Joe Meade D-6 Soils

5510-59

Received MAR 2 1989 District Engineer Rochester

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, BASE, BITUMINOUS PAVING & SIGNALS

LOCATED ON T.H. 63 FROM 23RD ST. N.E. IN ROCHESTER TO 1.1 MI. NO. OF CO. RD. 124 N. OF ROCHESTER

STATE PROJ. NO. 5510-59 (T.H. 63=59)
MINN. PROJ. NO. _____

GROSS LENGTH	15554.14	FEET	2.946 MILES
BRIDGES-LENGTH	NONE	FEET	MILES
EXCEPTIONS-LENGTH	5389.04	FEET	1.021 MILES
NET LENGTH	10165.10	FEET	1.925 MILES

MILE POINT 42 + 00.404 TO MILE POINT 45 + 00.216
LENGTH & DESCRIPTION BASED ON SOUTHBOUND ℄

STATE PROJ. NO. _____
MINN. PROJ. NO. _____

GROSS LENGTH		FEET	MILES
BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH		FEET	MILES
MILE POINT		TO MILE POINT	

EQUATIONS

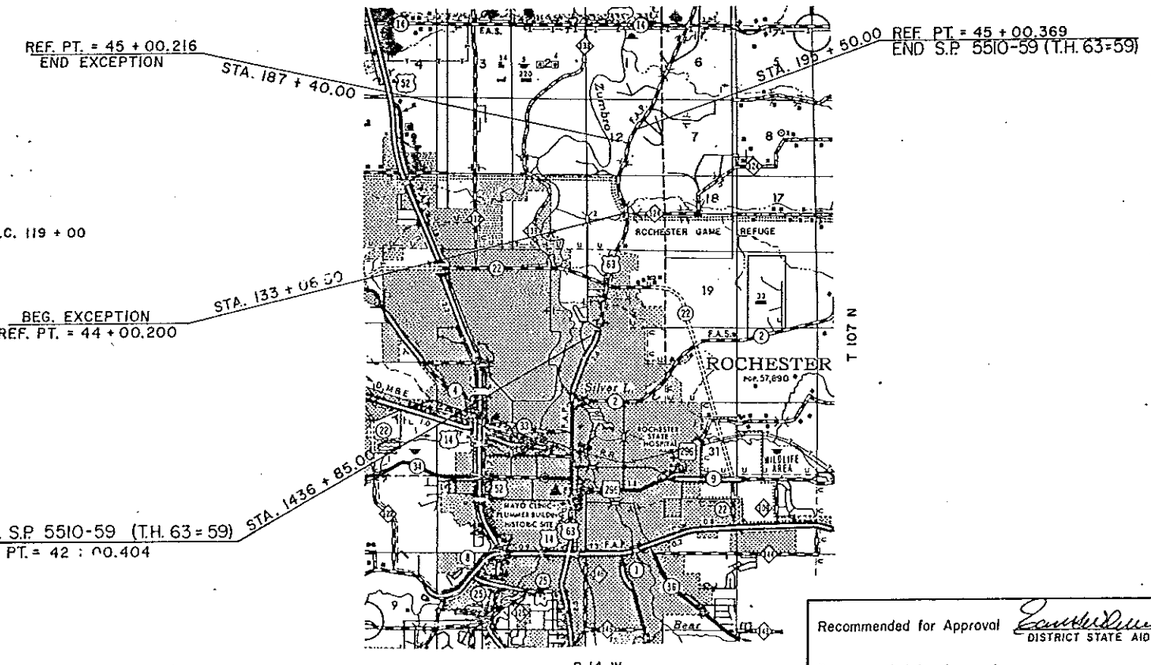
SOUTHBOUND	NORTHBOUND
L^ORI S.T. 1446 + 93.92 = L^ORI P.O.T. 49 + 53.10	P.O.T. 1447 + 16.96 = P.O.T. 49 + 53.10
L^ORI P.T. 60 + 84.64 = L^ORI P.O.T. 60 + 84.94	P T. 60 + 84.20 = P O.T. 60 + 87.06
L^ORI P.O.T. 78 + 49.10 = L^ORI P.O.T. 78 + 51.41	P.O.T. 104 + 96.46 = P.O.T. 105 + 21.33
L^ORI S.T. 105 + 14.72 = L^OR P.O.T. 105 + 21 33	P.O.T. 119 + 03.77 = A POINT 12.0' RT. OF L^OR3 P.O.C. 119 + 00
L^OR P.O.T. 113 + 47 26 = L^OR3 T.S 113 + 47.26	
L^OR3 S.T. 138 + 41.28 = L^OR3 P.O.T 138 + 42.29	
L^OR3 S.T. 165 + 60.00 = L^OR3 P.O.T. 165 + 61.87	
L^OR3 S.T. 176 + 80.19 = L P.O.T. 177 + 19.77	
L P.O.T. 182 + 67.47 = L^OR4 T.S. 182 + 67.47	
L^OR4 S.T. 196 + 25.50 = L P.O.T. 196 + 36.48	

REF POST 42 = STA. 1415 + 52

REF. POST 43 = STA. 70 + 33

REF. POST 44 = STA. 122 + 53

REF. POST 45 = STA. 175 + 64



SCALE
INDEX MAP 5280'

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

DESIGN DESIGNATION - TIER NO. N/A

ADT (Current Year) 1987 =	15,000	Design Speed	60 MPH
ADT (Future Year) 2007 =	21,500	Based on	STOPPING Sight Distance
DHV (Design Hr. Vol.) =	2365	Height of eye	4.5' Height of object 0.5'
D (Directional Distr.) =	60-40 %	Design Speed not achieved at:	
T (Heavy Commercial) =	33 %	STA. ____ TO STA. ____	MPH ____
		STA. ____ TO STA. ____	MPH ____

PROJECT LOCATION
OLMSTED COUNTY
6 DISTRICT

Recommended for Approval _____ 12-13 1988
DISTRICT STATE AID ENGINEER

Recommended for Approval _____ 19__
STATE AID PLANS ENGINEER

Approved _____ 19__
STATE AID ENGINEER

Approved 12-13-1988 _____
CITY ENGINEER

Approved 11/29 1988 _____
COUNTY ENGINEER

STATE PROJ. NO.	AREA	JOB
5510-59		

FED. PROJ. NO. STATE FUNDS

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 - 4	ESTIMATED QUANTITIES
5 - 10	TYPICAL SECTIONS
11 - 25	GRADING PLANS
26 - 28	MISCELLANEOUS PROFILES
29 - 36	STORM SEWER PLANS
37 - 40	PAVING PLANS
41 - 47	DETAILS
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62 - 65	JUNCTION BOX PLAN
66 - 71	BRIDGE 8309 PLAN
72 - 76	BRIDGE 96666 PLAN
77 - 80	STANDARD PLANS
81 - 86	LANDSCAPE PLAN
87 - 92	TRAFFIC SIGNAL PLANS
93 - 96	LIGHTING PLAN
97 - 98	TRAFFIC CONTROL
99 - 100	EARTHWORK TABULATIONS
101 - 154A	CROSS SECTIONS
155 - 168	C.S.A.H. 22 (55 - 622 - 09) PLAN

THIS PLAN CONSISTS OF 169 SHEETS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE 11/22/88 REG. NO. 8955 ENGR. Donald Schiefen

DESIGN SQUAD R. NICKUM - K. BIENIEK

Right of Way Approval _____ 2-15 1989
DIRECTOR, RIGHT OF WAY OPERATIONS

Recommended for Approval _____ 19__

Recommended for Approval Leonard G. Eitts 1-18 1989
55 DH DIRECTOR, OFFICE OF TRAFFIC ENGINEERING

Recommended for Approval Dave Swilons 12/15 1988
DISTRICT ENGINEER

Recommended for Approval Frank W. Smith 2-13 1989
75 for DESIGN SERVICES DIRECTOR

Recommended for Approval Gerald J. Robinson 2-16 1989
DIRECTOR OFFICE OF TECHNICAL SUPPORT

Approved 2/16 1989 Leo A. Kraft
DEPUTY DIVISION DIRECTOR
TECHNICAL SERVICES DIVISION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
_____ DATE
DIVISION ADMINISTRATOR

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE _____ REG. NO. _____

S.A.P. 55-622-09
STATE PROJ. NO. 5510-59 (T.H. 63=59) SHEET NO. 1 OF

2-17-89

STATEMENT OF ESTIMATED QUANTITIES

NUMBER	ITEM	UNITS	S.A.P. 55 - 622 - 09 QUANTITIES PARTICIPATING ESTIMATED	S.A.P. 55 - 622 - 09 QUANTITIES NON PARTICIPATING ESTIMATED	S.P. 5510-59 QUANTITIES ESTIMATED	TOTAL QUANTITIES ESTIMATED	TOTAL QUANTITIES FINAL
2021.501	MOBILIZATION	LUMP SUM	0.14	0.02	0.84	1	
2031.501	FIELD OFFICE TYPE D	EACH	0.14	0.02	0.84	1	
2031.503	FIELD LABORATORY TYPE D	EACH	0.14	0.02	0.84	1	
2051.501	MAINT & RESTORATION OF HAUL ROADS	LUMP SUM	0.14	0.02	0.84	1	
2101.501	CLEARING	ACRE			3.0	3.0	
2101.502	CLEARING	TREE	35		26	61	
2101.506	GRUBBING	ACRE			3.0	3.0	
2101.507	GRUBBING	TREE	42		25	67	
2102.502	PAVEMENT MARKING REMOVAL	LIN. FT.			750	750	
2103.501	BUILDING REMOVAL (1)	LUMP SUM					
2104.501	REMOVE PIPE CULVERTS	LIN. FT.	257		1768	2025	
2104.501	REMOVE MANHOLES AND CATCH BASINS	LIN. FT.			8	8	
2104.501	REMOVE SEWER PIPE (STORM)	LIN. FT.			520	520	
2104.501	REMOVE SEWER PIPE (SANITARY)	LIN. FT.			129	129	
2104.501	REMOVE CURB	LIN. FT.			335	335	
2104.501	REMOVE CURB AND GUTTER	LIN. FT.			1065	1065	
2104.501	REMOVE GUARD RAIL-PLATE BEAM	LIN. FT.			426	426	
2104.501	REMOVE CONCRETE MEDIAN	LIN. FT.			250	250	
2104.505	REMOVE CONCRETE WALK	SQ. YD.			270	270	
2104.507	REMOVE MASONRY & CONC STRUCTURES (P)	CU. YD.			28	28	
2104.509	REMOVE GUARD POSTS	EACH			17	17	
2104.509	REMOVE CATCH BASINS	EACH			11	11	
2104.521	SALVAGE METAL CULVERTS	LIN. FT.			38	38	
2104.523	SALVAGE CASTINGS	EACH			16	16	
2104.523	SALVAGE METAL APRONS	EACH			1	1	
2105.503	ROCK EXCAVATION (2)	CU. YD.			700	700	
2105.515	UNCLASSIFIED EXCAVATION (3)(P)	CU. YD.	22205	836	110900	133941	
2105.522	SELECT GRANULAR BORROW MOD 10%(CV) (P)	CU. YD.			21257	21257	
2105.523	COMMON BORROW (LV)	CU. YD.	804		9101	9905	
2105.525	TOPSOIL BORROW (LV) (4)	CU. YD.			2868	2868	
2105.535	SALVAGE TOPSOIL (EV) (P)	CU. YD.	1414			1414	
2105.543	STABILIZING AGGREGATE (5)	TON			4652	4652	
2123.501	COMMON LABORER (6)	HOUR			100	100	
2123.503	MOTOR GRADER (6)	HOUR			36	36	
2123.509	DOZER (6)	HOUR			24	24	
2211.503	AGGREGATE BASE PLACED CLASS 5 (P)	CU. YD.			3148	3148	
2211.503	AGGREGATE BASE PLACED CLASS 6 (P)	CU. YD.	5777 (7)	257 (7)	13857	19891	
2221.503	AGG SHOULDERING PLACED CLASS 5 (P)	CU. YD.			325	325	
2221.503	AGG SHOULDERING PLACED CLASS 6 (P)	CU. YD.	1637		469	2106	
2331.504	BIT MATERIAL FOR MIXTURE	TON	750	16	881	1647	
2331.508	WEARING COURSE MIXTURE (MOD)	TON	259 (8)	257 (8)	3319	3835	
2331.510	BINDER COURSE MIXTURE (MOD)	TON			963	963	
2331.514	BASE COURSE MIXTURE (MOD)	TON	13530 (9)		10430	23960	
2331.516	SHOULDER MIXTURE (MOD)	TON	280		1148	1428	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	131		425	556	
2341.508	WEARING COURSE MIXTURE (MOD)	TON	2111 (10)			2111	
2341.510	BINDER COURSE MIXTURE (SPECIAL)	TON			8846	8846	
2357.502	BIT MATERIAL FOR TACK COAT	GALLON	4228		7202	11430	

STATEMENT OF ESTIMATED QUANTITIES

NUMBER	ITEM	UNITS	S.A.P. 55 - 622 - 09 QUANTITIES PARTICIPATING MUNICIPAL ESTIMATED	S.A.P. 55 - 622 - 09 QUANTITIES NON PARTICIPATING MUNICIPAL ESTIMATED	S.P. 5510-59 QUANTITIES ESTIMATED	TOTAL QUANTITIES ESTIMATED	TOTAL QUANTITIES FINAL
2361.504	ASPHALT CEMENT	TON			280	280	
2361.508	WEARING COURSE MIXTURE (SPECIAL)	TON			4511	4511	
2411.501	STRUCTURE CONCRETE (3Y43) (P)	CU. YD.			342	342	
2411.541	REINFORCEMENT BARS (EPOXY COATED) (P)	POUND			57920	57920	
0411.602	CONSTRUCT CONCRETE OR MASONRY PLUG (11)	EACH			2	2	
0422.602	WOOD RETAINING WALL	SQ. FT.			360	360	
2451.503	GRANULAR BACKFILL (CV) (P)	CU. YD.			971	971	
2451.509	AGGREGATE BEDDING (CV) (P)	CU. YD.			1456	1456	
2501.511	12" CS PIPE CULVERT (12)	LIN. FT.			32	32	
2501.511	18" CS PIPE CULVERT (13)	LIN. FT.	128		356	484	
2501.511	24" CS PIPE CULVERT	LIN. FT.	22			22	
2501.511	12" RC PIPE CULVERT	LIN. FT.			32	32	
2501.511	15" RC PIPE CULVERT	LIN. FT.			32	32	
2501.511	24" RC PIPE CULVERT (14)	LIN. FT.			160	160	
2501.511	30" RC PIPE CULVERT	LIN. FT.			14	14	
2501.511	33" RC PIPE CULVERT	LIN. FT.			12	12	
2501.511	36" RC PIPE CULVERT CLASS III	LIN. FT.			20	20	
2501.511	42" RC PIPE CULVERT CLASS III	LIN. FT.			40	40	
2501.511	66" RC PIPE CULVERT CLASS II	LIN. FT.			264	264	
2501.511	84" RC PIPE CULVERT CLASS II (15)	LIN. FT.			428	428	
2501.515	12" GS PIPE APRONS	EACH			2	2	
2501.515	18" GS PIPE APRONS	EACH	6		11	17	
2501.515	24" GS PIPE APRONS	EACH	2			2	
2501.515	12" RC PIPE APRONS	EACH	6 (16)		14	20	
2501.515	15" RC PIPE APRONS	EACH			3	3	
2501.515	24" RC PIPE APRONS	EACH			3	3	
2501.515	27" RC PIPE APRONS	EACH			1	1	
2501.515	66" RC PIPE APRONS	EACH			4	4	
2501.515	84" RC PIPE APRONS	EACH			1	1	
2501.517	A-S DIAPHRAGMS FOR 18" METAL PIPE	EACH			1	1	
2501.521	77" SPAN CS PIPE-ARCH CULVERT	LIN. FT.			26	26	
2501.521	36" SPAN RC P-A CULV CLASS IIA	LIN. FT.	232			232	
2501.525	22" SPAN RC PIPE-ARCH APRONS	EACH			1	1	
2501.525	36" SPAN RC PIPE-ARCH APRONS	EACH	4			4	
2501.571	INSTALL METAL CULVERTS	LIN. FT.			38	38	
2501.573	INSTALL METAL APRONS	EACH			1	1	
2502.521	4" TP PIPE DRAIN (19)	LIN. FT.			64	64	
2502.521	6" PE CORRUGATED PIPE DRAIN (17)	LIN. FT.			75	75	
2502.541	3" PE CORR PERF PIPE DRAIN (18)	LIN. FT.			13425	13425	
0503.606	DISCONNECT SANITARY SEWER CONNECTION (1)	CONNECTION			1	1	
0502.601	PRECAST CONCRETE HEADWALL (19)	EACH			4	4	
0504.606	DISCONNECT WATER SERVICE CONNECTION (1)	CONNECTION			1	1	
2503.511	12" CS PIPE SEWER	LIN. FT.			36	36	
2503.511	12" RC PIPE SEWER	LIN. FT.			4214	4214	
2503.511	12" RC PIPE SEWER CLASS IV (16)	LIN. FT.	357			357	
2503.511	15" RC PIPE SEWER	LIN. FT.			691	691	
2503.511	18" RC PIPE SEWER	LIN. FT.			556	556	
2503.511	21" RC PIPE SEWER	LIN. FT.			133	133	
2503.511	21" RC PIPE SEWER CLASS III	LIN. FT.			458	458	
2503.511	24" RC PIPE SEWER	LIN. FT.			18	18	
2503.511	24" RC PIPE SEWER CLASS III	LIN. FT.			33	33	
2503.511	27" RC PIPE SEWER	LIN. FT.			279	279	

(1) PROVIDED FOR THE REMOVAL OF THE LAND AND LAKES BUILDING.

(2) PROVIDED FOR THE REMOVAL OF ROCK FROM SEWER TRENCHES.

(3) UNCLASSIFIED EXCAVATION INCLUDES SUBGRADE TREATMENT AS SHOWN IN THE CROSS SECTIONS AND ALL CULVERT EXCAVATION.

(4) PROVIDED TO SUPPLEMENT TOPSOIL AVAILABLE ON THE PROJECT.

(5) PROVIDED FOR STABILIZING THE UPPER PORTION OF THE "SELECT GRANULAR" SUBGRADE, APPLY AT THE RATE OF 150 POUNDS PER SQ. YD.

(6) PROVIDED TO PERFORM MISCELLANEOUS SHAPING TO FACILITATE DRAINAGE, AS DIRECTED BY THE ENGINEER.

(7) AGGREGATE BASE PLACED INCLUDES 4928 CU. YDS. FOR MAINLINE, 581 CU. YDS. FOR RIGHT AND LEFT TURN LANES, 268 CU. YDS. FOR SIX APPROACHES AND 257 CU. YDS. FOR BIKE PATH.

(8) WEARING COURSE MIXTURE TO BE USED AS SHOWN IN TRAFFIC CONTROL LAYOUT PLAN SHEET NO. 162,259 TONS AND 257 TONS FOR BIKE PATH.

(9) BASE COURSE MIXTURE INCLUDES 9961 TONS FOR MAINLINE, 2863 TONS FOR RIGHT AND LEFT TURN LANES AND 92 TONS FOR FIVE APPROACHES.

(10) WEARING COURSE MIXTURE INCLUDES 1550 TONS FOR MAINLINE, 500 TONS FOR RIGHT AND LEFT TURN LANES AND 61 TONS FOR SIX APPROACHES.

(11) PROVIDED TO PREPARE BOX CULVERT NO. 8310 S.B. STA. 87+88 FOR ABANDONMENT.

(12) PROVIDED TO PAY FOR FLUMES LT. OF S.B. STA. 54+00.

(13) LENGTH INCLUDES ONE 90° ELBOW.

(14) INCLUDES ONE T-SECTION WITH 24" RISER.

(15) LENGTH INCLUDES 6-71° LONG RADIUS BENDS.

(16) STORM SEWER WORK.

(17) PROVIDED TO DRAIN MANHOLE DESIGN SPECIAL 2, 60 FT. LEFT OF S.B. STA. 85+20.

(18) PROVIDED FOR SUBGRADE DRAINS. SEE TYPICAL SECTIONS.

(19) TO BE USED AT SUBORAIN OUTLETS WITH CONCRETE HEADWALLS.

STATEMENT OF ESTIMATED QUANTITIES

NUMBER	ITEM	UNITS	S.A.P. 55 - 622 - 09 QUANTITIES		S.P. 5510-59	TOTAL QUANTITIES	
			PARTICIPATING	NON PARTICIPATING	QUANTITIES	QUANTITIES	
			ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	FINAL
2503.511	36" RC PIPE SEWER (20)	LIN. FT.			36	36	
2503.511	36" RC PIPE SEWER CLASS III	LIN. FT.			803	803	
2503.541	42" RC PIPE SEWER CLASS III DES 3006	LIN. FT.			138	138	
2503.511	8" DUCTILE IRON PIPE SEWER	LIN. FT.			29	29	
2503.511	10" DUCTILE IRON PIPE SEWER	LIN. FT.			100	100	
2503.521	22" SPAN RCP-A SEWER CLASS IIA	LIN. FT.			36	36	
0503.603	15" CS SLOTTED DRAIN	LIN. FT.			30	30	
0503.603	SANITARY SEWER INSULATION (22)	LIN. FT.			40	40	
2503.541	36" RC PIPE SEWER DES 3006 (31)	LIN. FT.			1168	1168	
0504.602	ADJUST VALVE BOX - WATER	EACH		6		6	
0504.605	4" POLYSTYRENE INSULATION	SQ. YD.		73		73	
2506.506	CONSTRUCT MANHOLES DESIGN A OR F (30)	LIN. FT.			97	97	
2506.506	CONSTRUCT MANHOLES DESIGN C OR G	LIN. FT.			11	11	
2506.506	CONSTRUCT MANHOLES DES SPECIAL 1	LIN. FT.			14	14	
2506.506	CONSTRUCT MANHOLES DESIGN 54-4019 (30)	LIN. FT.			12	12	
2506.506	CONSTRUCT MANHOLES DESIGN 60-4019 (30)	LIN. FT.			55	55	
2506.506	CONSTRUCT MANHOLES DESIGN 78-4019 (30)	LIN. FT.			9	9	
2506.506	CONSTRUCT MANHOLES DESIGN 84-4020 (30)	LIN. FT.			11	11	
2506.507	CONSTRUCT CATCH BASINS DES A OR F (30)	LIN. FT.			79	79	
2506.507	CONSTRUCT CATCH BASINS DES C OR G	LIN. FT.			318	318	
2506.507	CONSTRUCT CATCH BASINS DES C	LIN. FT.			10	10	
2506.507	CONSTRUCT CATCH BASINS DES F	LIN. FT.			7	7	
2506.507	CONSTRUCT CATCH BASIN DES H	LIN. FT.			196	196	
2506.507	CONSTRUCT CATCH BASIN DES I	LIN. FT.			4	4	
2506.507	CONST CATCH BASINS DES 48-4020 (30)	LIN. FT.			8	8	
2506.508	CONST MANHOLES DES SPECIAL 2 (23)	EACH			1	1	
2506.508	CONST MANHOLES DES SPECIAL 3	EACH			13	13	
2506.509	CONST CATCH BASINS DES C OR G (16)	EACH	11			11	
2506.509	CONST CATCH BASINS DESIGN LP 4-4 (29)	EACH			2	2	
2506.511	RECONSTRUCT MANHOLES	LIN. FT.		2	127	129	
2506.516	CASTING ASSEMBLIES	EACH			176	176	
2506.521	INSTALL CASTINGS	EACH			16	16	
2506.522	ADJUST FRAME & RING CASTINGS	EACH			6	6	
2503.541	36"RC PIPE SEWER CLASS III DES 3006 (31)	LIN. FT.			734	734	
2511.501	RANDOM RIPRAP CLASS III	CU. YD.	18		48	66	
2511.501	RANDOM RIPRAP CLASS IV	CU. YD.			98	98	
2511.511	GRANULAR FILTER (33)	CU. YD.	9			9	
2511.515	GEOTEXTILE FILTER	SQ. YD.			326	326	
2521.501	3' CONCRETE WALK	SQ. FT.			34828	34828	
2521.501	4' CONCRETE WALK	SQ. FT.		148	11085	11233	
2531.501	CONCRETE C & G DES B624	LIN. FT.	3874		8397	12271	
2531.501	CONCRETE C & G DES D424	LIN. FT.			816	816	
2531.501	CONCRETE C & G DES S524	LIN. FT.			15032	15032	
2531.505	CONCRETE MEDIAN	LIN. FT.	200		50	250	
2531.511	CONCRETE MEDIAN NOSE (P)	CU. YD.			33	33	
2545.515	LIGHT BASES, DESIGN E	EACH			85	85	
2545.523	2" NONMETALLIC CONDUIT	LIN. FT.			16761	16761	
0585.603	4" RIGID STEEL CONDUIT	LIN. FT.	216			216	
2554.501	TRAFFIC BARRIER DES. B8307	LIN. FT.	300			300	
2554.505	PERMANENT BARRICADES	LIN. FT.			72	72	
2554.509	GUIDE POSTS TYPE B	EACH			55	55	
2554.521	ANCHORAGE ASSEMBLIES - PLATE BEAM	EACH	4			4	
2554.523	TWISTED END TREATMENT	EACH	4			4	

STATEMENT OF ESTIMATED QUANTITIES

NUMBER	ITEM	UNITS	S.A.P. 55 - 622 - 09 QUANTITIES		S.P. 5510-59	TOTAL QUANTITIES	
			PARTICIPATING MUNICIPAL	NON PARTICIPATING MUNICIPAL	QUANTITIES	QUANTITIES	
			ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	FINAL
0563.601	TRAFFIC CONTROL	LUMP SUM	0.14	0.02	0.84	1	
0563.603	REPLACE TUBE DELINEATORS	EACH			10	10	
0563.603	ONE-WAY RAISED PAV'T MARKERS, TEMP (24)	EACH			130	130	
0563.603	TWO-WAY RAISED PAVT MARKER, TEMP (25)	EACH			80	80	
0563.603	REPLACEMENT ONE-WAY RPM, TEMP	EACH			30	30	
0563.603	REPLACEMENT TWO-WAY RPM, TEMP	EACH			20	20	
2564.531	F&I SIGN PANELS TYPE D--SIGNALS	SQ. FT.			76	76	
2581.501	REMOVABLE PREFORMED PLASTIC MARKING (32)	LIN. FT.			1610	1610	
2565.511	FULL T ACT T CONTROL SIG SYS	SIG.SYST.			1	1	
0565.602	HANDHOLES TYPE LD	EACH	2			2	
0565.604	REVISE SIGNAL SYSTEM	SYSTEM			1	1	
2571.501	SPRUCE, BLACK HILLS 8' HI B&B	TREE			3	3	
2571.502	ASH, MARSHALL'S SEEDLESS 2" CAL B & B	TREE			23	23	
2571.502	HACKBERRY, COMMON 2" CAL B&B	TREE			75	75	
2571.502	LINDEN, AMERICAN 2" CAL B&B	TREE			49	49	
2571.503	CRABAPPLE, RED SPLENDOR 2" CAL B&B	TREE			72	72	
2571.503	CRABAPPLE, SNOWDRIFT 2" CAL B&B	TREE			82	82	
2571.503	HAWTHORNE, THRNLS CCKSPR 2" CAL B&B	TREE			25	25	
2571.503	PLUM, AMERICAN 5' HI BR	TREE			65	65	
2571.505	LILAC, MISS KIM 2' HI BR	SHRUB			220	220	
2571.505	ROSE NEARLY WILD 2 YR NO 1 BR	SHRUB			900	900	
2573.501	BALE CHECK (26)	EACH	65		250	315	
2575.501	SEEDING (P)	ACRE	3.3		5	8.3	
2575.502	SEED MIXTURE 600	POUND	250		375	625	
2575.505	SODDING, TYPE EROSION	SQ. YD.	2510 (27)		4080	6590	
2575.505	SODDING, TYPE LAWN	SQ. YD.			62683	62683	
2575.511	MULCH MATERIAL TYPE 1 (28)	TON	8		8	16	
2575.511	MULCH MATERIAL TYPE 5	TON			0.4	0.4	
2575.519	DISC ANCHORING (P)	ACRE	3.3		4	7.3	
2575.531	COMMERCIAL FERT ANALYSIS 12-12-12	TON	1		5	6	
2580.501	TEMPORARY LANE MARKING	RD. STA.			184	184	

(16) STORM SEWER WORK.

(20) INCLUDES ONE 7½° LONG RADIUS BEND.

(21) INCLUDES TWELVE 7½° LONG RADIUS BENDS.

(22) PROVIDED TO INSULATE SANITARY SEWER AT THOSE LOCATIONS WHERE IT FLOWS UNDER BOX CULVERTS.

(23) PROVIDED TO PAY FOR SPECIAL MANHOLE AND COVER THAT IS TO BE CONSTRUCTED AROUND LIGHT POLE 69 FT. LT. OF S.B. STA. 84+99.

(24) ALL ONE-WAY RAISED PAVEMENT MARKERS SHALL BE WHITE IN COLOR.

(25) ALL TWO-WAY RAISED PAVEMENT MARKERS SHALL BE YELLOW IN COLOR.

(26) BALE CHECK TO BE USED FOR EROSION CONTROL AS DIRECTED BY THE ENGINEER.

(27) SODDING INCLUDES 1460 SQ. YDS. FOR MEDIAN AND 50 SQ. YDS. AT INLET APRON C/L CULVERTS STA. 204+05 AND 204+12 AND 1000 SQ. YDS. FOR DITCH LINER RT. STA. 204+00 TO STA. 210+85.

(28) TO BE APPLIED AT THE RATE OF 2.5 TONS PER ACRE.

(29) DOES NOT INCLUDE PAYMENT FOR CASTINGS.

(30) STEPS REQUIRED.

(31) INCLUDES ONE 7-1/2° LONG RADIUS BEND.

(32) INCLUDES 770 LIN. FT. WHITE AND 840 LIN. FT. YELLOW.

(33) NOT OPTIONAL

Fed. Proj. No.

STATEMENT OF ESTIMATED QUANTITIES

NUMBER	ITEM	UNITS	S.A.P. 55 - 622 - 09 QUANTITIES		S.P. 5510-59	TOTAL	
			PARTICIPATING	NON PARTICIPATING	QUANTITIES	QUANTITIES	
			ESTIMATED	ESTIMATED	ESTIMATED	ESTIMATED	FINAL
	ITEMS WITH ALTERNATES						
	ALTERNATE AA-1						
2501.511	12" CM PIPE CULVERT	LIN. FT.			52	52	
2501.511	15" CM PIPE CULVERT	LIN. FT.			24	24	
2501.511	18" CM PIPE CULVERT	LIN. FT.			496	496	
2501.511	24" CM PIPE CULVERT	LIN. FT.			34	34	
2501.515	12" CM PIPE APRONS	EACH			4	4	
2501.515	15" CM PIPE APRONS	EACH			2	2	
2501.515	18" CM PIPE APRONS	EACH			14	14	
2501.515	24" CM PIPE APRONS	EACH			2	2	
2501.521	17" SPAN CS PIPE-ARCH CULVERT	LIN. FT.			46	46	
2501.521	42" SPAN CS PIPE-ARCH CULVERT	LIN. FT.			76	76	
2501.525	17" SPAN CS PIPE-ARCH APRONS	EACH			4	4	
2501.525	42" SPAN CS PIPE-ARCH APRONS	EACH			2	2	
	ALTERNATE AA-2						
2501.511	12" RC PIPE CULVERT	LIN. FT.			36	36	
2501.511	15" RC PIPE CULVERT	LIN. FT.			16	16	
2501.511	18" RC PIPE CULVERT	LIN. FT.			426	426	
2501.511	24" RC PIPE CULVERT	LIN. FT.			26	26	
2501.515	12" RC PIPE APRONS	EACH			4	4	
2501.515	15" RC PIPE APRONS	EACH			2	2	
2501.515	18" RC PIPE APRONS	EACH			14	14	
2501.515	24" RC PIPE APRONS	EACH			2	2	
2501.521	22" SPAN RC P-A CULV CLASS IIA	LIN. FT.			26	26	
2501.521	44" SPAN RC P-A CULV CLASS IIA	LIN. FT.			66	66	
2501.525	22" SPAN RC PIPE-ARCH APRONS	EACH			4	4	
2501.525	44" SPAN RC PIPE-ARCH APRONS	EACH			2	2	

CONSTRUCTION NOTES

TOP OF SUBGRADE FOR THIS PROJECT IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE MATERIALS.

PRIOR TO PLACING CLASS 6 AGGREGATE BASE MATERIALS, THE UPPER PORTION OF THE "SELECT GRANULAR" SUBGRADE SHALL BE STABILIZED BY THE ADDITION OF STABILIZING AGGREGATE AT THE RATE OF 150 LBS. PER SQ. YD.

TIE ALL JOINTS, INCLUDING APRON JOINTS, OF ALL RCP CULVERTS.

TIE THE FIRST THREE JOINTS, INCLUDING THE APRON JOINT, AT ALL FREE ENDS OF RCP STORM SEWERS.

SOILS NOTES

SELECTED GRADING MATERIALS FOR THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED EXCEPT TOPSOIL, HIGHLY ORGANIC SOILS, CONCRETE DEBRIS AND BITUMINOUS MATERIALS.

TOPSOIL AND OTHER UNSUITABLE GRADING MATERIALS SHALL BE ELIMINATED FROM THE UPPER 3.0 FT. OF THE "GRADING SUBGRADE" AND SHALL NOT BE PLACED ADJACENT TO ANY STRUCTURE.

PRIOR TO CONSTRUCTION, THE NATURAL TOPSOILS SHALL BE STRIPPED FROM ALL AREAS TO BE DISTURBED. THIS MATERIAL SHALL BE STOCKPILED FOR USE AS NEW SLOPE DRESSING.

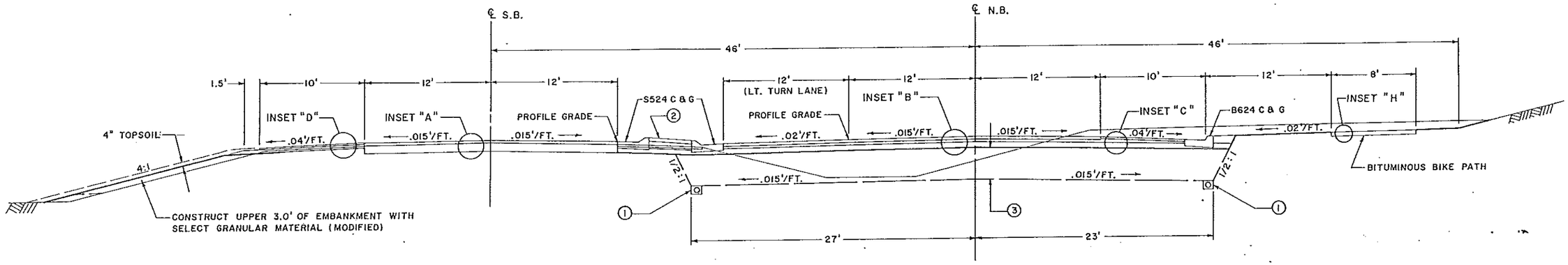
THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
0004 A	SPECIFICATION REFERENCE TO STANDARD PLATES (1983)
3000 K	REINFORCED CONCRETE PIPE
3007 B	SHEAR REINF. FOR PRECAST DRAINAGE STRUCTURES
3014 J	REINFORCED CONCRETE PIPE ARCH DETAIL
3040 F	CORRUGATED METAL PIPE CULVERT (2-2/3" X 1/2" CORR.)
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3122 I	METAL APRON FOR C.M. PIPE-ARCH CULVERT
3123 I	METAL APRON FOR C.S. PIPE
3124 B	METAL APRON CONNECTION
3133 B	RIPRAP AT RCP OUTLETS
3145 E	CONCRETE PIPE TIES
3146 C	ANTI-SEEPAGE DIAPHRAGM
3221 C	CORRUGATED STEEL PIPE COUPLING BAND
4000 I	MANHOLE OR CATCH BASIN (DESIGN A)
4002 E	MANHOLE OR CATCH BASIN (DESIGN C)
4005 K	MANHOLE OR CATCH BASIN (DESIGN F)
4006 K	MANHOLE OR CATCH BASIN (DESIGN G AND H)
4008 E	CATCH BASIN (DESIGN I)
4010 G	CONCRETE SHORT CONE AND ADJUSTING RING
4011 D	PRECAST CONCRETE BASE
4016 C	CURB OPENING CATCH BASIN
4019 E	MANHOLE OR CATCH BASIN NOT FOR USE UNDER TRAFFIC LOADS
4020 E	MANHOLE OR CATCH BASIN FOR USE UNDER TRAFFIC LOADS
4101 C	RING CASTING FOR MANHOLE OR CATCH BASIN
4108 E	MANHOLE ADJUSTING RINGS
4110 D	COVER CASTING FOR MANHOLE (711 AND 712)
4129 F	CATCH BASIN FRAME CASTING (802 A)
4132 E	CATCH BASIN FRAME CASTING (805)
4143 D	STOOL GRATE AND CONCRETE FRAME (731)
4151 B	GRATE CASTING FOR CATCH BASIN (811)
4152 B	CATCH BASIN GRATE CASTING (814)
4160 D	CURB BOX CASTING FOR CATCH BASIN (823 A AND 833 A)
4180 H	MANHOLE OR CATCH BASIN STEP
7035 J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 C	PEDESTRIAN CURB RAMP
7100 F	CONCRETE CURB AND GUTTER (DESIGN B AND V)
7102 G	CONCRETE CURB AND GUTTER (DESIGN BR, D AND S)
7110 E	CURB AND GUTTER CONSTRUCTION AT CATCH BASIN
7111 G	INSTALLATION & REINFORCEMENT OF CATCH BASIN CASTINGS
8000 I	STANDARD BARRICADES
8002 F	PERMANENT BARRICADES
8003 B	BREAKAWAY SIGN SUPPORT (PLASTIC)
8117 F	PRECAST CONCRETE HANDHOLE (OR PULLBOX)
8150 B	INSTALLATION OF CULVERT MARKERS
8307 N	STEEL PLATE BEAM GUARDRAIL
8317 D	GUARDRAIL ANCHORAGE ASSEMBLY FOR BRIDGES
9000 B	APPROACHES AND ENTRANCES
9101 B	SHAPING AND SODDING OF SLOPES AT BOX CULVERT ENDS
9102 C	SODDING AT PIPE CULVERT ENDS
8127A	LIGHT BASE DESIGN E
3006 F	GASKET JOINT FOR R.C. PIPE
3041 C	CORRUGATED METAL PIPE

PIT DATA

PIT NO. 55034 (W 1/2 SE 1/4 20-108-14)
IS A POSSIBLE SOURCE OF BA-1, BA-2, CL.5
AND CL.6 FOR THIS PROJECT.

ESTIMATE SHEET

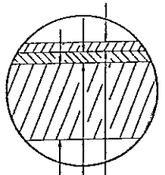


THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

S.B. STA. 1440 + 00 TO 116 + 00
N.B. STA. 1440 + 00 TO 116 + 00

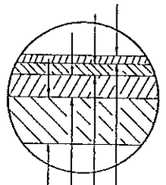
(1) SUBGRADE DRAIN SEE SHEET NO. 43 FOR DETAIL
(2) 3" CONCRETE SIDEWALK
(3) 3' SUBCUT FOR COMPACTION, BACKFILL WITH SELECT GRANULAR MATERIAL (MODIFIED)

INSET "A"



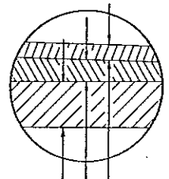
1" BITUMINOUS WEARING COURSE (SPEC. 2361)
VAR. (1 1/2" MIN.) BITUMINOUS BINDER COURSE (SPEC. 2341)
INP. BITUMINOUS PAVEMENT (10"±)

INSET "B"



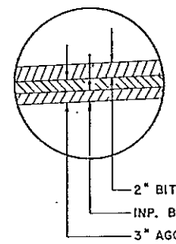
1" BITUMINOUS WEARING COURSE (SPEC. 2361)
1 1/2" BITUMINOUS BINDER COURSE (SPEC. 2341)
3" BITUMINOUS BASE COURSE (SPEC. 2331)
6" AGGREGATE BASE (CLASS 6)

INSET "C"



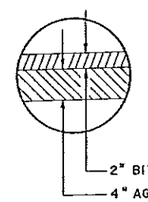
2" BITUMINOUS SHOULDERING (SPEC. 2331)
VAR. DEPTH AGGREGATE SHOULDERING (CLASS 6)
6" AGGREGATE BASE (CLASS 6)

INSET "D"



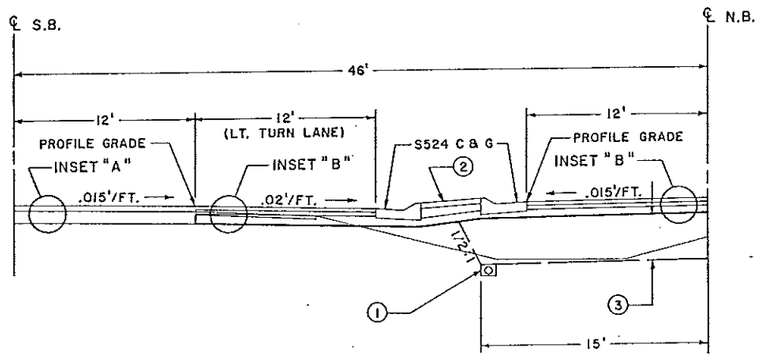
2" BITUMINOUS SHOULDERING (SPEC. 2331)
INP. BITUMINOUS SHOULDER (REMOVE)
3" AGGREGATE SHOULDERING (CLASS 5)

INSET "H"

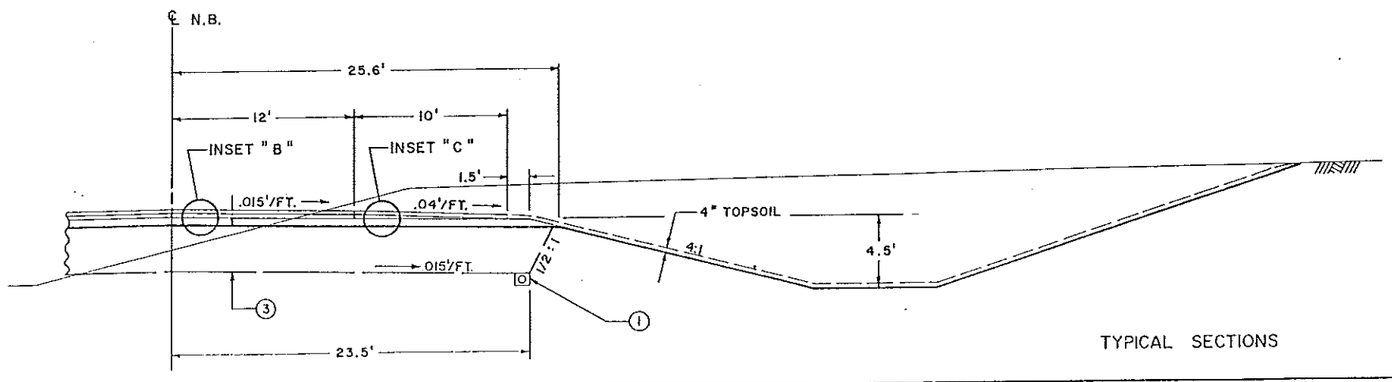


2" BITUMINOUS WEARING COURSE (SPEC. 2331)
4" AGGREGATE BASE (CLASS 5)

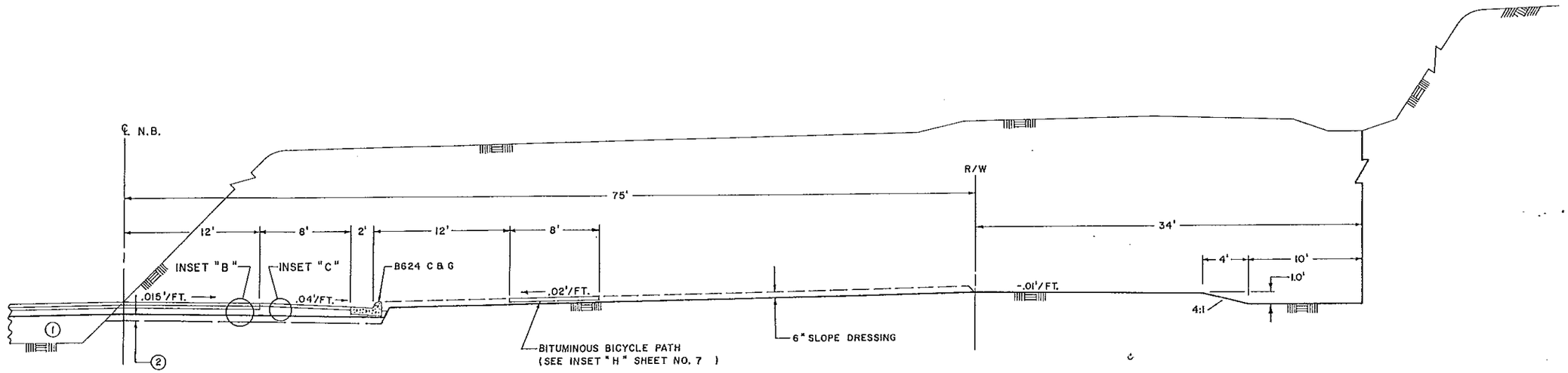
LEFT TURN LANE



DITCH SECTION

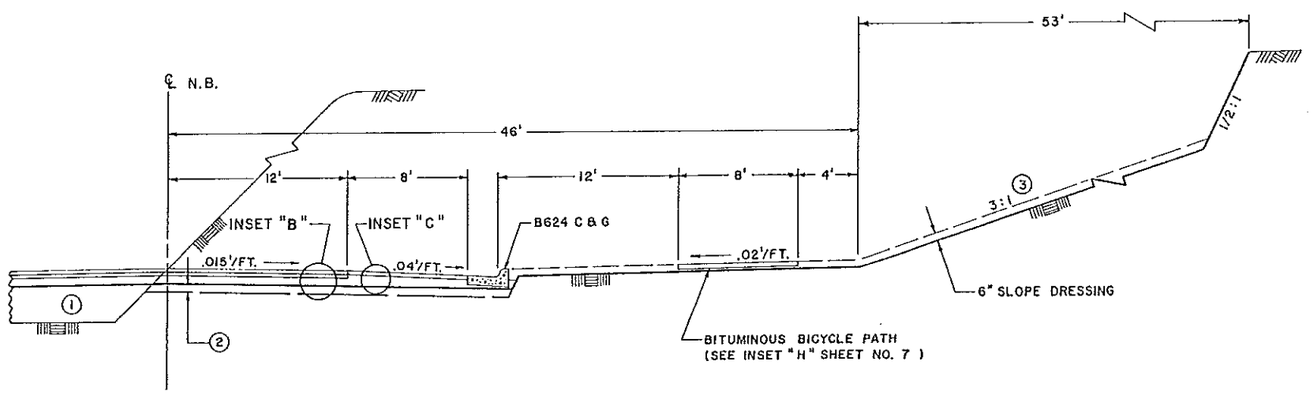


TYPICAL SECTIONS



THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATION:

N.B. STA. 93 + 00 TO 97 + 00



① CONSTRUCT UPPER 3.0' OF EMBANKMENT WITH SELECT GRANULAR MATERIAL (MODIFIED)

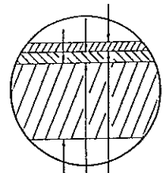
② 6" FOR COMPACTION BACKFILL WITH SELECT GRANULAR MATERIAL (MODIFIED)

③ FROM STA. 97 + 00 TO 100 + 50 SEE CROSS SECTIONS FOR BACKSLOPE

THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

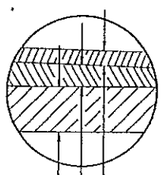
N.B. STA. 73 + 00 TO 78 + 00
N.B. STA. 97 + 00 TO 100 + 50

INSET "B"



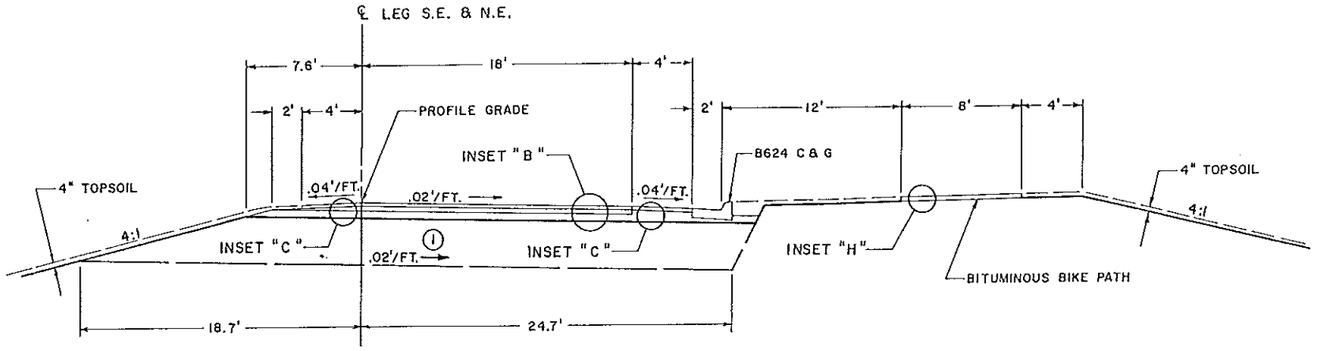
1" BITUMINOUS WEARING COURSE (SPEC. 2361)
VAR. (1 1/2" MIN.) BITUMINOUS BINDER COURSE (SPEC. 2341)
INP. BITUMINOUS PAVEMENT (10"±)

INSET "C"



2" BITUMINOUS SHOULDERING (SPEC. 2331)
VAR. DEPTH AGGREGATE SHOULDERING (CLASS 6)
6" AGGREGATE BASE (CLASS 6)

TYPICAL SECTIONS

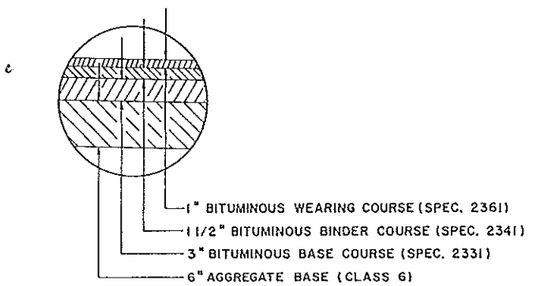


THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

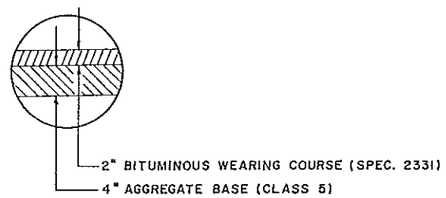
S.E. LEG STA. 0 + 00 TO 1 + 53.5
N.E. LEG STA. 0 + 00 TO 1 + 38.7

① CONSTRUCT UPPER 3.0' OF EMBANKMENT WITH SELECT GRANULAR MATERIAL (MODIFIED)

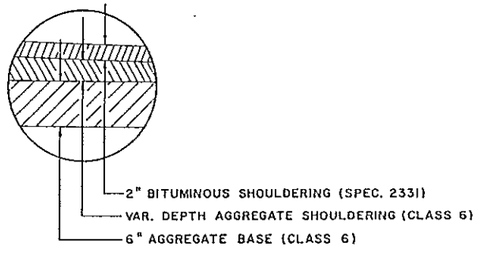
INSET "B"

