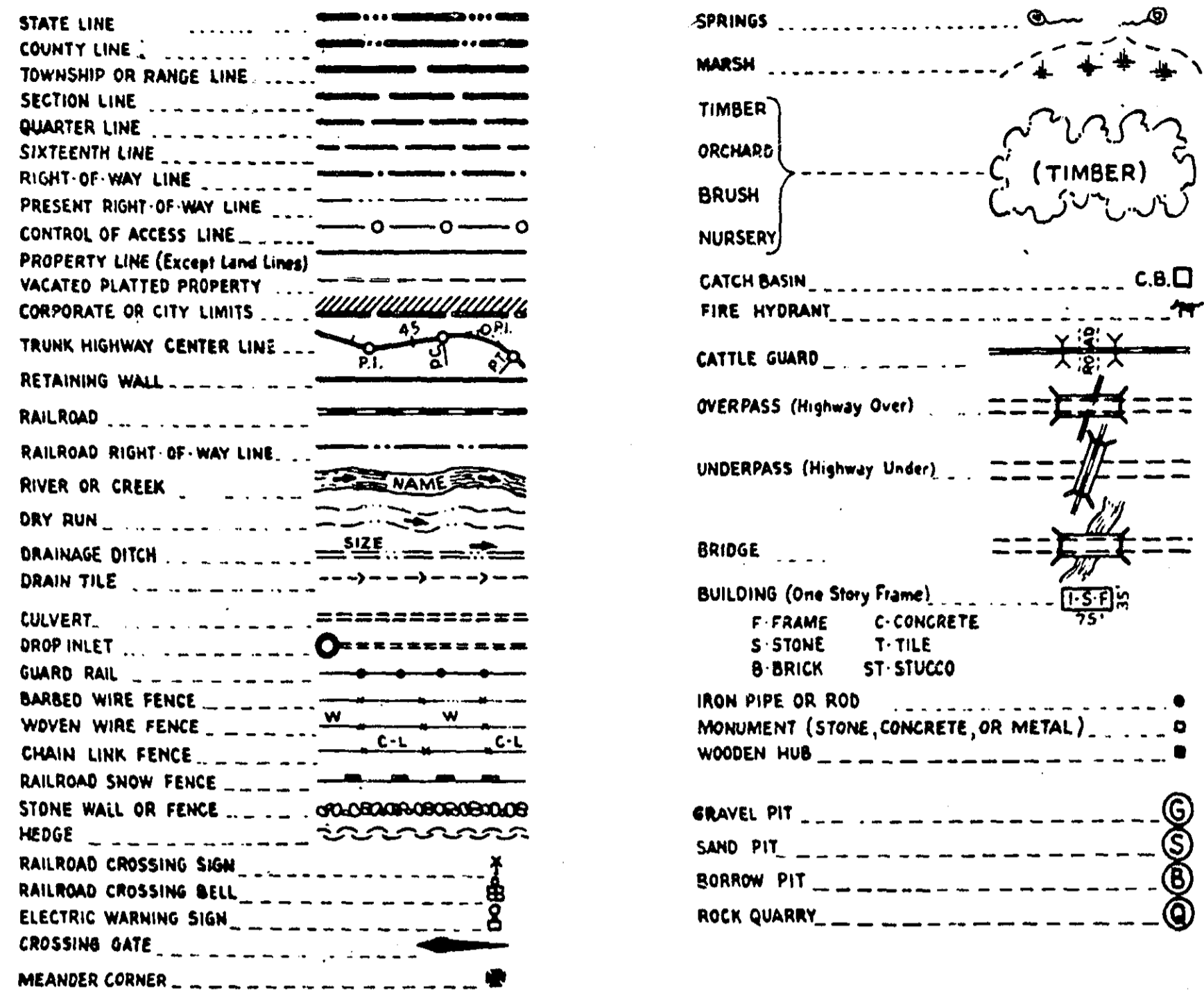
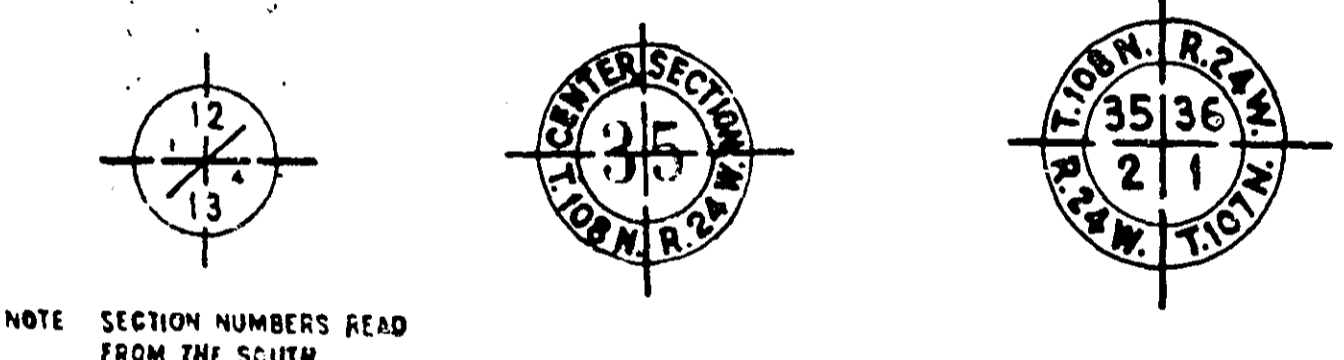
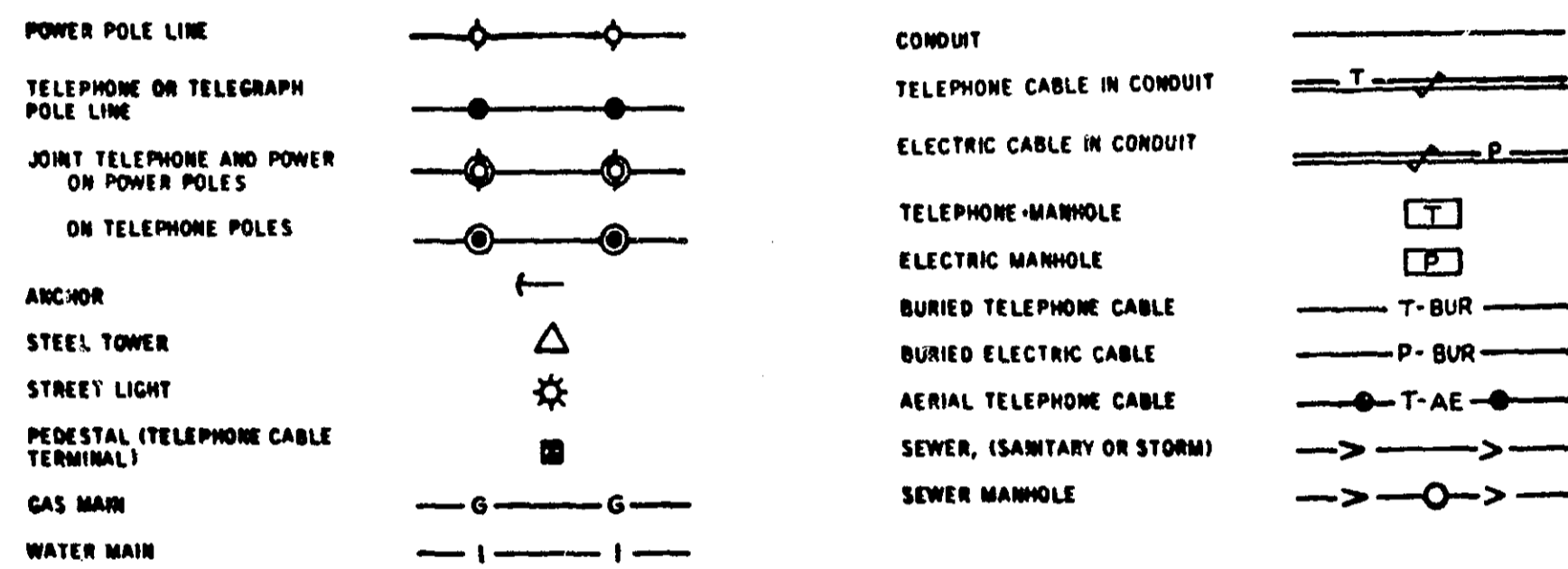


**PLANS SYMBOLS**



**UTILITIES SYMBOLS**



**PIT DATA**

COUNTY PIT NO. Located in S.W. 1/4 OF S.W. 1/4 OF SEC. 13 T.29N., R.23W.  
Dead Haul

PIT NO. Located in Dead Haul

PIT NO. Located in Dead Haul

PIT NO. Located in Dead Haul

**SPECIFICATIONS**

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1964 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED FEBRUARY 1, 1966 SHALL GOVERN.

**OFFICE OF COUNTY ENGINEER  
RAMSEY COUNTY**

**CONSTRUCTION PLAN FOR GRADING, CONCRETE PAVEMENT AND BITUMINOUS SURFACING  
COUNTY ROAD "B"**

BETWEEN: HAMLINE AVE. AND DALE ST.

FROM: A POINT 50 FEET WEST OF THE NORTH 1/4 CORNER OF SECTION 10 T.29N., R.23W. TO: A POINT 139 FEET EAST OF THE NORTHEAST CORNER OF SECTION 14, T.29N., R.23W.

GROSS LENGTH 8063.0 FEET 1.527 MILES  
BRIDGES-LENGTH 0 FEET 0 MILES  
EXCEPTIONS-LENGTH 0 FEET 0 MILES  
NET LENGTH 8063.0 FEET 1.527 MILES

SCALES  
PLAN, 1 inch = 50 Feet  
PROFILE, Horiz. 1 inch = 50 Feet - Vert. 1 inch = 5 Feet  
WORKING PLANS  
Horiz. 1 inch = 50 Feet  
Vert. 1 inch = 5 Feet  
Cross-Sections 1 inch = 10 Feet  
LAYOUT, 1 inch = 2640 Feet

DESIGN DESIGNATION  
A.D.T. 1966 = 6100 HAM. TO LEX., 3500 LEX. TO DALE  
A.D.T. 1980 = 8000 HAM. TO LEX., 5000 LEX. TO DALE  
DHV = 200  
D (DIRECTIONAL DISTRIBUTION) = 50 - 50  
T (HEAVY COMMERCIAL) 1980 = 5%  
DESIGN SPEED = 35 M.P.H.  
DESIGN LOAD = 9 TON  
SOILS FACTOR = 120% HAM. TO LEX., 50% LEX. TO DALE

T.H. 49 DETOUR  
AFTER MAY 15, 1966

**INDEX**

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS & ESTIMATED QUANTITIES
3&4	DRAINAGE STRUCTURE CHART & STANDARD PLATES
5	SEWER DETAIL SHEET
6-11	PLAN PROFILES & CONSTRUCTION PLAN
12-16	STORM SEWER PLAN & PROFILES
17-34	CROSS SECTIONS
35-38	TRAFFIC SIGNALS

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.

*Frankie Amber* REG. NO. 2042 DATE 4-18-66  
ENGINEER

RECOMMENDED FOR APPROVAL *Dora R. Ambla* DATE 4-18-66  
COUNTY ENGINEER

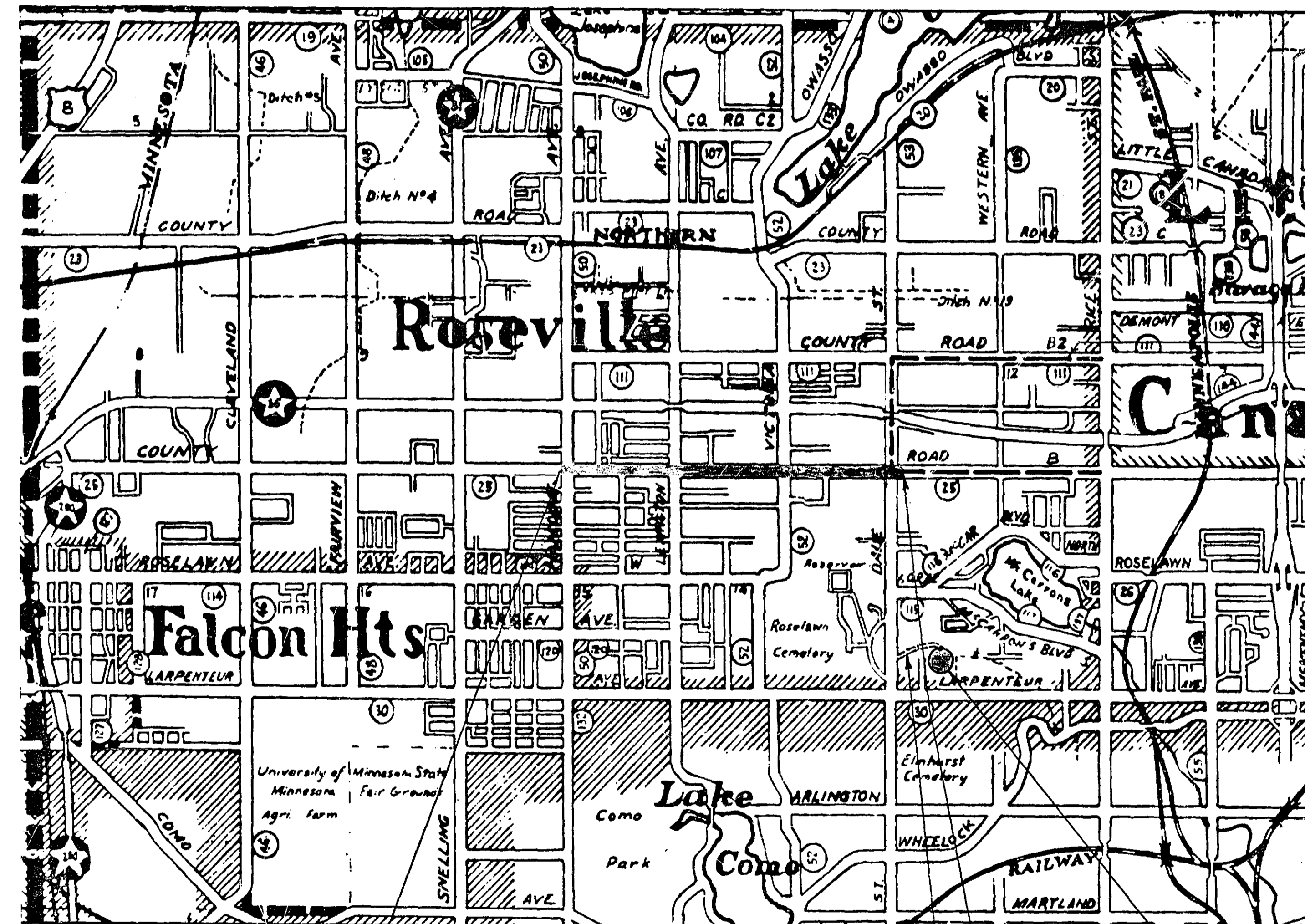
APPROVED *Leo Jensen's* DATE 4-18-66  
CHAIRMAN OF THE RAMSEY COUNTY BOARD

MINNESOTA STATE HIGHWAY DEPARTMENT

RECOMMENDED FOR APPROVAL *C.E. Weichselbaum* DATE 4-22-66

RECOMMENDED FOR APPROVAL *J. F. Johnson* DATE 4-19-66  
ASST. DISTRICT ENGINEER

APPROVAL *E. Wilson* DATE 4-22-66  
ASST. STATE AID ENGINEER



BEGIN PROJ.  
STA. 0+50

END OF PROJ.  
STA. 80+13  
HAUL ROAD

COUNTY PIT

MICRO-FILMED

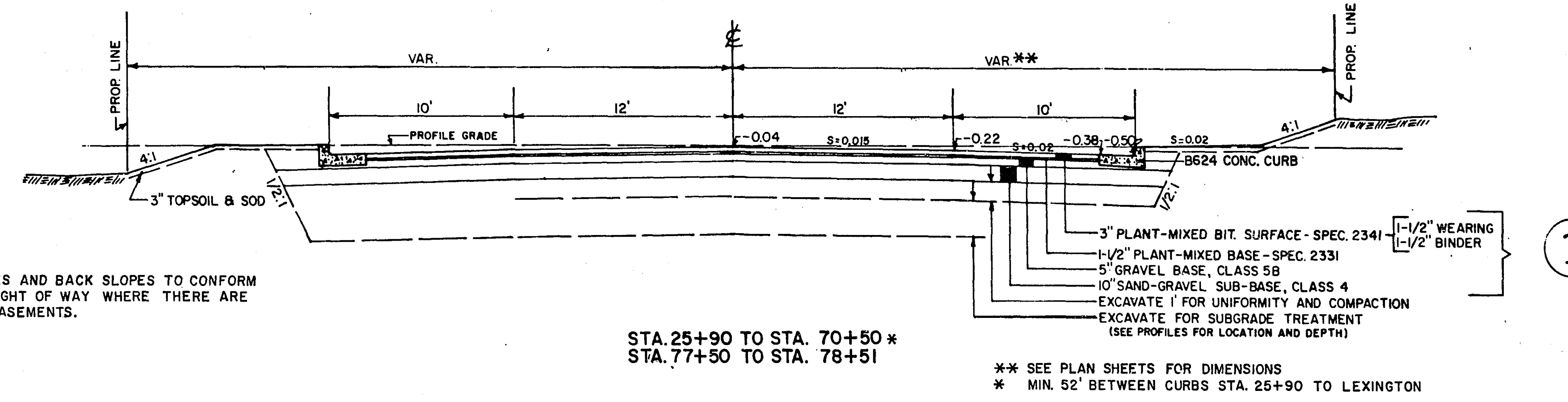
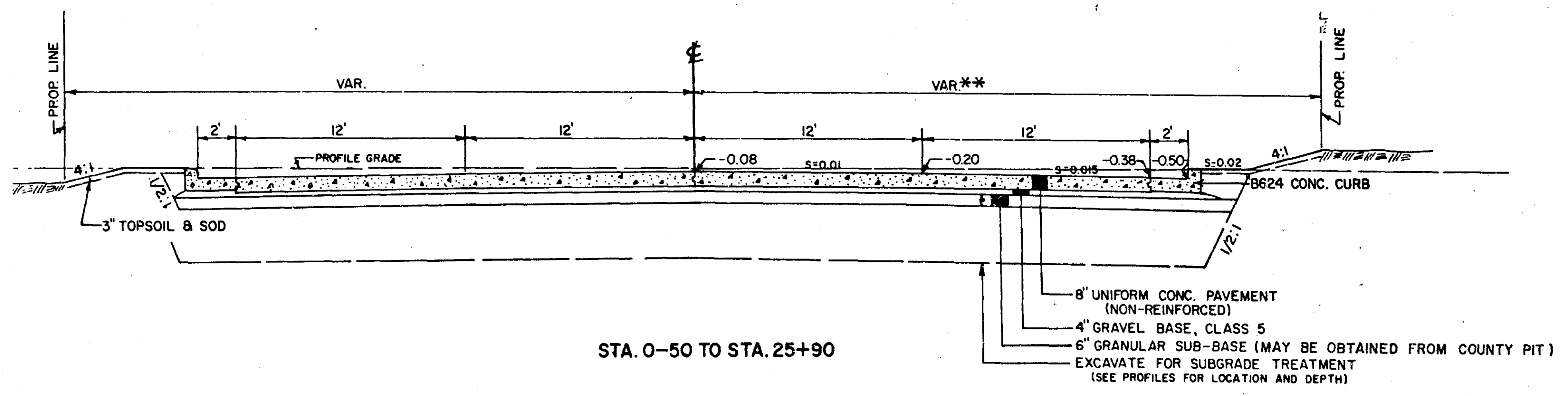
MICROFILMED  
RAMSEY COLLEGE

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2031.503	FIELD LABORATORY, TYPE C	EACH	1
2101.502	CLEARING	TREE	20
2101.507	GRUBBING	TREE	25
2104.502	REMOVE PAVEMENT	S.Y.	106
2104.504	REMOVE CURB	L.F.	80
2104.506	REMOVE SIDEWALK	S.Y.	23
2104.510	REMOVE CHAIN LINK FENCE, STEEL POSTS	L.F.	367
2104.511	REMOVE MANHOLES AND CATCH BASINS	STRUCTURE	5
2104.512	REMOVE DROP INLETS	STRUCTURE	8
2104.515	REMOVE PIPE SEWERS	L.F.	123
2104.521	REMOVE STONE MASONRY WALL	L.F.	210
2105.501	CLASS A EXCAVATION	C.Y.	55,948
2105.564	SALVAGED BITUMINOUS MIXTURE IN STOCKPILES	C.Y.	2,412
2123.506	1 CUBIC YARD DRAGLINE	HOUR	426
2123.509	DOZER	HOUR	60
2110.517	GRANULAR MATERIAL	C.Y.	33,803
2130.501	WATER	(M) GAL.	300
504.685	ADJUSTING WATER GATE HOUSING	HOUSING	7
2201.526	GRAVEL SUB-BASE IN PLACE CLASS 4	TON	14,400
2202.526	GRAVEL BASE IN PLACE CLASS 5	TON	3,611
2202.526	GRAVEL BASE IN PLACE CLASS 5B	TON	9,275
504.686	ADJUSTING SERVICE VALVE HOUSING	HOUSING	4
2301.511	8" NON-REINFORCED CONCRETE PAVEMENT (ST. STR.)	S.Y.	13,685
2301.521	8" NON-REINFORCED CONCRETE PAVEMENT (H.E.S.)	S.Y.	590
2301.531	REINFORCEMENT BARS	POUND	11,520
2301.536	DOWEL BAR ASSEMBLIES	L.F.	576
2301.549	CONCRETE TREATING OIL	GAL.	900
2331.501	BITUMINOUS MATERIAL FOR PRIME COAT	GAL.	9,450
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	79
2331.514	BASE COURSE MIXTURE	TON	2,250
2341.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	2,920
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	264
2341.509	WEARING COURSE MIXTURE + FILLER	TON	2,790
2341.510	BINDER COURSE MIXTURE	TON	2,450
2356.505	BITUMINOUS MATERIAL FOR SEAL COAT	GAL.	5,000
356.611	SEAL COAT AGGREGATE	TON	145
2503.512	F&I 12" R.C.P. SEWER, CLASS IV	L.F.	716
2503.512 (1)	F&I 15" R.C.P. SEWER, CLASS II	L.F.	728
2503.512 (2)	F&I 18" R.C.P. SEWER, CLASS II	L.F.	1,901
2503.512 (3)	F&I 21" R.C.P. SEWER, CLASS II	L.F.	87
2503.512 (4)	F&I 21" R.C.P. SEWER, CLASS IV	L.F.	140
2503.512 (5)	F&I 24" R.C.P. SEWER, CLASS II	L.F.	305
2503.512	F&I 30" R.C.P. SEWER, CLASS II	L.F.	394
2503.512 (6)	F&I 30" R.C.P. SEWER, CLASS IV	L.F.	38
2503.512 (7)	F&I 36" R.C.P. SEWER, CLASS II	L.F.	178
2503.512	F&I 48" R.C.P. SEWER, CLASS III	L.F.	263
2503.531 (8)	F&I 43-3/4" SPAN R.C.P.-A SEWER, CLASS II	L.F.	333
2503.531 (9)	F&I 73-1/2" SPAN R.C.P.-A SEWER, CLASS IV	L.F.	278
	CONCRETE ENCASMENT SANITARY SEWER	C.Y.	10
2506.506	CONSTRUCT MANHOLES, DESIGN A	L.F.	75.8
2506.506 (10)	CONSTRUCT MANHOLES, DESIGN B-1	L.F.	46.0
2506.506 (10)	CONSTRUCT MANHOLES, DESIGN C	L.F.	50.0
2506.506 (10)	CONSTRUCT MANHOLES, DESIGN F	L.F.	24.0
2506.506 (11)	CONSTRUCT MANHOLES, DESIGN T	L.F.	32.0
2506.507 (10)	CONSTRUCT CATCH BASINS, DESIGN G	L.F.	199.9
2506.507	CONSTRUCT CATCH BASINS, DESIGN L.P.	L.F.	36.0
2506.516	F&I CASTING ASSEMBLIES	ASSEMBLIES	68
2506.521	INSTALL CASTING ASSEMBLIES	ASSEMBLIES	15
2506.522	ADJUST FRAME AND RING CASTINGS	ASSEMBLIES	18
503.691	LOWER SANITARY SEWER SERVICE	L.F.	80
	INSULATE SANITARY SEWER SERVICE	L.F.	20
504.692	LOWER WATER MAIN	EACH	2
	INSULATE WATERMAIN	L.F.	20
	LOWER WATER SERVICE	L.F.	40
	INSULATE WATER SERVICE	L.F.	20
2511.501	RANDOM RIPRAP, CLASS A	C.Y.	40
2511.506	FILTER BLANKET, TYPE I	C.Y.	20
2515.541	F&I CONC. APRONS FOR 21" S.C.P.	APRON	1
2515.541	F&I CONC. APRONS FOR 24" S.C.P.	APRON	1
2515.541 (12)	F&I CONC. APRONS FOR 36" S.C.P.	APRON	1
2515.542 (12)	F&I CONC. APRONS FOR 73-1/2" SPAN S.C.P.-A	APRON	1
2531.501	CONCRETE CURB AND GUTTER, DESIGN B624	L.F.	16,582
2531.507	CONCRETE DRIVEWAY PAVEMENT, 8" THICK	S.Y.	267
2535.501	BITUMINOUS CURB	L.F.	2,100
2574.501	ROADSIDE SEEDING, CLASS 15	ACRE	1
2576.501	SODDING	S.Y.	17,900
2557.512	CHAIN LINK FENCE (STEEL FABRIC) 36" HIGH	L.F.	109
2557.512	CHAIN LINK FENCE (STEEL FABRIC) 60" HIGH	L.F.	83
557.621	RESET CHAIN LINK FENCE, STEEL FABRIC, STEEL POSTS	L.F.	367
2565.501	FULL TRAFFIC ACTUATED TRAFFIC CONTROL SYSTEM	SIGNAL SYSTEM	2

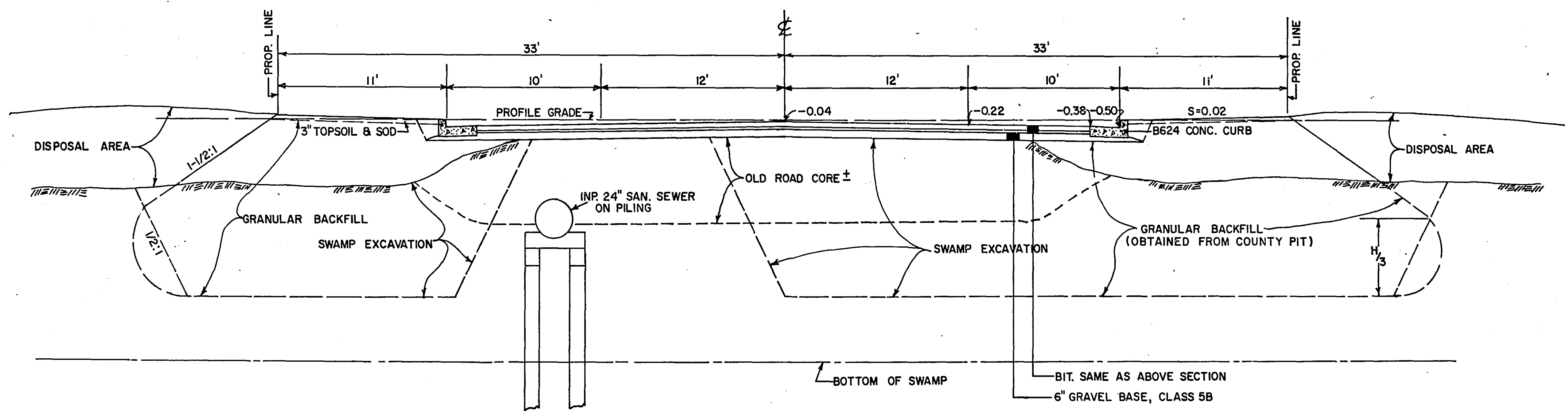
- (1) INCLUDES 15" PLUG
- (2) INCLUDES 18" PLUG
- (3) INCLUDES 21" PLUG
- (4) INCLUDES 6" 7-1/2" BENDS
- (5) INCLUDES 24" PLUG AND 6" 7-1/2" BENDS
- (6) INCLUDES 30" PLUG
- (7) INCLUDES 6" 7-1/2" BENDS
- (8) INCLUDES 12" 11-1/4" BENDS
- (9) INCLUDES 13" 11-1/4" BENDS
- (10) SEE MANHOLE DETAILS ON SHEET NO.5
- (11) SEE MANHOLE DETAILS ON SHEETS NO.5 & 16
- (12) INCLUDES TIMBER SHEETING

TYPICAL SECTIONS



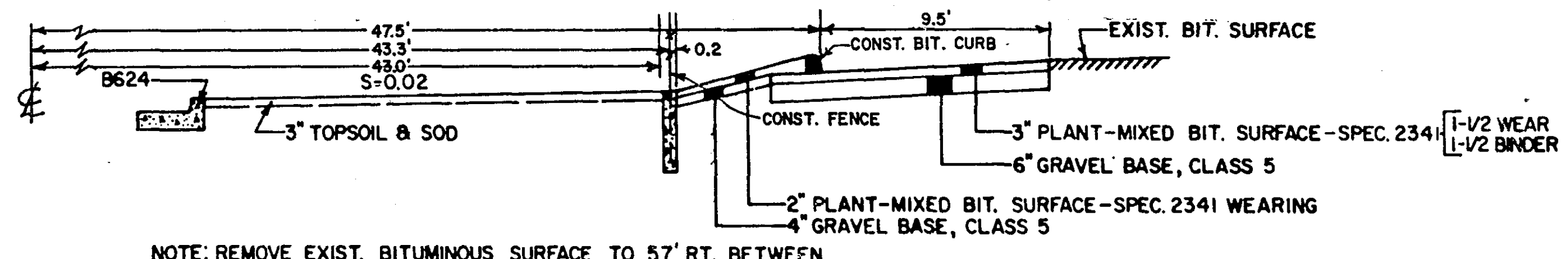
NOTE: SLOPES AND BACK SLOPES TO CONFORM TO RIGHT OF WAY WHERE THERE ARE NO EASEMENTS.

\*\* SEE PLAN SHEETS FOR DIMENSIONS  
\* MIN. 52' BETWEEN CURBS STA. 25+90 TO LEXINGTON



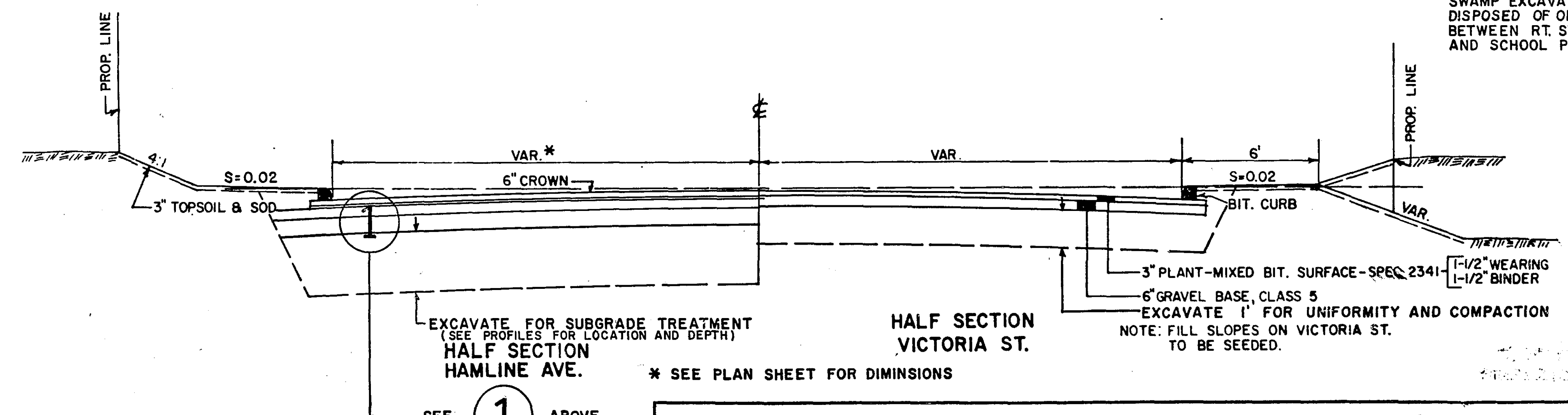
NOTE: THE DALE ST. SEWER TRENCH SURFACING AND BASE SHALL BE AS SHOWN IN NO. 1 DETAIL. PAYMENT SHALL BE INCLUDED IN LIKE QUANTITIES.

