

BEGIN CITY PROJ. NO. 00-P-1200
 BEGIN S.A.P. 164-020-88, S.A.P. 62-637-16
 ONTARIO ST. (EB STA. 93+51.38)
 (NW SEC. 06-T28N-R22W)

CITY PROJ. NO. S-1896
 S.P. 6201-77
 (EB STA. 102+60.15)

END CITY PROJ. NO. 00-P-1200
 END S.A.P. 164-020-88, S.A.P. 62-637-16
 JACKSON ST. (EB STA. 121+18.79)
 (NE SEC. 06-T28N-R23W)

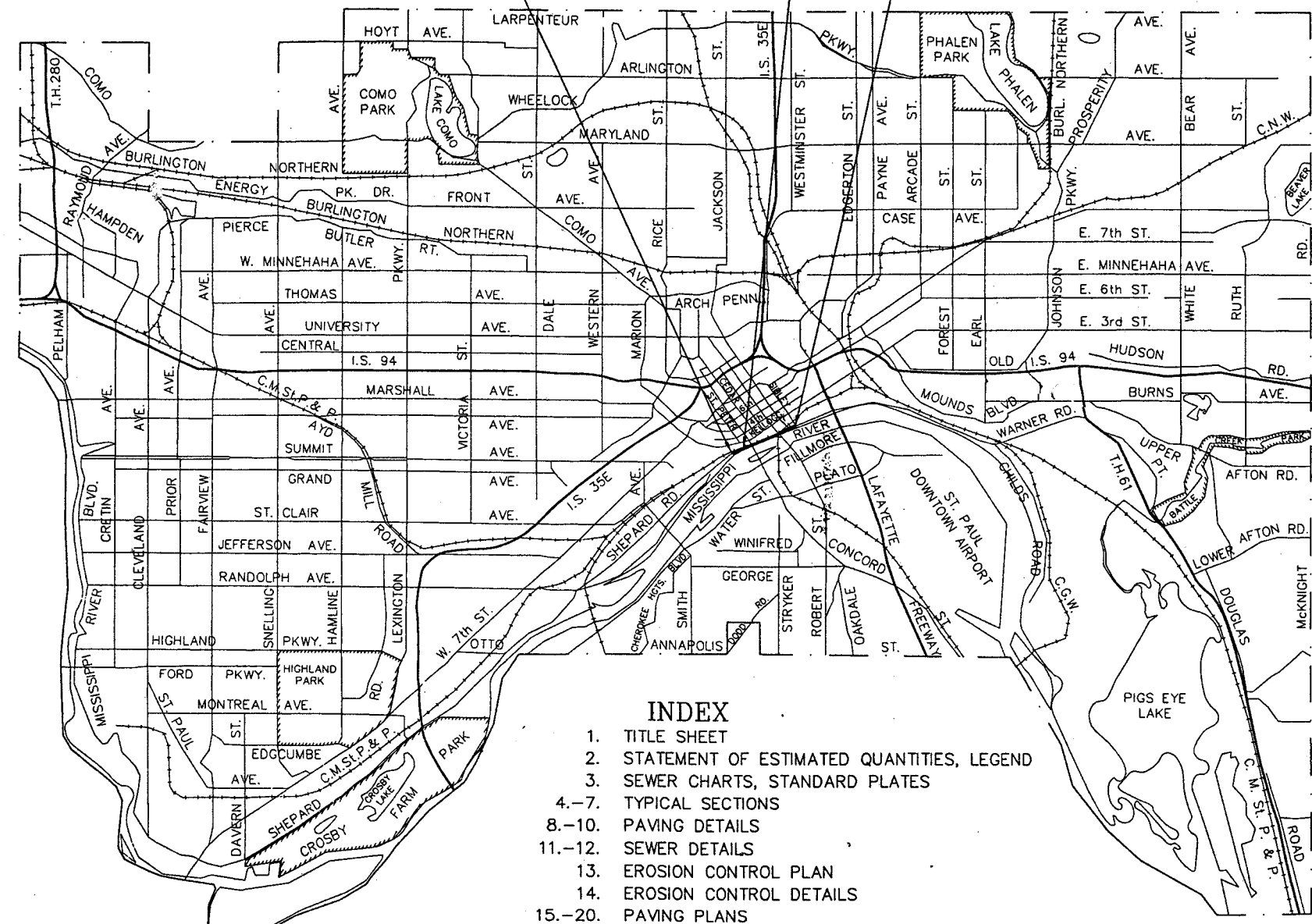
Minn. Proj. No. State Funds

MINNESOTA DEPARTMENT OF TRANSPORTATION
 CITY OF ST. PAUL
 Department of Public Works

CONSTRUCTION PLAN
 for
 SHEPARD ROAD (CSAH 37)
 from
 ONTARIO ST. to JACKSON ST.
 CITY PROJECT NO. 00-P-1200, S-1896
 S.A.P. 164-020-88, S.A.P. 62-637-16, S.P.6201-77

CONCRETE PAVING, STORM SEWER, LANDSCAPING & LIGHTING
 BRIDGE NO. 62596 (PED. BRIDGE), 62597 (SEWER OUTLET)

GROSS LENGTH 2767.41 FEET 0.524 MILES



INDEX

1. TITLE SHEET
2. STATEMENT OF ESTIMATED QUANTITIES, LEGEND
3. SEWER CHARTS, STANDARD PLATES
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- 11.-12. SEWER DETAILS
13. EROSION CONTROL PLAN
14. EROSION CONTROL DETAILS
- 15.-20. PAVING PLANS
- 21.-47. CROSS SECTIONS
- W1.-W45, W19A. SHEET PILE WALL, BRIDGE NO. 62596, 62597
- LT1.-LT8. LIGHTING PLANS
- L1.-L14. LANDSCAPE PLANS
- D1.-D8. DETOUR LAYOUT
- SS1.-SS8. SIGNING AND STRIPING PLANS

DESIGN DESIGNATION

PRESENT ADT (2003)	16,360
PROJECTED ADT (2023)	22,904
MTC BUS ADT (ONE WAY)	00
FUNCTIONAL CLASSIFICATION:	HIGH DENSITY ARTERIAL
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
SOIL FACTOR (K VALUE)	250
N18 FACTOR	4,826,000
DESIGN LOAD (TON)	9
DESIGN SPEED (MPH)	30
STOPPING SIGHT DISTANCE BASED ON:	3.5'
HEIGHT OF EYE & 0.5' HEIGHT OF OBJECT	

APPROVED	<i>Randy H. Fueth</i>	9/10	2002
	Manager, Street Engineering/Construction Division		
APPROVED	<i>Chris A.</i>	9/10	2002
	City Engineer		
APPROVED	<i>Keith N.</i>	9/11	2002
	Ramsey County Engineer		
RECOMMENDED FOR APPROVAL	<i>Matthew S. Moore</i>	9/12	2002
	Metro Division Transportation Engineer		
RECOMMENDED FOR APPROVAL	<i>May daeho</i>	9/12	2002
	Metro Division Water Resources Engineer		
RECOMMENDED FOR APPROVAL	<i>Daniel S. Wray</i>	9/23	2002
	State Bridge Engineer		
RECOMMENDED FOR APPROVAL	<i>R. Swan</i>	9/27	2002
	State Pre-Letting Engineer		
OFFICE OF LAND MANAGEMENT APPROVAL	<i>Alan J. Smith</i>	10/3	2002
	Director, Land Management		
APPROVED	<i>Dellert W. Gerdner</i>	10/3	2002
	State Design Engineer		
RECOMMENDED FOR APPROVAL	<i>Matthew S. Moore</i>	10/2/02	2002
	Metro Assistant Division Engineer - State Aid Reviewed for compliance with state aid rules/policy		
APPROVED FOR STATE AID FUNDING	<i>Matthew S. Moore</i>	10/2/02	2002
	State Aid Engineer		

AGREEMENT NO. 83659
 CITY OF ST. PAUL
 SP 6201-77 (TH 5 = 102)
 STATE FUNDS
 METRO DIVISION

SPECIFICATIONS
 THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

PAVING
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Eric S. Moore
 DATE 9/11/02 LIC. NO. 21229

LIGHTING
 I HEREBY CERTIFY THAT I HAVE REVIEWED THIS PLAN AND THAT I AM A LICENSED MASTER ELECTRICIAN CERTIFIED UNDER THE LAWS OF THE STATE OF MINNESOTA.
Tom Studer
 DATE 9/11/02 LIC. NO. 23988

SEWER
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Joseph J. Muller
 DATE 9/11/02 LIC. NO. 13942

THIS PLAN CONTAINS 131 SHEETS.
 THIS PLAN CONTAINS ADDENDUM NO. 1 REVISED PLAN SHEETS 15, 20, W-6, W-17, W-19, W-21, W-27 THROUGH W-30

NOTE: SEE SHEET 3 FOR VARIANCES.

	DESIGNED	JE	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS SHEPARD ROAD	PROJECT:	00-P-1200	STATE AID PROJECT NUMBERS:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
	DRAWN	MW		DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/SHTITLE3.DWG
	APPROVED	JE		DWG. NO.:	1400	DATE:	9/10/02

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THE FOLLOWING STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

ST. PAUL DRG. NO.	MnDOT DRG. NO.	STANDARD DETAIL
1304B		SIGN COLLAR PLACEMENT
2007C		CATCH BASIN-DESIGN TYPE 3C
2015E		CATCH BASIN-DESIGN TYPE 7A
2101B		MANHOLE-DESIGN TYPE I
2104C		MANHOLE-TYPE IV
2201C		FRAME CASTING 'A'
2202B		COVER CASTINGS B, & D
2207B		MANHOLE ADAPTOR RING
2301B		OUTSIDE DROP
2308B		CONSTRUCTION JOINT
2309B		CATCH BASIN CONNECTION
2317B		TYPES OF TRENCH BEDDING
3000A		CONCRETE CURB
3001A		BITUMINOUS CURB
3002A		BITUMINOUS CURB OPENING FOR DRIVEWAYS
TEXT		GUIDE FOR PED. RAMP CONSTRUCTION
3004B,5B,6B		PEDESTRIAN CURB RAMP
3100B		CONCRETE CURB AND GUTTER
4031B		BARRICADE DESIGNS
4032A		BARRICADING FOR STREET CLOSURE
4035A		WARNING LIGHTS AND CHANNELIZING DEVICES
5004A		332 CONTROLLER CABINET FOUNDATION
5007B		STREET LIGHTING FEED CABINET
5008C		LIGHT STANDARD FOOTING DETAIL
5009		UNDERGROUND ELECTRICAL CONDUIT PLACEMENT
	1070L	REINFORCED PANEL
	1103J	TYPICAL DOWEL BAR ASSEMBLY
	1141D	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION
	3000L	REINFORCED CONCRETE PIPE
	3006G	GASKET JOINT FOR REINFORCED CONCRETE PIPE
	3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
	3133C	RIPRAP AT RCP OUTLETS
	3145E	CONCRETE PIPE TIES
	8000	STANDARD BARRICADES
	8110D	TRAFFIC SIGNAL BRACKETING
	8111C	TRAFFIC SIGNAL BRACKETING
	8112C	PEDESTAL FOUNDATION
	8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
	8120K	POLE FOUNDATION
	8121D	TRANSFORMER BASE AND POLE BASE PLATE
	8122C	PEDESTAL AND PEDESTAL BASE
	8123E	POLE AND MASTARM
	8124E	MAST AND SIGNAL MOUNTS
	8126F	POLE FOUNDATION

EXISTING SEWERS

SHEET	STR NO.	STATION	LT.	RT.	AS IS	REM CB	ADJ MH	RECONST. MH
SHEET 15								
	1	EBL 88+71.35		91.41	X			
	2	EBL 88+51.57		109.49	X			
	3	EBL 88+55.67		130.7	X			
	4	EBL 88+58.42		153.68	X			
	5	EBL 88+61.48		172.74	X			
	6	EBL 88+69.66		219.87	X			
	7	EBL 89+41.95		97.59	X			
	8	EBL 91+37.60		80.92			X	RAISE 5'
	9	EBL 91+45.75		122.67	X			
	10	EBL 91+54.68		168.28	X			
	11	EBL 92+75.86		46.87			X	RAISE 5'
	12	EBL 93+20.65		46.54			X	RAISE 5'
	13	EBL 94+66.48		21.52			X	
	14	EBL 94+73.24		58.34		X		
	15	EBL 94+83.15		103.83	X			
	16	WBL 95+35.58	23.63			X		
	17	WBL 95+35.46		11.63		X		
	18	EBL 94+97.93	11.27			X		
	19	EBL 94+97.57		13.48		X		
	20	WBL 97+06.19	26.62		X			
	21	EBL 98+26.99		22.36		X		
SHEET 16								
	22	WBL 100+61.52	7.42			X		
	23	EBL 100+17.83		7.37		X		
	24	WBL 102+52.47	4.35			X		
	25	EBL 102+07.31		10.77		X		
	26	WBL 104+38.81	6.04			X		
	27	EBL 103+94.06		8.21		X		
	28	EBL 105+64.47		4.28		X		
	29	WBL 106+49.97	10.44			X		
	30	EBL 106+05.21		3.81		X		
	31	WBL 108+37.58	10.85			X		
	32	EBL 107+93.64		3.73		X		
	33	WBL 110+41.99	12.89			X		
	34	EBL 109+96.92		1.11		X		
	35	EBL 110+26.66	3.55				X	
SHEET 17								
	36	WBL 112+31.79	12.37			X		
	37	EBL 111+89.70		2.75		X		
	38	WBL 114+25.66	8.58			X		
	39	EBL 113+85.17		7.14		X		
	40	EBL 113+89.24		4.7			X	
	41	WBL 118+13.99	11.43			X		
	42	WBL 118+17.10		6.19			X	
	43	EBL 117+77.66		11.59			X	
	44	WBL 122+29.30	35.22		X			
	45	WBL 122+25.92	4.35				X	

STORM SEWER CONSTRUCTION

SHEET	STR NO.	Station	LT.	RT.	MH	CB	LENGTH (I.F.)	SIZE (IN.)	TYPE
SHEET 15									
	15	EBL 94+83.15		103.83		INPLACE	45	12	RCP
	100	WBL 96+80.04	16.05			7A	10	12	RCP
	101	WBL 96+90.00	15.45			7A	23	15	RCP
	102	WBL 96+79.97		12		7A	10	12	RCP
	103	WBL 96+90.00		12		7A	29	15	RCP
	104	EBL 96+46.08	12			7A	10	12	RCP
	105	EBL 96+56.04	12			7A	11	15	RCP
	106	EBL 96+45.91 *1		13		7A	10	12	RCP
	107	EBL 96+55.96 *1		13		7A	20	15	RCP
	108	EBL 96+66.00		13		7A	10	12	RCP
	109	EBL 96+66.00	6		TYPE IV		29	18	RCP
	110	EBL 96+95.17	6		TYPE III				
SHEET 16									
	111	WBL 102+74.00	13			7A	10	12	RCP
	112	WBL 102+84.00	13			7A	21	12	DIP
	113	WBL 102+84.00		12		7A	10	15	RCP
	114	EBL 102+40.00	12			7A	22	16	DIP
	115	EBL 102+20.00		13		7A	11	12	RCP
	116	EBL 102+30.00		17	TYPE IV		28	24	RCP
	117	EBL 102+40.00		13		7A	11	12	RCP
	118	WBL 111+00.17	13			7A	21	12	DIP
	119	WBL 111+00.14		12		7A	33	15	RCP
	120	EBL 110+55.92	12			7A	30	15	RCP
	121	EBL 110+46		13		7A	10	12	RCP
	122	EBL 110+55.87		13		7A	21	12	DIP
		EBL 110+27.48 *2				CEDAR ST. OUTLET	23	48	RCP
	123	WBL 111+10	13			7A	10	12	RCP
	124	WBL 111+10		12		7A	10	12	RCP
	125	EBL 110+66	12			7A	10	12	RCP
	126	EBL 110+66		13		7A	10	12	RCP
SHEET 17									
		EBL 113+88.00 *2				MINNESOTA ST. OUTLET	24	48	RCP
	127	WBL 117+95.00	10.88			7A	10	12	RCP
	128	WBL 117+95.00		11.65		7A	10	12	RCP
	129	EBL 117+68	10.59			7A	10	12	RCP
	130	EBL 117+58		11.13		7A	10	12	RCP
	131	EBL 117+68		11.13		7A	10	12	RCP
	132	WBL 118+05.00	11.16			7A	20	15	RCP
	133	WBL 118+05.00		11.17		7A	13	16	DIP
	134	EBL 117+77.85	11.02			7A	13	18	RCP
	135	EBL 117+77.87		11.03		7A	18	15	RCP
	136	EBL 117+88		11.03		7A	10	12	RCP
	137	WBL 118+75.09		4.5	TYPE V-S				

*1 SEE NOTE ON SHEET NO. 15

*2 EST. STATION. ACTUAL STATION TO BE DETERMINED IN THE FIELD.

EARTHWORK SUMMARY

(C.V. - E.V.)				
EXCAVATION	COMMON EXCAVATION	5,925	SUITABLE	5,176
14,732	SUBGRADE EXCAVATION	8,807	OTHER	9,556

(C.V. - E.V.)			
EMBANKMENT	SELECT NON GRANULAR MATERIAL	4,313	
26,932	SELECT GRANULAR BORROW MODIFIED	20,787	
	TOPSOIL BORROW	1,832	

THIS PROJECT WAS GRANTED A VARIANCE ON SEPTEMBER 30, 2002 FROM MINNESOTA RULE 8820.9936, SO AS TO PERMIT AN 11' WIDE TRAFFIC LANES WITH 1' WIDE CURB REACTION DISTANCE ADJACENT TO THE MEDIAN AND 2' WIDE CURB REACTION DISTANCE ADJACENT TO THE OUTSIDE CURB LINE. IT IS PROPOSED TO CONSTRUCT 11' WIDE TRAFFIC LANES WITH 0' WIDE CURB REACTION DISTANCE ADJACENT TO THE MEDIAN AND 0' WIDE CURB REACTION DISTANCE ADJACENT TO THE OUTSIDE CURB LINES ON THE EASTERLY 550' SEGMENT OF THE PROJECT.

THIS PROJECT WAS GRANTED A VARIANCE ON SEPTEMBER 30, 2002 FROM MINNESOTA RULE 8820.9995, AS TO PERMIT AN 8' WIDE OFF ROAD BICYCLE PATH WITH 2' WIDE SHOULDER/CLEAR ZONE DISTANCE. IT IS PROPOSED TO CONSTRUCT AN 8' WIDE OFF ROAD BICYCLE PATH WITH A 0' WIDE SHOULDER/CLEAR ZONE DISTANCE ON THE EASTERLY 350' SEGMENT OF THE PROJECT.

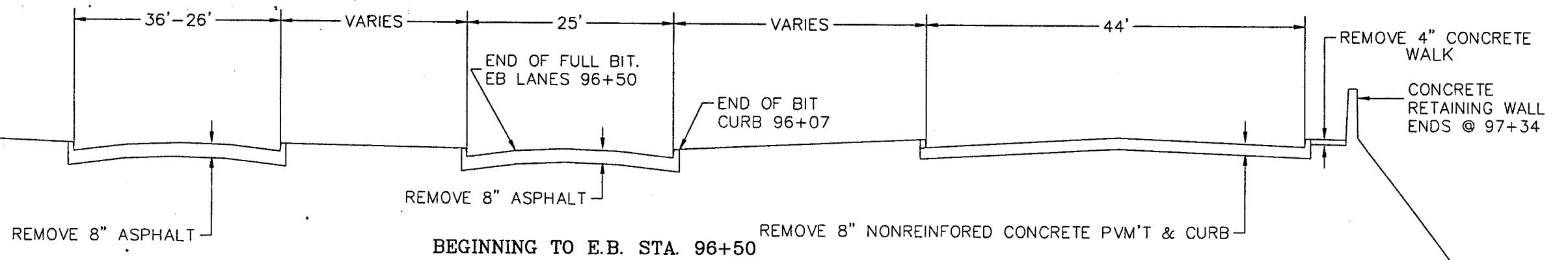
THIS PROJECT WAS GRANTED A VARIANCE ON SEPTEMBER 30, 2002 FROM MINNESOTA RULE 8820.9995, SO AS TO PERMIT AN OFF ROAD BICYCLE PATH BE DESIGNED TO CONFORM TO A 20 MILES PER HOUR DESIGN SPEED. IT IS PROPOSED TO CONSTRUCT THE OFF ROAD BICYCLE PATH IN THE VICINITY OF THE ROBERT STREET BRIDGE TO CONFORM TO A 10 MILES PER HOUR HORIZONTAL DESIGN SPEED.

28-29

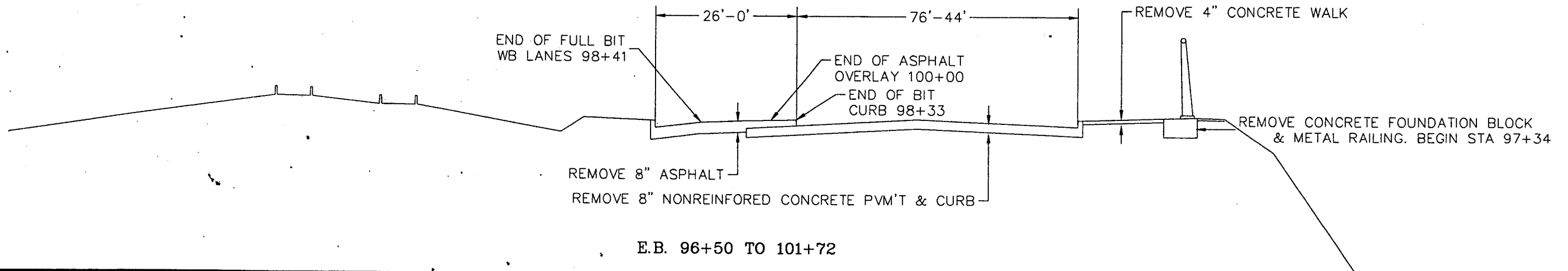
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	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS <h2 style="text-align: center;">SHEPARD ROAD</h2>	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)	
	DRAWN	MW			DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/CHARTS.DWG	
	APPROVED	BE			DWG. NO.	1400	DATE:	9/11/02	SHEET NO.

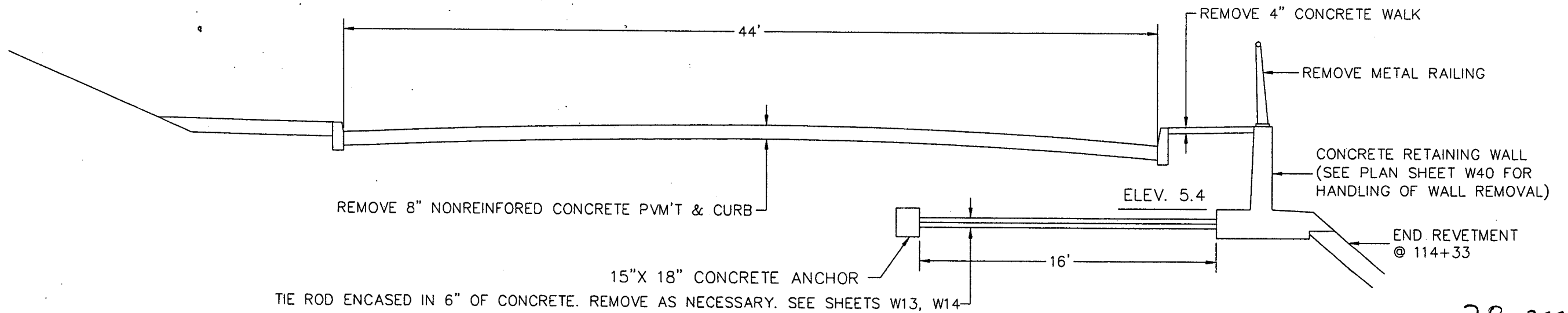
EXISTING SECTIONS



BEGINNING TO E.B. STA. 96+50



E.B. 96+50 TO 101+72



TIE ROD ENCASED IN 6" OF CONCRETE. REMOVE AS NECESSARY. SEE SHEETS W13, W14

E.B. 101+72 TO 115+97

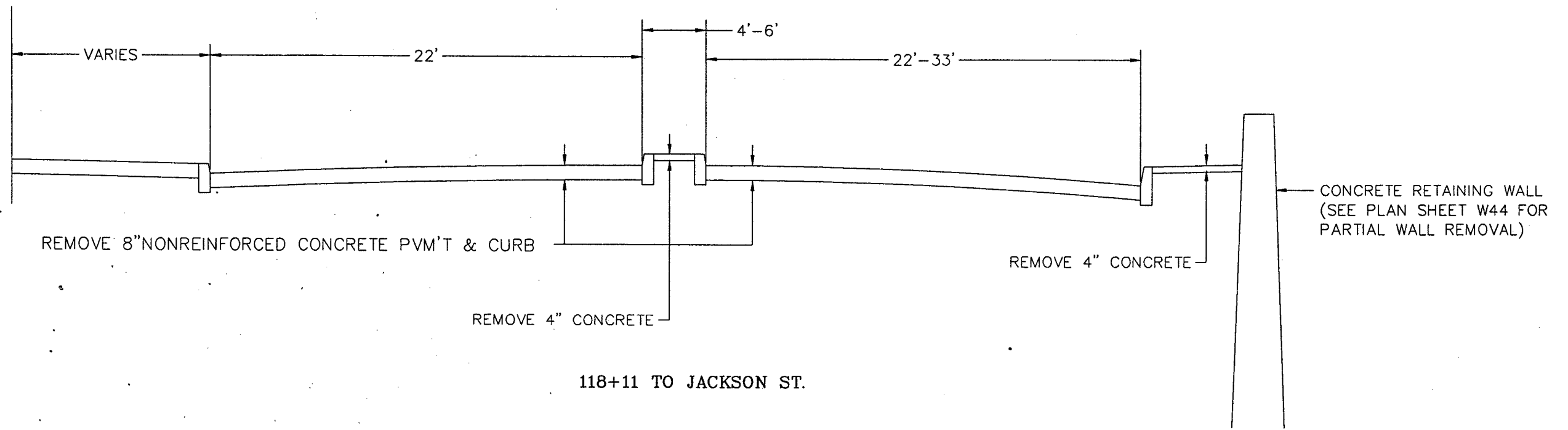
28-299

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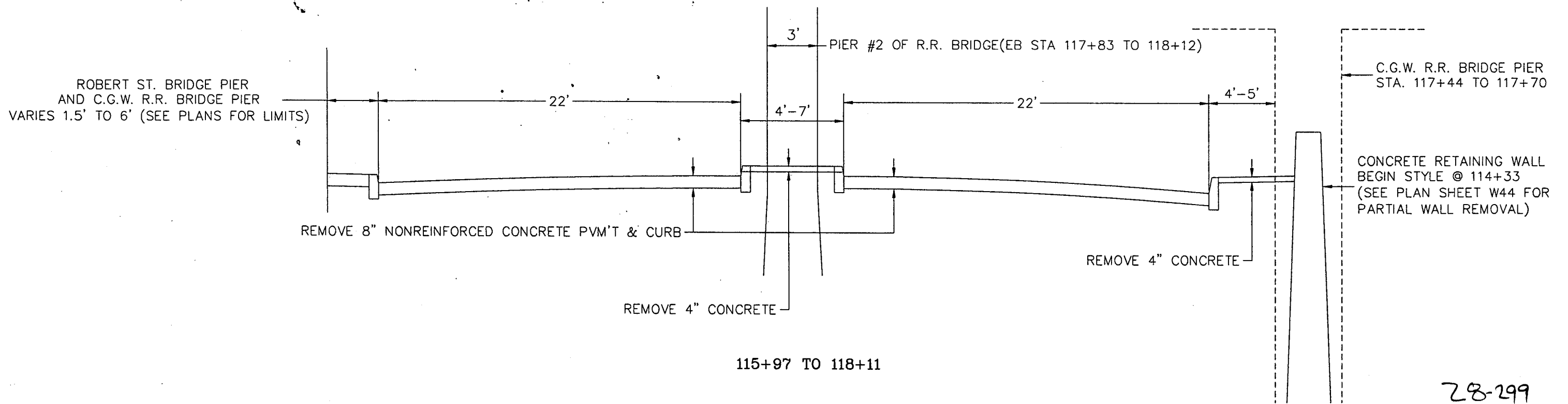
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	DRAWN	MW			DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/SHEP-TYP1
	APPROVED	BE			DWG. NO.	1400	DATE:	9/06/02

SHEPARD ROAD

EXISTING SECTIONS



118+11 TO JACKSON ST.



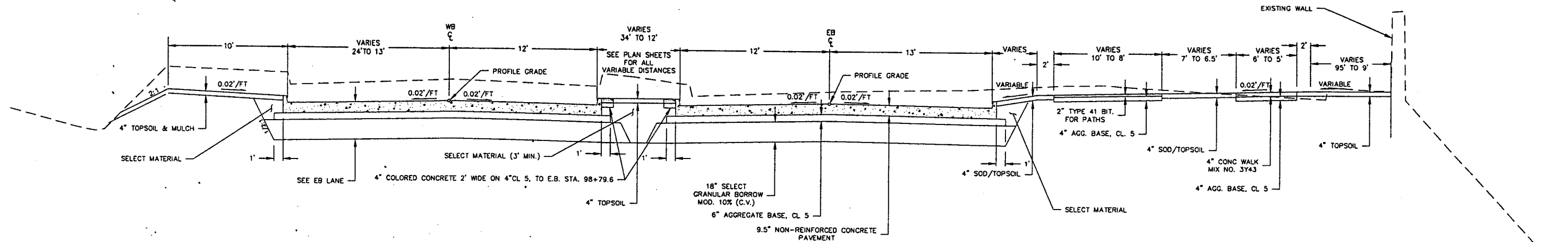
115+97 TO 118+11

28-299

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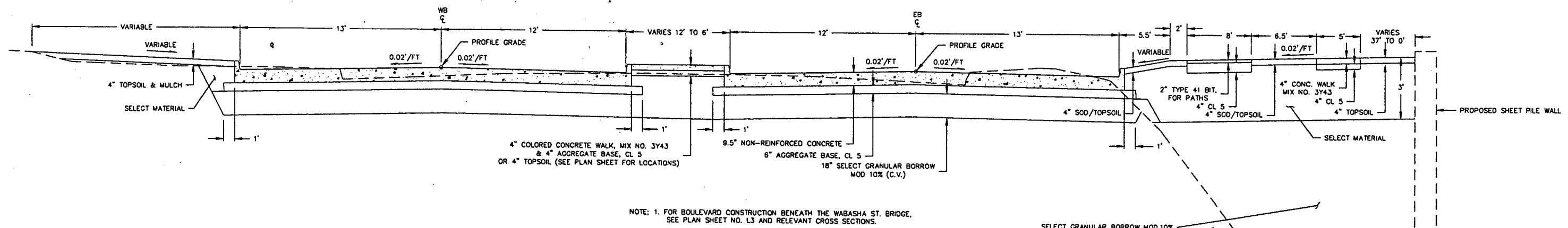
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)		
	DRAWN	MW			DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/SHEP-TYP2		
	APPROVED	BE			Signed		Date:	9/10/2002	Reg. No.	21229
<h2>SHEPARD ROAD</h2>					DWG. NO.	1400	DATE:	9/06/02	SHEET NO.	5 OF 47 SHEETS

PROPOSED TYPICAL SECTIONS



BEGINNING TO E.B. STA. 97+34.00

NOTES:
 1. CONSTRUCT 86 INTEGRANT CURB.
 2. PAVEMENT SLOPE TO BE .02' UNLESS OTHERWISE INDICATED BY ADDITIONAL PROFILES.



STA. E.B. 97+34.00 TO 107+17.65

NOTE: 1. FOR BOULEVARD CONSTRUCTION BENEATH THE WABASHA ST. BRIDGE, SEE PLAN SHEET NO. L3 AND RELEVANT CROSS SECTIONS.

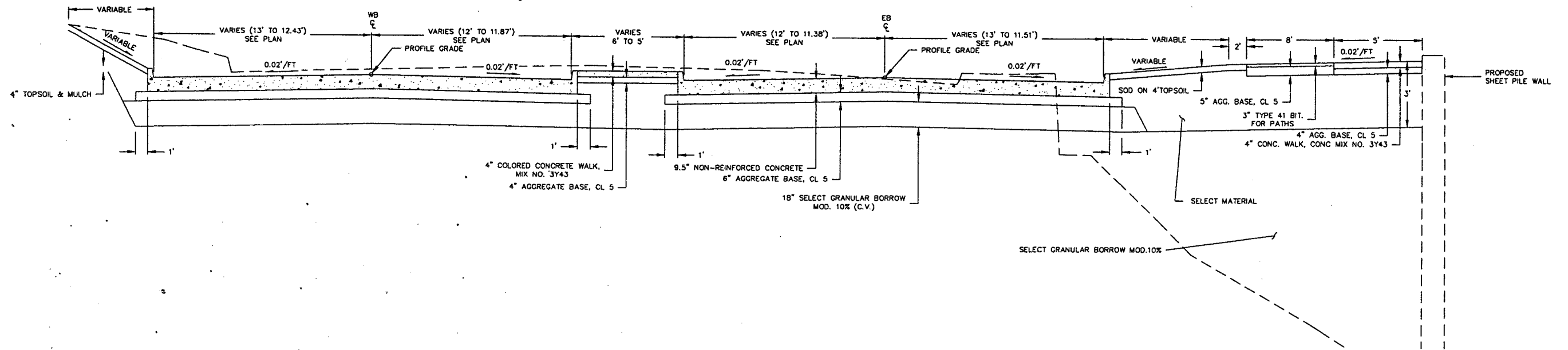
28-299

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	DESIGNED	JE	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	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT: 00-P-1200	STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
	DRAWN	MW			DRAWER: 12	CAD NAME: PLANSHEETS/PHASE3/SHEP-TYP3
	APPROVED	BE			Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229	DWG. NO. 1400 DATE: 9/06/02 SHEET NO. 6 OF 47 SHEETS

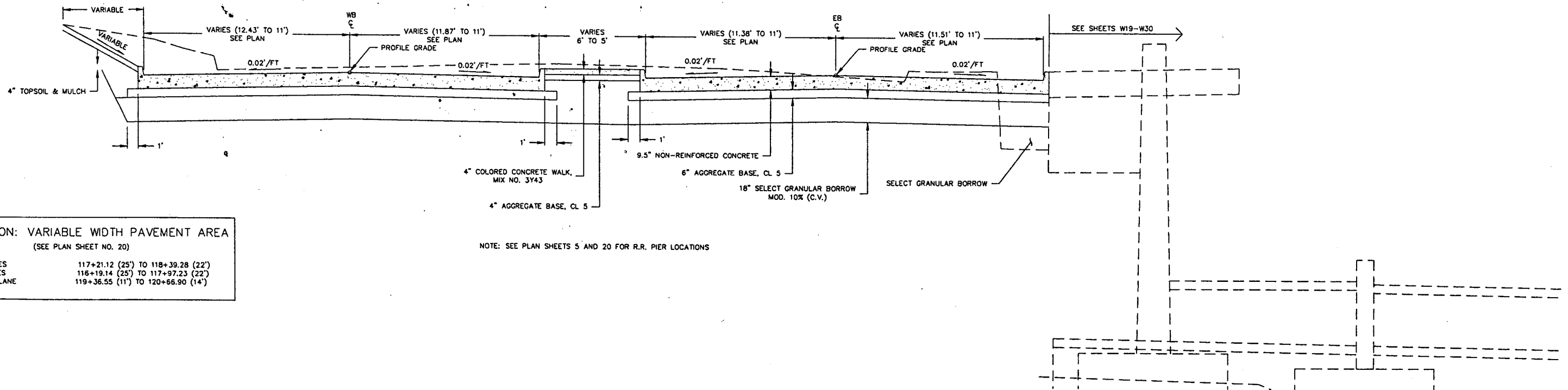
SHEPARD ROAD

PROPOSED TYPICAL SECTIONS



E.B. STA. 107+17.65 TO 117+18.52

NOTES:
 1. CONSTRUCT B6 INTEGRANT CURB.
 2. PAVEMENT SLOPE TO BE .02' UNLESS OTHERWISE INDICATED BY ADDITIONAL PROFILES.



ATTENTION: VARIABLE WIDTH PAVEMENT AREA
 (SEE PLAN SHEET NO. 20)

WB LANES	117+21.12 (25') TO 118+39.28 (22')
EB LANES	116+19.14 (25') TO 117+97.23 (22')
EB RT. LANE	119+36.55 (11') TO 120+66.90 (14')

NOTE: SEE PLAN SHEETS 5 AND 20 FOR R.R. PIER LOCATIONS

E.B. STA. 117+18.52 TO 121+18.79

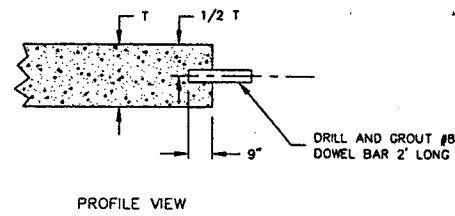
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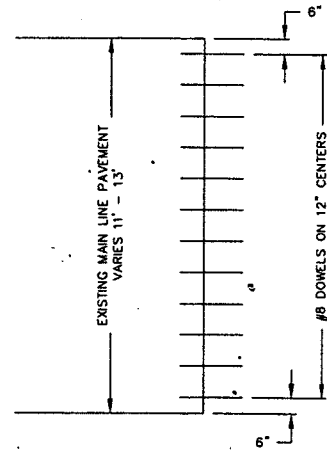
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	DRAWN	MW			DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/SHEP-TYP4		
	APPROVED	BE			Signed <i>[Signature]</i>	Date: 9/10/2002	Reg. No. 21229	DWC. NO.	1400	DATE:

SHEPARD ROAD

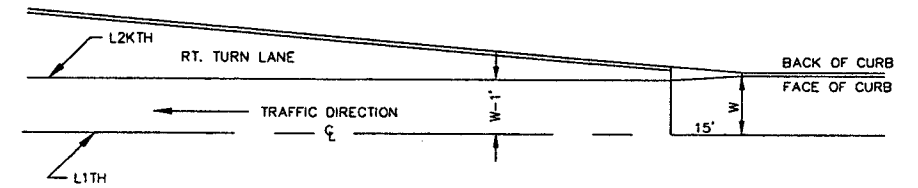
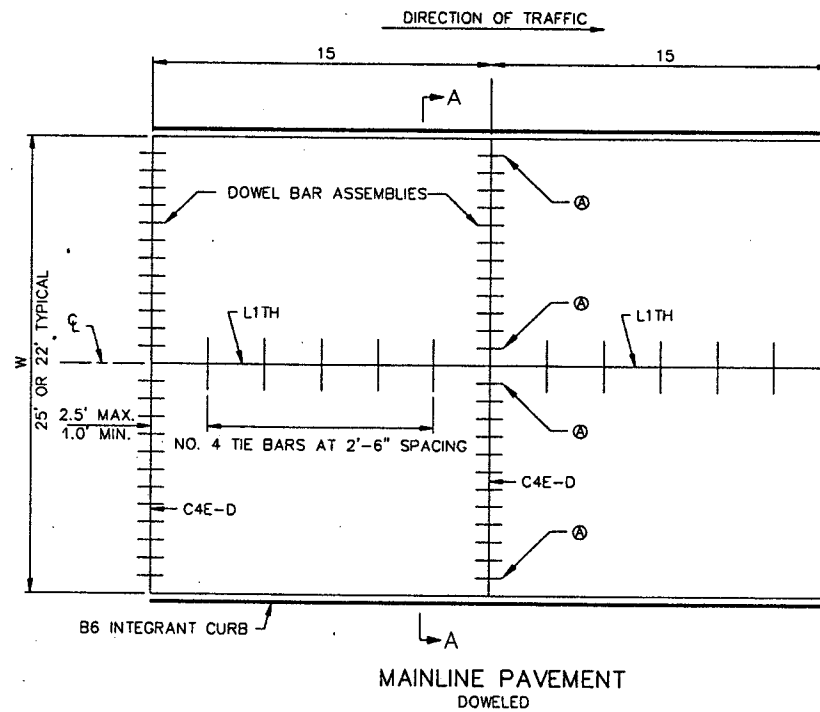
NOTE: SEE SHEET 9 FOR DOWEL BAR DIAMETER.
SEE STANDARD PLATE 1103J FOR ASSEMBLY POSITIONING RELATIVE TO LANE WIDTH.



PROFILE VIEW



PLAN VIEW
DOWEL BAR RETROFIT DETAIL



JOINTING AT START OF AUXILIARY LANE

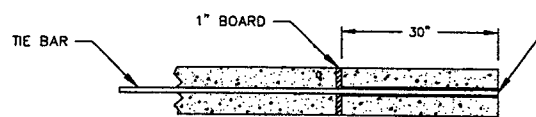
WB CONTRACTION JOINT

93+90.33 TO 95+55.33	= 11 PANELS @ 15'
95+55.33 TO 95+71.23	= 1 PANEL @ 15.9'
95+71.23 TO 97+21.23	= 10 PANELS @ 15'
97+21.23 TO 97+35.27	= 1 PANEL @ 14.04'
97+35.27 TO 116+55.27	= 128 PANELS @ 15'
116+55.27 TO 117+21.12	= 4 PANELS @ 16.46'
117+21.12 TO 118+39.28	= 8 PANELS @ 14.77'
118+39.28 TO 121+54.28	= 21 PANELS @ 15'
121+54.28 TO 122+07.49	= 3 PANELS @ 17.74'
122+07.49 TO 122+42.80	= 2 PANELS @ 17.66'

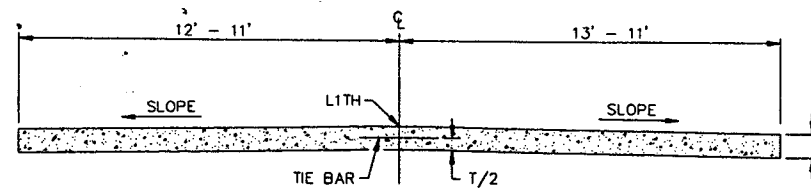
EB CONTRACTION JOINT

93+51.30 TO 115+71.30	= 148 PANELS @ 15'
115+71.30 TO 116+19.14	= 3 PANELS @ 15.95'
116+19.14 TO 117+69.14	= 10 PANELS @ 15'
117+69.14 TO 117+97.23	= 2 PANELS @ 14.05'
117+97.23 TO 118+87.23	= 6 PANELS @ 15'
118+87.23 TO 119+36.55	= 3 PANELS @ 16.44'
119+36.55 TO 121+01.55	= 11 PANELS @ 15'
121+01.55 TO 121+18.79	= 1 PANEL @ 17.24'

EXTEND ALL TIE BARS INTO THE TERMINAL HEADER. COVER WITH 1 IN. I.D. METAL OR RIGID PLASTIC TUBING WITH THE EXCEPTION OF THE TIE BARS AT THE EDGE OF THE SLAB AND ADJACENT TO LONGITUDINAL JOINTS. THESE EXCEPTIONS ARE MARKED ⊗ IN THE PLAN VIEW.



TEMPORARY TERMINAL HEADER



SECTION A-A

GENERAL NOTES:

- 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: THE FIRST OR LAST JOINTS SHALL BE DOWELED CONTRACTION JOINTS, C4E-D.
- DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103J.
- ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 420 FOR AASHTO M-31 OR M-53.
- TIE BARS:
USE NO. 4 BARS 2.5 FT LONG, AT 30" ϕ SPACING.
NO MORE THAN TWO LANES SHALL BE PAVED AT THE SAME TIME.

NOTE: ALL DIMENSIONS ARE IN FEET, EXCEPT AS NOTED.

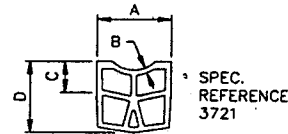
28-299

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	DESIGNED	JE	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	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5=102)
	DRAWN	MW			DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/DET-JOINTS1
	APPROVED	BE			DWG. NO.	1400	DATE:	9/06/02
Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229			<h1>SHEPARD ROAD</h1>					

REQUIRED DIMENSIONS

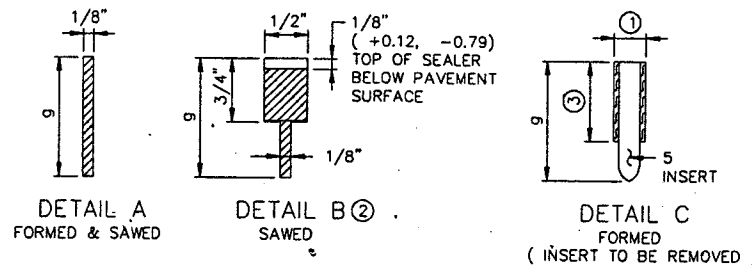
JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	7/8"
A	3/4" +1/8" -1/16"
B	5/8" +1/64"
C	5/8" MIN.
D	3/4" MIN.
WEB AND WALL THICKNESS, UNLESS NOTED	1/32" MIN.



TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

CONTRACTION JOINT SEALER
PREFORMED ELASTIC TYPE

NOTES:
"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 1/8", NOR MORE THAN 1/4" BELOW THE PAVEMENT SURFACE.
SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.

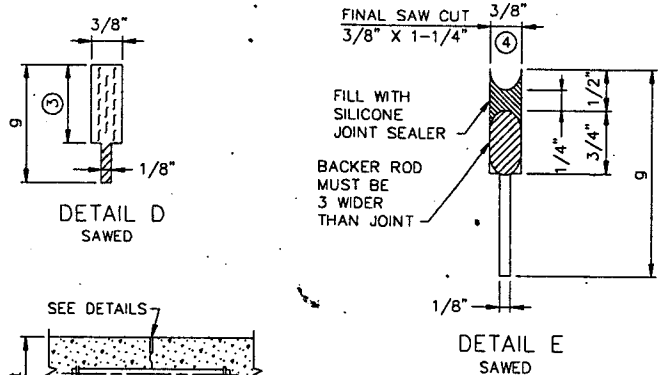


CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2B	C2B-D	B	3720
C2X	C2X-D	B OR C	3720
C30	C30-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	POLYMERIC

CONTRACTION JOINT DEPTH & DOWEL BAR TABLE ⑤

PAVEMENT THICKNESS t	CONCRETE BASE JOINT DEPTH g	DOWEL BAR DIAMETER
6"-6-1/4"	1-1/4"	1"
6-1/2"-10-1/2"	2"	1-1/4"
10-5/8"-12-1/2"	-	1-1/2"
12-3/4"-14"	-	1-3/4"



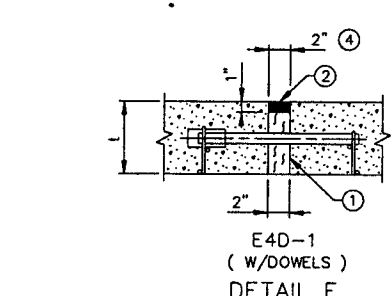
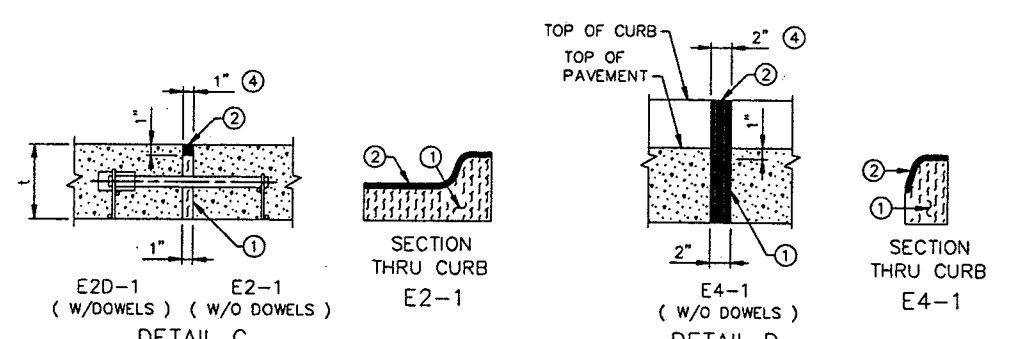
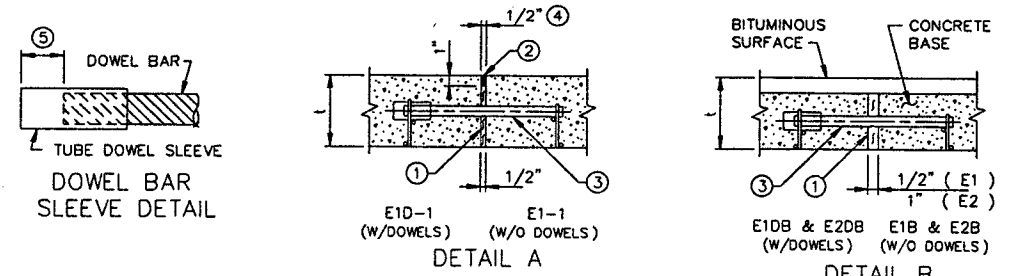
LEGEND
C = CONTRACTION JOINT
NO. = SEALANT TYPE
1 = UNSEALED
2 = 3720
3 = 3721
4 = MOISTURE CURED POLYMERIC
LETTER = DETAIL
X = MORE THAN 1 DETAIL
-D = DOWEL BARS

NOTES:
① DESIGN C3X OR C3X-D -PRIOR TO INSTALLING PREFORMED JOINT SEALER IN THE FORMED JOINT (DETAIL C), THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 3/8" BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT.
DESIGN C2X OR C2X-D -PRIOR TO SEALING FORMED JOINT (DETAIL C), WITH HOT POUR SEALER, THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH WIDTH OF 5/8" FOR A DEPTH OF 3/4", + 1/8", -1/16". BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT. THE SEALER SHALL BE FILLED TO THE SAME DEPTH AS SHOWN IN DETAIL B.
② DESIGN C2B OR C2B-D -PRIOR TO SEALING FORMED JOINT (DETAIL B) WITH HOT POUR JOINT SEALER, A STRIP OF PAPER 5/8" WIDE SHALL BE PLACED ON THE BOTTOM OF THE 5/8" WIDE JOINT.
③ WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH.
④ THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. POLYMERIC SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".
⑤ FOR UNBONDED OVERLAYS, THE JOINT DEPTH "g" SHALL BE 1/3. FOR CONCRETE PAVEMENT, THE JOINT DEPTH "g" SHALL BE 1/4.

CONTRACTION JOINT NOTES:
IN CONCRETE BASE CONSTRUCTION THE CONTRACTION JOINTS SHALL BE SPACED AT 30 FT INTERVALS AND AT RIGHT ANGLES TO THE LONGITUDINAL JOINTS, EXCEPT AS NOTED BELOW. WHERE THE 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 FT, NOR MORE THAN 30 FT. JOINT WIDTH TOLERANCES: + 1/16" AND - 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, 5-297.216 & .219.
SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

CONTRACTION JOINTS
DESIGN C



EXPANSION JOINTS

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	②
E1DB	E1B	B	UNSEALED
E2D-1	E2-1	C	②
E2DB	E2B	B	UNSEALED
E4D-1	E4-1	D	②
		E	②

LEGEND
E = EXPANSION JOINT
NO. = JOINT REFERENCE
-1 = HOT POURED SEAL ②
D = DOWEL BARS
B = CONCRETE BASE
S = CONCRETE SILL

NOTES:
① PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
② JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE (0") ± 1/8".
③ DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.
④ JOINT WIDTH IS EQUAL TO HALF OF THE JOINT NUMBER IN 1/2" INTERVALS (i.e. E1 = 1/2", E2 = 1", E3 = 1-1/2", E4 = 2", E8 = 4").
⑤ SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.

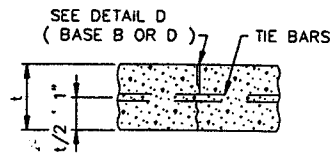
EXPANSION JOINTS
DESIGN E

28-299

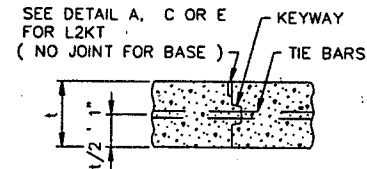
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	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>Paul Paul</i> Date: 9/10/2002 Reg. No. 21229	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
	DRAWN	MW			DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/DET-JOINTS2
	APPROVED	BE			DWG. NO.	1400	DATE:	9/06/02

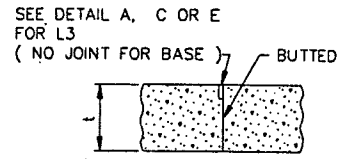
SHEPARD ROAD



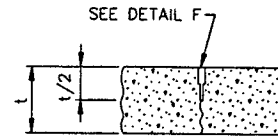
L1, L1T, L1B & L1TB



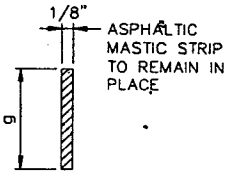
L2KT & L2KTb



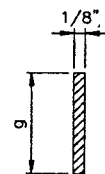
L3 & L3B



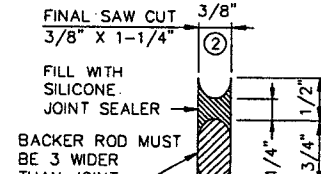
L4



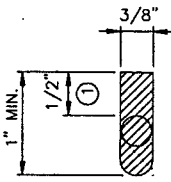
DETAIL A
(FORMED & UNSEALED)



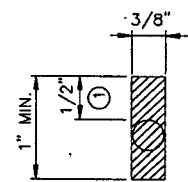
DETAIL B
(SAWED & SEALER, SPEC. 3723)
(BASE JOINTS UNSEALED)



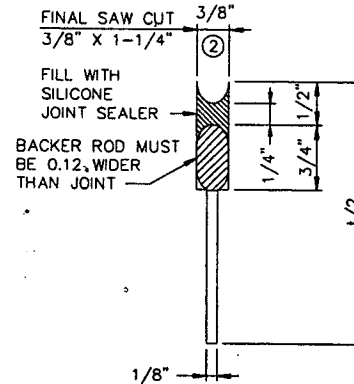
DETAIL C
(SAWED)



DETAIL D
(FORMED & SEALED
SPEC. 3723)



DETAIL E
(SAWED & SEALER
SPEC. 3723)



DETAIL F
(SAWED)

LONGITUDINAL JOINT CLASS DESIGNATION,
DETAIL & SEALER SPECIFICATION TABLE

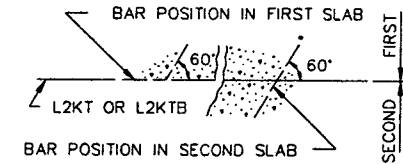
CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H L1BU	L1TH L1TBU	L2KTH L2KTS		B A OR B D OR E C D OR E C F	3723 UNSEALED 3723 POLYMERIC 3723 POLYMERIC SILICONE
L4S			L3H L3S		

LEGEND
 L = LONGITUDINAL JOINT
 NO. = JOINT REFERENCE
 K = KEYWAY
 T = TIE BARS
 B = CONCRETE BASE
 U = UNSEALED
 H = HOT POUR
 S = MOISTURE CURED
 POLYMERIC

JOINT REFERENCE NUMBERS
 1 = SAWED TO A DEPTH OF t/3
 2 = KEYED CONSTRUCTION JOINT
 3 = BUTTED CONSTRUCTION JOINT
 4 = SAWED TO A DEPTH OF t/2

LONGITUDINAL JOINT
DEPTH TABLE ③

PAVEMENT THICKNESS t	CONCRETE BASE JOINT DEPTH g
6"-6-1/2"	2"
6-3/4"-7-1/2"	2-1/4"
7-3/4"-8-1/2"	2-1/2"
8-3/4"-9"	2-3/4"
9-1/4"-9-1/2"	3"
9-3/4"-14"	—



TIE BAR BENDING DETAIL

LONGITUDINAL JOINT NOTES:

TIE BARS FOR L1TB JOINTS SHALL BE THE SAME SIZE AND SPACING AS SHOWN ON STANDARD PLAN SHEETS 5-297.216 & .219.

EXCEPT WHEN NOTED OTHERWISE IN THE PLANS, THE TIE BAR SPACING FOR ALL L2KT AND L2KTb JOINTS SHALL BE 2.5 FT 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 PAVEMENT TO PAVEMENT OR BASE TO BASE. TIE BARS IN THE L2KT OR L2KTb JOINTS SHALL BE NO. 4 2.5 FT X 2.5 FT, WHEN TYING CURB AND GUTTER TO PAVEMENT 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 26.2 FT, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16" TO - 1/32".

SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16" BELOW TOP OF PAVEMENT SURFACE.

- THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F (205 DEG. C), WITH A DIAMETER 1/8" LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2" BELOW THE TOP OF THE PAVEMENT.
- THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2" DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2" BELOW THE SURFACE OF THE PAVEMENT. SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4".
- FOR CONCRETE PAVEMENT THE JOINT DEPTH "g" SHALL BE t/3.

GENERAL NOTES:

SEE THE FOLLOWING STANDARD PLATES AND STANDARD PLAN SHEETS FOR ADDITIONAL DETAILS: DOWEL BAR ASSEMBLY 1103, PAVEMENT KEYWAY 1141 AND CONCRETE PAVEMENT WITH SKEWED JOINTS 5-297.216 - .219.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

28-299

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DESIGNED JE
 DRAWN MW
 APPROVED BE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *James Blaine* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200
 DRAWER: 12
 DWG. NO. 1400

STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 CAD NAME: SHEP/PLANSHEETS/PHASE3/DET-JOINTS3
 DATE: 9/06/02 SHEET NO. 10 OF 47 SHEETS



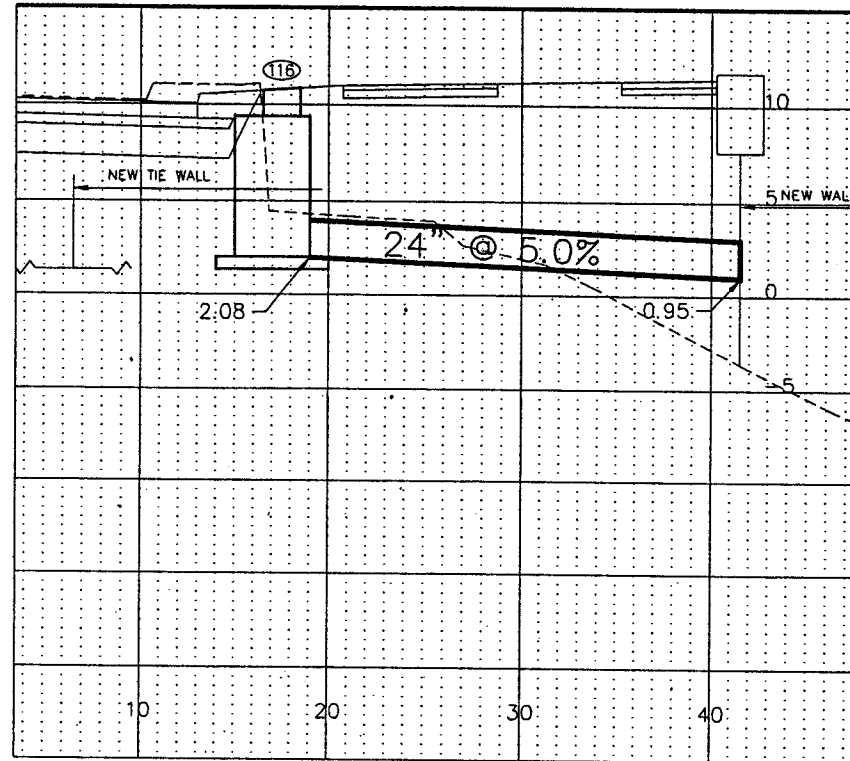
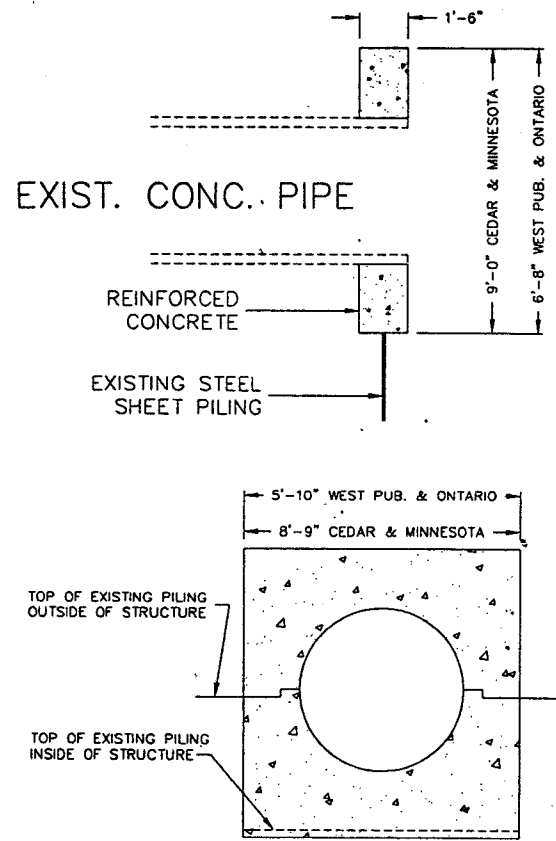
SEWER DETAILS

EXISTING OUTLETS TO BE REMOVED

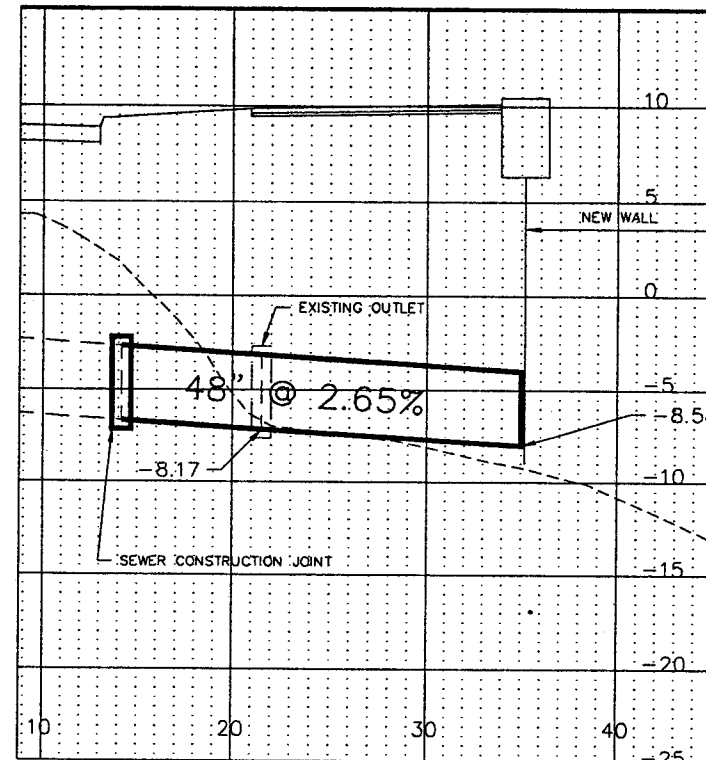
CB OUTLET @ EB STA. 102+30

CEDAR OUTLET

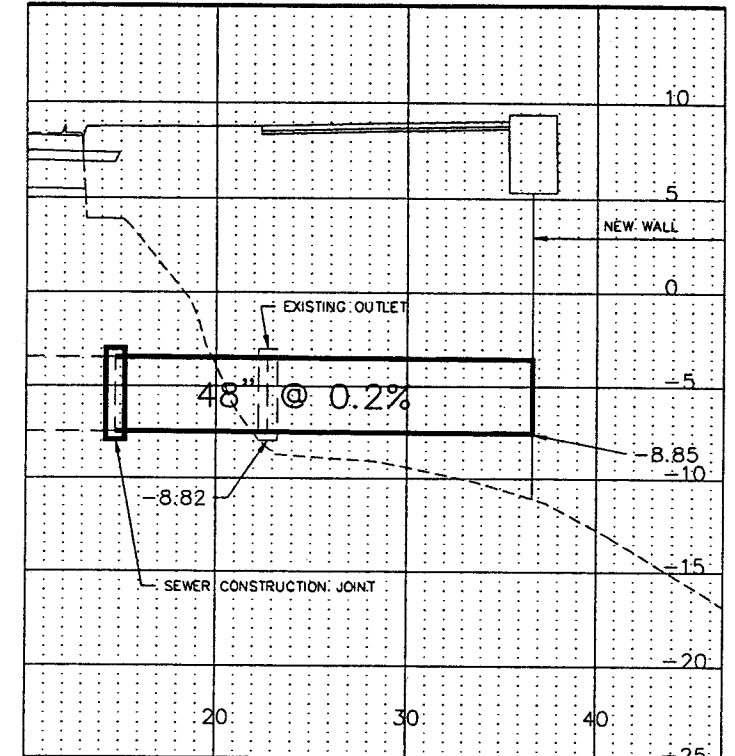
MINNESOTA OUTLET



PROFILE



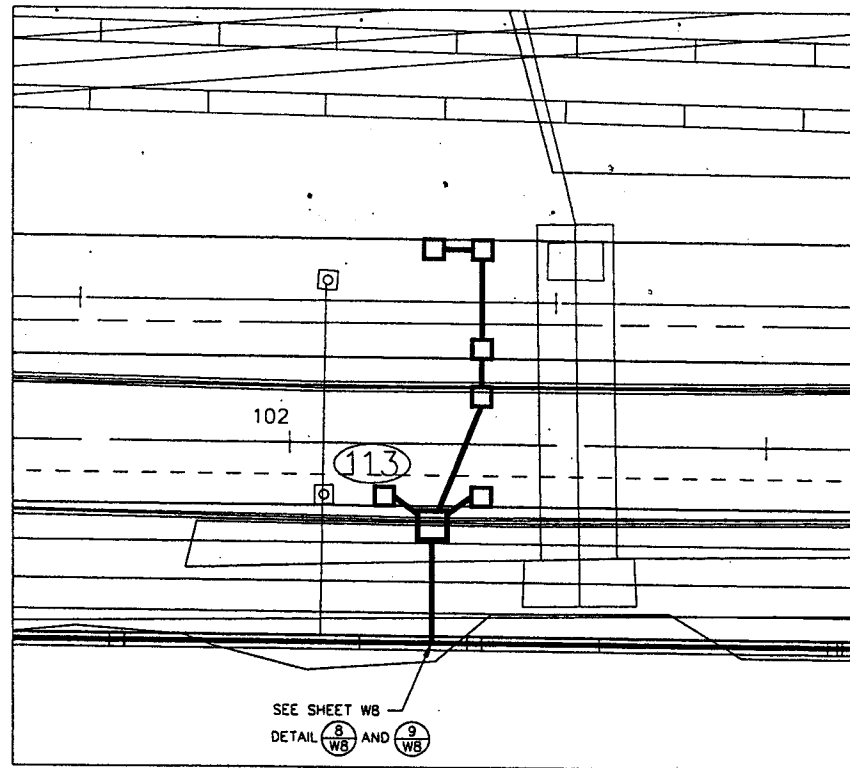
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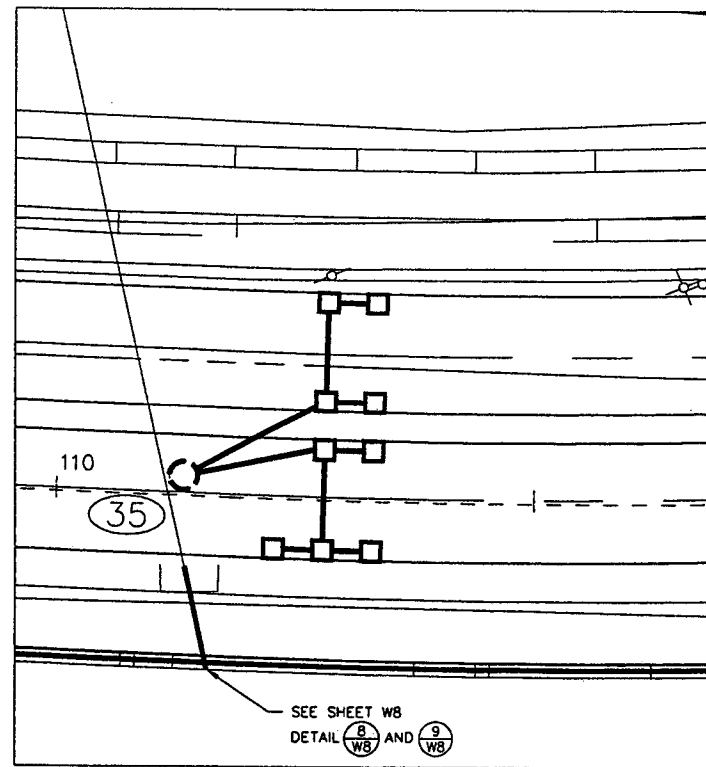
PROFILE

AT CEDAR & MINNESOTA

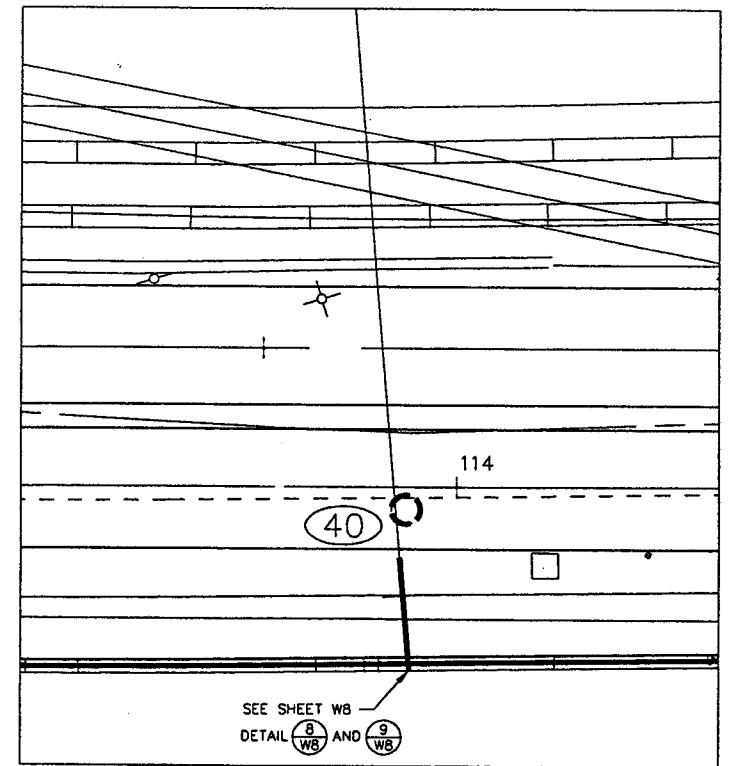
1. REMOVE EXISTING CONCRETE (OUTLET) STRUCTURE
BID ITEM 2104.509
2. REMOVE EXISTING SEWER PIPE TO SOUND PIPE.
(TO BE DETERMINED IN THE FIELD)
3. CONNECT TO EXISTING STORM SEWER
BID ITEM 2503.602
4. CONCRETE PIPE EYEBOLT TIES REQUIRED ON ALL
PIPE LAID AND SHALL BE INCIDENTAL.
5. NORMAL POOL ELEVATION = -6.90.



PLAN



PLAN



PLAN

28-299

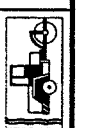
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DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229
DRAWN	MW	
APPROVED	BE	

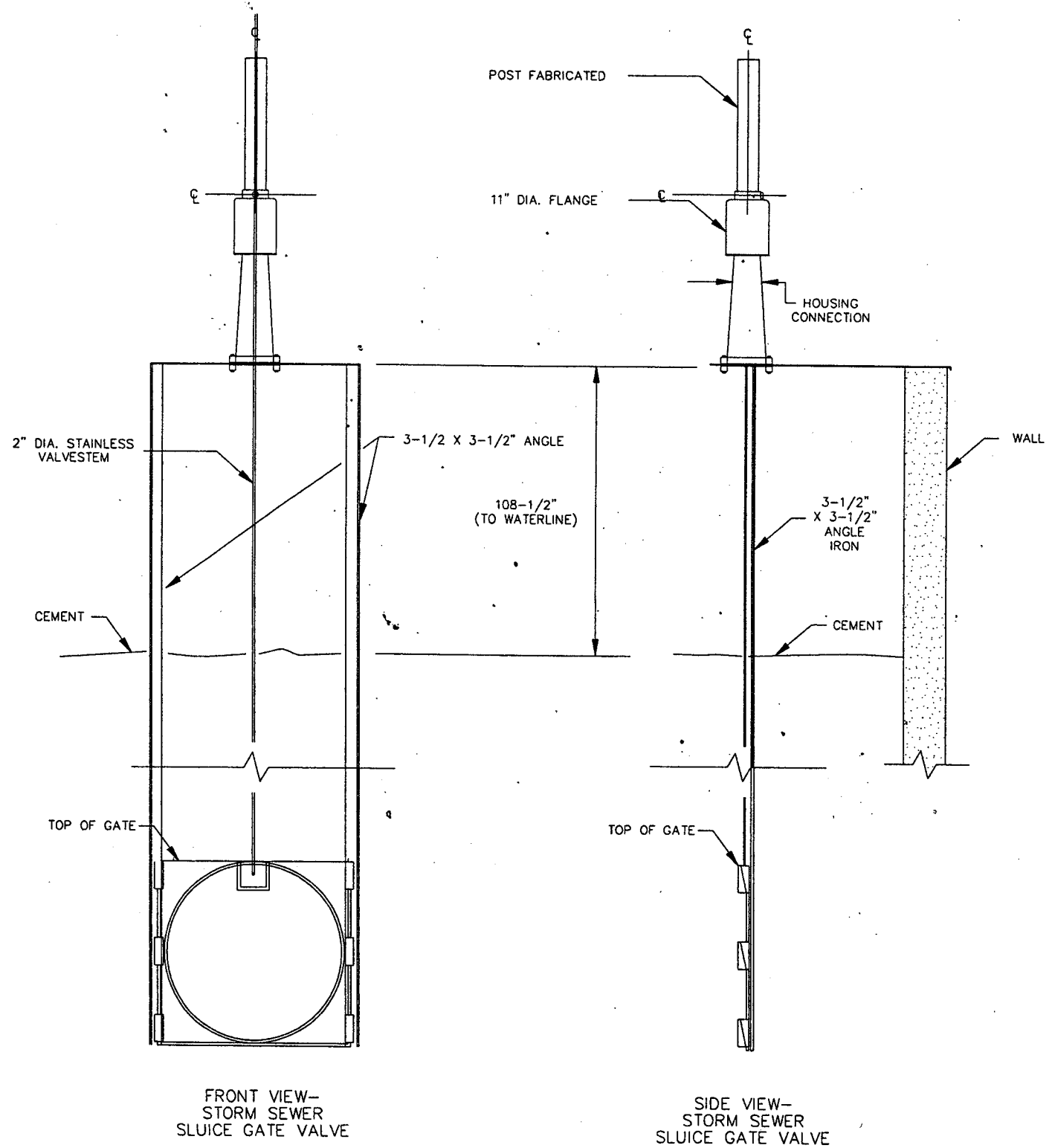
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/SEWER-DETAILS1
DWG. NO.	1400	DATE:	9/06/02
		SHEET NO.	11 OF 47 SHEETS



SLUICE GATE VALVE TO BE REMOVED



28.299

	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229
	DRAWN	MW	
	APPROVED	BE	

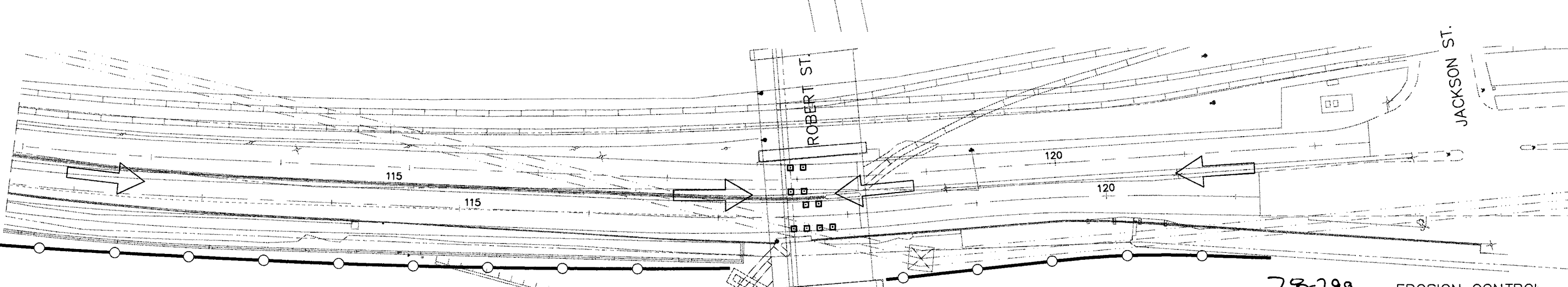
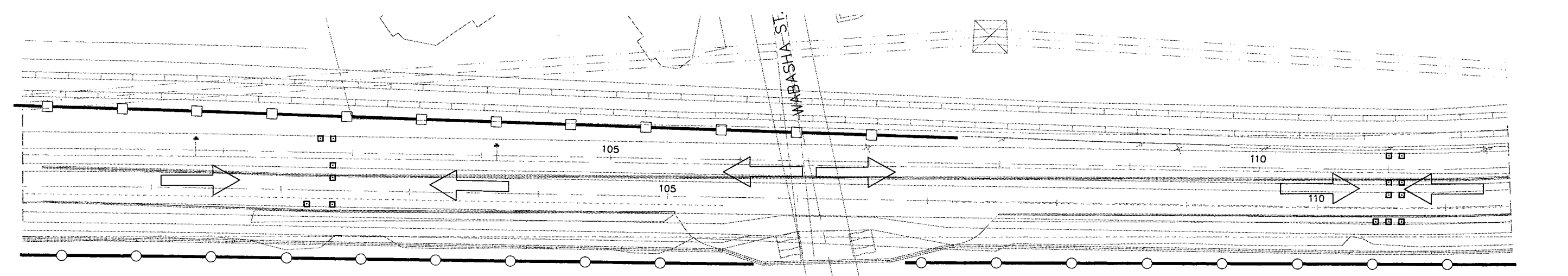
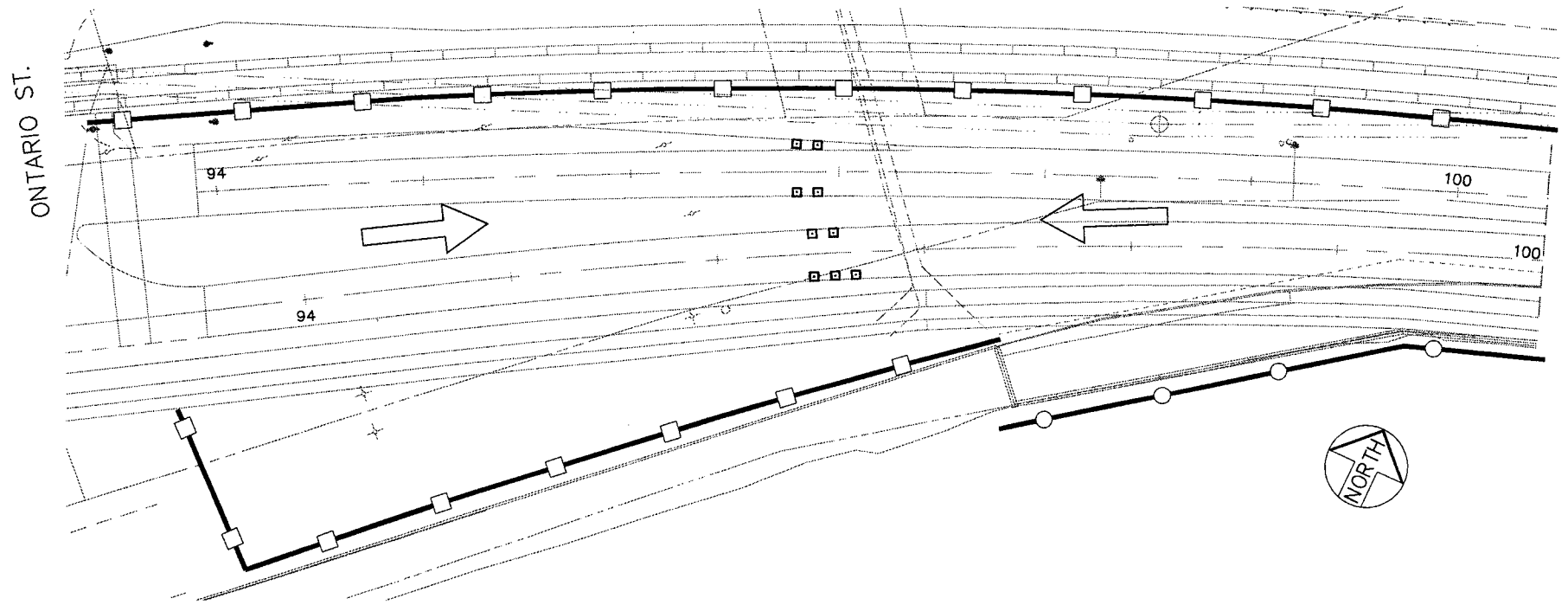
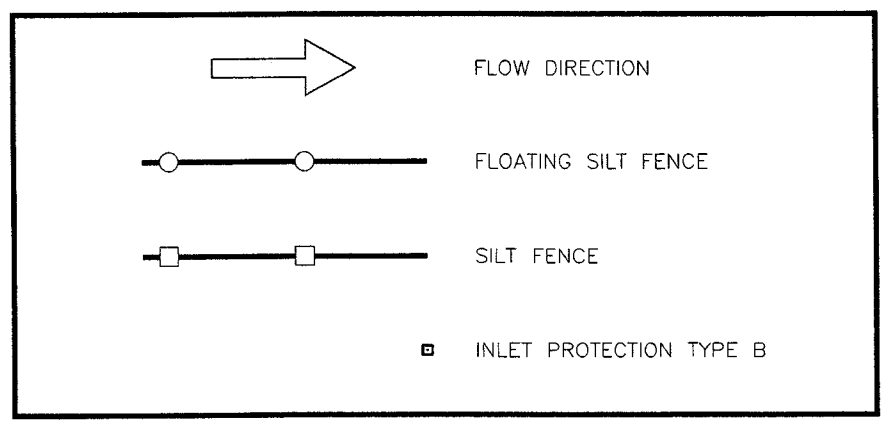
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/SEWER-DETAILS2.DWG
DWG. NO.	1400	DATE:	9/06/02
		SHEET NO.	12 OF 47 SHEETS



EROSION CONTROL LEGEND



28-299 EROSION CONTROL

DESIGNED	JE
DRAWN	MW
APPROVED	BE

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

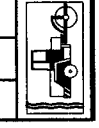
Signed *James Glass* Date: 9/10/2002 Reg. No. 21229

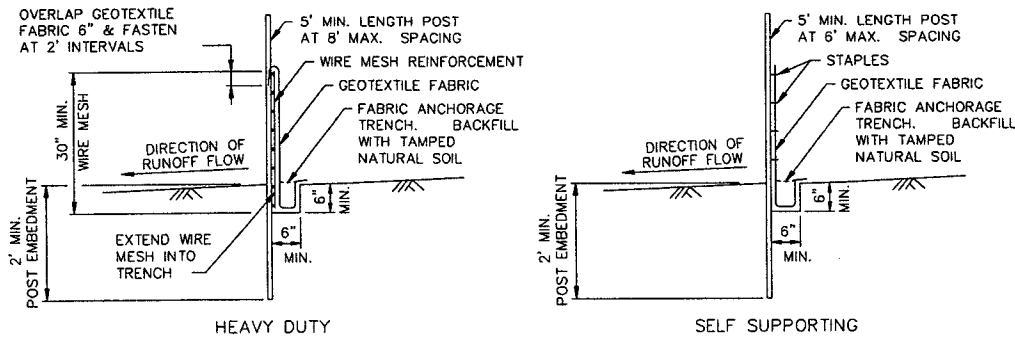
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200
 DRAWER: 12
 DWG. NO. 1400

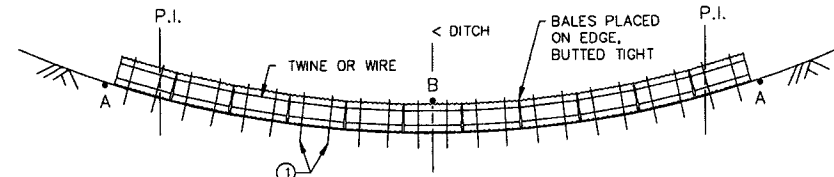
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 CAD NAME: SHEP/PLANSHEETS/PHASE3/ER-CONTR.DWG
 DATE: 9/13/02
 SHEET NO. 13 OF 47 SHEETS





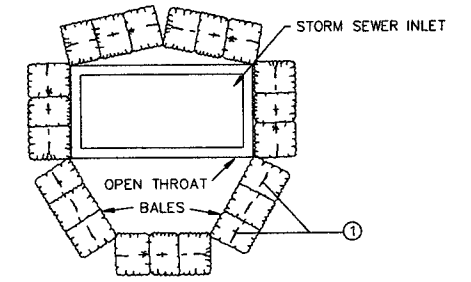
SILT FENCE DETAILS
TO PROTECT AREAS FROM SHEET FLOW
(SEE SPEC. 3886)

DESIGN CRITERIA:
MAXIMUM CONTRIBUTING AREA: 3 ACRES

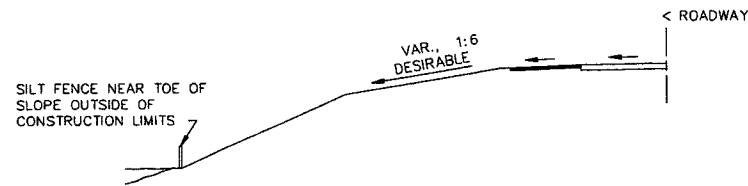


NOTE:
POINT A MUST BE HIGHER THAN POINT B

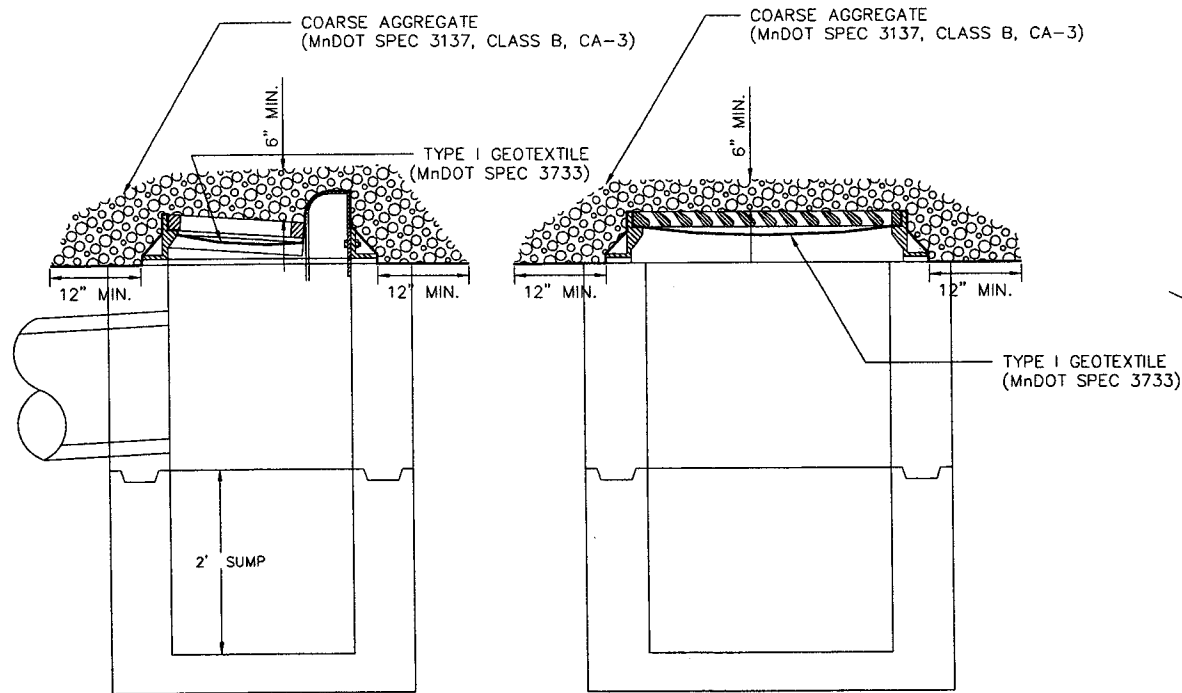
BALE DITCH SEDIMENT CHECK



BALE CHECK TO PROTECT STORM SEWER INLETS

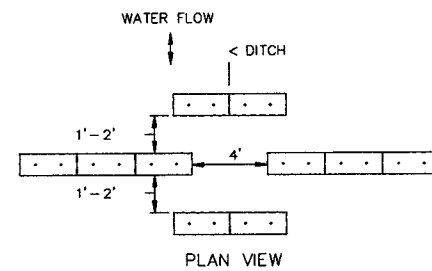


ROADWAY EMBANKMENT

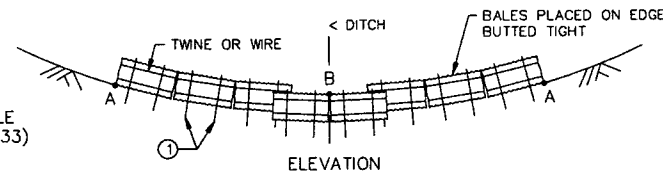


INLET PROTECTION TYPE B

- NOTES:
1. INLET PROTECTION TYPE B IS REQUIRED FOR THE IDENTIFIED CATCH BASINS PRIOR TO CURB AND GUTTER CONSTRUCTION, BID ITEM 2573.530
 2. CONTRACTOR TO INSPECT "INLET PROTECTION TYPE B" EVERY 7 DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. CONTRACTOR TO REPLACE COARSE AGGREGATE AND/OR GEOTEXTILE IF IT BECOMES NONFUNCTIONAL AS A SEDIMENT CONTROL.
 3. SUMPS SHALL BE KEPT FUNCTIONAL. CONTRACTOR SHALL CLEAN SUMP IF SEDIMENT IS WITHIN 12" OF OUTLET PIPE.



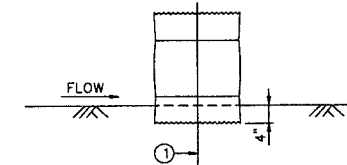
PLAN VIEW



ELEVATION

NOTE:
POINT A MUST BE HIGHER THAN POINT B

BALE DITCH VELOCITY CHECKS
(WILL REQUIRE A MINIMUM OF 10 BALES PER SITE)



BALE CHECK DETAIL

RECOMMENDED SPACING BETWEEN DITCH CHECKS	
DITCH GRADE (%)	SPACING (FT)
2	100
4	75
6	50
8	39
10	25

DESIGN CRITERIA:

	BALE	ROCK
STORM FREQUENCY:	2 YR. - 24 HR.	10 YR. - 24 HR.
MAX. FLOW VELOCITY:	5.0'/s	12.0'/s
MAX. DITCH GRADE:	5%	—
MAX. DRAINAGE AREA:	2 ACRES	5 ACRES

NOTE:

- ① TWO 2" X 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND EMBEDDED IN THE GROUND 10" MINIMUM.

28-299

EROSION CONTROL DETAILS



DESIGNED	JE
DRAWN	MW
APPROVED	BE

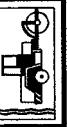
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

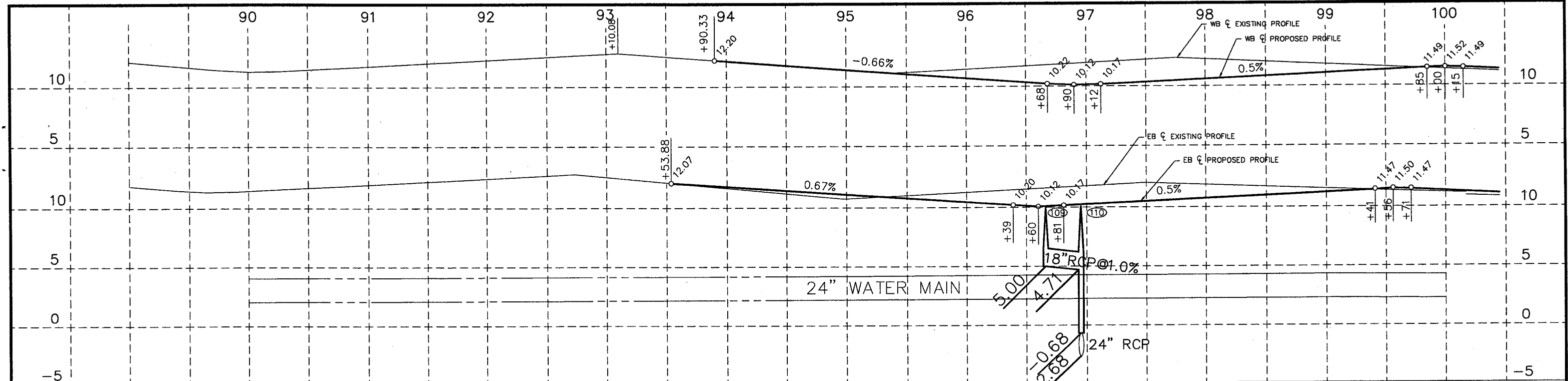
Signed *James Egan* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200	STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5=102)
DRAWER: 12	CAD NAME: SHEP/PLANSHEETS/PHASE3/ER-CONTR2.DWG
DWG. NO. 1400	DATE: 9/12/02 SHEET NO. 14 OF 47 SHEETS

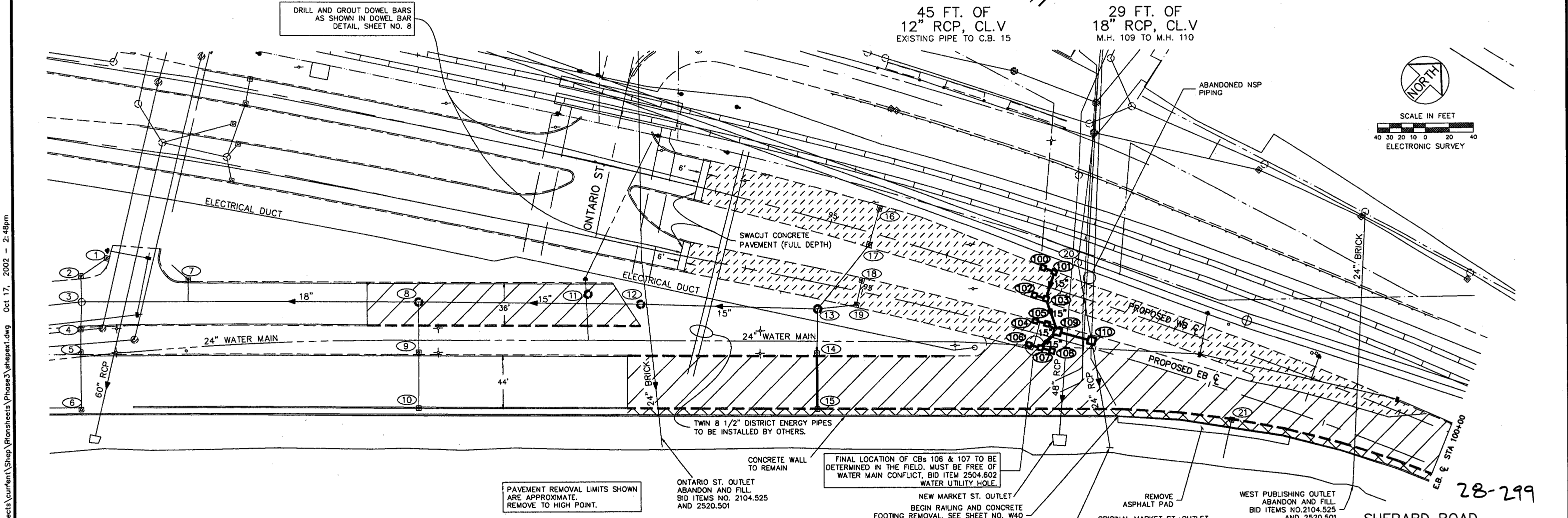




DRILL AND GROUT DOWEL BARS AS SHOWN IN DOWEL BAR DETAIL, SHEET NO. 8

45 FT. OF 12" RCP, CL.V EXISTING PIPE TO C.B. 15

29 FT. OF 18" RCP, CL.V M.H. 109 TO M.H. 110



PAVEMENT REMOVAL LIMITS SHOWN ARE APPROXIMATE. REMOVE TO HIGH POINT.

ONTARIO ST. OUTLET ABANDON AND FILL. BID ITEMS NO. 2104.525 AND 2520.501

FINAL LOCATION OF C.Bs 106 & 107 TO BE DETERMINED IN THE FIELD. MUST BE FREE OF WATER MAIN CONFLICT, BID ITEM 2504.602 WATER UTILITY HOLE.

NEW MARKET ST. OUTLET BEGIN RAILING AND CONCRETE FOOTING REMOVAL. SEE SHEET NO. W40 TYPE 1 RETAINING WALL.

REMOVE ASPHALT PAD ORIGINAL MARKET ST. OUTLET

WEST PUBLISHING OUTLET ABANDON AND FILL. BID ITEMS NO. 2104.525 AND 2520.501

REVISED 10/17/2002 ADDENDUM 1

EXISTING AND REMOVAL PLAN

SHEPARD ROAD 93+51.38 TO 100+00

DESIGNED	JE
DRAWN	MW
APPROVED	BE

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

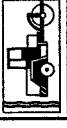
Signed *[Signature]* Date: 10/17/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

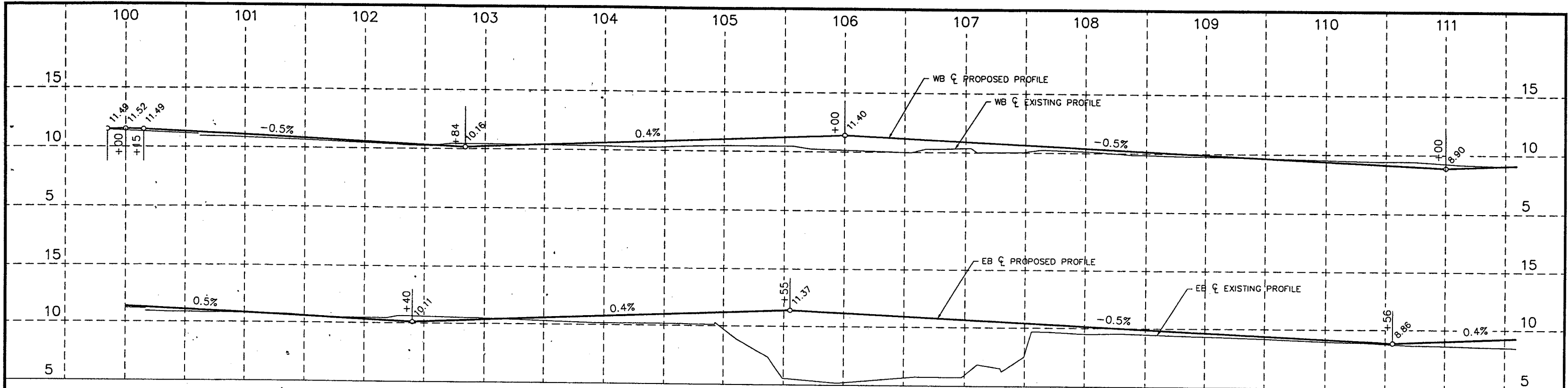
PROJECT:	00-P-1200
DRAWER:	12
DWG. NO.	1400

STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
CAD NAME:	SHEP/PLANSHEETS/PHASE3/SHEPEX1
DATE:	10/17/02
SHEET NO.	15 OF 47 SHEETS



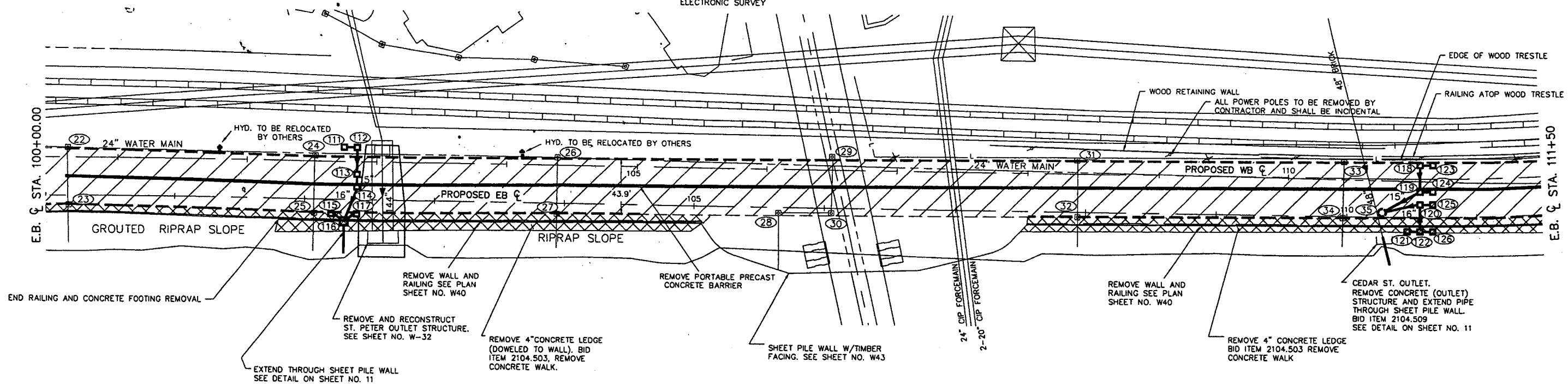
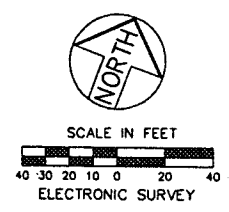
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28-299



24.5 FT. OF
24" RCP, CL.V
M.H. 116 TO SHEET PILE WALL

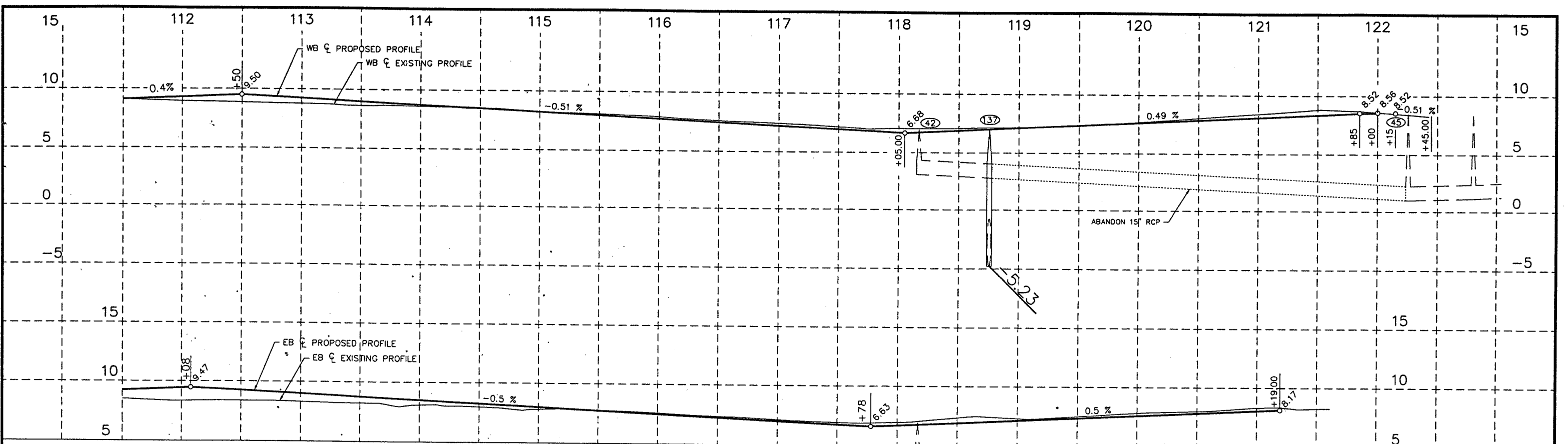
23 FT. OF
48" RCP, CL.V
FROM EXISTING PIPE TO SHEET PILE WALL



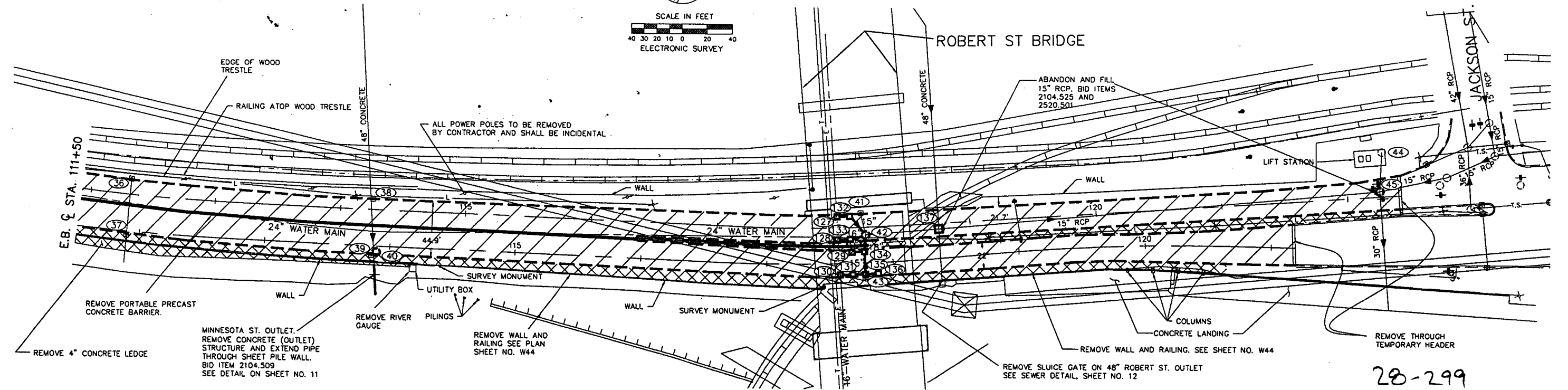
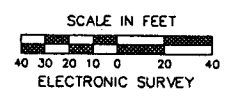
EXISTING AND REMOVAL PLAN

28-299
SHEPARD ROAD
STA 100+00 TO 111+50

	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>James E. [Signature]</i> Date: 9/10/2002 Reg. No. 21229	PREPARED BY	STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
	DRAWN	MW				DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/SHEPEX2
	APPROVED	BE				DWG. NO.	1400	DATE:	9/11/02



24 FT. OF
48" RCP, CL.V
FROM EXISTING PIPE TO SHEET PILE WALL



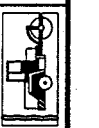
28-299

SHEPARD ROAD
STA 111+50 TO JACKSON ST.

EXISTING AND REMOVAL PLAN

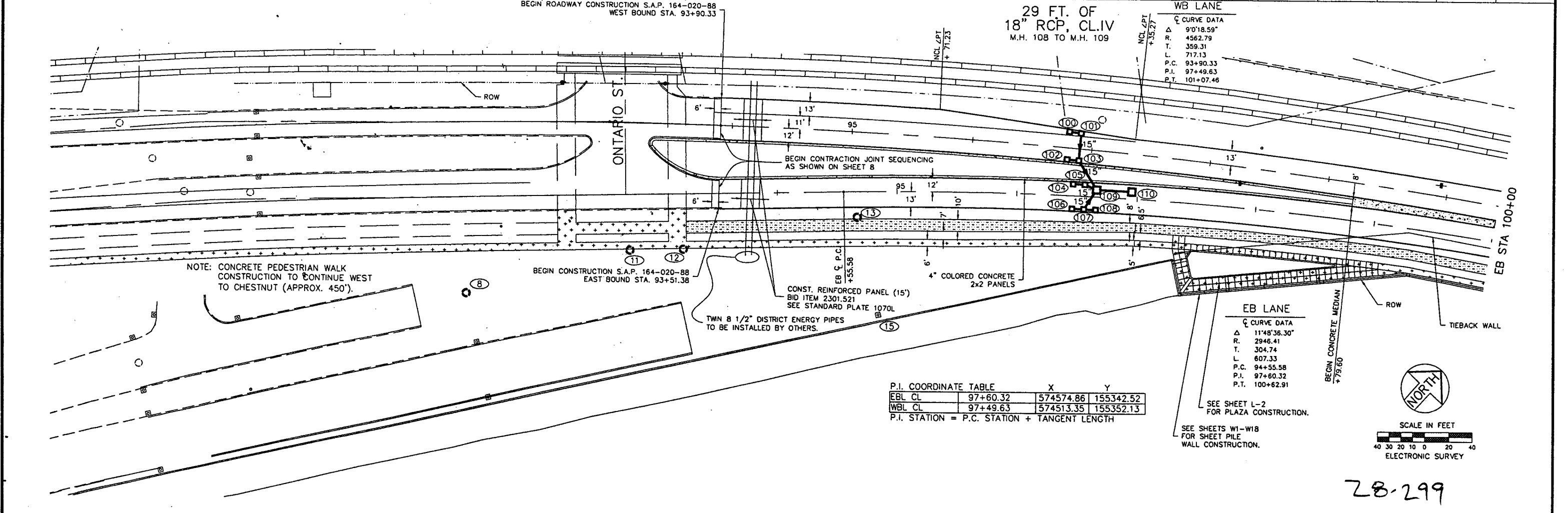
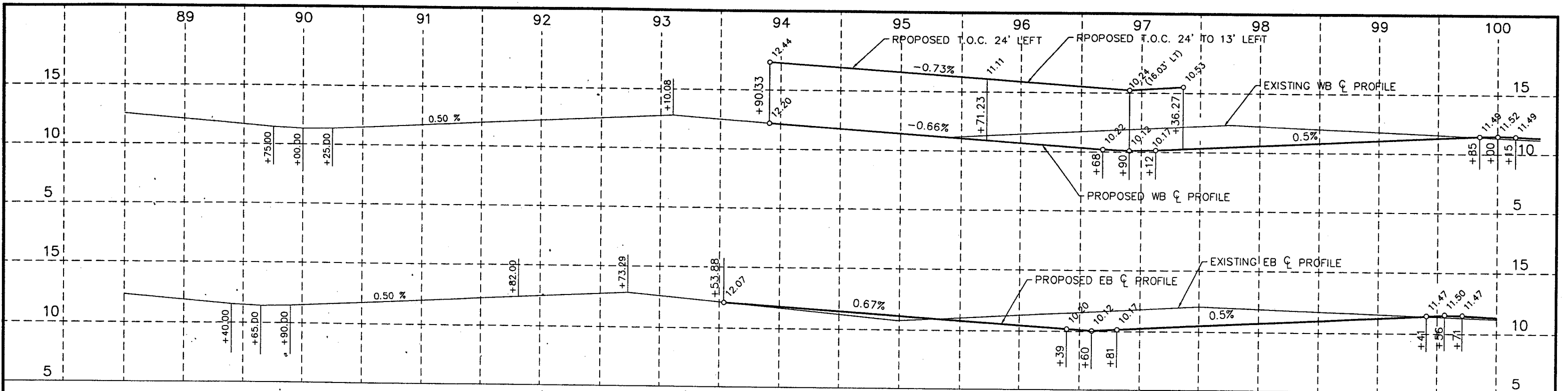
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>James [Signature]</i> Date: 9/10/2002 Reg. No. 21229	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5=102)
	DRAWN	MW			DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/SHEPEX3
	APPROVED	BE			DWG. NO.	1400	DATE:	9/11/02

SHEPARD ROAD



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NOTE: CONCRETE PEDESTRIAN WALK CONSTRUCTION TO CONTINUE WEST TO CHESTNUT (APPROX. 450').

BEGIN CONSTRUCTION S.A.P. 164-020-88 EAST BOUND STA. 93+51.38

BEGIN ROADWAY CONSTRUCTION S.A.P. 164-020-88 WEST BOUND STA. 93+90.33

29 FT. OF 18" RCP, CLIV
M.H. 108 TO M.H. 109

WB LANE

☉ CURVE DATA

Δ	90°18.59"
R.	4562.79
T.	359.31
L.	717.13
P.C.	93+90.33
P.I.	97+49.63
P.T.	101+07.46

EB LANE

☉ CURVE DATA

Δ	11°48'36.30"
R.	2946.41
T.	304.74
L.	607.33
P.C.	94+55.58
P.I.	97+60.32
P.T.	100+62.91

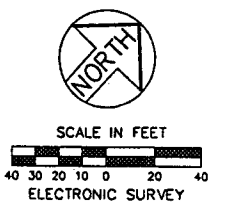
P.I. COORDINATE TABLE

	X	Y	
EBL CL	97+60.32	574574.86	155342.52
WBL CL	97+49.63	574513.35	155352.13

P.I. STATION = P.C. STATION + TANGENT LENGTH

SEE SHEET L-2 FOR PLAZA CONSTRUCTION.

SEE SHEETS W1-W18 FOR SHEET PILE WALL CONSTRUCTION.



