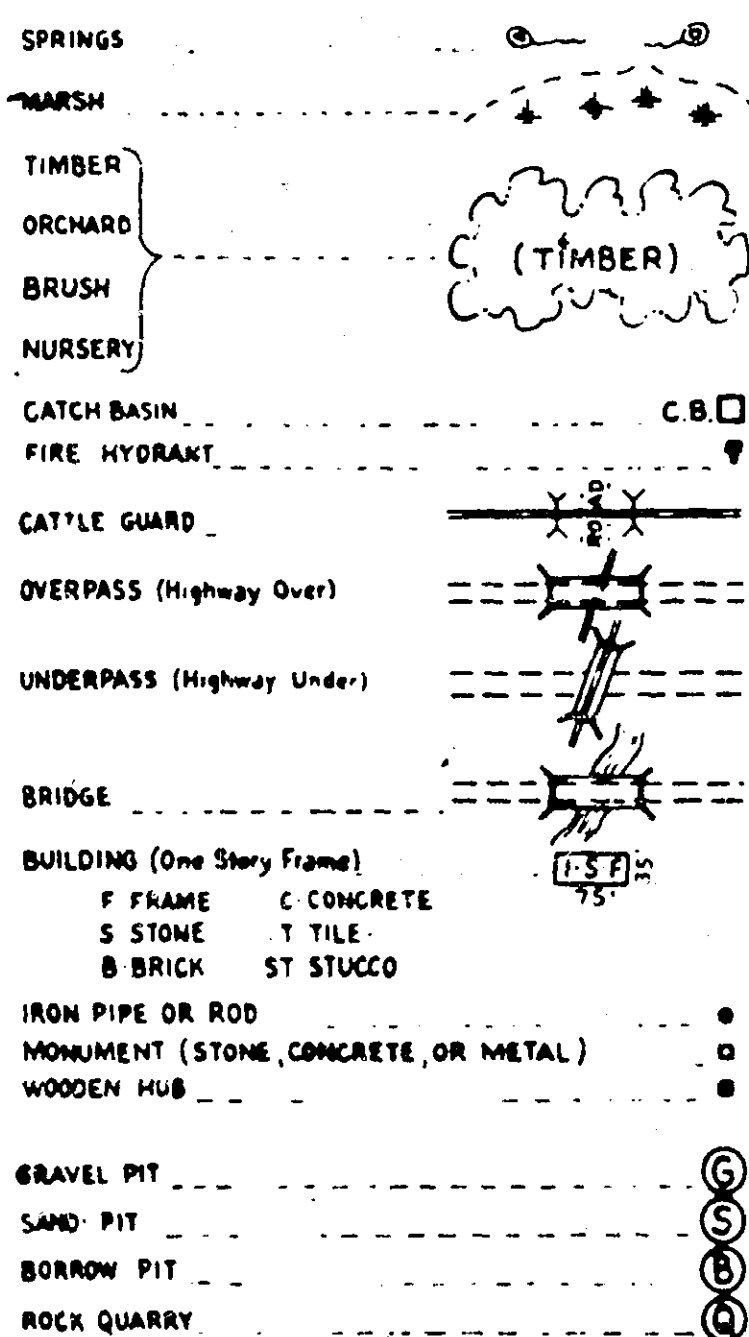
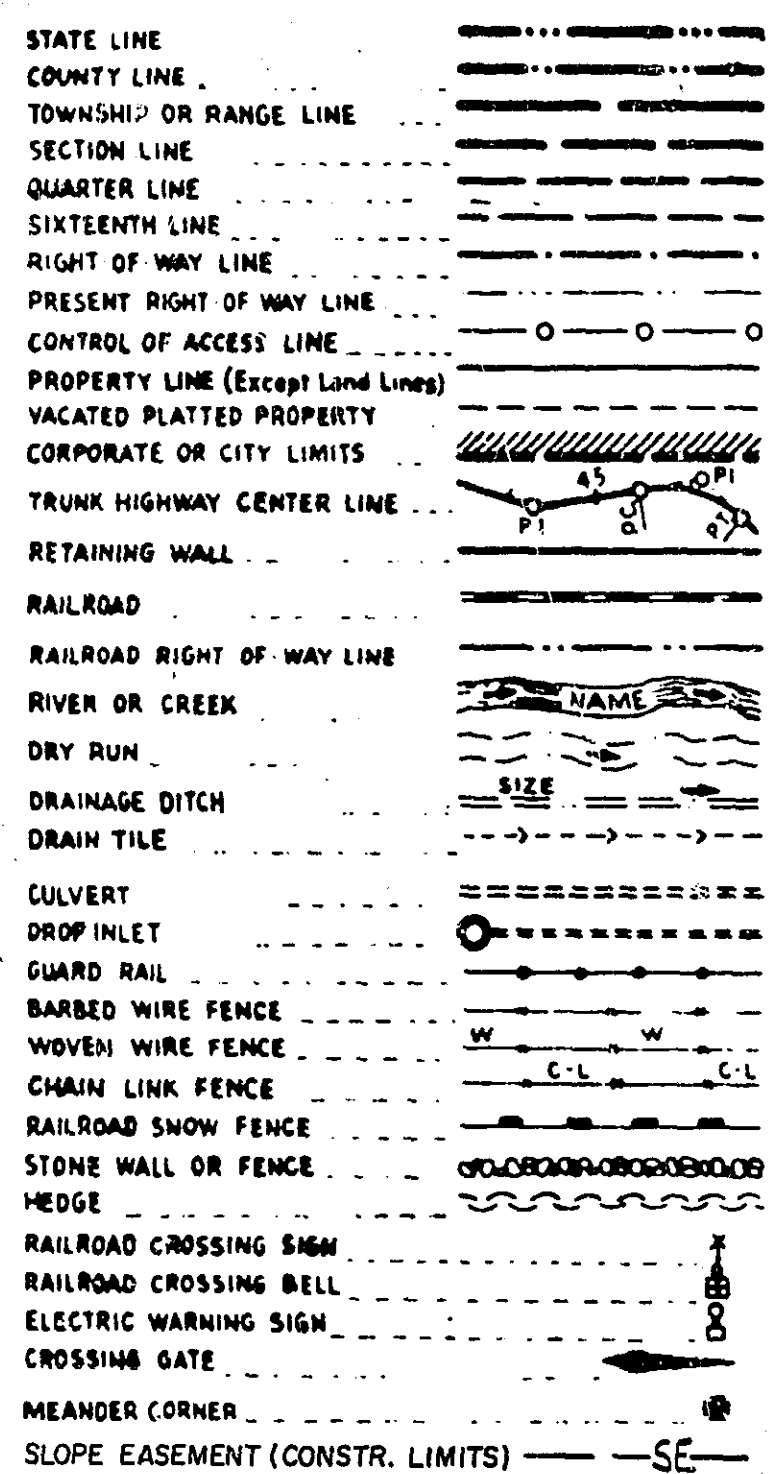
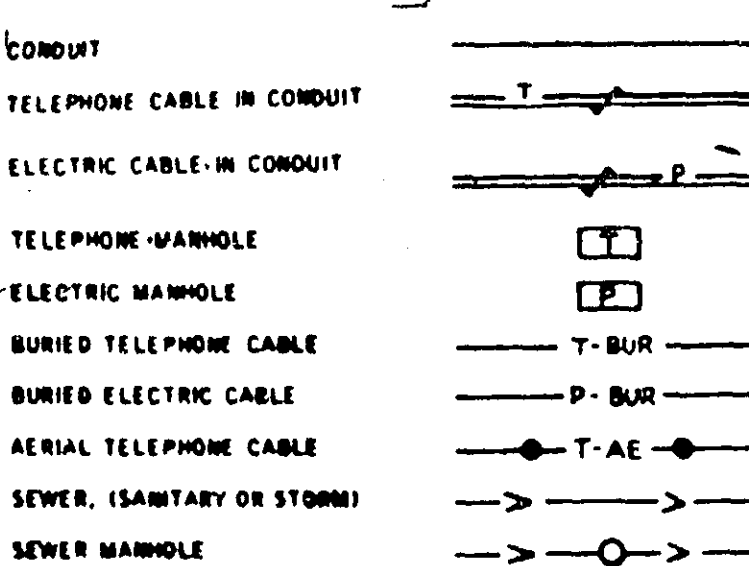
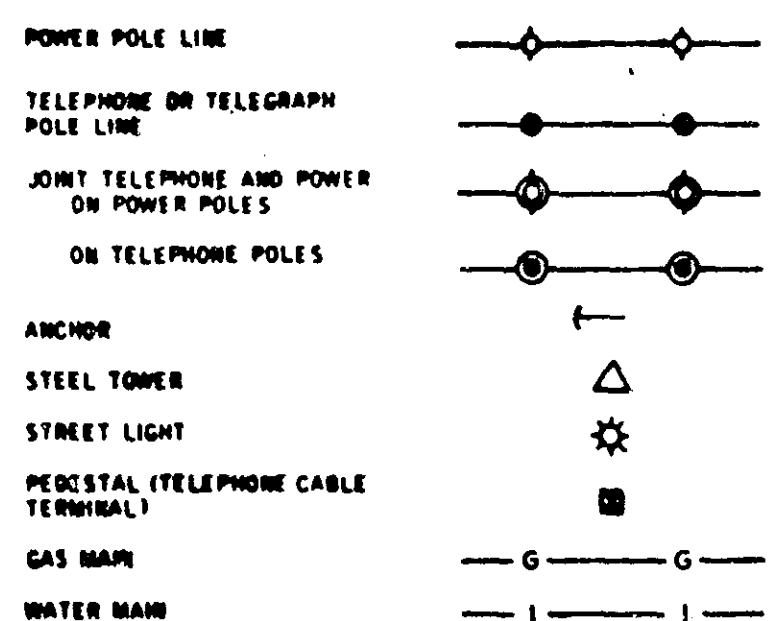


PLANS SYMBOLS



UTILITIES SYMBOLS



PIT DATA

PIT NO. _____ Located in _____
Dead Haul

PIT NO. _____ Located in _____
Dead Haul

SPECIFICATIONS REFERENCE

THE 1978 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

GROSS LENGTH 2500.0 FEET 0.473 MILES
BRIDGE LENGTH 0 FEET 0 MILES
NET LENGTH 2500.0 FEET 0.473 MILES

PLAN
PROFILE HORIZ.
PROFILE VERT.
LAYOUT MAP



BEGIN S.P. 62-665-17
STATION 46+00.0

ACCOUNT PLAN
CONFORMING TO
CIVIL RECORDS
DATE: 12-21-83

MINNESOTA DEPARTMENT OF TRANSPORTATION RAMSEY COUNTY

DEPARTMENT OF PUBLIC WORKS
CONSTRUCTION PLAN FOR: GRADING AND CONCRETE PAVEMENT

WHITE BEAR AVENUE

BETWEEN: 365' SOUTH OF BURKE AVENUE AND T.H. 36

S.P. 62-665-17

FROM: A POINT 666.95 FEET SOUTH OF THE N.E. CORNER OF SECTION 15, T.29, R.22.

TO: A POINT 1548.03 FEET NORTH OF THE S.W. CORNER ALONG THE WEST LINE AND 690.58 FEET EAST OF THE WEST LINE OF SECTION 11, T.29N., R.22W.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3	TYPICAL SECTIONS - WHITE BEAR AVENUE
4-5	DRAINAGE CHARTS & DETAILS
6	TABULATIONS, DETAILS & SIDE STREET TYPICAL
7	LANDSCAPING DETAILS
8-11	CONCRETE PAVING DETAILS
12-15	PLAN & PROFILE SHEETS
16-33	CROSS SECTIONS
34	TRAFFIC CONTROL PLAN

END S.P. 62-665-17
STATION 71+00.0

DESIGN DESIGNATION

"B" TO PROSPERITY PROSPERITY TO T.H. 36

ADT (CURRENT YEAR) 1982	17,000	17,000
ADT (FUTURE YEAR) 2003	22,400	
DHV	2,600	
D (DIRECTIONAL DISTRIBUTION)	60-40	
T (HEAVY COMMERCIAL)	5%	
DESIGN SPEED	45 MPH	
DESIGN LOAD	9 TON	
SOIL FACTOR	100%	

ACCOUNT NO. 47215

DESIGN SQUAD _____ DATE _____
DRAWN BY _____ DATE _____
CHECKED BY _____ DATE _____

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

DATE 12-09-81 REG. NO. 13501 ENGR. Larry F. Fulk

RECOMMENDED FOR APPROVAL DATE 12-11-81
TRAFFIC ENGR. _____

RECOMMENDED FOR APPROVAL DATE 1-27-82
COUNTY ENGINEER _____

RECOMMENDED FOR APPROVAL DATE 1-18-82
CIVIL ENGR. _____

APPROVED DATE 2-8-82
CHAIRMAN OF THE RAMSEY COUNTY BOARD _____

RECOMMENDED FOR APPROVAL DATE 1-11-81
MAINT. ENGR. _____

APPROVED DATE 01-07-82
MAYOR OF THE CITY OF MAPLEWOOD _____

RECOMMENDED FOR APPROVAL DATE 1-13-82
CORR. ENGR. _____

APPROVED _____ DATE _____

RECOMMENDED FOR APPROVAL DATE 1-13-82
DESIGN ENGR. _____

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL DATE 1-18-82
CIVIL ENGR. _____

RECOMMENDED FOR APPROVAL DATE 11-30-82
STATE AID PLANS ENGINEER _____

APPROVED DATE 1-13-82
COORDINATING ENGR. _____

RECOMMENDED FOR APPROVAL DATE 4-8-82
DISTRICT STATE AID ENGINEER _____

APPROVAL DATE 4-13-82
STATE AID ENGINEER _____

PLAN REVISIONS		
DATE	SHEET NO.	BY
11-18-82	MN/DOT, FAU REVISIONS	L.K.F.
	SHEETS 1-15, 34	

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	ESTIMATED QUANTITIES	FINAL ESTIMATED QUANTITIES
2021.501	MOBILIZATION	L.S.	1	
2101.502	CLEARING	TREE	41	
2101.507	GRUBBING	TREE	39	
2104.501	REMOVE PIPE SEWERS	L.F.	435	
2104.501	REMOVE PIPE CULVERTS	L.F.	211	
2104.501	REMOVE CURB AND GUTTER	L.F.	3395	
2104.501	REMOVE CONCRETE CURB	L.F.	607	
2104.501	REMOVE BITUMINOUS CURB	L.F.	785	
2104.503	REMOVE SIDEWALK	S.F.	20	
2104.505	REMOVE CONCRETE PAVEMENT	S.Y.	7470	
2104.505	REMOVE CONCRETE MEDIAN	S.Y.	340	
2104.509	REMOVE MANHOLES AND CATCH BASINS	EACH	7	
2104.509	REMOVE METAL APRONS	EACH	1	
2102.501	PAVEMENT MARKING REMOVAL	S.F.	1200	
0564.603	4" SOLID LINE YELLOW-REMOVABLE POLYMER PREFORMED	L.F.	8200	
2104.521	SALVAGE CHAIN LINK FENCE	L.F.	85	
2104.523	SALVAGE HYDRANT	EACH	3	
2104.523	SALVAGE CASTINGS	EACH	7	
2105.501	COMMON EXCAVATION	C.Y.	26939	
2105.525	TOPSOIL BORROW (L.V.)	C.Y.	795	
(6) 2130.501	WATER	M. GAL.	100	
2211.501	AGGREGATE BASE CLASS 4	TON	248	
(3) 2211.501	AGGREGATE BASE CLASS 5	TON	6348	
2301.502	CONCRETE PAVEMENT STANDARD WIDTH	S.Y.	7547	
2301.503	CONCRETE PAVEMENT IRREGULAR WIDTH	S.Y.	2431	
2301.511	STRUCTURAL CONCRETE	C.Y.	1984	
2301.513	STRUCTURAL CONCRETE HIGH EARLY	C.Y.	109	
2301.529	REINFORCEMENT BARS	POUND	6339	
2301.536	DOWEL BAR ASSEMBLIES	L.F.	580	
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	188	
2331.510	BINDER COURSE MIXTURE	TON	413	
2331.514	BASE COURSE MIXTURE	TON	3295	
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	24	
(2) 2341.508	WEARING COURSE MIXTURE	TON	383	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	533	
2361.504	ASPHALT CEMENT	TON	17	
2361.508	WEARING COURSE MIXTURE	TON	239	
2501.515	15" R.C. PIPE APRONS	EACH	3	
2503.541	15" R.C. PIPE SEWER DESIGN 3006 CLASS IV	L.F.	1341	
2503.541	18" R.C. PIPE SEWER DESIGN 3006	L.F.	566	
2501.515	18" R.C. PIPE APRONS	EACH	1	
2506.506	CONSTRUCT M.H. DESIGN A OR F	L.F.	49.1	
2506.507	CONSTRUCT C.B. DESIGN LP4-4	EACH	2	
2506.507	CONSTRUCT C.B. DESIGN LP4-6	EACH	4	
2506.507	CONSTRUCT C.B. DESIGN LP4-7	EACH	3	
2506.507	CONSTRUCT C.B. DESIGN SPECIAL 2	L.F.	29.5	
2506.522	ADJUST FRAME & RING CASTINGS	EACH	3	
2506.516	CASTING ASSEMBLIES	EACH	19	
2521.501	4" CONCRETE WALK	S.F.	7775	
2531.501	CONCRETE CURB & GUTTER DESIGN B612	L.F.	755	
2531.501	CONCRETE CURB & GUTTER DESIGN B618	L.F.	369	
2531.501	CONCRETE CURB & GUTTER DESIGN B624	L.F.	4989	
2531.501	CONCRETE CURB & GUTTER DESIGN S524	L.F.	55	
(4) 2531.503	CONCRETE MEDIAN	S.Y.	115	
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S.Y.	773	
0331.603	SAWING BITUMINOUS PAVEMENT SURFACE	L.F.	300	
2535.501	BITUMINOUS CURB	L.F.	1128	
2571.501	TECHNY ARBORVITAE 4' HI B&B	SHRUB	40	
2571.502	GREEN ASH 2" CAL B&B	TREE	2	
2571.503	AMUR MAPLE 4' HI BR	TREE	12	
2575.505	SODDING	S.Y.	9538	
(7) 2575.531	COMMERCIAL FERTILIZER ANALYSIS 12-12-12	TON	0.33	
0504.602	LOWER WATER SERVICE	EACH	3	
0504.603	LOWER 16" WATER MAIN	L.F.	300	
0557.603	INSTALL CHAIN LINK FENCE	L.F.	85	
0301.602	RESEAL CONCRETE PAVEMENT JOINTS	POUND	938	
0301.604	CLEAN AND SAW CONCRETE PAVEMENT JOINTS	L.F.	1659	
0301.604	ROUT AND CLEAN CONCRETE PAVEMENT CRACKS	L.F.	177	
0301.604	CLEAN CONCRETE PAVEMENT CRACKS	L.F.	40	
0301.604	SAWING CONCRETE PAVEMENT	L.F.	104	
0301.608	SPECIAL CONCRETE	C.F.	10	
(5) 0504.605	2" INSULATION	S.Y.	289	
0501.602	TRASHGUARD FOR 15" R.C. APRON	EACH	1	
0501.602	TRASHGUARD FOR 18" R.C. APRON	EACH	1	
0504.602	INSTALL HYDRANT	EACH	3	
0504.602	ADJUST VALVE BOX - WATER	EACH	15	
0563.601	TRAFFIC CONTROL	L.S.	1	
(3) 2211.501	AGGREGATE BASE CLASS 5	TON	370	
2521.501	4" CONCRETE WALK	S.F.	12760	

- (1) INCLUDES 41 TONS FOR ENTRANCES
 (2) INCLUDES 57 TONS FOR ENTRANCES
 (3) 100% CRUSHED MATERIAL
 (4) MOUNTABLE
 (5) FOR WATERMAIN AND SERVICES
 (6) FOR DUST CONTROL
 (7) RATE OF 350 LBS./ACRE

REVISED	DATE	DESIGNED BY
PRIME COAT	12-11-81	DESIGNED BY
2301.502 QUANT	2-17-81	DRAWN BY
QUANTITIES	1-9-82	CHECKED BY
QUANTITIES & PLANS	11-18-82	
PER FHWA		

I hereby certify that this plan, specification, or report 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.
Harry R. Feldman
 Date 12-07-81 Reg. No. 13501

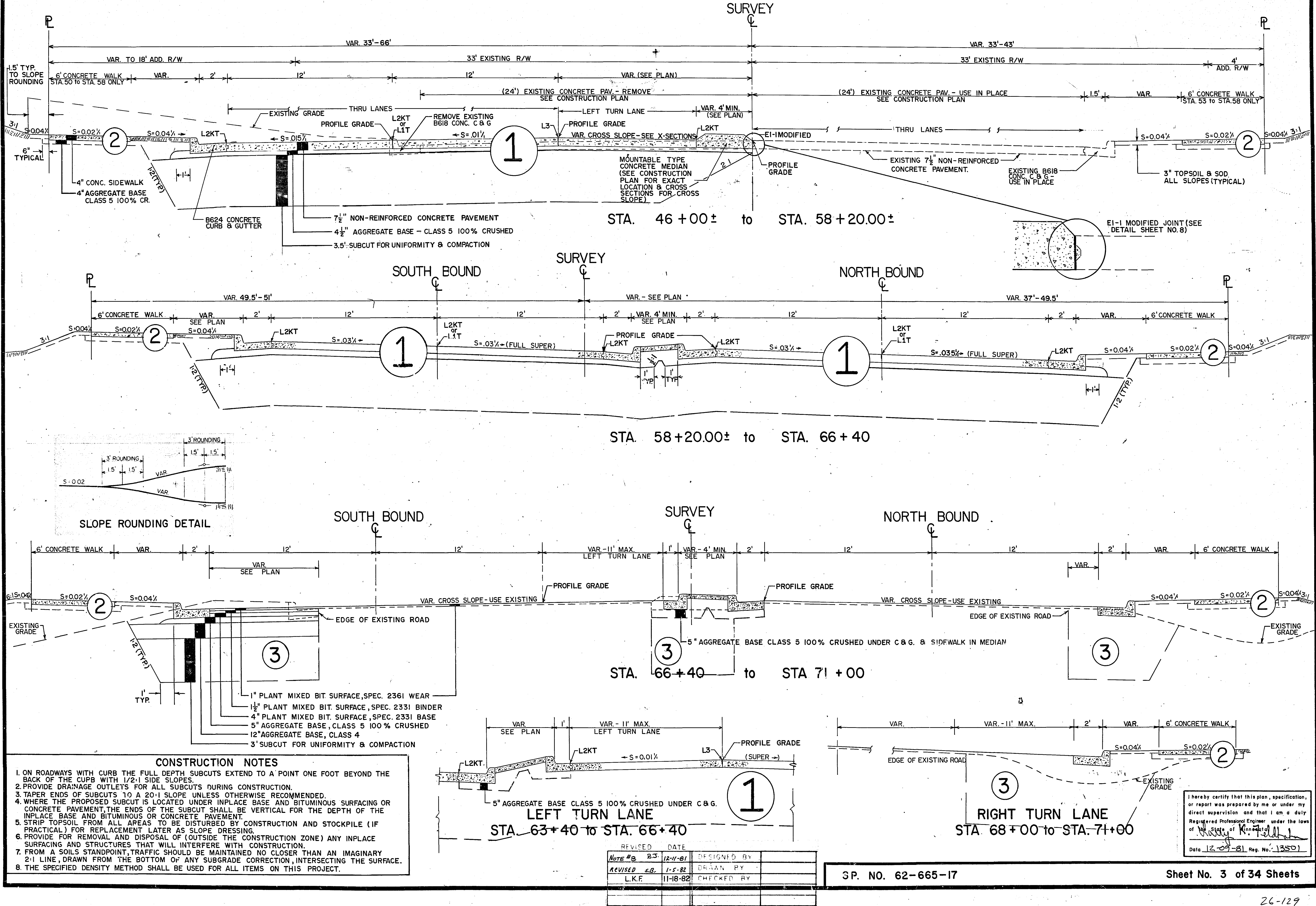
THE FOLLOWING STANDARD PLATES AS APPROVED BY FHWA SHALL GOVERN ON THIS PROJECT.

STANDARD	PLATES
0003 A	SPECIFICATION REFERENCE TO STANDARD PLATES
1103 I	TYPICAL DOWEL BAR ASSEMBLY
1141 B	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
1150 N	CONSTRUCTION OF HEADER JOINTS
3000 I	REINFORCED CONCRETE PIPE
3006 C	GASKET JOINT FOR R.C. PIPE
3100 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3145 A	CONCRETE PIPE JOINT TIES
4000 H	MANHOLE OR CATCH BASIN
4005 K	MANHOLE OR CATCH BASIN
4010 F	CONCRETE SHORT CONE AND ADJUSTING RING
4011 D	PRECAST CONCRETE BASE
4020 C	MANHOLE OR CATCH BASIN
4021 C	PRECAST CURB OPENING CATCH BASIN
4101 C	RING CASTING FOR MANHOLE OR CATCH BASIN
4102 C	MANHOLE OR CATCH BASIN RING CASTING
4108 E	MANHOLE ADJUSTING RINGS
4110 D	COVER CASTING FOR MANHOLE
4131 C	CATCH BASIN FRAME & GRATE CASTING
4143 D	STOOL GRATE & CONCRETE FRAME
4180 G	MANHOLE STEP CASTING
4016 C	CURB OPENING CATCH BASIN
7020 I	CONCRETE CURB
7035 J	CONCRETE WALK AND CURB RETURNS AT ENTRANCES
7036 C	PEDESTRIAN CURB RAMPS
7065 C	BITUMINOUS CURB
7100 E	CONCRETE CURB AND GUTTERS
7102 F	CONCRETE CURB AND GUTTER
7105 C	CONCRETE MEDIAN
7110 E	CURB AND GUTTER CONSTRUCTION AT CATCH BASIN
8000 H	STANDARD BARRICADES
8003 B	BREAKAWAY SIGN SUPPORT (PLASTIC)
9102 C	SODDING AT PIPE CULVERT ENDS

CLEAR & GRUB CHART

STATION	LOCATION		DESCRIPTION	CLEAR	GRUB
	LT.	RT.			
WHITE BEAR AVE.					
53+45	61'		4" PINE	1	1
+86		41'	2" MAPLE	1	1
+91	54'		4" MAPLE	1	1
54+07		41'	2" MAPLE	1	1
+24	54'		3" MAPLE	1	1
+52	54'		3" MAPLE	1	1
+80	54'		3" MAPLE	1	1
55+41	57'		7" PINE	1	1
57+06	53'		4" MAPLE	1	1
+54	53'		4" MAPLE	1	1
60+90 TO 61+50		5'-80'	23-4" TO 10"	23	21
COUNTY ROAD "B"					
83+80		35'	22" PINE	1	1
84+45		41'	14" PINE	1	1
84+97		31'	STUMP	1	1
85+04		37'	17" PINE	1	1
85+22		43'	14" PINE	1	1
PROSPERITY AVE.					
68+29	32'		TW-20" COTT	2	1
+41	31'		16" COTT.	1	1
69+80	28'		24" MAPLE	1	1
			TOTAL	41	39

TYPICAL SECTIONS



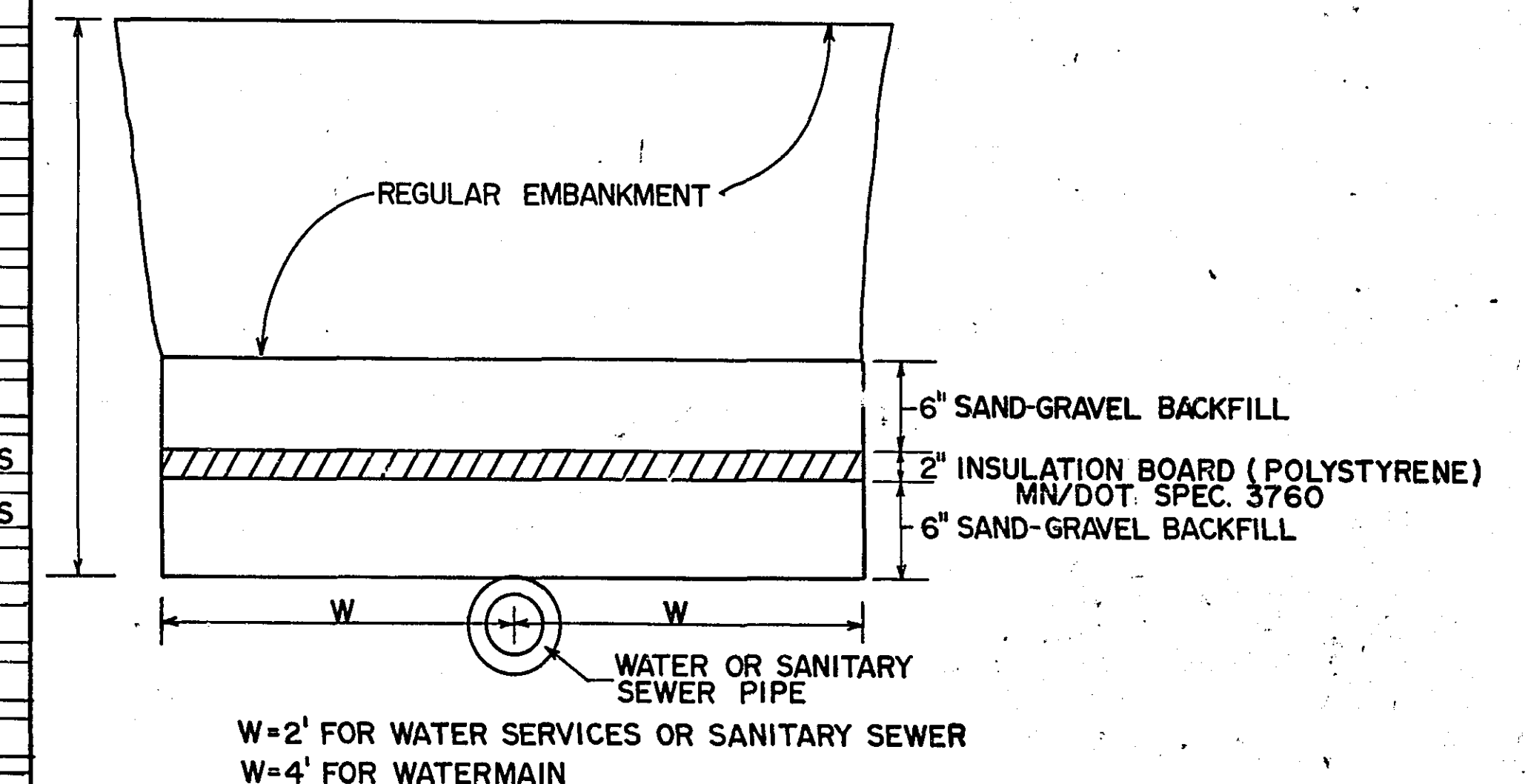
DRAINAGE CHART

STATION	LOCATION	NO.	TYPE	DESIGN	HEIGHT LIN. FT.	CASTING ASSEMBLY	ELEVATION			ADJUST CASTING ASSEMBLY	RECONSTRUCT CATCH BASIN OR MANHOLE LIN. FT.	INSTALL CASTING ASSEMBLY	FURNISH AND INSTALL PIPE SEWER					DRAINS TO		REMARKS																	
							PROFILE	ORIGINAL GRATE OR RING	NEW GRATE OR RING				CB. or M.H. INVERT	REINFORCED CONCRETE PIPE					CORRUGATED STEEL PIPE					APRON	CLASS	STRUCTURE NO.	INVERT EL.										
EXISTING STRUCTURES																																					
WHITE BEAR AVE.																																					
46+06	28' RT.	1	ST.	C.B.	3.63	3"		904.3		900.67																O.K. LEAVE											
46+06	28' LT.	2	ST.	C.B.	4.25	3"		904.0		899.75																O.K. LEAVE											
52+67	℄	3	SAN.	M.H.	12.34	9"		920.76		908.42	I															ADJUST											
60+12	64' LT.	4	ST.	C.B.	4.69	3"		923.14		918.45																REMOVE											
60+50	76' LT.	5	ST.	M.H.	4.65	7"		922.83		918.18	I															ADJUST											
60+93	19' LT.	6	ST.	C.B.	5.10	3"		922.73		917.63																REMOVE											
61+67	27' LT.	7	ST.	M.H.	4.0	7"		922.59		918.59																REMOVE											
64+89	39' RT.	8	ST.	C.B.	2.62	9"		922.85		920.23																REMOVE											
69+30	62' LT.	9	TEL.	M.H.	9.80	12"		919.6		909.8																DO NOT DISTURB											
70+63	64' LT.	10	ST.	APR.						914.73																O.K. LEAVE											
70+70	6' RT.	11	ST.	C.B.	6.17	3"		923.41		917.24																REMOVE											
70+78	6' RT.	12	ST.	C.B.	6.07	3"		923.46		917.39																REMOVE											
COUNTY ROAD "B"																																					
83+08	6' RT.	13	SAN.	M.H.	19.27	9"		921.35		903.98	I															ADJUST											
85+89	29' LT.	14	TEL.	M.H.	9.64	12"		924.42		915 ±																RECONSTRUCT BY OTHERS											
85+89	19' LT.	15	TEL.	M.H.				922.80																		RECONSTRUCT BY OTHERS											
PROSPERITY ROAD																																					
70+63	25' RT.	16	ST.	APR.						920.59																REMOVE											
71+00	℄	17	SAN.	M.H.	8.78	9"		922.83		914.05																O.K. LEAVE											
71+76	27' RT.	18	ST.	C.B.	3.34	12"		919.96		916.68																O.K. LEAVE											
72+48	13' RT.	19	ST.	S.D.																						O.K. LEAVE											

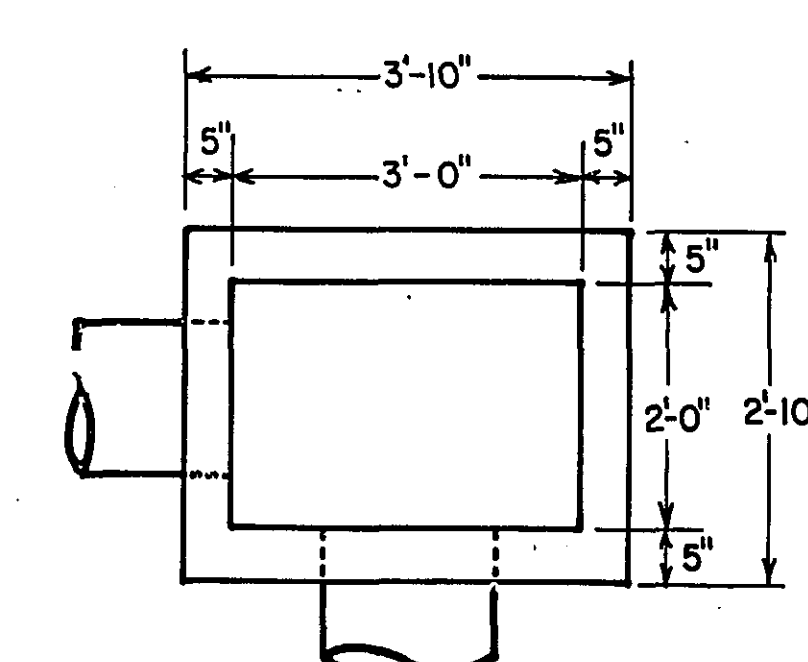
HYDRANT CHART

SALVAGE		INSTALL	
STATION	LOCATION	STATION	LOCATION
WHITE BEAR AVE.			
46+06	36' LT.	O.K. LEAVE	
50+00	40' LT.	50+00	53' LT.
53+11	32' LT.	53+11	53' LT.
58+90	36' LT.	58+90	38' LT.
65+10	145' LT.	O.K. LEAVE	
COUNTY ROAD "B"			
82+08	24' LT.	O.K. LEAVE	
NOTE: STATIONING & LOCATIONS ARE FROM SURVEY 0			
ALL HYDRANT WORK SHALL BE DONE AS DIRECTED BY THE CITY OF MAPLEWOOD & CITY OF ST. PAUL WATER UTILITY.			

