

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## ANOKA COUNTY, MINNESOTA

AGREEMENT NO. 04854  
ANOKA COUNTY  
S.P. 0202-95 (TH10=3)  
STATE FUNDS  
METRO DISTRICT

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS PAVEMENT, STORM SEWER, SIGNAL SYSTEM, BRIDGE NO. 02007 & 02586,  
RETAINING WALLS, LIGHTING, WATERMAIN, SANITARY SEWER AND ADA IMPROVEMENTS

LOCATED ON C.S.A.H. 83 FROM 559' SOUTH OF T.H. 10 TO 1117' NORTH OF T.H. 10

**STATE PROJ. NO. 0202-95**  
GROSS LENGTH 4485.00 FEET 0.85 MILES  
BRIDGES-LENGTH 0.00 FEET 0.00 MILES  
EXCEPTIONS-LENGTH 0.00 FEET 0.00 MILES  
NET LENGTH 4485.00 FEET 0.85 MILES  
REF. POINT 219+00.728 TO REF. POINT 220+00.593  
LENGTH AND DESCRIPTION BASED UPON W.B. T.H. 10

**STATE AID PROJ. NO. 002-683-004**  
GROSS LENGTH 1619.50 FEET 0.31 MILES  
BRIDGES-LENGTH 295.58 FEET 0.06 MILES  
EXCEPTIONS-LENGTH 0 FEET 0 MILES  
NET LENGTH 1323.92 FEET 0.25 MILES  
LENGTH AND DESCRIPTION BASED UPON N.B. C.S.A.H. 83

**STATE AID PROJ. NO. 199-115-002**  
GROSS LENGTH 1752.57 FEET 0.33 MILES  
BRIDGES-LENGTH 0 FEET 0 MILES  
EXCEPTIONS-LENGTH 0 FEET 0 MILES  
NET LENGTH 1752.57 FEET 0.33 MILES  
LENGTH AND DESCRIPTION BASED UPON N.B. RIVERDALE DR. AND E.B. RIVERDALE DR.

**STATE FUNDS**

**GOVERNING SPECIFICATIONS**

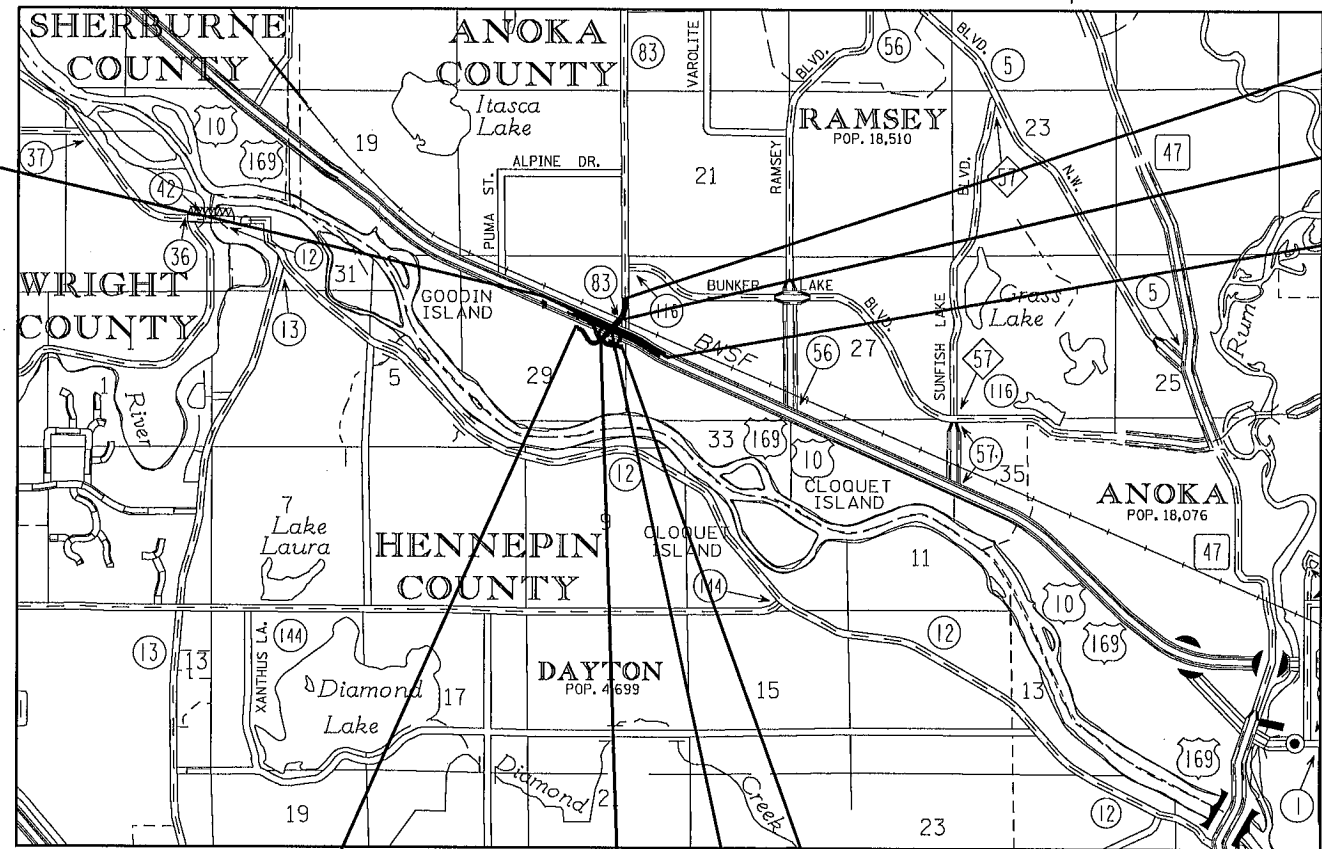
THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR CONSTRUCTION' AND THE 2014 EDITION OF THE 'MATERIALS LAB SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION' SHALL GOVERN.  
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE 'MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' (MN MUTCD) AND PART VI, 'FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS'.

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467-586	CROSS SECTIONS

THIS PLAN CONTAINS 586 SHEETS

**SRE** Consulting Group, Inc.  
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.  
SIGNATURE: *Craig Hass*  
DATE 09-12-14 LIC. NO. 45039 PRINT NAME CRAIG HASS

APPROVED	ANOKA COUNTY ENGINEER	20
APPROVED	CITY ENGINEER, CITY OF RAMSEY	20
RECOMMENDED FOR APPROVAL	DISTRICT TRANSPORTATION ENGINEER	20
RECOMMENDED FOR APPROVAL	DISTRICT MATERIALS ENGINEER	20
RECOMMENDED FOR APPROVAL	DISTRICT WATER RESOURCES ENGINEER	20
RECOMMENDED FOR APPROVAL	DISTRICT TRAFFIC ENGINEER	20
RECOMMENDED FOR APPROVAL	STATE BRIDGE ENGINEER	20
RECOMMENDED FOR APPROVAL	STATE PRE-LETTING ENGINEER	20
RECOMMENDED FOR APPROVAL	DIRECTOR, OFFICE OF LAND MANAGEMENT	20
APPROVED	STATE DESIGN ENGINEER	20
	DISTRICT STATE AID ENGINEER; REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY	20
	APPROVED FOR STATE AID FUNDING; STATE AID ENGINEER	20



BEGIN S.P. 0202-95  
@ W.B. T.H. 10  
STA. 164+70.00

END S.A.P. 002-683-004  
@ N.B. C.S.A.H. 83  
STA. 116+19.50  
BRIDGE NO. 02586

END S.P. 0202-95  
@ W.B. T.H. 10  
STA. 209+55.00

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

**EQUATIONS:**  
S.B. C.S.A.H. 83 STA. 114+47.201 BACK=  
S.B. C.S.A.H. 83 STA. 114+90.786 AHEAD

PROJECT LOCATION  
COUNTY : ANOKA  
DISTRICT : METRO

**SCALES**

INDEX MAP	3000'
GENERAL LAYOUT	200'
PLAN	50'
PROFILE	50' HORIZ. / 5' VERT.
X-SECTION	10' HORIZ. / 10' VERT.

**DESIGN DESIGNATION FOR:**

	C.S.A.H. 83	T.H. 10	BIKEWAY
R-VALUE	50	50	-
ADT (Current Year) 2009 =	6,910	38,000	-
ADT (Future Year) 2030 =	30,000 (2030)	48,500 (2030)	-
PAVEMENT DESIGN	10 TON	10 TON	-
FUNCTIONAL CLASSIFICATION	A MINOR ARTERIAL EXPANDER	PRINCIPAL ARTERIAL	-
NO. OF TRAFFIC LANES	4	4	-
NO. OF PARKING LANES	0	0	-
ESALS (20)	3,061,000 (20 YRS.)	5,236,000 (20 YRS.)	-
Design Speed	40 MPH	65 MPH	20 MPH
Based on Sight Distance	STOPPING	STOPPING	STOPPING
Height of eye / Height of Object	3.5' / 2.0'	3.5' / 2.0'	4.5' / 0.0'
Design Speed not achieved at:	N.A.	N.A.	N.A.

I HEREBY CERTIFY THAT THE FINAL FIELD CHANGES, IF ANY, OF THIS PLAN WERE MADE 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 \_\_\_\_\_ LIC. NO. \_\_\_\_\_ PRINT NAME \_\_\_\_\_

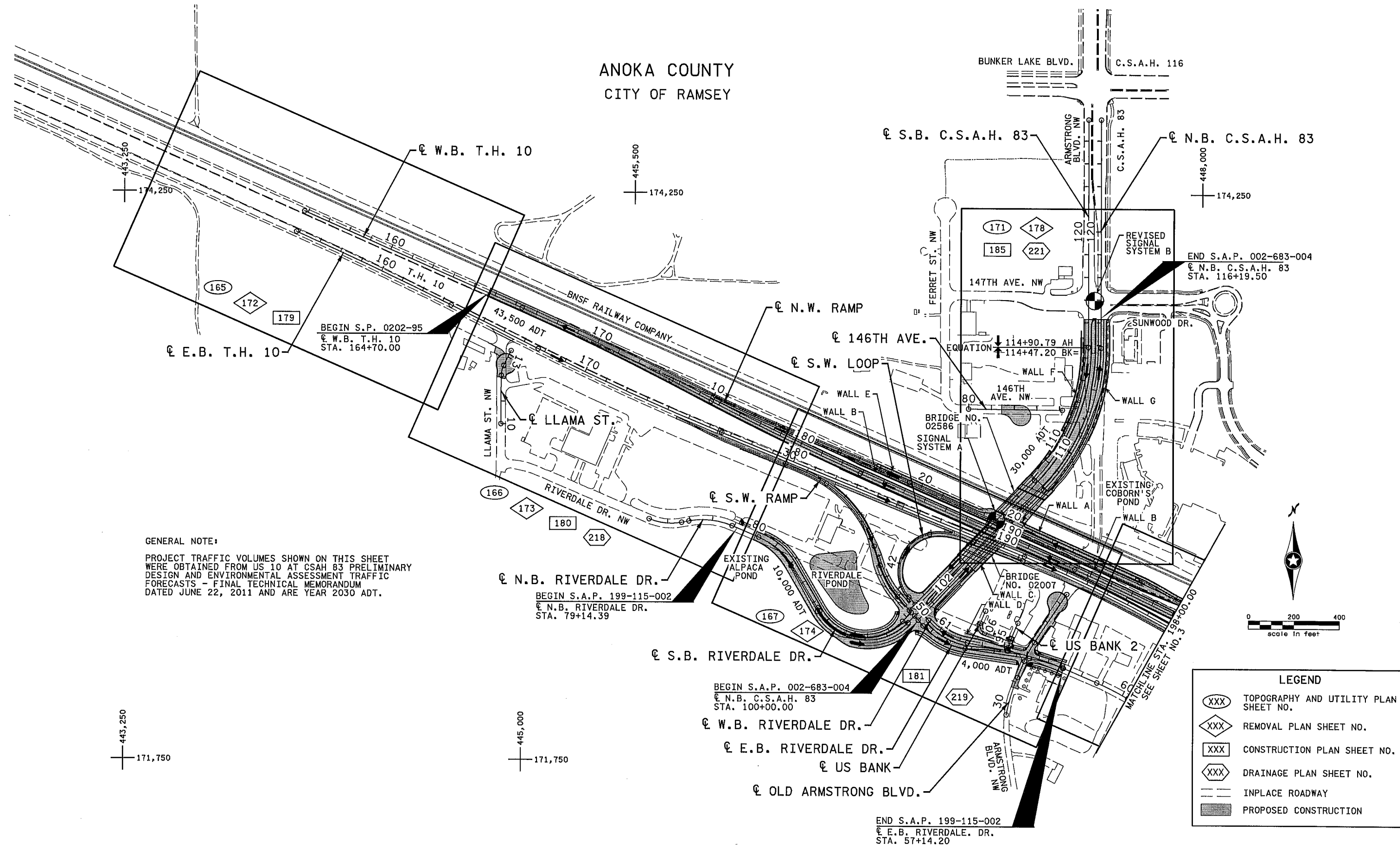
THIS PLAN AND/OR SPECIFICATION WAS PREPARED SPECIFICALLY FOR THIS PROJECT, AND ANY RE-USE OF DETAILS OR SPECIFICATIONS ON OTHER PROJECTS IS NOT INTENDED OR AUTHORIZED BY THE DESIGNER. LIABILITY FOR ANY RE-USE ON OTHER PROJECTS IS THE RESPONSIBILITY OF THE PERSON, AGENCY, OR CORPORATION USING PLAN OR SPECIFICATION DATA FROM THIS PROJECT.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL C. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

S.A.P. 002-683-004, 199-115-002  
STATE PROJ. NO. 0202-95 (TH10=3) SHEET NO. 1 OF 586 SHEETS

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ANOKA COUNTY  
CITY OF RAMSEY



GENERAL NOTE:  
PROJECT TRAFFIC VOLUMES SHOWN ON THIS SHEET WERE OBTAINED FROM US 10 AT CSAH 83 PRELIMINARY DESIGN AND ENVIRONMENTAL ASSESSMENT TRAFFIC FORECASTS - FINAL TECHNICAL MEMORANDUM DATED JUNE 22, 2011 AND ARE YEAR 2030 ADT.

LEGEND	
(XXX)	TOPOGRAPHY AND UTILITY PLAN SHEET NO.
(XXX)	REMOVAL PLAN SHEET NO.
(XXX)	CONSTRUCTION PLAN SHEET NO.
(XXX)	DRAINAGE PLAN SHEET NO.
---	INPLACE ROADWAY
█	PROPOSED CONSTRUCTION

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259

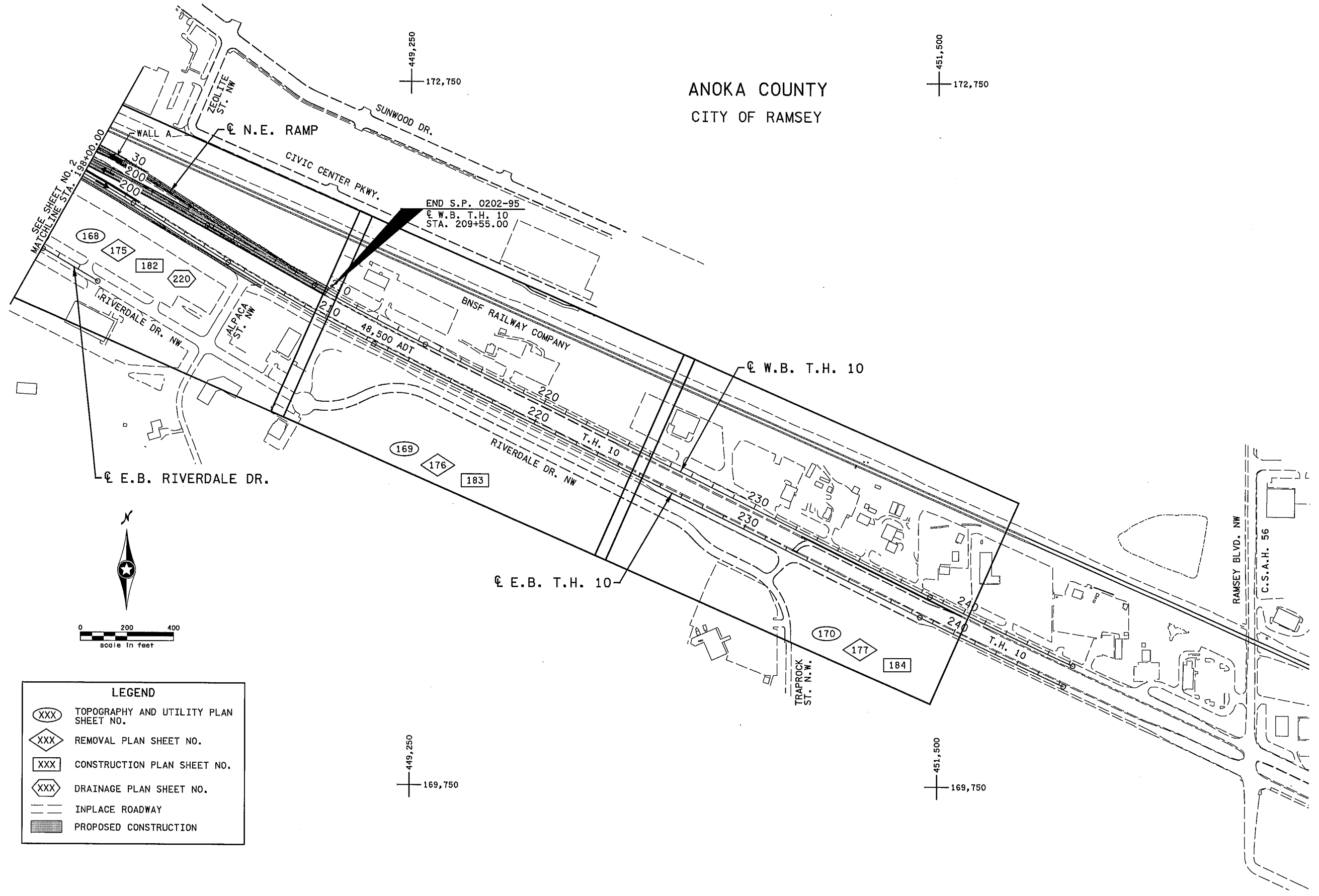


ANOKA COUNTY  
GENERAL LAYOUT  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 2 OF 586



ANOKA COUNTY  
CITY OF RAMSEY



**LEGEND**

(XXX)	TOPOGRAPHY AND UTILITY PLAN SHEET NO.
(XXX)	REMOVAL PLAN SHEET NO.
(XXX)	CONSTRUCTION PLAN SHEET NO.
(XXX)	DRAINAGE PLAN SHEET NO.
---	INPLACE ROADWAY
█	PROPOSED CONSTRUCTION

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NO	DATE	BY	CKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANJETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
GENERAL LAYOUT  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
3  
OF  
586

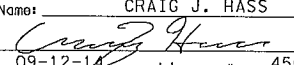
STATEMENT OF ESTIMATED QUANTITIES

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES	PROJ. NO. S.P. 0202-95		PROJ. NO. S.A.P. 199-115-002		PROJ. NO. S.A.P. 002-683-004	
							ESTIMATED	ROADWAY	STORM	ROADWAY	STORM	ROADWAY
	NN	438	2011.601	CONSTRUCTION SURVEYING	LUMP SUM	1		1				
			2021.501	MOBILIZATION	LUMP SUM	1		0.67		0.09		0.24
			2031.501	FIELD OFFICE TYPE D	EACH	1		0.67		0.09		0.24
			2031.503	FIELD LABORATORY TYPE DX	EACH	1		0.67		0.09		0.24
	G	37	2101.501	CLEARING	ACRE	4.4		3.4		0.3		0.7
	G	37	2101.506	GRUBBING	ACRE	4.4		3.4		0.3		0.7
	N	41 - 42	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	17640		12450		1980		3210
(4)			2103.501	BUILDING REMOVAL	LUMP SUM	1		1				
	H	37	2104.501	REMOVE STONE MASONRY WALL	LIN FT	360		360				
	F, QQ	34 - 36 , 236	2104.501	REMOVE PIPE CULVERTS	LIN FT	681		472		50		159
	D	31 - 32	2104.501	REMOVE WATER MAIN	LIN FT	260				90		170
	F, QQ	34 - 36 , 236	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	2251		436		1310		505
	E	33	2104.501	REMOVE SEWER PIPE (SANITARY)	LIN FT	170						170
	H	37	2104.501	REMOVE CURB & GUTTER	LIN FT	1540		550		250		740
	H	37	2104.501	REMOVE CHAIN LINK FENCE	LIN FT	1100						1100
	H	37	2104.501	REMOVE WOOD FENCE	LIN FT	290						290
	E, D	33 , 31 - 32	2104.501	REMOVE STEEL CASING	LIN FT	200						200
	H	37	2104.503	REMOVE CONCRETE WALK	SQ FT	3360		510				2850
	H	37	2104.505	REMOVE PAVEMENT	SQ YD	12570		12570				
	H	37	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	46740		25320		8540		12880
	D	31 - 32	2104.509	REMOVE PIEZOMETER	EACH	3		3				
	F, QQ	34 - 36 , 236	2104.509	REMOVE PIPE APRON	EACH	24		16		1		7
	E	33	2104.509	REMOVE SEPTIC TANK	EACH	2		2				
	C	27 - 30	2104.509	REMOVE LIGHTING UNIT	EACH	8						8
	E	33	2104.509	REMOVE MANHOLE	EACH	1						1
	D	31 - 32	2104.509	REMOVE GATE VALVE & BOX	EACH	3				2		1
	D	31 - 32	2104.509	REMOVE HYDRANT	EACH	1						1
	F, QQ	34 - 36 , 236	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	12		5		4		3
	C, H	27 - 30 , #TB11	2104.509	REMOVE LIGHT FOUNDATION	EACH	9						9
	BB, CC	350 , 350	2104.509	REMOVE MARKER	EACH	6		2				4
	V	347 - 348	2104.509	REMOVE SIGN TYPE C	EACH	55		33		12		10
	Y	350	2104.509	REMOVE SIGN TYPE D	EACH	10		7		2		1
	H	37	2104.509	REMOVE SIGN TYPE SPECIAL	EACH	3		1				2
	H	37	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	60		50				10
	H	37	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	12250		10840		1240		170
	F	34 - 36	2104.523	SALVAGE CASTING	EACH	2				2		
	F	34 - 36	2104.523	SALVAGE PIPE APRON	EACH	1						1
	FF	392	2104.523	SALVAGE LIGHT FOUNDATION	EACH	1				1		
	FF	392	2104.523	SALVAGE LIGHTING UNIT	EACH	1				1		
	NN	438	2104.523	SALVAGE FIBER OPTIC VAULT	EACH	1		1				
	D	31 - 32	2104.525	ABANDON WELL	EACH	1				1		
	NN	438	2104.601	REMOVE CABLES	LUMP SUM	1		1				
(4)			2104.601	REGULATED WASTE EVALUATION	LUMP SUM	1		1				
			2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1		1				
	QQ	236	2104.603	ABANDON PIPE SEWER	LIN FT	13		13				
(1) (5)			2105.602	SETTLEMENT PLATES	EACH	19		19				

NOTES:

- (1) SEE MISCELLANEOUS DETAILS.
- (2) BITUMINOUS QUANTITIES BASED ON UNIT WEIGHT OF 113 POUNDS PER SQUARE YARD PER INCH, TACK COAT AND LONGITUDINAL JOINT ADHESIVE SHALL BE INCIDENTAL.
- (3) SEE CONSTRUCTION/ SOILS NOTES FOR DESCRIPTION.
- (4) 8175 RIVERDALE DRIVE N.W. SEE REMOVAL PLANS.
- (5) SEE PUBLIC UTILITY PLANS.
- (6) SEE PROTECT TREE AREAS IN REMOVAL PLANS.
- (7) QUANTITY ALSO INCLUDES MEDIAN NOSES, ENTRANCE NOSES, EXIT NOSES, AND PEDESTRIAN RAMPS.
- (8) TEMPORARY IMPACT ATTENUATOR, SEE STAGING AND TRAFFIC CONTROL PLANS
- (9) PERMANENT IMPACT ATTENUATOR, TEST LEVEL 2
- (10) SEE SOILS AND CONSTRUCTION NOTES

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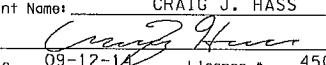

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CRAIG J. HASS  Date: 09-12-10 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259	ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES T.H. 10 / C.S.A.H. 83 INTERCHANGE	SHEET 4 OF 586
NO. DATE BY CKD APPR REVISION					

STATEMENT OF ESTIMATED QUANTITIES

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES	PROJ. NO. S.P. 0202-95		PROJ. NO. S.A.P. 199-115-002		PROJ. NO. S.A.P. 002-683-004	
							ESTIMATED	ROADWAY	STORM	ROADWAY	STORM	ROADWAY
	A	17	2105.607	EXCAVATION SPECIAL	CU YD	3700	3700					
	A	17	2105.607	COMMON BORROW SPECIAL (CV)	CU YD	3670	3670					
(10)			2105.607	HAUL & DISPOSE OF CONTAMINATED MATERIAL	CU YD	3430	3430					
	A	17	2106.607	EXCAVATION - COMMON (P)	CU YD	160216	119626		12933		27657	
	A	17	2106.607	EXCAVATION - SUBGRADE (P)	CU YD	30994	28155		1520		1319	
	A	17	2106.607	COMMON EMBANKMENT (CV) (P)	CU YD	296162	106393		53712		136057	
(3)	A	17	2106.607	GRANULAR EMBANKMENT (CV) (P)	CU YD	52397	30527		12031		9839	
(3)	A	17	2106.607	SELECT GRANULAR EMBANKMENT (CV) (P)	CU YD	22735	19457				3278	
	J	38	2211.503	AGGREGATE BASE (CV) CLASS 5 MODIFIED (P)	CU YD	4640	140		4040		460	
	J	38	2211.503	AGGREGATE BASE (CV) CLASS 6 (P)	CU YD	19950	16220		20		3710	
(2)	J	38	2360.501	TYPE SP 12.5 WEARING COURSE MIX (2,C)	TON	2300	1980		240		80	
(2)	J	38	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	3370	120		1670		1580	
(2)	J	38	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,C)	TON	2370					2370	
(2)	J	38	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TON	10810	10790		20			
(2)	J	38	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	2250			2250			
(2)	J	38	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (4,B)	TON	8330	7060		10		1260	
	R, S	246	280	2401.513	TYPE MOD F (TL-4) RAILING CONCRETE (3Y46) (P)	LIN FT	813		153		660	
	R		246	2401.513	TYPE MOD P-1 (TL-2) RAILING CONC (3Y46) (P)	LIN FT	460				460	
	R, S	246	280	2401.513	TYPE MOD P-4 (TL-4) RAILING CONC (3Y46) (P)	LIN FT	2812	2812				
	R		246	2402.583	ORNAMENTAL METAL RAILING TYPE SPECIAL 1 (P)	LIN FT	460				460	
	EE	43		2406.553	BRIDGE APPROACH PANELS (P)	SQ YD	2155	1330			825	
	S	280		2411.501	STRUCTURAL CONCRETE (1A43) (P)	CU YD	1943	1890		53		
	R, S	246	280	2411.501	STRUCTURAL CONCRETE (3Y43) (P)	CU YD	3339	2938		89		312
	Q	232	235	2411.507	CONCRETE INLET PAD	EACH	8		8			
	S	280		2411.541	REINFORCEMENT BARS (P)	POUND	164423	160107		4316		
	R, S	246	280	2411.541	REINFORCEMENT BARS (EPOXY COATED) (P)	POUND	531637	468544		9673		53420
	R		246	2411.604	MECHANICALLY STABILIZED EARTH WALL (P)	SQ YD	5709	3401			2308	
	R, S	246	280	2411.618	ANTI-GRAFFITI COATING (P)	SQ FT	49852	34844		1398		13610
	R, S	246	280	2411.618	SPECIAL SURFACE FINISH (P)	SQ FT	88399	62600		1349		24450
	R, S	246	280	2411.618	ARCH SURFACE-FINISH (SINGLE COLOR) (P)	SQ FT	1430	1430				
	R, S	246	280	2411.618	ARCH SURFACE FINISH (MULTI COLOR) (P)	SQ FT	4220	2880		50		1290
	R, S	246	280	2411.618	ARCH CONC TEXTURE (THIN BRICK) (P)	SQ FT	4220	2880		50		1290
	R	246		2411.618	ARCH CONC TEXTURE (CUT STONE) (P)	SQ FT	1430	1430				
	T	461		2411.618	SIDEWALK SCORING	S F	323			323		
	T	461		2411.618	SIDEWALK COLOR SYSTEM	S F	323			323		
	A	17		2451.501	STRUCTURE EXCAVATION CLASS U	CU YD	20373	12143		756		7474
	A	17		2451.503	GRANULAR BACKFILL (CV)	CU YD	3675	3400		275		
	Q, QQ	236	232 - 235	2451.507	GRANULAR BEDDING (CV)	CU YD	20.0	5.0			15.0	
	A	17		2451.607	STRUCTURAL BACKFILL	CU YD	113060	82673		509		29878
	QQ	236		2501.515	12" GS PIPE APRON	EACH	2			1		1
	QQ	236		2501.515	15" GS PIPE APRON	EACH	2			2		
	QQ	236		2501.515	21" GS PIPE APRON	EACH	1			1		
	Q, QQ	232	235	236	2501.515	15" RC PIPE APRON	EACH	5		5		
	Q	232	235		2501.515	18" RC PIPE APRON	EACH	3		3		
	Q	232	235		2501.515	21" RC PIPE APRON	EACH	1		1		
	Q	232	235		2501.515	24" RC PIPE APRON	EACH	3		3		
	Q	232	235		2501.515	30" RC PIPE APRON	EACH	2		2		
	Q	232	235		2501.525	22" SPAN RC PIPE-ARCH APRON	EACH	1		1		
	Q	232	235		2501.567	21" SPAN CS SAFETY APR & GRATE DES 3128	EACH	1		1		
	Q	232	235		2501.569	15" RC SAFETY APRON	EACH	1		1		

- NOTES:
- SEE MISCELLANEOUS DETAILS.
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  - QUANTITY ALSO INCLUDES MEDIAN NOSES, ENTRANCE NOSES, EXIT NOSES, AND PEDESTRIAN RAMPS.
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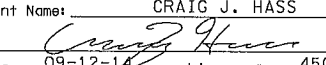

NO	DATE	BY	CKD	APPR	REVISTON	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Pr Int Name: CRAIG J. HASS  Date: 09-12-14 License #: 45039	STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259	 ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.	ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES T.H. 10 / C.S.A.H. 83 INTERCHANGE	SHEET 5 OF 586
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STATEMENT OF ESTIMATED QUANTITIES

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES	PROJ. NO. S.P. 0202-95		PROJ. NO. S.A.P. 199-115-002		PROJ. NO. S.A.P. 002-683-004	
							ESTIMATED	ROADWAY	STORM	ROADWAY	STORM	ROADWAY
	Q	232 - 235	2501.569	24" RC SAFETY APRON	EACH	4		4				
	Q	232 - 235	2501.573	INSTALL PIPE APRON	EACH	1						1
	Q	232 - 235	2501.602	TRASH GUARD FOR 15" PIPE APRON	EACH	1		1				
	Q	232 - 235	2501.602	TRASH GUARD FOR 18" PIPE APRON	EACH	1						1
	Q	232 - 235	2501.602	TRASH GUARD FOR 21" PIPE APRON	EACH	1		1				
	F	34 - 36	2501.603	CLEAN PIPE CULVERT	LIN FT	475		420				55
	R, S	246 , 280	2502.521	4" TP PIPE DRAIN	LIN FT	186	111		75			
	R, S	246 , 280	2502.521	6" TP PIPE DRAIN	LIN FT	1250	780				470	
	R, S	246 , 280	2502.541	4" PERF TP PIPE DRAIN	LIN FT	858	705		153			
	R, S	246 , 280	2502.541	6" PERF TP PIPE DRAIN	LIN FT	9372	5952				3420	
	QQ	236	2503.511	12" CS PIPE SEWER	LIN FT	506		457				49
	QQ	236	2503.511	15" CS PIPE SEWER	LIN FT	77		77				
	QQ	236	2503.511	21" CS PIPE SEWER	LIN FT	22		22				
	QQ	236	2503.511	24" CS PIPE SEWER	LIN FT	33		33				
	GG	43	2503.511	24" PVC PIPE SEWER	LIN FT	384					384	
	GG	43	2503.511	30" PVC PIPE SEWER	LIN FT	198					198	
	Q	232 - 235	2503.521	22" SPAN RC PIPE-ARCH SEWER CL IIA	LIN FT	72		72				
	Q, QQ	232 - 235 , 236	2503.541	15" RC PIPE SEWER DES 3006 CL V	LIN FT	5789		3219		1091		1479
	Q	232 - 235	2503.541	18" RC PIPE SEWER DES 3006	LIN FT	594		109		442		43
	Q	232 - 235	2503.541	18" RC PIPE SEWER DES 3006 CL III	LIN FT	145		103				42
	Q	232 - 235	2503.541	18" RC PIPE SEWER DES 3006 CL IV	LIN FT	130		96				34
	Q	232 - 235	2503.541	21" RC PIPE SEWER DES 3006 CL III	LIN FT	29						29
	Q	232 - 235	2503.541	21" RC PIPE SEWER DES 3006 CL V	LIN FT	407			252			155
	Q	232 - 235	2503.541	24" RC PIPE SEWER DES 3006	LIN FT	264		264				
	Q	232 - 235	2503.541	24" RC PIPE SEWER DES 3006 CL IV	LIN FT	88		88				
	Q	232 - 235	2503.541	30" RC PIPE SEWER DES 3006	LIN FT	721		721				
(5)	Q, QQ	232 - 235 , 236	2503.601	SEWER INSPECTION	LUMP SUM	1					1	
	Q, QQ	232 - 235 , 236	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	11		6		4		1
	Q, QQ	232 - 235 , 236	2503.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE	EACH	4		1				3
	GG	43	2503.602	CONNECT TO EXISTING SANITARY SEWER SER	EACH	2					2	
	GG	43	2503.602	24" PIPE PLUG	EACH	1					1	
	E	33	2503.603	PLUG FILL & ABANDON PIPE SEWER	LIN FT	330					330	
	Q	232 - 235	2503.603	30" STEEL CASING PIPE	LIN FT	47		23				24
	GG	43	2503.603	42" STEEL CASING PIPE	LIN FT	188					188	
(5)			2504.601	TEST EXISTING WATER MAIN	LUMP SUM	1					1	
	D	31 - 32	2504.602	ADJUST GATE VALVE & BOX	EACH	7			7			
	Q	232 - 235	2504.604	4" POLYSTYRENE INSULATION	SQ YD	14.2				14.2		
	GG	43	2504.608	WATERMAIN FITTINGS	POUND	81					81	
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DESIGN F	LIN FT	264.0		108.0				156.0
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	61.0		47.0				14.0
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	84.0		44.0				40.0
	Q, QQ	232 - 235 , 236	2506.501	CONST DRAINAGE STRUCTURE DESIGN SD-48	LIN FT	24.0		7.0		17.0		
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DESIGN SD-60	LIN FT	9.0		4.5				4.5
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	LIN FT	45.0			45.0			
	GG	43	2506.501	CONST DRAINAGE STRUCTURE DESIGN SPEC 3	LIN FT	70.9					70.9	
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	151.0			151.0			
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DES 54-4020	LIN FT	8.0		8.0				
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	12.5		12.5				
	Q	232 - 235	2506.501	CONST DRAINAGE STRUCTURE DES 66-4020	LIN FT	8.0		8.0				
	Q	232 - 235	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	EACH	1		1				

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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. Pr Int Name: CRAIG J. HASS  Date: 09-12-10 License #: 45039				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259		ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES T.H. 10 / C.S.A.H. 83 INTERCHANGE		SHEET 6 OF 586	
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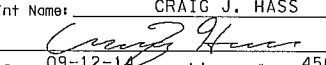

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							ESTIMATED	ROADWAY	STORM	ROADWAY	STORM	ROADWAY
	Q	232 - 235	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LN FT	2.0						2.0
	P, GG	217 , 43	2506.516	CASTING ASSEMBLY	EACH	116		44		36		36
	F	232 - 235	2506.521	INSTALL CASTING	EACH	2						
	E, F	33 , 34 - 36	2506.522	ADJUST FRAME & RING CASTING	EACH	6	1		4		1	
	GG	43	2506.602	CASTING ASSEMBLY SPECIAL	EACH	4					4	
	Q	232 - 235	2511.501	RANDOM RIPRAP CLASS II	CU YD	57.0	57.0					
	Q	232 - 235	2511.501	RANDOM RIPRAP CLASS III	CU YD	13.0	13.0					
	Q	232 - 235	2511.515	GEOTEXTILE FILTER TYPE IV	SQ YD	322.0	322.0					
	K	38	2521.501	4" CONCRETE WALK	SQ FT	32680	540		7070		25070	
(7)	K	38	2521.501	6" CONCRETE WALK	SQ FT	24650	17870		1900		4880	
	K	38	2521.511	2.5" BITUMINOUS WALK	SQ FT	17570			17570			
	K	38	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LN FT	3190	3190					
	K	38	2531.501	CONCRETE CURB & GUTTER DESIGN B612	LN FT	460			460			
	K	38	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LN FT	7240			5050		2190	
	K	38	2531.501	CONCRETE CURB & GUTTER DESIGN B624	LN FT	2200					2200	
	K	38	2531.501	CONCRETE CURB & GUTTER DESIGN D424	LN FT	3140	3140					
	K	38	2531.501	CONCRETE CURB & GUTTER DESIGN D418	LN FT	910			910			
	K	38	2531.618	TRUNCATED DOMES	SQ FT	172			144		28	
	K	38	2533.506	CONC MED BAR & GL SCR DES 8309 TYPE A	LN FT	1130	1130					
	K	38	2533.506	CONC MED BAR & GL SCR DES 8309 TYPE AA	LN FT	1360	1360					
	K	38	2533.506	CONC MED BAR & GL SCR D 8309 TYPE A STEP	LN FT	740	740					
	K	38	2533.506	CONC MED BAR & GL SCR DES 8309 TYPE TRAN	LN FT	260	260					
	N	41 - 42	2533.507	PORTABLE PRECAST CONCR BARRIER DES 8337	LN FT	6550	5210		230		1110	
	N	41 - 42	2533.508	RELOCATE PORT PRECAST CONC BAR DES 8337	LN FT	15090	13750		230		1110	
	H	37	2540.602	RELOCATE MAIL BOX SUPPORT	EACH	1			1			
	T	461	2540.603	LANDSCAPE EDGER	LN FT	168.3			168.3			
	R	246	2545.509	CONDUIT SYSTEM (SIGNALS)	LUMP SUM	1					1	
	FF	392	2545.511	LIGHTING UNIT TYPE 9-40	EACH	20	20					
	FF	392	2545.514	UNDERPASS LUMINAIRES TYPE LED	EACH	2	2					
	FF	392	2545.515	LIGHT FOUNDATION DESIGN E	EACH	20	20					
	FF	392	2545.521	0.75" RIGID STEEL CONDUIT	LN FT	61	61					
	FF	392	2545.521	1" RIGID STEEL CONDUIT	LN FT	150	150					
	FF	392	2545.521	2" RIGID STEEL CONDUIT	LN FT	16	16					
	FF	392	2545.523	2" NON-METALLIC CONDUIT	LN FT	95	95					
	FF	392	2545.523	3" NON-METALLIC CONDUIT	LN FT	491	491					
	FF	392	2545.531	UNDERGROUND WIRE 1 COND NO 2	LN FT	81	81					
	FF	392	2545.531	UNDERGROUND WIRE 1 COND NO 10	LN FT	3168	3168					
	FF	392	2545.533	DIRECT BURIED LIGHTING CABLE 4 COND NO 4	LN FT	5524	5524					
	FF	392	2545.541	SERVICE CABINET -TYPE L1	EACH	1	1					
	FF	392	2545.543	UNDERGROUND CABLE SPLICE	EACH	1	1					
	FF	392	2545.545	EQUIPMENT PAD B	EACH	1	1					
	FF	392	2545.551	JUNCTION BOX	EACH	2	2					
	FF	392	2545.553	HANDHOLE	EACH	1	1					
	FF	392	2545.602	INSTALL LIGHTING UNIT	EACH	1			1			
	FF	392	2545.602	INSTALL LIGHT FOUNDATION	EACH	1			1			
	FF	392	2545.603	0.75" LIQUIDTIGHT FLEXIBLE CONDUIT	LN FT	24	24					
	FF	392	2545.603	1" LIQUIDTIGHT FLEXIBLE CONDUIT	LN FT	6	6					
	NN	438	2550.514	FIBEROPTIC SPLICE VAULT	EACH	1	1					
	NN	438	2550.515	OUTDOOR FIBER SPLICE ENCLOSURE	EACH	1	1					
	NN	438	2550.516	BURIED CABLE SIGN	EACH	10	10					

NOTES:

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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	NO	DATE	BY	CKD	APPR	REVISION							<p>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.</p> <p>Print Name: CRAIG J. HASS</p>  <p>Date: 09-12-11 License #: 45039</p>	<p>STATE AID PROJECT NO. 002-683-004 199-115-002</p> <p>STATE PROJECT NO. 0202-95 (TH 10)</p> <p>COUNTY PROJECT NO.</p> <p>CITY PROJECT NO.</p>	<p>DRAWN BY S. MARTINS</p> <p>DESIGNED BY D. SYMANIETZ</p> <p>CHECKED BY C. HASS</p> <p>COMM. NO. 0138259</p>	 <p><b>ENGINEERS PLANNERS DESIGNERS</b></p>	<p><b>ANOKA COUNTY</b></p> <p>STATEMENT OF ESTIMATED QUANTITIES</p> <p>T.H. 10 / C.S.A.H. 83 INTERCHANGE</p>	<p>SHEET 7 OF 586</p>
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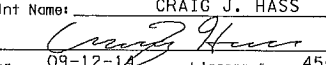


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						ESTIMATED	ROADWAY	STORM	ROADWAY	STORM	ROADWAY	STORM
	NN	438	2550.523	1.5" NON-METALLIC CONDUIT	LIN FT	5378	5378					
	NN	438	2550.602	FIBER OPTIC PIGTAIL TERMINATION	EACH	1	1					
	NN	438	2550.602	FIBER OPTIC CABLE SPLICING	EACH	2	2					
	NN	438	2550.602	FIBER OPTIC CABLE TESTING	LUMP SUM	1	1					
	NN	438	2550.602	PULL VAULT	EACH	1	1					
	NN	438	2550.603	ARMORED FIBER OPTIC PIGTAIL CABLE 12SM	LIN FT	2025	2025					
	NN	438	2550.603	REROUTE FIBER OPTIC CABLE	LIN FT	100	100					
	NN	438	2550.603	FIBER OPTIC TRUNK CABLE 36SM	LIN FT	4200	4200					
	NN	438	2550.603	1.5" BORED CONDUIT	LIN FT	541	541					
	L	39	2554.501	TRAFFIC BARRIER DESIGN SPECIAL	LIN FT	75	50				25	
	L	39	2554.501	TRAFFIC BARRIER DESIGN B8338	LIN FT	538	538					
	Q	232 - 235	2554.509	GUIDE POST TYPE B	EACH	22	19				3	
	L	39	2554.521	ANCHORAGE ASSEMBLY - PLATE BEAM	EACH	2	2					
	L	39	2554.523	END TREATMENT-ENERGY ABSORBING TERMINAL	EACH	1					1	
(1)	L	39	2554.523	END TREATMENT-TANGENT TERMINAL	EACH	1	1					
(1)	L	39	2554.523	END TREATMENT-FLARED TERMINAL	EACH	3	3					
(8)	N	41 - 42	2554.615	IMPACT ATTENUATOR	ASSEMBLY	9	6		1		2	
(9)	L	39	2554.615	IMPACT ATTENUATOR NO 1	ASSEMBLY	1					1	
(8)	N	41 - 42	2554.615	RELOCATE IMPACT ATTENUATOR	ASSEMBLY	16	13		1		2	
			2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.67		0.09		0.24	
	N	41 - 42	2563.602	MEDIAN BARRIER DELINEATOR	EACH	216	173		7		36	
	N	41 - 42	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	49	35				14	
	N	41 - 42	2563.618	CONSTRUCTION SIGN-SPECIAL	SQ FT	205	197		8			
	HH	352	2564.511	CONCRETE FOOTINGS (TYPE OH SPREAD)	CU YD	23	23					
	RR	346	2564.522	STRUCT STEEL-POSTS FOR TYPE A SIGNS	POUND	3496	3496					
	HH	352	2564.522	STRUCT STEEL-POSTS FOR OH SIGNS (B)	POUND	7471	7471					
	HH	352	2564.522	STRUCT STEEL-TRUSSES FOR OH SIGNS (B)	POUND	7135	7135					
	HH	352	2564.522	STR STEEL-PANEL MT PST FOR OH SIGNS (B)	POUND	540	540					
	RR	346	2564.531	SIGN PANELS TYPE A	SQ FT	384	384					
	V	347 - 348	2564.531	SIGN PANELS TYPE C	SQ FT	1016.39	697.51		190.69		128.19	
	X	349	2564.531	SIGN PANELS TYPE D	SQ FT	270.38	109.5		54.38		106.5	
	U	352	2564.531	SIGN PANELS TYPE OH	SQ FT	288	288					
	AA	350	2564.550	DELINEATOR TYPE X4-6	EACH	14	14					
	Z	350	2564.551	REFERENCE POST MARKER	EACH	4	4					
	AA	350	2564.552	HAZARD MARKER X4-2	EACH	9	3		4		2	
	AA	350	2564.553	CLEARANCE MARKER X4-4	EACH	3	2				1	
	AA	350	2564.555	END OF ROADWAY MARKER X4-11	EACH	3			3			
			2565.511	TRAFFIC CONTROL SIGNAL SYSTEM A	SIG SYS	1	0.5				0.5	
			2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1	0.34				0.66	
			2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1					1	
			2565.602	HANDHOLE	EACH	13	4				9	
			2565.603	4" NON-METALLIC CONDUIT	LIN FT	685	233				452	
			2565.616	PEDESTRIAN CROSSWALK FLASHER SYSTEM	SYSTEM	1			1			
			2565.616	REVISE SIGNAL SYSTEM B	SYSTEM	1					1	
			2565.616	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	0.5				0.5	
	T	461	2571.501	CONIFEROUS TREE 8' HT B&B	TREE	49			49			
	T	461	2571.502	DECIDUOUS TREE 2.5" CAL B&B	TREE	116			116			
	T	461	2571.503	ORNAMENTAL TREE 2" CAL B&B	TREE	13			13			
	T	461	2571.505	DECIDUOUS SHRUB NO 5 CONT	SHRUB	621			621			
	T	461	2571.604	GEOTEXTILE WEED BARRIER FABRIC	SQ YD	97.8			97.8			

