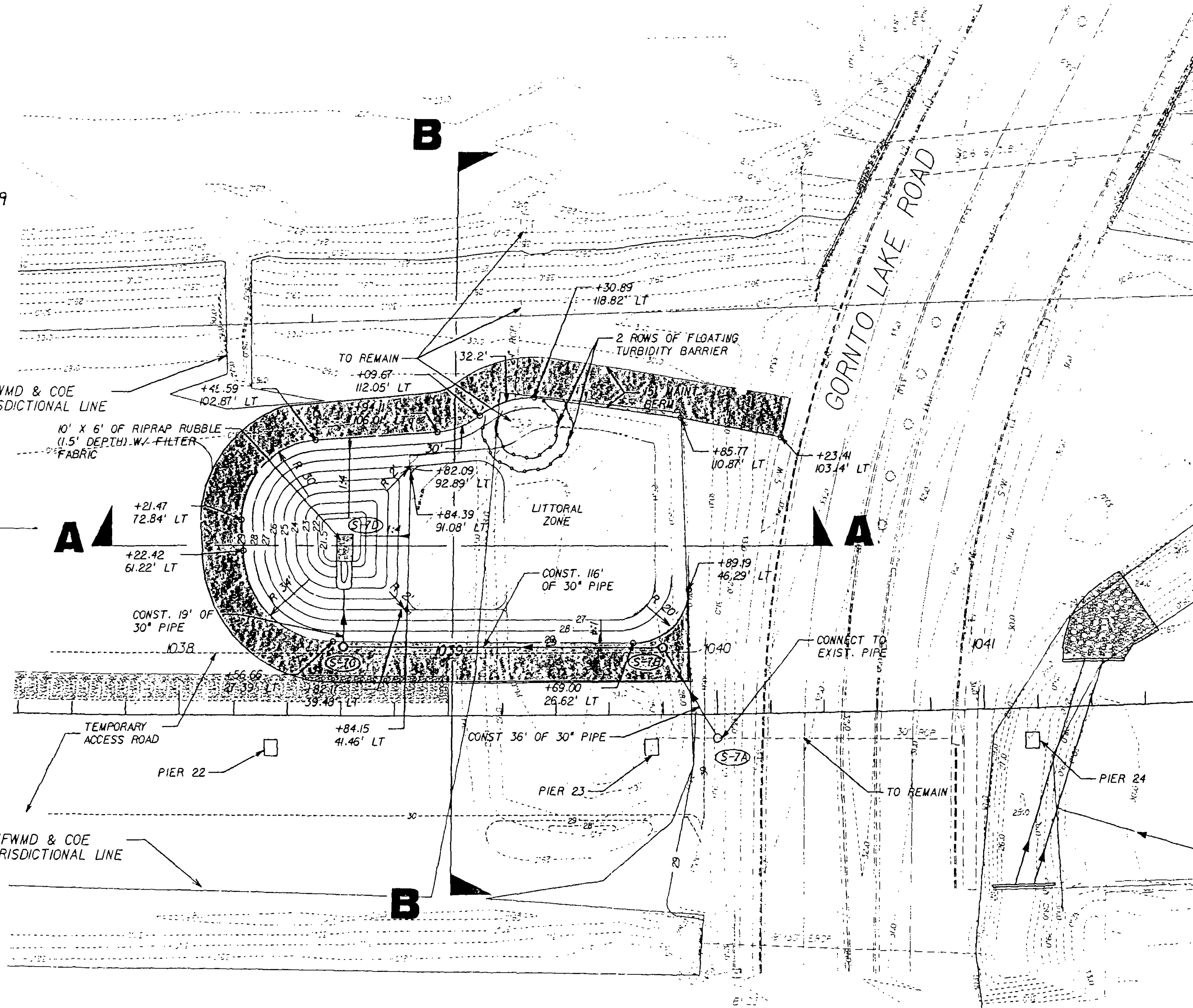
(S-7A) STA 1040+00 (8.80' RT)
CONST. MH TYPE P-7 (ALT A) (<10)
FDOT INDEX NO. 200 & 201
RIM EL ~~33.0~~ 33.02
FL ~~22.50~~ (E & NW) 22.49

(S-7B) STA 1039+80 (24.76' LT)
CONST. MH TYPE P-7 (ALT A) (<10)
FDOT INDEX NO. 200 & 201
RIM EL ~~29.0~~ 29.01
FL ~~22.0~~ (W & SE) (W) 22.06 (SE) 22.09

(S-7C) STA 1038+60.60 (25.55' LT)
CONST. MH TYPE P-7 (<10)
FDOT INDEX NO. 200 & 201
RIM EL ~~29.0~~ 28.97
FL 21.8 (E & S) (E) 21.86 (S) 21.89

(S-7D) STA 1038+60.60 (57.44' LT)
CONST. 30" MES (1:4)
FDOT INDEX NO. 272
FL ~~21.3~~ 21.26

Bob L. Potter 1/9/07
BOB L. POTTER, PSM. 5688



GENERAL NOTE:
DURING CONSTRUCTION, THE ACCESS ROAD WILL FUNCTION AS THE MAINTENANCE BERM ON THE SOUTH SIDE

Oct. 4th, 2005

SOUTHWEST FLORIDA WATER ... RECEIVED

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
10/4/05	MM	2 ADDED SHEET									

REVISIONS

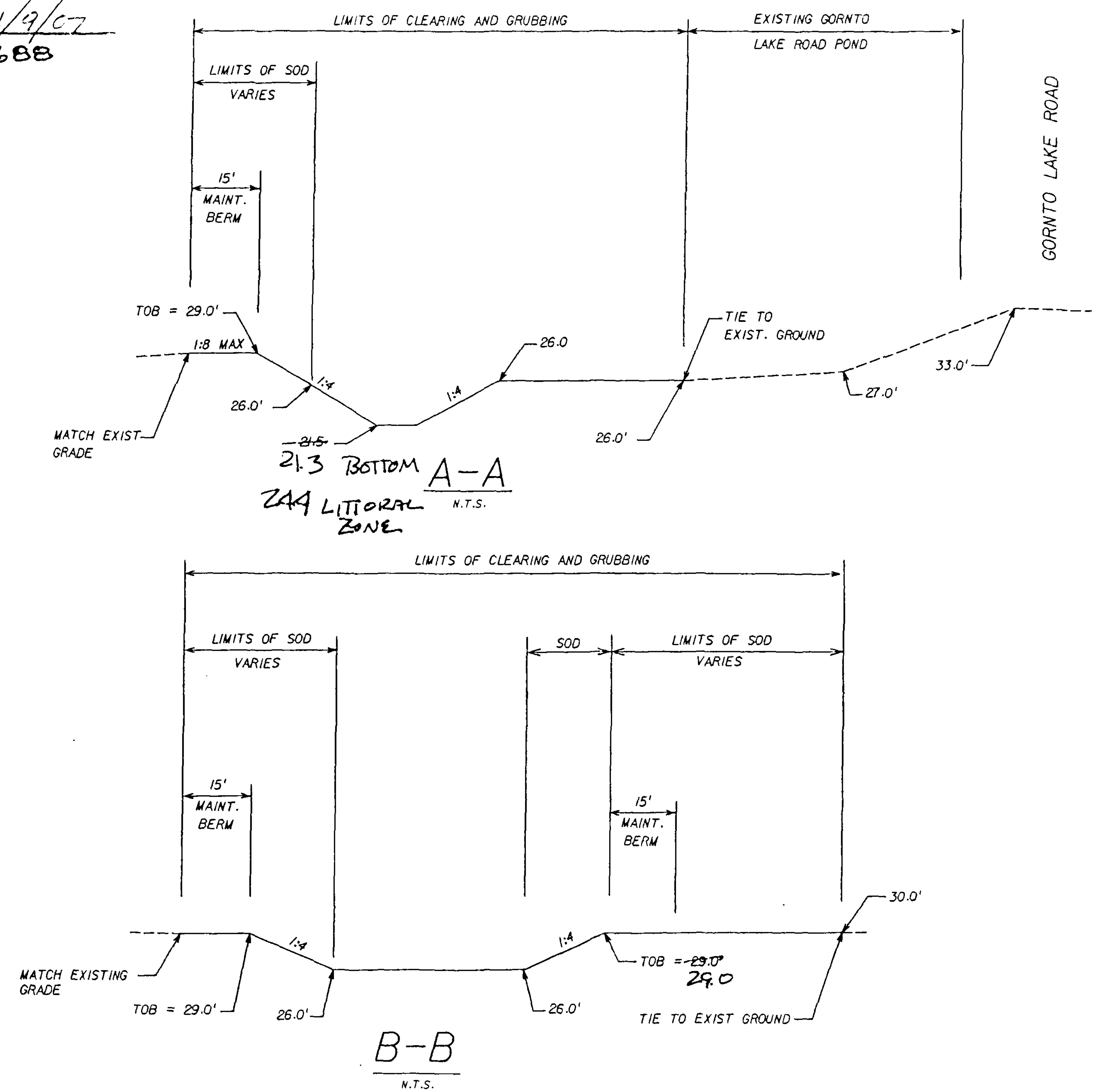
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

GORNTO LAKE ROAD POND

CONTRACT NO.	SHEET NO.
51.40.01	42B

1/9/07
BOB L. POTTER PSM 5688



SOUTHWEST FLORIDA WATER ... RECEIVED

Oct. 4th 2005

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
10/4/05	MM	2 ADDED SHEET									

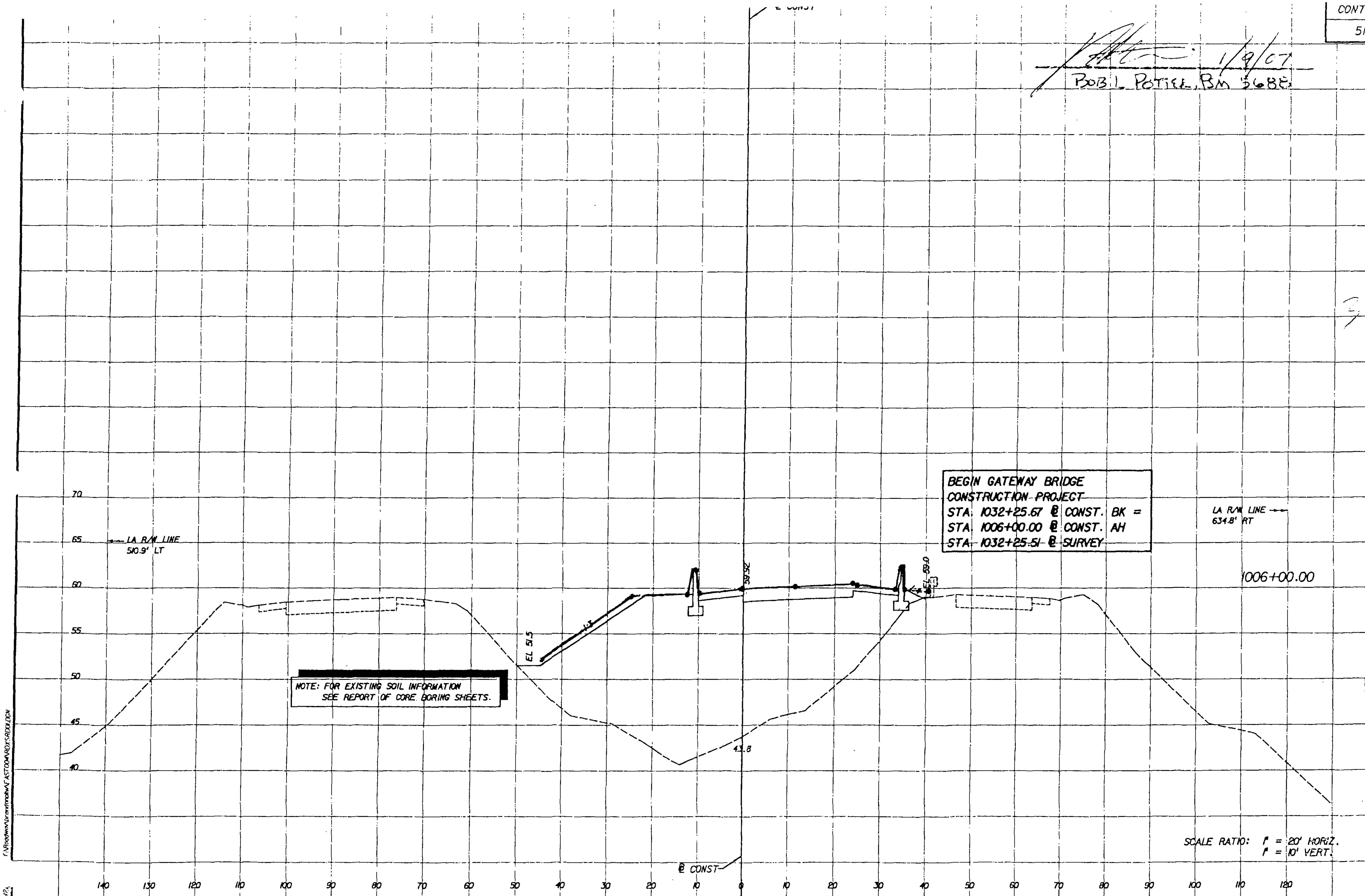
ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

GORNTO LAKE ROAD POND

CONTRACT NO.	SHEET NO.
51.40.01	60

ROADWAY EXC.		ROADWAY Emb.	
A	V	A	V
0		942	



Bob L. Potiel, BM 5688 1/9/07

3/18/02

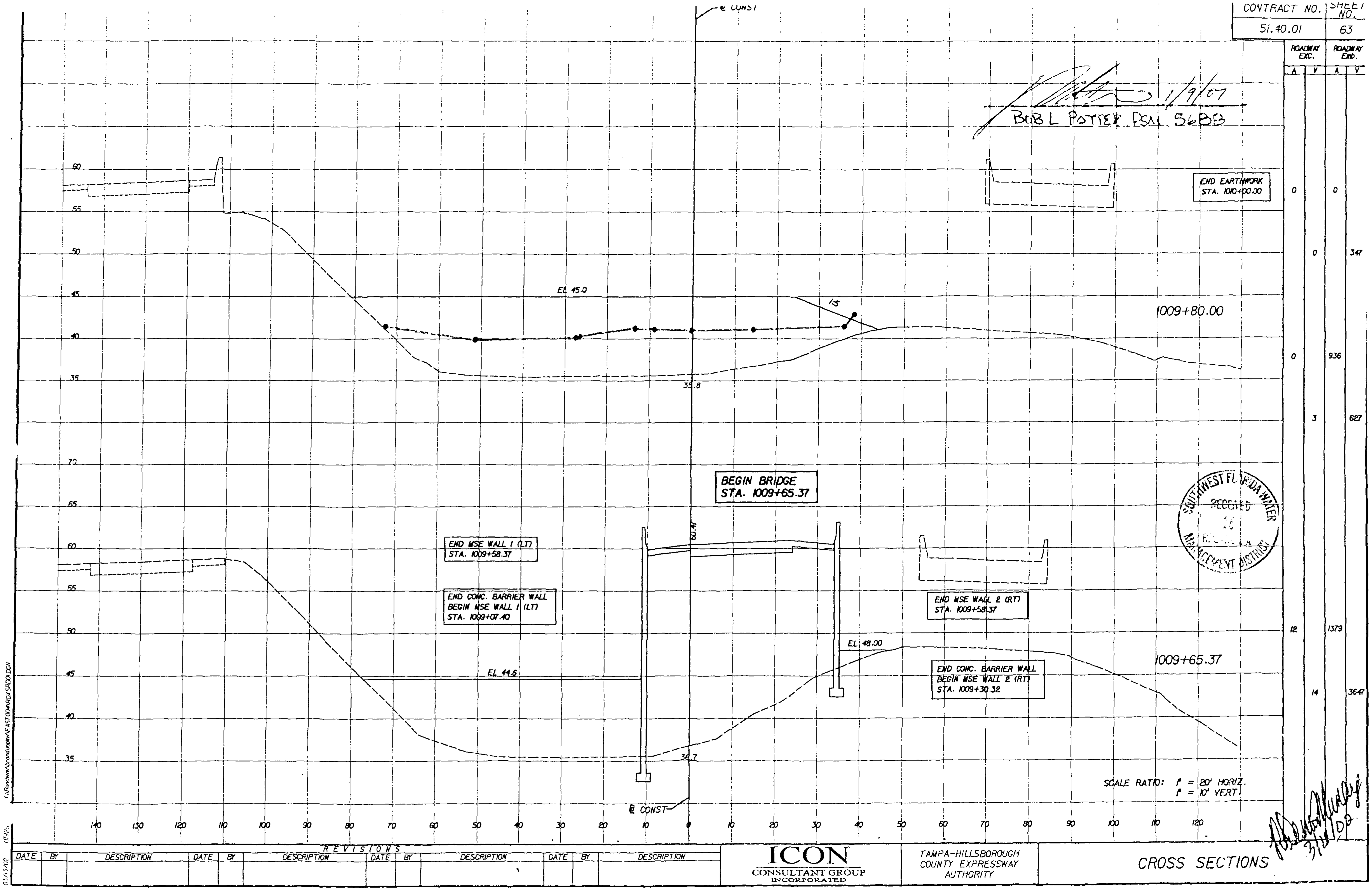
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CROSS SECTIONS


CONTRACT NO.
51.40.01
SHEET NO.
63
ROADWAY EXC.
ROADWAY Emb.
A V A V
BOB L POTTER PSM 5683
1/9/07
℄ CONST
END EARTHWORK
STA. 1010+00.00
0
0
0
347
EL 45.0
1:5
1009+80.00
0
936
35.8
3
627
BEGIN BRIDGE
STA. 1009+65.37
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RECEIVED
END MSE WALL 1 (LT)
STA. 1009+58.37
60.41
END CONC. BARRIER WALL
BEGIN MSE WALL 1 (LT)
STA. 1009+07.40
END MSE WALL 2 (RT)
STA. 1009+58.37
12
1379
EL 48.00
1009+65.37
EL 44.6
END CONC. BARRIER WALL
BEGIN MSE WALL 2 (RT)
STA. 1009+30.32
14
3647
36.7
SCALE RATIO: 1" = 20' HORIZ.
1" = 10' VERT.
℄ CONST
70
65
60
55
50
45
40
35
140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120
REVISIONS
DATE BY DESCRIPTION DATE BY DESCRIPTION DATE BY DESCRIPTION DATE BY DESCRIPTION
ICON
CONSULTANT GROUP
INCORPORATED
TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY
CROSS SECTIONS

CONTRACT NO.	SHEET NO.
51.40.01	64

ROADWAY EXC. A	ROADWAY EXC. V	ROADWAY Emb. A	ROADWAY Emb. V
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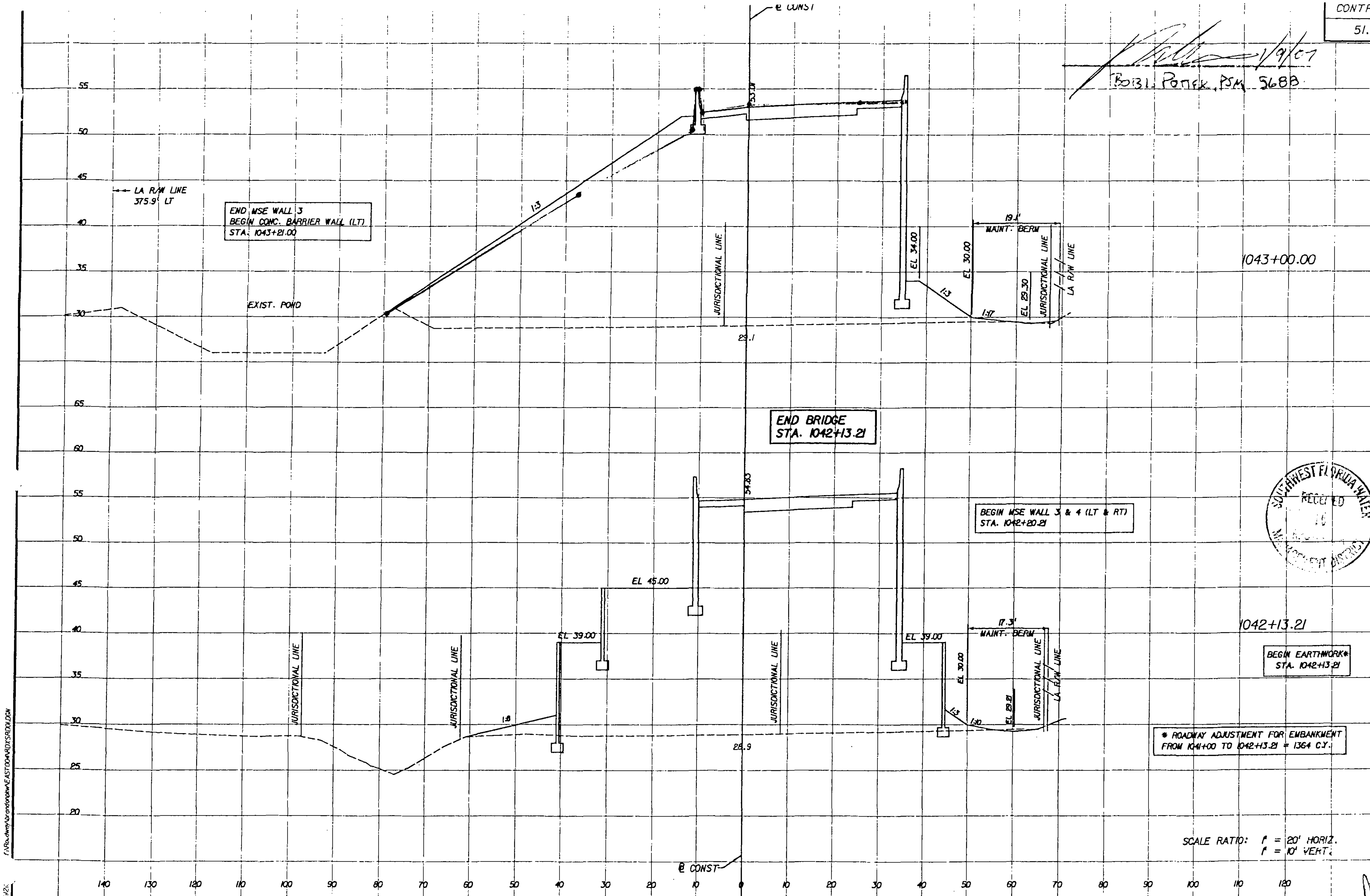
	10		5781
6		1647	

Bobi Potter, PSM 5688 1/9/07



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CROSS SECTIONS

CONTRACT NO.	SHEET NO.
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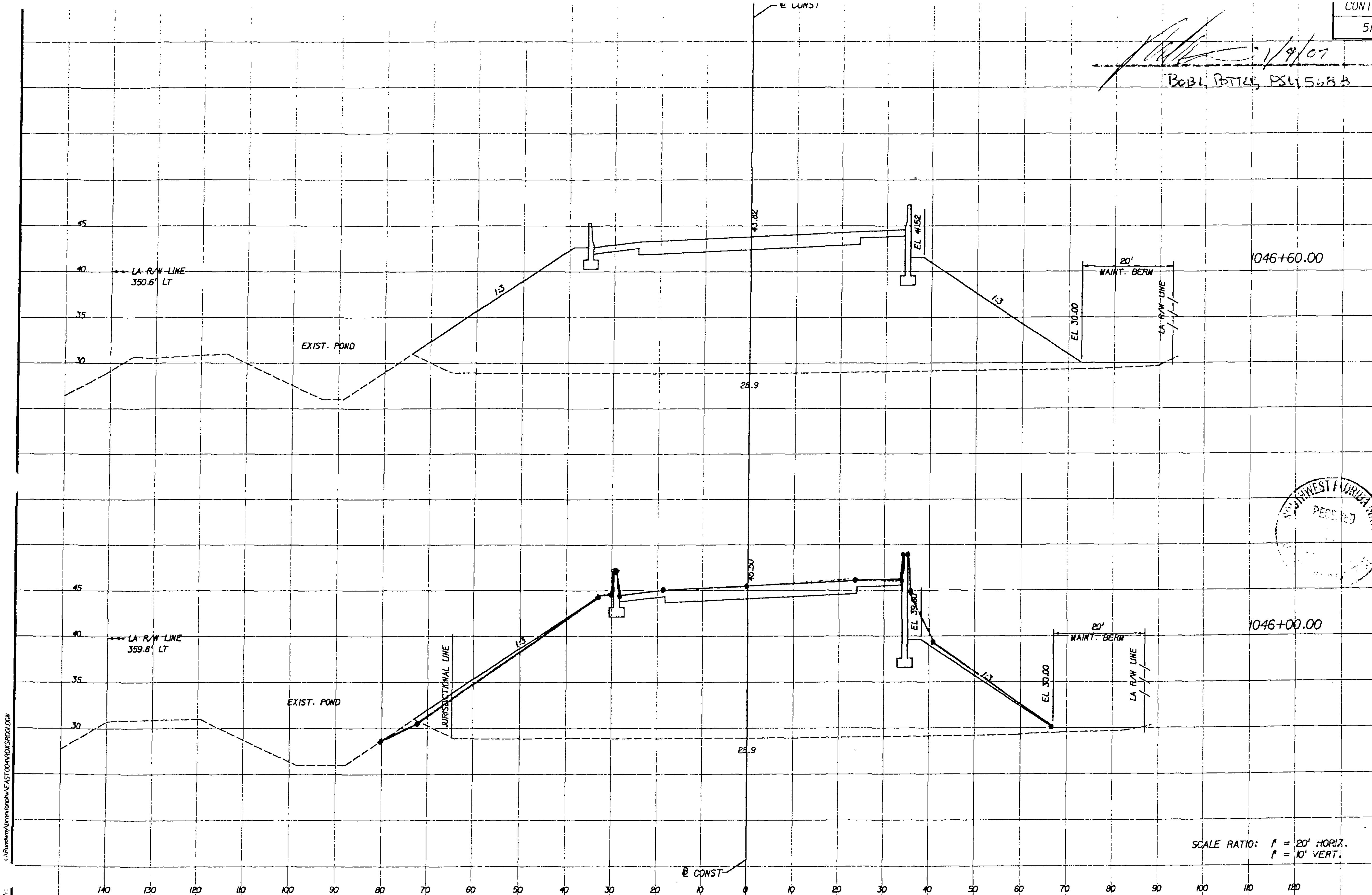
1/9/07
Bobl Potter PSM 5683



ROADWAY EXC.		ROADWAY Emb.	
A	V	A	V
0		1543	
	0		3462
0		1573	
	0		5932

3/18/02

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

CROSS SECTIONS

01/11/02

441

44021031 001

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

GATEWAY BRIDGE PROJECT
90% DRAINAGE DESIGN REPORT
ISSUED FOR PERMITTING
AUTHORITY CONTRACT: 50.30.001

Prepared by:

ICON
CONSULTANT GROUP
INCORPORATED

10006 North Dale Mabry Highway, Suite 201
Tampa, Florida 33618

Telephone: (813) 962-8689
Facsimile: (813) 963-1610

Contact Person: Michael E. Mills, P.E.