SWAMP EXCAVATION MATERIAL MAY BE DISPOSED OF ON HUBER SIGN CO. PROP. BETWEEN RT. STA. 73+25 AND DALE ST. AND SCHOOL PROP. ON LEFT.



NOTE: REMOVE EXIST. BITUMINOUS SURFACE TO 57' RT. BETWEEN STATION 21+10 AND 24+85. PAYMENT FOR QUANTITIES TO BE INCLUDED IN LIKE QUANTITIES. SET FENCE POST AS SHOWN IN STANDARD PLATE NO. 9322A.

FENCE AND PARKING LOT SECTION  
SCHOOL PROP. RIGHT STA. 19+75 TO STA. 20+02



EXCAVATE FOR SUBGRADE TREATMENT (SEE PROFILES FOR LOCATION AND DEPTH)  
\* SEE PLAN SHEET FOR DIMENSIONS

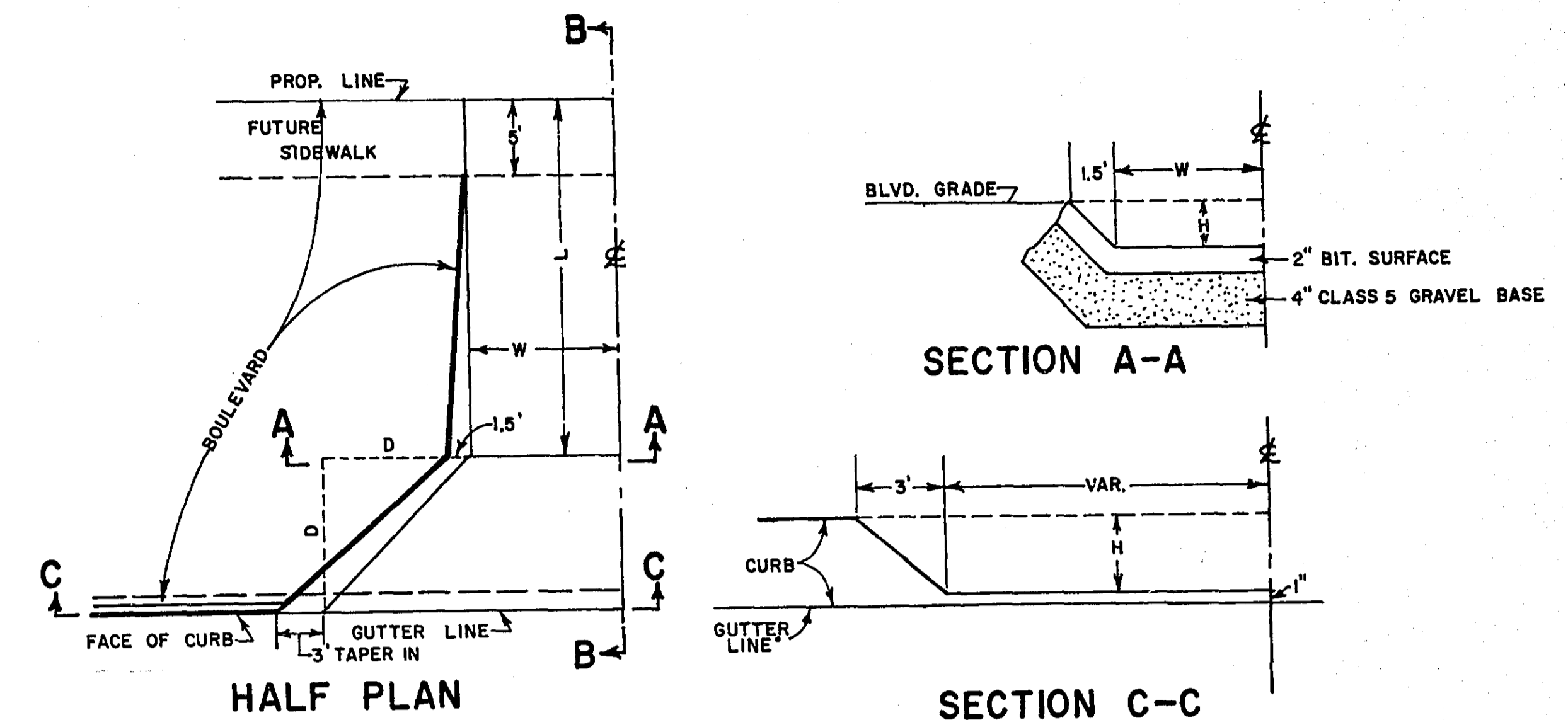
NOTE: FILL SLOPES ON VICTORIA ST. TO BE SEEDDED.

# DRAINAGE

# STRUCTURES

STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT.	F.&I. CASTING ASSEMBLY	ELEVATION			ADJUST CASTING ASSEMBLY	RECONSTRUCT C.B. OR M.H. LIN. FT.	INSTALL CASTING ASSEMBLY	INSTALL CONCRETE PIPE SEWER LINEAR FEET				MOVING M.H. OR C.B.	REMOVE PIPE SEWER LIN. FT.	CLASS	DRAINS TO		REMARK	
							PROFILE	ORIGINAL GRATE OR RING	NEW GRATE OR RING				C.B. OR MH INVERT	12"	15"	18"				21"	STRUCTURE NO.		INV. EL.
0+65	LT. 18'	1	M.H.			A	955.15	954.60	954.77														
0+81	LT. 17.5'	2	M.H.			A	954.99	954.48	954.61														
2+78	LT. 25'	3	C.B.	G	4.8	B	953.74	953.36	953.04	948.10			28'					IV	6	947.6			
3+02	RT. 25'	4	C.B.	G	2.8	B	953.70	953.36	953.29	950.40			35'					IV	6			REMOVE S.D. REMOVE S.D.	
3+03	LT. 25'	5	S.D.			A	953.70	952.25	953.39														
3+03	LT. 10'	6	M.H.			A	953.70	953.66	953.39														
3+35	LT. 16'	7	M.H.			A	953.62	953.55	953.36														
4+35	RT. 25'	8	C.B.	G	1.5	B	953.36	952.66	951.00				35'					IV	9	949.0			
4+35	LT. 10'	9	M.H.	G	6.6	A	953.36	953.18	946.52														
4+35	LT. 25'	10	C.B.	G	4.8	B	953.36	952.66	947.80				15'					IV	9				
5+43	LT. 10'	11	M.H.			A	954.32	953.92	954.14														
5+43.5	RT. 25'	12	C.B.	G	5.3	B	954.32	951.83	953.62	947.70			4'					IV				REMOVE S.D. RT. 21.2' REMOVE S.D. LT. 26.7'	
5+43.5	LT. 26.7'	13	C.B.	G	5.3	B	954.32	952.49	953.62	947.70													
6+25	RT. 22'	14	M.H.			A	955.23	955.27	954.88													REMOVE 7" OF CONE	
6+58	LT. 19'	15	M.H.			A	955.59	955.70	955.29														
6+59	RT. 19'	16	M.H.			A	955.61	955.82	955.31														
6+59	RT. 19'	16	M.H.			A	955.61	955.82	955.31														
6+63.4	LT. 11'	17	M.H.			A	955.64	955.82	955.31														
6+82.5	LT. 28.5'	18	C.B.	G	4.8	B	955.89	954.76	955.40	950.50												REMOVE S.D. LT. 30' @ +84.6	
6+98	RT. 25'	19	C.B.	G	4.8	B	956.03	955.33	950.50	950.50			51'					IV					
9+59	RT. 17'	20	M.H.			A	957.29	957.04	957.02														
10+29	LT. 20'	21	M.H.			A	957.21	956.29	956.89													REMOVE 3" OF CONE	
12+80	RT. 25'	22	C.B.	G	3.7	B	953.88	953.18	949.56	949.56			50'					IV	25	946.0			
12+96.5	RT. 39'	23	C.B.				953.81	951.65														O.K. LEAVE	
13+17	LT. 19'	24	M.H.			A	953.73	954.18	953.43													REMOVE 3" OF CONE	
13+28.7	RT. 40'	25	M.H.				953.68	953.46														O.K. LEAVE	
13+38.6	RT. 39.6'	26	S.D.				953.64	951.70														O.K. LEAVE	
13+63	LT. 25'	27	S.D.	G	3.9	B	953.55	953.15	952.85	948.9												REMOVE S.D. LT. 21'	
13+64	LT. 33'	28	M.H.				953.54	954.34														O.K. LEAVE	
16+50	LT. 20'	29	M.H.			A	951.65	951.09	951.33														
18+01	RT. 25'	30	C.B.	G	5.2	B	950.49	949.33	949.79	944.60			5'					IV				REMOVE S.D. RT. 20'	
18+01	LT. 25'	31	C.B.	G	6.5	B	950.49	948.3	949.79	943.16												REMOVE S.D.	
18+01	LT. 49'	32	M.H.				950.49	948.3														O.K. LEAVE	
19+65	RT. 19'	33	M.H.				948.35	947.43														REMOVE	
19+89	LT. 20'	34	M.H.			A	948.10	947.19	947.78														
21+76	RT. 25'	35	C.B.	G	4.6	B	947.17	946.7	946.47				4'					IV				REMOVE S.D. RT. 21'	
21+76	LT. 25'	36	C.B.	G	4.8	B	947.17	945.71	946.46													REMOVE S.D. LT. 22'	
21+76	LT. 33'	37	M.H.				947.17	947.46	947.3													O.K. LEAVE	
22+77	RT. 48.5'	38	C.B.	G	4.3		948.17	947.4	943.0	943.0			24'					IV	39			USE CASTING & COVER 25+84 LT. 23'	
22+77	RT. 25'	39	C.B.	G	3.4	B	946.75	946.05	942.5				50'					II	40				
22+77	LT. 25'	40	C.B.	G	4.7	B	946.75	946.05	941.2				8'					II	41				
22+77	LT. 33'	41	M.H.	A	6.8		946.75	946.90	940.0														
23+10	LT. 19'	42	M.H.			A	946.83	947.13	946.53													REMOVE 5" OF CONE	
25+84	LT. 23'	43	S.D.			A	947.94	947.65	947.58														
25+85	RT. 23'	44	C.B.	G	5.0	B	947.94	947.40	947.24	942.24			6'					IV				REMOVE C.B. RT. 21'	
26+04	LT. 17'	45	M.H.				948.00	947.83	947.73														
26+09	LT. 37'	46	C.B.	G	4.2	B	948.02	947.5	943.2	943.2													
26+11	RT. 50'	47	C.B.	G	3.8	B	948.02	947.39	947.40														
26+13	LT. 40'	48	C.B.				948.03	947.55														REMOVE C.B. 26+13	
26+58	RT. 43'	49	C.B.	G	3.9	B	948.10	947.67	947.67	943.83												REMOVE	
26+56	LT. 46'	50	C.B.				948.10	947.39															
26+56		51	M.H.				948.10	947.99	948.08													O.K. LEAVE	
26+79	RT. 23'	52	C.B.	G	2.7	B	948.16	947.54	947.46	944.7			28'					IV				REMOVE -C.B. RT. 20'	
26+79	LT. 23'	53	C.B.	G	3.5	B	948.16	947.47	947.46	944.0			28'					IV				REMOVE C.B. LT. 20'	
27+73	LT. 22.5'	54	M.H.				948.67	947.19	948.17													O.K. LEAVE	
28+00	LT. 20'	55	M.H.				948.89	948.77														REMOVE	
30+78	LT. 22'	56	M.H.				950.22	950.95	949.72														
31+54	LT. 22'	57	M.H.				949.49	950.17	948.99														

## BITUMINOUS ENTRANCE DETAILS

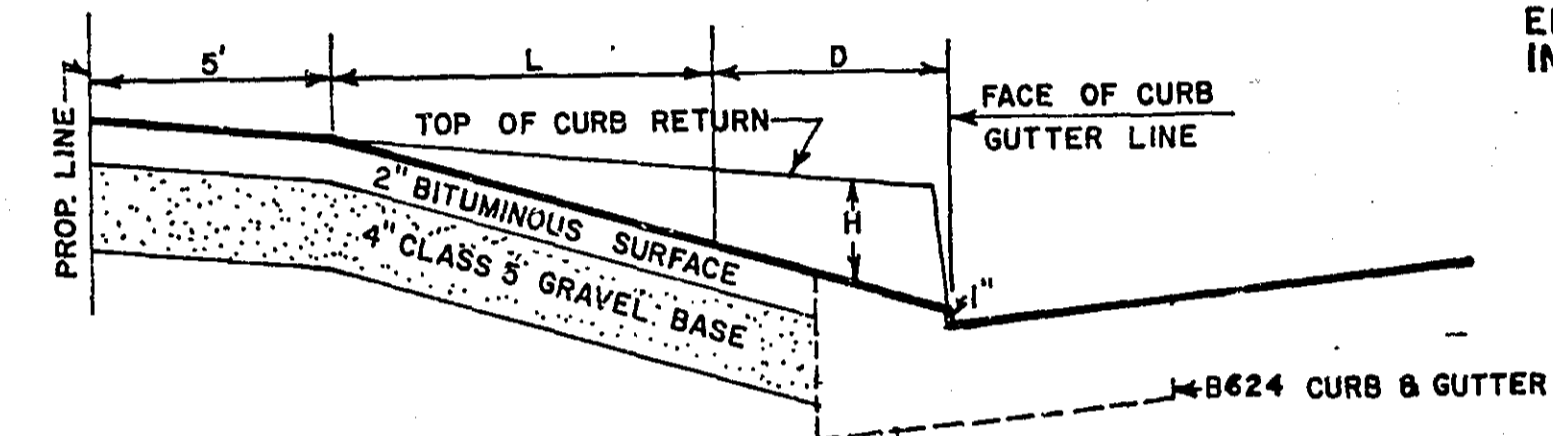


HALF PLAN

SECTION A-A

SECTION C-C

NOTE: PRIVATE ENTRANCE: W=6' D=5'  
COMMERCIAL ENTRANCE: W=11' D=10'  
THE EXACT LOCATION AND WIDTH OF  
ENTRANCES SHALL BE DETERMINED  
IN THE FIELD BY THE ENGINEER.



SECTION B-B

## STANDARD DETAIL PLATES

1016	CONCRETE PAVEMENT NON-REINFORCED 8" UNIFORM X 24" (1)
1075G	TERMINAL HEADERS
1101G	EXPANSION JOINTS (DOWELLED)
1103C-1108C	DOWEL BAR ASSEMBLIES
1120 G	CONTRACTION JOINTS
1140G	LONGITUDINAL JOINTS
1141A	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
1150F	CONSTRUCTION OF HEADER JOINT
3000 C	REINFORCED CONCRETE PIPE
3014 B	REINFORCED CONCRETE PIPE-ARCH
4181	MANHOLE STEP CASTING
4016	CURB OPENING CATCH BASIN
4006D	MANHOLE OR CATCH BASIN
4102B	MANHOLE OR CATCH BASIN RING CASTING
4111C	COVER CASTING FOR MANHOLE
4129	CATCH BASIN FRAME CASTING
4151A	GRATE CASTING FOR CATCH BASIN
4160	CURB BOX CASTING FOR CATCH BASIN
7020C	CONCRETE CURB
7023 A	CONCRETE CURB
7035D	CURB RETURNS AT ENTRANCES
7065B	BITUMINOUS CURB
7100C	CONCRETE CURB AND GUTTER (DESIGN B)
7110D	CURB AND GUTTER CONSTRUCTION AT CATCH BASIN
7111C	INSTALLATION OF CATCH BASIN CASTING
8000B-8009	STANDARD BARRICADE
7200B	CONCRETE SIDEWALK
9322B	URBAN FENCE FOR FREEWAYS & EXPRESSWAYS

(1) CROWN MODIFIED TO THAT SHOWN IN TYPICAL SECTION.  
CONTROL CONTRACTION JOINTS (FORMED) TO BE CONSTRUCTION EVERY 60 FEET. (TRANSVERS JOINTS TO BE PERPENDICULAR TO E.)

A = F&I. CASTING ASSEMBLY NO. 4102B

B = F&I. CASTING ASSEMBLY NO. 4129  
GRATE FRAME NO. 802  
GRATE NO. 811  
CURB BOX NO. 823-TYPE B

C = NEENAH NO. R1740-B OR EQUAL

S.A.P. NO. 62-625-02

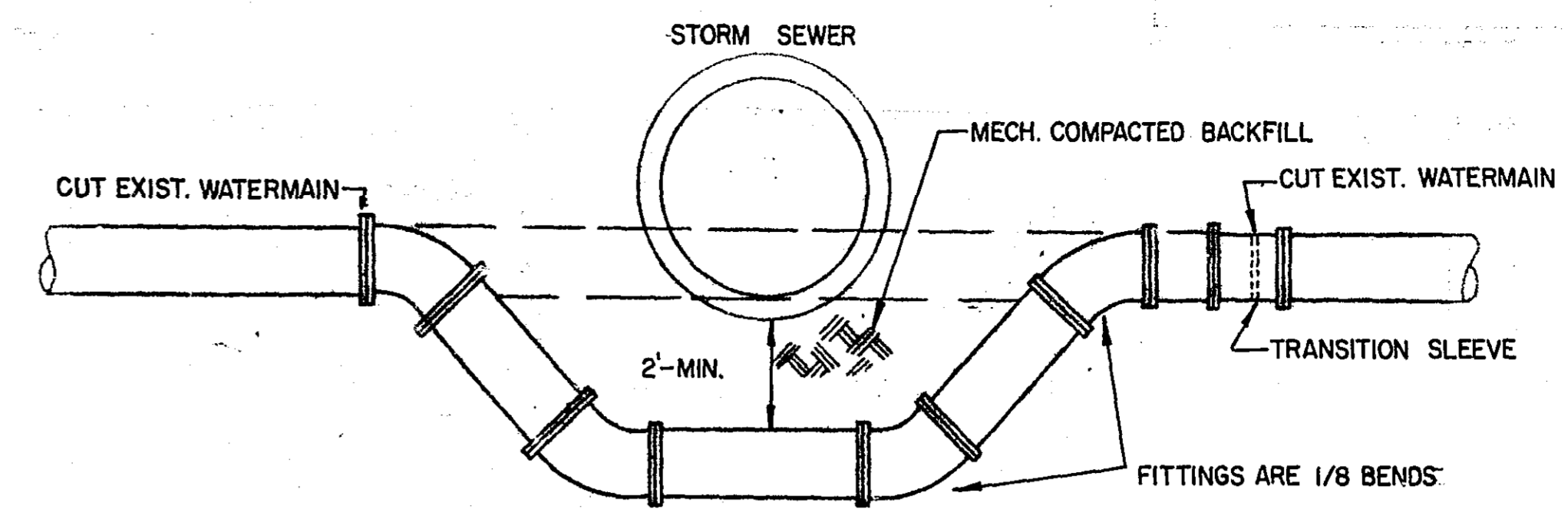
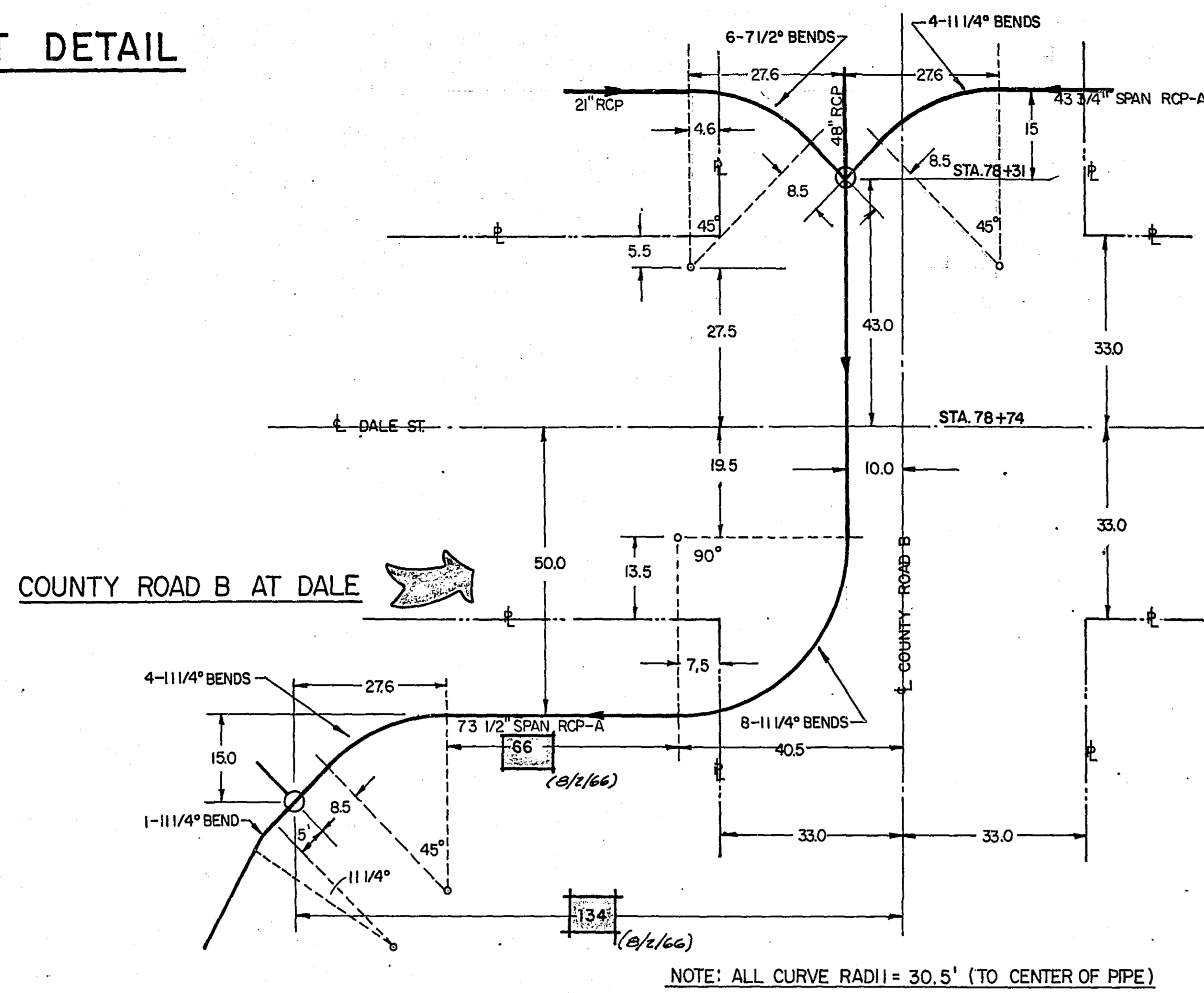
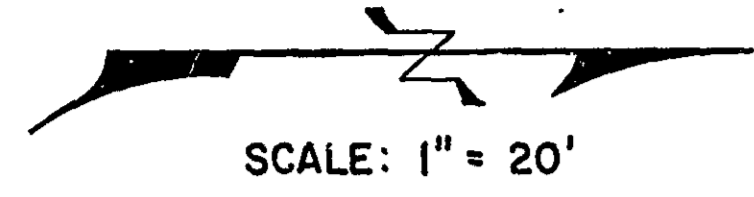
SHEET 3 OF 38 SHEETS

MICROFILMED  
RANNEY CO. ENGR.

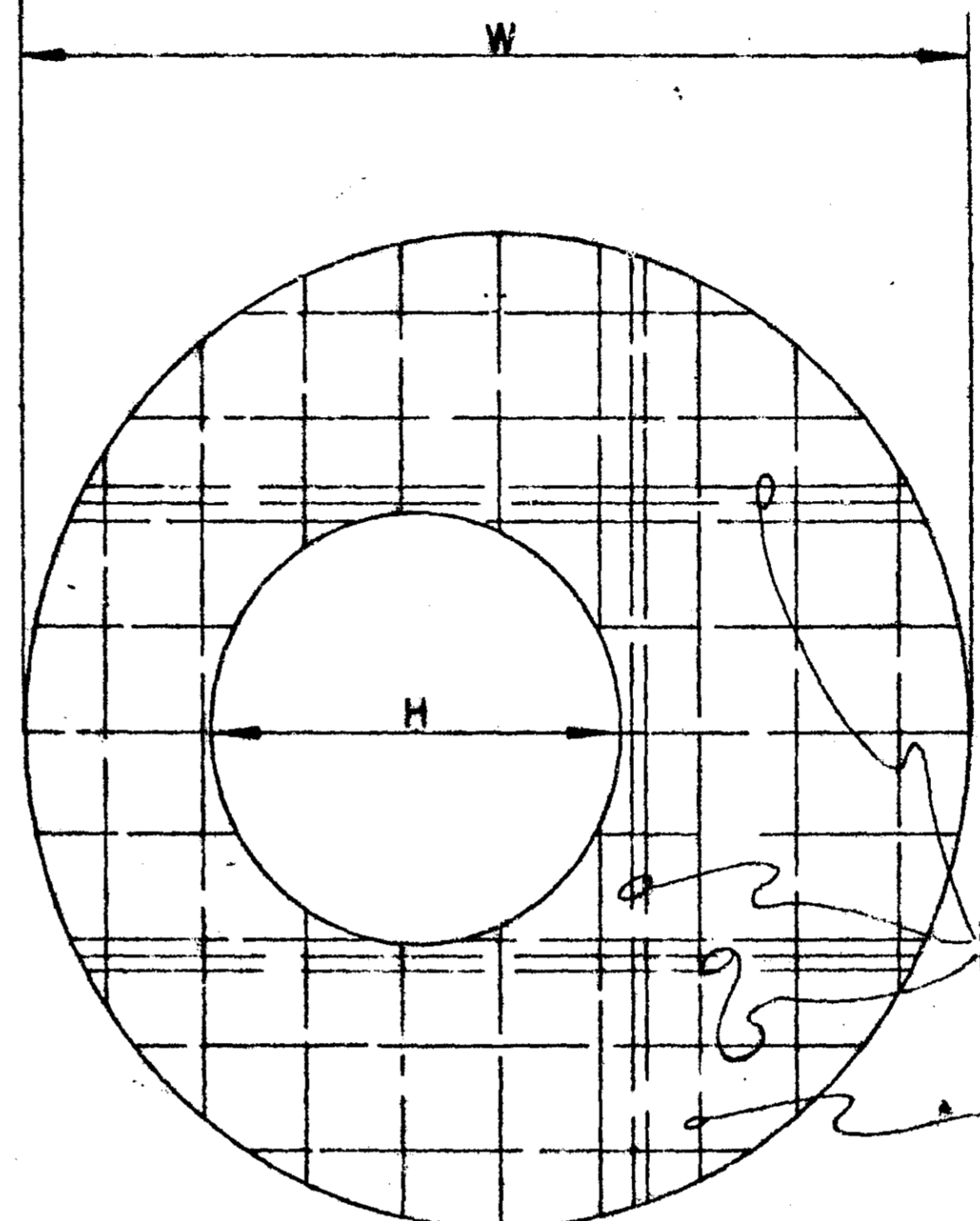
Main data table with columns for STATION, LOCATION, NO, TYPE, DESIGN, CONST. HEIGHT, STRUCTURES, ELEVATIONS, REMOVE PIPE SEWER, FURNISH & INSTALL PIPE SEWERS (R.C.P.), DRAINS TO, and REMARKS.