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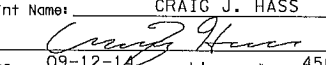

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NO. DATE BY CKD APPR REVISION					...CAD_BIM\Plan\8255.es+05.dgn							

STATEMENT OF ESTIMATED QUANTITIES

NOTES	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES	PROJ. NO. S.P. 0202-95		PROJ. NO. S.A.P. 199-115-002		PROJ. NO. S.A.P. 002-683-004	
						ESTIMATED	ROADWAY	STORM	ROADWAY	STORM	ROADWAY	STORM
(6)	H	37	2572.501	TEMPORARY FENCE	LIN FT	150			150			
	M	40	2573.502	SILT FENCE, TYPE SD	LIN FT	3080	2780				300	
	M	40	2573.502	SILT FENCE, TYPE MS	LIN FT	3720	1035		1620		1065	
	M	40	2573.530	STORM DRAIN INLET PROTECTION	EACH	106	35		40		31	
	M	40	2573.533	SEDIMENT CONTROL LOG TYPE STRAW	LIN FT	7416	6781		45		590	
	Q	232 - 235	2573.535	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	0.67		0.09		0.24	
			2573.550	EROSION CONTROL SUPERVISOR	LUMP SUM	1	0.67		0.09		0.24	
	M	40	2573.560	CULVERT END CONTROLS	EACH	22	19		1		2	
(3)	M	40	2574.508	FERTILIZER TYPE 3	POUND	790	10		720		60	
(3)	M	40	2574.508	FERTILIZER TYPE 4	POUND	5440	3850		330		1260	
	T	461	2574.525	BOULEVARD TOPSOIL BORROW	CU YD	48.9			48.9			
(3)	A	17	2574.550	COMPOST GRADE 2	CU YD	6967	5472		624		871	
	M	40	2575.501	SEEDING	ACRE	32.4	22.3		3.5		6.6	
(3)	M	40	2575.502	SEED MIXTURE 25-131	POUND	400	10		390			
(3)	M	40	2575.502	SEED MIXTURE 33-261	POUND	20	20					
(3)	M	40	2575.502	SEED MIXTURE 35-221	POUND	1120	780		80		260	
(3)	M	40	2575.502	SEED MIXTURE 35-241	POUND	40	40					
	Q	232 - 235	2575.505	SODDING TYPE LAWN	SQ YD	96		86				10
	M	40	2575.505	SODDING TYPE SALT TOLERANT	SQ YD	2150			1630		520	
(3)	M	40	2575.511	MULCH MATERIAL TYPE 3	TON	49.6	34.0		7.1		8.5	
	M	40	2575.518	TEMPORARY POLY COVERING	SQ YD	5080	710		170		4200	
	M	40	2575.519	DISK ANCHORING	ACRE	25.0	17.1		3.7		4.2	
	M	40	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	35650	25110		190		10350	
(3)	M	40	2575.571	RAPID STABILIZATION METHOD 3	M GALLON	190.5	134.5		22.0		34.0	
	N	41 - 42	2581.501	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	37940	33740				4200	
	N	41 - 42	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	2730	1790				940	
	DD	325 - 326	2582.501	PAVT MSSG (LT ARROW) POLY PREF-GR IN	EACH	2	2					
	DD	325 - 326	2582.501	PAVT MSSG (RT ARROW) POLY PREF-GR IN	EACH	8	8					
	N	41 - 42	2582.502	4" SOLID LINE WHITE-PAINT	LIN FT	15500	7230		1970		6300	
	N	41 - 42	2582.502	12" SOLID LINE WHITE-PAINT	LIN FT	270	70				200	
	N	41 - 42	2582.502	4" BROKEN LINE WHITE-PAINT	LIN FT	1130	1030				100	
	N	41 - 42	2582.502	4" DOTTED LINE WHITE-PAINT	LIN FT	150					150	
	N	41 - 42	2582.502	4" SOLID LINE YELLOW-PAINT	LIN FT	10410	5940		1770		2700	
	N	41 - 42	2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	4370	370		1720		2280	
	DD	325 - 326	2582.502	4" SOLID LINE WHITE-POLY PREF-GR IN	LIN FT	1830	1830					
	DD	325 - 326	2582.502	8" SOLID LINE WHITE-POLY PREF-GR IN	LIN FT	1840	1840					
	DD	325 - 326	2582.502	24" SOLID LINE WHITE-POLY PREF-GR IN	LIN FT	60	60					
	DD	325 - 326	2582.502	4" BROKEN LINE WHITE-POLY PREF-GR IN	LIN FT	2000	2000					
	DD	325 - 326	2582.502	4" DOTTED LINE WHITE-POLY PREF-GR IN	LIN FT	280	280					
	DD	325 - 326	2582.502	8" DOTTED LINE WHITE-POLY PREF-GR IN	LIN FT	40	40					
	DD	325 - 326	2582.502	24" SOLID LINE YELLOW-POLY PREF-GR IN	LIN FT	158	158					
	DD	325 - 326	2582.502	4" SOLID LINE WHITE-EPOXY	LIN FT	9240	1020		4290		3930	
	DD	325 - 326	2582.502	4" BROKEN LINE WHITE-EPOXY	LIN FT	470	40				430	
	DD	325 - 326	2582.502	4" SOLID LINE YELLOW-EPOXY	LIN FT	4620	390		1700		2530	
	DD	325 - 326	2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	LIN FT	1210			1210			
	DD	325 - 326	2582.502	4" SOLID LINE WHITE-EPOXY-GR IN	LIN FT	13820	13820					
	DD	325 - 326	2582.502	4" SOLID LINE YELLOW-EPOXY-GR IN	LIN FT	14510	14510					
	DD	325 - 326	2582.503	CROSSWALK MARKING-POLY PREFORM-GR IN	SQ FT	180	180					
	DD	325 - 326	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	630	40		320		270	
	DD	325 - 326	2582.618	PAVEMENT MARKING SPECIAL	SQ FT	1290	50		1090		150	

- NOTES:
- SEE MISCELLANEOUS DETAILS.
  - BITUMINOUS QUANTITIES BASED ON UNIT WEIGHT OF 113 POUNDS PER SQUARE YARD PER INCH, TACK COAT AND LONGITUDINAL JOINT ADHESIVE SHALL BE INCIDENTAL.
  - SEE CONSTRUCTION/ SOILS NOTES FOR DESCRIPTION.
  - 8175 RIVERDALE DRIVE N.W. SEE REMOVAL PLANS.
  - SEE PUBLIC UTILITY PLANS.
  - SEE PROTECT TREE AREAS IN REMOVAL PLANS.
  - QUANTITY ALSO INCLUDES MEDIAN NOSES, ENTRANCE NOSES, EXIT NOSES, AND PEDESTRIAN RAMPS.
  - TEMPORARY IMPACT ATTENUATOR, SEE STAGING AND TRAFFIC CONTROL PLANS
  - PERMANENT IMPACT ATTENUATOR, TEST LEVEL 2
  - SEE SOILS AND CONSTRUCTION NOTES

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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: CRAIG J. HASS  Date: 09-12-14 License #: 45039				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259		ANOKA COUNTY STATEMENT OF ESTIMATED QUANTITIES T.H. 10 / C.S.A.H. 83 INTERCHANGE		SHEET 9 OF 586	
NO DATE BY CKD APPR REVISION				...CAD_BIM\PIan\8259_est06.dgn		 ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.					

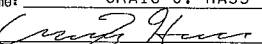
THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES

3000 L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006 G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007 E	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014 J	REINFORCED CONCRETE PIPE ARCH (2 SHEETS)
3022 C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3040 F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3100 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110 G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3123 J	METAL APRON FOR C.S. PIPE
3124 B	METAL APRON CONNECTION
3128 H	METAL SAFETY APRON & GRATE (2 SHEETS)
3131 C	PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS
3133 D	RIPRAP AT RCP OUTLETS
3139 B	RIPRAP AT PRECAST CONCRETE END SECTIONS
3145 G	CONCRETE PIPE OR PRECAST CULVERT TIES
3221 C	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
4005 M	MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F
4006 L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4010 H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011 E	PRECAST CONCRETE BASE
4020 J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4022 A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4024 A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026 A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101 D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110 F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4129 G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 802A
4132 F	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4140 D	SPECIAL GRATE CASTINGS FOR CATCH BASIN (CONVEX AND CONCAVE) - CASTING NO. 720 AND 721
4143 E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4154 B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4160 D	CURB BOX CASTING FOR CATCH BASIN - CASTING NO. 823A AND 833A
4180 J	MANHOLE OR CATCH BASIN STEP
7038 A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100 H	CONCRETE CURB & GUTTER (DESIGN B AND DESIGN V)
7102 J	CONCRETE CURB & GUTTER (DESIGNS D, S, B4, B5 AND D3) (2 SHEETS)
7107 I	ENTRANCE NOSE (URBAN DESIGN)
7108 G	EXIT NOSE (URBAN DESIGN)
7111 J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113 A	CONCRETE APPROACH NOSE DETAIL
8000 I	STANDARD BARRICADES
8106 B	EQUIPMENT PAD B (CAST-IN-PLACE OR PRECAST)
8110 E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8111 E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
8112 H	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8114 A	P.V.C. HANDHOLE / PULL BOX (NO VEHICLE LOAD) (2 SHEETS)
8120 P	POLE FOUNDATION (PA85)
8121 H	TRANSFORMER BASE AND POLE BASE PLATE (PA85M, PA90 AND PA100) (2 SHEETS)
8122 F	PEDESTAL AND PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
8123 G	POLE AND MAST ARM LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY (FOR ALL POLE TYPES) (2 SHEETS)
8126 K	POLE FOUNDATION (PA90 AND PA100)
8127 D	LIGHT FOUNDATION - DESIGN E (40 FT. POLE OR LESS)
8129 A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)
8133 A	POLE AND MAST ARM - TYPE BA (9 SHEETS)
8134 B	POLE FOUNDATION - TYPE BA (4 SHEETS)
8309 A	REINFORCED CONCRETE MEDIAN BARRIER TYPE F & GLARE SCREEN DESIGN 8309 (3 SHEETS)
8318 C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCT'S
8337 C	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE "F") (3 SHEETS)
8338 D	W-BEAM GUARDRAIL & END ANCHORAGES (INSTALLATION WITH STEEL POSTS) (4 SHEETS)
9102 E	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)

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NO	DATE	BY	CHKD	APPR	REVISION

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 Pr Int Name: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

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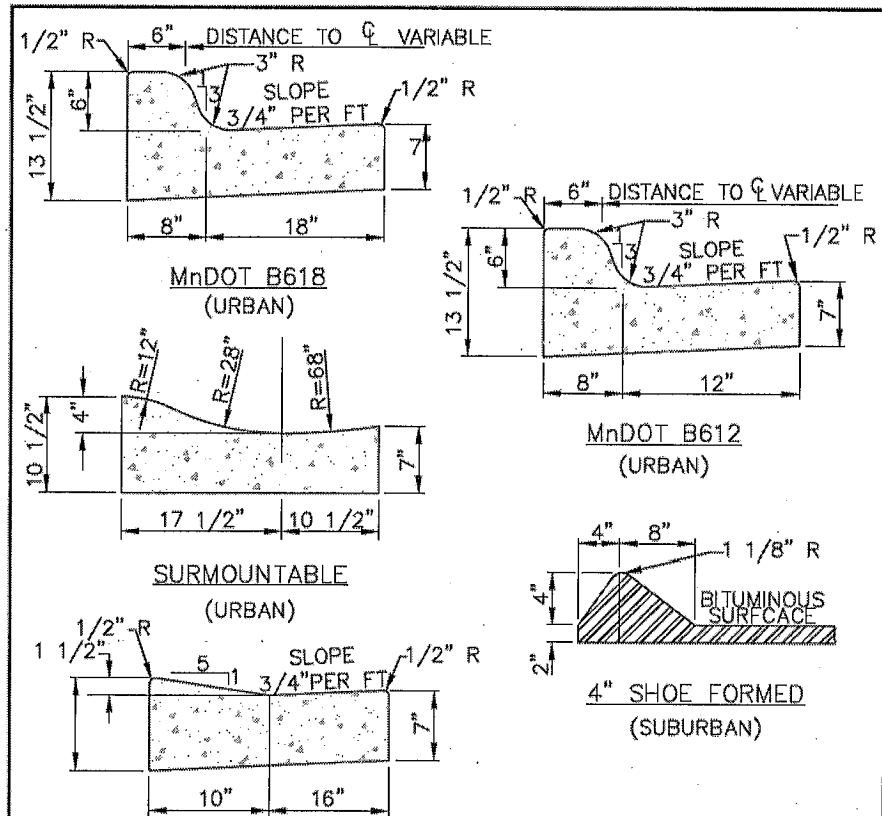
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 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
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STANDARD PLATES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

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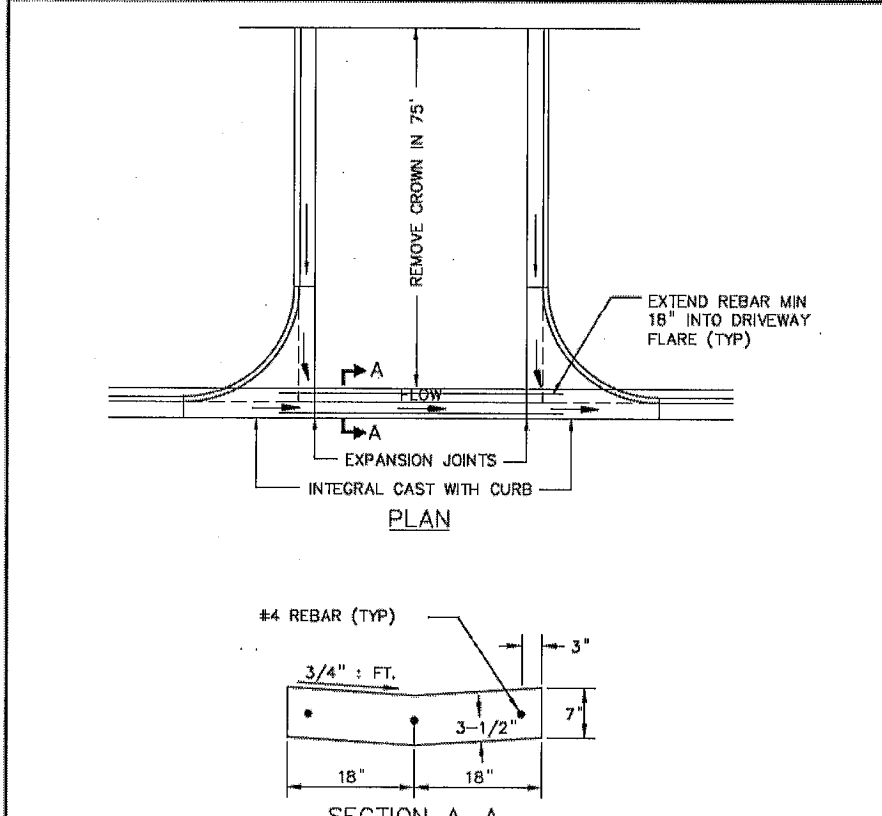


**DRIVEWAY FOR B618**

**NOTES:**

1. ON WEAR COURSE MILL THE EXISTING BITUMINOUS 1.5" BY 24" IN FRONT OF THE REPLACEMENT CURB.
2. ON BASE COURSE SAW CUT AND REMOVE EXISTING BITUMINOUS 18" IN FRONT OF THE REPLACEMENT CURB.

APPROVED DATE		STANDARD DETAILS
04-12		CURB AND GUTTER
		CITY PLATE No. STR-1



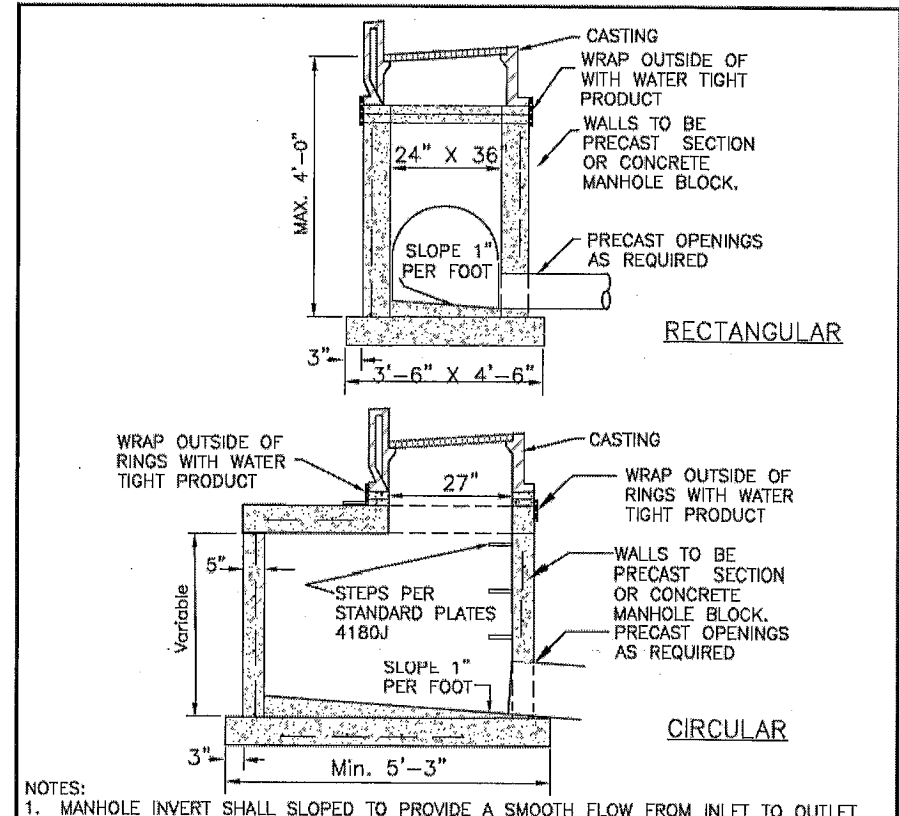
**SECTION A-A**

**CONCRETE VALLEY GUTTER**

**NOTES:**

1. WITH REMOVAL OF EXISTING CURB AT A STREET, MILL BITUMINOUS TO A DEPTH OF 1.5" AND A WIDTH OF 18" IN EXISTING STREET.
2. TO BE USED WHENEVER CROSS DRAINAGE IS < 2%

APPROVED DATE		STANDARD DETAILS
4-2007		CROSS GUTTER
		CITY PLATE No. STR-2



**NOTES:**

1. MANHOLE INVERT SHALL SLOPED TO PROVIDE A SMOOTH FLOW FROM INLET TO OUTLET
2. CONCRETE BASE SHALL BE 6" POURED IN PLACE OR 5" PRECAST SLAB.
3. CONCRETE ADJUSTING RINGS TO BE INSTALLED MAX. 7-2" RINGS, MIN 2-2" RINGS
4. GROUT BETWEEN RINGS, SHIMS SHALL BE METAL, CONCRETE OR PLASTIC
5. INSPECTION OF MANHOLE REQUIRED BEFORE BACKFILLING
6. A 10 GAUGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL STORM LINES.
7. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE
8. STEPS ARE REQUIRED IF STRUCTURE FROM THE CASTING TO THE INVERT IS GREATER THAN 4 FEET
9. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS

APPROVED DATE		STANDARD DETAILS
4-2007		CATCH BASIN
		CITY PLATE No. STO-7

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Print Name: CRAIG J. HASS  
  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

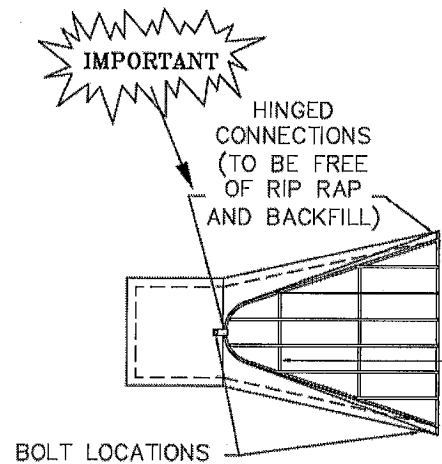


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ANOKA COUNTY  
STANDARD PLATES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CITY OF RAMSEY STANDARD PLATES

SHEET 11 OF 586

NOTE:  
GUARDS MUST BE INCORPORATED ON ALL INSTALLATIONS EXCEPT WHERE SPECIFICALLY ALLOWED OTHERWISE BY THE CITY ENGINEER.



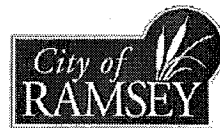
ALL GUARDS TO HAVE (1) CROSS BAR - 60" AND UP TO HAVE (2) EQUALLY SPACED

ARCH ROUND	PIPE SIZE	BOLT DIA.	BAR SIZE
	12"-24"	5/8"	5/8"
	27"-48"	3/4"	3/4"
	54"-90"	1"	1"
	22"-29"	5/8"	5/8"
	36"-59"	3/4"	3/4"
	65"-88"	1"	1"

NOTE: COATINGS ARE AS SPECIFIED ELSEWHERE

**IMPORTANT**

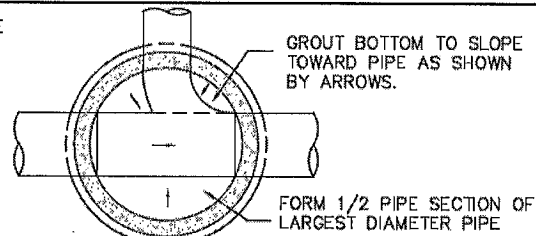
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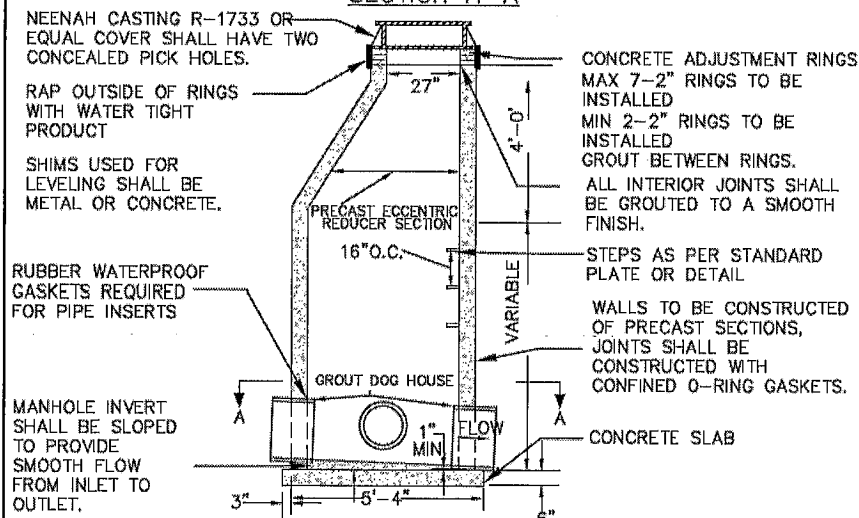
STANDARD DETAILS  
TRASH GUARD

CITY PLATE No.  
STO-12

A 5 FT. GREEN CARSONITE MARKER SHALL BE INSTALLED NEXT TO ALL STRUCTURES NOT IN A PAVED SURFACE.



SECTION A-A



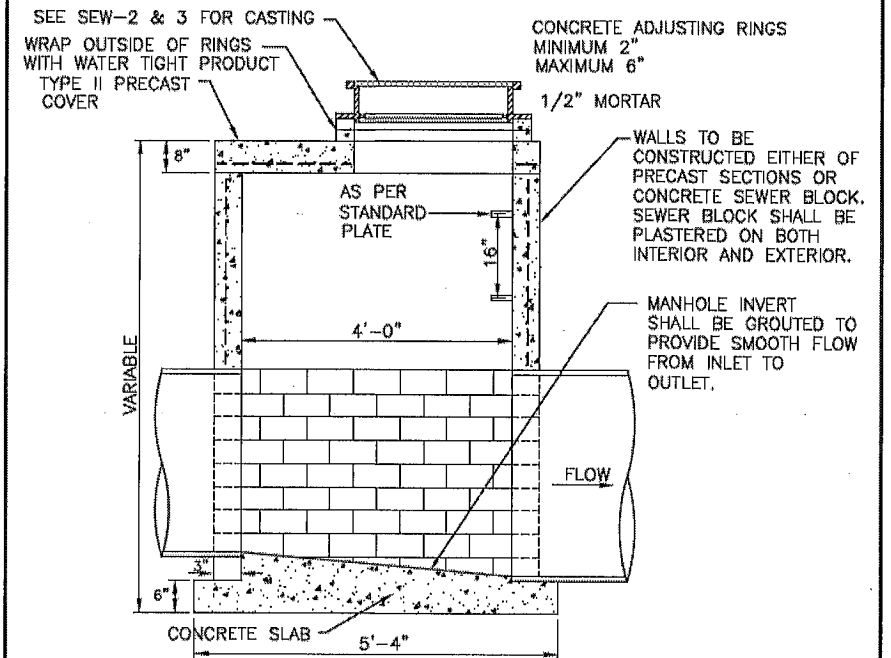
- NOTES:
1. A 10 GAGE SOLID COPPER TRACER WIRE IS REQUIRED WITH ALL SEWER LINES.
  2. CONDUCTIVITY IS REQUIRED ON ALL TRACER WIRE.
  3. TRACER WIRES ARE TO END IN STRUCTURES, AT FINISHED GRADE ON ALL SERVICES AND STUBS.
  4. 6" BASE FOR ALL MANHOLES LESS THAN 14 FT. OF DEPTH, INCREASE BASE THICKNESS 2" PER 6 FT. OF DEPTH BEYOND 14 FT.
  5. 5" PRECAST BASE MAY BE USED FOR MANHOLES LESS THAN 14 FT. DEEP.
  6. ALL INVERTS TO BE 0.10' ABOVE OUTLET,

APPROVED  
DATE 1-2006



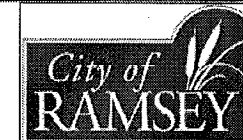
STANDARD DETAILS  
MANHOLE

CITY PLATE No.  
SEW-4



SLAB-TOP MANHOLE  
N.T.S.

APPROVED  
DATE 9-2011



STANDARD DETAILS  
STANDARD DETAILS  
SLAB-TOP MANHOLE

CITY PLATE No.  
SEW-6

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Pr Int Name: CRAIG J. HASS  
Date 09-12-18 License # 45039

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COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



ENGINEERS  
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DESIGNERS

ANOKA COUNTY  
STANDARD PLATES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CITY OF RAMSEY STANDARD PLATES

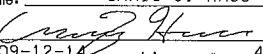

SHEET  
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TABULATIONS "I", "II", "JJ", "KK", "MM", "O", "OO", AND "PP" NOT USED

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NO	DATE	BY	CKD	APPR	REVISION																						

**CONSTRUCTION /SOILS NOTES**

**GRADING, BASE AND SURFACE**

- 1 TOP OF THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 OR 6 AGGREGATE BASE.
- 2 SELECT GRADING MATERIAL ON THIS PROJECT, WHETHER OBTAINED LOCALLY OR FROM BORROW, SHALL CONSIST OF ALL SOILS EXCEPT TOPSOIL, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE MATERIAL.
- 3 UNSUITABLE MATERIALS ARE TOPSOILS, DEBRIS, PEAT, MUCK AND ORGANIC OR OTHER UNSTABLE SOILS.
- 4 GRANULAR EMBANKMENT IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B1.  
SELECT GRANULAR EMBANKMENT IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B2.  
SELECT GRANULAR EMBANKMENT MODIFIED 10% IS DEFINED AS MATERIAL MEETING THE REQUIREMENTS OF SPEC. 3149.2B4.
- 5 STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 1.5 FEET.
- 6 ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE EXCAVATION - COMMON.
- 7 IN THE AREAS OF T.H. 10, RAMPS, C.S.A.H. 83 AND RIVERDALE DRIVE CONSTRUCTION, PROVIDE FOR THE SUBCUT SPECIFIED IN THE PLANS. ANY UNCONTAMINATED GRANULAR MATERIAL REMOVED FROM THE EXISTING SUBGRADE AREA MAY BE USED IN OTHER AREAS DESIGNATED FOR GRANULAR EMBANKMENT, PROVIDED IT MEETS THE REQUIREMENTS.
- 8 FOR THE EMBANKMENT CONSTRUCTION OF T.H. 10, THE RAMPS, C.S.A.H. 83 AND RIVERDALE DRIVE, THE UPPER 4' OF THE GRADING GRADE SHALL BE CONSTRUCTED WITH GRANULAR EMBANKMENT OF WHICH THE UPPER 1.5' SHALL BE SELECT GRANULAR EMBANKMENT FOR T.H. 10 AND THE RAMPS, AND THE UPPER 1' SHALL BE SELECT GRANULAR EMBANKMENT FOR C.S.A.H. 83.
- 9 CONSTRUCT STEPS, BEFORE PLACING EMBANKMENT MATERIAL, AT A MINIMUM WIDTH OF 12 INCHES WHEN SLOPES ARE STEEPER THAN 1V:4H.
- 10 EXCESS TOPSOIL MATERIAL SHALL BE USED IN TURF ESTABLISHMENT AREAS UP TO A MAXIMUM OF 12 INCHES THICK.
- 11 COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION MEETING THE REQUIREMENTS OF GRANULAR MATERIALS SHALL BE OBTAINED IN ACCORDANCE WITH THE "PENETRATION INDEX METHOD" REQUIREMENTS.
- 12 COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION NOT MEETING THE REQUIREMENTS OF GRANULAR MATERIALS SHALL BE OBTAINED IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.
- 13 COMPACTION OF THE AGGREGATE BASE LAYER SHALL BE OBTAINED IN ACCORDANCE WITH THE PENETRATION INDEX METHOD. THIS WOULD INCLUDE ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE.
- 14 COMPACTION OF THE GRADING AND AGGREGATE ITEMS ON BYPASSES, TEMPORARY WORK SHALL BE BY THE "QUALITY COMPACTION" METHOD.
- 15 COMPACTION OF THE BITUMINOUS ITEMS ON PERMANENT ROADWAY CONSTRUCTION SHALL BE BY THE "MAXIMUM DENSITY COMPACTION" METHOD.
- 16 COMPACTION OF THE BITUMINOUS ITEMS ON BYPASSES, TEMPORARY CONSTRUCTION, DRIVEWAYS AND TRAILS SHALL BE BY THE "ORDINARY COMPACTION" METHOD.
- 17 TEST ROLLING SHALL NOT BE REQUIRED ON THIS PROJECT.
- 18 THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD". THE CONTRACTOR SHALL USE A MINIMUM OF 4 PASSES OF AN APPROVED COMPACTION DEVICE.
- 19 AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V):2(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.
- 20 WHERE CONNECTING TO THE INPLACE ROADWAYS AT THE TERMINI OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION, UNLESS OTHERWISE NOTED.
- 21 PROVIDE 1V:20H LONGITUDINAL TAPERS BETWEEN CHANGES IN SUBGRADE AND SUBCUT DEPTHS.
- 22 DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-16 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.  

CITY PROJECT NO.  

DESIGNED BY S. MARTINS

CHECKED BY D. SYMANIETZ

COMM. NO. 0138259



**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
CONSTRUCTION/SOILS NOTES  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**14**  
OF  
**586**

**CONSTRUCTION /SOILS NOTES**

- 23 PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES ( INCIDENTAL ). THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357 WITH THE FOLLOWING MODIFICATIONS:
1. THE TACK COAT SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-1H) AND SHALL BE APPLIED BETWEEN ALL BITUMINOUS COURSES.
  2. THE TACK COAT SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SY BETWEEN BITUMINOUS LAYERS AND 0.07 TO 0.10 GAL/SY ON MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID.
- 24 APPLY LONGITUDINAL JOINT ADHESIVE ON BITUMINOUS CONSTRUCTION JOINTS BETWEEN ADJACENT TRAFFICKED LANES ( INCLUDING SHOULDERS ), OR BETWEEN BITUMINOUS PAVEMENTS AND CONCRETE PAVEMENTS OR CURB AND GUTTER ( INCIDENTAL ). JOINT ADHESIVE IS NOT REQUIRED ON LONGITUDINAL CONSTRUCTION JOINTS BETWEEN ADJACENT HOT MIX ASPHALTS FORMED BY ECHELON PAVING.
- 25 PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. SAWCUT LINES PARALLEL WITH THE ROADWAY ALIGNMENT SHALL NOT OCCUR WITHIN A LANE AND SHALL BE ON EITHER A SHOULDER LINE OR A LANE LINE.
- 26 THE PHASE II ENVIRONMENTAL SITE ASSESSMENT IDENTIFIED SOIL WITH ELEVATED CONCENTRATIONS OF DIESEL RANGE ORGANICS AND GASOLINE RANGE ORGANICS IN A LOCALIZED AREA OF THE PROPOSED RIVERDALE POND EXCAVATION SOUTH OF RIVERDALE DR. SEE SPECIAL PROVISIONS 2105 CONTAMINATED SOIL AND REGULATED MATERIAL.
- 27 THE PHASE II ENVIRONMENTAL SITE ASSESSMENT IDENTIFIED SOILS INTERMIXED WITH TACK OIL ALONG EXISTING W.B. T.H. 10 BETWEEN STA 178+00 AND 182+00. THIS MATERIAL IS CONSIDERED A REGULATED MATERIAL AND CAN BE REUSED BENEATH THE ROAD BASE IN MNDOT RIGHT OF WAY. SEE SPECIAL PROVISIONS 2105 CONTAMINATED SOIL AND REGULATED MATERIAL.
- 28 DO NOT USE NUCLEAR GAUGE TO DETERMINE DENSITY OR MOISTURE CONTENT FOR QUALITY ASSURANCE OR VERIFICATION TESTING FOR ANY MATERIAL MEETING MNDOT 2105, 2106, 2112, 2211, 2212, 2215, 2218, 2221, 2331, 2451, 2502, OR 2511. USE OF A NUCLEAR GAUGE FOR QUALITY CONTROL TESTING IS ALLOWED ACCORDING TO THE GRADING & BASE MANUAL.
- REMOVALS**
- 29 PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH SPEC. 2104.3D3. PROVIDE FOR SAW CUTTING AS DEEMED NECESSARY BY THE ENGINEER.
- 30 THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED TO BE AS FOLLOWS:
- EB 10 MAINLINE - 10.5 INCHES BITUMINOUS
  - EB 10 SHOULDER - 6 INCHES BITUMINOUS
  - WB 10 MAINLINE - 21.5 INCHES PAVEMENT (10.5 INCHES BITUMINOUS, 3 INCHES AGGREGATE, 8 INCHES CONCRETE)
  - WB 10 SHOULDER - 21.5 INCHES BITUMINOUS (10.5 INCHES BITUMINOUS, 3 INCHES AGGREGATE, 8 INCHES BITUMINOUS)
  - C.S.A.H. 83 NORTH OF TH10 - 6 INCHES BITUMINOUS
  - RIVERDALE DR NW. - 3 INCHES BITUMINOUS
  - OLD ARMSTRONG BLVD. - 3 INCHES BITUMINOUS
  - 146TH AVE NW. - 3 INCHES BITUMINOUS
  - LLAMA ST. - 3 INCHES BITUMINOUS
  - PARKING LOT SOUTH OF TH10 AND WEST OF C.S.A.H. 83 - 5 INCHES BITUMINOUS
  - PARKING LOT NORTH OF TH10 AND WEST OF C.S.A.H. 83 - 4.5 INCHES BITUMINOUS
- THE CONTRACTOR SHALL INVESTIGATE AND MAKE HIS OWN DETERMINATION.
- ( INFORMATION TAKEN FROM THE PROJECT SOIL BORINGS AND RECORD DRAWINGS ).
- TURF ESTABLISHMENT**
- 31 PLACE A MINIMUM OF 6 INCHES OF SLOPE DRESSING ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT. SLOPE DRESSING SHALL BE SUPPLEMENTED WITH 2 INCHES OF GRADE 2 COMPOST FOR A TOTAL THICKNESS OF 8 INCHES IN THESE AREAS. THE GRADE 2 COMPOST SHALL BE LIGHTLY TILLED INTO THE SURFACE OF THE SLOPE DRESSING.
- 32 SOD ALL AREAS ADJACENT TO RESIDENCES, BUSINESSES, OR TRAILS, AND AREAS OF HEAVY DRAINAGE RUNOFF, AS INDICATED IN THE TURF ESTABLISHMENT AND EROSION CONTROL PLANS AND DETAILS AND AS DIRECTED BY THE ENGINEER. PLACE FERTILIZER TYPE 3, ANALYSIS 22-5-10 @ 350 POUNDS PER ACRE IN SODDED AREAS.

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NO	DATE	BY	CKD	APPR	REVISION

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.

Pr Int Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-12 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-118-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY D. SYMANJETZ

CHECKED BY C. HASS

COMM. NO. 0138259



**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**

CONSTRUCTION/SOILS NOTES

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**

15  
OF  
586

**CONSTRUCTION /SOILS NOTES**

33 TEMPORARY SEEDING SHALL BE CONDUCTED USING RAPID STABILIZATION METHOD 3 AS INDICATED IN THE STAGING AND TRAFFIC CONTROL PLANS. THE FOLLOWING MATERIALS AND RATES SHALL APPLY TO MN/DOT SPEC. 2575:

TYPE 6 HYDRAULIC SOIL STABILIZER @ 350 POUNDS PER 1000 GALLONS ON SLURRY MIX  
 SEED MIXTURE 22-111 @ 10 POUNDS PER 1000 GALLONS OF SLURRY MIX  
 FERTILIZER TYPE 3, 10-10-10 @ 50 POUNDS PER 1000 GALLONS OF SLURRY MIX  
 WATER @ 875 GALLONS PER 1000 GALLONS OF SLURRY MIX  
 APPLY MIXTURE AT A RATE OF 6000 GALLONS PER ACRE.

34 SEEDING REQUIREMENTS ON THIS PROJECT ARE AS FOLLOWS: (SEE EROSION CONTROL AND TURF ESTABLISHMENT PLANS FOR SEED TYPE LOCATIONS)

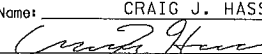
- A. ON PERMANENT CONSTRUCTION OF TH 10, RAMPS C.S.A.H. 83 AND RIVERDALE DRIVE:  
 SEED MIXTURE 35-221 @ 36.5 POUNDS PER ACRE (PLS).  
 FERTILIZER TYPE 4, ANALYSIS 17-10-7 @ 180 POUNDS PER ACRE.  
 TYPE 3 MULCH @ 2 TONS PER ACRE WITH DISC ANCHOR ON ALL SLOPES FLATTER THAN 1:3.  
 CATEGORY 3 BLANKET ON SLOPES 1:3 AND STEEPER. USE CATEGORY 3 BLANKET ON BOTTOMS OF SUPER ELEVATIONS ONLY IF NO CURB AND GUTTER.
- B. ON PERMANENT CONSTRUCTION OF LOCAL ROADWAYS:  
 SEED MIXTURE 25-131 @ 220 POUNDS PER ACRE (PLS).  
 FERTILIZER TYPE 3, ANALYSIS 22-5-10 @ 350 POUNDS PER ACRE.  
 TYPE 3 MULCH @ 2 TONS PER ACRE WITH DISC ANCHOR OR CATEGORY 3 BLANKET ON SLOPES 1:3 AND STEEPER.
- C. ON WET POND AREAS:  
 SEED MIXTURE 33-261 @ 35 POUNDS PER ACRE (PLS) TO BE PLANTED 10 FEET ON EITHER SIDE OF NORMAL WATER LEVEL.  
 SEED MIXTURE 35-241 @ 36.5 POUNDS PER ACRE (PLS) TO BE PLANTED FROM SEED MIXTURE 33-261 TO TOP OF POND.  
 FERTILIZER TYPE 4, 18-1-8 @ 120 POUNDS PER ACRE FOR SEED MIXTURE 33-261.  
 FERTILIZER TYPE 4, 18-1-8 @ 100 POUNDS PER ACRE FOR SEED MIXTURE 35-241.  
 TYPE 3 MULCH @ 2 TONS PER ACRE WITH DISC ANCHOR.  
 CATEGORY 3 EROSION CONTROL BLANKET AT THE NORMAL WATER LINE, EMERGENCY SPILL WAY, AND AREAS OF CONCENTRATED IN-FLOW.