CONSTRUCTION PLAN

SHEPARD ROAD
STA. 93+51.38 TO STA. 100+00

DESIGNED	JE	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
DRAWN	MW	
APPROVED	BE	

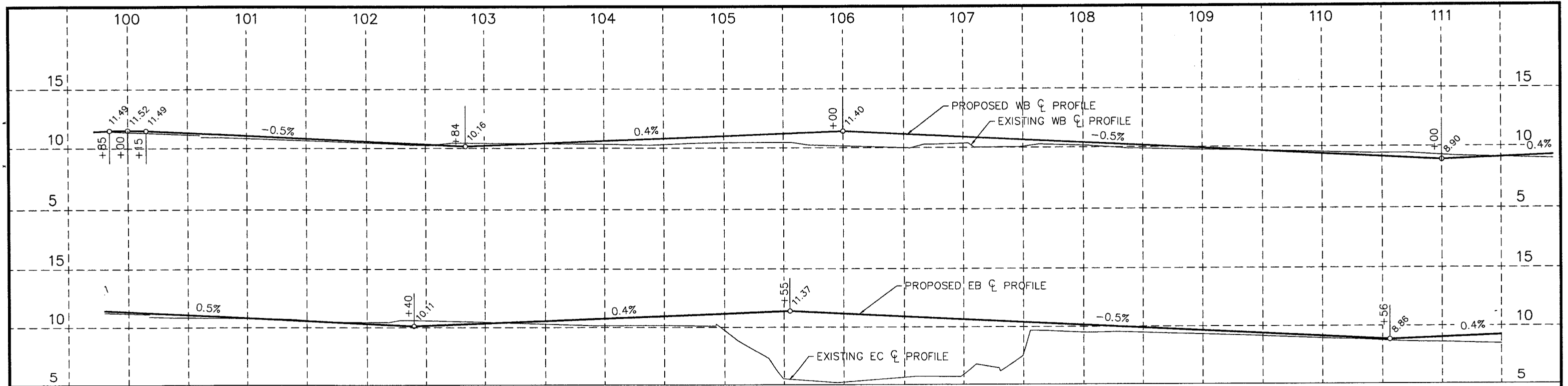
Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
DRAWER:	12	CAD NAME:	SHEP/PLANSHEETS/PHASE3/SHEPCONST1.DWG
DWG. NO.	1400	DATE:	9/11/02
		SHEET NO.	18 OF 47 SHEETS

28-299



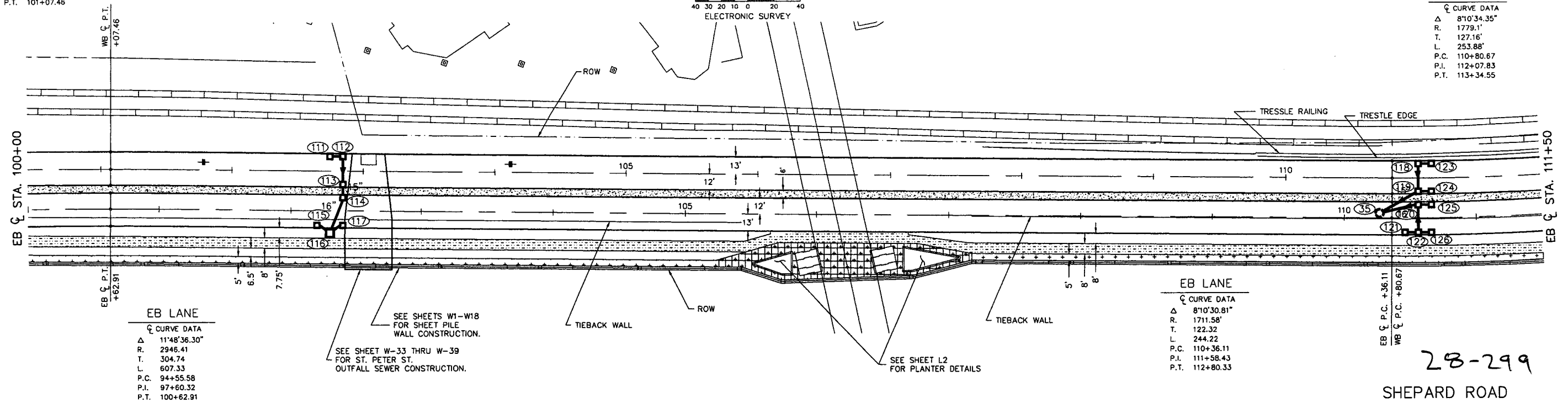
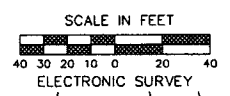
P.I. COORDINATE TABLE

	X	Y
EBL CL	97+60.32	574574.86 155342.52
EBL CL	111+58.43	575891.31 155819.72
WBL CL	97+49.63	574513.35 155352.13
WBL CL	112+07.83	575885.63 155849.57

P.I. STATION = P.C. STATION + TANGENT LENGTH

WB LANE
 CURVE DATA
 Δ 9°0'18.59"
 R. 4562.79
 T. 359.31
 L. 717.13
 P.C. 93+90.32
 P.I. 97+49.63
 P.T. 101+07.46

WB LANE
 CURVE DATA
 Δ 8°10'34.35"
 R. 1779.1'
 T. 127.16'
 L. 253.88'
 P.C. 110+80.67
 P.I. 112+07.83
 P.T. 113+34.55



EB LANE
 CURVE DATA
 Δ 11°48'36.30"
 R. 2948.41
 T. 304.74
 L. 607.33
 P.C. 94+55.58
 P.I. 97+60.32
 P.T. 100+62.91

EB LANE
 CURVE DATA
 Δ 8°10'30.81"
 R. 1711.58'
 T. 122.32'
 L. 244.22'
 P.C. 110+36.11
 P.I. 111+58.43
 P.T. 112+80.33

28-299

CONSTRUCTION PLAN

SHEPARD ROAD
 STA. 100+00 TO STA. 111+50

DESIGNED	JE
DRAWN	MW
APPROVED	BE

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

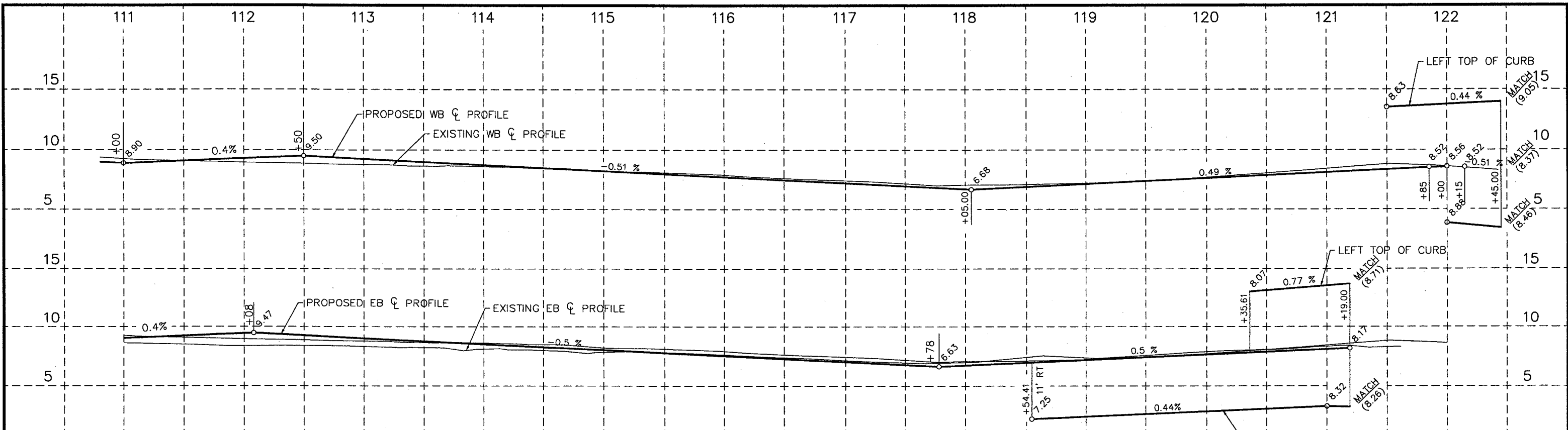
Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200	STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER: 12	CAD NAME: SHEP/PLANSHEETS/PHASE3/SHEPCONST2
DWG. NO. 1400	DATE: 9/11/02 SHEET NO. 19 OF 47 SHEETS

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P.I. COORDINATE TABLE

	X	Y
EBL CL	111+58.43	575891.31
EBL N. CURB	117+38.54	576397.60
EBL CL	117+28.71	576394.73
EBL S. CURB	117+08.83	576383.32
EBL N. CURB	118+25.55	576469.30
EBL CL	118+25.82	576475.62
EBL S. CURB	118+26.07	576481.93
EBL CL	118+95.49	576531.80
EBL N. CURB	119+86.43	576601.32
EBL CL	120+01.76	576620.18
EBL S. CURB	119+61.22	576592.58
WBL CL	112+07.83	575885.63
WBL S. CURB	117+71.66	576389.04
WBL CL	117+80.58	576391.25
WBL N. CURB	117+99.43	576401.37

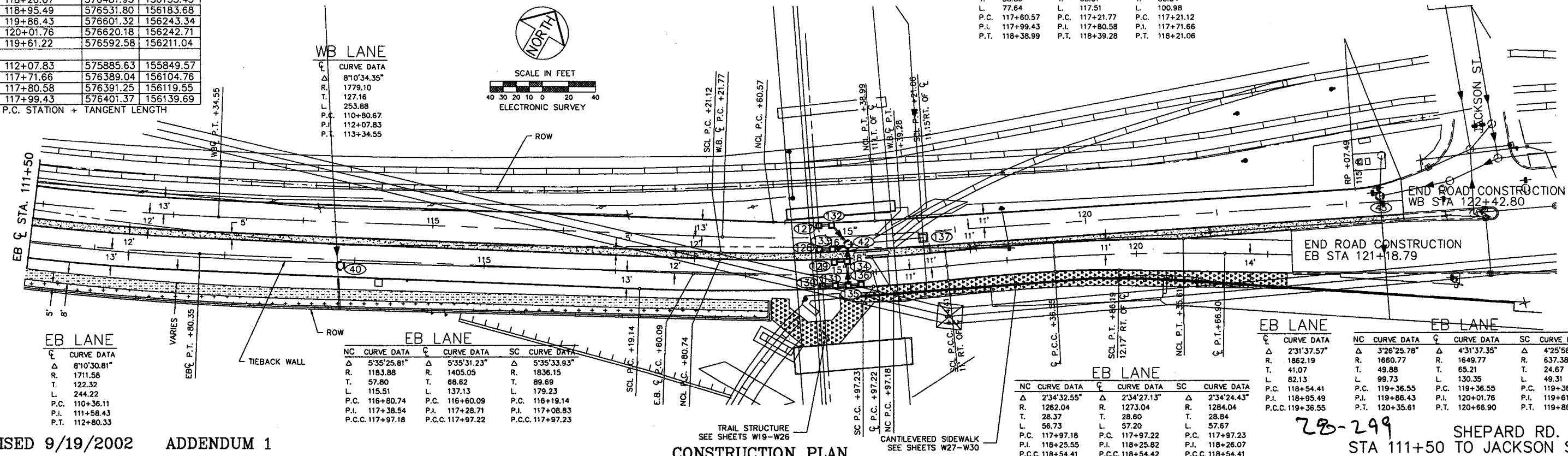
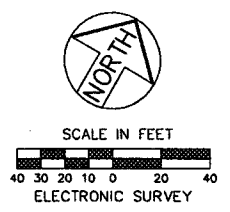
P.I. STATION = P.C. STATION + TANGENT LENGTH

WB LANE

NC CURVE DATA	SC CURVE DATA	SC CURVE DATA
Δ 6'0"34.28"	Δ 6'0"38.95"	Δ 6'0"38.94"
R. 740.23	R. 1120.09	R. 962.60
T. 38.86	T. 58.81	T. 50.54
L. 77.64	L. 117.51	L. 100.98
P.C. 117+60.57	P.C. 117+21.77	P.C. 117+21.12
P.I. 117+99.43	P.I. 117+80.58	P.I. 117+71.66
P.T. 118+38.99	P.T. 118+39.28	P.T. 118+21.06

WB LANE

Δ	R.	T.	L.	P.C.	P.I.	P.T.
8'10"34.35"	1779.10	127.16	253.68	110+80.67	112+07.83	113+34.55



EB LANE

Δ	R.	T.	L.	P.C.	P.I.	P.T.
8'10"30.81"	1711.58	122.32	244.22	110+36.11	111+58.43	112+80.33

EB LANE

NC CURVE DATA	SC CURVE DATA	SC CURVE DATA
Δ 5'35"25.81"	Δ 5'35"31.23"	Δ 5'35"33.93"
R. 1183.88	R. 1405.05	R. 1836.15
T. 57.80	T. 68.62	T. 89.69
L. 115.51	L. 137.13	L. 179.23
P.C. 116+80.74	P.C. 116+60.09	P.C. 116+19.14
P.I. 117+38.54	P.I. 117+28.71	P.I. 117+08.83
P.C.C. 117+97.18	P.C.C. 117+97.22	P.C.C. 117+97.23

EB LANE

NC CURVE DATA	SC CURVE DATA	SC CURVE DATA
Δ 2'34"32.55"	Δ 2'34"27.13"	Δ 2'34"24.43"
R. 1262.04	R. 1273.04	R. 1284.04
T. 28.37	T. 28.60	T. 28.84
L. 56.73	L. 57.20	L. 57.67
P.C. 117+97.18	P.C. 117+97.22	P.C. 117+97.23
P.I. 118+25.55	P.I. 118+25.82	P.I. 118+26.07
P.C.C. 118+54.41	P.C.C. 118+54.42	P.C.C. 118+54.41

EB LANE

NC CURVE DATA	SC CURVE DATA	SC CURVE DATA
Δ 3'26"25.78"	Δ 4'31"37.35"	Δ 4'25"58.80"
R. 1660.77	R. 1649.77	R. 637.38
T. 49.88	T. 65.21	T. 24.67
L. 99.73	L. 130.35	L. 49.31
P.C. 119+36.55	P.C. 119+36.55	P.C. 119+36.55
P.I. 119+86.43	P.I. 120+01.76	P.I. 119+61.22
P.T. 120+35.61	P.T. 120+66.90	P.T. 119+86.19

REVISED 9/19/2002 ADDENDUM 1

CONSTRUCTION PLAN

SHEPARD ROAD

28-299 SHEPARD RD. STA 111+50 TO JACKSON ST.

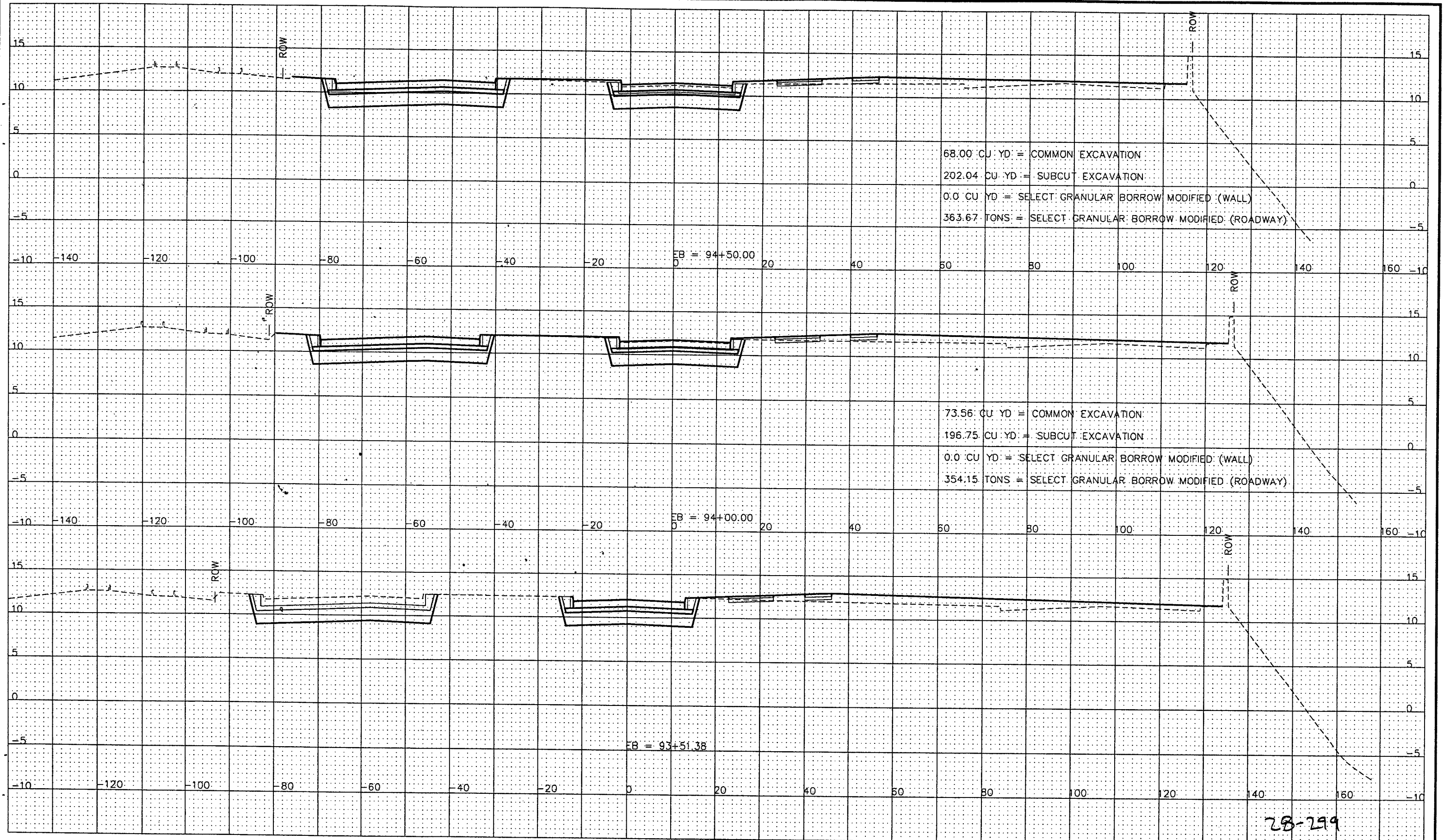
DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
DRAWN	MW	
APPROVED	BE	

Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

PROJECT: 00-P-1200	STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
DRAWER: 12	CAD NAME: SHEP/PLANSHEETS/PHASE3/SHEPCONST3
DWG. NO. 1400	DATE: 9/19/02 SHEET NO. 20 OF 47 SHEETS

Z:\streets\projects\current\Shep\Plansheets\Phase3\shepconst3.dwg Oct 17, 2002 - 2:54pm



28-299

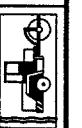
STATION 93+53.88 TO 94+50.00

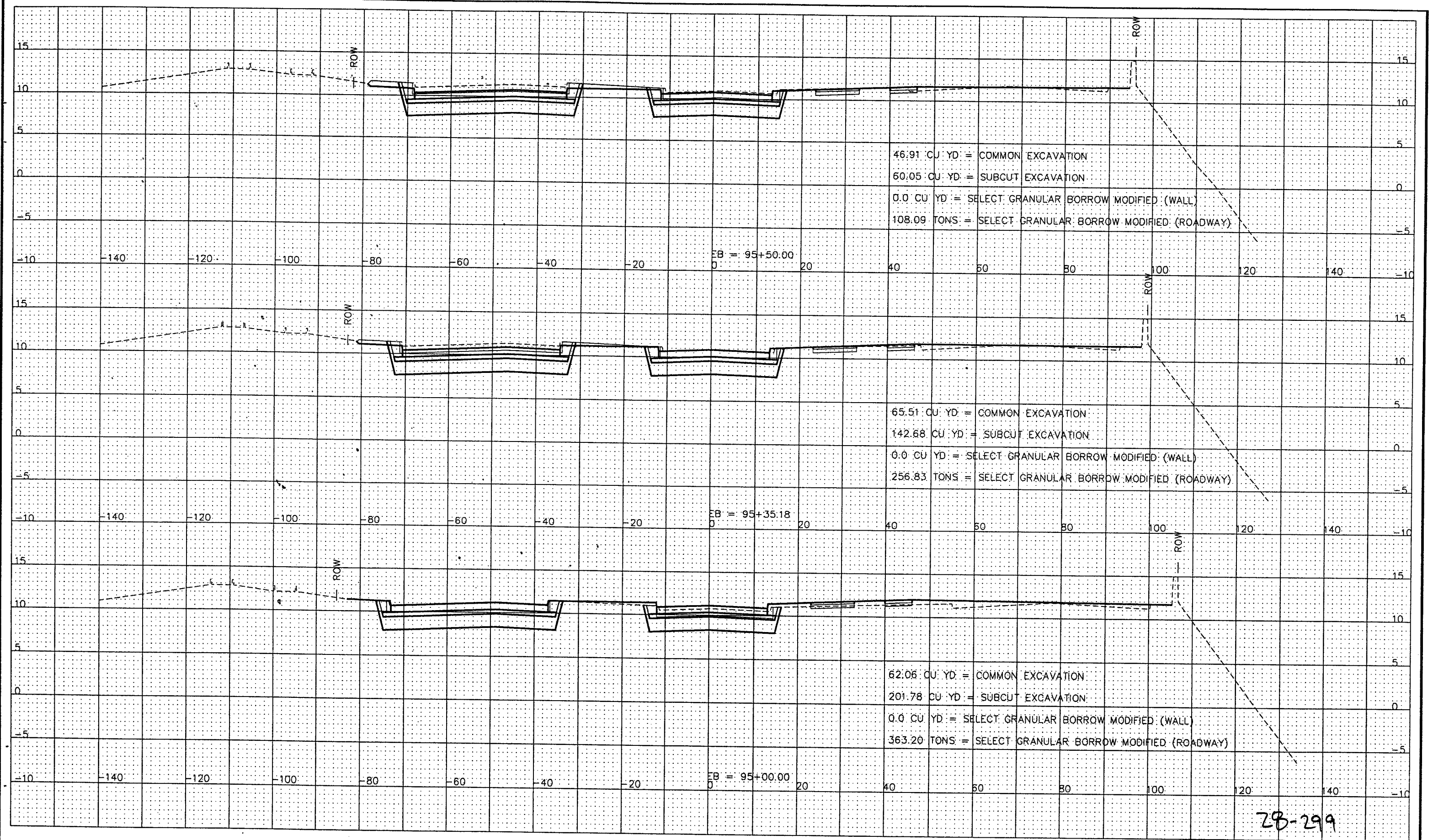
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	21 OF 47 SHEETS





28-299

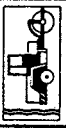
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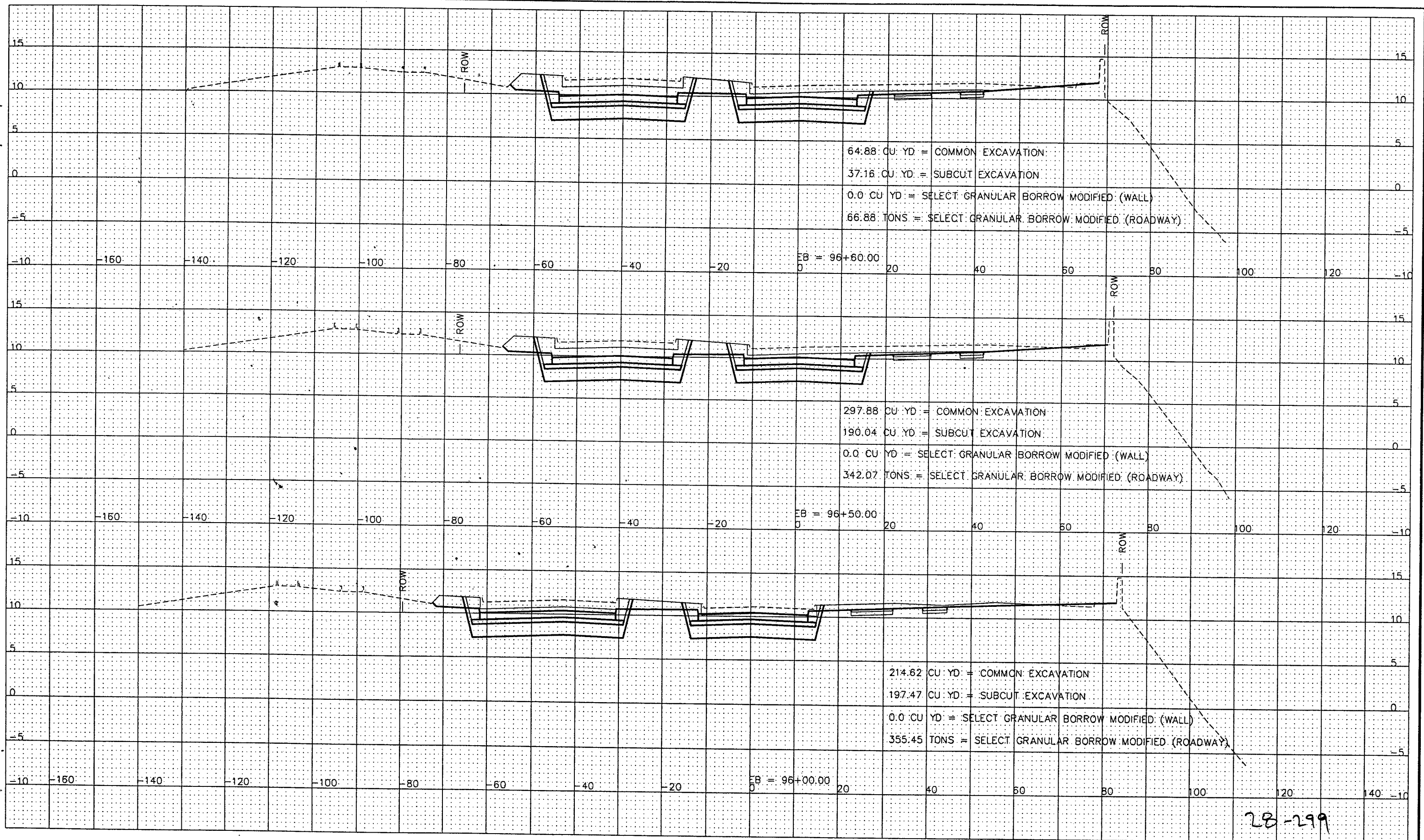
DESIGNED JE
 DRAWN MW
 APPROVED BE
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 22 OF 47 SHEETS





28-299

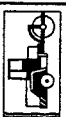
STATION 96+00.00 TO 96+60.00

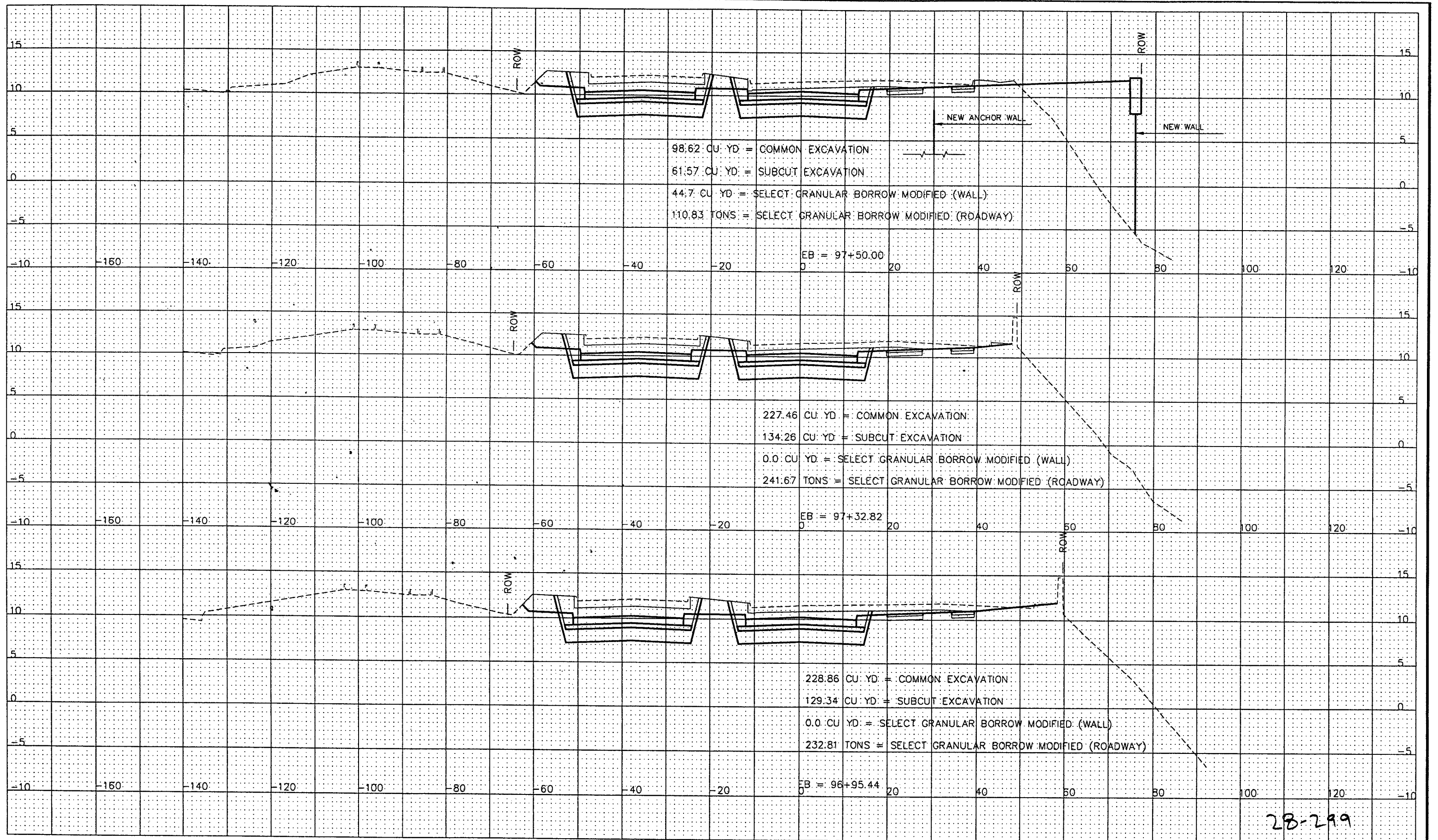
DESIGNED: JE
 DRAWN: MW
 APPROVED: BE
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed: *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 23 OF 47 SHEETS





28-299

STATION 96+95.44 TO 97+50.00

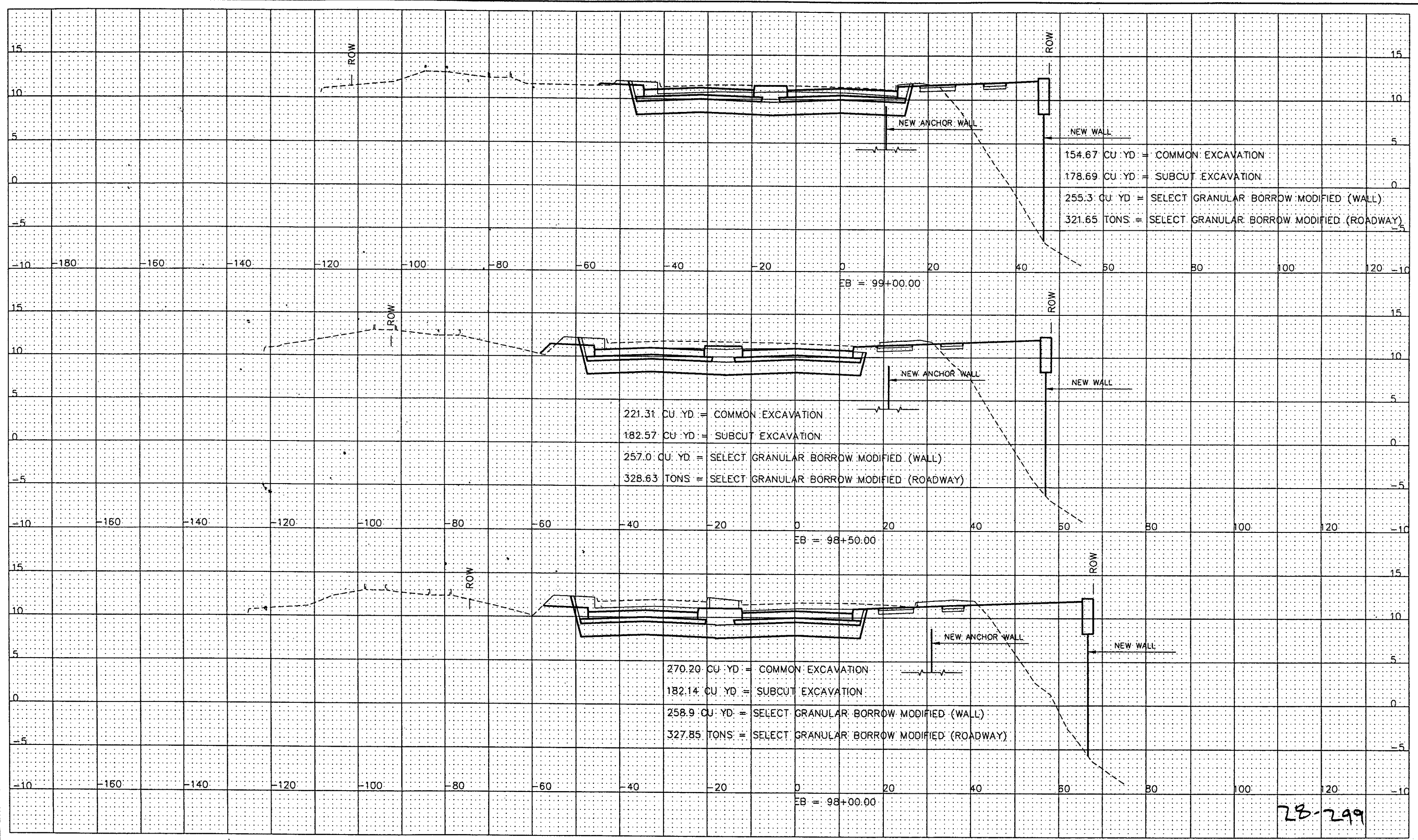
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	
Signed <i>[Signature]</i>		Date: 9/10/2002	Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	24 OF 47 SHEETS





28-299

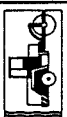
STATION 98+00.00 TO 99+00.00

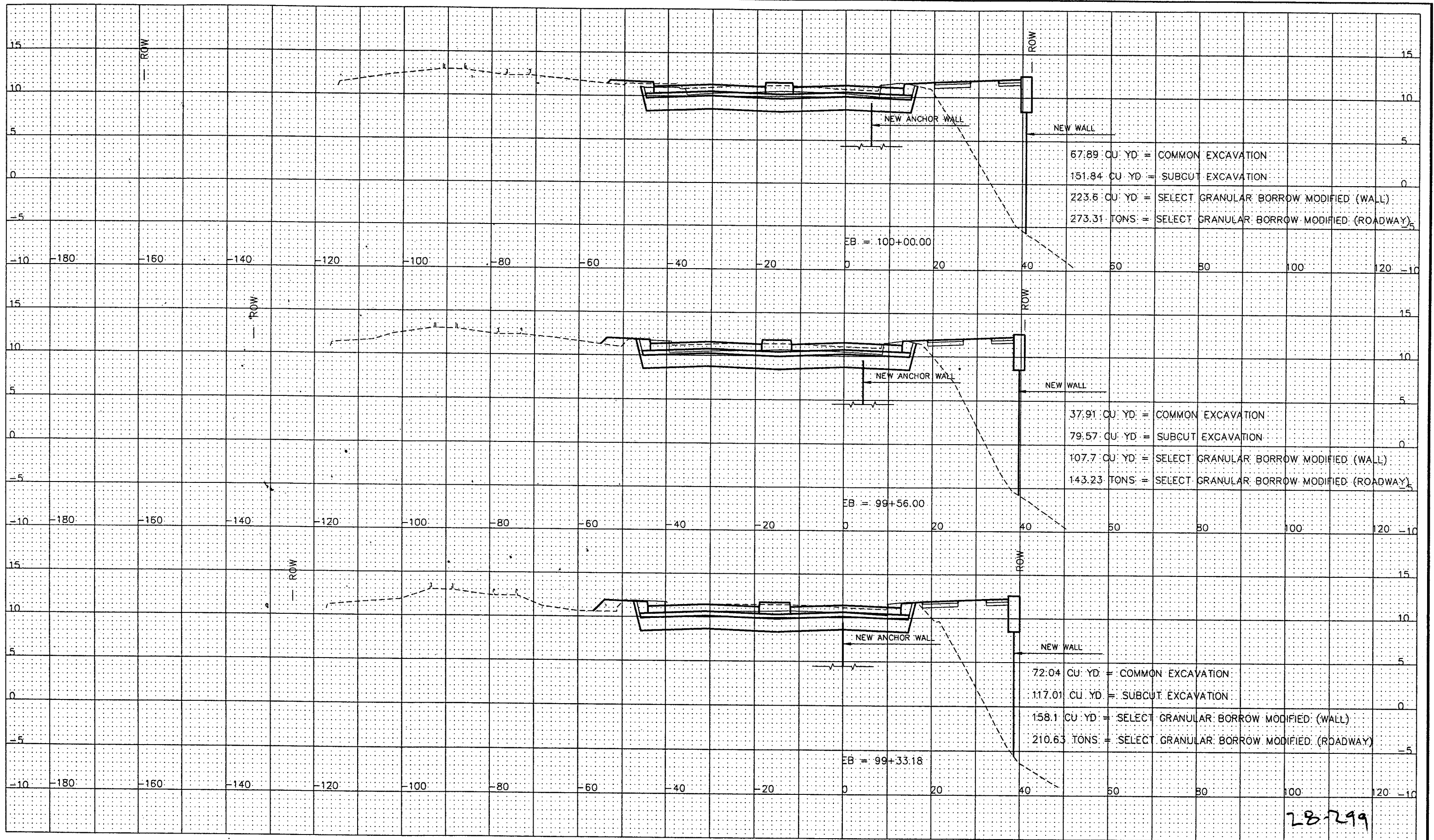
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	25 OF 47 SHEETS





28-299

STATION 99+33.18 TO 100+00.00

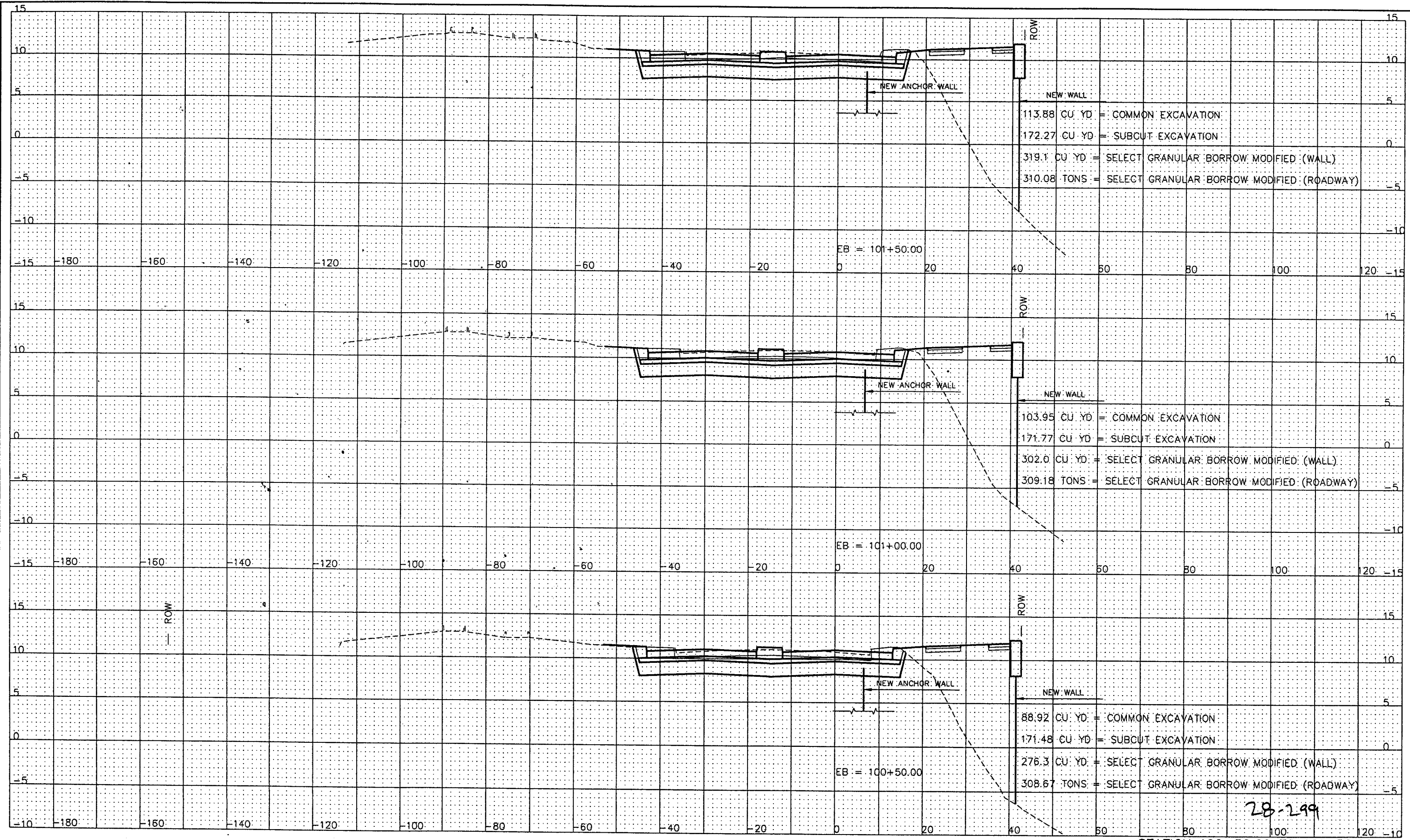
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	26 OF 47 SHEETS





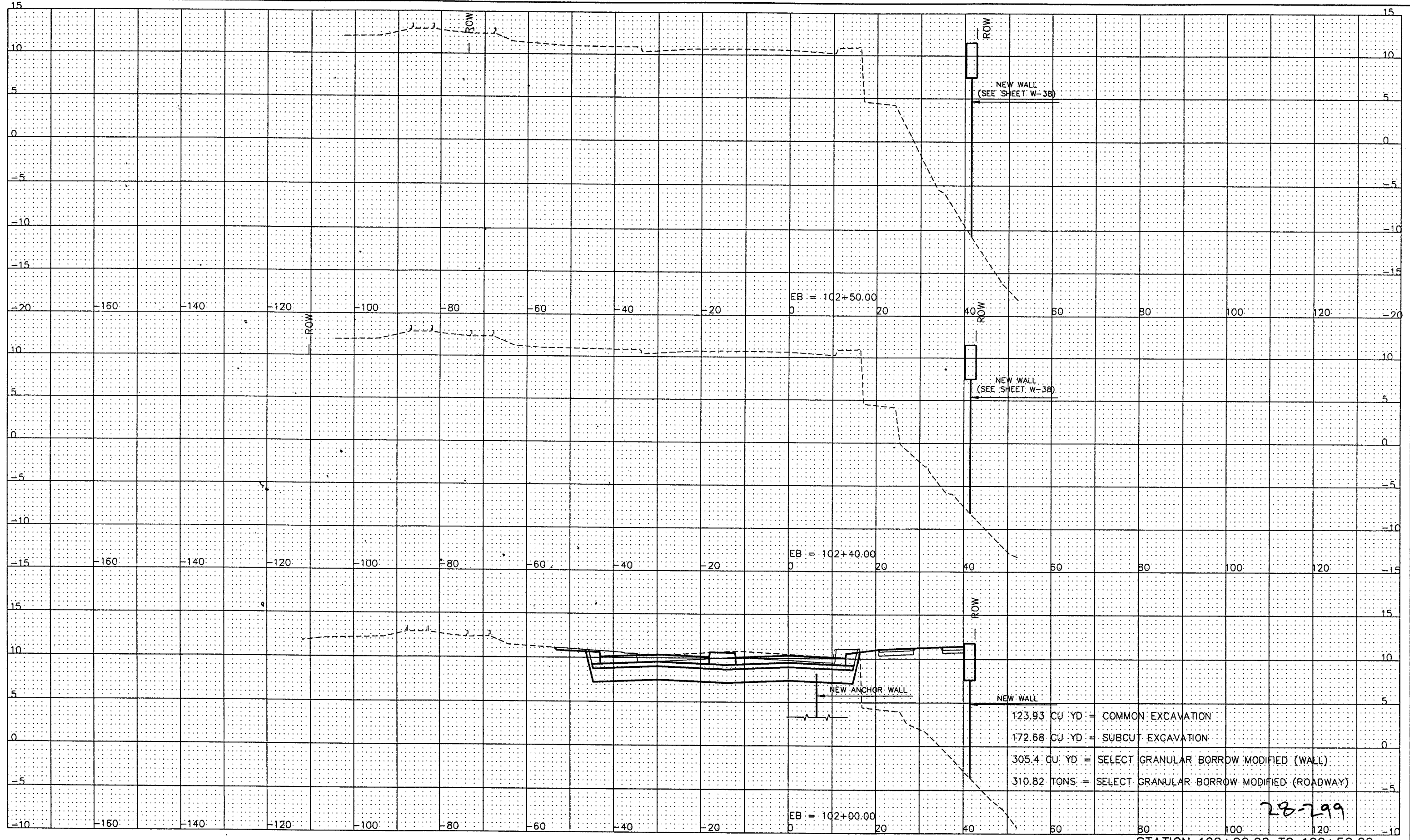
DESIGNED JE
 DRAWN MW
 APPROVED BE Signed *James Olson* Date: 9/10/2002 Reg. No. 21229

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

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 27 OF 47 SHEETS



123.93 CU. YD. = COMMON EXCAVATION
 172.68 CU. YD. = SUBCUT EXCAVATION
 305.4 CU. YD. = SELECT GRANULAR BORROW MODIFIED (WALL)
 310.82 TONS = SELECT GRANULAR BORROW MODIFIED (ROADWAY)

28-299

STATION 102+00.00 TO 102+50.00

	DESIGNED	JE
	DRAWN	MW
	APPROVED	BE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

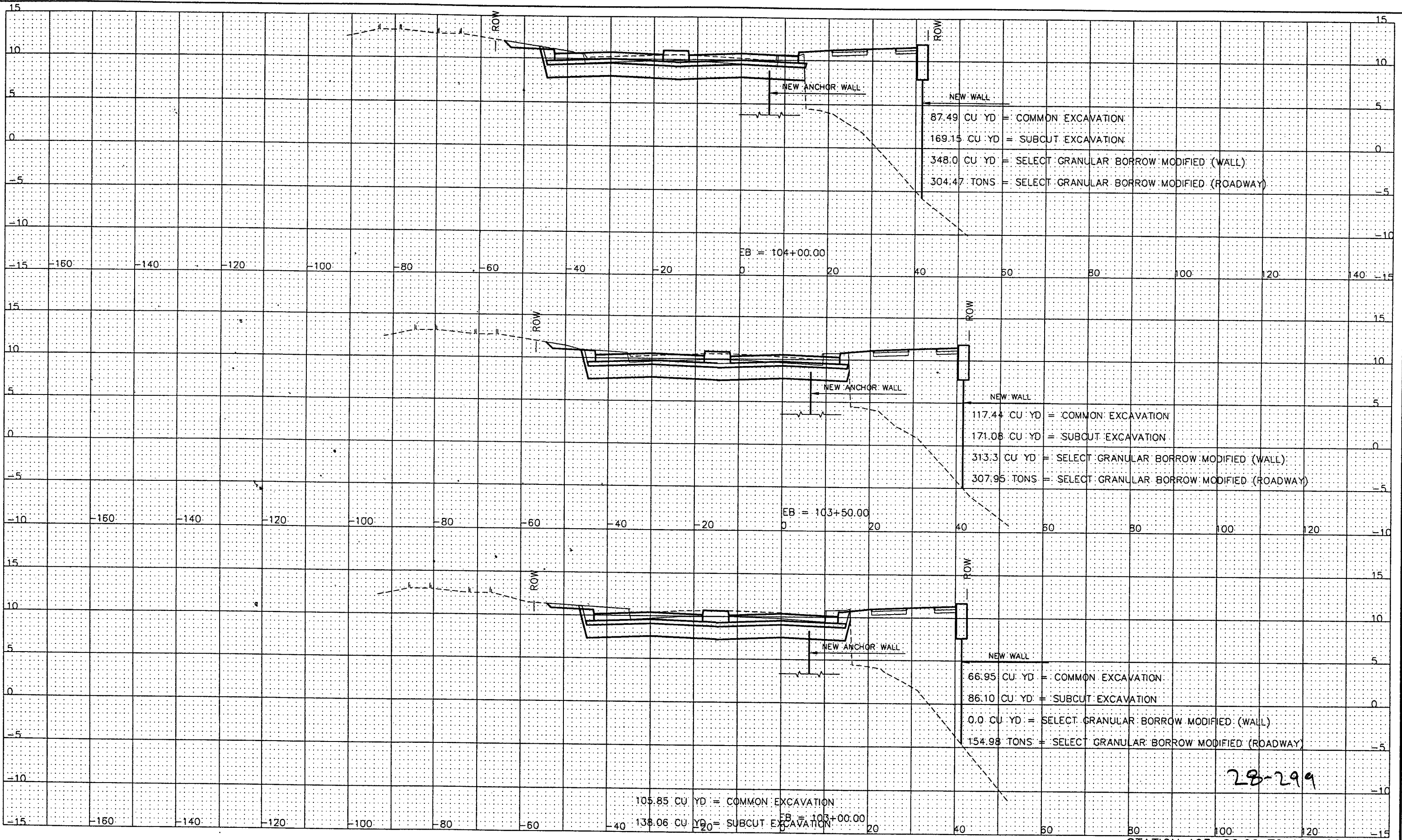
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200
 DRAWER: 12
 DWG. NO. 1400

STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DATE: 9/05/02 SHEET NO. 28 OF 47 SHEETS





28-299

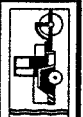
248.51 TONS = SELECT GRANULAR BORROW MODIFIED STATION 103+00.00 TO 104+00.00

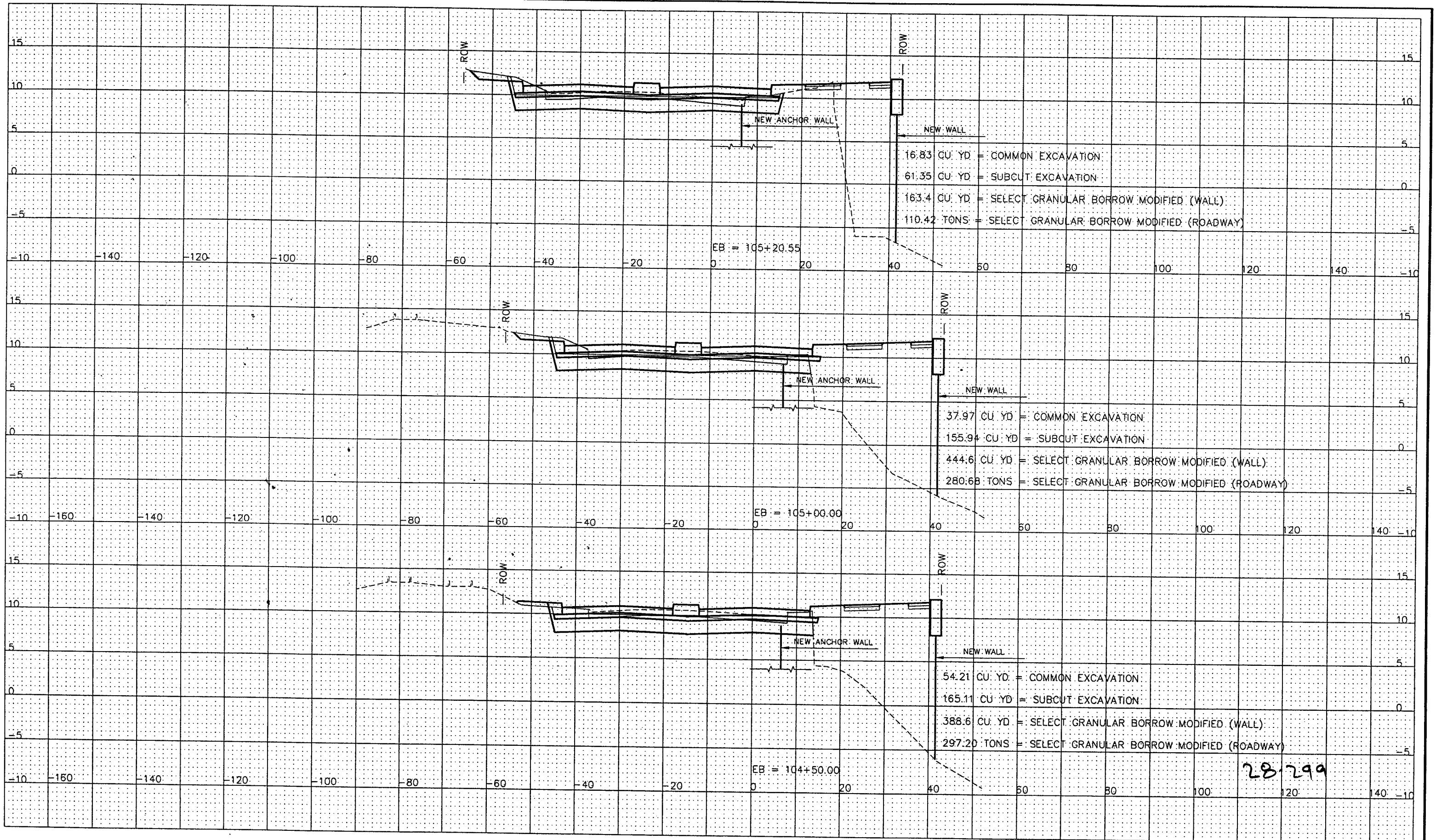
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	29 OF 47 SHEETS





28-299

STATION 104+50.00 TO 105+20.55

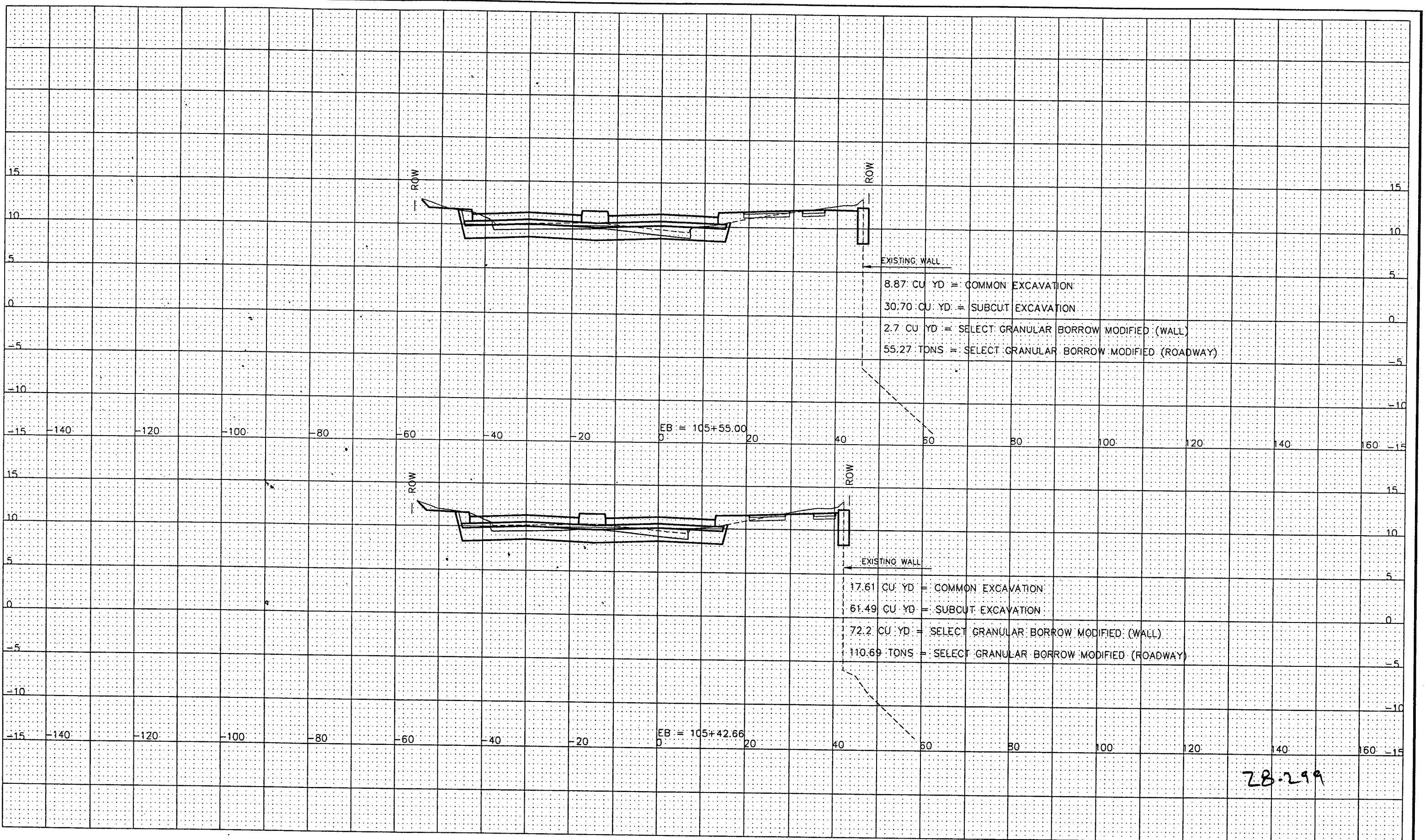
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	30 OF 47 SHEETS





28-299

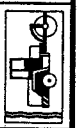
STATION 105+42.66 TO 105+55.00

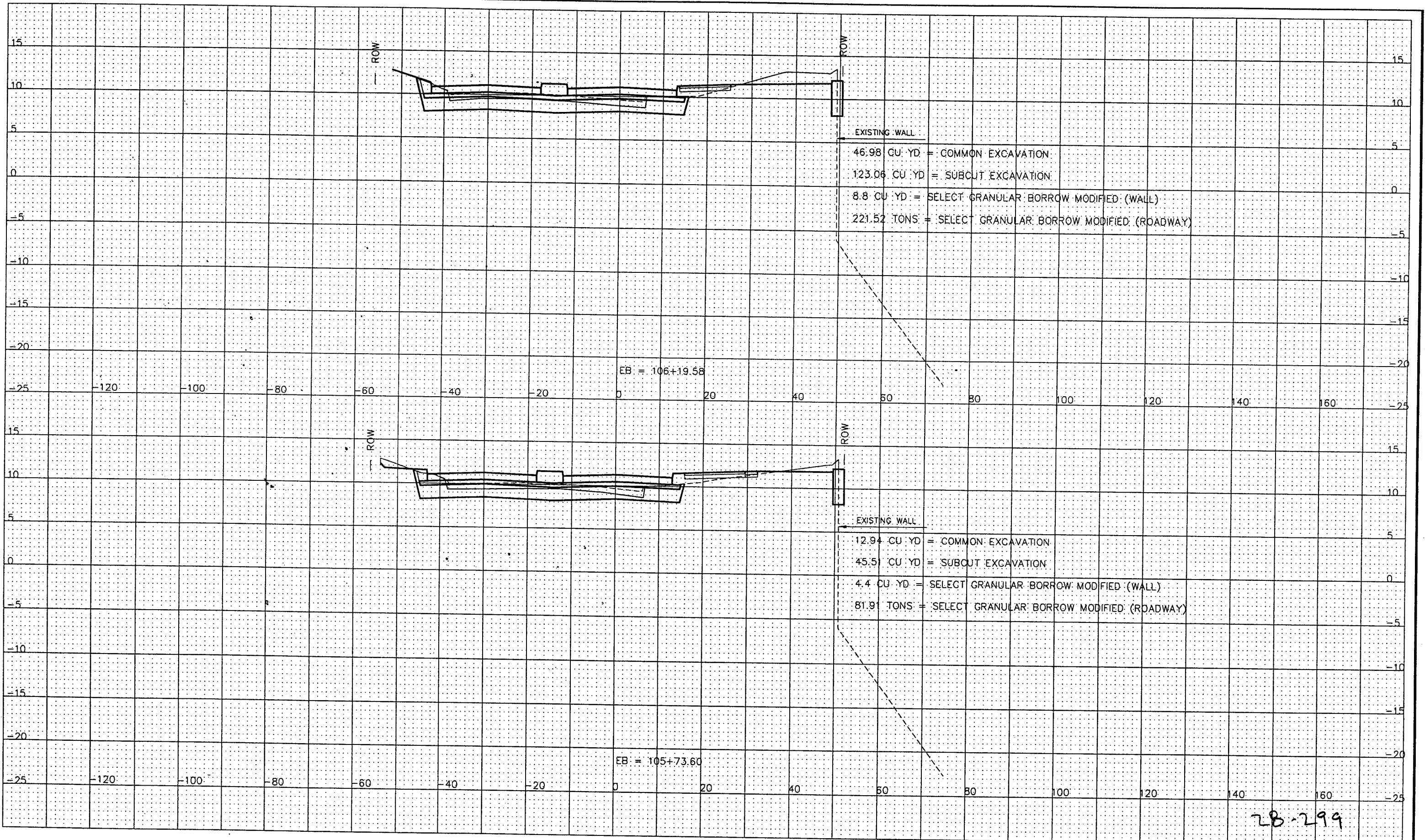
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>James [Signature]</i> Date: 9/10/2002 Reg. No. 21229
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	31 OF 47 SHEETS





28-299

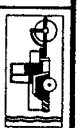
STATION 105+73.60 TO 106+19.58

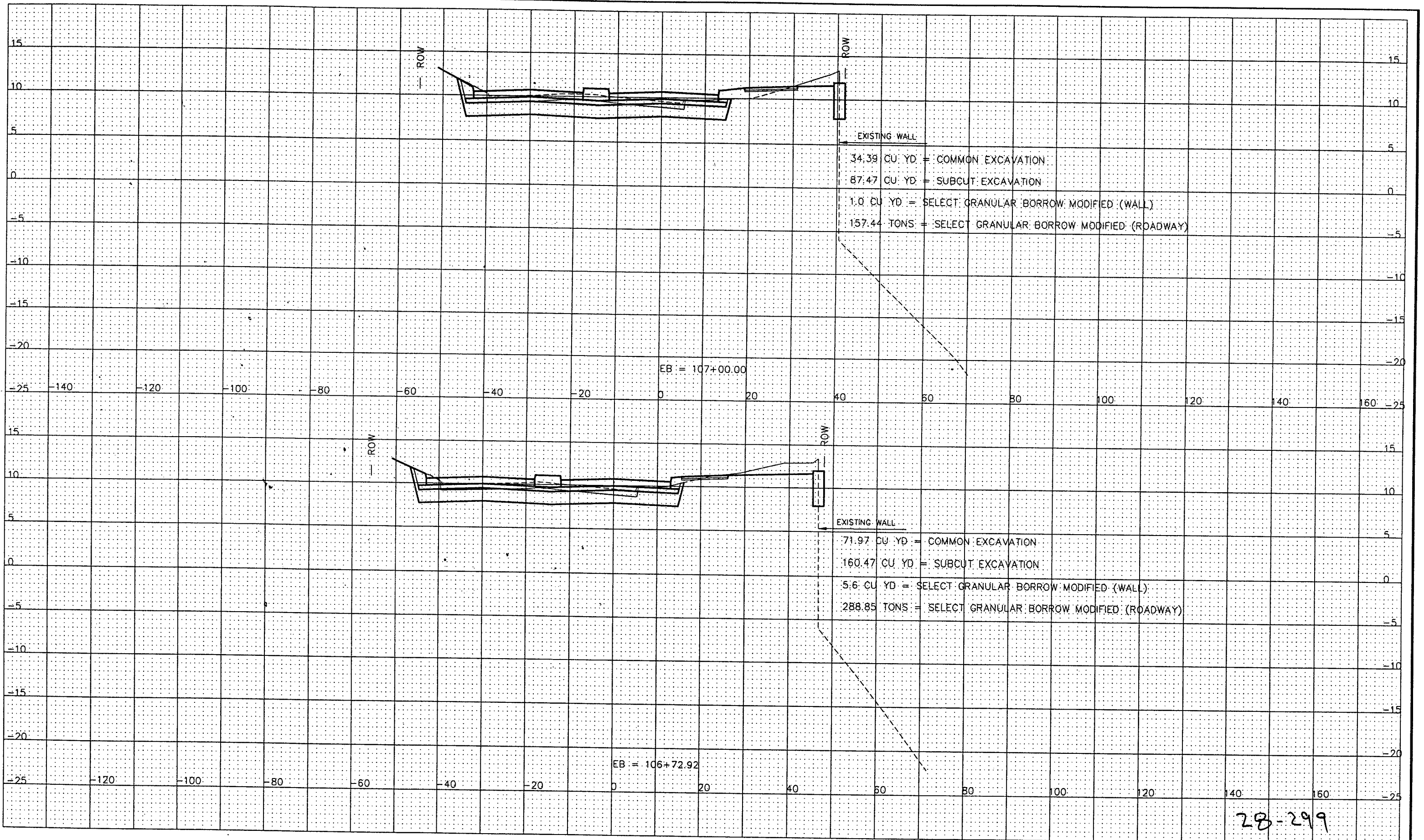
DESIGNED JE
 DRAWN MW
 APPROVED BE
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *Paul Egan* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 32 OF 47 SHEETS





28-299

STATION 106+72.92 TO 107+00.00

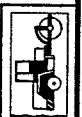
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

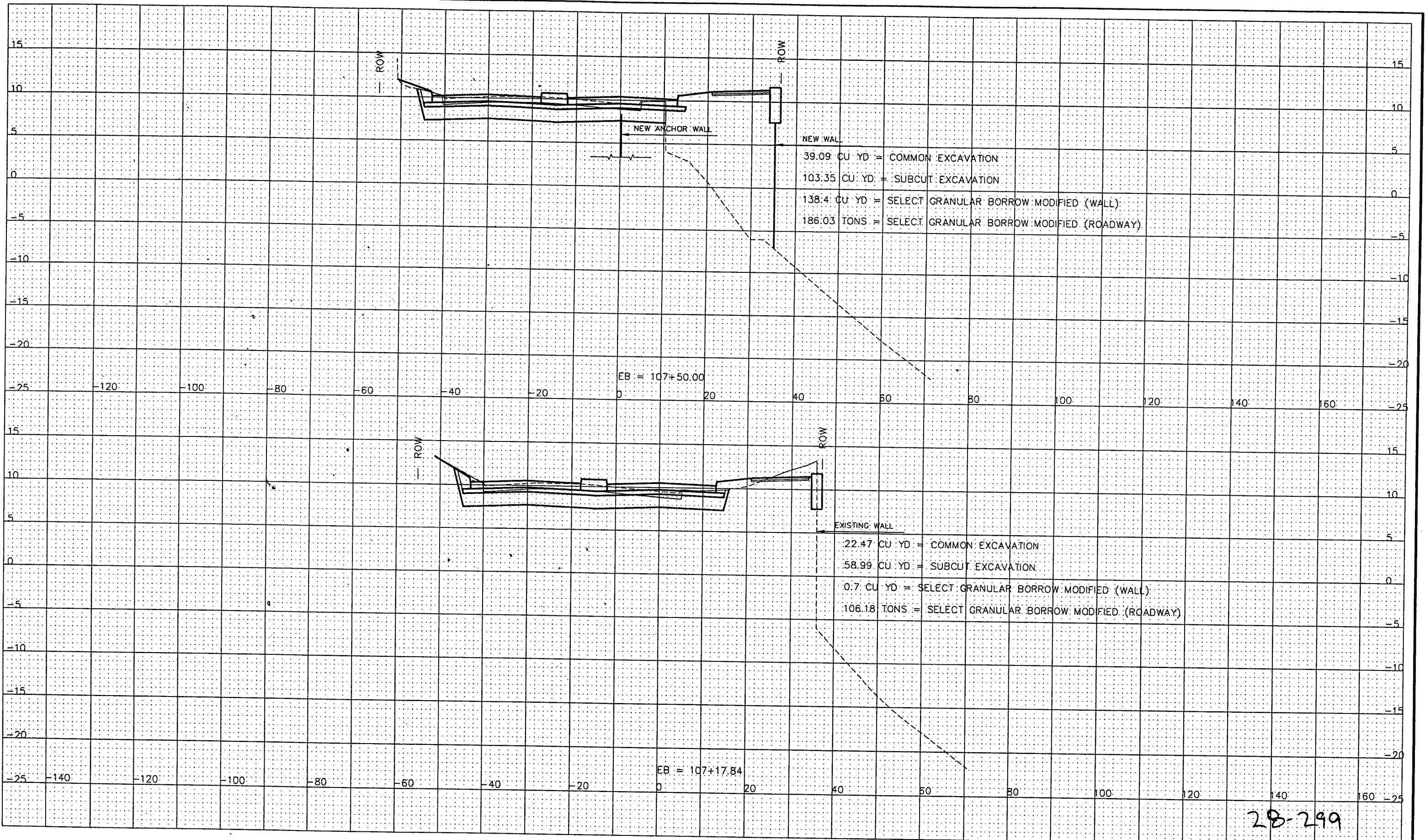
Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	33 OF 47 SHEETS





28-299

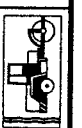
STATION 107+17.84 TO 107+50.00

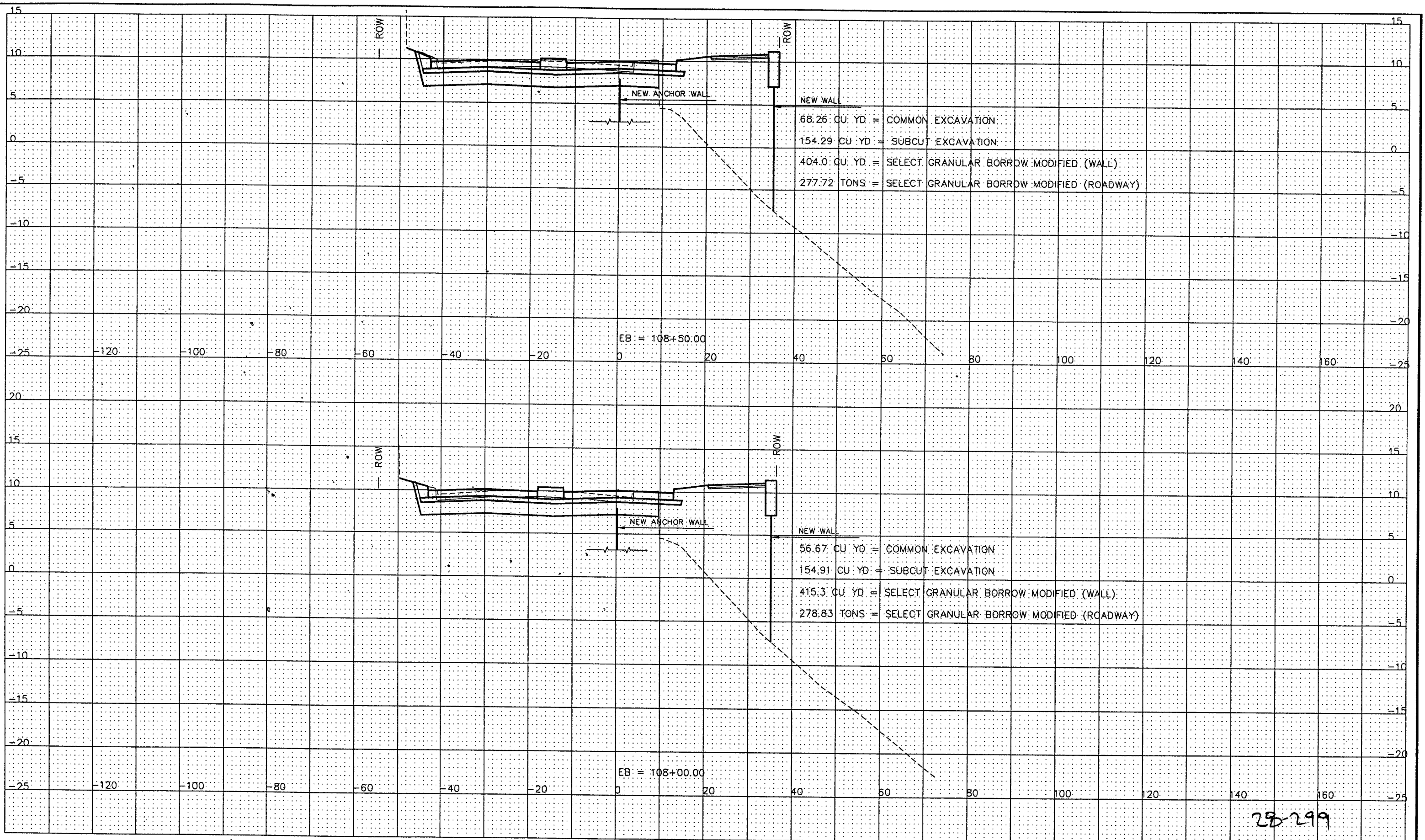
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Signed <i>Paula Olson</i> Date: 9/10/2002 Reg. No. 21229
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	34 OF 47 SHEETS





25-299

STATION 108+00.00 TO 108+50.00

	DESIGNED	JE	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
	DRAWN	MW	
	APPROVED	BE	

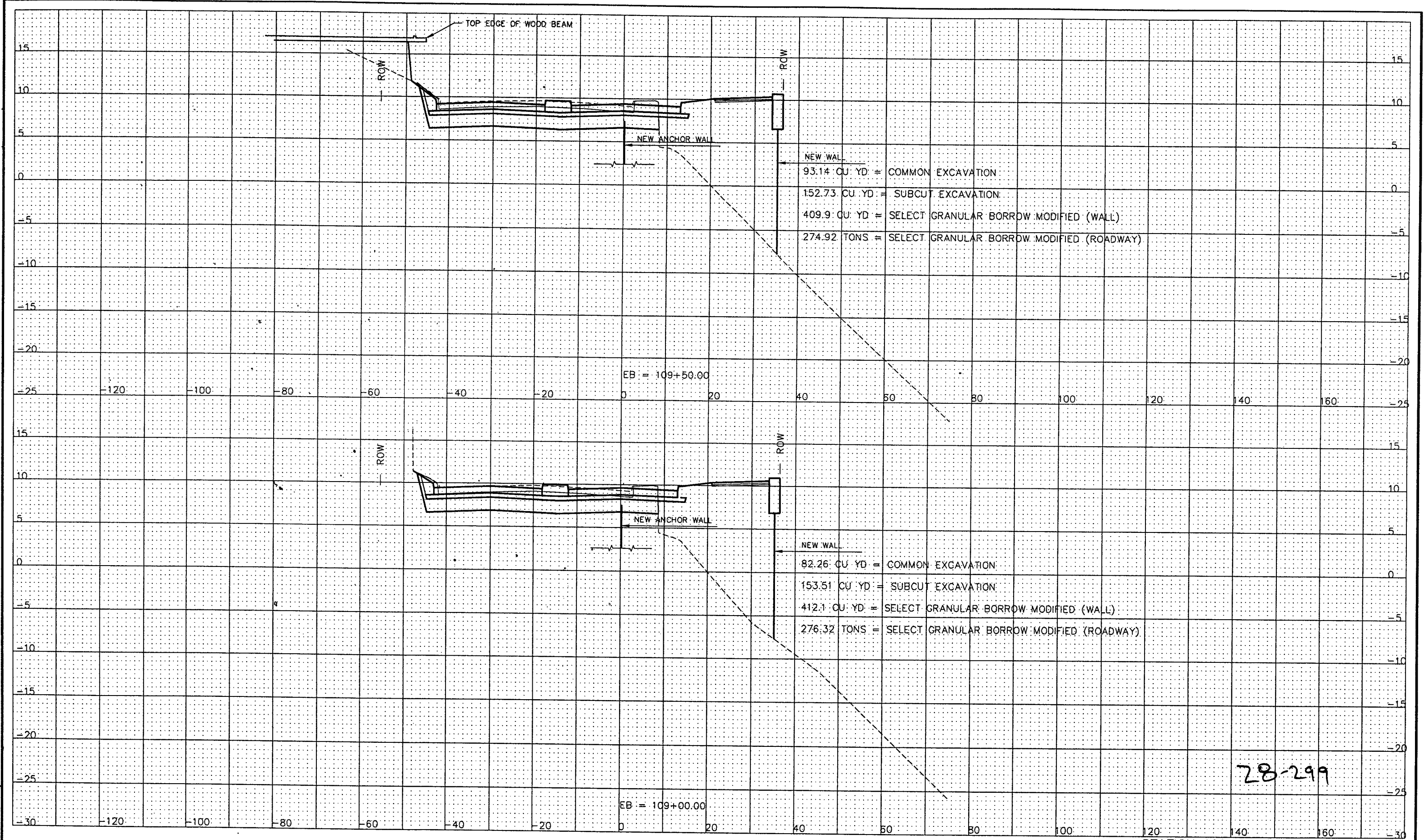
Signed *James Glass* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (I.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	35 OF 47 SHEETS





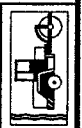
STATION 109+00.00 TO 109+50.00

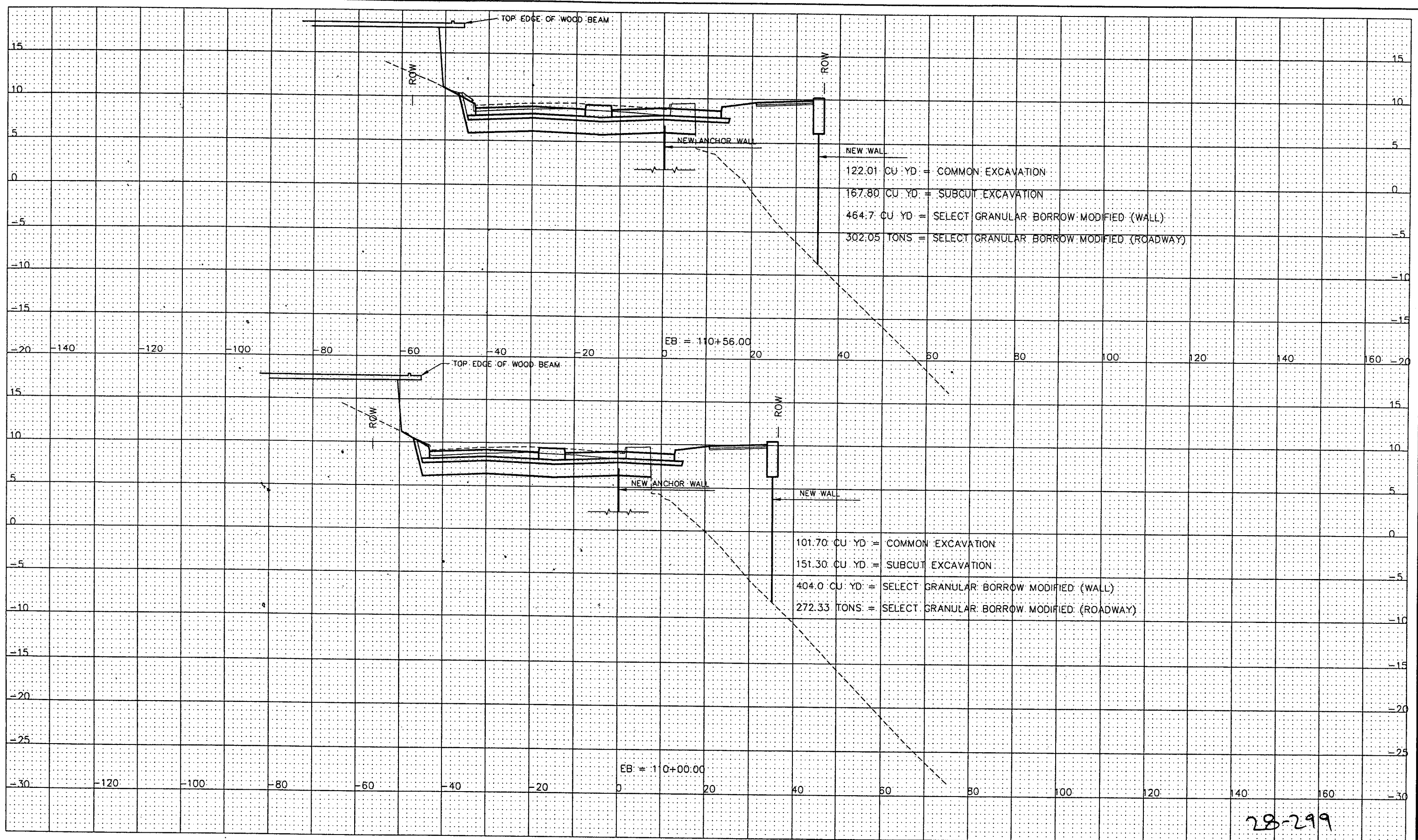
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (I.H.5=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	36 OF 47 SHEETS





28-299

STATION 110+00.00 TO 110+56.00



DESIGNED JE
 DRAWN MW
 APPROVED BE

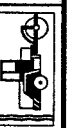
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *Paul E. Olson* Date: 9/10/2002 Reg. No. 21229

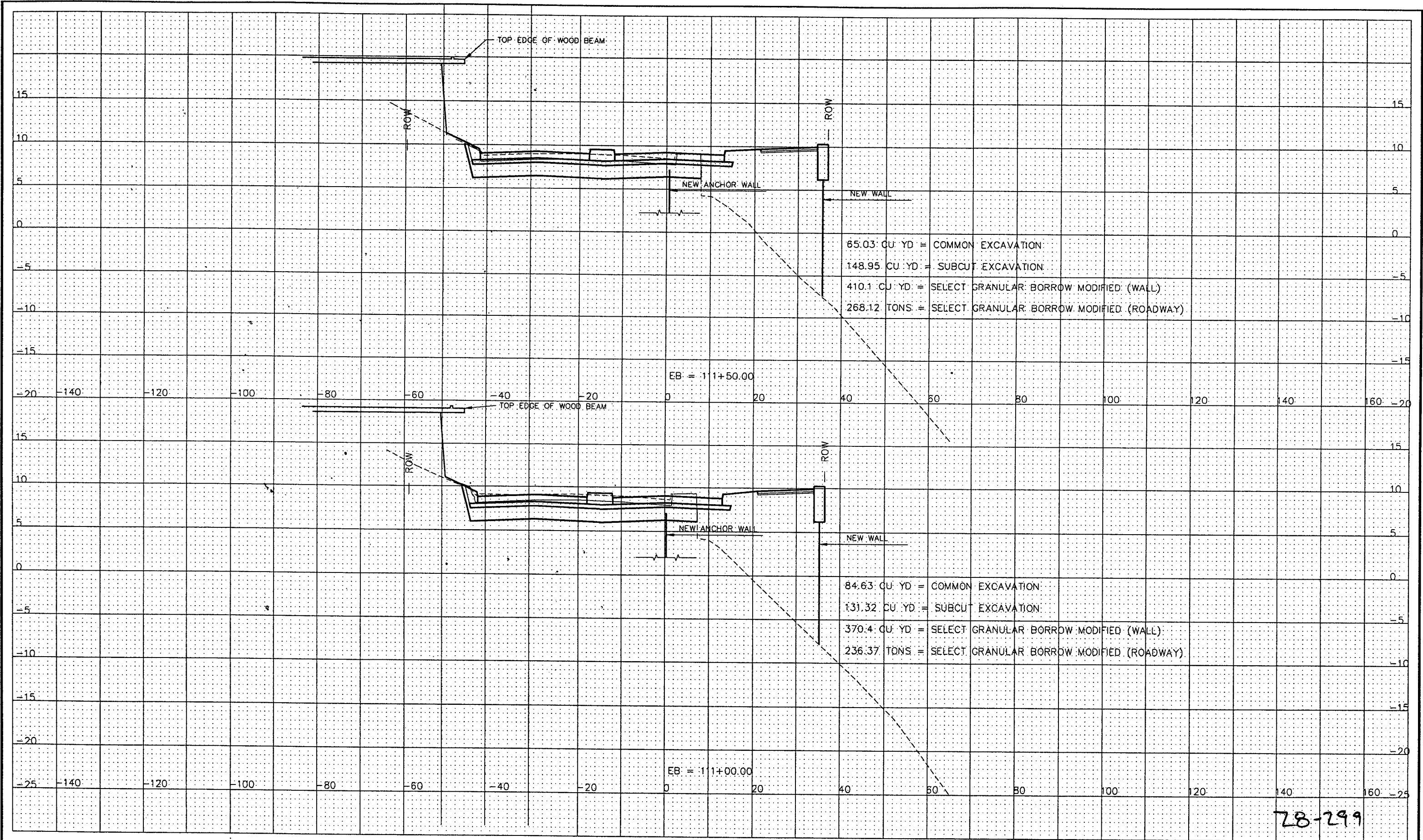
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200
 DRAWER: 12
 DWG. NO. 1400

STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (I.H.5.=102)
 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DATE: 9/05/02 SHEET NO. 37 OF 47 SHEETS





65.03 CU. YD = COMMON EXCAVATION
 148.95 CU. YD = SUBCUT EXCAVATION
 410.1 CU. YD = SELECT GRANULAR BORROW MODIFIED (WALL)
 268.12 TONS = SELECT GRANULAR BORROW MODIFIED (ROADWAY)

84.63 CU. YD = COMMON EXCAVATION
 131.32 CU. YD = SUBCUT EXCAVATION
 370.4 CU. YD = SELECT GRANULAR BORROW MODIFIED (WALL)
 236.37 TONS = SELECT GRANULAR BORROW MODIFIED (ROADWAY)

78-299

STATION 111+00.00 TO 111+50.00

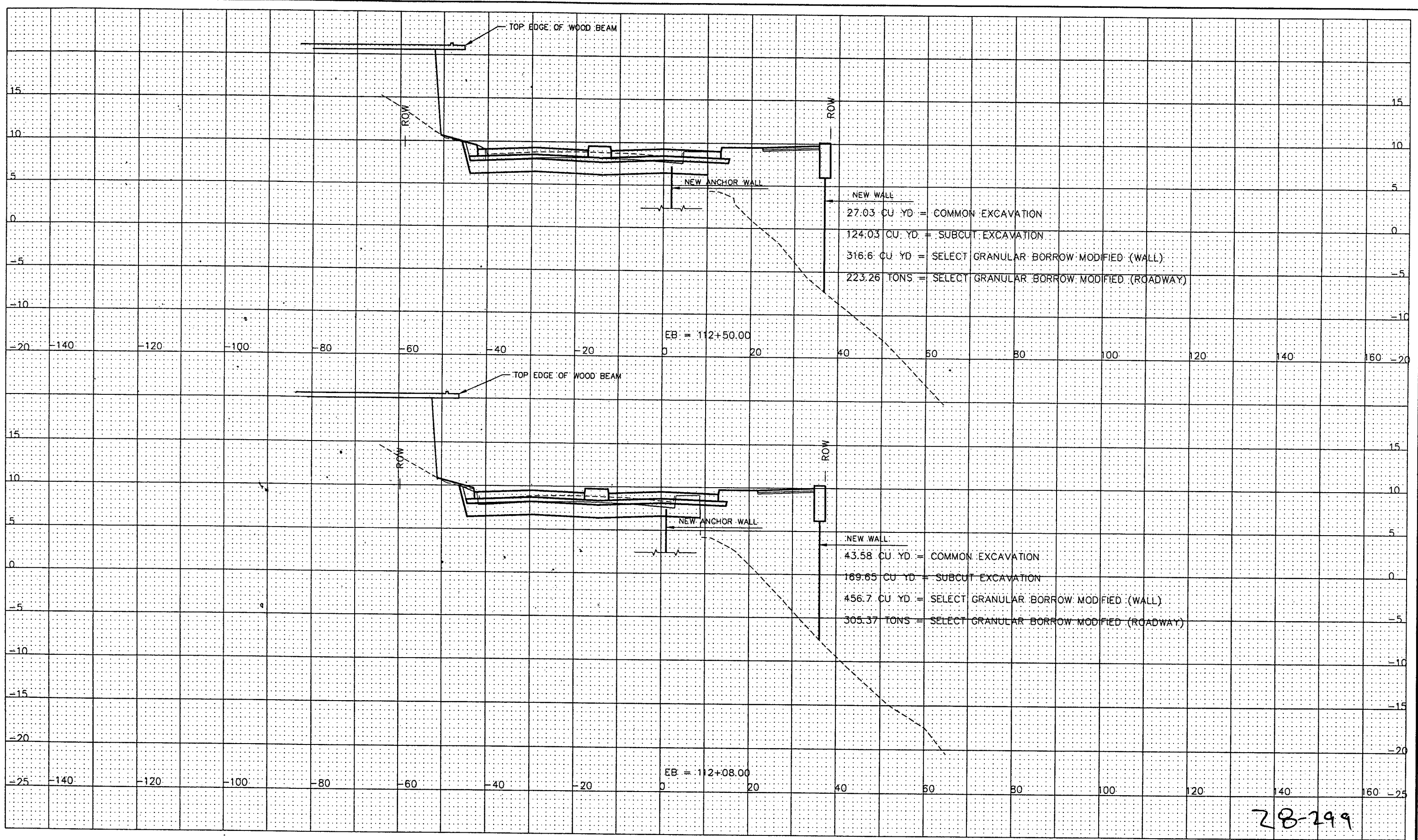
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA Signed <i>[Signature]</i> Date: 9/10/2002 Reg. No. 21229
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	38 OF 47 SHEETS





28-299

STATION 112+08.00 TO 112+50.00



DESIGNED JE
DRAWN MW
APPROVED BE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

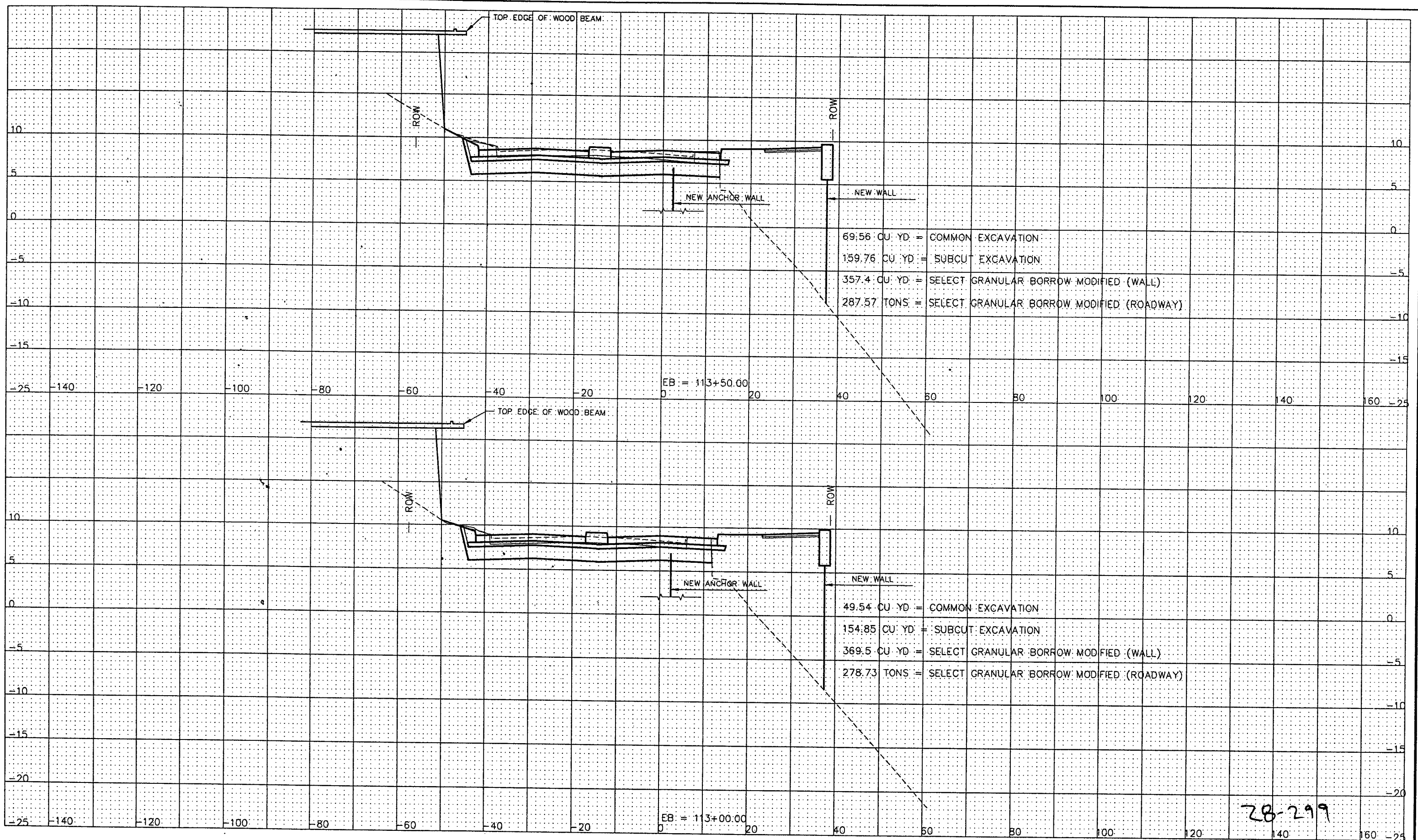
PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200
DRAWER: 12
DWG. NO. 1400


STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.S.=102)
CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DATE: 9/05/02
SHEET NO. 39 OF 47 SHEETS

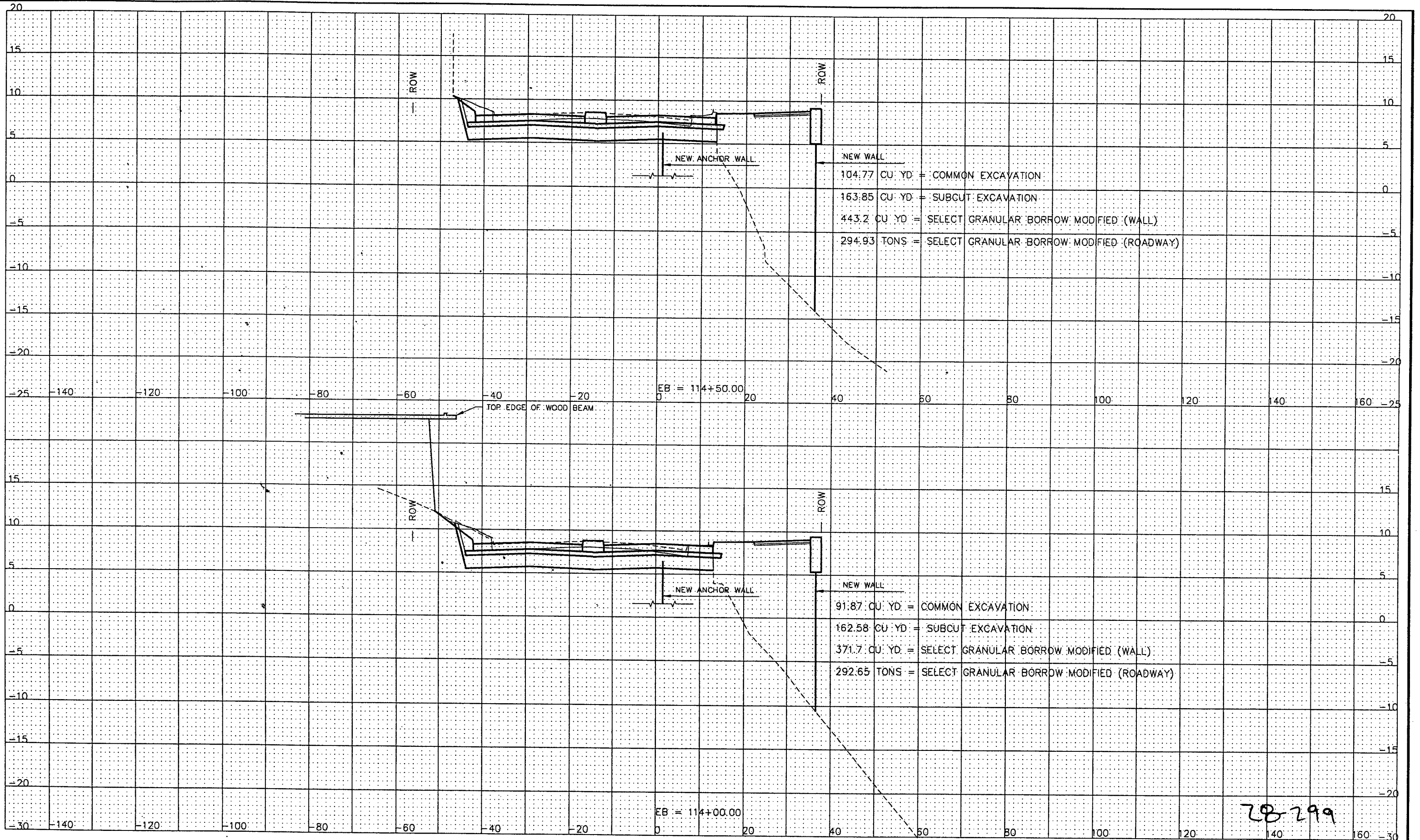




28-299

STATION 113+00.00 TO 113+50.00

	DESIGNED	JE	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	PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
	DRAWN	MW			DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
	APPROVED	BE			DWG. NO.	1400	DATE:	9/05/02
Signed <i>Prince Elmer</i> Date: 9/10/2002 Reg. No. 21229			<h2>SHEPARD ROAD</h2>					



28-299

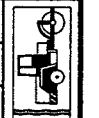
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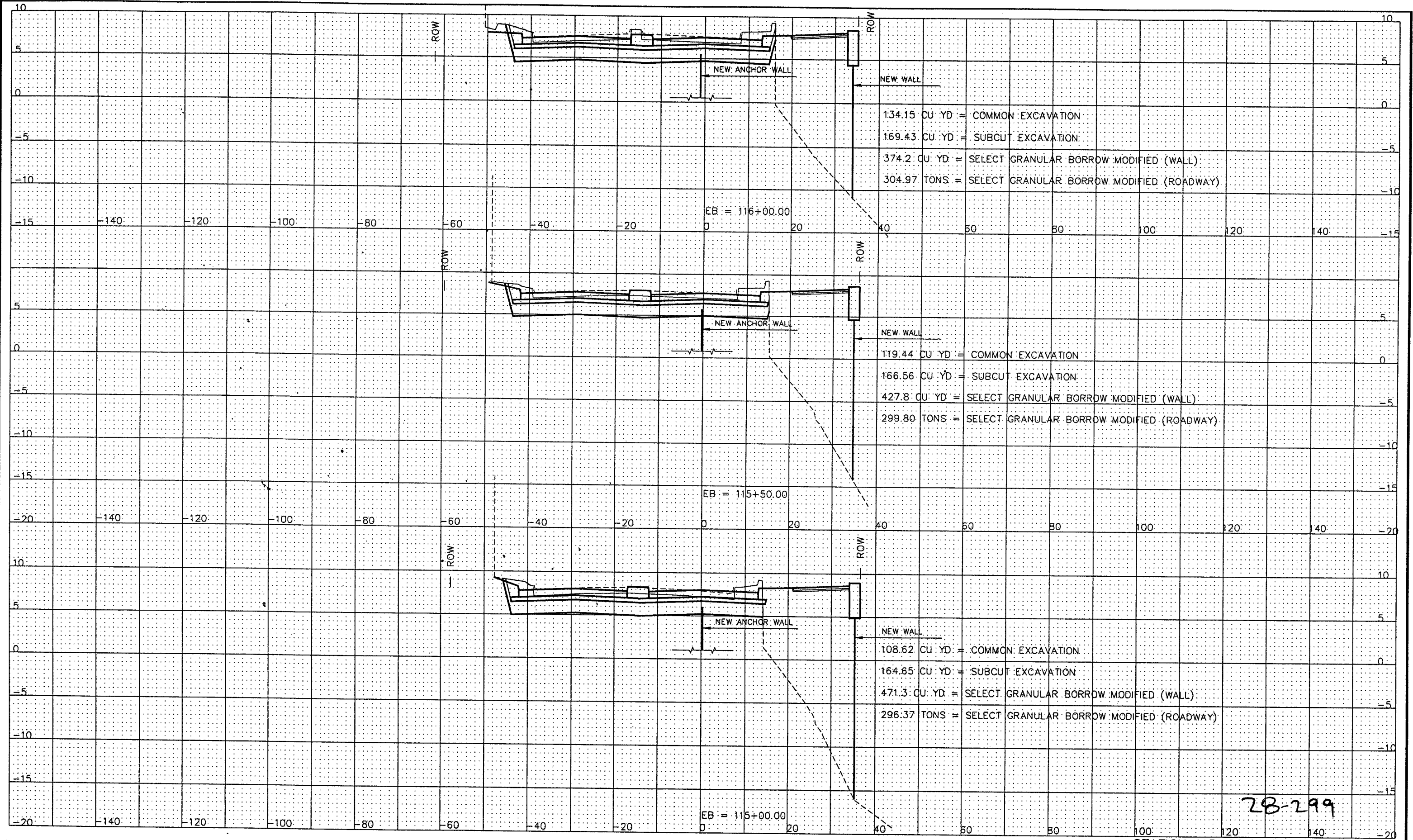
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	41 OF 47 SHEETS





28-299

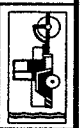
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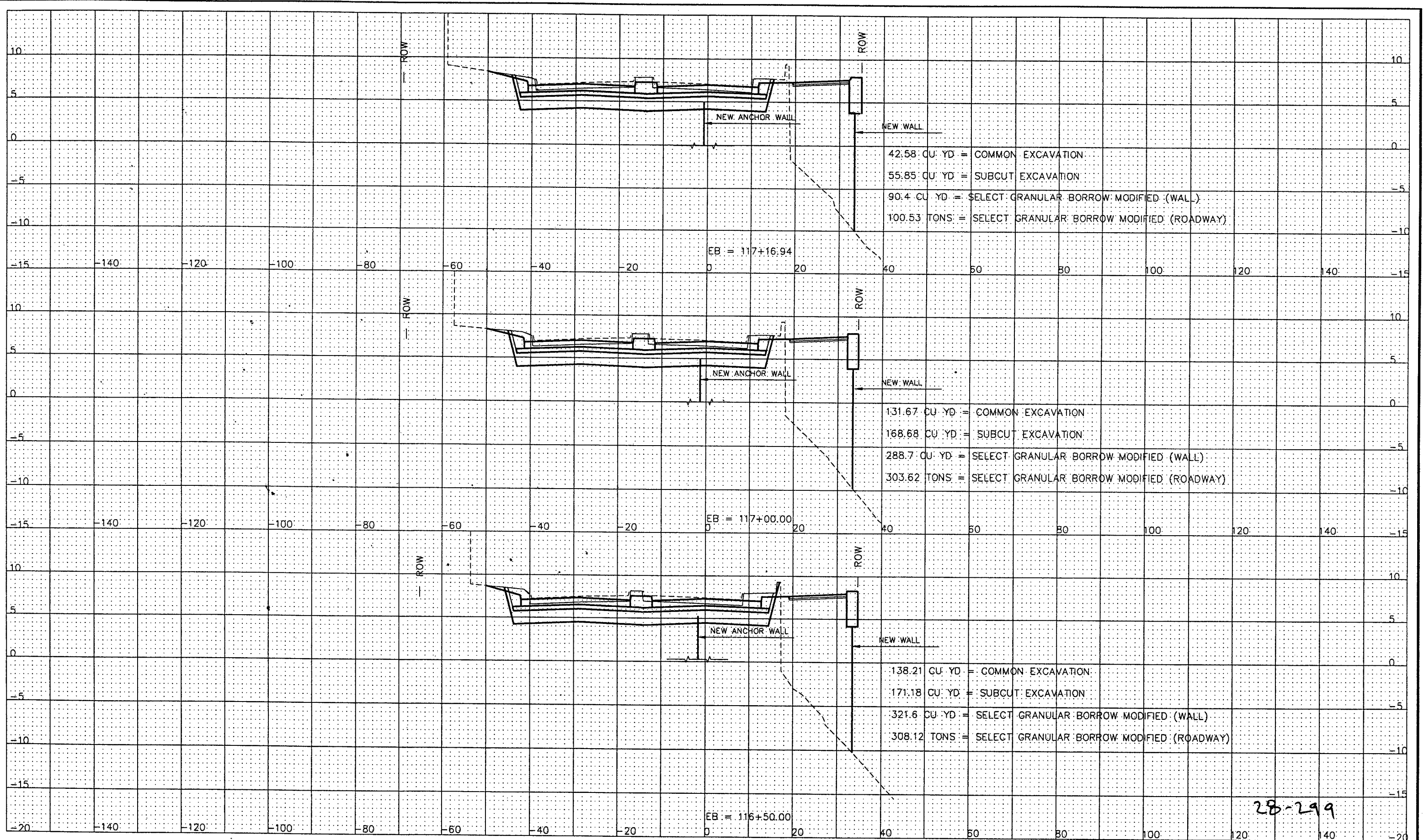
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	
Signed <i>Paul Egan</i>		Date: 9/10/2002	Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (I.H.5=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	42 OF 47 SHEETS





42.58 CU. YD = COMMON EXCAVATION
 55.85 CU. YD = SUBCUT EXCAVATION
 90.4 CU. YD = SELECT GRANULAR BORROW MODIFIED (WALL)
 100.53 TONS = SELECT GRANULAR BORROW MODIFIED (ROADWAY)

131.67 CU. YD = COMMON EXCAVATION
 168.68 CU. YD = SUBCUT EXCAVATION
 288.7 CU. YD = SELECT GRANULAR BORROW MODIFIED (WALL)
 303.62 TONS = SELECT GRANULAR BORROW MODIFIED (ROADWAY)

138.21 CU. YD = COMMON EXCAVATION
 171.18 CU. YD = SUBCUT EXCAVATION
 321.6 CU. YD = SELECT GRANULAR BORROW MODIFIED (WALL)
 308.12 TONS = SELECT GRANULAR BORROW MODIFIED (ROADWAY)

28-299

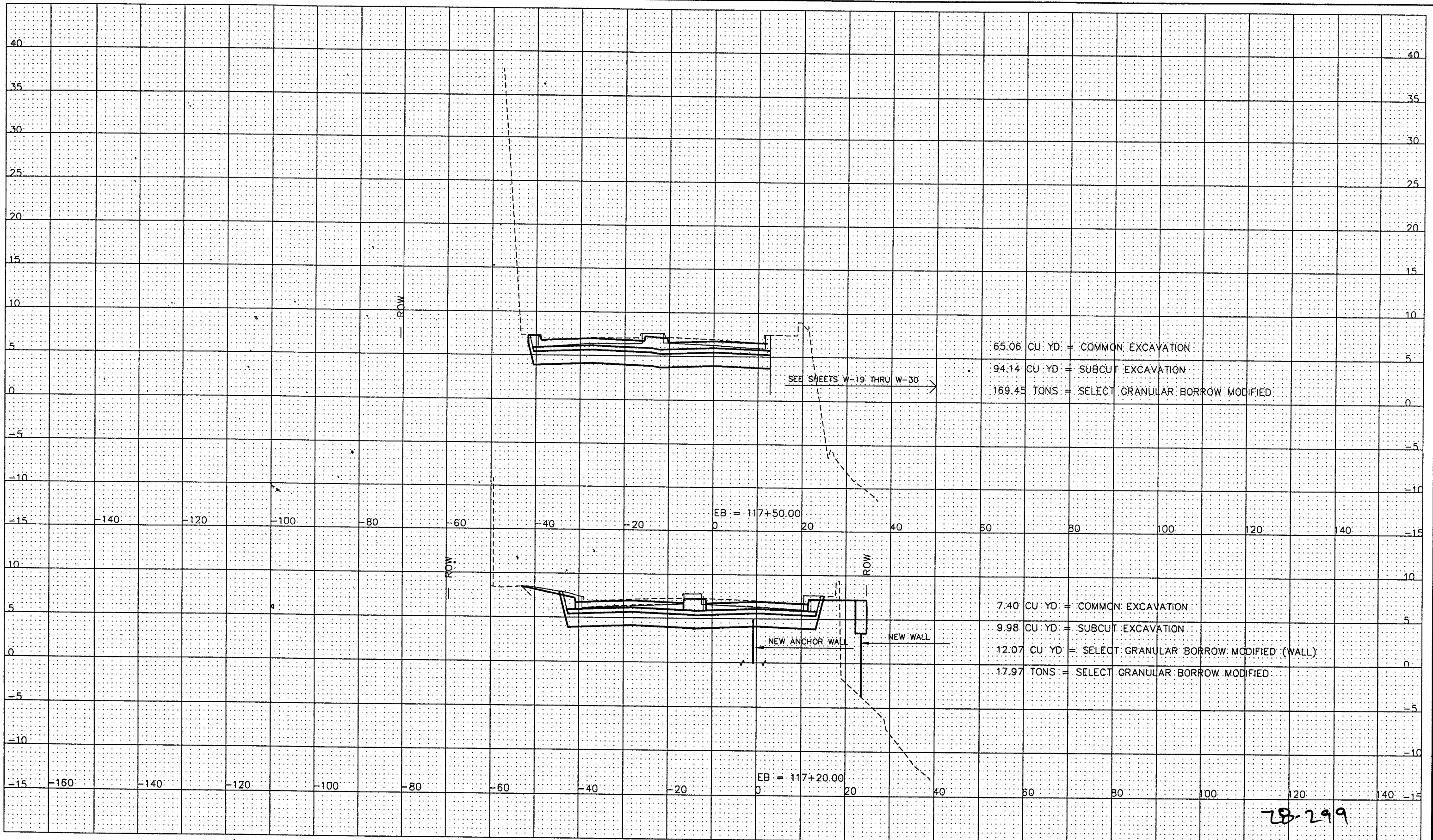
STATION 116+50.00 TO 117+16.94

DESIGNED JE
 DRAWN MW
 APPROVED BE
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 43 OF 47 SHEETS



65.06 CU. YD. = COMMON EXCAVATION
 94.14 CU. YD. = SUBCUT EXCAVATION
 169.45 TONS = SELECT GRANULAR BORROW MODIFIED

7.40 CU. YD. = COMMON EXCAVATION
 9.98 CU. YD. = SUBCUT EXCAVATION
 12.07 CU. YD. = SELECT GRANULAR BORROW MODIFIED (WALL)
 17.97 TONS = SELECT GRANULAR BORROW MODIFIED

STATION 117+20.00 TO 117+50.00

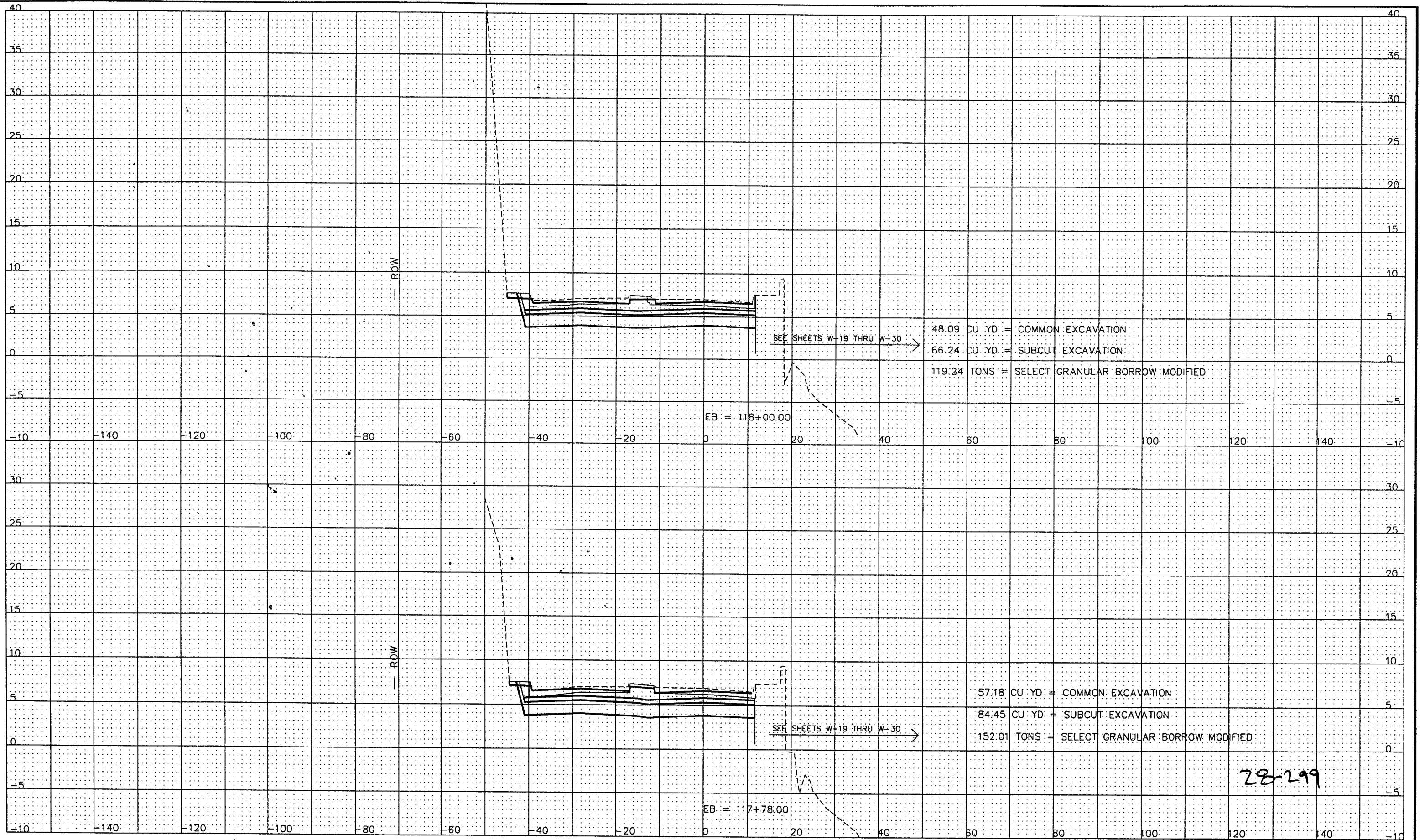
DESIGNED JE
 DRAWN MW
 APPROVED BE
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *James [Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 44 OF 47 SHEETS





STATION 117+78.00 TO 118+00.00

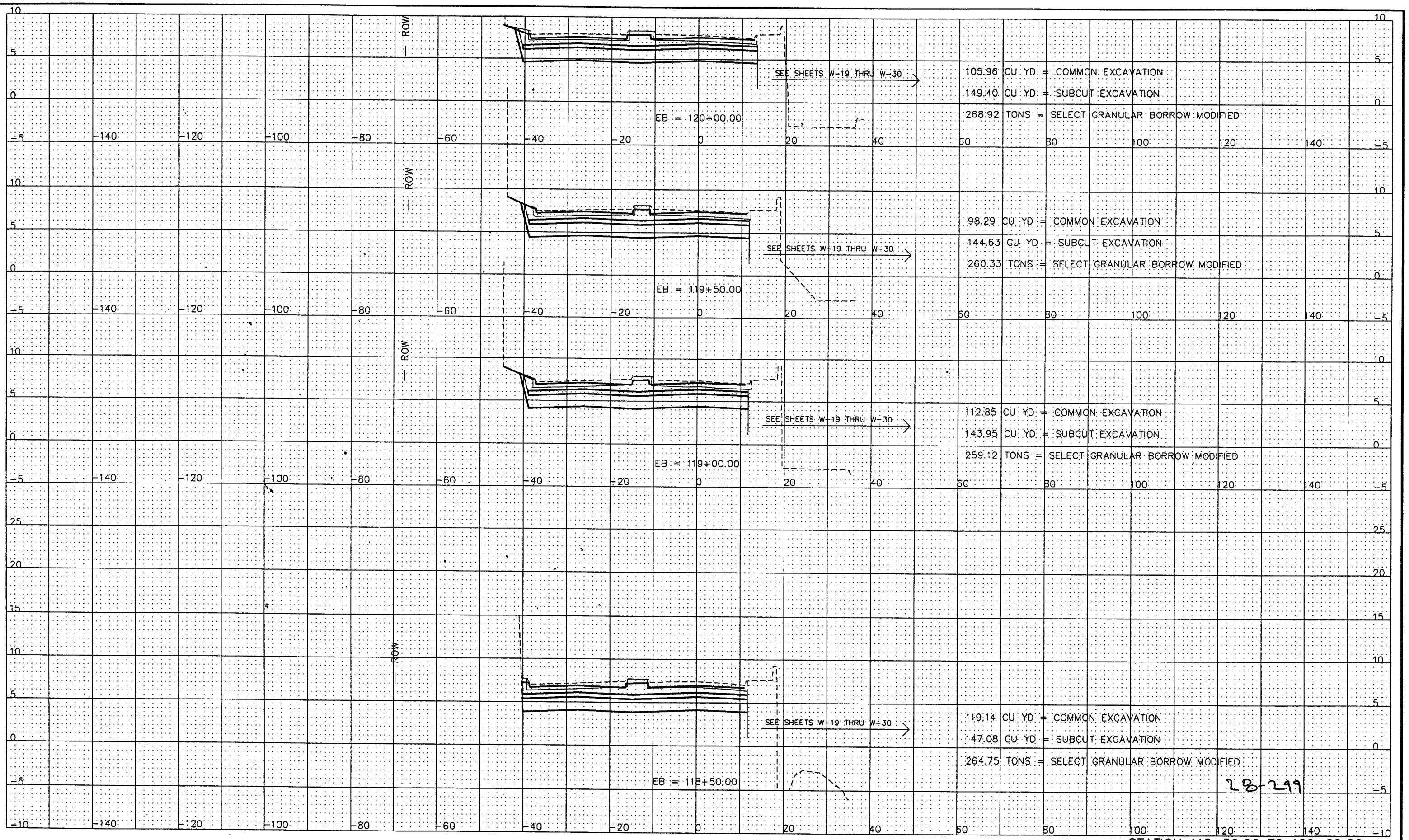
	DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
	DRAWN	MW	
	APPROVED	BE	

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	45 OF 47 SHEETS





28-299

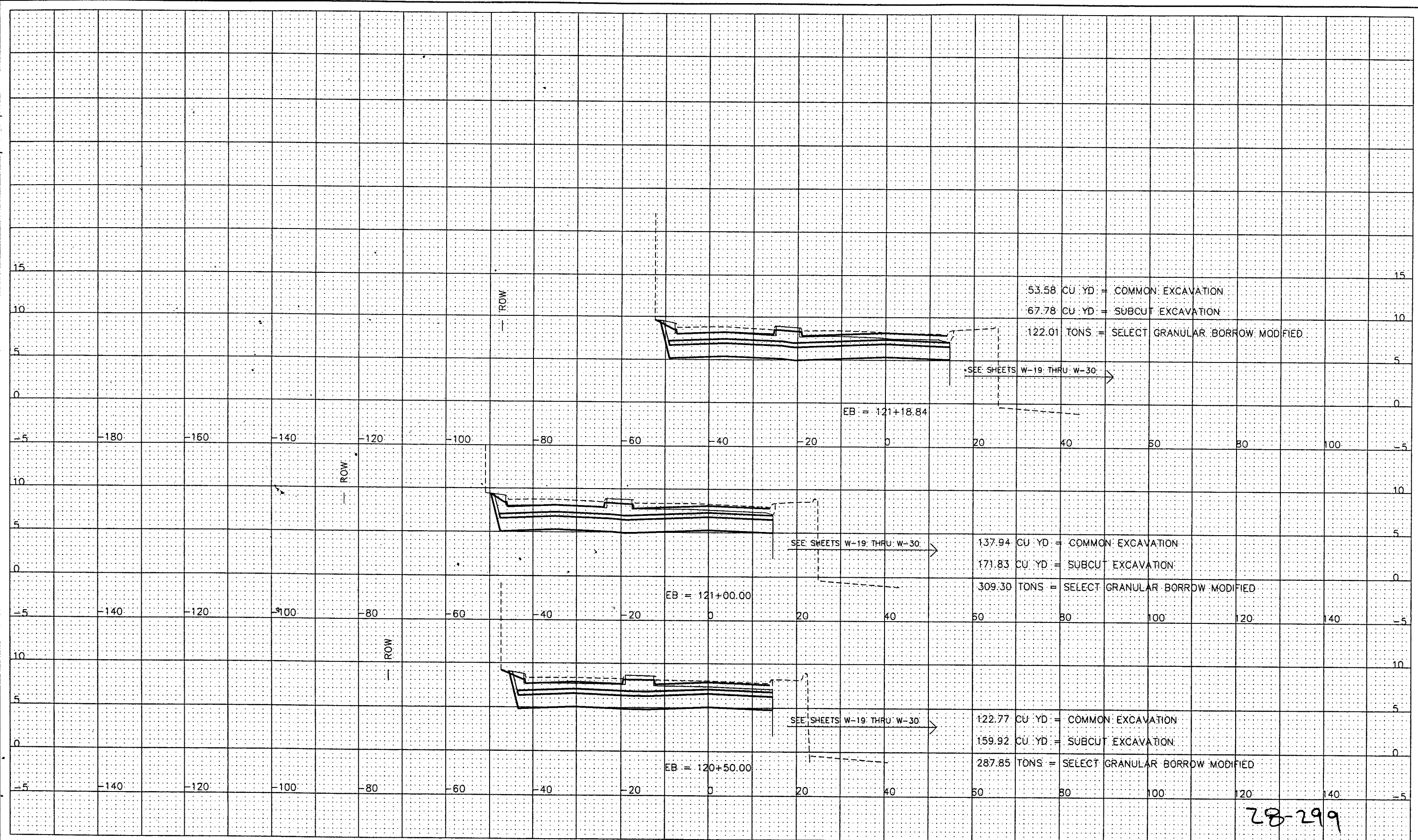
STATION 118+50.00 TO 120+00.00

DESIGNED JE
 DRAWN MW
 APPROVED BE
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
 Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT: 00-P-1200 STATE AID PROJECT NUMBER: 164-020-88, 62-637-16, S.P. 6201-77 (T.H.5.=102)
 DRAWER: 12 CAD NAME: PLANSHEETS/PHASE3/XS-8-23-2000.DWG
 DWG. NO. 1400 DATE: 9/05/02 SHEET NO. 46 OF 47 SHEETS



28-299

STATION 120+50.00 TO 121+18.84

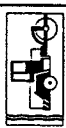
DESIGNED	JE	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
DRAWN	MW	
APPROVED	BE	

Signed *[Signature]* Date: 9/10/2002 Reg. No. 21229

PREPARED BY STREET ENGINEERING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

PROJECT:	00-P-1200	STATE AID PROJECT NUMBER:	164-020-88, 62-637-16, S.P. 6201-77 (T.H.5=102)
DRAWER:	12	CAD NAME:	PLANSHEETS/PHASE3/XS-8-23-2000.DWG
DWG. NO.	1400	DATE:	9/05/02
		SHEET NO.	47 OF 47 SHEETS



A. **DISCREPANCIES:** THE CONTRACTOR SHALL INFORM THE CITY IN WRITING, DURING THE BIDDING PERIOD, OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS OR OF ANY VARIATIONS NEEDED IN ORDER TO CONFORM TO CODES, RULES AND REGULATIONS. UPON RECEIPT OF SUCH INFORMATION, THE CITY WILL SEND WRITTEN INSTRUCTIONS REGARDING ANY DETERMINED DISCREPANCY. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND WORK SHALL BE PERFORMED IN A MANNER AS DIRECTED BY THE CITY.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS AT THE JOB SITE AND BRING TO THE CITY'S ATTENTION ANY DISCREPANCIES.