REVISED 8/2/66

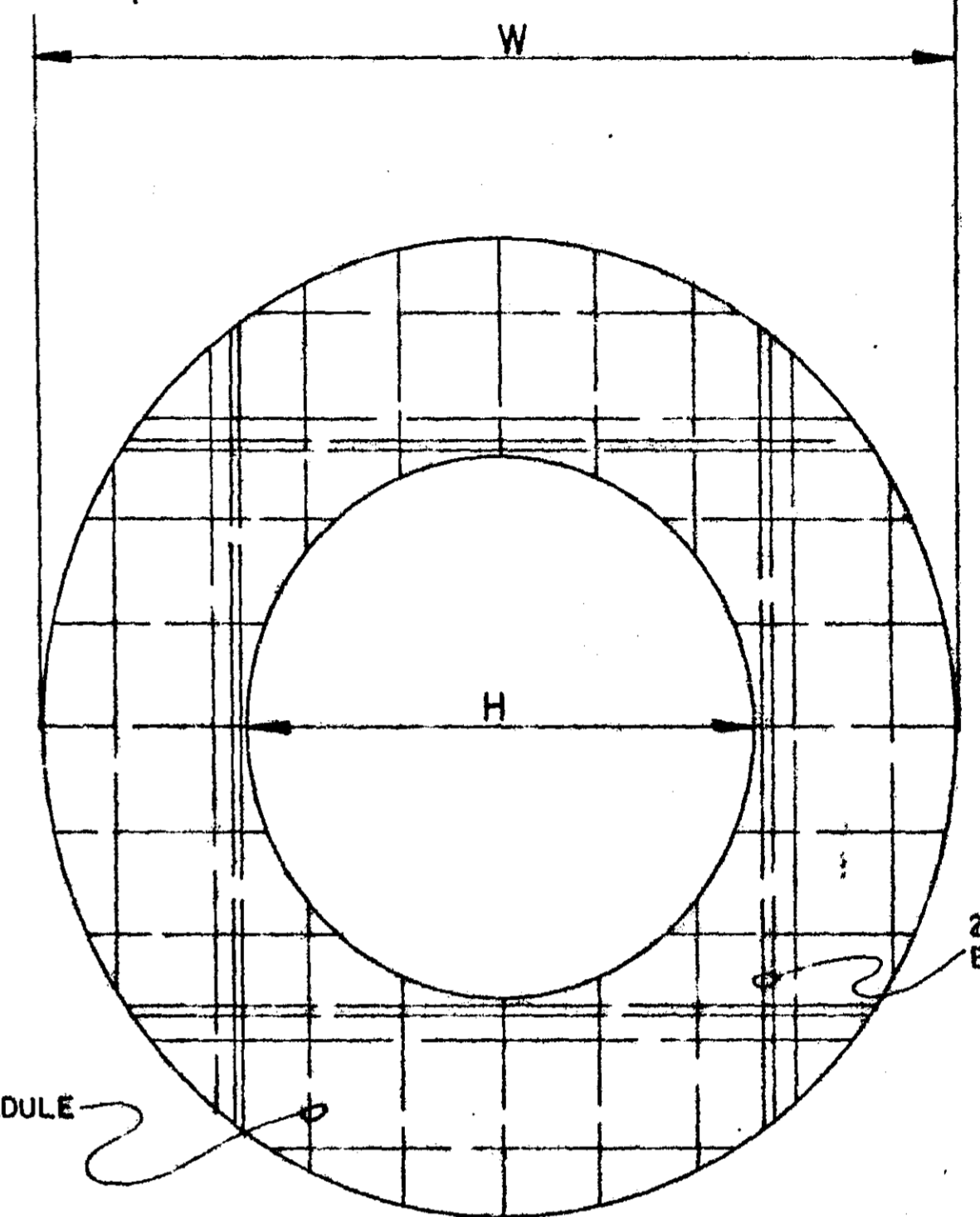
**ALIGNMENT DETAIL**



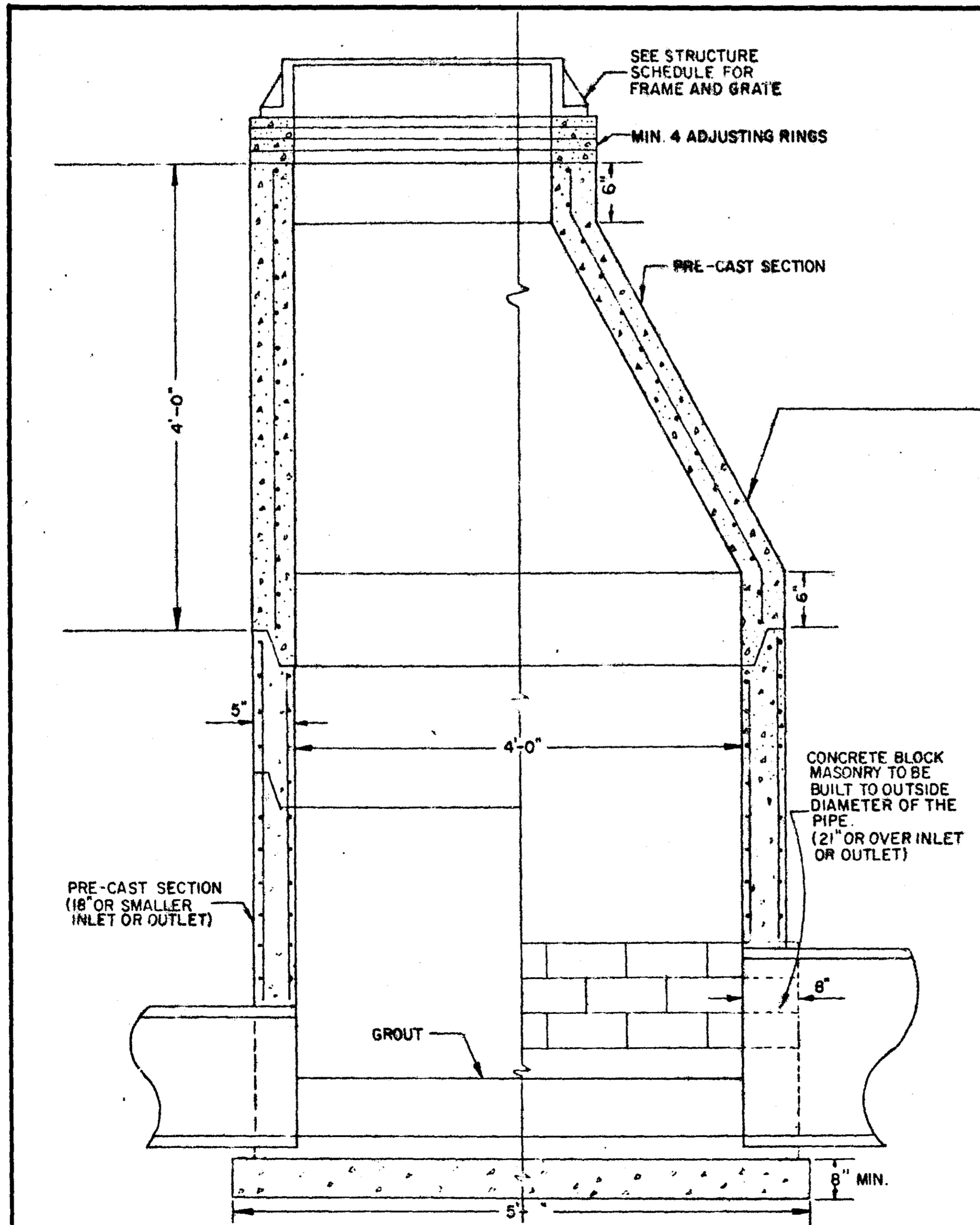
**LOWER WATERMAIN DETAIL**



**PRE-CAST COVER ECCENTRIC OPENING**

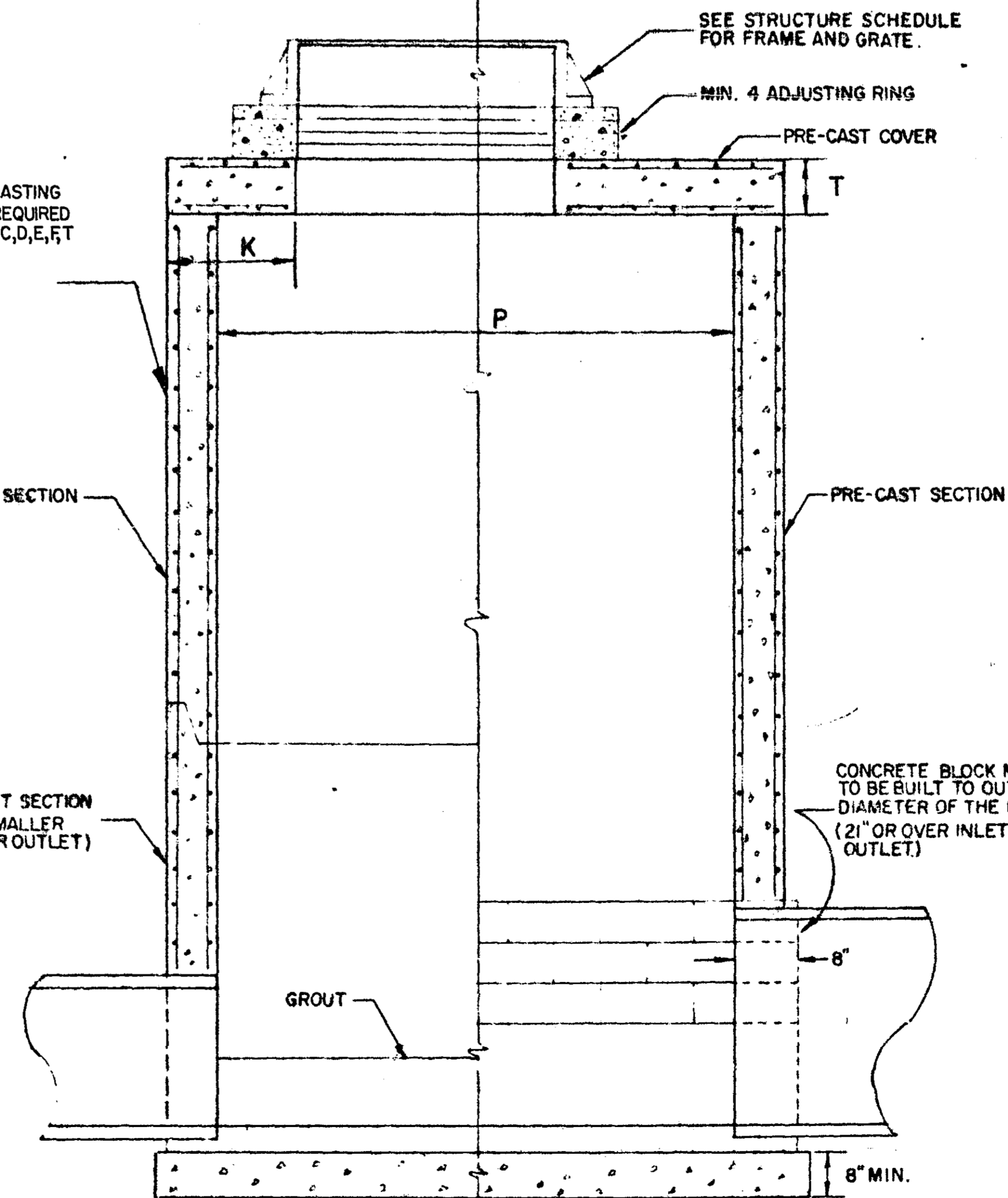


**PRE-CAST COVER CONCENTRIC OPENING**



**TYPE-A MANHOLE**

NOTE: MANHOLE STEPS CASTING NO. 044@16" O.C. REQUIRED ON ALL TYPE A,B,C,D,E,F,T MANHOLES.



**TYPE B THRU F AND B-1 THRU F-1 MANHOLES**

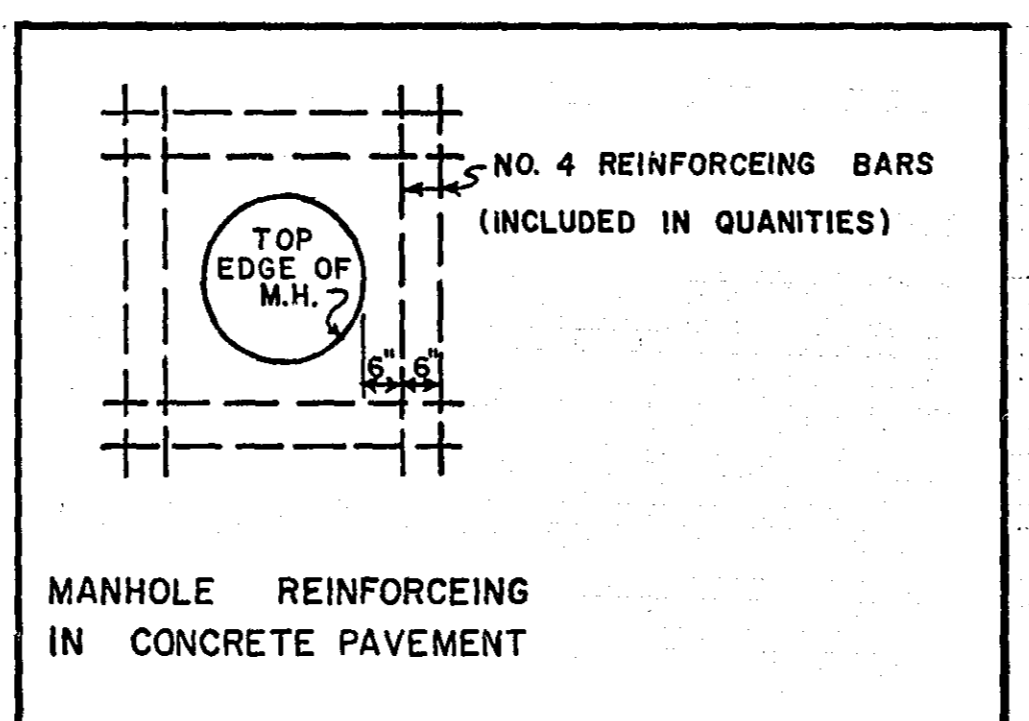
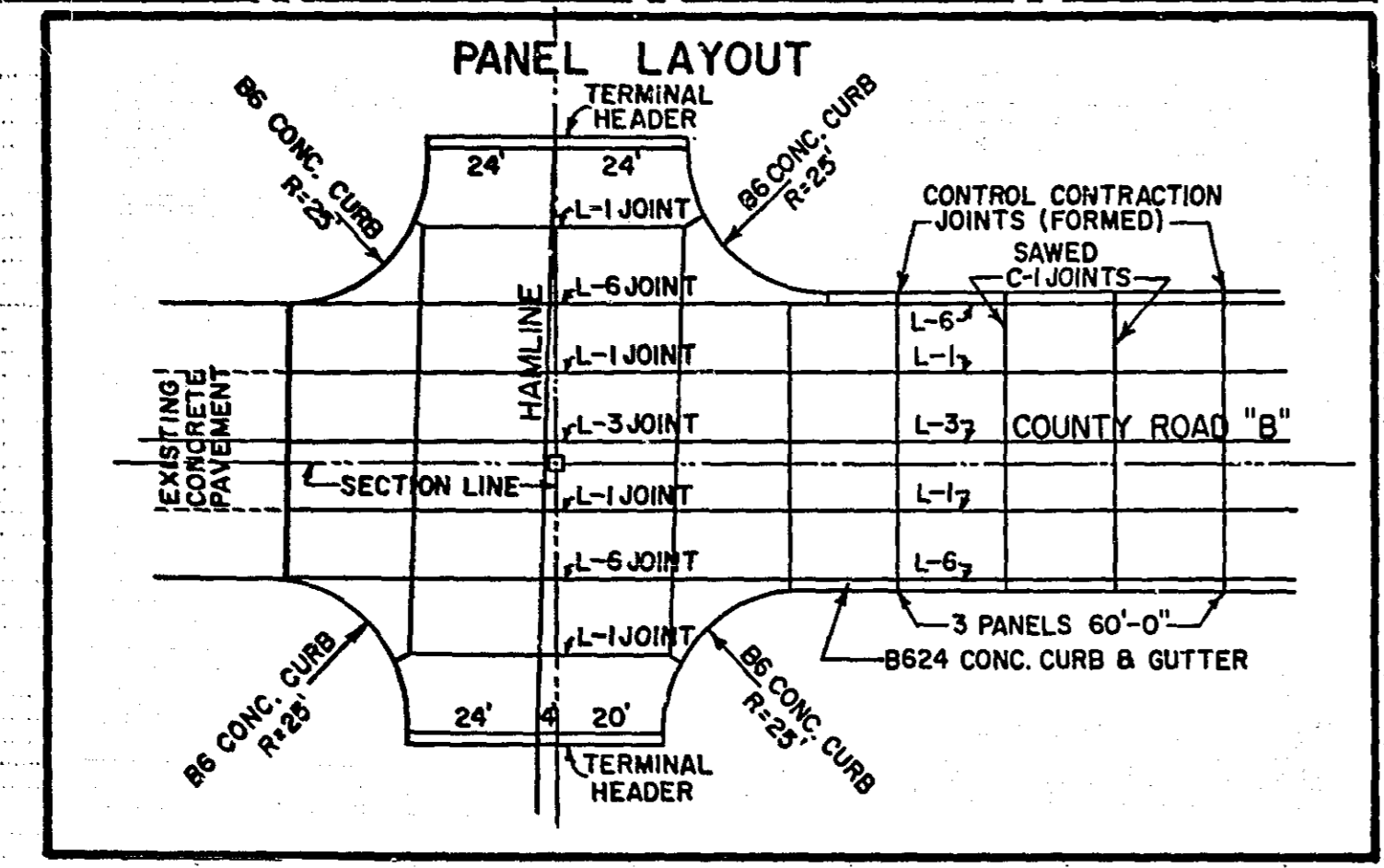
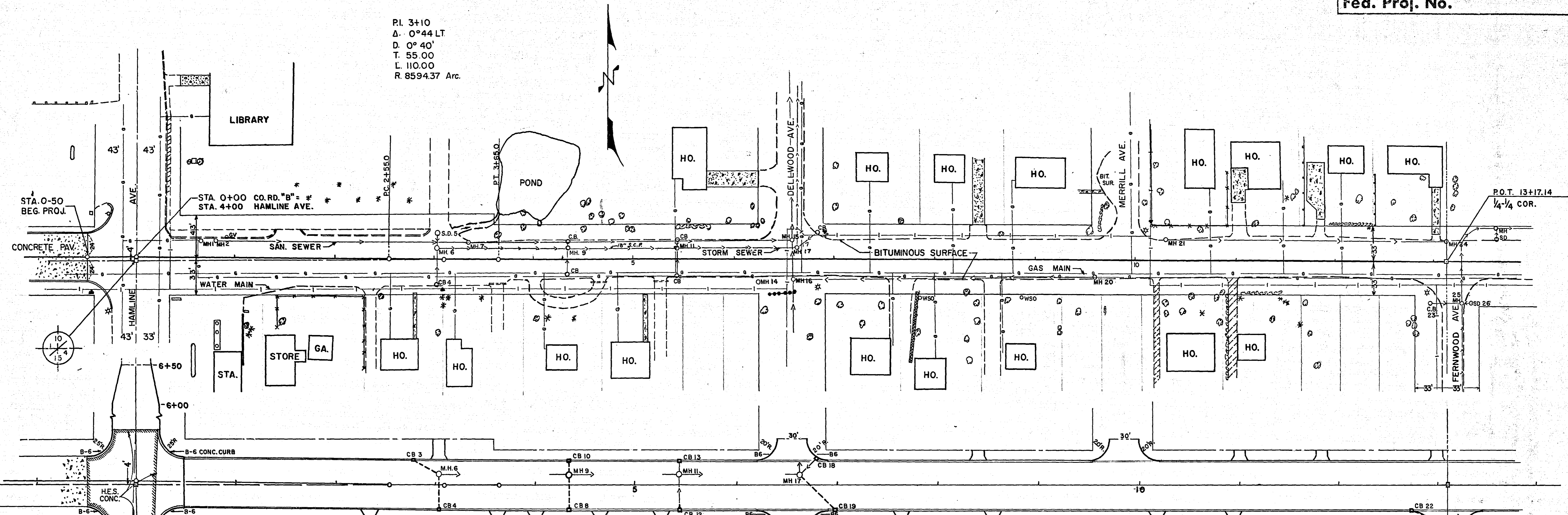
**SIZE AND REINFORCING REQUIREMENTS**

MANHOLE TYPE	DIMENSIONS					TYPE OF OPENING	COVER REINFORCING	
	P	K	T	W	H		BOTTOM BARS	TOP BARS
B	48"	6"	6"	58"	27"	ECC.	#4@6" O.C. E.W.	NONE
B-1	48"	11"	6"	58"	36"	CON.	"	NONE
C	60"	7"	8"	72"	27"	ECC.	"	#3@6" O.C. E.W.
C-1	60"	18"	8"	72"	36"	CON.	"	"
D	72"	8"	8"	86"	27"	ECC.	"	"
D-1	72"	25"	8"	86"	36"	CON.	"	"
E	84"	9"	8"	100"	27"	ECC.	#4@4" O.C. E.W.	#3@4" O.C. E.W.
E-1	84"	32"	8"	100"	36"	CON.	"	"
F	96"	9"	8"	113"	27"	ECC.	"	"
F-1	96"	38.5"	8"	113"	36"	CON.	"	"
G	(CATCH BASIN) SEE STD. PLATE 4006D							
T	SEE DETAIL SHEET 16							

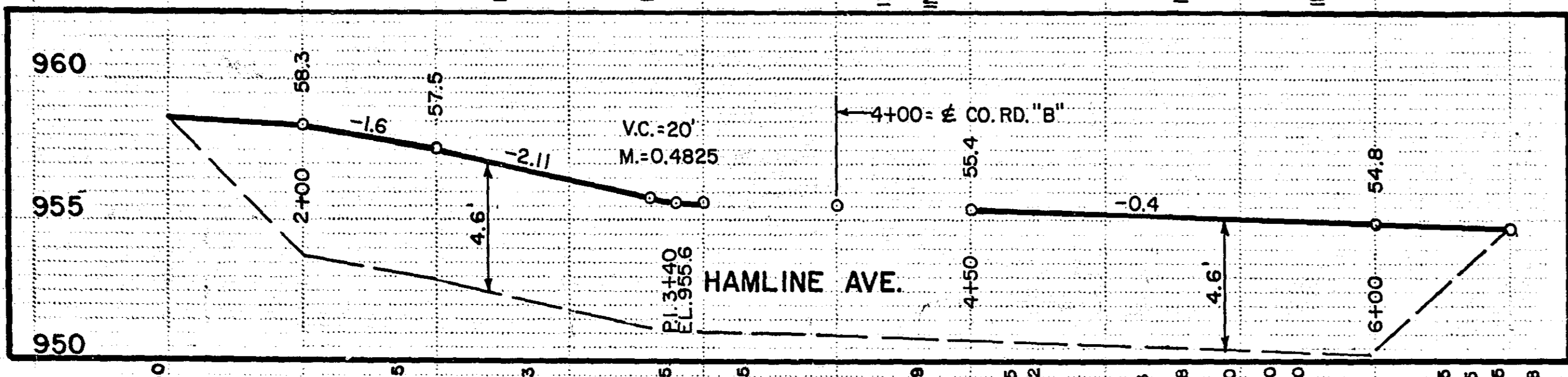
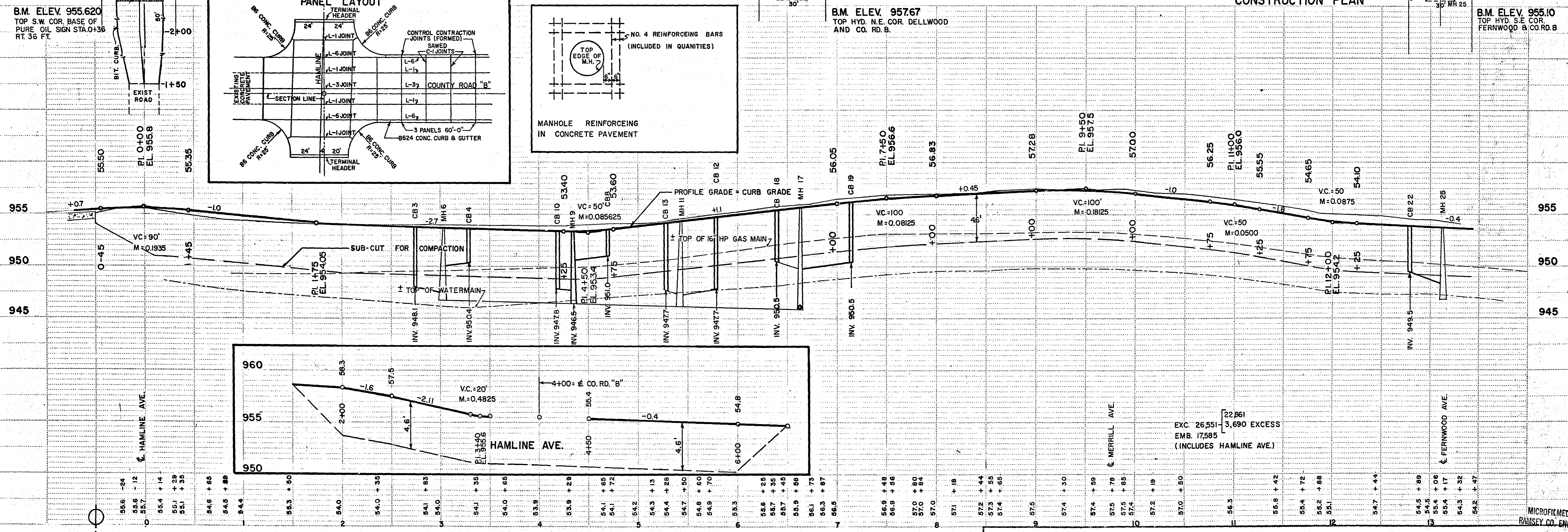
**MANHOLE DETAILS**

**REVISED 8/2/66**

PI. 3+10  
Δ. 0°44' LT  
D. 0° 40'  
T. 55.00  
L. 110.00  
R. 8594.37 Arc.



CONSTRUCTION PLAN



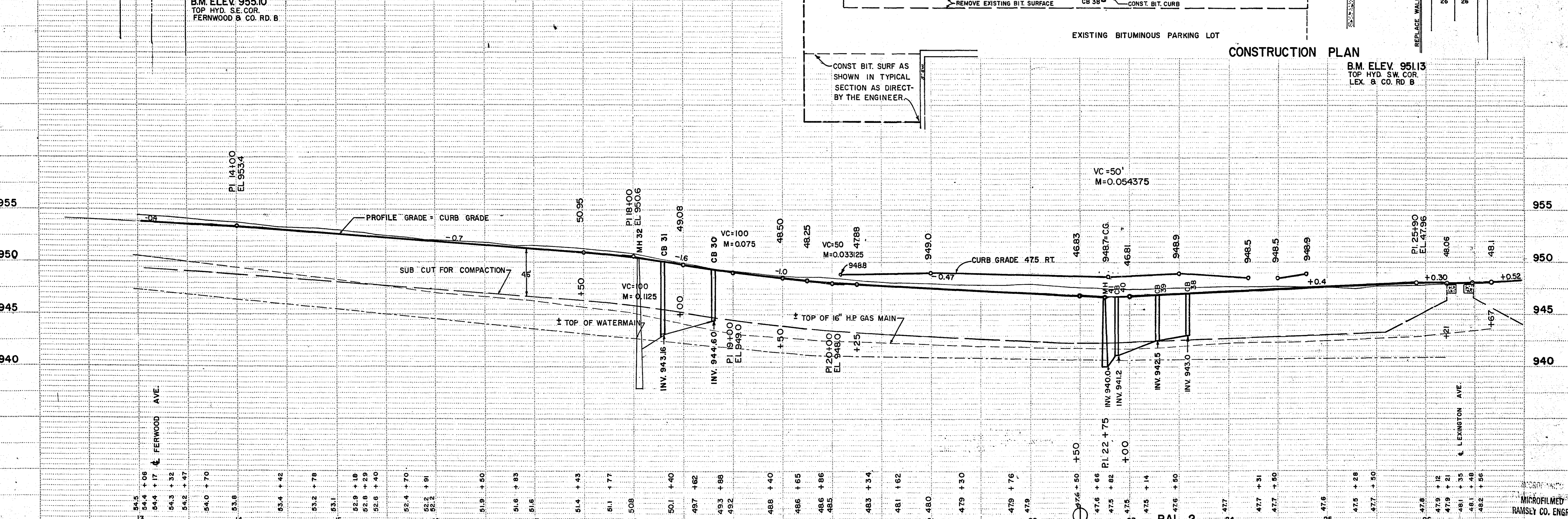
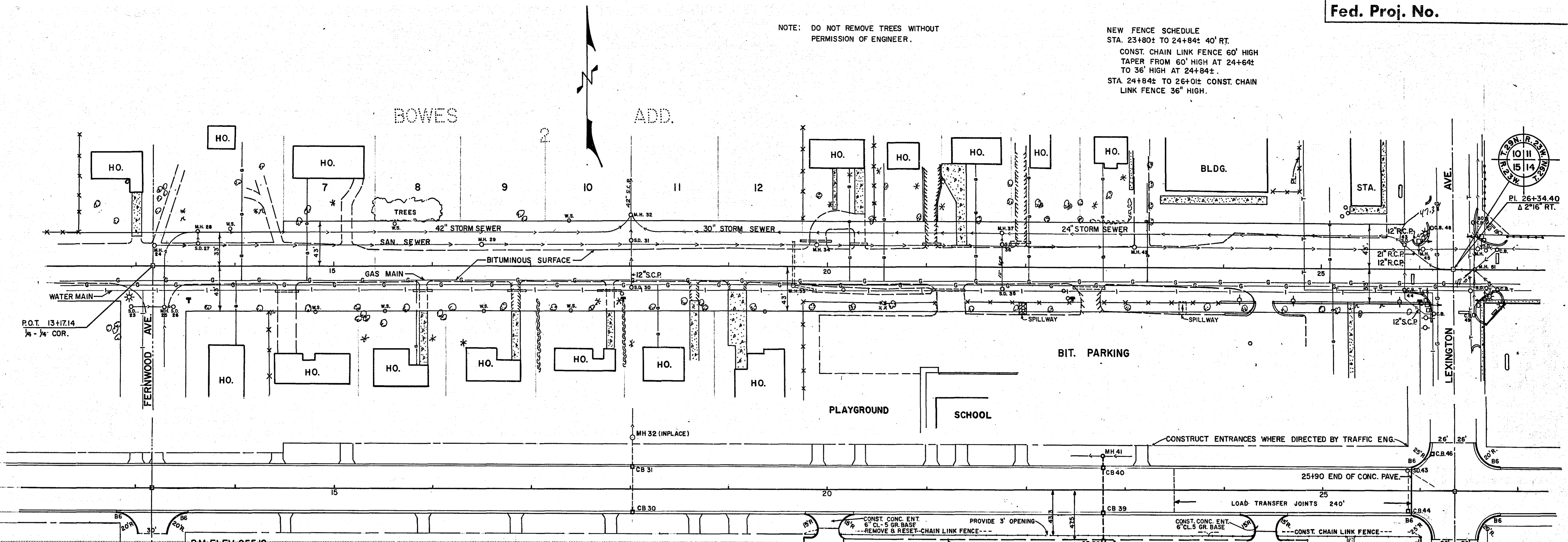
EXC. 26,551  
EMB. 17,585  
(INCLUDES HAMLINE AVE.)

ROOSTAR CO. INC., ST. PAUL, MINNEAPOLIS, MINNESOTA

MICROFILMED  
RAMSEY CO. ENGR.

NOTE: DO NOT REMOVE TREES WITHOUT PERMISSION OF ENGINEER.

NEW FENCE SCHEDULE  
STA. 23+80± TO 24+84± 40' RT.  
CONST. CHAIN LINK FENCE 60' HIGH  
TAPER FROM 60' HIGH AT 24+64±  
TO 36' HIGH AT 24+84±.  
STA. 24+84± TO 26+01± CONST. CHAIN  
LINK FENCE 36' HIGH.



B.M. ELEV. 955.10  
TOP HYD. SE. COR.  
FERWOOD & CO. RD. B

B.M. ELEV. 951.13  
TOP HYD. SW. COR.  
LEX. & CO. RD. B

CONSTRUCTION PLAN

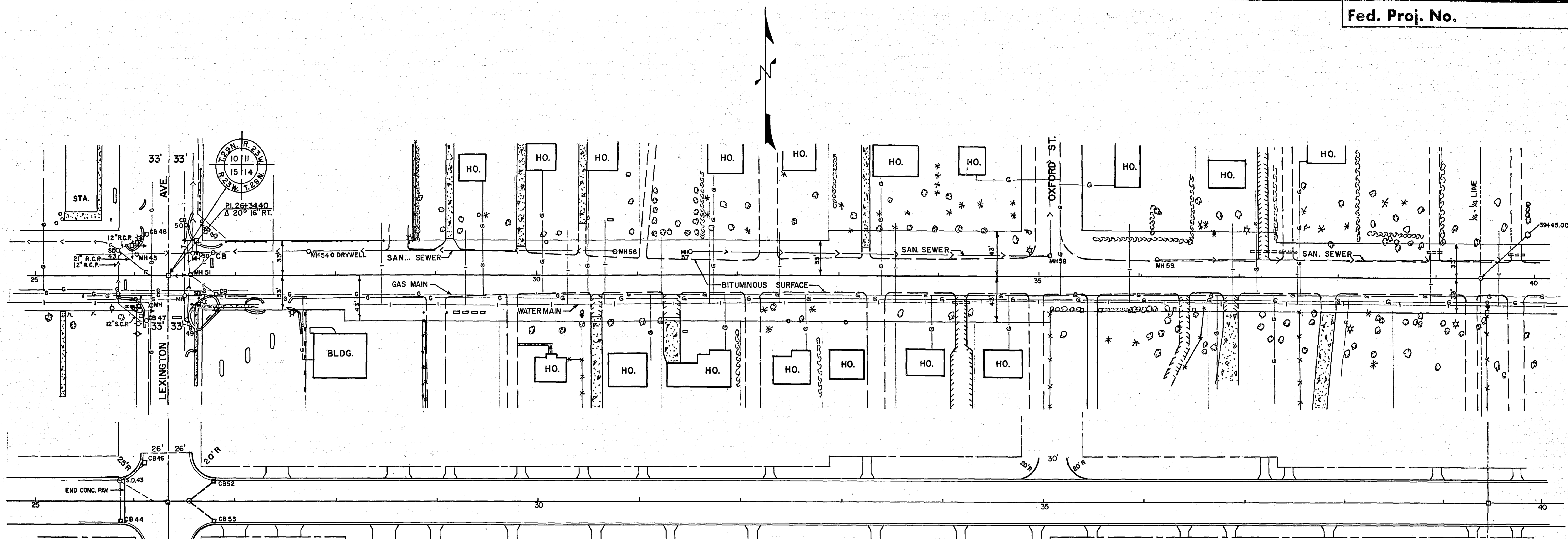
BAL. 1

S.A.P. NO. 62-625-02

Sheet No. 7 of 38 Sheets

6858

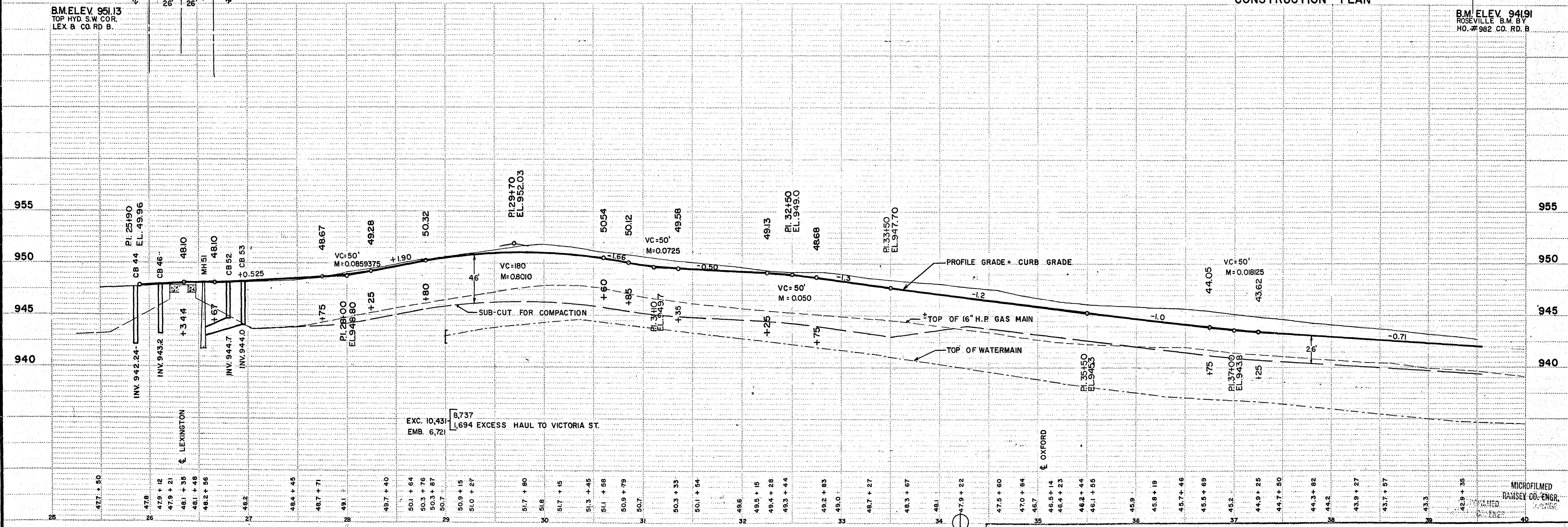
MICROFILMED  
RAMSEY CO. ENGR.