**MISCELLANEOUS**

- 35 WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS.
- 36 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- 37 THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
- 38 CONTROL AND PREVENT THE SPREADING OF SPOTTED KNAPEWEED (INCIDENTAL). LOCATIONS OF SPOTTED KNAPEWEED SHOWN IN THE TOPOGRAPHY AND UTILITY PLANS.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 CONSTRUCTION/SOILS NOTES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

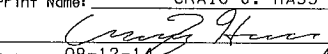

SHEET 16 OF 586

A EARTHWORK SUMMARY												
ALIGNMENT	EXCAVATION TOTALS (EV)				EMBANKMENT TOTALS (CV)							
	COMMON (CU YD)	SUBGRADE (CU YD)	EXCAVATION SPECIAL (A-1) (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)	COMMON BORROW SPECIAL (CU YD)
					SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)						
S.P. 0202-95												
E.B. T.H. 10 (SUBTOTAL A)	35185	25709	270	2498	15017	8297	2767	25333	16289	11252	252	
E.B. T.H. 10 (SUBTOTAL B)	2766				1055	1003	340					
N.W. RAMP	2476	947		4637	2963	752	252	1034	541	14117	2446	
N.E. RAMP	4651	897		5008	5807	1092	361	804	509	33531	702	
S.W. RAMP	1292	359			13639	449	147	2242	1407			
S.W. LOOP	909	243			6157	143	47	1114	711			
RIVERDALE POND GRADING	22332		3430		9932	2411	804					3670
S.W. RAMP GORE AREA	4322				1811	609	203					
S.W. LOOP INFIELD	1935				16080	657	219					
BRIDGE NO. 02007 WEST ABUTMENT (A-1)	397				1561	130	44			1930		
T.H. 10 DRY DITCH	3174				1431	863	288					
BYPASS 1 (A-2) (A-1)	10751				6900	1451						
BYPASS 3 (A-2)	7593				5140	1043						
WALL SURCHARGE	21843									21843		
<b>S.P. 0202-95 TOTAL</b>	<b>119626</b>	<b>28155</b>	<b>3700</b>	<b>12143</b>	<b>87493</b>	<b>18900</b>	<b>5472</b>	<b>30527</b>	<b>19457</b>	<b>82673</b>	<b>3400</b>	<b>3670</b>
S.A.P. 199-115-002												
N.B. RIVERDALE DR.	5897	924			28407	804	270	7463				
E.B. RIVERDALE DR.	4435	596		756	22578	819	273	4568		509	275	
OLD ARMSTRONG BLVD. (SUBTOTAL A)	207				78	50	17					
OLD ARMSTRONG BLVD. (SUBTOTAL B)	519				41	67	22					
LLAMA ST.	323				273	28	9					
146TH AVE.	778				63	101	33					
BYPASS 2 (A-2)	720					393						
OLD ARMSTRONG BLVD. - STAGE 2 (A-2)	54					10						
<b>S.A.P. 199-115-002 TOTAL</b>	<b>12933</b>	<b>1520</b>		<b>756</b>	<b>51440</b>	<b>2272</b>	<b>624</b>	<b>12031</b>		<b>509</b>	<b>275</b>	
S.A.P. 002-683-004												
N.B. C.S.A.H. 83 (SUBTOTAL A)	4059				48778	649	216	3807	1369	2577		
N.B. C.S.A.H. 83 (SUBTOTAL B)	6185	1319		856	71282	1328	444	6032	1909	19078		
C.S.A.H. 83 DRY BASIN	4113				71	633	211					
BRIDGE NO. 02586 EAST ABUTMENT (A-1)(A-3)(A-4)	13300			3748	13316					5908		
BRIDGE NO. 02586 WEST ABUTMENT (A-1)(A-3)				2870						2315		
<b>S.A.P. 002-683-004 TOTAL</b>	<b>27657</b>	<b>1319</b>		<b>7474</b>	<b>133447</b>	<b>2610</b>	<b>871</b>	<b>9839</b>	<b>3278</b>	<b>29878</b>		
<b>PROJECT TOTALS</b>	<b>160216</b>	<b>30994</b>	<b>3700</b>	<b>20373</b>	<b>272380</b>	<b>23782</b>	<b>6967</b>	<b>52397</b>	<b>22735</b>	<b>113060</b>	<b>3675</b>	<b>3670</b>

NOTES:

- (A-1) INCLUDES QUANTITIES NOT COVERED BY CROSS SECTIONS
- (A-2) INCLUDES QUANTITIES FOR REMOVAL OF BYPASS
- (A-3) INCLUDES QUANTITIES FOR BRIDGE FOOTING SUBCUT
- (A-4) INCLUDES QUANTITIES FOR BRIDGE SURCHARGE AND SURCHARGE REMOVAL

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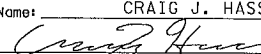
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: <u>CRAIG J. HASS</u>  Date: <u>09-12-18</u> License # <u>45039</u>					STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259		 ENGINEERS PLANNERS DESIGNERS		ANOKA COUNTY EARTHWORK SUMMARY T.H. 10 / C.S.A.H. 83 INTERCHANGE		SHEET 17 OF 586	
NO. DATE BY CKD APPR REVISION														



B		EARTHWORK TABULATION								
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
E.B. T.H. 10	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
163+50.00										
164+00.00	331			115	104	35				
164+50.00	346			134	108	36				
165+00.00	380	38		162	120	40	8	50		
165+50.00	422	174		194	133	44	105	112		
166+00.00	411	275		106	152	51	196	123		
166+50.00	431	273		91	157	52	196	123		
167+00.00	406	271		163	128	43	196	123		
167+50.00	339	276		144	111	37	196	123		
168+00.00	345	280		141	114	38	196	123		
168+50.00	348	281		154	115	38	196	123		
169+00.00	352	280		173	116	39	196	123		
169+50.00	355	278		191	116	39	196	123		
170+00.00	356	279		199	116	39	198	124		
170+50.00	358	280		207	117	39	202	127		
171+00.00	410	287		212	134	45	206	129		
171+50.00	500	297		148	150	50	211	132		
172+00.00	560	287		102	154	51	216	135		
172+50.00	559	260		131	157	52	220	138		
173+00.00	520	242		162	159	53	225	140		
173+50.00	504	239		228	159	53	230	143		
174+00.00	506	234		255	158	53	234	146		
174+50.00	500	225		203	150	50	239	149		
175+00.00	512	244		171	144	48	254	168		
175+50.00	532	281		162	140	47	289	193		
176+00.00	552	289		179	134	45	323	205		
176+50.00	598	287		212	133	44	344	218		
177+00.00	607	293		218	130	43	365	230		
177+50.00	592	287		303	131	44	380	239		
178+00.00	580	281		367	129	43	390	245		
178+50.00	564	284		316	121	40	402	252		
179+00.00	578	285		285	119	40	415	260		
179+50.00	471	224		280	92	31	364	228		
180+00.00	352	158		282	65	22	304	192		
180+50.00	348	153		274	65	22	302	192		
181+00.00	345	158		248	62	21	309	197		
181+50.00	349	178		221	60	20	330	209		
182+00.00	361	217		183	55	18	369	233		
182+29.59	183	105		86	28	9	192	122		
182+50.00	102	48		52	17	6	103	67		
183+00.00	266	134		120	46	15	253	163		
183+50.00	271	159		111	48	16	253	163		
184+00.00	264	182		97	46	15	253	163		
184+50.00	261	200		87	44	15	253	163		
185+00.00	262	210		78	44	15	253	163		
185+50.00	259	187		83	42	14	253	163		
186+00.00	249	170		90	40	13	253	163		
186+50.00	247	188		86	40	13	253	163		
187+00.00	228	191		75	34	11	253	163		
187+50.00	252	224		67	28	9	316	201		
188+00.00	280	264		69	27	9	366	236		
188+50.00	289	299		148	30	10	375	242		
189+00.00	380	337	466	442	47	16	391	246	1696	126
189+50.00	453	343	865	641	62	21	379	238	3666	126
190+00.00	427	344	783	522	56	19	367	231	3930	
190+50.00	325	343	384	263	39	13	355	224	1960	
191+00.00	266	341		94	34	11	343	217		
191+50.00	276	336		84	39	13	332	210		
192+00.00	266	331		83	39	13	322	204		
192+50.00	259	329		78	38	13	314	200		
193+00.00	260	345		61	39	13	309	196		
193+50.00	206	415		34	39	13	308	196		
194+00.00	209	420		34	38	13	310	197		

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NO	DATE	BY	CKD	APPR	REVISION

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.  
 Pr Int Name: CRAIG J. HASS  
  
 Date 09-12-14 License # 45039

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

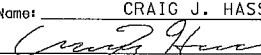
ANOKA COUNTY  
 EARTHWORK TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

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B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON (CU YD)	SUBGRADE (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)
				SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)					
E.B.T.H. 10										
194+50.00	281	341		47	37	12	314	199		
195+00.00	295	301		52	37	12	319	202		
195+50.00	290	287		58	36	12	325	206		
196+00.00	279	275		66	37	12	320	206		
196+50.00	279	270		81	43	14	312	204		
197+00.00	297	280		108	52	17	312	204		
197+50.00	316	281		156	61	20	312	204		
198+00.00	341	274		228	70	23	312	204		
198+50.00	356	271		271	76	25	312	204		
199+00.00	347	278		231	75	25	312	204		
199+50.00	341	289		177	73	24	312	204		
200+00.00	359	297		154	77	26	307	203		
200+50.00	374	298		163	80	27	295	192		
201+00.00	365	302		157	81	27	284	179		
201+50.00	346	319		143	82	27	276	177		
202+00.00	334	332		157	83	28	271	174		
202+50.00	425	417		183	104	35	328	211		
203+00.00	509	515		190	119	40	394	250		
203+50.00	499	528		153	116	39	390	245		
204+00.00	495	526		121	118	39	370	233		
204+50.00	482	528		101	118	39	350	221		
205+00.00	462	512		101	119	40	333	211		
205+50.00	442	486		105	120	40	318	202		
206+00.00	455	464		81	123	41	302	192		
206+50.00	475	421		63	125	42	269	182		
207+00.00	436	352		100	123	41	229	155		
207+50.00	342	302		108	104	35	207	130		
208+00.00	287	285		87	89	30	197	124		
208+50.00	268	276		97	85	28	196	123		
209+00.00	270	209		94	86	29	136	121		
209+50.00	282	73		100	90	30	48	59		
210+00.00	284			106	90	30	10			
210+50.00	252			77	76	25				
<b>SUBTOTAL (A)</b>	<b>35185</b>	<b>25709</b>	<b>2498</b>	<b>15017</b>	<b>8297</b>	<b>2767</b>	<b>25333</b>	<b>16289</b>	<b>11252</b>	<b>252</b>
231+50.00										
232+00.00	190			29	59	20				
232+50.00	110			26	59	20				
233+00.00	110			28	59	20				
233+50.00	254			18	59	20				
234+00.00	246			22	59	20				
234+50.00	163			38	59	20				
235+00.00	154			33	59	20				
235+50.00	153			54	59	20				
236+00.00	151			78	59	20				
236+50.00	149			76	59	20				
237+00.00	147			85	59	20				
237+50.00	146			94	59	20				
238+00.00	146			91	59	20				
238+50.00	147			92	59	20				
239+00.00	155			97	59	20				
239+50.00	169			101	59	20				
240+00.00	176			93	59	20				
<b>SUBTOTAL (B)</b>	<b>2766</b>			<b>1055</b>	<b>1003</b>	<b>340</b>				
<b>TOTAL</b>	<b>37951</b>	<b>25709</b>	<b>2498</b>	<b>16072</b>	<b>9300</b>	<b>3107</b>	<b>25333</b>	<b>16289</b>	<b>11252</b>	<b>252</b>

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NO	DATE	BY	CKD	APPR	REVISION

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.  
 Pr Int Name: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
 002-683-004  
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 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
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ANOKA COUNTY  
 EARTHWORK TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

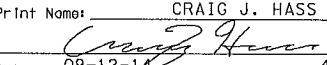
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B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
N. W. RAMP	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
13+35.35										
13+85.35	136	131		4	34	11	126	78		
14+35.35	128	134		10	34	11	126	80		
14+85.35	117	138		18	35	12	124	80		
15+35.35	112	142		25	36	12	124	80		
15+85.35	113	138		30	36	12	128	82		
16+35.35	117	123		39	38	13	136	87		
16+64.94	73	60		29	24	8	86	54		
16+85.35	52	32		23	18	6	50		50	
17+35.35	122	42	3	77	41	14	134		168	
17+85.36	124	7	138	161	40	13			294	78
18+35.37	133		278	246	41	14			384	163
18+85.38	136		295	272	41	14			468	175
19+35.40	140		314	237	42	14			630	187
19+85.43	137		349	195	41	14			825	211
20+35.45	125		379	197	39	13			987	234
20+85.48	116		412	197	38	13			1156	250
21+35.50	110		428	205	36	12			1326	269
21+85.52	107		445	217	35	12			1481	286
22+35.55	112		454	240	36	12			1623	221
22+85.57	123		447	237	36	12			1938	160
23+35.60	143		695	304	31	10			2787	212
<b>TOTAL</b>	<b>2476</b>	<b>947</b>	<b>4637</b>	<b>2963</b>	<b>752</b>	<b>252</b>	<b>1034</b>	<b>541</b>	<b>14117</b>	<b>2446</b>

B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
N. E. RAMP	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
20+11.57										
20+61.59	151		734	264	25	8			3859	
21+11.63	144		518	213	25	8			3402	
21+62.57	153		337	204	28	9			3026	
22+13.48	153		318	216	28	9			2942	
22+64.38	152		281	233	29	10			2824	
23+15.28	146		256	252	30	10			2673	
23+66.18	122		279	226	34	11			2481	
24+17.10	100		313	205	37	12			2268	20
24+68.03	109		292	232	34	11			2049	44
25+19.00	122		286	256	32	11			1829	68
25+70.00	127		288	273	34	11			1612	86
26+21.04	134		241	301	36	12			1384	81
26+72.12	145		199	459	39	13			996	76
27+23.20	156		170	513	43	14			634	69
27+74.29	160		149	370	44	15			480	64
28+25.39	179		125	263	47	16			369	61
28+76.49	229	14	101	210	53	18			305	56
29+27.59	270	42	83	199	59	20			251	52
29+78.70	271	67	38	195	64	21	81		147	25
30+29.81	282	89		193	70	23	101	108		
30+80.82	299	110		178	73	24	126	81		
31+30.82	283	127		138	67	22	124	80		
31+80.82	274	141		95	60	20	124	80		
32+30.82	261	152		67	55	18	124	80		
32+80.83	229	155		52	46	15	124	80		
<b>TOTAL</b>	<b>4651</b>	<b>897</b>	<b>5008</b>	<b>5807</b>	<b>1092</b>	<b>361</b>	<b>804</b>	<b>509</b>	<b>33531</b>	<b>702</b>

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NO	DATE	BY	CHK	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: **09-12-18** License # **45039**

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  

**ENGINEERS PLANNERS DESIGNERS**  
 Consulting Group, Inc.

**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET 20 OF 586**

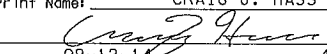
B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
S.W. LOOP	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
40+50.56										
40+75.00	57			748	3	1	93	57		
41+17.00	101			1171	10	3	127	80		
41+57.00	108			1173	18	6	101	65		
41+95.00	123			1181	24	8	95	61		
42+35.00	108			894	19	6	99	64		
42+80.00	85			506	9	3	112	72		
43+20.00	38			251	8	3	99	64		
43+50.00	8			66	6	2	75	48		
43+86.32	68	50		63	15	5	90	58		
44+29.16	119	102		72	21	7	107	69		
44+75.72	94	91		32	10	3	116	73		
<b>TOTAL</b>	<b>909</b>	<b>243</b>		<b>6157</b>	<b>143</b>	<b>47</b>	<b>1114</b>	<b>711</b>		

B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
S.W. RAMP	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
32+24.43										
32+55.70	84	73		6	12	4	85	53		
32+76.21	71	53		8	10	3	57	37		
33+23.58	195	137		42	31	10	133	85		
33+69.62	170	80		54	36	12	129	82		
34+00.00	68	11		63	24	8	85	54		
34+50.00	63	5		217	40	13	140	90		
35+00.00	65			452	40	13	140	90		
35+50.00	39			749	40	13	160	101		
36+00.00				1112	40	13	201	126		
36+50.00	37			1738	46	15	233	145		
37+00.00	155			2398	46	15	242	151		
37+50.00	170			2662	38	13	242	151		
38+00.00	109			2693	31	10	254	156		
38+26.63	66			1445	15	5	141	86		
<b>TOTAL</b>	<b>1292</b>	<b>359</b>		<b>13639</b>	<b>449</b>	<b>147</b>	<b>2242</b>	<b>1407</b>		

B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
E.B. RIVERDALE DR.	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
50+66.46										
51+00.00	326			4340	76	25	430			
51+50.00	608			6726	157	52	606			
52+00.00	534			4747	133	44	597			
52+50.00	477			3225	116	39	582			
53+00.00	431		194	1904	93	31	564	154	82	
53+50.00	384		328	844	64	21	538	226	129	
54+00.00	314	78	184	383	43	14	495	100	56	
54+50.00	261	104	50	177	23	8	293	29	8	
54+84.73	166	41		90	19	6	76			
55+24.62	146	78		69	24	8	92			
55+50.00	87	60		12	8	3	60			
56+00.00	233	92		26	20	7	92			
56+50.00	266	77		22	23	8	77			
57+00.00	202	66		13	20	7	66			
<b>TOTAL</b>	<b>4435</b>	<b>596</b>	<b>756</b>	<b>22578</b>	<b>819</b>	<b>273</b>	<b>4568</b>	<b>509</b>	<b>275</b>	

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NO	DATE	BY	CKD	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
 002-683-004  
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 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**  
 DESIGNED BY  
**D. SYMANIETZ**  
 CHECKED BY  
**C. HASS**  
 COMM. NO. 0138259



**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

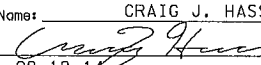
B EARTHWORK TABULATION										
STATION  N.B. RIVERDALE DR.	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON (CU YD)	SUBGRADE (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)
				SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)					
80+00.25										
80+50.14	200	44		58	34	11	44			
81+00.07	179	88		59	30	10	92			
81+50.02	151	127		50	23	8	147			
82+00.00	200	139		103	25	8	202			
82+50.00	241	111		128	23	8	204			
83+00.00	220	83		91	15	5	204			
83+50.00	220	135		107	15	5	309			
84+00.00	236	152		160	20	7	415			
84+50.00	268	45		371	32	11	412			
85+00.00	304			787	44	15	408			
85+50.00	331			1238	53	18	407			
86+00.00	351			1628	59	20	409			
86+50.00	385			2104	65	22	460			
87+00.00	417			2565	68	23	514			
87+50.00	437			2950	73	24	527			
88+00.00	452			3430	77	26	542			
88+50.00	470			3958	78	26	575			
89+00.00	434			4162	55	18	658			
89+50.00	401			4458	15	5	934			
<b>TOTAL</b>	<b>5897</b>	<b>924</b>		<b>28407</b>	<b>804</b>	<b>270</b>	<b>7463</b>			

B EARTHWORK TABULATION										
STATION  OLD ARMSTRONG BLVD.	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON (CU YD)	SUBGRADE (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)
				SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)					
30+75.00										
31+25.00	93			33	23	8				
31+68.23	114			45	27	9				
<b>SUBTOTAL (A)</b>	<b>207</b>			<b>78</b>	<b>50</b>	<b>17</b>				
32+65.57										
33+15.50	142			20	13	4				
33+65.50	99			7	12	4				
34+15.51	88			5	12	4				
34+50.00	57			3	9	3				
35+00.00	83			4	13	4				
35+30.00	50			2	8	3				
<b>SUBTOTAL (B)</b>	<b>519</b>			<b>41</b>	<b>67</b>	<b>22</b>				
<b>TOTAL</b>	<b>726</b>			<b>119</b>	<b>117</b>	<b>39</b>				

B EARTHWORK TABULATION										
STATION  LLAMA ST.	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON (CU YD)	SUBGRADE (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)
				SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)					
12+06.29										
12+25.00	43			25	7	2				
12+50.00	79			52	8	3				
12+75.00	100			76	7	2				
13+00.00	101			120	6	2				
<b>TOTAL</b>	<b>323</b>			<b>273</b>	<b>28</b>	<b>9</b>				

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NO	DATE	BY	CHK	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: **09-12-18** License #: **45039**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
**S. MARTINS**  
 DESIGNED BY  
**D. SYMANIETZ**  
 CHECKED BY  
**C. HASS**  
 COMM. NO. **0138259**



**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**22**  
 OF  
**586**

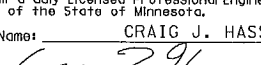


B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
146TH AVE.	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
81+45.00										
81+50.00	10			1	2	1				
81+75.00	56			10	11	4				
82+00.00	115			13	13	4				
82+25.00	189			14	16	5				
82+50.00	179			13	14	5				
83+00.00	164			12	19	6				
83+50.00	35				13	4				
84+00.00	30				13	4				
<b>TOTAL</b>	<b>778</b>			<b>63</b>	<b>101</b>	<b>33</b>				

B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
N.B.C.S.A.H. 83	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
100+00.00										
100+50.00	270			5027			1003	142		
101+00.00	245			5346	15	5	696	234		
101+50.00	565			6280	91	30	538	183		
102+00.00	770			7449	149	50	538	183		
102+50.00	727			8057	136	45	538	183		
103+00.00	665			8346	121	40	412	316		
103+28.50	365			4328	63	21	82	128	571	
103+50.00	263			2552	44	15			1030	
103+66.00	189			1393	30	10			976	
<b>SUBTOTAL (A)</b>	<b>4059</b>			<b>48778</b>	<b>649</b>	<b>216</b>	<b>3807</b>	<b>1369</b>	<b>2577</b>	
107+68.50										
108+00.00	376			2395	52	17	127		2471	
108+50.00	673			8601	111	37	346	46	1571	
109+00.00	661			9417	122	41	287	96	1560	
109+50.00	554			8802	125	42	288	100	1527	
110+00.00	490			8137	122	41	293	101	1449	
110+50.00	430			7502	118	39	300	104	1344	
111+00.00	276			6785	114	38	308	106	1235	
111+50.00	305			5980	104	35	317	109	1200	
112+00.00	378			4673	91	30	321	109	1295	
112+50.00	324		14	3196	71	24	336	112	1337	
113+00.00	290		58	2199	48	16	376	125	1192	
113+50.00	272		86	1547	42	14	423	141	935	
114+00.00	265		123	910	42	14	454	151	724	
114+50.00	209	52	176	380	34	11	482	162	562	
115+00.00	179	279	202	149	33	11	510	176	403	
115+50.00	188	566	152	234	41	14	520	181	221	
116+00.00	237	403	45	323	47	16	325	90	52	
116+15.00	78	19		52	11	4	19			
<b>SUBTOTAL (B)</b>	<b>6185</b>	<b>1319</b>	<b>856</b>	<b>71282</b>	<b>1328</b>	<b>444</b>	<b>6032</b>	<b>1909</b>	<b>19078</b>	
<b>TOTAL</b>	<b>10244</b>	<b>1319</b>	<b>856</b>	<b>120060</b>	<b>1977</b>	<b>660</b>	<b>9839</b>	<b>3278</b>	<b>21655</b>	

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NO	DATE	BY	CHK	APPR	REVISION

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 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**  
 DESIGNED BY  
**D. SYMANIETZ**  
 CHECKED BY  
**C. HASS**  
 COMM. NO. **0138259**



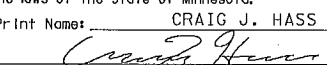
**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**23**  
 OF  
**586**

B EARTHWORK TABULATION										
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON (CU YD)	SUBGRADE (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)
				SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)					
BYPASS -1										
12+82.29										
13+33.31	33			10	9					
13+84.41	53			24	11					
14+35.61	82			46	13					
14+86.88	124			79	14					
15+38.25	161			106	14					
15+89.67	182			120	13					
16+41.12	192			124	11					
16+92.61	194			129	10					
17+44.14	209			149	14					
17+95.69	253			188	20					
18+47.28	309			237	28					
18+98.77	350			272	33					
19+48.95	352			272	36					
19+99.09	339			256	39					
20+49.19	318			233	41					
20+99.26	295			209	43					
21+49.30	296			213	39					
21+99.32	304			226	35					
22+49.33	300			221	35					
22+99.33	294			215	36					
23+49.33	279			201	34					
23+98.73	272			193	37					
24+47.60	268			186	39					
24+96.52	262			182	37					
25+45.50	271			184	43					
25+94.56	280			188	49					
26+43.74	276			187	46					
26+93.03	246			159	43					
27+42.39	194			118	33					
27+91.76	147			88	16					
28+41.15	131			76	7					
28+90.54	147			78	34					
29+39.95	145			68	60					
29+89.37	104			30	51					
30+38.80	100			3	46					
30+88.45	103				46					
31+38.61	109				55					
31+88.74	126				63					
32+38.83	132				62					
32+88.88	125				59					
33+38.92	103				52					
33+88.94	91				45					
<b>TOTAL</b>	<b>8551</b>			<b>5270</b>	<b>1451</b>					

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: **CRAIG J. HASS**  
  
 Date: **09-12-14** License # **45039**

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DRAWN BY  
 S. MARTINS  
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 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

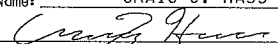
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 OF  
 586

B		EARTHWORK TABULATION								
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
BYPASS -2	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
20+00.00										
20+50.00	26				25					
21+00.00	31				25					
21+50.00	46				25					
22+00.00	59				30					
22+50.00	66				36					
23+00.00	70				41					
23+50.00	73				44					
24+00.00	72				43					
24+50.00	68				38					
25+00.00	63				34					
25+50.00	50				27					
26+00.00	28				13					
26+50.00	14				3					
27+00.00	12				2					
27+50.00	12				1					
28+00.00	12				1					
28+50.00	12				3					
29+00.00	6				2					
<b>TOTAL</b>	<b>720</b>				<b>393</b>					

B		EARTHWORK TABULATION								
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON	SUBGRADE	STRUCTURE CLASS U	COMMON		COMPOST GRADE 2	GRANULAR	SELECT GRANULAR	STRUCTURAL BACKFILL	GRANULAR BACKFILL
				SELECT GRADING	SLOPE DRESSING					
OLD ARMSTRONG BLVD. BYPASS	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)	(CU YD)
32+90.51										
33+15.51	10				2					
33+65.51	13				2					
34+15.51	11				2					
34+50.00	7				1					
35+00.00	13				3					
<b>TOTAL</b>	<b>54</b>				<b>10</b>					

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DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
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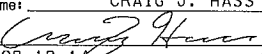
**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 25  
 OF  
 586

B		EARTHWORK TABULATION								
STATION	EXCAVATION TOTALS (EV)			EMBANKMENT TOTALS (CV)						
	COMMON (CU YD)	SUBGRADE (CU YD)	STRUCTURE CLASS U (CU YD)	COMMON		COMPOST GRADE 2 (CU YD)	GRANULAR (CU YD)	SELECT GRANULAR (CU YD)	STRUCTURAL BACKFILL (CU YD)	GRANULAR BACKFILL (CU YD)
				SELECT GRADING (CU YD)	SLOPE DRESSING (CU YD)					
BYPASS -3										
31+14.53										
31+64.82	27				14					
32+15.11	32				17					
32+65.14	38				19					
33+15.70	43				23					
33+66.00	47				28					
34+16.30	54				32					
34+66.61	63			1	37					
35+16.92	69			1	43					
35+67.20	61			2	25					
36+17.28	60			11	7					
36+67.35	92			37	11					
37+17.41	143			86	14					
37+67.46	205			142	19					
38+17.49	260			190	26					
38+67.51	302			229	29					
39+17.52	328			253	31					
39+67.53	340			263	33					
40+17.33	342			265	33					
40+67.02	344			269	31					
41+16.70	352			280	30					
41+66.39	361			289	29					
42+16.08	359			286	29					
42+65.76	355			283	29					
43+15.45	332			258	31					
43+65.14	237			161	32					
44+14.82	151			78	30					
44+64.51	146			80	23					
45+14.19	174			112	19					
45+63.87	242			179	19					
46+13.56	287			225	19					
46+63.23	278			218	17					
47+12.91	267			208	15					
47+62.58	221			167	12					
48+12.25	162			114	10					
48+61.90	128			86	10					
49+11.84	107			70	11					
49+61.85	99			62	16					
50+11.85	87			50	21					
50+61.86	68			34	21					
51+11.87	56			24	22					
51+61.88	56			26	23					
52+11.90	64			35	23					
52+61.92	60			30	26					
53+11.95	49			19	28					
53+61.97	45			17	26					
<b>TOTAL</b>	<b>7593</b>			<b>5140</b>	<b>1043</b>					

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**ANOKA COUNTY**  
 EARTHWORK TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**  
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**OF**  
**586**

C EXISTING UTILITIES (CONNEXUS)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
OLD ARMSTRONG BLVD.	29+50, 34' RT - 32+03, 38' RT	BURIED POWER	CONNEXUS	RELOCATE
OLD ARMSTRONG BLVD.	32+78, 39' LT - 35+41, 29' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
OLD ARMSTRONG BLVD.	32+78, 39' LT - 32+76, 48' RT	BURIED POWER	CONNEXUS	RELOCATE
OLD ARMSTRONG BLVD.	32+82, 43' LT - 35+24, 39' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
OLD ARMSTRONG BLVD.	35+40, 39' LT - 35+49, 37' RT	OH POWER	CONNEXUS	LEAVE AS IS
OLD ARMSTRONG BLVD.	35+42, 29' LT	POWER POLE	CONNEXUS	LEAVE AS IS
S.W. RAMP	36+60, 84' RT - 38+49, 51' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. RIVERDALE DR.	51+87, 130' LT - 55+25, 81' LT	BURIED POWER	CONNEXUS	RELOCATE
E.B. RIVERDALE DR.	55+75, 21' RT - 57+54, 48' RT	BURIED POWER	CONNEXUS	RELOCATE
E.B. RIVERDALE DR.	56+03, 40' LT - 57+82, 30' LT	BURIED POWER	CONNEXUS	RELOCATE
E.B. RIVERDALE DR.	57+55, 48' RT - 57+84, 36' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
N.B. RIVERDALE DR.	75+17, 26' LT - 81+65, 209' LT	BURIED POWER	CONNEXUS	RELOCATE
N.B. RIVERDALE DR.	81+65, 209' LT	ELEC METER	CONNEXUS	RELOCATE
N.B. RIVERDALE DR.	81+83, 160' LT	ELEC PED	CONNEXUS	RELOCATE
N.B. RIVERDALE DR.	81+84, 160' LT - 84+08, 256' LT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	100+57, 85' LT - 101+35, 118' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	106+88, 325' LT - 108+81, 286' RT	OH POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	108+81, 286' RT - 111+22, 110' RT	OH POWER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	106+88, 325' LT	POWER POLE	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+53, 147' LT	POWER POLE	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+92, 22' LT	ELEC METER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+92, 23' LT	ELEC METER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+98, 27' LT - 109+80, 121' LT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+97, 27' LT	ELEC PED	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+99, 22' LT	POWER POLE	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	107+93, 23' LT - 107+97, 27' LT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	108+45, 56' LT	ELEC PED	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	108+52, 325' RT - 108+80, 287' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+56, 344' RT - 108+65, 359' RT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	108+63, 357' RT - 108+81, 286' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+64, 303' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+65, 359' RT	ELEC METER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+67, 301' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+68, 298' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+81, 286' RT	POWER POLE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+81, 300' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+83, 298' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	108+84, 297' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	109+49, 179' LT	ELEC PED	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	109+64, 145' LT	ELEC PED	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	109+81, 121' LT	ELEC METER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	110+24, 165' RT	POWER POLE	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	111+21, 111' RT - 117+94, 32' RT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	111+22, 110' RT	POWER POLE	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	111+40, 101' RT	GUY WIRE	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	111+44, 100' RT	GUY WIRE	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	111+71, 116' RT	ELEC PED	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	111+71, 115' RT - 113+74, 43' RT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	112+36, 70' LT - 118+03, 83' LT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	112+39, 63' LT - 112+41, 57' LT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	112+39, 63' LT	ELEC METER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	112+40, 53' LT	ELEC PED	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	113+56, 76' LT - 113+74, 43' RT	BURIED POWER	CONNEXUS	RELOCATE
N.B. C.S.A.H. 83	116+33, 85' RT - 117+94, 33' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	117+37, 126' LT - 118+03, 87' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
N.B. C.S.A.H. 83	117+45, 216' LT - 118+02, 90' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	163+05, 77' RT - 192+98, 80' RT	OH POWER	CONNEXUS	RELOCATE
E.B. T.H. 10	163+05, 77' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	165+62, 115' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	165+62, 115' RT - 166+66, 72' RT	OH POWER	CONNEXUS	RELOCATE
E.B. T.H. 10	166+06, 163' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	166+10, 156' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	166+62, 62' RT	GUY WIRE	CONNEXUS	RELOCATE
E.B. T.H. 10	166+66, 72' RT	POWER POLE	CONNEXUS	RELOCATE
E.B. T.H. 10	166+66, 72' RT - 167+87, 328' RT	OH POWER	CONNEXUS	RELOCATE
E.B. T.H. 10	167+87, 328' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	169+10, 66' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	172+04, 65' RT	POWER POLE	CONNEXUS	LEAVE AS IS

C EXISTING UTILITIES (CONNEXUS)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
E.B. T.H. 10	174+19, 449' RT - 175+11, 448' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	175+14, 80' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	175+14, 81' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	175+14, 83' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	175+14, 73' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	178+40, 72' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	181+63, 71' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	184+84, 73' RT	POWER POLE	CONNEXUS	RELOCATE
E.B. T.H. 10	191+03, 74' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	191+05, 119' RT - 192+95, 95' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	191+11, 74' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	191+31, 66' RT	GUY WIRE	CONNEXUS	RELOCATE
E.B. T.H. 10	191+31, 75' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	191+31, 76' RT - 191+39, 88' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	191+39, 89' RT	ELEC PED	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+76, 81' RT - 192+11, 73' RT	OH POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+82, 262' LT - 194+01, 263' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+81, 262' LT	ELEC PED	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+81, 263' LT - 193+99, 241' LT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+82, 88' RT - 194+92, 83' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+82, 88' RT	ELEC METER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	193+99, 241' LT	ELEC METER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	194+05, 58' RT - 194+92, 83' RT	BURIED POWER	CONNEXUS	RELOCATE
E.B. T.H. 10	194+92, 82' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	196+12, 180' LT - 197+70, 75' RT	BURIED POWER	CONNEXUS	RELOCATE
E.B. T.H. 10	197+48, 74' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	197+69, 61' RT	GUY WIRE	CONNEXUS	RELOCATE
E.B. T.H. 10	197+70, 73' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	200+33, 218' LT - 200+40, 73' RT	BURIED POWER	CONNEXUS	RELOCATE
E.B. T.H. 10	200+40, 62' RT	GUY WIRE	CONNEXUS	RELOCATE
E.B. T.H. 10	200+41, 72' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	203+10, 70' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	205+93, 69' RT - 205+95, 99' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	205+93, 68' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	205+94, 68' RT - 206+02, 97' RT	BURIED POWER	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	208+00, 82' RT	GUY WIRE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	208+00, 71' RT	POWER POLE	CONNEXUS	LEAVE AS IS
E.B. T.H. 10	210+11, 73' RT	POWER POLE	CONNEXUS	LEAVE AS IS

UTILITIES  
THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES INVOLVED ON THIS PROJECT.

CONNEXUS ENERGY  
CENTERPOINT ENERGY MINNESOTA GAS  
MINNESOTA DEPARTMENT OF TRANSPORTATION  
CENTURYLINK  
WINDSTREAM COMMUNICATIONS  
ZAYO GROUP, LLC  
COMCAST CABLE COMMUNICATIONS, INC.  
BNSF RAILWAY COMPANY  
ANOKA COUNTY  
CITY OF RAMSEY

GENERAL NOTES:

ALL UTILITY WORK SHOWN ON THESE SHEETS SHALL BE PERFORMED BY OTHERS UNLESS NOTED.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL C. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-12, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
EXISTING UTILITY TABULATIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
27  
OF  
586

C EXISTING UTILITIES (CENTERPOINT ENERGY)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
OLD ARMSTRONG BLVD.	29+50, 23' RT - 32+15, 33' RT	3" GAS	CENTERPOINT ENERGY	RELOCATE
OLD ARMSTRONG BLVD.	31+95, 16' RT - 31+98, 47' RT	SERVICE	CENTERPOINT ENERGY	RELOCATE
OLD ARMSTRONG BLVD.	32+58, 41' LT - 35+46, 26' LT	4" GAS	CENTERPOINT ENERGY	LEAVE AS IS
OLD ARMSTRONG BLVD.	32+69, 45' RT - 32+82, 24' LT	4" GAS	CENTERPOINT ENERGY	RELOCATE
S.W. RAMP	36+64, 84' RT - 38+49, 49' LT	4" GAS	CENTERPOINT ENERGY	LEAVE AS IS
E.B. RIVERDALE DR.	51+86, 126' LT - 55+17, 55' LT	4" GAS	CENTERPOINT ENERGY	LEAVE AS IS
E.B. RIVERDALE DR.	55+74, 9' RT - 56+03, 34' LT	3" GAS	CENTERPOINT ENERGY	RELOCATE
E.B. RIVERDALE DR.	55+84, 28' RT - 57+44, 48' RT	SERVICE	CENTERPOINT ENERGY	RELOCATE
E.B. RIVERDALE DR.	56+00, 35' LT - 57+81, 24' LT	4" GAS	CENTERPOINT ENERGY	RELOCATE
N.B. RIVERDALE DR.	81+95, 160' LT - 82+24, 114' LT	SERVICE	CENTERPOINT ENERGY	LEAVE AS IS
N.B. RIVERDALE DR.	82+24, 114' LT - 84+13, 256' LT	4" GAS	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	100+55, 85' LT - 101+31, 118' RT	4" GAS	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	108+28, 223' RT - 108+33, 218' RT	6" GAS	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	108+33, 218' RT - 111+45, 103' RT	6" GAS	CENTERPOINT ENERGY	RELOCATE
N.B. C.S.A.H. 83	110+82, 218' LT - 111+09, 17' RT	2" GAS	CENTERPOINT ENERGY	RELOCATE
N.B. C.S.A.H. 83	111+09, 16' RT - 118+19, 62' LT	ABANDONED	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	111+29, 132' LT - 113+22, 145' LT	SERVICE	CENTERPOINT ENERGY	RELOCATE
N.B. C.S.A.H. 83	111+36, 107' RT - 111+83, 90' RT	6" GAS	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	111+57, 3' LT - 111+86, 82' RT	ABANDONED	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	111+81, 84' RT - 117+84, 27' RT	6" GAS	CENTERPOINT ENERGY	RELOCATE
N.B. C.S.A.H. 83	111+83, 90' RT - 111+96, 114' RT	4" GAS	CENTERPOINT ENERGY	LEAVE AS IS
N.B. C.S.A.H. 83	117+39, 220' LT - 117+39, 110' LT	2" GAS	CENTERPOINT ENERGY	LEAVE AS IS
E.B. T.H. 10	164+83, 46' RT - 193+12, 76' RT	4" GAS	CENTERPOINT ENERGY	RELOCATE
E.B. T.H. 10	191+46, 98' RT - 191+50, 51' RT	SERVICE	CENTERPOINT ENERGY	LEAVE AS IS
E.B. T.H. 10	192+80, 262' LT - 192+82, 46' RT	6" GAS	CENTERPOINT ENERGY	RELOCATE
E.B. T.H. 10	206+47, 80' RT - 209+81, 144' LT	4" GAS	CENTERPOINT ENERGY	RELOCATE

C EXISTING UTILITIES (WINDSTREAM)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
E.B. T.H. 10	164+48, 66' RT - 164+89, 71' RT	BURIED TEL	WINDSTREAM	LEAVE AS IS
E.B. T.H. 10	164+89, 71' RT	TEL PED	WINDSTREAM	LEAVE AS IS
E.B. T.H. 10	164+89, 66' RT - 165+22, 71' RT	BURIED FIBER	WINDSTREAM	LEAVE AS IS
E.B. T.H. 10	165+17, 71' RT	TEL HH	WINDSTREAM	LEAVE AS IS
E.B. T.H. 10	165+17, 71' RT - 209+67, 55' RT	BURIED FIBER	WINDSTREAM	RELOCATE
E.B. T.H. 10	165+22, 71' RT	TEL HH	WINDSTREAM	LEAVE AS IS
E.B. T.H. 10	192+89, 64' RT	TEL HH	WINDSTREAM	RELOCATE
E.B. T.H. 10	194+39, 70' RT	TEL HH	WINDSTREAM	LEAVE AS IS
E.B. T.H. 10	206+52, 60' RT	TEL HH	WINDSTREAM	RELOCATE

C EXISTING UTILITIES (BNSF)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
E.B. T.H. 10	193+14, 217' LT	RR XING SIGNAL	BNSF RR	REMOVE
E.B. T.H. 10	193+89, 170' LT	RR XING SIGNAL	BNSF RR	REMOVE
E.B. T.H. 10	193+97, 237' LT	RR SIGNAL CONTROL HOUSE	BNSF RR	REMOVE
E.B. T.H. 10	194+07, 243' LT	RR XING SIGNAL	BNSF RR	REMOVE

C EXISTING UTILITIES (ZAYO GROUP)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
N.B. C.S.A.H. 83	112+70, 103' RT - 117+97, 21' RT	BURIED FIBER	ZAYO GROUP	RELOCATE
N.B. C.S.A.H. 83	112+71, 65' RT	TEL HH	ZAYO GROUP	RELOCATE
N.B. C.S.A.H. 83	116+16, 61' RT	TEL HH	ZAYO GROUP	LEAVE AS IS
N.B. C.S.A.H. 83	116+16, 61' RT - 117+94, 37' RT	BURIED FIBER	ZAYO GROUP	LEAVE AS IS

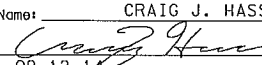

C EXISTING UTILITIES (COMCAST)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
OLD ARMSTRONG BLVD.	29+40, 16' RT - 32+08, 30' RT	BURIED TV	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+04, 31' RT - 32+07, 32' RT	BURIED TV	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+04, 31' RT - 32+15, 33' RT	BURIED TV	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+04, 31' RT	TV PED	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+04, 31' RT - 35+51, 25' RT	BURIED TV	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+08, 28' LT - 35+41, 28' LT	BURIED TV	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+78, 31' LT - 34+09, 21' LT	BURIED TV	COMCAST	RELOCATE
OLD ARMSTRONG BLVD.	32+78, 32' LT	TV PED	COMCAST	LEAVE AS IS
OLD ARMSTRONG BLVD.	35+40, 39' LT - 35+50, 6' RT	OVERHEAD FIBER	COMCAST	LEAVE AS IS (1)
E.B. RIVERDALE DR.	55+71, 14' RT - 57+88, 31' RT	BURIED TV	COMCAST	RELOCATE
E.B. RIVERDALE DR.	55+70, 17' RT - 57+88, 31' RT	BURIED TV	COMCAST	RELOCATE
E.B. RIVERDALE DR.	55+74, 9' RT - 57+85, 22' RT	BURIED TV	COMCAST	RELOCATE
E.B. RIVERDALE DR.	55+74, 20' RT - 57+51, 49' RT	BURIED TV	COMCAST	RELOCATE
E.B. RIVERDALE DR.	57+75, 47' RT - 57+88, 31' RT	BURIED TV	COMCAST	LEAVE AS IS
E.B. RIVERDALE DR.	57+88, 31' RT	TV PED	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	108+53, 331' RT - 113+57, 50' RT	BURIED TV	COMCAST	RELOCATE
N.B. C.S.A.H. 83	108+53, 332' RT - 115+69, 35' RT	BURIED FIBER	COMCAST	RELOCATE
N.B. C.S.A.H. 83	108+54, 333' RT	TV PED	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	109+59, 164' LT - 110+72, 213' LT	BURIED TV	COMCAST	RELOCATE
N.B. C.S.A.H. 83	110+67, 221' LT - 113+57, 51' RT	BURIED TV	COMCAST	RELOCATE
N.B. C.S.A.H. 83	110+72, 212' LT	TV PED	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	111+97, 110' RT - 113+56, 51' RT	BURIED TV	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	111+97, 112' RT - 113+56, 51' RT	BURIED TV	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	112+75, 60' RT	TV PED	COMCAST	RELOCATE
N.B. C.S.A.H. 83	113+56, 51' RT - 115+96, 21' RT	BURIED TV	COMCAST	RELOCATE
N.B. C.S.A.H. 83	113+56, 51' RT - 115+96, 20' RT	BURIED TV	COMCAST	RELOCATE
N.B. C.S.A.H. 83	113+57, 51' RT	TV PED	COMCAST	RELOCATE
N.B. C.S.A.H. 83	113+57, 48' RT	TEL HH	COMCAST	RELOCATE
N.B. C.S.A.H. 83	113+57, 51' RT - 114+43, 137' LT	BURIED TV	COMCAST	RELOCATE
N.B. C.S.A.H. 83	113+57, 51' RT - 113+68, 50' RT	BURIED TV	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	114+42, 151' LT	TV PED	COMCAST	LEAVE AS IS
N.B. C.S.A.H. 83	115+69, 35' RT - 117+83, 36' RT	BURIED FIBER	COMCAST	RELOCATE
E.B. T.H. 10	163+05, 77' RT - 192+98, 80' RT	OVERHEAD FIBER	COMCAST	RELOCATE (1)
E.B. T.H. 10	165+62, 115' RT - 166+66, 72' RT	OVERHEAD TV	COMCAST	RELOCATE (1)
E.B. T.H. 10	181+66, 72' RT - 182+20, 97' RT	BURIED TV	COMCAST	RELOCATE
E.B. T.H. 10	193+45, 78' RT - 194+33, 73' RT	OVERHEAD FIBER	COMCAST	LEAVE AS IS (1)
E.B. T.H. 10	193+64, 80' RT - 194+33, 73' RT	BURIED TV	COMCAST	LEAVE AS IS
E.B. T.H. 10	193+82, 84' RT - 193+96, 79' RT	BURIED TV	COMCAST	RELOCATE
E.B. T.H. 10	193+88, 263' LT - 194+45, 50' RT	BURIED TV	COMCAST	RELOCATE
E.B. T.H. 10	193+88, 263' LT - 194+46, 56' RT	BURIED FIBER	COMCAST	RELOCATE
E.B. T.H. 10	193+90, 263' LT - 194+45, 50' RT	BURIED TV	COMCAST	RELOCATE
E.B. T.H. 10	193+97, 79' RT	TV MH	COMCAST	LEAVE AS IS
E.B. T.H. 10	194+03, 57' RT - 195+28, 55' RT	BURIED FIBER	COMCAST	RELOCATE
E.B. T.H. 10	194+33, 74' RT - 194+57, 121' RT	BURIED TV	COMCAST	LEAVE AS IS

NOTES:

SEE SHEET 27 FOR GENERAL NOTES.

(1) LOCATED ON CONNEXUS POLES.