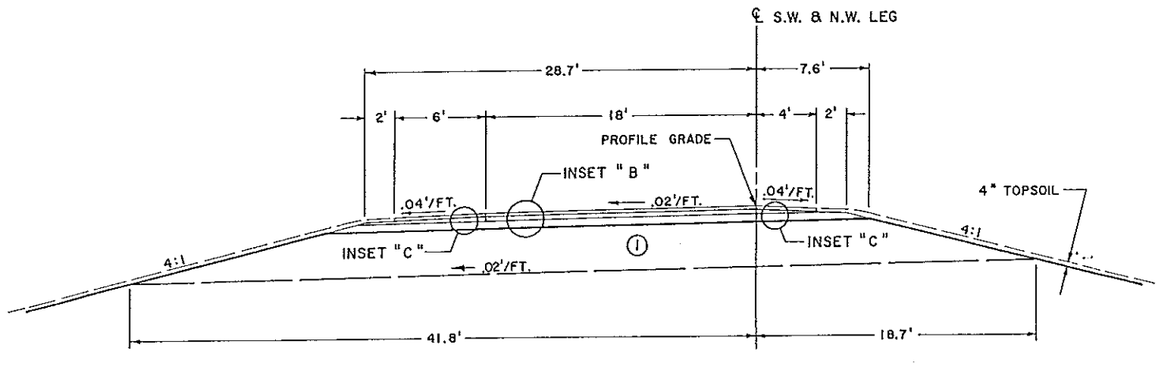


INSET "H"



INSET "C"



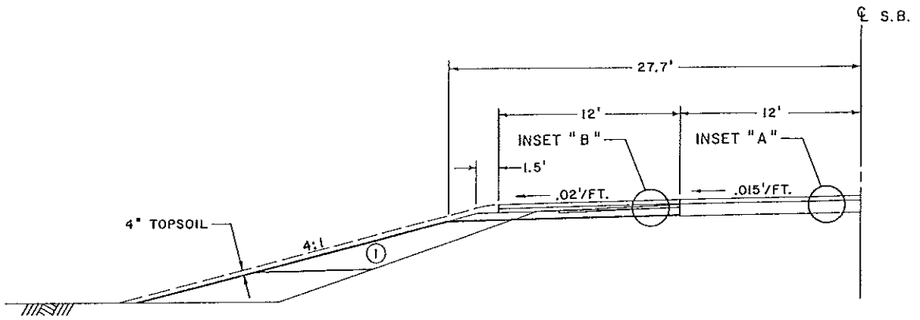


THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

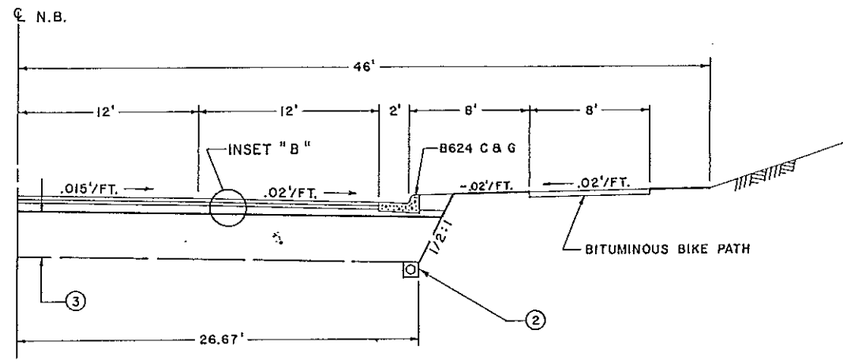
S.W. LEG STA. 0 + 00 TO 1 + 38.7
N.W. LEG STA. 0 + 00 TO 1 + 53.5

TYPICAL SECTIONS

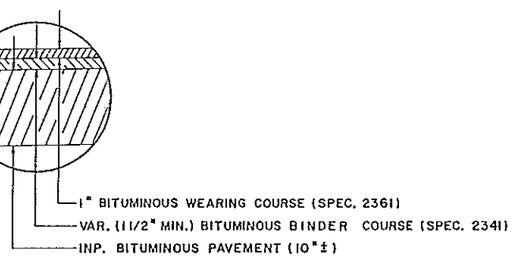
RIGHT TURN LANE AND BY-PASS LANE



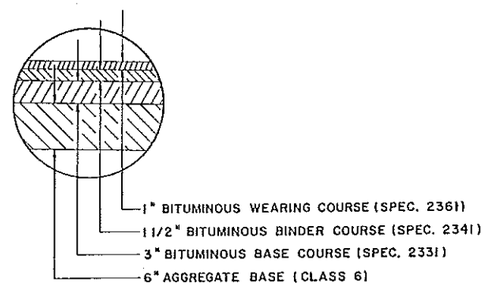
RIGHT TURN LANE



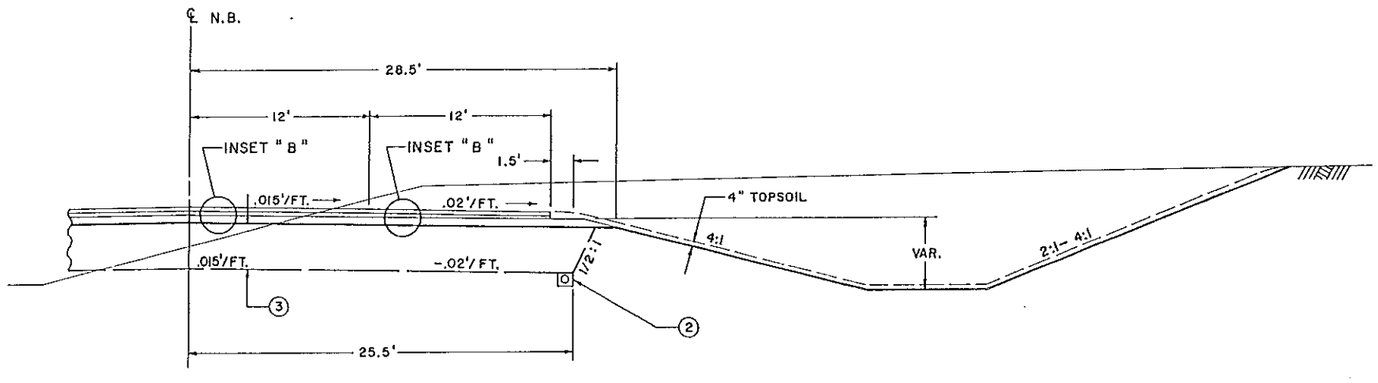
INSET "A"



INSET "B"



RIGHT TURN LANE WITH DITCH



(1) CONSTRUCT UPPER 3.0' OF EMBANKMENT WITH SELECT GRANULAR MATERIAL (MODIFIED)

(2) SUBGRADE DRAIN SEE SHEET NO. 43 FOR DETAIL

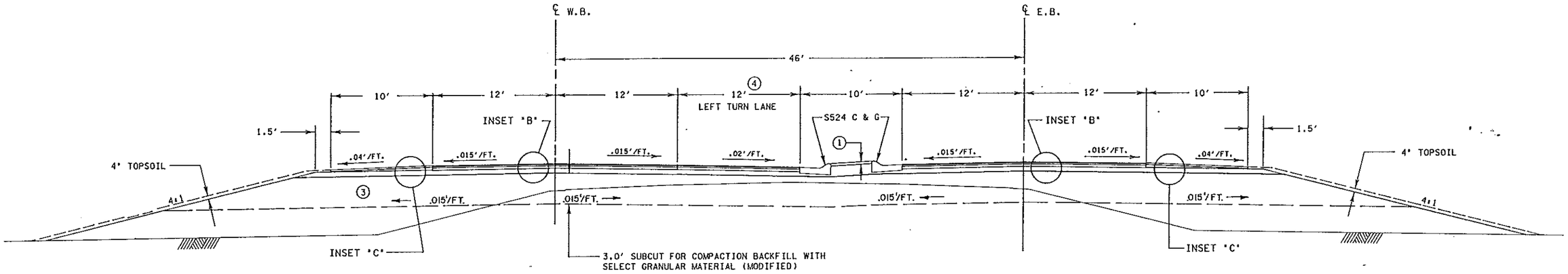
(3) 3' SUBCUT FOR COMPACTION, BACKFILL WITH SELECT GRANULAR MATERIAL (MODIFIED)

THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATION:

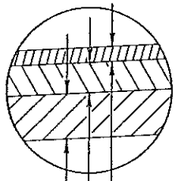
L^OR N.B. STA. 102 + 05 TO 107 + 00

TYPICAL SECTIONS

C.S.A.H. 22



INSET 'A'



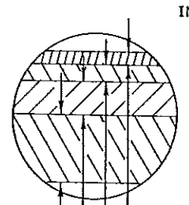
PL. 1" BITUMINOUS WEARING COURSE (SPEC. 2361)
PL. VAR. (1-1/2" MIN.) BITUMINOUS BINDER COURSE (SPEC. 2341)
INP. BITUMINOUS PAVEMENT (10")

THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATION:

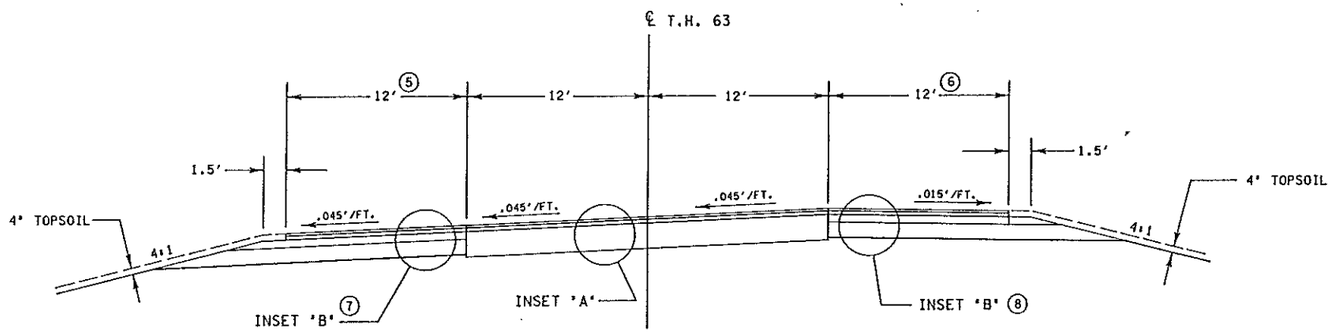
STA. 210 + 85 TO 104 + 00 (2)

(1) 3' CONCRETE SIDEWALK
(2) INCLUDES EQUATION
(3) THE UPPER 3' OF THE SUBGRADE SHALL BE CONSTRUCTED WITH SELECT GRANULAR MATERIAL (MODIFIED)
(4) FOR LEFT TURN LANE LOCATIONS SEE SHEETS

INSET 'B'



PL. 1" BITUMINOUS WEARING COURSE (SPEC. 2361)
PL. 1-1/2" BITUMINOUS BINDER COURSE (SPEC. 2341)
PL. 3" BITUMINOUS BASE COURSE (SPEC. 2331)
PL. 6" AGGREGATE BASE (CLASS 6)

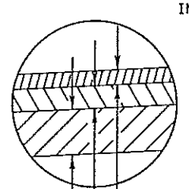


THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

LT. STA. 116 + 00 TO STA. 133 + 08.5
RT. STA. 119 + 00 TO STA. 133 + 08.5

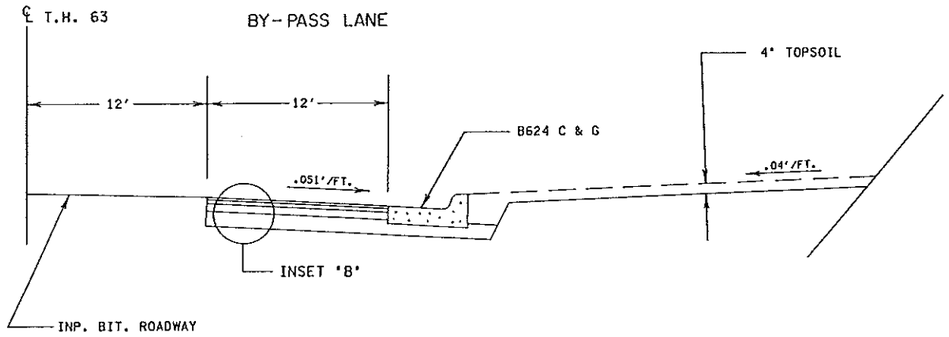
(5) VAR. STA. 131 + 00 To 133 + 08.5
(6) 10' STA. 116 + 00 TO 126 + 00
8' STA. 128 + 65 TO 129 + 85
(7) INSET 'G' LT. OF STA. 126 + 18 TO STA. 131 + 00
INSET 'B' LT. OF STA. 131 + 00 TO STA. 133 + 08.5
(8) INSET 'D' RT. OF STA. 116 + 00 TO STA. 126 + 00
INSET 'D' RT. OF STA. 128 + 65 TO STA. 129 + 85
INSET 'G' STA. 129 + 85 TO STA. 133 + 08.5

INSET 'C'



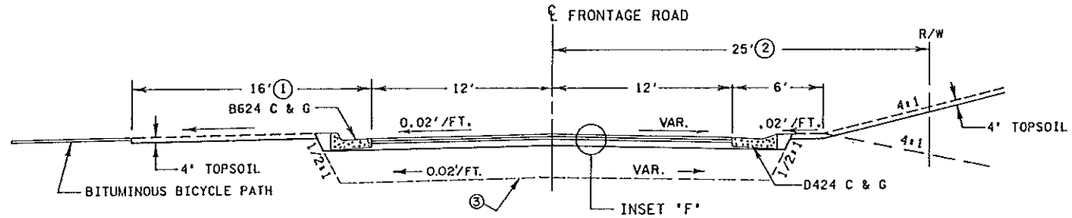
2" BITUMINOUS SHOULDERING (SPEC. 2331)
VAR. DEPTH AGGREGATE SHOULDERING (CLASS 6)
6" AGGREGATE BASE (CLASS 6)

TYPICAL SECTIONS



THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

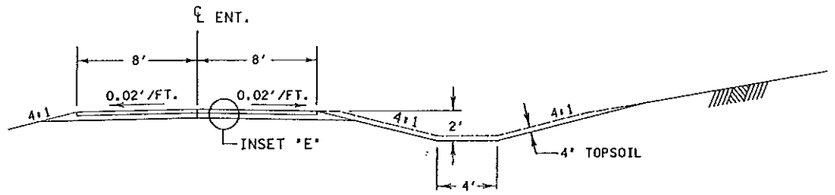
RT. OF STA. 187 TO 95 - 194 + 05



THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATION:

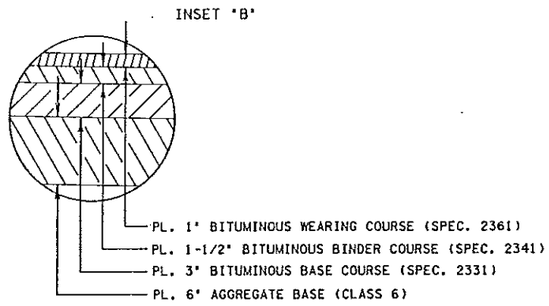
RT. OF N.B. STA. 59 + 22 - 63 + 75

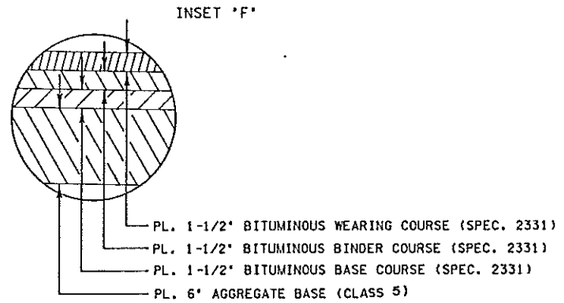
(1) VAR. STA. 59 + 22 - 60 + 44
(2) 15' STA. 58 + 99.4 - 59 + 83
VAR. STA. 59 + 83 - 60 + 44
(3) 1'SUBCUT FOR COMPACTION, BACKFILL WITH SELECT GRANULAR MATERIAL (MODIFIED)
(4) 2' SUBCUT FOR COMPACTION, BACKFILL WITH SELECT GRANULAR MATERIAL (MODIFIED)

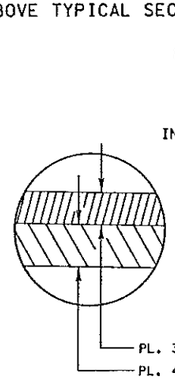


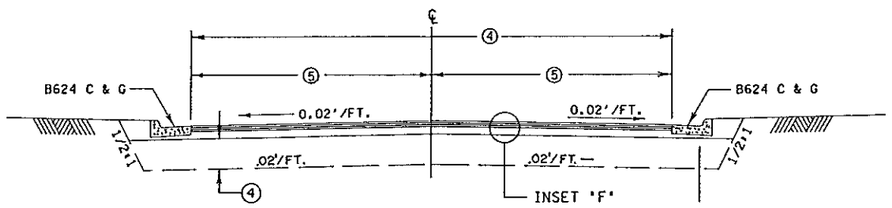
THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATION:

RT. OF N.B. STA. 107 + 40 TO 110 + 25





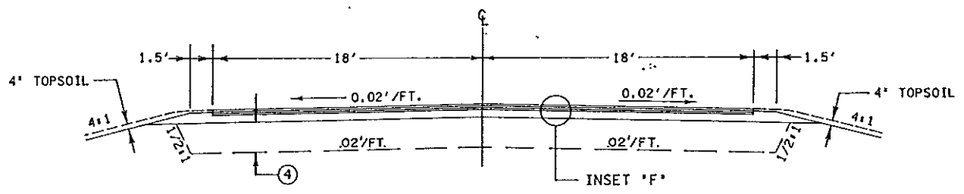




THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

NORTHERN HEIGHTS DR. N.E.
NORTHERN HILLS DR. N.E.
24st ST. N.E. (LT.)
SERVICE COURT N.E.
ROCKY CREEK DR. N.E.
31st ST. N.E. (LT.)

STREET WIDTH		
STREET	④	⑤
NORTHERN HEIGHTS DR. N.E.	46'	23'
NORTHERN HILLS DR. N.E.	36'	18'
24st ST. N.E. (LT.)	40'	20'
SERVICE COURT N.E.	32'	16'
ROCKY CREEK DR. N.E.	44'	22'
31st ST. N.E. (LT.)	36'	18'



THE ABOVE TYPICAL SECTION SHALL APPLY AT THE FOLLOWING LOCATIONS:

27th ST. N.E.
31st ST. N.E. (LT.)
R.P.U. ENT. N.E.
41st ST. N.E.
6th AVE. N.E.

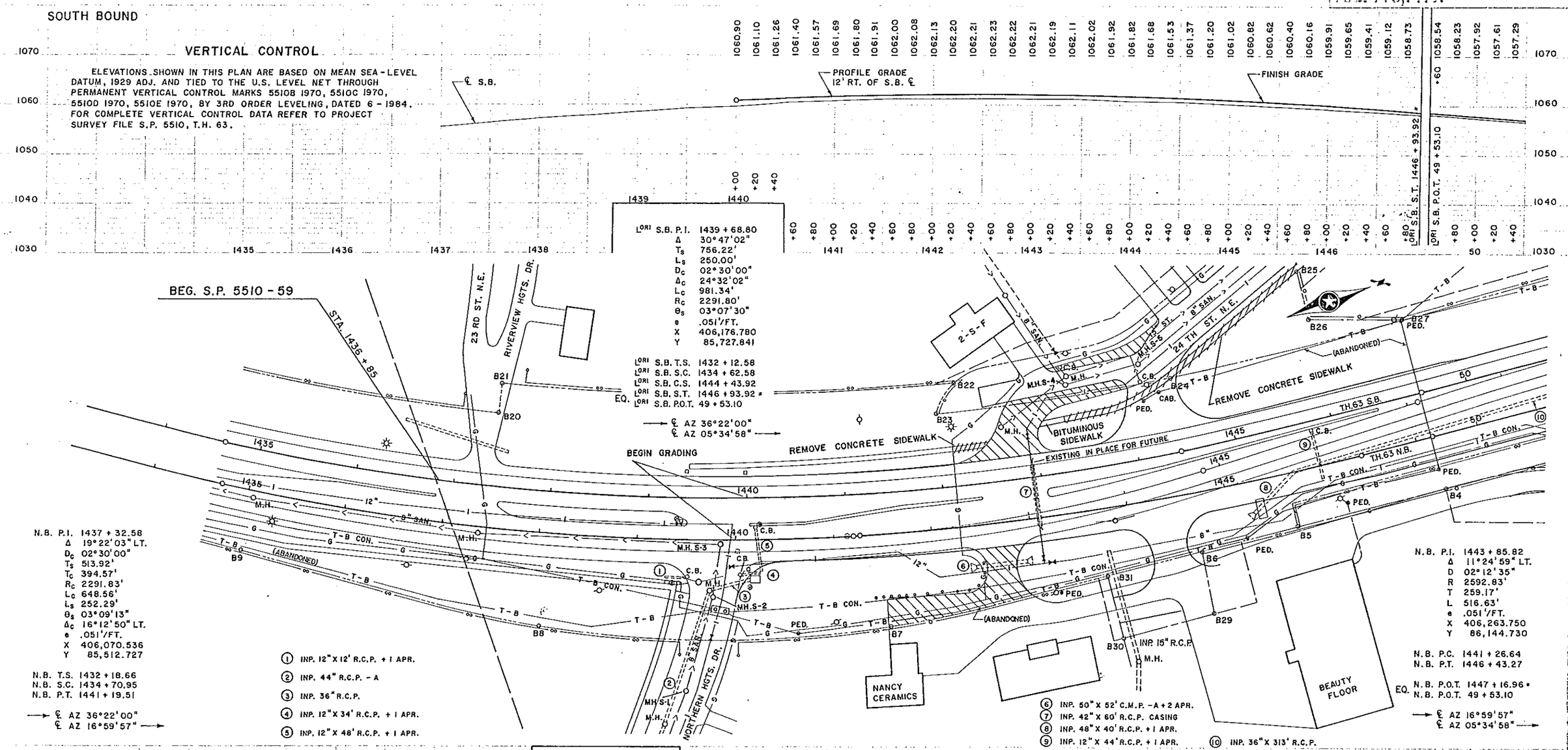
TYPICAL SECTIONS

Fed. Proj. No.

SOUTH BOUND

VERTICAL CONTROL

ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA-LEVEL DATUM, 1929 ADJ. AND TIED TO THE U.S. LEVEL NET THROUGH PERMANENT VERTICAL CONTROL MARKS 5510B 1970, 5510C 1970, 5510D 1970, 5510E 1970, BY 3RD ORDER LEVELING, DATED 6-1984. FOR COMPLETE VERTICAL CONTROL DATA REFER TO PROJECT SURVEY FILE S.P. 5510, T.H. 63.



B.M. ELEV. 1061.401
NO. 5510-B (MHD)
105' LT. S.B. STA. 1441 + 97

NORTH BOUND

HORIZONTAL CONTROL

COORDINATE VALUES SHOWN IN THIS PLAN ARE PROJECT COORDINATES REFERRED TO MINNESOTA STATE PLANE COORDINATE DATUM BY 1979 TRAVERSE TIES TO PERMANENT CONTROL STATIONS; LUND (1973), MAYO (1973) & BLIND (1977). AZIMUTH REFERENCE IS TO ZERO DEGREES NORTH.

TO CONVERT PROJECT COORDINATES TO STATE PLANE COORDINATES USE THE FOLLOWING EQUATIONS:

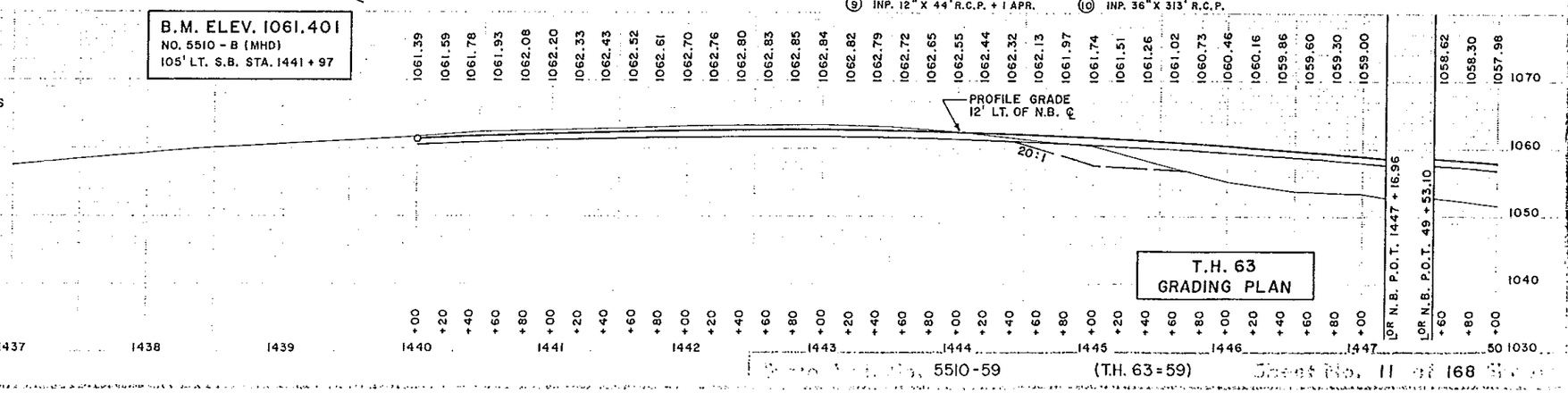
X STATE PLANE = (X PROJECT + 2,000,000) X .99990510

Y STATE PLANE = (Y PROJECT + 300,000) X .99990510

FOR COMPLETE HORIZONTAL CONTROL DATA AND TIES REFER TO PROJECT SURVEY FILE, S.P. 5510, T.H. 63.

SIGNED _____ DISTRICT SURVEYS ENGINEER

REGISTRATION NO. 11527



T.H. 63 GRADING PLAN

Proj. No. 5510-59 (T.H. 63=59) Sheet No. 11 of 168 Sheets

SOUTH BOUND

1051.8525

PROFILE GRADE
12' RT. OF S.B. ℄

℄ S.B.

-2.5 %

S.D.G. LT. -0.4 %

+00 / 34.6

+50 / 33.2

LORI S.B. P.O.T. 49 + 53.10

+60	+80	+00	+20	+40	+60	+80	+00	+20	+40	+60	+80	+00	+20	+40	+60	+80	+00
1058.54	1058.23	1057.92	1057.61	1057.29	1056.95	1056.61	1056.22	1055.83	1055.44	1055.03	1054.61	1054.20	1053.74	1053.29	1052.82	1052.35	

50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

LORI S.B. P.T. 60 + 84.64 ±
LORI S.B. P.O.T. 60 + 84.94

1028.1100

FINISH GRADE

+00 / 22.0

SD6 3.1% 64

+50

B.M. ELEV. 1021.404
NO. 5510 - C (MHD)
75' LT. S.B. STA. 63 + 69

METHODIST CHURCH

GAR.

GAR.

T-B

INP. 33" R.C.P.
INP. 30" R.C.P. + CONC. HDWL.

B528 B23 B25 B26 B27 B24 B28

M.H. M.H.S-9 PED. T-B CON. T-B

INP. 103" X 96' STL. P. - A

INP. 18" X 40' C.M.P. + 2 APR.

INP. 18" X 40' C.M.P. + 2 APR.

INP. 28" X 48' C.M.P. - A + 2 APR.

T.H.63 S.B.

TH 63 S.B.

8" SAN. M.H.S-6 M.H.S-8 M.H.S-10 M.H.S-11 M.H.S-12

T-B CON. M.H. C.B. T-PED CAB.

B4 B3 B2 B501 B22 B21 B20 B17 B16 B18 B19 B36 B37

PED.

OVER-HANG

U.G. TANKS

GAS STA.

MUTUAL OF OMAHA

NORTHERN HILLS DR.

NORTHERN LIGHTS

① INP. 36" X 313' R.C.P.
② INP. 18" X 22' C.M.P. + 1 APR.
③ INP. 33" R.C.P.
④ INP. 42" C.M.P. + 1 APR.
⑤ INP. 58" X 36" X 94' C.M.P. - A + 2 APR.
⑥ INP. 18" X 80' ST. CASING

LORI S.B. P.I. 57 + 71.39
Δ 03°08'30"
D 00°30'05"
R 11,428.74'
T 313.41'
L 626.66'
e R.C.
X 406,329.958
Y 87,294.880

LORI S.B. P.C. 54 + 57.98
EQ. LORI S.B. P.T. 60 + 84.64 ±
LORI S.B. P.O.T. 60 + 84.94

→ ℄ AZ 05°34'58"
℄ AZ 08°43'28" →

N.B. P.I. 57 + 70.11
Δ 03°08'30" RT.
D 00°30'00"
R 11,459.16'
T 314.24'
L 628.33'
e R.C.
X 406,375.617
Y 87,289.149

N.B. P.C. 54 + 55.87
EQ. N.B. P.T. 60 + 84.20 ±
N.B. P.O.T. 60 + 87.06

→ ℄ AZ 05°34'58"
℄ AZ 08°43'28" →

NORTH BOUND

PROFILE GRADE
12.0' LT. OF N.B. ℄

℄ N.B.

-2.5 %

3.0' SUBCUT

0.96'

SUBGRADE

N.B. P.T. 60+84.20
N.B. P.O.T. 60 + 87.06

1028.1098

FINISH GRADE

LORI N.B. P.O.T. 49 + 53.10

+60	+80	+00	+20	+40	+60	+80	+00	+20	+40	+60	+80	+00	+20	+40	+60	+80	+00
1058.62	1058.30	1057.98	1057.63	1057.28	1056.94	1056.58	1056.21	1055.83	1055.44	1055.03	1054.61	1054.20	1053.72	1053.28	1052.81	1052.35	1051.8500

50 51 52 53 54 55 56 57 58 59 60 61 62 63 64

+52.47

T.H. 63
GRADING PLAN

5510-59 (T.H. 63=59) 12 168

Fed. Proj. No.

SOUTH BOUND

V.C. = 700'
M = 2.0825'

1018.9400

PROFILE GRADE
12' RT. OF S.B. ℄

FINISH GRADE

℄ S.B.

S.D.G. LT. -3.1%

S.D.G. LT. -0.4%

S.D.G. LT. +0.3%

S.D.G. LT. -2.0%

-0.12%

+00
15.8

+50
9.80

+50
9.00

+35
11.56

+50
14.0

+00
13.0

P.I. + 00
EL. 1019.36

LORI P.O.T. 78 + 49.10 =
LORI P.O.T. 78 + 51.41

1030
1020
1010
1000

64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

B.M. ELEV. 1021.404
NO. 5510 - C (MHD)
75' LT. S.B. STA. 63 + 69

B.M. ELEV. 1005.177
NO. 5510 - D (MHD)
246' LT. S.B. STA. 85 + 32

GAR.
2 - S - APT.
GAR.
2 - S - APT.
27TH ST. N.E.
2 - S - BR. APT.
SAN. 12"
M.H.S-15
I - S - F GAR.
CAB.
T - B CON.
INP. 15" X 94' C.M.P. +2 APR.
M.H.
PED.
INP. W1010 X 43' BOX CULV.
WELL
I-S-F HO.
SEPTIC TANK
31ST ST. N.E.
SEPTIC TANK
I-S-F HO.
WELL
32ND ST. N.E.
B30
B31
B32
B29
LORI P.O.T. 78 + 49.10 =
LORI P.O.T. 78 + 51.41
65
70
75
TH 63 S.B.

INP. 42" X 66' C.M.P. - A + 2 APR.
M.H.S-12
SAN. 8"
M.H.S-13
M.H.S-14
M.H.S-16
INP. 42" X 44' C.M.P. - A +2 APR.
M.H.S-17
M.H.S-18
SAN. 10"
M.H.S-19
T.H.63 N.B.
INP. 18" X 28' C.M. + 2 APR.
SIGN
C.B.
PED.
B13
B12
B10
B11
METAL BLDG.
SANJO
B9
BOAT SHOP
B35
B34
B8
B7
ROCKY CREEK DR.
ST.
① INP. 28" X 48' C.M.P. - A + 2 APR.
REC. BOWLING LANES
I - S - BL

NORTH BOUND

V.C. = 700'
M = 2.0825'

1018.9398

PROFILE GRADE
12.0' LT. OF N.B. ℄

FINISH GRADE

0.96'

-0.12%

3.0' SUBCUT

SUBGRADE

0.5' SUBCUT

3.0' SUBCUT

℄ N.B.

P.I. + 02.4664
EL. 1019.3598

+52.47

1030
1020
1010
1000

64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

T.H. 63 GRADING PLAN

5510-59 (T.H. 63 = 59)

Fed. Proj. No.

SOUTH BOUND

PROFILE GRADE 12.0' RT. OF S.B. ℄

FINISH GRADE

-0.12%

S.D.G. LT. -0.4%

+00 13.0

+00 11.4

S.B. ℄

V.C. = 600' M = .69'

+0.80%

S.D.G. LT. -0.7%

+00 07.55

S.D.G. LT. +4.0%

S.D.G. LT. +2.2%

+00 11.1

+50 05.1

B.M. ELEV. 1005.177
NO. 5510 - D (MHD)
246' LT. S.B. STA. 85 + 32

LORI P.O.T. 78 + 49.10 =
LORI P.O.T. 78 + 51.41

1017.0567

1019.0967

P.I. + 21.74
EL. 1016.6967

+21.74

C.S.A.H. 22 E.B.

C.S.A.H. 22 W.B.

LORI P.O.T. 83 + 84.92 =
C.S.A.H. 22 E.B. P.O.T. 218 + 01.85 =
C.S.A.H. 22 E.B. P.O.T. 94 + 38.23

LORI P.O.T. 84 + 32.10 =
C.S.A.H. 22 W.B. P.O.T. 217 + 91.33 =
C.S.A.H. 22 W.B. P.O.T. 94 + 27.71

B26 B25 B24 B23 B633 B33 B34 B35 B36 B37 B38 B39 B40 B41

BIT. PARKING

S.W. LEG

N.W. LEG

N.B. STA. 86+20 - 88+60
90' LT.
CONSTRUCT WOOD RETAINING WALL.
360 SQ. FT.

1-1/2-S-F HO.
4-PLEX

HYD.

CAB.

T-BUR T-BUR TBUR 4 CABLE (ABANDONED)

INP. 104 X 76' BOX CULV. (PLUG AND ABANDON)

INP. 18" X 38' C.M.

TH 63 S.B.

T.H. 63 N.B.

M.H.S-20 M.H.S-21 M.H.S-22 M.H.S-23 M.H.S-24 M.H.S-25

WOODED

SAN. 10"

P-B

PED.

N.B. STA. 87+88 ℄
INP. 104 X 76' BOX CULV. (PLUG AND ABANDON)

B601 B22 B14 B15

S.E. LEG

N.E. LEG

SIGN 200'-1-1/2" 200'-1-1/2"

15' PERM. EASEMENT

BIT. PARKING B-624 C&G

190'-1-1/2"

127'-2"

INP. 24" X 64 R.C. + 2 APR.

INP. 36" X 100' S.C.-A + 2 APR.

LOR N.B. P.O.T. 83 + 72.09 =
C.S.A.H. 22 E.B. P.O.T. 94 + 85.42

LOR N.B. P.O.T. 84 + 19.27 =
C.S.A.H. 22 P.O.T. 94 + 74.90

NORTH BOUND

0.96'

PROFILE GRADE 12.0' LT. OF N.B. ℄

FINISH GRADE

-0.12%

+0.80%

+00 1016.80

SUBGRADE

+00 1013.60

+30 1013.20

3.0' SUBCUT

S.D.G. RT. -1.6%

S.D.G. RT. -0.3%

℄ N.B.

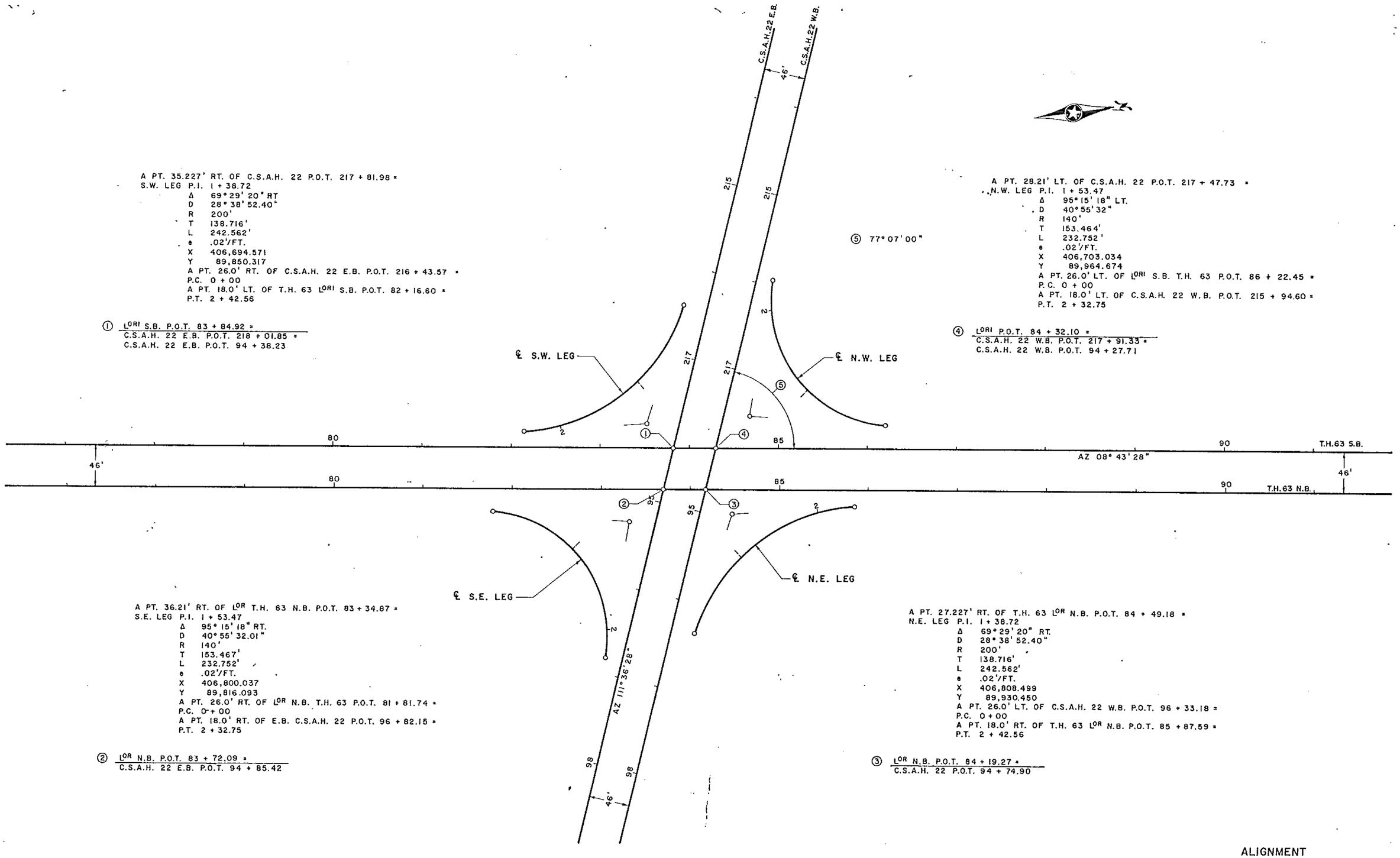
T.H. 63
GRADING PLAN

78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93

1030 1020 1010 1000

State Proj. No. 5510-59 (T.H. 63=59) Sheet No. 14 of 168 Sheets

Fed. Proj. No.



A PT. 35.227' RT. OF C.S.A.H. 22 P.O.T. 217 + 81.98 =
S.W. LEG P.I. 1 + 38.72
Δ 69° 29' 20" RT
D 28° 38' 52.40"
R 200'
T 138.716'
L 242.562'
e .02'/FT.
X 406,694.571
Y 89,850.317
A PT. 26.0' RT. OF C.S.A.H. 22 E.B. P.O.T. 216 + 43.57 =
P.C. 0 + 00
A PT. 18.0' LT. OF T.H. 63 L^ORI S.B. P.O.T. 82 + 16.60 =
P.T. 2 + 42.56

① L^ORI S.B. P.O.T. 83 + 84.92 =
C.S.A.H. 22 E.B. P.O.T. 218 + 01.85 =
C.S.A.H. 22 E.B. P.O.T. 94 + 38.23

⑤ 77° 07' 00"

A PT. 28.21' LT. OF C.S.A.H. 22 P.O.T. 217 + 47.73 =
N.W. LEG P.I. 1 + 53.47
Δ 95° 15' 18" LT.
D 40° 55' 32"
R 140'
T 153.464'
L 232.752'
e .02'/FT.
X 406,703.034
Y 89,964.674
A PT. 26.0' LT. OF L^ORI S.B. T.H. 63 P.O.T. 86 + 22.45 =
P.C. 0 + 00
A PT. 18.0' LT. OF C.S.A.H. 22 W.B. P.O.T. 215 + 94.60 =
P.T. 2 + 32.75

④ L^ORI P.O.T. 84 + 32.10 =
C.S.A.H. 22 W.B. P.O.T. 217 + 91.33 =
C.S.A.H. 22 W.B. P.O.T. 94 + 27.71

A PT. 36.21' RT. OF L^OR T.H. 63 N.B. P.O.T. 83 + 34.87 =
S.E. LEG P.I. 1 + 53.47
Δ 95° 15' 18" RT.
D 40° 55' 32.01"
R 140'
T 153.467'
L 232.752'
e .02'/FT.
X 406,800.037
Y 89,816.093
A PT. 26.0' RT. OF L^OR N.B. T.H. 63 P.O.T. 81 + 81.74 =
P.C. 0 + 00
A PT. 18.0' RT. OF E.B. C.S.A.H. 22 P.O.T. 96 + 82.15 =
P.T. 2 + 32.75

② L^OR N.B. P.O.T. 83 + 72.09 =
C.S.A.H. 22 E.B. P.O.T. 94 + 85.42

A PT. 27.227' RT. OF T.H. 63 L^OR N.B. P.O.T. 84 + 49.18 =
N.E. LEG P.I. 1 + 38.72
Δ 69° 29' 20" RT.
D 28° 38' 52.40"
R 200'
T 138.716'
L 242.562'
e .02'/FT.
X 406,808.499
Y 89,930.450
A PT. 26.0' LT. OF C.S.A.H. 22 W.B. P.O.T. 96 + 33.18 =
P.C. 0 + 00
A PT. 18.0' RT. OF T.H. 63 L^OR N.B. P.O.T. 85 + 87.59 =
P.T. 2 + 42.56

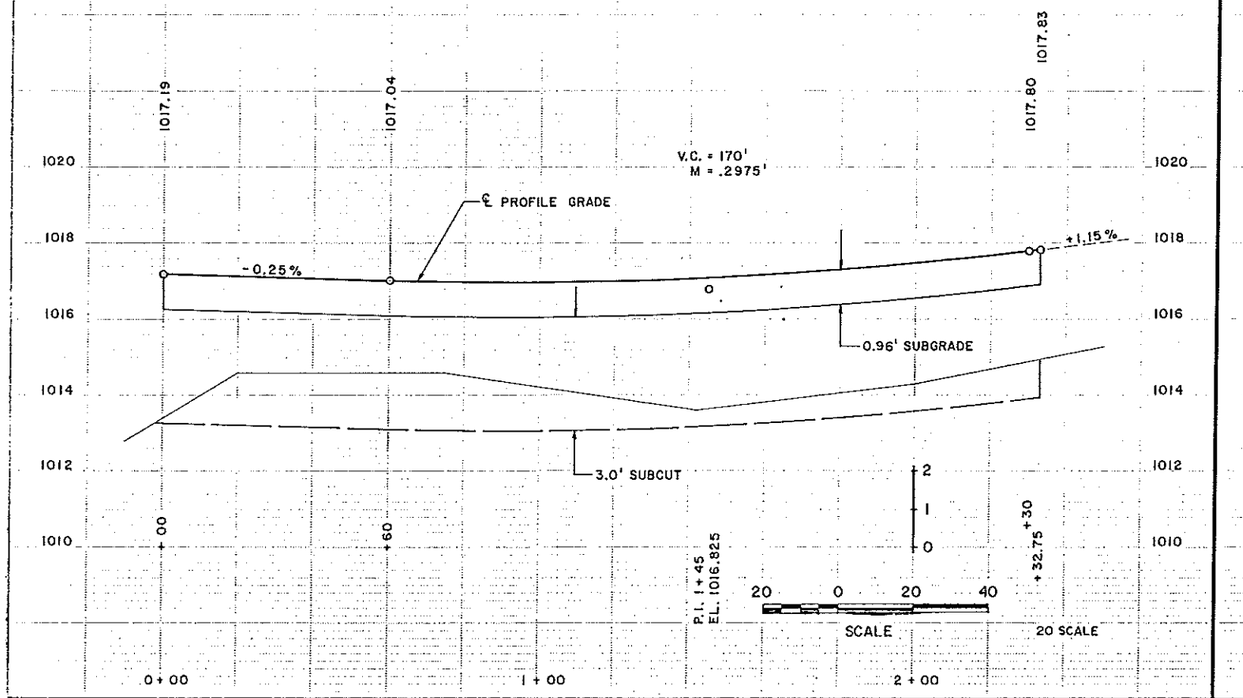
③ L^OR N.B. P.O.T. 84 + 19.27 =
C.S.A.H. 22 P.O.T. 94 + 74.90

ALIGNMENT
GRADING PLAN

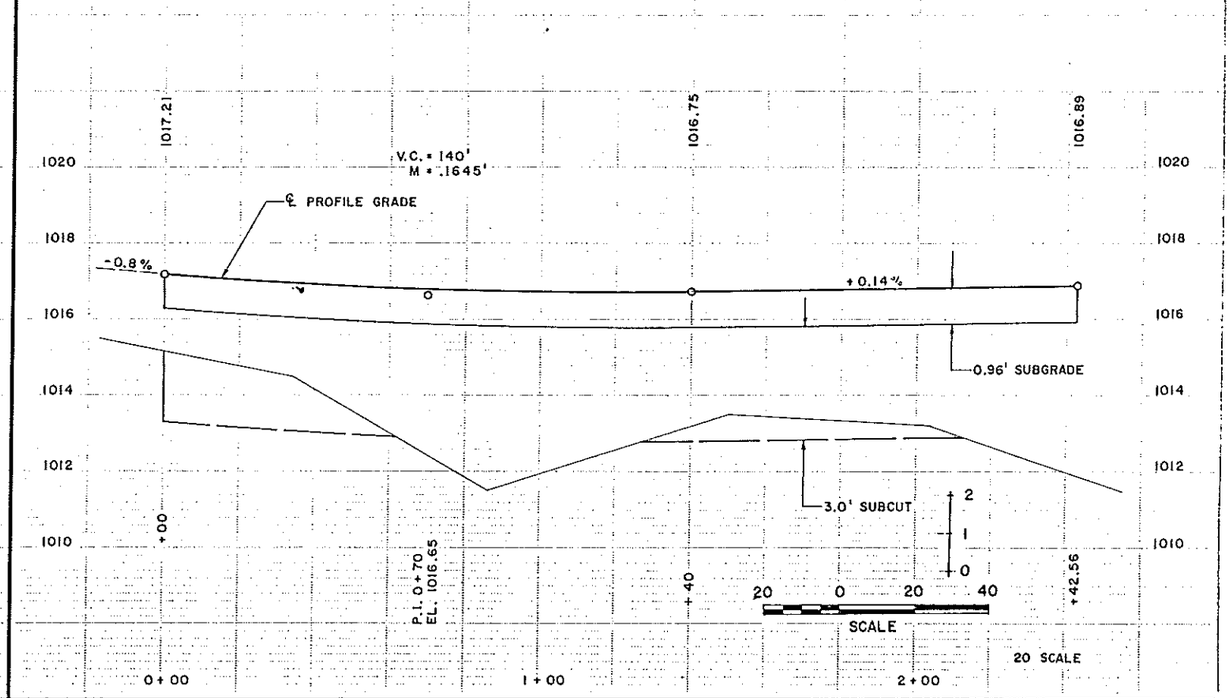
State Proj. No. 5510 - 59 (T.H. 63 = 59)

Sheet No. 15 of 168 Sheets

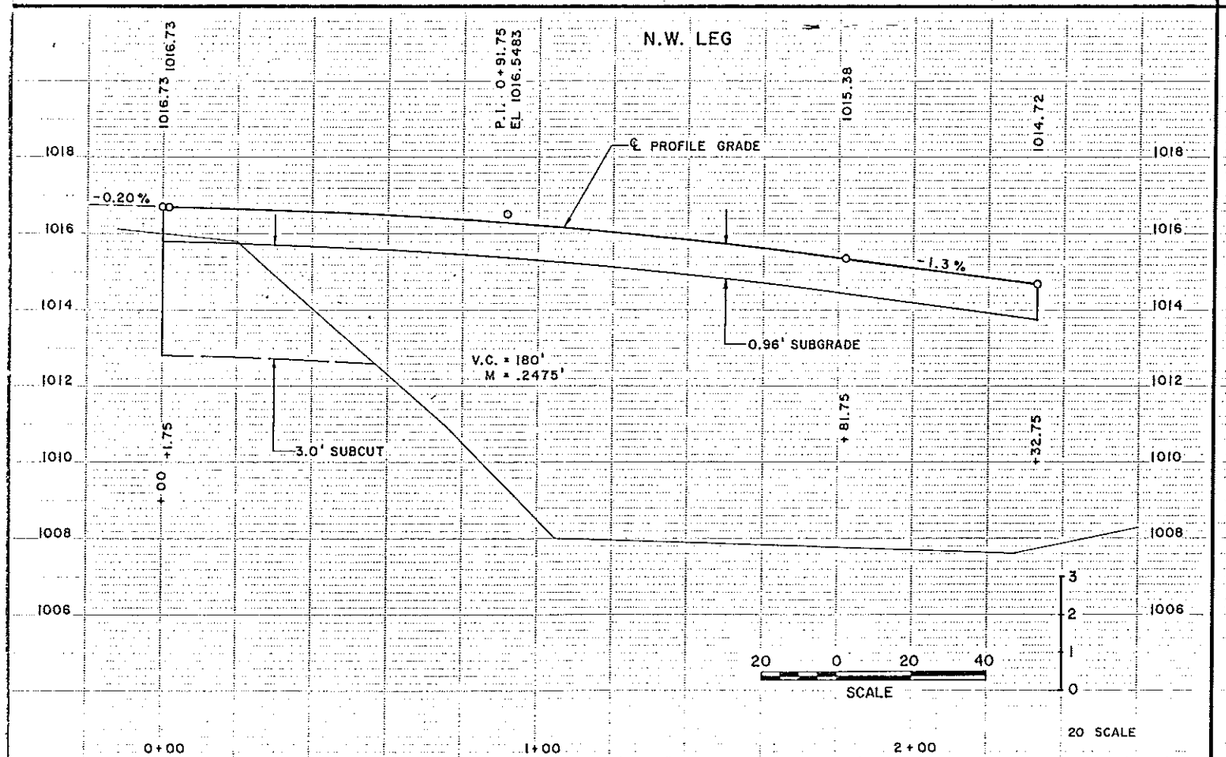
S.E. LEG



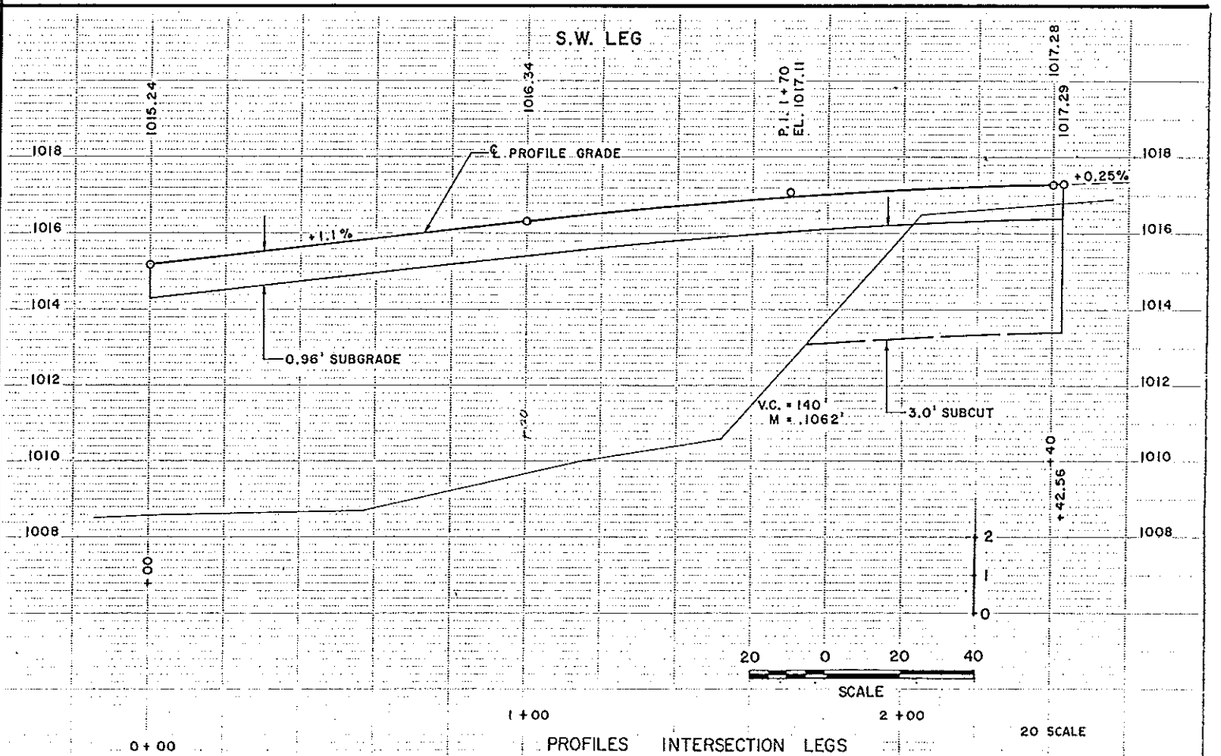
N.E. LEG



N.W. LEG



S.W. LEG



PROFILES INTERSECTION LEGS

H BOUND

1023.3228

1026.6228

00'
1.3750'

℄ S.B.

