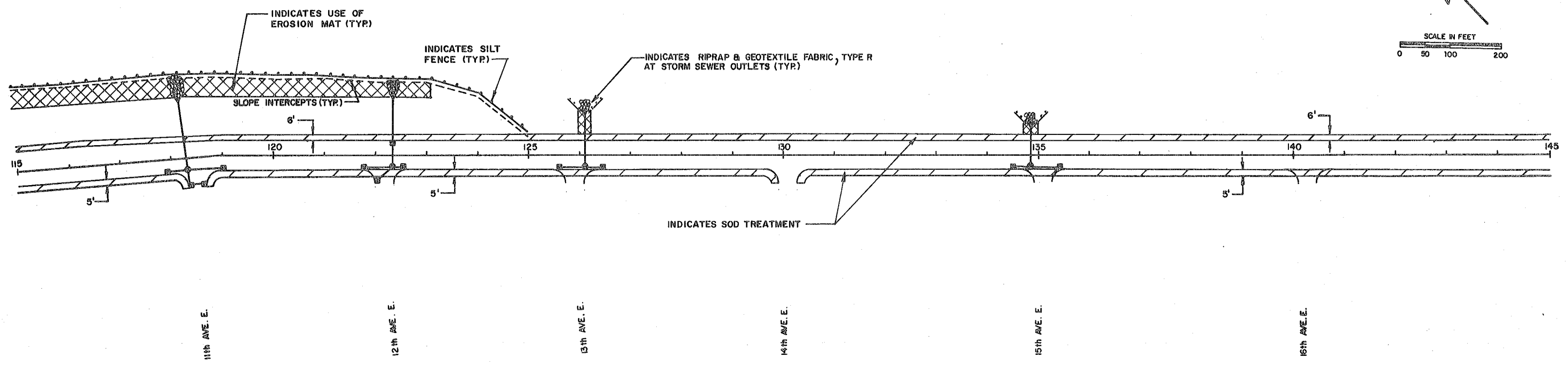
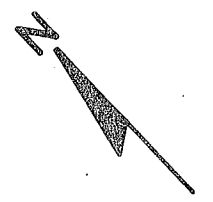
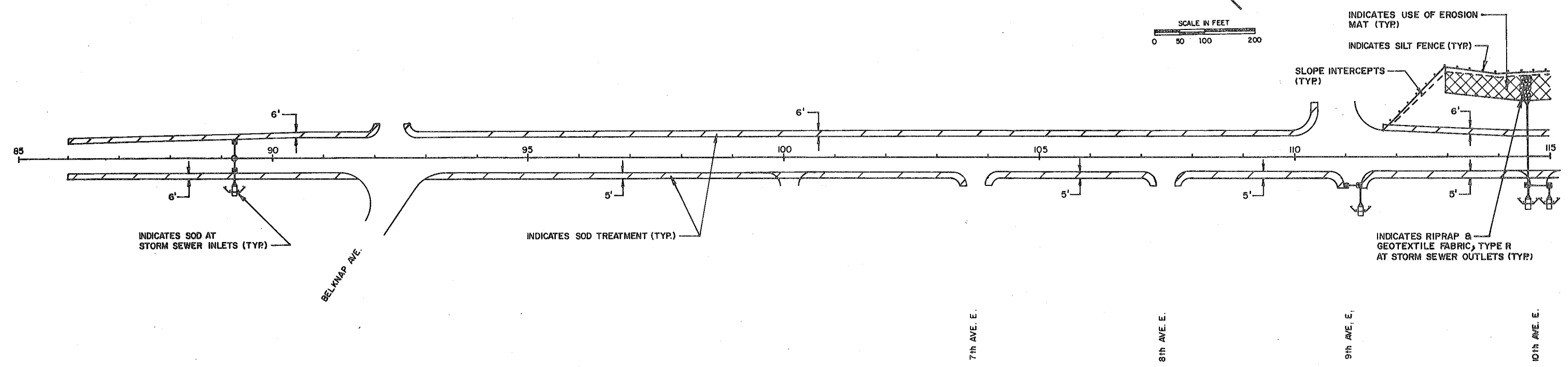
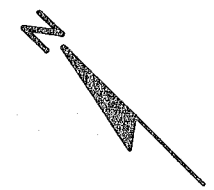


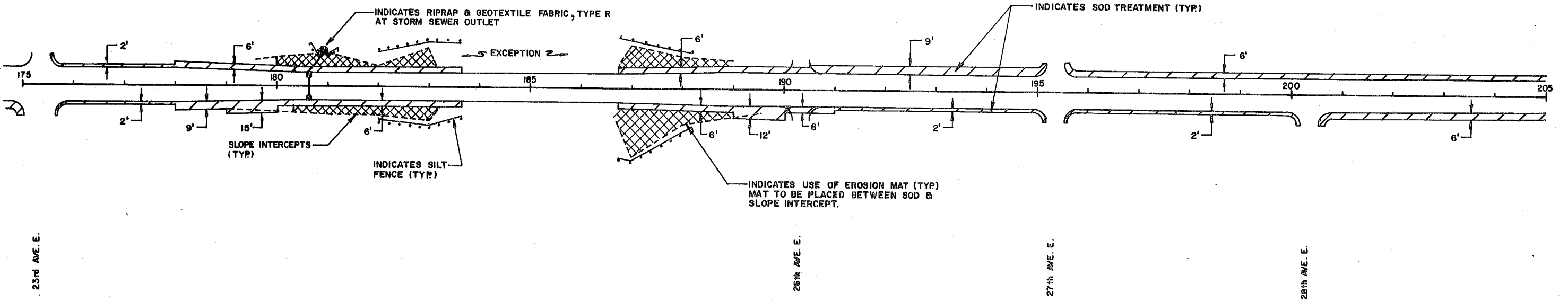
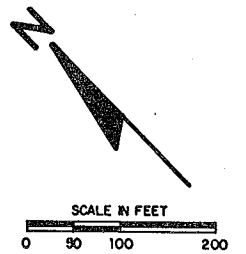
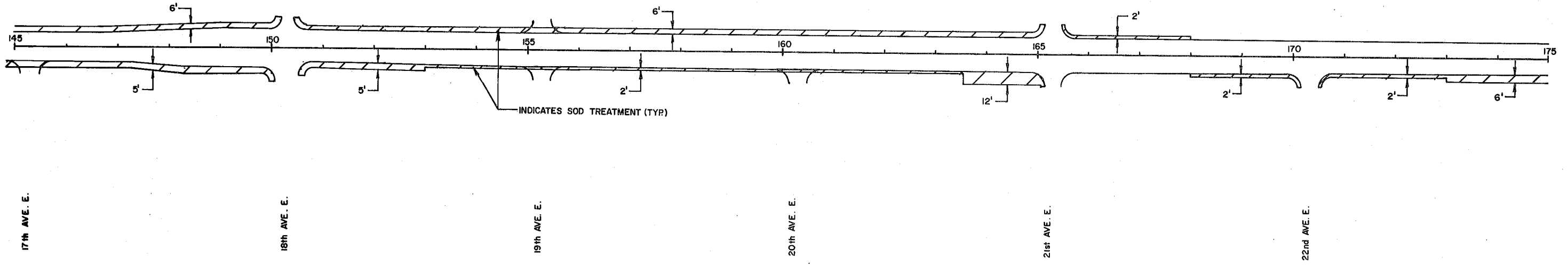
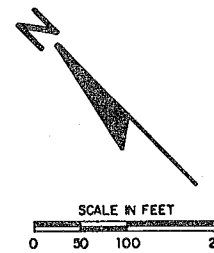
9/56

STATE PROJECT NUMBER	SHEET NO.
1190-07-71	2.12
EROSION CONTROL PLAN	

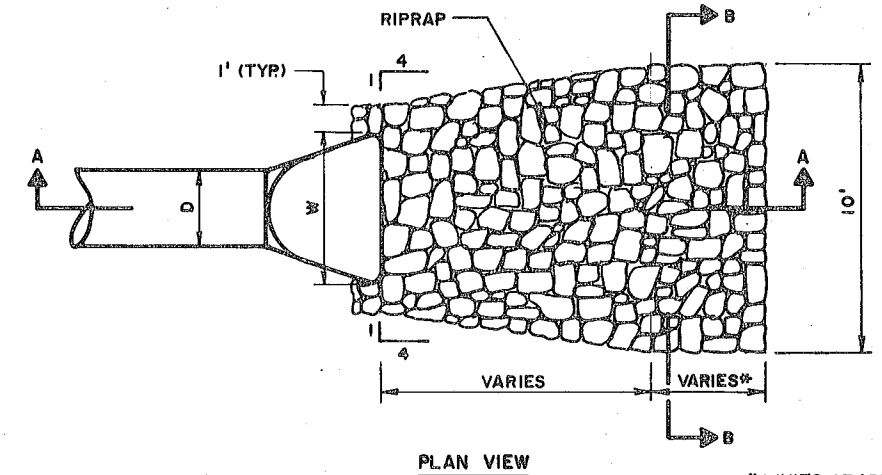
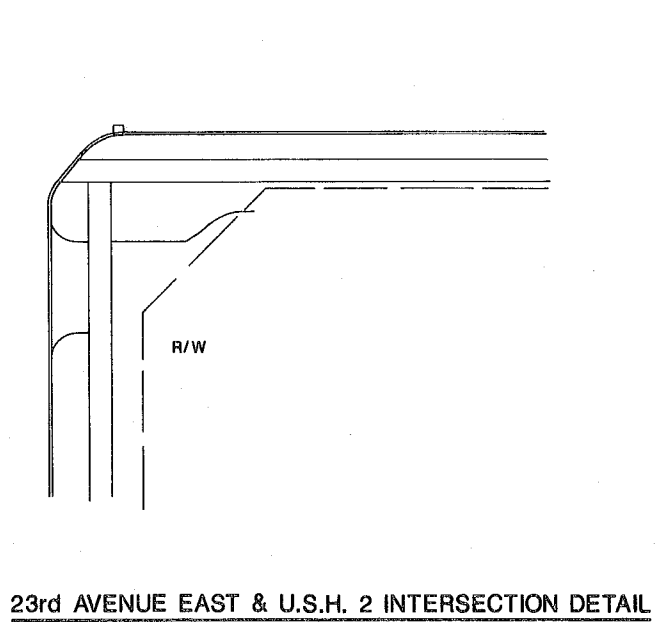
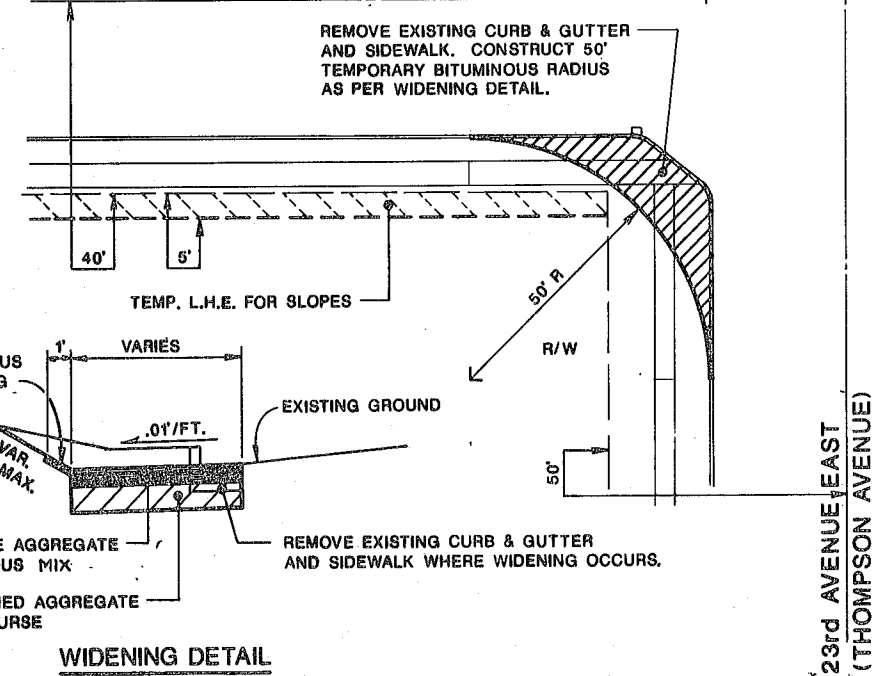
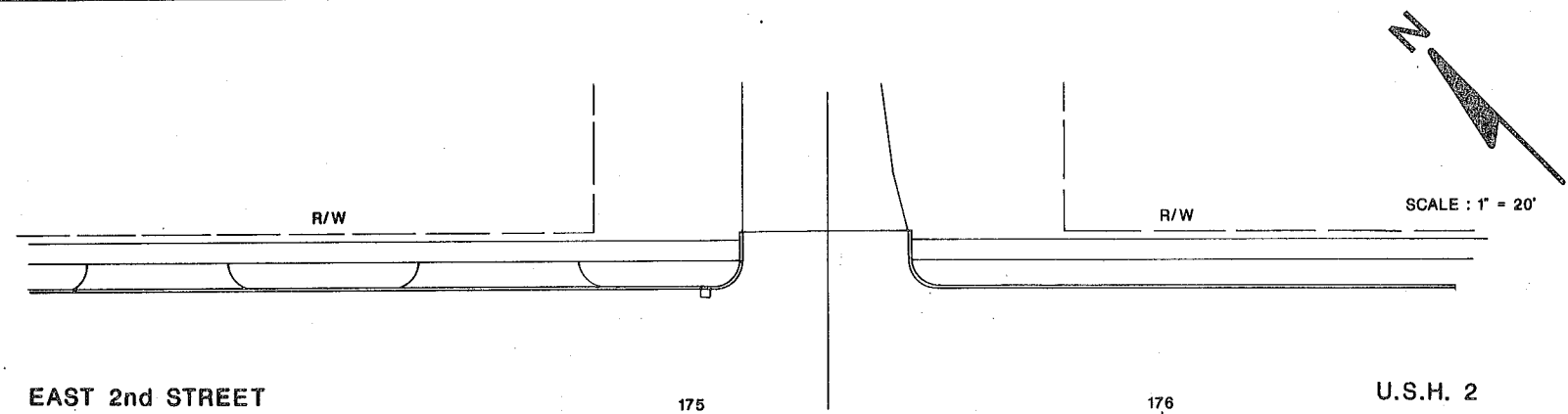
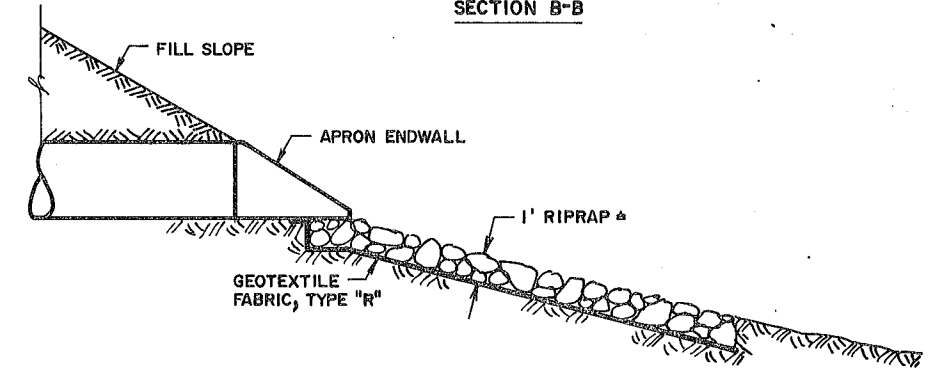
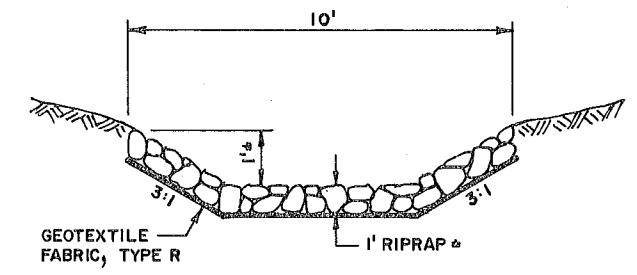
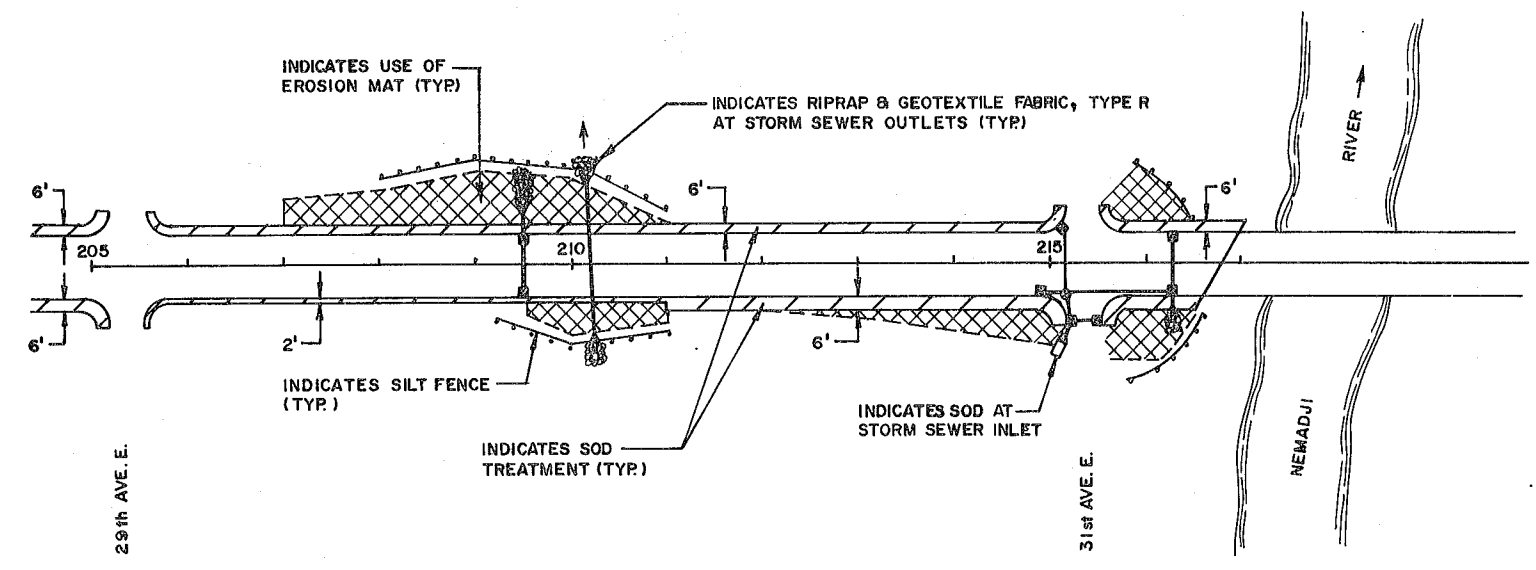
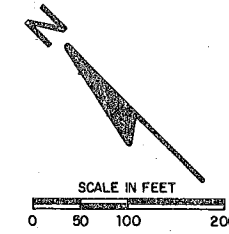


10/56

STATE PROJECT NUMBER	SHEET NO.
1190-07-71	2.13
EROSION CONTROL PLAN	



STATE PROJECT NUMBER 1190-07-71	SHEET NO. 2 of 14
EROSION CONTROL PLAN / 23rd AVENUE EAST & U.S.H. 2 INTERSECTION DETAIL	



\*LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.

DATE 11/29/88

## ESTIMATE OF QUANTITIES

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1190-07-71 QUANTITY	1190-07-72 QUANTITY	1190-10-71 QUANTITY	1190-12-72 QUANTITY
20101	CLEARING	STA.	22.00	22.00			
20104	GRUBBING	STA.	22.00	22.00			
20330	REMOVING OLD CULVERTS	EACH	1.00	1.00			
20351	REMOVING OLD BRIDGE, STATION 185+00	L.S.	1.00			1.00	
20401	REMOVING PAVEMENT	S.Y.	98,399.00	87,576.00			10,823.00
20405	REMOVING CURB AND GUTTER	L.F.	1,480.00	1,480.00			
20406	REMOVING CONCRETE SIDEWALK	S.Y.	5,547.00	5,547.00			
20411	REMOVING GUARDRAIL	L.F.	461.00	461.00			
20412	REMOVING FENCE	L.F.	253.00	253.00			
20480	ABANDONING MANHOLES	EACH	9.00	9.00			
20481	ABANDONING CATCH BASINS	EACH	2.00				2.00
20482	ABANDONING INLETS	EACH	55.00	55.00			
20503	UNCLASSIFIED EXCAVATION	C.Y.	77,522.00	72,367.00			5,155.00
20610	EXCAVATION FOR STRUCTURES, BRIDGES B-16-68	L.S.	1.00			1.00	
21302	FINISHING ROADWAY, PROJECT 1190-07-71	L.S.	1.00	1.00			
21303	FINISHING ROADWAY, PROJECT 1190-12-72	L.S.	1.00				1.00
21401	OBLITERATING OLD ROAD	STA.	15.00	15.00			
30404	CRUSHED AGGREGATE BASE COURSE	TON	4,500.00	4,500.00			
40909	CONCRETE PAVEMENT, 9-INCH	S.Y.	89,346.00	80,398.00			8,948.00
40919	H.E.S. CONCRETE PAVEMENT, 9-INCH	S.Y.	1,340.00	1,340.00			
40931	CONCRETE DRIVEWAY	S.Y.	145.00	145.00			
40935	CONCRETE PAVEMENT APPROACH SLAB	S.Y.	527.00	527.00			
40941	H.E.S. CONCRETE DRIVEWAY	S.Y.	411.00	411.00			
50201	CONCRETE MASONRY, BRIDGES	C.Y.	1,145.00			1,145.00	
50230	PROTECTIVE SURFACE TREATMENT	GAL.	144.00	144.00			
50504	HIGH-STRENGTH BAR STEEL REINFORCEMENT, BRIDGES	LB.	121,350.00				121,350.00
50510	COATED HIGH-STRENGTH BAR STEEL REINFORCEMENT	LB.	89,250.00				89,250.00

SHEET 3

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1190-07-71 QUANTITY	1190-07-72 QUANTITY	1190-10-71 QUANTITY	1190-12-72 QUANTITY
50601	STRUCTURAL CARBON STEEL	LB.	40,700.00			40,700.00	
50606	HIGH-STRENGTH STRUCTURAL STEEL	LB.	430,210.00			430,210.00	
50621	BEARING PADS	S.F.	89.00			89.00	
51020	PREBORING, CAST-IN-PLACE CONCRETE PILING	L.F.	85.00			85.00	
51030	CAST-IN-PLACE CONCRETE PILING, DELIVERED AND DRIVEN, 10-3/4 INCH	L.F.	8,020.00			8,020.00	
52210	REINFORCED CONCRETE CULVERT PIPE, CLASS III, 42-INCH	L.F.	168.00	168.00			
52260	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 12-INCH	EACH	3.00	3.00			
52261	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 15-INCH	EACH	5.00	5.00			
52262	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 18-INCH	EACH	3.00	3.00			
52268	REINFORCED CONCRETE APRON ENDWALLS FOR CULVERT PIPE, 42-INCH	EACH	2.00	2.00			
60123	CONCRETE CURB AND GUTTER, 30-INCH, TYPE A	L.F.	27,862.00	24,844.00			3,018.00
60204	CONCRETE SIDEWALK, 4-INCH	S.F.	47,943.00	47,943.00			
60315	CONCRETE STEPS	S.F.	40.00	40.00			
60405	SLOPE PAVING, CRUSHED AGGREGATE	S.Y.	705.00			705.00	
60601	RIPRAP	C.Y.	106.00	106.00			
60602	HEAVY RIPRAP	C.Y.	150.00			150.00	
60825	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 12-INCH	L.F.	127.00	127.00			
60826	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 15-INCH	L.F.	2,834.00	2,754.00			80.00
60827	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 18-INCH	L.F.	585.00	585.00			
60829	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 24-INCH	L.F.	456.00	456.00			
60831	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 30-INCH	L.F.	648.00	648.00			

SHEET 3.1

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1190-07-71 QUANTITY	1190-07-72 QUANTITY	1190-10-71 QUANTITY	1190-12-72 QUANTITY
60837	REINFORCED CONCRETE PIPE, CLASS III, STORM SEWER, 60-INCH	L.F.	90.00	90.00			
60850	REINFORCED CONCRETE PIPE, CLASS IV, STORM SEWER, 12-INCH	L.F.	2,687.00	2,687.00			
60851	REINFORCED CONCRETE PIPE, CLASS IV, STORM SEWER, 15-INCH	L.F.	43.00	43.00			
60852	REINFORCED CONCRETE PIPE, CLASS IV, STORM SEWER, 18-INCH	L.F.	145.00	145.00			
61110	MANHOLES, TYPE 1	EACH	19.00	19.00			
61113	MANHOLES, TYPE 5	EACH	3.00	3.00			
61121	INLETS, TYPE 1	EACH	12.00	12.00			
61122	INLETS, TYPE 3	EACH	93.00	81.00			12.00
61128	RECONSTRUCTING MANHOLES	EACH	18.00	18.00			
61151	MANHOLE COVERS, TYPE J	EACH	40.00	40.00			
61162	INLET COVERS, TYPE B	EACH	12.00	12.00			
61167	INLET COVERS, TYPE H	EACH	93.00	81.00			12.00
61182	ADJUSTING MANHOLE COVERS	EACH	52.00	40.00			12.00
61201	PIPE UNDERDRAIN, 6-INCH	L.F.	26,868.00	23,689.00	160.00		3,019.00
61211	PIPE UNDERDRAIN, UNPERFORATED, 6-INCH	L.F.	30.00	30.00			
61332	NONMETALLIC CONDUIT, 1 1/4-INCH	L.F.	11,895.00	11,895.00			
61336	NONMETALLIC CONDUIT, 3-INCH	L.F.	1,153.00	1,153.00			
61611	CHAIN LINK FENCE, TYPE B, 5 FT.	L.F.	505.00	505.00			
61910	MOBILIZATION	L.S.	1.00	.70	.18		.07
62001	CONCRETE CORRUGATED MEDIAN	S.F.	272.00	272.00			
62110	LANDMARK REFERENCE MONUMENTS AND COVERS	EACH	30.00	30.00			
62501	TOPSOIL	S.Y.	53,593.00	50,928.00			2,665.00
62702	MULCHING	S.Y.	47,473.00	47,473.00			
62905	FERTILIZER, TYPE B	CWT.	41.70	40.00			1.70
63002	SEEDING	LB.	1,150.00	1,150.00			
63101	SODDING	S.Y.	20,065.00	17,400.00			2,665.00
64202	FIELD OFFICE, TYPE B	L.S.	1.00	1.00			

SHEET 3.2

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1190-07-71 QUANTITY	1190-07-72 QUANTITY	1190-10-71 QUANTITY	1190-12-72 QUANTITY
64210	FIELD LABORATORY	L.S.	1.00	1.00			
64302	TRAFFIC CONTROL, PROJECT 1190-07-71	L.S.	1.00	1.00			
64303	TRAFFIC CONTROL, PROJECT 1190-12-72	L.S.	1.00				1.00
64304	TRAFFIC CONTROL, PROJECT 1190-10-71	L.S.	1.00		1.00		
64406	PAVEMENT MARKING, EPOXY, 4-INCH	L.F.	34,906.00	31,406.00			3,500.00
64414	PAVEMENT MARKING, CHANNELIZING, EPOXY, 8-INCH	L.F.	1,466.00	1,466.00			
64438	PAVEMENT MARKING, STOP LINE, EPOXY, 24-INCH	L.F.	334.00	334.00			
64457	PAVEMENT MARKING, CROSSWALK, EPOXY, 6-INCH	L.F.	784.00	784.00			
64472	PAVEMENT MARKING, ARROWS, EPOXY, TYPE 2	EACH	37.00	37.00			
64479	PAVEMENT MARKING, WORDS, EPOXY	EACH	17.00	17.00			
64481	TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE	L.F.	29,444.00	25,102.00			4,342.00
64484	TEMPORARY PAVEMENT MARKING	L.F.	63,747.00	60,665.00			3,082.00
64487	REMOVING PAVEMENT MARKINGS	L.F.	34,263.00	34,063.00			200.00
90001	REMOVING PIPE UNDERDRAIN	L.F.	11,886.00	11,886.00			
90003	CONCRETE MEDIAN, 15-INCH	S.F.	79,001.00	73,604.00			5,397.00
90004	TRAFFIC SIGNALS, BELKNAP STREET	L.S.	1.00	1.00			
90005	TRAFFIC SIGNALS, 18TH AVENUE EAST	L.S.	1.00	1.00			
90010	SELECTED BORROW EXCAVATION	TON	111,580.00	111,580.00			
90016	CONCRETE BASES, TYPE 5, SPECIAL	EACH	95.00	95.00			
90019	POLES, TYPE 6	EACH	4.00	4.00			
90025	CHAIN LINK FENCE, ALUMINUM, TYPE A, 4 FT.	L.F.	301.00			301.00	
90350	CRUSHED AGGREGATE BASE COURSE, OPEN GRADED	TON	52,521.00	47,950.00			4,571.00
90379	SINGLE AGGREGATE BITUMINOUS MIX	TON	404.00	364.00			40.00
90416	COARSE AGGREGATE	TON	5,855.00	4,294.00			1,561.00
90424	EXPANSION DEVICE, B-16-68	L.S.	1.00			1.00	
90448	PAVEMENT TIES	EACH	38.00				38.00

ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1190-07-71 QUANTITY	1190-07-72 QUANTITY	1190-10-71 QUANTITY	1190-12-72 QUANTITY
90462	EXPANSION BEARING ASSEMBLIES	EACH	55.00			55.00	
90463	FIXED BEARING ASSEMBLIES	EACH	11.00			11.00	
90478	TEMPORARY SHEET PILING	S.F.	3,740.00			3,740.00	
90524	PAINTING, VINYL SYSTEM, B-16-68	L.S.	1.00			1.00	
90533	SPLIT CONCRETE BLOCK RETAINING WALL	S.F.	1,000.00	1,000.00			
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90573	CONCRETE BARRIER, TRANSITION SECTION	L.F.	452.00	452.00			
90581	GEOTEXTILE FABRIC, TYPE SAS	S.Y.	72,579.00	61,770.00			10,809.00
90582	GEOTEXTILE FABRIC, TYPE R	S.Y.	350.00	350.00			
90583	GEOTEXTILE FABRIC, TYPE HR	S.Y.	195.00			195.00	
90584	GEOTEXTILE FABRIC, TYPE DF	S.Y.	15,719.00	12,700.00			3,019.00
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90627	ANCHOR ASSEMBLY FOR BEAM GUARD	EACH	4.00			4.00	
90642	MOBILIZATION, EROSION CONTROL	EACH	4.00	4.00			
90644	EROSION MAT, DELIVERED	S.Y.	11,500.00	11,500.00			
90645	EROSION MAT, INSTALLED	S.Y.	11,500.00	11,500.00			
90646	SILT FENCE, DELIVERED	L.F.	5,676.00	5,500.00			176.00
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90647	SILT FENCE, INSTALLED	L.F.	5,676.00	5,500.00			
90648	SILT FENCE MAINTENANCE	L.F.	5,676.00	5,500.00			176.00
90649	EROSION BALES, DELIVERED	EACH	200.00	200.00			
90650	EROSION BALES, INSTALLED	EACH	200.00	200.00			
90663	ELECTRICAL WIRE, NO. 4	L.F.	17,209.00				17,209.00
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90670	CABLE IN DUCT, 2 CONDUCTOR, NO. 4	L.F.	5,714.00				5,714.00
90674	CABLE IN DUCT, 3 CONDUCTOR, NO. 4	L.F.	17,235.00				17,235.00
90685	LUMINAIRES, 250 WATTS, HIGH PRESSURE SODIUM	EACH	99.00				99.00
90700	ELECTRICAL SERVICE, LIGHTING, STA. 107+74	L.S.	1.00				1.00
90701	ELECTRICAL SERVICE, LIGHTING, STA. 144+98	L.S.	1.00				1.00
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90702	ELECTRICAL SERVICE, LIGHTING, STA. 175+98	L.S.	1.00				1.00



ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1190-07-71 QUANTITY	1190-07-72 QUANTITY	1190-10-71 QUANTITY	1190-12-72 QUANTITY
90703	ELECTRICAL SERVICE, LIGHTING, STA. 215+75	L.S.	1.00		1.00		
90714	TRAFFIC CONTROL, NON-METALLIC DRUMS	DAYS	50,900.00	50,900.00			
90721	TRAFFIC CONTROL, FLEXIBLE DELINEATOR POSTS	EACH	728.00	728.00			
90722	TRAFFIC CONTROL, FLEXIBLE DELINEATOR BASES	EACH	1,456.00	1,456.00			
90792	PULLBOXES, 12X24-INCH	EACH	22.00		22.00		
90801	TRANSFORMER BASES	EACH	95.00		95.00		
90807	POLES, TYPE 5	EACH	95.00		95.00		
90875	MAST ARMS, SINGLE MEMBER, 6-FT.	EACH	61.00		61.00		
90876	MAST ARMS, SINGLE MEMBER, 8-FT.	EACH	37.00		37.00		
90878	MAST ARMS, TRUSS TYPE, 12-FT.	EACH	1.00		1.00		
90882	SAWING EXISTING PAVEMENT	L.F.	1,365.00	1,193.00			172.00
90883	FULL DEPTH SAWCUTS	L.F.	57.00				57.00
90999	ON-THE-JOB TRAINING	HRS.	1,000.00				1,000.00

NOTE: ALL STATIONING IS "A" LINE  
STATIONING ON THIS SHEET

ABANDONING CATCH BASINS

STATION	LOCATION	QUANTITY
102A+15	36' LT.	1
102+12	29' RT.	1

REINFORCED CONCRETE PIPE, CLASS III, S.S. 15"

STATION AND LOCATION	L.F.
102A+18 C/L TO 102A+50, 28' RT.	40
102A+18 C/L TO 102A+50, 28' LT.	40

STATION TO STATION	LOCATION	REMOVING PAVEMENT S.Y.	CONCRETE PAVEMENT 9-INCH S.Y.	CONCRETE CURB & GUTT, 30" TYPE A L.F.	OPEN GRADED AGGREGATE BASE CRSE. TONS	GEOTEXTILE FABRIC TYPE SAS S.Y.
97A+68 - 100A+75	LT.	1023	819	307	458	1074
97+68 - 100+75	RT.	1023	819	307	458	1075
100+75 - 102+56	INTERSECT.	1539	1383	346	600	1462
102+56 - 112+18	LT.	3207	2566	962	1434	3366
102+56 - 112+18	RT.	3207	2566	962	1435	3367
112+18 - 113+08.76	INTERSECT.	824	795	134	186	465

TOPSOIL, FERTILIZER, SODDING

STATION TO STATION	LOCATION	TOPSOIL S.Y.	FERTILIZER CWT.	SODDING S.Y.
97A+68 - 101A+45	LT.	267	0.2	267
97+68 - 101+45	RT.	355	0.2	355
101+85 - 113+00	LT.	1220	0.8	1220
101+85 113+09	RT.	823	0.5	823

INLETS AND COVERS

STATION	LOCATION	QUANTITY	
		TYPE 3 INLETS	TYPE H COVERS
97A+82	27.5' LT.	1	1
98+89	27.5' RT.	1	1
101+17	27.5' LT.	1	1
101+17	27.5' RT.	1	1
102+13	27.5' LT.	1	1
102+13	27.5' RT.	1	1
106+59	27.5' LT.	1	1
107+04.5	27.5' RT.	1	1
109+30	27.5' LT.	1	1
109+30	27.5' RT.	1	1
112+85	27.5' RT.	1	1
113+09	27.5' LT.	1	1

ADJUSTING MANHOLE COVERS

STATION	LOCATION	QUANTITY
98A+89	C/L	1
101+13	C/L	1
101+50	53' LT.	1*
101+90	20' LT.	1*
102+19	C/L	1
105+46	20' LT.	1*
105+48	C/L	1
106+59	C/L	1
109+12	20' LT.	1*
109+30	C/L	1
112+65	20' LT.	1*
112+85	C/L	1

\* CITY OF SUPERIOR, NON PARTICIPATING

SINGLE AGGREGATE BITUMINOUS MIX

(INTERSECTION) E STREET LT.	11 TONS
" " RT.	9 TONS
" SECOND AVE. E. LT.	11 TONS
" " RT.	9 TONS

PIPE UNDERDRAIN, 6-INCH

STATION TO STATION	LOCATION	L.F.
97A+68 - 97A+82	LT.	14
97+82 - 101+17	LT.	333
101+17 - 101+42	LT.	48
101+88 - 102+50	LT.	82
102+50 - 106+59	LT.	409
106+59 - 109+30	LT.	271
109+30 - 112+41	LT.	315
112+76 - 113+08.76	LT.	27
97+68 - 98+89	RT.	121
98+89-101+17	RT.	228
101+17 - 101+45	RT.	43
101+85 - 102+13	RT.	43
102+13 - 107+04.5	RT.	492
107+04.5 - 112+43	RT.	553
112+83 - 112+85	RT.	11
112+85 - 113+08.76	RT.	29

PAVEMENT MARKING, EPOXY, 4-INCH

MAINLINE	WHITE	770 L.F.
C/L	YELLOW	2,730 L.F.