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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. Pr Int Name: CRAIG J. HASS  Date: 09-12-18 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY A. DEBRUIN DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259 	ANOKA COUNTY EXISTING UTILITY TABULATIONS T.H. 10 / C.S.A.H. 83 INTERCHANGE	SHEET 28 OF 586
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C EXISTING UTILITIES (MNDOT) (1)

ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
OLD ARMSTRONG BLVD.	34+84, 21' RT - 35+51, 24' RT	BUR SIG WIRE	MNDOT	(2)
OLD ARMSTRONG BLVD.	34+84, 23' RT	HANDHOLE	MNDOT	(2)
N.B. C.S.A.H. 83	108+45, 296' RT - 109+92, 168' RT	BUR SIG WIRE	MNDOT	(2)
N.B. C.S.A.H. 83	109+93, 168' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	164+84, 57' RT - 209+68, 46' RT	BURIED FIBER	MNDOT	(4)
E.B. T.H. 10	165+29, 42' RT	HEADWALL	MNDOT	(4)
E.B. T.H. 10	165+29, 42' RT - 165+33, 58' RT	DRAIN TILE	MNDOT	(4)
E.B. T.H. 10	165+33, 58' RT	FIBER OPTIC VAULT	MNDOT	(4)
E.B. T.H. 10	186+97, 29' RT - 192+99, 40' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	186+97, 29' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	189+64, 28' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	192+88, 132' LT - 193+17, 140' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	192+88, 130' LT - 192+92, 34' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	192+88, 131' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	192+92, 34' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	192+93, 38' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	192+95, 65' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	192+95, 65' LT - 193+27, 57' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	192+98, 126' LT	SIG MAST ARM	MNDOT	(2)
E.B. T.H. 10	192+99, 44' RT - 194+21, 31' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+00, 40' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	193+17, 140' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	193+17, 144' LT	SIG MAST ARM	MNDOT	(2)
E.B. T.H. 10	193+27, 58' LT	SIG MAST ARM	MNDOT	(2)
E.B. T.H. 10	193+45, 260' LT - 193+61, 256' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+49, 253' LT - 193+61, 256' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+53, 262' LT - 194+03, 248' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+63, 80' RT - 193+85, 47' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+66, 47' RT - 194+21, 31' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+85, 46' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	193+87, 44' RT - 194+02, 57' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+89, 32' RT	SIG MAST ARM	MNDOT	(2)
E.B. T.H. 10	193+90, 32' RT - 194+21, 31' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+94, 44' LT	SIG MAST ARM	MNDOT	(2)
E.B. T.H. 10	193+94, 44' LT - 194+24, 31' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+95, 146' LT	SIG MAST ARM	MNDOT	(2)
E.B. T.H. 10	193+96, 145' LT - 194+25, 138' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	193+96, 234' LT - 194+25, 139' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	194+02, 58' RT	PED SIGNAL	MNDOT	(2)
E.B. T.H. 10	194+03, 248' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	194+03, 57' RT - 194+21, 31' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	194+06, 57' RT	PED SIGNAL	MNDOT	(2)
E.B. T.H. 10	194+21, 167' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	194+21, 31' RT - 194+25, 138' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	194+21, 31' RT - 209+69, 23' RT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	194+21, 31' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	194+24, 31' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	194+25, 139' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	194+25, 57' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	194+25, 138' LT - 199+14, 125' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	195+28, 55' RT	FIBER OPTIC VAULT	MNDOT	(4)
E.B. T.H. 10	195+28, 55' RT - 195+30, 43' RT	DRAIN TILE	MNDOT	(4)
E.B. T.H. 10	195+30, 43' RT	HEADWALL	MNDOT	(4)
E.B. T.H. 10	196+25, 127' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	199+14, 123' LT - 199+14, 120' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	199+14, 126' LT - 199+20, 120' LT	BUR SIG WIRE	MNDOT	(2)
E.B. T.H. 10	199+14, 126' LT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	205+90, 46' RT	HANDHOLE	MNDOT	(2)
E.B. T.H. 10	206+57, 45' RT	HANDHOLE	MNDOT	(2)

C EXISTING UTILITIES (ANOKA COUNTY) (1)

ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
N.B. C.S.A.H. 83	111+57, 85' RT	HANDHOLE	ANOKA COUNTY	(3)
N.B. C.S.A.H. 83	111+57, 85' RT - 116+23, 41' RT	BUR SIG WIRE	ANOKA COUNTY	(3)
N.B. C.S.A.H. 83	113+77, 33' RT	HANDHOLE	ANOKA COUNTY	(3)
N.B. C.S.A.H. 83	116+03, 28' RT	HANDHOLE	ANOKA COUNTY	(3)
N.B. C.S.A.H. 83	116+03, 81' LT	HANDHOLE	ANOKA COUNTY	(3)
N.B. C.S.A.H. 83	116+02, 28' RT - 117+33, 123' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+03, 31' LT	HANDHOLE	ANOKA COUNTY	(3)
N.B. C.S.A.H. 83	116+25, 41' RT	SIG MAST ARM	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+31, 96' LT - 116+45, 108' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+32, 95' LT	SIG MAST ARM	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+45, 108' LT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+45, 108' LT - 116+52, 225' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+48, 225' LT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+80, 56' RT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	116+80, 56' RT - 117+77, 87' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+33, 123' LT - 117+37, 127' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+33, 123' LT - 117+36, 130' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+33, 123' LT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+36, 130' LT	PED SIGNAL	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+37, 127' LT	PED SIGNAL	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+37, 54' RT - 117+37, 64' RT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+37, 126' LT - 117+76, 88' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+37, 52' RT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+38, 126' LT - 117+77, 88' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+50, 36' RT	SIG MAST ARM	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+52, 100' LT	SIG MAST ARM	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+51, 100' LT - 118+09, 86' LT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+52, 35' RT - 117+76, 24' RT	BUR SIG WIRE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+76, 22' LT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+77, 24' RT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS
N.B. C.S.A.H. 83	117+77, 88' LT	HANDHOLE	ANOKA COUNTY	LEAVE AS IS

- NOTES:
- SEE SHEET 27 FOR GENERAL NOTES.
  - (1) WORK TO BE DONE BY CONTRACTOR AS NOTED.
  - (2) REMOVAL PAID FOR UNDER REMOVE SIGNAL SYSTEM.
  - (3) REMOVAL PAID FOR UNDER REVISE SIGNAL SYSTEM B.
  - (4) SEE TRAFFIC MANAGEMENT SYSTEM PLANS.

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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>NO</th><th>DATE</th><th>BY</th><th>CHKD</th><th>APPR</th></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td colspan="5" style="text-align: center;">REVISION</td></tr> </table>	NO	DATE	BY	CHKD	APPR						REVISION					<p>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.</p> <p>Print Name: <b>CRAIG J. HASS</b></p> <p><i>Craig J. Hass</i></p> <p>Date: <u>09-12-18</u> License #: <u>45039</u></p>	<p>STATE AID PROJECT NO. 002-683-004 199-115-002</p> <p>STATE PROJECT NO. 0202-95 (TH 10)</p> <p>COUNTY PROJECT NO.</p> <p>CITY PROJECT NO.</p>	<p>DRAWN BY A. DEBRUIN</p> <p>DESIGNED BY D. SYMANIETZ</p> <p>CHECKED BY C. HASS</p> <p>COMM. NO. 0138259</p>	<p><b>ANOKA COUNTY</b></p> <p>EXISTING UTILITY TABULATIONS</p> <p>T.H. 10 / C.S.A.H. 83 INTERCHANGE</p>	<p>SHEET</p> <p>29</p> <p>OF</p> <p>586</p>
NO	DATE	BY	CHKD	APPR																
REVISION																				



C EXISTING UTILITIES (CENTURY LINK)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
OLD ARMSTRONG BLVD.	32+85, 37' RT	TEL PED	CENTURY LINK	RELOCATE
OLD ARMSTRONG BLVD.	32+85, 40' RT - 32+85, 49' RT	BURIED TEL	CENTURY LINK	LEAVE AS IS
OLD ARMSTRONG BLVD.	35+40, 39' LT - 35+50, 6' RT	OVERHEAD TEL	CENTURY LINK	LEAVE AS IS
E.B. RIVERDALE DR.	56+08, 48' LT - 57+80, 37' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. RIVERDALE DR.	57+58, 44' RT - 57+87, 39' RT	BURIED TEL	CENTURY LINK	LEAVE AS IS
E.B. RIVERDALE DR.	57+86, 39' RT	TEL PED	CENTURY LINK	LEAVE AS IS
N.B. C.S.A.H. 83	108+35, 252' RT - 117+46, 58' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	108+49, 312' RT - 112+50, 56' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	108+49, 311' RT - 112+52, 52' LT	BURIED FIBER	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	110+19, 148' LT - 110+73, 222' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	110+97, 158' LT	TEL PED	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	110+98, 158' LT - 111+64, 21' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	110+97, 158' LT - 111+41, 249' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	110+97, 158' LT - 111+24, 1' RT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+36, 246' LT - 112+43, 65' LT	BURIED FIBER	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 22' LT - 112+48, 63' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+52, 49' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+51, 49' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 111+75, 24' RT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+49, 63' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+51, 49' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 18' LT - 111+64, 21' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+50, 59' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 18' LT	TEL PED	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT	TEL PED	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+79, 57' RT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+64, 21' LT - 112+52, 49' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	111+97, 114' RT - 112+48, 64' LT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+42, 64' LT	TEL PED	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+47, 46' LT - 112+74, 60' RT	BURIED TEL	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+50, 58' LT	TEL PED	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+53, 53' LT	TEL HH	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+75, 67' RT	TEL HH	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+74, 60' RT	TEL HH	CENTURY LINK	RELOCATE
N.B. C.S.A.H. 83	112+80, 64' RT	TEL HH	CENTURY LINK	RELOCATE
E.B. T.H. 10	163+05, 77' RT - 192+98, 80' RT	OVERHEAD TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	164+49, 159' LT - 194+00, 135' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	164+49, 154' LT - 194+01, 135' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	164+50, 156' LT - 209+52, 137' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	164+51, 150' LT - 170+78, 181' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	165+62, 115' RT - 166+65, 73' RT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	166+63, 73' RT - 167+46, 229' RT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	166+63, 72' RT	TEL PED	CENTURY LINK	RELOCATE
E.B. T.H. 10	170+79, 182' LT	TEL MH	CENTURY LINK	RELOCATE
E.B. T.H. 10	170+78, 181' LT - 193+88, 135' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	170+86, 182' LT	TEL MH	CENTURY LINK	RELOCATE
E.B. T.H. 10	180+82, 161' LT	TEL MH	CENTURY LINK	RELOCATE
E.B. T.H. 10	182+18, 97' RT - 184+84, 74' RT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	182+27, 96' RT - 184+84, 73' RT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	182+27, 96' RT - 184+84, 73' RT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	190+69, 131' LT	TEL MH	CENTURY LINK	RELOCATE
E.B. T.H. 10	191+49, 111' RT - 194+91, 94' RT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	191+57, 72' RT	TEL PED	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	193+08, 262' LT - 193+99, 136' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	193+45, 78' RT - 210+11, 73' RT	OVERHEAD TEL	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	193+68, 263' LT - 194+02, 134' LT	BURIED FIBER	CENTURY LINK	RELOCATE
E.B. T.H. 10	193+69, 263' LT - 194+02, 134' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	193+81, 78' RT - 194+04, 133' LT	BURIED TEL	CENTURY LINK	RELOCATE
E.B. T.H. 10	193+81, 78' RT	TEL PED	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	193+82, 83' RT	TEL PED	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	193+97, 79' RT - 193+99, 133' LT	BURIED FIBER	CENTURY LINK	RELOCATE
E.B. T.H. 10	194+02, 134' LT	TEL MH	CENTURY LINK	RELOCATE
E.B. T.H. 10	194+33, 75' RT - 194+33, 75' RT	BURIED TEL	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	194+33, 65' RT	GUY WIRE	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	194+33, 73' RT	TEL POLE	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	194+33, 75' RT	TEL PED	CENTURY LINK	LEAVE AS IS
E.B. T.H. 10	201+59, 131' LT	TEL MH	CENTURY LINK	RELOCATE
E.B. T.H. 10	209+52, 137' LT	TEL MH	CENTURY LINK	LEAVE AS IS

C EXISTING UTILITIES (PRIVATE OWNER)				
ALIGNMENT	LOCATION STATION AND OFFSET	IN PLACE UTILITY	UTILITY OWNER	NOTES
E.B. T.H. 10	167+06, 121' RT	LIGHT POLE	PRIVATE OWNER	SALVAGE (1)
E.B. T.H. 10	167+63, 82' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	168+92, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	169+80, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	170+78, 92' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	174+04, 92' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	174+68, 92' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	175+35, 92' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	176+04, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	176+73, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	177+50, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	178+25, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
E.B. T.H. 10	179+00, 91' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
S.W. RAMP	30+10, 70' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
S.W. RAMP	30+98, 69' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS
N.B. C.S.A.H. 83	107+92, 22' LT - 108+38, 51' LT	BURIED POWER	PRIVATE OWNER	RELOCATE
N.B. C.S.A.H. 83	108+39, 52' LT - 108+45, 56' LT	BURIED POWER	PRIVATE OWNER	RELOCATE
N.B. C.S.A.H. 83	108+39, 52' LT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	108+50, 39' RT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	109+22, 34' LT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	109+49, 179' LT - 109+66, 168' LT	BURIED POWER	PRIVATE OWNER	RELOCATE
N.B. C.S.A.H. 83	111+13, 102' LT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	111+14, 16' LT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	111+56, 279' LT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	111+90, 213' LT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	111+97, 85' RT	LIGHT POLE	PRIVATE OWNER	REMOVE (2)
N.B. C.S.A.H. 83	112+16, 160' RT	LIGHT POLE	PRIVATE OWNER	LEAVE AS IS

NOTES:

SEE SHEET 27 FOR GENERAL NOTES.

(1) SEE LIGHTING PLANS.

(2) REMOVE LIGHTING UNIT AND REMOVE LIGHT FOUNDATION.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY A. DEBRUIN

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259



ANOKA COUNTY

EXISTING UTILITY TABULATIONS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 30 OF 586



D EXISTING WATER MAIN

ALIGNMENT	LOCATION STATION AND OFFSET	EXISTING ITEM	LEAVE AS IS	REMOVE					ABANDON WELL (EACH)	ADJUST GATE VALVE & BOX (EACH)	NOTES
				WATER MAIN (LIN FT)	STEEL CASING (LIN FT)	PIEZOMETER (EACH)	GATE VALVE & BOX (EACH)	HYDRANT (EACH)			
OLD ARMSTRONG BLVD.	31+81, 11' RT - 31+81, 21' RT	6" DIP WM	X								
OLD ARMSTRONG BLVD.	31+81, 21' RT	HYDRANT	X							(3)	
OLD ARMSTRONG BLVD.	31+81, 11' RT - 32+50, 9' RT	12" DIP WM	X								
OLD ARMSTRONG BLVD.	31+81, 19' RT	WATERMAIN VALVE							1	(3)	
OLD ARMSTRONG BLVD.	32+18, 34' RT - 32+52, 30' RT	12" DIP WM	X							(1)	
OLD ARMSTRONG BLVD.	32+46, 40' LT - 32+50, 9' RT	8" DIP WM	X								
OLD ARMSTRONG BLVD.	32+50, 9' RT - 32+52, 30' RT	12" DIP WM	X								
OLD ARMSTRONG BLVD.	32+50, 11' RT	WATERMAIN VALVE							1	(4)	
OLD ARMSTRONG BLVD.	32+52, 30' RT - 35+37, 30' RT	12" DIP WM	X								
OLD ARMSTRONG BLVD.	32+52, 30' RT - 32+54, 43' RT	12" DIP WM	X								
OLD ARMSTRONG BLVD.	32+61, 30' RT	WATERMAIN VALVE							1	(4)	
OLD ARMSTRONG BLVD.	33+01, 29' RT - 33+01, 32' RT	6" DIP WM	X								
OLD ARMSTRONG BLVD.	33+01, 37' RT	HYDRANT	X								
OLD ARMSTRONG BLVD.	33+01, 34' RT	WATERMAIN VALVE	X								
OLD ARMSTRONG BLVD.	35+21, 40' LT - 35+24, 30' RT	8" DIP WM	X								
OLD ARMSTRONG BLVD.	35+24, 29' RT	WATERMAIN VALVE	X								
OLD ARMSTRONG BLVD.	35+31, 31' RT	WATERMAIN VALVE	X								
OLD ARMSTRONG BLVD.	35+38, 37' RT	HYDRANT	X								
OLD ARMSTRONG BLVD.	35+37, 30' RT - 35+51, 29' RT	12" DIP WM	X								
OLD ARMSTRONG BLVD.	35+38, 35' RT	WATERMAIN VALVE	X								
OLD ARMSTRONG BLVD.	35+37, 30' RT - 35+38, 37' RT	6" DIP WM	X								
E.B. RIVERDALE DR.	54+87, 49' LT - 55+13, 42' LT	8" DIP WM	X								
E.B. RIVERDALE DR.	54+87, 49' LT - 54+92, 63' LT	6" DIP WM	X								
E.B. RIVERDALE DR.	54+91, 61' LT	WATERMAIN VALVE							1	(3)	
E.B. RIVERDALE DR.	54+92, 63' LT	HYDRANT	X							(3)	
E.B. RIVERDALE DR.	55+75, 7' RT - 56+78, 28' RT	12" DIP WM	X							(1)	
E.B. RIVERDALE DR.	55+93, 22' LT - 58+68, 10' LT	12" DIP WM	X								
E.B. RIVERDALE DR.	56+66, 12' LT - 56+68, 42' LT	6" DIP WM	X								
E.B. RIVERDALE DR.	56+67, 24' LT	WATERMAIN VALVE	X						1	(3)	
E.B. RIVERDALE DR.	56+76, 11' LT - 56+77, 26' LT	6" DIP WM	X								
E.B. RIVERDALE DR.	56+75, 28' RT	WATERMAIN VALVE	X							(1)	
E.B. RIVERDALE DR.	56+77, 24' LT	WATERMAIN VALVE							1	(3)	
E.B. RIVERDALE DR.	56+77, 26' LT	HYDRANT	X							(3)	
E.B. RIVERDALE DR.	56+78, 28' RT	HYDRANT	X							(1)	
E.B. RIVERDALE DR.	56+81, 11' LT - 56+86, 39' RT	6" DIP WM	X								
E.B. RIVERDALE DR.	56+81, 5' LT	WATERMAIN VALVE							1	(3)(4)	
N.B. RIVERDALE DR.	81+87, 139' LT	WATER WELL							1	(6)	
N.B. C.S.A.H. 83	112+62, 166' RT - 113+00, 156' RT	4" DIP WM		45							
N.B. C.S.A.H. 83	112+65, 176' RT - 113+02, 165' RT	8" DIP WM		45							
N.B. C.S.A.H. 83	112+79, 161' RT	WATERMAIN VALVE					1				
N.B. C.S.A.H. 83	112+89, 169' RT	WATERMAIN VALVE					1				
S.A.P. 199-115-002 TOTAL				90			2		1	7	
N.B. C.S.A.H. 83	108+50, 319' RT - 112+41, 75' RT	12" DIP WM	X								
N.B. C.S.A.H. 83	109+59, 117' LT	WATER WELL	X							(5)(6)	
N.B. C.S.A.H. 83	109+82, 132' LT	WATER WELL	X							(5)(6)	
N.B. C.S.A.H. 83	111+97, 67' LT - 112+17, 72' LT	6" DIP WM		20							
N.B. C.S.A.H. 83	111+97, 67' LT - 112+40, 70' RT	12" DIP WM		150							
N.B. C.S.A.H. 83	112+40, 70' RT - 112+66, 182' RT	12" DIP WM	X								
N.B. C.S.A.H. 83	112+12, 24' LT - 112+40, 70' RT	24" STEEL CASING PIPE			100						
N.B. C.S.A.H. 83	112+14, 71' LT	WATERMAIN VALVE					1				
N.B. C.S.A.H. 83	112+17, 72' LT	HYDRANT						1			
N.B. C.S.A.H. 83	112+39, 75' RT	WATERMAIN VALVE	X								
N.B. C.S.A.H. 83	112+44, 85' RT	WATERMAIN VALVE	X								
N.B. C.S.A.H. 83	113+34, 164' LT	WATER WELL	X							(6)	
N.B. C.S.A.H. 83	115+43, 339' LT	WATER WELL	X							(6)	
N.B. C.S.A.H. 83	117+03, 34' RT - 117+05, 87' RT	UNKNOWN DIP WM	X								
N.B. C.S.A.H. 83	117+05, 41' RT	WATERMAIN VALVE	X								
N.B. C.S.A.H. 83	117+08, 45' RT	WATERMAIN VALVE	X								
S.A.P. 002-683-004 TOTAL				170	100		1	1			

SEE SHEET 27 FOR GENERAL NOTES. NOTES: (1) TO BE REMOVED UNDER CITY PROJECT NO. 12-22. (2) TO BE REMOVED UNDER CITY PROJECT NO. 12-22. (3) TO BE CONSTRUCTED UNDER CITY PROJECT NO. 12-22, LOCATIONS SHOWN ARE APPROXIMATE. (4) ADJUSTMENT MAY BE 6" TO 1". (5) WELL TO BE ABANDONED UNDER SEPARATE CONTRACT. (6) PRIVATE OWNER.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
 Date: 09-12-10 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 EXISTING UTILITY TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 EXISTING WATER MAIN TABULATION

SHEET 31 OF 586

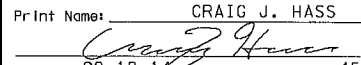

D EXISTING WATER MAIN

ALIGNMENT	LOCATION STATION AND OFFSET	EXISTING ITEM	LEAVE AS IS	REMOVE					ABANDON	ADJUST	NOTES
				WATER MAIN	STEEL CASING	PIEZOMETER	GATE VALVE & BOX	HYDRANT	WELL	GATE VALVE & BOX	
				(LIN FT)	(LIN FT)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	
E.B. T.H. 10	188+91, 48' LT	PIEZOMETER				1					(6)
E.B. T.H. 10	189+22, 38' RT	PIEZOMETER				1					(6)
E.B. T.H. 10	190+13, 83' RT - 192+94, 99' RT	8" DIP WM	X								
E.B. T.H. 10	190+12, 83' RT	HYDRANT	X								
E.B. T.H. 10	190+15, 83' RT	WATERMAIN VALVE	X								
E.B. T.H. 10	191+32, 84' RT - 191+34, 89' RT	8" DIP WM	X								
E.B. T.H. 10	191+34, 89' RT	WATERMAIN VALVE	X								
E.B. T.H. 10	193+68, 80' RT - 193+80, 31' RT	12" DIP WM	X								
E.B. T.H. 10	193+75, 278' LT - 193+80, 32' RT	24" STEEL CASING PIPE	X								
E.B. T.H. 10	193+76, 263' LT - 193+77, 176' LT	12" DIP WM	X								
E.B. T.H. 10	193+77, 176' LT - 193+80, 32' RT	12" DIP WM	X								
E.B. T.H. 10	201+49, 148' LT	PIEZOMETER				1					
S.P. 0202-95 (T.H. 10)		TOTAL				3					
PROJECT TOTALS					260	100	3	3	1	1	7

SEE SHEET 27 FOR GENERAL NOTES.

NOTES:  
(6) PRIVATE OWNER.

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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: <b>CRAIG J. HASS</b>  Date: <u>09-12-18</u> License # <u>45039</u>				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY A. DEBRUIN DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259	 <b>ENGINEERS PLANNERS DESIGNERS</b>	<b>ANOKA COUNTY</b> EXISTING UTILITY TABULATIONS <b>T.H. 10 / C.S.A.H. 83 INTERCHANGE</b> EXISTING WATER MAIN TABULATION	<b>SHEET</b> 32 OF 586
NO. DATE BY CKD APPR REVISION								

E

EXISTING SANITARY SEWER

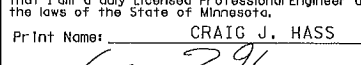
ALIGNMENT	LOCATION STATION AND OFFSET	EXISTING ITEM	LEAVE AS IS	PROPOSED RIM ELEV	EXISTING RIM ELEV	REMOVE				PLUG FILL & ABANDON PIPE SEWER (LIN FT)	ADJUST FRAME & RING CASTING (EACH)	NOTES		
						SEPTIC TANK (EACH)	MANHOLE (EACH)	SEWER PIPE (SANITARY) (LIN FT)	STEEL CASING (LIN FT)					
OLD ARMSTRONG BLVD.	31+37, 1' LT - 32+39, 2' LT	18" PVC SAN	X											
OLD ARMSTRONG BLVD.	32+36, 40' LT - 32+39, 2' LT	8" PVC SAN	X											
OLD ARMSTRONG BLVD.	32+39, 2' LT	SAN MH									1	(3)		
OLD ARMSTRONG BLVD.	32+39, 2' LT - 35+33, 1' LT	18" PVC SAN	X											
OLD ARMSTRONG BLVD.	32+39, 2' LT - 32+43, 40' RT	18" PVC SAN	X											
OLD ARMSTRONG BLVD.	32+29, 37' RT - 35+32, 38' RT	1 1/4" FM	X									(1)		
OLD ARMSTRONG BLVD.	35+25, 39' LT - 35+33, 1' LT	8" PVC SAN	X											
OLD ARMSTRONG BLVD.	35+25, 40' LT - 35+33, 1' LT	8" PVC SAN	X											
OLD ARMSTRONG BLVD.	35+33, 1' LT - 35+50, 14' RT	18" PVC SAN	X											
OLD ARMSTRONG BLVD.	35+33, 1' LT	SAN MH		880.44	880.44						1			
E.B. RIVERDALE DR.	54+85, 39' LT - 55+10, 33' LT	1 1/4" FM	X									(2)		
E.B. RIVERDALE DR.	55+79, 8' RT - 55+81, 2' LT	1 1/4" FM	X									(2)		
E.B. RIVERDALE DR.	55+79, 8' RT - 56+31, 17' RT	1 1/4" FM	X									(2)		
E.B. RIVERDALE DR.	55+87, 13' LT - 58+68, 1' LT	18" PVC SAN	X									(3)		
E.B. RIVERDALE DR.	56+31, 17' RT - 56+87, 22' RT	1 1/4" FM	X									(2)		
E.B. RIVERDALE DR.	56+87, 22' RT - 56+96, 46' RT	1 1/4" FM	X									(2)		
E.B. RIVERDALE DR.	56+92, 1' LT - 56+96, 38' RT	6" PVC SAN	X									(3)		
E.B. RIVERDALE DR.	56+98, 50' RT	LIFT STATION	X									(1)(5)		
S.A.P. 199-115-002 TOTAL											2			
N.B. C.S.A.H. 83	108+55, 341' RT - 108+80, 334' RT	18" PVC SAN	X											
N.B. C.S.A.H. 83	108+80, 334' RT	A3	X											
N.B. C.S.A.H. 83	108+80, 334' RT - 110+14, 189' RT	18" PVC SAN	X											
N.B. C.S.A.H. 83	109+05, 252' LT	4" PVC SEPTIC DRAIN FIELD	X									(4)(5)		
N.B. C.S.A.H. 83	109+15, 257' LT	4" PVC SEPTIC DRAIN FIELD	X									(4)(5)		
N.B. C.S.A.H. 83	109+25, 263' LT	4" PVC SEPTIC DRAIN FIELD	X									(4)(5)		
N.B. C.S.A.H. 83	109+47, 180' LT	LIFT STATION/SEPTIC TANK	X									(4)(5)		
N.B. C.S.A.H. 83	110+14, 189' RT - 112+34, 84' RT	18" PVC SAN	X											
N.B. C.S.A.H. 83	110+14, 189' RT	SAN MH	X											
N.B. C.S.A.H. 83	112+02, 17' LT	SAN MH						1						
N.B. C.S.A.H. 83	111+94, 39' LT - 112+34, 84' RT	30" PVC SAN							130					
N.B. C.S.A.H. 83	112+00, 22' LT - 112+30, 73' RT	42" STEEL CASING PIPE								100				
N.B. C.S.A.H. 83	112+02, 17' LT - 116+10, 63' LT	24" PVC SAN							40		330			
N.B. C.S.A.H. 83	112+34, 84' RT	SAN MH	X											
N.B. C.S.A.H. 83	112+34, 84' RT - 112+59, 198' RT	30" PVC SAN	X											
N.B. C.S.A.H. 83	112+59, 198' RT	SAN MH	X											
N.B. C.S.A.H. 83	114+19, 131' LT	LIFT STATION	X									(4)(5)		
N.B. C.S.A.H. 83	116+10, 63' LT	SAN MH		877.70	877.68						1			
N.B. C.S.A.H. 83	116+10, 63' LT - 120+12, 81' LT	24" PVC SAN												
N.B. C.S.A.H. 83	120+12, 81' LT	SAN MH												
S.A.P. 002-683-004 TOTAL									1	170	100	330	1	
E.B. T.H. 10	182+36, 136' RT	SEPTIC TANK						1				(5)		
E.B. T.H. 10	182+45, 128' RT	SEPTIC TANK						1				(5)		
E.B. T.H. 10	190+14, 97' RT - 191+22, 97' RT	8" PVC SAN	X											
E.B. T.H. 10	190+14, 97' RT	SAN MH	X											
E.B. T.H. 10	191+15, 117' RT - 191+22, 97' RT	6" PVC SAN	X											
E.B. T.H. 10	191+22, 97' RT - 192+95, 95' RT	8" PVC SAN	X											
E.B. T.H. 10	191+22, 97' RT	SAN MH	X											
E.B. T.H. 10	193+53, 79' RT - 193+76, 59' RT	18" PVC SAN	X											
E.B. T.H. 10	193+74, 65' RT - 193+76, 59' RT	1 1/4" FM	X									(2)		
E.B. T.H. 10	193+74, 65' RT - 193+78, 75' RT	1 1/4" FM	X									(2)		
E.B. T.H. 10	193+74, 101' RT - 193+78, 75' RT	1 1/4" FM	X									(2)		
E.B. T.H. 10	193+76, 52' RT - 193+98, 278' LT	30" STEEL CASING PIPE	X											
E.B. T.H. 10	193+76, 59' RT - 193+97, 263' LT	18" PVC SAN	X											
E.B. T.H. 10	193+76, 59' RT	SAN MH		879.41	880.59						1			
E.B. T.H. 10	194+74, 120' RT	SAN MH	X											
S.P. 0202-95 (T.H.10) TOTAL									2			1		
PROJECT TOTALS									2	1	170	100	330	4

SEE SHEET 27 FOR GENERAL NOTES.

NOTES:

- (1) TO BE REMOVED UNDER CITY PROJECT NO. 12-22.
- (2) TO BE ABANDONED UNDER CITY PROJECT NO. 12-22.
- (3) TO BE CONSTRUCTED UNDER CITY PROJECT NO. 12-22, LOCATIONS SHOWN ARE APPROXIMATE.
- (4) SEPTIC SYSTEM TO BE REMOVED UNDER SEPARATE CONTRACT.
- (5) PRIVATE OWNER.

3:11:32 PM 9/11/2014 H:\Projects\8259\CAD\BIM\on\8259.tb07.dgn

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. Prt Name: CRAIG J. HASS  Date: 09-12-14 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY A. DEBRUIN DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259	<b>SRH</b> Consulting Group, Inc.	<b>ENGINEERS PLANNERS DESIGNERS</b>	<b>ANOKA COUNTY</b> EXISTING UTILITY TABULATIONS T.H. 10 / C.S.A.H. 83 INTERCHANGE EXISTING SANITARY SEWER TABULATION	<b>SHEET 33 OF 586</b>
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F

EXISTING DRAINAGE ITEMS

ALIGNMENT	LOCATION STATION AND OFFSET	EXISTING ITEM	LEAVE AS IS	REMOVE (SPEC. 2104)				SALVAGE (SPEC. 2104)		CLEAN PIPE CULVERT (LIN FT)	ADJUST FRAME & RING CASTING (EACH)	INSTALL CASTING (EACH)	EXISTING TOP OF CASTING ELEV.	PROPOSED TOP OF CASTING ELEV.	NOTES		
				PIPE CULVERTS (LIN FT)	SEWER PIPE (STORM) (LIN FT)	PIPE APRON (EACH)	DRAINAGE STRUCTURE (EACH)	PIPE APRON (EACH)	CASTING (EACH)								
OLD ARMSTRONG BLVD.	30+34, 31' RT	15" CSP	X														
OLD ARMSTRONG BLVD.	30+34, 31' RT - 30+99, 26' RT	15" CSP	X														
OLD ARMSTRONG BLVD.	30+99, 26' RT	15" CSP	X														
E.B. RIVERDALE DR.	50+59, 42' LT - 53+21, 46' LT	24" RCP			225												
E.B. RIVERDALE DR.	53+21, 46' LT - 53+40, 122' LT	15" RCP			60												
E.B. RIVERDALE DR.	53+21, 46' LT	STORM MANHOLE					1										
E.B. RIVERDALE DR.	53+40, 122' LT	DROP INLET	X														
E.B. RIVERDALE DR.	53+40, 122' LT - 53+54, 129' LT	15" RCP	X														
E.B. RIVERDALE DR.	53+54, 129' LT	15" RCP	X														
E.B. RIVERDALE DR.	54+23, 116' LT - 54+25, 123' LT	12" RCP	X														
E.B. RIVERDALE DR.	54+23, 116' LT	12" RCP	X														
E.B. RIVERDALE DR.	54+25, 123' LT	CATCH BASIN	X														
E.B. RIVERDALE DR.	55+13, 98' LT - 55+15, 117' LT	12" RCP	X														
E.B. RIVERDALE DR.	55+13, 98' LT	12" RCP	X														
E.B. RIVERDALE DR.	55+15, 117' LT	CATCH BASIN	X														
E.B. RIVERDALE DR.	57+04, 20' RT - 57+21, 19' RT	15" RCP	X														
E.B. RIVERDALE DR.	56+86, 19' LT	CATCH BASIN						1			1		872.25	(1)(4)			
E.B. RIVERDALE DR.	56+86, 19' LT - 56+97, 19' LT	15" RCP	X														
E.B. RIVERDALE DR.	56+97, 19' LT	CATCH BASIN						1			1		872.20	(1)(4)			
E.B. RIVERDALE DR.	56+97, 19' LT - 57+21, 19' LT	15" RCP	X														
E.B. RIVERDALE DR.	57+21, 19' LT	CATCH BASIN	X														
E.B. RIVERDALE DR.	57+21, 19' LT - 58+01, 19' LT	15" RCP	X														
E.B. RIVERDALE DR.	57+21, 19' LT - 57+21, 19' RT	18" RCP	X														
E.B. RIVERDALE DR.	57+21, 19' RT	CATCH BASIN	X														
E.B. RIVERDALE DR.	57+21, 19' RT - 59+57, 15' RT	24" RCP	X														
E.B. RIVERDALE DR.	58+01, 19' LT	CATCH BASIN	X														
E.B. RIVERDALE DR.	59+57, 15' RT	STORM MANHOLE	X														
E.B. RIVERDALE DR.	59+57, 15' RT - 62+06, 15' RT	24" RCP	X														
E.B. RIVERDALE DR.	62+06, 15' RT	STORM MANHOLE	X														
N.B. RIVERDALE DR.	75+16, 54' RT - 75+80, 69' RT	27" RCP	X														
N.B. RIVERDALE DR.	75+80, 69' RT	STORM MANHOLE	X														
N.B. RIVERDALE DR.	75+80, 69' RT - 75+93, 95' RT	27" RCP	X														
N.B. RIVERDALE DR.	75+93, 95' RT	27" RCP	X														
N.B. RIVERDALE DR.	76+73, 107' RT - 76+82, 78' RT	15" RCP	X														
N.B. RIVERDALE DR.	76+73, 107' RT	15" RCP	X														
N.B. RIVERDALE DR.	76+82, 78' RT - 77+09, 59' LT	15" RCP	X														
N.B. RIVERDALE DR.	76+82, 78' RT	STORM MANHOLE	X														
N.B. RIVERDALE DR.	77+09, 59' LT	CATCH BASIN	X														
N.B. RIVERDALE DR.	80+89, 71' LT - 81+03, 3' RT	15" RCP	X														
N.B. RIVERDALE DR.	80+89, 71' LT	DROP INLET	X														
N.B. RIVERDALE DR.	81+03, 3' RT - 84+38, 220' LT	15" RCP			415												
N.B. RIVERDALE DR.	81+03, 3' RT - 81+22, 69' RT	15" RCP	X														
N.B. RIVERDALE DR.	81+18, 90' RT	27" RCP	X														
N.B. RIVERDALE DR.	81+18, 90' RT - 81+22, 69' RT	27" RCP	X														
N.B. RIVERDALE DR.	81+22, 69' RT	STORM MANHOLE	X														
N.B. RIVERDALE DR.	81+22, 69' RT - 81+70, 3' LT	24" RCP	X														
N.B. RIVERDALE DR.	81+70, 3' LT - 84+08, 178' LT	24" RCP			195												
N.B. RIVERDALE DR.	81+70, 3' LT	STORM MANHOLE															
N.B. RIVERDALE DR.	82+90, 197' LT	12" CPP				1						874.54	874.76				
N.B. RIVERDALE DR.	82+90, 197' LT - 83+27, 223' LT	12" CPP			50												
N.B. RIVERDALE DR.	83+27, 223' LT	12" CPP				1											
N.B. RIVERDALE DR.	83+45, 234' LT	12" CPP				1											
N.B. RIVERDALE DR.	83+45, 234' LT - 84+15, 251' LT	12" CPP			75												
N.B. RIVERDALE DR.	84+08, 178' LT	STORM MANHOLE					1										
N.B. RIVERDALE DR.	84+08, 178' LT - 89+53, 31' LT	24" RCP			300												
N.B. RIVERDALE DR.	84+15, 251' LT	CATCH BASIN					1										
N.B. RIVERDALE DR.	84+15, 251' LT - 84+38, 220' LT	12" RCP			40												
N.B. RIVERDALE DR.	84+38, 220' LT	CATCH BASIN					1										
S.A.P. 199-115-002				TOTAL				50	1310	3	4			2	1	2	

SEE SHEET 27 FOR GENERAL NOTES.

NOTES:

- (1) TO BE CONSTRUCTED UNDER CITY PROJECT NO. 12-22.
- (4) SALVAGE CASTING STAGE 1B. INSTALL CASTING STAGE 4.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY A. DEBRUIN

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

EXISTING UTILITY TABULATIONS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

EXISTING DRAINAGE ITEMS

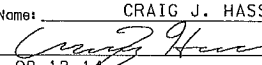

SHEET 34 OF 586

F EXISTING DRAINAGE ITEMS														
ALIGNMENT	LOCATION STATION AND OFFSET	EXISTING ITEM	LEAVE AS IS	REMOVE (SPEC. 2104)			SALVAGE (SPEC. 2104)		CLEAN PIPE CULVERT (LIN FT)	ADJUST FRAME & RING CASTING (EACH)	INSTALL CASTING (EACH)	EXISTING TOP OF CASTING ELEV.	PROPOSED TOP OF CASTING ELEV.	NOTES
				PIPE CULVERTS (LIN FT)	SEWER PIPE (STORM) (LIN FT)	PIPE APRON (EACH)	DRAINAGE STRUCTURE (EACH)	PIPE APRON (EACH)						
N.B.C.S.A.H. 83	100+03, 55' LT - 100+13, 30' LT	24" RCP			30									
N.B.C.S.A.H. 83	100+13, 30' LT	STORM MANHOLE					1							
N.B.C.S.A.H. 83	100+13, 30' LT - 100+38, 38' RT	24" RCP			75									
N.B.C.S.A.H. 83	109+29, 132' RT	15" RCP				1								
N.B.C.S.A.H. 83	109+29, 132' RT - 109+69, 102' RT	15" RCP		55										
N.B.C.S.A.H. 83	109+69, 102' RT	15" RCP				1								
N.B.C.S.A.H. 83	110+50, 211' LT - 111+01, 141' LT	15" CPP			85									
N.B.C.S.A.H. 83	110+50, 211' LT	15" UNKNOWN				1								
N.B.C.S.A.H. 83	110+55, 46' RT	15" RCP				1								
N.B.C.S.A.H. 83	110+55, 46' RT - 110+98, 16' RT	15" RCP		55										
N.B.C.S.A.H. 83	110+98, 16' RT	15" RCP				1								
N.B.C.S.A.H. 83	111+60, 206' RT - 111+77, 213' RT	36" RCP	X											
N.B.C.S.A.H. 83	111+75, 87' RT - 112+09, 121' RT	21" RCP												
N.B.C.S.A.H. 83	111+77, 213' RT	STORM MANHOLE	X						55					
N.B.C.S.A.H. 83	111+77, 213' RT - 112+28, 193' RT	36" RCP	X											
N.B.C.S.A.H. 83	112+07, 65' LT	15" UNKNOWN				1								
N.B.C.S.A.H. 83	112+07, 65' LT - 113+48, 83' LT	15" CPP			135									
N.B.C.S.A.H. 83	112+09, 121' RT	CATCH BASIN	X											
N.B.C.S.A.H. 83	112+09, 121' RT - 112+28, 193' RT	36" RCP	X											
N.B.C.S.A.H. 83	112+09, 121' RT - 112+28, 193' RT	21" RCP	X											
N.B.C.S.A.H. 83	112+28, 193' RT	CATCH BASIN	X											
N.B.C.S.A.H. 83	113+48, 83' LT - 114+50, 103' LT	15" CPP			95									
N.B.C.S.A.H. 83	113+48, 83' LT	DROP INLET					1							
N.B.C.S.A.H. 83	114+50, 103' LT	15" UNKNOWN				1								
N.B.C.S.A.H. 83	115+64, 109' LT	18" RCP					1							(2)
N.B.C.S.A.H. 83	115+64, 109' LT - 115+98, 75' LT	18" RCP			50									
N.B.C.S.A.H. 83	115+97, 42' LT	CATCH BASIN												(3)
N.B.C.S.A.H. 83	115+97, 42' LT - 115+98, 75' LT	18" RCP			35									
N.B.C.S.A.H. 83	115+97, 26' LT - 115+97, 42' LT	18" RCP	X											
N.B.C.S.A.H. 83	115+97, 26' LT - 115+98, 24' RT	18" RCP	X											
N.B.C.S.A.H. 83	115+97, 26' LT	CATCH BASIN												(3)
N.B.C.S.A.H. 83	115+98, 24' RT - 117+30, 17' RT	24" RCP	X											
N.B.C.S.A.H. 83	115+98, 75' LT	CATCH BASIN					1							
N.B.C.S.A.H. 83	115+98, 24' RT	CATCH BASIN							1		877.18	877.60		
N.B.C.S.A.H. 83	117+25, 201' LT	CATCH BASIN	X											
N.B.C.S.A.H. 83	117+25, 201' LT - 117+30, 17' RT	18" RCP	X											
N.B.C.S.A.H. 83	117+30, 17' RT - 118+84, 18' RT	24" RCP	X											
N.B.C.S.A.H. 83	117+30, 17' RT	STORM MANHOLE	X											
N.B.C.S.A.H. 83	117+30, 17' RT - 117+31, 82' RT	15" RCP	X											
N.B.C.S.A.H. 83	117+31, 82' RT	CATCH BASIN	X											
N.B.C.S.A.H. 83	118+84, 18' RT	DROP INLET	X											
S.A.P. 002-683-004				TOTAL	110	505	7	3	1	55	1			

SEE SHEET 27 FOR GENERAL NOTES.

NOTES:  
 (2) SEE DRAINAGE TABULATION.  
 (3) RECONSTRUCT DRAINAGE STRUCTURE SEE DRAINAGE TABULATION.

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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: CRAIG J. HASS  Date: 09-12-18 License # 45039				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY A. DEBRUIN DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138299	 ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY EXISTING UTILITY TABULATIONS T.H. 10 / C.S.A.H. 83 INTERCHANGE EXISTING DRAINAGE ITEMS	SHEET 35 OF 586
NO DATE BY CKD APPR REVISION								

F

EXISTING DRAINAGE ITEMS

ALIGNMENT	LOCATION STATION AND OFFSET	EXISTING ITEM	LEAVE AS IS	REMOVE (SPEC. 2104)				SALVAGE (SPEC. 2104)		CLEAN PIPE CULVERT (LIN FT)	ADJUST FRAME & RING CASTING (EACH)	INSTALL CASTING (EACH)	EXISTING TOP OF CASTING ELEV.	PROPOSED TOP OF CASTING ELEV.	NOTES	
				PIPE CULVERTS (LIN FT)	SEWER PIPE (STORM) (LIN FT)	PIPE APRON (EACH)	DRAINAGE STRUCTURE (EACH)	PIPE APRON (EACH)	CASTING (EACH)							
E.B. T.H. 10	163+57, 145' LT	18" CSP	X													
E.B. T.H. 10	163+57, 145' LT - 163+59, 83' LT	18" RCP							65							
E.B. T.H. 10	163+59, 83' LT	18" CSP	X													
E.B. T.H. 10	163+66, 30' RT	18" CSP	X													
E.B. T.H. 10	163+66, 47' LT - 163+66, 30' RT	18" RCP							80							
E.B. T.H. 10	163+66, 47' LT	18" CSP	X													
E.B. T.H. 10	165+67, 35' RT	18" CSP				1										
E.B. T.H. 10	165+67, 35' RT - 166+56, 35' RT	18" CSP		90												
E.B. T.H. 10	166+56, 35' RT	18" CSP				1										
E.B. T.H. 10	170+38, 503' RT - 175+11, 528' RT	27" RCP	X													
E.B. T.H. 10	170+38, 503' RT	DROP INLET	X													
E.B. T.H. 10	193+17, 158' LT	24" RCP				1										
E.B. T.H. 10	193+17, 158' LT - 193+94, 161' LT	24" RCP		80					80						(5)	
E.B. T.H. 10	193+19, 49' LT	15" RCP				1										
E.B. T.H. 10	193+94, 161' LT	24" RCP				1										
E.B. T.H. 10	193+19, 49' LT - 194+00, 50' LT	15" RCP		85												
E.B. T.H. 10	194+00, 50' LT	15" RCP				1										
E.B. T.H. 10	205+88, 50' RT	15" CSP	X												(3)	
E.B. T.H. 10	205+88, 50' RT - 206+53, 50' RT	15" CSP	X												(3)	
E.B. T.H. 10	206+53, 50' RT	15" CSP	X												(3)	
E.B. T.H. 10	208+44, 70' RT	12" RCP	X													
E.B. T.H. 10	208+44, 94' RT	12" RCP	X													
E.B. T.H. 10	208+44, 70' RT - 208+45, 78' RT	12" RCP	X													
E.B. T.H. 10	208+44, 94' RT - 208+45, 78' RT	12" RCP	X													
E.B. T.H. 10	208+45, 78' RT	DROP INLET	X													
E.B. T.H. 10	210+57, 130' LT	15" CSP	X													
E.B. T.H. 10	210+57, 130' LT - 210+58, 60' LT	15" RCP							70							
E.B. T.H. 10	210+58, 60' LT	15" CSP	X													
E.B. T.H. 10	210+57, 35' LT	18" CSP	X													
E.B. T.H. 10	210+57, 35' LT - 210+58, 33' RT	18" RCP							65							
E.B. T.H. 10	210+58, 33' RT	18" CSP	X													
E.B. T.H. 10	211+75, 136' LT - 212+32, 135' LT	18" CSP							60							
E.B. T.H. 10	231+72, 46' RT	18" CSP	X													
E.B. T.H. 10	231+72, 46' RT - 232+72, 44' RT	18" RCP	X													
E.B. T.H. 10	232+72, 44' RT	18" CSP	X													
E.B. T.H. 10	232+23, 52' LT	18" CSP				1										
E.B. T.H. 10	232+23, 52' LT - 232+80, 50' LT	18" RCP		60												
E.B. T.H. 10	232+80, 50' LT	18" CSP				1										
S.P. 0202-95 (T.H.10)				TOTAL						420						
PROJECT TOTALS					475	1815	18	7	1	2	475	2	2			

SEE SHEET 27 FOR GENERAL NOTES.