+0.80 %

+0.30 %

S.D.G. LT. +2.2%

+50
16.6

PROFILE GRADE
12.0' RT. OF S.B. ℄

P.I. +50
EL. 1025.722

LORI S.T. 105 + 14.72 *

LOR P.O.T. 105 + 21.33

1040
1030
1020
1010

B43 94 95 96 +50 97 98 99 100 101 102 +50 103 104 105 106 107

3745 ROCHESTER LAPIDARY SUPPLY

METAL SHED

B46 B47 B48 B49 B50 B51 B52 B53 B54 B55 B12

TBUR CAB. HYD. B44 B45 PED. INP. 18" X 30" C.M. + 2 APR. B41 REPLACE C.M. 2-CABLE INP. 42" X 60" S.C. + 2 APR.

95 100 105 T.H. 63 S.B. T.H. 63 N.B.

M.H.S-25 M.H.S-26 M.H.S-27 M.H.S-28 M.H.S-29 M.H.S-30

C. - A + 2 APR. B10 B11 B12 B13 INP. 18" X 34' C.M. JIM WHITING GARDEN CENTER B56 B57 B9 GAS VALVES

LORI T.S. 93 + 19.73 * I.P. INP. DOWN

LORI SC 95 + 19.73

LORI S.B. P.I. 99 + 22.40 (I.P. INP.)
Δ 19°55'52"
T_s 602.67'
L_s 200.00'
D_c 02°00'11"
Δ_c 15°55'29"
L_c 794.99'
R_c 2860.28'
θ_s 02°00'11"
e .045'/FT.
X = 406,959.232
Y = 91,395.440
℄ AZ 08°43'28"
℄ AZ 28°39'20"

N.B. P.I. 99 + 12.00
Δ 19°55'52" RT.
D 02°00'00"
R 2864.79'
T 503.36'
L 996.56'
e .045'/FT.
X = 407,003.474
Y = 91,380.474
P.C. 94 + 08.63
P.T. 104 + 05.19
EQ. N.B. P.O.T. 104 + 96.46 *
P.O.T. 105 + 21.33
℄ AZ 08°43'28"
℄ AZ 28°39'20"

V.C. = 600'
M = 0.3750'

LORI C.S. 103 + 14.72

ALBERTH DRIVE N.E.

LORI S.T. 105 + 14.72 * I.P. INP. DOWN 0.3'
LOR P.O.T. 105 + 21.33

B8 B7 B6 B5 B4 FRONTAGE ROAD 41ST. ST. N.E.

RTH BOUND

1023.4028

1026.7028

B.M. ELEV. 1026.980
NO. 5510 - E (MHD)
185' RT. S.B. STA. 107 + 75

℄ N.B.

PROFILE GRADE
12.0' LT. OF N.B. ℄

FINISH GRADE

0.96'

+0.30%

+0.80 %

0.5' SUBCUT

3.0' SUBCUT

+00
21.2

S.D.G. RT. -0.3%

SUBGRADE

+96.46
20.0

+21.33
20.0

+25
18.0

S.D.G. RT. -1.9 %

LOR N.B. P.O.T. 104 + 96.46 *
LOR N.B. P.O.T. 105 + 21.33

1040
1030
1020
1010

P.I. +60
EL. 1025.8028

+60

+60

93 94 95 96 97 98 99 100 101 102 103 104 105 106 107

T.H. 63
GRADING PLAN

5510-59 (T.H. 63=59)

Bad. Prof. No.

SOUTH BOUND

PROFILE GRADE
12' RT. OF S.B. ℄

+0.30 %

℄ S.B.

P.I. +55
EL. 1030.5180

1029.1680

1017.9180

FINISH GRADE

-2.8 %

V.C. = 900'
M = 3.4875'

1040 / 1030 / 1020 / 1010

107 108 109 110 +05 111 112 113 114 115 116 117 118 119 +05 120 121

N.B. P.I. 114 + 60.41
Δ 09° 06' 25.52" LT.
D 01° 01' 30"
R 5589.83'
T 445.19'
L 888.49'
e .027'/FT.
P.C. 110 + 15.22
P.T. 119 + 03.72
X = 407,738.961
Y = 92,726.338

EQ. N.B. P.O.T. 119 + 03.77 =
A PT. 12.0' RT. OF L^OR3 P.O.C. 119 + 00

→ ℄ AZ 28°39'20"
℄ AZ 19°32'55" →

L^OR P.O.T. 113 + 47.25 =
L^OR3 T.S. 113 + 47.25

L^OR3 S.C. 115 + 47.25

L^OR3 S.B. P.I. 126 + 60.10
Δ 45° 54' 46"
T_s 1312.84'
L_s 200.00'
D_c 02° 00' 05"
Δ_c 41° 54' 35"
L_c 2094.02'
R_c 2862.78'
θ_s 02° 00' 05"
e .045'/FT.
X = 408,273.874
Y = 93,801.097

→ ℄ AZ 28°39'20"
℄ AZ 342°44'35" →

SHED
SHED
BARN
GRAN.
WELL HO.

B12 B13 B14 B15 B16

T BUR G

INP. 24" X 30' C.M.
+2 APR.
(REMOVE)

INP. 18" X 34' C.M.
+2 APR. (REMOVE)

T.H.63 S.B.

110 115 120

INP. 18" X 80' C.M.
+2 APR. (REMOVE)

T.H.63 N.B.

INP. 18" X 32' C.M.
+2 APR.
(REMOVE)

INP. 18" X 34' C.M.
+2 APR.
(REMOVE)

B21 B4 B5 B6 B7 B8

2-66" X 152' RCP

B11 B10 SHED B9

42'(SPAN) CULV.
+2 APR.

B701

GAR.

DRAIN FIELD

2-S-F HO.

1-S-F HO.

B6 B5 B4

STA. 120 + 00

END MAINLINE GRADING

NORTH BOUND

B.M. ELEV. 1026.980
NO. 5510 - E (MHD)
185' RT. S.B. STA. 107 + 75

PROFILE GRADE
12.0' LT. OF N.B. ℄

0.96'

+0.30 %

SUBGRADE
+50
23.0

S.D.G. RT. +4.0 %

S.D.G. RT. +0.8 %

+50
26.2

3.0' SUBCUT

℄ N.B.

FINISH GRADE

20:1

+50
1023.00

S.D.G. RT. -2.6 %

+00
1013.90

1029.1482 1029.22 1029.26 1029.29 1029.29 1029.28 1029.24 1029.18 1029.09 1028.98 1028.86 1028.72 1028.55 1028.36 1028.15 1027.92 1027.66 1027.33 1027.39

1040 / 1030 / 1020 / 1010

107 108 109 110 111 112 113 114 115 116 117 118 119 120 121

+00 +25 +50 +75 +00 +25 +50 +75 +00 +25 +50 +75 +00 +25 +50 +75 +00 +25 +30

T.H. 63
GRADING PLAN

5510-59 (T.H. 63=59) 18 168

Fed. Proj. No.

PVT. TRAVEL EASE.

15'
S.E.
60'
20'
15'
25'
℄ OF EASE.
95'
50'
175'
50'
20'
15'
15'

B16 B17 B18

T - BUR

(CLOSE)
18" X 36' C.M.P (REMOVE)
+2 APR.

18" X 28' C.M.P. (REMOVE)
+2 APR.

(CLOSE)
B21
B4

18" X 56' C.M.P. (REMOVE)
+2 APR.

(CLOSE)
24" X 28' C.M.P. (REMOVE)
+2 APR.

BR. NO. 6840

120
125
130

T.H. 63

+95
+75
+05

50'R
50'R
INP. 24" X 68' R.C.P.
+2 APR.

B27
B22
B23
INP. 30" X 68' R.C.P.
+2 APR.
B24
B25
B26

B3

STA. 133 + 08.5

BEGIN EXCEPTION
END PAVING

L OR 3 S.B. P.I. 126 + 60.10
Δ 45°54'46"
T_s 1312.84'
L_s 200.00'
D_c 02°00'05"
Δ_c 41°54'35"
L_c 2094.02'
R_c 2862.78'
Θ_s 02°00'05"
e .045'/FT.
X = 408,273.874
Y = 93,801.097

1030
1020
1010
1000
990
980

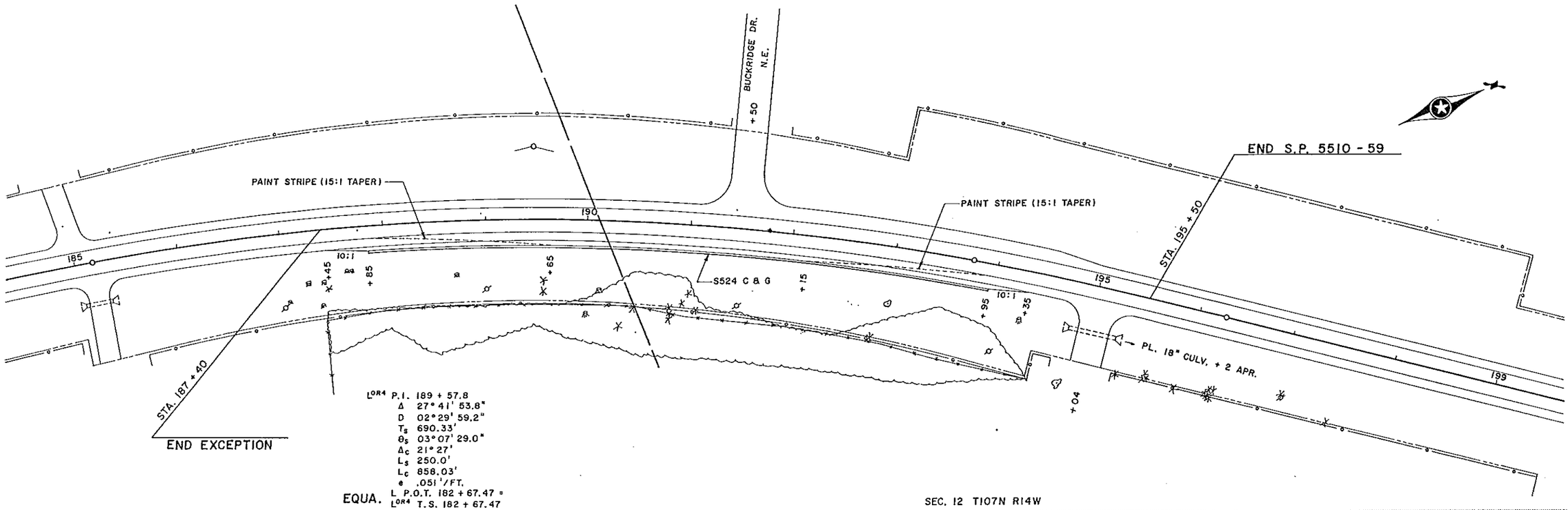
℄ S.B.

BR. NO. 6840

120 121 122 123 124 125 126 127 128 129 130 131 132 133 134

T.H. 63
GRADING PLAN

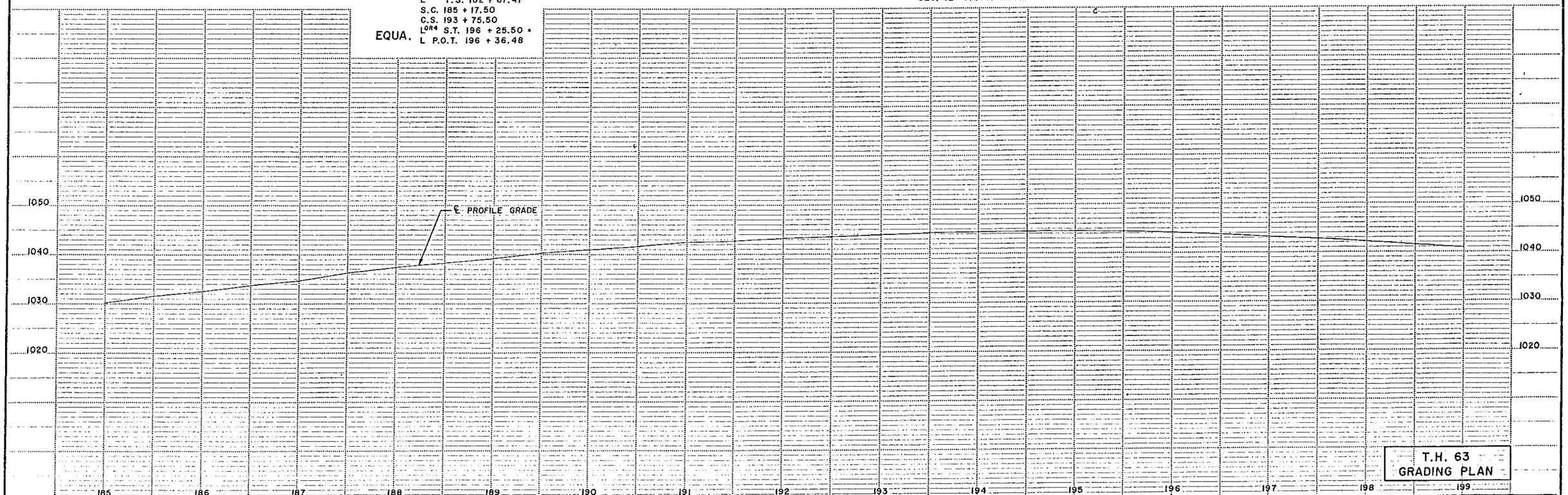
Fed. Proj. No.



L^OR4 P.I. 189 + 57.8
Δ 27° 41' 53.8"
D 02° 29' 59.2"
T_s 690.33'
θ_s 03° 07' 29.0"
Δ_c 21° 27'
L_s 250.0'
L_c 858.03'
e .051'/FT.

EQUA. L P.O.T. 182 + 67.47 = L^OR4 T.S. 182 + 67.47
S.C. 185 + 17.50
C.S. 193 + 75.50
EQUA. L^OR4 S.T. 196 + 25.50 = L P.O.T. 196 + 36.48

SEC. 12 T107N R14W



T.H. 63
GRADING PLAN

State Proj. No. S.P. 5510 - 59 (T.H. 63 = 59)

Sheet No. 20 of 168 Sheets

Fed. Proj. No.

WEST BOUND

1040 / 1030 / 1020 / 1010

1008.7253 — P.I. +00 EL. 1014.3253 — 1016.3253

FINISH GRADE — W.B. ℄ — +1.00 % — 20:1 — 3.0' SUBCUT — V.C. = 400' M = 0.90' — +2.80 %

212 — 213 — 214 — 215 — 216 — 217

B.M. ELEV. 1005.177
NO. 5510 - D (MHD)
246' LT. S.B. STA. 85 + 32

C.S.A.H. 22 W.B. P.O.T. 217 + 91.33 = C.S.A.H. 22 W.B. P.O.T. 94 + 27.71

1017.3000 — V.C. = 300' M = 0.6375' — 1020.4500 — 1026.0075 — V.C. = 300' M = 0.15'

FINISH GRADE — W.B. ℄ — +0.20 % — +1.90 % — +2.3 % — S.D.G. LT. +1.44 % — 20:1 — 3.0' SUBCUT

+50 11.14 — P.I. +00 EL. 1017.6000 — +50 — +42.5 — +35 21.0 — P.I. +92.5 EL. 1028.8575

95 — 96 — 97 — 98 — 99 — 100 — 101 — 102 — 103

1040 / 1030 / 1020 / 1010

LOR P.O.T. 84 + 32.10 = C.S.A.H. W.B. P.O.T. 217 + 91.33 = C.S.A.H. W.B. P.O.T. 94 + 27.71

LOR N.B. P.O.T. 84 + 19.27 = C.S.A.H. 22 P.O.T. 94 + 74.90

B34 — B32 — B31 — B30 — B33 — B14 — B15 — B16 — B17 — B18

BIT. PARKING — BIT. PARKING

INP. 18" X 60' C.M. + 2 APR.

INP. 24" X 64' R.C. + APR.

INP. 56" X 94' C.S.P. - A + 2 APR.

INP. 77" X 140' C.S.P. + 2 APR.

W — 215 — 46' — 95 — 100 — C.S.A.H. 22 W.B. — C.S.A.H. 22 E.B.

G — 8" — G — G — G — 8" — G — G — G — M.H.

B27 — B26 — B25 — B24 — B23 — B22 — B60 — B59 — B19 — B58 — B29 — B28

BIT. PARKING
LOR S.B. P.O.T. 83 + 84.92 = C.S.A.H. 22 E.B. P.O.T. 218 + 01.85 = C.S.A.H. 22 E.B. P.O.T. 94 + 38.23

LOR N.B. P.O.T. 83 + 72.09 = C.S.A.H. 22 E.B. P.O.T. 94 + 85.42

AUTO. DEALER

T.H. 63 S.B. — T.H. 63 N.B.

EAST BOUND

1040 / 1030 / 1020 / 1010

1008.7253 — P.I. +00 EL. 1014.3253 — 1016.3253

E.B. ℄ — FINISH GRADE — +1.00 % — 20:1 — 3.0' SUBCUT — V.C. = 400' M = 0.90' — +2.80 %

212 — 213 — 214 — 215 — 216 — 217 — 218

C.S.A.H. 22 E.B. P.O.T. 218 + 01.85 = C.S.A.H. 22 E.B. P.O.T. 94 + 38.23

1017.3000 — V.C. = 300' M = 0.7312' — 1020.8250 — 1029.4250

EB ℄ — FINISH GRADE — +0.20 % — +2.15 % — S.D.G. RT. +2.3 % — 3.0' SUBCUT

+00 1013.1 — P.I. +00 EL. 1017.6000 — +50 — +00 1024.6

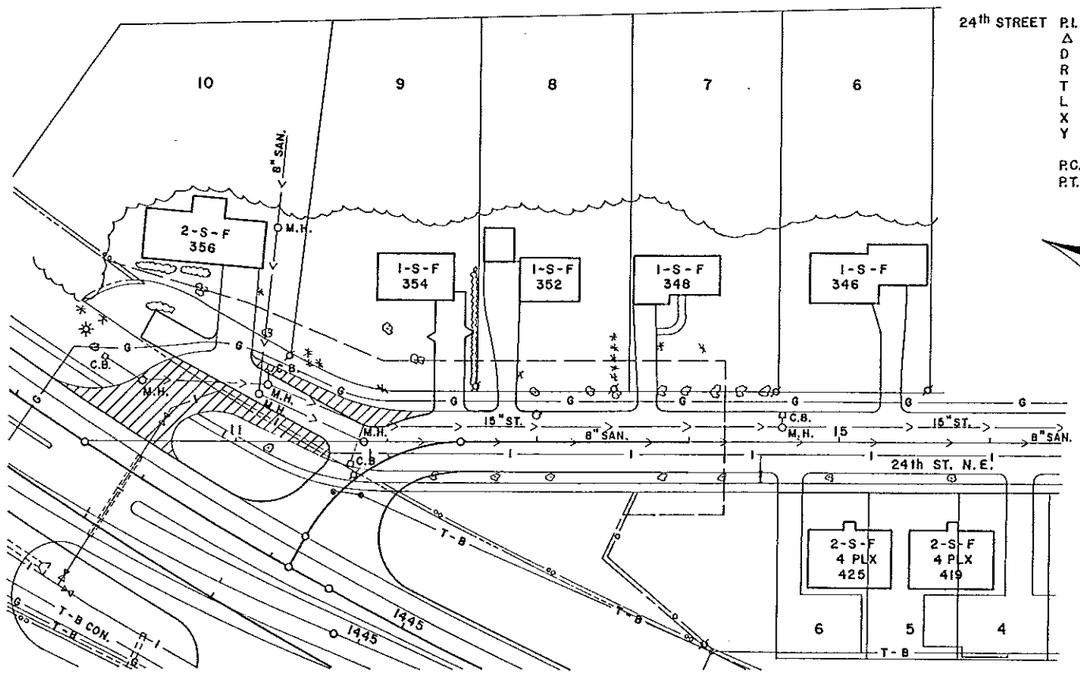
95 — 96 — 97 — 98 — 99 — 100 — 101 — 102 — 103

1040 / 1030 / 1020 / 1010

C.S.A.H. 22

State Proj. No. 5510-59 (T.H. 63=59) Sheet No. 21 of 168 Sheets

Fed. Proj. No.



24th STREET
P.I. 11+92.517
Δ 60° 55' 22.06"
D 47° 44' 47.34"
R 120.00'
T 70.577'
L 127.596'
X
Y

P.C. 11+21.940
P.T. 12+49.536



State Proj. No. 5510-59(T.H. 63 = 59)

Sheet No. 22 of 168 Sheets

Fed. Proj. No.

A POINT 88.04' LT. OF S.B. P.O.C. 1442 + 65.37 = ENT. P.O.T. 1 + 42.00

4" CONC. SIDEWALK (INP.)

×14

65'R

B624 C & G

D424 C & G

℄ ENT.

20'

A POINT 20.0' LT. OF 24th ST. P.O.C. 11 + 85.79 = ENT. P.O.T. 0 + 00

25'R

65'R

5'

B624 C & G

BASE LINE

10

11

12

13

15

℄ 24th ST. N.E.

D424 C & G

S.B. STA. 1442+56.2 = BASE LINE 10+00

15'R

4" CONC. SIDEWALK

1

1443

40'R

B624 C & G

5'

4" CONC. SIDEWALK

4" CONC. SIDEWALK (IMP.)

℄ S.B. T.H. 63

×76

40'R

A POINT 93.54' LT. OF S.B. P.O.C. 1444 + 14 = 24th ST. P.I. 11 + 92.18

Δ 60°27'24.97" RT.
D 47°44'47.34"
R 120'
T 69.9215'
L 126.6207'
e R/C
P.C. 11 + 22.26
P.T. 12 + 48.88
X= 406,124.527
Y= 86,218.000

20 0 20
SCALE

S.B. P.O.C. 1444 + 14 = 24th ST. P.O.T. 10 + 98.64

S.B. C.S. STA. 1444 + 43.92

1445

① CONSTRUCT PEDESTRIAN CURB RAMP

B.M. ELEV. 1061.401
NO. 5510 - B (MHD)
105' LT. S.B. STA. 1441 + 97

1056.23
1055.55
1056.0
1056.80
1058.506
1055.956
1052.256
1048.556
1043.256
1044.856

V.C. = 100'
M = .8875'

+3.1%

-4.0%

℄ ENT.

P.I. 0 + 70
EL. 1054.00

A POINT 20.0' LT. OF 24th ST. P.O.C. 11 + 85.79 = ENT. P.O.T. 0 + 00

℄ T.H. 63 S.B.

S.B. P.O.C. 1444 + 14 = 24th ST. 10 + 98.98

-5.1%

V.C. = 100'
M = .2875'

P.I. 12 + 00
EL. 1055.956

-7.4%

V.C. = 100'
M = .525'

℄ 24th ST. N.E. (PROFILE GRADE)

-3.2%

P.I. 13 + 50
EL. 1044.856

20 0 20 40
SCALE

24TH ST. N.E.

1065
1060
1055
1050
1045
1040

10
8
6
4
2
0

+42
+20
+00
+50
+00
+50
+00
+50
+00

1+60
1+00
0+00
11+00
12+00
13+00
14+00

State Proj. No. 5510 - 59(T.H. 63 = 59)

Sheet No. 23 of 168 Sheets

Fed. Proj. No.

A POINT 116' RT. OF L^ORI S.B. P.O.T. STA. 63 + 00 =
FR. RD. P.O.T. STA. 13 + 00

FR. RD. P.I. 10 + 25.57
Δ 14° 08' 24"
D 38° 11' 49.9"
R 150'
T 18.60'
L 37.02'
P.C. 10 + 06.92
P.T. 10 + 43.99
X= 406,483.124
Y= 87,528.210

A POINT 145.39' RT. OF L^ORI S.B.
P.O.C. STA. 58 + 99.36 =
FR. RD. P.O.T. STA. 8 + 99.38

(PROP. LINE)

OVERHANG (PUMPS)

U.G. TANKS

D424 C & G

℄ FRONTAGE ROAD

12

12'

12'

10

+ 14

16'

15'R

16'

50'R

40'R

B624 C & G

BICYCLE PATH (BIT.)

8'

63

℄ N.B. T.H. 63

60

58

N.B. P.T. 60 + 84.20 =
N.B. P.O.T. 60 + 87.06

61

60

℄ S.B. T.H. 63

L^ORI S.B. P.T. 60 + 84.64 =
L^ORI S.B. P.O.T. 60 + 84.94

L^ORI S.B. P.O.C. STA. 58 + 99.36

20 10 0 20
SCALE

B.M. ELEV. 1021.404
NO. 5510 - C (MHD)
75' LT. S.B. STA. 63 + 69

1045
1040
1035
1030
1025

1025.9750
1031.6100
1033.5600
1035.4500
P.I. 10 + 00
EL. 1036.50
1036.8500
1037.6760
P.I. 11 + 00
EL. 1032.30

℄ PROFILE GRADE

- 2.3 %
+ 4.2 %
- 1.4 %

V.C. = 60'
M = 0.1425'

V.C. = 50'
M = 0.3625'

+ 75
+ 30
+ 70
+ 25
+ 75
+ 16

14 + 00
13 + 00
12 + 00
11 + 00
10 + 00
9 + 00

10
8
6
4
2
0

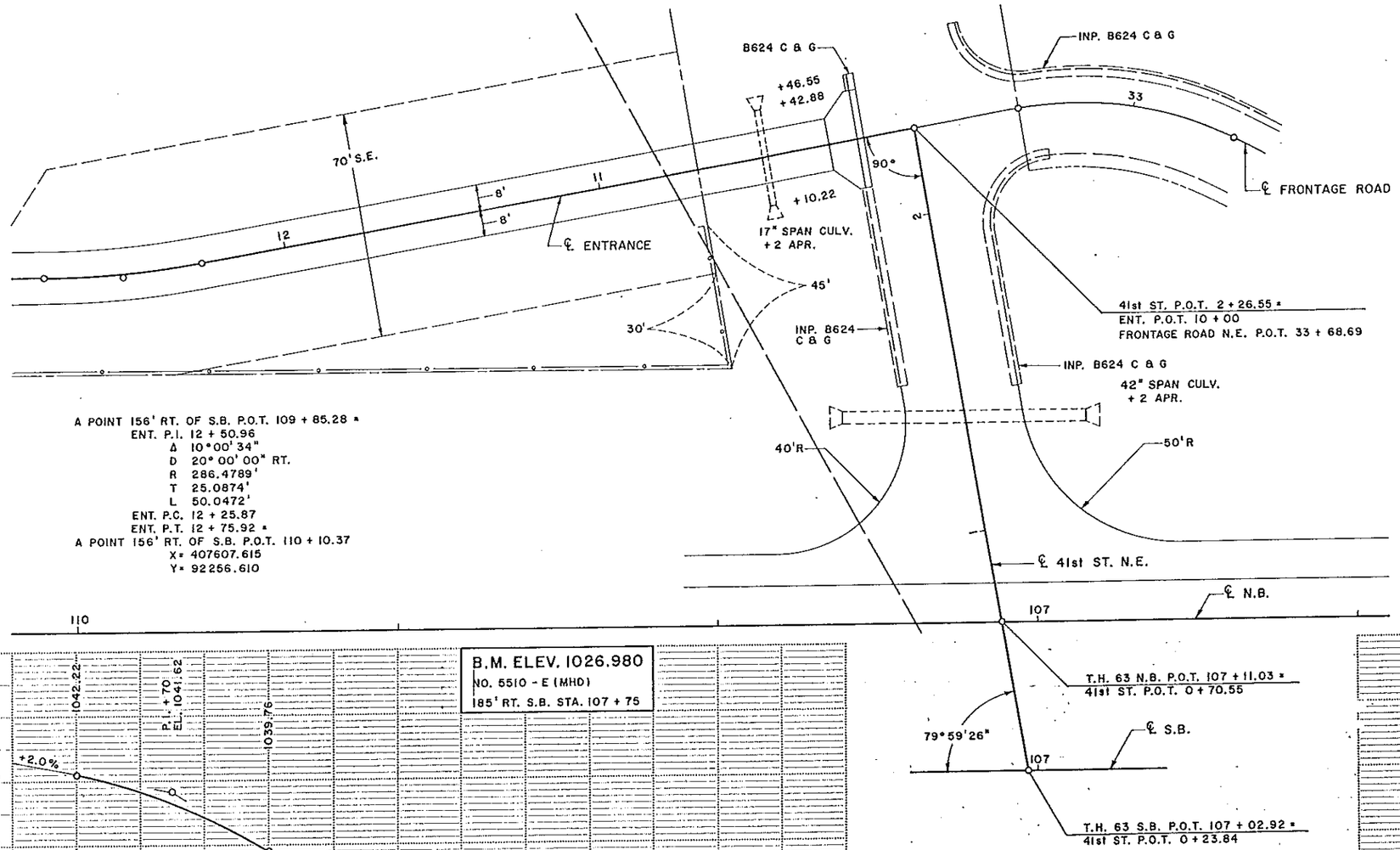
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SCALE

FRONTAGE ROAD

State Proj. No. 5510 - 59 (T.H. 63 = 59)

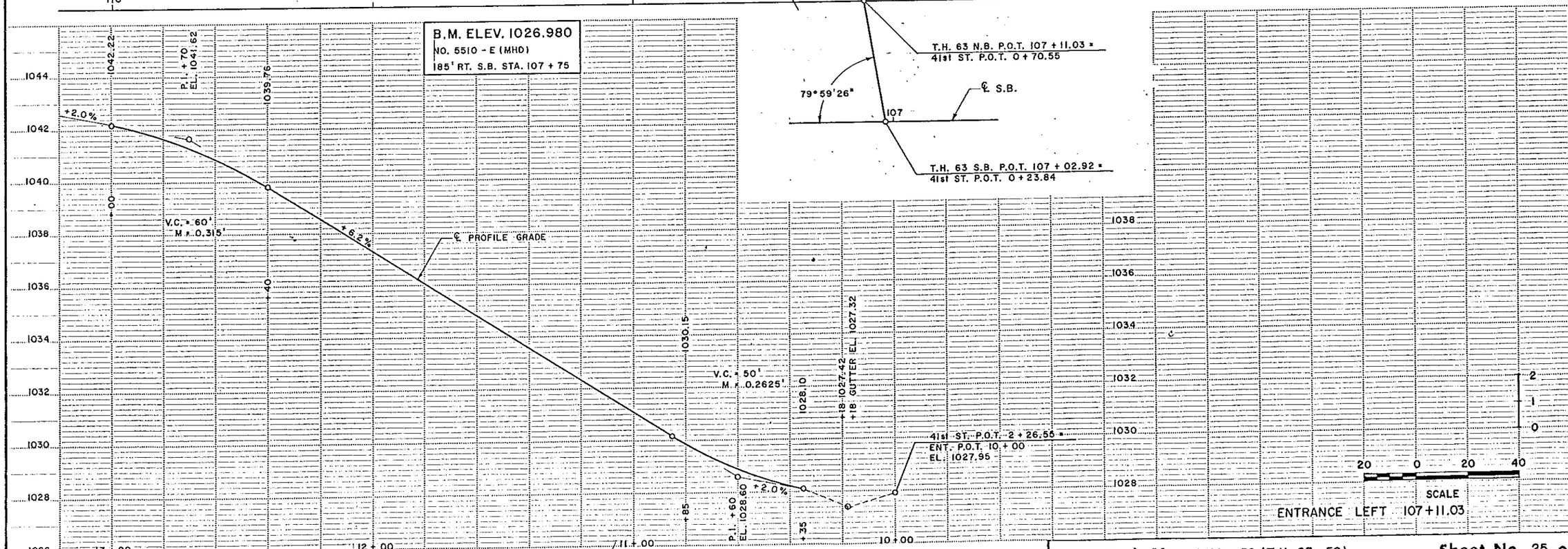
Sheet No. 24 of 168 Sheets

Fed. Proj. No.



A POINT 156' RT. OF S.B. P.O.T. 109 + 85.28 =
ENT. P.I. 12 + 50.96
Δ 10° 00' 34"
D 20° 00' 00" RT.
R 286.4789'
T 25.0874'
L 50.0472'
ENT. P.C. 12 + 25.87
ENT. P.T. 12 + 75.92 =
A POINT 156' RT. OF S.B. P.O.T. 110 + 10.37
X = 407607.615
Y = 92256.610

20 0 20
SCALE

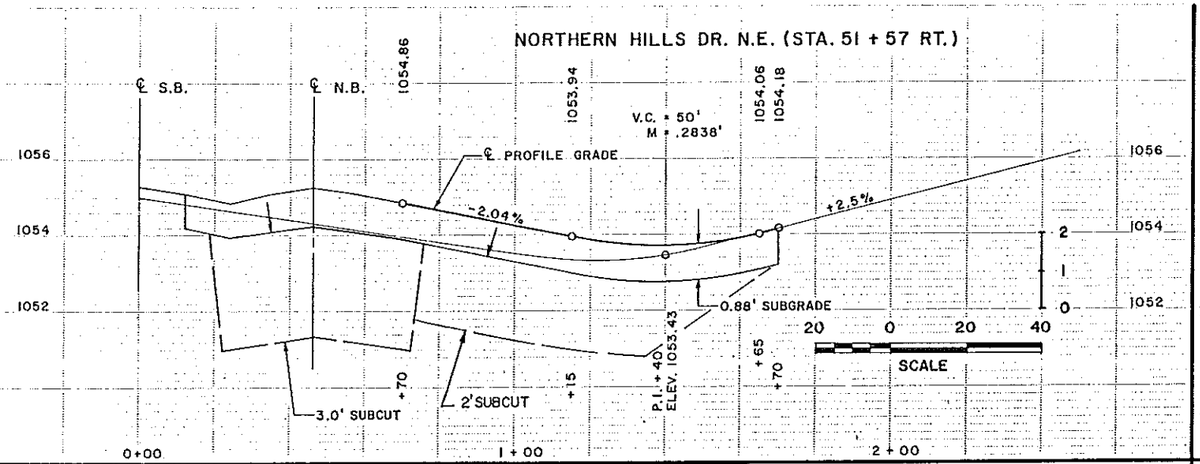


ENTRANCE LEFT 107+11.03

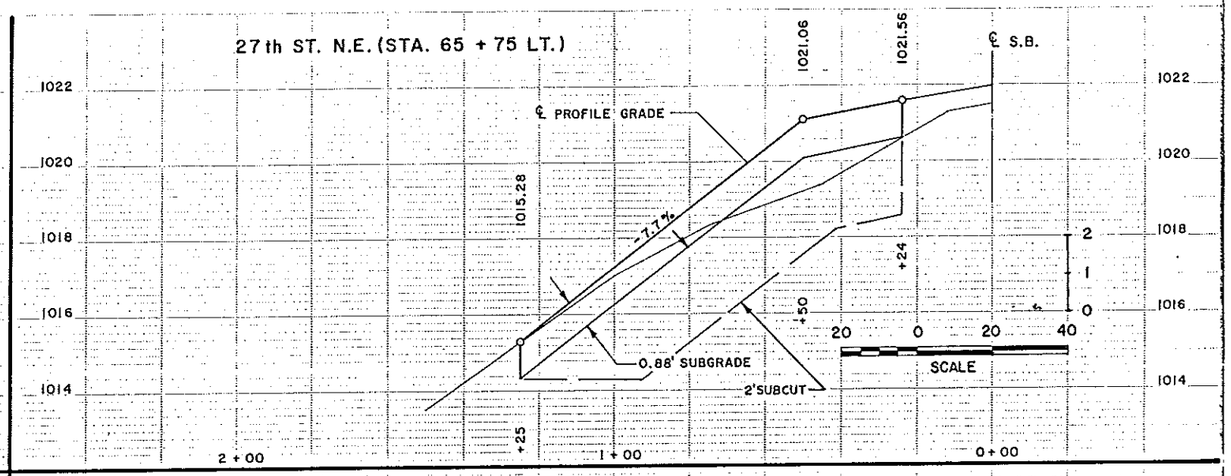
State Proj. No. 5510 - 59 (T.H. 63 = 59)

Sheet No. 25 of 168 Sheets

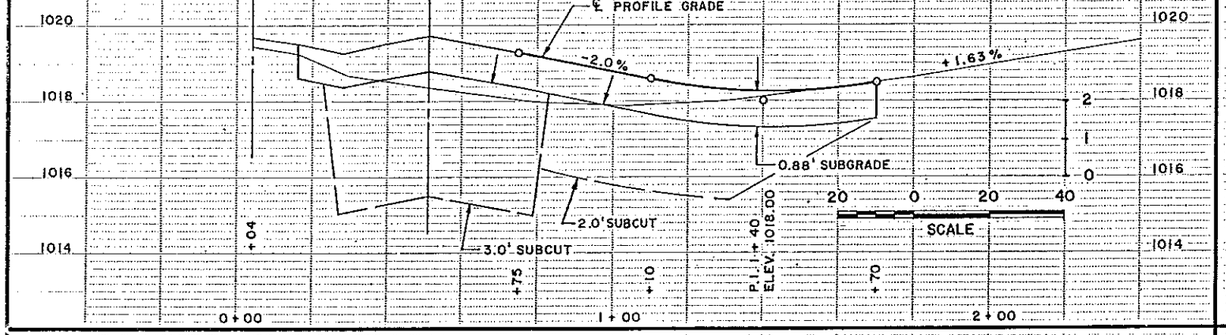
NORTHERN HILLS DR. N.E. (STA. 51 + 57 RT.)



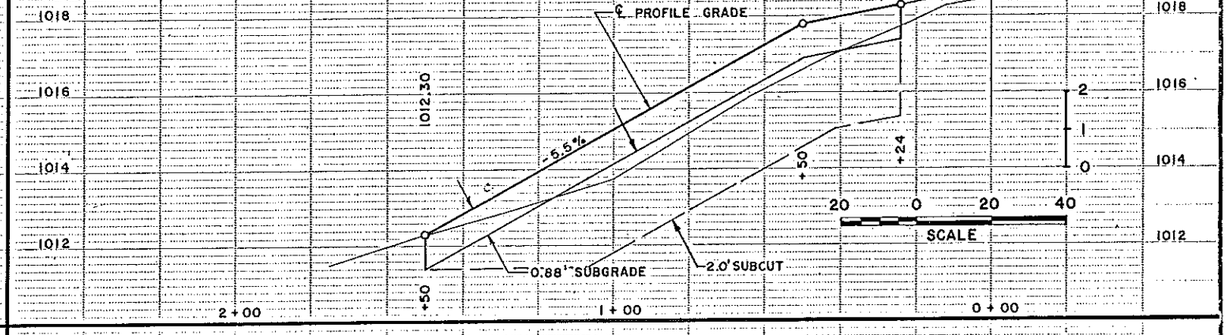
27th ST. N.E. (STA. 65 + 75 LT.)



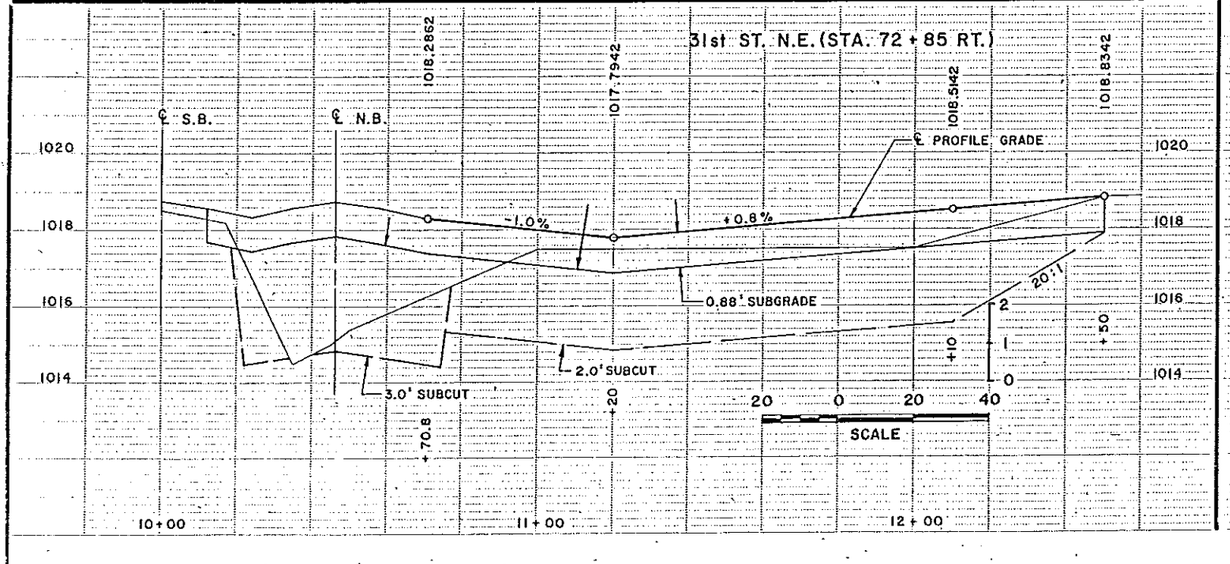
ROCKY CREEK DR. N.E. (STA. 67 + 84.6 RT.)



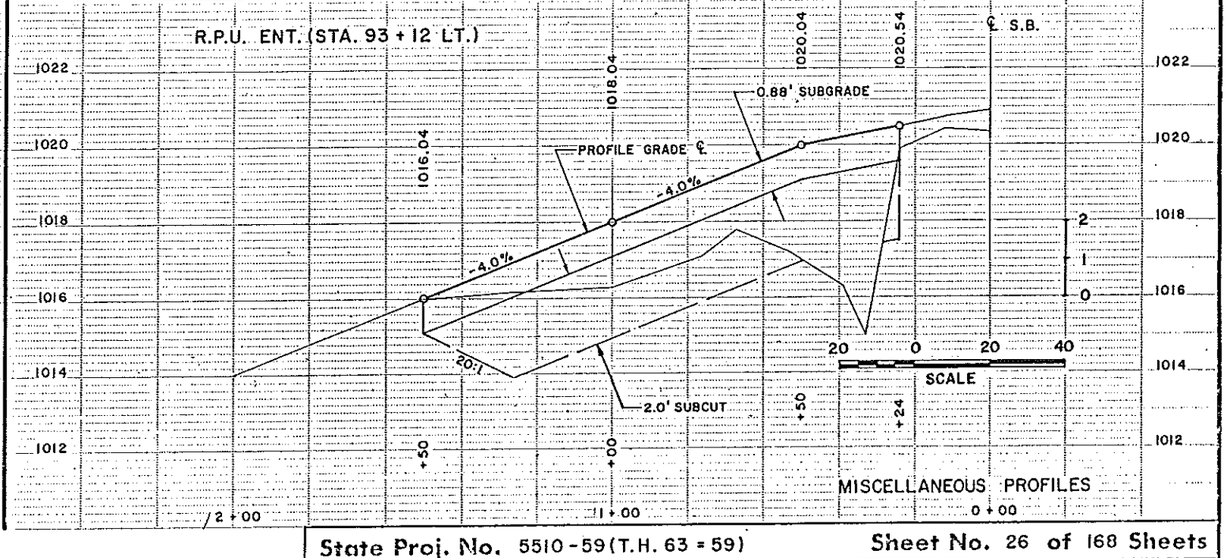
31st ST. N.E. (STA. 72 + 85 LT.)



31st ST. N.E. (STA. 72 + 85 RT.)



R.P.U. ENT. (STA. 93 + 12 LT.)

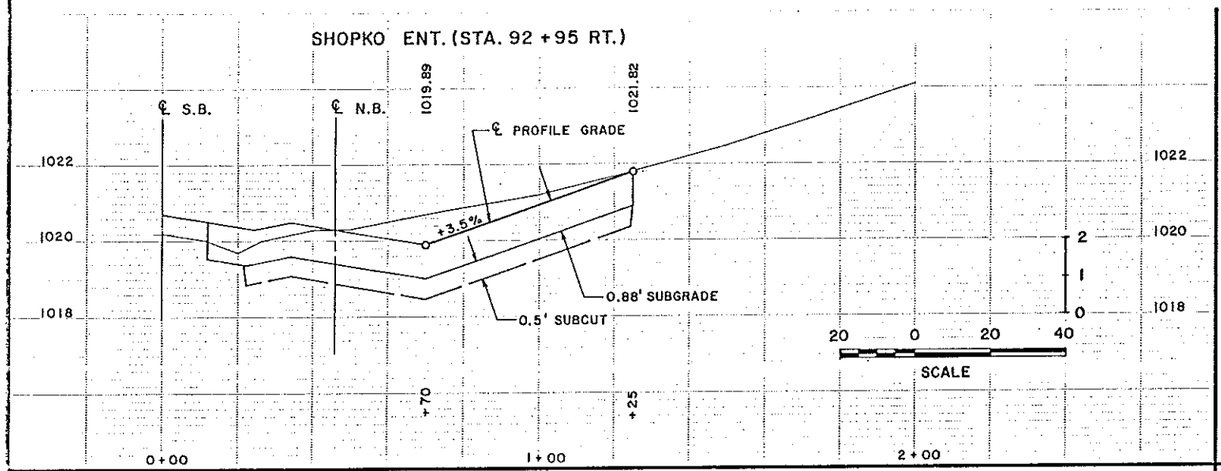


MISCELLANEOUS PROFILES

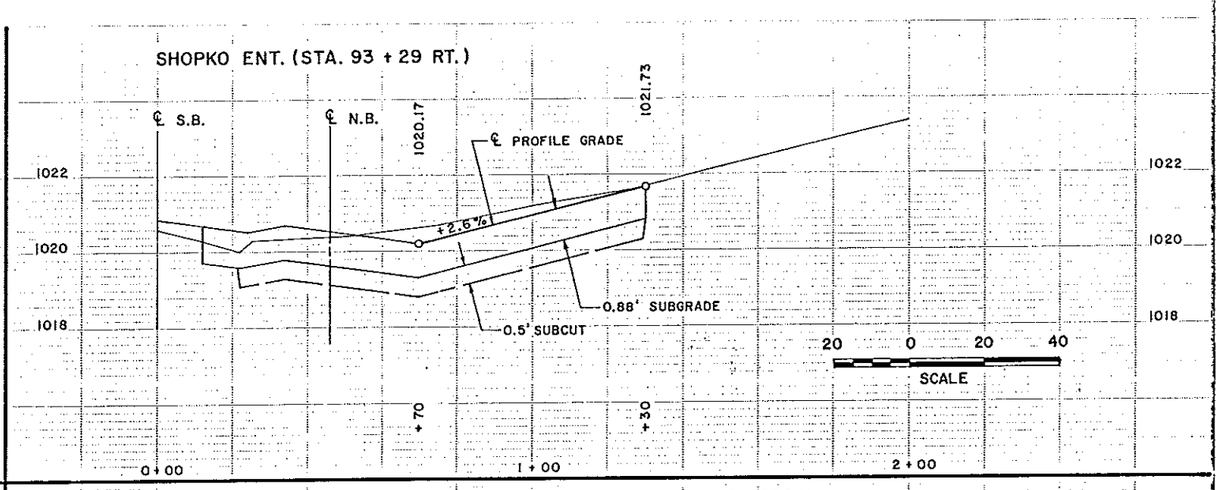
State Proj. No. 5510-59(T.H. 63 = 59)

Sheet No. 26 of 168 Sheets

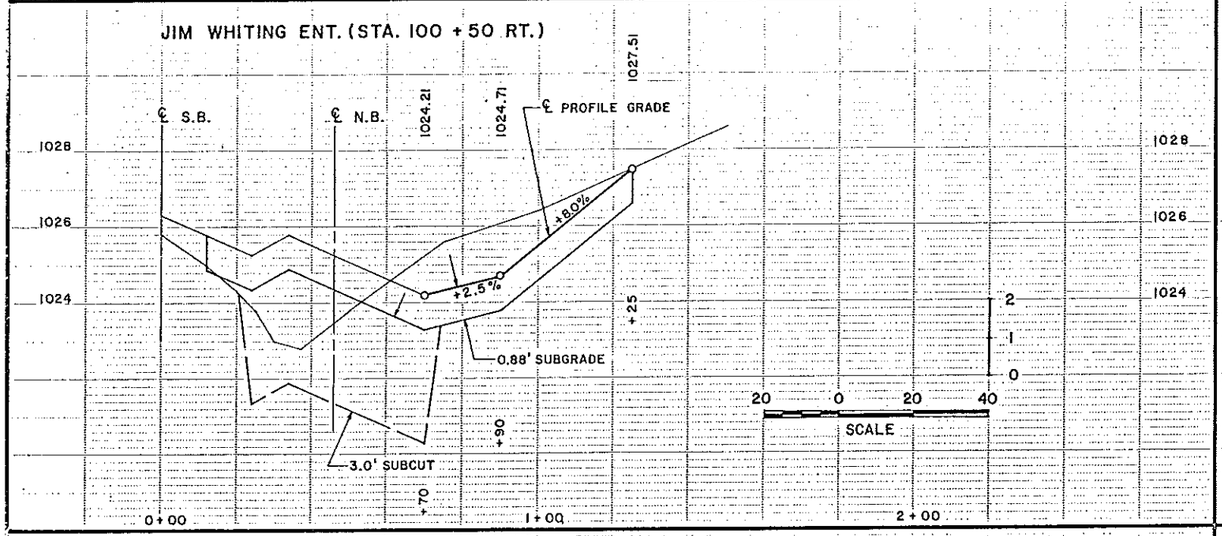
SHOPKO ENT. (STA. 92 + 95 RT.)