CONSTRUCTION PLAN

B.M. ELEV. 951.13  
TOP HYD. S.W. COR.  
LEX. & CO. RD. B.

B.M. ELEV. 941.91  
ROSEVILLE B.M. BY  
HO. #982 CO. RD. B.



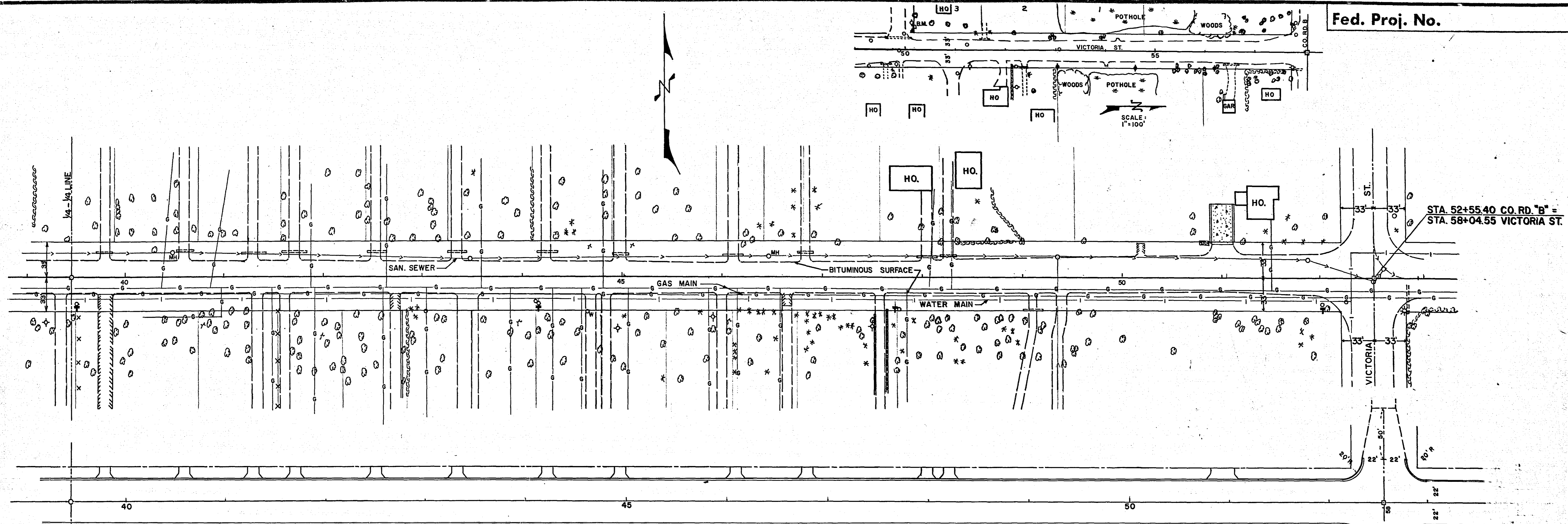
BAL. 2

S.A.P. NO. 62-625-02

Sheet No. 8 of 38 Sheets

MICROFILMED  
RAMSEY CO. ENGR.



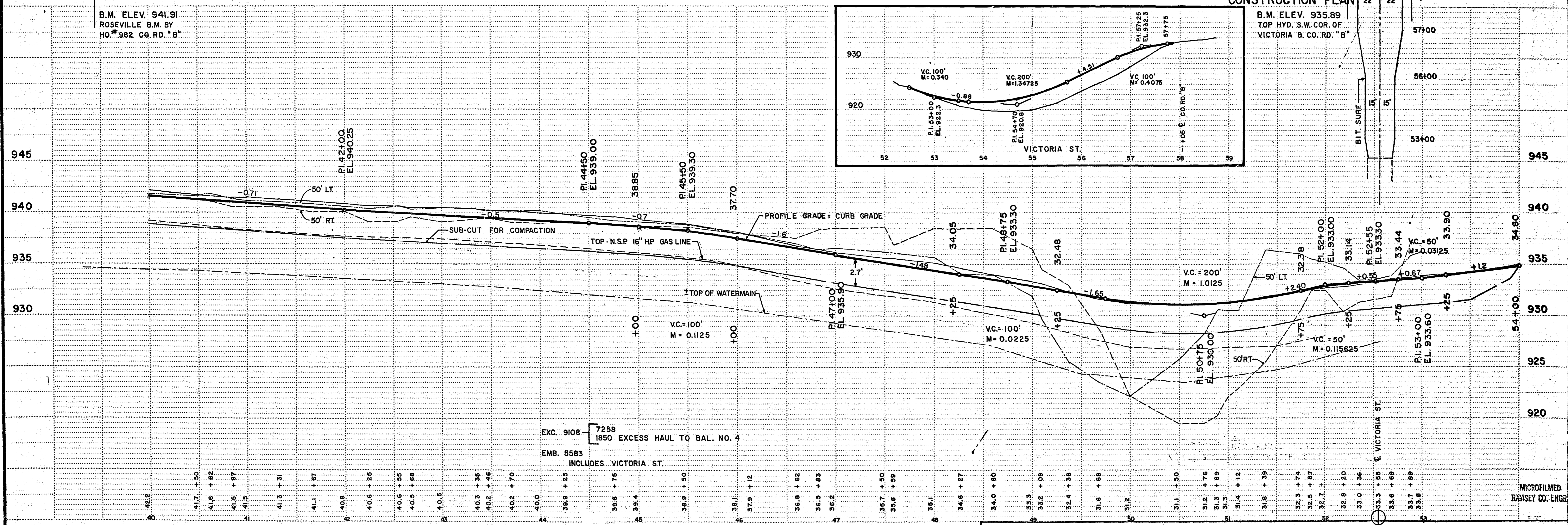


STA. 52+55.40 CO. RD. "B" =  
STA. 58+04.55 VICTORIA ST.

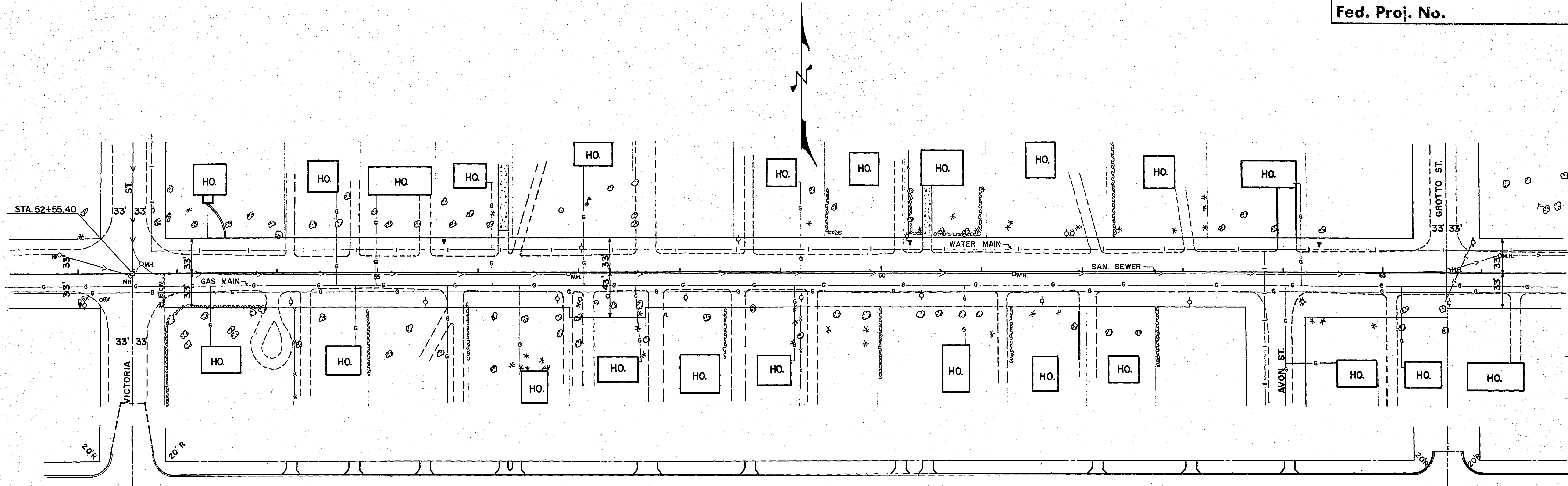
B.M. ELEV. 941.91  
ROSEVILLE B.M. BY  
HO.#982 CG. RD. "B"

CONSTRUCTION PLAN

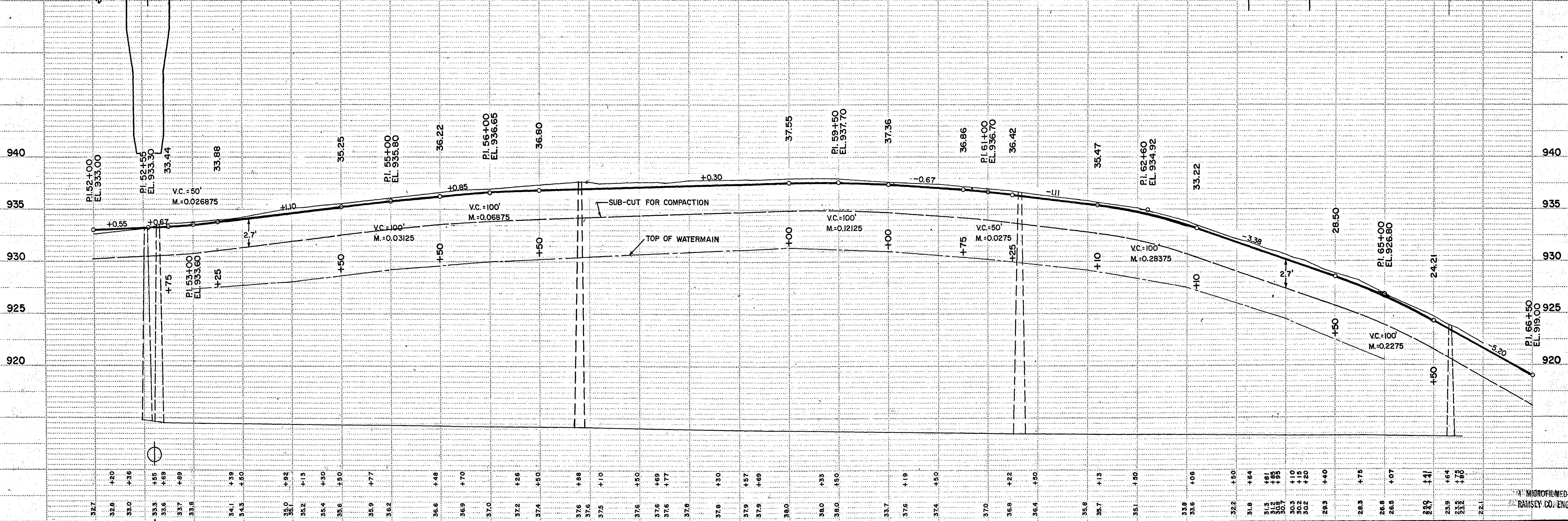
B.M. ELEV. 935.89  
TOP HYD. S.W. COR. OF  
VICTORIA & CO. RD. "B"



EXC. 9108 7258  
1850 EXCESS HAUL TO BAL. NO. 4  
EMB. 5583  
INCLUDES VICTORIA ST.



CONSTRUCTION PLAN



BAL. 4

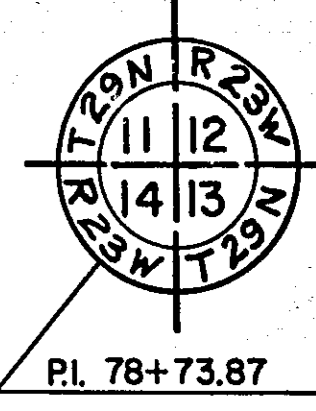
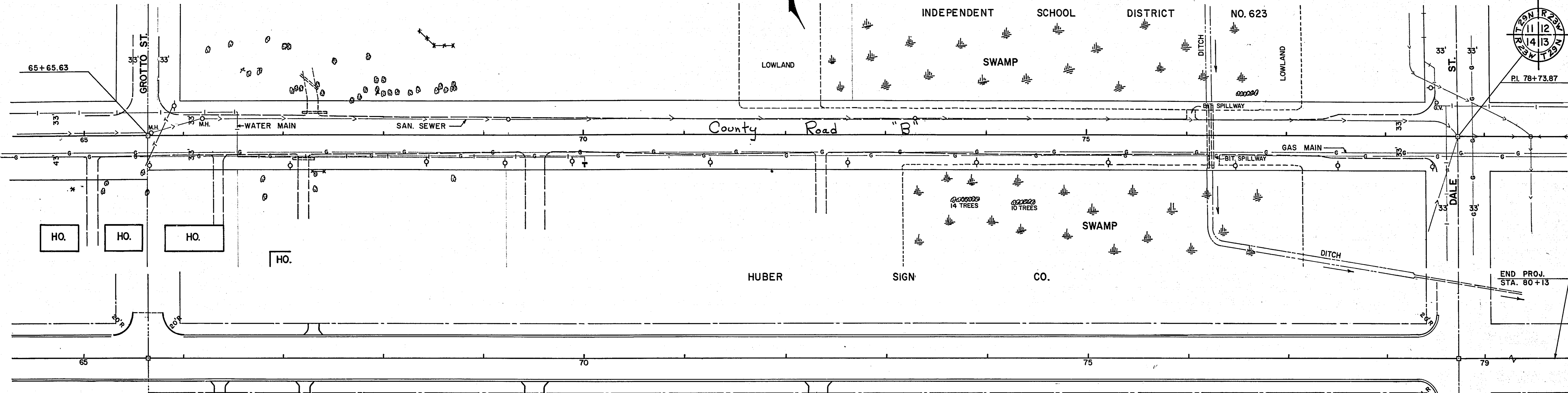
S.A.P. NO. 62-625-02

Sheet No. 10 of 38 Sheets

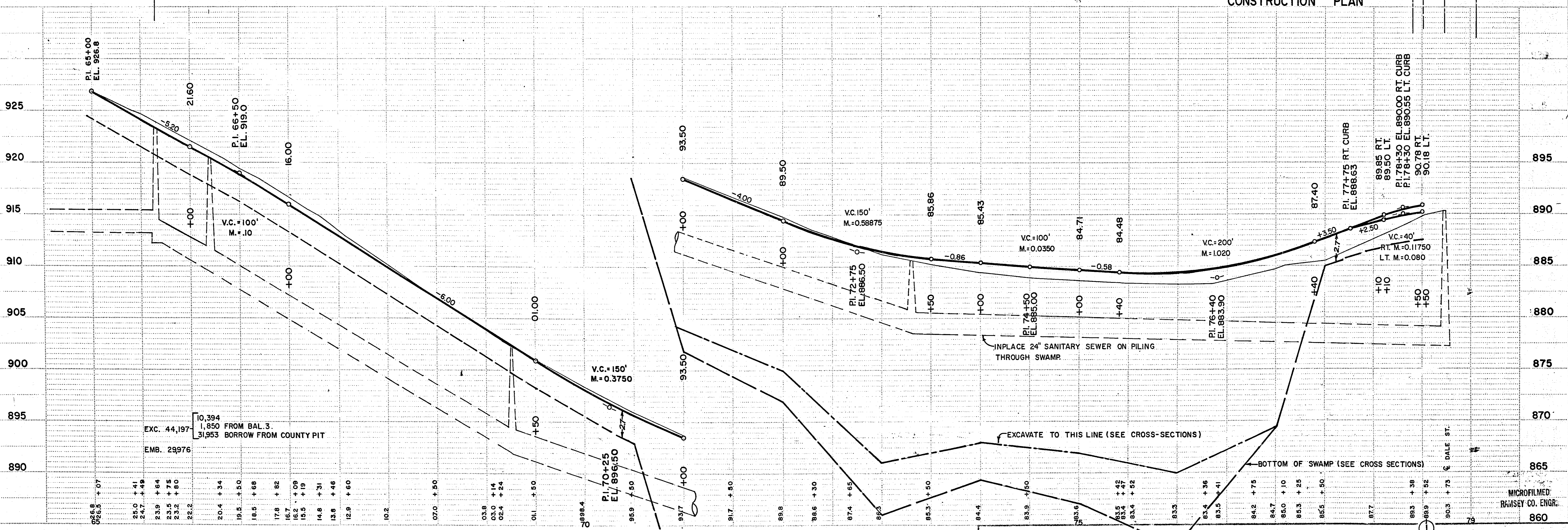
6P5P

NORESTAR © NO. 102 - ST. PAUL - MINNEAPOLIS, MINNESOTA ©

MICROFILMED  
RAMSEY CO. ENGR.



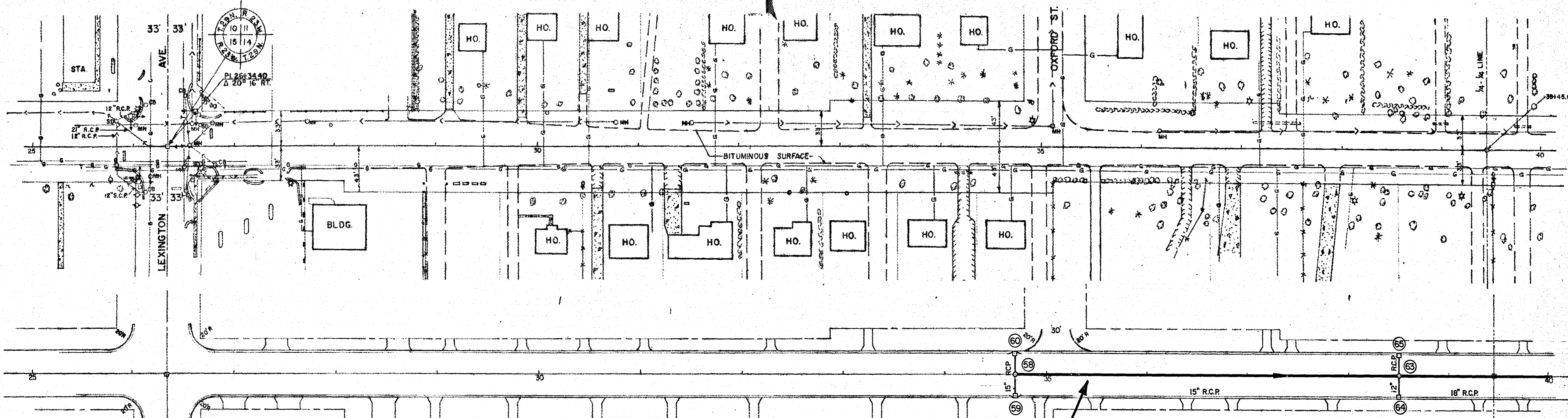
CONSTRUCTION PLAN



EXC. 44,197  
EMB. 23,976  
10,394 FROM BAL. 3.  
31,953 BORROW FROM COUNTY PIT

S.A.P. NO. 62-625-02

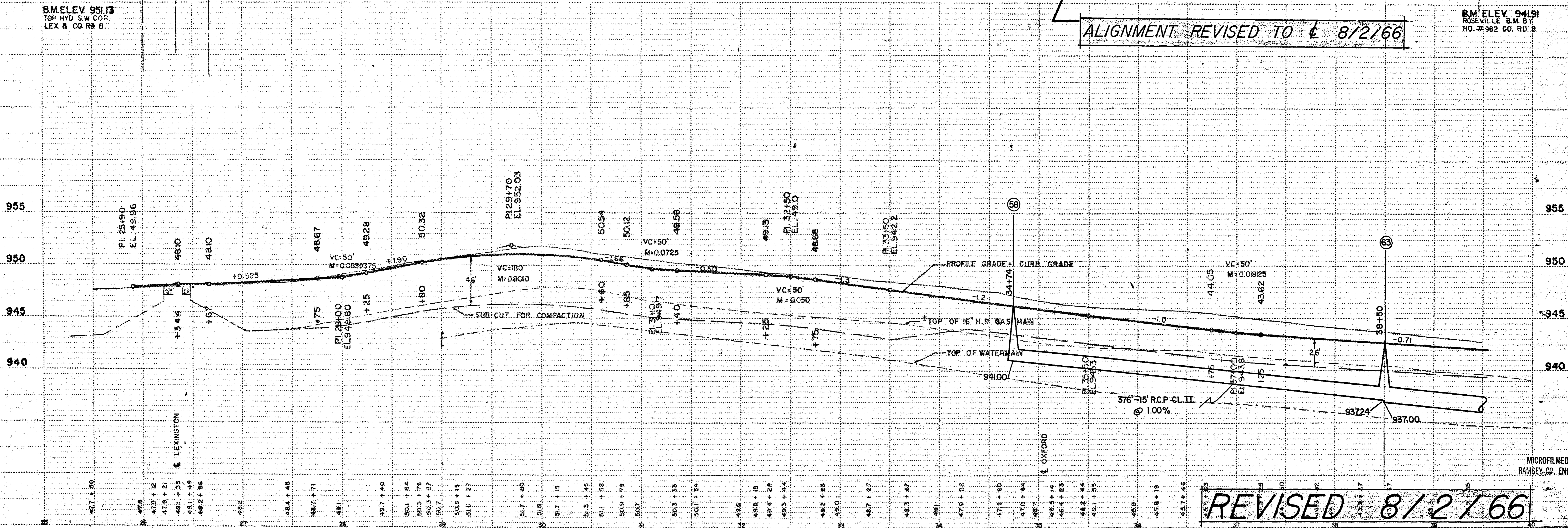
Sheet No. 11 of 38 Sheets



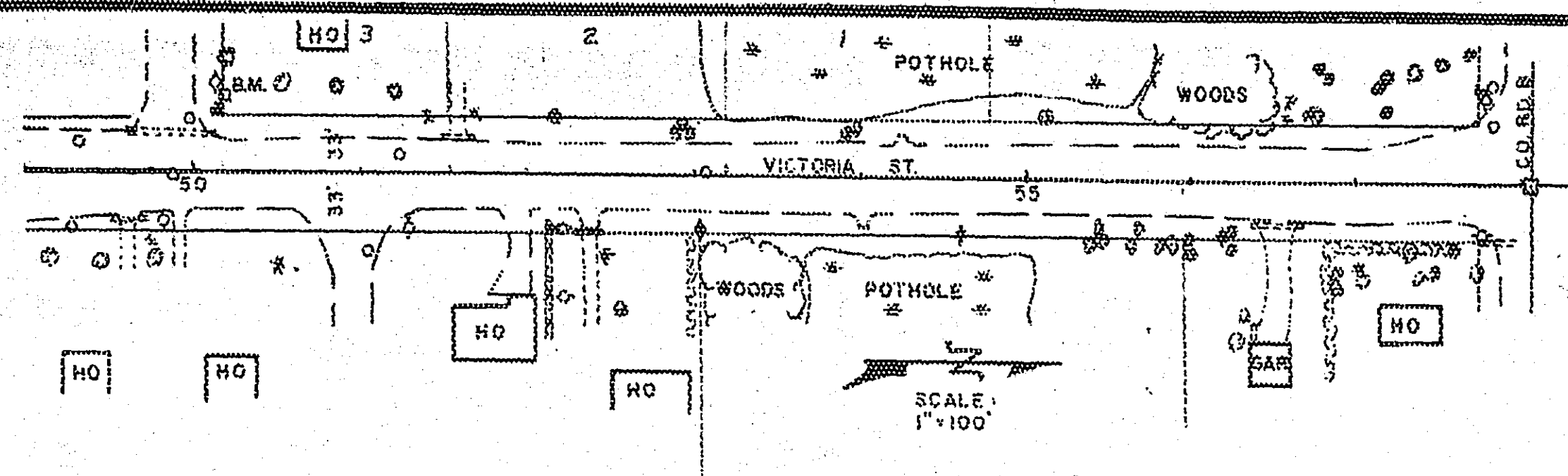
B.M. ELEV. 951.13  
TOP HYD. S.W. COR.  
LEX. & CO. RD. B.

B.M. ELEV. 941.91  
ROSEVILLE B.M. BY  
HO. #982 CO. RD. B.

ALIGNMENT REVISED TO 8/2/66



REVISED 8/2/66



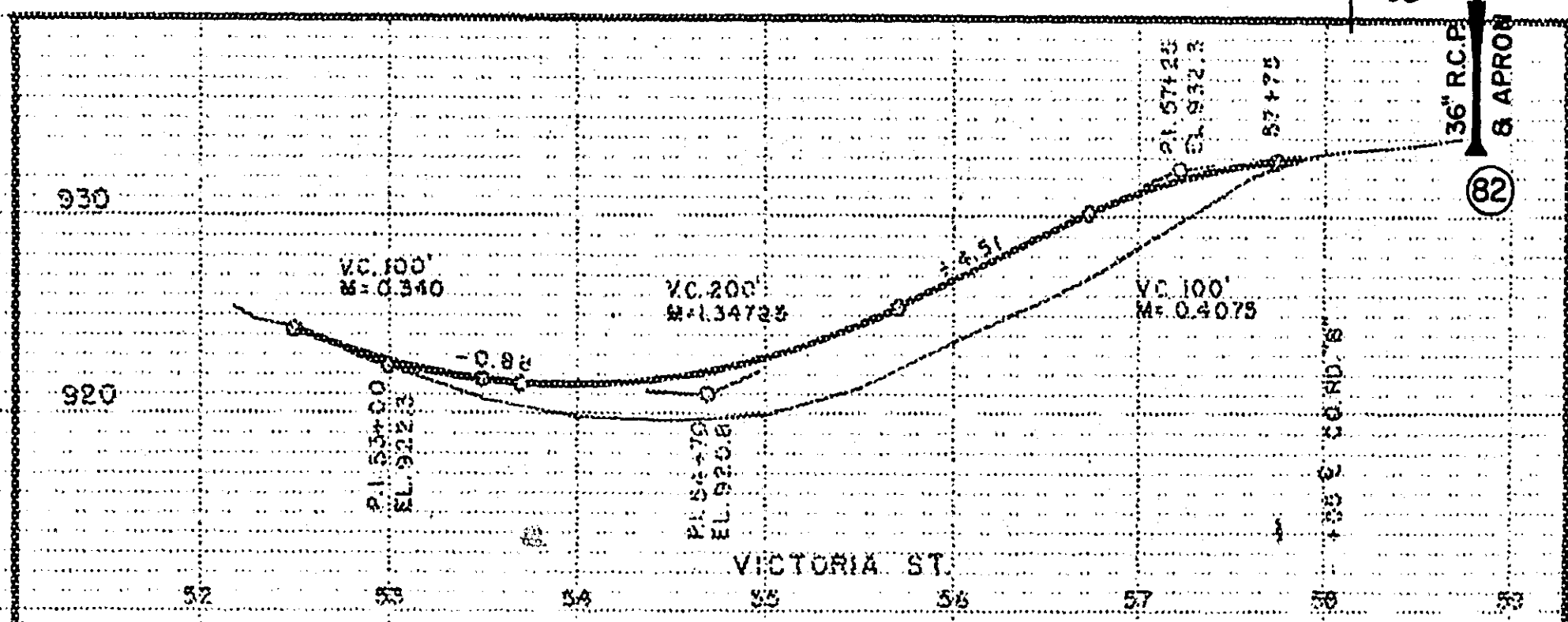
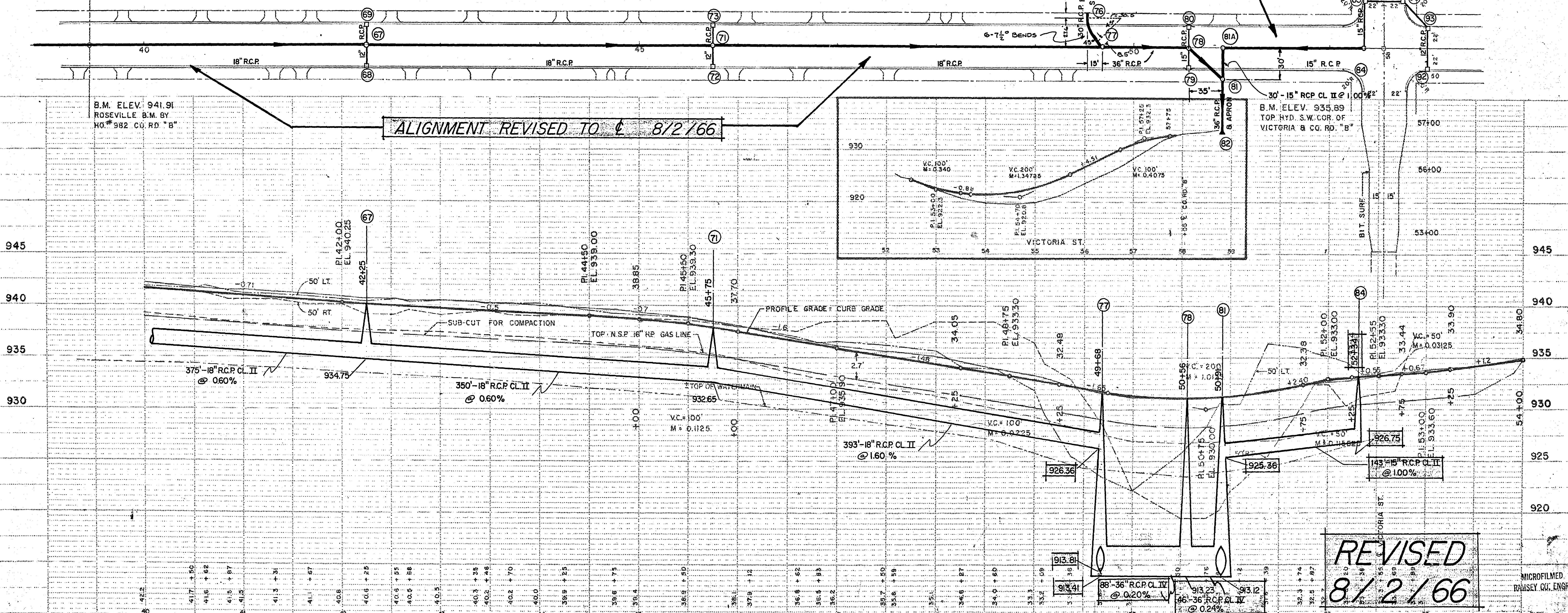
STA. 52+55.40 CO. RD. "B"  
STA. 58+04.55 VICTORIA ST.

