

TYPICAL SECTION NO. 1

ANTICIPATED PAVEMENT DESIGN

- ① SURFACE - 1.5" ASPHALT CONCRETE, TYP SM - 9.5.0 @ 165 lb/SQYD.
- ② INTERMEDIATE - 2" ASPHALT CONCRETE, TYP IM - 19.0A @ 220 lb/SQYD.
- ③ BASE - 3" ASPHALT CONCRETE, TYPE BM - 25.0A
- ④ SUBBASE - 10" AGGREGATE BASE MATERIAL, TYPE 1, NO. 21A OR NO. 21B
- ⑤ CITY STANDARD 9" CURB
- ⑥ EXISTING PAVEMENT

**FOREST HILL AVENUE  
IMPROVEMENT PROJECT**



Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works
DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA	

FOREST HILL AVENUE PLAN VIEW

CIP: XXX-XXX-XXX-XXX

DESIGN BY: STANTEC	REVIEWED BY:	FIELD NOTES:	SCALE: HORIZ: 1"=25'	DATE: 11/19/2012	DRAWING FILE NAME: \$FILES\$	DRAWING NO. 2
CHECKED BY: STANTEC			VERT: 1"=25'			

# STORM SEWER DESIGN COMPUTATIONS

FROM	TO	DRAIN AREA (AC)	RUNOFF COEF (C)	INCREM C x A	ACCUM C x A	Tc TO PIPE (MIN)	INTEN (i)	ACCUM FLOW (CFS)	UPPER INVERT	LOWER INVERT	LENGTH (FT)	SLOPE PERCENT	PIPE DIA (IN)	MAX Q (CFS)	VEL (FPS)	TIME IN PIPE (MIN)	ACCUM TIME (MIN)	REMARKS	TOP ELEV
1	4	0.19	0.64	0.12	0.12	5.00	7.07	0.86	181.20	181.00	11.47	1.74	15	8.53	4.5	0.04	5.04		185.50
2	5	0.13	0.72	0.09	0.09	5.00	7.07	0.66	178.20	176.50	11.47	14.82	15	24.87	8.7	0.02	5.02		183.50
1A	4	0.44	0.61	0.27	0.27	5.00	7.07	1.90	183.25	181.00	154.02	1.46	15	7.81	5.2	0.49	5.49		187.75
4	5	0.00	0.00	0.00	0.39	5.49	6.90	2.69	180.90	176.50	96.19	4.57	15	13.82	8.7	0.18	5.67		185.23
5	3	0.00	0.00	0.00	0.48	5.67	6.84	3.31	176.40	176.00	59.86	0.67	15	5.28	4.5	0.22	5.89		183.23
3	7	0.28	0.67	0.19	0.67	5.89	6.77	4.55	175.90	172.00	313.46	1.24	15	7.21	6.2	0.84	6.73		183.50
6	7	0.36	0.75	0.27	0.27	5.00	7.07	1.91	172.80	172.00	40.94	1.95	15	9.03	5.8	0.12	5.12		177.30
7	7A	0.39	0.66	0.26	1.20	6.73	6.51	7.81	171.75	170.30	93.26	1.55	18	13.10	7.7	0.20	6.93		176.50
7A	10	0.11	0.69	0.08	1.27	6.93	6.45	8.23	170.20	167.85	88.28	2.66	18	17.14	9.6	0.15	7.09		174.80
10	13	0.09	0.79	0.07	1.35	7.09	6.41	8.63	167.75	166.30	86.05	1.69	18	13.63	8.2	0.18	7.26		172.63
11	13	0.22	0.85	0.19	0.19	5.00	7.07	1.32	166.85	166.55	47.31	0.63	15	5.14	3.5	0.22	5.22		171.10
13	16	0.05	0.83	0.04	1.57	7.26	6.36	10.01	166.05	163.10	198.08	1.49	21	19.34	8.1	0.41	7.67		172.30
16	20	0.20	0.78	0.16	1.73	7.67	6.25	10.82	163.00	161.75	199.64	0.63	21	12.54	5.9	0.57	8.24		170.35
20	23	0.20	0.85	0.17	1.90	8.24	6.10	11.60	161.65	157.75	196.54	1.98	21	22.32	9.4	0.35	8.59		169.00
23	25	0.20	0.76	0.15	2.05	7.26	6.36	13.05	157.50	155.87	96.70	1.69	24	29.37	9.1	0.18	7.44		165.35
14	17	0.30	0.80	0.24	0.24	5.00	7.07	1.70	165.80	165.20	101.53	0.59	15	4.97	3.7	0.46	5.46		170.30
17	18	0.04	0.86	0.03	0.27	5.46	6.91	1.90	165.10	163.00	203.67	1.03	15	6.56	4.6	0.73	6.20		169.70
18	21	0.24	0.71	0.17	0.44	6.20	6.68	2.97	162.90	160.00	104.89	2.76	15	10.74	7.5	0.23	6.43		167.55
21	22	0.23	0.62	0.14	0.59	6.43	6.60	3.88	159.90	158.25	40.92	4.03	15	12.97	9.2	0.07	6.50		165.25
22	22A	0.64	0.46	0.29	0.88	6.50	6.58	5.80	158.00	157.60	32.65	1.23	18	11.63	6.6	0.08	6.59		163.50
22A	24	0.18	0.52	0.09	0.98	6.59	6.56	6.40	157.50	156.30	50.66	2.37	18	16.17	8.6	0.10	6.68		163.50
24	25	0.05	0.67	0.03	1.01	6.68	6.53	6.59	156.20	155.75	71.73	0.63	18	8.32	5.2	0.23	6.91		163.65
25	29	0.00	0.00	0.00	3.06	7.44	6.31	19.32	155.65	154.60	206.43	0.51	27	22.09	6.3	0.55	7.99		163.65
29	32	0.31	0.77	0.24	3.30	7.99	6.17	20.35	154.50	154.20	51.76	0.58	27	23.58	6.7	0.13	8.12		162.00
32	32A	0.13	0.83	0.11	3.41	8.12	6.13	20.90	154.10	153.70	77.07	0.52	27	22.31	6.4	0.20	8.32		161.83
32A	35	0.05	0.87	0.04	3.45	8.32	6.08	21.00	153.60	153.00	111.33	0.54	27	22.73	6.5	0.29	8.61		161.80
35	40	0.15	0.84	0.13	3.58	8.61	6.01	21.51	152.90	152.20	138.39	0.51	27	22.03	6.3	0.37	8.97		162.40
27	30	0.48	0.57	0.27	0.27	5.00	7.07	1.94	156.43	156.00	64.83	0.66	15	5.26	4.0	0.27	5.27		162.00
30	30A	0.31	0.70	0.22	0.49	5.27	6.98	3.42	156.00	155.20	63.94	1.25	15	7.23	5.8	0.18	5.46		161.83
30A	33	0.08	0.68	0.05	0.55	5.46	6.92	3.77	155.20	154.40	99.39	0.80	15	5.80	5.0	0.33	5.79		162.00
33	36	0.22	0.73	0.16	0.71	5.79	6.81	4.80	154.15	153.60	95.38	0.58	18	7.98	4.7	0.34	6.12		162.00
36	40	0.36	0.67	0.24	0.95	6.12	6.70	6.34	153.50	152.95	92.33	0.60	18	8.11	5.1	0.30	6.43		162.55
40	45	0.12	0.79	0.09	4.62	8.97	5.93	27.37	152.10	151.10	230.64	0.43	36	43.92	6.6	0.59	9.56		162.75
42	43	1.01	0.50	0.51	0.51	5.00	7.07	3.57	154.50	154.25	36.18	0.69	15	5.37	4.7	0.13	5.13		160.00
43	44	1.16	0.43	0.50	1.00	5.13	7.03	7.06	154.00	153.50	47.93	1.04	18	10.73	6.5	0.12	5.25		159.75
44	45	0.03	0.87	0.03	1.03	5.25	6.99	7.19	153.40	151.10	71.69	3.21	18	18.81	9.9	0.12	5.37		162.45
45	48	0.00	0.00	0.00	5.65	9.56	5.79	32.72	151.00	150.48	100.12	0.52	36	48.07	7.3	0.23	9.79		162.45
48	49	0.17	0.83	0.14	5.79	9.79	5.74	33.25	150.38	150.00	73.35	0.52	36	48.00	7.3	0.17	9.95		161.35
49	47	0.05	0.87	0.04	5.83	9.95	5.71	33.29	149.90	149.46	84.74	0.52	36	48.06	7.3	0.19	10.15		159.50
47	50	0.36	0.64	0.23	6.06	10.15	5.67	34.35	149.36	147.00	103.11	2.29	36	100.90	12.9	0.13	10.28		158.80
50	51	0.52	0.53	0.28	6.34	10.28	5.64	35.74	146.90	140.00	105.61	6.53	36	170.48	19.1	0.09	10.37		153.85
51	54	0.29	0.61	0.18	6.52	10.37	5.62	36.61	139.90	132.00	118.48	6.67	36	172.22	19.4	0.10	10.47		147.05
56	54	0.37	0.86	0.32	0.32	5.00	7.07	2.25	134.50	132.15	37.35	6.29	15	16.20	9.3	0.07	5.07		143.00
54	53	0.29	0.55	0.16	6.99	10.47	5.60	39.15	131.90	129.00	39.20	7.40	36	181.40	20.5	0.03	10.51		140.65
53	55	1.67	0.40	0.67	7.66	10.51	5.59	42.84	128.90	128.00	83.06	1.08	36	69.43	10.3	0.13	10.64		136.00
58	55	0.15	0.84	0.13	0.13	5.00	7.07	0.89	135.25	133.10	35.87	5.99	15	15.81	7.0	0.09	5.09		139.75
55	59	0.09	0.79	0.07	7.86	10.64	5.56	43.73	127.90	127.20	127.21	0.55	36	49.47	7.9	0.27	10.91		137.60
59	52	0.13	0.76	0.10	7.96	10.91	5.51	43.85	127.10	126.90	34.02	0.59	36	51.14	8.1	0.07	10.98		135.45
52	64	0.15	0.85	0.13	8.09	10.98	5.50	44.45	126.80	125.00	90.27	1.99	36	94.18	13.1	0.11	11.09		137.50
66	67	9.05	0.35	3.17	11.25	11.09	5.47	61.61	115.91	113.06	110.40	2.58	42	161.64	15.7	0.12	11.21		
57	60	0.00	0.00	0.01	0.01	5.00	7.07	0.07	123.06	120.86	186.16	1.18	24	24.59	1.7	1.80	6.80		136.50
61	60	0.76	0.88	0.67	0.67	5.00	7.07	4.73	129.85	129.50	49.23	0.71	15	5.45	5.0	0.16	5.16		134.35
60	67	0.08	0.77	0.06	0.74	6.80	6.49	4.81	120.86	118.86	146.44	1.37	24	26.44	6.4	0.38	7.19		135.00
67	68	0.14	0.65	0.09	12.08	11.21	5.45	65.88	113.06	109.60	118.60	2.92	42	171.84	16.7	0.12	11.33		136.66

## FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works
DEPARTMENT OF PUBLIC WORKS RICHMOND, VIRGINIA	

## FOREST HILL AVENUE PLAN VIEW

CIP: XXX-XXX-XXX-XXX

DESIGN BY: STANTEC	REVIEWED BY:	FIELD NOTES	SCALE HORIZ. 1"=25' VERT. 1"=25'	DATE \$DATE\$	DRAWING FILE NAME \$FILE\$	DRAWING NO. 2A
CHECKED BY: STANTEC						

# TREE SURVEY INDEX

SEE PLANS FOR TREE AND SHRUBERY LOCATIONS						
1	25091	3720804.437	11767388.36	TRE20	12" PINE	Remove
2	25095	3720796.354	11767404.68	TRE20	12" PINE	Do Not Disturb
3	25094	3720758.936	11767501.69	TRE16	30" OAK	Do Not Disturb
4	25090	3720747.829	11767531.93	TRE16	42" OAK	Do Not Disturb
5	25089	3720736.174	11767555.48	TRE16	36" OAK	Do Not Disturb
6	25092	3720808.777	11767606.12	TRE16	27" OAK	Do Not Disturb
7	25088	3720716.753	11767607.44	TRE20	12" PINE	Remove
8	25093	3720786.365	11767657.16	TRE16	42" OAK	Do Not Disturb
9	25000	3720655.775	11767947.28	TRE16	24" OAK	Remove
10	25001	3720642.647	11767958.04	TRE20	21" PINE	Remove
11	25087	3720564.945	11767940.48	TRE20	6" PINE	Do Not Disturb
12	25002	3720632.524	11767999.49	TRE20	21" PINE	Remove
13	25003	3720630.866	11768004.83	TRE20	15" PINE	Remove
14	25004	3720612.842	11768047.66	TRE20	21" OAK	Remove
15	25086	3720535.622	11768029.48	TRE11	12" HOLLY DOUBLE TRUNK	Remove
16	25005	3720605.1	11768058.81	TRE20	21" OAK	Remove
17	25085	3720524.533	11768051.73	TRE20	6" PINE	Remove
18	25084	3720501.427	11768117.36	TRE16	36" OAK	Do Not Disturb
19	25006	3720570.849	11768151.14	TRE11	12" HOLLY	Remove
20	25007	3720565.5	11768164.67	TRE03	12" CEDER	Remove
21	25008	3720562.363	11768170.53	TRE03	12" CEDER	Remove
22	25009	3720560.819	11768176.13	TRE03	6" CEDER	Remove
23	25010	3720559.345	11768181.75	TRE03	6" CEDER	Remove
24	25011	3720570.669	11768201.47	TRE16	36" OAK	Remove
25	25083	3720471.632	11768200.97	TRE14	12" MAGNOLIA DOUBLE TRUNK	Remove
26	25012	3720539.439	11768272.39	TRE20	27" PINE	Do Not Disturb
27	25013	3720518.591	11768304.52	TRE23	33" SWEETGUM	Remove
28	25014	3720518.862	11768326.5	TRE16	18" OAK	Remove
29	25015	3720516.043	11768336.94	TRE16	9" OAK	Remove
30	25016	3720513.808	11768340.33	TRE20	33" PINE DEAD	Remove
31	25017	3720497.947	11768378.24	TRE20	15" PINE	Remove
32	25018	3720490.891	11768377.45	TRE16	24" OAK	Remove
33	25019	3720492.131	11768388.59	TRE16	21" OAK	Remove
34	25020	3720488.207	11768393.24	TRE11	6" HOLLY	Remove
35	25096	3720489.104	11768416.59	TRE20	18" PINE	Do Not Disturb
36	25097	3720486.442	11768419.93	TRE16	6" OAK	Do Not Disturb
37	25021	3720480.974	11768426.55	TRE16	15" OAK	Remove
38	25098	3720485.257	11768430.06	TRE16	9" OAK	Do Not Disturb
39	25022	3720478.658	11768436.8	TRE16	15" OAK	Remove
40	25099	3720481.126	11768447.64	TRE20	18" PINE	Do Not Disturb
41	25023	3720450.589	11768507.6	TRE16	15" OAK	Remove
42	25024	3720448.799	11768508.47	TRE16	12" OAK	Remove
43	25026	3720438.452	11768547.09	TRE23	9" SWEETGUM	Remove
44	25025	3720439.929	11768548.21	TRE20	27" PINE	Remove
45	25027	3720419.424	11768591.01	TRE23	6" SWEETGUM	Remove
46	25028	3720424.773	11768598.46	TRE16	12" OAK	Remove
47	25029	3720417.7	11768607.44	TRE16	21" OAK	Remove
48	25030	3720416.074	11768612.72	TRE23	6" SWEETGUM	Remove
49	25031	3720409.301	11768619.24	TRE23	6" SWEETGUM DOUBLE TRUNK	Remove
50	25082	3720339.275	11768598.3	TRE16	30" OAK	Remove

SEE PLANS FOR TREE AND SHRUBERY LOCATIONS						
51	25032	3720407.465	11768624.26	TRE23	6" SWEETGUM	Remove
52	25033	3720404.565	11768646.28	TRE16	6" OAK	Remove
53	25034	3720405.333	11768651.76	TRE20	18" PINE	Remove
54	25035	3720397.621	11768675.79	TRE20	15" PINE	Remove
55	25081	3720319.66	11768654.27	TRE20	15" PINE	Remove
56	25036	3720394.594	11768684.17	TRE16	12" OAK	Remove
57	25037	3720398.035	11768692.02	TRE20	21" PINE	Remove
58	25038	3720398.078	11768693.63	TRE23	9" SWEETGUM	Remove
59	25039	3720391.039	11768699.05	TRE16	12" OAK	Remove
60	25040	3720383.015	11768701.76	TRE20	7" PINE	Remove
61	25080	3720310.707	11768682.63	TRE20	6" PINE	Remove
62	25078	3720313.622	11768686.12	TRE20	6" PINE	Remove
63	25079	3720314.169	11768686.48	TRE20	6" PINE	Remove
64	25077	3720308.526	11768712.91	TRE16	9" OAK	Remove
65	25041	3720363.69	11768774.7	TRE14	15" MAGNOLIA DOUBLE TRUNK	Remove
66	25075	3720254.723	11768845.08	TRE20	12" PINE	Remove
67	25043	3720270.1	11769100.2	TRE23	12' SWEETGUM	Remove
68	25044	3720269.705	11769102.48	TRE23	15" SWEETGUM	Remove
69	25045	3720264.819	11769116.68	TRE23	15" SWEETGUM	Remove
70	25046	3720263.67	11769126.75	TRE20	27" PINE	Remove
71	25076	3720166.532	11769136.74	TRE16	39" OAK	Do Not Disturb
72	25047	3720235.742	11769195.21	TRE20	27" PINE	Remove
73	25074	3720107.46	11769269.39	TRE16	30" OAK	Do Not Disturb
74	25048	3720150.931	11769508.47	TRE11	12" HOLLY	Remove
75	25049	3720134.818	11769532.41	TRE03	6" CEDER	Remove
76	25050	3720132.243	11769537.98	TRE03	6" CEDAR TRIPLE TRUNK	Remove
77	25073	3720057.258	11769535.65	TRE20	21" PINE	Remove
78	25072	3720036.388	11769615.91	TRE20	18" PINE	Remove
79	25071	3720039.818	11769619.66	TRE20	18" PINE	Remove
80	25070	3720037.07	11769623.99	TRE20	15" PINE	Remove
81	25051	3720112.203	11769664.74	TRE20	24" PINE	Remove
82	25052	3720096.203	11769725.89	TRE23	27" SWEETGUM	Remove
83	25069	3720005.844	11769762.62	TRE20	9" PINE	Remove
84	25068	3720005.006	11769763.87	TRE20	12" PINE	Remove
85	25067	3720003.954	11769767.67	TRE20	12" PINE	Remove
86	25053	3720076.223	11769794.64	TRE11	12" HOLLY	Remove
87	25054	3720062.689	11769826.93	TRE11	15" HOLLY	Remove
88	25066	3719917.906	11770042.27	TRE20	27" PINE	Remove
89	25065	3719911.668	11770054.68	TRE20	18" PINE	Remove
90	25055	3719992.643	11770089.17	TRE03	30" CEDER	Remove
91	25064	3719905.565	11770070.47	TRE16	18" OAK	Remove
92	25056	3719981.596	11770109.51	TRE03	24" CEDER	Remove
93	25063	3719898.087	11770083.65	TRE20	15" PINE	Remove
94	25062	3719897.025	11770089.67	TRE23	15" SWEETGUM	Remove
95	25061	3719894.765	11770092.79	TRE23	15" SWEETGUM	Remove
96	25057	3719958.06	11770152.24	TRE03	15" CEDER	Remove
97	25060	3719867.569	11770134.91	TRE23	18" SWEETGUM	Remove
98	25058	3719948.176	11770173.54	TRE03	15" CEDER	Remove
99	25059	3719924.909	11770217.92	TRE03	18" CEDER	Remove

⊠ DENOTES LOCATION OF TREES AND SHRUBERY IN PLAN VIEW.

## FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	
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DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

## FOREST HILL AVENUE TREE SURVEY INDEX

CIP: 040-291-8950

DESIGN BY: STANTEC	REVIEWED BY:	FIELD NOTES:	SCALE: HORIZ: 1"=25'	DATE: 2/5/2013	DRAWING FILE NAME: 71000609_tree_survey_sheet.dwg	DRAWING NO: 2B
CHECKED BY: STANTEC			VERT: 1"=25'			

# TREE SURVEY INDEX

SEE PLANS FOR TREE AND SHRUBERY LOCATIONS			
100	Approx. Location (Field Verified)	48" OAK	Do Not Disturb
101	Approx. Location (Field Verified)	TREE	Do Not Disturb
102	Approx. Location (Field Verified)	TREE	Do Not Disturb
103	Approx. Location (Field Verified)	28" TREE	Do Not Disturb
104	Approx. Location (Field Verified)	12" TREE	Do Not Disturb
105	Approx. Location (Field Verified)	TREE	Do Not Disturb
106	Approx. Location (Field Verified)	24" TREE	Do Not Disturb
107	Approx. Location (Field Verified)	30" TREE	Do Not Disturb
108	Approx. Location (Field Verified)	CEDER	Do Not Disturb
109	Approx. Location (Field Verified)	CEDER	Do Not Disturb
110	Approx. Location (Field Verified)	TREE	Do Not Disturb
111	Approx. Location (Field Verified)	TREE	Do Not Disturb
112	Approx. Location (Field Verified)	TREE	Do Not Disturb
113	Approx. Location (Field Verified)	TREE	Do Not Disturb
114	Approx. Location (Field Verified)	TREE	Do Not Disturb
115	Approx. Location (Field Verified)	TREE	Do Not Disturb
116	Approx. Location (Field Verified)	TREE	Do Not Disturb
117	Approx. Location (Field Verified)	TREE	Do Not Disturb
118	Approx. Location (Field Verified)	TREE	Do Not Disturb
119	Approx. Location (Field Verified)	TREE	Do Not Disturb
120	Approx. Location (Field Verified)	TREE	Do Not Disturb
121	Approx. Location (Field Verified)	CRATE MYRTLE	Do Not Disturb
122	Approx. Location (Field Verified)	CRATE MYRTLE	Do Not Disturb
123	Approx. Location (Field Verified)	CRATE MYRTLE	Do Not Disturb
124	Approx. Location (Field Verified)	CLUSTER OF TREES	Do Not Disturb
125	Approx. Location (Field Verified)	TREE	Do Not Disturb
126	Approx. Location (Field Verified)	TREE	Do Not Disturb
127	Approx. Location (Field Verified)	TREE	Do Not Disturb
128	Approx. Location (Field Verified)	TREE	Do Not Disturb
129	Approx. Location (Field Verified)	TREE	Do Not Disturb
130	Approx. Location (Field Verified)	TREE	Do Not Disturb

SEE PLANS FOR TREE AND SHRUBERY LOCATIONS			
131	Approx. Location (Field Verified)	48" OAK	Do Not Disturb
132	Approx. Location (Field Verified)	DOGWOOD	Do Not Disturb
133	Approx. Location (Field Verified)	TREE	REMOVE
134	Approx. Location (Field Verified)	CEDER	Do Not Disturb
135	Approx. Location (Field Verified)	TREE	Do Not Disturb
136	Approx. Location (Field Verified)	TREE	Do Not Disturb
137	Approx. Location (Field Verified)	48" OAK	Do Not Disturb
138	Approx. Location (Field Verified)	24" OAK	Do Not Disturb
139	Approx. Location (Field Verified)	TREE	Do Not Disturb
140	Approx. Location (Field Verified)	RED TIP SHRUBS	REMOVE
141	Approx. Location (Field Verified)	CLUSTER OF TREES	Do Not Disturb
142	Approx. Location (Field Verified)	TREE	Do Not Disturb
143	Approx. Location (Field Verified)	36" OAK	Do Not Disturb
144	Approx. Location (Field Verified)	OAK	Do Not Disturb
145	Approx. Location (Field Verified)	JAPANESE MAPLE	Do Not Disturb
146	Approx. Location (Field Verified)	CLUSTER OF TREES AND SHRUBS	Do Not Disturb
147	Approx. Location (Field Verified)	48" OAK	REMOVE
148	Approx. Location (Field Verified)	TREE	Do Not Disturb
149	Approx. Location (Field Verified)	CLUSTER OF TREES	Do Not Disturb
150	Approx. Location (Field Verified)	28" TREE	Do Not Disturb
151	Approx. Location (Field Verified)	TREE	Do Not Disturb
152	Approx. Location (Field Verified)	TREE	Do Not Disturb
153	Approx. Location (Field Verified)	TREE	Do Not Disturb
154	Approx. Location (Field Verified)	TREE	Do Not Disturb
155	Approx. Location (Field Verified)	TREE	Do Not Disturb
156	Approx. Location (Field Verified)	TREE	Do Not Disturb
157	Approx. Location (Field Verified)	TREE	Do Not Disturb
158	Approx. Location (Field Verified)	TREE	Do Not Disturb
159	Approx. Location (Field Verified)	EXISTING LANDSCAPED AREA	RETAIN AS MUCH AS POSSIBLE

⊗ DENOTES LOCATION OF TREES AND SHRUBERY IN PLAN VIEW.

## FOREST HILL AVENUE IMPROVEMENT PROJECT



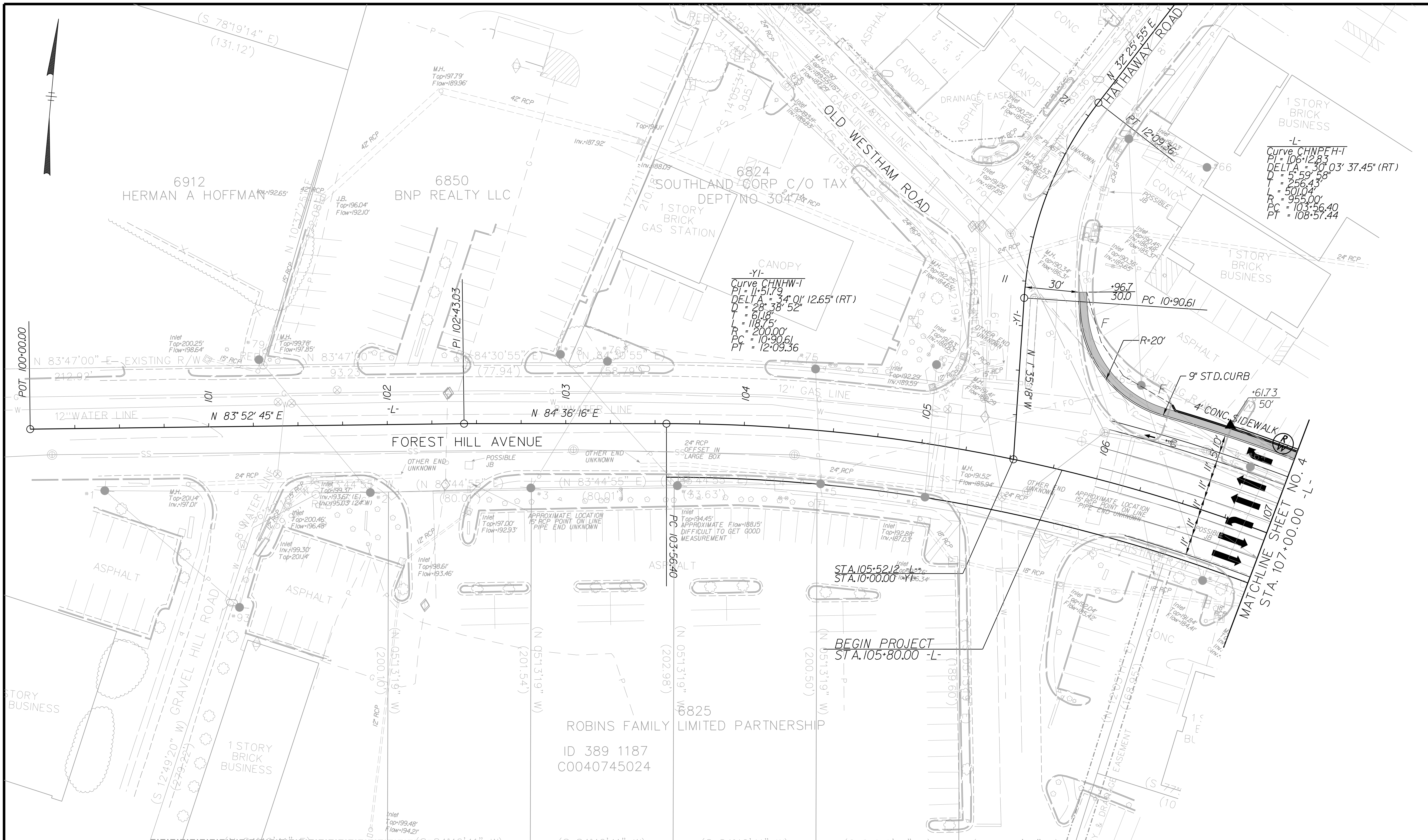
Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works

DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

CIP: 040-291-8950

## FOREST HILL AVENUE TREE SURVEY INDEX

DESIGN BY: STANTEC	REVIEWED BY:	FIELD NOTES	SCALE: HORIZ: 1"=25'	DATE: 2/5/2013	DRAWING FILE NAME: 71000609_tree_survey_sheet.dwg	DRAWING NO: 2C
CHECKED BY: STANTEC			VERT: 1"=25'			



-L-  
 Curve CHNPEH-1  
 PI = 106+12.83  
 DELTA = 30° 03' 37.45" (RT)  
 D = 5' 59" 58"  
 T = 256.43'  
 L = 501.04'  
 R = 955.00'  
 PC = 103+56.40  
 PT = 108+57.44

-YI-  
 Curve CHNHW-1  
 PI = 11+51.79  
 DELTA = 34° 01' 12.65" (RT)  
 D = 28' 38" 52"  
 T = 61.18'  
 L = 118.75'  
 R = 200.00'  
 PC = 10+90.61  
 PT = 12+09.36

# FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	Capital Project Administrator
Project Engineer	Deputy Director for Transportation / Public Works
Maintenance Engineer	Director of Public Works
City Traffic Engineer	

DEPARTMENT OF PUBLIC WORKS  
 RICHMOND, VIRGINIA

## FOREST HILL AVENUE PLAN VIEW

CIP: 040-291-8950

DESIGN BY: STANTEC	REVIEWED BY:	FIELD NOTES:	SCALE: HORIZ. 1"=25'	DATE: 2/5/2013	DRAWING FILE NAME: 171000608_rdy_psh_3.dgn	DRAWING NO. 3
CHECKED BY: STANTEC			VERT. 1"=25'			

SPT/ELLS



# -L- (FOREST HILL AVE.) DRAINAGE LEFT OF ALIGNMENT

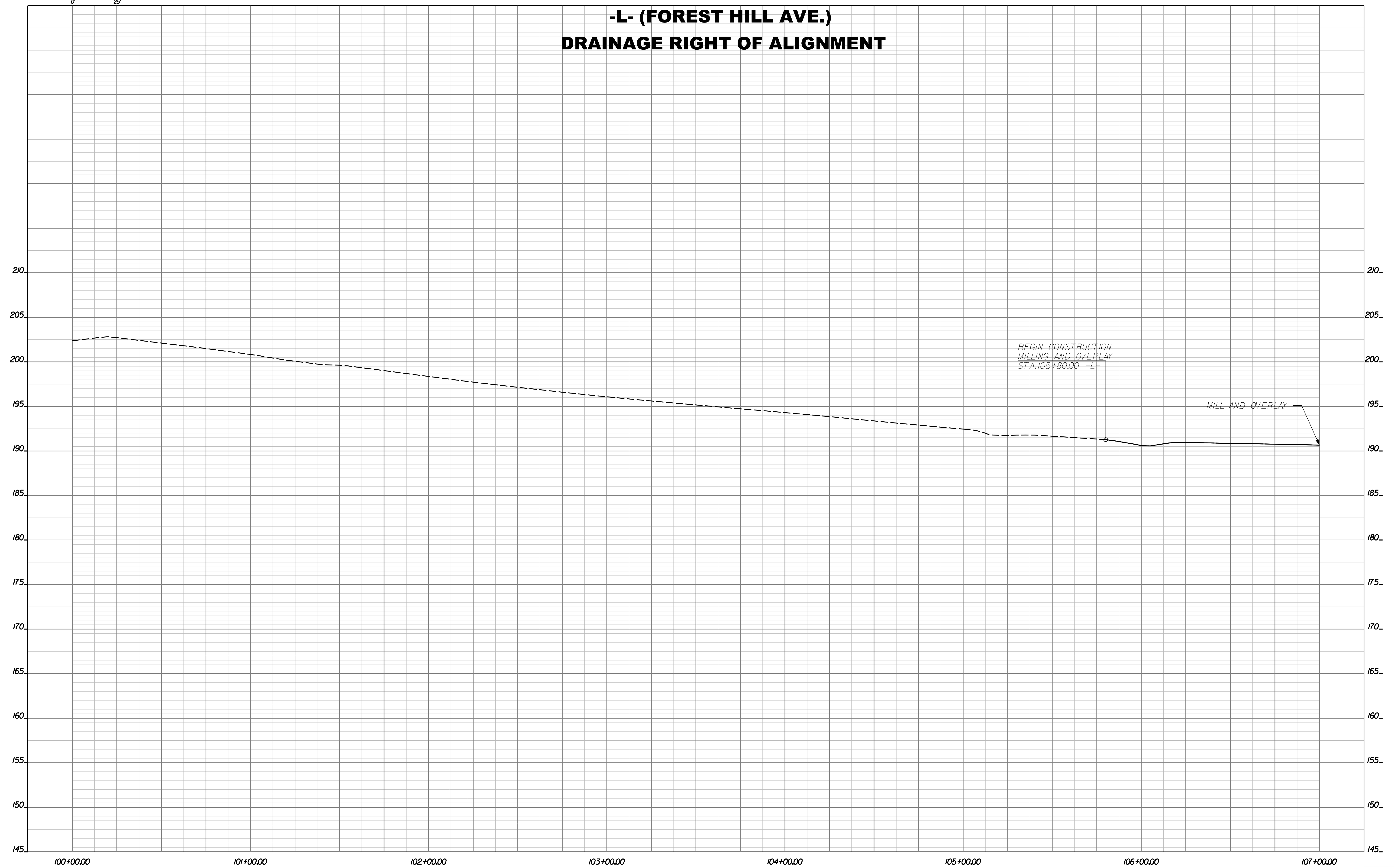


BEGIN CONSTRUCTION  
MILLING AND OVERLAY  
STA. 105+80.00 -L-

MILL AND OVERLAY



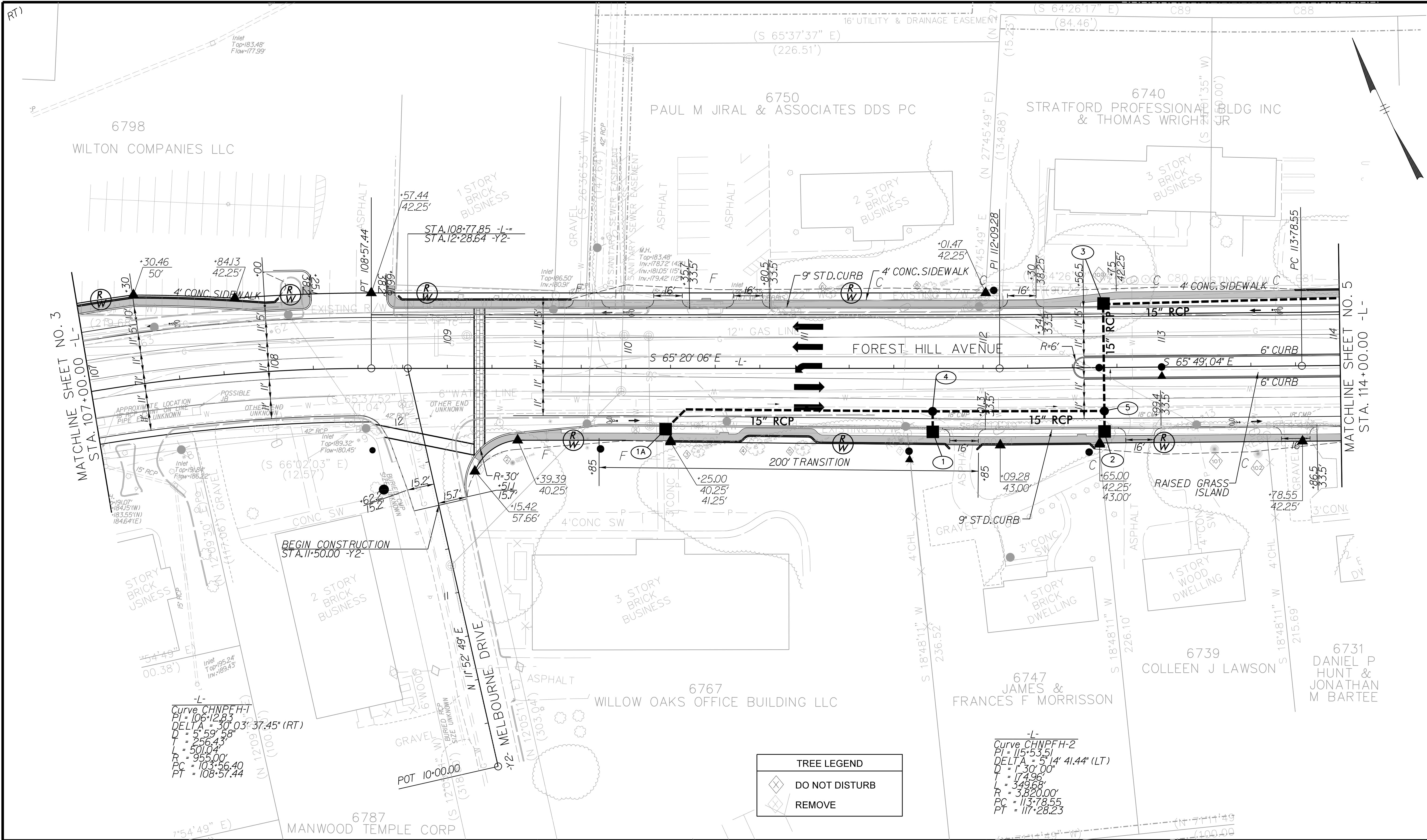
# -L- (FOREST HILL AVE.) DRAINAGE RIGHT OF ALIGNMENT