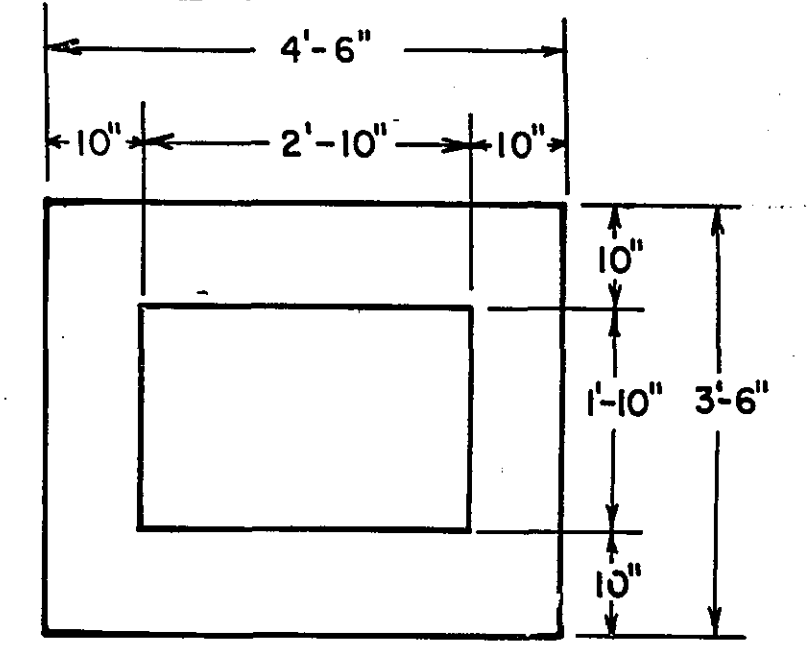
WATER AND SANITARY SEWER INSULATION DETAIL



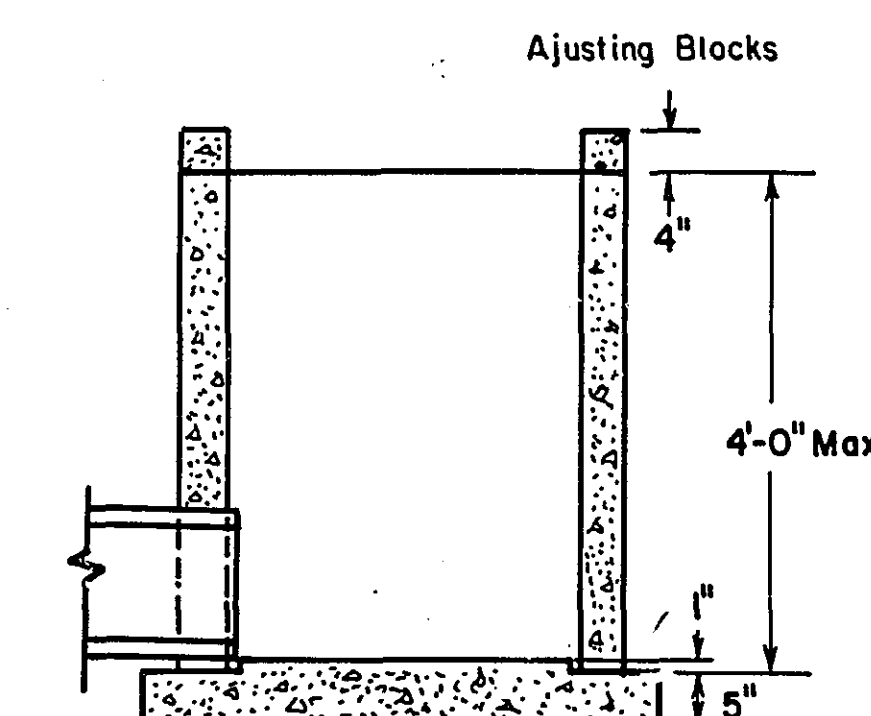
CATCH BASIN DESIGN SPECIAL 2



CATCH BASIN PLAN



BASE SLAB PLAN



SECTIONAL VIEW
CATCH BASIN & BASE SLAB

1. ESS BROTHERS, BADGER FOUNDRY, NEENAH FOUNDRY, NO. R-3067-L CURB INLET FRAME, GRATE, AND CURB BOX, OR APPROVED EQUAL CASTINGS SHALL BE USED WITH STRUCTURE.
2. PIPE CUT-OUTS TO BE LOCATED WHERE REQUIRED.
3. ALTERNATE CAST-IN-PLACE BASE SLAB CAN BE USED.
4. INSTALL AS PER MN/DOT STD. PLATE NO. 7111
5. REINFORCING: SINGLE LINE STEEL WIRE FABRIC, WALL-W3.5xW3.0 HAVING AN AREA OF NOT LESS THAN 21 SQ. IN./FT. OF HEIGHT. BASE-W4.0xW4.0 HAVING AN AREA OF NOT LESS THAN 16 SQ. IN./FT. OF HEIGHT.

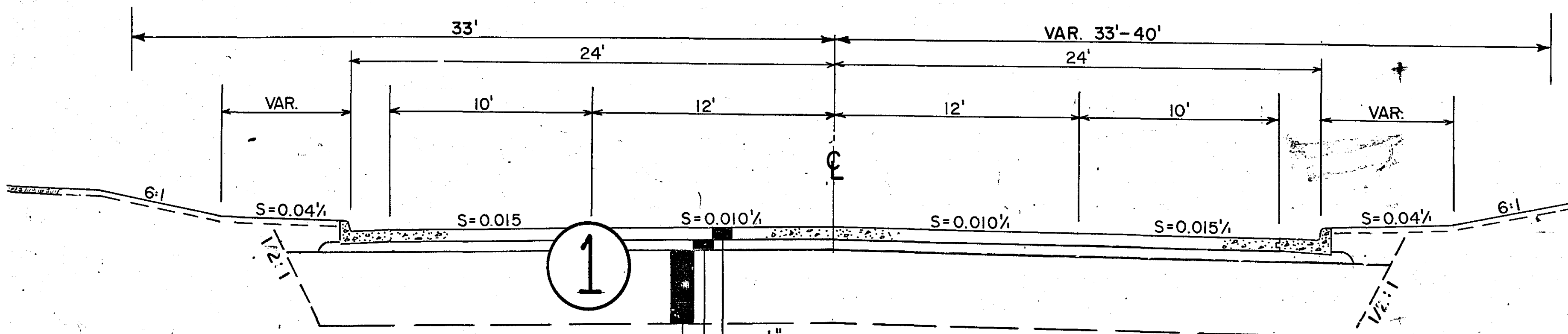
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Harry K. Feldman

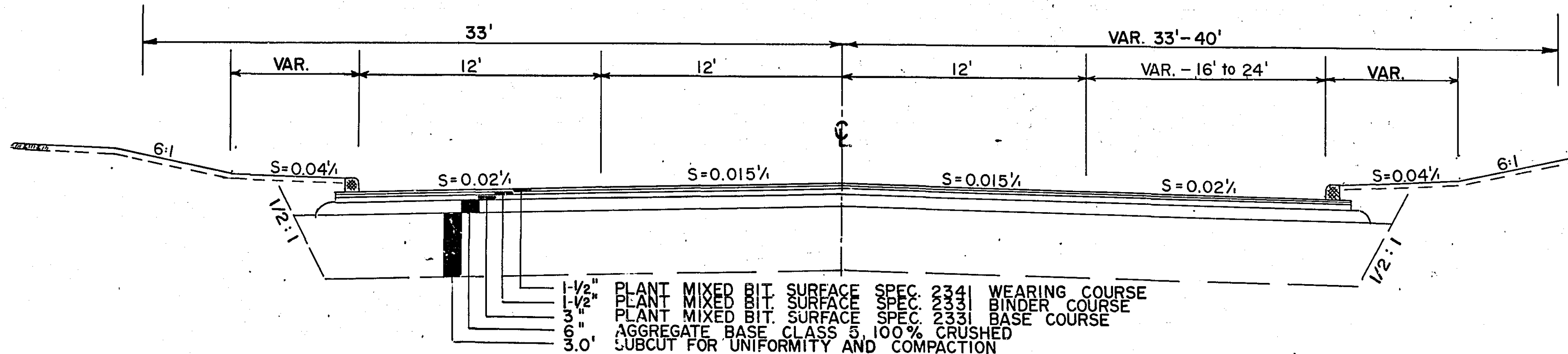
Date 12-09-81 Reg. No. 13501

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
L.K.F.	11-18-82			

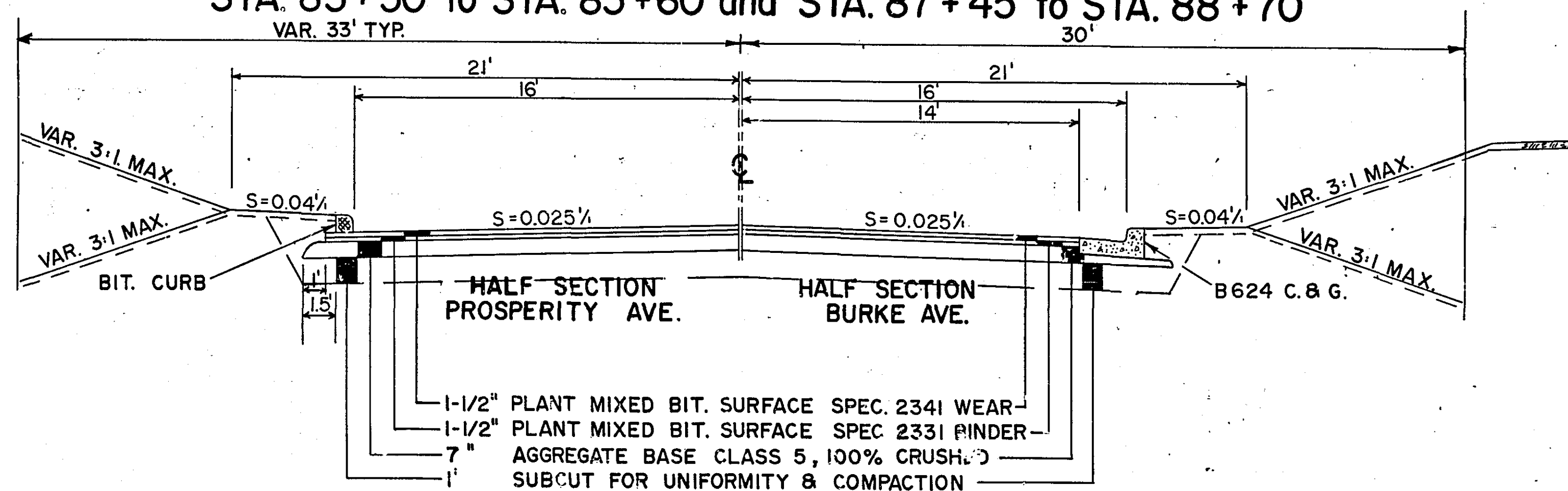
26-129



CONCRETE TYPICAL
COUNTY ROAD B
STA. 85+60 to STA. 87+45



BITUMINOUS TYPICAL
COUNTY ROAD B
STA. 83+50 to STA. 85+60 and STA. 87+45 to STA. 88+70



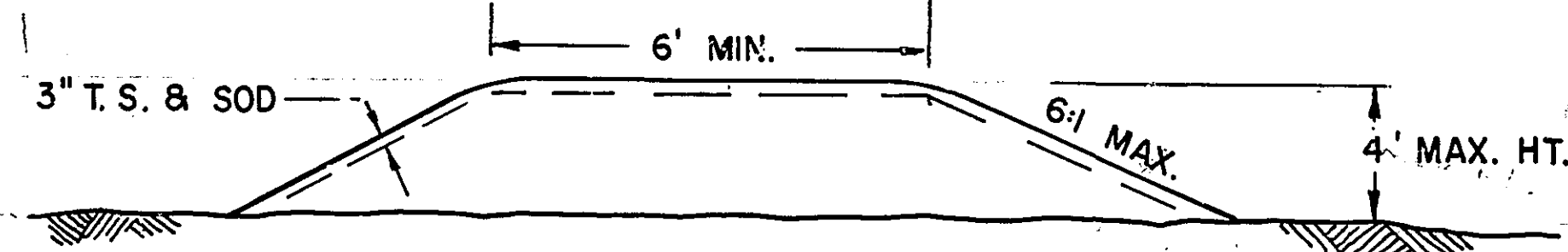
SIDE STREET TYPICAL

CONCRETE DRIVEWAY

EARTHWORK SUMMARY

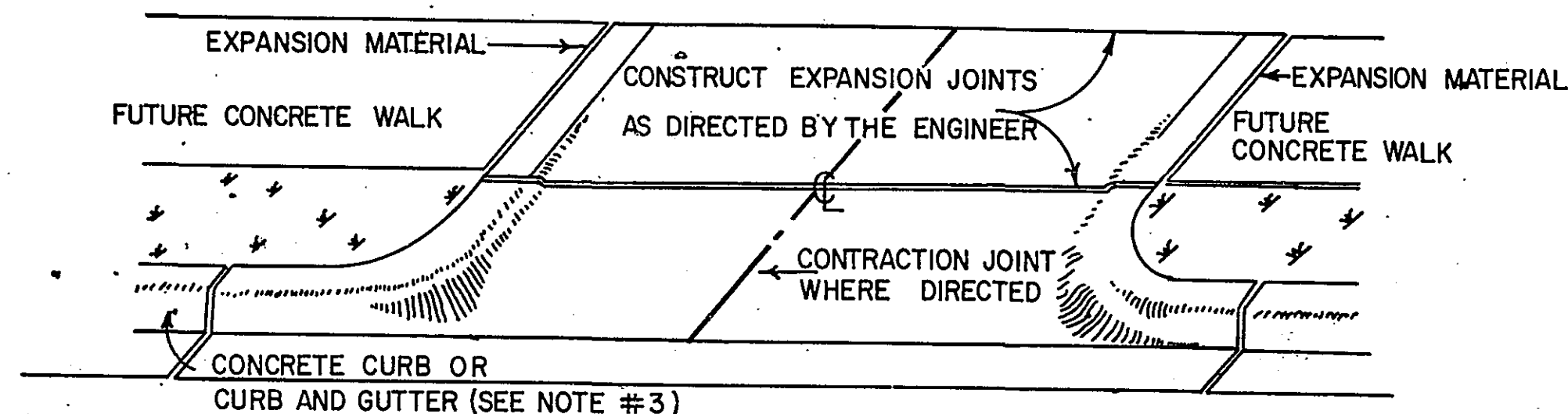
	CONCRETE REMOVAL	COMMON EXCAVATION	EMBANKMENT	EXCESS	TOPSOIL BORROW
WHITE BEAR AVE					
STA. 46+00± to STA. 66+50±	7,470 S.Y.	19,727 C.Y.	15,285 C.Y.		
STA. 66+50± to STA. 71+00±	0 S.Y.	2,016 C.Y.	1,655 C.Y.		
COUNTY ROAD "B"					
PROSPERITY ROAD	0 S.Y.	4,225 C.Y.	1,991 C.Y.		
		26,939 C.Y.	19,515 C.Y.		
			x 130 %		
TOTALS	7,470 S.Y.	26,939 C.Y.	25,370 C.Y.	1,569 C.Y.*	795

*THE CONTRACTOR SHALL USE APPROX 600 C.Y. OF THIS MATERIAL FOR BERM CONSTRUCTION.

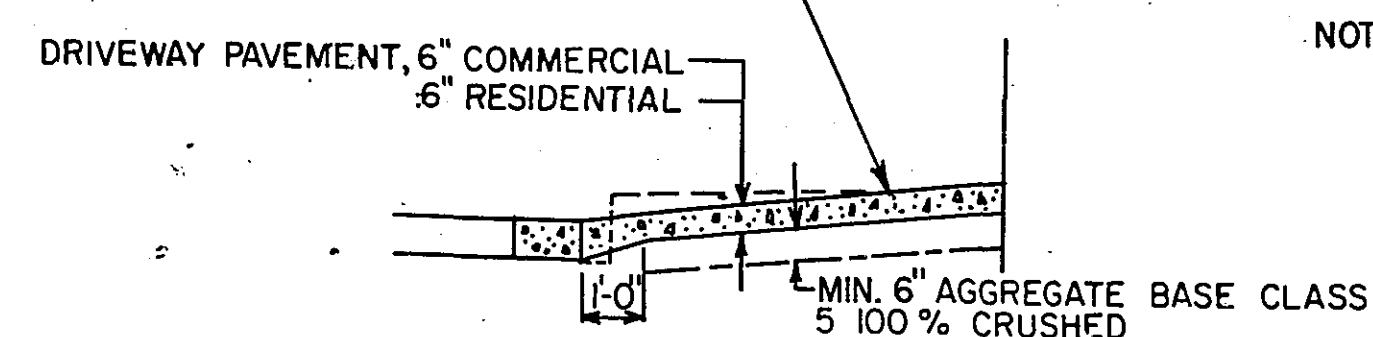


EARTH BERM DETAIL

WHITE BEAR AVENUE -- STA. 60+75± TO STA. 62+50± LT.



SEE X-SECTIONS FOR ENT GRADES

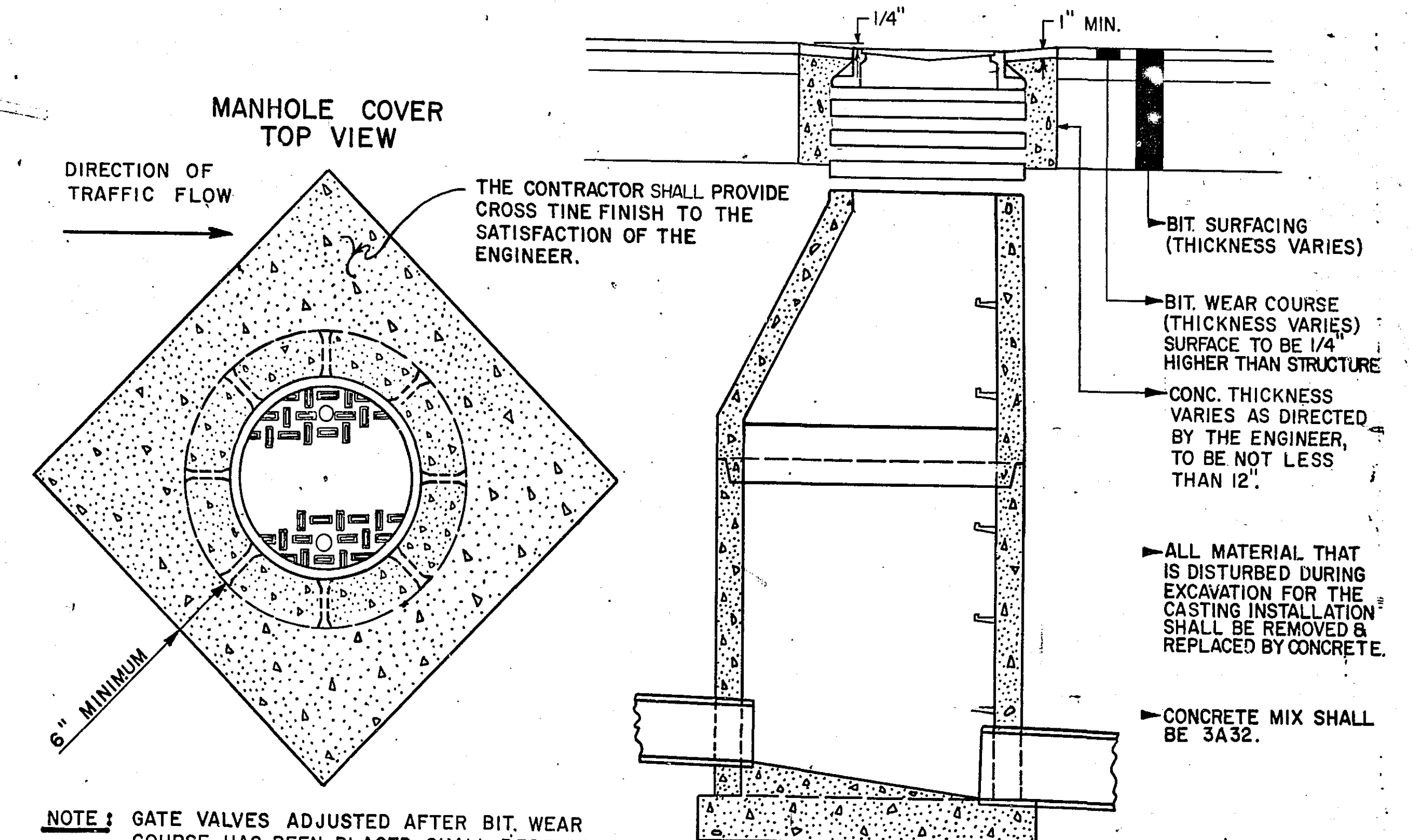


SECTION ON & DRIVEWAY

- NOTE: 1. CONTRACTION JOINT REQUIRED IF WIDTH EXCEEDS 16'.
2. THE EXACT LOCATION AND WIDTH OF ENTRANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. GUTTER SHALL BE PAVED INTEGRAL WITH DRIVEWAY PAVEMENT WHERE CURB AND GUTTER IS USED.
4. DRIVEWAY WIDTH, RESIDENTIAL MIN. 12', MAX. 22', COMMERCIAL 90% 32', 60% 26' EXCEPT AS NOTED.
5. RADIUS, RESIDENTIAL IS 5', COMMERCIAL IS MIN. 10'. MAX. 15'. ALL TO BE VERIFIED BY THE ENGINEER.

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
L.R.F.	11-18-82			

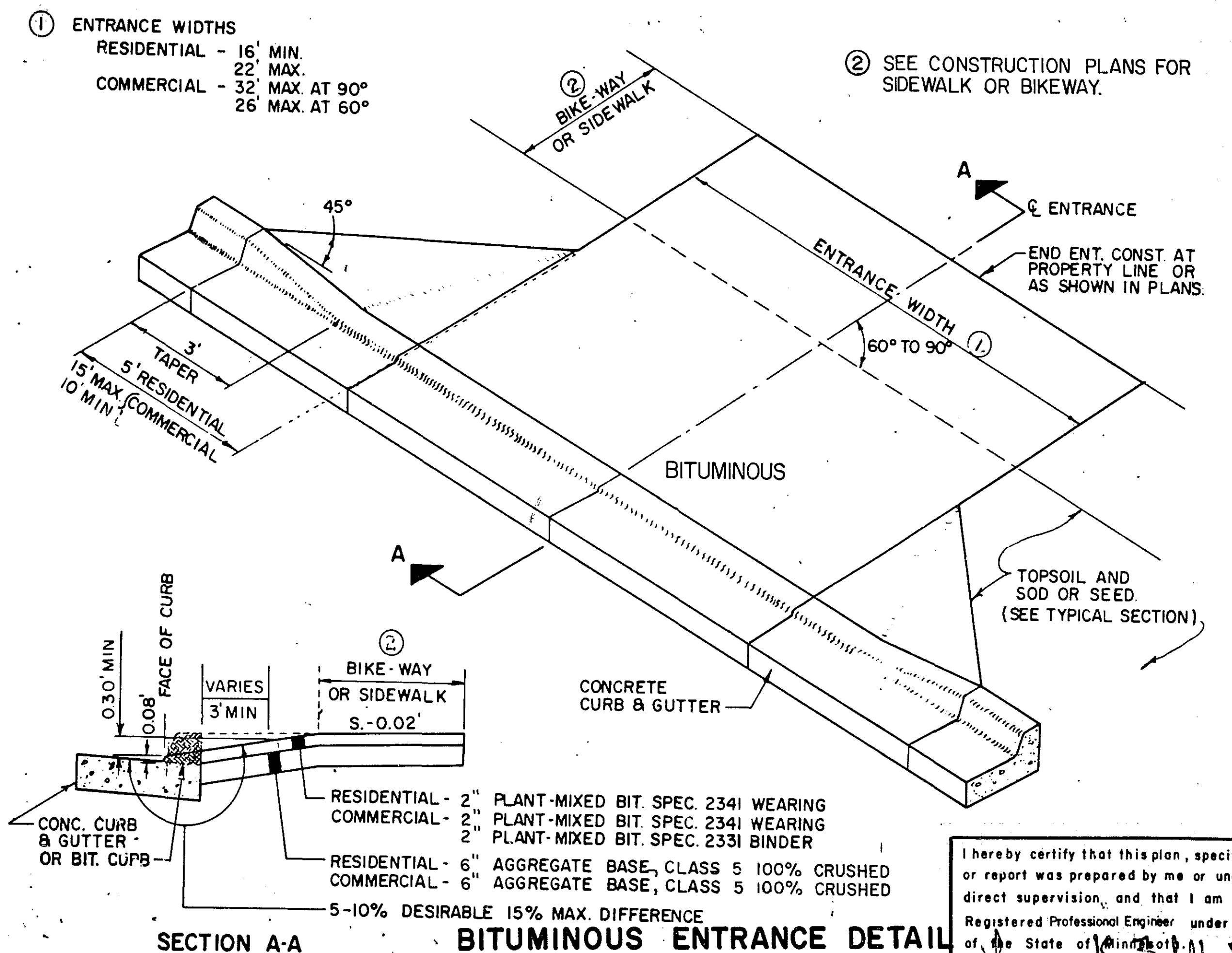
MANHOLE FRAME AND RING CASTING INSTALLATION



NOTE: GATE VALVES ADJUSTED AFTER BIT WEAR COURSE HAS BEEN PLACED SHALL RECEIVE THE SAME TREATMENT.

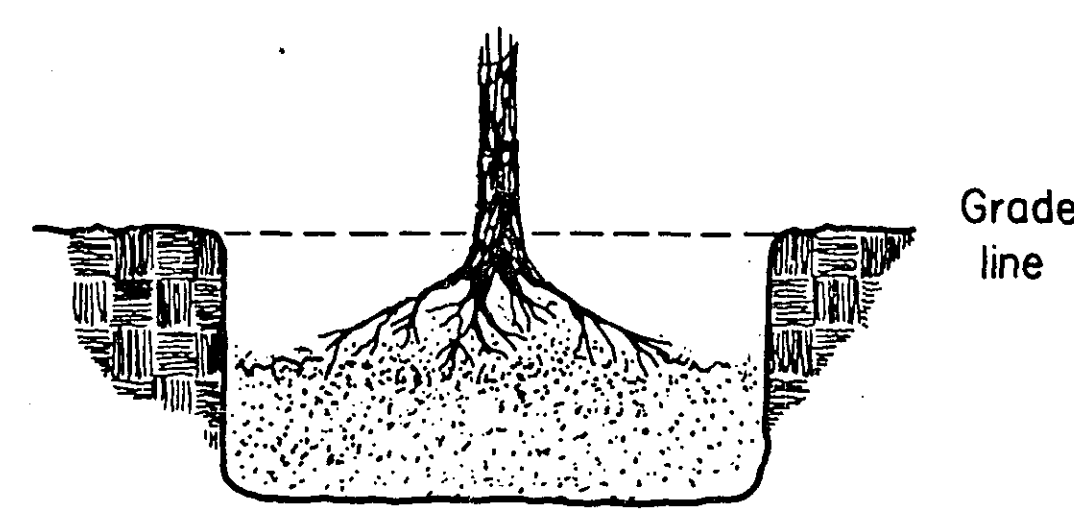
IF THE BITUMINOUS WEARING COURSE WILL NOT BE CONSTRUCTED BEFORE MANHOLE AND RING CASTING INSTALLATION, THE CONTRACTOR SHALL INSTALL THOSE CASTINGS IN ACCORDANCE WITH THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

ENTRANCE DETAIL



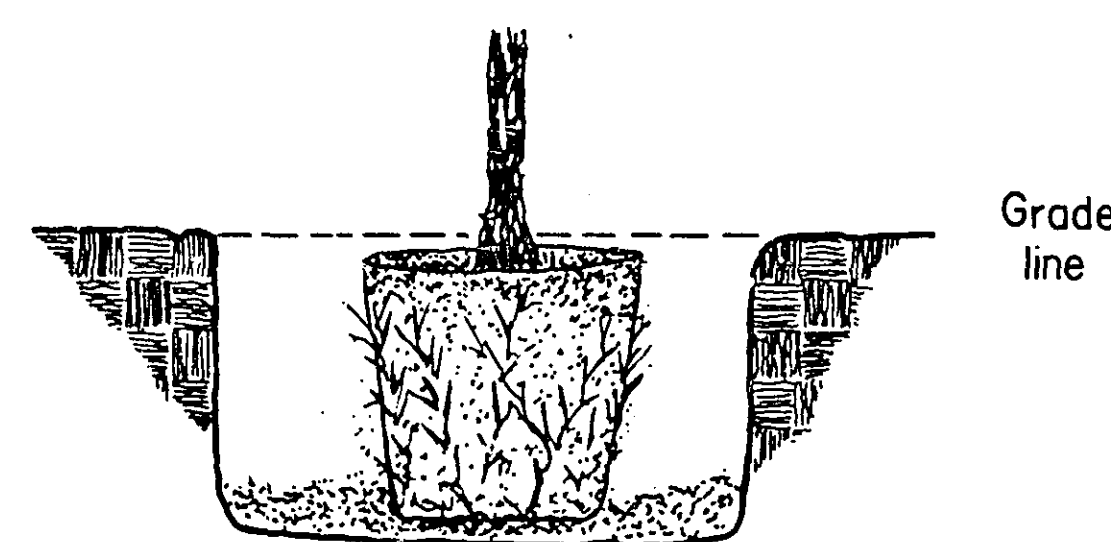
SPECIAL DETAILS & STREET TYPICALS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Date 12-04-81 Reg. No. 13501



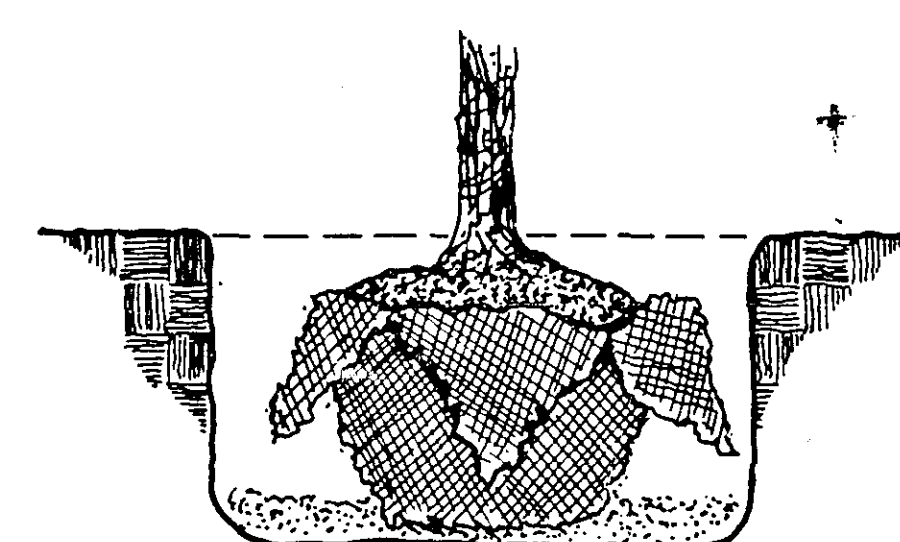
BARE ROOT

1. Place and tamp enough planting soil into hole so that the plant can be placed at proper depth.
2. Set plant at grade and with roots evenly distributed.
3. Complete planting operations, plumb plant and water thoroughly.