SAWING EXISTING PAVEMENT

(INTERSECTION) E STREET LT.	46 L.F.
" " RT.	40 L.F.
" SECOND AVE. E. LT.	46 L.F.
" " RT.	40 L.F.

PAVEMENT TIES

STATION	QUANTITY
97A+68	38

CONCRETE MEDIAN, 15-INCH

STATION TO STATION	S.F.
97A+68 - 101A+20	1403
102A+12 - 112A+14	3994

\* SILT FENCE (UNDISTRIBUTED)  
DELIVERED, INSTALLED & MAINTANCE  
176 LINEAL FEET

\* ASSUME SILTY SOILS

FULL DEPTH SAWCUTS

STATION	L.F.
97A+68	57

TEMPORARY PAVEMENT MARKING

STATION TO STATION	LOCATION	L.F.
97A+68 113A+09	LT.	3082

TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE

STATION TO STATION	LOCATION	L.F.
93A+18 - 97A+68	RT.-C/L	450
95A+88 - 97A+68	LT.-C/L	180
95A+88 - 97A+68	RT.-C/L	180
93A+18 - 97A+68	LT.-C/L	450
97A+68 - 113A+09	RT.	3082

REMOVING PAVEMENT MARKING

STATION TO STATION	LOCATION	L.F.
96A+00 - 97A+68	LT. & RT.	200

STATE PROJECT NUMBER	SHEET NO.
1190-07-71	30
DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES	

**CLEARING AND GRUBBING**

STATION TO STATION	LOCATION	STATIONS CLEARING	STATIONS GRUBBING
114 + 00 TO 124 + 50	LT & RT	11	11
146 + 00 TO 147 + 00	LT	1	1
152 + 00 TO 153 + 00	LT	1	1
155 + 00 TO 157 + 00	LT	2	2
173 + 00 TO 174 + 00	RT	1	1
179 + 00 TO 181 + 00	LT & RT	2	2
186 + 75 TO 188 + 00	RT	2	2
189 + 00 TO 190 + 00	RT	1	1
209 + 00 TO 210 + 00	LT & RT	1	1

**REMOVING CONCRETE SIDEWALK**

STATION TO STATION	LOCATION	S. Y.
85 + 95 TO 103 + 78.5	RT	110
103 + 78.5 TO 118 + 43.5	RT	177
118 + 43.5 TO 130 + 07.5	RT	188
130 + 07.5 TO 150 + 28.5	RT	426
130 + 07.5 TO 150 + 28.5	LT	3
150 + 28.5 TO 170 + 30	RT	989
150 + 28.5 TO 170 + 30	LT	277
170 + 30 TO 195 + 32	RT	1,101
170 + 30 TO 195 + 32	LT	1,047
195 + 32 TO 216 + 53	RT	811
195 + 32 TO 216 + 53	LT	46

**REMOVING GUARDRAIL**

STATION TO STATION	LOCATION	LIN. FT.
181 + 37 TO 183 + 00	RT	163
186 + 86 TO 183 + 00	LT	214
188 + 22 TO 188 + 63	LT	41
188 + 22 TO 188 + 65	RT	43

**REMOVING OLD CULVERTS**

STATION	DESCRIPTION	EACH
210 + 20	3'X3'X100' BOX CULVERT	1

**ABANDONING INLETS**

STATION	LOCATION	EACH
92 + 56	37' LT	1
96 + 13	30' LT	1
96 + 13	30' RT	1
99 + 79	28' LT	1
99 + 79	28' RT	1
100 + 46	28' RT	1
107 + 71	51' LT	1
107 + 71	28' RT	1
110 + 84	28' RT	1
111 + 36	28' RT	1
111 + 95	52' LT	1
114 + 51	28' RT	1
115 + 03	28' RT	1
118 + 17	28' RT	1
118 + 17	34' RT	1
118 + 69	28' RT	1
121 + 88	28' RT	1
122 + 35	28' RT	1
122 + 37	28' RT	1
125 + 62	28' RT	1
129 + 82	28' RT	1
129 + 82	28' LT	1
130 + 41	28' RT	1
130 + 41	28' LT	1
134 + 83	28' RT	1
135 + 33	28' RT	1
140 + 03	28' RT	1
140 + 52	28' RT	1
140 + 53	28' LT	1
145 + 02	28' RT	1
155 + 02	28' RT	1
155 + 54	28' RT	1
160 + 07	28' RT	1
160 + 54	28' RT	1
165 + 05	28' RT	1
165 + 55	28' RT	1
170 + 07	28' RT	1
170 + 55	28' RT	1
174 + 86	28' RT	1
175 + 04	28' LT	1
175 + 75	28' RT	1
189 + 97	28' LT	1
190 + 04	28' RT	1
190 + 54	28' RT	1
195 + 06	28' RT	1
195 + 54	28' LT	1
195 + 54	28' RT	1
200 + 06	28' RT	1
200 + 55	28' RT	1
205 + 09	28' RT	1
205 + 58	28' RT	1
209 + 50	28' LT	1
209 + 50	28' RT	1
216 + 31	28' RT	1
216 + 31	28' LT	1

**REMOVING FENCE**

STATION TO STATION	LOCATION	LIN. FT.
147 + 30 TO 149 + 83	RT	253

**REMOVING PAVEMENT**  
\* INCLUDES CURB & GUTTER AND MEDIAN REMOVAL

STATION TO STATION	LOCATION	DESCRIPTION	S. Y.
92 + 32	RT	BELKNAP ST. MAINLINE	809
85 + 95 TO 103 + 78.5	LT & RT	MAINLINE	11,649
96 + 47	LT & RT	5TH AVENUE E.	272
100 + 12	LT & RT	6TH AVENUE E.	129
103 + 78.5	RT	7TH AVENUE E.	49
103 + 78.5 TO 118 + 43.5	LT & RT	MAINLINE	12,701
107 + 44.5	RT	8TH AVENUE E.	47
111 + 10.5	RT	9TH AVENUE E.	50
114 + 77	RT	10TH AVENUE E.	48
118 + 43.5	RT	11TH AVENUE E.	51
118 + 43.5 TO 130 + 07.5	LT & RT	MAINLINE	7,132
122 + 10	RT	12TH AVENUE E.	48
125 + 85	RT	13TH AVENUE E.	49
130 + 07.5	RT	14TH AVENUE E.	51
130 + 07.5 TO 150 + 28.5	LT & RT	MAINLINE	13,813
135 + 08	RT	15TH AVENUE E.	51
140 + 28	RT	16TH AVENUE E.	48
145 + 28	RT	17TH AVENUE E.	49
150 + 28.5	LT & RT	18TH AVENUE E.	285
150 + 28.5 TO 170 + 30	LT & RT	MAINLINE	13,132
155 + 28.5	LT & RT	19TH AVENUE E.	125
160 + 28.5	LT & RT	20TH AVENUE E.	88
165 + 29	LT & RT	21ST AVENUE E.	88
170 + 30	LT & RT	22ND AVENUE E.	92
170 + 30 TO 195 + 32	LT & RT	MAINLINE	17,645
175 + 30.5	LT & RT	23RD AVENUE E.	272
190 + 31	LT & RT	26TH AVENUE E.	100
195 + 32	LT & RT	27TH AVENUE E.	90
195 + 32 TO 216 + 53	LT & RT	MAINLINE	8,221
200 + 31.5	LT & RT	28TH AVENUE E.	88
205 + 32	LT & RT	29TH AVENUE E.	98
215 + 31	LT & RT	31ST AVENUE E.	206

**ABANDONING MANHOLES**

STATION	LOCATION	EACH
107 + 71	27.5' LT	1
111 + 38	28' LT	1
118 + 17	27.5' LT	1
130 + 08	20.5' LT	1
130 + 09	CENTERLINE	1
140 + 60	24' RT	1
160 + 15	21.4' RT	1
165 + 30	24' RT	1
169 + 99	21' RT	1

**OBLITERATING OLD ROAD**

STATION TO STATION	LOCATION	STATION
96 + 47	RT	1
100 + 12	RT	2
114 + 77	RT	1
122 + 10	RT	1
125 + 85	RT	2
135 + 08	RT	1
140 + 28	RT	2
145 + 28	RT	2
155 + 28	RT	1
160 + 28	RT	1
190 + 31	RT	1

**CRUSHED AGGREGATE BASE COURSE**

STATION TO STATION	LOCATION	TONS
85 + 95 TO 103 + 78.5	LT & RT	450
103 + 78.5 TO 118 + 43.5	RT	450
118 + 43.5 TO 130 + 07.7	RT	150
130 + 07.5 TO 150 + 28.5	LT & RT	450
150 + 28.5 TO 170 + 30	LT & RT	525
170 + 30 TO 195 + 32	LT & RT	750
195 + 32 TO 216 + 53	LT & RT	1,725

**YARDAGE SUMMARY**

UNCLASSIFIED EXCAVATION	46,498 C.Y.
EBS	25,869 C.Y.
TOTAL UNCLASSIFIED EXCAVATION	72,367 C.Y.
CLAY EXCAVATION USED TO BALANCE YARDAGE*	10,470 C.Y.
WASTE	61,897 C.Y.
FILL	39,406 C.Y.
EBS BACKFILL	25,869 C.Y.
SELECT BORROW	111,580 TON

\* INCL. IN TOTAL UNCL. EXC.

**SINGLE AGGREGATE BITUMINOUS MIX**

STATION	LOCATION	BIT. MIX TONS
103 + 78	RT	20
107 + 44	RT	20
111 + 10	RT	18
118 + 43	RT	17
130 + 07	RT	19
150 + 28	RT	5
150 + 28	LT	12
165 + 29	RT	16
165 + 29	LT	19
170 + 30	RT	16
175 + 30	RT	28
175 + 30	LT	20
195 + 32	RT	18
195 + 32	LT	18
200 + 31	RT	18
205 + 32	RT	18
205 + 32	LT	18
215 + 31	RT	20
215 + 31	LT	17
PE's & CE's	LT & RT	27

**REMOVING CURB & GUTTER**

STATION TO STATION	LOCATION	LIN. FT.
103 + 96.5 RT	7TH AVENUE E.	23
107 + 62.5 RT	8TH AVENUE E.	20
110 + 45 LT	9TH AVENUE E.	90
146 + 66.5 TO 149 + 91.5 LT	18TH AVENUE E.	364
147 + 33.5 TO 149 + 80.5 RT	18TH AVENUE E.	294
150 + 65.5 TO 154 + 95.5 LT	18TH AVENUE E.	469
150 + 81.5 RT	18TH AVENUE E.	60
165 + 11 RT	21ST AVENUE E.	20
170 + 12 RT	22ND AVENUE E.	20
170 + 48 RT	22ND AVENUE E.	20
175 + 00 RT	23RD AVENUE E.	24
175 + 12 LT	23RD AVENUE E.	20
175 + 48 LT	23RD AVENUE E.	20
175 + 60 RT	23RD AVENUE E.	36

**CONCRETE PAVEMENT, 9 INCH**

STATION TO STATION	S. Y.	REMARKS
85 + 95 TO 103 + 78.5	10,480	MAINLINE
103 + 78.5 TO 118 + 43.5	8,915	MAINLINE
118 + 43.5 TO 130 + 07.5	6,277	MAINLINE
130 + 07.5 TO 150 + 28.5	12,895	MAINLINE
150 + 28.5 TO 170 + 30	11,867	MAINLINE
170 + 30 TO 195 + 32	12,796	MAINLINE
195 + 32 TO 216 + 53	14,407	MAINLINE
INTERSECTIONS:		
92 + 32.8 LT	167	BELKNAP ST.
103 + 78.5 RT	131	7TH AVENUE E.
107 + 44.5 RT	131	8TH AVENUE E.
110 + 45 LT	492	BARKER'S ISLAND ENT.
111 + 10.5 RT	131	9TH AVENUE E.
118 + 43.5 RT	131	11TH AVENUE E.
137 + 07.5 RT	131	14TH AVENUE E.
195 + 32 LT & RT	262	27TH AVENUE E.
200 + 31.5 RT	131	28TH AVENUE E.
205 + 32 LT & RT	245	29TH AVENUE E.
92 + 50 RT	809	BELKNAP ST.

80348

STATE PROJECT NUMBER	SHEET NO.
1190-07-71	3D
DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES	

**ADJUST MANHOLE COVERS**

STATION TO STATION	LOCATION	EACH
85 + 95 TO 103 + 78.5	MAINLINE	10
103 + 78.5 TO 118 + 43.5	MAINLINE	2
118 + 43.5 TO 130 + 07.5	MAINLINE	2
122 + 14 RT	12TH AVENUE E.	1
130 + 07.5 TO 150 + 28.5	MAINLINE	4
135 + 09 RT	15TH AVENUE E.	1
150 + 10 RT	18TH AVENUE E.	1
150 + 28.5 TO 170 + 30	MAINLINE	9
150 + 02 RT	18TH AVENUE E.	1
150 + 49 RT	18TH AVENUE E.	1
150 + 55	RT	1
150 + 87	LT	1
150 + 92	RT	1
172 + 19	LT	1
175 + 21 RT	23RD AVENUE E.	1
175 + 30 RT	23RD AVENUE E.	1
175 + 56 RT	23RD AVENUE E.	1
214 + 91	RT	1

**LANDMARK REFERENCE MONUMENTS & COVERS**

STATION	LOCATION	EACH
100+34	27' RT.	1
114+74	C/L	1
115+00	30' RT.	1
125+85	C/L	1
140+28	C/L	1
149+86	30' RT.	1
160+30	C/L	1
165+30	C/L	1
190+31	C/L	1
214+77	27' RT.	1

**REMOVING PIPE UNDERDRAIN**

STATION TO STATION	LOCATION	LIN. FT.
85 + 95 TO 103 + 78.5	LT & RT	775
103 + 78.5 TO 118 + 43.5	LT	1,150
130 + 07.5 TO 150 + 28.5	LT & RT	875
150 + 28.5 TO 170 + 30	LT & RT	2,255
170 + 30 TO 195 + 32	LT & RT	2,332
195 + 32 TO 216 + 53	LT & RT	4,499

**SAWING EXISTING PAVEMENT**

STATION TO STATION	LIN. FT.
85 + 95 TO 103 + 78.5	83
103 + 78.5 TO 118 + 43.5	265
118 + 43.5 TO 130 + 07.5	69
130 + 07.5 TO 150 + 28.5	188
150 + 28.5 TO 170 + 30	293
170 + 30 TO 195 + 32	199
195 + 32 TO 216 + 53	96

**PIPE UNDERDRAIN, 6-INCH**

STATION TO STATION	LOCATION	LIN. FT.
85 + 95 TO 103 + 78.5	LT & RT	3,385
103 + 78.5 TO 118 + 43.5	LT & RT	2,470
118 + 43.5 TO 130 + 07.5	LT & RT	1,728
130 + 07.5 TO 150 + 28.5	LT & RT	4,916
150 + 28.5 TO 170 + 30	LT & RT	3,006
170 + 30 TO 195 + 32	LT & RT	3,553
195 + 32 TO 216 + 53	LT & RT	4,631

**CRUSHED AGGREGATE BASE COURSE, OPEN GRADED**

STATION TO STATION	TONS
85 + 95 TO 183 + 60.9	34,250
INTERSECTIONS ENTRANCES	1,545
186 + 79.5 TO 216 + 53.2	10,929
INTERSECTIONS ENTRANCES	1,044
	50

**GEOTEXTILE FABRIC, TYPE "SAS"**

STATION TO STATION	LOCATION	S. Y.
85+95 - 113+00	MAINLINE	19,116
123+00 - 146+66	MAINLINE	13,670
146+66 - 149+80	MAINLINE	2,246
149+80 - 166+00	MAINLINE	11,160
169+00 - 171+50	MAINLINE	1,722
174+50 - 178+00	MAINLINE	2,489
190+00 - 203+00	MAINLINE	8,956
207+50 - 211+00	MAINLINE	2,411

**TRAFFIC CONTROL - NON METALLIC DRUMS**

STATION TO STATION	LOCATION	DAYS
86 + 00 TO 216 + 53	MAINLINE	50,900

**CHAIN LINK FENCE, TYPE "B", 5-FEET**

STATION TO STATION	LOCATION	LIN. FT.
147 + 30.5 TO 149 + 83	FRONT OF SW	252.5
147 + 30.5 TO 149 + 83	BACK OF SW	252.5

**COARSE AGGREGATE (SIZE NO. 1)**

STATION TO STATION	LOCATION	TONS
85 + 95 TO 103 + 78.5	LT & RT	609
103 + 78.5 TO 118 + 43.5	LT & RT	353
118 + 43.5 TO 130 + 07.5	LT & RT	305
130 + 07.5 TO 150 + 28.5	LT & RT	659
150 + 28.5 TO 170 + 30	LT & RT	621
170 + 30 TO 195 + 32	LT & RT	594
195 + 32 TO 216 + 53	LT & RT	1,073

**GEOTEXTILE FABRIC, TYPE "R"**

STATION TO STATION	LOCATION	S. Y.
103 + 78.5 TO 118 + 43.5	LT	160
118 + 43.5 TO 130 + 07.5	LT	70
130 + 07.5 TO 150 + 28.5	LT	25
170 + 30 TO 195 + 32	LT	25
195 + 32 TO 216 + 53	LT & RT	70

**TRAFFIC CONTROL - FLEXIBLE DELINEATOR POST & BASES**

STATION TO STATION	LOCATION	POSTS EACH	BASES EACH
86 + 00 TO 216 + 53	MAINLINE	728	1,456

**CONCRETE CORRUGATED MEDIAN**

STATION TO STATION	LOCATION	S. F.
152 + 87 TO 153 + 55	MAINLINE, 18TH - 19TH	272

**GEOTEXTILE FABRIC, TYPE "DE"**

STATION TO STATION	LOCATION	S. Y.
118 + 43.5 TO 130 + 07.5	UNDERDRAIN WRAP	3,340
130 + 07.5 TO 150 + 28.5	UNDERDRAIN WRAP	560
150 + 28.5 TO 170 + 30	UNDERDRAIN WRAP	1,570
170 + 30 TO 195 + 32	UNDERDRAIN WRAP	3,336
195 + 32 TO 216 + 53	UNDERDRAIN WRAP	3,894

**TOPSOIL, MULCHING, FERTILIZER AND SEEDING**

STATION TO STATION	LOCATION	TOPSOIL S. Y.	MULCHING S. Y.	TYPE "B" FERTILIZER CWT	SEEDING LBS.
85 + 95 TO 103 + 78.5	LT & RT	4,188	4,358	4	120
103 + 78.5 TO 118 + 43.5	LT & RT	10,420	8,422	7	200
118 + 43.5 TO 130 + 07.5	LT & RT	10,916	9,389	9	250
130 + 07.5 TO 150 + 28.5	LT & RT	4,236	6,732	4	120
150 + 28.5 TO 170 + 30	LT & RT	6,460	10,231	5	150
170 + 30 TO 195 + 32	LT & RT	7,164	5,391	6	160
195 + 32 TO 216 + 53	LT & RT	7,544	2,950	5	150

**PAVEMENT MARKING, EPOXY**

STATION TO STATION	LOCATION	4" SKIP WHITE L.F.	4" SOLID YELLOW L.F.	4" SKIP YELLOW L.F.	ARROWS EACH	WORDS EACH	CHANNELIZING 8" SOLID WHITE L.F.	STOP LINE L.F.	CROSS-WALK SOLID WHITE L.F.
85+95 TO 103+78	MAINLINE	900	3,382	-	4	4	485	226	420
103+78 TO 118+43	MAINLINE	750	2,736	-	5	5	279	-	-
118+43 TO 130+07	MAINLINE	600	2,328	-	-	-	-	-	-
130+07 TO 150+28	MAINLINE	1,025	3,894	-	2	2	150	108	-
150+28 TO 170+30	MAINLINE	1,000	3,662	800	10	2	272	-	364
170+30 TO 195+32	MAINLINE	1,250	3,822	-	8	4	128	-	-
195+32 TO 216+53	MAINLINE	1,075	4,248	1,125	10	-	152	-	-

**EROSION CONTROL (DELIVERED, INSTALLED & MAINTAINED)**

STATION TO STATION	LOCATION	SODDING S. Y.	EROSION MAT S. Y.	SILT* FENCE LIN. FT.	EROSION BALES EACH
85 + 95 TO 103 + 78.5	LT & RT	2,131	---	530	
103 + 78.5 TO 118 + 43.5	LT & RT	1,696	2,150	940	
118 + 43.5 TO 130 + 07.5	LT & RT	2,713	1,635	1,250	
130 + 07.5 TO 150 + 28.5	LT & RT	1,155	---	410	
150 + 28.5 TO 170 + 30	LT & RT	1,693	---	360	
170 + 30 TO 195 + 32	LT & RT	5,943	3,675	770	
195 + 32 TO 216 + 53	LT & RT	2,069	4,040	1,240	
UNDISTRIBUTED					200

\* ASSUME SILTY SOILS

DETAILED SUMMARY OF MISCELLANEOUS QUANTITIES

H. F. S. CONCRETE PAVEMENT, 9-INCH

STATION	S. Y.	REMARKS
150 + 28.5 LT & RT	309	18TH AVENUE E.
165 + 29 LT & RT	262	21ST AVENUE E.
170 + 30 RT	131	22ND AVENUE E.
175 + 30.5 LT & RT	372	23RD AVENUE E.
215 + 30.8 LT & RT	266	31ST AVENUE E.

REINFORCED CONCRETE PIPE, STORM SEWER

STATION TO STATION	LOCATION	12-INCH CL. III LIN. FT.	12-INCH CL. IV LIN. FT.	JOINT TIES	15-INCH CL. III LIN. FT.	15-INCH CL. IV LIN. FT.	18-INCH CL. III LIN. FT.	18-INCH CL. IV LIN. FT.	24-INCH CL. III LIN. FT.	30-INCH CL. III LIN. FT.	60-INCH CL. III LIN. FT.
85 + 95 TO 103 + 78.5	MAINLINE LT & RT	71	190	8	16	--	59	--	--	648	--
103 + 78.5 TO 118 + 43.5	MAINLINE LT & RT	--	389	16	497	--	424	--	456	--	--
118 + 43.5 TO 130 + 07.5	MAINLINE LT & RT	--	237	16	379	--	--	--	--	--	90
130 + 07.5 TO 150 + 28.5	MAINLINE LT & RT	26	469	8	419	--	73	--	--	--	--
150 + 28.5 TO 170 + 30	MAINLINE LT & RT	--	270	--	1,309	43	--	--	--	--	--
170 + 30 TO 195 + 32	MAINLINE LT & RT	30	528	8	53	--	29	145	--	--	--
195 + 32 TO 216 + 53	MAINLINE LT & RT	--	604	36	81	--	--	--	--	--	--

H. F. S. CONCRETE DRIVEWAY (6-INCH)

STATION TO STATION	LOCATION	S. Y.
130 + 07.5 TO 150 + 28.5	RT	32
130 + 07.5 TO 150 + 28.5	LT	10
150 + 28.5 TO 170 + 30	RT	64
150 + 28.5 TO 170 + 30	LT	156
170 + 30 TO 195 + 32	RT	16
170 + 30 TO 195 + 32	LT	82
195 + 32 TO 216 + 53	LT	51

TEMPORARY PAVEMENT MARKING & TEMPORARY PAVEMENT MARKING REMOVAL

STATION TO STATION	LOCATION	4" SKIP WHITE L.F.	4" SOLID YELLOW L.F.	CHANNELIZING 8" SOLID WHITE L.F.
* 85+95 TO 103+78	MAINLINE	900	3,382	485
* 103+78 TO 118+43	MAINLINE	750	2,736	279
* 118+43 TO 118+43	MAINLINE	600	2,328	--
* 130+07 TO 150+28	MAINLINE	1,025	3,894	150
* 150+28 TO 170+30	MAINLINE	1,000	3,662	272
* 170+30 TO 195+32	MAINLINE	1,250	3,822	128
* 195+32 TO 219+56	MAINLINE	1,075	4,248	152
85+95 TO 219+56	TEMP. E. & EXIST. PAV'T.	--	24,602	NO REM. NECESSARY
212B+00 TO 217B+00	HEMADJI BYPASS	--	2,000	NO REM. NECESSARY

TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE

STATION TO STATION	LOCATION	L.F.
85+95 TO 219+56	MAINLINE	25,102

MANHOLES, TYPE 5

STATION TO STATION	LOCATION	COVER TYPE	EACH
130 + 07.5 TO 150 + 28.5	MAINLINE	J	2
150 + 28.5 TO 170 + 30	MAINLINE	J	1

CONCRETE DRIVEWAY (6-INCH)

STATION TO STATION	LOCATION	S. Y.
103 + 78.5 TO 118 + 43.5	RT	22
118 + 43.5 TO 130 + 07.5	RT	43
118 + 43.5 TO 130 + 07.5	LT	10
130 + 07.5 TO 150 + 28.5	RT	20
130 + 07.5 TO 150 + 28.5	LT	16
150 + 28.5 TO 170 + 30	LT	24
195 + 32 TO 216 + 53	RT	10

CONCRETE CURB & GUTTER, TYPE "A", 30-INCH

STATION TO STATION	LOCATION	LIN. FT.
85 + 95 TO 103 + 78.5	MAINLINE - 28' RT	1,621
85 + 95 TO 103 + 78.5	MAINLINE - 40' LT	1,843
103 + 78.5 TO 118 + 43.5	MAINLINE - 28' RT	1,569
103 + 78.5 TO 118 + 43.5	MAINLINE - 28' TO 52' LT	1,283
118 + 43.5 TO 130 + 07.5	MAINLINE - 28' RT	1,169
118 + 43.5 TO 130 + 07.5	MAINLINE - 28' LT	1,203
130 + 07.5 TO 150 + 28.5	MAINLINE - 28' TO 38' RT	1,986
130 + 07.5 TO 150 + 28.5	MAINLINE - 28' TO 38' LT	1,996
150 + 28.5 TO 170 + 30	MAINLINE - 33' RT	2,036
150 + 28.5 TO 170 + 30	MAINLINE - 33' LT	2,008
170 + 30 TO 195 + 32	MAINLINE - 33' TO 28' RT	2,000
170 + 30 TO 195 + 32	MAINLINE - 33' TO 28' LT	2,027
195 + 32 TO 216 + 53	MAINLINE - 33' RT	2,056
195 + 32 TO 216 + 53	MAINLINE - 33' LT	2,047

\* INCLUDES INTERSECTION RADII AND CURB TAPERS

CONCRETE STEPS

STATION	LOCATION	S. F.
178 + 94	LT	15
179 + 62	LT	25

INLETS, TYPE 1

STATION TO STATION	LOCATION	COVER TYPE	EACH
118 + 43.5 TO 130 + 07.5	MAINLINE LT & RT	B	5
130 + 07.5 TO 150 + 28.5	MAINLINE LT & RT	B	3
150 + 28.5 TO 170 + 30	MAINLINE LT & RT	B	2
195 + 32 TO 216 + 53	MAINLINE LT & RT	B	2

CONCRETE PAVEMENT APPROACH SLAB

STATION TO STATION	S. Y.	REMARKS
183 + 24.6 TO 183 + 60.9	202	N. W. ABUTMENT EAST END OVERHEAD
186 + 75.9 TO 186 + 96.4	114	S. E. ABUTMENT EAST END OVERHEAD
216 + 23.5 TO 216 + 53.2	211	N. W. ABUTMENT HEMADJI RIVER BR.

CONCRETE BARRIER, TRANSITION SECTION

STATION TO STATION	LOCATION	LIN. FT.
182 + 59 TO 183 + 43	LT	84
182 + 59 TO 183 + 43	RT	84
186 + 67 TO 187 + 51	LT & RT	168
215 + 73 TO 216 + 46	LT	73
215 + 73 TO 216 + 16	RT	43

INLETS, TYPE 3

STATION TO STATION	LOCATION	COVER TYPE	EACH
85 + 95 TO 103 + 78.5	MAINLINE LT & RT	H	10
103 + 78.5 TO 118 + 43.5	MAINLINE LT & RT	H	12
118 + 43.5 TO 130 + 07.5	MAINLINE LT & RT	H	10
130 + 07.5 TO 150 + 28.5	MAINLINE LT & RT	H	13
150 + 28.5 TO 170 + 30	MAINLINE LT & RT	H	11
170 + 30 TO 195 + 32	MAINLINE LT & RT	H	13
195 + 32 TO 216 + 53	MAINLINE LT & RT	H	12

R.C.C.P. CLASS III, 42-INCH

STATION	LOCATION	L. F.	REMARKS
209 + 90	CENTERLINE	168	25° R.H.F.

CONCRETE MEDIAN, 15-INCH

STATION TO STATION	LOCATION	S. F.
85 + 95 TO 103 + 78.5	SIDESTREET MEDIAN	400
85 + 95 TO 103 + 78.5	MAINLINE MEDIAN	17,246
103 + 78.5 TO 118 + 43.5	MAINLINE MEDIAN	16,665
118 + 43.5 TO 130 + 07.5	MAINLINE MEDIAN	8,402
130 + 07.5 TO 150 + 28.5	MAINLINE MEDIAN	10,079
150 + 28.5 TO 170 + 30	MAINLINE MEDIAN	1,102
170 + 30 TO 195 + 32	MAINLINE MEDIAN	13,710

RIPRAP

STATION TO STATION	LOCATION	C. Y.
103 + 78.5 TO 118 + 43.5	LT	54
118 + 43.5 TO 130 + 07.5	LT	18
130 + 07.5 TO 150 + 28.5	LT	7
170 + 30 TO 195 + 32	LT	7
195 + 32 TO 216 + 53	LT	11
195 + 32 TO 216 + 53	RT	9

REINFORCED CONCRETE APRON ENDWALL

STATION TO STATION	12" EACH	15" EACH	18" EACH	24" EACH
85 + 95 TO 103 + 78.5	--	1	--	--
103 + 78.5 TO 118 + 43.5	1	2	--	--
118 + 43.5 TO 130 + 07.5	--	2	--	--
130 + 07.5 TO 150 + 28.5	--	--	1	--
170 + 30 TO 195 + 32	--	--	1	--
195 + 32 TO 216 + 53	2	--	1	2

CONCRETE SIDEWALK, 4-INCH

STATION TO STATION	LOCATION	S. F.
85 + 95 TO 103 + 78.5	RT	2,813
103 + 78.5 TO 118 + 43.5	RT	1,811
118 + 43.5 TO 130 + 07.5	RT	3,285
130 + 07.5 TO 150 + 28.5	RT	5,255
150 + 28.5 TO 170 + 30	RT	9,151
150 + 28.5 TO 170 + 30	LT	2,354
170 + 30 TO 195 + 32	RT	11,148
170 + 30 TO 195 + 32	LT	7,347
195 + 32 TO 216 + 53	RT	7,628
195 + 32 TO 216 + 53	LT	295

MANHOLES, TYPE 1

STATION TO STATION	LOCATION	COVER TYPE	EACH
85 + 95 TO 103 + 78.5	MAINLINE	J	2
130 + 78.5 TO 118 + 43.5	MAINLINE	J	8
150 + 28.5 TO 170 + 30	MAINLINE	J	8
195 + 32 TO 216 + 53	MAINLINE	J	1

RECONSTRUCTING MANHOLE

STATION	LOCATION	EACH	COVER TYPE
100+16	19' RT.	1	J
107+45	19' LT.	1	J
118+43	20' LT.	1	J
122+10	20' LT.	1	J
130+01	20.5' LT.	1	J
140+57	47' RT.	1	J
141+75	20.5' LT.	1	J
145+55	39' RT.	1	J
150+10	41.5' LT.	1	J
150+41	41' LT.	1	J
165+30	24' RT.	1	J
168+69	20.5' LT.	1	J
175+17	41' LT.	1	J
175+32	50' RT.	1	J
190+20.8	23.8' LT.	1	J
195+19	24' LT.	1	J
200+23	24' LT.	1	J
205+25	25' LT.	1	J

STORM SEWER SCHEDULE

Table with columns: NO., STATION, LOCATION, TYPE & COVER, TOP OF MANHOLE, GRATE ELEV., DISCH. ELEV., D" BOX DEPTH, P.U.D. ELEV., REINFORCED CONCRETE PIPE SIZE (12", 15", 18", 24", 30", 60"), APRON END WALL CLASS, DRAINS TO (NO., GRADE, INV. ELEV.), REMARKS.