BEGIN CONSTRUCTION  
MILLING AND OVERLAY  
STA. 105+80.00 -L-

MILL AND OVERLAY





# FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works

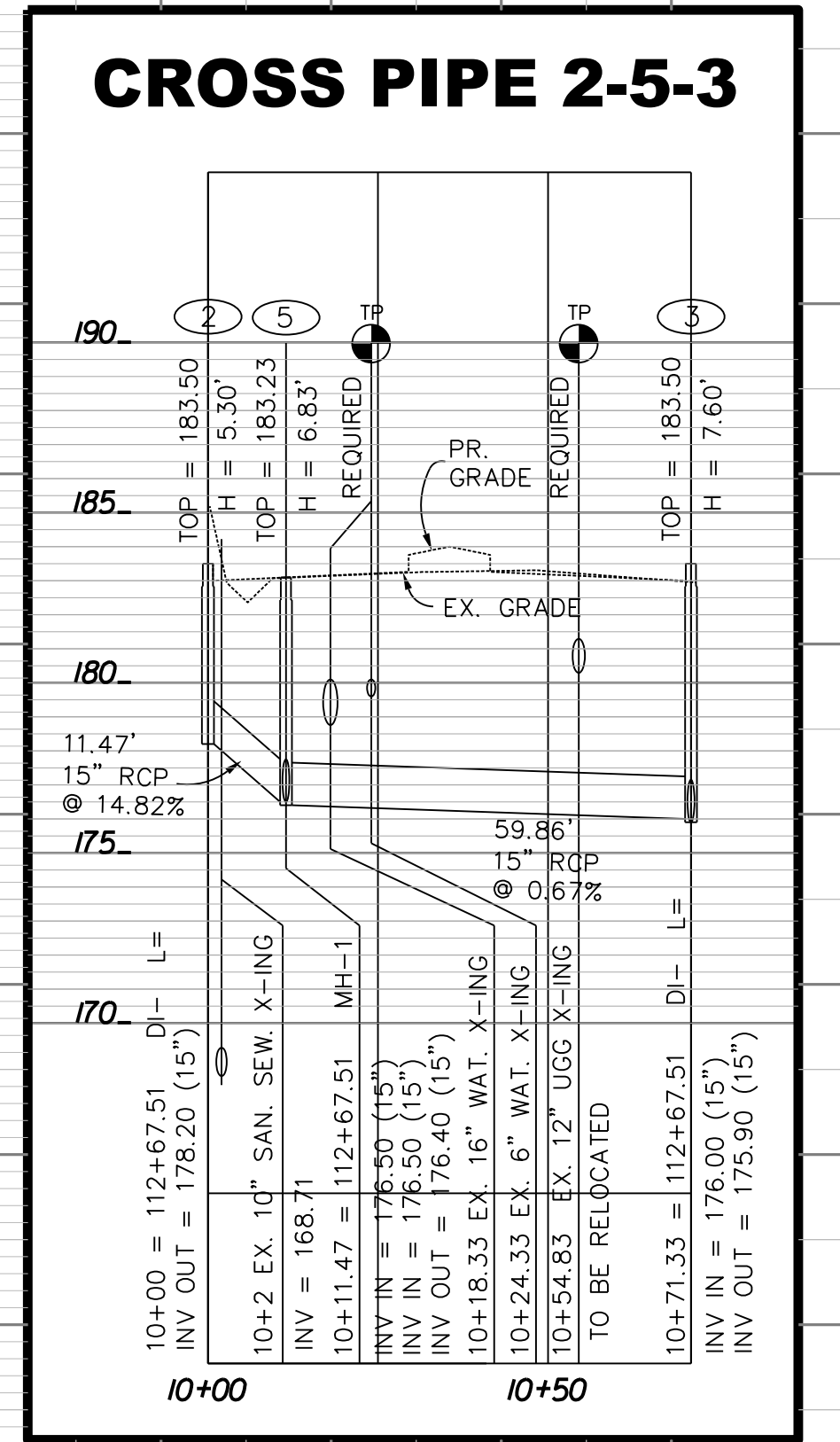
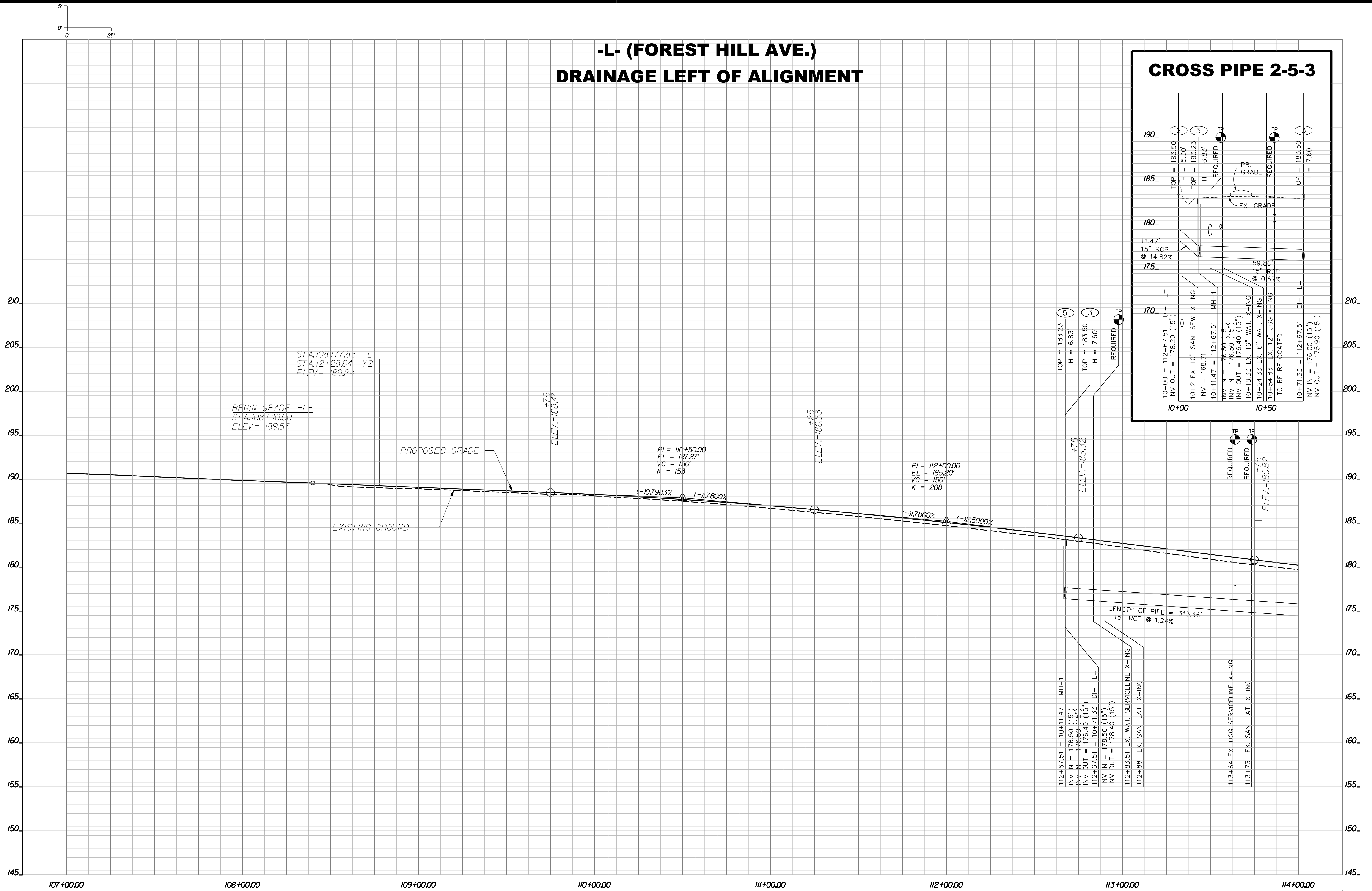
DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

## FOREST HILL AVENUE PLAN VIEW

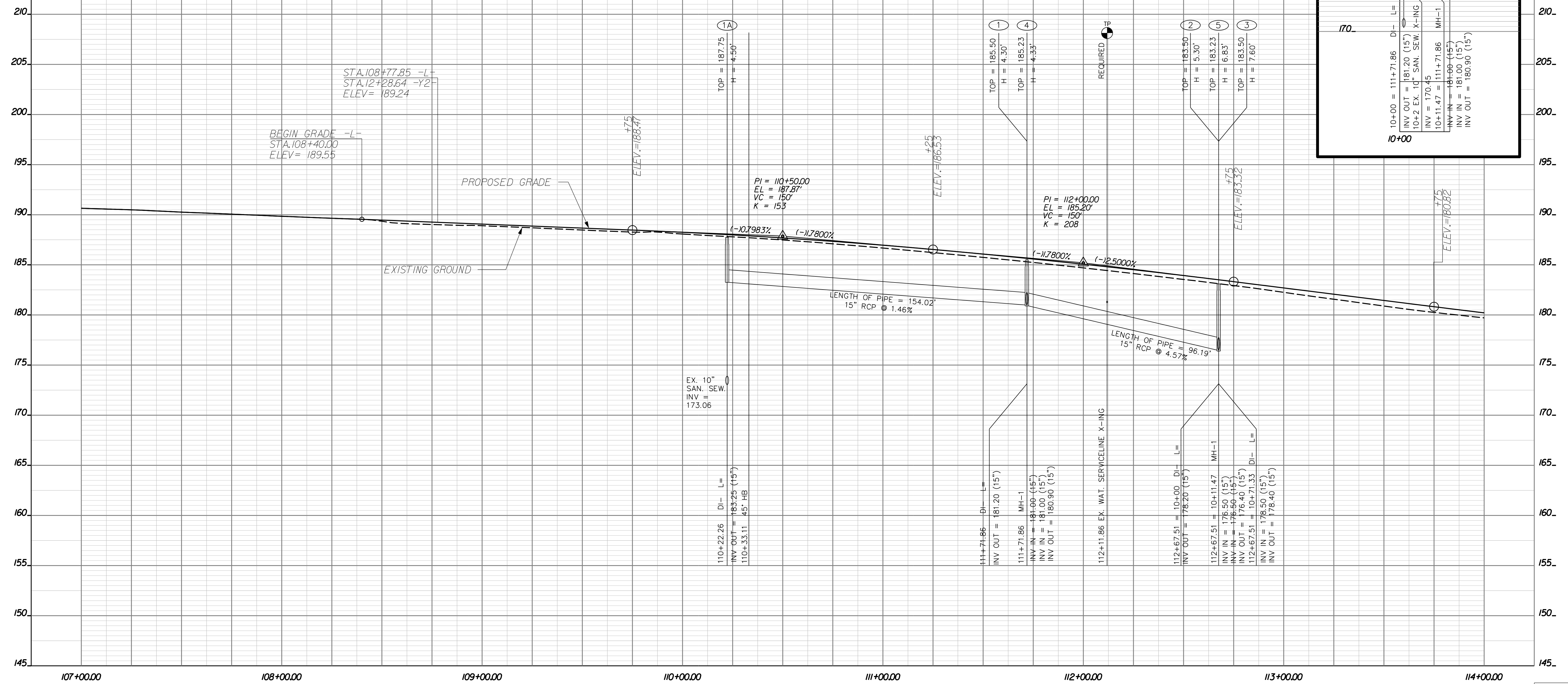
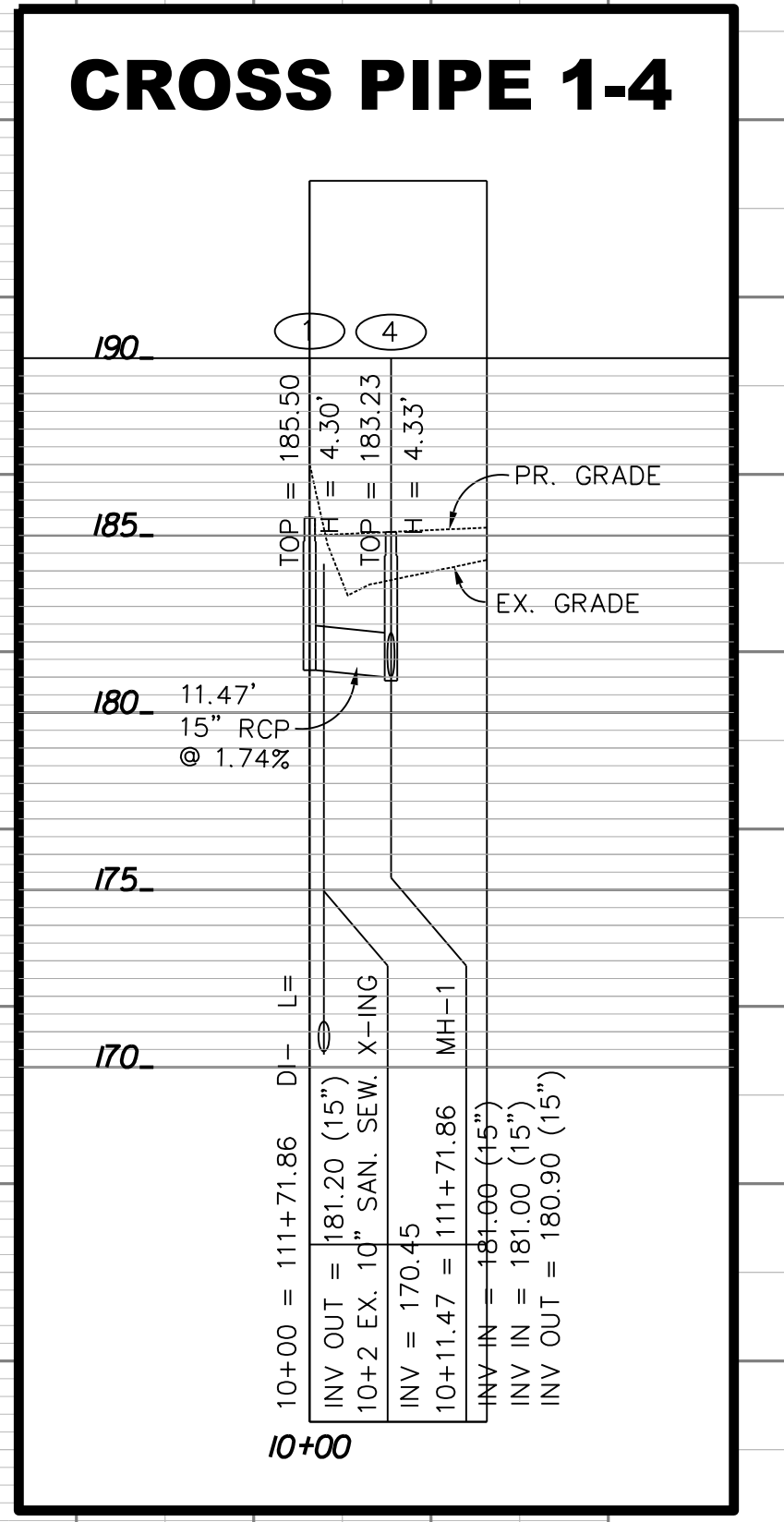
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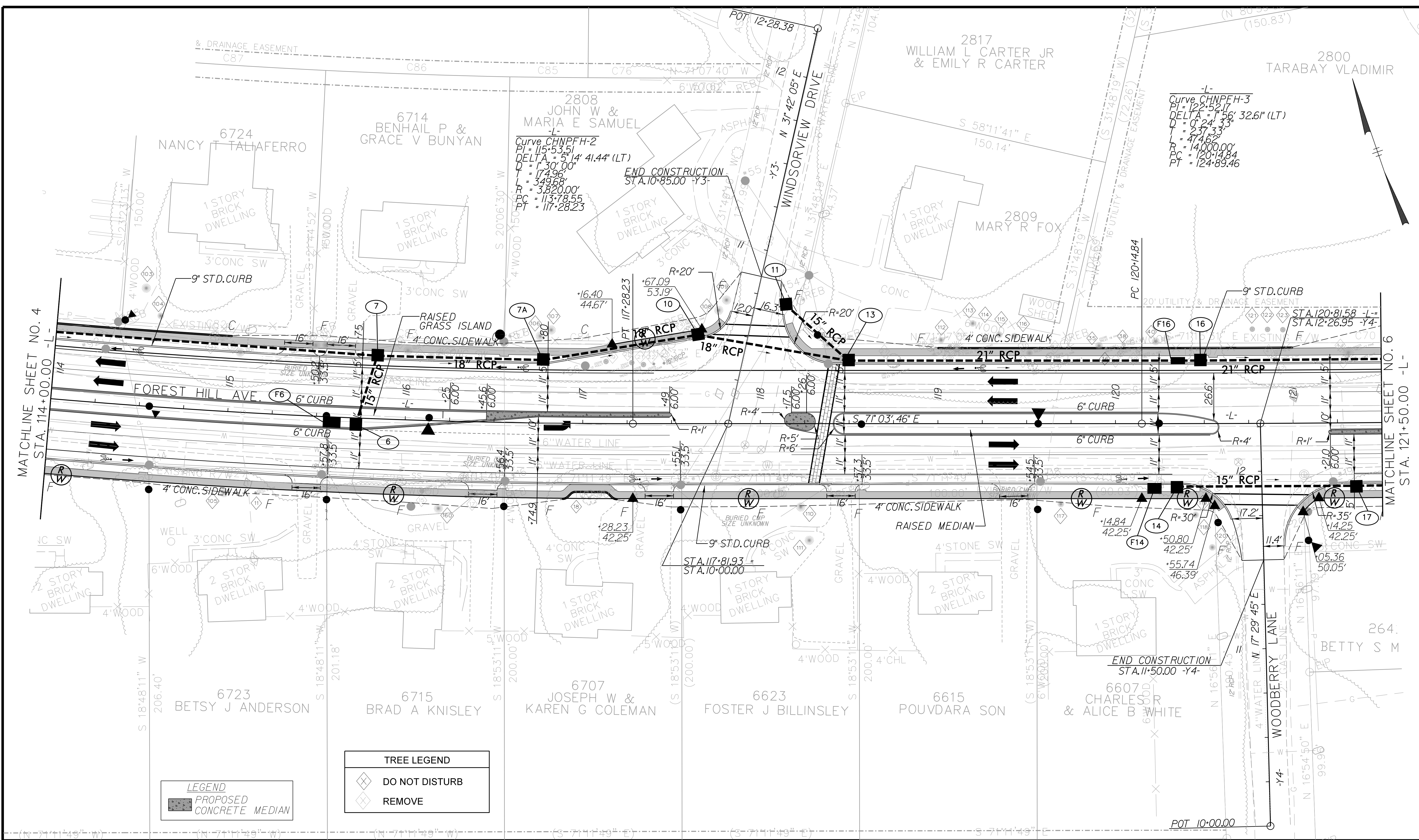
S:\FILES

# -L- (FOREST HILL AVE.) DRAINAGE LEFT OF ALIGNMENT



# -L- (FOREST HILL AVE.) DRAINAGE RIGHT OF ALIGNMENT





-L-  
 Curve CHNPFH-3  
 PI = 122.52.17  
 DELTA = 1° 56' 32.6" (LT)  
 D = 0° 24' 33"  
 T = 237.33'  
 L = 474.62'  
 R = 14,000.00'  
 PC = 120.14.84  
 PT = 124.89.46

-L-  
 Curve CHNPFH-2  
 PI = 115.53.51  
 DELTA = 5° 14' 41.44" (LT)  
 D = 1° 30' 00"  
 T = 174.96'  
 L = 349.68'  
 R = 3,820.00'  
 PC = 113.78.55  
 PT = 117.28.23

LEGEND  
 PROPOSED CONCRETE MEDIAN

TREE LEGEND  
 DO NOT DISTURB  
 REMOVE

# FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	Capital Project Administrator
Project Engineer	Deputy Director for Transportation / Public Works
Maintenance Engineer	Director of Public Works
City Traffic Engineer	

DEPARTMENT OF PUBLIC WORKS  
 RICHMOND, VIRGINIA

## FOREST HILL AVENUE PLAN VIEW

CIP: 040-291-8950

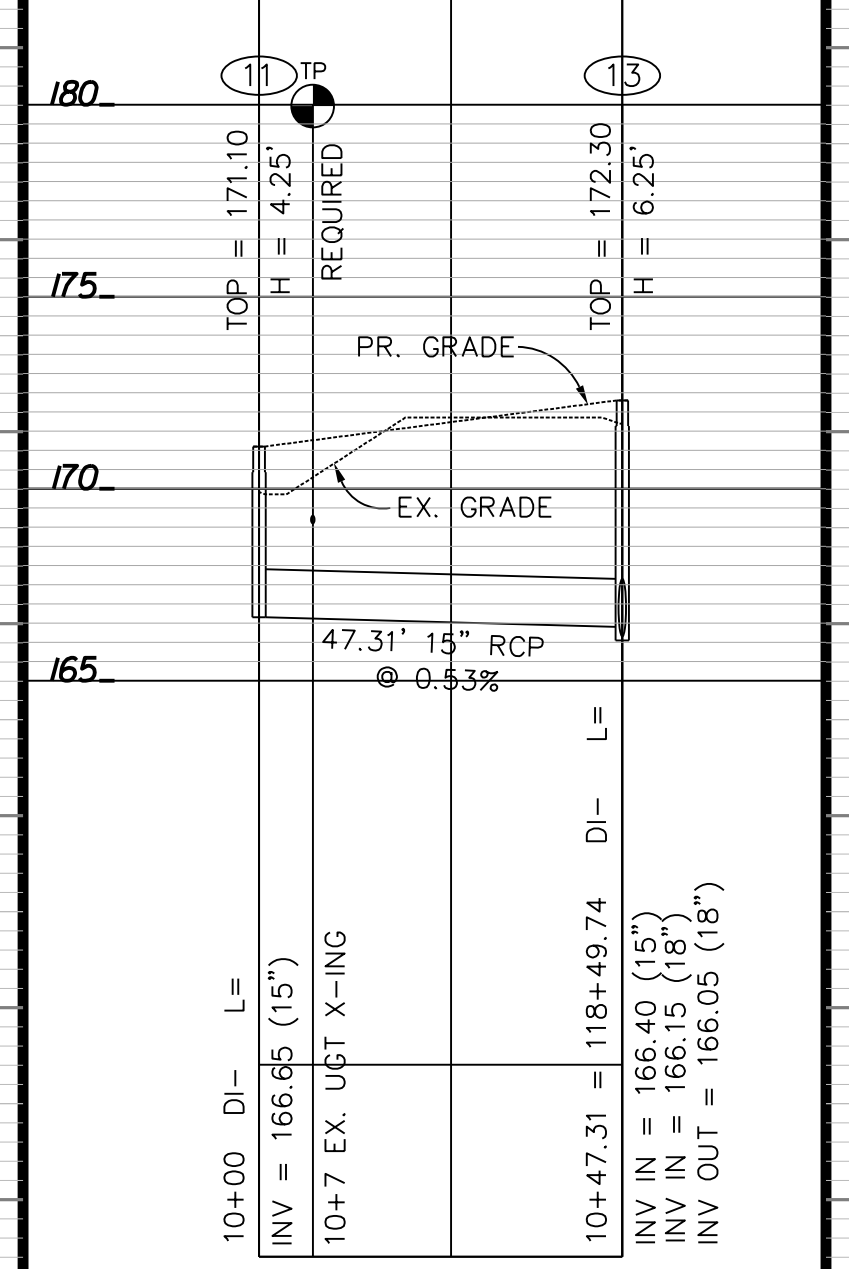
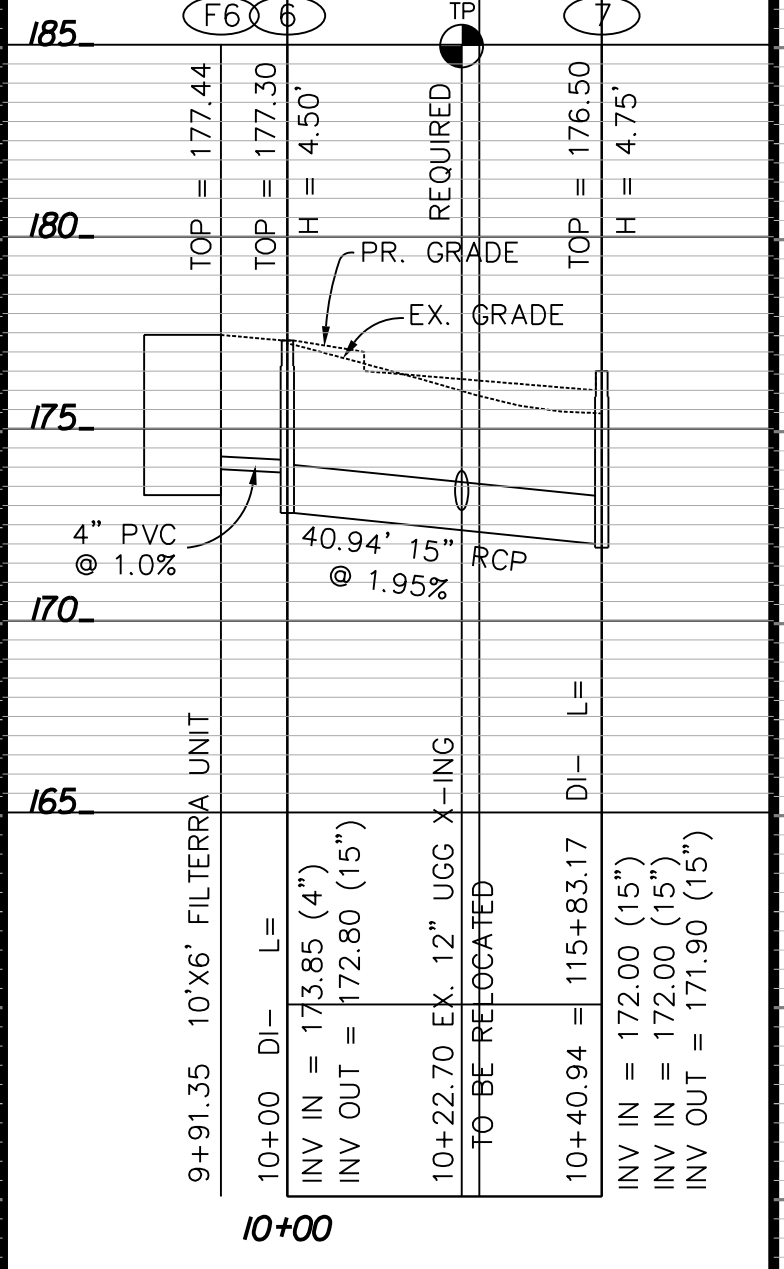
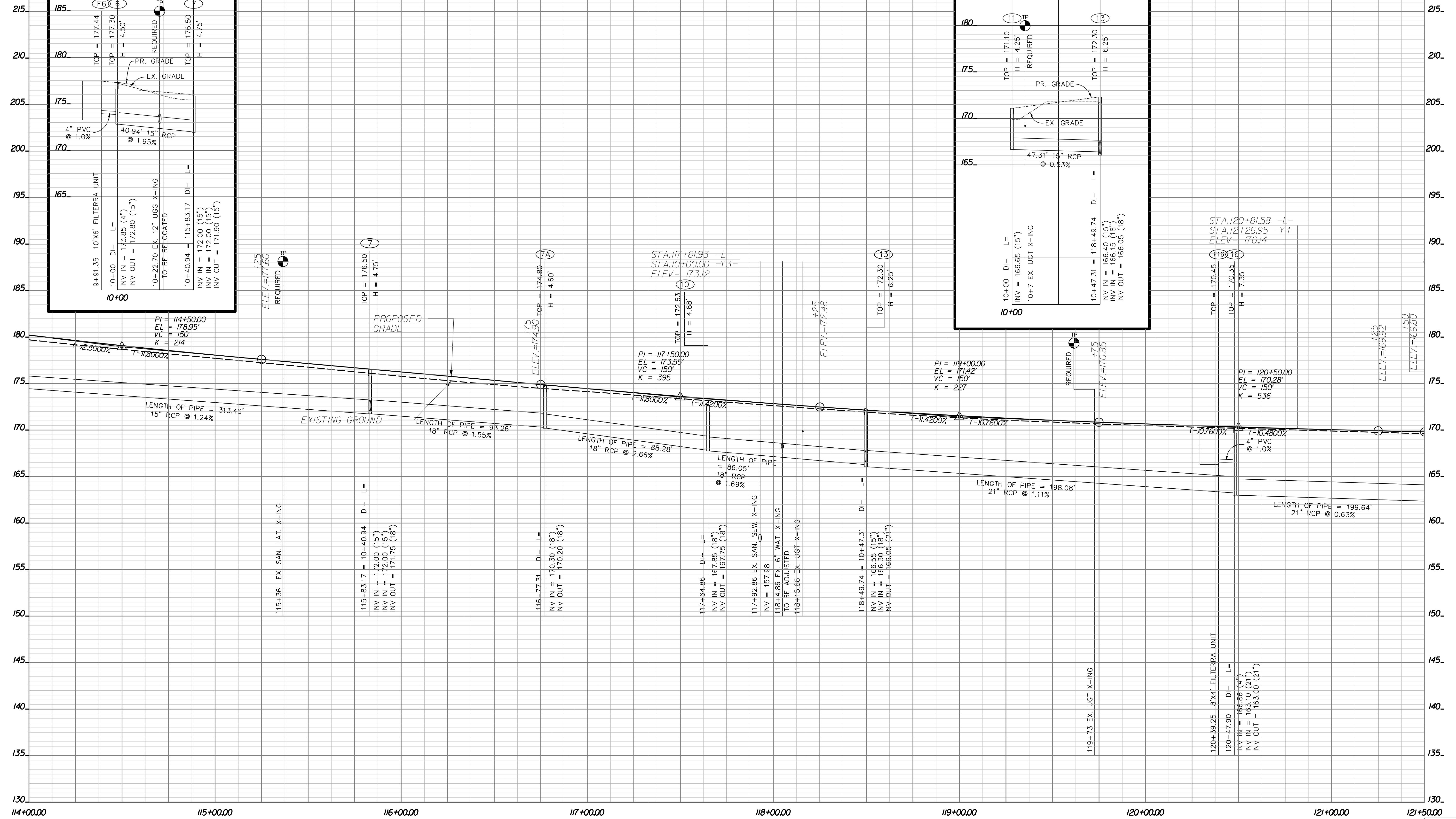
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DRAWN BY: STANTEC					
CHECKED BY: STANTEC					

SPT/ELLS

# -L- (FOREST HILL AVE.) DRAINAGE LEFT OF ALIGNMENT

## CROSS PIPE 6-7

## CROSS PIPE 11-13



STA. 120+81.58 -L-  
STA. 12+26.95 -Y4-  
ELEV = 170.14

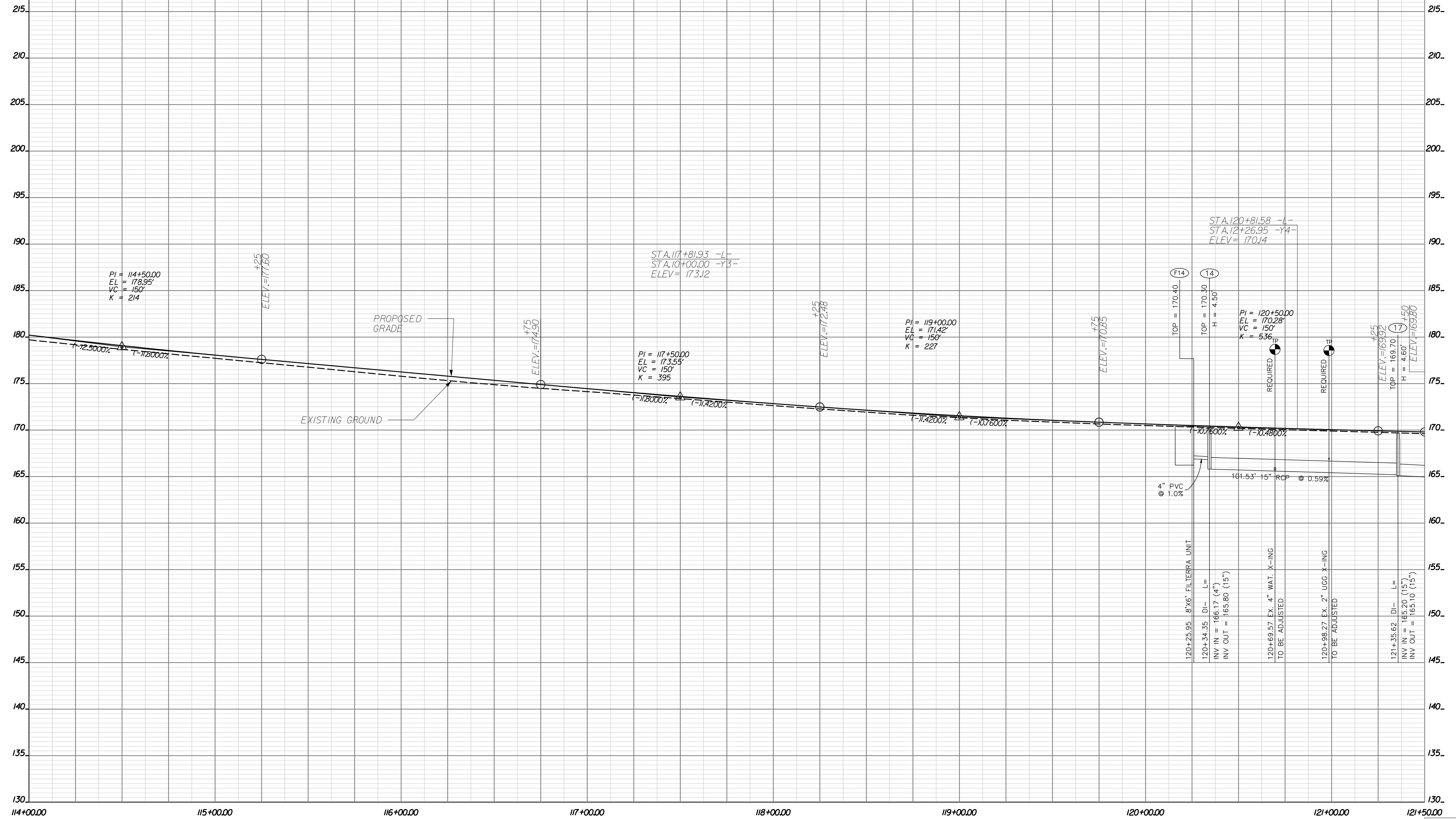
STA. 117+81.93 -L-  
STA. 10+00.00 -Y3-  
ELEV = 173.12

PI = 120+50.00  
EL = 170.28'  
VC = 150'  
K = 536

PI = 119+00.00  
EL = 171.42'  
VC = 150'  
K = 227

PI = 117+50.00  
EL = 173.55'  
VC = 150'  
K = 395

# -L- (FOREST HILL AVE.) DRAINAGE RIGHT OF ALIGNMENT



PI = 114+50.00  
EL = 178.95'  
VC = 150'  
K = 214

+25  
ELEV.=177.60

STA. 117+81.93 -L-  
STA. 10+00.00 -Y3-  
ELEV = 173.12

PI = 117+50.00  
EL = 173.55'  
VC = 150'  
K = 395

+25  
ELEV.=172.48

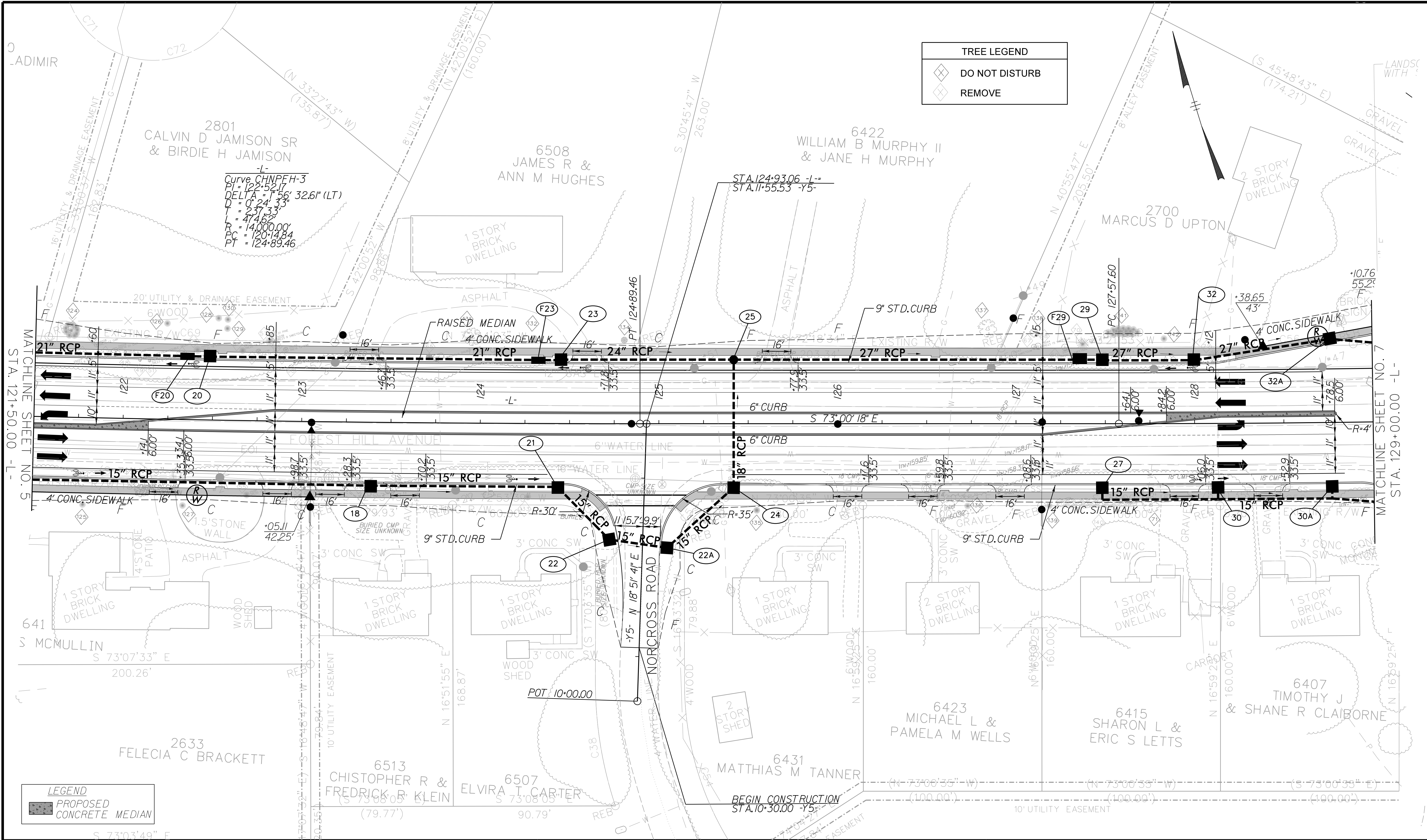
PI = 119+00.00  
EL = 171.42'  
VC = 150'  
K = 227

+75  
ELEV.=170.85

STA. 120+81.58 -L-  
STA. 12+26.95 -Y4-  
ELEV = 170.14

PI = 120+50.00  
EL = 170.28'  
VC = 150'  
K = 536

+25  
ELEV.=169.92  
TOP = 169.70  
H = 4.60'  
+50  
ELEV.=169.00



TREE LEGEND	
	DO NOT DISTURB
	REMOVE

LEGEND	
	PROPOSED CONCRETE MEDIAN

# FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	Capital Project Administrator
Project Engineer	Deputy Director for Transportation / Public Works
Maintenance Engineer	Director of Public Works
City Traffic Engineer	