POT / CONTAINER

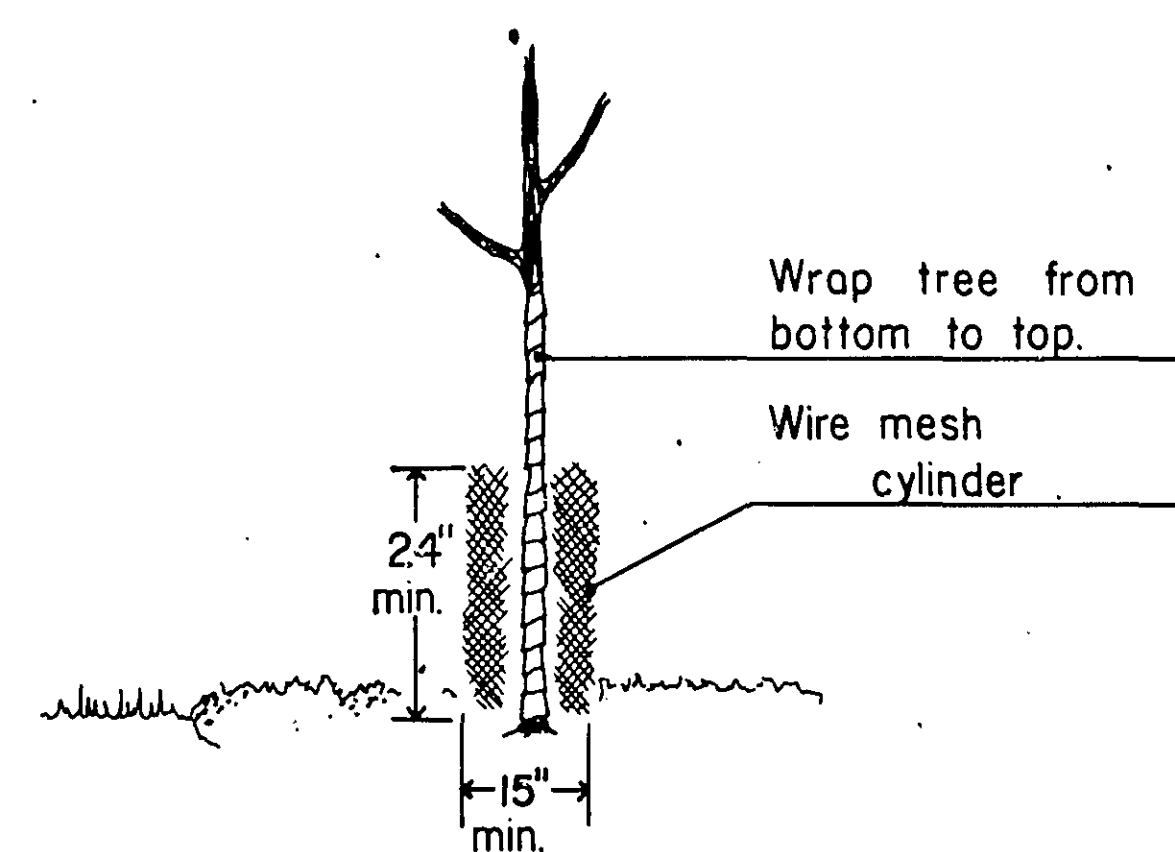
1. Place and tamp enough planting soil into hole so that plant can be set at proper depth.
2. Remove pot or container and roughen sides of root ball with a stick or something sharp to expose root ends.
3. Set plant into hole and complete planting operations, plumb plant and water thoroughly.



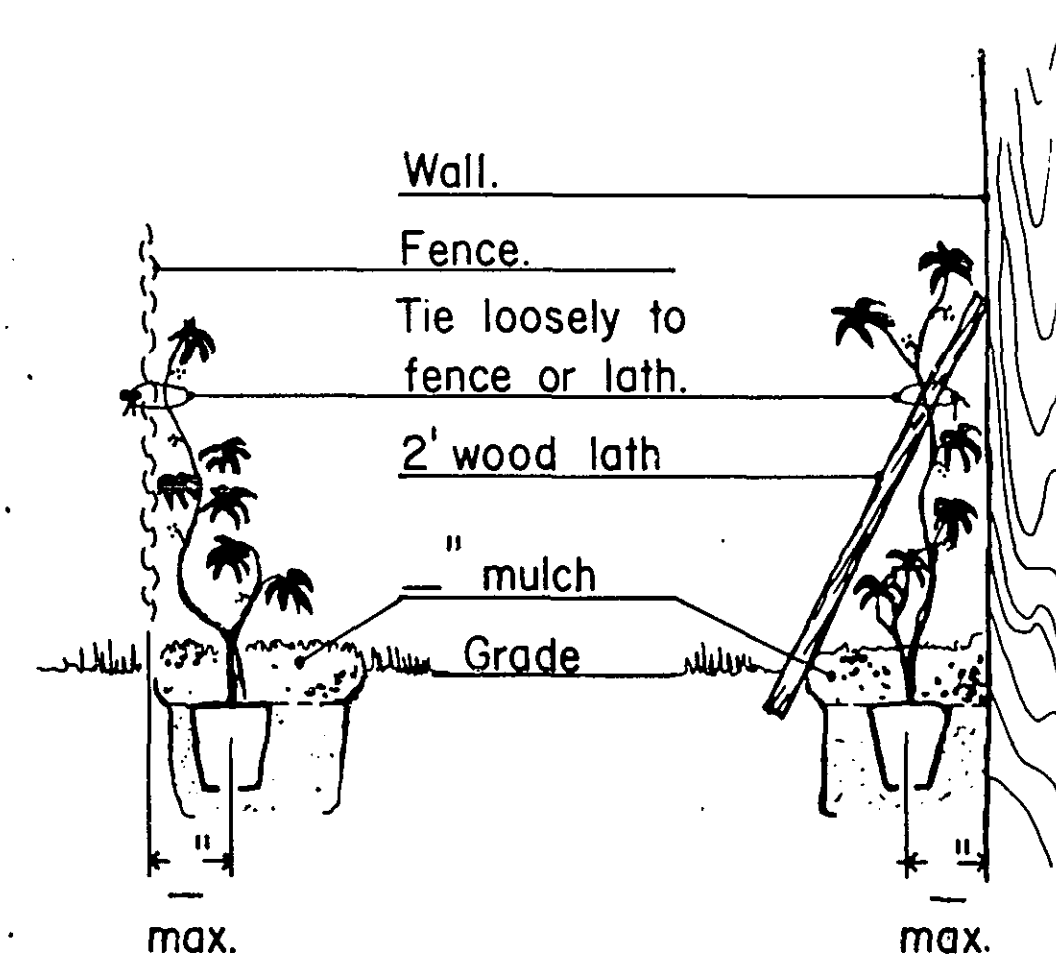
B & B

1. Place and tamp enough planting soil into hole so that plant can be set at proper depth, if needed.
2. Set plant into hole and remove cords and burlap to expose top of ball.
3. Complete planting operations, plumb plant and water thoroughly.

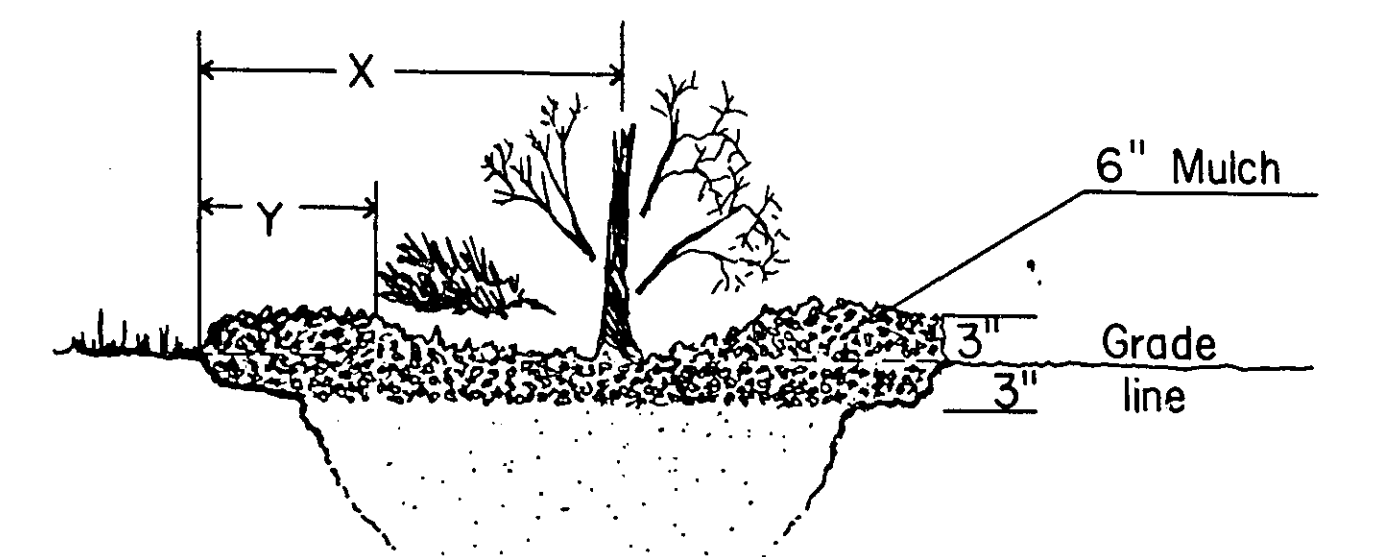
PLANTING DETAILS



PROTECTION DETAIL

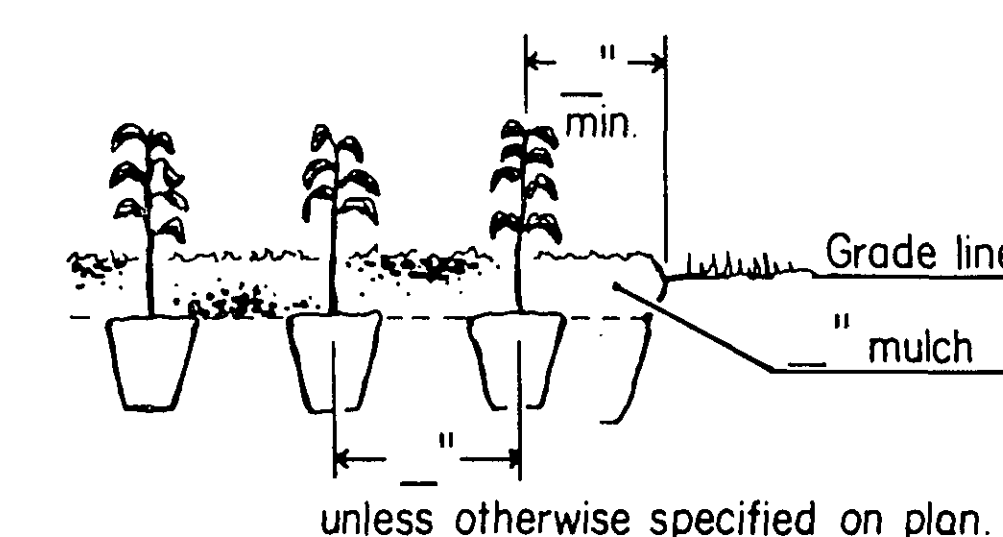


VINE PLANTING



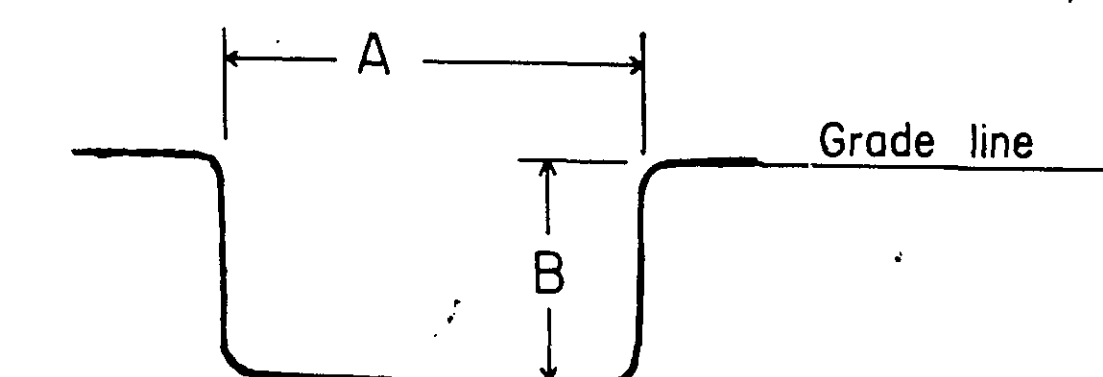
Type of plant	X (center of plant to the mulch line)	Y (outer edge of widest branches to the mulch line)
Evergreen trees & shrubs.		—' minimum.
Shade trees & Half trees.	—' minimum.	
Deciduous shrubs.	—' minimum.	
Vines & Ground covers	—" minimum. or —" minimum.	

MULCHING DETAIL



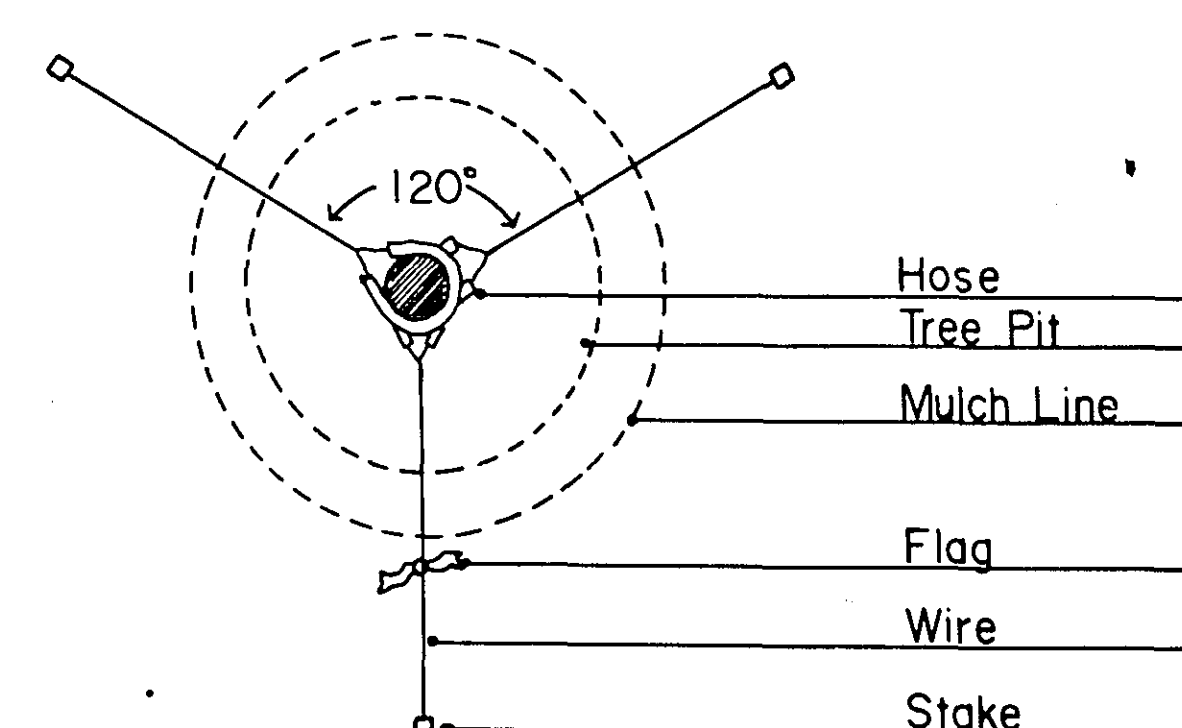
GROUND COVER PLANTING

STANDARD PLANTING DETAILS

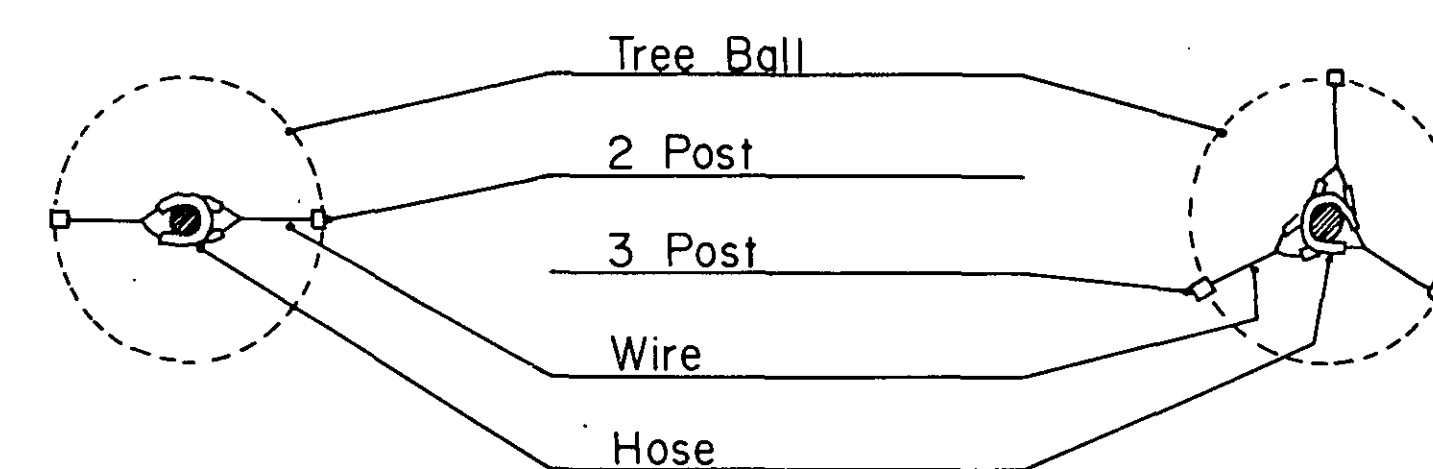


Minimum hole size	Type plant	Size range
A x B		
62" x 28"	B & B Shade tree.	over 3" cal. thru 4" cal.
48" x 21"	B & B Shade tree. B.R. Shade tree. Evergreen tree.	up to 3" cal. over 2" cal. up to 8' hi.
36" x 18"	Evergreen shrub. B.R. Shade tree. Deciduous shrubs (B.R.) B.R. Half tree.	over 30" spread. up to 2" cal. over 5' hi. over 8' hi. (1" cal.)
30" x 18"	Evergreen shrub. B.R. Half tree. Deciduous shrub (B.R.)	up to 30" spread. up to 8' hi. up to 5' hi.
24" x 18"	Container / Potted	up to 5 gallon.
12" x 12"	Vine / Ground cover (potted)	up to 1 gallon.

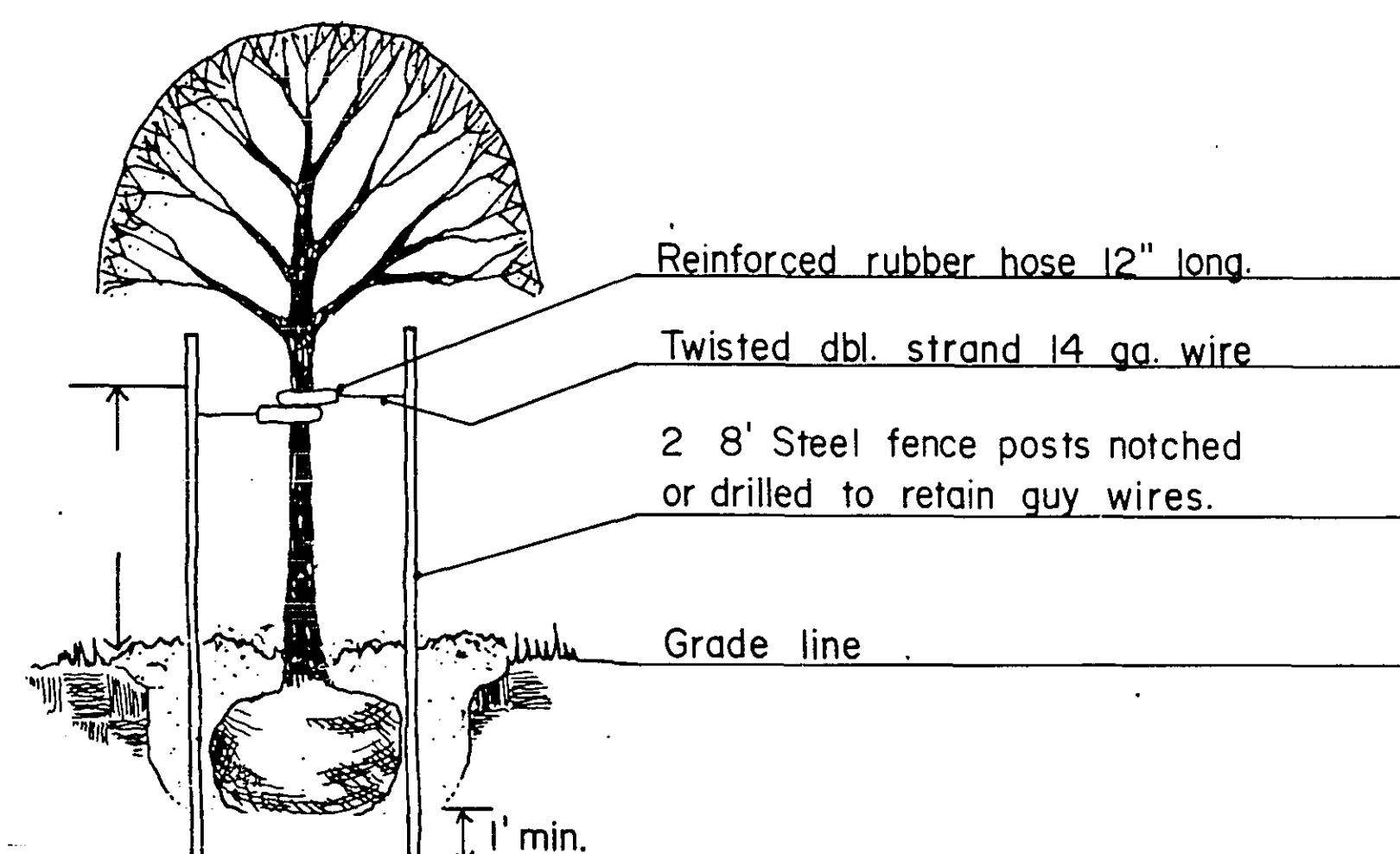
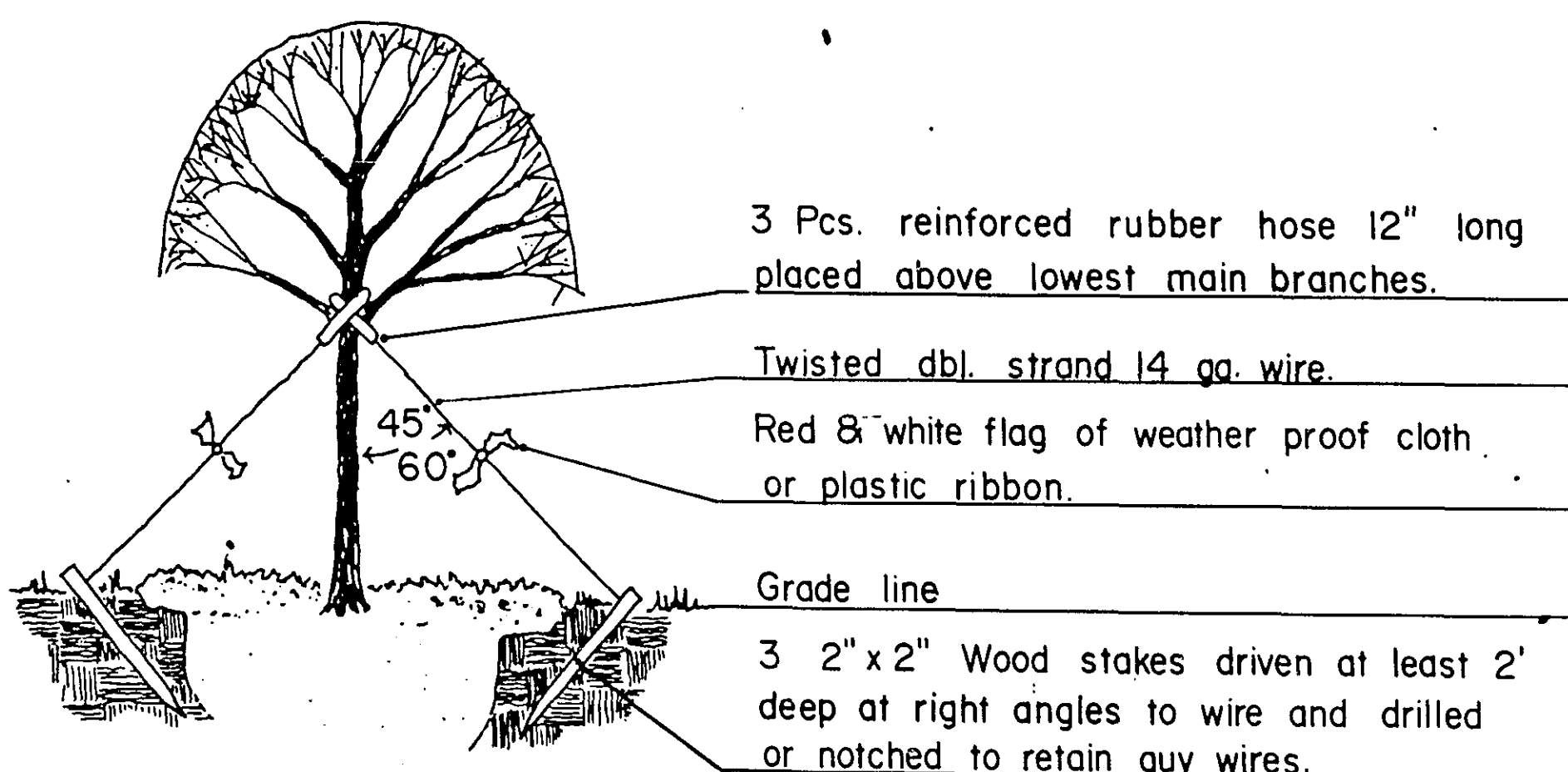
MINIMUM HOLE SIZE



STAKING AND GUYING (NORMAL AREA)



STAKING AND GUYING (RESTRICTED AREA)



GENERAL NOTES

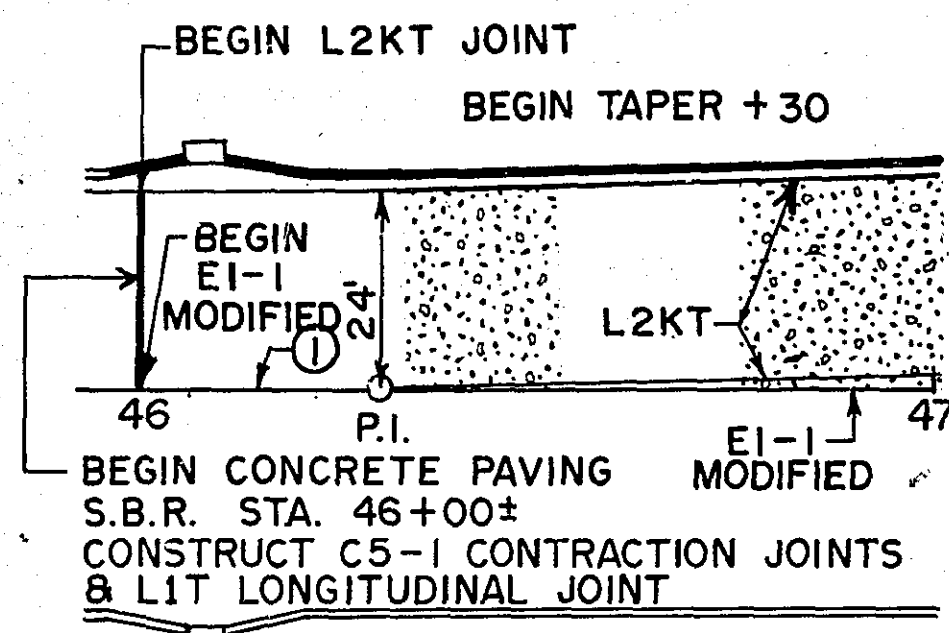
- Planting Soil: Mn/Dot 257I.2C1, Mn/Dot 257I.3D, Mn/Dot 3877.2B
- Fertilizer: Mn/Dot 257I.2C3, Mn/Dot 388I
- Mulch Material: Mn/Dot 257I.2C4, Mn/Dot 257I.3H, Mn/Dot 3882
- Guying: Mn/Dot 257I.3J (Normal area)
- Wrapping: Mn/Dot 257I.2D3, Mn/Dot 257I.3J
- Rodent protection: Mn/Dot 257I.2DI and special provisions, Mn/Dot 257I.3J
- Mass plantings: Plant spacings of ' or less shall be mass excavated and spacings of ' or less shall be continuously mulched.

LEGEND				
	QUANTITY	SIZE	DESCRIPTION	REMARKS
(WA)	2	2" CALIPER	GREENASH "NEWFORT" (FRAXINUS PENNSYLVANICA "NEWFORT")	B & B
(MS)	12	3' HIGH	AMUR MAPLE (ACER GINNALA)	B.R.
—	40	4' HIGH	CEDAR SHRUB "TECHNY" (THUJA OCCIDENTALIS)	B & B SPACED EVERY 6'

REVISED	DATE	DESIGNED BY	DRAWN BY
		CHECKED BY	

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Date 11-19-32 Reg. No. 13501



CONSTRUCTION NOTES

① CHECK EDGE OF N.B.R. FOR AIR VOIDS, CLEAN & "BUTTER" ANY VOIDS WITH A LOW SLUMP, AIR-ENTRAINED MORTAR.