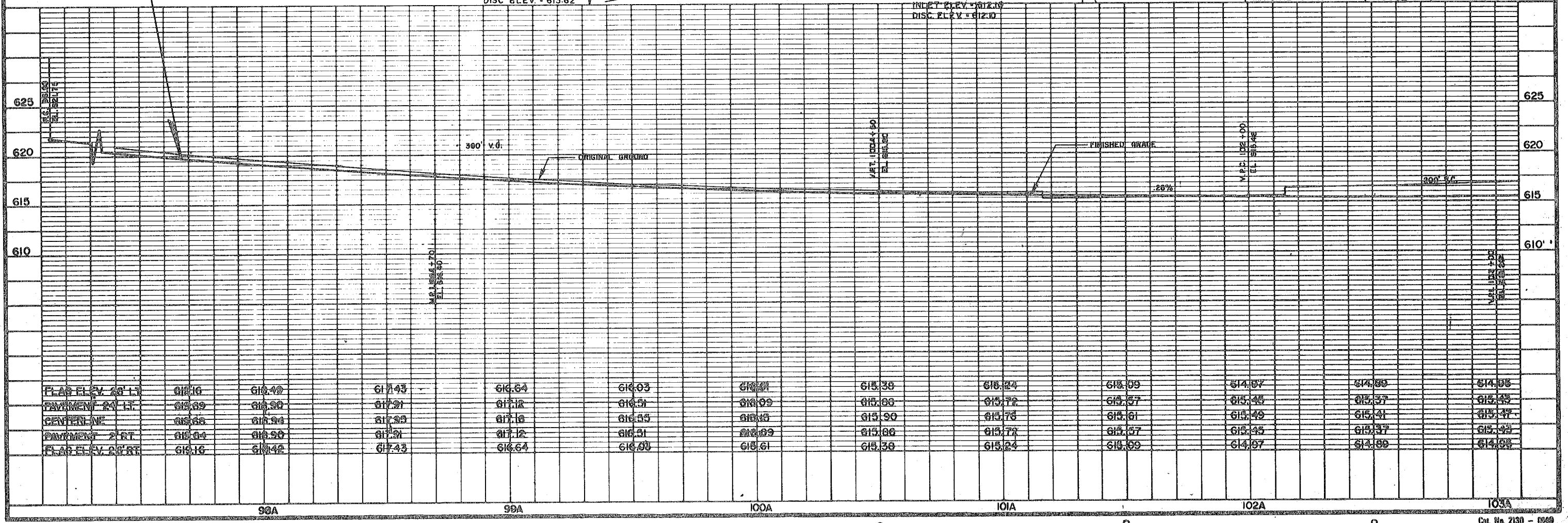
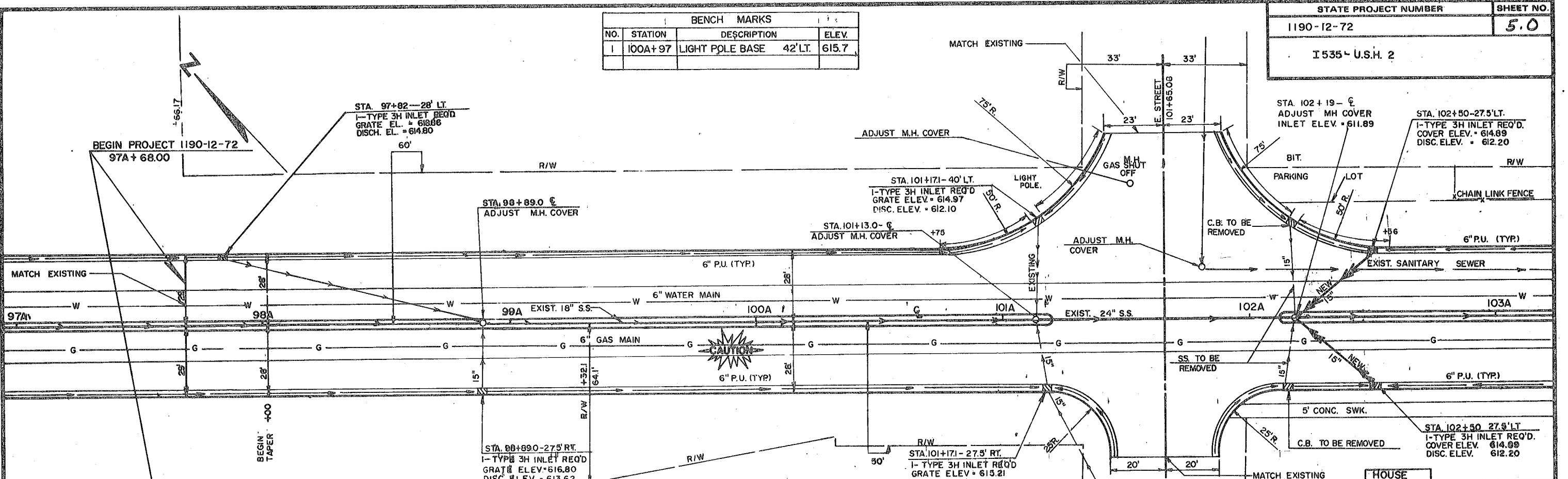
DATE: 08/15/2017 10:50:00 AM

SUBTOTAL FOR LINEAL FEET OF PIPE FOR THIS SHEET: 2003 2145 585 456 648 90



STATE PROJECT NUMBER	SHEET NO.
1190-12-72	5.0
I 535 - U.S.H. 2	

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	100A+97	LIGHT POLE BASE 42' LT.	615.7

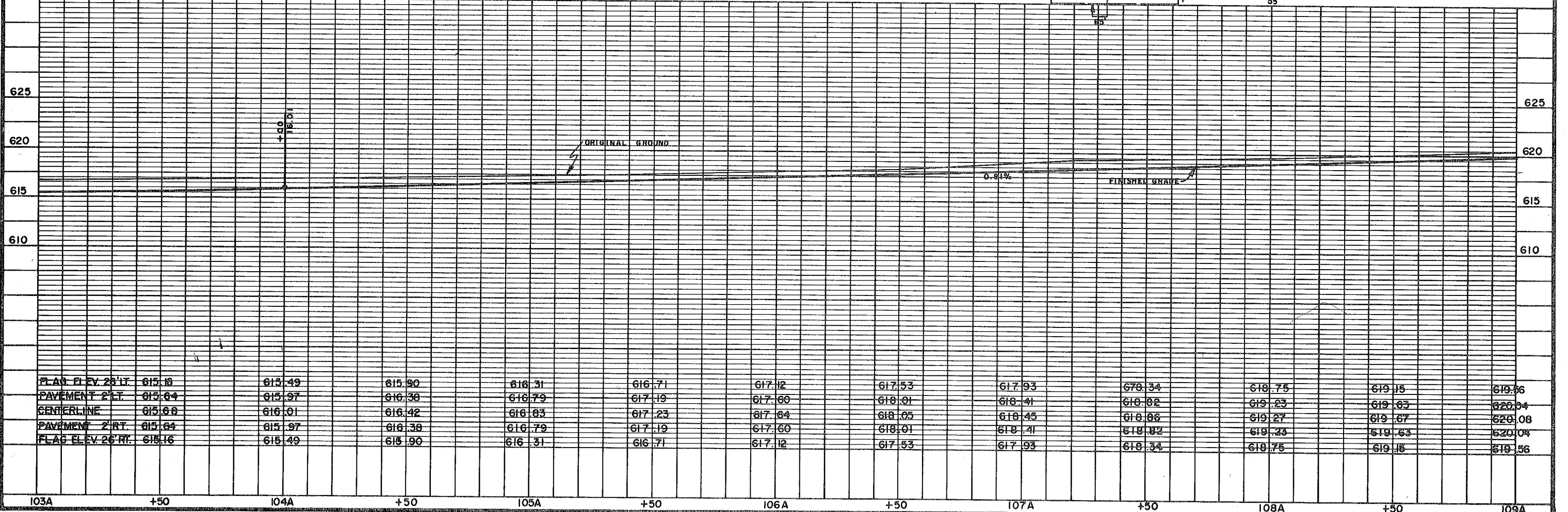
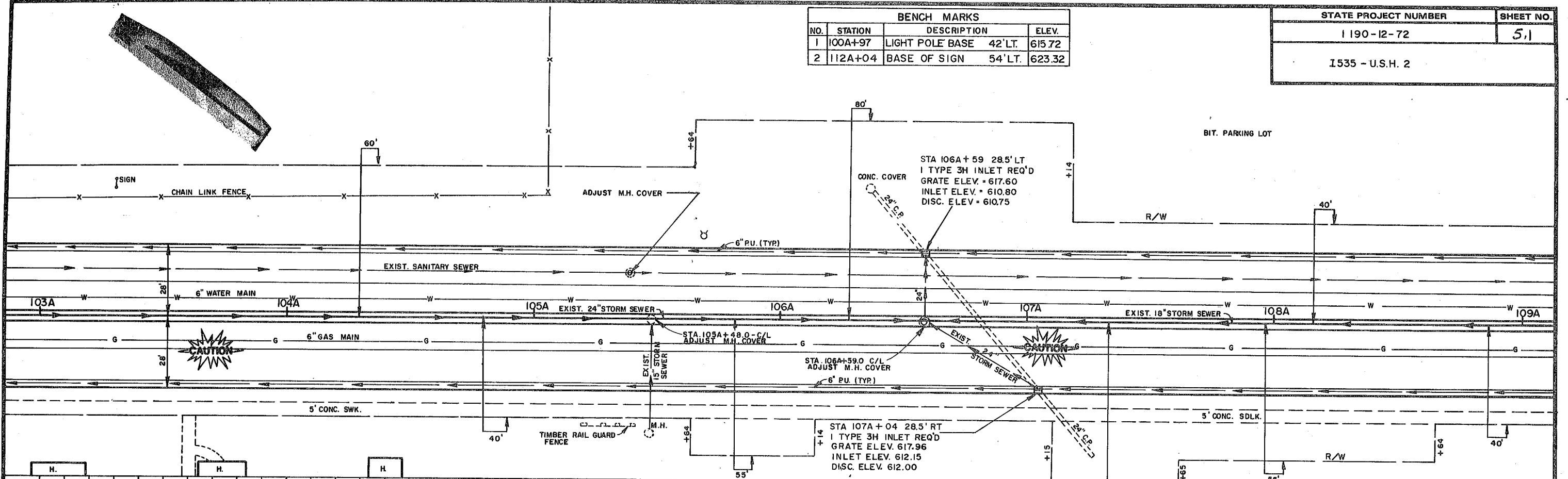


FLAG ELEV. 28' LT.	618.16	619.49	617.43	616.64	616.03	615.81	615.38	615.24	615.09	614.97	614.80	614.95
PAVEMENT 24' LT.	618.39	619.90	617.91	617.12	616.51	616.09	615.66	615.72	615.57	615.45	615.37	615.45
CENTERLINE	618.68	619.94	617.93	617.14	616.53	616.10	615.90	615.76	615.61	615.49	615.41	615.47
PAVEMENT 24' RT.	618.64	619.90	617.91	617.12	616.51	616.09	615.66	615.72	615.57	615.45	615.37	615.45
FLAG ELEV. 26' RT.	618.16	619.42	617.43	616.64	616.03	615.81	615.38	615.24	615.09	614.97	614.80	614.95



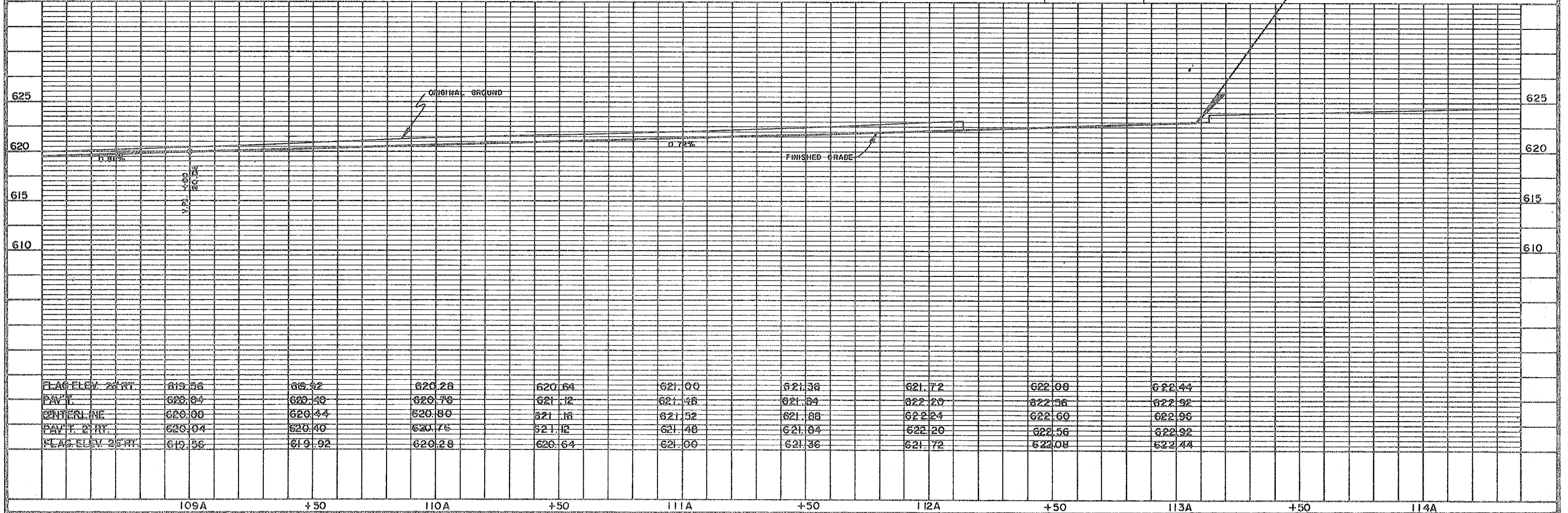
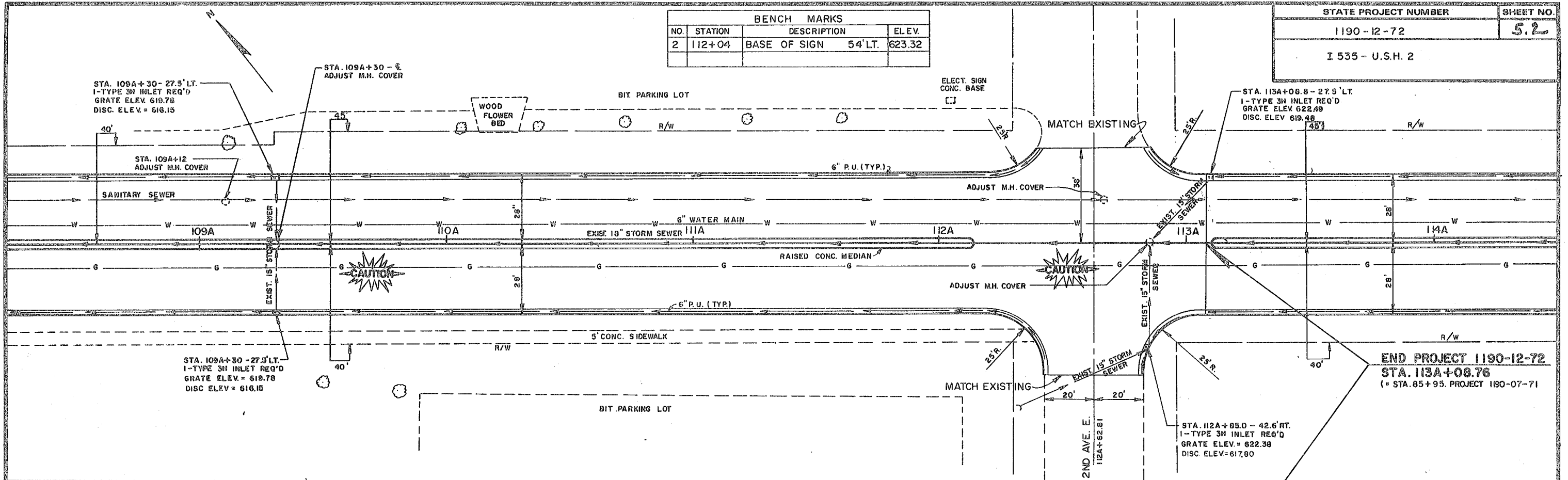
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	100A+97	LIGHT POLE BASE 42' LT.	615.72
2	112A+04	BASE OF SIGN 54' LT.	623.32

STATE PROJECT NUMBER	SHEET NO.
1190-12-72	51
1535 - U.S.H. 2	



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
2	112+04	BASE OF SIGN 54' LT.	623.32

STATE PROJECT NUMBER	SHEET NO.
1190-12-72	5.2
I 535 - U.S.H. 2	



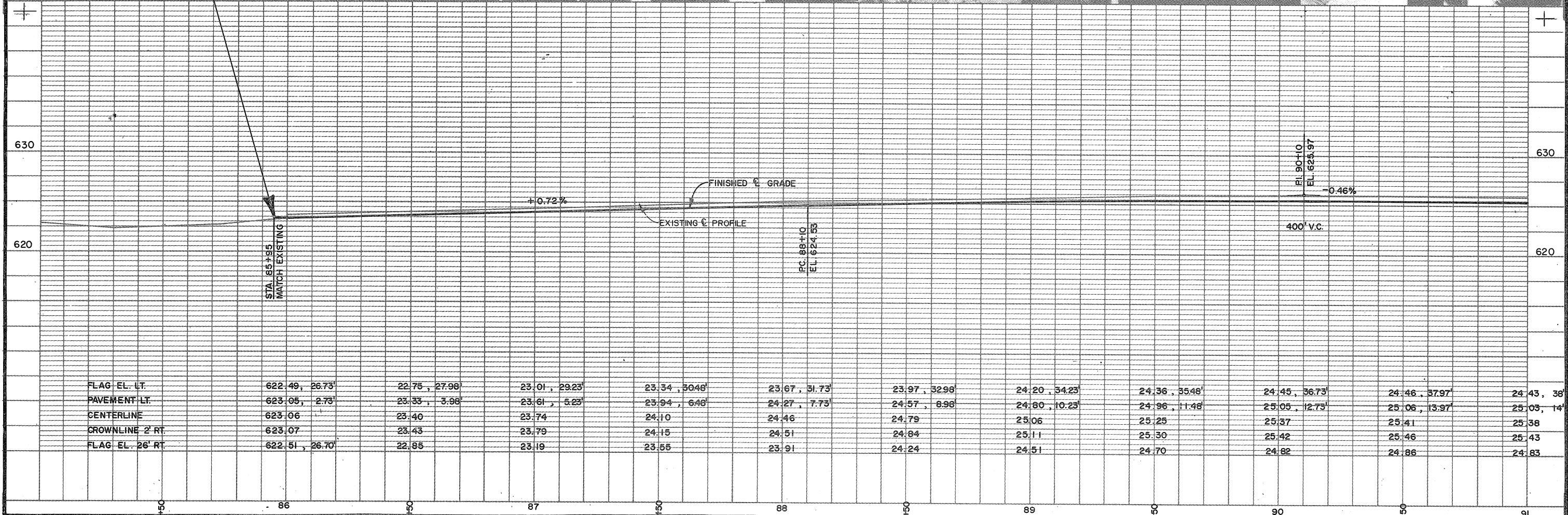
END PROJECT 1190-12-72  
 STA. 113A+08.76  
 (= STA. 85+95. PROJECT 1190-07-71)

E. SECOND ST. - U.S.H. 2



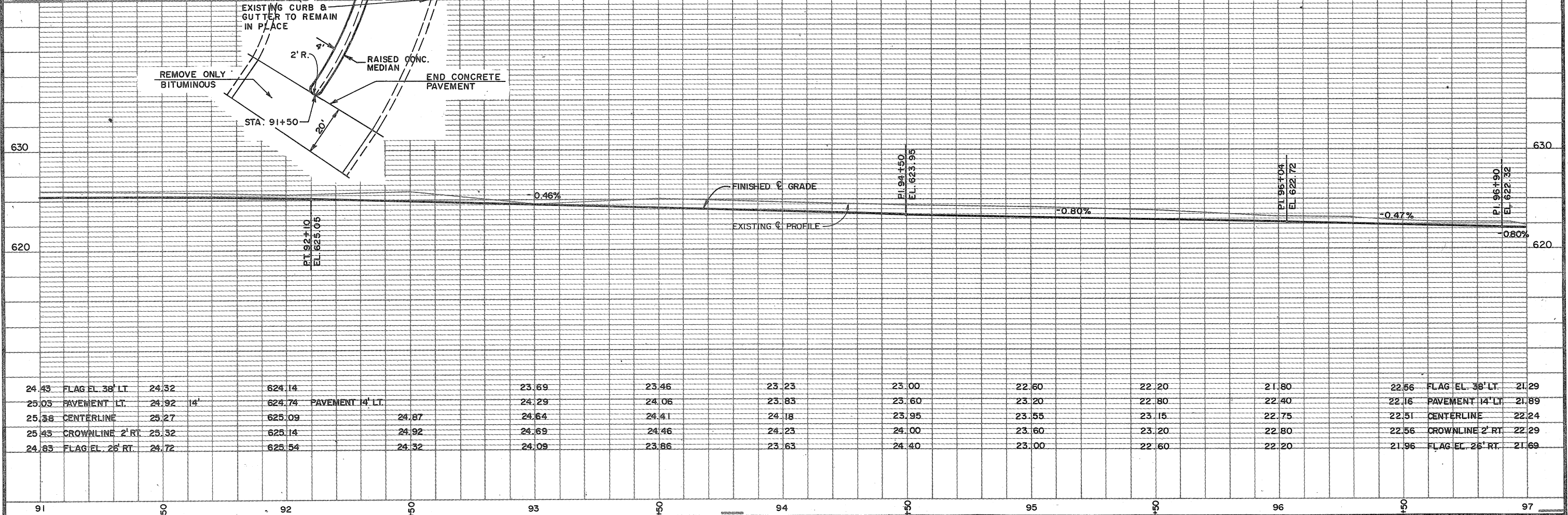
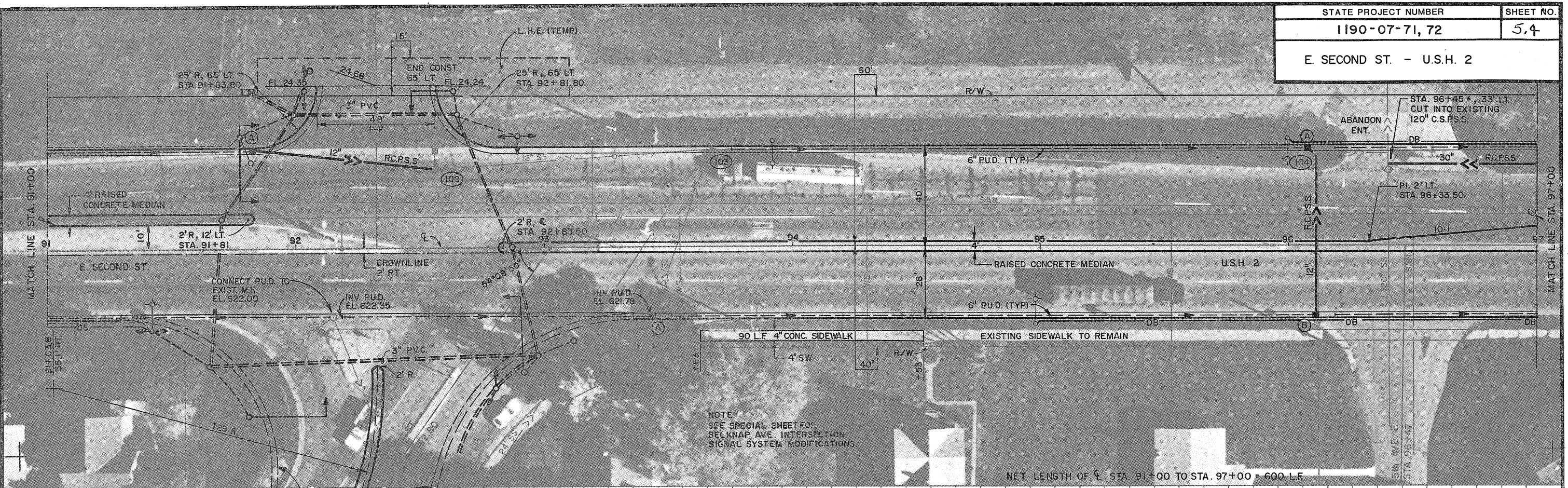
NET LENGTH OF  $\varnothing$  STA. 85+95 TO STA. 91+00 = 505 L.F.

NOTE:  
ITEMS (13), (19) & (20)  
PERTAIN TO SIGNAL SYSTEM  
MODIFICATIONS.



FLAG-EL. LT.	622.49, 26.73'	22.75, 27.98'	23.01, 29.23'	23.34, 30.48'	23.67, 31.73'	23.97, 32.98'	24.20, 34.23'	24.36, 35.48'	24.45, 36.73'	24.46, 37.97'	24.43, 38'
PAVEMENT-LT.	623.05, 2.73'	23.33, 3.98'	23.61, 5.23'	23.94, 6.48'	24.27, 7.73'	24.57, 8.98'	24.80, 10.23'	24.96, 11.48'	25.05, 12.73'	25.06, 13.97'	25.03, 14'
CENTERLINE	623.06	23.40	23.74	24.10	24.46	24.79	25.06	25.25	25.37	25.41	25.38
CROWNLIN 2' RT.	623.07	23.43	23.79	24.15	24.51	24.84	25.11	25.30	25.42	25.46	25.43
FLAG-EL. 26' RT.	622.51, 26.70'	22.85	23.19	23.55	23.91	24.24	24.51	24.70	24.82	24.86	24.83

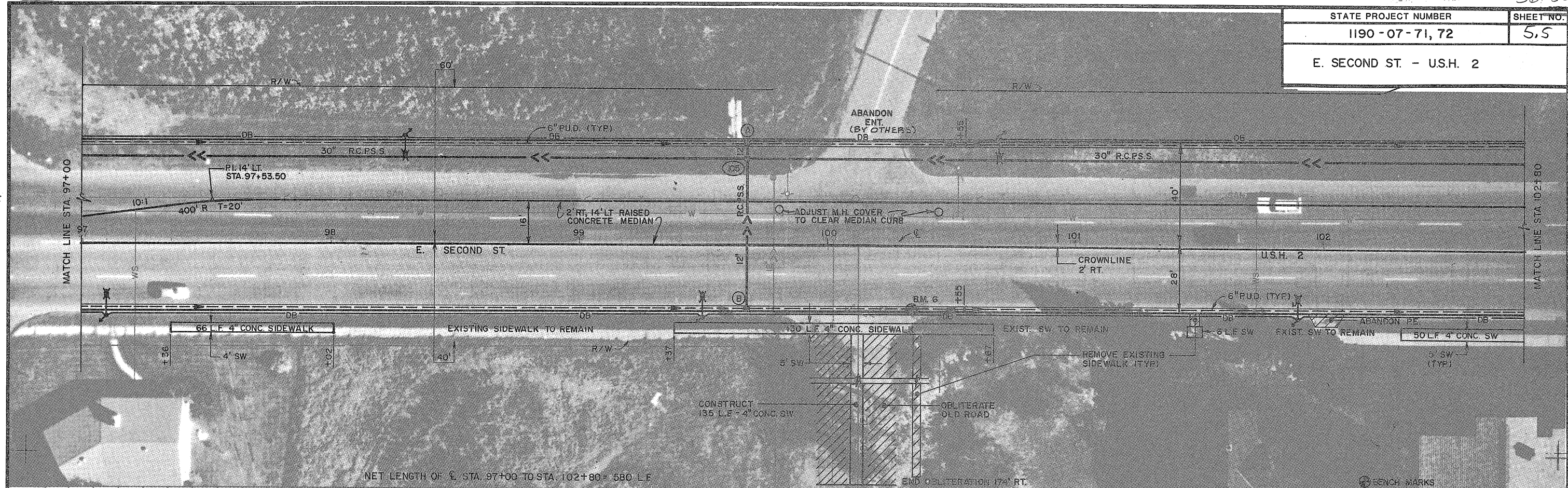
STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5.4
E. SECOND ST. - U.S.H. 2	



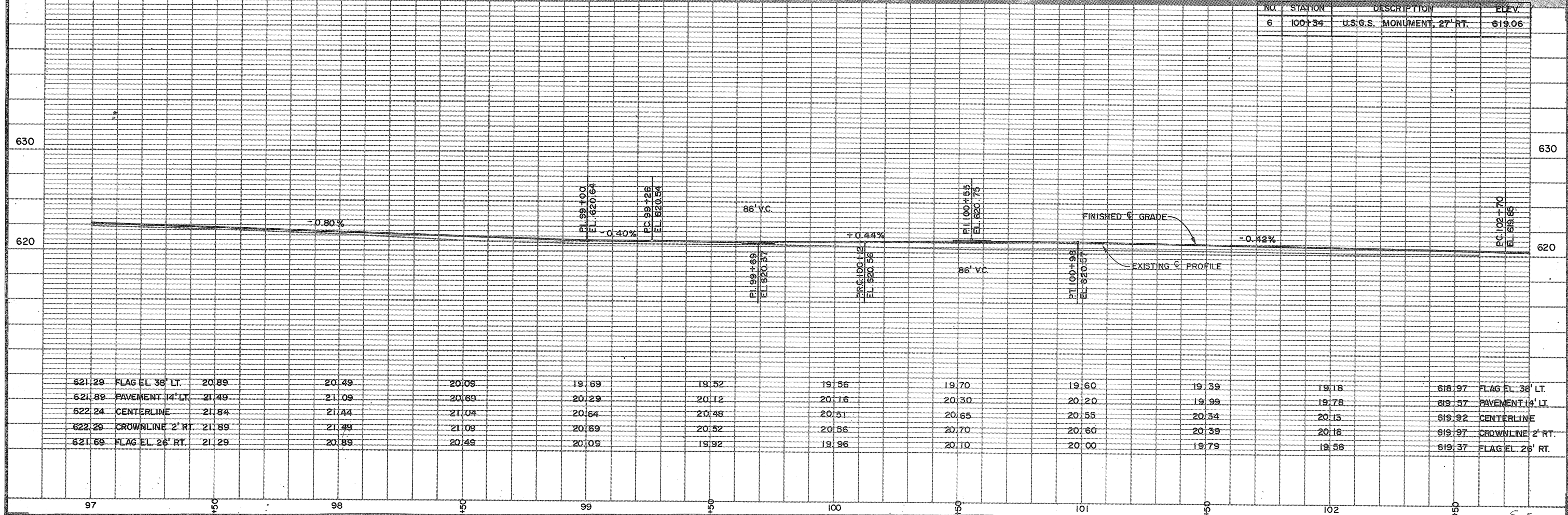
24.43	FLAG EL. 38' LT.	24.32	624.14	23.69	23.46	23.23	23.00	22.60	22.20	21.80	22.56	FLAG EL. 38' LT.	21.29
25.03	PAVEMENT LT.	24.92	624.74	24.29	24.06	23.83	23.60	23.20	22.80	22.40	22.16	PAVEMENT 14' LT.	21.89
25.38	CENTERLINE	25.27	625.09	24.87	24.64	24.41	24.18	23.95	23.55	23.15	22.75	CENTERLINE	22.24
25.43	CROWNLINE 2' RT.	25.32	625.14	24.92	24.69	24.46	24.23	24.00	23.60	23.20	22.80	CROWNLINE 2' RT.	22.29
24.65	FLAG EL. 26' RT.	24.72	623.54	24.32	24.09	23.86	23.63	24.40	23.00	22.60	21.96	FLAG EL. 26' RT.	21.69

36156

STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5,5
E. SECOND ST. - U.S.H. 2	