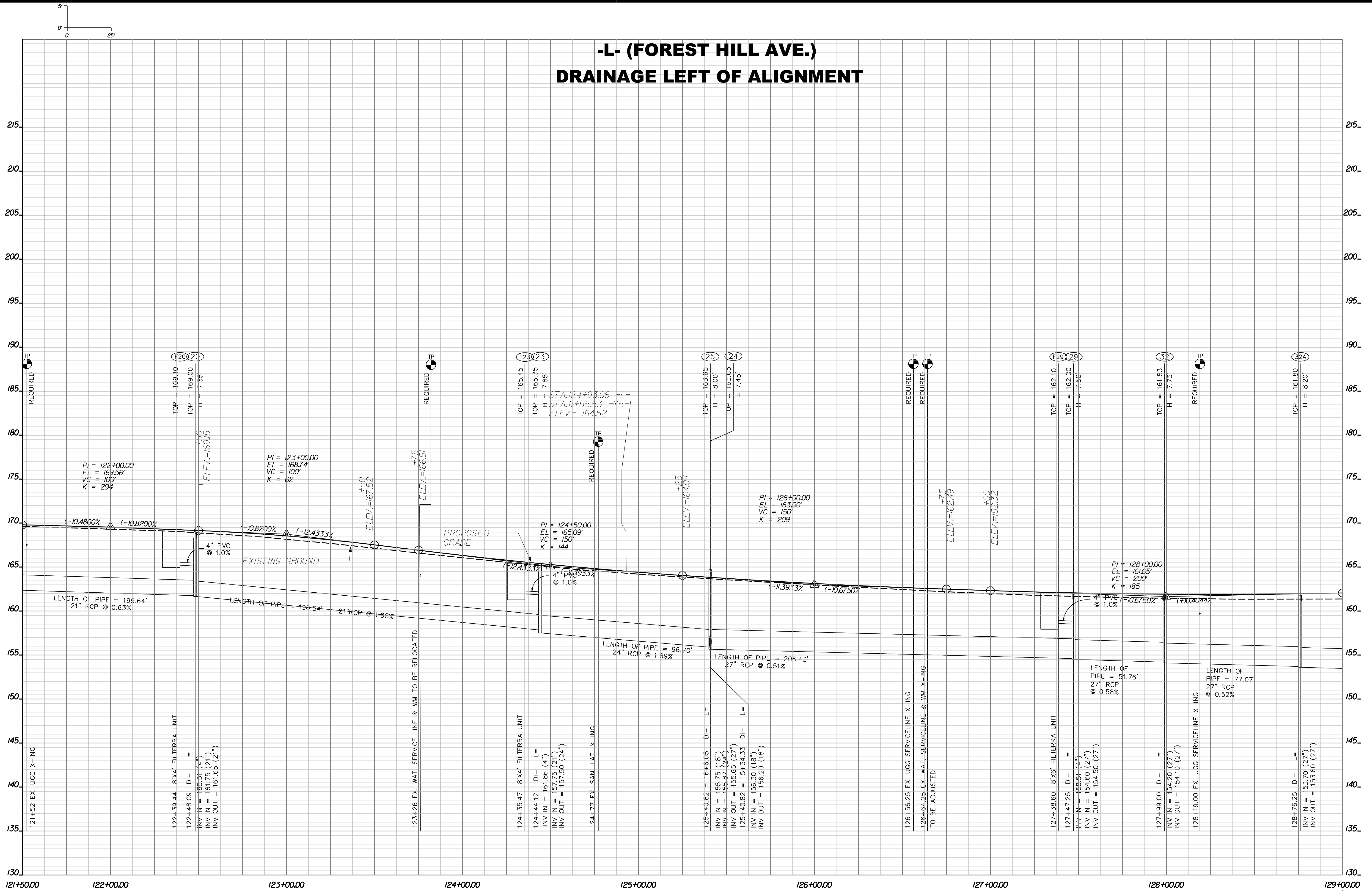
## FOREST HILL AVENUE PLAN VIEW

DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

CIP: 040-291-8950	DESIGN BY: STANTEC	REVIEWED BY:	FIELD NOTES:	DATE: 2/5/2013	DRAWING FILE NAME: 171000608_rdy_psh_6.dgn	DRAWING NO. 6
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	CHECKED BY: STANTEC					

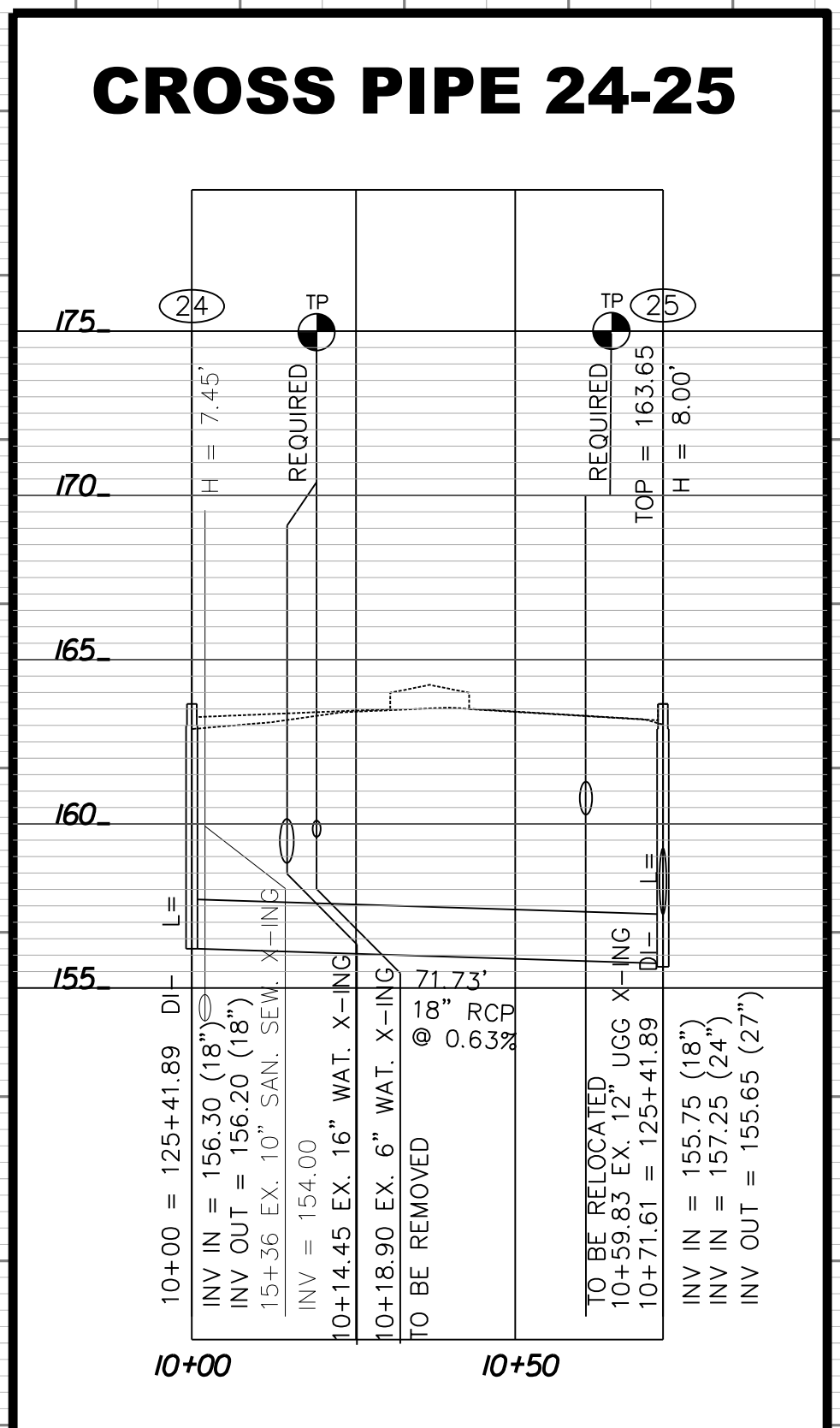
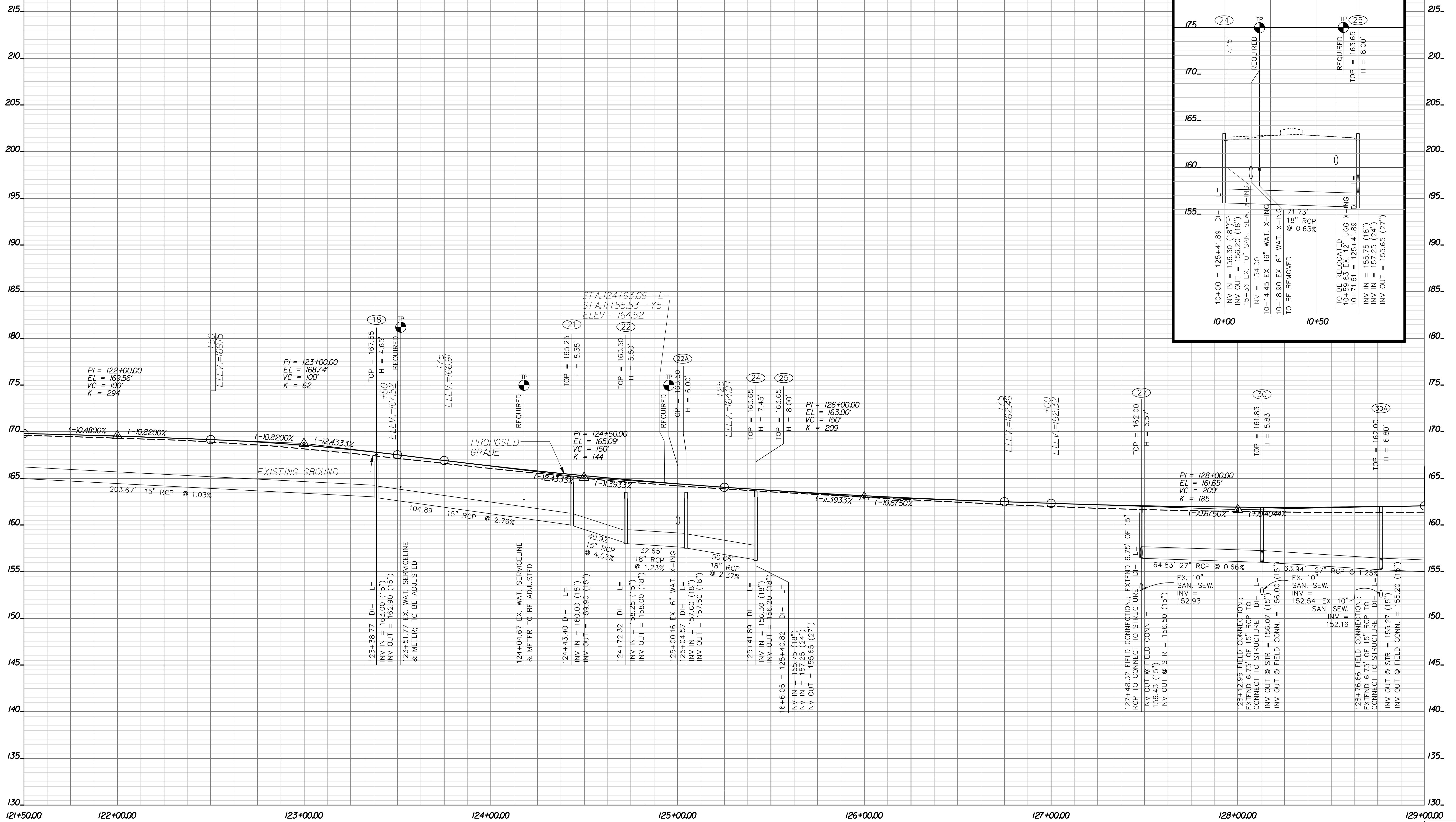
SPT/ELLS

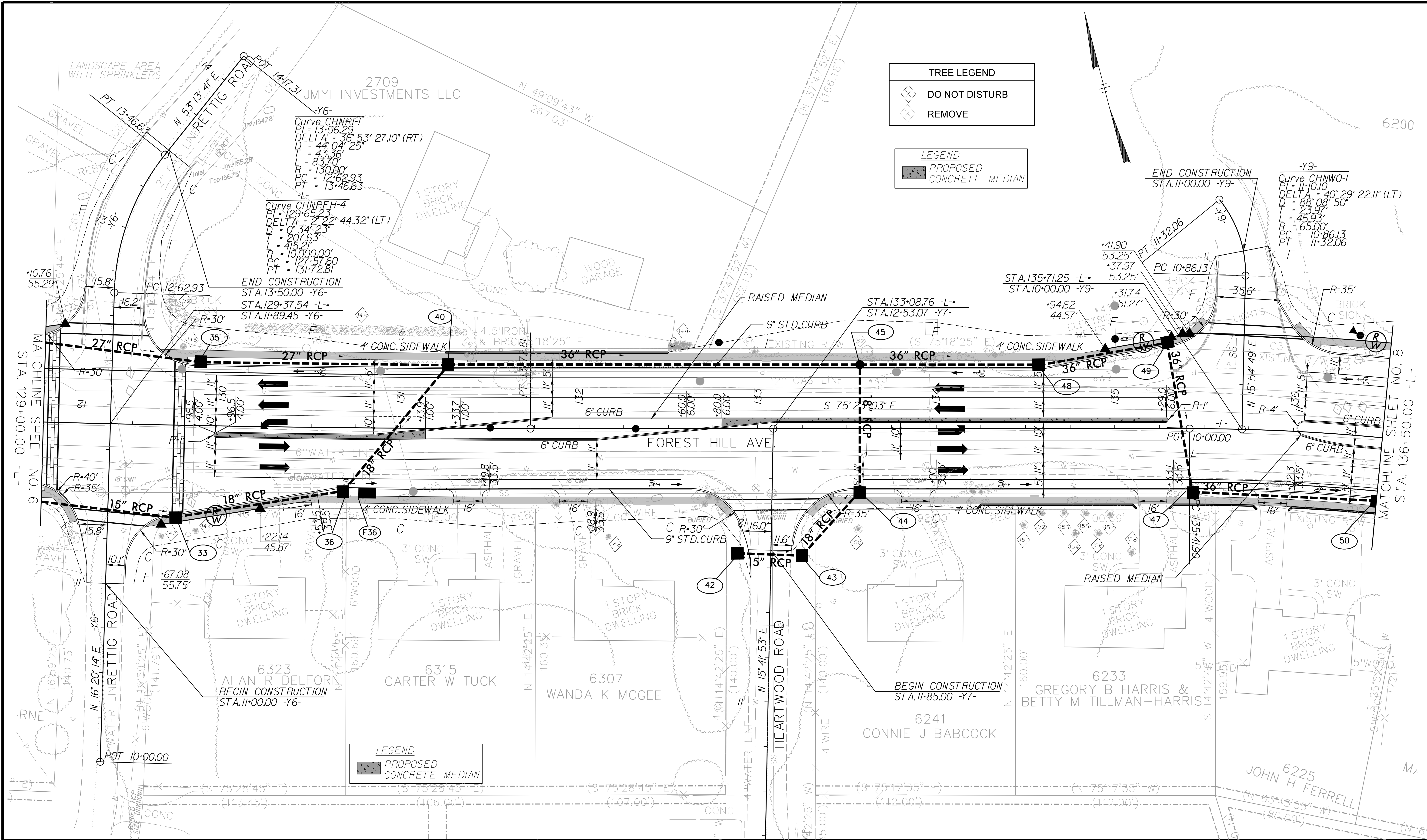
# -L- (FOREST HILL AVE.) DRAINAGE LEFT OF ALIGNMENT





# -L- (FOREST HILL AVE.) DRAINAGE RIGHT OF ALIGNMENT





TREE LEGEND	
	DO NOT DISTURB
	REMOVE

LEGEND	
	PROPOSED CONCRETE MEDIAN

LEGEND	
	PROPOSED CONCRETE MEDIAN

# FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works

## FOREST HILL AVENUE PLAN VIEW

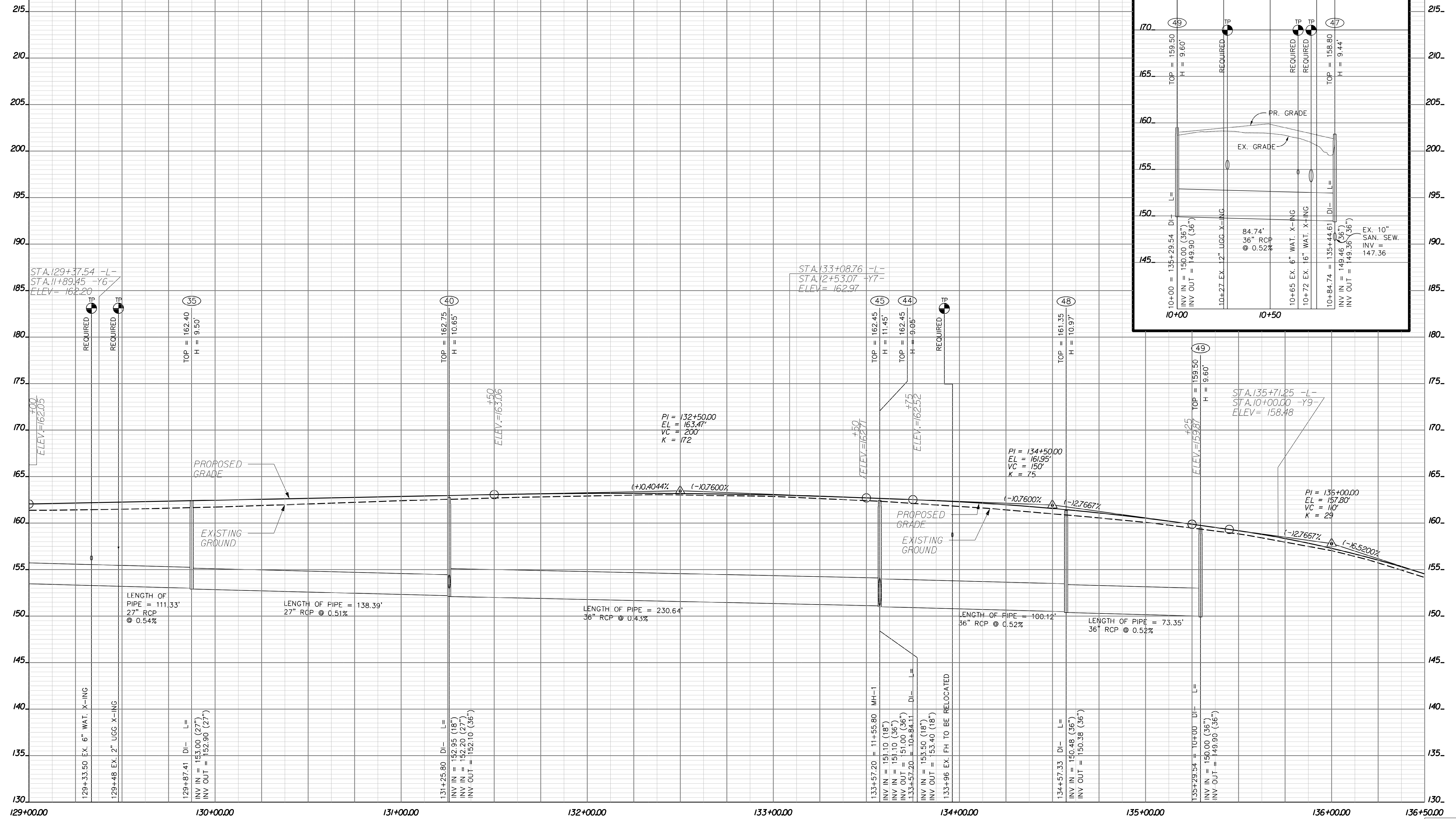
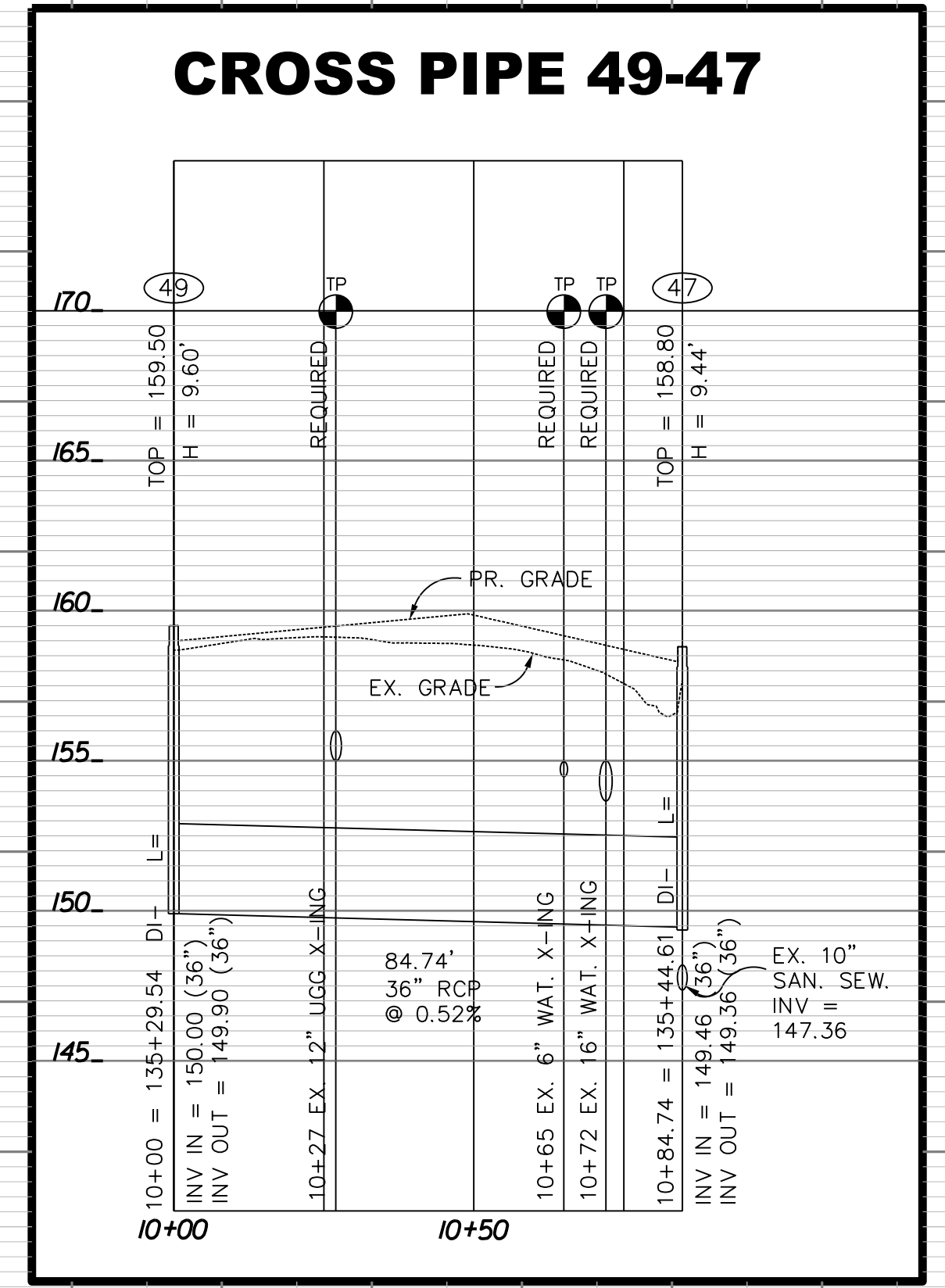
DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

CIP: 040-291-8950

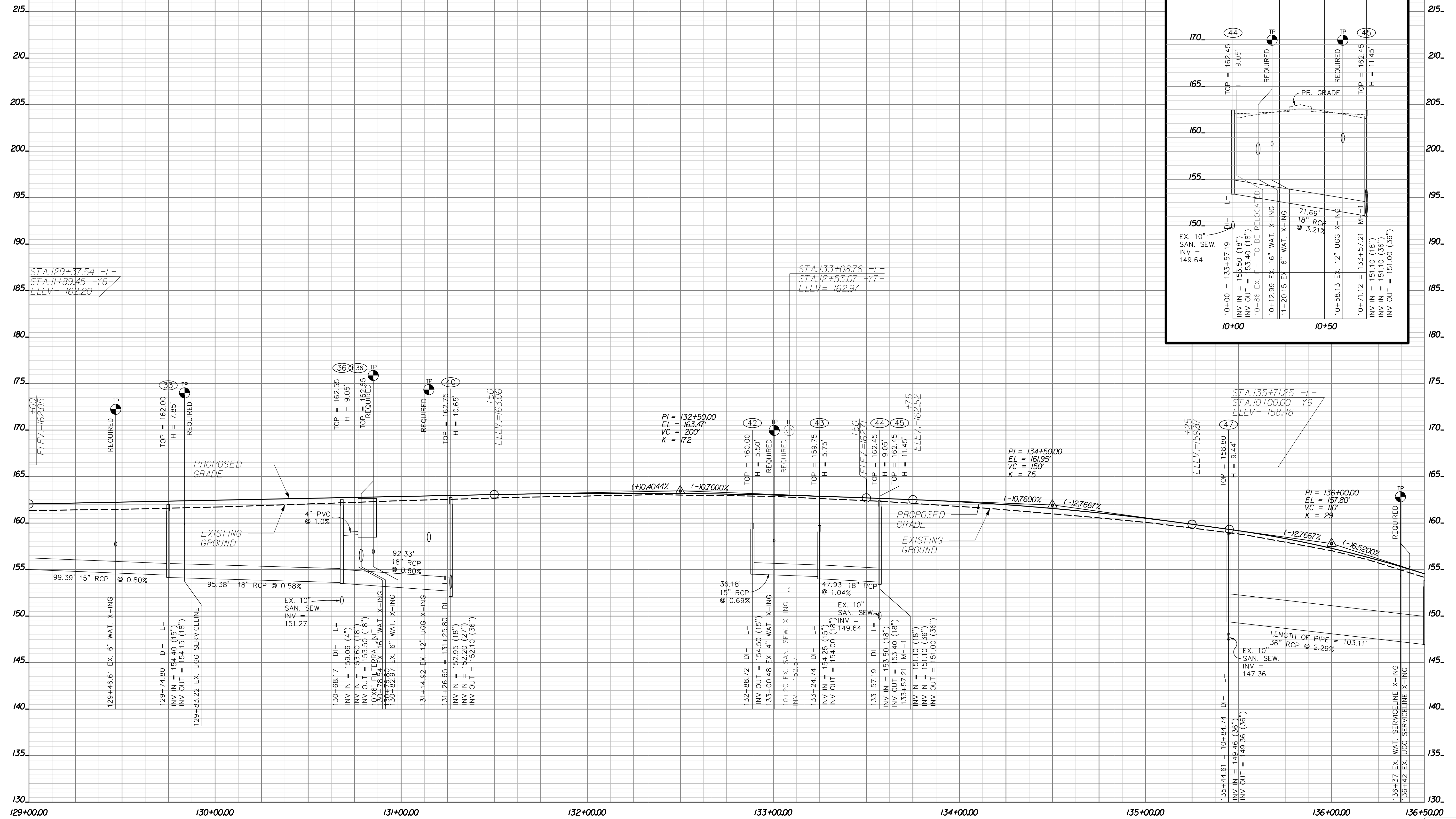
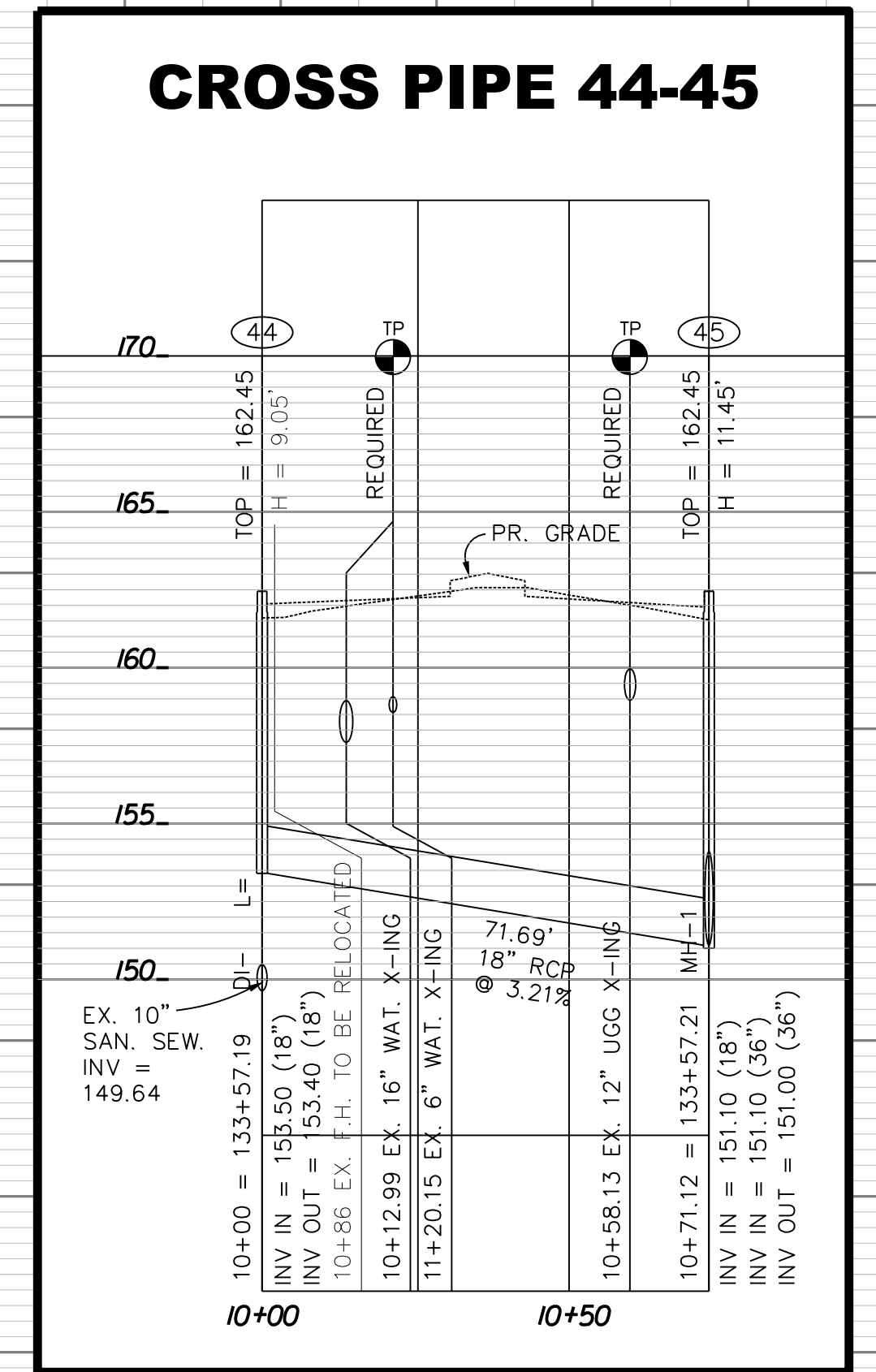
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CHECKED BY: STANTFC					

SPT/ELLS

# -L- (FOREST HILL AVE.) DRAINAGE LEFT OF ALIGNMENT



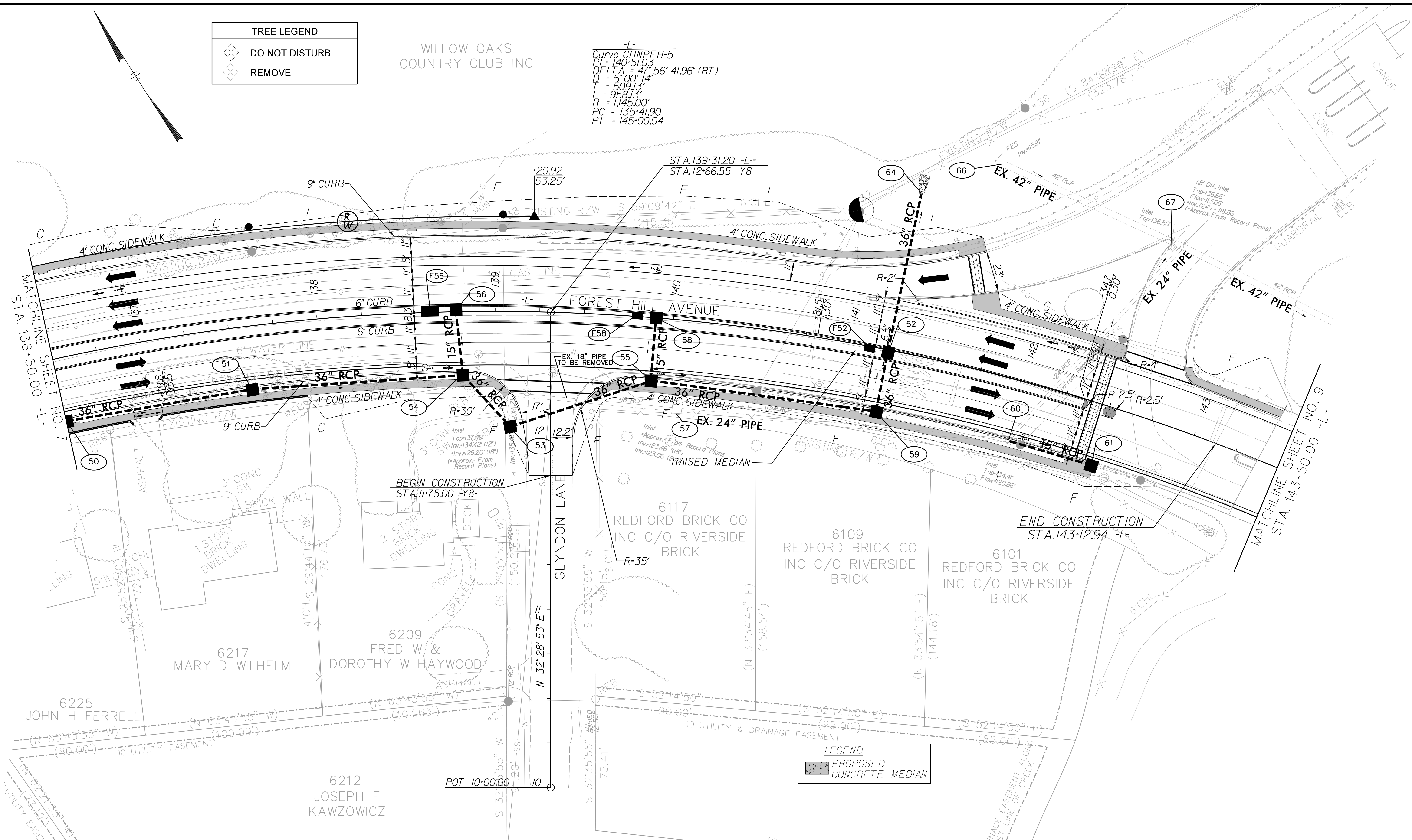
# -L- (FOREST HILL AVE.) DRAINAGE RIGHT OF ALIGNMENT



TREE LEGEND	
	DO NOT DISTURB
	REMOVE

WILLOW OAKS  
COUNTRY CLUB INC

-L-  
Curve CHNPFH-5  
PI = 140+51.03  
DELTA = 47° 56' 41.96" (RT)  
D = 5° 00' 14"  
L = 509.13'  
R = 959.13'  
PC = 135+41.90  
PT = 145+00.04



LEGEND	
	PROPOSED CONCRETE MEDIAN

# FOREST HILL AVENUE IMPROVEMENT PROJECT



Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works

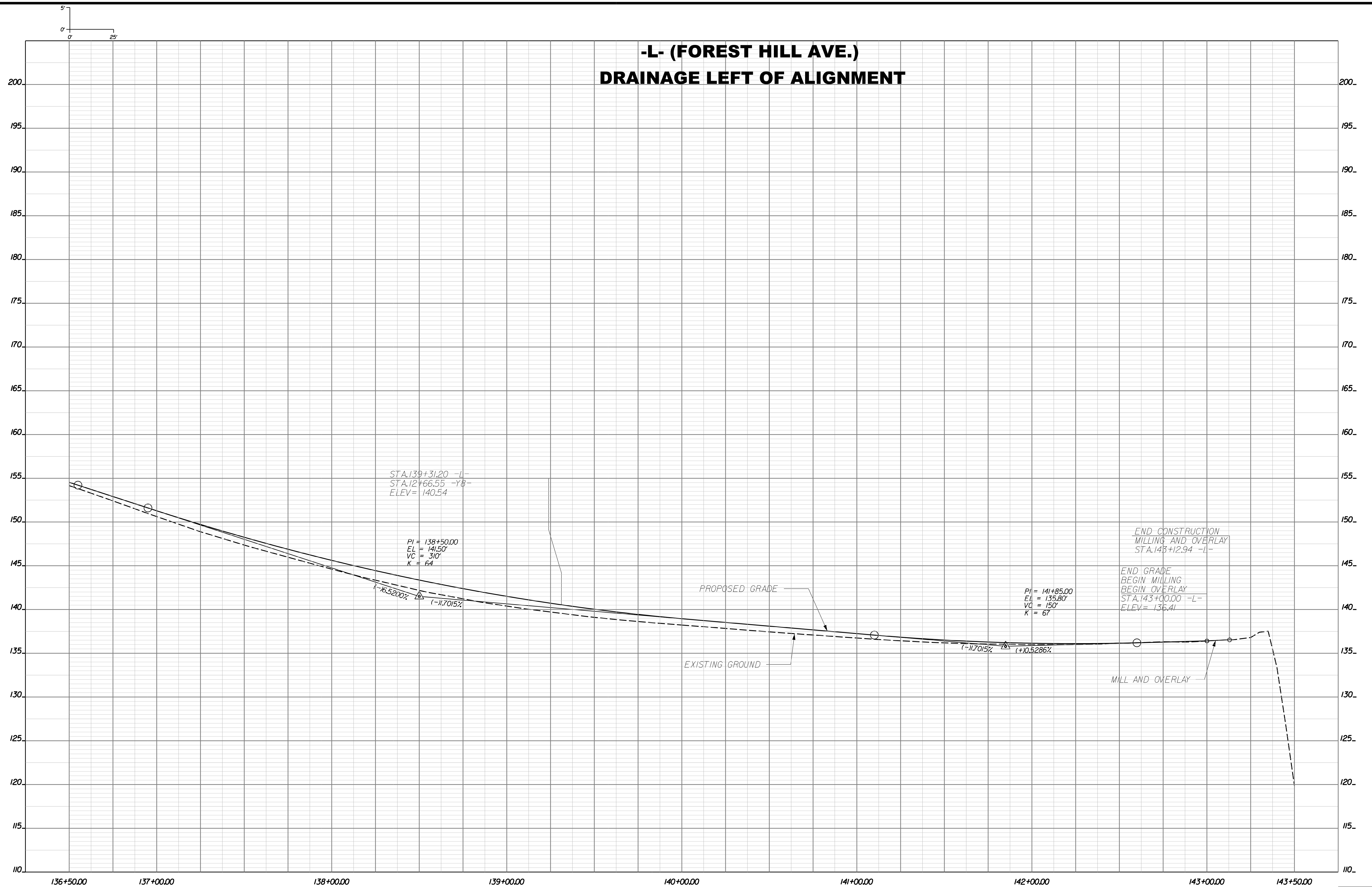
DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

