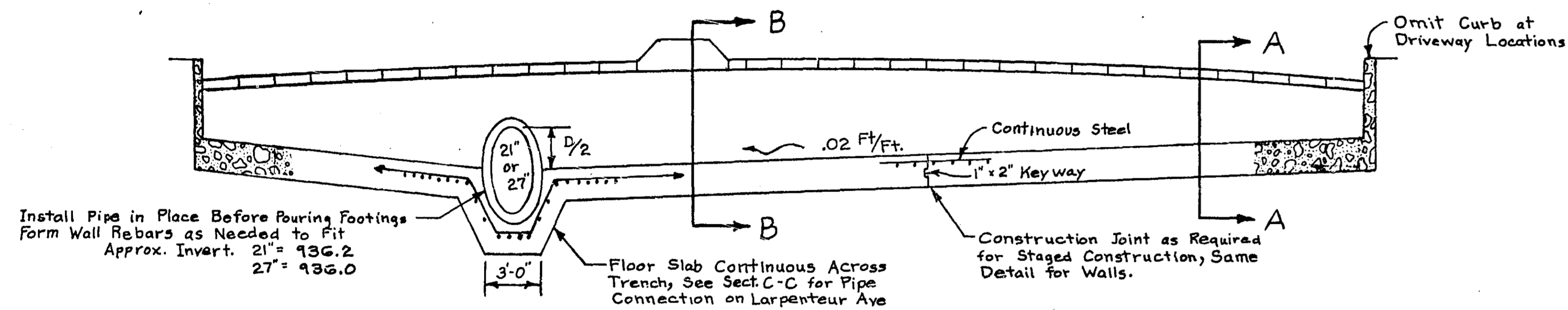
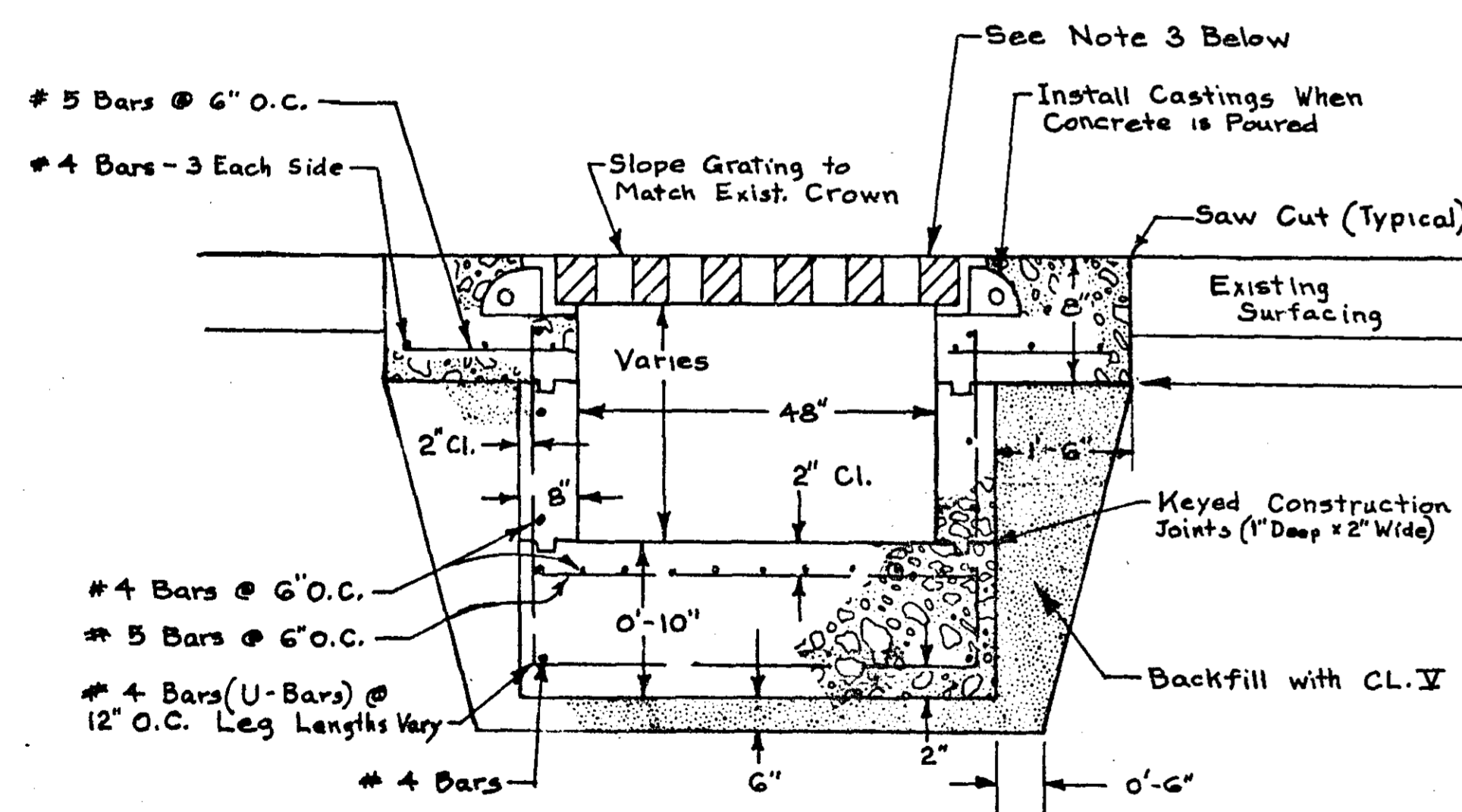


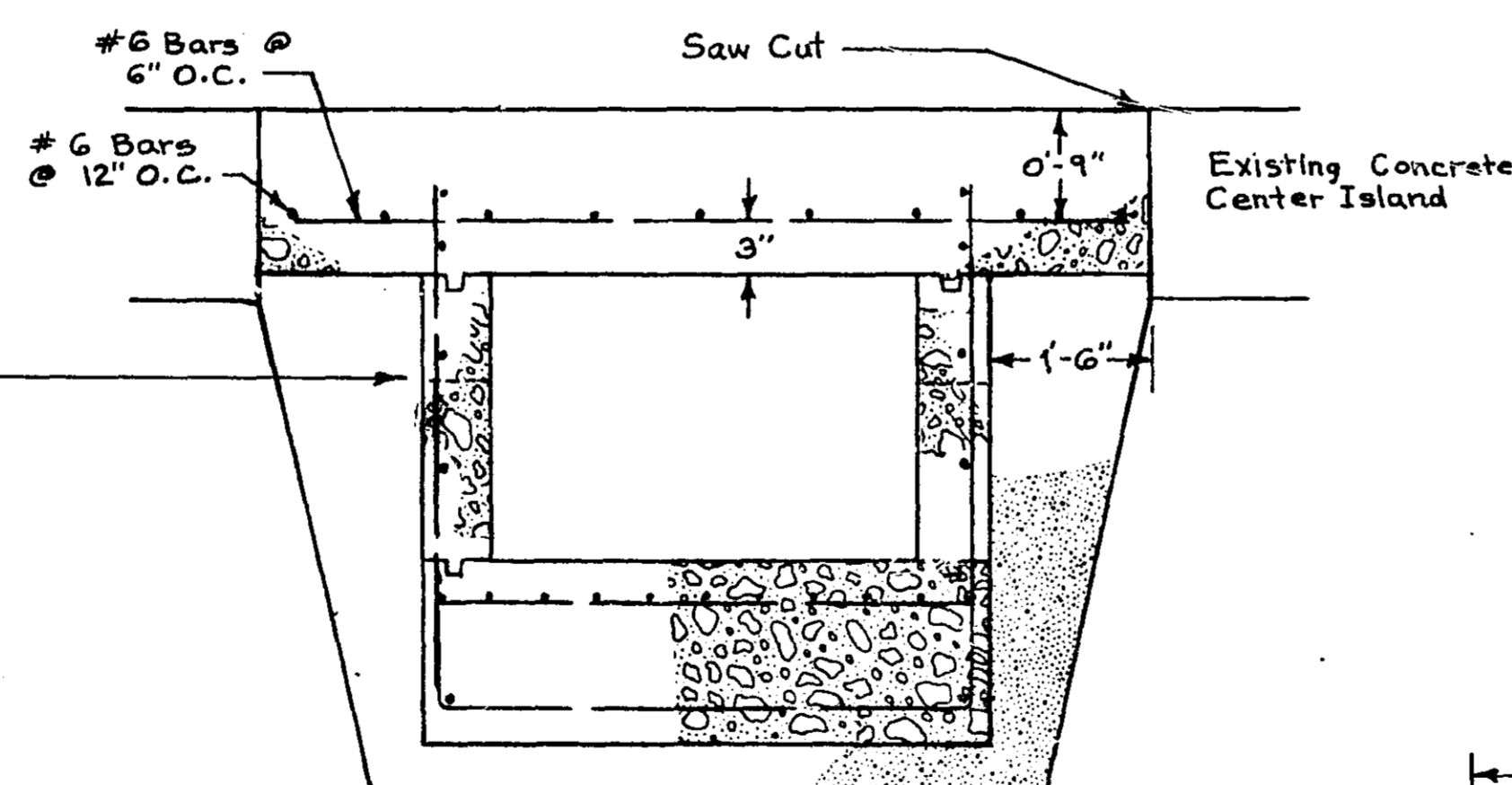
TYPICAL SECTION - HOYT AVE.  
SCALE: 1" = 4'



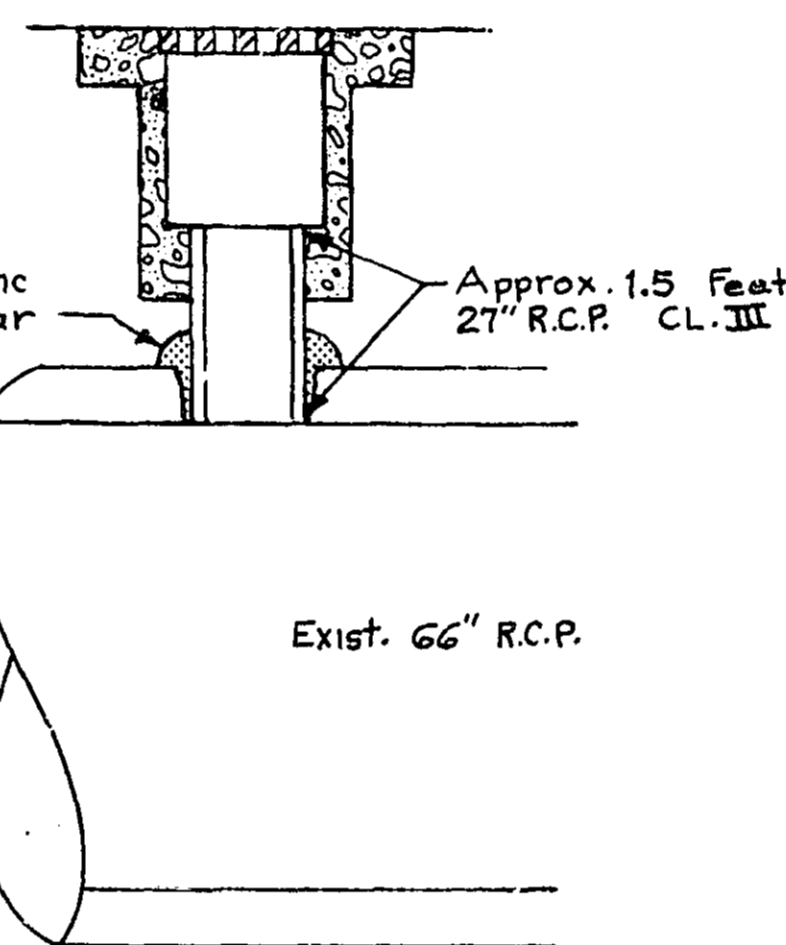
TYPICAL SECTION - WHITE BEAR & LARPENTEUR  
SCALE: 1" = 6' Horiz. 1" = 3' Vert.