JANUARY 8, 2001

578

90% DRAINAGE DESIGN REPORT
ISSUED FOR PERMITTING
GATEWAY BRIDGE PROJECT
AUTHORITY CONTRACT NO. 50.30.001
FBE PROJECT NO. 1736
HILLSBOROUGH COUNTY

PREPARED FOR:
TAMPA-HILLSBOROUGH COUNTY
EXPRESSWAY AUTHORITY
JANUARY 8, 2001

PREPARED BY:

ICON CONSULTANT GROUP, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FLORIDA 33618

Michael E. Mills, P.E.
FL Reg. No. 43359

MICHAEL E. MILLS
CERTIFICATE
STATE OF
REGISTERED ENGINEER
2.12.01

579

90% DRAINAGE DESIGN REPORT
ISSUED FOR PERMITTING
GATEWAY BRIDGE PROJECT

TABLE OF CONTENTS

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LIST OF APPENDICES

1.0 GENERAL PROJECT INFORMATION

1.1 Introduction

The purpose of this report is to describe the existing and proposed hydrologic and hydraulic conditions for the proposed Gateway Bridge project of the Brandon Parkway (Selmon Expressway). The limits of the Gateway Bridge project extend from west of the I-75/Selmon Expressway Interchange to west of Brandon Town Center Drive.

This report should be attached to construction plans considered 90% complete (Phase III). The information provided herein has been updated pursuant to the Phase I, 45% Drainage Plans and Phase II (60%) plans submittal and reflects approximately 95% completion of the drainage design tasks associated with the Gateway Bridge project. The objective of this submittal is to present the proposed drainage design along with detailed construction plans for formal review by all permitting agencies. The design has been done pursuant to coordination efforts with those agencies having jurisdiction in the project area including the Southwest Florida Water Management District, the Florida Department of Transportation, Hillsoborough County and with the Tampa Hillsborough County Expressway Authority.

1.2 Site Location and Description

The Gateway Bridge project segment of the Brandon Parkway is located within the County of Hillsborough, Florida; Section 29, Township 29S, Range 20E. The project limits extend from west of the I-75/Selmon Expressway interchange to west of Brandon Town Center Drive. Refer to the Location Map provided in Appendix A.

The proposed project will maintain the four-lane rural expressway function to the outside of the existing right-of-way and construct a two-lane, directional expressway in the center of the roadway right-of-way. The new inside travel lanes will be bridged over the I-75 right-of-way and proceed east to Brandon Town Center Boulevard. These travel lanes shall provide single direction traffic from Brandon to Tampa during the a.m. peak hours and from Tampa to Brandon during the p.m. peak hours.

1.3 Field Review and Pre-Application Meetings

ICON staff performed field drainage investigations. Documentation, sketches and photographs were taken in the field so that they may be referenced later in the office. Utilizing this information, existing drainage patterns and proposed design concepts were established.

Several design coordination meetings/conversations have been conducted with Marty Stone (THCEA), Ben Muns (THCEA), Jimmie Gill (THCEA GEC – URS/Greiner), Paul Schmid (THCEA GEC – URS/Greiner), Al Stewart (KCA), Alan Lawton (KCA), Peter Nikolov

(TBE), Michelle Robertson (Southwest Florida Water Management District - Supervisor, Engineering Review, Tampa), Pat Frantz (Southwest Florida Water Management District – Environmental Scientist), Barry Lenz (Dames & Moore/URS) and Karen Hill (Dames & Moore/URS). Records of meetings and relevant documentation are provided in the correspondence section of this report.

1.4 Soil Characteristics

The natural soils in the vicinity of the Brandon Parkway are predominantly poorly-drained fine sands. The soil types consist of Malabar, Myakka, Ona and Smyrna fine sands, all of which are designated as hydrologic soil group B/D. For purposes of establishing SCS curve numbers, a hydrologic soil group D is assumed for most of the project limits. Based upon site-specific, geotechnical investigations performed for this project, groundwater was encountered within one to two feet of the natural ground surface. It is estimated that the seasonal high groundwater table within the right-of-way range from 1 to 2 feet below existing grade for the unimproved upland soils. A copy of the soils map is provided in Appendix A.

1.5 Curve Numbers

Runoff curve numbers were generated based upon review of the SCS Soil Survey Manual for Hillsborough County. Typically, hydrologic soil group type D was utilized for upland areas to reflect either the poorly drained condition of the unimproved areas and the steep embankment areas. The following summarizes the curve numbers used during the preliminary hydrologic analysis.

Land Use	HSG = D
Pasture, Fair Condition	80
Impervious	98
Wetland (herbaceous and forested)	98
Open Water	100

1.6 Rainfall Intensity Data

Rainfall Intensity-Duration-Frequency curves from the FDOT Drainage Manual and SWFWMD's Return Period Rainfall Maps were utilized for the hydrologic analyses performed. The following summarizes the rainfall amounts used for the design storm events.

Storm Frequency/Duration	Rainfall Amount (in.)
100-year/1-hour (FDOT)	4.50
100-year/2-hour (FDOT)	5.92
100-year/4-hour (FDOT)	7.32
100-year/8-hour (FDOT)	9.20
100-year/24-hour (FDOT)	12.96
10-year/24-hour (SWFWMD)	6.75
100-year/24-hour (SWFWMD)	10.75

1.7 Floodplain Information

According to the Hillsborough County Flood Insurance Rate Maps, an established 100-year flood plain exists within the project limits east of the I-75/Selmon Expressway interchange. Reference should be made to the Federal Emergency Management Agency's map #120112-0387 E, dated August 15, 1989, provided in Appendix A of this report. More detailed information, such as specific design high waters and stage/time relationships were obtained from the Delaney Creek Stormwater Management Master Plan, prepared for the Southwest Florida Water Management District and from the modeling efforts performed by Kissinger Campo & Associates/Tampa Bay Engineering for their Brandon Feeder Roads project. Reference SWFWMD permit application #4321031.000.

The only impacts to the existing floodplain will be located east of the end of bridge. In summary, the 100-year floodplain elevation appropriate for the area where impacts are proposed is approximately 30.60 ft-msl. Approximately 520.83 feet (Sta 1042+13.21 to Sta 1047+34.04) of the easternmost portion of the Gateway Bridge project shall propose fill within the existing floodplain. The volume of floodplain impact is approximately 1.237 acre-feet. This is the portion of the project where the bridge section ends and the fill section begins.

Based upon our coordination efforts with SWFWMD and TBE (the roadway design consultant for the east adjacent Brandon Feeder Roads project), the flood volume compensation for this impact has been satisfied and was demonstrated by the Delaney Creek Watershed modeling performed for the Brandon Feeder Road project. This segment of the Gateway Bridge project is designed to drain to a pond proposed for the Brandon Feeder Roads (Pond No. 2).

1.8 Resources for Analysis

Existing Studies / Plans / Reports/Permits:

- Location Hydraulic Report for the Brandon Area PD&E, prepared for THCEA, dated November 1998
- Pond Siting Report for the Brandon Area PD&E, prepared for THCEA, dated

November 1998

- Delaney Creek Stormwater Management Master Plan, prepared for SWFWMD, dated April 1986.
- Delaney Creek Stormwater Management Master Plan Second Interim Report, prepared for SWFWMD, dated September 1985.
- SR 618 (Crosstown Expressway) Construction Plans, prepared for FDOT, dated 1982.
- SR 93-A (I-75) Construction Plans, prepared for FDOT, dated 1982, revised 1/25/93.
- Brandon Parkway – Feeder Roads Environmental Resource Permit, application #4321031.000

Technical Reference and Regulation Material:

- Soil Survey of Hillsborough County by the United States Department of Agriculture
- Urban Hydrology for Small Watersheds - SCS Technical Release 55 by the United States Department of Agriculture, June 1986.
- Drainage Manual by the State of Florida Department of Transportation, revised January 1999.
- The Environmental Resource Permitting Information Manual - Southwest Florida Water Management District, revised February 1999

Aerial Photography and Survey:

- Hillsborough County, Florida Aerial Photographs (1" = 200')
- U.S.G.S. 7.5 Minute Series Quadrangle Maps - Sulphur Springs, Florida
- Southwest Florida Water Management District Aerial/Topographic Maps (1" = 200')
- AIM Engineering & Surveying, project specific survey

2.0 EXISTING CONDITIONS

The project site is located within the Delaney Creek Watershed. The Delaney Creek Watershed is located entirely within Hillsborough County, Florida and flows east to west to its ultimate outfall into the East Bay portion of Hillsborough Bay. The limits of this watershed extend approximately 10 miles east of Hillsborough Bay into the Brandon area. Its north and south limits typically straddles State Road 60 and ranges from about 2.5 to 3.0 miles in width.

Land uses within the Delaney Creek Watershed range from heavy commercial and residential in the east end to industrial and residential in the portion of the watershed west of US 301. The natural characteristics of this watershed include relatively flat terrain including pasture lands with scattered marsh and forested wetland systems. Seasonal high groundwater is typically within 1 to 2 feet of existing grade throughout most of the watershed. Because of the extensive development, flat terrain, and high groundwater table, flooding is known to occur within Delaney Creek. Consequently, Hillsborough County and the Southwest Florida Water Management District have designated this watershed as a "peak sensitive" basin and, therefore, have basin-specific development requirements for stormwater management. Section 3.2 discusses the project's special design criteria for stormwater management.

Within the project limits, the local project drainage areas are separated and given unique basin names for the purposes of analysis and reference.

2.1 I-75 Basin A (Sta 1006+00.00 to Sta 1011+80.00)

This basin includes the western half of the Selmon Expressway/I-75 Interchange. Some of the features within this basin include the water bodies in the northwest and southwest quadrants of the interchange which are referred to as the NW Basin (OSW-A) and the SW Basin (OSW-B), respectively, interchange Ramps A and B, I-75 Ramp E and the I-75 Southbound travel lanes. All of the drainage within this area ultimately outfalls to the north through the NW Basin and into Delaney Creek.

2.2 I-75 Basin B (Sta 1011+80.00 to Sta 1023+40.00)

The eastern half of the Selmon Expressway/I-75 Interchange drains eastward into an existing tributary canal of Delaney Creek. The project area within this basin includes interchange Ramp C and Loop D, the I-75 Northbound travel lanes, the I-75 Collector/Distributor road and the Valley Wetland system (OSW-C) located between Ramp C and Loop D.

2.3 Delaney Creek Tributary Canal Basin (Sta 1023+40.00 to Sta 1025+57.44)

This portion of the Gateway Bridge project area sheet flows into the existing Delaney Creek Tributary Canal (Wetland BB). The Canal flows south to north and converges with the main channel of Delaney Creek on the east side of the I-75 Delaney Creek crossing. This canal receives runoff from approximately 130.4 acres, which includes about 46.9 acres from the I-75 right-of-way.

2.4 Scupper Drain Basin (Sta 1025+57.44 to Sta 1039+75.83)

This segment of the Gateway Bridge shall propose scupper drainage; hence, the name. The characteristics of the existing runoff in this area include sheet flow and minor routing through flat, shallow, scattered depressional areas. All of the drainage in this area ultimately outfalls into Delaney Creek which is located to the north of the Gateway Bridge.

2.5 Pond No. 2 Basin (Sta 1039+75.83 to Sta 1047+34.04)

The existing drainage characteristics are similar to the Scupper Drain Basin.

3.0 PROPOSED CONDITIONS

The proposed improvements of the Selmon Expressway/Brandon Parkway will involve constructing a two-lane (expandable to three-lanes) directional parkway through the middle of the existing Selmon Expressway right-of-way. Adjustments to the existing travel lanes are proposed as necessary to provide for the three total roadway systems and ramps. The following summarizes the drainage design approach and details.

Note, all drainage calculations performed were done for both the two lane and three lane scenarios. In summary, there was no increase in design or construction cost by designing for the future three-lane condition. Therefore, all drainage design (gutter spread, inlet capacity, storm drains, water quality treatment, attenuation) was done assuming the three-lane condition.

3.1 Drainage Design Notes

- Starting at the beginning of the bridge project and proceeding east, the Gateway Bridge crosses over the existing I-75 right-of-way. Bridge drainage over I-75 right-of-way cannot be accomplished with scuppers since this design concept would allow drainage to fall directly on the interstate travel lanes and the roadway embankment areas below. Therefore, bridge drainage will be collected with grate inlets located at each pier location and then conveyed down each pier via storm drain pipes and onto the existing ground at the bottom of each pier. The drainage will then be discharged into the existing roadside swales designed to convey the I-75 runoff. No significant increase in runoff is anticipated since the curve numbers for bridges versus interstate versus drainage conveyance swales are all very similar. This design approach was agreed upon by the FDOT who owns the I-75 right-of-way. FDOT has since reviewed the proposed design. Documentation is provided in this report.

- The remainder of the project east of the I-75 right-of-way shall be drained via 6" diameter scuppers, spaced a maximum 10' apart on centers, onto the undeveloped land below. Pursuant to SWFWMD, if the drainage were allowed to fall on the natural ground below, no attenuation would be required. Then, only water quality treatment would be required. For the scupper design approach, a 10' wide riprap strip will be constructed beneath the proposed scuppers that will prevent scouring of the ground below and dissipate the rainfall. The riprap strip shall match existing grade and will allow the drainage to evenly sheet flow in its current natural direction.

- The project proposes to construct approximately 5.95 acres of new impervious surface area (based upon the ultimate three lane section). The Gateway Bridge project's drainage design shall also take into consideration the new impervious surface area proposed to drain to the Gateway Bridge project from the adjoining Selmon Expressway Roadway project to the west (also designed by ICON Consultant Group). The new impervious area is summarized below.

Selmon Expressway Roadway Project	1.61	acres
Gateway Bridge Project	5.95	acres
Total New Impervious Surface Area	7.56	acres

Approximately 1.25 acres of this area shall be conveyed east of the end of the Gateway Bridge limits and into the proposed Pond No. 2 (designed by others for the Brandon Feeder Road project). Therefore, 6.31 acres (7.56 acres minus 1.25 acres) of new impervious area must be treated within the Gateway Bridge project limits.

- It is necessary to demonstrate to FDOT that the new impervious runoff from the Gateway Bridge over I-75 does not impact design high waters and design flow rates within the FDOT's existing drainage system. To do so, it will be necessary to hydrologically and hydraulically model the existing and proposed drainage conditions using FDOT's critical storm/critical duration analysis.

- Pursuant to our coordination meetings and telephone conversations with FDOT, FDOT will consider the proposal to utilize their existing drainage system for stormwater management of the Gateway Bridge project runoff as long as no permits exist for the existing stormwater facilities in the existing Selmon Expressway/I-75 interchange and no adverse impacts to design high waters and design flow rates occur. In summary, no permits exist for the existing I-75 interchange area (including FDER/FDEP, SWFWMD, FDOT).

3.2 Design Criteria

<u>Water Quality Treatment</u>: Pursuant to coordination with the Water Management District, the project may propose to equivalently treat runoff from 6.43 acres of impervious roadway areas.

- Total Gateway Bridge Project Area = 5.95 acres
- Selmon Expressway Roadway Project Area = 1.61 acres
- Less Area Draining to Adjacent Project = 1.25 acres
- Remaining Impervious Area To Be Treated = 6.31 acres
- *Required Water Quality Treatment Volume = 6.31 acres x 1" = <u>0.525acre-feet</u>*
- Total Impervious Area To Drain to NW Basin = 9.90 acres (0.825 acre-feet)
- ***Propose to Treat 100% DCIA Draining to NW Basin = 9.90 acres = 0.825 acre-feet. This will satisfy all treatment requirements for the entire Gateway Bridge project and a portion of the adjacent project to the west, <u>based upon the ultimate 3-lane build-out</u>. FDOT shall own the credits for the banked treatment volume (9.90 acres – 6.31 acres = 3.59 acres or 0.300 acre-feet).***

<u>Water Quantity Attenuation</u>: SWFWMD will require that, for the project area, the post-developed 100-year (design storm) peak discharge rate shall not exceed the pre-development <u>10-year</u> peak discharge rate. Offsite drainage areas that co-mingle with project area drainage

may be discharged at its pre-development 100-year peak discharge rate for the same post-development design storm event.

- Pre-Development Model of I-75 Basin A and Basin B: Use 100-year rainfall amounts for all basins *except* those basins identified as Gateway Bridge Project Basins. Use 10-year rainfall amounts for the Gateway Bridge Segment Basins.
- Post-Development Model of I-75 Basin A and Basin B: Use 100-year rainfall amounts for all basins.
- Post-development peak discharge at ultimate outfall to downstream waters (NW Basin and Valley Wetland Basin for I-75 Drainage Basin A and Drainage Basin B, respectively) should not exceed the pre-development peak discharge rate.

Runoff Volume Attenuation: The post-development 100-year runoff volume discharged during the first 24 hours of the storm event shall not exceed the pre-development 100-year runoff volume discharged during the same time period.

Special Considerations:

- Scupper Drain Basin shall be allowed to drain onto existing ground. A riprap strip is proposed beneath the scupper locations along the entire length of the Scupper Drain Basin to prevent erosion and to dissipate the rain.
- Brandon Feeder Road Pond 2 is presently being designed by others and permitted under permit number 4321031.000. ICON has coordinated with the designer for the Brandon Feeder Road and proposes that all Gateway Bridge runoff designed to drain to Pond 2 at the east end of the Gateway Bridge Project (1.25 acres of impervious) is treated and attenuated there.

3.3 I-75 Basin A

All of the project's equivalent water quality treatment shall be accomplished within the existing wetland located in the northwest quadrant of the Selmon Expressway/I-75 interchange. This wetland, labeled OSW-A by the project environmental scientist and designated as the NW Basin for stormwater design purposes, shall be retrofitted with a control structure that will accomplish water quality wetlands treatment of all of the impervious surface area draining to it and shall also meet the requirements of SWFWMD and FDOT for attenuation.

NWL: OSW-A had a normal pool and seasonal high water elevation established based upon biological indicators. These elevations are 26.41' and 27.13', respectively. According to survey information, which was verified against the original interchange construction plans, the NW Basin outfalls at elevation 25.57 via a 30" RCP. Pursuant to a field visit, there does not seem to be a downstream control that influences the seasonal high water elevation. It is likely the unusually high seasonal high water elevation is indicative of a maintained wetland basin with steep seepage slopes. Based upon a pre-application meeting with SWFWMD, it was agreed that the existing control elevation should be used for the modeling and design of this stormwater facility. Therefore, 25.57 was set as the NWL.

DLW: Approximately 9.90 acres of impervious surface area drains to the NW Basin. Assuming 1" of treatment for all DCIA, NW Basin is designed to treat 0.825 acre-feet of runoff. The treatment of this volume shall occur above the NWL (25.57'). The resulting DLW is 25.94'. A 0.19' wide bleed-down weir is proposed to discharge the water quality treatment volume within the required times.

Tailwaters: The stage/time relationship was developed based upon the modeling results of the Delaney Creek Watershed Model utilized for the Brandon Feeder Roads project (#4321031.000).

Rate Attenuation: The NW Basin receives runoff from approximately 55.78 acres. Of this area, 1.87 acres is considered actual project area. To establish the allowable discharge rate per SWFWMD requirements, the 1.87 acres was modeled using a 10-year/24-hour storm event. As agreed to by SWFWMD, the remainder (55.78 acres – 1.87 acres = 53.91 acres) was allowed to be discharged at its current 100-year/24-hour design storm rate. To accomplish this, a rectangular orifice (5' x 1') is proposed. The invert of this rectangular orifice is equal to the DLW elevation, 25.94'.

Volume Attenuation: The 100-year/24-hour post-developed runoff volume leaving the NW Basin does not exceed the pre-developed runoff volume calculated from the composite pre-development 100-year/10-year hydrologic model. Therefore, this design is conservative (exceeds minimum design requirements).

Design Summary: Refer to Appendix B for a summary of the design flow rates, design high waters, the runoff volumes, modeling schematics and copies of the stormwater modeling. Information relating to both SWFWMD calculations and FDOT calculations are provided. In conclusion, the slightly higher DHW's do not pose a threat to the safety of motorists or to the structural integrity of the roadway facilities adjacent to the NW Basin.

3.4 I-75 Basin B

Since all of the Gateway Bridge Project's water quality treatment is to occur within I-75 Basin A (NW Basin), only attenuation of project runoff is proposed within this drainage basin and is to be accomplished by retrofitting the existing outfall pipe for the Valley Wetland (OSW-C) with a control structure. The structure has been sized to meet both SWFWMD and FDOT stormwater design requirements.

NWL: As with the NW Basin, the control elevation of the existing outfall pipe from the Valley Wetland (25.80') is proposed. For comparison, the normal pool and seasonal high water elevations established based upon biological indicators is 25.81' and 26.40', respectively.

Tailwaters: The stage/time relationship was developed based upon the modeling results of the Delaney Creek Watershed Model utilized for the Brandon Feeder Roads project (#4321031.000).

Rate Attenuation: The Valley Wetland Basin receives runoff from approximately 11.66 acres. Of this area, 1.59 acres is considered actual project area. To establish the allowable discharge rate per SWFWMD requirements, the 1.59 acres was modeled using a 10-year/24-hour storm event. As agreed to by SWFWMD, the remainder (11.66 acres – 1.59 acres = 10.07 acres) was allowed to be discharged at its current 100-year/24-hour design storm rate. To accomplish this, a rectangular orifice (5' x 0.67') is proposed. The invert of this rectangular orifice is equal to the NWL elevation, 25.80'. Note, in the proposed condition, the actual drainage area is increased by 0.05 acres (11.71 acres, total). This additional drainage area is located between Piers 11 and 12 and, in the existing condition, discharges to the Delaney Creek Tributary Canal.

Volume Attenuation: The 100-year/24-hour post-developed runoff volume leaving the Valley Wetland does not exceed the pre-developed runoff volume calculated from the composite pre-development 100-year/10-year hydrologic model. Therefore, this design is conservative (exceeds minimum design requirements).

Design Summary: Refer to Appendix C for a summary of the design flow rates, design high waters, the runoff volumes, modeling schematics and copies of the stormwater modeling. Information relating to both SWFWMD calculations and FDOT calculations are provided. In conclusion, the slightly higher DHW's do not pose a threat to the safety of motorists or to the structural integrity of the roadway facilities adjacent to the Valley Wetland.

3.5 Delaney Creek Tributary Canal Basin

In the pre-developed condition, the project area draining to this canal is approximately 0.24 acres and includes the bridge span between Piers 12 and 13. Approximately 0.05 acres of this basin is open water (canal).

In the proposed condition, this basin area is reduced to 0.19 acres in size. Approximately 0.05 acres of drainage area is redirected to the Valley Wetland due to the bridge span drainage design. About 0.14 acres is converted from steeply sloped embankment to impervious.

In summary, the difference from pre- to post-development was not considered significant enough to propose any attenuation design. And, since water quality treatment for the project

5/12

is being accommodated within the NW Basin, no further analysis was performed for this basin.

3.6 Scupper Drain Basin

No drainage design is required for this basin except for gutter spread, inlet sizing/spacing and storm drain design. As agreed to by SWFWMD pursuant to our pre-application meeting, drainage from the bridge shall be allowed to fall through 6" diameter scuppers, spaced 10' apart on centers and then permitted to flow over THCEA-owned land as it does in its natural condition. By doing so, no attenuation is required for this runoff. And again, since water quality treatment is being provided for the project in the NW Basin, no treatment is proposed in this basin. Reference Appendix D for Bridge Deck Drainage information and calculations.

3.7 Pond 2 Basin

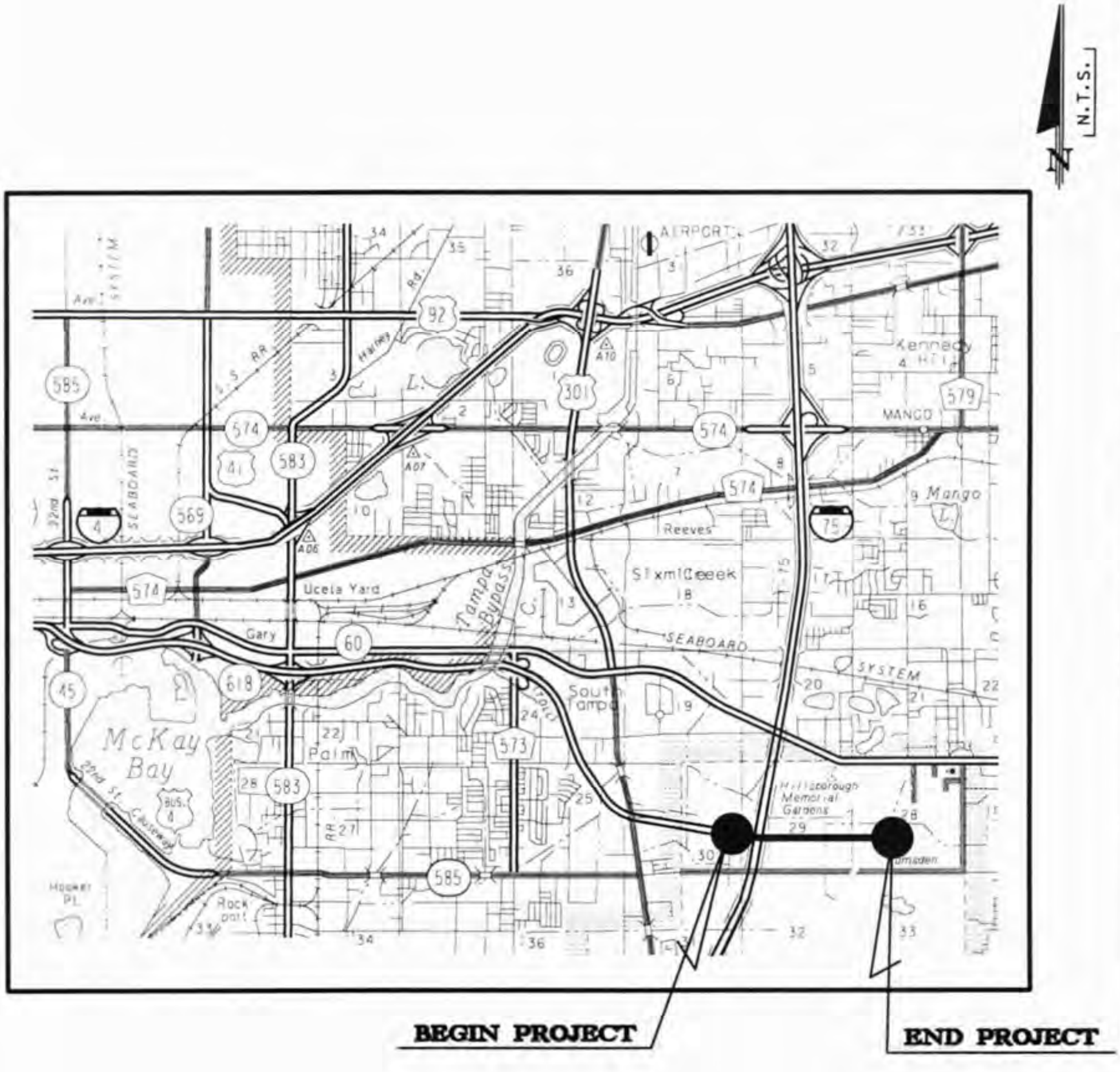
Approximately 1.25 acres of the bridge and roadway runoff is proposed to drain from the Gateway Bridge project to Pond 2. Because of issues relating to the construction of the bridge, it was determined that Pond 2 should be constructed as part of the Gateway Bridge Project. The Pond 2 design is based upon the hydrologic calculations performed by the designers of the Brandon Feeder Road. Therefore, if reviewing this Pond design, please refer to the Brandon Feeder Road drainage design documentation. Calculations for gutter spread, inlet spacing and storm drains are included in the Gateway Bridge drainage documentation.