ALIGNMENT PIPE SIZE & GRADE REVISED 8/2/66

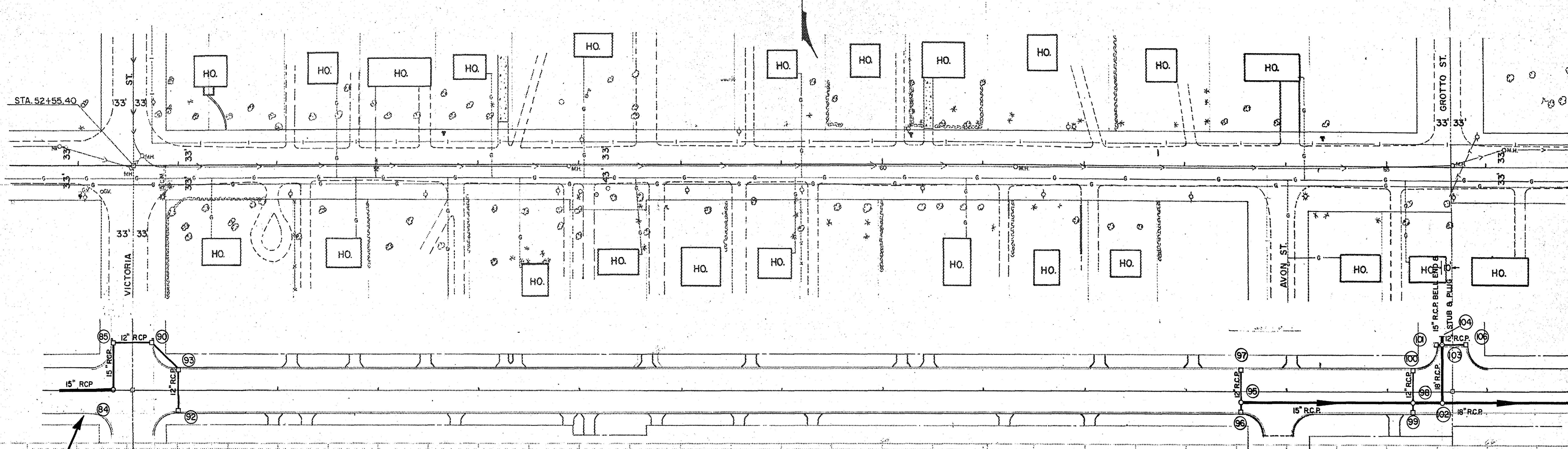
ALIGNMENT REVISED TO 8/2/66

B.M. ELEV. 941.91  
ROSEVILLE B.M. 89  
HO # 382 CO. RD. "B"

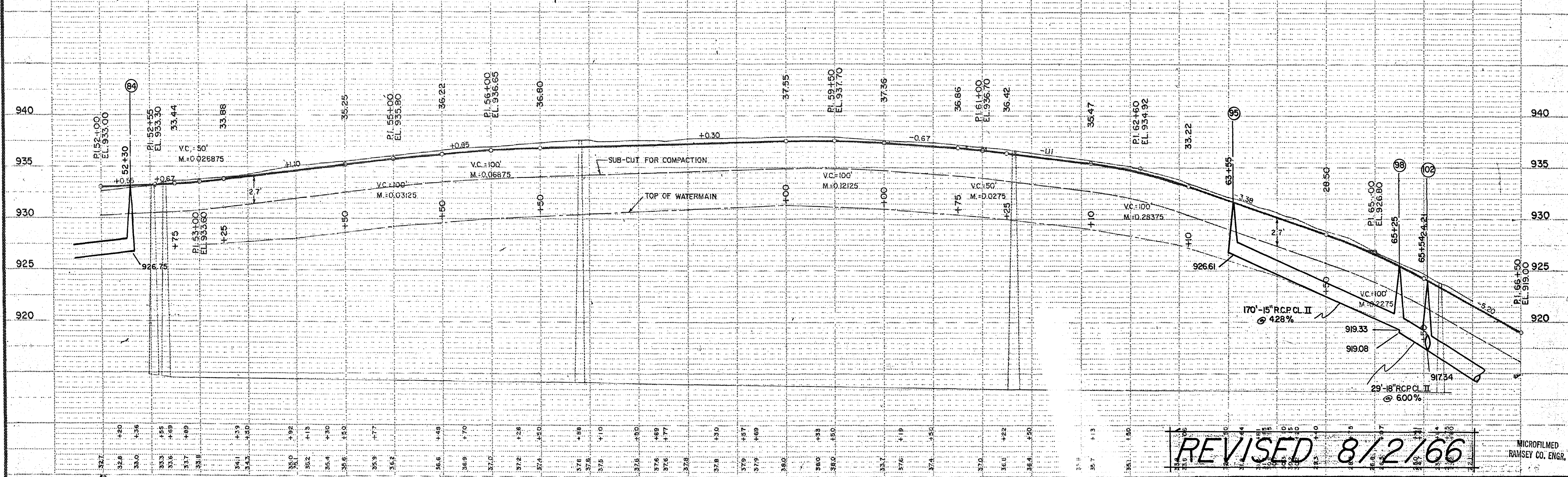
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TOP HYD. S.W. COR. OF  
VICTORIA & CO. RD. "B"



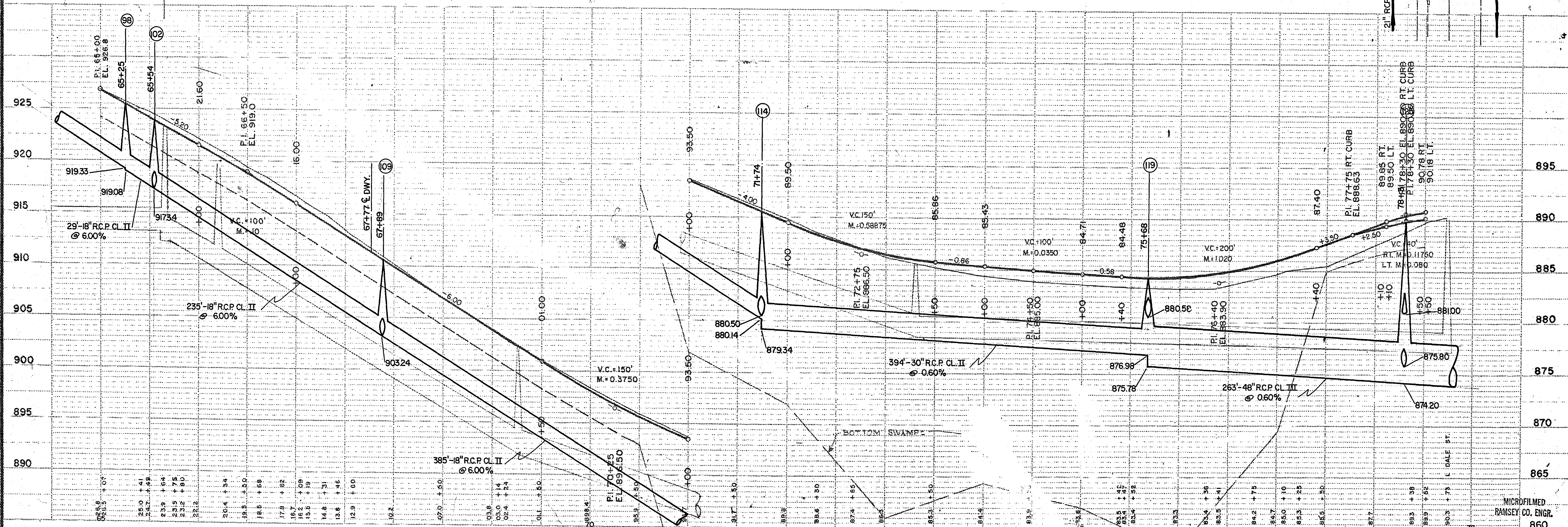
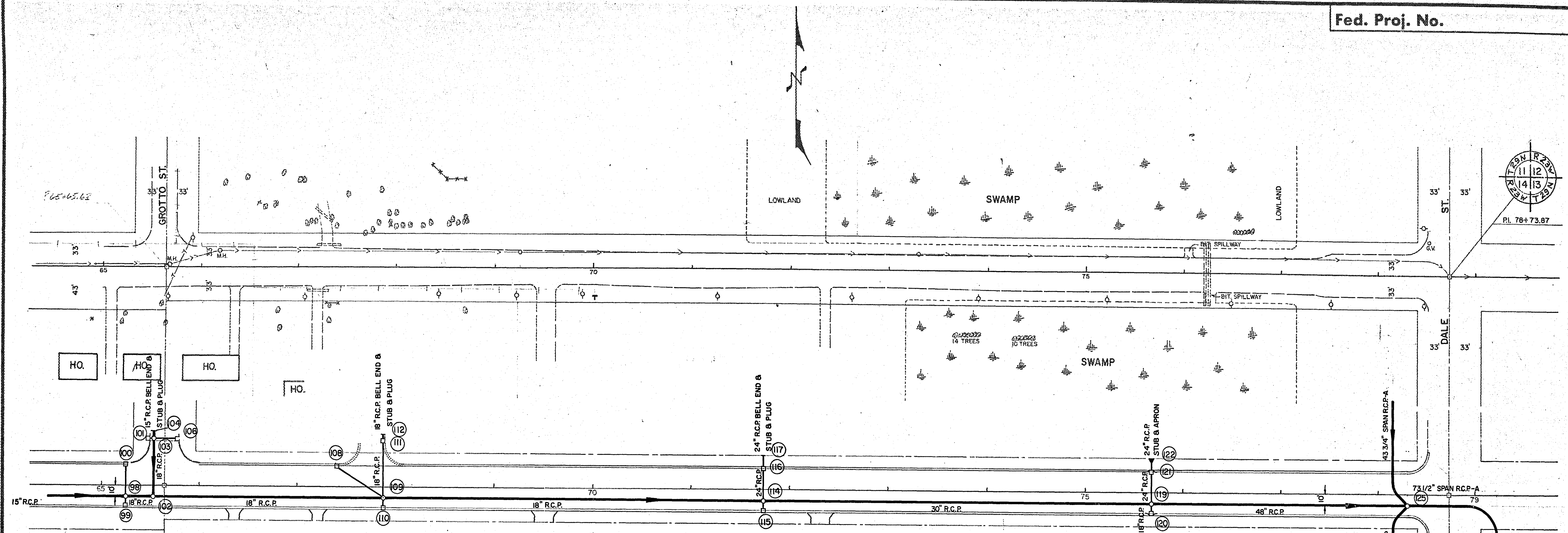
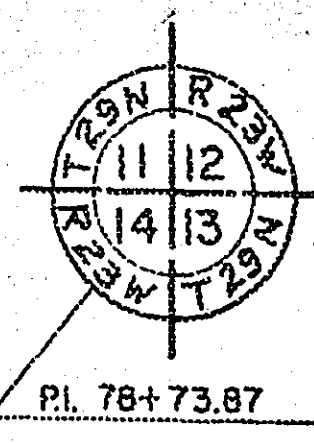
REVISED  
8/2/66



ALIGNMENT, PIPE SIZE 8 GRADE REVISED 8/2/66



REVISED 8/2/66



ROSEVILLE © No. 132 - ST. PAUL - MINNEAPOLIS, MINNESOTA ©

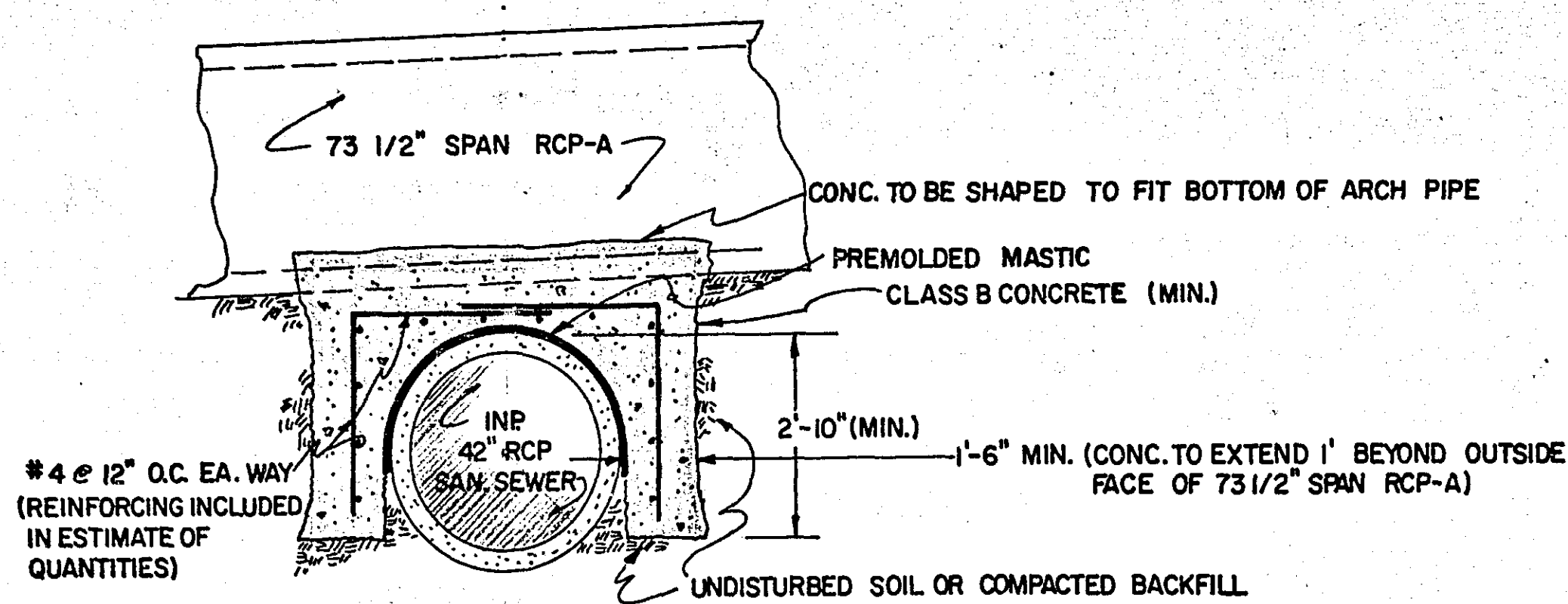
STORM DRAINAGE PLANS PREPARED BY VILLAGE OF ROSEVILLE CONSULTING ENGINEERS - BANISTER ENGINEERING CO.

S.A.P. NO. 62-625-02

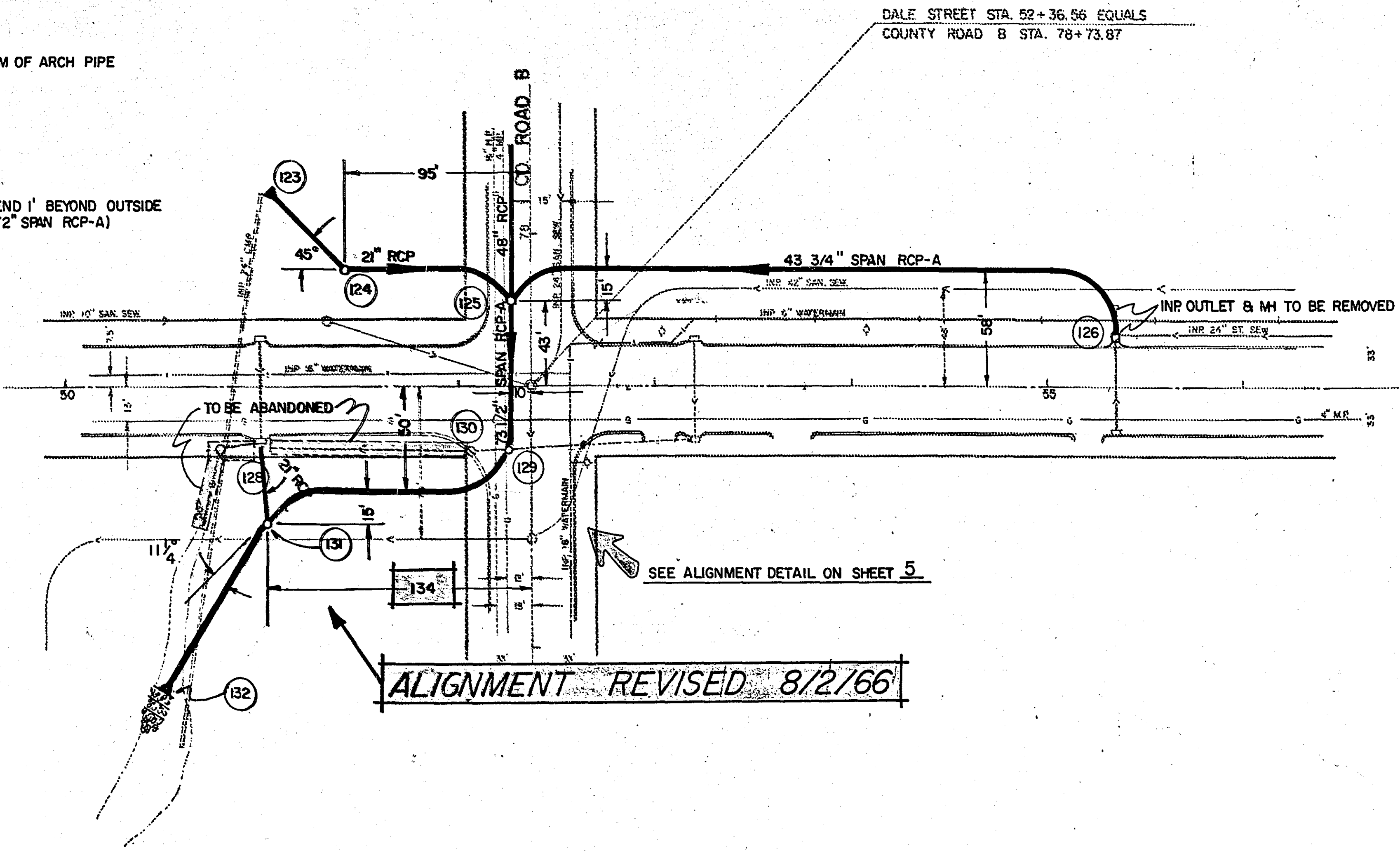
Sheet No. 15 of 38 Sheets

MICROFILMED  
RAMSEY CO. ENGR.  
860

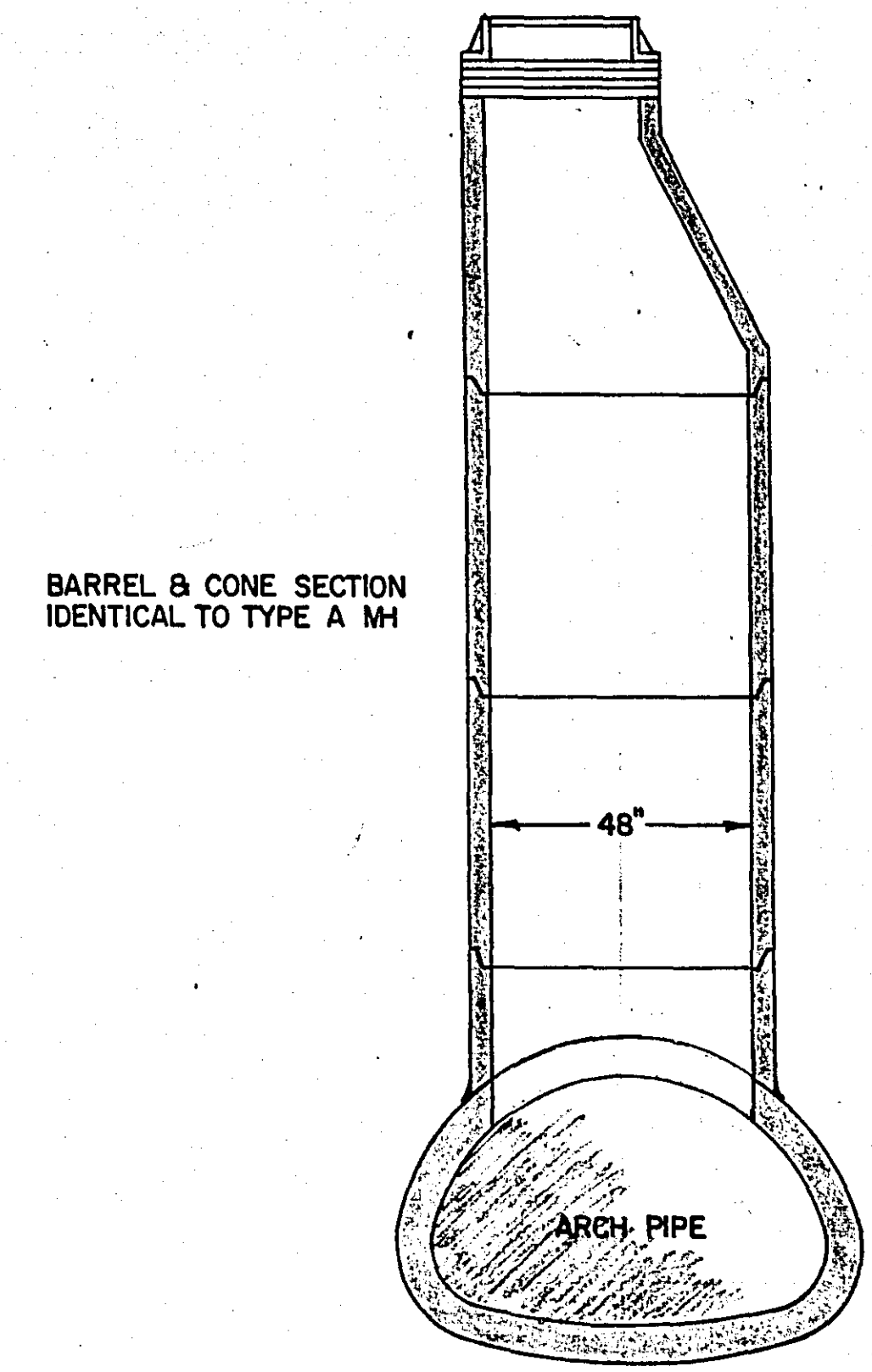
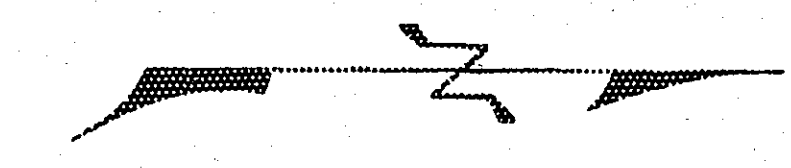
6858



SANITARY SEWER ENCASEMENT DETAIL

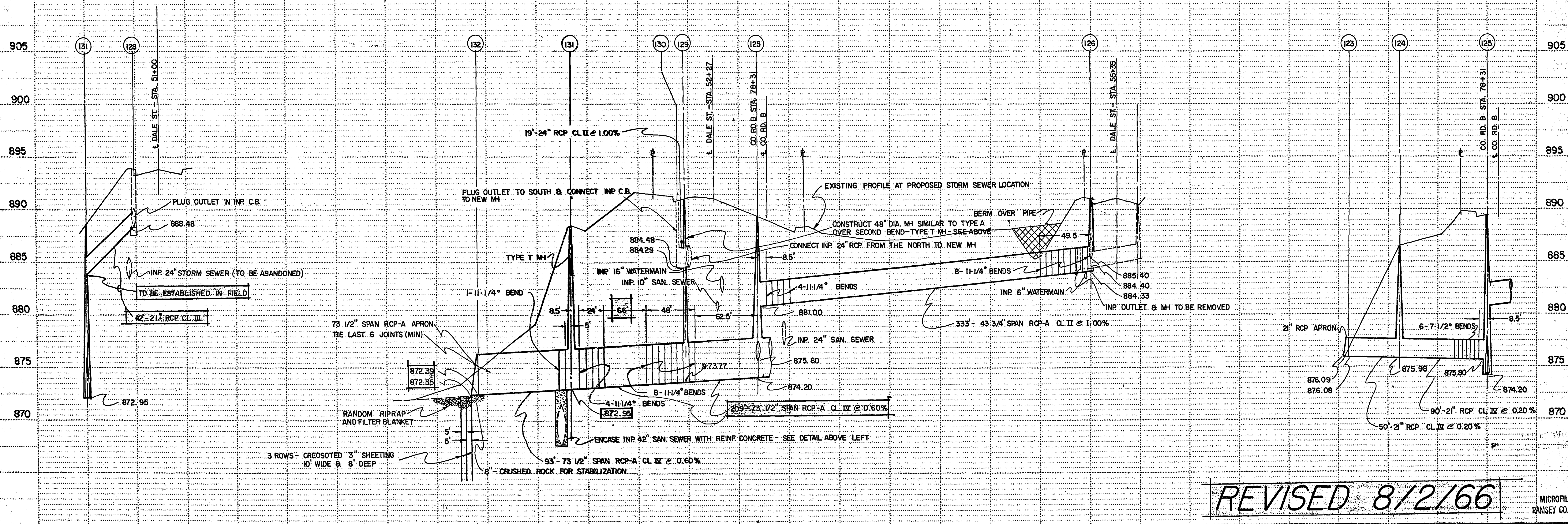


ALIGNMENT REVISED 8/2/66



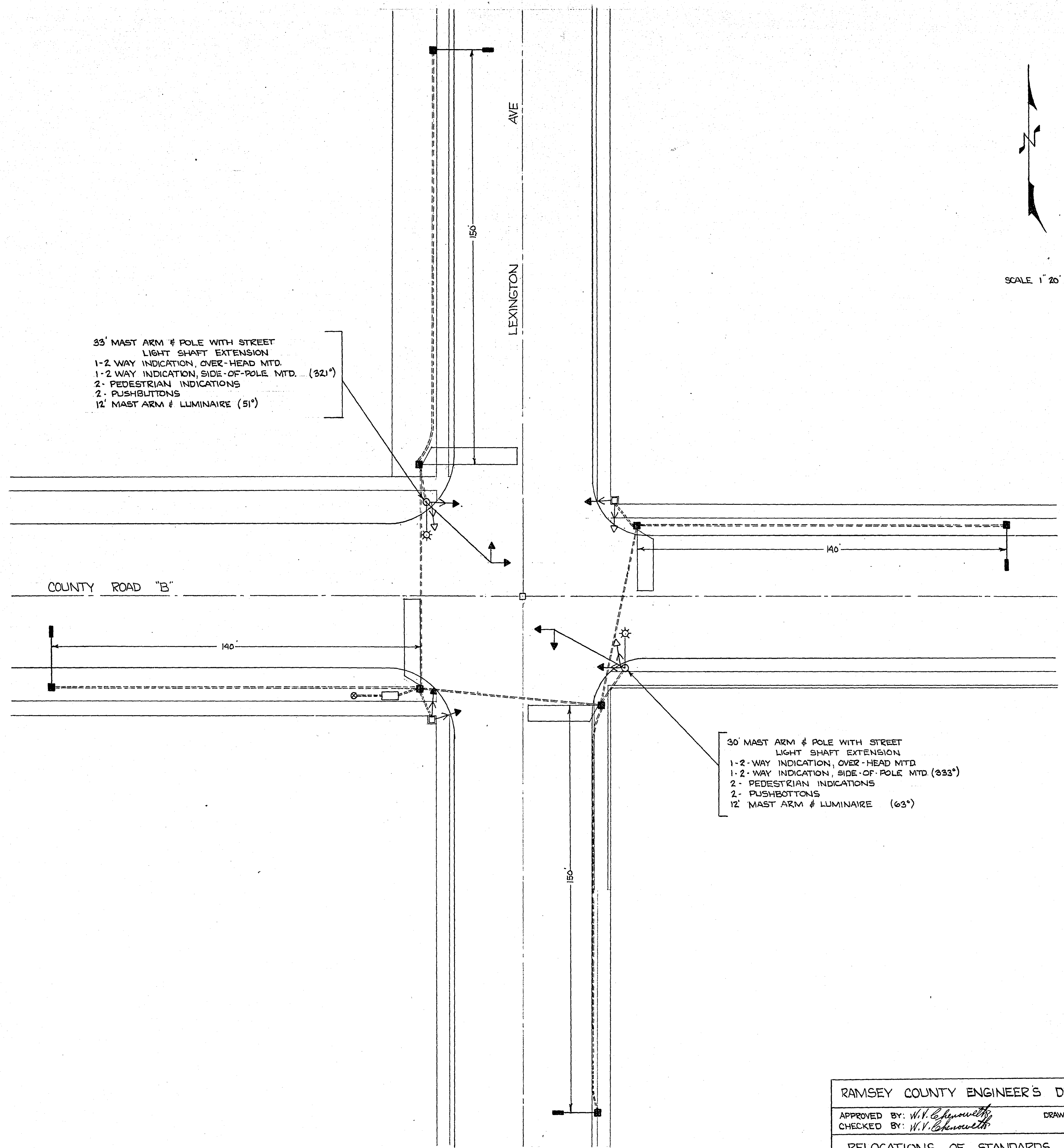
TYPE T MANHOLE

DALE STREET



REVISED 8/2/66





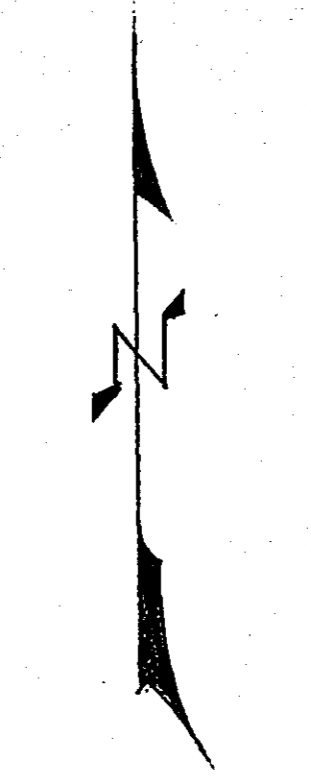
33' MAST ARM & POLE WITH STREET  
 LIGHT SHAFT EXTENSION  
 1-2 WAY INDICATION, OVER-HEAD MTD.  
 1-2 WAY INDICATION, SIDE-OF-POLE MTD. (321°)  
 2- PEDESTRIAN INDICATIONS  
 2- PUSHBUTTONS  
 12' MAST ARM & LUMINAIRE (51°)

30' MAST ARM & POLE WITH STREET  
 LIGHT SHAFT EXTENSION  
 1-2-WAY INDICATION, OVER-HEAD MTD  
 1-2-WAY INDICATION, SIDE-OF-POLE MTD (333°)  
 2- PEDESTRIAN INDICATIONS  
 2- PUSHBUTTONS  
 12' MAST ARM & LUMINAIRE (63°)

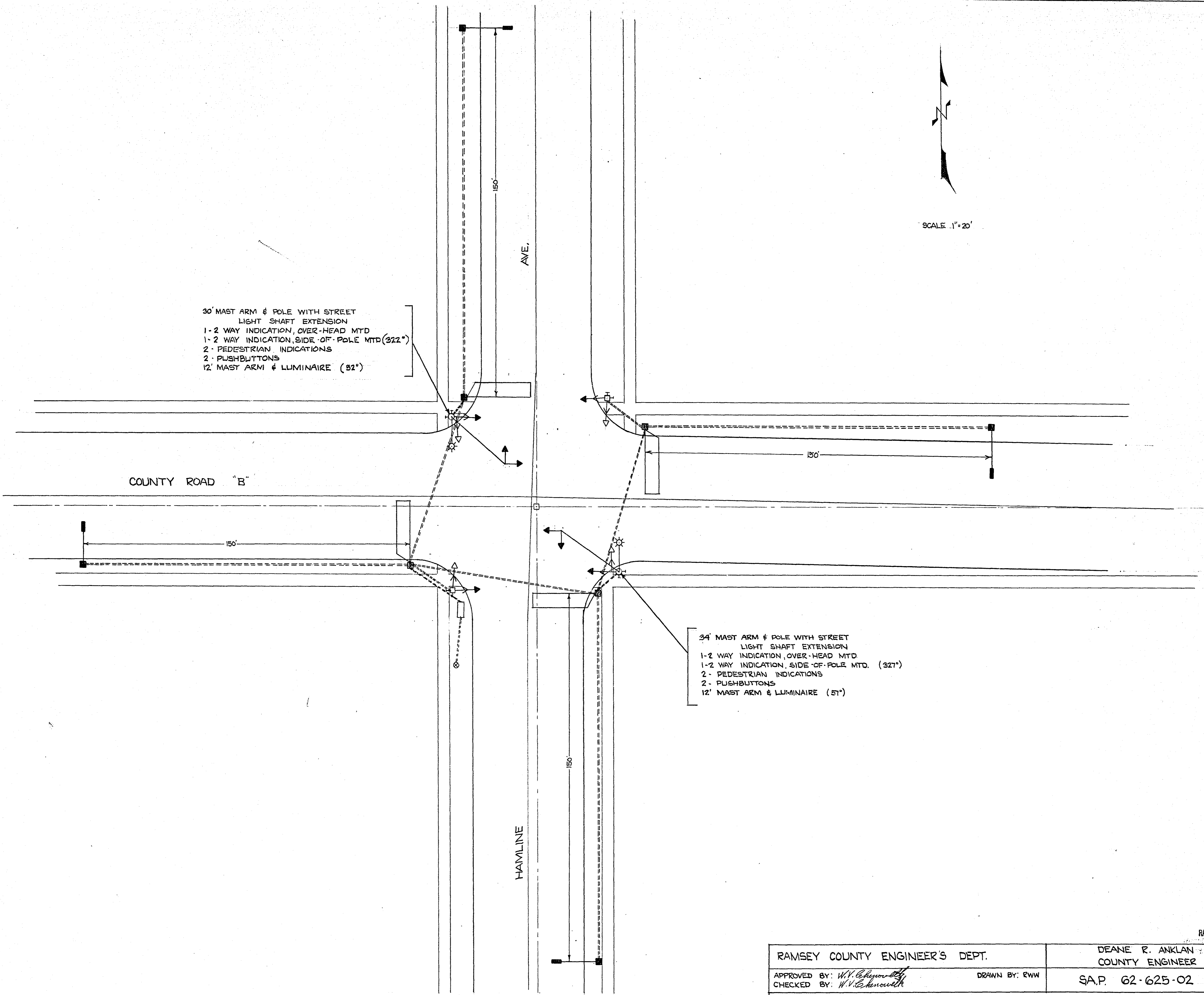
MICROFILMED  
 RAMSEY CO. ENGR.