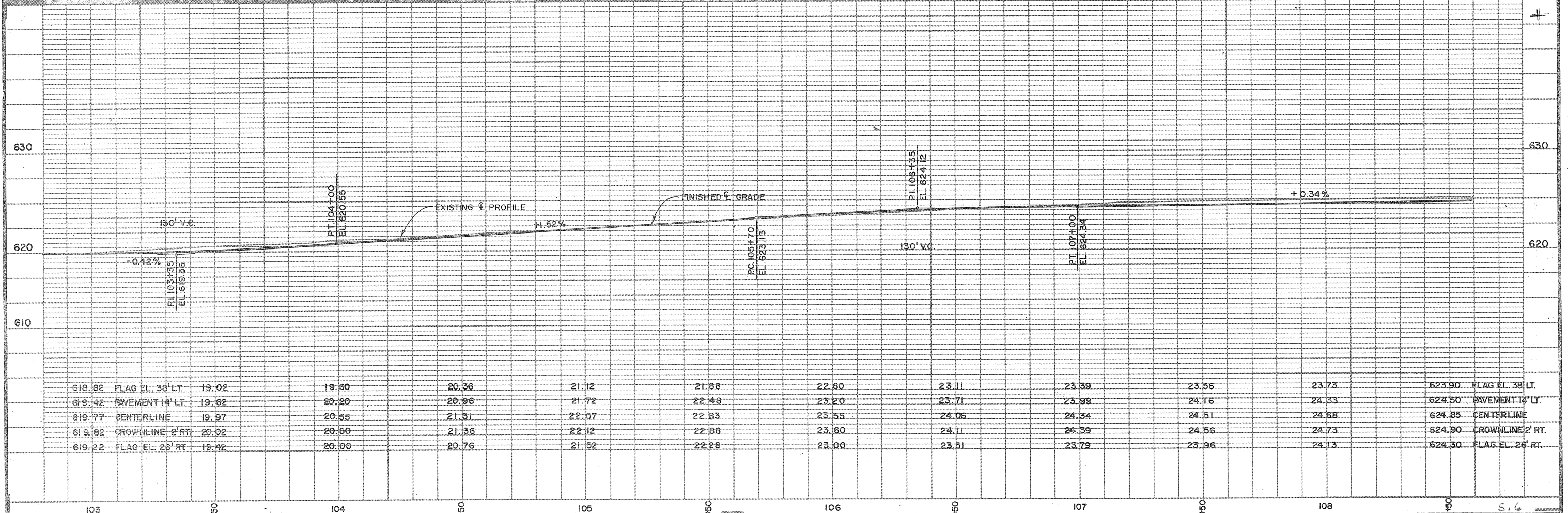
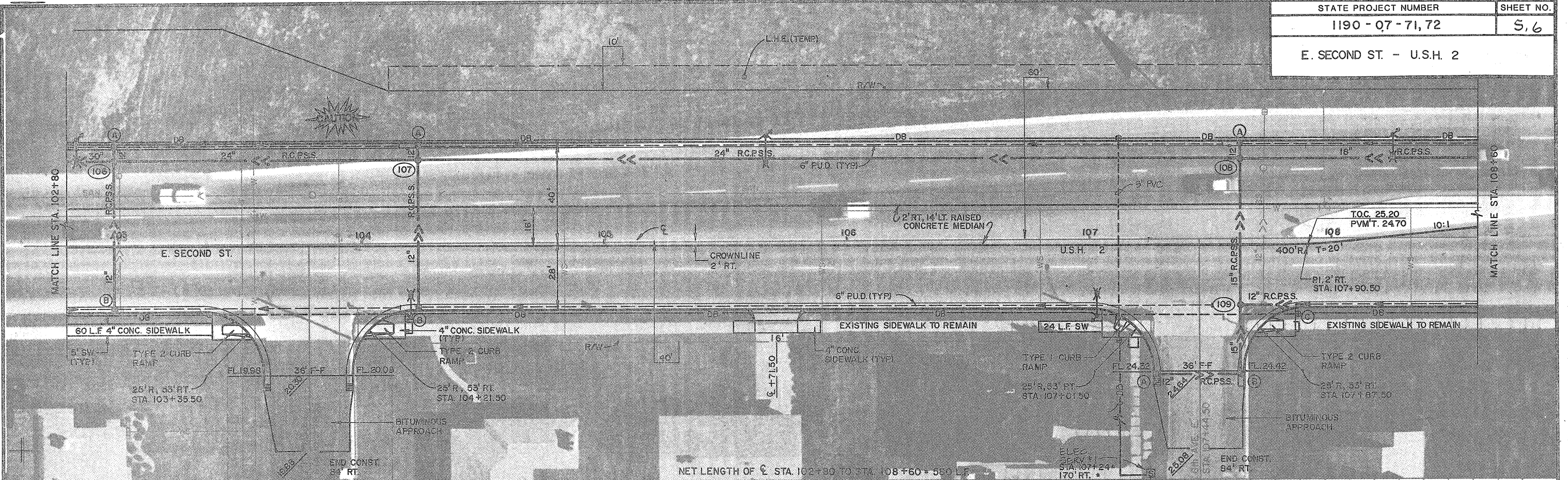
NET LENGTH OF C. STA. 97+00 TO STA. 102+80 = 580 LF



NO.	STATION	DESCRIPTION	ELEV.
6	100+34	U.S.G.S. MONUMENT, 27' RT.	619.06

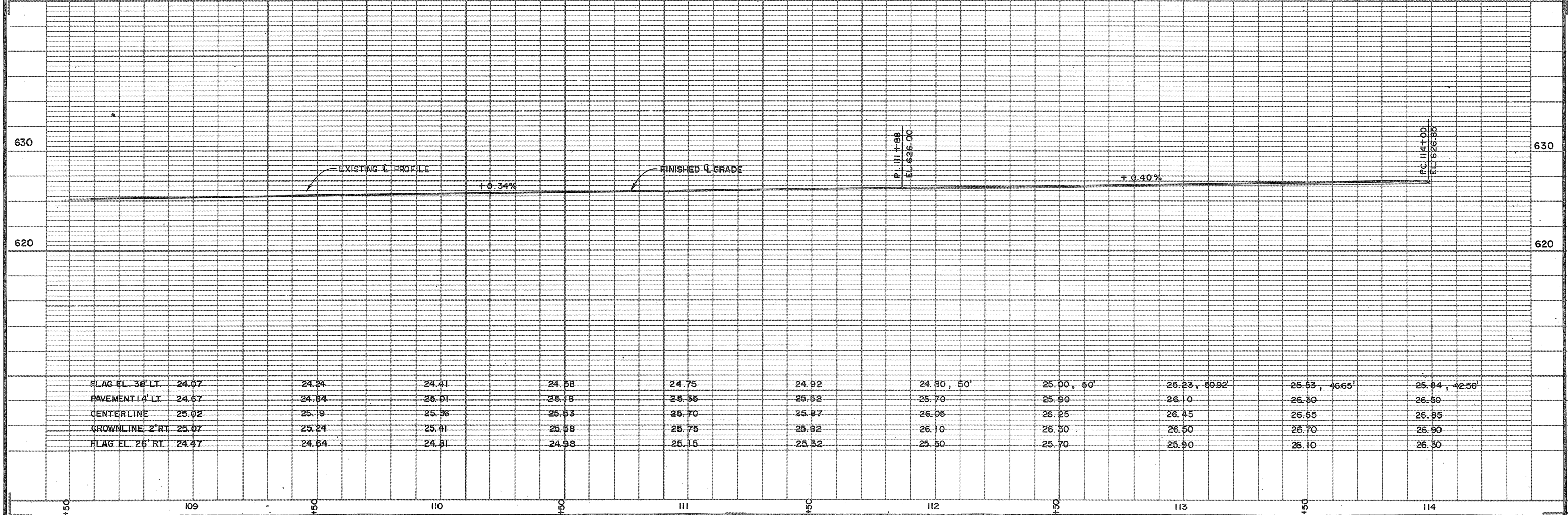
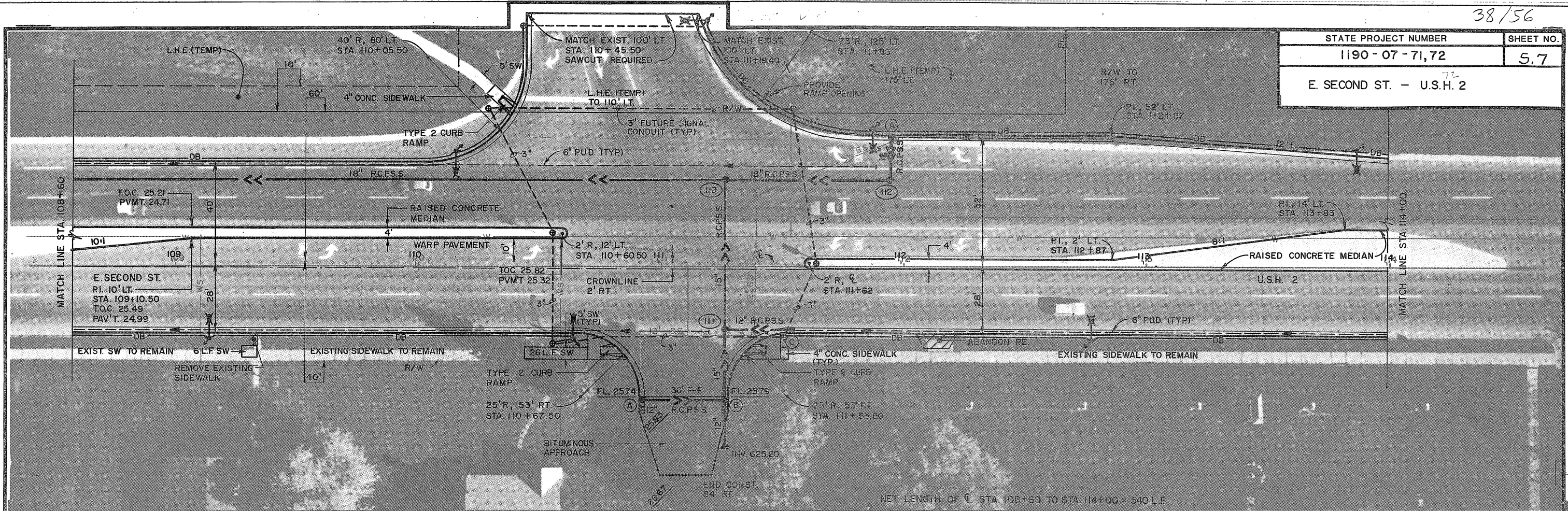
621.29	FLAG EL 38' LT.	20.89	20.49	20.09	19.69	19.52	19.56	19.70	19.60	19.39	19.18	618.97	FLAG EL 38' LT.
621.89	PAVEMENT 14' LT.	21.49	21.09	20.69	20.29	20.12	20.16	20.30	20.20	19.99	19.78	619.57	PAVEMENT 14' LT.
622.24	CENTERLINE	21.84	21.44	21.04	20.64	20.48	20.51	20.65	20.55	20.34	20.13	619.92	CENTERLINE
622.29	CROWLINE 2' RT.	21.89	21.49	21.09	20.69	20.52	20.56	20.70	20.60	20.39	20.18	619.97	CROWLINE 2' RT.
621.69	FLAG EL 26' RT.	21.29	20.89	20.49	20.09	19.92	19.96	20.10	20.00	19.79	19.58	619.37	FLAG EL 26' RT.

E. SECOND ST. - U.S.H. 2



618.62	FLAG EL. 36' LT.	19.02	19.60	20.36	21.12	21.88	22.60	23.11	23.39	23.56	23.73	623.90	FLAG EL. 38' LT.
619.42	PAVEMENT 14' LT.	19.62	20.20	20.96	21.72	22.48	23.20	23.71	23.99	24.16	24.33	624.50	PAVEMENT 14' LT.
619.77	CENTERLINE	19.97	20.35	21.31	22.07	22.83	23.55	24.06	24.34	24.51	24.68	624.85	CENTERLINE
619.82	CROWNLIN 2' RT.	20.02	20.60	21.36	22.12	22.88	23.60	24.11	24.39	24.56	24.73	624.90	CROWNLIN 2' RT.
619.22	FLAG EL. 26' RT.	19.42	20.00	20.76	21.52	22.28	23.00	23.51	23.79	23.96	24.13	624.30	FLAG EL. 26' RT.

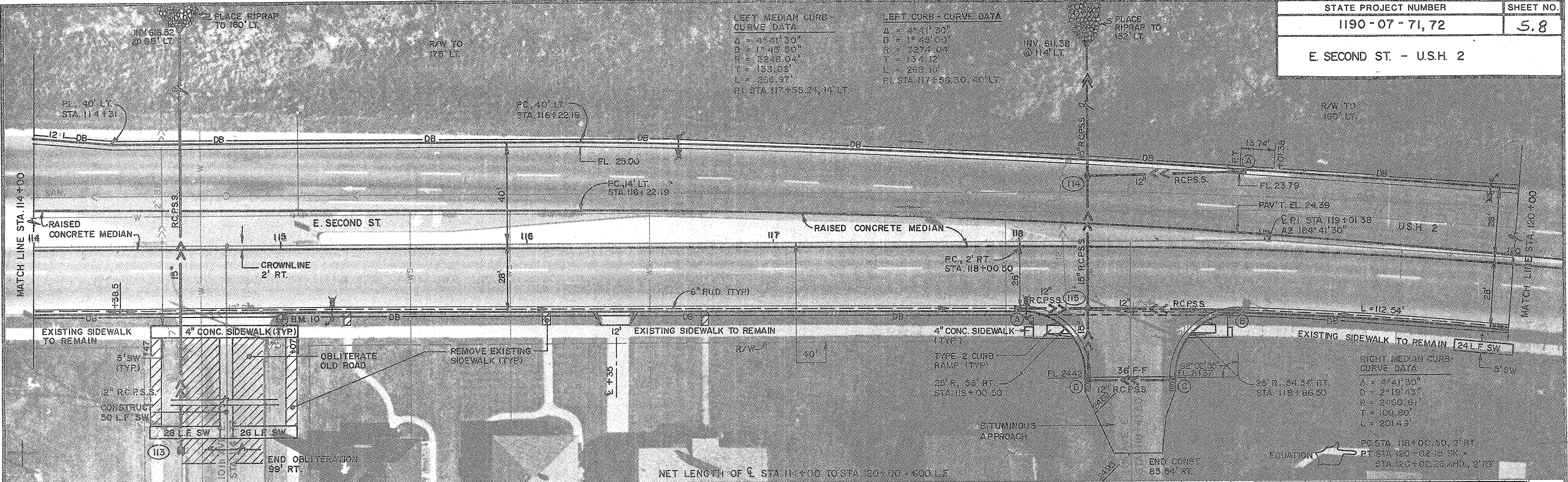
STATE PROJECT NUMBER	SHEET NO.
1190-07-71,72	5.7
E. SECOND ST. - U.S.H. 2	



STATE PROJECT NUMBER	SHEET NO.
1190-07-71,72	5.8
E. SECOND ST. - U.S.H. 2	

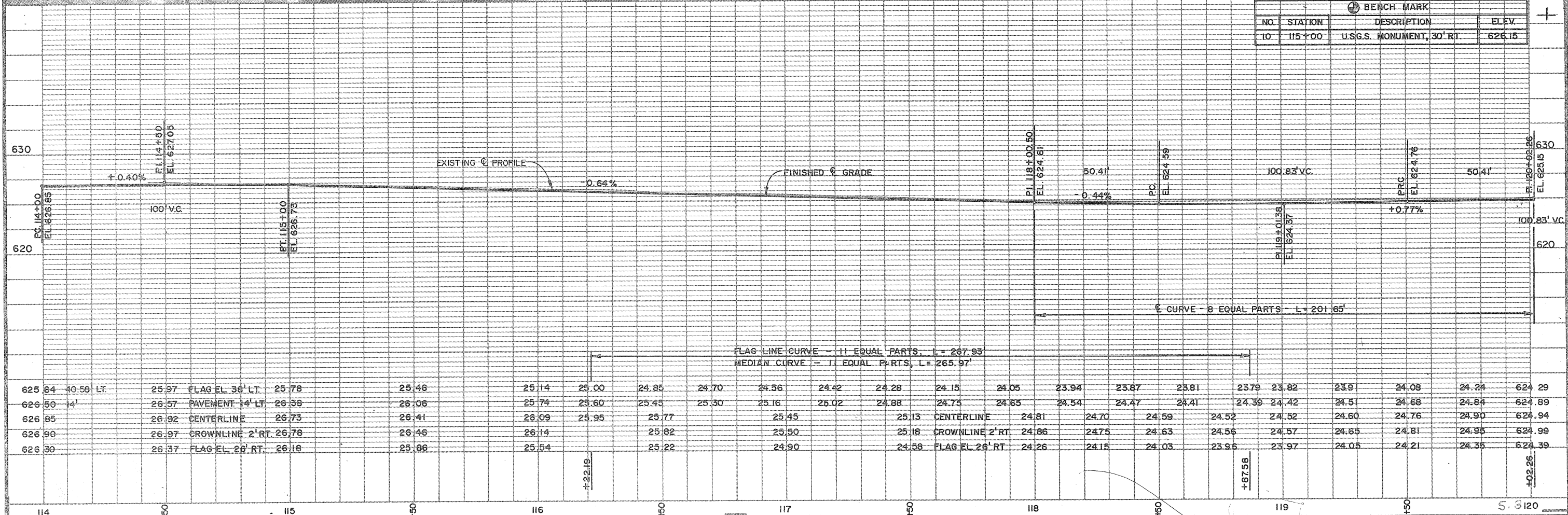
**LEFT MEDIAN CURB - CURVE DATA**  
 $\Delta = 4^{\circ} 41' 30''$   
 $D = 1^{\circ} 45' 50''$   
 $R = 3274.04'$   
 $T = 134.12'$   
 $L = 265.97'$   
 $PI STA 117+55.24, 14' LT$

**LEFT CURB - CURVE DATA**  
 $\Delta = 4^{\circ} 41' 30''$   
 $D = 1^{\circ} 45' 50''$   
 $R = 3274.04'$   
 $T = 134.12'$   
 $L = 265.97'$   
 $PI STA 117+55.30, 46' LT$



NET LENGTH OF  $\ell$  STA 114+00 TO STA 120+00 = 600 LF

BENCH MARK			
NO.	STATION	DESCRIPTION	ELEV.
10	115+00	U.S.G.S. MONUMENT, 30' RT.	626.15

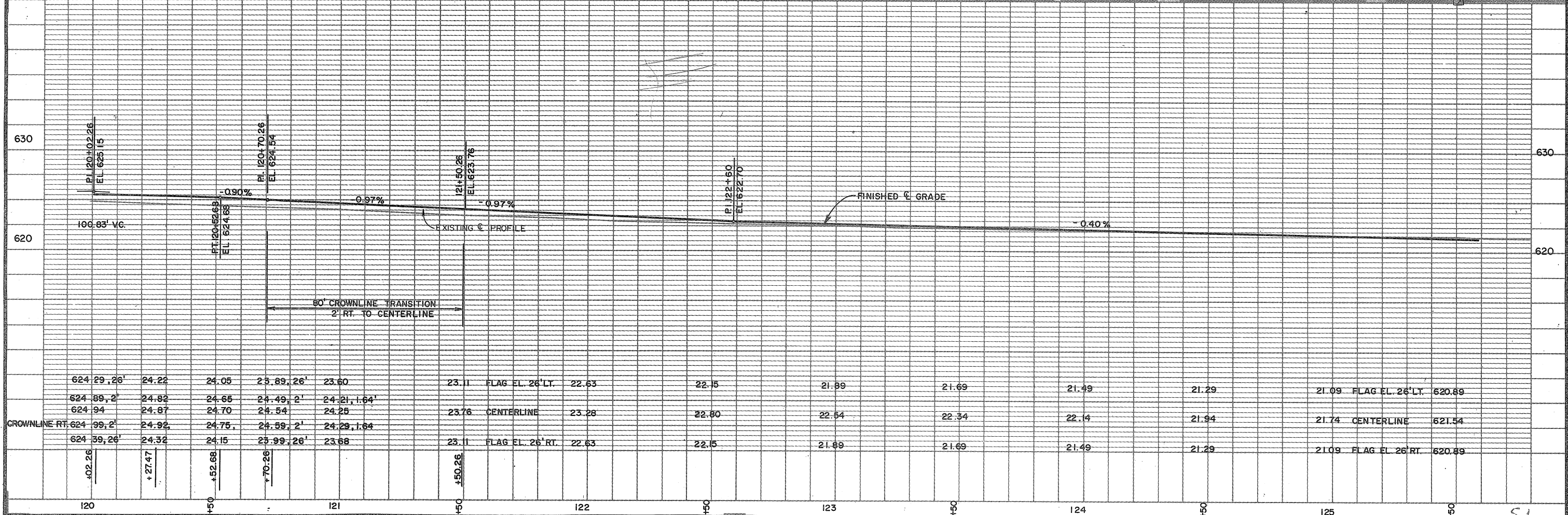
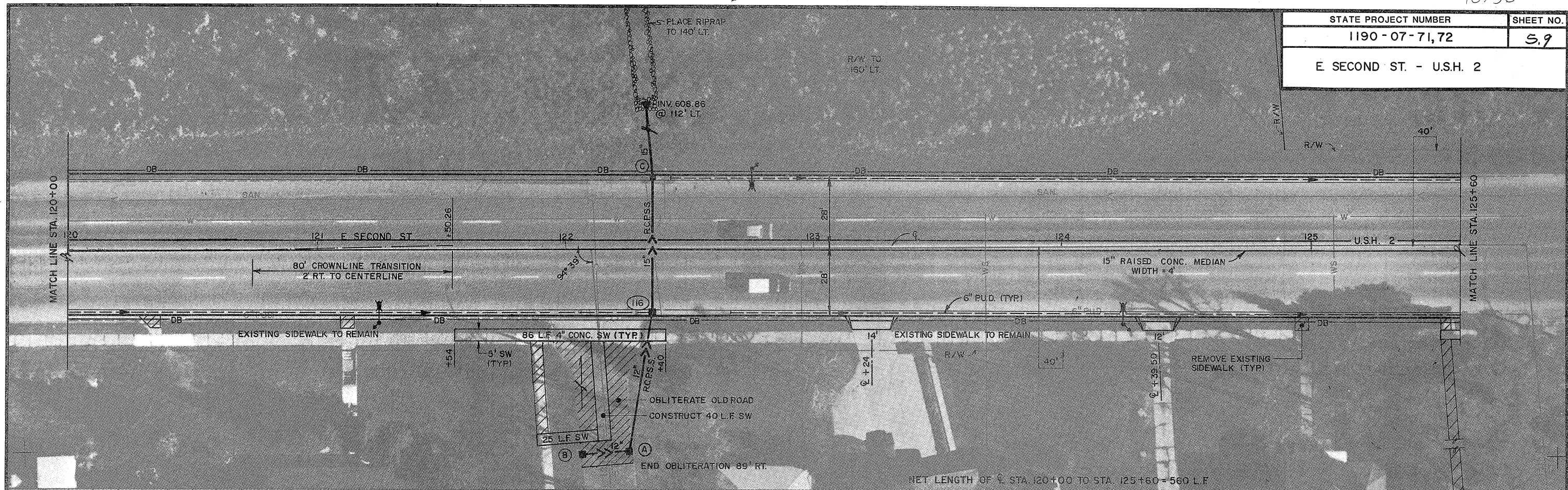


FLAG LINE CURVE - 11 EQUAL PARTS, L = 267.93'  
 MEDIAN CURVE - 11 EQUAL PARTS, L = 265.97'

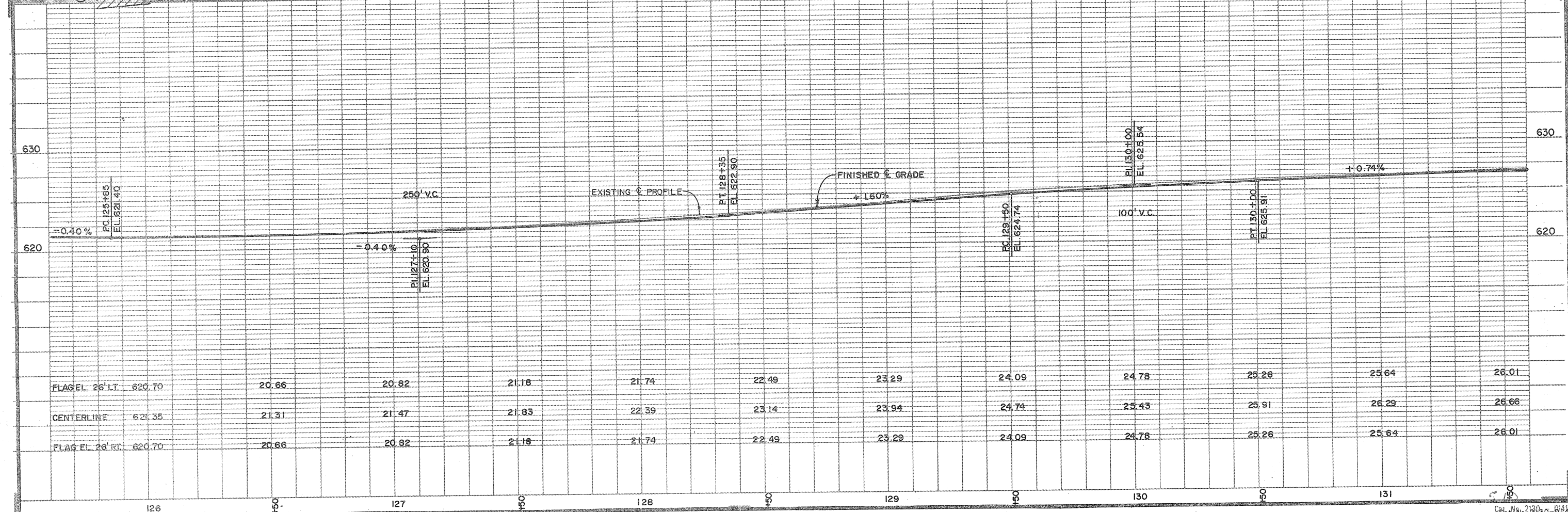
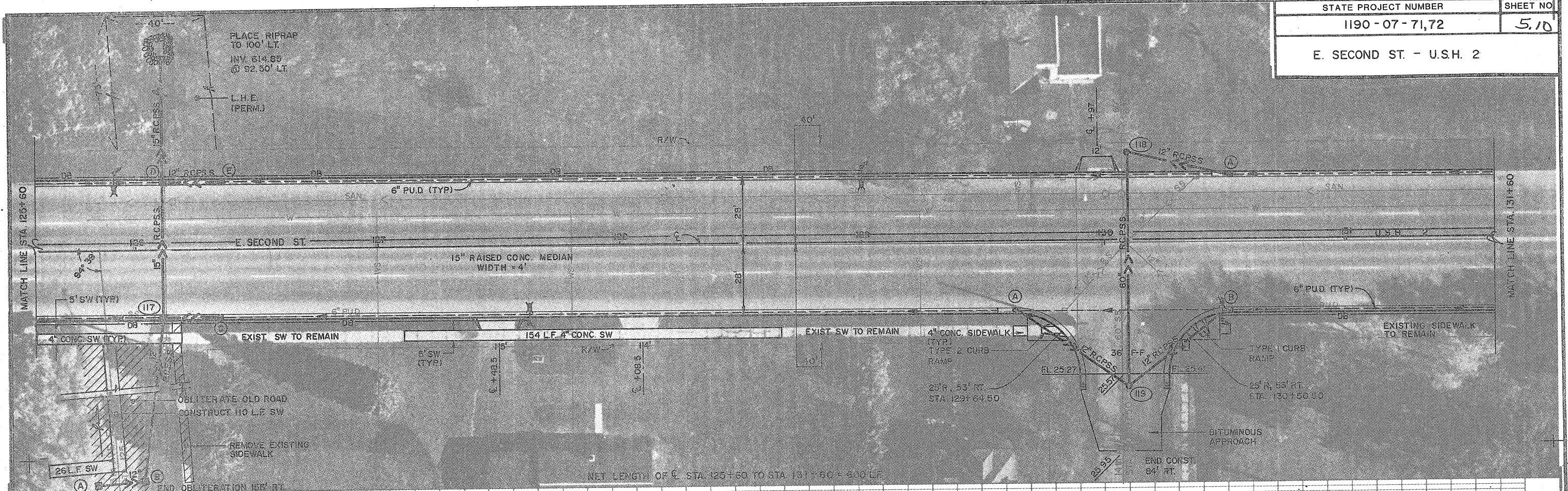
625.84	40.56	LT.	25.97	FLAG EL 36' LT.	25.78	25.46	25.14	25.00	24.85	24.70	24.56	24.42	24.28	24.15	24.05	23.94	23.87	23.81	23.79	23.82	23.9	24.08	24.24	624.29
626.50	14'		26.57	PAVEMENT 14' LT	26.38	26.06	25.74	25.60	25.45	25.30	25.16	25.02	24.88	24.75	24.65	24.54	24.47	24.41	24.39	24.42	24.51	24.68	24.84	624.89
626.85			26.92	CENTERLINE	26.73	26.41	26.09	25.95	25.77		25.45		25.13	CENTERLINE	24.81	24.70	24.59	24.52	24.52	24.60	24.76	24.90	624.94	
626.90			26.97	CROWLINE 2' RT	26.78	26.46	26.14		25.82		25.50		25.18	CROWLINE 2' RT	24.86	24.75	24.63	24.56	24.57	24.65	24.81	24.95	624.99	
626.30			26.37	FLAG EL 26' RT.	26.18	25.86	25.54		25.22		24.90		24.58	FLAG EL 26' RT	24.26	24.15	24.03	23.95	23.97	24.05	24.21	24.35	624.39	



STATE PROJECT NUMBER	SHEET NO.
1190-07-71,72	5.9
E SECOND ST. - U.S.H. 2	

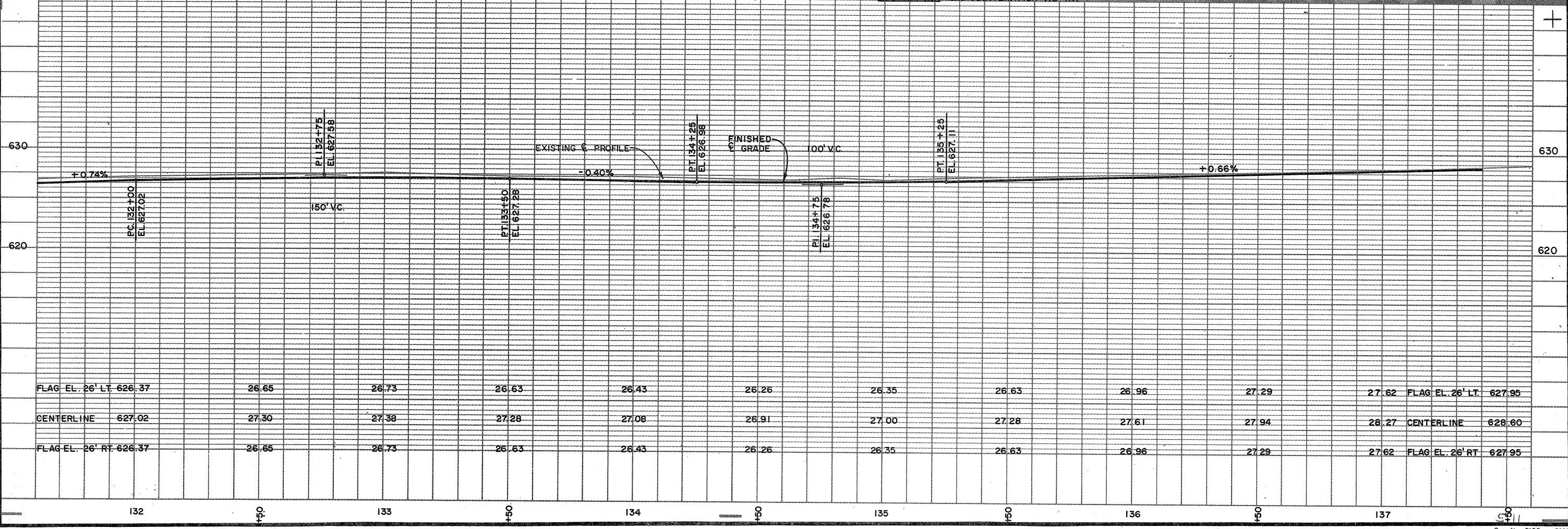
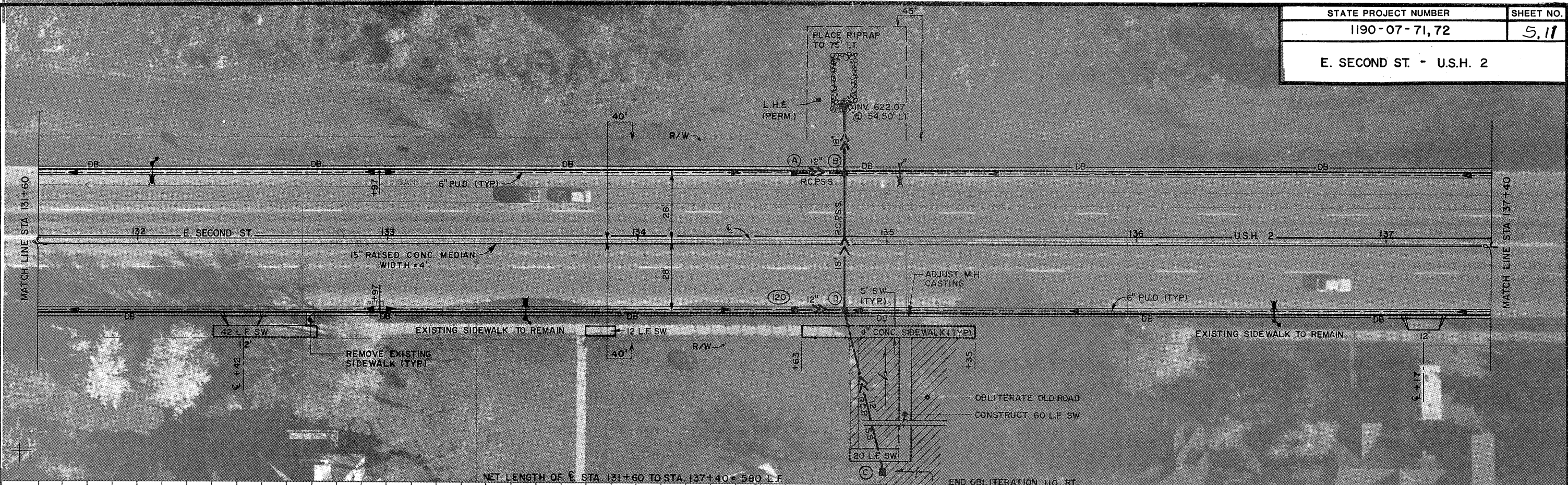