3.8 Gornto Lake Road Canal Crossing

In order to provide maintenance access for Pond 2, the bridge end abutment and the MSE walls at the east end of the Gateway Bridge project, the existing Gornto Lake Road Canal must be crossed. The crossing proposes two – 34" x 54" ERCP's which are identical to the Canal's outfall structure to Delaney Creek which is located about 150' to the north of the crossing. According to the Delaney Creek model (see Appendix A – References), the 100-year peak flow through this channel is 41.10 cfs or 20.55 cfs per 42" equivalent pipe. In summary, it is the designer's opinion the culverts are more than adequately sized. No detailed calculations were performed.

APPENDIX A
GENERAL EXHIBITS: LOCATION MAP, DRAINAGE MAP, SOILS MAP, FLOODPLAIN MAP, REFERENCES

594

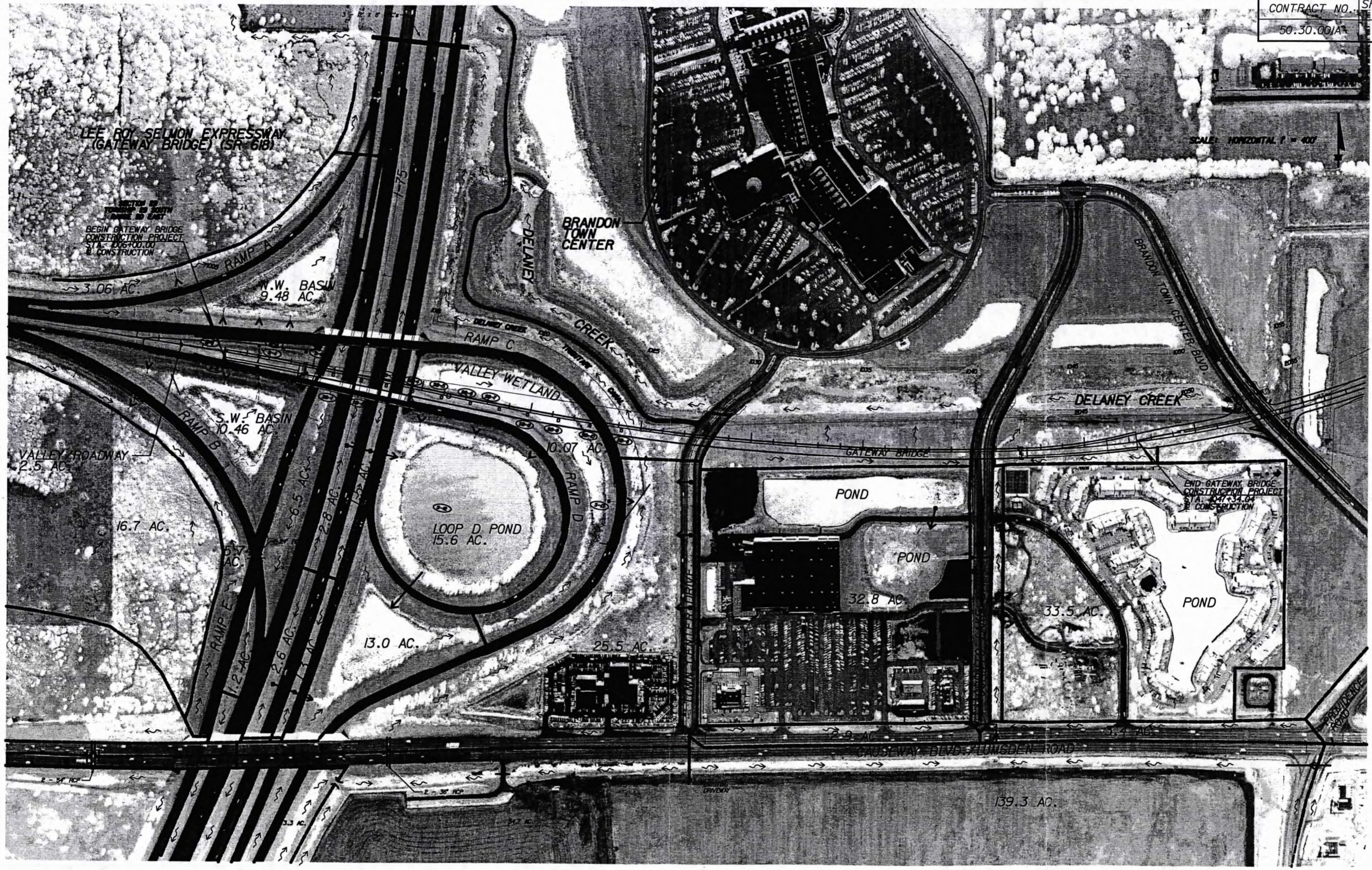


ICON
CONSULTANT GROUP
INCORPORATED
10006 N. DALE MABRY HIGHWAY
SUITE 201
TAMPA, FLORIDA 33618
(813) 962-8689

FIGURE 1

LOCATION MAP
GATEWAY BRIDGE PROJECT
BRANDON PARKWAY

SHEET NO.



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

ICON CONSULTANT GROUP INCORPORATED

TAMPA-HILLSBOROUGH COUNTY EXPRESSWAY AUTHORITY

DRAINAGE MAP

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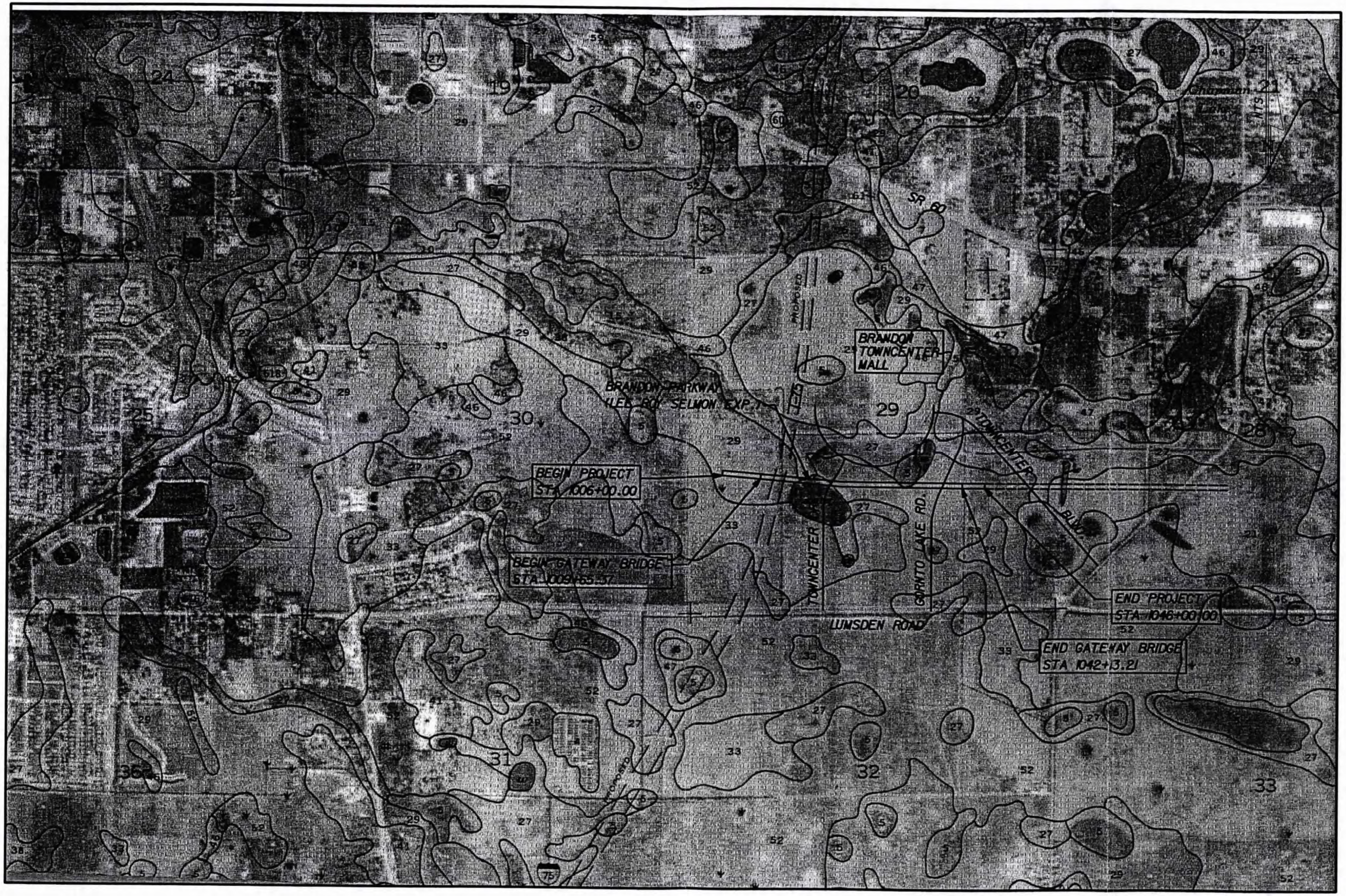
516

THCEA PROJ. NO.	SHEET NO.
50.30.001	



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REVISIONS

ICON CONSULTANT GROUP INCORPORATED

SOIL SURVEY OF HILLSBOROUGH COUNTY, FLORIDA MAP (50)

597

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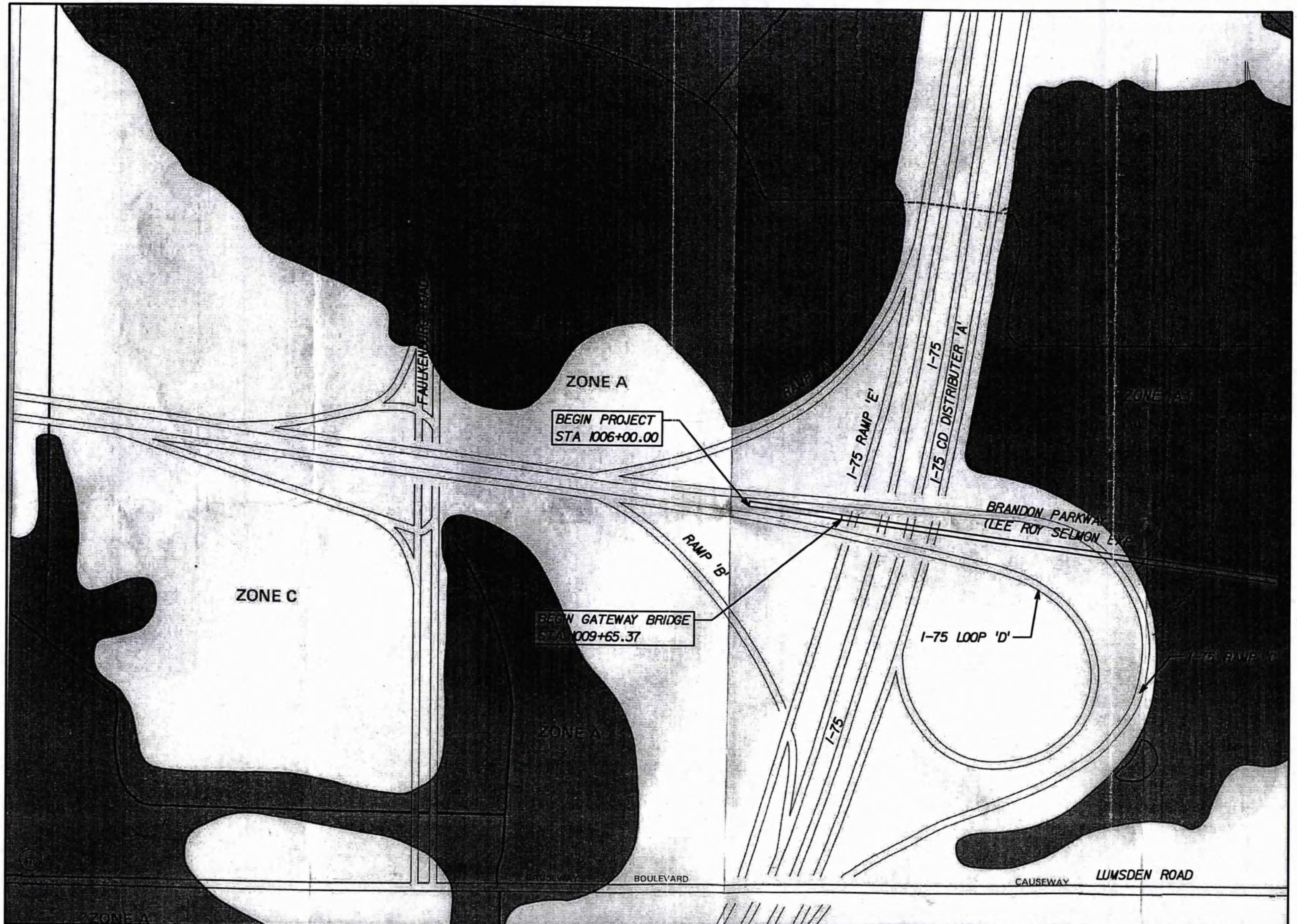
50.30.001	



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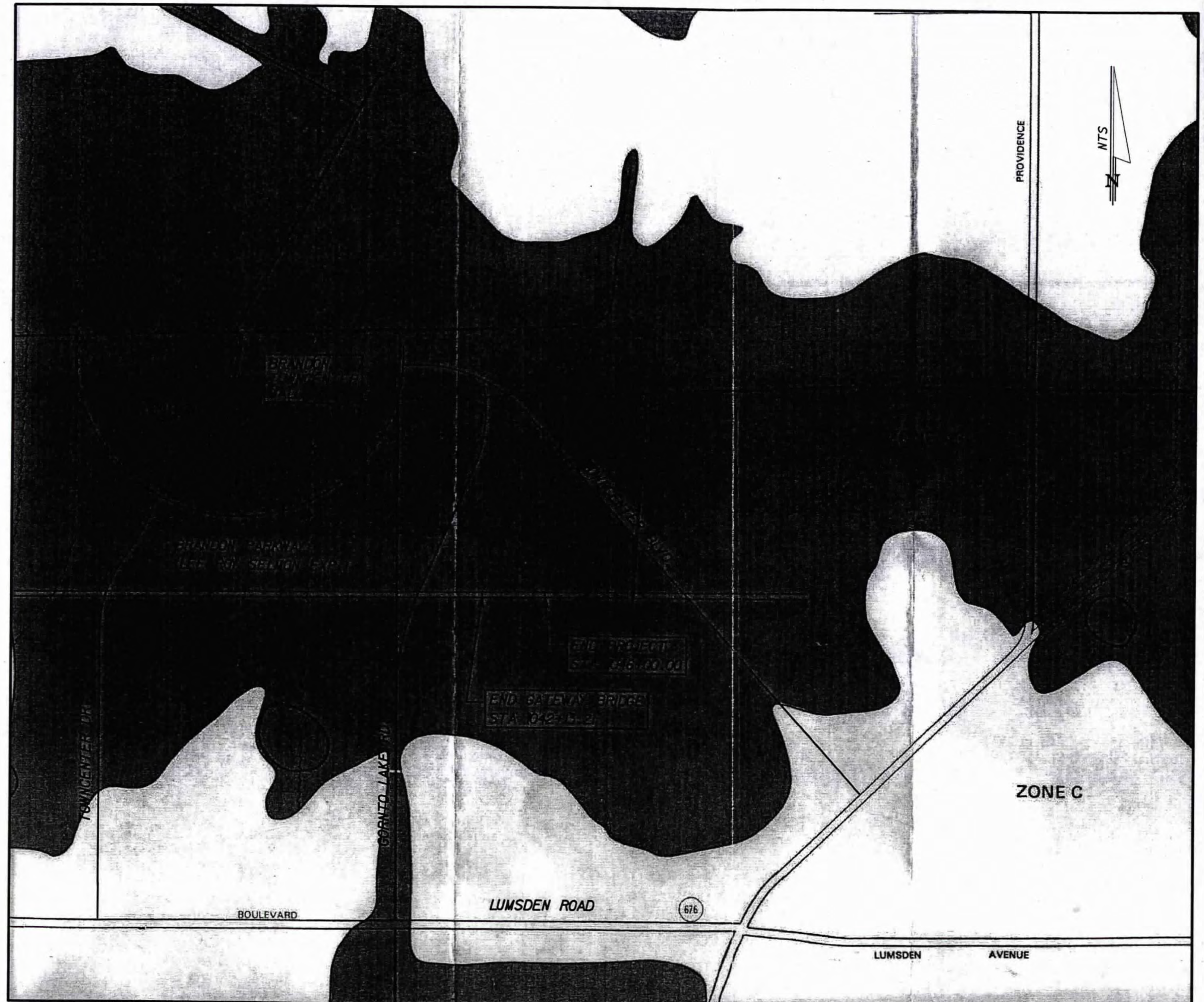
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON CONSULTANT GROUP INCORPORATED

FEMA MAP
COMMUNITY - PANEL NUMBER
120112 0387 E (AUGUST 15 1989)

THCEA PROJ. NO.	SHEET NO.
50.30.001	



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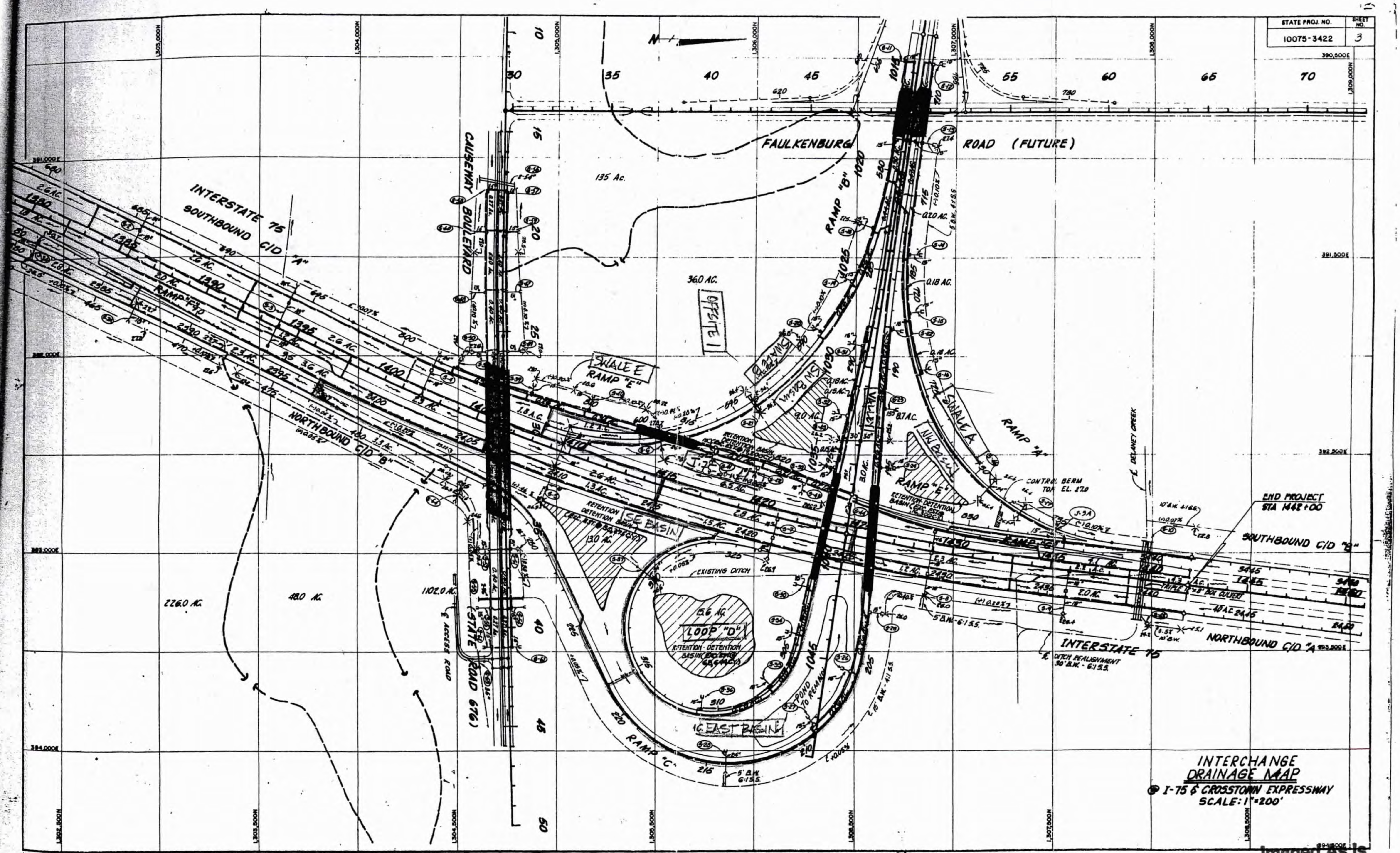
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ICON

FEMA MAP
COMMUNITY – PANEL NUMBER
120112 0387 E (AUGUST 15 1989)

599



STATE PROJ. NO. 10075-3422
SHEET NO. 3
INTERCHANGE DRAINAGE MAP
@ I-75 & CROSSTOWN EXPRESSWAY
SCALE: 1"=200'
FAULKENBURG ROAD (FUTURE)
CAUSEWAY BOULEVARD
(STATE ROAD 676)
INTERSTATE 75
SOUTHBOUND C/D "A"
NORTHBOUND C/D "B"
SOUTHBOUND C/D "B"
NORTHBOUND C/D "A"
RAMP "A"
RAMP "B"
RAMP "C"
RAMP "E"
LOOP "D"
SWALE A
SWALE E
OFFSITE 1
SE BASIN
NW BASIN
SW BASIN
EAST BASIN
VALLEY
END PROJECT STA 1442+00
EXISTING DITCH
DELANEY CREEK
ACCESS ROAD
CONTROL BERM TOP EL. 27.0
135 Ac.
36.0 AC.
48.0 AC.
226.0 AC.
102.0 AC.
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Mike Mills

From: Alan Lawton <WLawton@kcaeng.com>
To: 'Mike Mills' <mmill@iconconsultants.net>
Cc: Alphonse Stewart <AStewart@kcaeng.com>
Sent: Thursday, August 03, 2000 9:40 AM
Attach: 2narr.DOC; 2IN.TXT; 3YR2.TXT
Subject: RE: Gateway Bridge: Drainage Design

Good Morning Mike,

I have the latest data for your modeling pleasure:

- The tailwater for Delaney Creek is; Hour 0 : Elev. 26.5, Hour 23.18 : Elev. 30.61, and Hour 24 : Elev. 30.4 with an initial elev. of 26.5
- We have 1.26 acres coming to your inlet. I have attached the latest report for this section.
- The narrative for Pond 2 is also attached for you.

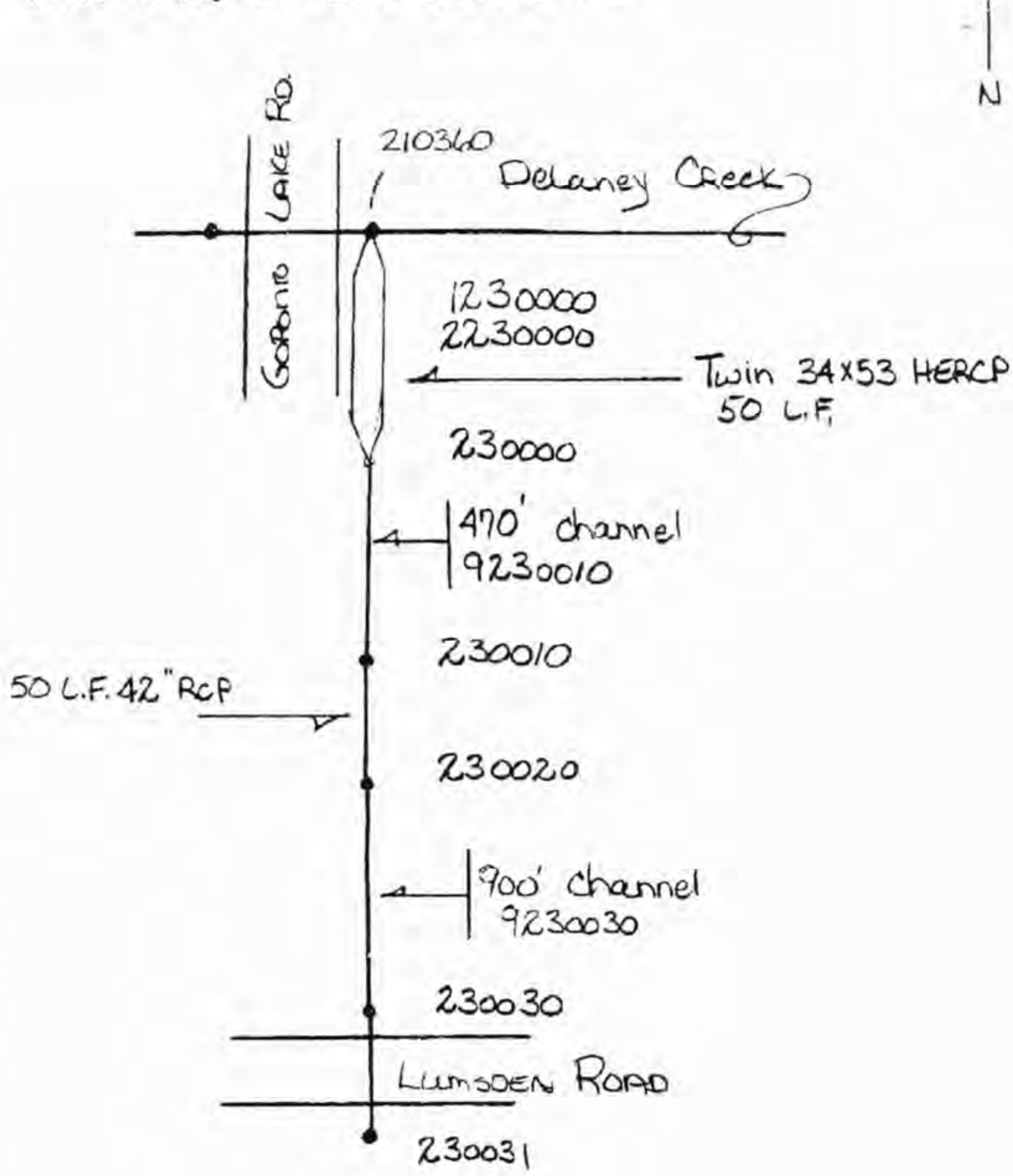
We had to run the 3 year system for the design of our storm sewer system. This input is also attached. Your new pond design will most likely give a new 3 year tailwater elevation for our system. Please let us know when completed.

Thanks and enjoy your ICPR experience,
Alan Lawton

KISINGER CAMPO & ASSOCIATES
ENGINEERS & LAND SURVEYORS
TAMPA, FLORIDA

JOB: BRANDON PARKWAY — COMPUTED BY: WRG — DATE: 10/9/2000
DESCRIPTION: MODEL FLOW RATES FOR — CHECKED BY: — DATE:
SHEET 1 OF 2

Nat channel and pipes on
EAST SIDE OF GORONO LAKE RD.