RAMSEY COUNTY ENGINEER'S DEPT.		DEANE R. ANKLAN COUNTY ENGINEER
APPROVED BY: <i>W.V. Chiswell</i>	DRAWN BY RWW	S.A.P. 62-625-02
CHECKED BY: <i>W.V. Chiswell</i>	RELOCATIONS OF STANDARDS, MAST ARMS & PULL BOXES	
		DATE 8-12-66

6858



SCALE 1" = 20'



30' MAST ARM & POLE WITH STREET LIGHT SHAFT EXTENSION  
1-2 WAY INDICATION, OVER-HEAD MTD  
1-2 WAY INDICATION, SIDE-OF-POLE MTD (322°)  
2- PEDESTRIAN INDICATIONS  
2- PUSHBUTTONS  
12' MAST ARM & LUMINAIRE (52°)

34' MAST ARM & POLE WITH STREET LIGHT SHAFT EXTENSION  
1-2 WAY INDICATION, OVER-HEAD MTD  
1-2 WAY INDICATION, SIDE-OF-POLE MTD. (327°)  
2- PEDESTRIAN INDICATIONS  
2- PUSHBUTTONS  
12' MAST ARM & LUMINAIRE (51°)

MICROFILMED  
RAMSEY CO. ENGR.

RAMSEY COUNTY ENGINEER'S DEPT.		DEANE R. ANKLAN COUNTY ENGINEER	
APPROVED BY: <i>W.V. Chiswell</i>	DRAWN BY: RWW	S.A.P. 62-625-02	
CHECKED BY: <i>W.V. Chiswell</i>		RELOCATIONS OF STANDARDS, MAST ARMS & PULL BOXES DATE 8-12-66	

6858



**SIGNALS**  
 30' MAST ARM & POLE WITH STREET LIGHT SHAFT EXTENSION.  
 1-2-WAY INDICATION, OVER-HEAD M'T'D.  
 1-2-WAY INDICATION, SIDE-OF-POLE M'T'D. (325°)  
 2- PEDESTRIAN INDICATIONS  
 2- PUSHBUTTONS  
 12' MAST ARM & LUMINAIRE (55°)  
 (SEE SPECIAL PROVISIONS).

**SIGNALS**  
 1-2 WAY INDICATION, PEDESTAL M'T'D.  
 2- PEDESTRIAN INDICATIONS  
 2- PUSHBUTTONS

LEGEND OF SIGNAL SYSTEM	
	MAST ARM & POLE
	PEDESTAL
	HANDHOLE (PULL BOX)
	CONTROLLER
	SOURCE OF POWER
	VEHICLE SIGNAL WITH BACKGROUND SHIELDS
	PEDESTRIAN SIGNAL
	PUSH-BUTTON
	MAST ARM & LUMINAIRE
	VEHICLE SIGNAL

1-3" RMC  
 2-12/C #12  
 4-3/C #12  
 2-1/C 6 TYPE R.H.W. OR T.H.W.

1-3" RMC  
 2-12/C #12  
 2-3/C #12  
 2-1/C #6 TYPE R.H.W. OR T.H.W.

1-3" RMC  
 2-12/C #12  
 2-3/C #12

1-1 1/2" RMC  
 1-3/C #12

1-1 1/2" RMC  
 1-3/C #12

1-1" RMC  
 2-1/C #12 U.S.E.  
 TWIST 1-TURN/FT.

1-3" RMC  
 3-12/C #12  
 4-3/C #12

1-3" RMC  
 4-12/C #12  
 4-3/C #12  
 2-1/C #6 TYPE R.H.W. OR T.H.W.

1-3" RMC  
 2-12/C #12  
 4-3/C #12

**SIGNALS**  
 1-2-WAY INDICATION, PEDESTAL M'T'D.  
 2- PEDESTRIAN INDICATIONS  
 2- PUSHBUTTONS

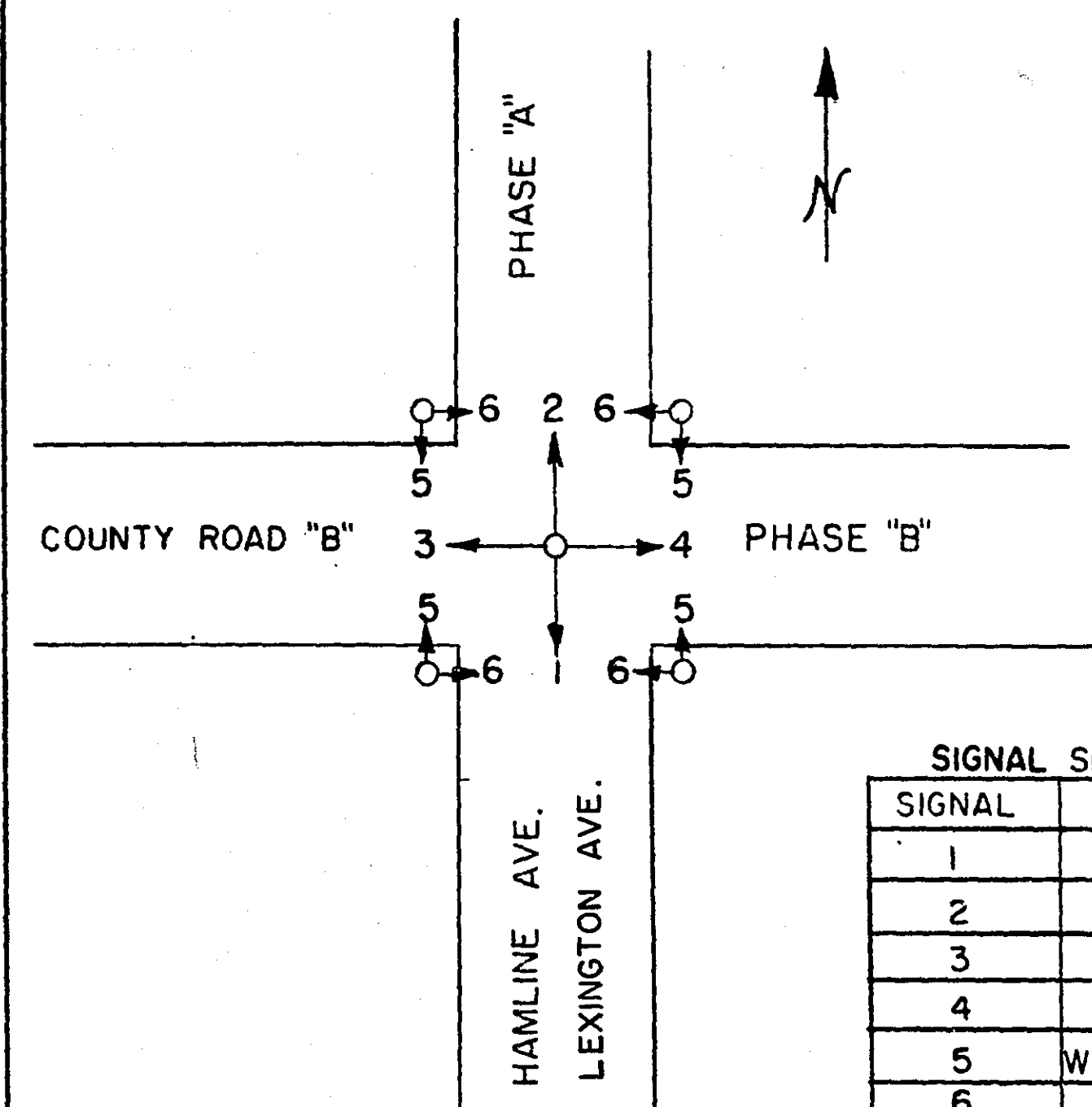
2-3" RMC  
 6-12/C #12  
 12-3/C #12  
 2-1/C 6 TYPE R.H.W. OR T.H.W.

STUB OUT 1 1/4" RMC THREADED AND CAPPED FOR FUTURE USE

1-3" RMC  
 3-12/C #12  
 6-3/C #12  
 1-TURN/FT  
 2-1/C #6 TYPE R.H.W. OR T.H.W.

30' MAST ARM & POLE WITH STREET LIGHT SHAFT EXTENSION.  
 1-2-WAY INDICATION, OVER-HEAD M'T'D.  
 1-2-WAY INDICATION, SIDE-OF-POLE M'T'D. (325°)  
 2- PEDESTRIAN INDICATIONS  
 2- PUSHBUTTONS  
 12' MAST ARM & LUMINAIRE (55°)  
 (SEE SPECIAL PROVISIONS).

**SIGNALS**



**SIGNAL SEQUENCE CHART**

SIGNAL	PHASE "A"			PHASE "B"		
1	G	G	Y	R	R	R
2	G	G	Y	R	R	R
3	R	R	R	G	G	Y
4	R	R	R	G	G	Y
5	WALK	D.W.	D.W.	D.W.	D.W.	D.W.
6	D.W.	D.W.	D.W.	WALK	D.W.	D.W.

SIGNAL FLASHING  
 FLASHING RED INDICATIONS  
 NUMBERED 1-2-3-4

**NOTES:**

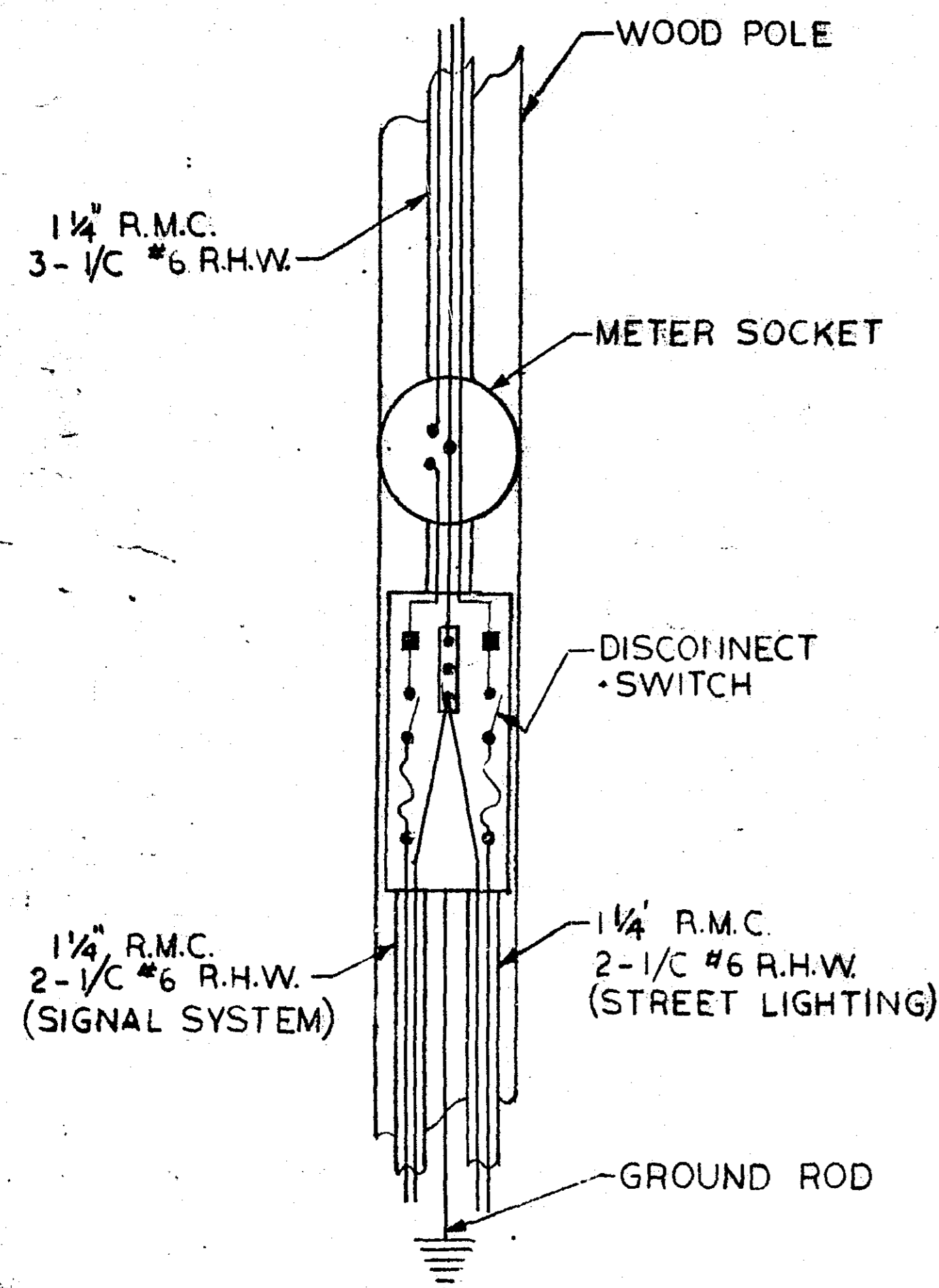
- ALL VEHICLE SIGNALS 12" DIAMETER. PEDESTRIAN SIGNALS 9" RECTANGULAR.
- EXACT LOCATION OF ALL SIGNAL EQUIPMENT WILL BE DETERMINED IN THE FIELD BY THE ENGINEER
- SEE DETAIL SHEETS FOR CONSTRUCTION OF BASES, AND ALL OTHER SIGNAL EQUIPMENT SPECIFICATIONS.
- PHASE "A" HAMLINE AVE. & LEXINGTON AVE. PHASE "B" COUNTY ROAD "B".

USE AT FOLLOWING LOCATIONS  
 HAMLINE AVE. AND CO. RD. "B"  
 LEXINGTON AVE. AND CO. RD. "B"

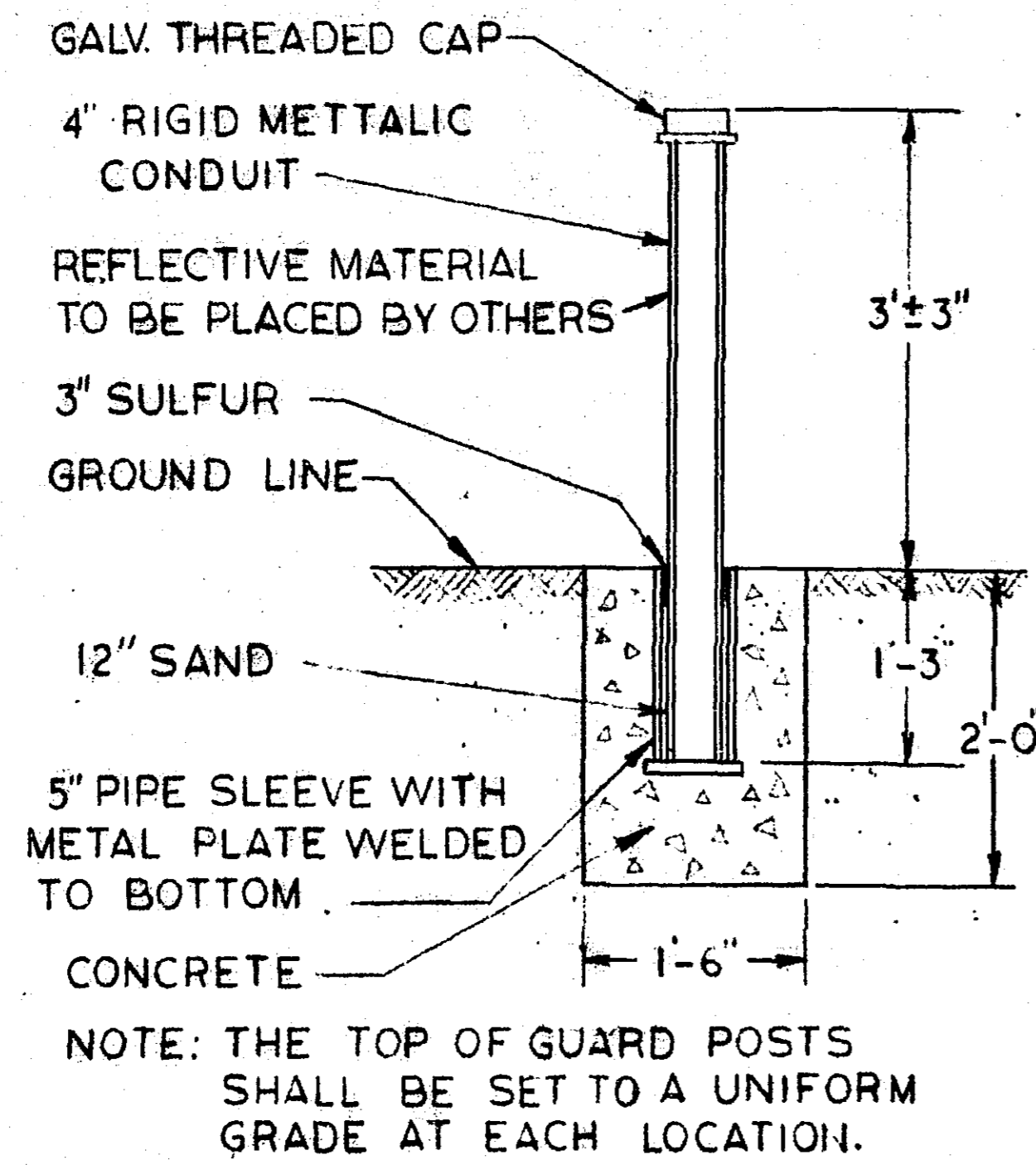
**PROPOSED TRAFFIC SIGNAL SYSTEMS**  
 SCALE IN FEET  
 0 10 20 40  
 RAMSEY COUNTY ENGINEERING DEPARTMENT

**METER AND DISCONNECT  
DETAIL**

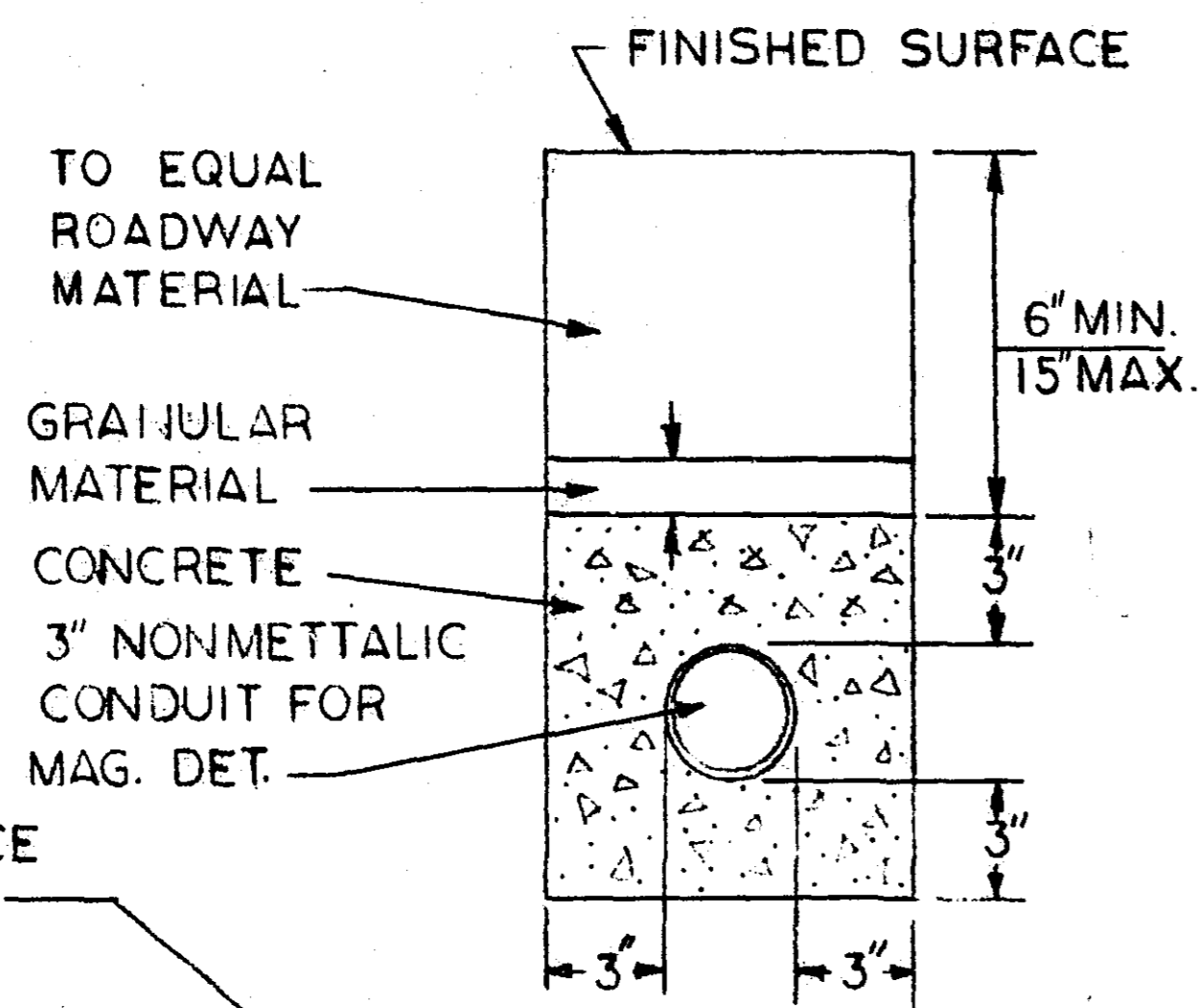
SCALE: NONE  
HOOKUP FOR LIGHTING AND  
SIGNAL (120/240 VOLTS)



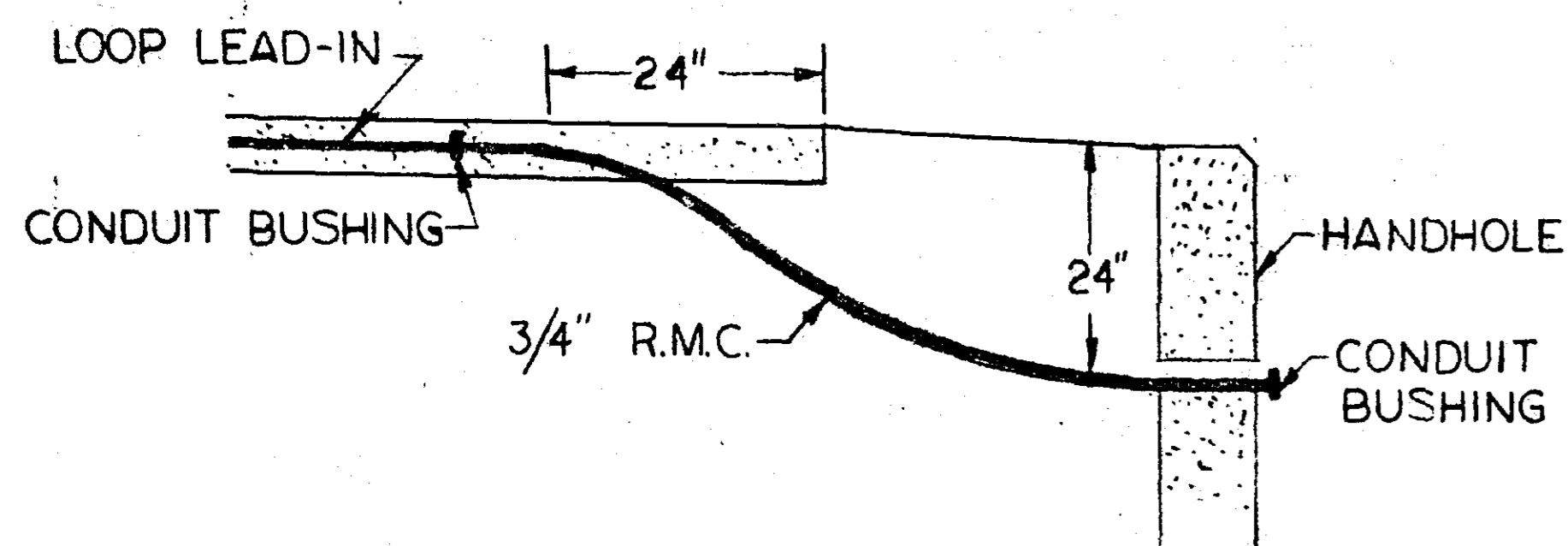
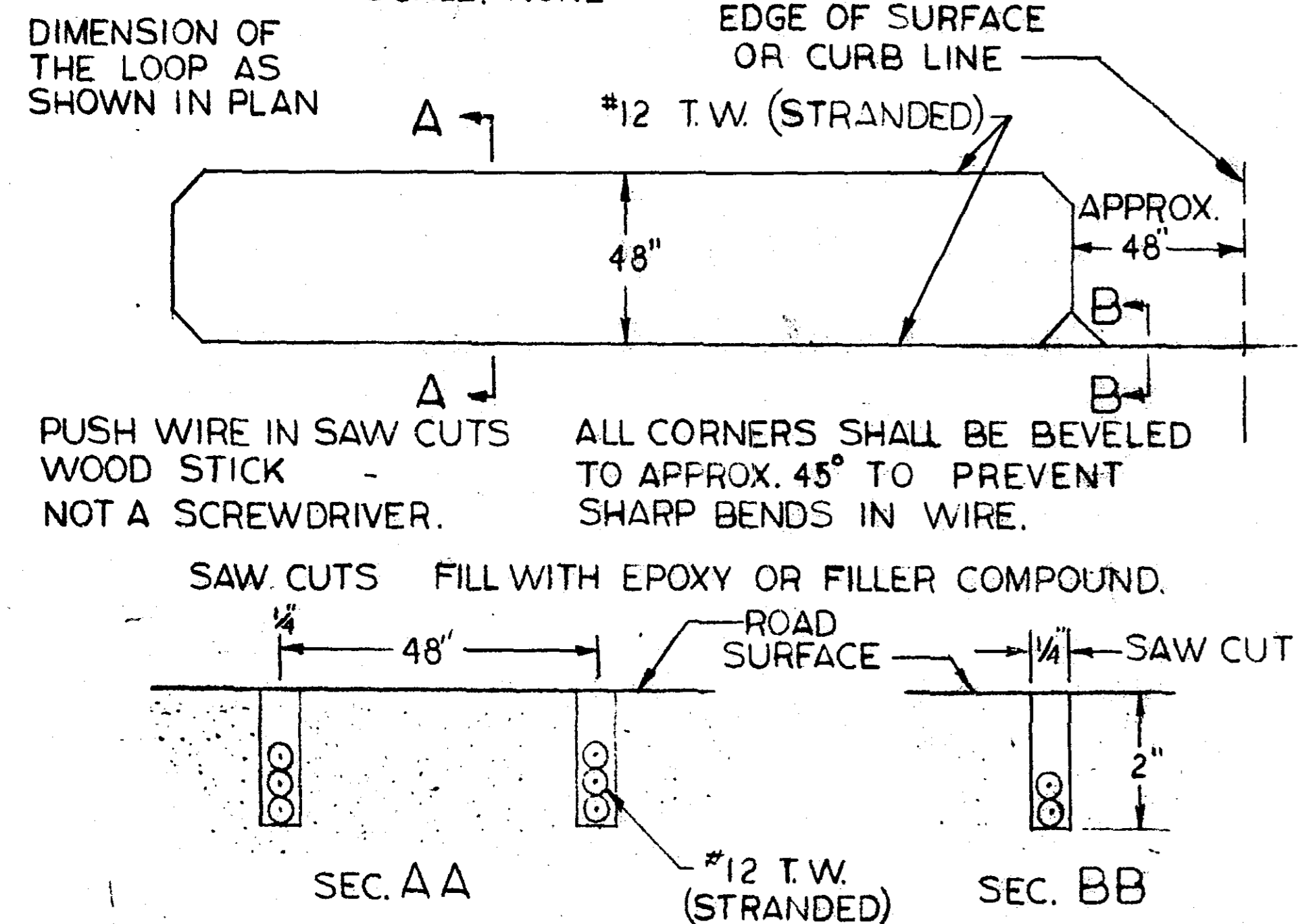
**GUARD POST**