THE ACTUAL EXTENT, LOCATION AND QUANTITY OF REQUIRED REMOVAL MAY VARY FROM THAT SHOWN. THE CONTRACTOR SHALL VERIFY THE EXTENT OF REQUIRED REMOVALS AS WORK PROCEEDS AND NOTIFY THE CITY OF ANY VARIATIONS FROM THE CONTRACT DRAWINGS.

ALL DIMENSIONS AND SIZES OF EXISTING CONSTRUCTION INDICATED ON THE DRAWINGS ARE BASED UPON LIMITED FIELD MEASUREMENTS AND SHALL BE CONSIDERED APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

CONTRADICTIONS BETWEEN ACTUAL FIELD CONDITIONS AND CONDITIONS SHOWN ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE CITY. THE CITY SHALL APPROVE MODIFICATIONS REQUIRED DUE TO CONTRADICTIONS IF NECESSARY.

B. **SHORING:** IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE BRACING AND FORMWORK, ETC., AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP DRAWINGS (CERTIFIED BY A LICENSED ENGINEER IN THE STATE OF MINNESOTA) OF ALL PROPOSED SHORING AND BRACING, INDICATING PLACEMENT AND LOAD CAPACITY OF SHORING ELEMENTS TO THE CITY FOR REVIEW.

C. **EXCAVATION:** THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT.

D. **DEMOLITION WORK:** PROTECT EXISTING WORK TO REMAIN FROM DAMAGE.

DISPOSE OF DEMOLISHED MATERIAL OFF SITE AND IN ACCORDANCE WITH LOCAL CODES.

NOTIFY THE CITY'S REPRESENTATIVE IMMEDIATELY UPON ENCOUNTERING UNEXPECTED OR CONCEALED CONDITIONS AND, EXCEPT IN AN EMERGENCY, BEFORE THE ENCOUNTERED CONDITIONS ARE DISTURBED.

AT NO COST TO THE OWNER, PROMPTLY REPAIR DAMAGE TO PROPERTY OF THE OWNER WHICH IS TO REMAIN IN USE AND TO THE ADJACENT FACILITIES RESULTING FROM DEMOLITION OPERATIONS.

SHEET PILING WORKING POINT COORDINATES		
WORK POINT	X	Y
A	574580.78	155273.46
B	574600.40	155251.99
C	574755.30	155363.78
D	575326.76	155570.93
E	575488.90	155636.44
F	575759.50	155734.54
G	575826.72	155759.39
H	575893.18	155786.40
I	575951.23	155812.36
J	576015.71	155843.90
K	576078.96	155877.65
L	576401.89	156055.55
M	576394.83	156068.37

CANTILEVERED SIDEWALK WORKING POINT COORDINATES		
WORK POINT	X	Y
N	576462.06	156105.81
O	576605.23	156204.70
P	576731.63	156275.76

SUMMARY OF QUANTITIES CONDUIT SYSTEM (LIGHTING)			
ITEM	UNIT	QUANTITY	
3/4" Diameter PVC	Lin. Ft.	2400	
Light Anchorage	Each	32	
3/4" Diameter PVC 90° Bends	Each	64	
3/4" Diameter Caps	Each	66	

① Quantities Listed are for Informational Purposes, Any Additional Minor Items or Slight Changes in Quantities Required Shall be Furnished by the Contractor with No Additional Compensation.

② Supplied by Pole Manufacturer, Installed by Contractor.

E. **NEW WORK IN CONJUNCTION WITH EXISTING CONSTRUCTION:** THE CONTRACTOR SHALL VERIFY ALL SIZES, DIMENSIONS, ELEVATIONS, LOCATIONS, ETC. OF ELEMENTS OF THE EXISTING CONSTRUCTION WHICH ARE RELATIVE TO THE NEW CONSTRUCTION.

ALL DIMENSIONS INVOLVING NEW WORK TYING INTO OR GOVERNED BY EXISTING CONSTRUCTION SHALL BE FIELD VERIFIED BY THE CONTRACTOR AND FURNISHED TO THE APPROPRIATE SUBCONTRACTOR PRIOR TO FABRICATION OF ANY WORK. THE VERIFIED DIMENSIONS SHALL BE INCLUDED AND BE NOTED AS SUCH ON THE FIRST SHOP DRAWING SUBMITTAL.

ALL HOLES THROUGH EXISTING CONSTRUCTION SHALL BE CORE DRILLED OR SAW CUT.

F. **CAST-IN-PLACE CONCRETE PILE NOTES:**

THE MINIMUM WALL THICKNESS OF THE PILING SHALL BE 0.395".

APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED ON DETAIL NO. B201. BACK-UP RING SHALL HAVE A TIGHT FIT.

WELDING ELECTRODE SHALL BE A W.S. TYPE E7016 OR E7018 (LOW-HYDROGEN).

LOW-HYDROGEN ELECTRODES SHALL BE STORED IN HOLDING OVENS AT A TEMPERATURE OF NOT LESS THAN 250 DEGREES F.

LOW-HYDROGEN ELECTRODES SHALL BE PLACED IN A HOLDING OVEN FOR AT LEAST 8 HOURS IF THEY HAVE BEEN EXPOSED TO THE ATMOSPHERE FOR MORE THAN 2 HOURS.

ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.

WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0 DEGREES F OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32 DEGREES F, THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70 DEGREES F AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.

G. **REINFORCING STEEL:**

- ALL REINFORCING STEEL SHALL CONFORM TO MNDOT SPEC SECTION 3301 AND $f_y = 60,000$ PSI.
- ALL REINFORCING STEEL SHALL BE EPOXY COATED.

STATEMENT OF ESTIMATED QUANTITIES - SHEET PILE WALL			
ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY
2104.501	REMOVE CONCRETE RETAINING WALL (TYPE 1) (PARTIAL DEPTH)	LF	1130
2104.501	REMOVE CONCRETE RETAINING WALL (TYPE 2) (PARTIAL DEPTH)	LF	180
2104.501	REMOVE METAL PIPE RAILING	LF	1310
2104.503	REMOVE SHEET PILING	SF	720
2104.607	SALVAGE RANDOM RIFRAP	CY	2800
2301.602	DRILL & GROUT 3/4" ANCHORAGE	EACH	20
2401.513	TYPE SPECIAL RAIL CONCRETE (3Y46)	LF	1945
2401.541	REINFORCING BARS (EPOXY COATED)	LB	54100
2401.601	STRUCTURE EXCAVATION (RETAINING WALL)	LS	1
2401.602	CONCRETE RAIL POST	EACH	32
2402.583	ORNAMENTAL METAL RAILING TYPE 1	LF	1545
2402.583	ORNAMENTAL METAL RAILING TYPE 2	LF	372
2411.604	STONE MASONRY VENEER 5 1/2" THICK	SY	88
2452.601	TIEBACK SYSTEM	LS	1
2452.603	STEEL SHEET PILING -TYPE 1	SF	36530
2452.603	STEEL SHEET PILING -TYPE 2	SF	48540
2511.607	INSTALL RANDOM RIFRAP	CY	2000
2545.509	CONDUIT SYSTEM (LIGHTING)	LS	1

ITEM NO.	ITEMS INCIDENTAL TO OTHER QUANTITIES	UNIT	APPROXIMATE QUANTITY
	DOWEL BAR ASSEMBLIES	EACH	31
	PREMOLDED SPONGE RUBBER JOINT FILLER 2'-6" X 4'-0" X 1/2"	EACH	31

LIST OF SHEETS	
W-1	General Notes, Schedule of Quantities, List of Sheets
W-2	Sheet Pile Wall Plan & Elevation
W-3	Sheet Pile Wall Plan & Elevation
W-4	Sheet Pile Wall Plan & Elevation
W-5	Sheet Pile Wall Plan & Elevation
W-6	Sheet Pile Wall Plan & Elevation
W-7	Sheet Pile Wall Details
W-8	Sheet Pile Wall Details
W-9	Sheet Pile Wall Details
W-10	Sheet Pile Wall Typical Sections
W-11	Sheet Pile Wall Typical Sections
W-12	Sheet Pile Wall Typical Sections
W-13	Sheet Pile Wall Typical Sections
W-14	Sheet Pile Wall Typical Sections
W-15	Typical Rail Panels Sections & Details
W-16	Typical Rail Panels Sections & Details
W-17	Typical Rail Panels Sections & Details
W-18	Typical Rail Panels Sections & Details
W-19	Bridge No. 62596 Deck Plan (Sheet 1 of 8)
W-19A	Bridge No. 62596 Framing Plan
W-20	Bridge Railing & Deck Plan (Sheet 2 of 8)
W-21	Bridge Structure Sections (Sheet 3 of 8)
W-22	Bridge Structure Sections (Sheet 4 of 8)
W-23	Typical Rail Panels Sections & Details (Sheet 5 of 8)
W-24	Typical Rail Panels Sections & Details (Sheet 6 of 8)
W-25	B-Details (Sheet 7 of 8)
W-26	B-Details (Sheet 8 of 8)
W-27	Cantilever Sidewalk Reinforcement Layout
W-28	Cantilever Sidewalk Reinforcement Layout
W-29	Cantilever Sidewalk Details
W-30	Cantilever Sidewalk Salvage Existing Railing Details
W-31	Existing Outfall Structure Plan
W-32	Existing Outfall Structure Plan & Section
W-33	Bridge No. 62597 Proposed Outfall Structure Plan (Sheet 1 of 7)
W-34	Proposed Outfall Structure Plan & Section (Sheet 2 of 7)
W-35	Proposed Outfall Structure Section (Sheet 3 of 7)
W-36	Proposed Outfall Structure Section (Sheet 4 of 7)
W-37	Proposed Outfall Structure Bottom Slab Reinf. (Sheet 5 of 7)
W-38	Proposed Outfall Structure Wall Reinf. (Sheet 6 of 7)
W-39	Proposed Outfall Structure Top Slab Reinf. (Sheet 7 of 7)
W-40	Existing Retaining Wall Plan & Sections (Type 1)
W-41	Existing St. Peter Outfall Structure
W-42	Existing St. Peter Outfall Structure
W-43	Existing Wabasha Sheet Piling
W-44	Existing Retaining Wall Section (Type 2)
W-45	Existing Retaining Wall / Cant. Sidewalk

For Statement of Estimated Quantities - Bridge No. 62596, See Sheet W-19.

For Statement of Estimated Quantities - Cantilever Sidewalk, See Sheet W-27.

For Statement of Estimated Quantities - Bridge No. 62597, See Sheet W-33.

28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY J. SHEEHAN DATE 6/00
 DESIGNED BY G. SCHWIENTEK DATE 6/00
 CHECKED BY M. DAUBENBERGER DATE 6/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: Max Daubenberg
 Signature: Max Daubenberg
 Date: 9/10 License #: 9164

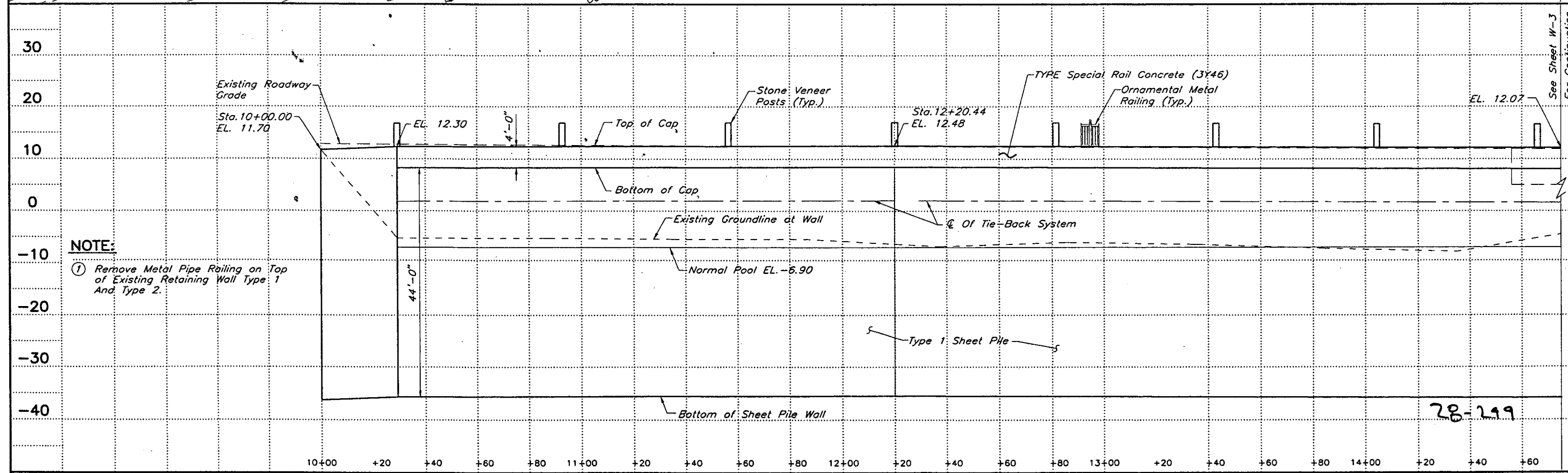
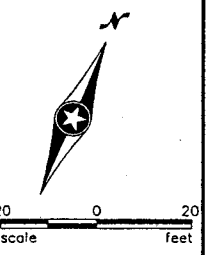
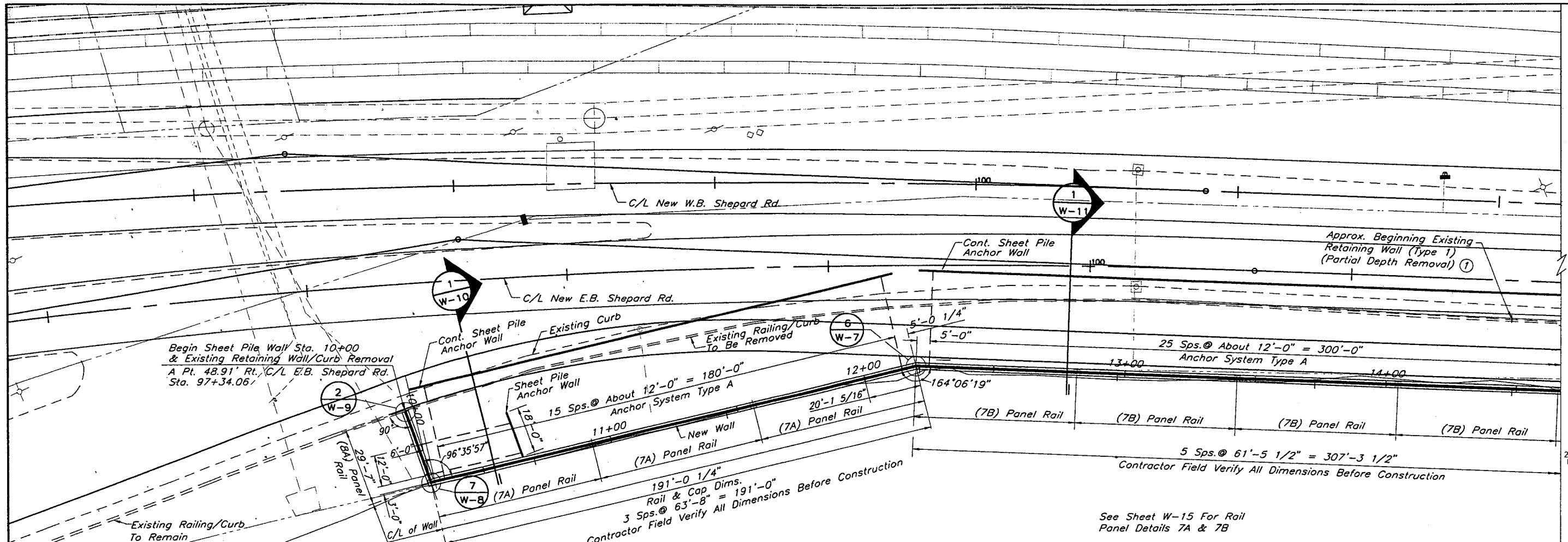
SRF CONSULTING GROUP, INC.



City of St. Paul

SHEPARD ROAD
 GENERAL NOTES, QUANTITIES, &
 LIST OF SHEETS
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-1 OF W-45



NO.	DATE	BY	DESCRIPTION OF REVISIONS

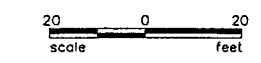
DRAWN BY: J. SHEEHAN DATE: 3/00
 DESIGNED BY: G. SCHWIENIEK DATE: 3/00
 CHECKED BY: M. DAUBENBERGER DATE: 3/00
 COMM. NO.: 0993567
 License # 164



City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 PLAN & ELEVATION
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
 W-2
 OF
 W-45



NOTES

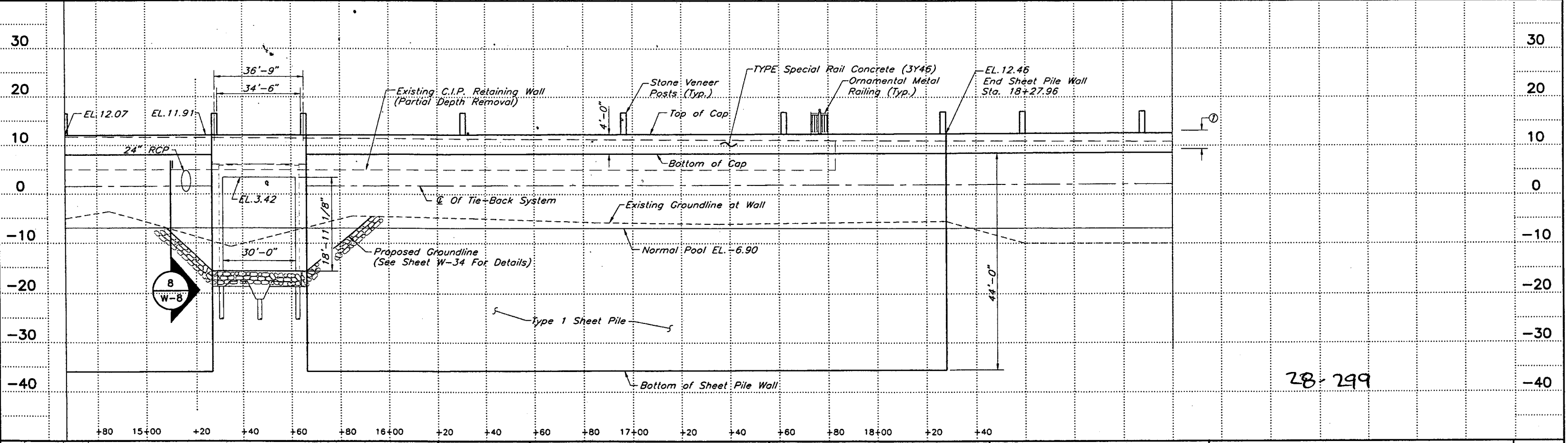
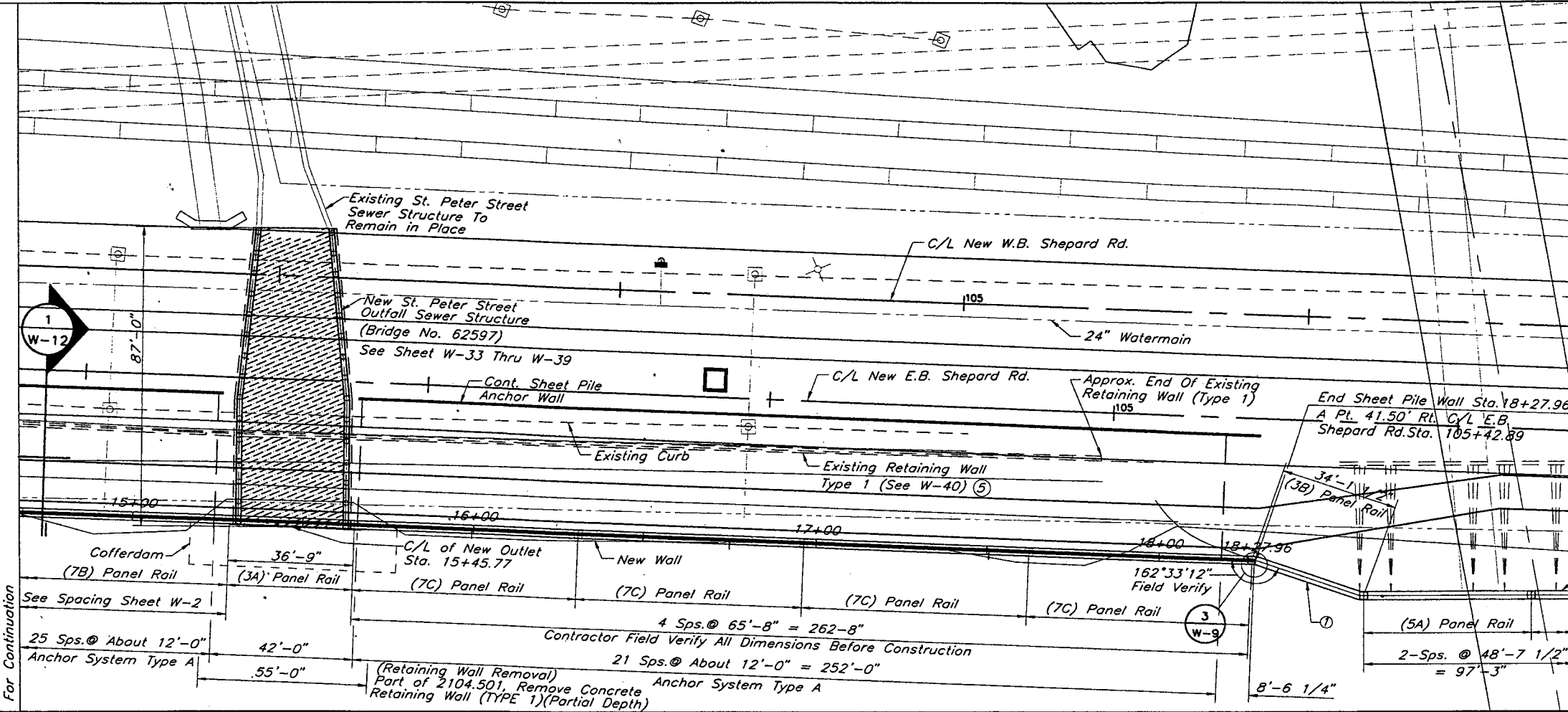
- ① Part of the Existing Steel Sheet Pipe Wall Shall be Removed at the Wabasha Bridge to Construct the TYPE Special Rail Concrete (3Y46). The Sheet Piling Shall be Cutoff and Removed Approximately 2 Feet Above the Bottom of the Concrete Cap. The Removal of the Wire Fence Adjacent to the Wall and The Timber Facing Attached to The Sheet Wall Shall be Incidental to Removal of Sheet Piling. Also Refer to Sheet W-43 For Additional Information.
- 2. Cost of Installation And Removal of Cofferdam is Incidental To Foundation Preparation (2401.601).
- 3. See Sheet W-15 For Rail Panel Details 7C.
- 4. See Sheet W-16 For Rail Panel Details 3A, 3B & 5A.
- ⑤ Remove Metal Railing on Top of Existing Retaining Wall Type 1 And Type 2.

Existing Sheet Pile Wall (See W-43) ①

See Sheet W-4 For Continuation

1
W-12

See Sheet W-2 For Continuation



28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67ple12.dwg DEC. 07, 2001

DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 1/10 License # 9164

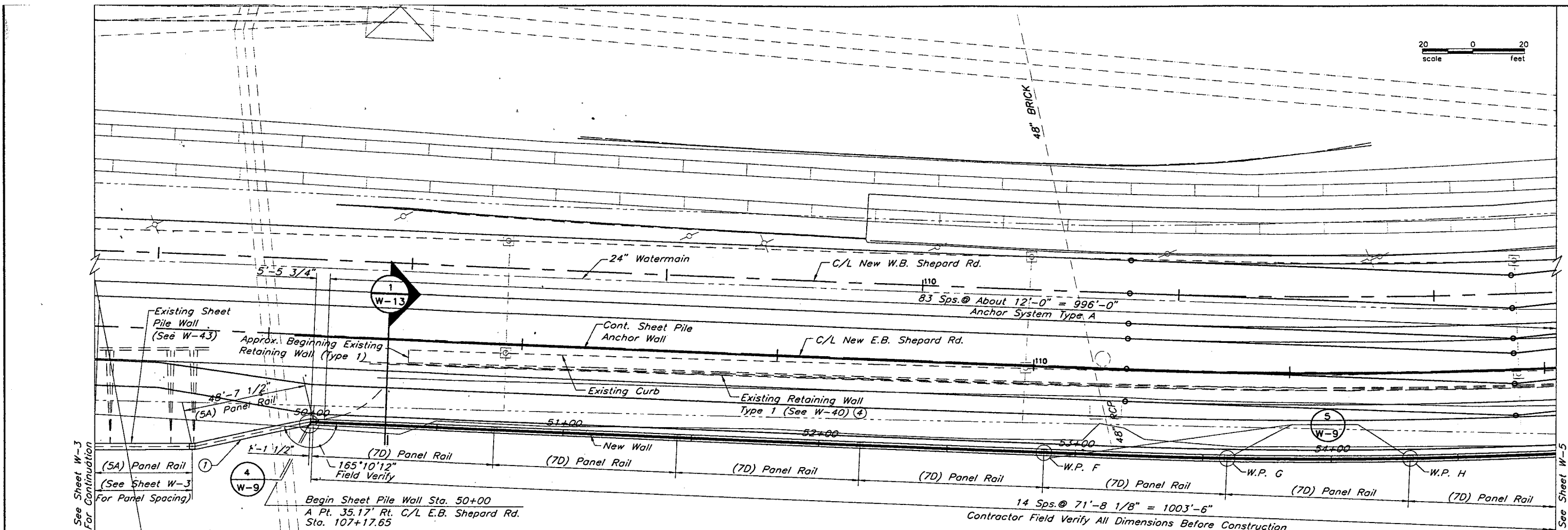
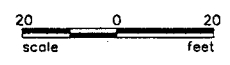


City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 PLAN & ELEVATION

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-3 OF W-45

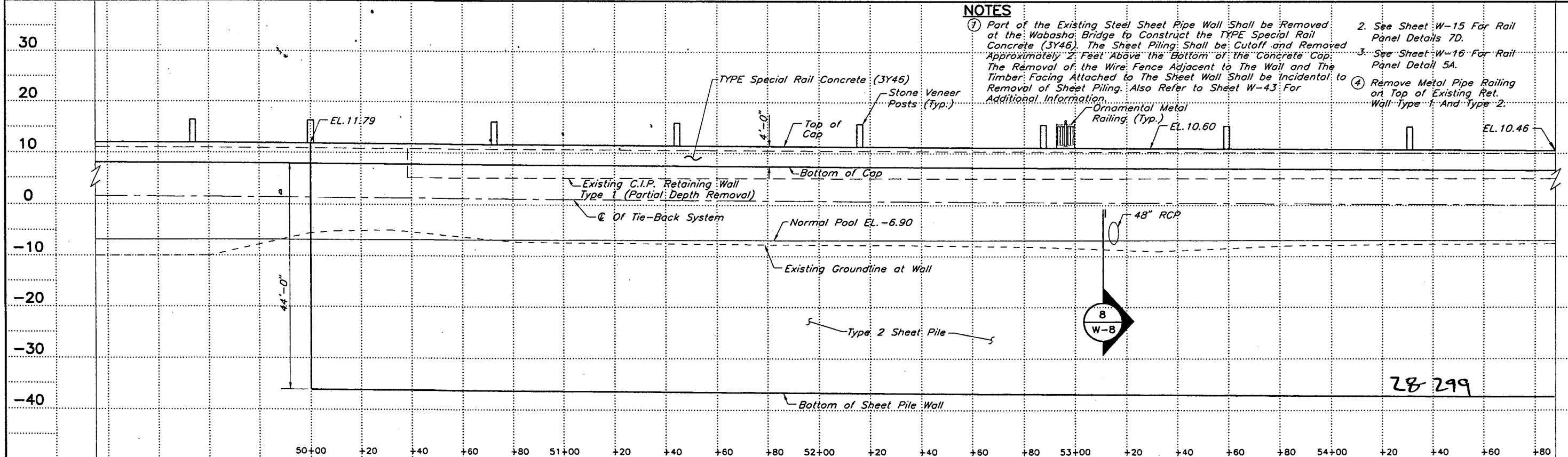


See Sheet W-3 For Continuation

See Sheet W-5 For Continuation

NOTES

- ① Part of the Existing Steel Sheet Pipe Wall shall be removed at the Wabasha Bridge to construct the TYPE Special Rail Concrete (3Y46). The Sheet Piling shall be cutoff and removed approximately 2' Feet Above the Bottom of the Concrete Cap. The Removal of the Wire Fence Adjacent to the Wall and the Timber Facing Attached to the Sheet Wall shall be incidental to Removal of Sheet Piling. Also Refer to Sheet W-43 For Additional Information.
- ② See Sheet W-15 For Rail Panel Details 7D.
- ③ See Sheet W-16 For Rail Panel Detail 5A.
- ④ Remove Metal Pipe Railing on Top of Existing Ret. Wall Type 1 And Type 2.



NO.	DATE	BY	DESCRIPTION OF REVISIONS

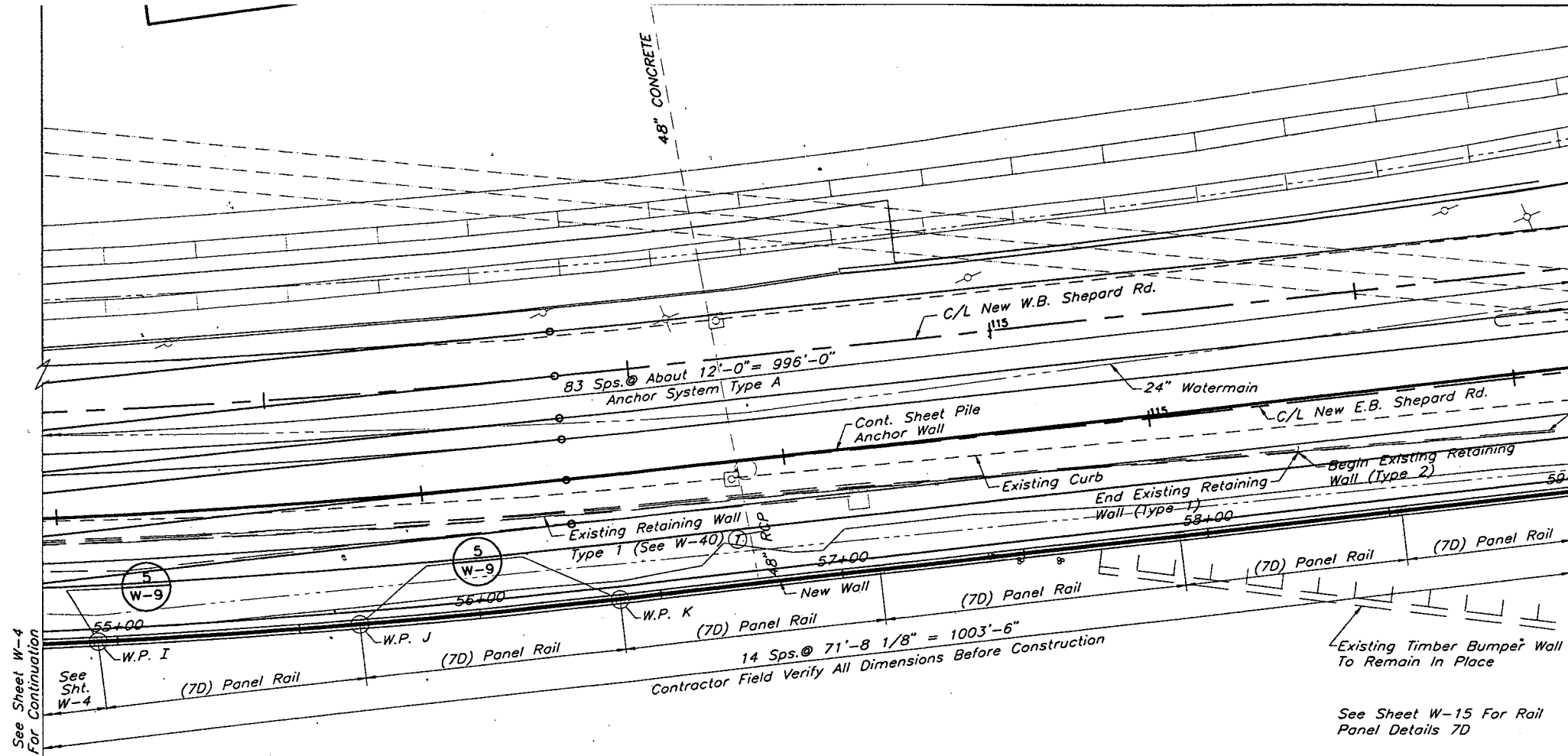
DRAWN BY: J. SHEEHAN DATE: 3/00
 DESIGNED BY: G. SCHWIENTEK 3/00
 CHECKED BY: M. DAUBENBERGER 3/00
 COMM. NO.: 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Signature: *Max Daubenberg*
 Date: 1/9/02 License #: 9164



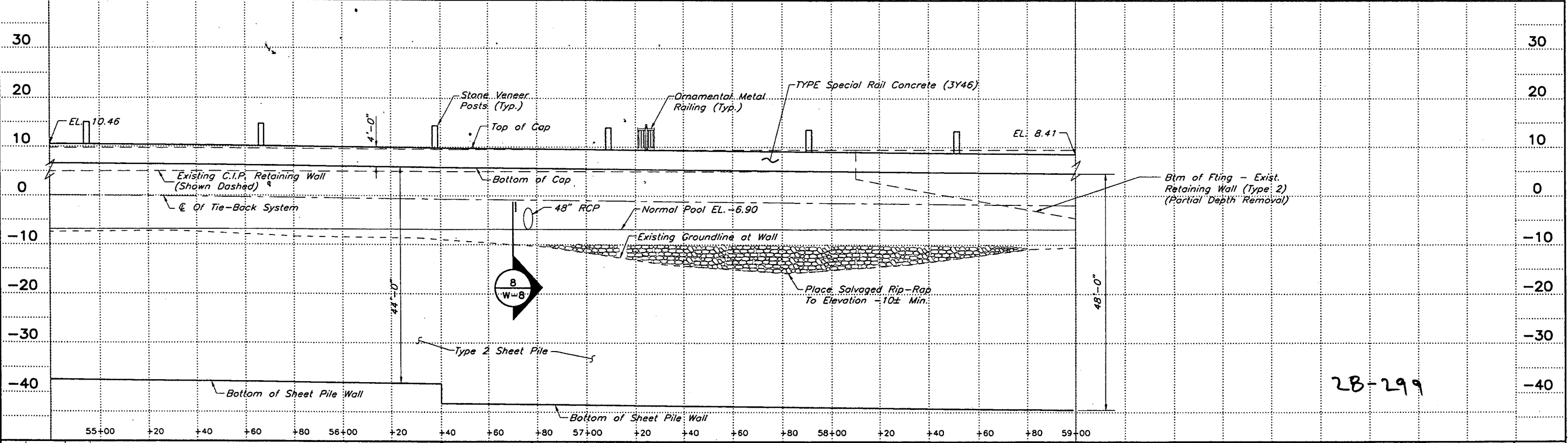
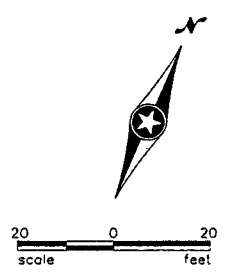
City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 PLAN & ELEVATION
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
 W-4
 OF
 W-45



NOTE:
 ① Remove Metal Pipe Railing on Top of Existing Ret. Wall Type 1 And Type 2.



DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENIEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993587

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 Date: 9/5/02 License # 164



City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 PLAN & ELEVATION

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

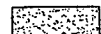

SHEET W-5 OF W-45

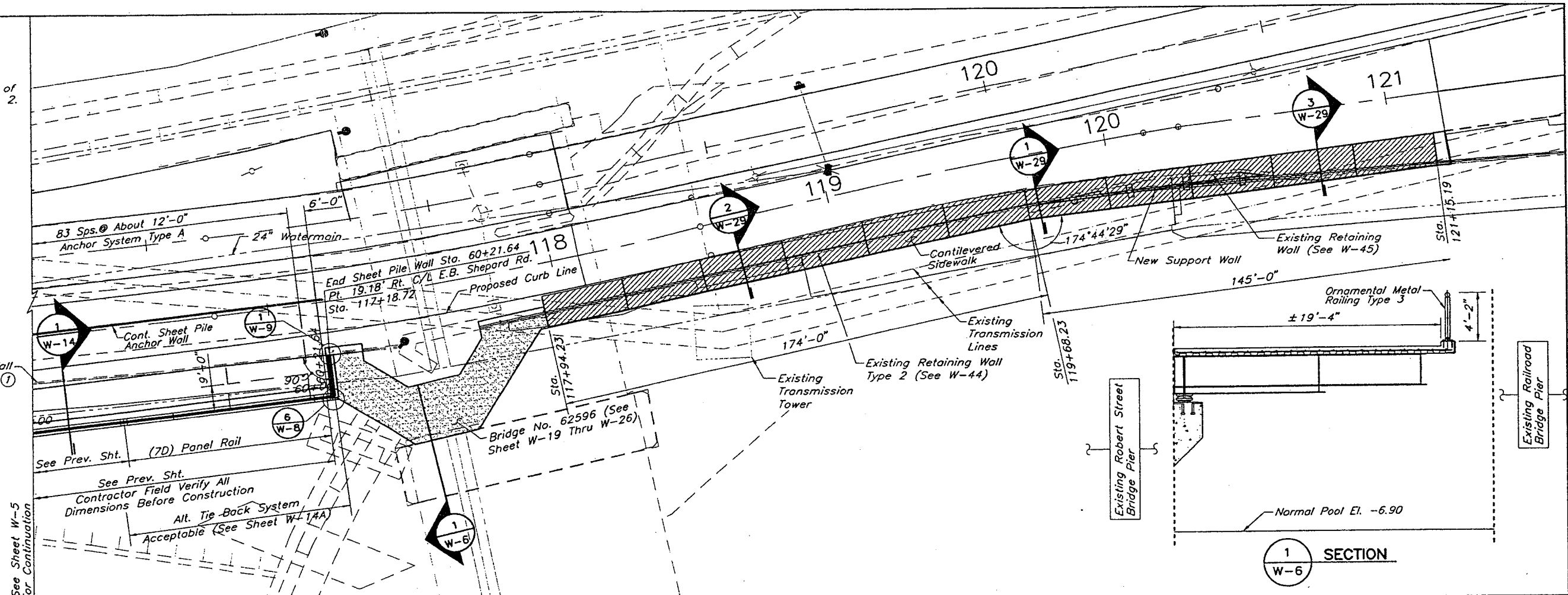
NO.	DATE	BY	DESCRIPTION OF REVISIONS
H:\Struc\003\3567\67ple14.dwg	DEC. 07, 2001		

NOTE:

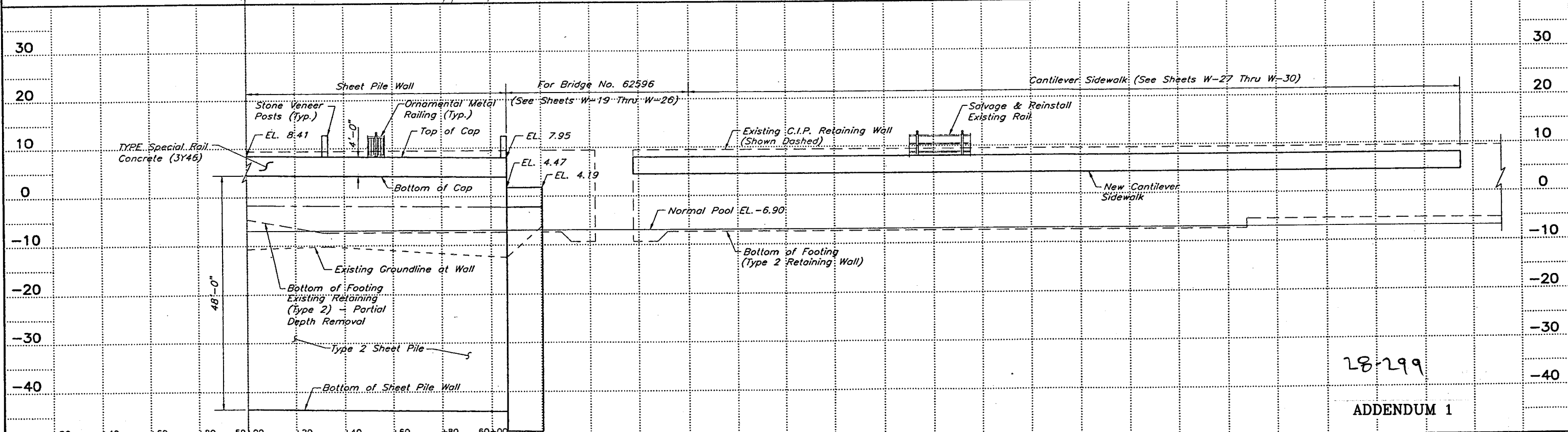
① Remove Metal Pipe Railing on Top of Existing Ret. Wall Type 1 And Type 2.

LEGEND

-  Bridge No. 62596
-  Cantilever Sidewalk



SECTION 1
W-6



28-299
ADDENDUM 1

REVISED 10/3/2002			
NO.	DATE	BY	DESCRIPTION OF REVISIONS
H:\Struc\003\3567\67ple15.dwg DEC. 07, 2001			

DRAWN BY DATE
J. SHEEHAN 3/00
DESIGNED BY
G. SCHWIENTEK 3/00
CHECKED BY
M. DAUBENBERGER 3/00
COMM. NO.
0993567

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: MAX DUBENBERGER
Max Dubenberger
Date: 10/3/02 License # 9164

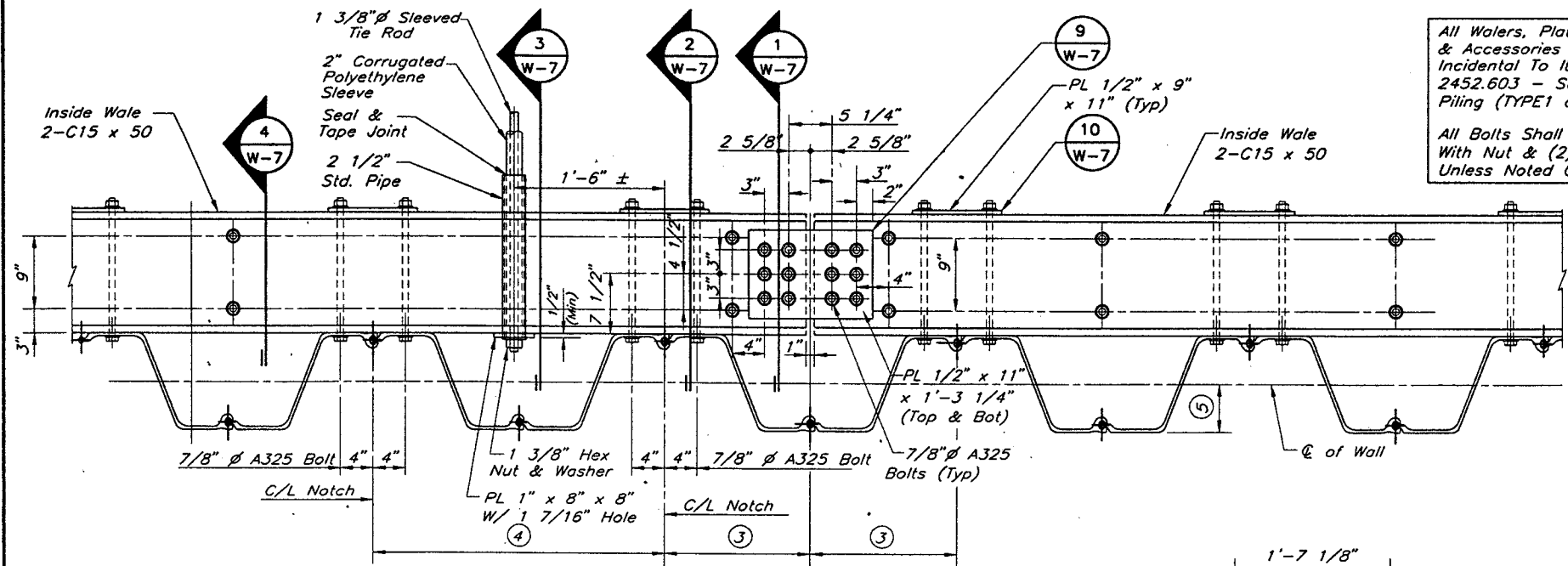


City of St. Paul

SHEPARD ROAD
SHEET PILE WALL
PLAN & ELEVATION

S.P. NO. 6201-77(T.H.5=201) M.S.A. PROJ. NO. 62-637-16
CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

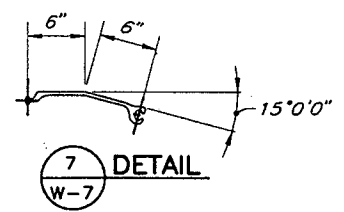
SHEET
W-6
OF
W-45



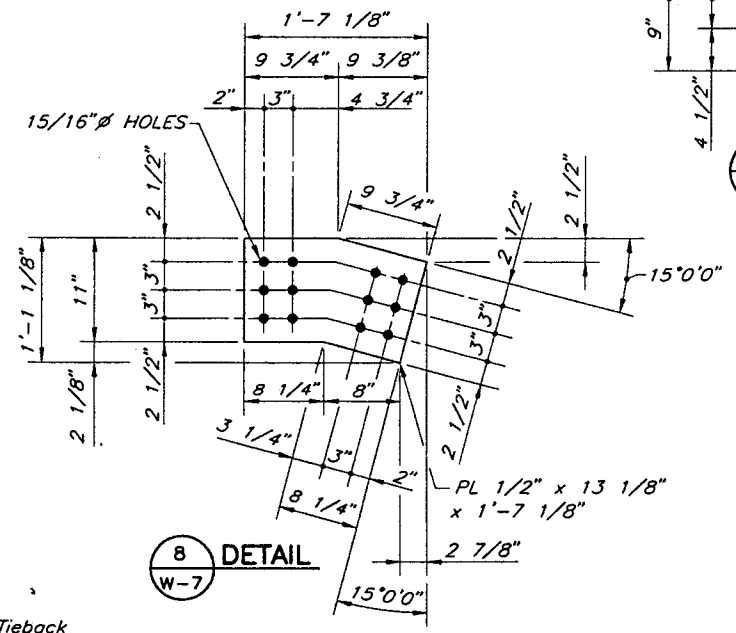
All Waters, Plates, Bolts & Accessories Shall Be Incidental To Item No. 2452.603 - Steel Sheet Piling (TYPE1 or TYPE2)
 All Bolts Shall Be A325 With Nut & (2) Washers Unless Noted Otherwise

- Notes:
- ① TYPE 1 - Hot-Rolled AZ13 or Cold Rolled CZ114RD Steel Sheet Piling - See Special Provisions
 - ② TYPE 2 - Hot-Rolled AZ18 or Cold Rolled CZ128 Steel Sheet Piling - See Special Provisions
 - ③ 2'-2 3/8" @ AZ13; 2'-0 3/4" @ AZ18; 2'-0" @ CZ114RD or CZ128
 - ④ 4'-4 3/4" @ AZ13; 4'-1 1/2" @ AZ18; 4'-0" @ CZ114RD or CZ128
 - ⑤ 6" @ AZ13; 7 1/2" @ AZ18; 6 3/4" @ CZ114RD or CZ128

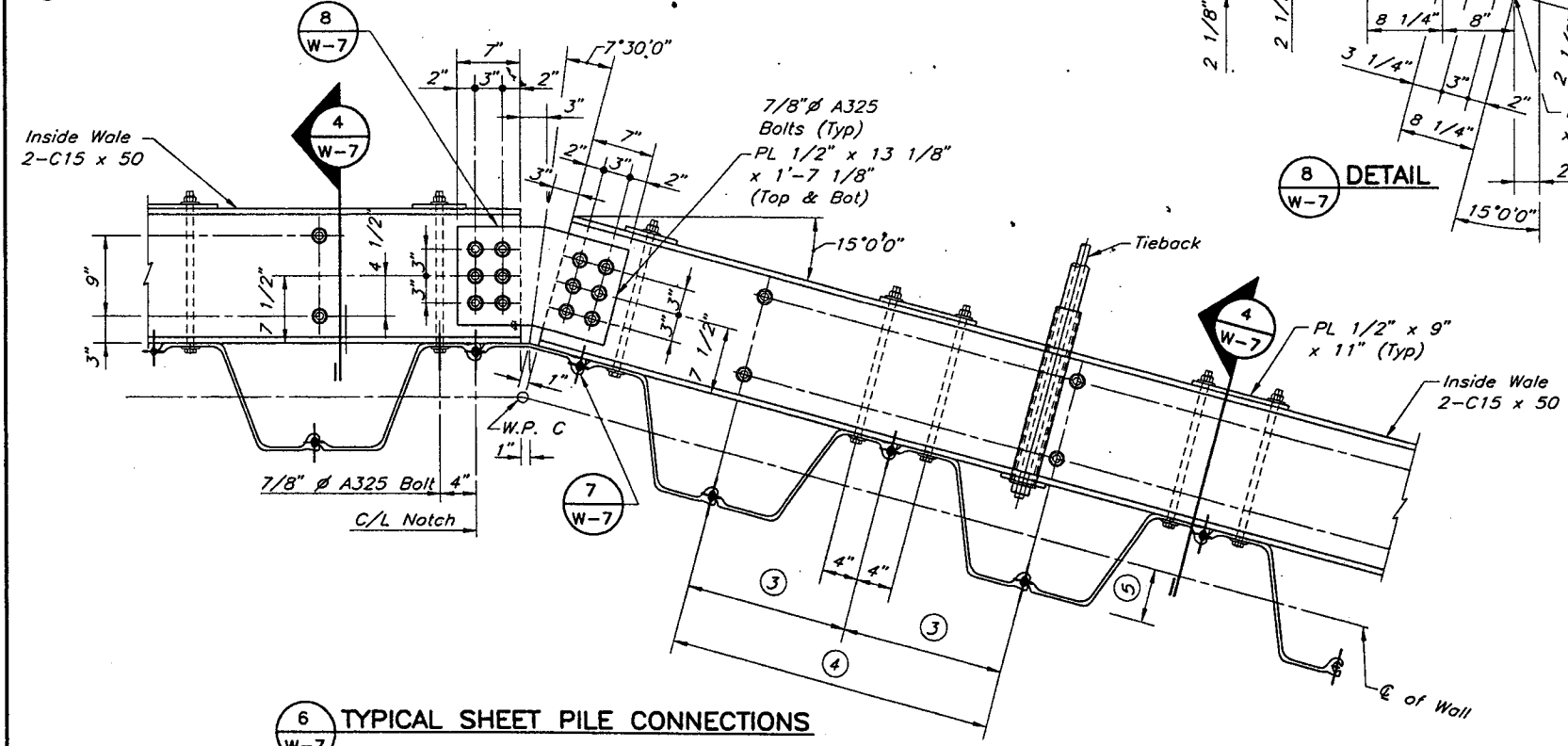
⑤ TYPICAL SHEET PILE CONNECTIONS



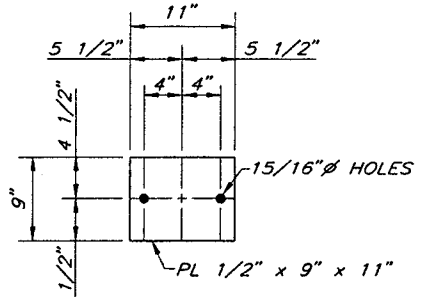
⑦ DETAIL



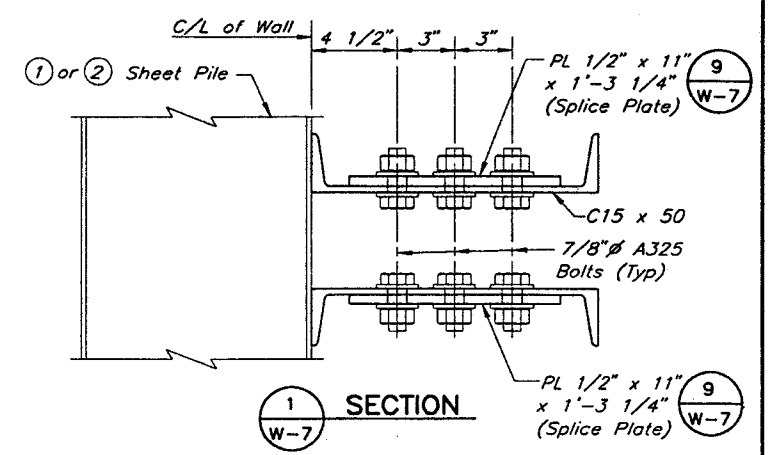
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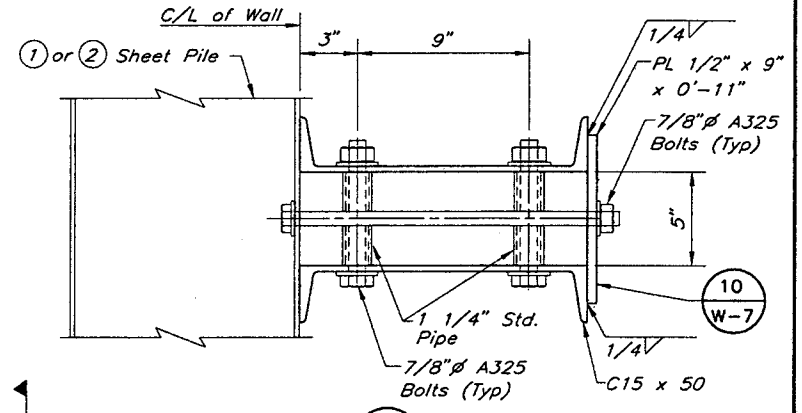
⑥ TYPICAL SHEET PILE CONNECTIONS



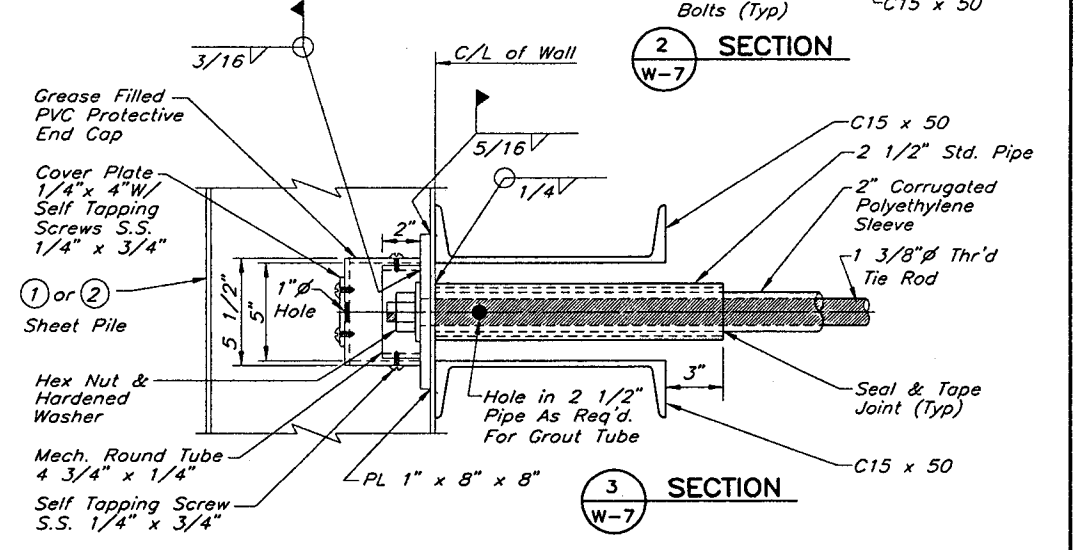
⑩ DETAIL



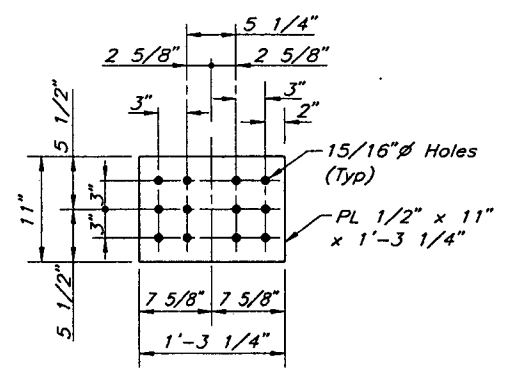
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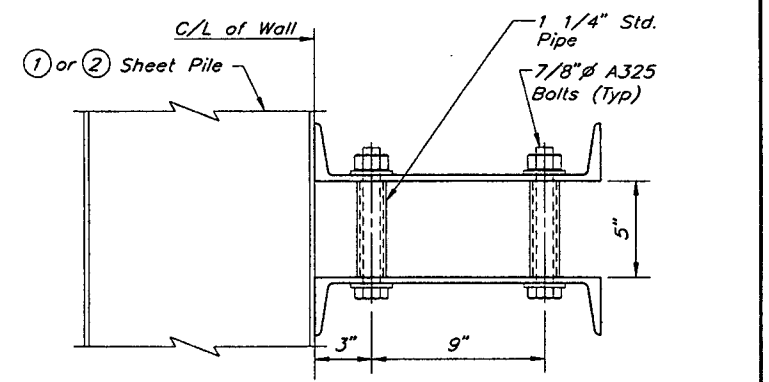
② SECTION



③ SECTION



⑨ DETAIL



④ SECTION

NO	DATE	DESCRIPTION OF REVISIONS

DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 1/10/02 License # 9164



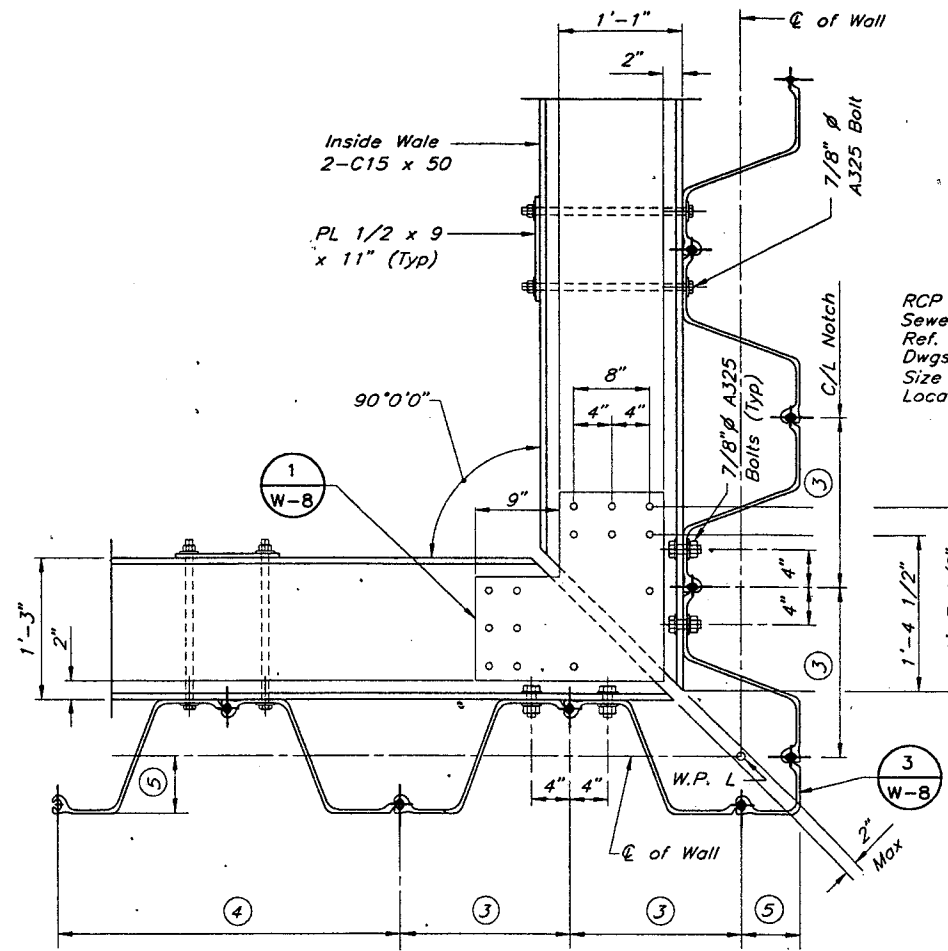
City of St. Paul

SHEPARD ROAD SHEET PILE WALL DETAILS
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

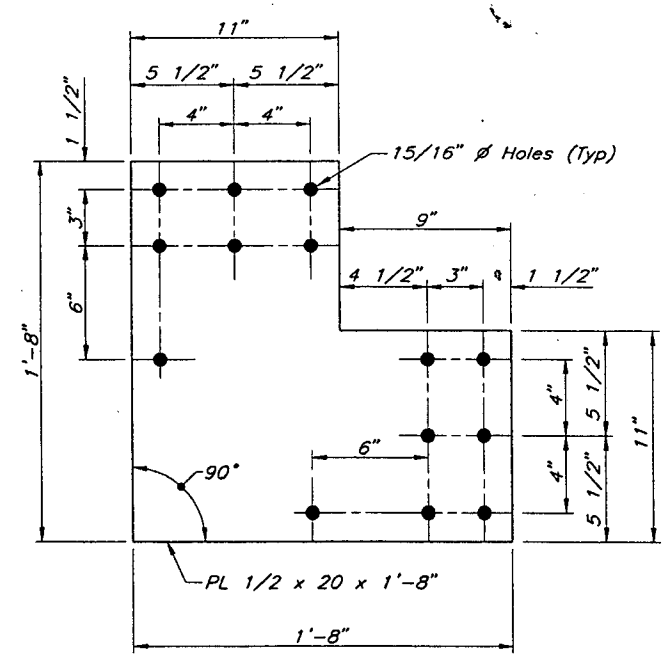
SHEET W-7 OF W-45

All Walsers, Plates, Bolts & Accessories Shall Be Incidental To Item No. 2452.603 - Steel Sheet Piling (Permanent)

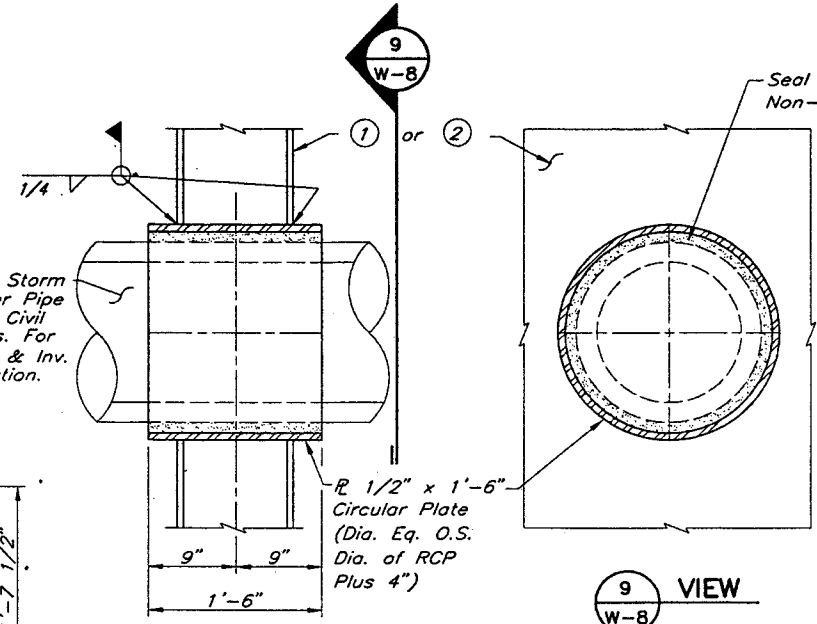
All Bolts Shall Be A325 With Nut & (2) Washers Unless Noted Otherwise



6 SHEET PILE CONNECTION

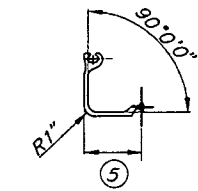


1 DETAIL

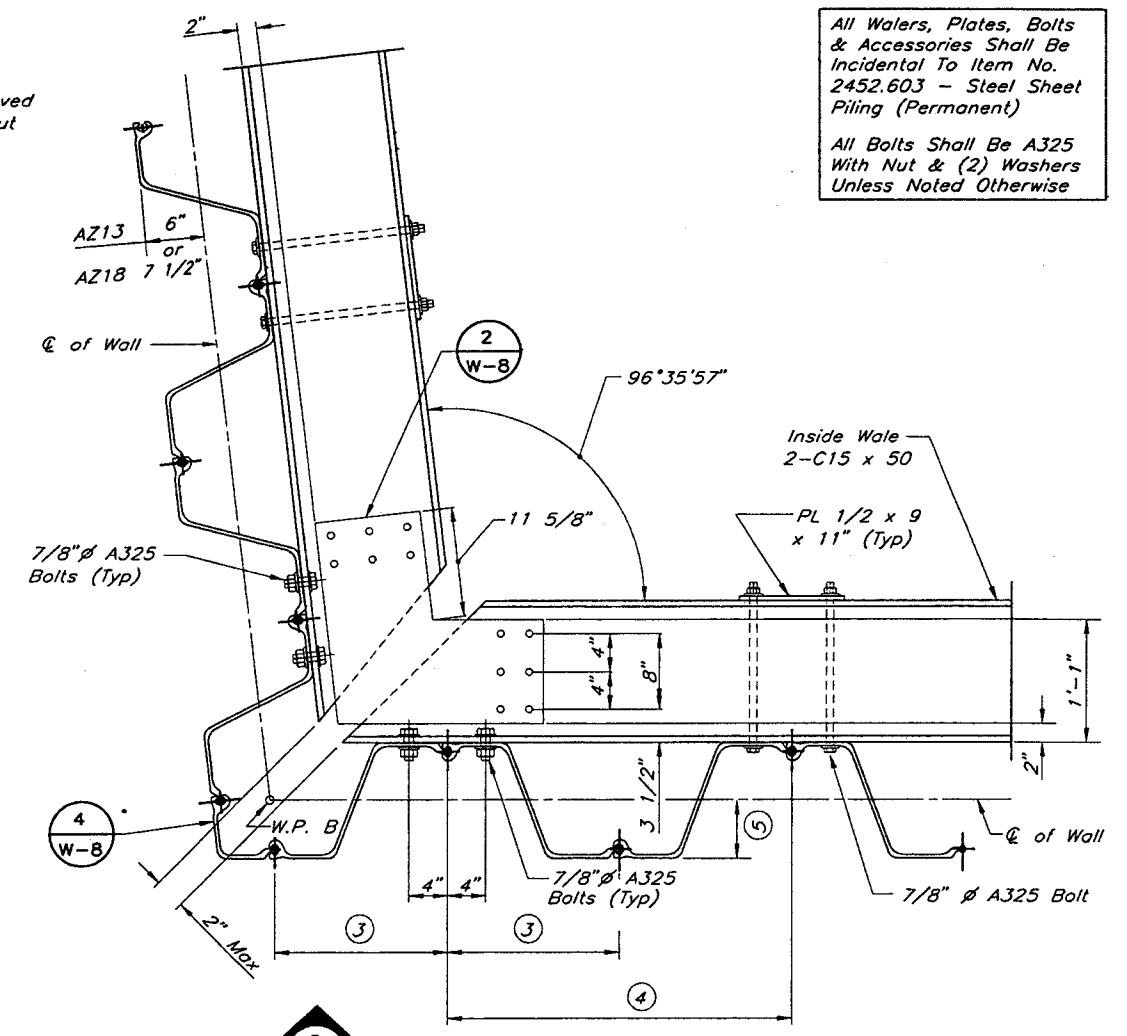


8 REINFORCING RING DETAIL

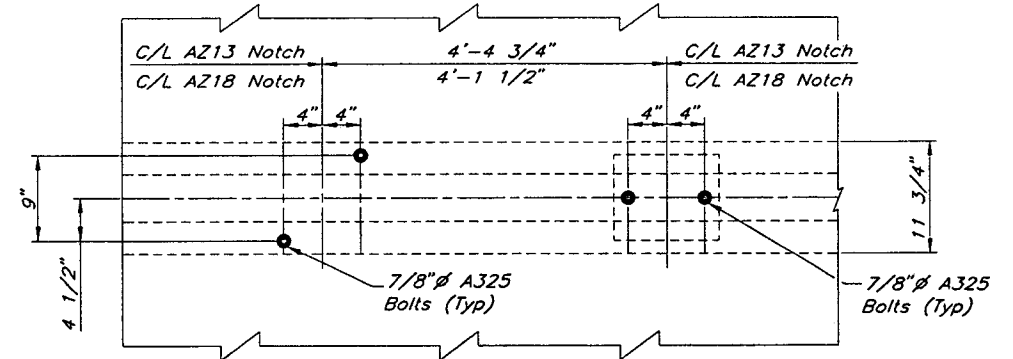
9 VIEW



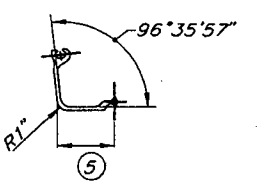
3 DETAIL



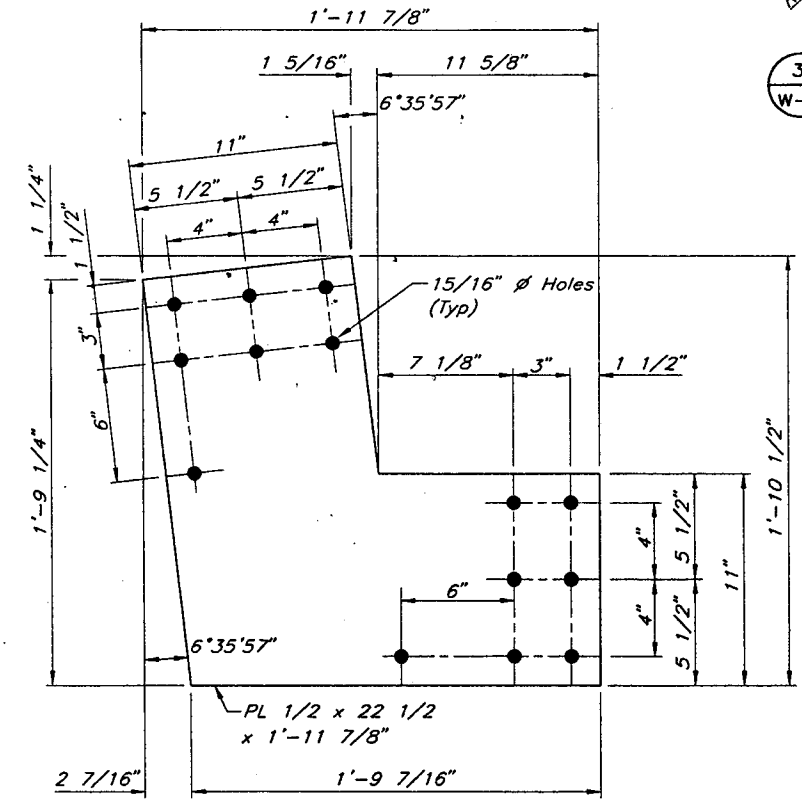
7 SHEET PILE CONNECTION



5 VIEW



4 DETAIL



2 DETAIL

- Notes:
- ① TYPE 1 - Hot-Rolled AZ13 or Cold Rolled CZ114RD Steel Sheet Piling - See Special Provisions
 - ② TYPE 2 - Hot-Rolled AZ18 or Cold Rolled CZ128 Steel Sheet Piling - See Special Provisions
 - ③ 2'-2 3/8" @ AZ13; 2'-0 3/4" @ AZ18; 2'-0" @ CZ114RD or CZ128
 - ④ 4'-4 3/4" @ AZ13; 4'-1 1/2" @ AZ18; 4'-0" @ CZ114RD or CZ128
 - ⑤ 6" @ AZ13; 7 1/2" @ AZ18; 6 3/4" @ CZ114RD or CZ128

28-299

NO	DATE	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67S.P.DETAIL2.dwg DEC. 29, 2000

DRAWN BY: J. SHEEHAN DATE: 3/00
 DESIGNED BY: G. SCHWENK DATE: 3/00
 CHECKED BY: M. DAUBENBERGER DATE: 3/00
 COMM. NO. 0993567

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 1/10/02 License #: 184

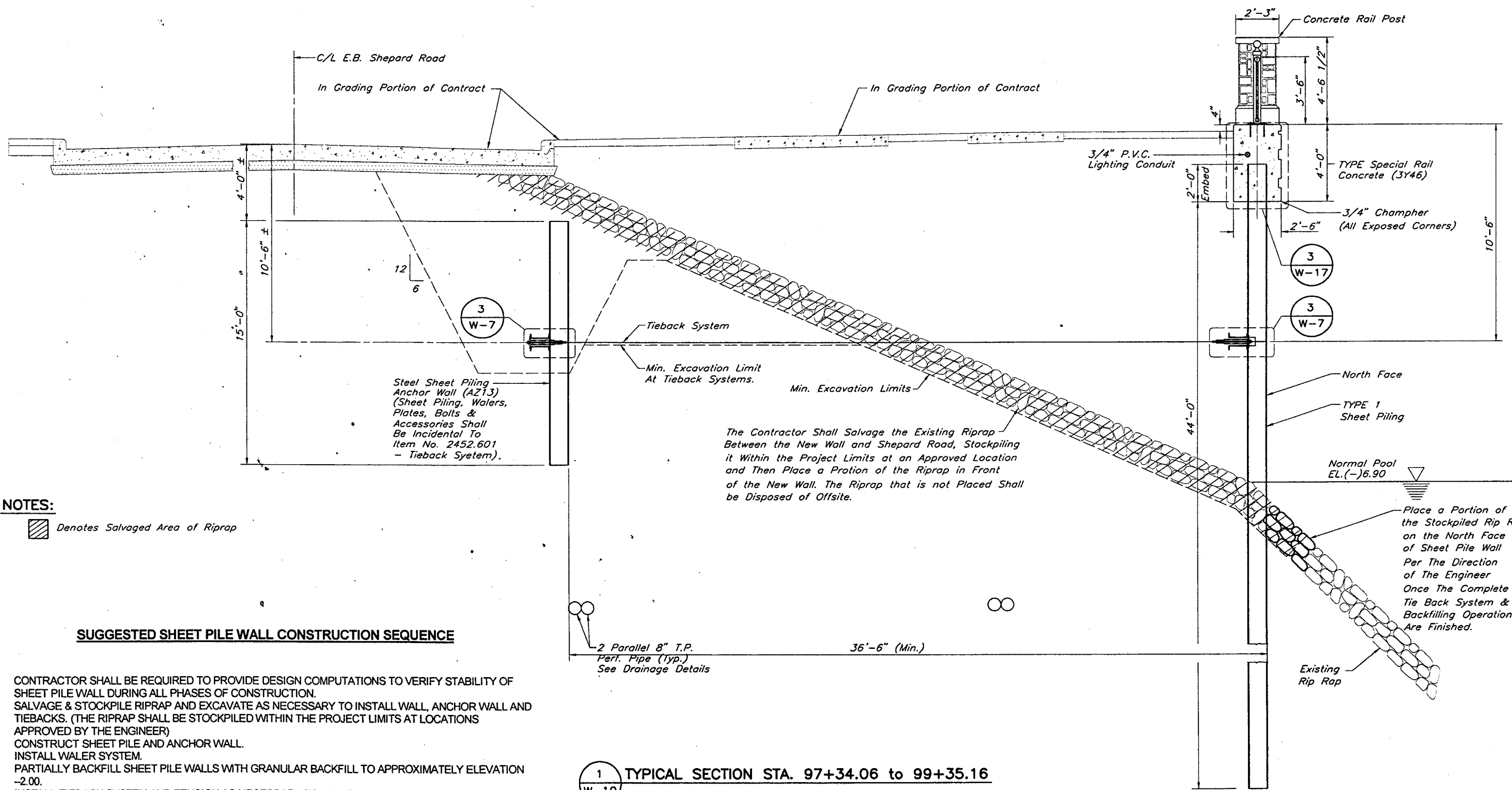


City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 DETAILS

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-8 OF W-45



NOTES:
 Denotes Salvaged Area of Riprap

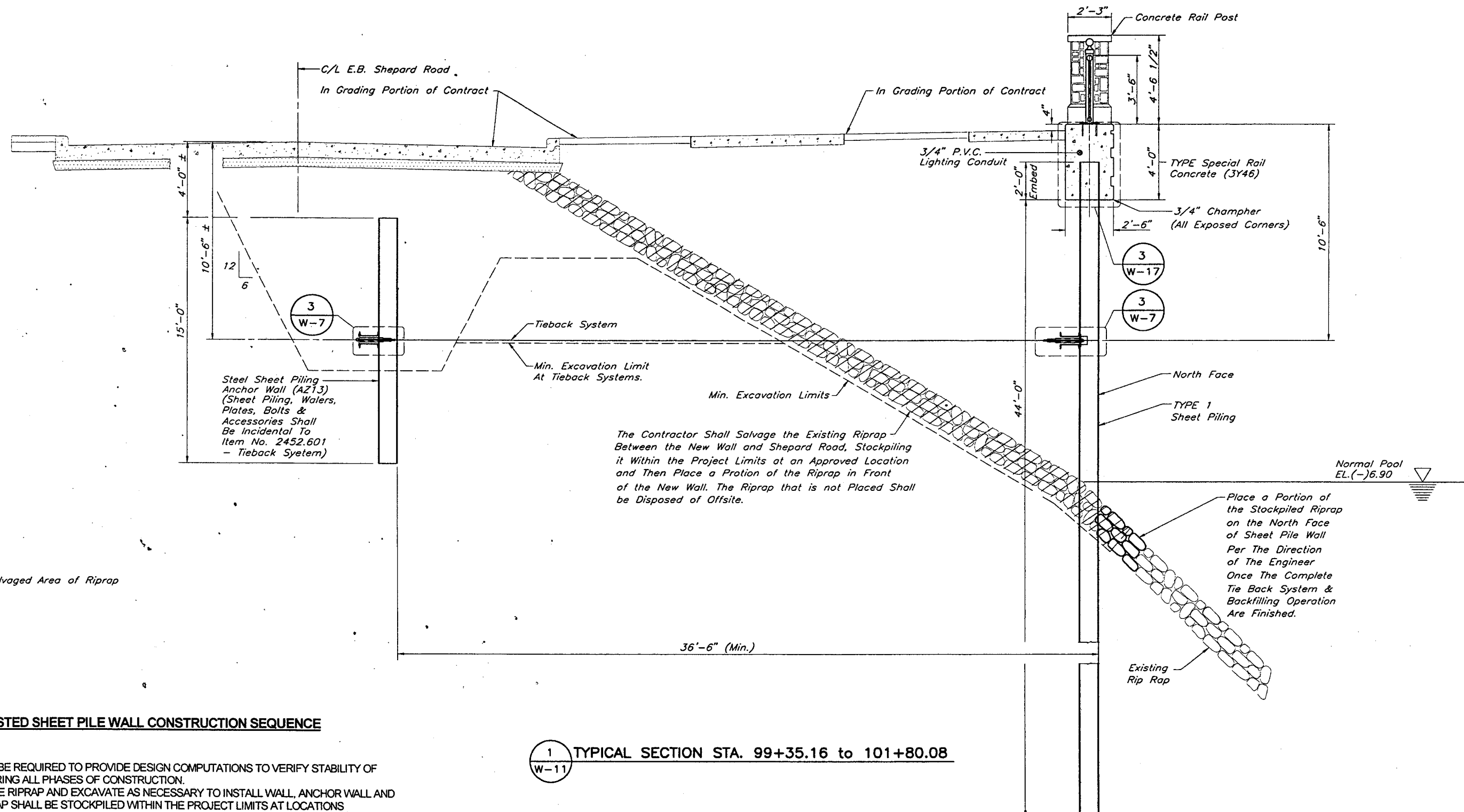
SUGGESTED SHEET PILE WALL CONSTRUCTION SEQUENCE

1. CONTRACTOR SHALL BE REQUIRED TO PROVIDE DESIGN COMPUTATIONS TO VERIFY STABILITY OF SHEET PILE WALL DURING ALL PHASES OF CONSTRUCTION.
2. SALVAGE & STOCKPILE RIPRAP AND EXCAVATE AS NECESSARY TO INSTALL WALL, ANCHOR WALL AND TIEBACKS. (THE RIPRAP SHALL BE STOCKPILED WITHIN THE PROJECT LIMITS AT LOCATIONS APPROVED BY THE ENGINEER)
3. CONSTRUCT SHEET PILE AND ANCHOR WALL.
4. INSTALL WALER SYSTEM.
5. PARTIALLY BACKFILL SHEET PILE WALLS WITH GRANULAR BACKFILL TO APPROXIMATELY ELEVATION -2.00.
6. INSTALL TIEBACK SYSTEM AND TENSION AS NECESSARY TO MAINTAIN WALL ALIGNMENT.
7. CONTINUE BACKFILLING, COMPACTION AND TENSIONING TIEBACKS UNTIL BACKFILLING OPERATION IS COMPLETE AS PER GRADING TYPICAL SECTIONS SHOWN ON PLAN SHEET NO. S 6 & 7.
8. PROVIDE FINAL TIEBACK TENSIONING AS NECESSARY TO PROVIDE FINAL WALL ALIGNMENT.
9. INSTALL GREASE CAPS ON TIEBACK SYSTEM AND COMPLETE BACKFILL.

1 TYPICAL SECTION STA. 97+34.06 to 99+35.16
 W-10

28-299

DRAWN BY J. SHEEHAN DATE 3/00		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>MAX DAUBENBERGER</u> <u>Max Daubenger</u> Date: <u>9/9/02</u> License # <u>9184</u>			City of St. Paul	SHEPARD ROAD SHEET PILE WALL TYPICAL SECTION	SHEET W-10 OF W-45
DESIGNED BY G. SCHWIENTEK DATE 3/00							
CHECKED BY M. DAUBENBERGER DATE 3/00							
COMM. NO. 0993567							
NO. DATE BY DESCRIPTION OF REVISIONS							
H:\Struc\003\3567\67SECT5.dwg DEC. 27, 2000							



NOTES:

Denotes Salvaged Area of Riprap

SUGGESTED SHEET PILE WALL CONSTRUCTION SEQUENCE

1. CONTRACTOR SHALL BE REQUIRED TO PROVIDE DESIGN COMPUTATIONS TO VERIFY STABILITY OF SHEET PILE WALL DURING ALL PHASES OF CONSTRUCTION.
2. SALVAGE & STOCKPILE RIPRAP AND EXCAVATE AS NECESSARY TO INSTALL WALL, ANCHOR WALL AND TIEBACKS. (THE RIPRAP SHALL BE STOCKPILED WITHIN THE PROJECT LIMITS AT LOCATIONS APPROVED BY THE ENGINEER)
3. CONSTRUCT SHEET PILE AND ANCHOR WALL.
4. INSTALL WALER SYSTEM.
5. PARTIALLY BACKFILL SHEET PILE WALLS WITH GRANULAR BACKFILL TO APPROXIMATELY ELEVATION -2.00.
6. INSTALL TIEBACK SYSTEM AND TENSION AS NECESSARY TO MAINTAIN WALL ALIGNMENT.
7. CONTINUE BACKFILLING, COMPACTION AND TENSIONING TIEBACKS UNTIL BACKFILLING OPERATION IS COMPLETE AS PER GRADING TYPICAL SECTIONS SHOWN ON PLAN SHEET NO.'S 6 & 7.
8. PROVIDE FINAL TIEBACK TENSIONING AS NECESSARY TO PROVIDE FINAL WALL ALIGNMENT.
9. INSTALL GREASE CAPS ON TIEBACK SYSTEM AND COMPLETE BACKFILL.

1 TYPICAL SECTION STA. 99+35.16 to 101+80.08
W-11

28-299

NO	DATE	BY	DESCRIPTION OF REVISIONS

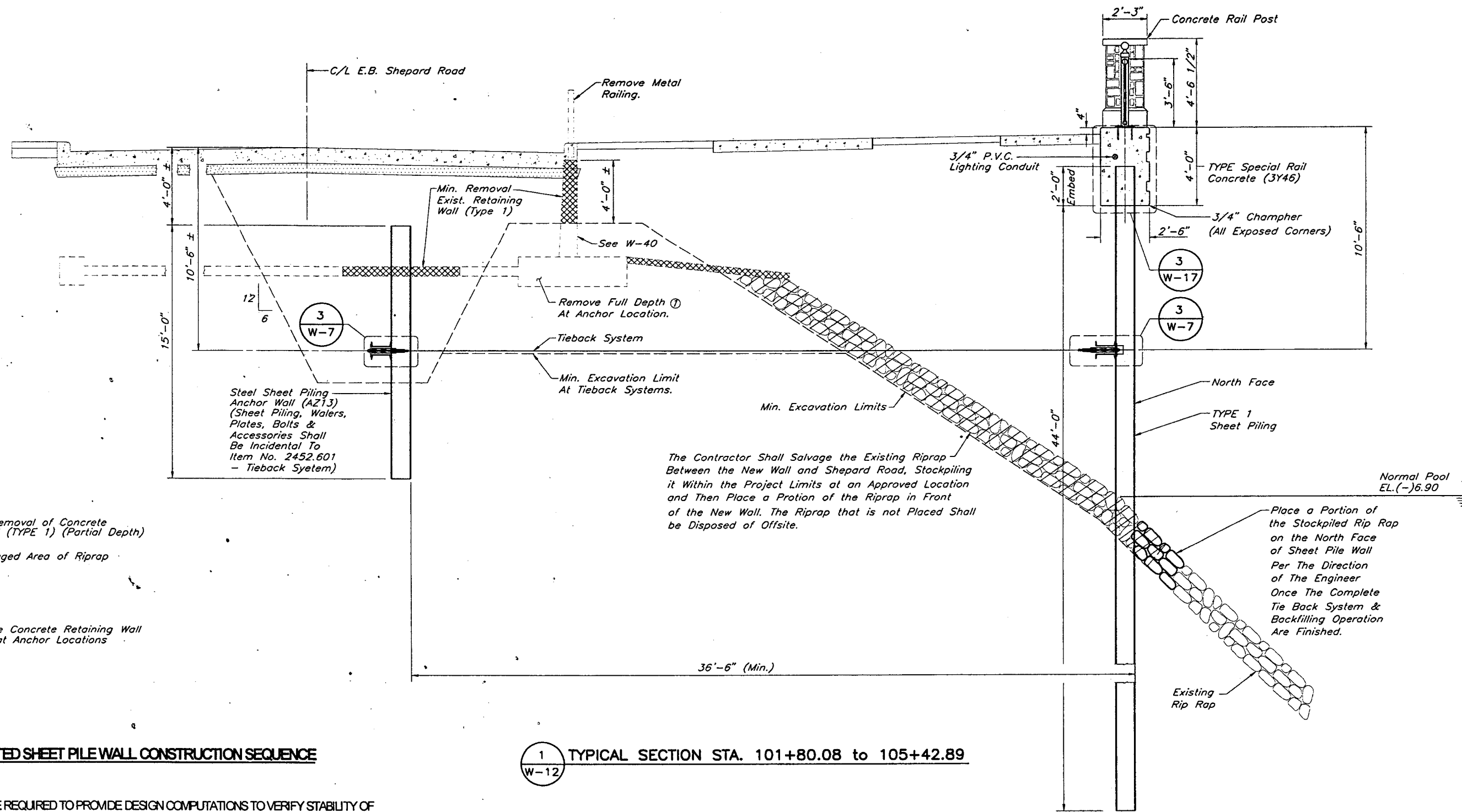
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK DATE 3/00
 CHECKED BY M. DAUBENBERGER DATE 3/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 9/19/02 License #: 9164



City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 TYPICAL SECTION
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-11 OF W-45



LEGEND:

- Included in Removal of Concrete Retaining Wall (TYPE 1) (Partial Depth)
- Denotes Salvaged Area of Riprap

NOTE:

- ① Remove Entire Concrete Retaining Wall (TYPE 1) - at Anchor Locations

The Contractor Shall Salvage the Existing Riprap Between the New Wall and Shepard Road, Stockpiling it Within the Project Limits at an Approved Location and Then Place a Portion of the Riprap in Front of the New Wall. The Riprap that is not Placed Shall be Disposed of Offsite.

Place a Portion of the Stockpiled Riprap on the North Face of Sheet Pile Wall Per The Direction of The Engineer Once The Complete Tie Back System & Backfilling Operation Are Finished.

SUGGESTED SHEET PILE WALL CONSTRUCTION SEQUENCE

① TYPICAL SECTION STA. 101+80.08 to 105+42.89

1. CONTRACTOR SHALL BE REQUIRED TO PROVIDE DESIGN COMPUTATIONS TO VERIFY STABILITY OF SHEET PILE WALL DURING ALL PHASES OF CONSTRUCTION.
2. REMOVE & STOCKPILE RIPRAP AND EXCAVATE AS NECESSARY TO INSTALL WALL, ANCHOR WALL AND TIEBACKS.
3. CORE DRILL HOLE FOR ANCHOR IN EXISTING TYPE 2 RETAINING WALL.
4. INSTALL WALER SYSTEM.
5. PARTIALLY BACKFILL SHEET PILE WALLS WITH GRANULAR BACKFILL TO APPROXIMATELY ELEVATION -2.00.
6. INSTALL TIEBACK SYSTEM AND TENSION AS NECESSARY TO MAINTAIN WALL ALIGNMENT.
7. CONTINUE BACKFILLING, COMPACTION AND TENSIONING TIEBACKS UNTIL BACKFILLING OPERATION IS COMPLETE.
8. PROVIDE FINAL TIEBACK TENSIONING AS NECESSARY TO PROVIDE FINAL WALL ALIGNMENT. INSTALL GREASE CAPS ON TIEBACK SYSTEM AND COMPLETE BACKFILL.

28-299

NO	DATE	BY	DESCRIPTION OF REVISIONS

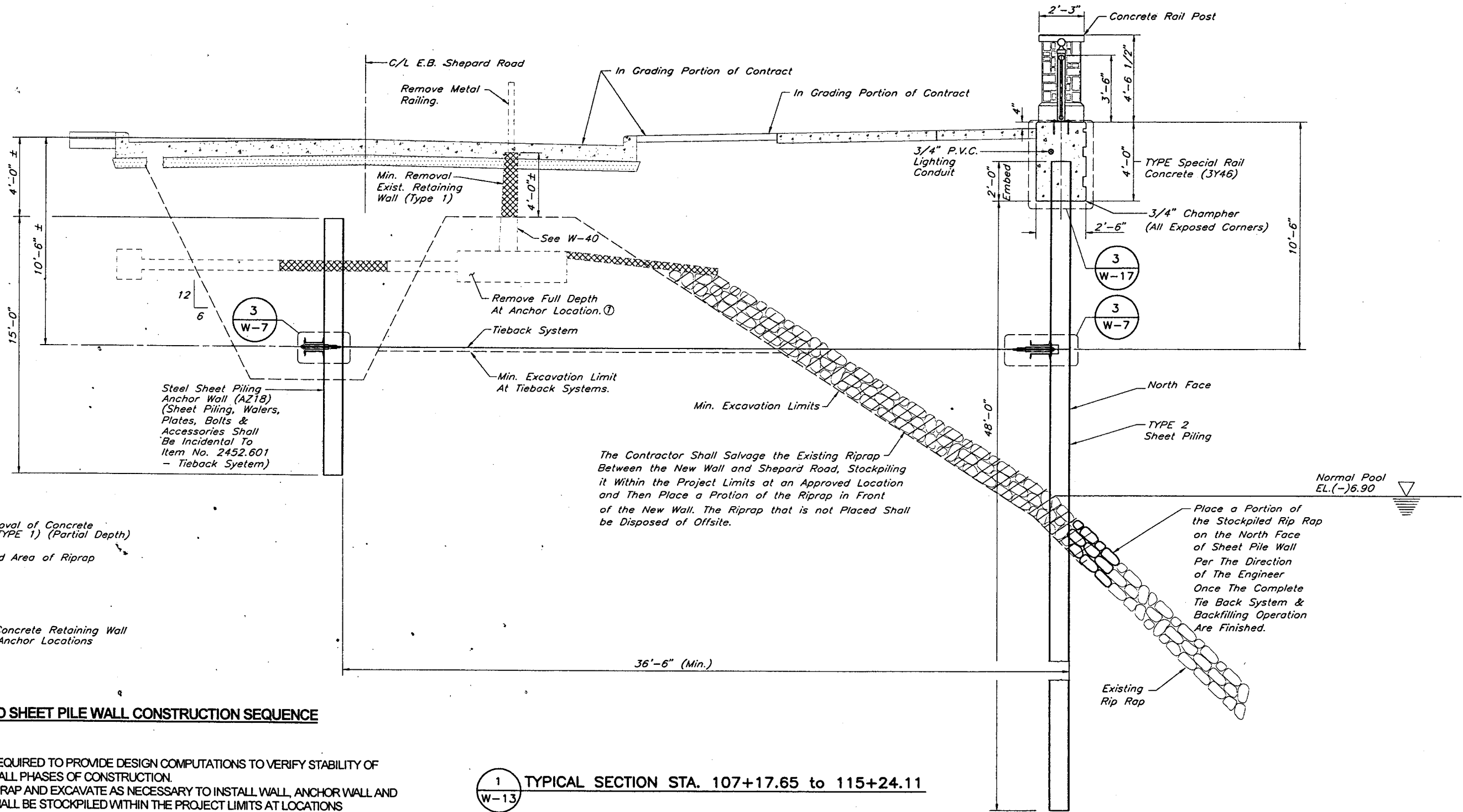
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENIEK DATE 3/00
 CHECKED BY M. DAUBENBERGER DATE 3/00
 COMM. NO. 0993567
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 Print Name: MAX DAUBENBERGER
 Signature: *Max Daubenberg*
 Date: 9/19/02 License # 9164



City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 TYPICAL SECTION
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
 W-12
 OF
 W-45



LEGEND:

Included in Removal of Concrete Retaining Wall (TYPE 1) (Partial Depth)

Denotes Salvaged Area of Riprap

NOTE:

① Remove Entire Concrete Retaining Wall (TYPE 1) - at Anchor Locations

The Contractor Shall Salvage the Existing Riprap Between the New Wall and Shepard Road, Stockpiling it Within the Project Limits at an Approved Location and Then Place a Portion of the Riprap in Front of the New Wall. The Riprap that is not Placed Shall be Disposed of Offsite.

Place a Portion of the Stockpiled Riprap on the North Face of Sheet Pile Wall Per The Direction of The Engineer Once The Complete Tie Back System & Backfilling Operation Are Finished.

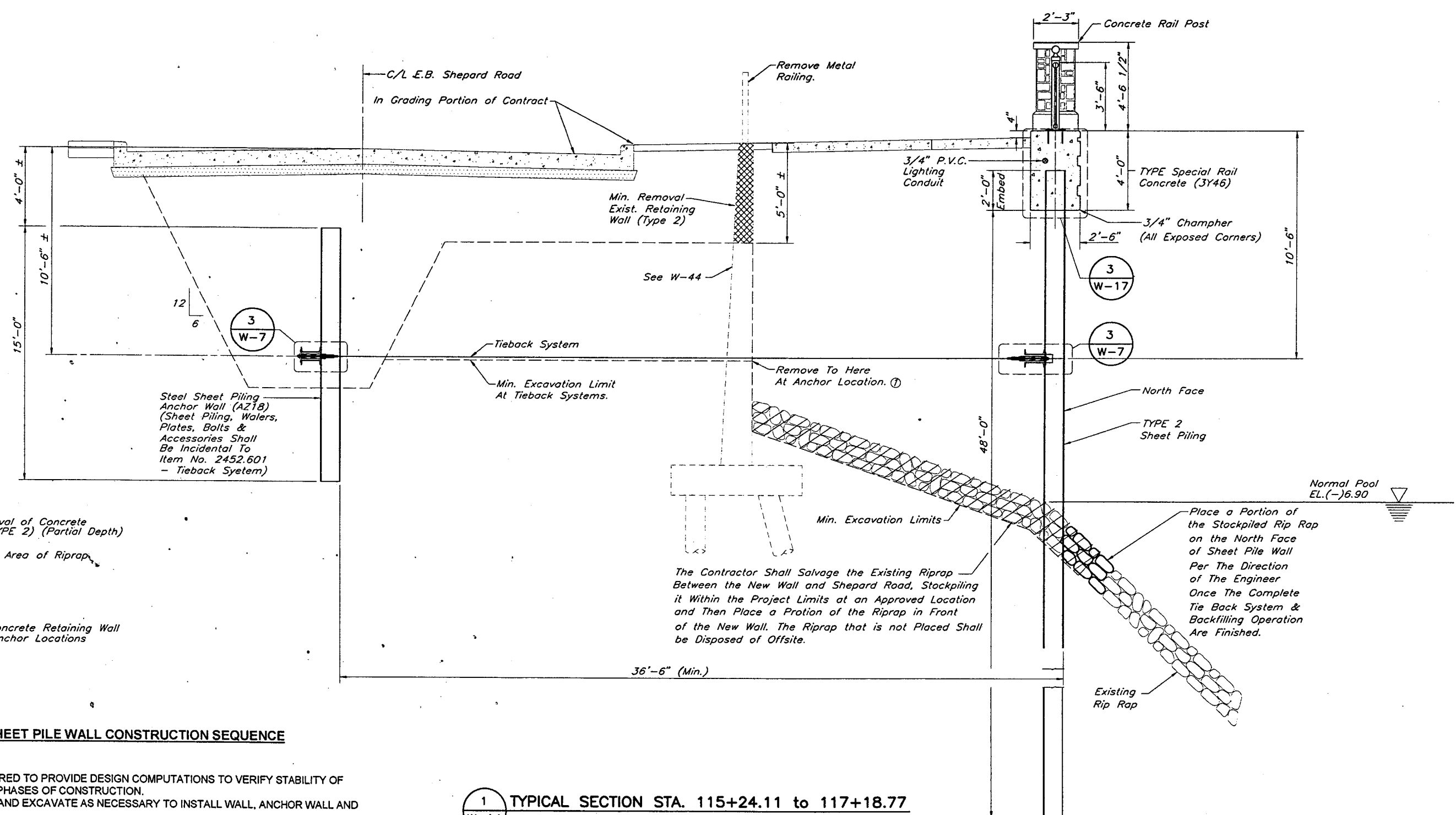
SUGGESTED SHEET PILE WALL CONSTRUCTION SEQUENCE

1. CONTRACTOR SHALL BE REQUIRED TO PROVIDE DESIGN COMPUTATIONS TO VERIFY STABILITY OF SHEET PILE WALL DURING ALL PHASES OF CONSTRUCTION.
2. SALVAGE & STOCKPILE RIPRAP AND EXCAVATE AS NECESSARY TO INSTALL WALL, ANCHOR WALL AND TIEBACKS. (THE RIPRAP SHALL BE STOCKPILED WITHIN THE PROJECT LIMITS AT LOCATIONS APPROVED BY THE ENGINEER)
3. CONSTRUCT SHEET PILE AND ANCHOR WALL
4. INSTALL WALER SYSTEM.
5. PARTIALLY BACKFILL SHEET PILE WALLS WITH GRANULAR BACKFILL TO APPROXIMATELY ELEVATION -2.00.
6. INSTALL TIEBACK SYSTEM AND TENSION AS NECESSARY TO MAINTAIN WALL ALIGNMENT.
7. CONTINUE BACKFILLING, COMPACTION AND TENSIONING TIEBACKS UNTIL BACKFILLING OPERATION IS COMPLETE AS PER GRADING TYPICAL SECTIONS SHOWN ON PLAN SHEET NO. 'S 6 & 7.
8. PROVIDE FINAL TIEBACK TENSIONING AS NECESSARY TO PROVIDE FINAL WALL ALIGNMENT.
9. INSTALL GREASE CAPS ON TIEBACK SYSTEM AND COMPLETE BACKFILL.

1 TYPICAL SECTION STA. 107+17.65 to 115+24.11
W-13

2B-299

DRAWN BY: J. SHEEHAN DATE: 3/00 DESIGNED BY: G. SCHWIENTEK DATE: 3/00 CHECKED BY: M. DAUBENBERGER DATE: 3/00 COMM. NO. 0993567		I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: MAX DAUBENBERGER Date: 9/9/02 License # 9164	 	SHEPARD ROAD SHEET PILE WALL TYPICAL SECTION	SHEET W-13 OF W-45 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88
NO. DATE BY DESCRIPTION OF REVISIONS H:\Struc\003\3567\67SECT1.dwg DEC. 07, 2001					



LEGEND:

- Included in Removal of Concrete Retaining Wall (TYPE 2) (Partial Depth)
- Denotes Salvaged Area of Riprap

NOTE:

- ① Remove Entire Concrete Retaining Wall (TYPE 1) - at Anchor Locations

SUGGESTED SHEET PILE WALL CONSTRUCTION SEQUENCE

1. CONTRACTOR SHALL BE REQUIRED TO PROVIDE DESIGN COMPUTATIONS TO VERIFY STABILITY OF SHEET PILE WALL DURING ALL PHASES OF CONSTRUCTION.
2. REMOVE & STOCKPILE RIPRAP AND EXCAVATE AS NECESSARY TO INSTALL WALL, ANCHOR WALL AND TIEBACKS.
3. REMOVE EXISTING RETAINING WALLS PER PLAN.
4. CONSTRUCT SHEET PILE AND ANCHOR WALL.
5. INSTALL WALER SYSTEM.
6. PARTIALLY BACKFILL SHEET PILE WALLS WITH GRANULAR BACKFILL TO APPROXIMATELY ELEVATION -2.00.
7. INSTALL TIEBACK SYSTEM AND TENSION AS NECESSARY TO MAINTAIN WALL ALIGNMENT.
8. CONTINUE BACKFILLING, COMPACTION AND TENSIONING TIEBACKS UNTIL BACKFILLING OPERATION IS COMPLETE AS PER GRADING SECTIONS SHOWN ON PLAN SHEET NO.'S 6 & 7.
9. PROVIDE FINAL TIEBACK TENSIONING AS NECESSARY TO PROVIDE FINAL WALL ALIGNMENT.
10. INSTALL GREASE CAPS ON TIEBACK SYSTEM AND COMPLETE BACKFILL.