STATE PROJECT NUMBER	SHEET NO
1190-07-71,72	5,10
E. SECOND ST. - U.S.H. 2	

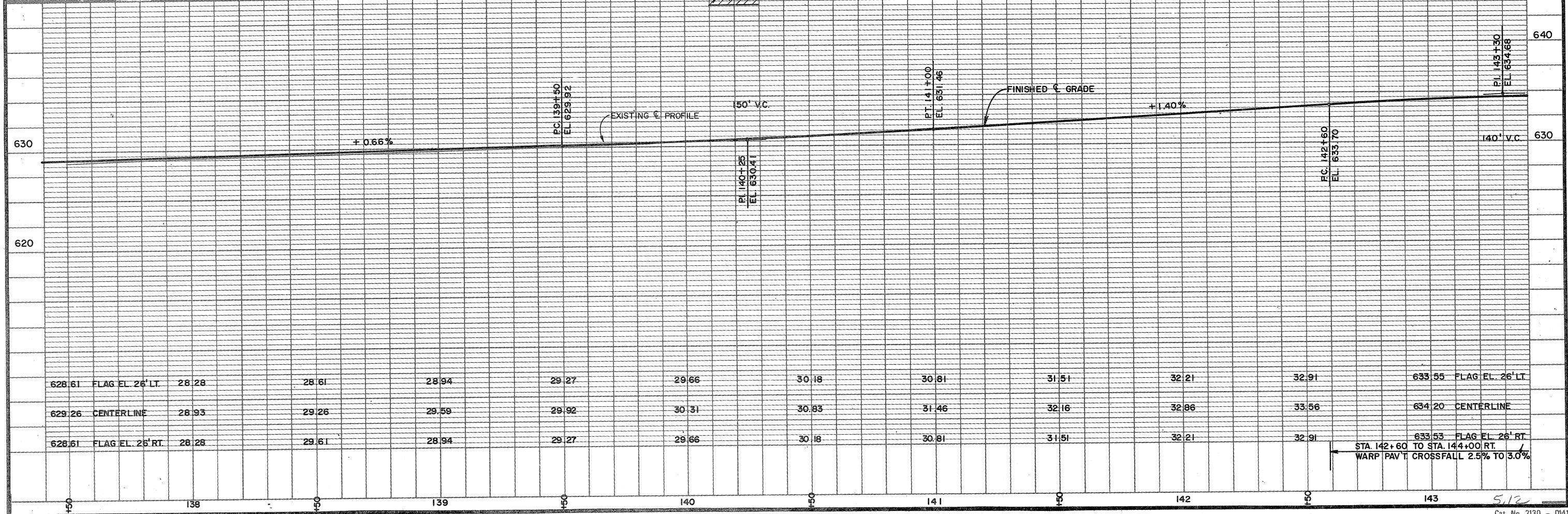
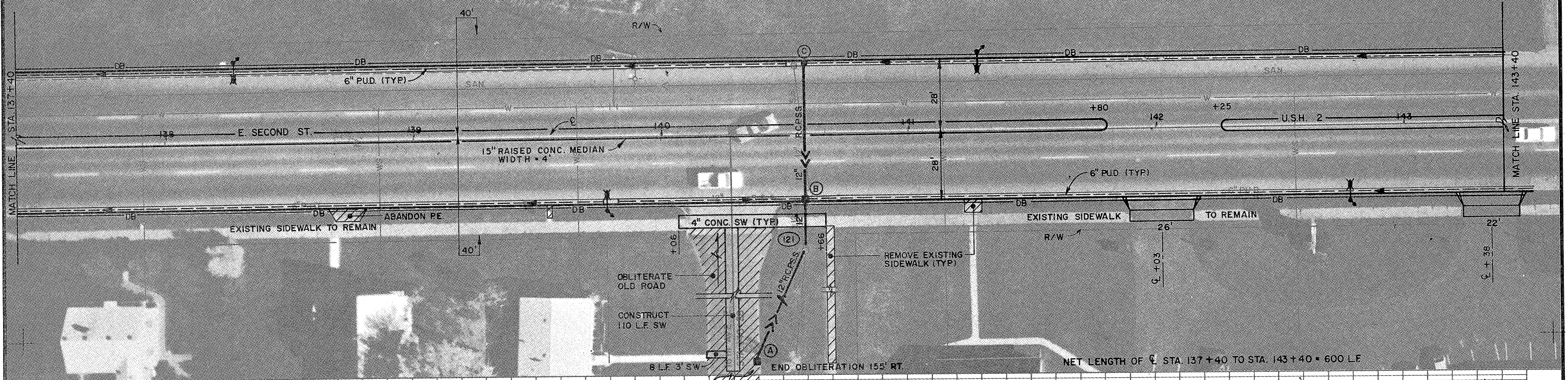


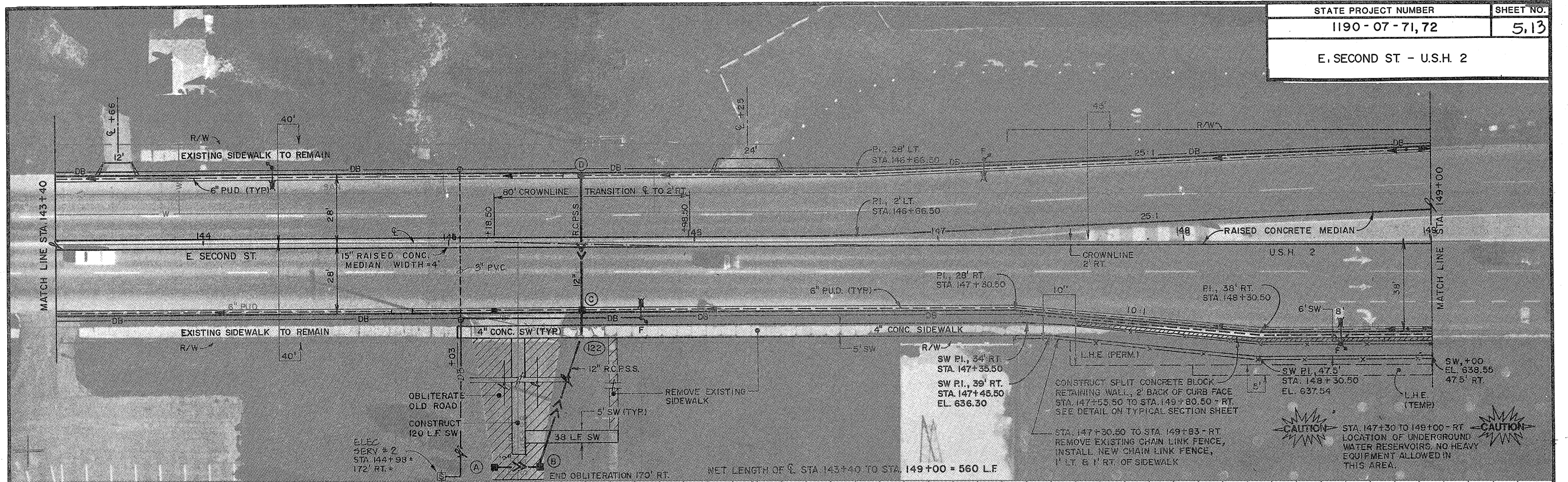
42156

STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5, 11
E. SECOND ST. - U.S.H. 2	



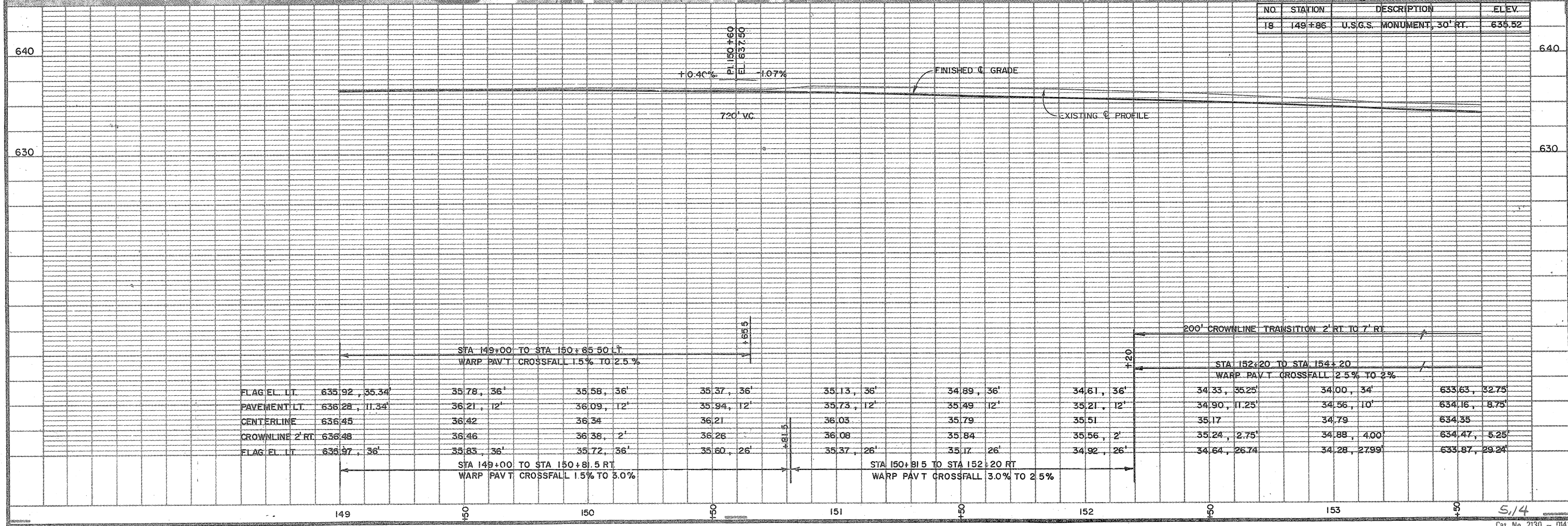
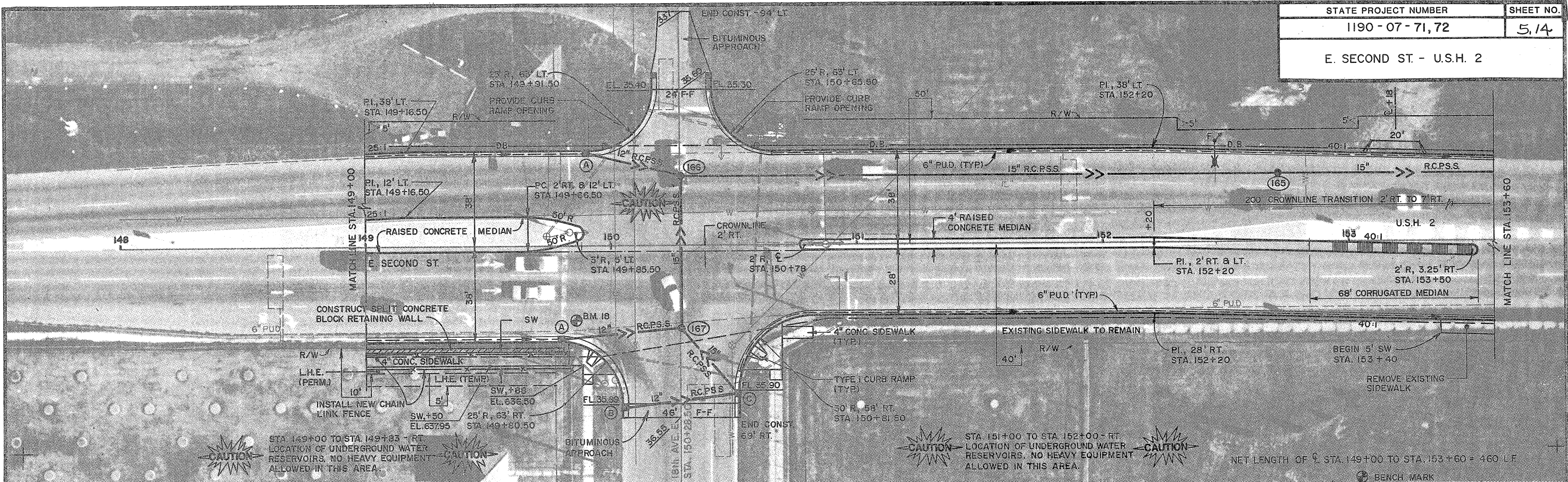
STATE PROJECT NUMBER	SHEET NO.
1190 - 07 - 71, 72	5.12
E. SECOND ST. - U.S.H. 2	



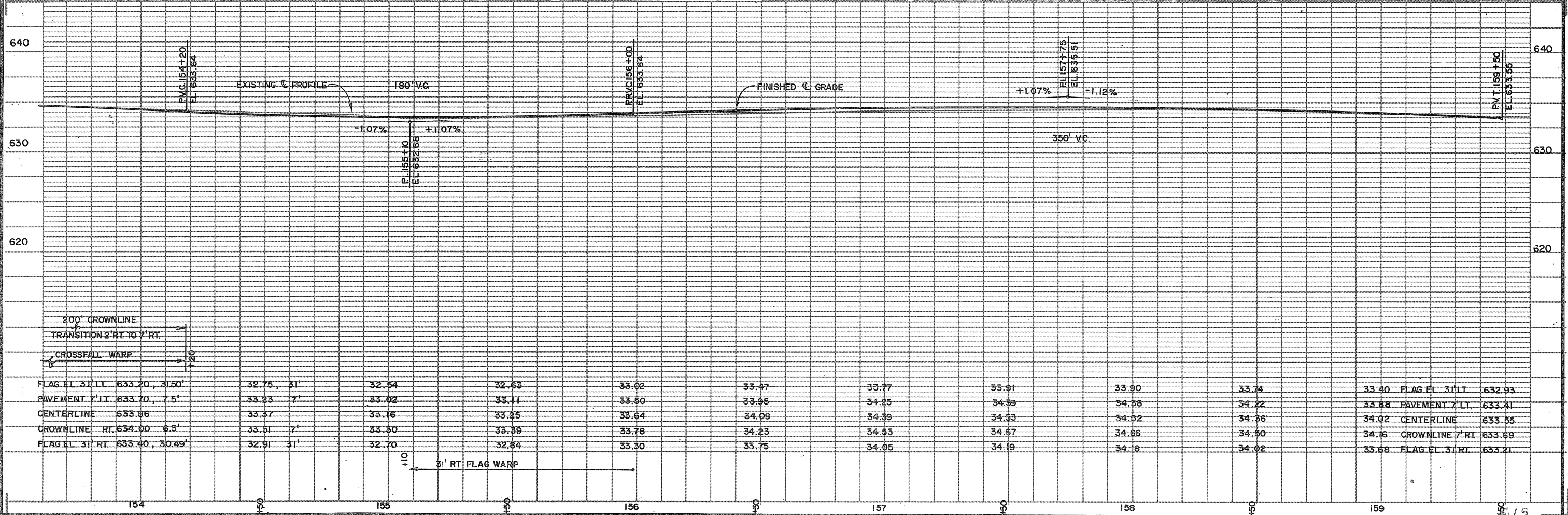
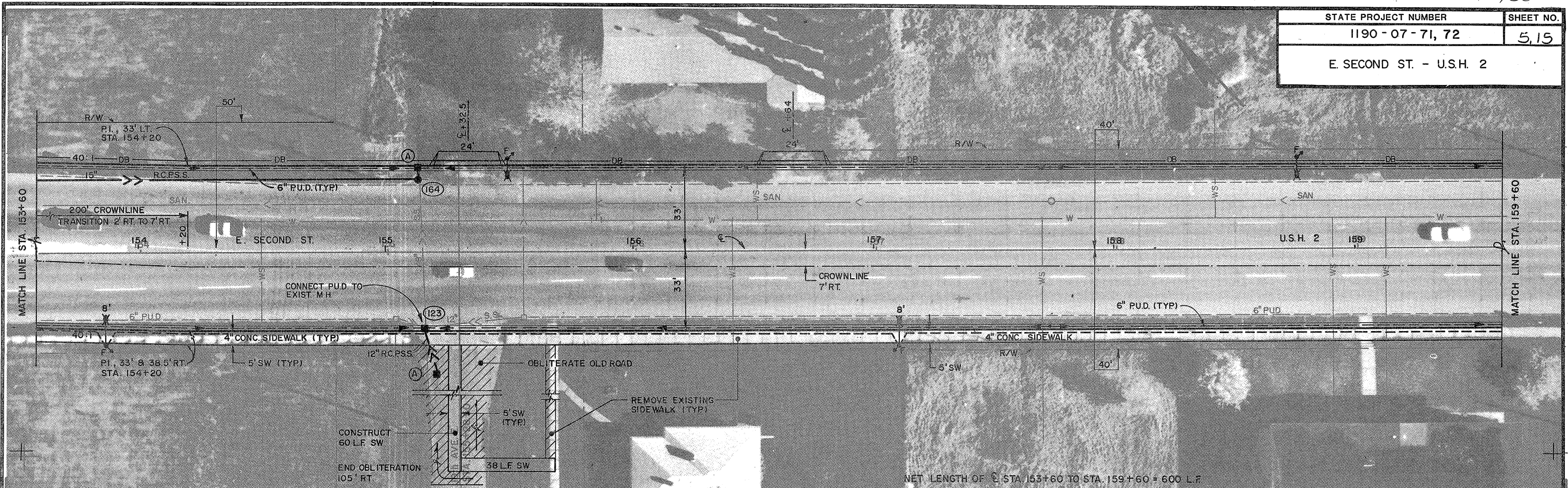


Station	Profile	Grade	Notes
143+40	634.02	10.40%	FLAG EL. 26' LT.
144+00	634.67		CENTERLINE
144+00	634.96		RT. 144+00 EL. 634.96
145+00	635.92		FLAG EL. 26' RT.
146+00	636.02		80' CROWLINE TRANSITION CENTERLINE TO 2' RT.
147+00	636.06		PC 147+00 EL. 636.06
148+00	636.23		STA. 146+50 TO STA. 149+00 LT. WARP PAV'T. CROSSFALL 2.5% TO 1.5%
149+00	636.48		STA. 147+00 TO STA. 149+00 RT. WARP PAV'T. CROSSFALL 3.0% TO 1.5%

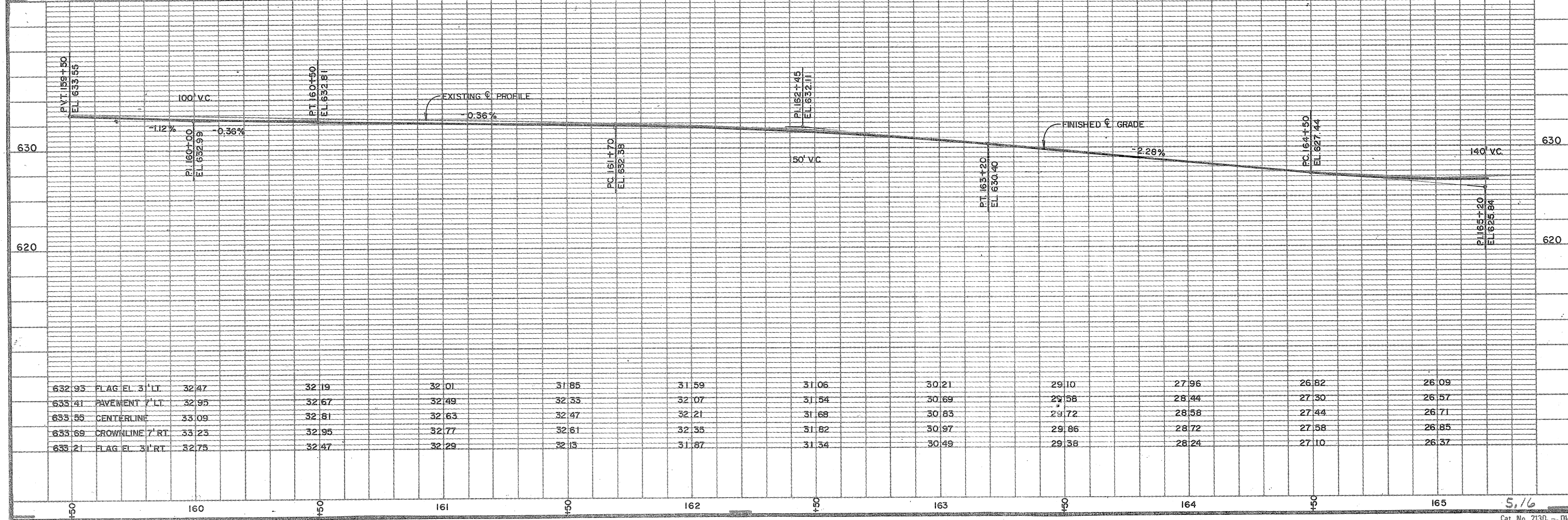
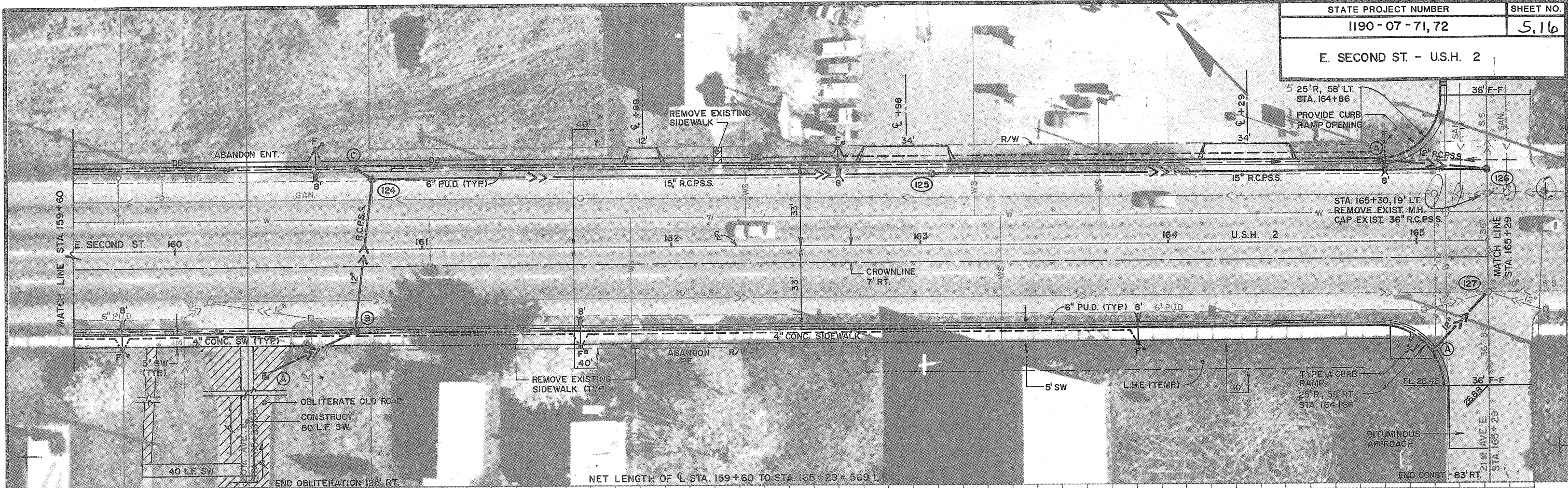
STATE PROJECT NUMBER	SHEET NO.
1190-07-71,72	5,14
E. SECOND ST. - U.S.H. 2	



STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5, 15
E. SECOND ST. - U.S.H. 2	

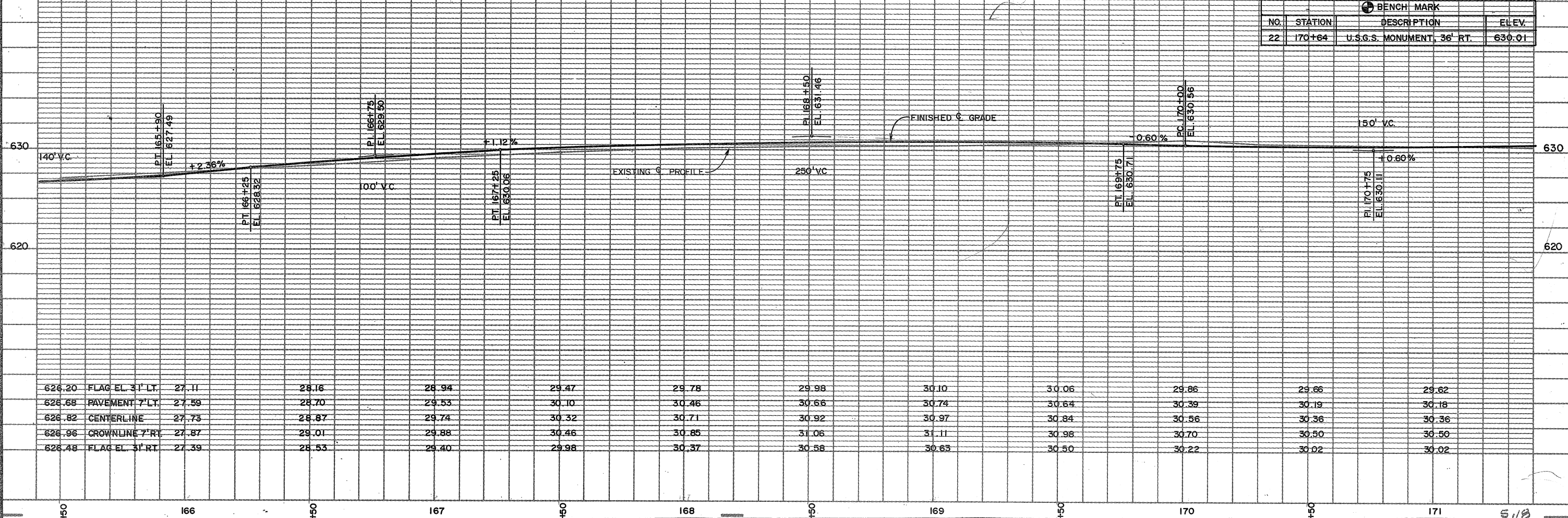
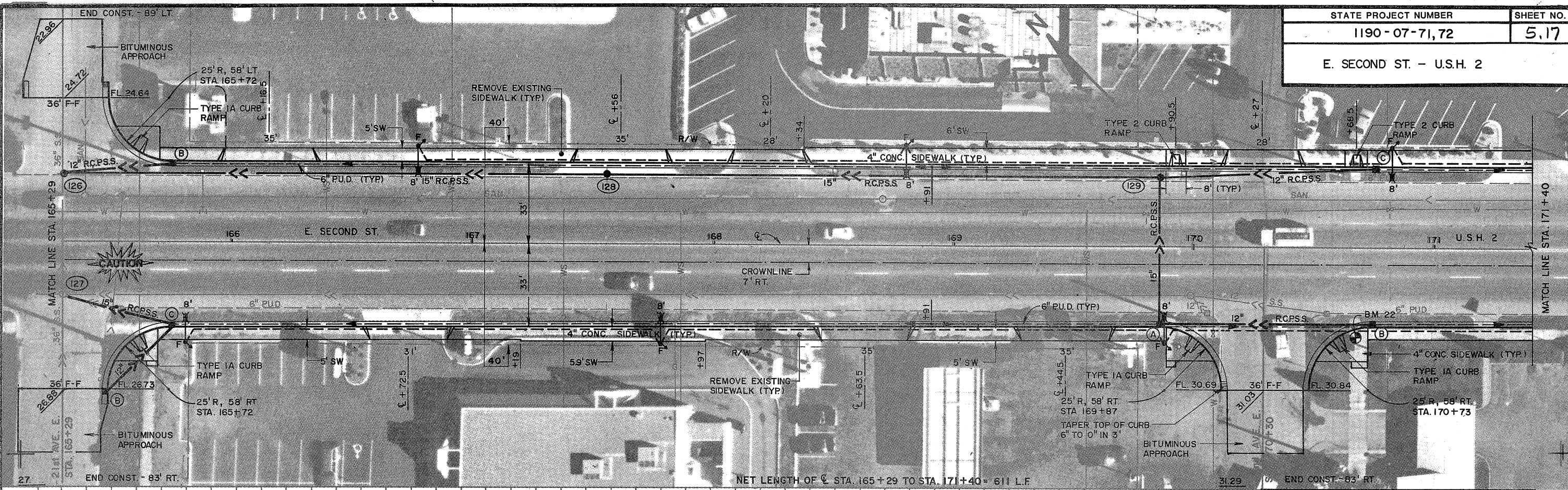


STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5.16
E. SECOND ST. - U.S.H. 2	





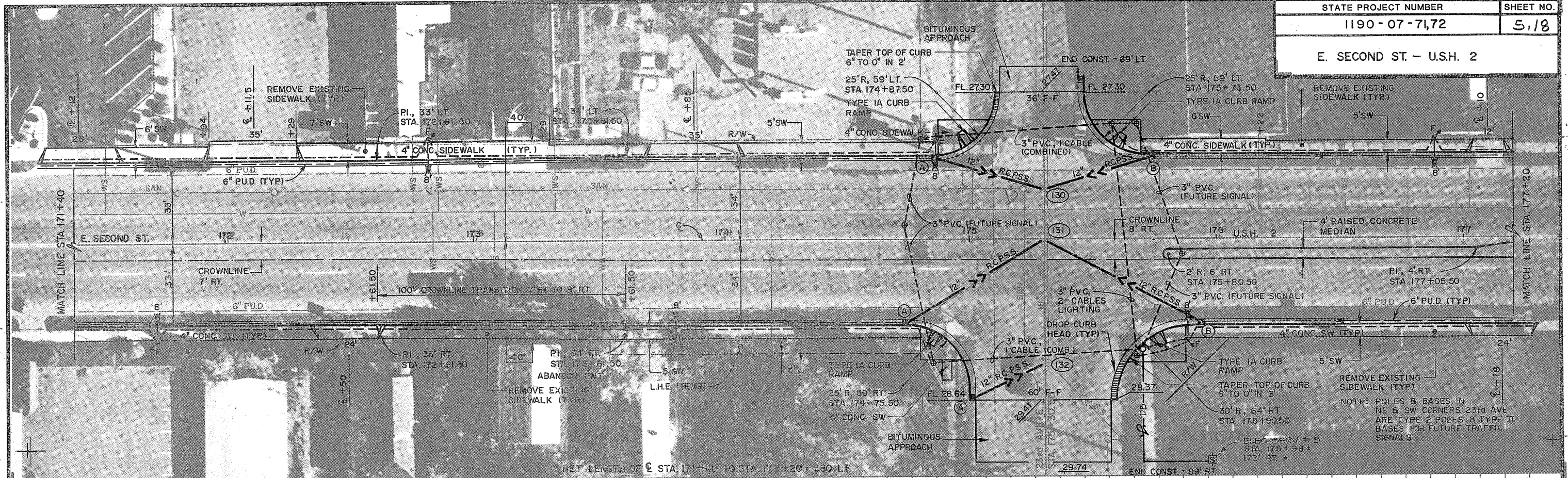
STATE PROJECT NUMBER	SHEET NO.
1190-07-71,72	5.17
E. SECOND ST. - U.S.H. 2	



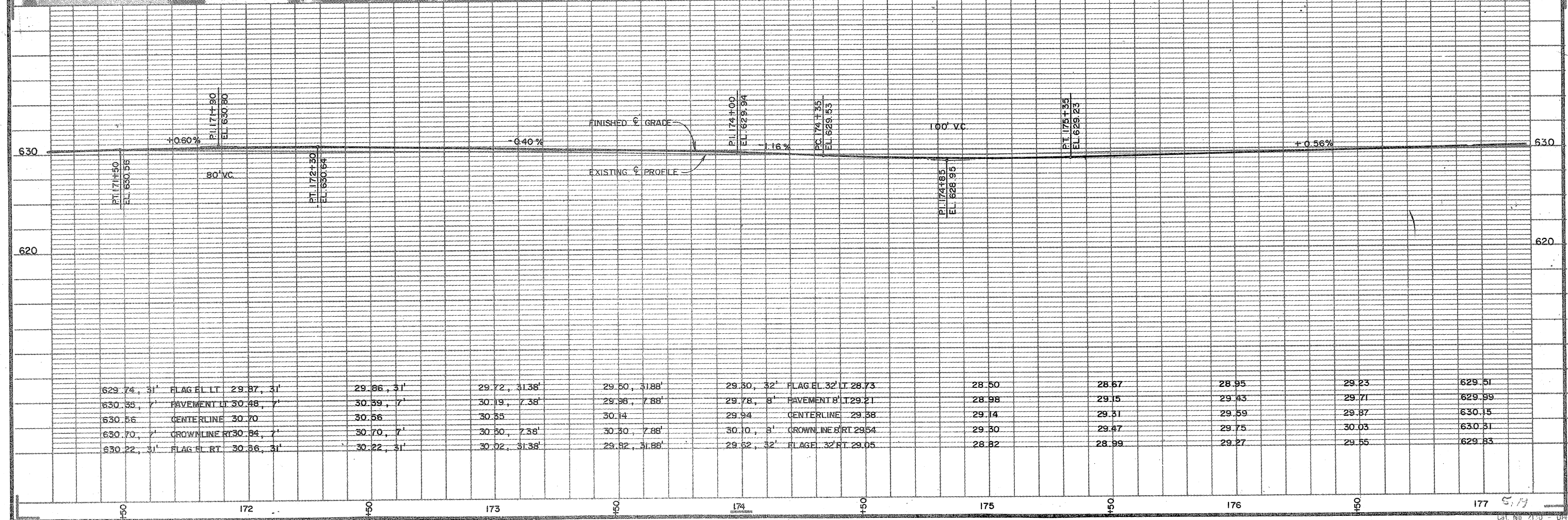
BENCH MARK			
NO.	STATION	DESCRIPTION	ELEV.
22	170+64	U.S.G.S. MONUMENT, 36' RT.	630.01

626.20	FLAG EL 3' LT.	27.11	28.16	28.94	29.47	29.78	29.98	30.10	30.06	29.86	29.66	29.62
626.68	PAVEMENT 7' LT.	27.59	28.70	29.53	30.10	30.46	30.66	30.74	30.64	30.39	30.19	30.18
626.82	CENTERLINE	27.73	28.87	29.74	30.32	30.71	30.92	30.97	30.84	30.56	30.36	30.36
626.96	CROWNLIN 7' RT.	27.87	29.01	29.88	30.46	30.85	31.06	31.11	30.98	30.70	30.50	30.50
626.48	FLAG EL 3' RT.	27.39	28.53	29.40	29.98	30.37	30.58	30.65	30.50	30.22	30.02	30.02