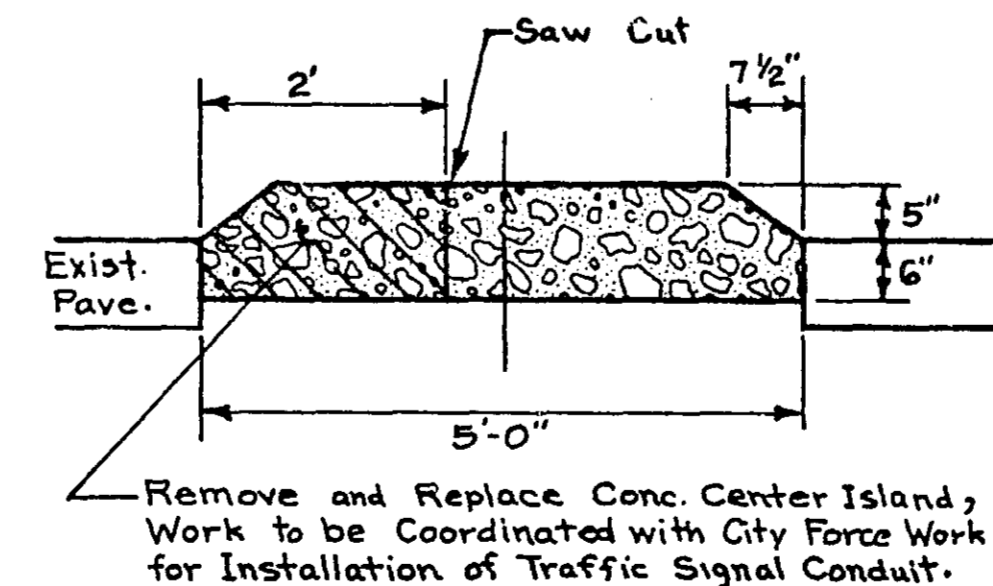
SECTION A-A  
SCALE: 1" = 1' Horiz. 1" = 2' Vert.



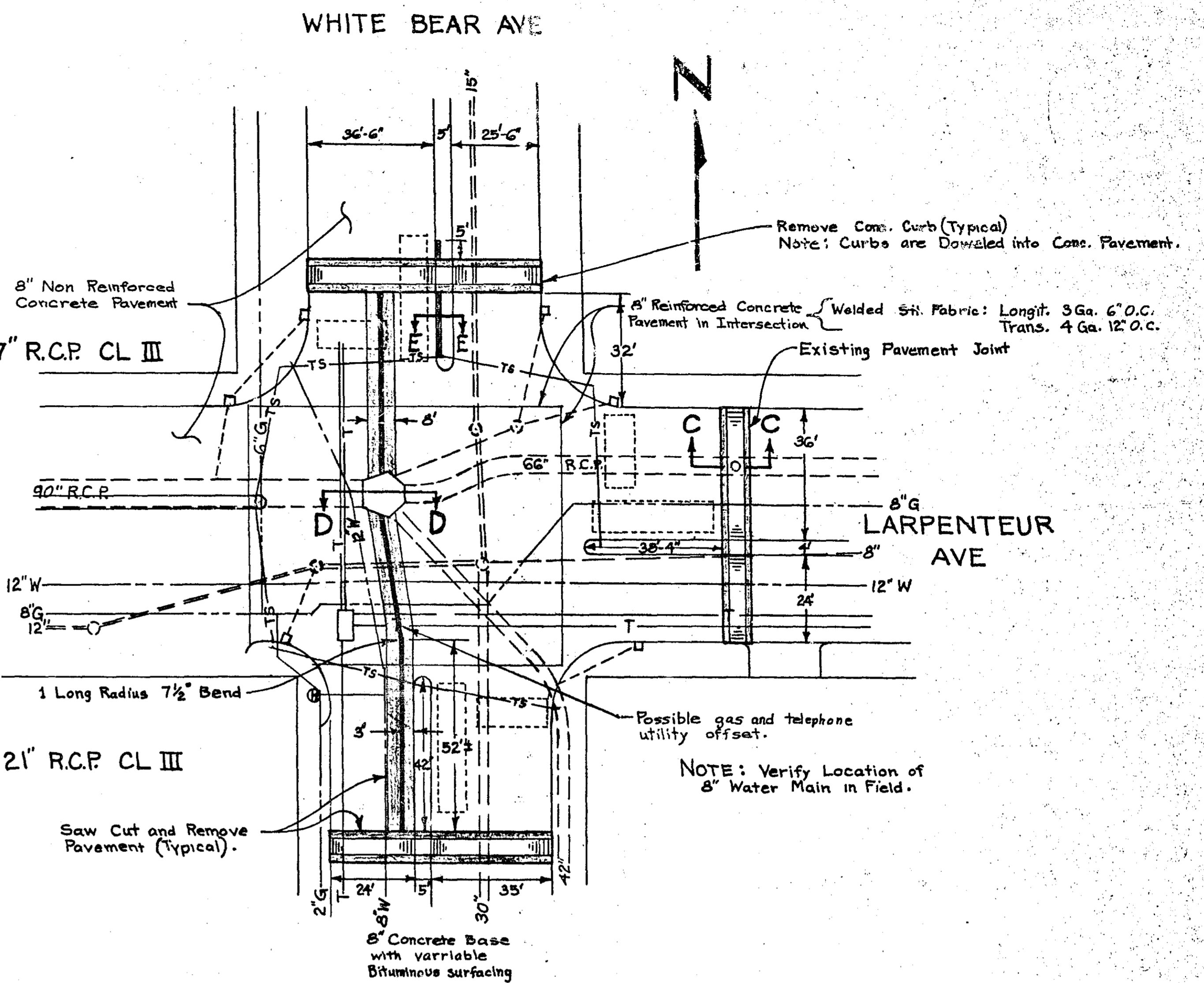
SECTION B-B  
SCALE: 1" = 1' Horiz. 1" = 2' Vert.



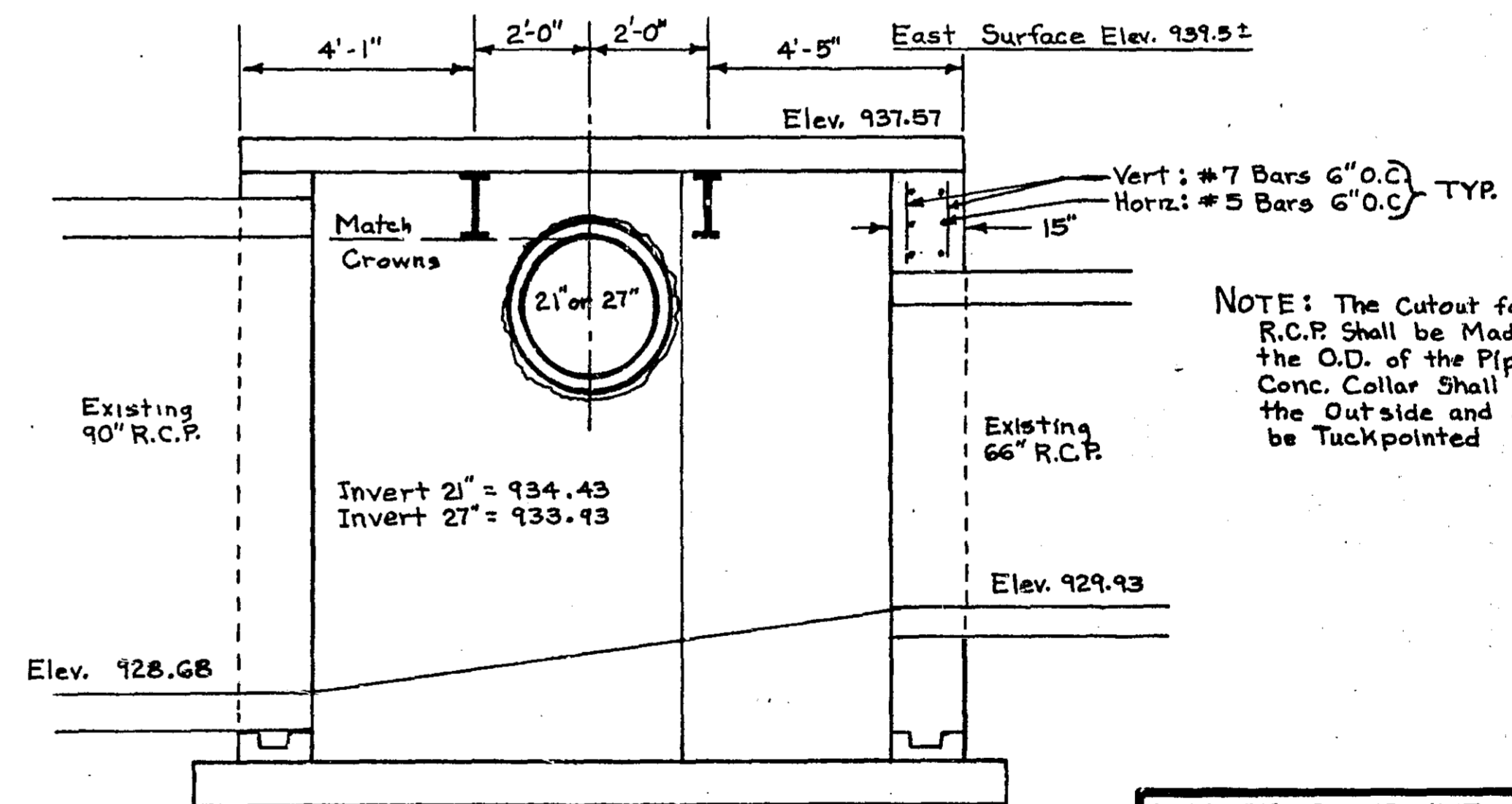
SECTION C-C  
SCALE: 1" = 6' Horiz. 1" = 3' Vert.



SECTION E-E  
SCALE 1" = 2'



PLAN - WHITE BEAR AVE AND LARPENTEUR AVE INTERSECTION DRAINAGE GRATE CONSTRUCTION LOCATIONS  
SCALE: 1" = 30'



SECTION D-D  
SCALE: 1" = 3'

- NOTES: 1. Rebars shall be preformed billet steel bars conforming to ASTM A 615 Grade 60.  
2. Wearing surface concrete shall be class 3 A 4115 all other concrete shall be class 3 Y 46 HE.  
3. Grate, Frame and appurtenances shall be furnished by the City and installed by the Contractor. - See Special Provisions

FLANDRAU - HOYT  
STORM SEWER

SEWER DR. II DRG. NO. 6038

WHITE BEAR AVE. AND LARPENTEUR AVE. INTERSECTION  
AND  
HOYT AVE. WEST OF FLANDRAU ST.  
FLANDRAU-HOYT STORM SEWER  
S-1635

DEPARTMENT OF PUBLIC WORKS  
CITY OF ST. PAUL, MINNESOTA

DESIGNED A. J. S.	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.	DRG. NO. 5038
DRAWN H. E. K.		DATE 3/29/79
CHECKED A. J. S.		SIGNATURE REG. NO.

SHEET 4 OF 4

OFFICE OF COUNTY ENGINEER  
 RAMSEY COUNTY  
 CONSTRUCTION PLAN  
 FOR GRADING AND CONCRETE SURFACING  
**WHITE BEAR AVE.**

BETWEEN WHITE BEAR COURT AND SPRUCE PLACE

FROM: A POINT 1190.21 FEET SOUTH AND 396.51 FEET WEST OF THE CENTER OF SECTION 26, T.30N, R.22 W.  
 TO: A POINT 546.35 FEET NORTH OF THE SOUTH 1/4 CORNER OF SECTION 26, T.30N, R.22 W.

GROSS LENGTH 4473 FEET 0.847 MILES  
 BRIDGES-LENGTH 0 FEET 0 MILES  
 EXCEPTIONS-LENGTH 0 FEET 0 MILES  
 NET LENGTH 4473 FEET 0.847 MILES

SCALES  
 PLAN, 1 Inch = 50 Feet  
 PROFILE, Horiz. 1 Inch = 50 Feet Vert. 1 Inch = 5 Feet  
 CROSS-SECTIONS, 1 Inch = 10 Feet  
 LAYOUT, 1 Inch = 5280 Feet

DESIGN DESIGNATION

A.D.T. 1967 =  
 A.D.T. 1985 = 20,000  
 DHV =  
 D(DIRECTIONAL DISTRIBUTION) =  
 T(HEAVY COMMERCIAL) 1985 = 900  
 DESIGN SPEED = 50 M.P.H.  
 DESIGN LOAD = 9 TON  
 SOIL FACTOR = 100 %