NOTES:

- (3) STORM CULVERT TO BE REMOVED UNDER CITY PROJECT NO. 12-22.
- (5) CLEAN PIPE CULVERT IN STAGE 1, REMOVE PIPE CULVERT IN STAGE 3.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 EXISTING UTILITY TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 EXISTING DRAINAGE ITEMS

SHEET 36 OF 586

G CLEARING AND GRUBBING			
ALIGNMENT	STATION TO STATION	(G-1)	(G-1)
		CLEARING (ACRE)	GRUBBING (ACRE)
<b>S.P. 0202-95</b>			
N.B. C.S.A.H. 83	103+28 - 106+19	0.1	0.1
N.E. RAMP	20+00 - 32+93	0.2	0.2
S.W. LOOP	40+23 - 44+90	0.1	0.1
S.W. RAMP	32+36 - 38+55	0.7	0.7
W.B. T. H. 10	164+70 - 209+55	2.3	2.3
<b>S.P. 0202-95 TOTAL</b>		<b>3.4</b>	<b>3.4</b>
<b>S.A.P. 199-115-002</b>			
E.B. RIVERDALE DR. N.W.	50+91 - 57+14	0.3	0.3
<b>S.A.P. 199-115-002 TOTAL</b>		<b>0.3</b>	<b>0.3</b>
<b>S.A.P. 002-683-004</b>			
N.B. C.S.A.H. 83	100+00 - 103+28	0.1	0.1
N.B. C.S.A.H. 83	106+19 - 116+17	0.6	0.6
<b>S.A.P. 002-683-004 TOTAL</b>		<b>0.7</b>	<b>0.7</b>
<b>PROJECT TOTALS</b>		<b>4.4</b>	<b>4.4</b>

NOTES:

(G-1) INCLUDES INDIVIDUAL TREES PAID FOR AS 0.05 ACRE PER TREE.

H REMOVALS AND SAWING														
ALIGNMENT	STATION TO STATION	(H-2)	REMOVE CURB & GUTTER (LIN FT)	(H-3)	(H-3)	REMOVE CONCRETE WALK (SQ FT)	REMOVE PAVEMENT (SQ YD)	REMOVE BITUMINOUS PAVEMENT (SQ YD)	REMOVE LIGHT FOUNDATION (EACH)	(H-4)	SAWING CONCRETE PAVEMENT (FULL DEPTH) (LIN FT)	SAWING BIT PAVEMENT (FULL DEPTH) (LIN FT)	RELOCATE MAIL BOX SUPPORT (EACH)	(H-1)
		REMOVE STONE MASONRY WALL (LIN FT)		REMOVE CHAIN LINK FENCE (LIN FT)	REMOVE WOOD FENCE (LIN FT)					REMOVE SIGN TYPE SPECIAL (EACH)				TEMPORARY FENCE (LIN FT)
<b>S.P. 0202-95</b>														
N.B. C.S.A.H. 83	103+28 - 106+19						380	190						
N.E. RAMP	20+00 - 32+93					60	2360	2400				480		
N.W. RAMP	14+02 - 23+58						2890	1570						
S.W. LOOP	40+23 - 44+90	150						40						
S.W. RAMP	32+36 - 38+55	210	400			130		8070	1			100		
W.B. T. H. 10	164+70 - 209+55		150			320	6940	13050			50	10260		
<b>S.P. 0202-95 TOTAL</b>		<b>360</b>	<b>550</b>			<b>510</b>	<b>12570</b>	<b>25320</b>	<b>1</b>		<b>50</b>	<b>10840</b>		
<b>S.A.P. 199-115-002</b>														
146TH AVE. N.W.	81+00 - 83+00		130					2690				40		110
E.B. RIVERDALE DR. N.W.	50+91 - 57+14							1540				200		
LLAMA ST. N.W.	12+06 - 13+32							810				110		
N.B. RIVERDALE DR. N.W.	80+00 - 89+52							930				80		40
OLD ARMSTRONG BLVD.	30+75 - 31+69							280				50		
OLD ARMSTRONG BLVD.	32+64 - 35+49							1350				460	1	
US BANK	90+07 - 91+79		120					940				300		
<b>S.A.P. 199-115-002 TOTAL</b>			<b>250</b>					<b>8540</b>				<b>1240</b>	<b>1</b>	<b>150</b>
<b>S.A.P. 002-683-004</b>														
N.B. C.S.A.H. 83	100+00 - 103+28							1250				60		
N.B. C.S.A.H. 83	106+19 - 116+17		740	1100	290	2850		11630	1	2	10	110		
<b>S.A.P. 002-683-004 TOTAL</b>			<b>740</b>	<b>1100</b>	<b>290</b>	<b>2850</b>		<b>12880</b>	<b>1</b>	<b>2</b>	<b>10</b>	<b>170</b>		
<b>PROJECT TOTALS</b>		<b>360</b>	<b>1540</b>	<b>1100</b>	<b>290</b>	<b>3360</b>	<b>12570</b>	<b>46740</b>	<b>1</b>	<b>3</b>	<b>60</b>	<b>12250</b>	<b>1</b>	<b>150</b>

NOTES:

- (H-1) PROTECTION OF TREES
- (H-2) HEIGHTS RANGE FROM 1 FT TO 3 FT
- (H-3) HEIGHT APPROXIMATELY 6 FT
- (H-4) QUALITY RV, WISER CHOICE LIQUORS, AND DIVERSIFIED PAVING SIGNS

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 37 OF 586

**J**

**AGGREGATE AND BITUMINOUS SUMMARY**

ALIGNMENT	STATION TO STATION	AGGREGATE BASE (CV) CLASS 5 MODIFIED (CU YD)	AGGREGATE BASE (CV) CLASS 6 (CU YD)	TYPE SP 12.5 WEARING COURSE MIX (2,C) (SPWEB230C) (TON)	TYPE SP 12.5 WEARING COURSE MIX (3,C) (SPWEB340C) (TON)	TYPE SP 12.5 WEARING COURSE MIX (4,C) (SPWEB440C) (TON)	TYPE SP 12.5 WEARING COURSE MIX (4,F) (SPWEB440F) (TON)	TYPE SP 12.5 NON WEAR COURSE MIX (3,B) (SPNWB330B) (TON)	TYPE SP 12.5 NON WEAR COURSE MIX (4,B) (SPNWB430B) (TON)
<b>S.P. 0202-95</b>									
N.E. RAMP	20+00 - 32+93		2030	60			1390		860
N.W. RAMP	14+02 - 23+58		720	80			340		230
S.W. LOOP	40+23 - 44+90	80	350		70		200		130
S.W. RAMP	32+36 - 38+55	60	690	60	50		430		290
W.B. T. H. 10	164+70 - 209+55		12430	1780			8430		5550
<b>S.P. 0202-95 TOTAL</b>		<b>140</b>	<b>16220</b>	<b>1980</b>	<b>120</b>		<b>10790</b>		<b>7060</b>
<b>S.A.P. 199-115-002</b>									
146TH AVE. N.W.	81+00 - 83+00	130			100			130	
E.B. RIVERDALE DR. N.W.	50+91 - 57+14	1360		100	470			640	
LLAMA ST. N.W.	12+06 - 13+32	120			90			120	
N.B. RIVERDALE DR. N.W.	80+00 - 89+52	2070		140	740			1070	
OLD ARMSTRONG BLVD.	30+75 - 31+69	40			30			40	
OLD ARMSTRONG BLVD.	32+64 - 35+49	200	20		150		20	180	10
US BANK	90+07 - 91+79	120			90			70	
<b>S.A.P. 199-115-002 TOTAL</b>		<b>4040</b>	<b>20</b>	<b>240</b>	<b>1670</b>		<b>20</b>	<b>2250</b>	<b>10</b>
<b>S.A.P. 002-683-004</b>									
N.B. C.S.A.H. 83	100+00 - 103+28	250	1190	40	600	850			450
N.B. C.S.A.H. 83	106+19 - 116+17	210	2520	40	980	1520			810
<b>S.A.P. 002-683-004 TOTAL</b>		<b>460</b>	<b>3710</b>	<b>80</b>	<b>1580</b>	<b>2370</b>			<b>1260</b>
<b>PROJECT TOTALS</b>		<b>4640</b>	<b>19950</b>	<b>2300</b>	<b>3370</b>	<b>2370</b>	<b>10810</b>	<b>2250</b>	<b>8330</b>

**K**

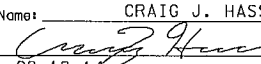
**CURB & GUTTER, WALKS, AND CONCRETE MEDIAN BARRIER**

ALIGNMENT	STATION TO STATION	4" CONCRETE WALK (SQ FT)	6" CONCRETE WALK (SQ FT)	2.5" BITUMINOUS WALK (SQ FT)	(K-1) CONCRETE CURB & GUTTER DESIGN B424 (LIN FT)	CONCRETE CURB & GUTTER DESIGN B612 (LIN FT)	CONCRETE CURB & GUTTER DESIGN B618 (LIN FT)	CONCRETE CURB & GUTTER DESIGN B624 (LIN FT)	(K-1) CONCRETE CURB & GUTTER DESIGN D424 (LIN FT)	CONCRETE CURB & GUTTER DESIGN D418 (LIN FT)	TRUNCATED DOMES (SQ FT)	CONC MED BAR & GL SCR DES 8309 TYPE A (LIN FT)	CONC MED BAR & GL SCR DES 8309 TYPE AA (LIN FT)	CONC MED BAR & GL SCR D 8309 TYPE A STEP (LIN FT)	CONC MED BAR & GL SCR DES 8309 TYPE TRAN (LIN FT)
<b>S.P. 0202-95</b>															
N.E. RAMP	20+00 - 32+93		8480						1420				720		80
N.W. RAMP	14+02 - 23+58		5680						950				540		80
S.W. LOOP	40+23 - 44+90				450				510						
S.W. RAMP	32+36 - 38+55	540	60						90						
W.B. T. H. 10	164+70 - 209+55		3650		2740				170			1130	100	740	100
<b>S.P. 0202-95 TOTAL</b>		<b>540</b>	<b>17870</b>		<b>3190</b>				<b>3140</b>			<b>1130</b>	<b>1360</b>	<b>740</b>	<b>260</b>
<b>S.A.P. 199-115-002</b>															
E.B. RIVERDALE DR. N.W.	50+91 - 57+14	4260	1040	7430				1960			84				
LLAMA ST. N.W.	12+06 - 13+32							300							
N.B. RIVERDALE DR. N.W.	80+00 - 89+52	2810	750	10100		30		2130		910	48				
OLD ARMSTRONG BLVD.	32+64 - 35+49							650							
US BANK	90+07 - 91+79		110	40		430	10				12				
<b>S.A.P. 199-115-002 TOTAL</b>		<b>7070</b>	<b>1900</b>	<b>17570</b>		<b>460</b>	<b>5050</b>			<b>910</b>	<b>144</b>				
<b>S.A.P. 002-683-004</b>															
N.B. C.S.A.H. 83	100+00 - 103+28	3710	290					530	580		8				
N.B. C.S.A.H. 83	106+19 - 116+17	21360	4590					1660	1620		20				
<b>S.A.P. 002-683-004 TOTAL</b>		<b>25070</b>	<b>4880</b>					<b>2190</b>	<b>2200</b>		<b>28</b>				
<b>PROJECT TOTALS</b>		<b>32680</b>	<b>24650</b>	<b>17570</b>	<b>3190</b>	<b>460</b>	<b>7240</b>	<b>2200</b>	<b>3140</b>	<b>910</b>	<b>172</b>	<b>1130</b>	<b>1360</b>	<b>740</b>	<b>260</b>

NOTES:  
 (K-1) GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE FOR 760' OF CONC CURB AND GUTTER DESIGN B424 AND 2970' OF CONC CURB AND GUTTER DESIGN D424.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ENGINEERS PLANNERS DESIGNERS**  
 Consulting Group, Inc.

**ANOKA COUNTY**  
 TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
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 OF  
 586



L TRAFFIC BARRIER								
ALIGNMENT	STATION TO STATION	(L-1) TRAFFIC BARRIER DESIGN SPECIAL (LIN FT)	TRAFFIC BARRIER DESIGN B8338 (LIN FT)	ANCHORAGE ASSEMBLY - PLATE BEAM (EACH)	(L-2) END TREATMENT-ENERGY ABSORBING TERMINAL (EACH)	(L-3) END TREATMENT-TANGENT TERMINAL (EACH)	(L-4) END TREATMENT-FLARED TERMINAL (EACH)	(L-5) (L-6) IMPACT ATTENUATOR NO 1 (ASSEMBLY)
<b>S.P. 0202-95</b>								
N.E. RAMP	20+00 - 32+93	50	163				2	
W.B. T. H. 10	164+70 - 209+55		375	2		1	1	
<b>S.P. 0202-95 TOTAL</b>		<b>50</b>	<b>538</b>	<b>2</b>		<b>1</b>	<b>3</b>	
<b>S.A.P. 002-683-004</b>								
N.B. C.S.A.H. 83	106+19 - 116+17	25			1			1
<b>S.A.P. 002-683-004 TOTAL</b>		<b>25</b>			<b>1</b>			<b>1</b>
<b>PROJECT TOTALS</b>		<b>75</b>	<b>538</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>1</b>

NOTES:

- (L-1) SEE STANDARD PLAN SHEET 5-297.603 FOR DETAILS
- (L-2) C.A.T. OR BRAKEMASTER
- (L-3) ET-PLUS
- (L-4) FLEAT-350
- (L-5) QUADGUARD, C.A.T., OR BRAKEMASTER
- (L-6) PERMANENT IMPACT ATTENUATOR, TEST LEVEL 2

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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig J. Hass*

Date: **09-12-14** License # **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
A. DEBRUIN

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



**SRH**  
Consulting Group, Inc.

ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

TABULATIONS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
39  
OF  
586

M EROSION CONTROL AND TURF ESTABLISHMENT															
ALIGNMENT	STATION TO STATION	SILT FENCE, TYPE SD (LIN FT)	SILT FENCE, TYPE MS (LIN FT)	STORM DRAIN INLET PROTECTION (EACH)	SEDIMENT CONTROL LOG TYPE STRAW (LIN FT)	CULVERT END CONTROLS (EACH)	FERTILIZER TYPE 3 (POUND)	FERTILIZER TYPE 4 (POUND)	SEEDING (ACRE)	SEED MIXTURE 25-131 (POUND)	SEED MIXTURE 33-261 (POUND)	SEED MIXTURE 35-221 (POUND)	SEED MIXTURE 35-241 (POUND)	SODDING TYPE SALT TOLERANT (SQ YD)	
<b>S.P. 0202-95</b>															
N.B. C.S.A.H. 83	103+28 - 106+19			1											
N.E. RAMP	20+00 - 32+93	1740		11	470	1		250	1.4				60		
N.W. RAMP	14+02 - 23+58	1040		3	170			170	1				40		
S.W. LOOP	40+23 - 44+90			2	665	1		230	1.3				50		
S.W. RAMP	32+36 - 38+55			2	2641	4		500	3.3		20		70	40	
W.B. T. H. 10	164+70 - 209+55		1035	16	2835	13	10	2700	15.3	10			560		
<b>S.P. 0202-95 TOTAL</b>		<b>2780</b>	<b>1035</b>	<b>35</b>	<b>6781</b>	<b>19</b>	<b>10</b>	<b>3850</b>	<b>22.3</b>	<b>10</b>	<b>20</b>		<b>780</b>	<b>40</b>	
<b>S.A.P. 199-115-002</b>															
146TH AVE. N.W.	81+00 - 83+00						330		0.9	210					
E.B. RIVERDALE DR. N.W.	50+91 - 57+14		500	16			110	80	0.6	40			20	665	
LLAMA ST. N.W.	12+06 - 13+32				45		60		0.2	40					
N.B. RIVERDALE DR. N.W.	80+00 - 89+52		990	16			70	240	1.3				50	965	
OLD ARMSTRONG BLVD.	30+75 - 31+69					1	20	10	0.1	10			10		
OLD ARMSTRONG BLVD.	32+64 - 35+49			5			90		0.3	60					
US BANK	90+07 - 91+79		130	3			40		0.1	30					
<b>S.A.P. 199-115-002 TOTAL</b>			<b>1620</b>	<b>40</b>	<b>45</b>	<b>1</b>	<b>720</b>	<b>330</b>	<b>3.5</b>	<b>390</b>			<b>80</b>	<b>1630</b>	
<b>S.A.P. 002-683-004</b>															
N.B. C.S.A.H. 83	100+00 - 103+28			8	280	1	60	190	1.2				40	115	
N.B. C.S.A.H. 83	106+19 - 116+17	300	1065	23	310	1		1070	5.4				220	405	
<b>S.A.P. 002-683-004 TOTAL</b>		<b>300</b>	<b>1065</b>	<b>31</b>	<b>590</b>	<b>2</b>	<b>60</b>	<b>1260</b>	<b>6.6</b>	<b>0</b>			<b>260</b>	<b>520</b>	
<b>PROJECT TOTALS</b>		<b>3080</b>	<b>3720</b>	<b>106</b>	<b>7416</b>	<b>22</b>	<b>790</b>	<b>5440</b>	<b>32.4</b>	<b>400</b>	<b>20</b>		<b>1120</b>	<b>40</b>	<b>2150</b>

M EROSION CONTROL AND TURF ESTABLISHMENT						
ALIGNMENT	STATION TO STATION	MULCH MATERIAL TYPE 3 (TON)	TEMPORARY POLY COVERING (SQ YD)	DISK ANCHORING (ACRE)	EROSION CONTROL BLANKETS CATEGORY 3 (SQ YD)	RAPID STABILIZATION METHOD 3 (M GALLON)
<b>S.P. 0202-95</b>						
N.B. C.S.A.H. 83	103+28 - 106+19					
N.E. RAMP	20+00 - 32+93	1.6		0.8	2970	6.0
N.W. RAMP	14+02 - 23+58	1.3		0.7	1530	5.0
S.W. LOOP	40+23 - 44+90	2.2		1.1	950	7.0
S.W. RAMP	32+36 - 38+55	6.0	710	3.0	2330	23.0
W.B. T. H. 10	164+70 - 209+55	22.9		11.5	17330	93.5
<b>S.P. 0202-95 TOTAL</b>		<b>34.0</b>	<b>710</b>	<b>17.1</b>	<b>25110</b>	<b>134.5</b>
<b>S.A.P. 199-115-002</b>						
146TH AVE. N.W.	81+00 - 83+00	1.9		1.0		5.0
E.B. RIVERDALE DR. N.W.	50+91 - 57+14	1.2		0.6	30	4.5
LLAMA ST. N.W.	12+06 - 13+32	0.3		0.2	160	3.0
N.B. RIVERDALE DR. N.W.	80+00 - 89+52	2.6	170	1.3		7.0
OLD ARMSTRONG BLVD.	30+75 - 31+69	0.2		0.1		
OLD ARMSTRONG BLVD.	32+64 - 35+49	0.6		0.3		1.0
US BANK	90+07 - 91+79	0.3		0.2		1.5
<b>S.A.P. 199-115-002 TOTAL</b>		<b>7.1</b>	<b>170</b>	<b>3.7</b>	<b>190</b>	<b>22.0</b>
<b>S.A.P. 002-683-004</b>						
N.B. C.S.A.H. 83	100+00 - 103+28	1.0	1550	0.5	3990	9.5
N.B. C.S.A.H. 83	106+19 - 116+17	7.5	2650	3.7	6360	24.5
<b>S.A.P. 002-683-004 TOTAL</b>		<b>8.5</b>	<b>4200</b>	<b>4.2</b>	<b>10350</b>	<b>34.0</b>
<b>PROJECT TOTALS</b>		<b>49.6</b>	<b>5080</b>	<b>25.0</b>	<b>35650</b>	<b>190.5</b>

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NO	DATE	BY	CHK	APPR	REVISION

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: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY G. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
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 586

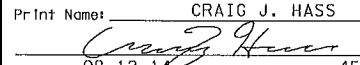

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TRAFFIC CONTROL AND STAGING

ALIGNMENT (STATION TO STATION)	PORTABLE PRECAST CONCRETE BARRIER DES 8337	RELOCATE PORTABLE CONCRETE BARRIER DES 8337	(N-1) IMPACT ATTENUATOR	(N-1) RELOCATE IMPACT ATTENUATOR	MEDIAN BARRIER DELINEATOR	PORTABLE CHANGEABLE MESSAGE SIGN	CONSTRUCTION SIGN- SPECIAL	4" SOLID LINE WHITE - PAINT	12" SOLID LINE WHITE - PAINT	4" BROKEN LINE WHITE - PAINT	4" DOTTED LINE WHITE - PAINT	4" SOLID LINE YELLOW - PAINT	4" DOUBLE SOLID LINE YELLOW - PAINT	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	(N-2) REMOVABLE PREFORMED PAVEMENT MARKING TAPE	PAVEMENT MARKING REMOVAL
	[LIN FT]	[LIN FT]	[ASSEMBLY]	[ASSEMBLY]	[EACH]	[UNIT DAY]	[SQ FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]
W.B. T.H. 10 (STA 164+70 - 209+55)																
STAGE 1A	1970		2		65	28	82							1350	10230	5950
STAGE 1B	1830	2000	2	2	61	7	39	3120		480		2390			5200	3530
STAGE 2		3070		3			77	1610		300		2320			7440	730
STAGE 3		4200		4										440	5040	
STAGE 4		3070		2											3470	
N.W. RAMP (STA 14+02 - 23+58)																
STAGE 1A																620
STAGE 1B	290		1		9			300		60		300				360
STAGE 2		290		1												
STAGE 3																
STAGE 4																
N.E. RAMP (STA 20+00 - 32+93)																
STAGE 1A																
STAGE 1B	830				28			1460	70	190		930				1230
STAGE 2		830						210					70			30
STAGE 3																
STAGE 4																
S.W. RAMP (STA 32+36 - 38+55)																
STAGE 1A																
STAGE 1B	200		1		7			310					180			
STAGE 2		200		1												
STAGE 3																
STAGE 4																
S.W. LOOP (STA 40+23 - 44+90)																
STAGE 1A																
STAGE 1B	90				3			220					120			
STAGE 2		90														
STAGE 3																
STAGE 4																
N.B. C.S.A.H. 83 (STA 103+28 - 106+19)																
STAGE 1A																
STAGE 1B																
STAGE 2																
STAGE 3																
STAGE 4															920	
S.P. 0202-95 SUBTOTAL	5210	13750	6	13	173	35	197	7230	70	1030		5940	370	1790	33740	12450

NOTES:  
 (N-1) IMPACT ATTENUATOR AND RELOCATE IMPACT ATTENUATOR FOR TEMPORARY USE ONLY.  
 (N-2) QUANTITY BASED ON 4" STRIPE WIDTH. ADDITIONAL LENGTH ACCOUNTED FOR WITH STOP BARS AND CROSSWALKS.

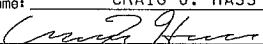

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Print Name: CRAIG J. HASS  Date: 09-12-18 License #: 45039				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY A. DEBRUIN DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259	 ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY TABULATIONS T.H. 10 / C.S.A.H. 83 INTERCHANGE	SHEET 41 OF 586
NO DATE BY CKD APPR REVISION								

N TRAFFIC CONTROL AND STAGING																
ALIGNMENT (STATION TO STATION)	PORTABLE PRECAST CONCRETE BARRIER DES 8337	RELOCATE PORTABLE CONCRETE BARRIER DES 8337	(N-1) IMPACT ATTENUATOR	(N-1) RELOCATE IMPACT ATTENUATOR	MEDIAN BARRIER DELINEATOR	PORTABLE CHANGEABLE MESSAGE SIGN	CONSTRUCTION SIGN- SPECIAL	4" SOLID LINE WHITE - PAINT	12" SOLID LINE WHITE - PAINT	4" BROKEN LINE WHITE - PAINT	4" DOTTED LINE WHITE - PAINT	4" SOLID LINE YELLOW - PAINT	4" DOUBLE SOLID LINE YELLOW - PAINT	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	(N-2) REMOVABLE PREFORMED PAVEMENT MARKING TAPE	PAVEMENT MARKING REMOVAL
	[LIN FT]	[LIN FT]	[ASSEMBLY]	[ASSEMBLY]	[EACH]	[UNIT DAY]	[SQ FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]	[LIN FT]
N.B. RIVERDALE DR. N.W. (STA 80+00 - 89+52)																
STAGE 1A																
STAGE 1B	10															
STAGE 2		10										1050	830			
STAGE 3								310				370				310
STAGE 4								300				350				370
E.B. RIVERDALE DR. N.W. (STA 50+91 - 57+14)																
STAGE 1A																
STAGE 1B			1					280					240			
STAGE 2				1				300					320			1300
STAGE 3								250								
STAGE 4																
OLD ARMSTRONG BLVD. (STA 30+75 - 31+69)																
STAGE 1A																
STAGE 1B													110			
STAGE 2																
STAGE 3																
STAGE 4																
OLD ARMSTRONG BLVD. (STA 32+64 - 35+49)																
STAGE 1A																
STAGE 1B								90								
STAGE 2																
STAGE 3																
STAGE 4																
US BANK (STA 90+07 - 91+79)																
STAGE 1A																
STAGE 1B	220				7			440					220			
STAGE 2		220														
STAGE 3																
STAGE 4																
LLAMA ST. N.W. (STA 12+06 - 13+32)																
STAGE 1A							8									
STAGE 1B																
STAGE 2																
STAGE 3																
STAGE 4																
146TH AVE. N.W. (STA 81+00 - 83+00)																
STAGE 1A																
STAGE 1B																
STAGE 2																
STAGE 3																
STAGE 4																
S.A.P. 199-115-002 SUBTOTAL	230	230	1	1	7		8	1970				1770	1720			1980
N.B. C.S.A.H. 83 (STA 100+00 - 103+28)																
STAGE 1A																
STAGE 1B	280				9			580					290			
STAGE 2		280														
STAGE 3								650	130			470	110			
STAGE 4								940			40	520				1330
N.B. C.S.A.H. 83 (STA 106+19 - 116+17)																
STAGE 1A						14										
STAGE 1B	830		2		27			1860	70		110	330	1080	940	1910	1880
STAGE 2																
STAGE 3		830		2				1090				540	800		1860	
STAGE 4								1180		100		840		430		
S.A.P. 002-683-004 SUBTOTAL	1110	1110	2	2	36	14		6300	200	100	150	2700	2280	940	4200	3210
TOTAL	6550	15090	9	16	216	49	205	15500	270	1130	150	10410	4370	2730	37940	17640

NOTES:  
(N-1) IMPACT ATTENUATOR AND RELOCATE IMPACT ATTENUATOR FOR TEMPORARY USE ONLY.  
(N-2) QUANTITY BASED ON 4" STRIPE WIDTH. ADDITIONAL LENGTH ACCOUNTED FOR WITH STOP BARS AND CROSSWALKS.

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NO    DATE    BY    CKD    APPR .....\CAD_BIM\Plan\8255.tbq02.dgn				REVISION		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: CRAIG J. HASS  Date: 09-12-18 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY A. DEBRUIN DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259				ENGINEERS PLANNERS DESIGNERS		ANOKA COUNTY TABULATIONS T.H. 10 / C.S.A.H. 83 INTERCHANGE		SHEET 42 OF 586	
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EE BRIDGE APPROACH PANELS		
ALIGNMENT	STATION TO STATION	BRIDGE APPROACH PANELS (SQ YD)
S.P. 0202-95		
N.B. C.S.A.H. 83	103+28 - 106+19	1330
S.P. 0202-95 TOTAL		1330
S.A.P. 002-683-004		
N.B. C.S.A.H. 83	106+19 - 116+17	825
S.A.P. 002-683-004 TOTAL		825
PROJECT TOTALS		2155

GG SANITARY SEWER AND WATER MAIN								
ALIGNMENT	STATION TO STATION	24" PVC PIPE SEWER	30" PVC PIPE SEWER	24" PIPE PLUG	42" STEEL CASING PIPE	(GG-1) WATERMAIN FITTINGS	(GG-3) CONST DRAINAGE STRUCTURE DESIGN SPEC 3	(GG-2) CASTING ASSEMBLY
		(LIN FT)	(LIN FT)	(EACH)	(LIN FT)	(POUND)	(LIN FT)	(EACH)
S.A.P. 002-683-004								
N.B. C.S.A.H. 83	106+19 - 116+17	384	198	1	188	81	70.9	4
S.A.P. 002-683-004 TOTAL		384	198	1	188	81	70.9	4
PROJECT TOTALS		384	198	1	188	81	70.9	4

NOTES:

- (GG-1) QUANTITY FOR 4", 8", AND 12" MECHANICAL JOINT PLUGS, SEE REMOVAL PLANS.
- (GG-2) CASTING ASSEMBLY A-7D UTILIZED FOR SANITARY MANHOLES CONSISTS OF FRAME CASTING 700-7 (MNDOT STD. PLATE 4101) AND COVER 715 (MNDOT STD. PLATE 4110)
- (GG-3) SEE CITY STANDARD PLATE SEW-4

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
A. DEBRUIN

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

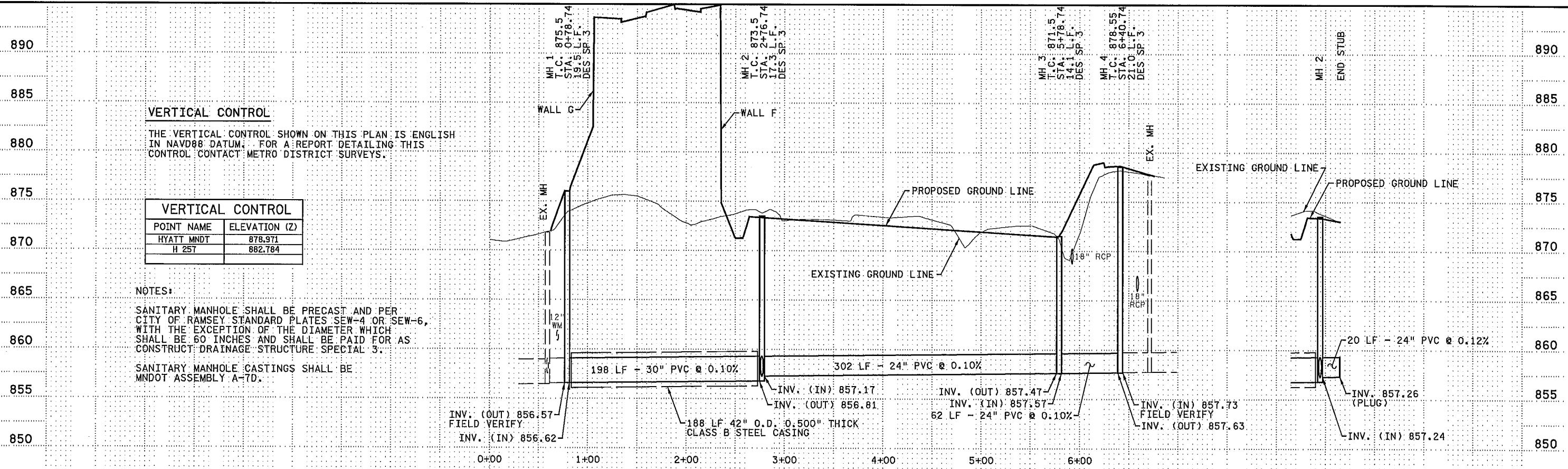
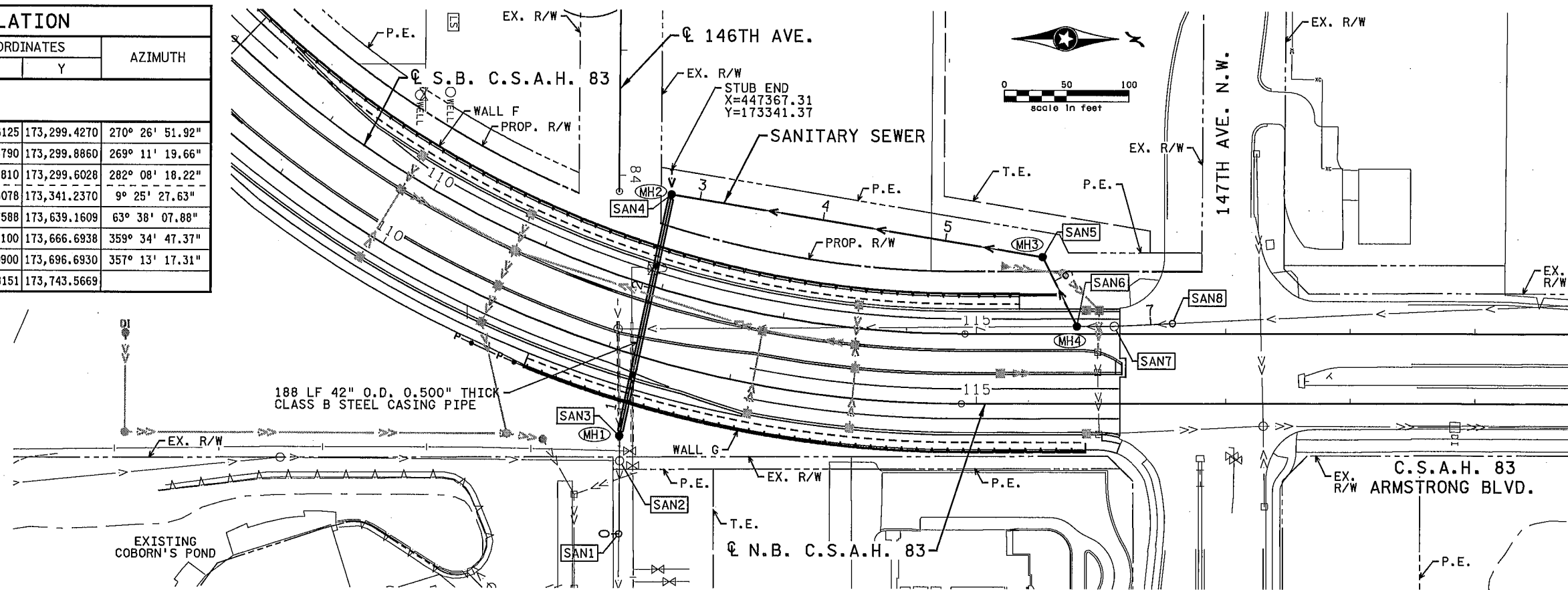


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TABULATIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
43  
OF  
586

ALIGNMENT TABULATION						
POINT NUMBER	POINT	STATION	COORDINATES		AZIMUTH	
			X	Y		
<b>SANITARY SEWER &lt;SAN&gt;</b>						
SAN1	POT	SANITARY SEWER	0+00.000	447,659.6125	173,299.4270	270° 26' 51.92"
SAN2	PI		0+58.735	447,600.8790	173,299.8860	269° 11' 19.66"
SAN3	PI		0+78.735	447,580.8810	173,299.6028	282° 08' 18.22"
SAN4	PI		2+76.735	447,387.3078	173,341.2370	9° 25' 27.63"
SAN5	PI		5+78.735	447,436.7588	173,639.1609	63° 38' 07.88"
SAN6	PI		6+40.735	447,492.3100	173,666.6938	359° 34' 47.37"
SAN7	PI		6+70.735	447,492.0900	173,696.6930	357° 13' 17.31"
SAN8	POT	SANITARY SEWER	7+17.664	447,489.8151	173,743.5669	



**VERTICAL CONTROL**

THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784

**NOTES:**

SANITARY MANHOLE SHALL BE PRECAST AND PER CITY OF RAMSEY STANDARD PLATES SEW-4 OR SEW-6, WITH THE EXCEPTION OF THE DIAMETER WHICH SHALL BE 60 INCHES AND SHALL BE PAID FOR AS CONSTRUCT DRAINAGE STRUCTURE SPECIAL 3.

SANITARY MANHOLE CASTINGS SHALL BE MNDOT ASSEMBLY A-7D.

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: **CRAIG J. HASS**  
 Date: **09-12-18** License #: **45039**

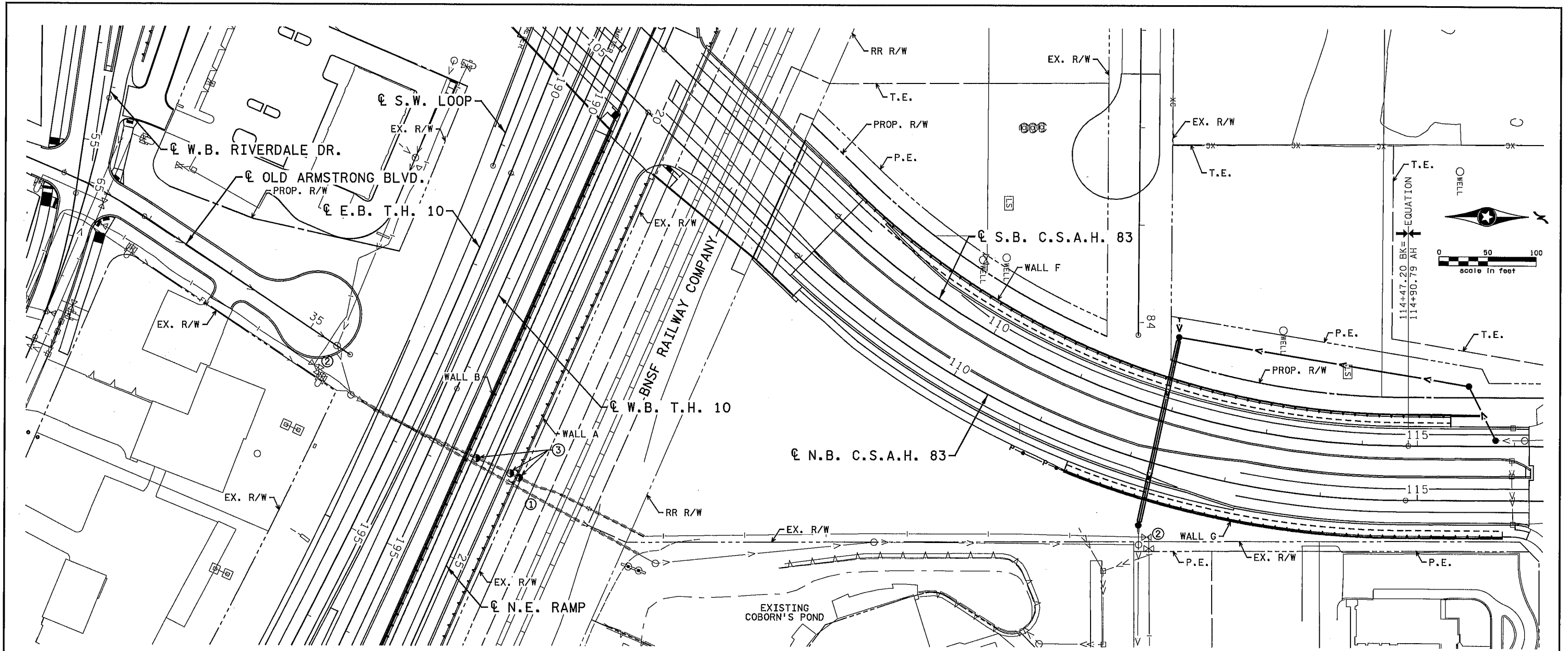
STATE AID PROJECT NO. 002-683-004 199-115-002  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ANOKA COUNTY**  
 PUBLIC UTILITY PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 PROPOSED SANITARY SEWER

**SHEET**  
 44  
**OF**  
 586

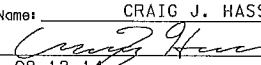
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- NOTES:
- ① INSPECT SEWER BEFORE AND AFTER RETAINING WALL A AND B CONSTRUCTION, IN ACCORDANCE WITH SPECIAL PROVISION 2503.
  - ② TEST WATER PRESSURE BEFORE AND AFTER RETAINING WALL A AND B CONSTRUCTION, IN ACCORDANCE WITH SPECIAL PROVISION 2504.
  - ③ SETTLEMENT PLATES DURING CONSTRUCTION OF RETAINING WALL A AND B, IN ACCORDANCE WITH SPECIAL PROVISION 2105. SEE DETAILS ON SHEET 94.

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date 09-12-14 License # 45039

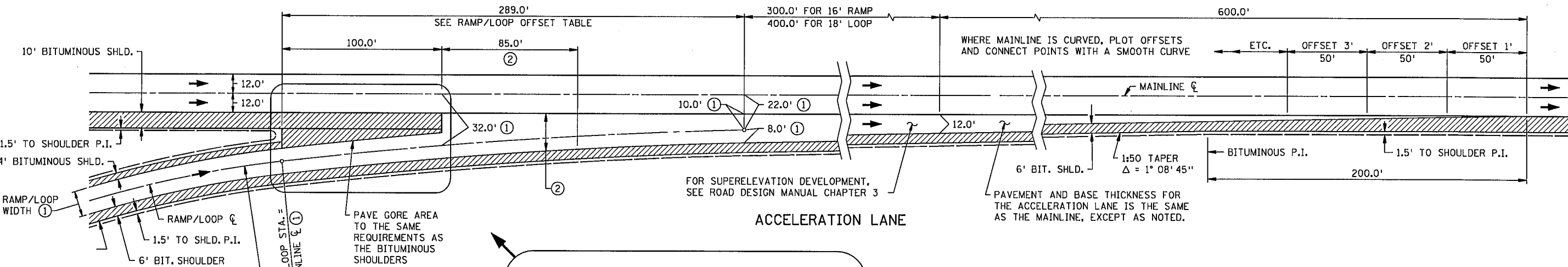
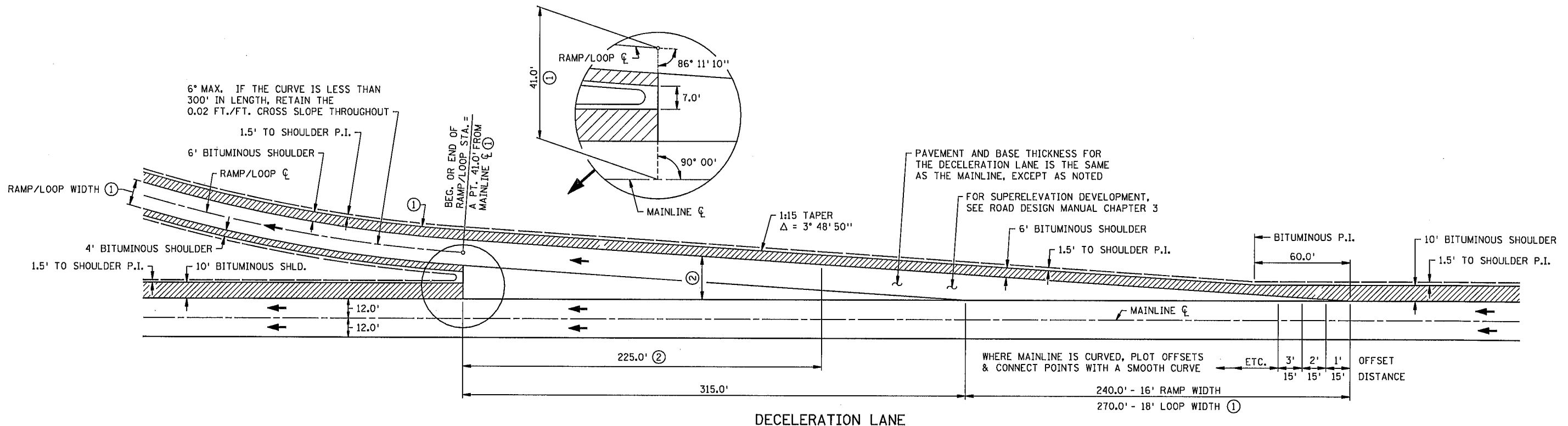
STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 A. TRACY  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259


**ENGINEERS  
 PLANNERS  
 DESIGNERS**  
 Consulting Group, Inc.

ANOKA COUNTY  
 PUBLIC UTILITY PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 SANITARY SEWER INSPECTION & WATERMAIN TESTING

SHEET  
 45  
 OF  
 586



16 FT. RAMP/LOOP OFFSET TABLE FOR APPROX. 2° CURVE ①  
OFFSET FROM MAINLINE  $\phi$  TO RAMP/LOOP  $\phi$

DISTANCE	0'	20'	40'	60'	80'	100'	120'	140'	160'
OFFSET	22.00'	22.47'	23.08'	23.83'	24.72'	25.75'	26.91'	28.22'	29.67'
DISTANCE	180'	189'	200'	220'	240'	260'	280'	289'	
OFFSET	31.26'	32.00'	32.99'	34.86'	36.87'	39.02'	41.32'	42.41'	

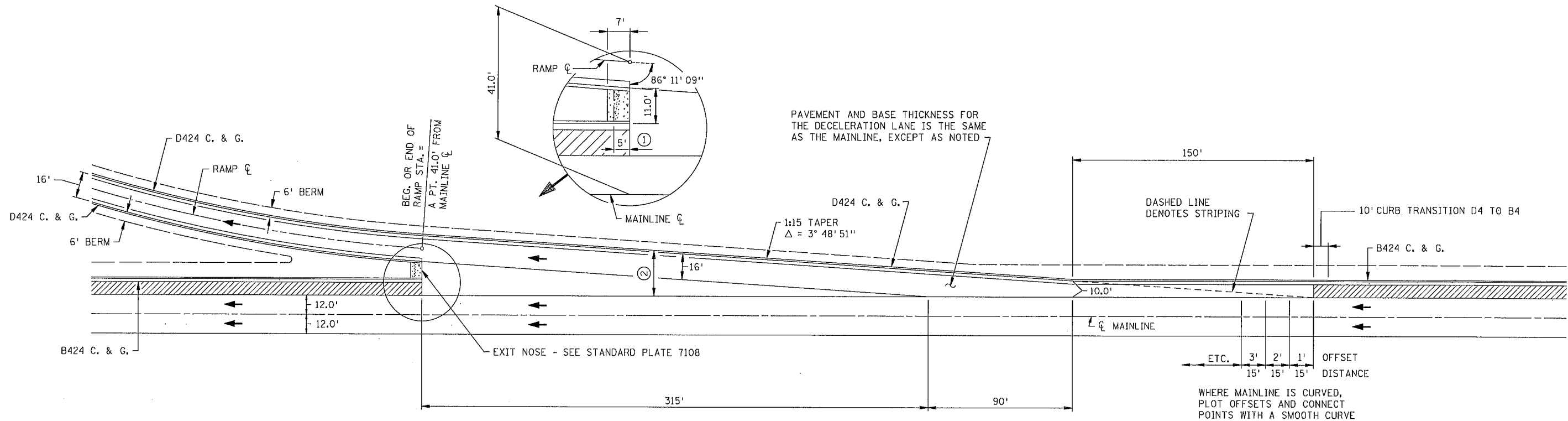
- NOTES:**
- ① WHEN IT IS NECESSARY FOR RAMPS/LOOPS TO BE WIDER, SEE ROAD DESIGN MANUAL CHAPTER 6, WIDENING SHALL BE DONE ON THE OUTSIDE AND THE TAPER LENGTH INCREASED ACCORDINGLY.
  - ② THE AREA SHOWN SHALL BE GRADED FOR MAINLINE DEPTH. THE RAMP PAVEMENT THICKNESS WILL BE USED WITH ADDITIONAL DEPTH CORRECTED IN THE AGGREGATE BASE, OR GRADING MATERIAL, DEPENDING ON THE SURFACING TYPE.