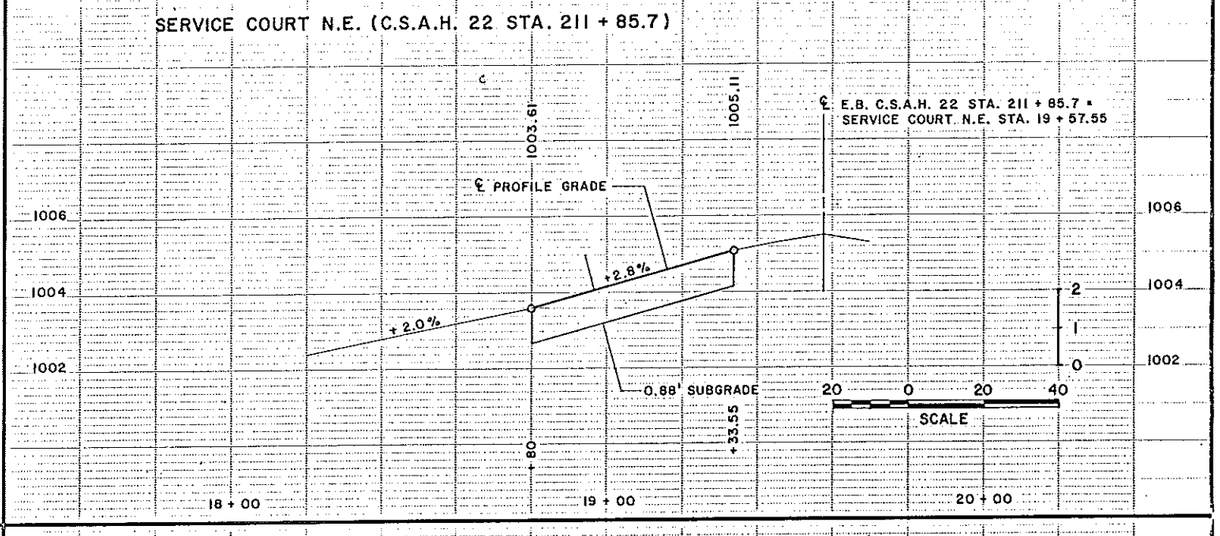
SHOPKO ENT. (STA. 93 + 29 RT.)



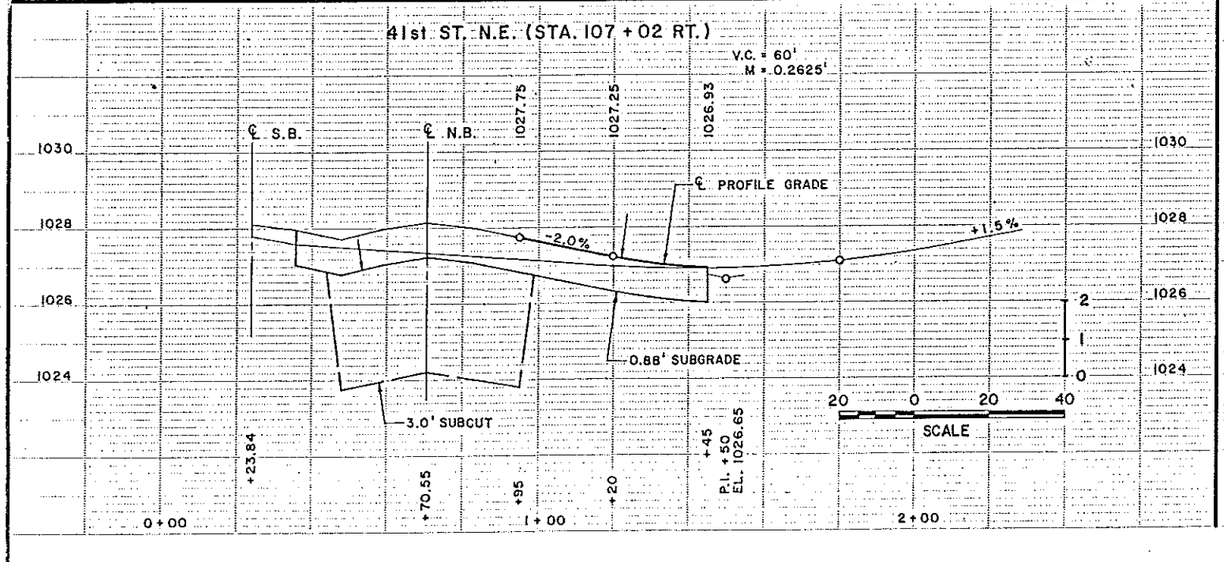
JIM WHITING ENT. (STA. 100 + 50 RT.)



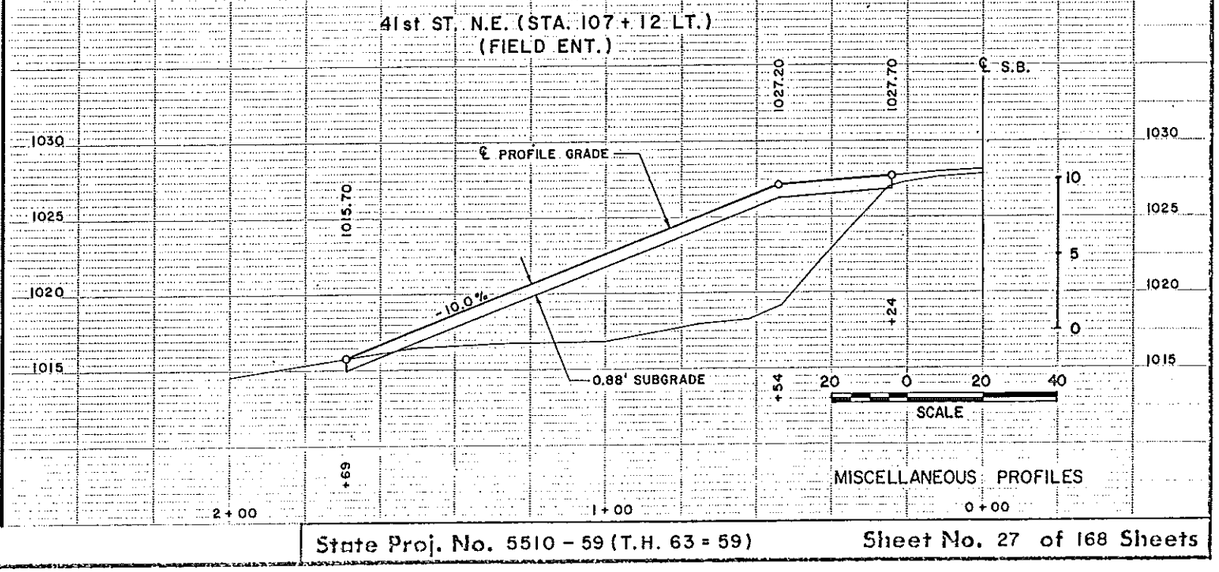
SERVICE COURT N.E. (C.S.A.H. 22 STA. 211 + 85.7)



41st ST. N.E. (STA. 107 + 02 RT.)



41st ST. N.E. (STA. 107 + 12 LT.) (FIELD ENT.)

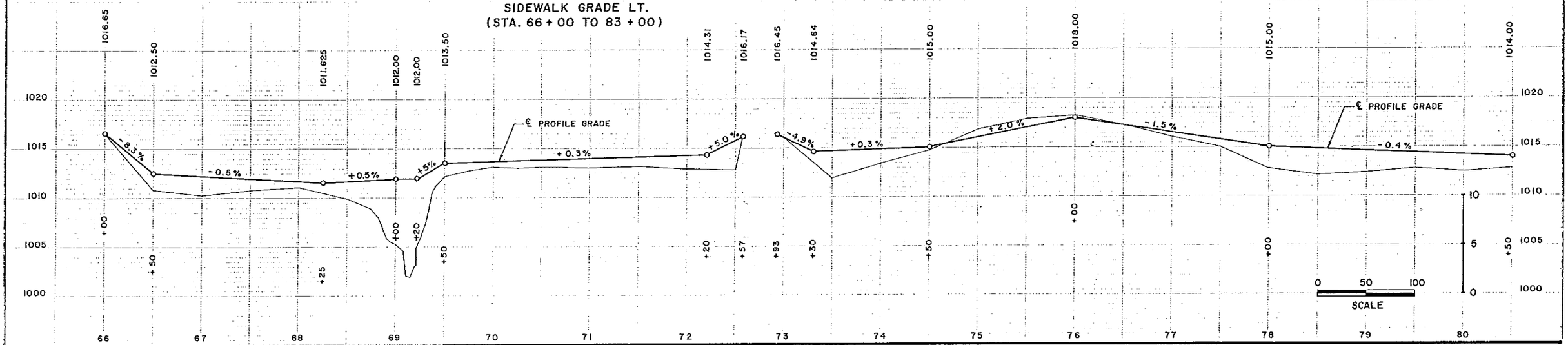


MISCELLANEOUS PROFILES

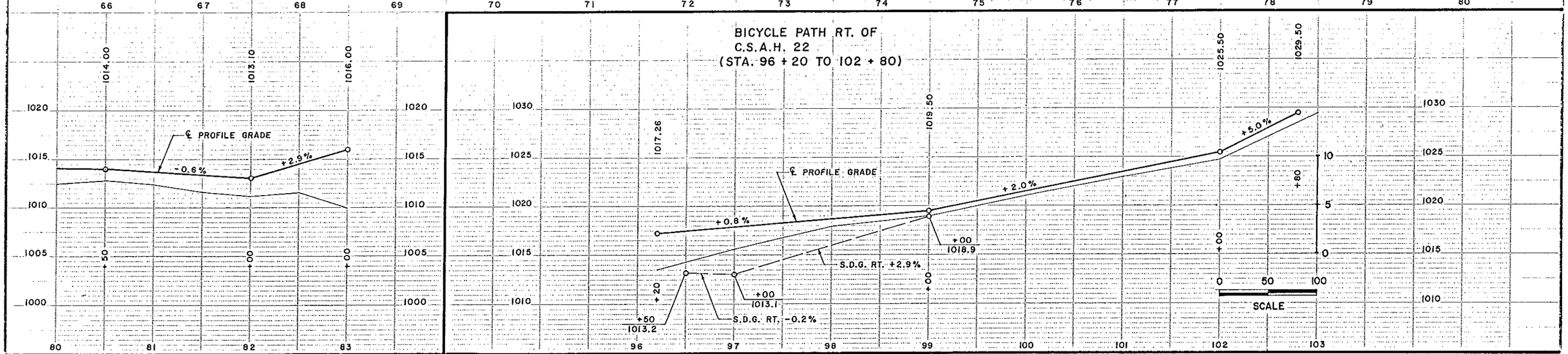
State Proj. No. 5510 - 59 (T.H. 63 = 59)

Sheet No. 27 of 168 Sheets

SIDEWALK GRADE LT.
(STA. 66 + 00 TO 83 + 00)

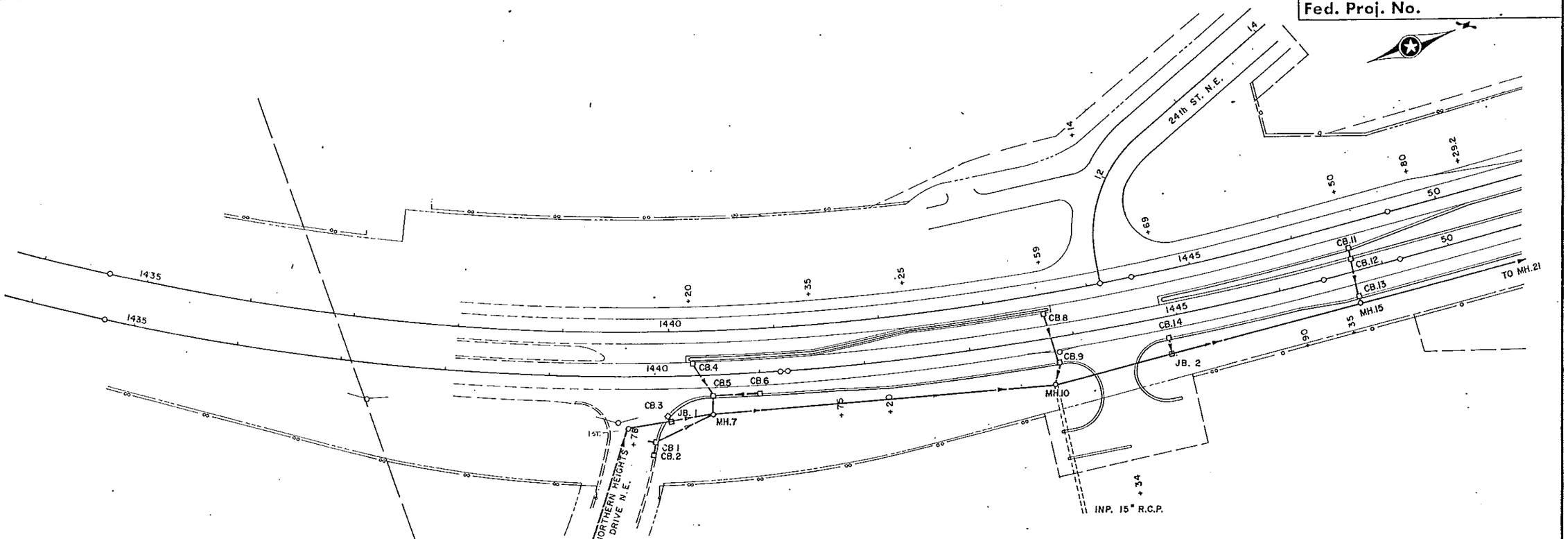


BICYCLE PATH RT. OF C.S.A.H. 22
(STA. 96 + 20 TO 102 + 80)



MISCELLANEOUS PROFILES

Fed. Proj. No.



State Proj. No. 5510-59 (T.H 63=59) Sheet No. 29 of 168 Sheets

Fed. Proj. No.

STA. 54 + 00 - 68.25' LT.
CONST. CONCRETE JCT. BOX (FOR DETAILS & QUANTITIES SEE SHEETS 62 - 65)
REMOVE 30" R.C.P. 6 LIN. FT.
REMOVE 33" R.C.P. 4 LIN. FT.
F & I 30" X 14' R.C.P.
F & I 33" X 12' R.C.P.
F & I 2 - 12" X 16' C.S.P.
F & I 2 - 12" G.S. APRONS
F & I CASTING ASSY. E
F & I 2 - DELINEATOR POST
SOD 16 SQ. YDS.

① FOR ADDITIONAL CULVERT INFORMATION SEE TABULATION SHEET NO. 51

NOTE: SLOTTED DRAINS SHALL BE DEPRESSED 0.1' BELOW SHOULDER PROFILE

PL. 18" X 64' C.M.P. +2 APR.

FROM MH 15 — MH21 — CB22 — CB24 — MH. 16 — CB25 — JB 3 — CB23 — NORTHERN HILLS DR. N.E. +57

CB17 — CB18 — CB19 — CB20 — MH26 — CB 29 — CB30 — MH31 — CB27 — CB28 — CB35 CB36 — JB.4 — CB37 — CB34 — MH38 — CB32 — CB33 — CB39 — CB40 — CB 41 — MH42 — CB44 — CB43 — CB45 — JB 5 — CB49 — CB48 — CB52 — CB51 — JB 6 — CB50 — JB 7 — CB46 — CB47 — CB53 — MH 54

+80 +29.2 +71 +00 +17 +12 +07 +27 +45 +00 +55 +55 +96 +75 +16 +20 +55 +95

50 55 60 65

CB35 TC.1041.59 — 12"X20 RCP 2.5% — OUT 1037.80 — INL 1037.30 — CB36 TC 1041.09 — 12"X10'9" 2.5% — INL. 1035.20 — OUT 1035.47 — 36" STORM SEWER

CB37 T.C.1038.34 — 12"X22 RCP 2.5% — OUT 1034.60 — INL. 1034.05 — CB34 T.C.1037.79 — 15"X7' RCP 2.0% — OUT 1033.08

CB49 TC.1025.31 — 12"X10' RCP 1.0% — OUT 1021.2 — INL 1021.1 — 1020.19 — CB52 TC.1025.16 — 12"X20 RCP 2.0% — OUT 1022.97 — INL 1022.57 — CB51 TC.1025.69 — 12"X26' RCP 2.0% — OUT 1022.47 — 36" STORM SEWER

CB48 TC 1025.69 — 15"X25.5' RCP 2.0% — INL 1021.95 — OUT 1021.70 — 36" STORM SEWER — INL. 1021.19

SLOTTED DRAIN T.C. 1023.22 — CB50 TC 1023.22 — 15"X12' RCP 0.8% — INL 1021.54 — OUT 1019.00 — INL 1018.90

CB41 TC 1029.19 — SLOTTED DRAIN T.C.1029.19 — CB40 TC 1029.59 — 15"X20' RCP 0.75% — INL 1027.51 — OUT 1025.65 — INL 1025.5 — OUT 1025.15

CB44 TC 1031.50 — OUT 1027.26 — CB 43 TC 1030.29 — 12"X66' RCP 2.0% — INL 1026.26 — CB45 TC 1030.29 — 12"X50' RCP 2.0% — INL 1025.64 — OUT 1026.16 — OUT 1025.39 — INL 1025.10

CB39 TC EL 1030.14 — 12"X48 RCP 1.0% — OUT 1026.36 — INL 1025.90 — CB40 TC 1029.59 — 15"X7' RCP 2.0% — OUT 1025.15 — INL 1025.00 — MH 42 TC 1030.33 — 15"X29 RCP 1.0% — OUT 1023.69

CB47 TC 1022.24 — CB53 TC 1022.25 — 12"X8' RCP 1.0% — 12"X60' RCP 1.0% — 15"X9' RCP 2.0% — OUT 1018.80 — INL 1018.72 — OUT 1018.46 — INL 1017.96 — OUT 1017.70 — INL 1017.6 — MH 54 TC 1022.98

CB46 TC 1022.48

CB17 TC EL 1055.58 — 12"X10' RCP 1.0% — OUT 1051.8 — INL 1051.7

CB18 TC EL 1055.79 — 12"X 47' RCP 2.5% — OUT 1051.6 — INL 1051.1

CB19 TC EL 1056.07 — 15"X 7' RCP 2.5% — INL 1052.79 — OUT 1050.85 — INL 1050.69

MH 21 TC EL 1056.79 — 12"X 53' RCP 5.66% — OUT 1044.4

CB 20 TC 1056.22 — 12"X11' RCP 1.0% — OUT 1052.9

CB 19 TC EL 1056.07 — INL 1052.79 — INL 1039.0

CB 27 TC EL 1047.86 — 12" X 52' RCP 1.0% — OUT 1042.0 — INL 1042.00

CB 28 TC EL 1046.35 — OUT 1042.67

C.B. 29 TC EL. 1045.98 — 12"X 60' RCP 2.5 % — OUT 1042.2 — INL 1040.5

CB 30 TC EL 1044.41 — 15"X19' RCP 2.5 % — OUT 1038.98 — INL 1038.50

MH 31 TC EL 1045.40 — 36"X270' RCP 2.0% — OUT 1036.5

FLOWS TO MH 38

CB39 TC EL 1030.14 — 12"X48 RCP 1.0% — OUT 1026.36 — INL 1025.90

CB 40 TC 1029.59 — 15"X7' RCP 2.0% — OUT 1025.15 — INL 1025.00

MH . 2 TC 1030.33 — 15"X29 RCP 1.0 % — OUT 1023.69 — INL 1025.10

CB 43 TC 1030.29 — 12"X66' RCP 2.0 % — INL 1025.64 — OUT 1026.16 — OUT 1025.39

CB45 TC 1030.29 — 12"X50' RCP 2.0% — INL 1026.26

CB44 TC 1031.50 — OUT 1027.26

CB41 TC 1029.19 — 15"X20' RCP 0.75% — INL 1027.51 — OUT 1025.65 — INL 1025.5 — OUT 1025.15

CB40 TC 1029.59

CB47 TC- 1022.24 — CB53 TC 1022.25 — 12"X8' RCP 1.0% — 12"X60' RCP 1.0% — 15"X9' RCP 2.0% — OUT 1018.80 — INL 1018.72 — OUT 1018.46 — INL 1017.96 — OUT 1017.70 — INL 1017.6

MH 54 TC 1022.98

CB46 TC 1022.48

FLOWS FROM MH 15 — 36"X 80' RCP 1.2 % — OUT 1044.4

DES 3006

MH.26 TC. 1049.55 — 36"X 314' RCP 1.5 % — INL 1039.70 — OUT 1036.85

5'-1" CULVERT STA. 54+00

MH. 16 TC.EL 1053 68 — 12" X 9' RCP — INL 1047.50 — OUT 1048.7

CB 24 TC EL. 1053.24

CB 32 TC EL. 038.14 — 12"X6' RCP 1.25 % — OUT 1034.36 — INL. 1034.26

CB33 TC. 1037.90 — 12"X52 RCP 1.5 % — OUT 1034.16 — INL. 1033.38

CB34 TC. 1037.79 — 15"X7' RCP 2.0% — OUT 1033.06 — INL 1032.96

MH38 TC. 1038.43

CB23 TC EL. 1053.62 — 12"X46 RCP 2.0% — OUT 1049.80 — INL. 1049.70

CB 22 T.C. 1053.24 — 15"X 25' RCP — OUT 1048.51 — INL. 1047.50

MH. 16 TC 1053.68 — INL. 1047.30

LENGTH INCLUDES 12 LONG RADIUS BENDS

MH 31 TC EL 1045.40 — INL. 1038.50 — 36"X 272' RCP (LENGTH INCLUDES 1 - 7 1/2° LONG RADIUS BEND.) 2.0 % — INL. 1036.68 — OUT 1036.50

INL 1041.62 — 36"X57' RCP 2.0% — OUT 1041.62

36"X 300' RCP 1.0 % — DES 3006

CB 25 TC. 1053.42 — 12"X 9' RCP (INP) — OUT 1047.37 — INL 1044.21 — 33" RCP (INP) EL. 1041.62

MH 38 TC. 1038.43 — INL 1032.95 — DES 3006 — INL 1031.05 — OUT 1030.80

FLOWS TO MH42 36"X 338' RCP 2.0 %

MH42 TC EL 1030.33 — INL 1025.00 — OUT 1023.69 — INL 1023.74

FLOWS FROM MH 38 — 36"X 347' RCP 2.0 % — DES 3006

MH 54 TC 1022.98 — INL 1017.60 — 36"X 211' RCP 2.2 % — INL 1016.75 — DES 3006 — OUT 015.85 — FLOWS TO MH. 61

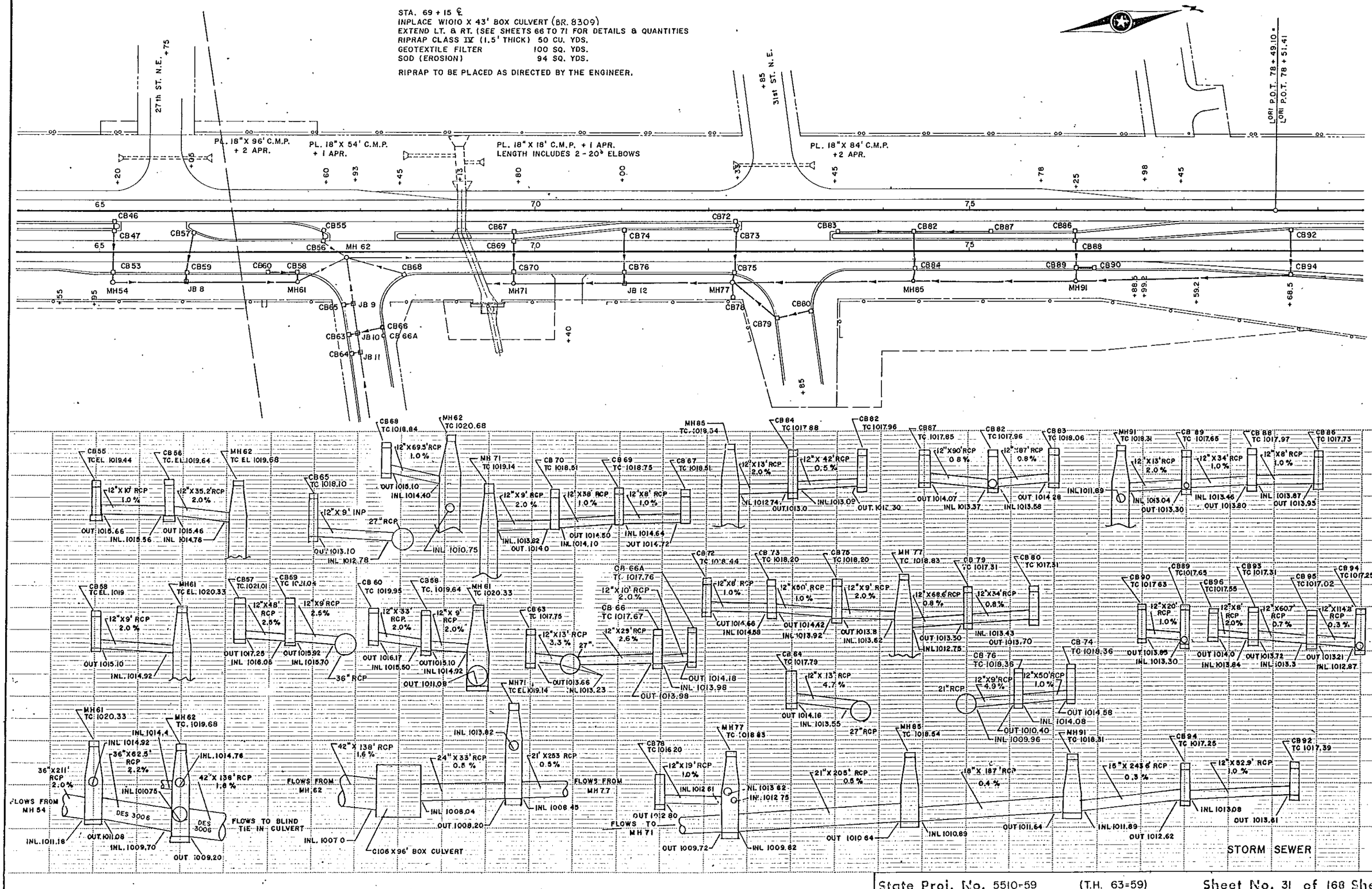
STORM SEWER

State Proj. No. 5510-59 (T.H. 63=59) Sheet No. 30 of 168 Sheets

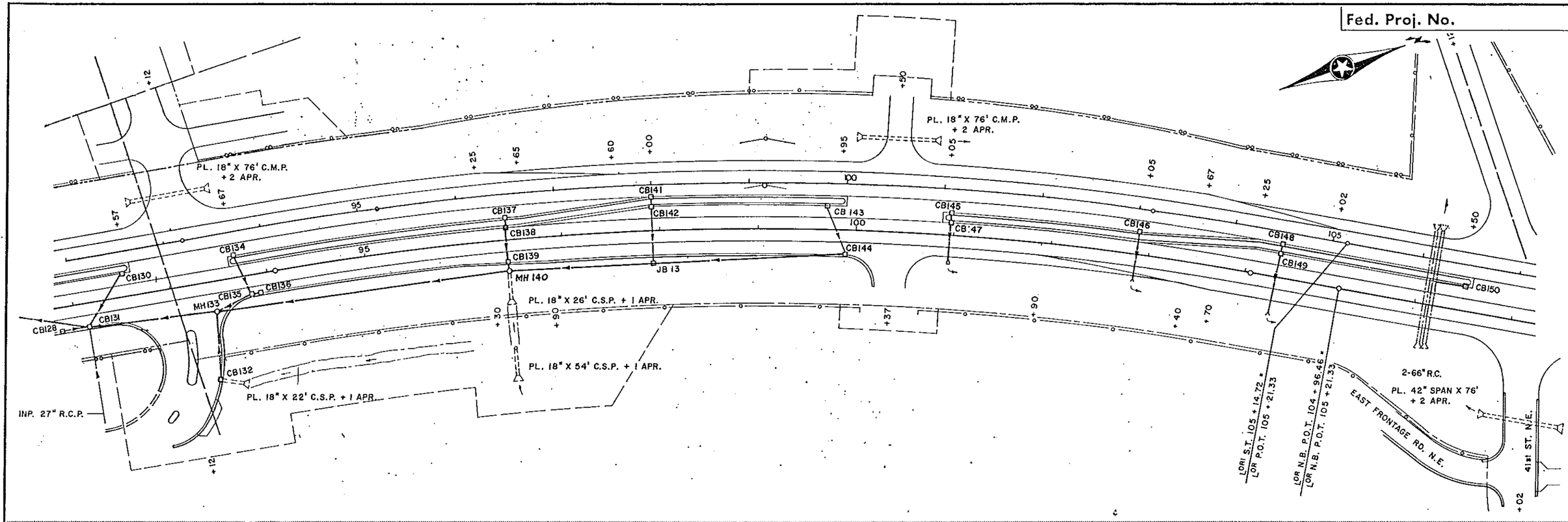
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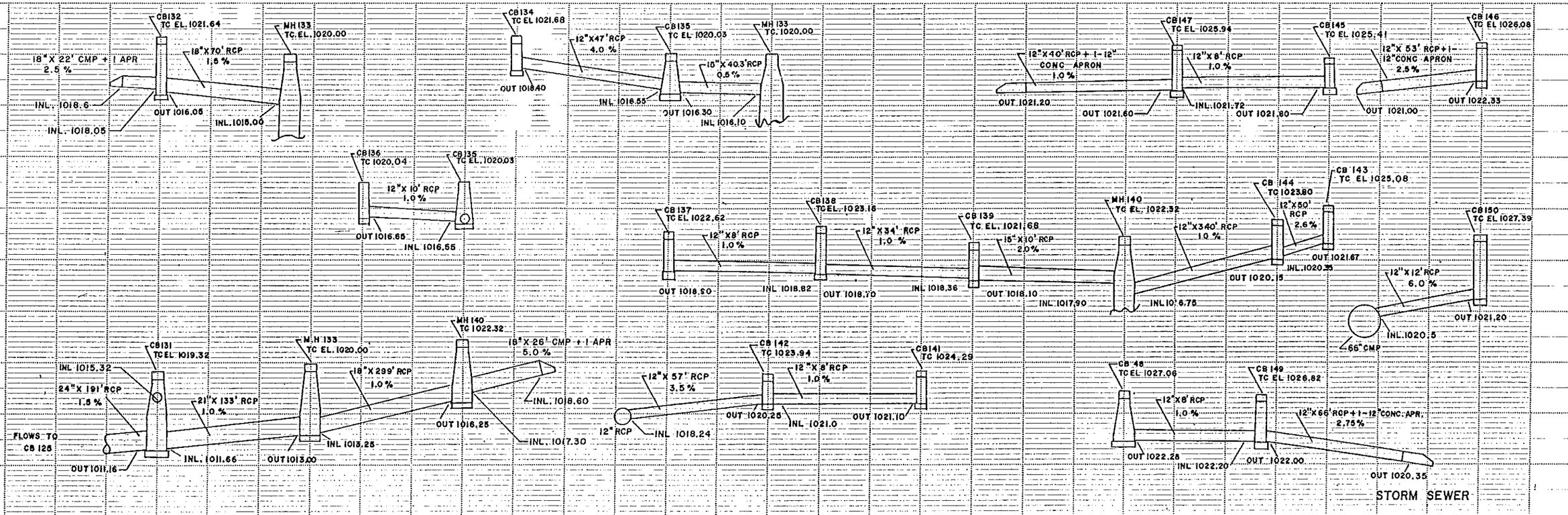
STA. 69 + 15 ℄
INPLACE W10I0 X 43' BOX CULVERT (BR. 8309)
EXTEND LT. & RT. (SEE SHEETS 66 TO 71 FOR DETAILS & QUANTITIES
RIPRAP CLASS IV (1.5' THICK) 50 CU. YDS.
GEOTEXTILE FILTER 100 SQ. YDS.
SOD (EROSION) 94 SQ. YDS.

RIPRAP TO BE PLACED AS DIRECTED BY THE ENGINEER.



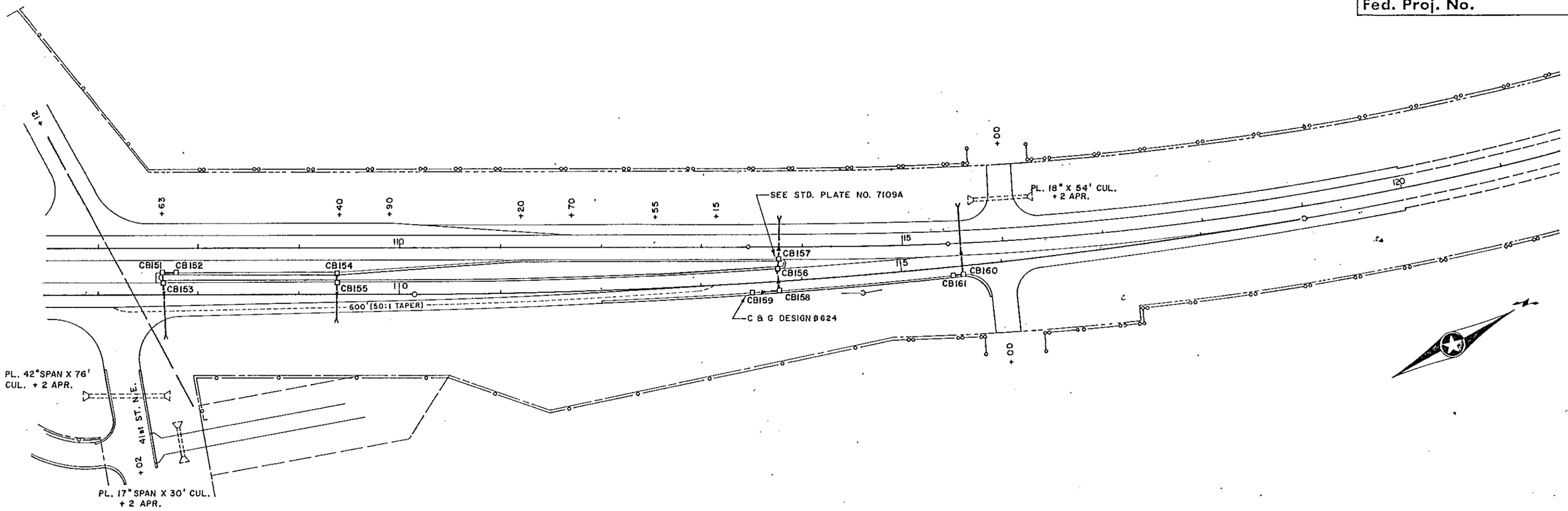
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State Proj. No. 5510-59 (T.H. 63=59) Sheet No. 33 of 168 Sheets

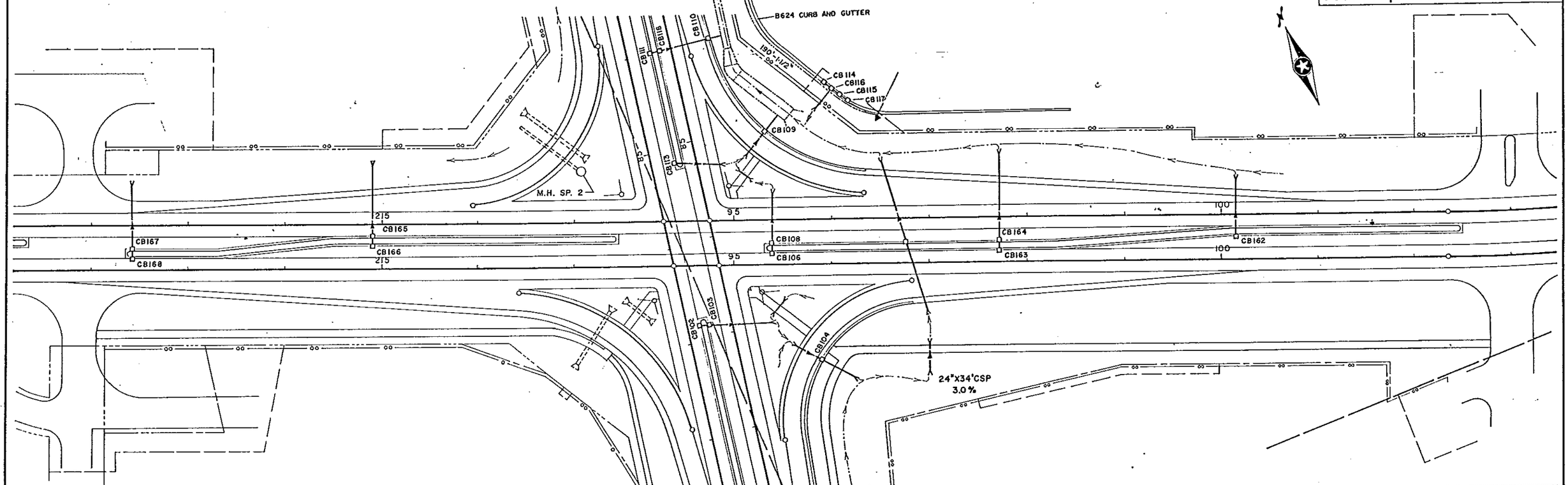
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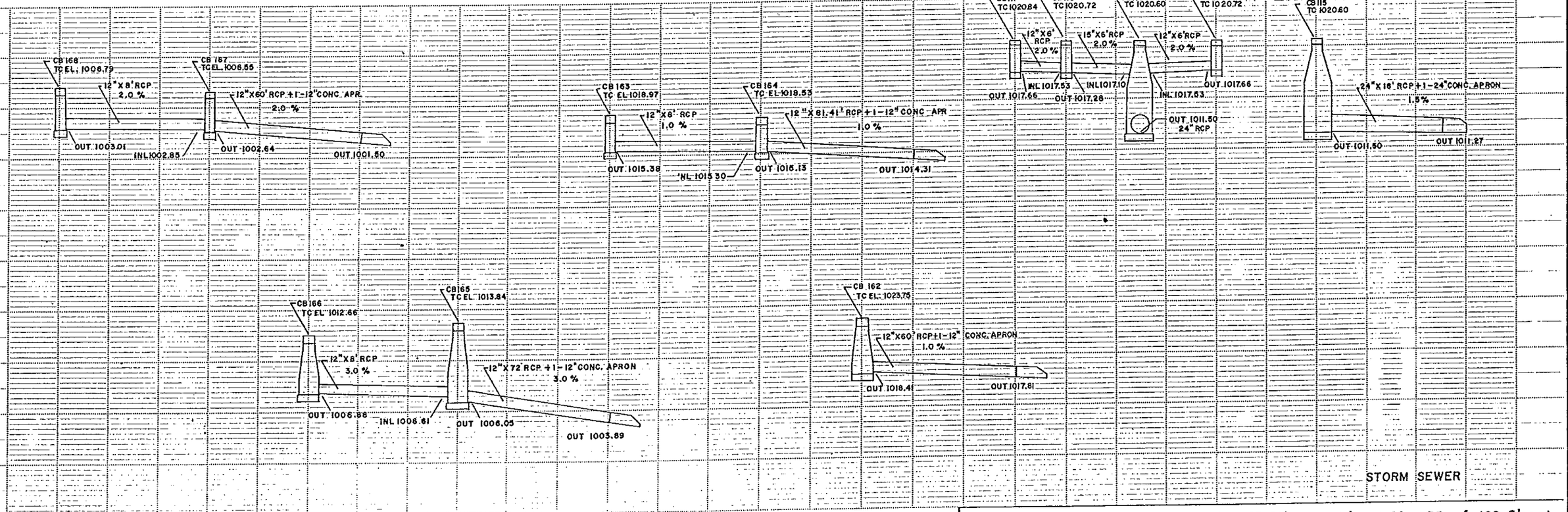


STORM SEWER

State Proj. No. 5510-59 (TH. 63=59) Sheet No. 34 of 168 Sheets

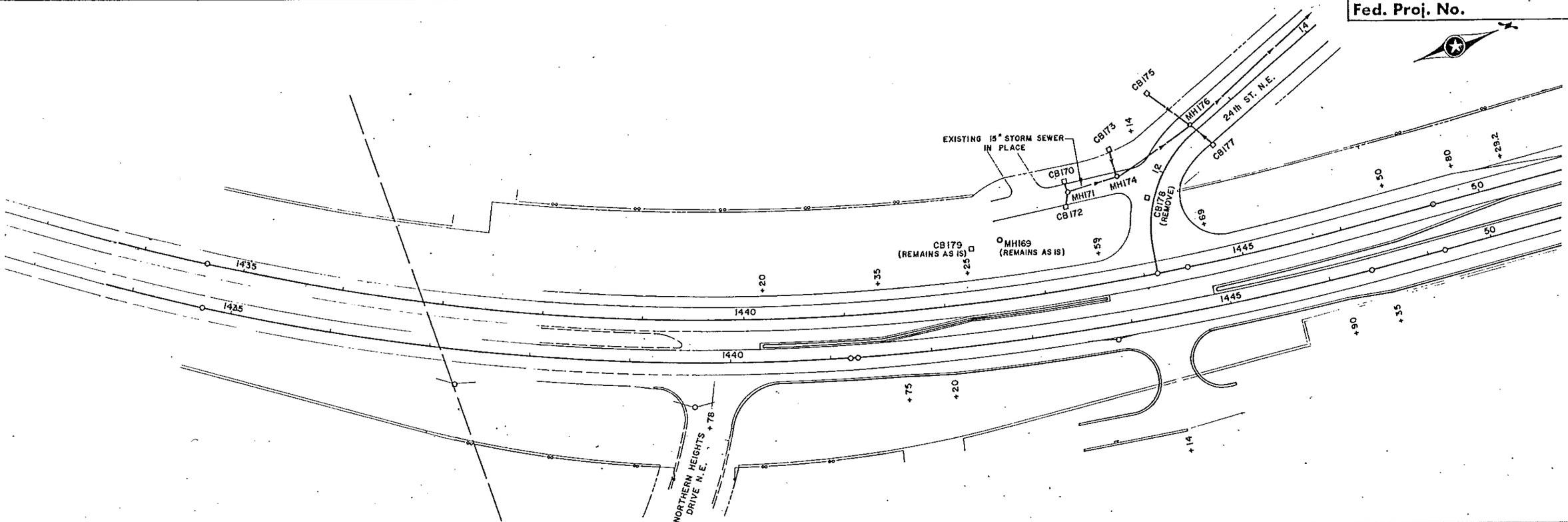
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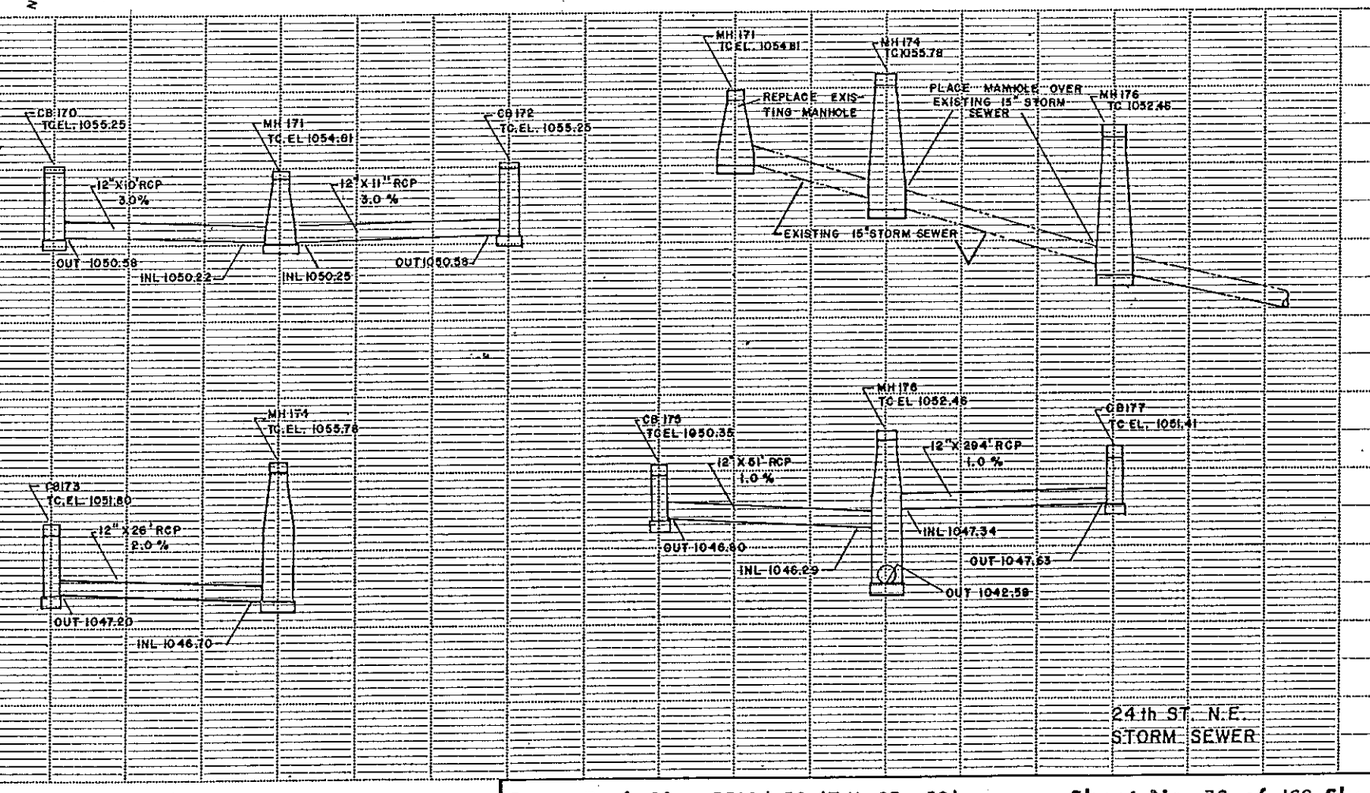




STORM SEWER

Fed. Proj. No.