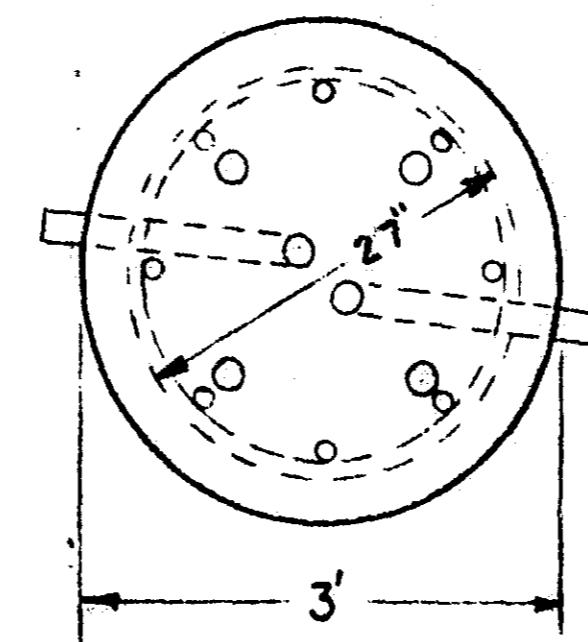
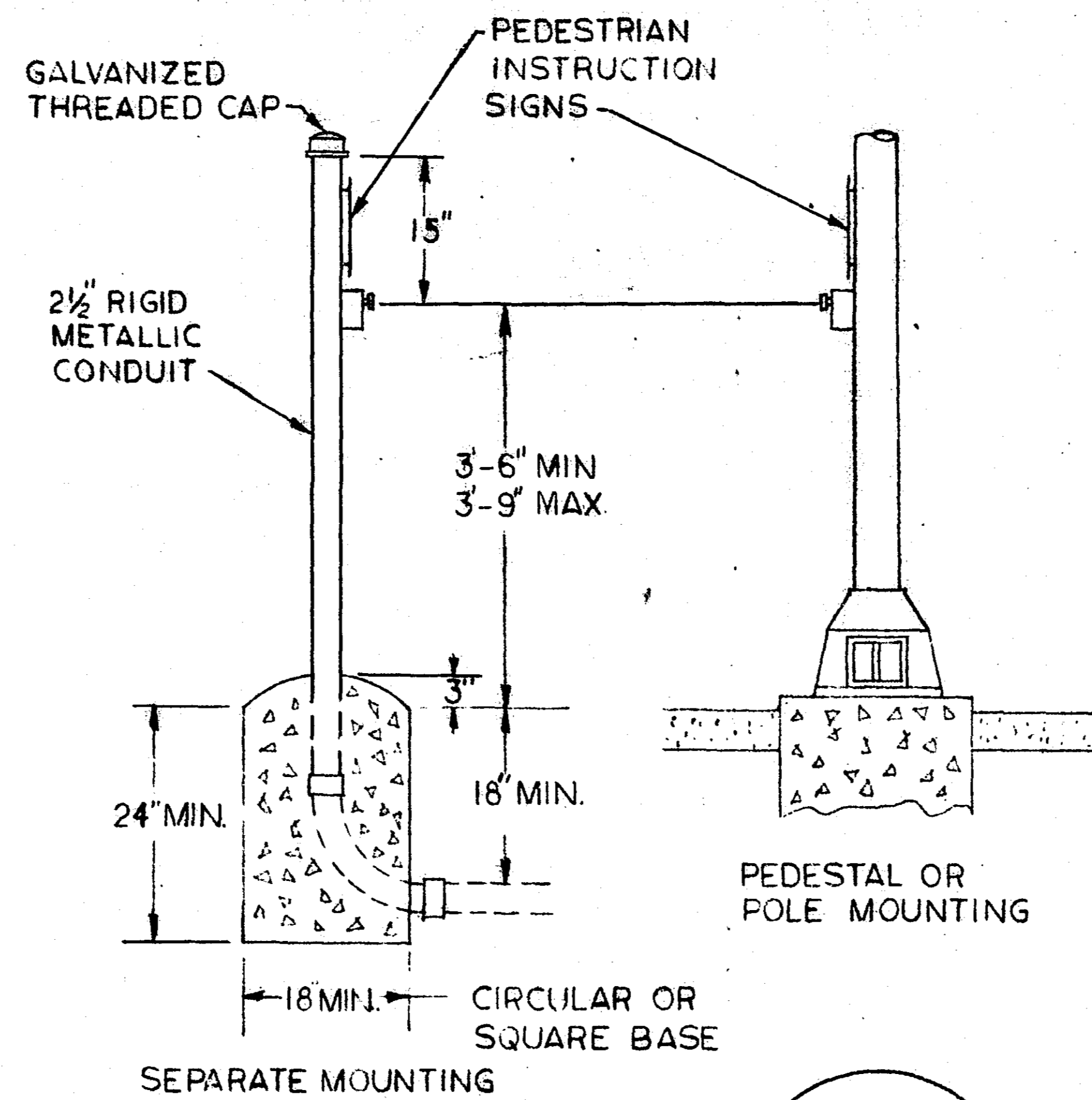
**NONMETALLIC CONDUIT  
ENCASEMENT**  
SCALE: NONE



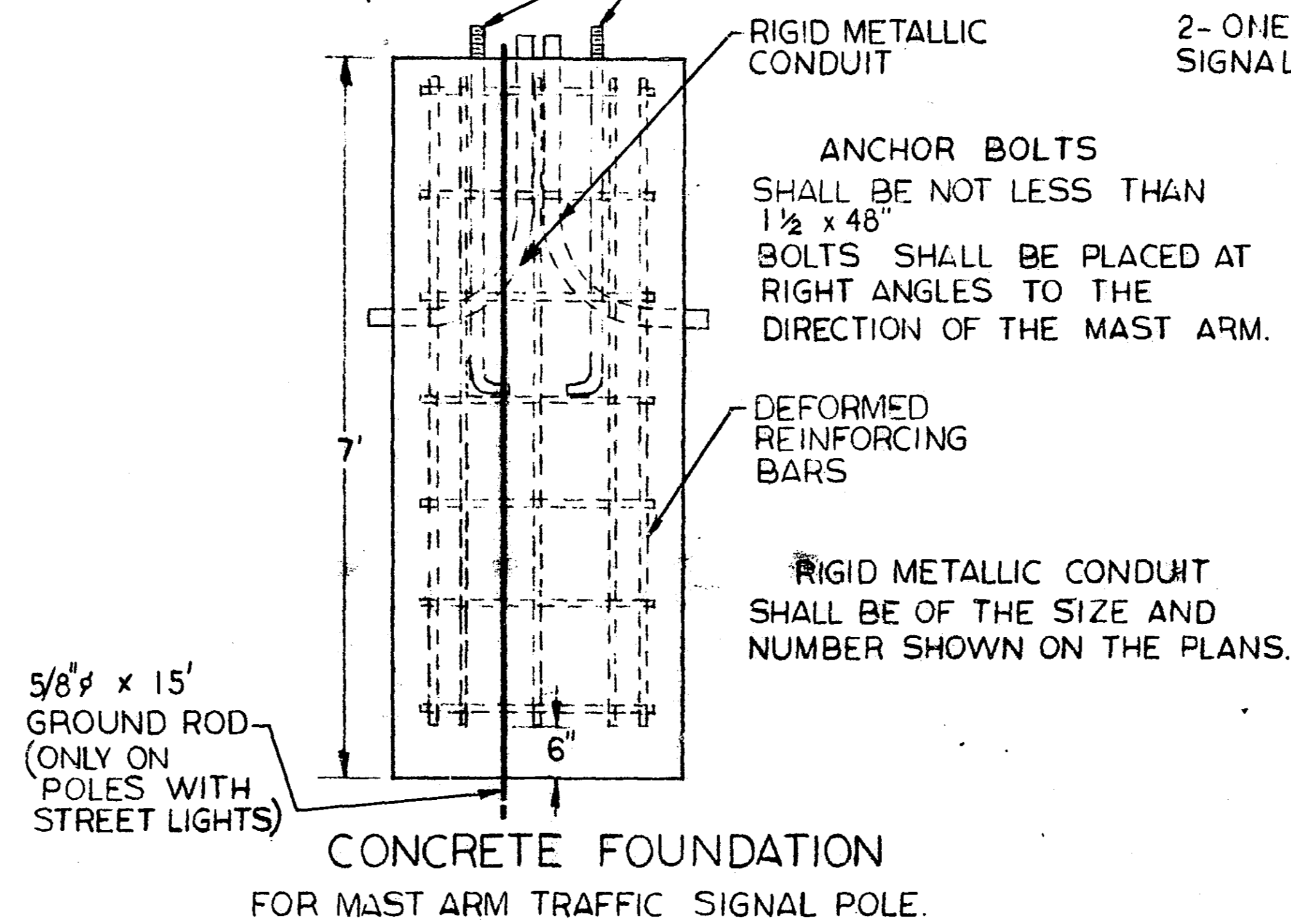
**DETECTION LOOP INSTALLATION  
DETAIL NO. 2**  
SCALE: NONE



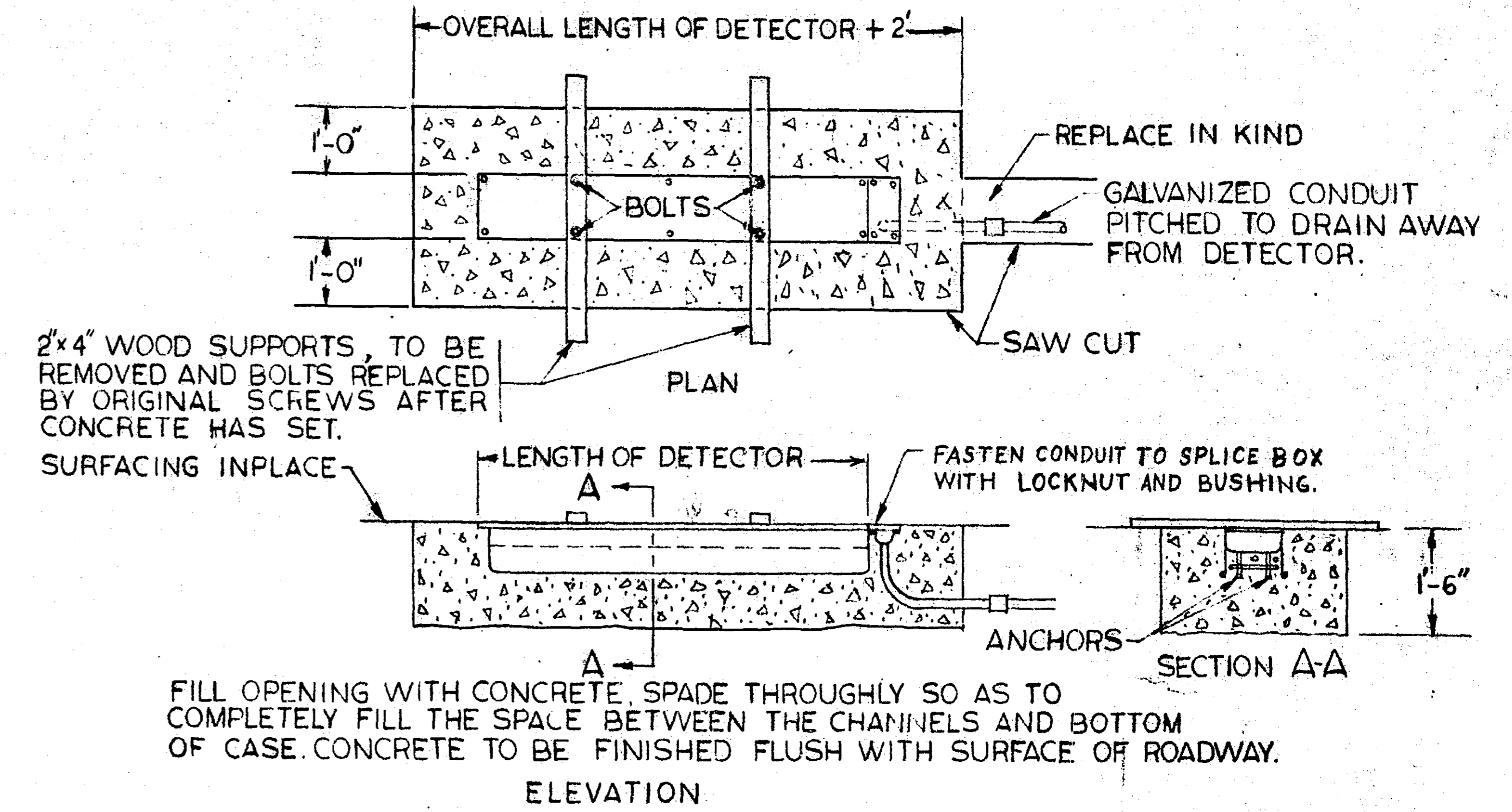
**PEDESTRIAN PUSH BUTTON**



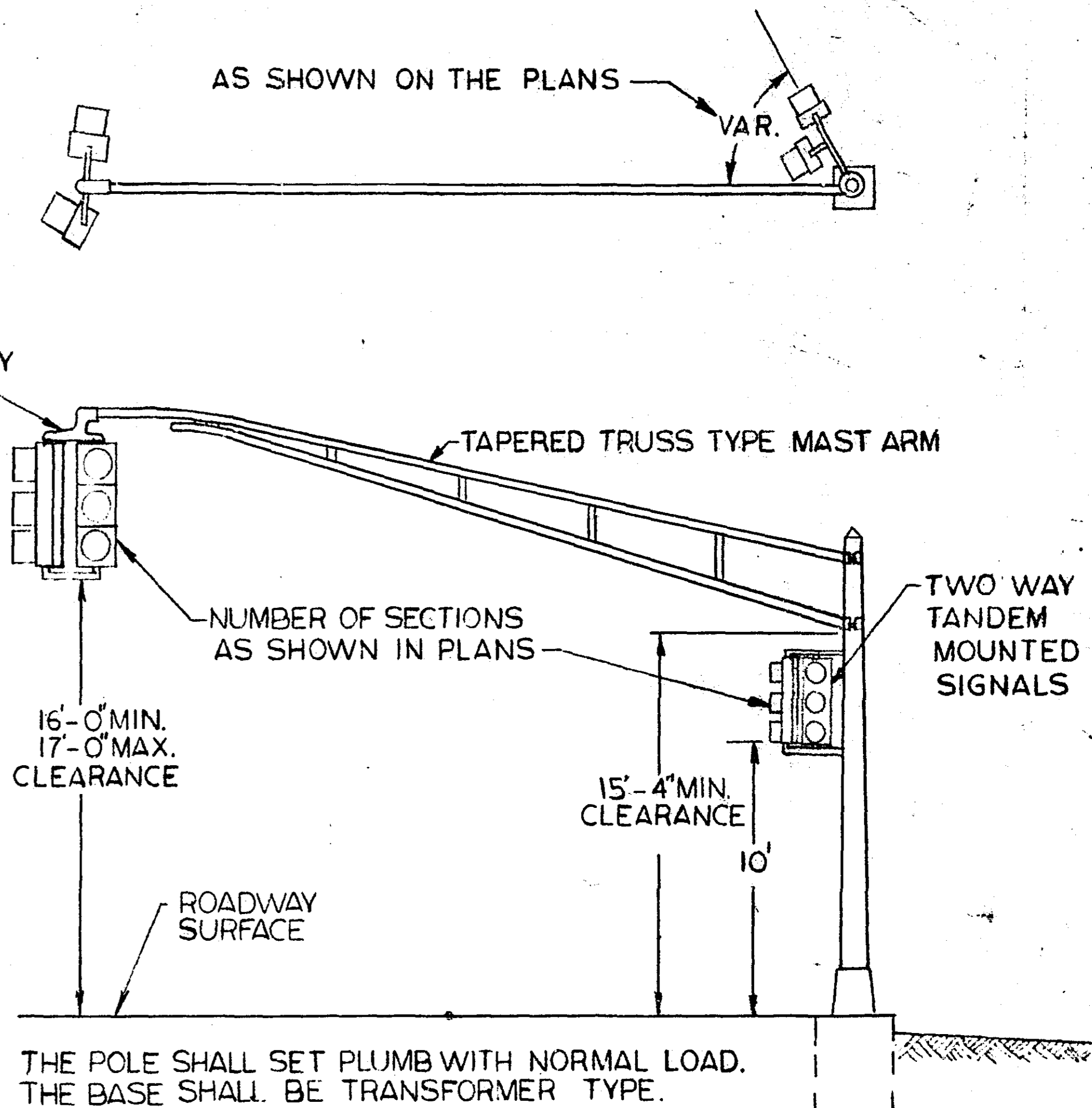
ANCHOR BOLTS



**PRESSURE SENSITIVE VEHICLE DETECTOR**



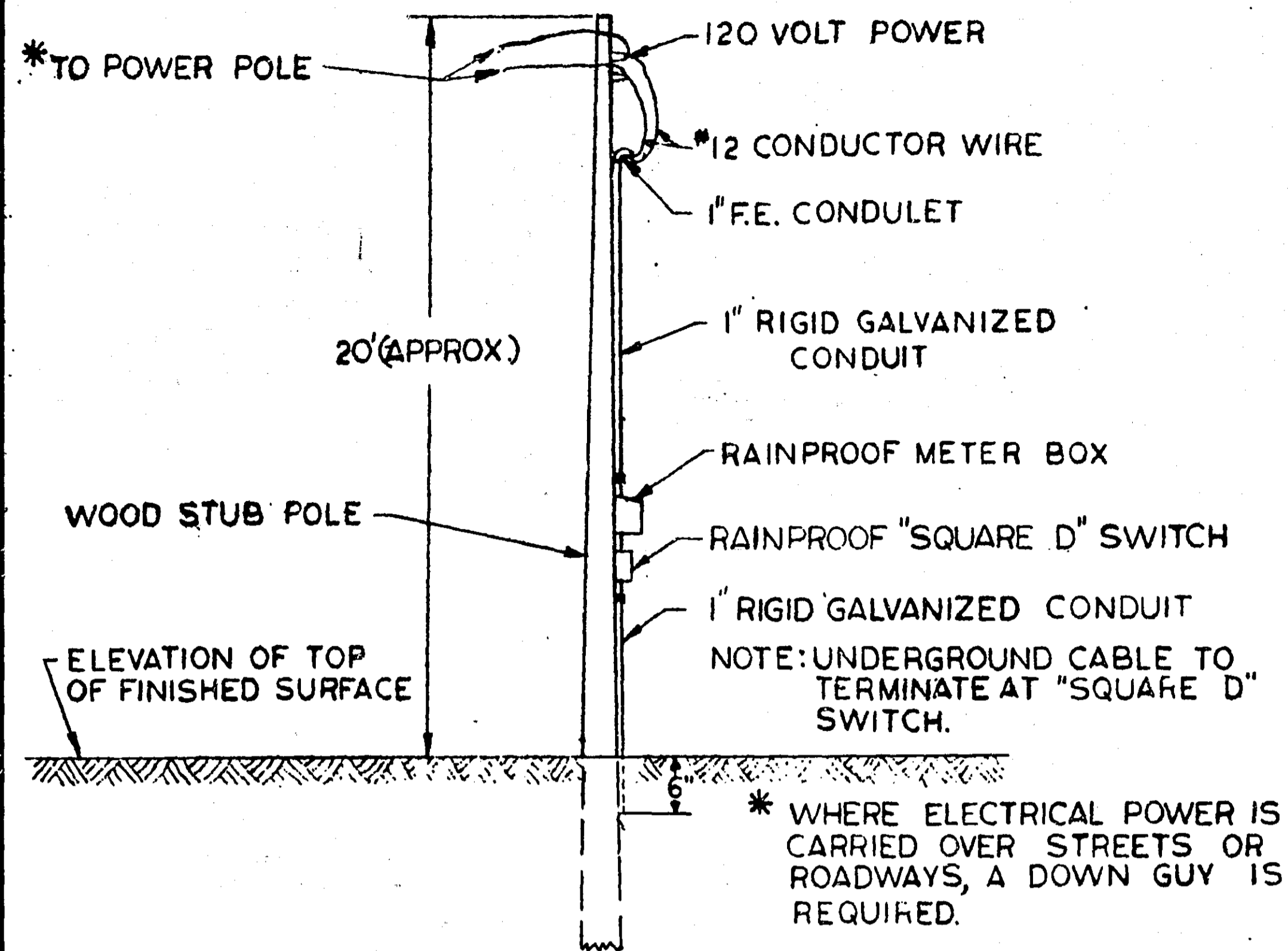
**MAST ARM TRAFFIC SIGNAL POLE**  
SCALE: NONE



**TRAFFIC ACTUATED  
TRAFFIC CONTROL SIGNAL SYSTEM  
DETAILS**  
RAMSEY COUNTY ENGINEERING DEPARTMENT  
SCALE IN FEET  
0 10 20 40

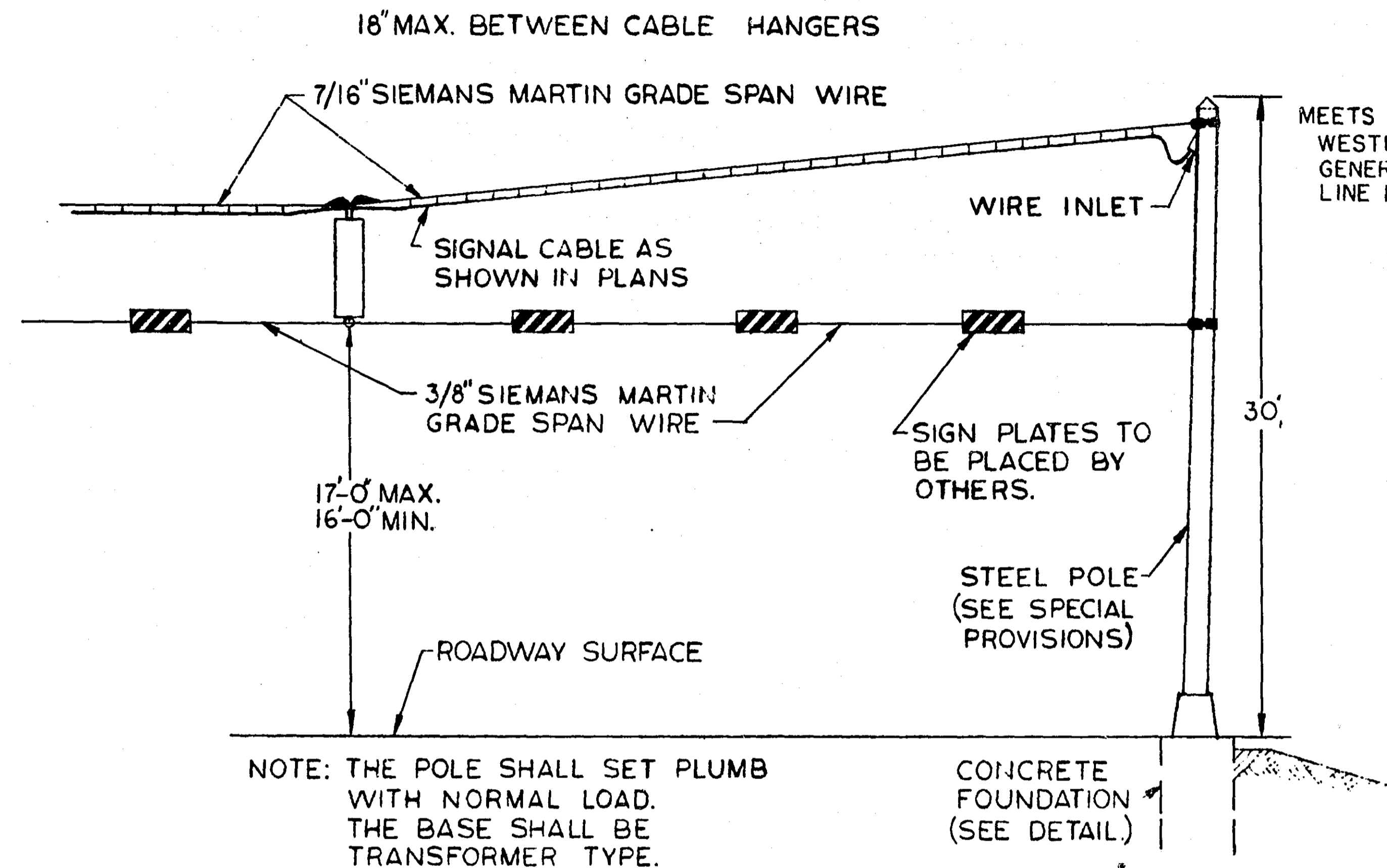
### WOOD STUB POLE FOR POWER CONNECTION

SCALE NONE



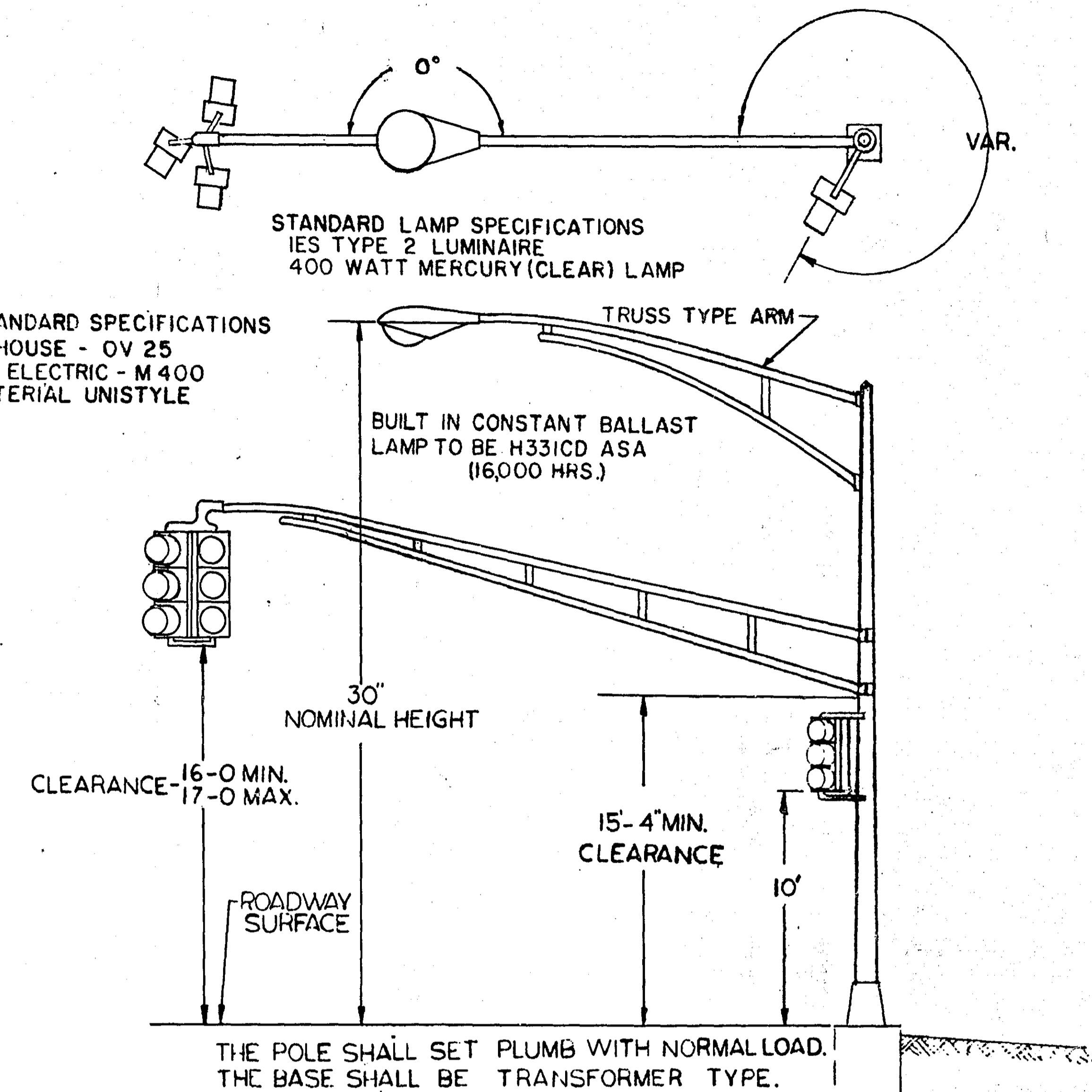
### STEEL POLE INSTALLATION DETAIL

SCALE NONE



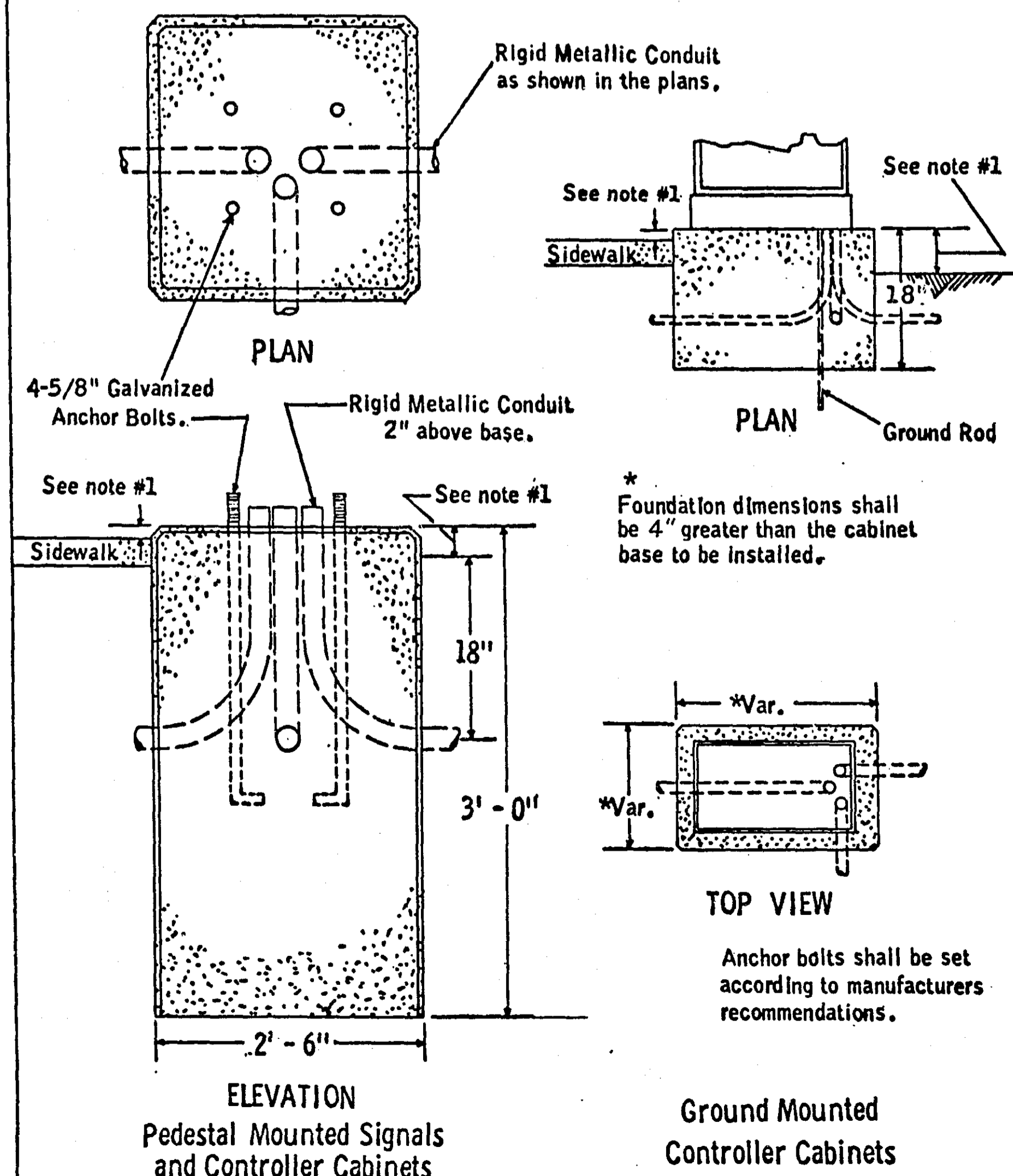
### MAST ARM TRAFFIC SIGNAL POLE

SCALE NONE

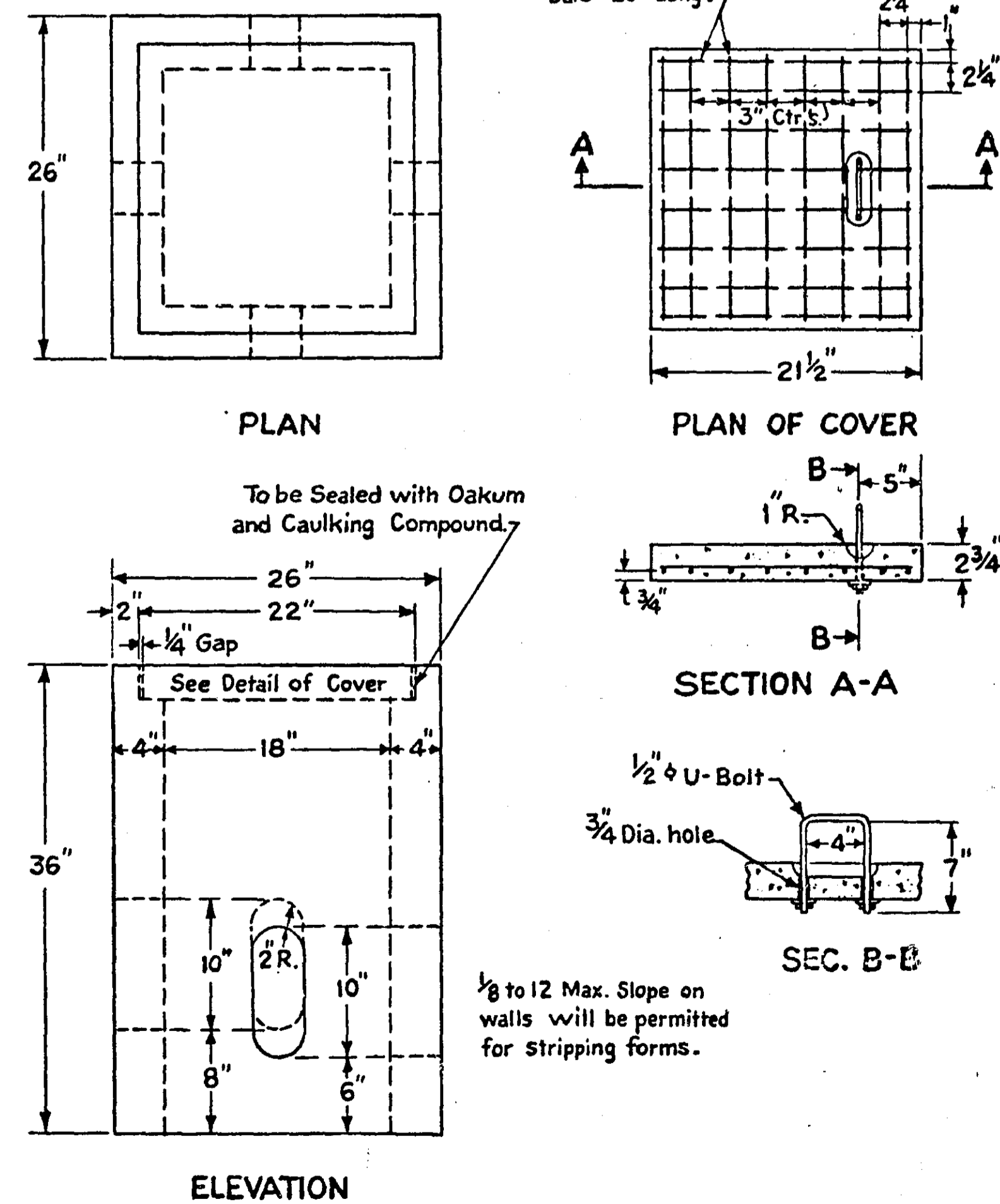


NOTE #1

Distance from ground line variable from 1/4\"/>



CONCRETE FOUNDATIONS



PRECAST CONCRETE HANDHOLE OR PULLBOX

### LEGEND OF SIGNAL SYSTEM

	CONTROLLER
	HANDHOLE (PULLBOX)
	RIGID METALLIC CONDUIT (R.M.C.)
	PEDESTAL
	MAST ARM & POLE
	SIGNAL FACE
	SIGNAL FACE & BACKGROUND SHIELD
	3\"/>
	STEEL POLE
	WOOD POLE
	MAST ARM & LUMINAIRE
	MAG. DET. IN 3\"/>