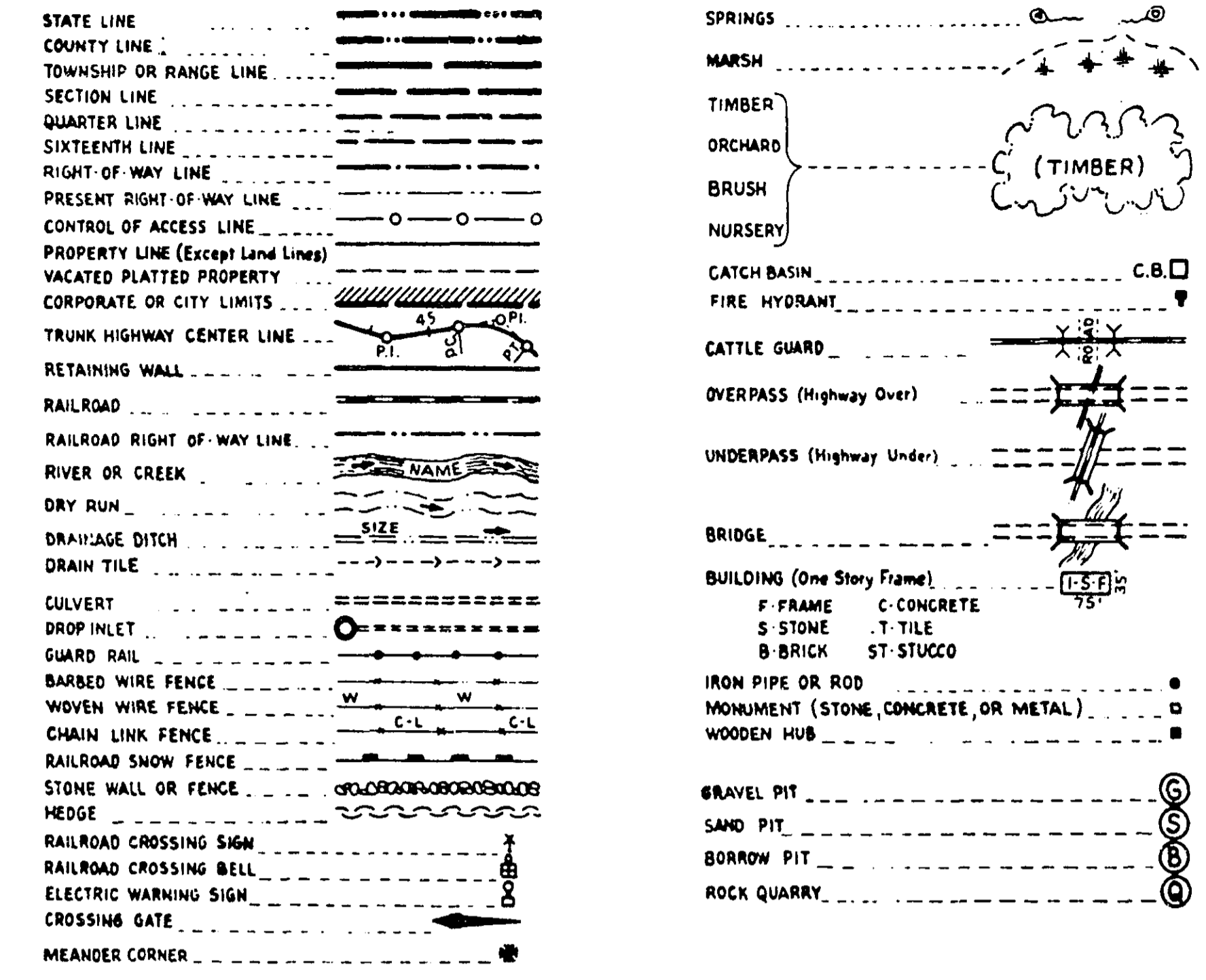
INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTION & ESTIMATED QUANTITIES
3	DRAINAGE CHART
4	DETAIL SHEET
5-8	PLAN PROFILE AND CONSTRUCTION PLAN
9-16	CROSS-SECTIONS

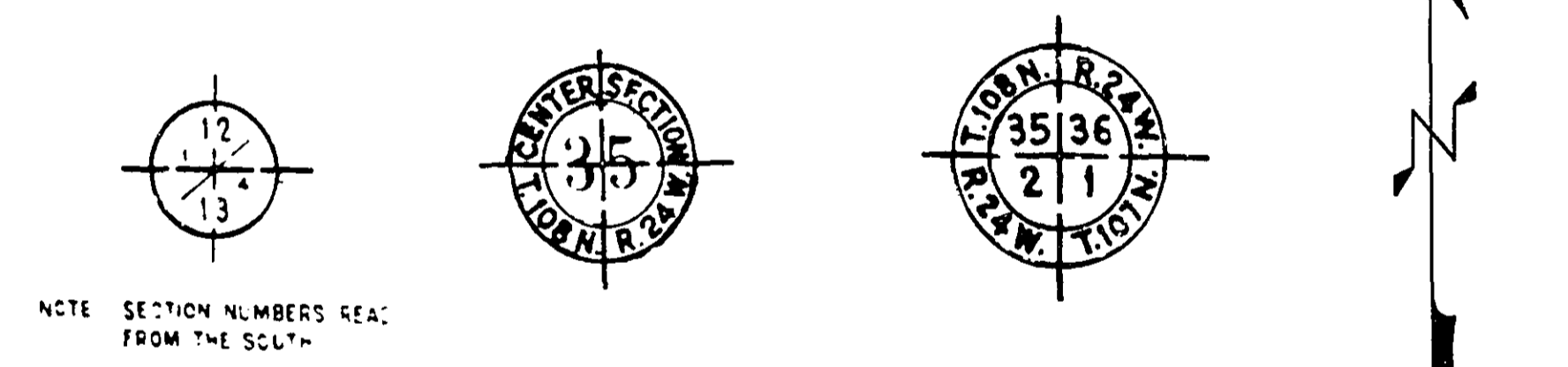
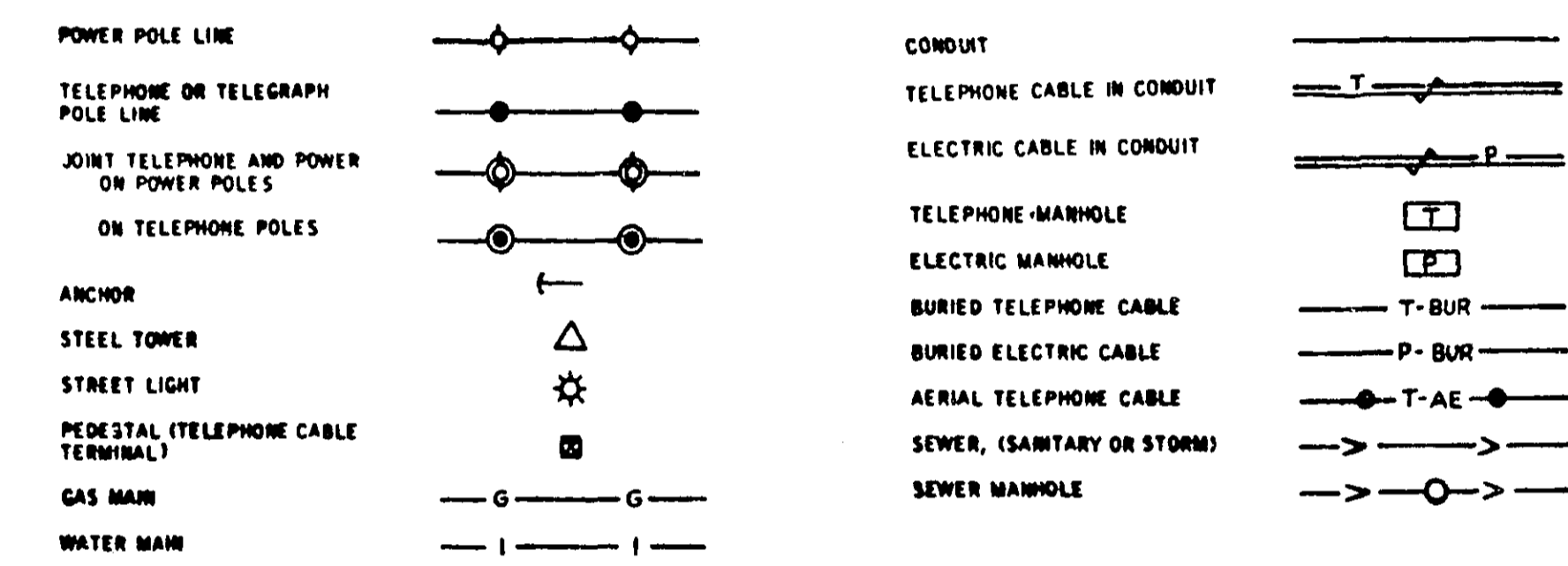
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
*White Amber* REG. NO. 2042 DATE 5-22-68  
 ENGINEER

RECOMMENDED FOR APPROVAL *Dean R. Amble* COUNTY ENGINEER DATE 5-22-68  
 APPROVED *Phonash. Butue* CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE 5-27-68  
 APPROVED *William R. Kull, Jr.* MAYOR, CITY OF WHITE BEAR DATE 5-27-68  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN, WHITE BEAR TOWN BOARD  
 MINNESOTA STATE HIGHWAY DEPARTMENT  
 RECOMMENDED FOR APPROVAL *C.E. Weichselbaum* DATE 7-10-68  
 RECOMMENDED FOR APPROVAL *J. J. ...* DISTRICT STATE AID ENGINEER DATE 5-28-68  
 APPROVAL \_\_\_\_\_ DATE 1/16/69  
 STATE AID ENGINEER