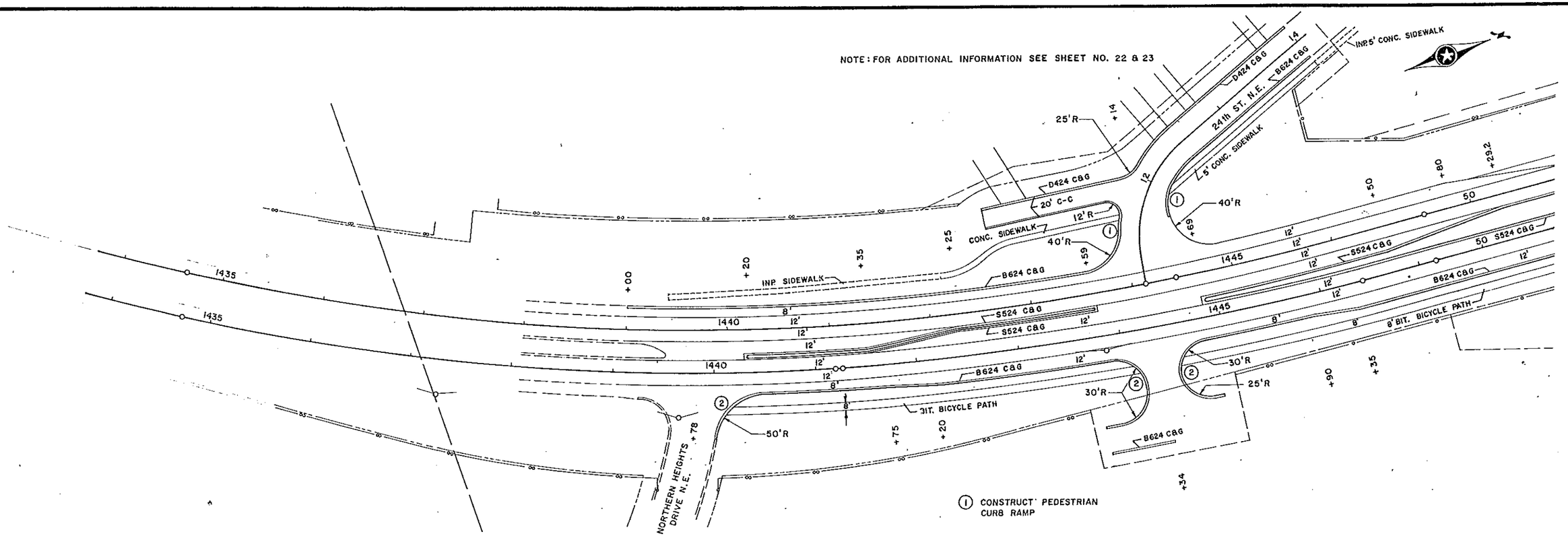


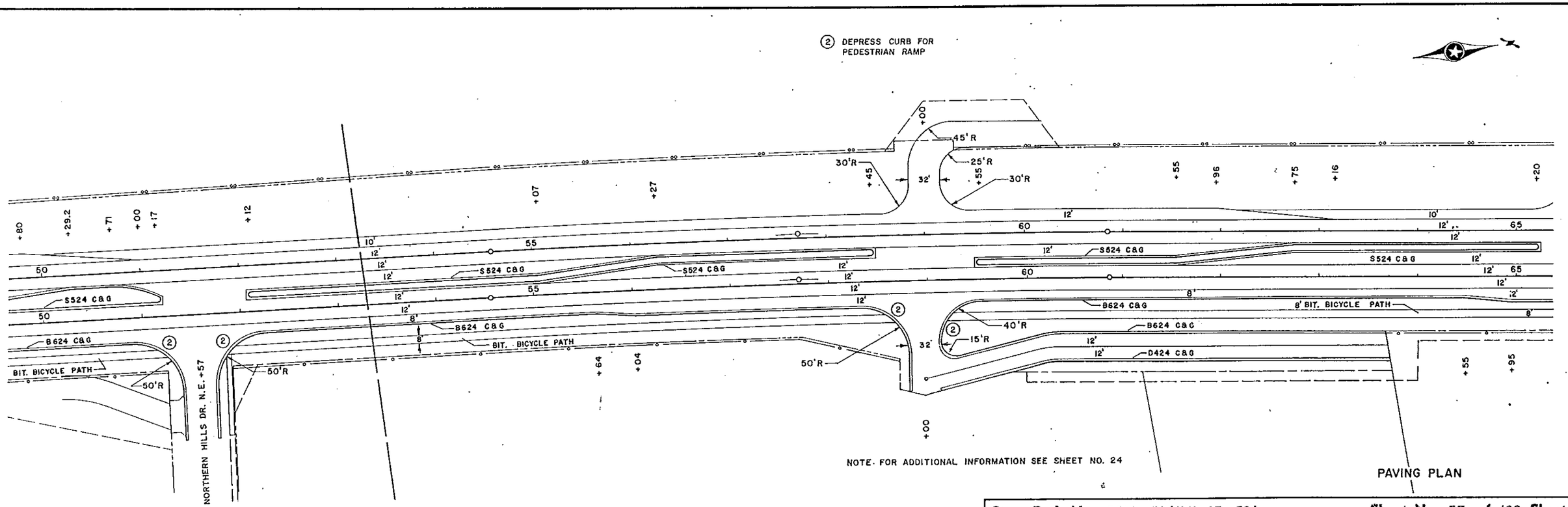
24th ST. N.E.
STORM SEWER

State Proj. No. 5510 - 59 (T.H. 63 = 59)

Sheet No. 36 of 168 Sheets

NOTE: FOR ADDITIONAL INFORMATION SEE SHEET NO. 22 & 23

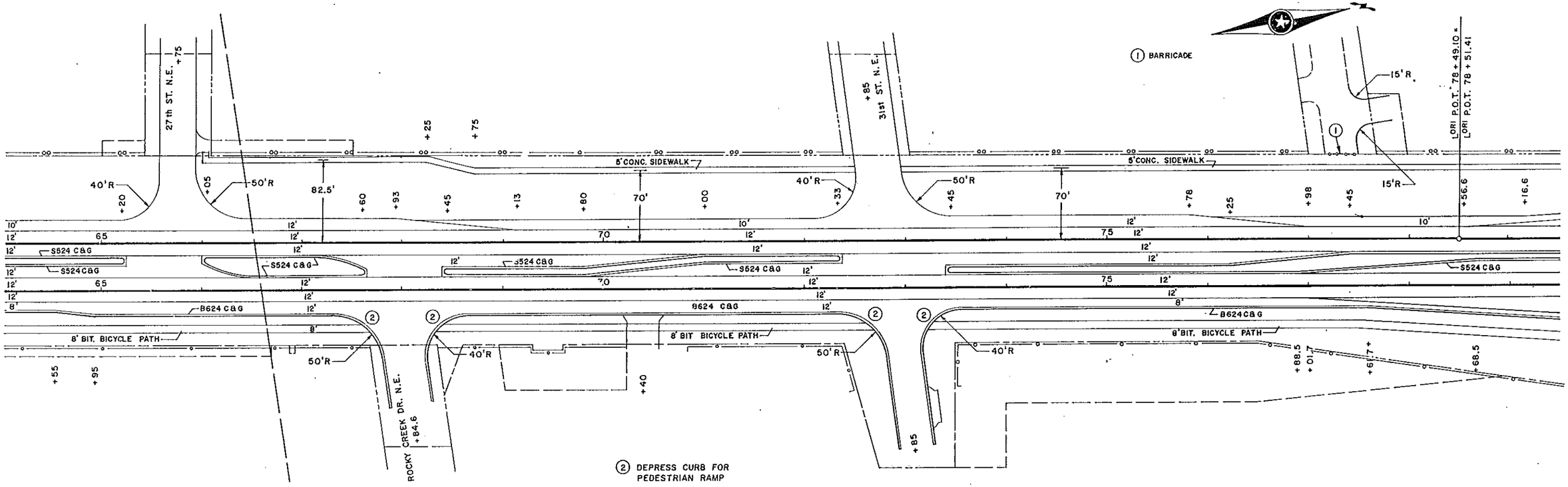


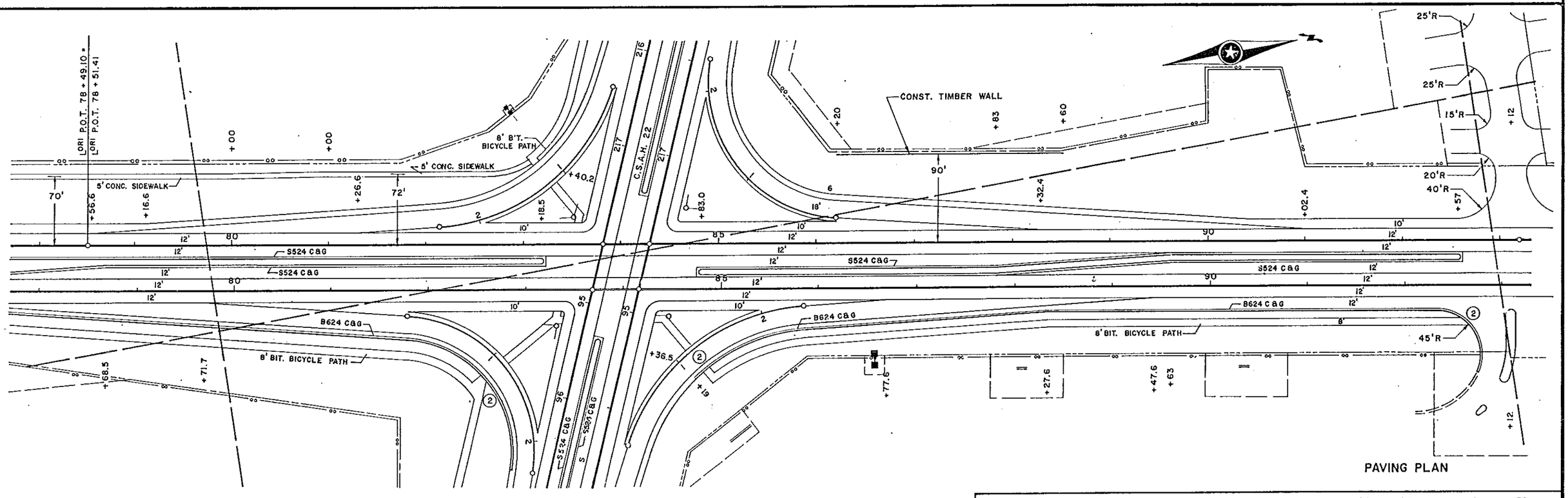


NOTE. FOR ADDITIONAL INFORMATION SEE SHEET NO. 24

PAVING PLAN

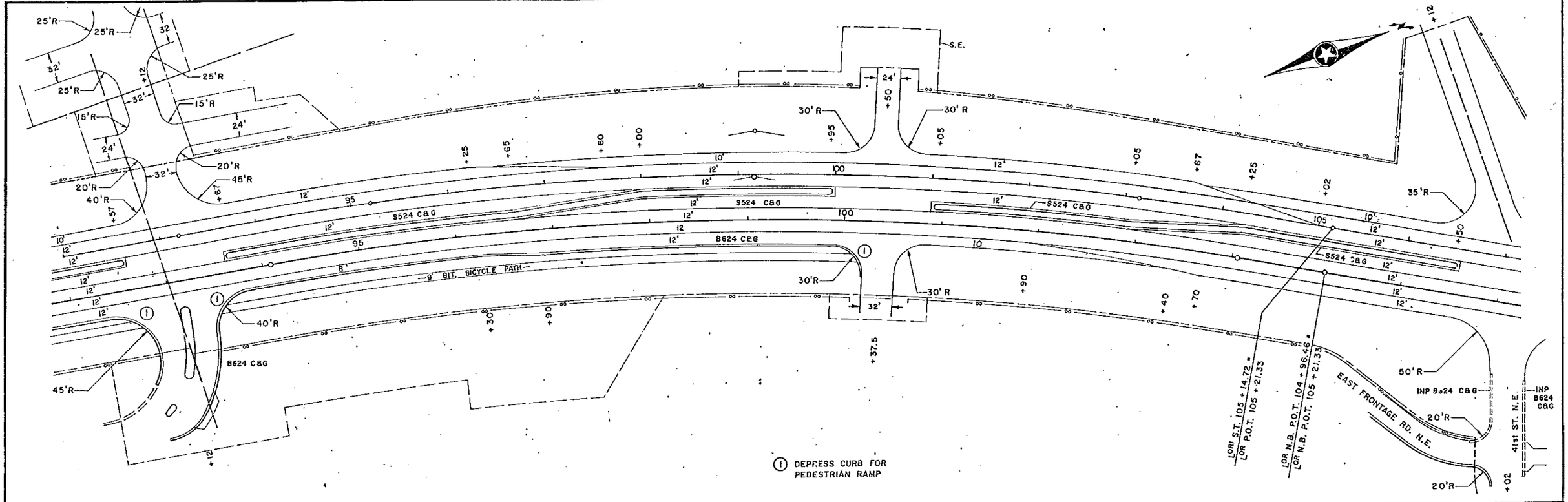
State Proj. No. 5510 - 59 (T.H. 63 = 59) **Sheet No.** 37 **of** 166 **Sheets**

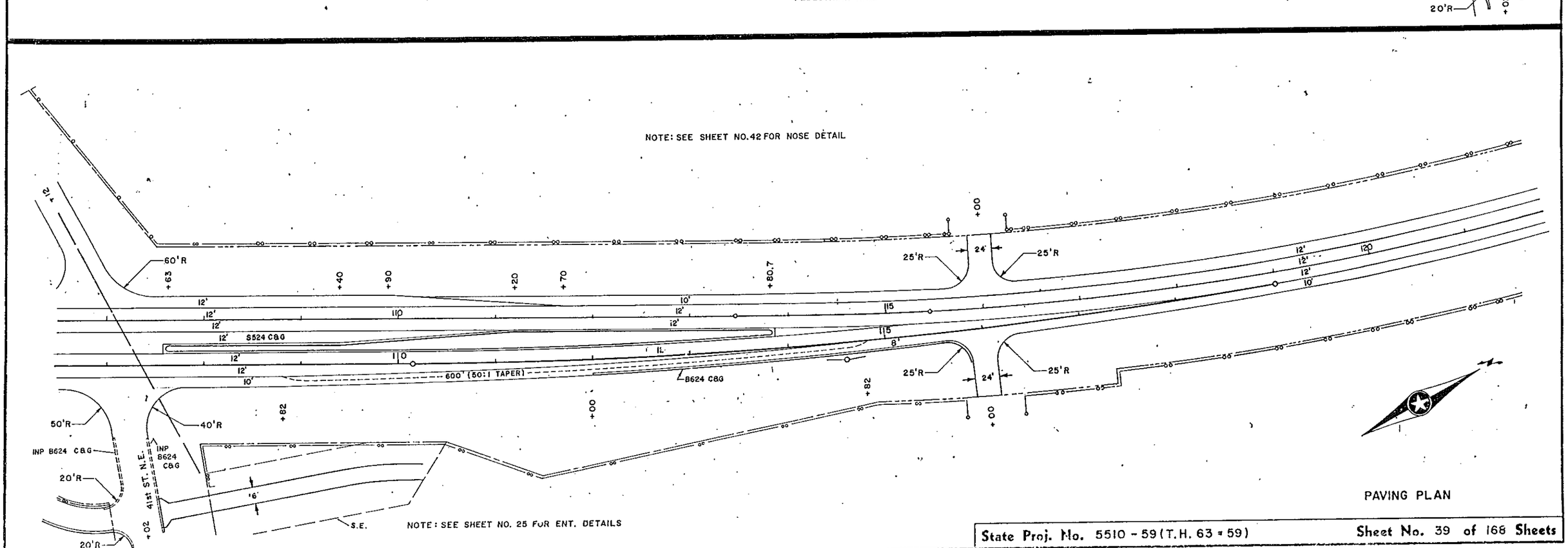




PAVING PLAN

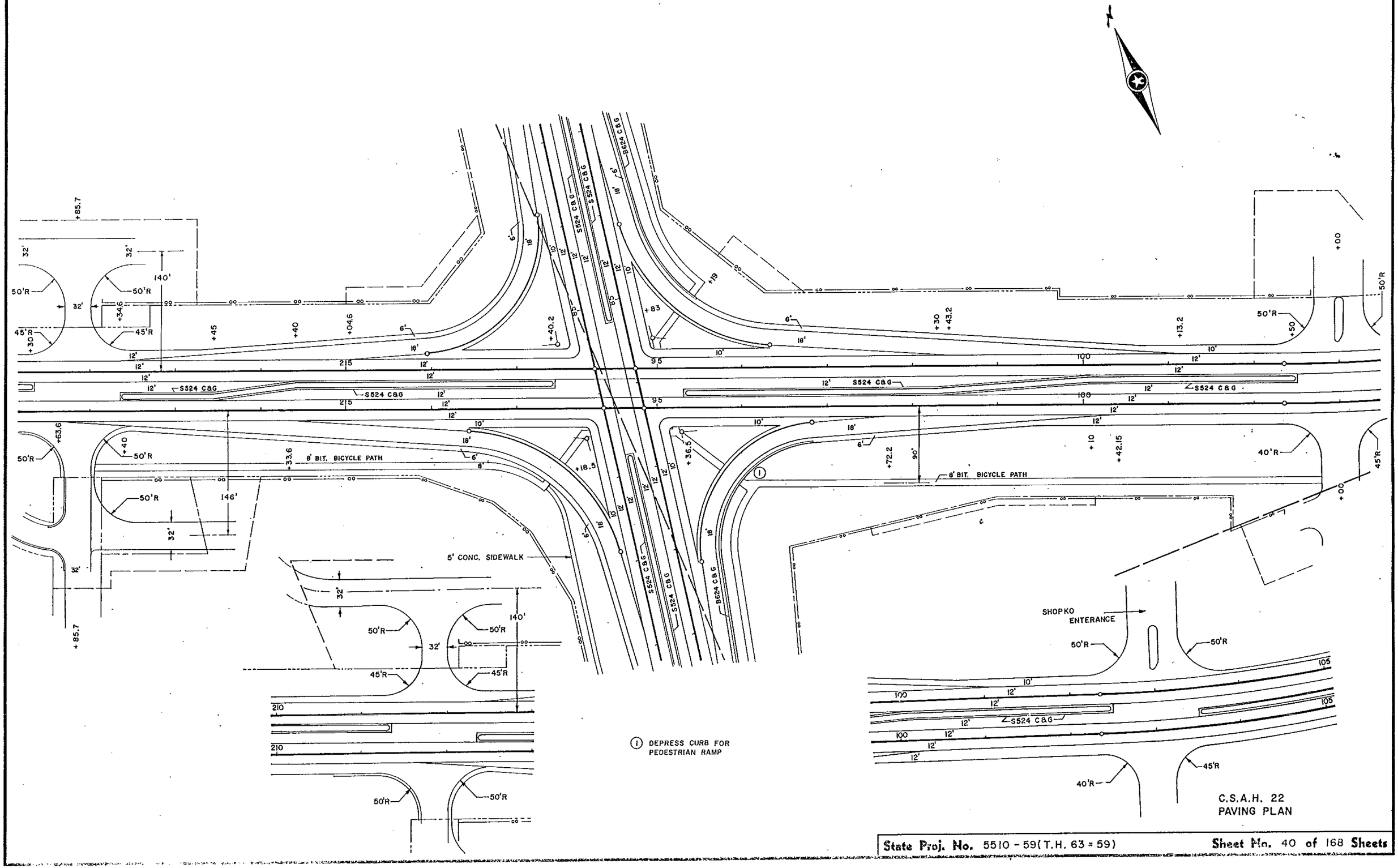
State Proj. No. 5510 - 59 (T.H. 63 = 59) **Sheet No.** 38 **of** 168 **Sheets**





State Proj. No. 5510 - 59 (T.H. 63 = 59)

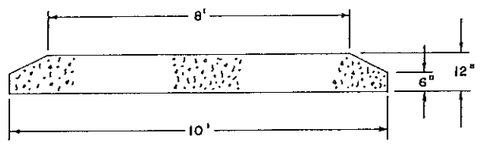
Sheet No. 39 of 168 Sheets



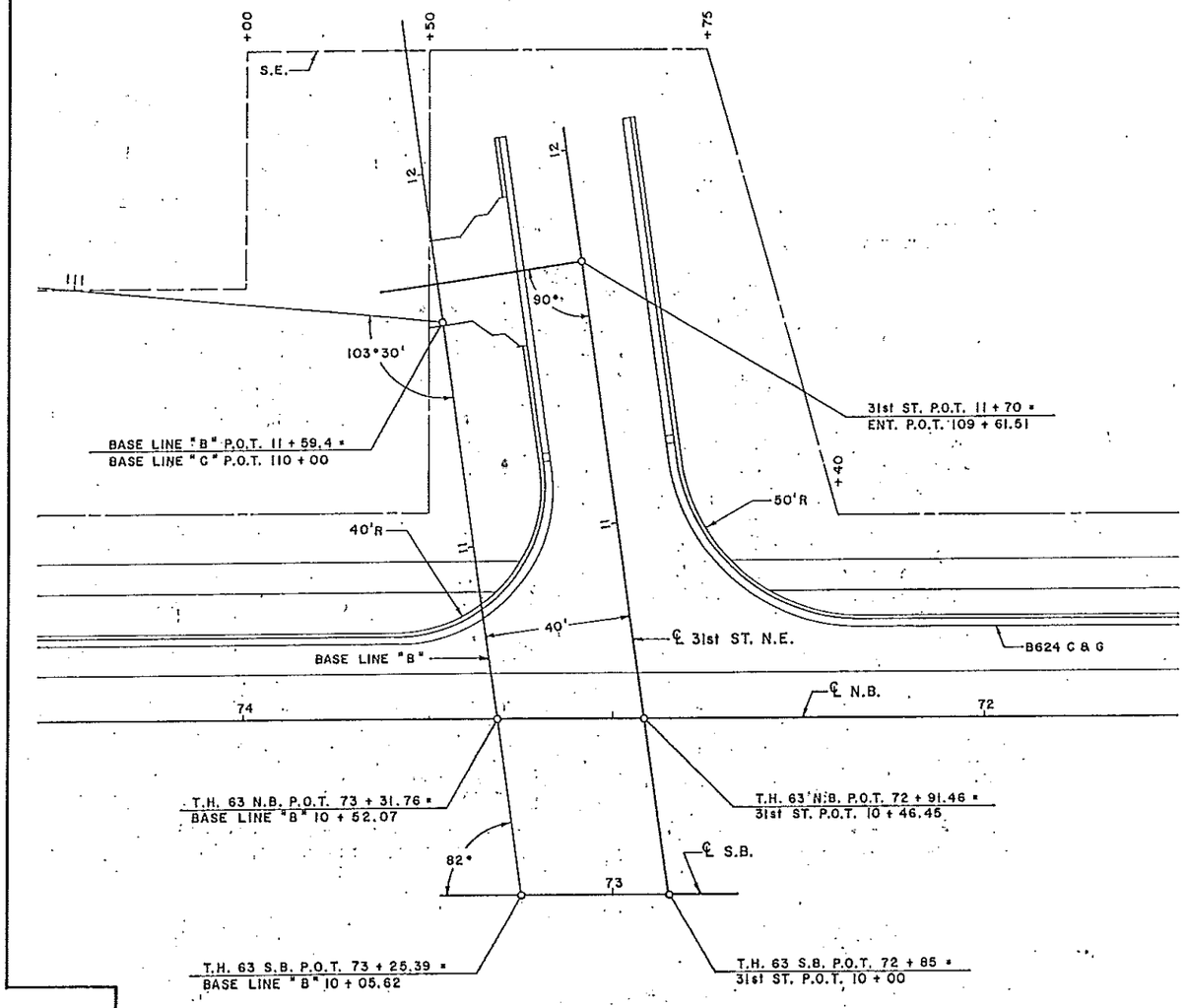
C.S.A.H. 22
PAVING PLAN

State Proj. No. 5510 - 59(T.H. 63 = 59) **Sheet No.** 40 **of** 168 **Sheets**

SECTION A - A



EAST ENT. TO SHOPKO



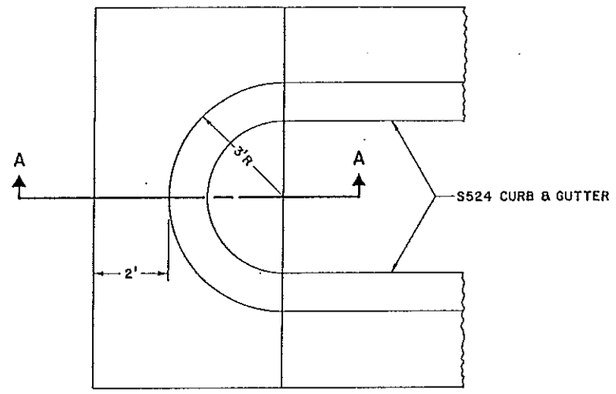
31st ST. N.E. LAYOUT

20 10 0 20
SCALE

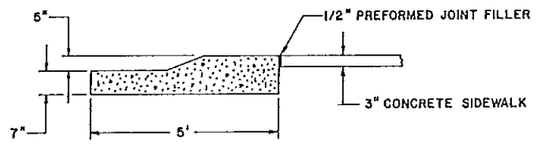
DETAILS

STATE PROJ. NO. 5510 - 59 (T.H. 63 = 59) SHEET NO. 41 OF 168 SHEETS

MEDIAN NOSE DETAIL

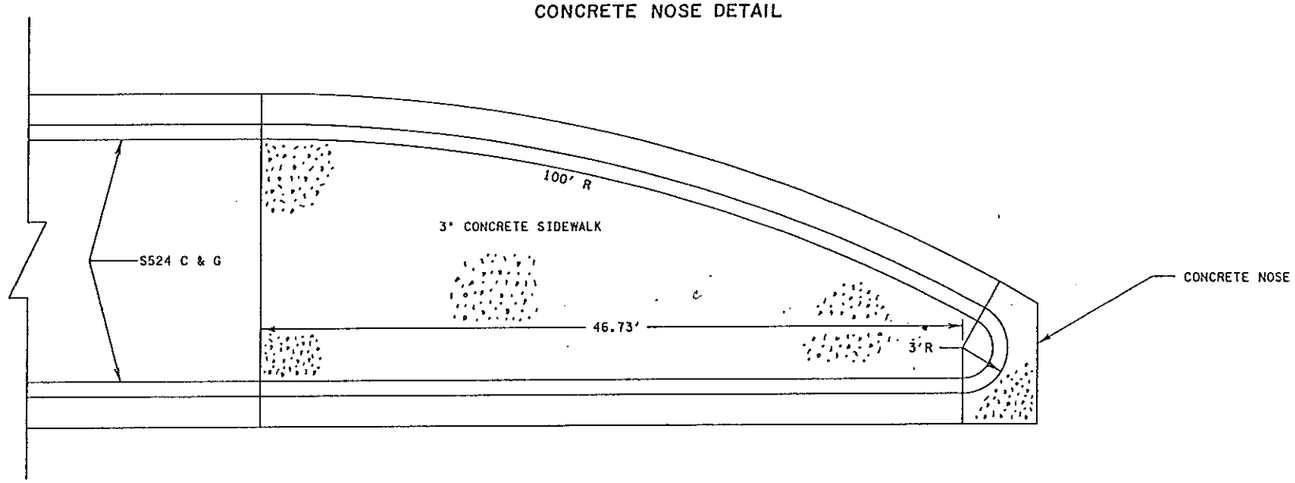


SECTION A-A



NOTE: FOR LOCATIONS & QUANTITIES SEE TABULATIONS ON SHEET NO. 56

CONCRETE NOSE DETAIL

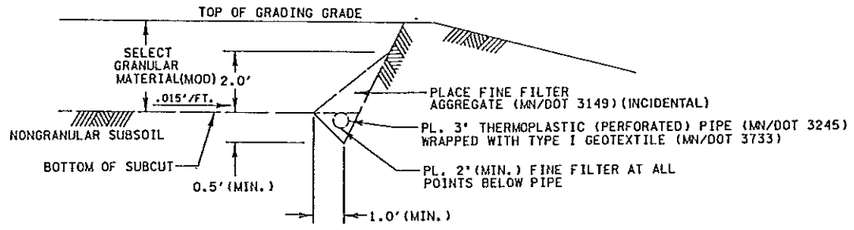


THE ABOVE DETAIL SHALL APPLY AT THE FOLLOWING LOCATIONS:

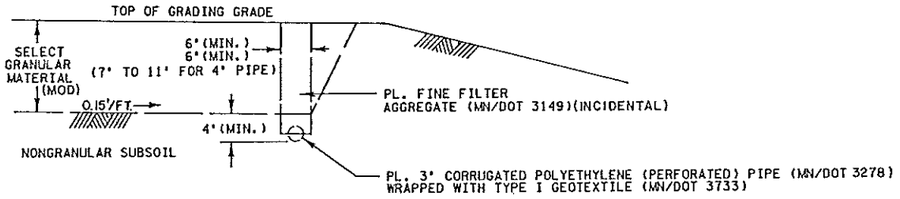
S.B. STA. 50 + 17 - 50 + 70.3
S.B. STA. 66 + 05 - 66 + 52.7
S.B. STA. 67 + 13.3 - 67 + 60

DETAILS

SUBGRADE DRAINAGE DETAIL

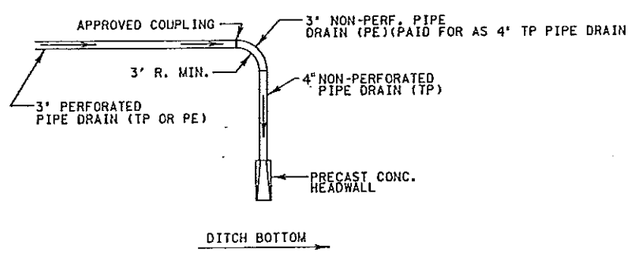


OPTION NO. 1

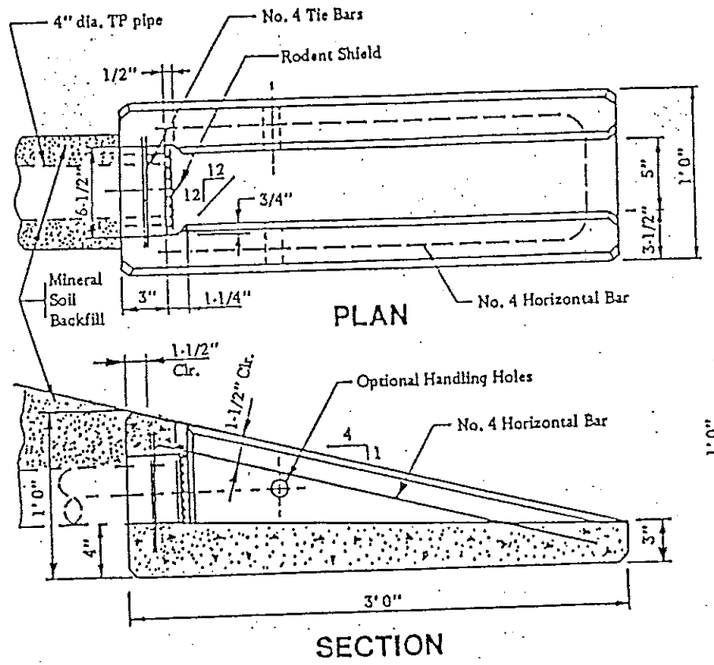


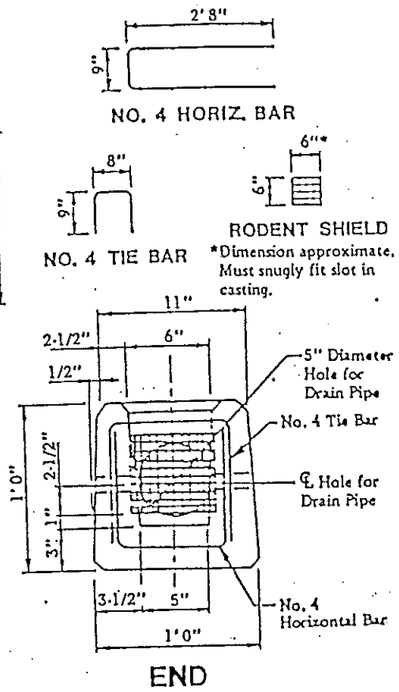
OPTION NO. 2

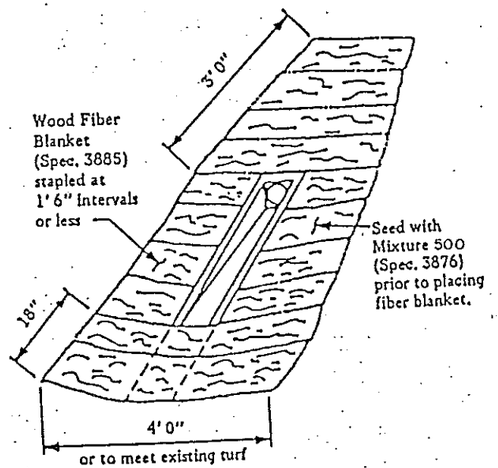
DETAIL OF OUTLET



① OUTLET PERFORATED SUBGRADE DRAIN INTO STORM SEWER SYSTEM AT LOCATIONS DETERMINED BY THE ENGINEER. SUBGRADE DRAIN IS TO BE OUTLETED AT INTERVALLS OF 400' OR LESS.







VEGETATION ESTABLISHMENT

NOTES:

1. Concrete for precast headwall shall have a minimum compressive strength of 5000 p.s.i. prior to shipping and an air content of approximately 6%. The fabricator shall provide a quality control program approved by the Engineer.

2. The rodent shield may be fabricated from one of the following:
   a. Carbon steel flattened expanded metal, style 1/2" No. 13F.
   b. Tack-welded or frame-welded wire cloth, min. gage No. 8 wire.
   c. Welded-wire stock, min. gage No. 8 wire.
   Type b. and c. shall have nominal openings of 1/2" square. All wire or expanded metal shall be hot dipped galvanized after fabrication. Actual screen dimensions shall be such as will snugly fit the provided slot (tapered if necessary) and fully cover the pipe opening.

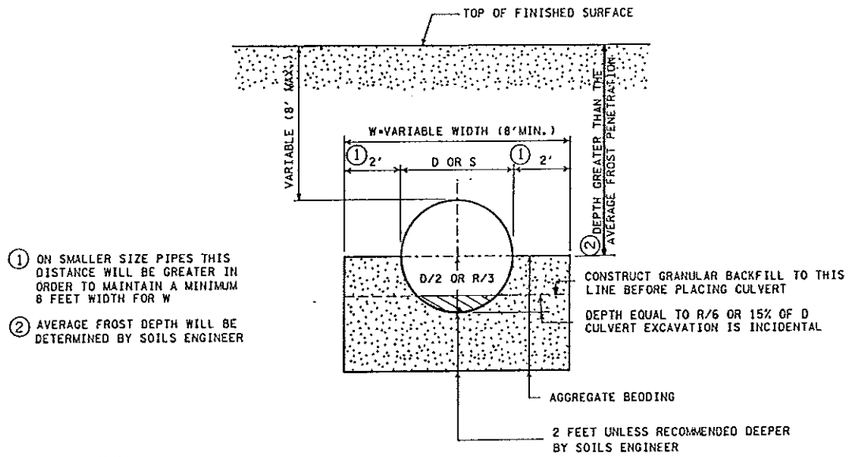
3. Alternates to above designs (both rodent screen and concrete headwall) may be approved by the Materials Engineering Section.

4. Approximate weight of headwall = 210 lbs.

5. An epoxy protective coating (as listed in Concrete Manual 5-694.184E) shall be applied to the inside and outside of the entire headwall, except the bottom surface, before installation. The epoxy protective coating shall be light grey, clear or neutral in color and shall be applied as recommended by the manufacturer. The surfaces of the concrete, on which the epoxy protective coating is applied, shall be thoroughly cleaned by wire brushing or sand cleaning and shall be dry, before application.

STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	
PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS	SPECIFICATION REFERENCE 2502 3622

DETAILS



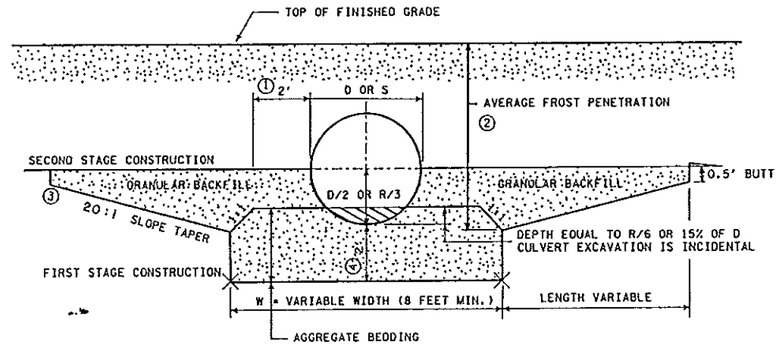
1 ON SMALLER SIZE PIPES THIS DISTANCE WILL BE GREATER IN ORDER TO MAINTAIN A MINIMUM 8 FEET WIDTH FOR W

2 AVERAGE FROST DEPTH WILL BE DETERMINED BY SOILS ENGINEER

LEGEND:

D = OUTSIDE DIAMETER OF ROUND PIPE
R = OUTSIDE RISE OF PIPE-ARCH
S = OUTSIDE SPAN OF PIPE-ARCH

TREATMENT OF CENTER-LINE CULVERTS IN PLASTIC SOILS
(CASE I)

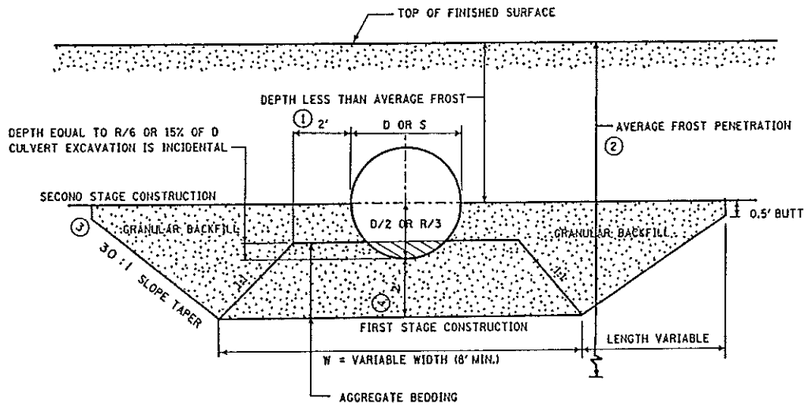


LEGEND:
D = OUTSIDE DIAMETER OF ROUND PIPE
R = OUTSIDE RISE OF PIPE-ARCH
S = OUTSIDE SPAN OF PIPE-ARCH

EXCAVATION WILL BE PAID FOR AS UNCLASSIFIED EXCAVATION.

1 ON SMALLER PIPES THIS DISTANCE WILL BE GREATER IN ORDER TO MAINTAIN A MINIMUM 8 FEET WIDTH FOR W.
2 AVERAGE FROST DEPTH WILL BE DETERMINED BY THE SOILS ENGINEER.
3 TAPER RATIO DEPENDS ON SOIL AND MOISTURE CONDITION. TAPER TO BE USED WILL BE RECOMMENDED BY SOILS ENGINEER. (20 : 1)
4 DEPTH SHALL BE 2 FEET UNLESS RECOMMENDED DEEPER BY SOILS ENGINEER.

TREATMENT OF CENTER-LINE CULVERTS IN PLASTIC SOILS
(CASE III)



LEGEND:
D = OUTSIDE DIAMETER OF ROUND PIPE
R = OUTSIDE RISE OF PIPE-ARCH
S = OUTSIDE SPAN OF PIPE-ARCH

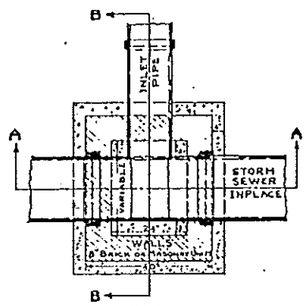
EXCAVATION WILL BE PAID FOR AS UNCLASSIFIED EXCAVATION.

1 ON SMALLER PIPES THIS DISTANCE WILL BE GREATER IN ORDER TO MAINTAIN A MINIMUM 8 FEET WIDTH FOR W.
2 AVERAGE FROST DEPTH WILL BE DETERMINED BY THE SOILS ENGINEER.
3 TAPER RATIO DEPENDS ON SOIL AND MOISTURE CONDITION. TAPER TO BE USED WILL BE RECOMMENDED BY SOILS ENGINEER. (30 : 1)
4 DEPTH SHALL BE 2 FEET UNLESS RECOMMENDED DEEPER BY SOILS ENGINEER.

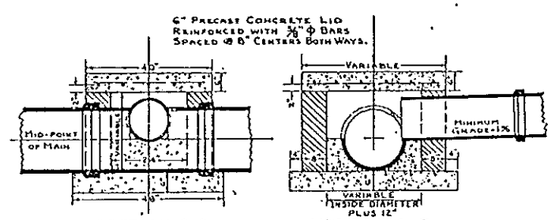
TREATMENT OF CENTER-LINE CULVERTS IN PLASTIC SOILS
(CASE IV)

NOTE: AVERAGE FROST DEPTH HAS BEEN DETERMINED TO BE 5.5' AND SHALL APPLY TO ALL CASES

JUNCTION BOX (MANHOLE DESIGN 3)

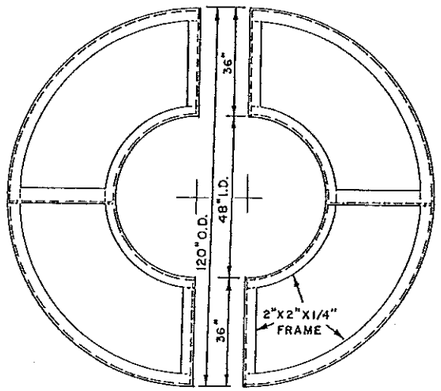


NOTE:
ALIGNMENT - INLET PIPE SHALL BE CENTERED ON THE MID-POINT OF A LENGTH OF PIPE IN MAIN.
FLOWLINE OF INLET PIPE SHALL BE LEVEL WITH MID-POINT OF MAIN.
GRADE OF INLET PIPE - 1% MINIMUM.
CONCRETE - TYPE MIX 3Y43
CONSTRUCTION - CONCRETE PLACED TO MID-POINT OF MAIN SHALL BE THOROUGLY HARDENED BEFORE OPENING IN MAIN IS CUT.
THE CUT SHALL BE CAREFULLY AND NEATLY MADE KEEPING THE SIZE OF THE OPENING TO A MINIMUM, SO AS NOT TO DAMAGE THE BELL OF THE LENGTH CUT INTO OR THE ADJOINING LENGTHS.

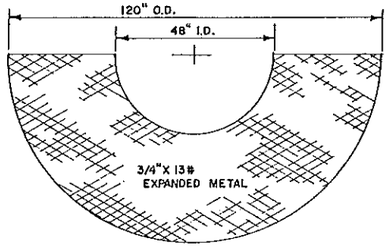


NOTE: THIS STRUCTURE IS TO BE USED ON ALL CONNECTIONS EXCEPT THOSE WHERE CITY ENGINEER DIRECTS THAT A MANHOLE IS REQUIRED.

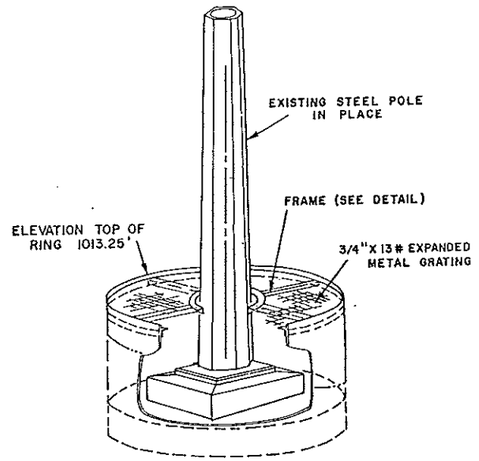
DETAILS



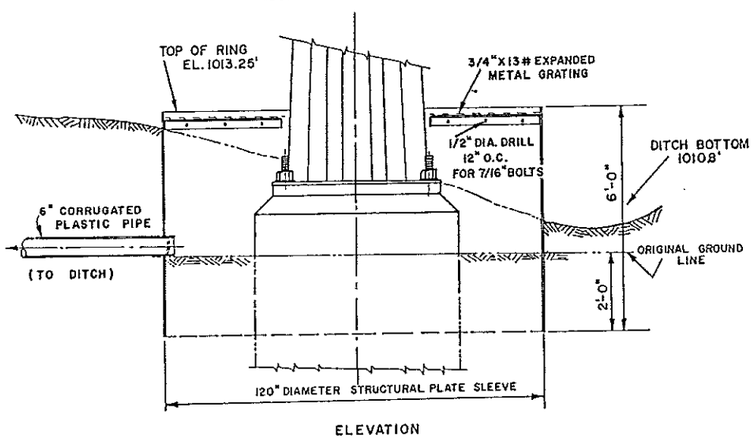
FRAME DETAIL



GRATING DETAIL
(2 REQ.)

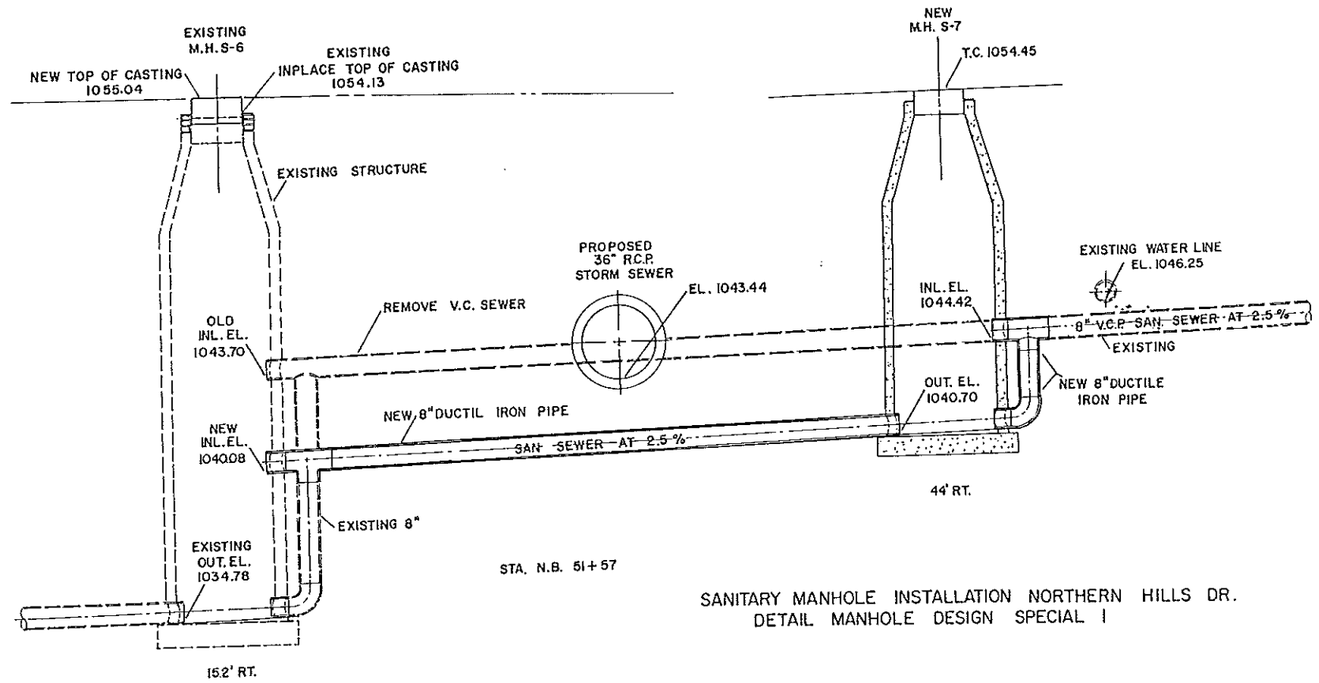


ISOMETRIC DETAIL

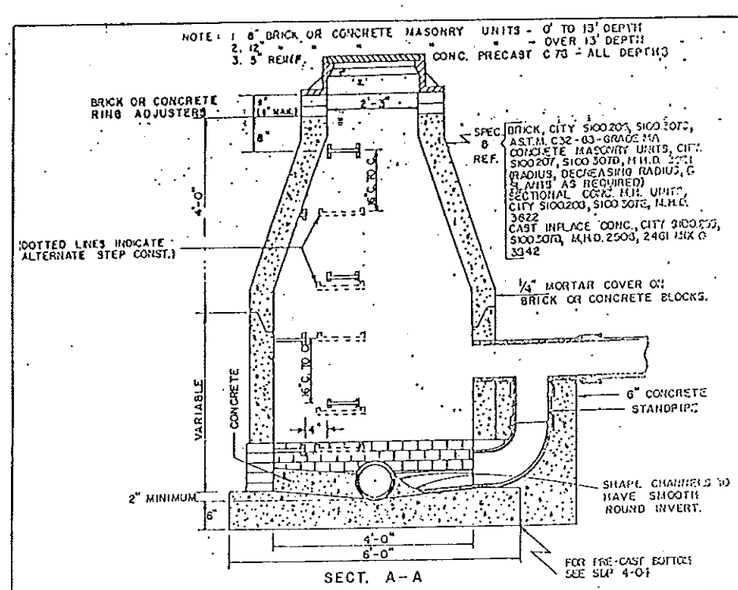


ELEVATION

MEASURED AND PAID FOR AS MANHOLE DESIGN SPECIAL 2
AT STATION S8. 84+99 AT 69' LT.



SANITARY MANHOLE INSTALLATION NORTHERN HILLS DR.
DETAIL MANHOLE DESIGN SPECIAL 1

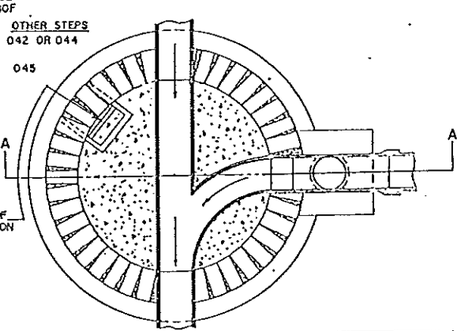


SECT. A-A

MANHOLE DESIGN SPECIAL 1

NOTE: FOR STEP CASTINGS USE M.H.D. STANDARD PLATE 4180F

	TOP STEP	OTHER STEPS
MASONARY OR POURED CONC.	042	042 OR 044
PRECAST	043	045



PLACE STEPS IN CENTER OF UPSTREAM QUADRANT NOT ON AXIS OF EITHER PIPE.

NOTE: FRAME AND GRATE TO BE ACCORDING TO SDP 4-01 FOR PRE-CAST

DEPARTMENT OF CITY ENGINEER-ROCHESTER, MINNESOTA

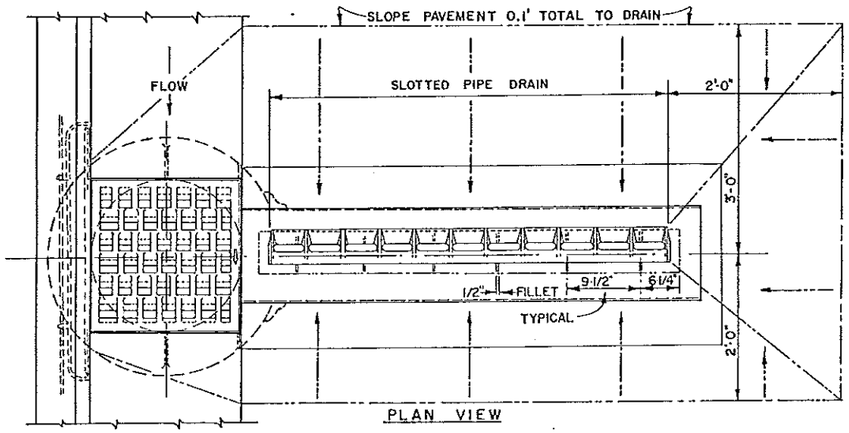
MANHOLE TYPE I-A
(OUTSIDE DROP)
MANHOLE DESIGN SPECIAL 1

REVISED	1-1-79		
SHT	OF	SHTS	DIRECTOR OF PUBLIC SERVICES

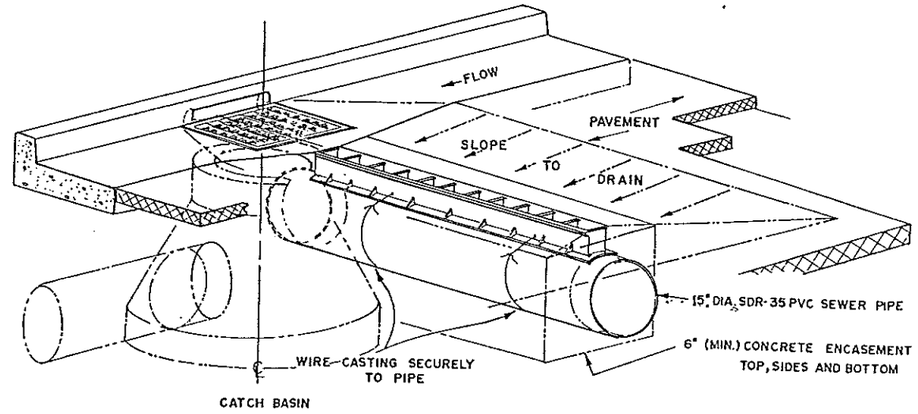
SDP 4-01

DETAILS

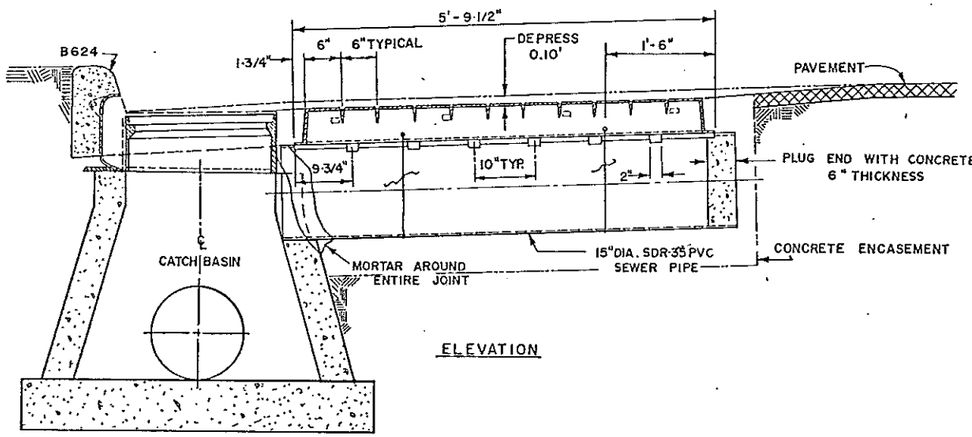
Fed. Proj. No.