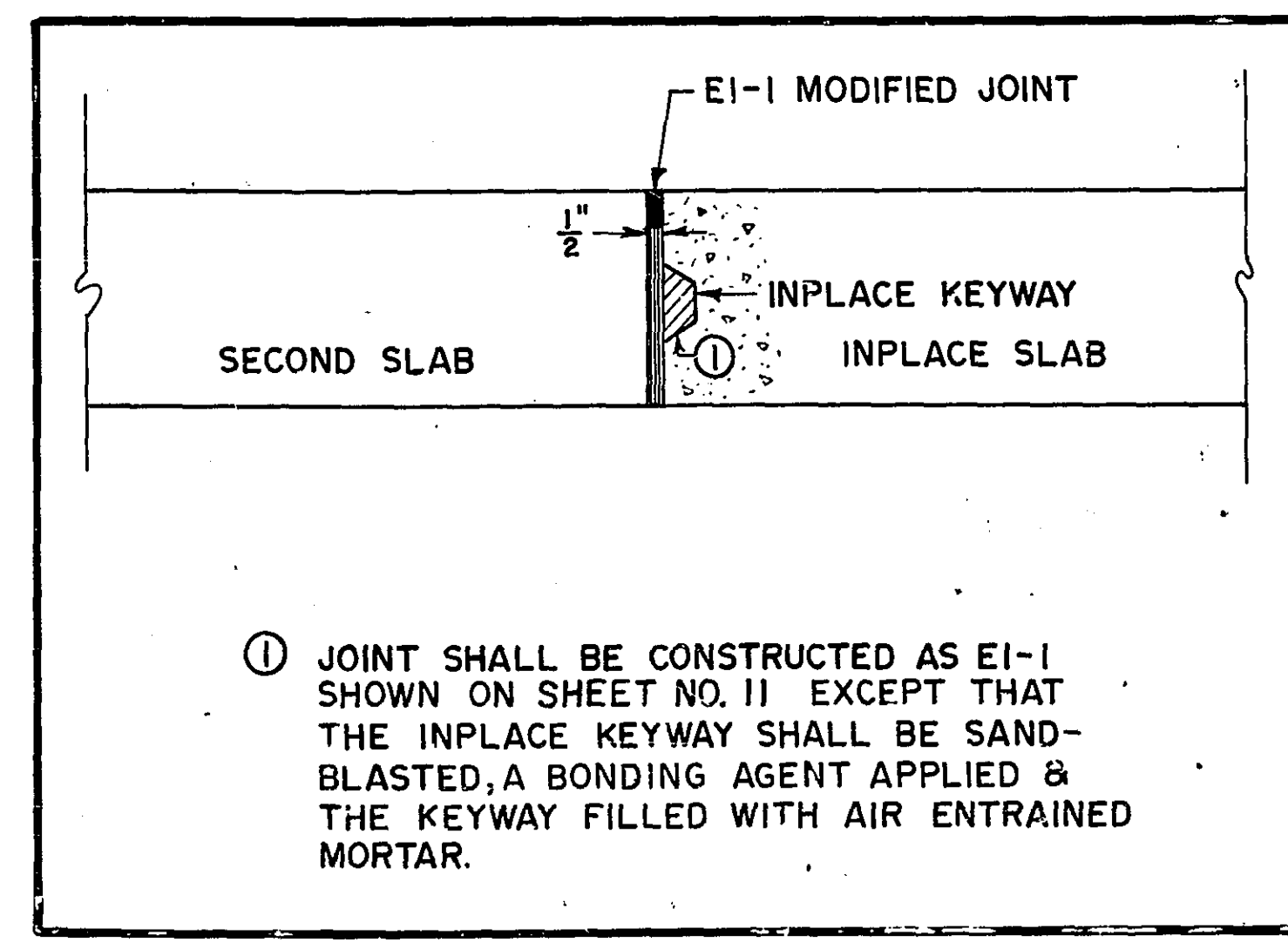
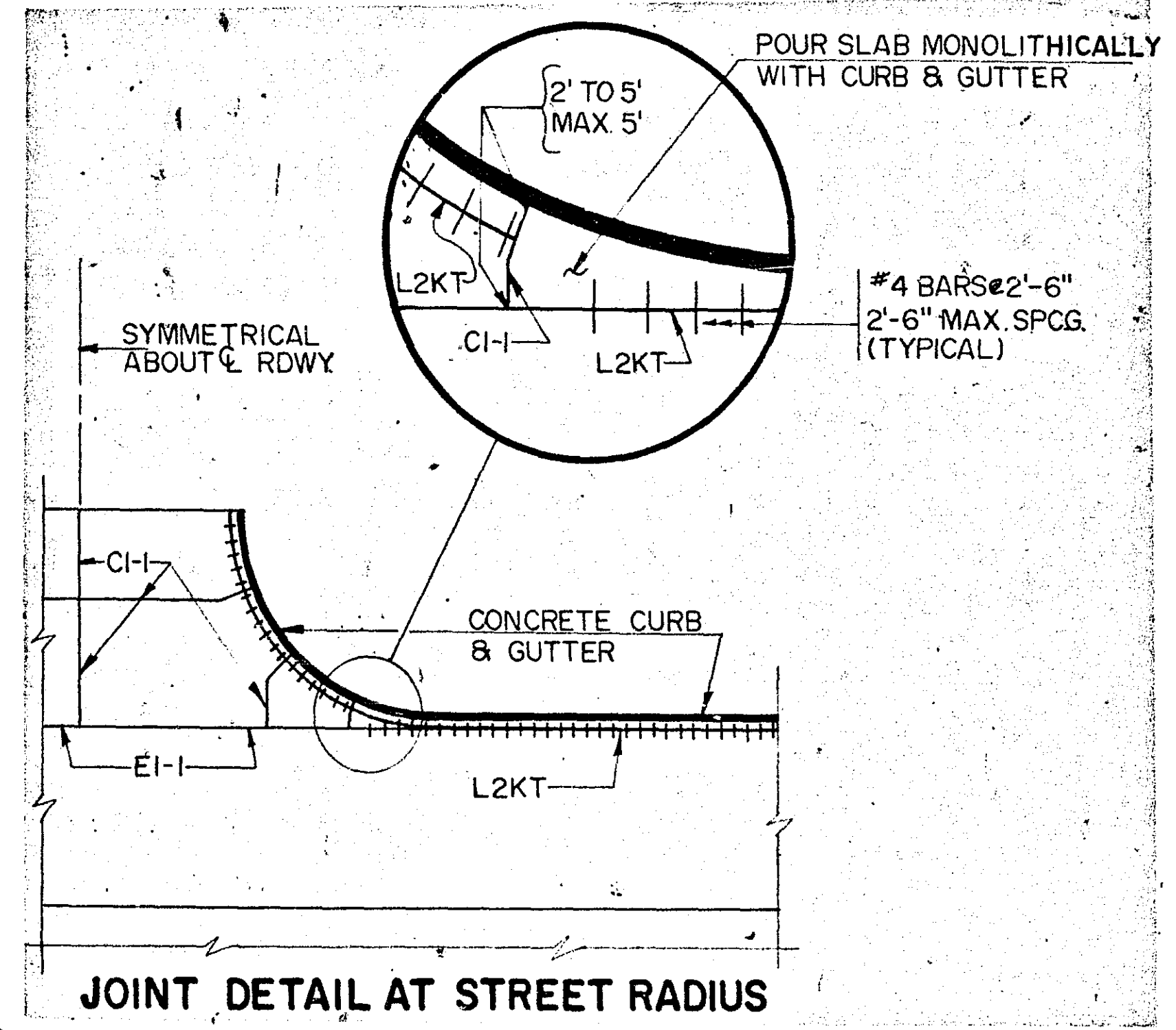
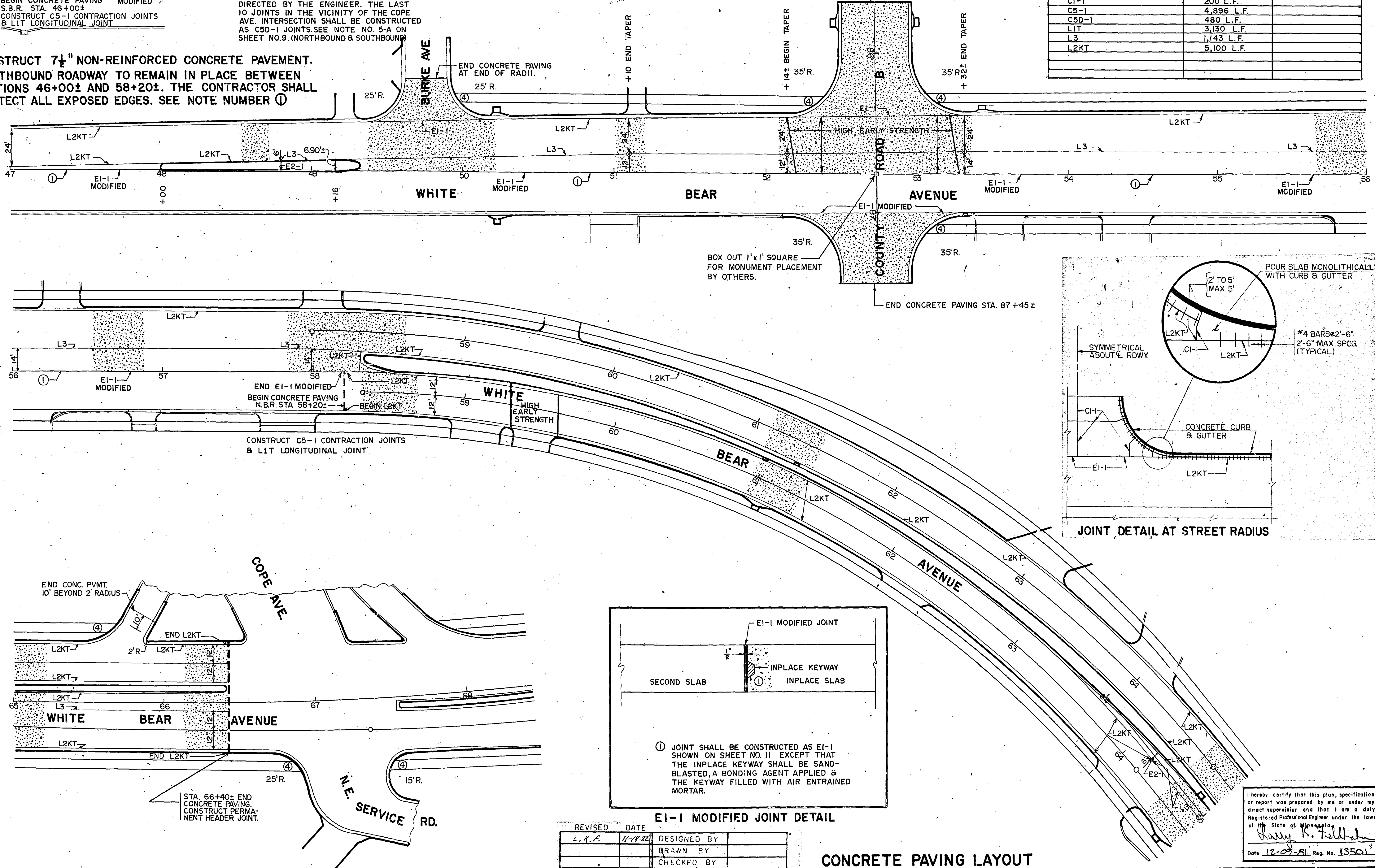
SEE DETAIL BELOW.

C5-1 CONTRACTION JOINTS SHALL BE CONTINUOUS THRU 24' MAINLINE PAVING AND VARIABLE WIDTH CENTER LANE AS DIRECTED BY THE ENGINEER. THE LAST 10 JOINTS IN THE VICINITY OF THE COPE AVE. INTERSECTION SHALL BE CONSTRUCTED AS C5D-1 JOINTS. SEE NOTE NO. 5-A ON SHEET NO. 9. (NORTHBOUND & SOUTHBOUND)

④ NOTE: PEDESTRIAN CURB RAMPS SHALL BE INSTALLED IN ALL STREET RADII. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AS PER STD. PLATE 7036 B

CONCRETE PAVING JOINT TABULATION		
	WHITE BEAR AVE	
E1-1	300 L.F.	
E1-1 MODIFIED	1,220 L.F.	
E2-1	12 L.F.	
C1-1	200 L.F.	
C5-1	4,896 L.F.	
C5D-1	480 L.F.	
L1T	3,130 L.F.	
L3	1,143 L.F.	
L2KT	5,100 L.F.	

CONSTRUCT 7½" NON-REINFORCED CONCRETE PAVEMENT. NORTHBOUND ROADWAY TO REMAIN IN PLACE BETWEEN STATIONS 46+00± AND 58+20±. THE CONTRACTOR SHALL PROTECT ALL EXPOSED EDGES. SEE NOTE NUMBER ①



REVISED	DATE	DESIGNED BY
L.R.F.	11-18-82	
		DRAWN BY
		CHECKED BY

CONCRETE PAVING LAYOUT

S.P. No. 62-665-17

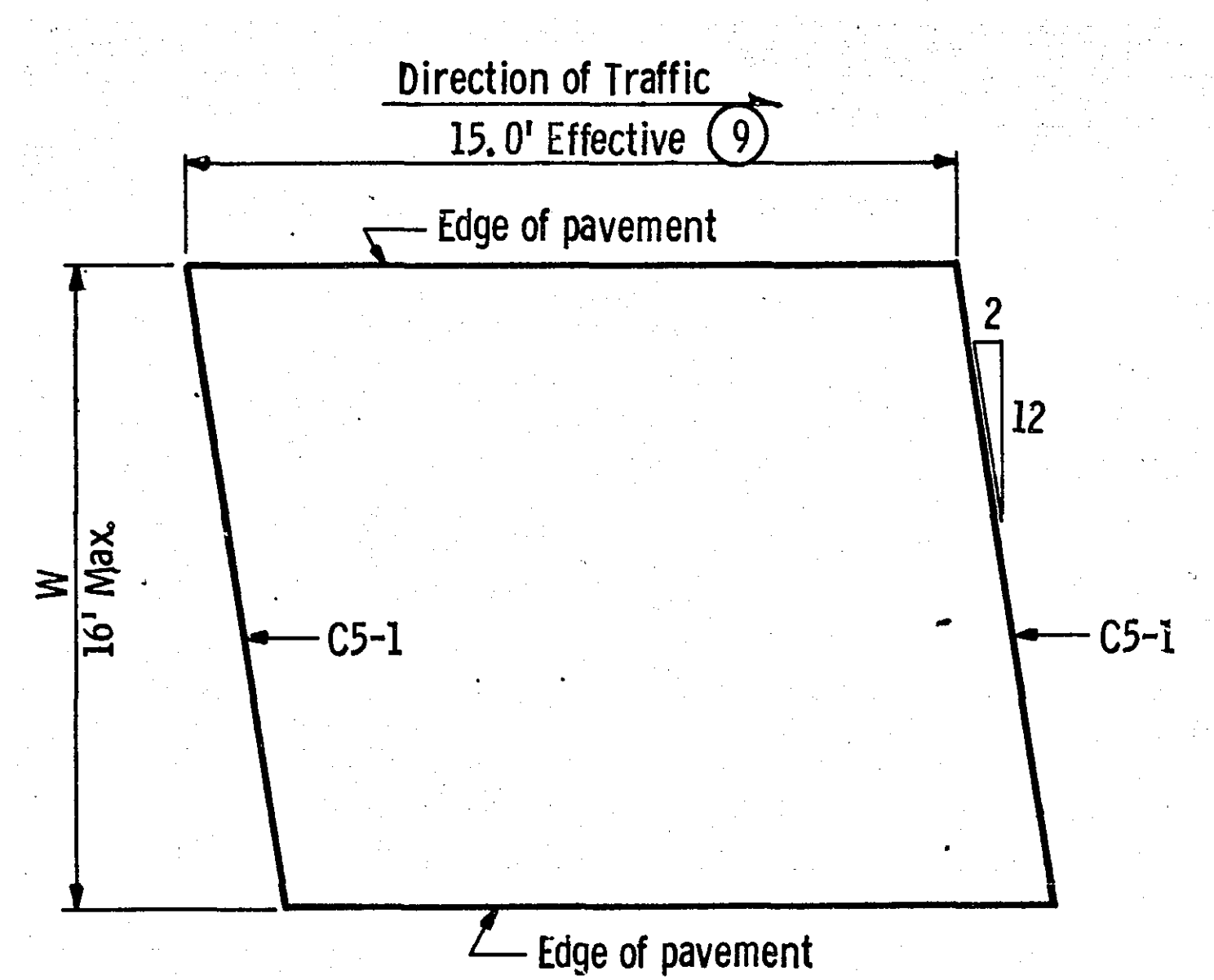
Sheet No. 8 of 34 Sheets

I hereby certify that this plan, specification, or report 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.

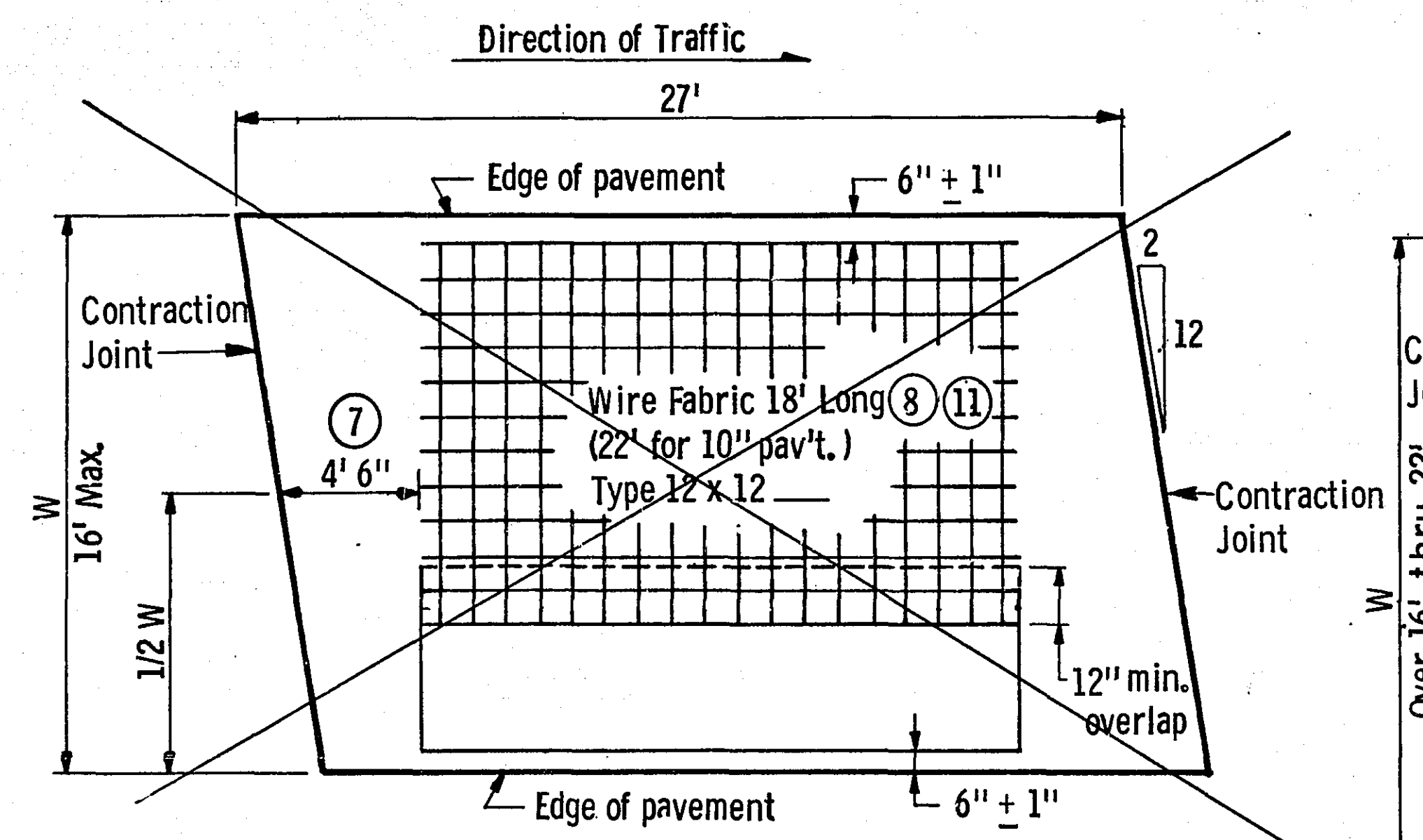
Danny K. Feldman

Date 12-07-81 Reg. No. 13501

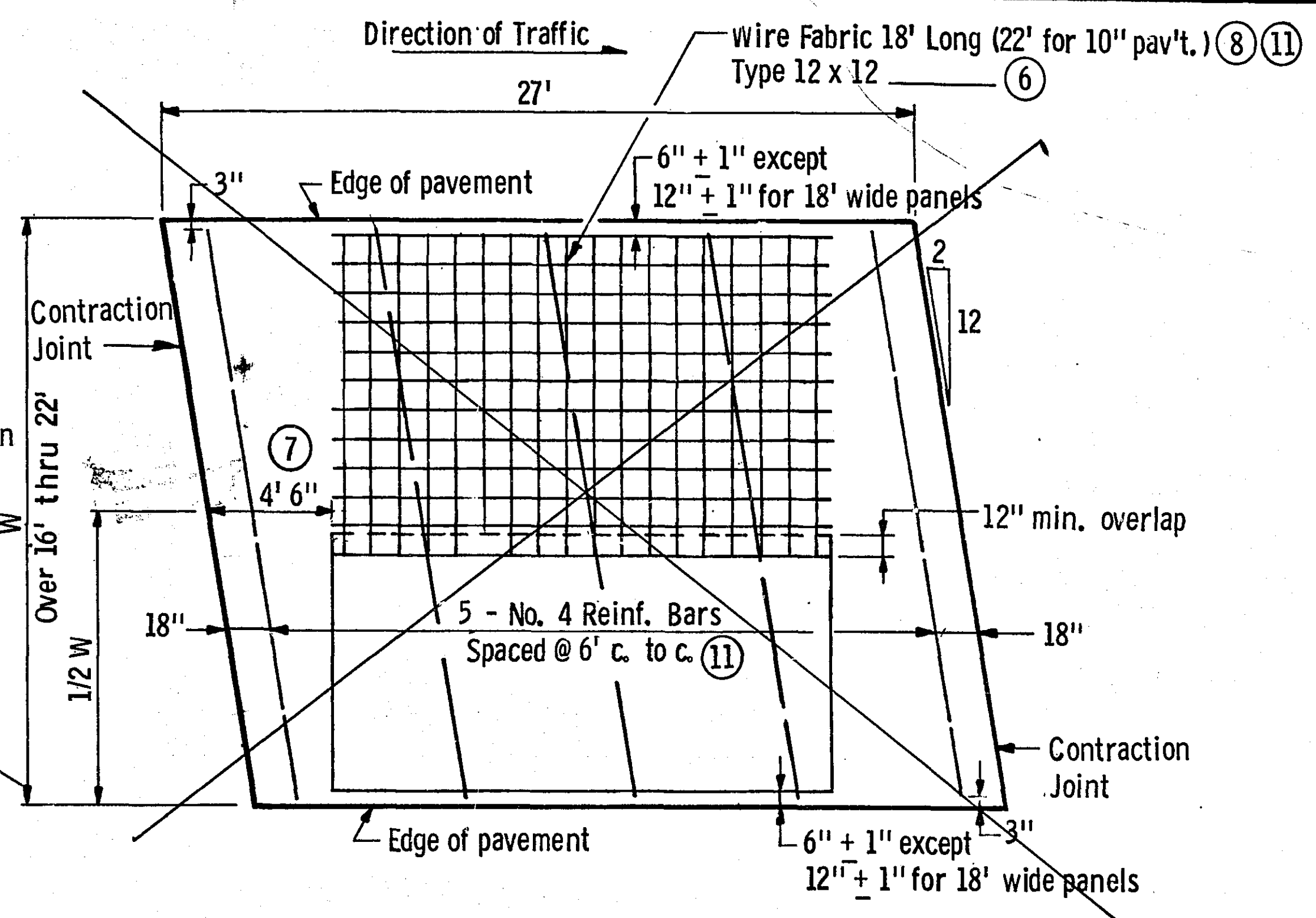
Fed. Proj. No.



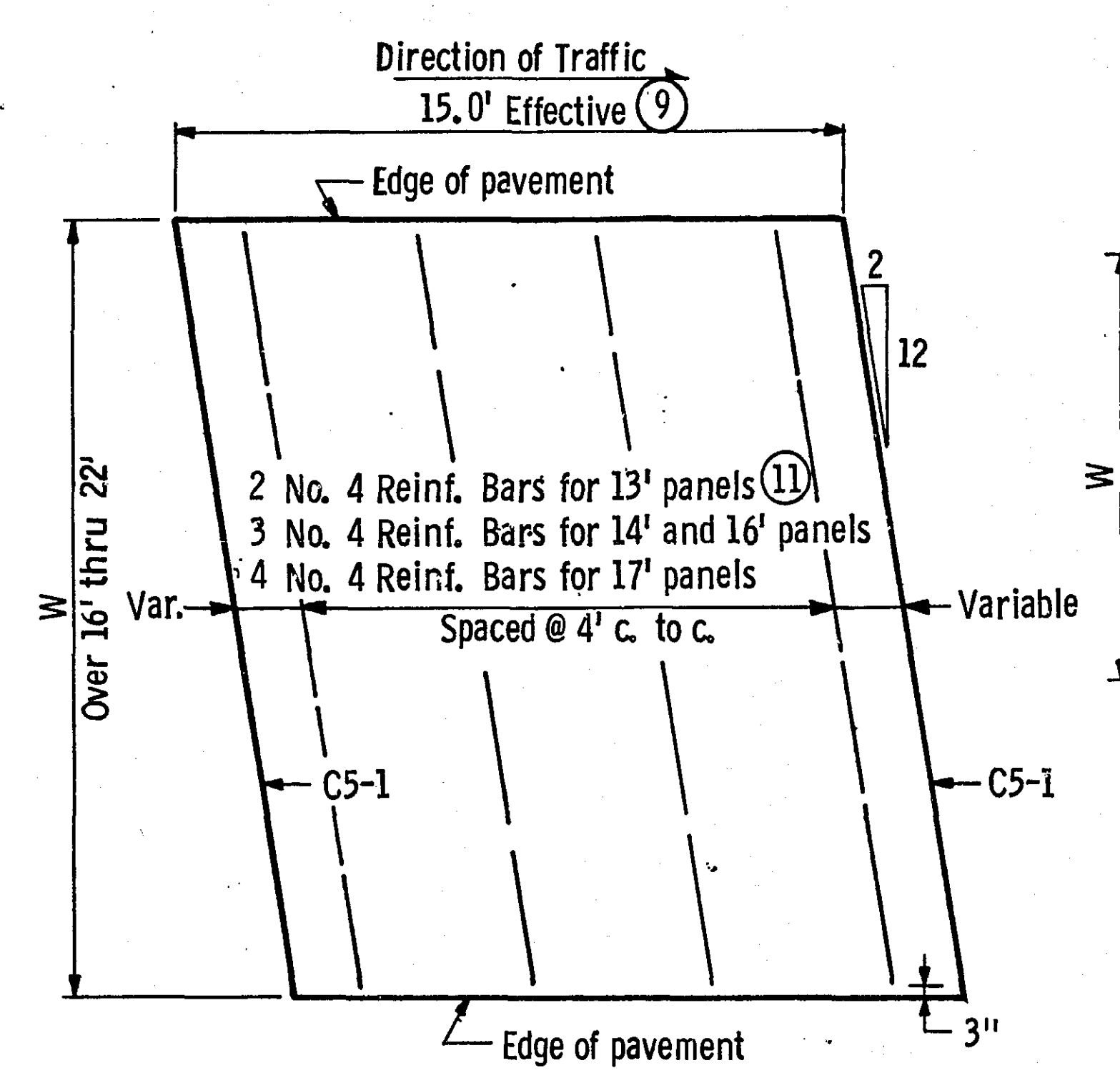
NON-REINFORCED CONCRETE PAVEMENT
FOR 15.0 FT. EFFECTIVE SKEWED PANELS - 0' THRU 16' WIDTHS
DETAIL A



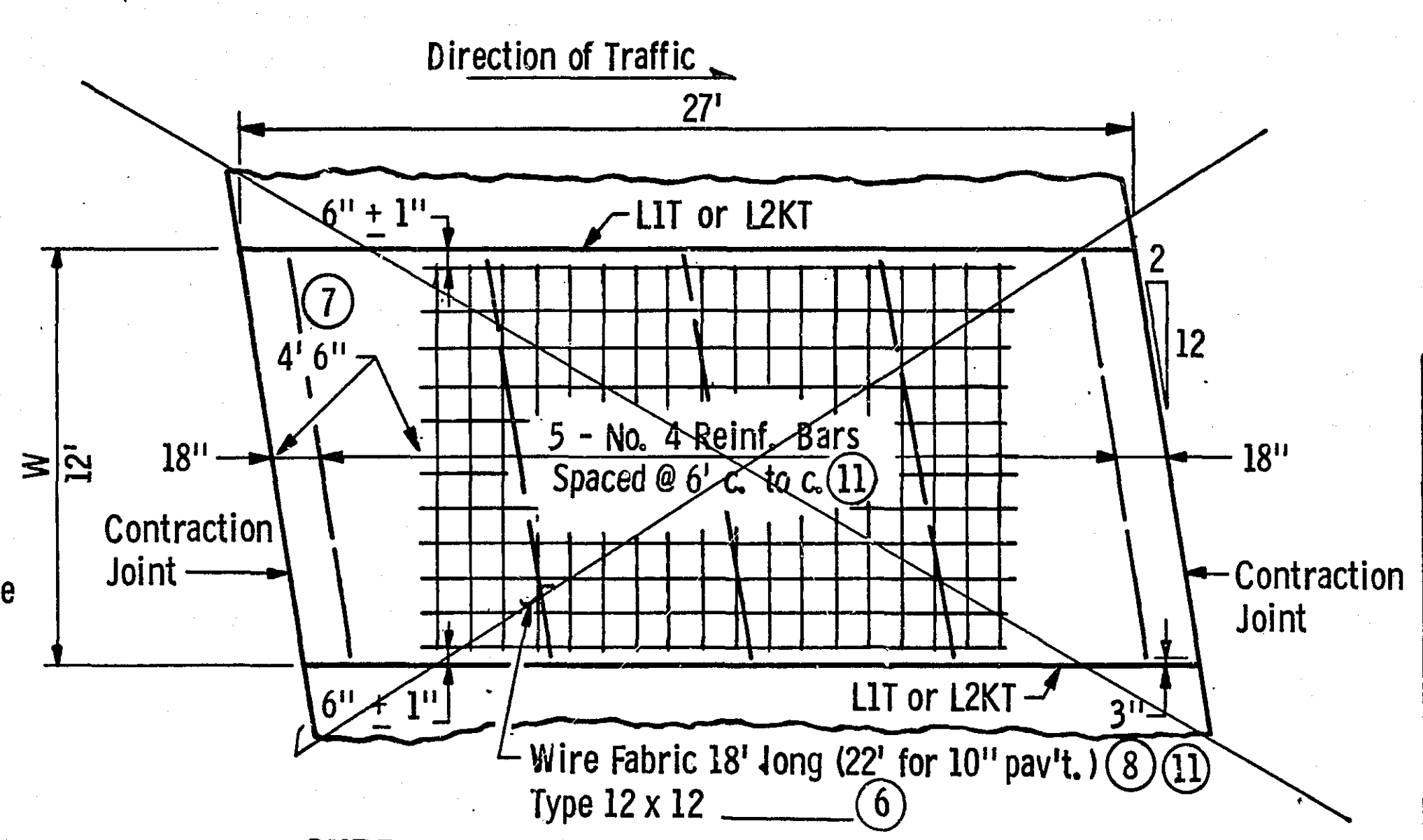
REINFORCED CONCRETE PAVEMENT
FOR 27 FT. SKEWED PANELS - 0' THRU 16' WIDTHS
DETAIL D



