

# OFFICE OF COUNTY ENGINEER RAMSEY COUNTY CONSTRUCTION PLAN FOR GRADING AND BITUMINOUS SURFACING SILVER LAKE ROAD S.P. 62-644-04

BETWEEN: T.H. 100 AND: T.H. 10-62  
FROM: A POINT 688.16 FT. NORTH OF THE SOUTH 1/4 CORNER OF SECTION 19 T.30N., R.23W. TO: A POINT 969.74 FT. NORTH AND 220.28 FT. EAST OF THE SOUTH 1/4 CORNER OF SECTION 6 T.30N., R.23W.

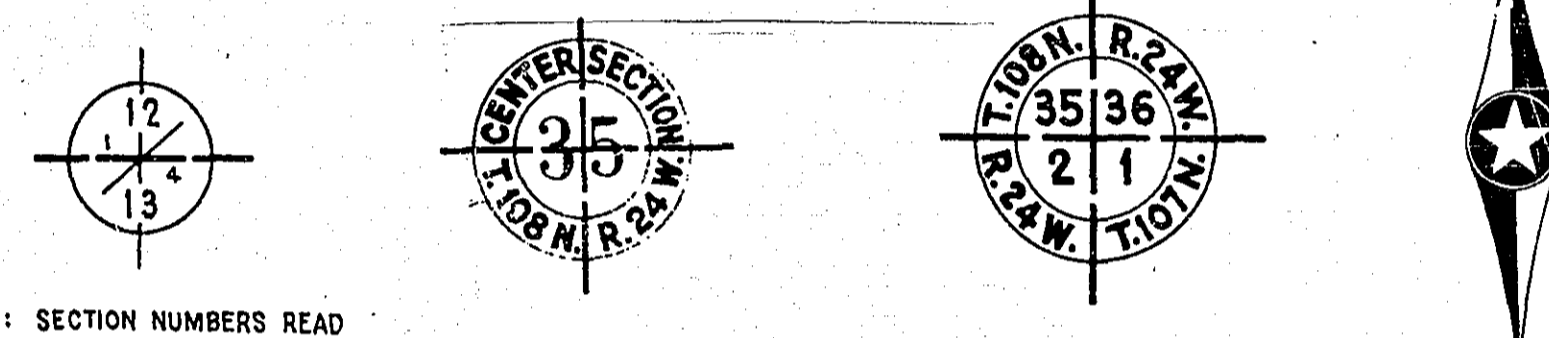
GROSS LENGTH 16,72.00 FEET 3.0629 MILES  
BRIDGES-LENGTH 0 FEET 0 MILES  
EXCEPTIONS-LENGTH 0 FEET 0 MILES  
NET LENGTH 16,72.00 FEET 3.0629 MILES

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4	DRAINAGE DETAILS
5-7	MISC. DETAILS
8-14	PLAN & PROFILE SHEETS
15-17	CONSTRUCTION PLAN SHEETS
18-20	SANITARY SEWER & WATERMAIN PLAN SHEETS
21	STANDARD TRIPLE 10'X6' BOX CULVERT
22-55	CROSS SECTIONS
55	DITCH CHANGE LEFT OF STA. 108+00 & RICE CREEK CHANNEL CHANGE

PLAN, 1 inch = 100 Feet  
 PROFILE, Horiz. 1 inch = 100 Feet. Vert. 1 inch = 10 Feet.  
 WORKING PLANS - Horiz. 1 inch = 100 Feet  
 Vert. 1 inch = 10 Feet  
 LAYOUT, 1 inch = 2640 Feet

### CONVENTIONAL SIGNS

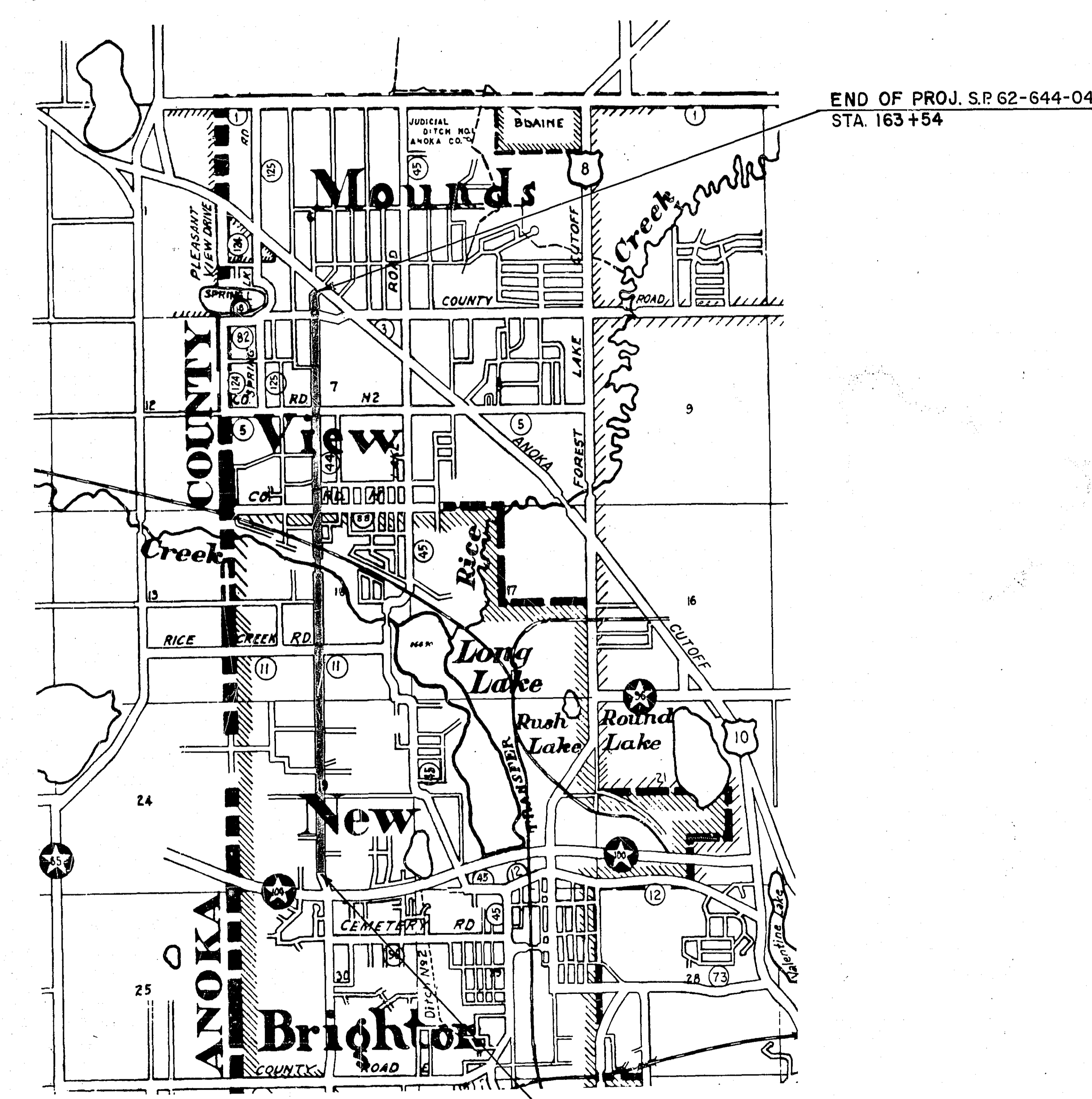
STATE LINE	--- --- --- ---	TIMBER	--- --- --- ---
COUNTY LINE	--- --- --- ---	BRUSH	--- --- --- ---
TOWNSHIP OR RANGE LINE	--- --- --- ---	ORCHARD	--- --- --- ---
SECTION LINE	--- --- --- ---	ROCK LEDGE	--- --- --- ---
QUARTER LINE	--- --- --- ---	SAND	--- --- --- ---
SIXTEENTH LINE	--- --- --- ---	EDGE OF CUT	--- --- --- ---
RIGHT-OF-WAY LINE	--- --- --- ---	TOE OF EMBANKMENT	--- --- --- ---
PRESENT ROAD 1/4 LINE	--- --- --- ---	CATCH BASIN	--- --- --- ---
LIMITED ACCESS	--- --- --- ---	MANHOLE	--- --- --- ---
PROPERTY LINE (Excep. Land Lines)	--- --- --- ---	DROP INLET	--- --- --- ---
VACATED PLATTED PROPERTY	--- --- --- ---	FIRE HYDRANT	--- --- --- ---
CORPORATE OR CITY LIMITS	--- --- --- ---	ARC LAMP	--- --- --- ---
TRUNK HIGHWAY CENTER LINE	--- --- --- ---	OTHER LAMPS (State Kind)	--- --- --- ---
RETAINING WALL	--- --- --- ---	RAILROAD CROSSING SIGN	--- --- --- ---
STEAM RAILROAD	--- --- --- ---	RAILROAD CROSSING BELL	--- --- --- ---
ELECTRIC RAILROAD	--- --- --- ---	ELECTRIC WARNING SIGN	--- --- --- ---
RAILROAD RIGHT-OF-WAY LINE	--- --- --- ---	CROSSING GATE	--- --- --- ---
CREEK	--- --- --- ---	CATTLE GUARD	--- --- --- ---
RAPIDS OR WATERFALL	--- --- --- ---	OVERHEAD (Highway Over)	--- --- --- ---
DRY RUN	--- --- --- ---	UNDERPASS (Highway Under)	--- --- --- ---
DRAINAGE DITCH	--- --- --- ---	ABUTMENT, WALL & PIER	--- --- --- ---
HIGH TENSION LINE	--- --- --- ---	BRIDGE	--- --- --- ---
POWER POLE LINE	--- --- --- ---	CULVERT	--- --- --- ---
TELEPHONE OR TELEGRAPH LINE	--- --- --- ---	BUILDING (One Story Frame)	--- --- --- ---
TELEPHONE CONDUIT	--- --- --- ---	C-CONCRETE S-STONE T-TILE B-BRICK ST-STUCCO	--- --- --- ---
GUARD RAIL	--- --- --- ---	HEDGE	--- --- --- ---
WIRE FENCE	--- --- --- ---	IRON PIPE	--- --- --- ---
RAILROAD SNOW FENCE	--- --- --- ---	STONE MONUMENT	--- --- --- ---
BOARD OR HIGHWAY SNOW FENCE	--- --- --- ---	WOOD STAKE OR HUB	--- --- --- ---
STONE WALL OR FENCE	--- --- --- ---	MEANDER CORNER	--- --- --- ---
GAS MAIN	--- --- --- ---		
WATER PIPE	--- --- --- ---		
SEWER PIPE	--- --- --- ---		
DRAIN TILE	--- --- --- ---		
GRAVEL PIT	--- --- --- ---		
SAND PIT	--- --- --- ---		
CLAY PIT	--- --- --- ---		
ROCK QUARRY	--- --- --- ---		
SPRINGS	--- --- --- ---		
MARSH	--- --- --- ---		



NOTE: SECTION NUMBERS READ FROM THE SOUTH

### PIT DATA

PIT NO. _____	Located in _____
PIT NO. _____	Located in _____
PIT NO. _____	Located in _____
PIT NO. _____	Located in _____



END OF PROJ. S.P. 62-644-04  
STA. 163+54

BEG. OF PROJ. S.P. 62-644-04  
STA. 1+82

### DESIGN DESIGNATION

ADT 1965 NORTH 1/2	= NONE	DESIGN SPEED 40 M.P.H.
ADT 1965 SOUTH 1/2	= 1,550	BASED ON PASSING SIGHT DISTANCE
ADT 1980 NORTH 1/2	= 5,000	HEIGHT OF EYE 3.75' HEIGHT OF OBJECT 4.50'
ADT 1980 SOUTH 1/2	= 6,000	DESIGN SPEED NOT ACHIEVED AT:
DHV	= 150 TO 250	STA. 23+00 TO STA. 30+00 30 M.P.H.
D (DIRECTIONAL DISTRIBUTION)	= 50%	STA. 35+00 TO STA. 50+00 30 M.P.H.
T (HEAVY COMMERCIAL)	=	STA. 85+00 TO STA. 92+00 30 M.P.H. (RAILROAD CROSSING)
		STA. 153+00 TO STA. 163+00 30 M.P.H.

DESIGN LOAD = 9 TONS  
 S.F. 100 - STA. 1+82 TO STA. 89+50  
 S.F. 50 - STA. 89+50 TO STA. 163+54

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.  
*Donald A. Baker* REG. NO. 2042 DATE 1-11-65  
 ENGINEER

RECOMMENDED FOR APPROVAL *Dean P. O'Neil* DATE 1-11-65  
 COUNTY ENGINEER  
 APPROVED *John A. Brennan* DATE 1-11-65  
 CHAIRMAN OF RAMSEY COUNTY BOARD

MINNESOTA STATE HIGHWAY DEPARTMENT  
 RECOMMENDED FOR APPROVAL *J. F. Berglund* DATE 1-11-65  
 DATE 1-11-65  
 RECOMMENDED FOR APPROVAL *R. S. Brennan* DATE 1-11-65  
 DISTRICT ENGINEER  
 APPROVAL *Bill G. Brennan* DATE 1-11-65  
 STATE AID ENGINEER

---SPECIFICATIONS---  
 THE "SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JAN. 1, 1964 SHALL GOVERN.

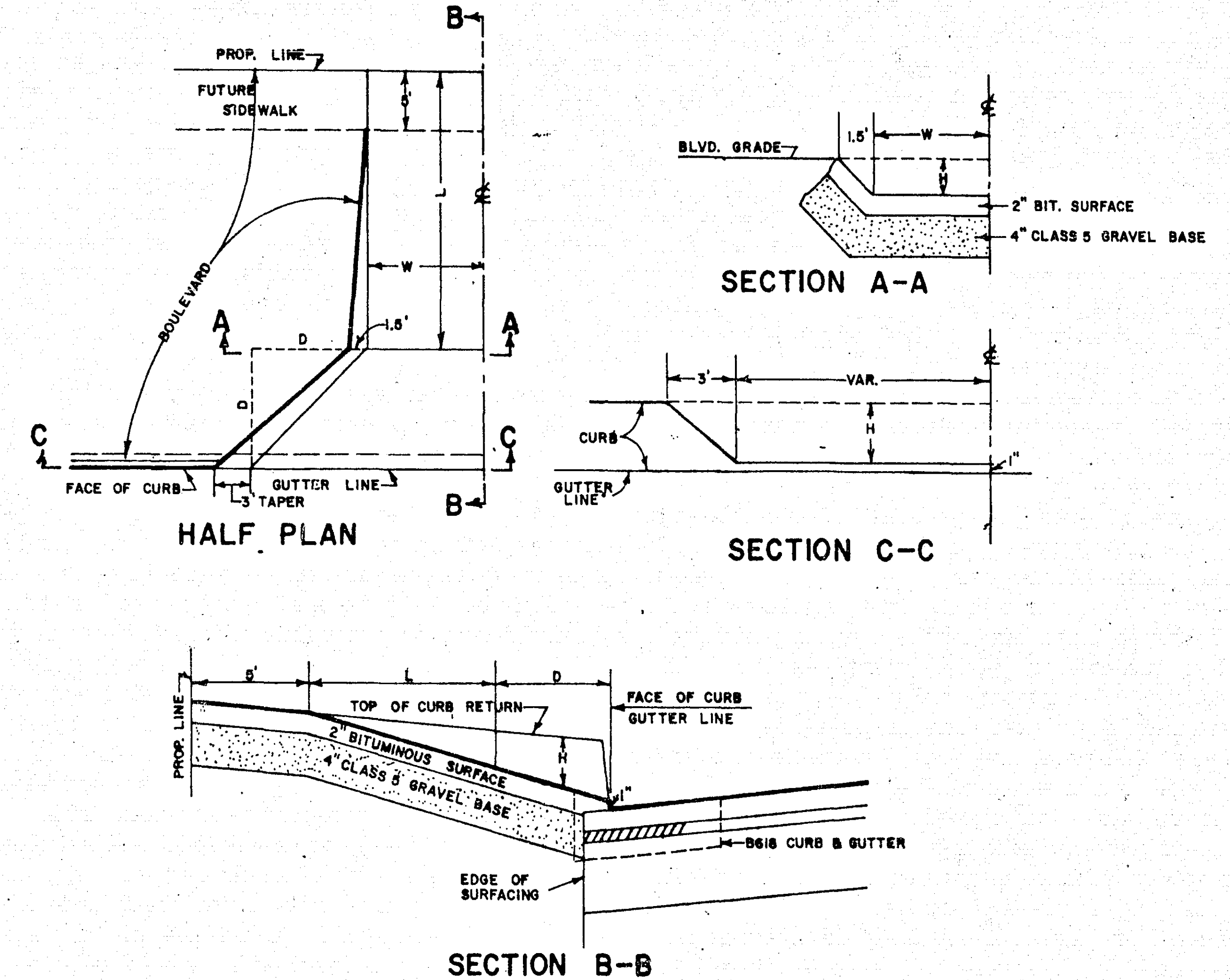
ESTIMATED QUANTITIES			
SPEC. NO.	DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES
2101.501	CLEARING	ACRE	5.6
2101.502	CLEARING	TREE	187
2101.506	GRUBBING	ACRE	5.6
2101.507	GRUBBING	TREE	175
504.692	REMOVE AND RELAY 12" CAST IRON WATERMAIN	L.F.	315
2104.501	REMOVE PORTABLE CULVERTS	L.F.	72
2104.503	REMOVE CURB AND GUTTER	L.F.	50
2104.506	REMOVE SIDE WALK	S.Y.	23
2104.510	REMOVE FENCE (BARB WIRE, WOOD POSTS)	L.F.	5239
2104.510	REMOVE FENCE (WOOD RAIL, WOOD POSTS)	L.F.	78
2104.510	REMOVE FENCE (WOOVEN WIRE)	L.F.	646
2106.501	CLASS A EXCAVATION (1)	C.Y.	95475
2105.504	CLASS S.G. EXCAVATION	C.Y.	44025
2105.506	BORROW EXCAVATION, CLASS A (6)	C.Y.	35982
2110.519	GRANULAR MATERIAL DELIVERED	C.Y.	27610
2106.501	SPECIAL SWAMP EXCAVATION (1)	C.Y.	83577
2108.511	CHAMMEL EXCAVATION, (CLASS A)	C.Y.	2843
2130.501	WATER (2)	(M) GAL.	400
2201.520	GRAVEL SUB-BASE IN PLACE (CLASS 4)	TON	25300
2202.526	GRAVEL BASE IN PLACE (CLASS 5)	TON	22610
2302.512	8" REINFORCED CONCRETE BASE (STANDARD STRENGTH)	S.Y.	263
2302.531	REINFORCEMENT BARS	POUND	920
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	228
2331.514	BASE COURSE MIXTURE (4)	TON	8500
2341.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	8300
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	705
2341.509	WEARING COURSE MIXTURE & FILLER (5)	TON	7410
2341.510	BINDER COURSE MIXTURE	TON	6700
2356.505	BITUMINOUS MATERIAL FOR SEAL COAT	GAL.	12000
356.611	SEAL COAT AGGREGATE, F.A.2	TON	600
2411.501	CONCRETE (3)	C.Y.	217
2411.511	STRUCTURE EXCAVATION (CLASS II)	C.Y.	250
2411.541	REINFORCEMENT BARS	POUND	37128
2451.511	SAND-GRAVEL SUB-FOUNDATION	C.Y.	163
557.685	PIPE RAIL FENCE (1-1/4" GALV)	L.F.	116
2421.506	STRUCTURE EXCAVATION (CLASS B)	C.Y.	13
2421.508	CONCRETE, MIX NO. 109	C.Y.	5
2421.512	MORTAR RUBBLE MASONARY	C.Y.	12
2421.521	REINFORCEMENT BARS	POUND	232
2451.511	SAND-GRAVEL SUB-FOUNDATION	C.Y.	5
2574.521	COMMERCIAL FERTILIZER, 12-12-12	TON	3.2
2575.501	SURFACE MULCHING, TYPE 1 (7)	TON	20
2575.506	SURFACE MULCHING, TYPE 6 (7)	GAL.	2000
2515.531	F.& I. METAL APRON FOR 18" C.M.P.	APRON	1
2501.521	F.& I. 15" R.C.P. CULVERT (CLASS 2)	L.F.	80
2515.542	F.& I. CONC. APRON FOR 28" SPAN S.C.P.-A CULVERT	APRON	2
2501.521	F.& I. 24" R.C.P. CULVERT (CLASS 2)	L.F.	338
2501.521	F.& I. 30" R.C.P. CULVERT (CLASS 2)	L.F.	72
2501.522	F.& I. 22" SPAN R.C.P.-A CULVERT (CLASS 4)	L.F.	108
2501.522	F.& I. 51" SPAN R.C.P.-A CULVERT (CLASS 2)	L.F.	54
2515.542	F.& I. CONC. APRON FOR 22" SPAN S.C.P.-A CULVERT	APRON	4
2515.541	F.& I. CONCRETE APRON FOR 30" S.C.P. CULVERT	APRON	2
2515.542	F.& I. CONCRETE APRON FOR 51" SPAN S.C.P.-A CULVERT	APRON	2
2501.522	F.& I. 28" SPAN R.C.P.-A CULVERT (CLASS 2)	L.F.	50
2503.512	F.& I. 15" R.C.P. SEWER (CLASS 2)	L.F.	134
2503.512	F.& I. 18" R.C.P. SEWER (CLASS 2)	L.F.	607
2503.512	F.& I. 18" R.C.P. SEWER (CLASS 4)	L.F.	57
2503.512	F.& I. 21" R.C.P. SEWER (CLASS 4)	L.F.	60
2503.512	F.& I. 24" R.C.P. SEWER (CLASS 2)	L.F.	278
2503.512	F.& I. 36" R.C.P. SEWER (CLASS 2)	L.F.	8
2503.514	F.& I. 18" C.M.P. SEWER	L.F.	32
2503.514	F.& I. 18" C.M.P. SEWER	L.F.	368
2503.514	F.& I. 24" C.M.P. SEWER	L.F.	20
2503.521	INSTALL CONCRETE PIPE SEWER	L.F.	60
2503.531	F.& I. 22" SPAN R.C.P. SEWER (CLASS 2)	L.F.	54
2515.541	F.& I. CONCRETE APRON FOR 24" S.C.P. SEWER	APRON	1
2515.541	F.& I. CONCRETE APRON FOR 36" S.C.P. SEWER	APRON	1
2515.542	F.& I. CONC. APRON FOR 22" SPAN S.C.P. SEWER	APRON	1
2506.506	CONSTRUCT MANHOLES, DESIGN A OR C	L.F.	15.4
2506.507	CONSTRUCT CATCH BASINS, DESIGN RC-3	L.F.	78.9
2506.507	CONSTRUCT CATCH BASINS, DESIGN A OR C	L.F.	26.9
2506.511	RECONSTRUCT MANHOLES	L.F.	1.3
2506.516	F.& I. CASTING ASSEMBLIES	ASSEMBLY	9
2506.521	INSTALL CASTINGS	ASSEMBLY	1
2506.522	ADJUST FRAME AND RING CASTINGS	ASSEMBLY	9
2512.501	HAND-PLACED RIPRAP	C.Y.	5.0
2512.506	FILTER BLANKET, TYPE 1	C.Y.	3
2515.507	CONCRETE EROSION CONTROL STRUCTURES	C.Y.	7.0
2531.501	CONCRETE CURB AND GUTTER, DESIGN B618	L.F.	19692
2531.502	CONCRETE CURB, DESIGN B6	L.F.	920
2535.501	BITUMINOUS CURB	L.F.	9619
2556.501	STRUCTURAL PLATE BEAM GUARD RAIL	L.F.	325
557.621	RESET BARBED WIRE FENCE, 3 WIRES, WOOD POSTS	L.F.	124
557.621	RESET WOOVEN WIRE FENCE, STEEL POSTS	L.F.	67
2574.501	ROADSIDE SEEDING	ACRE	10.1
2576.501	SODDING	S.Y.	12302
504.674	MOVE HYDRANT	HYDRANT	5
504.685	ADJUST WATER GATE HOUSING	HOUSING	16
504.686	ADJUST SERVICE VALVE HOUSING	HOUSING	23