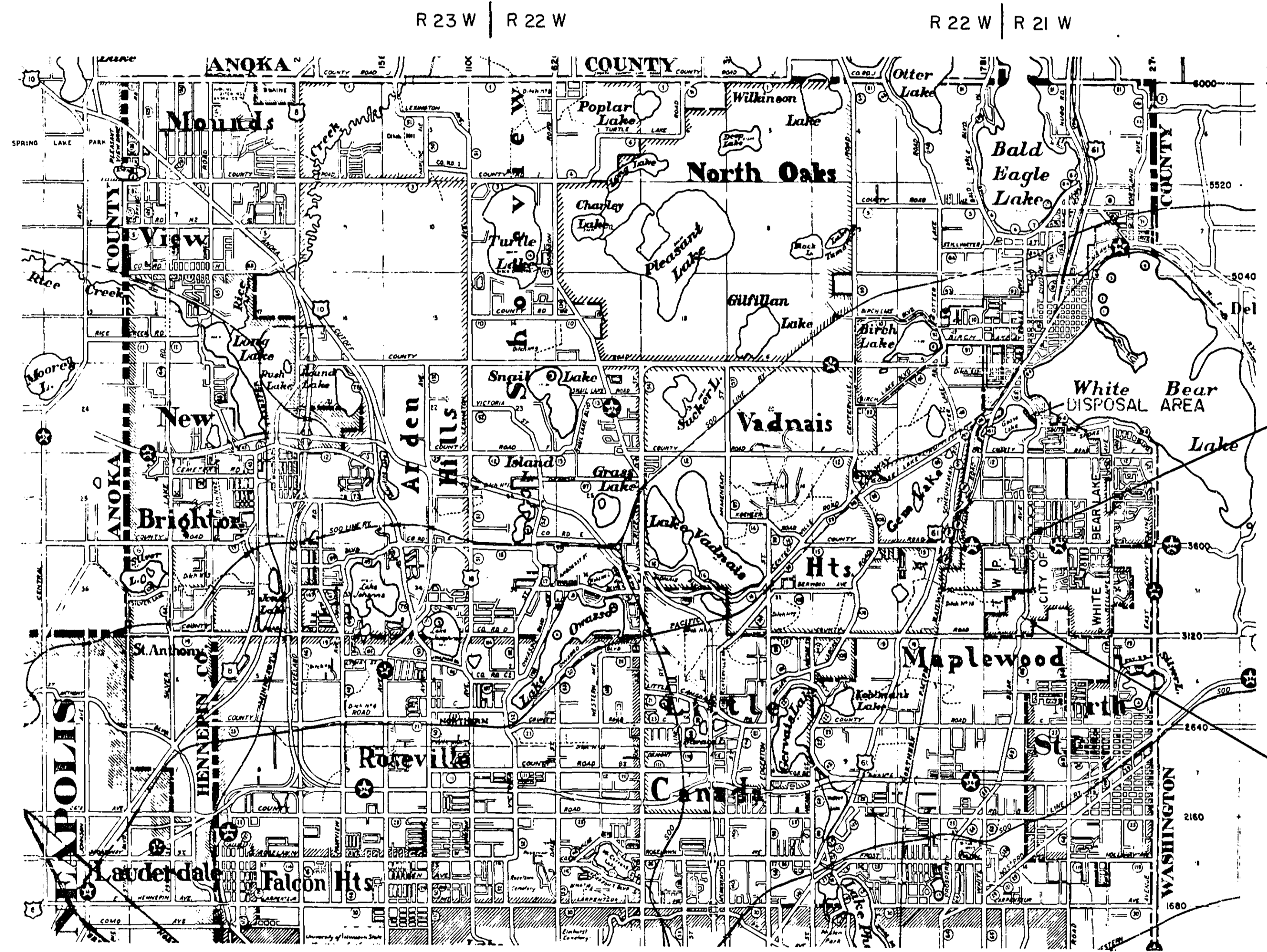
PLANS SYMBOLS



UTILITIES SYMBOLS



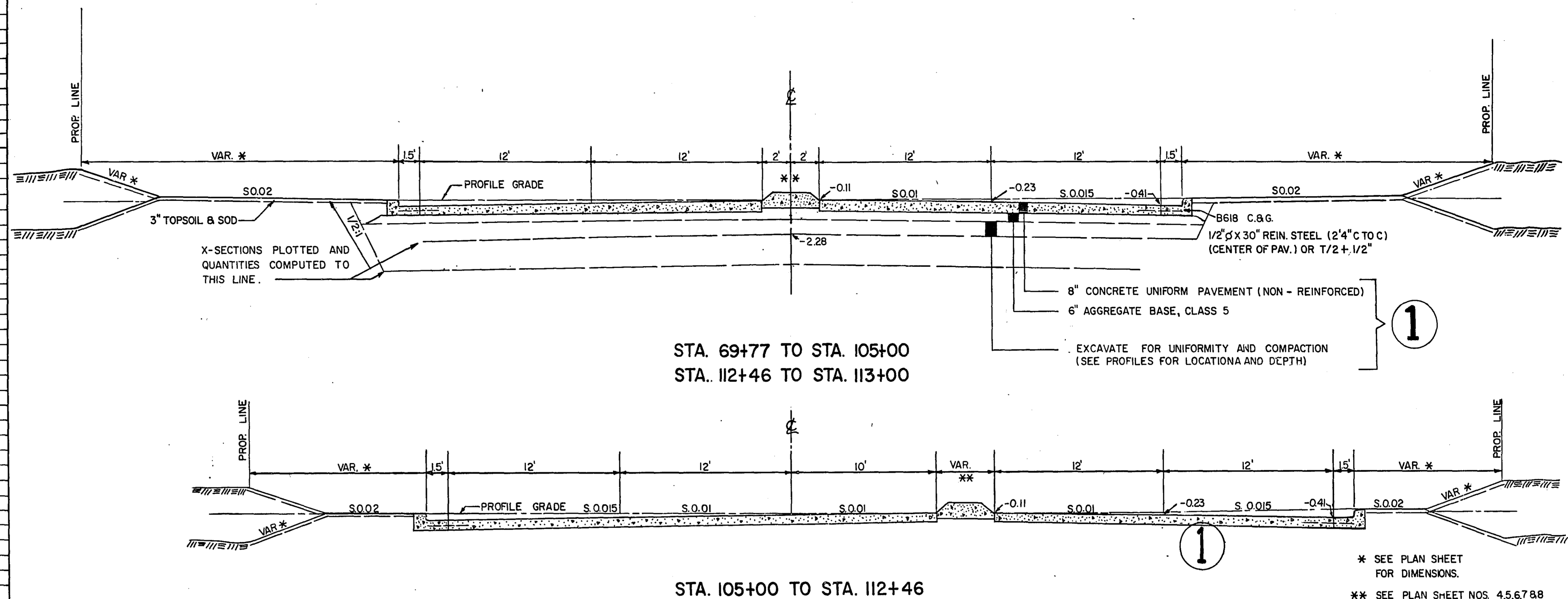
SPECIFICATIONS  
 THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JANUARY 1, 1968 SHALL GOVERN.



STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2021.501	MOBILIZATION	LUMP SUM	1
2031.503	FIELD LABORATORY, TYPE C	EACH	1
(1) 2101.502	CLEARING	TREE	63
(1) 2101.507	GRUBBING	TREE	62
2104.502	REMOVE PAVEMENT	S.Y.	10,158
2104.511	REMOVE MANHOLES AND CATCHBASINS	STRUCTURE	4
2104.515	REMOVE PIPE SEWERS	L.F.	60
2104.520	REMOVE SEPTIC TANK	STRUCTURE	1
2104.520	REMOVE PRECAST CONTROL STRUCTURE (72+48)	STRUCTURE	1
2105.501	COMMON EXCAVATION	C.Y.	34,635
2105.521	GRANULAR BORROW	C.Y.	3,574
(2) 2130.501	WATER	(M) GAL.	300
2211.501	AGGREGATE BASE, CLASS 5	TON	10,671
2301.502	CONCRETE PAVEMENT STANDARD WIDTH	S.Y.	23069
565.635	3" RIGID METALLIC CONDUIT	L.F.	243
2301.503	CONCRETE PAVEMENT IRREGULAR WIDTH	S.Y.	1,692
2301.511	STRUCTURAL CONCRETE	C.Y.	5499
2301.529	REINFORCEMENT BARS	POUND	18,104
2301.531	STANDARD JOINTS, DESIGN L-1	L.F.	8,766
2301.531	STANDARD JOINTS, DESIGN L-6	L.F.	10,975
2301.531	STANDARD JOINTS, DESIGN L-8	L.F.	5,631
2301.531	STANDARD JOINTS, DESIGN L-9	L.F.	706
2301.531	STANDARD JOINTS, DESIGN C	L.F.	11,075
2301.536	DOWEL BAR ASSEMBLIES	L.F.	576
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	14
2341.509	WEARING COURSE MIXTURE + FILLER	TON	300
2358.501	BITUMINOUS MATERIAL FOR PRIME COAT	GAL.	990
2501.536	18" CONCRETE APRON	APRON	1
2451.503	GRANULAR BACKFILL	C.Y.	950
501.620	INSTALL 12" CONCRETE APRON	APRON	2
2501.536	21" CONCRETE APRON	APRON	1
2501.536	12" CONCRETE APRON	APRON	2
2503.502	12" REINFORCED CONCRETE SEWER, CLASS IV	L.F.	621
2503.502	15" REINFORCED CONCRETE SEWER, CLASS II	L.F.	739
2503.502	18" REINFORCED CONCRETE SEWER, CLASS II	L.F.	396
2503.502	21" REINFORCED CONCRETE SEWER, CLASS II	L.F.	1089
2503.502	24" REINFORCED CONCRETE SEWER, CLASS II	L.F.	66
2503.504	12" METAL SEWER, 16 GAUGE	L.F.	10
2506.507	CONSTRUCT CATCHBASIN DESIGN M	L.F.	81
2506.507	CONSTRUCT CATCHBASINS, DESIGN A. OR F.	L.F.	20.4
2506.506	CONSTRUCT MANHOLES, DESIGN A. OR F.	L.F.	26.2
2506.509	CONSTRUCT CATCHBASINS, DESIGN RC-3	STRUCTURE	8
2506.509	CONSTRUCT CATCHBASINS, DESIGN RC-2	STRUCTURE	11
2506.516	CASTINGS ASSEMBLIES	ASSEMBLY	7
2506.521	INSTALL CASTINGS	ASSEMBLY	3
2506.522	ADJUST FRAME RING AND CASTINGS	ASSEMBLY	6
411.610	INSTALL PRECAST CONTROL STRUCTURE (72+48)	STRUCTURE	1
2511.501	RANDOM RIPRAP, CLASS A	C.Y.	2.5
2511.501	RANDOM RIPRAP, CLASS B	C.Y.	260
2521.501	4" CONCRETE WALK (MEDIAN)	S.F.	6,072
2531.501	CONCRETE CURB AND GUTTER, DESIGN B618	L.F.	7,870
2531.502	CONCRETE CURB, DESIGN BR 6-8	L.F.	631
2531.503	CONCRETE MEDIAN	S.Y.	1230
2531.507	7" CONCRETE DRIVEWAY PAVEMENT	S.Y.	60
2531.502	CONCRETE CURB, DESIGN S-5	L.F.	2,958
565.632	CONCRETE HAND HOLES	HAND HOLE	6
2575.505	SODDING	S.Y.	12,982
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	0.81
2531.502	CONCRETE CURB, DESIGN B-6	L.F.	39
2575.551	TOPSOIL	C.Y.	1244

TYPICAL SECTION  
WHITE BEAR AVE.



STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	NON-PARTICIPATING PORTION ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2521.501	4" CONCRETE WALK	S.F.	22,485

(1) SEE SHEET NO. 16  
(2) FOR DUST PALLIATIVE

STANDARD DETAIL PLATES

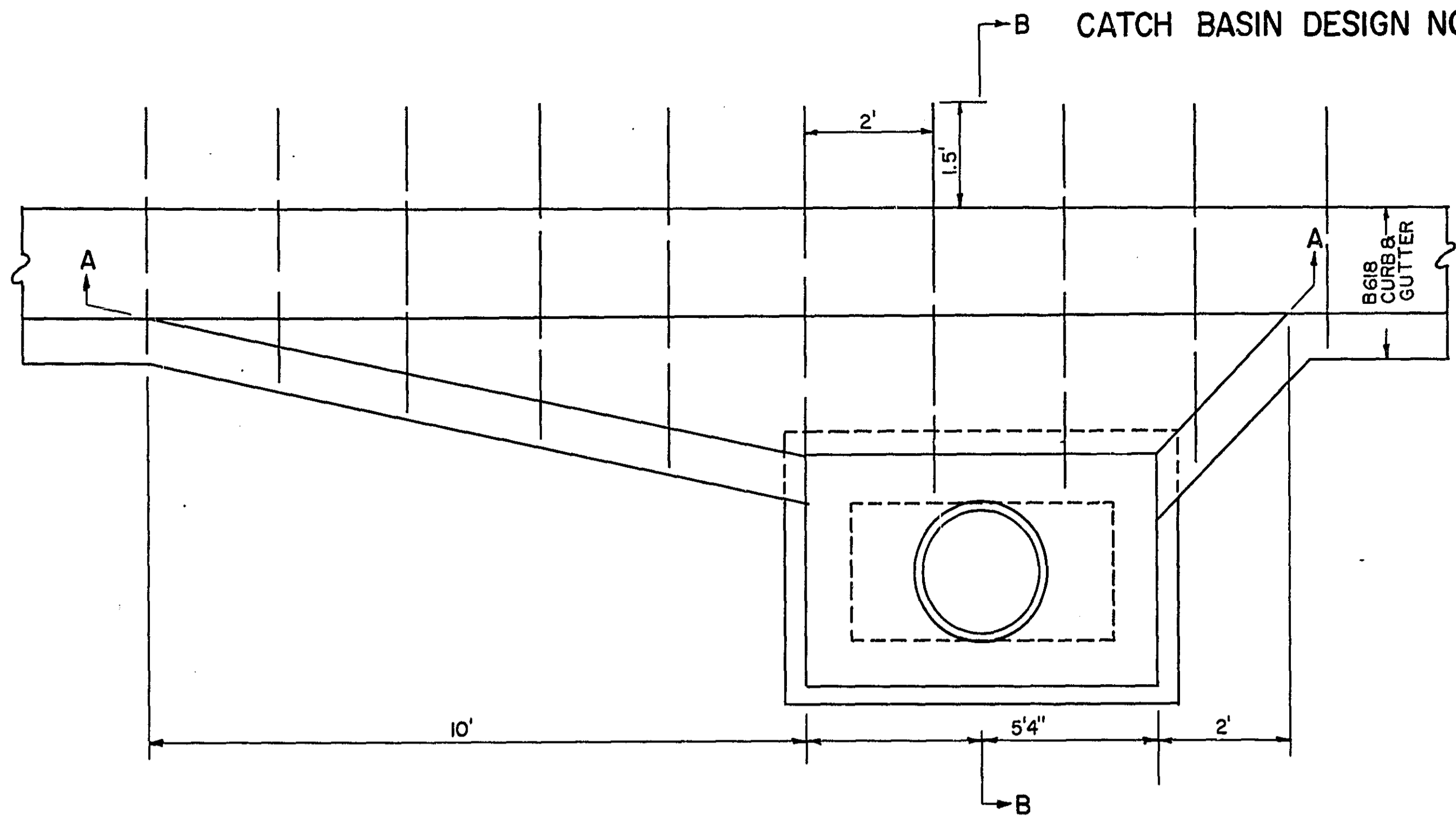
1016 B	CONCRETE PAVEMENTS NON-REINFORCED
1070 E	REINFORCED PANEL OVER CULVERTS
1100 G	EXPANSION JOINTS
1103 D	DOWEL BAR ASSEMBLY
1104 D	DOWEL BAR ASSEMBLY
1106 C	DOWEL BAR ASSEMBLY
1107 F	DOWEL BAR ASSEMBLY
1108 D	DOWEL BAR ASSEMBLY
1120 I	CONTRACTION JOINTS
1140 I	LONGITUDINAL JOINTS
1141 B	PAVEMENT KEY WAY FOR KEYED JOINT CONSTRUCTION
11501	CONSTRUCTION OF HEADER JOINTS
3000 F	REINFORCED CONCRETE PIPE
3100 E	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
4000 G	MANHOLE OR CATCH BASIN
4005 H	MANHOLE OR CATCH BASIN
4013 A	CATCH BASIN
4017 C	CATCH BASIN