SUPPLEMENTAL PANEL REINFORCEMENT
FOR 27 FT. SKEWED PANELS OVER 16' THRU 22' WIDTHS
DETAIL G

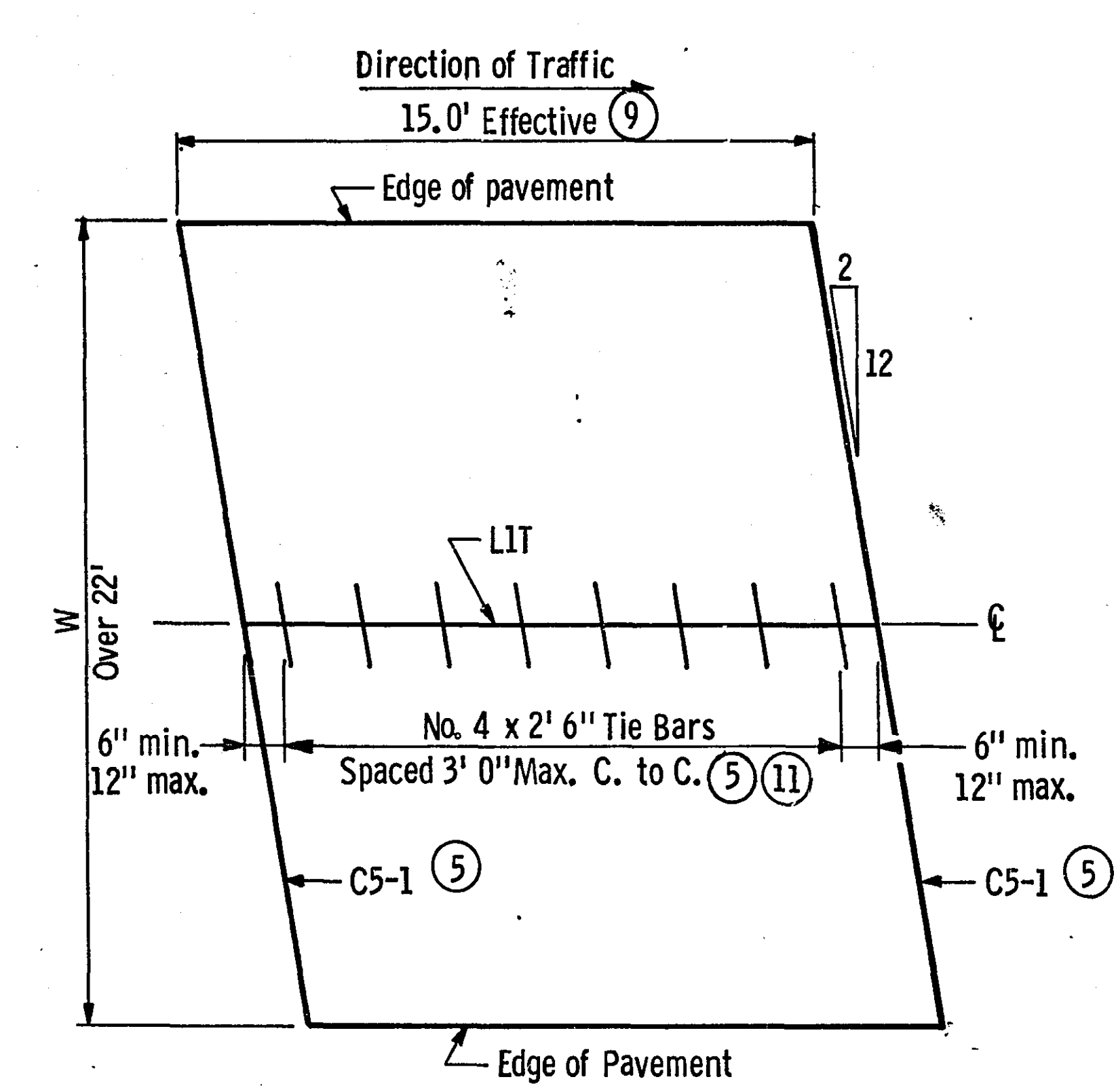


SUPPLEMENTAL PANEL REINFORCEMENT
FOR 15.0 FT. EFFECTIVE SKEWED PANELS - OVER 16' THRU 22' WIDTHS
DETAIL B

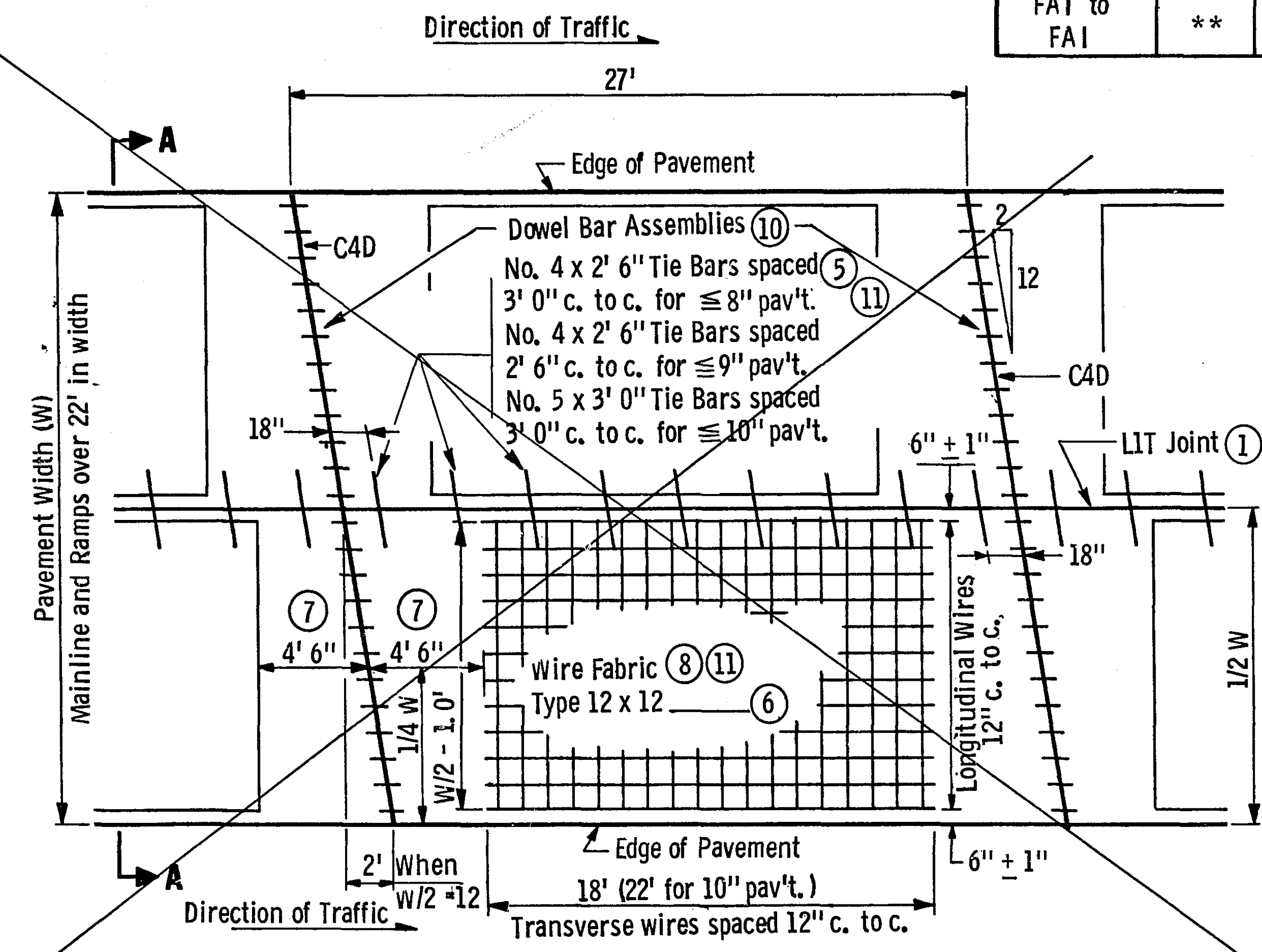


SUPPLEMENTAL PANEL REINFORCEMENT
FOR 27 FT. PANELS
DETAIL E

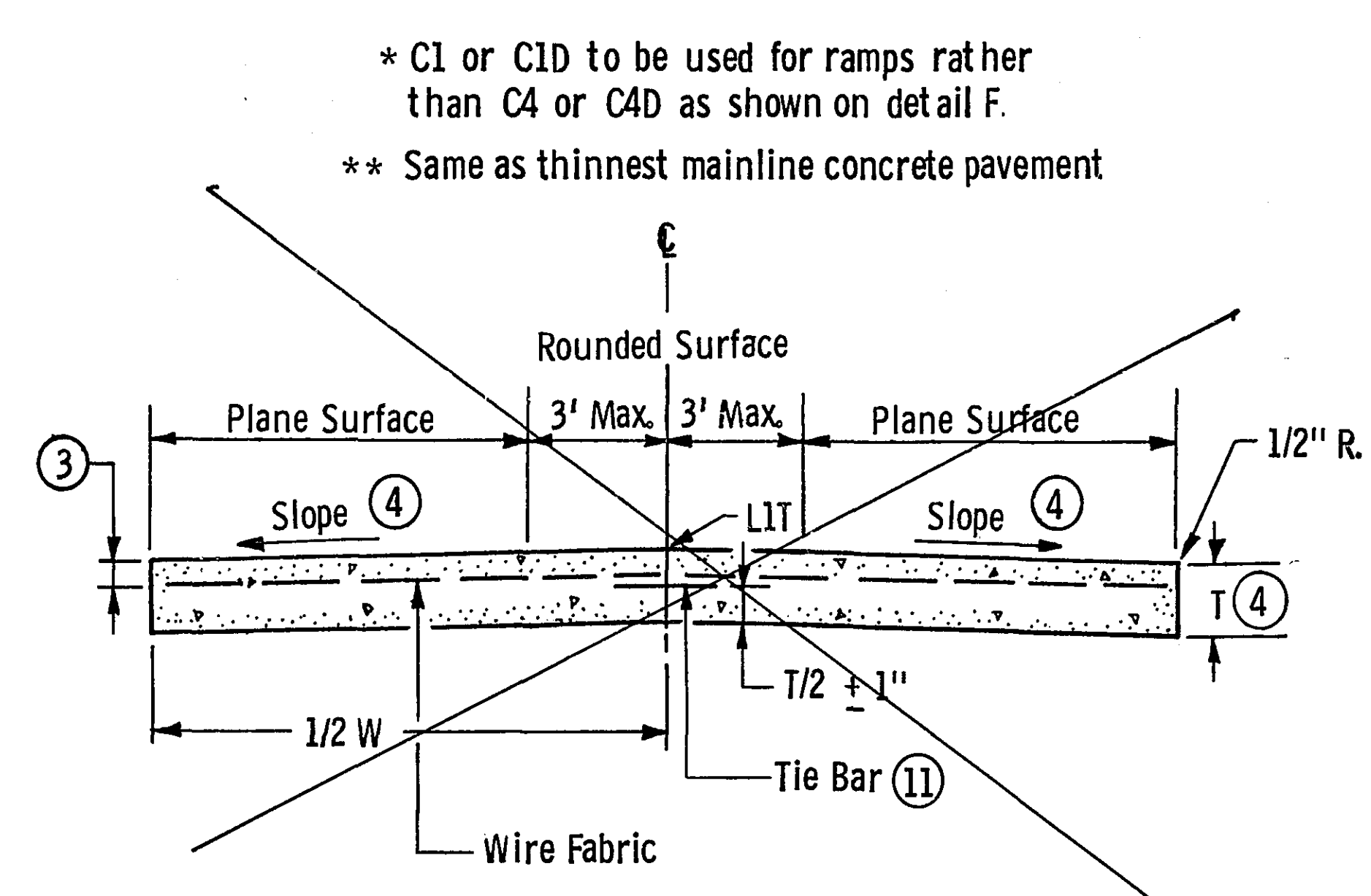
RAMP DESIGN								
② TST-HC/DT	Pav't. Thick.	Pav't. Width	Panel Length	⑥ Fabric Reinf.	③ Supple. Reinf.	Skew. Cont. Jts.	L. Jt. ⑫	See Detail
0 to 200	8"	0 thru 16'	15.0' ⑨	None	No	C5-1	None	A
0 to 200	8"	Over 16' thru 22'	15.0' ⑨	None	Yes	C5-1	None	B
0 to 200	8"	Over 22'	15.0' ⑨	None	No	C5-1	Yes	C
Over 200	8"	0 thru 16'	27'	Yes	No	C1D	None	D
Over 200	8"	Over 16' thru 22'	27'	Yes	Yes	C1D	None	G
Over 200	8"	Over 22'	27'	Yes	No	* C1D	Yes	F
FAI to FAI	**	0 thru 16'	27'	Yes	No	C1D	None	D
FAI to FAI	**	Over 16' thru 22'	27'	Yes	Yes	C1D	None	G
FAI to FAI	**	Over 22'	27'	Yes	No	* C1D	Yes	F



NON-REINFORCED CONCRETE PAVEMENT
FOR 15.0 FT. EFFECTIVE SKEWED PANELS - OVER 22' WIDTHS
DETAIL C



REINFORCED CONCRETE PAVEMENT
FOR SKEWED 27 FT. PANELS - OVER 22' WIDTHS
DETAIL F



SECTION A-A

- NOTES:**
- When pavement width exceeds 25 feet the longitudinal joint shall be L1T or L2KT as designated.
 - Tractor semi-trailer, heavy commercial average daily traffic includes only traffic categories 3, 4 and 5 of traffic assignment.
 - The steel fabric and any supplemental bars shall be placed within the limits of 2-3/4" below the surface to one inch below mid-depth of planned T.
 - See typical sections and plan sheets for cross slopes and pavement thickness T.
 - When rigid pavement adjoins flexible pavement, bridge approaches, R. R. crossings or other types of free ends the following modifications shall be made:
 - For non-reinforced concrete pavement the first or last ten joints shall be dowelled contraction joints, C5D-1 (skewed). Tie bars shall be spaced as shown, except the first and last tie bar of each panel shall be 10" from and parallel to the contraction joint.
 - For reinforced concrete pavement in the first or last panel at free ends, an additional tie bar shall be placed 9" from and parallel to the contraction joint at free end of the panel.
 - Fabric shall be of type indicated below for given pavement thickness:
 - ≤ 6" 12 x 12 D5.8 x W4.0 or 12 x 12 W6.2 x W4.0
 - ≤ 9" 12 x 12 D6.5 x W4.0 or 12 x 12 W7.0 x W4.0
 - ≤ 10" 12 x 12 D7.2 x W4.0 or 12 x 12 W7.8 x W4.0Transverse wire is W4.0.
 - 2' 6" for pavement thickness of 10"
 - Fabric reinforcement will be measured for payment by area in sq. yds. of pavement panels constructed with reinforcement.
 - 15.0' effective joint spacing is actual 13', 16', 14', 17' and repeat joint spacing.
 - Dowel bar assemblies shall be similar to those shown on Standard Plate 1103.
 - All reinforcing bars shall meet the requirements of Grade 60 for AASHTO M-31 or M-53. All wire fabric as per Spec. 3303.
 - For rural ramps with widths of 15 feet or greater provide a L1T Joint 12 feet from the right edge of the ramp.

CONCRETE PAVEMENT WITH SKEWED JOINTS
15.0 FT. EFFECTIVE AND 27 FT. PANELS

State Proj. No. 62-665-17

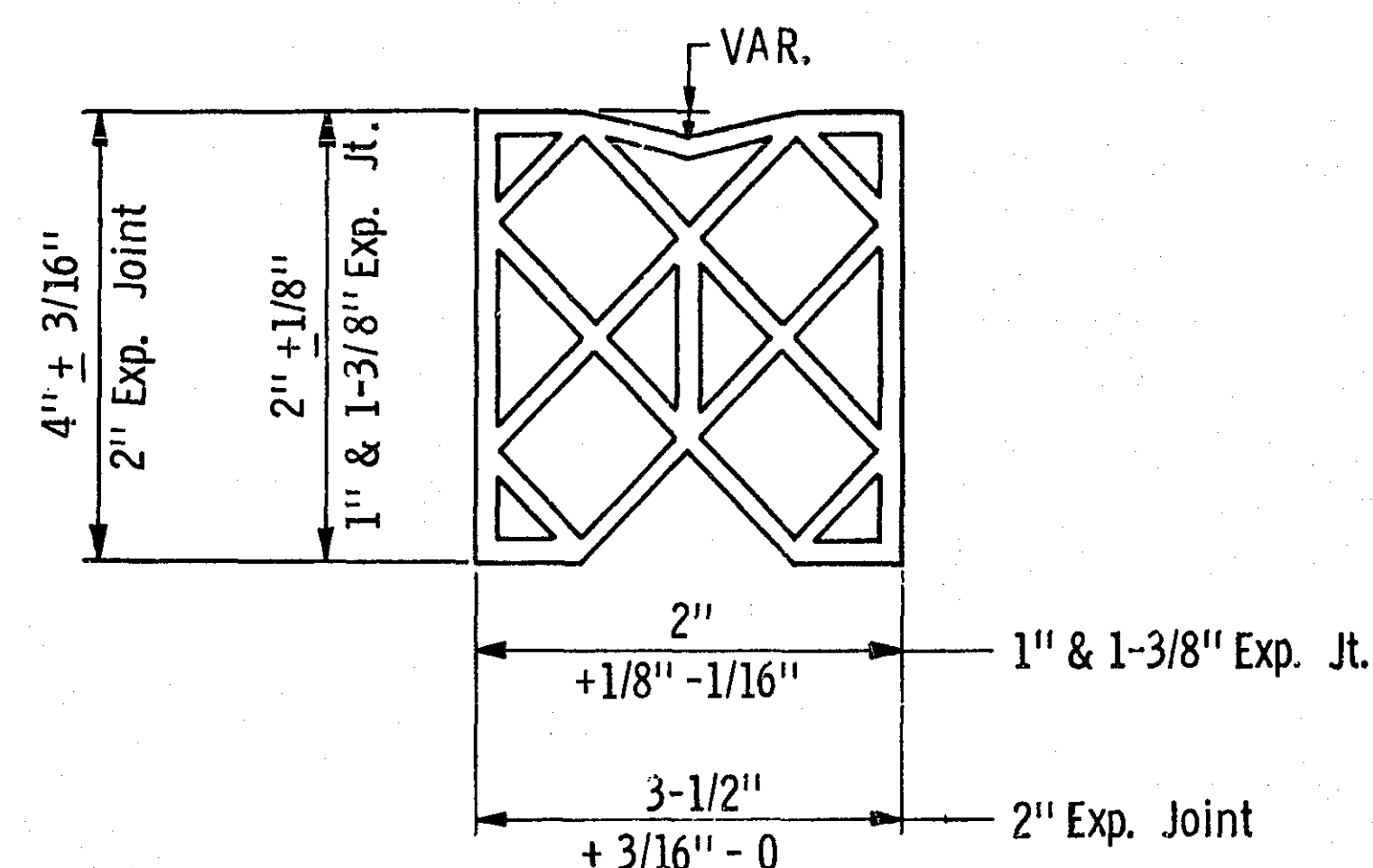
Sheet No. 9 of 34 Sheets

REQUIRED DIMENSIONS

Joint Type	Transverse	Transverse
Nominal Sealer size	13/16"	1-1/4"
	Use in all 3/8" Joints	Use in all 1/2" Joints
A	0.80" +0.14" -0.05"	1.25" +0.13"
B	0.08" +0.02"	0.10" +0.02"
C	0.60" min.	1.00" min.
D	0.80" min.	1.00" min.
Web and wall thicknesses unless noted	0.03" min.	0.06" min.

NOTES: "A" Dimension shall apply at any point throughout "C" depth. The above concrete joint sealers shall be used in 3/8" and 1/2" contraction joints. In its final position, the top corners of the preformed joint sealer shall be placed not less than 1/8" nor more than 5/16" below the pavement surface.

CONTRACTION JOINT MATERIAL



The above concrete joint sealer shall be placed only in those portion of expansion joints where protection angles are required. In its final position, the upper corners of the preformed joint sealer shall be placed not less than 3/16" nor more than 1/2" below the top surface of angle.

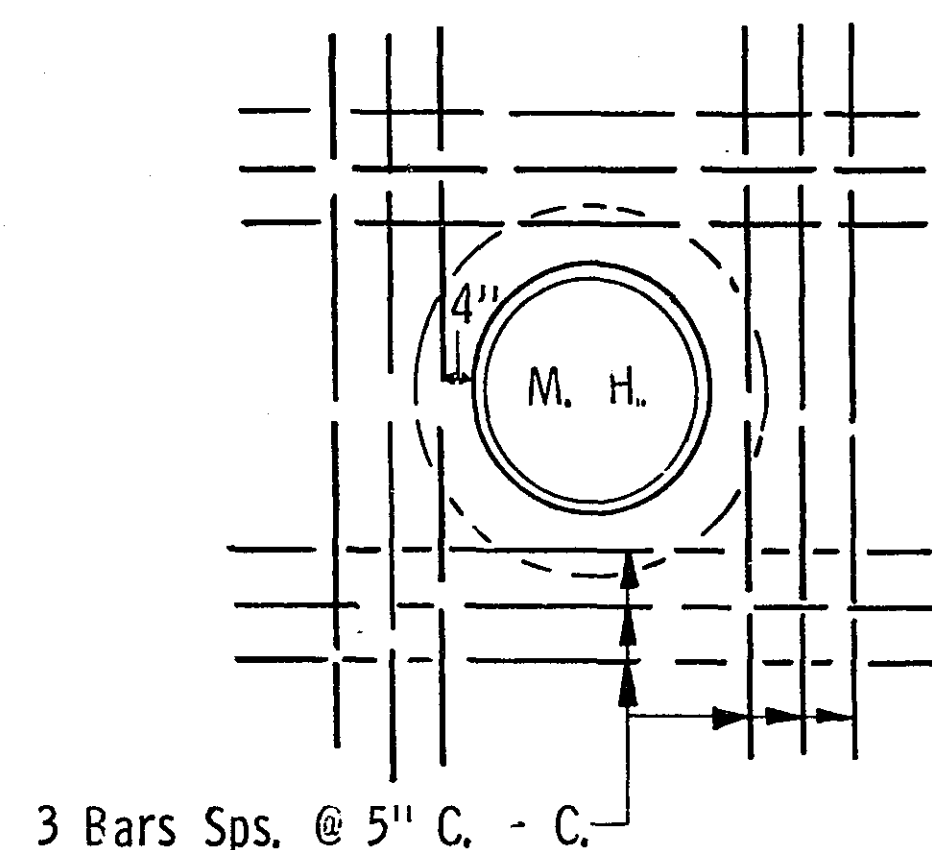
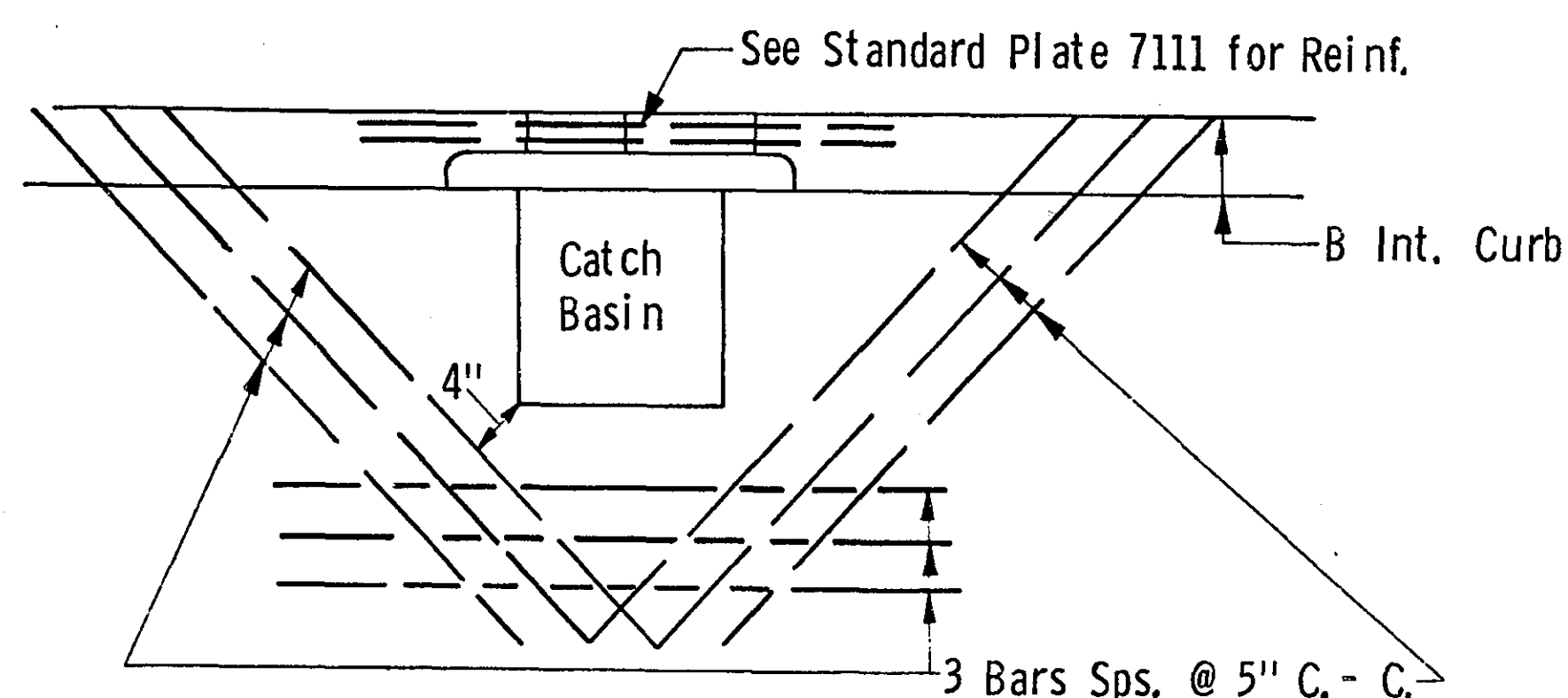
EXPANSION JOINT MATERIAL

General Notes:

Sharp internal corners will not be permitted. All corners shall be provided with a suitable fillet. Currently approved alternate configurations are on file in the Materials Engineering Section, Minnesota Transportation Dept.

CONCRETE JOINT SEALER

(PREFORMED ELASTIC TYPE)

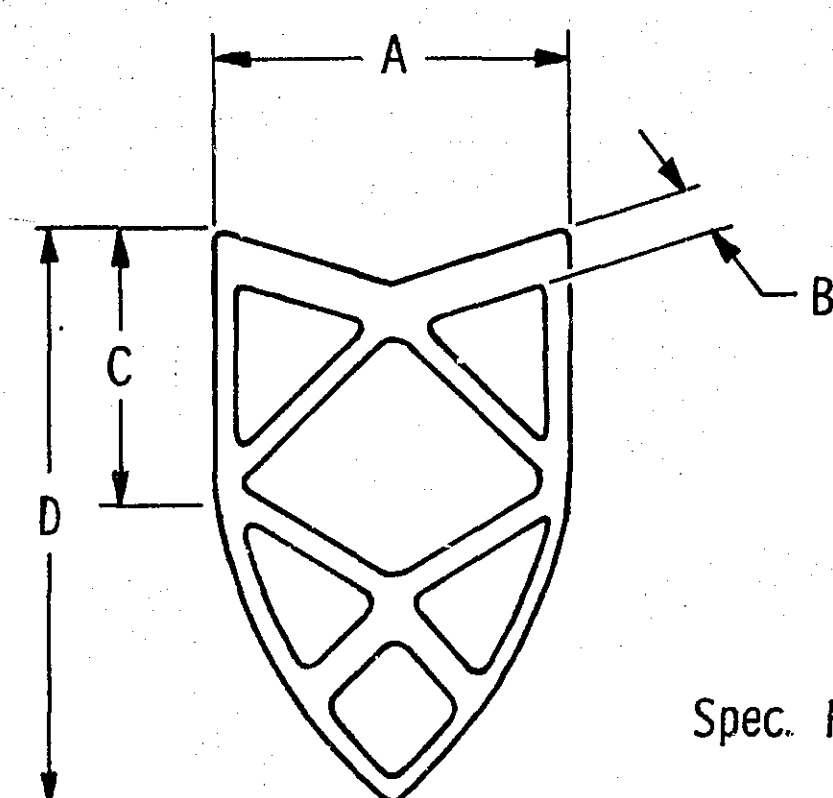


NOTES:

1. Reinf. bars shall be No. 5 x 6' deformed and shall meet the requirements of AASHTO M-31 Grade 40.
2. Catch basins use 56.3 lbs. Manholes use 75.00 lbs.

REINFORCEMENT AT CATCH BASINS AND MANHOLES

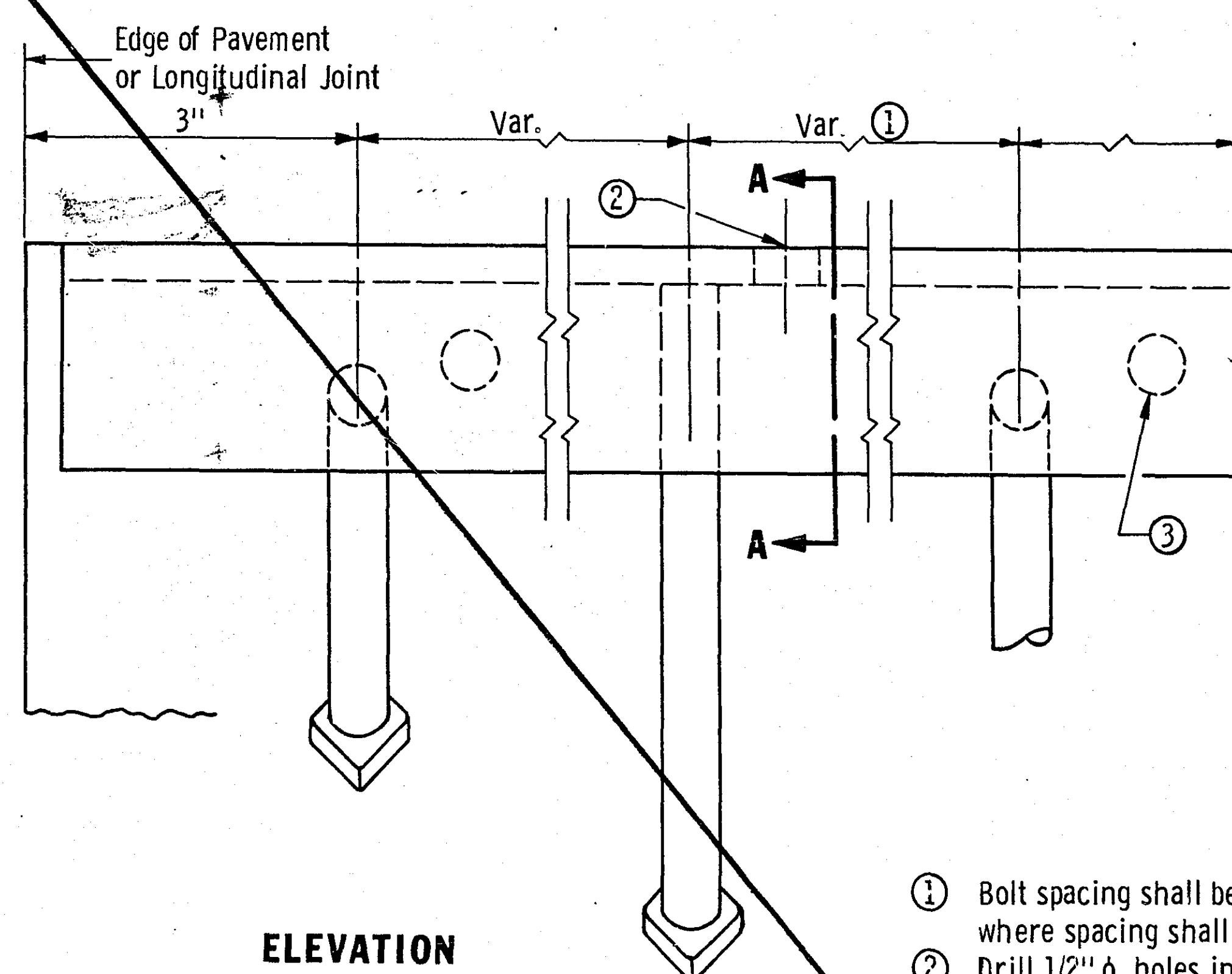
NOT TO SCALE



Spec. Ref : 3721

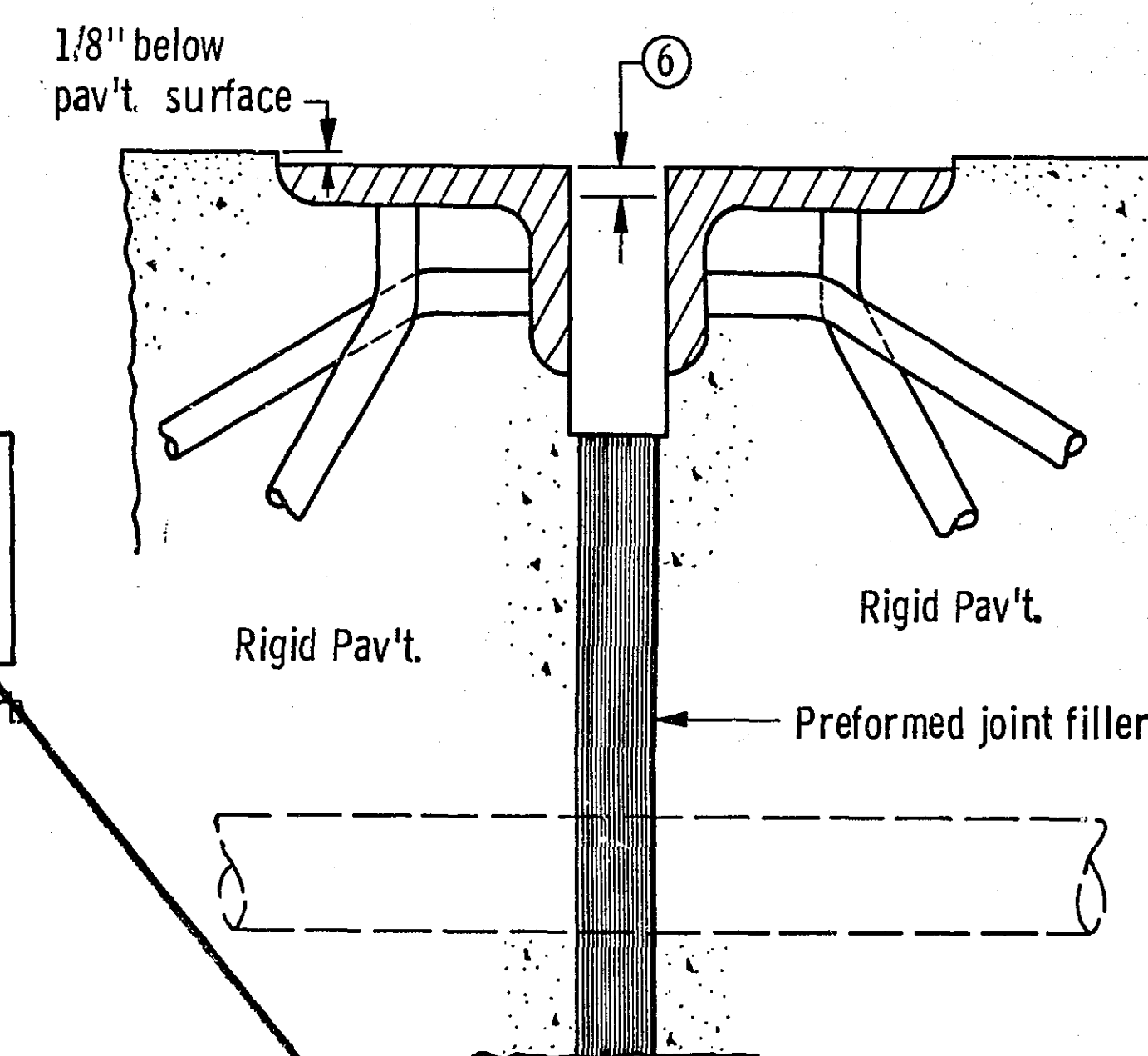
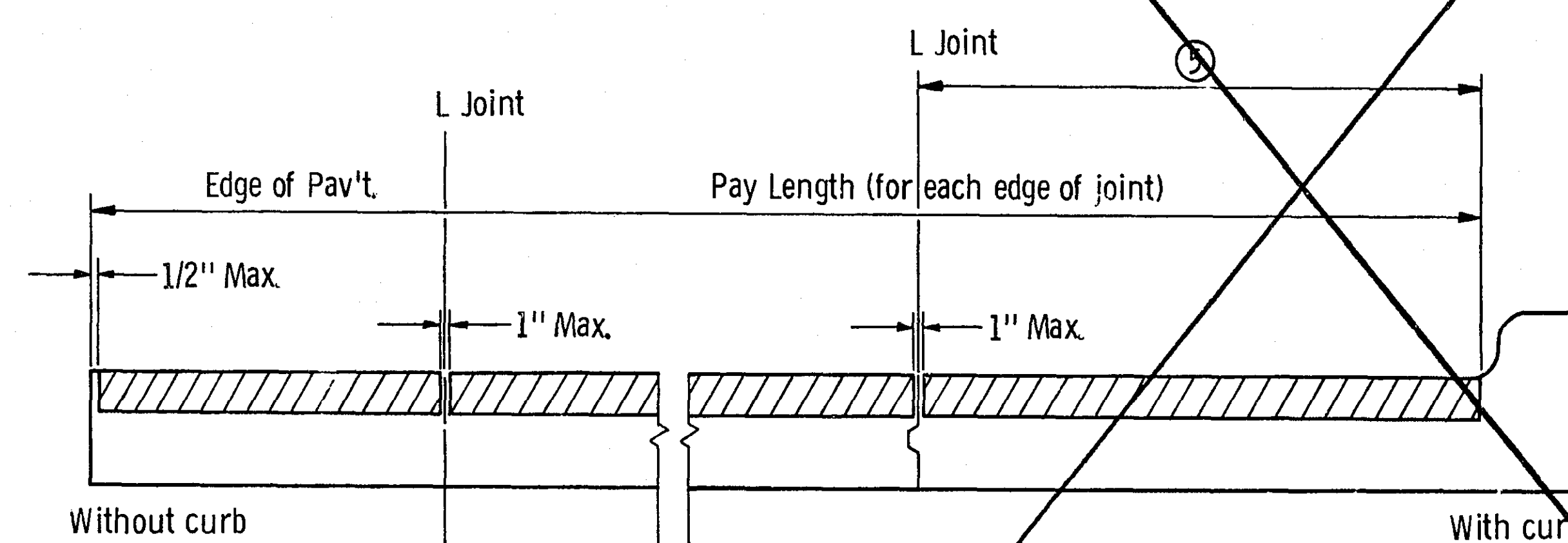
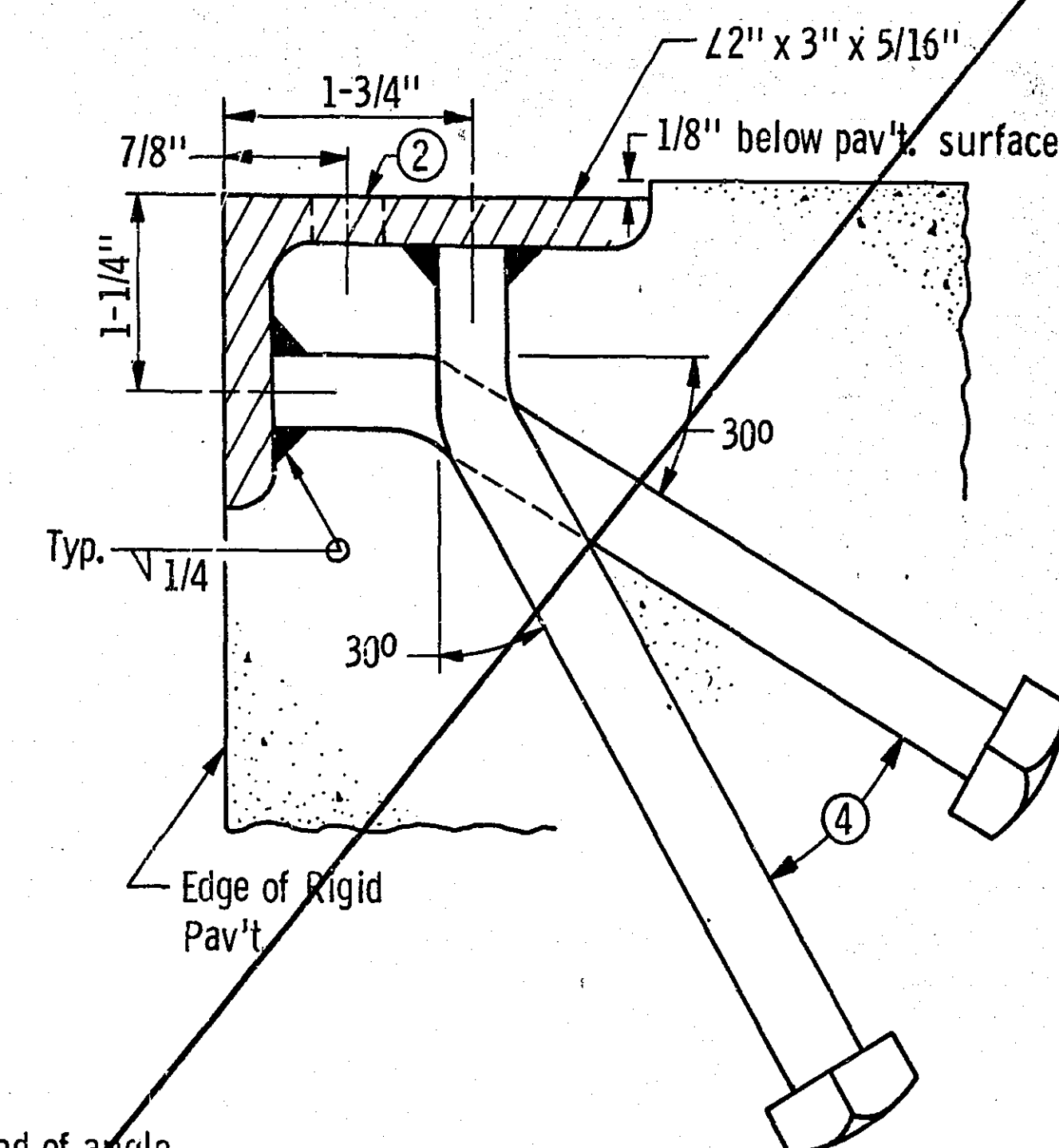
Typical shape for satisfactory installation in joint (5 cell min).