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KISINGER CAMPO & ASSOCIATES
ENGINEERS & LAND SURVEYORS
TAMPA, FLORIDA

JOB Brandon Parkway COMPUTED BY WRG DATE 10/9/00
DESCRIPTION Selected Output From Proposed Cond. Model CHECKED BY ______ DATE ______
SHEET 2 OF 2

Storm Event	Conduit Number	Flow Rate - Peak (CFS)
10 YR.	1230000	16.60
10 YR.	2230000	16.60
10 YR.	9230010	29.90
25 YR.	1230000	16.50
25 YR.	2230000	16.50
25 YR.	9230010	33.50
50 YR.	1230000	19.60
50 YR.	2230000	19.60
50 YR.	9230010	39.30
100 YR.	1230000	20.40
100 YR.	2230000	20.40
100 YR.	9230010	41.10

Storm Event	Junction Number	Elevation - Peak (FT. NGVD)
10 YR	210360	28.69
10 YR.	230000	28.73
10 YR.	230010	29.31
25 YR.	210360	29.15
25 YR.	230000	29.20
25 YR.	230010	29.60
50 YR	210360	29.90
50 YR	230000	29.98
50 YR	230010	30.17
100 YR	210360	30.22
100 YR	230000	30.31
100 YR.	230010	30.46

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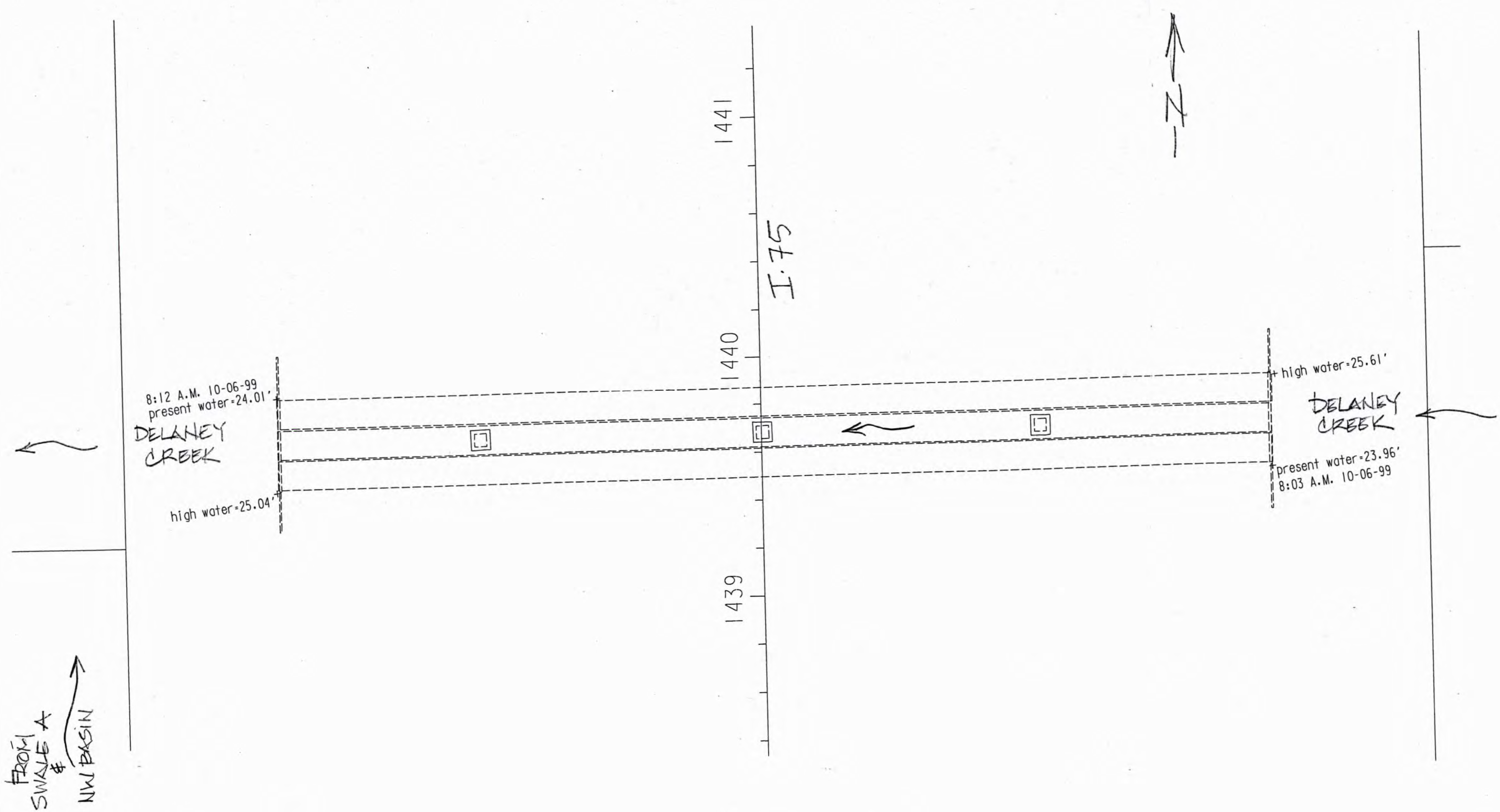
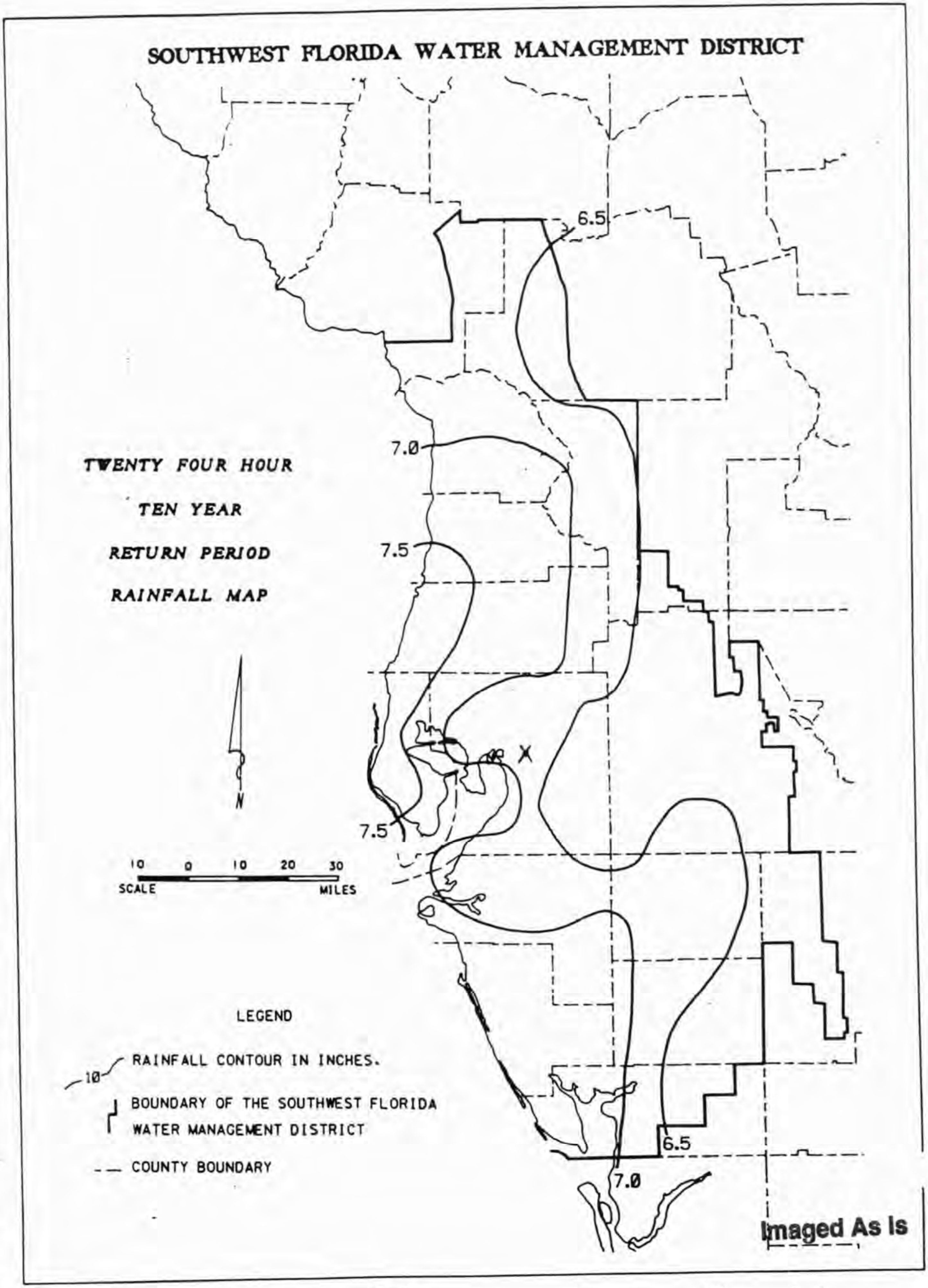
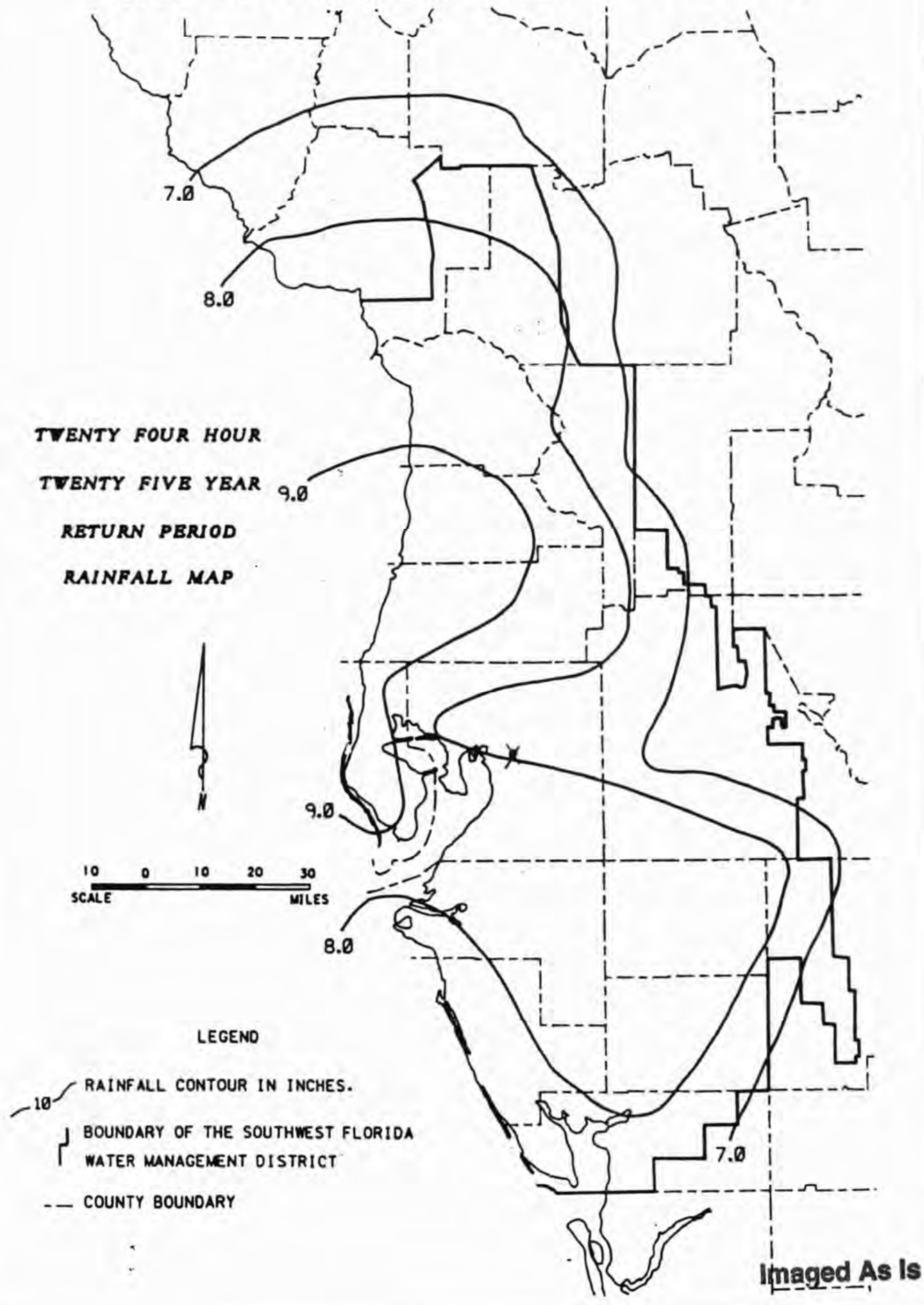
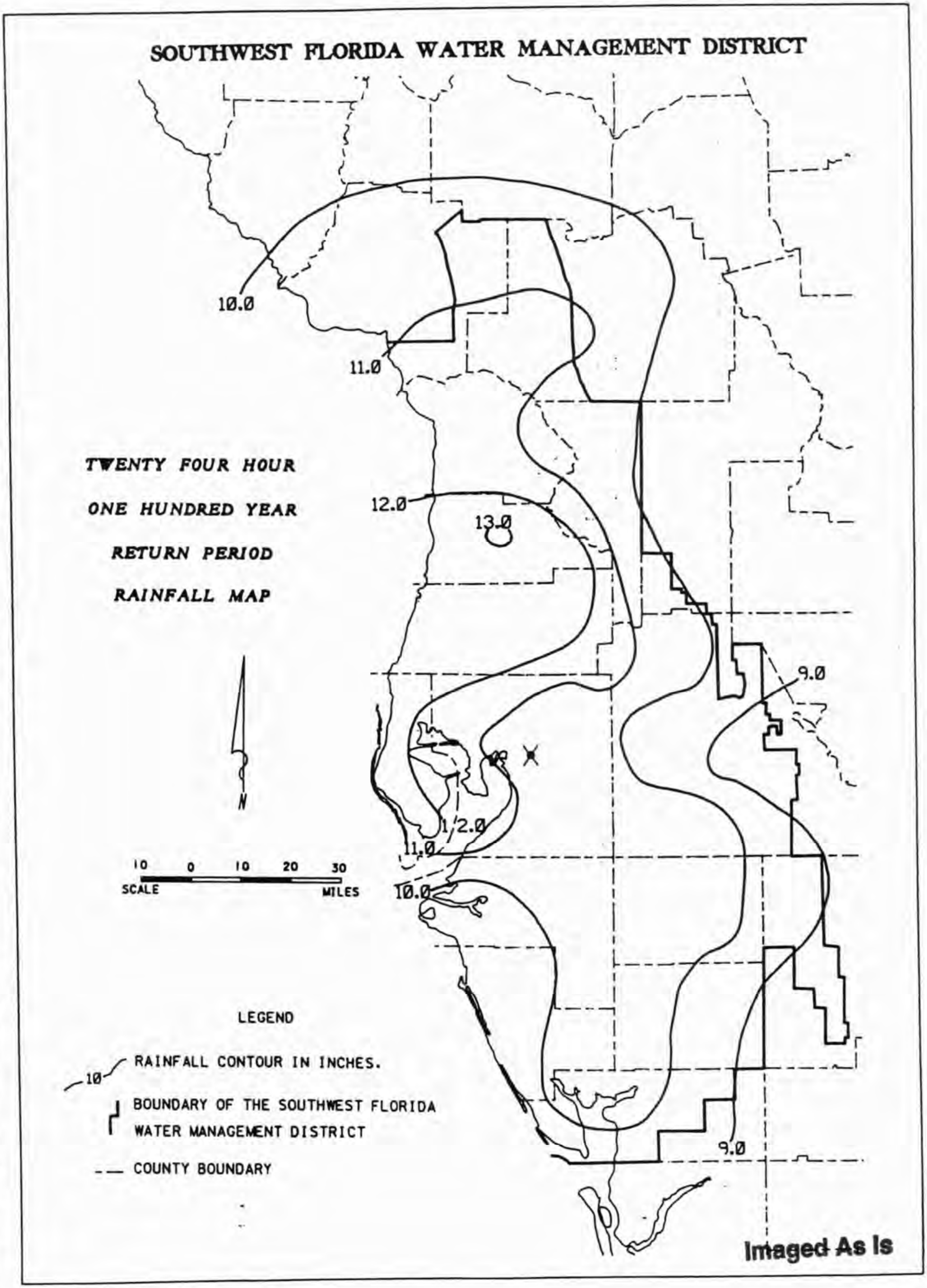
603


N
1441
1440
1439
I-75
8:12 A.M. 10-06-99
present water=24.01'
DELANEY CREEK
high water=25.04'
high water=25.61'
DELANEY CREEK
present water=23.96'
8:03 A.M. 10-06-99
FROM SWALE A
&
NW BASIN


SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
TWENTY FOUR HOUR
TEN YEAR
RETURN PERIOD
RAINFALL MAP
6.5
7.0
7.5
7.5
7.0
6.5
N
10 0 10 20 30
SCALE MILES
LEGEND
10 RAINFALL CONTOUR IN INCHES.
BOUNDARY OF THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
COUNTY BOUNDARY

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT





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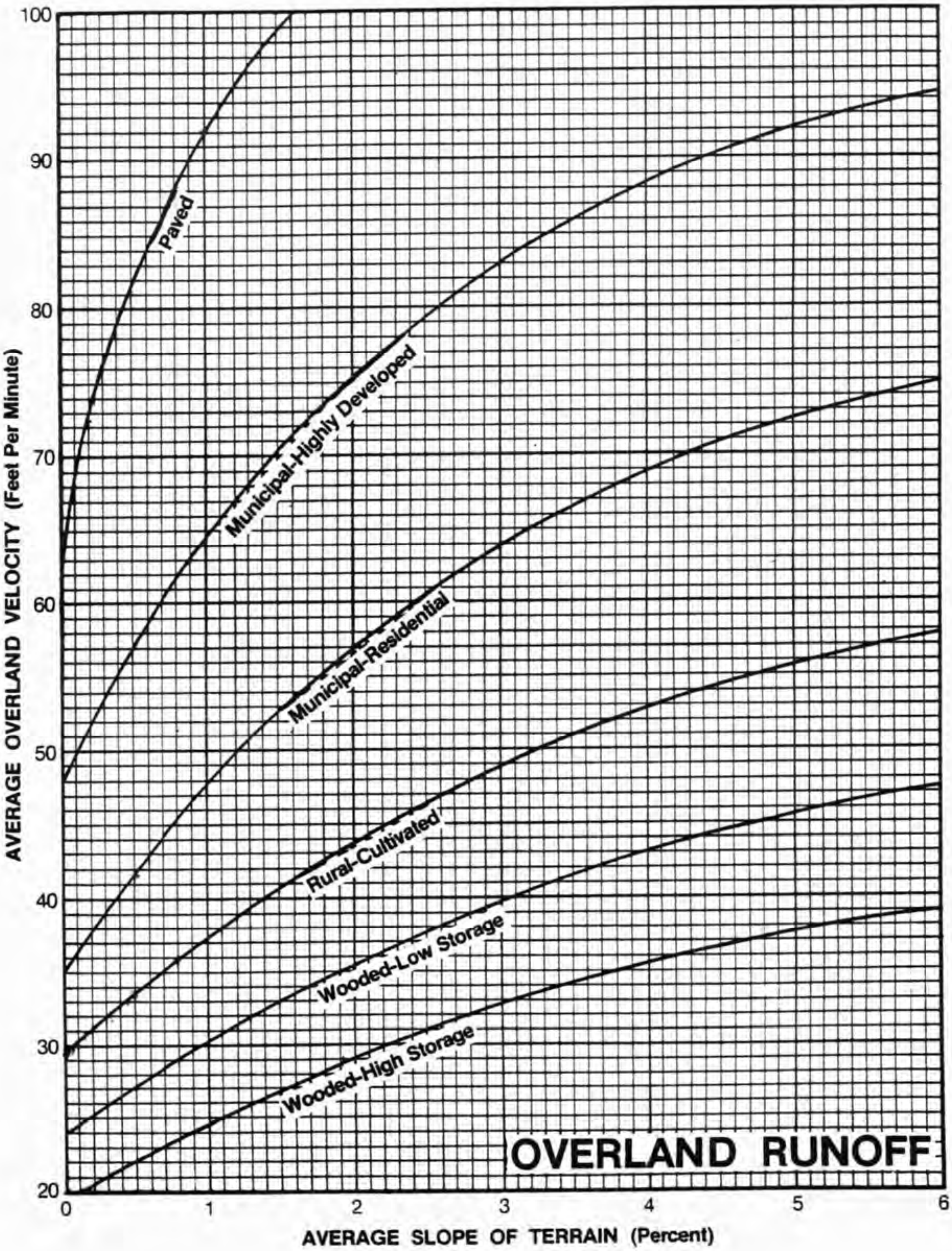
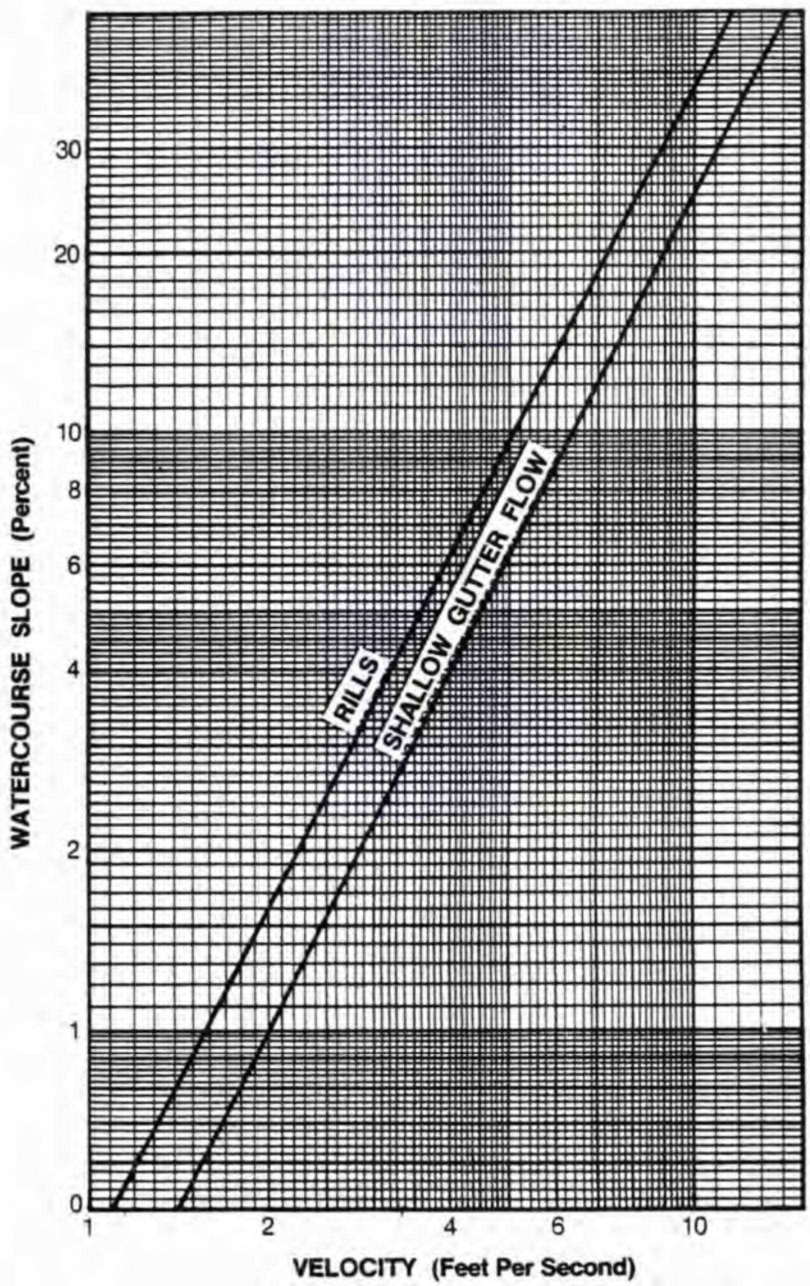


FIGURE 5-19
Overland Flow Velocities for Various Land Use Types

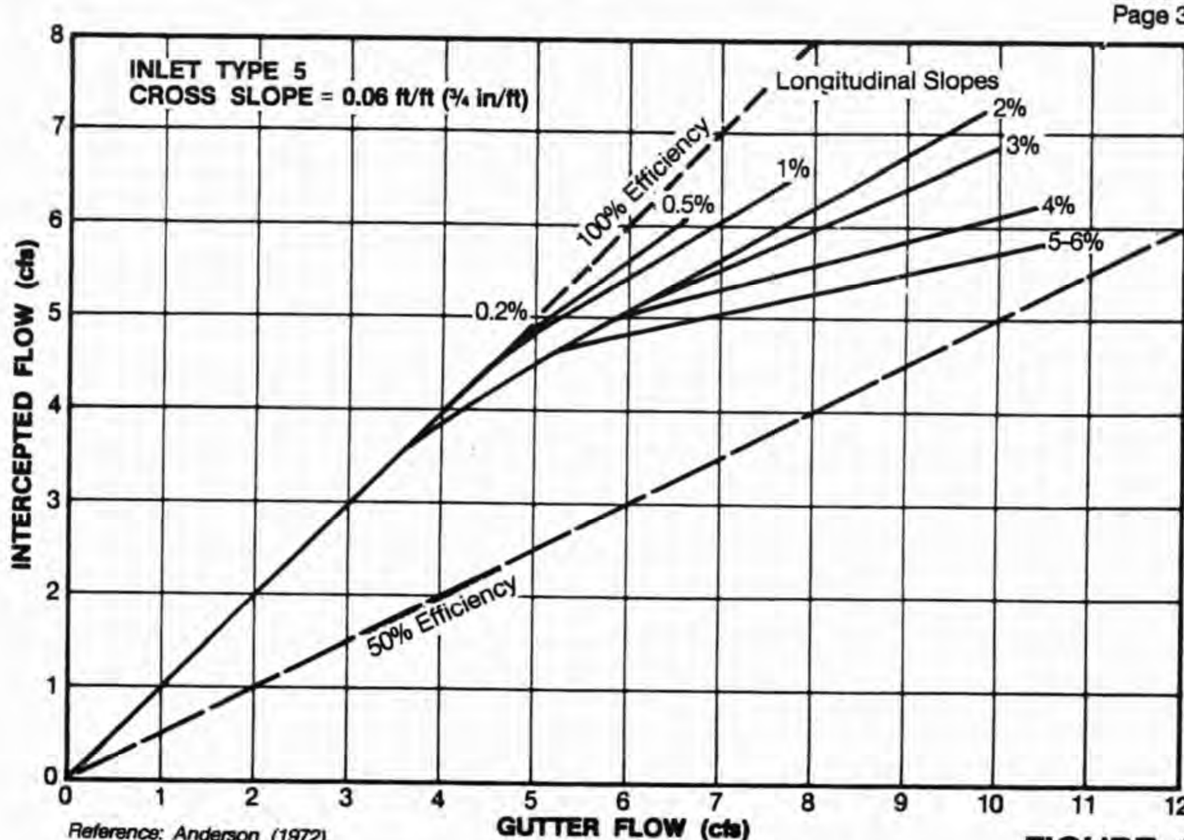
608



Reference: USDA, SCS, TR-55 Draft (1984).