ESTIMATED QUANTITIES			
SPEC. NO.	DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES
2503.513	F.& I. 8" CLAY PIPE SEWER (EXTRA STRENGTH)	L.F.	3079
503.691	F.& I. 6" V.C.P. SAN. SEWER SERVICE CONNECTION (STD. STR.)	L.F.	1931
503.650	CONCRETE RISER BLOCKS	BLOCK	26
503.631	F.& I. 8" CAST IRON PIPE SEWER, CLASS 22	L.F.	40
503.624	F.& I. V.C. WYE BRANCHES, 8" X 6"	WYE	47
2506.506	CONSTRUCT MANHOLES, DESIGN F (7)	L.F.	155.5
2506.516	F.& I. CASTING ASSEMBLIES	ASSEMBLY	11
506.623	F.& I. DROP CONNECTION TO MANHOLE	L.F.	14
504.601	F.& I. 12" WATERMAIN, CLASS 23	L.F.	20
504.601	F.& I. 6" WATERMAIN, CLASS 22	L.F.	1769
504.602	F.& I. 12 X 12 X 12" CAST IRON TEE	TEE	1
504.604	F.& I. 6" CAST IRON PLUG	PLUG	4
504.605	F.& I. 12" X 8" CAST IRON REDUCER	REDUCER	1
504.602	F.& I. 6 X 6 X 6" CAST IRON TEE	TEE	7
504.608	F.& I. 1" COPPER WATER PIPE SERVICE CONNECTIONS (TYPE K)	L.F.	136
504.615	F.& I. CORPORATION COCK	CONNECTION	2
504.681	F.& I. 6" GATE VALVE AND BOX	VALVE	5
504.650	F.& I. 12"-22-1/2" CAST IRON BEND	BEND	1
504.650	F.& I. 12"-45° CAST IRON PIPE BEND	BEND	2
504.682	REMOVE AND REPLACE GATE VALVE	VALVE	1
504.672	F.& I. HYDRANTS	HYDRANT	2
504.677	F.& I. CURB BOX AND STOP	BOX	2
504.692	REMOVE AND RELAY 12" CAST IRON WATERMAIN	L.F.	130
504.650	F.& I. 6"-45° CAST IRON PIPE BEND	BEND	2

- (1) APPROXIMATELY 5100 CUBIC YARDS OF TOPSOIL MATERIAL REQUIRED FOR PROJECT. MATERIAL MAY BE OBTAINED FROM CLASS A EXCAVATION OR SWAMP EXCAVATION.
- (2) WATER TO BE USED BY DIRECTION OF ENGINEER FOR DUST PALLIATIVE ONLY.
- (3) INCLUDES PAYMENT FOR BRIDGE PLATE.
- (4) APPROXIMATELY 540 TONS FOR SIDE STREET SURFACING.
- (5) APPROXIMATELY 560 TONS FOR SIDE STREET SURFACING.
- (6) POSSIBLE SOURCE. SEE SHEET 16, 35 AND 45.

(7) ALL DESIGN F MANHOLES ARE TO BE USED FOR SANITARY SEWER BETWEEN STA. 110+00 AND STA. 137+46.57 AS SHOWN ON SHEETS 18, 19 AND 20.

BITUMINOUS ENTRANCE DETAILS

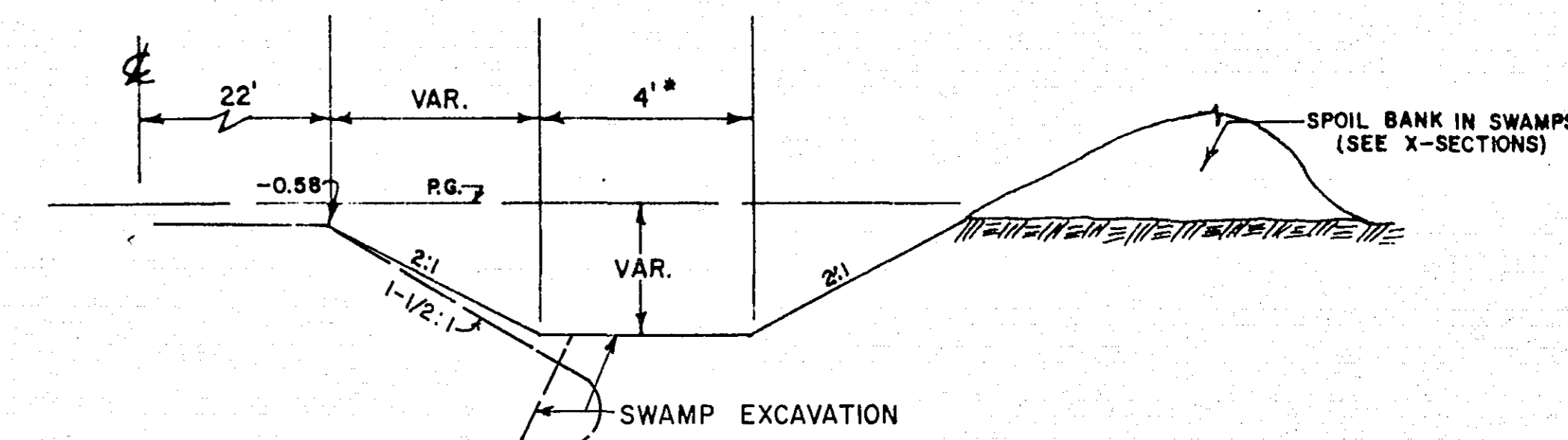
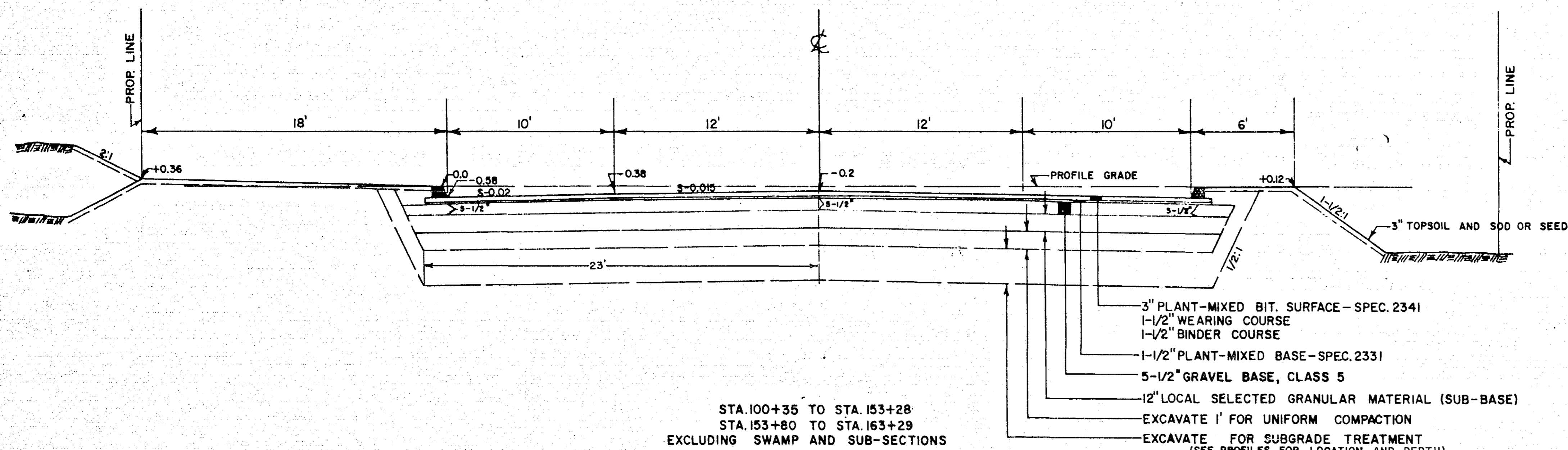
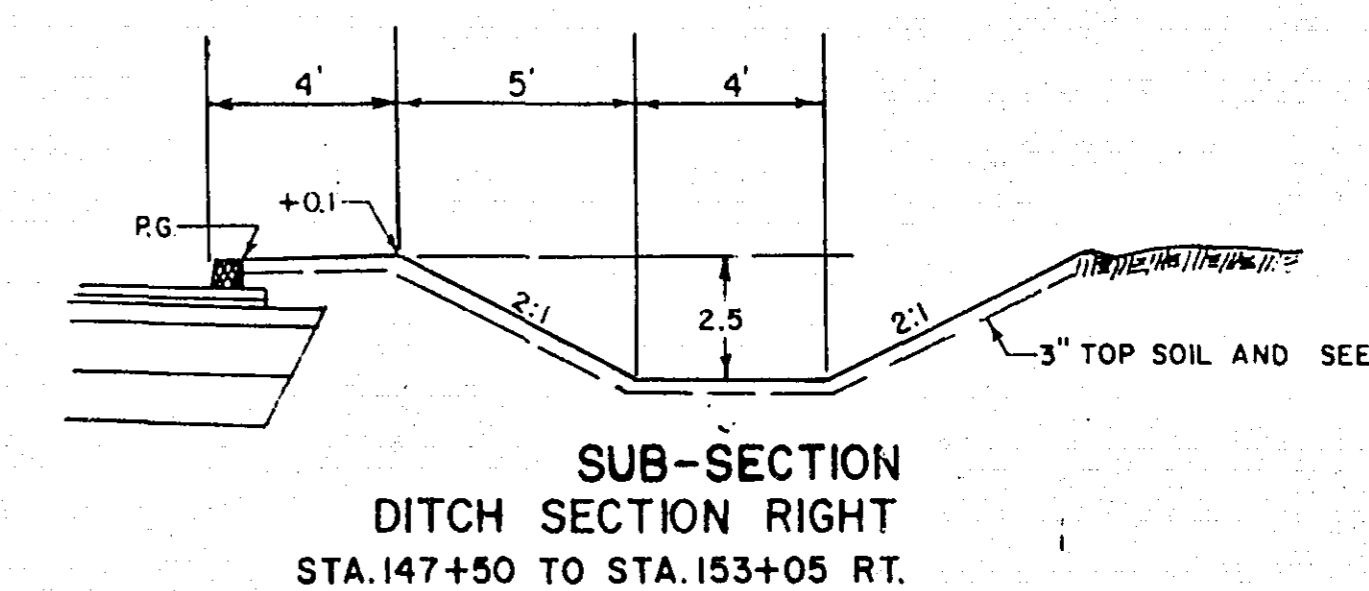
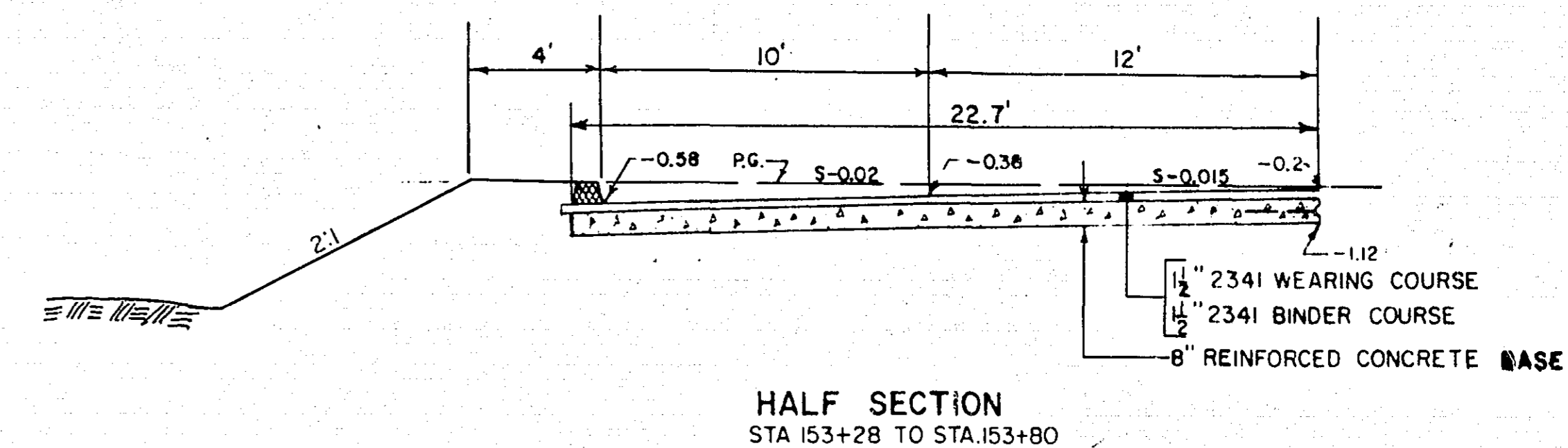
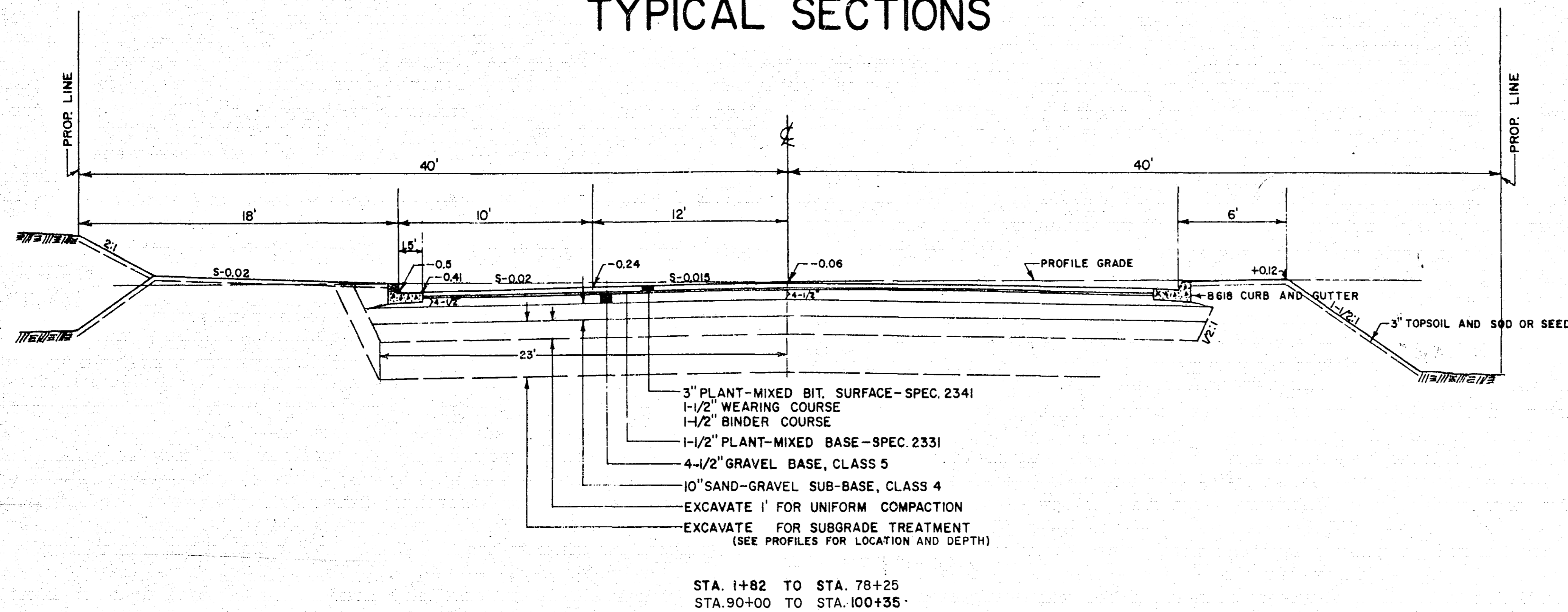


NOTE: PRIVATE ENTRANCE W=6' D=5'  
COMMERCIAL ENTRANCE W=11' D=10'

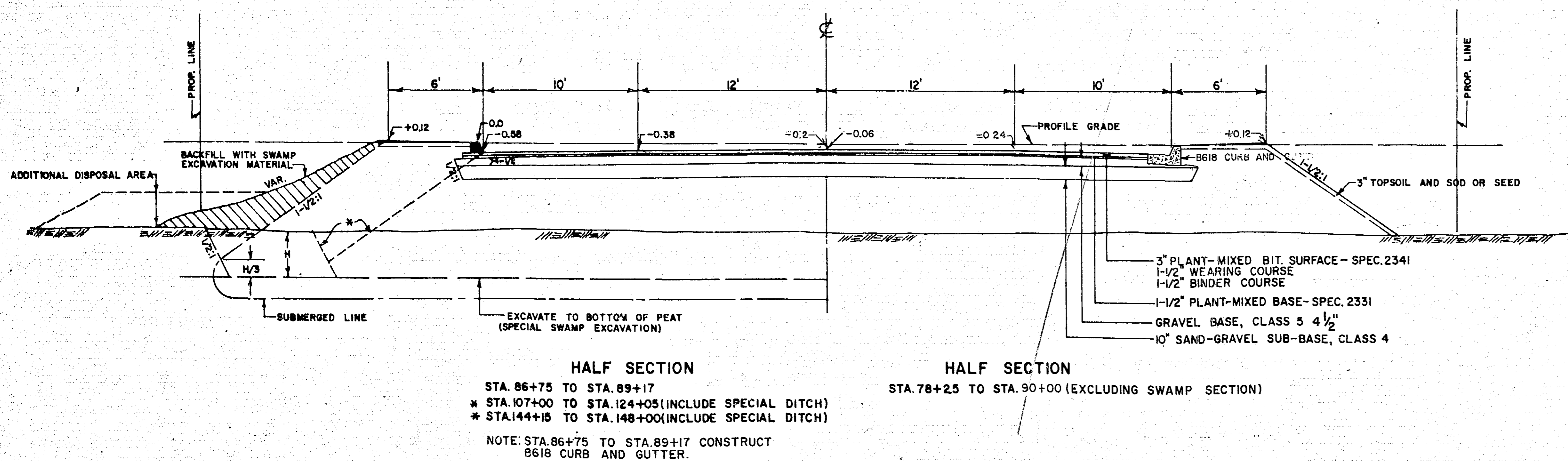
NOTE: THE EXACT LOCATION OF ENTRANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

STANDARD DETAIL PLATES	
3000C	REINFORCED CONCRETE PIPE
3014B	REINFORCED CONCRETE PIPE-ARCH
3100D & 3102C	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110B	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3122C	METAL APRON FOR C.M. PIPE-ARCH CULVERTS
4000E	MANHOLE OR CATCH BASIN
4002C	MANHOLE OR CATCH BASIN
4101A	RING CASTING FOR MANHOLE OR CATCH BASIN (CASTING NO. 700-7)
4108B	AUXILIARY CASTING FOR MANHOLE RING EXTENSION
4111C	COVER CASTING FOR MANHOLE
4126C	CATCH BASIN FRAME CASTING
4149B	GRATE CASTING FOR CATCH BASIN
4161C	CURB BOX CASTING FOR CATCH BASIN
4181	MANHOLE STEP CASTING
5200A	REINFORCED CONCRETE SURGE BASIN
7065B	BITUMINOUS CURB
7100C	CONCRETE CURB AND GUTTER
8000A - 8009	STANDARD BARRICADE
8307D	STRUCTURAL PLATE BEAM GUARD RAIL
9102A	SODDING AT PIPE CULVERT ENDS
4006D	MANHOLE OR CATCH BASIN
4005E	MANHOLE OR CATCH BASIN

# TYPICAL SECTIONS



NOTE: SLOPES & BACKSLOPES SHALL CONFORM TO RIGHT OF WAY WHERE THERE ARE NO EASEMENTS.