ELEVATION



- ① Bolt spacing shall be 12" max. c. to c. except at end of angle where spacing shall be 3" as shown.
- ② Drill 1/2" ϕ holes in horizontal leg spaced at 9" max. c. to c. (7/8" to ϕ of hole from outer edge of vertical leg.)
- ③ Drill holes for temporary fastening if needed.
- ④ 1/2" x 6" bolts, sq. or regular hex. head or stud with forged head. Bend 30° approx. 1" from end of bolt. Space and stagger on vertical and horizontal legs as shown in detail below.

SECTION A-A



- ⑤ In concrete pavement, protection angles shall be placed at expansion joints sealed with preformed elastic type joint sealer (Spec. 3721).
 - a. At expansion joints abutting bridge ends, protection angle shall be placed to face of curbs except minimum length of protection angle shall be two feet.
 - b. At expansion joints not abutting bridge, protection angle shall be placed on all traffic lanes greater than three feet in width.
 - c. See Sheet No. for protection angle tabulation

- ⑥ Neoprene joint sealer to be placed 3/16" min. to 1/2" max. below top surface of angle.

NOTE:

See Expansion Joint Design Details for dimensions.

EXPANSION JOINT

PROTECTION ANGLE

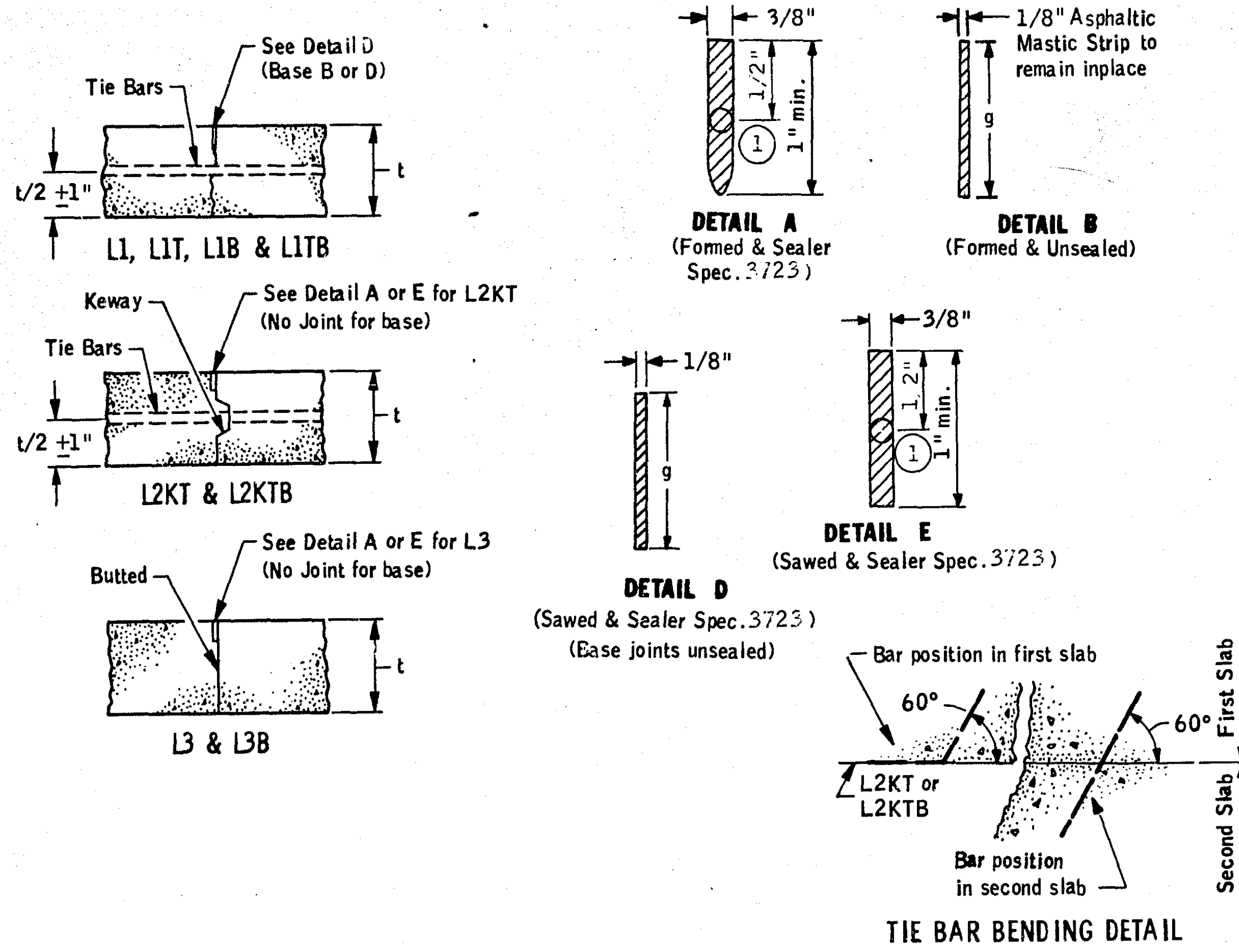
SPECIFICATIONS:
Galvanizing - Spec. 3394
Angles - Spec. 3306
Bolts and Nuts - Spec. 3391 A
Submittal of shop drawings for approval is not required.

APPROVED May 17, 1977

Research and Standards Engineer
RESEARCH AND STANDARDS
SECTION

S.P. 62-665-17

Sheet No. 10 of 34 Sheets



TYPE L1 JOINT DEPTHS			
Pav't. Thickness t	Non-Reinf. Pav't. g	Reinforced Pav't. g	Concrete Base g
6"	2"		2"
6-1/2"	2"		2"
7"	2-1/4"		2-1/4"
7-1/2"	2-1/4"		2-1/4"
8"	2-1/2"	2-1/2"	2-1/2"
8-1/2"	2-1/2"	2-1/2"	2-1/2"
9"	2-3/4"	2-3/4"	2-3/4"
10"	3"	3"	3"

CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPEC.
Without Tie Bars	With Tie Bars	With Keyway & Tie Bars	Butted		
L1	L1T	L2KT L2KTB	L3 L3B	D	3723
L1B	L1TB			B or D A or E None	Unsealed 3723 Unsealed

LEGEND
L = Longitudinal Joint
No. = Joint Reference
T = Tie Bars
K = Keyway
B = Concrete Base

EXAMPLE
Tie Bars
Keyway
Joint Reference
Longitudinal Joint

LONGITUDINAL JOINT NOTES

Tie bars for L1TB joints shall be the same size and spacing as shown on standard plan sheet 5-297.217.

Except when noted otherwise in the plans the tie bar spacing for all L2KT and L2KTB joints shall be 2' 6" c. to c. and bent 60° as shown.

Tie bars in the L2KT and L2KTB joints shall be the same size and length as used for the L1T or L1TB joints when tying pav't. to pav't. or base to base. Tie bars in the L2KT or L2KTB joints shall be No. 4 x 2' 6" when tying curb and gutter to pav't. or base.

All tie bars shall meet the requirements of Grade 60 for AASHTO M-31 or M-53.

Normally, tied pavement widths shall not exceed 30 feet except bridge approach panels and pavement tapers.

Joint width tolerance, +1/16", -1/32".

Spec. 3723 Sealer - Top of sealer flush to -3/16" below top of pavement surface.

- 1 Just prior to sealing joint (Detail A & E) a paper rope with a 1/8" larger diameter than the joint opening may be placed 1/2" below the top of the pavement.

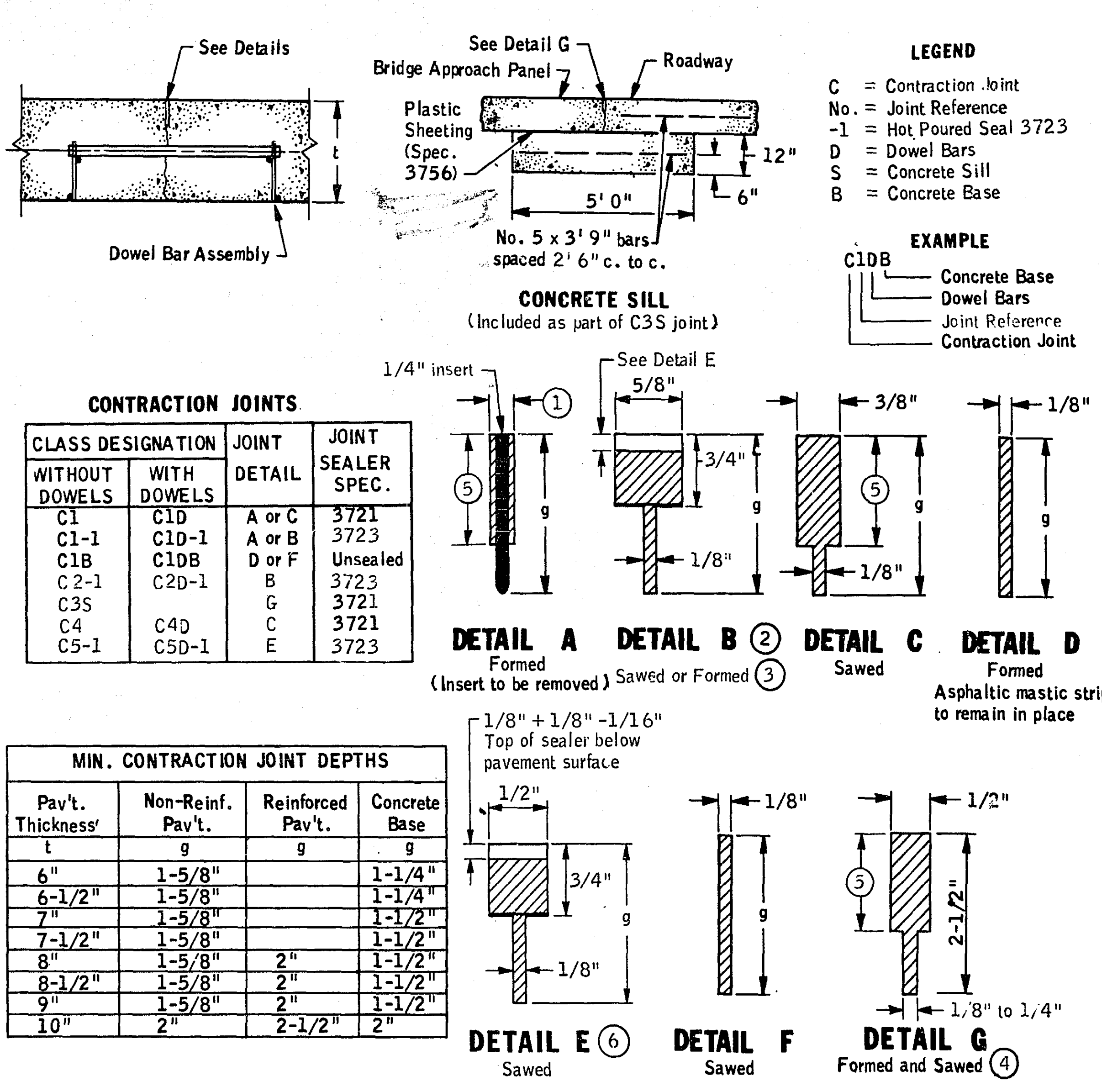
GENERAL NOTES:

See the following standard plates and standard plan sheet for additional details: Dowel Bar Assembly 1103; Pav't. Keyway 1141; and Concrete Pavement with Skewed Joints 5-297.217.

See paving layouts in the plans for joint class designations to be used and special reinforcement required.

APPROVED June 8, 1981
R. O. Kipp
Director
OFFICE OF ENGINEERING STANDARDS

LONGITUDINAL JOINTS
DESIGN L



CONTRACTION JOINTS			
CLASS DESIGNATION	JOINT DETAIL	JOINT SEALER SPEC.	
WITHOUT DOWELS	WITH DOWELS		
C1	C1D	A or C	3721
C1-1	C1D-1	A or B	3723
C1B	C1DB	D or F	Unsealed
C2-1	C2D-1	B	3723
C3S		G	3721
C4	C4D	C	3721
C5-1	C5D-1	E	3723

MIN. CONTRACTION JOINT DEPTHS			
Pav't. Thickness t	Non-Reinf. Pav't. g	Reinforced Pav't. g	Concrete Base g
6"	1-5/8"		1-1/4"
6-1/2"	1-5/8"		1-1/4"
7"	1-5/8"		1-1/2"
7-1/2"	1-5/8"		1-1/2"
8"	1-5/8"	2"	1-1/2"
8-1/2"	1-5/8"	2"	1-1/2"
9"	1-5/8"	2"	1-1/2"
10"	2"	2-1/2"	2"

- 1 Design C1 or C1D: Prior to installing preformed joint sealer in the formed joint, (Detail A) the joint shall be widened to a nominal width of 3/8" by sawing along the full length of the formed joint.
- Design C1-1 or C1D-1: Prior to sealing formed joint (Detail A) with hot poured joint sealer, the joint shall be widened to a nominal width of 5/8" for a depth of 3/4", +1/8", -1/16", by sawing along the full length of the formed joint. Prior to sealing joint (Detail B) with hot poured joint sealer a strip of paper 5/8" wide shall be placed on the bottom of the 5/8" wide joint.
- 2 Design C1-1 or C1D-1, C2-1 or C2D-1: Prior to sealing joint (Detail B) with hot poured joint sealer a strip of paper 5/8" wide shall be placed on the bottom of the 5/8" wide joint.
- 3 Design C2-1 or C2D-1: Use insert for forming joint (no sawing permitted).
- 4 Use 5/16" x 2" insert for forming joint. Final dimensions shall be obtained by sawing.
- 5 Depth shall be 1/4" greater than preformed joint sealer when compressed to fit joint design width.
- 6 Design C5-1 or C5D-1: Prior to sealing joint (Detail E) with hot poured joint sealer a strip of paper 1/2" wide shall be placed on the bottom of the 1/2" wide joint.

CONTRACTION JOINT NOTES

In concrete base construction the contraction joints shall be spaced at 30 foot intervals and at right angles to the longitudinal joints except as noted below. Where concrete base is constructed adjacent to existing pavement or base, the contraction joints in the new base shall match those in the existing pavement or base except that the spacing shall not be less than 15 feet nor more than 30 feet.

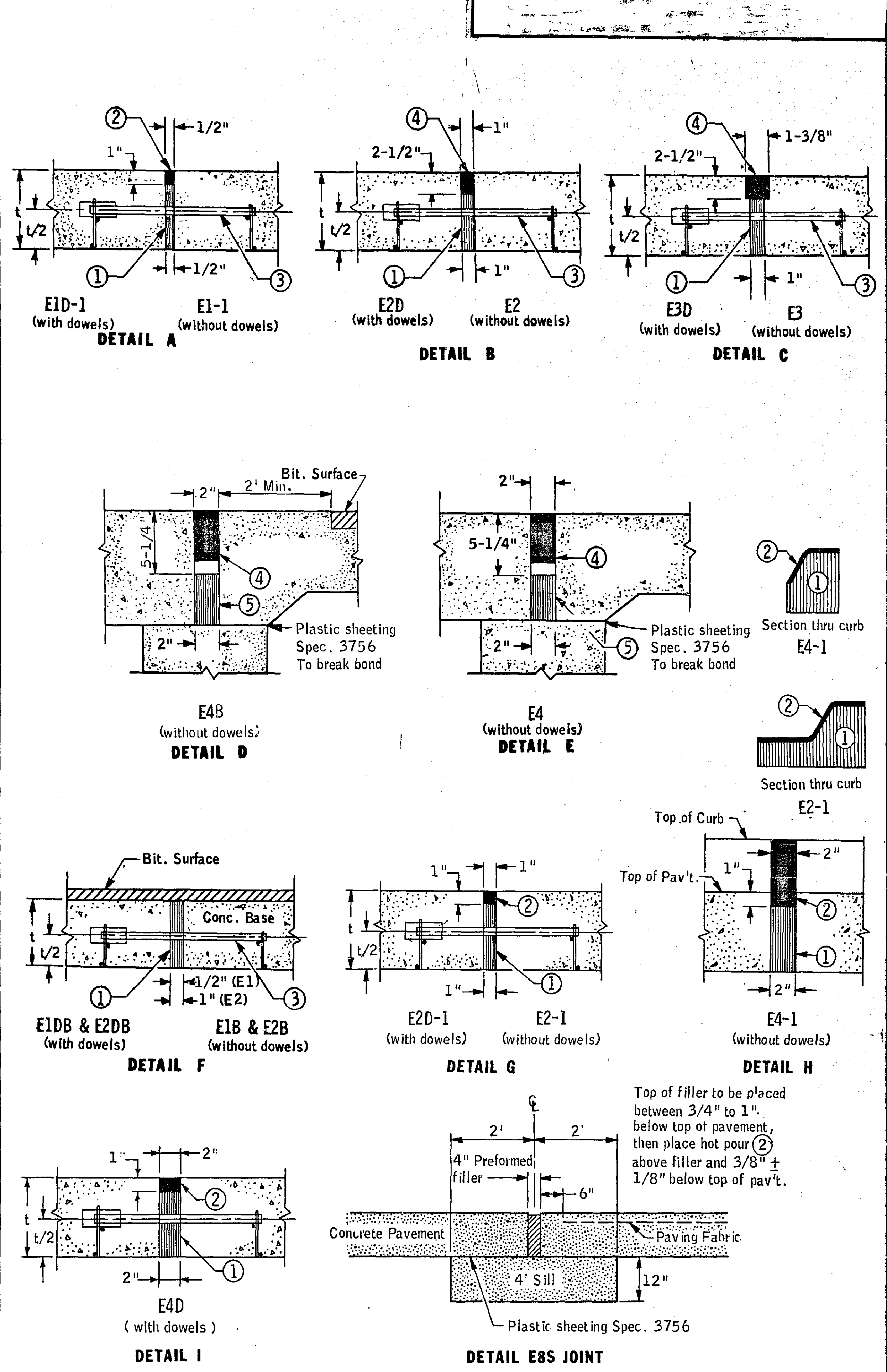
Joint width tolerances: +1/16", -1/32"

GENERAL NOTES:

See the following standard plates and standard plan sheet for additional details: Dowel Bar Assembly 1103; Construction of Header Joints 1150, and Concrete Pavement with Skewed Joints 5-297.217.

See paving layouts in the plans for joint class designation to be used and special reinforcement required.

CONTRACTION JOINTS
DESIGN C



- 1 Preformed Joint Filler Material - Spec. 3702
- 2 Joint Sealer as specified. Top of sealer, flush to 1/8" below top of pavement surface. Top of sealer for curb section E joints flush with surface (0") +1/8".
- 3 Dowel Bar Assembly See Std. Pl. 1103
- 4 Joint Sealer - Spec. 3721 Refer to plans for details of sealer
- 5 Preformed Joint Filler Material - Spec. 3702 or an approved sheet polystyrene.

LEGEND
E = Expansion Joint
No. = Joint Reference
-1 = Hot Poured Seal
D = Dowel Bars
B = Concrete Base

EXAMPLE
E1D-1
E1B
E2
E2D-1
E2DB
E3D

Hot Poured Seal
Dowel Bars
Joint Reference
Expansion Joint

EXPANSION JOINTS			
CLASS DESIGNATION	JOINT DETAIL	JOINT SEALER SPEC.	
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	2
E1DB	E1B	F	Unsealed
E2D	E2	B	3721
E2D-1	E2-1	G	2
E2DB	E2B	F	Unsealed
E3D	E3	C	3721
	E4	E	3721
	E4B	D	3721
	E4-1	H	2
E4D		I	2

EXPANSION JOINTS
DESIGN E

PAVEMENT JOINTS

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE

① SALVAGE & INSTALL HYDRANT AS DIRECTED.
SEE HYDRANT CHART SHEET No. 4

CONSTRUCT ALL ENTRANCES
OF CONCRETE TO THE PROP-
ERTY LINE, AS INDICATED.

—SAWCUT BITUMINOUS AS DIRECTED

END B624 C & G 5'
BEYOND CATCH BASIN SEE SHEET NO.
TAPERS.

B.M. 924.51
TOP HYD. N.W. COR.
CO. RD. "B" & W.B.A.

B.M. 916.63°
TOP HYD. N.W. COR.
BURKE AVE. & W.B.A.

B.M. 907.16
TOP HYD. STA.
46+00 LT.

HO.

GROUP HEALTH CLINIC

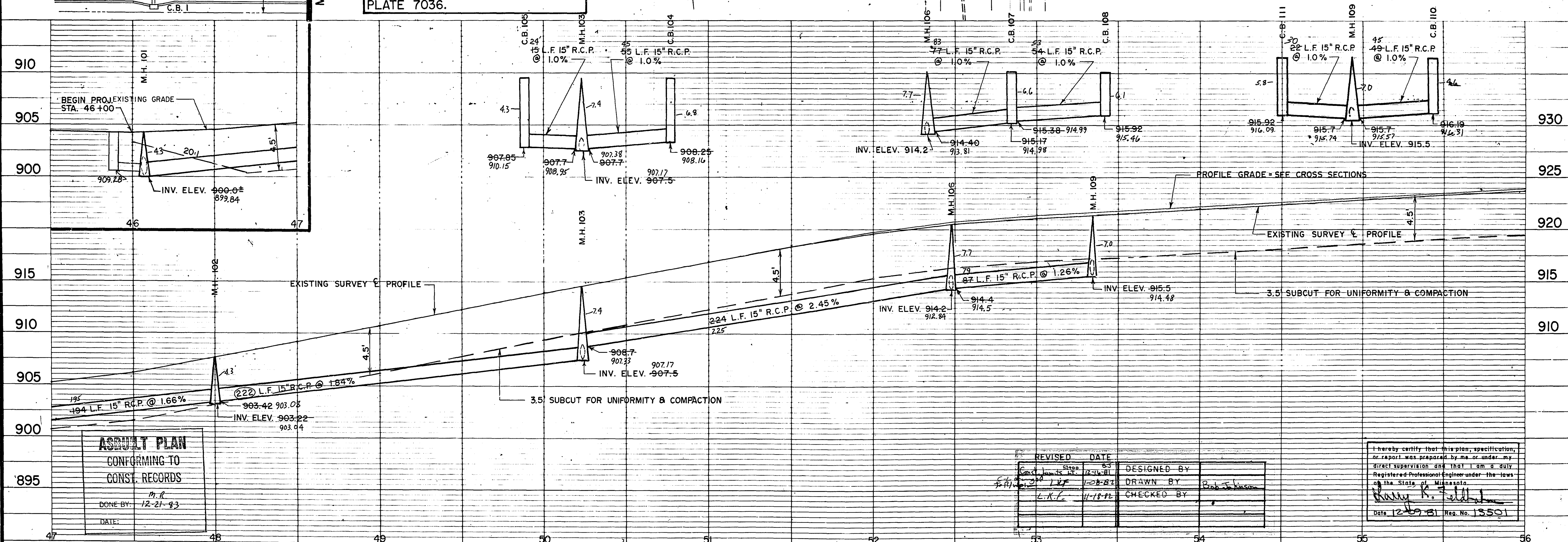
GROUP HEALTH LAWN
SPRINKLER SYSTEM TO
BE RELOCATED BY OTHERS.

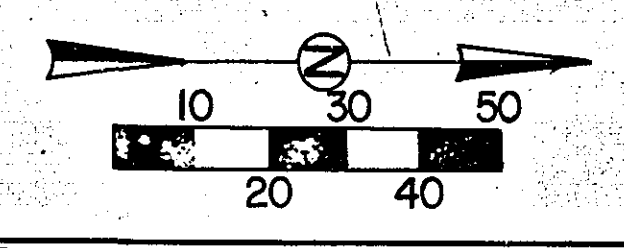
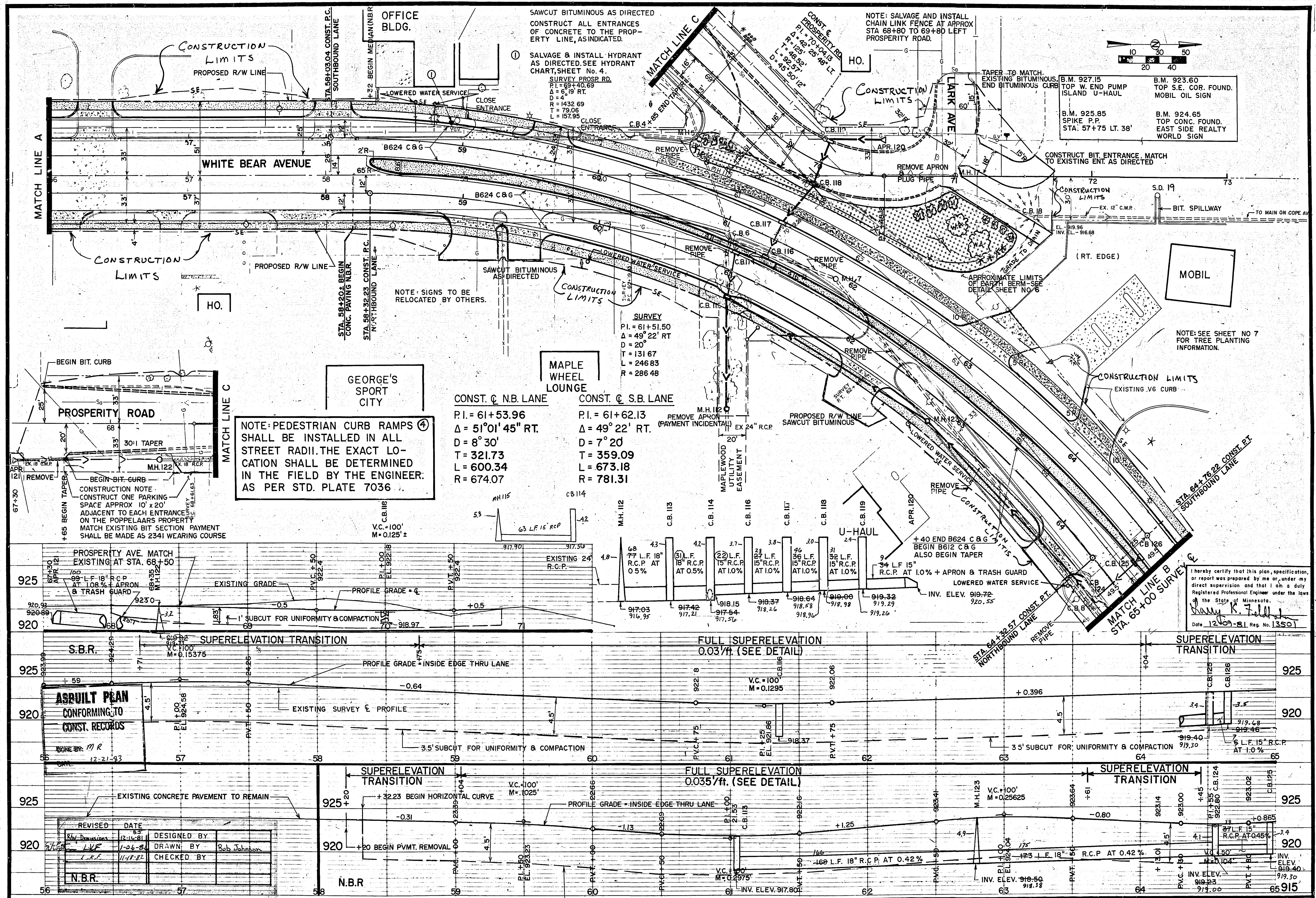
④ NOTE: PEDESTRIAN CURB RAMPS SHALL BE INSTALLED IN ALL STREET RADII. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. AS PER STD. PLATE 7036.

KINNEY'S

SEE SIGNAL SYSTEM CONSTRUCTION
PLANS FOR EXACT SIGNAL LOCATION.

B.M. 924.64
TOP N.W. BOLT NO. LIGHT
AT GAS HUT STA. 54+50 RT.