1 TYPICAL SECTION STA. 115+24.11 to 117+18.77
W-14

28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

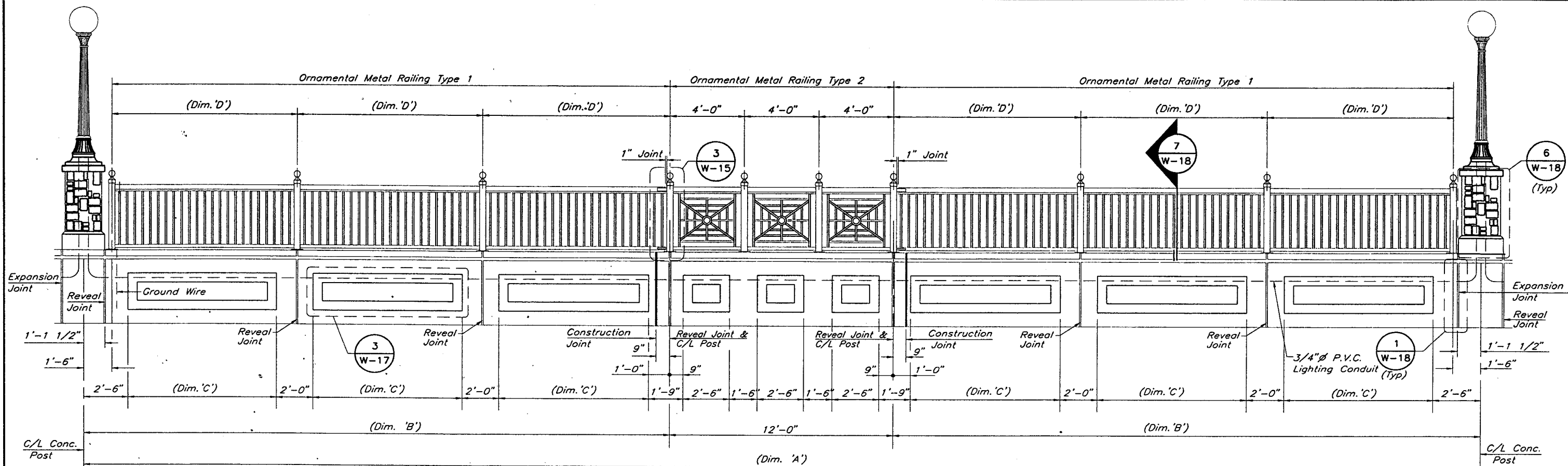
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Signature: *Max Daubenberg*
 Date: 1/19/02 License #: 9164



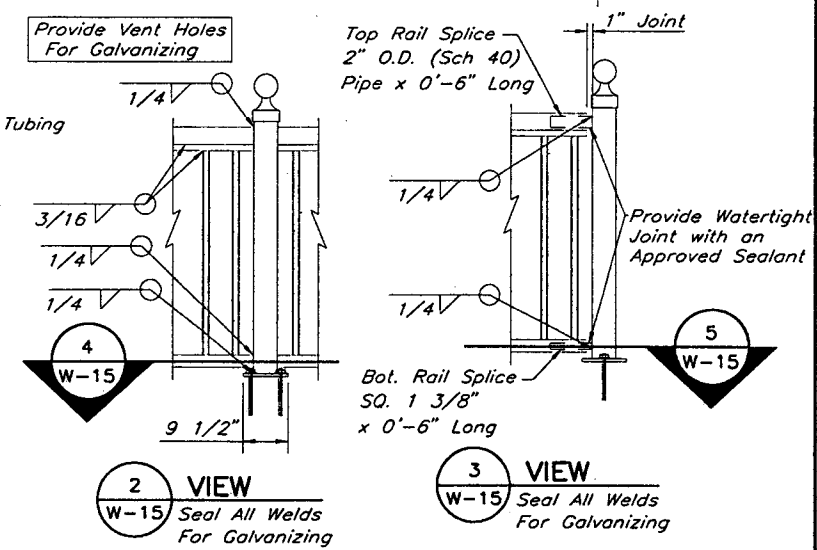
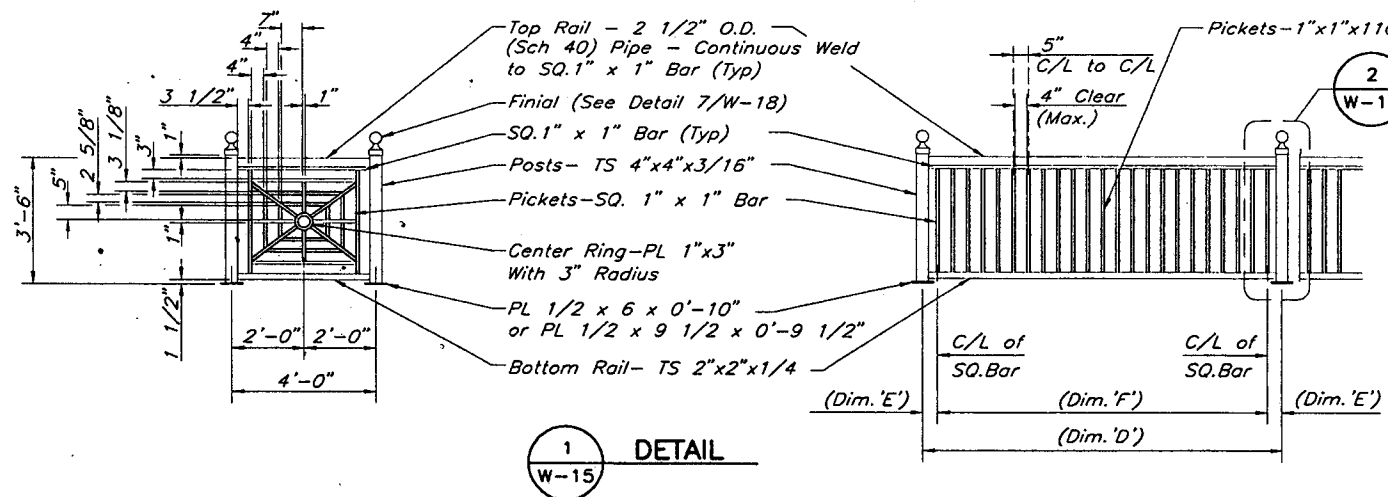
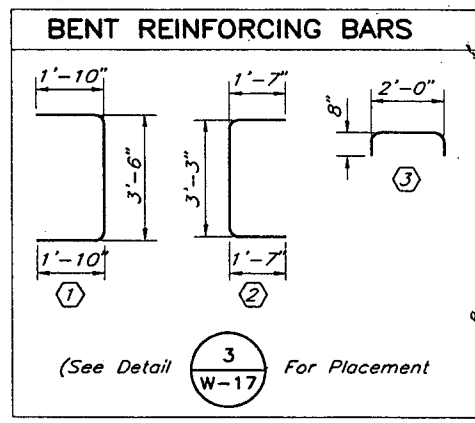
City of St. Paul

SHEPARD ROAD
 SHEET PILE WALL
 TYPICAL SECTION
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

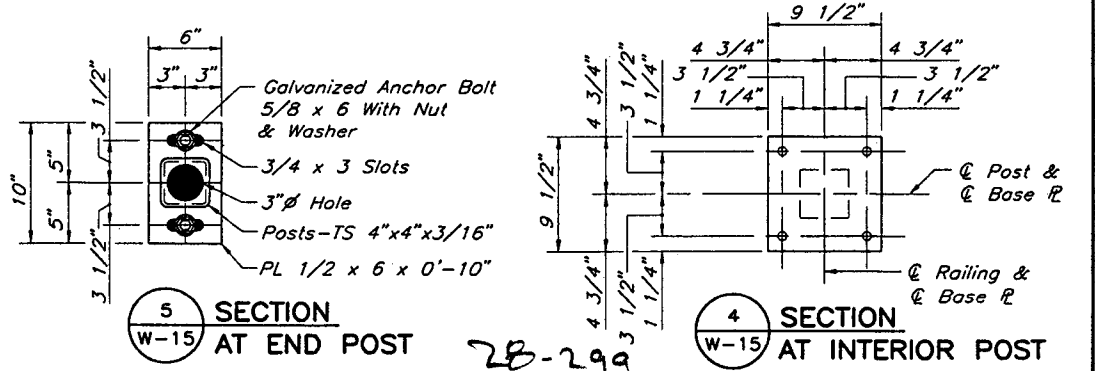
SHEET W-14 OF W-45



7 PANEL RAIL ELEVATION



7 PANEL RAIL DIMENSIONS							
Quantity	Panel #	(Dim. 'A')	(Dim. 'B')	(Dim. 'C')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
3	7A	63'-8"	25'-10"	6'-1 1/4"	8'-1 1/4"	0'-6 1/8"	17 Sps. @ 5" = 7'-1"
5	7B	61'-5 1/2"	24'-8 3/4"	5'-8 15/16"	7'-8 15/16"	0'-4"	17 Sps. @ 5" = 7'-1"
4	7C	65'-8"	26'-10"	6'-5 5/16"	8'-5 5/16"	0'-5 11/16"	18 Sps. @ 5" = 7'-6"
14	7D	71'-8 1/8"	29'-10 1/16"	7'-5 3/8"	9'-5 3/8"	0'-6 11/16"	20 Sps. @ 5" = 8'-4"



NO.	DATE	BY	DESCRIPTION OF REVISIONS

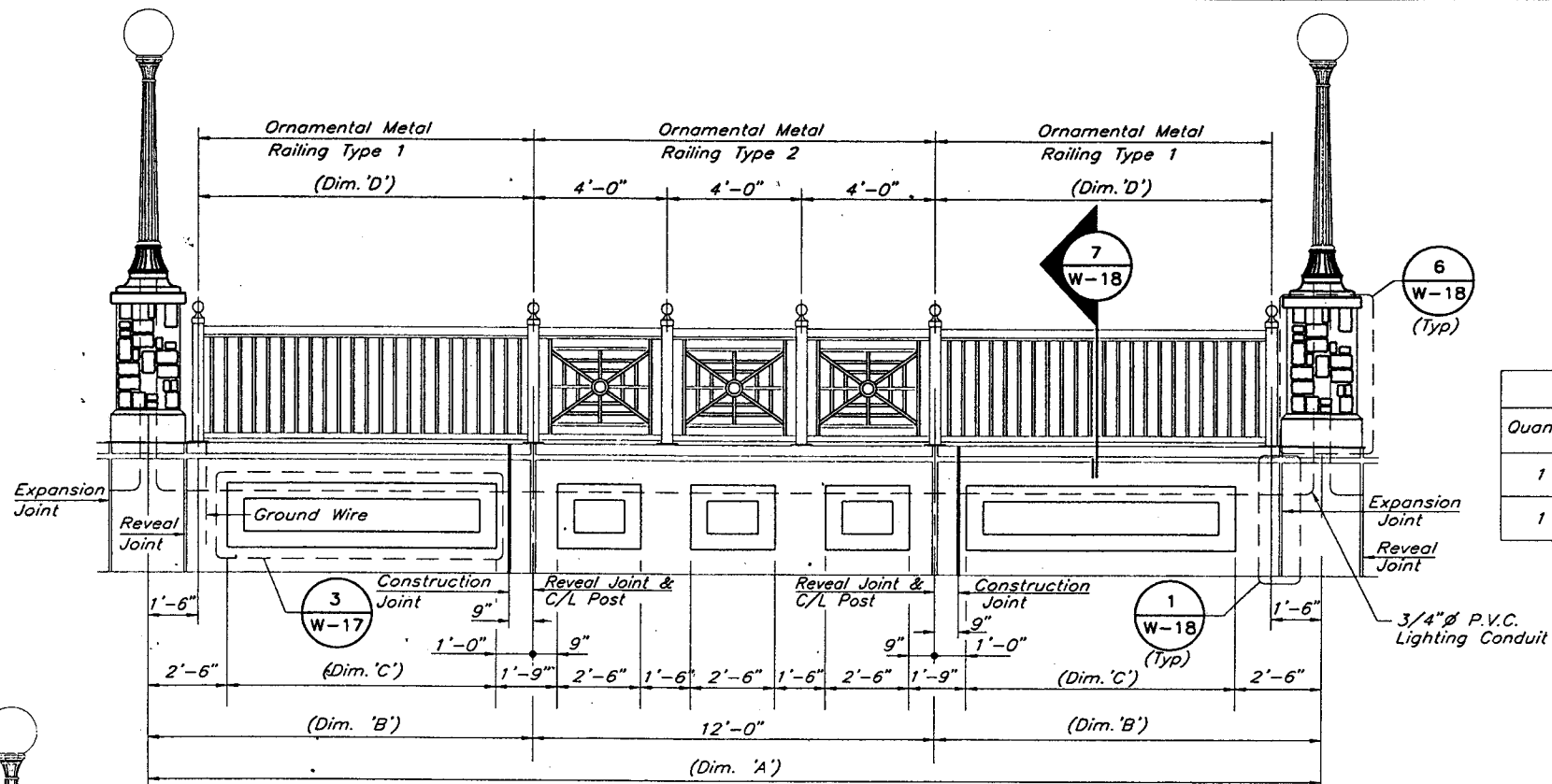
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 9/27/02 License #: 9164



City of St. Paul

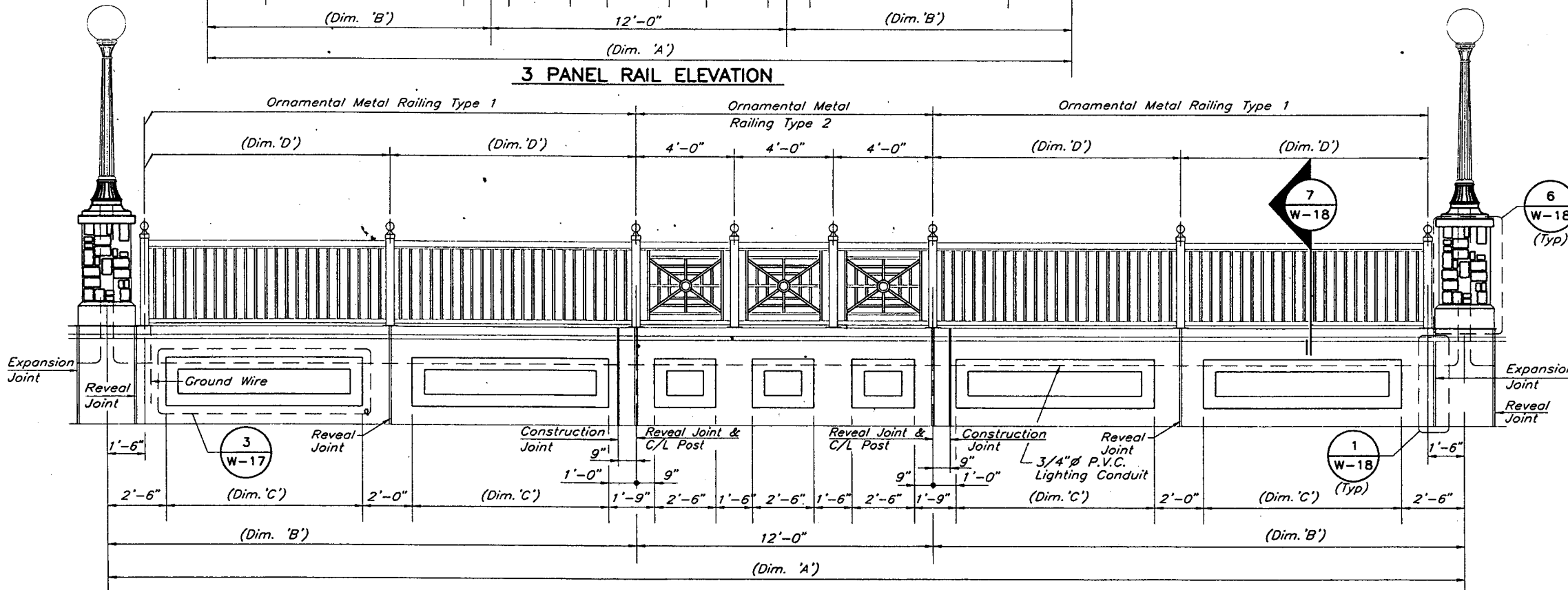
SHEPARD ROAD
 TYPICAL RAIL PANELS
 SECTIONS & DETAILS (TYPE 1 & 2)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-15 OF W-45



3 PANEL RAIL ELEVATION

Quantity	Panel #	(Dim. 'A')	(Dim. 'B')	(Dim. 'C')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
1	3A	36'-9"	12'-4 1/2"	8'-10 1/2"	10'-10 1/2"	0'-5 1/4"	24 Sps. @ 5" = 10'-0"
1	3B	34'-1 1/2"	11'-0 3/4"	7'-6 3/4"	9'-6 3/4"	0'-4 7/8"	21 Sps. @ 5" = 8'-9"



5 PANEL RAIL ELEVATION

Quantity	Panel #	(Dim. 'A')	(Dim. 'B')	(Dim. 'C')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
3	5A	48'-7 1/2"	18'-3 3/4"	6'-4 7/8"	8'-4 7/8"	0'-5 7/16"	18 Sps. @ 5" = 7'-6"

NOTES

1. See Sheet W-15 For Details of Railing Assembly.
2. Railing Shall Be Galvanized Per Mn/Dot 3394, & Painted Per Special Provisions After Fabrication.
3. Galvanize All Hardware Per Mn/Dot Spec. 3392.
4. All Reinforcing Bars Shall Be Epoxy Coated in Accordance With Spec. 3301, Grade 60
5. All Dimensions Are to be Field Verified Before Ordering Materials.
6. See Special Provisions For Architectural Treatment on Concrete Rail Posts.
7. Conduit System For Lighting Shall Run Inside The Concrete Rail Cap, See Special Provisions.
8. All Structural Steel Tubing in The Rail Shall Be A500, Grade B.
9. Material For Closure Plates And Base Plates Shall Conform to Spec. 3306.
10. Railing Expansion Joints Shall Be Placed in Horizontal Rails. The Minimum Distance Between Expansion Joints Shall Be Two Panel Lengths And Shall Not Exceed 40 Feet.
11. The Railing, Base Plates, Protruding Portions of Bolts, Nuts and Washers Shall Be Painted in Accordance With The Special Provisions.

28-299

NO	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67RAIL2.dwg DEC. 28, 2000

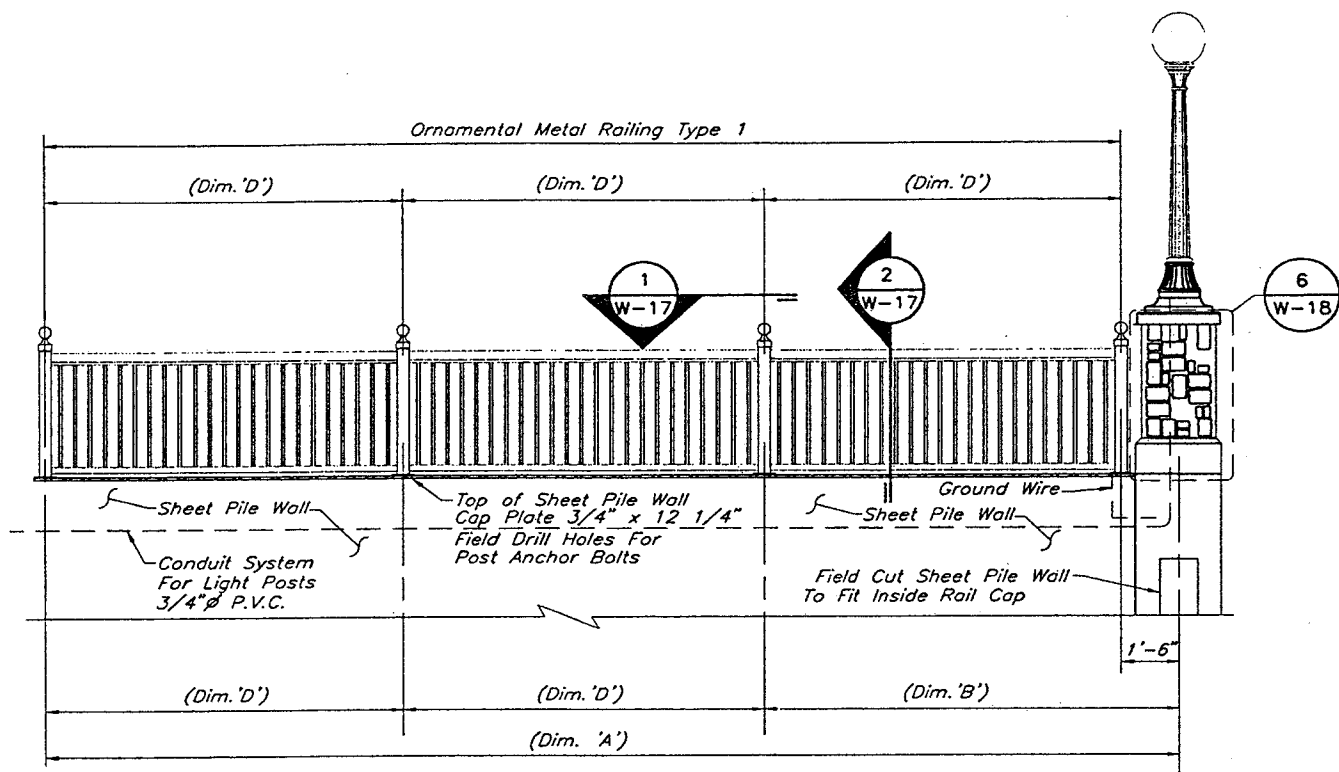
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENIEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 12/16/02 License #: 9164



City of St. Paul

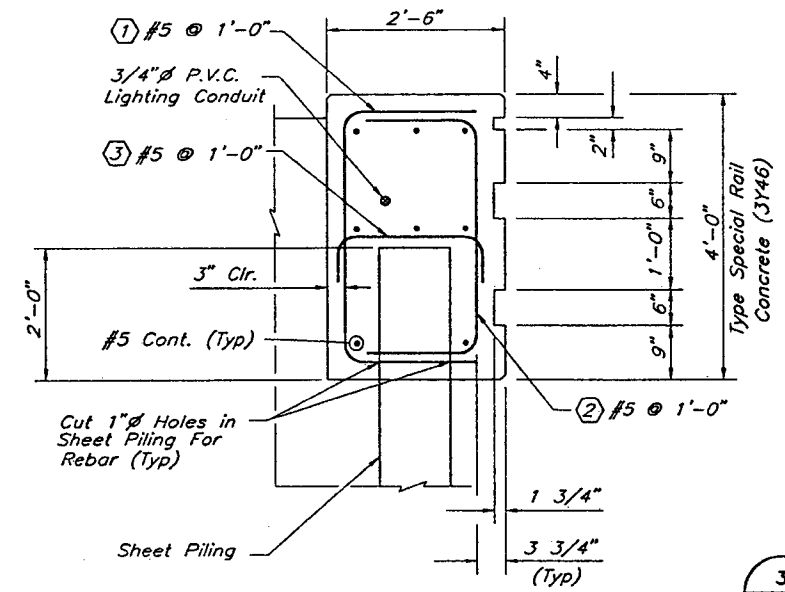
SHEPARD ROAD
 TYPICAL RAIL PANELS
 SECTIONS & DETAILS (TYPE 1 & 2)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-16 OF W-45

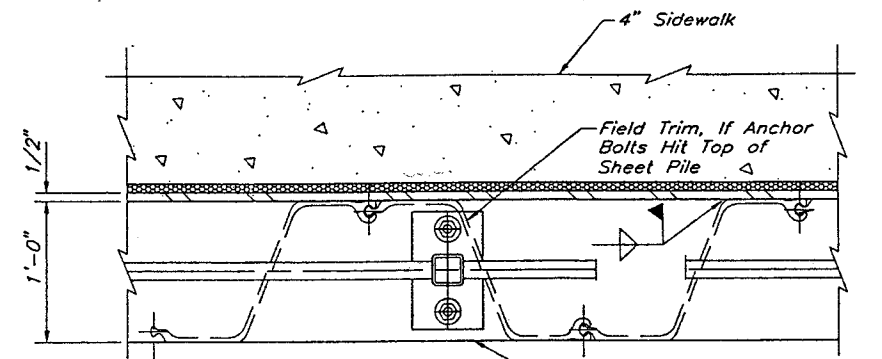
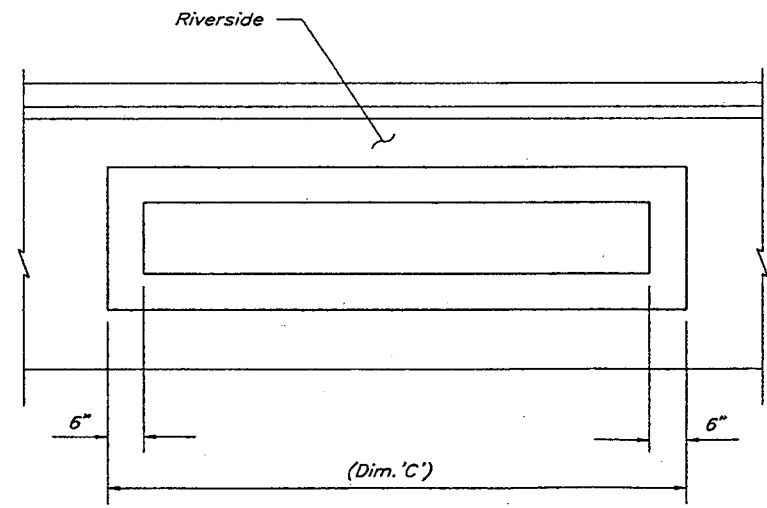


3 PANEL RAIL ELEVATION

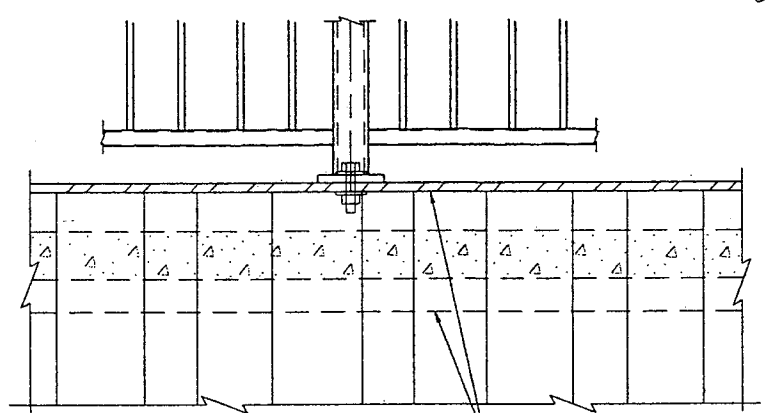
3 PANEL RAIL DIMENSIONS							
Quantity	Panel #	(Dim. 'A')	(Dim. 'B')	(Dim. 'C')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
1	BA	29'-7"	10'-10 5/16"	N/A	9'-4 5/16"	0'-3 11/16"	21 Sps. @ 5" = 8'-9"



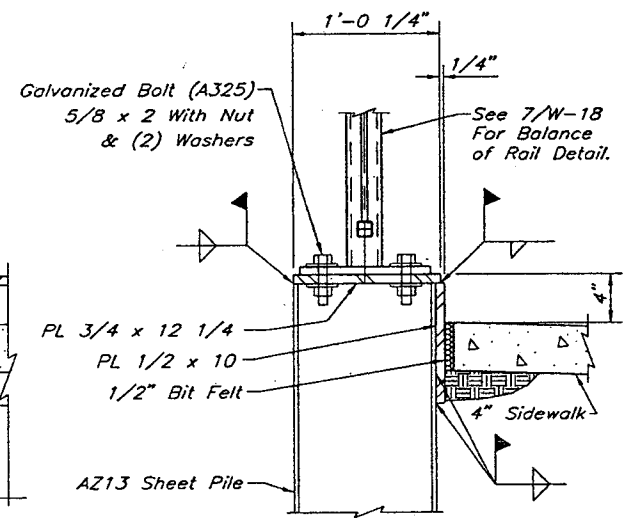
3 VIEW



1 PLAN



ELEVATION



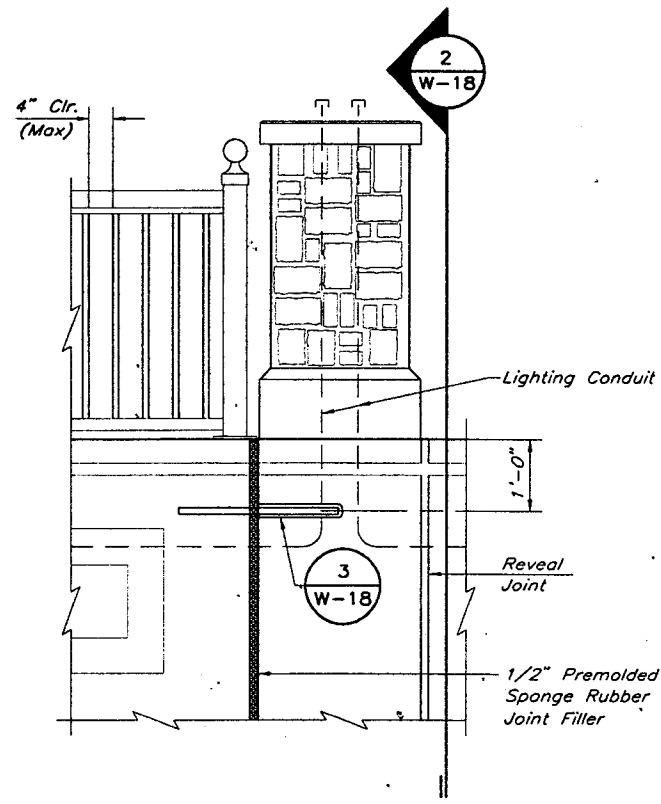
2 SECTION

NOTES

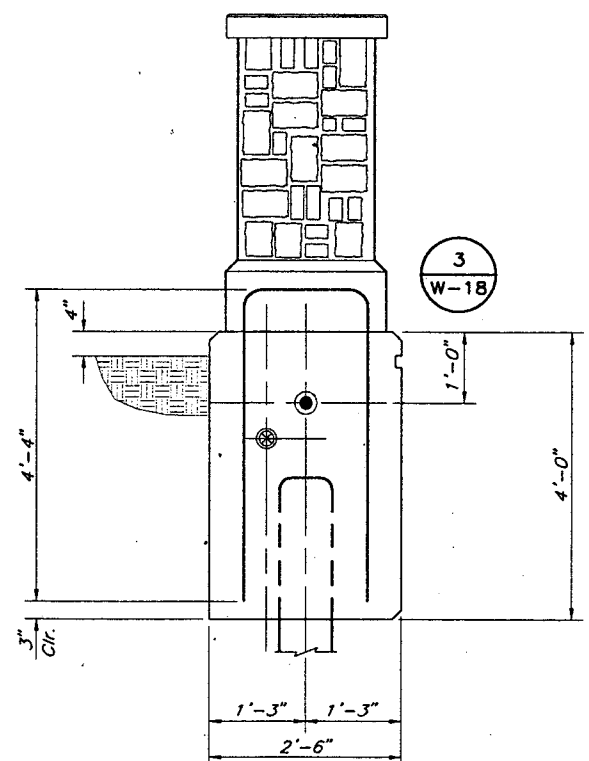
- See Sheet W-15 For Details of Railing Assembly.
- Railing Shall Be Galvanized Per Mn/Dot 3394, & Painted Per Special Provisions After Fabrication.
- Galvanize All Hardware Per Mn/Dot Spec. 3392.
- All Reinforcing Bars Shall Be Epoxy Coated in Accordance With Spec. 3301, Grade 60
- All Dimensions Are to be Field Verified Before Ordering Materials.
- See Special Provisions For Architectural Treatment on Concrete Rail Posts.
- Conduit System For Lighting Shall Run Inside The Concrete Rail Cap, See Special Provisions.
- All Structural Steel Tubing in The Rail Shall Be A500, Grade B.
- Material For Closure Plates And Base Plates Shall Conform to Spec. 3306.
- Railing Expansion Joints Shall Be Placed in Horizontal Rails. The Minimum Distance Between Expansion Joints Shall Be Two Panel Lengths And Shall Not Exceed 40 Feet.
- The Railing, Base Plates, Protruding Portions of Bolts, Nuts and Washers Shall Be Painted in Accordance With The Special Provisions.

28-29A

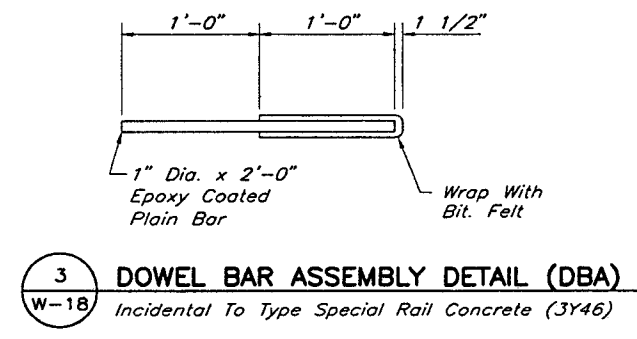
ADDENDUM 1



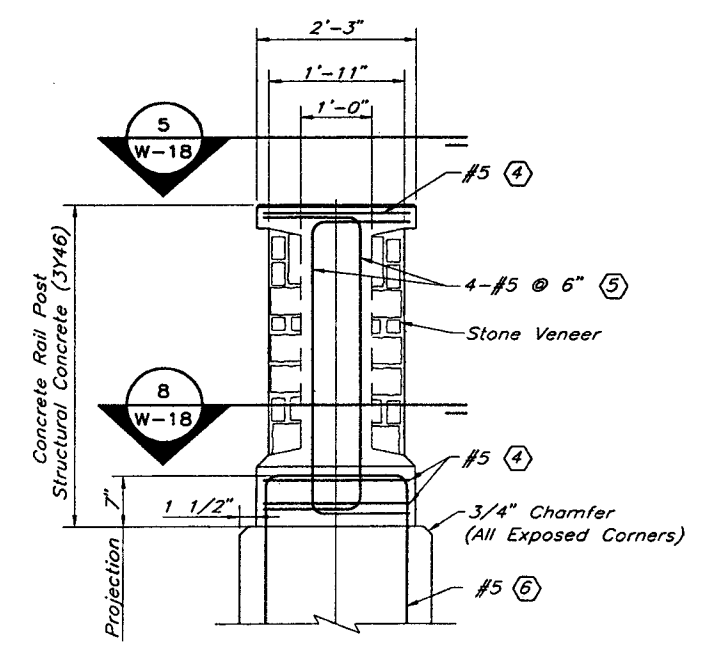
1 EXPANSION JOINT DETAIL
W-18



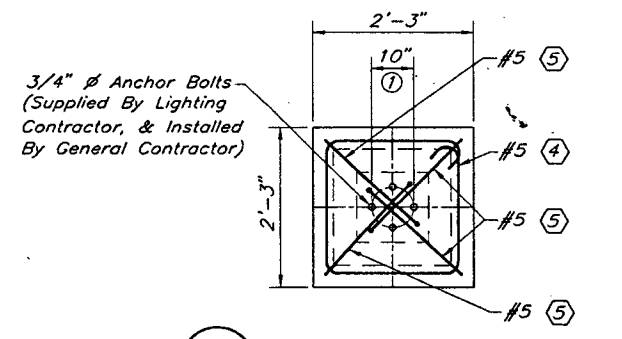
2 SECTION THRU EXPANSION JOINT
W-18



3 DOWEL BAR ASSEMBLY DETAIL (DBA)
W-18
Incidental To Type Special Rail Concrete (3Y46)

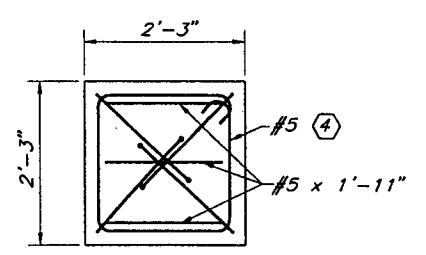


4 SECTION THRU POST
W-18

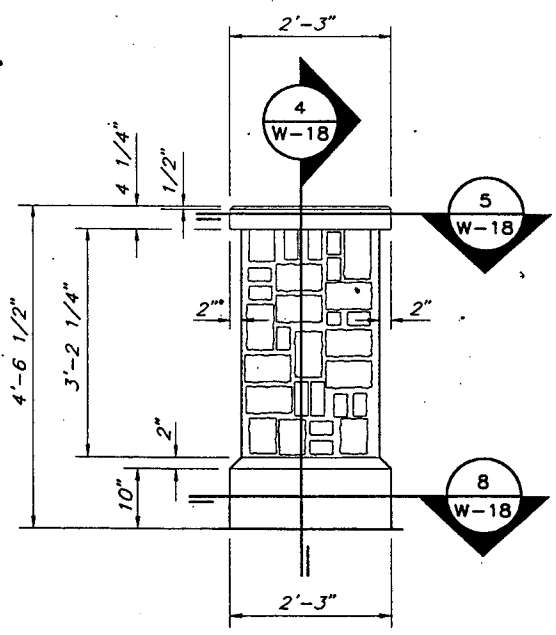


5 POST PLAN VIEW
W-18

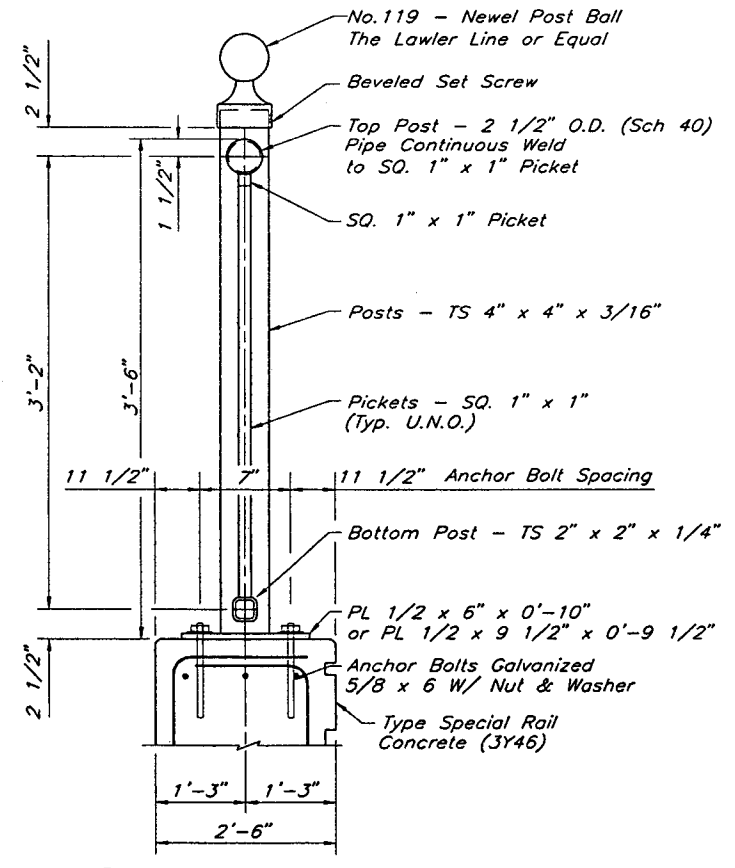
1 Verify Bolt Circle With Supplier Before Installation



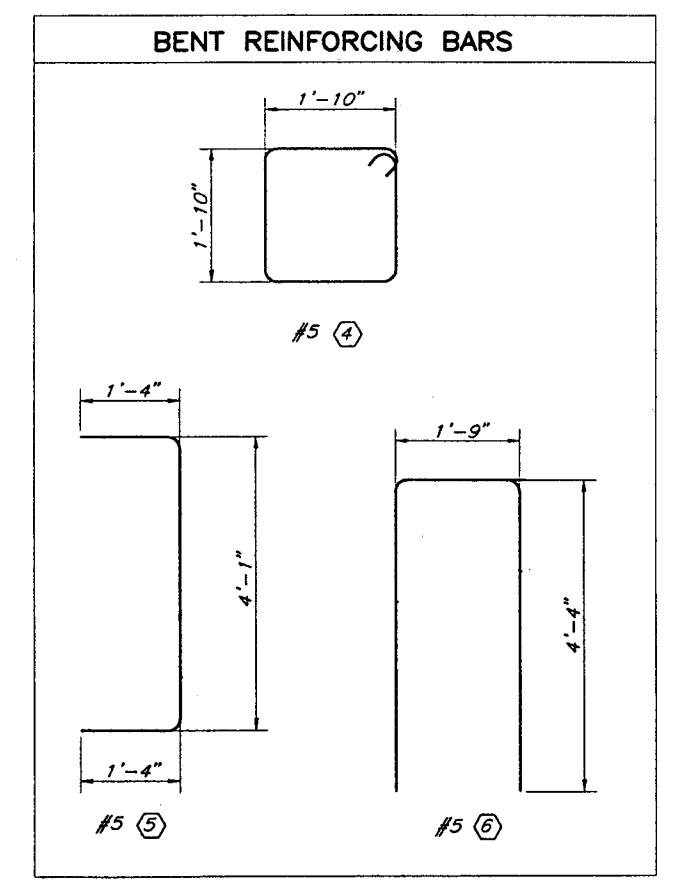
8 SECTION THRU POST BASE
W-18



6 CONCRETE RAIL POST (3Y46)
W-18



7 SECTION THRU RAILING
W-18



8 BENT REINFORCING BARS
W-18

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67RAIL3.dwg DEC. 07, 2001

DRAWN BY J. SHEEHAN DATE 5/00
 DESIGNED BY G. SCHWENIEK DATE 5/00
 CHECKED BY M. DAUBENBERGER DATE 5/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
Max Daubenberg
 Date 9/9/02 License # 9164



City of St. Paul

SHEPARD ROAD
 TYPICAL RAIL PANELS
 SECTIONS & DETAILS (TYPE 1)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-18 OF W-45

STATEMENT OF ESTIMATED QUANTITIES - BRIDGE NO. 62596

ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY
2104.501	REMOVE CONCRETE RETAINING WALL (TYPE 2) (PARTIAL DEPTH)	LF	50
2301.602	DRILL & GROUT REINFORCEMENT BAR	EACH	215
2401.501	STRUCTURAL CONCRETE (3Y43)	CY	19
2401.512	BRIDGE SLAB CONCRETE (3Y36)	SF	1620
2401.541	REINFORCING BARS (EPOXY COATED)	LB	5550
2401.603	PREFORMED FOAM JT SEALANT	LF	70
2401.618	STAY-IN-PLACE FORMS	SF	1620
2402.521	STRUCTURAL STEEL (3309)	LB	33700
2402.583	ORNAMENTAL METAL RAILING TYPE 3	LF	154
2402.595	BEARING ASSEMBLY	EACH	8

NOTES:

- Quantity Includes Drilling & Grouting of 144 No. 6 Bars & 36 No. 7 Bars. Weight of Reinforcing is included in Bid Item 2401.541 Reinforcement Bars.
- Item "Bearing Assembly" Includes 6 TYPE E1 And 2 TYPE E2 Exp. Curved Plate Bearing Assemblies And Embedment Plates.
- Saw Cut And Remove Top Portion of Existing Retaining Wall to Required Elevations. For Elevations Refer to Sheet W-20, W-21 & W-22.
- Payment For Stay-in-Place Forms Includes Angles And Bent Plates at Edge of Deck.

DESIGN DATA

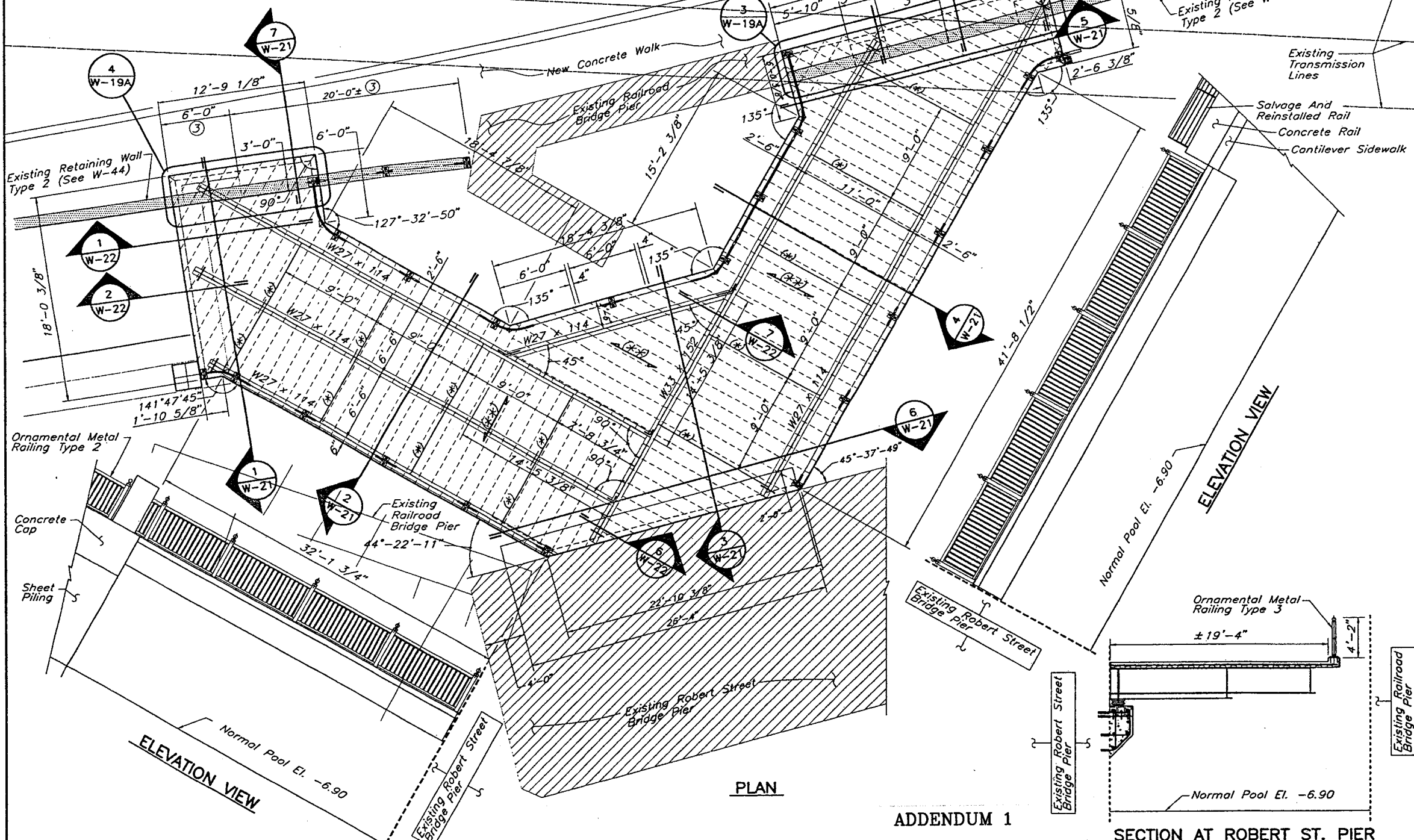
1996 And Current Interim AASHTO Specifications, and 1997 Guide Specification For Design of Pedestrian Bridges. Load Factor Design Method.

Design Load; Live Load: Max. of 85 psf or 10 Kip Maintenance Vehicle.

Maximum Allowable Design Stresses:
 Reinforced Concrete:
 $f_c' = 4,000$ P.S.I., $n = 8$
 $f_y = 60,000$ P.S.I. Reinforcement
 Structural Steel
 $f_y = 50,000$ P.S.I.
 3309 Steel (Unpainted)
 Deck Area = 1600 Sq. Ft.

NOTES:

- All Structural Steel Shall Conform To Mn/Dot 3309 Unless Noted Otherwise.
- Dimension Shown Are Measured on a Horizontal Plane.
- Bearing Stiffeners To Be Placed 8" From End of Beam and Shall Be Vertical.
- Stiffeners Shall Be Perpendicular to C/L of Beams.
- Field Connections Shall Be Made With 7/8" High Strength Bolts With Nut & 2-Washers (Galvanized).
- Galvanize All Hardware Per Mn/Dot Spec. 3392.
- Galvanize Steel Deck Per Mn/Dot 3394.
- All Reinforcing Bars Shall Be Epoxy Coated in Accordance With Spec. 3301, Grade 60
- Railing Shall Be Galvanized Per Mn/Dot 3394, & Painted Per Special Provisions After Fabrication.
- (*) Refer to Mn/Dot Detail No. B402 For Intermediate Diaphragms.
- (**) 3"-16 Gage Galvanized Steel Decking, Min. $l = 1.6$ in⁴/ft Min. $S = 1.019$ in³/ft.
- All Dimensions Are to be Field Verified Before Fabricating Materials.
- Top of Existing Retaining Wall to be Sawcut to Match Top Steel Beams Except in Areas of Beam Pockets Where Retaining Wall Shall be Cut to Elevation Shown on Plan Sheets W-20 To W-22.
- Metal Decking Shall be Secured to Supporting Steel by a Minimum of 5/8" Puddle Weld @ 6" on Center at Laps and @ 12" on Center at Intermediate Supports.



PLAN

ELEVATION VIEW

ELEVATION VIEW

SECTION AT ROBERT ST. PIER

ADDENDUM 1

REVISED 10/3/2002			
NO.	DATE	BY	DESCRIPTION OF REVISIONS
H:\Struc\003\3567\67brstr.dwg	DEC. 06, 2001		

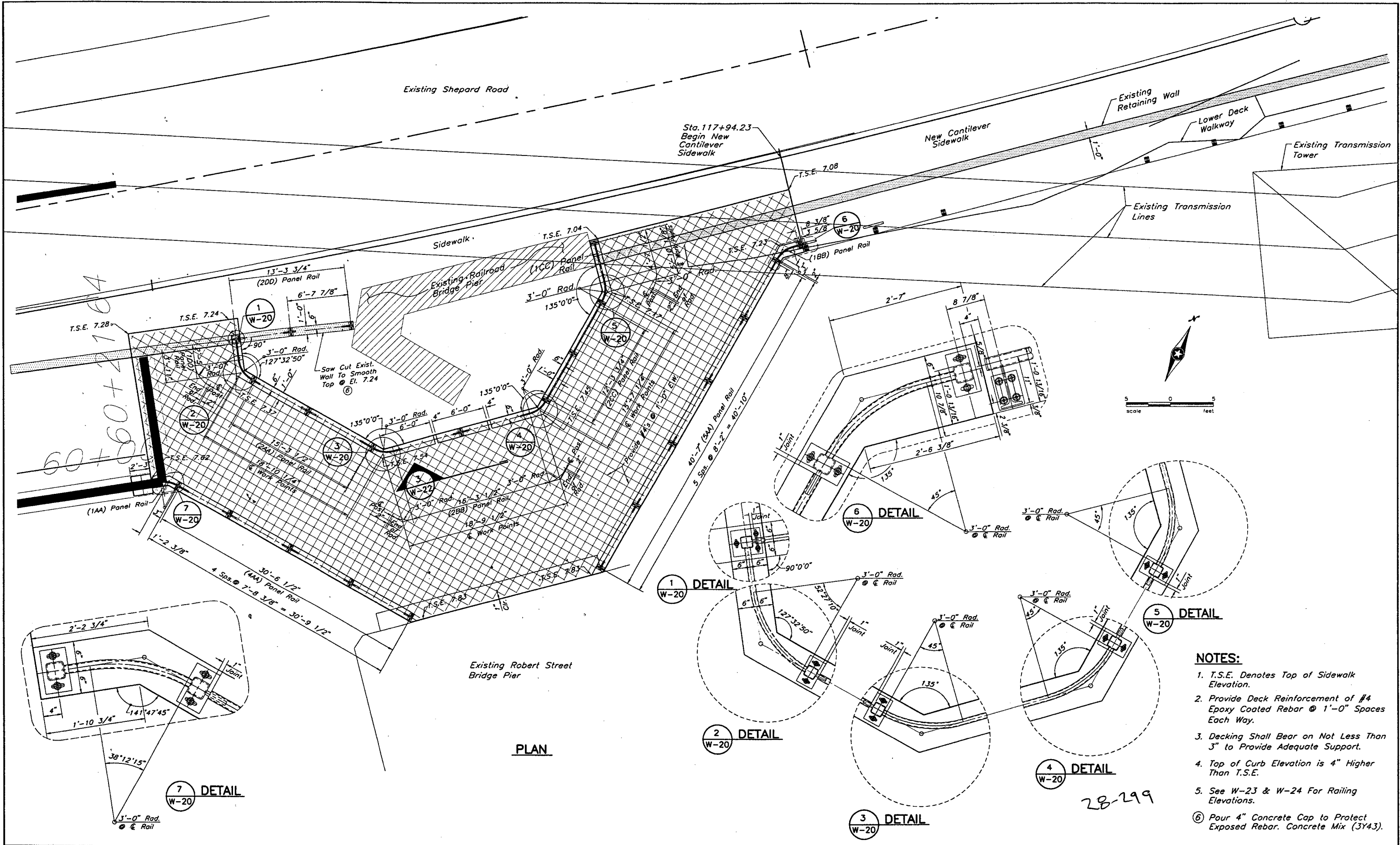
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 COMM. NO. 0993567
 Date: 1/10/02 License # 9164



City of St. Paul

CITY OF ST. PAUL
 BRIDGE NO. 62596
 SHEPARD ROAD TRAIL OVER MISSISSIPPI RIVER
 27" & 33" DEEP STEEL BEAMS
 50' SPAN 28-299
 BRIDGE I.D. NO. 301
 APPROVED: *Kevin L. Wilson*
 ST. PAUL CITY ENGINEER (Bridge Engineer)
 APPROVED: *Wanun L. Wargom* 9/23/02
 STATE BRIDGE ENGINEER

BRIDGE NO. 62596
 DECK PLAN
 (SHEET 1 OF 8)
 SHEET W-19 OF W-45
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88



PLAN

NOTES:

1. T.S.E. Denotes Top of Sidewalk Elevation.
2. Provide Deck Reinforcement of #4 Epoxy Coated Rebar @ 1'-0" Spaces Each Way.
3. Decking Shall Bear on Not Less Than 3" to Provide Adequate Support.
4. Top of Curb Elevation is 4" Higher Than T.S.E.
5. See W-23 & W-24 For Railing Elevations.
6. Pour 4" Concrete Cap to Protect Exposed Rebar. Concrete Mix (3Y43).

NO	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67RAIL4.dwg DEC. 07, 2001

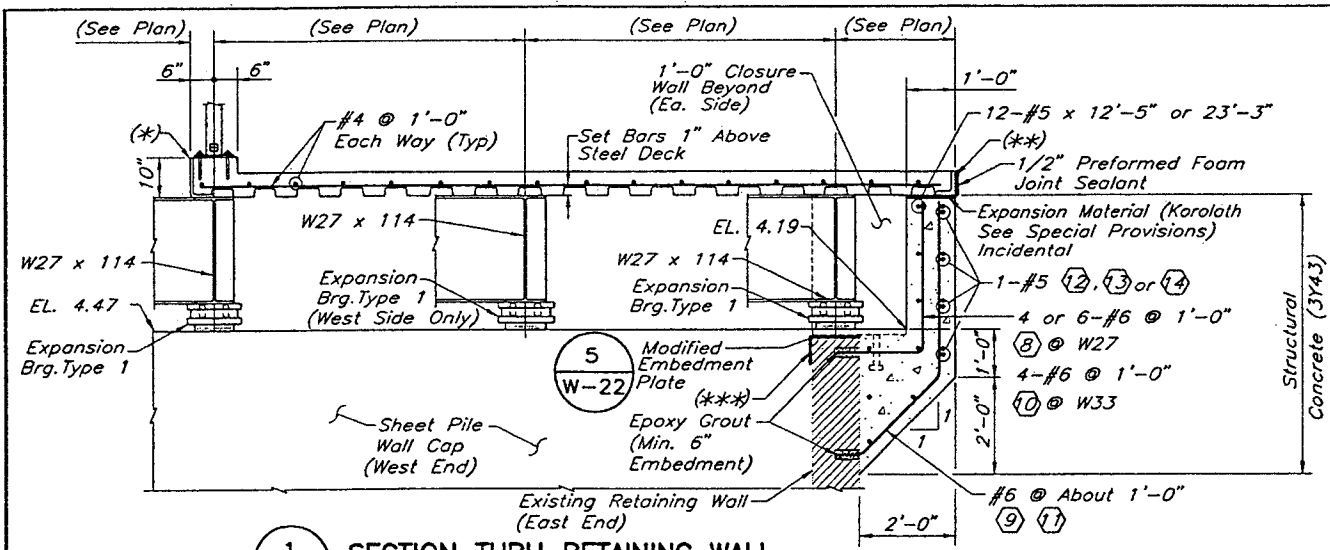
DRAWN BY J. SHEEHAN DATE 4/00
 DESIGNED BY G. SCHWENTEK DATE 4/00
 CHECKED BY M. DAUBENBERGER DATE 4/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
Max Daubenberg
 Date 7/19/02 License # 9164



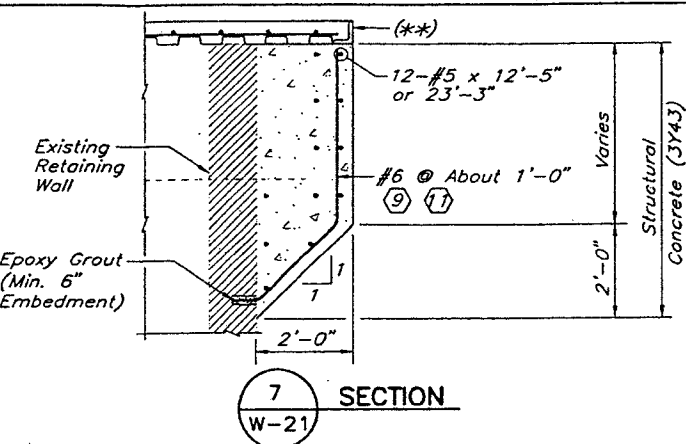
City of St. Paul

BRIDGE NO. 62596
 RAILING AND DECK PLAN
 (SHEET 2 OF 8)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

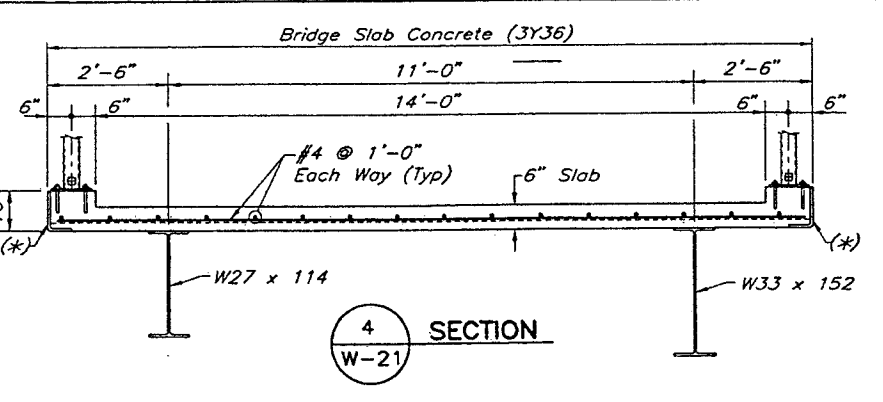
SHEET W-20 OF W-45



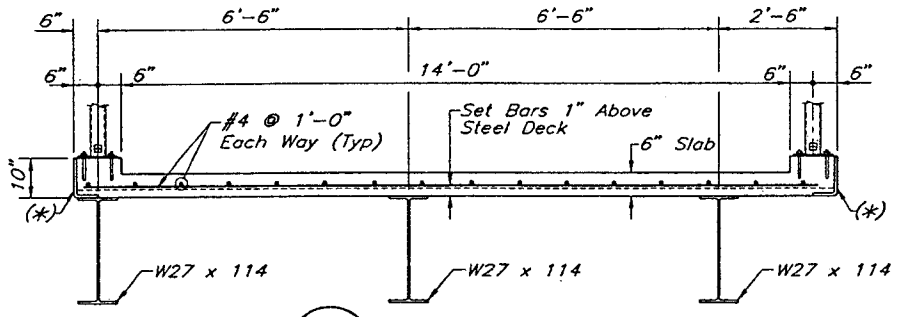
1 SECTION THRU RETAINING WALL
W-21



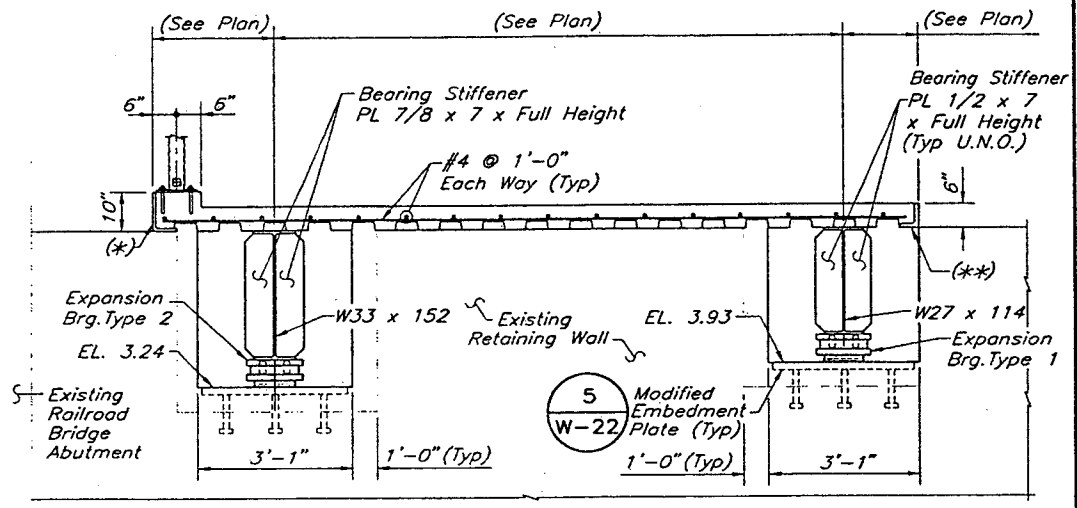
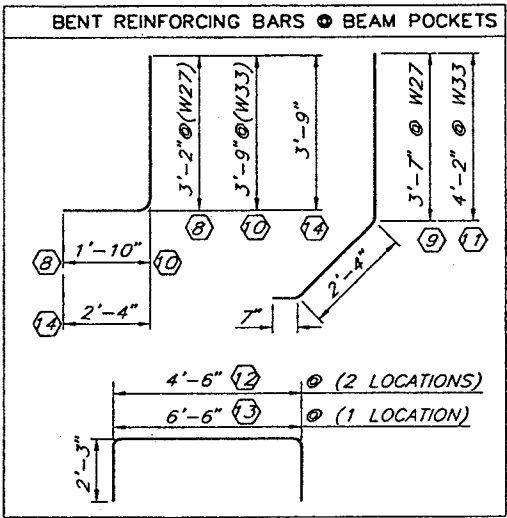
7 SECTION
W-21



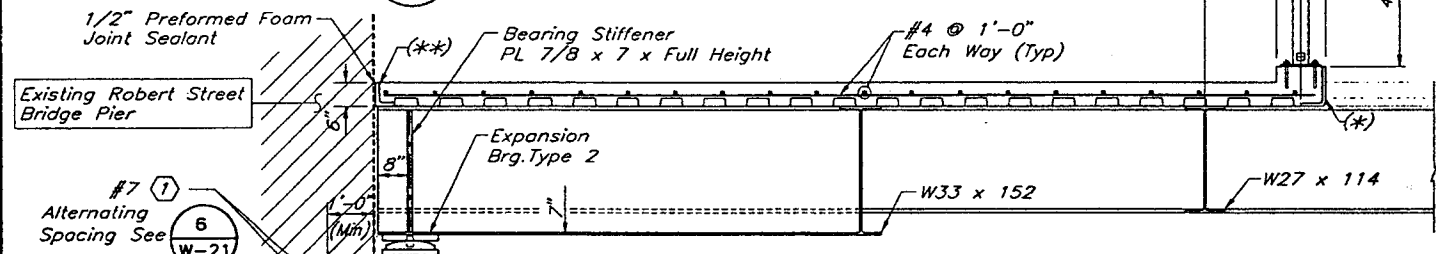
4 SECTION
W-21



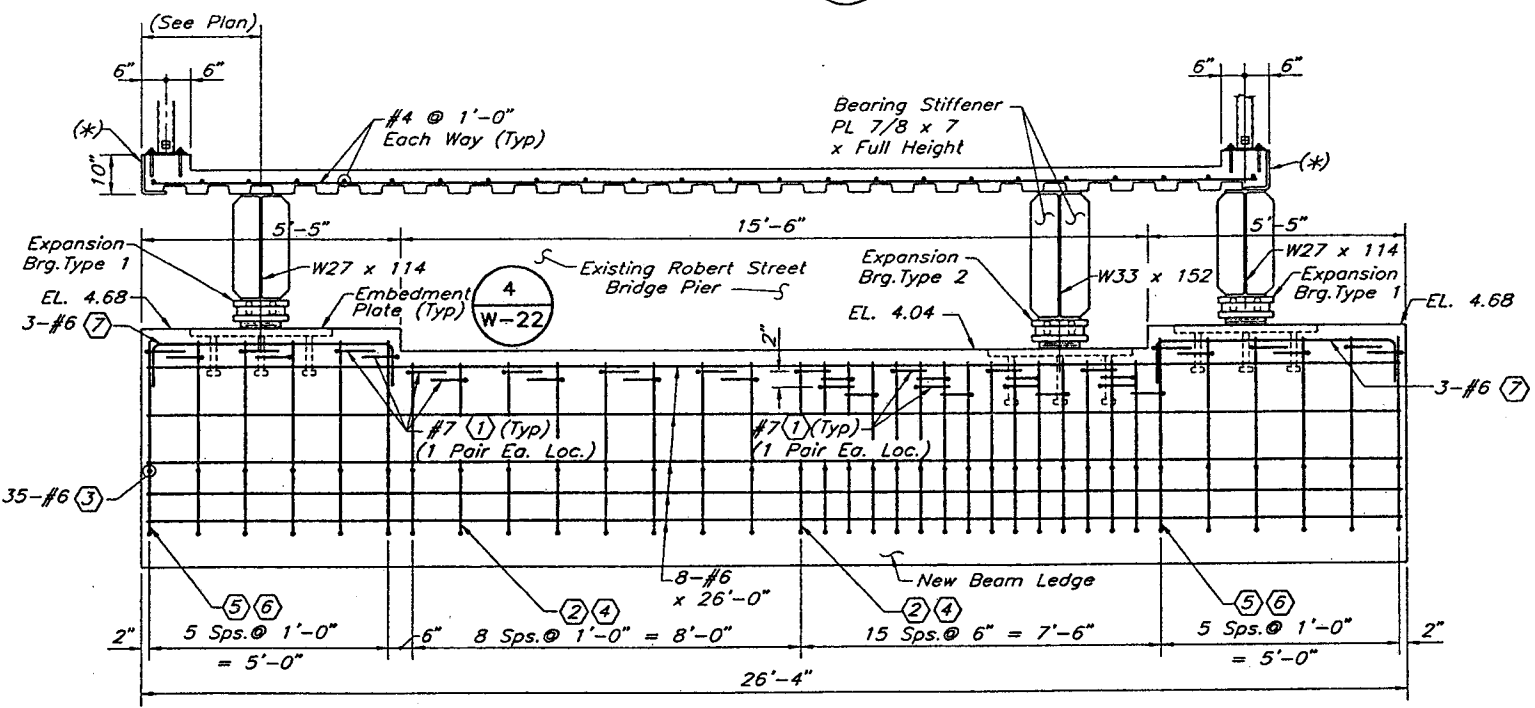
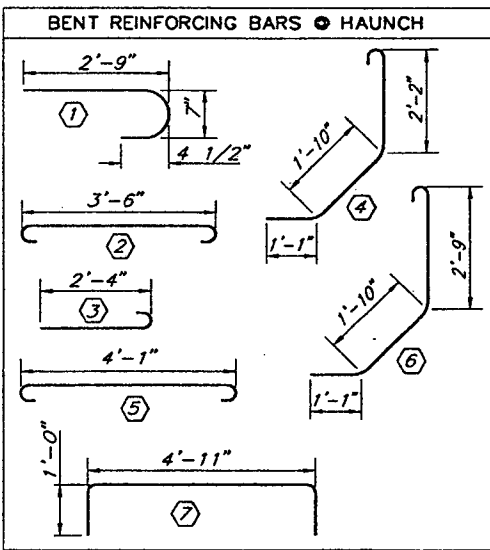
2 SECTION
W-21



5 SECTION AT RETAINING WALL
W-21



3 SECTION
W-21



6 SECTION AT CANTILEVER
W-21

NOTES:

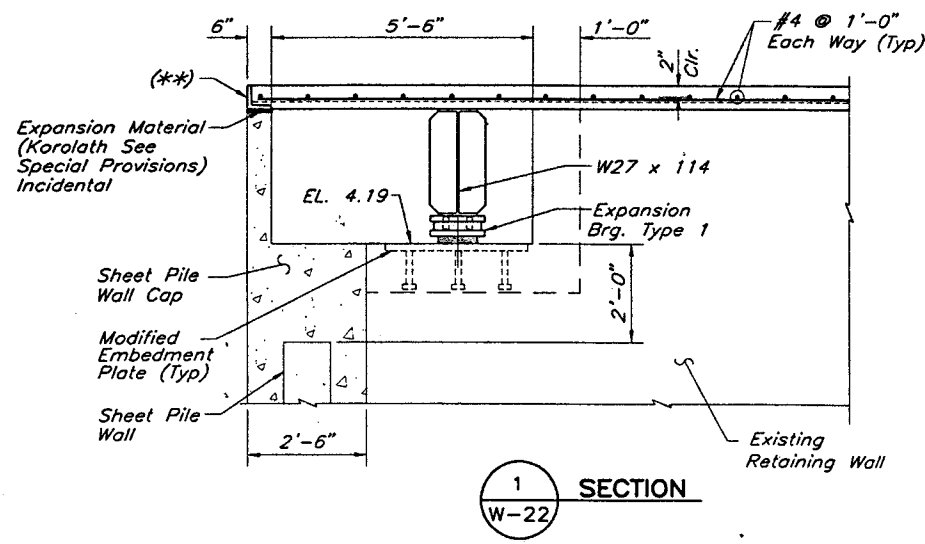
- (*) Structural Steel (3306) Bent Plate 1/2 x 16 Cont. @ Edge of Deck Where Curb is Req'd. For Railing. (Galvanized) Field Weld @ All Splices, & Repair Galvanizing.
- (**) Structural Steel (3306) Angle 6 x 6 x 1/2 Cont. @ Edge of Deck Where Curb is Not Req'd. (Galvanized) Field Weld @ All Splices, & Repair Galvanizing.
- (***) Apply Dampproofing to Saw Cut Locations to Protect Existing Rebar (Incidental).

Bent Plate & Angle Incidental To Item No 2401.618 Stay-In-Place Forms.

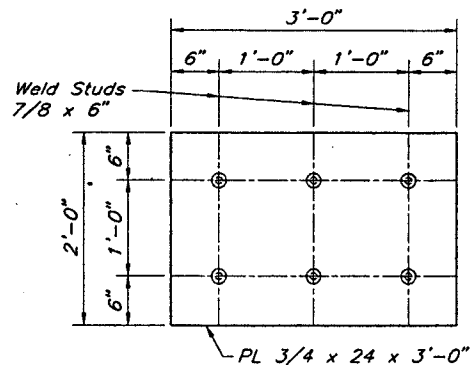
28-299

ADDENDUM 1

REVISED 10/3/2002			DRAWN BY J. SHEEHAN DESIGNED BY G. SCHWENK CHECKED BY M. DAUBENBERGER DATE 3/00 3/00 3/00	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: MAX DAUBENBERGER <i>Max Daubenberg</i> Date 7/5/02 License # 9164	SRF CONSULTING GROUP, INC. SAINT PAUL City of St. Paul	BRIDGE NO. 62596 SECTIONS & DETAILS (SHEET 3 OF 8) S.P. NO. 6201-77(T.H.5-102) M.S.A. PROJ. NO. 62-637-16 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88	SHEET W-21 OF W-45
NO. DATE BY DESCRIPTION OF REVISIONS H:\Struc\003\3567\67deckdtls1.dwg DEC. 07, 2001							

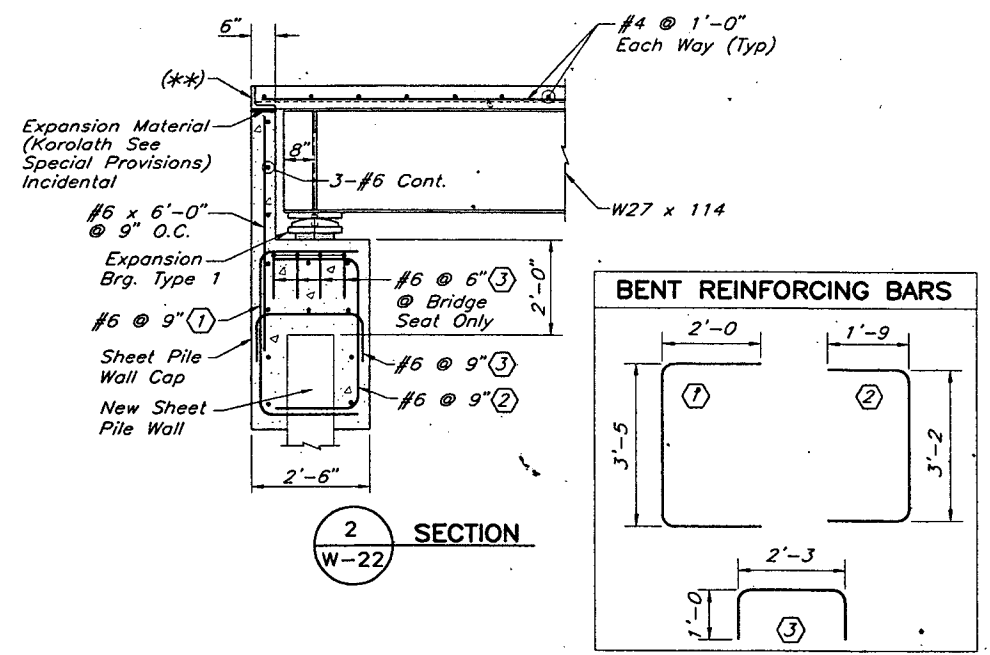


1 SECTION
W-22

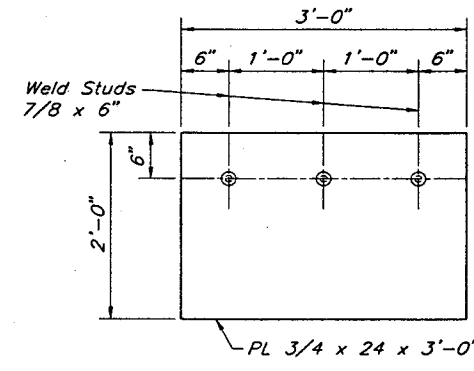


4 EMBEDMENT PLATE
W-22 (3 THUS)

Structural Steel 3306 Galvanize Per 3394, Incidental to Bearing Assemblies

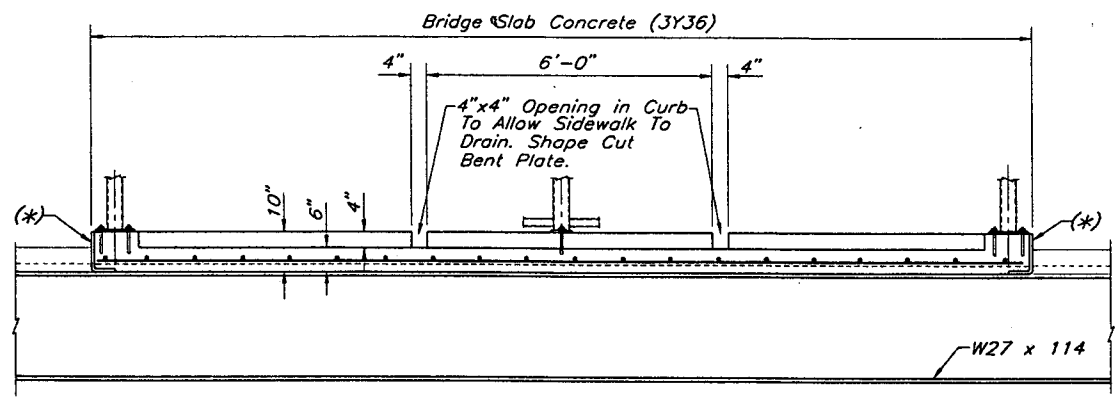
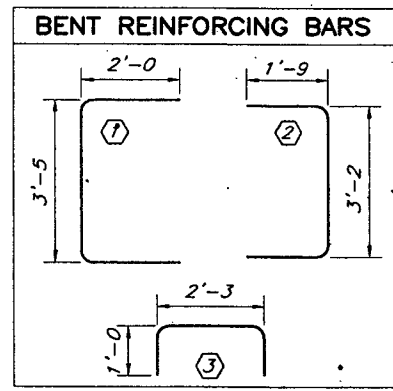


2 SECTION
W-22



5 MODIFIED EMBEDMENT PLATE
W-22 (3 THUS)

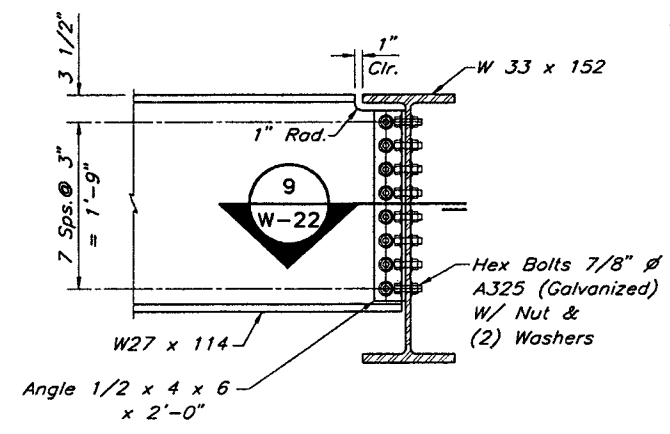
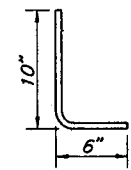
Structural Steel 3306 Galvanize Per 3394, Incidental to Bearing Assemblies



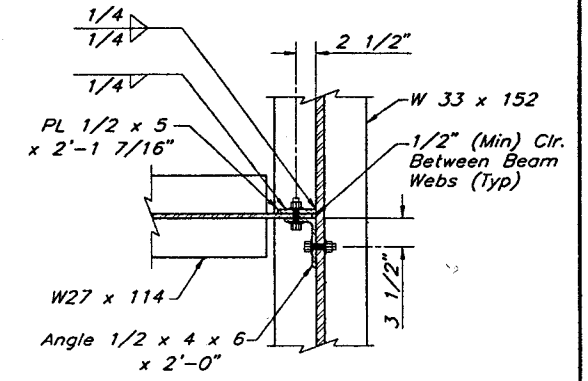
3 SECTION
W-22

NOTES:

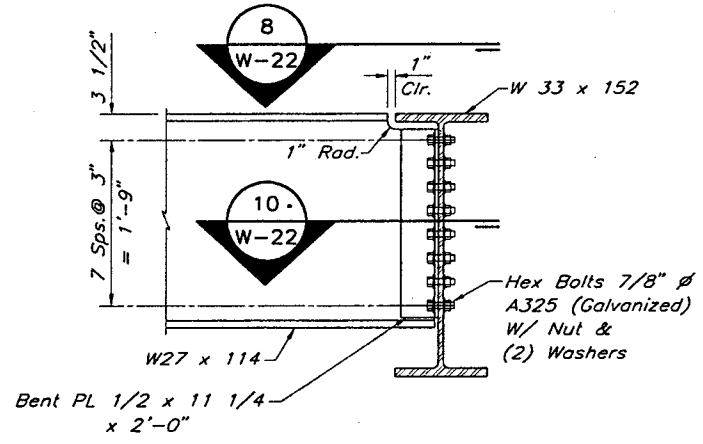
- (*) Structural Steel 3306 Bent Plate 1/2 x 16 Cont. @ Edge of Deck Where Curb is Req'd. For Railing. (Galvanized) Field Weld @ All Splices, & Repair Galvanizing. Incidental to Stay-in-Place Forms.
- (**) Structural Steel 3306 Angle 6 x 6 x 1/2 Cont. @ Edge of Deck Where Curb is Not Req'd. (Galvanized) Field Weld @ All Splices, & Repair Galvanizing. Incidental to Stay-in-Place Forms.



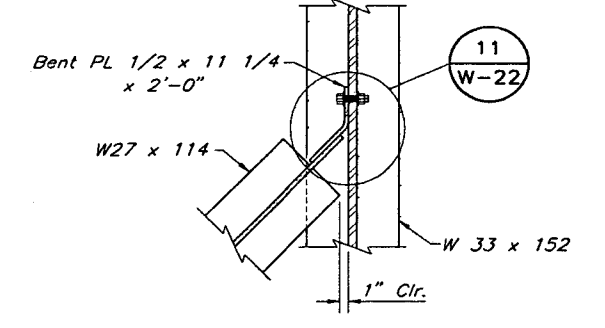
6 BEAM CONNECTION DETAIL - 90 degrees
W-22



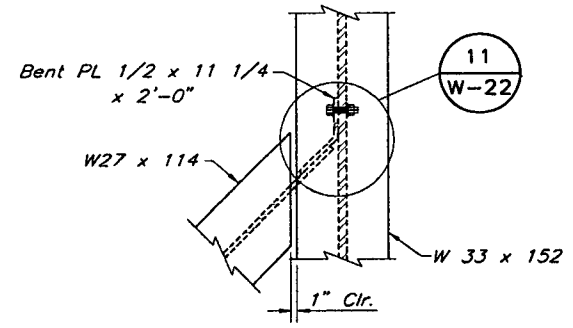
9 SECTION
W-22



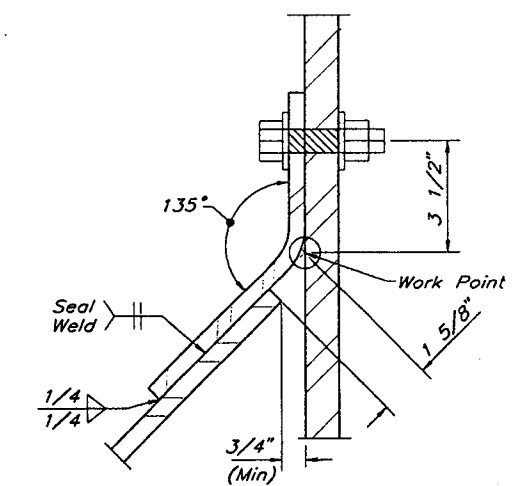
7 BEAM CONNECTION DETAIL - 45 degrees
W-22



10 SECTION
W-22



8 SECTION
W-22



11 DETAIL
W-22

28-299

NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK DATE 3/00
 CHECKED BY M. DAUBENBERGER DATE 3/00
 COMM. NO. 0993567

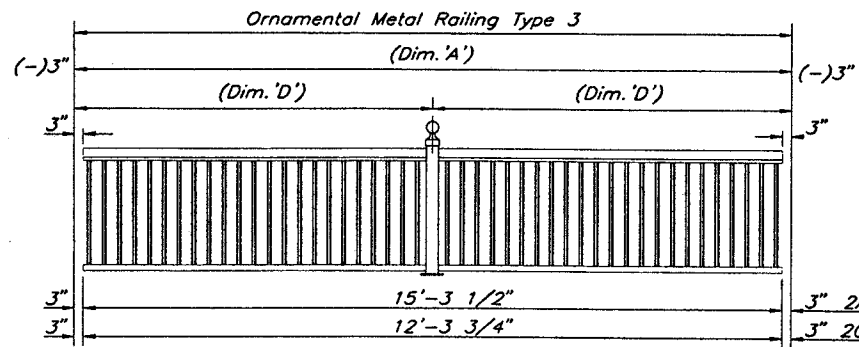
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 9/15/02 License #: 9164



City of St. Paul

BRIDGE NO. 62596
 SECTIONS & DETAILS
 (SHEET 4 OF 8)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

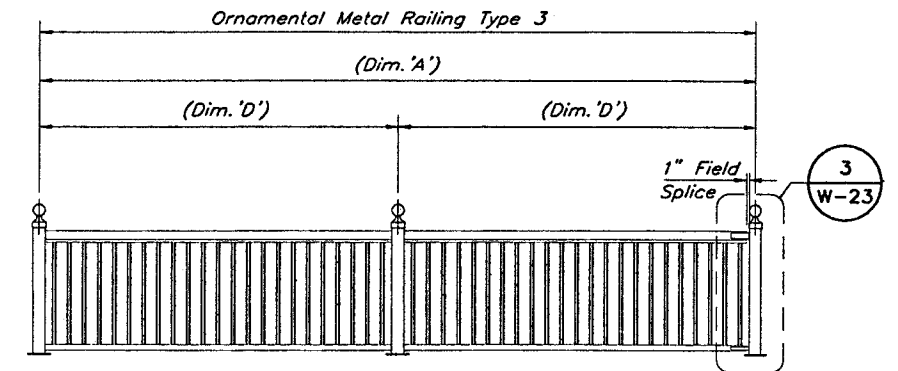
SHEET W-22 OF W-45



2 PANEL RAIL ELEVATION 2AA & 2CC

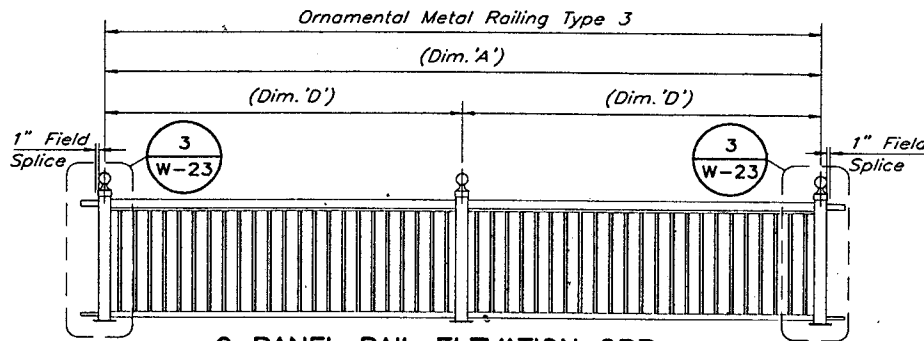
2 PANEL RAIL DIMENSIONS				
Panel #	(Dim. 'A')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
2AA	15'-9 1/2"	7'-10 3/4"	0'-4 7/8"	17 Sps. @ 5" = 7'-1"
2CC	12'-9 3/4"	6'-4 7/8"	0'-5 15/16"	13 Sps. @ 5" = 5'-5"

Note: For Dims. 'E' & 'F'
See Detail 1/W-23

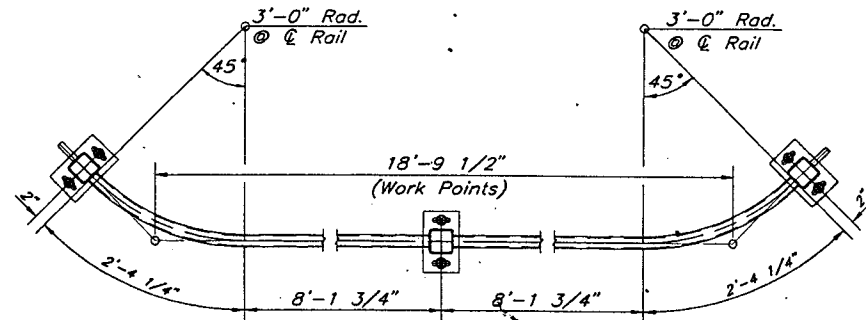


2 PANEL RAIL ELEVATION 2DD

2 PANEL RAIL DIMENSIONS				
Panel #	(Dim. 'A')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
2DD	13'-3 3/4"	6'-7 7/8"	0'-4 15/16"	14 Sps. @ 5" = 5'-10"

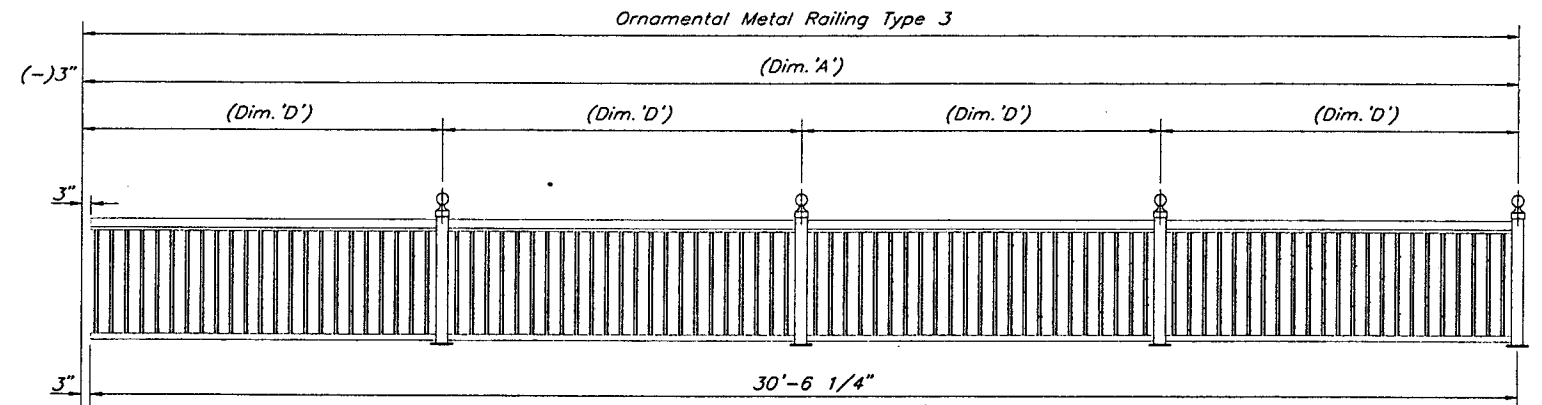


2 PANEL RAIL ELEVATION 2BB



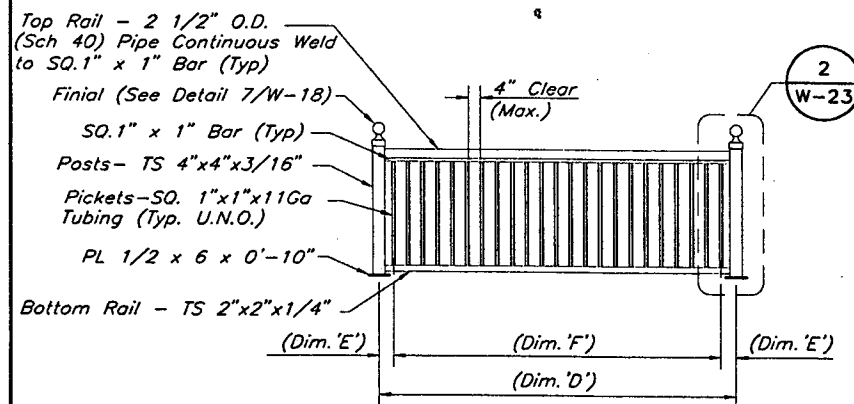
PLAN VIEW PANEL 2BB

2 PANEL RAIL DIMENSIONS				
Panel #	(Dim. 'A') C/L Rail	(Dim. 'D') C/L Rail	(Dim. 'E') C/L Rail	(Dim. 'F') C/L Rail
2BB	21'-4"	10'-6"	0'-5 1/2"	23 Sps. @ 5" = 9'-7"

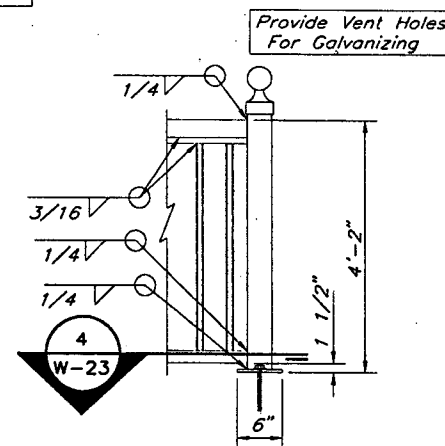


4 PANEL RAIL ELEVATION 4AA

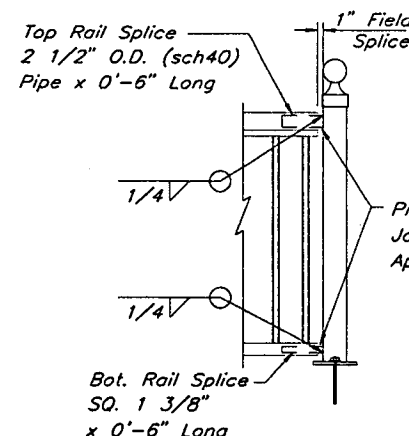
4 PANEL RAIL DIMENSIONS				
Panel #	(Dim. 'A')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
4AA	30'-9 1/4"	7'-8 5/16"	0'-6 3/16"	16 Sps. @ 5" = 6'-8"



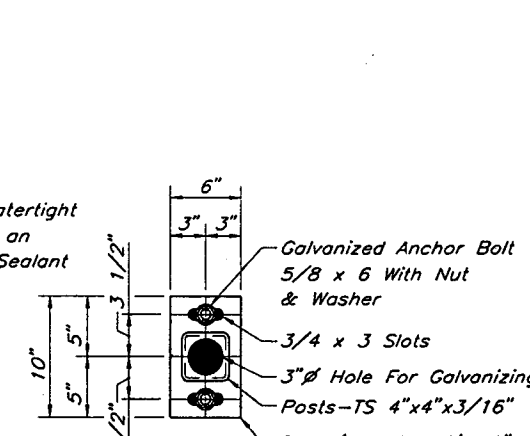
1 DETAIL
W-23



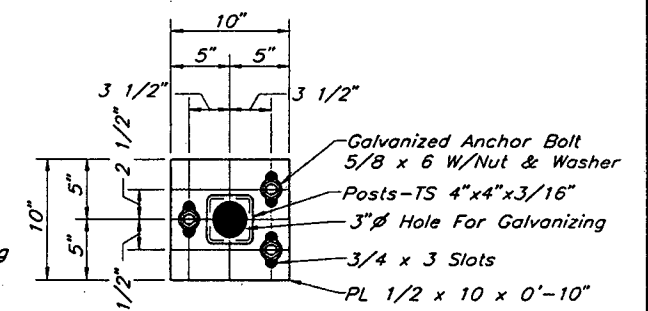
2 VIEW
W-23 Seal All Welds
For Galvanizing



3 VIEW
W-23 Seal All Welds
For Galvanizing



4 SECTION
W-23



5 DETAIL
W-23 28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY J. SHEEHAN	DATE 3/00
DESIGNED BY G. SCHWIENTEK	DATE 3/00
CHECKED BY M. DAUBENBERGER	DATE 3/00
COMM. NO. 0993567	

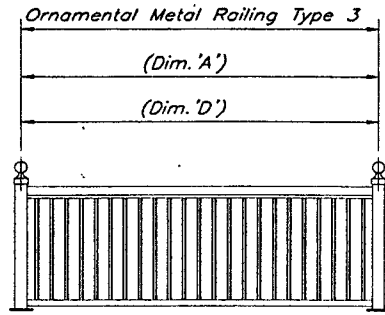
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Print Name: MAX DAUBENBERGER
Max Daubenberg
Date: 9/10/02 License #: 9164



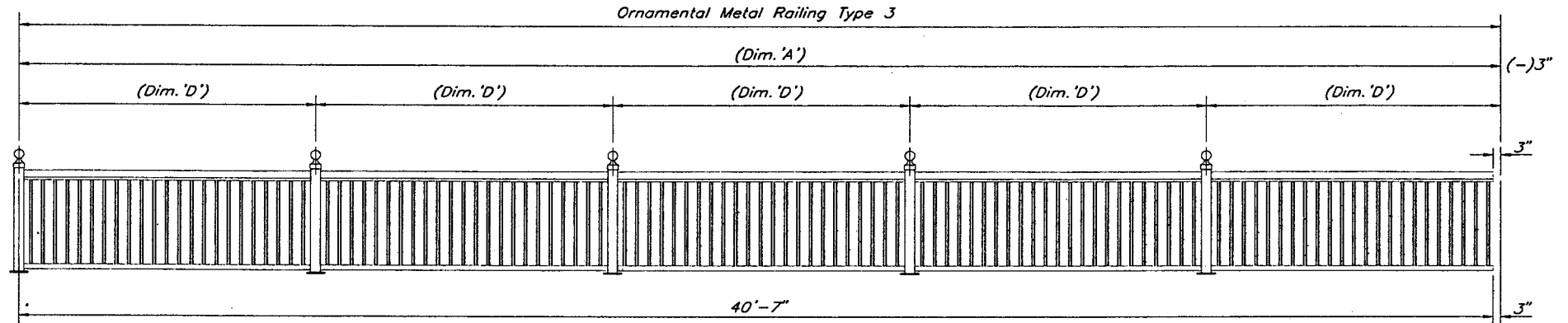
City of St. Paul

BRIDGE NO. 62596
RAIL PANELS DETAILS (TYPE 3)
(SHEET 5 OF 8)
S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
W-23
OF
W-45



1 PANEL RAIL ELEVATION



5 PANEL RAIL ELEVATION

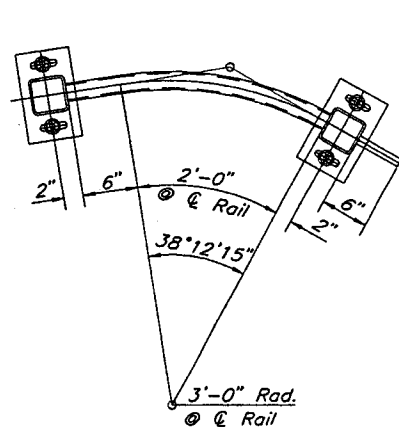
1 PANEL RAIL DIMENSIONS				
Panel #	(Dim. 'A') Along C/L	(Dim. 'D') Along C/L	(Dim. 'E') Along C/L	(Dim. 'F') Along C/L
1AA	2'-10"	2'-10"	0'-4 1/2"	5 Sps. @ 5" = 2'-1"
1BB	3'-3"	3'-3"	0'-4 1/2"	6 Sps. @ 5" = 2'-6"
1CC	7'-1 3/4'	7'-1 3/4'	0'-5 3/8"	15 Sps. @ 5" = 6'-3"
1DD	5'-4 1/4"	5'-4 1/4"	0'-4 5/8"	11 Sps. @ 5" = 4'-7"

5 PANEL RAIL DIMENSIONS				
Panel #	(Dim. 'A')	(Dim. 'D')	(Dim. 'E')	(Dim. 'F')
5AA	40'-10"	8'-2"	0'-4"	18 Sps. @ 5" = 7'-6"

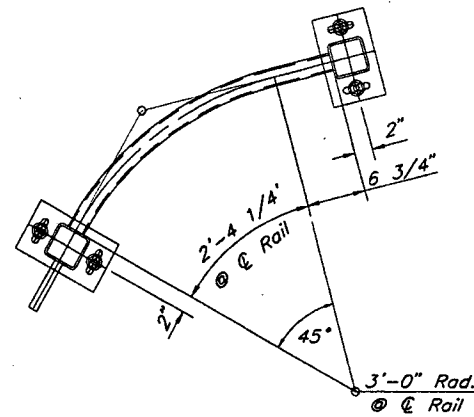
NOTES

Note: For Dims. 'E' & 'F'
See Detail 1/W-23

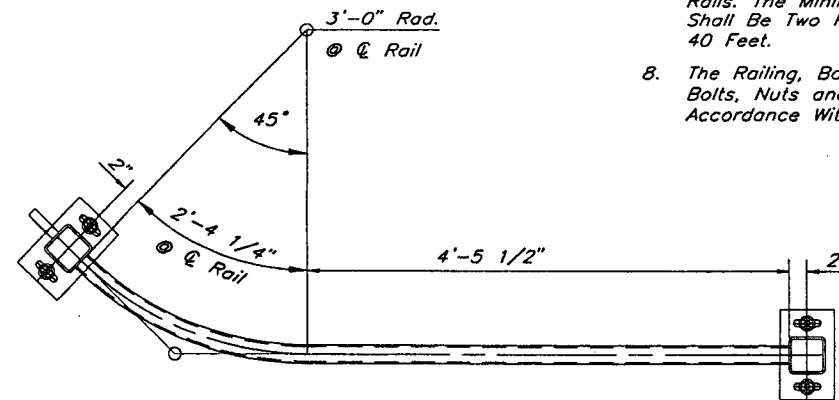
- See Sheet W-22 For Details of Railing Assembly.
- Railing Shall Be Galvanized Per Mn/Dot 3394, & Painted Per Special Provisions After Fabrication.
- Galvanize All Hardware Per Mn/Dot Spec. 3392.
- All Dimensions Are to be Field Verified Before Ordering Materials.
- All Structural Steel Tubing in The Rail Shall Be A500, Grade B.
- Material For Closure Plates And Base Plates Shall Conform to Spec. 3306.
- Railing Expansion Joints Shall Be Placed in Horizontal Rails. The Minimum Distance Between Expansion Joints Shall Be Two Panel Lengths And Shall Not Exceed 40 Feet.
- The Railing, Base Plates, Protruding Portions of Bolts, Nuts and Washers Shall Be Painted in Accordance With The Special Provisions.



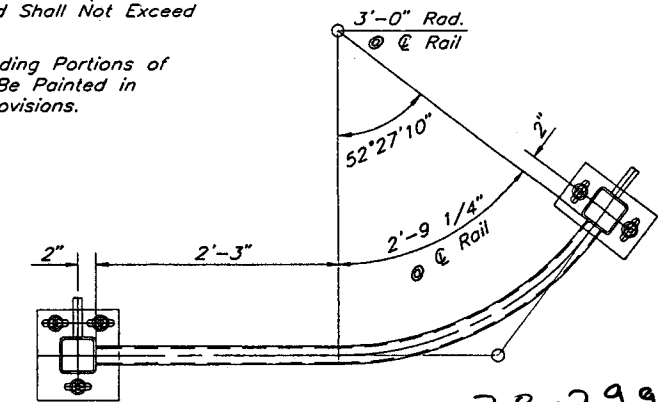
(1AA) PANEL RAIL PLAN VIEW



(1BB) PANEL RAIL PLAN VIEW



(1CC) PANEL RAIL PLAN VIEW



(1DD) PANEL RAIL PLAN VIEW

NO.	DATE	BY	DESCRIPTION OF REVISIONS

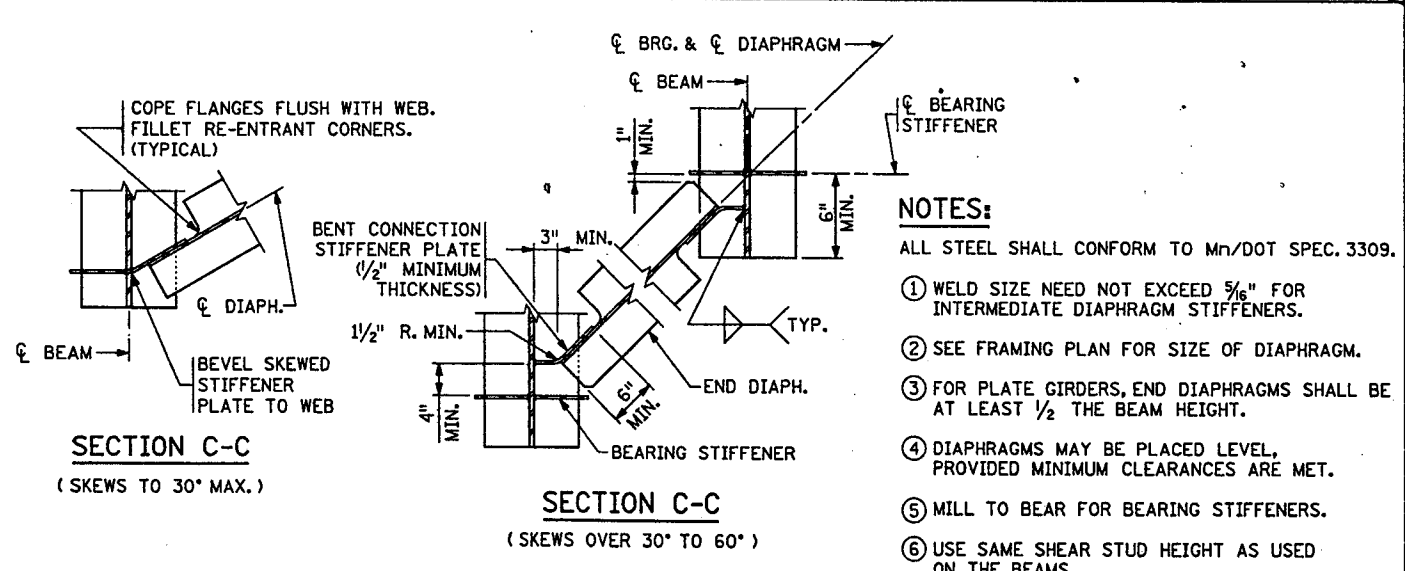
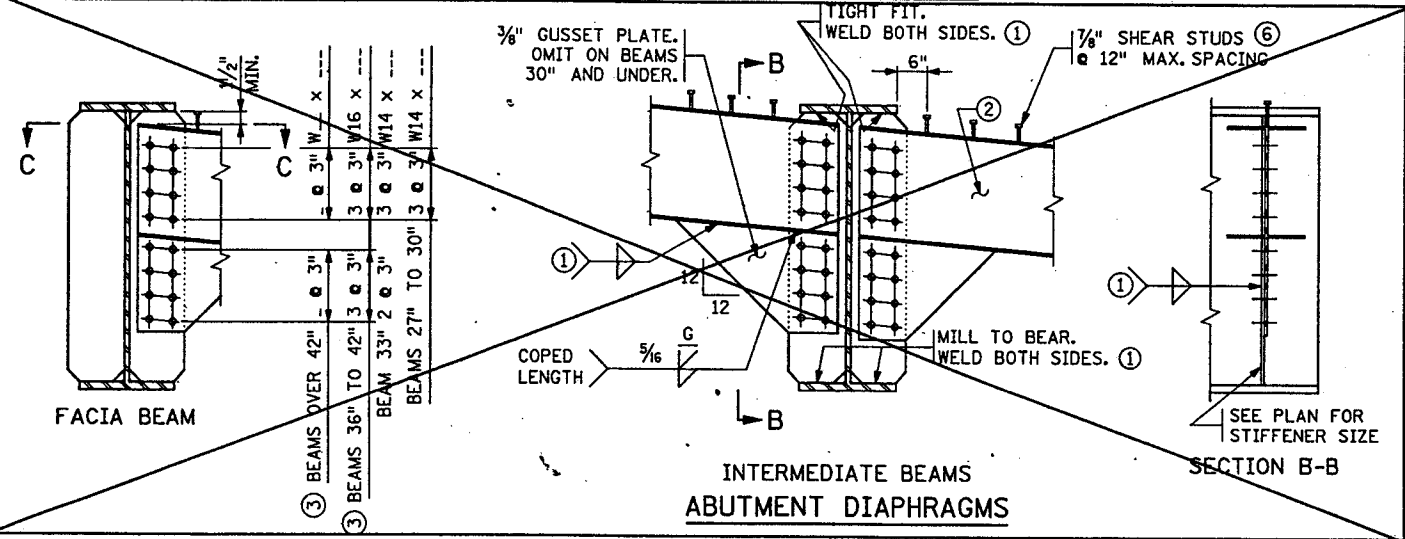
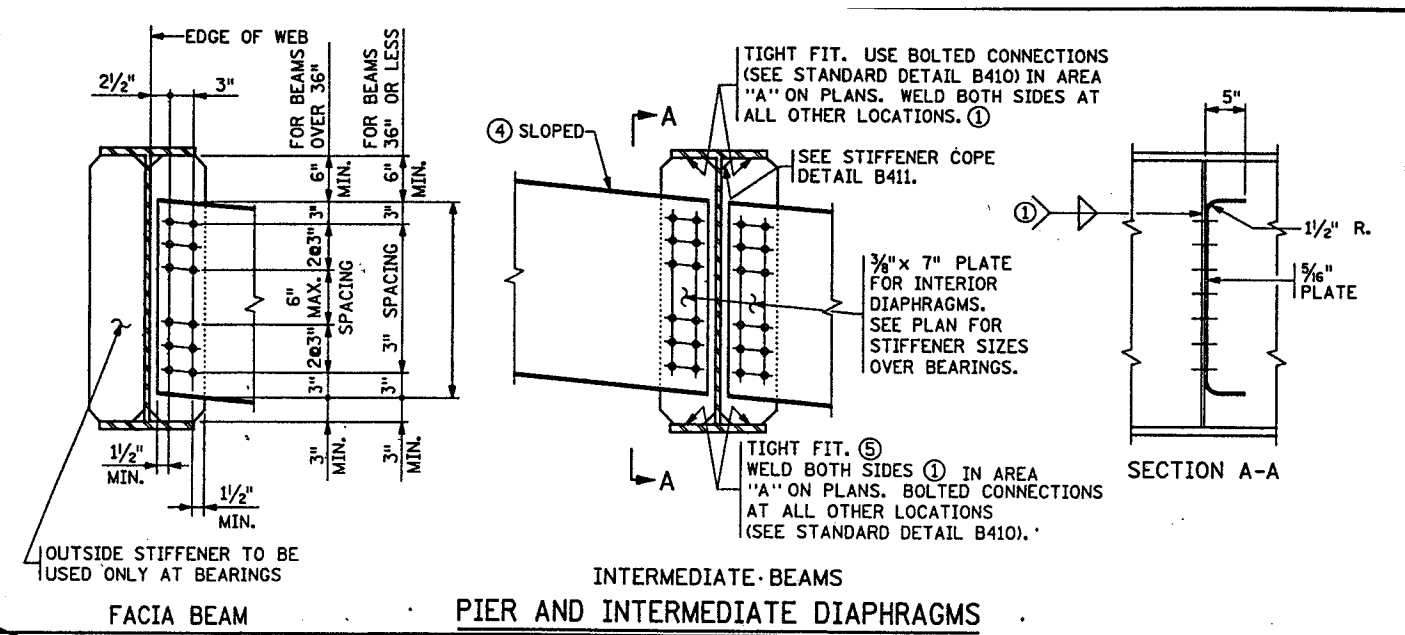
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENIEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 1/9/02 License # 9164

SRF CONSULTING GROUP, INC.

SAINT PAUL
 City of St. Paul

BRIDGE NO. 62596
 RAIL PANELS DETAILS (TYPE 3)
 (SHEET 6 OF 8)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-24 OF W-45



APPROVED: JULY 30, 1999

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

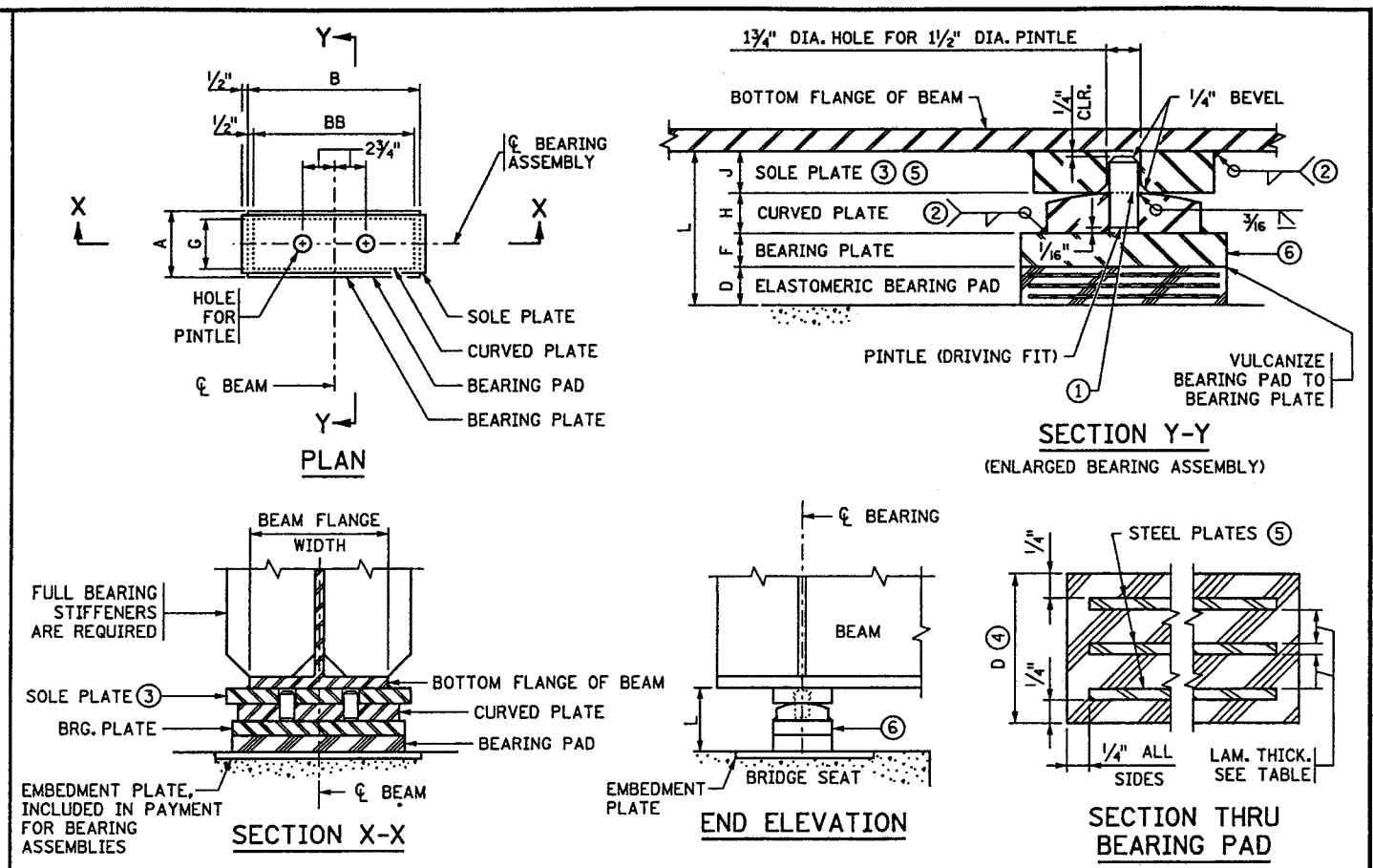
REVISION

DETAIL NO.

STATE BRIDGE ENGINEER

BOLTED DIAPHRAGMS
(FOR STEEL BEAMS)

B402



TABLE

BEAM FLANGE WIDTH	BEARING PAD SIZE			STEEL PLATES		LAMINATES	SHAPE FACTOR	BEARING PLATE SIZE			CURVED PLATE SIZE			SOLE PLATE SIZE			PINTLE DIA.	ASSY. HEIGHT L	ASSEMBLY TYPE	
	A	B	D	NO.	THICK.			A	B	F	G	BB	H	① RAD.	WIDTH	LENG.				THICK. J ③
10.07	8	14	1 1/8	2	1/8	1	3/8	6.8	10	16	1	4 1/2	14	1 1/8	16	6	1 1/4	1 1/2	4 1/2	E1
11.565	14	16	1 1/8	2	1/8	1	3/8	10	16	18	1 1/4	4 1/2	16	1 5/8	18	6	1 1/2	1 1/2	6	E2

NOTES:

ELASTOMERIC MATERIALS & PAD CONSTRUCTION SHALL COMPLY WITH Mn/DOT SPEC. 3741.

ALL STEEL PLATES SHALL COMPLY WITH Mn/DOT SPEC. 3306, EXCEPT THE SOLE PLATE. THE SOLE PLATE SHALL BE THE SAME MATERIAL SPEC. AS THE STEEL BEAMS.

PINTLES SHALL COMPLY WITH Mn/DOT SPEC. 3309.

GALVANIZE STRUCTURAL STEEL BEARING ASSEMBLY AFTER FABRICATION PER Mn/DOT SPEC. 3394, EXCEPT AS NOTED.

PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL MATERIAL ON THIS DETAIL EXCEPT THE SOLE PLATE. THE SOLE PLATE IS INCLUDED IN THE WEIGHT OF STRUCTURAL STEEL.

① THE RADIUS OF THE CURVED PLATE SHALL BE 1'-4" MINIMUM AND 2'-0" MAXIMUM UNLESS OTHERWISE SPECIFIED IN TABLE. FINISH TO 250 MICRO. THE FINISHED THICKNESS OF THE PLATE MAY BE 1/16" LESS THAN SHOWN.

② WELDING PER Mn/DOT SPEC. 2471.

③ WHEN THE SOLE PLATE IS TAPERED, DIMENSIONS "J" AND "L" ARE THICKNESS OF SOLE PLATE AND BEARING ASSEMBLY AT CENTERLINE OF BEARING.

④ THE TOTAL THICKNESS SHOWN INCLUDES THE STEEL PLATES.

⑤ DO NOT GALVANIZE THESE PLATES.

⑥ SEE SHEET W-19A FOR ADDITIONAL BEARING ASSEMBLY TYPE E2 INFORMATION.

REFER TO SHEET W-22 FOR INFORMATION ON EMBEDMENT PLATES

DESIGN DATA:
MAXIMUM HORIZONTAL LOAD IS 70 KIPS
MINIMUM SOLE PLATE THICKNESS IS 1/4 INCHES

APPROVED: JULY 30, 1999

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

REVISION

DETAIL NO.