**DRAINAGE CULVERTS**

LINE NO.	STATION	LOCATION	IN PLACE	REMARKS	REMOVE		FURNISH & INSTALL		PORTABLE		CULVERTS		FURNISH & INSTALL		PORTABLE		CULVERTS		CLASS
					PORT. CULV. LIN. FT.	CONC. STRUCT. CU. YD.	CULVERT * EXCAVATION	SODDING	24" R.C.P. LIN. FT.	APR.	15" R.C.P. LIN. FT.	APR.	R.C.P.-A 51" SPAN LIN. FT.	APR.	R.C.P.-A 28" SPAN LIN. FT.	APR.	30" R.C.P. LIN. FT.	APR.	
1	5/97		15"x56" S.C.P.	ABANDON															
2	9/08	RT. 21'	15"x20" C.M.	ABANDON															
3	10/59	LT. 20'	12"x26" C.M.	ABANDON															
4	12/44	LT. 19'	15"x20" C.M.	ABANDON															
5	14/10	LT. 20'	15"x20" C.M.	ABANDON															
6	16/76	☒	12"x58" C.M.	ABANDON															
7	17/50	☒		RT. 915.2 LT. 915.0			48 C.Y.	14	86										2
8	21/25	RT. 21'	18"x60" + APRONS	REMOVE		72													
9	21/90	RT. 21'	15"x20" C.M.	ABANDON															
10	29/17	RT. 29'	15"x30" C.M.	ABANDON															
11	30/60	☒		RT. AND LT. 920.5			73 C.Y.	14	90										2
12	31/25	LT. 18'-RT. 22'	18"x40" C.M.	ABANDON															
13	31/52	☒	15"x56" C.M.	ABANDON															
14	33/50	☒		RT. AND LT. 920.0			59 C.Y.	14	86										2
15	36/10	RT. 21'	15"x20" C.M.	ABANDON															
16	39/63	LT. 20'	15"x20" C.M.	ABANDON															
17	42/95	LT. 21'	15"x20" C.M.	ABANDON															
18	44/49	LT. 21'	18"x20" C.M.	ABANDON															
19	47/14	LT. 20' C.M.	12"x20" C.M.	ABANDON															
20	48/05	LT. 20'	12"x20" C.M.	ABANDON															
21	49/65	RT. 23'	15"x20" C.M.	ABANDON															
22	52/25	☒		RT. AND LT. 909.50			36 C.Y.	14	76										2
23	53/57	☒	15"x40" C.M.	ABANDON															
24	57/13	RT. 21'	12"x20" C.M.	ABANDON															
25	60/41	☒	15"x38" C.M.	ABANDON															
26	89/53	RT. 37' EL.	885.6 TO 887.8	LT. 36.5' EL. 885.2			23 C.Y.	14	80										2
27	108/00	☒		RT. 886.2 LT. 885.9				22				54	2						4
28	108/12	RT. 20'	48"x24" C.M.	ABANDON															
29	122/00	☒		RT. 889.4 LT. 889.8				15											2
30	126/52	LT. 7'	15" C.M.	ABANDON															
31	129/54	LT. 25'	12"x20" C.M.	ABANDON															
32	145/00	☒		RT. 894.0 LT. 894.5			15 C.Y.	18				72	2 (\$T. PT. 3100C)						2
33	153/50	☒		RT. 907.1 LT. 907.3			10 C.Y.	11					52	2 (\$T. PT. 3110B)					4
34	153/90	☒		RT. 906.7 LT. 907.0			5 C.Y.	11					56	2 (\$T. PT. 3110B)					4

LINE: 8 INSTALL 60L.F. BETWEEN C.B. 2 AND M.H. 3 \*FOR INFORMATIONAL PURPOSES ONLY

**GATE VALVE LOCATIONS AND ADJUSTMENTS**

STATION	LOCATION	TYPE	REMARKS
6/90	LT. 15'	WATER	ADJUST
21/00	LT. 47'	GAS	ADJUST BY OTHERS
21/36	RT. 21'	WATER	ADJUST
21/55	LT. 40'	WATER	O.K. LEAVE
21/59	LT. 36'	GAS	ADJUST BY OTHERS
27/80	LT. 35'	WATER	ADJUST
27/80	RT. 33'	WATER	ADJUST
27/82	LT. 42'	GAS	ADJUST BY OTHERS
28/43	LT. 26'	WATER	ADJUST
40/85	LT. 26'	WATER	ADJUST
40/90	LT. 40'	WATER	ADJUST
40/90	RT. 26'	WATER	ADJUST
41/52	LT. 26'	WATER	ADJUST
95/95	LT. 33'	GAS	ADJUST BY OTHERS
96/28	LT. 32'	GAS	ADJUST BY OTHERS
96/71	LT. 10.5'	WATER	ADJUST
97/08	RT. 30'	WATER	ADJUST
100/08	RT. 20'	GAS	ADJUST BY OTHERS
100/75	RT. 20'	GAS	ADJUST BY OTHERS
106/70	LT. 21'	WATER	ADJUST
107/10	RT. 32'	WATER	ADJUST
110/09	LT. 38'	WATER	O.K. LEAVE
126/93	RT. 11'	WATER	ADJUST
132/25	RT. 11'	WATER	ADJUST
137/20	LT. 32'	WATER	ADJUST

**REMOVE FENCE**

STATION	TO STATION	LIN. FT.	TYPE
2/69 LT. 56'	2/69 LT. 46'	10	BARB WIRE
2/69 LT. 46'	8/03 LT. 39'	534	BARB WIRE
8/03 LT. 39'	8/03 LT. 57'	18	BARB WIRE
12/68 RT. 45'	12/68 RT. 29'	16	BARB WIRE
12/69 RT. 29'	19/13 RT. 28'	644	BARB WIRE
21/55 RT. 38'	21/55 RT. 24'	14	BARB WIRE
21/55 RT. 24'	21/80 RT. 24'	25	BARB WIRE
21/92 RT. 41'	21/92 RT. 25'	16	BARB WIRE
21/92 RT. 25'	22/77 RT. 27'	85	BARB WIRE
22/77 RT. 63'	22/77 RT. 38'	25	BARB WIRE
22/77 RT. 38'	27/00 RT. 39'	423	BARB WIRE
36/34 RT. 31'	40/44 RT. 31'	410	BARB WIRE
102/18 RT. 32'	102/18 RT. 22'	10	WOOD RAIL
102/42 RT. 23'	102/42 RT. 23'	50	WOOD RAIL
102/92 RT. 23'	102/92 RT. 33'	10	WOOD RAIL
110/29 RT. 53'	110/29 LT. 7'	60	BARB WIRE
110/29 LT. 7'	124/45 LT. 13'	1416	BARB WIRE
133/35 RT. 40'	133/62 RT. 14'	40	BARB WIRE
133/62 RT. 14'	143/27 RT. 2'	996	BARB WIRE
143/27 LT. 2'	143/03 RT. 86'	94	BARB WIRE
149/24 LT. 40'	149/24 LT. 25'	15	BARB WIRE
149/24 LT. 25'	150/55 LT. 33'	121	BARB WIRE
150/55 LT. 33'	150/55 LT. 43'	10	BARB WIRE
155/60	158/15 LT. 3'	255	BARB WIRE
158/15 LT. 3'	158/15 LT. 45'	42	BARB WIRE
157/73 RT. 45'	157/90	49	WOVEN WIRE
157/90	157/40 RT. 45'	68	WOVEN WIRE
157/90	162/85 LT. 33'	530	WOVEN WIRE
102/18 RT. 22'	102/26 RT. 22'	8	WOOD RAIL

**RESET FENCE**

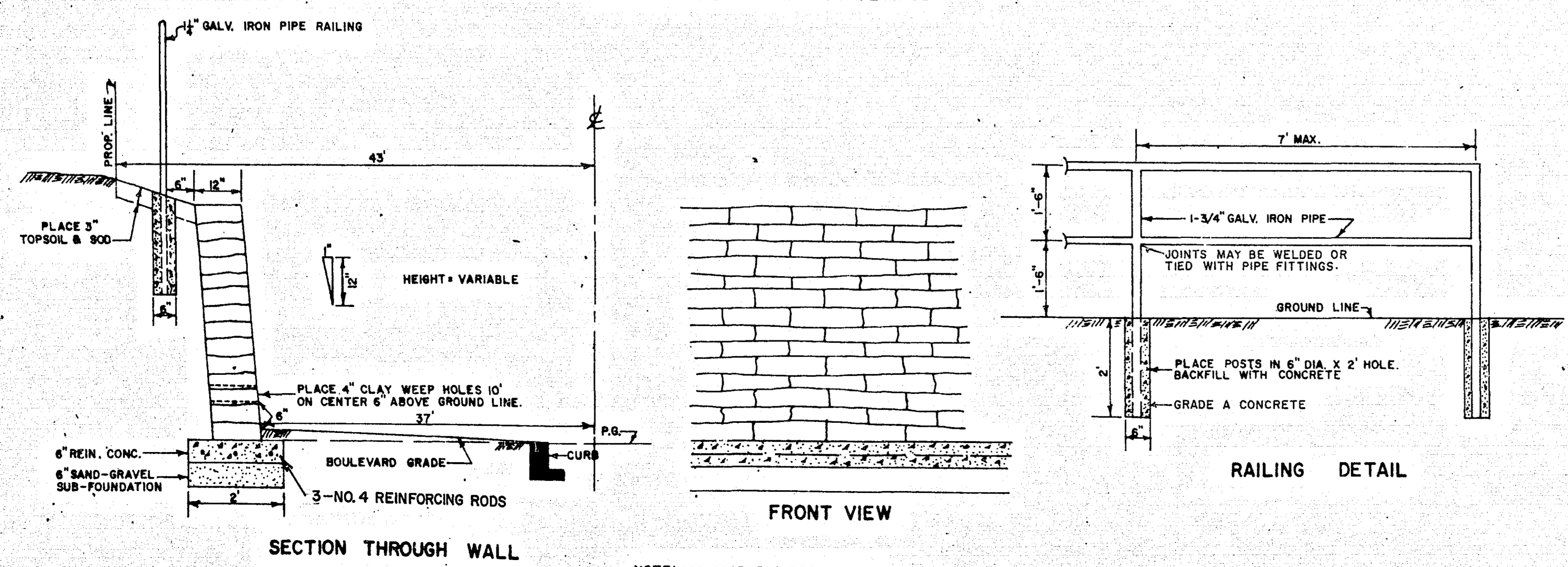
STATION	TO STATION	LIN. FT.	TYPE
149/24 LT. 40'	150/55 LT. 40'	121	BARB WIRE
150/55 LT. 40'	150/55 LT. 43'	3	BARB WIRE
157/73 RT. 45'	157/40 RT. 45'	67	WOVEN WIRE

**SODDING GUIDE**

STATION	TO STATION	LOCATION	SQ. YDS.
8/65	12/55	RT. 23'-44'	909
10/04	13/04	LT. 23'-40'	519
19/25	20/90	LT. 23'-40'	288
21/45	22/80	RT. 23'-42'	261
21/40	23/45	LT. 23'-39'	364
26/50	27/85	LT. 23'-41'	270
27/95	29/10	RT. 23'-43'	256
31/55	32/55	LT. 23'-37'	132
35/66	37/00	RT. 23'-39'	214
37/95	39/95	LT. 23'-32'	160
41/30	42/65	RT. 23'-45'	306
43/05	47/60	LT. 23'-40'	811
47/60	48/70	LT. 23'-40'	178
47/80	49/50	RT. 23'-54'	654
58/50	60/40	LT. 23'-40'	359
60/40	60/49	LT. 23'-40'	17
90/00	100/00	RT. 23'-33'	811
90/00	100/00	LT. 23'-32'	826
100/50	105/50	LT. 23'-37'	706
100/50	106/65	RT. 23'-30'	286
110/30	111/50	LT. 23'-39'	213
115/75	117/35	LT. 23'-39'	284
124/95	126/60	LT. 23'-39'	293
126/90	141/40	LT. 23'-39'	2356
155/50	158/50	RT. 23'-36'	433
161/50	162/90	LT. 23'-39'	249

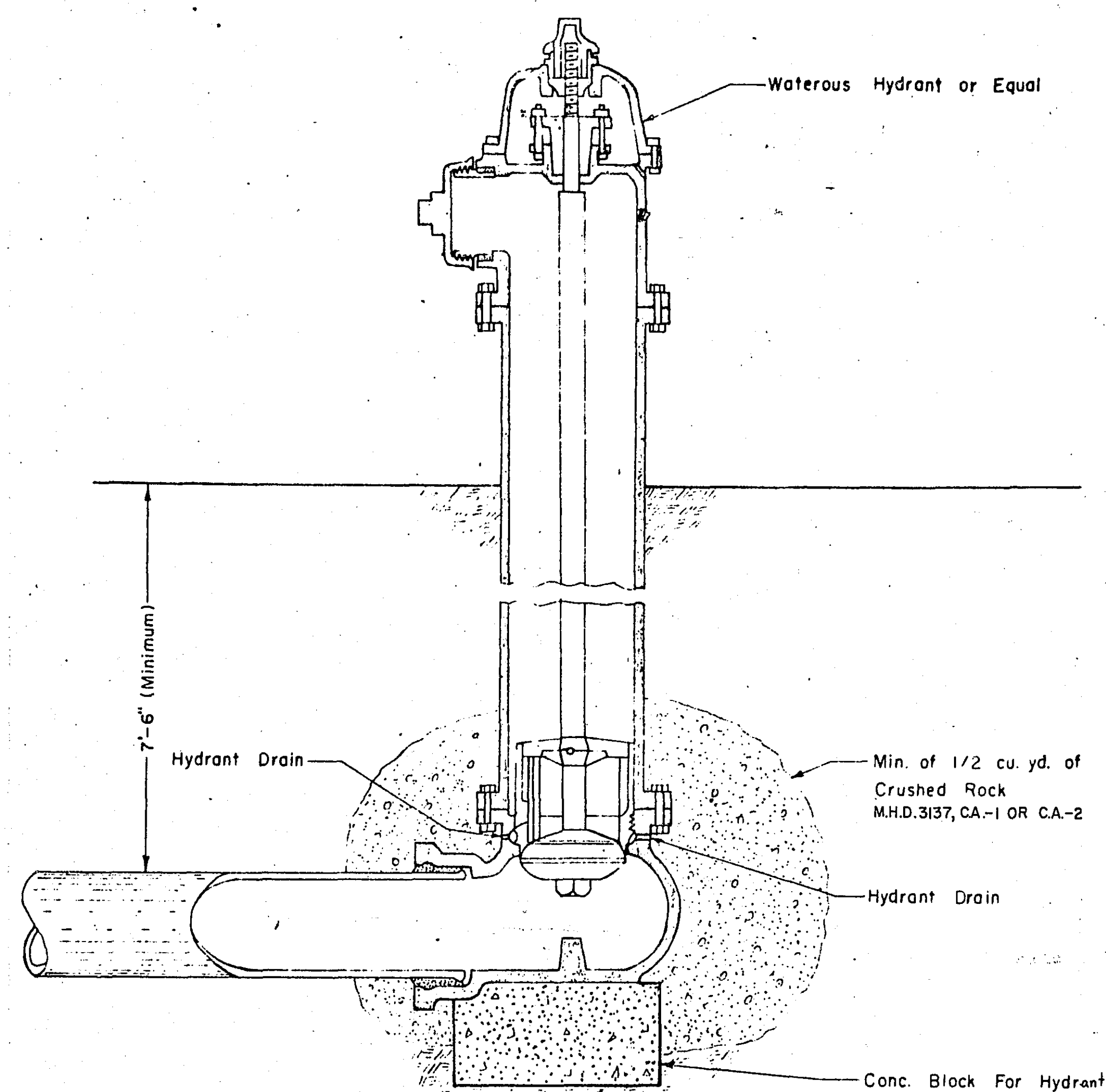
NOTE: ALL AREAS NOT SODDED SHALL BE SEED.

**MORTAR RUBBLE MASONRY WALL LEFT STA. 26+46 TO STA. 27+62**

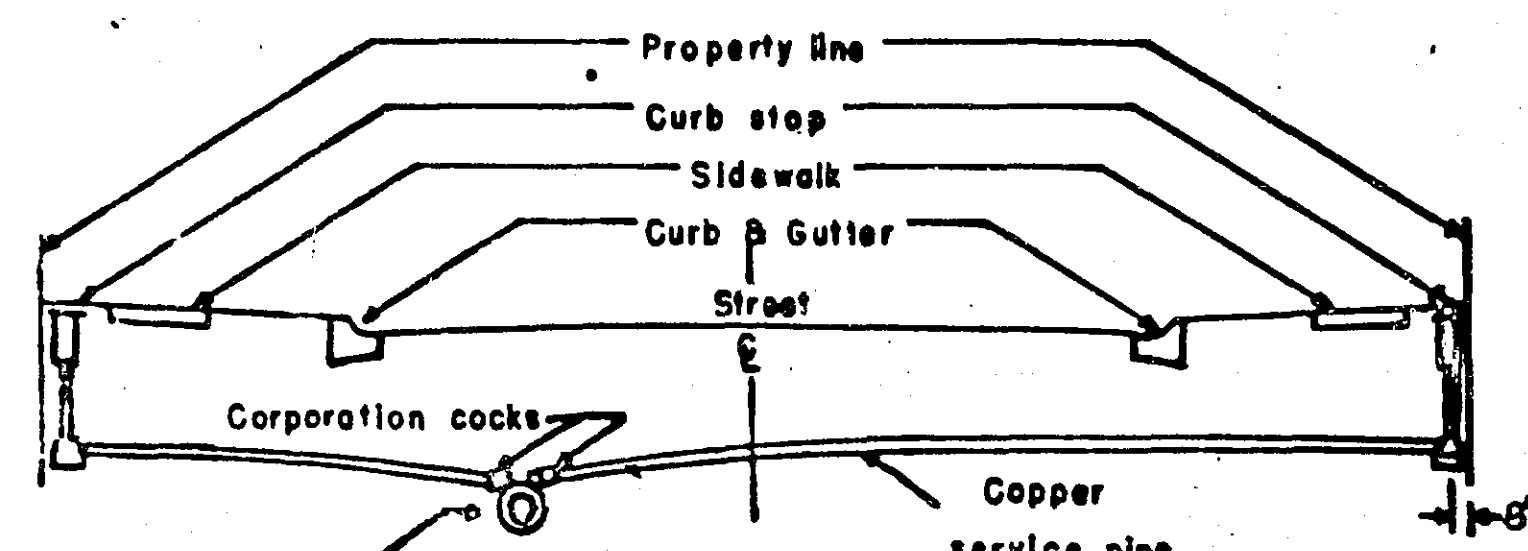
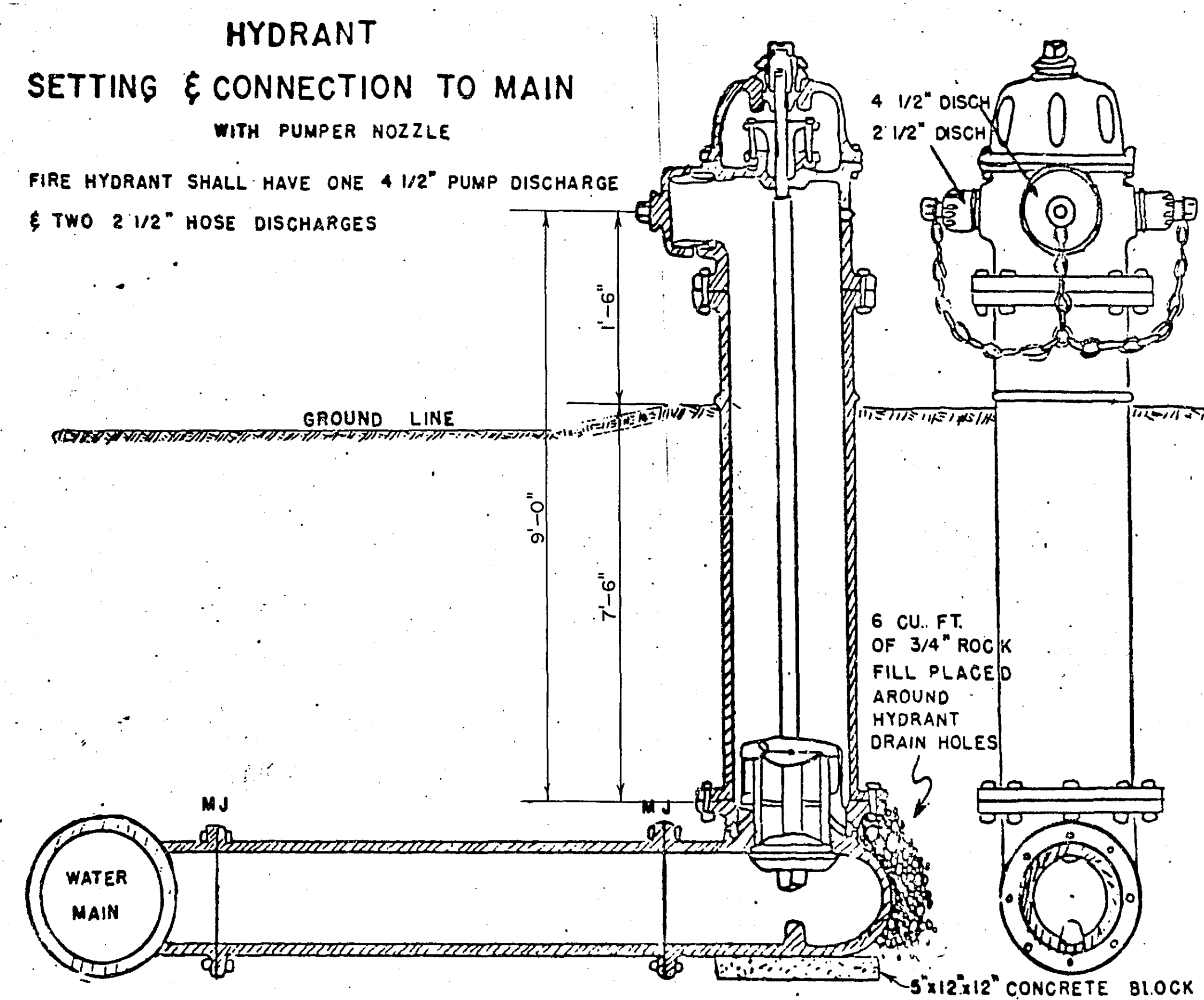


NOTE: SEE PROFILE SHEET NO. 15 FOR ELEV. OF TOP OF WALL.

CLEARING		AND		GRUBBING		
STATION	TO STATION	LOCATION	TREE	ACRE	TREE	ACRE
2/07	8/06	LT.	14		8	
9/32	15/39	RT.	13		19	
19/17		LT.	1		1	
19/24	26/54	RT.	26		23	
26/59		LT.	1		1	
26/65	42/78	RT.	31		31	
36/34		RT.		.05		.05
44/23	49/66	RT.		.73		.73
54/99	56/74	RT.		.14		.14
58/25	61/54	RT.	11		10	
62/38	63/45	LT. & RT.		.10		.10
63/65	65/03	RT.		.07		.07
65/96	67/96	LT.	2		2	
68/22	69/40	LT. & RT.		.17		.17
70/27	72/81	LT. & RT.		.35		.35
73/13	73/77	RT.	5		3	
77/70	82/00	LT. & RT.		.75		.75
82/10	83/60	LT. & RT.		.24		.24
83/50	84/90	LT. & RT.		.13		.13
84/60	88/75	LT. & RT.		.92		.92
93/65	105/83	RT.	16		16	
107/10	110/30	LT. & RT.		.65		.65
110/30	116/01	LT. & RT.		.64		.64
116/79	117/50	LT. & RT.	9		5	
117/50	120/45	LT. & RT.		.17		.17
123/85	124/88	LT.	5		5	
128/57		LT.	1		1	
133/62	147/67	LT. & RT.	29		27	
154/25	157/25	LT.		.30		.30
157/31	157/84	LT. & RT.	9		10	
158/06	160/30	LT.		.21		.21
158/17	163/21	LT. & RT.	14		14	
TOTALS			187	5.63	180	5.63

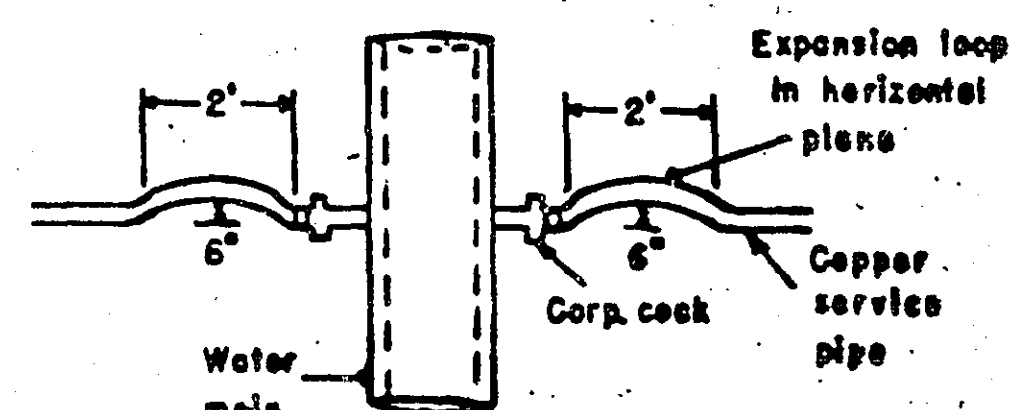


TYPICAL FIRE HYDRANT INSTALLATION  
CUT-AWAY VIEW OF STANDARD TYPE HYDRANT  
STA.1+82 TO STA.100+34



SECTION THROUGH STREET

Water main  
Location will vary as indicated on plan view.