STANDARD DETAIL PLATES

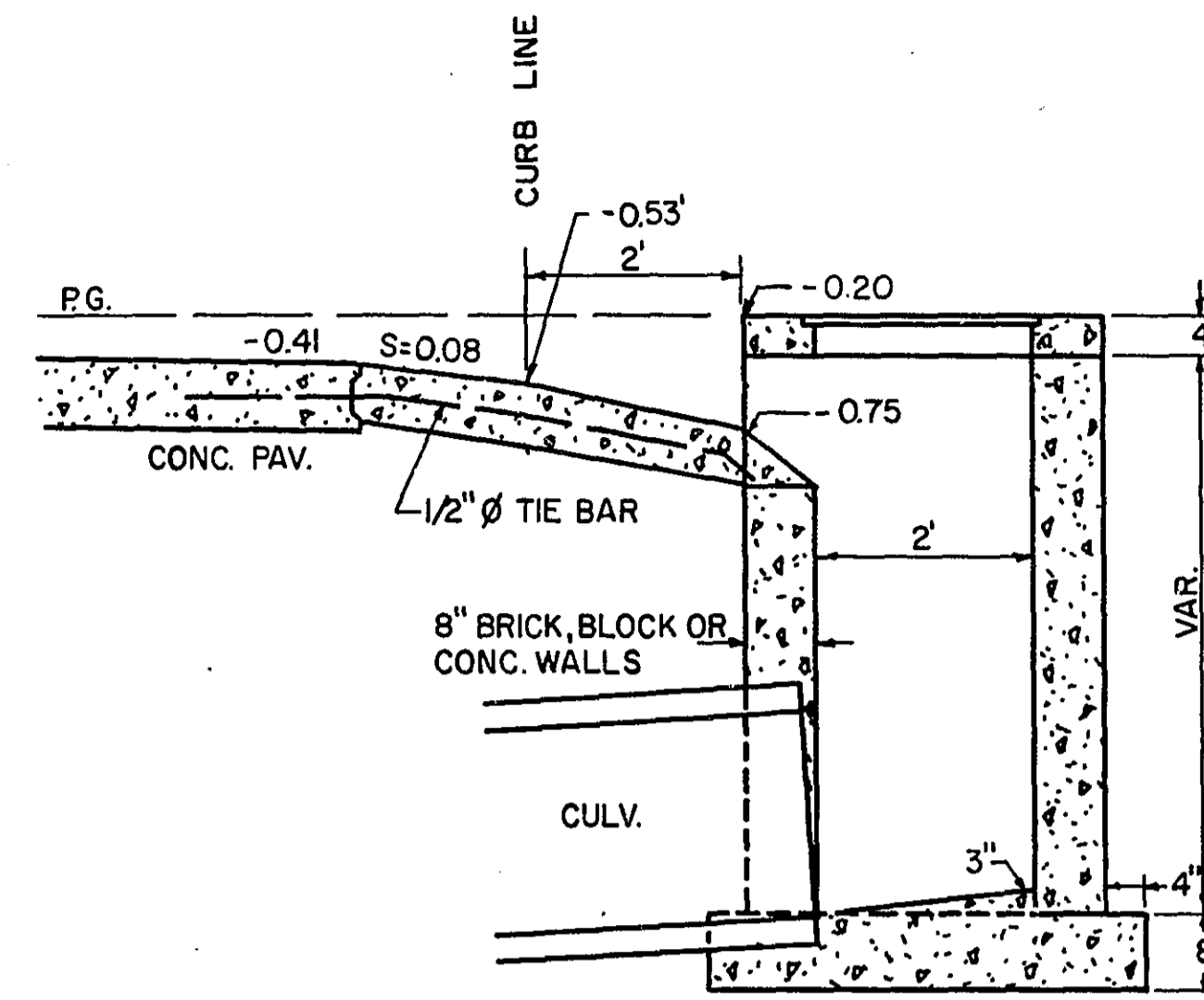
4101 B	RING CASTING FOR MANHOLE OR CATCH BASIN
4102 C	MANHOLE OR CATCH BASIN RING CASTING
4110 D	COVER CASTING FOR MANHOLE
4129 A	CATCH BASIN FRAME CASTING
4130 A	CATCH BASIN FRAME AND GRATE CASTING
4151 B	GRATE CASTING FOR CATCH BASIN
4160 B	CURB BOX CASTING FOR CATCH BASIN
4180 F	MANHOLE STEP CASTING
7020 D	CONCRETE CURBS
7035 E	CONCRETE WALK & CURB RETURN AT ENTRANCES
7100 D	CONCRETE CURB AND GUTTERS
7105 C	CONCRETE MEDIAN
7110 E	CURB AND GUTTER CONSTRUCTION AT CATCH BASIN
7111 D	INSTALLATION OF CATCH BASIN CASTINGS
8000 C	STANDARD BARRICADES
8008 C	CONTRACTORS SIGN
8117 A	PRECAST CONCRETE HANDHOLE (PULL BOX)



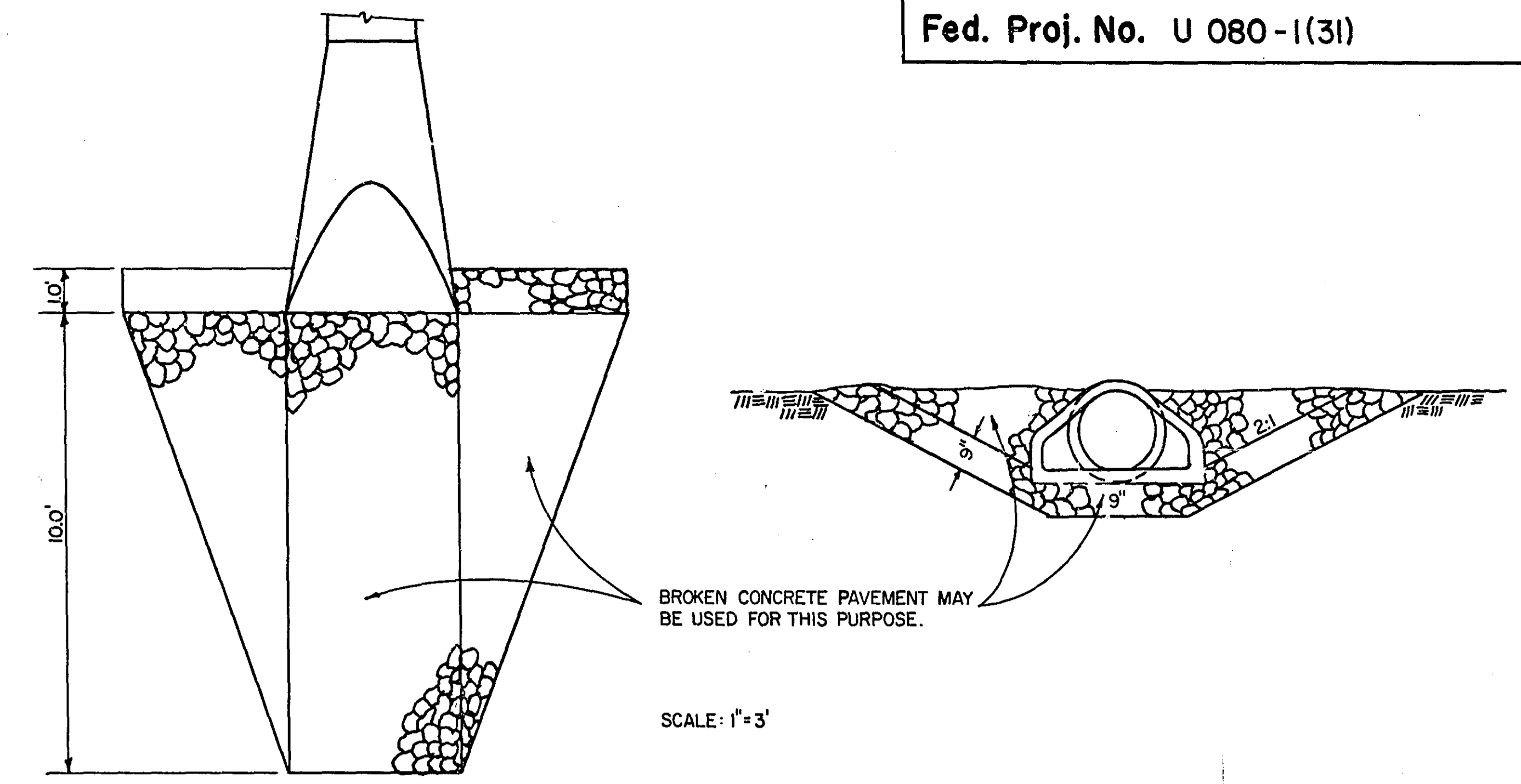
CATCH BASIN DESIGN NO. R.C. 3



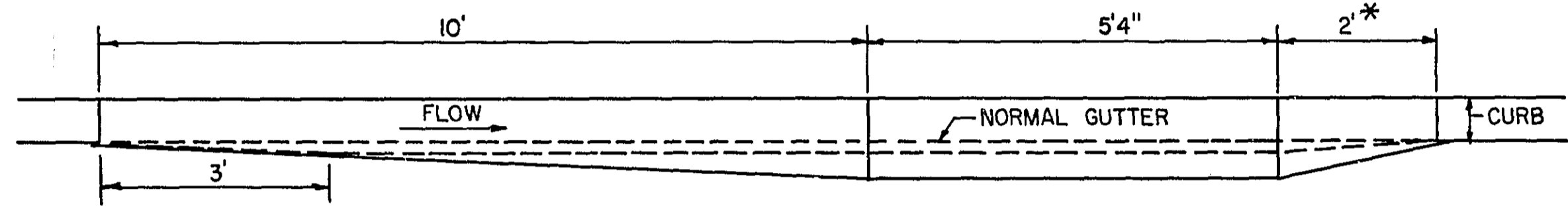
SCALE: 1" = 2'-0"



SEC. B-B



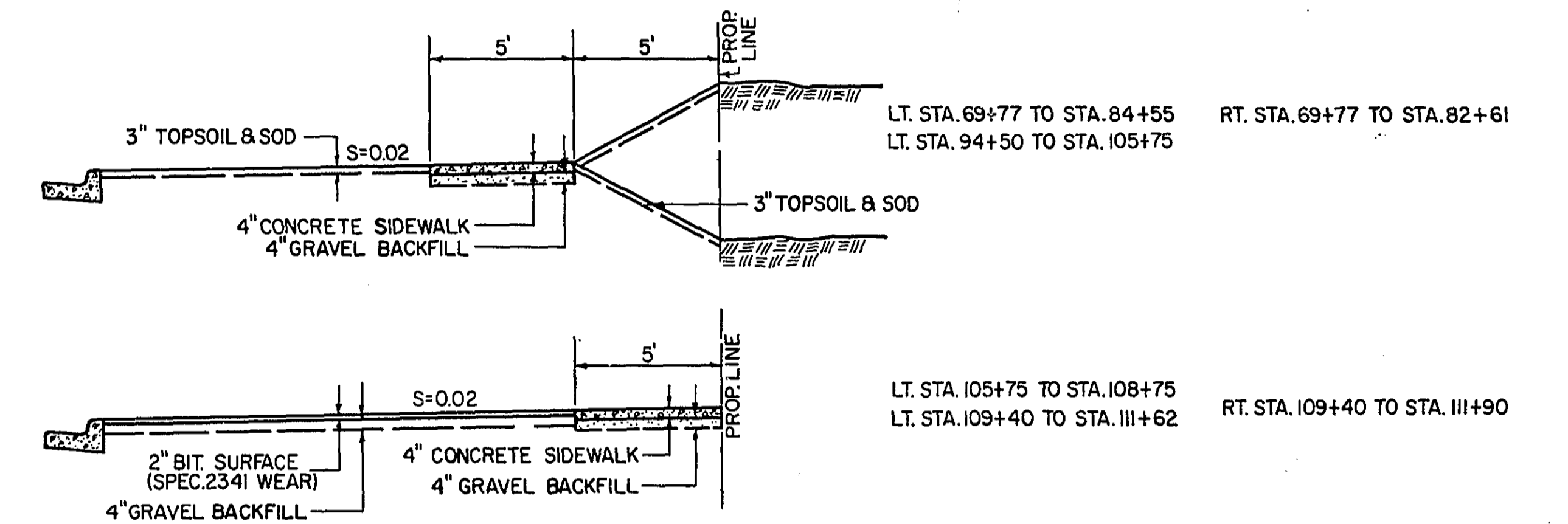
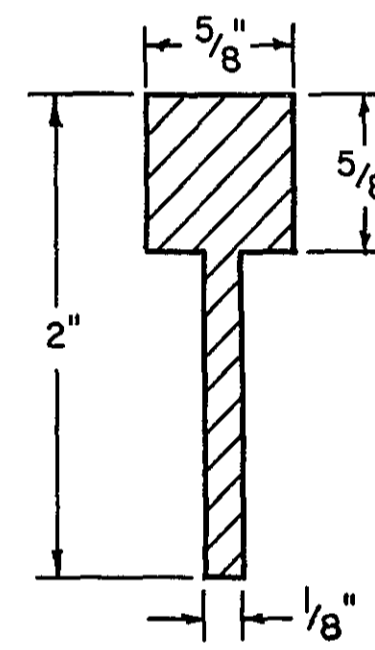
RIPRAP DETAIL  
STA. 82+50 RT. 200'