STATE BRIDGE ENGINEER

CURVED PLATE BEARING ASSEMBLY
(STEEL BEAMS)
(VULCANIZED EXPANSION)

B357

TITLE:

BOLTED DIAPHRAGMS, AND
CURVED PLATE BEARING ASSEMBLY

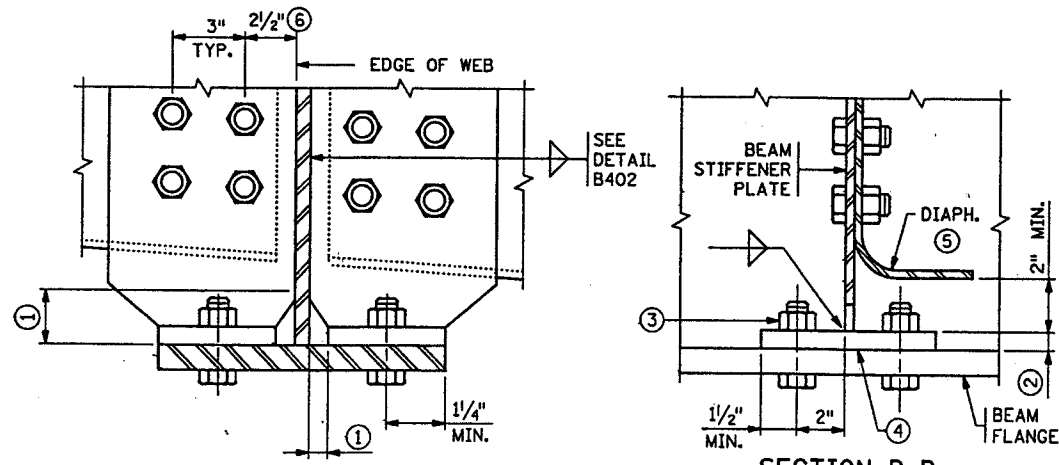
DES: GS DR: JCS
CHK: MD CHK: MD

APPROVED:

BRIDGE NO. 62596

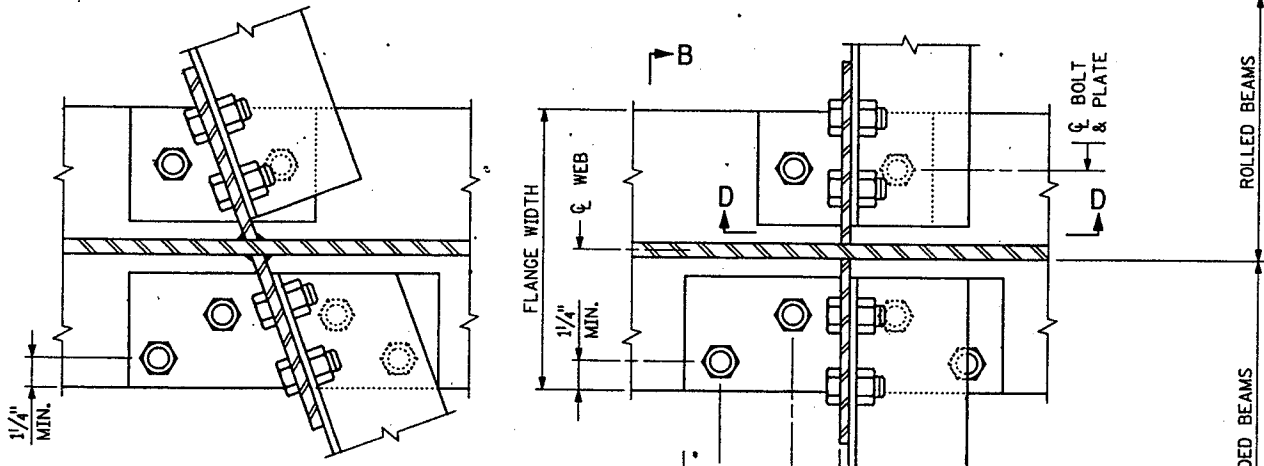
SHEET NO. 7 OF 8 SHEETS

SHEET W-25 OF W-45



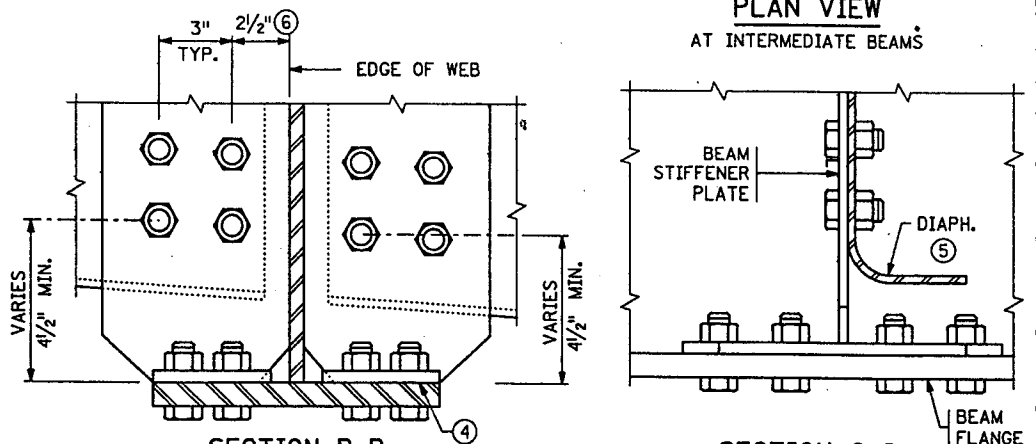
SECTION B-B
CONNECTION WITH 2 BOLTS
AT INTERMEDIATE BEAMS

SECTION D-D
CONNECTION WITH 2 BOLTS



PLAN VIEW
AT INTERMEDIATE BEAMS
(UP TO 20° SKEW)

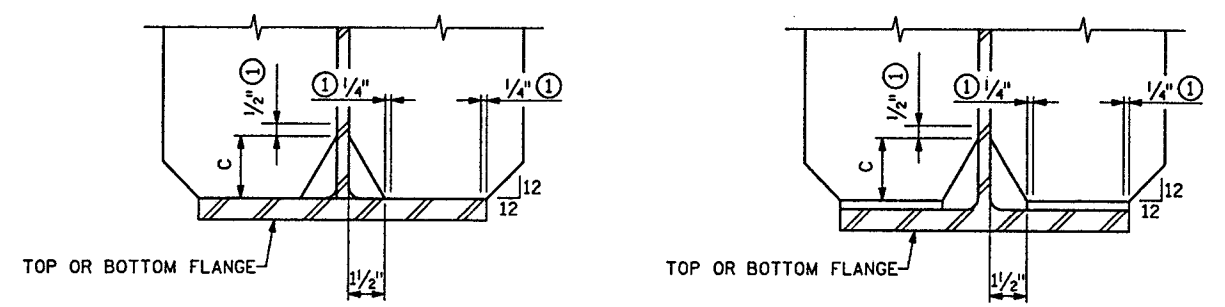
PLAN VIEW
AT INTERMEDIATE BEAMS



SECTION B-B
CONNECTION WITH 4 BOLTS
AT INTERMEDIATE BEAMS

SECTION C-C
CONNECTION WITH 4 BOLTS

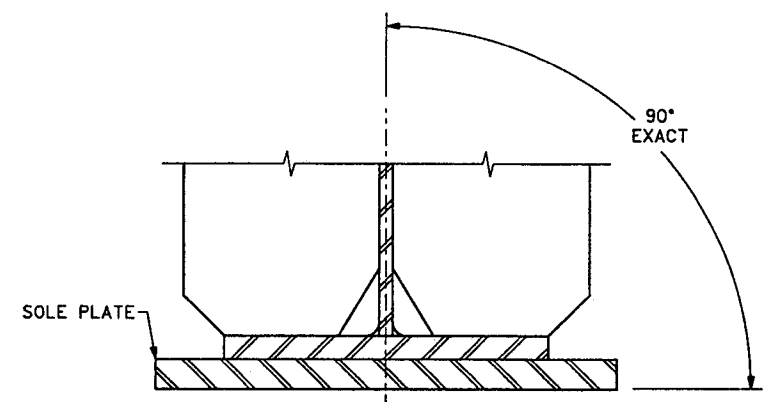
- NOTES:**
- ALL STEEL SHALL CONFORM TO Mn/DOT SPEC. 3309.
 - ① SEE DETAIL B411.
 - ② MINIMUM PLATE THICKNESS SHALL BE 3/4".
 - ③ BOLT PLATE TO BEAM FLANGE PRIOR TO WELDING PLATE TO BEAM STIFFENER PLATE.
 - ④ REMOVE LOOSE SCALE AND RUST FROM CONTACT AREA AT DIAPH. CONNECTION. SURFACE MUST BE FLAT AND PRIMED.
 - ⑤ BENT PLATE DIAPHRAGMS SHOWN. FOR CROSS FRAME DIAPHRAGM DETAILS, SEE B407.
 - ⑥ WHEN FLANGE WIDTHS ARE LESS THAN 8 1/2", USE 1 1/2".



STIFFENER TO FLANGE CONNECTION

STIFFENER TO TAB PLATE CONNECTION

STIFFENER COPE DETAIL
(PLATE GIRDER OR ROLLED BEAM)



PLACING SOLE PLATE AT BEARING

- NOTES:**
- ① DO NOT WELD IN THIS AREA. SEE B410 FOR CONNECTION DETAILS.

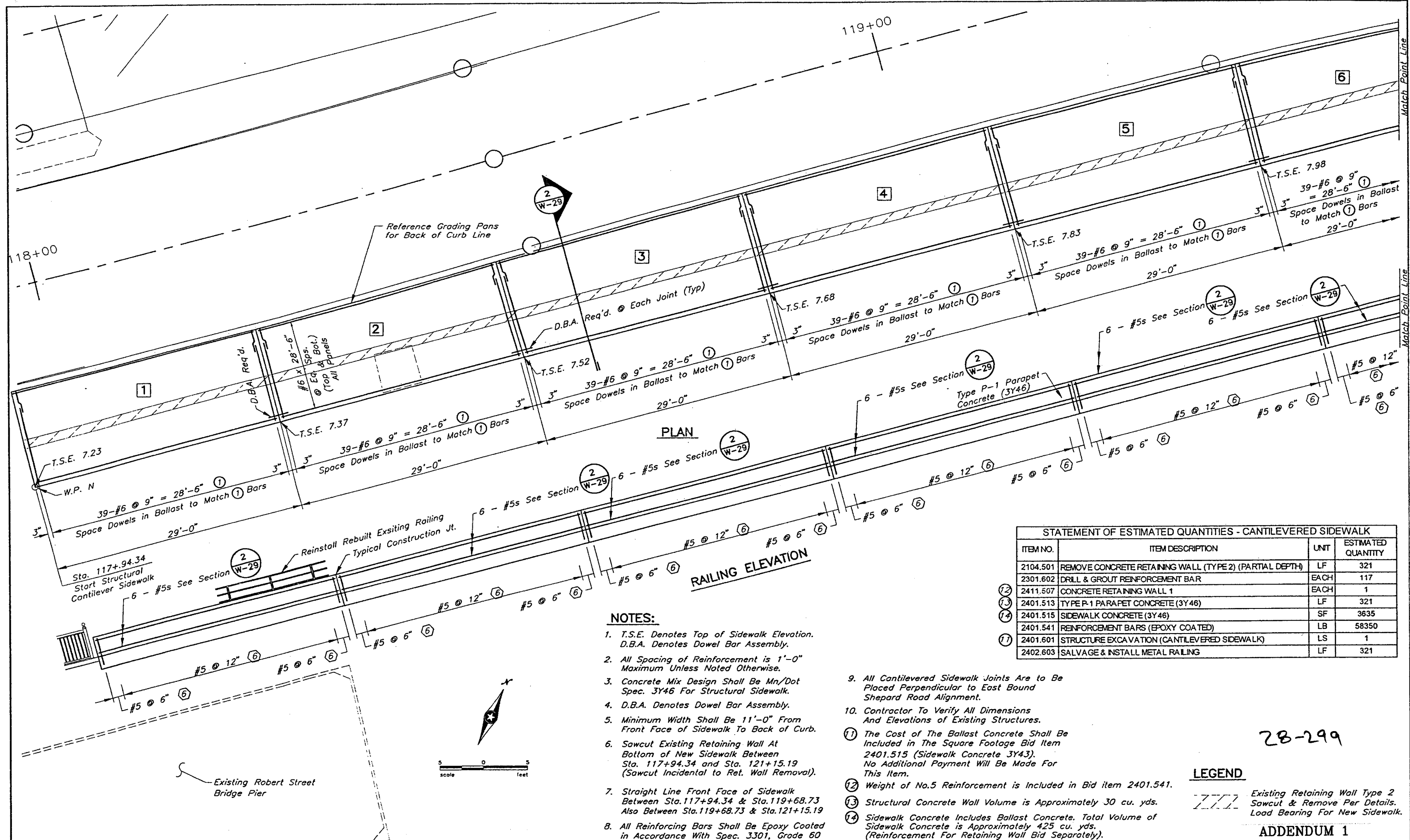
TABLE	
WEB THICKNESS	DIMENSION C
1/2", 3/16", 5/8"	2 1/2"
1/16", 3/4"	3"

28-299

APPROVED: JULY 30, 1999	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION 01-28-00 ljh	DETAIL NO. B410
 STATE BRIDGE ENGINEER		BOLTED FLANGE TO STIFFENER DETAIL (FOR STRAIGHT STEEL BEAMS ONLY)	

APPROVED: JULY 30, 1999	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
 STATE BRIDGE ENGINEER		STIFFENER DETAILS (FOR STEEL BEAMS)	
			B411

TITLE: STIFFENER DETAILS AND BOLTED FLANGE TO STIFFENER DETAIL	DES: KS	DR: JB	APPROVED:	BRIDGE NO. 62596	SHEET W-26 OF W-45
	CHK: LAE	CHK: PR			



STATEMENT OF ESTIMATED QUANTITIES - CANTILEVERED SIDEWALK			
ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY
2104.501	REMOVE CONCRETE RETAINING WALL (TYPE 2) (PARTIAL DEPTH)	LF	321
2301.602	DRILL & GROUT REINFORCEMENT BAR	EACH	117
② 2411.507	CONCRETE RETAINING WALL 1	EACH	1
③ 2401.513	TYPE P-1 PARAPET CONCRETE (3Y46)	LF	321
④ 2401.515	SIDEWALK CONCRETE (3Y46)	SF	3635
2401.541	REINFORCEMENT BARS (EPOXY COATED)	LB	58350
⑦ 2401.601	STRUCTURE EXCAVATION (CANTILEVERED SIDEWALK)	LS	1
2402.603	SALVAGE & INSTALL METAL RAILING	LF	321

NOTES:

- T.S.E. Denotes Top of Sidewalk Elevation. D.B.A. Denotes Dowel Bar Assembly.
- All Spacing of Reinforcement is 1'-0" Maximum Unless Noted Otherwise.
- Concrete Mix Design Shall Be Mn/Dot Spec. 3Y46 For Structural Sidewalk.
- D.B.A. Denotes Dowel Bar Assembly.
- Minimum Width Shall Be 11'-0" From Front Face of Sidewalk To Back of Curb.
- Sawcut Existing Retaining Wall At Bottom of New Sidewalk Between Sta. 117+94.34 and Sta. 121+15.19 (Sawcut Incidental to Ret. Wall Removal).
- Straight Line Front Face of Sidewalk Between Sta. 117+94.34 & Sta. 119+68.73 Also Between Sta. 119+68.73 & Sta. 121+15.19
- All Reinforcing Bars Shall Be Epoxy Coated in Accordance With Spec. 3301, Grade 60
- All Cantilevered Sidewalk Joints Are to Be Placed Perpendicular to East Bound Shepard Road Alignment.
- Contractor To Verify All Dimensions And Elevations of Existing Structures.
- ⑦ The Cost of The Ballast Concrete Shall Be Included in The Square Footage Bid Item 2401.515 (Sidewalk Concrete 3Y43). No Additional Payment Will Be Made For This Item.
- ⑫ Weight of No.5 Reinforcement is Included in Bid item 2401.541.
- ⑬ Structural Concrete Wall Volume is Approximately 30 cu. yds.
- ⑭ Sidewalk Concrete Includes Ballast Concrete. Total Volume of Sidewalk Concrete is Approximately 425 cu. yds. (Reinforcement For Retaining Wall Bid Separately).

LEGEND

Existing Retaining Wall Type 2 Sawcut & Remove Per Details. Load Bearing For New Sidewalk.

ADDENDUM 1

REVISED 10/3/2002	
NO.	DATE
BY	DESCRIPTION OF REVISIONS
H:\Struc\003\3567\67cont1.dwg DEC. 07, 2001	

DRAWN BY J. SHECHAN DATE 3/00
 DESIGNED BY S. SCHWENK DATE 3/00
 CHECKED BY L. ERICKSON DATE 3/00
 COMM. NO. 0993567

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 11/10/02 License # 26164

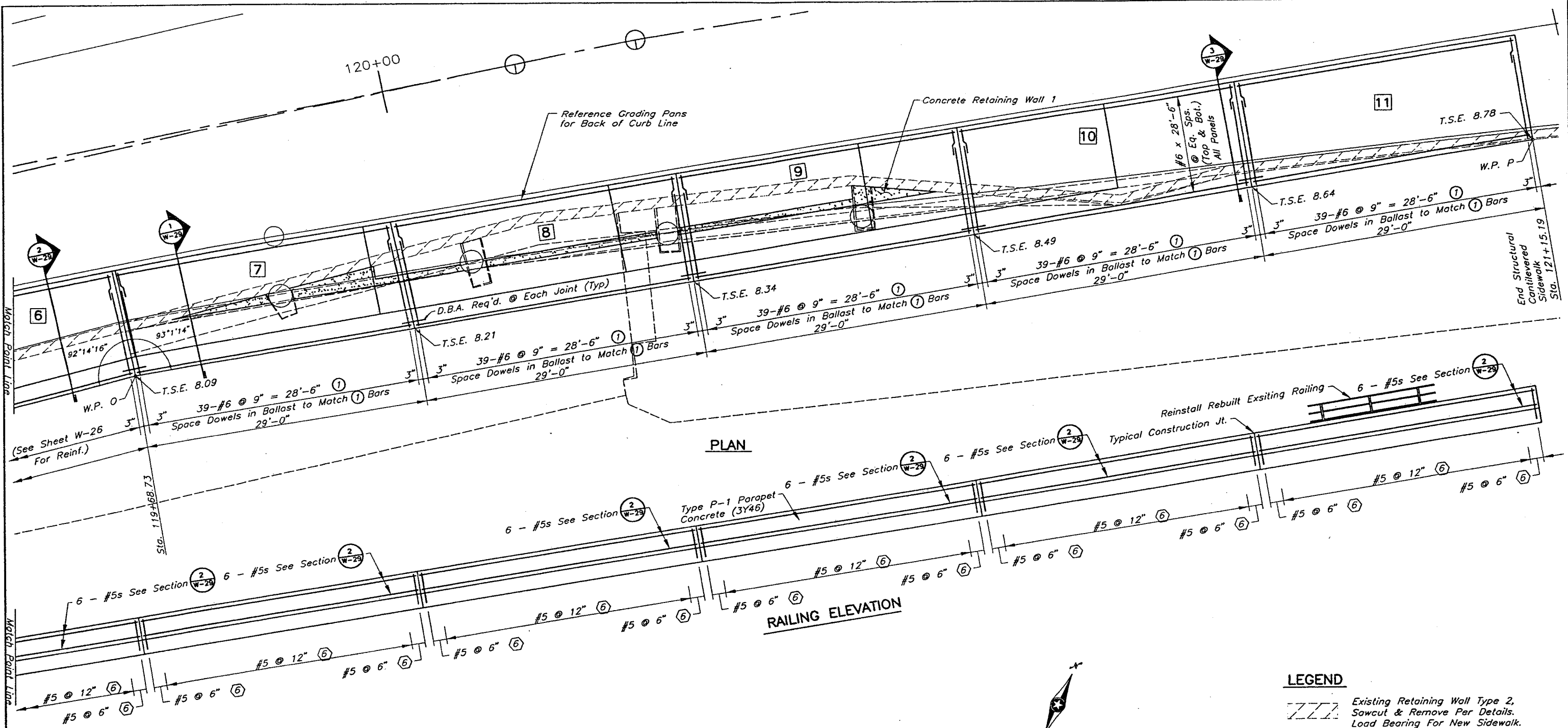


City of St. Paul

SHEPARD ROAD
 CANTILEVER SIDEWALK
 REINFORCEMENT LAYOUT

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
 W-27
 OF
 W-45



LEGEND

Existing Retaining Wall Type 2, Sawcut & Remove Per Details. Load Bearing For New Sidewalk.

New 8" Structural Concrete Wall (Concrete Retaining Wall 1) See Detail 1/W-29

28-299

ADDENDUM 1

REVISED 10/3/2002		
NO	DATE	BY
DESCRIPTION OF REVISIONS		
H:\Struc\003\3567\67cant2.dwg DEC. 07, 2001		

DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK 3/00
 CHECKED BY L. ERICKSON 3/00
 COMM. NO. 0993567

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 9/9/02 License #: 9164

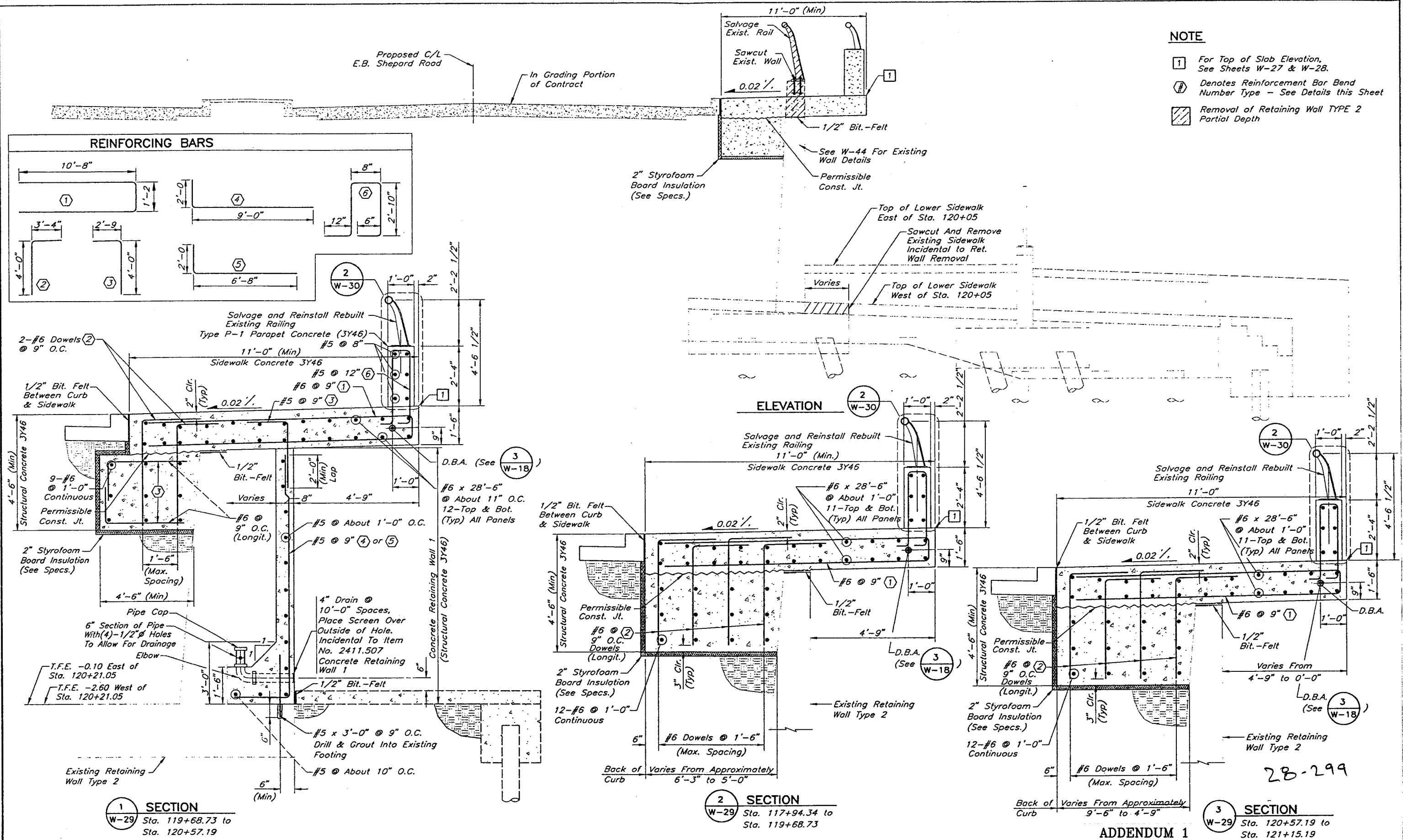
SRF CONSULTING GROUP, INC.

City of St. Paul

SHEPARD ROAD
 CANTILEVER SIDEWALK
 REINFORCEMENT LAYOUT
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-28 OF W-45

- NOTE**
- ① For Top of Slab Elevation, See Sheets W-27 & W-28.
 - ② Denotes Reinforcement Bar Bend Number Type - See Details this Sheet
 - ▨ Removal of Retaining Wall TYPE 2 Partial Depth



1 SECTION
W-29 Sta. 119+68.73 to Sta. 120+57.19

2 SECTION
W-29 Sta. 117+94.34 to Sta. 119+68.73

3 SECTION
W-29 Sta. 120+57.19 to Sta. 121+15.19

ADDENDUM 1

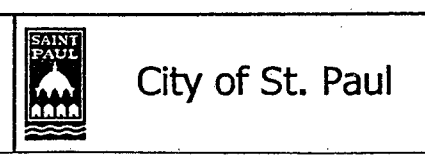
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REVISED 10/3/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

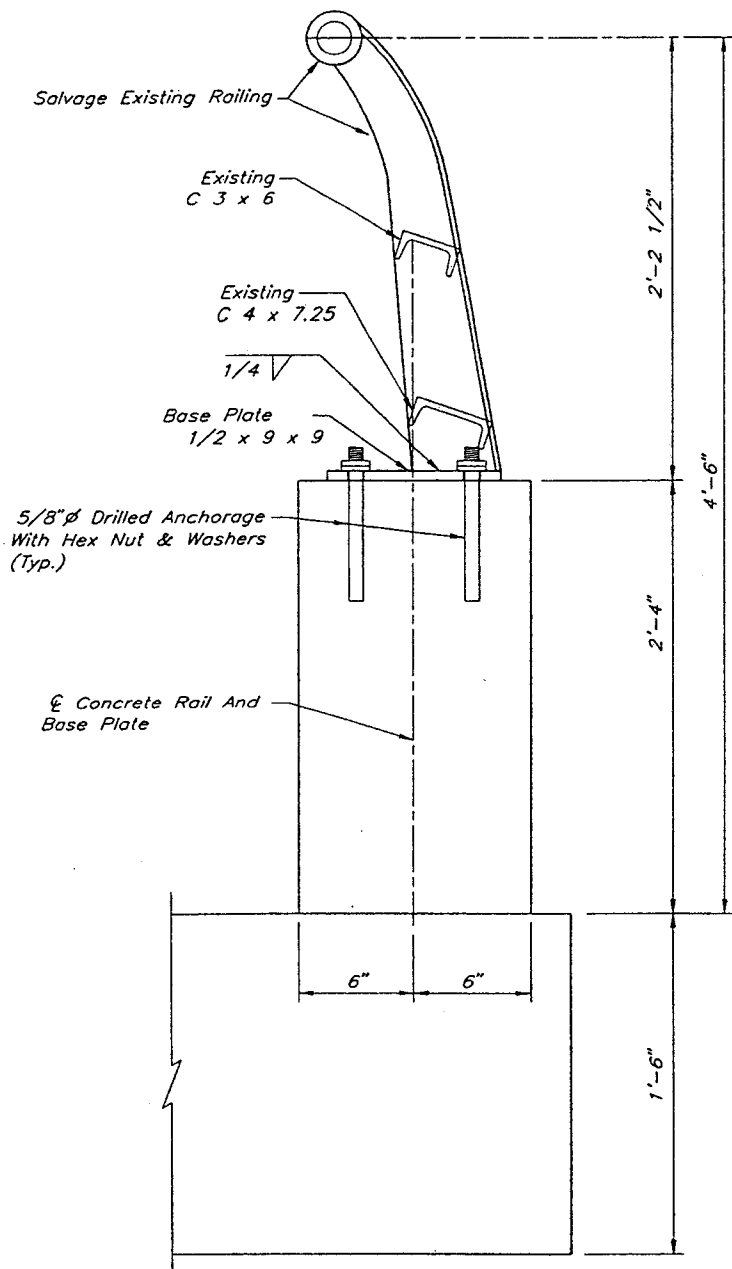
H:\Struc\003\3567\67DETAIL4.dwg DEC. 07, 2001

DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENTEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
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 Print Name: MAX DAUBENBERGER
 Date: 9/15/02 License # 9164

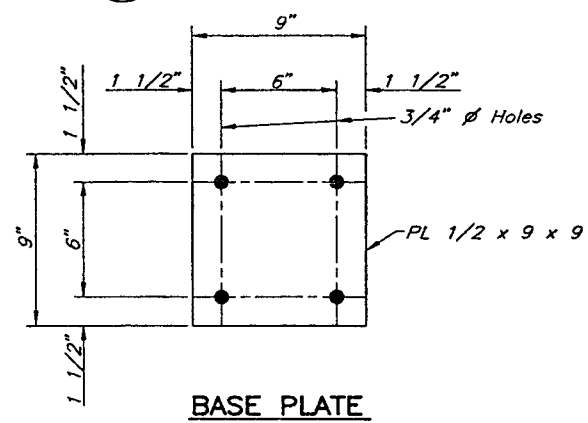


SHEPARD ROAD
 CANTILEVERED SIDEWALK
 DETAILS
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

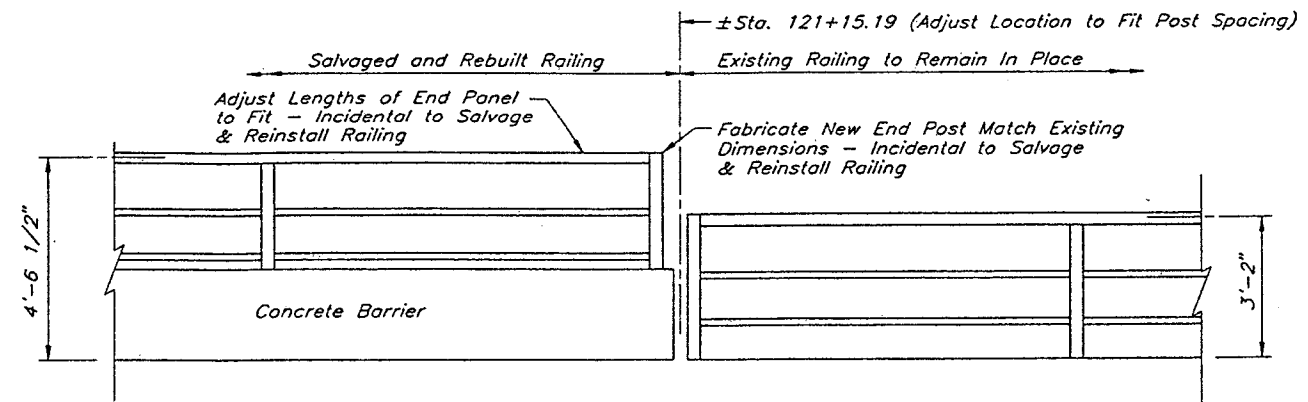
SHEET
 W-29
 OF
 W-45



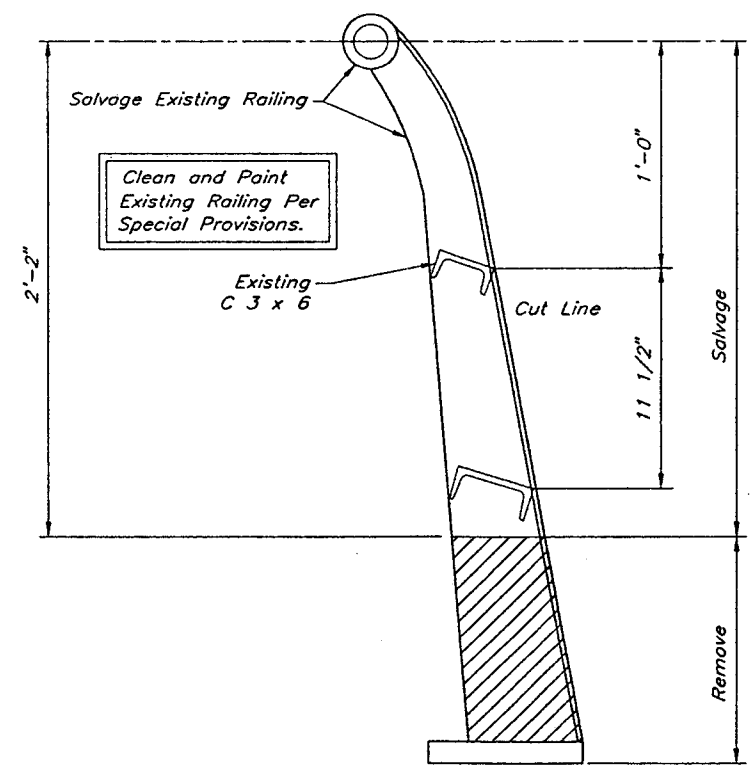
2 REBUILT RAILING
W-30



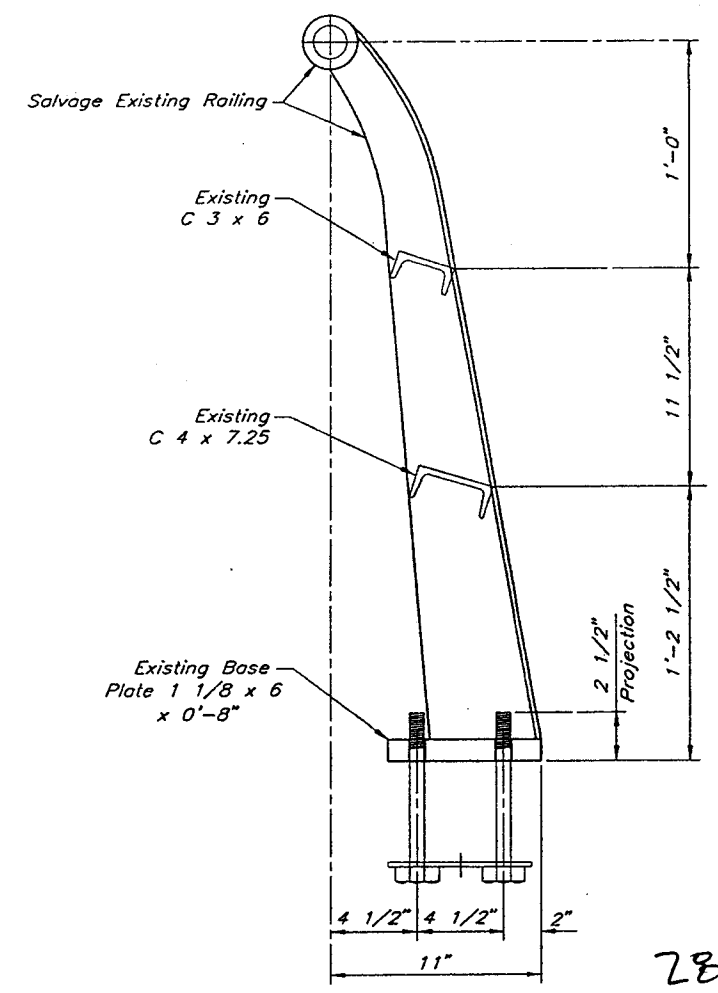
BASE PLATE



ELEVATION VIEW AT END OF REBUILT RAILING



REBUILT RAIL



EXISTING POST DETAIL

ADDENDUM 1

28-299

REVISED 10/3/2002		
NO.	DATE	DESCRIPTION OF REVISIONS
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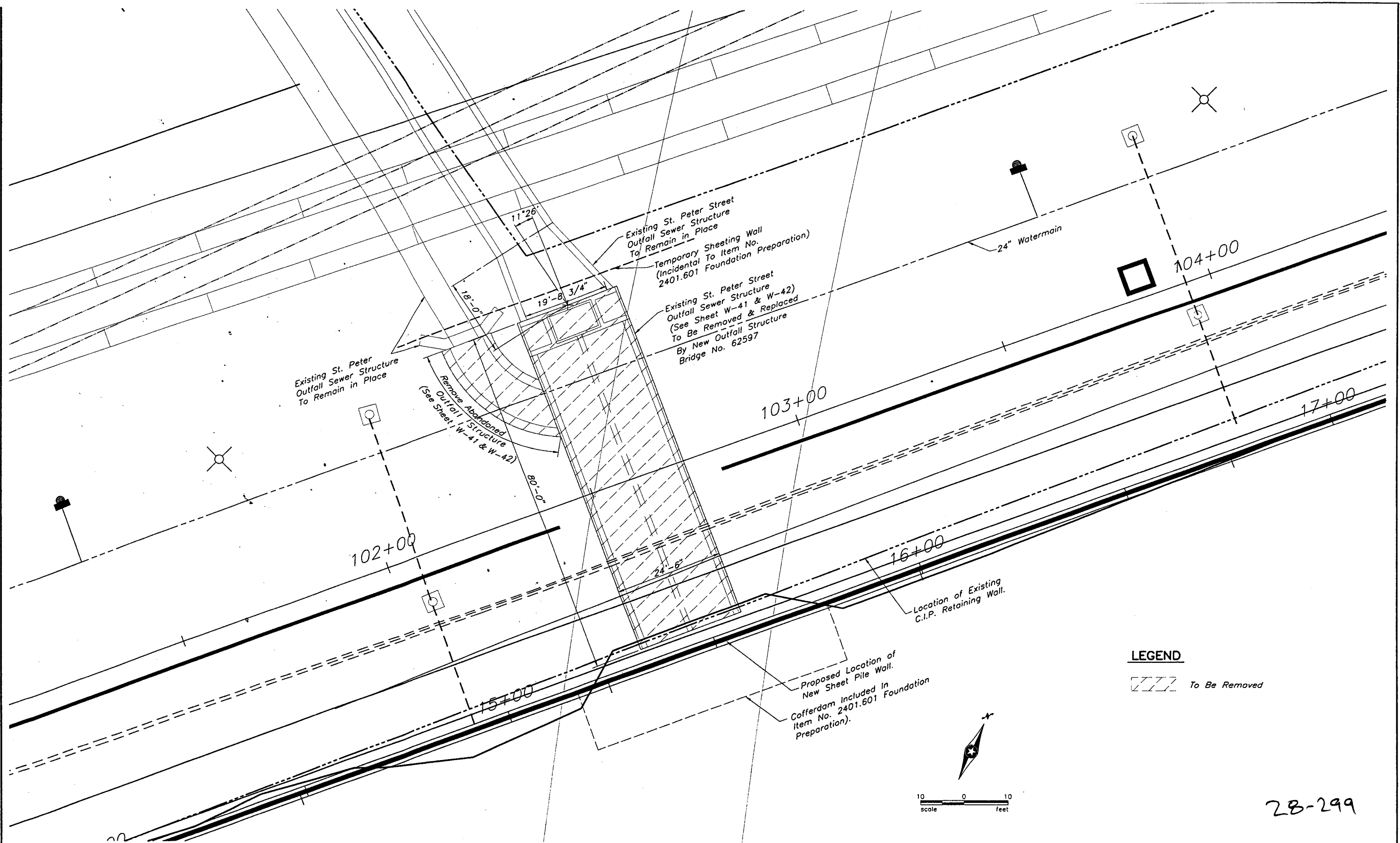
DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY G. SCHWIENIEK 3/00
 CHECKED BY M. DAUBENBERGER 3/00
 COMM. NO. 0993567
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 Print Name: MAX DAUBENBERGER
Max Daubenberg
 Date 9/9/02 License # 9164




City of St. Paul

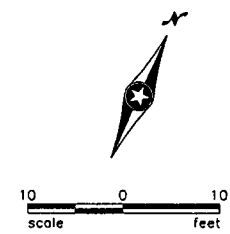
SHEPARD ROAD
 CANTILEVERED SIDEWALK
 SALVAGE EXISTING RAILING DETAILS
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-30 OF W-45



LEGEND

 To Be Removed



28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67outfal.dwg DEC. 29, 2000

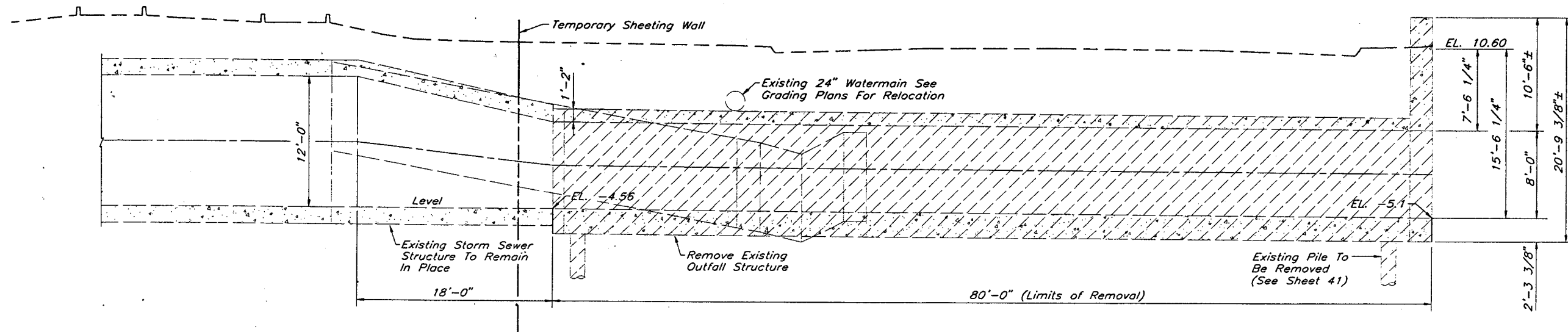
DRAWN BY: J. SHEEHAN DATE: 3/00
 DESIGNED BY: G. SCHWENK DATE: 3/00
 CHECKED BY: L. ERICKSON DATE: 3/00
 COMM. NO.: 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DANENBERGER
Max Danenberg
 Date: 11/7/02 License #: 9164



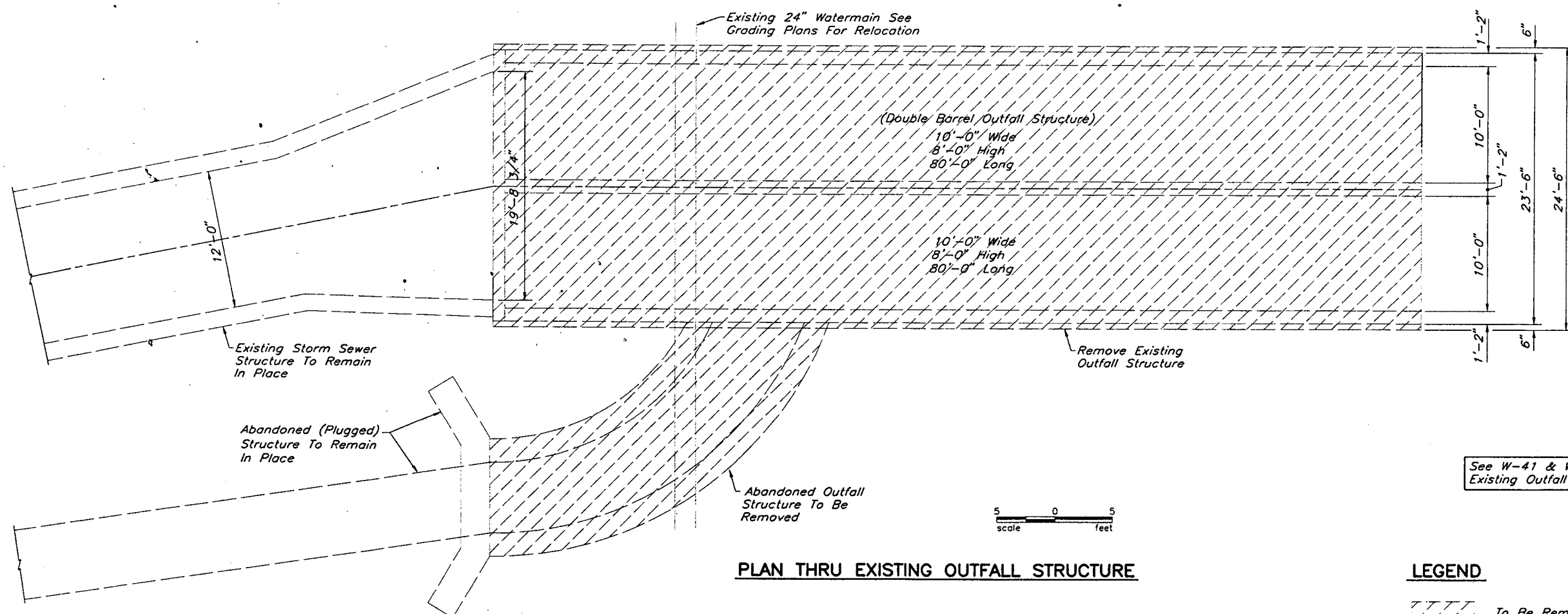
City of St. Paul

SHEPARD ROAD
 EXISTING OUTFALL STRUCTURE
 PLAN
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
 W-31
 OF
 W-45



SECTION THRU EXISTING OUTFALL STRUCTURE



PLAN THRU EXISTING OUTFALL STRUCTURE

LEGEND

/// To Be Removed

28-299

NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY
J. SHEEHAN
DATE
3/00

DESIGNED BY
G. SCHWIENIEK
DATE
3/00

CHECKED BY
M. DAUBENBERGER
DATE
3/00

COMM. NO.
0993587

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

Print Name: MAX DAUBENBERGER

Max Daubenberg

Date: 7/16/02 License # 9164



City of St. Paul

SHEPARD ROAD
EXISTING OUTFALL STRUCTURE
PLAN & SECTION

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

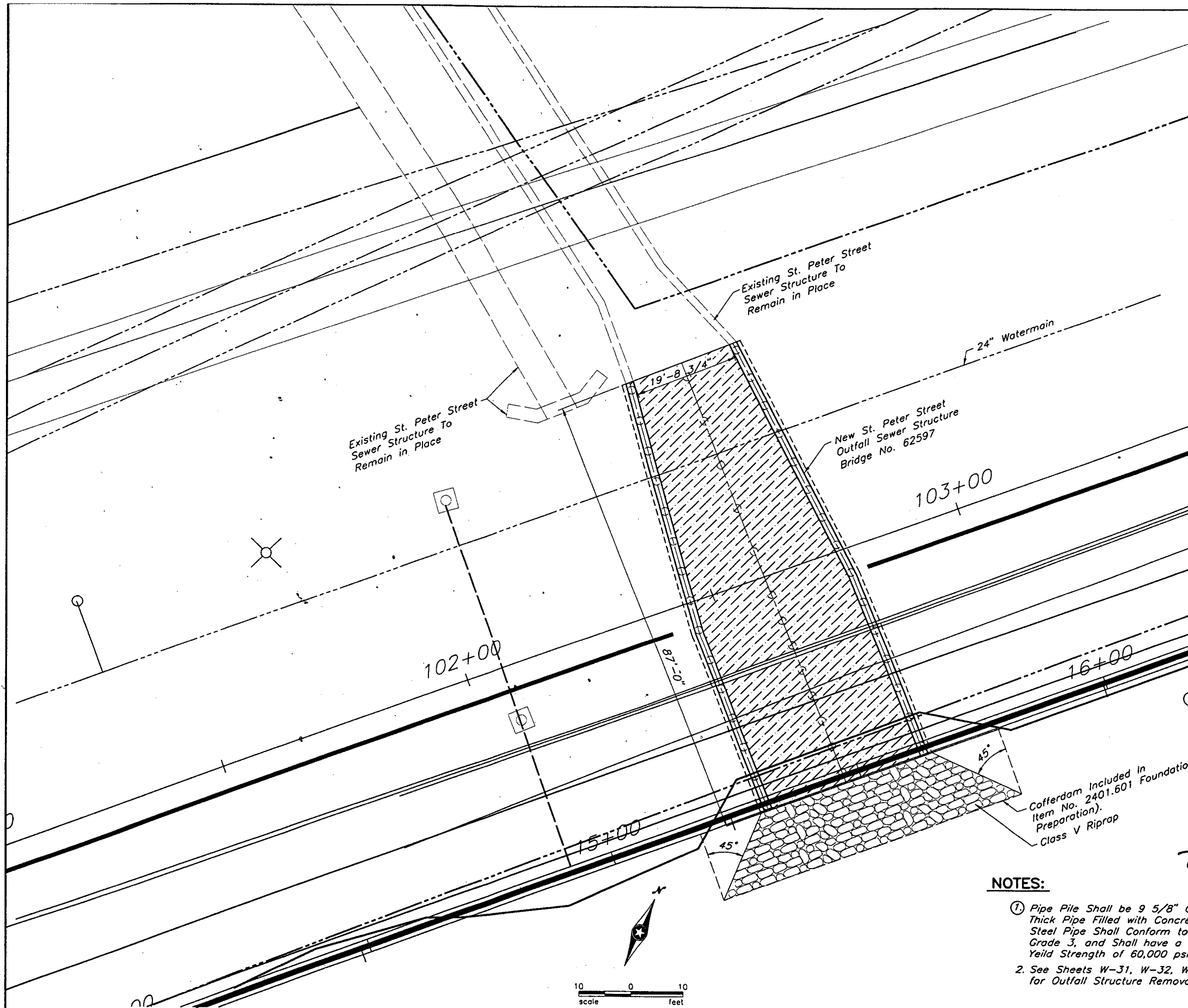
SHEET
W-32
OF
W-45

DESIGN DATA

1996 And Current Interim AASHTO Specifications
 HS25 Live Loading
 Load Factor Design Method
 Includes 17 P.S.F. Allowance For Future Wearing
 Course Modifications

Maximum Allowable Design Stresses:
 Reinforced Concrete:
 $f_c' = 4,000$ P.S.I., $n = 8$
 $f_y = 60,000$ P.S.I. Reinforcement

Deck Area: = 2,760 Sq. Ft.
 Projected A.D.T. For 2020 = XXX
 Operating Rating HS 61



STATEMENT OF ESTIMATED QUANTITIES - BRIDGE NO. 62597

ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY
2301.602	DRILL AND GROUT REINFORCEMENT BARS	EA	60
2401.501	STRUCTURAL CONCRETE (3Y43)	CY	710
2401.541	REINFORCING BARS (EPOXY COATED)	LB	136850
2104.509	REMOVE CONCRETE ST. PETER STREET OUTFALL STRUCTURE	EA	1
2104.509	REMOVE ABANDONED CONCRETE ST. PETER STREET OUTFALL STRUCTURE	EA	1
2401.601	FOUNDATION PREPARATION	LS	1
① 2452.507	C-I-P CONCRETE PILING DELIVERED 10"	LF	4335
2452.508	C-I-P CONCRETE PILING DRIVEN 10"	LF	4335
2511.501	RANDOM RIPRAP CLASS V	CY	50
2511.515	GEOTEXTILE FILTER TYPE IV	SY	80

CITY OF ST. PAUL

BRIDGE NO. 62597

ST. PETER STREET OUTFALL

VARIABLE DEPTH & WIDTH CONCRETE BOX
 20'-30' SPAN

BRIDGE I.D. NO. 113

APPROVED: *[Signature]*
 ST. PAUL CITY ENGINEER (Bridge Engineer)

APPROVED: _____
 STATE BRIDGE ENGINEER

NOTES:

- ① Pipe Pile Shall be 9 5/8" OD x 0.395" Thick Pipe Filled with Concrete. Steel Pipe Shall Conform to ASTM A-252, Grade 3, and Shall have a Minimum Yield Strength of 60,000 psi.
2. See Sheets W-31, W-32, W-41, & W-42 for Outfall Structure Removals

28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67R.I.P. outfal.dwg DEC. 07, 2001

DRAWN BY: J. SHEEHAN DATE: 4/00
 DESIGNED BY: G. SCHWIENTEK DATE: 4/00
 CHECKED BY: M. DAUBENBERGER DATE: 4/00
 COMM. NO. 0993567

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
[Signature]
 Date: 7/9/02 License # 9164

SRF CONSULTING GROUP, INC.

SAINT PAUL
 City of St. Paul

BRIDGE NO. 62597
PROPOSED OUTFALL STRUCTURE PLAN
 (SHEET 1 OF 7)

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-33 OF W-45

FOUNDATION RECOMMENDATION

Foundation Report By American Engineering Testing, Inc. (Dated May 19, 2000).
 Recommends Pile Foundation, 9 5/8" ϕ C.I.P. Piles With 0.395 Wall Thickness, Driven To Refusal On Bedrock, Estimate Length 85 Feet With A 100 Ton Working Capacity.

PILE NOTES:

Pile Spacing Shown Is At Bottom of Footing

All Piles Shall Have A Nominal O.S. Diameter 9 5/8" with a Shell of 0.395" Thickness.

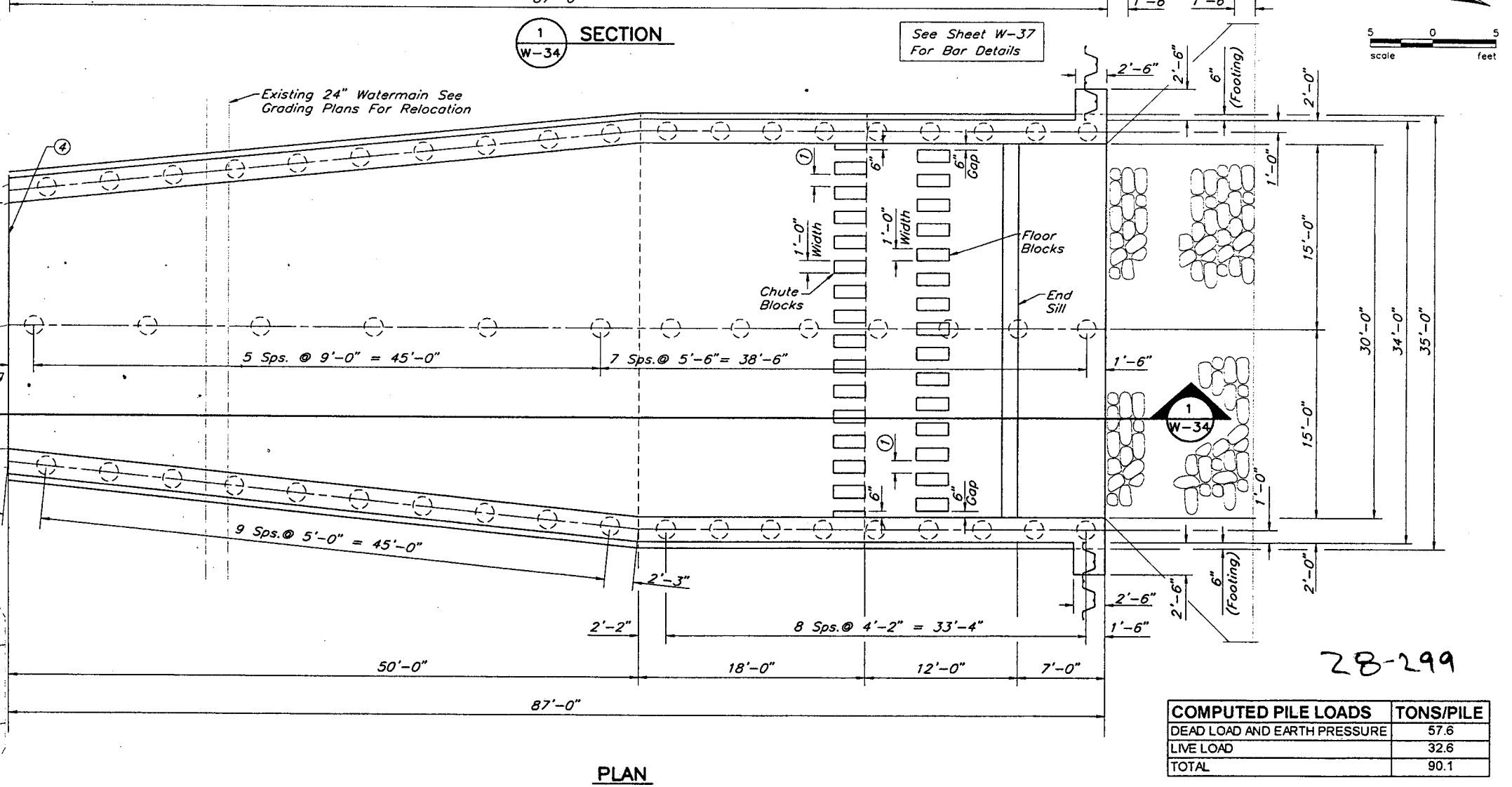
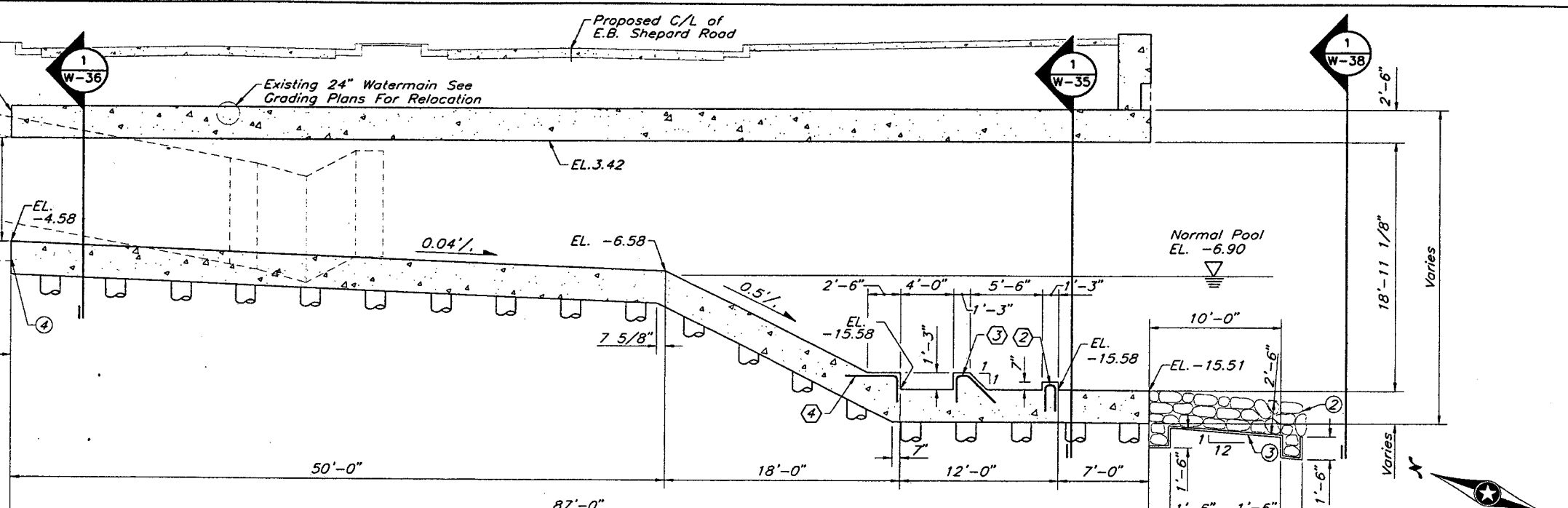
Pile Shall Bear On Bedrock (Shakopee Foundation). 9 5/8" C.I.P. Concrete Pile Est. Length 85 Feet.

Total Number of Pile = 51

NOTES

- ① 1'-0" Gap Between All Blocks.
- ② Class V Riprap Per Mn/Dot 3601.
- ③ Geotextile Type IV Per Mn/Dot 3733.
- ④ Drill and Grout Reinforcement 12" Into Existing Outfall Structure. (One Layer Around Entire Structure)

From St. Peter St. Tunnel Project 61-5-479
 1. Old Connection To Outlet Abandoned & Filled.
 2. The 6'-0" Sewer Was Redirected By Diversion Tunnel To 12'-0" Tunnel About 160' Upstream.



COMPUTED PILE LOADS	TONS/PILE
DEAD LOAD AND EARTH PRESSURE	57.6
LIVE LOAD	32.6
TOTAL	90.1

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67prop outfall.dwg NOV. 09, 2001

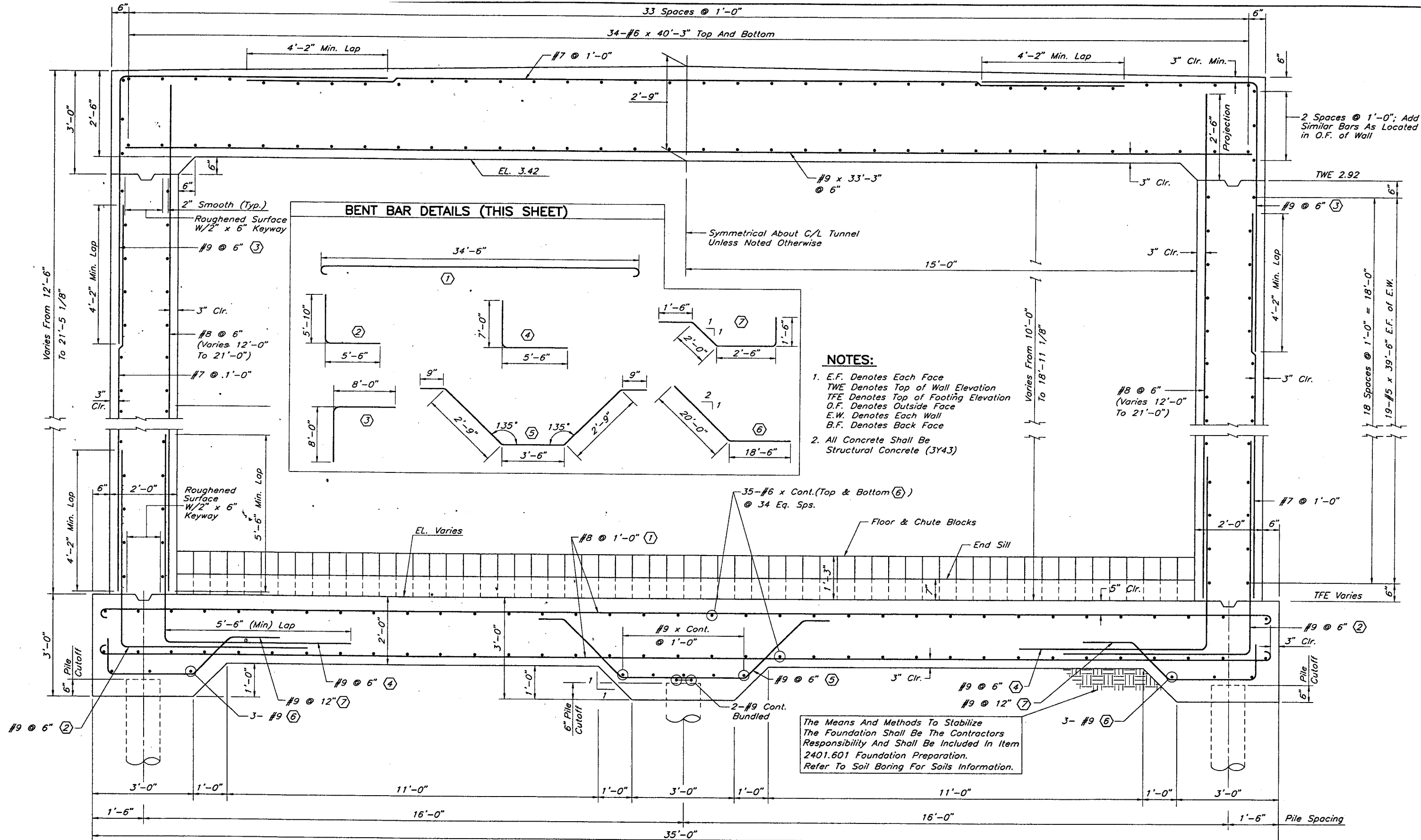
DRAWN BY J. SHEEHAN DATE 4/00
 DESIGNED BY W. ESHENAUER DATE 4/00
 CHECKED BY D. FILIPAK DATE 4/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Date: 9/17/02 License #: 9164



City of St. Paul

BRIDGE NO. 62597
PROPOSED OUTFALL STRUCTURE PLAN AND SECTION
 (SHEET 2 OF 7)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-34 OF W-45



NOTES:

- E.F. Denotes Each Face
 TWE Denotes Top of Wall Elevation
 TFE Denotes Top of Footing Elevation
 O.F. Denotes Outside Face
 E.W. Denotes Each Wall
 B.F. Denotes Back Face
- All Concrete Shall Be Structural Concrete (3Y43)

1 TYPICAL OUTFALL STRUCTURE SECTION
 W-35

28-299

NO	DATE	BY	DESCRIPTION OF REVISIONS

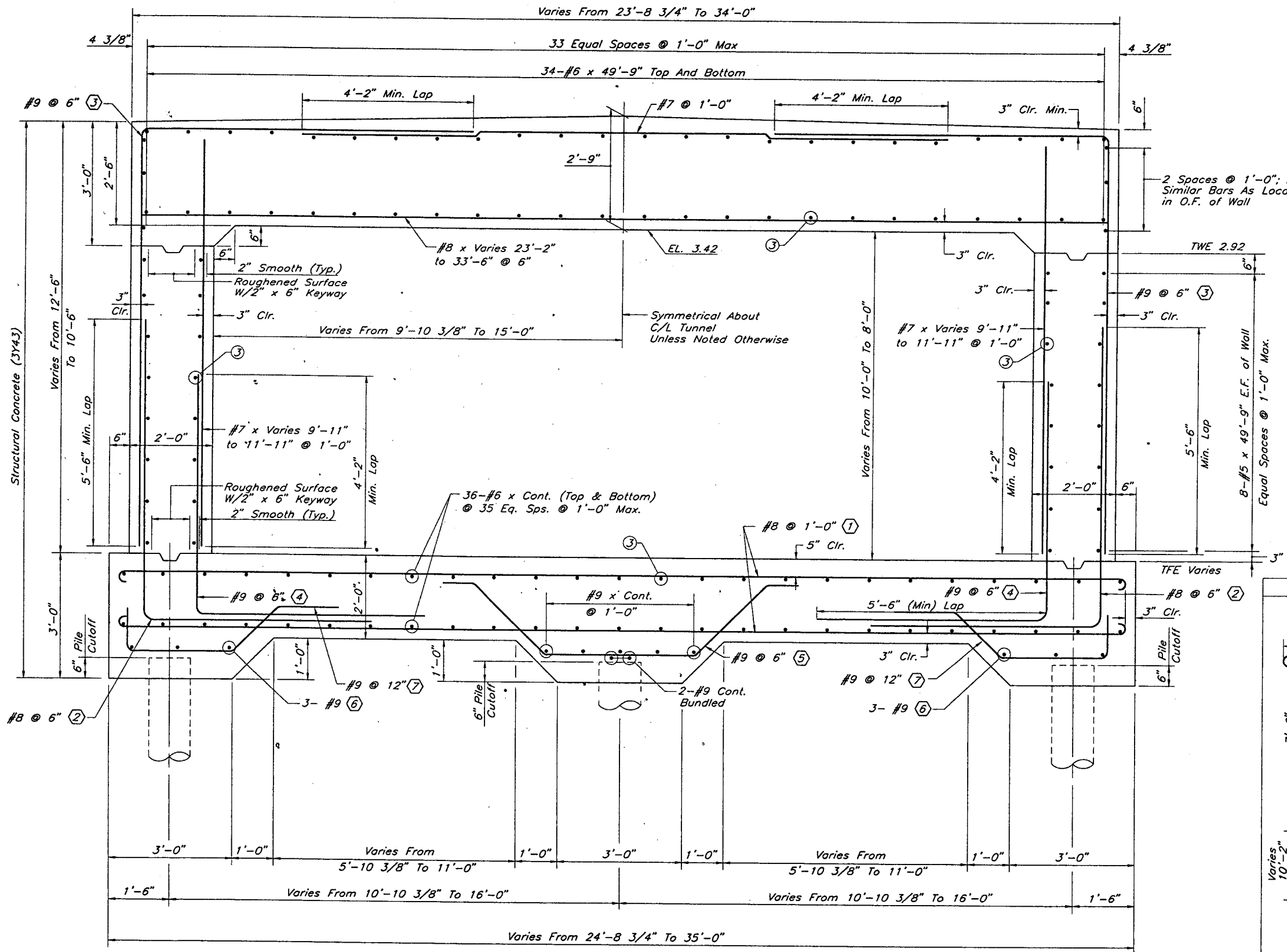
DRAWN BY J. SHEEHAN DATE 4/00
 DESIGNED BY G. SCHWIENK 4/00
 CHECKED BY M. DAUBENBERGER 4/00
 COMM. NO. 0993567
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 Print Name: MAX DAUBENBERGER
 Date: 7/17/02 License # 9164



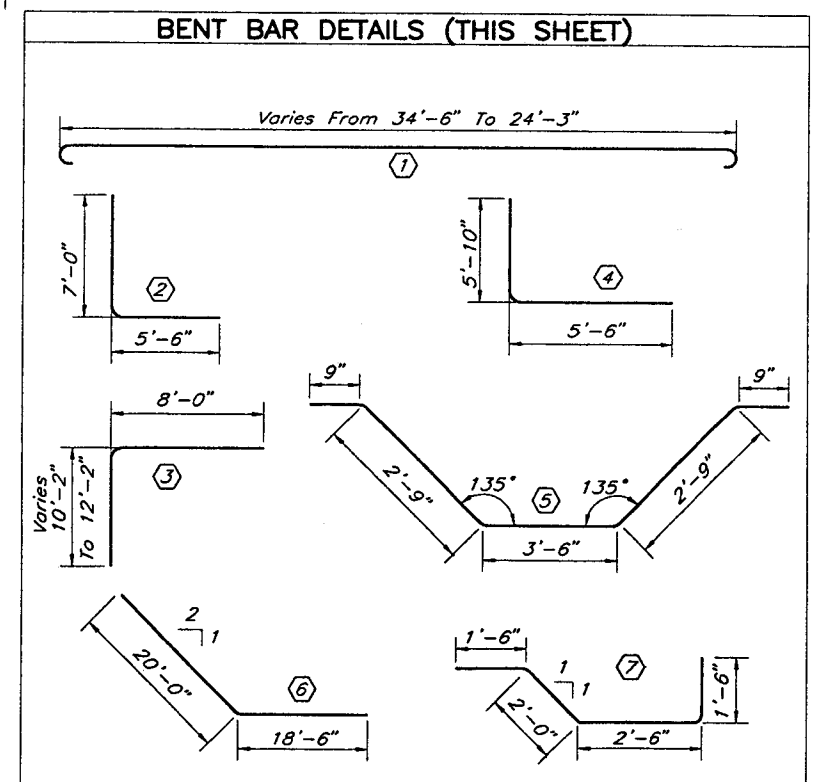
City of St. Paul

BRIDGE NO. 62597
PROPOSED OUTFALL STRUCTURE SECTION
 (SHEET 3 OF 7)
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-35 OF W-45



- NOTES:**
1. E.F. Denotes Each Face
TWE Denotes Top of Wall Elevation
TFE Denotes Top of Footing Elevation
O.F. Denotes Outside Face
E.W. Denotes Each Wall
B.F. Denotes Back Face
 2. All Concrete Shall Be Structural Concrete (3Y43)
 3. Drill and Grout Reinforcement 12" Into Existing Outfall Structure. (One Layer Around Entire Structure)



1 SECTION @ OUTFALL STRUCTURE
W-36

NO	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67TUNDET2.dwg NOV. 13, 2001

DRAWN BY J. SHEEHAN 4/00
 DESIGNED BY G. SCHWIENK 4/00
 CHECKED BY M. DAUBENBERGER 4/00
 COMM. NO. 0993567

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 Print Name: MAX DAUBENBERGER
 Date: 9/15/02 License # 9164



City of St. Paul

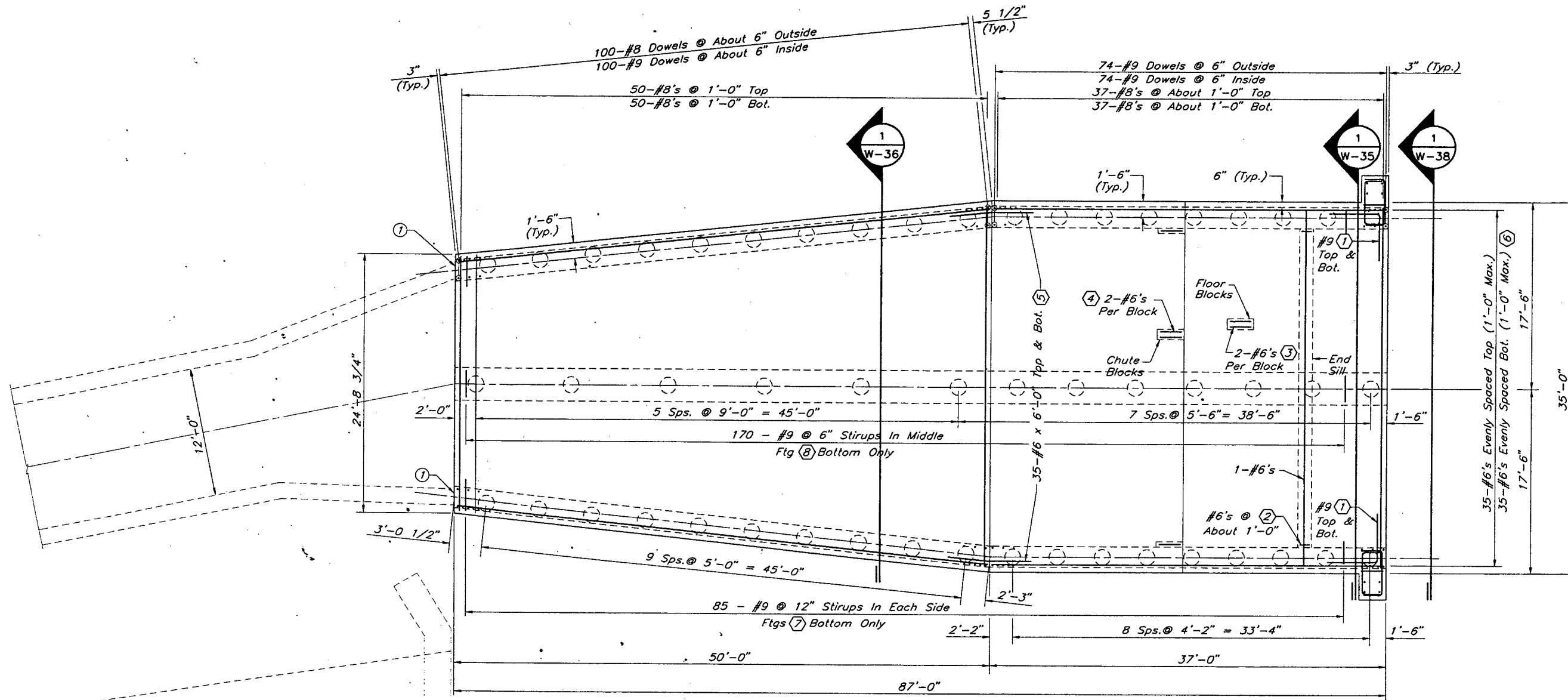
BRIDGE NO. 62597
PROPOSED OUTFALL STRUCTURE SECTION
 (SHEET 4 OF 7)

CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-36 OF W-45

NOTES

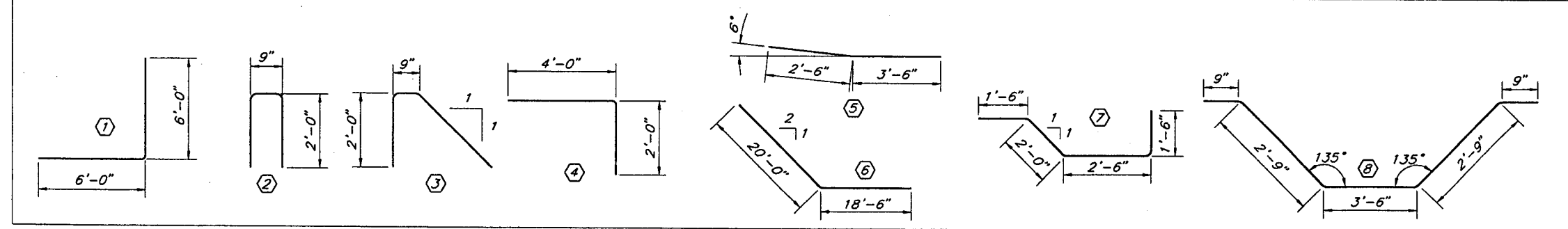
- ① Drill and Grout Reinforcement 12" Into Existing Outfall Structure. (One Layer Around Entire Structure)



PLAN

28-299

BENT BAR DETAILS (THIS SHEET)



NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67SLAB.dwg NOV. 09, 2001

DRAWN BY: J. HAMRE
 DATE: 12/00
 DESIGNED BY: J. SCHWIENTEK
 CHECKED BY: M. DAUBENBERGER
 COMM. NO.: 0993567

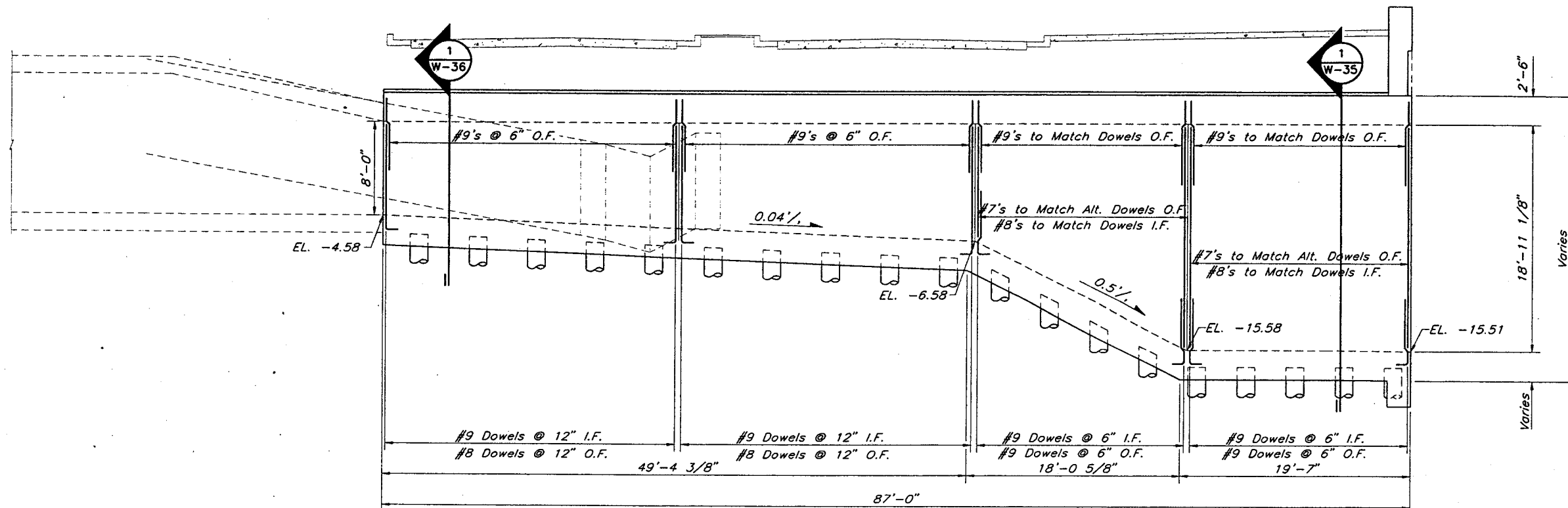
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 Print Name: MAX DAUBENBERGER
 Signature: *Max Daubenberg*
 Date: 11/10/02 License #: 9164



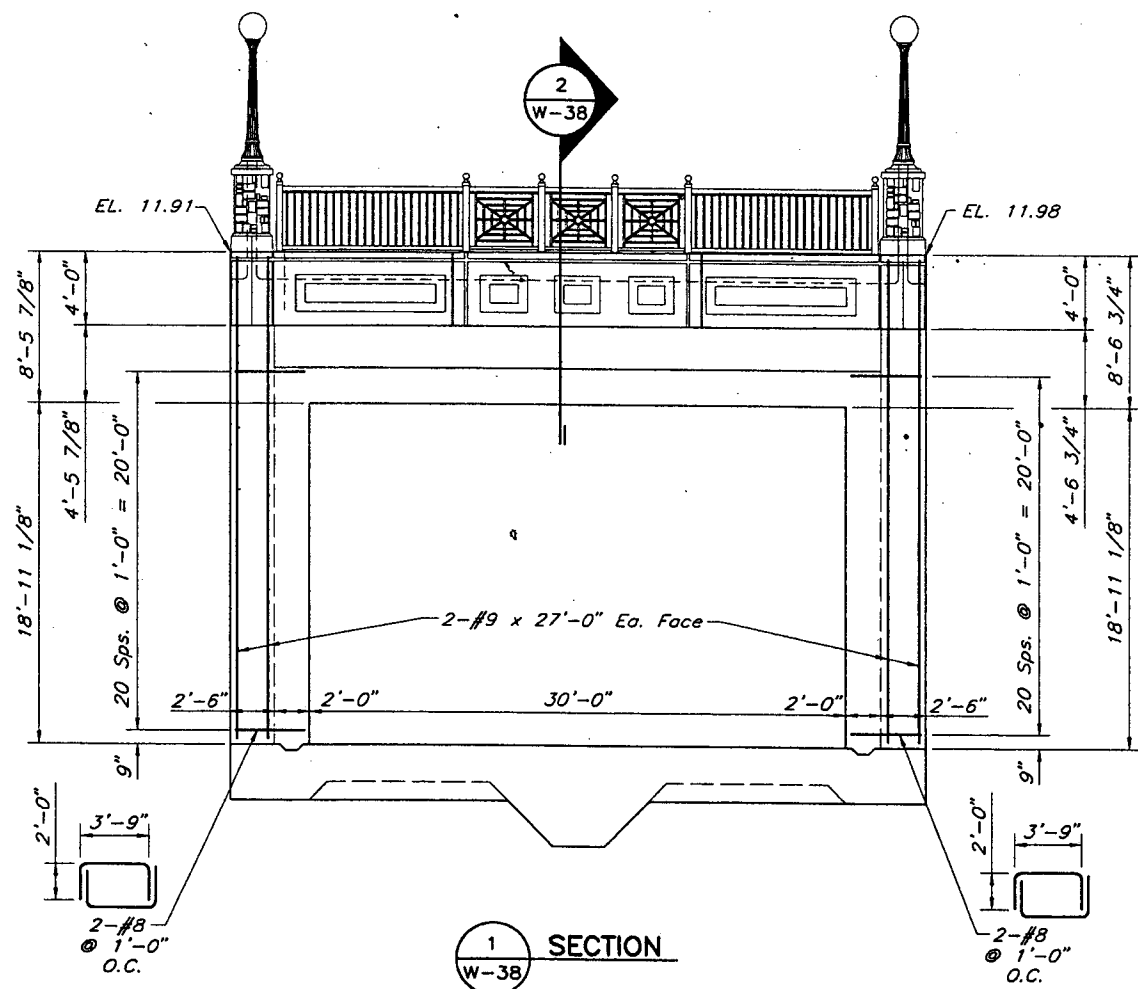
City of St. Paul

BRIDGE NO. 62597
**PROPOSED OUTFALL STRUCTURE
 TOP & BOTTOM SLAB REINFORCEMENT**
 (SHEET 5 OF 7)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

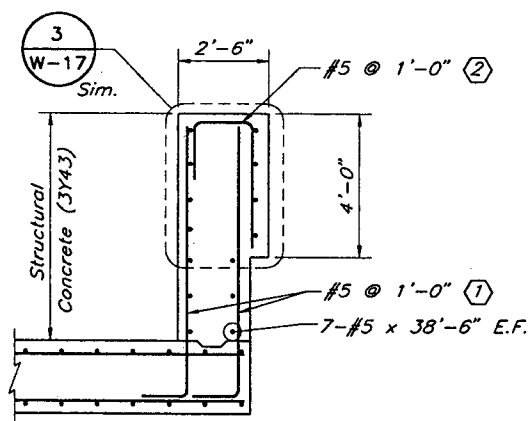
SHEET
W-37
 OF
W-45



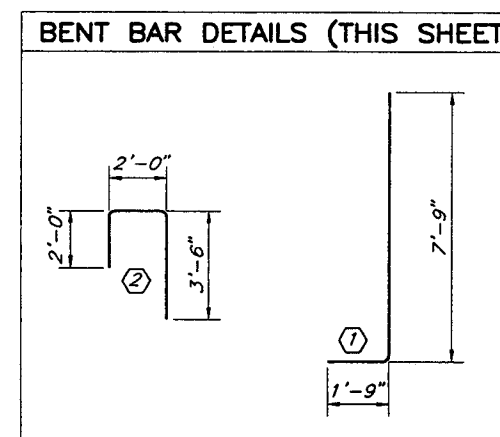
ELEVATION



SECTION 1
W-38



SECTION 2
W-38



BENT BAR DETAILS (THIS SHEET)

NOTES

I.F. Denotes Inner Face
O.F. Denotes Outer Face
E.F. Denotes Each Face

28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67WALL-1.dwg NOV. 09, 2001

DRAWN BY J. SHEEHAN DATE 3/00
 DESIGNED BY J. SCHWIENIEK DATE 3/00
 CHECKED BY M. DAUBENBERGER DATE 3/00
 COMM. NO. 0993567
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 Date: 7/9/02 License # 9164

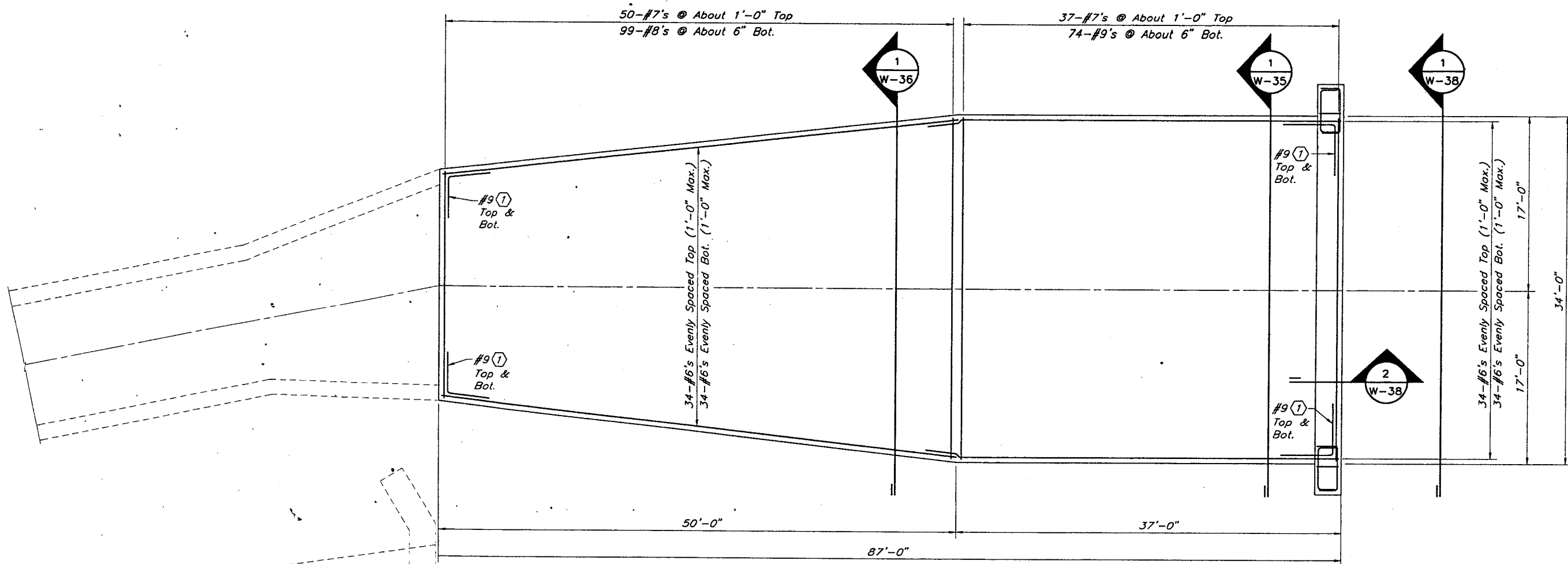
SRF CONSULTING GROUP, INC.



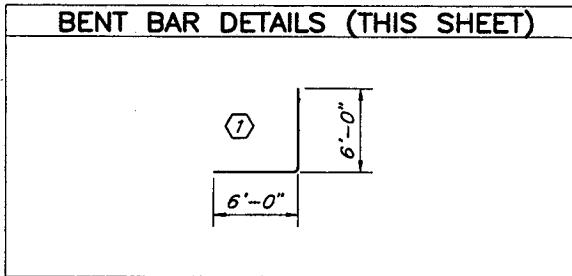
City of St. Paul

BRIDGE NO. 62597
PROPOSED OUTFALL STRUCTURE WALL REINFORCEMENT
 (SHEET 6 OF 7)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET W-38 OF W-45



PLAN



28-299

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67SLAB2.dwg NOV. 13, 2001

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J. HAMRE
DATE
12/00

DESIGNED BY
J. SCHWIENIEK
DATE
12/00

CHECKED BY
M. DAUBENBERGER
DATE
12/00

COMM. NO.
0993567

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Print Name: MAX DAUBENBERGER

Max Daubenberg

Date: 9/9/02 License # 9164

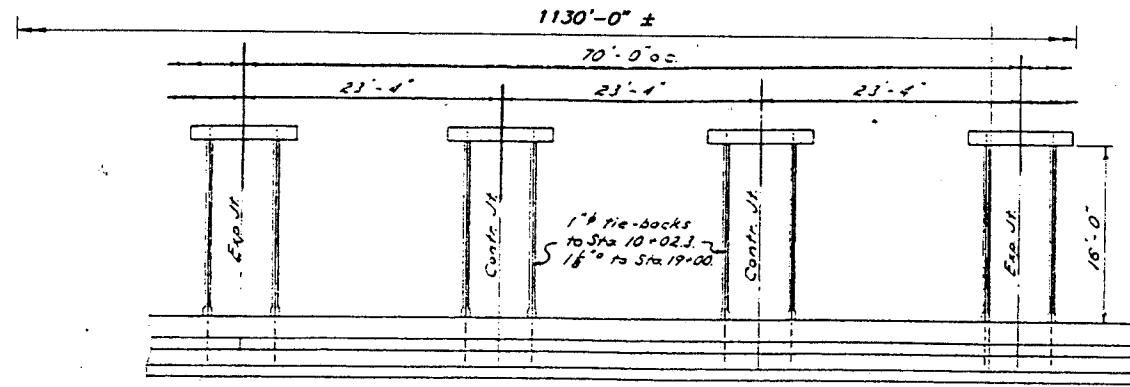


City of St. Paul

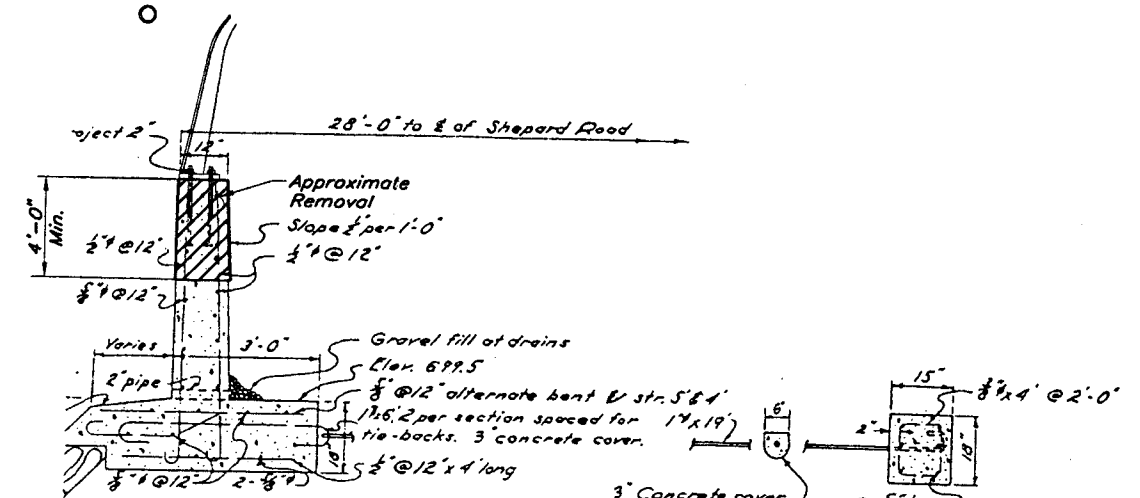
BRIDGE NO. 62597
**PROPOSED OUTFALL STRUCTURE
 TOP SLAB REINFORCEMENT**
 (SHEET 7 OF 7)

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
W-39
 OF
W-45

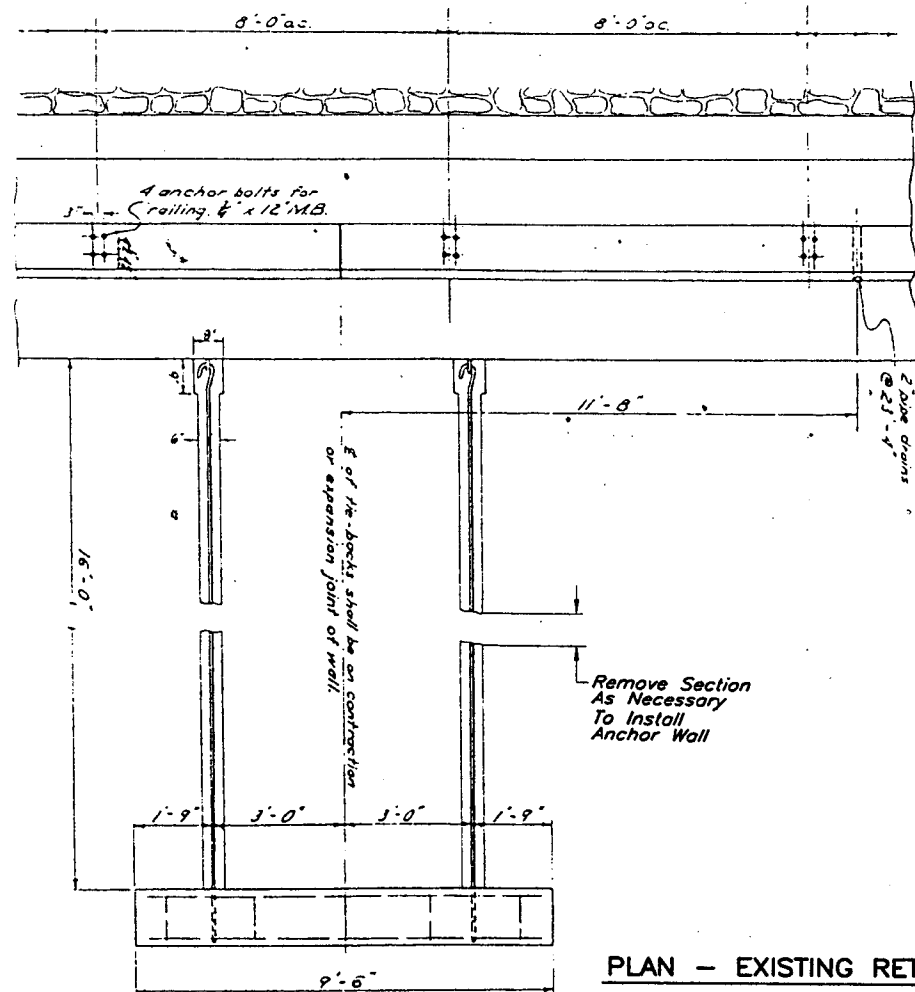


PLAN VIEW OF WALL
PLAN - EXISTING RETAINING WALL (TYPE 1)



TYPICAL SECTION
STA 8+39 TO STA 10+02.3

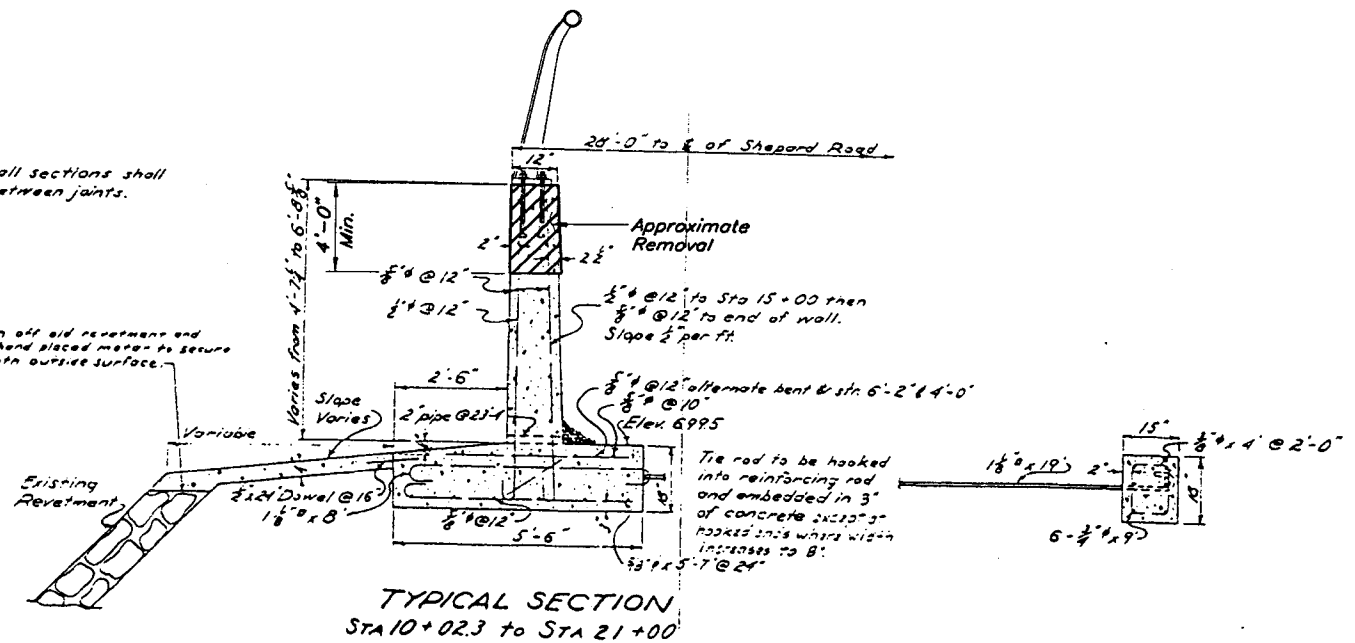
SECTION - EXISTING RETAINING WALL (TYPE 1)
(101+60 ± TO 105+00 ALONG E.B. SHEPARD ROAD)



PLAN - EXISTING RETAINING WALL (TYPE 1)

1: All wall sections shall be tight between joints.

Clean off old revetment and use hand placed mortar to secure smooth outside surface.



SECTION - EXISTING RETAINING WALL (TYPE 1)
(107+50 ± TO 115+40 ALONG E.B. SHEPARD ROAD)

28-299

For Information Only

NO	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67_w40.dwg DEC. 07, 2001

DRAWN BY J. SHEEHAN 8/00
 DESIGNED BY G. SCHWENK 8/00
 CHECKED BY M. DAUBENBERGER 8/00
 COMM. NO. 0993597

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
 Signature: *Max Daubenberg*
 Date: 9/10/02 License #: 9164

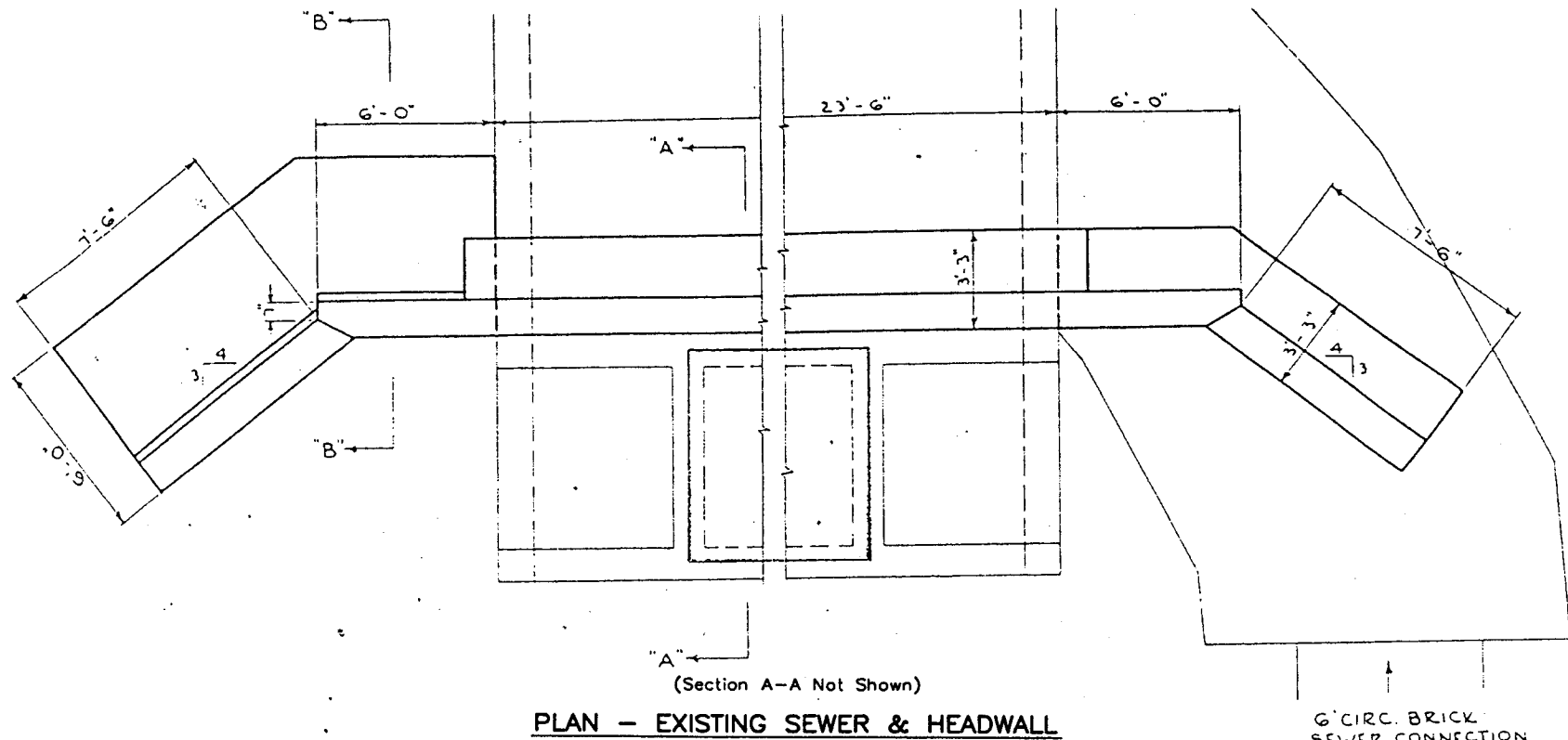
SRF CONSULTING GROUP, INC.



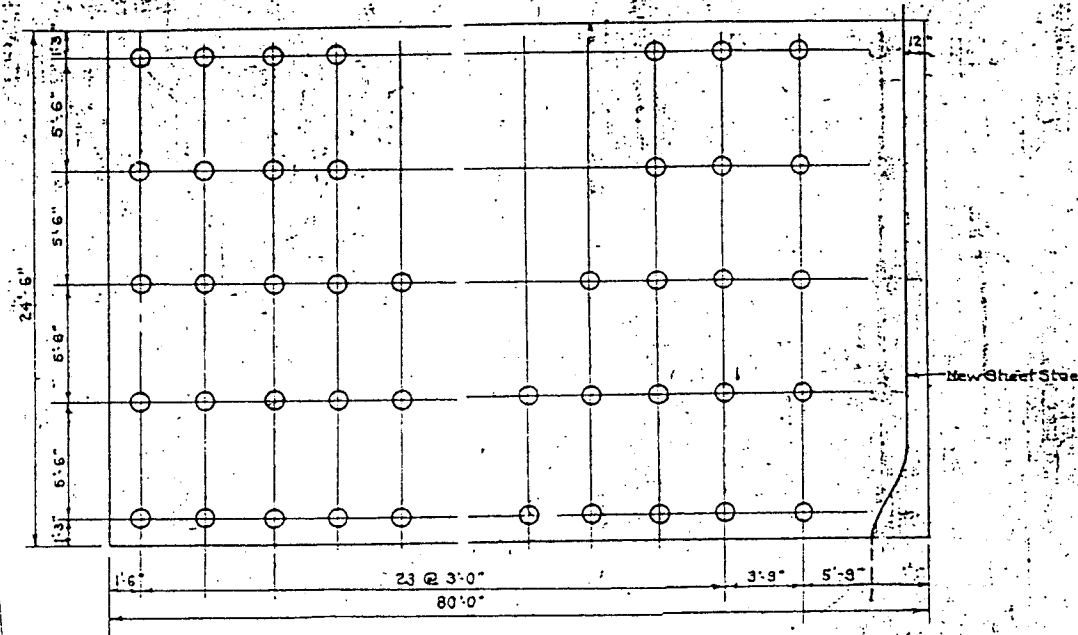
City of St. Paul

SHEPARD ROAD
 EXISTING SHEET PILE ANCHOR WALL
 & EXISTING RETAINING WALL (TYPE 1)
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

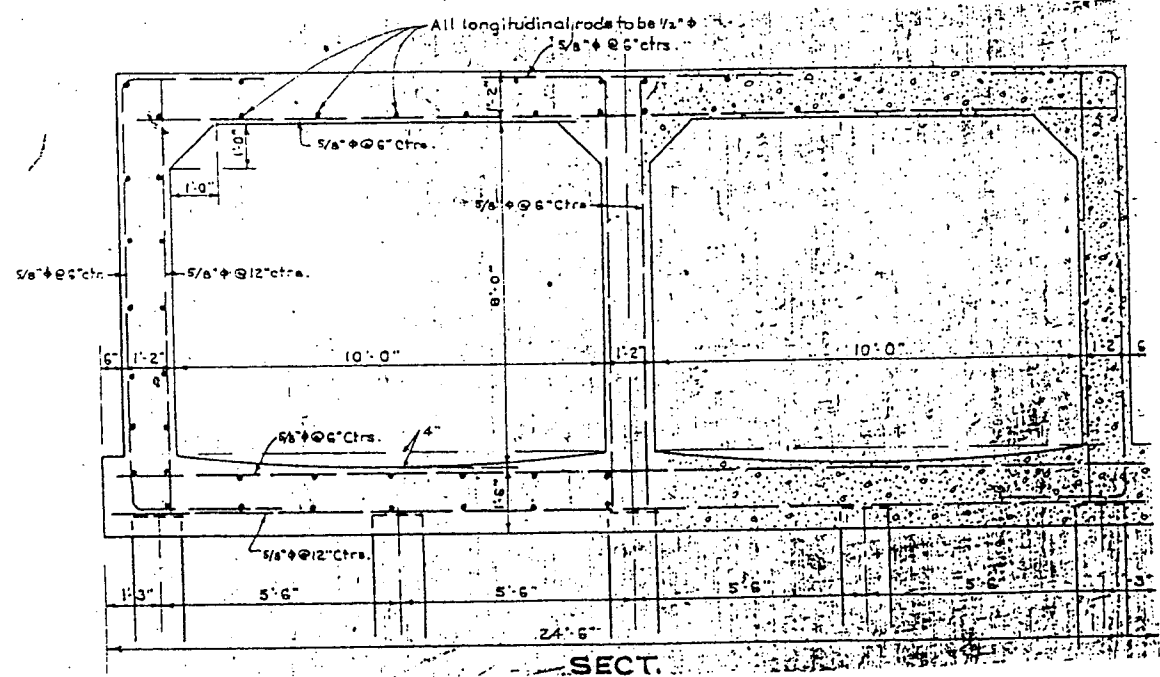
SHEET W-40 OF W-45



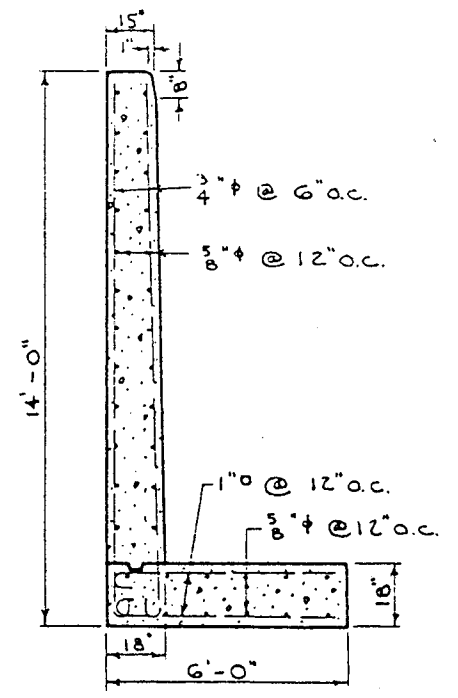
PLAN - EXISTING SEWER & HEADWALL
TOP VIEW OF ST. PETER ST. SEWER AND HEADWALL



PILING PLAN
PLAN - EXISTING FOOTING



SECTION - EXISTING OUTFALL STRUCTURE



SECTION "B-B"
EAST WING WALL SIMILAR

28-299

For Information Only

NO.	DATE	BY	DESCRIPTION OF REVISIONS

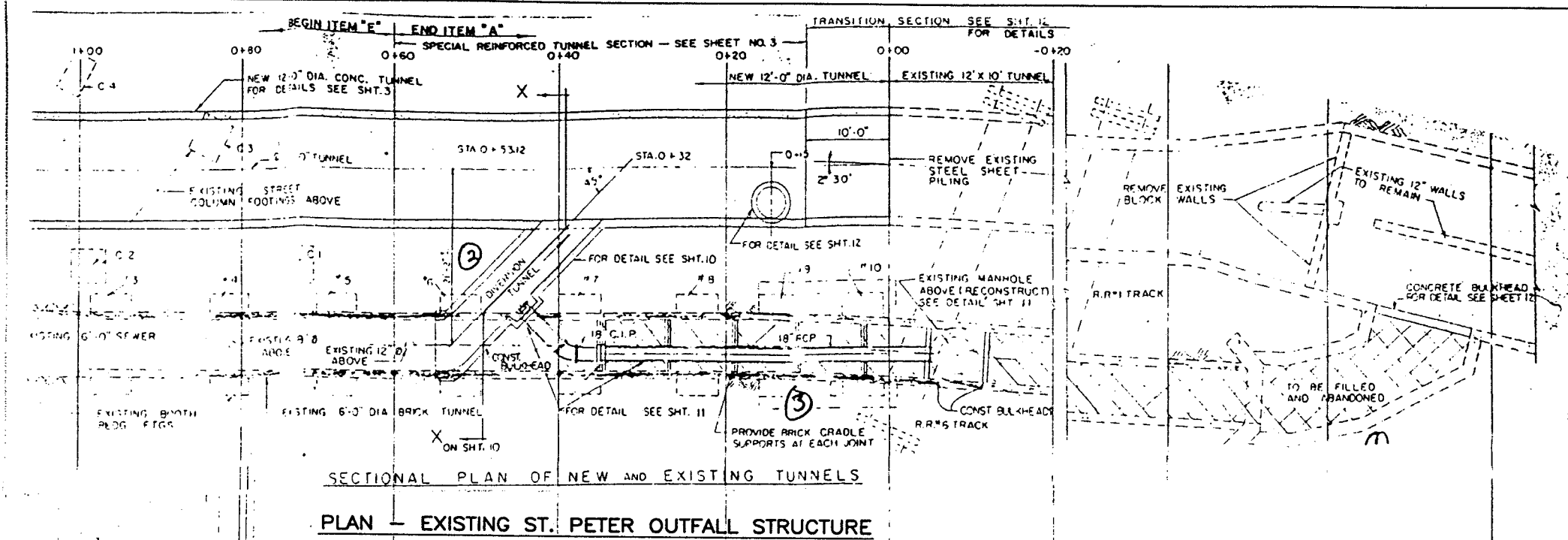
DRAWN BY J. SHEEHAN DATE 6/00
 DESIGNED BY G. SCHWIENIEK DATE 6/00
 CHECKED BY M. DAUBENBERGER DATE 6/00
 COMM. NO. 0993567
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
Max Daubenberg
 Date 11/10/02 License # 3184



City of St. Paul

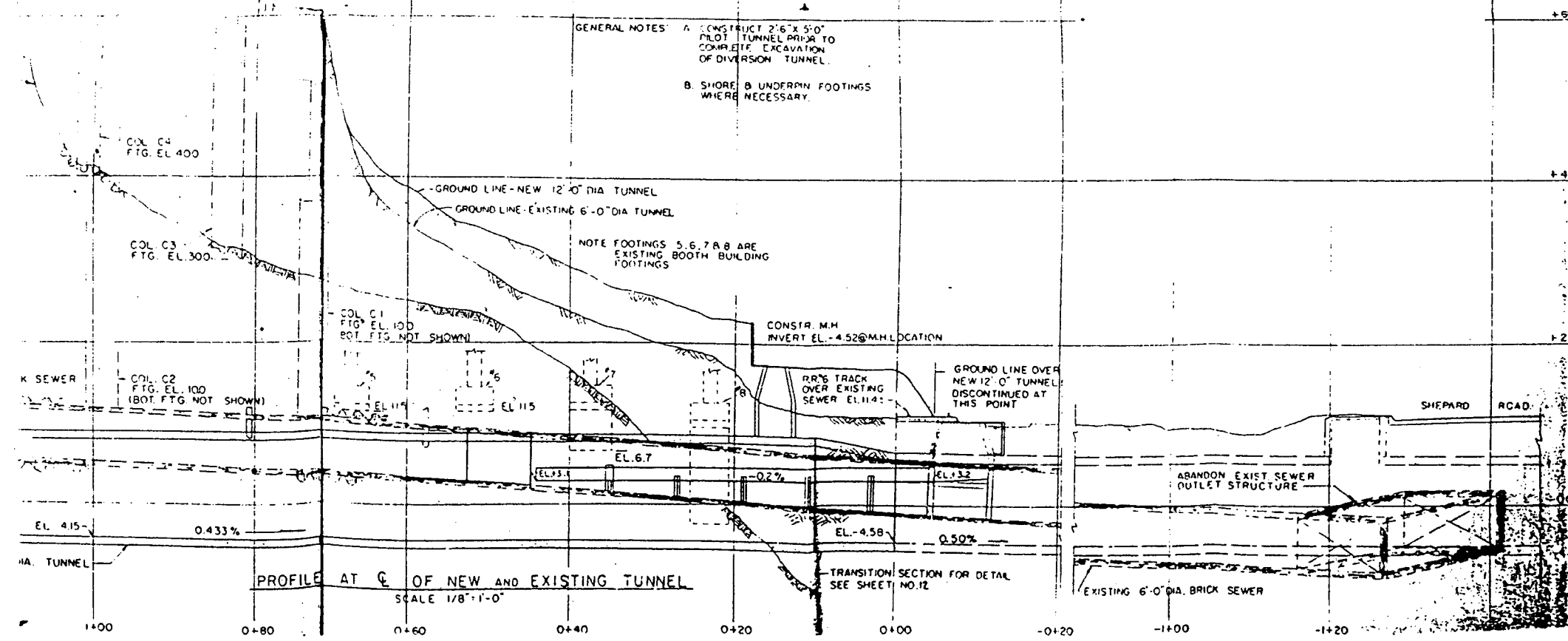
SHEPARD ROAD
 EXISTING ST. PETER
 OUTFALL STRUCTURE
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
 W-41
 OF
 W-45



SECTIONAL PLAN OF NEW AND EXISTING TUNNELS
 PLAN - EXISTING ST. PETER OUTFALL STRUCTURE

GENERAL NOTES:
 A. CONSTRUCT 2'-6" X 5'-0" PILOT TUNNEL PRIOR TO COMPLETE EXCAVATION OF DIVERSION TUNNEL.
 B. SHORE & UNDERPIN FOOTINGS WHERE NECESSARY.