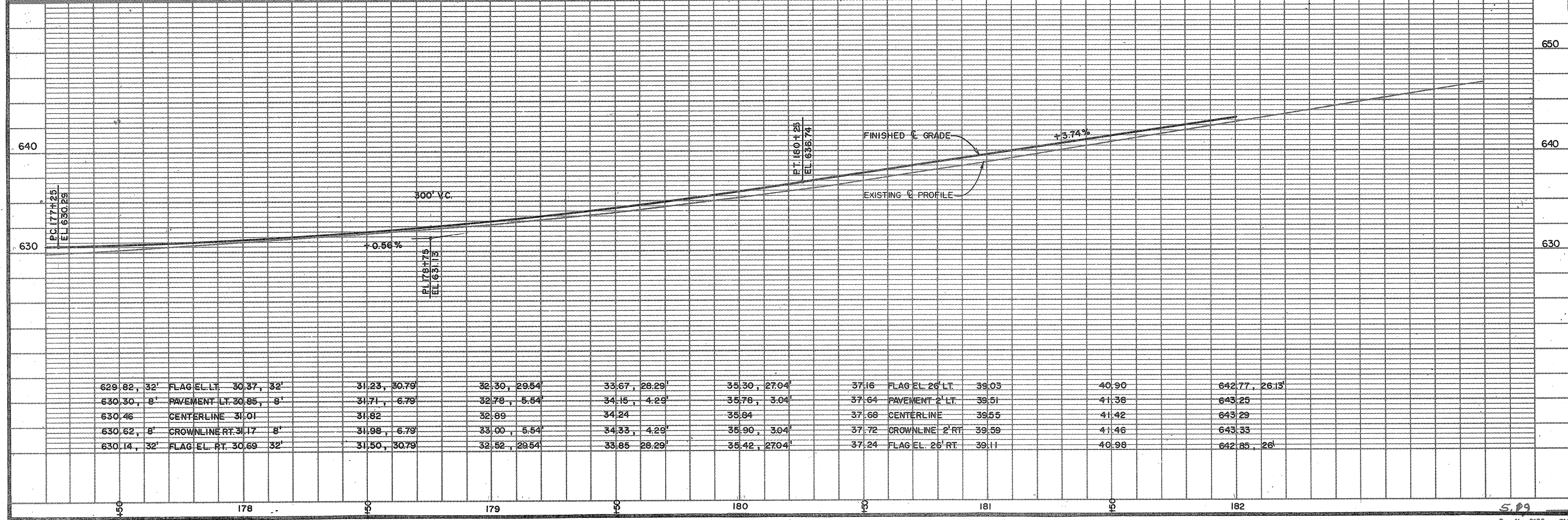
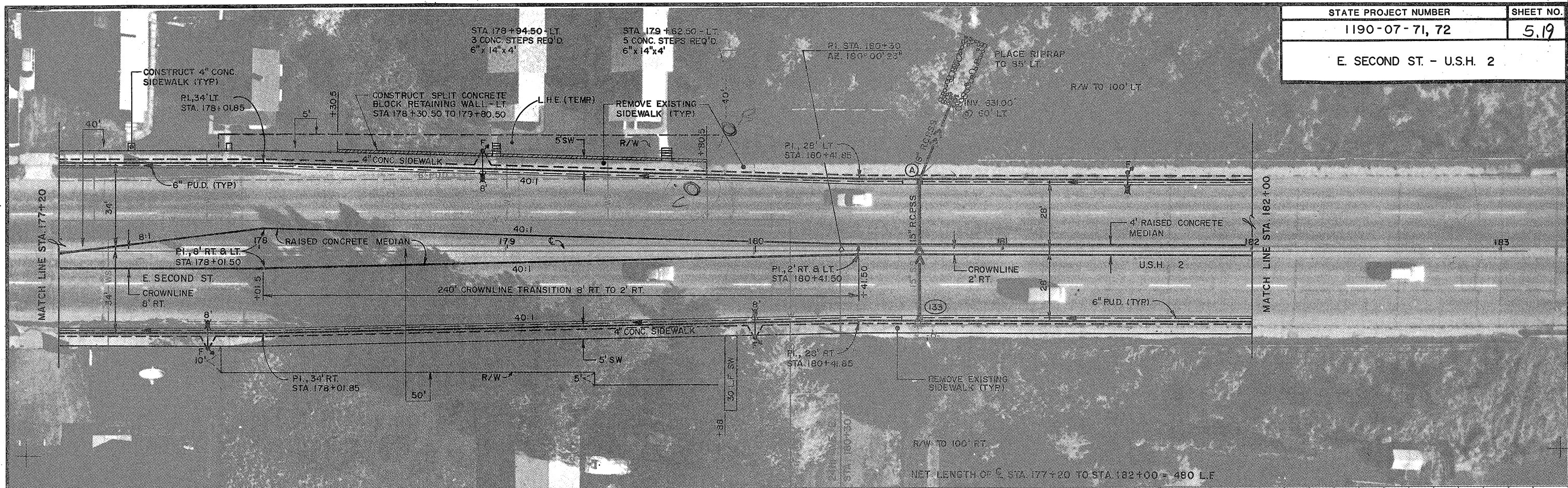
E. SECOND ST. - U.S.H. 2



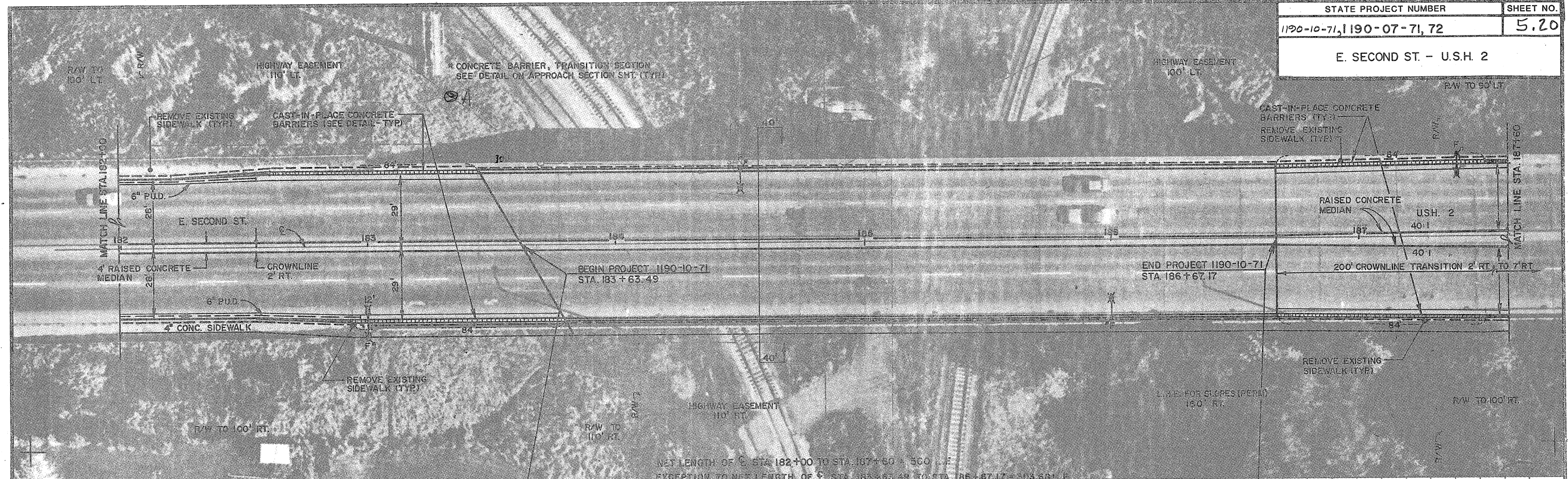
NET LENGTH OF STA 171+40 TO STA 177+20 = 580 LF



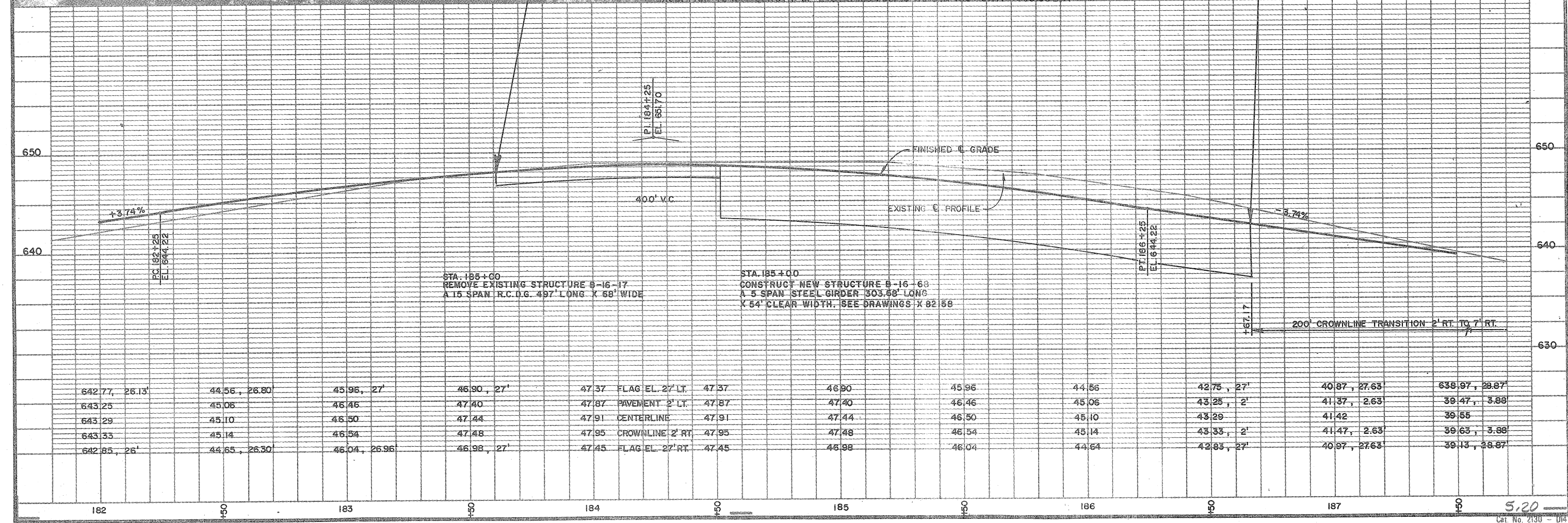
STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5.19
E. SECOND ST. - U.S.H. 2	



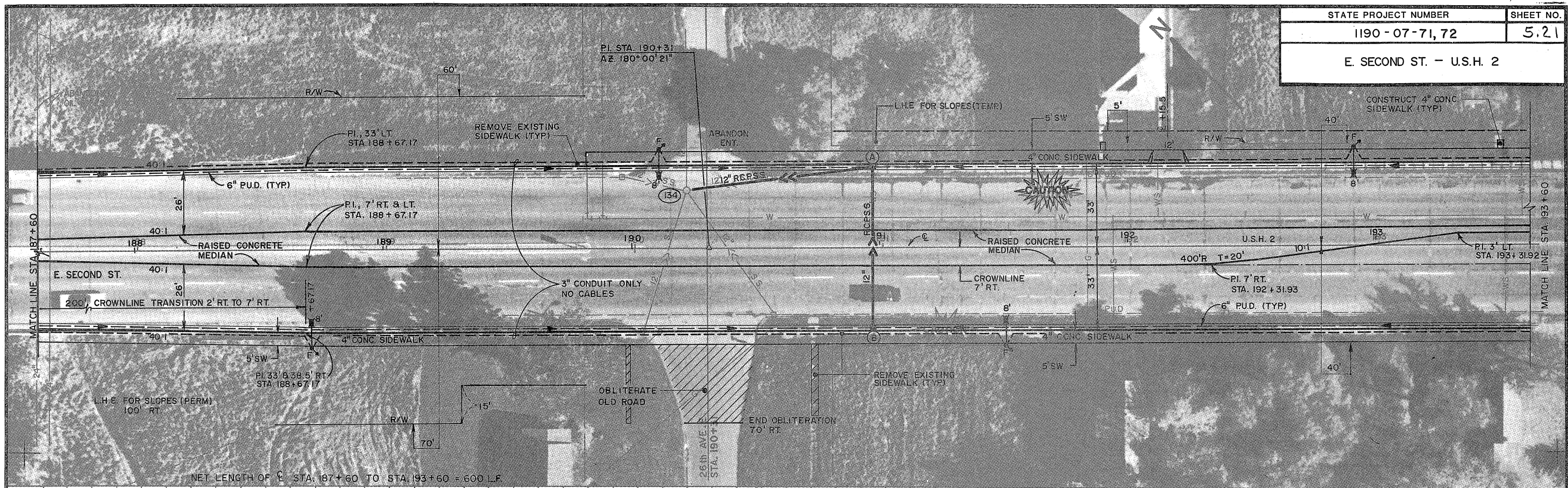
STATE PROJECT NUMBER	1190-10-71, 1190-07-71, 72	SHEET NO.	5.20
E. SECOND ST. - U.S.H. 2			



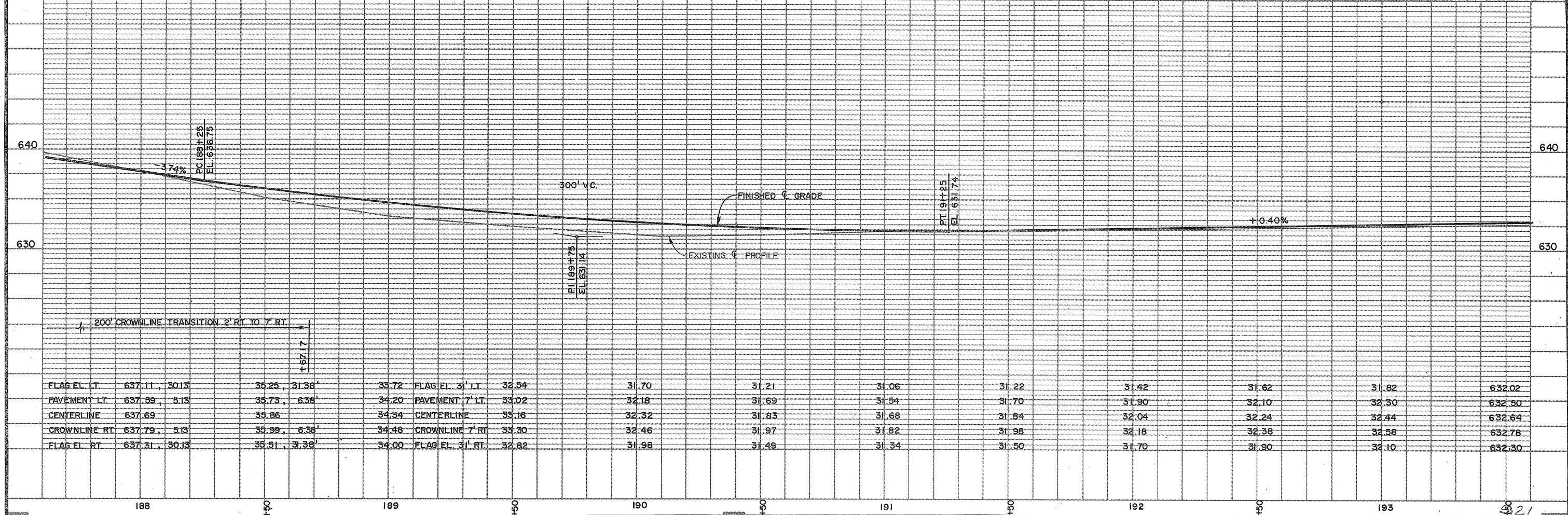
NET LENGTH OF STA 182+00 TO STA 187+60 = 560' L.F.  
 EXCEPTION TO NET LENGTH OF STA 183+63.49 TO STA 186+67.17 = 303.68' L.F.



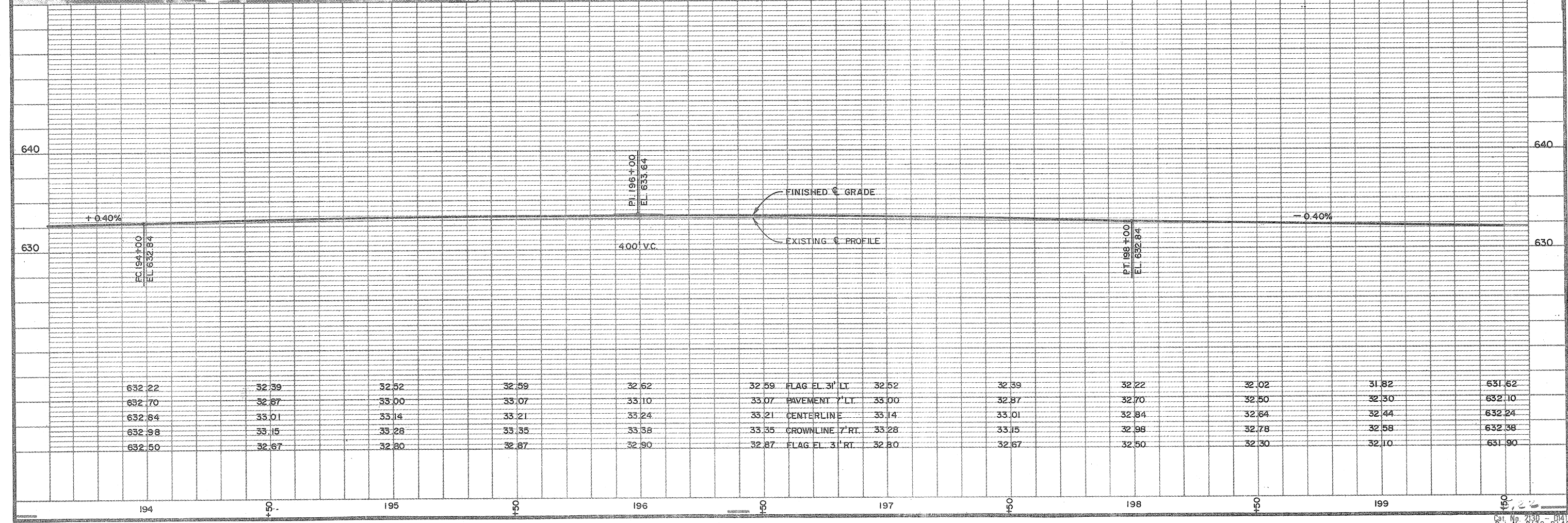
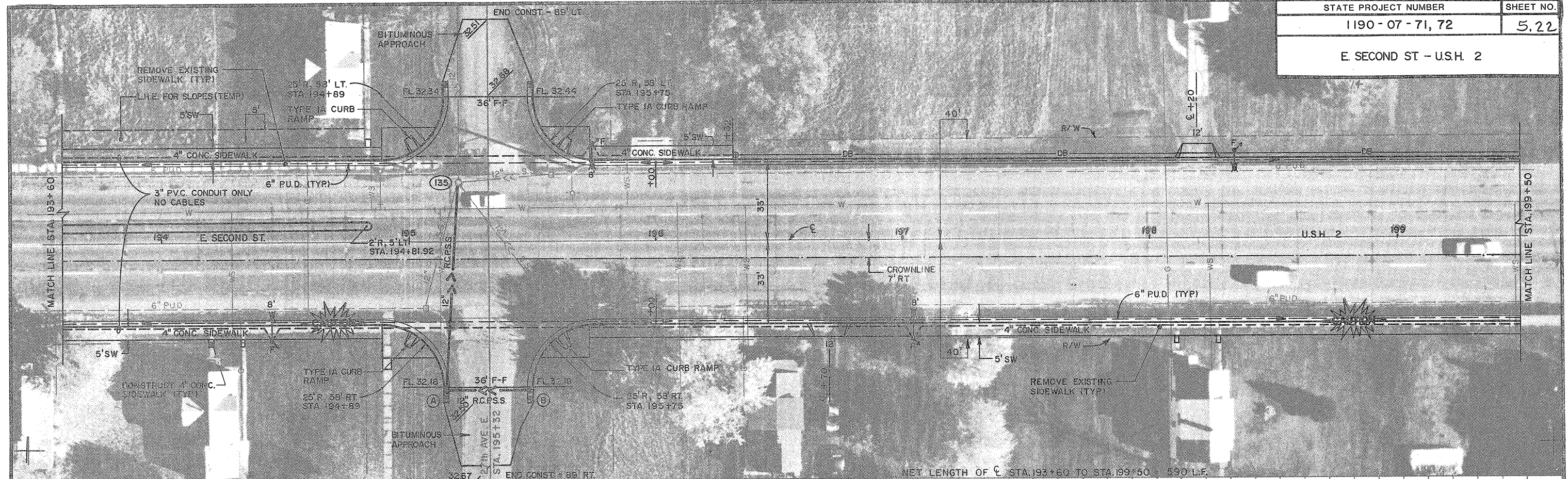
E. SECOND ST. - U.S.H. 2

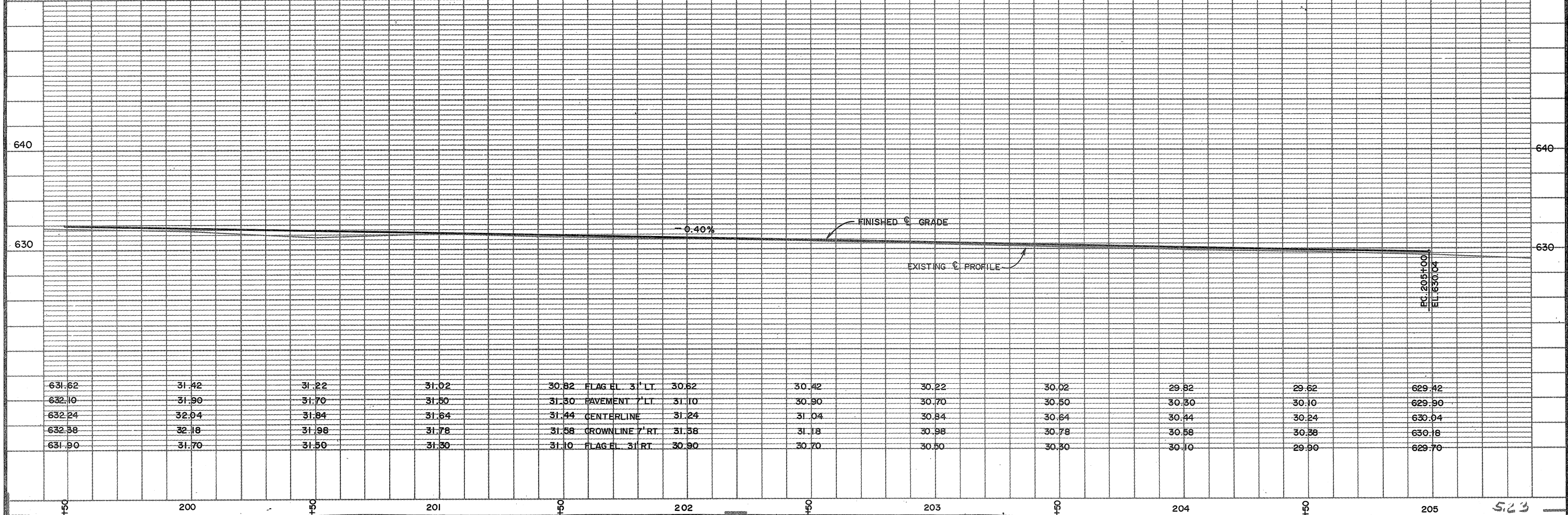
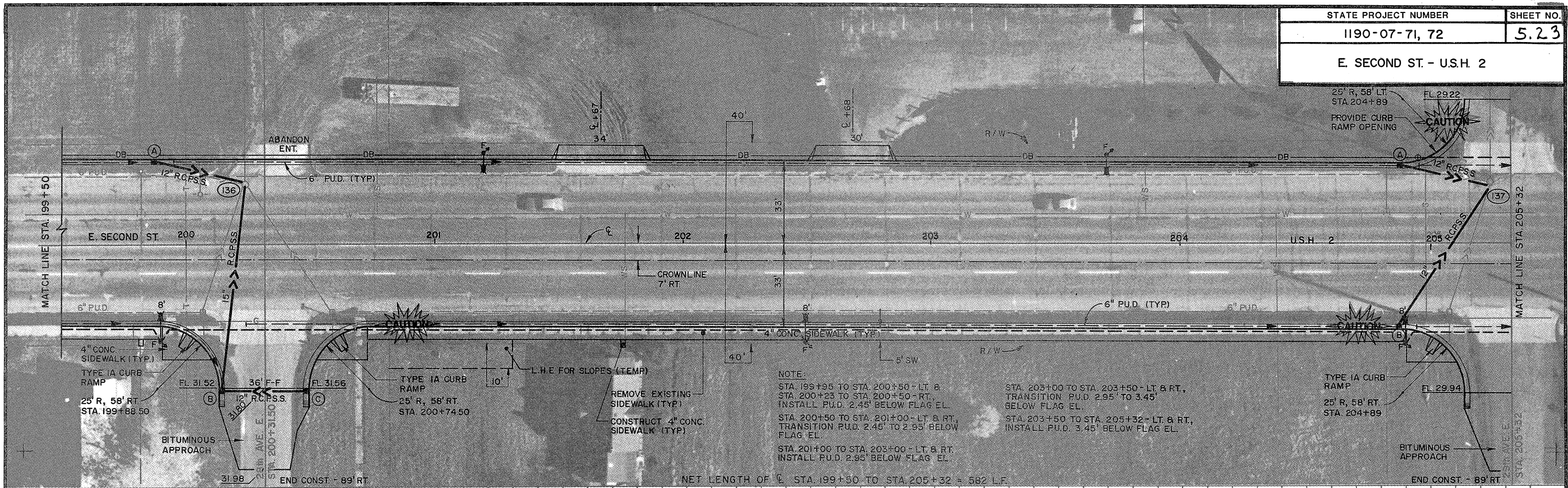


NET LENGTH OF STA. 187+60 TO STA. 193+60 = 600 LF.

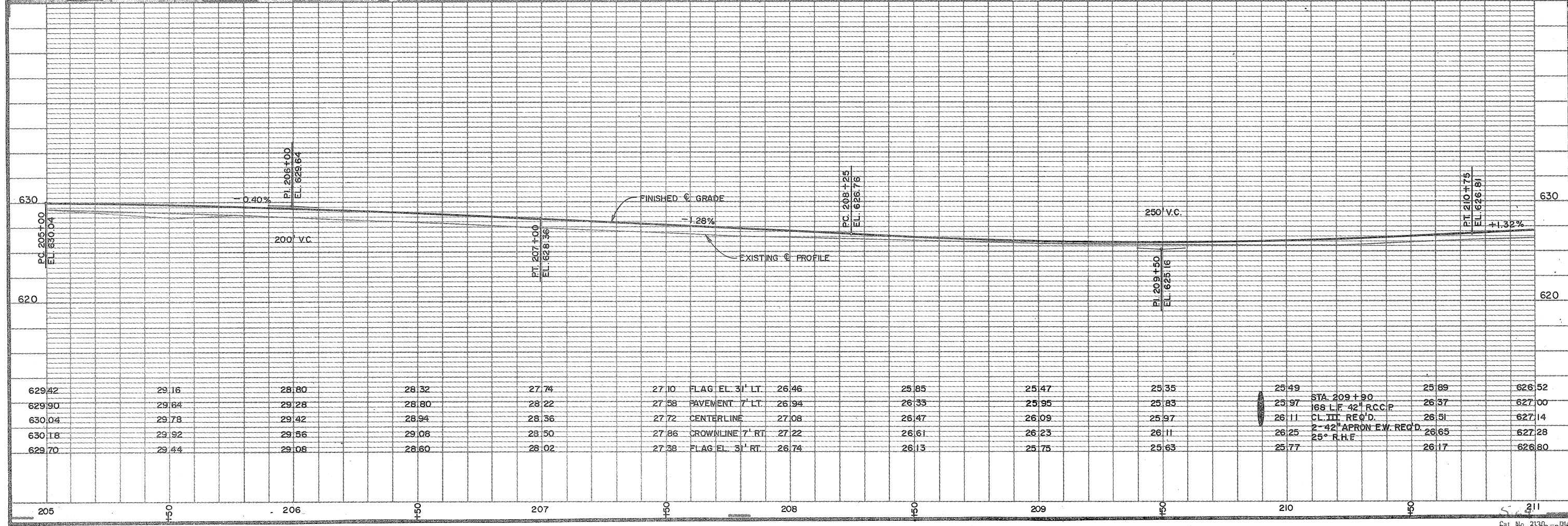


STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5.22
E SECOND ST - U.S.H. 2	





STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5, 24
E. SECOND ST. - U.S.H. 2	

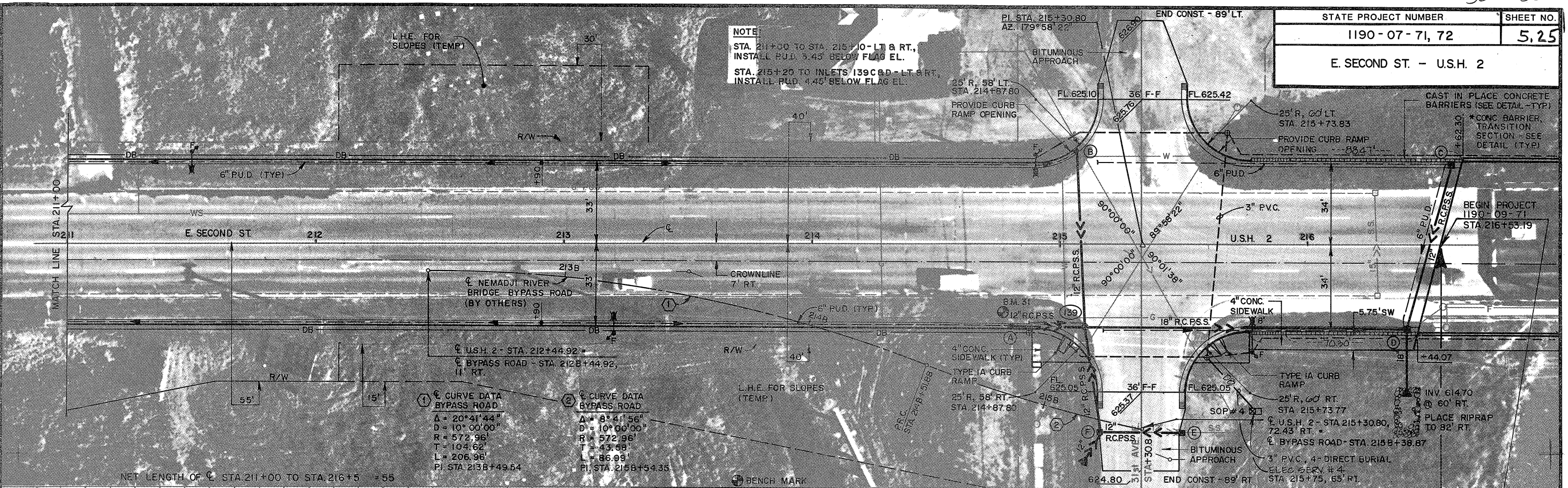




STATE PROJECT NUMBER	SHEET NO.
1190-07-71, 72	5,25
E. SECOND ST. - U.S.H. 2	

**NOTE**

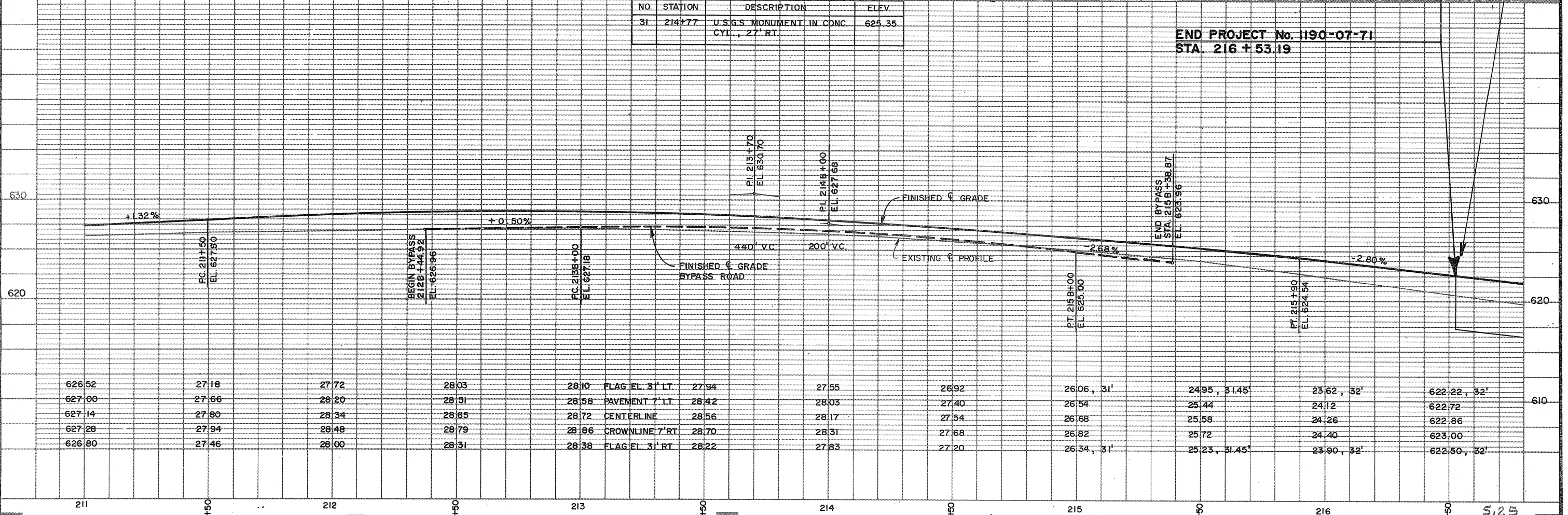
STA. 211+00 TO STA. 215+10 - LT & RT,  
INSTALL P.U.D. 3.45' BELOW FLAG EL.  
STA. 215+20 TO INLETS 139C & D - LT & RT,  
INSTALL P.U.D. 4.45' BELOW FLAG EL.