STANDARD SHEET NO. 5-297.106	STANDARD ACCELERATION AND DECELERATION LANES (RURAL) BITUMINOUS PAVEMENT
STANDARD APPROVED: JULY 30, 1991	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 46 OF 586 SHEETS	

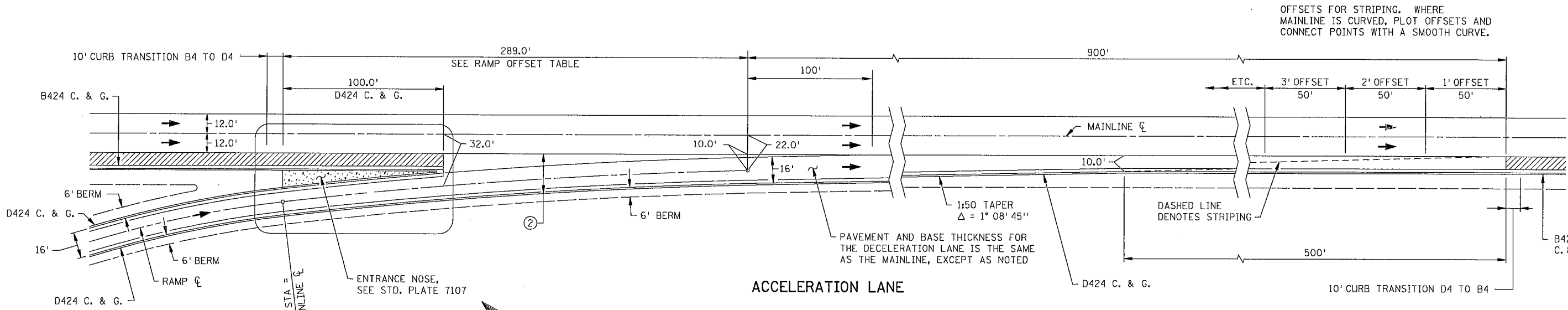
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REVISION DATE  
3-20-2001

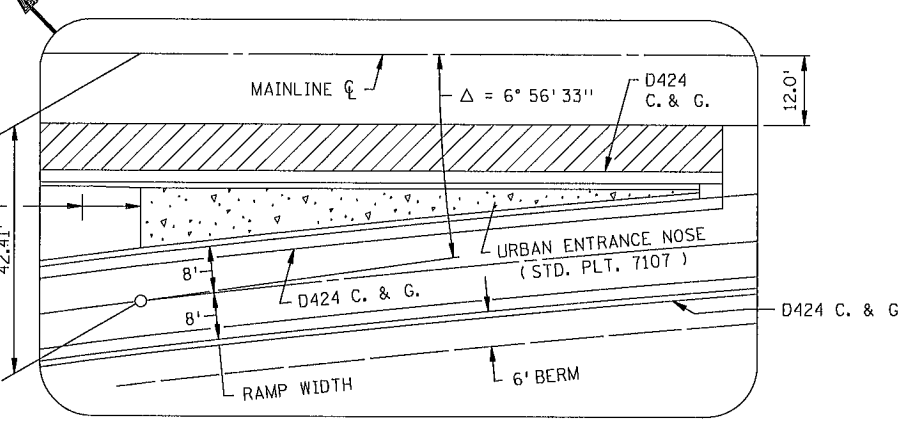




**DECELERATION LANE**



**ACCELERATION LANE**



RAMP OFFSET TABLE FOR APPROX. 2° CURVE  
OFFSET FROM MAINLINE C TO RAMP C

DISTANCE	0'	20'	40'	60'	80'	100'	120'	140'	160'
OFFSET	22.00'	22.47'	23.08'	23.83'	24.72'	25.75'	26.91'	28.22'	29.67'
DISTANCE	180'	189'	200'	220'	240'	260'	280'	289'	
OFFSET	31.26'	32.00'	32.99'	34.86'	36.87'	39.02'	41.32'	42.41'	

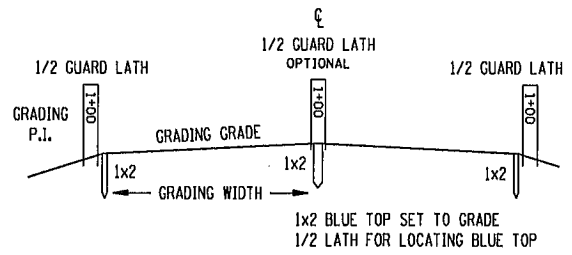
- NOTES:**
- ① WHEN CONSTRUCTING CURB & GUTTER, SLOPE FROM 0" TO 4" CURB.
  - ② THE AREA SHOWN SHALL BE GRADED FOR MAINLINE DEPTH. THE MAINLINE PAVEMENT THICKNESS SHALL TRANSITION TO RAMP PAVEMENT THICKNESS OVER 25' BEGINNING AT THE EXIT/ENTRANCE NOSE OF RAMP.

STANDARD SHEET NO. 5-297.108	STANDARD ACCELERATION AND DECELERATION LANES (URBAN) BITUMINOUS PAVEMENT
STANDARD APPROVED: JUNE 15, 2011	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 47 OF 586 SHEETS	

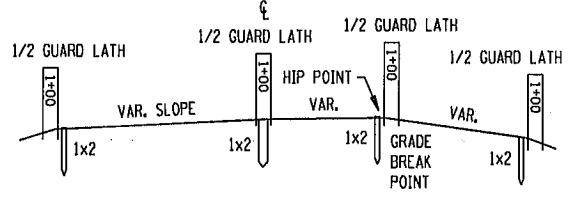
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**BLUE TOPS**

**NORMAL SECTION**

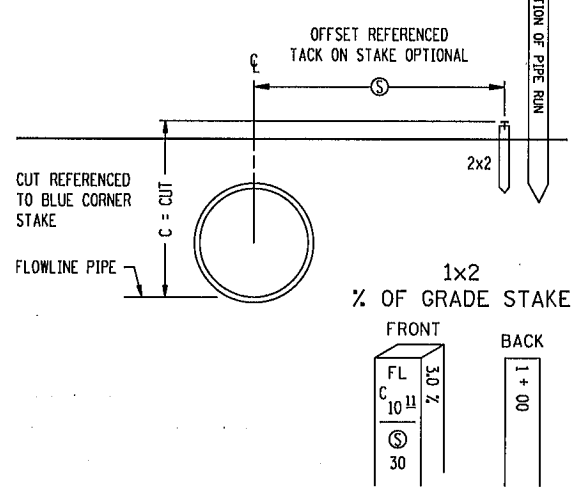


**TRANSITION SECTION**

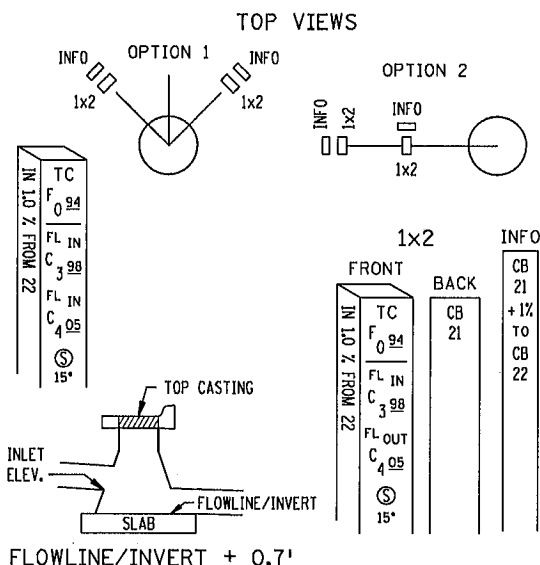


**PIPE STAKING**

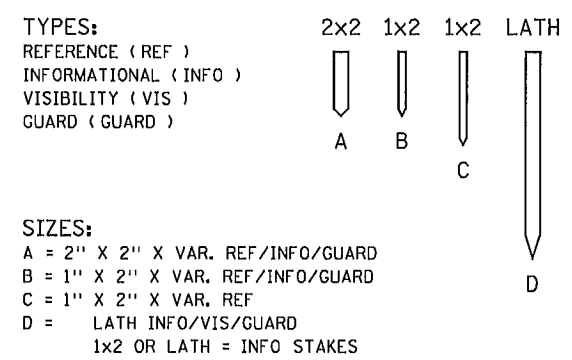
**PROFILE VIEW CENTERLINE PIPE**



**CATCH BASIN OR MANHOLE (CB/MH)**



**STANDARD STAKES**

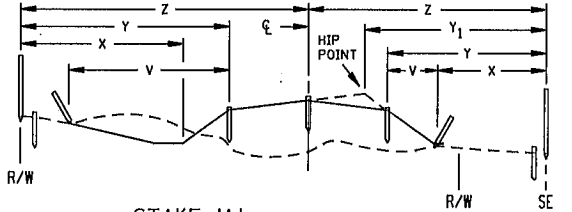


**ABBREVIATIONS**

- BBL = BARREL ( PIPE )
- B.C. = BACK CURB
- C & G = CURB & GUTTER
- C = CUT
- CAP = CORR. ALUM. PIPE
- CB = CATCH BASIN
- CL & GR = CLEAR & GRUB
- COR = CORNER
- CR = CROWN
- CSP = CORR. STEEL PIPE
- DC = DITCH CUT
- D.E. = DRAINAGE EASEMENT
- DI = DROP INLET
- EB = EASTBOUND
- E.M. = EDGE BITUMINOUS MAT
- E.S. = EDGE CONCRETE SLAB
- F = FILL
- FF = FRONT FACE
- FL = FLOW LINE
- FL IN = FLOWLINE INLET
- FL OUT = FLOWLINE OUTLET
- GR = GRADE
- GW = GRADING WIDTH
- HH = HANDHOLE
- HP = HIP POINT
- LT = LEFT
- MH = MANHOLE
- NB = NORTHBOUND
- ⊙ = OFFSET
- PAR = PARCEL
- % = PERCENT GRADE
- P.E. = PERM. EASEMENT
- RAD = RADIUS POINT
- RCP = REINF. CONC. PIPE
- RP = REFERENCE POINT
- RSC = REINF. SECT. CONC.
- RT = RIGHT
- R/W = RIGHT OF WAY
- SB = SOUTHBOUND
- SCP = SECT. CONC. PIPE
- SH = SHOULDER
- TC = TOP CASTING OR TOP CURB
- T.E. = TEMP. EASEMENT
- 3 : 1 = SLOPE (EXAMPLE)
- WB = WESTBOUND
- WP = WORKING POINTS

**SLOPE STAKES**

**SINGLE ROADWAY - EXAMPLE 'A'**



**STAKE 'A'**

FULL LATH AND HUB-STATION  
DIST. TO CL WITH CUT/FILL TO CL (Z)  
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y) (Y1)  
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)  
OFFSET TO SAFTY SLOPE  
OFFSET TO HIP POINT

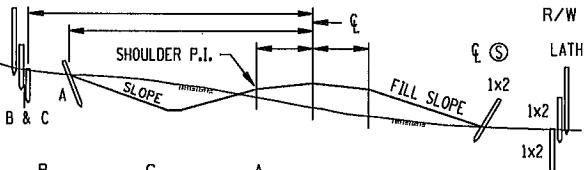
**STAKE 'B'**

FULL LATH  
DITCH CUT/SHLD. FILL  
SLOPE RATED  
DISTANCE TO INSLOPE  
TOE (VI) OR SHOULDER  
(AS APPLIES) (IV)

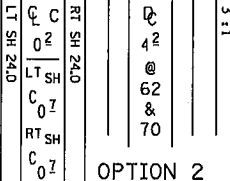
**NOTE:**  
BLUE TOPS REQUIRED ON CL AND BOTH SHOULDERS AT MINIMUM  
ALL CULVERTS TO BE STAKED  
MINIMUM DATA TO BE PROVIDED  
STAKE TO BOTTOM OF TOPSOIL

**SLOPE STAKES**

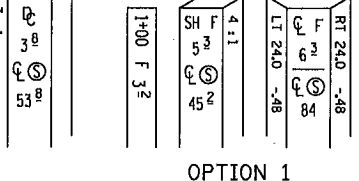
**SINGLE ROADWAY - EXAMPLE 'B'**



**OPTION 2**

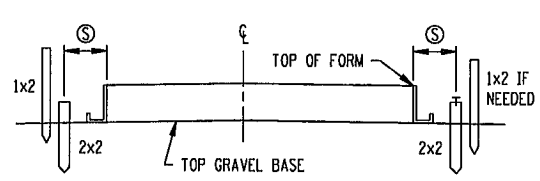


**OPTION 1**

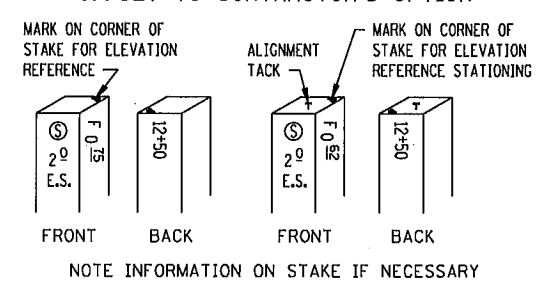


**NOTES:** ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM CL. STAKE TO BOTTOM OF TOP SOIL.  
**KEY STAKES:** BLUE TOP SET AT R/W BOUNDARY LT. & RT. MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

**CONCRETE PAVING STATIONARY FORM**



**OFFSET TO CONTRACTOR'S OPTION**



**NOTE INFORMATION ON STAKE IF NECESSARY**

**RECOMMENDED STAKING INTERVALS**

**FIGURE A**

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE									
0 - 3'	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3'	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
M' 100' CHORD 0 - .25	100	100	100	50	50				
M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

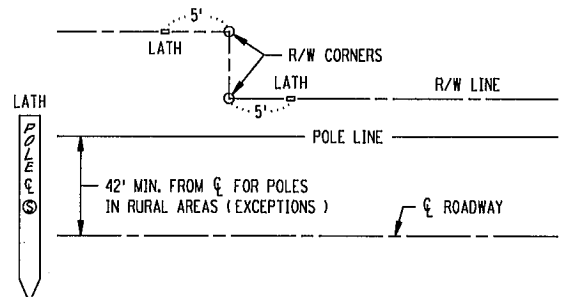
**STAKING TOLERANCES ( FEET )**

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPE STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

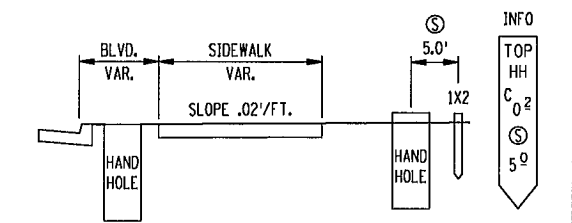
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

**UTILITY ( UTIL )**

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER  
EXAMPLE: POLE LINE = R/W LINE

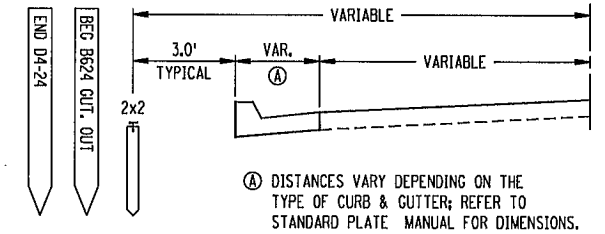


**PULL BOX OR HAND HOLE**

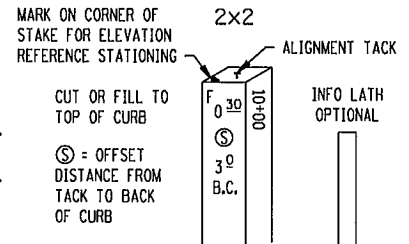


**CURB & GUTTER ( CURB )**

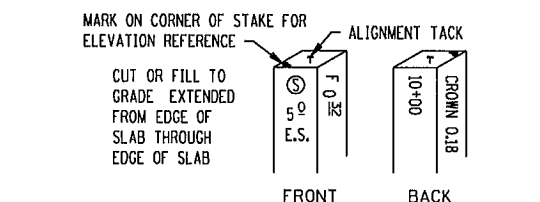
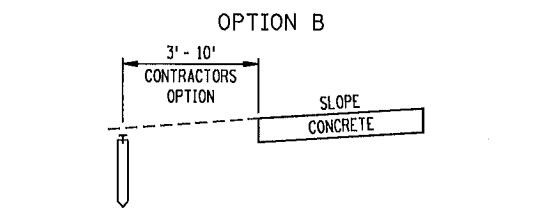
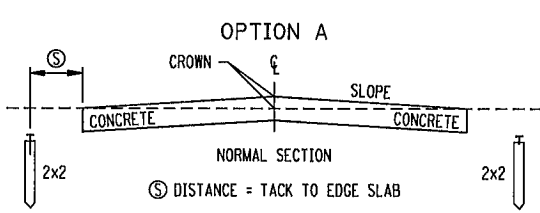
OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE



Ⓐ DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.



**CONCRETE PAVING - SLIP FORM**



**DISCLAIMER**

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

STANDARD SHEET NO.  
5-297.115 ( 1 OF 2 )  
STANDARD APPROVED:  
DECEMBER 21, 1994

**STAKING INFORMATION SHEET**



**NOTES:**

- \* ① SEE STANDARD PLAN 5-297.231 FOR DRAINAGE DETAILS AND ADDITIONAL REQUIREMENTS.
- \* ② B4 CURB DESIGN SHOWN. SEE STANDARD PLATES FOR CURB DETAILS.
- ③ E8H QUANTITY SHALL BE PAID FOR SEPARATELY, MEASURED FROM BACK OF CURB TO BACK OF CURB.
- \* ④ TO ACCOMMODATE GUARDRAIL CONNECTION AND CRASH TEST REQUIREMENTS THE CONCRETE BARRIER MUST EXTEND 7'-0" MINIMUM ONTO THE APPROACH PANEL. FOR PARALLEL WINGWALLS THE BARRIER MUST EXTEND 7'-0" MINIMUM ON TO THE APPROACH PANEL OR TO THE END OF THE WINGWALL, WHICHEVER IS LONGER. REFER TO BRIDGE PLAN FOR BARRIER REINFORCEMENT AND PAYMENT.
- ⑤ SEE GRADING PLANS FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.
- \* ⑥ WHEN SKEW IS OVER 45°, THE JOINT SHALL BE PERPENDICULAR TO GUTTER FOR 1' (TYP.).
- ⑦ PANEL SIZE AND REQUIREMENTS FOR TRANSVERSE AND LONGITUDINAL JOINTS ARE SHOWN ON STANDARD PLANS 5-297.228 AND 5-297.229.
- ⑧ FOR CONCRETE PAVEMENT, SEE STANDARD PLAN 5-297.227 FOR LUG REQUIREMENTS.
- \* ⑨ SEE BRIDGE PLANS AND DETAILS FOR CONCRETE WALK SCORING AND COLORING DETAILS.
- \* ⑩ SEE SECTION B-B FOR POINT LOCATION, TOP OF WEARING COURSE (W.C.) EL. IS THEORETICAL AS NO WEARING COURSE WILL BE PLACED UNDER THE SIDEWALK.

**GENERAL NOTES:**

SECTION A-A IS SHOWN ON STANDARD PLAN 5-297.227.  
SECTIONS B-B AND C-C ARE SHOWN ON STANDARD PLAN 5-297.225 AND SHOW THE STATION AND ELEVATION AT END LOCATIONS ON THE APPROACH PANEL.

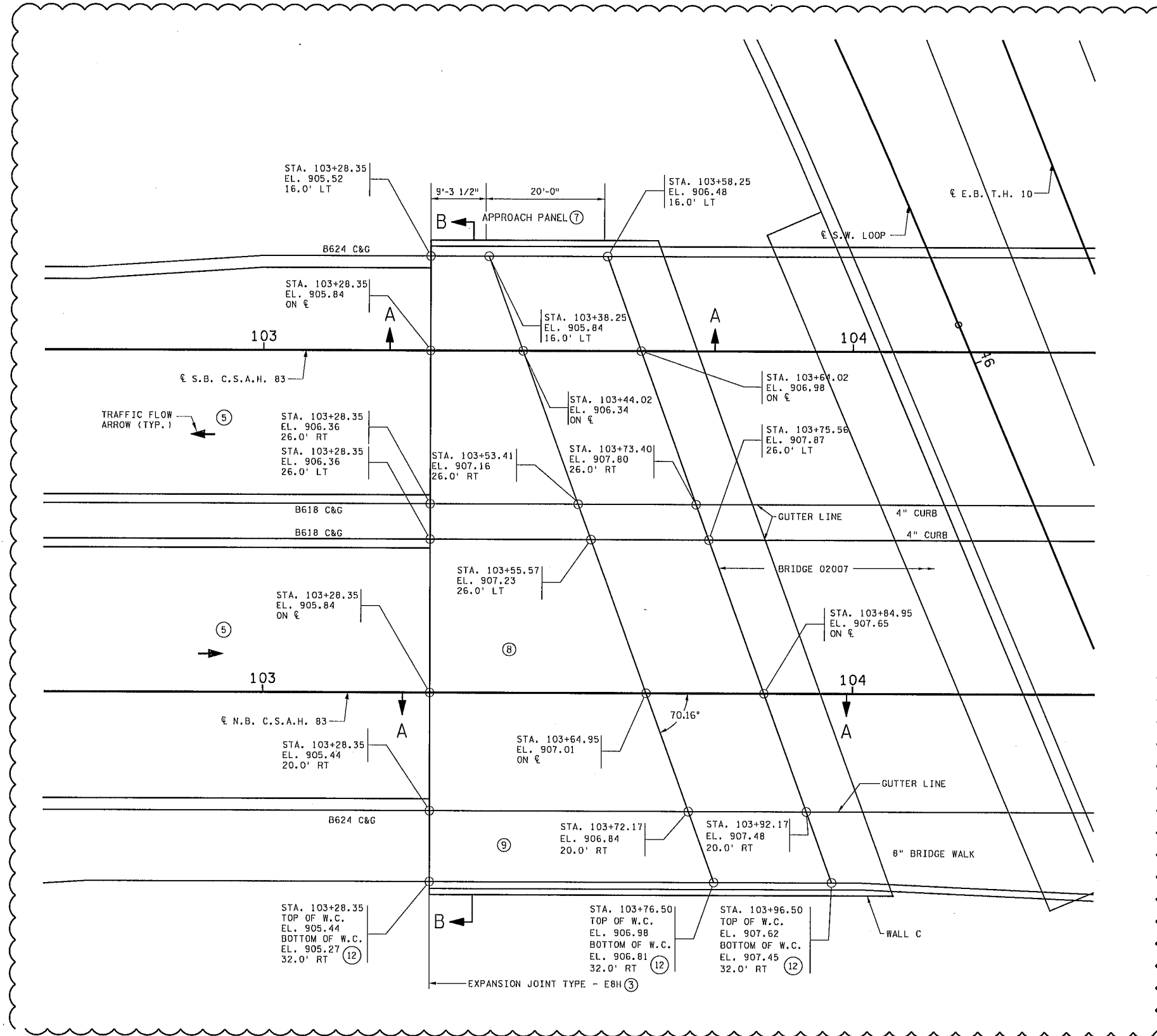
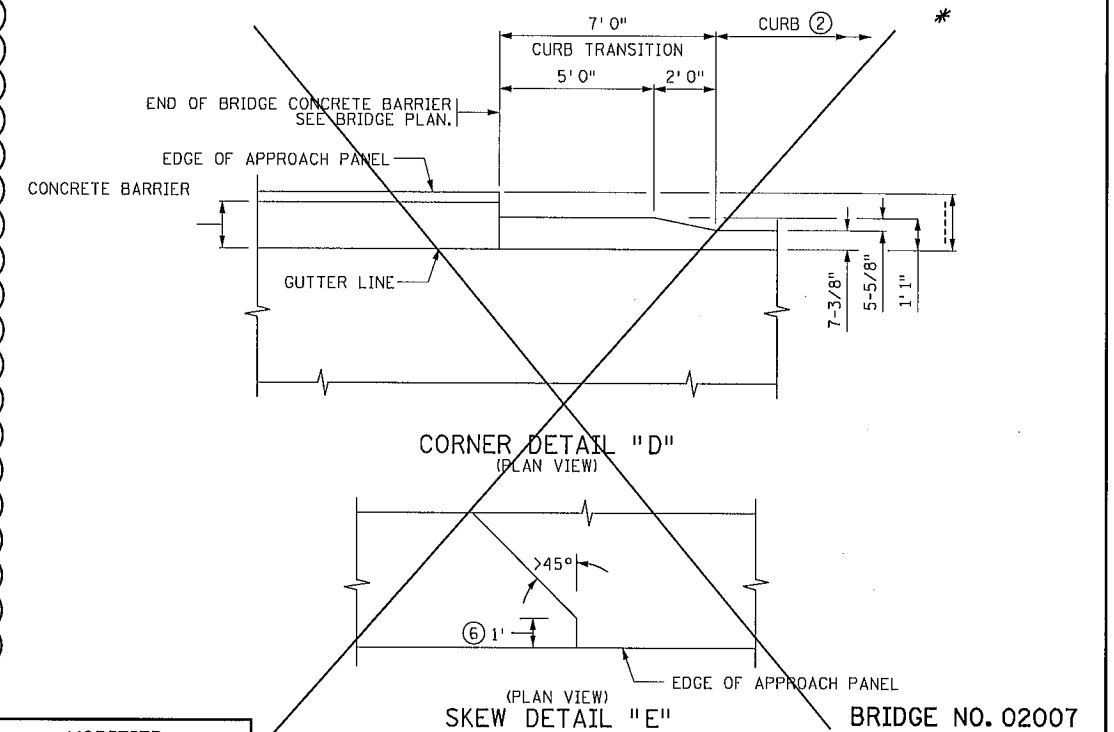
A CONCRETE SILL IS REQUIRED BENEATH EXPANSION JOINT TYPE E8H. EXTEND THE EXPANSION JOINT AND THE SILL ALONG THE FULL WIDTH OF THE TRAFFIC LANES, SHOULDERS AND CURB. ENSURE THAT SILL DOES NOT INTERFERE WITH GUARDRAIL POST PLACEMENT. CONCRETE SILL AND CURBING, IF REQUIRED, ARE INCLUDED IN THE APPROACH PANEL PAY ITEM.

- \* AT THE END OF THE CONCRETE BARRIER, TRANSITION FACE OF 4 INCH CURB INTO PROFILE OF CONCRETE BARRIER. SEE CURB TRANSITION DETAILS ON STANDARD PLAN 5-297.227 IF THERE IS NO ROADWAY CURB AT THE END OF THE APPROACH PANEL, APPROACH PANEL CURB HEIGHT FROM 4 INCH TO 6 INCH IN THE LAST 3'-4" SECTION (1:10 OR FLATTER SLOPE).

GENERAL DRAINAGE DETAILS ARE SHOWN ON BRIDGE APPROACH PANEL DRAINAGE DETAILS, STANDARD PLAN 5-297.231. ADDITIONAL CATCH BASIN DETAILS ARE SHOWN ON DRAINAGE PLAN SHEETS.

CONCRETE MIX SHALL BE 3A42 FOR APPROACH PANEL AND SILL.

REFER TO MNDOT SPEC. 2406 FOR ADDITIONAL INFORMATION.

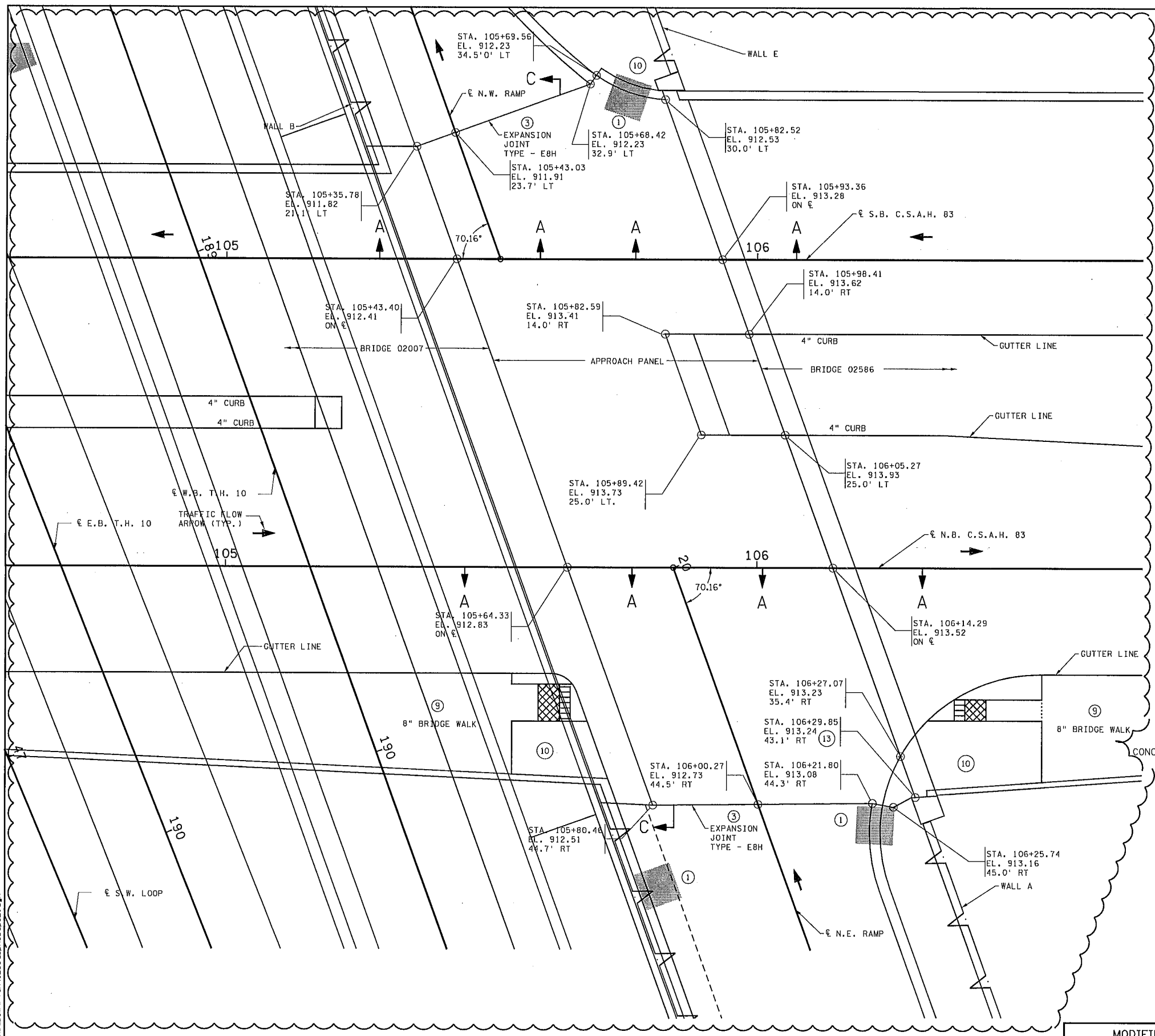


\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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: CRAIG J. HASS  
Date: 09-12-14 License #: 45039

MODIFIED	TITLE:
STANDARD PLAN SHEET NO. 5-297.224	BRIDGE APPROACH PANEL LAYOUT (CONCRETE BARRIER ON APPROACH PANEL)
STANDARD APPROVED: DECEMBER 20, 2011	

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- NOTES:**
- ① SEE STANDARD PLAN 5-297.231 FOR DRAINAGE DETAILS AND ADDITIONAL REQUIREMENTS.
  - \* ② B4 CURB DESIGN SHOWN. SEE STANDARD PLATES FOR CURB DETAILS.
  - ③ E8H QUANTITY SHALL BE PAID FOR SEPARATELY, MEASURED FROM BACK OF CURB TO BACK OF CURB.
  - \* ④ TO ACCOMMODATE GUARDRAIL CONNECTION AND CRASH TEST REQUIREMENTS THE CONCRETE BARRIER MUST EXTEND 7'-0" MINIMUM ONTO THE APPROACH PANEL. FOR PARALLEL WINGWALLS THE BARRIER MUST EXTEND 7'-0" MINIMUM ON TO THE APPROACH PANEL OR TO THE END OF THE WINGWALL, WHICHEVER IS LONGER. REFER TO BRIDGE PLAN FOR BARRIER REINFORCEMENT AND PAYMENT.
  - \* ⑤ SEE GRADING PLANS FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.
  - \* ⑥ WHEN SKEW IS OVER 45°, THE JOINT SHALL BE PERPENDICULAR TO GUTTER FOR 1' (TYP.).
  - \* ⑦ PANEL SIZE AND REQUIREMENTS FOR TRANSVERSE AND LONGITUDINAL JOINTS ARE SHOWN ON STANDARD PLANS 5-297.228 AND 5-297.229.
  - \* ⑧ FOR CONCRETE PAVEMENT, SEE STANDARD PLAN 5-297.227 FOR LUG REQUIREMENTS.
  - \* ⑨ SEE BRIDGE PLANS AND DETAILS FOR CONCRETE WALK SCORING AND COLORING DETAILS.
  - ⑩ SEE INTERSECTION DETAILS AND PEDESTRIAN RAMP DETAILS FOR ADDITIONAL INFORMATION.
  - \* ⑬ ELEVATION IS AT TOP OF APPROACH PANEL. ELEVATION AT TOP OF SIDEWALK IS 913.54.

**GENERAL NOTES:**

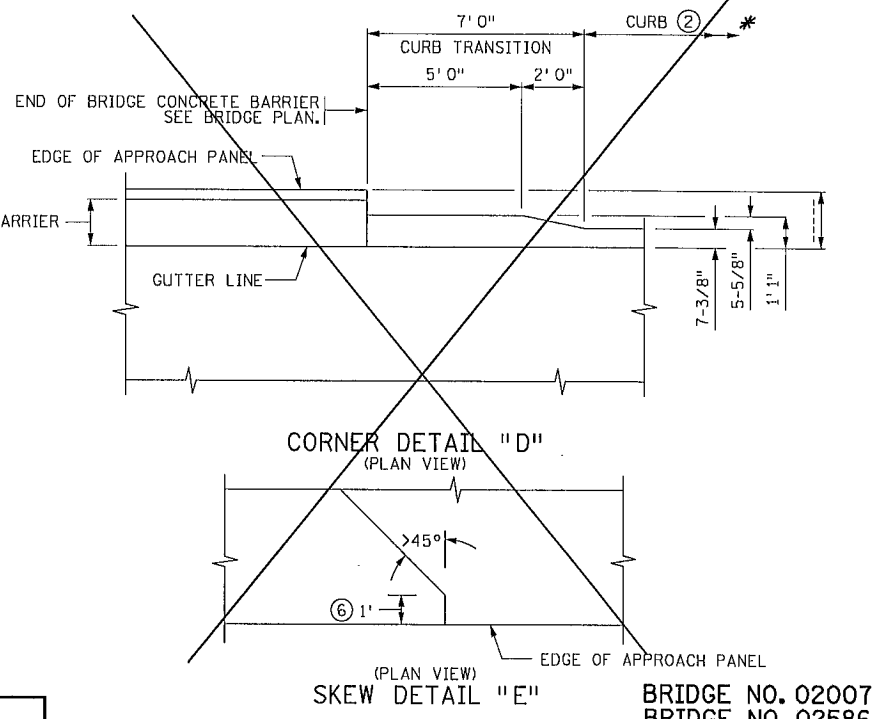
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GENERAL DRAINAGE DETAILS ARE SHOWN ON BRIDGE APPROACH PANEL DRAINAGE DETAILS, STANDARD PLAN 5-297.231. ADDITIONAL CATCH BASIN DETAILS ARE SHOWN ON DRAINAGE PLAN SHEETS.

CONCRETE MIX SHALL BE 3A42 FOR APPROACH PANEL AND SILL.  
 REFER TO MNDOT SPEC. 2406 FOR ADDITIONAL INFORMATION.



\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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: CRAIG J. HASS  
 Date: 09-12-11 License #: 45039

MODIFIED	TITLE:
STANDARD PLAN SHEET NO. 5-297.224	BRIDGE APPROACH PANEL LAYOUT (CONCRETE BARRIER ON APPROACH PANEL)
STANDARD APPROVED: DECEMBER 20, 2011	

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**NOTES:**

- \* ① SEE STANDARD PLAN 5-297.231 FOR DRAINAGE DETAILS AND ADDITIONAL REQUIREMENTS.
- \* ② B4 CURB DESIGN SHOWN. SEE STANDARD PLATES FOR CURB DETAILS.
- ③ EBH QUANTITY SHALL BE PAID FOR SEPARATELY, MEASURED FROM BACK OF CURB TO BACK OF CURB.
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- \* ⑨ SEE BRIDGE PLANS AND DETAILS FOR CONCRETE WALK SCORING AND COLORING DETAILS.
- \* ⑩ SEE SECTION B-B FOR POINT LOCATION, TOP OF WEARING COURSE (W.C.) EL. IS THEORETICAL AS NO WEARING COURSE WILL BE PLACED UNDER THE SIDEWALK.

**GENERAL NOTES:**

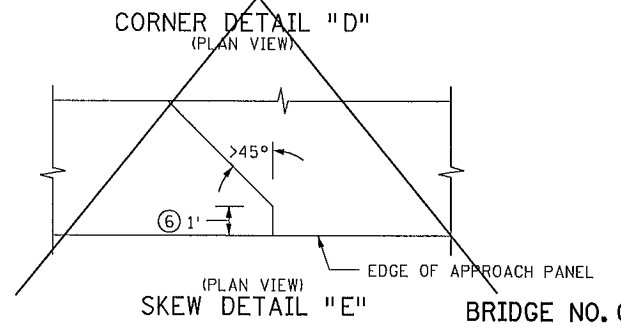
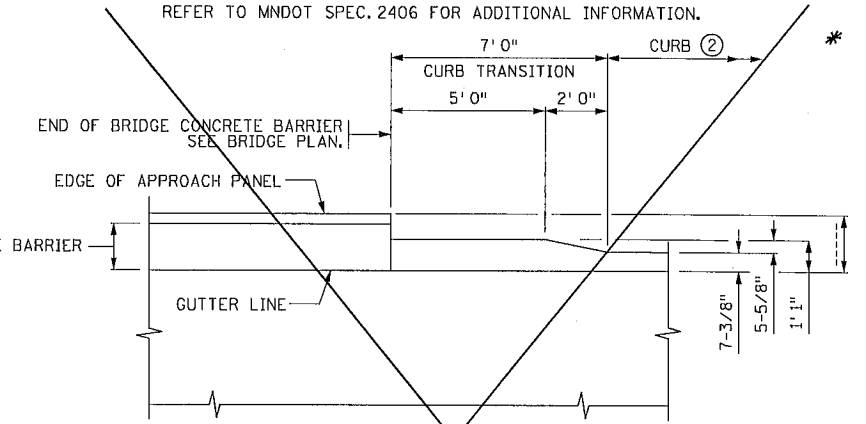
SECTION A-A IS SHOWN ON STANDARD PLAN 5-297.227.  
SECTION B-B IS SHOWN ON STANDARD PLAN 5-297.225  
AND SHOW THE STATION AND ELEVATION AT END LOCATIONS ON THE APPROACH PANEL.

A CONCRETE SILL IS REQUIRED BENEATH EXPANSION JOINT TYPE EBH. EXTEND THE EXPANSION JOINT AND THE SILL ALONG THE FULL WIDTH OF THE TRAFFIC LANES, SHOULDERS AND CURB. ENSURE THAT SILL DOES NOT INTERFERE WITH GUARDRAIL POST PLACEMENT. CONCRETE SILL AND CURBING, IF REQUIRED, ARE INCLUDED IN THE APPROACH PANEL PAY ITEM.

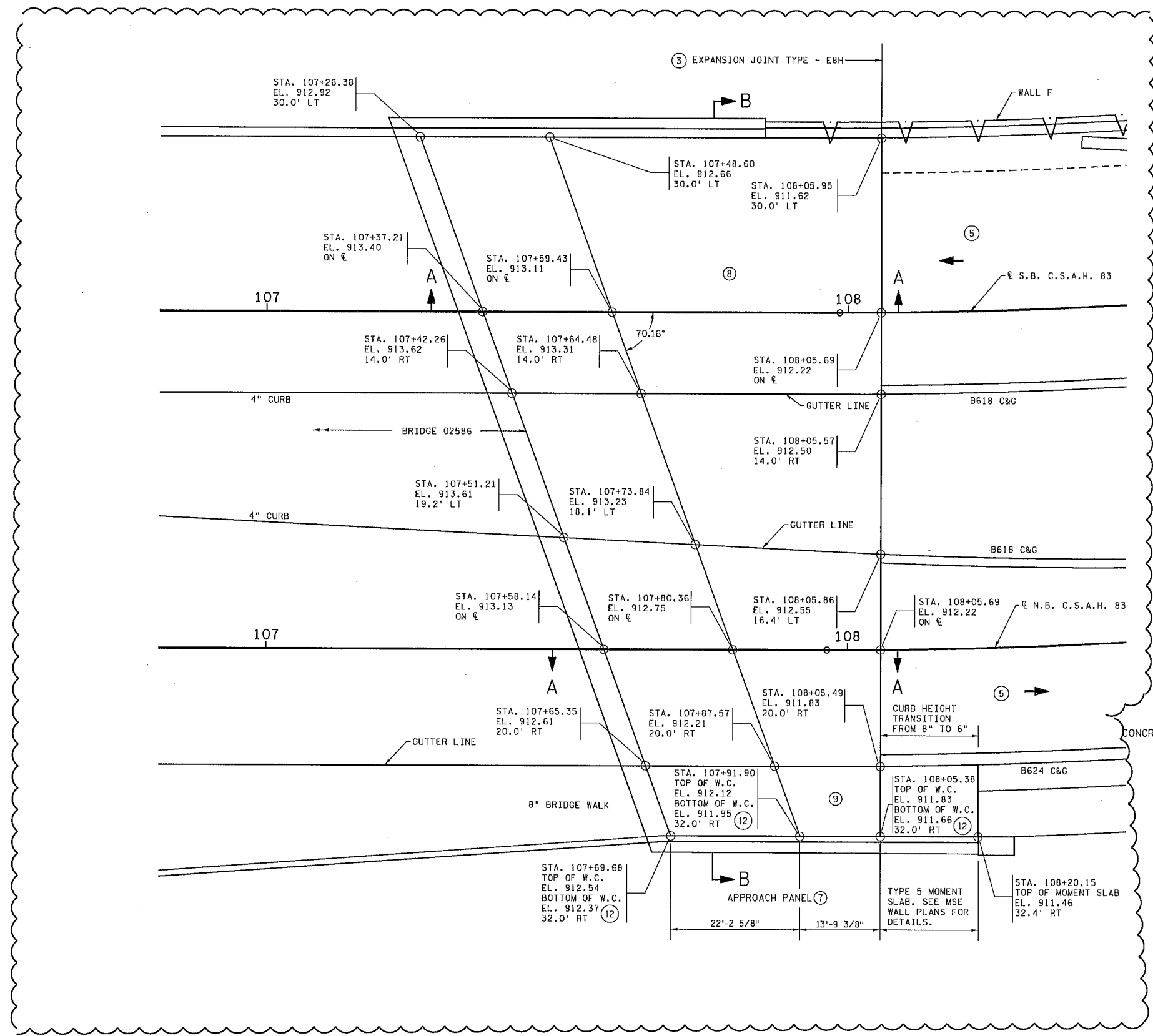
AT THE END OF THE CONCRETE BARRIER, TRANSITION FACE OF 4-INCH CURB INTO PROFILE OF CONCRETE BARRIER. SEE CURB TRANSITION DETAILS ON STANDARD PLAN 5-297.227 IF THERE IS NO ROADWAY CURB AT THE END OF THE APPROACH PANEL, APPROACH PANEL CURB HEIGHT FROM 4 INCH TO 0 INCH IN THE LAST 3'-4" SECTION (1:10 OR FLATTER SLOPE).

GENERAL DRAINAGE DETAILS ARE SHOWN ON BRIDGE APPROACH PANEL DRAINAGE DETAILS, STANDARD PLAN 5-297.231. ADDITIONAL CATCH BASIN DETAILS ARE SHOWN ON DRAINAGE PLAN SHEETS.

CONCRETE MIX SHALL BE 3A42 FOR APPROACH PANEL AND SILL.  
REFER TO MNDOT SPEC. 2406 FOR ADDITIONAL INFORMATION.