PROFILE AT C OF NEW AND EXISTING TUNNEL
 SCALE 1/8"=1'-0"

28-299

For Information Only

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67_w42.dwg DEC. 28, 2000

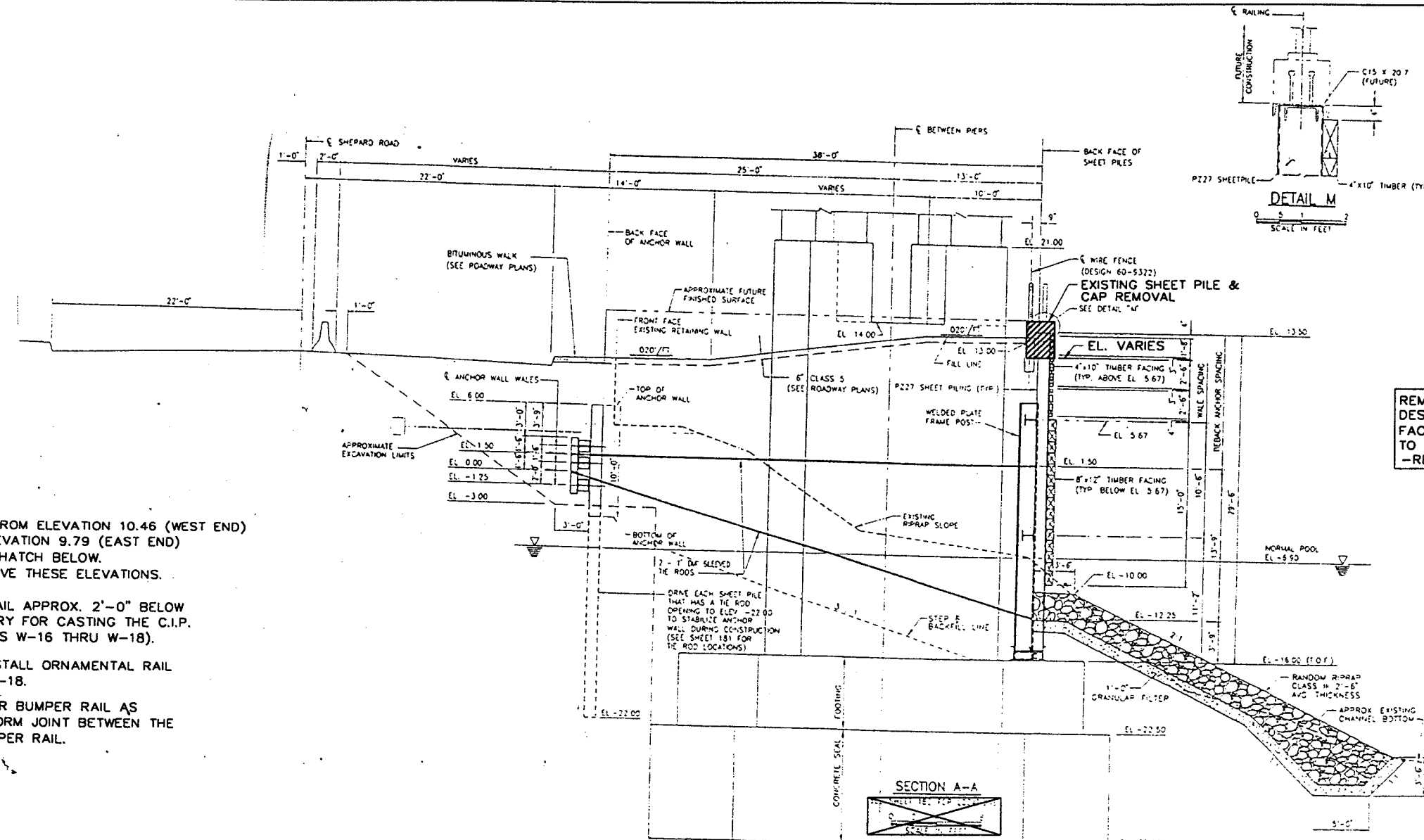
DRAWN BY: J. SHEEHAN DATE: 8/00
 DESIGNED BY: G. SCHWENK DATE: 8/00
 CHECKED BY: M. DAUBENBERGER DATE: 8/00
 COMM. NO.: 0993587
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Print Name: MAX DAUBENBERGER
Max Daubenberg
 Date: 9/18/02 License #: 9164



City of St. Paul

SHEPARD ROAD
 EXISTING ST. PETER
 OUTFALL STRUCTURE
 S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

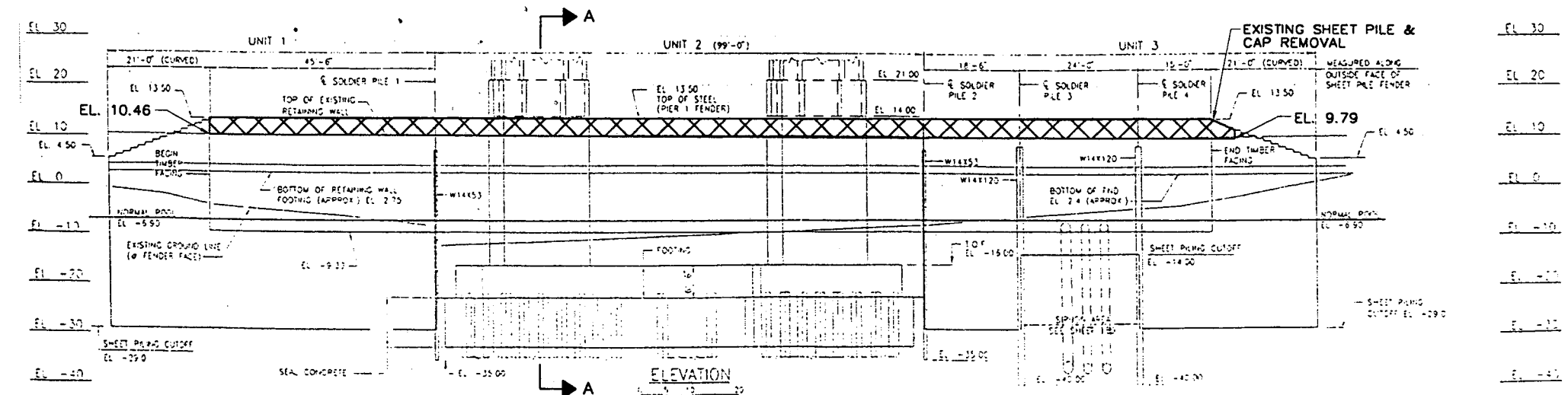
SHEET
 W-42
 OF
 W-45



REMOVAL OF WIRE FENCE
DESIGN 60-9322, TIMBER
FACING & RAILING INCIDENTAL
TO ITEM NO. 2104.503
-REMOVE SHEET PILING

CONSTRUCTION NOTES:

- CUT EXISTING SHEET PILE FROM ELEVATION 10.46 (WEST END) IN A STRAIGHT LINE TO ELEVATION 9.79 (EAST END) AS SHOWN BY THE CROSS HATCH BELOW. REMOVE ALL MATERIAL ABOVE THESE ELEVATIONS.
- REMOVE TIMBER BUMPER RAIL APPROX. 2'-0" BELOW THE CUT LINE AS NECESSARY FOR CASTING THE C.I.P. CONCRETE CAP (SEE SHEETS W-16 THRU W-18).
- CAST CONCRETE CAP & INSTALL ORNAMENTAL RAIL PER SHEETS W-16 THRU W-18.
- REPAIR THE EXISTING TIMBER BUMPER RAIL AS REQUIRED TO HAVE A UNIFORM JOINT BETWEEN THE NEW RAIL AND TIMBER BUMPER RAIL.



28-299

DRAWN BY: J. SHEEHAN DESIGNED BY: G. SCHWIENTEK CHECKED BY: M. DAUBENBERGER COMM. NO.: 0993567	DATE: 6/00 DATE: 6/00 DATE: 6/00	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: MAX DAUBENBERGER Date: 7/17/02 License #: 9164	TKDA TRUST AND DONALD MCKENNA AND ASSOCIATES PROFESSIONALS ENGINEERS - ARCHITECTS - PLANNERS SAINT PAUL, MINNESOTA	WABASHA STREET BRIDGE ST. PAUL, MINNESOTA SP 164-235-09	PER 1 FENDER PLAN AND ELEVATION	SHEET NO. 181 OF 312 SHEETS 62555	Bridge No. 62555
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For Information Only

NO.	DATE	BY	DESCRIPTION OF REVISIONS

H:\Struc\003\3567\67_w43.dwg DEC. 28, 2000

DRAWN BY: J. SHEEHAN
 DESIGNED BY: G. SCHWIENTEK
 CHECKED BY: M. DAUBENBERGER
 COMM. NO.: 0993567

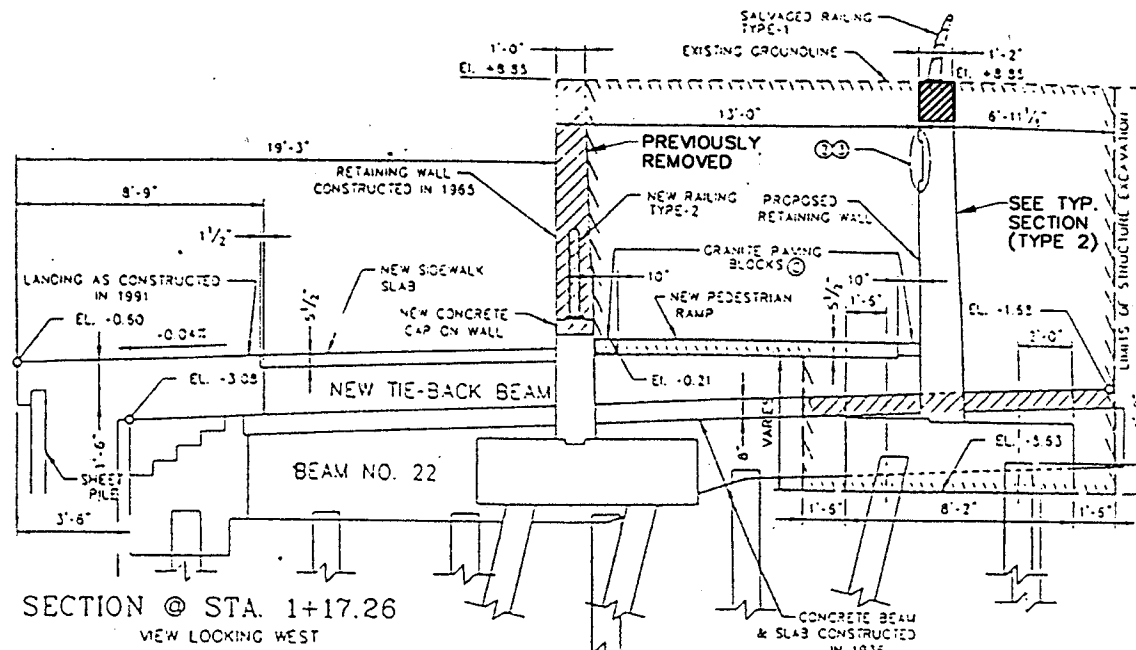
SRF CONSULTING GROUP, INC.

Saint Paul
City of St. Paul

SHEPARD ROAD
EXISTING WABASHA SHEET PILING

S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

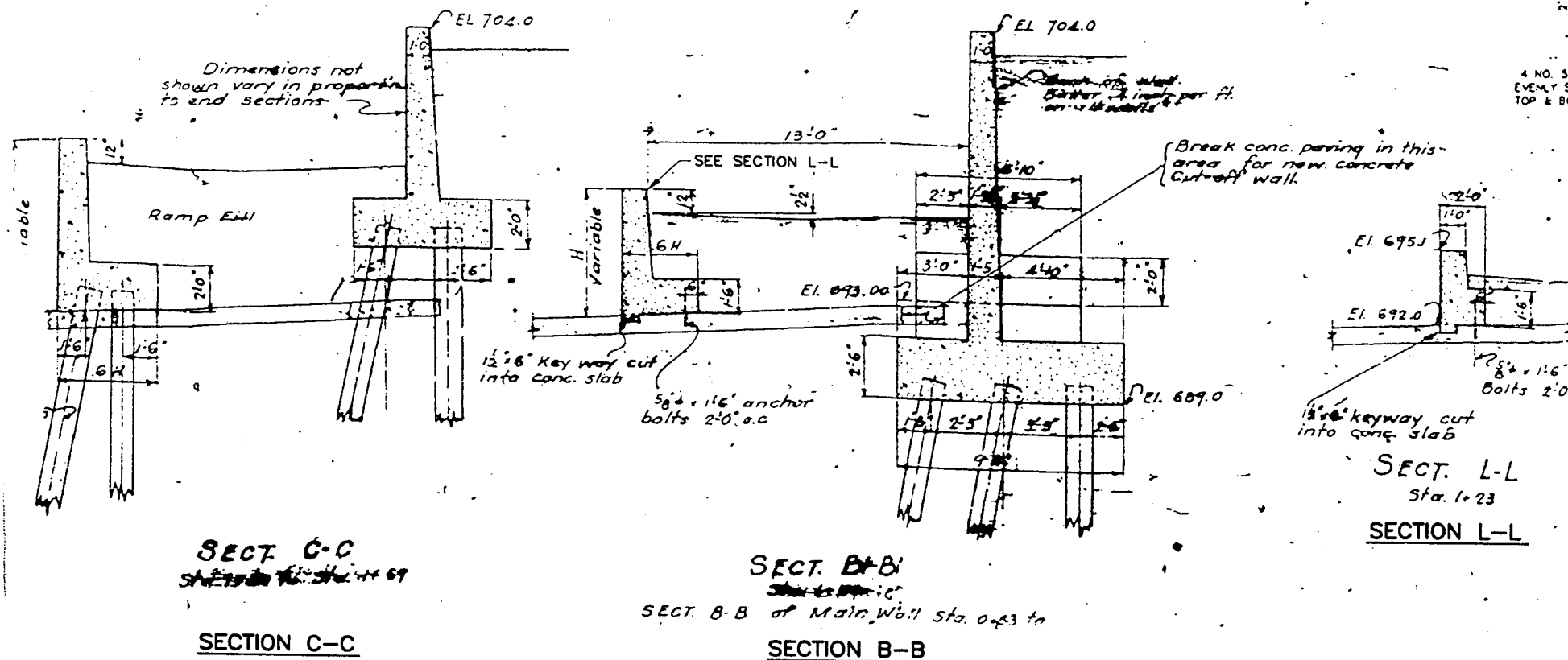
SHEET W-43 OF W-45



SECTION @ STA. 1+17.26
VIEW LOOKING WEST

SEE SECTION B-B & C-C
BELOW FOR EXISTING GEOMETRY

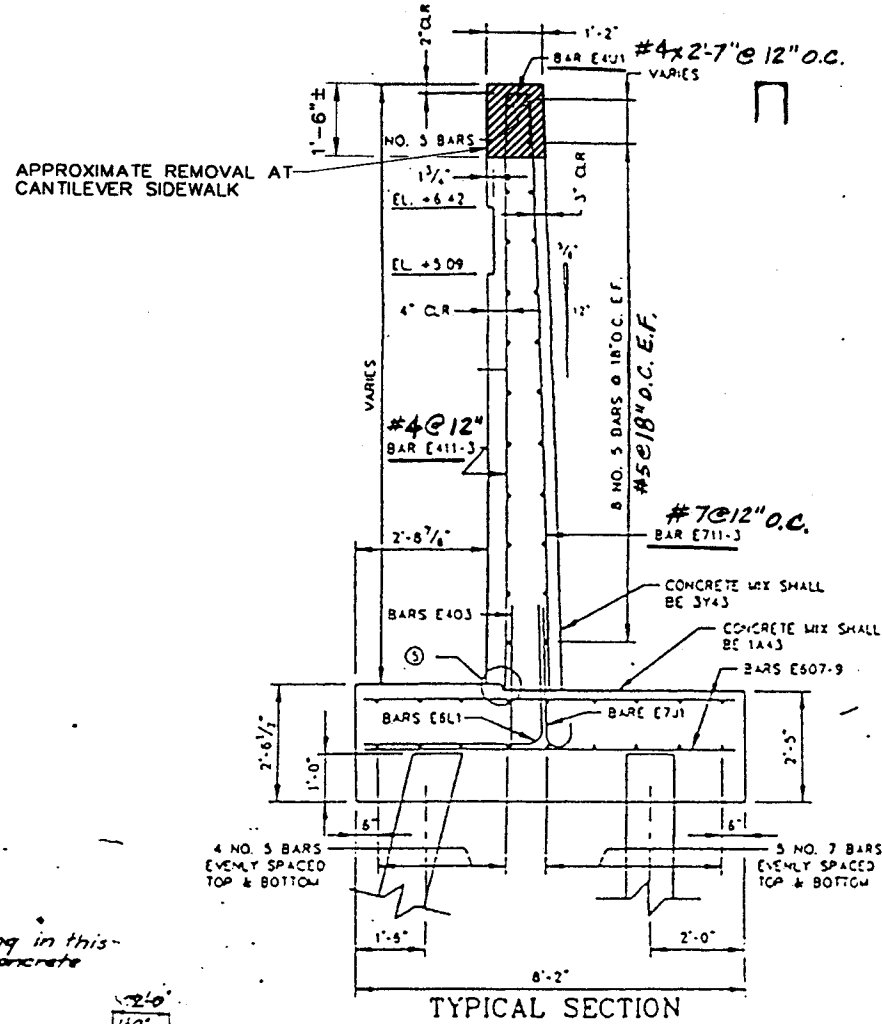
SECTION - RETAINING WALL (TYPE 2) AT CANTILEVER SIDEWALK



SECT. C-C
SECTION C-C

SECT. B-B
SECTION B-B of Main Wall Sta. 0+83 to

SECT. L-L
Sta. 1+23
SECTION L-L

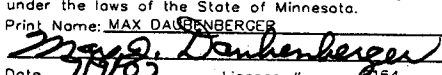

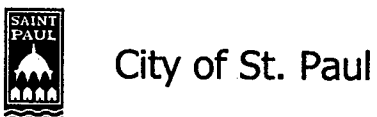


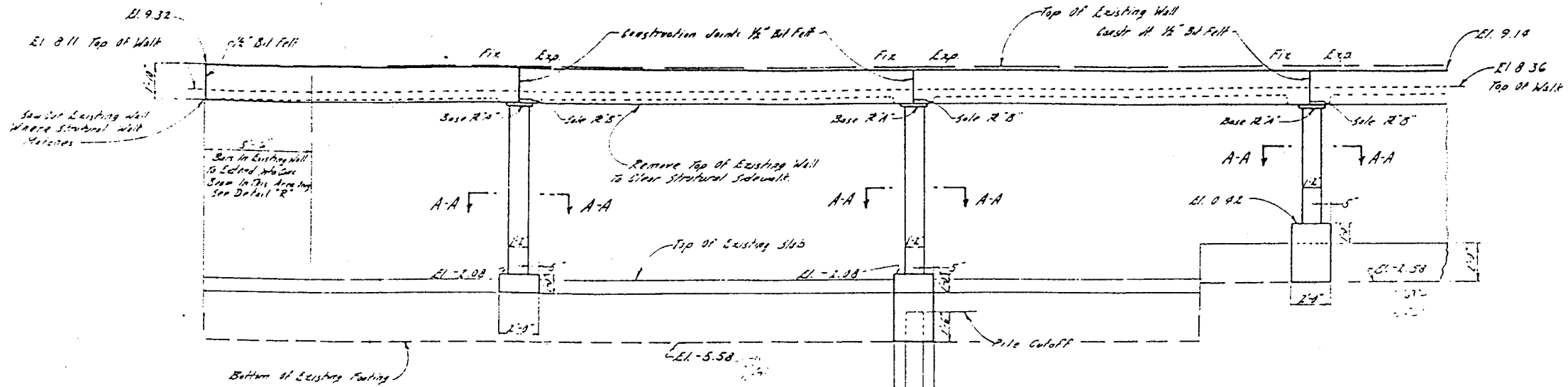
TYPICAL SECTION
TYPICAL SECTION - (TYPE 2)

NOTE:
EXISTING ST. PAUL ELEVATION 0.00 =
NEW CONSTRUCTION ELEVATION 694.10
BASED ON 1912 DATUM.

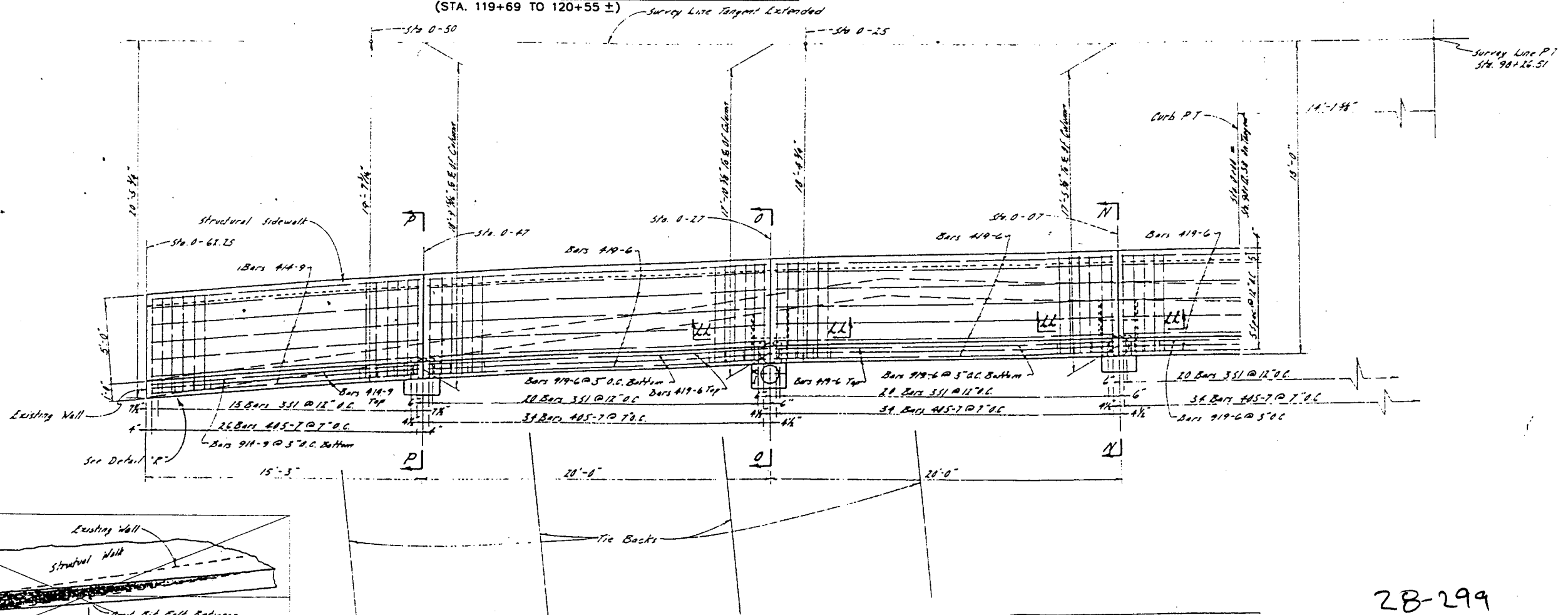
28-299

For Information Only

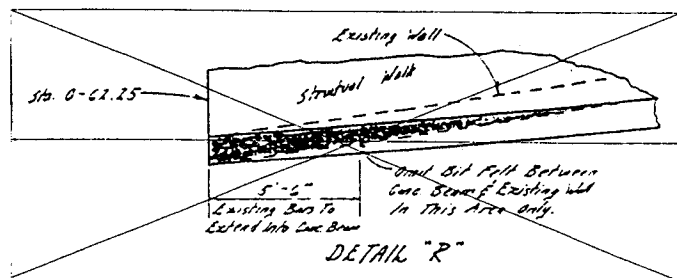
NO. DATE BY DESCRIPTION OF REVISIONS H:\Struc\003\3567\67_w44.dwg DEC. 28, 2000			DRAWN BY: J. SHEEHAN DATE: 8/00 DESIGNED BY: G. SCHWIENTEK DATE: 8/00 CHECKED BY: M. DAUBENBERGER DATE: 8/00 COMM. NO.: 0993567	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: MAX DAUBENBERGER  Date: 7/1/02 License #: 6164			SHEPARD ROAD EXISTING RETAINING WALL SECTION (TYPE 2)	SHEET W-44 OF W-45
S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16 CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88								



ELEVATION
Sta. 0+62.25 To Sta. 0+00
ELEVATION - EXISTING WALL AT CANTILEVER SIDEWALK
(STA. 119+69 TO 120+55 ±)



PLAN - EXISTING WALL AT CANTILEVER SIDEWALK
(STA. 119+69 TO 120+55 ±)



28-299

For Information Only

NO.	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY
J. SHEEHAN
6/00

DESIGNED BY
G. SCHWENKEK
6/00

CHECKED BY
M. DAUBENBERGER
6/00

COMM. NO.
0993587

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

Print Name: MAX DAUBENBERGER
Max Daubenberg
Date: 7/9/02 License # 9164

SRF CONSULTING GROUP, INC.



City of St. Paul

SHEPARD ROAD
**EXISTING RETAINING WALL
CANTILEVERED SIDEWALK**

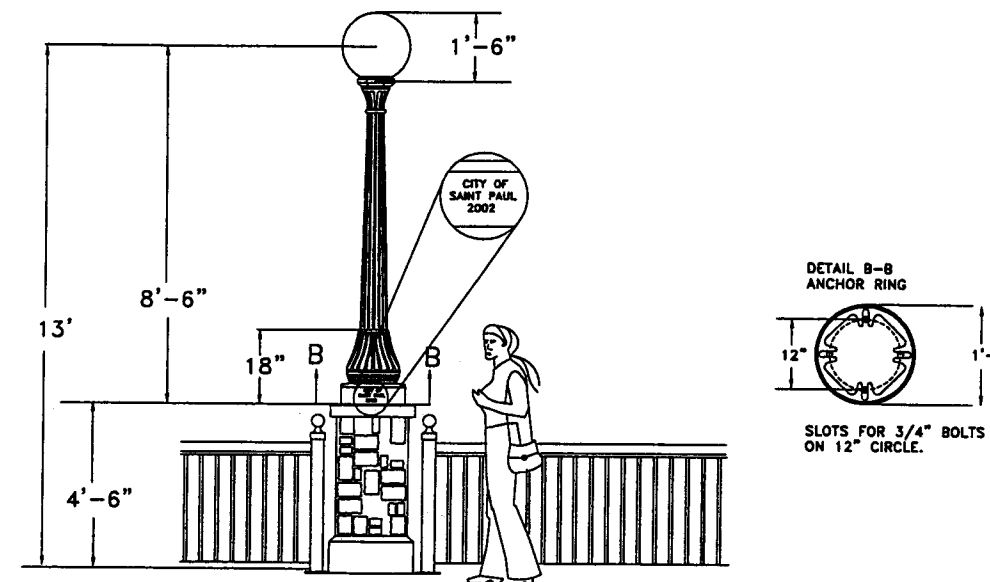
S.P. NO. 6201-77(T.H.5=102) M.S.A. PROJ. NO. 62-637-16
CITY PROJ. NO. 00-P-1200 M.S.A. PROJ. NO. 164-020-88

SHEET
W-45
OF
W-45

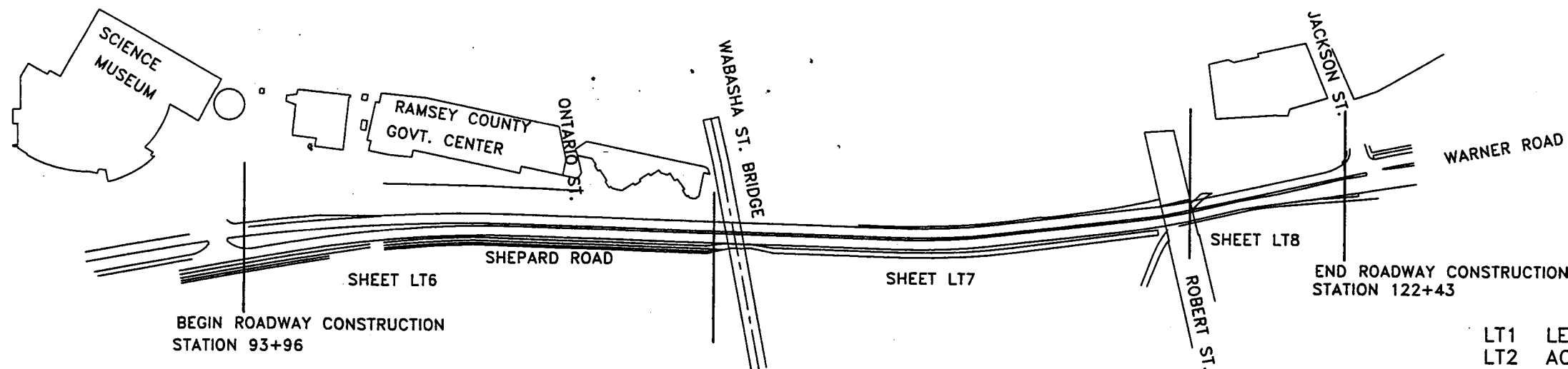
LIGHTING LEGEND

	PULLBOX TO BE INSTALLED
	EXISTING PULLBOX
	UTILITY/POWER POLE
	FEEDPOINT TO BE INSTALLED
	PHOTOELECTRIC CONTROL TO BE INSTALLED
	PROVIDE CONDUIT STUB
	EXISTING LIGHT STANDARD
	LIGHT STANDARD TO BE INSTALLED
	EXISTING BENT STRAW WITH SIGNALS
	NEW CONDUIT
	EXISTING CONDUIT
	CONDUIT END CAPPED
	3-1/c #8 A.W.G., 1-1/c #8 BARE
	3-1/c #4 A.W.G., 1-1/c #8 BARE
	3-1/c #2 A.W.G., 1-1/c #8 BARE
	1-1/c #8 BARE
	INSTALL 1-1/2" NMC, 3-1/c #6 A.W.G., #8 BARE
	FIRE HYDRANT
	TREE
	GROUND ROD TO BE INSTALLED
	EXISTING SIGNAL PEDESTAL FOUNDATION
	CONTROLLER CABINET ASSEMBLY & FOUNDATION-IN PLACE

PEDESTAL MOUNTED SINGLE GLOBE
TYPICAL FOR UNITS #142 TO #170



NOTE: SEE RAILING AND PEDESTAL DESIGN PLANS FOR CONDUIT PLACEMENT.



28-299

- LT1 LEGEND, LOCATION MAP AND DETAILS
- LT2 ACORN STYLE LIGHTING UNIT DETAILS
- LT3 FEED CABINET DETAILS
- LT4 WALKWAY UNDER ROBERT ST. DETAILS
- LT5 WIRING DIAGRAMS
- LT6-LT8 LIGHTING CONSTRUCTION PLANS



I HEREBY CERTIFY THAT I HAVE REVIEWED THIS PLAN AND THAT I AM A MASTER ELECTRICIAN CERTIFIED UNDER THE LAWS OF THE STATE OF MINNESOTA

DATE _____ REG. NO. _____

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

SIGNED *Tom St. Osk* DATE *8/28/02* REG. NO. *23988*

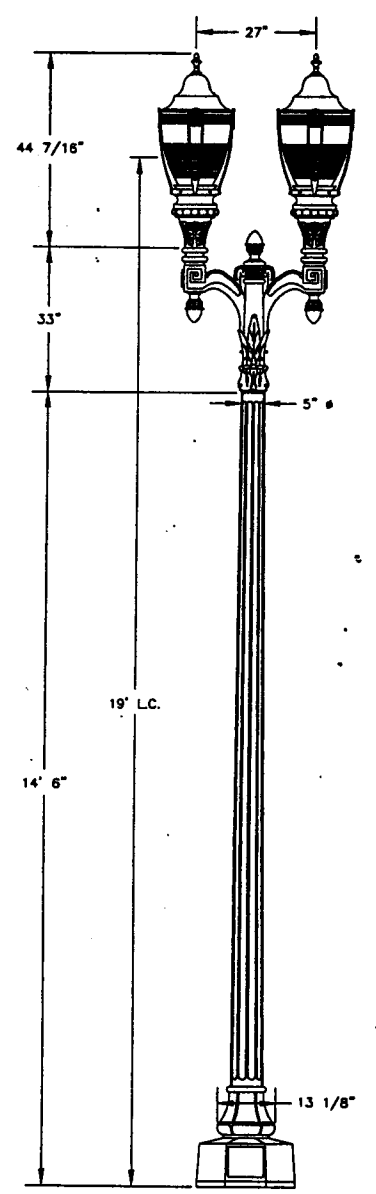
PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS

SHEPARD ROAD

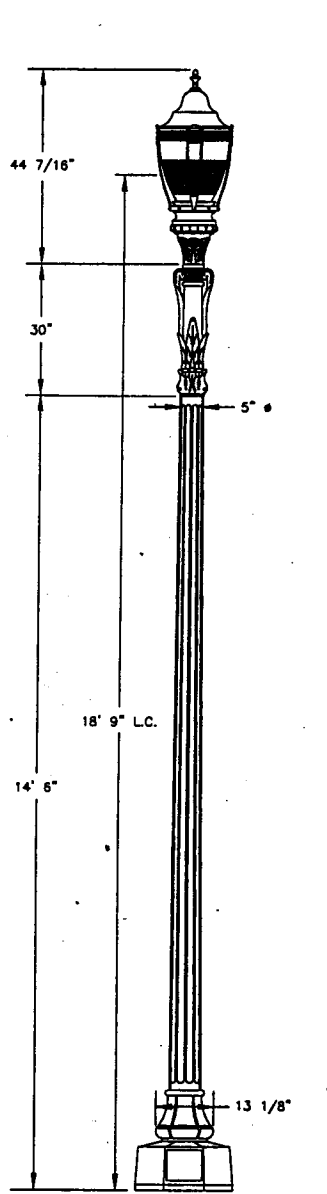
PROJECT NUMBER: 01-P-1200	STATE AID PROJECT NUMBER: 164-020-88, 62-637-16
DRAWER NUMBER: 15	CAD DRAWING NAME: JOHNEM/SHEPARDPHASE3/LEGSHEP3.DWG
DRAWING NUMBER: 1677	DATE: 10/15/01
SHEET LT1 OF LT8 SHEETS	



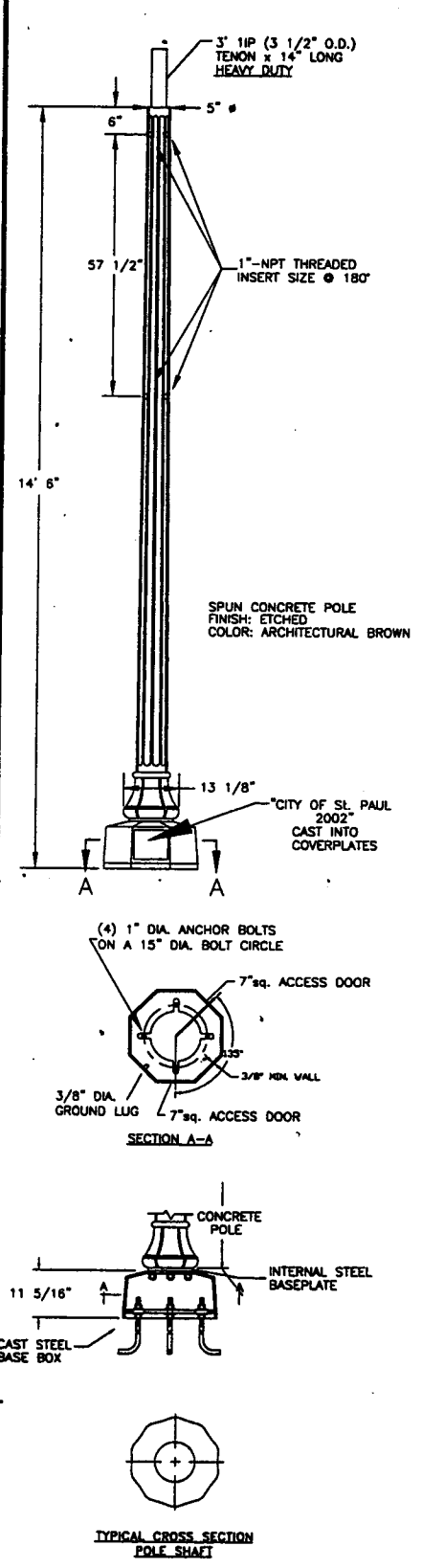
TWIN ACORN STYLE LIGHT STANDARD DETAIL



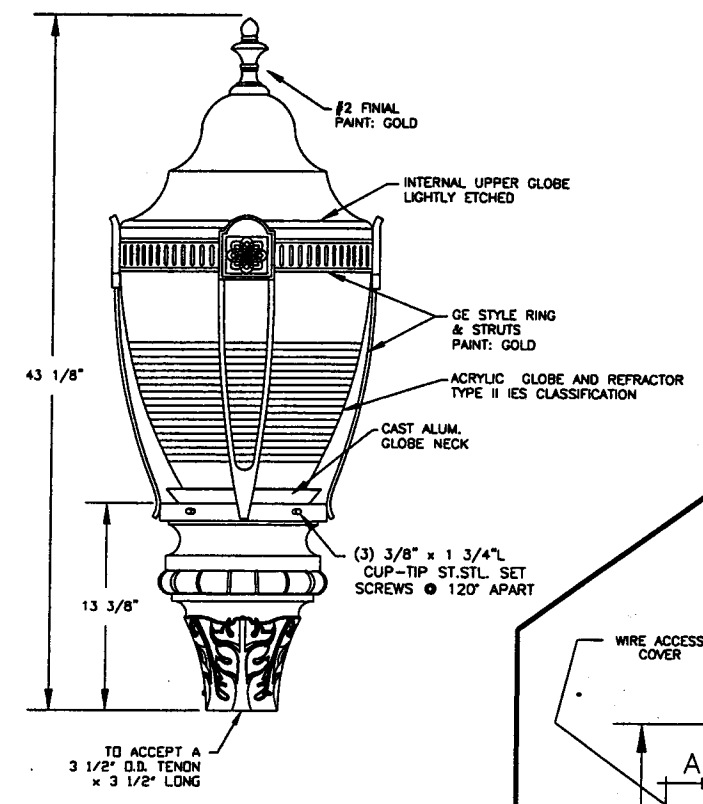
SINGLE ACORN STYLE LIGHT STANDARD DETAIL



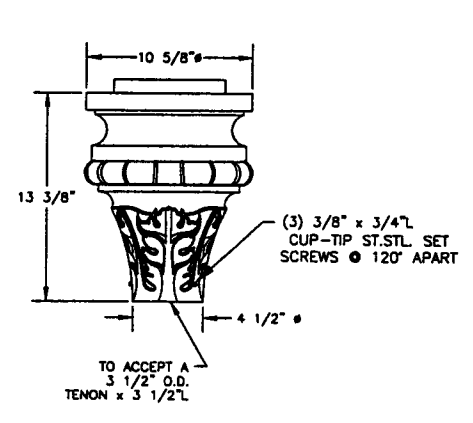
ACORN POLE DETAIL



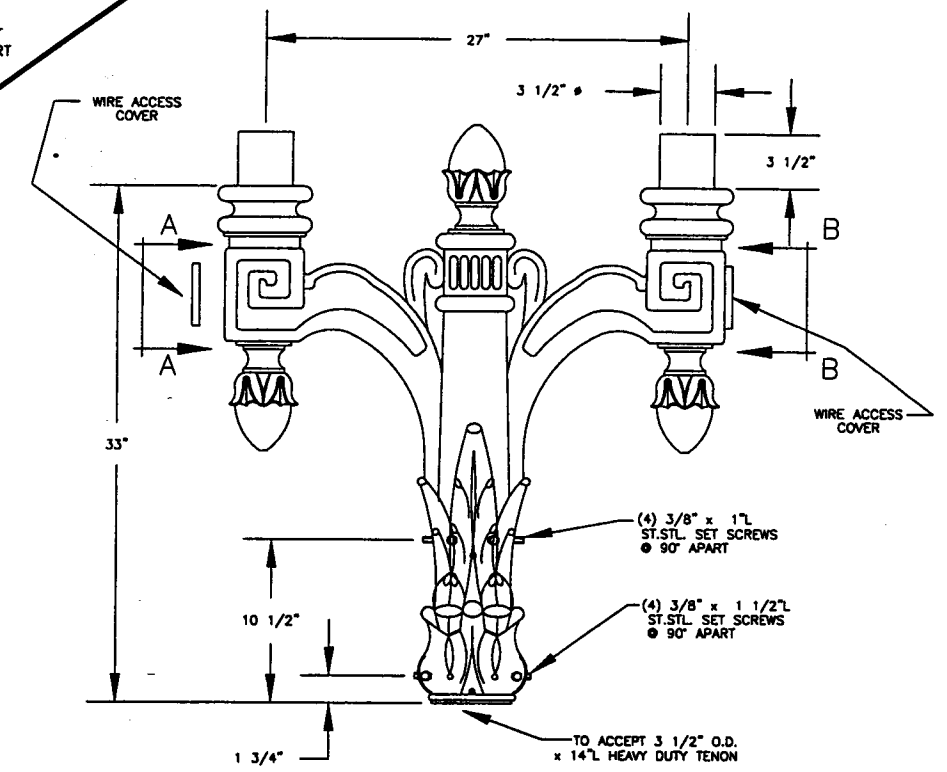
ACORN LUMINAIRE DETAIL



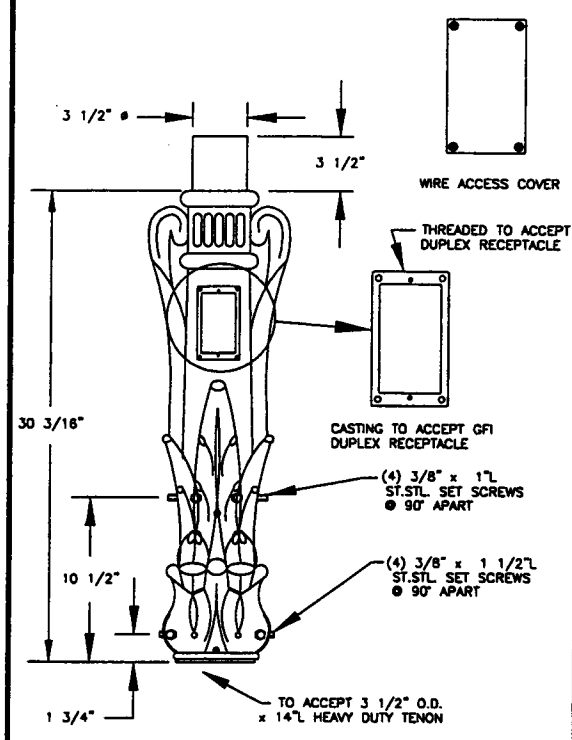
CAPITAL DETAIL



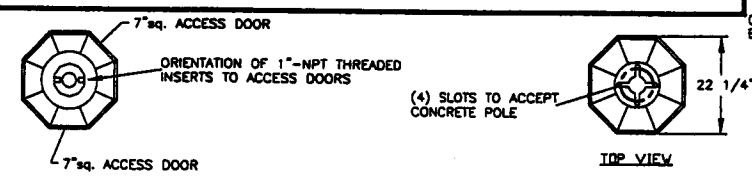
TWIN ARM BRACKET DETAIL



SINGLE ARM BRACKET DETAIL



NOTE: ALL WASHERS SHALL BE HOT DIPPED GALVANIZED STEEL FLAT WASHERS (2-1/2" O.D., 1-1/8" I.D. WITH A THICKNESS OF 3/16").

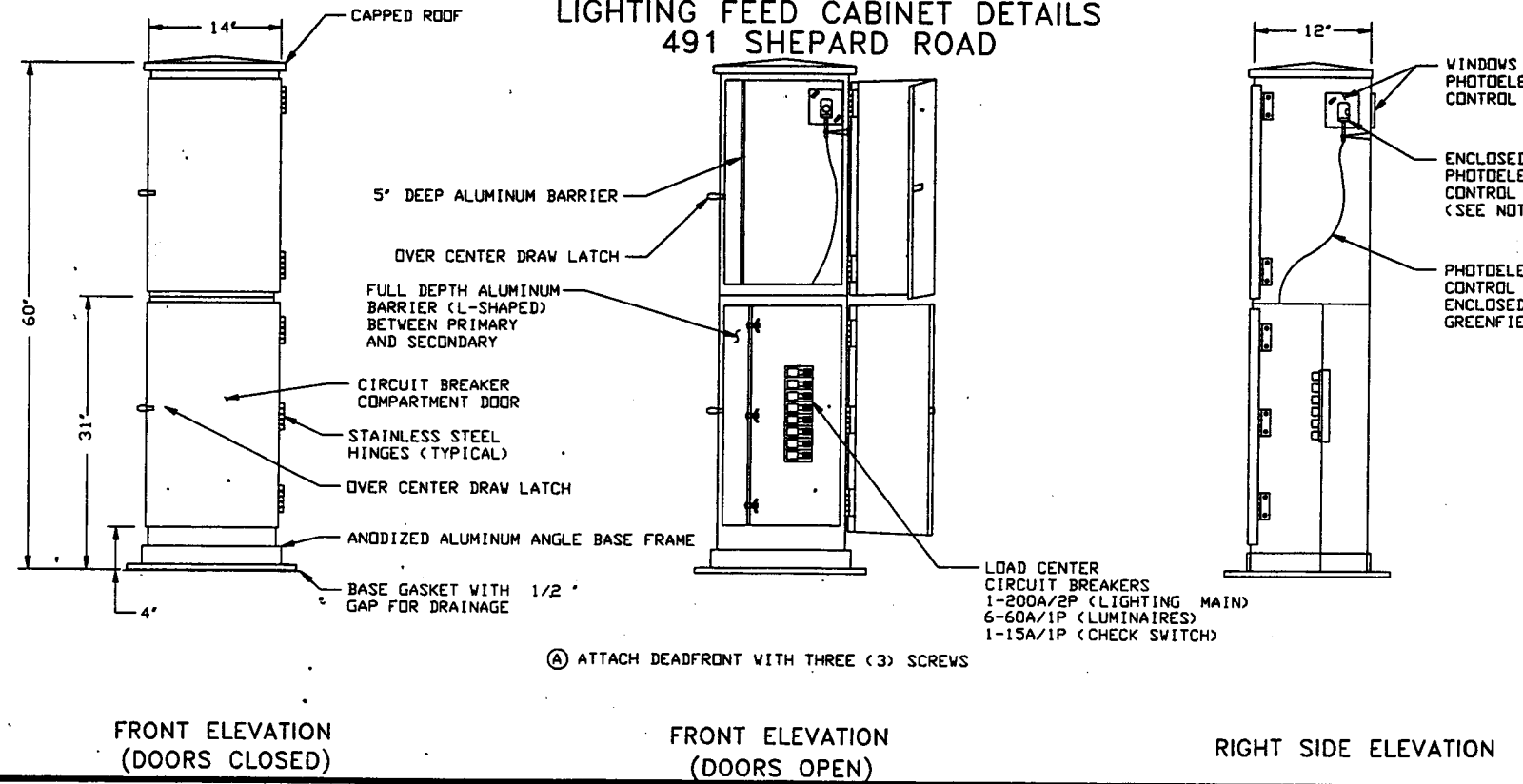


	DESIGNED	JEM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS SHEPARD ROAD	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16
	DRAWN	JEM		DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDROAD3/ACORN.DWG
	APPROVED	TCS		DRAWING NUMBER	1677	DATE	10/15/01

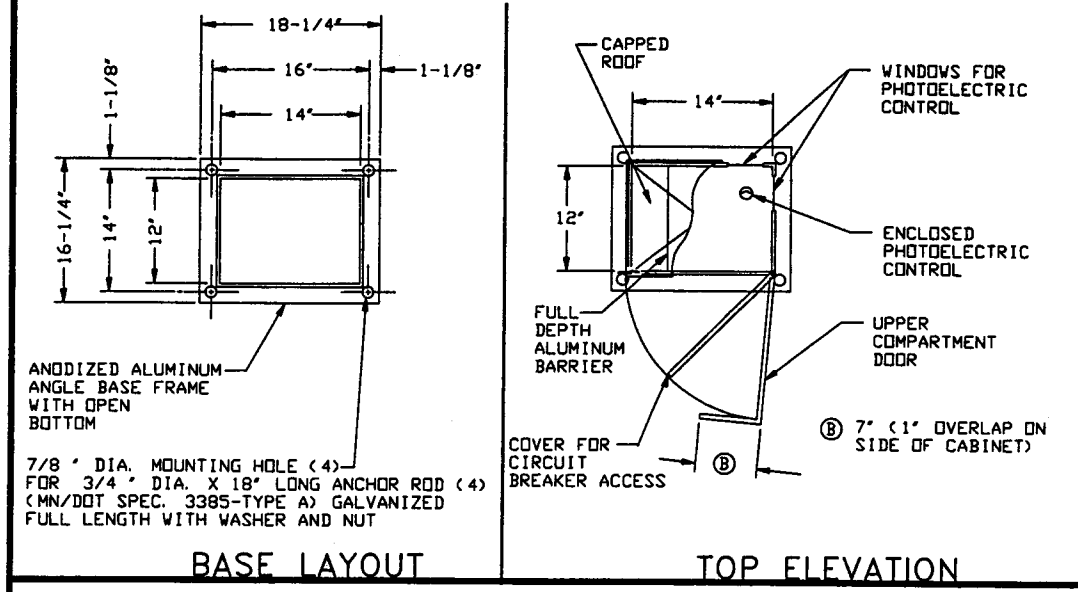
SIGNED *Tom Stedelle* DATE *8/28/01* REG. NO. *23988*

28-299

LIGHTING FEED CABINET DETAILS
491 SHEPARD ROAD



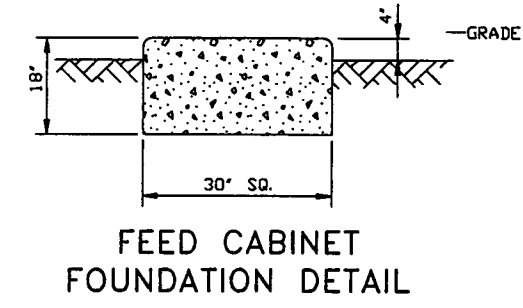
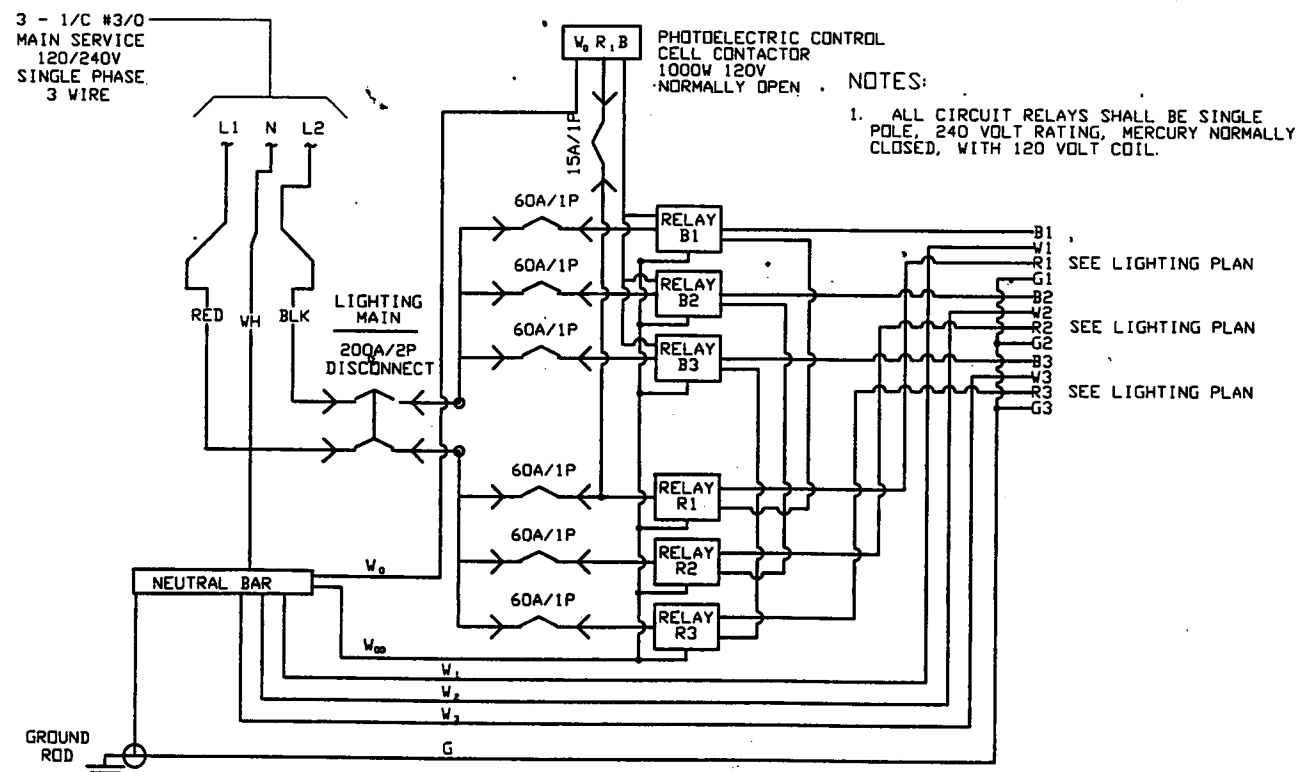
FEED CABINET BASE DETAILS



NOTES:

- ANCHOR RODS, NUTS AND WASHERS PER MN/DDT 3385 OR APPROVED EQUAL SET AS RECOMMENDED BY CABINET MANUFACTURER. NUMBER, SIZE AND LENGTH OF ANCHOR RODS SHALL BE AS REQUIRED BY THE CABINET MANUFACTURER.
- UPPER PART OF FOUNDATION SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER IN THE FIELD.
- TOP OF CONDUITS SHALL BE CAPPED UNTIL CONDUCTOR IS INSTALLED. BELL ENDS SHALL BE INSTALLED BEFORE CONDUCTOR IS INSTALLED. CONDUIT SHALL PROJECT BETWEEN 2 AND 3 INCHES ABOVE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET OR AS DIRECTED BY THE ENGINEER BUT SHALL NOT INTERFERE WITH CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
- CONCRETE MIX 3Y36 OR EQUAL SHALL BE USED FOR SERVICE EQUIPMENT FOUNDATION.
- FEED CABINET SHALL BE UL-LISTED.
- EXACT LOCATION OF CONDUIT WITHIN THE PAD FOUNDATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

LIGHTING FEED CABINET WIRING DIAGRAM

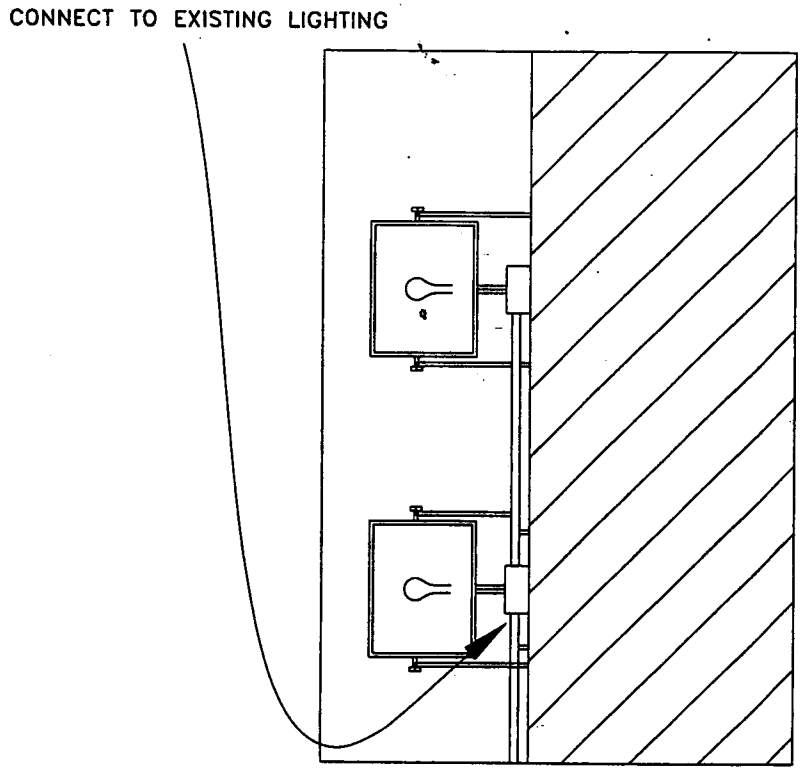
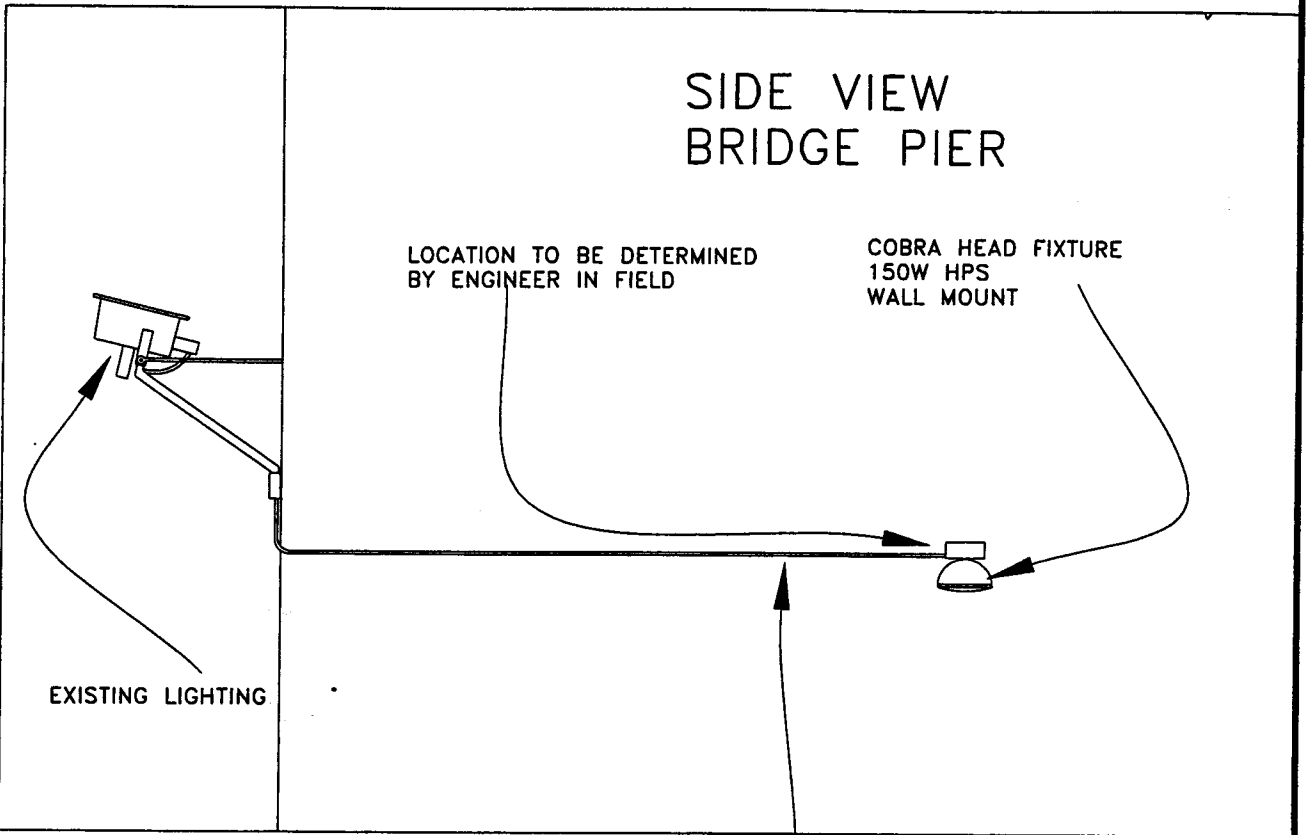
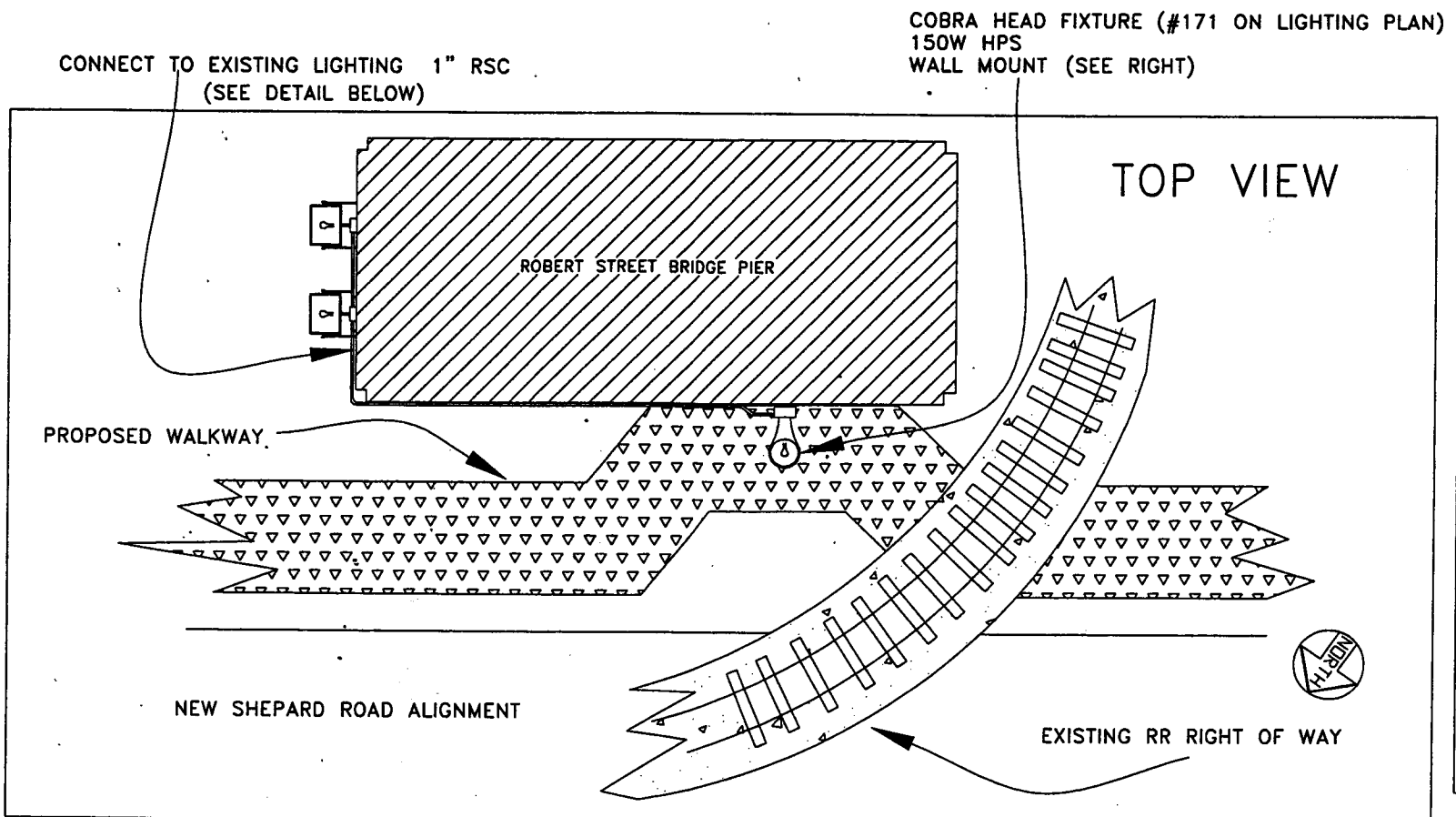


CONSTRUCTION NOTES

- THE FEED CABINET AND BASE FRAME SHALL BE FABRICATED FROM FORMED ANODIZED ALUMINUM.
- ALL HINGES, HINGE PINS AND LOCKS SHALL BE OF NON-CORRODING MATERIALS.
- THE FEED CABINET DOORS SHALL BE ATTACHED TO THE ENCLOSURE WITH NON-CORRODING TYPE TAMPERPROOF CARRIAGE BOLTS.
- BOTH COMPARTMENT DOORS SHALL BE SECURED WITH AN OVER CENTER DRAW LATCH AND DUAL LOCKING FIXTURE AND MUST CONFORM TO UTILITY REQUIREMENTS.
- BOTH DOOR OPENINGS SHALL BE SEALED WITH NEOPRENE GASKETS TO FORM A COMPLETE SEAL WITH THE ENCLOSURE.
- THE PHOTOELECTRIC CONTROL WINDOW CONTROL WINDOW (4' X 4") SHALL BE CLEAR LEXAN MATERIAL.
- CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60HZ AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING (E.G. "LIGHTING 1" OR "LIGHTING 2").
- ALL CIRCUIT BREAKERS SHALL BE CLEARLY MARKED IN A MANNER THAT WILL NOT DETERIORATE WITH MOISTURE OR AGE.
- SHORT CIRCUIT RATING - 10,000 AIC SYMMETRICAL.
- PROVIDE CLEARANCE TO INSTALL OR REMOVE PHOTOELECTRIC CONTROL.
- PHOTOELECTRIC CONTROL LENS SHALL BE ORIENTED TO ELIMINATE INTERFERENCE BY MANMADE LIGHT SOURCES. PHOTOELECTRIC CONTROL LENS SHALL NORMALLY FACE NORTH AND EAST.
- ALL CONDUIT ENTERING FOUNDATION SHALL BE SEALED WITH AN APPROVED DUCT SEALER.
- THE SERVICE CABINET SHALL BE U.L. LISTED AND APPROVED FOR USE AS OUTDOOR WEATHER PROOF SERVICE ENTRANCE EQUIPMENT.
- THE SERVICE CABINET SHALL BE WELDED TO THE BASE IN ACCORDANCE WITH U.L. STANDARDS.

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	DESIGNED	JEM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA SIGNED <i>Tom St...</i> DATE <i>8/24/01</i> REG. NO. <i>23985</i>	PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS SHEPARD ROAD	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16	
	DRAWN	JEM			DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDROAD3/FEEDCAB.DWG	
	APPROVED	TCS			DRAWING NUMBER	1677	DATE	10/15/01	SHEET LT3 OF LT8 SHEETS



1" RSC WITH ASSOCIATED HANGERS AND CONNECTORS

PROPOSED LIGHTING FOR WALKWAY SEGMENT UNDER ROBERT ST. BRIDGE
LIGHTING UNIT # 171

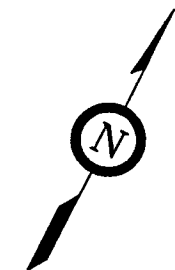
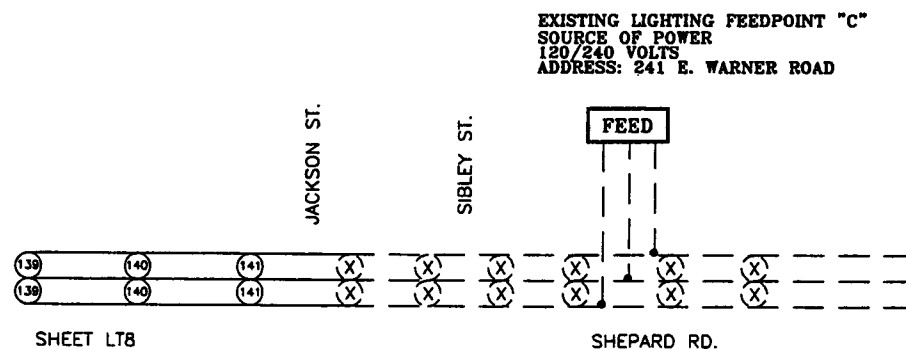
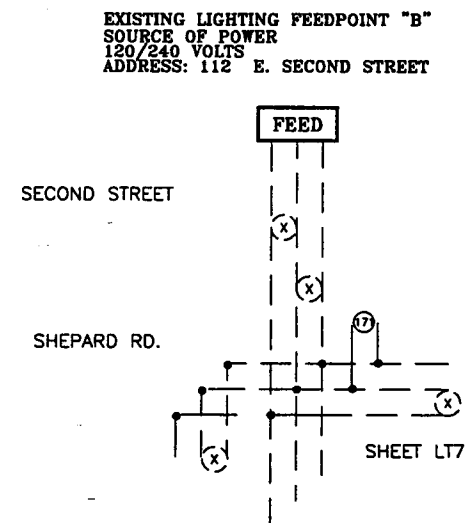
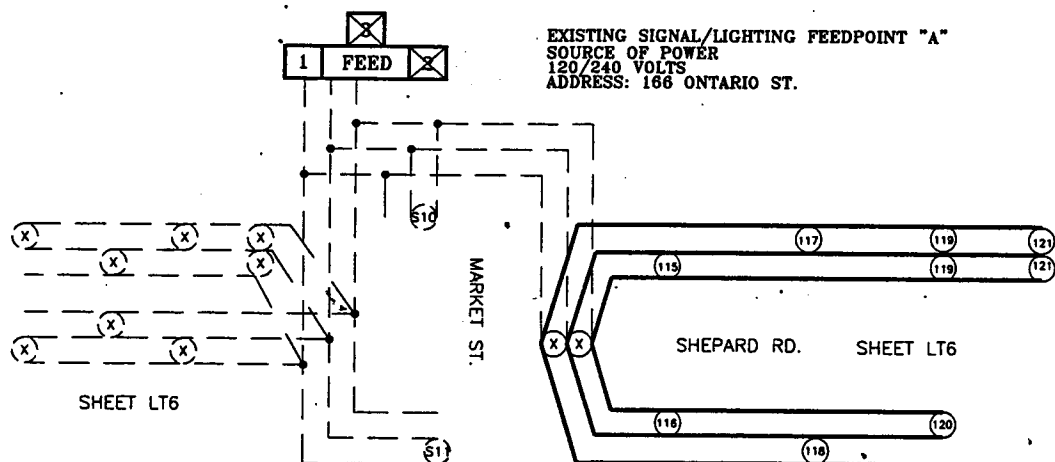
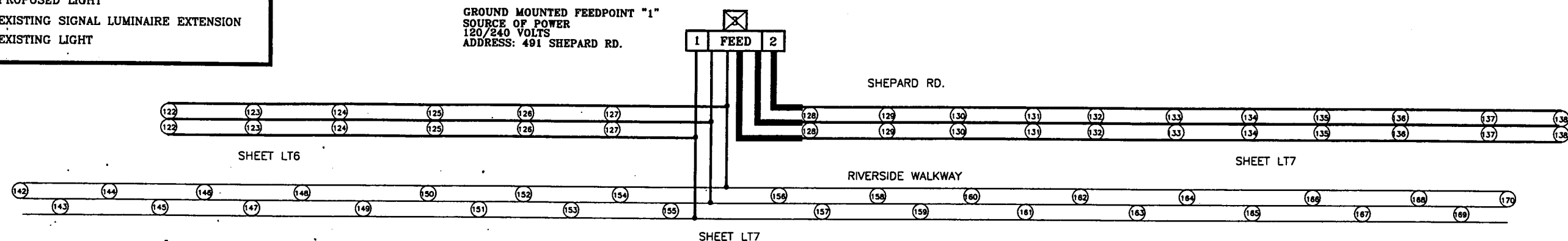
28-299

	DESIGNED	JEM	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 PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS SHEPARD_ROAD	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16
	DRAWN	JEM		DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDROAD3/PIER3LT.DWG
	APPROVED	TCS		DRAWING NUMBER	1677	DATE	10/15/01
SIGNED <i>Tom St. John</i> DATE <i>6/25/01</i> REG. NO. <i>239FF</i>							

LEGEND

- EXISTING #4 WIRE
- ===== NEW #6 WIRE
- ===== NEW #4 WIRE
- ===== NEW #2 WIRE
- ⊙ SPLICE IN PULLBOX
- ⊙ PROPOSED LIGHT
- ⊙ EXISTING SIGNAL LUMINAIRE EXTENSION
- ⊙ EXISTING LIGHT

WIRING DIAGRAM



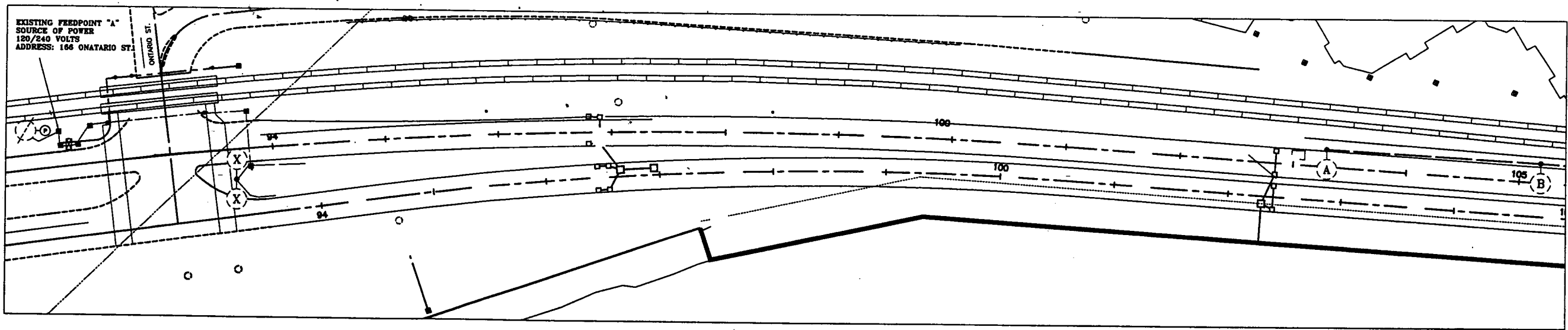
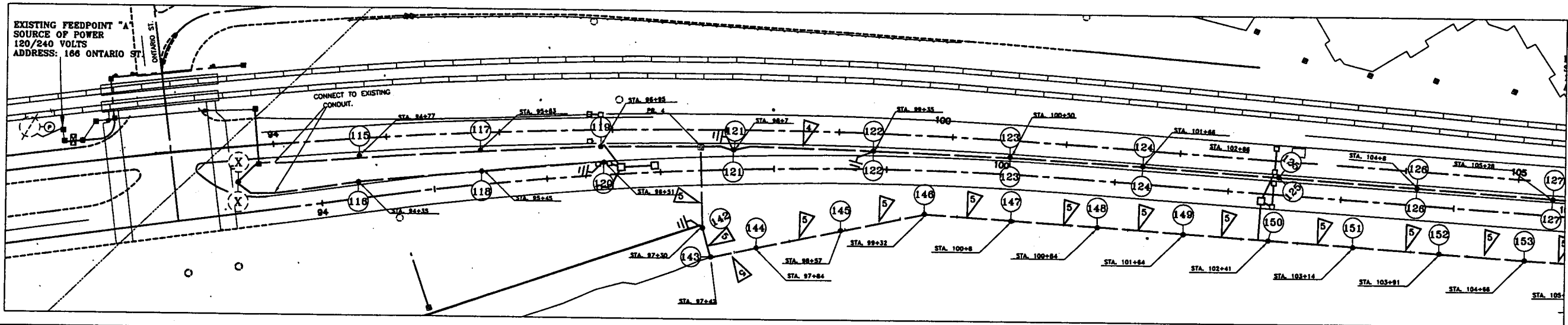
28-299

	DESIGNED	JEM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA SIGNED: <i>Tom Stoddard</i> DATE: 5/28/02 REG. NO. 23988	PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS SHEPARD ROAD	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16		
	DRAWN	JEM			DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDPHASE3/SHEPWIRE4.DWG		
	APPROVED	TCS			DRAWING NUMBER	1677	DATE	10/15/01	SHEET LT5 OF LT8 SHEETS	

CONSTRUCTION PLAN

LIGHTING NOTES:

- 1) ALL WIRE ON THIS PLAN SHEET SHALL BE UNLESS OTHERWISE FLAGGED.
- 2) ALL CONDUIT USED FOR UNITS 115-127 SHALL BE 2" P.V.C. UNLESS OTHERWISE NOTED.
- 3) ALL CONDUIT USED FOR UNITS 142-153 SHALL BE 1 1/2" P.V.C. UNLESS OTHERWISE NOTED.
- 4) UNITS 115-120 SHALL BE SINGLE ACORN STYLE HAVING R150 LUMINAIRES.
UNITS 121-127 SHALL BE TWIN ACORN STYLE HAVING R150 LUMINAIRES.
UNITS 142-153 SHALL BE SINGLE GLOBE STYLE PEDESTAL MOUNT HAVING R70 LUMINAIRES.
- 5) CONTRACTOR SHALL REMOVE AND SALVAGE UNITS "A" & "B" AND DISPOSE OF FOUNDATIONS. SALVAGED UNITS SHALL BE DELIVERED TO # 899 N. DALE ST.
- 6) SINGLE ACORN UNITS SHALL BE SET BACK 4 FT FROM FACE OF CURB, TWIN ACORN UNITS SHALL BE CENTERED ON THE MEDIAN, OR AS DIRECTED BY THE ENGINEER.
- 7) UNITS 115, 117, 119 AND 121-127 ARE USING THE NORTHERN MOST STATIONING (i.e. CENTERLINE STATIONING FOR WESTBOUND TRAFFIC).
UNITS 142-153 ARE USING THE SOUTHERN MOST STATIONING (i.e. CENTERLINE STATIONING FOR EASTBOUND TRAFFIC).



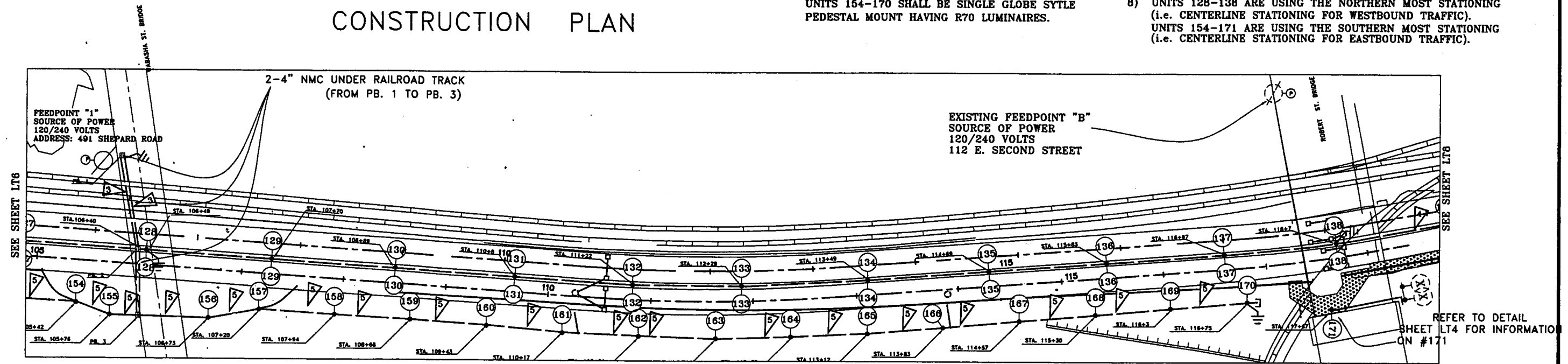
EXISTING AND REMOVAL PLAN

28-299
SHEPARD ROAD
ONTARIO ST. TO STATION 105+42

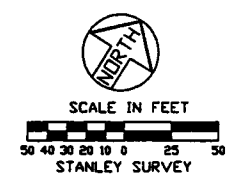
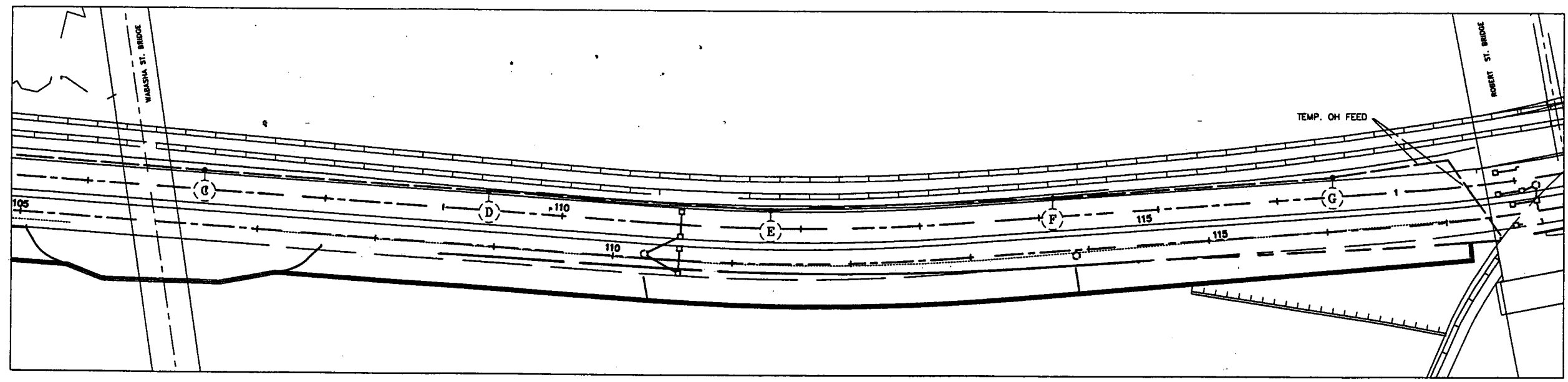
	DESIGNED	JEM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA SIGNED <i>Tom Stoltz</i> DATE <i>8/28/02</i> REG. NO. <i>23988</i>	PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS SHEPARD ROAD	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16	
	DRAWN	JEM			DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDROAD3/SHEP3LTG01.DWG	
	APPROVED	TCS			DRAWING NUMBER	1677	DATE	10/15/01	SHEET LT6 OF LT8 SHEETS

- LIGHTING NOTES:
- 1) ALL WIRE ON THIS PLAN SHEET SHALL BE UNLESS OTHERWISE FLAGGED.
 - 2) ALL CONDUIT USED FOR UNITS 128-138 SHALL BE 2" P.V.C. UNLESS OTHERWISE NOTED.
 - 3) ALL CONDUIT USED FOR UNITS 154-170 SHALL BE 1 1/2" P.V.C. UNLESS OTHERWISE NOTED.
 - 4) UNITS 128-138 SHALL BE DOUBLE ACORN STYLE HAVING R150 LUMINAIRES. UNITS 154-170 SHALL BE SINGLE GLOBE SYTLE PEDESTAL MOUNT HAVING R70 LUMINAIRES.
 - 5) SINGLE ACORN UNITS SHALL BE SET BACK 4 FT FROM FACE OF CURB, TWIN ACORN UNITS SHALL BE CENTERED ON THE MEDIAN, OR AS DIRECTED BY THE ENGINEER.
 - 6) UNIT #171 SHALL BE A 150 WATT HPS COBRA HEAD WALL MOUNT.
 - 7) CONTRACTOR SHALL REMOVE AND SALVAGE UNITS C, D, E, F AND G, AND DISPOSE OF FOUNDATIONS. SALVAGED UNITS SHALL BE DELIVERED TO # 899 N. DALE ST.
 - 8) UNITS 128-138 ARE USING THE NORTHERN MOST STATIONING (i.e. CENTERLINE STATIONING FOR WESTBOUND TRAFFIC). UNITS 154-171 ARE USING THE SOUTHERN MOST STATIONING (i.e. CENTERLINE STATIONING FOR EASTBOUND TRAFFIC).

CONSTRUCTION PLAN



EXISTING AND REMOVAL PLAN



28-299

SHEPARD ROAD
STATION 104+96 TO STATION 119+17

	DESIGNED	JEM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA SIGNED <i>Tom Stas</i> DATE <i>8/28/02</i> REG. NO. <i>7398F</i>	PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16	
	DRAWN	JEM			DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDPHASE3/SHEP3LTG002.DWG	
	APPROVED	TCS			DRAWING NUMBER	1677	DATE	10/15/01	SHEET LT7 OF LT8 SHEETS

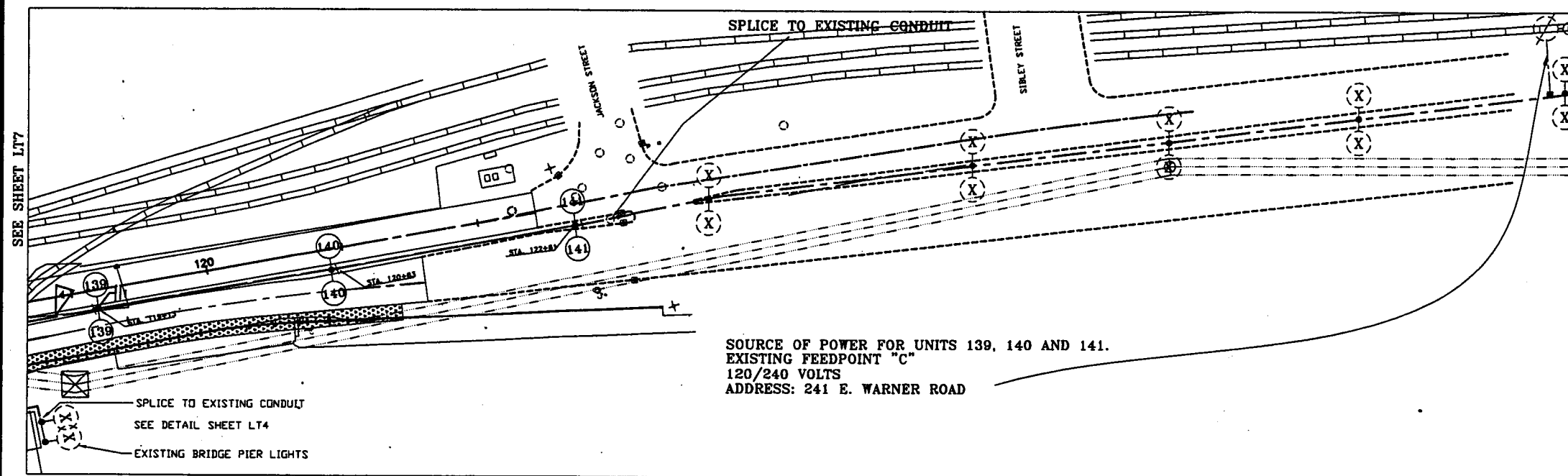
SHEPARD ROAD



CONSTRUCTION PLAN

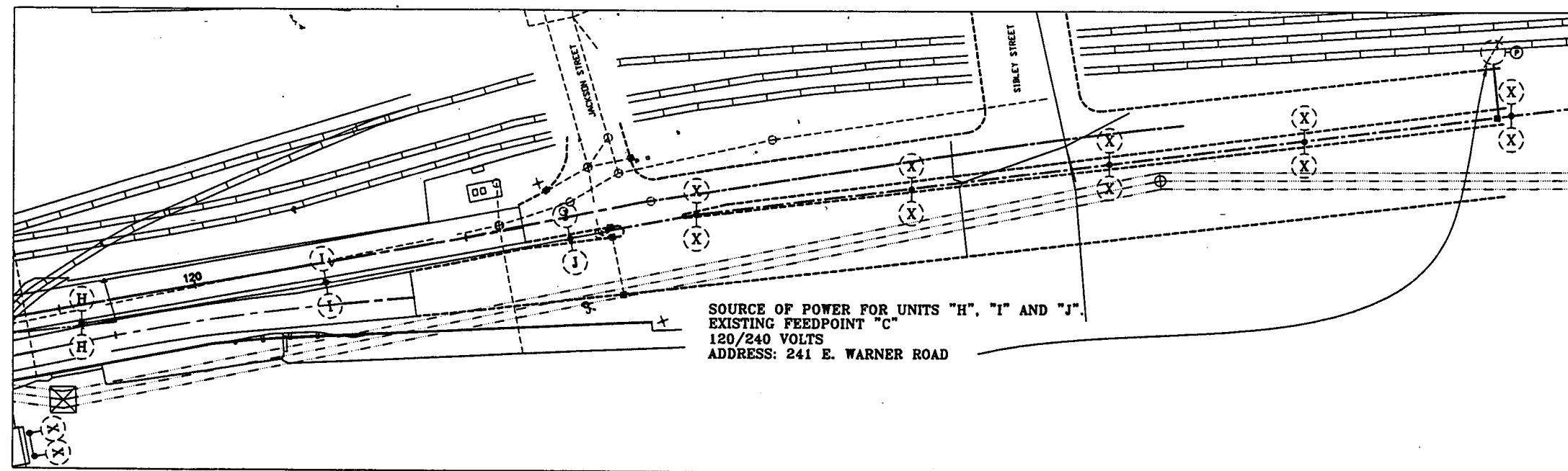
LIGHTING NOTES:

- 1) ALL WIRE ON THIS PLAN SHEET SHALL BE UNLESS OTHERWISE FLAGGED.
- 2) ALL CONDUIT FOR UNITS 139, 140, AND 141 SHALL BE 2" P.V.C. UNLESS OTHERWISE NOTED.
- 3) EXISTING UNITS "H", "I" AND "J" SHALL BE REMOVED AND REINSTALLED BY CITY FORCES.
- 4) CONTRACTOR SHALL INSTALL CONDUIT AND FOUNDATIONS FOR UNITS 139, 140, AND 141.
- 5) UNITS 139, 140, AND 141 SHALL BE CENTERED ON THE MEDIAN, OR AS DIRECTED BY THE ENGINEER.

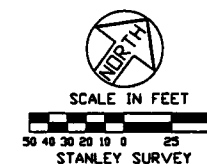


SOURCE OF POWER FOR UNITS 139, 140 AND 141.
 EXISTING FEEDPOINT "C"
 120/240 VOLTS
 ADDRESS: 241 E. WARNER ROAD

SPlice TO EXISTING CONDUIT
 SEE DETAIL SHEET LT4
 EXISTING BRIDGE PIER LIGHTS



SOURCE OF POWER FOR UNITS "H", "I" AND "J".
 EXISTING FEEDPOINT "C"
 120/240 VOLTS
 ADDRESS: 241 E. WARNER ROAD



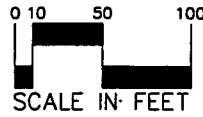
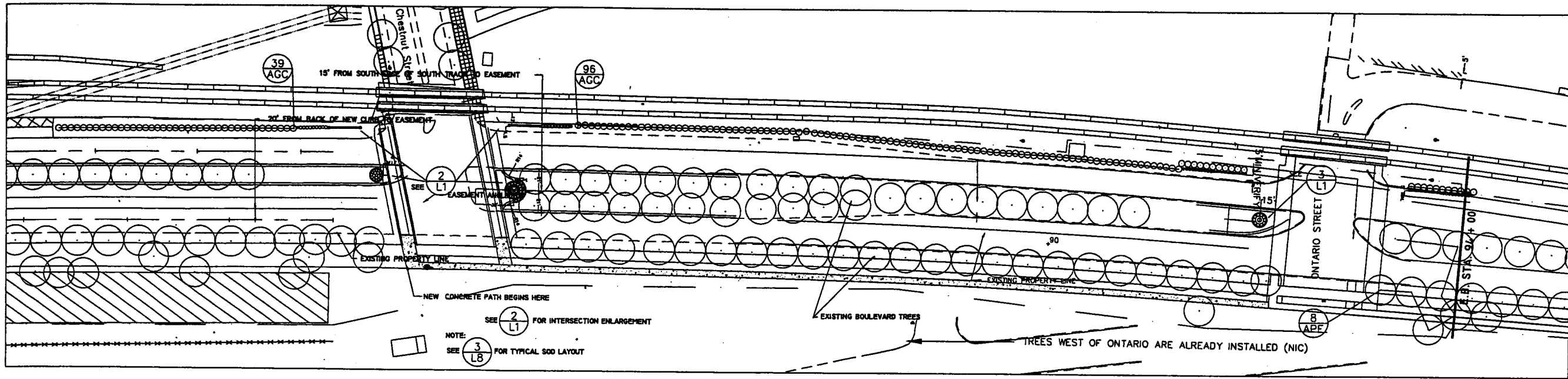
EXISTING AND REMOVAL PLAN

SHEPARD ROAD
 STATION 118+97 TO STATION 123+17

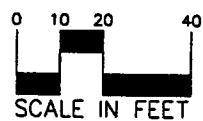
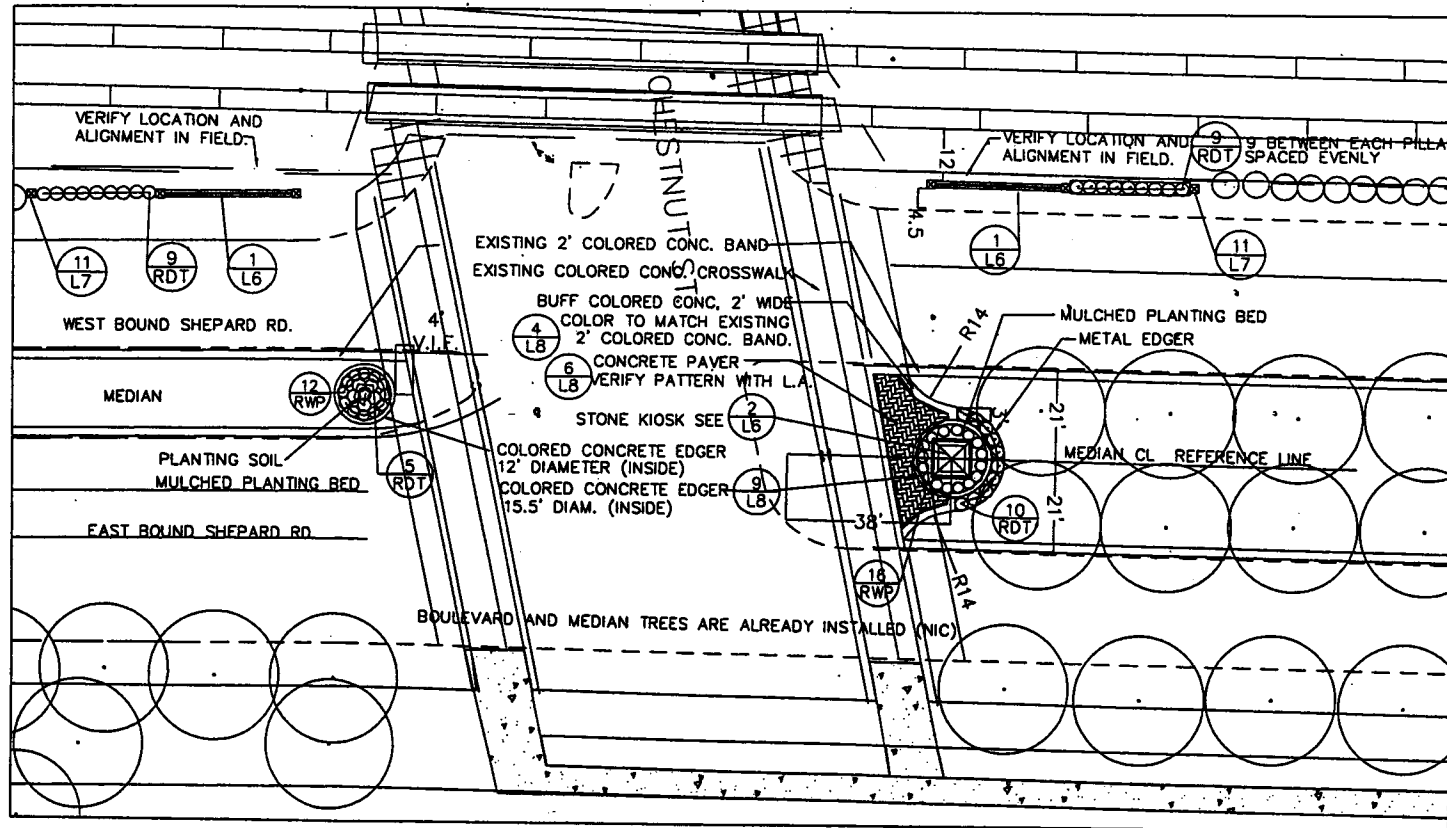
28-299

	DESIGNED	JEM	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNED <i>Tom Stoddard</i> DATE <i>8/28/02</i> REG. NO. <i>23988</i>	PREPARED BY STREET LIGHTING DIVISION FOR THE CITY OF ST. PAUL, DEPARTMENT OF PUBLIC WORKS <h2 style="text-align: center;">SHEPARD ROAD</h2>	PROJECT NUMBER	01-P-1200	STATE AID PROJECT NUMBER	164-020-88, 62-637-16		
	DRAWN	JEM			DRAWER NUMBER	15	CAD DRAWING NAME	JOHNEM/SHEPARDPAHSE3/SHEP3LTG003.DWG		
	APPROVED	TCS			DRAWING NUMBER	1677	DATE	10/15/01	SHEET LT8 OF LT8 SHEETS	

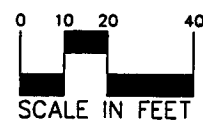
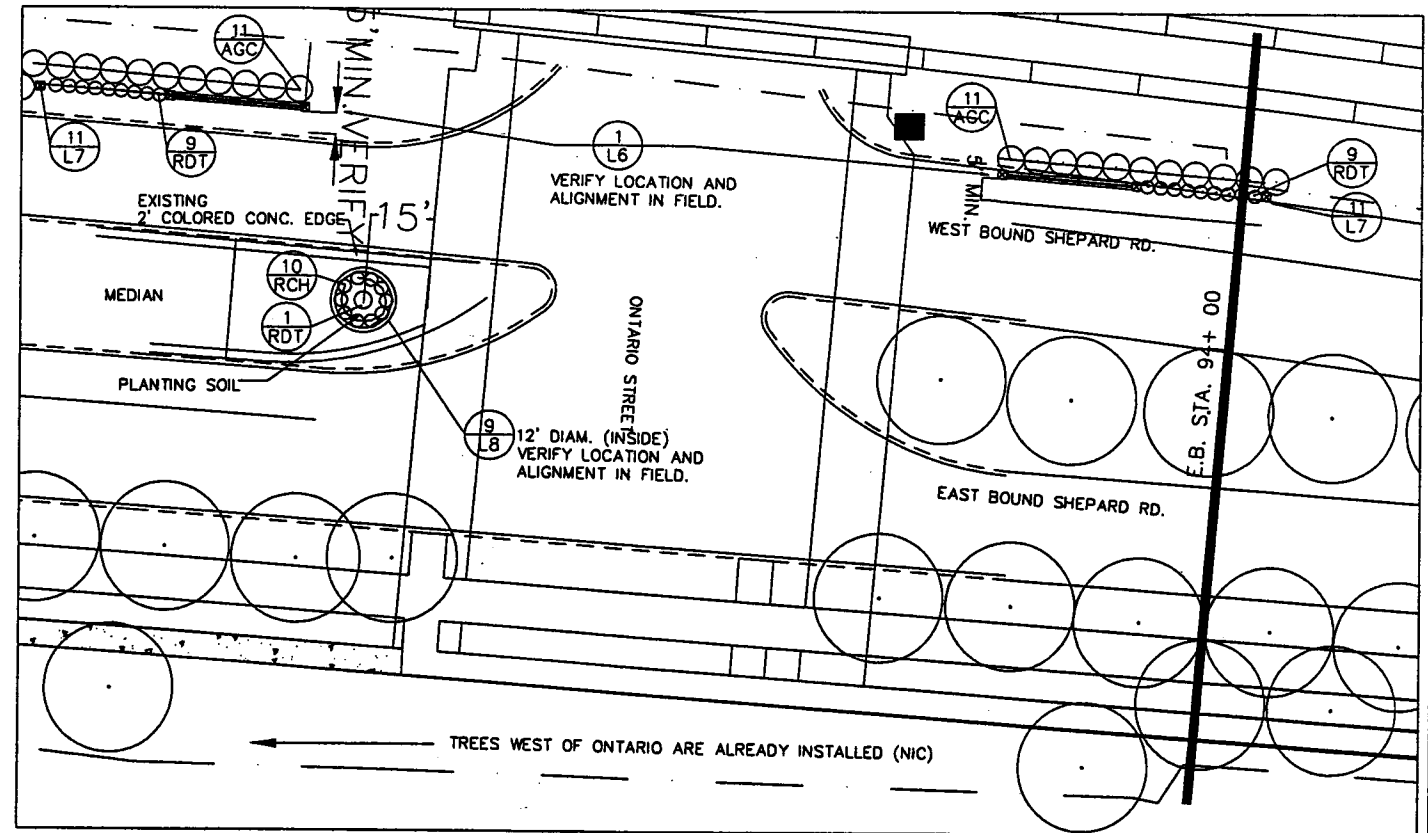




LANDSCAPE PLAN-EB STA. 80+00 TO 94+00



CHESTNUT MONUMENT & LANDSCAPE LAYOUT ENLARGEMENT



ONTARIO ST. MONUMENT & LANDSCAPE LAYOUT ENLARGEMENT

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Jody Martinez
 Date 9/16/02 Reg. No. 17548

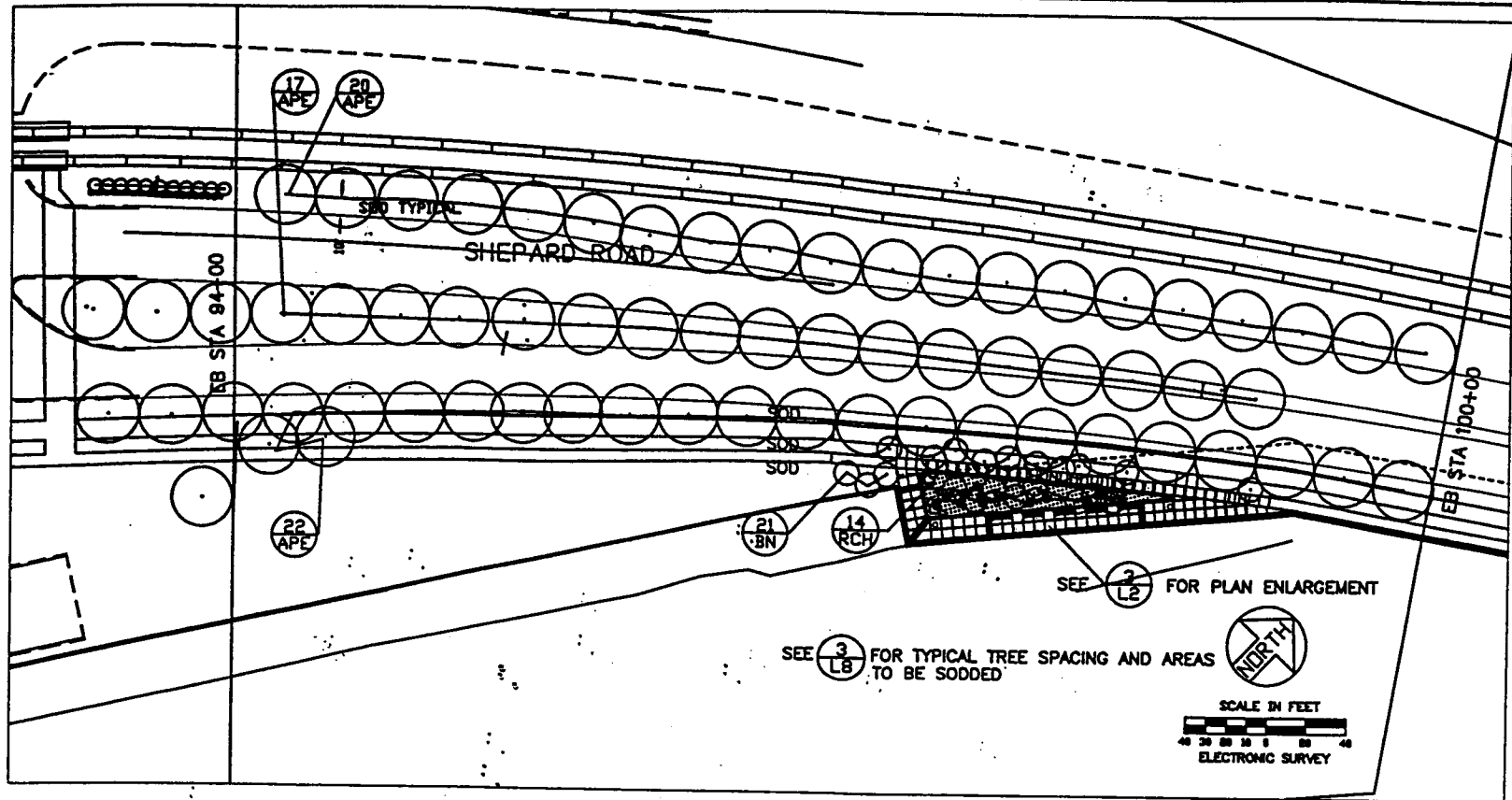
JOB NO. LP-00-05
 DR. #/DATE/APP. #/DATE
 DATE: 9/10/2002

DIVISION OF PARKS & RECREATION
 300 CITY HALL ANNEX
 25 WEST FOURTH STREET
 ST. PAUL, MINNESOTA 55102

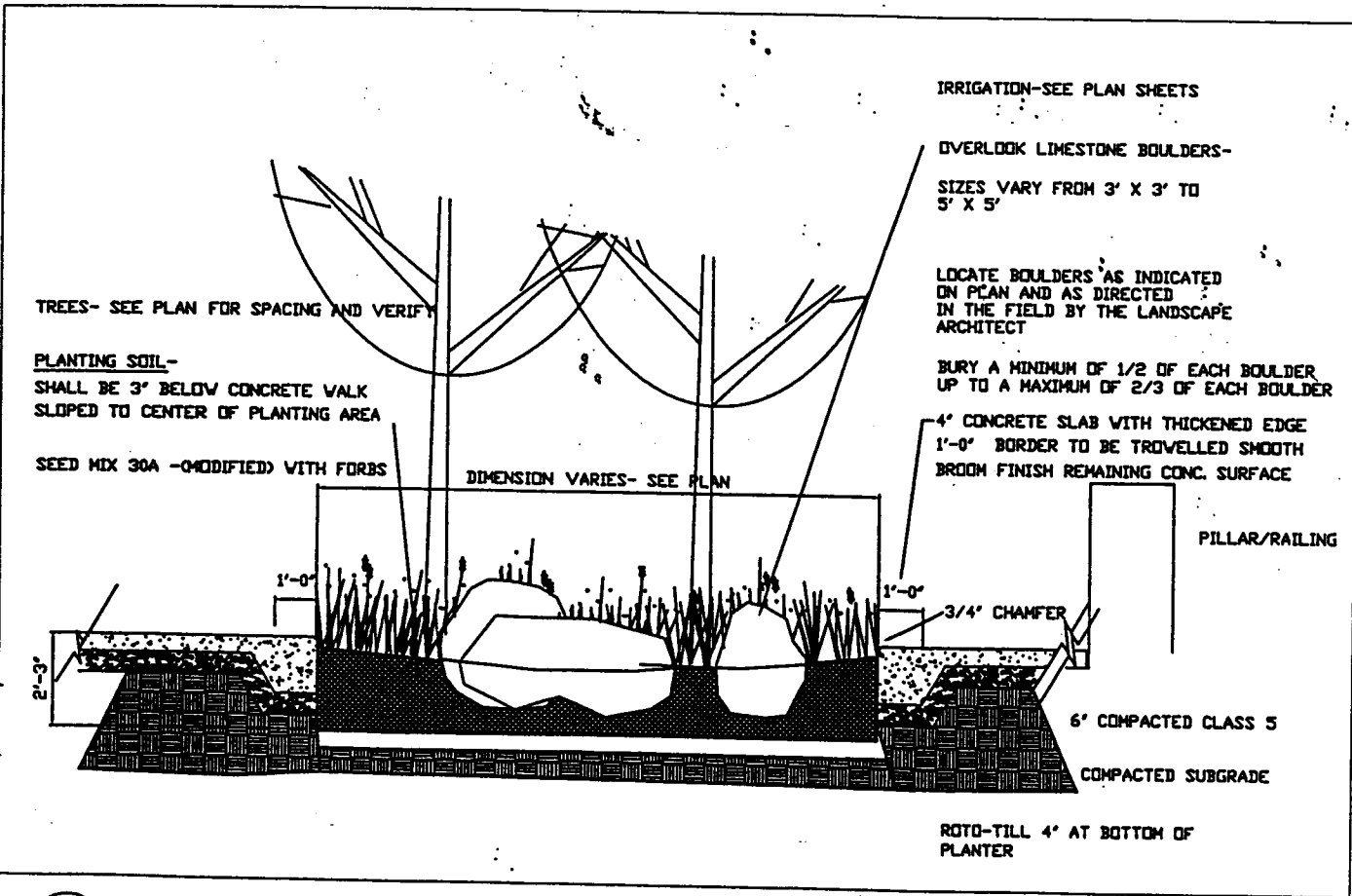
LANDSCAPE PLAN

SHEPARD ROAD LANDSCAPING
 PHASE 3

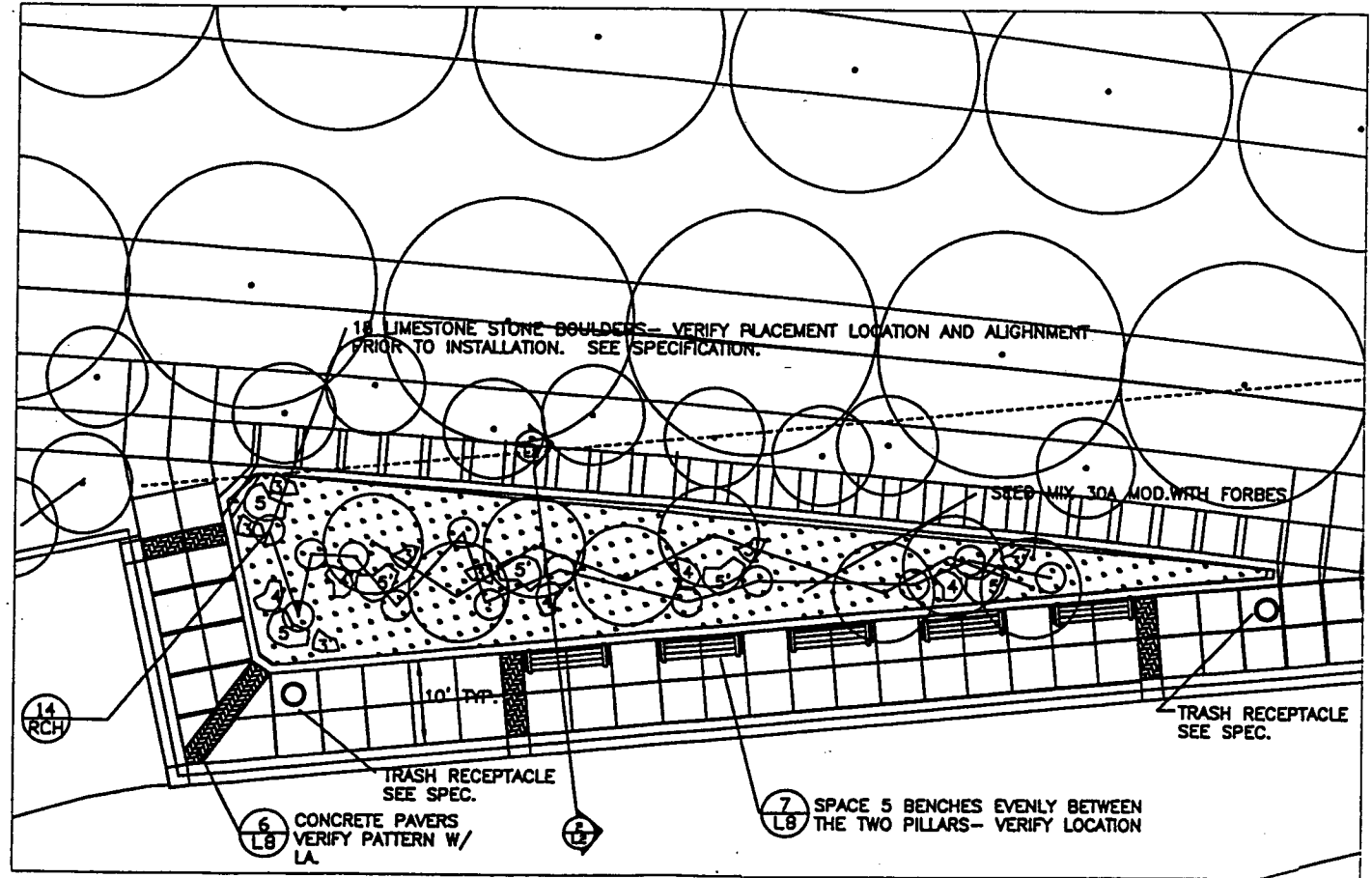
OF 14 SHEETS



1 LANDSCAPE PLAN- EB STA.94+00 TO EB STA.100+00
L2



2 PLANTING BED-SECTION
L2 NOT TO SCALE



3 LANDSCAPE PLAN PLAZA ELARGEMENT
L2 SCALE

S.A.P. 164-020-88, S.A.P. 62-637-16

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date of Issue: 10/2/88
John Marchese
10/2/88