PLAN VIEW

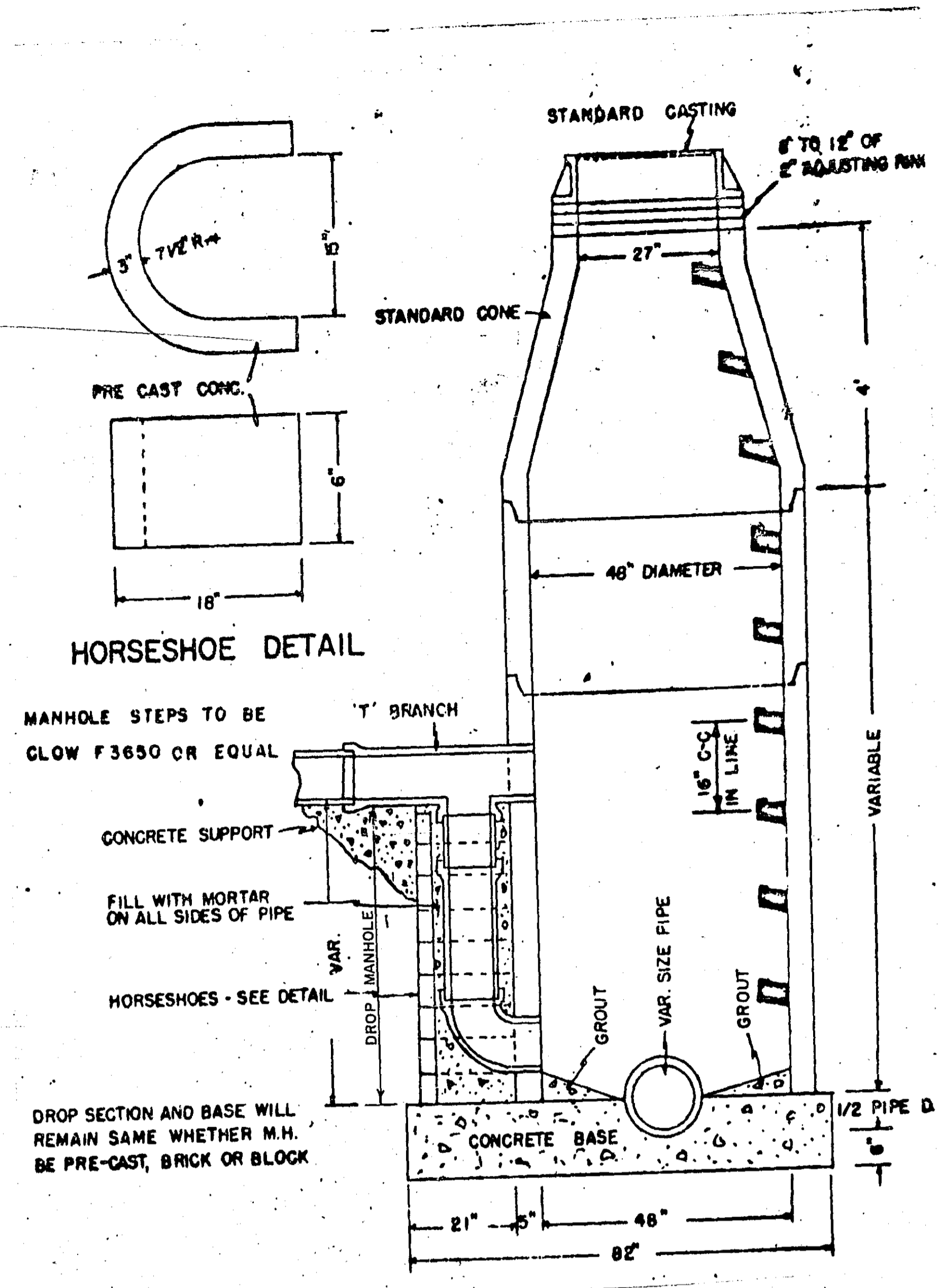
NOTES  
All curb stop covers shall have the word "water" stamped on them.

SECTION

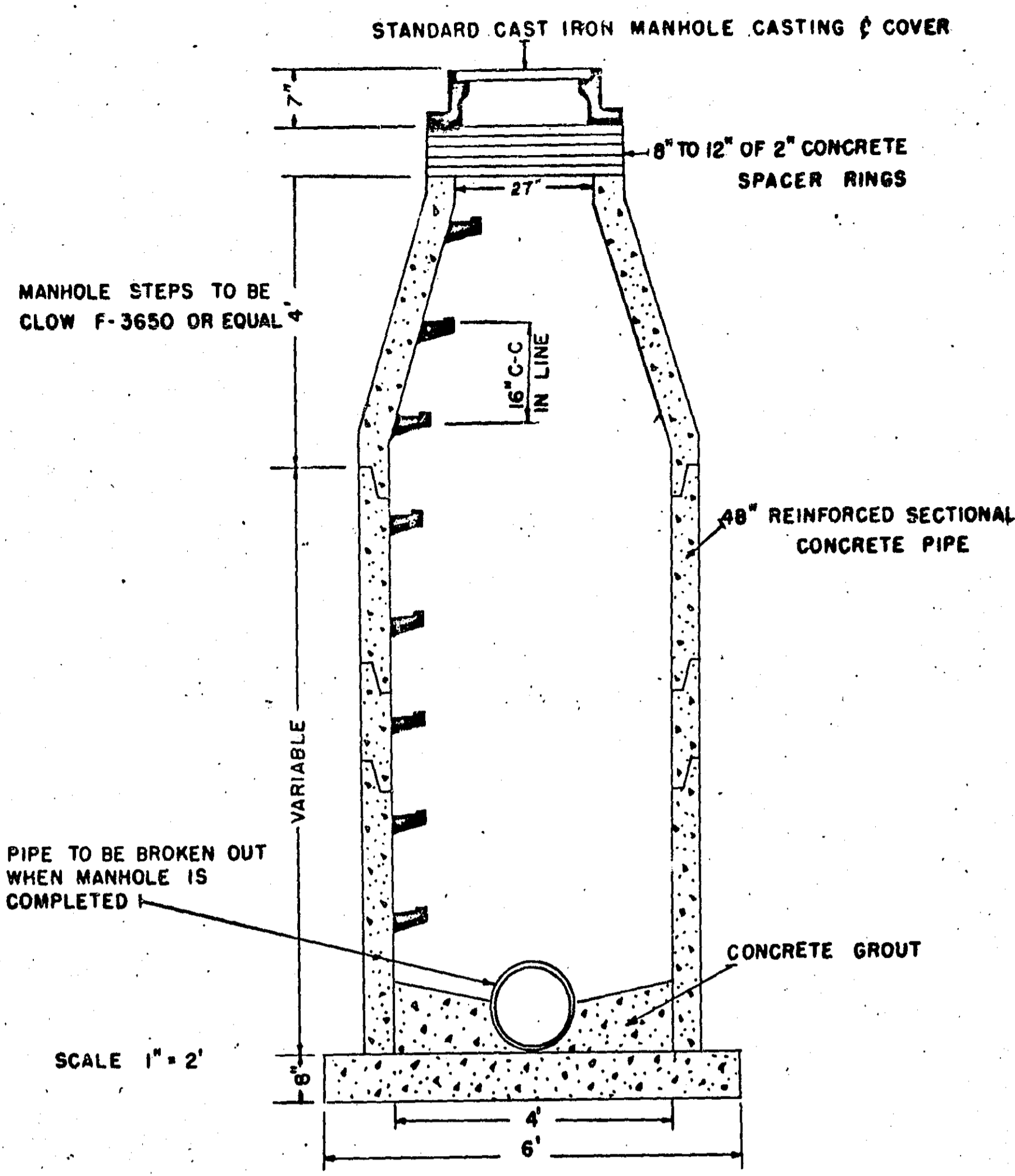
TYPICAL SERVICE CONNECTIONS  
NOT TO SCALE

NOTE: TRENCHES SHALL BE BACKFILLED ACCORDING TO MINNESOTA HIGHWAY DEPARTMENT SPECIFICATIONS.

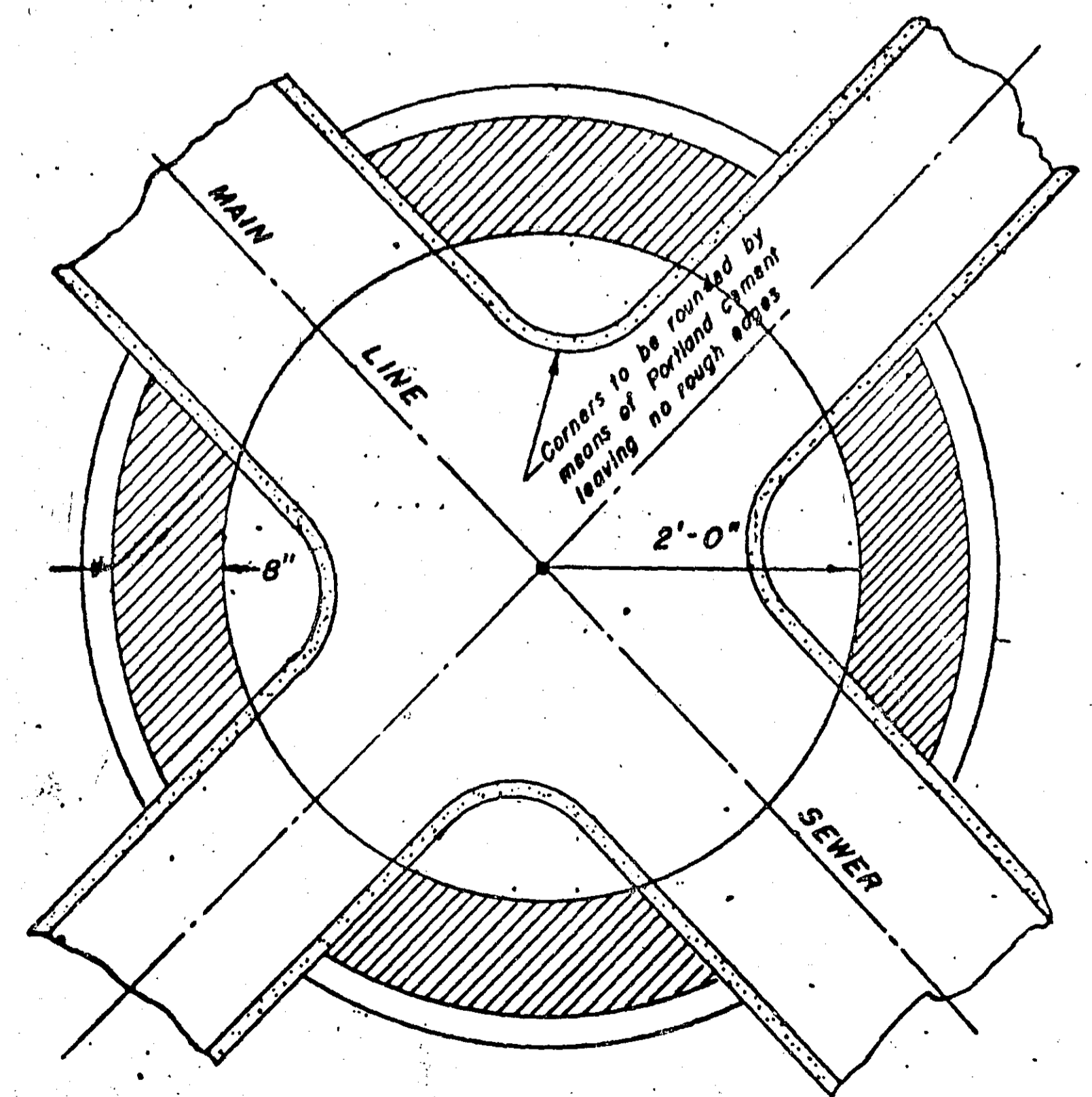
WATER MAIN DETAILS



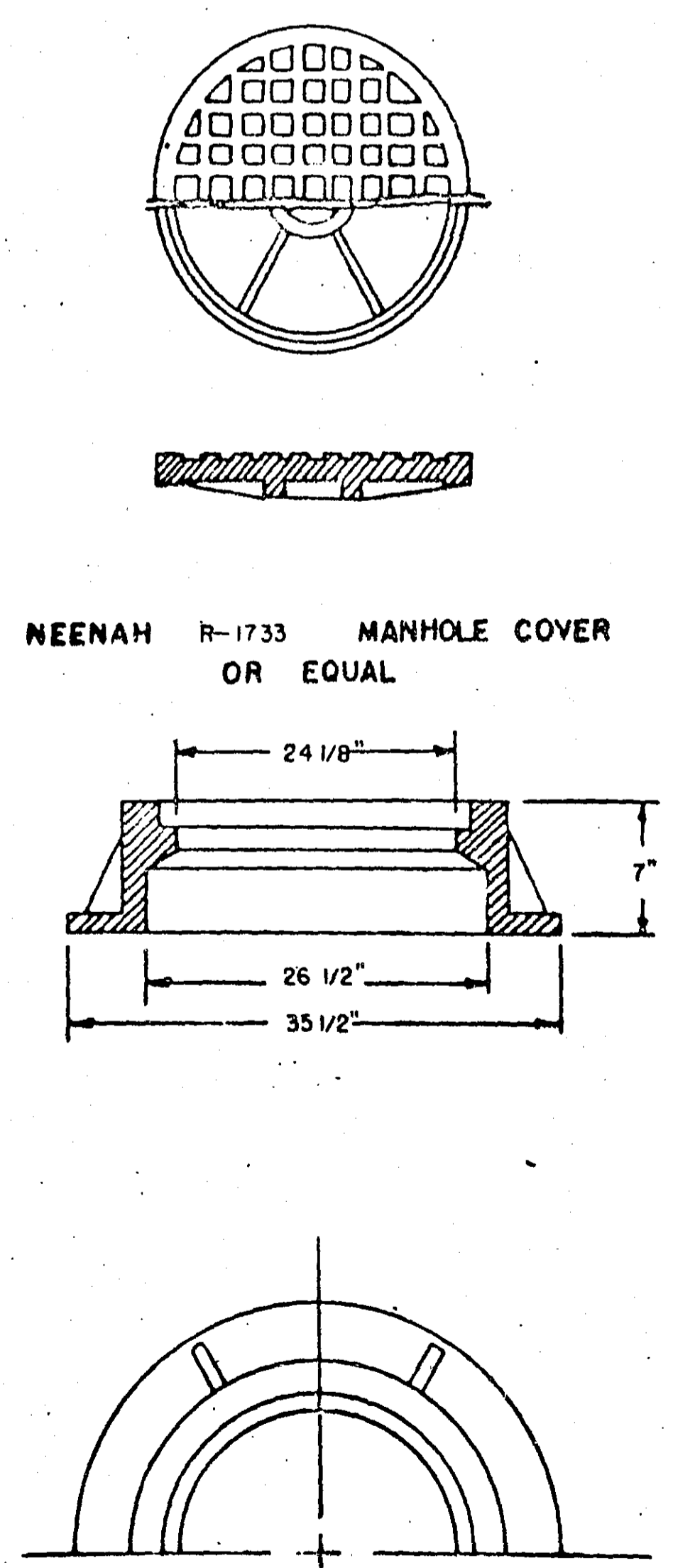
DROP CONNECTION TO MANHOLE



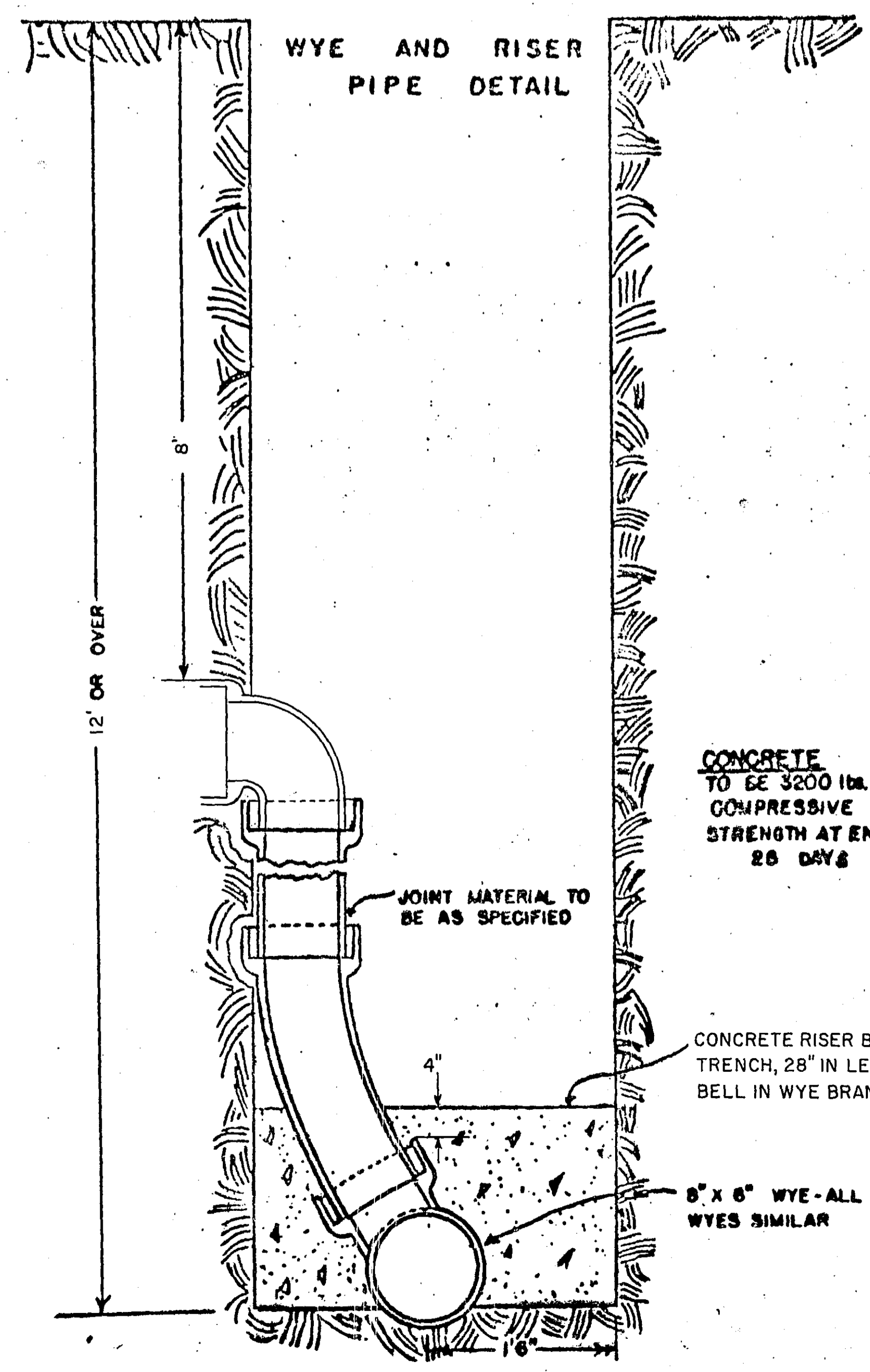
STANDARD PRE-CAST CONCRETE MANHOLE FOR PIPE 36" DIAMETER & UNDER



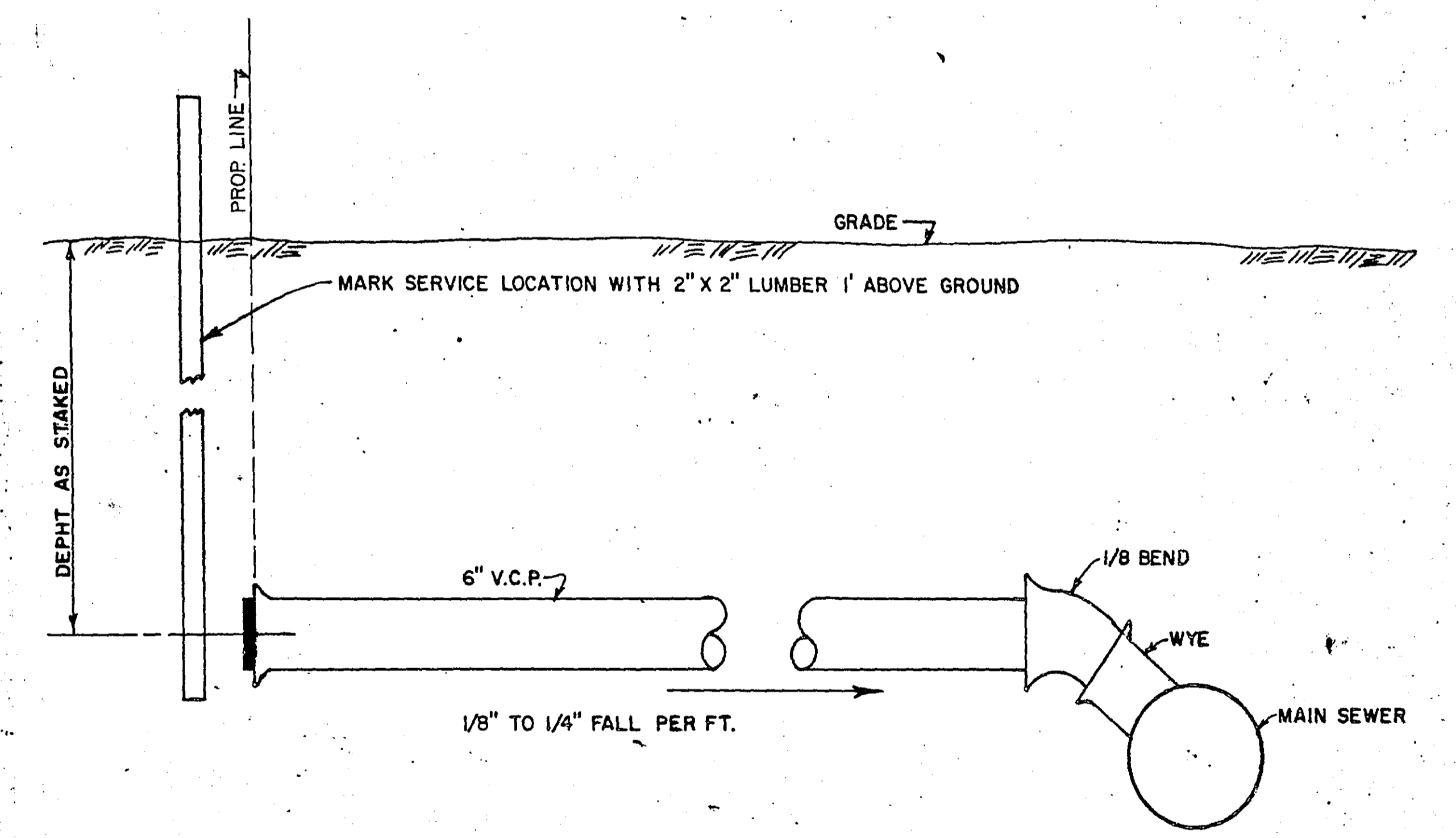
PLAN OF MANHOLE BOTTOM FLOW LINES  
Scale 1" = 1'-0"