SEC. A-A

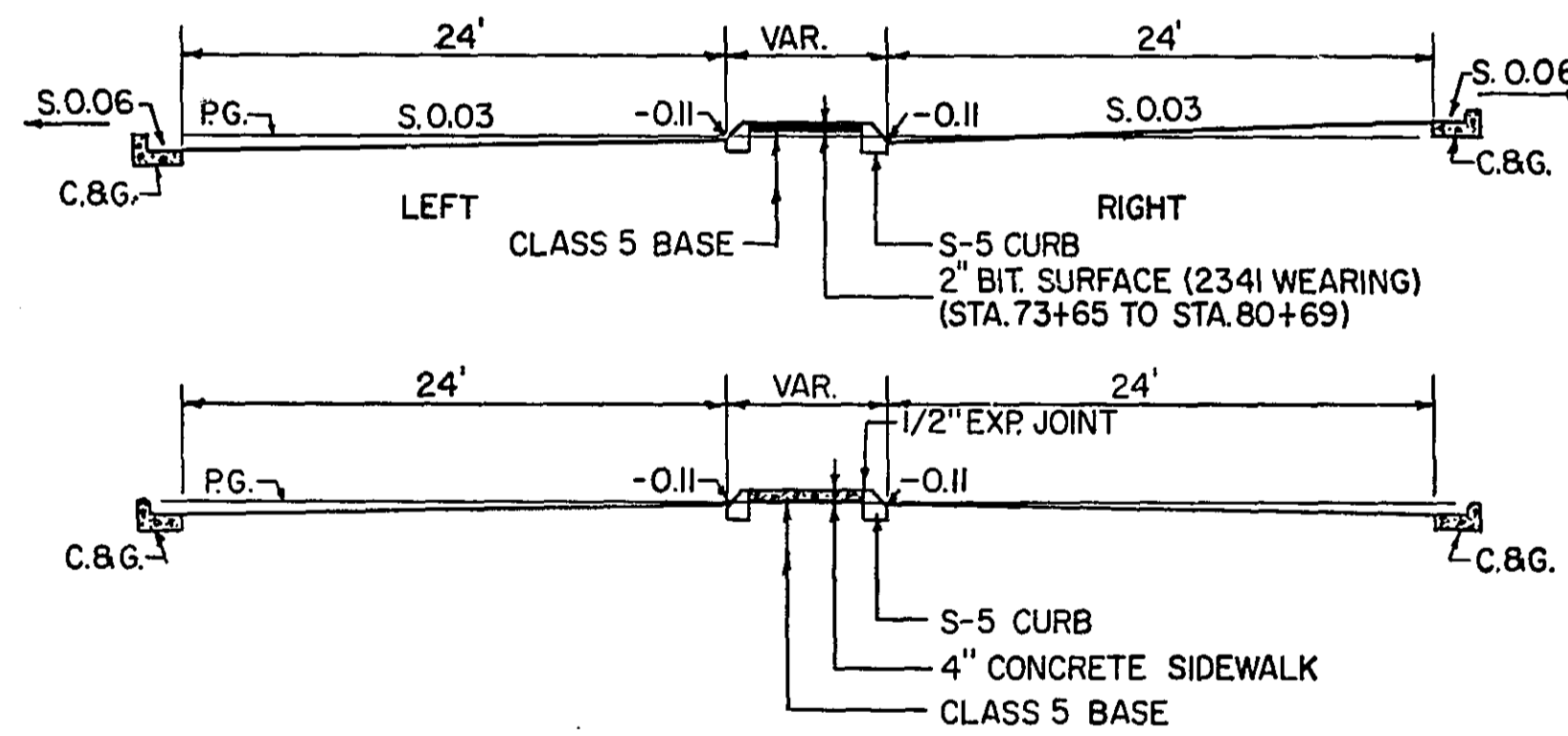
\* 10' AT LOW POINTS

DETAIL OF CONTRACTION JOINT  
(SAWED - FILLED WITH CONC. JOINT SEALER SPEC. 3723)

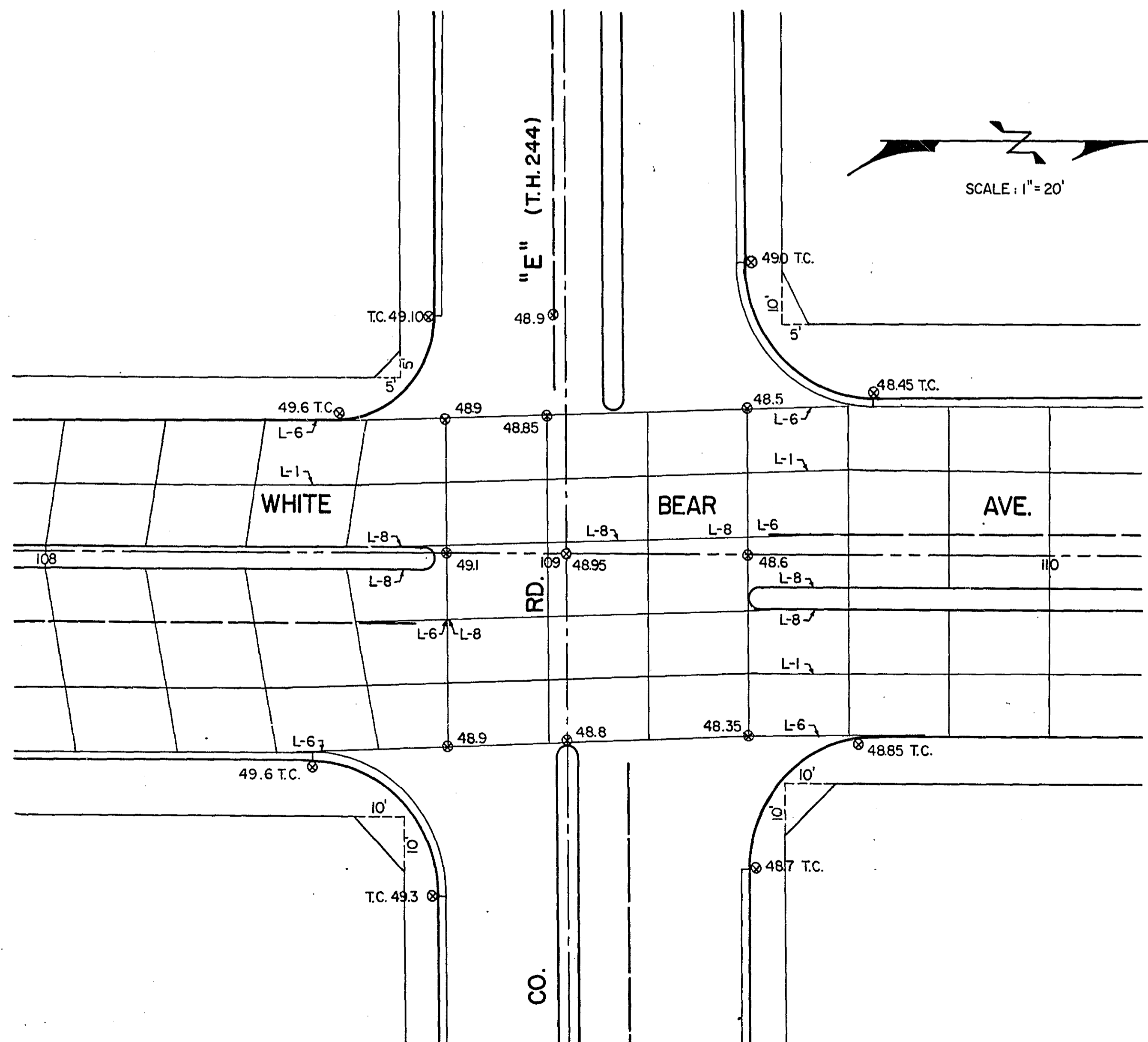
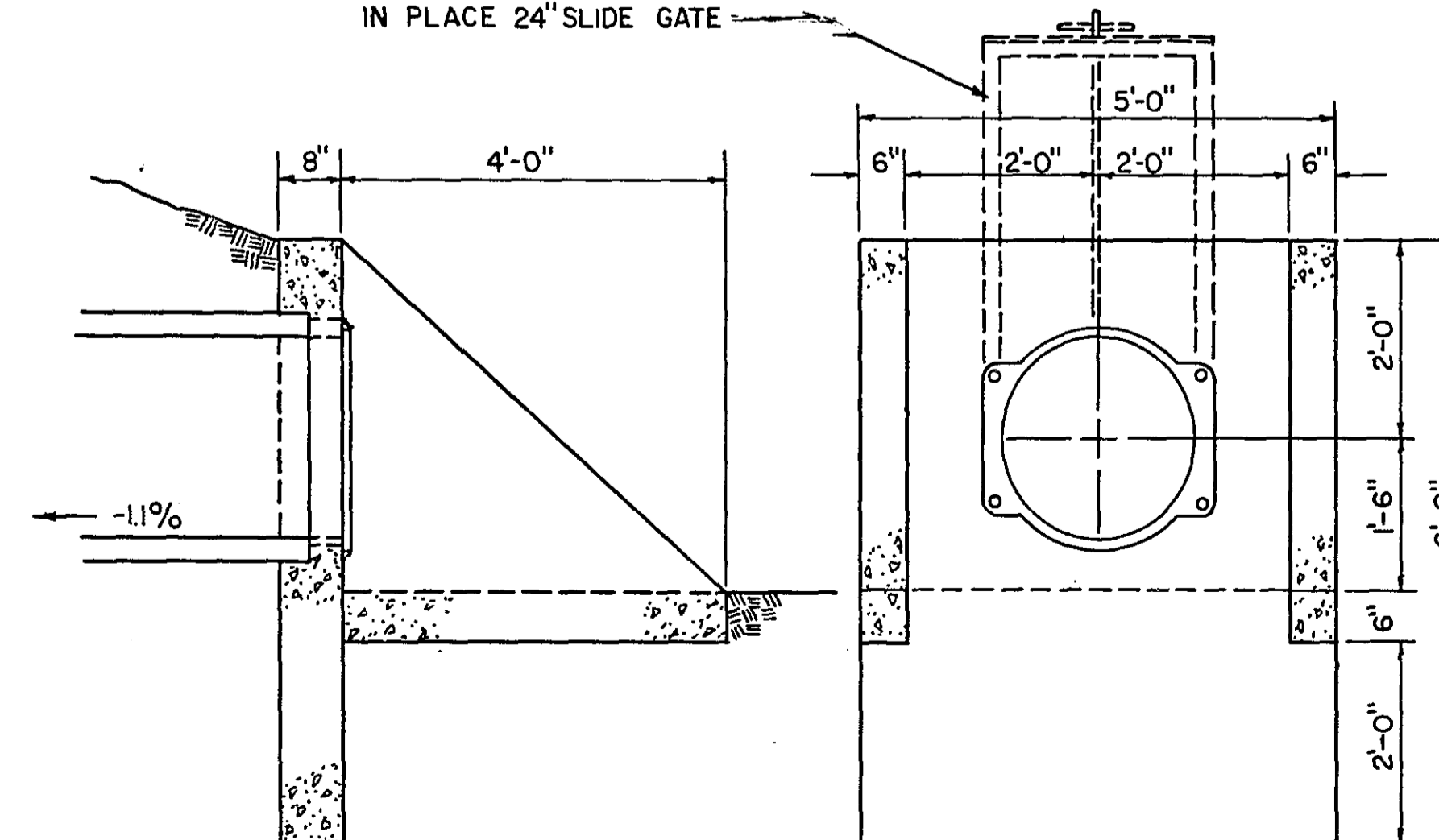