10/16/88-88
10/16/88-88
10/16/88-88

DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102

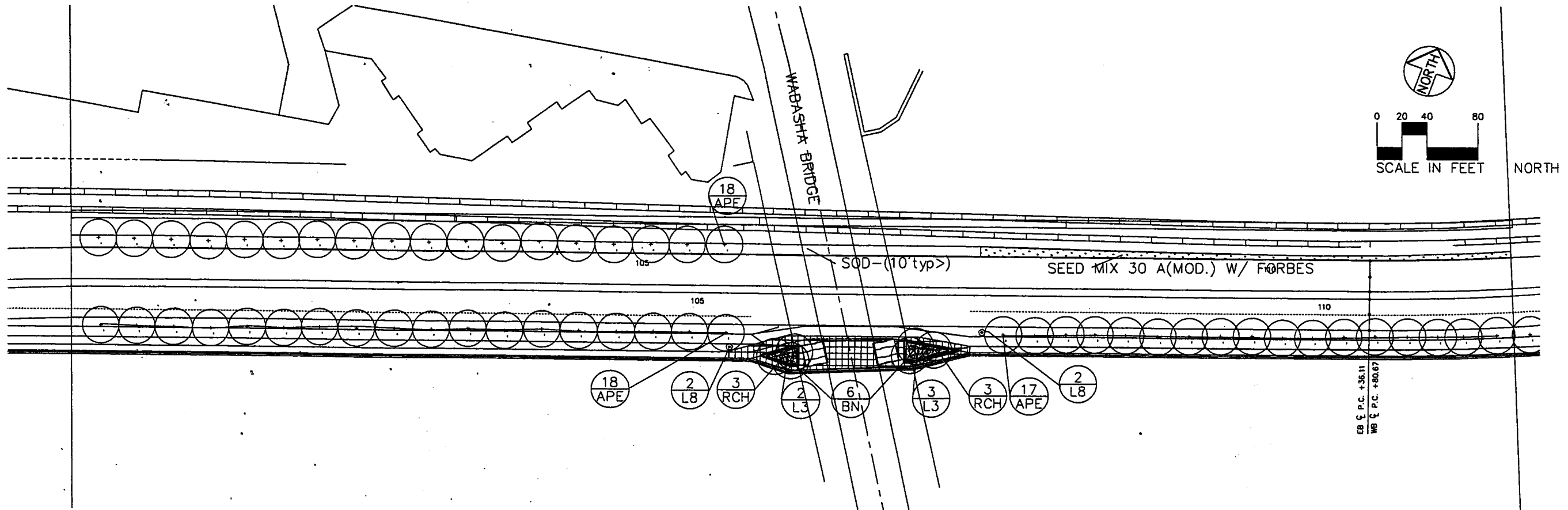
LANDSCAPE PLAN

REVISIONS:

SHEPARD ROAD LANDSCAPING
PHASE 3

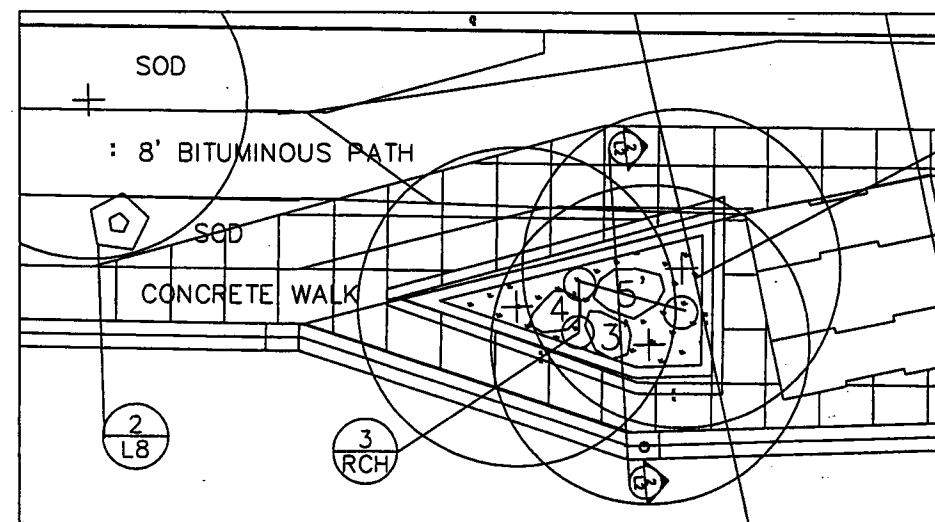
L2
OF 14 SHEETS

28-299



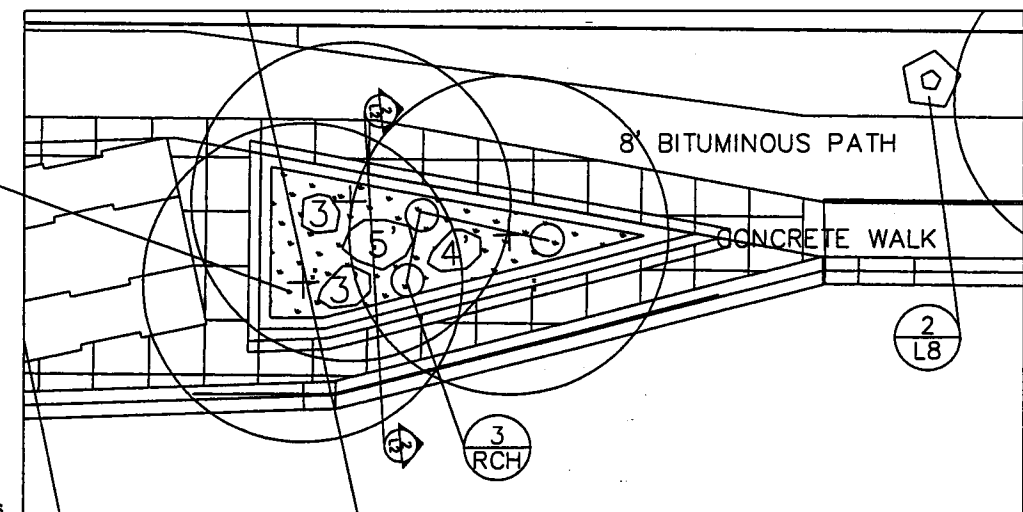
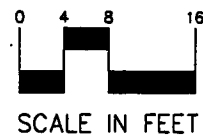
1 LANDSCAPE PLAN—EB STA. 100+00 TO EB STA. 111.50
 L3 SHEPARD/PHASE 3/PLAN SHEETS/L.3

NOTES
 SEE PAVING PLANS FOR PLANTER AND PAVING LAYOUT

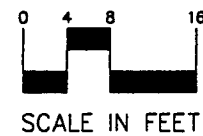


2 LANDSCAPE PLANTER(WAB. WEST)
 L3 SHEPARD/PHASE 3/PLAN SHEETS/L.3

SEED MIX 30A—MODIFIED WITH FORBES



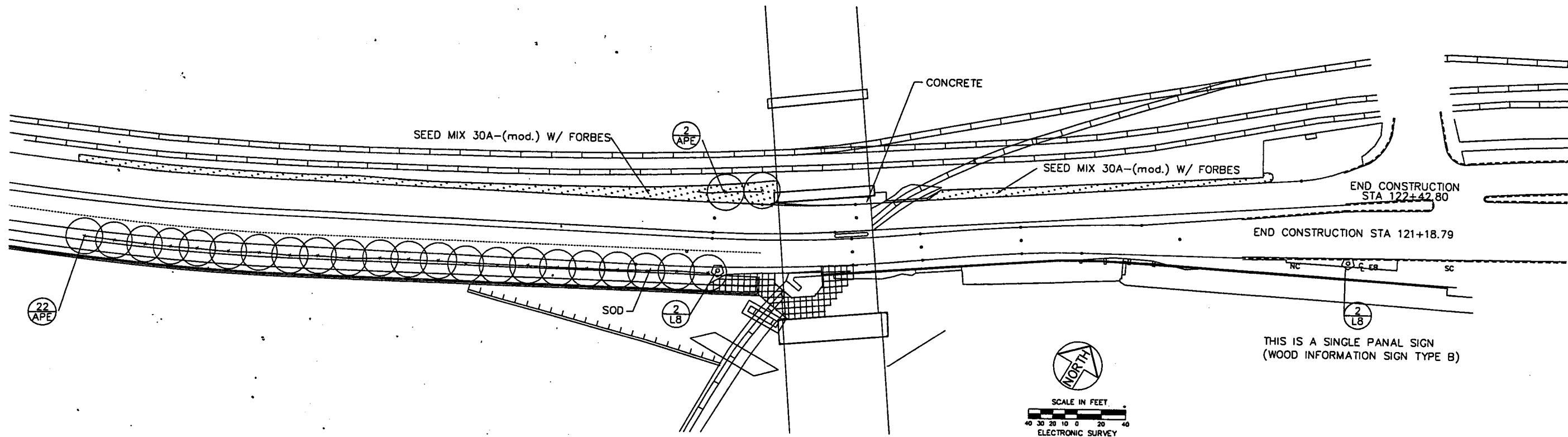
3 LANDSCAPE PLANTER (WAB EAST)
 L3 SHEPARD/PHASE 3/PLAN SHEETS/L.3



S.A.P. 164-020-88, S.A.P. 62-637-16

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota. **Jody Martinez**, Date: 9/11/02, Reg. No. 17248
 JOB NO. 164-020-88, DR. BY: JPM, DATE: 9/10/02
 DIVISION OF PARKS & RECREATION, 300 CITY HALL ANNEX, 25 WEST FOURTH STREET, ST. PAUL, MINNESOTA 55102
LANDSCAPE PLAN
SHEPARD ROAD LANDSCAPE PHASE 3
L3
 OF 14 SHEETS

28-299



1 LANDSCAPE PLAN-EB STA.111+50 TO 121+18
L4 SCALE DOSFILE

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
 Date: 9/11/02
 Reg. No. 17948
 Jody Martinez

Job No. 164-020-88
 Date in design: 8/10/02
 Date: 9/10/02

DIVISION OF PARKS & RECREATION
 300 CITY HALL ANNEX
 25 WEST FOURTH STREET
 ST. PAUL, MINNESOTA 55102

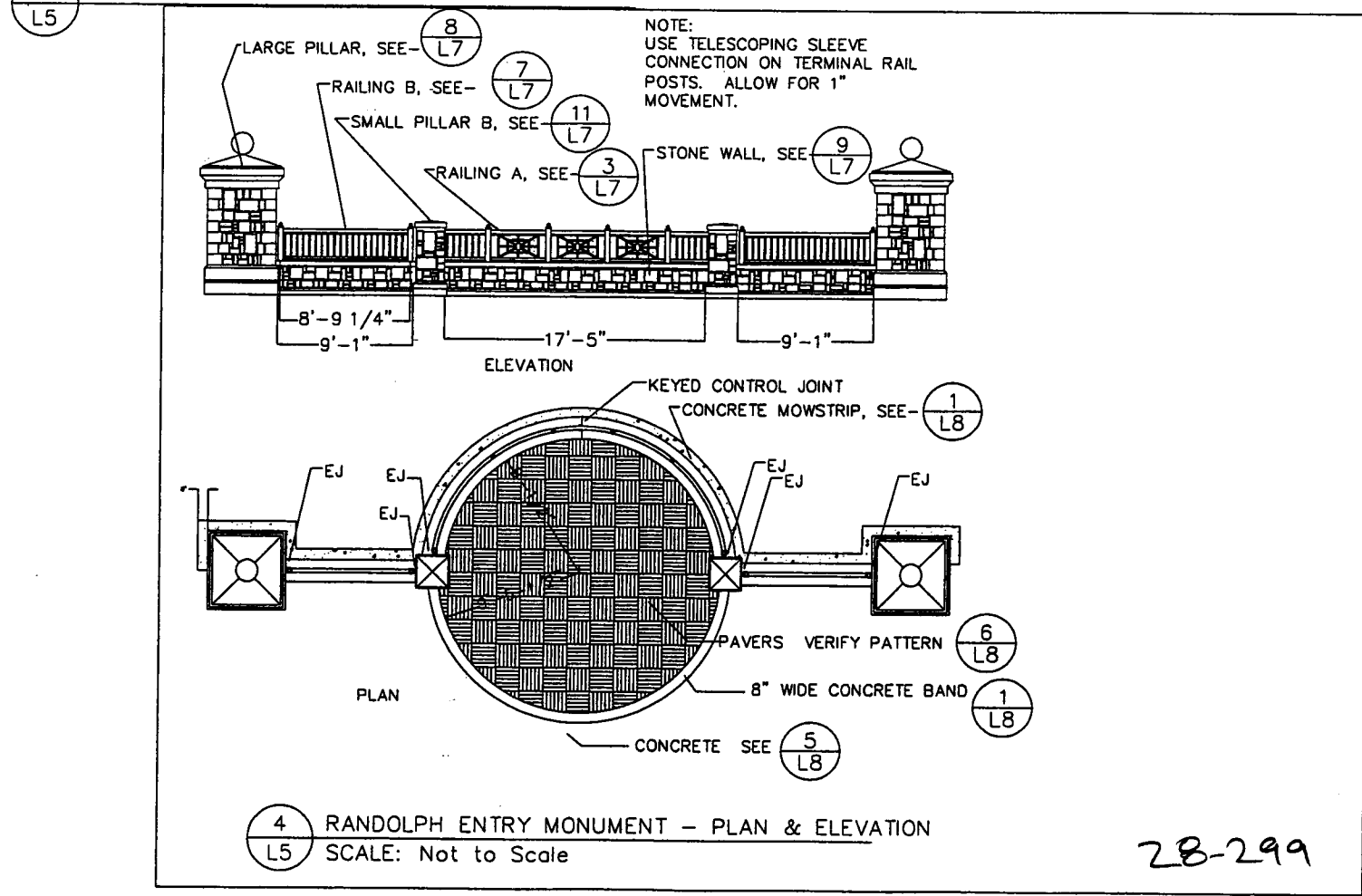
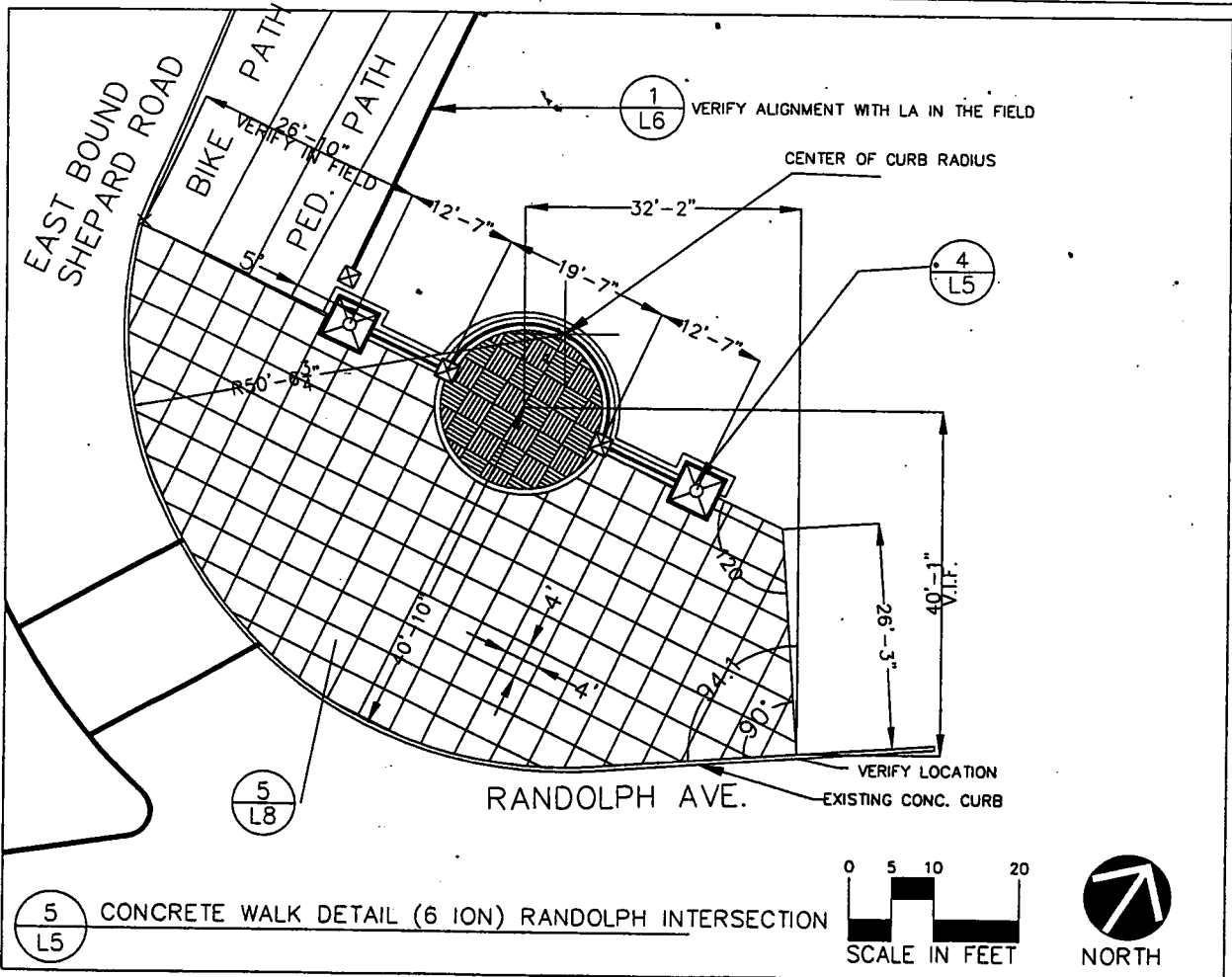
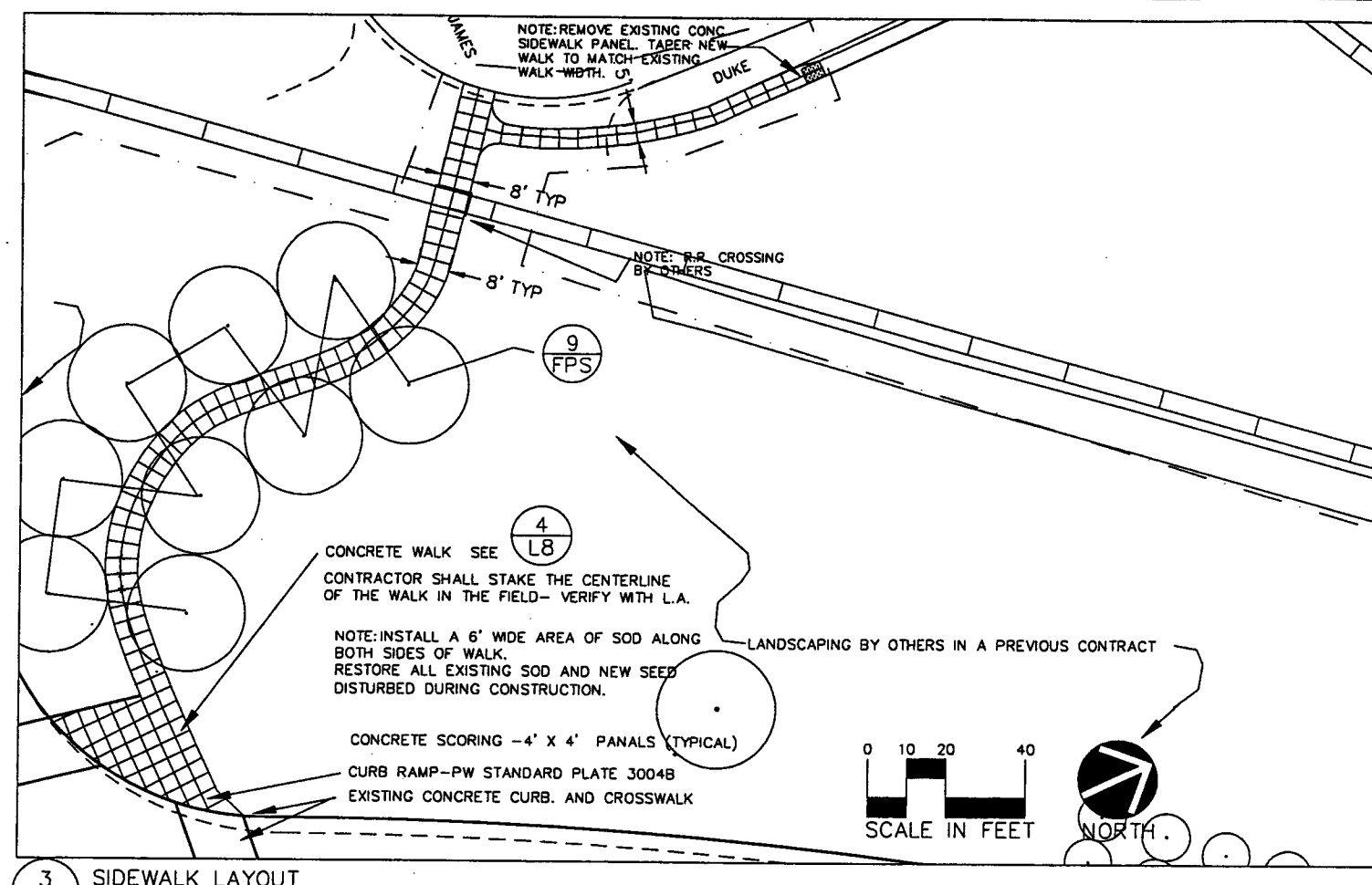
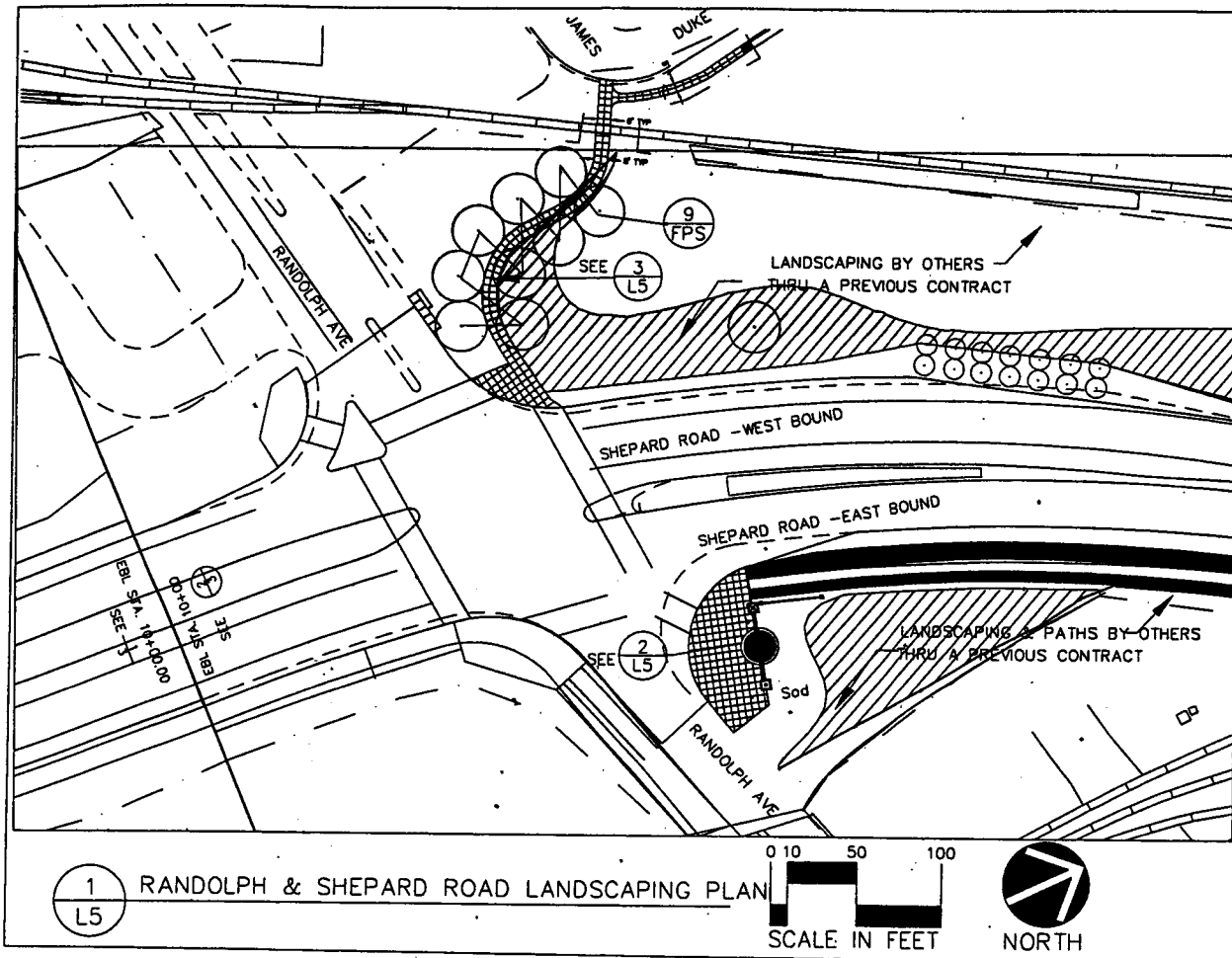
LANDSCAPE PLAN

SHEPARD ROAD LANDSCAPING
 PHASE 3

L4
 OF 14 SHEETS

28-299

S.A.P. 164-020-88, S.A.P. 62-637-16

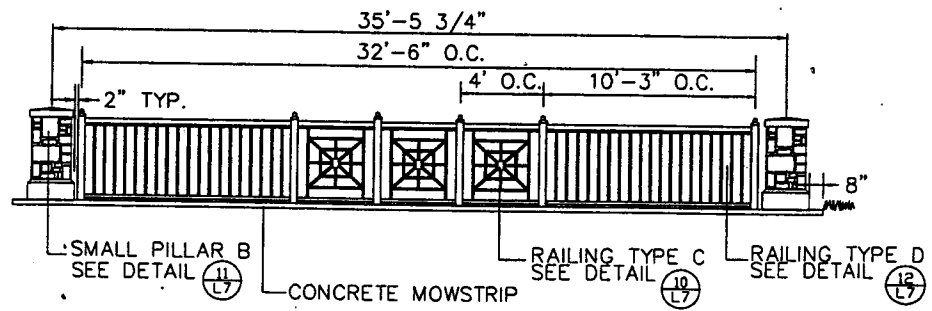


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
 Jody Martinez
 No. 17548
 Date: 11/10/07

JOB NO. 164-020-88
 DATE: 8/7/2008
 DIVISION OF PARKS & RECREATION
 300 CITY HALL ANNEX
 25 WEST FOURTH STREET
 ST. PAUL, MINNESOTA 55102

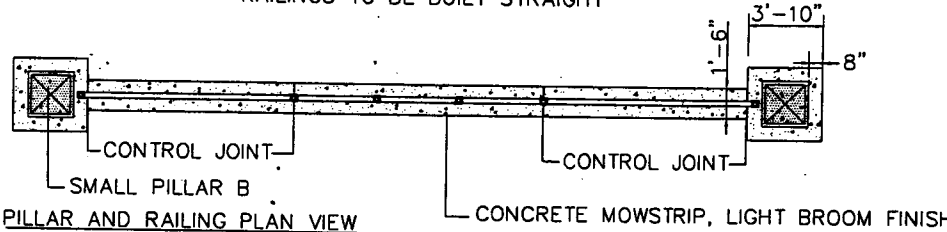
LANDSCAPE PLAN
 SHEPARD ROAD LANDSCAPING
 PHASE 3
 L5
 OF 14 SHEETS

28-299



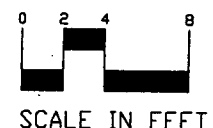
PILLAR AND RAILING ELEVATION

NOTE:
WHERE PILLARS & RAILING ARE PLACED ON SLOPE, TOP & BOTTOM RAILS SHALL FOLLOW GRADE (DETERMINE PITCH IN FIELD) WHILE PILLARS, POSTS, AND PICKETS REMAIN PLUMB. PAINT ALL RAILS. SEE SPEC SECTION PROVIDE SAMPLE FOR APPROVAL BY L.A. SUBMIT SHOP DRAWINGS FOR ALL RAILINGS RAILINGS TO BE BUILT STRAIGHT

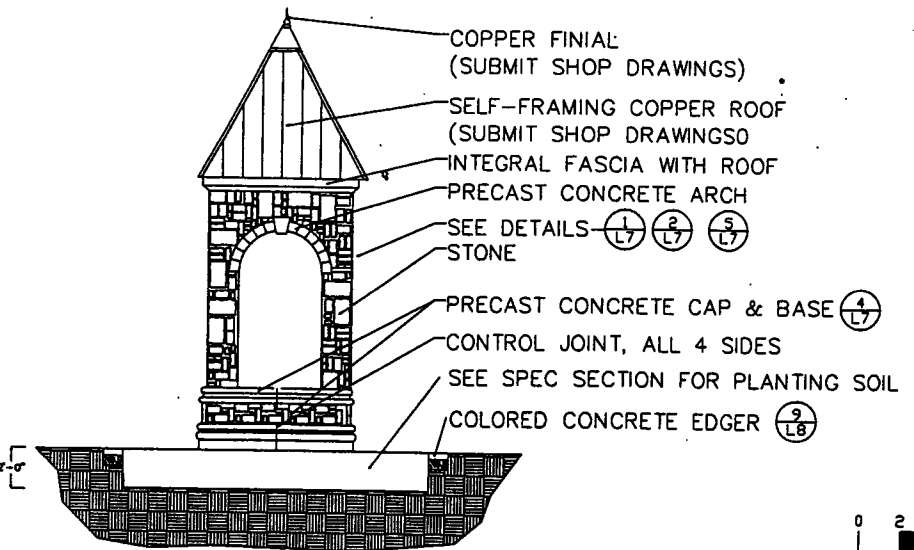


PILLAR AND RAILING PLAN VIEW

(1) ENTRY PILLAR WITH RAIL, TYPE C (L6)

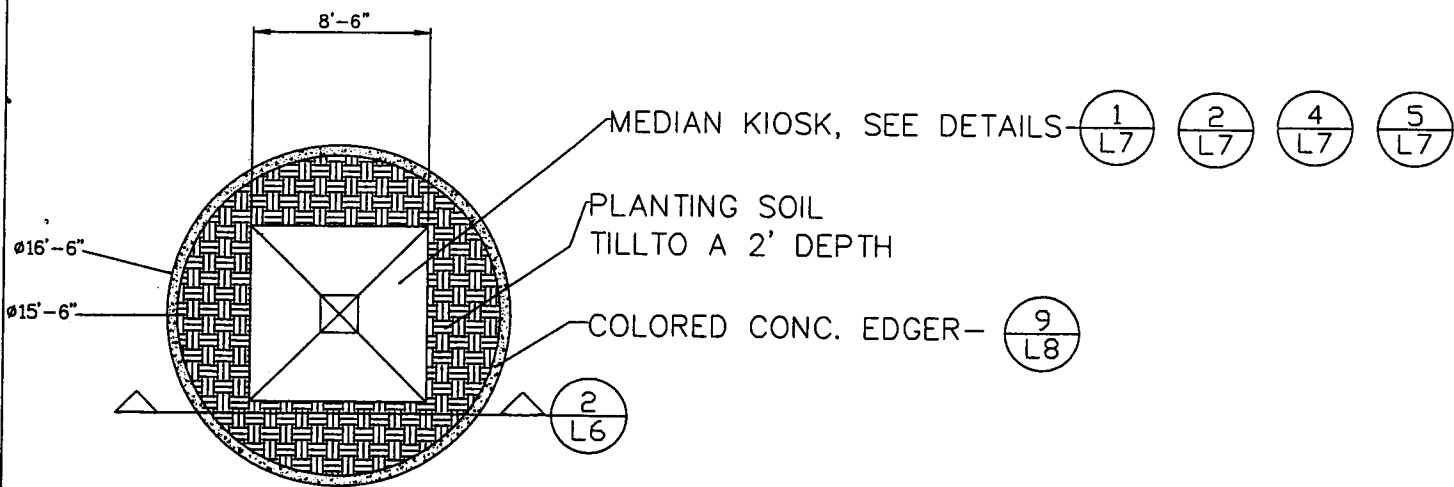
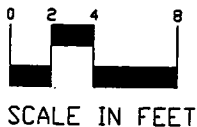


NOTE: SUBMIT SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT FOR ALL PRECAST CAPS AND BASES.

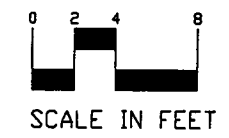


(2) MEDIAN KIOSK - ELEVATION (L6)

SEE DETAIL (3/L6) FOR PLAN VIEW



(3) KIOSK - PLAN VIEW (L6)



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
John J. Kelly
 Date: 7/14/02 Reg. No. 17548

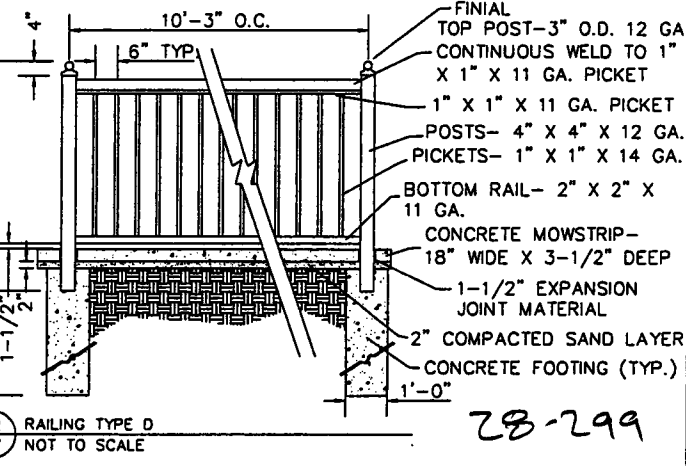
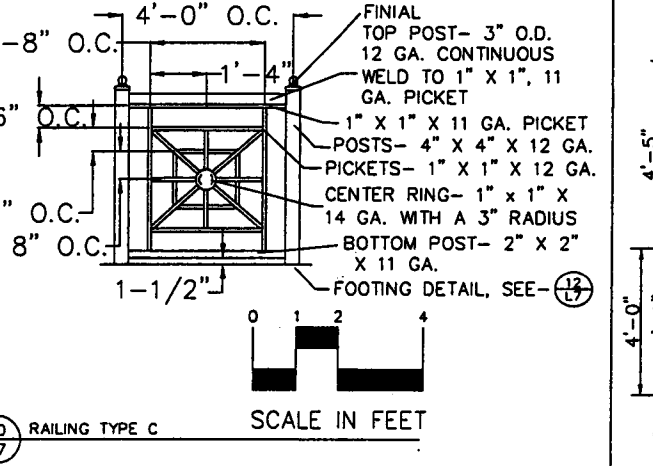
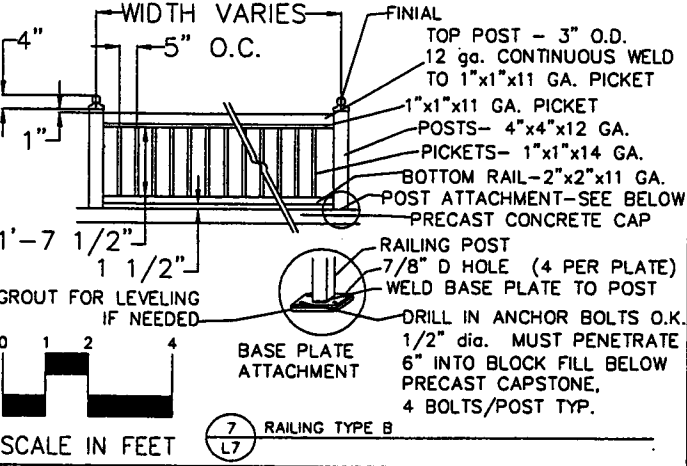
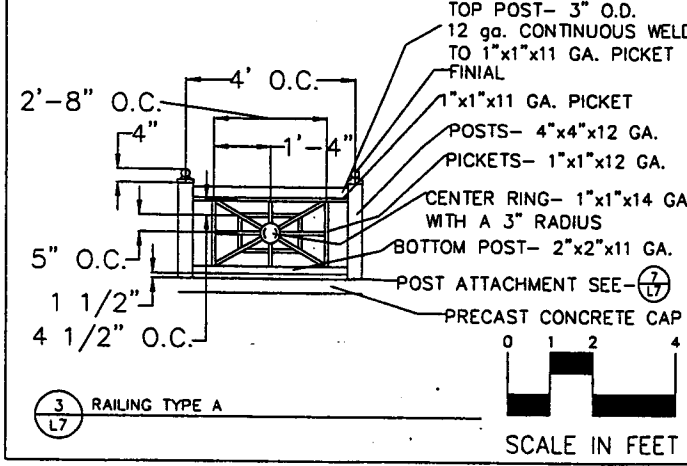
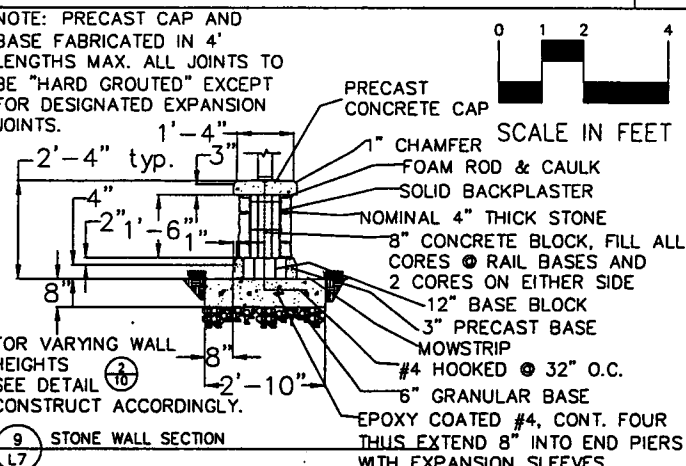
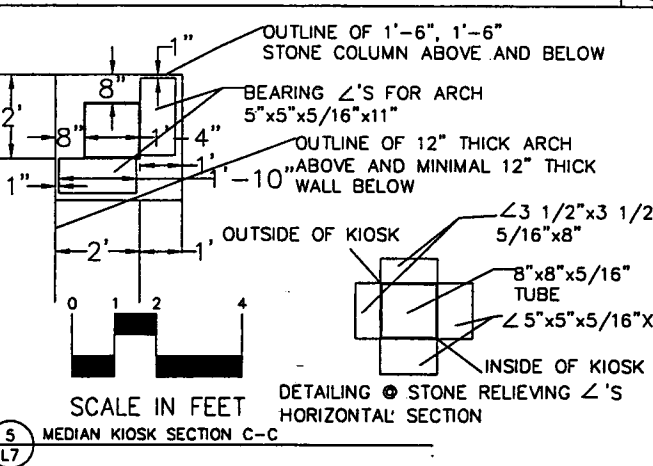
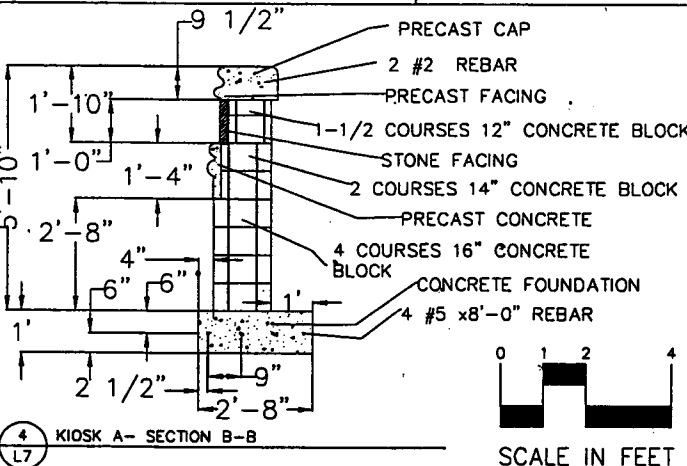
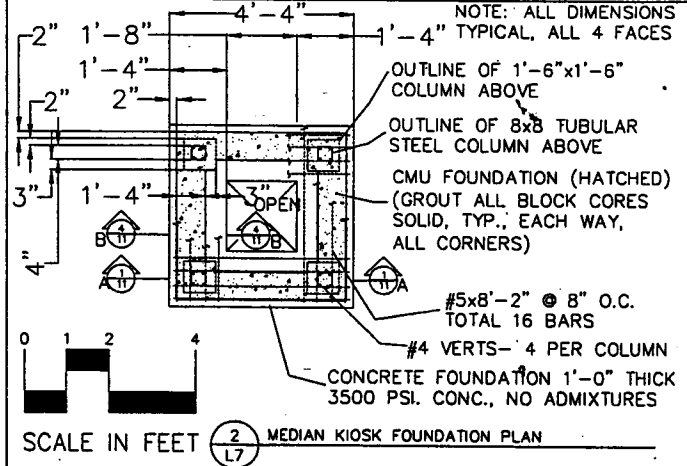
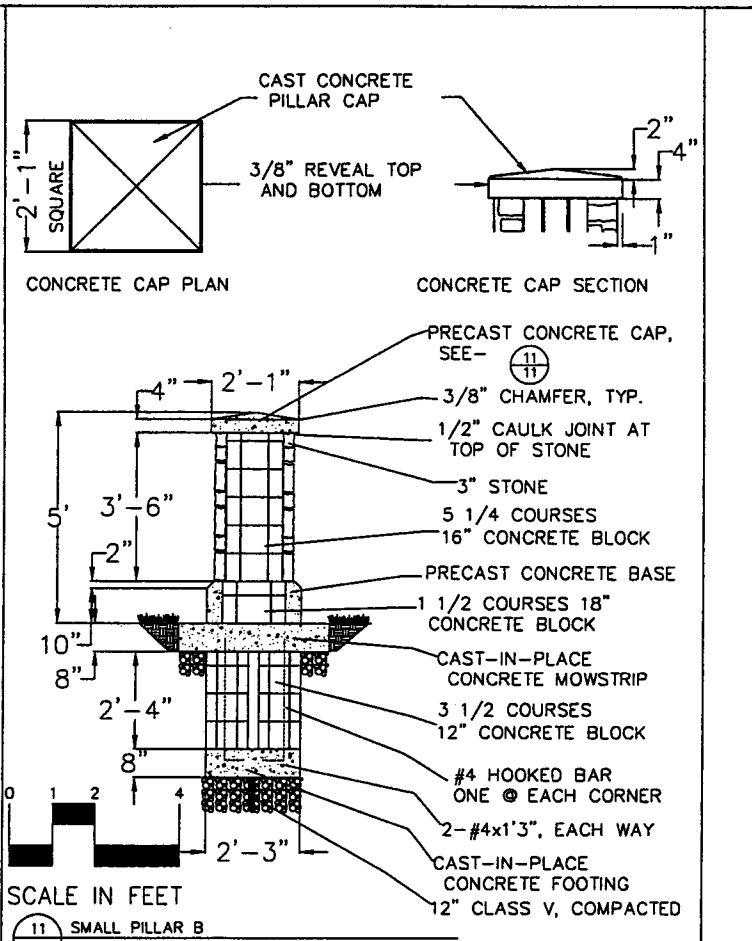
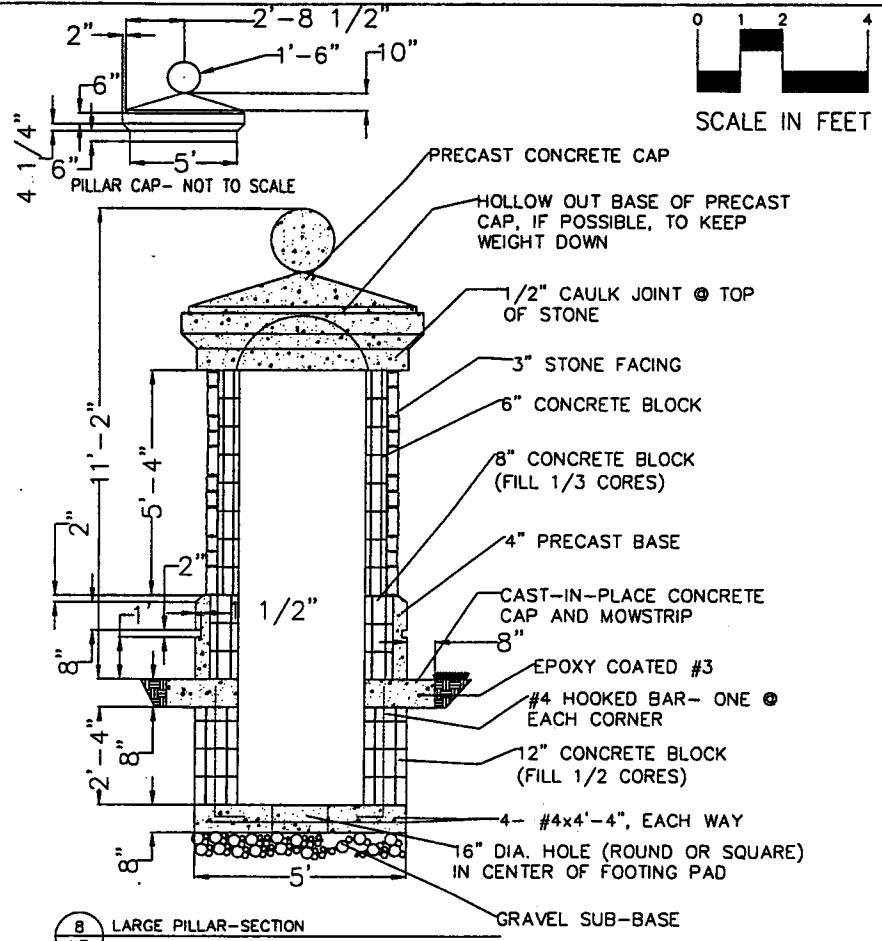
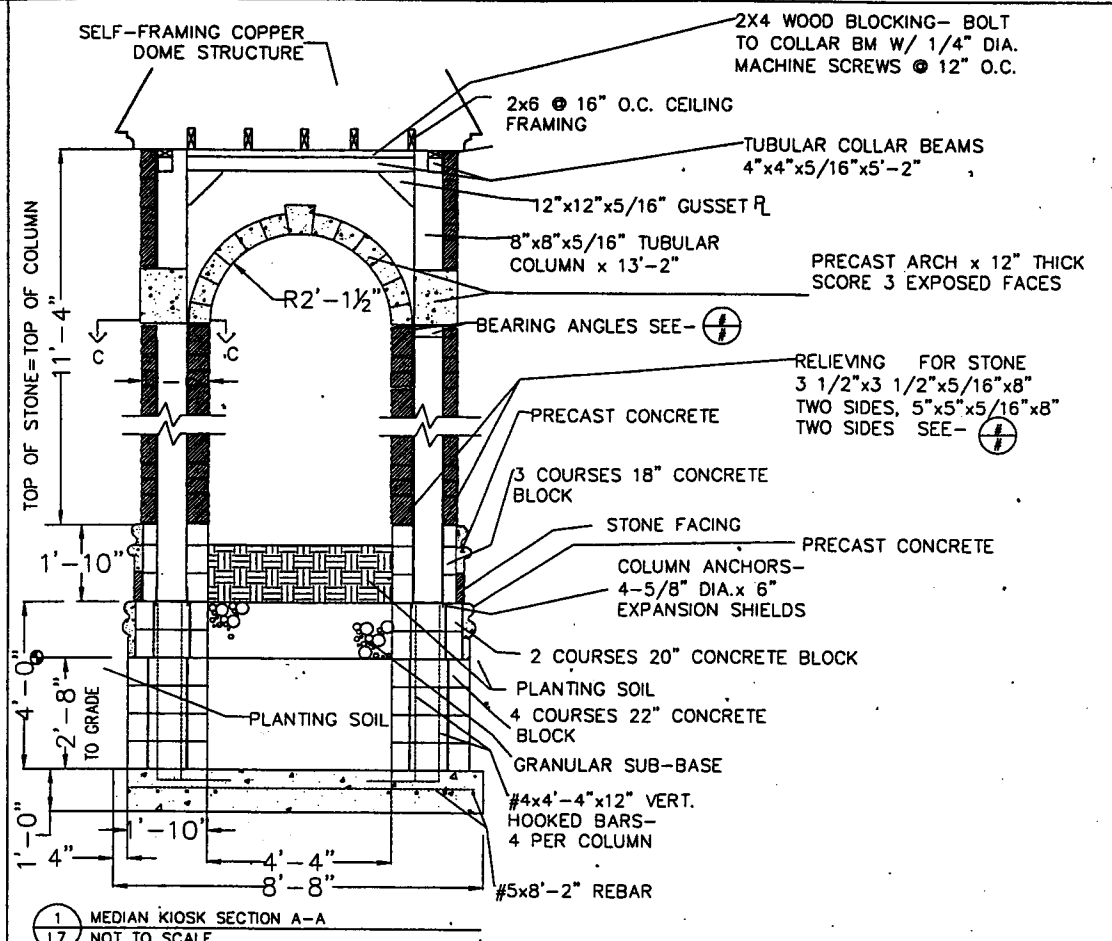
Cap No: 164-020-88
 Date: 8/10/2002
 Drawn by: JJK
 Checked by: JJK

DIVISION OF PARKS & RECREATION
 300 CITY HALL ANNEX
 25 WEST FOURTH STREET
 ST. PAUL, MINNESOTA 55102

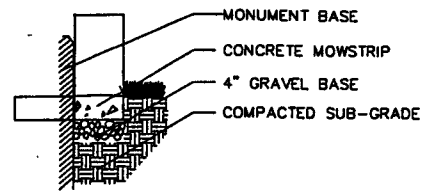
DETAILS
 REVISIONS:

SHEPARD ROAD LANDSCAPING
 PHASE 3

L6
 OF 16 SHEETS



I hereby certify that the plans, specifications, or conditions approved hereon were prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer in the State of Minnesota.
 Date 9/16/02 Reg. No. 1857
 JOB NO. LR-00-05 DR. W. CLM SUP. DATE: 9/10/02
 DIVISION OF PARKS & RECREATION
 300 CITY HALL ANNEX
 25 WEST FOURTH STREET
 ST. PAUL, MINNESOTA 55102
DETAILS
 SHEPARD ROAD LANDSCAPING
 PHASE 3
 L7
 OF 14 SHEETS

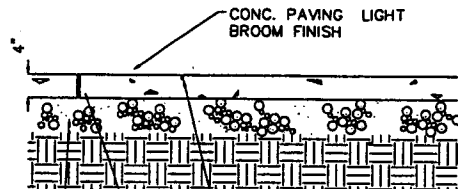


NOTE:
SCORE CONC. MOWING STRIP W/ 1/4\"/>

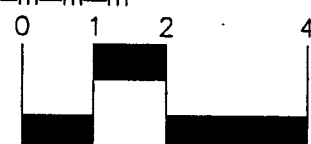


SCALE IN FEET

1 MOWING STRIP DETAIL
L8

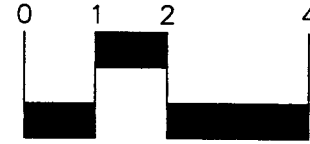
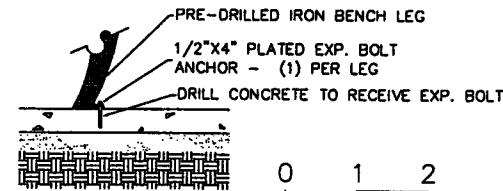


NOTE:
LOCATE EXPANSION & CONTROL JOINTS AS SHOWN ON PLANS
4\"/>



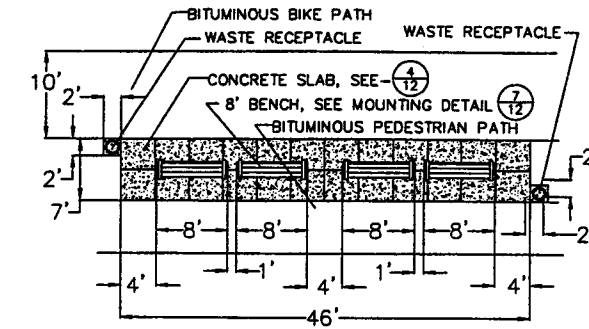
SCALE IN FEET

4 CONCRETE WALK
L8



SCALE IN FEET

7 BENCH MOUNTING DETAIL
L8



8 BENCH AREA PLAN
SCALE: NOT TO SCALE

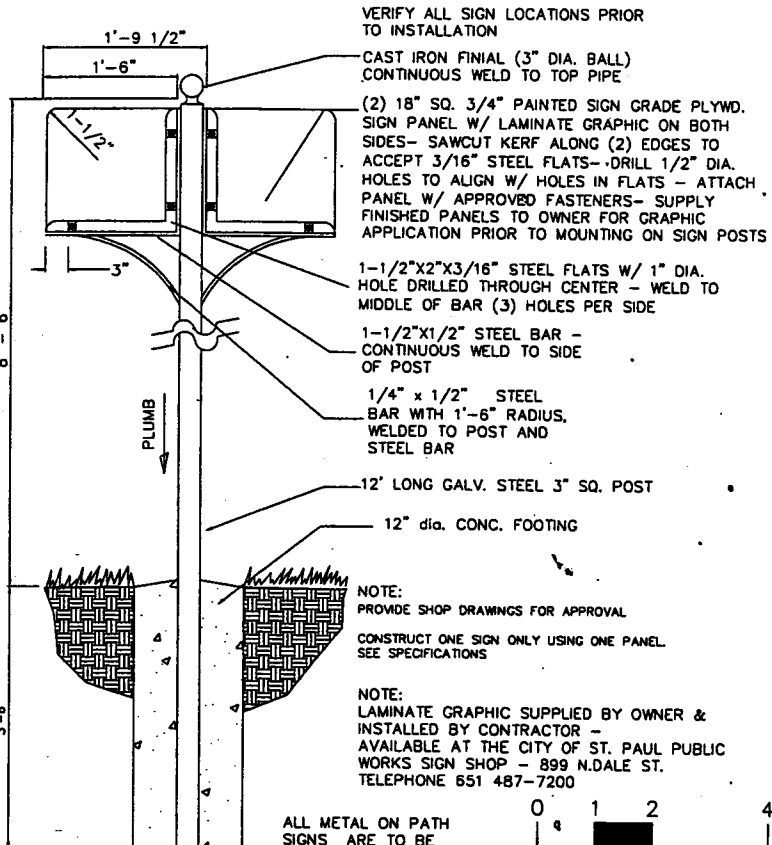


SCALE IN FEET

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Date: 9/10/2002
Reg. No. 91102
Jody Martinez

JOB NO. 198-00-05
DATE: 8/10/2002
DRAWN: KCV SUPP.
CHECKED: JMM

DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102

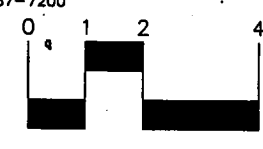


VERIFY ALL SIGN LOCATIONS PRIOR TO INSTALLATION
CAST IRON FINIAL (3\"/>

1-1/2\"/>

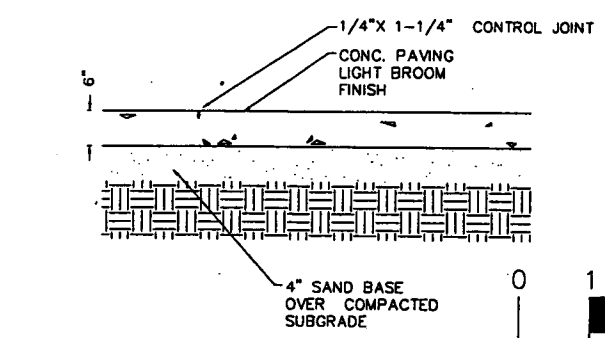
NOTE:
PROVIDE SHOP DRAWINGS FOR APPROVAL
CONSTRUCT ONE SIGN ONLY USING ONE PANEL
SEE SPECIFICATIONS
NOTE:
LAMINATE GRAPHIC SUPPLIED BY OWNER & INSTALLED BY CONTRACTOR - AVAILABLE AT THE CITY OF ST. PAUL PUBLIC WORKS SIGN SHOP - 899 N.DALE ST. TELEPHONE 651 487-7200

ALL METAL ON PATH SIGNS ARE TO BE PAINTED. SEE SPECIFICATIONS

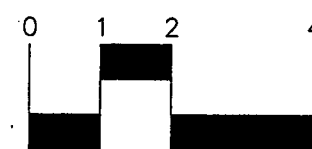


SCALE IN FEET

2 DOUBLE PATH SIGN DETAIL
L8

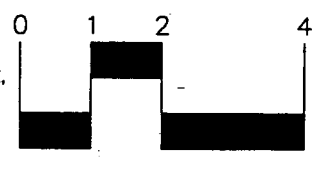
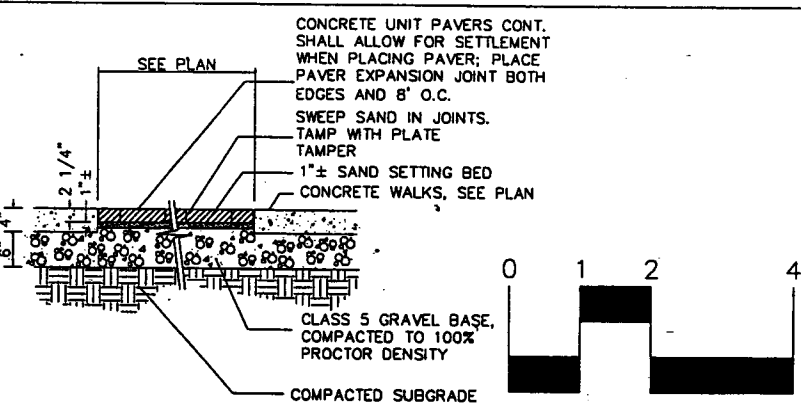


NOTE:
SEE PLANS FOR EXPANSION & CONTROL JOINT SPACING & LOCATIONS



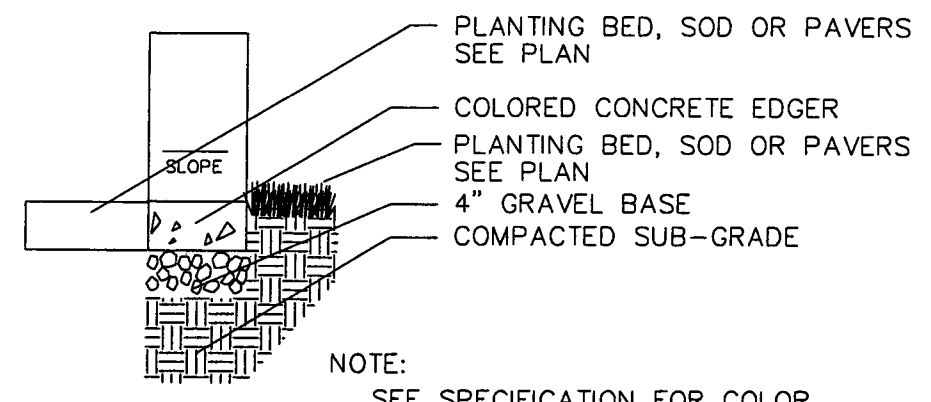
SCALE IN FEET

5 CONCRETE WALK DETAIL (6 IN.)
L8



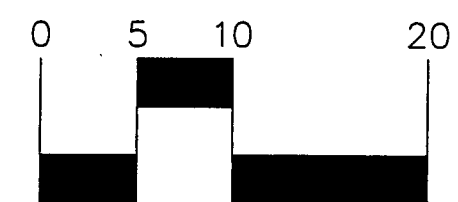
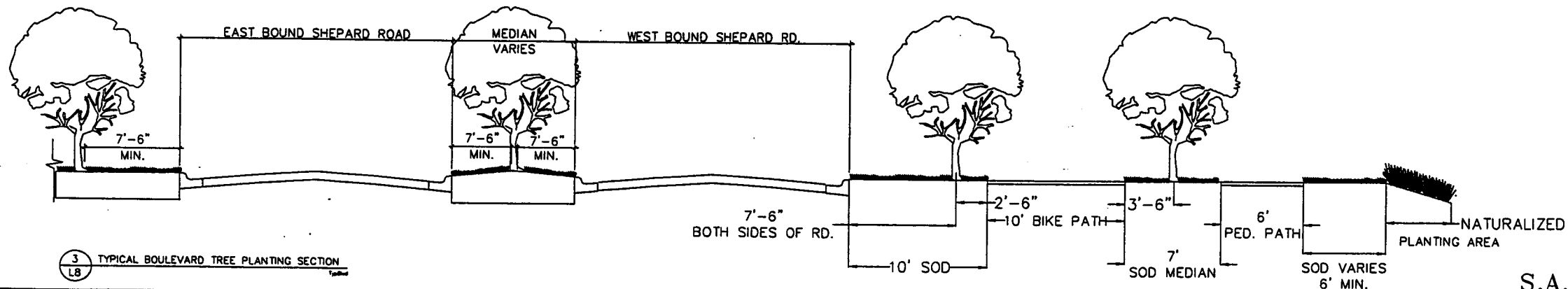
SCALE IN FEET

6 TYPICAL BRICK PAVING DETAIL
L8



NOTE:
SEE SPECIFICATION FOR COLOR
SLOPE SURFACE TO DRAIN

9 COLORED CONCRETE EDGER
L8 SCALE: NOT TO SCALE



SCALE IN FEET

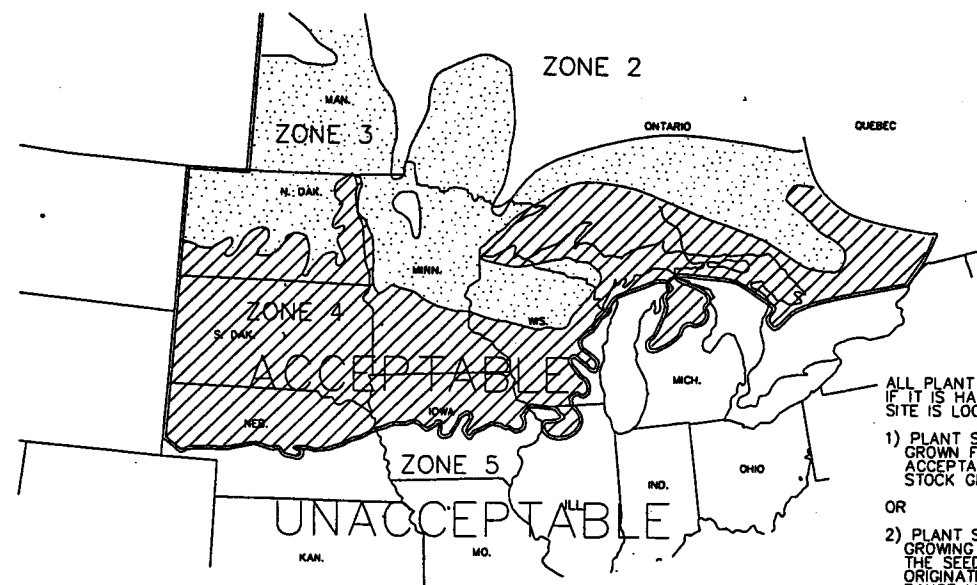
3 TYPICAL BOULEVARD TREE PLANTING SECTION
L8

S.A.P. 164-020-88, S.A.P. 62-637-16
28-299

DETAILS
REVISIONS:

SHEPARD ROAD LANDSCAPING
PHASE 3

L8
OF 14 SHEETS



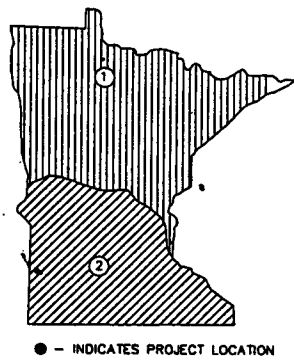
ZONE 1 BELOW -50 F
 ZONE 2 -50 to -40
 ZONE 3 -40 to -30
 ZONE 4 -30 to -20

ALL PLANT STOCK SHALL BE DEEMED ACCEPTABLE FOR HARDINESS IF IT IS HARDY TO THE MINNESOTA ZONE WHERE THE PROJECT SITE IS LOCATED AND:

- 1) PLANT STOCK CAN BE DOCUMENTED AS CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN ON THE ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS.
- OR
- 2) PLANT STOCK, IF GROWN OUTSIDE THE ACCEPTABLE GROWING RANGE LIMITS, CAN BE DOCUMENTED AS HAVING THE SEED SOURCE AND ROOT AND GRAFT STOCK ORIGINATING FROM WITHIN THE ACCEPTABLE GROWING RANGE LIMITS.

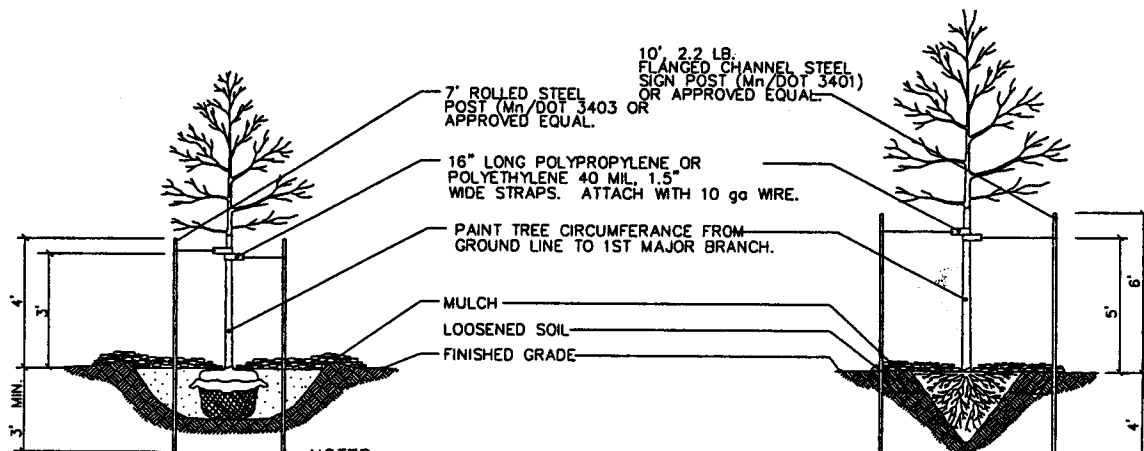
ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS
SOURCE: U.S.D.A. PLANT HARDINESS ZONE MAP

- NOTES:
1. BARE ROOT PERENNIALS MUST BE INSTALLED IN THE SPRING BY JUNE 1ST. IF PLANTING IN FALL, FOLLOW FALL DECIDUOUS PLANTING DATES.
 2. ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
 3. FALL PLANTING MAY NOT BE RECOMMENDED OR ALLOWED. SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS. THE FOLLOWING BARE ROOT PLANTS ARE NOT RECOMMENDED FOR FALL INSTALLATION: HAWTHORN, RUSSIAN OLIVE, DOGWOOD, POPLAR, HACKBERRY, LINDEN, IRONWOOD, HONEYLOCUST, BIRCH, MOUNTAIN ASH, MAPLE, WILLOW, CRABAPPLE, PLUM/CHERRY, OAKS, AND SUMAC.



	SPRING				FALL	
	PERENNIALS	CONIFEROUS	DECIDUOUS	SEEDLINGS	DECIDUOUS	CONIFEROUS
1	MAY 1 TO JUNE 15	APRIL 21 TO JUNE 1	APRIL 21 TO JUNE 1	APRIL 21 TO JUNE 1	OCT. 1 TO NOV. 1	AUG. 25 TO SEPT. 15
2	MAY 1 TO JUNE 15	APRIL 7 TO MAY 17	APRIL 7 TO JUNE 1	APRIL 7 TO MAY 17	OCT. 10 TO NOV. 15	AUG. 25 TO SEPT. 15

OPTIMUM PLANTING DATE ZONES IN MINNESOTA



- NOTES:
1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRE. APPLICABLE TO DECIDUOUS TREES. PLACE OUTSIDE OF ROOT BALL. DRIVE PLUMB REGARDLESS OF OVER 100 mm (4") CALIPER AND GROUND SLOPE.
 2. REQUESTS TO SUBSTITUTE RUBBER HOSE AND WIRE GUYING SYSTEMS WILL NOT BE APPROVED.
 3. TREE STAKING IS NOT REQUIRED UNLESS SPECIFIED OR NECESSARY TO MAINTAIN TREES IN A PLUMB CONDITION WHERE VANDALISM, SOIL, OR WIND CONDITIONS ARE A PROBLEM, OR AS REQUESTED BY THE ENGINEER.
 4. REMOVE AFTER ONE YEAR.

STANDARD TREE STAKING / GUYING DETAIL LARGE MACHINE - TRANSPLANT TREE STAKING / GUYING DETAIL

FORM A DOUBLE-LAYERED CYLINDER USING 0.25" GRID GALVANIZED AND WELDED WIRE MESH AND (HARDWARE CLOTH). OVERLAP THE CUT END 2".

DRIVE TWO 1"x1" OPPOSING WHITE OAK STAKES INTO THE GROUND 7" FROM THE CENTER OF THE TREE STEM.

SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER SCREWS AND WASHERS OR RATCHET-LOCKING TIES ALONG THE OVERLAP. SPACE APPROXIMATELY 4" ON CENTER ALONG THE OVERLAP.
 - SCREWS SHALL BE ROUND HEAD GALVANIZED 1/8" DIA. x 3/4" LONG WITH WASHERS.
 OR
 - RATCHET-LOCK TIES SHALL BE NYLON AND AT LEAST 8" LONG.

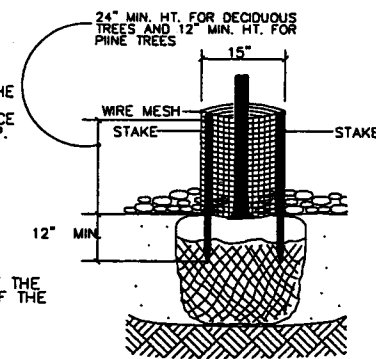
IMBED THE LOWER EDGE OF THE MESH CYLINDER 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.

CUT EDGES WILL NOT BE PERMITTED AT THE TOP OF THE CYLINDER. CUT THE STAKE FLUSH WITH THE TOP OF THE CYLINDER.

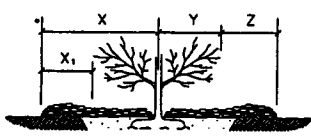
MULCH WITHIN THE CYLINDER SHALL NOT EXCEED 3" DEPTH AND SHALL BE PULLED BACK FROM THE TRUNK AS SPECIFIED IN MULCH PLACEMENT DETAIL.

THE BOTTOM WHORL OF PINE BRANCHES MAY HAVE TO BE REMOVED TO PERMIT INSTALLATION OF 12" MIN. HEIGHT RODENT GUARDS.

INSTALL ON ALL DECIDUOUS AND PINE TREES, DO NOT INSTALL ON SPRUCE TREES.



RODENT PROTECTION DETAIL

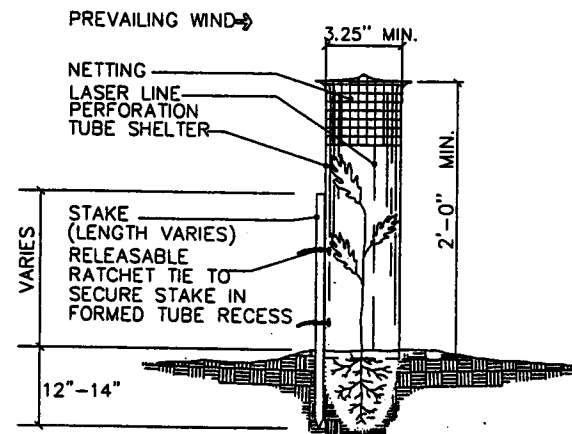


SUBSIDING OR DETERIORATING MULCH IS ACCEPTABLE THROUGHOUT THE CONTRACT HOWEVER, THE MULCH DEPTH MUST BE MAINTAINED AT A MINIMUM 3" DEPTH AT ALL TIMES AND UPON FINAL ACCEPTANCE REPLACEMENT MULCH SHALL BE REQUIRED TO PROVIDE THE MINIMUM DEPTH SPECIFIED WHEN SUBSIDENCE OR LOSS IS EXCESSIVE OR WHEN THE CONTRACTOR'S OPERATIONS HAVE CONTAMINATED THE MULCH WITH SOIL.

- NOTE:
1. REMOVE MULCH PLACED TO A DEPTH GREATER THAN THAT SPECIFIED WHEN DIRECTED BY THE ENGINEER.
 2. PULL MULCH BACK NO LESS THEN 3" AND NO MORE THAN 6" FROM THE TRUNK

TYPE OF PLANT	X CENTER OF PLANT TO MULCH LINE	X ₁ EDGE OF BRANCHING TO MULCH LINE	Y DEPTH OF MULCH	Z DEPTH OF MULCH
CONIFEROUS TREES	VARIABLES	3' MIN.	4"-6"	4"-6"
DECIDUOUS TREES	3' MIN.	N/A	4"-6"	4"-6"
CONIFEROUS SHRUBS	VARIABLES	3' MIN.	3"-4"	4"-6"
DECIDUOUS SHRUBS	3' MIN.	N/A	4"-6"	4"-6"
VINES	2' MIN.	N/A	4"-6"	4"-6"
PERENNIALS	VARIABLES	2' MIN.	2"-4"	2"-4"
MACHINE-TRANSPLANTED TREES	12" BEYOND EDGE OF HOLE		4"-6"	4"-6"

MULCH PLACEMENT DETAIL



SEEDLING TREE SHELTER DETAIL

USE SEAMLESS, EXTRUDED, TWIN-WALL RIGID AND SEMI TRANSLUCENT POLYPROPYLENE TUBES WITH A LASER LINE PERFORATION AND AN OUTWARD-FLARED TOP RIM.

SECURE THE SHELTER WITH NYLON RATCHET-LOCKING TIES ATTACHED TO A 1" x 1" WHITE OAK STAKE TO PREVENT DISLODGING OR TWISTING. IMBED THE BOTTOM OF THE TUBE A MINIMUM OF 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.

INSTALL A PLASTIC PHOTO-DEGRADABLE NETTING COVER AND SLEEVE OVER THE TOP OF THE TUBE TO PREVENT ENTRAPMENT OF BIRDS. PULL NETTING DOWN AS SHOWN.

See Specifications for Modifications to These Details.
STANDARD PLANTING DETAILS (B)
DATED 03-06-2000

S.A.P. 164-020-88, S.A.P. 62-637-16

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Judy Martinez
Date: 9/10/02 Reg. No. 17248

JOB NO. 164-02-08
DRAWING: SUPP
DATE: 9/10/2002

DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102

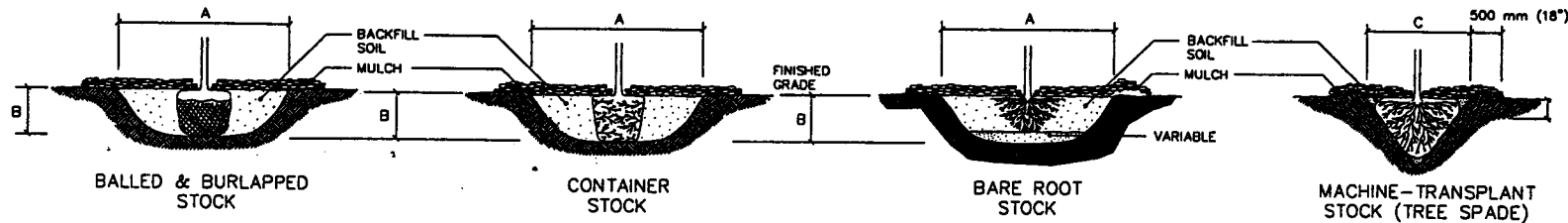
PLANTING DETAILS

SHEPARD ROAD
PHASE 3

L9
OF 14 SHEETS

PLANTING HOLE DIMENSIONS
(MINIMUM WIDTH DOES NOT APPLY IN MASS PLANTING BEDS)
ALL VALUES ARE AS FOLLOWS: ENGLISH

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES	(6") SEEDLING	(15")	(14")
	(9") SEEDLING	(18)	(14)
	(12") SEEDLING	(23)	(18)
	(2) B.B.	(36)	(10)
	(3) B.B.	(42)	(11)
	(4) B.B.	(51)	(13)
	(5) B.B.	(60)	(13)
	(6) B.B.	(66)	(15)
	(7) B.B.	(72)	(16)
	(8) B.B.	(81)	(18)
(9) B.B.	(90)	(20)	
(10) B.B.	(102)	(21)	
DECIDUOUS & ORNAMENTAL TREES	(6") SEEDLING	(15")	(14")
	(12") SEEDLING	(23)	(18)
	(18") SEEDLING	(30)	(18)
	(2) SEEDLING	(36)	(18)
	(2.5) SEEDLING	(40)	(18)
	(3) B.R.	(46)	(13)
	(4) B.R.	(46)	(14)
	(5) B.R.	(48)	(14)
	(6) B.R.	(54)	(15)
	(7) B.R.	(60)	(16)
	(8) B.R.	(66)	(19)
	(0.75) B.R.	(48)	(12)
	(1) B.R.	(54)	(14)
	(1.25) B.R.	(60)	(14)
	(1.5) B.R.	(66)	(15)
	(1.75) B.R.	(72)	(16)
(2) B.R.	(84)	(19)	
(2.5) B.R.	(96)	(20)	
(3.5) B.R.	(114)	(23)	
(4) B.B.	(126)	(25)	
CONIFEROUS SHRUBS (UPRIGHT)	(2) B.B.	(36")	(9")
	(3) B.B.	(48)	(12)
	(4) B.B.	(63)	(14)
	(18") SPR B.B.	(30")	(8")
CONIFEROUS SHRUBS (SPREADING)	(2) SPR B.B.	(36)	(9)
	(2.5) SPR B.B.	(42)	(11)
	(3) SPR B.B.	(48)	(12)
DECIDUOUS SHRUBS	(18") B.R.	(30")	(8")
	(2) B.R.	(33)	(9)
	(3) B.R.	(42)	(11)
	(4) B.R.	(48)	(12)
	(5) B.R.	(54)	(14)
	(6) B.R.	(60)	(14)
	(18") B.B.	(27)	(7)
	(2) B.B.	(30)	(8)
(3) B.B.	(36)	(9)	
(4) B.B.	(42)	(11)	
(5) B.B.	(48)	(12)	
(6) B.B.	(54)	(14)	
CONTAINER GROWN PLANTS	CELLPACKS	(6")	(2.5")
	(2.25) CONT.	(7)	(3)
	(3.5) CONT.	(10)	(3)
	(4) CONT.	(11)	(4)
	(4.5) CONT.	(13)	(4)
	(1.0) CONT.	(15)	(5.5)
	(#1) CONT.	(18)	(8)
	(#2) CONT.	(23)	(8)
	(#3) CONT.	(29)	(8.5)
	(#5) CONT.	(30)	(11)
(#7) CONT.	(37)	(11)	
(#10) CONT.	(44)	(14)	
(#15) CONT.	(45)	(15)	
(#20) CONT.	(60)	(17)	
(#25) CONT.	(72)	(18)	
VINES	1 YR. MED. B.R.	(15")	(11")
	1 YR. NO. 1 B.R.	(17)	(14)
	2 YR. MED. B.R.	(33)	(12)
	2 YR. NO. 1 B.R.	(42)	(15)
	(#1) CONT.	(18)	(8)
	(#2) CONT.	(23)	(7.5)

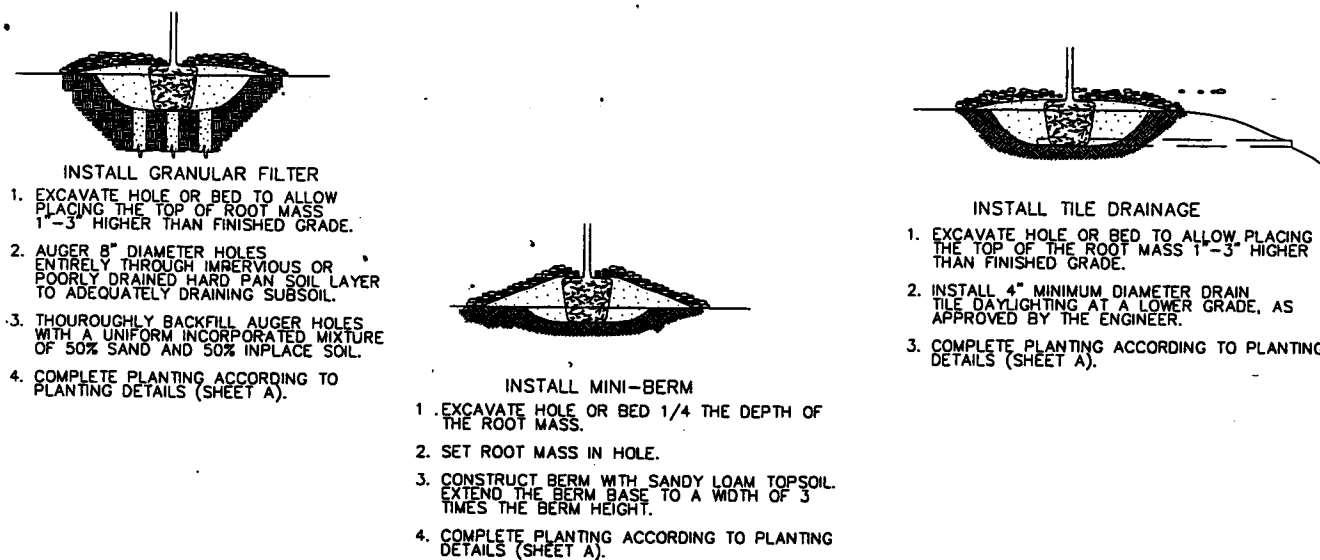


- SCARIFY SIDES AND BOTTOM OF HOLE.
- PROCEED WITH CORRECTIVE PRUNING AS DIRECTED BY ENGINEER.
- SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED BACKFILL SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
- PLACE PLANT IN PLANTING HOLE WITH BURLAP AND WIRE BASKET (IF USED). INTACT BACKFILL TO WITHIN APPROXIMATELY 1/2 OF THE TOP OF THE ROOTBALL, THEN WATER PLANT. REMOVE THE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. ALSO REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/3 OF THE BALL. REMOVE ALL TWINE.
- PLUMB AND BACKFILL WITH THE BACKFILL SOIL.
- WATER TO SETTLE PLANTS AND FILL VOIDS.
- WATER THOROUGHLY WITHIN 2 HOURS.
- PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.
- STAKE AND GUY TO PROVIDE ADDITIONAL SUPPORT BETWEEN THE STEM AND ROOT BALL AS NECESSARY.

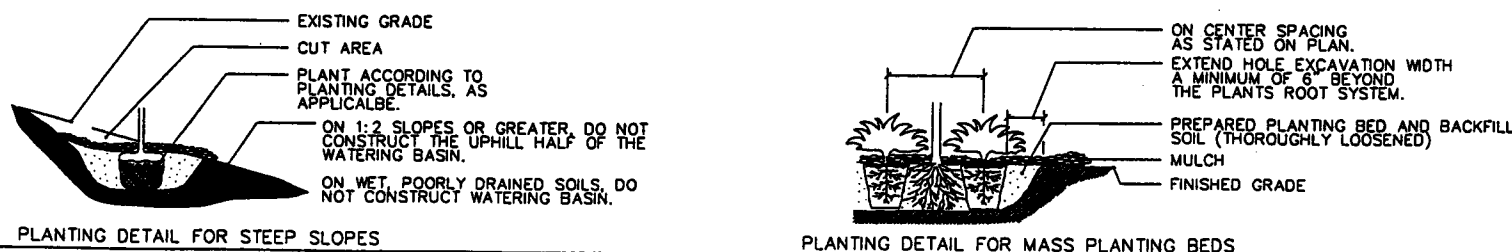
MINIMUM TREE SPADE SIZE REQUIREMENTS

SPADE DIAMETER SIZE C	OAK TREES CALIPER	DECIDUOUS/ORNAMENTAL TREES,CALIPER	CONIFEROUS
42"	1" to 1.5"	2" to 3"	
60"	1.5" to 2.5"	3" to 4"	
78"	2.5" to 3.5"	4" to 6"	
85"	3.5" to 5"	6" to 8"	

PLANTING DETAILS FOR ISOLATED PLANTING LOCATIONS

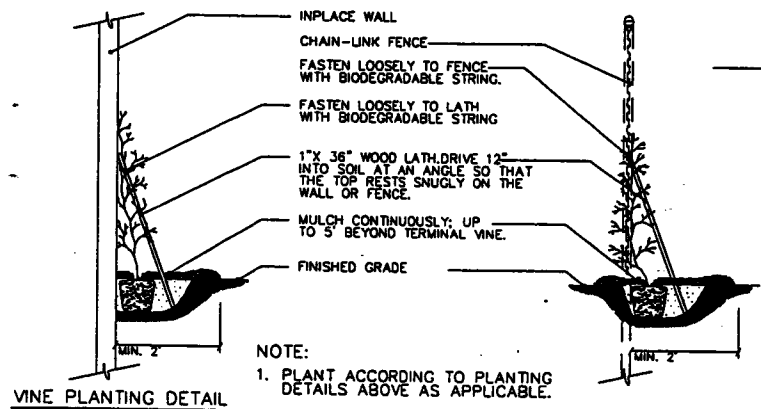


ALTERNATIVE PLANTING DETAILS FOR POORLY DRAINED SOIL
(NEED AND ALTERNATIVE SELECTION SHALL BE DETERMINED BY CONTRACTOR, SUBJECT TO APPROVAL BY THE ENGINEER.)



GENERAL NOTES

- SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS.
- PLANTING HOLE: AND BED CULTIVATION: THE PLANTING DETAILS REPRESENT ADEQUATELY DRAINED SOIL CONDITIONS. THE CONTRACTOR SHOULD EXERCISE DISCRETION IN SETTING PLANTS 1"-3" HIGHER IN POORLY DRAINED SOILS OR USING ALTERNATIVE PLANTING DETAILS ON SHEET B.
- BACKFILL SOIL: USE CULTIVATED AND AMENDED SOIL EXCAVATED FROM PLANTING HOLES. REMOVE ALL DEBRIS INCLUDING ROCKS LARGER THAN 3" DIA.
- FERTILIZER: NONE
MN/DOT 3881
- COMPOST: NONE
Mn/DOT 3890
- MULCH MATERIAL: Mn/DOT 3882 TYPE 6 UNLESS OTHERWISE SPECIFIED.
- MASS PLANTING: MASS PREPARE PLANT SPACING OF 10' OR LESS. PLANT IN STAGGERED ROWS ON THE PERIMETER FIRST, THEN UNIFORMLY FILL IN WITH REMAINING QUANTITY. USE TRIANGULAR SPACING UNLESS SPECIFIED OTHERWISE. PROVIDE 5' RADIUS CLEAR OF SHRUBS AROUND EACH DECIDUOUS TREE AND 6' RADIUS AROUND EACH EVERGREEN TREE. THIS RADIUS (CLEARANCE) SHALL BE MEASURED FROM THE CENTER OF THE TREE TO THE CENTER OF THE SHRUB. NOTIFY ENGINEER OF GROSS PLANT QUANTITY SURPLUS OR DEFICIENCY IMMEDIATELY. MASS MULCH PLANT SPACINGS OR LESS.
- TREE PAINTING: PAINT OAKS, LINDENS, LOCUSTS, MAPLES, CRABAPPLES AND MOUNTAIN ASH. ONLY UNDILUTED EXTERIOR WHITE LATEX PAINT IS ACCEPTABLE. PAINT TREE CIRCUMFERENCE FROM GROUND LINE TO FIRST MAJOR BRANCH.
- PLANTING PLAN: RESPECT STATED DIMENSIONS BEFORE SCALING FROM PLAN.
- WATERING GUIDELINES: PLANT TYPE AVERAGE AMOUNT OF WATER PER APPLICATION GALLONS
- | | |
|---------------------------------------|--------|
| MACHINE TRANSPLANTED TREES 42" AND UP | 50-100 |
| BALLED & BURLAPPED TREES | 20 |
| BARE ROOT TREES | 15 |
| BALLED & BURLAPPED SHRUBS | 10 |
| BARE ROOT OR CONTAINER SHRUBS | 7 |
| WOODY SEEDLINGS | 4 |
| PERENNIALS AND VINES | 3 |
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR AND MAINTAIN SOIL MOISTURE AT ADEQUATE BUT NOT EXCESSIVE LEVELS. THE ABOVE LISTED APPLICATION AMOUNTS ARE GUIDELINES, NOT REQUIREMENTS.



PLANTING DETAIL FOR STEEP SLOPES

PLANTING DETAIL FOR MASS PLANTING BEDS

See Specifications for Modifications to These Details.

STANDARD PLANTING DETAILS (A)
DATED 03-08-2000
28-299

S.A.P. 164-020-88, S.A.P. 62-637-16

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

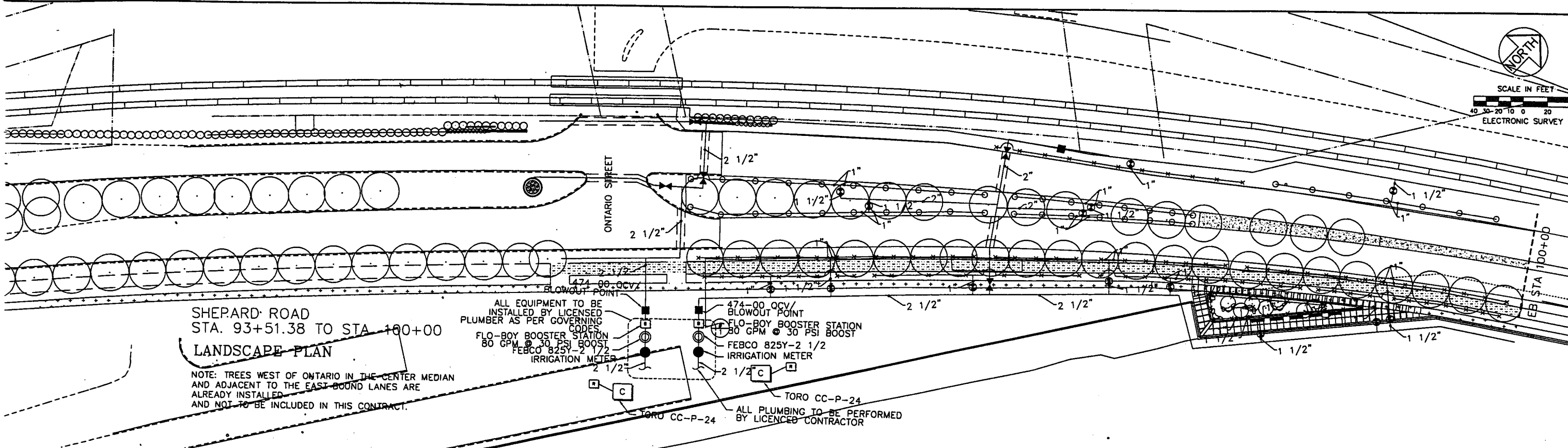
Jody Martinez
Date: 9/16/02
Reg. No. 17148

DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102

PLANTING DETAILS

SHEPARD ROAD
PHASE 3

L10
OF 14 SHEETS



SHEPARD ROAD
STA. 93+51.38 TO STA 100+00
LANDSCAPE PLAN

NOTE: TREES WEST OF ONTARIO IN THE CENTER MEDIAN AND ADJACENT TO THE EAST BOUND LANES ARE ALREADY INSTALLED AND NOT TO BE INCLUDED IN THIS CONTRACT.

ALL EQUIPMENT TO BE INSTALLED BY LICENSED PLUMBER AS PER GOVERNING CODES

FLO-BOY BOOSTER STATION
80 GPM @ 30 PSI BOOST
FEBCO 825Y-2 1/2
IRRIGATION METER

474-00 QCV/
BLOWOUT POINT

FLO-BOY BOOSTER STATION
80 GPM @ 30 PSI BOOST
FEBCO 825Y-2 1/2
IRRIGATION METER

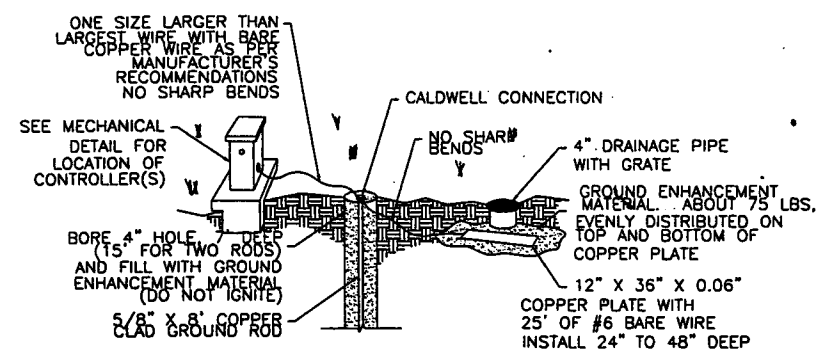
TORO CC-P-24

ALL PLUMBING TO BE PERFORMED BY LICENSED CONTRACTOR

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Jody Martinez
Date 7/16/02 Reg. No. 7598

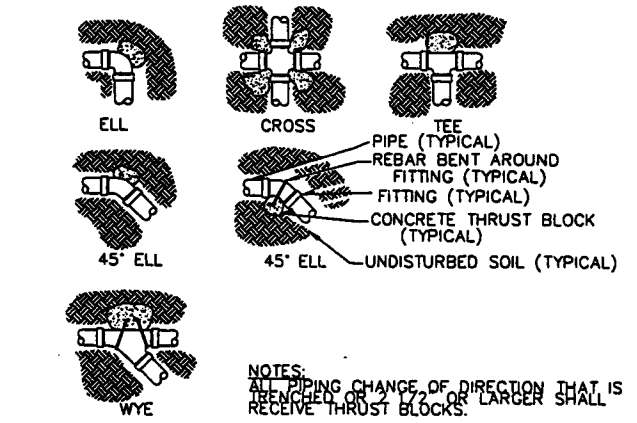
JOB NO. 164-020-88
S.E.C. CHY SUP.
DATE 8/28/2002

DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102



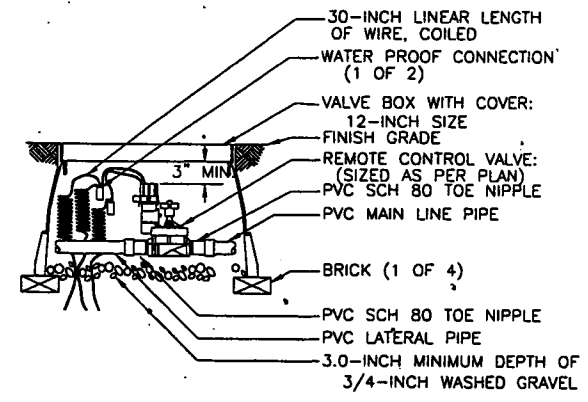
NOTE: THIS INFORMATION IS PROVIDED TO FACILITATE THE PROCUREMENT OF COMPONENTS NEEDED FOR GROUNDING IRRIGATION CONTROLLERS. PLEASE INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE NATIONAL ELECTRICAL CODE.

GROUND ROD AND PLATE DETAIL
SCALE: NOT TO SCALE

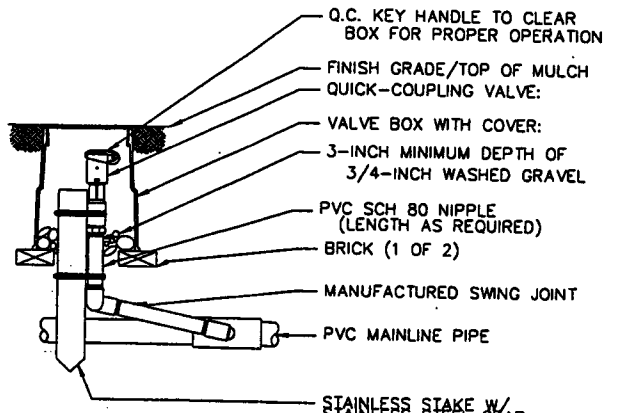


NOTES:
1. ALL PIPING CHANGE OF DIRECTION THAT IS REACHED OR 90° OR LARGER SHALL RECEIVE THRUST BLOCKS.

THRUST BLOCK
SCALE: NOT TO SCALE

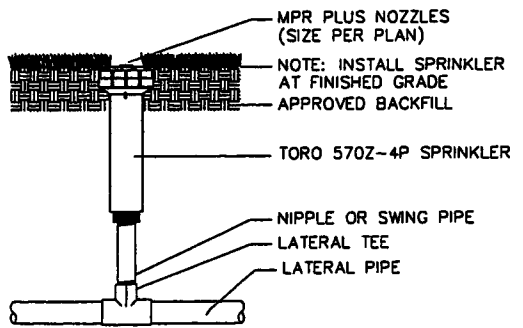


ELECTRIC VALVE AND VALVE BOX
SCALE: NOT TO SCALE

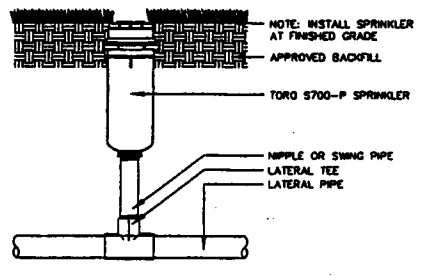


NOTE: 1. FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO QUICK-COUPLING VALVE INLET SIZE.

QUICK-COUPLING VALVE
SCALE: NOT TO SCALE



FIXED-SPRAY SPRINKLER TORO 570Z-4P
SCALE: NOT TO SCALE



SINGLE-STREAM SPRINKLER TORO S700P
SCALE: NOT TO SCALE

LEGEND

- ☐ TORO 850-74 RAIN SWITHC W/ R5BYPASS
- ☐ C TORO CC-P-24 (INTERNAL TRANSFORMER) FIELD SATELLITE SEE MECHANICAL DETAIL
- ☐ TORO 850-74 RAIN SWITHC W/ R5BYPASS
- TORO 220-27-04 P.R. ELECTRIC 1" BRASS VALVE (30 PSI) (30 PSI TURF)
- FEBCO 825Y-2 1/2 RPZ BACKFLOW DEVICE - AS PER CODES
- IRRIGATION METER - AS PER CODES
- ✕ NIBCO IRR. ISOLATION VALVE
- TORO 474-00 Q.C.V. W/ BOX
- CLASS 200 PVC 2 1/2" - 2" MAINS
- CLASS 200 PVC 1" (BEFORE VALVES)
- #100 POLY (ALL LATERALS AFTER VALVES)
- TORO 570Z-6P-COM W/ SB-90-PC2 (30 PSI) - OR SB-4-180-PC2 - SEE DETAIL
- TORO 570Z-6P-COM W/ SB-180-PC2 (30 PSI) SEE DETAIL
- TORO S700C-4P - 1.5Q 3.0H 6.0F (NOZZELS)
- x TORO 570Z-4P SPRAY HEAD 15' NOZ.

DESIGN NOTES

1. ALL PRODUCT APPLICATIONS AND INSTALLATIONS MUST MEET MANUFACTURERS REQUIREMENTS.
2. FLOW RATES THROUGH PVC PIPING NOT TO EXCEED MANUFACTURERS RECOMMENDATION.
3. PIPING TO BE LOCATED WITHIN OWNER'S PROPERTY LINES.
4. CONTRACTOR IS RESPONSIBLE FOR PROPER OPERATION OF IRRIGATION SYSTEM. SYSTEM SHALL NOT EXCEED MANUFACTURERS RECOMMENDATIONS AND SHALL WATER ALL SEEDED AND SODDED AREAS NOTED. IRRIGATION PLAN IS INTENDED TO INCLUDE EVERYTHING NECESSARY TO THE PROPER OPERATION OF SAID IRRIGATION SYSTEM. IF ADJUSTMENTS ARE REQUIRED, CONTRACTOR SHALL MAKE ADJUSTMENTS FOR SAME.
5. IRRIGATION PLANS SHALL HAVE PRECEDENCE OVER IRRIGATION SPECIFICATIONS. ANY DISCREPANCIES BETWEEN THESE TWO DOCUMENTS MUST BE BROUGHT TO THE ATTENTION OF THE IRRIGATION CONSULTANT.
6. IT IS THE INTENT TO KEEP IRRIGATION WATER OFF ALL BUILDINGS, SIDEWALKS AND PARKING AREAS. IT WILL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FIELD TUNE EACH SPRINKLER AS TO KEEPING IRRIGATION ADJUSTED TO GRASSED AND SEEDED AREAS ONLY. IT WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE OWNER WITH AN OPERATION SCHEDULE THAT WORKS WITH EXISTING PLANS AND ANY FIELD ADJUSTMENTS.
7. IT IS THE INTENT OF THE IRRIGATION DESIGN TO ACHIEVE HEAD TO HEAD COVERAGE IN ALL SEEDED AND SODDED AREAS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST FOR THE SAME.

ELECTRICAL NOTES:

1. BOTH 24 V.A.C. COMMON (WHITE) AND HOT (RED) SHALL BE # 12 UFUL BURIAL WIRE INSTALLED AS PER ALL LOCAL CODES AND N.E.C. REQUIREMENTS FOR 24 V.A.C. WIRING.
2. ALL VALVES SHALL HAVE SEPARATE HOT WIRE RETURNING TO IRRIGATION FIELD SATELLITE. NO PAIRING IN FIELD.

ALL PIPING AND EQUIPMENT LOCATIONS DIAGRAMMATIC IN NATURE. ALL EQUIPMENT SHALL BE LOCATED WITHIN OWNER'S PROPERTY AND IN LANDSCAPED AREAS. IT IS THE INTENT TO HIDE ALL ELECTRIC REMOTE VALVE BOXES FROM VIEW. OWNER SHALL ULTIMATELY APPROVE ALL SPRINKLER, VALVE, AND CONTROLLER LOCATIONS BEFORE INSTALLATION.

28-299
S.A.P. 164-020-88, S.A.P. 62-637-16

IRRIGATION PLAN

SHEPARD ROAD LANDSCAPING
PHASE 3

111
OF 14 SHEETS

DESIGN NOTES

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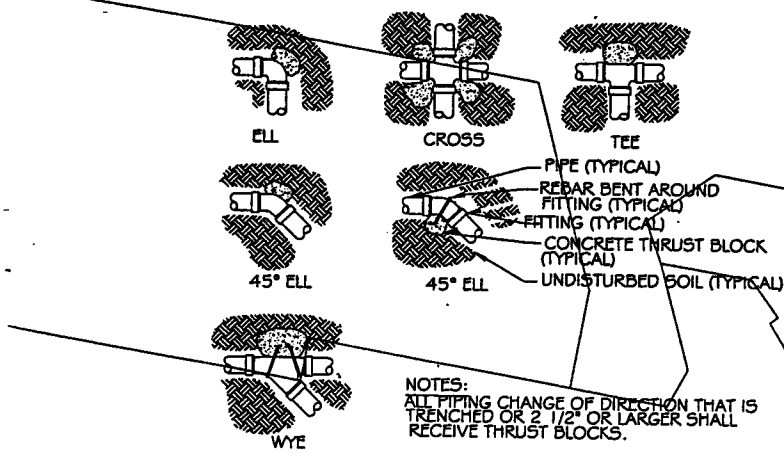
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LEGEND

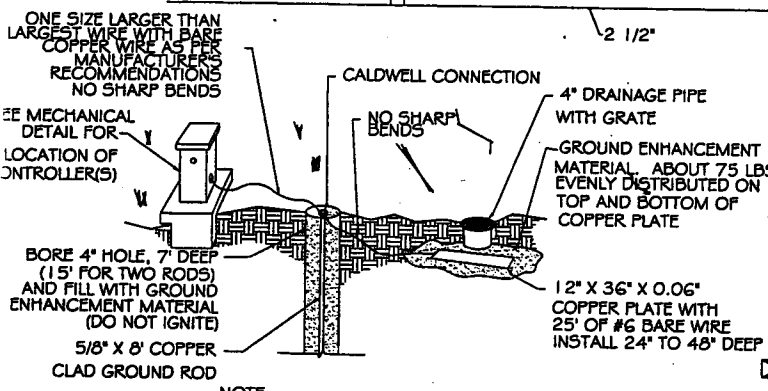
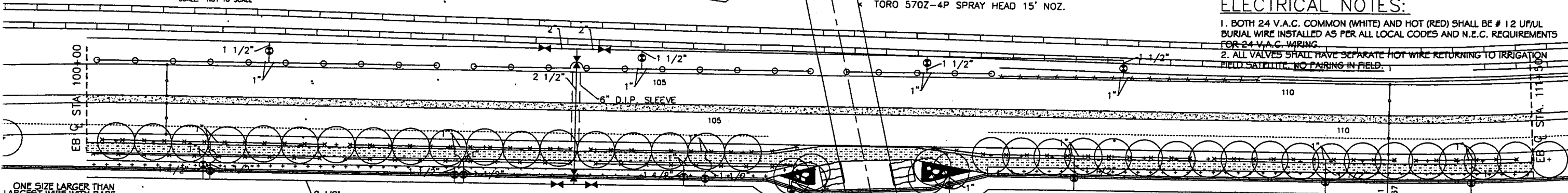
- ☐ TORO 850-74 RAIN SWITHC W/ R5BPASS
- Ⓢ TORO CC-P-24 (INTERNAL TRANSFORMER) FIELD SATELLITE SEE MECHANICAL DETAIL
- ☐ TORO 850-74 RAIN SWITHC W/ R5BPASS
- TORO 220-27-04 P.R. ELECTRIC 1" BRASS VALVE (30 PSI) (30 PSI DRIP) (50 PSI TURF)
- FEBCO 825Y-2 1/2 RPZ BACKFLOW DEVICE - AS PER CODES
- IRRIGATION METER - AS PER CODES
- ▶ NIBCO IRR. ISOLATION VALVE
- TORO 474-00 Q.C.V. W/ BOX
- CLASS 200 PVC 2 1/2" - 2" MAINS
- CLASS 200 PVC 1" (BEFORE VALVES)
- #100 POLY (ALL LATERALS AFTER VALVES)
- TORO 570Z-6P-COM W/ SB-90-PC2 (30 PSI) OR SB-4-180-PC2 - SEE DETAIL
- TORO 570Z-6P-COM W/ SB-180-PC2 (30 PSI) SEE DETAIL
- TORO 5700C-4P - 1.5Q 3.0H 6.0F (NOZZELS)
- ★ TORO 570Z-4P SPRAY HEAD 15' NOZ.

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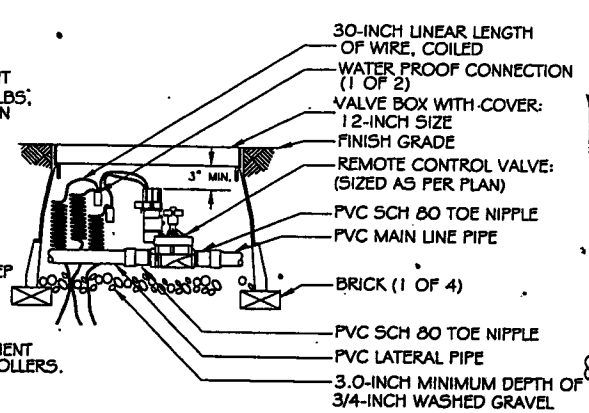
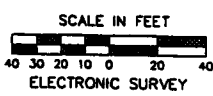
NOTES:
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THRUST BLOCK
SCALE: NOT TO SCALE

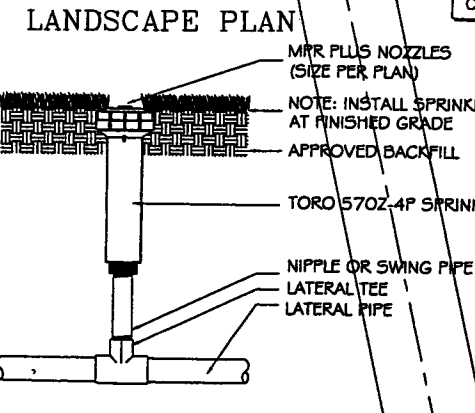


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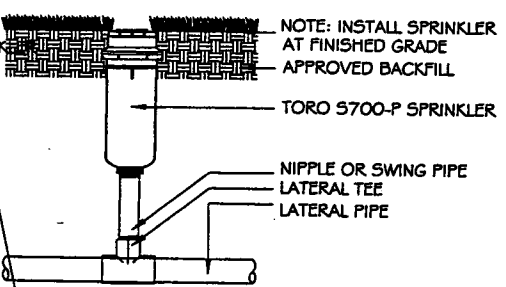
GROUND ROD AND PLATE DETAIL
SCALE: NOT TO SCALE



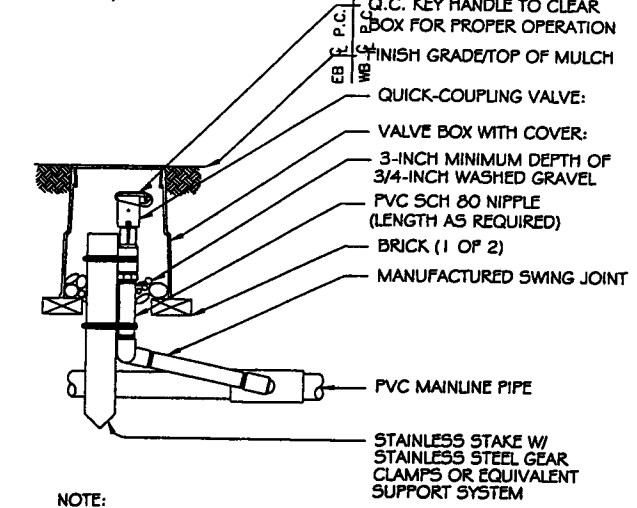
ELECTRIC VALVE AND VALVE BOX
SCALE: NOT TO SCALE



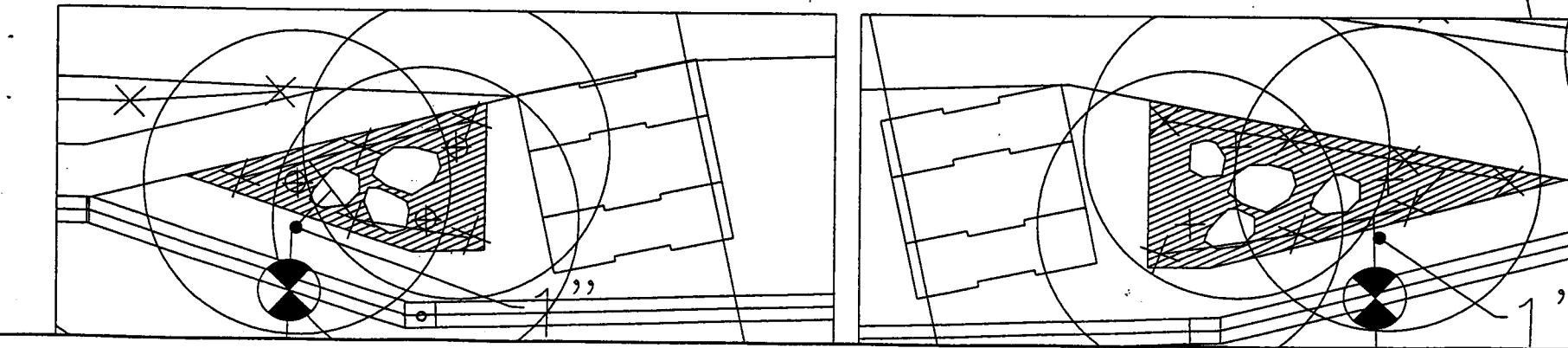
FIXED-SPRAY SPRINKLER TORO 570Z-4P
SCALE: NOT TO SCALE



SINGLE-STREAM SPRINKLER TORO 5700P
SCALE: NOT TO SCALE



QUICK-COUPLING VALVE
SCALE: NOT TO SCALE



SHEPARD ROAD
STA. 100+00 TO STA. 111+50

28-29a
S.A.P. 164-020-88, S.A.P. 62-637-16

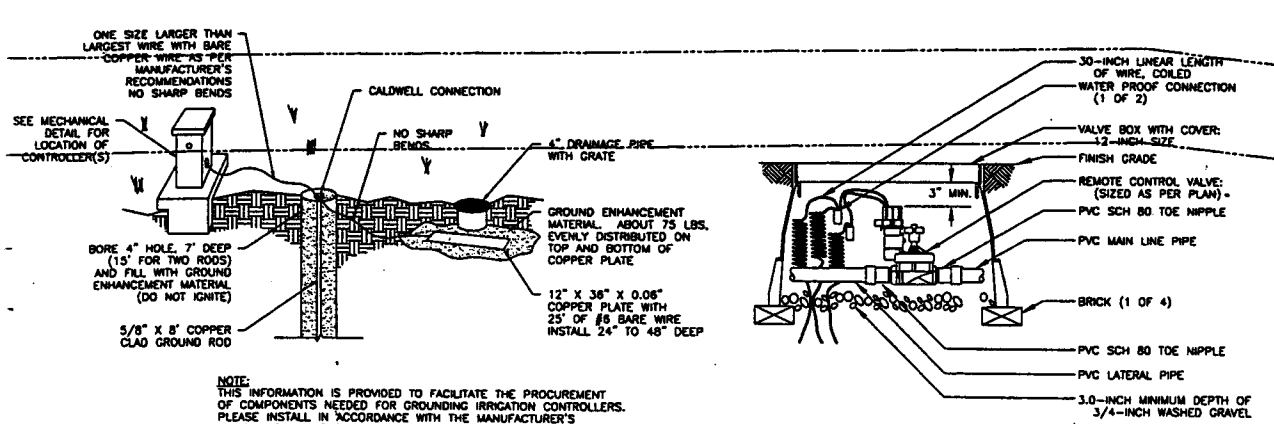
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date: 1/14/02
Jody Martinez
Reg. No. 17549

DATE: 9/10/2002
SHEPARD ROAD LANDSCAPING
DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102

IRRIATION PLAN
REVISIONS:

SHEPARD ROAD LANDSCAPING
PHASE 3

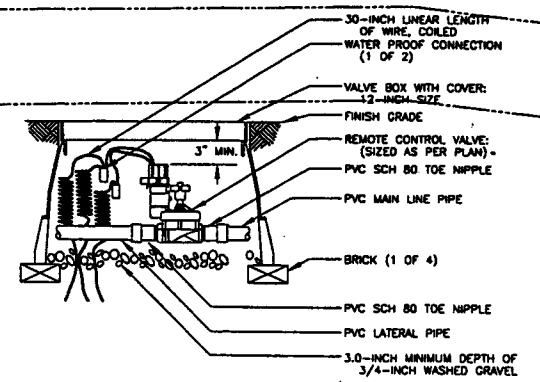
OF 14 SHEETS



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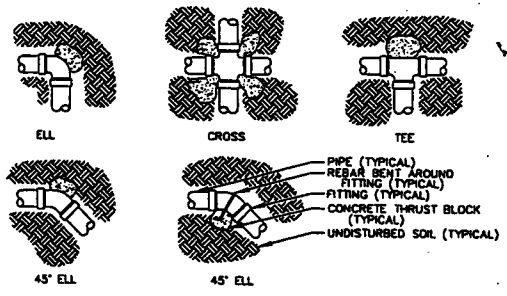
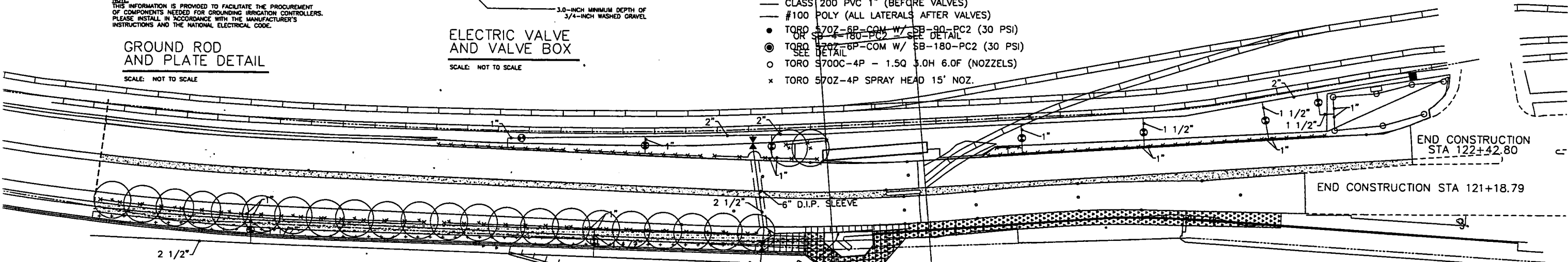


ELECTRIC VALVE AND VALVE BOX

SCALE: NOT TO SCALE

LEGEND

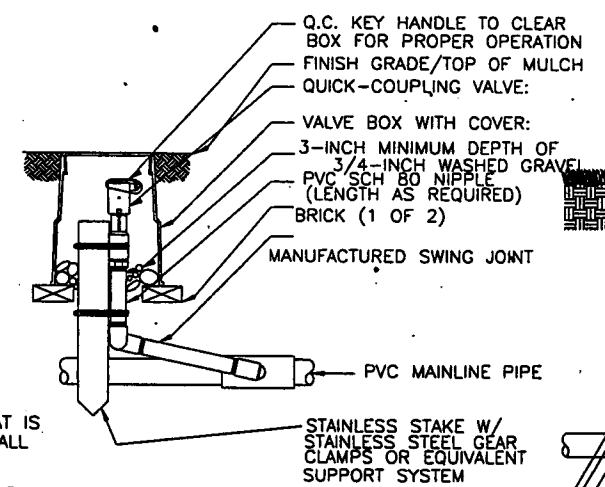
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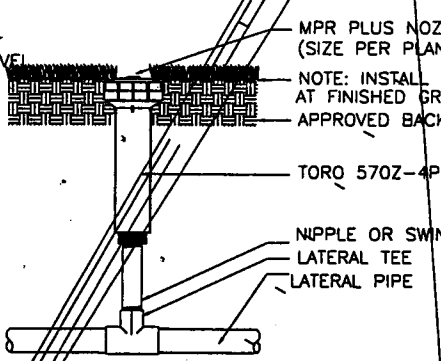
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NOTE: FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

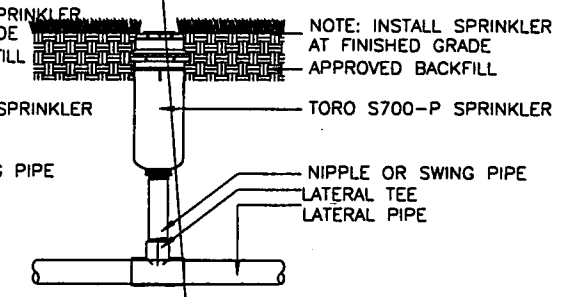
QUICK-COUPLING VALVE

SCALE: NOT TO SCALE



FIXED-SPRAY SPRINKLER TORO 570Z-4P

SCALE: NOT TO SCALE



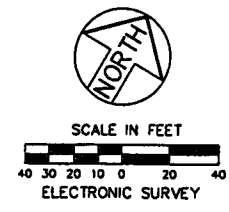
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28-299

S.A.P. 164-020-88, S.A.P. 62-637-16

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date: 9/10/02
Jody Martinez
Reg. No. 17548

JOB NO. 164-00-08
DATE: 08/01/02

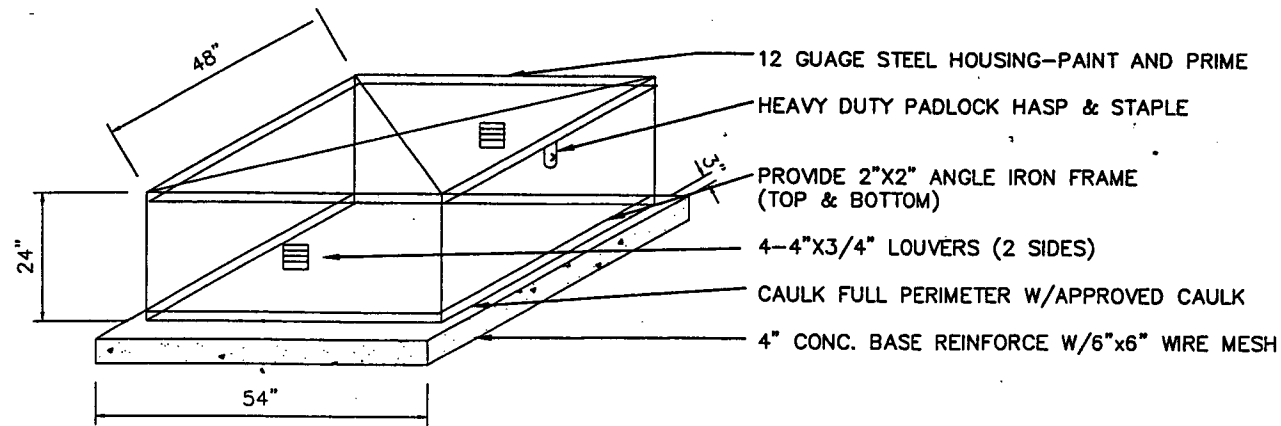
DIVISION OF PARKS & RECREATION
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IRRIGATION PLAN

SHEPARD ROAD LANDSCAPING PHASE 3

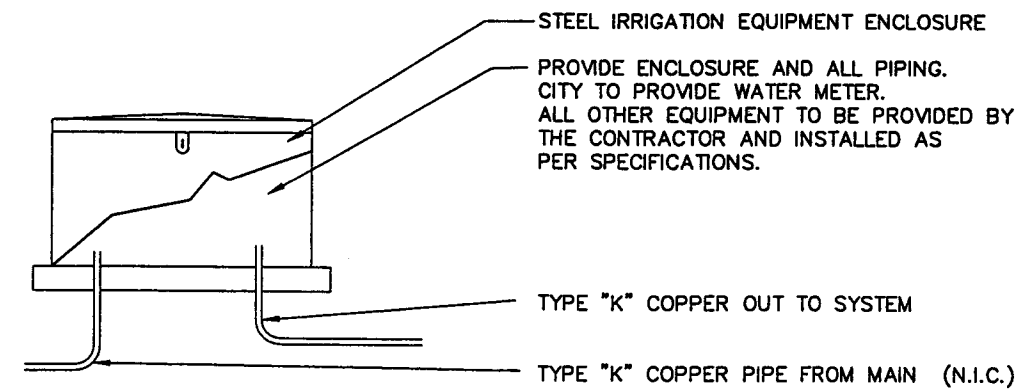
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OF 14 SHEETS

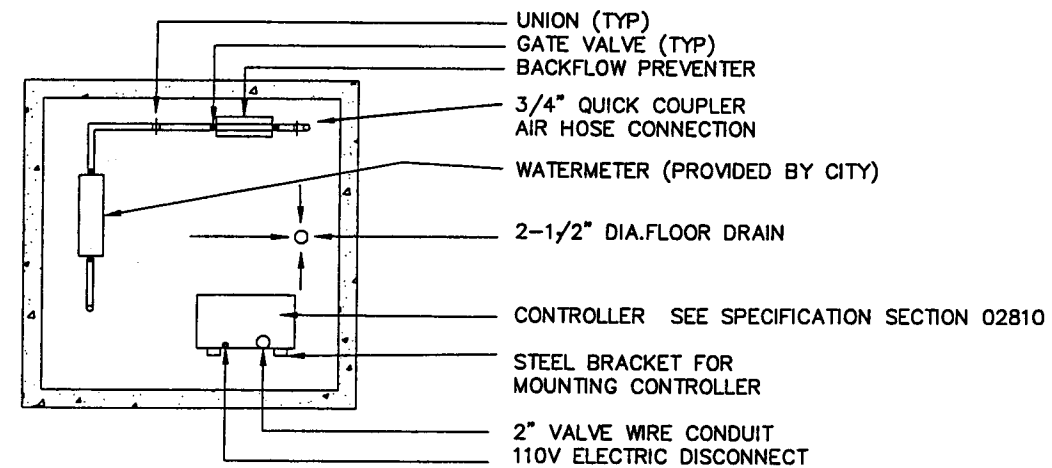


SECTION/PERSPECTIVE

NOTE:
EXACT LOCATION OF WATER AND
ELECTRICAL FEED WILL BE DETERMINED
IN THE FIELD.