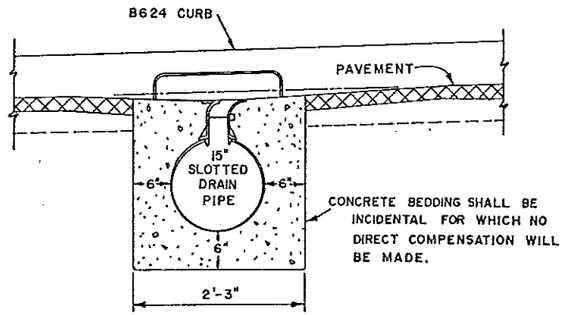
PLAN VIEW



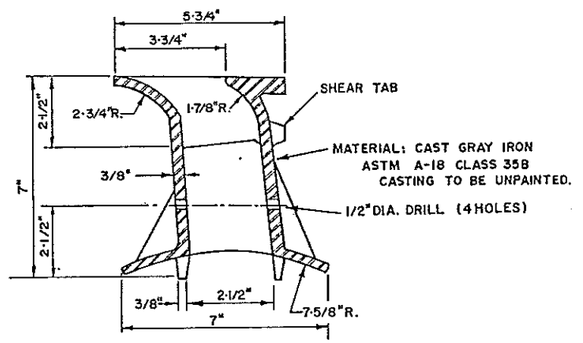
CONSTRUCTION PERSPECTIVE



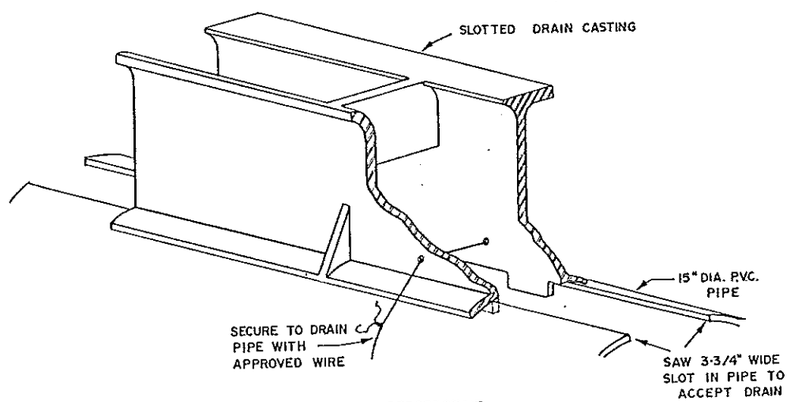
ELEVATION



TYPICAL SECTION

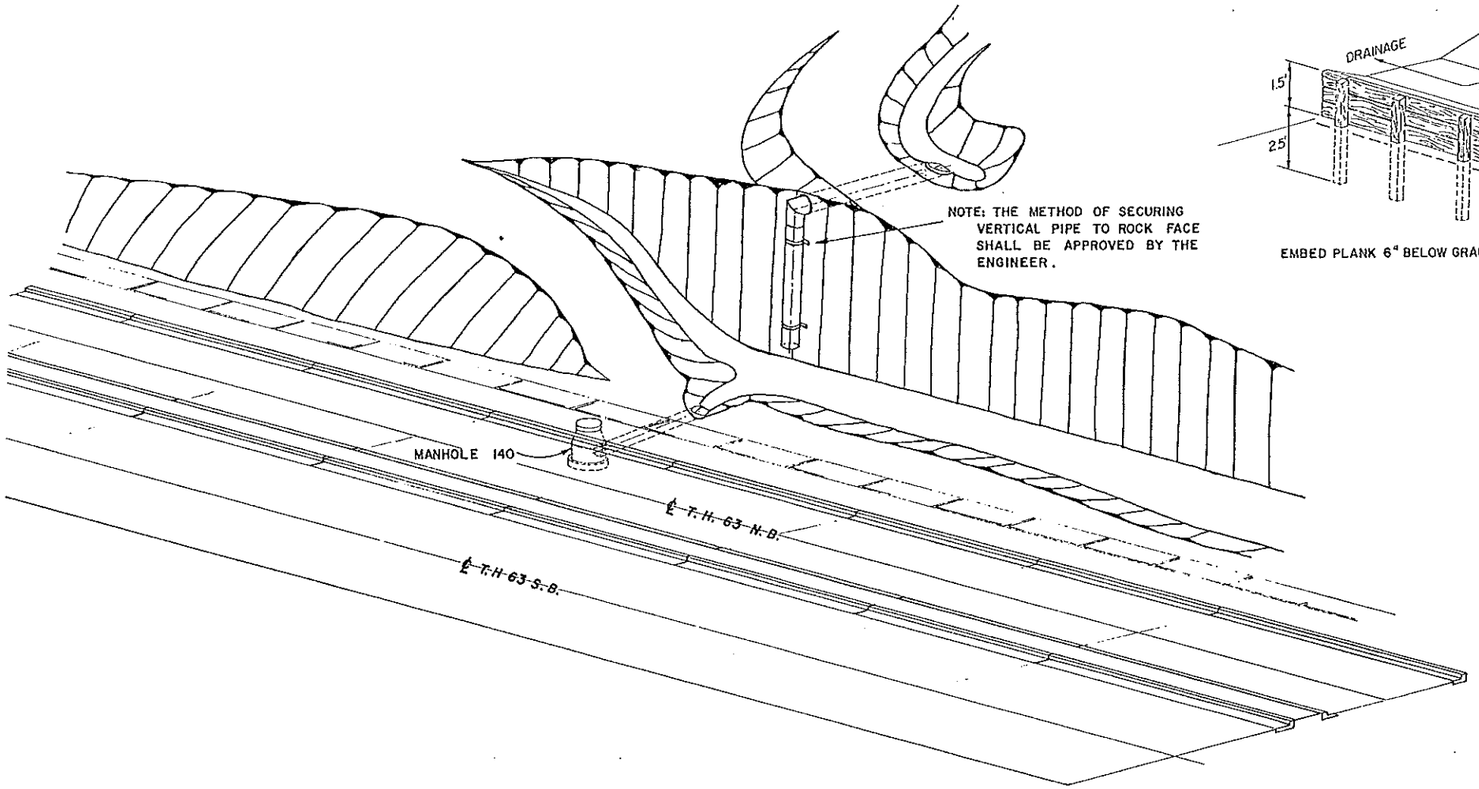


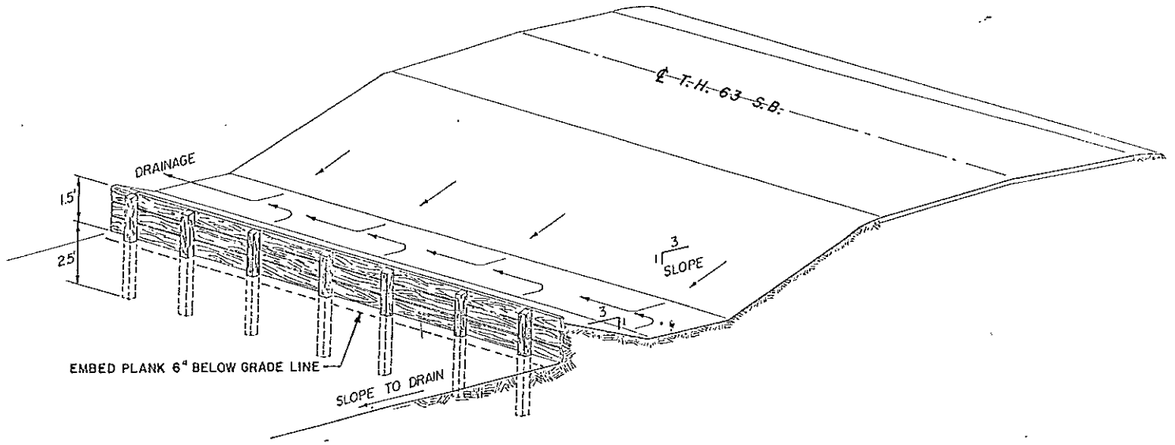
SLOTTED DRAIN TYPICAL SECTION

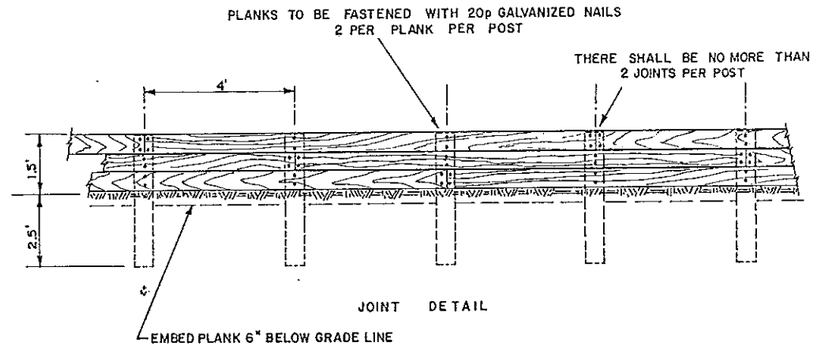


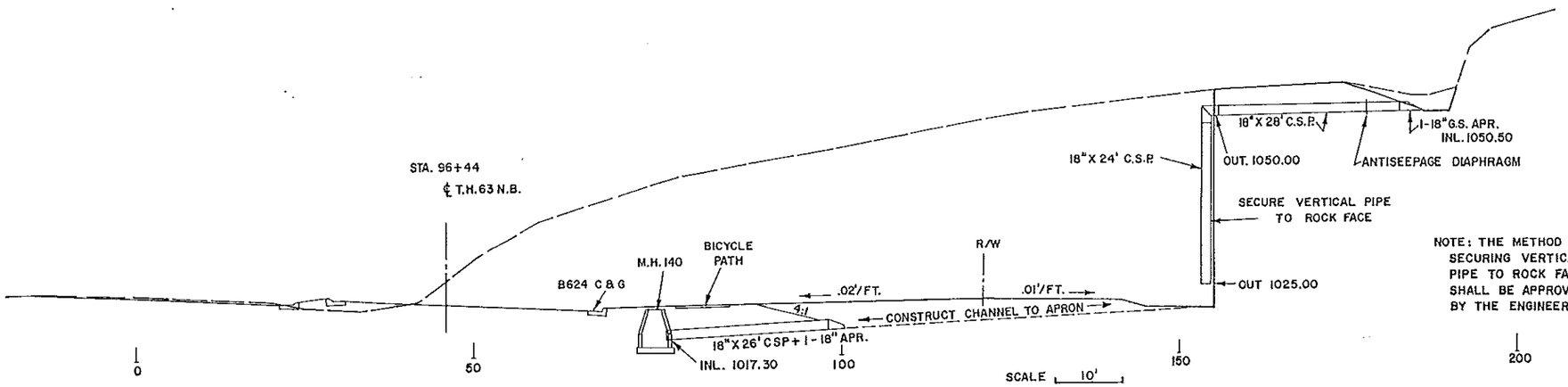
SLOTTED DRAIN PERSPECTIVE

DETAILS
SLOTTED DRAIN
SLOTTED PIPE DRAIN INSTALLATION

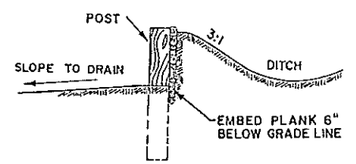








SECTION N.B. STA. 96+44



CROSS SECTION

TIMBER WALL

LT. OF N.B. STA. 86+20 TO STA. 88+66 .

DETAILS

REMOVE MEDIAN

STATION	LOCATION	LIN. FT.	REMARKS
S.B. 1444+00-1446+50	2'-10'RT.	250'	

REMOVE MANHOLES

STATION	LOCATION	LIN. FT.	REMARKS
S.B. 67+84.5	51.8'RT.	7.6	REM. INP. SS. M.H. & CSTG.

REMOVE CONCRETE CURB

STATION	LOCATION	LIN. FT.	REMARKS
S.B. 1440+04-1441+59	RT.	155'	
S.B. 1441+59-1442+39	RT.	180'	

REMOVE PIPE CULVERTS

STATION	LOCATION	INPLACE	REMOVE LIN. FT.	REMARKS
S.B. 1442+50	84'RT.	49" X 52' CMP-A + 2 APRONS	61	
S.B. 1445+00 - 50+03	RT.	36" X 343' RCP + 1 APRON	351	
S.B. 50+90	67'RT.	18" X 22' CMP + 1 APRON	25	
S.B. 51+57	65'RT.	57" X 94' CMP-A + 2 APRONS	104	
S.B. 58+75	38'LT.	18" X 40' CMP + 2 APRONS	45	
S.B. 59+00	32'RT.	18" X 40' CMP + 2 APRONS	45	
S.B. 64+00	36'RT.	28" X 48' CMP-A + 2 APRONS	53	
S.B. 65+86	72'LT.	15" X 94' CMP + 2 APRONS	98	
S.B. 67+93	40'RT.	42" X 68' CMP-A + 2 APRONS	76	
S.B. 70+52	48'RT.	42" X 44' CMP-A + 2 APRONS	52	
S.B. 73+50	42'RT.	30" X 30' CMP + 2 APRONS	38	
S.B. 77+60	40'RT.	18" X 28' CMP + 2 APRONS	33	
S.B. 92+70	37'LT.	18" X 38' CMP -NO APRONS		SALVAGE 38 LIN. FT.
S.B. 93+12	46'RT.	36" X 100' RCP-A + 2 APRONS	116	
S.B. 94+85	40'LT.	18" X 30' CMP + 2 APRONS	35	
S.B. 106+24	℄	42' X 60' RCP + 2 APRONS	76	
S.B. 107+10	43'RT.	18" X 82' CMP + 2 APRONS	87	
S.B. 110+42	42'LT.	24" X 30' CMP + 2 APRONS	37	
S.B. 114+32	34'RT.	18" X 32' CMP + 2 APRONS	37	
S.B. 115+90	38'LT.	18" X 34' CMP + 2 APRONS	39	
S.B. 115+92	38'LT.	18" X 34' CMP + 2 APRONS	39	
Lor3 120+55	40'RT.	18" X 28' CMP + 2 APRONS	33	
Lor3 121+60	37'LT.	18" X 36' CMP + 2 APRONS	41	
Lor3 126+20	46'LT.	18" X 56' CMP + 2 APRONS	61	
Lor3 131+14	46'LT.	24" X 28' CMP + 2 APRONS	33	
C. S. A. H. 22				
E.B. 211+86	58'RT.	18" X 60' RCP + 2 APRONS	LEAVE	LEAVE AS IS
W.B. 212+00	14'LT.	18" X 60' CMP + 2 APRONS	65	
W.B. 96+00	C	24" X 64' RCP + 2 APRONS	76	
W.B. 102+80	C	77" X 148' CSP-A + 2 APRONS (1)		SALVAGE APRON

(1) SALVAGE APRON AND EXTEND RIGHT END.

REMOVE CONCRETE CURB AND GUTTER

STATION	LOCATION	LIN. FT.	REMARKS
S.B. 1440+04-1440+59	RT.	55'	
S.B. 1441+59-1442+39	RT.	80'	
S.B. 1443+07-1444+00	RT.	186'	
N.B. 1440+00	RADIUS RT.	86'	
N.B. 85+10	154'RT.	16'	
N.B. 93+12	ENT.RT.	537'	
C.S.A.H. 22			
E.B. 212+02	77'RT.-182'RT.	105'	(B624)

REMOVE SIDEWALK

STATION	LOCATION	SQ. YDS.	REMARKS
S.B. 1440+04-1442+39	INP. MEDIAN	65	
S.B. 1442+13-1442+50	LEFT	4	
S.B. 1443+07-1444+00	INP. MEDIAN	42	
S.B. 1443+35-1446+10	LEFT	36	
S.B. 93+12	INP. MEDIAN	123	N. SHOPKO MEDIAN

REMOVE CATCH BASINS AND STORM SEWERS

STATION	LOCATION	REMOVE CATCH BASIN		REMOVE PIPE SEWER		REMARKS
		LIN. FT.	EACH	LIN. FT.	MATERIAL	
S.B. 1440+05	84'RT.	4.6'	1			
S.B. 1440+09	24'RT.	2.4'	1			
N.B. 1440+15	34'RT.			37'	12" X 31' RCP	+ 1 APRON
N.B. 1440+22	CENTERLINE			54'	12" X 48' RCP	+ 1 APRON
S.B. 1443+36	100'LT.			10'	12" X 10' RCP	
S.B. 1444+10	90'LT.			30'	12" X 30' RCP	
S.B. 1445+79	8'RT.	2.5'	1			
N.B. 1446+00				47'	12" X 47' RCP	CENTERLINE
S.B. 51+39.5	123'RT.	4.4'	1	25.5'	15" X 25.5' RCP	
S.B. 51+39.5	158'RT.	4.2'	1	35'	12" X 35' RCP	
S.B. 51+74.5	123'RT.	4.4'	1	9.5'	12" X 9.5' RCP	
S.B. 51+74.5	158'RT.	6.2'	1	9.5'	12" X 9.5' RCP	
N.B. 51+80	31'RT.			94'	42" X 86' CMP	+ 1 APRON
S.B 67+80	110'RT.	3.9' (2)	1	13.5'	12" X 13.5' RCP	
N.B. 67+84	6'RT.			102'	27" X 96' RCP	+ 1 APRON
S.B. 68+21	90'RT.	4.1'	1	29.5'	12" X 13.5' RCP	
N.B. 92+12	8'-25'RT.			23'	21" X 17' RCP	+ 1 APRON
24TH STREET						
S.B. 1443+34	117'LT.	4.2'	1			
S.B. 1444+17	76'LT.	3.8' (2)	1			

(2) REMOVE C. B. AND PLUG LEAD.

CONCRETE AND MASONERY STRUCTURES REMOVAL

STATION	LOCATION	MASONERY & CONC. STRUCT. CU. YD.	REMARKS
1440+04	78'RT.	5.2	ENERGY DISIPATOR
51+05	50'RT.	7.2	ENERGY DISIPATOR
54+00	81'RT.	7.7	CONCRETE INLET
85+09	187'RT.	2.6	CONCRETE FLUME
88+04	131'RT.	2.6	CONCRETE FLUME
90+30	131'RT.	2.6	CONCRETE FLUME

REMOVE GUARD RAIL

STATION TO STATION	LOCATION	LIN. FEET	GUARD POSTS
1441+10 - 1442+25	100'RT.	20 (3)	
1441+25 - 1441+45	85' - 105'RT.		10
59+00	LT.		4
64+00	RT.		2
65+75	LT.		1
68+06 - 70+21	26'LT.	215 (3)	
68+29 - 70+20	25'RT.	191 (3)	

(3) PLATE BEAM GUARD RAIL.

TABULATIONS

NEW CONCRETE CURB AND GUTTER

STATION	LOCATION	B624 LIN. FT.	D424 LIN. FT.	S524 LIN. FT.	REMARKS
S.B. 1439+00-1443+55	LEFT	455			
S.B. 1440+20-1443+59	BOTH SIDES			678	339' EACH SIDE
S.B. 1442+60-1444+10	LEFT	208			24TH ST. E. SIDE
S.B. 1444+10-1446+20	LEFT	212			24TH ST. E. SIDE
S.B. 1442+60-1446+20	24TH ST.		360		INCLUDES ENT. LT.
N.B. 1439+86-1444+34	RIGHT	540			
N.B. 1443+78-1444+90	RIGHT	116			RT. SIDE OF ENT.
N.B. 1444+34-51+57	RIGHT	594			INCL. S. SIDE N. HILLS DR.
S.B. 1444+69-51+17	MEDIAN			778	388.8' EACH SIDE
S.B. 52+12-58+45	MEDIAN			1266	633'EACH SIDE
N.B. 51+57-58+99	RIGHT	791			INCL. N. SIDE N. HILLS DR.
S.B. 58+99	8+99 - 13+75	465			EAST FR. RD.
S.B. 59+10-63+70	FR. RD. EAST		456		FR.RD. STA. 8+99-13+75
N.B. 58+99-67+85	RIGHT	859			
S.B. 59+55-65+20	MEDIAN			1129	564.7' EACH SIDE
S.B. 66+05-67+60	MEDIAN			310	155' EACH SIDE
N.B. 67+85-72+91.5	RIGHT	561			
S.B. 68+45-72+33	MEDIAN			776	388' EACH SIDE
N.B. 72+91.5		174			BOTH SIDES 31ST.ST
N.B. 72+91.5-83+72.09	RIGHT	981			
S.B. 73+45-83+18.5	MEDIAN			1942	971' EACH SIDE
N.B. 83+72.09-93+09.7	RIGHT	903			
S.B. 84+83-92+57				1548	774' EACH SIDE
N.B. 85+09	154' RT.	27			SHOPKO PARKING LOT
N.B. 88+04	89' RT.	11			SHOPKO PARKING LOT
N.B. 90+30	89' RT.	11			SHOPKO PARKING LOT
N.B. 93+09.7-100+50	RIGHT	617			
N.B. 93+10	MEDIAN	260			SHOPKO N. ENT.
S.B. 93+67-99+95	BOTH SIDES			1256	628' EACH SIDE
S.B. 101+05-106+50	MEDIAN			1077	538.4' EACH SIDE
S.B. 106+85		36.6			41ST ST.
S.B. 107+63-113+80.7				1235.4	617.7' EACH SIDE
N.B. 112+00-116+00	RIGHT	400			
187+85 - 193+95	RIGHT			610	
C.S.A.H. 22					
95+36.5-102+50				1427	713.5' EACH SIDE
103+55-104+00		90			
210+85-211+30		90			
212+40-217+40				1000.4	500.2' EACH SIDE

CLEARING AND GRUBBING (1)

STATION	LOCATION	CLEARING		GRUBBING		REMARKS
		TREE	ACRE	TREE	ACRE	
S.B. 1443+60	125' LT.	2		2		
S.B. 1445+00	180' LT.	1		1		
S.B. 1445+50	205' LT.	1		1		
S.B. 54+00	LT.	3		2		
N.B. 69+25	LT.	1		1		
N.B. 69+50	RT.		0.05		0.05	
73+85	80' RT.	2		1		
S.B. 74+25 - 77+35	80'-145'RT.		0.4		0.4	
N.B. 77+75 - 78+00	95'-125'RT.		0.5		0.5	
S.B. 78+75 - 79+30	80-120'RT.		0.5		0.5	
N.B. 80+30 - 82+85	70' - 125"RT.		0.3		0.3	
N.B. 89+34	53'LT.	1		1		
N.B. 90+32	85'-100'LT.	3		3		
N.B. 90+40 - 91+00	100'-115'LT.	6		7		
N.B. 95+70 - 99+50	RT.		0.4		0.4	
S.B. 98+30 - 100+75	LT.		0.2		0.2	
S.B. 106+00 - 107+25	LT.		0.1		0.1	
S.B. 107+25 - 115+00	LT.		0.25		0.25	
N.B. 107+75 - 110+50	RT.	5		5		
N.B. 110+50 - 116+00	RT.		0.4		0.4	
S.B. 116+40	55' LT.	1		1		

(1) TREES THAT ARE NOT LISTED SHALL NOT BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

TABULATIONS

CITY OF ROCHESTER SANITARY SEWER

NO.	STATION	LOCATION	INPLACE TOP OF CASTING ELEV.	SALVAGE CASTING	RECONST. M.H. LIN.FT.	INSTALL CASTING	ADJUST CASTING	CASTING	CONST M. H. DESIGN	CONST M. H. LIN. FT.	TOP OF CASTING ELEVATION	INLET ELEVATION	OUTLET ELEVATION	SEWER PIPE TYPE	SEWER PIPE SIZE	SEWER PIPE LENGTH	SEWER PIPE FLOWS TO	SEWER PIPE SLOPE	REMARKS
S-1	S.B. 1439+43	193'RT.																	LEAVE AS IS
S-2	S.B. 1439+67	99'RT.																	LEAVE AS IS
S-3	S.B. 1439+73	47'RT.																	LEAVE AS IS
S-4	S.B. 1443+42	88'LT.	1053.20	1	5.60	1					1054.76								
S-5	S.B. 1444+17	96'LT.	1050.06	1	10.60	1					1056.70								
S-6	N.B. 51+57	15.2'RT.	1054.13				1				1055.04	1040.08							CONSTRUCT NEW INLET
S-7	N.B. 51+57	44'RT.						1-D	SPECIAL !	13.80	1054.45	1044.42	1040.70	D.I.P.	8"	28.8'	S-6	2.5%	REMOVE 28.8' INP. V.C.P.
S-8	N.B. 53+82	15'RT.	1037.80	1	15.90	1					1049.68								
S-9	N.B. 53+94	70'LT.	1032.00	1	10.60	1					1038.60								
S-10	N.B. 57+50	38'RT.	1041.40				1				1040.60								
S-11	N.B. 61+00	38'RT.	1032.66				1				1032.14								
S-12	N.B. 64+57	14'RT.	1020.70				1				1023.60								
S-13	N.B. 67+94	14'RT.	1018.04	1	5.48	1					1019.52								
S-14	N.B. 68+57	14'RT.	1013.30	1	10.87	1					1019.17								
S-15	S.B. 68+56	85'LT.	1010.80																LEAVE AS IS
S-16	N.B. 69+57	14'RT.						1-D	A OR F	14.90	1018.89	1004.06	1004.06	D.I.P.	10"	100'	S-14	0.4%	(1)
S-17	N.B. 71+41	14'RT.	1015.02	1	7.65	1					1018.67								
S-18	N.B. 72+45	14'RT.	1015.98	1	6.87	1					1018.55								
S-19	N.B. 76+39	13'LT.	1015.66	1	6.42	1					1018.08								
S-20	N.B. 79+20	14'LT.	1014.88	1	6.62	1					1017.50								
S-21	N.B. 80+25	69'RT.	1016.90																LEAVE AS IS
S-22	N.B. 83+20	69'RT.	1014.08																LEAVE AS IS
S-23	N.B. 86+20	69'RT.	1019.31																LEAVE AS IS
S-24	N.B. 89+41	71'RT.	1020.14																LEAVE AS IS
S-25	N.B. 92+93.7	13.7'LT.	1020.00				1				1022.44								
S-26	N.B. 96+06.2	10.7'LT.	1020.96	1	5.96	1					1022.92								
S-27	N.B. 98+06.3	14.15'RT.	1021.90	1	6.54	1					1022.44								
S-28	N.B. 101+65.4	14'RT.	1024.00	1	7.00	1					1026.21								
S-29	N.B. 103+51.6	18.5'RT.	1024.00	1	6.50	1					1025.72								
S-30	N.B. 105+40	14'RT.	1023.00	1	8.30	1					1027.20								

(1) REMOVE INPLACE V.C.P. AND REPLACE WITH 100 LIN. FT. D.I.P.

TABULATIONS

SURFACE DRAINAGE

STATION	LOCATION	SIZE & TYPE	WITHOUT ALTERNATES		WITH ALTERNATES				INLET	OUTLET	BEDDING DETAIL	AGGREGATE BEDDING	SOD	DELINEATOR POST TYPE B.	RIP RAP	GEOTEXTILE FILTER	REMARKS
					ALTERNATE AA-1 C.M.P.		ALTERNATE AA-2 R.C.P.								CU. YDS.	SQ. YDS.	
			LENGTH	APRON	LENGTH	APRON	LENGTH	APRON									
S.B. 54+00	45'LT.-65'LT.	36"RC	20'CL.III						1034.06 ±	1034.46	I	9.4 C.Y.					EXTEND INP CULV. LT. (1)
S.B. 54+00	34'RT.-74'RT.	42"RC	40'CL.III						1037.65	1036.50	I	28.2 C.Y.					EXTEND INP CULV. LT. (1)
S.B. 59+00	ENT. LT.	18"			64'	2-18"	54'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
S.B. 65+75	27TH ST. LT.	18"			96'	2-18"	86'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
S.B. 68+50 - 69+07	62'LT.	18"CS	54'	1-18"GS					1008.9	1007.4			11 S.Y.	1			DRAIN TO 106 BOX CULVERT
S.B. 69+16 - 69+35	55'LT.	18"CS	18'	1-18"GS					1011.5	1007.6			11 S.Y.	1			DRAINS TO 106 BOX CULVERT (4)
S.B. 72+85	31ST. ST. LT.	18"			84'	2-18"	74'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
S.B. 82+00	SIDEWALK LT.	17"SPAN			16'	2-17"S	6'	2-17"S	DITCH	BOTTOM			23 S.Y.	2			
N.B. 87+49.4	CENTERLINE	84" RC	42B	1-84"RC					1004.66	1003.80	I	773 C.Y.	80 S.Y.	1	48 (12)	96	45° SKEW (2)
S.B. 93+12	ENT TO RPU	18"	76 (14)	2-18"GS					DITCH	BOTTOM			23 S.Y.	2			
N.B. 93+55	104'RT.	18"CS	22'	1-18"GS					1018.6	1018.05			11 S.Y.	1			FLOWS TO CB 132
N.B. 96+44	RT.	18"CS	26'	1-18"GS					1018.60	1017.30			11 S.Y.	1			FLOWS TO M.H. 140
N.B. 96+44	RT.	18"CS	54 (10)	1-18"GS					1050.50	1025.00							(11)
S.B. 100+50	ENT. LT.	18"			76'	2-18"	66'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
N.B. 106+30	CENTERLINE	66"RC	2-132'	4-66"RC					1017.90	1017.6	I	366 C.Y.	238 S.Y.	2	42.5 (13)	102	CULV C 'S AT 106+24.7 & 106+35.3
N.B. 107+03	41ST. ST. RT.	42"SPAN			76'	2-42"S	66'	2-44"S	DITCH	BOTTOM			53 S.Y.	2			
N.B. 107+85	ENT. RT.	17"SPAN			30'	2-17"S	20'	2-22"S	DITCH	BOTTOM			23 S.Y.	2			
S.B. 116+00	ENT. LT.	18"			54'	2-18"	44'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
Lor3 126+22	ENT. LT.	18"			76'	2-18"	66'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
LOR2 195+04	ENT. RT.	18"			46'	2-18"	36'	2-18"	DITCH	BOTTOM			23 S.Y.	2			
C. S. A. H. 22																	
E.B. 103+20	EXTEND RT.	77"CS SPAN	26'	(3)							I	27 C.Y.	52 S.Y.	1			EXTEND RT. (3)
97+00	BIKE PATH RT.	24"			34'	2-24"	26'	2-24"	1013.10	1013.00			31 S.Y.	2			
W.B. 96+69	CENTERLINE	24"RC	160 (5)	2-24" RCP					1013.00	1012.52	III	116C.Y. (6)	31 S.Y.	2			17°-44'-45" SKEW
211 + 85.7	SERVICE COURT	18"RC															LEAVED AS IS
SW LEG																	
0+95	CENTERLINE	18" CS	70'	2-18" GS					1012.80	1009.60	III	38C.Y. (7)	23 S.Y.	2			
1+16	25'LT.	12"			30'	2-12"	22	2-12"	DITCH	BOTTOM			14 S.Y.				UNDER BICYCLE PATH
NW LEG																	
1+12	CENTERLINE	18"CS	74'	2-18" GS					1010.80	1007.40	I	58 C.Y.	23 S.Y.	2			
SE LEG																	
1+00	CENTERLINE	12"RC	32'	1-12"RC					1013.80	1013.60	IV	19C.Y. (8)	6 S.Y.	1			FLOWS TO C.B. 104
1+24	40'LT.	12"			22'	2-12"	14	2-12"	DITCH	BOTTOM			14 S.Y.	2			UNDER BICYCLE PATH
NE LEG																	
1+25	CENTERLINE	15" RCP	32'	1-15"RC					1013.50	1013.20	IV	21C.Y. (9)	8 S.Y.	1			FLOWS TO C.B. 109
1+15	25'LT.	15"			24'	2-15"	16'	2-15"	DITCH	BOTTOM			17 S.Y.	2			UNDER BICYCLE PATH

(1) INCLUDES PAYMENT FOR MAKING CONNECTION TO INPLACE 8'-7" SPAN ST. PL. CULV.

(2) LENGTH INCLUDES 6 LONG RADIUS BENDS.

(3) SALVAGE AND INSTALL INPLACE APRON.

(4) LENGTH INCLUDES 2-18" 20° ELBOOWS.

(5) LENGTH INCLUDES 1 -T-SECTION WITH 24" RISER.

(6) 562 C.Y. GRANNULAR BACKFILL.

(7) 77 C.Y. GRANNULAR BACKFILL.

(8) 157 C.Y. GRANNULAR BACKFILL.

(9) 175 C.Y. GRANNULAR BACKFILL.

(10) LENGTH INCLUDES 1-90° ELBOW.

(11) PL. ANTISEEPAGE DIAPHRAGM FOR 18" GS PIPE CULVERT.

(12) CLASS IV RIP RAP.

(13) CLASS III RIP RAP.

(14) INSTALL 38 LIN. FT., F AND I. 38 LIN. FT.

TABULATIONS

STORM SEWER

NO.	STATION	LOCATION	CONSTRUCT MANHOLE AND CATCH BASINS							FLOWS TO				PIPE SEWER			SOD	RIP RAP	GEOTEXTILE FILTER	DELINEATOR POST	REMARKS
			MANHOLE		CATCH BASIN		CASTING ASS'Y	TOP OF CASTING ELEVATION	OUTLET ELEVATION	STRUCTURE OR DITCH	INLET ELEVATION	APRON SIZE	OUTLET ELEVATION	TYPE	SIZE	LENGTH					
			DESIGN	LIN. FT.	DESIGN	LIN. FT.										LIN. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.	TYPE B	
CB-1	N.B. STA 1+03	25' LT.			C	2.89'	A	1063.69	1060.69	MH-7	1060.45			RC	12"	61'					
CB-2	N.B. STA. 1+25	25' LT.			C OR G	4.16'	A	1065.24	1060.97	CB-1	1060.75			RC	12"	22'					SLOTTED DRAIN INLET 1062.01
CB-3	N.B.1440+29	33'RT.			H	3.41'	A	1061.92	1058.40	36"S.S.	1058.30			RC	12"	4'					
CB-4	N.B.1440+35.7	13'LT.			H	3.57'	B	1061.52	1057.84	CB-5	1057.65			RC	12"	39'					
CB-5	N.B.1440+55	21'RT.			C OR G	5.19'	A	1062.70	1057.40	MH-7	1057.30			RC	15"	17'					
CB-6	N.B.1441+00	21'RT.			H	3.60'	A	1063.01	1059.30	CB-5	1058.85			RC	12"	45'					
MH-7	N.B.1440+55	38'RT.	60-4019	8.45			D	1063.86	1055.50	MH-10	1057.47			RC	36"	324'CL III ②					①
CB-8	N.B.1443+75	25'LT.			H	MH 3.75'	B	1061.90	1058.33	CB-9	1047.50			RC	12"	51'					
CB-9	N.B.1443+84	25'RT.			A OR F	5.65'	A	1063.46	1057.70	MH-10	1051.60			RC	12"	23'					
MH-10	N.B.1443+75	45'RT.	60-4019	9.71	1 C OR G	3.31'	D	1064.33	1051.40	MH-15	1047.50			RC	36"	299' CL III					COMBINATION MANHOLE
CB-11	S.B.1446+47	25'RT.			H	3.66'	B	1059.27	1055.50	CB-12	1055.40			RC	12"	8'					
CB-12	N.B.1446+70	13'LT.			C OR G	3.78'	B	1059.29	1055.40	CB-13	1055.10			RC	12"	25'					
CB-13	N.B.1446+70	25'RT.			C OR G	4.55'	A	1059.61	1054.95	MH-15	1054.80			RC	15"	7'					
CB-14	N.B.1444+90	21'RT.			A OR F	9.37'	A	1062.58	1053.10	36"S.S.	1051.00			RC	12"	14'					
MH-15	N.B.1446+70	31'RT.	54-4019	5.87	A OR F	MH 7.15'	D	1060.23	1047.30	MH-21	1044.50			RC	36"	180' CL III					
MH-16	N.B.51+65	77'RT.	EXISTING				ADJUST	1053.68	1041.42	MH-31	1036.68			RC	36"	357'CL III ③					ADJ CSTG.(INCL. 12L.R. BENDS)
CB-17	S.B.51+15	23'RT.			H	3.67'	B	1055.57	1051.80	CB-18	1051.70			RC	12"	10'					
CB-18	N.B.51+14	13'LT.			C OR G	4.07'	B	1055.79	1051.60	CB-19	1051.10			RC	12"	47.2'					
CB-19	N.B.50+86	25'RT.			C OR G	5.11'	A	1056.07	1050.85	MH-21	1050.68			RC	15"	7'					
CB-20	N.B.50+75	25'RT.			H	3.21'	A	1056.22	1052.90	CB-19	1052.79			RC	12"	11'					
MH-21	N.B.50+86	25'RT.	54-4019	5.87	2 A OR F	MH 6.61'	D	1056.79	1044.40	MH-26	1037.70			RC	36"	314'CL III ③					COMBINATION MANHOLE
CB-22	N HILLS DR 1+22	17'RT.			C OR G	4.61'	A	1053.23	1048.51	MH-16	1047.50			RC	15"	25'					
CB-23	N HILLS DR 1+70	17'RT.			H	3.71'	A	1053.62	1049.80	CB-22	1048.70			RC	12"	46'					
CB-24	N HILLS DR 1+22	17'LT.			C OR G	4.42'	A	1053.24	1048.71	MH-16	1047.50			RC	12"	9'					
CB-25	N HILLS DR 1+62	17'LT.			A OR F	5.94'	A	1053.42	1044.37	33"S.S.	1044.21			RC	12"	9'					
MH-26	N.B.54+00	30'RT.	78-4019	8.52	3 C OR G	MH 4.27'	D	1049.88	1036.85	CULVERT	1036.45			RC	42"						SEE SURFACE DRAINAGE
CB-27	N.B.54+53	13'LT.			A OR F	5.75'	B	1047.86	1042.00	CULVERT	1039.00			RC	12"	53'					
CB-28	S.B.55+04	25'RT.			H	3.67'	B	1046.35	1042.57	CB-27	1042.05			RC	12"	52'					
CB-29	N.B.55+00	21'RT.			H	3.67'	A	1045.98	1042.20	CB-30	1040.50			RC	12"	60'					
CB-30	N.B.55+60	21'RT.			C OR G	5.32'	A	1044.41	1038.98	MH-31	1038.50			RC	15"	19'					
MH-31	N.B.55+60	40'RT.	60-4019	5.85	3 C OR G	MH 3.14'	D	1045.40	1036.50	MH-38	1031.06			RC	36"	272'②③					LENGTH INCL. 1-7.5° L.R. BEND
CB-32	S.B.58+42	13'RT.			H	3.67'	B	1038.14	1034.36	CB-33	1034.26			RC	12"	8'					
CB-33	N.B.58+45	25'LT.			C OR G	3.63'	B	1037.90	1034.16	CB-34	1033.38			RC	12"	52'					
CB-34	N.B.58+32	25'RT.			C OR G	4.62'	A	1037.79	1033.06	MH-38	1032.96			RC	15"	7'					
CB-35	N.B.56+80	25'RT.			H	3.68'	A	1041.59	1037.80	CB-36	1037.30			RC	12"	20'					
CB-36	N.B.57+00	25'RT.			C OR G	5.51'	A	1041.09	1035.47	36"S.S.	1035.20			RC	12"	11'					
CB-37	N.B.58+10	25'RT.			H	3.63'	A	1038.34	1034.60	CB-34	1034.05			RC	12"	22'					
MH-38	N.B.58+32	32'RT.	60-4019	8.02			D	1038.43	1030.50	MH-42	1023.74			RC	36"	338' ③					
CB-39	S.B.61+52	25'RT.			H	3.67'	B	1030.14	1026.26	CB-40	1025.90			RC	12"	46'					
CB-40	N.B.61+70	21'RT.			C OR G	4.33'	A	1029.59	1025.15	MH-42	1025.00			RC	15"	7'					
CB-41	N.B.61+90	21'RT.			C	2.83'	A	1029.19	1025.65	CB-40	1025.50			RC	15"	20'					SLOTTED DRAIN INLET 1027.51
MH-42	N.B.61+70	28'RT.	60-4019	6.73			D	1030.33	1023.69	MH-54	1016.75			RC	36"	347' ③					
CB-43	N.B.61+70	57'RT.			C OR G	4.79'	A	1030.29	1025.39	MH-42	1025.10			RC	15"	29'					
CB-44	N.B.61+20	83'RT.			C OR G	4.13'	B	1031.50	1027.26	CB-45	1026.26			RC	12"	50'					

① 36"X36' R.C.P. PIPE SEWER TO CONNECT INPLACE STORM SEWER TO MH7. INCLUDES 1 7-1/2° LONG RADIUS BEND.

② LENGTH TO INCLUDE 1 - 7.5° LONG RADIUS BEND ③ DES 3006

TABULATIONS

STORM SEWER

NO.	STATION	LOCATION	CONSTRUCT MANHOLE AND CATCH BASINS							FLOWS TO				PIPE SEWER			SOD	RIP RAP	GEOTEXTILE FILTER	DELINEATOR POST	REMARKS
			MANHOLE		CATCH BASIN		CASTING ASS'Y	TOP OF CASTING ELEVATION	OUTLET ELEVATION	STRUCTURE OR DITCH	INLET ELEVATION	APRON SIZE	OUTLET ELEVATION	TYPE	SIZE	LENGTH					
			DESIGN	LIN. FT.	DESIGN	LIN. FT.										LIN. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.	TYPE B	
CB-45	N.B.61+70	83'RT.			C OR G	4.02'	B	1030.29	1026.16	CB-43	1025.64			RC	12"	26'					
CB-46	S.B.61+17	13'RT.			H	3.57'	B	1022.48	1018.80	CB-47	1018.72			RC	12"	8'					
CB-47	N.B.65+17	25'LT.			C OR G	4.16'	B	1022.24	1018.46	CB-53	1017.96			RC	12"	50'					
CB-48	N.B.63+70	57'RT			C OR G	3.88'	A	1025.69	1021.70	36"S.S.	1021.19			RC	15"	26'					FR. RD. STA. 13+70 13'LT.
CB-49	N.B.63+45	21'RT.			C OR G	4.00'	A	1025.31	1021.20	36"S.S.	1021.10			RC	12"	10'					
CB-50	N.B.64+52	21'RT.			C	4.11'	A	1023.22	1019.00	36"S.S.	1018.90			RC	15"	12'					SLOTTED DRAIN INLET 1021.54
CB-51	N.B.63+70	83'RT.			C OR G	3.11'	B	1025.69	1022.47	CB-48	1021.95			RC	12"	26'					E. FR. RD. 13+70 13'RT.
CB-52	N.B.63+50	83'RT.			H	3.07'	B	1025.15	1022.97	CB-51	1022.57			RC	12"	20'					E. FR. RD. 13+50 13'RT.
CB-53	N.B.65+17	25'RT.			C OR G	4.44'	A	1022.25	1017.70	MH-54	1017.60			RC	15"	9'					
MH-54	N.B.65+17	34'RT.	60-4019	7.22			D	1022.98	1015.85	MH-61	1011.18			RC	36"	211' ①					
CB-55	S.B.67+57	23'RT.			H	3.67'	B	1019.44	1015.66	CB-56	1015.56			RC	12"	10'					
CB-56	N.B.67+57	13'LT.			C OR G	4.07'	B	1019.64	1015.46	MH-62	1014.76			RC	12"	35'					
CB-57	N.B.66+08	23'LT.			H	3.65'	B	1021.01	1017.25	CB-59	1016.06			RC	12"	48'					
CB-58	N.B.67+28	25'RT.			C OR G	4.43'	A	1019.64	1015.10	MH-61	1014.92			RC	12"	9'					
CB-59	N.B.66+00	25'RT.			C OR G	5.01'	A	1021.04	1015.92	36"S.S.	1015.70			RC	12"	9'					
CB-60	N.B.66+95	25'RT.			H	3.67'	A	1019.95	1016.17	CB-58	1015.50			RC	12"	33'					
MH-61	N.B.67+28	34'RT.	60-4019	9.34			D	1020.37	1011.09	MH-62	1009.70			RC	36"	62.5'CL.III ①					COMBINATION MANHOLE
MH-62	N.B.67+84.5	6'RT.	84-4020	10.57			D	1019.68	1009.20	BOX CULV.	1007.00			RC	42"	138' CL.III ①					
CB-63	N.B.67+87	21'RT.			C OR G	3.98	A	1017.75	1013.66	27"S.S.	1013.40			RC	12"	13'					ROCKY CR. DR. 1+40
CB-64	ROCKY CR DR 1+60	21'RT.			H	3.92'	A	1017.79	1014.16	27"S.S.	1013.55			RC	12"	13'					
CB-65	N.B.67+80	62'RT.			C OR G	4.79	A	1018.00	1013.10	27"S.S.	1012.78			USE	INPL.	CULV.					ROCKY CR. DR. 1+12
CB-66	ROCKY CR DR 1+40	21'LT.			C OR G	3.58'	A	1017.67	1013.98	27"S.S.	1013.23			RC	12"	29'					ROCKY CR. DR. 1+40
CB-66A	ROCKY CR. DR.	95'RT.			H	3.47	A	1017.76	1014.18	CB-66	1013.98			RC	12"	10'					S.B. 68+26
CB-67	S.B.69+77	25'RT.			H	3.67'	B	1018.51	1014.72	CB-69	1014.64			RC	12"	8'					LOW POINT IN CURB
CB-68	S.B.68+48	25'RT.			H	3.63'	A	1018.84	1015.10	MH-62	1014.40			RC	12"	69.5'					
CB-69	N.B.69+77	13'LT.			C OR G	4.14'	B	1018.75	1014.50	CB-70	1014.12			RC	12"	38'					
CB-70	N.B.69+77	25'RT.			C OR G	4.40'	B	1018.51	1014.00	MH-71	1013.82			RC	12"	9'					
MH-71	N.B.69+77	34'RT.	A OR F	11.03			D	1019.14	1008.20	BOX CULV.	1008.04			RC	24"	33'CL. III					
CB-72	S.B.72+30	13'RT.			H	3.67'	B	1018.44	1014.66	CB-73	1014.58			RC	12"	8'					
CB-73	N.B.72+30	25'LT.			C OR G	3.67'	B	1018.20	1014.42	CB-75	1013.92			RC	12"	50'					
CB-74	N.B.71+03	25'LT.			H	3.67'	B	1018.36	1014.58	CB-76	1014.08			RC	12"	50'					
CB-75	N.B.72+30	25'RT.			C OR G	4.29'	A	1018.20	1013.80	MH-77	1013.62			RC	12"	9'					
CB-76	N.B.71+03	25'RT.			A OR F	7.85'	A	1018.36	1010.40	21"S.S.	1009.96			RC	12"	9'					
MH-77	N.B.72+30	34'RT.	A OR F	9.20			D	1018.83	1009.72	MH-71	1008.45			RC	21'	253'CL. III					
CB-78	S.B.72+24	98'RT.			C OR G	3.40'	C	1016.20	1012.80	MH-77	1012.61			RC	12"	19'					
CB-79	N.B.72+84.87	75.2'RT.			C OR G	3.90'	A	1017.31	1013.30	MH-77	1012.75			RC	12"	69'					
CB-80	N.B.73+18.53	70.5'RT.			C OR G	3.50'	A	1017.31	1013.70	CB-79	1013.43			RC	12"	34'					
CB-82	S.B.74+35	25'RT.			C OR G	4.55'	B	1017.96	1013.30	CB-84	1013.09			RC	12"	42'					
CB-83	S.B.73+48	25'RT.			H	3.67'	B	1018.06	1014.28	CB-82	1013.58			RC	12"	87'					
CB-84	N.B.76+35	21'RT.			C OR G	4.77'	B	1017.88	1013.00	MH-85	1012.74			RC	12"	13'					
MH-85	N.B.76+35	34'RT.	A OR F	7.99			D	1018.54	1010.64	MH-77	1009.82			RC	21"	205'CL. III					
CB-86	S.B.76+22	25'RT.			H	3.67'	B	1017.73	1013.95	CB-88	1013.87			RC	12"	8'					
CB-87	S.B.75+25	25'RT.			H	3.67'	B	1017.85	1014.07	CB-82	1013.37			RC	12"	90'					
CB-88	N.B.76+22	13'LT.			C OR G	4.06'	B	1017.97	1013.80	CB-89	1013.46			RC	12"	34'					

① DES 3006

STORM SEWER

NO.	STATION	LOCATION	CONSTRUCT MANHOLE AND CATCH BASINS							FLOWS TO				PIPE SEWER			SOD	RIP RAP	GEOTEXTILE FILTER	DELINEATOR POST	REMARKS
			MANHOLE		CATCH BASIN		CASTING ASS'Y	TOP OF CASTING ELEVATION	OUTLET ELEVATION	STRUCTURE OR DITCH	INLET ELEVATION	APRON SIZE	OUTLET ELEVATION	TYPE	SIZE	LENGTH					
			DESIGN	LIN. FT.	DESIGN	LIN. FT.										LIN. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.	TYPE B	
CB-89	N.B.76+22	21'RT.			C OR G	4.24'	A	1017.65	1013.30	MH-91	1013.04			RC	12"	13'					
CB-90	N.B.76+42	21'RT.			H	3.67'	A	1017.63	1013.85	CB-89	1013.65			RC	12"	20'					
MH-91	N.B.76+22	34'RT.	A OR F	6.76			D	1018.31	1011.64	MH-85	1010.89			RC	18"	187'					
CB-92	N.B.78+65.5	25'LT.			H	3.67'	B	1017.39	1031.61	CB-94	1013.08			RC	12"	53'					
CB-93	N.B.78+65.5	25'LT.			C OR G	3.48'	B	1017.31	1013.72	CB-95	1013.30			RC	12"	61'					
CB-94	N.B.78+66	27.9'RT.			C OR G	4.14'	A	1017.25	1012.62	MH-91	1011.89			RC	15"	244'					
CB-95	N.B.78+80	35'RT.			F	3.70'	A	1017.02	1013.21	CB-94	1012.87			RC	12"	115'					DESIGN F CB WITH SHORT CONE
CB-96	S.B.80+33	13'RT.			H	3.44'	B	1017.55	1014.00	CB-93	1013.84			RC	12"	8'					
CB-97	S.B.81+00	13'RT.			H	3.03'	B	1017.40	1014.26	CB-99	1014.18			RC	12"	8'					
CB-98	S.B.82+10	13'RT.			H	2.91'	B	1017.27	1014.25	CB-100	1014.17			RC	12"	8'					
CB-99	N.B.81+00	25'LT.			C OR G	2.97'	B	1017.16	1014.08	CB-101	1013.80			RC	12"	69'					
CB-100	N.B.82+10	25'LT.			C OR G	2.82'	B	1017.03	1014.10	DITCH RT.		12"CONC.RC	1013.80	RC	12"	72'	9				
CB-101	N.B.81+00	43.6'RT.			C OR G	2.86'	A	1016.71	1013.74	DITCH RT.		12"CONC.RC	1013.60	RC	12"	34'	9				
CB-102	S.B.83+15.5	13'RT.			H	2.85'	B	1017.14	1014.18	CB-103	1014.10			RC	12"	8'					
CB-103	N.B.83+18	25'LT.			C OR G	2.71'	B	1016.90	1014.08	DITCH RT.		12"CONC.RC	1013.80	RC	12"	56'	9				
CB-104	S.E.LEG 1+00	23'RT.			C OR G	2.61'	A	1016.22	1013.50	DITCH RT.		22"CONC. RC-A	1013.30	RCP-A	22"	36'	9				ON C.S.A.H. 22 22"SPAN
CB-106	W.B.P.O.T.95+40	25'RT.			C OR G	2.82'	B	1016.69	1013.77	DITCH LT.		12"CONC.RC	1013.50	RC	12"	54'	9				ON C.S.A.H. 22
CB-107	W.B. 96+76.8	25'RT.			I	3.87'	B	1017.43	1012.78	CULVERT											SET OVER EXISTING CULVERT
CB-108	E.B. 95+40	130'LT.			H	2.94'	B	1016.93	1013.90	CB-106	1013.82			RC	12"	8'					
CB-109	N.E.LEG 1+25				H	2.74'	A	1015.95	1013.10	C 46 D	1012.90			RC	15"	21'					FLOWS INTO BOX CULVERT
CB-110	S.B.86+00	40.2'RT.			A OR F	5.77'	A	1016.13	1010.25	84"RCP	1009.67			RC	15"	15'					
CB-111	S.B.86+00	25'RT.			C OR G	4.70'	B	1016.61	1011.80	CB-118	1011.70			RC	12"	8'					LOW POINT
CB-112	S.B.86+50	25'RT.			H	3.52'	B	1016.63	1013.00	CB-119	1012.92			RC	12"	8'					
CB-113	N.B.84+75	23'RT.			H	2.84'	B	1016.70	1013.75	DITCH RT.		12"CONC.RC	1013.50	RC	12"	50'	9				
CB-114	S.B. 85+10	187'RT.			H	3.07'	A	1020.84	1017.66	CB-115	1017.53			RC	12"	6'					
CB-115	S.B. 85+10	187'RT.			C OR G	3.33'	A	1020.72	1017.28	CB-116				RC	15"	6'					
CB-116	S.B. 85+10	187'RT.			A OR F	8.99'	A	1020.60	1011.50	DITCH		24"CONC.RC	1011.27	RC	24"	18'	16	5.8	28	1	CLASS III RIP RAP
CB-117	S.B. 85+10	187'RT.			H	2.95'	A	1020.72	1017.66	CB-115	1017.53			RC	12"	6'					
CB-118	N.B. 85+97.7	13'LT.			C OR G	4.80'	B	1016.85	1011.60	CB-110	1010.54			RC	12"	53'					
CB-119	S.B.86+50	13'LT.			C OR G	4.26'	B	1016.87	1012.50	CB-118	1011.73			RC	12"	50'					
CB-120	S.B. 87+80	25'RT.			C OR G	4.35'	B	1016.86	1012.40	CB-121	1012.30			RC	12"	8'					
CB-121	N.B.87+72.68	130'LT.			C OR G	4.83'	B	1017.14	1012.20	CB-123	1011.29			RC	12"	46'					
CB-122	N.B. 89+66	25'LT.			H	3.61'	B	1017.64	1013.92	CB-126	1013.55			RC	12"	62'					
CB-123	N.B. 88+00	27'RT.			A OR F	6.25'	A	1016.80	1010.44	84"RCP	1009.24			RC	12"	12'					
CB-124	N.B. 88+04	90'RT.			C OR G	4.73'	A	1023.94	1919.10	84"RCP	1009.10			CMP	12"	36'					SLOTTED DRAIN INLET 1022.26
CB-125	S.B.90+30	13'RT.			A OR F	9.87'	B	1018.27	1008.20	DITCH LT.		27"CONC.RC	1006.40	RC	27"	88'	18				
CB-126	N.B.90+27.68	25'LT.			C OR G	4.80'	B	1018.01	1013.10	CB-125	1013.0			RC	15"	8'					
CB-127	N.B.90+27.68	25'RT.			C OR G	4.20'	A	1018.01	1013.70	CB-126	1013.20			RC	15"	50'					
CB-128	N.B.91+80	25'RT.			H	3.62'	A	1019.18	1015.45	CB-131	1014.85			RC	12"	30'					
CB-129	N.B.90+27.68	90'RT.			C OR G	4.91'	A	1025.92	1020.90	CB-127	1013.95			RC	12"	65'					SLOTTED DRAIN INLET 1024.24
CB-130	N.B.92+51.68	25'LT.			H	3.67'	B	1019.75	1015.97	CB-131	1015.32			RC	12"	65.3'					
CB-131	S.B.92+09.68	25'RT.			48-4020	6.91'	A	1019.32	1011.16	CB-125	1008.30			RC	27"	191'					
CB-132	S.B.93+33	100'RT.			C OR G	5.48'	A	1021.64	1016.05	MH-133	1015.00			RC	18"	70'					
MH-133	N.B.93+42.64	31'RT.	A OR F	7.09'			D	1020.00	1013.00	CB-131	1011.66			RC	21"	133'					