PLAN & SECTION OF MANHOLE CASTINGS  
Scale 1" = 1'-0"



CONCRETE TO BE 3200 lbs. PSI. COMPRESSIVE STRENGTH AT END OF 28 DAYS



SANITARY SEWER SERVICE CONNECTION

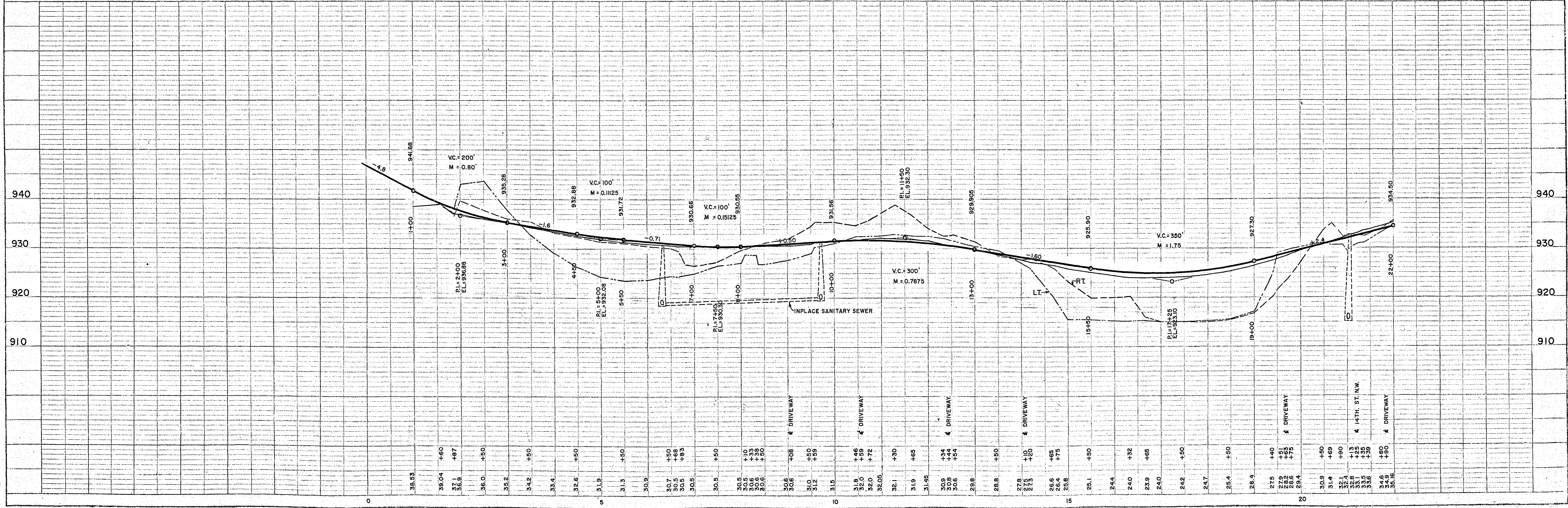
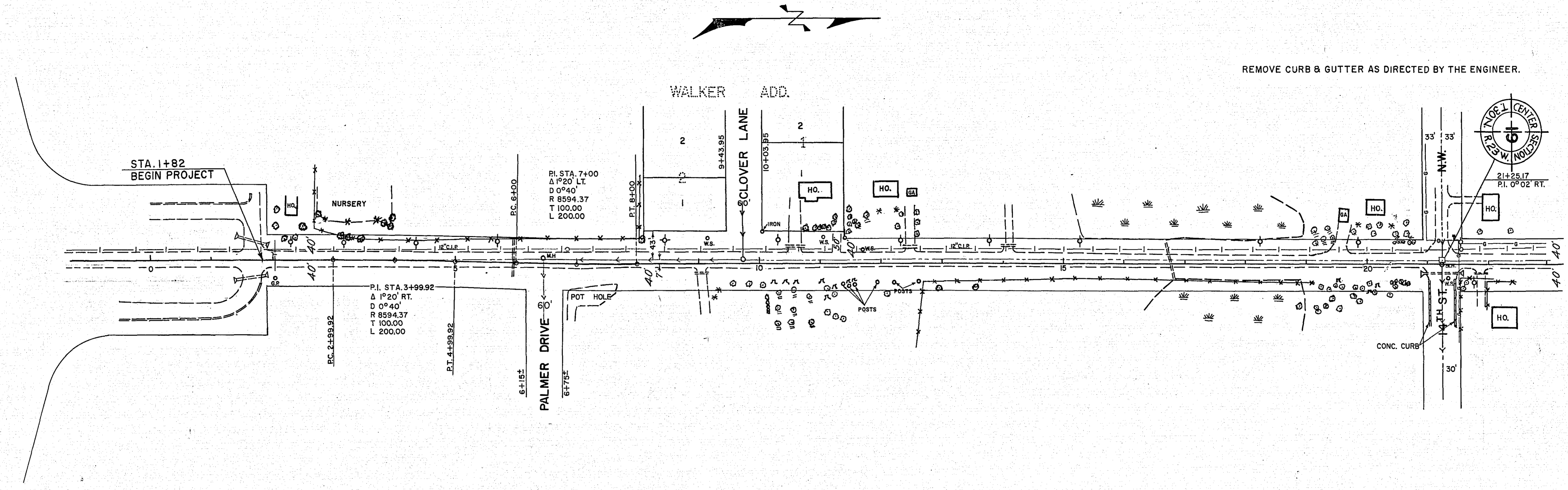
NOTE: TRENCHES SHALL BE BACKFILLED ACCORDING TO MINNESOTA HIGHWAY DEPARTMENT SPECIFICATIONS.

SANITARY SEWER STANDARDS

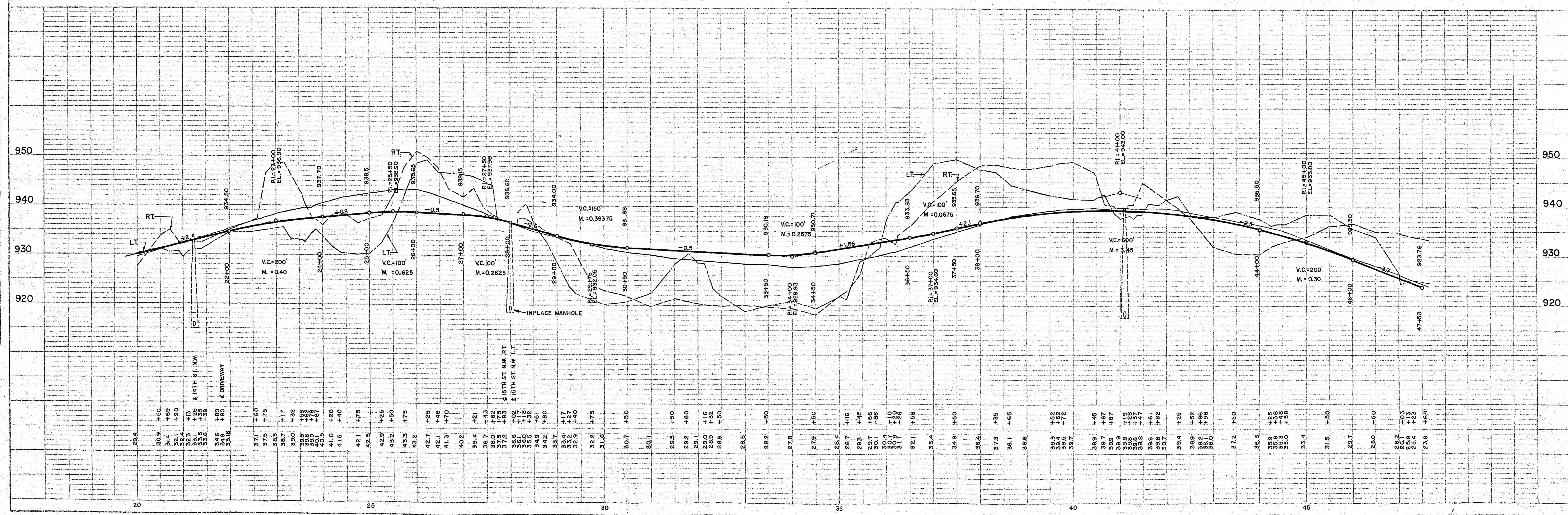
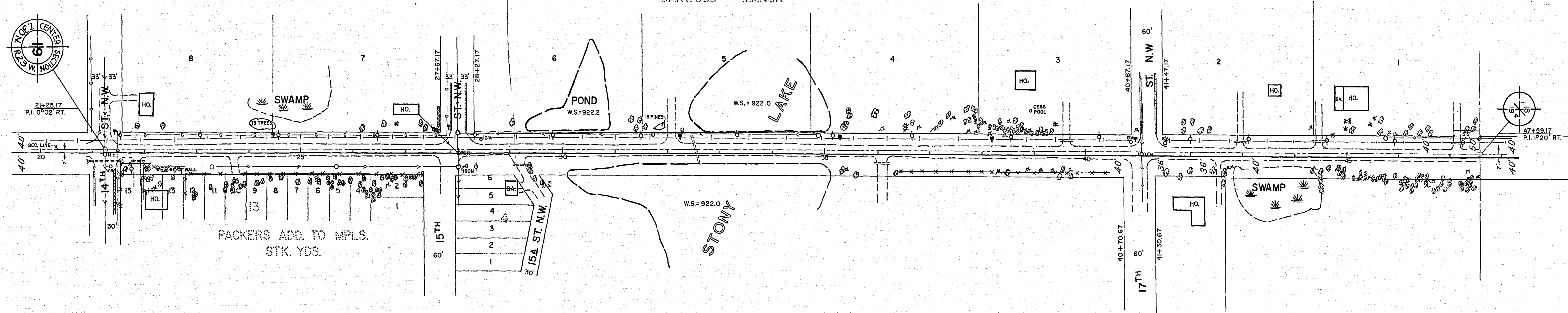
PLAN  
 SUPERVISED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 FLOTTING BY \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 ALIGNMENT CHECKED BY \_\_\_\_\_  
 RT. OF WAY CHECKED BY \_\_\_\_\_

PROFILE  
 SUPERVISED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 FLOTTING BY \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 GRADES CHECKED BY \_\_\_\_\_  
 STRUCTURE AGT. AS CHECKED BY \_\_\_\_\_

T.H. 100





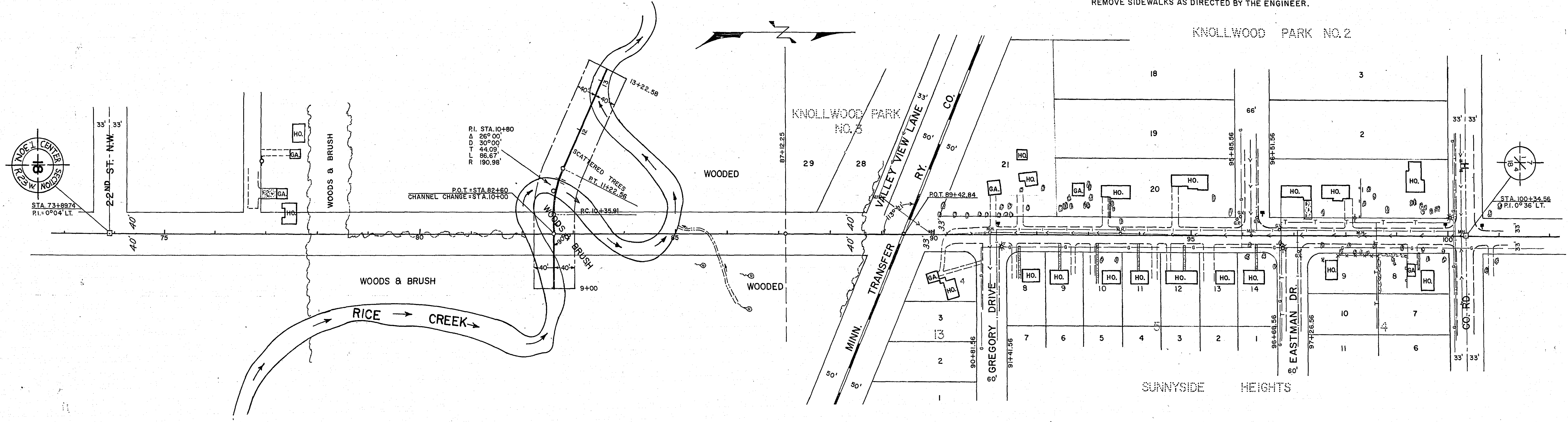


**PLAN**  
 DRAWN TO SCALE  
 NOTE BOOK ALIGNMENT CHECKED  
 NO. OF WAY CHECKED

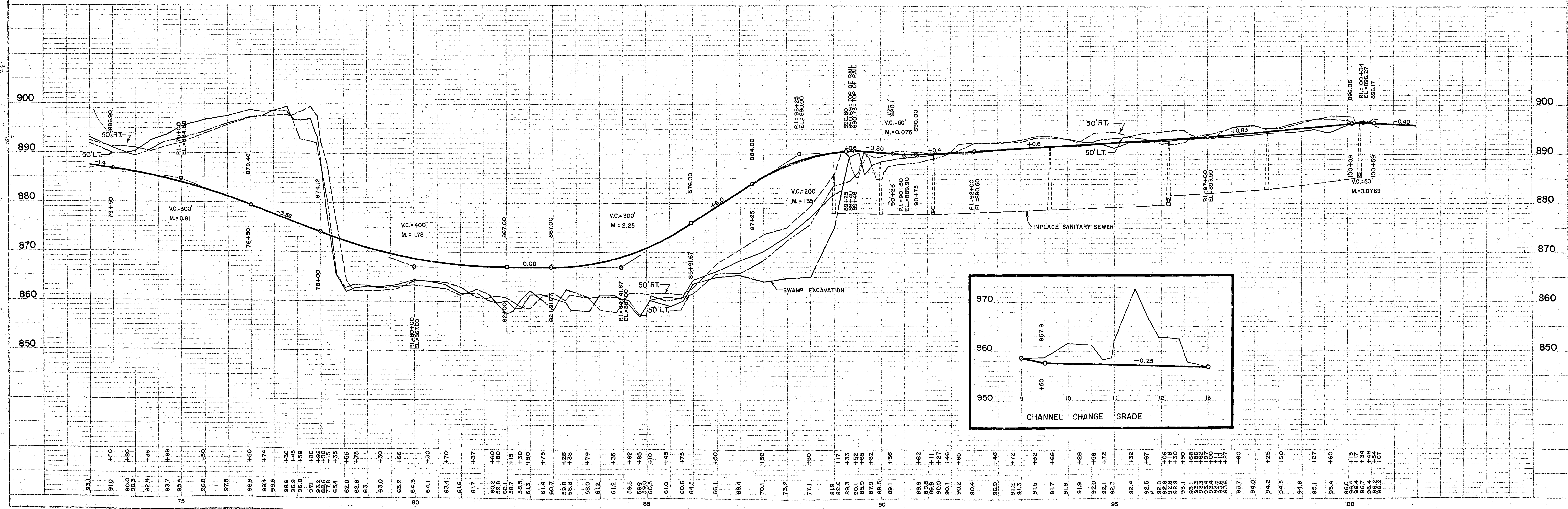
**PROFILE**  
 SUPERVISOR  
 NOTE BOOK GRADES CHECKED  
 NO. OF NOTICES  
 PROCEDURE DETAILS CHECKED



REMOVE SIDEWALKS AS DIRECTED BY THE ENGINEER.



NOTE: HOUSE SERVICE CONNECTIONS FOR WATERMAIN AND GAS MAINS SHALL BE LOCATED IN THE FIELD.

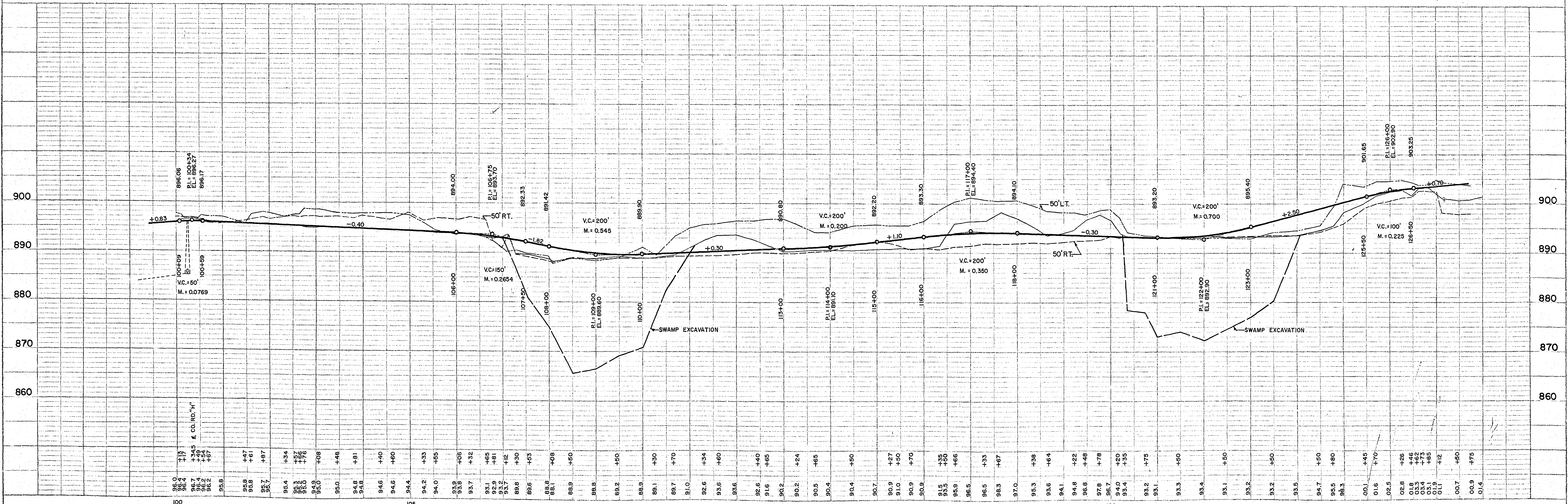
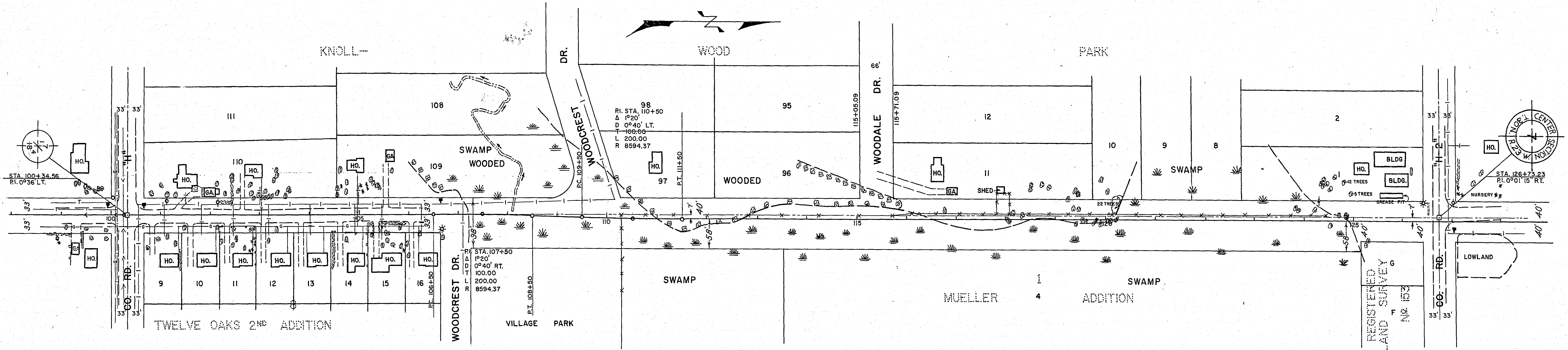


PLAN  
 NOTE BOOK  
 NO.

PROFILE  
 NOTE BOOK  
 NO.