SECTION



PLAN

NOTE:
CONTRACTOR SHALL SECURELY MOUNT ALL COMPONENTS
TO THE CONCRETE SLAB TO THE SATISFACTION OF
THE LANDSCAPE ARCHITECT.

- 2 IRRIGATION CABINET
- 8 NO SCALE

PLANTING SCHEDULE

CODE	COMMON NAME	SCIENTIFIC NAME	QUAN	SIZE	TYPE	COMMENTS
APE	PRAIRIE SPIRE ASH	FRAXINUS PENNSYLVANICA 'RUGBY'	144	2.5"	B&B	BOULEVARD
FPS	SUMMIT GREEN ASH	FRAXINUS PENNSYLVANICA 'SUMMIT'	9	2.5"	B&B	BOULEVARD
BN	RIVER BIRCH - CLUMP	BETULA NIGRA	27	2.5"	B&B	
AGC	BAILEY COMPACT AMUR MAPLE	ACER GINNALA 'BAILEY COMPACT'	157	#2	POT	HEDGE
RWP	'WHITE PAVEMENT' SHRUB ROSE	ROSA 'WHITE PAVEMENT'	28	#2	POT	
RCH	'CHUCKLES' SHRUB ROSE	ROSA 'CHUCKLES'	30	#2	POT	
RDT	'DAVID THOMPSON' SHRUB ROSE	ROSA 'DAVID THOMPSON'	52	#2	POT	HEDGE

28-299

S.A.P. 164-020-88, S.A.P. 62-637-16

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Landscape Architect under the laws of the State of Minnesota.
Jody Martinez
Date 7/14/02 Reg. No. 17948

28 NO. 164-020-88
DATE: 7/14/02
DATE: 8/10/2002

DIVISION OF PARKS & RECREATION
300 CITY HALL ANNEX
25 WEST FOURTH STREET
ST. PAUL, MINNESOTA 55102

PLANTING SCHEDULE
REVISIONS:

SHEPARD ROAD LANDSCAPING
PHASE 3

L14
OF 14 SHEETS

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS DETOUR CONTROL PLAN UNLESS OTHERWISE NOTED.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THESE LAYOUTS AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
5. THE CONTRACTOR SHALL MAINTAIN A 2.0' MIN. CLEAR DISTANCE BETWEEN THE EDGE OF TRAVEL LANE AND THE NEAREST EDGE OF ANY ADJACENT TRAFFIC CONTROL DEVICE (DRUMS, BARRICADES, BARRIER, ETC.).
6. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER.
7. CONTRACTOR SHALL PROVIDE CHANNELIZING DEVICES (AND SIGNING IF NECESSARY) AT ALL PRIVATE ENTRANCE LOCATIONS WHERE NEEDED TO SAFELY GUIDE TRAFFIC TO AND FROM THE TRAVEL CORRIDOR, TO THE SATISFACTION OF THE ENGINEER.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTANT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED ON POST DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD. IF THIS IS NOT POSSIBLE THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AT 5-7', AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POST SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC.
4. ALL ORANGE SIGNS SHALL BE MADE OF DIAMOND GRADE ORANGE REFLECTIVE SHEETING OR AN APPROVED SUBSTITUTE.
5. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF THE TEMPORARY SIGNS TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED AS NEEDED, OR PROVIDE TEMPORARY SIGNING UNTIL THE FINAL SIGNING IS INSTALLED.
6. THE CONTRACTOR SHALL MAINTAIN, RELOCATE AND/OR ADJUST ALL EXISTING SIGNING WHICH REMAINS APPROPRIATE, OR REMOVE EXISTING SIGNING AS DIRECTED BY THE ENGINEER. REMOUNTING OF EXISTING SIGNS MAY BE REQUIRED TO MAINTAIN ADEQUATE VISIBILITY DURING CONSTRUCTION.

PAVEMENT MARKING:

1. OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
2. PAINT SHALL BE USED ON ROADWAY SURFACES AS DIRECTED BY THE ENGINEER.
3. BROKEN LINE QUANTITIES ARE CALCULATED FROM THE ACTUAL MARKING LENGTH AND THEREFORE DO NOT INCLUDE THE GAP.

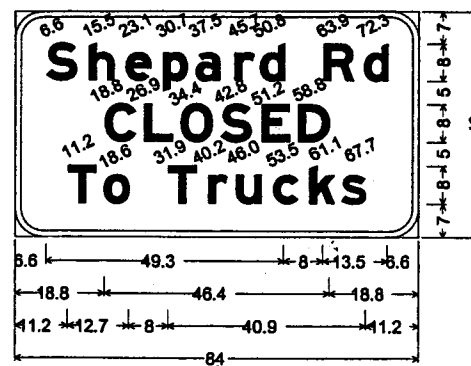
BARRIER & DELINEATION:

1. TEMPORARY PORTABLE PRECAST CONCRETE BARRIER WITH DELINEATORS/REFLECTIVE SURFACE SHALL MATCH THE EXISTING BARRIER.

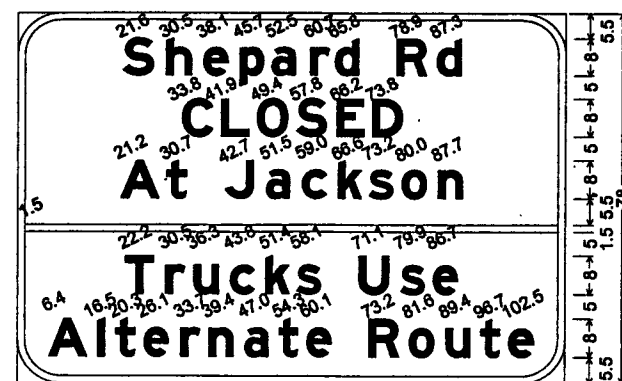
TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	TRAFFIC CONTROL SIGN (POST OR STAND MOUNTED)
	TYPE III BARRICADE = (REFLECTORIZED BOTH SIDES) (8' WIDE UNLESS NOTED OTHERWISE)
	DRUM-LIKE CHANNELIZER =
	TYPE A OR B FLASHING WARNING LIGHT (SPECIFY HIGH INTENSITY)
	TRAFFIC FLOW
	INPLACE TRAFFIC SIGNAL
	FLAG

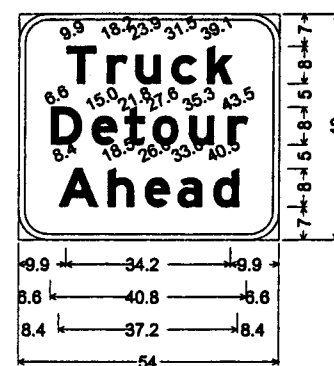
28-299



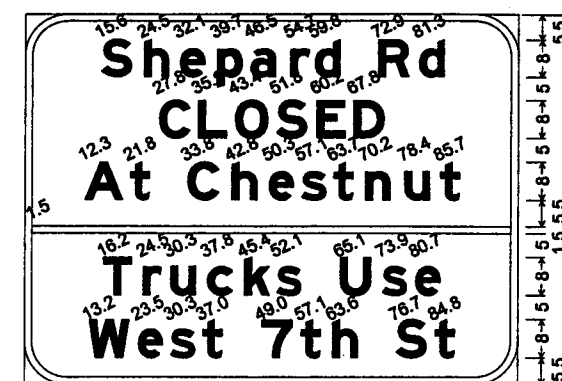
WZ-1;
6.0" Radius, 1.3" Border, Black on Orange;
[Shepard Rd] E Mod; [CLOSED] E Mod;
[To Trucks] E Mod;



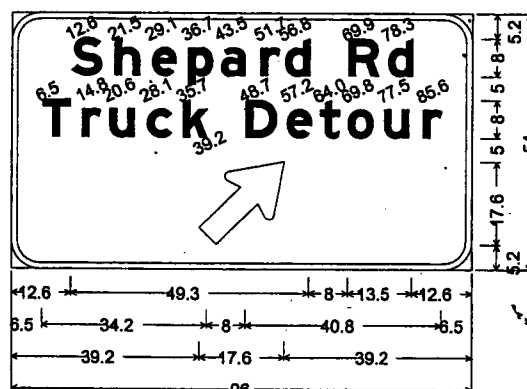
WZ-2; 9.0" Radius, 1.5" Border, Black on Orange;
[Shepard Rd] E Mod; [CLOSED] E Mod; [At Jackson] E Mod;
[Trucks Use] E Mod; [Alternate Route] E Mod;



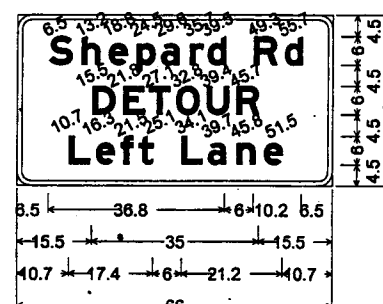
WZ-3;
6.0" Radius, 1.3" Border, Black on Orange;
[Truck] E Mod;
[Detour] E Mod;
[Ahead] E Mod;



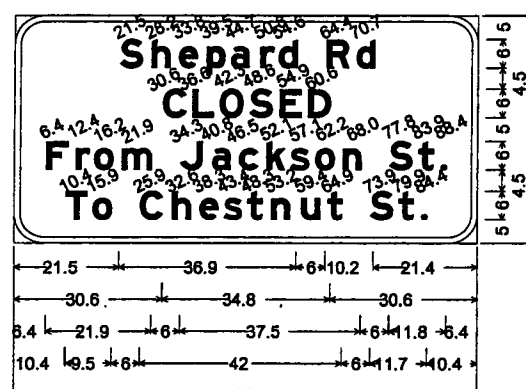
WZ-4; 9.0" Radius, 1.5" Border, Black on Orange;
[Shepard Rd] E Mod; [CLOSED] E Mod;
[At Chestnut] E Mod; [Trucks Use] E Mod;
[West 7th St] E Mod;



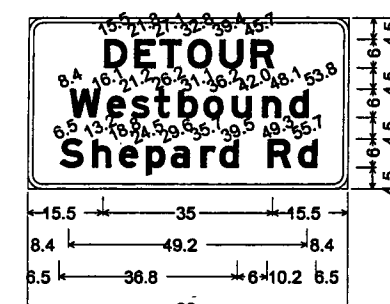
WZ-5; 6.0" Radius, 1.3" Border, Black on Orange;
[Shepard Rd] E Mod; [Truck Detour] E Mod;
Standard Arrow Custom 22.3" X 13.5" 45°;



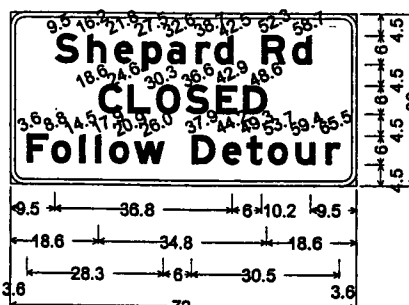
WZ-6;
3.0" Radius, 1.0" Border, Black on Orange;
[Shepard Rd] E Mod 99% spacing;
[DETOUR] E Mod;
[Left Lane] E Mod;



WZ-7; 6.0" Radius, 1.3" Border, Black on Orange;
[Shepard Rd] E Mod; [CLOSED] E Mod;
[From Jackson St.] E Mod; [To Chestnut St.] E Mod;



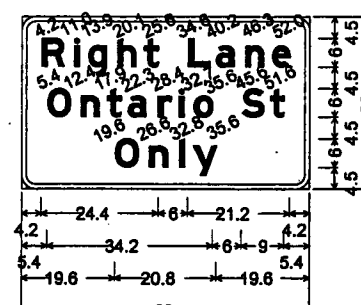
WZ-8;
3.0" Radius, 1.0" Border, Black on Orange;
[DETOUR] E Mod;
[Westbound] E Mod;
[Shepard Rd] E Mod 99% spacing;



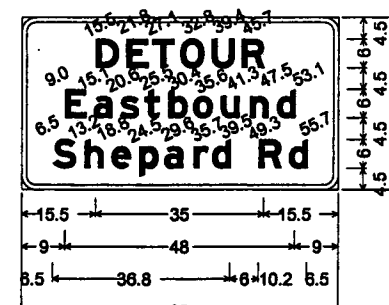
WZ-9;
3.0" Radius, 1.0" Border, Black on Orange;
[Shepard Rd] E Mod 99% spacing;
[CLOSED] E Mod;
[Follow Detour] E Mod 99% spacing;



WZ-10;
3.0" Radius, 1.0" Border, Black on Orange;
[Ontario] E Mod;
[Street] E Mod;
[Only] E Mod;



WZ-11;
3.0" Radius, 1.0" Border, Black on Orange;
[Right Lane] E Mod;
[Ontario St] E Mod;
[Only] E Mod;



WZ-12;
3.0" Radius, 1.0" Border, Black on Orange;
[DETOUR] E Mod;
[Eastbound] E Mod;
[Shepard Rd] E Mod 99% spacing;

DRAWN BY R.W. SMITH DATE 1-01
DESIGNED BY P. ZAGER DATE 1-01
CHECKED BY P. CORKLE DATE 1-01
COMM. NO. 0993567
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date 11-Sept-02 Reg. No. 24761



City of St. Paul

SHEPARD ROAD
SYMBOLS AND SIGNS
CITY PROJ. NO. 00-P-1200
STATE PROJ. NO. 6201-77
S.A.P. 62-637-16
S.A.P. 164-020-88

SHEET
D-1
OF
D-8

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 01/19/02 11:43 AM
 09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

TRAFFIC CONTROL STANDARD SIGNS ①				
SIGN LEGEND	SIGN DESIGNATION	SIGN SIZE	SIGN COLOR	QUANTITY
	G20-X1	72"x60"	BLACK ON ORANGE	4
	M4-8	30"x15"	BLACK ON ORANGE	1
	M4-9R	30"x24"	BLACK ON ORANGE	3
	M4-9L	30"x24"	BLACK ON ORANGE	3
	M4-9T	30"x24"	BLACK ON ORANGE	6
	M4-9ATR	30"x24"	BLACK ON ORANGE	3
	M4-9ATL	30"x24"	BLACK ON ORANGE	3
	M5-1aR	30"x24"	WHITE ON BLUE	3
	M6-1a	30"x24"	WHITE ON BLUE	3
	M6-2aL	21"x15"	WHITE ON BLUE	1
	R3-1	24"x24"	BLACK AND RED ON WHITE	1
	R3-2	24"x24"	BLACK AND RED ON WHITE	1
	W1-1R	30"x30"	BLACK ON ORANGE	2
	W1-1L	30"x30"	BLACK ON ORANGE	2
	W1-4R	30"x30"	BLACK ON ORANGE	2
	W1-4bL	48"x48"	BLACK ON ORANGE	2
	W1-6	48"x24"	BLACK ON ORANGE	5

TRAFFIC CONTROL STANDARD SIGNS ①				
SIGN LEGEND	SIGN DESIGNATION	SIGN SIZE	SIGN COLOR	QUANTITY
	W12-1	30"x30"	BLACK ON ORANGE	2
	W13-1	24"x24"	BLACK ON ORANGE	7
	W20-2	48"x48"	BLACK ON ORANGE	4
	WZ-1	48"x84"	BLACK ON ORANGE	7
	WZ-2	78"x114"	BLACK ON ORANGE	4
	WZ-3	48"x54"	BLACK ON ORANGE	2
	WZ-4	78"x102"	BLACK ON ORANGE	2
	WZ-4	54"x96"	BLACK ON ORANGE	1
	WZ-6	36"x66"	BLACK ON ORANGE	1
	WZ-7	48"x96"	BLACK ON ORANGE	1
	WZ-8	36"x66"	BLACK ON ORANGE	1
	WZ-9	36"x72"	BLACK ON ORANGE	4

TRAFFIC CONTROL STANDARD SIGNS ①				
SIGN LEGEND	SIGN DESIGNATION	SIGN SIZE	SIGN COLOR	QUANTITY
	WZ-10	36"x42"	BLACK ON ORANGE	2
	WZ-11	36"x60"	BLACK ON ORANGE	2
	WZ-12	36"x66"	BLACK ON ORANGE	1
	TYPE III			46
	BARREL-DRUM LIKE CHANNELIZER			105
4" SOLID LINE-WHITE (PAINT)				1,860'
4" SOLID LINE-YELLOW (PAINT)				700'
4" BROKEN LINE-WHITE (PAINT)				210'

28-299

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09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

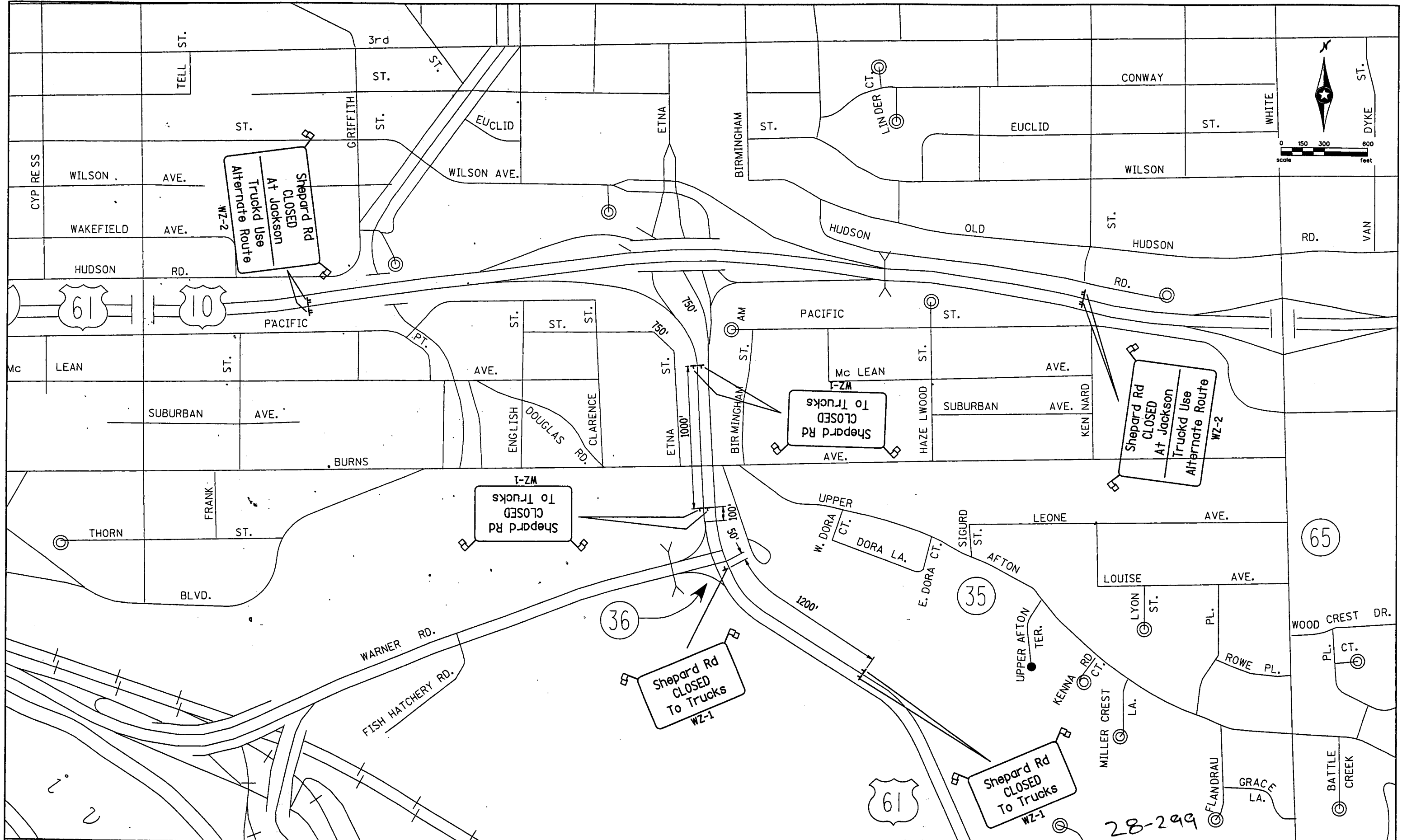
NAME: 356702.DGN DATE: Sep. 06, 2002

DRAWN BY R. W. SMITH DATE 1-01
 DESIGNED BY P. ZAGER DATE 1-01
 CHECKED BY P. CORKLE DATE 1-01
 COMM. NO. 0993567
 I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Date: 10 Sept 07 Reg. No. 24761



City of St. Paul

SHEPARD ROAD TABULATIONS		SHEET D-2 OF D-8
CITY PROJ. NO. 00-P-1200 STATE PROJ. NO. 6201-77	S.A.P. 62-637-16 S.A.P. 164-020-88	



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NO	DATE	BY	DESCRIPTION OF REVISIONS

NAME: 3567D4.DGN DATE: Sep. 06, 2002

DRAWN BY: R.W. SMITH DATE: 1-01
 DESIGNED BY: P. ZAGER DATE: 1-01
 CHECKED BY: P. CORKLE DATE: 1-01
 COMM. NO.: 0893567

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
[Signature]
 Date: 10-Sept-02 Reg. No. 24761

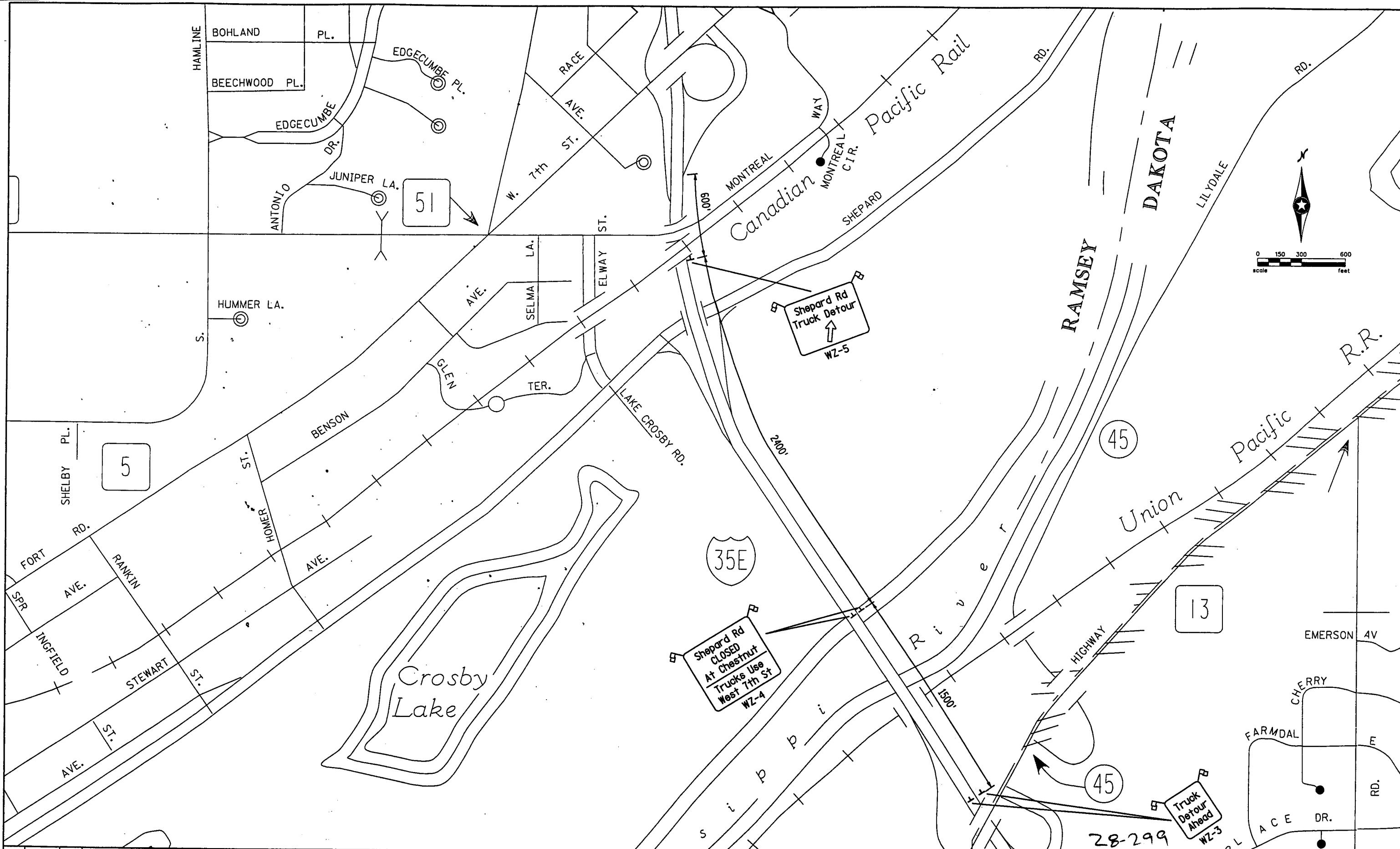


City of St. Paul

SHEPARD ROAD
 DETOUR LAYOUT

CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
 STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

SHEET D-3 OF D-8



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 09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

NAME: 3567D5.DGN DATE: Sep. 06, 2002

DRAWN BY R. W. SMITH DATE 1-01
 DESIGNED BY P. ZAGER DATE 1-01
 CHECKED BY P. CORKLE DATE 1-01
 COMM. NO. 0993567

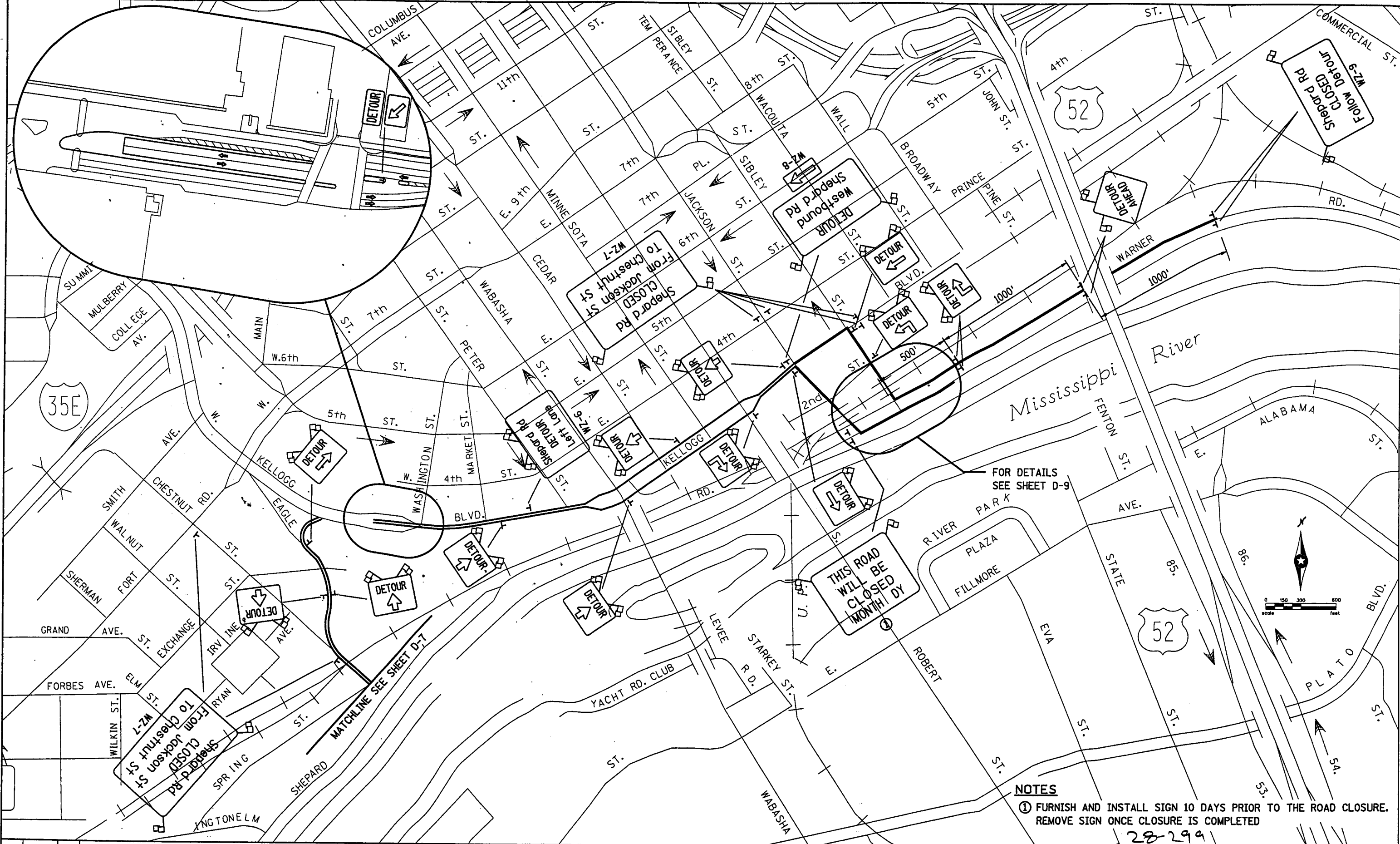
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
[Signature]
 Date 16-Sept-02 Reg. No. 24761



City of St. Paul

SHEPARD ROAD
 DETOUR LAYOUT
 CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
 STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

SHEET
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 OF
 D-8



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 09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

NAME: 356706.DGN DATE: Sep. 13, 2002

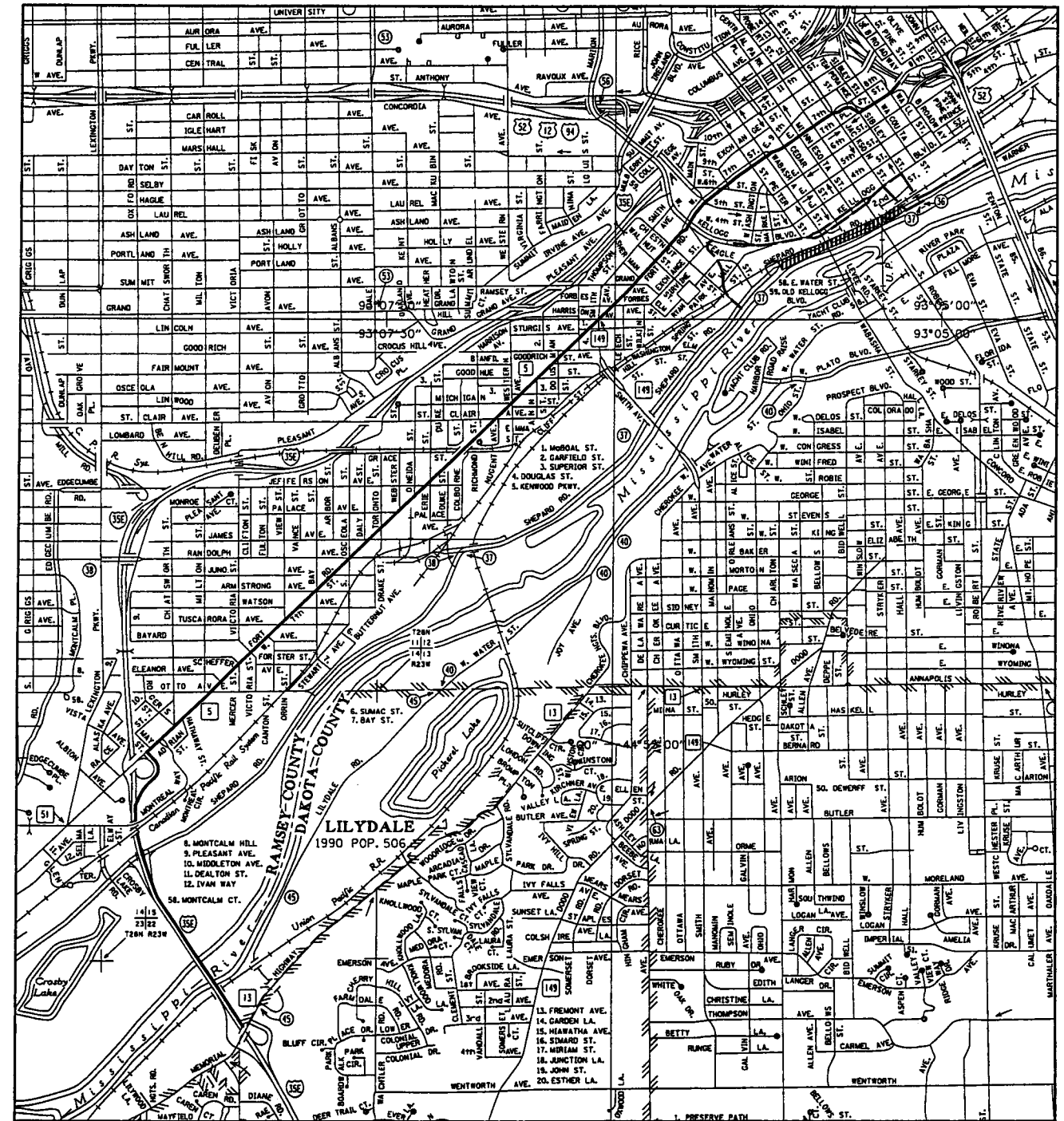
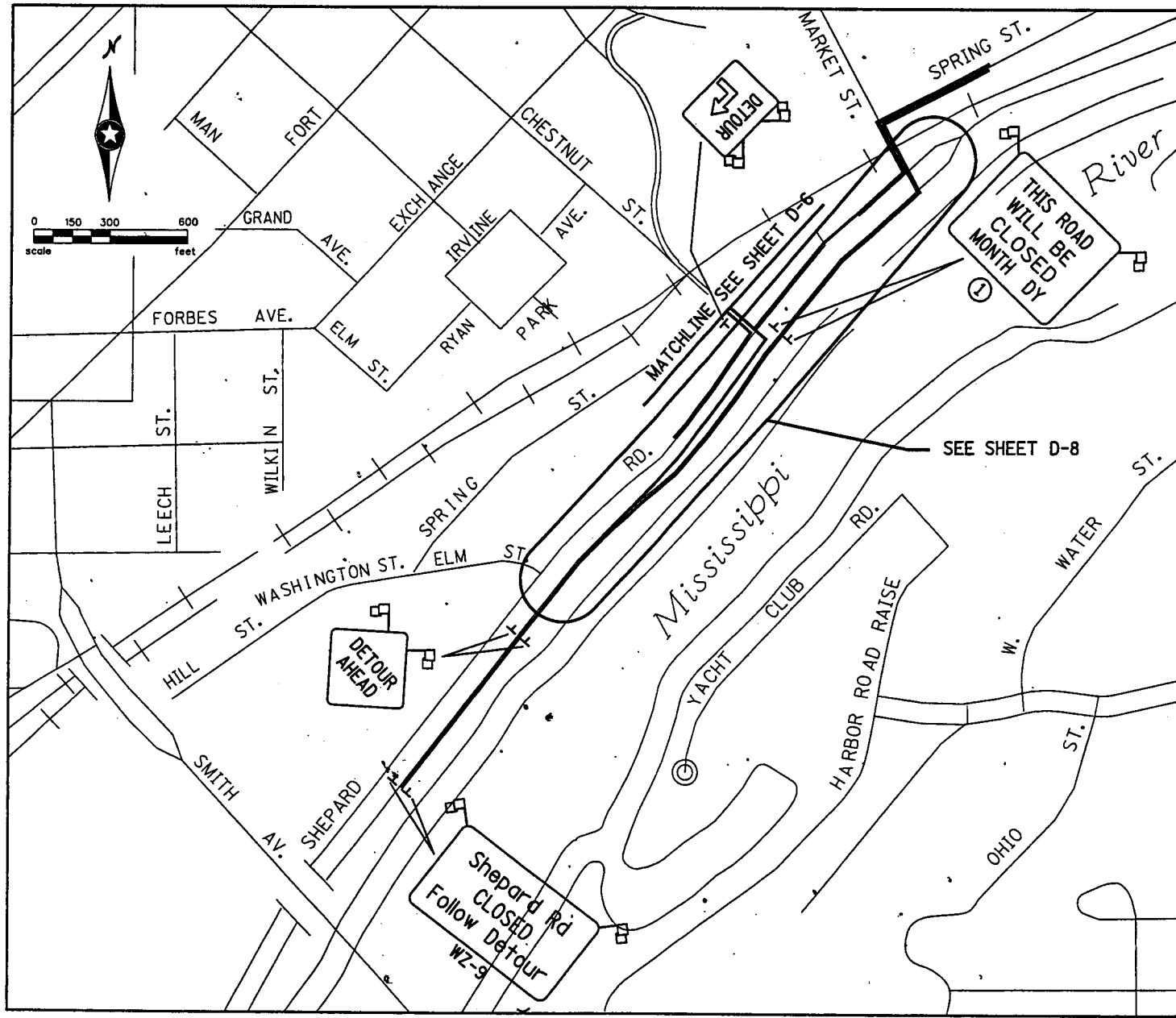
DRAWN BY: R.W. SMITH DATE: 1-01
 DESIGNED BY: P. ZAGER DATE: 1-01
 CHECKED BY: P. CORKLE DATE: 1-01
 COMM. NO.: 0993567

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[Signature]
 Date: 16-Sept-02 Reg. No. 24761



City of St. Paul

SHEPARD ROAD DETOUR LAYOUT		SHEET D-5 OF D-8
CITY PROJ. NO. 00-P-1200 STATE PROJ. NO. 6201-77	S.A.P. 62-637-16 S.A.P. 164-020-88	



NOTES

- ① FURNISH AND INSTALL SIGN 10 DAYS PRIOR TO THE ROAD CLOSURE. REMOVE SIGN ONCE CLOSURE IS COMPLETED.

LEGEND

- TRUCK DETOUR ROUTE
- CAR DETOUR ROUTE
- CLOSED ROADWAY SEGMENT



28-299

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NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY R. W. SMITH DATE 1-01
 DESIGNED BY P. ZAGER DATE 1-01
 CHECKED BY P. CORKLE DATE 1-01
 COMM. NO. 0993567

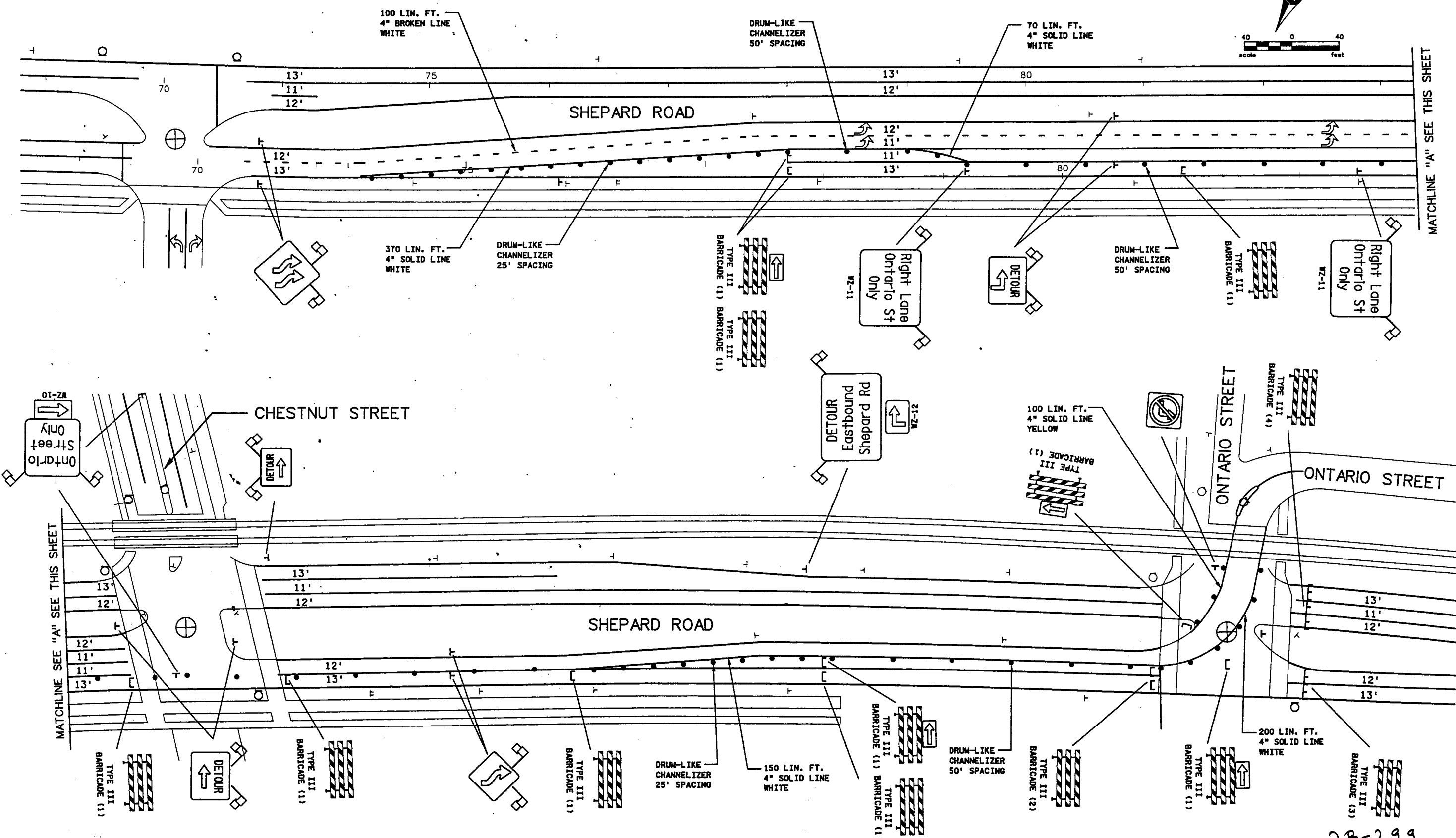
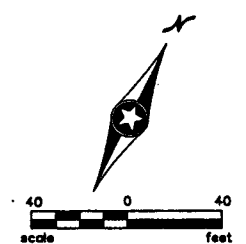
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
[Signature]
 Date 10-Sept-02 Reg. No. 74761



City of St. Paul

SHEPARD ROAD
 DETOUR LAYOUT
 CITY PROJ. NO. 00-P-1200
 STATE PROJ. NO. 6201-77
 S.A.P. 62-637-16
 S.A.P. 164-020-88

SHEET
 D-6
 OF
 D-8



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28-299

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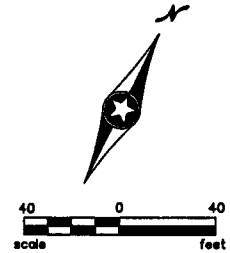
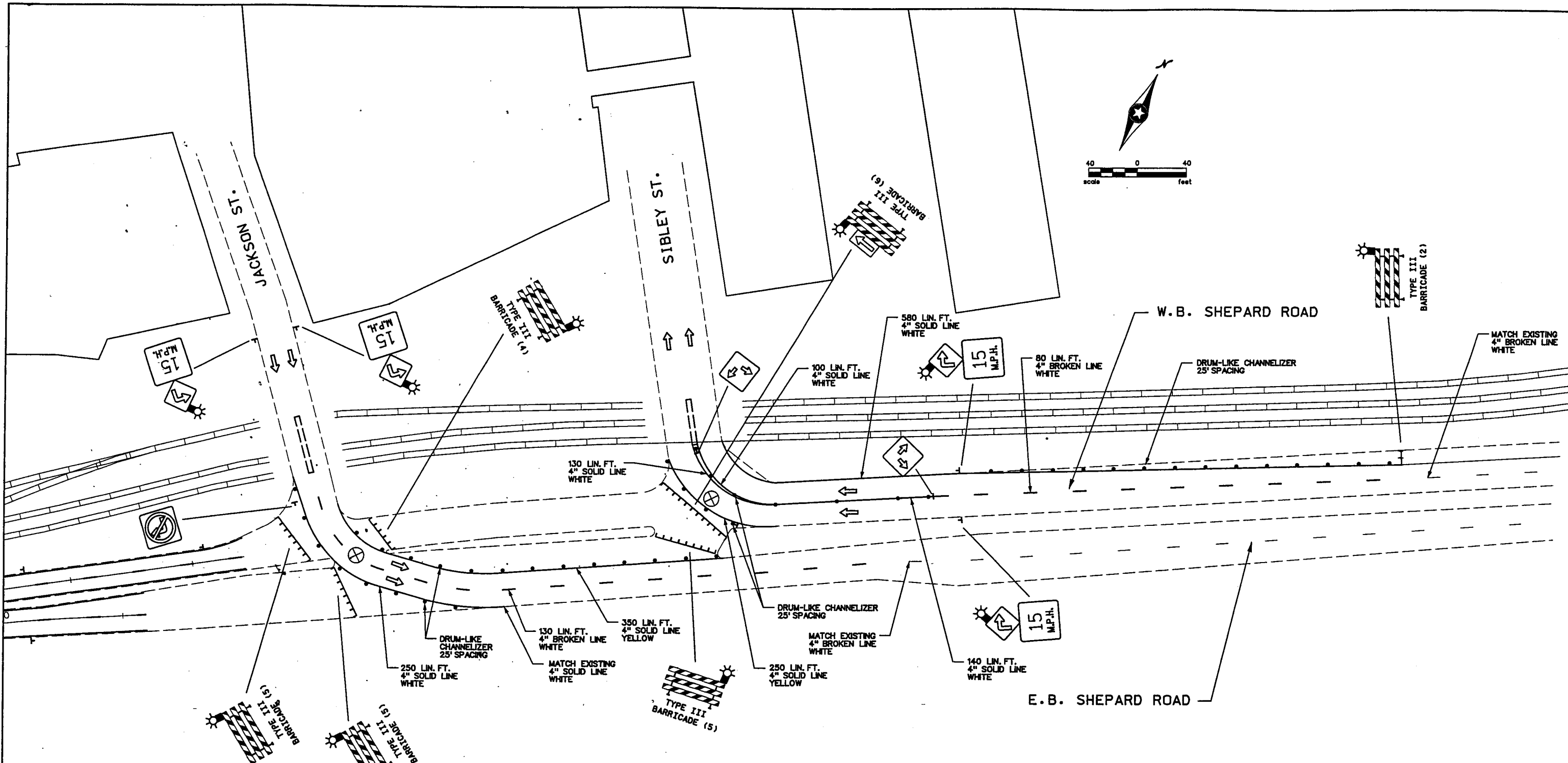
NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY: R.W. SMITH DATE: 1-01
 DESIGNED BY: P. ZAGER DATE: 1-01
 CHECKED BY: P. CORKLE DATE: 1-01
 COMM. NO.: 0993567
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 Date: 11 Sept 02 Reg. No. 24761



City of St. Paul

SHEPARD ROAD DETOUR LAYOUT		SHEET D-7 OF D-8
CITY PROJ. NO. 00-P-1200	S.A.P. 62-637-16	
STATE PROJ. NO. 6201-77	S.A.P. 164-020-88	



NOTES:

- ① ALL BROKEN LINES SHALL UTILIZE A 10' SKIP, 30' GAP PATTERN, UNLESS NOTED OTHERWISE.
- ② MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE ENGINEER.
- ③ ALL CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE ENGINEER SHALL BE REMOVED, THE METHOD OF REMOVAL SHALL BE DIRECTED BY THE ENGINEER.
- ④ ALL CONFLICTING SIGNING IDENTIFIED BY THE ENGINEER SHALL BE SALVAGED, AS DIRECTED BY THE ENGINEER.
- ⑤ ALL TEMPORARY PAVEMENT MARKINGS SHALL BE PAINT.
- ⑥ THE CITY OF ST. PAUL WILL BE RESPONSIBLE FOR ALL SIGNAL WORK. THEY SHALL BE NOTIFIED (7) SEVEN WORKING DAYS PRIOR TO SIGNAL MODIFICATIONS.

28-299

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NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY R.W. SMITH DATE 1-01
 DESIGNED BY P. ZAGER DATE 1-01
 CHECKED BY P. CORKLE DATE 1-01
 COMM. NO. 0993567
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 Date 16-Sept-02 Reg. No. 24761

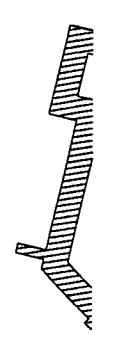
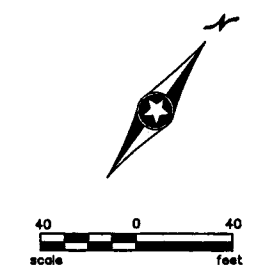


City of St. Paul

SHEPARD ROAD DETOUR LAYOUT		SHEET D-8 OF D-8
CITY PROJ. NO. 00-P-1200	S.A.P. 62-637-16	
STATE PROJ. NO. 6201-77	S.A.P. 164-020-88	

TYPE "C" SIGN TABULATIONS										
INSTALL. NO.	QUANTITY	NO. AND TYPE	KNEE BRACE	LENGTH	MOUNTING HEIGHT	SIZE	AREA	TOTAL SQUARE	CODE	PANEL
C-1	2	2U	-	13	7	24x24	4.0	8.0	R2-1	SPEED LIMIT 30
C-2	1	2U	-	13	7	24x30	5.0	5.0	R3-1	RIGHT TURN LANE
C-3	19	2U	-	13	7	24x30	5.0	95.0	R2-3a	NO PARKING
C-4	4	2U	-	14	7	24x30	5.0	20.0	W10-3	RAILROAD ADVANCE
TOTAL								128.0		

PAVEMENT MARKING TABULATIONS		
ITEM	UNIT	QUANTITY
PAVEMENT MESSAGE (RIGHT ARROW) EPOXY	EACH	1
PAVEMENT MESSAGE (RR XING) EPOXY	EACH	1
4" SOLID LINE YELLOW EPOXY	LF	5,840
4" SOLID LINE WHITE EPOXY	LF	5,770
4" BROKEN LINE WHITE EPOXY	LF	1,420



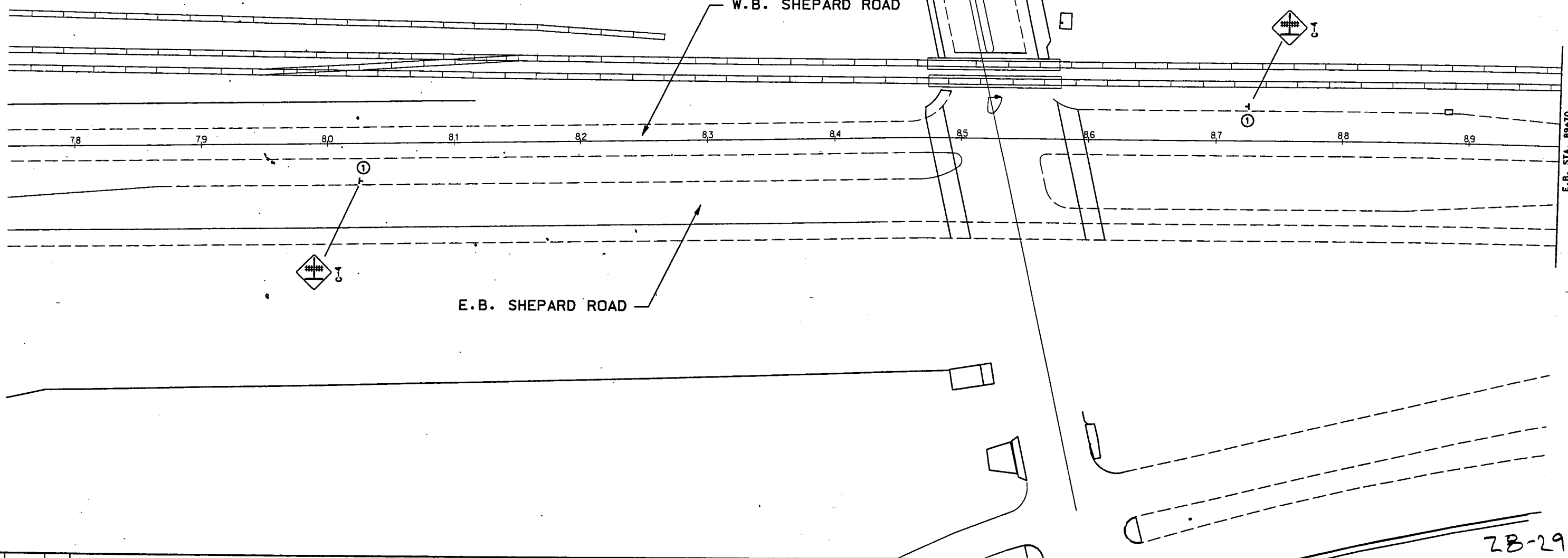
NOTES:

- ① SALVAGED EXISTING SIGN PANEL AND POSTS. FURNISH AND INSTALL NEW SIGN PANEL AND POST.

CHESTNUT STREET

W.B. SHEPARD ROAD

E.B. SHEPARD ROAD



E.B. STA. 89+70

28-299

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09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

NAME: 3567SSZ.DGN DATE: Sep. 06, 2002

DRAWN BY R.W. SMITH DATE 1-01
 DESIGNED BY P. ZAGER DATE 1-01
 CHECKED BY P. CORKLE DATE 1-01
 COMM. NO. 0993567
 I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Date 16-Sept-02 Reg. No. 24761

SRF CONSULTING GROUP, INC.

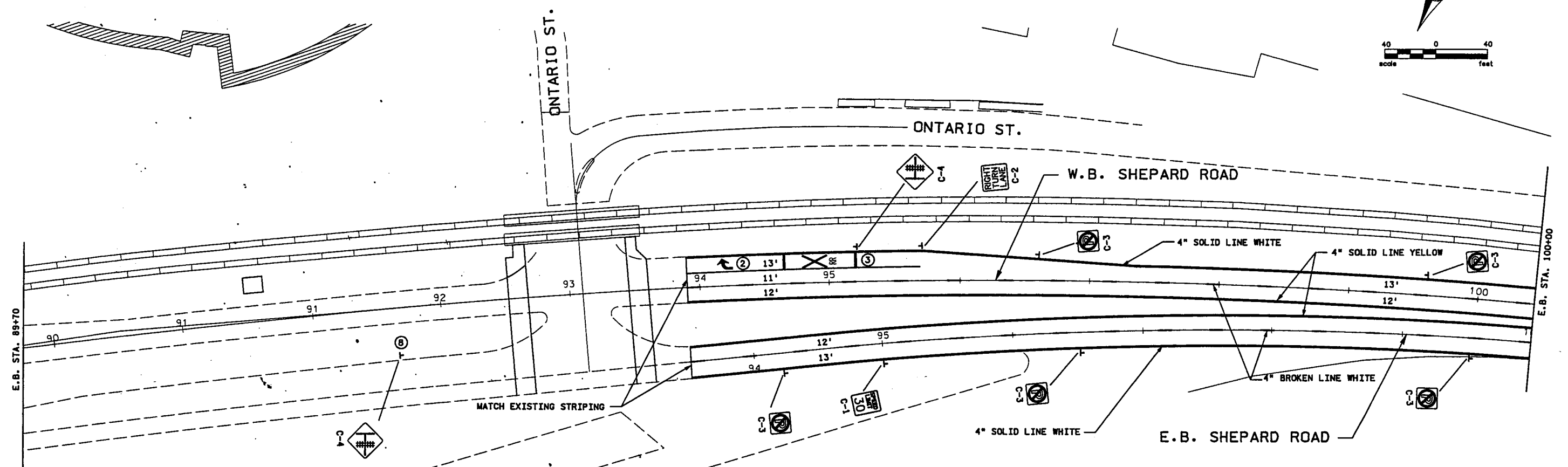
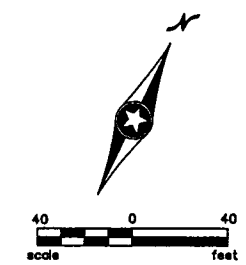


City of St. Paul

SHEPARD ROAD
 SIGNING AND STRIPING
 FROM MARKET ST. TO JACKSON ST.
 CITY PROJ. NO. 00-P-1200
 STATE PROJ. NO. 6201-77

SHEET SS-1 OF SS-9

S.A.P. 62-637-16
 S.A.P. 164-020-88



NOTES:

- ① ALL BROKEN LINES SHALL UTILIZE A 10' SKIP, 30' GAP PATTERN, UNLESS NOTED OTHERWISE.
- ② PAVEMENT MESSAGE (RIGHT TURN) EPOXY 8'-0".
- ③ PAVEMENT MESSAGE (RR CROSSING) EPOXY (SEE SPECIAL PROVISIONS).
- ④ MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE ENGINEER.
- ⑤ ALL CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE ENGINEER SHALL BE REMOVED, THE METHOD OF REMOVAL SHALL BE DIRECTED BY THE ENGINEER.
- ⑥ ALL CONFLICTING SIGNING IDENTIFIED BY THE ENGINEER SHALL BE SALVAGED, AS DIRECTED BY THE ENGINEER.
- ⑦ ALL PAVEMENT MARKINGS SHALL BE EPOXY.
- ⑧ SALVAGE EXISTING SIGN PANEL AND POSTS. FURNISH AND INSTALL NEW SIGN PANEL AND POST.

28-299

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 09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY R.W. SMITH	DATE 1-01
DESIGNED BY P. ZAGER	DATE 1-01
CHECKED BY P. CORKLE	DATE 1-01
COMM. NO. 0993567	

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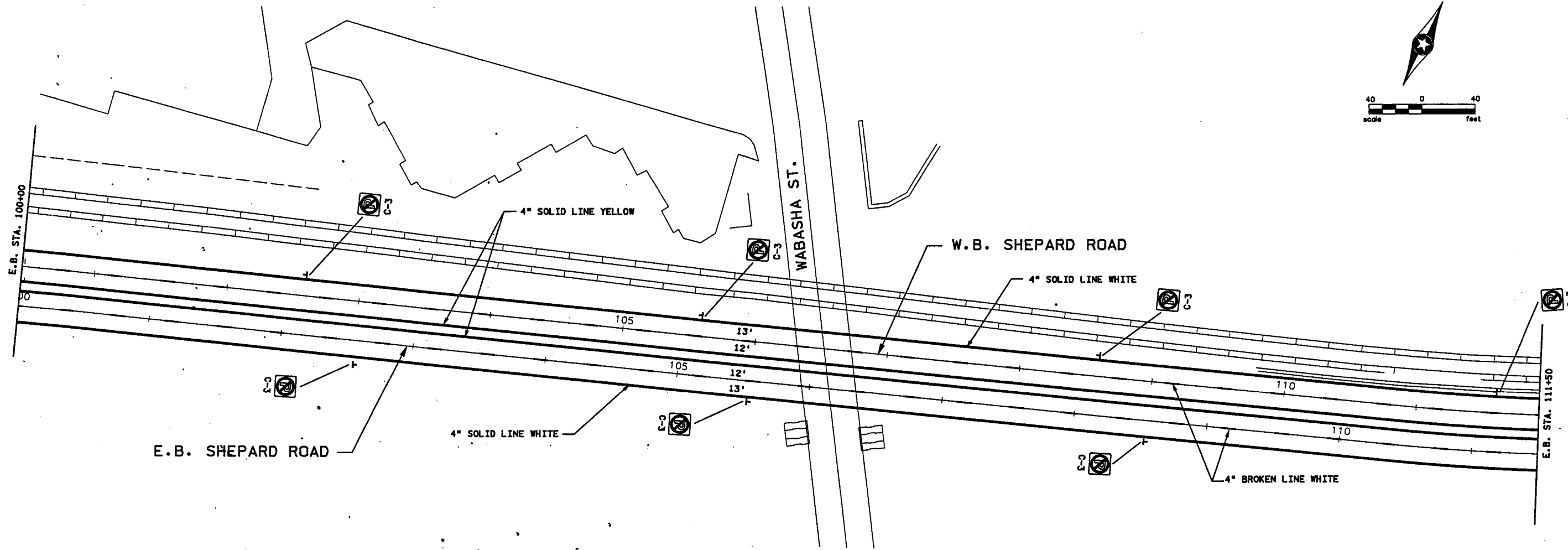
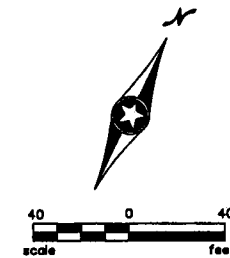
[Signature]
 Date 16 Sept 02 Reg. No. 24761



City of St. Paul

SHEPARD ROAD
 SIGNING AND STRIPING
 FROM MARKET ST. TO JACKSON ST.
 CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
 STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

SHEET
 SS-2
 OF
 SS-9



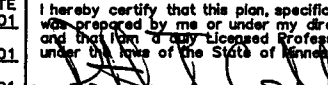
NOTES:

- ① ALL BROKEN LINES SHALL UTILIZE A 10' SKIP, 30' GAP PATTERN, UNLESS NOTED OTHERWISE.
- ② MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE ENGINEER.
- ③ ALL CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE ENGINEER SHALL BE REMOVED, THE METHOD OF REMOVAL SHALL BE DIRECTED BY THE ENGINEER.
- ④ ALL CONFLICTING SIGNING IDENTIFIED BY THE ENGINEER SHALL BE SALVAGED, AS DIRECTED BY THE ENGINEER.
- ⑤ ALL PAVEMENT MARKINGS SHALL BE EPOXY.

28-299

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 09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY R.W. SMITH DESIGNED BY P. ZAGER CHECKED BY P. CORKLE COMM. NO. 0993567	DATE 1-01 1-01 1-01	I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  Date <u>16-Sept-02</u> Reg. No. <u>26761</u>
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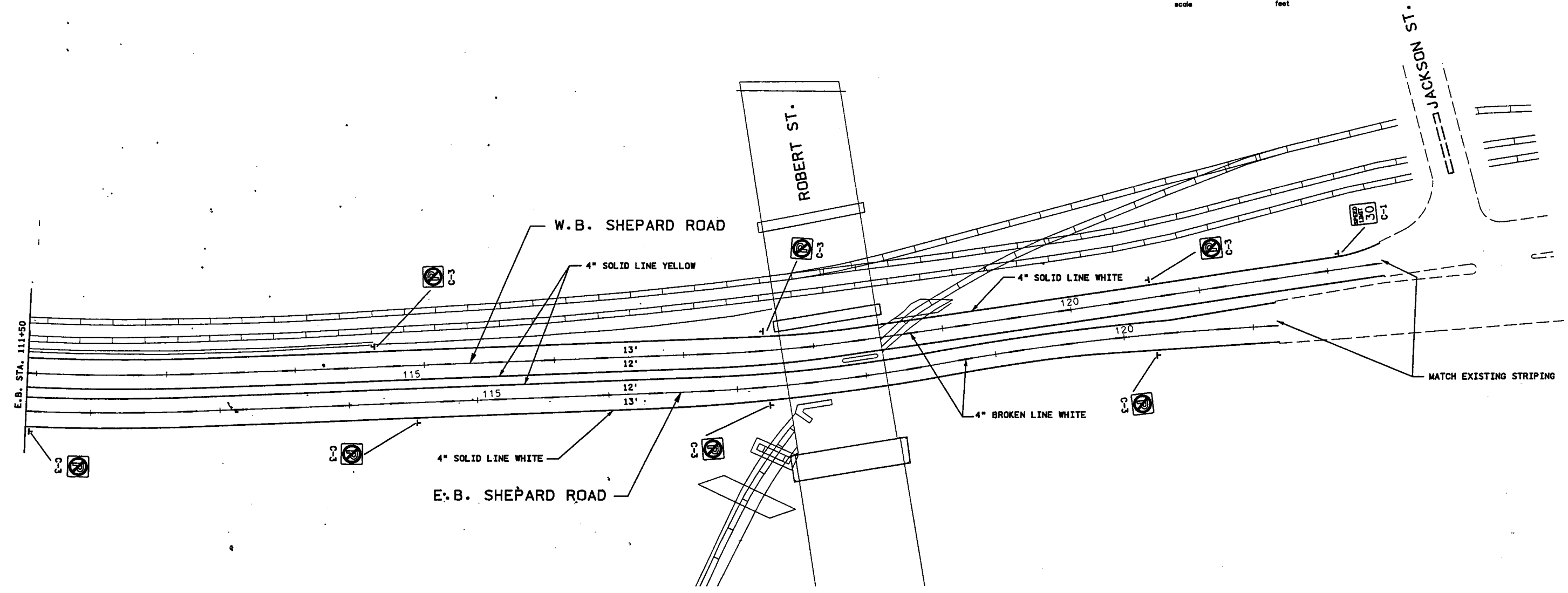
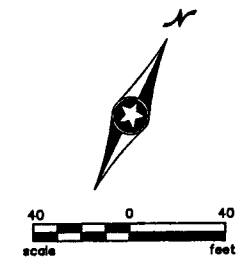


City of St. Paul

SHEPARD ROAD
SIGNING AND STRIPING
FROM MARKET ST. TO JACKSON ST.

CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
 STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

SHEET
 SS-3
 OF
 SS-9



NOTES:

- ① ALL BROKEN LINES SHALL UTILIZE A 10' SKIP, 30' GAP PATTERN, UNLESS NOTED OTHERWISE.
- ② MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE ENGINEER.
- ③ ALL CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE ENGINEER SHALL BE REMOVED, THE METHOD OF REMOVAL SHALL BE DIRECTED BY THE ENGINEER.
- ④ ALL CONFLICTING SIGNING IDENTIFIED BY THE ENGINEER SHALL BE SALVAGED, AS DIRECTED BY THE ENGINEER.
- ⑤ ALL PAVEMENT MARKINGS SHALL BE EPOXY.

28-299

P:\3567\003\3567\3567SSC.dgn
 01:32:50 PM
 01:32:50 PM
 09/16/2002

NO	DATE	BY	DESCRIPTION OF REVISIONS

DRAWN BY R.W. SMITH DATE 1-01
 DESIGNED BY P. ZAGER DATE 1-01
 CHECKED BY P. CORKLE DATE 1-01
 COMM. NO. 0993567

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
[Signature]
 Date 16-Sept-02 Reg. No. 24761

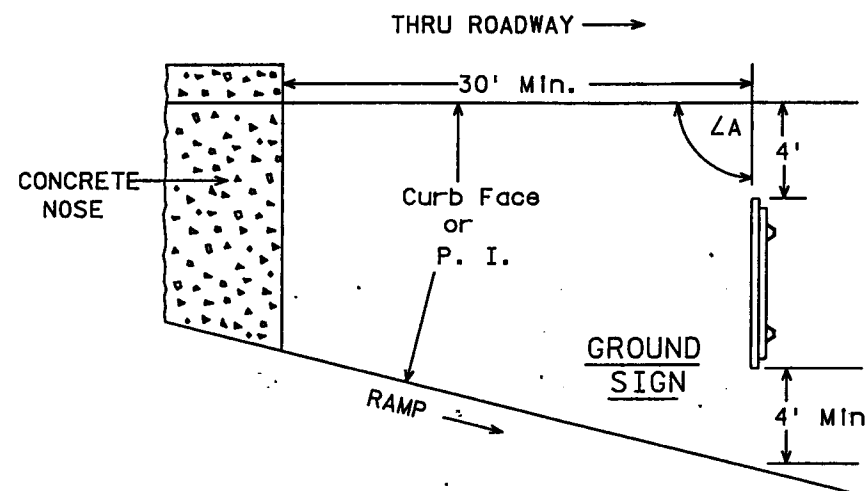


City of St. Paul

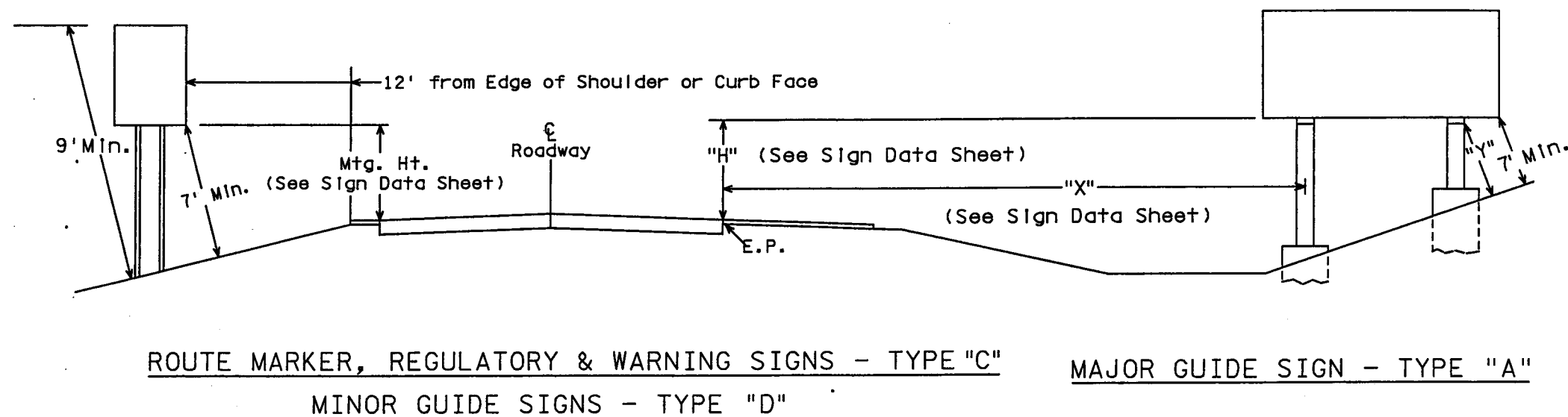
SHEPARD ROAD
 SIGNING AND STRIPING
 FROM MARKET ST. TO JACKSON ST.
 CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
 STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

SHEET
 SS-4
 OF
 SS-9

GORE PLACEMENT



ROADSIDE PLACEMENT



NOTES:

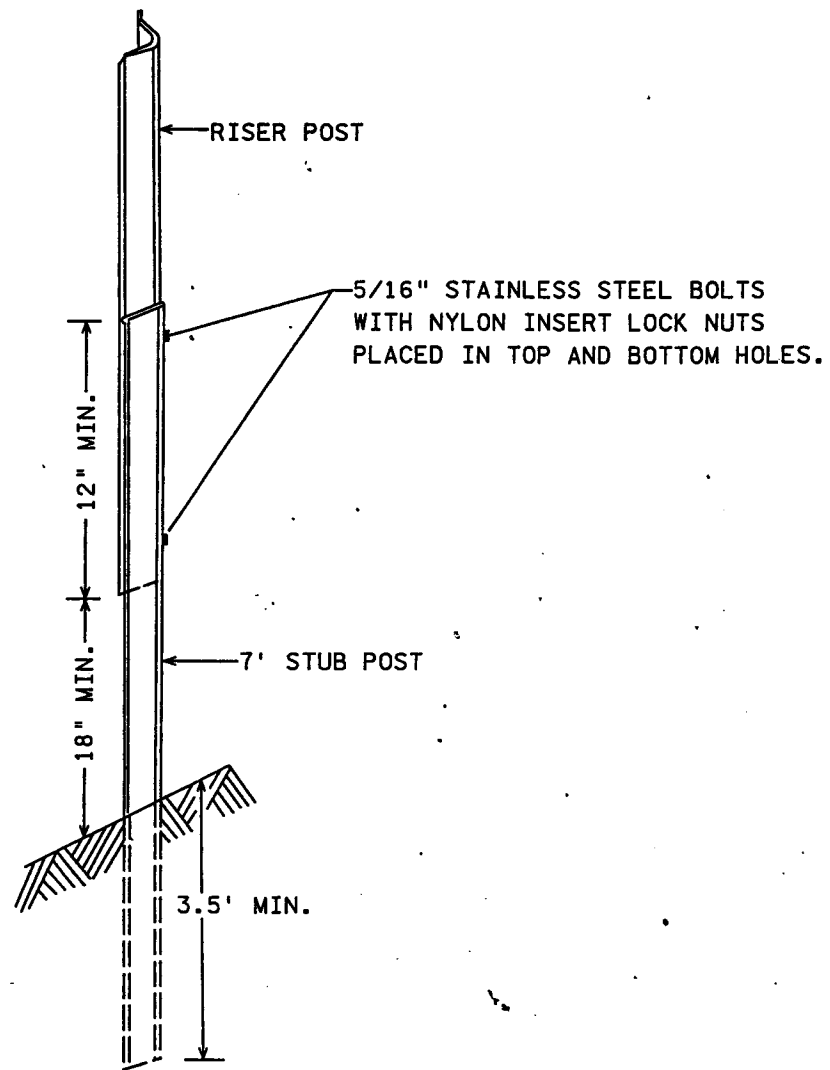
1. If a secondary sign is mounted below a major sign, the major sign shall be at least 8' above the pavement edge and the secondary sign at least 5'.
2. All route markers, warning, and regulatory signs shall be at least 6' above pavement edge except where heavy pedestrian traffic is encountered they shall be 7'.
3. Sign faces shall be vertical.
4. Overhead signs shall be positioned at right angles to the thru roadway unless otherwise noted.
5. To avoid specular glare, $\angle A$ shall be approximately 93° for signs located less than 30' from the edge of pavement and approximately 92° for signs located 30' or more from edge of pavement. This applies to signs Type A, 'C', & D' and includes signs in the gore.
6. "Y" is the perpendicular distance from the ground line to the friction fuse on the post. This distance shall be at least 7'.
7. Where "X" is less than 30', "H" shall be $7' \pm 6"$. Where "X" is 30' or greater, minimum and preferred "H" is 5'.
8. Lateral clearances given apply to right and/or left side installation.

Revised 10-26-92
4-15-94

SIGN PLACEMENT

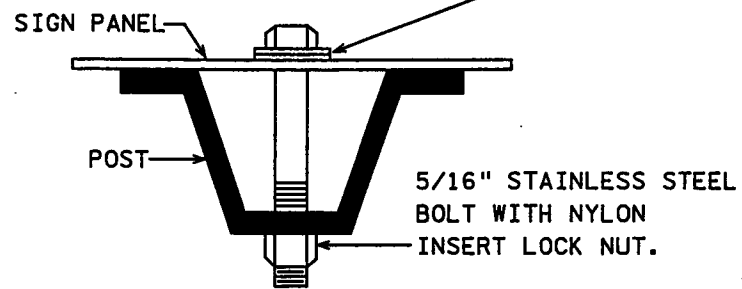
28-299

TYPE "C" & "D" POST

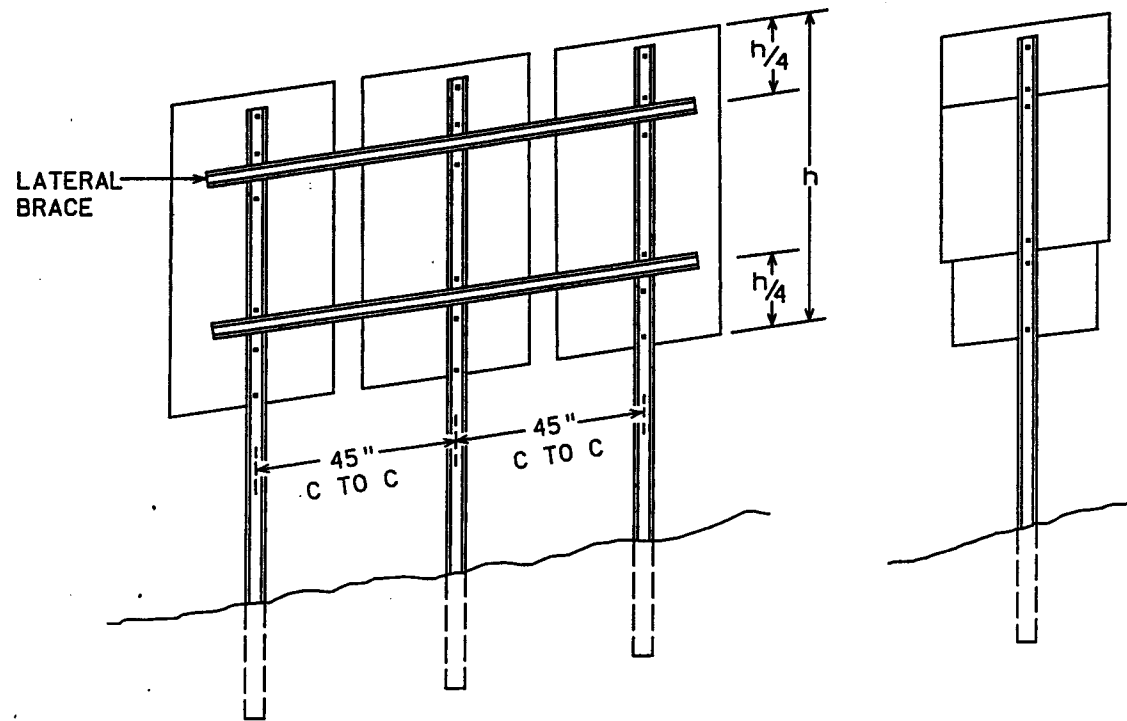


"U POST" SPLICE

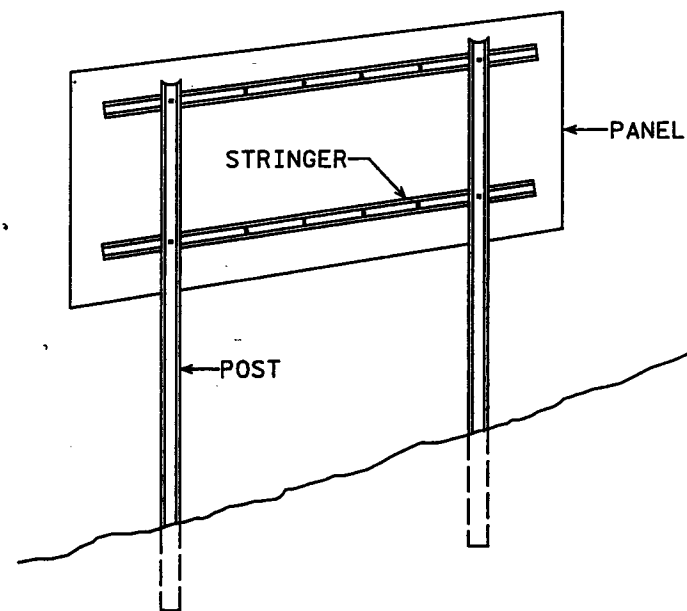
STAINLESS STEEL WASHER AND NYLON WASHER
(T= 1/32" MIN., I.D.= 3/8" MAX., O.D.= 7/8" MAX.)



"U POST" MOUNTING
TYPE "C" SIGNS



TYPICAL TYPE "C" INSTALLATIONS



TYPICAL TYPE "D" INSTALLATION

NOTES:

1. USE 3# STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE "D" SIGN POST LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE "D" SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH TYPE "D" STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCHING CODE) FOR TYPE "C" SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) "U POSTS" SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3 1/2'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DOT 3352.2A7.
11. 2 AND 3 POST TYPE "C" SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 OR MORE SINGLE POST SIGNS (TYPE "C") ARE MOUNTED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 POST SECTIONS, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN SKETCH.

"C" & "D" SIGN DETAILS

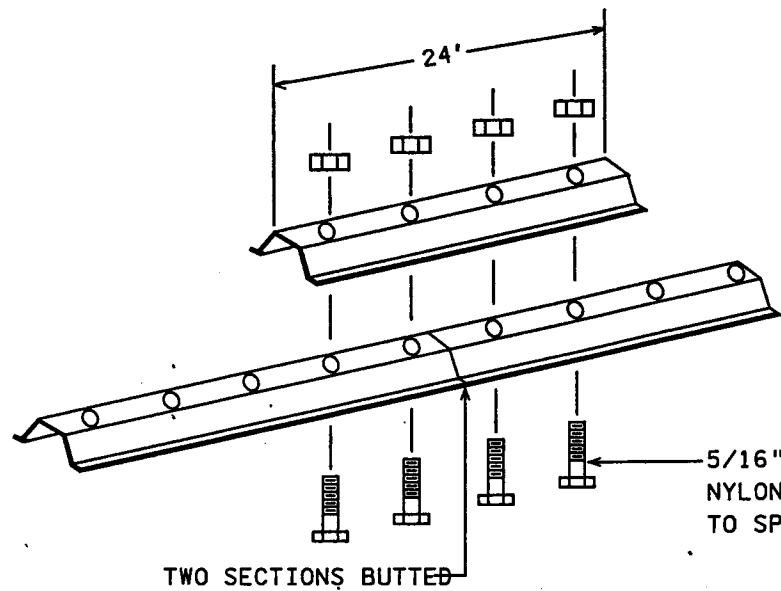
DESIGN A
Sheet 1 of 3

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Rev. 7-20-93
Rev. 3-23-90

CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

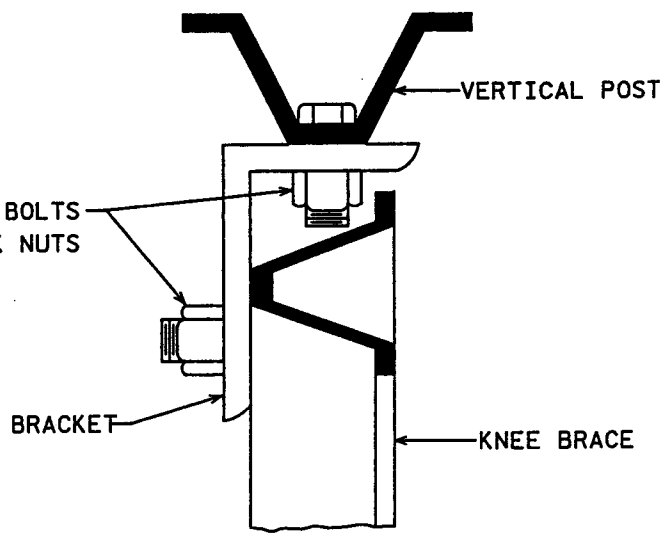
Sheet No. SS-6 of SS-9 Sheets



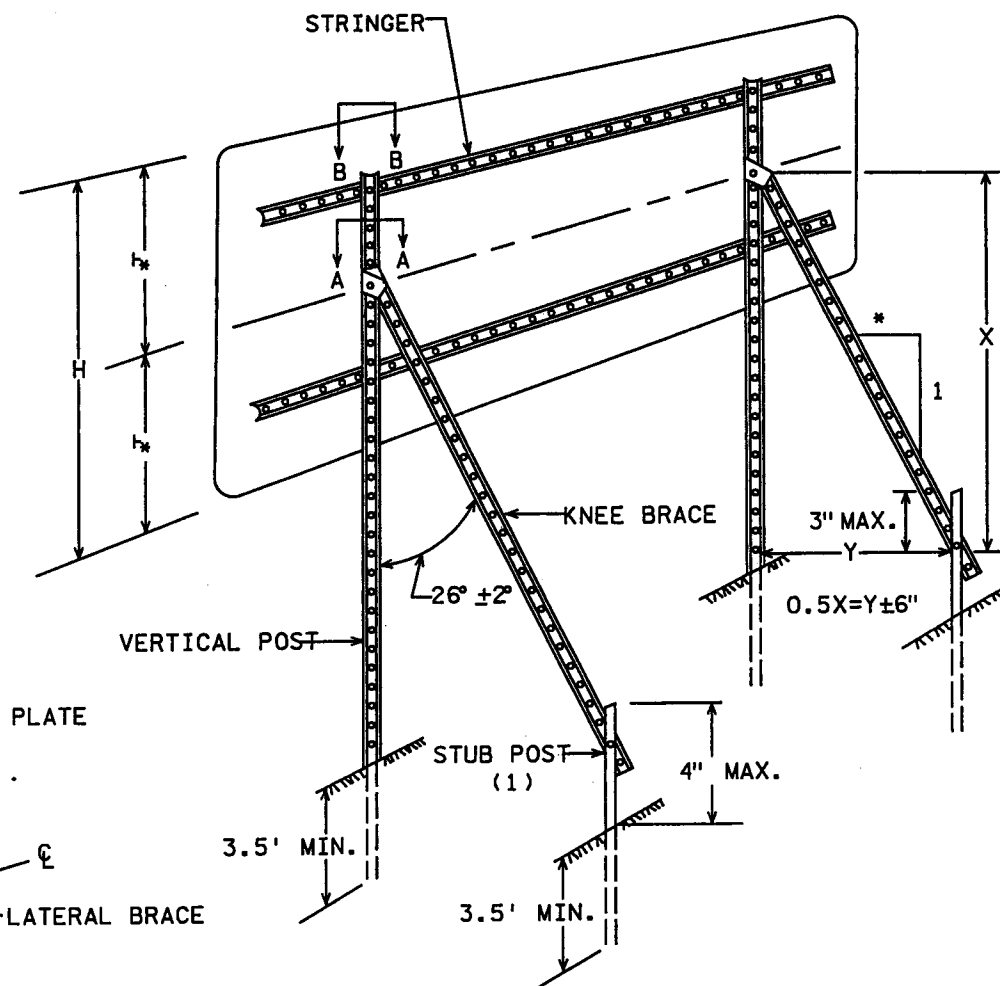
TWO SECTIONS BUTTED

5/16" STAINLESS STEEL BOLTS WITH NYLON INSERT LOCK NUTS AS CLOSE TO SPLICE & OUTSIDE HOLES.

Lateral Brace or Stringer. Splice Detail (Exploded View)

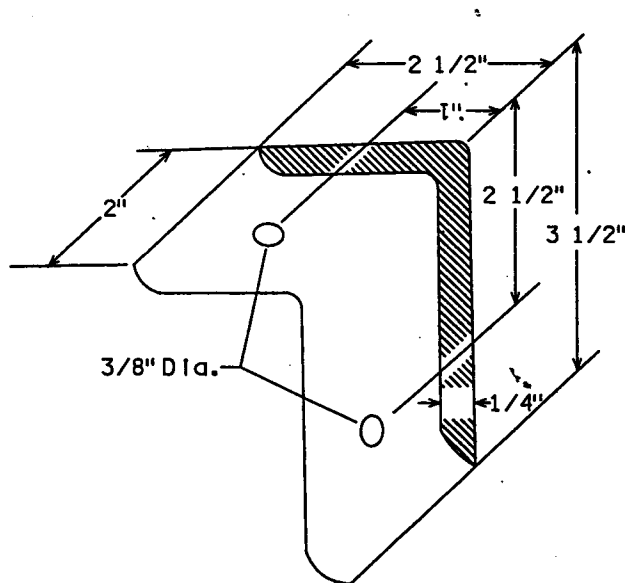


Section A-A



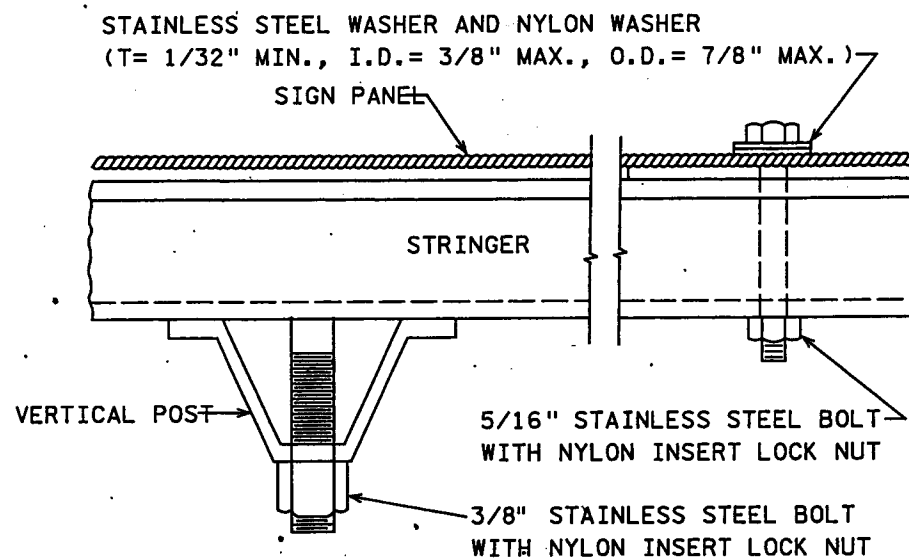
Typical "A-Frame" Installation Type "D" Signs

(1) Offset stub post 1' toward roadway relative to vertical post.

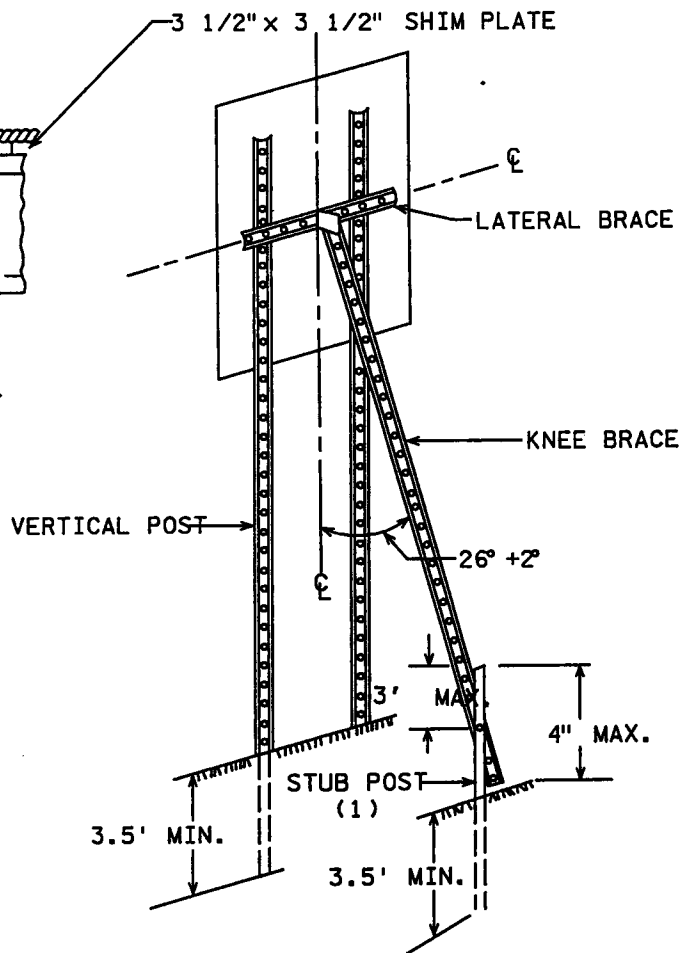


A-Frame Bracket

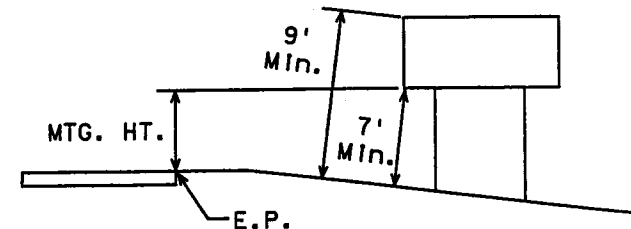
(Steel Mn/DOT 3306 galvanized per Mn/DOT 3394)



Section B-B



Typical "A-Frame" Installation Type C Signs

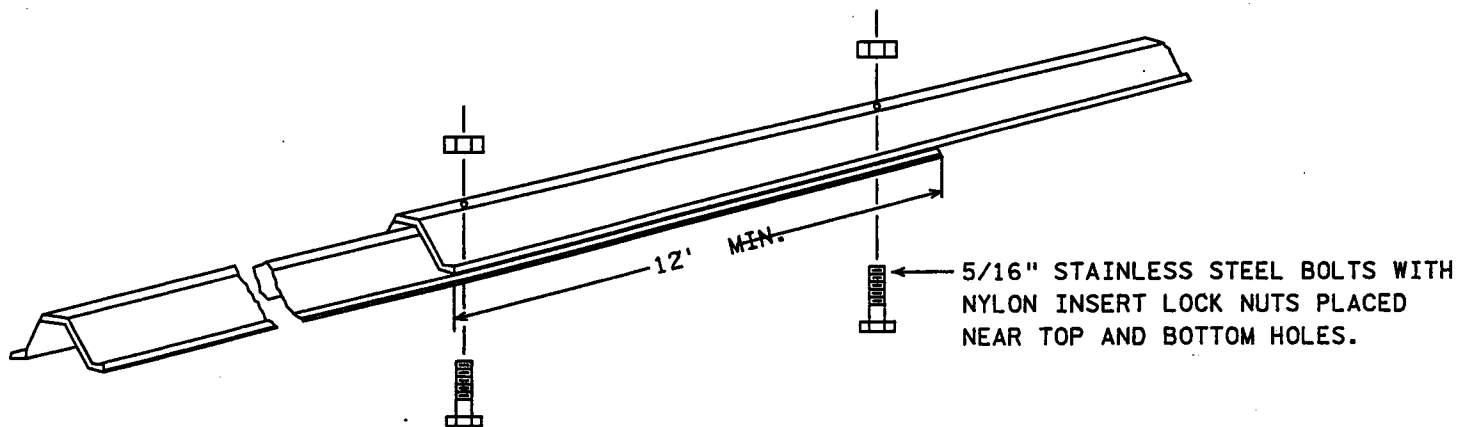


Typical Mounting

"C" & "D" SIGN DETAILS

DESIGN A
Sheet 2 of 3

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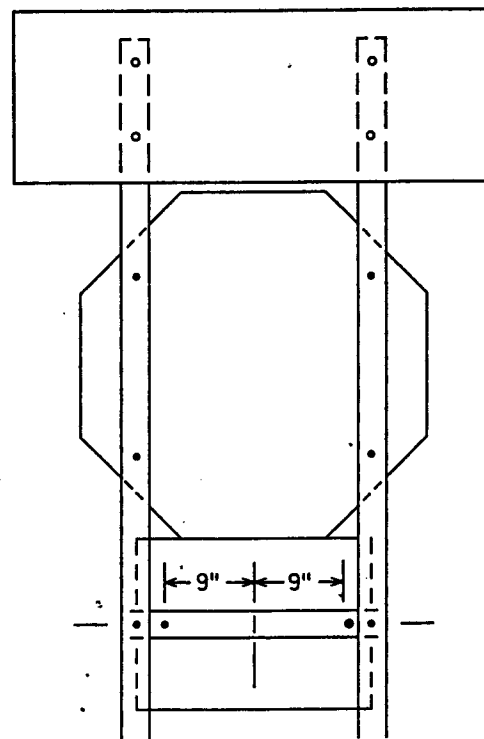
Knee Brace Splice

Rev. 3-31-93
Rev. 3-23-90

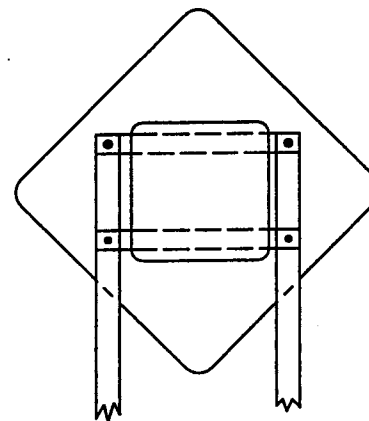
CITY PROJ. NO. 00-P-1200
STATE PROJ. NO. 6201-77

S.A.P. 62-637-16
S.A.P. 164-020-88

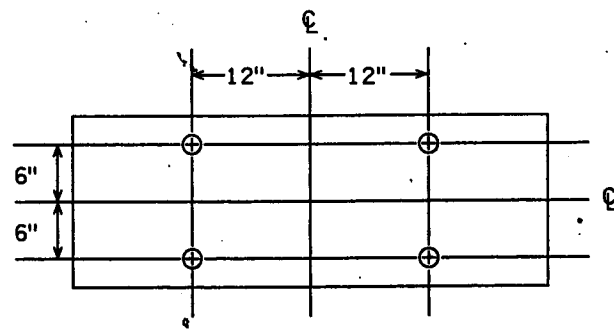
Sheet No. SS-7 of SS-9 Sheets



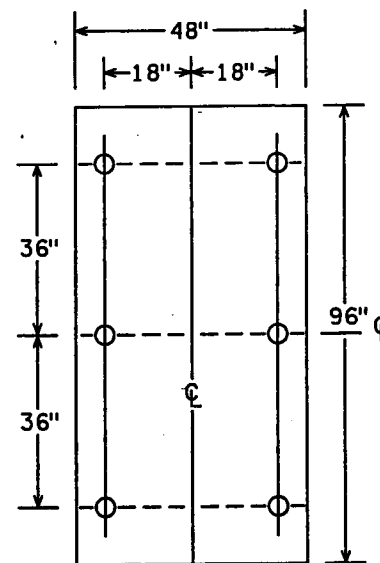
R6-1, R1-1 & (R6-3 or R6-3a)
Mounting



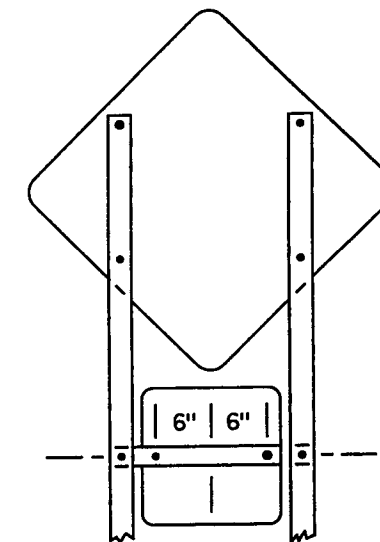
Back to back mounting
of R4-7 and W9-2



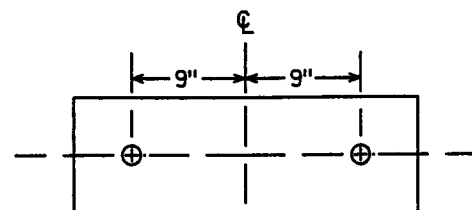
Punching for R6-1 (48x18")



Punching for R2-4a
SPEED LIMIT



(W1-1, W1-2, W1-3, W1-4 or W1-5) & W13-1
Mounting



Punching for R6-1 (36x12")

"C" & "D" SIGN DETAILS

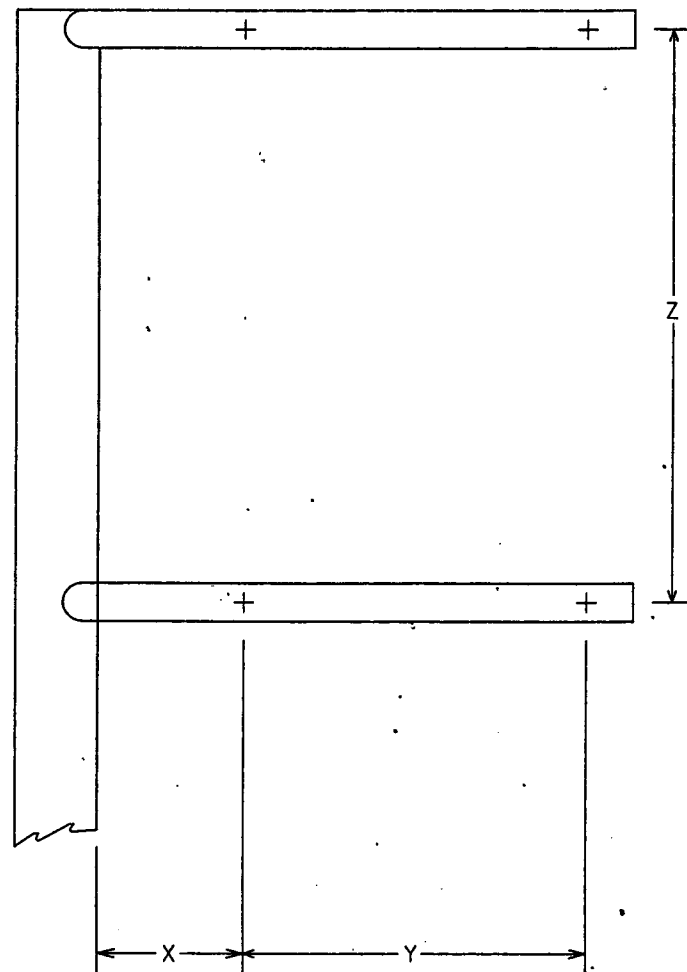
DESIGN A
Sheet 3 of 3

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Rev. 3-31-93
Rev. 3-23-90

CITY PROJ. NO. 00-P-1200 S.A.P. 62-637-16
STATE PROJ. NO. 6201-77 S.A.P. 164-020-88

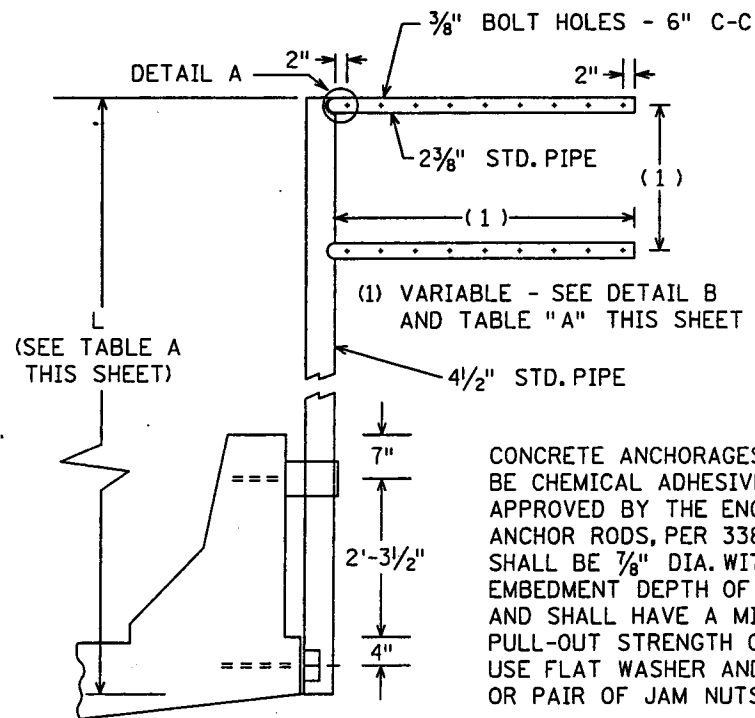
Sheet No. SS-8 of SS-9 Sheets



DETAIL B

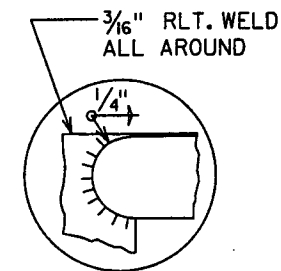
SIGN NO.	X (IN.)	Y (IN.)	Z (IN.)	L (FT.)

TABLE A



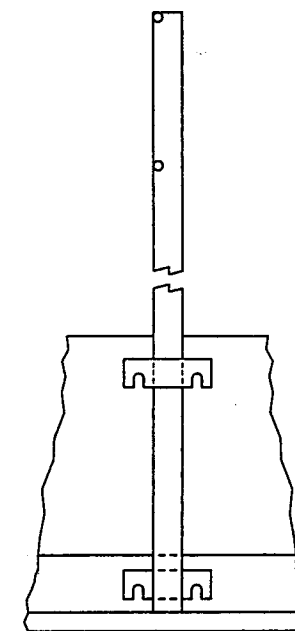
ELEVATION

CONCRETE ANCHORAGES SHALL BE CHEMICAL ADHESIVE TYPE AS APPROVED BY THE ENGINEER. ANCHOR RODS, PER 3385 TYPE A, SHALL BE 7/8" DIA. WITH A MIN. EMBEDMENT DEPTH OF 10", AND SHALL HAVE A MIN. ULTIMATE PULL-OUT STRENGTH OF 8000*. USE FLAT WASHER AND LOCK NUT OR PAIR OF JAM NUTS.

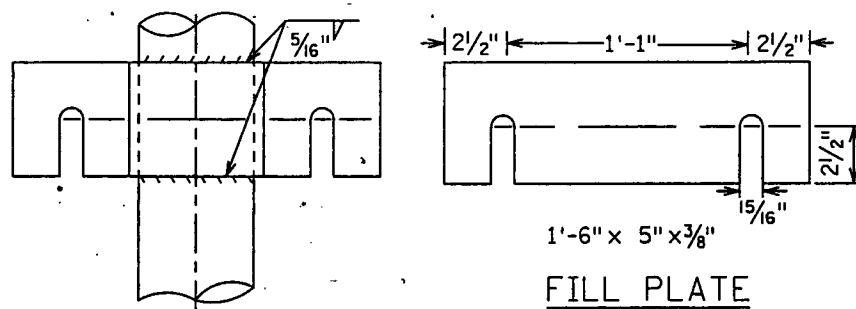


DETAIL A

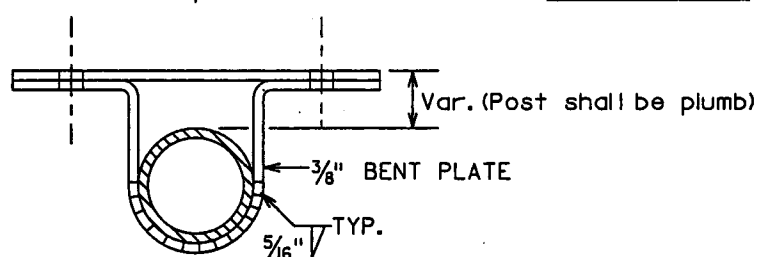
2" PIPE OFFSET ON 4 1/2" PIPE (OFFSET SHALL BE IN THE SAME DIRECTION AS THE SIGN IS FACING)



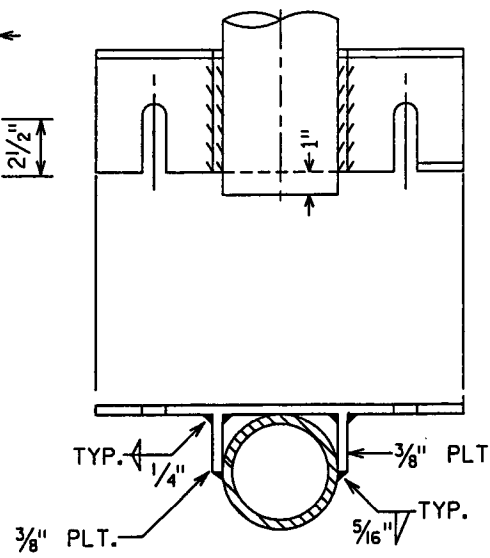
END VIEW



FILL PLATE



UPPER CONNECTION



LOWER CONNECTION

NOTES:

1. ALL PIPE MATERIAL SHALL CONFORM TO ASTM DESIGNATION A53, SCHEDULE 40.
2. ALL STEEL FOR STRUCTURAL ITEMS SHALL CONFORM TO MN/DOT 3306 (STRUCTURAL STEEL) UNLESS OTHERWISE NOTED.
3. FOR NOTES AND DETAILS NOT SHOWN, SEE TYPE C AND D SIGN DETAILS.

TYPE C & D SIGN STRUCTURAL DETAILS MOUNTED ON BRIDGE RAIL

DESIGN B (4A)

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