### TRAFFIC ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM DETAILS

RAMSEY COUNTY ENGINEERING DEPARTMENT

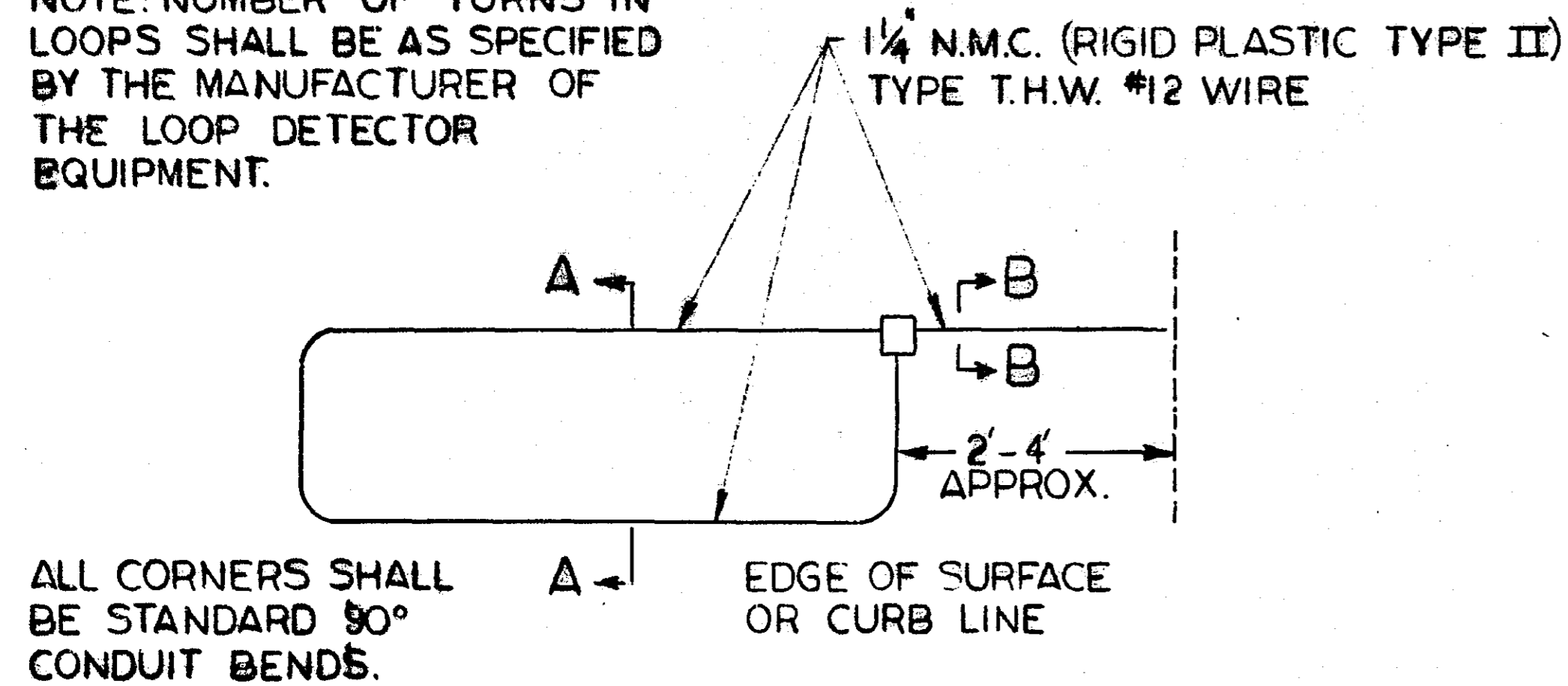
SCALE IN FEET  
0 10 20 40

6858

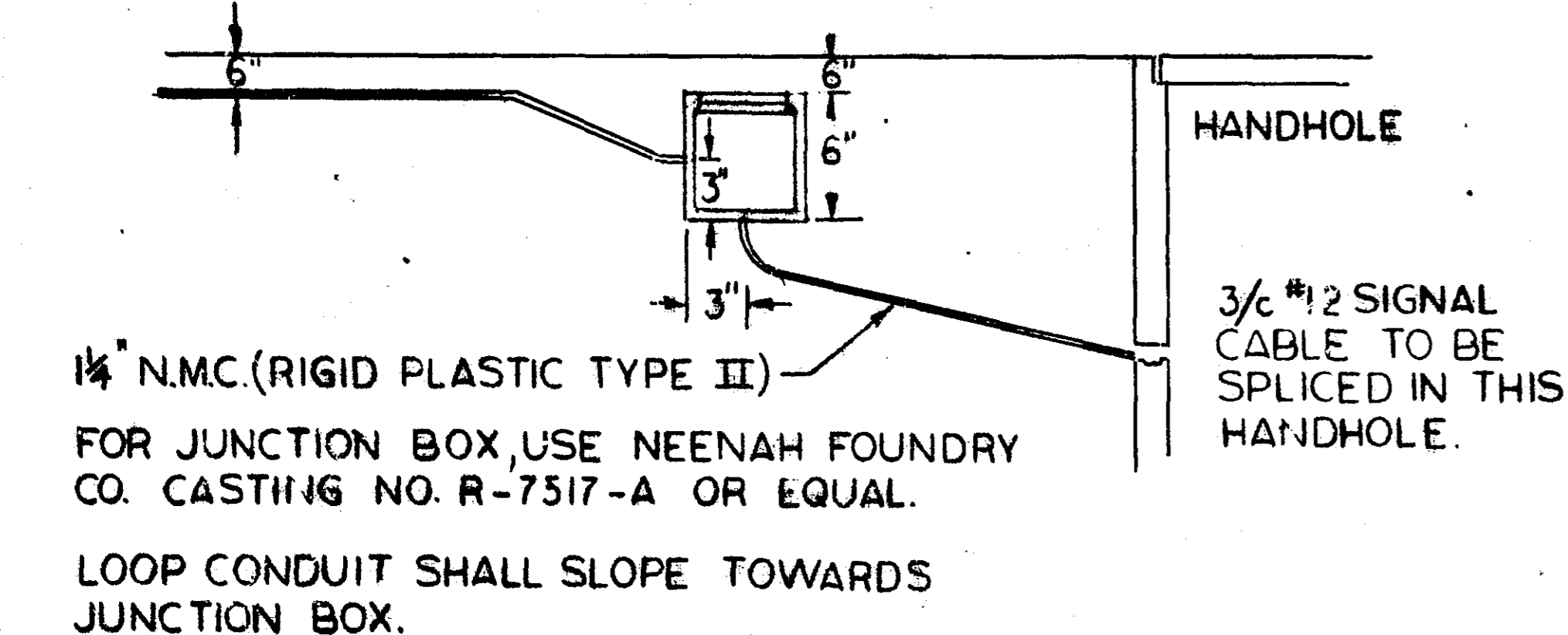
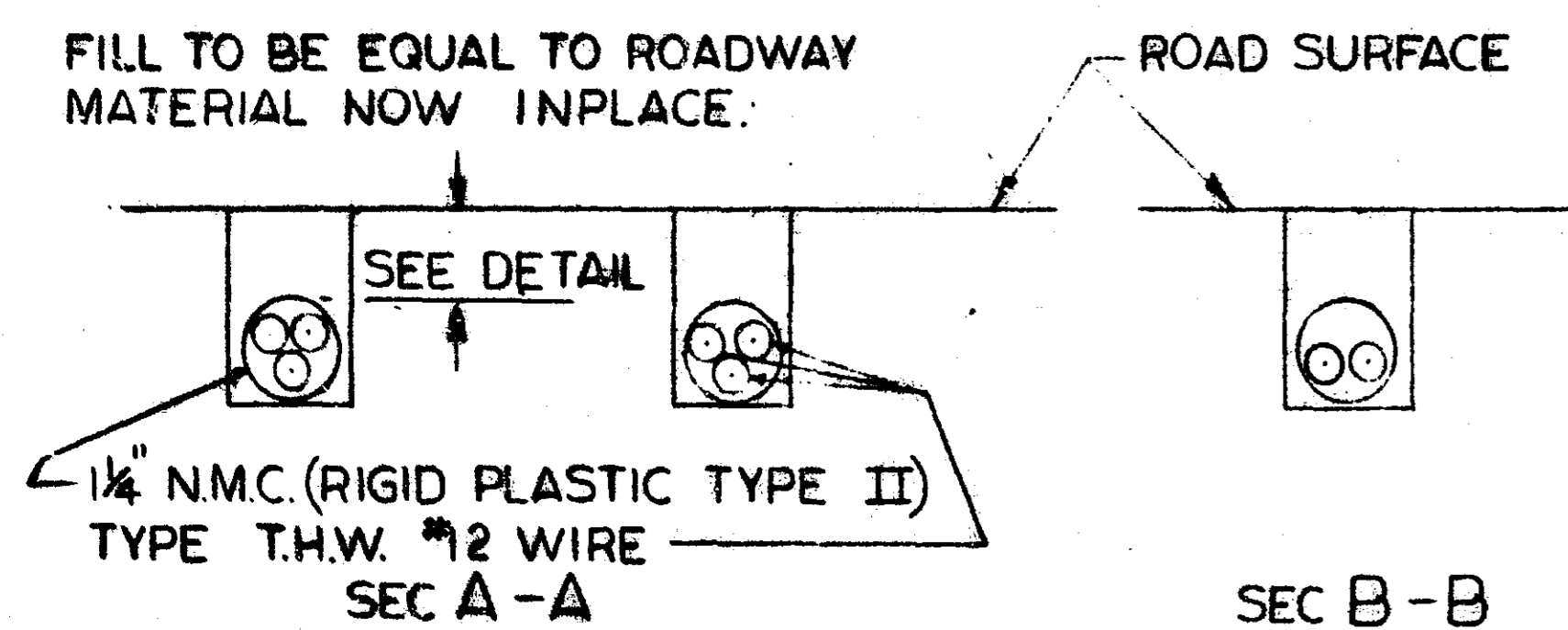
**LOOP DETECTOR DETAIL NO. 4**

SCALE: NONE

NOTE: NUMBER OF TURNS IN LOOPS SHALL BE AS SPECIFIED BY THE MANUFACTURER OF THE LOOP DETECTOR EQUIPMENT.

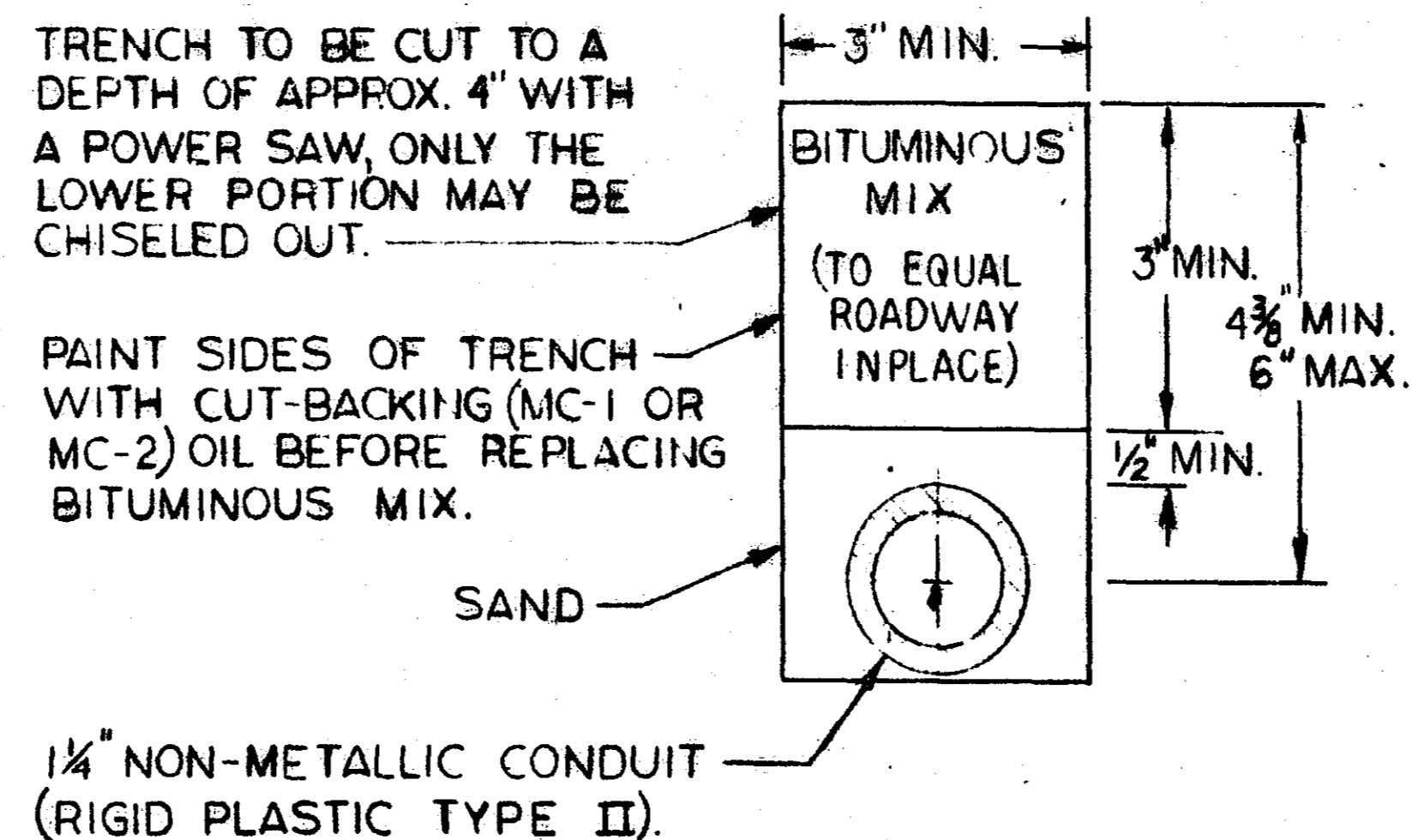


FILL TO BE EQUAL TO ROADWAY MATERIAL NOW IN PLACE.



**CONDUIT INSTALLATION DETAIL FOR LOOP DETECTOR**

SCALE: NONE

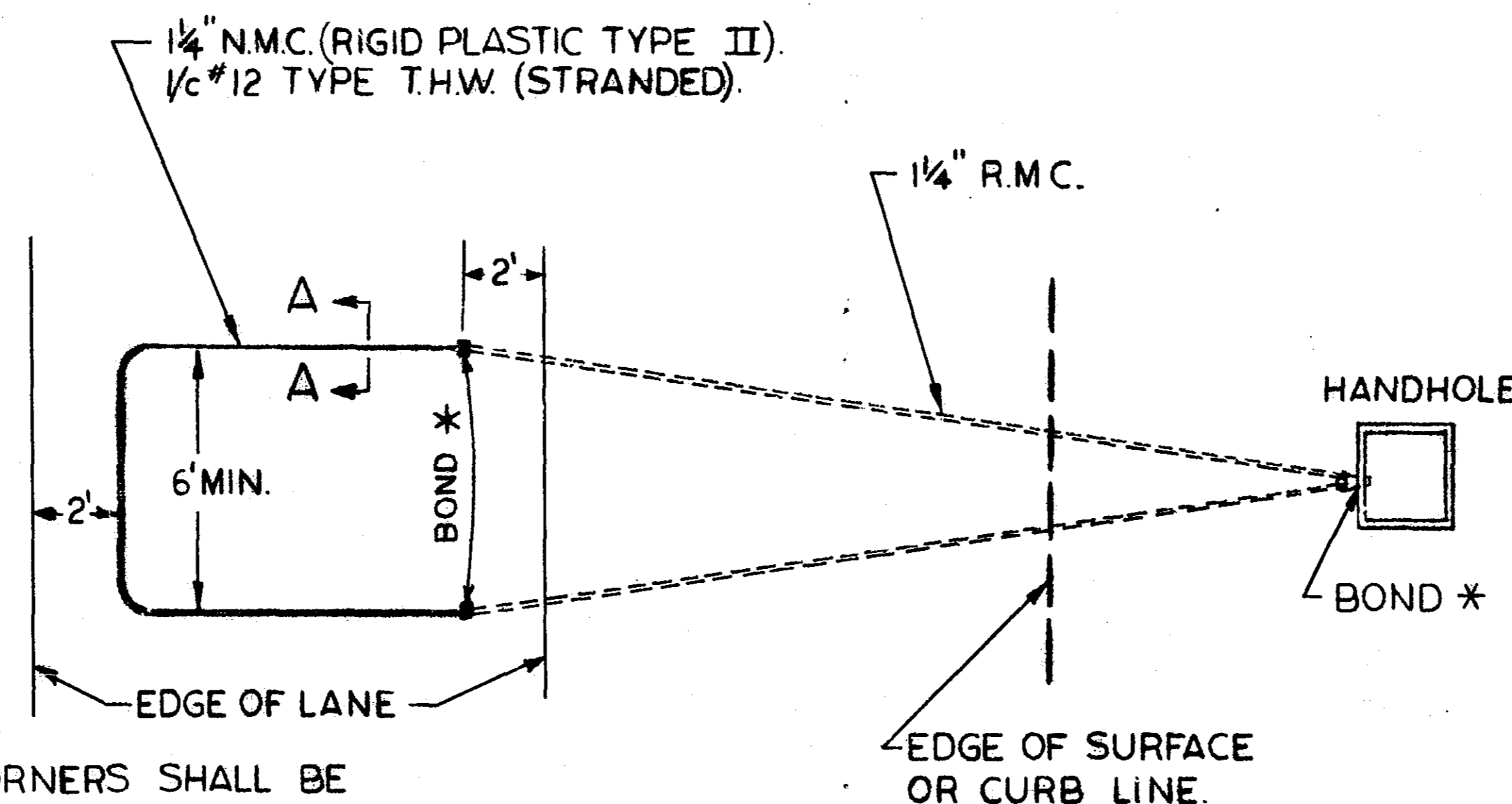


**LOOP DETECTOR DETAIL NO. 3**

SCALE: NONE

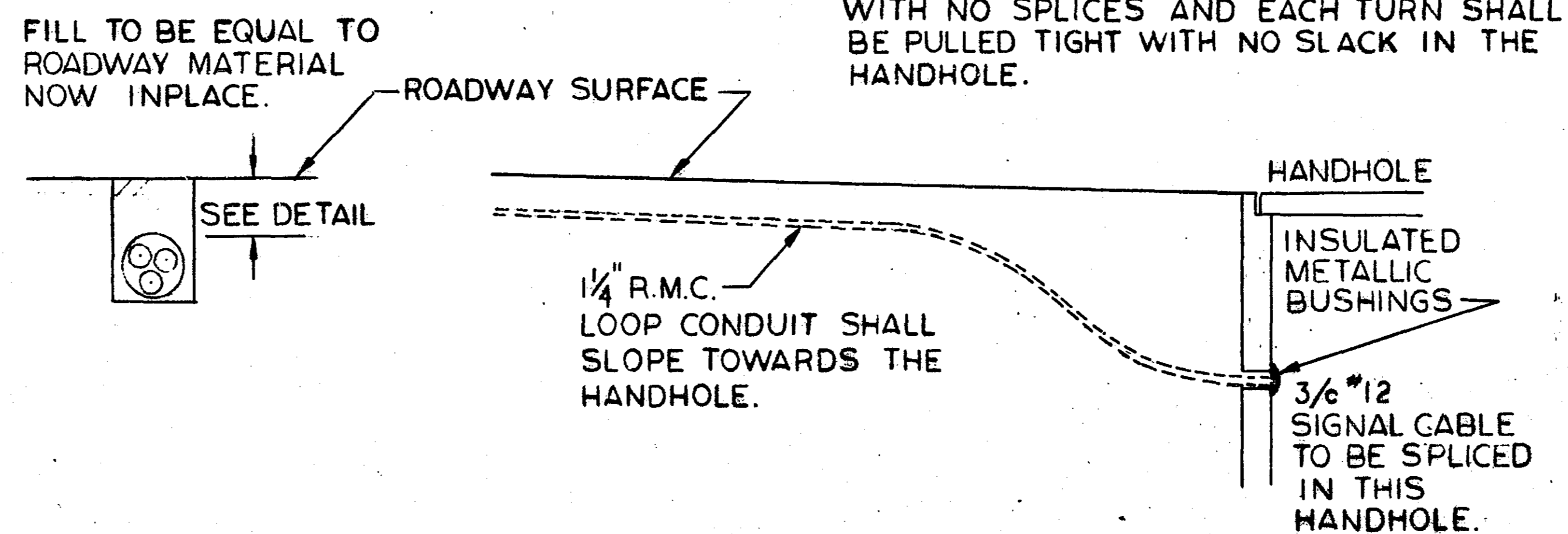
NOTE: NUMBER OF TURNS IN THE LOOP SHALL BE AS SPECIFIED BY THE MANUFACTURER OF THE LOOP DETECTOR EQUIPMENT.

\* NOTE: BOND ENDS OF R.M.C. TOGETHER WITH 1/8" #4 TYPE U.S.E. & TYPE J GROUND CLAMPS.



ALL CORNERS SHALL BE STANDARD 90° CONDUIT BENDS.

FILL TO BE EQUAL TO ROADWAY MATERIAL NOW IN PLACE.



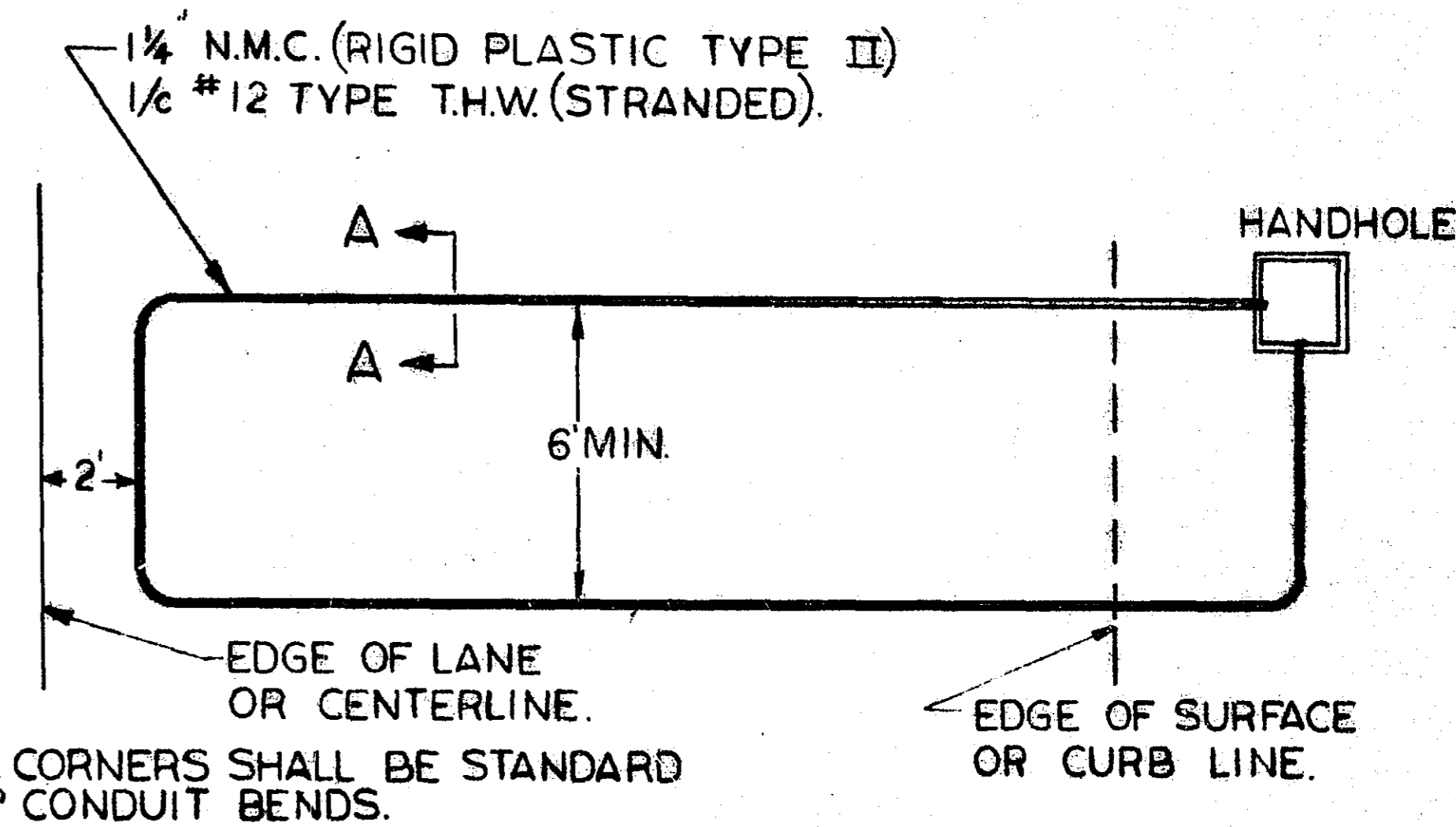
THE LOOP SHALL BE ONE CONTINUOUS WIRE WITH NO SPLICES AND EACH TURN SHALL BE PULLED TIGHT WITH NO SLACK IN THE HANDHOLE.

**LOOP DETECTOR DETAIL NO. 1**

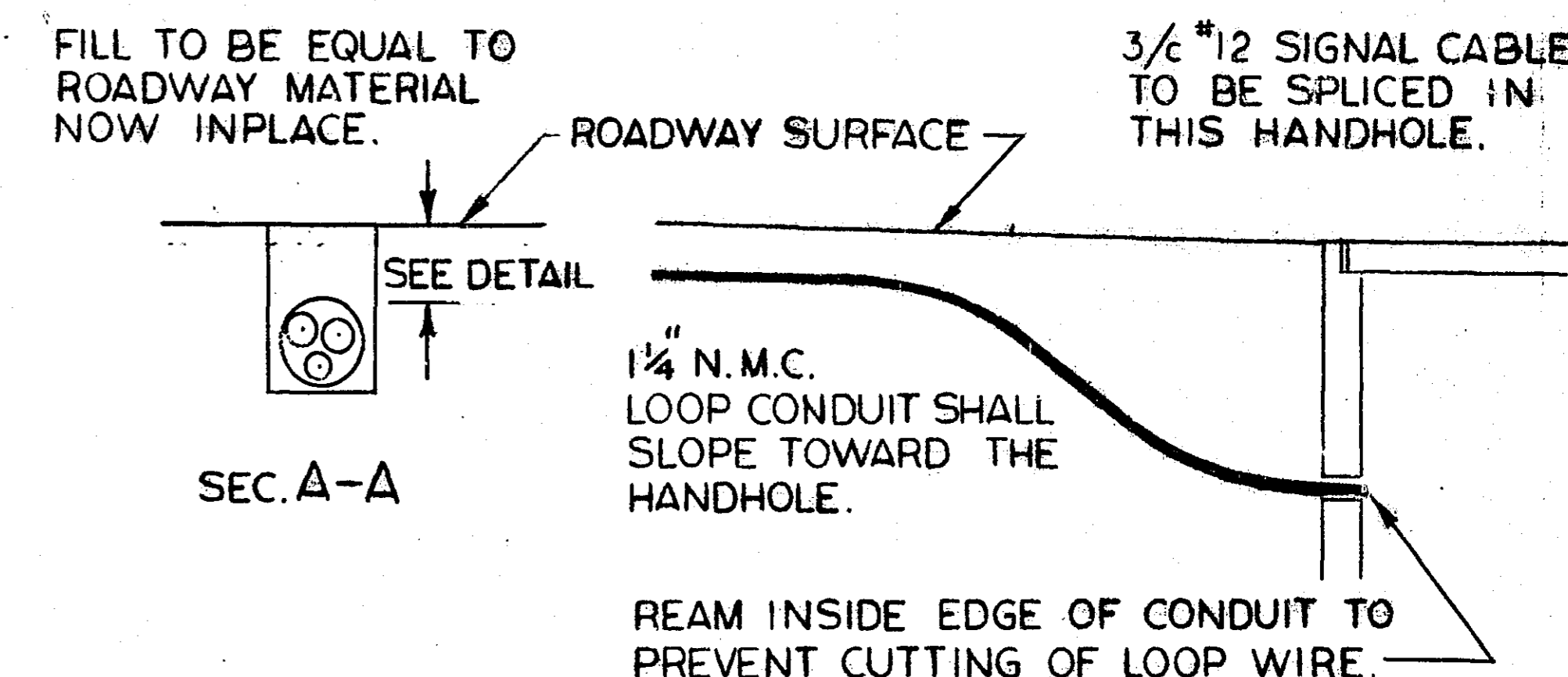
SCALE: NONE

NOTE: NUMBER OF TURNS IN THE LOOPS SHALL BE AS SPECIFIED BY THE MANUFACTURER OF THE LOOP DETECTOR EQUIPMENT.

THE LOOP SHALL BE ONE CONTINUOUS WIRE WITH NO SPLICES AND EACH TURN SHALL BE PULLED TIGHT WITH NO SLACK IN THE HANDHOLE.



FILL TO BE EQUAL TO ROADWAY MATERIAL NOW IN PLACE.



TRAFFIC ACTUATED  
TRAFFIC CONTROL SIGNAL SYSTEM  
DETAILS

RAMSEY COUNTY ENGINEERING DEPARTMENT

SCALE IN FEET  
0 10 20 40

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