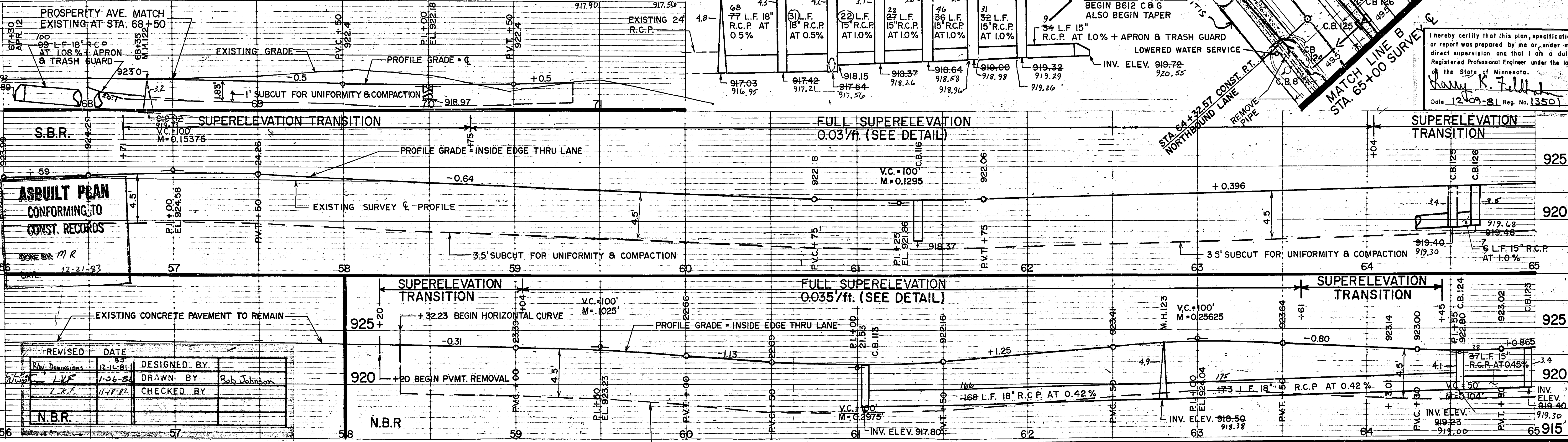




NOTE: PEDESTRIAN CURB RAMPS SHALL BE INSTALLED IN ALL STREET RADII. THE EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. AS PER STD. PLATE 7036

CONST. C. N.B. LANE
P.I. = 61+53.96
Δ = 51°01'45" RT.
D = 8°30'
T = 321.73
L = 600.34
R = 674.07

CONST. C. S.B. LANE
P.I. = 61+62.13
Δ = 49°22' RT.
D = 7°20'
T = 359.09
L = 673.18
R = 781.31



ASBUILT PLAN CONFORMING TO CONST. RECORDS

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1	12-14-81	W. J. Johnson	W. J. Johnson	W. J. Johnson
2	1-26-82	W. J. Johnson	W. J. Johnson	W. J. Johnson
3	11-17-82	W. J. Johnson	W. J. Johnson	W. J. Johnson

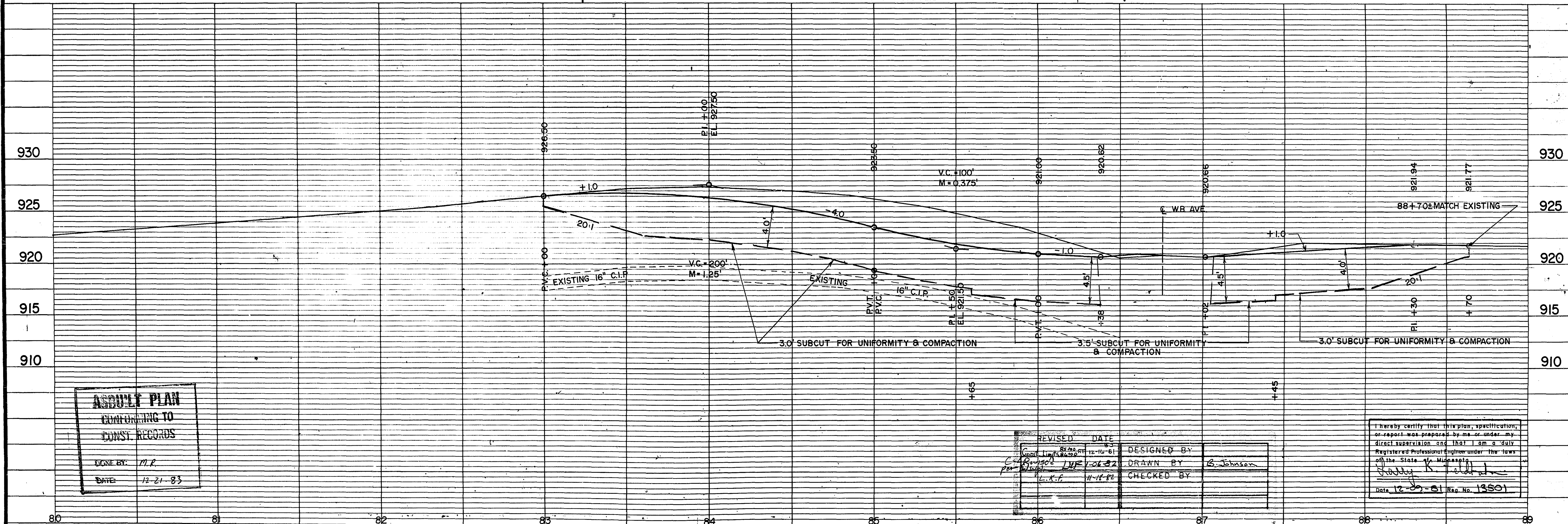
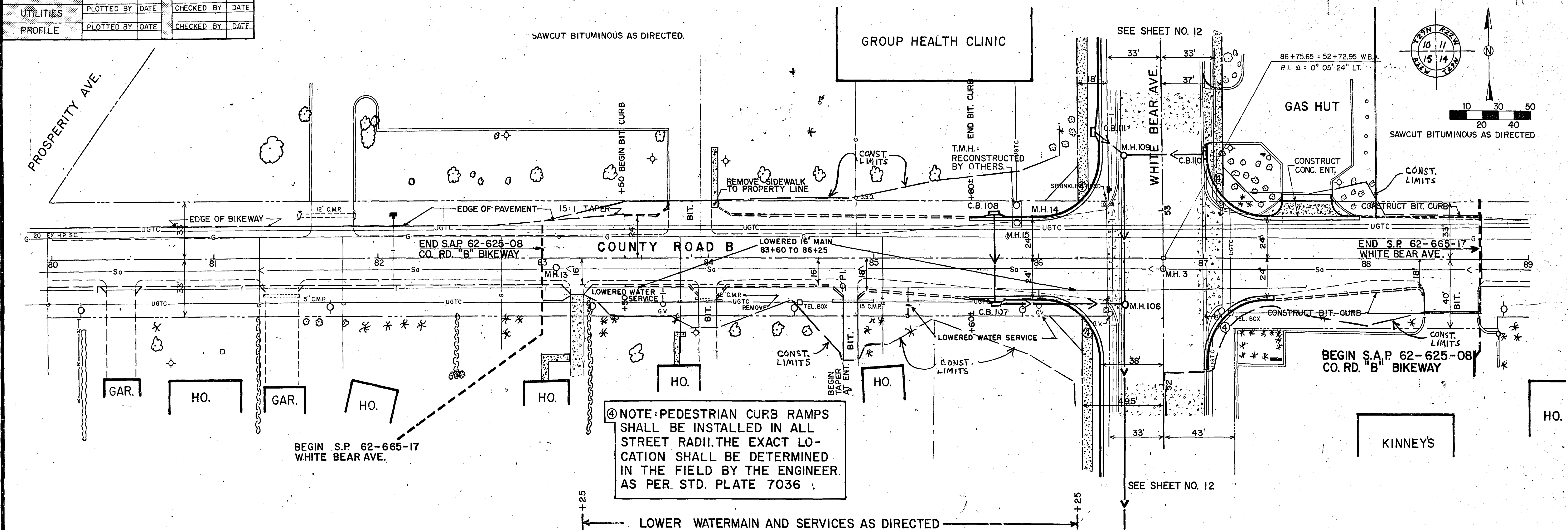
N.B.R.

I hereby certify that this plan, specification, or report 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.

Harry K. Felt

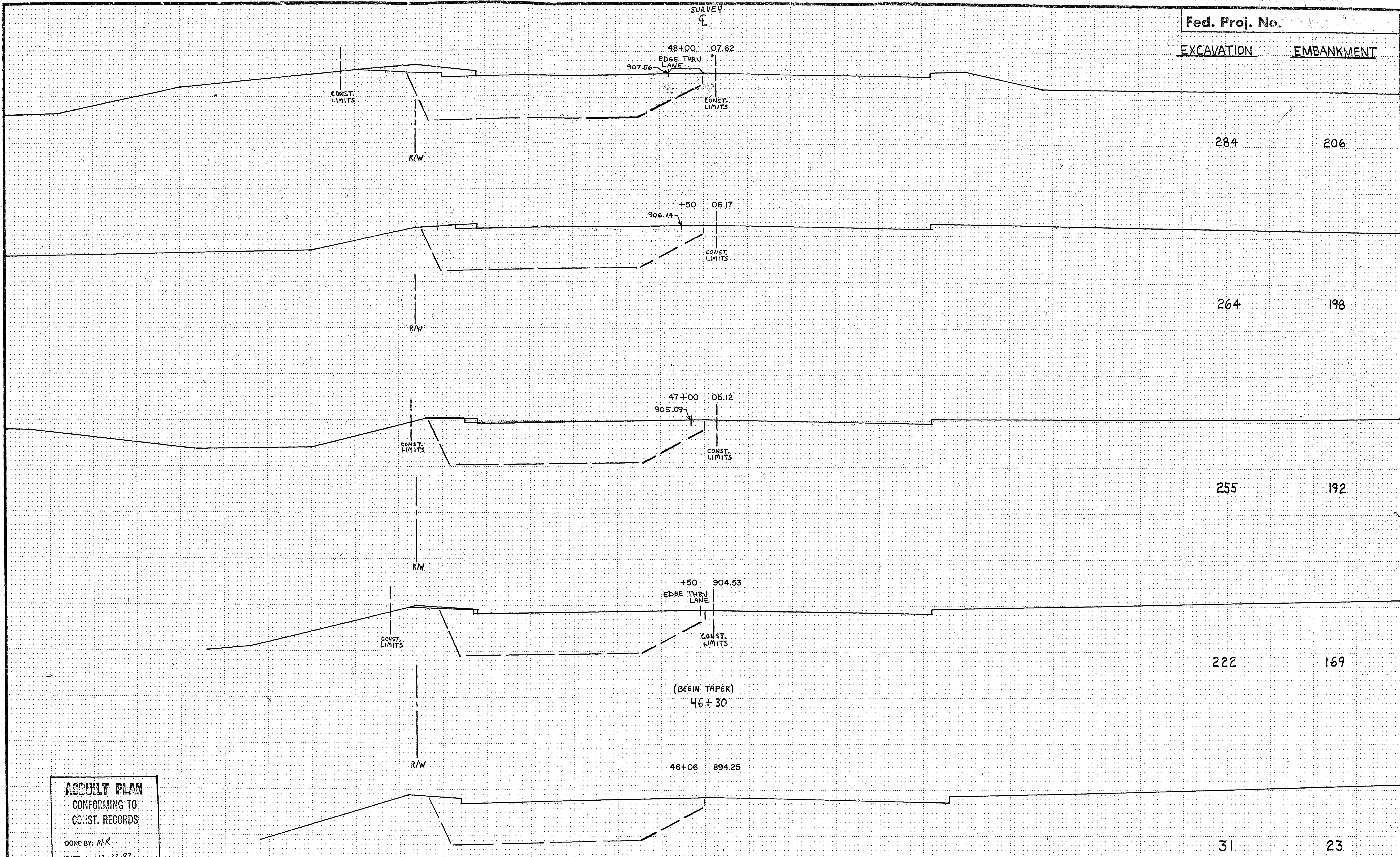
Date 12-09-81 Reg. No. 13501

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
PROFILE	PLOTTED BY	DATE	CHECKED BY	DATE



Fed. Proj. No.

EXCAVATION EMBANKMENT



284

206

264

198

255

192

222

169

31

23

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: M.R.
DATE: 12-22-83

SURVEY
BEGIN PROJECT
STA. 46+00±

REVISED	DATE	DESIGNED BY
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Date 12-29-83 Reg. No. 13501

Fed. Proj. No.

EXCAVATION EMBANKMENT

Q BURKE

EDGE THRU LANE
912.92

SURVEY
Q

+71 13.0

CONSTRUCT B.T.
ENTRANCE TO
SHIRLEYS OFF BURKE

203

140

RADIUS

912.26

+50 12.15

234

158

R/W

CONSTRUCT ENTRANCE

49+19 11.4

911.30

CONST. LIMITS

CONST. LIMITS

387

263

CONST. LIMITS

909.52

+60 09.6

CONST. LIMITS

183

134

48+29 908.6

908.53

EDGE THRU LANE

CONST. LIMITS

SURVEY
Q

R/W

170

124

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: MR
DATE: 12-22-83

REVISED	DATE	DESIGNED BY
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Date 12-29-81 Reg. No. 13501

State Proj. No. 62-665-17 WHITE BEAR AVE. Sheet No. 17 of 34 Sheets

Fed. Proj. No.

EXCAVATION EMBANKMENT

COUNTY ROAD "B"

SURVEY
E

MATCH
CO. RD. B
X-SECTION
STA. 84+35

MATCH
CO. RD. B
X-SECTION
STA. 87+45

REMOVE
INPLACE
CONCRETE

1.0%

BEGIN NEW RADIUS STA. 52+15 ± RT. 26

727 540

CONST.
LIMITS

354 264

CONST.
LIMITS

KINNEYS ENTRANCE - O.K. LEAVE

327 236

ENTRANCE - CLOSE

CONST.
LIMITS

389 280

CONST.
LIMITS

364 266

RADIUS

CONST.
LIMITS

SURVEY
E

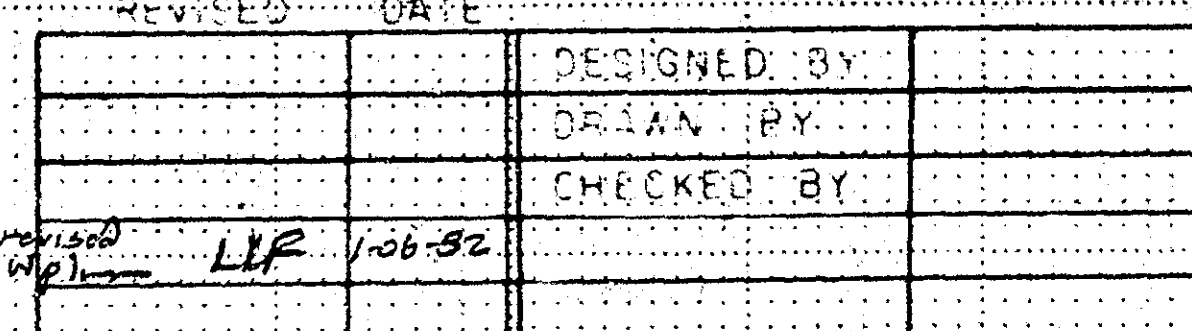
277 193

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

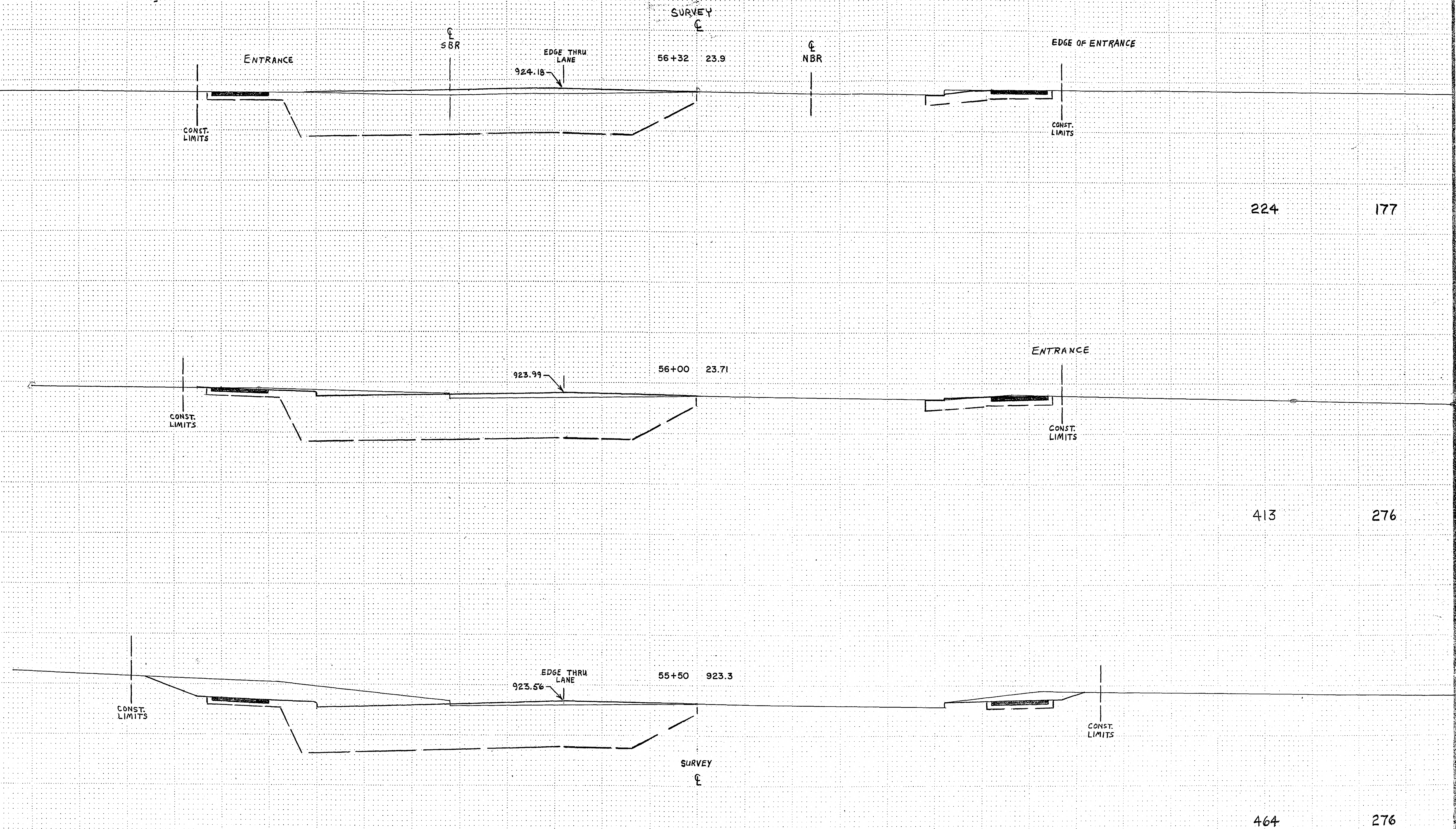
DONE BY: *MR.*
DATE: 12-22-83

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY

I hereby certify that this plan, specification, or report 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.
Harry K. Telsch
Date 12-29-81 Reg. No. 13501



I hereby certify that this plan, specification
or report was prepared by me or under my
direct supervision and that I am a duly
Registered Professional Engineer under the law
of the State of Minnesota.
Harry K. Feld
Data 12-09-81 Reg. No. 13501



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: M.R.
DATE: 12-22-83

REVISED	DATE	DESIGNED BY
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Date 12-22-81 Reg. No. 13501

Fed. Proj. No.

EXCAVATION

EMBANKMENT

ENTRANCE

SURVEY

923.91 EDGE THRU LANE

58+04 23.7

CONST. LIMITS

166

134

924.07

+80 23.7

CONST. LIMITS

ENTRANCE

CONST. LIMITS

375

263

924.36

57+33 24.0

CONST. LIMITS

CONST. LIMITS

411

265

924.42 EDGE THRU LANE

56+85 924.0

CONST. LIMITS

CONST. LIMITS

ENTRANCE

391

292

SURVEY

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: M.R.

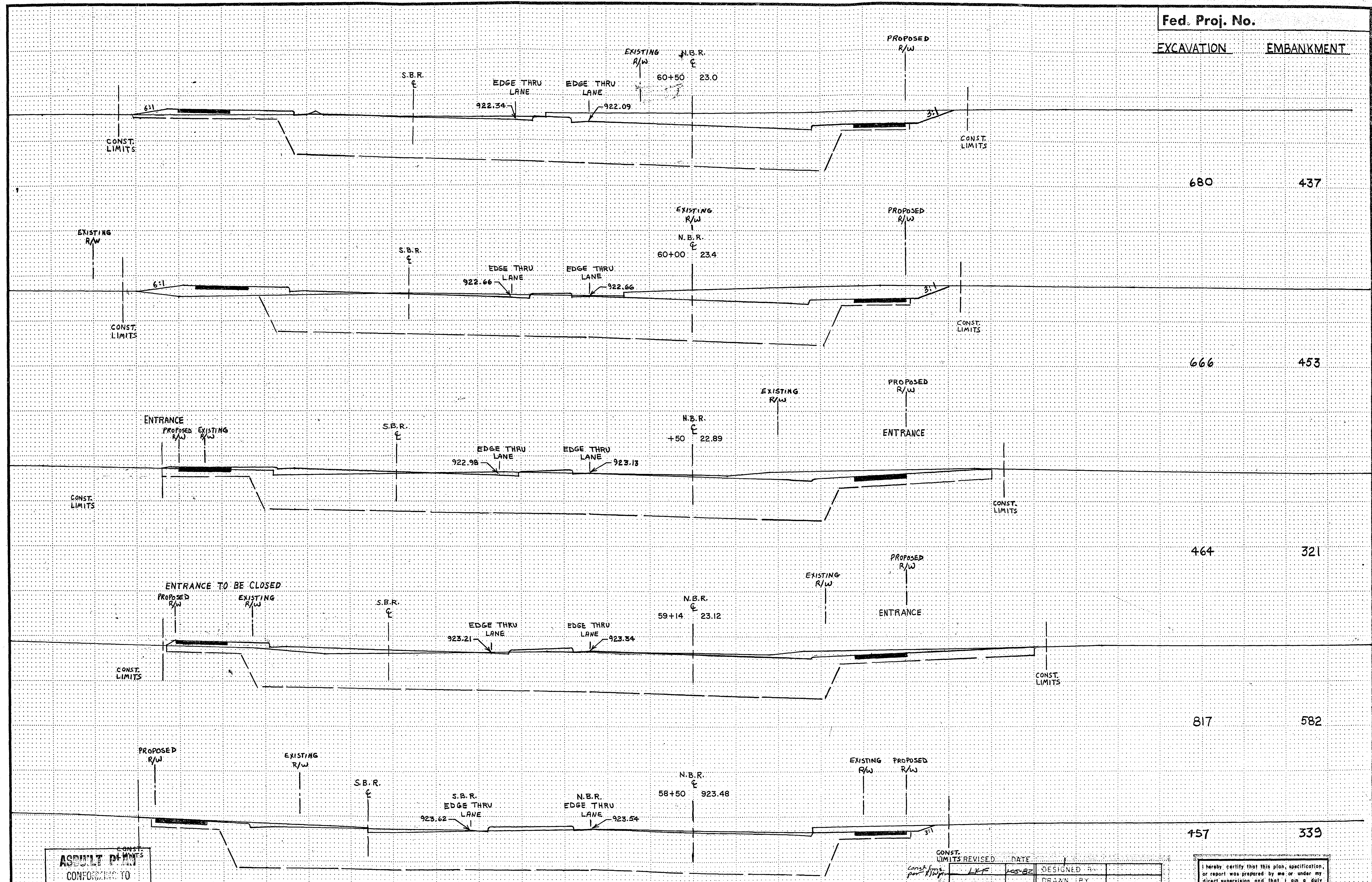
DATE: 12-22-83

First plans per

REVISED	DATE	DESIGNED BY
LKF	1-05-82	
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification, or report 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 Michigan.
Date 12-09-81 Reg. No. 13501

State Proj. No. 62-665-17 WHITE BEAR AVE. Sheet No. 21 of 34 Sheets



680 437

666 453

464 321

817 582

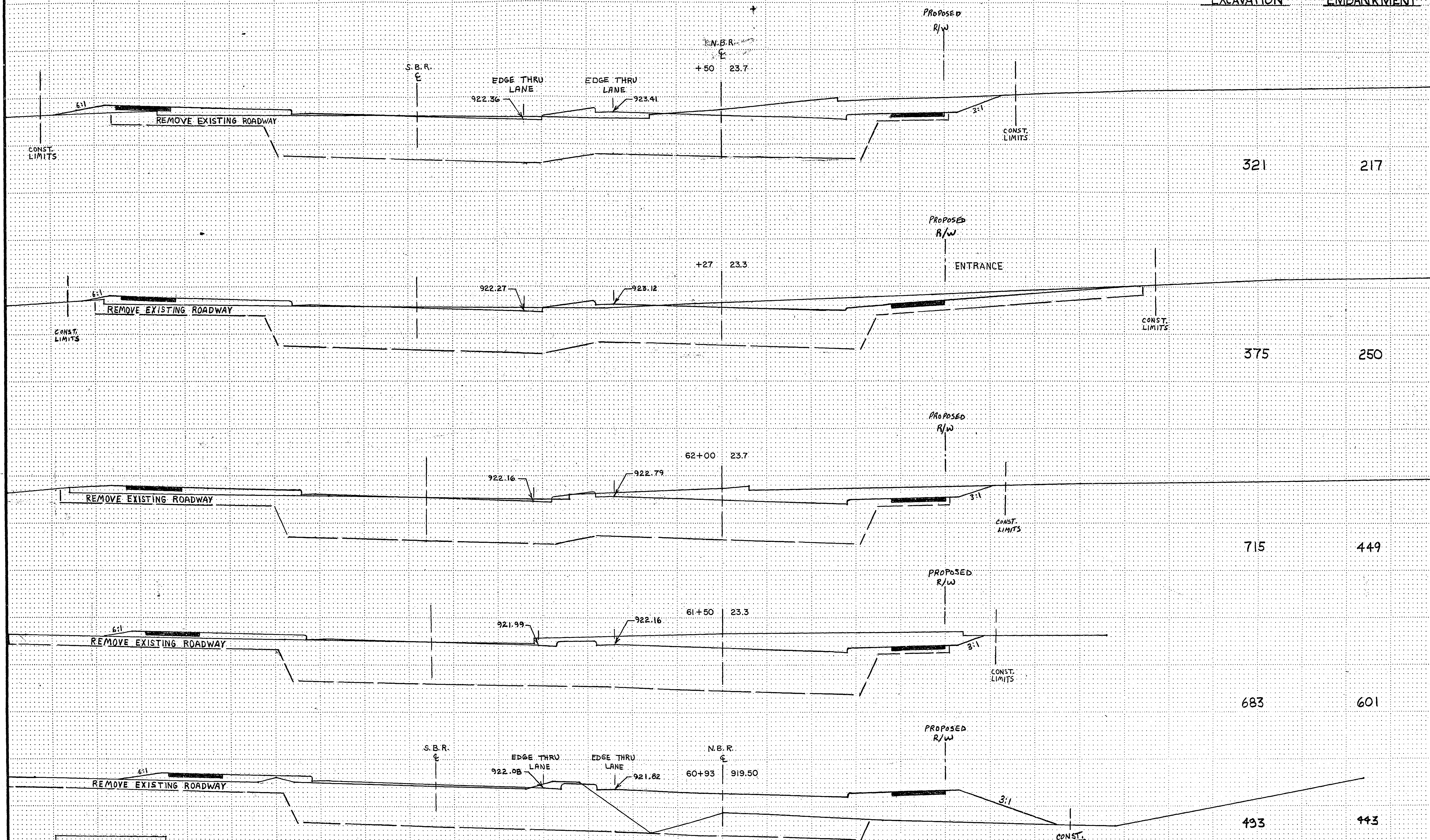
457 339

BEGIN SUBCUT ON RT. STA. 58+20 ±

ASBUILT PLANS
CONFORMING TO
CONST. RECORDS
DONE BY: MR
DATE: 12-22-83

CONST. LIMITS	REVISED	DATE	DESIGNED BY
1	LKF	10-5-82	
			DRAWN BY
			CHECKED BY

I hereby certify that this plan, specification, or report 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.
Larry K. Felt
Date 12-29-81 Reg. No. 13501

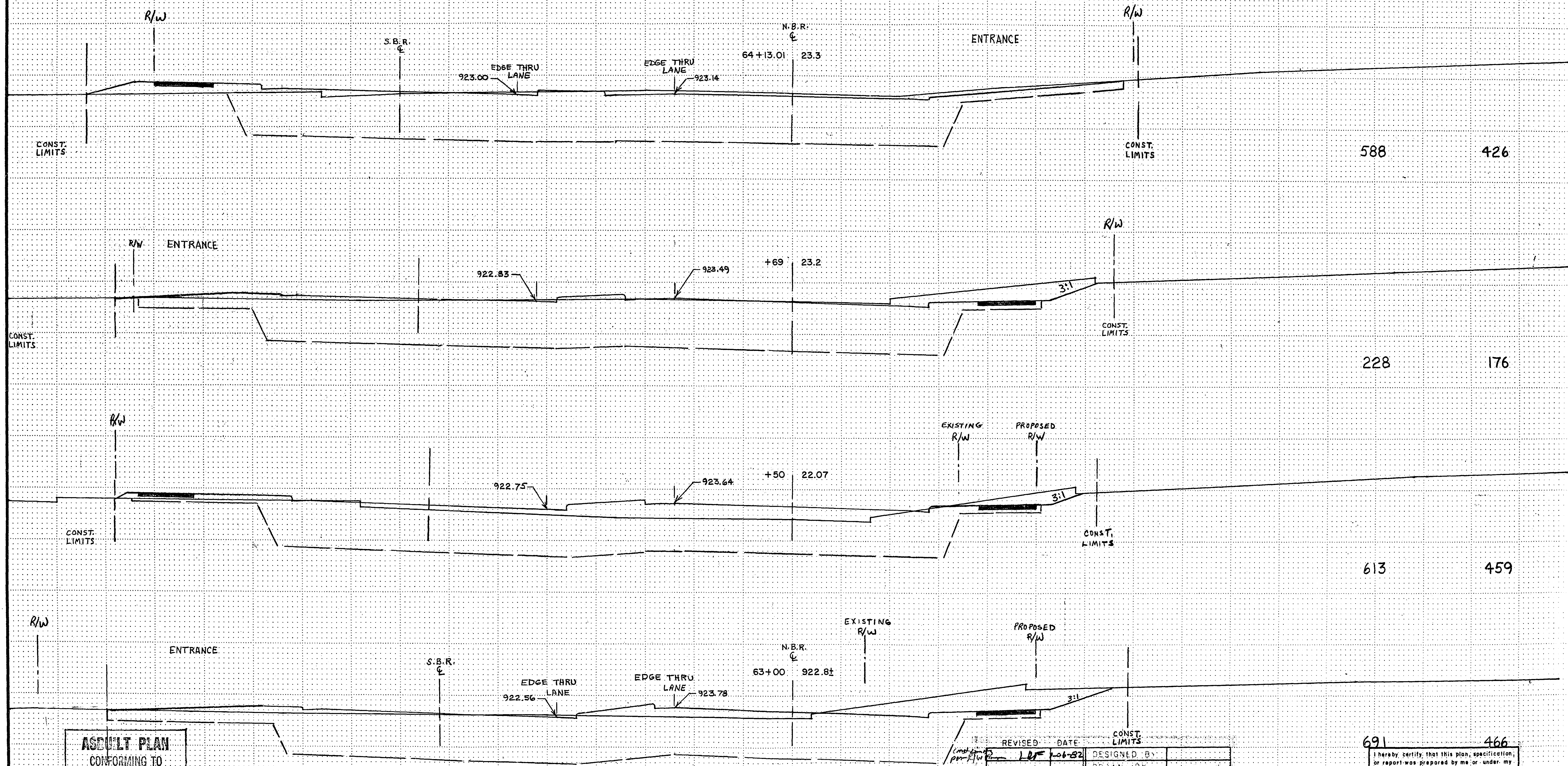


ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: M.R.
DATE: 12-22-03

REVISED	DATE	DESIGNED BY
		DRAWN BY
		CHECKED BY

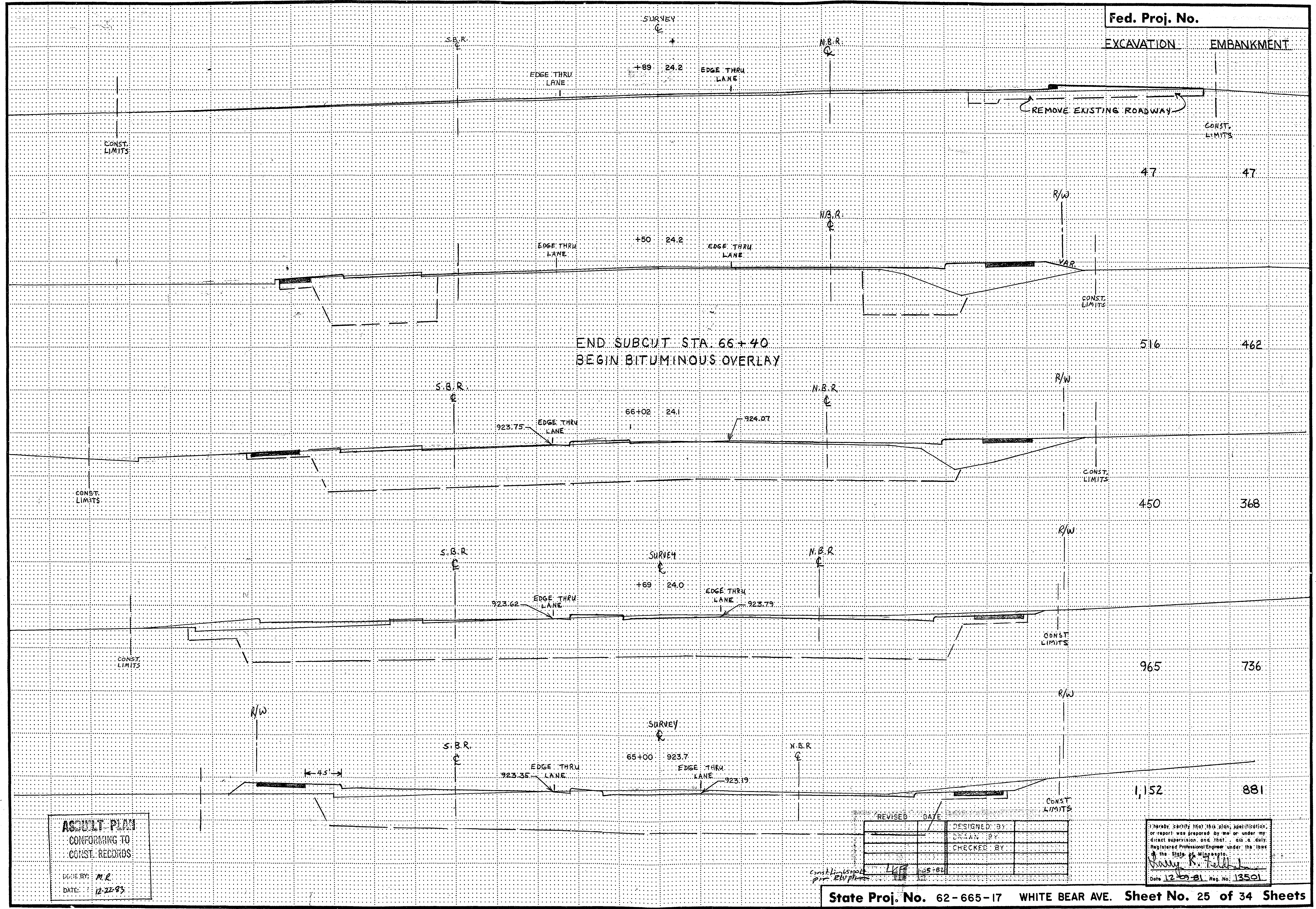
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Date 12-09-01 Reg. No. 13501