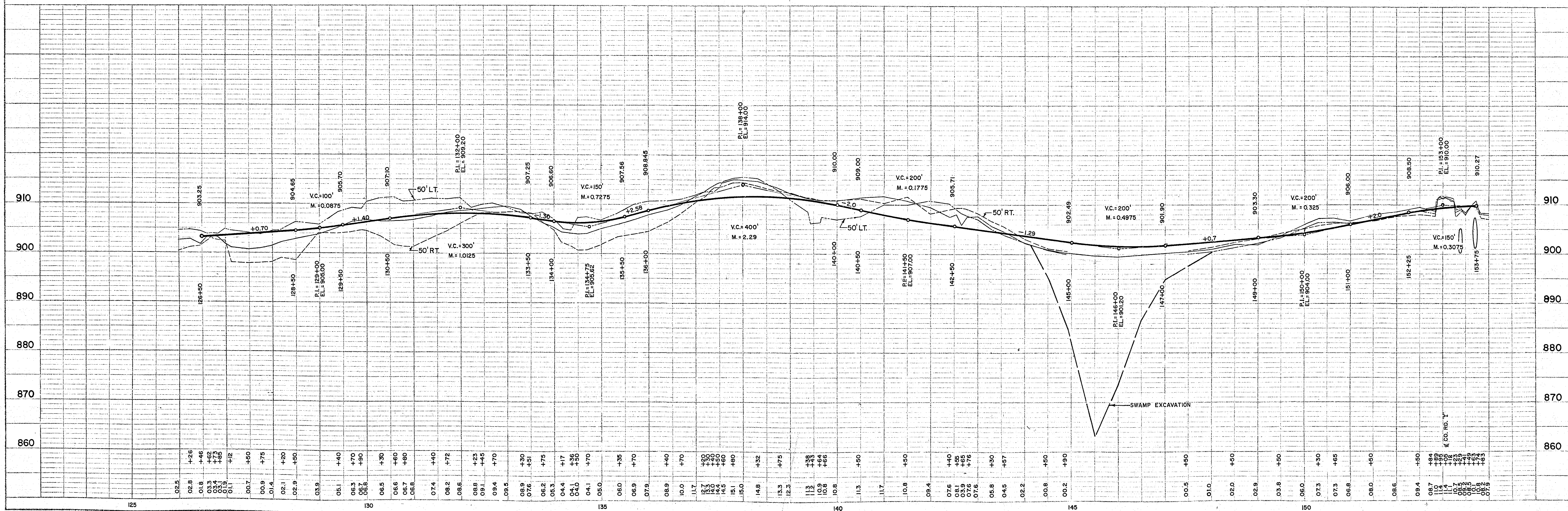
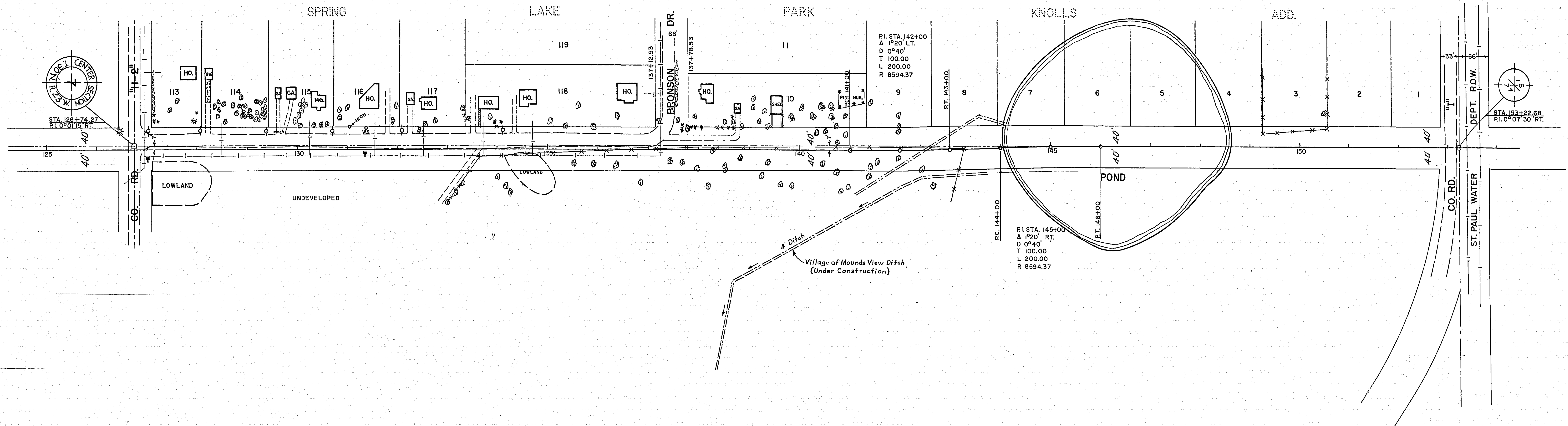
DATE	
BY	
NO.	
PLAN	
NOTE BOOK	
NO.	

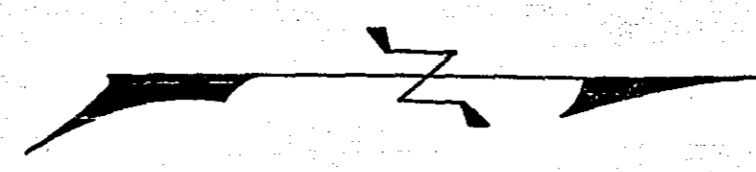
DATE	
BY	
NO.	
PROFILE	
NOTE BOOK	
NO.	



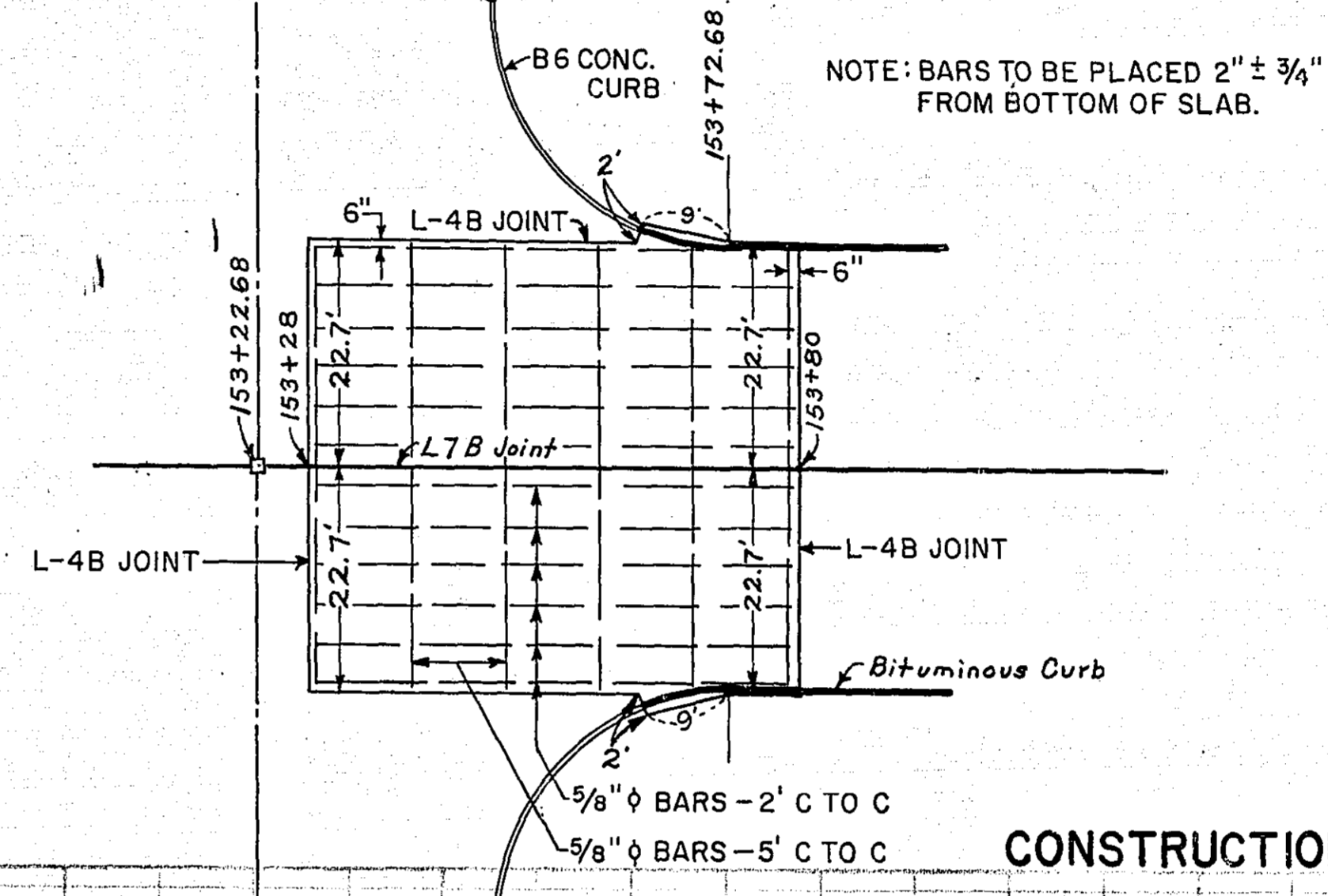
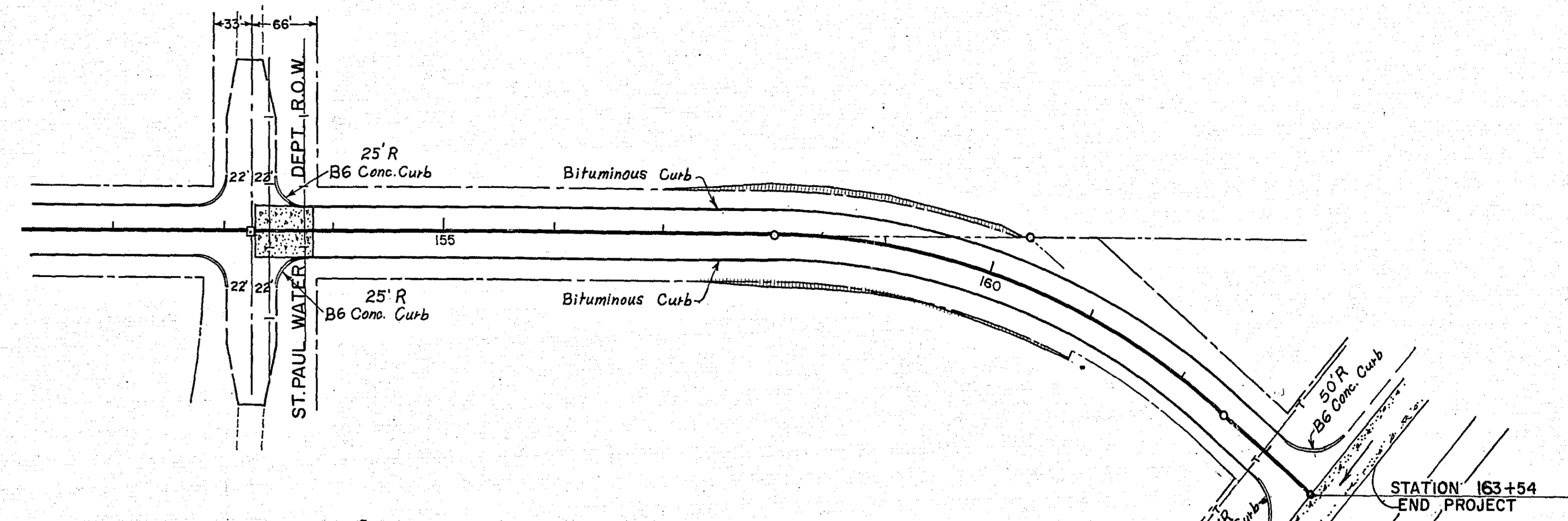
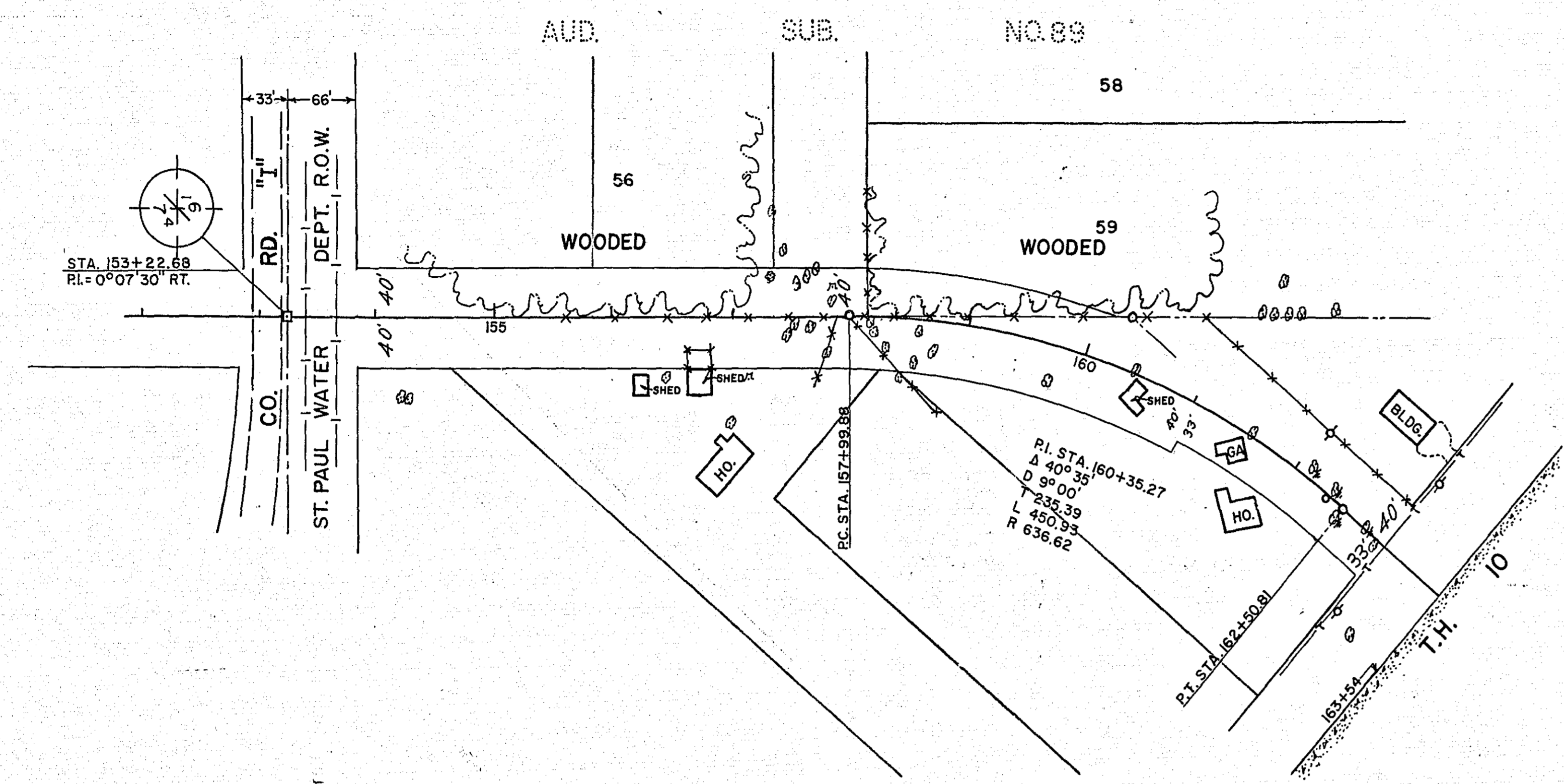
PLAN  
 SURVEILED  
 ALIGNED  
 NOTE BOOK  
 RT OF WAY CHECKER  
 NO.

PROFILE  
 SURVEILED  
 ALIGNED  
 NOTE BOOK  
 RT OF WAY CHECKER  
 NO.





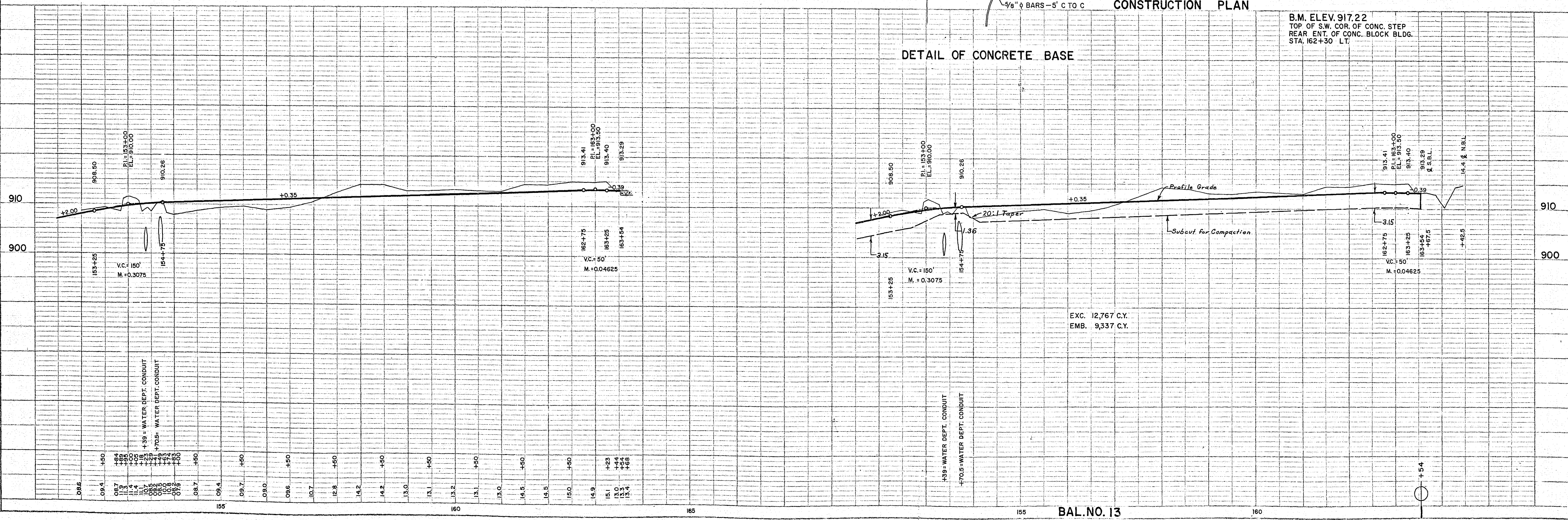
DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 PLAN  
 SURVEILED, \_\_\_\_\_  
 PLOTTED, \_\_\_\_\_  
 NOTE BOOK GRADES CHECKED, \_\_\_\_\_  
 NO. \_\_\_\_\_  
 RT. OF WAY CHECKED, \_\_\_\_\_



CONSTRUCTION PLAN

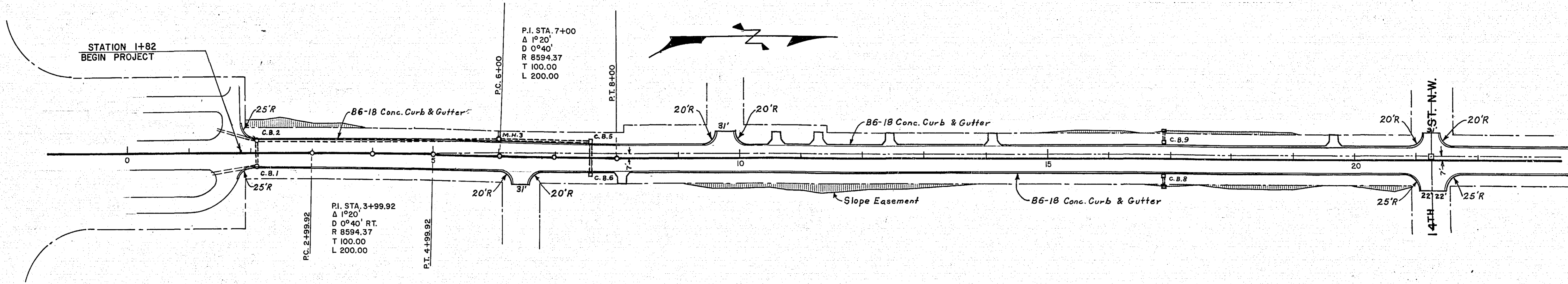
B.M. ELEV. 917.22  
 TOP OF S.W. COR. OF CONC. STEP  
 REAR ENT. OF CONC. BLOCK BLDG.  
 STA. 162+30 L.T.

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 PROFILE  
 SURVEILED, \_\_\_\_\_  
 PLOTTED, \_\_\_\_\_  
 NOTE BOOK GRADES CHECKED, \_\_\_\_\_  
 NO. \_\_\_\_\_  
 STRUCTURE NOTED, \_\_\_\_\_

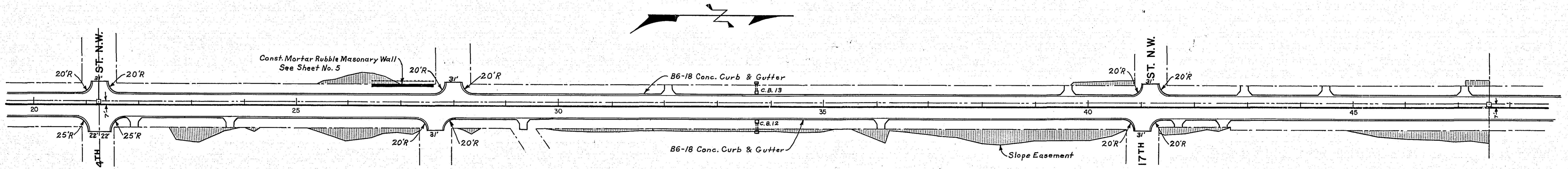
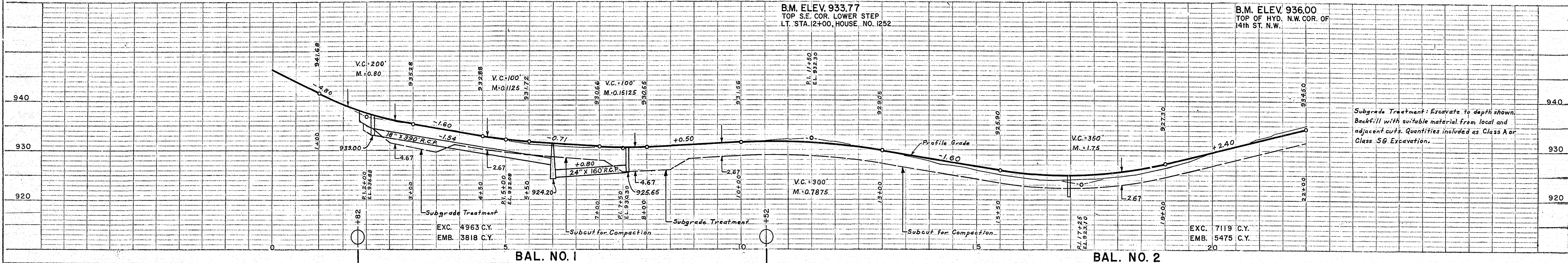


BAL. NO. 13

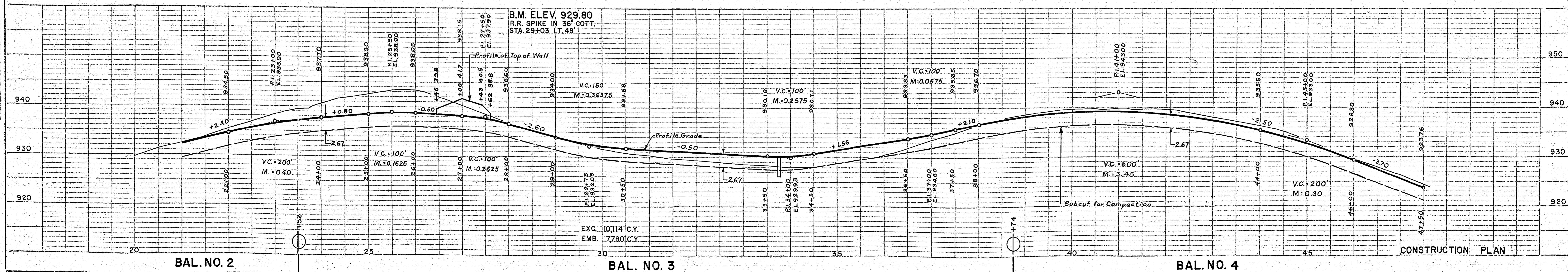
TH 100



DATE	
BY	
NO.	
PLAN	
SURVEYED, PLOTTED, CHECKED, ALIGNED, RET. OF WAY CHECKED.	
NOTE BOOK NO. _____	
STRUCTURE NOTATIONS CHINA	