BRIDGE NO. 02586



\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

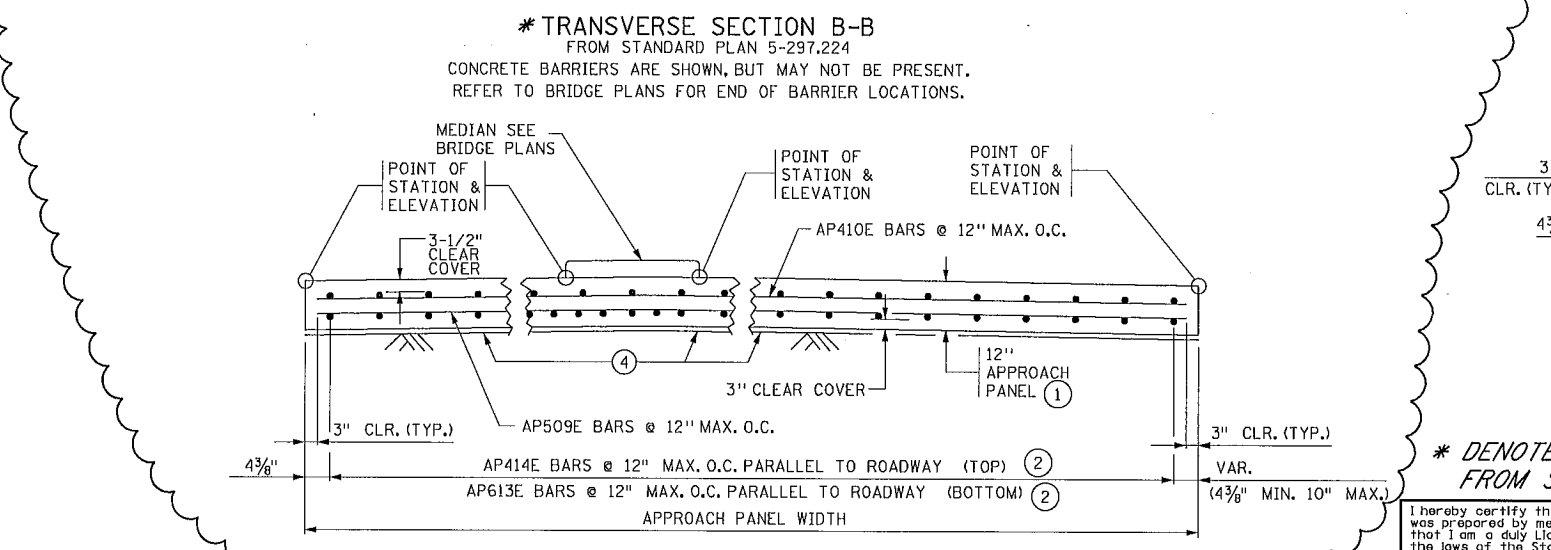
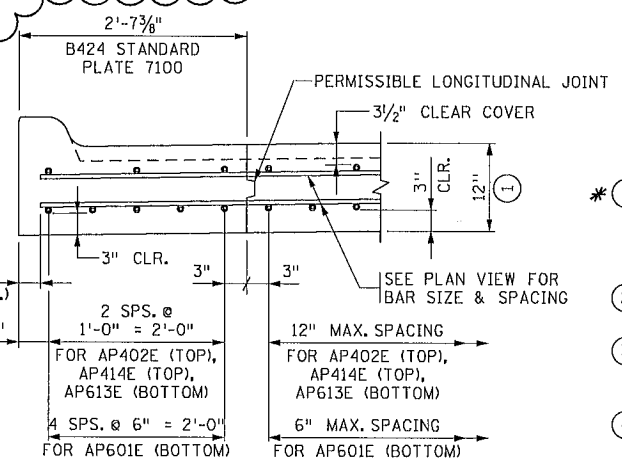
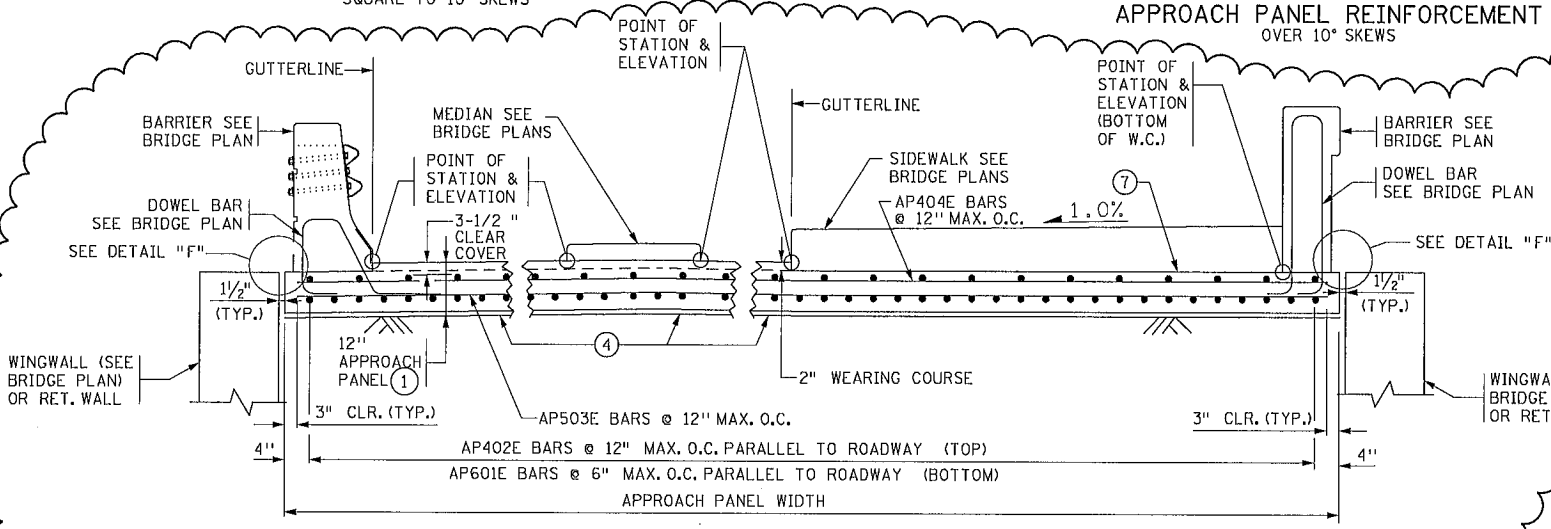
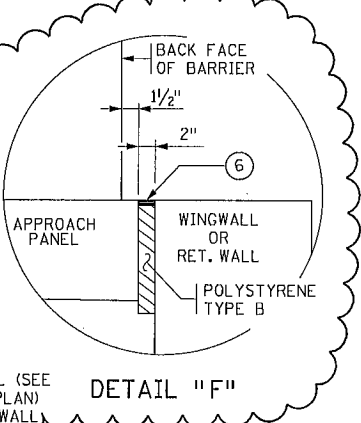
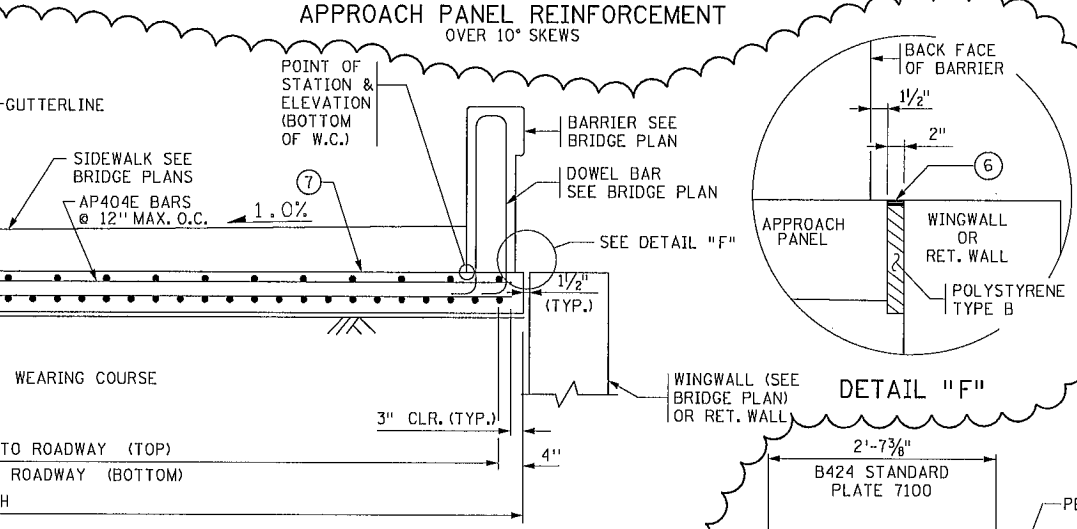
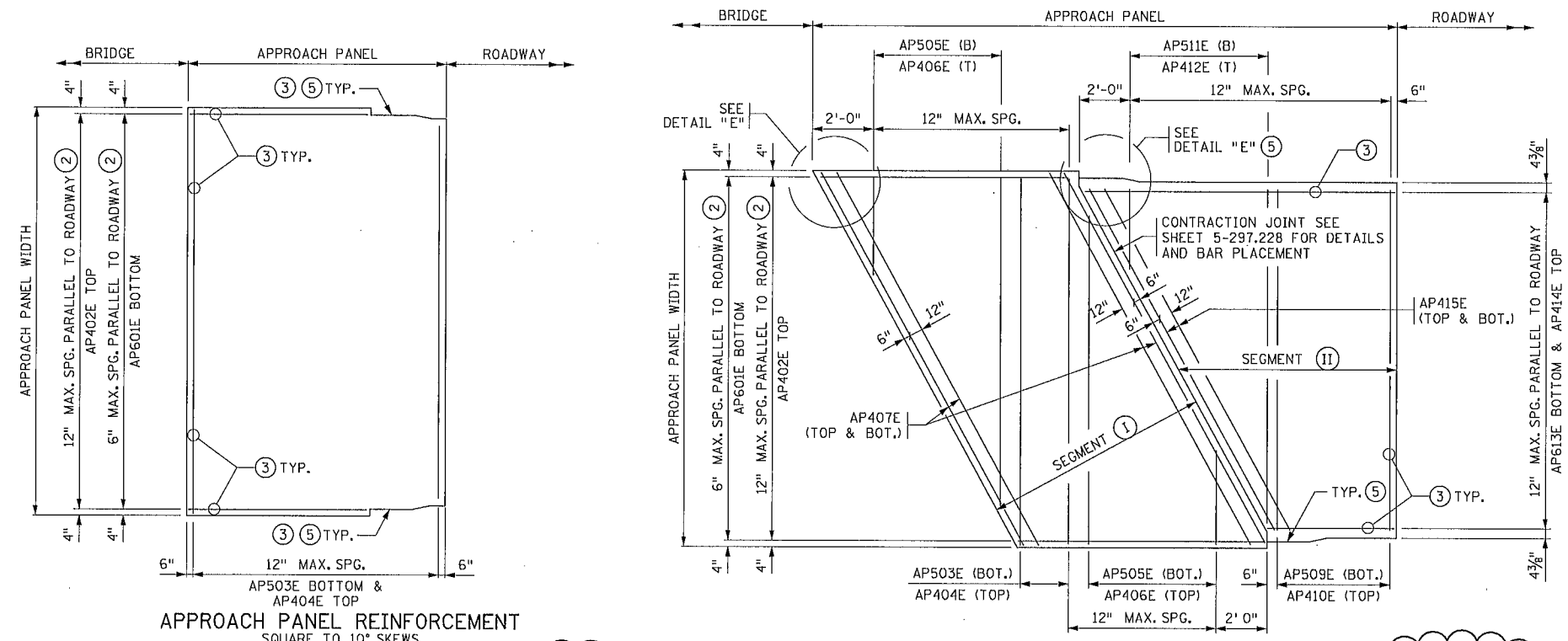
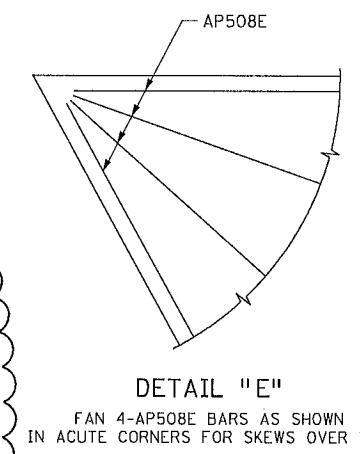
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STANDARD PLAN SHEET NO. 5-297.224	BRIDGE APPROACH PANEL LAYOUT
STANDARD APPROVED: DECEMBER 20, 2011	(CONCRETE BARRIER ON APPROACH PANEL)

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ESTIMATED REINFORCEMENT QUANTITY FOR BRIDGE APPROACH PANELS		
TYPE	LOCATION	ESTIMATED WEIGHT
PANEL (SQ. TO 10°)	BRIDGE TO END OF APPROACH PANEL	48.5 LB./SQ. YD.
PANEL SEGMENT (OVER 10°) ①	BRIDGE TO CONTRACTION JOINT	48.5 LB./SQ. YD.
PANEL SEGMENT (OVER 10°) ②	CONTRACTION JOINT TO END OF APPROACH PANEL	35.0 LBS/SQ. YD.
CURB	7.0 FT. CURB TRANSITION	19.0 LBS/EACH
SILL	SILL (IF REQUIRED)	14.0 LBS/LIN FT.

**NOTES:**  
 TRANSVERSE BARS IN BOTH PANEL SEGMENTS ARE PERPENDICULAR TO ROADWAY CENTERLINE EXCEPT AP407E ARE PARALLEL TO SKEW IN SEGMENT ① AND AP415E ARE PARALLEL TO SKEW IN SEGMENT ②.  
 LONGITUDINAL BARS IN BOTH PANEL SEGMENTS ARE PARALLEL TO ROADWAY CENTERLINE.

BILL OF REINFORCEMENT FOR BRIDGE APPROACH PANELS				
CONTRACTOR IS REQUIRED TO COMPLETE THE BILL OF REINFORCEMENT TABLE AND PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE PROJECT ENGINEER AT LEAST 3 WEEKS BEFORE REBAR FABRICATION.				
BAR	NO.	LENGTH	SHAPE	LOCATION
AP601E		1'-	—	BOTTOM LONGITUDINAL
AP402E		1'-	—	TOP LONGITUDINAL
AP503E		1'-	—	BOTTOM TRANSVERSE
AP404E		1'-	—	TOP TRANSVERSE
AP505E	SER. OF	1'- TO	—	BOTTOM TRANSVERSE
AP406E	SER. OF	1'- TO	—	TOP TRANSVERSE
AP407E		1'-	—	TOP & BOTTOM EDGE
AP508E		8'-0	—	TOP CORNER - FAN
AP509E		1'-	—	BOTTOM TRANSVERSE
AP410E		1'-	—	TOP TRANSVERSE
AP511E	SER. OF	1'- TO	—	BOTTOM TRANSVERSE
AP412E	SER. OF	1'- TO	—	TOP TRANSVERSE
AP613E	SER. OF	1'- TO	—	BOTTOM LONGITUDINAL
AP414E	SER. OF	1'- TO	—	TOP LONGITUDINAL
AP415E		1'-	—	TOP & BOTTOM EDGE
AP616E		5'-0	—	C2H-D JOINT



- GENERAL NOTES:**
- AS PER MNDOT SPEC. 3301, USE EPOXY COATED GRADE 60 REINFORCEMENT BARS IN APPROACH PANEL, CONCRETE SILL AND CURB TRANSITION.
  - BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH MNDOT SPEC. 3301.
  - FOR VARIABLE ROADWAY WIDTHS, VARY THE LAP LENGTH OF THE REINFORCEMENT.
  - MINIMUM REINFORCEMENT LAP LENGTHS ARE AS FOLLOWS: NO. 4 BAR = 1'-8", NO. 5 BAR = 2'-1", NO. 6 BAR = 2'-6".
  - ALL LAP SPLICES SHALL BE STAGGERED SUCH THAT NO MORE THAN 50% OF REBAR IS SPLICED AT THE SAME LOCATION.
  - ① APPROACH SLAB THICKNESS IS 12" (12" MONOLITHIC OR 10" SLAB + 2" WEARING COURSE). CHECK BRIDGE PLANS FOR CONCRETE WEARING COURSE, WHICH IS INCLUDED IN BRIDGE PLAN QUANTITIES. THE APPROACH PANEL BETWEEN BRIDGES 02007 AND 02586 IS MONOLITHIC. ALL OTHER APPROACH PANELS HAVE A 10" SLAB + 2" WEARING COURSE.
  - ② SPACING ONLY FOR B4 INTEGRANT CURB. SEE CURB DETAIL FOR SPACING FOR USING B424 CURB AND GUTTER.
  - ③ EXTEND AND/OR CUT REINFORCING AS NECESSARY TO ACCOMMODATE CURB TRANSITION IF PRESENT. REINFORCEMENT MUST EXTEND INTO CURB AS SHOWN IN TRANSVERSE SECTIONS B-B AND C-C.
  - ④ IF THE APPROACH PANEL IS TIED TO THE BRIDGE ABUTMENT WITH REINFORCEMENT BARS, PLACE 12 MIL POLYETHYLENE SHEETING (OR 2 LAYERS OF 6 MIL) UNDER THE LIMITS OF THE APPROACH PANEL TO ALLOW THE PANEL TO MOVE LONGITUDINALLY ON THE GRADE. SHEETING IS INCLUDED IN THE APPROACH PANEL PAY ITEM.
  - ⑤ SEE STANDARD PLAN 5-297.224 FOR CURB TRANSITION LOCATION.
  - ⑥ SEAL WITH SELF-LEVELING SILICONE PER MNDOT 3722.
  - \* ⑦ APPROACH PANEL LEVEL BELOW TRAIL.

\* DENOTES MODIFICATIONS FROM STANDARD PLAN

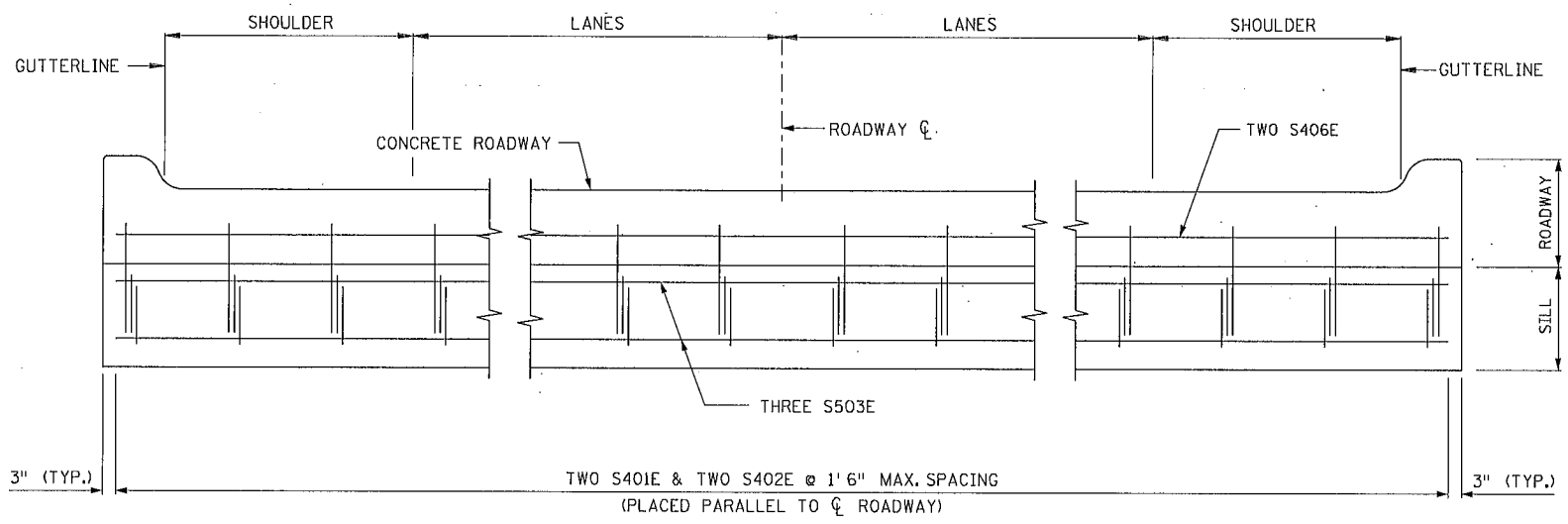
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CRAIG J. HASS  
 Date: 09-12-10 License #: 45039

MODIFIED	TITLE:
STANDARD PLAN SHEET NO. 5-297.225	
STANDARD APPROVED:	
DECEMBER 20, 2011	

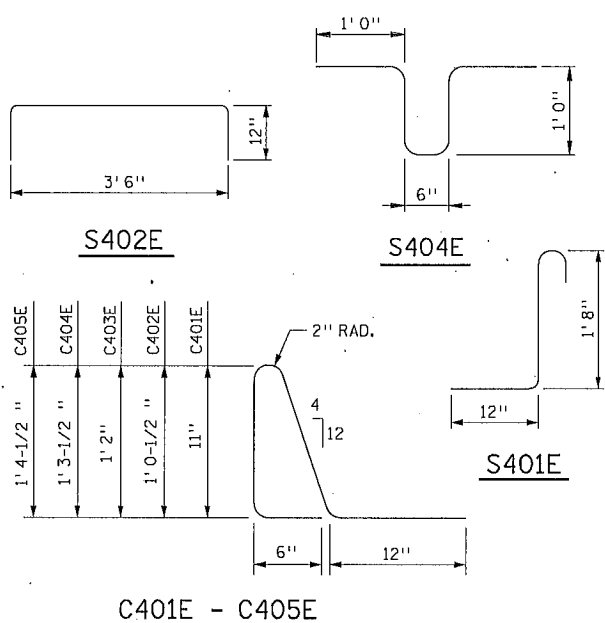
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REVISION DATE 3-22-2013





**SILL ELEVATION**  
(REINFORCEMENT IN PAVEMENT NOT SHOWN)



**C401E - C405E**

**BILL OF REINFORCEMENT FOR CONCRETE SILL**

CONTRACTOR IS REQUIRED TO COMPLETE THE BILL OF REINFORCEMENT TABLE AND PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE PROJECT ENGINEER AT LEAST 3 WEEKS BEFORE REBAR FABRICATION.

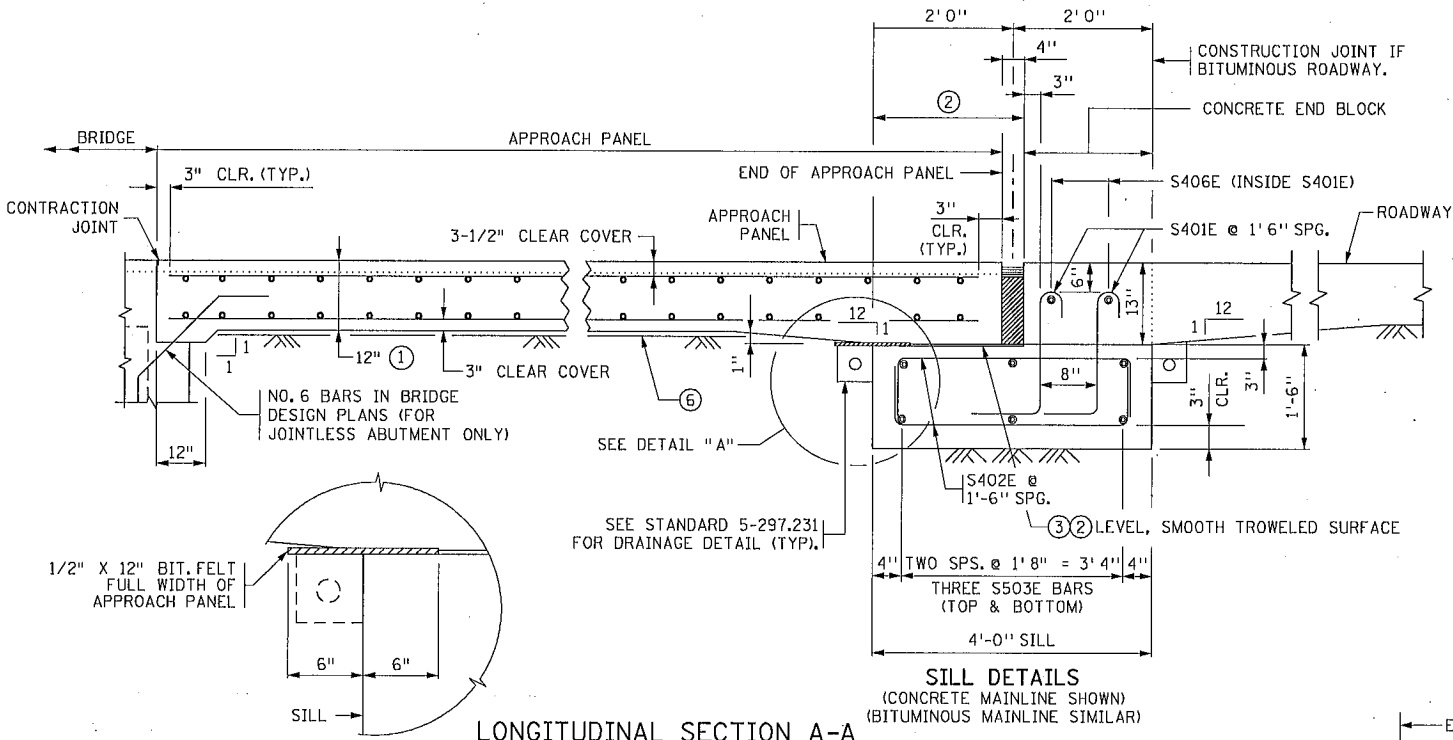
BAR NO.	LENGTH	SHAPE	LOCATION
S401E	3' 2"	[Symbol]	SILL VERTICAL
S402E	5' 6"	[Symbol]	SILL TIE
S503E	"	[Symbol]	SILL HORIZONTAL
S404E	4' 6"	[Symbol]	KEY TIE
S405E	"	[Symbol]	KEY HORIZONTAL
S406E	"	[Symbol]	END BLOCK HORIZONTAL

\* MINIMUM REINFORCEMENT LAP LENGTHS ARE AS FOLLOWS:  
NO. 4 BAR = 1'-8", NO. 5 BAR = 2'-1"

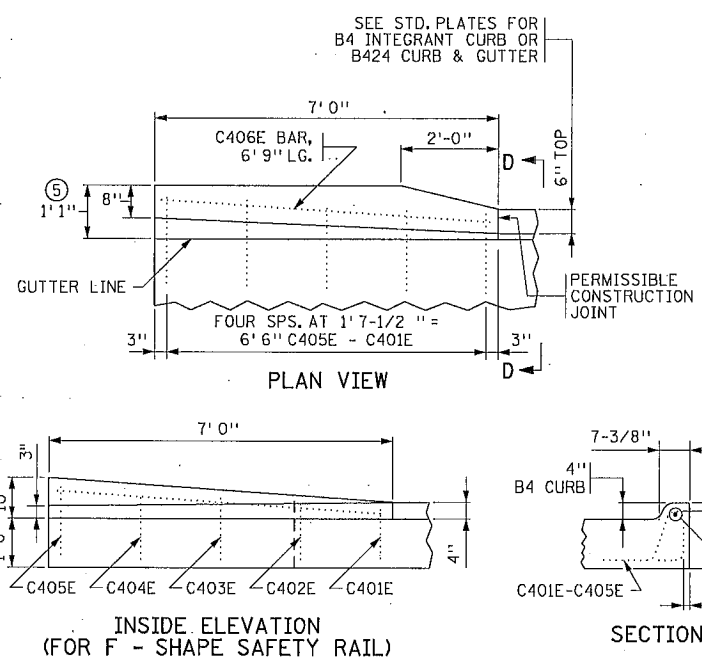
**BILL OF REINFORCEMENT FOR CURB TRANSITION**

CONTRACTOR IS REQUIRED TO COMPLETE THE BILL OF REINFORCEMENT TABLE AND PREPARE SHOP DRAWINGS AND SUBMIT THEM TO THE PROJECT ENGINEER AT LEAST 3 WEEKS BEFORE REBAR FABRICATION.

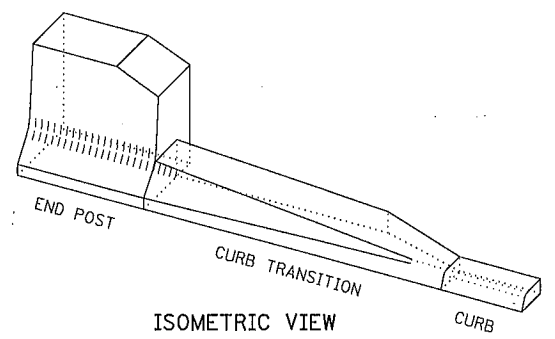
BAR NO.	LENGTH	SHAPE	LOCATION
C401E	3' 6"	[Symbol]	CURB VERTICAL
C402E	3' 9"	[Symbol]	CURB VERTICAL
C403E	4' 0"	[Symbol]	CURB VERTICAL
C404E	4' 3"	[Symbol]	CURB VERTICAL
C405E	4' 5"	[Symbol]	CURB VERTICAL
C406E	6' 9"	[Symbol]	CURB LONGITUDINAL



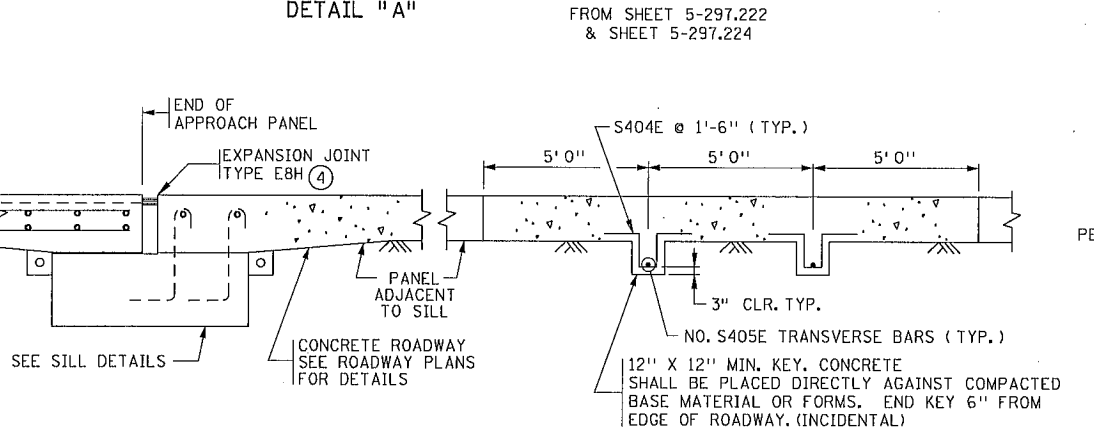
**LONGITUDINAL SECTION A-A**  
FROM SHEET 5-297.222 & SHEET 5-297.224



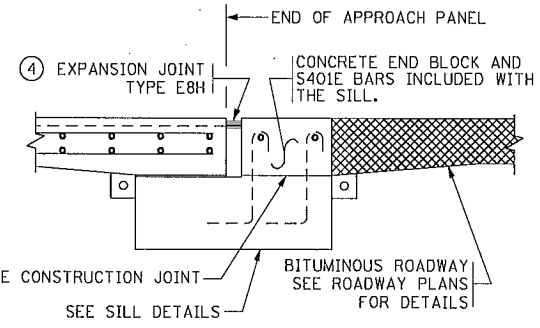
**CURB TRANSITION DETAILS**  
F-SHAPE SAFETY BARRIER TO B4 CURB WITH W-BEAM GUARDRAIL BARRIER



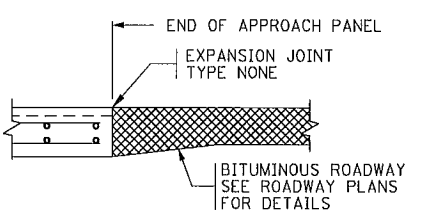
**ISOMETRIC VIEW**



**SILL & CONCRETE MAINLINE**



**SILL & BITUMINOUS MAINLINE**



**BITUMINOUS MAINLINE WITHOUT SILL**  
(NON TRUNK HIGHWAY USE ONLY)

**NOTES:**

- AS PER MNDOT 3301, USE EPOXY COATED GRADE 60 REINFORCEMENT BARS.
- ENSURE THAT SILL DOES NOT INTERFERE WITH GUARDRAIL POST PLACEMENT.
- \* ① APPROACH SLAB THICKNESS IS 12" (12" MONOLITHIC ON APPROACH PANEL BETWEEN BRIDGES 02007 AND 02586. ALL OTHER APPROACH PANELS ARE 10" SLAB + 2" WEARING COURSE). CHECK BRIDGE PLANS FOR CONCRETE WEARING COURSE, WHICH IS INCLUDED IN BRIDGE PLAN QUANTITIES.
- ② PLACE PLASTIC SHEETING (MNDOT 3756) AS APPROVED BY THE ENGINEER TO BREAK BOND. COVER AREA SHOWN IN DETAIL. (SHEETING IS INCLUDED IN THE APPROACH PANEL PAY ITEM).
- ③ REQUIRED CONSTRUCTION JOINT.
- \* ④ SEE STANDARD PLANS 5-297.222 & 5-297.224 FOR TYPE OF EXPANSION JOINT. DETAILS OF EXPANSION JOINT TYPE E8H ARE SHOWN ON STANDARD PLAN 5-297.229.
- ⑤ FROM BACK SIDE OF CURB TRANSITION TO GUTTERLINE.
- ⑥ IF THE APPROACH PANEL IS TIED TO THE BRIDGE ABUTMENT WITH REINFORCEMENT BARS, PLACE 12 MIL POLYETHYLENE SHEETING (OR 2 LAYERS OF 6 MIL) UNDER THE LIMITS OF THE APPROACH PANEL TO ALLOW THE PANEL TO MOVE LONGITUDINALLY ON THE GRADE. SHEETING IS INCLUDED IN THE APPROACH PANEL PAY ITEM.

\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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Print Name: CRAIG J. HASS  
Date: 09-12-13 License #: 45039

STANDARD PLAN SHEET NO. 5-297.227  
STANDARD APPROVED: DECEMBER 20, 2011

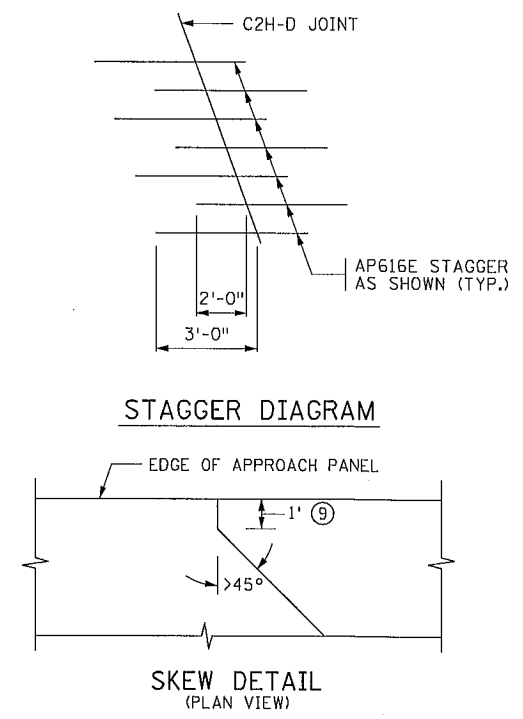
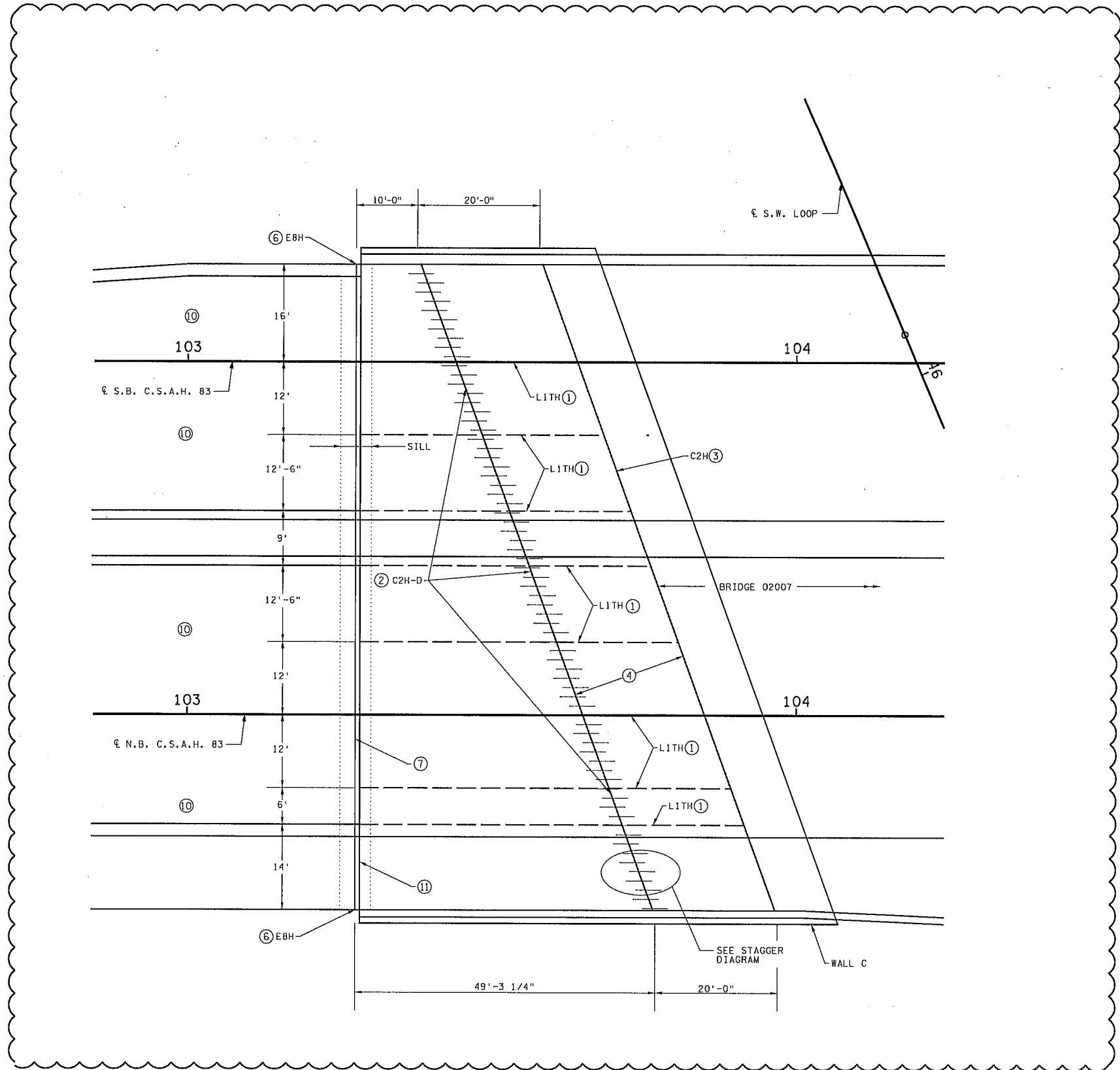
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STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 54 OF 586 SHEETS

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APPROACH PANEL JOINT LAYOUT NOTES:

- ① L1TH LONGITUDINAL JOINT. SEE STANDARD PLAN 5-297.229 FOR REINFORCEMENT LAP LENGTH REQUIREMENTS FOR STAGED CONSTRUCTION.
- ② PERMISSIBLE CONSTRUCTION JOINT. USE JOINT TYPE C2H-D WITH AP616E BARS AT 12-INCH SPACING AT MID DEPTH OF THE SLAB, PARALLEL TO THE CENTERLINE OF THE ROADWAY. AP616E BARS ARE 5'-0" LONG. PLACE THE BAR WITH 2'-0" ON ONE SIDE OF THE JOINT AND 3'-0" ON THE OPPOSITE SIDE OF THE JOINT. ALTERNATE THE 2'-0" AND 3'-0" DIMENSIONS AS SHOWN ON THE PLAN. THE C2H-D JOINT AND AP616E BARS ARE REQUIRED ON ALL PANELS WITH A SKEW OVER 10 DEGREES.
- ③ C2H CONTRACTION JOINT.
- ④ MAXIMUM PANEL LENGTH OF 20'-0" FOR UP TO 40° SKEWS, 15'-0" FOR SKEWS OVER 40°.
- ⑤ ALL JOINTS SHALL BE SAWCUT. SAWCUTS SHALL BE MADE WHILE THE CONCRETE IS STILL GREEN. WHEN A CONCRETE WEARING COURSE IS SPECIFIED, THE JOINTS SHALL BE SAWN THROUGH BOTH THE WEARING COURSE AND THE UNDERLYING APPROACH SLAB IN A SINGLE OPERATION.
- ⑥ E8H JOINT REQUIRED IN CURB ADJACENT TO E8H JOINT. E8H QUANTITY SHALL BE PAID FOR SEPARATELY, MEASURED FROM BACK OF CURB TO BACK OF CURB.
- \* ⑦ SEE STANDARD PLANS 5-297.222 OR 5-297.224 FOR TYPE OF EXPANSION JOINT.
- \* ⑧ SEE STANDARD PLANS 5-297.229 OR 5-297.231 FOR JOINT DETAIL FOR CONCRETE BARRIER ON WINGWALL.
- ⑨ WHEN SKEW IS OVER 45°, THE JOINT SHALL BE PERPENDICULAR TO GUTTER FOR 1' (TYP).
- ⑩ SEE GRADING PLAN FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.
- \* ⑪ SIDEWALK COVER PLATE.



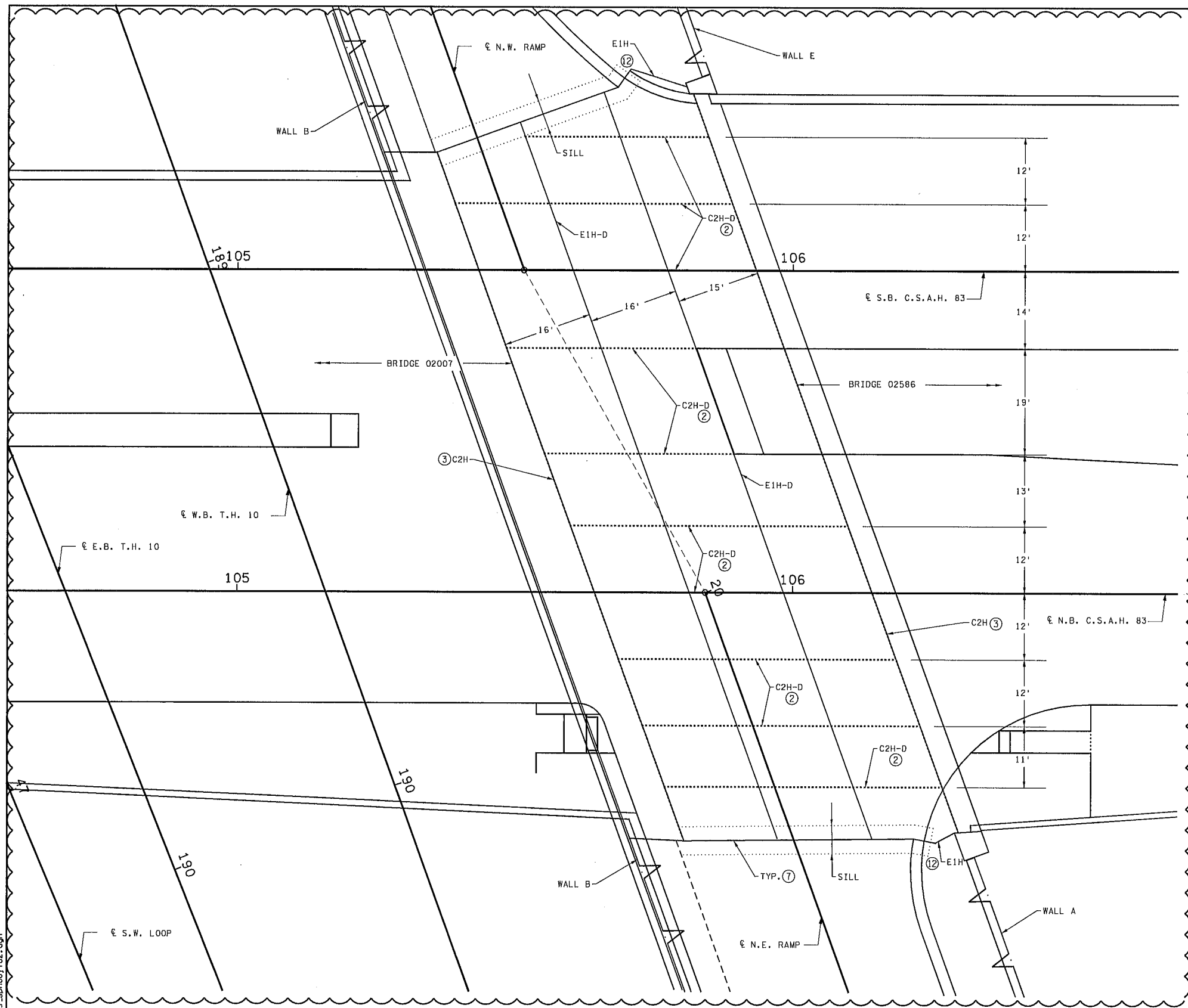
\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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 Date: 09-12-14 License #: 45039

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 STANDARD PLAN SHEET NO. 5-297.228  
 STANDARD APPROVED: MARCH 23, 2011

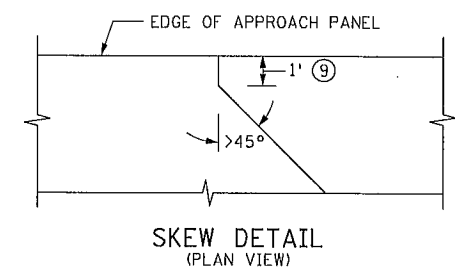
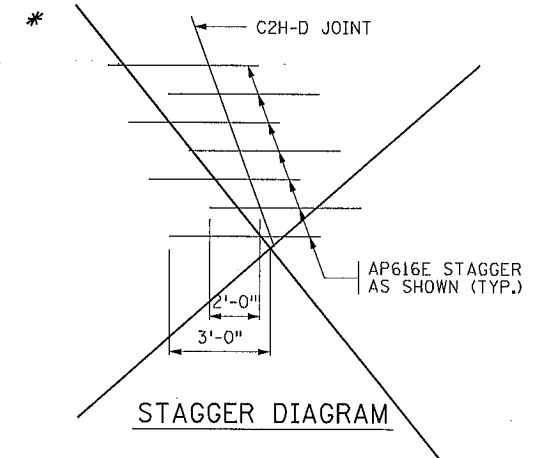
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 BRIDGE NO. 02007

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**APPROACH PANEL JOINT LAYOUT NOTES:**

- \* ① LITH LONGITUDINAL JOINT. SEE STANDARD PLAN 5-297.229 FOR REINFORCEMENT LAP LENGTH REQUIREMENTS FOR STAGED CONSTRUCTION.
- ② PERMISSIBLE CONSTRUCTION JOINT. USE JOINT TYPE C2H-D WITH AP616E BARS AT 12-INCH SPACING AT MID DEPTH OF THE SLAB, PARALLEL TO THE CENTERLINE OF THE ROADWAY. AP616E BARS ARE 5'-0" LONG, PLACE THE BAR WITH 2'-0" ON ONE SIDE OF THE JOINT AND 3'-0" ON THE OPPOSITE SIDE OF THE JOINT. ALTERNATE THE 2'-0" AND 3'-0" DIMENSIONS AS SHOWN ON THE PLAN. THE C2H-D JOINT AND AP616E BARS ARE REQUIRED ON ALL PANELS WITH A SKEW OVER 10 DEGREES.
- ③ C2H CONTRACTION JOINT.
- \* ④ MAXIMUM PANEL LENGTH OF 20'-0" FOR UP TO 40° SKEWS, 15'-0" FOR SKEWS OVER 40°.
- ⑤ ALL JOINTS SHALL BE SAWCUT. SAWCUTS SHALL BE MADE WHILE THE CONCRETE IS STILL GREEN. WHEN A CONCRETE WEARING COURSE IS SPECIFIED, THE JOINTS SHALL BE SAWN THROUGH BOTH THE WEARING COURSE AND THE UNDERLYING APPROACH SLAB IN A SINGLE OPERATION.
- \* ⑥ EBH JOINT REQUIRED IN CURB ADJACENT TO EBH JOINT. EBH QUANTITY SHALL BE PAID FOR SEPARATELY, MEASURED FROM BACK OF CURB TO BACK OF CURB.
- \* ⑦ SEE STANDARD PLANS 5-297.222 OR 5-297.224 FOR TYPE OF EXPANSION JOINT.
- \* ⑧ SEE STANDARD PLANS 5-297.229 OR 5-297.231 FOR JOINT DETAIL FOR CONCRETE BARRIER ON WINGWALL.
- ⑨ WHEN SKEW IS OVER 45°, THE JOINT SHALL BE PERPENDICULAR TO GUTTER FOR 1' (TYP).
- ⑩ SEE GRADING PLAN FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.
- \* ⑫ SILL ENDS AT BACK OF CURB.