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DRAWN BY: M.R.
DATE: 12-22-83

REVISED	DATE	DESIGNED BY
1	10-6-82	LD
		DRAWN BY
		CHECKED BY

691 466
I hereby certify that this plan, specification, or report 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.
Harry K. Feldman
Date 12-07-81 Reg. No. 13501



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DRAWN BY: M.R.
DATE: 12-22-83

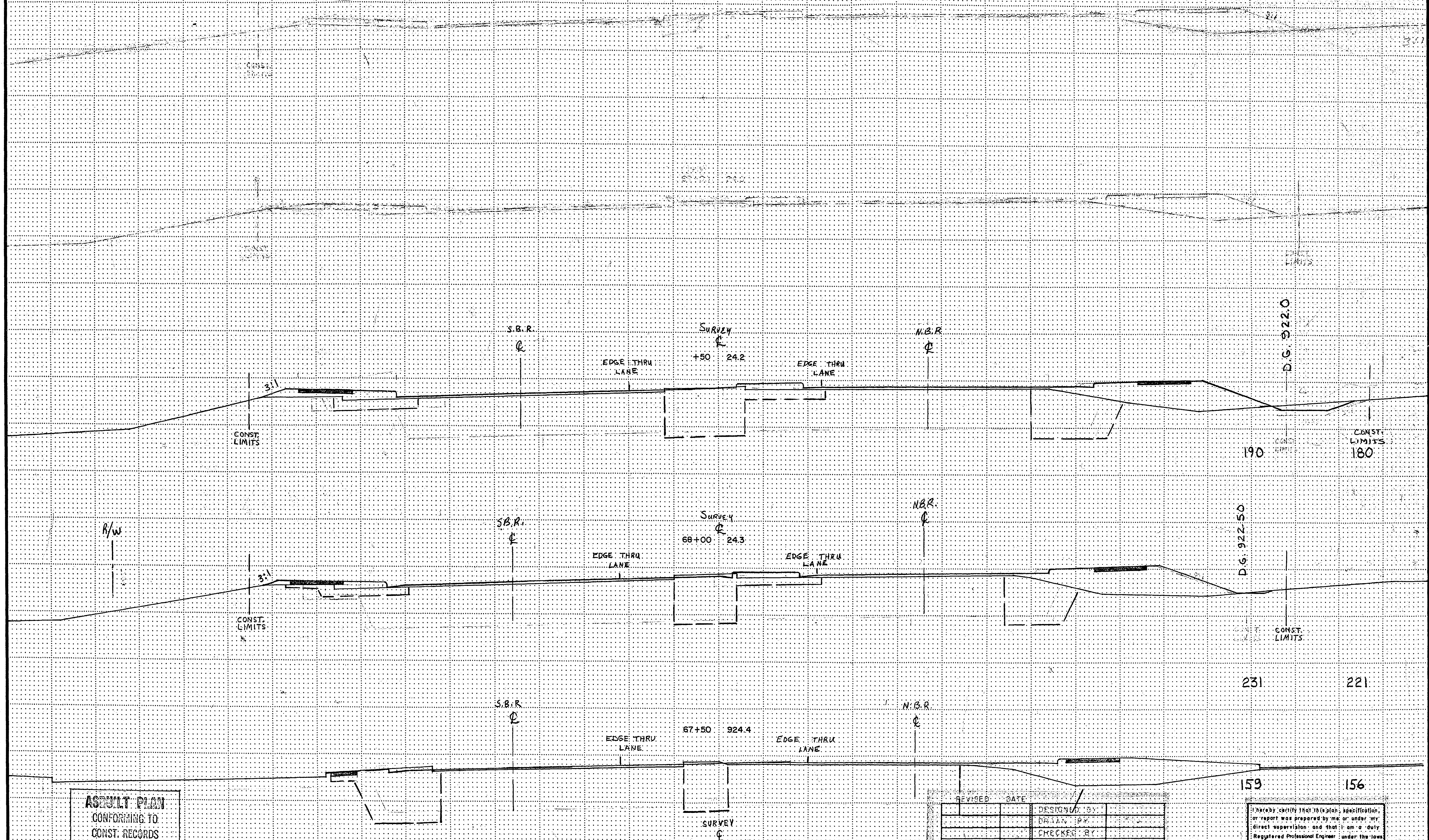
REVISED	DATE	DESIGNED BY
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification, or report 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.

Harry R. Telle
Date 12-29-81 Reg. No. 13501

EXCAVATION

EMBANKMENT



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: *M.R.*
 DATE: *12-22-83*

REVISED	DATE	DESIGNED BY	DRAN	BY	W
		CHECKER BY			

I hereby certify that this plan, specification,
or report 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.
Samuel P. Bell
Date 12-09-81 Reg. No. 13501

Fed. Proj. No.

EXCAVATION EMBANKMENT

TOTAL W.B.A. 21,743 16,940

CONST. LIMITS 252 212

OVERLAY TO MATCH
EXISTING PAVEMENT
AS DIRECTED

END OVERLAY AS
DIRECTED

71+00 922.7

S.B.R.
E

SURVEY
E

70+50 923.3

N.B.R.
E

CONTROL
CABINET

D.G. 922.0

GRADE TO
DRAIN TO
CATCH BASIN

305 217

S.B.R.
E

SURVEY
E

70+00 923.7

N.B.R.
E

S.D. 920.0

D.G. 920.5

310 209

S.B.R.
E

SURVEY
E

69+50 923.8

N.B.R.
E

D.G. 921.0

260 187

S.B.R.
LANE

SURVEY
E

69+00 924.0

N.B.R.
E

D.G. 921.5

215 183

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: M.R.
DATE: 12-22-83

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY

I hereby certify that this plan, specification,
or report 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.
Harry K. Tschopp
Date 12-29-81 Reg. No. 13501

State Proj. No. 62-665-17 WHITE BEAR AVE. Sheet No. 27 of 34 Sheets

Fed. Proj. No.

EXCAVATION

EMBANKMENT

R/W

83+22 26.8

926.66

R/W

ENTRANCE

INPLACE
CONCRETE

C-L

83

53

BEGIN PROJECT STA. 83+00

+63 26.0

82+35 25.5

81+74 924.7

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

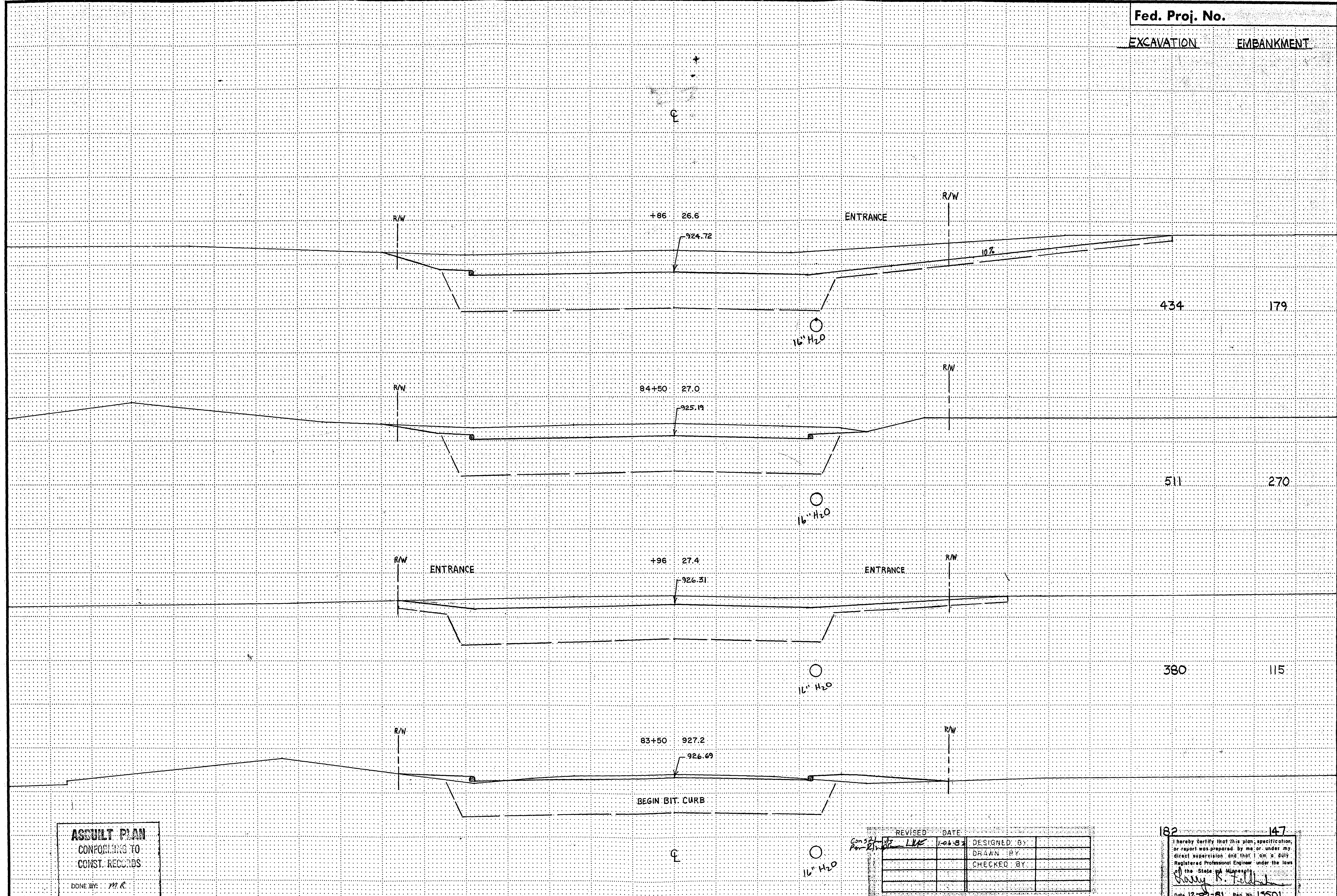
DONE BY: MK
DATE: 12-21-83

REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY

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or report was prepared by me or under my
direct supervision and that I am a duly
Registered Professional Engineer under the laws
of the State of Minnesota.
Date 12-29-81 Reg. No. 13501

State Proj. No. 62-665-17

CO. RD. "B" Sheet No. 28 of 34 Sheets



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: *M.R.*
DATE: *12-22-83*

REVISED	DATE	DESIGNED BY
<i>Cons 27-10-83</i>	<i>LRK</i>	<i>1-24-83</i>
		DRAWN BY
		CHECKED BY

182 147

I hereby certify that this plan, specification, or report 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.

Darryl R. Feldman
Date *12-29-81* Reg. No. *13501*

← E.W.B.A. →
+76 20.79

86+50 20.56

SEE WHITE BEAR AVE. X-SECTIONS
FOR SUBCUTS STA 85+95 to 87+45

97

34

R/W

+89 23.5

921.13

R/W

VAR.

880

308

16" H₂O

R/W

85+34 925.4

922.31

R/W

REVISED DATE

Slopes RT.	12-17-81	DESIGNED BY	
		DRAWN BY	
		CHECKED BY	

732

252

I hereby certify that this plan, specification, or report 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.
Harry K. Feldman
Date 12-28-81 Reg. No. 13501

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: MR
DATE: 12-22-83

Fed. Proj. No.

EXCAVATION EMBANKMENT

TOTAL CO. RD. "B" 4,225 1,991

81 47

380 281

311 211

154 94

921.77±
88+70±
MATCH EXISTING

+52 21.8
921.85

ENTRANCE

88+00 21.9
921.64

+62 22.0
921.26

87+50 R.G. = 921.14

87+45 BEGIN CO. RD. B SUBCUT QUANTITIES

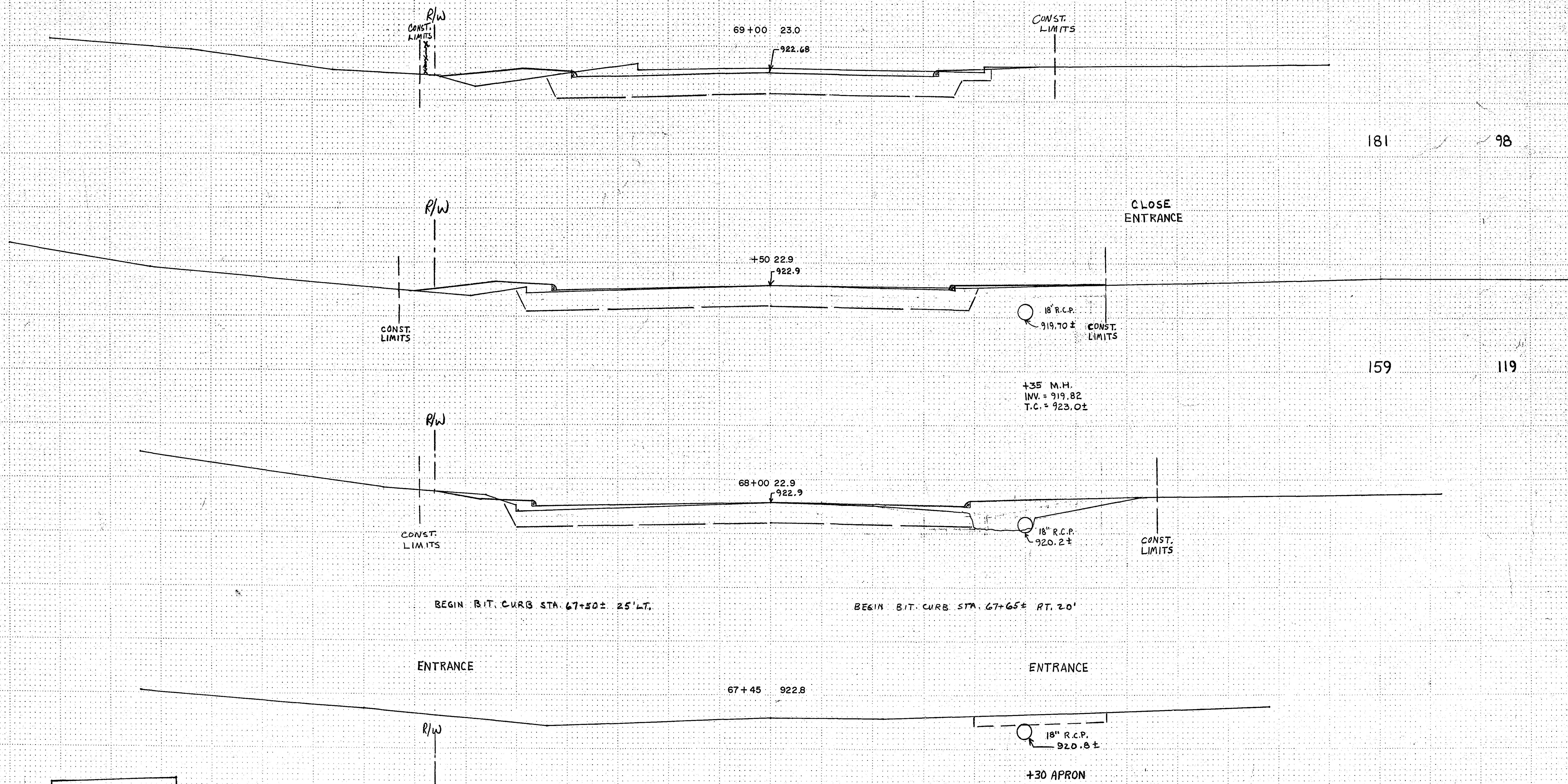
87+02 20.66
NO CHANGE - W.B. AVE.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: *MR*
DATE: *12-22-83*

REVISED	DATE	DESIGNED BY
Const App Per R/W plan	<i>1-16-82</i>	<i>MR</i>
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification,
or report 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 Wisconsin.
Darryl R. Tellepsen
Date *12-22-83* Reg. No. *13501*



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: MR
DATE: 12-22-83

REVISED	DATE	DESIGNED BY
		DRAWN BY
		CHECKED BY

I hereby certify that this plan, specification, or report 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 Missouri.
Date 12-29-81 Reg. No. 13501

EXCAVATION EMBANKMENT

PROJECT TOTAL	26,939	$19,515 \times 130\% =$
		25,370

TOTAL PROSPERITY	971	584
------------------	-----	-----

MATCH
EXISTING

922.61

+85 22.5

REMOVE EXISTING CUL-DE-SAC

125

94

CONST.
LIMITS

CONST.
LIMITS

+48	22.4
	922.42

APRON 118
INV. 919.72

127

93

C.B. 117
T.C. = 921.88 ±

70+00	23.2
-------	------

C.B. 116
TC: 921.88+

32' x 15" R.C.P.

CONST.
LIMITS

CONST
LIMIT:

INV. 919.32

INV: 918.97

168

78

69 + 55	923.6
---------	-------

CONST. LIMITS

CONST.
LIMIT.

**ASBUILT PLAN
CONFORMING TO
CONST. RECORDS**

DONE BY: MR
DATE: 12-22-83

REVISED	DATE	DESIGNED BY	
		DRAWN BY	
		CHECKED BY	

211 102

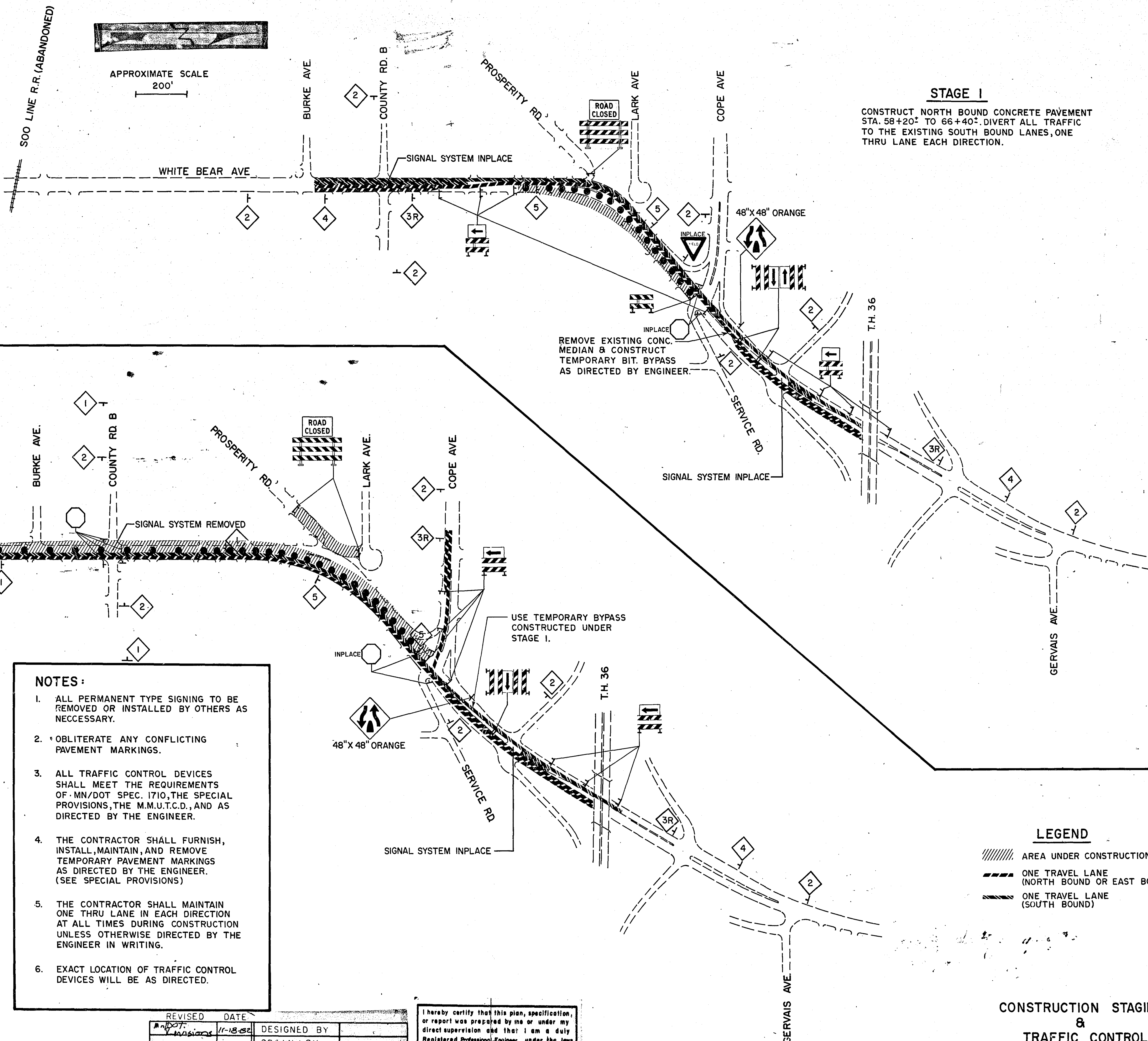
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Larry K. Feldman

Date 12-09-81 Reg. No. 13501

STANDARD SIGN CODES

RI-1 30"X30" MINIMUM INPLACE OR INSTALLED BY RAMSEY COUNTY	STOP
W3-1 48"X48" ORANGE	STOP AHEAD
W20-1 48"X48" ORANGE	ROAD CONSTRUCTION AHEAD
W20-5, R or L 48"X48" ORANGE W13-1 20 MPH 24"X24" ORANGE	LANE CLOSED
W20-6 48"X48" ORANGE W13-1 20 MPH 24"X24" ORANGE	SINGLE LANE AHEAD
W6-3 48"X48" ORANGE	LANE AHEAD
BARRICADE TYPE III WITH ONE FLASHER (8' MINIMUM) W1-6, R or L 48"X24" ORANGE	
BARRICADE TYPE III WITH ONE FLASHER (8' MINIMUM)	
BARRICADE TYPE I WITH ONE STEADY BURN WARNING LIGHT (2' MINIMUM)	



REVISED	DATE	DESIGNED BY	DRAWN BY	CHECKED BY
1	11-18-82			

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Date 12-9-81 Reg. No. 12103

S.P. NO. 62-665-17

Sheet No. 34 of 34 Sheets

STATEMENT OF ESTIMATED QUANTITIES						GROUP 1		GROUP 2		GROUP 3		GROUP 4		GROUP 5		GROUP 6						
ITEM NO.	ITEM	UNIT	ESTIMATED QUANTITIES	FINAL QUANTITIES	UNIT PRICE	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT
2021.501	MOBILIZATION	L.S.	1	1	48,700.00	48,700.00	1.00	48,700.00														
2101.502	CLEARING	TREE	41	50	45.00	2,250.00	50.00	2,250.00														
2101.507	GRUBBING	TREE	39	39	35.00	1,365.00	39.00	1,365.00														
2104.501	REMOVE PIPE SEWERS	L.F.	435	450	8.00	3,600.00			450.00	3,600.00												
2104.501	REMOVE PIPE CULVERTS	L.F.	211	232	5.00	1,160.00	232.00	1,160.00														
2104.501	REMOVE CURB AND GUTTER	L.F.	3395	3,427	1.50	5,140.50	3,427.00	5,140.50														
2104.501	REMOVE CONCRETE CURB	L.F.	607	340	2.00	680.00	340.00	680.00														
2104.501	REMOVE BITUMINOUS CURB	L.F.	785	687	0.50	343.50	687.00	343.50														
2104.503	REMOVE SIDEWALK	S.F.	20	20	1.00	20.00	20.00	20.00														
2104.505	REMOVE CONCRETE PAVEMENT	S.Y.	7470	7,499	3.00	22,497.00	7,499.00	22,497.00														
2104.505	REMOVE CONCRETE MEDIAN	S.Y.	340	437	3.00	1,311.00	437.00	1,311.00														
2104.509	REMOVE MANHOLES AND CATCH BASINS	EACH	7	7	150.00	1,050.00	7.00	1,050.00														
2104.509	REMOVE METAL APRONS	EACH	1	1	25.00	25.00	1.00	25.00														
2102.501	PAVEMENT MARKING REMOVAL	S.F.	1200	0	2.00	0.00	0.00	0.00														
0564.603	4" SOLID LINE YELLOW-REMOVABLE POLYMER PREFORMED	L.F.	8200	6,976	1.35	9,336.60	6,976.00	9,336.60														
2104.521	SALVAGE CHAIN LINK FENCE	L.F.	85	0	2.00	0.00	0.00	0.00														
2104.523	SALVAGE HYDRANT	EACH	3	3	200.00	600.00	3.00	600.00														
2104.523	SALVAGE CASTINGS	EACH	7	0	60.00	0.00	0.00	0.00														
2565.501	FULL TACT T CONTROL SYSTEM A	516 SYS	1	1	50,000.00	50,000.00							1.00	50,000.00								
2565.501	FULL TACT T CONTROL SYSTEM B	516 SYS	1	1	53,750.00	53,750.00							1.00	53,750.00								
2105.501	COMMON EXCAVATION	C.Y.	26939	26,939	1.70	45,796.30	26,939.00	45,796.30														
2105.525	TOPSOIL BORROW (L.V.)	C.Y.	795	989	5.45	5,390.05	989.00	5,390.05														
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM A	SYSTEM	1	1	1,475.00										1.00	1,475.00						
0565.604	EMERGENCY VEHICLE PRE-EMPTION SYSTEM B	SYSTEM	1	1	0.00										1.00	1,200.00						
2130.501	WATER	M. GAL.	100	0	10.00	0.00	0.00	0.00														
2211.501	AGGREGATE BASE CLASS 4	TON	248	250	7.00	1,750.00	250.00	1,750.00														
2211.501	AGGREGATE BASE CLASS 5	TON	6348	5,854	6.00	35,124.00	5,854.00	35,124.00														
2301.502	CONCRETE PAVEMENT STANDARD WIDTH	S.Y.	7547	7,607	5.73	43,588.11	7,607.00	43,588.11														
2301.503	CONCRETE PAVEMENT IRREGULAR WIDTH	S.Y.	2431	2,616	6.38	16,670.08	2,616.00	16,670.08														
2301.511	STRUCTURAL CONCRETE	C.Y.	1984	1,892	44.20	83,626.40	1,892.00	83,626.40														
2301.513	STRUCTURAL CONCRETE HIGH EARLY	C.Y.	109	252	55.00	13,860.00	252.00	13,860.00														
2301.529	REINFORCEMENT BARS	POUND	6339	6,430	0.43	2,764.70	6,430.00	2,764.70														
2301.536	DOWEL BAR ASSEMBLIES	L.F.	580	729	3.35	2,442.15	729.00	2,442.15														
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	188	51.8	100.00	5,180.00	51.80	5,180.00														
2331.510	BINDER COURSE MIXTURE	TON	413	612	18.00	11,016.00	612.00	11,016.00														
2331.514	BASE COURSE MIXTURE	TON	3295	593	7.00	4,151.00	593.00	4,151.00														
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	24	39.4	180.00	7,092.00	39.40	7,092.00														
2341.508	WEARING COURSE MIXTURE	TON	383	759	20.00	15,180.00	20.00	15,180.00														
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	533	637	1.50	955.50	637.00	955.50														
2361.504	ASPHALT CEMENT	TON	17	20.4	180.00	3,672.00	20.40	3,672.00														
2361.508	WEARING COURSE MIXTURE	TON	239	319	30.00	9,570.00	319.00	9,570.00														
2501.515	15" R.C. PIPE APRONS	EACH	3	3	335.00	1,005.00			3.00	1,005.00												
2503.541	15" R.C. PIPE SEWER DESIGN 3006 CLASS IV	L.F.	1341	1,331	29.30	38,998.70			1,331.00	38,998.70												
2503.541	18" R.C. PIPE SEWER DESIGN 3006	L.F.	566	603	33.35	20,110.05			603.00	20,110.05												
2501.515	18" R.C. PIPE APRONS	EACH	1	1	350.00	350.00			1.00	350.00												
2506.506	CONSTRUCT M.H. DESIGN A OR F	L.F.	49.1	57.5	135.00	7,762.50			57.50	7,762.50												
2506.507	CONSTRUCT C.B. DESIGN LP4-4	EACH	2	3	1,000.00	3,000.00			3.00	3,000.00												
2506.507	CONSTRUCT C.B. DESIGN LP4-6	EACH	4	4	1,400.00	5,600.00			4.00	5,600.00												
2506.507	CONSTRUCT C.B. DESIGN LP4-7	EACH	3	3	1,550.00	4,650.00			3.00	4,650.00												
2506.507	CONSTRUCT C.B. DESIGN SPECIAL 2	L.F.	29.5	28.6	155.00	4,433.00			28.60	4,433.00												
2506.522	ADJUST FRAME & RING CASTINGS	EACH	3	4	150.00	600.00	4.00	600.00														
2506.516	CASTING ASSEMBLIES	EACH	19	19	260.00	4,940.00			19.00	4,940.00												
2521.501	4" CONCRETE WALK	S.F.	7775	9,457	1.36	12,861.52	9,457.00	12,861.52														
2531.501	CONCRETE CURB & GUTTER DESIGN B612	L.F.	755	549	4.46	2,448.54	549.00	2,448.54														
2531.501	CONCRETE CURB & GUTTER DESIGN B618	L.F.	369	467	5.27	2,461.09	467.00	2,461.09														
2531.501	CONCRETE CURB & GUTTER DESIGN B624	L.F.	4989	5,770	5.63	32,485.10	5,770.00	32,485.10														
2531.501	CONCRETE CURB & GUTTER DESIGN S524	L.F.	55	92	8.50	782.00	92.00	782.00														
2531.503	CONCRETE MEDIAN	S.Y.	115	136	2.418	3,288.48	136.00	3,288.48														
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S.Y.	773	772	18.38	14,189.36	772.00	14,189.36														
0331.603	SAWING BITUMINOUS PAVEMENT SURFACE	L.F.	300	771	3.00	2,313.00	771.00	2,313.00														
2535.501	BITUMINOUS CURB	L.F.	1128	1,288	2.20	2,833.60	1,288.00	2,833.60														
2571.501	TECHNY ARBORVITAE 4" HI B&B	SHRUB	40	40	50.00	2,000.00	40.00	2,000.00														
2571.502	GREEN ASH 2" CAL B&B	TREE	2	2	100.00	200.00	2.00	200.00														
2571.503	AMUR MAPLE 4" HI BR	TREE	12	12	20.00	240.00	12.00	240.00														
2575.505	SODDING	S.Y.	9538	11,650	0.90	10,485.00	11,650.00	10,485.00														
2575.531	COMMERCIAL FERTILIZER ANALYSIS 12-12-12	TON	0.33	40	350.00	14,000.00	0.40	14,000.00														
0504.602	LOWER WATER SERVICE	EACH	3	8	490.00	3,920.00	8.00	3,920.00														
0504.603	LOWER 16" WATER MAIN	L.F.	300	265	27.50	7,287.50	265.00	7,287.50														
0557.603	INSTALL CHAIN LINK FENCE	L.F.	85	0	5.00	0.00	0.00	0.00														
0301.602	RESEAL CONCRETE PAVEMENT JOINTS	POUND	938	757	0.93	704.01	757.00	704.01														
0301.604	CLEAN AND SAW CONCRETE PAVEMENT JOINTS	L.F.	1659	1,536	0.95	1,459.20	1,536.00	1,459.20														
0301.604	ROUT AND CLEAN CONCRETE PAVEMENT CRACKS	L.F.	177	158	1.60	252.80	158.00	252.80														
0301.604	CLEAN CONCRETE PAVEMENT CRACKS	L.F.	40	0	1.20	0.00	0.00	0.00														
0301.604	SAWING CONCRETE PAVEMENT	L.F.	104	51	5.00	255.00	51.00	255.00														
0301.608	SPECIAL CONCRETE	C.F.	10	8.5	75.00	637.50	8.50	637.50														
0504.605	2" INSULATION	S.Y.	289	53	14.00	742.00	53.00	742.00														
0501.602	TRASHGUARD FOR 15" R.C. APRON	EACH	1	1	250.00	250.00			1.00	250.00												
0501.602	TRASHGUARD FOR 18" R.C. APRON	EACH	1	1	270.00	270.00			1.00	270.00												
0504.602	INSTALL HYDRANT	EACH	3	3	5																	