SIDEWALK DETAILS

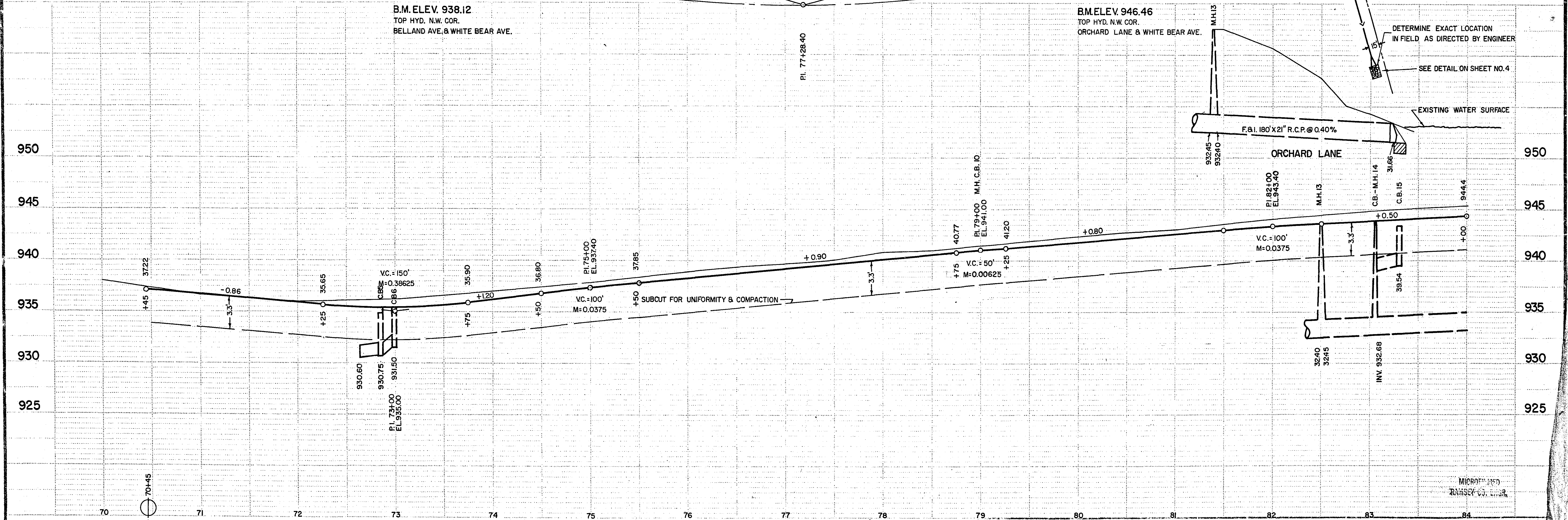
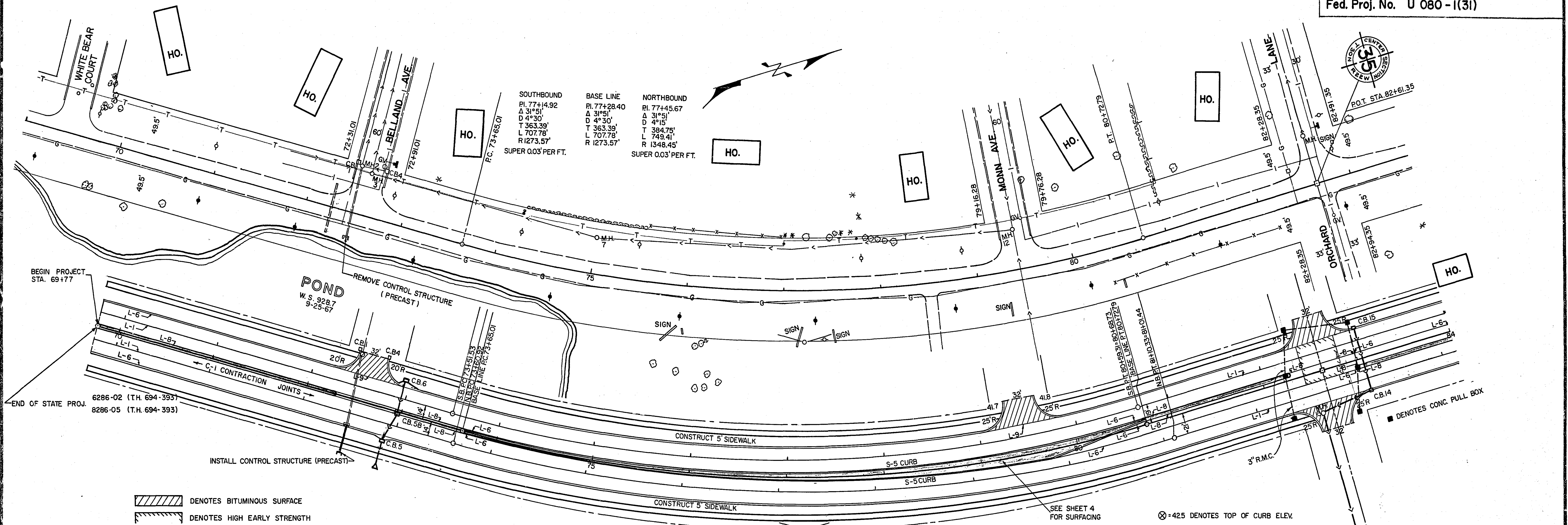
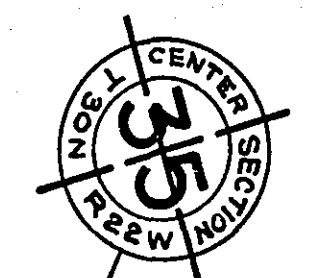
SUPERELEVATION AND MEDIAN SURFACING DETAILS



EXISTING PRECAST CONTROL STRUCTURE SKETCH STA. 72+48

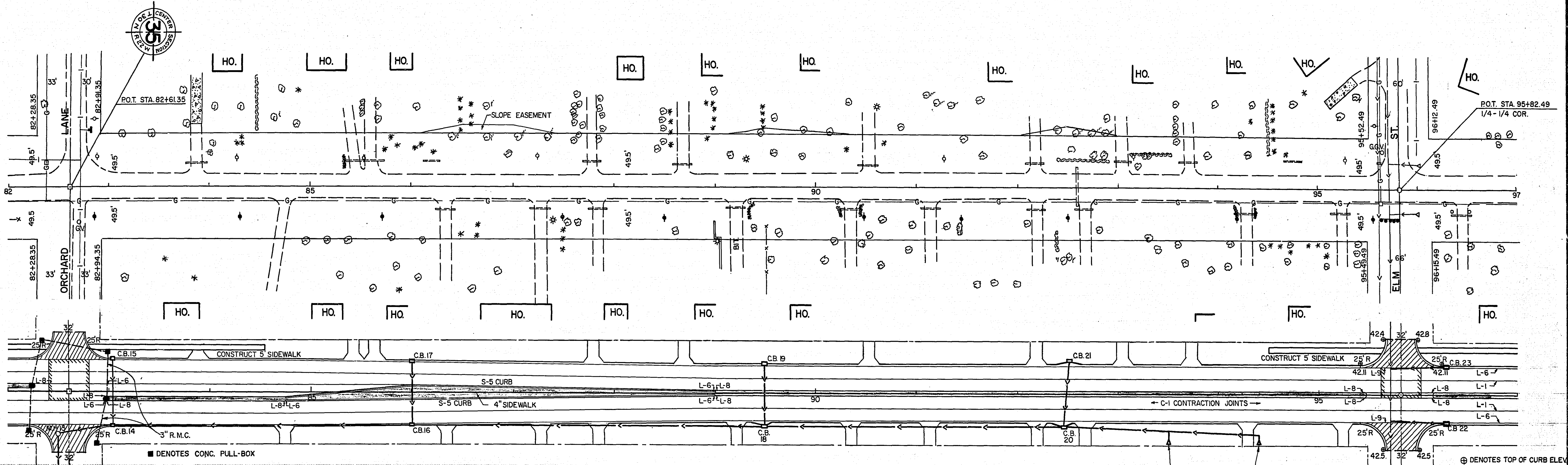
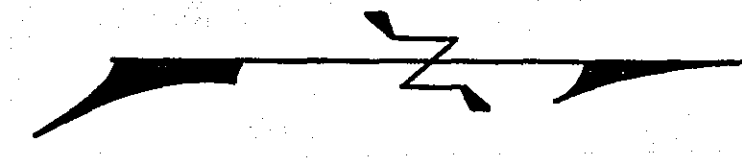


SCALE: 1" = 20'



NO. 102 ST. PAUL - MINNEAPOLIS, MINNESOTA

MICROFILMED  
RAMSEY CO. LIBRARY

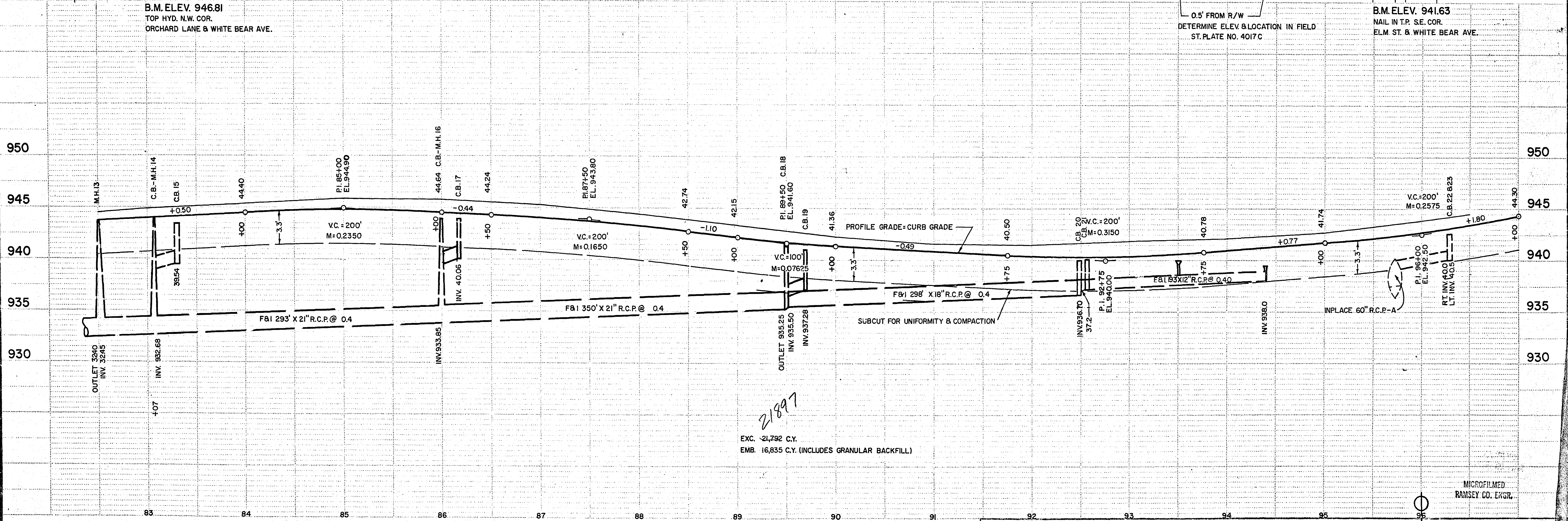


B.M. ELEV. 946.81  
TOP HYD. N.W. COR.  
ORCHARD LANE & WHITE BEAR AVE.

0.5' FROM R/W  
DETERMINE ELEV. & LOCATION IN FIELD  
ST. PLATE NO. 4017C

B.M. ELEV. 941.63  
NAIL IN T.P. S.E. COR.  
ELM. ST. & WHITE BEAR AVE.

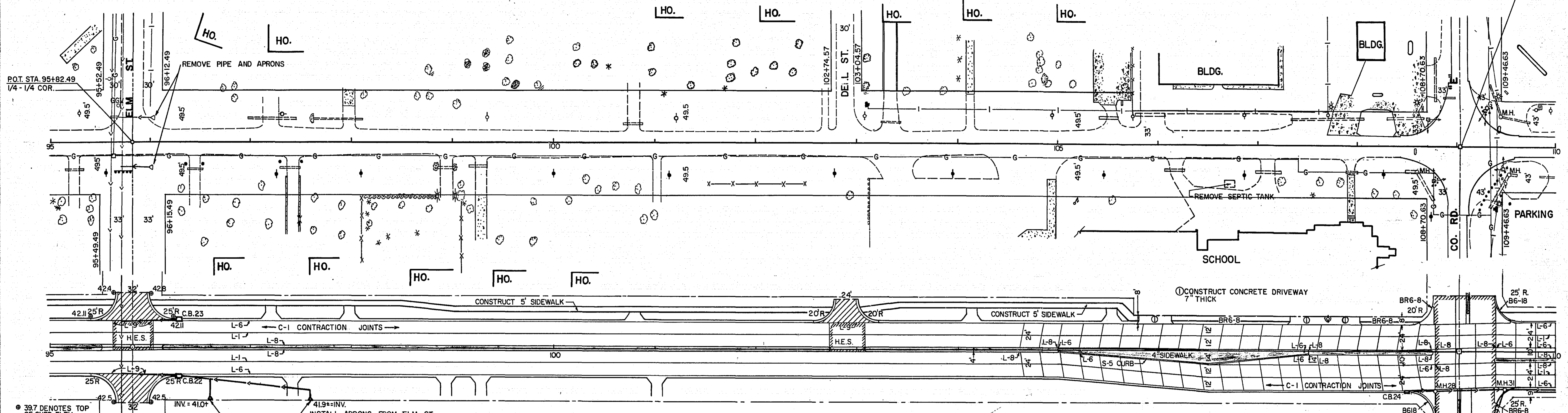
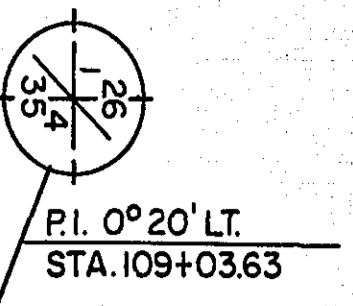
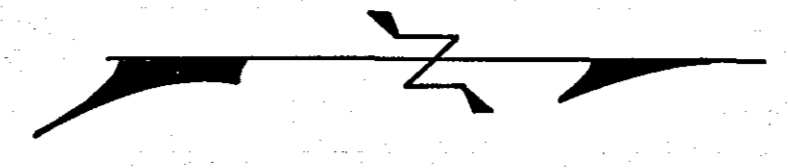
⊕ DENOTES TOP OF CURB ELEV.