NET LENGTH OF C STA. 211+00 TO STA. 216+55 = 55

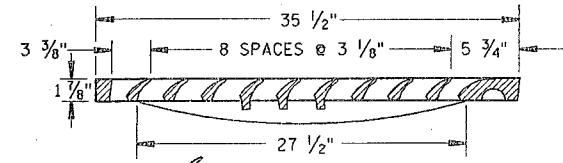
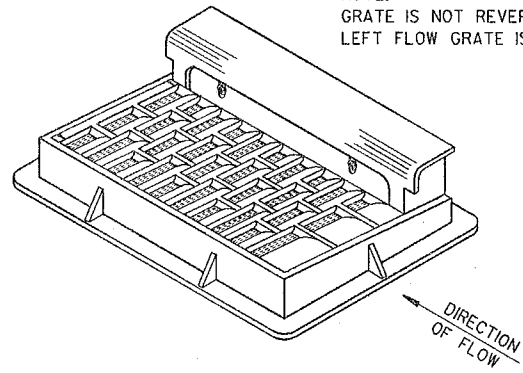
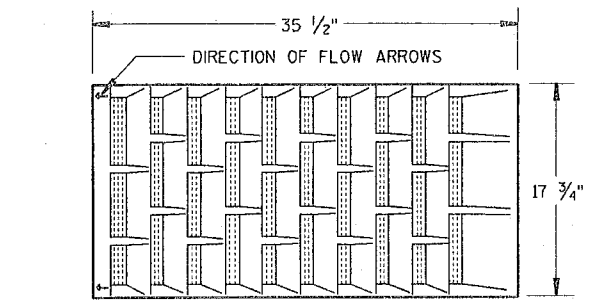
NO.	STATION	DESCRIPTION	ELEV.
31	214+77	U.S.G.S. MONUMENT IN CONC. CYL., 2\"/>	

END PROJECT No. 1190-07-71  
STA. 216 + 53.19

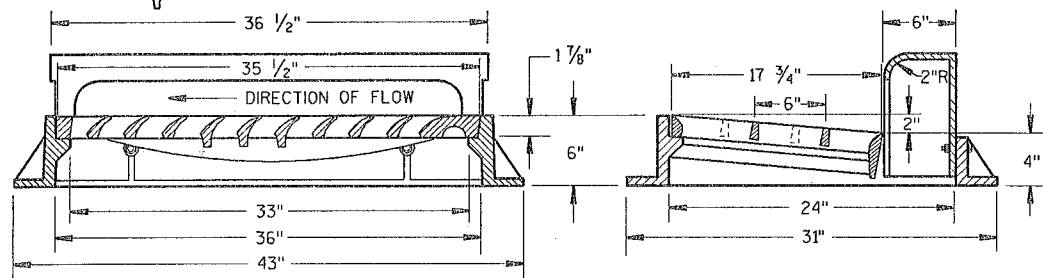


626.52	27.18	27.72	28.03	28.10	FLAG EL. 3' LT.	27.94	27.55	26.92	26.06, 31'	24.95, 31.45'	23.62, 32'	622.22, 32'
627.00	27.66	28.20	28.51	28.58	PAVEMENT 7' LT.	28.42	28.03	27.40	26.54	25.44	24.12	622.72
627.14	27.80	28.34	28.65	28.72	CENTERLINE	28.56	28.17	27.54	26.68	25.58	24.26	622.86
627.28	27.94	28.48	28.79	28.86	CROWNLINE 7' RT.	28.70	28.31	27.68	26.82	25.72	24.40	623.00
626.80	27.46	28.00	28.31	28.38	FLAG EL. 3' RT.	28.22	27.83	27.20	26.34, 31'	25.23, 31.45'	23.90, 32'	622.50, 32'

NOTE:  
GRATE IS NOT REVERSIBLE.  
LEFT FLOW GRATE IS SHOWN

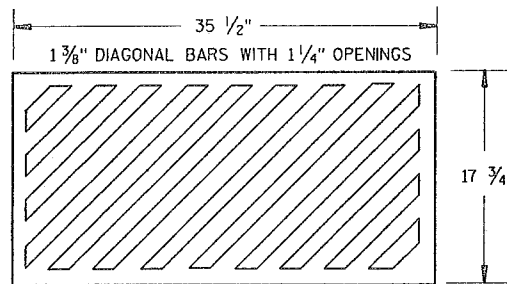


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



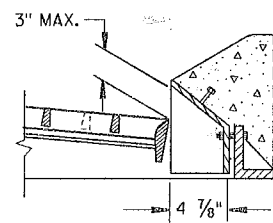
**TYPE "H"**

(APPROXIMATE WEIGHT 510 LBS.)

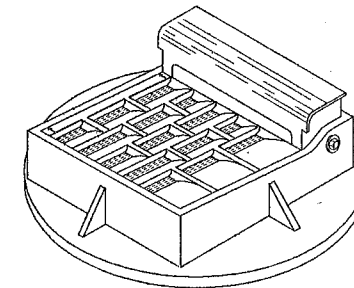
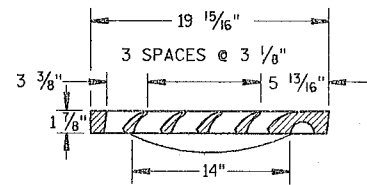
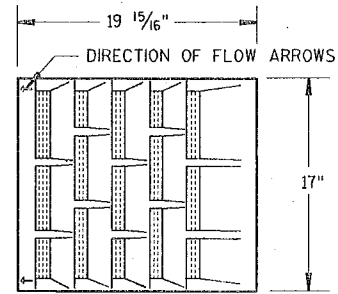


**SPECIAL GRATE NO. 1**

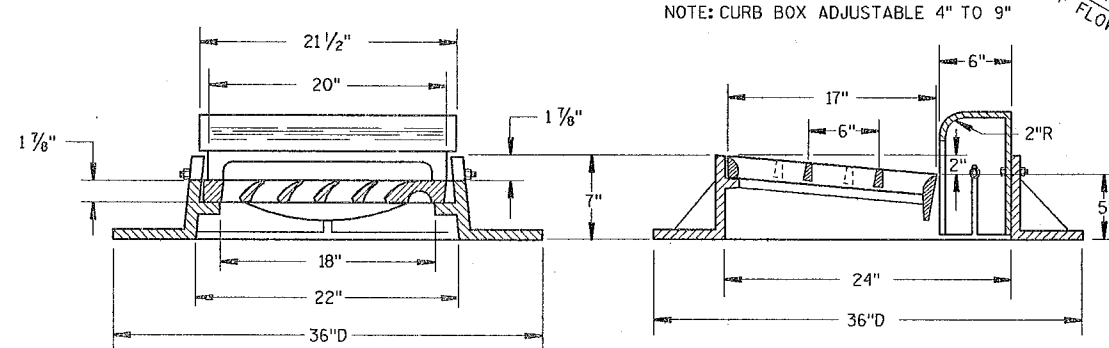
(APPROXIMATE WEIGHT 175 LBS.)  
(NOTE AS TYPE H1 ON DRAINAGE TABLE)



**MOUNTABLE CURB BOX  
FOR TYPES "A" & "H" COVERS**



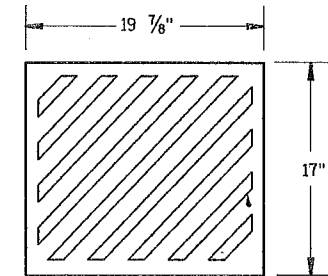
NOTE:  
GRATE IS NOT REVERSIBLE  
LEFT FLOW GRATE IS SHOWN



**TYPE "A"**

(APPROXIMATE WEIGHT 410 LBS.)

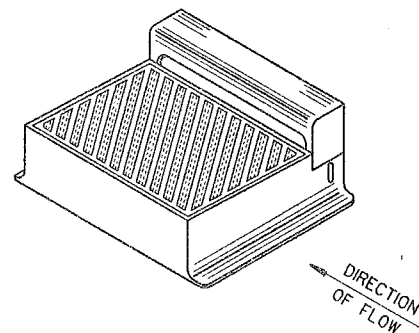
1" DIAGONAL BARS  
WITH 1 1/2" OPENINGS



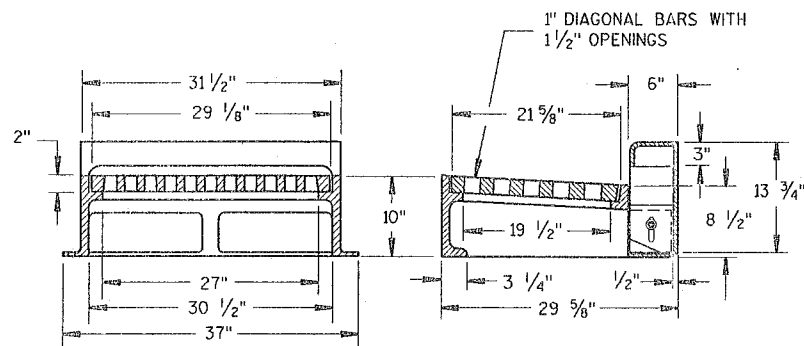
**SPECIAL GRATE NO. 1**

(APPROXIMATE WEIGHT 85 LBS.)

(NOTE AS TYPE A1 ON DRAINAGE TABLE)



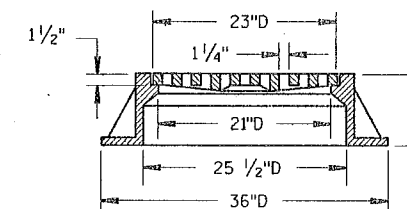
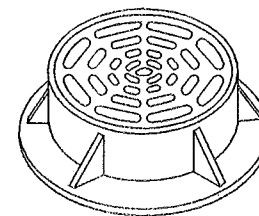
DIAGONAL SLOTS, SHALL BE ORIENTED  
TO THE DIRECTION OF FLOW AS ILLUSTRATED.  
GRATES ARE MANUFACTURED TO BE REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

**TYPE "WM"**

(APPROXIMATE WEIGHT 650 LBS.)



**TYPE "C"**

(APPROXIMATE WEIGHT 365 LBS.)

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL CATCH BASIN, MANHOLE AND INLET COVERS WHICH ARE PLACED IN VEHICULAR TRAFFIC AREAS SHALL BE "NON-ROCKING" TYPE.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

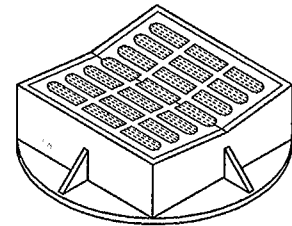
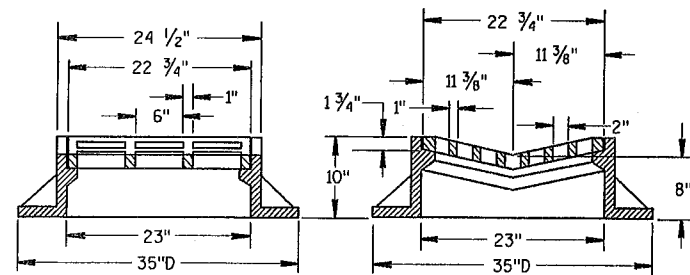
**INLET COVERS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

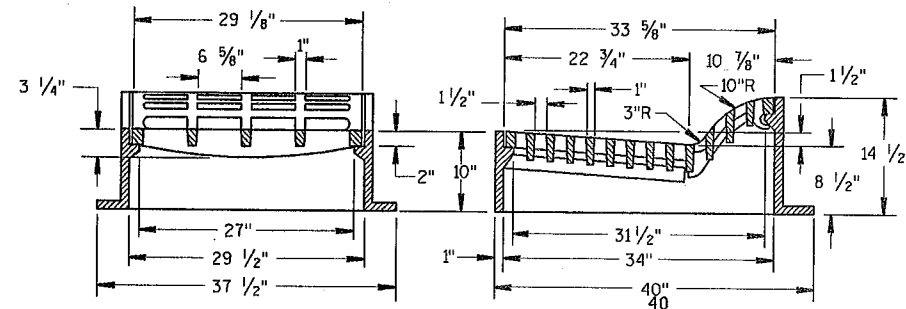
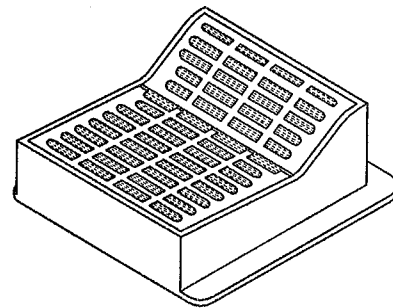
APPROVED  
8-11-88  
DATE

*[Signature]*  
STATE DESIGN ENGINEER FOR HWYS

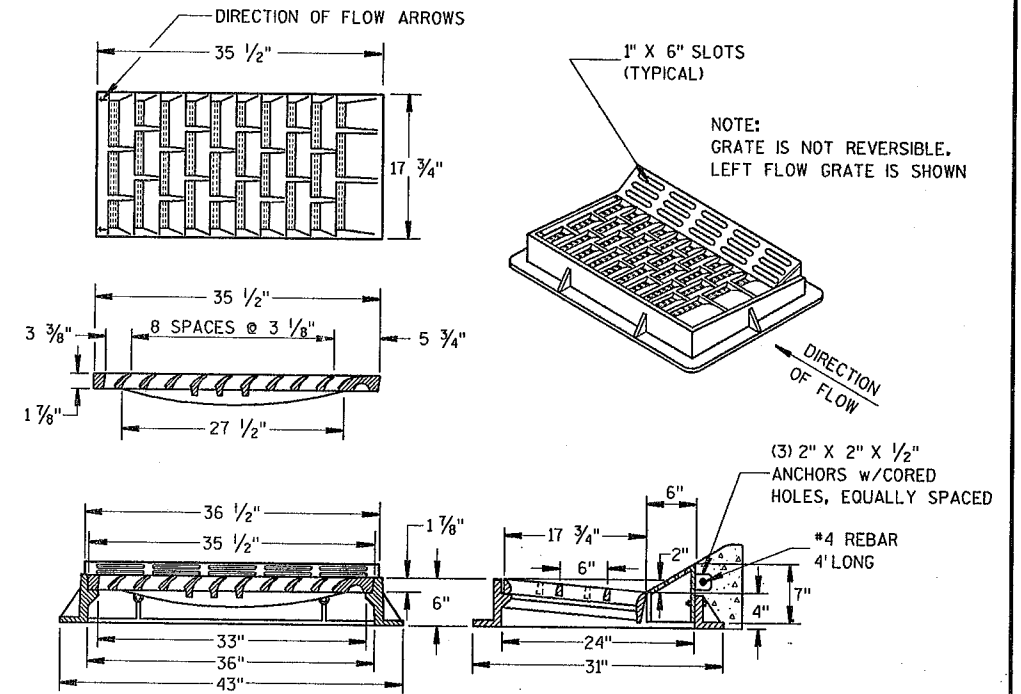
FHWA



**TYPE "B"**  
(APPROXIMATE WEIGHT 400 LBS.)



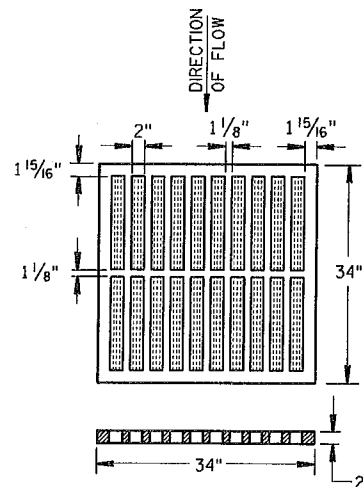
**TYPE "F"**  
(APPROXIMATE WEIGHT 835 LBS.)



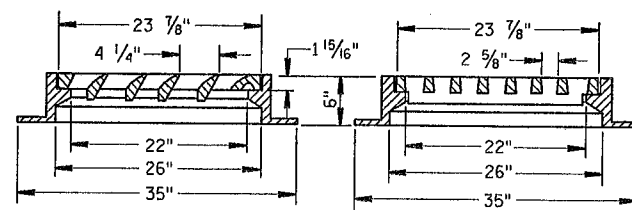
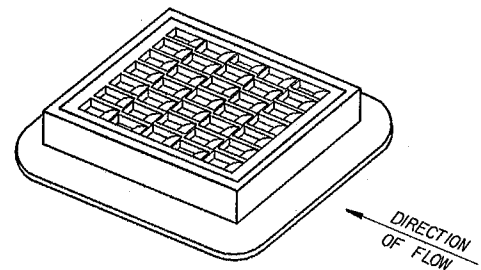
**TYPE "HM"**  
(APPROXIMATE WEIGHT 510 LBS.)

DESIGN NOTES: (WILL NOT APPEAR IN CONTRACT PLANS)

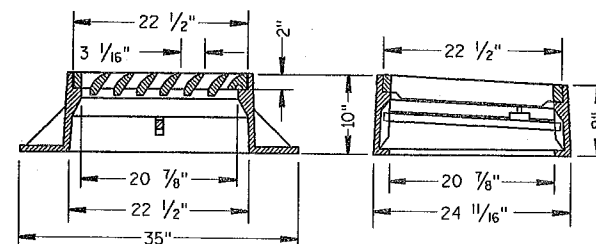
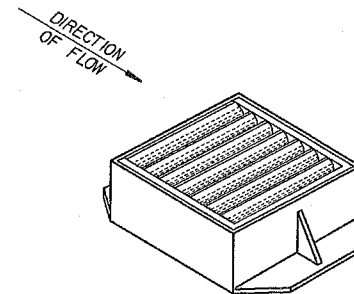
CAUTION: DO NOT USE GRATES WITH LONGITUDINAL SLOTS WHERE BICYCLE TRAFFIC IS PERMITTED



**TYPE "MS"**  
(APPROXIMATE GRATE WEIGHT 285 LBS.)



**TYPE "S"**  
(APPROXIMATE WEIGHT 495 LBS.)



**TYPE "V"**  
(APPROXIMATE WEIGHT 400 LBS.)

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

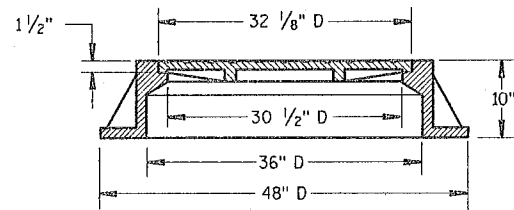
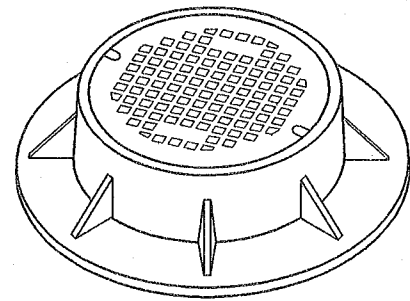
ALL COVERS PLACED IN VEHICULAR TRAFFIC AREAS SHALL BE "NON-ROCKING" TYPE.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

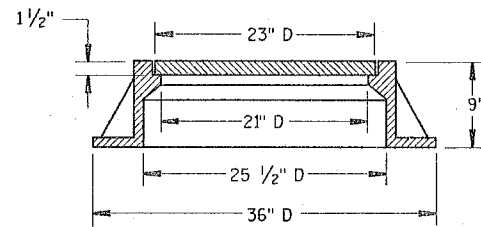
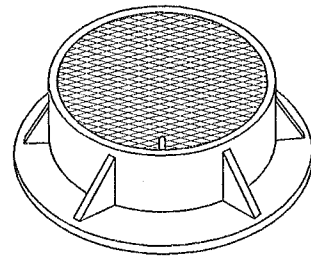
**INLET COVERS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

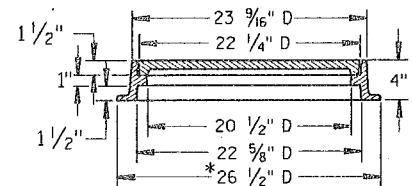
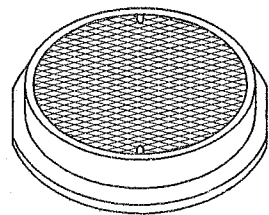
APPROVED  
8-11-88  
DATE  
STATE DESIGN ENGINEER FOR HWYS  
FHWA



**TYPE "K"**  
(APPROXIMATE WEIGHT 775 LBS.)

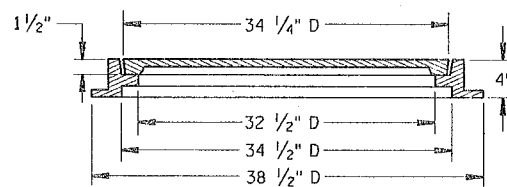
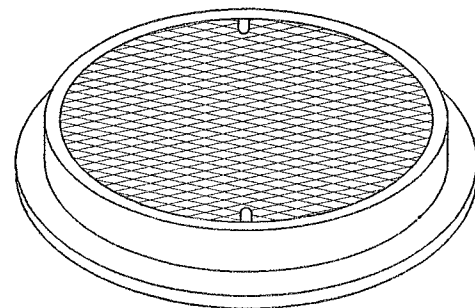


**TYPE "J"**  
(APPROXIMATE WEIGHT 395 LBS.)



\* THIS DIMENSION IS 25 1/2" ON BEVELED SIDE

**TYPE "L"**  
(APPROXIMATE WEIGHT 146 LBS.)



**TYPE "M"**  
(APPROXIMATE WEIGHT 385 LBS.)

**GENERAL NOTES**

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

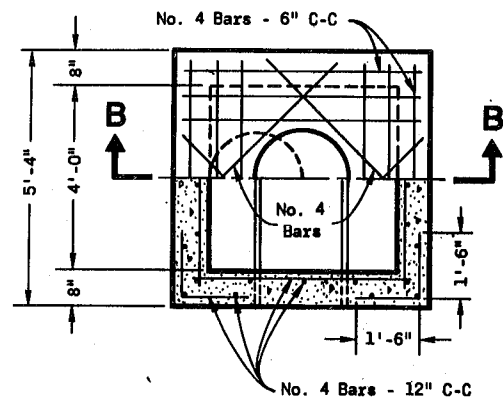
ALL COVERS PLACED IN VEHICULAR TRAFFIC AREAS SHALL BE "NON-ROCKING" TYPE.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

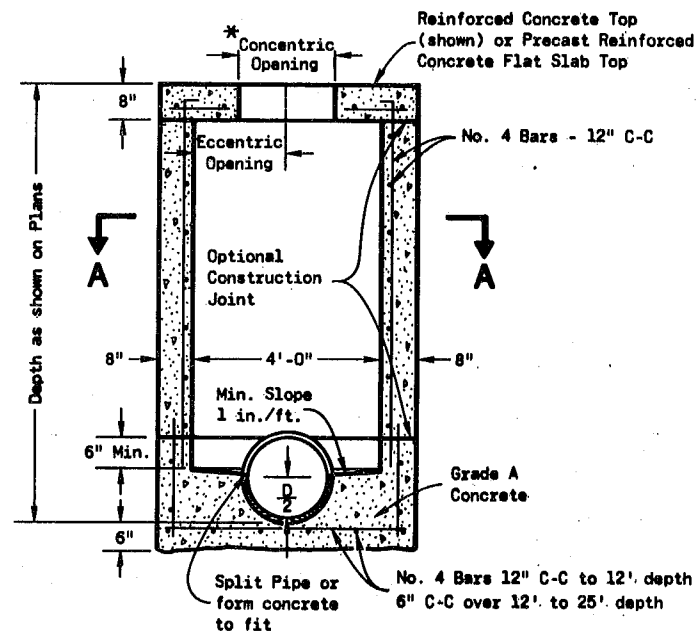
S.D.D. 8 A 5-6c

<b>MANHOLE COVERS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8-11-86 DATE	 STATE DESIGN ENGINEER FOR HWYS
FHWA	

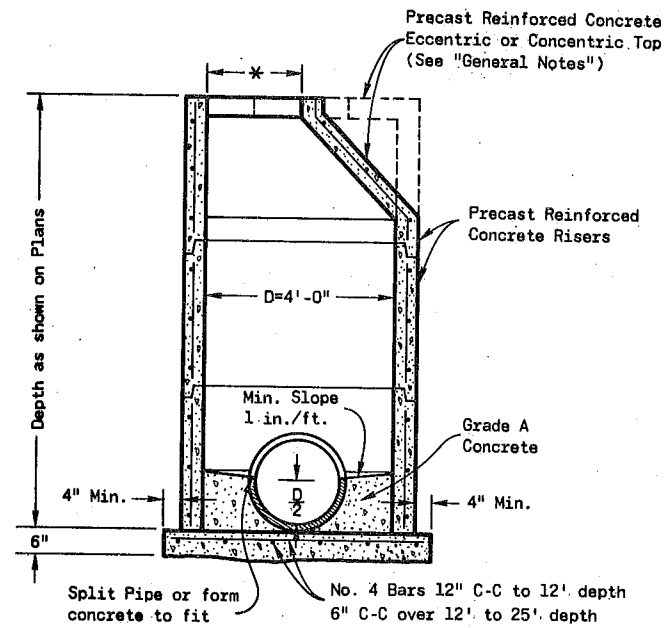
S.D.D. 8 A 5-6c



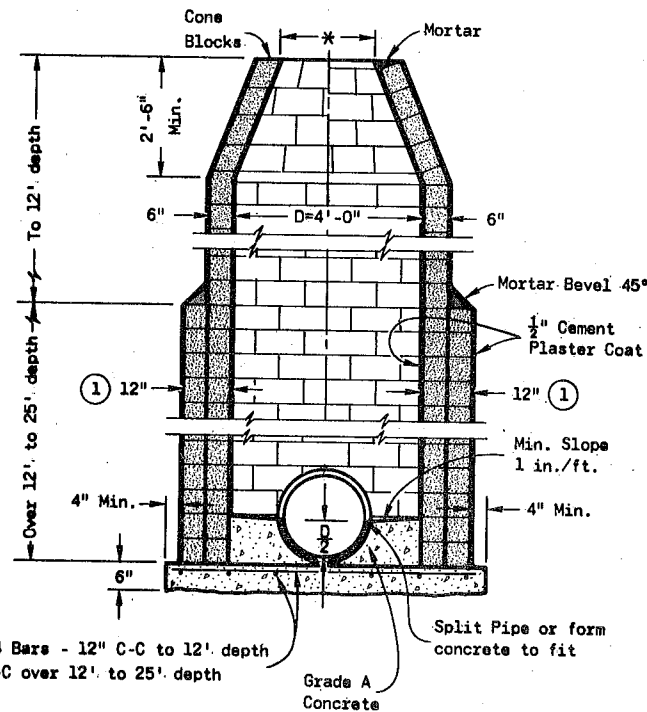
HALF SECTION A-A



SECTION B-B  
REINFORCED CONCRETE



PRECAST REINFORCED CONCRETE



CONCRETE BLOCK

### GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-B", "Inlets 3-H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

Precast Reinforced Bases shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Cone Tops (Eccentric or Concentric) may be used on concrete block structures. The Cone Tops shall be installed on a bed of mortar.

Eccentric Cone Tops may be used on all structures, and Concentric Cone Tops shall be used only on structures 5 feet or less in depth, unless otherwise directed by the Engineer.

Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches; minimum wall embedment of 3 inches; and be capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch. Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to Federal Specification TT-P-645 or equivalent. Steps of approved Polypropylene plastic coated reinforcement bar will be acceptable.

All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers may be placed with tongue up or down.

All Precast Inlet Units shall conform to the pertinent requirements of AASHTO Designation M 199.

\* Use 2'-0" diameter opening with Type "C", "L" and "J" covers, or 3'-0" diameter with Type "K" and "M" covers.

① 2 courses 6" block.

### MANHOLES TYPE 1

MANHOLES TYPE 1

State of Wisconsin  
Department of Transportation

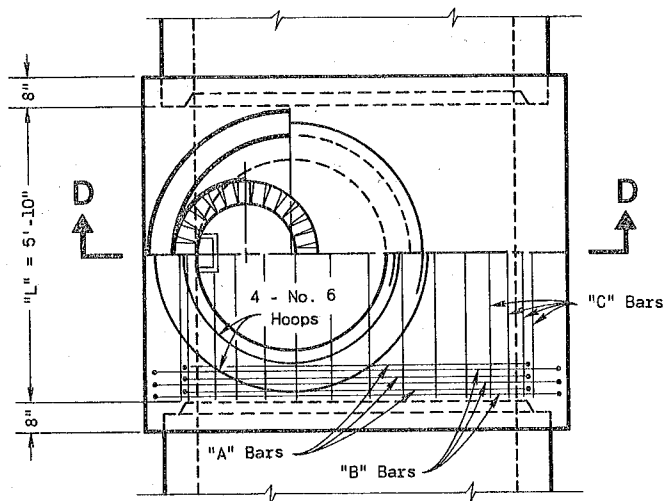
APPROVED  
4-13-82

DATE

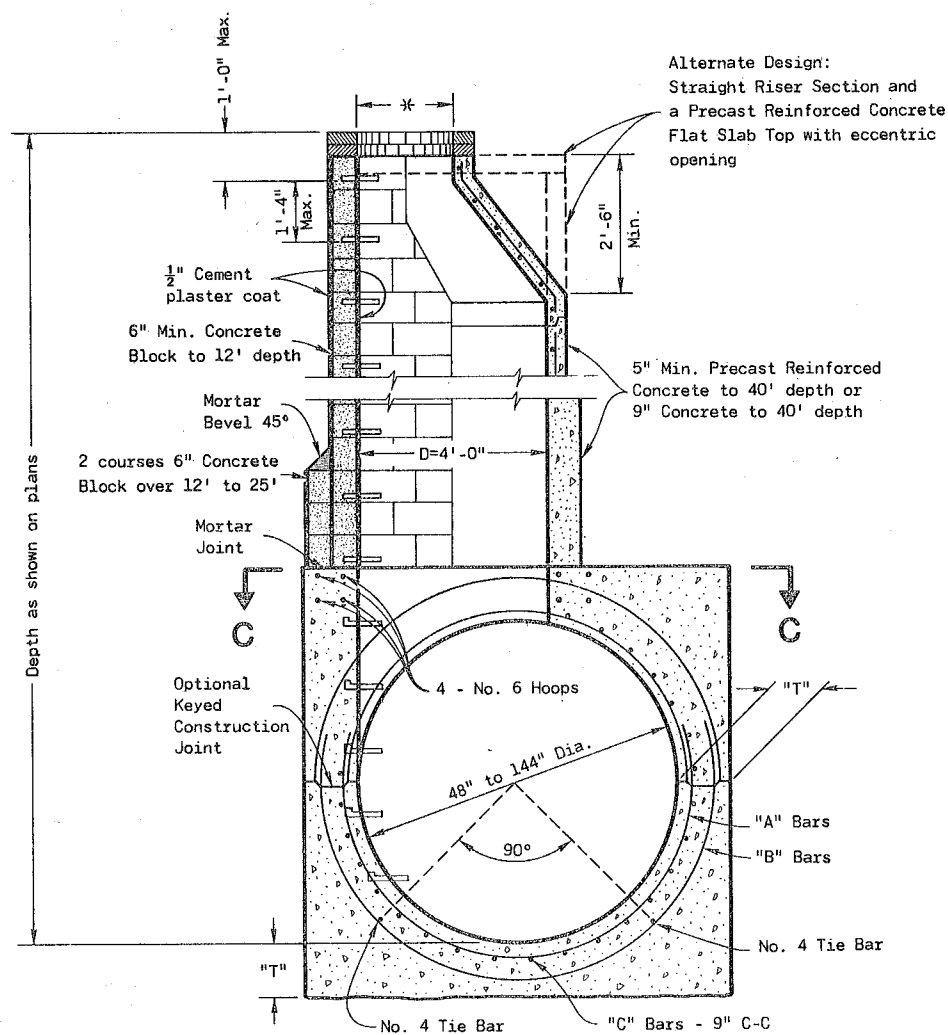
*D. J. Strand*  
CHIEF DESIGN ENGINEER

FHWA

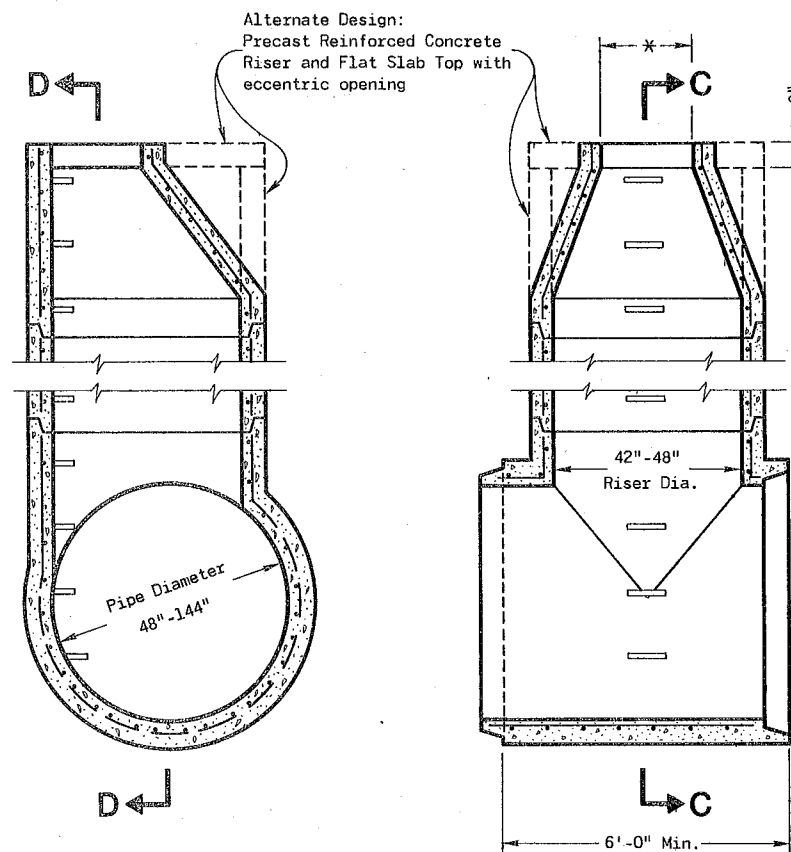
S.D.D. 8 B 6-3



HALF SECTION C-C



SECTION D-D  
MANHOLE TYPE 5



SECTION C-C SECTION D-D

MANHOLE TYPE 6  
PRECAST "T" SECTION

NOTE: All "A", "B", and "C" Bar Steel Reinforcing is the same diameter which varies with depth.  
No. 5 Bars to 20' depth  
No. 6 Bars over 20' to 30' depth  
No. 7 Bars over 30' to 40' depth

The "A" and "B" Bars may be placed in one or two segments, and shall lap 24 Bar Diameters.  
"C" Bars shall have Standard Hooked Ends.

NOTE: "T" throughout length "L" shall be 13" for Pipe Diameter 48" to 84" and 15" for Pipe Diameter greater than 84".

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-B", "Inlets 3-H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

Steps meeting the following requirements shall be installed in all structures over 5 feet in depth: 16 inch C-C maximum spacing; project a minimum clear distance of 4 inches from the wall at the point of embedment; minimum length of 10 inches; minimum wall embedment of 3 inches; and be capable of supporting a concentrated load of 300 lbs. Ferrous metal steps not painted or treated to resist corrosion shall have a minimum cross sectional dimension of 1 inch.