STORM SEWER

NO.	STATION	LOCATION	CONSTRUCT MANHOLE AND CATCH BASINS							FLOWS TO				PIPE SEWER			SOD	RIP RAP	GEOTEXTILE FILTER	DELINEATOR POST	REMARKS
			MANHOLE		CATCH BASIN		CASTING ASS'Y	TOP OF CASTING ELEVATION	OUTLET ELEVATION	STRUCTURE OR DITCH	INLET ELEVATION	APRON SIZE	OUTLET ELEVATION	TYPE	SIZE	LENGTH					
			DESIGN	LIN. FT.	DESIGN	LIN. FT.										LIN. FT.	SQ. YDS.	CU. YDS.	SQ. YDS.	TYPE B	
CB-134	S.B.93+70	25'RT.			H	3.17'	B	1021.68	1018.40	CB-135	1016.55			RC	12"	46.74'					
CB-135	N.B.93+81.5	21'RT.			F	3.62'	A	1020.03	1016.30	MH-133	1016.10			RC	15"	40.3'					DESIGN F CB WITH SHORT CONE
CB-136	N.B.93+92.5	21'RT.			H	3.28'	A	1020.04	1016.65	CB-135	1016.55			RC	12"	10'					
CB-137	S.B.96+50	25'RT.			H	3.61'	B	1022.63	1018.90	CB-138	1018.82			RC	12"	8'					
CB-138	N.B.96+44	13'LT.			C OR G	4.35'	B	1022.16	1018.70	CB-139	1018.36			RC	12"	34'					
CB-139	N.B.96+44	21'RT.			C OR G	3.51'	A	1021.72	1018.10	MH-140	1017.90			RC	15"	10'					
MH-140	N.B.96+44	31'RT.	A OR F	6.16'			D	1022.32	1016.25	MH-133	1013.25			RC	18"	299'					
CB-141	S.B.98+03	13'RT.			H	3.08'	B	1024.29	1021.10	CB-142	1021.00			RC	12"	8'					
CB-142	N.B.97+94.46	25'LT.			C OR G	3.58'	B	1023.94	1020.25	12"S.S.	1018.24			RC	12"	57'					
CB-143	N.B.99+80	25'LT.			H	3.76'	B	1025.14	1021.67	CB-144	1020.35			RC	12"	50'					
CB-144	N.B.99+88.35	25'RT.			C OR G	3.54'	A	1023.80	1020.15	MH-140	1016.75			RC	12"	340'					
CB-145	S.B.101+08	25'RT.			H	3.50'	B	1025.41	1021.80	CB-147	1021.72			RC	12"	8'					
CB-146	S.B.103+02	25'RT.			H	3.64'	B	1026.08	1022.33	DITCH RT.		1-12" RC	1021.00	RC	12"	53'	9				
CB-147	N.B.100+96.22	13'LT.			C OR G	4.23'	B	1025.94	1021.60	DITCH RT.		1-12" RC	1021.20	RC	12"	40'	9				
CB-148	S.B.104+50	13'RT.			C OR G	4.67'	B	1026.28	1022.28	CB-149	1022.20			RC	12"	8'					
CB-149	N.B.104+31.86	25'LT.			C OR G	4.71'	B	1026.82	1022.00	DITCH RT.	1020.35			RC	12"	66'	9				
CB-150	N.B.106+47	25'LT.			A OR F	6.08'	B	1027.39	1021.20	66"RCP	1020.50			RC	12"	%12'					
CB-151	S.B.107+66	25'RT.			C OR G	4.06'	B	1027.75	1023.58	CB-153	1023.50			RC	12"	8'					
CB-152	S.B.107+76	25'RT.			H	2.87'	B	1028.78	1024.80	CB-151	1024.70			RC	12"	10'					
CB-153	N.B.107+66	13'LT.			C OR G	4.47'	B	1027.99	1023.40	DITCH RT.		12"RC	1023.13	RC	12"	46'	9			1	
CB-154	S.B.109+37	25'RT.			H	3.15'	B	1028.26	1025.00	CB-155	1024.92			RC	12"	8'					
CB-155	N.B.109+37	13'LT.			C OR G	3.67'	B	1028.50	1024.70	DITCH RT.	1024.50	12"RC	1024.50	RC	12"	40'	9			1	
CB-156	N.B.113+78.5	13'LT.			C OR G	3.38'	B	1028.54	1025.05	CB-157	1024.97			RC	12"	8'					
CB-157	S.B.113+77	13'RT.			C OR G	3.72'	B	1028.55	1024.72	DITCH LT.	1024.72	15"CONC.	1024.51	RC	15"	42'	9			1	
CB-158	N.B.113+85	9'RT.			C OR G	3.07'	A	1028.56	1025.38	CB-156	1025.15			RC	12"	23'					
CB-159	N.B.113+50	9'RT.			H	2.84'	A	1022.78	1025.83	CB-158	1025.48			RC	12"	35'					
CB-160	N.B.115+62	9'RT.			C OR G	3.51'	A	1026.92	1023.30	DITCH	1023.30	15"CONC.	1023.00	RC	15"	70'	9			1	
CB-161	N.B.115+50	9'RT.			H	3.44'	A	1027.12	1023.57	CB-160	1023.45			RC	12"	12'					
CB-162	E.B.100+13	25'LT.			C OR G	5.23'	B	1023.75	1018.41	DITCH LT.		12"CONC.	1017.81	RC	12"	60'	9			1	
CB-163	E.B.97+70	13'LT.			H	3.48'	B	1018.97	1015.38	CB-164	1015.30			RC	12"	8'					
CB-164	W.B.97+70	25'RT.			C OR G	3.29'	B	1018.53	1015.13	DITCH LT.		12"APRON	1014.31	RC	12"	82'	8			1	
CB-165	W.B.214+90	13'RT.			A OR F	7.67'	B	1013.84	1006.05	DITCH LT.		12"APRON	1003.90	RC	12"	72'	9			1	
CB-166	E.B.214+90	25'LT.			C OR G	5.67'	B	1012.66	1006.88	CB-165	1006.64			RC	12"	8'					
CB-167	W.B.212+43	25'RT.			C OR G	3.74'	B	1006.65	1002.70	DITCH LT.		12"APRON	1001.50	RC	12"	60'	9			1	
CB-168	E.B.212+43	13'LT.			H	3.67'	B	1006.79	1003.01	CB-167	1002.85			RC	12"	8'					
CB-169	S.B.1442+62	58.5'LT.	EXISTING	MANHOLE				1057.08													ADJUST SIDEWALK TO MATCH T.C.
CB-170	S.B.1443+35	105'LT.			LP 4X4		E	1055.10	1050.43	MH-171	1050.13			RC	12"	10'					
CB-171	S.B.1443+39	96'LT.		5.9' ①			②	1054.81	1047.34	MH-174			INPLACE	STORM	SEWER						RECONSTRUCT EXISTING MANHOLE
CB-172	S.B.1443+34	82'LT.			LB 4X4		E	1055.10	1050.43	MH-171	1050.10			RC	12"	11'					
CB-173	S.B.1443+91	130'LT.			C OR G	4.60'	C	1051.80	1047.20	MH-174	1046.70			RC	12"	26'					
CB-174	S.B.1443+91	103'LT.	A OR F	10.60'			D	1055.78	1045.37	CONSTRUCT	OVER	EXIST.	INPLACE	STORM	SEWER						STA.10+21 8.5'RT. OVER 15"S.S
CB-175	S.B.1443+39	176'LT.			H	3.64'	B ③	1050.35	1046.80	MH-176	1046.29			RC	12"	51'					12+40 60'LT. IN DRIVEWAY
MH-176	S.B.1444+74.5	137'LT.	A OR F	9.96'			D	1052.46	1042.58	15"S.S.	EXISTING		INPLACE	STORM	SEWER						STA. 12+50 10'LT.
CB-177	S.B.1444+93	114'LT.			H	3.67	A	1051.41	1047.63	MH-176	1047.34			RC	12"	30'					STA. 12+55 19'RT.
CB-178	S.B.1444+17	76'LT.			EXISTING	AS IS															TO BE REMOVED
CB-179	S.B.1442+34	54'LT.			EXISTING	AS IS															LEAVE AS IS

① RECONSTRUCT MANHOLE 5.9 LIN. FT.

② SALVAGE AND INSTALL CASTING

③ INSTALL GRATE TO MATCH DRIVEWAY SLOPE

TABULATIONS

BITUMINOUS DISTRIBUTION

LOCATION	2361(SPEC) WEARING COURSE	2331(MOD) WEARING COURSE	2341(SPEC) BINDER COURSE	2331(MOD) BINDER COURSE	2331(MOD) BASE COURSE	2331(MOD) SHOULDER MIXTURE	BITUMINOUS MATERIAL FOR TACK
	TONS	TONS	TONS	TONS	TONS	TONS	GALLONS
T.H. 63							
N.B.T.H. 63	1055		1582		3164	358	1534
S.B.T.H. 63	1326		3978 (2)			395	1929
RIGHT TURN LANE	585		969 (3)		1571		850
LEFT TURN LANE	393		589		1179		571
EAST FRONTAGE ROAD		142		142	142		138
BY-PASS LANE	89		134		268		130
STREET APPROACHES		535		535	535		519
ENTRANCES		956					
CROSSOVERS		68		104	204		99
C.S.A.H. 22							
E.B.	236		354		707	53	343
W.B.	236		354		707	66	343
CROSSOVERS	37		56		111		54
RIGHT TURN LANES	58		87		173		84
LEFT TURN LANES	98		147		293		142
STREET APPROACHES		182		182	182		176
ENTRANCES		237					
INTERSECTION (1)							
S.W. LEG	100		150		300	83	73
S.E. LEG	99		148		297	62	72
N.W. LEG	99		148		297	68	72
N.E. LEG	100		150		300	63	73
BICYCLE PATH		649					
BY-PASS & CONNECTIONS (TEMP.) (4)		550					

(1) INCLUDES QUANTITIES FOR ACCELL. AND DECELL. TAPERS.

(2) TO BE USED AS LEVELING COURSE.

(3) INCLUDES 183 TONS TO BE USED AS LEVELING COURSE.

(4) PROVIDED FOR THE CONSTRUCTION OF TEMPORARY BY-PASSES AND CONNECTIONS; LOCATIONS TO BE DETERMINED BY THE ENGINEER.

SLOTTED DRAINS

STATION	LOCATION	SIZE	LENGTH	FLOWS TO	INLET ELEV.	REMARKS
N. HEIGHTS DR. 1+03	25'LT.	15"	6'	C.B. 1	1062.01	
N.B. 61+90	21'RT.	15"	6'	C.B. 41	1027.51	
N.B. 64+52	21'RT.	15"	6'	C.B. 50	1021.54	
N.B. 88+04	90'RT.	15"	6'	C.B. 124	1022.26	
N.B. 90+27.7	90'RT.	15"	6'	C.B. 129	1024.24	

CONSTRUCT MEDIAN NOSES

STATION TO STATION	CUBIC YARDS
S.B. 1440+17 - 1440+20	.44
S.B. 1443+55 - 1443+59	.54
S.B. 1443+65 - 1444+69	.93
S.B. 51+17 - 51+22	1.05
S.B. 52+07 - 52+12	1.26
S.B. 58+45 - 58+50	1.26
S.B. 59+50 - 59+55	1.26
S.B. 65+20 - 65+25	1.26
S.B. 66+00 - 66+05	1.05
S.B. 67+60 - 67+65	1.05
S.B. 68+40 - 68+45	1.26
S.B. 72+33 - 72+38	1.26
S.B. 73+40 - 73+45	1.26
S.B. 83+18.5 - 83+23.5	1.26
S.B. 84+78 - 84+83	1.26
S.B. 92+57 - 92+62	1.26
S.B. 93+62 - 93+67	1.26
S.B. 99+95 - 100+00	1.26
S.B. 101+00 - 101+05	1.26
S.B. 106+50 - 106+55	1.26
S.B. 107+58 - 107+63	1.26
S.B. 113+80.7 - 113+85.7	1.26
C.S.A.H. 22	
W.B. 211+30 - 211+35	1.26
W.B. 212+35 - 212+40	1.26
W.B. 217+40.2 - 217+35.2	1.26
W.B. 95+31.5 - 95+36.5	1.26
W.B. 102+50 - 102+55	1.26
W.B. 103+50 - 103+55	1.26

CASTING SCHEDULE

CASTING ASSEMBLY	ITEM	CASTING NUMBER	STANDARD PLATE	NUMBER REQUIRED
A	GR. FRAME	B02A	4129	68
	GRATE	814	4152	
	CURB BOX	823A	4160	
B	GR. FRAME	805	4132	82
	GRATE	814	4152	
C	FRAME (5)		4143	2
	GRATE	731	4143	
D	RING	700-7	4101	21
	COVER	712	4110	
E	RING (6)	790-2	4108	3
	COVER	712	4110	

AGGREGATE BASE AND AGGREGATE SHOULDERING

LOCATION	2211.503 AGGREGATE BASE PLACED CLASS 5	2211.503 AGGREGATE BASE PLACED CLASS 6	2221.503 AGGREGATE SHOULDERING PLACED CL5	2221.503 AGGREGATE SHOULDERING PLACED CL6	2105.543 STABILIZING AGGREGATE (7)
	CU.YDS.	CU. YDS.	CU. YDS.	CU. YDS.	TONS
T.H. 63		9090	325	182	2804
BY-PASS LANE		330			
INTERSECTION LEGS		1232		237	534
C.S.A.H.22 INTERSECTION		2655		50	1314
ENTRANCES	1000				
APPROACHES	1256				
EAST FRONTAGE ROAD	242				
BY-BASSES (8)		550			
BICYCLE PATH	650				

(7) PRIOR TO PLACING CLASS 6 AGGREGATE BASE MATERIALS THE UPPER PORTION OF THE "SELECT GRANNULAR" SUBGRADE SHALL BE STABILIZED WITH STABILIZING AGGREGATE MEETING THE REQUIREMENTS OF 3149.2C. THE STABILIZING AGGREGATE IS TO BE APPLIED AT THE RATE OF 150 LBS. PER SQUARE YARD.

(8) LOCATIONS OF BY-PASS AND TEMPORARY CONNECTIONS SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

(5) REINFORCED CONCRETE FRAME FOR CASTING NO. 731

(6) RING CASTING NO. 790-2 MODIFIED BY THE ADDITION OF LUGS AT QUARTER POINTS. (SEE STD PLATE 4014 FOR DETAIL OF LUG)

TABULATIONS

SODDING

STATION	DESCRIPTION	SQ. YDS.	①	REMARKS
N.B. 1439+78-1444+34	BETWEEN CURB & BIKE PATH	392	L.	
N.B. 1439+78-1444+34	RT. OF BIKE PATH	2245	L.	
S.B. 1339+00-1444+14	BETWEEN CURB & BIKE PATH	1055	L.	
S.B. 1442+00-1444+14	LT. OF SIDEWALK	167	L.	
S.B. 1442+60-1446+50	LT. OF 24TH STREET	140	L.	BETWEEN CURB & SIDEWALK
S.B. 1444+14-1446+50	RT. OF 24TH STREET	1990	L.	
N.B. 1444+34-51+57	BETWEEN CURB & BIKE PATH	271	L.	
N.B. 1444+34-51+57	RT. OF BIKE PATH	856	L.	
S.B. 1444+14-59+00	SHOULDER SLOPES LT.	8110	L.	
N.B. 51+57-59+00	BETWEEN CURB & BIKE PATH	700	L.	
N.B. 51+57-59+00	RT. OF BIKE PATH	1177	L.	
S.B. 59+00-65+75	SHOULDER SLOPES LT.	3035	L.	
S.B.59+00	ENT. LT.	160	L.	
N.B. 59+00-68+00	BETWEEN CURB & BIKE PATH	929	L.	
N.B. 59+00-68+00	RT. OF BIKE PATH	1375	L.	
N.B. 60+00-63+90	RT. OF FRONTAGE ROAD	633	L.	
S.B. 65+75-72+85	SHOULDER SLOPES LT.	442	L.	INCL. AREA LT. OF SIDEWALK
N.B.68+00-72+85	BETWEEN CURB & BIKE PATH	318	L.	
N.B.68+00-72+85	RT. OF BIKE PATH	611	L.	
S.B. 72+85-84+30	SHOULDER SLOPES LT.	1500	L.	
S.B. 82+60-84+30	DEPRESSED MEDIAN LT.	433	L.	
N.B. 72+85-83+70	BETWEEN CURB & BIKE PATH	1537	L.	
N.B. 72+85-83+70	RT. OF BIKE PATH	1206	L.	
N.B. 80+80-83+70	DEPRESSED MEDIAN RT.	611	L.	
S.B. 84+30-86+30	DEPRESSED MEDIAN LT.	678	L.	
S.B. 84+30-90+12	SHOULDER SLOPES LT.	5156	L.	
N.B. 83+70-85+50	DEPRESSED MEDIAN RT.	433	L.	
N.B. 83+70-92+12	BETWEEN CURB & BIKE PATH	623	L.	
N.B. 83+70-92+12	RT. OF BIKE PATH	1822	L.	
S.B. 92+12-97+15	SHOULDER SLOPE LT.	2333	L.	DISTURBED AREAS

SODDING

STATION	DESCRIPTION	SQ. YDS.	①	REMARKS
S.B. 92+12	ENTS.LT.	1222	L.	DISTURBED AREA
92+12-100+37.5	BETWEEN CURB AND BIKE PATH	650	L.	
92+12-100+37.5	RT. OF BIKE PATH	2420	L.	
100+50	ENT. RADII LT.	44	E.	
N.B. 100+37.5-107+10	SHOULDER SLOPES RT.	3311	L.	DISTURBED AREAS
S.B. 106+12	ENT. RADII LT.	134	E.	
N.B. 107+10-116+00	SLOPES RT.	4078	L.	
N.B. 107+10-110+00	ENT. RT.	1233	E.	
116+00	ENT LT. RADII	70	E.	
116+00	ENT. RT. RADII	35	L.	
Lor3 116+00-126+18	INSIDE 10'W. SHOULDER SLOPE	681	E.	
S.B. 113+47-115+63	INSIDE 10'W. SHOULDER SLOPE	240	E.	
Lor3 126+18	ENTS. LT. RADII	226	E.	
Lor3 126+18	ENTS. RT. RADII	158	E.	
Lor4 187+65-187+85	SODDED FLUME	67	E.	
C.S.A.H. 22				
W.B. 210+85.7	ENTS. LT. RADII	159	L.	
E.B. 210+85.7	SERVICE DRIVE RADII	86	L.	
W.B. 210+85.7-216+00	SHOULDER SLOPES LT.	1389	L.	DISTURBED AREAS
E.B. 210+85.7-216+00	SLOULDER TO BIKE PATH	194	L.	ALSO SHLDR.SLOPES RT.
E.B. 210+85.7-216+00	RT. OF BIKE PATH	1133	L.	
W.B. 97+00-103+00	SHOULDER SLOPES LT.	3189	L.	
E.B. 97+00-103+00	SHLDR. SLOPES TO BIKE PATH	2544	L.	
E.B. 97+00-103+00	RT. OF BIKE PATH	1055	L.	
E.B. 103+00	RADII RT.	122	L.	
W.B. 103+00	RADII RT.	158	L.	
	SURFACE DRAINAGE	864	E.	
	STORM SEWER	187	E.	
	BOX CULVERTS	176	E.	

NEW CONCRETE SIDEWALK

STATION	LOCATION	3" SQ. FT.	4" SQ. FT.	REMARKS
1440+20-1443+59		243		MEDIAN
1442+14-1444+00			1425	
1444+58-1446+32			930	
1444+69-51+17		3048		MEDIAN
50+12 - 58+45		2532		MEDIAN
NORTHERN HILLS DR.	0+90-1+70		400	ON NORTHERN HILLS DR.
59+55 - 65+20		2260		MEDIAN
66+05 - 67+60		2128		MEDIAN
65+75 - 72+57			3295	INCL.7' ALONG 27TH ST.
68+45 - 72+35		1560		MEDIAN
72+93 - 83+00			5035	
73+45 - 83+18.5		5098		MEDIAN
84+83 - 92+57		3096		MEDIAN
93+67 - 99+95		2512		MEDIAN
101+05 - 106+50		2156		MEDIAN
107+63 - 113+80.7		4980		MEDIAN
C.S.A.H. 22				
210+85-211+30		180		
212+40-217+40.2		2001		
95+36-102+50		2854		
103+55-104+00		180		

JUNCTION BOXES

NO.	STATION ②	LOCATION ②	FROM	SIZE LEAD	INLET ELEV. ②	SIZE MAIN
JB1	1440+20	39'RT.	CB-3	12"	1058.3+	36"
JB2	1444+90	35'RT.	CB-14	12"	1051.40	36"
JB3	51+57	116'RT.	CB-25	12"	1044.71	33"
JB4	57+00	35'RT.	CB-36	12"	1035.20	36"
JB5	63+45	31'RT.	CBN-49	12"	1021.10	36"
JB6	63+70	32'RT.	CB-48	15"	1021.19	36"
JB7	64+52	35'RT.	CB-50	15"	1018.90	36"
JB8	66+00	34'RT.	CB-59	12"	1015.70	36"
JB9	67+93	62'RT.	CB-65	12"	1012.78	27"
JB10	67+97	89'RT.	CB-63	12"RC	1012.78	27"
JB10	67+97	89'RT.	CB-66	12"RC	1012.78	27"
JB11	68+00	109'RT.	CB-64	12"RC	1013.55	27"
JB12	71+03	34'RT.	CB-76	12"RC	1009.96	21"
JB13	94+05	32'RT.	CB-142	12"RC	1018.24	12"

① E - EROSION L - LAWN

TURF ESTABLISHMENT

ALL DISTURBED AREAS NOT SODDED SHALL BE SEEDED WITH SEED MIXTURE 600.

ALL AREAS THAT ARE TO BE SODDED OR SEEDED SHALL BE FERTILIZED WITH COMMERCIAL FRETILIZER, ANALYSIS 12-12-12, AT THE RATE OF 500 POUNDS PER ACRE, OR ITS EQUIVALENT.

ALL SLOPES 3:1 OR STEEPER THAT ARE TO BE SEEDED SHALL BE MULCHED WITH TYPE 1 MULCH (1.5 TONS PER ACRE) PLUS TYPE 5 MULCH (750 POUNDS PER ACRE.

ALL SLOPES FLATTER THAN 3:1 THAT ARE TO BE SEEDED SHALL BE MULCHED WITH TYPE 1 MULCH (1.5 TONS PER ACRE) AND DISC ANCHORED.

② EXACT LOCATION AND ELEVATION TO BE DETERMINEDED BY THE ENGINEER.

TABULATIONS

POLE LOCATIONS

STATION	LOCATION	CONSTUCTION LIMITS		POLE OWNERSHIP		DESCRIPTION
		INSIDE	OUTSIDE	R.P.U.	P.C.P.	
S.B. 1436+65	90'RT.		X	X		P.P.
S.B. 1438+55	98'RT.		X	X		P.P.
S.B. 1440+86	128'RT.		X	X		P.P.
S.B. 1441+18	76'LT.		X	X		P.P.
S.B. 1442+14	66'LT.		X	X		L.P.
S.B. 1443+00	119'RT.		X	X		P.P.
S.B. 1443+42	119'LT.		X	X		P.P.
S.B. 1444+24	75'LT.	X		X		P.P.
S.B. 1444+68	164'LT.		X	X		P.P.
S.B. 1445+90	83'RT.	X		X		P.P.
S.B.1446+86	78'LT.		X	X		P.P.
S.B. 51+36	105'RT.	X		X		L.P.
S.B. 51+37	84'RT.	X		X		P.P.
S.B. 52+10	75'LT.			X		P.P.
S.B. 54+57	86'RT.	X		X		P.P.
S.B. 54+74	73'LT.	X		X		P.P.
S.B. 55+48	85'LT.		X	X		P.P.
S.B. 56+33	154'LT.		X	X		P.P.
S.B. 56+97	85'RT.	X		X		P.P.
S.B. 57+35	72'LT.		X	X		P.P.
S.B. 58+05	181'LT.		X	X		P.P.
S.B. 58+99	30'LT.	X		X		L.P.
S.B. 59+04	162'RT.		PRIVATE	X		L.P.
S.B. 59+22	78'RT.	X		X		P.P.
S.B. 59+68	156'RT.		PRIVATE	X		L.P.
S.B. 60+00	75'LT		X	X		P.P.
S.B. 60+34	127'RT.	X		X		P.P.
S.B. 61+51	71'RT.	X		X		P.P.
S.B. 62+54	75'RT.		X	X		P.P.
S.B. 63+73	110'RT.	PRIVATE		X		L.P.
S.B. 64+25	30'RT.	X		X		L.P.
S.B. 64+35	72'RT.	X		X		P.P.
S.B. 65+09	75'LT.	ADJUST		X		P.P.
S.B. 65+56	97'LT.	X		X		P.P.
S.B. 66+42	71'RT.	X		X		P.P.
S.B. 67+66	75'LT.	X		X		P.P.
S.B. 68+12	190'LT.		X	X		P.P.
S.B. 68+38	70'RT.	X		X		P.P.
S.B. 70+21	75'LT.	X		X		P.P.
S.B. 70+24	70'RT.	X		X		P.P.
S.B. 70+80	29'RT.	X			X	L.P.
S.B. 71+18	70'RT.	X		X		P.P.
S.B. 72+33	73'LT.	X		X		L.P.
S.B. 72+77	71'RT.	X		X		P.P.
S.B. 72+80	139'RT.	X			X	L.P.
S.B. 73+10	79'LT.		X		X	P.P.

POLE LOCTIONS

STATION	LOCATION	CONSTRUCTION LIMITS		POLE OWNERSHIP		DESCRIPTION
		INSIDE	OUTSIDE	R.P.U.	P.C.P.	
S.B. 73+47	70'RT.	X			X	L.P.
S.B. 73+72	70'LT.	X		X		L.P.
S.B. 75+10	70'LT.	X		X		P.P.
S.B. 75+14	75'LT.	ADJUST		X		P.P.
S.B. 75+43	69'RT.	X			X	P.P.
S.B. 77+14	75'LT.	X		X		P.P.
S.B. 77+43	71'RT.	X			X	P.P.
S.B. 77+80	50'LT.	X		X		L.P.
S.B. 79+30	70'LT.	X		X		P.P.
S.B. 79+32	70'LT.	X			X	P.P.
S.B. 79+48	71'RT.	X			X	P.P.
S.B. 79+93	77'LT.	X		X		P.P.
S.B. 80+14	71'RT.	X			X	P.P.
S.B. 80+65	76'LT.	X		X		P.P.
S.B. 82+54	78'LT.	X		X		P.P.
S.B. 83+00	70'RT.	X			X	P.P.
S.B. 84+46	64'RT.	X			X	P.P.
S.B. 84+99	69'LT.	LEAVE		X		P.P.
S.B. 85+90	68'RT.	X			X	P.P.
S.B. 87+94	71'LT.	X		X		P.P.
S.B. 89+11	70'RT.	X			X	P.P.
S.B. 90+92	69'LT.	X		X		P.P.
S.B. 91+72	97'RT.	X			X	P.P.
S.B. 92+16	92'LT.		X		X	P.P.
S.B. 92+39	70'RT.	X			X	P.P.
S.B. 94+19	71'LT.		X	X		P.P.
S.B. 95+16	79'LT.		X	X		L.P.
S.B. 95+28	68'RT.	X			X	P.P.
S.B. 95+99	73'LT.		X	X		P.P.
S.B. 97+37	70'LT.		X	X		P.P.
S.B. 97+96	70'RT.	X			X	P.P.
S.B. 98+37	157'RT.		X		X	P.P.
S.B. 100+05	71'LT.		X	X		P.P.
S.B. 100+63	81'RT.	X			X	P.P.
S.B. 103+14	71'RT.	X			X	P.P.
S.B. 103+79	66'LT.		X	X		P.P.
S.B. 106+31	71'RT.	X			X	P.P.
S.B. 107+02	70'LT.	X		X		P.P.
S.B. 109+57	70'RT.	X			X	P.P.
S.B. 110+43	68'LT.	X		X		P.P.
S.B. 112+90	68'RT.	X			X	P.P.
S.B. 113+92	72'LT.		X	X		P.P.
S.B. 116+47	70'RT.	X			X	P.P.
S.B. 116+98	70'RT.	X			X	P.P.
S.B. 117+36	62'LT.	X		X		P.P.
S.B. 118+50	65'RT.		X		X	P.P.

C.S.A.H. 2 & POLE LOCATIONS

STATION SURVEY LINE	LOCATION	CONSTRUCTION LIMITS		POLE OWNERSHIP		DESCRIPTION
		INSIDE	OUTSIDE	R.P.U.	P.C.P.	
S.B. 121+28	74'LT.		X	X		P.P.
S.B. 121+45	71'RT.		X		X	P.P.
S.B. 121+56	68'RT.		X		X	P.P.
S.B. 124+85	112'LT.		X	X		P.P.
S.B. 128+02	70'RT.		X		X	P.P.
S.B. 128+75	135'RT.		X	X		P.P.
S.B. 131+13	77'RT.		X		X	P.P.
S.B. 132+60	110'RT.		X	X		P.P.
S.B. 134+10	98'RT.		X		X	P.P.
S.B. 134+40	71'RT.		X		X	P.P.
Lor4 187+00	71'RT.		X		X	P.P.
189+15	66'RT.		X		X	P.P.
191+51	73'RT.		X		X	P.P.
194+06	82'RT.		X		X	P.P.
197+01	61'RT.		X		X	P.P.
186+00	68'LT.	X			X	P.P.
189+30	76'LT.		X		X	P.P.
192+76	59'LT.	X			X	P.P.
195+46	46'LT.	X			X	P.P.
198+85	68'LT.		X		X	P.P.
201+82	66'LT.	X			X	P.P.
203+60	102'RT.		X		X	P.P.
204+83	66'LT.	X			X	P.P.
208+87	66'LT.		X		X	P.P.
212+31	72'RT.	X			X	P.P.
212+84	68'LT.				X	P.P.
W.B. 96+23	103'LT.		X	X		P.P.
E.B. 97+80	67'RT.	X		X		P.P.
E.B. 100+20	66'RT.	X		X		P.P.
E.B. 102+56	67'RT.	X		X		P.P.
E.B. 103+53	56'RT.		X	X		P.P.

RPU= ROCHESTER PUBLIC UTILITIES
PCP= PEOPLES CO-OP POWER

TABULATIONS

ROCHESTER PUBLIC UTILITIES (WATER)			
STATION TO STATION	LOCATION	DESCRIPTION	REMARKS
S.B. 1439+00 - 1439+82	29'RT.	WATER LINE	
S.B. 1439+34	29'RT.	WATER VALVE	
S.B. 1439+82 - 1439+73	29'-73'RT.	WATER LINE	
S.B. 1439+73 - 1441+52	73'-61'RT.	WATER LINE	
1439+76	73'RT.	WATER VALVE	
S.B. 1441+52 - 1441+90	61'-90'RT.	WATER LINE	
S.B. 1441+90 - 1443+10	90'RT.	WATER LINE	
S.B. 1442+88	86'RT.	WATER VALVE	
S.B. 1442+92	90'RT.	WATER VALVE	WATER LINE CROSSING
S.B. 1442+88	90'RT.-40'LT.	WATER LINE	CENTERLINE CROSSING
S.B. 1442+88	35'LT.	WATER VALVE	
S.B. 1442+88 - 1444+18	40'LT.-85'LT.	WATER LINE	
24TH ST. N.E.			
11+62 - 15+00	10'RT.	WATER LINE	
14+49	21'RT.	WATER VALVE	
14+49	24'RT.	FIRE HYDRANT	
S.B. 1443+10 - 1444+98	90'-102'RT.	WATER LINE	
S.B. 1444+98 - 1445+58	102'-64'RT.	WATER LINE	
S.B. 1445+58 - 50+66	64'-62'RT.	WATER LINE	
S.B. 50+66 - 50+92	62'-95'RT.	WATER LINE	
S.B. 50+92 - 63+02	95'RT.	WATER LINE	
S.B. 51+28	100'RT.	FIRE HYDRANT	
S.B. 51+34	100'RT.	WATER VALVE	
S.B. 51+82	95'RT.	WATER VALVE	
S.B. 52+50	99'RT.	WATER VALVE	
S.B. 52+54	95'RT.	WATER VALVE	
S.B. 54+20	98'RT.	WATER VALVE	
S.B. 54+20	100'RT.	FIRE HYDRANT	
S.B. 57+50	100'RT.	WATER VALVE	
S.B. 57+50	95'RT.	FIRE HYDRANT	
S.B. 57+53	98'RT.	WATER VALVE	
S.B. 60+60	100'RT.	WATER VALVE	
S.B. 60+60	95'-75'RT.	FIRE HYDRANT	
S.B. 63+02 - 63+52	75'RT.	WATER LINE	
S.B. 63+52 - 72+38	75'RT.	WATER LINE	
S.B.63+60	90'RT.	WATER VALVE	
S.B. 63+71	94'RT.	WATER VALVE	
S.B. 63+71	75'RT.	FIRE HYDRANT	
S.B. 65+83	75'RT.	WATER VALVE	
S.B.65+93	75'RT.	WATER VALVE	

ROCHESTER PUBLIC UTILITIES (WATER)			
STATION TO STATION	LOCATION	DESCRIPTION	REMARKS
S.B. 65+88	CENTERLINE	16" X 54'	W. LINE X-ING(STEEL CAST.)
S.B. 65+88	75'RT.-100'LT	WATER LINE	CENTERLINE OF CROSSING
S.B. 65+88	83'LT.	WATER VALVE	
S.B. 65+98	88'LT.	WATER VALVE	
S.B. 66+01	88'LT.	FIRE HYDRANT	
S.B. 67+80	90'RT.	WATER VALVE	
S.B. 67+80	94'RT.	FIRE HYDRANT	
S.B. 67+84	75'RT.	WATER VALVE	
S.B.68+10 - 68+25	75'-165'RT.	WATER LINE	
S.B. 68+12	77'RT.	WATER VALVE	
S.B. 71+00	75'-150'RT.	WATER LINE	
S.B. 71+00	77'RT.	WATER VALVE	
S.B. 72+34	75'RT.	WATER VALVE	
S.B. 72+38	75'RT.	FIRE HYDRANT	
S.B. 65+88 - 66+04	53'LT.	WATER LINE	
S.B. 65+90	53'LT.	WATER VALVE	
S.B. 66+04 - 66+14	53'-58'LT.	WATER LINE	
S.B. 66+14 - 72+64	58'LT.	WATER LINE	
S.B. 69+64	58'LT.	WATER VALVE	
S.B. 69+90	58'-135'LT.	WATER LINE	
S.B. 69+90	61'LT.	WATER VALVE	
S.B. 69+90	132'LT.	WATER VALVE	31ST. ST. N.E.
S.B. 69+90	135'LT.	FIRE HYDRANT	31ST. ST. N.E.
S.B. 72+64 - 782+96	58'-63'LT.	WATER LINE	31ST. ST. N.E.
S.B. 72+91	62'LT.	WATER VALVE	31ST. ST. N.E.
S.B. 72+96 - 72+84	63'-145'LT.	WATER LINE	31ST. ST. N.E.
S.B. 72+95	67'LT.	WATER VALVE	31ST. ST. N.E.
S.B. 72+84 - 72+51	145'-139'LT.	WATER LINE	31ST. ST. N.E.
S.B.72+55	140'LT.	WATER VALVE	31ST. ST. N.E.
S.B.72+51	139'LT.	FIRE HYDRANT	31ST. ST. N.E.
S.B. 92+56	CENTERLINE	WATER LINE	12" CROSSING
S.B. 92+85	80'LT.	FIRE HYDRANT	
S.B. 92+90	81' LT.	GATE VALVE	
S.B. 93+12	56'LT.	GATE VALVE	
S.B. 92+63 - 92+86	170'-122'RT.	WATER LINE	SHOPKO ENTERANCE NORTH
S.B.92+86	122'-50'RT.	WATER LINE	SHOPKO ENTERANCE NORTH
S.B.92+86	76'RT.	WATER VALVE	
S.B.92+86	89'RT.	WATER VALVE	
S.B. 92+86 - 93+04	50'-35'RT.	WATER LINE	
S.B. 92+72 - 92+86	99'RT.	WATER LINE	

ROCHESTER PUBLIC UTILITIES (WATER)			
STATION TO STATION	LOCATION	DESCRIPTION	REMARKS
S.B. 92+72	99'RT.	FIRE HYDRANT	
S.B. 92+76	99'RT.	WATER VALVE	
S.B. 92+64 - 92+86	82'RT.	WATER LINE	
S.B. 92+82	82'RT.	WATER VALVE	
S.B. 93+04 - 96+15	35'RT.	WATER LINE	
S.B. 96+15 - 98+15	35'RT.	WATER LINE	
S.B. 98+15 - 101+80	35'-63'RT.	WATER LINE	
S.B. 99+97	55'-81'RT.	WATER LINE	
S.B. 99+97	78'RT.	WATER VALVE	
S.B. 99+97	81'RT.	FIRE HYDRANT	
S.B. 100+00	56'RT.	WATER VALVE	
S.B. 100+44	59-79'RT.	WATER LINE	
S.B. 100+44	61'RT.	WATER VALVE	
S.B. 101+80 - 105+23	63'RT.	WATER LINE	
S.B.103+55	63'-200'RT.	WATER LINE	
S.B.103+55	172'RT.	WATER VALVE	
S.B. 105+01	63'RT.	WATER VALVE	
S.B.105+04	69'RT.	WATER VALVE	
S.B.105+04	72'RT.	FIRE HYDRANT	
C.S.A.H. 22			
E.B. 210+85 - 212+87	78'LT.	WATER LINE	
E.B. 212+72	94'LT.	WATER VALVE	
E.B. 212+72	97'LT.	FIRE HYDRANT	
E.B. 212+77	78'LT.	WATER VALVE	
E.B. 211+66	78'LT.-22'RT.	WATER LINE	CENTERLINE CROSSING
E.B. 211+66	72'LT.	WATER VALVE	
E.B. 211+66 - 211+74	22'-30'RT.	WATER LINE	
E.B.211+74	30'-200'RT.	WATER LINE	
E.B.211+74	194'RT.	WATER VALVE	
E.B. 211+53	175'RT.	FIRE HYDRANT	
E.B. 211+56	175'RT.	WATER VALVE	
E.B. 102+75	335'RT.-27'LT	WATER LINE	CENTERLINE CROSSING
E.B. 102+75	332'RT.	WATER VALVE	
E.B. 102+75 - 102+89	27'-100'LT.	WATER LINE	
E.B. 102+89	100'-240'LT.	WATER LINE	
E.B. 102+89 - 102+76	102'LT.	WATER LINE	
E.B. 102+77	102'LT.	WATER VALVE	
E.B. 102+89 - 103+25	102'LT.	WATER LINE	
E.B. 102+92	102'LT.	WATER VALVE	

U. S. WEST COMMUNICATIONS TELEPHONE SERVICE				
STATION	LOCATION	INSIDE CONST. LIMITS	OUTSIDE CONST. LIMITS	REMARKS
N.B. 1438+00 - 1439+80	40'-72'RT.		X	
N.B. 1439+80 - 1442+00	72'-65'RT.		X	
N.B. 1441+10 - 1443+20	103'RT.-80'RT.		X	
N.B. 1442+00 - 1445+00	65'-50'RT.	X		
N.B. 1443+20	80'RT.		X	TEL. PED.
N.B. 1445+00 - 1445+75	50'-15'RT.	X		
N.B. 1445+75 - 50+43	15'-12'RT.	X		
N.B. 1438+00 - 1438+60	85'-93'RT.		X	ABANDONED
N.B. 1438+60 - 1439+80	93'-65'RT.		X	ABANDONED
N.B. 1439+80 - 1440+63	65'-96'RT.		X	ABANDONED
N.B. 1440+63	96'RT.		X	ABANDONED PED.
N.B. 1440+63 - 1442+15	96'-85'RT.		X	ABANDONED
N.B. 1442+15 - 1445+15	85'-55'RT.	X		ABANDONED
N.B. 1443+23	75'RT.	X		TEL. PED.
N.B. 1445+15 - 1445+53	55'-35'RT.	X		ABANDONED
N.B. 1445+15	55'RT.	X		TEL. PED.
N.B. 1445+53 - 1447+17	35'-32'RT.	X		ABANDONED
N.B. 1446+20	55'RT.	X		TEL. CAB.
N.B. 1447+17	32'RT.-121'LT.	X		ABANDONED CROSSING
N.B. 1444+34	102'LT.		X	TEL. PED.
N.B. 1444+34 - 1444+52	102'-118'LR.		X	ABANDONED
N.B. 1444+52	118'LT.		X	TEL. PED.
N.B. 1444+52 - 1447+17	118'-121'LT.		X	ABANDONED
N.B. 1447+17	32'RT.	X		TEL. PED.
N.B. 1447+17	121'LT.		X	TEL. PED.
N.B. 51+30	62'RT.	X		TEL. CAB.
N.B. 51+30	72'RT.	X		TEL.PED.
N.B. 51+75	228'LT.	X		
N.B. 1447+17 - 51+75	121'-228'LT.		X	
N.B. 1447+17 - 50+47	12'RT.	X		
N.B. 50+47 - 51+00	12'-38'RT.	X		
N.B. 51+00	38'RT.	X		EXIST. M.H. (ADJUST)
N.B. 51+00 - 53+15	38'RT.	X		
N.B. 53+15	38'RT.-120'LT.	X		CROSSING
N.B. 53+15	120'LT.	X		EXIST. M.H. (ADJUST)
N.B. 1447+17 - 52+00	121'LT.	X		
N.B. 52+00 - 54+20	121'-130'LT.	X		
N.B. 54+20	130'LT.	X		TEL. PED.
N.B. 53+15 - 59+20	120'-112'LT.	X		
N.B. 58+23	104'RT.		X	TEL. PED.
N.B. 59+90	112'LT.	X		EXIST. M.H. (ADJUST)
N.B. 54+20 - 55+00	130'-120'LT.	X		
N.B. 55+00 - 59+90	115'LT.	X		
N.B. 59+90 - 63+00	112'-117'LT.	X		
N.B. 59+90 - 63+00	120'-127'LT.		X	
N.B. 60+37	82'RT.	X		TEL.CAB.
N.B. 63+00 - 64+10	127'LT.		X	TEL. PED.

U. S. WEST COMMUNICATIONS TELEPHONE SERVICE				
STATION	LOCATION	INSIDE CONST. LIMITS	OUTSIDE CONST. LIMITS	REMARKS
N.B. 64+10	117'LT.		X	
N.B. 64+87 - 65+25	117'-112'LT.	X		
N.B. 65+25 - 66+25	112'LT.	X		
N.B. 66+25 - 66+53	112'-117'LT.	X		
N.B. 66+53	117'LT.	X		EXIST. M.H. (ADJUST)
N.B. 64+10	127'LT.	X		TEL. PED.
N.B. 64+10 - 68+40	127'LT.	X		
N.B. 66+53 - 70+66	117'-123'LT.	X		
N.B. 70+66	123'LT.	X		EXIST. M.H. (ADJUST)
N.B. 68+40	127'LT.	X		TEL. PED.
N.B. 68+40	28'RT.	X		TEL. PED.
N.B.68+40 - 69+68	134'-125'LT.		X	
N.B. 69+68 - 75+16	125'-122'LT.		X	
N.B. 69+70	122'LT.		X	TEL. PED.
N.B. 75+16	122'LT.		X	TEL. PED.
N.B.70+66 - 75+16	122'-118'LT.		X	
N.B. 75+16 - 79+65	122'LT.		X	
N.B. 75+16 - 79+65	117'LT.	X		
N.B. 79+65	120'LT.	X		EXIST. M.H. (ADJUST)
N.B. 79+65	122'LT.	X		TEL. PED.
N.B. 79+65 - 80+00	118'LT.	X		TEL. PED.
N.B. 79+85	117'LT.	X		NEW TEL.CAB.
N.B. 80+00 - 80+80	118'LT.-200'LT			
N.B. 80+00 - 81+75	118'-30'RT.	X		CROSSING (ABANDONED)
N.B. 80+10	30'RT.	X		TEL. PED.
N.B.80+10 - 80+17	30'-110'RT.	X		
N.B. 80+00 - 81+75	118'LT.	X		
N.B. 81+75	118'LT.	X		TEL. PED.
N.B. 82+20	118'LT.	X		TEL. PED.
N.B. 81+75 - 84+76	118'LT.	X		
N.B. 84+76	118'LT.	X		TEL. PED.
N.B. 84+70 - 85+00	160'-55'RT.	X		
N.B. 85+00	118'LT.	X		TEL. CAB.
N.B. 85+00 - 91+65	55'-48'RT.	X		
N.B. 86+00	25'RT.	X		TEL.PED.
N.B. 84+76 - 87+62	118'-115'LT.	X		
N.B. 87+62	115'LT.	X		TEL.PED.
N.B. 87+62 - 90+40	115'LT.	X		
N.B. 90+40	115'LT.	X		TEL.PED.
N.B. 90+40 - 90+89	115'LT.	X		
N.B. 90+89	113'LT.	X		EXIST. M.H. (ADJUST)
N.B. 90+89 - 90+50	115'LT.-50'RT.	X		CROSSING
N.B. 90+89 - 93+07	115'-117'LT.	X		
N.B. 91+65	48'RT.	X		TEL. PED.
N.B. 91+65 - 93+50	48'RT.	X		
N.B. 93+07	117'LT.	X		TEL. PED.
N.B. 91+17	121'LT.	X		TEL. PED.