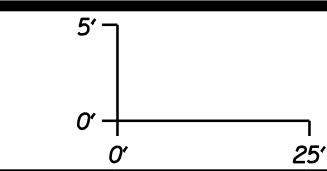
## FOREST HILL AVENUE PLAN VIEW

CIP: 040-291-8950

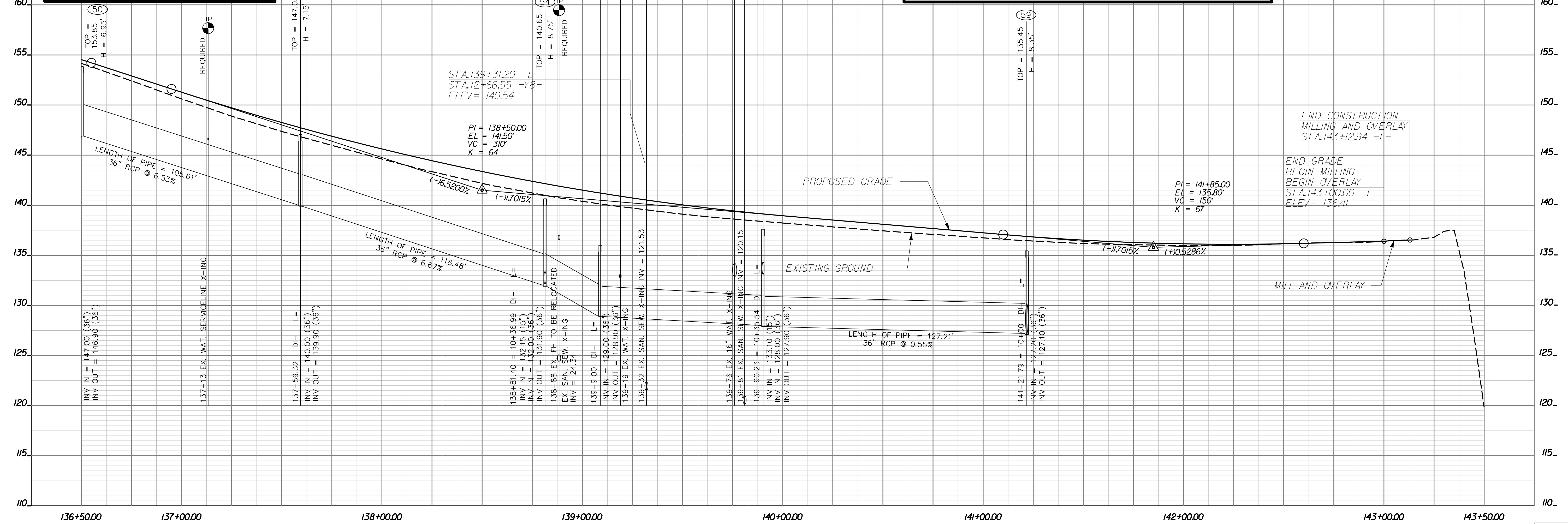
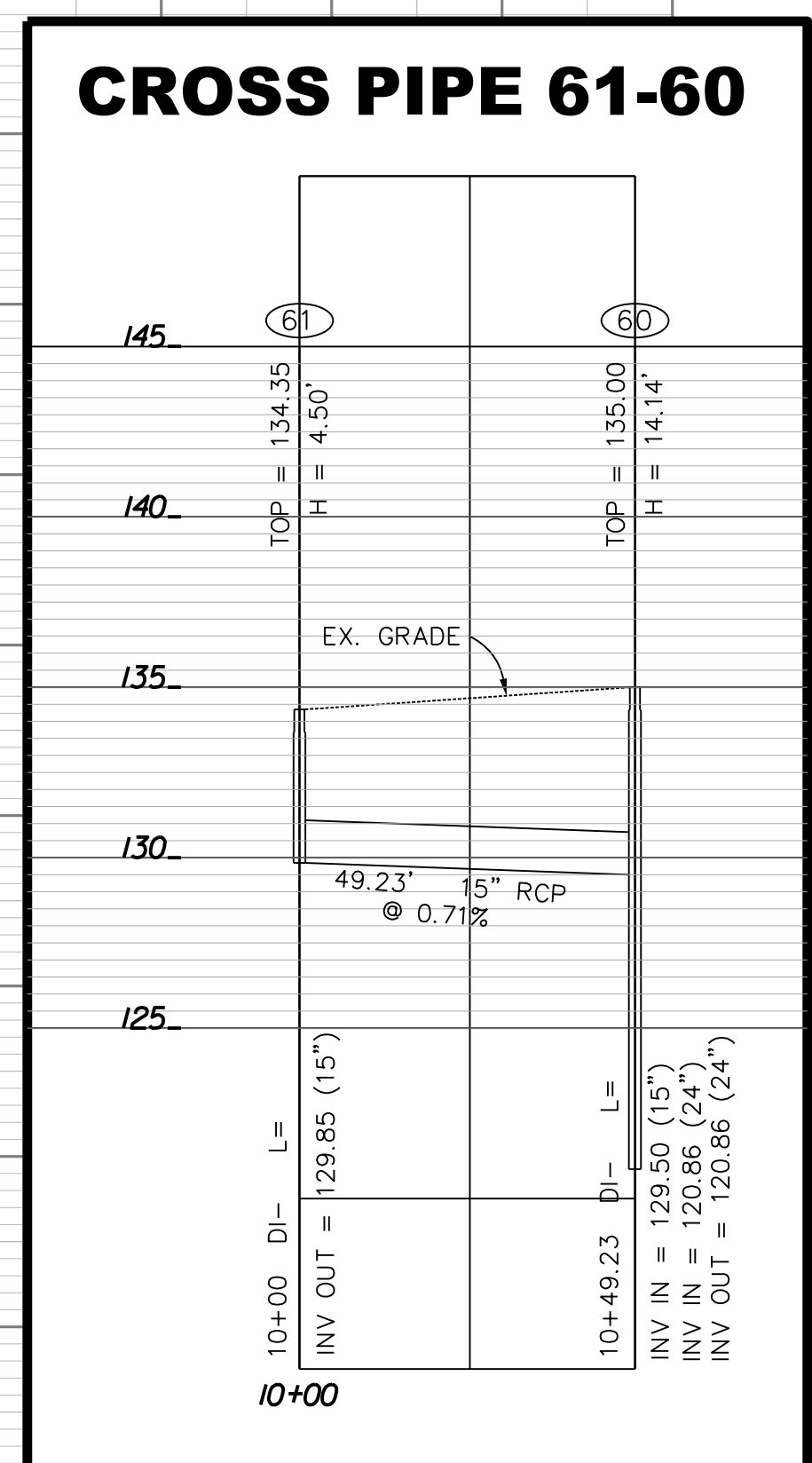
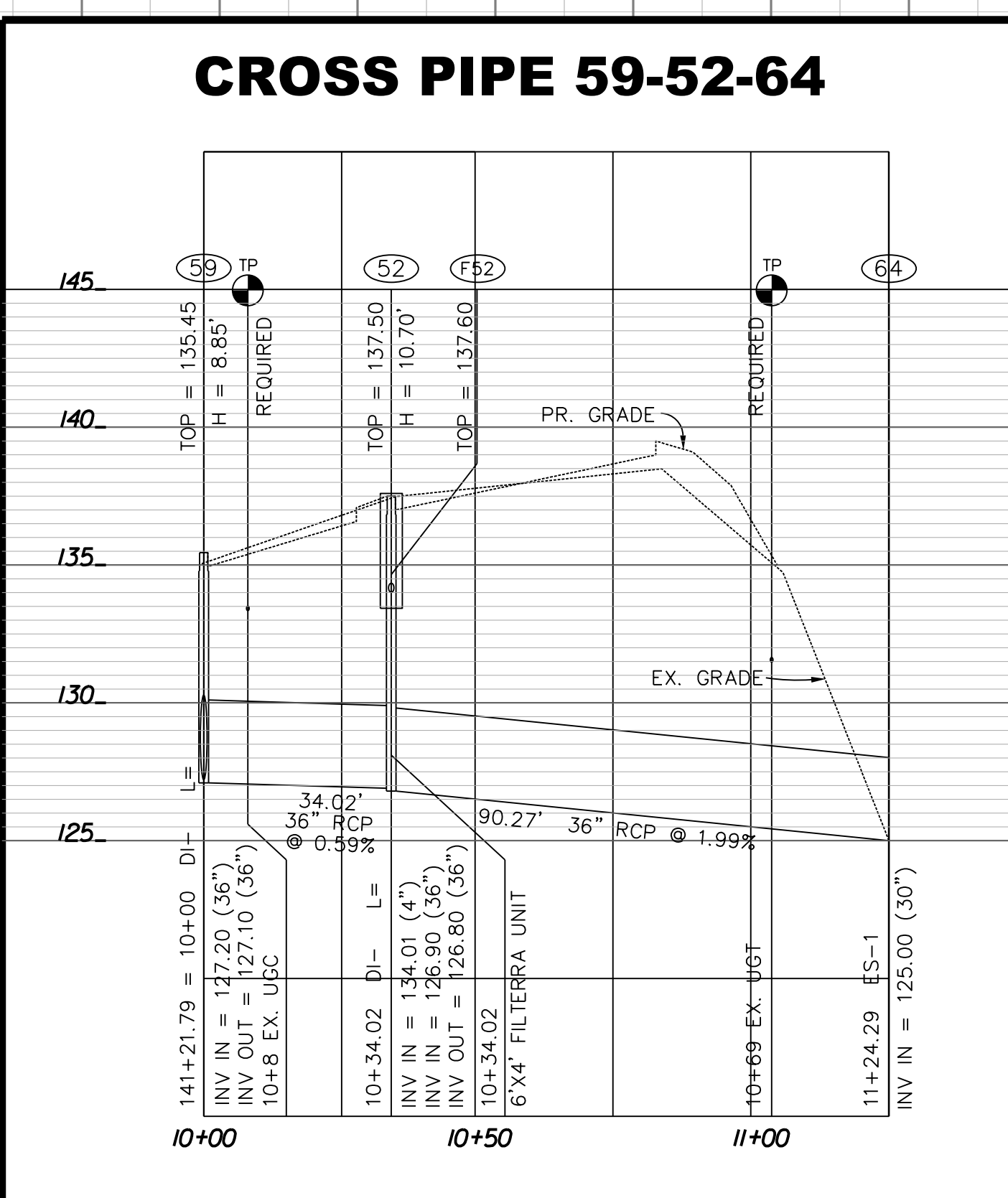
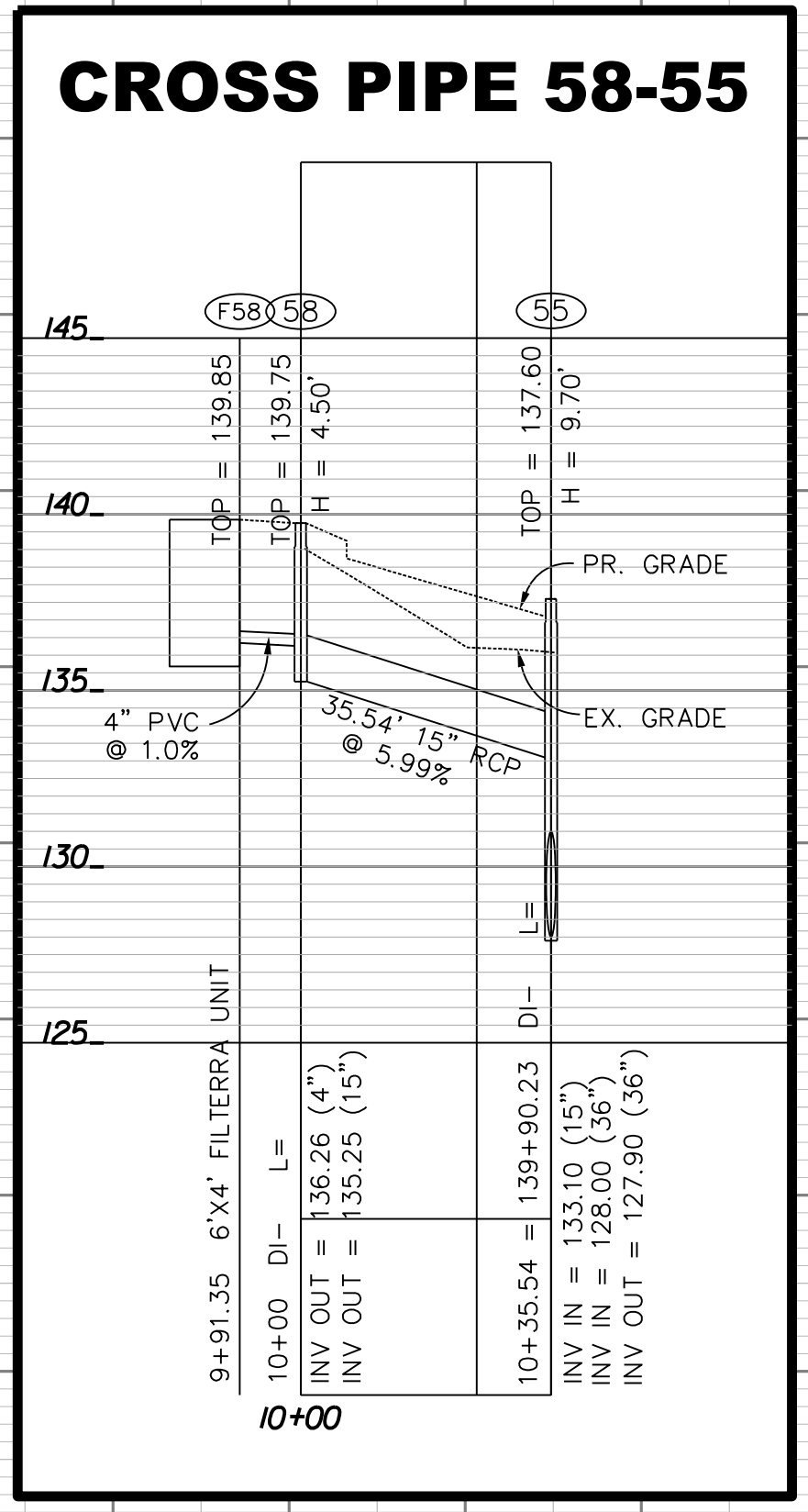
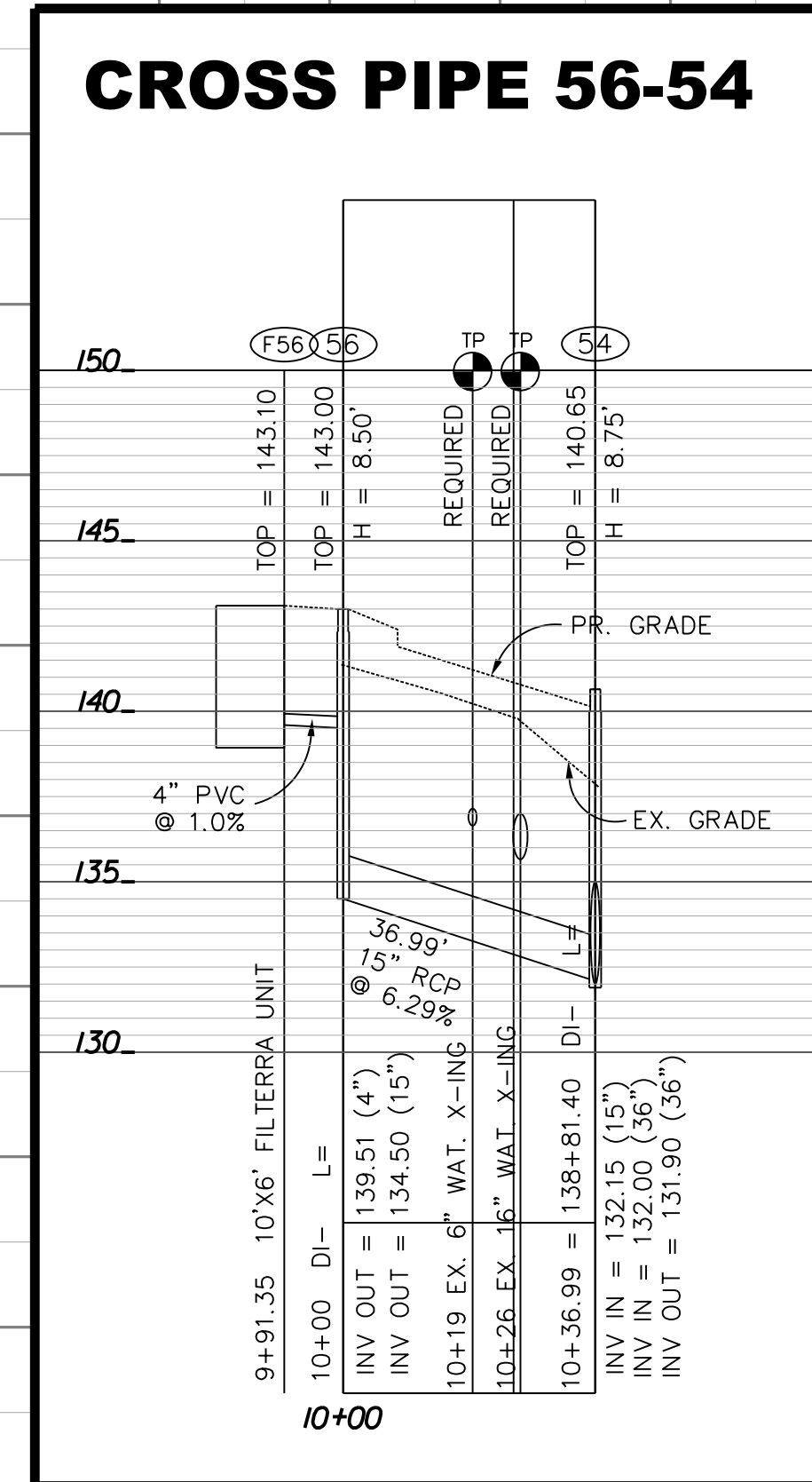
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STANTEC			HORIZ: 1"=25' VERT: 1"=25'	2/5/2013	171000608_rdy_psh_8.dgn	8

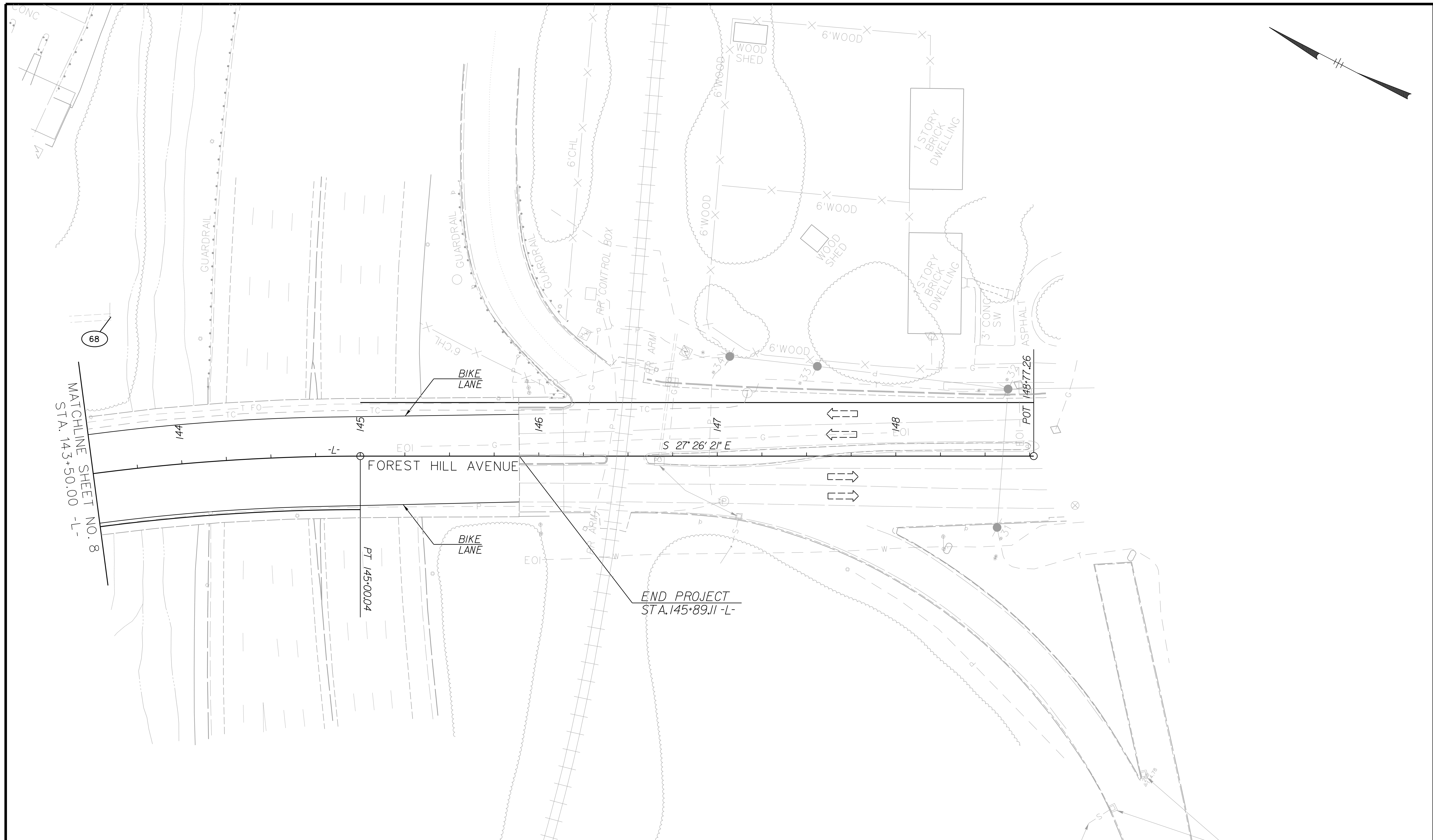
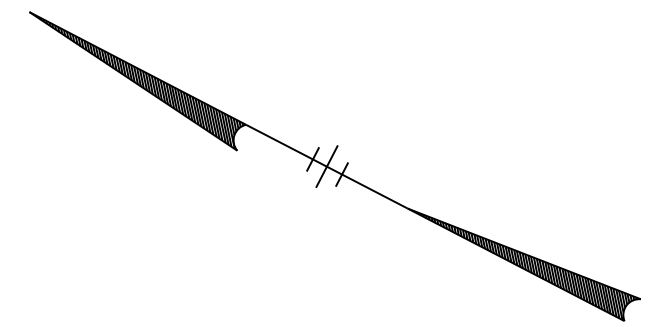
# -L- (FOREST HILL AVE.) DRAINAGE LEFT OF ALIGNMENT





**-L- (FOREST HILL AVE.)  
DRAINAGE RIGHT OF  
ALIGNMENT**





Technical	Administrative
Surveys Superintendent	
Project Engineer	Capital Project Administrator
Maintenance Engineer	Deputy Director for Transportation / Public Works
City Traffic Engineer	Director of Public Works

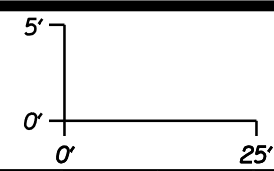
DEPARTMENT OF PUBLIC WORKS  
RICHMOND, VIRGINIA

## FOREST HILL AVENUE PLAN VIEW

CIP: 040-291-8950

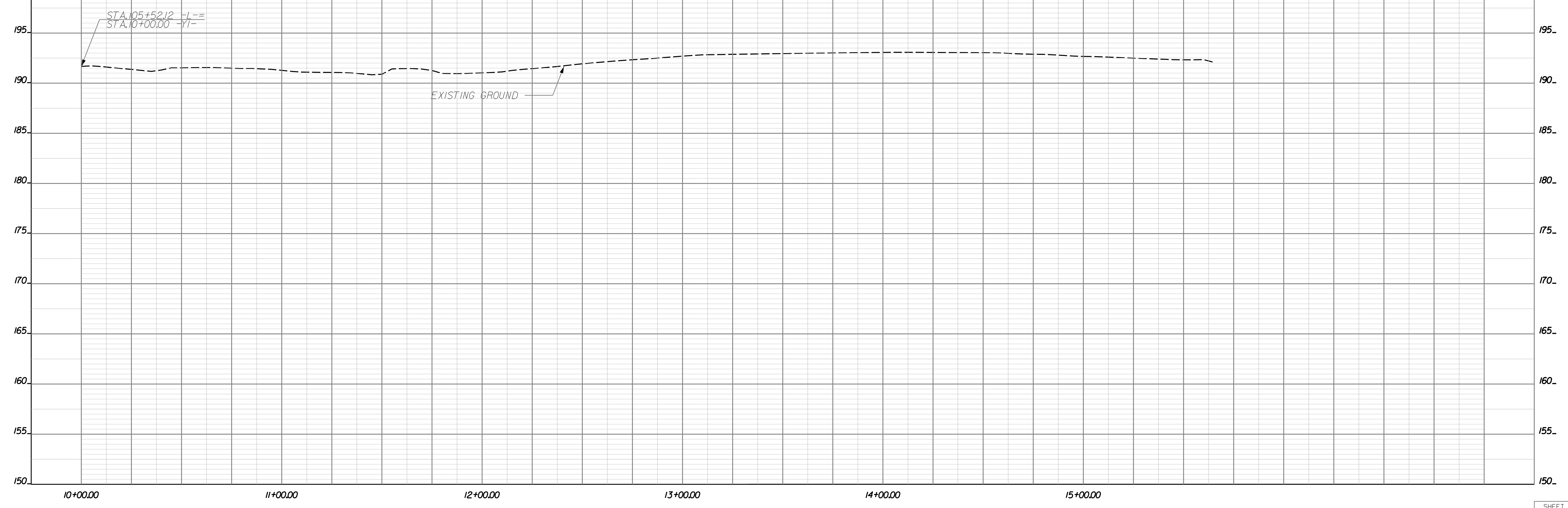
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DRAWN BY: STANTEC			VERT. 1"=25'			
CHECKED BY: STANTEC						