Solid Aluminum steps shall have a minimum cross sectional dimension of 0.75 inch Aluminum surfaces to be embedded in concrete shall be given one coat of suitable quality paint, such as zinc chromate primer conforming to federal specification TT-P-645 or equivalent. Steps of approved Polypropylene plastic coated reinforcement bar are acceptable.

Precast Reinforced Concrete Risers and Eccentric Cones may be used on concrete or concrete block manholes.

Precast sections shall be installed on a bed of mortar.

Precast Reinforced Concrete Risers may be placed with tongue up or down.

All bar steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

\* Use 2'-0" diameter opening with type "C", "L" and "J" covers, or 3'-0" diameter with type "K" and "M" covers.

All Precast Inlet Units shall conform to the pertinent requirements of AASHTO Designation M 199.

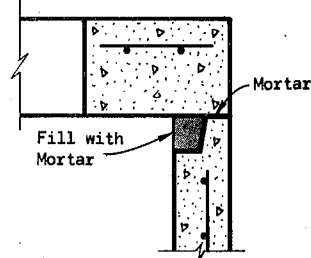
MANHOLES TYPE 5 & 6

State of Wisconsin  
Department of Transportation

APPROVED  
4-13-82  
DATE

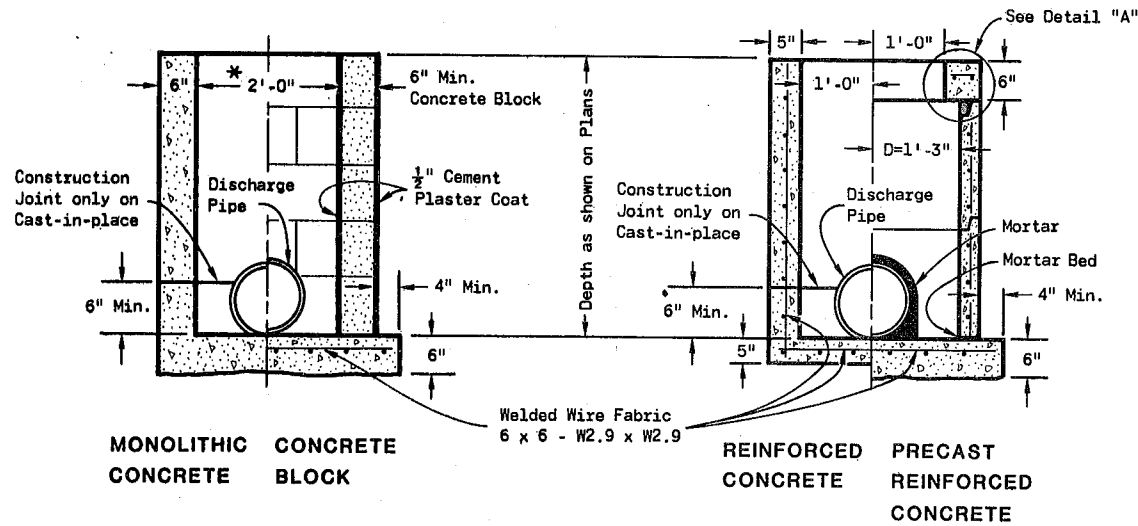
*D. J. Strand*  
CHIEF DESIGN ENGINEER

FHWA



DETAIL "A"

\* Selection of square or circular design will be based on the pipe sizes and the Inlet Cover being utilized.



INLETS TYPE 1

GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Detailed drawings for proposed alternate designs for underground drainage structures shall be submitted to the Engineer for approval providing that such alternate designs make provision for equivalent capacity and strength.

All Precast Inlet units shall conform to the pertinent requirements of AASHTO Designation M 199.

All drainage structures are designated on the plans as "Manholes 1-C", "Catch Basins 1-B", "Inlets 3-H", etc. The first digit designates the masonry portion of the structure, and the following letter designates the type of cover to be used to comprise the complete unit.

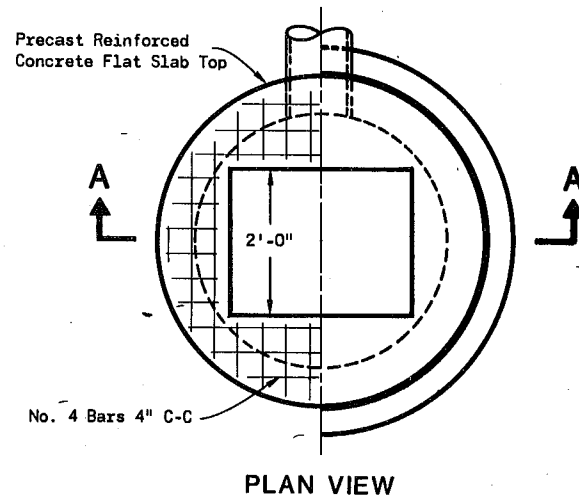
Precast Reinforced Bases shall be placed on a bed of material at least 6 inches in depth, which meets the requirements for Granular Backfill. This bedding shall be compacted and provide uniform support for the entire area of the base.

Precast Reinforced Concrete Flat Slab Tops may be used on the structures. The Tops shall be installed on a bed of mortar.

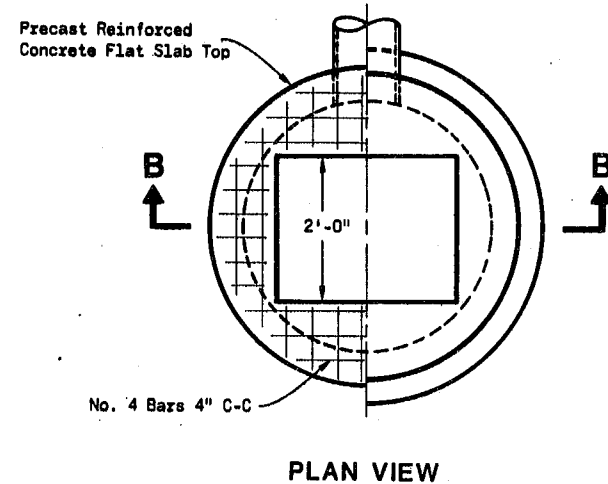
All Bar Steel reinforcement shall be embedded 2 inches clear unless otherwise shown or noted.

Precast Reinforced Concrete Risers shall be placed with tongue down.

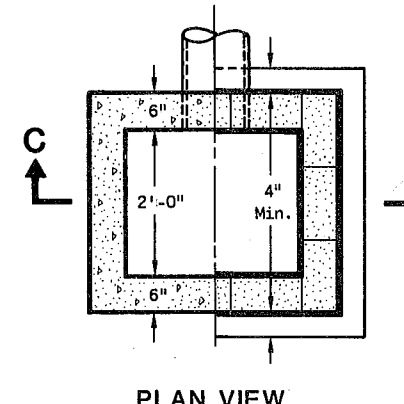
① Use 2'-6" opening for Type 2 Inlets and 3'-0" opening for Type 3 Inlets.



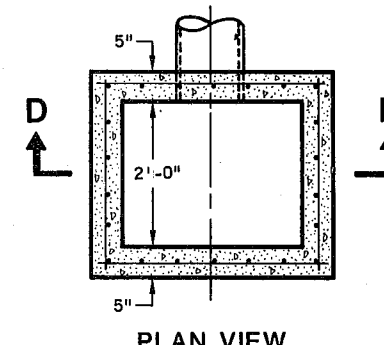
PLAN VIEW



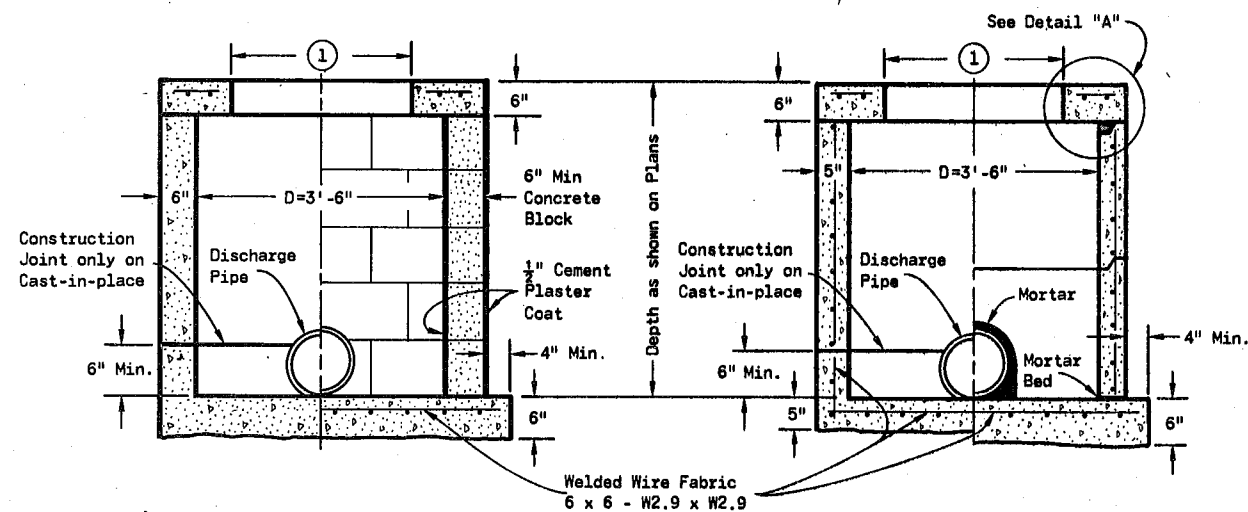
PLAN VIEW



PLAN VIEW



PLAN VIEW

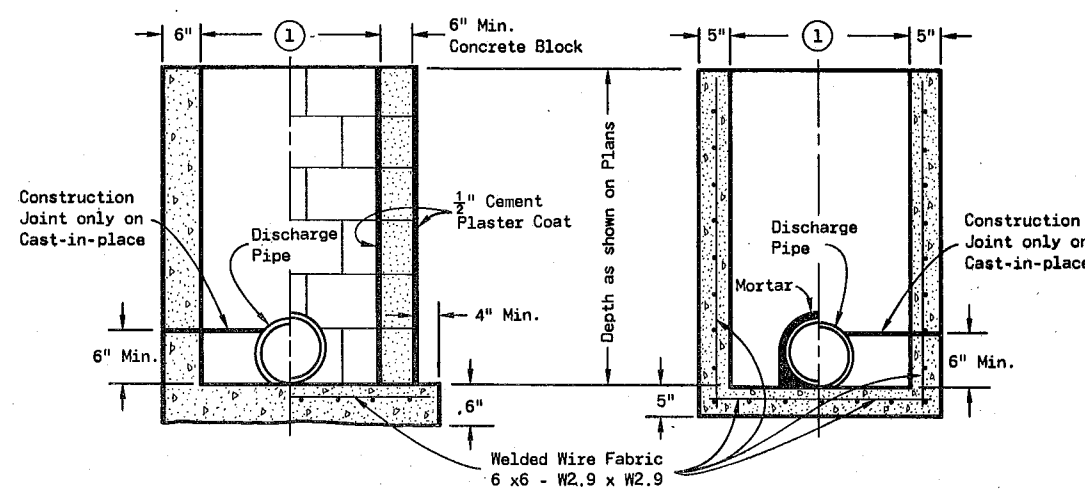


MONOLITHIC CONCRETE CONCRETE BLOCK

SECTION A-A

REINFORCED CONCRETE PRECAST REINFORCED CONCRETE

SECTION B-B



MONOLITHIC CONCRETE CONCRETE BLOCK

SECTION C-C

PRECAST REINFORCED CONCRETE REINFORCED CONCRETE

SECTION D-D

INLETS TYPE 2 & 3

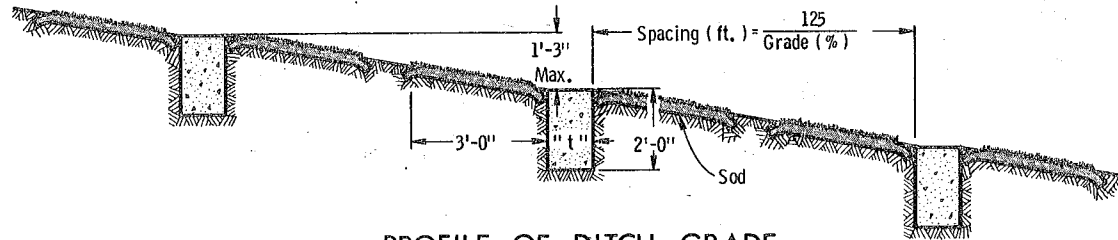
INLETS TYPE 1, 2 & 3

State of Wisconsin  
Department of Transportation

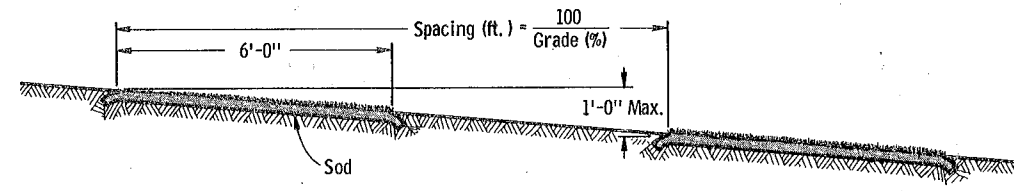
APPROVED  
4-13-82  
DATE

*D. Strand*  
CHIEF DESIGN ENGINEER

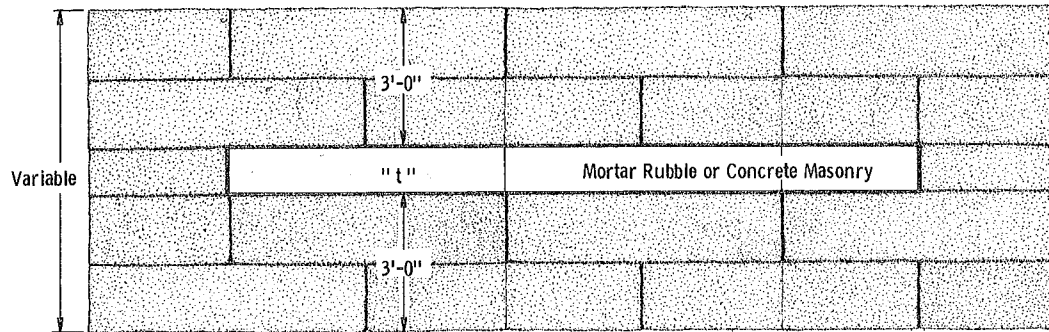
FHWA



PROFILE OF DITCH GRADE



PROFILE OF DITCH GRADE



PLAN VIEW SHOWING MASONRY AND SOD

"t" - Masonry thickness shall be 0'-9" for concrete and 1'-0" for mortar rubble.



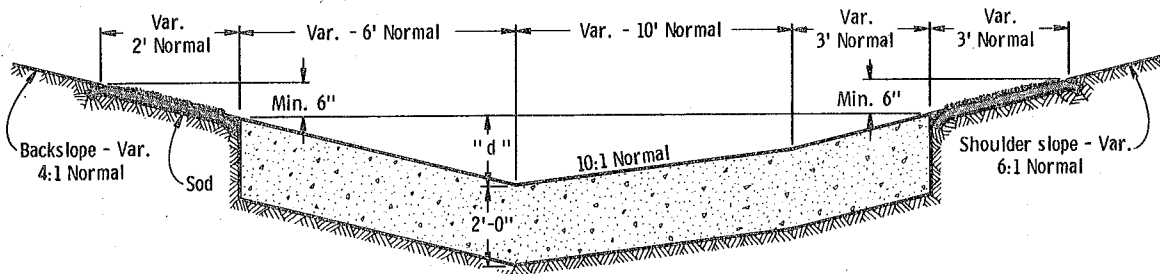
PLAN VIEW SHOWING SOD

**GENERAL NOTES**

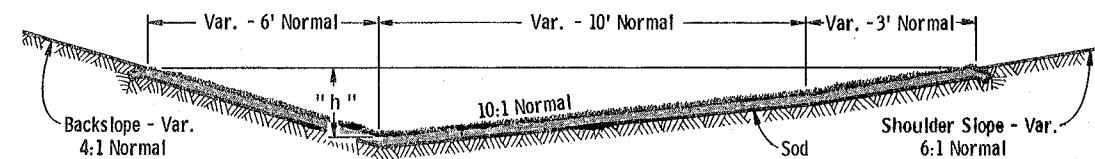
Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Alternate designs for ditch checks, of the material or combination of materials shown hereon, may be used upon written permission of the Engineer.

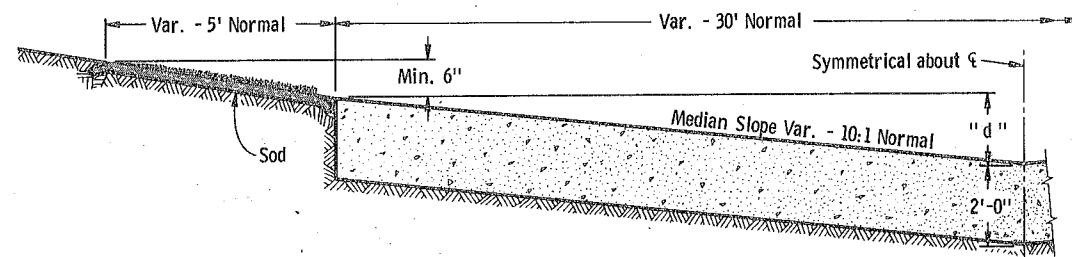
Sod strips for ditch checks may be placed either transversely or longitudinally to the direction of water flow.



SIDE DITCH CROSS SECTION

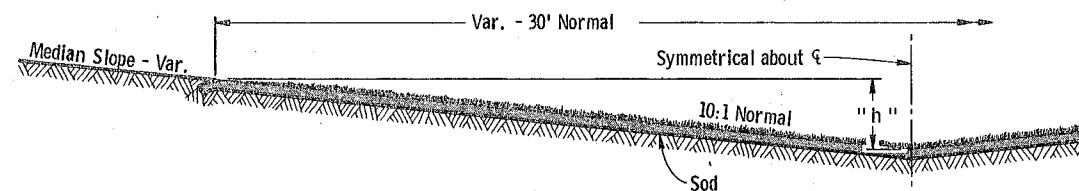


SIDE DITCH CROSS SECTION



MEDIAN DITCH CROSS SECTION

"d" - The minimum depth of the masonry portion of the ditch checks shall be equal to the maximum depth of flow. The normal "d" will be 1'-6".



MEDIAN DITCH CROSS SECTION

"h" - The minimum height of ditch to be sodded shall be equal to the maximum depth of flow plus 6". The normal "h" will be 1'-6".

**MASONRY AND SOD DITCH CHECKS**

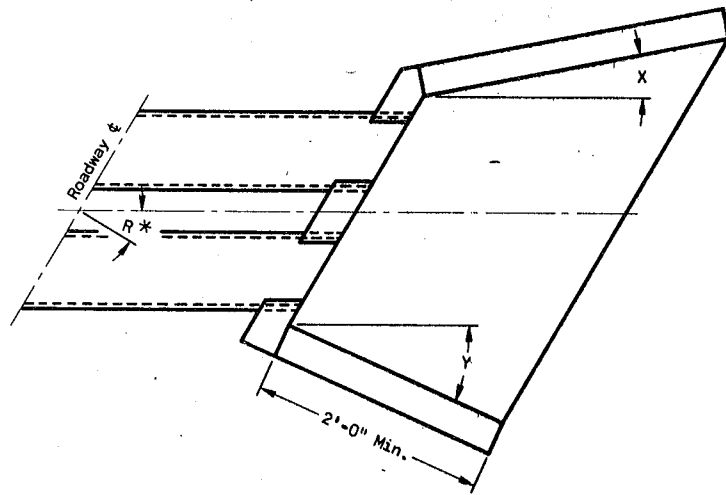
**SOD DITCH CHECKS**

**SOD OR MASONRY AND SOD DITCH CHECKS**

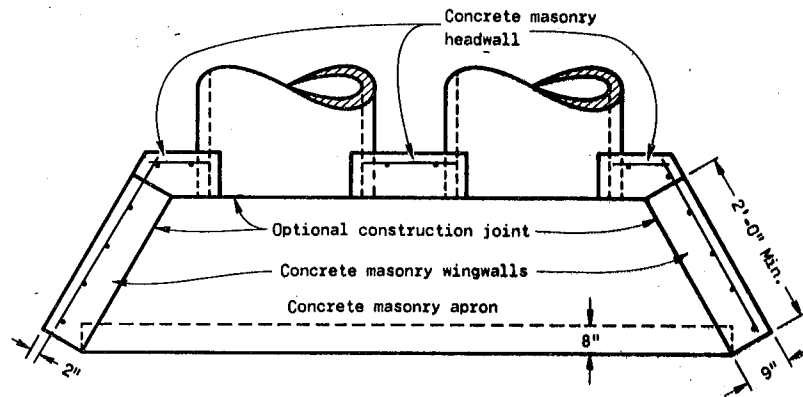
State of Wisconsin  
Department of Transportation  
Division of Highways

RECOMMENDED FOR APPROVAL:  
DATE 9/7/71  
APPROVED: [Signature]  
DATE 9/7/71  
[Signature]  
STATE HIGHWAY ENGINEER



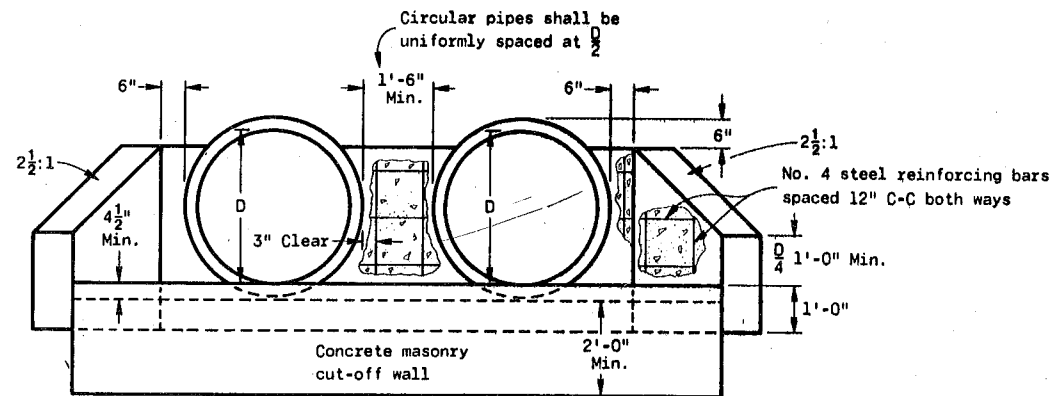


WINGWALL ANGLE DETAILS



PLAN VIEW

CIRCULAR PIPE AND PIPE ARCH



END ELEVATION

CIRCULAR PIPE

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	over 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
over 82°	0°	"			

\*R = Number of degrees right or left hand forward.

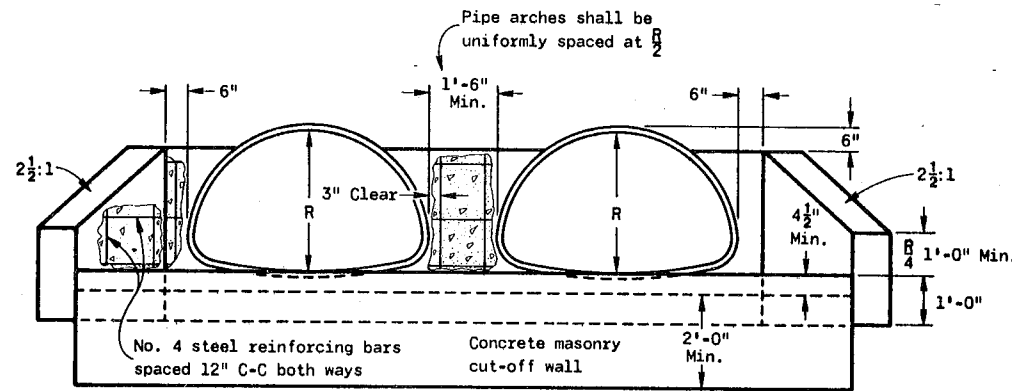
GENERAL NOTES

Details of construction, materials and workmanship not shown on this drawing shall conform to the pertinent requirements of the Standard Specifications and the applicable Special Provisions.

Fill slopes flatter than 2½:1 shall be warped to meet the top of the wingwall.

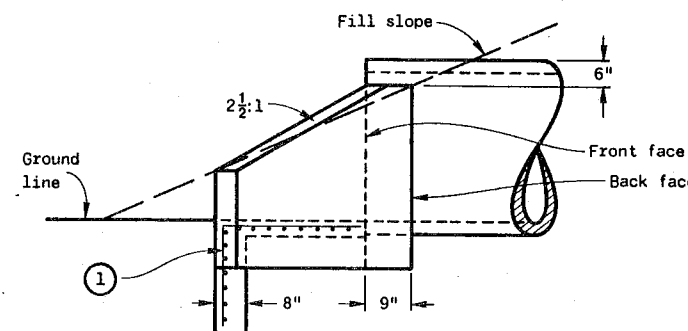
All steel reinforcement and welded steel wire fabric shall be embedded 2 inches clear unless otherwise noted.

① Minimum reinforcement shall be 6"x 6"- W4.0 x W4.0 or No. 3 bars longitudinal and transverse spacing 12" c-c.



END ELEVATION

PIPE ARCH



SIDE ELEVATION

CIRCULAR PIPE AND PIPE ARCH

CONCRETE MASONRY ENDWALLS  
(CIRCULAR PIPE & PIPE ARCHES)

State of Wisconsin  
Department of Transportation

APPROVED  
3-25-83  
DATE

*D. J. Strand*  
CHIEF DESIGN ENGINEER

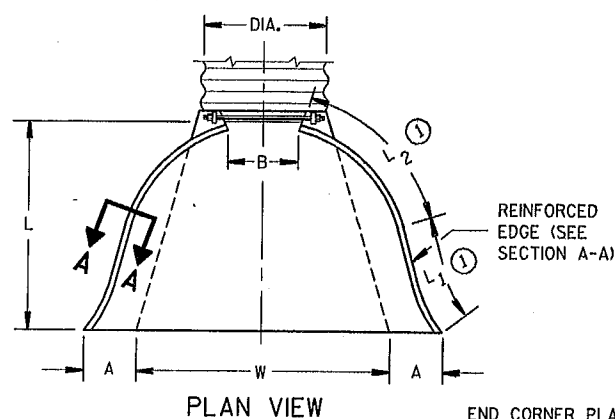
FHWA

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L <sub>1</sub> (1)	L <sub>2</sub> (1)	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 3/8	42	2 1/2 to 1	1 Pc.
24	.079	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.109	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/2 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/2 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

\* EXCEPT CENTER PANEL SEE GENERAL NOTES

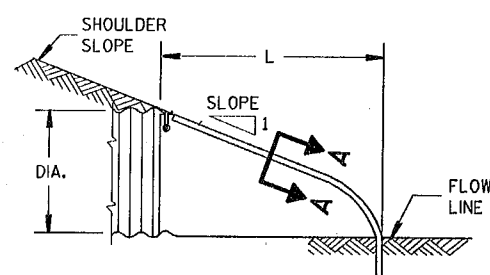
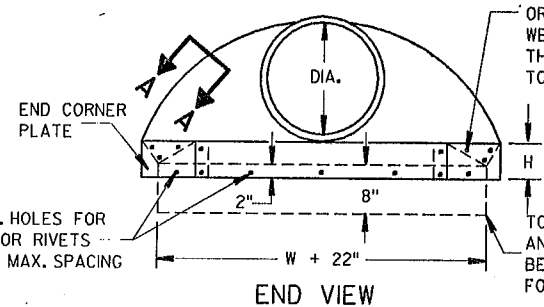
REINFORCED CONCRETE APRON ENDWALLS										
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE		
	T	A	B	C	D	E	G			
12	2	4	24	48 3/8	72 7/8	24	2	3 to 1		
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1		
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1		
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1		
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1		
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1		
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1		
36	4	15	63	34 3/4	97 1/4	72	4	3 to 1		
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1		
48	5	24	72	26	98	84	5	3 to 1		
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 3/4 to 1		
60	6	30-35	60	39	99	96	5	2 to 1		
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1		
72	7	24-36	78	21	99	108	6	2 to 1		
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1		
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1		
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1		

\* MINIMUM  
\*\* MAXIMUM

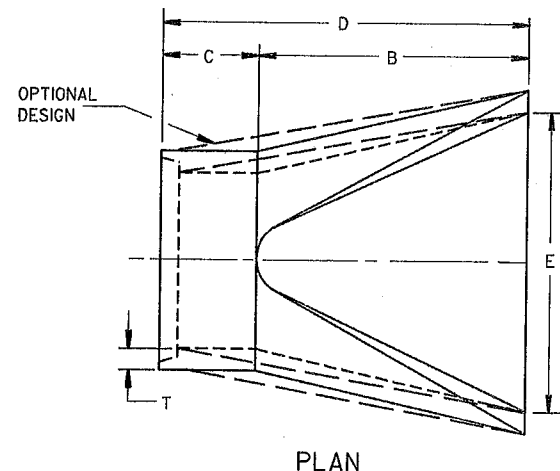


END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

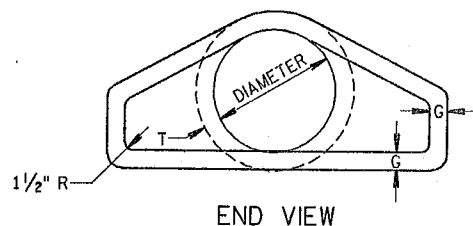
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



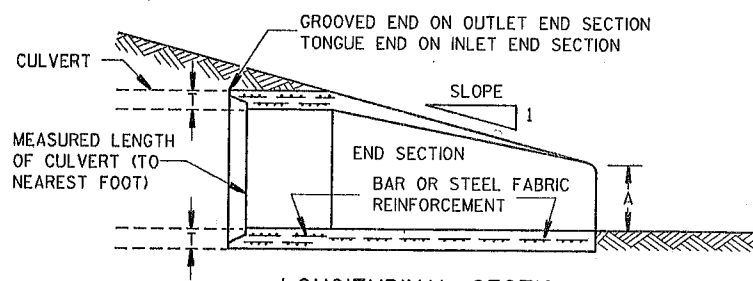
SIDE ELEVATION METAL ENDWALLS



PLAN

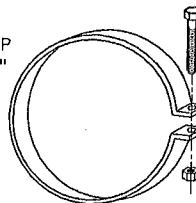


END VIEW

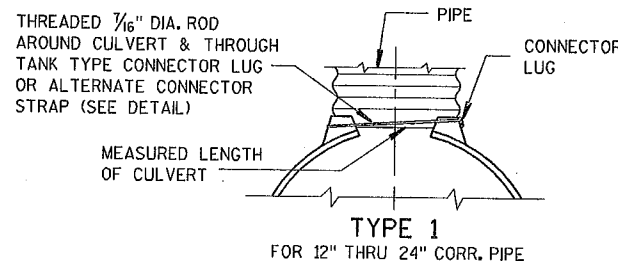


LONGITUDINAL SECTION CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



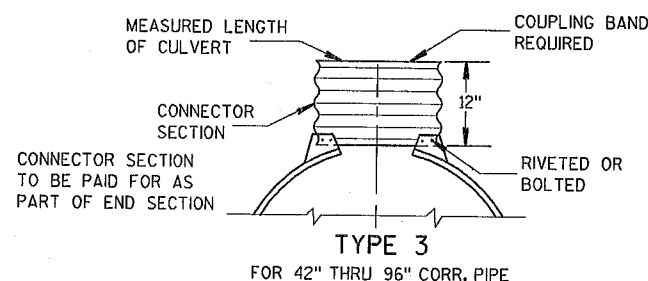
ALTERNATE FOR TYPE 1 CONNECTION END SECTION CONNECTOR STRAP



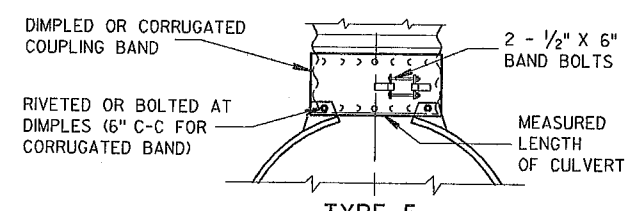
TYPE 1 FOR 12" THRU 24" CORR. PIPE



TYPE 2 FOR 30" THRU 96" CORR. PIPE



TYPE 3 FOR 42" THRU 96" CORR. PIPE



ALTERNATE FOR: ALL SIZES CORRUGATED CIRCULAR PIPE

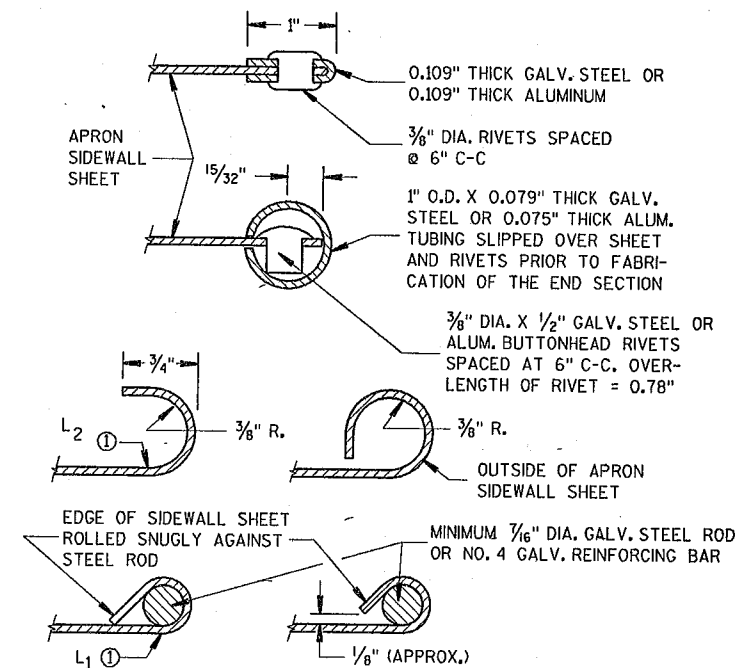
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VICE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED 12/17/87 DATE

STATE DESIGN ENGINEER FOR HWYS

FHWA