U. S. WEST COMMUNICATIONS TELEPHONE SERVICE				
STATION	LOCATION	INSIDE CONST. LIMITS	OUTSIDE CONST. LIMITS	REMARKS
N.B. 93+07 - 97+00	117'-115'LT.	X		
97+00 - 101+18	105'-115'LT.	X		
N.B. 99+86	105'LT.-30'RT.	X		CROSSING
N.B. 101+18 - 106+43	115'-110'LT.	X		
N.B. 106+43	110'LT.	X		TEL. PED.
N.B. 106+43 - 119+00	110'-78'LT.	X		
S.B. 119+00 - 124+00	65'-60'LT.		X	

PEOPLES NATURAL GAS LINES				
STATION TO STATION	LOCATION	DESCRIPTION	NUMBER	REMARKS
S.B.1438+00 - 1439+37	76'-86'RT.	GAS LINE		
S.B.1439+37	86'-102'RT.	GAS LINE		
S.B.1439+37 - 1439+90	102'-125'RT.	GAS LINE		
S.B.1439+90 - 1440+00	125'-139'RT.	GAS LINE		
S.B.1440+00 - 1442+00	139'-122'RT.	GAS LINE		
S.B.1442+00 - 1444+90	122'-98'RT.	GAS LINE		
S.B.1442+34 - 1442+14	120'RT.-48'LT.	GAS LINE		℄ CROSSING
S.B.1442+14 - 1443+10	48'-85'LT.	GAS LINE		24TH ST.N.E.
S.B.1443+10 - 1444+00	85'-120'LT.	GAS LINE		24TH ST.N.E.
S.B.1444+00 - 1446+00	120'-220'LT.	GAS LINE		24TH ST.N.E.
S.B.1444+90 - 1445+53	98'-70'RT.	GAS LINE		
S.B.1445+53 - 50+52	70'RT.	GAS LINE		
S.B.50+52 - 50+95	70'-87'RT.	GAS LINE		
S.B.50+95 - 57+50	87'RT.	GAS LINE		
S.B.57+50 - 61+00	87'-67'RT.	GAS LINE		
S.B.61+00 - 73+10	67'RT.	GAS LINE		
S.B.66+05	67'RT.-200'LT.	GAS LINE		℄ CROSSING 27TH ST. N.E.
S.B.67+72 - 68+00	67'-250' RT.	GAS LINE		ROCKY CREEK DR. N.E.
S.B.71+25	67'-200' RT.	GAS LINE		
S.B.73+10 - 72+90	67'RT.-130'LT.	GAS LINE		℄ CROSSING 31ST ST. N.E.
S.B.83+53 - 83+80	53'-195'LT.	GAS LINE		37TH ST. N.E.
S.B.83+53 - 85+02	81'LT.	GAS LINE		
S.B.85+02	81'LT.	GAS VALVE		
S.B.85+02 - 90+00	81-70'LT.	GAS LINE		
S.B.90+00 - 95+20	70'LT.	GAS LINE		
S.B.95+20 - 105+21	LT.	GAS LINE		GAS LINE 5'+ INSIDE R.W.
S.B.105+21 - 120+00	70'LT.	GAS LINE		
37TH ST. N.E.				
E.B.211+00 - 216+10	48'RT.	GAS LINE		

TABULATIONS

BOUNDARY CORNERS

PLAT NO.	B.C. NO.	PLAN COORDINATES ' X '	' Y '
55-25	B501	406387.186	86852.433
55-25	B2	406366.571	86641.538
55-25	B3	406367.565	86641.436
55-25	B4	406350.871	86470.648
55-25	B5	406335.787	86319.538
55-25	B6	406326.642	86208.708
55-25	B7	406237.061	85898.373
55-25	B8	406160.462	85560.525
55-25	B9	405986.359	85300.599
55-25	B10	405839.344	85100.951
55-25	B11	405641.292	84806.709
55-25	B12	405619.980	84819.779
55-25	B13	405461.500	84537.654
55-25	B14	405464.323	84832.649
55-25	B15	405554.367	84978.289
55-25	B16	405545.967	84983.714
55-25	B17	405668.228	85163.196
55-25	B18	405667.984	85163.375
55-25	B19	405810.185	85363.961
55-25	B20	405950.638	85611.604
55-25	B21	405924.268	85625.982
55-25	B22	406078.618	86052.706
55-25	B23	406102.476	86024.710
55-25	B24	406147.907	86247.004
55-25	B25	406091.049	86402.844
55-25	B26	406141.525	86397.518
55-25	B27	406174.086	86487.923
55-25	B528	406204.211	86853.034
55-25	B29	406391.422	86203.363
55-25	B30	406384.129	86114.963
55-25	B31	406319.017	86120.335

BOUNDARY CORNERS

PLAT NO.	B.C. NO.	PLAN COORDINATES ' X '	' Y '
55-26	B601	406815.779	89465.167
55-26	B7	406791.785	88820.958
55-26	B8	406780.408	88746.826
55-26	B9	406652.534	88731.040
55-26	B10	406610.062	88454.280
55-26	B11	406615.004	88453.521
55-26	B12	406610.454	88423.868
55-26	B13	406605.512	88424.627
55-26	B16	406516.866	87583.273
55-26	B17	406502.264	87485.250
55-26	B18	406510.297	87400.492
55-26	B19	406499.279	87371.751
55-26	B20	406468.811	87375.843
55-26	B21	406433.760	87284.416
55-26	B22	406398.993	86973.228
55-26	B23	406207.322	86890.736
55-26	B624	406261.241	87403.719
55-26	B25	406252.779	87404.855
55-26	B26	406260.988	87464.794
55-26	B27	406269.064	87463.666
55-26	B28	406307.717	87730.094
55-26	B29	406550.703	89277.407
55-26	B30	406490.703	89277.386
55-26	B31	406495.414	89307.387
55-26	B32	406555.414	89307.408
55-26	B633	406580.079	89464.468
55-26	B34	406714.724	89136.296
55-26	B35	406669.219	88839.767
55-26	B36	406520.534	87870.886
55-26	B37	406561.162	87871.929

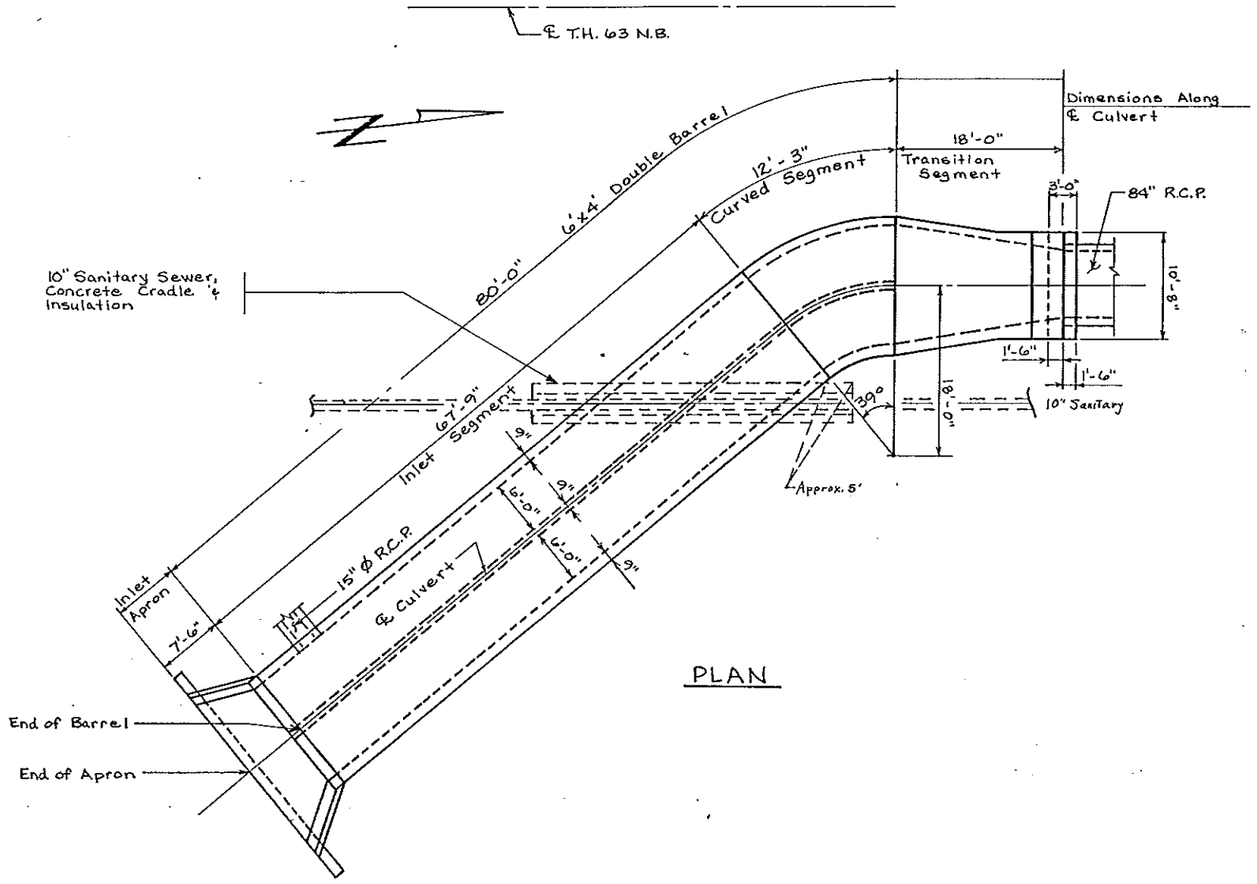
BOUNDARY CORNERS

PLAT NO.	B.C. NO.	PLAN COORDINATES ' X '	' Y '
55-27	B701	407517.089	92093.278
55-27	B2	407608.634	92062.450
55-27	B3	407561.011	91975.306
55-27	B4	407535.788	91981.157
55-27	B5	407497.888	91993.946
55-27	B6	407464.373	91950.065
55-27	B7	407384.529	91896.404
55-27	B8	407347.459	91855.300
55-27	B9	407261.636	91693.864
55-27	B10	407019.338	90974.531
55-27	B11	406987.416	90781.390
55-27	B12	406986.735	90776.955
55-27	B13	406980.660	90776.918
55-27	B14	406871.549	90065.920
55-27	B15	406949.291	89930.362
55-27	B16	407269.397	89803.575
55-27	B17	407265.714	89794.278
55-27	B18	407512.937	89696.354
55-27	B19	407722.081	89466.966
~~55-27~~	~~B20~~	~~407306.303~~	~~89466.060~~
~~55-27~~	~~B21~~	~~406993.974~~	~~89622.253~~
55-27	B22	406868.141	89641.563
55-27	B23	406613.915	89679.933
55-27	B24	406596.873	89772.745
55-27	B25	406569.011	89821.525
55-27	B26	406497.726	89883.354
55-27	B27	406[illegible]7.374	89982.513
55-27	B28	406[illegible]3.370	89891.257
55-27	B29	406117.688	89937.076
55-27	B30	406215.274	90183.454
55-27	B31	406224.480	90206.697
55-27	B32	406280.250	90184.608
55-27	B33	406576.016	90067.462
55-27	B34	406670.659	90121.520
55-27	B35	406705.631	90349.408
55-27	B36	406700.708	90501.920
55-27	B37	406646.344	90510.263
55-27	B38	406657.720	90584.395
55-27	B39	406720.912	90595.348
55-27	B40	406757.704	90595.570
55-27	B41	406785.998	90775.743
55-27	B42	406616.346	90774.719
55-27	B43	406615.948	90840.718
55-27	B44	406796.372	90841.807
55-27	B45	406810.380	90931.009
55-27	B46	406865.804	91231.761
55-27	B47	406953.977	91509.019
55-27	B48	406933.110	91516.924
55-27	B49	406955.793	91574.955
55-27	B50	406977.887	91566.050
55-27	B51	406985.014	91582.135
55-27	B52	407124.511	91854.282
55-27	B53	407208.162	92007.355
55-27	B54	407090.014	92056.383
55-27	B755	407089.713	92089.382
55-27	B56	407205.648	91575.322
55-27	B57	407206.562	91574.917
55-27	B58	407356.486	89466.771
55-27	B59	407371.608	89504.949
55-27	B60	407126.993	89601.839

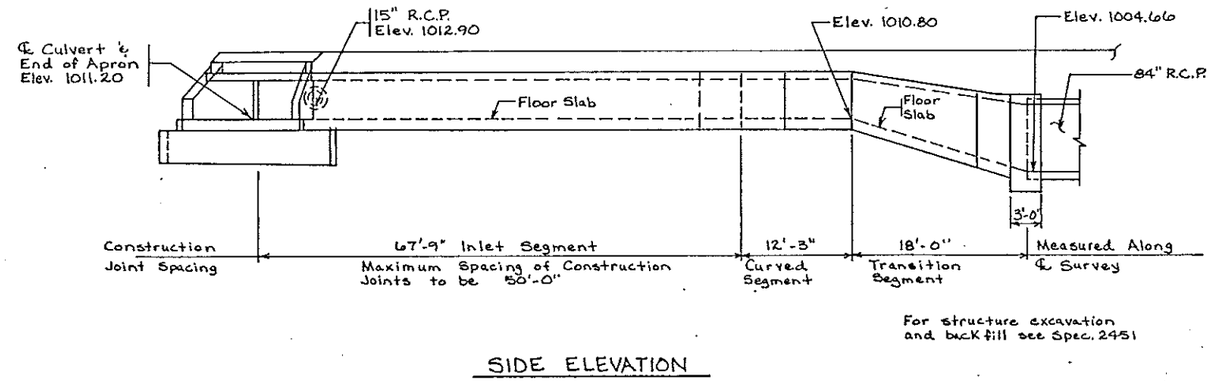
BOUNDARY CORNERS

PLAT NO.	B.C. NO.	PLAN COORDINATES ' X '	' Y '
55-28	B801	408205.350	94712.530
55-28	B2	408197.487	94662.499
55-28	B3	408093.122	94486.727
55-28	B4	407988.783	93250.270
55-28	B5	407888.012	92959.413
55-28	B6	407897.315	92955.366
55-28	B7	407818.599	92785.284
55-28	B8	407798.677	92747.000
55-28	B9	407690.995	92398.755
55-28	B10	407612.327	92327.787
55-28	B11	407489.289	92102.640
55-28	B12	407089.412	92122.380
55-28	B13	407292.083	92160.921
55-28	B14	407578.492	92685.019
55-28	B15	407671.133	92859.303
55-28	B16	407842.551	93285.018
55-28	B17	407899.216	93637.250
55-28	B18	407902.025	93931.267
55-28	B19	407889.870	94674.238
55-28	B820	407889.249	94711.277
55-28	B21	407988.766	93251.267
55-28	B22	408110.724	93912.149
55-28	B23	408118.917	93912.181
55-28	B24	408153.779	93947.319
55-28	B25	408219.778	93947.579
55-28	B26	408220.177	93846.580
55-28	B27	408105.521	93846.128

BOUNDARY CORNERS



PLAN



For structure excavation and backfill see Spec. 2451

SIDE ELEVATION

HYDRAULIC DATA		
Stream		UnKnown
Flood of Record (Date)	=	UnKnown
Maximum Observed Highwater	=	UnKnown
Design Flood (50 year frequency)	=	400 C.F.S.
Design Flood Headwater Elevation	=	1016.60
Basic Flood (100 year frequency)	=	480 C.F.S.
Basic Flood Headwater Elevation	=	1016.90

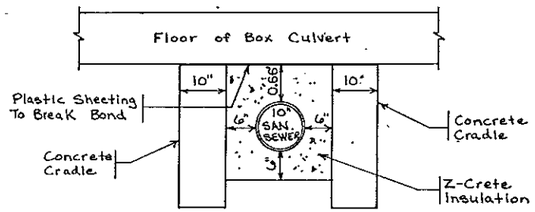
Fed. Proj. No.

DESIGN DATA

1983 A.A.S.H.T.O. SPECIFICATIONS AND CURRENT A.A.S.H.T.O. INTERIM SPECIFICATIONS LOADING: LOAD FACTOR DESIGN METHOD

INSIDE HEIGHT =	Variable	FT.
INSIDE WIDTH =	Variable	FT.
BARREL LENGTH =	98.00	FT.
HEIGHT OF WINGWALL AT END =	2.00	FT.
DEPTH OF CUTOFF WALL =	3.50	FT.
MAXIMUM DEPTH OF FILL	2.00	FT.
UNIT WEIGHT FILL =	130.00	LBS/CU.FT.
ANGLE INTERNAL FRICTION =	30.00	DEG.

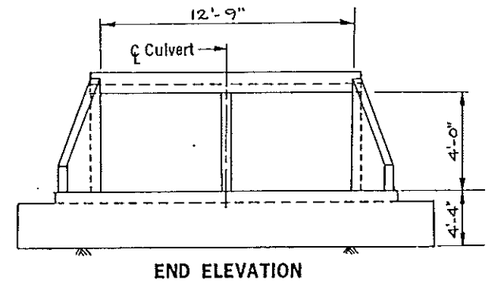
MAX ALLOWABLE DESIGN STRESSES:
f_y = 65,000 P.S.I. REINFORCEMENT
f'_c = 4,000 P.S.I. CONCRETE



CONCRETE CRADLE AND INSULATION DETAIL

LIST OF SHEETS

NO	DESCRIPTION
	General Plan and Elevation
	Concrete Box Culvert - Inlet & Curved Segments - Barrel Quantities & Reinforcement Details
	Concrete Box Culvert - Transition Segment - Geometrics Roof & Floor Reinforcement
	Concrete Box Culvert - Transition Segment - Wall Reinforcement & Quantities
	Concrete Box Culvert (Apron-Double Barrel-Square)



END ELEVATION

CONSTRUCTION NOTES:

The 1983 edition of the Minnesota Department of Transportation "Standard Specifications for Construction" shall govern.

The first digit or the first two digits of each bar mark indicate the bar size.

Concrete shall be Mix No. 3Y43 unless otherwise noted.

All exposed concrete edges shall be formed with a 1/2" vee unless otherwise noted.

Construction to be in accordance with Spec. 2411, except as noted.

B. M. Elev. . . . . (M. S. L. 1929 Adj.)

Ⓐ 2:1 slope on aprons only

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNED David W. Ganyo

DATE 8-22-88 REG. NO 8704

SCHEDULE OF QUANTITIES FOR ENTIRE CULVERT

ITEM NO.	ITEM	UNIT	QUANTITY
2411.501	Structure Conc. (3Y43)	Cu. Yd.	133
2411.541	Reinforcement Bars	Pound	22,050

FIG. 5-397.772 (1 OF 3)

± STATION 85 + 00

TRUNK HIGHWAY No. 63
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Bridge No. 96666
6'x4' DOUBLE BOX CULVERT
N.E. QUADRANT OF INT. OF T.H. 63 & C.S.A.H. 22 IN ROCHESTER STA. 85+00±
Concrete Box Culvert
Identification No. 113

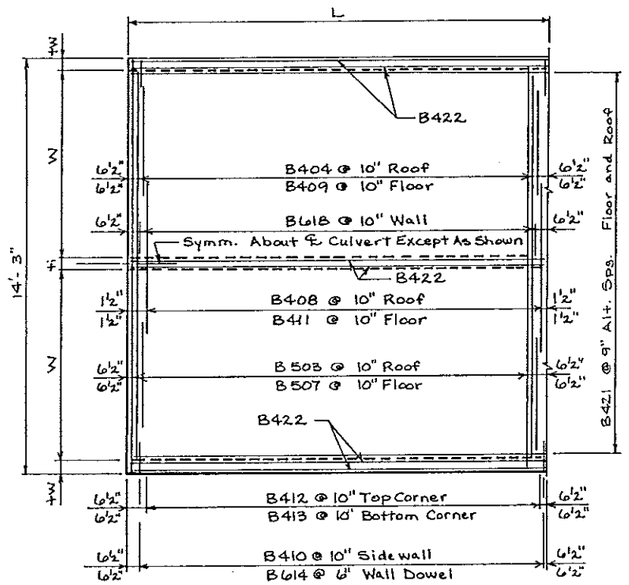
GENERAL PLAN AND ELEVATION

SEC. 24 T. 107 N R. 14 W
CASCADE TOWNSHIP OLMSTEAD COUNTY

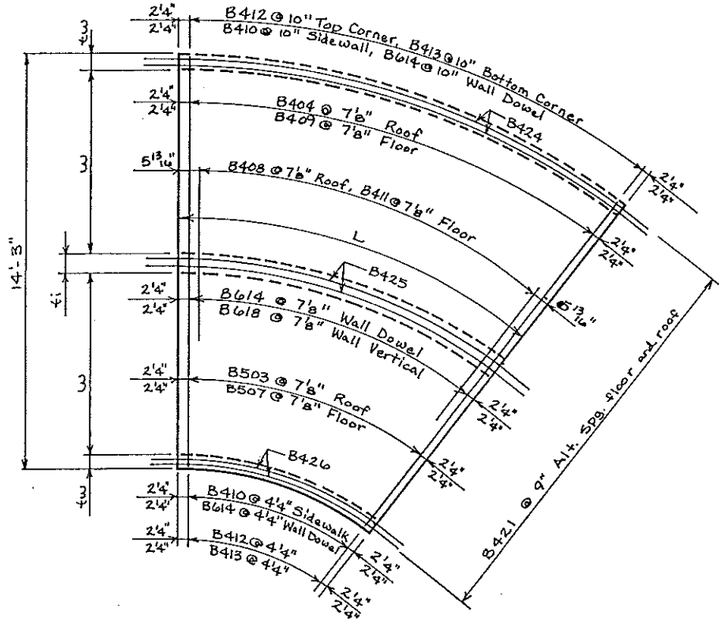
APPROVED: 8-22-88
Donald J. Flemming
BRIDGE ENGINEER

DES. R.J.B.	DR. M.K.T.	9666666
CHK. K.S.J.	CHK. R.J.B.	

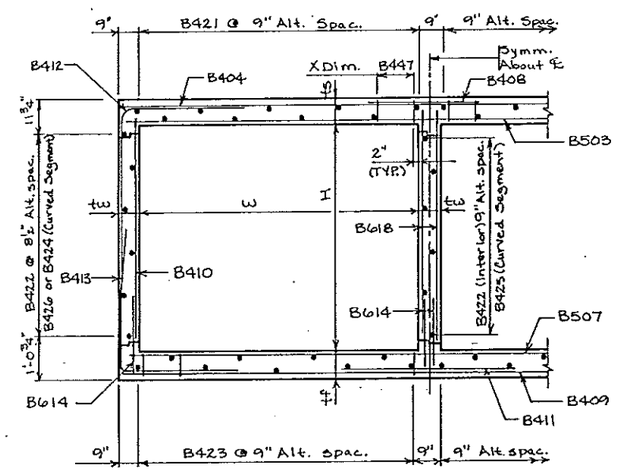
Area No. 64 Job No. 819 Design Unit DAVID W. GANYO State Proj. No. 5510-59 (T.H. 63) Sheet No. 72 of 168 Sheets



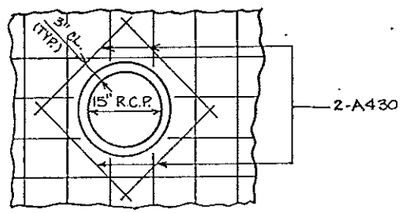
INLET SEGMENT



CURVED SEGMENT

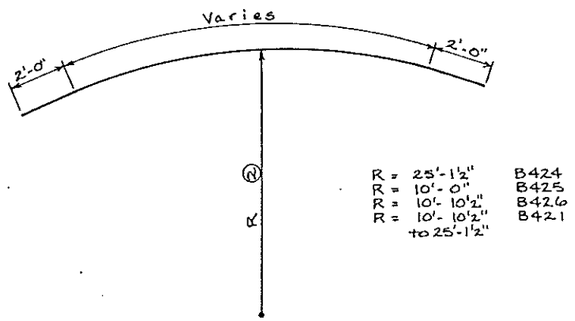


TYPICAL SECTION THRU BARREL



REINFORCEMENT DETAIL AT 15" R.C.P.

LONGITUDINAL SEGMENTS	
Inlet Segment	Curved Segment
tw = 9"	tw = 9"
ts = 9"	ts = 9"
tf = 10"	tf = 10"
ti = 9"	ti = 9"
L = 67'-9"	L = 12'-3"
H = 4'-0"	H = 4'-0"
W = 6'-0"	W = 6'-0"

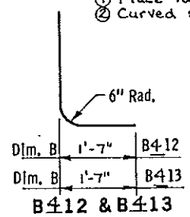


B424, B425, B426, B421

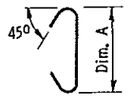
BILL OF REINFORCEMENT

INLET SEGMENT				CURVED SEGMENT				TYPICAL ALL SEGMENTS	
BAR	SIZE	NO.	LENGTH	BAR	SIZE	NO.	LENGTH	SHAPE	LOCATION
B503	5	81	13'-11"	ⓓB503	5	21	13'-11"	Str.	Roof Bottom Long
B404	4	81	12'-10"	ⓓB404	4	21	12'-10"	Str.	Roof Top Long
B507	5	81	13'-11"	ⓓB507	5	21	13'-11"	Str.	Floor Top Long
B408	4	82	2'-5"	B408	4	20	2'-5"	Str.	Roof Top Short
B409	4	81	12'-10"	ⓓB409	4	21	12'-10"	Str.	Floor Bottom Long
B410	4	162	4'-3"	B410	4	42	4'-3"	Str.	Wall Vertical Inside
B411	4	82	3'-1"	B411	4	20	3'-1"	Str.	Floor Bottom Short
B412	4	162	5'-1"	B412	4	42	5'-1"	Bent	Corner Top
B413	4	162	4'-4"	B413	4	42	4'-4"	Bent	Corner Bottom
B614	6	324	2'-3"	B614	6	84	2'-3"	Str.	Wall Dowel
								Str.	Floor Top Skewed
B618	6	162	4'-7"	B618	6	42	4'-7"	Str.	Center Wall Vertical
*B421	4	72	38'-0"	B421	4	36	2 SERIES 11'-5" to 21'-1"	Str.	Floor and Roof Long.
*B422	4	36	38'-0"						
				B424	4	6	21'-1"	Str.	Wall Long. Skew
				B425	4	6	16'-3"	Str.	Wall Long. Skew
				B426	4	6	11'-5"	Str.	Interior Wall Long.
B430	4	8	2'-6"						15" R.C.P. Diagonal
B447	4	82	1'-2"	B447	4	22	1'-2"	Bent	Top Int. Wall

* These bars may require field cutting or bending when developed into inlet apron.
① Place radial to ℄ Culvert.
② Curved segment only.



B412 & B413



STIRRUP B447

QUANTITIES FOR INLET & CURVED SEGMENTS		
Structure Conc. (3Y43)	101.7	Cu. Yd.
Reinforcement Bars	13,150	Lb.

STIRRUPS					
Segment	Bar	Dim. A	Trans. Spacing	Range X	Long. Spacing
Inlet	B447	5"	3"	3"	20"
Curved	B447	5"	3"	3"	14'4"

NOTES:
Bars lined out on bill of reinforcement do not apply to the design of these segments.

2" clear cover on reinforcement, except as otherwise noted.

See Std. Apron sheets for bars that extend from apron into barrel.

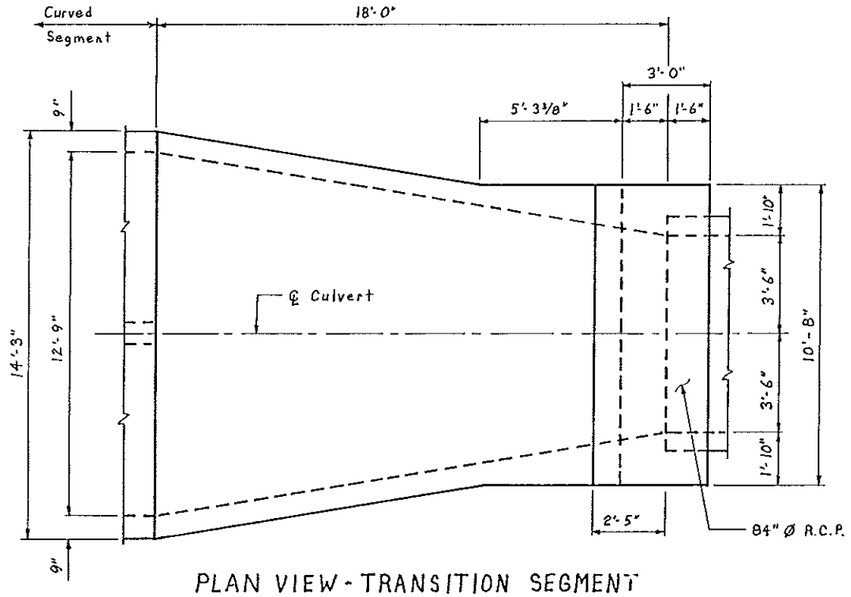
Cut reinforcement as necessary to clear 15" pipe

At construction joints, long. bars to lap 1'-10" min.

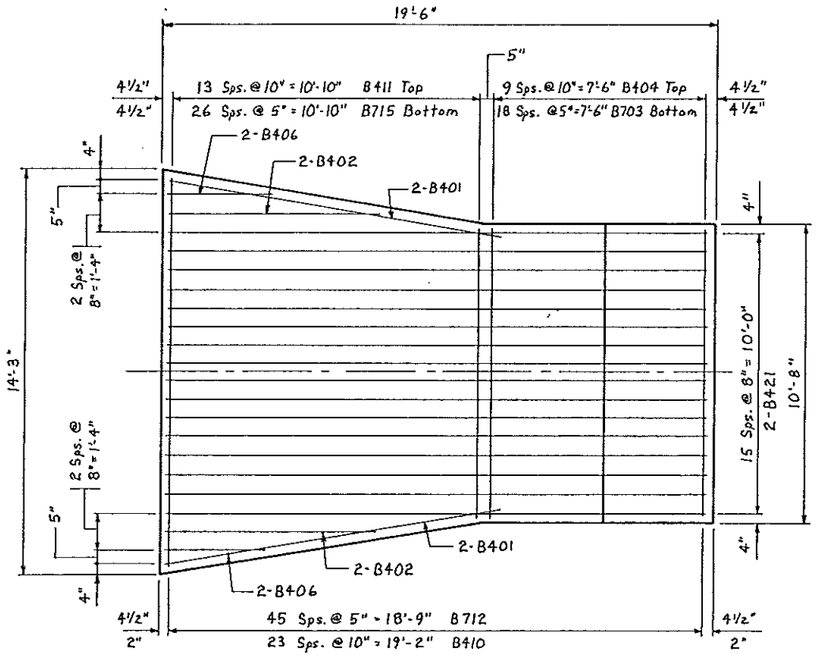
S.P. NO. 5510-59 (T.H. 63) STATION 85+00±

FIG. 5-397.779

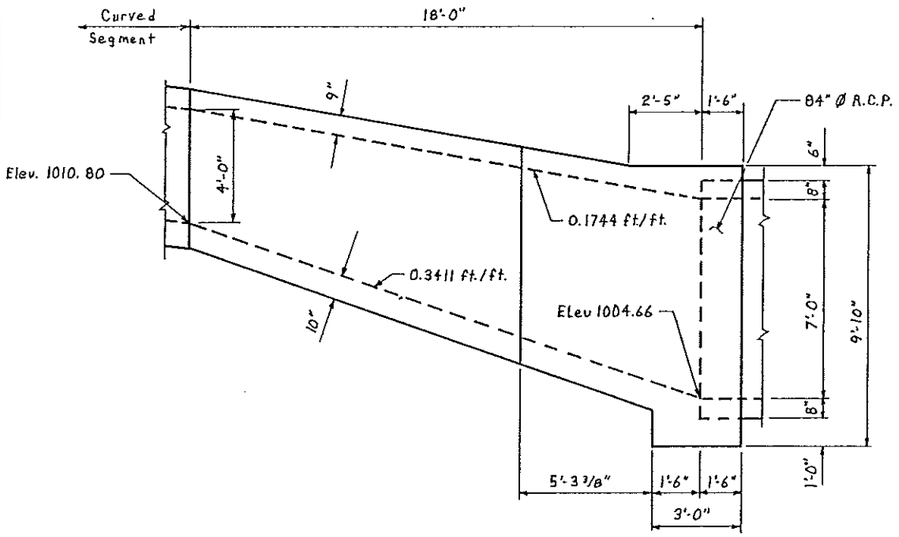
TITLE: CONCRETE BOX CULVERT – INLET & CURVED SEGMENTS BARREL QUANTITIES & REINFORCEMENT DETAILS	DES: R.J.B.	DR: M.K.T.	APPROVED:	Bridge No. 966666
	CHK: K.S.J.	CHK: R.J.B.		
	Sheet No. 73 of 168 Sheets			



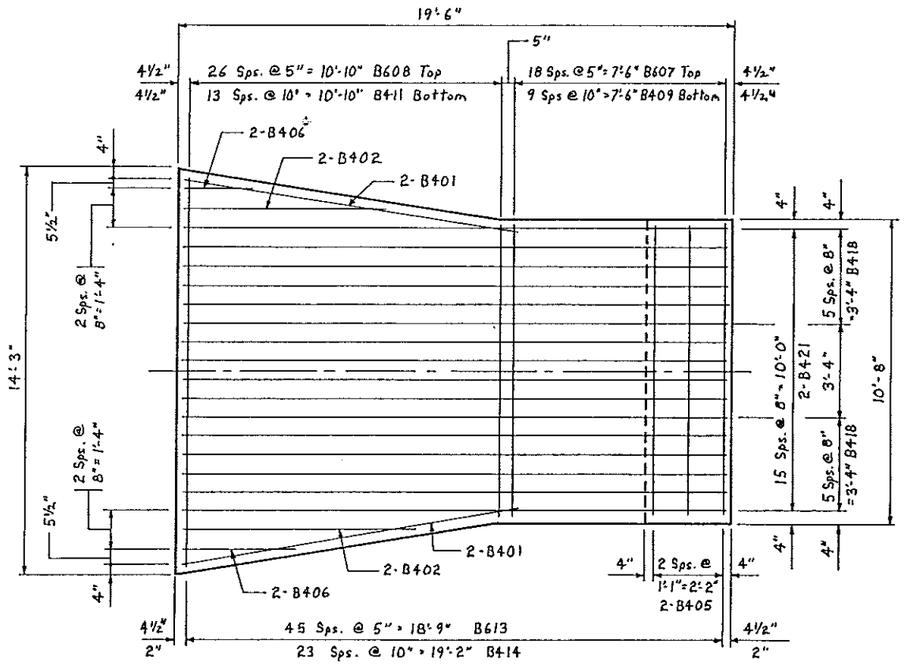
PLAN VIEW - TRANSITION SEGMENT



ROOF PLAN SHOWING REINFORCEMENT



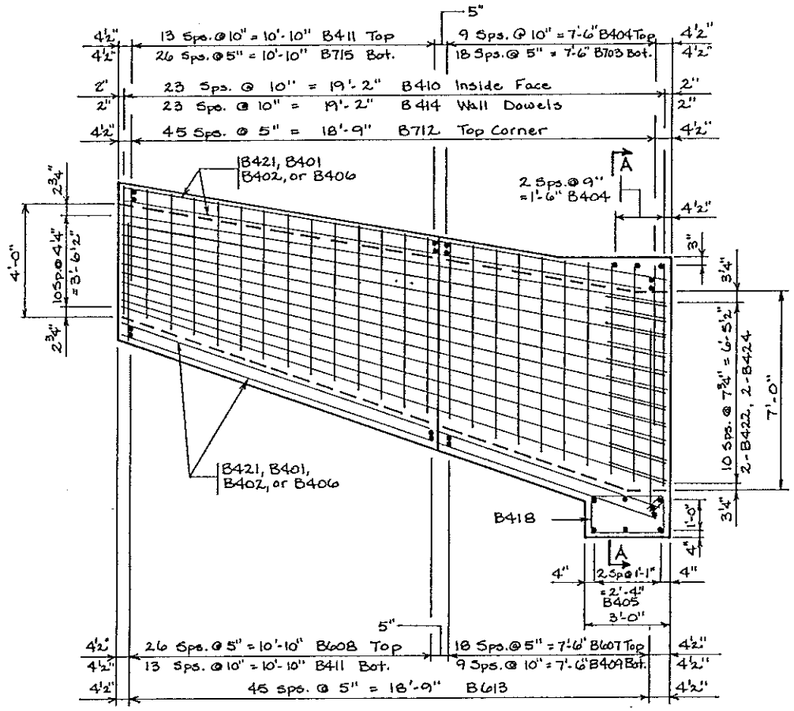
ELEVATION - TRANSITION SEGMENT



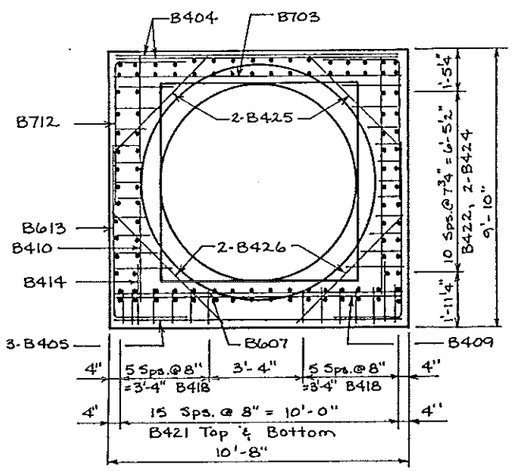
FLOOR PLAN SHOWING REINFORCEMENT

S.P. NO. 5510-59 (T.H.63) STATION 85+00±

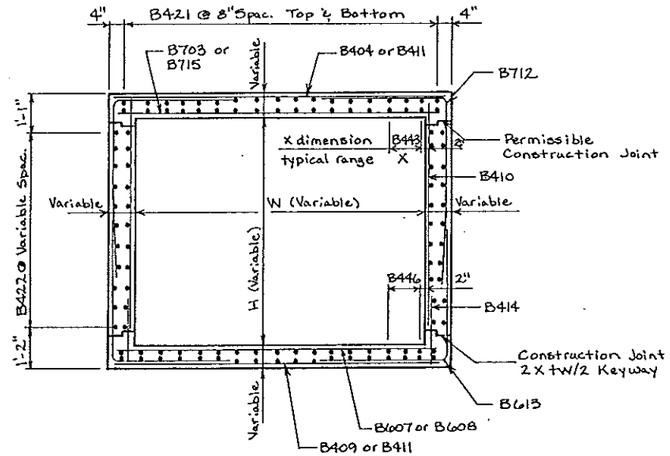
TITLE: CONCRETE BOX CULVERT TRANSITION SEGMENT-GEOMETRICS ROOF & FLOOR REINFORCEMENT	DES: R. J. B.	DR: M. K. T.	APPROVED:	Bridge No. 96666
	CHK: K. S. J.	CHK: R. J. B.		
	Sheet No. 74 of 168 Sheets			



WALL ELEVATION SHOWING REINFORCEMENT

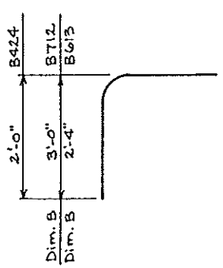


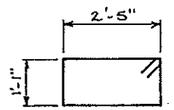
SECTION A-A



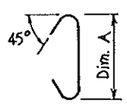
TYPICAL SECTION THRU BARREL

STIRRUPS					
Segment	Bar	Dim. A	Spacing	Range X	Long. Spacing
Transition	B443	5"	3"	39"	10"
Transition	B446	6"	3½"	17½"	10"





B418



STIRRUP
B443 & B446

BILL OF REINFORCEMENT TRANSITION SEGMENT

BAR	SIZE	NO.	LENGTH	SHAPE	LOCATION
B401	4	8	12'-6"	Str.	Roof & Floor Edge
B402	4	8	7'-9"	Str.	Roof & Floor Edge
B703	7	19	10'-2"	Str.	Roof Bot. Trans.
B404	4	13	10'-2"	Str.	Roof Top Trans.
B405	4	6	10'-2"	Str.	Pipe Bot. Trans.
B406	4	8	3'-0"	Str.	Roof & Floor Long.
B607	6	19	10'-2"	Str.	Floor Top Trans.
B608	6	27	1 Series 10'-2" to 13'-7"	Str.	Floor Top Trans.
B409	4	10	10'-2"	Str.	Floor Bot. Trans.
B410	4	48	2 Series 4'-5" to 7'-9"	Str.	Wall Vert. Inside
B411	4	28	2 Series 10'-2" to 13'-7"	Str.	Floor Bot. Trans.
B712	7	92	2 Series 6'-7" to 8'-10"	Bent	Corner Top
B613	6	92	2 Series 5'-11" to 8'-2"	Bent	Corner Bottom
B414	4	48	2'-0"	Str.	Wall Dowel
B715	7	27	1 Series 10'-2" to 13'-7"	Str.	Roof Bot. Trans.
B418	4	12	8'-1"	Bent	Footing Stirrup
B421	4	64	20'-0"	Str.	Roof & Floor Long.
B422	4	44	20'-0"	Str.	Wall Horizontal
B424	4	44	4'-0"	Bent	Wall Corner
B425	4	4	4'-6"	Str.	84" Pipe Diagonal
B426	4	4	5'-4"	Str.	84" Pipe Diagonal
B443	4	672	1'-2"	Bent	Top Corner - Roof
B446	4	288	1'-8"	Bent	Bottom Corner - Floor

QUANTITIES FOR TRANSITION SEGMENT		
Structure Concrete (3Y43)	20.7	CU. YD.
Reinforcement Bars	7460	POUNDS

NOTES:

2" clear cover on reinforcement, except as otherwise noted.

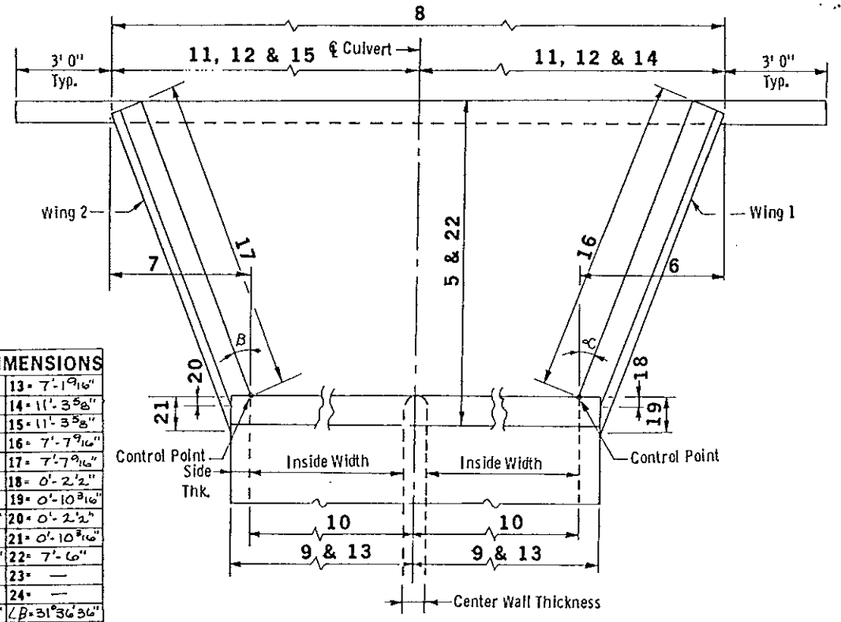
At construction joints, longitudinal bars to lap 1'-10" min.

B712, B613, B424

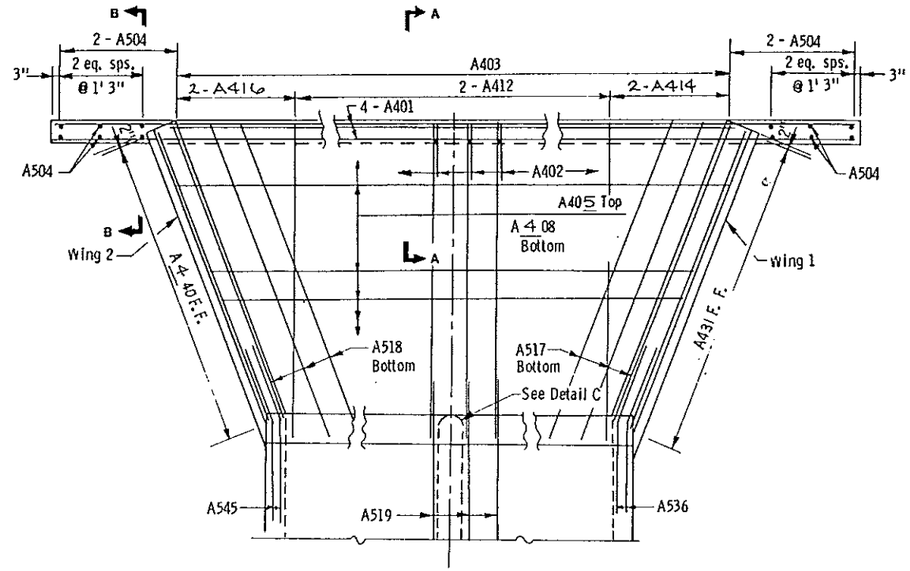
S.P. NO. 5510-59 (T.H. 63) STATION 85+00±

TITLE: CONCRETE BOX CULVERT TRANSITION SEGMENT WALL REINFORCEMENT & QUANTITIES	DES: R.J.B.	DR: M.K.T.	APPROVED:	Bridge No. 966666
	CHK: K.S.J.	CHK: R.J.B.		
	Sheet No. 75 of 168 Sheets			

APRON DIMENSIONS	
1 = 2'-0"	13 = 7'-1 9/16"
2 = 0'-6"	14 = 11'-3 5/8"
3 = 3'-9"	15 = 11'-3 5/8"
4 = 5'-7"	16 = 7'-7 9/16"
5 = 7'-6"	17 = 7'-7 9/16"
6 = 4'-11"	18 = 0'-2 1/2"
7 = 4'-11"	19 = 0'-10 3/16"
8 = 22'-7 3/16"	20 = 0'-2 1/2"
9 = 7'-9 1/16"	21 = 0'-10 3/16"
10 = 6'-4 9/16"	22 = 7'-6"
11 = 11'-3 5/8"	23 = —
12 = 11'-3 5/8"	24 = —
∠A = 31°36'36"	∠B = 31°36'36"
Skew Angle = 0° 00'	

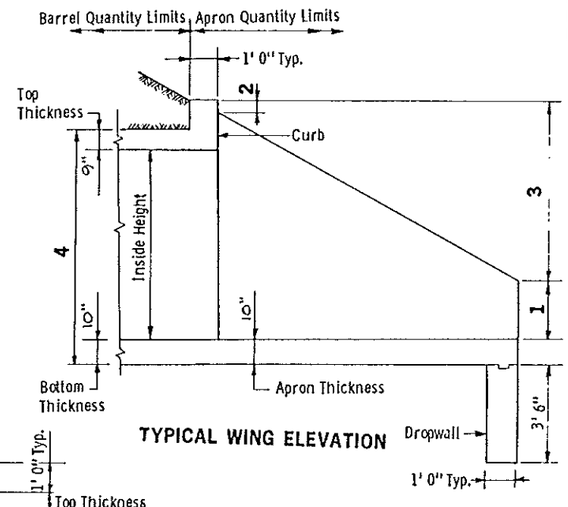


APRON PLAN

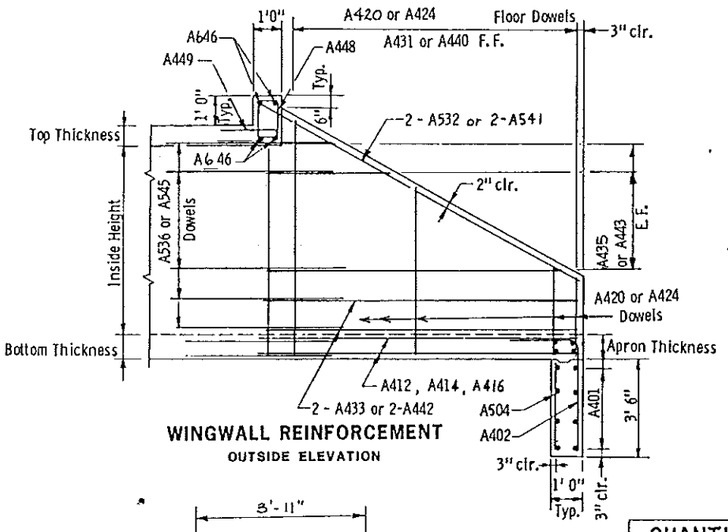


APRON REINFORCEMENT

N. F. = Near Face
F. F. = Far Face
E. F. = Each Face



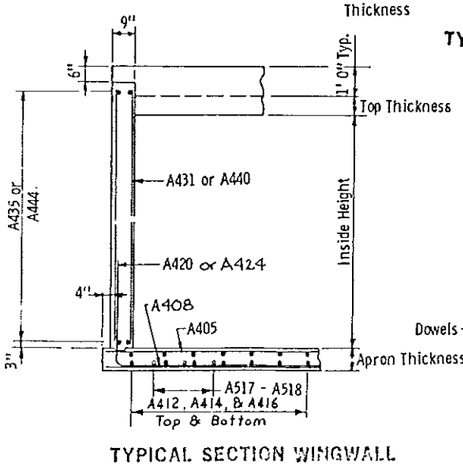
TYPICAL WING ELEVATION



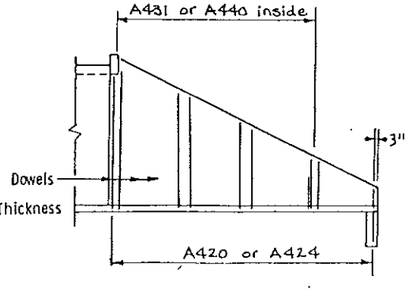
WINGWALL REINFORCEMENT
OUTSIDE ELEVATION

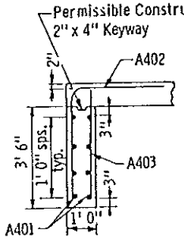
BILL OF REINFORCEMENT - 1 APRON						
BAR	SIZE	NO.	SPACING	LENGTH	SHAPE	LOCATION
A 401	4	8	12"	28'-1"	Str.	Dropwall Horiz.
A 402	4	23	12"	5'-11"	Bent	Dropwall Dowels
A 403	4	23	12"	3'-11"	Str.	Dropwall Dowels
A 504	5	12	15"	3'-0"	Str.	Dropwall Vert.
A 405	4	8	12"	1 SERIES 13'-9" to 22'-4"	Str.	Floor Trans. Top
A408	4	8	12"	1 SERIES 8'-11" to 17'-6"	Str.	Floor Trans. Bot.
A 412	4	28	12"	7'-3"	Str.	Floor Long.
A 414	4	6	12"	2 SERIES 2'-9" to 6'-0"	Str.	Floor at Wing 1
A 416	4	6	12"	2 SERIES 2'-9" to 6'-0"	Str.	Floor at Wing 2
A 517	5	3	12"	8'-6"	Str.	Floor at Wing 1
A 518	5	3	12"	8'-6"	Str.	Floor at Wing 2
A 519	5	28	12"	5'-0"	Str.	Floor at Barrel
A 420	4	9	12"	1 SERIES 6'-6" to 9'-11"	Bent	Floor at Wing 1
A 424	4	9	12"	1 SERIES 6'-6" to 9'-11"	Bent	Floor at Wing 2
A 431	4	10	12"	1 SERIES 1'-11" to 5'-9"	Str.	Wing 1 Vert.
A 532	5	2	5"	8'-5"	Str.	Wing 1 Top
A433	4	4	12"	7'-5"	Str.	Wing 1 Horiz.
A 435	4	6	12"	2 SERIES 1'-11" to 6'-7"	Str.	Wing 1 Horiz.
** A 536	5	10	12"	6'-0"	Bent	Wing 1 Barrel
A 440	4	10	12"	1 SERIES 1'-11" to 5'-9"	Str.	Wing 2 Vert.
A 541	5	2	5"	8'-5"	Str.	Wing 2 Top
A 442	4	4	12"	7'-5"	Str.	Wing 2 Horiz.
A 444	4	6	12"	2 SERIES 1'-11" to 6'-7"	Str.	Wing 2 Horiz.
** A 545	5	10	12"	6'-0"	Bent	Wing 2 Barrel
A646	6	4	8"	13'-11"	Str.	Curb Long.
A448	4	15	12"	4'-10"	Bent	Curb Tie
A 449	4	15	12"	2'-6"	Bent	Curb Tie
A 450	4	3	2.7"	4'-7"	Str.	Center Wall Vert.
A 451	4	5	12"	5'-2"	Bent	Center Wall Tie

** Bend in field as necessary.

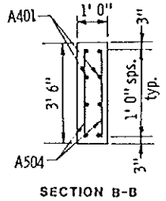


TYPICAL SECTION WINGWALL

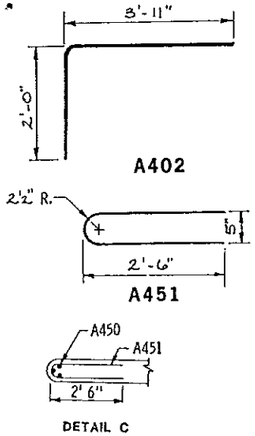




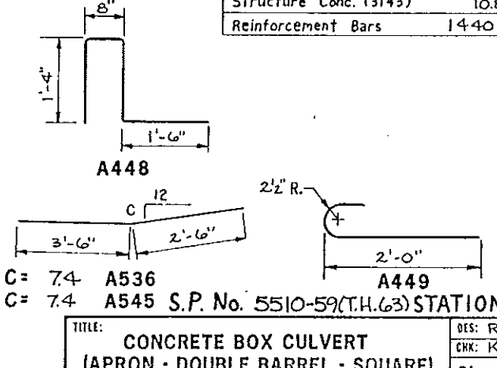
SECTION A-A



SECTION B-B

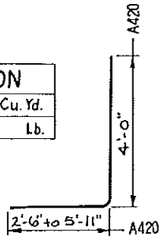


DETAIL C

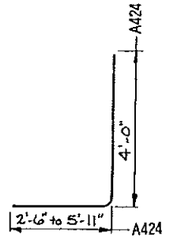


QUANTITIES FOR 1 APRON		
Structure Conc. (3Y43)	10.8	Cu. Yd.
Reinforcement Bars	1440	Lb.

C = 7.4 A536
C = 7.4 A545



A420



A424

S.P. No. 5510-59(T.H.63) STATION 85+05 ±

FIG. 5-397.773 (1 OF 3)

TITLE: CONCRETE BOX CULVERT (APRON - DOUBLE BARREL - SQUARE)	DES: R.J.B.	DR: M.K.T.	APPROVED:	Bridge No. 966066
	CHK: K.S.J.	CHK: R.J.B.		
	Sheet No. 76 of 168 Sheets			