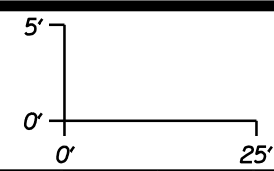




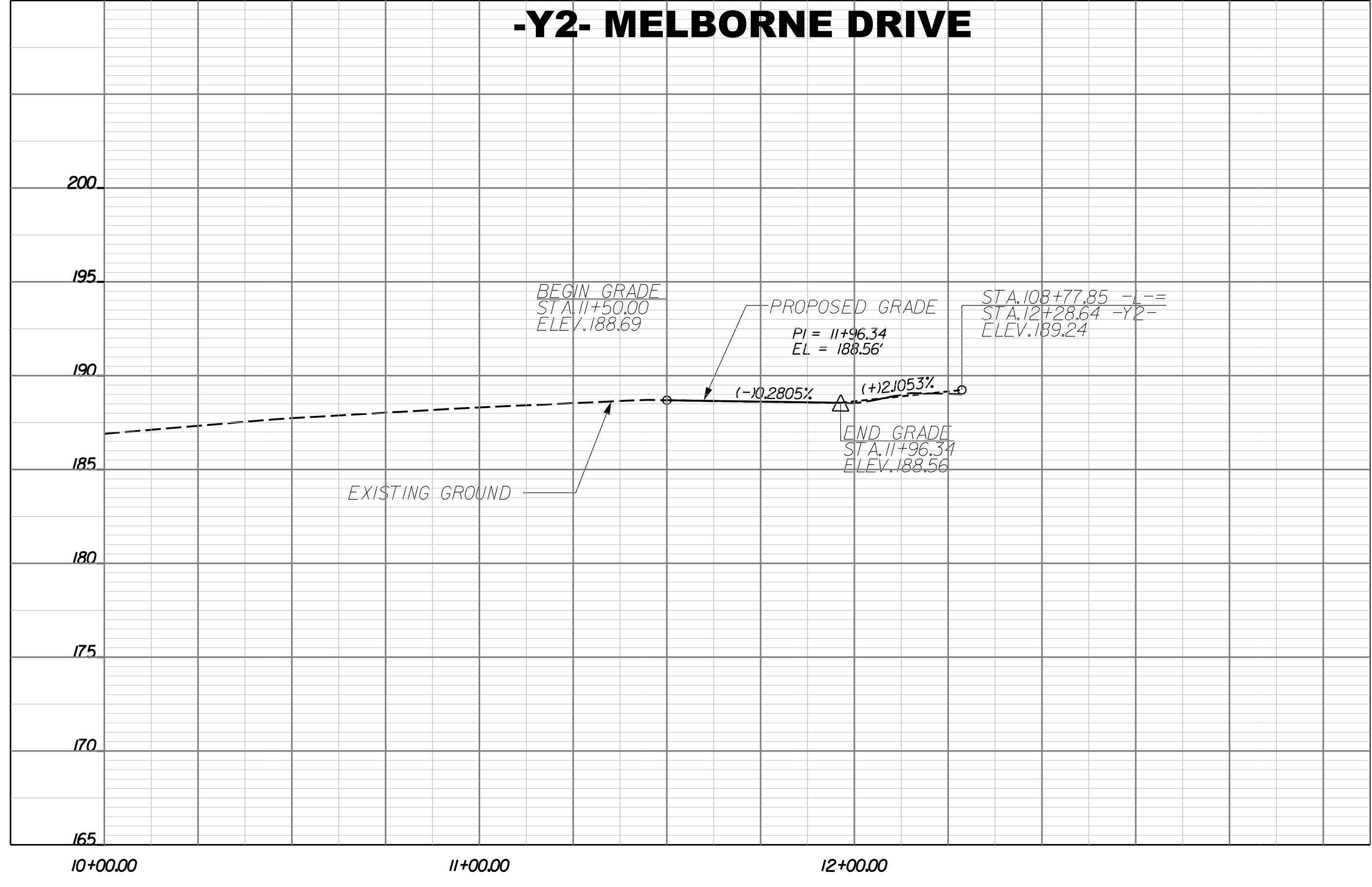
# -Y1- HATHAWAY ROAD

-Y1-

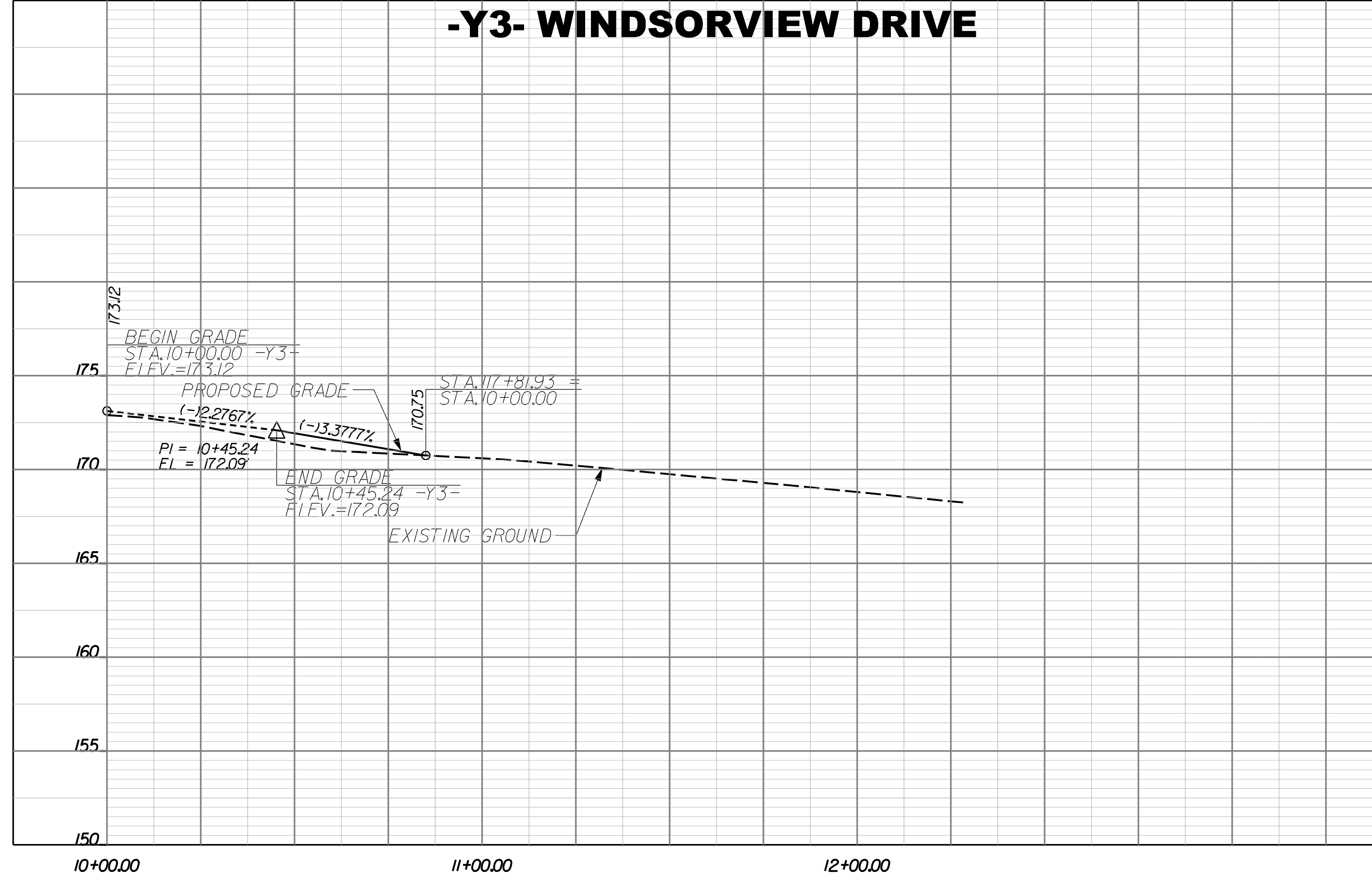




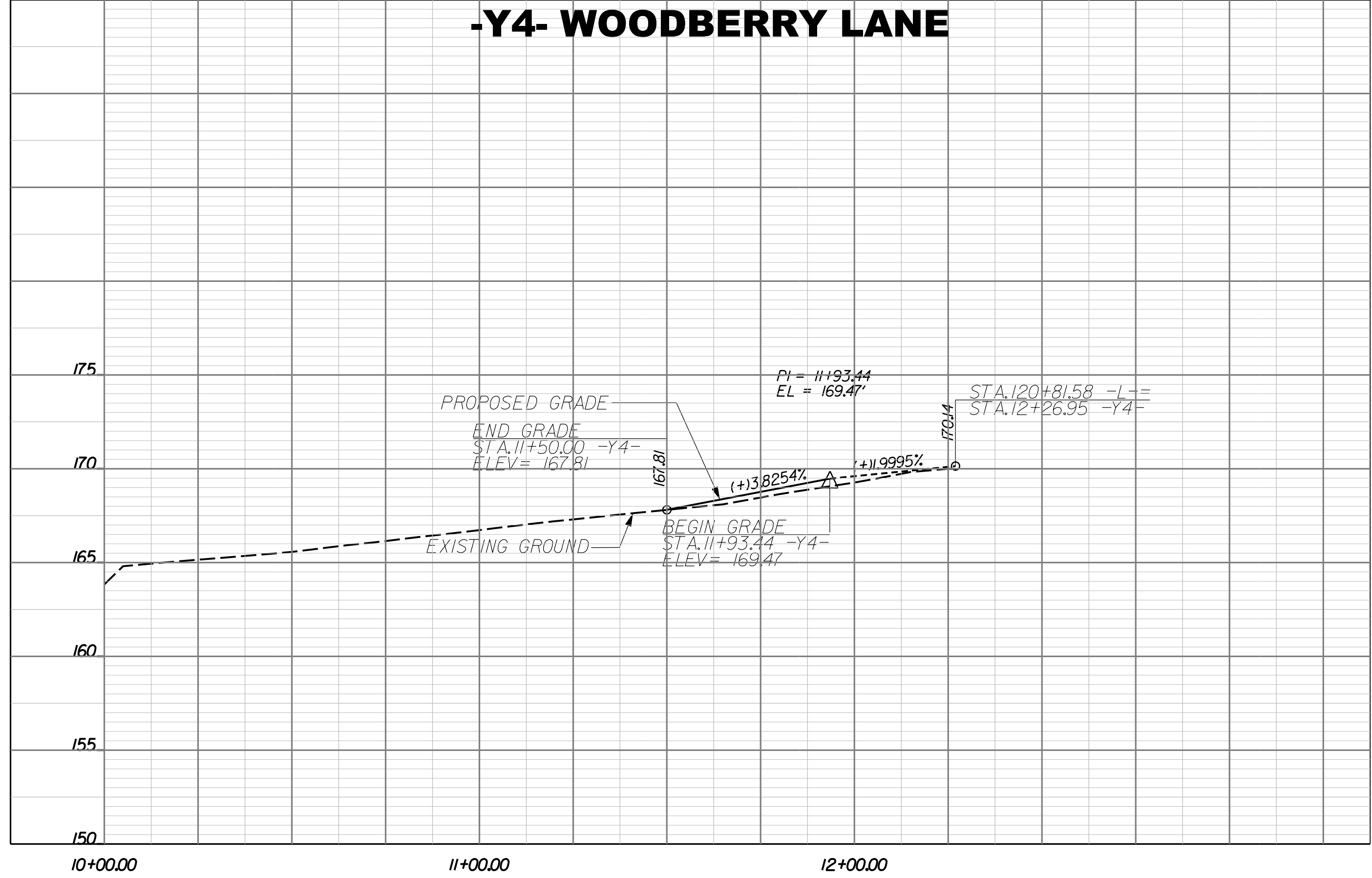
### -Y2- MELBORNE DRIVE



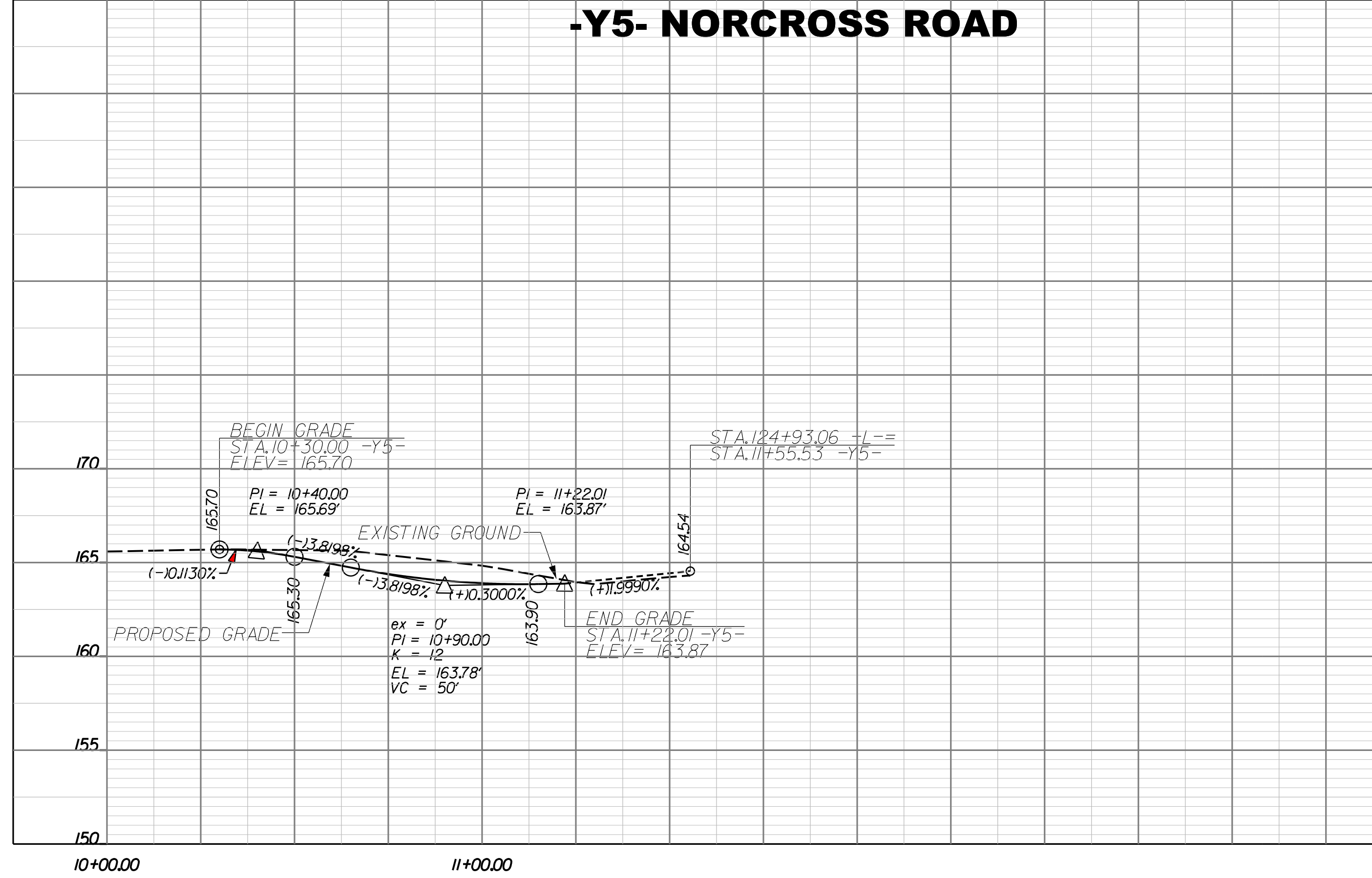
### -Y3- WINDSORVIEW DRIVE

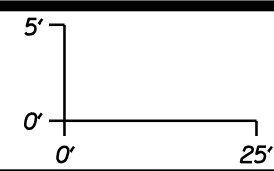


### -Y4- WOODBERRY LANE

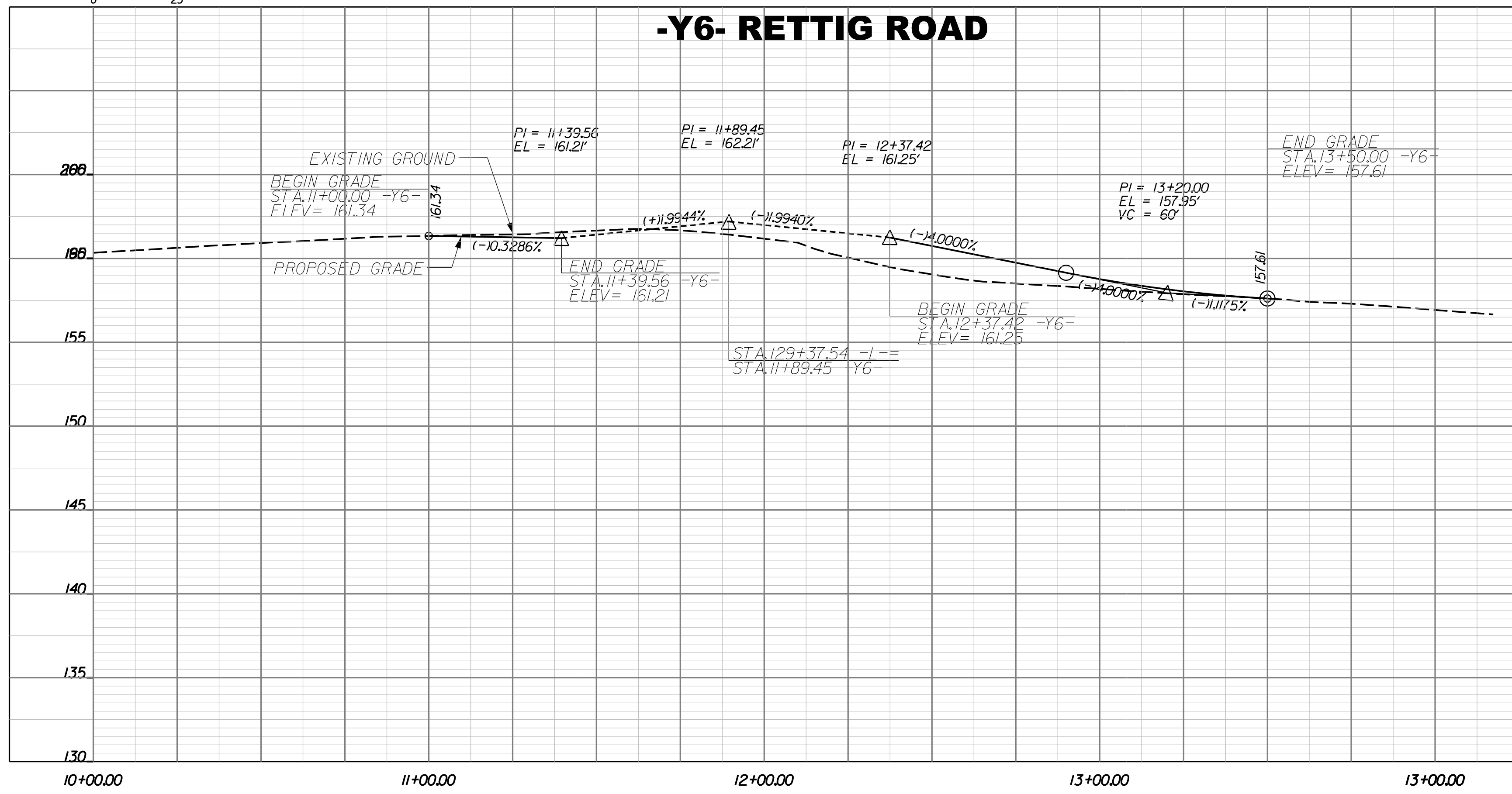


### -Y5- NORCROSS ROAD

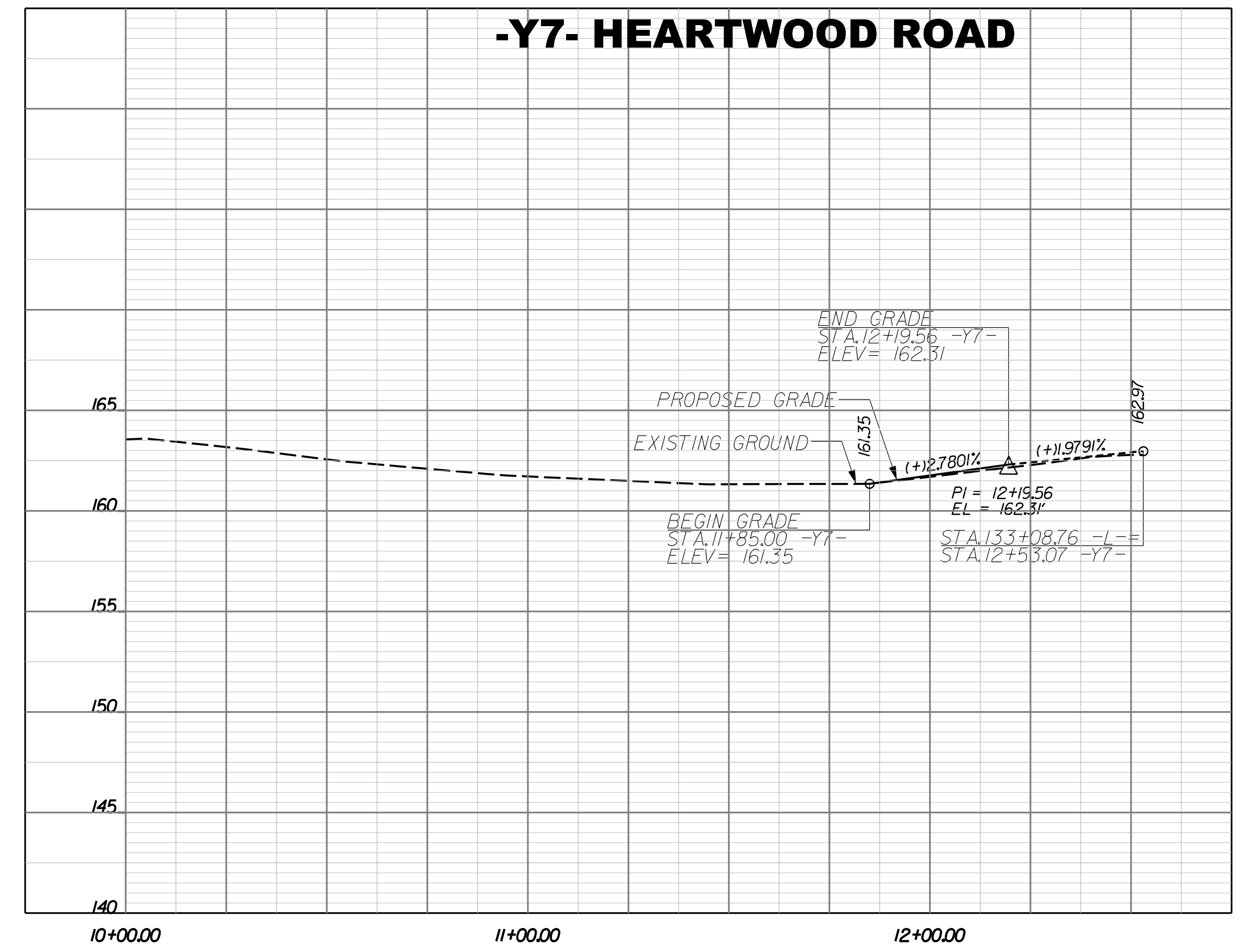




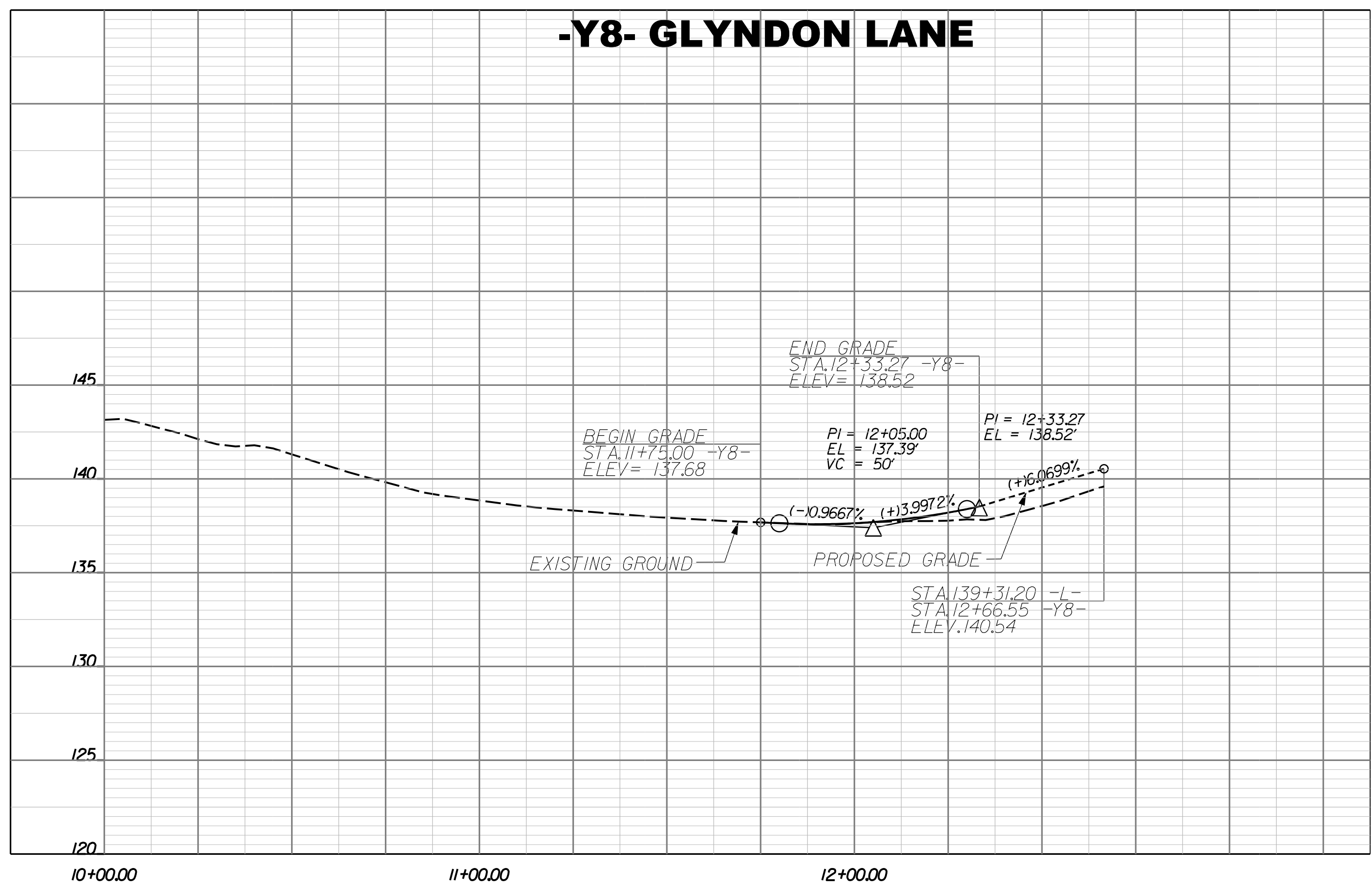
### -Y6- RETTIG ROAD



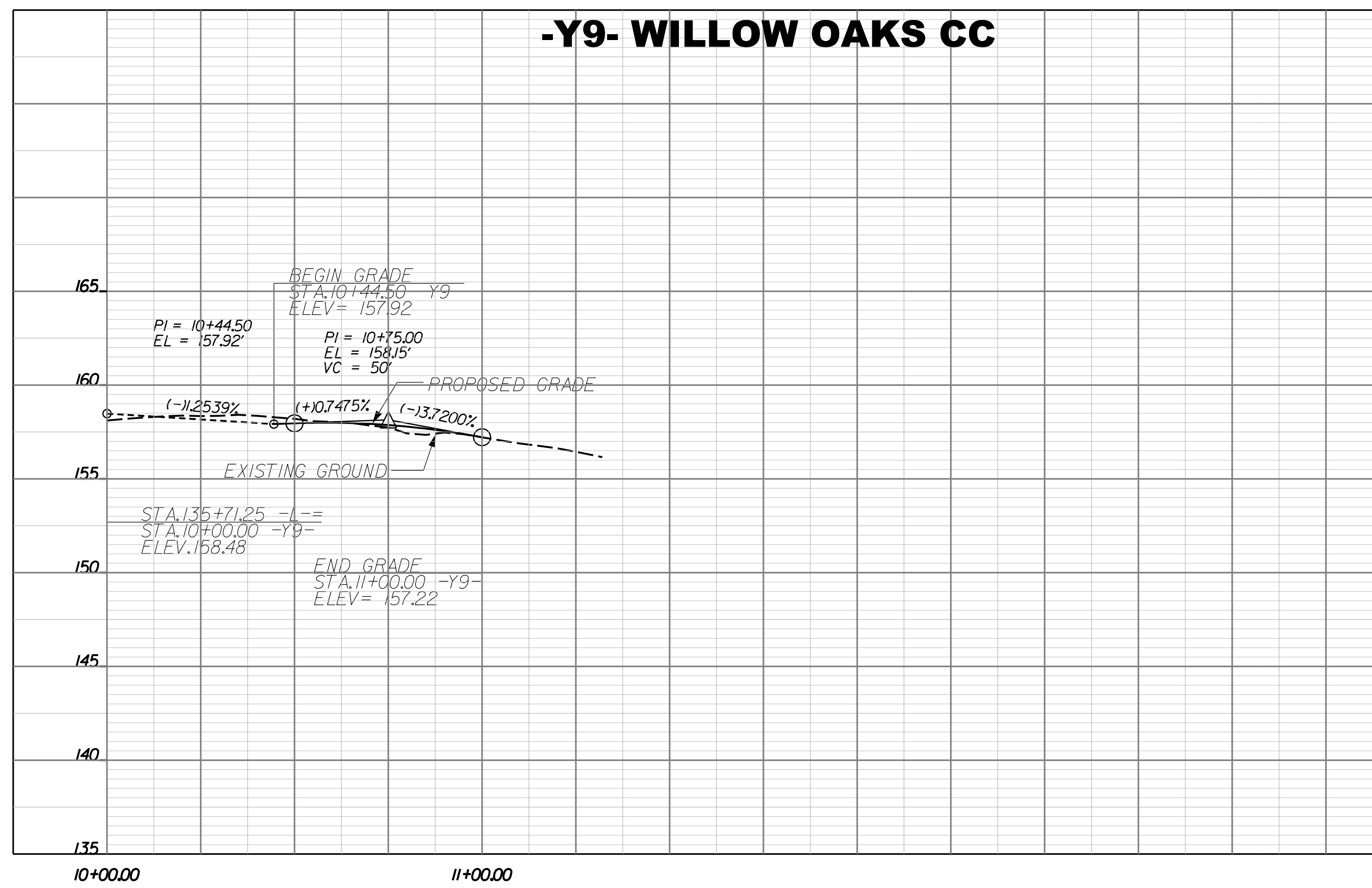
### -Y7- HEARTWOOD ROAD



### -Y8- GLYNDON LANE



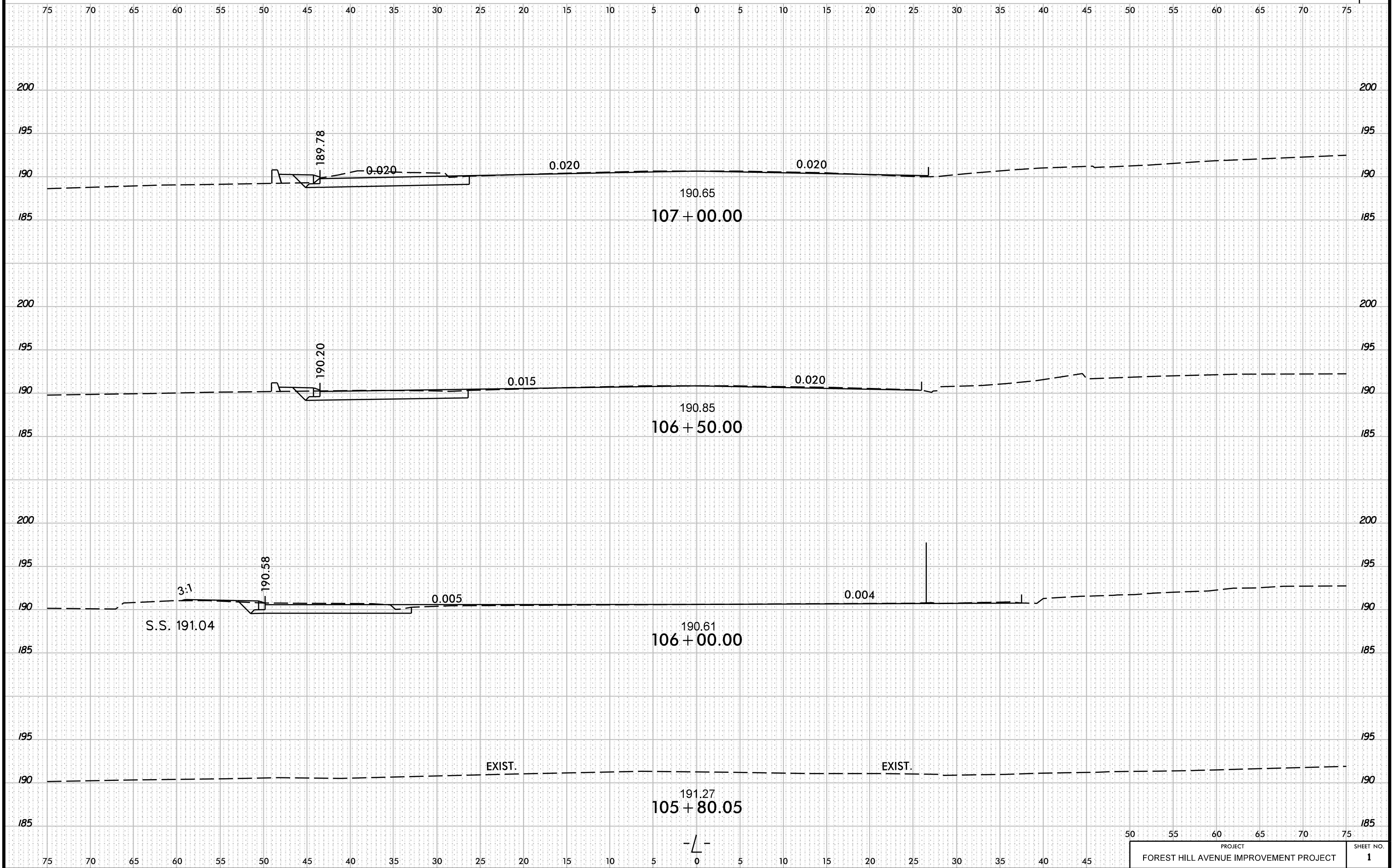
### -Y9- WILLOW OAKS CC



# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

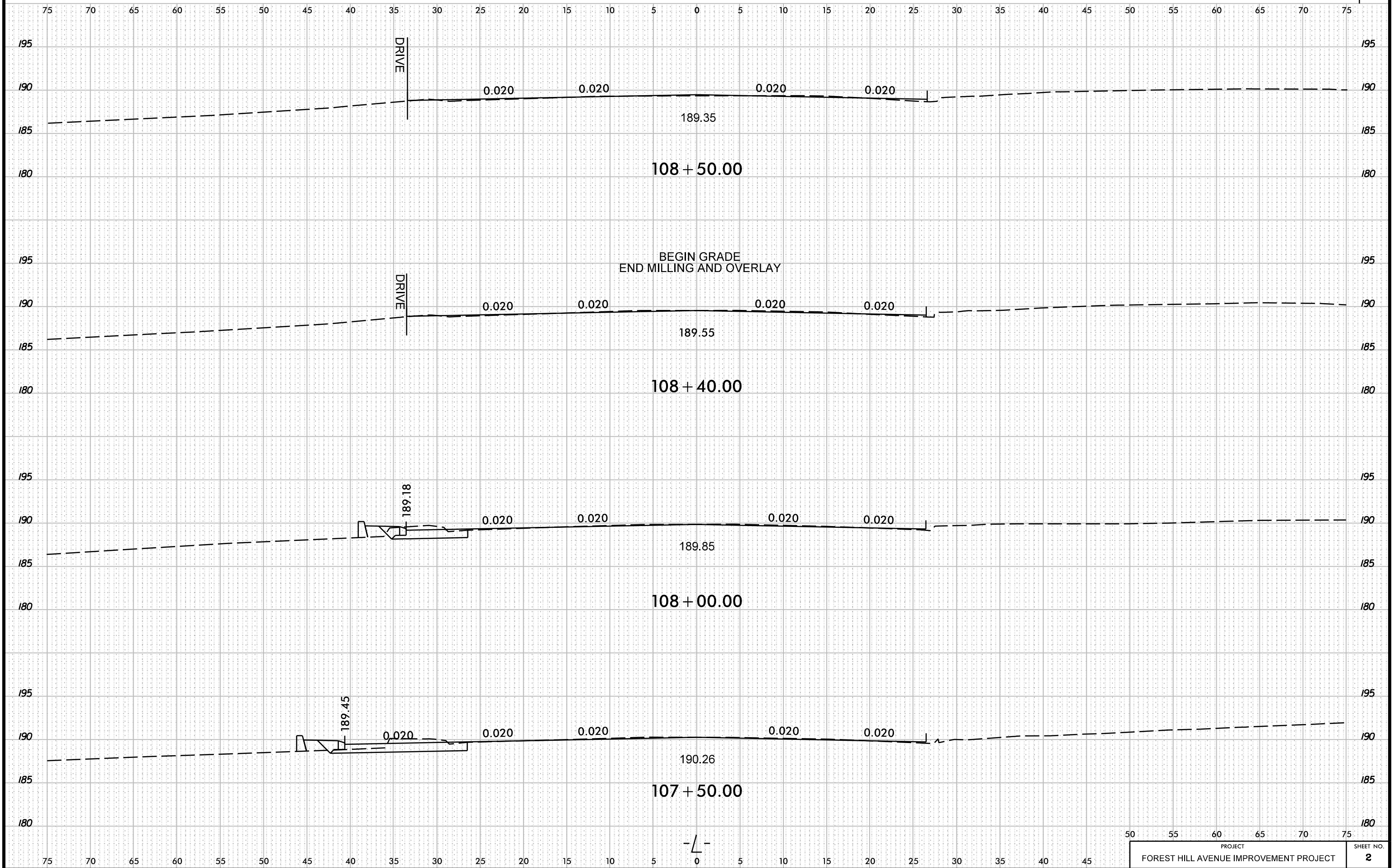


STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

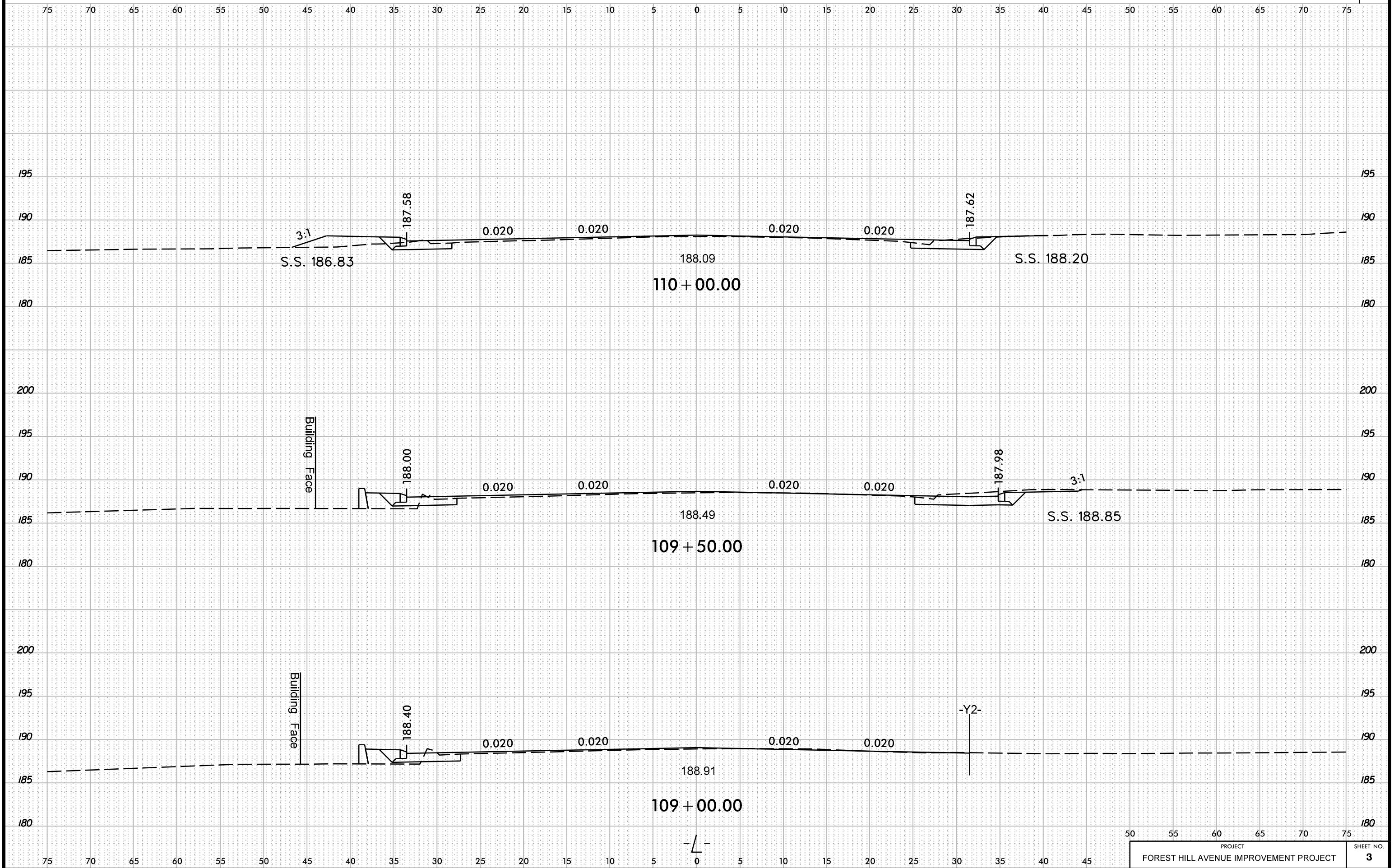


STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

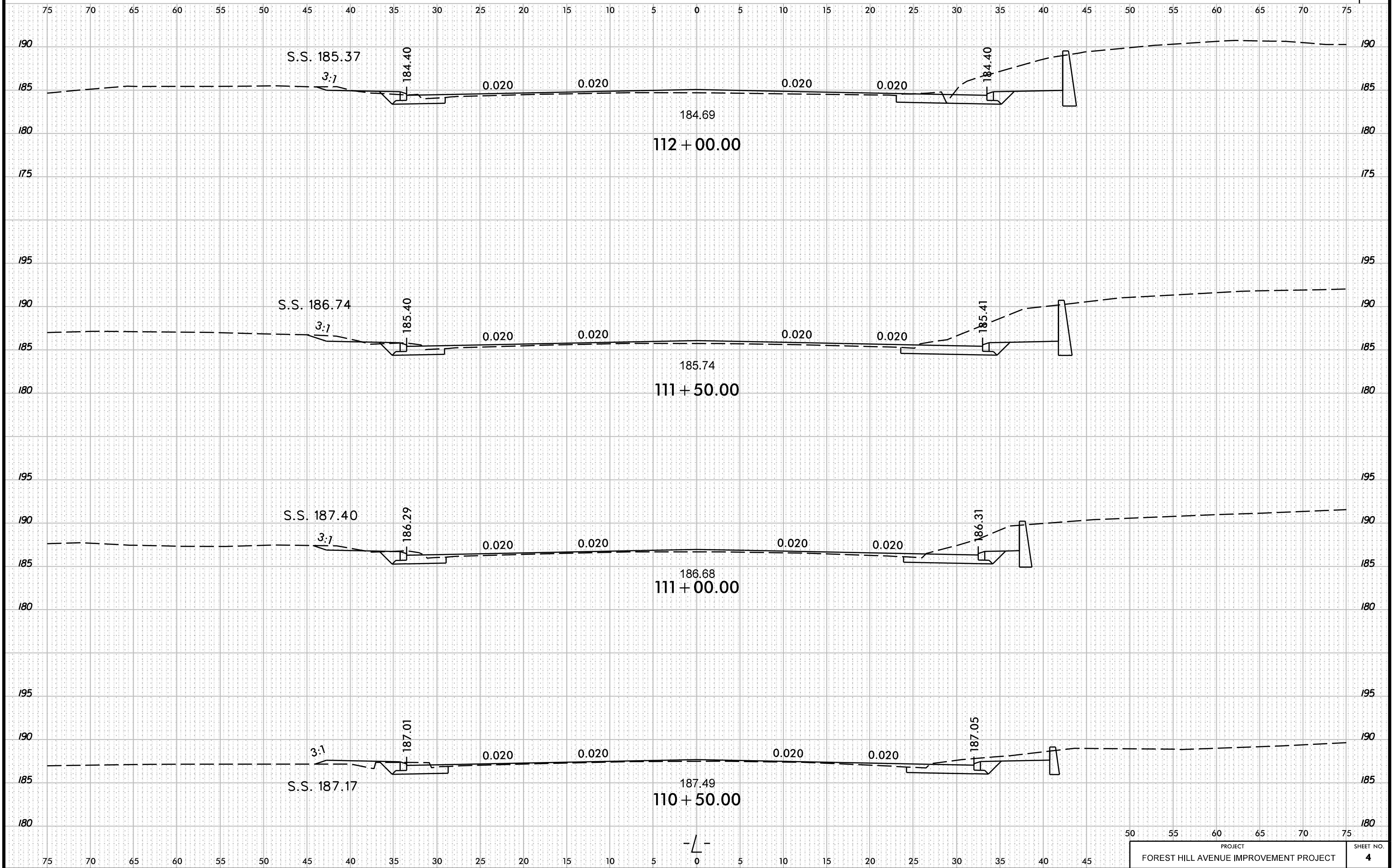


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

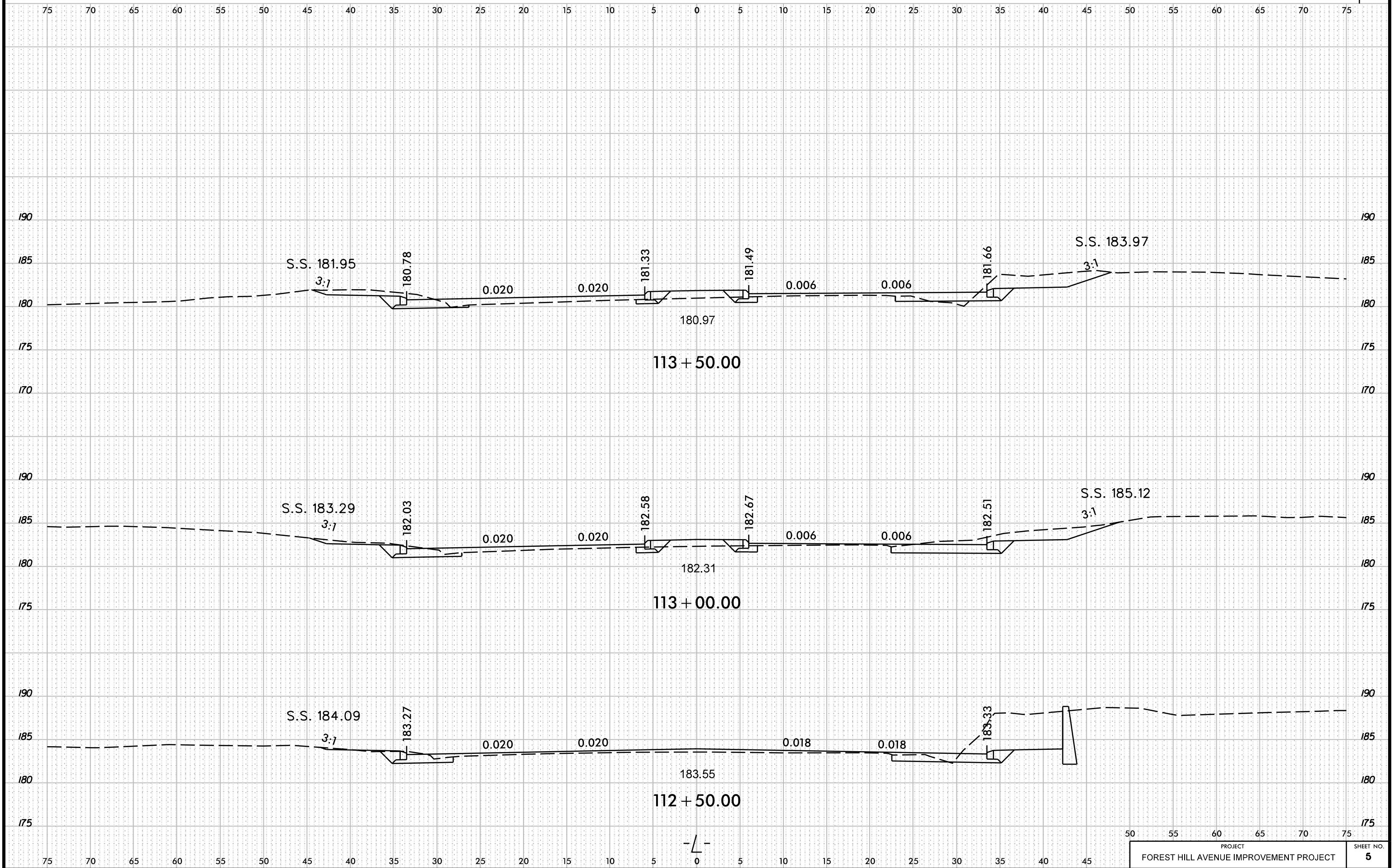


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



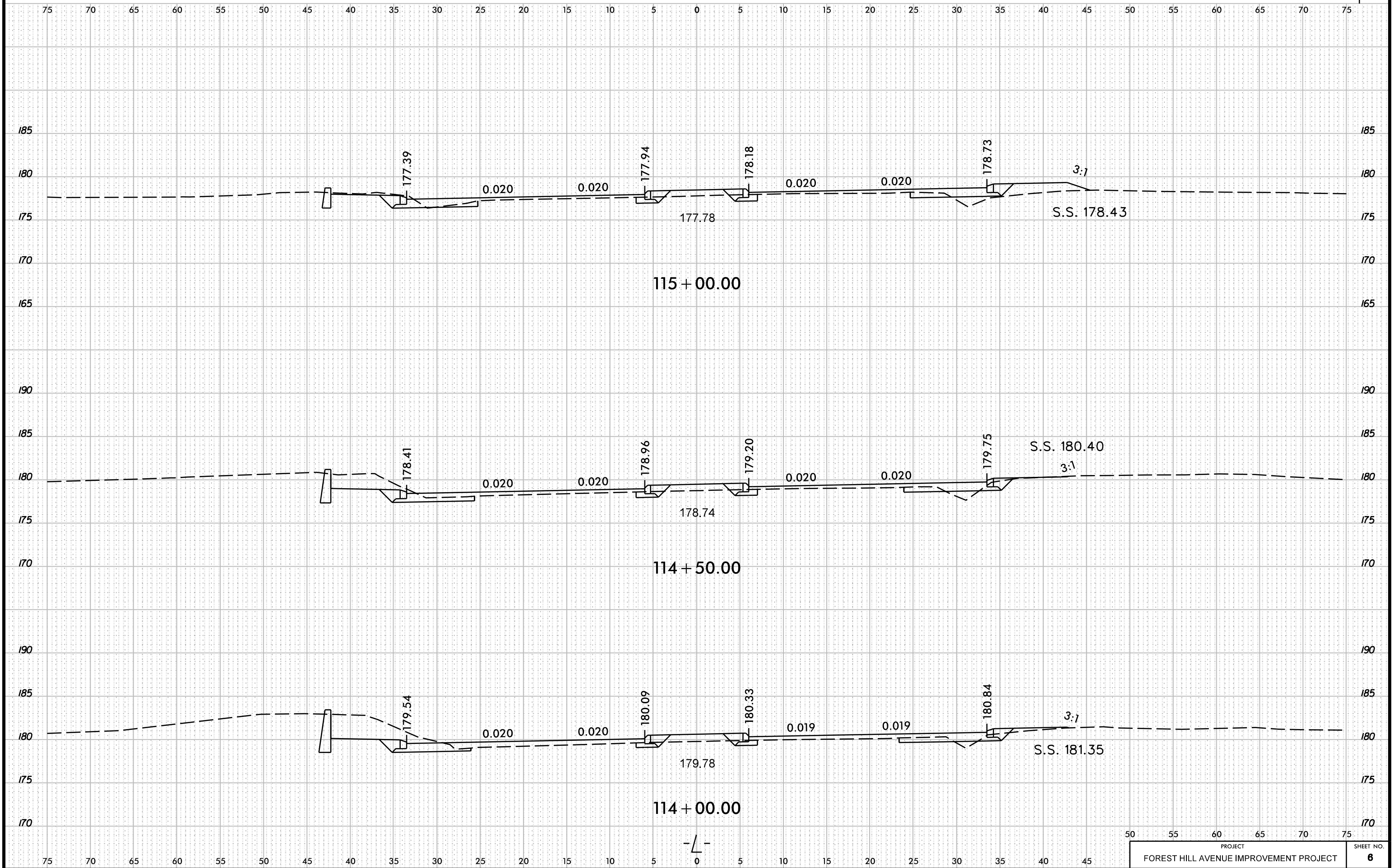
ST/MS&ST/AMPS



# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

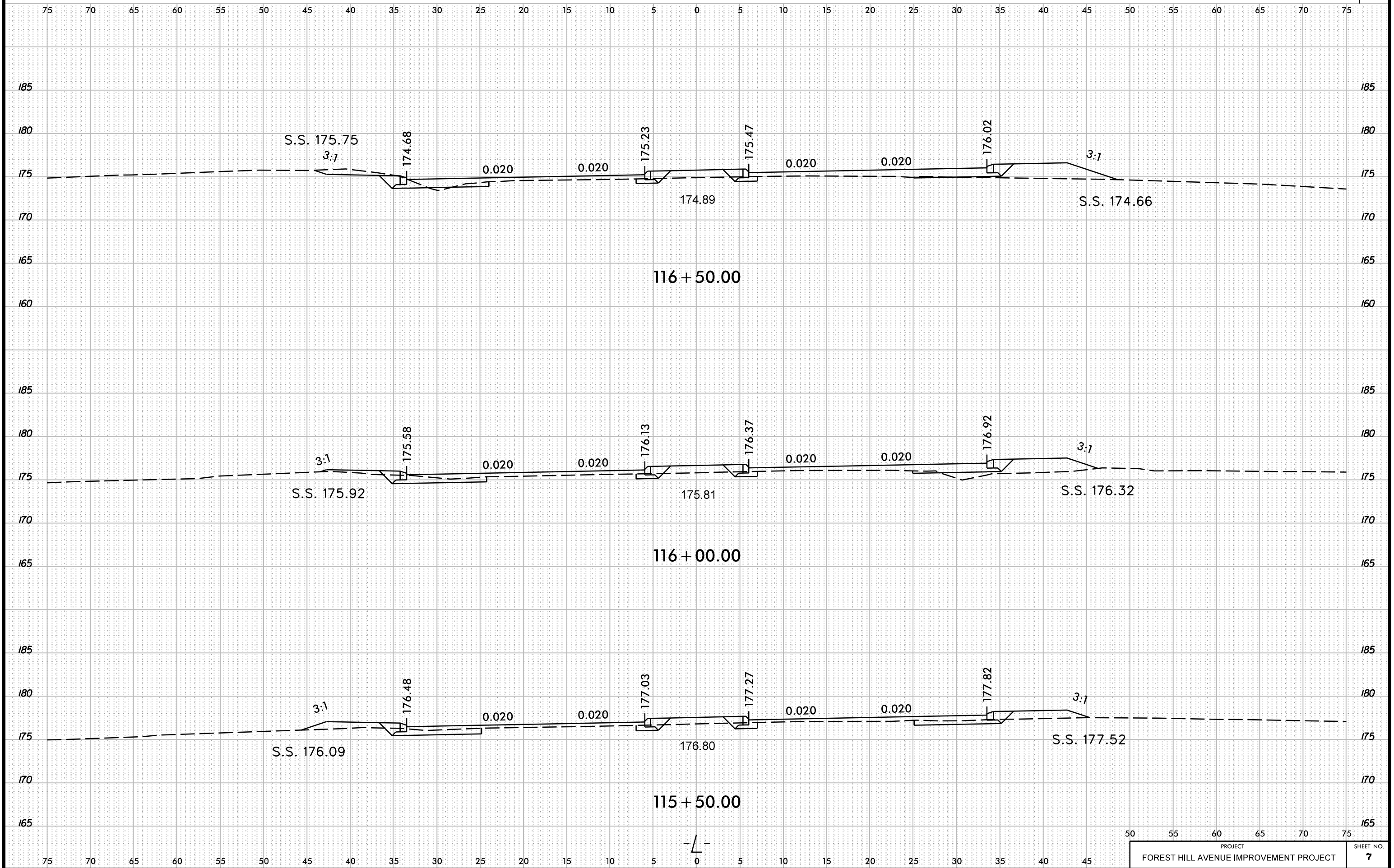


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

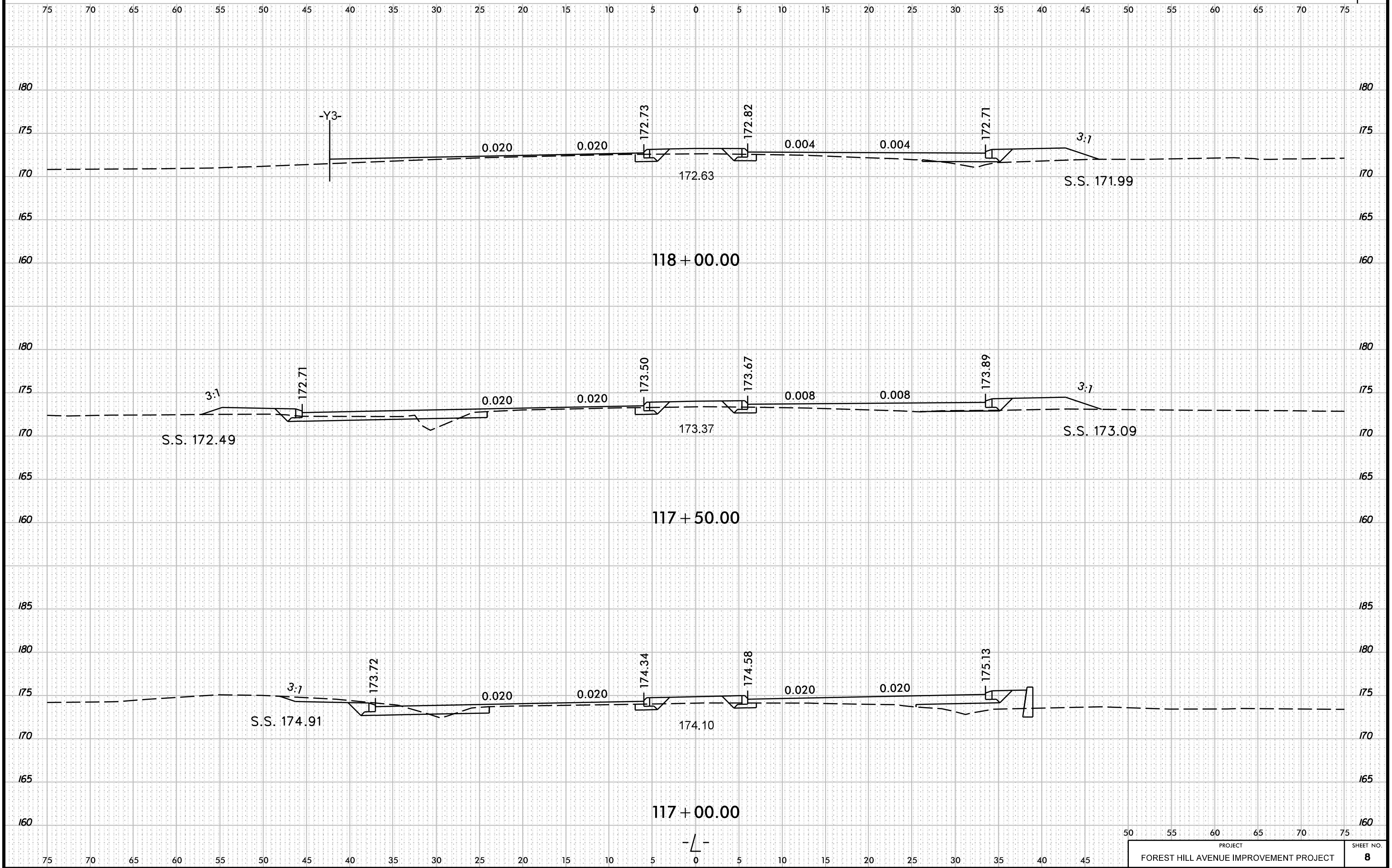


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

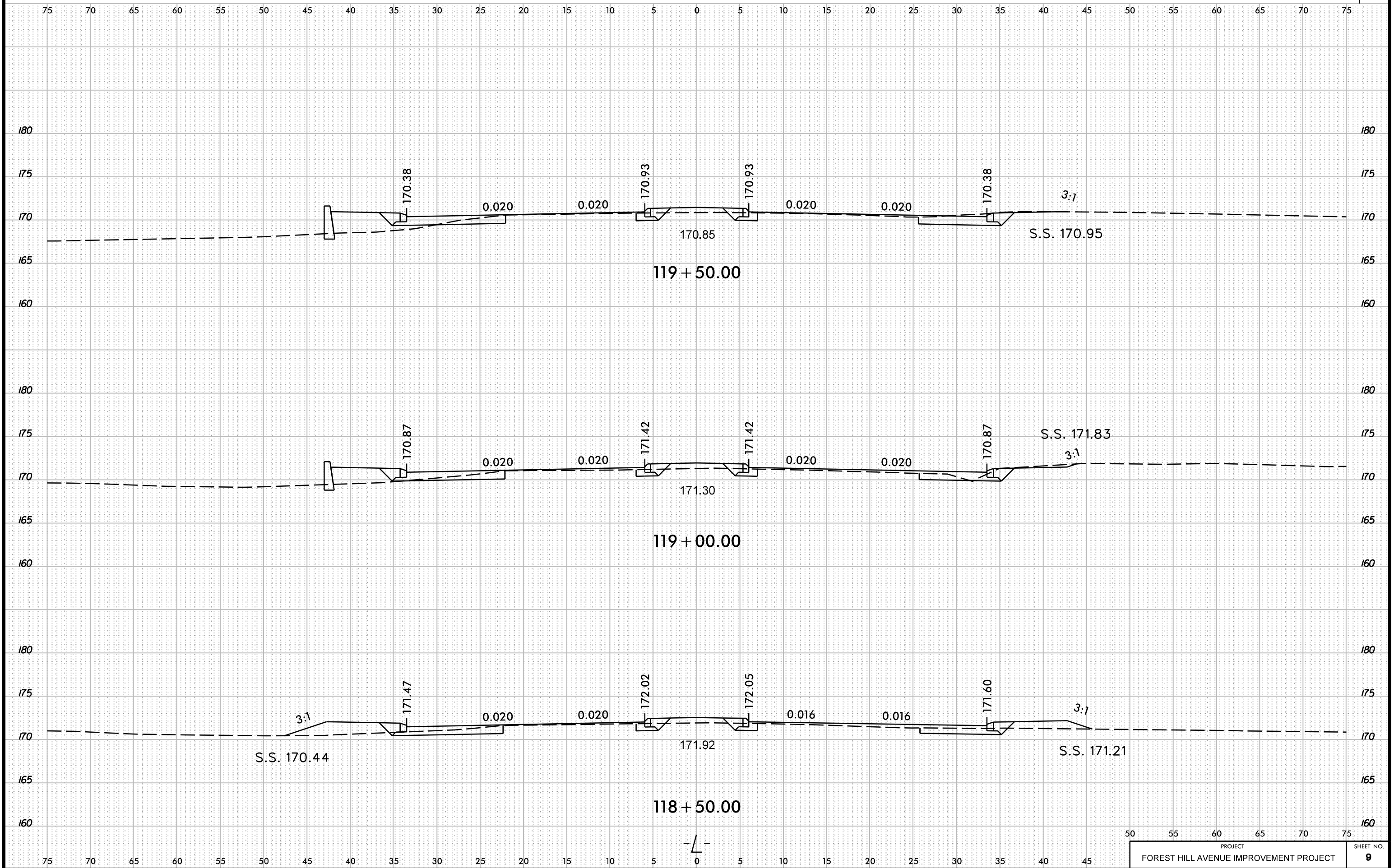


ST/MS&ST/AM/PS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

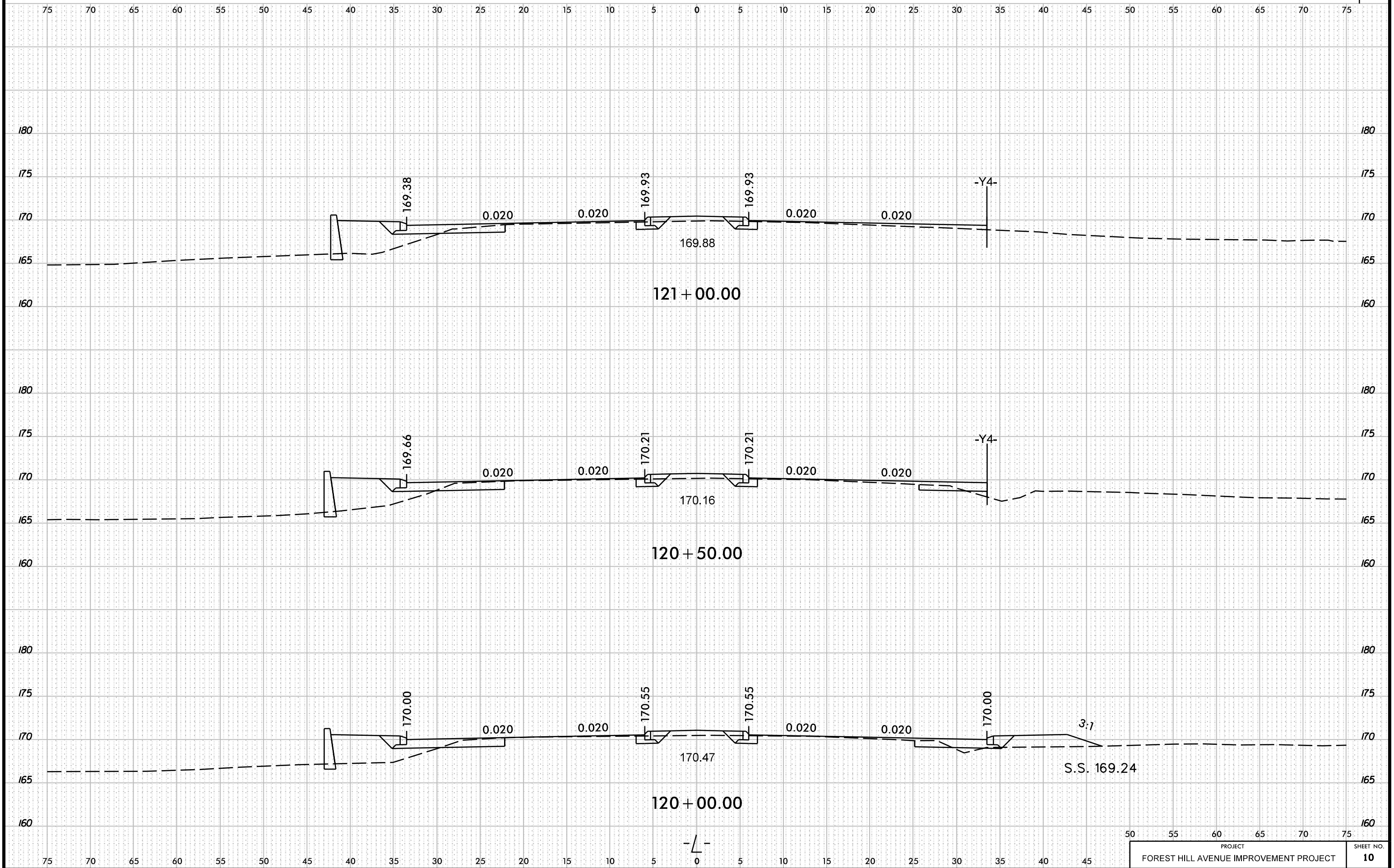


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

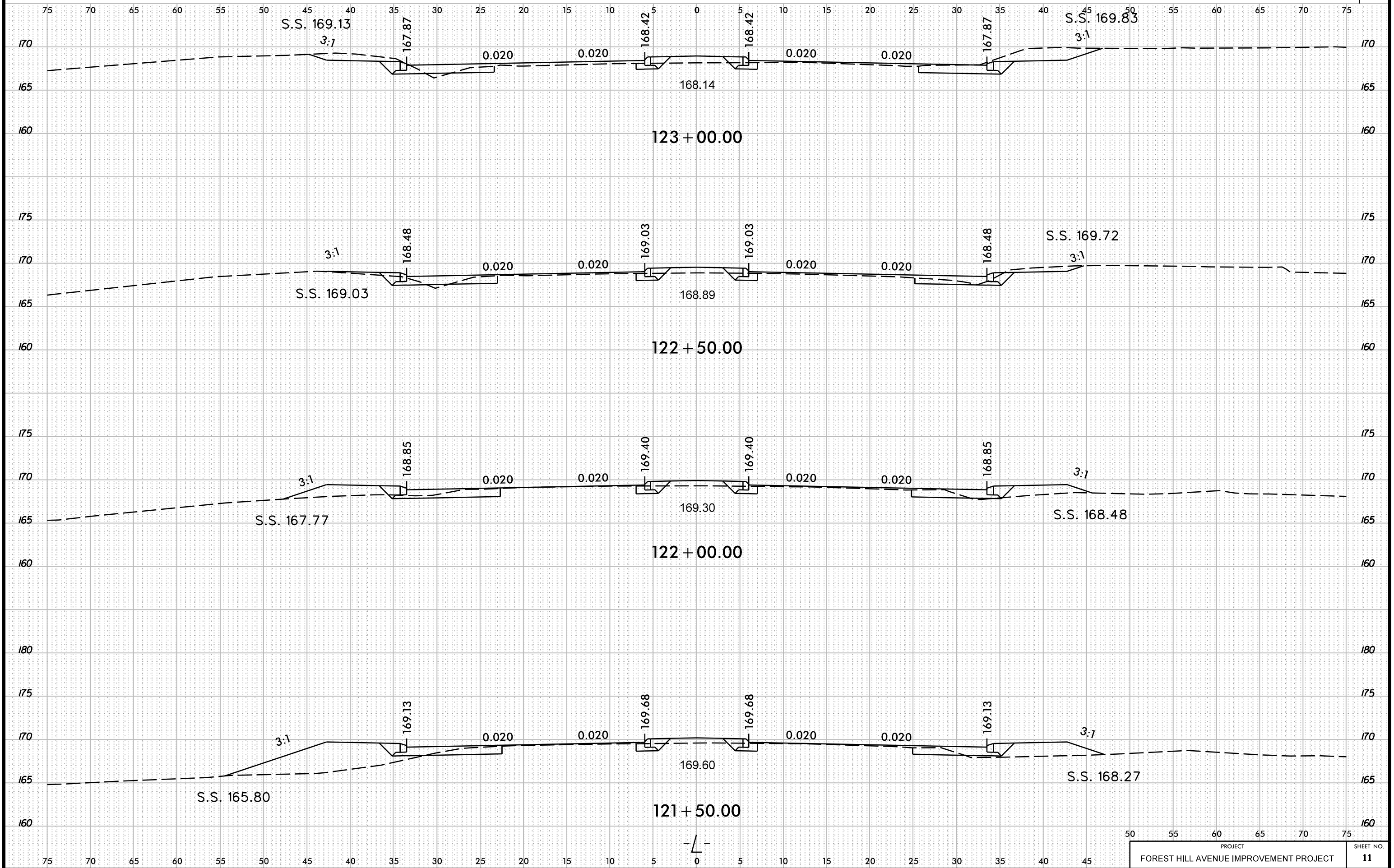


ST/ME&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

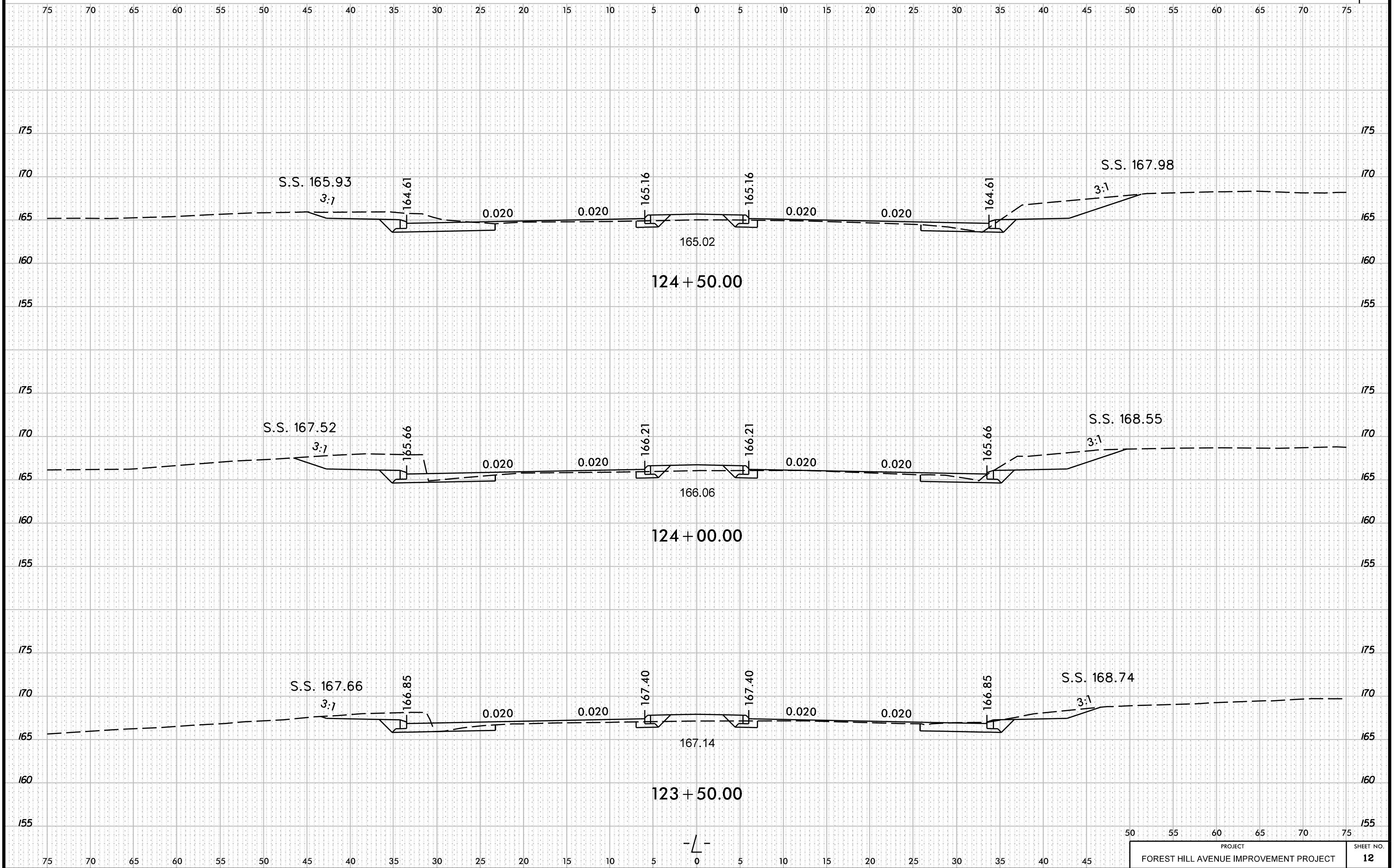


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

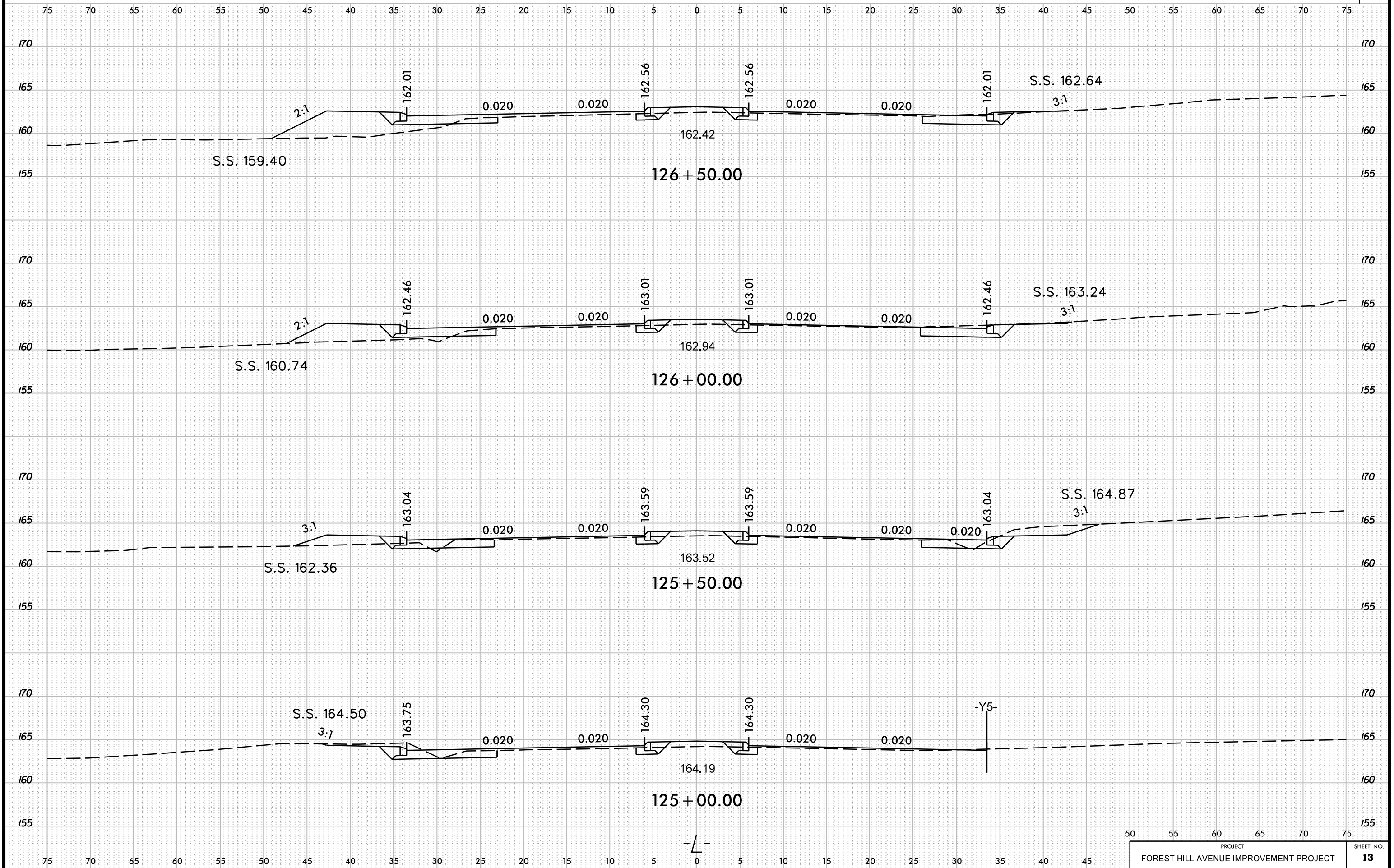


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



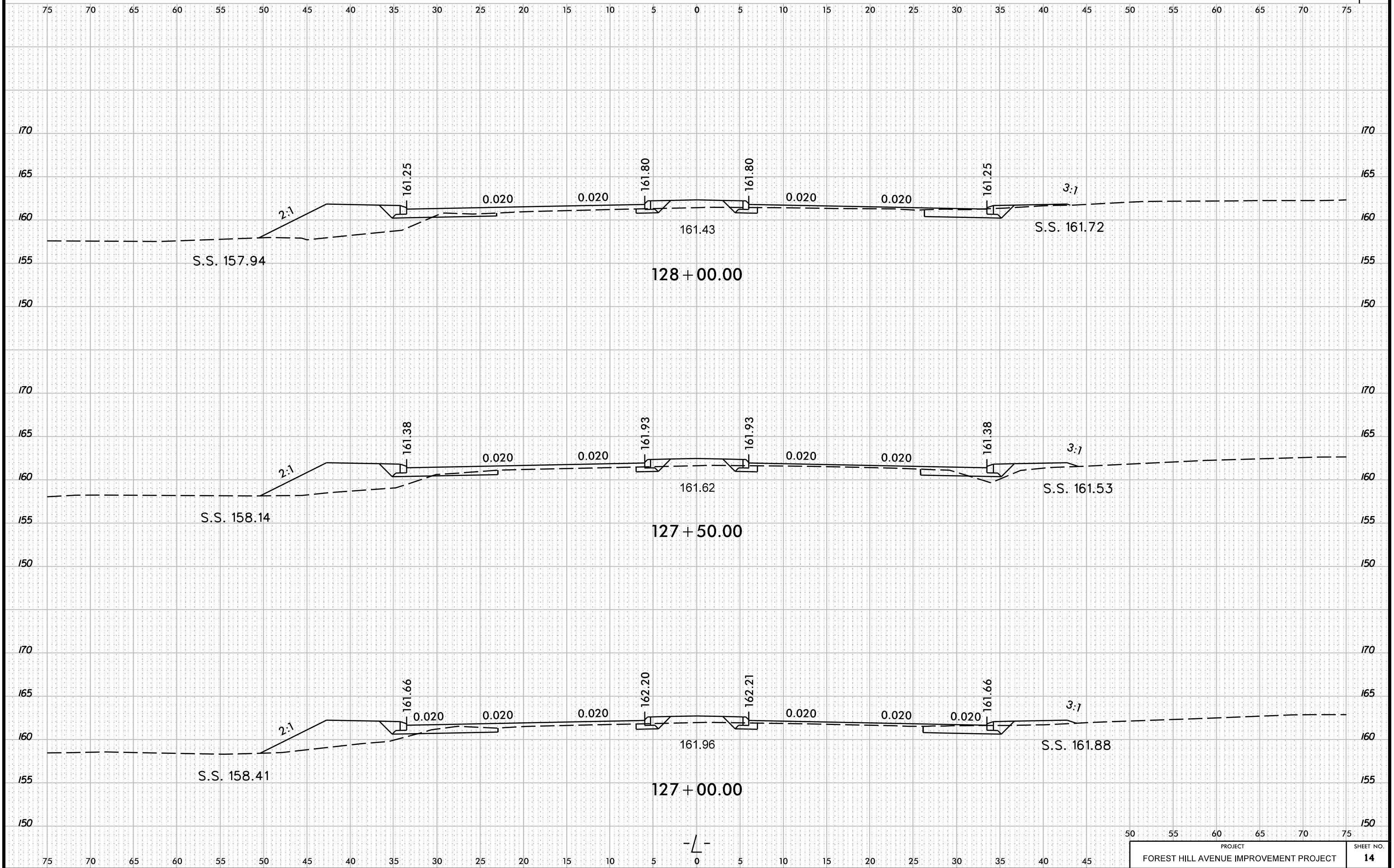
ST/MS&ST/AMPS



# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

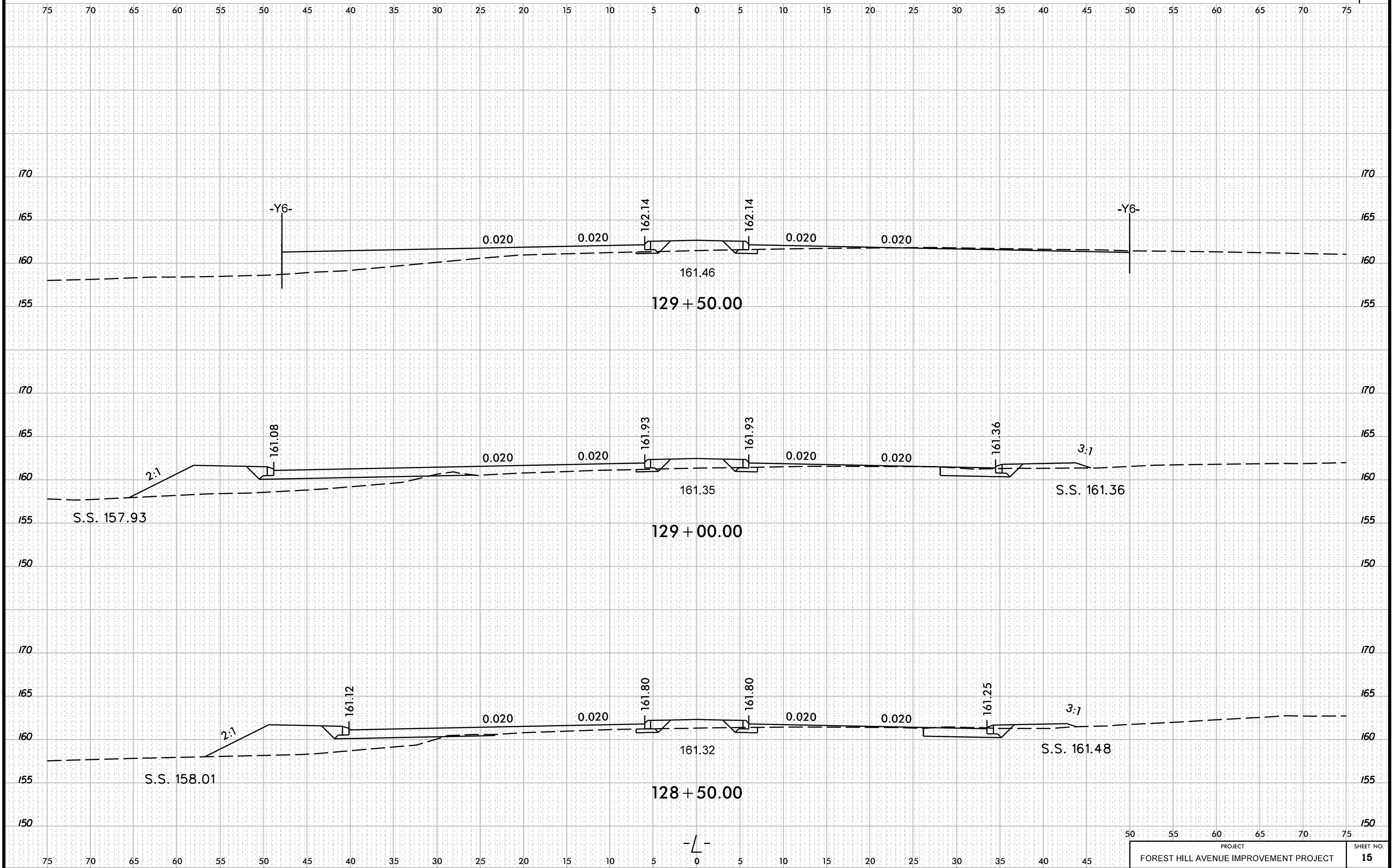


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

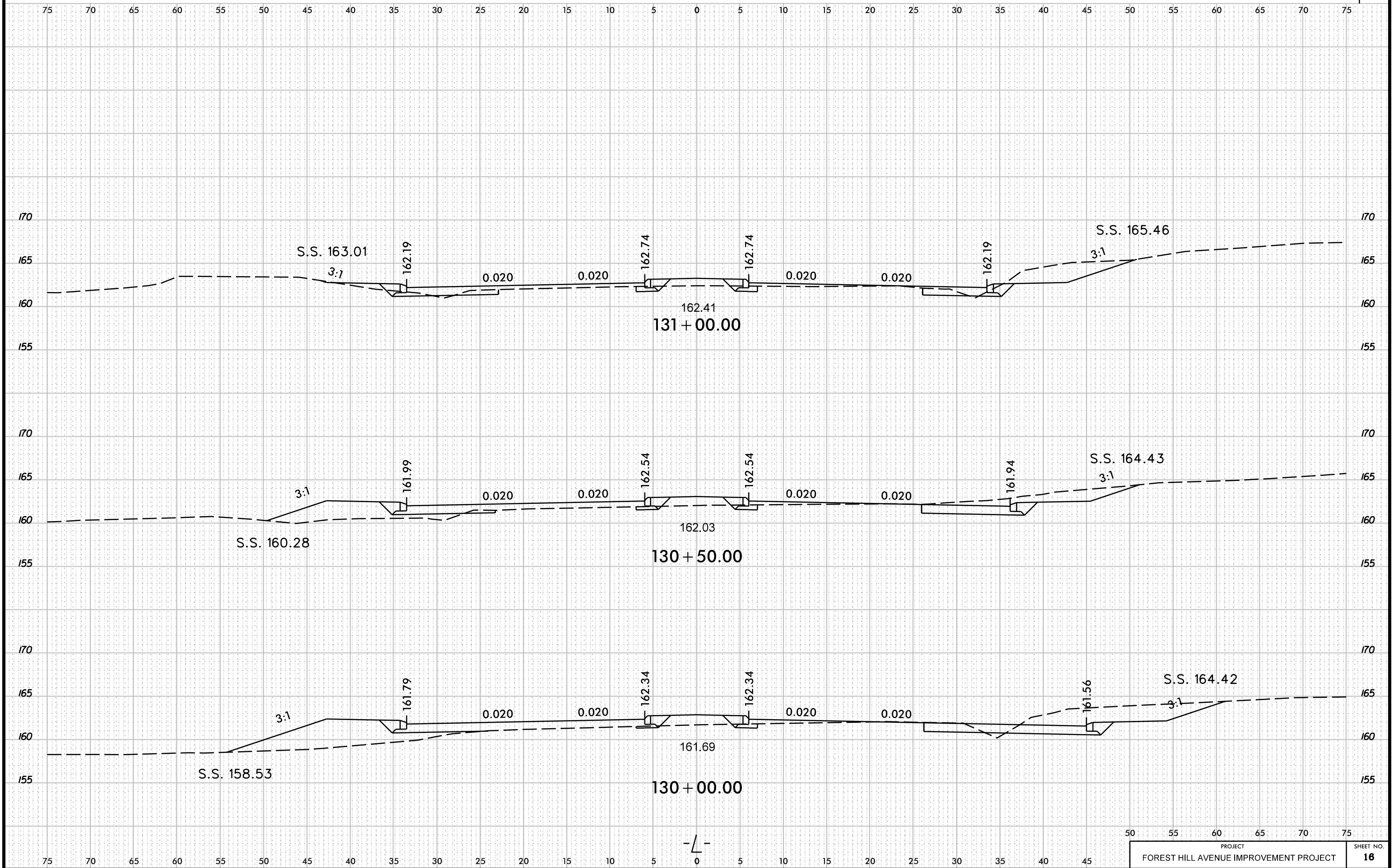


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

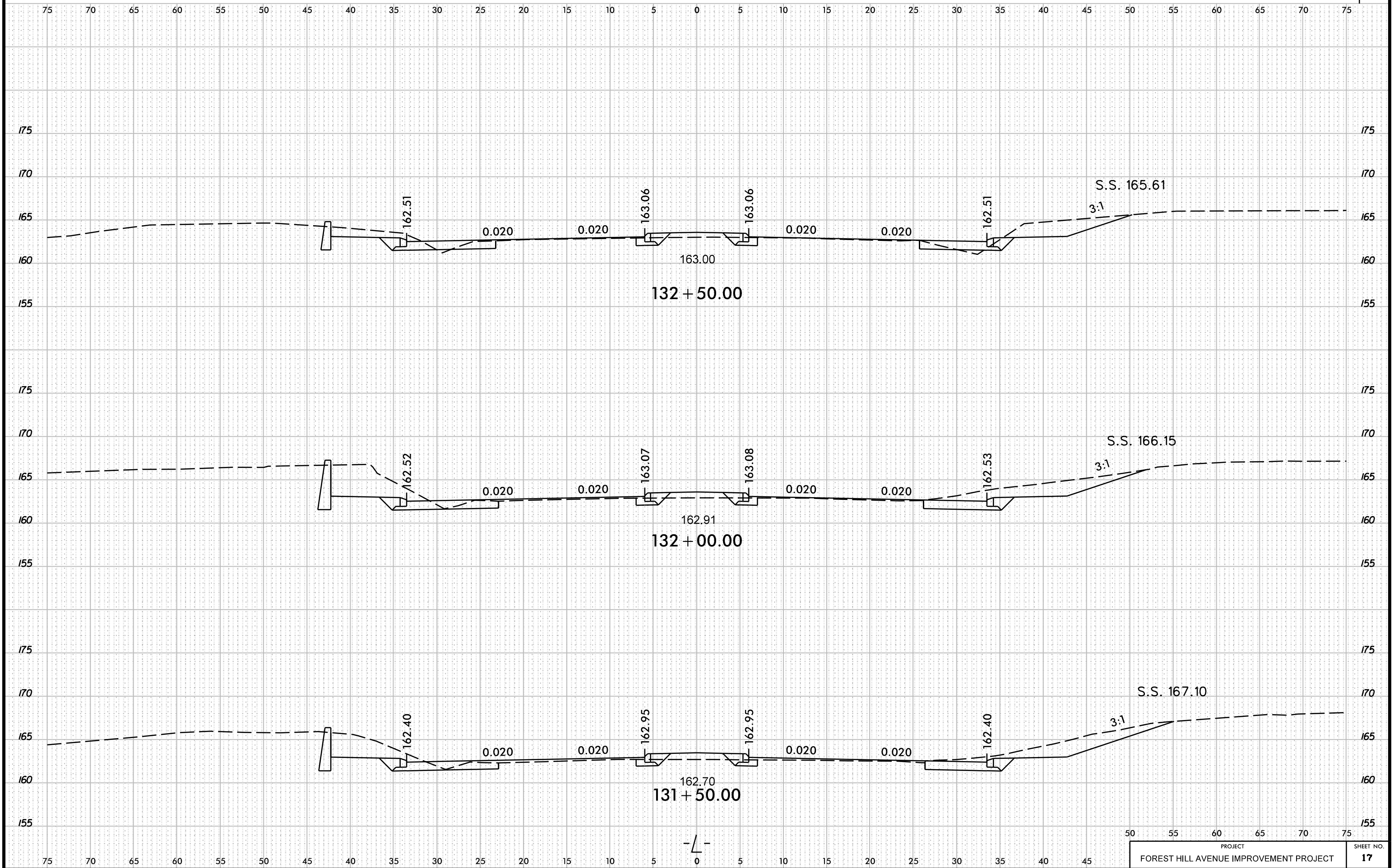


ST/MS&ST/AM/PS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

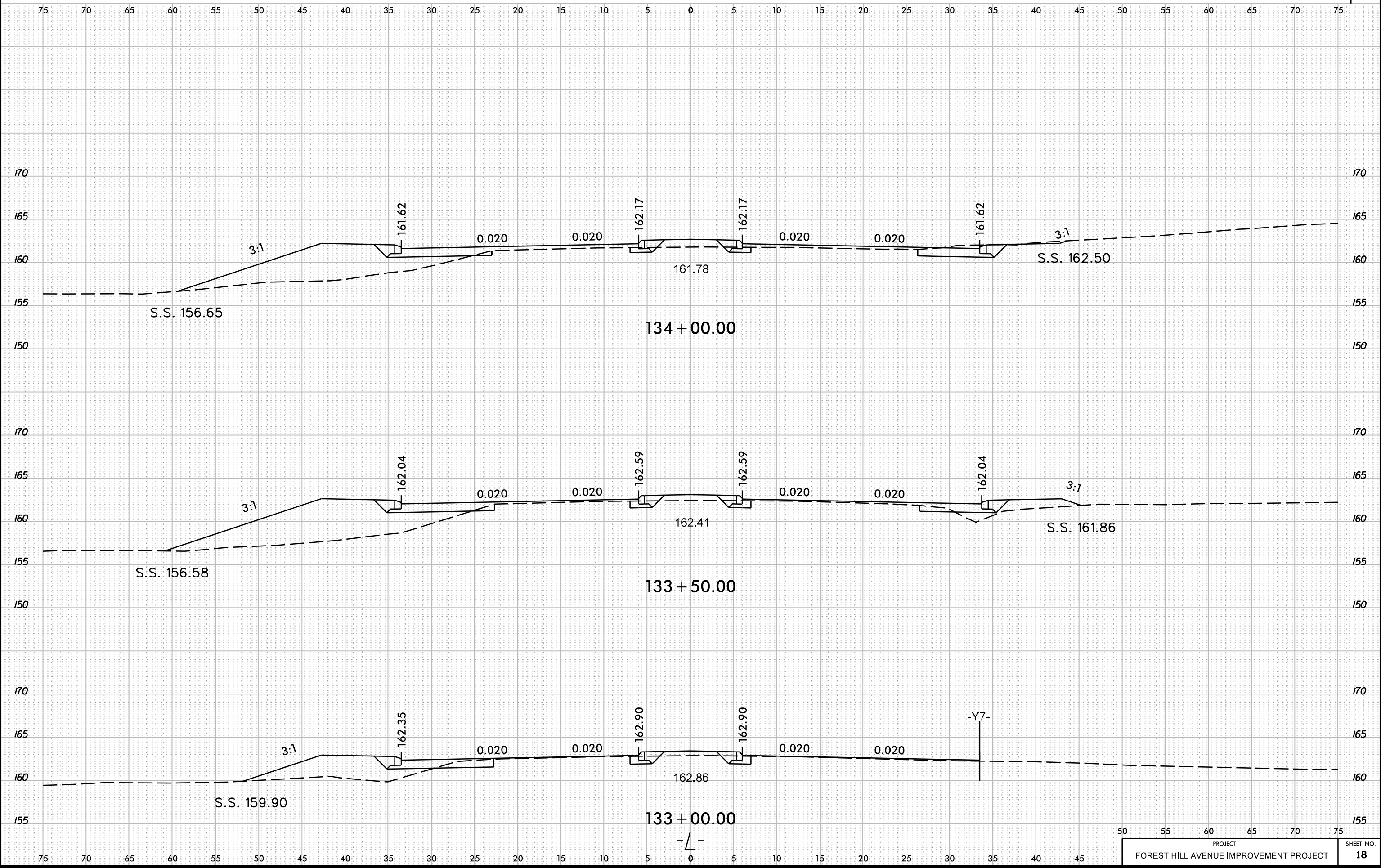