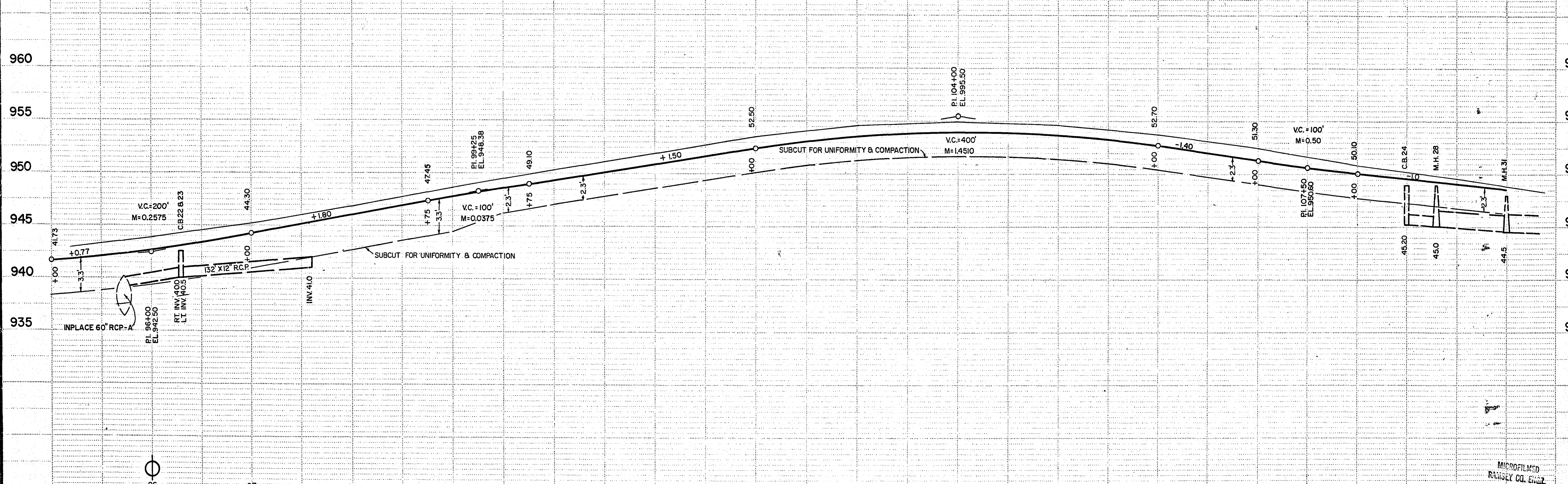
EXC. -2,792 C.Y.  
EMB. 16,835 C.Y. (INCLUDES GRANULAR BACKFILL)

MICROFILMED  
RAMSEY CO. ENGR.

REGISTERED PROFESSIONAL ENGINEER - MINNEAPOLIS, MINNESOTA

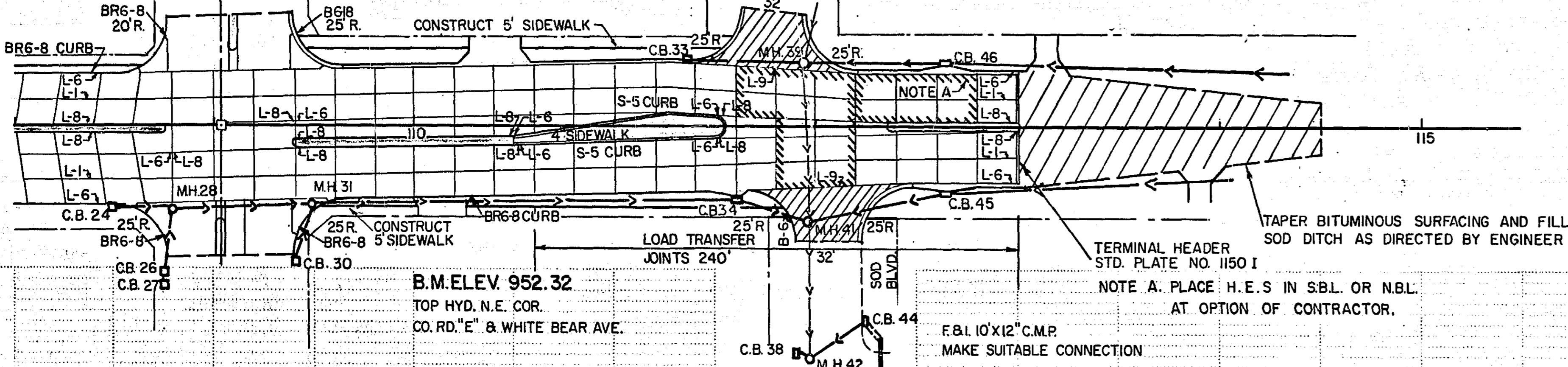
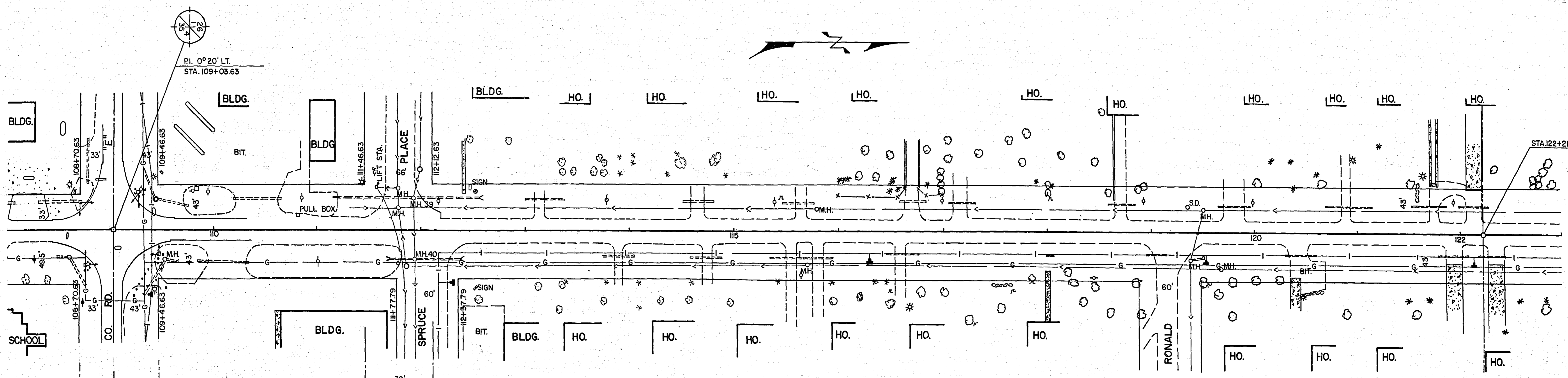


397 DENOTES TOP OF CURB ELEV.  
B.M. ELEV. 941.63  
NAIL IN T.P. S.E. COR.  
ELM ST. & WHITE BEAR AVE.  
05' FROM R/W  
DETERMINE ELEV. & LOCATION IN FIELD  
ST. PLATE NO. 4017C  
INSTALL APRONS FROM ELM ST.  
B.M. ELEV. 952.32  
TOP OF HYD. N.E. COR. OF  
CO. RD. "E" & WHITE BEAR AVE.



MICROFILMED  
RANNEY CO. ENG.



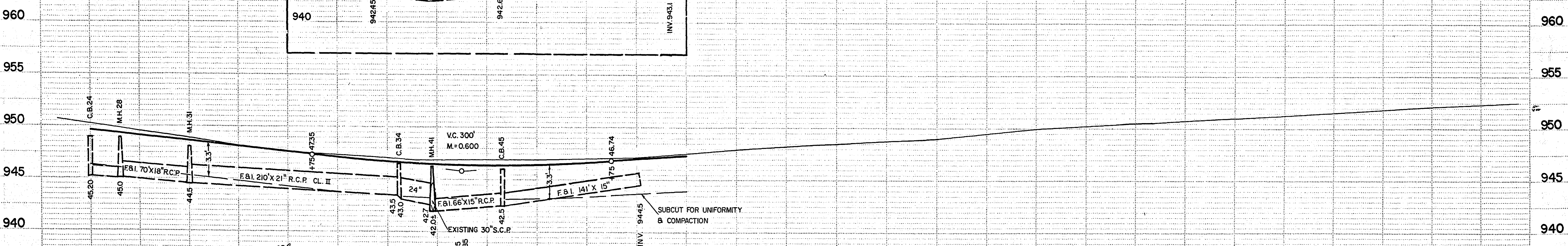
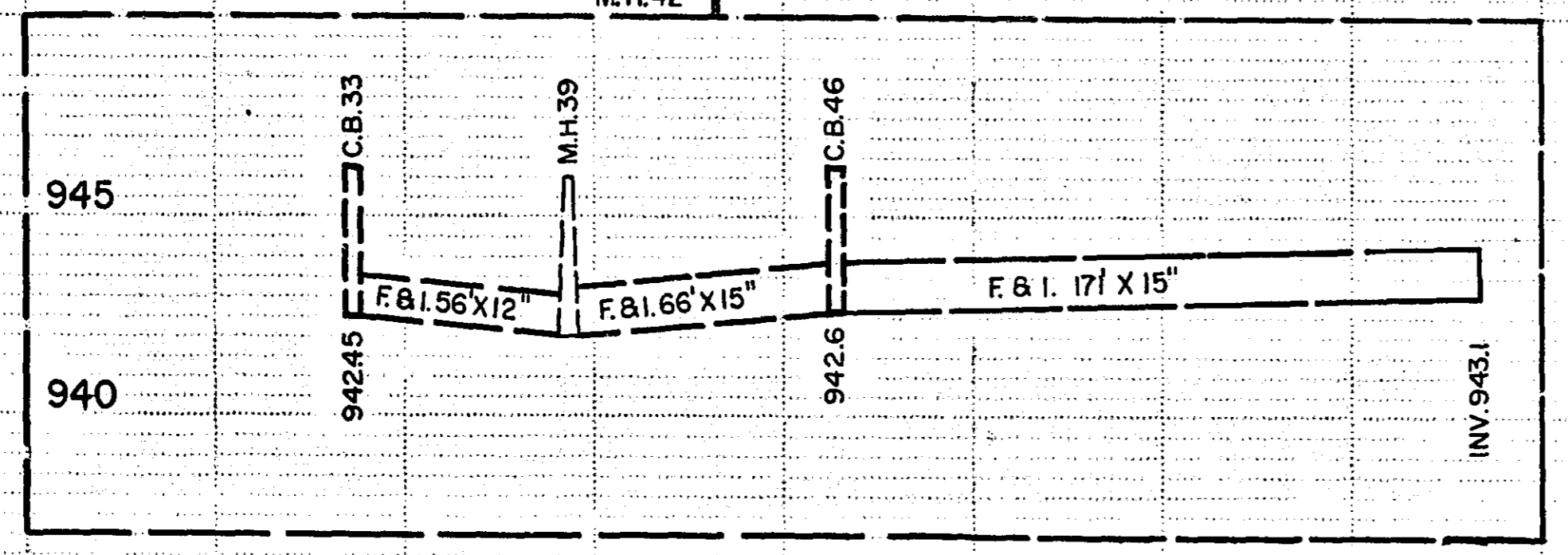


DENOTES HIGH EARLY STRENGTH CONCRETE  
 DENOTES BITUMINOUS SURFACING

B.M. ELEV 952.32  
 TOP HYD. N.E. COR.  
 CO. RD. "E" & WHITE BEAR AVE.

TERMINAL HEADER  
 STD. PLATE NO. 1150 I  
 NOTE A. PLACE H.E.S IN SBL OR NBL  
 AT OPTION OF CONTRACTOR.

B.M. ELEV 953.03  
 TOP HYD. N.E. COR.  
 RONALD & WHITE BEAR AVE



12738  
 EXC. 12843 C.Y. 8579 C.Y.  
 EMB. 6599 C.Y. 4264 C.Y. EXCESS

P.I. 112+25  
 EL. 945.85

SUBCUT FOR UNIFORMITY  
 & COMPACTION

MICROFILMED  
 RAMSEY CO. ENGR.