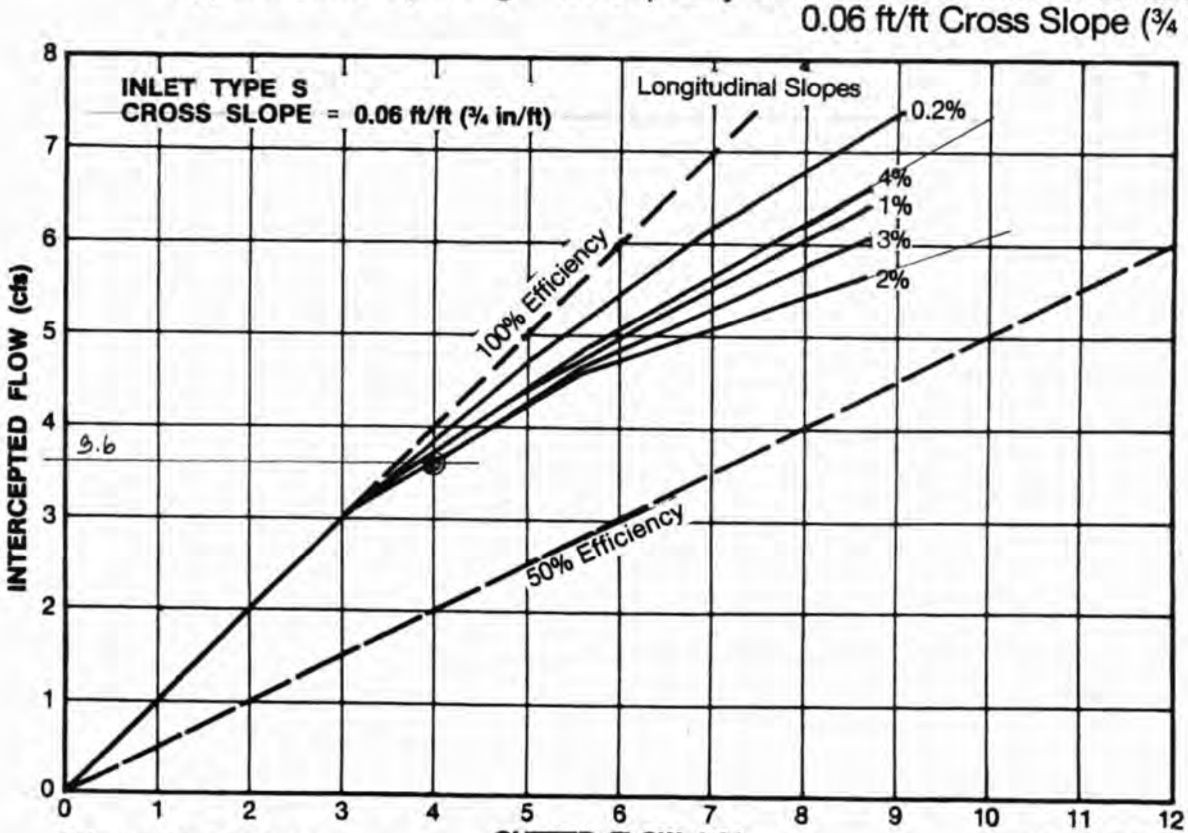
FIGURE 5-20
Average Velocities for Estimating Travel Time for Small Channel Flow

609



Reference: Anderson (1972).

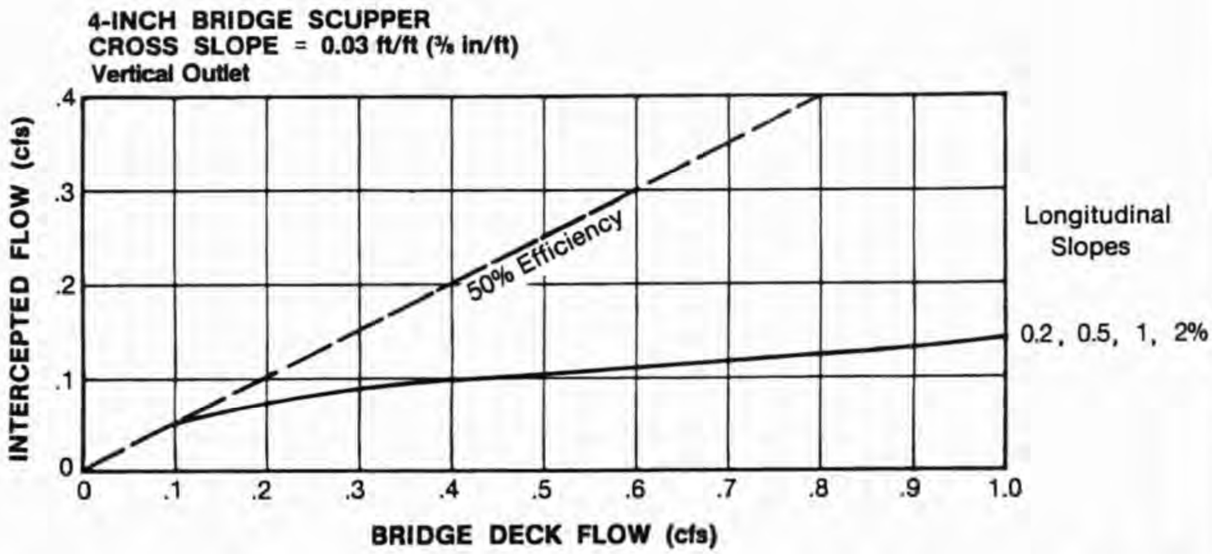
FIGURE 12-17
Type 5 Curb-Opening Inlet Capacity Chart for Continuous Grade and 0.06 ft/ft Cross Slope (¾ in/ft)



Reference: Anderson (1972).

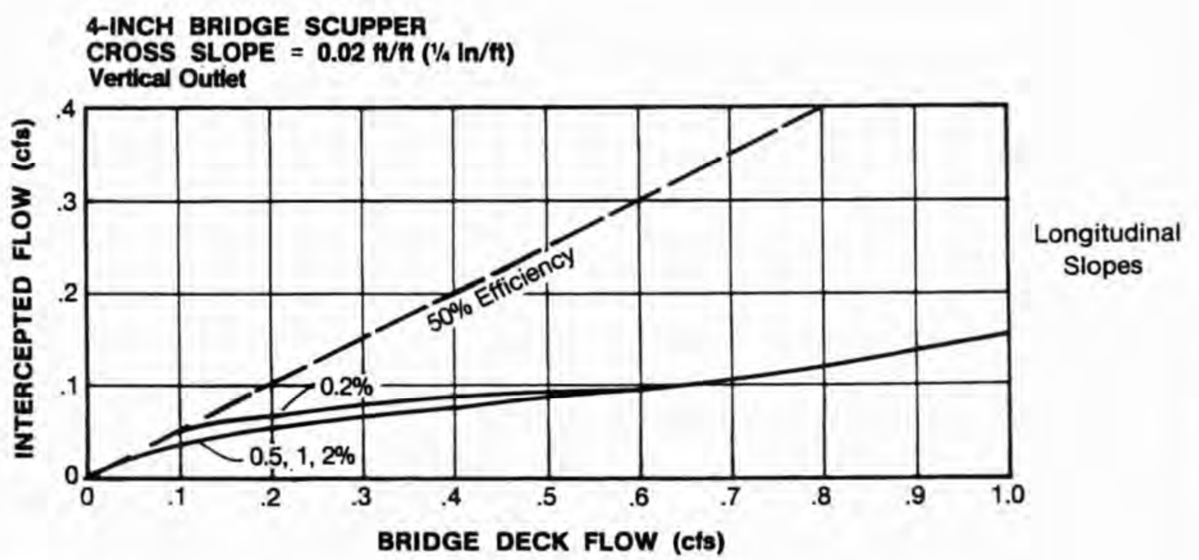
FIGURE 12-18
Type S Gutter Inlet Capacity Chart for Continuous Grade and 0.06 ft/ft Cross Slope (¾ in/ft)

61



Reference: Anderson (1973).

FIGURE 12-25
Intercepted Flow for 4-Inch Bridge Scuppers at 0.03 ft/ft Cross Slope (⅜ in/ft)



Reference: Anderson (1973).

FIGURE 12-26
Intercepted Flow for 4-Inch Bridge Scuppers at 0.02 ft/ft Cross Slope (¼ in/ft)

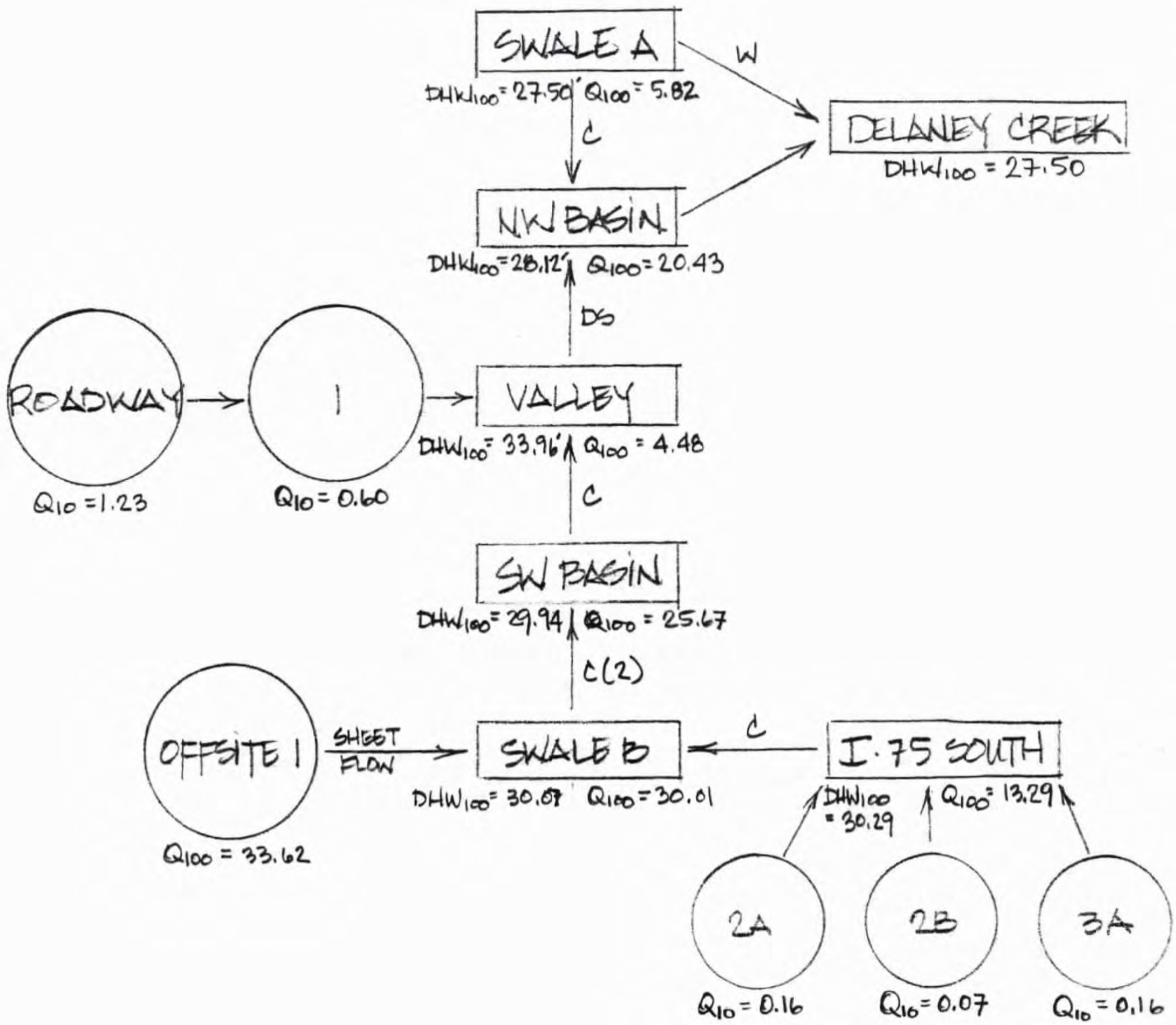
610

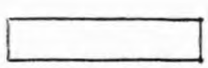
APPENDIX B
I-75 BASIN A: DRAINAGE CALCULATIONS

Brandon Parkway Project
Gateway Bridge - Summary of NW Basin

Storm Event	Q_{ex} (cfs)	Q_{fu} (cfs)	24-hr Vol_{ex} (acft)	24-hr Vol_{fu} (acft)	DHW_{ex} (ft)	DHW_{fu} (ft)
SWFWMD 10-year/24-hour	20.43	-	-	-	28.12	-
SWFWMD 100-year/24-hour	-	19.98	17.11	16.64	-	28.26
FDOT 100-year/1-hour	5.01	7.26	-	-	26.63	27.00
FDOT 100-year/2-hour	11.93	12.04	-	-	27.40	27.63
FDOT 100-year/4-hour	16.95	15.48	-	-	27.88	28.07
FDOT 100-year/8-hour	20.15	19.57	-	-	28.11	28.24
FDOT 100-year/24-hour	19.28	18.18	-	-	28.07	28.19

EXISTING CONDITIONS



 STORAGE BASINS (NODES)

 RUNOFF BASINS

1	BRIDGE BASIN DRAINING TO PIER 1
2A	" " " " " 2, WEST
2B	" " " " " 2, EAST
3A	" " " " " 3, WEST

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I -75 Basin A

Basin ID: Swale A

Basin Area (ac): 3.06

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	1.22
Pervious	D	80.0	1.84
Weighted CN:		87.2	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	2000.0
Avg Slope (%) =	0.10%
Velocity (fpm) =	66.0
Tc (min) =	30.3

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
25.60	0.03	0.00	NWL
26.00	0.06	0.02	
27.00	0.46	0.28	
28.00	0.82	0.92	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: 118'-24" RCP, U/S inv = 25.43', D/S inv=25.93', to NW Basin

Outfall 2: Popoff @ elev. 26.0 via BCW, 5', 4:1 SS, to Delaney Creek

Brandon Parkway Project

Gateway Bridge - Drainage Analysis

BASIN DATA SHEET

Description: Existing Conditions - I - 75 Basin A

Basin ID: NW Basin

Basin Area (ac): 9.48

Curve Number:

Land Use	Soils	CN	Area (ac)	
Wetlands	n/a	98.0	4.13	(OSW-A)
Impervious	n/a	98.0	0.78	
Pervious	D	80.0	4.57	
Weighted CN:		89.3		

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	700.0
Avg Slope (%) =	5.30%
Velocity (fpm) =	56.0
Tc (min) =	12.5

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
25.00	1.92	0.00	NWL
26.00	2.33	2.13	
28.00	3.30	7.76	
30.00	3.98	15.04	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: 84'~30" RCP, U/S inv=25.57', D/S inv=25.28', to Delaney Creek

Outfall 2: Control Berm, Crest Elev.=28.0', Length=10', 4:1 Slide Slopes

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I -75 Basin A

Basin ID: I-75 South (Less Gateway Bridge Segments 2A, 2B, 3A)

Basin Area (ac): 7.04

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	2.31
Pervious	D	80.0	4.73
Weighted CN:		85.9	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	1000.0
Avg Slope (%) =	0.05%
Velocity (fpm) =	66.0
Tc (min) =	15.2

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
28.10	0.01	0.00	NWL
29.00	0.30	0.14	
30.00	0.48	0.53	
31.00	0.67	1.10	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: 84LF~24" RCP, U/S inv=28.1, D/S inv=27.8, to Swale B

Outfall 2:

617

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A

Basin ID: Swale B

Basin Area (ac): 5.74

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	2.18
Pervious	D	80.0	3.56
Weighted CN:		86.8	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	1900.0
Avg Slope (%) =	0.03%
Velocity (fpm) =	66.0
Tc (min) =	28.8

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
26.76	0.01	0.00	NWL
27.00	0.12	0.02	
28.00	2.00	1.08	
29.00	2.30	3.23	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: 136 LF~ dual 36" RCP's, U/S inv's=26.84' & 26.76', D/S inv's= 26.79' & 26.72', to SW Basin

Outfall 2:

618

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A

Basin ID: Offsite 1 (Node Swale B)

Basin Area (ac): 16.7

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.00
Pervious	D	80.0	16.70
Weighted CN:		80.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	650.0
Avg Slope (%) =	0.15%
Velocity (fpm) =	31.0
Tc (min) =	21.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: Sheet Flow to Swale B

Outfall 2:

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A

Basin ID: SW Basin

Basin Area (ac): 10.46

Curve Number:

Land Use	Soils	CN	Area (ac)	
Wetlands	n/a	98.0	1.50	(OFW-B)
Impervious	n/a	98.0	1.54	
Pervious	D	80.0	7.42	
Weighted CN:		85.2		

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	650.0
Avg Slope (%) =	4.75%
Velocity (fpm) =	55.0
Tc (min) =	11.8

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
26.00	1.50	0.00	NWL
28.00	2.22	3.72	
30.00	3.44	9.38	
31.00	3.62	12.91	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: 355 LF ~ 30" RCP, U/S inv=26.65', D/S inv=25.12', to NW Basin

Outfall 2:

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A

Basin ID: Valley (Less Gateway Bridge Segment 1, Brandon Parkway Roadway Segment)

Basin Area (ac): 1.43

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.00
Pervious	D	80.0	1.43
Weighted CN:		80.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	1400.0
Avg Slope (%) =	1.57%
Velocity (fpm) =	41.0
Tc (min) =	34.1

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
33.80	0.01	0.00	NWL
34.00	0.02	0.00	
35.00	0.04	0.03	
40.00	0.32	0.93	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: Type B DBI, grate = 33.8', 180 LF ~ 30" RCP, U/S inv= 25.72', D/S inv=25.12', to NW Basin

Outfall 2:

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A (Station 998+24.11 to 1006+00.00)

Basin ID: Roadway (Brandon Parkway "Roadway" Segment, Node Valley)

Basin Area (ac): 1.07

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.00
Pervious	D	80.0	1.07
Weighted CN:		80.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	775.0
Avg Slope (%) =	1.57%
Velocity (fpm) =	41.0
Tc (min) =	18.9

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1:

Outfall 2:

ωdd

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A to Begin Bridge (Sta 1006+00.00 to 1009+65.37)

Basin ID: 1 (Gateway Bridge Segment, Node Valley)

Basin Area (ac): 0.5

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.00
Pervious	D	80.0	0.50
Weighted CN:		80.0	

Curve numbers obtained from Chapter 2. "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	60.0	
Avg Slope (%) =	0.30%	
Velocity (fpm) =	35.0	
Tc (min) =	1.7	>>>use 10 minutes

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1:

Outfall 2:

623

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I- 75 Basin A @ begin Bridge (Sta 1009+65.37 to 1010+51.37)

Basin ID: 2A (Gateway Bridge Segment, Node I-75 South)

Basin Area (ac): 0.12

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.04
Pervious	D	80.0	0.08
Weighted CN:		86.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	170.0	
Avg Slope (%) =	0.30%	
Velocity (fpm) =	35.0	
Tc (min) =	4.9	>>>use 10 minutes

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: West Swale Ramp E, drain via DBI to Swale I-75 South

Outfall 2:

624

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Existing Conditions - I -75 Basin A @ Pier 2 (Sta 1010+51.37 to 1010+98.22)

Basin ID: 2B (Gateway Bridge Segment, Node I-75 South)

Basin Area (ac): 0.06

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.01
Pervious	D	80.0	0.05
Weighted CN:		83.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	45.0	
Avg Slope (%) =	0.30%	
Velocity (fpm) =	35.0	
Tc (min) =	1.3	>>>use 10 minutes

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: Swale I-75 South

Outfall 2:

625

Brandon Parkway Project

Gateway Bridge - Drainage Analysis

BASIN DATA SHEET

Description: Existing Conditions - I-75 Basin A @ Pier 2 (Sta 1010+98.22 to 1011+84.22)

Basin ID: 3A (Gateway Bridge Segment, Node I-75 South)

Basin Area (ac): 0.12

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.06
Pervious	D	80.0	0.06
Weighted CN:		89.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	145.0	
Avg Slope (%) =	0.30%	
Velocity (fpm) =	35.0	
Tc (min) =	4.1	>>>use 10 minutes

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: Swale I-75 South

Outfall 2:

626

fl Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]
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GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-24SW **
(SWFWMD)

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	DELANEY	DELANEY	DELANEY	DELANEY	DELANEY
Rainfall Amount (in):	10.75	10.75	10.75	10.75	10.75
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	13.06	13.00	13.00	13.06	13.02
Flow Max (cfs):	6.28	21.07	15.25	11.82	33.62
Runoff Volume (in):	9.17	9.44	9.01	9.12	8.24
Runoff Volume (cf):	101891	324814	230184	190074	499737

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	2A
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	VALLEY	VALLEY	I-75S
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Comp Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Rainfall File:	DELANEY	DELANEY	DELANEY	DELANEY	DELANEY
Rainfall Amount (in):	10.75	10.75	* 6.75	* 6.75	* 6.75
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	18.90	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.50	0.12
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	80.00	80.00	86.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	12.98	13.11	13.02	13.00	13.00
Flow Max (cfs):	22.68	2.69	1.23	0.60	0.16

* PROJECT BASINS - 10 YEAR STORM EVENT

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GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-24SW **

Runoff Volume (in):	8.92	8.24	4.47	4.47	5.13
Runoff Volume (cf):	338609	42790	17347	8106	2234

***

Basin Name:	2B	3A
Group Name:	BASE	BASE
Node Name:	I-75S	I-75S
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH323	UH323
Peaking Factor:	323.00	323.00
Spec Time Inc (min):	1.33	1.33
Comp Time Inc (min):	1.33	1.33
Rainfall File:	DELANEY	DELANEY
Rainfall Amount (in):	* 6.75	* 6.75
Storm Duration (hr):	24.00	24.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00
Lag Time (hr):	0.00	0.00
Area (acres):	0.06	0.12
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	89.00
DCIA (%):	0.00	0.00
Time Max (hrs):	13.00	13.00
Flow Max (cfs):	0.07	0.16
Runoff Volume (in):	4.79	5.47
Runoff Volume (cf):	1044	2381

* PROJECT BASINS - 10 YR STORM EVENTS

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-1DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-1	FDOT-1	FDOT-1	FDOT-1	FDOT-1
Rainfall Amount (in):	4.50	4.50	4.50	4.50	4.50
Storm Duration (hr):	1.00	1.00	1.00	1.00	1.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	0.88	0.67	0.71	0.83	0.79
Flow Max (cfs):	11.11	56.75	35.48	21.23	60.42
Runoff Volume (in):	3.11	3.33	2.99	3.07	2.46
Runoff Volume (cf):	34518	114476	76431	64022	149053

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	2A
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	VALLEY	VALLEY	I-75S
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Comp Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Rainfall File:	FDOT-1	FDOT-1	FDOT-1	FDOT-1	FDOT-1

Rainfall Amount (in):	4.50	4.50	4.50	4.50	4.50
Storm Duration (hr):	1.00	1.00	1.00	1.00	1.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	18.90	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.50	0.12
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	80.00	80.00	86.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	0.68	0.91	0.76	0.67	0.64
Flow Max (cfs):	57.34	3.85	4.07	2.51	0.72

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-1DOT **

Runoff Volume (in):	2.93	2.46	2.46	2.46	3.00
Runoff Volume (cf):	111189	12768	9540	4470	1309

***

Basin Name:	2B	3A
Group Name:	BASE	BASE
Node Name:	I-75S	I-75S
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH323	UH323
Peaking Factor:	323.00	323.00
Spec Time Inc (min):	1.33	1.33
Comp Time Inc (min):	1.33	1.33
Rainfall File:	FDOT-1	FDOT-1
Rainfall Amount (in):	4.50	4.50
Storm Duration (hr):	1.00	1.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00
Lag Time (hr):	0.00	0.00
Area (acres):	0.06	0.12
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	89.00
DCIA (%):	0.00	0.00
Time Max (hrs):	0.64	0.64
Flow Max (cfs):	0.33	0.78
Runoff Volume (in):	2.73	3.30
Runoff Volume (cf):	594	1436

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-2DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-2	FDOT-2	FDOT-2	FDOT-2	FDOT-2

Rainfall Amount (in):	5.92	5.92	5.92	5.92	5.92
Storm Duration (hr):	2.00	2.00	2.00	2.00	2.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	1.01	0.86	0.88	1.02	0.93
Flow Max (cfs):	10.89	52.74	33.88	20.74	59.60
Runoff Volume (in):	4.44	4.69	4.32	4.41	3.69
Runoff Volume (cf):	49289	161493	110414	91929	223655

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	2A
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	VALLEY	VALLEY	I-75S
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Comp Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Rainfall File:	FDOT-2	FDOT-2	FDOT-2	FDOT-2	FDOT-2
Rainfall Amount (in):	5.92	5.92	5.92	5.92	5.92
Storm Duration (hr):	2.00	2.00	2.00	2.00	2.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	18.90	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.50	0.12
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	80.00	80.00	86.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	0.84	1.06	0.92	0.84	0.84
Flow Max (cfs):	54.43	3.91	4.03	2.45	0.67

********** Basin Summary - A99-2DOT **

Runoff Volume (in):	4.25	3.69	3.70	3.71	4.34
Runoff Volume (cf):	161225	19180	14359	6735	1888

***

Basin Name:	2B	3A
Group Name:	BASE	BASE
Node Name:	I-75S	I-75S
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH323	UH323
Peaking Factor:	323.00	323.00
Spec Time Inc (min):	1.33	1.33
Comp Time Inc (min):	1.33	1.33
Rainfall File:	FDOT-2	FDOT-2
Rainfall Amount (in):	5.92	5.92
Storm Duration (hr):	2.00	2.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00
Lag Time (hr):	0.00	0.00
Area (acres):	0.06	0.12
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	89.00
DCIA (%):	0.00	0.00

Time Max (hrs):	0.84	0.84
Flow Max (cfs):	0.32	0.71
Runoff Volume (in):	4.02	4.66
Runoff Volume (cf):	875	2030

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-4DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-4	FDOT-4	FDOT-4	FDOT-4	FDOT-4
Rainfall Amount (in):	7.32	7.32	7.32	7.32	7.32
Storm Duration (hr):	4.00	4.00	4.00	4.00	4.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	2.56	2.06	2.09	2.56	2.52
Flow Max (cfs):	8.63	32.41	22.21	16.27	44.94
Runoff Volume (in):	5.81	6.06	5.66	5.76	4.98
Runoff Volume (cf):	64502	208476	144662	120004	302115

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	2A
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	VALLEY	VALLEY	I-75S
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Comp Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Rainfall File:	FDOT-4	FDOT-4	FDOT-4	FDOT-4	FDOT-4
Rainfall Amount (in):	7.32	7.32	7.32	7.32	7.32
Storm Duration (hr):	4.00	4.00	4.00	4.00	4.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	18.90	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.50	0.12
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	80.00	80.00	86.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	2.05	2.65	2.52	2.04	2.04
Flow Max (cfs):	33.82	3.49	2.91	1.50	0.40

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-4DOT **

Runoff Volume (in):	5.58	4.98	4.99	4.99	5.68
Runoff Volume (cf):	211884	25833	19382	9062	2473

***

Basin Name:	2B	3A
Group Name:	BASE	BASE
Node Name:	I-75S	I-75S
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH323	UH323
Peaking Factor:	323.00	323.00
Spec Time Inc (min):	1.33	1.33
Comp Time Inc (min):	1.33	1.33
Rainfall File:	FDOT-4	FDOT-4
Rainfall Amount (in):	7.32	7.32
Storm Duration (hr):	4.00	4.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00
Lag Time (hr):	0.00	0.00
Area (acres):	0.06	0.12
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	89.00
DCIA (%):	0.00	0.00
Time Max (hrs):	2.04	2.02
Flow Max (cfs):	0.19	0.42
Runoff Volume (in):	5.33	6.02
Runoff Volume (cf):	1161	2624

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-8DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-8	FDOT-8	FDOT-8	FDOT-8	FDOT-8
Rainfall Amount (in):	9.20	9.20	9.20	9.20	9.20
Storm Duration (hr):	8.00	8.00	8.00	8.00	8.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	4.11	4.00	4.02	4.10	4.06
Flow Max (cfs):	9.82	35.59	25.38	18.60	53.63
Runoff Volume (in):	7.63	7.91	7.48	7.60	6.76
Runoff Volume (cf):	84805	272094	191206	158363	409535