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

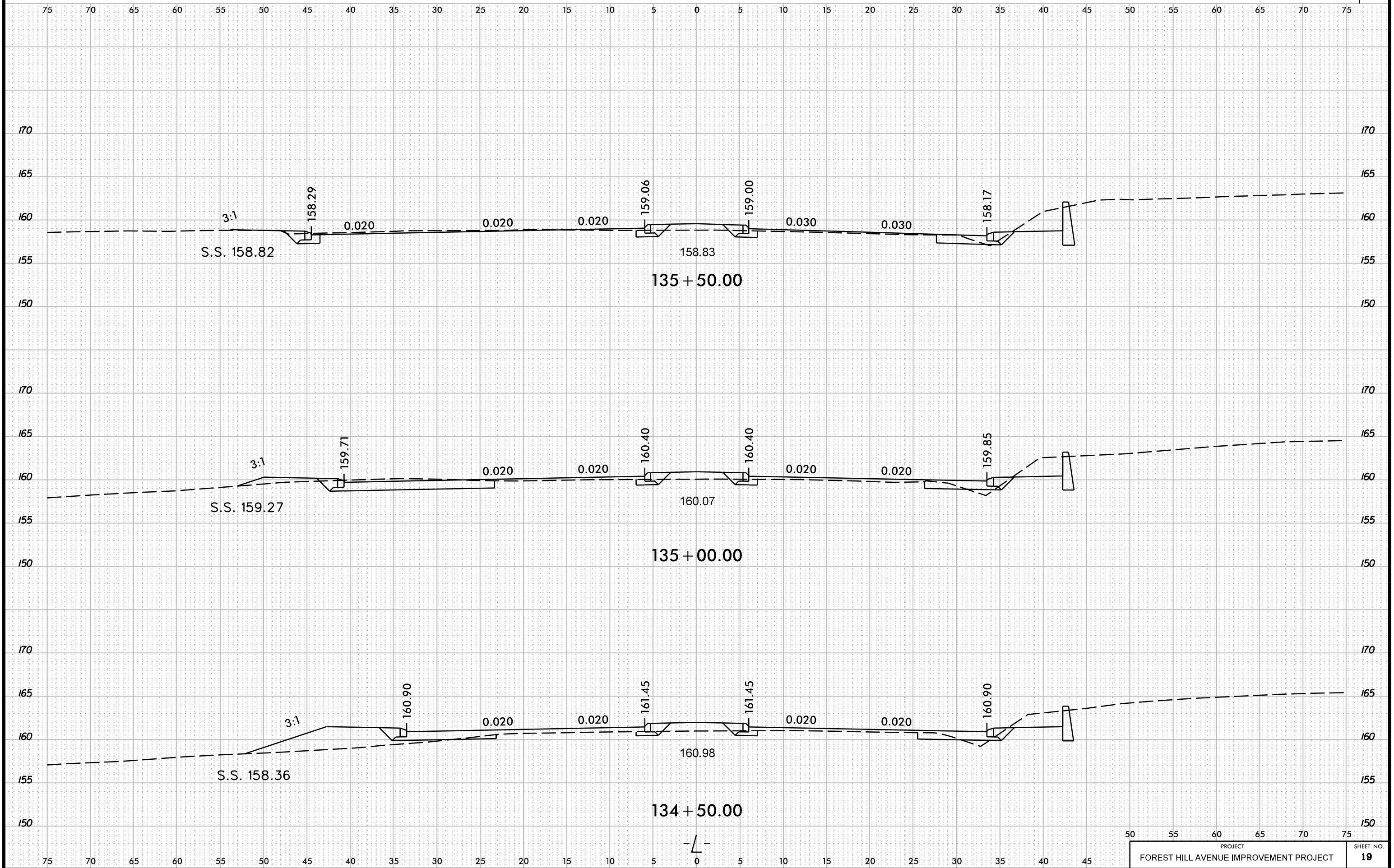


ST/MS&ST/AM/PS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

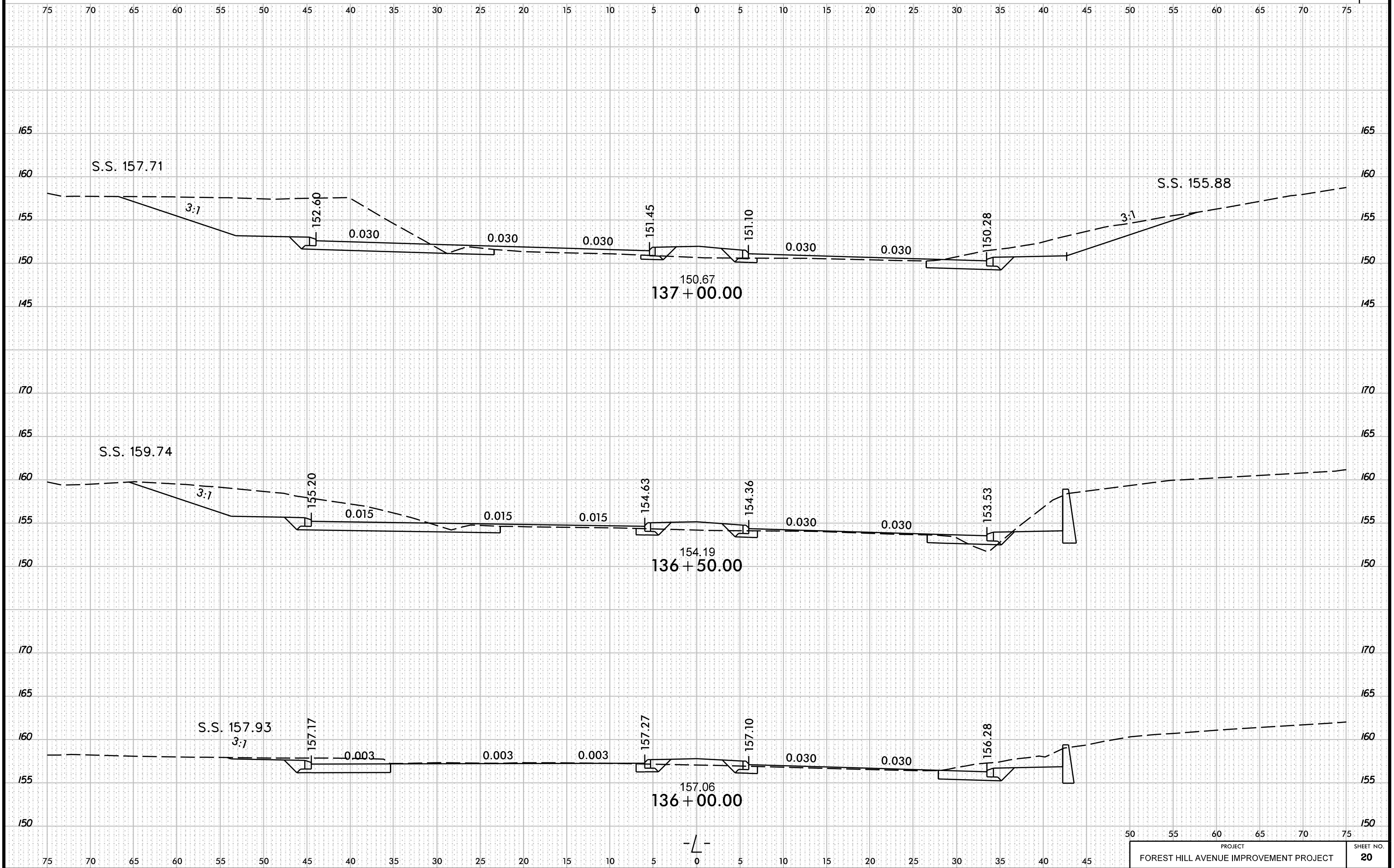


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

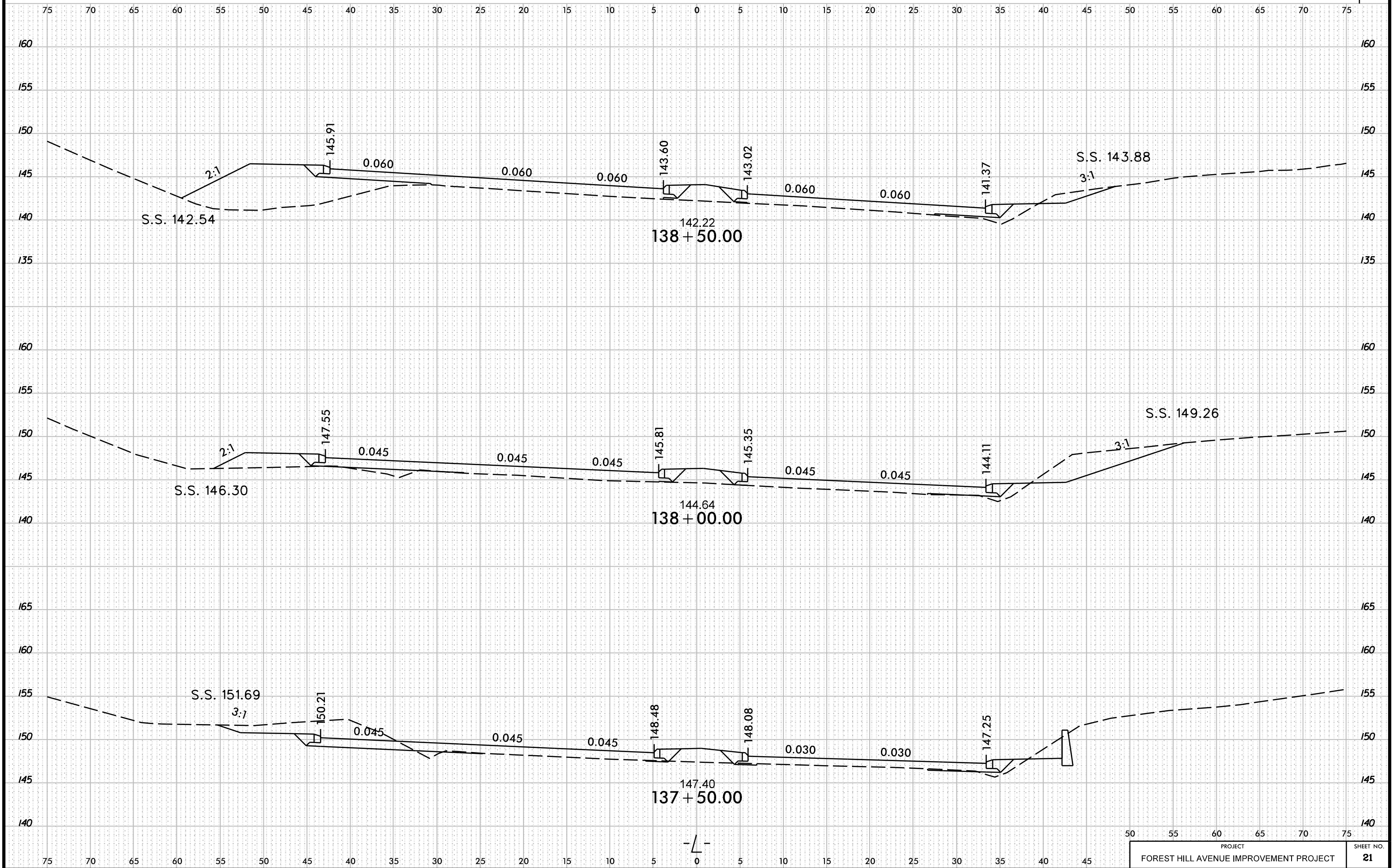


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

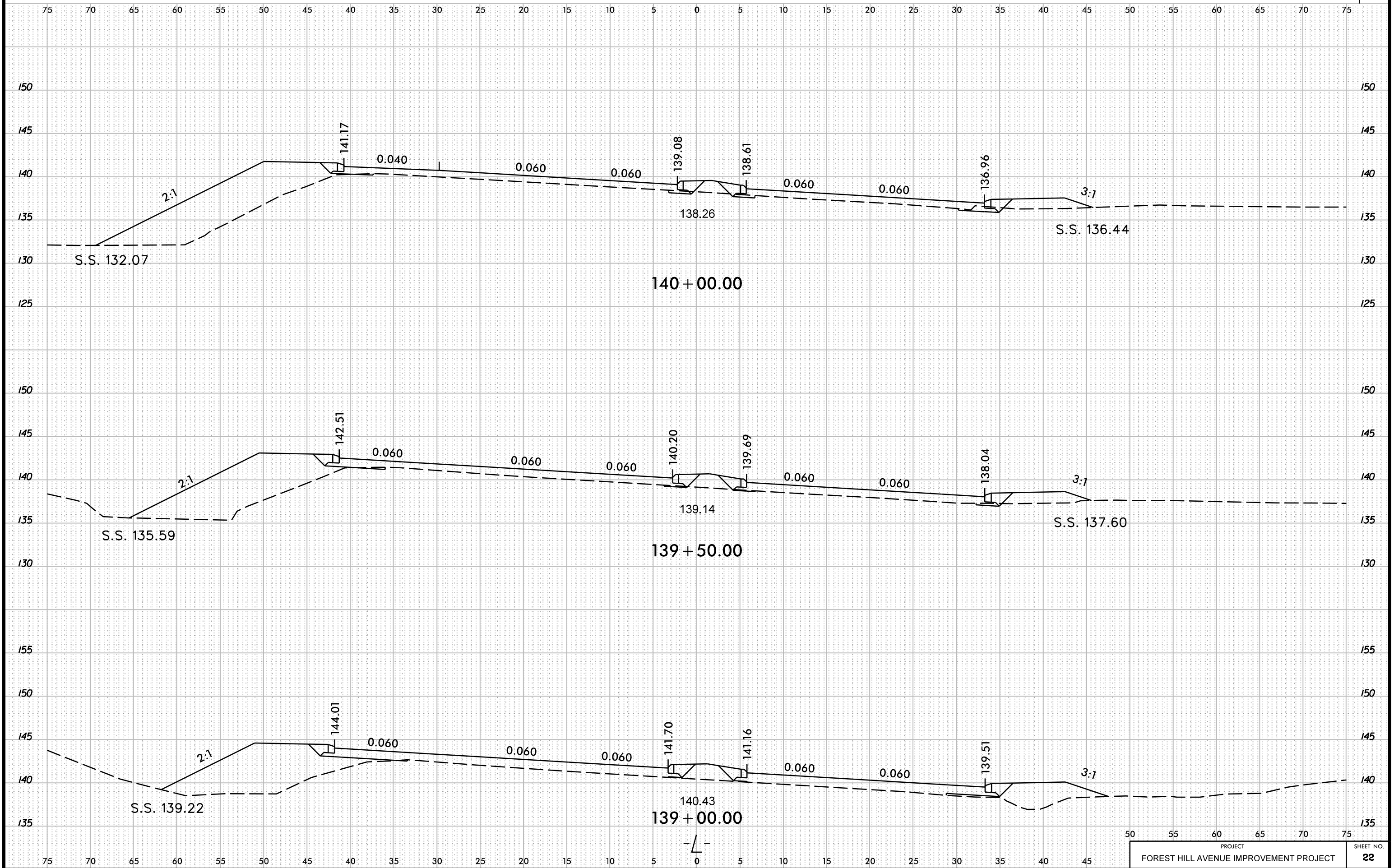




# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

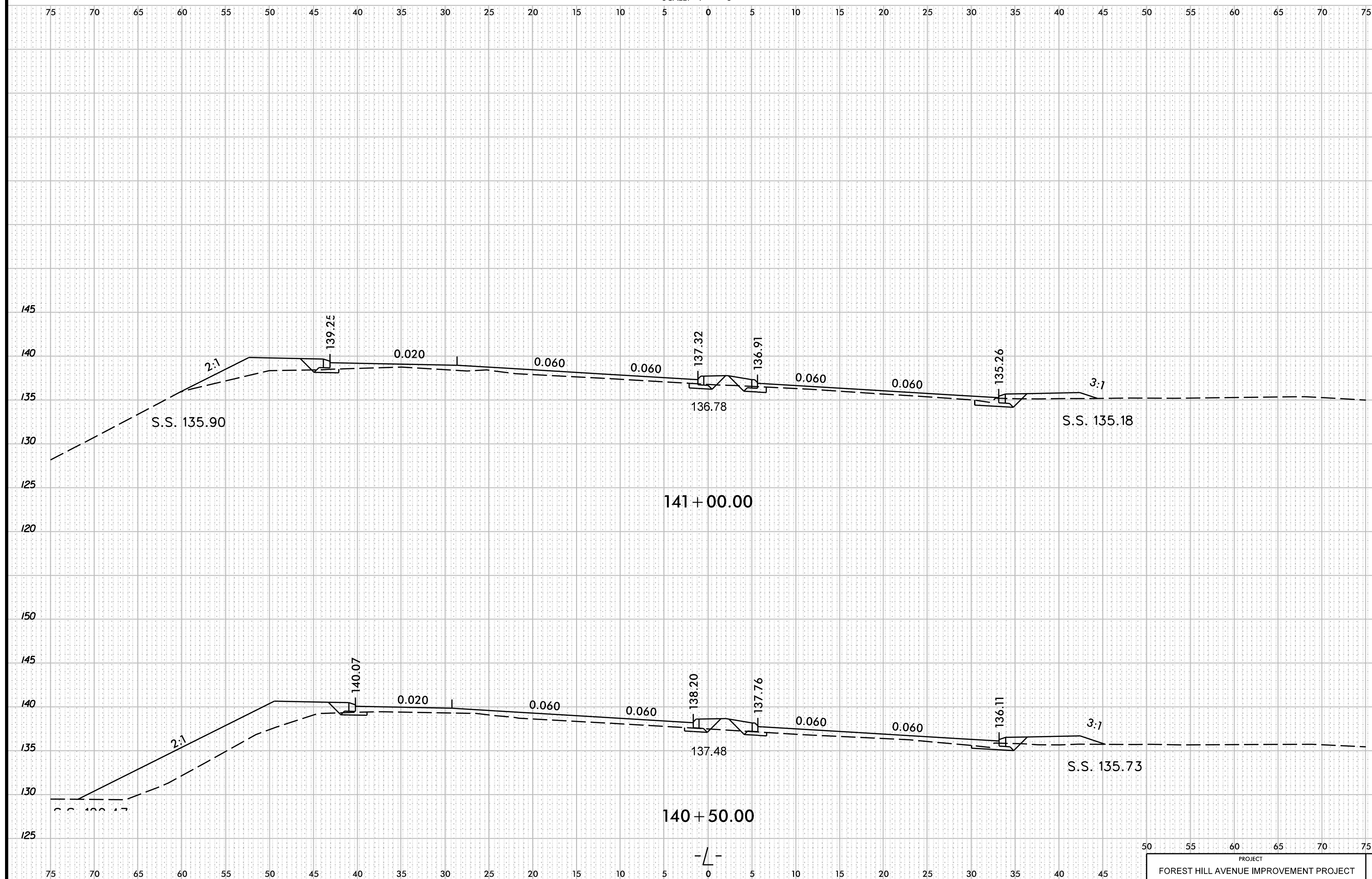


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

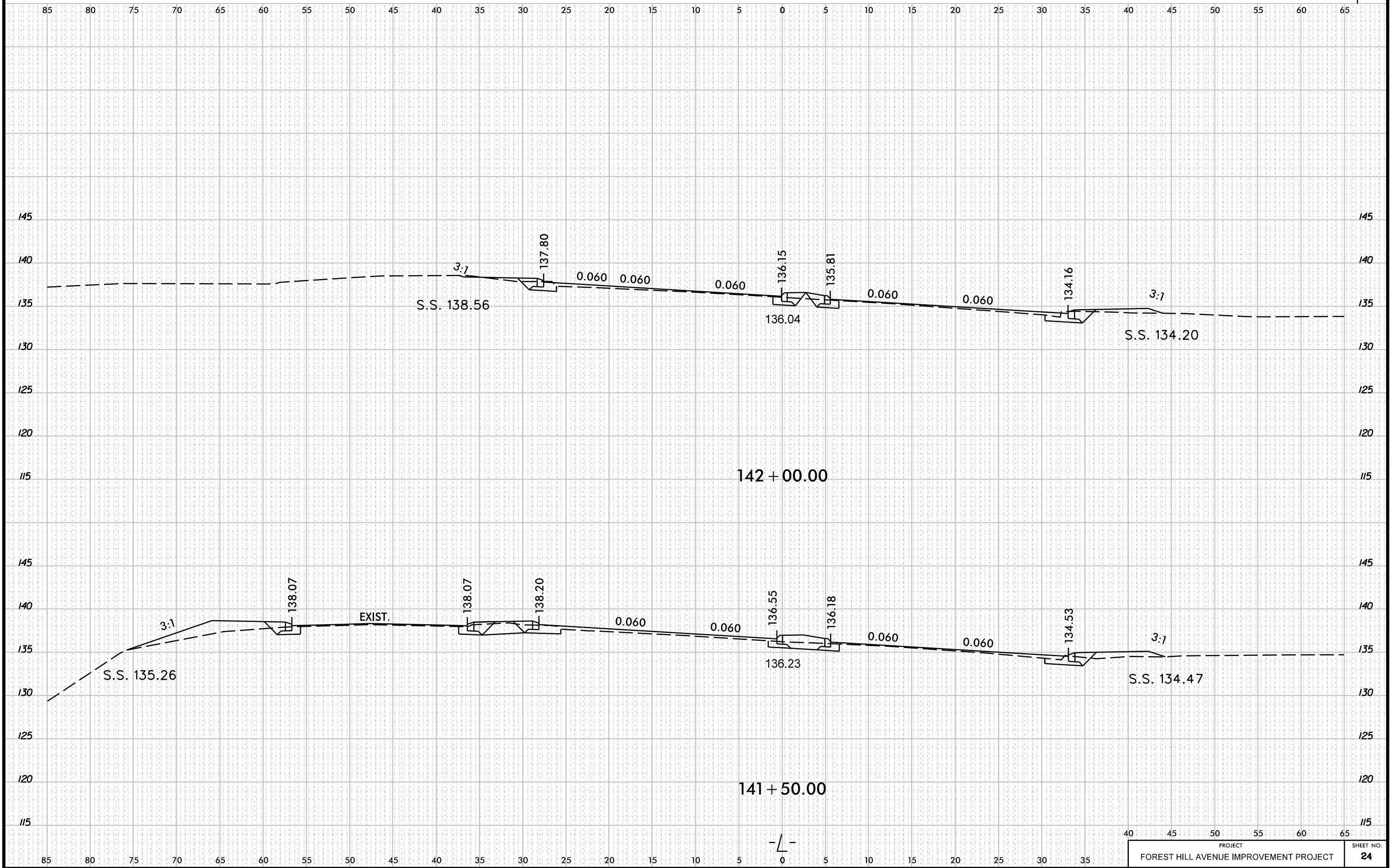


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

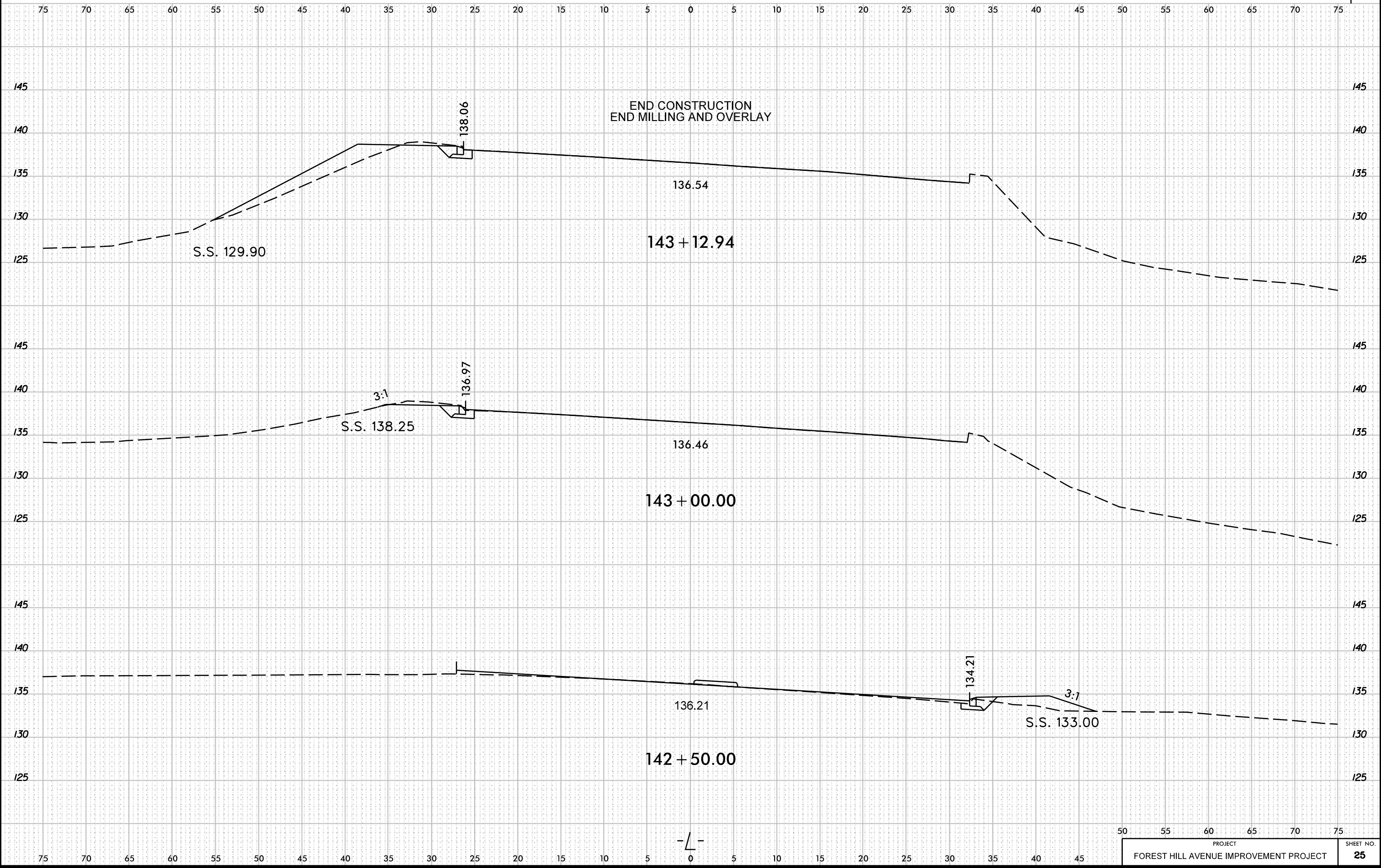


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

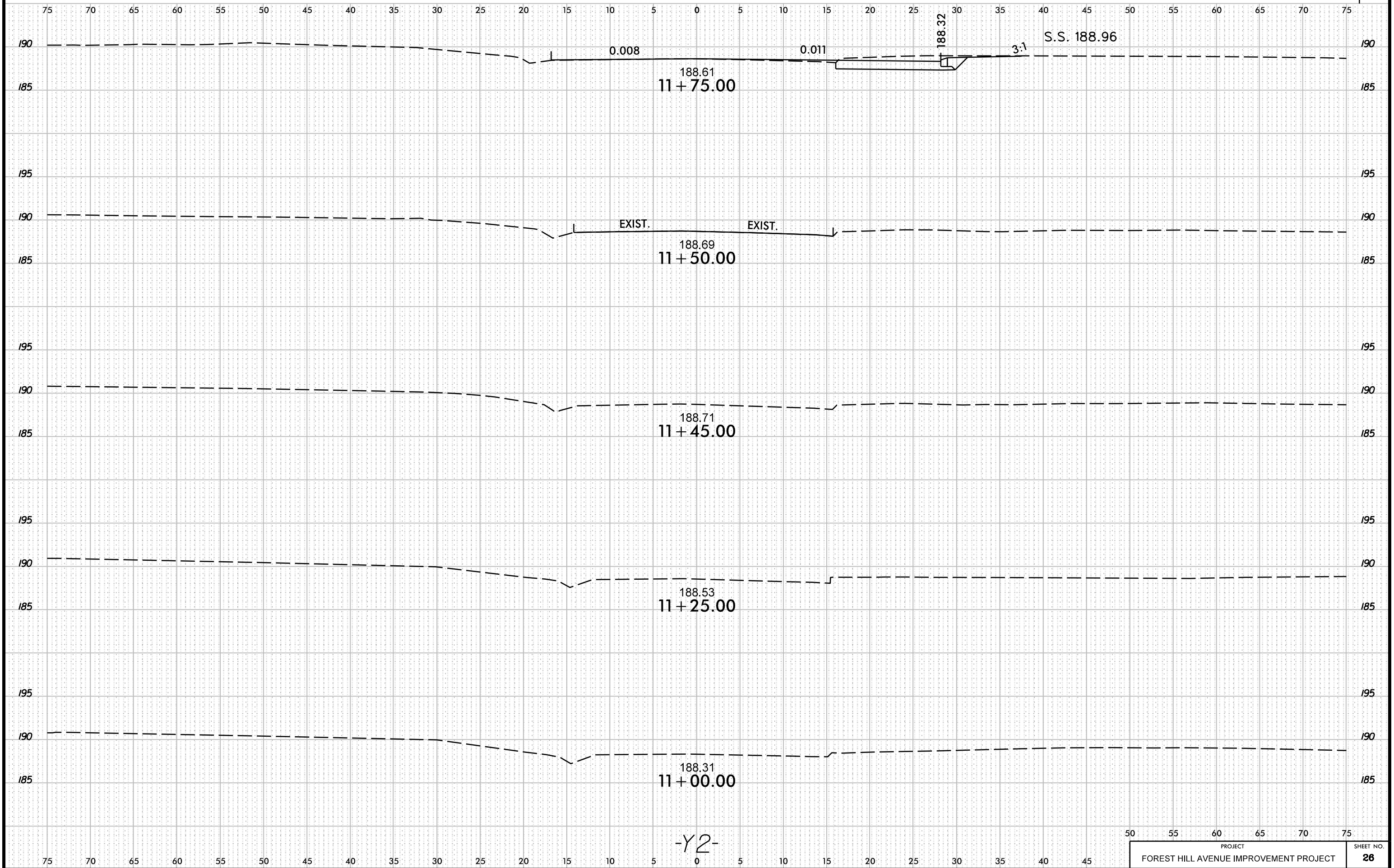


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



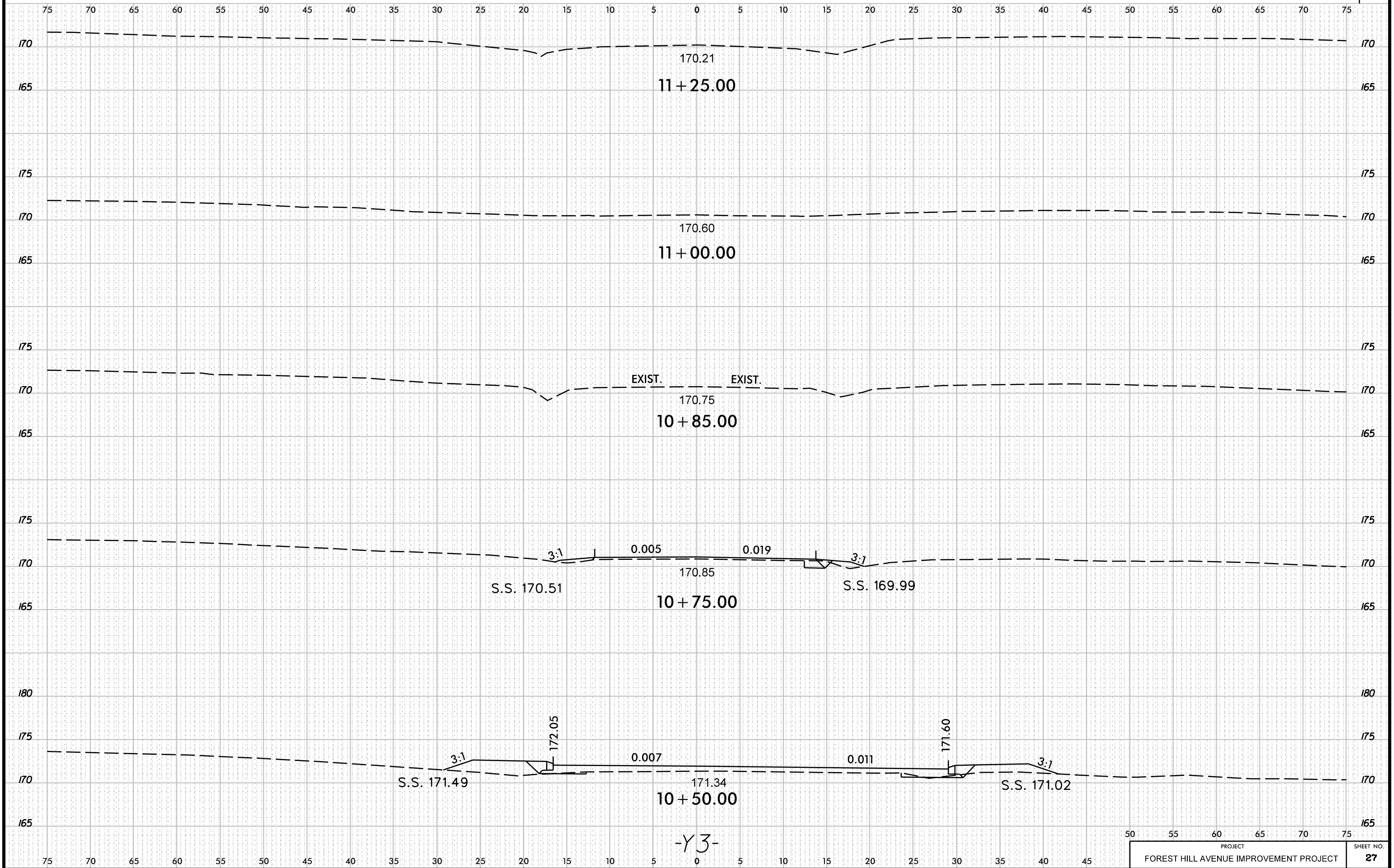
-Y2-

STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

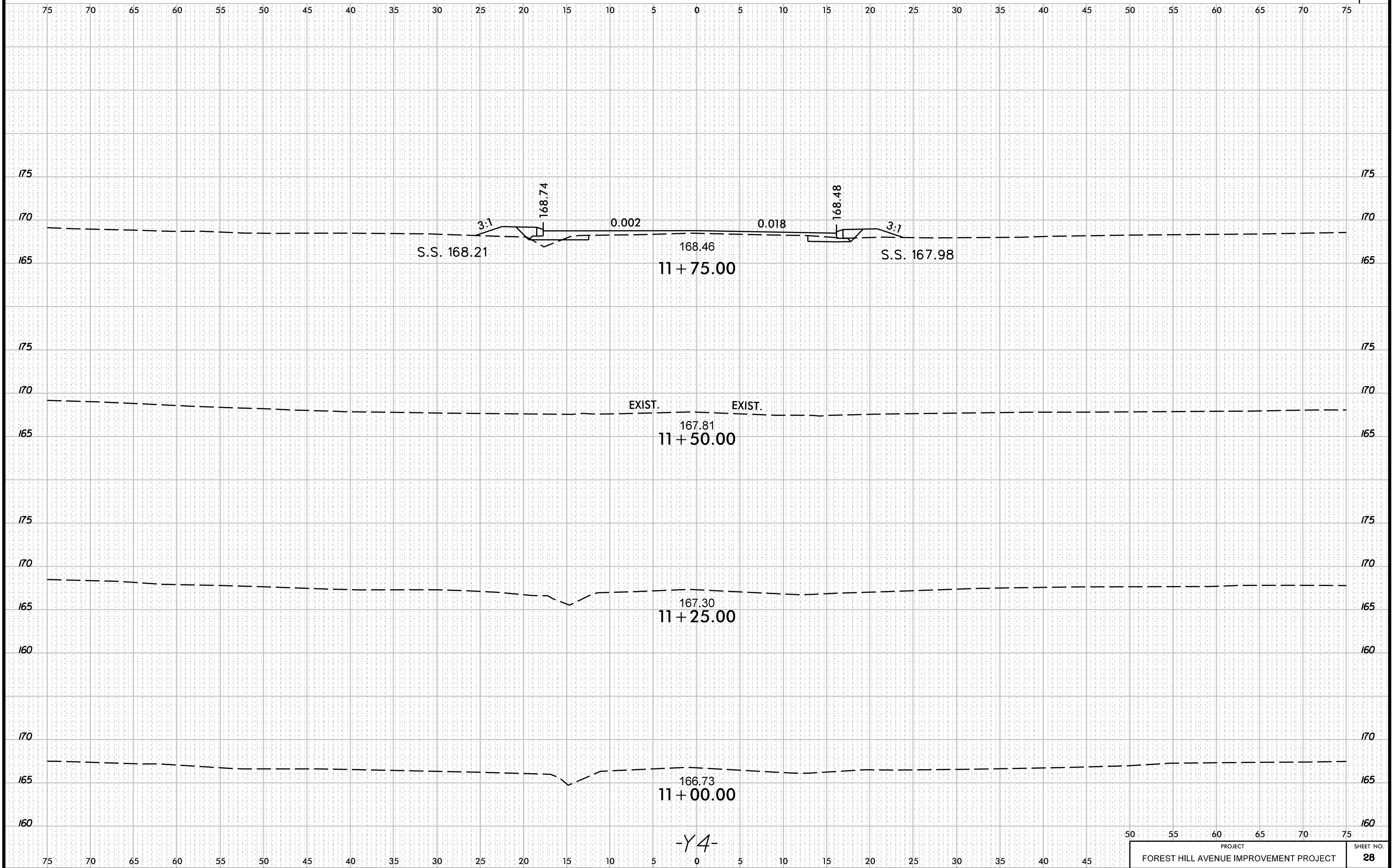


STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

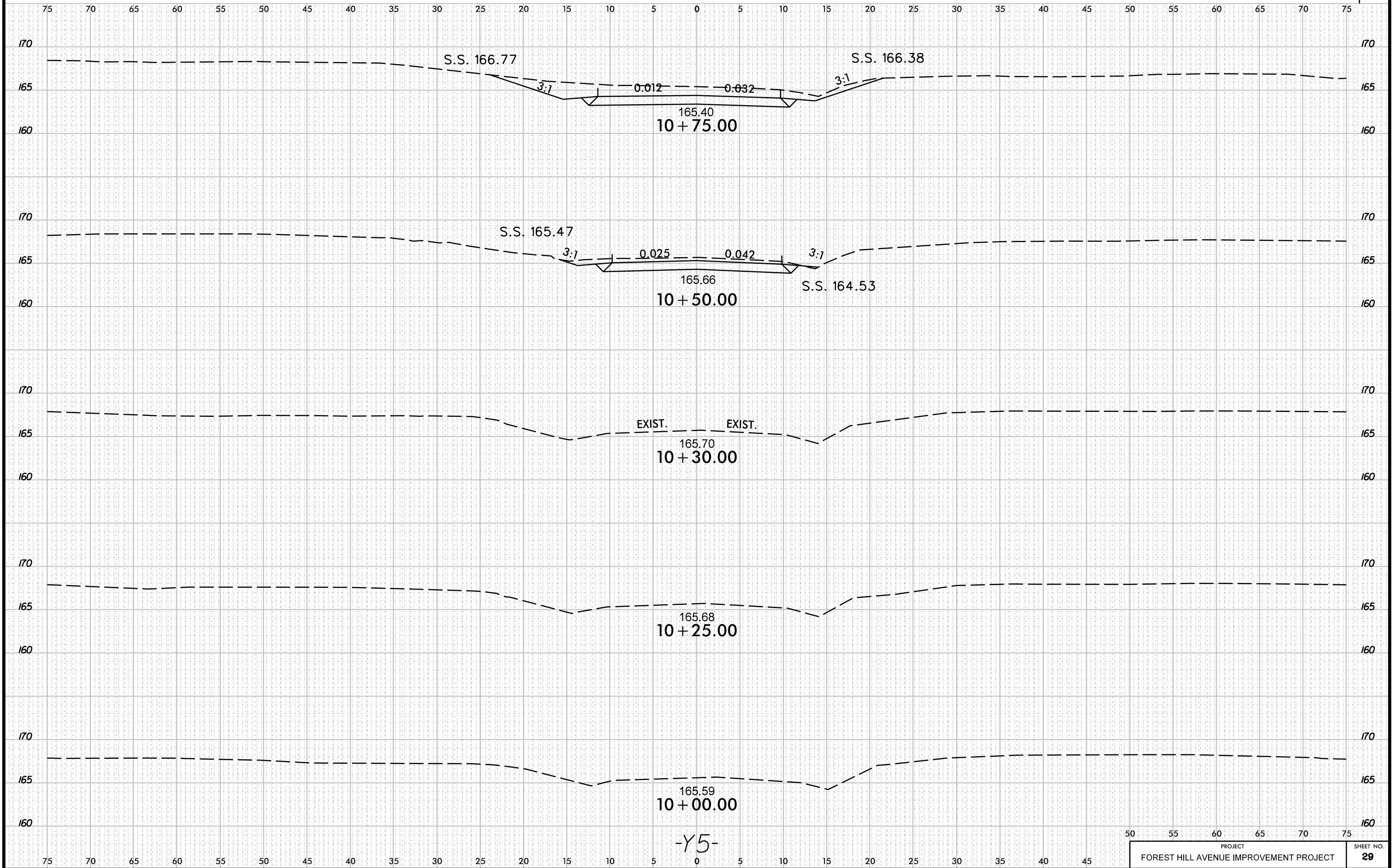


STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



-Y5-

STINE&STAMP

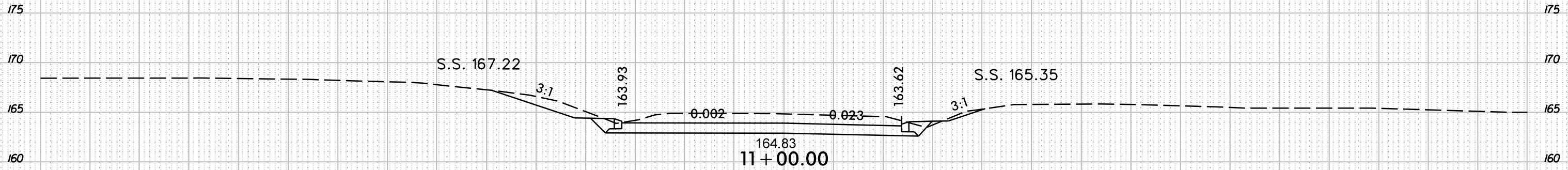


# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



-Y5-

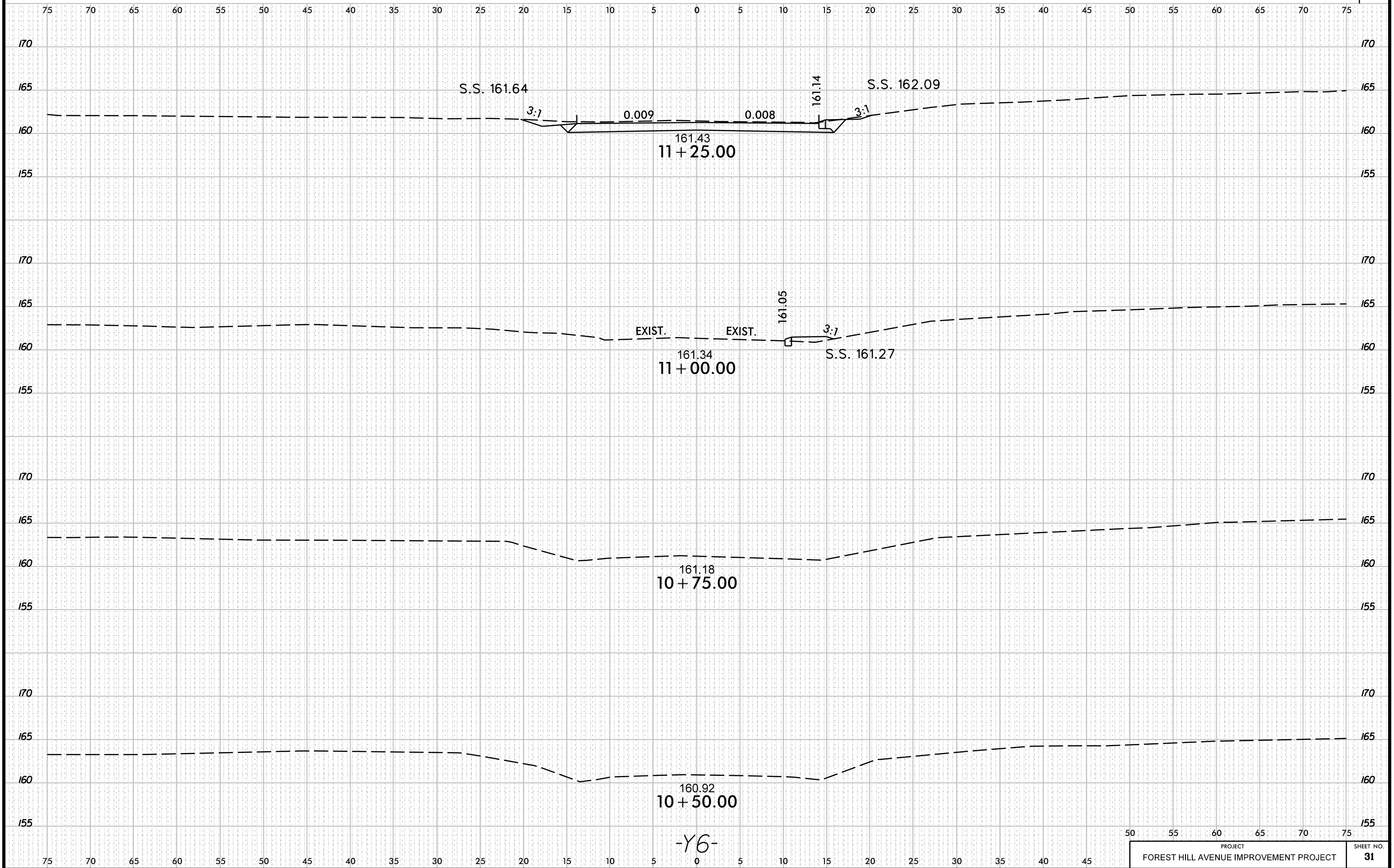
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



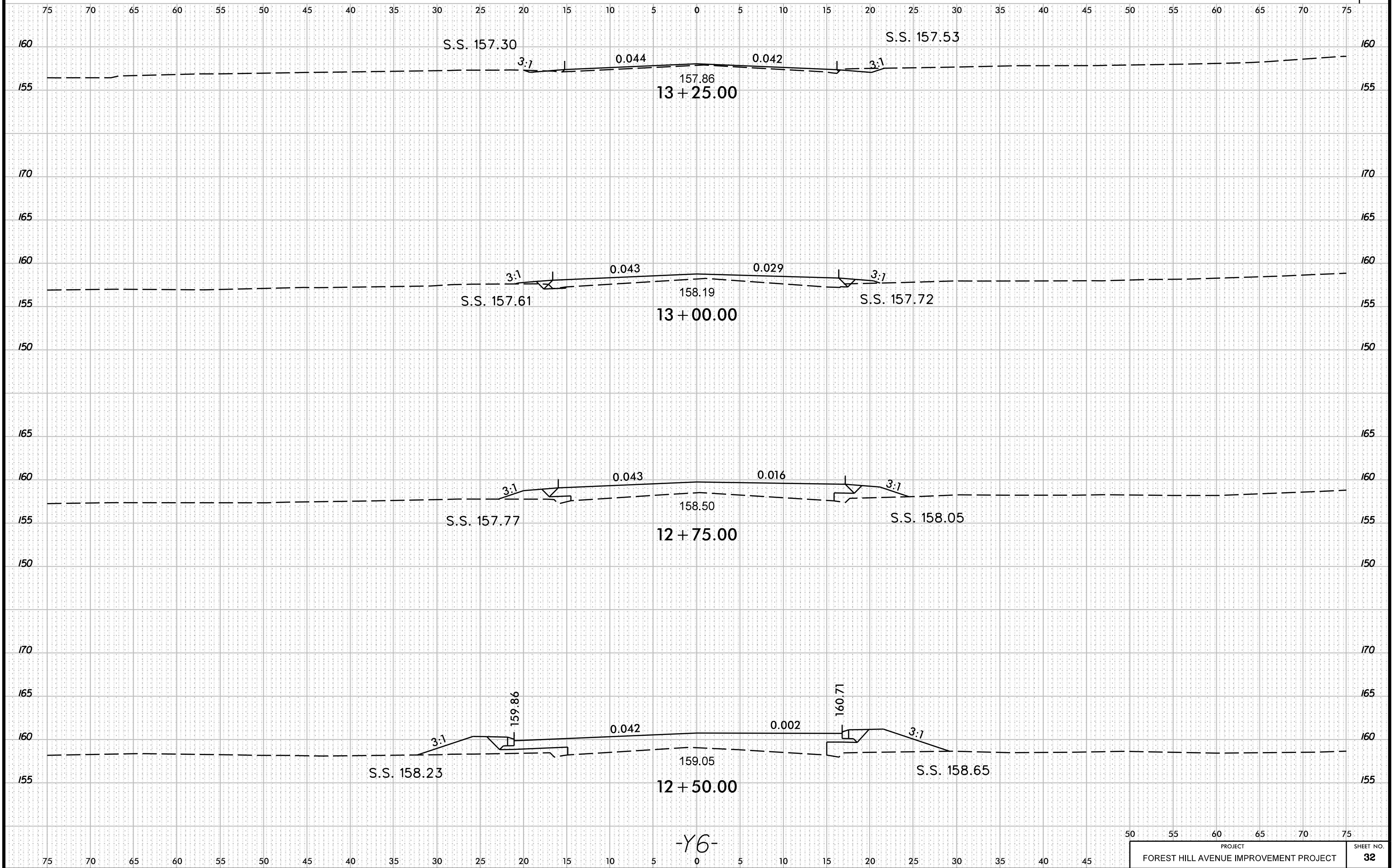
-Y6-

871NE&ST.AMPs

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



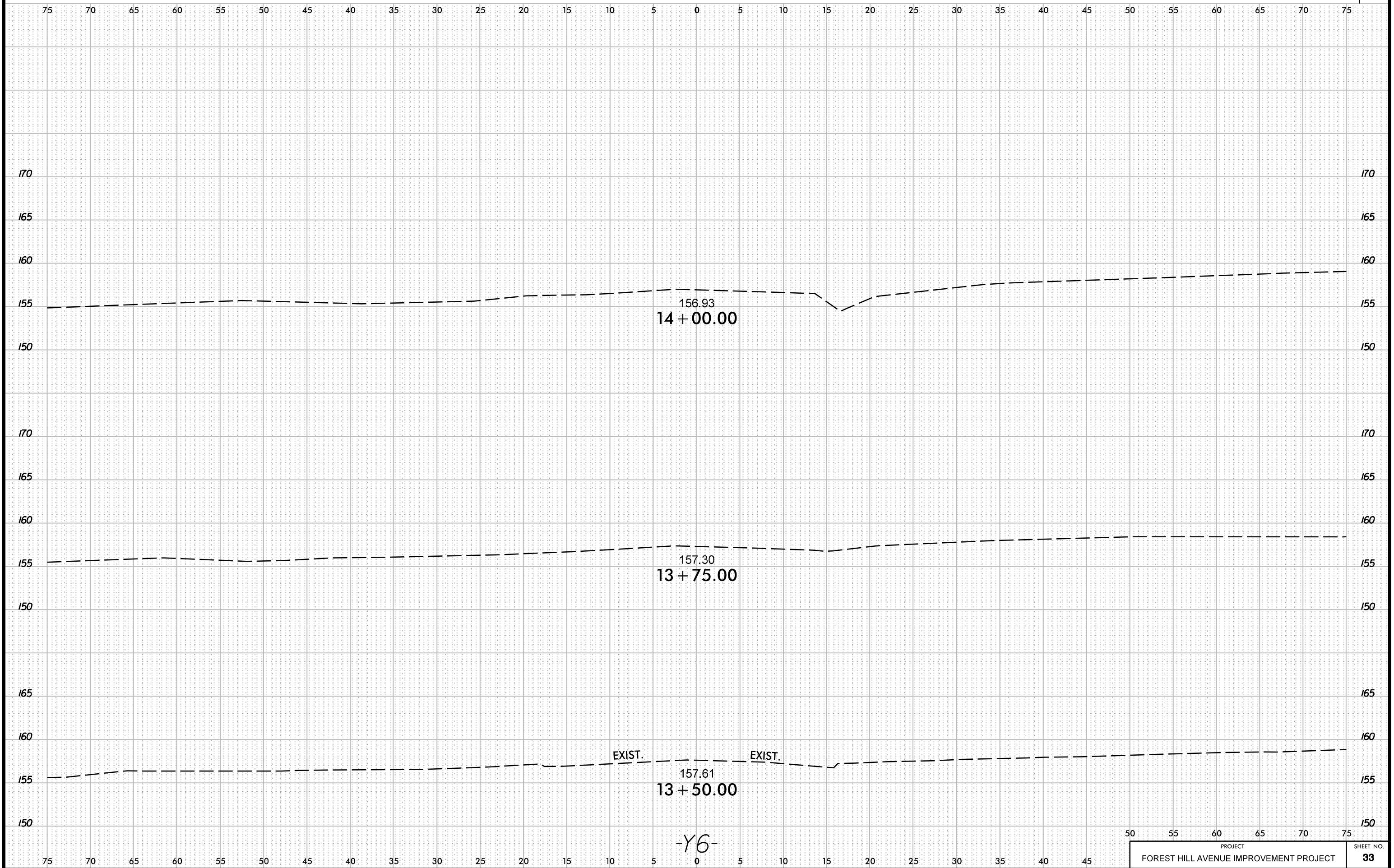
-Y6-

ST/ME/SST/AM/PS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

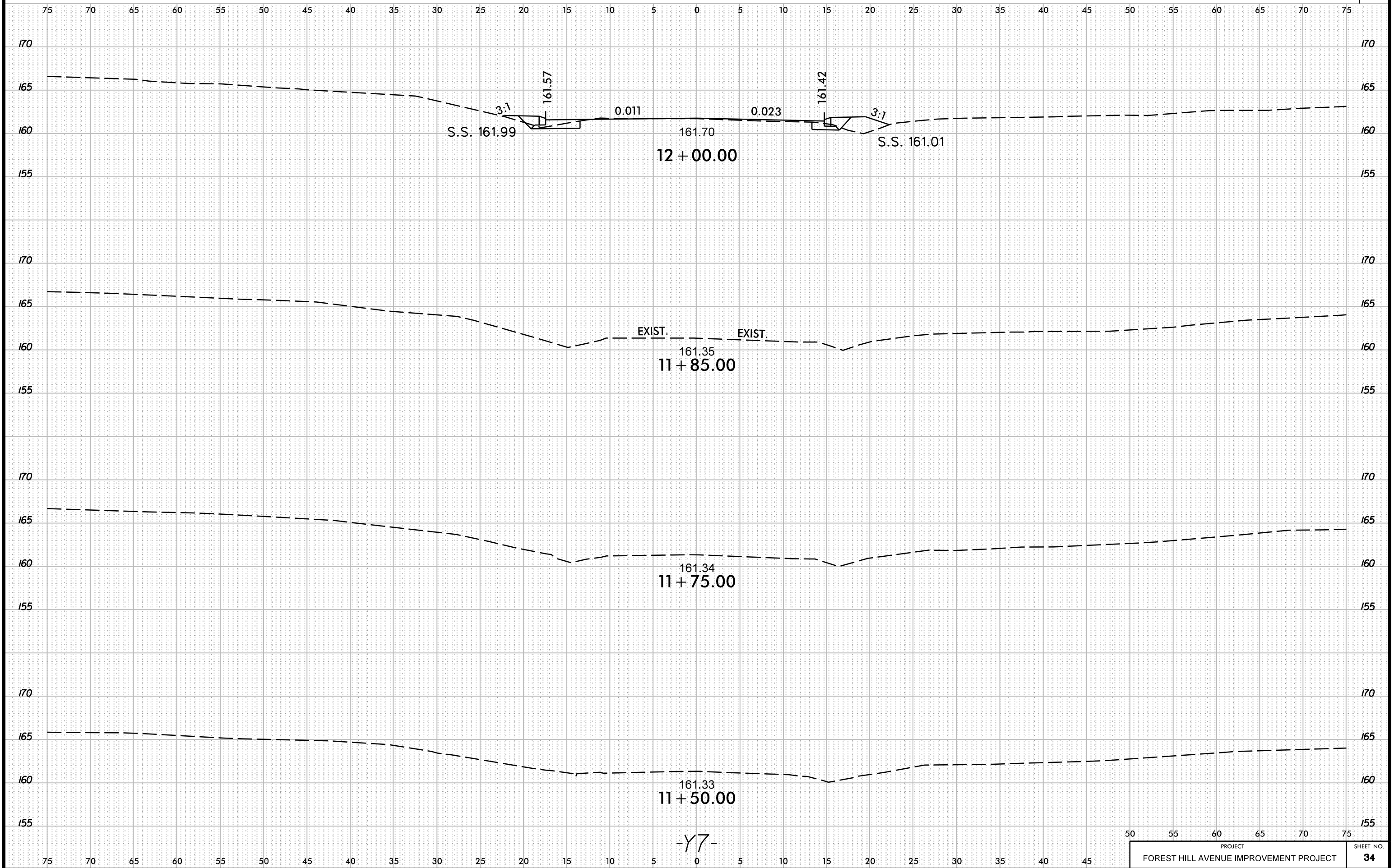


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

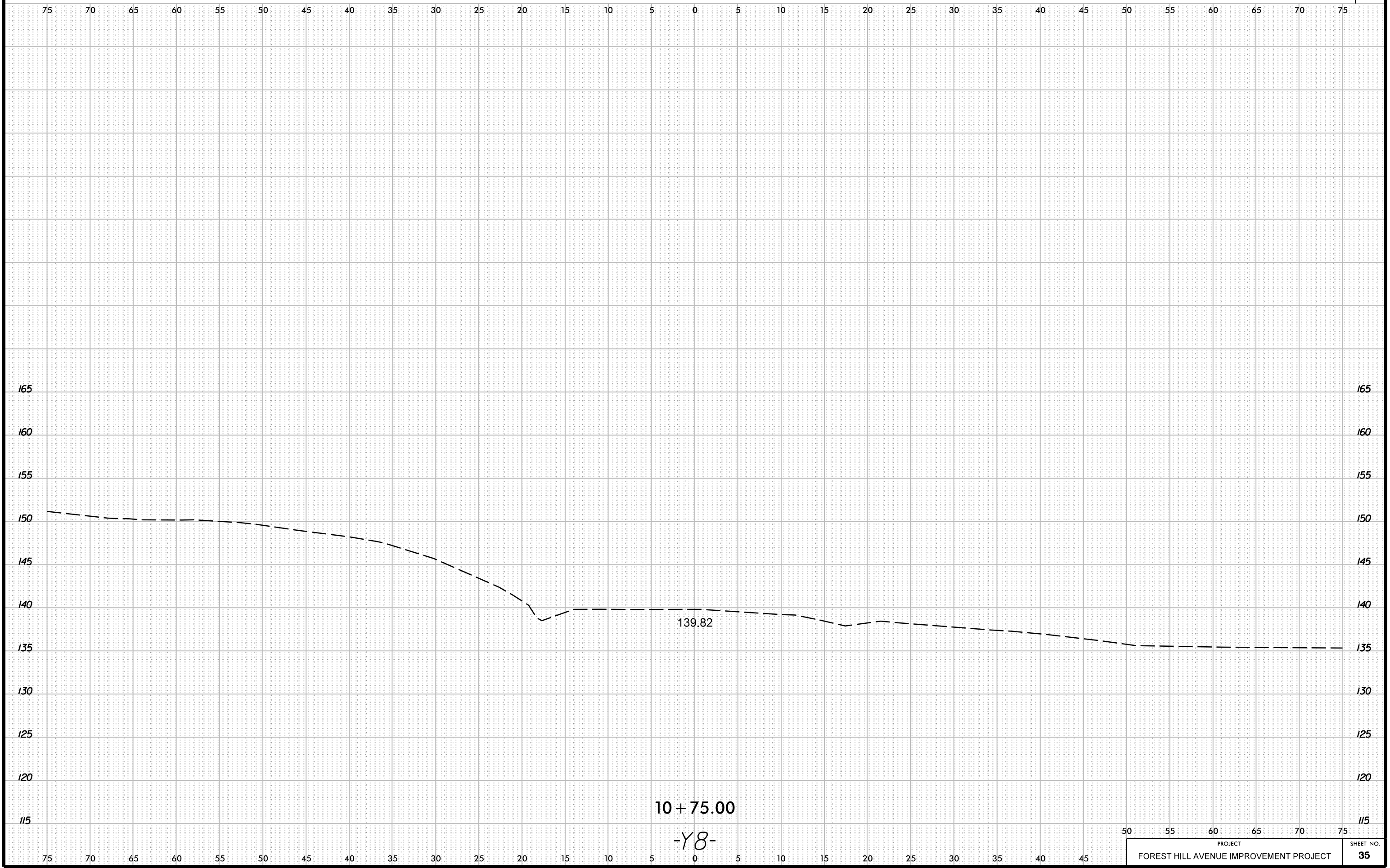


ST/MS&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

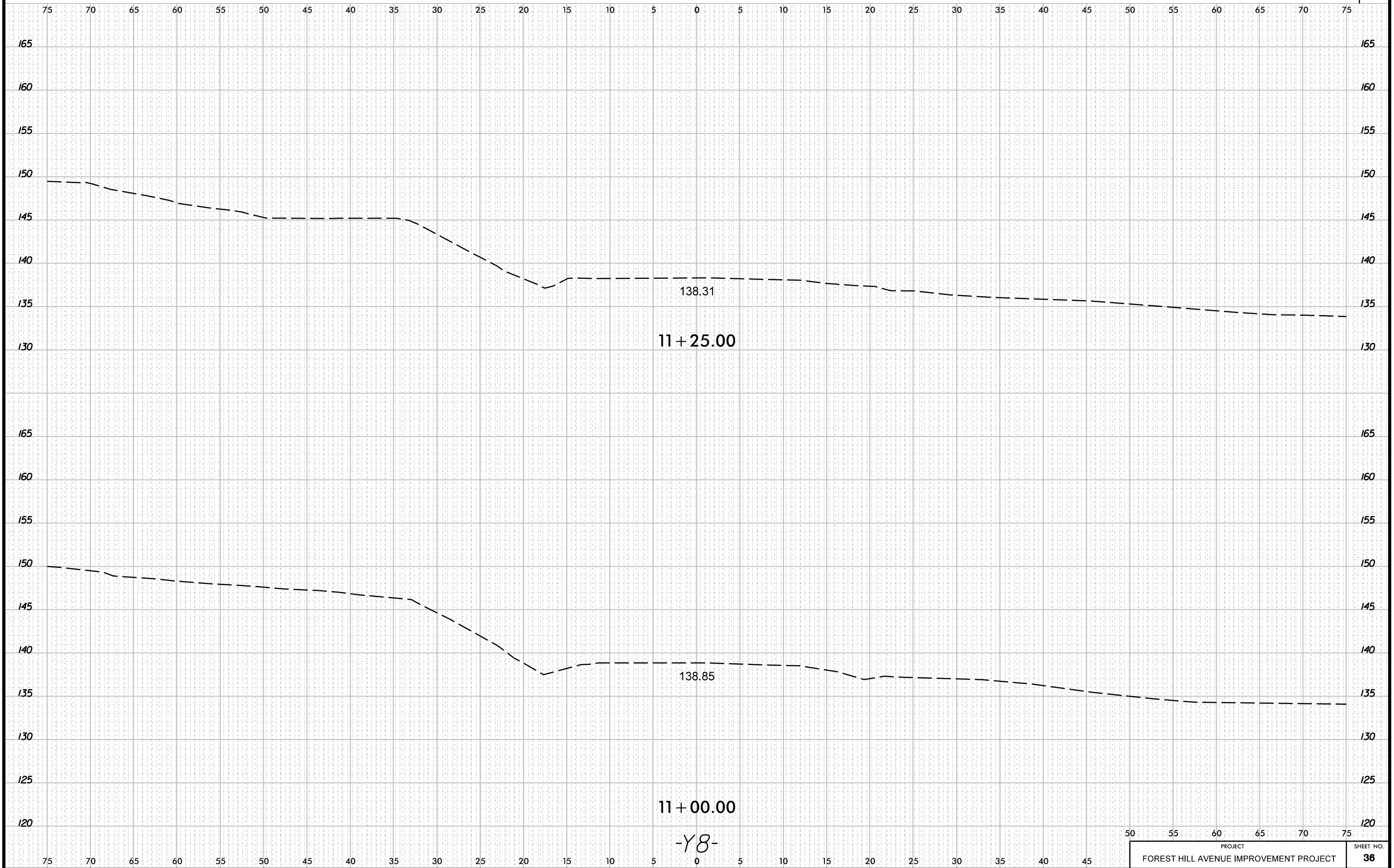


STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

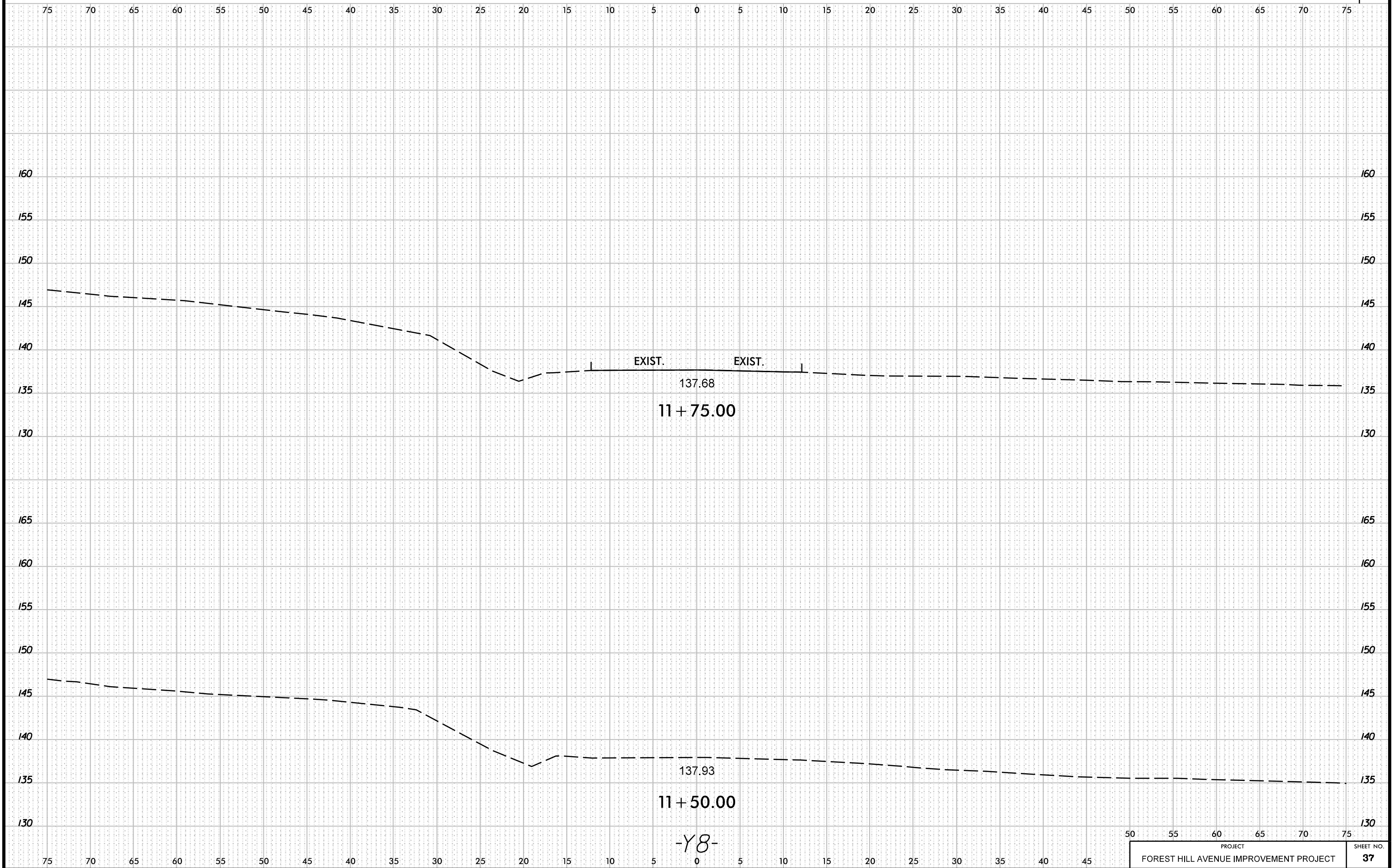


8716E&ST AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



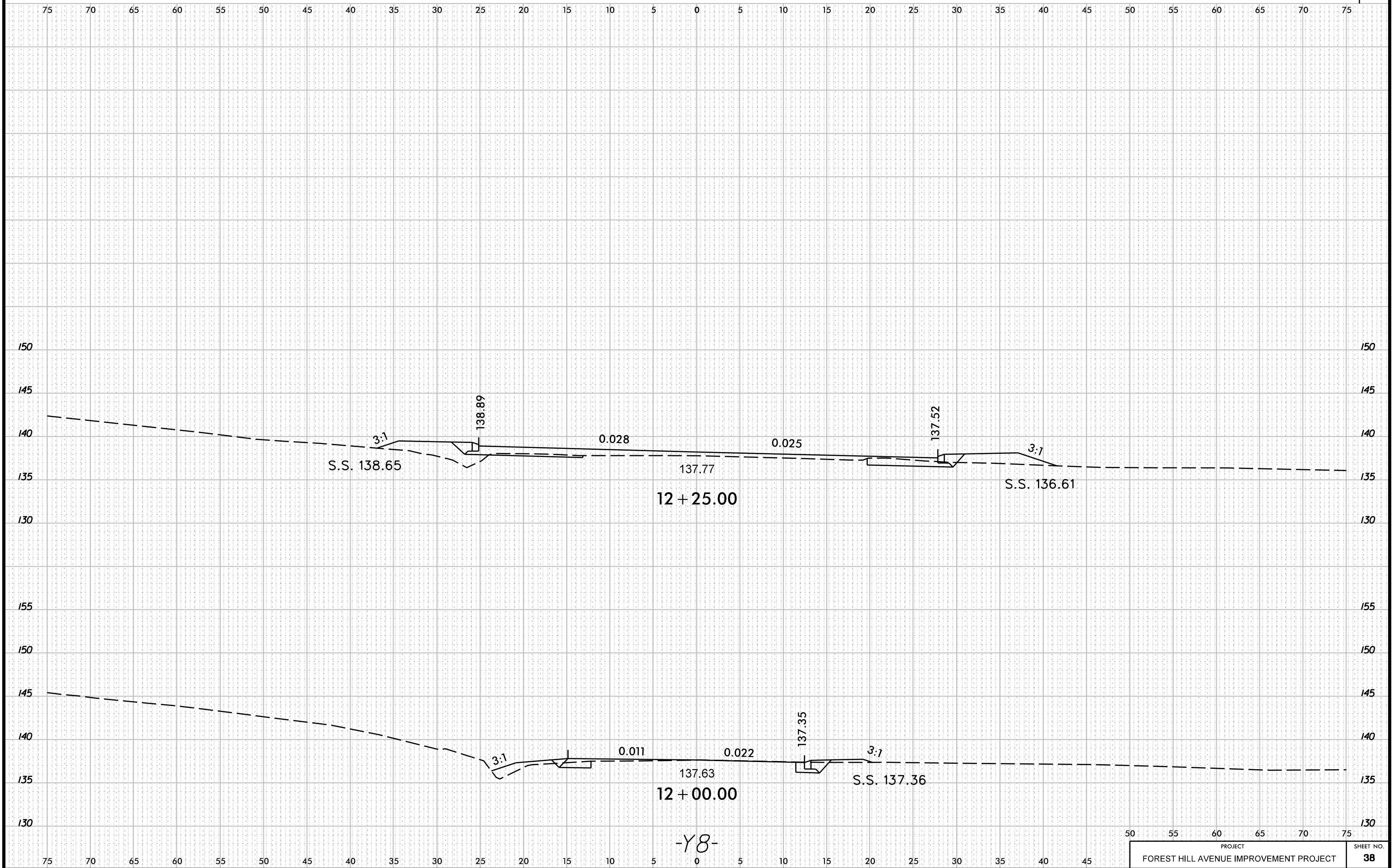
STINE&STAMP



# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

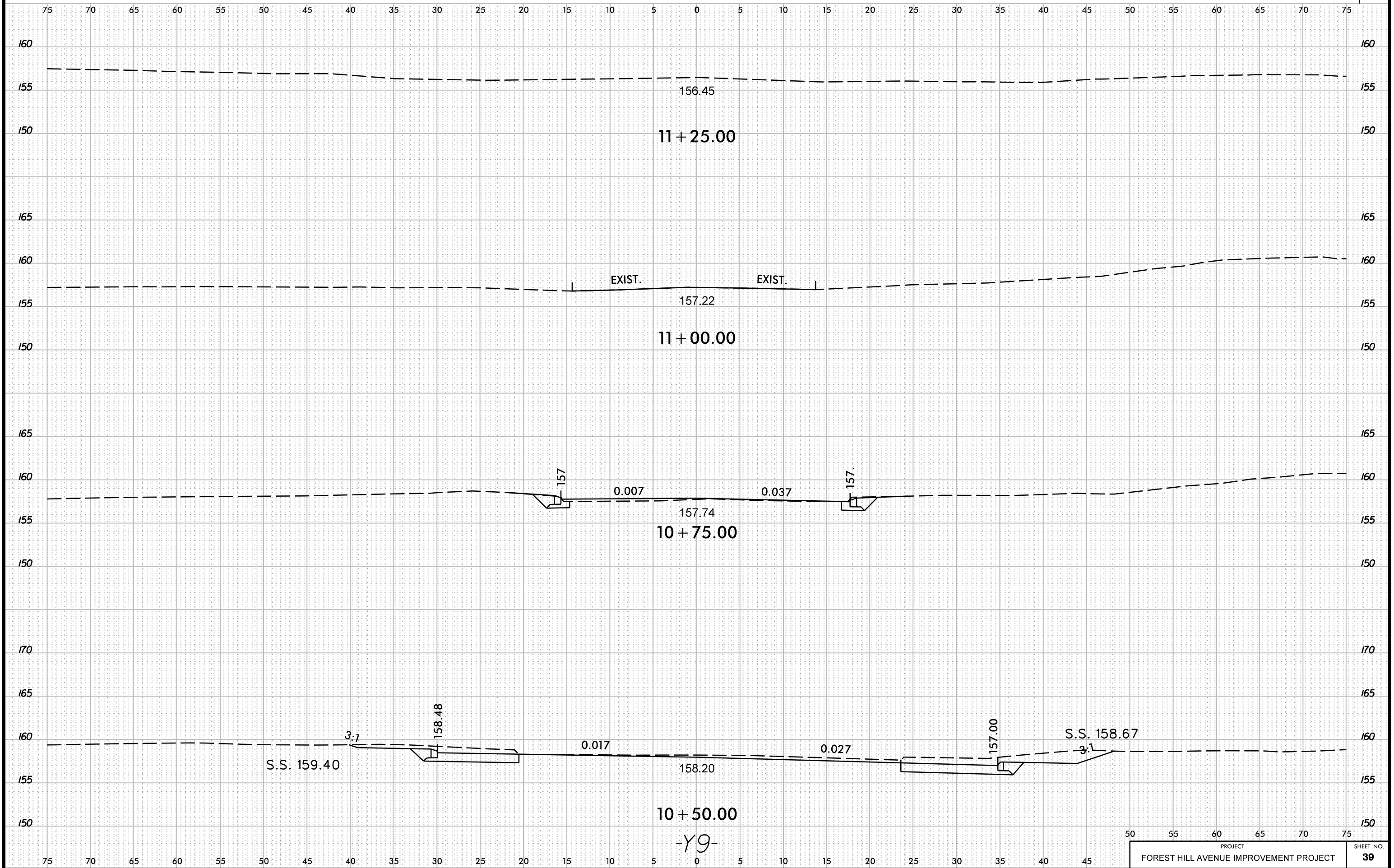


STINE&STAMP

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.



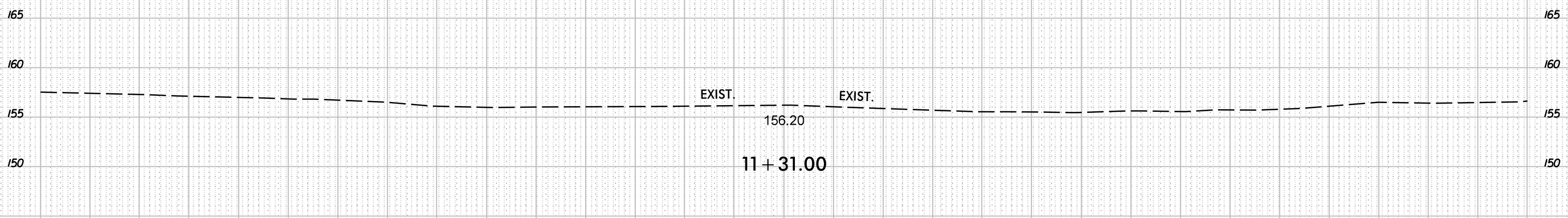
ST/ME&ST/AMPS

# CROSS SECTIONS

SCALE: 1" = 5'

SHEET NO.

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



EXIST.

EXIST.

11+31.00

156.20

-Y9-

STINE&STAMP