DATE	
BY	
NO.	
PROFILE	
SURVEYED, PLOTTED, CHECKED, ALIGNED, RET. OF WAY CHECKED.	
NOTE BOOK NO. _____	
STRUCTURE NOTATIONS CHINA	

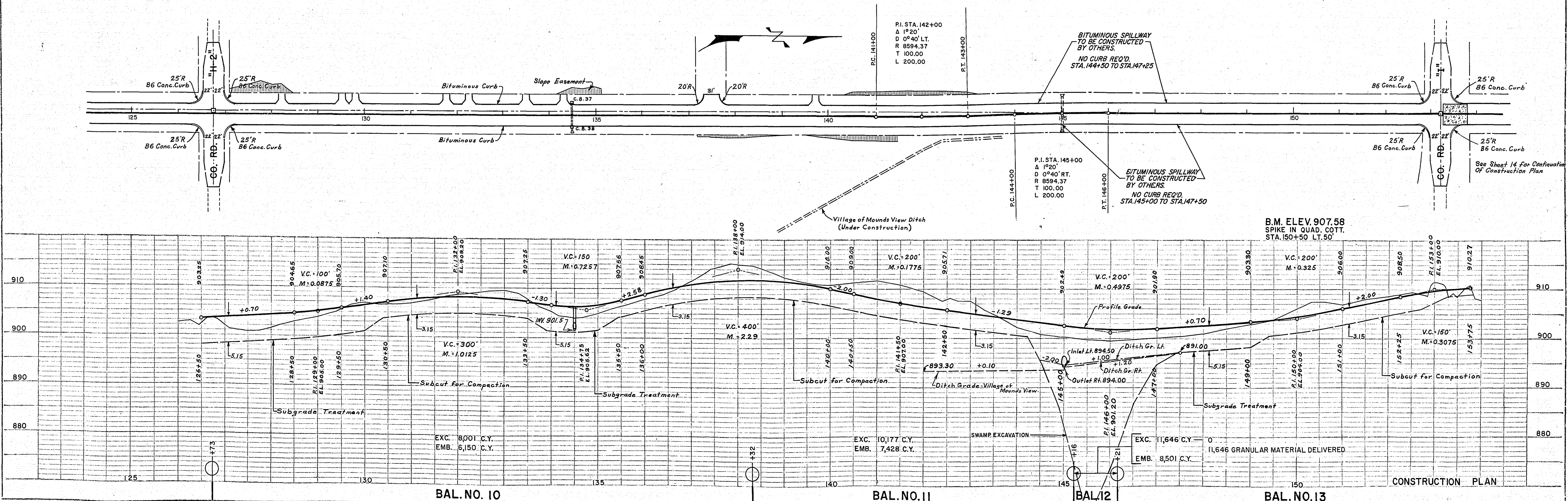
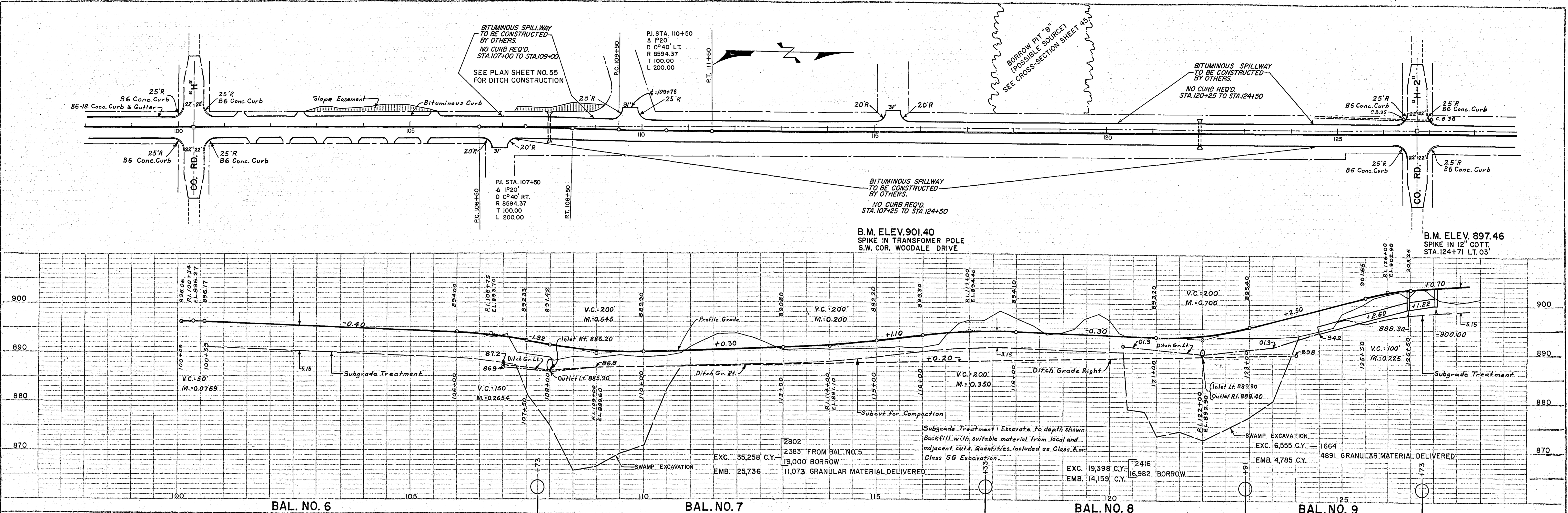




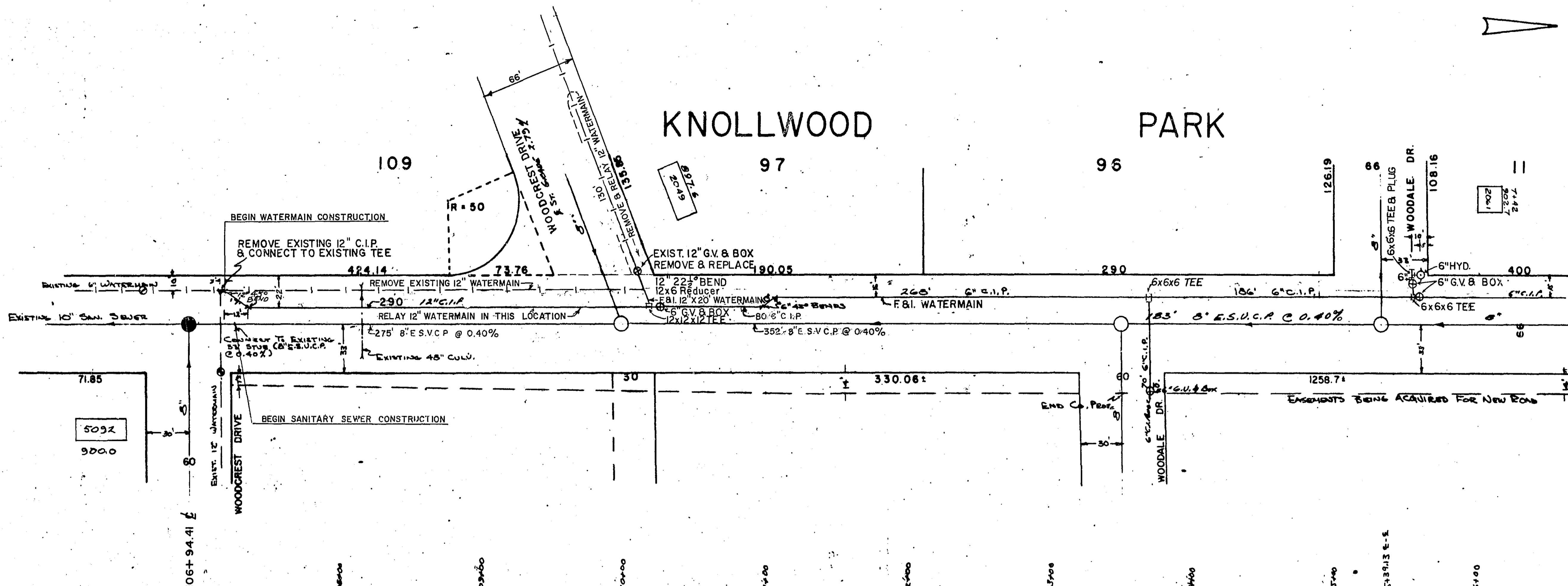
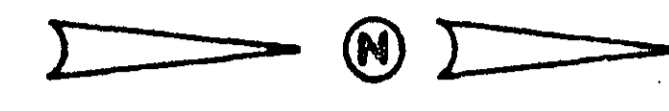


DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
SURVEYED: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
ALIGNMENT CHECKED: \_\_\_\_\_  
RT. OF WAY CHECKED: \_\_\_\_\_  
NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
PROFILE: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
STRUCTURE NOTATIONS CHECKED: \_\_\_\_\_  
NO. \_\_\_\_\_



# SILVER LAKE ROAD (FAIRCHILD AVENUE) WOODALE DR. TO WOODCREST DR.



DATE	BY

PLAN

SUBMITTED BY  
 CHECKED BY  
 ALIGNED CHECKED BY  
 DATE

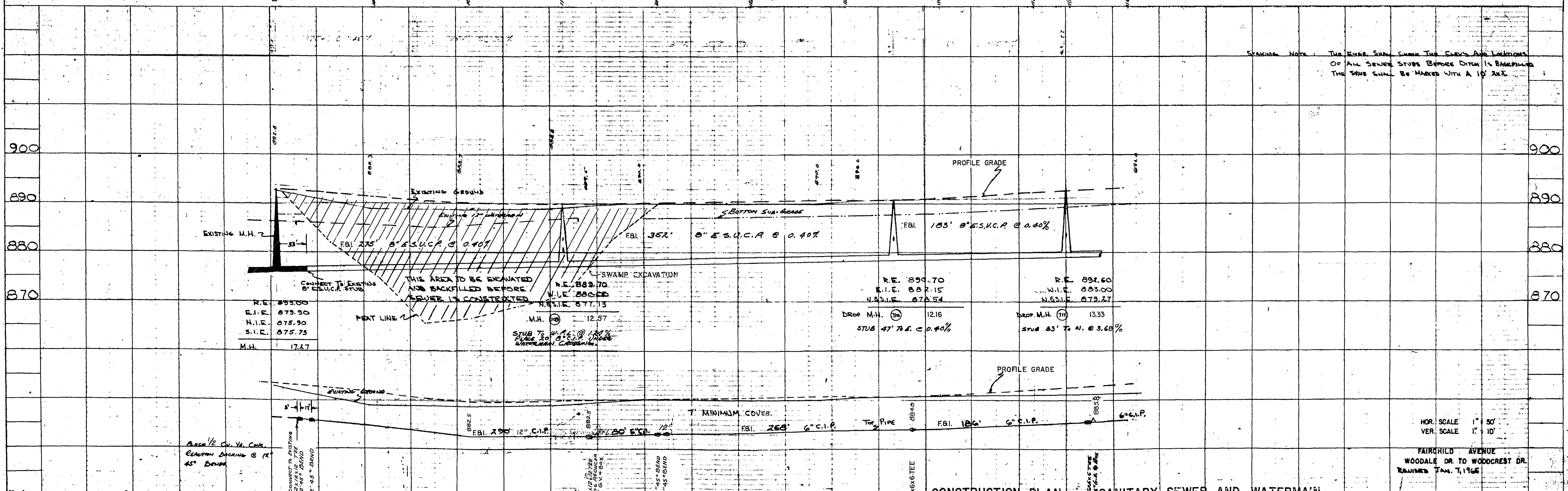
NOTE BOOK NO.

DATE	BY

PROFILE

SUBMITTED BY  
 CHECKED BY  
 DATE

NOTE BOOK NO.



SPACING NOTE: THE ENGINEER SHALL CHECK THE ELEVATIONS AND LOCATIONS OF ALL SEWER STOPS BEFORE DITCH OR BACKFILLING. THE STOPS SHALL BE MARKED WITH A 16\"/>

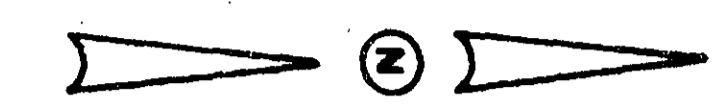
R.E.	855.00
E.I.F.	875.90
N.I.F.	875.90
S.I.F.	875.75
M.H.	17.27

R.F.	899.70	R.F.	892.60
E.I.F.	882.15	E.I.F.	883.00
N.S.I.F.	878.54	N.S.I.F.	879.27

HOR. SCALE 1" = 50'  
 VER. SCALE 1" = 10'

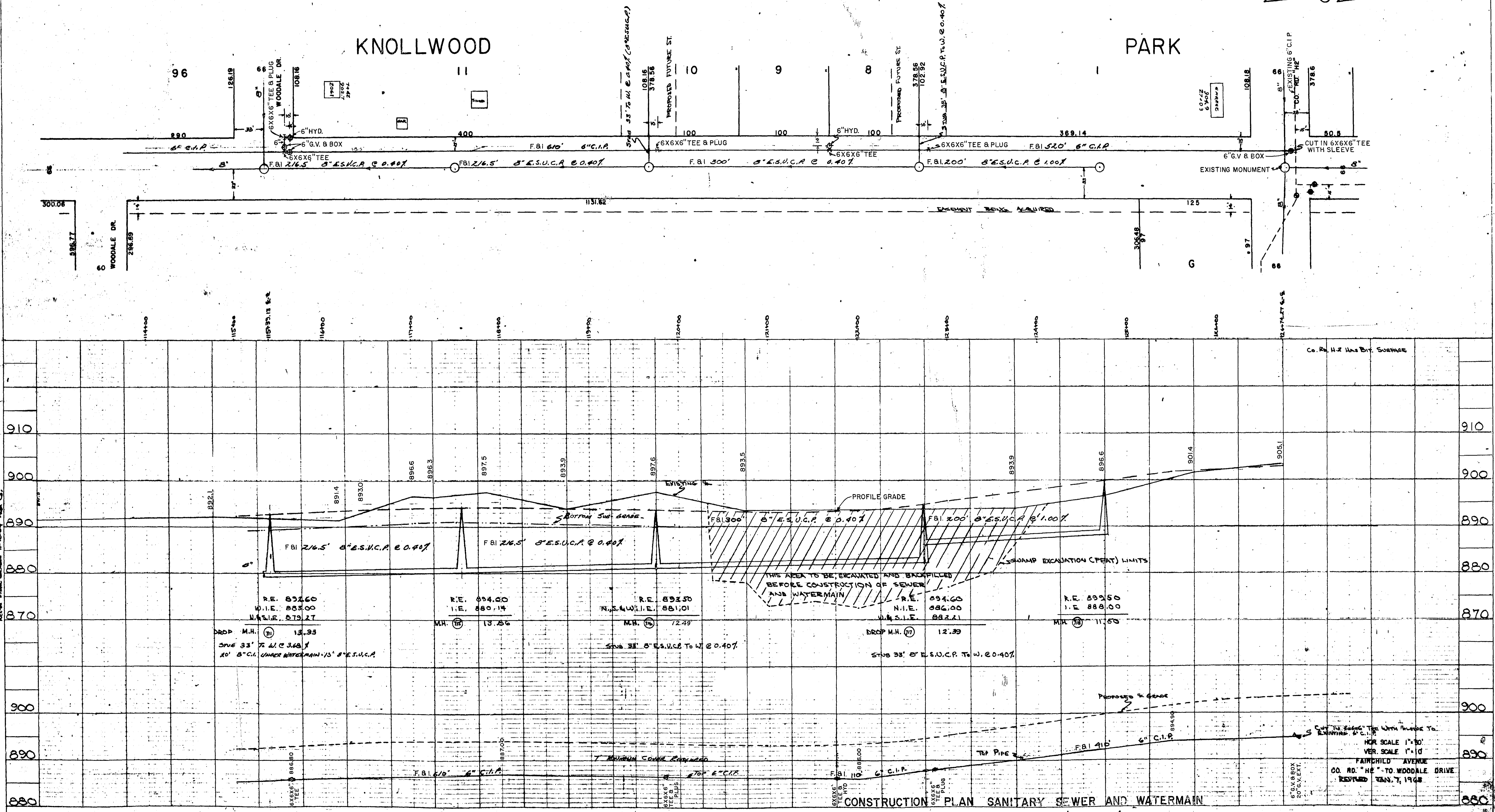
FAIRCHILD AVENUE  
 WOODALE DR. TO WOODCREST DR.  
 DATED JAN. 7, 1965

# SILVER LAKE ROAD (FAIRCHILD AVENUE) CO. RD. "H2" TO WOODALE DR.



PLAN	SUBMITTED	DATE
	REVISED	
	CHECKED	
	APPROVED	
	NO. BOOK	
	NO.	

PROFILE	SUBMITTED	DATE
	REVISED	
	CHECKED	
	APPROVED	
	NO. BOOK	
	NO.	



CONSTRUCTION PLAN SANITARY SEWER AND WATERMAIN

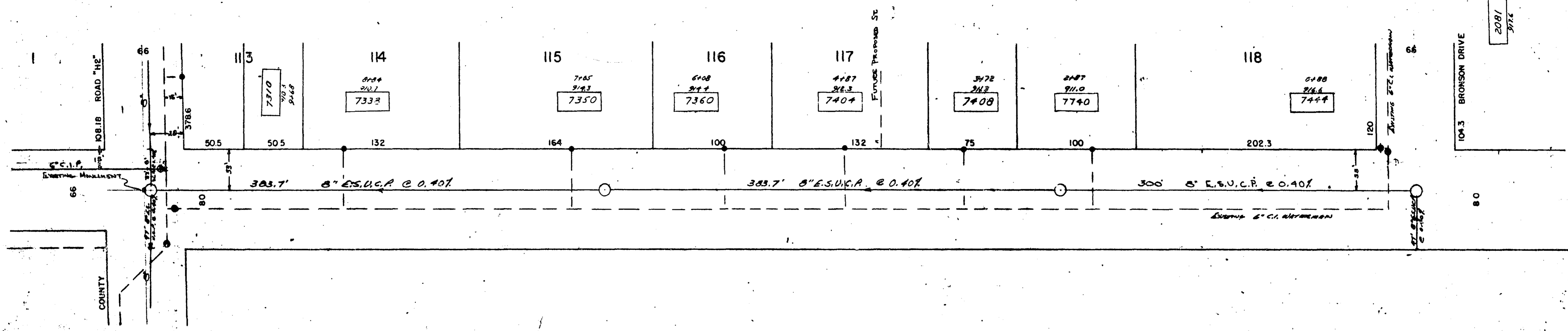
CUT IN 6" X 6" TEE WITH SLEEVE TO EXISTING 6" C.I.P.