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	2A
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	VALLEY	VALLEY	I-75S
Hydrograph Type:	UH	UH	UH	UH	UH

Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Comp Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Rainfall File:	FDOT-8	FDOT-8	FDOT-8	FDOT-8	FDOT-8
Rainfall Amount (in):	9.20	9.20	9.20	9.20	9.20
Storm Duration (hr):	8.00	8.00	8.00	8.00	8.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	18.90	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.50	0.12
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	80.00	80.00	86.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	3.99	4.17	4.03	4.00	4.00
Flow Max (cfs):	38.04	4.02	3.51	1.74	0.44

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-8DOT **

Runoff Volume (in):	7.40	6.75	6.76	6.76	7.50
Runoff Volume (cf):	281090	35036	26240	12271	3268

***

Basin Name:	2B	3A
Group Name:	BASE	BASE
Node Name:	I-75S	I-75S
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH323	UH323
Peaking Factor:	323.00	323.00
Spec Time Inc (min):	1.33	1.33
Comp Time Inc (min):	1.33	1.33
Rainfall File:	FDOT-8	FDOT-8
Rainfall Amount (in):	9.20	9.20
Storm Duration (hr):	8.00	8.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00
Lag Time (hr):	0.00	0.00
Area (acres):	0.06	0.12
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	89.00
DCIA (%):	0.00	0.00
Time Max (hrs):	4.00	4.00
Flow Max (cfs):	0.21	0.45
Runoff Volume (in):	7.13	7.87
Runoff Volume (cf):	1553	3428

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-24DT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH

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Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-24	FDOT-24	FDOT-24	FDOT-24	FDOT-24
Rainfall Amount (in):	12.96	12.96	12.96	12.96	12.96
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	12.05	12.00	11.99	12.03	12.04
Flow Max (cfs):	3.70	12.08	8.77	6.95	19.62
Runoff Volume (in):	11.35	11.63	11.18	11.30	10.38
Runoff Volume (cf):	126096	400225	285746	235513	629276

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	2A
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	VALLEY	VALLEY	I-75S
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Comp Time Inc (min):	1.57	4.55	2.52	1.33	1.33
Rainfall File:	FDOT-24	FDOT-24	FDOT-24	FDOT-24	FDOT-24
Rainfall Amount (in):	12.96	12.96	12.96	12.96	12.96
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	18.90	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.50	0.12
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	80.00	80.00	86.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	11.98	12.12	12.01	12.00	12.00
Flow Max (cfs):	13.03	1.61	1.26	0.60	0.15

GATEWAY BRIDGE - EXISTING CONDITIONS
BASIN A

********** Basin Summary - A99-24DT **

Runoff Volume (in):	11.09	10.38	10.38	10.38	11.20
Runoff Volume (cf):	421072	53857	40317	18844	4877

***

Basin Name:	2B	3A
Group Name:	BASE	BASE
Node Name:	I-75S	I-75S
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH323	UH323
Peaking Factor:	323.00	323.00
Spec Time Inc (min):	1.33	1.33
Comp Time Inc (min):	1.33	1.33
Rainfall File:	FDOT-24	FDOT-24
Rainfall Amount (in):	12.96	12.96
Storm Duration (hr):	24.00	24.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	10.00	10.00
Lag Time (hr):	0.00	0.0C

Area (acres):	0.06	0.12
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	83.00	89.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.00	12.00
Flow Max (cfs):	0.07	0.15
Runoff Volume (in):	10.79	11.59
Runoff Volume (cf):	2351	5049

fl

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

Gateway Bridge - Existing Conditions Analysis

```
********** Input Report ********************************************************
--------Class: Node-------------------------------------------------------------
   Name: DELANEY    Base Flow(cfs): 0           Init Stage(ft): 24
  Group: BASE           Length(ft): 0           Warn Stage(ft): 27.5
Comment:

Time(hrs)     Stage(ft)
0             24
12            24
24            27.5
40            26.5
48            26
--------Class: Node-------------------------------------------------------------
   Name: I-75S      Base Flow(cfs): 0           Init Stage(ft): 28.1
  Group: BASE           Length(ft): 0           Warn Stage(ft): 33
Comment:

Stage(ft)     Area(ac)
28.1          0.01
29            0.3
30            0.48
31            0.67
--------Class: Node-------------------------------------------------------------
   Name: NW_BASIN   Base Flow(cfs): 0           Init Stage(ft): 25.57
  Group: BASE           Length(ft): 0           Warn Stage(ft): 28
Comment:

Stage(ft)     Area(ac)
25            1.92
26            2.33
28            3.3
30            3.98
--------Class: Node-------------------------------------------------------------
   Name: SWALE_A    Base Flow(cfs): 0           Init Stage(ft): 25.93
  Group: BASE           Length(ft): 0           Warn Stage(ft): 28
Comment:

Stage(ft)     Area(ac)
25            0.03
26            0.06
27            0.46
28            0.82
```

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

Gateway Bridge - Existing Conditions Analysis

```
********** Input Report ********************************************************
--------Class: Node-------------------------------------------------------------
   Name: SWALE_B    Base Flow(cfs): 0           Init Stage(ft): 26.76
  Group: BASE           Length(ft): 0           Warn Stage(ft): 29
Comment:

Stage(ft)     Area(ac)
26.76         0.01
27            0.12
28            2
29            2.3
--------Class: Node-------------------------------------------------------------
   Name: SW_BASIN   Base Flow(cfs): 0           Init Stage(ft): 26.65
  Group: BASE           Length(ft): 0           Warn Stage(ft): 29
Comment:

Stage(ft)     Area(ac)
```

```
26          1.5
28          2.22
30          3.44
--------Class: Node-------------------------------------------------------------
  Name: VALLEY      Base Flow(cfs): 0          Init Stage(ft): 33.8
 Group: BASE           Length(ft): 0           Warn Stage(ft): 36
Comment:

Stage(ft)     Area(ac)
33.8          0.01
35            0.04
40            0.32
```



```
********** Input Report ********************************************************
--------Class: Pipe-------------------------------------------------------------

          Name: A_C1          From Node: SWALE_A   Length(ft): 118
         Group: BASE            To Node: NW_BASIN       Count: 1

               UPSTREAM       DOWNSTREAM              Equation: Average K
      Geometry: Circular      Circular                    Flow: Both
      Span(in): 24            24            Entrance Loss Coef: 0.5
      Rise(in): 24            24                Exit Loss Coef: 1
    Invert(ft): 25.43         25.93             Bend Loss Coef: 0
   Manning's N: 0.012         0.012         Outlet Cntrl Spec: Use dc or tw
   Top Clip(in): 0            0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0            0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                   1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                   1     1

--------Class: Pipe-------------------------------------------------------------

          Name: B_C1          From Node: SWALE_B   Length(ft): 136
         Group: BASE            To Node: SW_BASIN       Count: 1

               UPSTREAM       DOWNSTREAM              Equation: Average K
      Geometry: Circular      Circular                    Flow: Both
      Span(in): 36            36            Entrance Loss Coef: 0.5
      Rise(in): 36            36                Exit Loss Coef: 1
    Invert(ft): 26.84         26.76             Bend Loss Coef: 0
   Manning's N: 0.012         0.012         Outlet Cntrl Spec: Use dc or tw
   Top Clip(in): 0            0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0            0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                   1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                   1     1
```

```
********** Input Report ************************************************************
--------Class: Pipe------------------------------------------------------------------

         Name: B_C2          From Node: SWALE_B   Length(ft): 136
        Group: BASE            To Node: SW_BASIN        Count: 1

             UPSTREAM        DOWNSTREAM              Equation: Average K
     Geometry: Circular      Circular                    Flow: Both
     Span(in): 36            36           Entrance Loss Coef: 0.5
     Rise(in): 36            36               Exit Loss Coef: 1
   Invert(ft): 26.76         26.72            Bend Loss Coef: 0
  Manning's N: 0.012         0.012         Outlet Cntrl Spec: Use dc or tw
 Top Clip(in): 0             0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0           0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

--------Class: Pipe------------------------------------------------------------------

         Name: I-75_C1       From Node: I-75S     Length(ft): 84
        Group: BASE            To Node: SWALE_B         Count: 1

             UPSTREAM        DOWNSTREAM              Equation: Average K
     Geometry: Circular      Circular                    Flow: Both
     Span(in): 24            24           Entrance Loss Coef: 0.5
     Rise(in): 24            24               Exit Loss Coef: 1
   Invert(ft): 28.1          27.8             Bend Loss Coef: 0
  Manning's N: 0.012         0.012         Outlet Cntrl Spec: Use dc or tw
 Top Clip(in): 0             0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0           0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1


Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [5]
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Gateway Bridge - Existing Conditions Analysis


********** Input Report ************************************************************
--------Class: Pipe------------------------------------------------------------------

         Name: NW_C1         From Node: NW_BASIN  Length(ft): 84
        Group: BASE            To Node: DELANEY         Count: 1

             UPSTREAM        DOWNSTREAM              Equation: Average K
     Geometry: Circular      Circular                    Flow: Both
     Span(in): 30            30           Entrance Loss Coef: 0.5
     Rise(in): 30            30               Exit Loss Coef: 1
   Invert(ft): 25.57         25.28            Bend Loss Coef: 0
  Manning's N: 0.012         0.012         Outlet Cntrl Spec: Use dc or tw
 Top Clip(in): 0             0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0           0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1
```

```
    Downstream FHWA Inlet Edge Description:
    Circular Concrete: Square edge w/ headwall              1     1

--------Class: Pipe--------------------------------------------------------------

          Name: SW_C1        From Node: SW_BASIN  Length(ft): 355
         Group: BASE           To Node: NW_BASIN       Count: 1

                UPSTREAM     DOWNSTREAM            Equation: Average K
      Geometry: Circular     Circular                  Flow: Both
      Span(in): 30           30          Entrance Loss Coef: 0.5
      Rise(in): 30           30              Exit Loss Coef: 1
    Invert(ft): 26.65        25.12           Bend Loss Coef: 0
   Manning's N: 0.012        0.012        Outlet Cntrl Spec: Use dc or tw
  Top Clip(in): 0            0             Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0           0            Stabilizer Option: None


    Upstream FHWA Inlet Edge Description:
    Circular Concrete: Square edge w/ headwall              1     1

    Downstream FHWA Inlet Edge Description:
    Circular Concrete: Square edge w/ headwall              1     1
```

```
Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [6]
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Gateway Bridge - Existing Conditions Analysis


********** Input Report *******************************************************
--------Class: Weir--------------------------------------------------------------
   Name: A_W1              From Node: SWALE_A
  Group: BASE                To Node: DELANEY
  Count: 1

 Type: Mavis    Flow: Both       Geometry: Trapezoidal

     Bottom Width(ft): 10
  Left Side Slope(h/v): 4
 Right Side Slope(h/v): 4
           Invert(ft): 26
     Control Elev(ft): 26
 Structure Opening(ft): 999          TABLE
      Bottom Clip(ft): 0
         Top Clip(ft): 0
   Weir Discharge Coef: 2.7
Orifice Discharge Coef: 0


--------Class: Weir--------------------------------------------------------------
   Name: NW_W1             From Node: NW_BASIN
  Group: BASE                To Node: DELANEY
  Count: 1

 Type: Mavis    Flow: Both       Geometry: Trapezoidal

     Bottom Width(ft): 10
  Left Side Slope(h/v): 4
 Right Side Slope(h/v): 4
           Invert(ft): 28
     Control Elev(ft): 28
 Structure Opening(ft): 999          TABLE
      Bottom Clip(ft): 0
         Top Clip(ft): 0
   Weir Discharge Coef: 2.7
Orifice Discharge Coef: 0
```

```
Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [7]
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Gateway Bridge - Existing Conditions Analysis


********** Input Report ********************************************************
--------Class: Drop Structure----------------------------------------------------
    Name: V_DS1          From Node: VALLEY        Length(ft): 180
   Group: BASE             To Node: NW_BASIN           Count: 1

   Outlet Cntrl Spec: Use dc or tw     Inlet Cntrl Spec: Use dn
   Upstream Geometry: Circular     Downstream Geometry: Circular
                           UPSTREAM                 DOWNSTREAM
              Span(in): 30                    30
              Rise(in): 30                    30
            Invert(ft): 25.72                 25.12
           Manning's N: 0.012                 0.012
          Top Clip(in): 0                     0
       Bottom Clip(in): 0                     0

     Entrance Loss Coef: 0.5                   Flow: Both
         Exit Loss Coef: 1                 Equation: Aver Conveyance

      Upstream FHWA Inlet Edge Description:
      Circular Concrete: Square edge w/ headwall                1     1
      Downstream FHWA Inlet Edge Description:
      Circular Concrete: Square edge w/ headwall                1     1

 *** Weir 1 of 1 for Drop Structure V_DS1 ***                [TABLE]
   Count: 1                   Bottom Clip(in): 0
    Type: Horiz                  Top Clip(in): 0
    Flow: Both             Weir Discharge Coef: 3.2
Geometry: Rectangular  Orifice Discharge Coef: 0.6

         Span(in): 60                       Invert(ft): 33.8
         Rise(in): 66                 Control Elev(ft): 33.8
```

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Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - I-75 BASIN (BASIN A)
EXISTING CONDITIONS

********** Node Maximum Comparisons **********

^(Time units - hours)

Sim Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
*** Node Name: DELANEY		Group: BASE							
A99-24SW	24.00	27.50	27.50	0.0008	71.50	15.29	35.51	0.00	0.00
A99-1DOT	0.00	24.00	27.50	0.0000	5.25	1.00	16.32	0.00	0.00
A99-2DOT	0.00	24.00	27.50	0.0000	5.25	2.00	24.69	0.00	0.00
A99-4DOT	0.00	24.00	27.50	0.0000	5.25	3.38	32.30	0.00	0.00
A99-8DOT	0.00	24.00	27.50	0.0000	5.25	5.33	35.53	0.00	0.00
A99-24DT	24.00	27.50	27.50	0.0008	68.10	15.36	33.87	0.00	0.00
*** Node Name: I-75S		Group: BASE							
A99-24SW	13.14	30.29	33.00	0.0019	23341.58	13.00	15.64	13.06	13.29
A99-1DOT	1.00	30.70	33.00	0.0117	26736.72	0.75	36.37	1.00	15.25
A99-2DOT	1.39	30.90	33.00	0.0107	28362.53	1.00	30.60	1.54	17.13
A99-4DOT	2.77	30.88	33.00	0.0054	28214.82	2.00	22.68	2.81	17.82
A99-8DOT	4.24	31.01	33.00	0.0053	29314.72	4.00	26.46	4.20	18.70
A99-24DT	16.08	29.77	33.00	-0.0011	19137.63	12.00	9.15	12.05	8.44
*** Node Name: NW_BASIN		Group: BASE							
A99-24SW	15.55	28.12	28.00	0.0022	145605.14	12.72	40.20	15.55	20.43
A99-1DOT	1.00	26.63	28.00	0.0059	115531.03	0.75	66.10	1.00	5.01
A99-2DOT	2.00	27.40	28.00	0.0052	131394.36	0.92	56.40	2.00	11.93
A99-4DOT	4.00	27.88	28.00	0.0037	141343.06	2.50	52.82	4.00	16.95
A99-8DOT	6.48	28.11	28.00	0.0042	145439.69	4.00	61.56	6.48	20.15
A99-24DT	16.03	28.07	28.00	0.0012	144899.79	11.76	26.74	16.03	19.28
*** Node Name: SW_BASIN		Group: BASE							
A99-24SW	15.74	29.94	29.00	0.0025	148331.01	13.00	56.01	15.82	25.67
A99-1DOT	1.00	27.93	29.00	0.0071	96497.11	0.75	65.60	1.00	7.72
A99-2DOT	2.00	29.10	29.00	0.0063	126496.84	1.02	62.69	2.00	25.24
A99-4DOT	4.00	29.80	29.00	0.0051	144555.22	2.57	70.83	3.90	26.36
A99-8DOT	6.02	30.12	29.00	0.0051	153109.46	4.00	79.60	5.80	27.06
A99-24DT	16.31	29.64	29.00	0.0012	140351.11	12.00	36.50	16.61	23.82
*** Node Name: SWALE_A		Group: BASE							
A99-24SW	24.00	27.50	28.00	0.0008	27900.12	13.00	6.25	13.11	5.82
A99-1DOT	1.00	26.51	28.00	0.0038	11552.37	0.75	10.05	1.00	9.09
A99-2DOT	1.37	26.55	28.00	0.0028	12275.72	1.00	10.82	1.14	9.35
A99-4DOT	3.20	26.65	28.00	0.0020	14012.58	2.50	8.61	2.53	7.69
A99-8DOT	4.42	26.68	28.00	0.0019	14531.19	4.00	9.67	4.22	8.50
A99-24DT	24.00	27.51	28.00	0.0008	28126.71	12.00	3.69	12.10	3.50
*** Node Name: SWALE_B		Group: BASE							
A99-24SW	15.47	30.01	29.00	0.0024	113423.18	13.00	58.58	13.21	34.07
A99-1DOT	1.00	28.78	29.00	0.0112	97734.75	0.75	90.41	1.00	25.84
A99-2DOT	2.00	29.51	29.00	0.0076	107161.17	1.00	92.71	1.70	45.01
A99-4DOT	3.70	29.93	29.00	0.0050	112405.19	2.50	77.10	2.90	46.54
A99-8DOT	5.50	30.23	29.00	0.0046	116235.10	4.00	88.90	4.34	47.5[illegible]

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A99-24DT	16.22	29.69	29.00	0.0012	109434.70	12.00	34.97	12.22	23.76

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

GATEWAY BRIDGE - I-75 BASIN (BASIN A)
EXISTING CONDITIONS

********** Node Maximum Comparisons **

^(Time units - hours)

Sim Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
*** Node Name: VALLEY		Group: BASE							
A99-24SW	13.00	33.96	36.00	-0.0003	614.78	13.00	4.49	13.00	4.48
A99-1DOT	0.75	34.07	36.00	-0.0380	728.82	0.75	9.42	0.75	9.39
A99-2DOT	1.00	34.07	36.00	-0.0296	727.57	1.00	9.35	1.00	9.33
A99-4DOT	2.50	34.04	36.00	-0.0174	692.63	2.50	7.71	2.50	7.71
A99-8DOT	4.00	34.06	36.00	-0.0087	723.17	4.00	9.13	4.00	9.12
A99-24DT	12.00	33.94	36.00	-0.0041	586.49	12.00	3.47	12.00	3.47

11.750	29.61	0.41	0.00	9.91	0.00	0.00	0.00	7.40	1.4407	1.0894
12.000	29.72	0.43	0.00	10.28	0.00	0.00	0.00	8.22	1.6493	1.2507
12.250	29.86	0.46	0.00	12.91	0.00	0.00	0.00	9.22	1.8888	1.4308
12.500	30.03	0.49	0.00	14.56	0.00	0.00	0.00	10.85	2.1727	1.6381
12.750	30.16	0.51	0.00	15.29	0.00	0.00	0.00	12.32	2.4811	1.8774
13.000	30.27	0.53	0.00	15.63	0.00	0.00	0.00	13.23	2.8005	2.1414
13.250	30.28	0.53	0.00	11.36	0.00	0.00	0.00	12.73	3.0793	2.4096
13.500	30.21	0.52	0.00	8.73	0.00	0.00	0.00	10.98	3.2869	2.6545

GATEWAY BRIDGE - I-75 BASIN (BASIN A)
EXISTING CONDITIONS

********** Node Time Series by Node - A99-24SW ************

Time (hrs)	Stage (ft)	Surface Ar.(ac)	Inflow: Base Q (cfs)	Inflow: Onsite (cfs)	Inflow: Offsite (cfs)	Inflow: Bndry Q (cfs)	Inflow: Link Q (cfs)	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
13.750	30.14	0.51	0.00	7.72	0.00	0.00	0.00	9.07	3.4568	2.8616
14.000	30.10	0.50	0.00	7.31	0.00	0.00	0.00	7.69	3.6120	3.0348
14.250	30.09	0.50	0.00	6.64	0.00	0.00	0.00	6.75	3.7562	3.1840
14.750	30.09	0.50	0.00	5.84	0.00	0.00	0.00	5.62	4.0140	3.4396
15.250	30.11	0.50	0.00	5.15	0.00	0.00	0.00	5.20	4.2411	3.6632
15.750	30.09	0.50	0.00	4.47	0.00	0.00	0.00	4.68	4.4399	3.8674
16.250	30.07	0.49	0.00	3.90	0.00	0.00	0.00	4.40	4.6129	4.0551
16.750	30.01	0.48	0.00	3.35	0.00	0.00	0.00	3.96	4.7626	4.2279
17.250	29.96	0.47	0.00	2.94	0.00	0.00	0.00	3.73	4.8924	4.3868
17.750	29.88	0.46	0.00	2.55	0.00	0.00	0.00	3.40	5.0058	4.5341
18.250	29.80	0.44	0.00	2.16	0.00	0.00	0.00	3.19	5.1031	4.6702
18.750	29.70	0.43	0.00	1.75	0.00	0.00	0.00	2.79	5.1839	4.7937
19.250	29.59	0.41	0.00	1.40	0.00	0.00	0.00	2.54	5.2489	4.9039
19.750	29.47	0.39	0.00	1.05	0.00	0.00	0.00	2.19	5.2995	5.0017
20.250	29.34	0.36	0.00	0.83	0.00	0.00	0.00	1.98	5.3384	5.0879
20.750	29.21	0.34	0.00	0.64	0.00	0.00	0.00	1.74	5.3687	5.1648
21.250	29.07	0.31	0.00	0.45	0.00	0.00	0.00	1.57	5.3913	5.2330
21.750	28.92	0.28	0.00	0.27	0.00	0.00	0.00	1.29	5.4063	5.2919
22.250	28.77	0.23	0.00	0.20	0.00	0.00	0.00	1.05	5.4161	5.3401
22.750	28.61	0.18	0.00	0.15	0.00	0.00	0.00	0.81	5.4235	5.3785
23.250	28.46	0.13	0.00	0.12	0.00	0.00	0.00	0.54	5.4291	5.4064
23.750	28.35	0.09	0.00	0.08	0.00	0.00	0.00	0.30	5.4331	5.4237
24.002	28.32	0.08	0.00	0.00	0.00	0.00	0.00	0.13	5.4339	5.4282

*** Group: BASE Node: NW_BASIN

0.000	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
0.500	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.000	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.500	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
2.000	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
2.500	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.000	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.500	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
4.000	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.000(

4.500	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
5.000	25.57	2.16	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
5.500	25.57	2.16	0.00	0.06	0.00	0.00	0.00	0.00	0.0013	0.0000
6.000	25.57	2.16	0.00	0.24	0.00	0.00	0.00	0.00	0.0075	0.0000
6.500	25.58	2.17	0.00	0.71	0.00	0.00	0.00	0.00	0.0273	0.0000
7.000	25.60	2.17	0.00	1.06	0.00	0.00	0.04	0.00	0.0649	0.0001
7.500	25.63	2.19	0.00	1.76	0.00	0.00	0.09	0.02	0.1258	0.0006
8.000	25.67	2.20	0.00	2.13	0.00	0.00	0.25	0.06	0.2131	0.0021
8.500	25.72	2.22	0.00	3.42	0.00	0.00	0.59	0.14	0.3451	0.0060
9.000	25.80	2.26	0.00	3.89	0.00	0.00	1.16	0.34	0.5322	0.0159
9.500	25.91	2.30	0.00	5.15	0.00	0.00	2.16	0.62	0.7875	0.0356
10.000	26.04	2.36	0.00	5.55	0.00	0.00	3.59	1.16	1.1273	0.0723
10.500	26.20	2.44	0.00	7.38	0.00	0.00	5.52	2.08	1.5826	0.1391

GATEWAY BRIDGE - I-75 BASIN (BASIN A)
EXISTING CONDITIONS

********** Node Time Series by Node - A99-24SW ***

			|<---	---Inflow---	---	--->|				
Time (hrs)	Stage (ft)	Surface Ar.(ac)	Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
10.750	26.30	2.49	0.00	7.67	0.00	0.00	6.57	2.65	1.8630	0.1878
11.000	26.39	2.53	0.00	7.82	0.00	0.00	7.59	3.27	2.1693	0.2490
11.250	26.51	2.59	0.00	11.42	0.00	0.00	8.76	4.07	2.5369	0.3248
11.500	26.64	2.66	0.00	13.15	0.00	0.00	10.21	5.08	2.9867	0.4194
11.750	26.79	2.73	0.00	13.83	0.00	0.00	11.51	6.25	3.4898	0.5364
12.000	26.93	2.80	0.00	14.10	0.00	0.00	18.42	7.51	4.0875	0.6785
12.250	27.13	2.89	0.00	18.16	0.00	0.00	19.26	9.29	4.8100	0.8520
12.500	27.33	2.98	0.00	20.09	0.00	0.00	19.76	11.24	5.6082	1.0641
12.750	27.52	3.07	0.00	20.81	0.00	0.00	19.38	13.18	6.4350	1.3163
13.000	27.68	3.15	0.00	21.05	0.00	0.00	17.76	14.92	7.2511	1.6065
13.250	27.81	3.21	0.00	14.10	0.00	0.00	17.06	16.24	7.9740	1.9284
13.500	27.89	3.25	0.00	10.94	0.00	0.00	16.52	17.07	8.5797	2.2724
13.750	27.95	3.28	0.00	9.88	0.00	0.00	16.22	17.68	9.1331	2.6314
14.000	28.00	3.30	0.00	9.61	0.00	0.00	15.89	18.17	9.6662	3.0017
14.250	28.04	3.32	0.00	8.71	0.00	0.00	15.52	18.77	10.1798	3.3832
14.750	28.09	3.33	0.00	7.69	0.00	0.00	14.99	19.70	11.1488	4.1779
15.250	28.12	3.34	0.00	6.77	0.00	0.00	14.64	20.34	12.0598	5.0051
15.750	28.12	3.34	0.00	5.87	0.00	0.00	14.43	20.42	12.9217	5.8472
16.250	28.11	3.34	0.00	5.12	0.00	0.00	14.25	20.30	13.7413	6.6885
16.750	28.10	3.34	0.00	4.38	0.00	0.00	14.07	19.88	14.5228	7.5187
17.250	28.08	3.33	0.00	3.85	0.00	0.00	13.87	19.46	15.2702	8.3316
17.750	28.05	3.32	0.00	3.35	0.00	0.00	13.62	19.00	15.9868	9.1261
18.250	28.03	3.31	0.00	2.82	0.00	0.00	13.34	18.57	16.6713	9.9023
18.750	27.99	3.30	0.00	2.28	0.00	0.00	13.03	18.12	17.3215	10.6605
19.250	27.96	3.28	0.00	1.81	0.00	0.00	12.69	17.75	17.9376	11.4018
19.750	27.91	3.26	0.00	1.36	0.00	0.00	12.24	17.30	18.5184	12.1261
20.250	27.87	3.24	0.00	1.08	0.00	0.00	11.80	16.80	19.0655	12.8307
20.750	27.81	3.21	0.00	0.83	0.00	0.00	11.07	16.26	19.5775	13.5137
21.250	27.76	3.19	0.00	0.58	0.00	0.00	10.71	16.25	20.0567	14.185[illegible]

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21.750	27.68	3.15	0.00	0.34	0.00	0.00	10.18	16.35	20.5076	14.8589
22.250	27.61	3.12	0.00	0.26	0.00	0.00	10.11	15.65	20.9394	15.5200
22.750	27.55	3.09	0.00	0.20	0.00	0.00	10.41	14.12	21.3729	16.1350
23.250	27.50	3.07	0.00	0.15	0.00	0.00	6.33	11.23	21.7259	16.6586
23.750	27.48	3.06	0.00	0.10	0.00	0.00	8.52	6.12	22.0379	17.0171
24.002	27.51	3.08	0.00	0.00	0.00	0.00	9.60	3.14	22.2271	17.1133

*** Group: BASE Node: SW_BASIN

0.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
0.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
2.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
2.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
4.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
4.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000

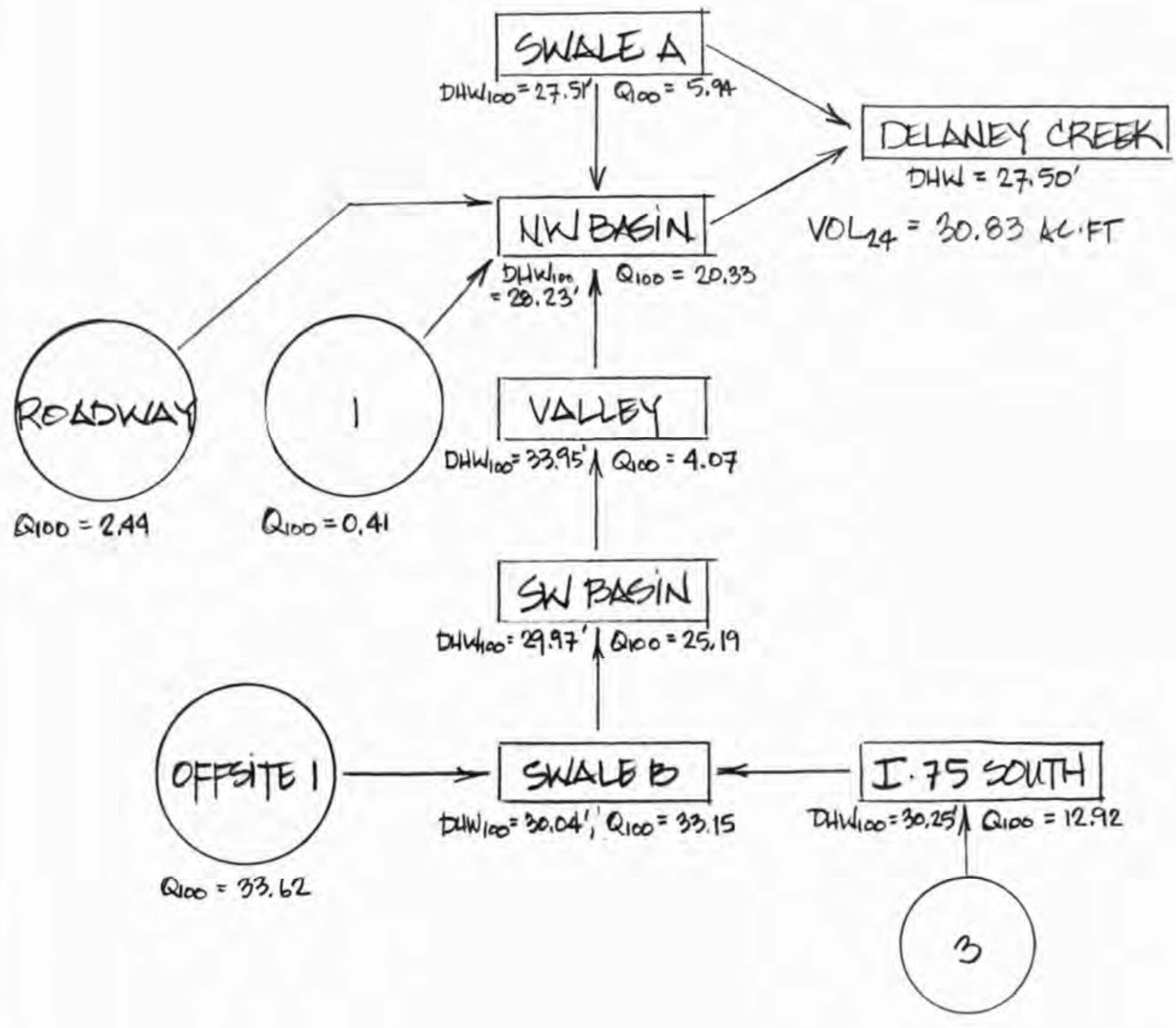
GATEWAY BRIDGE - I-75 BASIN (BASIN A)
EXISTING CONDITIONS

********** Node Time Series by Node - A99-24SW **

Time (hrs)	Stage (ft)	Surface Ar.(ac)	Inflow: Base Q (cfs)	Inflow: Onsite (cfs)	Inflow: Offsite (cfs)	Inflow: Bndry Q (cfs)	Inflow: Link Q (cfs)	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
5.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
5.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
6.000	26.65	1.74	0.00	0.02	0.00	0.00	0.00	0.00	0.0004	0.0000
6.500	26.65	1.74	0.00	0.33	0.00	0.00	0.04	0.00	0.0084	0.0000
7.000	26.67	1.75	0.00	0.68	0.00	0.00	0.31	0.00	0.0364	0.0000
7.500	26.71	1.76	0.00	1.32	0.00	0.00	0.77	0.00	0.0999	0.0000
8.000	26.77	1.79	0.00	1.74	0.00	0.00	1.44	0.08	0.2088	0.0017
8.500	26.86	1.82	0.00	3.01	0.00	0.00	2.46	0.25	0.3877	0.0085
9.000	26.99	1.87	0.00	3.58	0.00	0.00	3.82	0.65	0.6536	0.0271
9.500	27.17	1.94	0.00	4.93	0.00	0.00	5.47	1.41	1.0214	0.0698
10.000	27.37	2.01	0.00	5.45	0.00	0.00	7.57	2.65	1.5052	0.1538
10.500	27.61	2.10	0.00	7.44	0.00	0.00	10.44	4.57	2.1436	0.3032
10.750	27.74	2.15	0.00	7.79	0.00	0.00	11.61	5.78	2.5288	0.4101
11.000	27.87	2.19	0.00	8.02	0.00	0.00	12.47	7.06	2.9409	0.5428
11.250	28.01	2.25	0.00	11.95	0.00	0.00	13.30	8.55	3.4136	0.7042
11.500	28.17	2.34	0.00	13.80	0.00	0.00	14.82	10.30	3.9701	0.8989
11.750	28.33	2.44	0.00	14.56	0.00	0.00	17.08	12.21	4.5926	1.1315
12.000	28.49	2.54	0.00	14.91	0.00	0.00	19.59	19.94	5.2758	1.4636
12.250	28.63	2.62	0.00	19.49	0.00	0.00	23.31	21.75	6.0744	1.8943
12.500	28.81	2.73	0.00	21.58	0.00	0.00	27.15	23.34	7.0199	2.3601
12.750	29.01	2.85	0.00	22.39	0.00	0.00	30.87	24.23	8.0736	2.8515
13.000	29.23	2.98	0.00	22.66	0.00	0.00	33.35	23.66	9.2024	3.3463
13.250	29.43	3.10	0.00	14.90	0.00	0.00	34.05	24.19	10.2867	3.8406
13.500	29.57	3.18	0.00	11.62	0.00	0.00	31.91	24.67	11.2422	4.345[illegible]

GATEWAY BRIDGE   I-75 BASIN   MODELING SCHEMATIC

PROPOSED CONDITIONS



STORAGE BASINS (NODES)

RUNOFF BASINS

1 BRIDGE BASIN DRAINING TO PIER 1

3 " " " " " 3

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - I -75 Basin A

Basin ID: Swale A

Basin Area (ac): 3.06

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	1.22
Pervious	D	80.0	1.84
Weighted CN:		87.2	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	2000.0
Avg Slope (%) =	0.10%
Velocity (fpm) =	66.0
Tc (min) =	30.3

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
25.60	0.03	0.00	NWL
26.00	0.06	0.02	
27.00	0.46	0.28	
28.00	0.82	0.92	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: 118'~24" RCP, U/S inv = 25.43', D/S inv=25.93', to NW Basin

Outfall 2: Popoff @ elev. 26.0 via BCW, 5', 4:1 SS, to Delaney Creek

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - I -75 Basin A

Basin ID: NW Basin

Basin Area (ac): 9.48

Curve Number:

Land Use	Soils	CN	Area (ac)	
Wetlands	n/a	98.0	4.13	(OSW-A)
Impervious	n/a	98.0	0.78	
Pervious	D	80.0	4.57	
Weighted CN:		89.3		

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	700.0
Avg Slope (%) =	5.30%
Velocity (fpm) =	56.0
Tc (min) =	12.5

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
25.00	1.92	0.00	NWL
26.00	2.33	2.13	
28.00	3.30	7.76	
30.00	3.98	15.04	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a 25.96 ft

Outfall 1: 84'-30" RCP, U/S inv = 25.57', D/S inv = 25.28', to Delaney Creel

Outfall 2: Control Berm, Crest Elev. = 28.0', Length=10', 4:1 Side Slopes

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - I -75 Basin

Basin ID: I-75 South (Less Gateway Bridge Segments 2A, 2B, 3A)

Basin Area (ac): 7.04

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	2.31
Pervious	D	80.0	4.73
Weighted CN:		85.9	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	1000.0
Avg Slope (%) =	0.05%
Velocity (fpm) =	66.0
Tc (min) =	15.2

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
28.10	0.01	0.00	NWL
29.00	0.30	0.14	
30.00	0.48	0.53	
31.00	0.67	1.10	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: 84LF~24" RCP, U/S inv=28.1, D/S inv=27.8, to Swale B

Outfall 2:

Brandon Parkway Project

Gateway Bridge - Drainage Analysis

BASIN DATA SHEET

Description: Proposed Conditions - I-75 Basin A

Basin ID: Swale B

Basin Area (ac): 5.74

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	2.18
Pervious	D	80.0	3.56
Weighted CN:		86.8	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	1900.0
Avg Slope (%) =	0.03%
Velocity (fpm) =	66.0
Tc (min) =	28.8

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
26.76	0.01	0.00	NWL
27.00	0.12	0.02	
28.00	2.00	1.08	
29.00	2.30	3.23	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: 136 LF~ dual 36" RCP's, U/S inv's=26.84' & 26.76', D/S inv's= 26.79' & 26.72', to SW Basin

Outfall 2:

Brandon Parkway Project

Gateway Bridge - Drainage Analysis

BASIN DATA SHEET

Description: Proposed Conditions - I-75 Basin A

Basin ID: Offsite 1 (Node Swale B)

Basin Area (ac): 16.7

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.00
Pervious	D	80.0	16.70
Weighted CN:		80.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	650.0
Avg Slope (%) =	0.15%
Velocity (fpm) =	31.0
Tc (min) =	21.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: Sheet Flow to Swale B

Outfall 2:

651

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - I-75 Basin A

Basin ID: SW Basin

Basin Area (ac): 10.46

Curve Number:

Land Use	Soils	CN	Area (ac)	
Wetlands	n/a	98.0	1.50	(OSW-B)
Impervious	n/a	98.0	1.54	
Pervious	D	80.0	7.42	
Weighted CN:		85.2		

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	650.0
Avg Slope (%) =	4.75%
Velocity (fpm) =	55.0
Tc (min) =	11.8

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
26.00	1.50	0.00	NWL
28.00	2.22	3.72	
30.00	3.44	9.38	
31.00	3.62	12.91	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: 355 LF ~ 30" RCP, U/S inv=26.65', D/S inv=25.12', to NW Basir

Outfall 2:

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - I-75 Basin A

Basin ID: Valley (Less Gateway Bridge Segment 1, Brandon Parkway Roadway Segment)

Basin Area (ac): 1.43

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.00
Pervious	D	80.0	1.43
Weighted CN:		80.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	1400.0
Avg Slope (%) =	1.57%
Velocity (fpm) =	41.0
Tc (min) =	34.1

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
33.80	0.01	0.00	NWL
~~34.00~~	~~0.02~~	~~0.00~~	
35.00	0.02	0.03	
40.00	0.25	0.73	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: Type B DBI, grate = 33.8', 180 LF ~ 30" RCP, U/S inv= 25.72', D/S inv=25.12', to NW Basin

Outfall 2:

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - I-75 Basin A (Station 998+24.11 to 1006+00.00)

Basin ID: Roadway (Brandon Parkway "Roadway" Segment, Node Valley

Basin Area (ac): 1.07

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	1.07
Pervious	D	80.0	0.00
Weighted CN:		98.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	775.0	
Avg Slope (%) =	1.57%	
Velocity (fpm) =	84.0	
Tc (min) =	9.23	>>>Use 10 Minutes

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1:

Outfall 2:

Brandon Parkway Project
Gateway Bridge - Drainage Analysis
BASIN DATA SHEET

Description: Proposed Conditions - Begin Project to Pier 2 (Sta 1006+00.00 to 1010+51.37)

Basin ID: 1 (Includes Gateway Bridge Segments 1 and 2)

Basin Area (ac): 0.62

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.62
Pervious	D	80.0	0.00
Weighted CN:		98.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	450.0	
Avg Slope (%) =	0.00%	
Velocity (fpm) =	120.0	
Tc (min) =	3.8	>>>use 10 minutes

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft
Design Low Water: n/a ft

Outfall 1: Valley between Ramp C and Loop D, drain via storm sewer to NW Basin

Outfall 2:

Brandon Parkway Project

Gateway Bridge - Drainage Analysis

BASIN DATA SHEET

Description: Proposed Conditions - Pier 1 to Pier 3 (Sta 1010+98.22 to 1012+27.03)

Basin ID: 3 (Gateway Bridge Segment, Node I-75 South)

Basin Area (ac): 0.18

Curve Number:

Land Use	Soils	CN	Area (ac)
Wetlands	n/a	98.0	0.00
Impervious	n/a	98.0	0.18
Pervious	D	80.0	0.00
Weighted CN:		98.0	

Curve numbers obtained from Chapter 2, "Estimating Runoff" of the SCS Technical Release 55.

Time of Concentration:

Flow Length (ft) =	190.0	
Avg Slope (%) =	0.30%	
Velocity (fpm) =	84.0	(See Bridge Drainage Calcs)
Tc (min) =	2.3	

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Lag Time:

Flow Length (ft) =	0.0
Avg Slope (%) =	0.00%
Velocity (fpm) =	0.0
Tc (min) =	0.0

Velocities obtained from the Overland Flow Velocities Chart, Figure 5-19 or Average Velocities for Small Channel Flow, Figure 5-20, of the FDOT Drainage Manual.

Storage Available:

Stage (ft)	Area (ac)	Storage (acft)	
0.00	0.00	0.00	NWL
0.00	0.00	0.00	
0.00	0.00	0.00	
0.00	0.00	0.00	TOB

Water Quality Volume: n/a acft

Design Low Water: n/a ft

Outfall 1: Swale I-75 South

Outfall 2:

fl Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-24SW ***
(SWFWMD)

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	DELANEY	DELANEY	DELANEY	DELANEY	DELANEY
Rainfall Amount (in):	10.75	10.75	10.75	10.75	10.75
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	13.06	13.00	13.00	13.06	13.02
Flow Max (cfs):	6.28	21.07	15.25	11.82	33.62
Runoff Volume (in):	9.17	9.44	9.01	9.12	8.24
Runoff Volume (cf):	101891	324814	230184	190074	499737

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	3
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	NW_BASIN	VALLEY	SW_BASIN
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Comp Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Rainfall File:	DELANEY	DELANEY	DELANEY	DELANEY	DELANEY
Rainfall Amount (in):	10.75	10.75	10.75	10.75	10.75
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.62	0.18
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00

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Time Max (hrs):	12.98	13.11	13.00	13.00	13.00
Flow Max (cfs):	22.68	2.69	2.44	1.41	0.41

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-24SW **

Runoff Volume (in):	8.92	8.24	10.51	10.51	10.51
Runoff Volume (cf):	338609	42790	40835	23662	6870

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-1DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-1	FDOT-1	FDOT-1	FDOT-1	FDOT-1
Rainfall Amount (in):	4.50	4.50	4.50	4.50	4.50
Storm Duration (hr):	1.00	1.00	1.00	1.00	1.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	0.88	0.67	0.71	0.83	0.79
Flow Max (cfs):	11.11	56.75	35.48	21.23	60.42
Runoff Volume (in):	3.11	3.33	2.99	3.07	2.46
Runoff Volume (cf):	34518	114476	76431	64022	149053

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	3
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	NW_BASIN	VALLEY	SW_BASIN

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Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Comp Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Rainfall File:	FDOT-1	FDOT-1	FDOT-1	FDOT-1	FDOT-1
Rainfall Amount (in):	4.50	4.50	4.50	4.50	4.50
Storm Duration (hr):	1.00	1.00	1.00	1.00	1.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.62	0.18
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	0.68	0.91	0.62	0.62	0.62
Flow Max (cfs):	57.34	3.85	8.32	4.82	1.40

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-1DOT **

Runoff Volume (in):	2.93	2.46	4.27	4.27	4.27
Runoff Volume (cf):	111189	12768	16569	9601	2787

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-2DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-2	FDOT-2	FDOT-2	FDOT-2	FDOT-2
Rainfall Amount (in):	5.92	5.92	5.92	5.92	5.92
Storm Duration (hr):	2.00	2.00	2.00	2.00	2.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE

659

Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	1.01	0.86	0.88	1.02	0.93
Flow Max (cfs):	10.89	52.74	33.88	20.74	59.60
Runoff Volume (in):	4.44	4.69	4.32	4.41	3.69
Runoff Volume (cf):	49289	161493	110414	91929	223655

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	3
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	NW_BASIN	VALLEY	SW_BASIN
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Comp Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Rainfall File:	FDOT-2	FDOT-2	FDOT-2	FDOT-2	FDOT-2
Rainfall Amount (in):	5.92	5.92	5.92	5.92	5.92
Storm Duration (hr):	2.00	2.00	2.00	2.00	2.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.62	0.18
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	0.84	1.06	0.82	0.82	0.82
Flow Max (cfs):	54.43	3.91	7.14	4.14	1.20

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-2DOT ***

Runoff Volume (in):	4.25	3.69	5.68	5.68	5.68
Runoff Volume (cf):	161225	19180	22079	12793	3714

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-4DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-4	FDOT-4	FDOT-4	FDOT-4	FDOT-4
Rainfall Amount (in):	7.32	7.32	7.32	7.32	7.32
Storm Duration (hr):	4.00	4.00	4.00	4.00	4.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	2.56	2.06	2.09	2.56	2.52
Flow Max (cfs):	8.63	32.41	22.21	16.27	44.94
Runoff Volume (in):	5.81	6.06	5.66	5.76	4.98
Runoff Volume (cf):	64502	208476	144662	120004	302115

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	3
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	NW_BASIN	VALLEY	SW_BASIN
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Comp Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Rainfall File:	FDOT-4	FDOT-4	FDOT-4	FDOT-4	FDOT-4
Rainfall Amount (in):	7.32	7.32	7.32	7.32	7.32
Storm Duration (hr):	4.00	4.00	4.00	4.00	4.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.62	0.18
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	2.05	2.65	2.02	2.02	2.02
Flow Max (cfs):	33.82	3.49	4.02	2.33	0.68

BASIN A

********** Basin Summary - A99-4DOT **

Runoff Volume (in):	5.58	4.98	7.08	7.08	7.08
Runoff Volume (cf):	211884	25833	27514	15943	4628

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-8DOT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-8	FDOT-8	FDOT-8	FDOT-8	FDOT-8
Rainfall Amount (in):	9.20	9.20	9.20	9.20	9.20
Storm Duration (hr):	8.00	8.00	8.00	8.00	8.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	4.11	4.00	4.02	4.10	4.06
Flow Max (cfs):	9.82	35.59	25.38	18.60	53.63
Runoff Volume (in):	7.63	7.91	7.48	7.60	6.76
Runoff Volume (cf):	84805	272094	191206	158363	409535

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	3
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	NW_BASIN	VALLEY	SW_BASIN
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Comp Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Rainfall File:	FDOT-8	FDOT-8	FDOT-8	FDOT-8	FDOT-8
Rainfall Amount (in):	9.20	9.20	9.20	9.20	9.2(

Storm Duration (hr):	8.00	8.00	8.00	8.00	8.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.62	0.18
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	3.99	4.17	4.00	4.00	4.00
Flow Max (cfs):	38.04	4.02	4.17	2.41	0.70

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-8DOT **

Runoff Volume (in):	7.40	6.75	8.96	8.96	8.96
Runoff Volume (cf):	281090	35036	34815	20173	5857

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-24DT **

***

Basin Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	OFFSITE1
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SWALE_A	NW_BASIN	I-75S	SWALE_B	SWALE_B
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Comp Time Inc (min):	4.04	1.67	2.03	3.84	2.80
Rainfall File:	FDOT-24	FDOT-24	FDOT-24	FDOT-24	FDOT-24
Rainfall Amount (in):	12.96	12.96	12.96	12.96	12.96
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	30.30	12.50	15.20	28.80	21.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	3.06	9.48	7.04	5.74	16.70
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	87.20	89.30	85.90	86.80	80.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	12.05	12.00	11.99	12.03	12.04

Flow Max (cfs):	3.70	12.08	8.77	6.95	19.62
Runoff Volume (in):	11.35	11.63	11.18	11.30	10.38
Runoff Volume (cf):	126096	400225	285746	235513	629276

***

Basin Name:	SW_BASIN	VALLEY	ROADWAY	1	3
Group Name:	BASE	BASE	BASE	BASE	BASE
Node Name:	SW_BASIN	VALLEY	NW_BASIN	VALLEY	SW_BASIN
Hydrograph Type:	UH	UH	UH	UH	UH
Unit Hydrograph:	UH323	UH323	UH323	UH323	UH323
Peaking Factor:	323.00	323.00	323.00	323.00	323.00
Spec Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Comp Time Inc (min):	1.57	4.55	1.33	1.33	1.33
Rainfall File:	FDOT-24	FDOT-24	FDOT-24	FDOT-24	FDOT-24
Rainfall Amount (in):	12.96	12.96	12.96	12.96	12.96
Storm Duration (hr):	24.00	24.00	24.00	24.00	24.00
Status:	ONSITE	ONSITE	ONSITE	ONSITE	ONSITE
Time of Conc. (min):	11.80	34.10	10.00	10.00	10.00
Lag Time (hr):	0.00	0.00	0.00	0.00	0.00
Area (acres):	10.46	1.43	1.07	0.62	0.18
Vol of Unit Hyd (in):	1.00	1.00	1.00	1.00	1.00
Curve Number:	85.20	80.00	98.00	98.00	98.00
DCIA (%):	0.00	0.00	0.00	0.00	0.00
Time Max (hrs):	11.98	12.12	12.00	12.00	12.00
Flow Max (cfs):	13.03	1.61	1.40	0.81	0.23

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Basin Summary - A99-24DT **

Runoff Volume (in):	11.09	10.38	12.72	12.72	12.72
Runoff Volume (cf):	421072	53857	49420	28636	8314

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fl    Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]
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     Gateway Bridge - Proposed Conditions Analysis
     Basin A

     ********** Input Report ********************************************************
     --------Class: Node-------------------------------------------------------------
        Name: DELANEY    Base Flow(cfs): 0          Init Stage(ft): 24
       Group: BASE          Length(ft): 0          Warn Stage(ft): 27.5
     Comment:

     Time(hrs)     Stage(ft)
     0             24
     12            24
     24            27.5
     40            26.5
     48            26
     --------Class: Node-------------------------------------------------------------
        Name: I-75S      Base Flow(cfs): 0          Init Stage(ft): 28.1
       Group: BASE          Length(ft): 0          Warn Stage(ft): 33
     Comment:

     Stage(ft)     Area(ac)
     28.1          0.01
     29            0.3
     30            0.48
     31            0.67
     --------Class: Node-------------------------------------------------------------
        Name: NW_BASIN   Base Flow(cfs): 0          Init Stage(ft): 25.96
       Group: BASE          Length(ft): 0          Warn Stage(ft): 28
     Comment:

     Stage(ft)     Area(ac)
     25            1.92
     26            2.33
     28            3.3
     30            3.98
     --------Class: Node-------------------------------------------------------------
        Name: SWALE_A    Base Flow(cfs): 0          Init Stage(ft): 25.93
       Group: BASE          Length(ft): 0          Warn Stage(ft): 28
     Comment:

     Stage(ft)     Area(ac)
     25.6          0.03
     26            0.06
     27            0.46
     28            0.82

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     Gateway Bridge - Proposed Conditions Analysis
     Basin A

     ********** Input Report ********************************************************
```

```
--------Class: Node------------------------------------------------------------
  Name: SWALE_B     Base Flow(cfs): 0          Init Stage(ft): 26.76
 Group: BASE            Length(ft): 0          Warn Stage(ft): 29
Comment:

Stage(ft)     Area(ac)
26.76         0.01
27            0.12
28            2
29            2.3
--------Class: Node------------------------------------------------------------
  Name: SW_BASIN    Base Flow(cfs): 0          Init Stage(ft): 26.65
 Group: BASE            Length(ft): 0          Warn Stage(ft): 29
Comment:

Stage(ft)     Area(ac)
26            1.5
28            2.22
30            3.44
--------Class: Node------------------------------------------------------------
  Name: VALLEY      Base Flow(cfs): 0          Init Stage(ft): 33.8
 Group: BASE            Length(ft): 0          Warn Stage(ft): 36
Comment:

Stage(ft)     Area(ac)
33.8          0.01
35            0.02
40            0.25


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Gateway Bridge - Proposed Conditions Analysis
Basin A


********** Input Report ********************************************************
--------Class: Pipe------------------------------------------------------------

        Name: A_C1         From Node: SWALE_A    Length(ft): 118
       Group: BASE           To Node: NW_BASIN        Count: 1

             UPSTREAM      DOWNSTREAM             Equation: Average K
    Geometry: Circular     Circular                   Flow: Both
    Span(in): 24           24           Entrance Loss Coef: 0.5
    Rise(in): 24           24               Exit Loss Coef: 1
  Invert(ft): 25.43        25.93            Bend Loss Coef: 0
 Manning's N: 0.012        0.012         Outlet Cntrl Spec: Use dc or tw
 Top Clip(in): 0           0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0         0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                  1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                  1     1
```

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```
--------Class: Pipe--------------------------------------------------------------

          Name: B_C1         From Node: SWALE_B   Length(ft): 136
         Group: BASE           To Node: SW_BASIN       Count: 1

              UPSTREAM       DOWNSTREAM            Equation: Average K
      Geometry: Circular     Circular                  Flow: Both
      Span(in): 36           36          Entrance Loss Coef: 0.5
      Rise(in): 36           36              Exit Loss Coef: 1
    Invert(ft): 26.84        26.76           Bend Loss Coef: 0
   Manning's N: 0.012        0.012        Outlet Cntrl Spec: Use dc or tw
  Top Clip(in): 0            0             Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0           0            Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall               1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall               1     1


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Gateway Bridge - Proposed Conditions Analysis
Basin A

********** Input Report ********************************************************
--------Class: Pipe--------------------------------------------------------------

          Name: B_C2         From Node: SWALE_B   Length(ft): 136
         Group: BASE           To Node: SW_BASIN       Count: 1

              UPSTREAM       DOWNSTREAM            Equation: Average K
      Geometry: Circular     Circular                  Flow: Both
      Span(in): 36           36          Entrance Loss Coef: 0.5
      Rise(in): 36           36              Exit Loss Coef: 1
    Invert(ft): 26.76        26.72           Bend Loss Coef: 0
   Manning's N: 0.012        0.012        Outlet Cntrl Spec: Use dc or tw
  Top Clip(in): 0            0             Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0           0            Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall               1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall               1     1

--------Class: Pipe--------------------------------------------------------------
```

```
         Name: I-75_C1      From Node: I-75S     Length(ft): 84
        Group: BASE           To Node: SWALE_B        Count: 1

               UPSTREAM     DOWNSTREAM             Equation: Average K
     Geometry: Circular     Circular                   Flow: Both
     Span(in): 24           24           Entrance Loss Coef: 0.5
     Rise(in): 24           24               Exit Loss Coef: 1
   Invert(ft): 28.1         27.8             Bend Loss Coef: 0
  Manning's N: 0.012        0.012         Outlet Cntrl Spec: Use dc or tw
 Top Clip(in): 0            0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0          0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1
```