FAIRCHILD AVENUE  
CO. RD. "H2" TO WOODALE DRIVE  
REVISED 12/17/48

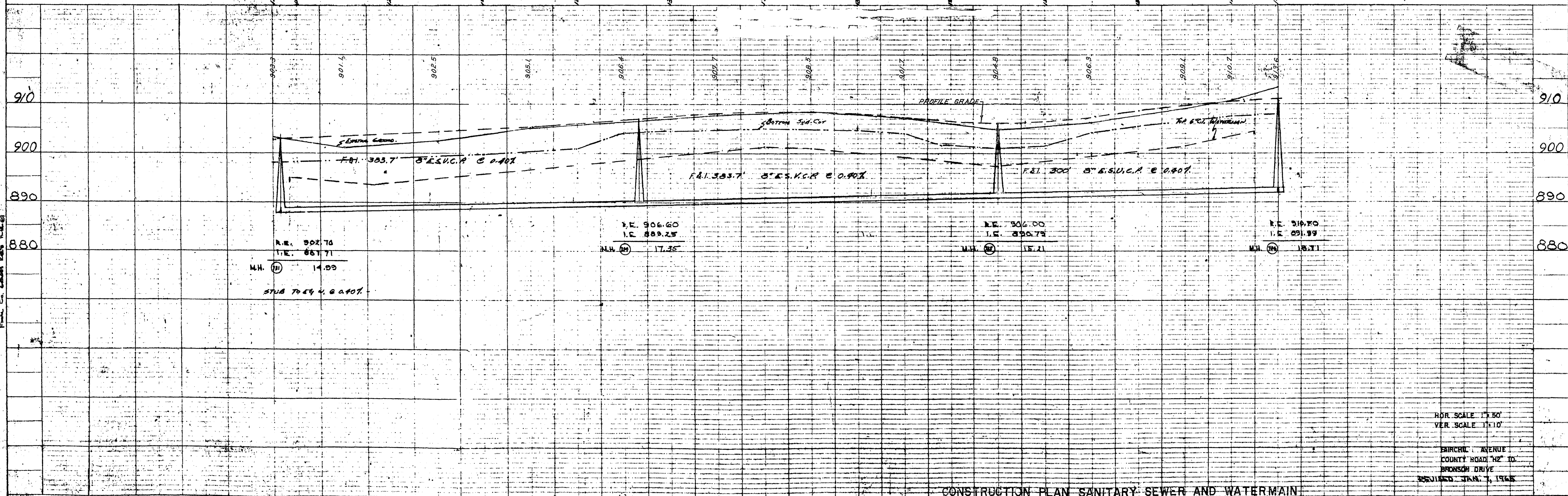
# SILVER LAKE ROAD (FAIRCHILD AVENUE) COUNTY ROAD "H2" TO BRONSON DRIVE



DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
NO. \_\_\_\_\_

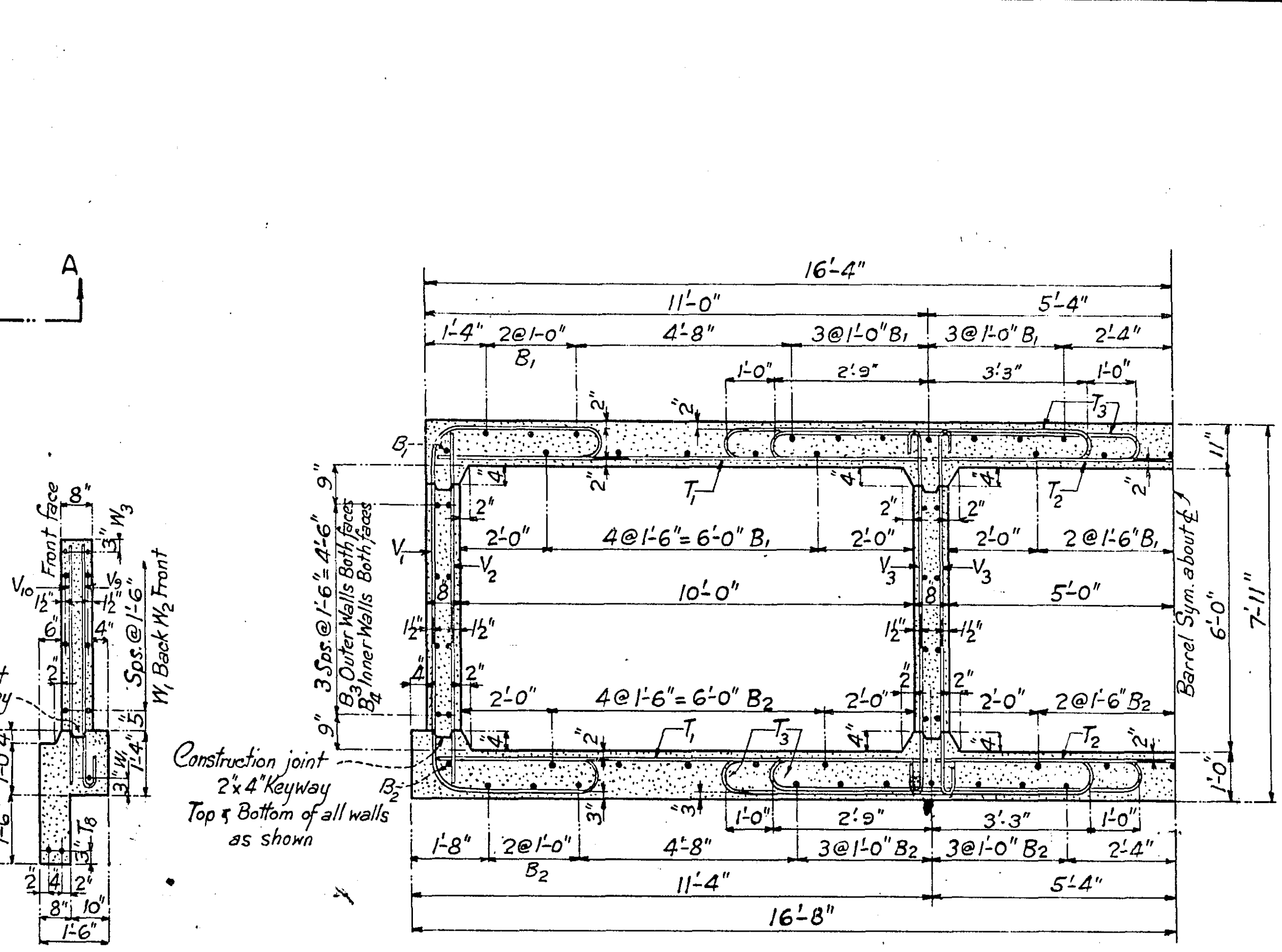
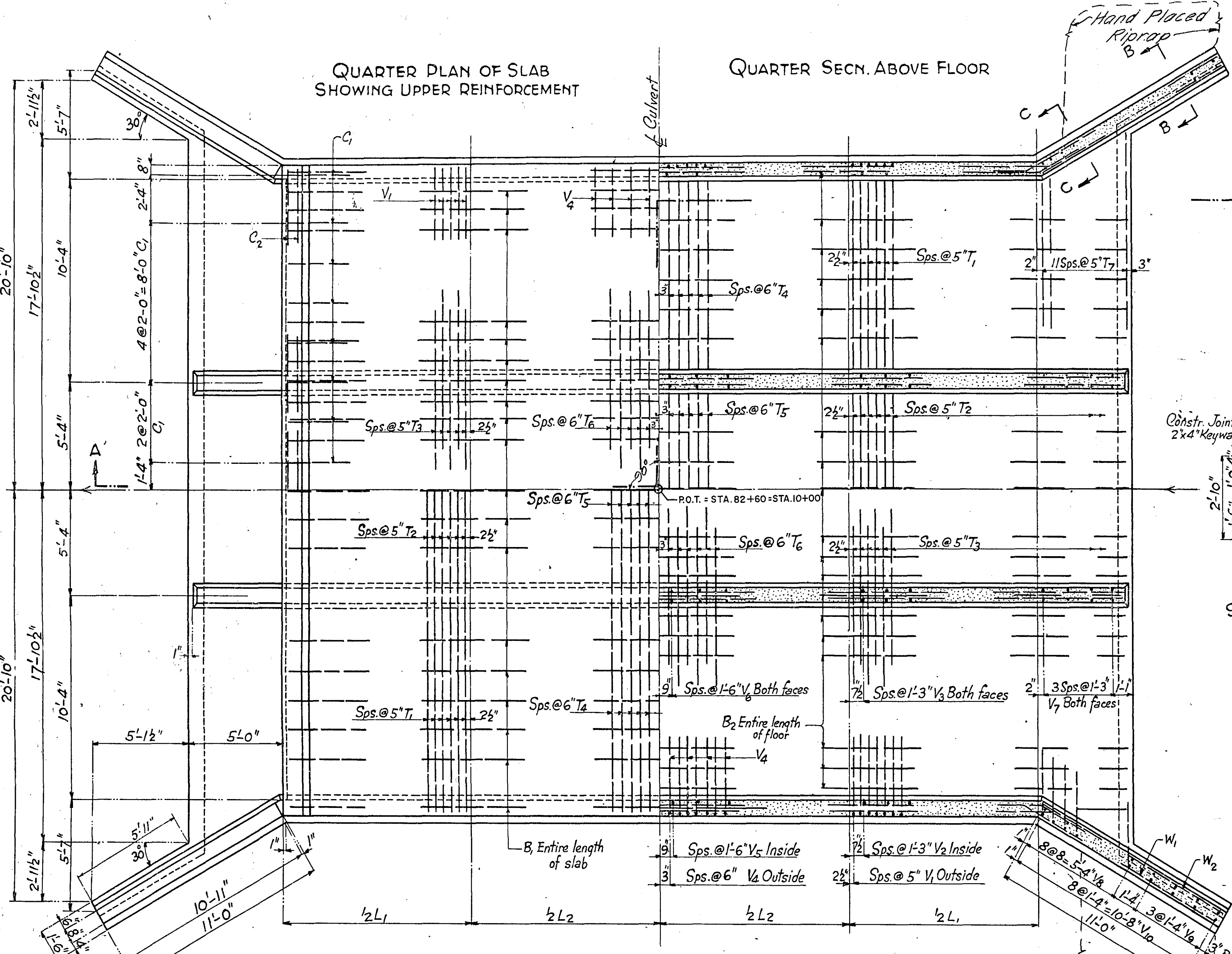


DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
NO. \_\_\_\_\_

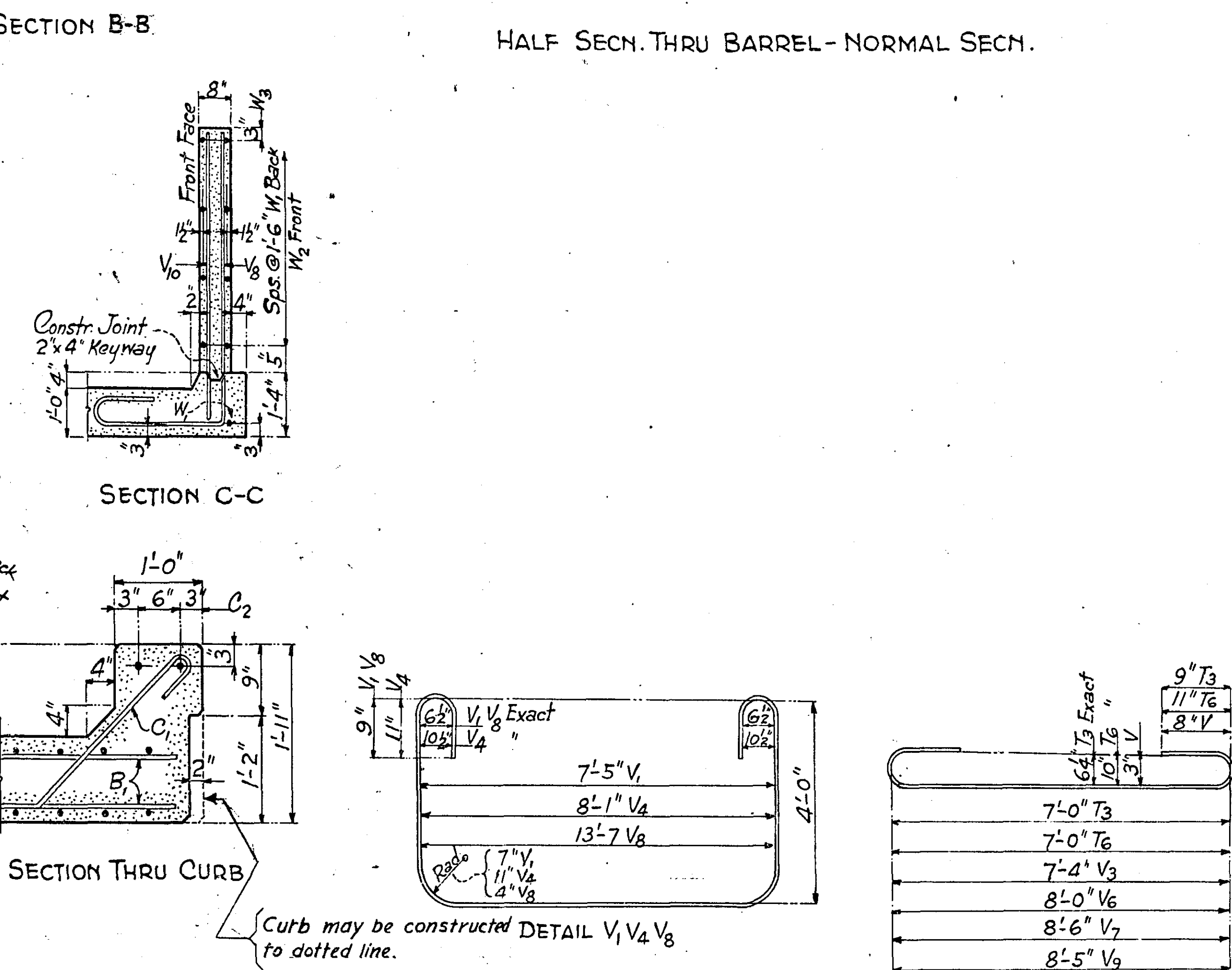
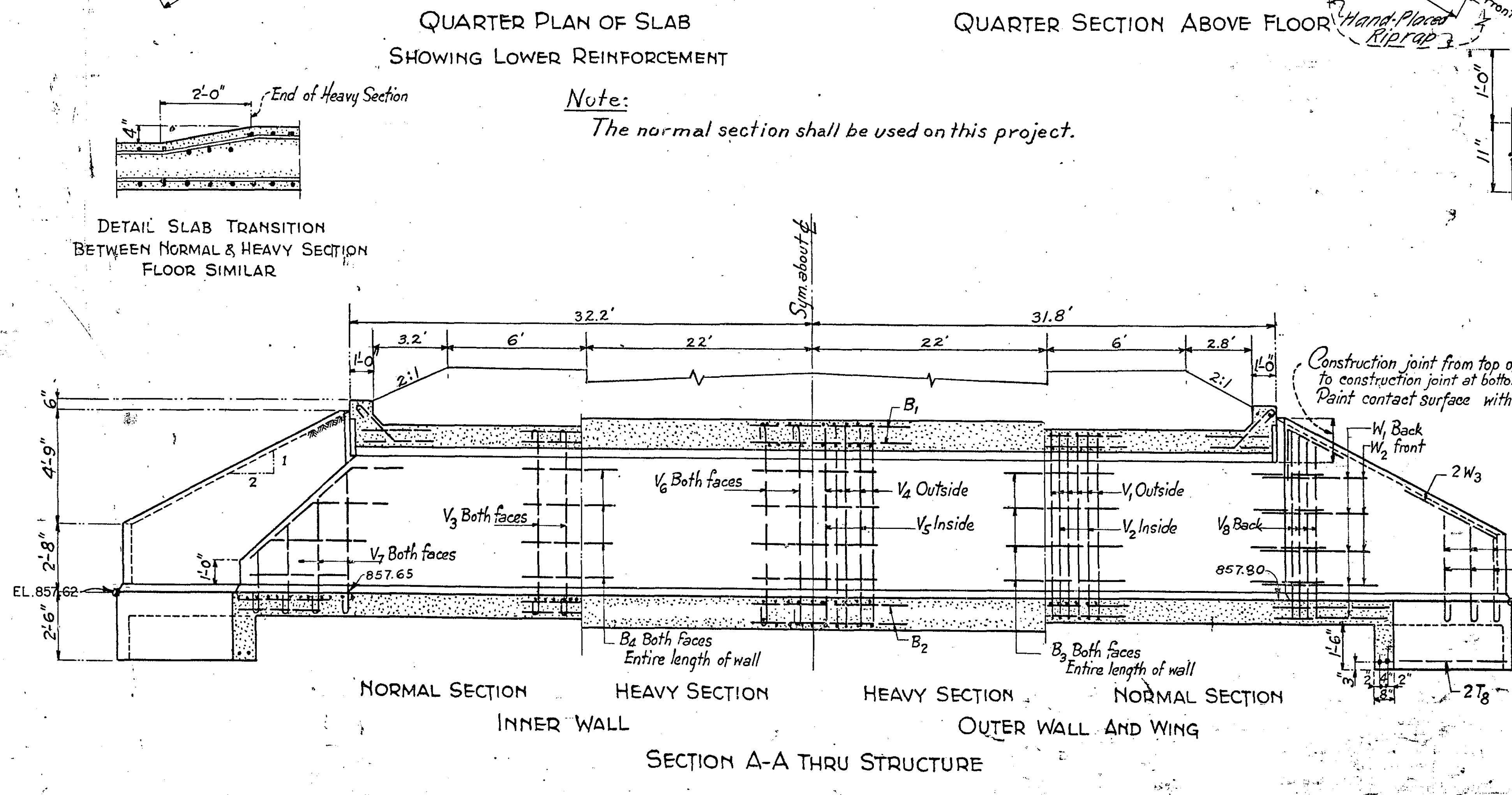


HOR. SCALE 1"=50'  
VER. SCALE 1"=10'  
FAIRCHILD AVENUE  
COUNTY ROAD "H2" TO  
BRONSON DRIVE  
ISSUED JAN. 7, 1965

CONSTRUCTION PLAN SANITARY SEWER AND WATERMAIN



BILL OF REINFORCEMENT BARS					
BAR	NUMBER	SIZE	LENGTH	SHAPE	LOCATION
Δ	B1	111	2'-6"		STRT. Barrel Longitud. Slab
□	B2	111	3'-4"		" " " Floor
+ Δ	B3	48	5'-6"		" " " Side Wall
+ Δ	B4	48	5'-6"		" " " Inner "
○	C1	32	5'-0"	Bent	Curb
○	C2	8	3'-4"	STRT.	"
○	T1	9.6L	3'-6"	10'-9"	STRT. Norm. Barrel Transv.
○	T2	48L+24	5'-6"	10'-7"	" " " " "
○	T3	9.6L+48	3'-6"	9'-3"	Bent " " " "
○	T4	8.0L2	3'-6"	10'-9"	STRT. Heavy " " "
○	T5	4.0L2	3'-6"	10'-7"	" " " " "
○	T6	8.0L2	3'-6"	10'-0"	Bent " " " "
○	T7	24	3'-6"	24'-4"	STRT. Apron Transv.
○	T8	8	3'-6"	25'-0"	" Drop Wall
○	V1	48L	5'-6"	17'-3"	Bent Norm. Barrel Vert.
○	V2	1.6L	5'-6"	7'-4"	STRT. " " " "
○	V3	3.2L	5'-6"	9'-1"	Bent " " " "
○	V4	4.0L2	5'-6"	18'-5"	Heavy " " " "
○	V5	1.33L2	5'-6"	8'-0"	STRT. " " " "
○	V6	2.6L2	5'-6"	9'-9"	Bent " " " "
○	V7	16	5'-6"	10'-3"	" Inner Wall - End
○	V8	18	5'-6"	23'-7"	" Wing Wall - Vert.
○	V9	8	5'-6"	10'-2"	" " " " "
○	V10	18	5'-6"	11'-2"	STRT. " " " "
○	W1	20	5'-6"	13'-6"	Bent Wing Wall - Horiz.
○	W2	16	5'-6"	10'-11"	STRT. " " " "
○	W3	8	5'-6"	17'-0"	" " " Top

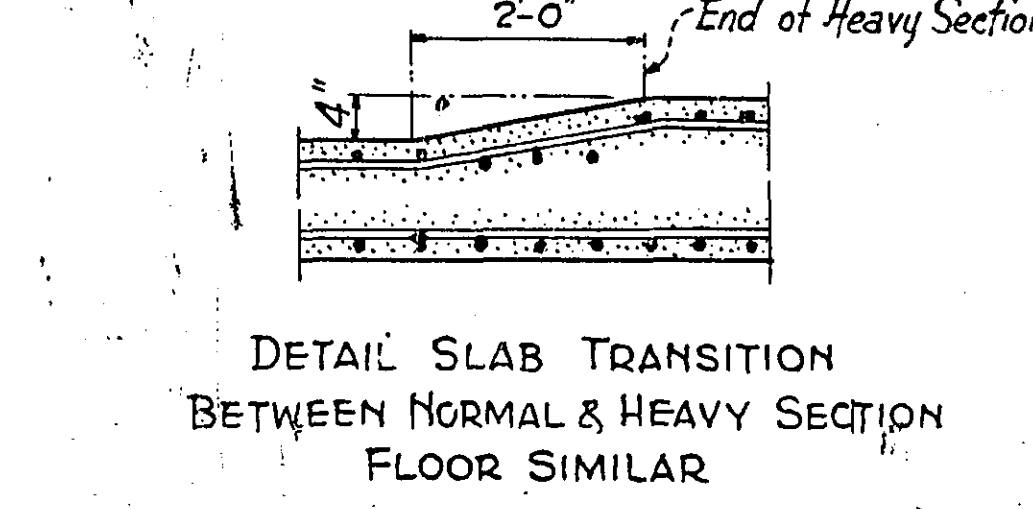


REINFORCEMENT BARS 506.54L + 586.45L2 + 470.9 LB CONCRETE  
 FOR FILLS UNDER 11 FT. 2.96 L + 27.7 CU. YD.  
 FOR FILLS 11 FT. TO 20 FT. 2.96 L + 3.77 L2 + 29.4 CU. YD.

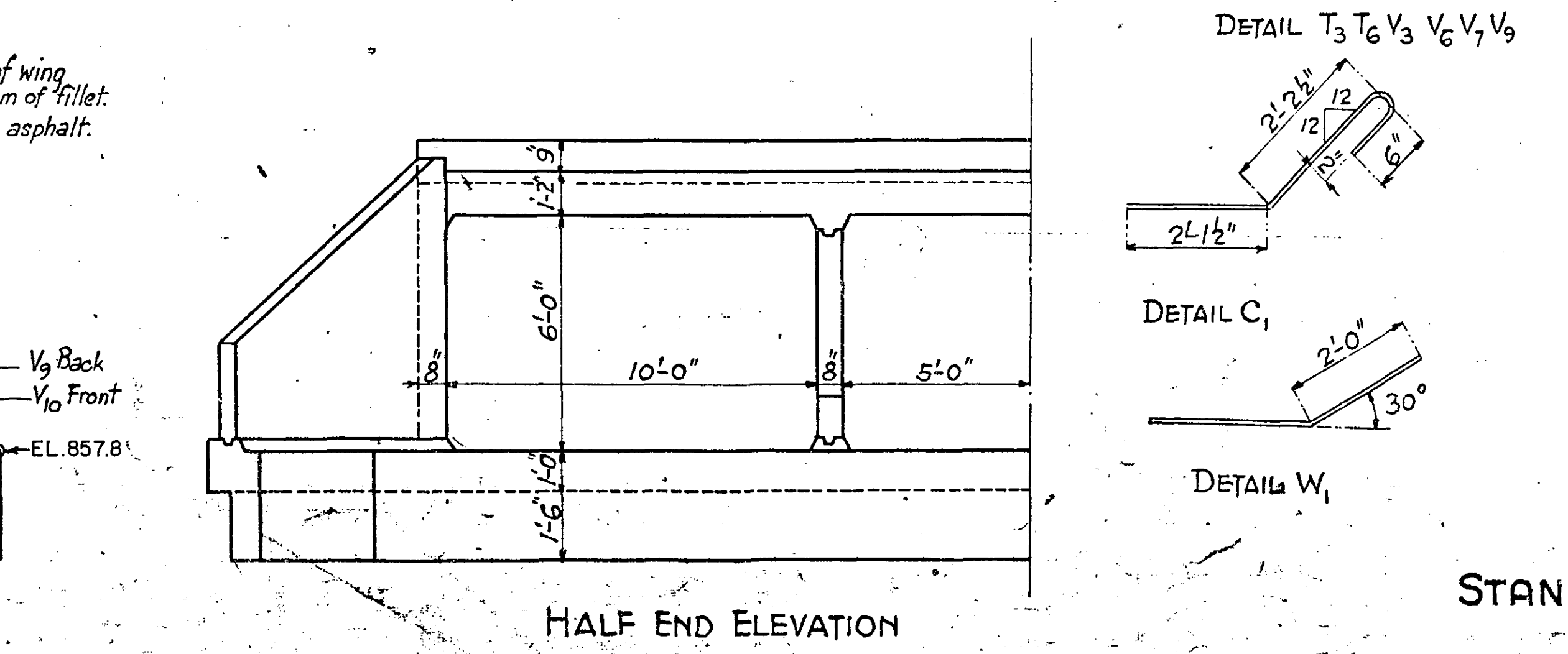
L = Length of Normal Section (11 Ft. to 10 Ft. Fill)  
 L2 = Length of Heavy Section (11 Ft. to 20 Ft. Fill)  
 W = Width of Roadway Top, Shoulder to Shoulder  
 H = Height of Fill over Barrel  
 S = Side slope ratio (Equals 4 for 4:1 Slope, etc.)

For fills less than 11 ft. L1 = W + 2(H-1)S + 2; L2 = 0  
 For fills 11 ft. to 20 ft. L1 = 20 S; L2 = W + 2(H-1)S + 2

- Length of B1 Bars = 3L1 + 3L2 + 1'-5"
- Length of B2 Bars = 3L1 + 3L2 + 5'-7"
- Length of B3 Bars = 3L1 + 3L2 + 3'-9"
- Length of B4 Bars = 3L1 + 3L2 + 4'-5"
- Lap Bars B2 3'-6" @ Splices
- Δ Lap Bars B1, B3, B4 2'-6" @ Splices
- Cut 2 Bars from each (one long, one short)
- + Bend in field.



Note:  
 The normal section shall be used on this project.



Construction Notes  
 The Minnesota Highway Department's current Specifications for Highway Construction shall apply.

NOTE: THE CONTRACTOR SHALL FURNISH AND INSTALL BRIDGE PLATE.