Gateway Bridge - Proposed Conditions Analysis
Basin A

```
********** Input Report ************************************************************
--------Class: Pipe------------------------------------------------------------------

         Name: SW_C1        From Node: SW_BASIN  Length(ft): 355
        Group: BASE           To Node: NW_BASIN       Count: 1

               UPSTREAM     DOWNSTREAM             Equation: Average K
     Geometry: Circular     Circular                   Flow: Both
     Span(in): 30           30           Entrance Loss Coef: 0.5
     Rise(in): 30           30               Exit Loss Coef: 1
   Invert(ft): 26.65        25.12            Bend Loss Coef: 0
  Manning's N: 0.012        0.012         Outlet Cntrl Spec: Use dc or tw
 Top Clip(in): 0            0              Inlet Cntrl Spec: Use dn
Bottom Clip(in): 0          0             Stabilizer Option: None


     Upstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

     Downstream FHWA Inlet Edge Description:
     Circular Concrete: Square edge w/ headwall                1     1

--------Class: Weir-----------------------------------------------------------------
    Name: A_W1             From Node: SWALE_A
   Group: BASE               To Node: DELANEY
   Count: 1
```

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```
 Type: Mavis    Flow: Both      Geometry: Trapezoidal

      Bottom Width(ft): 10
   Left Side Slope(h/v): 4
  Right Side Slope(h/v): 4
            Invert(ft): 26
      Control Elev(ft): 26
 Structure Opening(ft): 999        TABLE
       Bottom Clip(ft): 0
          Top Clip(ft): 0
    Weir Discharge Coef: 2.7
 Orifice Discharge Coef: 0



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Gateway Bridge - Proposed Conditions Analysis
Basin A

********** Input Report ****************************************************
--------Class: Weir---------------------------------------------------------
    Name: NW_W1              From Node: NW_BASIN
   Group: BASE                 To Node: DELANEY
   Count: 1

 Type: Mavis    Flow: Both      Geometry: Trapezoidal

      Bottom Width(ft): 10
   Left Side Slope(h/v): 4
  Right Side Slope(h/v): 4
            Invert(ft): 28
      Control Elev(ft): 28
 Structure Opening(ft): 999        TABLE
       Bottom Clip(ft): 0
          Top Clip(ft): 0
    Weir Discharge Coef: 2.7
 Orifice Discharge Coef: 0


--------Class: Drop Structure-----------------------------------------------
     Name: NW-DS1        From Node: NW_BASIN      Length(ft): 85
    Group: BASE            To Node: DELANEY           Count: 1

    Outlet Cntrl Spec: Use dc or tw     Inlet Cntrl Spec: Use dn
    Upstream Geometry: Circular      Downstream Geometry: Circular
                           UPSTREAM                  DOWNSTREAM
              Span(in): 30                  30
              Rise(in): 30                  30
            Invert(ft): 25.45               25.25
           Manning's N: 0.012               0.012
          Top Clip(in): 0                   0
       Bottom Clip(in): 0                   0
```

```
     Entrance Loss Coef: 0.5                     Flow: Both
         Exit Loss Coef: 1                   Equation: Aver Conveyance

      Upstream FHWA Inlet Edge Description:
      Circular Concrete: Square edge w/ headwall                1     1
      Downstream FHWA Inlet Edge Description:
      Circular Concrete: Square edge w/ headwall                1     1


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Gateway Bridge - Proposed Conditions Analysis
Basin A

********** Input Report ************************************************************
 *** Weir 1 of 1 for Drop Structure NW-DS1 ***                      [TABLE]
   Count: 2                   Bottom Clip(in): 0
    Type: Mavis                  Top Clip(in): 0
    Flow: Both              Weir Discharge Coef: 3.2
Geometry: Rectangular  Orifice Discharge Coef: 0.6

         Span(in): 30                       Invert(ft): 25.96
         Rise(in): 12                 Control Elev(ft): 25.96

--------Class: Drop Structure--------------------------------------------------------
     Name: V_DS1         From Node: VALLEY        Length(ft): 180
    Group: BASE            To Node: NW_BASIN           Count: 1

    Outlet Cntrl Spec: Use dc or tw     Inlet Cntrl Spec: Use dn
    Upstream Geometry: Circular      Downstream Geometry: Circular
                        UPSTREAM                 DOWNSTREAM
               Span(in): 30                30
               Rise(in): 30                30
             Invert(ft): 25.72             25.12
            Manning's N: 0.012             0.012
           Top Clip(in): 0                 0
        Bottom Clip(in): 0                 0

     Entrance Loss Coef: 0.5                     Flow: Both
         Exit Loss Coef: 1                   Equation: Aver Conveyance

      Upstream FHWA Inlet Edge Description:
      Circular Concrete: Square edge w/ headwall                1     1
      Downstream FHWA Inlet Edge Description:
      Circular Concrete: Square edge w/ headwall                1     1

 *** Weir 1 of 1 for Drop Structure V_DS1 ***                       [TABLE]
   Count: 1                   Bottom Clip(in): 0
    Type: Horiz                  Top Clip(in): 0
    Flow: Both              Weir Discharge Coef: 3.2
Geometry: Rectangular  Orifice Discharge Coef: 0.6
```

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Span(in): 60	Invert(ft): 33.8
Rise(in): 66	Control Elev(ft): 33.8

fl Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Node Maximum Comparisons **

^(Time units - hours)

Sim Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
*** Node Name:	DELANEY	Group: BASE							
A99-24SW	24.00	27.50	27.50	0.0008	0.00	15.15	36.11	0.00	0.00
A99-1DOT	0.00	24.00	27.50	0.0000	0.00	1.00	21.15	0.00	0.00
A99-2DOT	0.00	24.00	27.50	0.0000	0.00	1.98	26.93	0.00	0.00
A99-4DOT	0.00	24.00	27.50	0.0000	0.00	3.24	32.21	0.00	0.00
A99-8DOT	0.00	24.00	27.50	0.0000	0.00	5.33	36.71	0.00	0.00
A99-24DT	24.00	27.50	27.50	0.0008	0.00	15.30	33.63	0.00	0.00
*** Node Name:	I-75S	Group: BASE							
A99-24SW	13.15	30.25	33.00	0.0018	23008.15	13.00	15.24	13.05	12.92
A99-1DOT	1.00	30.63	33.00	0.0112	26105.80	0.75	34.77	1.00	14.68
A99-2DOT	1.39	30.82	33.00	0.0104	27704.82	1.00	29.39	1.54	16.60
A99-4DOT	2.76	30.80	33.00	0.0052	27516.78	2.00	21.67	2.80	17.22
A99-8DOT	4.24	30.93	33.00	0.0051	28579.61	4.00	25.35	4.20	18.10
A99-24DT	16.12	29.80	33.00	-0.0010	19402.21	12.00	8.77	12.03	8.00
*** Node Name:	NW_BASIN	Group: BASE							
A99-24SW	15.33	28.26	28.00	0.0021	147580.42	12.50	39.42	15.33	19.98
A99-1DOT	1.00	27.00	28.00	0.0054	123167.73	0.75	67.84	1.00	7.26
A99-2DOT	2.00	27.63	28.00	0.0050	136062.74	0.75	59.31	2.00	12.04
A99-4DOT	4.00	28.07	28.00	0.0033	144786.98	2.39	51.67	4.00	15.48
A99-8DOT	6.10	28.24	28.00	0.0039	147371.29	4.00	60.01	6.10	19.57
A99-24DT	15.49	28.19	28.00	0.0012	146609.79	11.75	25.71	15.49	18.18
*** Node Name:	SW_BASIN	Group: BASE							
A99-24SW	15.89	29.98	29.00	0.0025	149379.05	13.00	55.49	16.21	25.05
A99-1DOT	1.00	27.96	29.00	0.0071	96866.15	0.75	66.68	1.00	7.97
A99-2DOT	2.00	29.12	29.00	0.0064	126899.19	1.00	63.66	1.90	23.77
A99-4DOT	4.00	29.82	29.00	0.0051	145177.46	2.55	70.77	3.96	25.20
A99-8DOT	6.03	30.14	29.00	0.0051	153729.08	4.00	79.65	5.99	26.24
A99-24DT	16.36	29.68	29.00	0.0012	141552.06	12.00	36.05	16.75	23.30
*** Node Name:	SWALE_A	Group: BASE							
A99-24SW	24.00	27.51	28.00	0.0008	28056.10	13.00	6.25	13.10	5.95
A99-1DOT	1.00	26.57	28.00	0.0038	12734.49	0.75	10.05	1.00	9.15
A99-2DOT	1.37	26.61	28.00	0.0029	13395.75	1.00	10.82	1.13	9.31
A99-4DOT	3.05	26.68	28.00	0.0016	14602.42	2.50	8.61	2.59	7.69
A99-8DOT	4.33	26.72	28.00	0.0014	15184.67	4.00	9.67	4.27	8.68
A99-24DT	24.00	27.52	28.00	0.0008	28224.46	12.00	3.69	12.17	3.57
*** Node Name:	SWALE_B	Group: BASE							
A99-24SW	15.65	30.04	29.00	0.0024	113866.63	13.00	58.23	13.21	33.08
A99-1DOT	1.00	28.77	29.00	0.0112	97610.69	0.75	89.91	1.00	25.96
A99-2DOT	2.00	29.50	29.00	0.0076	107029.71	1.00	92.14	1.68	44.31
A99-4DOT	3.72	29.94	29.00	0.0050	112525.52	2.50	76.60	2.88	45.47
A99-8DOT	5.56	30.24	29.00	0.0046	116400.15	4.00	88.37	4.33	46.4[illegible]

A99-24DT	16.28	29.74	29.00	0.0012	109956.17	12.00	34.54	12.20	23.04

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Node Maximum Comparisons **

^(Time units - hours)

Sim Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Surface Area (sf)	Max Time Inflow	Max Inflow (cfs)	Max Time Outflow	Max Outflow (cfs)
*** Node Name: VALLEY		Group: BASE							
A99-24SW	13.00	33.95	36.00	-0.0003	491.63	13.00	4.08	13.00	4.07
A99-1DOT	0.75	34.02	36.00	-0.0347	516.56	0.75	7.09	0.75	7.08
A99-2DOT	1.00	34.01	36.00	-0.0265	512.36	1.00	6.54	1.00	6.53
A99-4DOT	2.50	33.99	36.00	-0.0154	502.93	2.50	5.37	2.50	5.37
A99-8DOT	4.00	34.01	36.00	-0.0067	510.57	4.00	6.31	4.00	6.31
A99-24DT	12.00	33.91	36.00	-0.0030	475.10	12.00	2.41	12.00	2.41

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11.250	29.31	0.36	0.00	7.60	0.00	0.00	0.00	5.26	1.0437	0.8082
11.500	29.45	0.38	0.00	9.01	0.00	0.00	0.00	6.25	1.2153	0.9272
11.750	29.59	0.41	0.00	9.67	0.00	0.00	0.00	7.23	1.4083	1.0665
12.000	29.70	0.43	0.00	10.03	0.00	0.00	0.00	8.02	1.6118	1.2240
12.250	29.83	0.45	0.00	12.57	0.00	0.00	0.00	9.00	1.8452	1.3998
12.500	29.99	0.48	0.00	14.19	0.00	0.00	0.00	10.66	2.1217	1.6029
12.750	30.12	0.50	0.00	14.90	0.00	0.00	0.00	12.04	2.4222	1.8374
13.000	30.23	0.52	0.00	15.24	0.00	0.00	0.00	12.88	2.7336	2.0949

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [3]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

******** Node Time Series by Node - A99-24SW *****

Time (hrs)	Stage (ft)	Surface Ar.(ac)	|<------ Base Q (cfs)	Onsite (cfs)	Inflow Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs) ------>|	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
13.250	30.24	0.53	0.00	11.12	0.00	0.00	0.00	12.29	3.0059	2.3549
13.500	30.18	0.51	0.00	8.53	0.00	0.00	0.00	10.47	3.2089	2.5899
13.750	30.12	0.50	0.00	7.53	0.00	0.00	0.00	8.59	3.3749	2.7867
14.000	30.10	0.50	0.00	7.13	0.00	0.00	0.00	7.25	3.5264	2.9503
14.250	30.09	0.50	0.00	6.28	0.00	0.00	0.00	6.32	3.6649	3.0906
14.500	30.10	0.50	0.00	5.82	0.00	0.00	0.00	5.68	3.7898	3.2145
14.750	30.11	0.50	0.00	5.64	0.00	0.00	0.00	5.34	3.9082	3.3284
15.000	30.12	0.50	0.00	5.57	0.00	0.00	0.00	5.17	4.0241	3.4369
15.250	30.13	0.51	0.00	5.02	0.00	0.00	0.00	4.98	4.1335	3.5417
15.750	30.12	0.50	0.00	4.36	0.00	0.00	0.00	4.50	4.3274	3.7374
16.250	30.10	0.50	0.00	3.80	0.00	0.00	0.00	4.24	4.4961	3.9179
16.750	30.05	0.49	0.00	3.26	0.00	0.00	0.00	3.84	4.6421	4.0847
17.250	30.00	0.48	0.00	2.86	0.00	0.00	0.00	3.62	4.7686	4.2387
17.750	29.93	0.47	0.00	2.49	0.00	0.00	0.00	3.30	4.8792	4.3817
18.250	29.85	0.45	0.00	2.10	0.00	0.00	0.00	3.10	4.9741	4.5139
18.750	29.75	0.44	0.00	1.71	0.00	0.00	0.00	2.74	5.0528	4.6345
19.250	29.65	0.42	0.00	1.36	0.00	0.00	0.00	2.49	5.1162	4.7426
19.750	29.54	0.40	0.00	1.03	0.00	0.00	0.00	2.15	5.1656	4.8387
20.250	29.42	0.38	0.00	0.81	0.00	0.00	0.00	1.95	5.2035	4.9236
20.750	29.29	0.35	0.00	0.62	0.00	0.00	0.00	1.72	5.2331	4.9994
21.250	29.16	0.33	0.00	0.44	0.00	0.00	0.00	1.54	5.2551	5.0666
21.750	29.01	0.30	0.00	0.27	0.00	0.00	0.00	1.32	5.2698	5.1257
22.250	28.87	0.26	0.00	0.20	0.00	0.00	0.00	1.12	5.2794	5.1761
22.750	28.72	0.21	0.00	0.15	0.00	0.00	0.00	0.90	5.2866	5.2178
23.250	28.58	0.17	0.00	0.11	0.00	0.00	0.00	0.69	5.2920	5.2506
23.750	28.44	0.12	0.00	0.08	0.00	0.00	0.00	0.43	5.2959	5.2738
24.002	28.38	0.10	0.00	0.00	0.00	0.00	0.00	0.35	5.2967	5.2818
Group: BASE		Node: NW_BASIN								
0.000	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
0.500	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.000	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.500	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
2.000	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.000(

2.500	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.000	25.96	2.32	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.500	25.96	2.32	0.00	0.01	0.00	0.00	0.01	0.00	0.0003	0.0000
4.000	25.96	2.32	0.00	0.02	0.00	0.00	0.01	0.00	0.0012	0.0000
4.500	25.96	2.32	0.00	0.07	0.00	0.00	0.04	0.00	0.0039	0.0000
5.000	25.96	2.32	0.00	0.09	0.00	0.00	0.05	0.00	0.0089	0.0001
5.500	25.97	2.33	0.00	0.20	0.00	0.00	0.08	0.01	0.0175	0.0004
6.000	25.97	2.33	0.00	0.39	0.00	0.00	0.09	0.03	0.0331	0.0012
6.500	25.99	2.33	0.00	0.98	0.00	0.00	0.15	0.07	0.0662	0.0032
7.000	26.01	2.34	0.00	1.34	0.00	0.00	0.20	0.17	0.1213	0.0082
7.500	26.04	2.36	0.00	2.13	0.00	0.00	0.30	0.36	0.2033	0.0191
8.000	26.08	2.37	0.00	2.51	0.00	0.00	0.38	0.64	0.3132	0.0397
8.500	26.13	2.40	0.00	3.98	0.00	0.00	0.67	1.09	0.4691	0.0755

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [4]

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Node Time Series by Node - A99-24SW **

Time (hrs)	Stage (ft)	Surface Ar.(ac)	|<---Inflow Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs) --->|	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
9.000	26.19	2.43	0.00	4.47	0.00	0.00	1.07	1.59	0.6798	0.1308
9.500	26.27	2.47	0.00	5.87	0.00	0.00	1.85	2.11	0.9538	0.2072
10.000	26.37	2.52	0.00	6.28	0.00	0.00	2.89	2.77	1.3030	0.3081
10.500	26.50	2.58	0.00	8.34	0.00	0.00	4.43	3.63	1.7562	0.4404
10.750	26.58	2.62	0.00	8.64	0.00	0.00	5.34	4.13	2.0324	0.5205
11.000	26.65	2.66	0.00	8.79	0.00	0.00	6.22	4.67	2.3319	0.6114
11.250	26.75	2.71	0.00	12.89	0.00	0.00	7.52	5.38	2.6980	0.7153
11.500	26.87	2.77	0.00	14.78	0.00	0.00	8.80	6.30	3.1526	0.8360
11.750	27.01	2.83	0.00	15.50	0.00	0.00	9.95	7.30	3.6592	0.9765
12.000	27.15	2.90	0.00	15.78	0.00	0.00	17.03	8.49	4.2610	1.1396
12.250	27.33	2.99	0.00	20.38	0.00	0.00	17.26	9.90	4.9887	1.3296
12.500	27.53	3.08	0.00	22.48	0.00	0.00	16.93	11.31	5.7848	1.5487
12.750	27.71	3.16	0.00	23.25	0.00	0.00	15.88	12.57	6.5961	1.7954
13.000	27.87	3.24	0.00	23.49	0.00	0.00	15.05	13.70	7.3985	2.0667
13.250	28.00	3.30	0.00	15.60	0.00	0.00	14.44	14.56	8.1070	2.3586
13.500	28.08	3.33	0.00	12.12	0.00	0.00	13.82	15.70	8.6853	2.6712
13.750	28.13	3.35	0.00	10.99	0.00	0.00	13.51	16.84	9.2063	3.0073
14.000	28.18	3.36	0.00	10.72	0.00	0.00	13.33	17.85	9.7079	3.3657
14.250	28.21	3.37	0.00	9.30	0.00	0.00	13.10	18.63	10.1877	3.7425
14.500	28.23	3.38	0.00	8.68	0.00	0.00	12.95	19.14	10.6425	4.1327
14.750	28.24	3.38	0.00	8.49	0.00	0.00	12.87	19.52	11.0867	4.5320
15.000	28.25	3.39	0.00	8.44	0.00	0.00	12.84	19.81	11.5272	4.9384
15.250	28.25	3.39	0.00	7.54	0.00	0.00	12.76	19.98	11.9568	5.3494
15.750	28.25	3.39	0.00	6.54	0.00	0.00	12.71	19.84	12.7738	6.1720
16.250	28.24	3.38	0.00	5.70	0.00	0.00	12.64	19.57	13.5504	6.9860
16.750	28.22	3.38	0.00	4.88	0.00	0.00	12.54	19.02	14.2893	7.7833
17.250	28.20	3.37	0.00	4.29	0.00	0.00	12.38	18.50	14.9935	8.5585
17.750	28.18	3.36	0.00	3.73	0.00	0.00	12.19	17.88	15.6667	9.3102
18.250	28.15	3.35	0.00	3.13	0.00	0.00	11.91	17.30	16.3063	10.037[illegible]

18.750	28.12	3.34	0.00	2.54	0.00	0.00	11.60	16.63	16.9092	10.7382
19.250	28.09	3.33	0.00	2.02	0.00	0.00	11.22	16.00	17.4749	11.4124
19.750	28.05	3.32	0.00	1.51	0.00	0.00	10.80	15.33	18.0029	12.0597
20.250	28.02	3.31	0.00	1.20	0.00	0.00	10.35	14.77	18.4959	12.6816
20.750	27.97	3.29	0.00	0.92	0.00	0.00	9.75	14.57	18.9550	13.2880
21.250	27.91	3.26	0.00	0.65	0.00	0.00	9.10	14.82	19.3770	13.8952
21.750	27.85	3.23	0.00	0.38	0.00	0.00	8.57	14.53	19.7635	14.5016
22.250	27.77	3.19	0.00	0.29	0.00	0.00	8.21	13.74	20.1242	15.0857
22.750	27.71	3.16	0.00	0.22	0.00	0.00	8.12	12.41	20.4720	15.6260
23.250	27.67	3.14	0.00	0.17	0.00	0.00	8.30	10.64	20.8191	16.1025
23.750	27.64	3.14	0.00	0.11	0.00	0.00	6.12	8.16	21.1227	16.4910
24.002	27.64	3.14	0.00	0.00	0.00	0.00	6.89	6.60	21.2589	16.6444

*** Group: BASE Node: SW_BASIN

0.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
0.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
1.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000

GATEWAY BRIDGE - PROPOSED CONDITIONS
BASIN A

********** Node Time Series by Node - A99-24SW **

Time (hrs)	Stage (ft)	Surface Ar.(ac)	|<------Inflow------ Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	------>| Link Q (cfs)	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
2.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
2.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
3.500	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0000	0.0000
4.000	26.65	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.0001	0.0000
4.500	26.65	1.74	0.00	0.01	0.00	0.00	0.00	0.00	0.0004	0.0000
5.000	26.65	1.74	0.00	0.01	0.00	0.00	0.00	0.00	0.0010	0.0000
5.500	26.65	1.74	0.00	0.02	0.00	0.00	0.00	0.00	0.0017	0.0000
6.000	26.65	1.74	0.00	0.04	0.00	0.00	0.00	0.00	0.0031	0.0000
6.500	26.66	1.74	0.00	0.37	0.00	0.00	0.04	0.00	0.0126	0.0000
7.000	26.67	1.75	0.00	0.73	0.00	0.00	0.31	0.00	0.0424	0.0000
7.500	26.71	1.77	0.00	1.39	0.00	0.00	0.77	0.00	0.1082	0.0000
8.000	26.77	1.79	0.00	1.80	0.00	0.00	1.44	0.09	0.2196	0.0018
8.500	26.87	1.82	0.00	3.11	0.00	0.00	2.45	0.27	0.4014	0.0092
9.000	27.00	1.87	0.00	3.67	0.00	0.00	3.81	0.68	0.6708	0.0288
9.500	27.17	1.94	0.00	5.05	0.00	0.00	5.45	1.46	1.0423	0.0731
10.000	27.38	2.01	0.00	5.57	0.00	0.00	7.61	2.72	1.5317	0.1595
10.500	27.62	2.10	0.00	7.60	0.00	0.00	10.38	4.67	2.1757	0.3123
10.750	27.75	2.15	0.00	7.96	0.00	0.00	11.49	5.88	2.5624	0.4212
11.000	27.88	2.20	0.00	8.18	0.00	0.00	12.28	7.16	2.9747	0.5559
11.250	28.02	2.25	0.00	12.20	0.00	0.00	13.07	8.64	3.4472	0.7191
11.500	28.18	2.35	0.00	14.07	0.00	0.00	14.57	10.39	4.0041	0.9157
11.750	28.34	2.44	0.00	14.84	0.00	0.00	16.83	12.28	4.6272	1.1499
12.000	28.49	2.53	0.00	15.19	0.00	0.00	19.78	20.37	5.3158	1.487[illegible]

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TITLE: NW Basin
PROJECT: Gateway Bridge
DRAWDOWN CALCULATION

30-May-00
04:10 PM

UPSTREAM Q @ 60HR (cfs)	0.00	CALCULATION INCR. (ft)	0.009
DLW	25.94	TIME @ 50% VOLUME	61.92
NWL	25.57	TIME @ 85% VOLUME	236.22
AREA AT DLW (ac)	2.30	DISCHARGE @ 50% VOLUME (cfs)	0.05
AREA AT NWL (ac)	2.15	TOTAL DESIGN DISCHARGE (cfs	0.05
AVERAGE AREA (ac)	2.23		
WEIR WIDTH (ft)	0.19		
WEIR COEFFICIENT	3.20	TREATMENT VOLUME (acft)	0.82

HEAD H (ft)	DISCHARGE Q (cfs)	TIME (HR)	TOTAL TIME (HR)	
0.370	0.13	0.00	0.00	
0.361	0.13	1.90	1.90	
0.352	0.12	1.98	3.88	
0.342	0.12	2.06	5.94	
0.333	0.11	2.14	8.09	
0.324	0.11	2.24	10.32	
0.315	0.10	2.33	12.66	
0.305	0.10	2.44	15.10	
0.296	0.09	2.55	17.65	
0.287	0.09	2.67	20.32	
0.278	0.08	2.81	23.13	
0.268	0.08	2.95	26.08	
0.259	0.08	3.11	29.19	
0.250	0.07	3.28	32.47	
0.241	0.07	3.47	35.93	
0.231	0.06	3.67	39.61	
0.222	0.06	3.90	43.50	
0.213	0.06	4.15	47.65	
0.204	0.05	4.43	52.09	
0.194	0.05	4.74	56.83	
0.185	0.05	5.09	61.92	<*** 50% VOLUME
0.176	0.04	5.49	67.41	
0.167	0.04	5.94	73.36	
0.157	0.04	6.46	79.82	
0.148	0.03	7.05	86.87	
0.139	0.03	7.75	94.62	
0.130	0.03	8.56	103.18	
0.120	0.02	9.53	112.72	
0.111	0.02	10.70	123.42	
0.102	0.02	12.12	135.54	
0.093	0.02	13.90	149.44	
0.083	0.01	16.15	165.59	
0.074	0.01	19.08	184.67	
0.065	0.01	23.02	207.69	
0.055	0.01	28.53	236.22	<*** 85% VOLUME
0.046	0.01	36.66	272.88	
0.037	0.00	49.53	322.41	<*** 90% VOLUME
0.028	0.00	72.21	394.63	
0.018	0.00	119.62	514.25	
0.009	0.00	257.39	771.64	

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Appendix E
Volumetric Calculations

Pond	New Additional Imperviuos Area (Ac)	8-inches over area (Ac-Ft)	Attenuation Depth (Ft)	Additional Area Required (Ac)
POND G3 Wet Detention	1.265	0.843	2.50	0.34
POND H1 Wet Detention	1.461	0.974	2.50	0.39
POND 6 Wet Detention	1.074	0.716	1.62	0.44
POND 200 Wet Detention	1.968	1.312	4.00	0.33
POND 300 Wet Detention	3.246	2.164	2.73	0.79