\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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 STANDARD APPROVED: MARCH 23, 2011

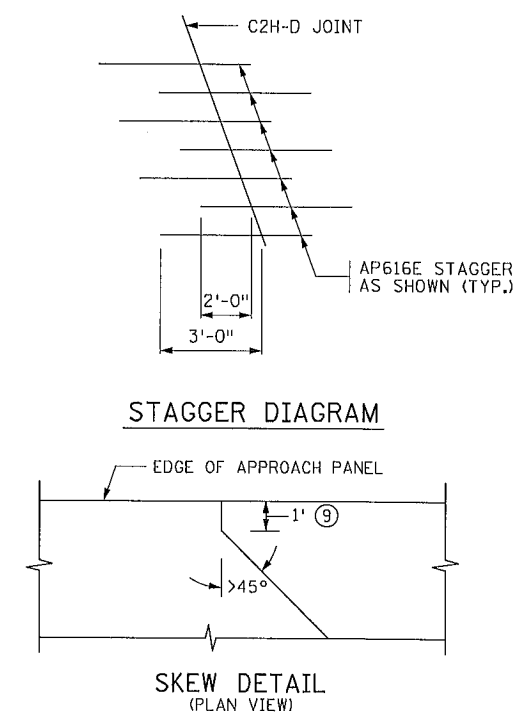
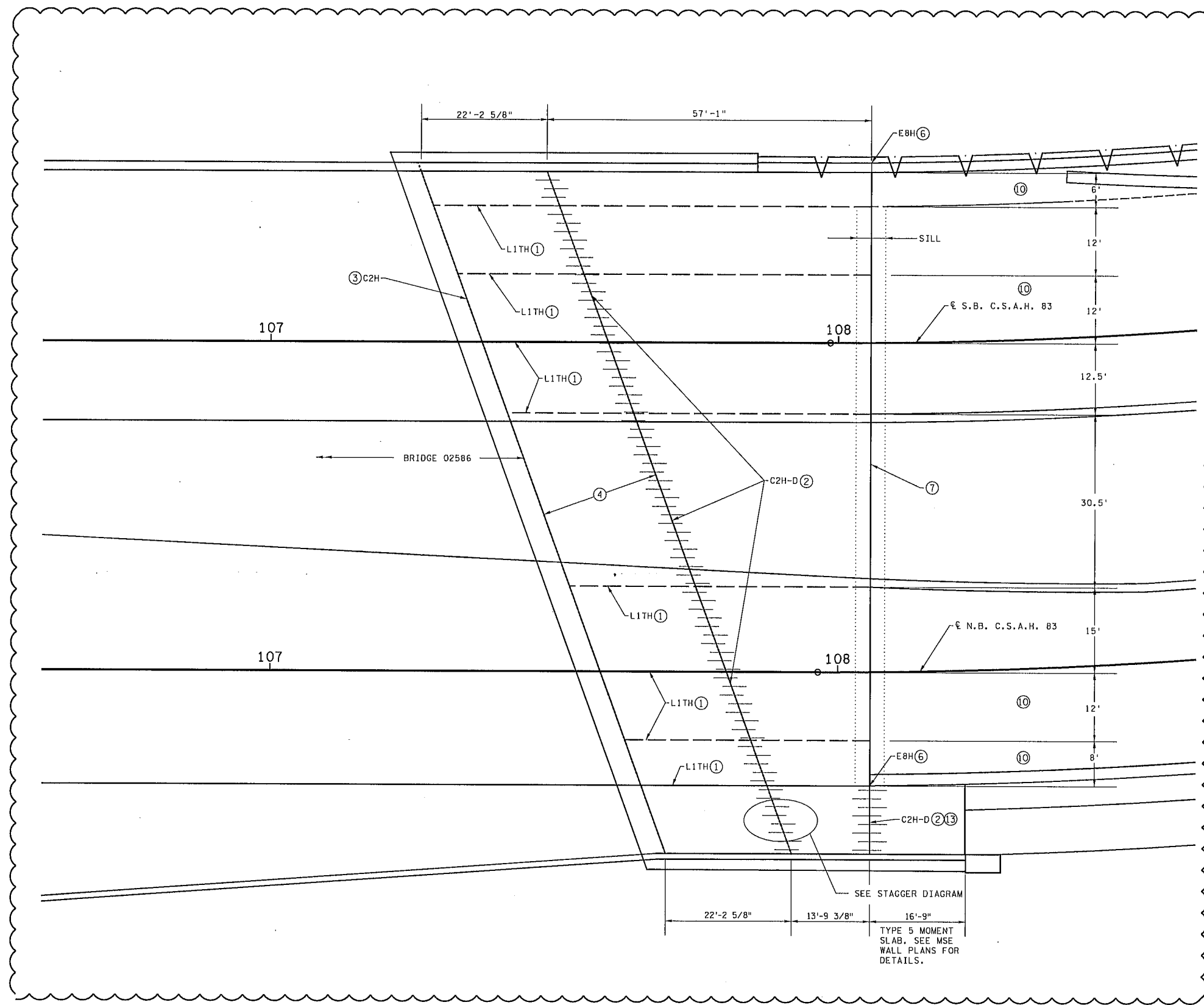
TITLE: BRIDGE APPROACH PANEL JOINT LAYOUT

BRIDGE NO. 02007  
 BRIDGE NO. 02586

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APPROACH PANEL JOINT LAYOUT NOTES:

- ① L1TH LONGITUDINAL JOINT. SEE STANDARD PLAN 5-297.229 FOR REINFORCEMENT LAP LENGTH REQUIREMENTS FOR STAGED CONSTRUCTION.
- ② PERMISSIBLE CONSTRUCTION JOINT. USE JOINT TYPE C2H-D WITH AP616E BARS AT 12-INCH SPACING AT MID DEPTH OF THE SLAB, PARALLEL TO THE CENTERLINE OF THE ROADWAY. AP616E BARS ARE 5'-0" LONG. PLACE THE BAR WITH 2'-0" ON ONE SIDE OF THE JOINT AND 3'-0" ON THE OPPOSITE SIDE OF THE JOINT. ALTERNATE THE 2'-0" AND 3'-0" DIMENSIONS AS SHOWN ON THE PLAN. THE C2H-D JOINT AND AP616E BARS ARE REQUIRED ON ALL PANELS WITH A SKEW OVER 10 DEGREES.
- ③ C2H CONTRACTION JOINT.
- \* ④ MAXIMUM PANEL LENGTH OF 20'-0" FOR UP TO 40° SKEWS, 15'-0" FOR SKEWS OVER 40°.
- ⑤ ALL JOINTS SHALL BE SAWCUT. SAWCUTS SHALL BE MADE WHILE THE CONCRETE IS STILL GREEN. WHEN A CONCRETE WEARING COURSE IS SPECIFIED, THE JOINTS SHALL BE SAWN THROUGH BOTH THE WEARING COURSE AND THE UNDERLYING APPROACH SLAB IN A SINGLE OPERATION.
- ⑥ E8H JOINT REQUIRED IN CURB ADJACENT TO E8H JOINT. E8H QUANTITY SHALL BE PAID FOR SEPARATELY, MEASURED FROM BACK OF CURB TO BACK OF CURB.
- \* ⑦ SEE STANDARD PLANS 5-297.222 OR 5-297.224 FOR TYPE OF EXPANSION JOINT.
- \* ⑩ SEE STANDARD PLANS 5-297.229 OR 5-297.231 FOR JOINT DETAIL FOR CONCRETE BARRIER ON WINGWALL.
- ⑨ WHEN SKEW IS OVER 45°, THE JOINT SHALL BE PERPENDICULAR TO GUTTER FOR 1' (TYP).
- ⑩ SEE GRADING PLAN FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.
- \* ⑬ DOWELS TO TYPE 5 MOMENT SLAB ARE INCIDENTAL.



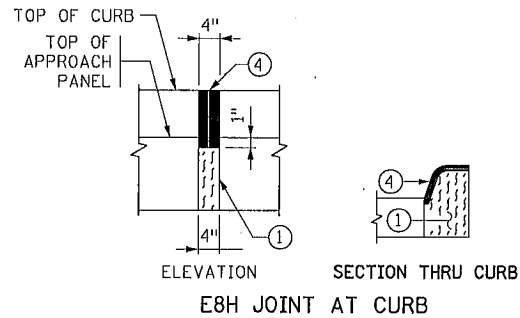
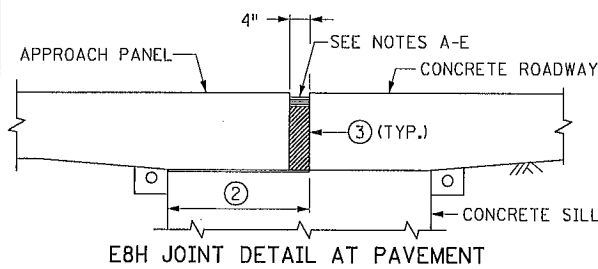
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\* DENOTES MODIFICATIONS FROM STANDARD PLAN

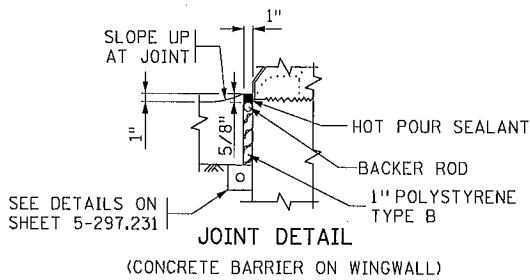
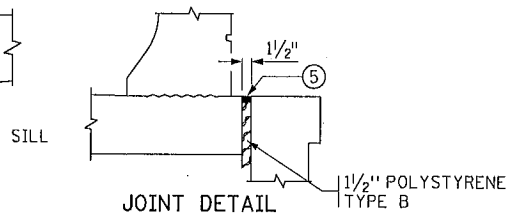
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MODIFIED	TITLE:
STANDARD PLAN SHEET NO. 5-297.228	BRIDGE APPROACH PANEL JOINT LAYOUT
STANDARD APPROVED: MARCH 23, 2011	

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## EXPANSION JOINTS



### E8H PRESSURE RELIEF JOINT MATERIAL INSTALLATION INSTRUCTIONS:

SEE MNDOT APPROVED/QUALIFIED PRODUCTS LIST.

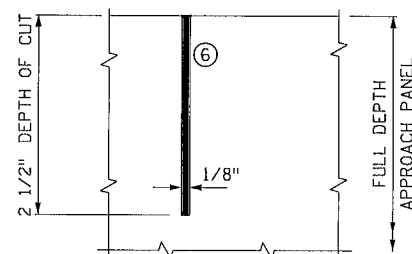
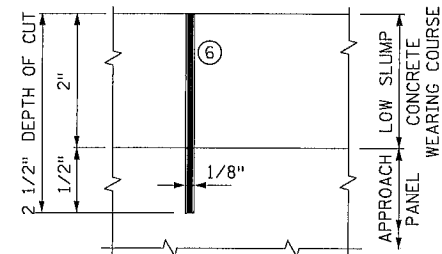
FURNISH AND INSTALL JOINT MATERIAL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE FOLLOWING:

- EXPANSION JOINT FILLER MATERIALS USED FOR A 4 INCH PRESSURE RELIEF JOINT CONSISTS OF A PREFORMED FOAM PRODUCT HAVING MINIMUM DIMENSIONS OF 4.5 INCHES IN WIDTH (MAY BE LAMINATED) AND 8 INCHES IN DEPTH, AND A MINIMUM LENGTH OF 10 FEET. WHEN THE CONCRETE DEPTH IS GREATER THAN THE DEPTH OF THE PRESSURE RELIEF MATERIAL, FILL THE VOID BELOW THE MATERIAL WITH POLYSTYRENE. FURNISH AND INSTALL THE JOINT MATERIAL UNDER COMPRESSION WITH A LUBRICANT ADHESIVE APPLIED TO THE CONCRETE CONTACT SURFACES.
- SAW OR FORM THE JOINTS 4 INCHES WIDE BY THE FULL-DEPTH OF THE PANEL. INSPECT TO ASSURE THAT THE INSIDE WALLS OF THE JOINT HAVE BEEN SANDBLASTED, ARE DRY, SMOOTH AND FREE OF DEBRIS AND LOOSE PARTICLES. APPLY TAPE TO THE TOP 1 INCH OF THE INSIDE WALLS TO PREVENT THE LUBRICANT ADHESIVE FROM CONTAMINATING THE CONCRETE BONDING SURFACES OF THE SUBSEQUENTLY PLACED HOT POUR JOINT SEALER.
- PAINT THE INSIDE WALLS OF THE JOINT WITH LUBRICANT ADHESIVE AT THE RATE OF 1 GALLON PER 50 LINEAL FEET OF JOINT.
- PINCH THE BOTTOM OF THE MATERIAL TOGETHER AND PUSH IT DOWN INTO THE JOINT. WALK THE MATERIAL DOWN INTO THE JOINT; USE A SLEDGEHAMMER AND A 2 X 4 IF NECESSARY. APPLY LUBRICANT ADHESIVE TO THE ENDS OF THE PREFORMED FOAM MATERIAL WHEN BUTTING TWO PIECES TOGETHER.
- FURNISH AND INSTALL THE FOAM RELIEF JOINT MATERIAL TO A DEPTH OF APPROXIMATELY 7/8 INCH BELOW THE FINISHED CONCRETE SURFACE. AFTER INSTALLATION, REMOVE THE TAPE AND FILL THE VOID ON TOP OF THE FOAM MATERIAL WITH APPROXIMATELY 1/2 INCH OF HOT POUR JOINT SEALER (MNDOT 3723 OR 3725) TO A LEVEL OF 3/8 INCH +/- 1/4 INCH BELOW THE FINISHED CONCRETE SURFACE. THE HOT POUR JOINT SEALER SHOULD ONLY SLIGHTLY MELT INTO THE FOAM JOINT MATERIAL (TO PREVENT EXCESSIVE MELTING OF THE JOINT MATERIAL, PLACE THE HOT POUR SEALER AT THE LOWER END OF THE TEMPERATURE SPECIFICATION). CHECK FOR CORRECT TEMPERATURE BY PLACING HOT POUR SEALER ON A SAMPLE OF WASTE FOAM MATERIAL.

### EXPANSION JOINT NOTES:

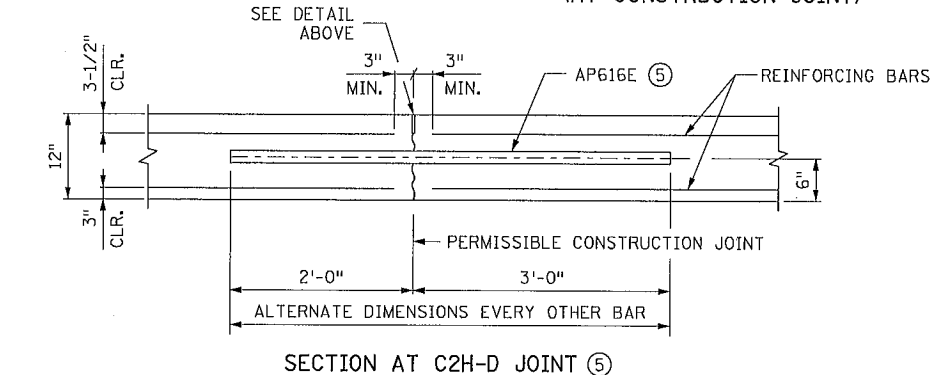
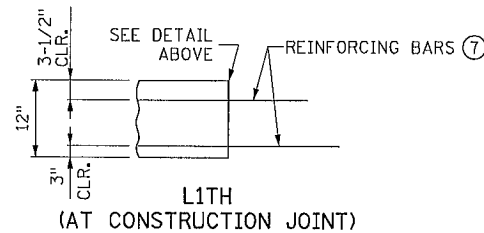
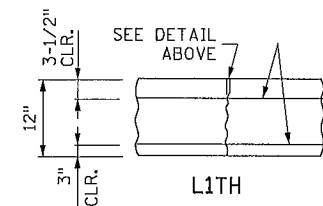
- PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
- PLACE PLASTIC SHEETING SPEC. 3756 AS APPROVED BY THE ENGINEER TO BREAK BOND. COVER AREA SHOWN IN DETAIL. SEE SILL DETAILS ON STANDARD PLAN 5-297.227.
- THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING PRIOR TO SEALING THE JOINT.
- HOT POUR JOINT SEALER SPEC. 3725. TOP OF SEALER FLUSH TO 1/8 INCH BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E8H JOINTS FLUSH WITH SURFACE (+ 1/8 INCH OR - 1/8 INCH).
- SEAL WITH SELF-LEVELING SILICONE PER MNDOT 3722.

## JOINT DETAILS



C2H & L1TH WITH CONCRETE WEARING COURSE (6)  
(SAWED & SEALED PER SPEC. 3725)

C2H & L1TH WITHOUT CONCRETE WEARING COURSE (6)  
(SAWED & SEALED PER SPEC. 3725)



### JOINT NOTES:

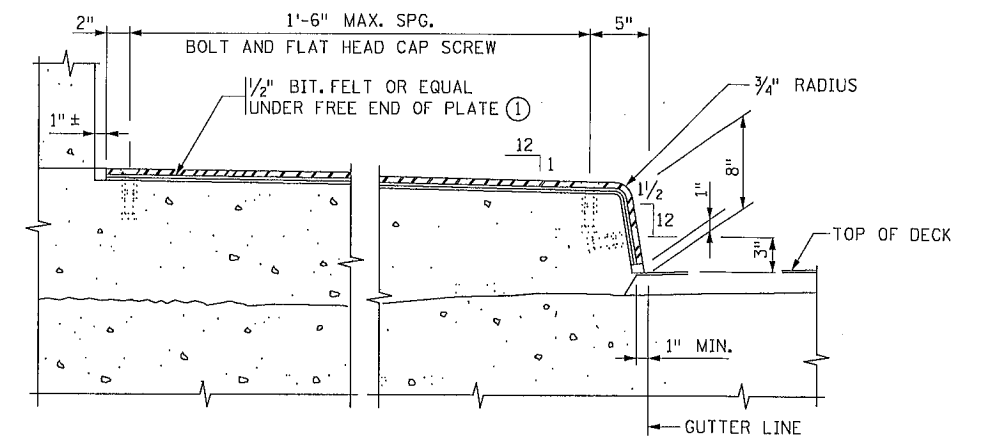
- PERMISSIBLE CONSTRUCTION JOINT. AP616E BARS AT 12-INCH SPACING AT MID DEPTH OF SLAB, PARALLEL TO THE CENTERLINE OF THE ROADWAY. AP616E BARS ARE 5'-0" LONG. PLACE THE BAR WITH 2'-0" ON ONE SIDE OF THE JOINT AND 3'-0" ON THE OPPOSITE SIDE OF THE JOINT. ALTERNATE THE 2'-0" AND 3'-0" DIMENSION AS SHOWN ON THE PLAN.
- CLEAN AND DRY FULLY CURED JOINT FACES BY SANDBLASTING PRIOR TO SEALING THE JOINT.
- WHEN CONSTRUCTING A L1TH JOINT UNDER STAGED CONSTRUCTION, EXTEND NO. 4 BARS 1'-8" AND NO. 5 BARS 2'-1" PAST THE EDGE OF THE FIRST CONCRETE POUR. CONSTRUCT L1TH JOINT ACCORDING TO DETAIL SHOWN AFTER ADJACENT POUR IS COMPLETE.

## SIDEWALK COVER PLATE

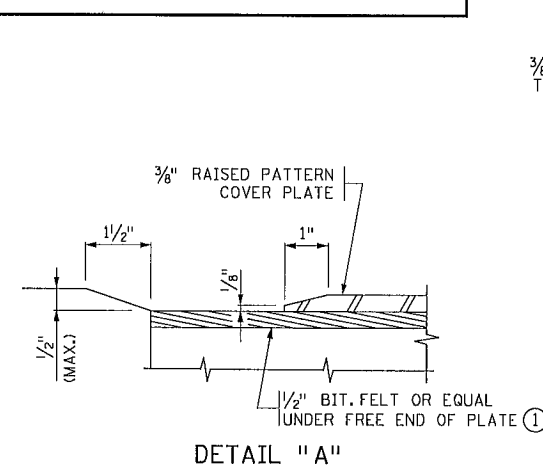
### GENERAL NOTES:

- GALVANIZE STRUCTURAL STEEL AFTER FABRICATION PER Mn/DOT SPEC. 3394
- GALVANIZE FASTENERS PER Mn/DOT SPEC. 3392.
- STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.
- SHOP DRAWING SUBMITTALS REQUIRED PER Mn/DOT SPEC. 2471.
- CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.
- FURNISHING AND INSTALLING SIDEWALK COVER PLATE IS INCIDENTAL.

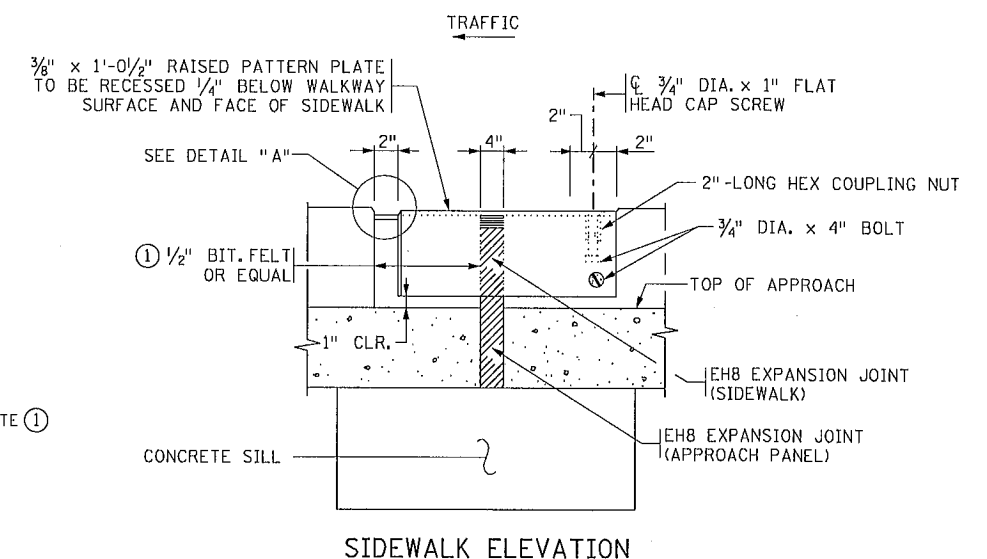
- USE LARGEST SINGLE PIECE POSSIBLE. USE OF SMALL PIECES OR SCRAPS SECURED TOGETHER IS PROHIBITED.



SECTION THROUGH SIDEWALK

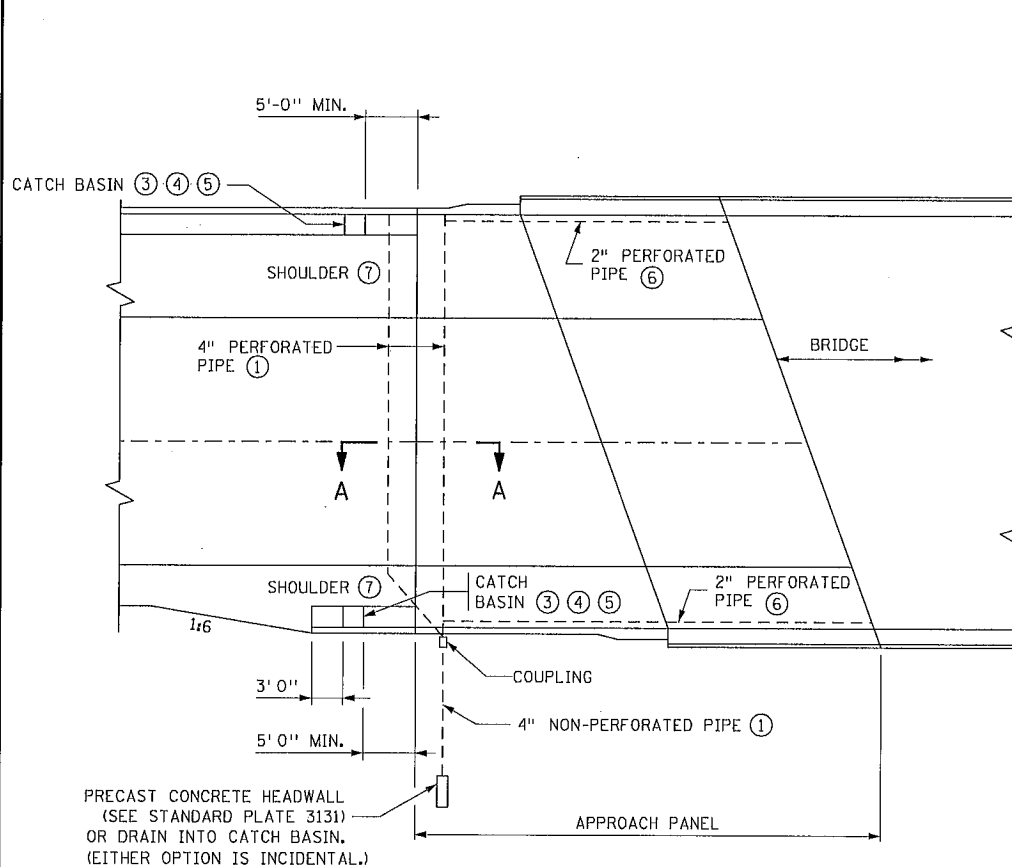


DETAIL "A"

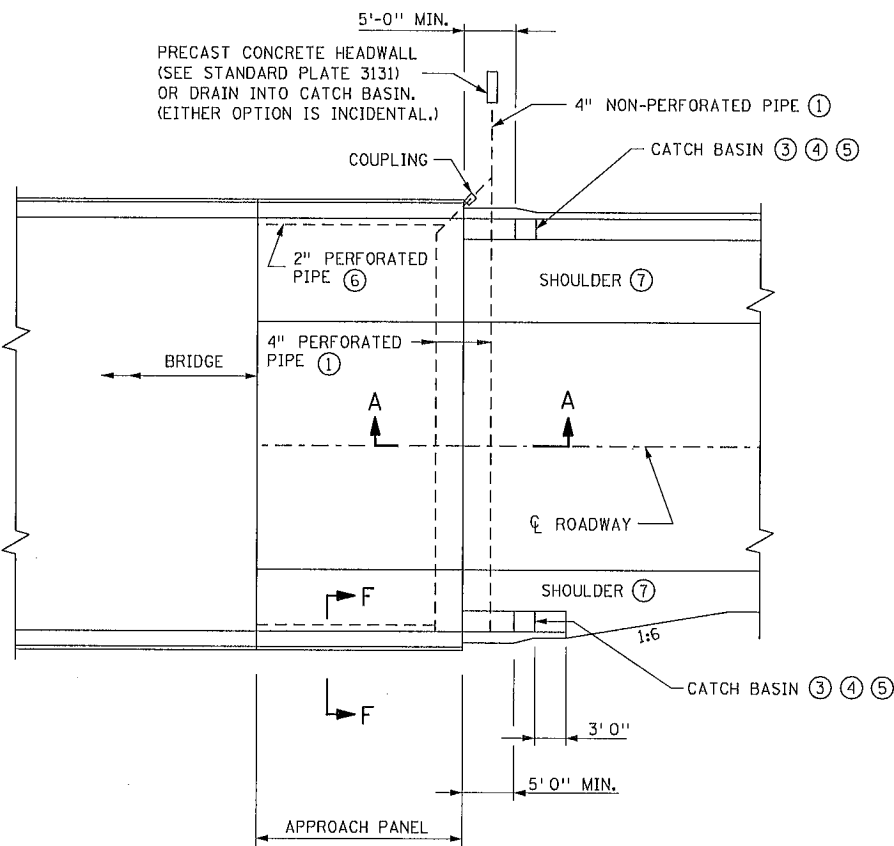


SIDEWALK ELEVATION

STANDARD PLAN SHEET NO. 5-297.229	TITLE: BRIDGE APPROACH PANEL JOINT DETAILS
STANDARD APPROVED: DECEMBER 20, 2011	
REVISION DATE 3-22-2013	STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 58 OF 586 SHEETS



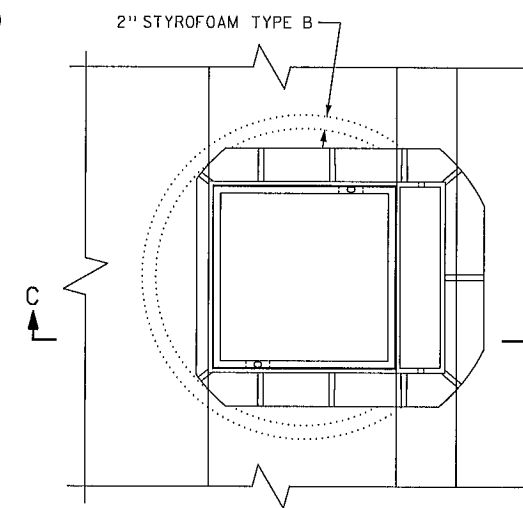
DIVIDED-URBAN ROADWAY PLAN  
OVER 10° - SKEWS



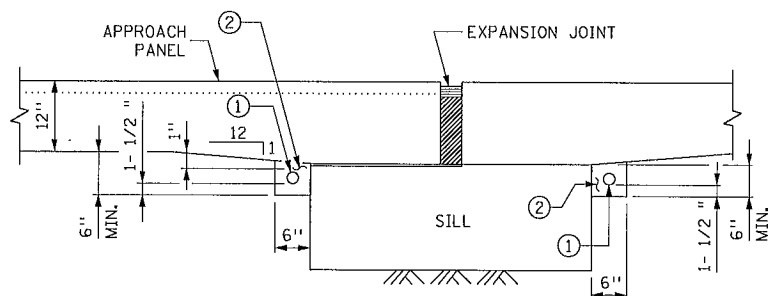
DIVIDED-URBAN ROADWAY PLAN  
SQUARE TO 10° SKEWS

NOTES:

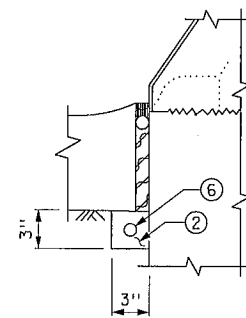
- ① 4-INCH NOMINAL DIAMETER THERMOPLASTIC PIPE, AS PER ASTM D1785M, SCHEDULE 40. SLOPE PIPE TO DITCH. WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER SPEC. 3733. 1/8 INCH PER 12 INCH MINIMUM SLOPE. FURNISHING AND INSTALLING THE DRAIN SYSTEM IS INCIDENTAL.
- ② BACKFILL WITH FINE AGGREGATE (MNDOT 3149) MODIFIED TO 0-3% PASSING A NO. 200 SIEVE (INCIDENTAL).
- ③ SEE ROADWAY PLAN FOR ADDITIONAL CATCH BASIN DETAILS.
- ④ LOCATE BETWEEN GUARDRAIL POST OR AS DETERMINED BY THE DESIGNER.
- ⑤ REFER TO THE DRAINAGE PLAN TO DETERMINE WHETHER A FLUME OR A CATCH BASIN REQUIRED.
- ⑥ 2-INCH NOMINAL DIAMETER THERMOPLASTIC PIPE, AS PER ASTM D1785M, SCHEDULE 40. SLOPE PIPE TO DITCH. WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER SPEC. 3733. 1/8 INCH PER 12 INCH MINIMUM SLOPE. FURNISHING AND INSTALLING THE DRAIN SYSTEM IS INCIDENTAL.
- ⑦ SEE GRADING PLANS FOR PAVEMENT AND SHOULDER WIDTHS AND CONFIGURATION.



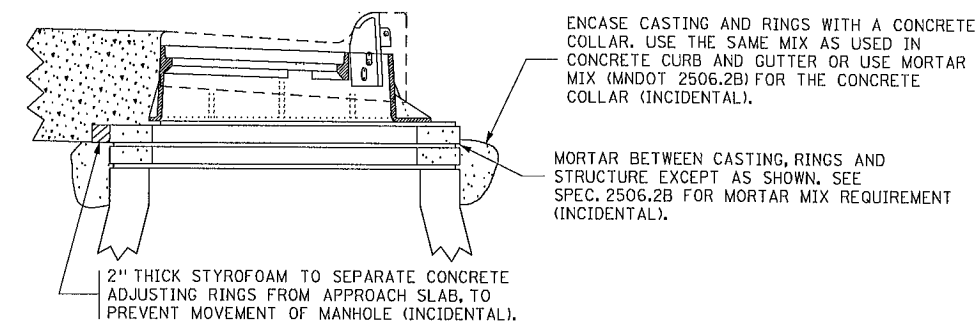
PLAN VIEW OF C.B. CASTING  
(GRATE NOT SHOWN)



SECTION A-A  
DRAINAGE AT EXPANSION JOINT DETAIL



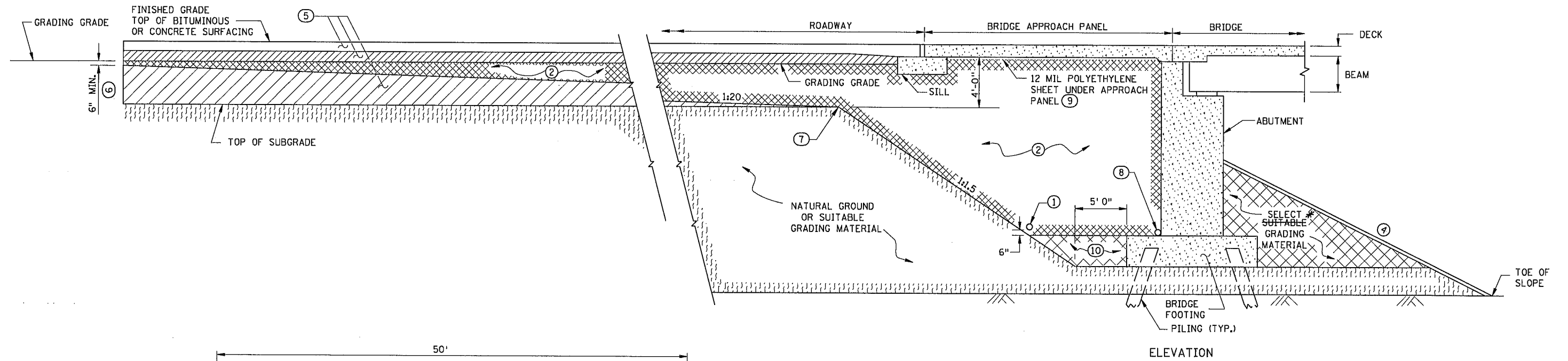
SECTION F-F  
DRAINAGE AT PANEL EDGE OF JOINT  
(THIS DETAIL IS USED IF THE CONCRETE BARRIER IS MOUNTED ON THE WINGWALL. DO NOT USE THIS DETAIL IF THE BARRIER IS MOUNTED ON THE APPROACH PANEL.)



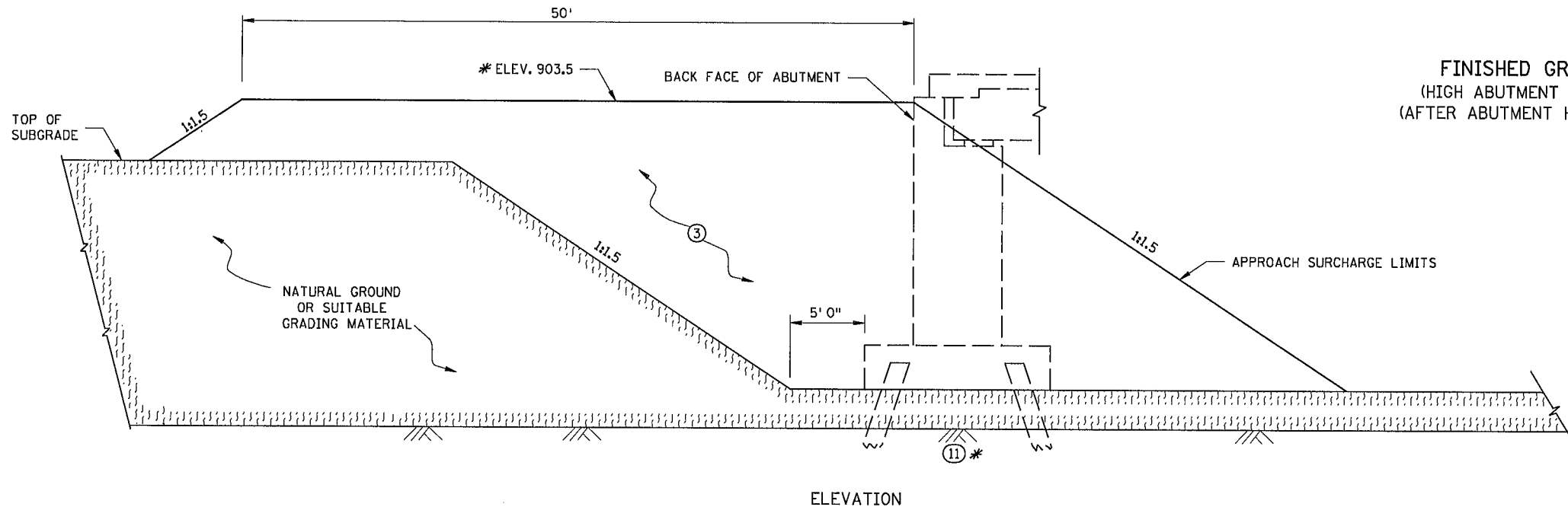
SECTION C-C

STANDARD PLAN SHEET NO. 5-297.231	TITLE: BRIDGE APPROACH PANEL DRAINAGE DETAILS
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 59 OF 586 SHEETS	

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ELEVATION  
**FINISHED GRADING SECTION**  
 (HIGH ABUTMENT ON PILING SHOWN)  
 (AFTER ABUTMENT HAS BEEN CONSTRUCTED)



ELEVATION  
**ROUGH GRADING SECTION**  
 (PRIOR TO ABUTMENT CONSTRUCTION)

**NOTES:**

- ① SUBSURFACE PIPE DRAIN. SEE GRADING PLAN FOR DETAILS. FURNISH AND INSTALL IF SHOWN IN GRADING PLAN.
- \* ② QUANTITY OF ~~SELECT GRANULAR MATERIAL MODIFIED 10%~~ <sup>STRUCTURAL BACKFILL</sup> IS BASED ON DIMENSIONS SHOWN, AND PAYMENT IS BASED ON THIS QUANTITY. ~~SELECT GRANULAR MATERIAL MODIFIED 10% SHALL COMPLY WITH SPEC. 3149.2D2, MODIFIED TO 10% OR LESS PASSING THE NUMBER 200 SIEVE. SEE GRADING PLAN FOR QUANTITY. IF THE CONTRACTOR CHOOSES TO INCREASE DIMENSIONS IN ORDER TO FACILITATE CONSTRUCTION OPERATIONS, ANY QUANTITY INCREASES SHALL BE CONSIDERED INCIDENTAL.~~
- \* ③ PLACE ABUTMENT APPROACH SURCHARGE MATERIAL PRIOR TO ABUTMENT CONSTRUCTION. AFTER COMPLETION OF SURCHARGE WAITING PERIOD, REMOVE SURCHARGE AND EXISTING NATURAL GROUND OR SUITABLE GRADING MATERIAL TO THE LIMITS SHOWN IN "ROUGH GRADING SECTION" ABOVE, PRIOR TO ABUTMENT CONSTRUCTION. SEE BRIDGE PLANS AND SPECIAL PROVISIONS FOR ABUTMENT APPROACH SURCHARGE REQUIREMENT ~~AND PAYMENTS.~~
- ④ SEE BRIDGE PLANS FOR SLOPE AND SLOPE PROTECTION.
- ⑤ SEE GRADING PLANS FOR TYPE OF MATERIAL.
- ⑥ GRADING TO BE SQUARED OFF ON SKEWED BRIDGES.
- ⑦ TOP OF 1:1.5 SLOPE (FORMS A LINE PARALLEL TO END OF BRIDGE).

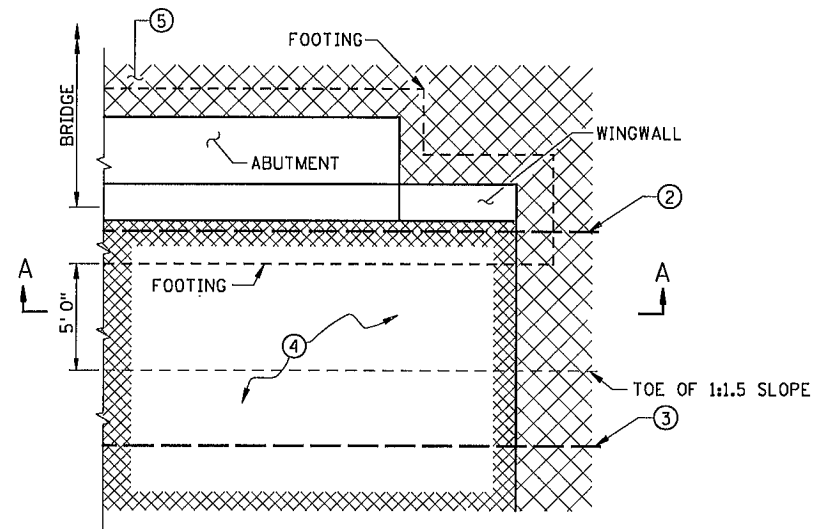
- ⑧ SUBSURFACE PIPE DRAIN. FURNISH AND INSTALL AT TOP OF BRIDGE FOOTING IF BRIDGE DETAIL B910 IS INCLUDED ON BRIDGE PLAN.
- ⑨ IF THE APPROACH PANEL IS TIED TO THE ABUTMENT WITH REINFORCEMENT BARS, PLACE 12 MIL POLYETHYLENE SHEETING (OR TWO LAYERS OF OF 6 MIL) UNDER THE LIMITS OF THE APPROACH PANEL TO ALLOW THE PANEL TO MOVE LONGITUDINALLY ON THE GRADE. SHEETING IS INCIDENTAL.
- \* ⑩ ~~SUITABLE GRADING MATERIAL SHALL HAVE SUITABLE MOISTURE CONTENT DURING PLACEMENT AND SHALL BE COMPACTED PER SPEC. 2105. SELECT 2106. STRUCTURAL BACKFILL GRANULAR MATERIAL MODIFIED 10% MAY BE USED IN LIEU OF SUITABLE GRADING MATERIAL.~~
- \* ⑪ CONSTRUCT FOOTING SUBCUT PRIOR TO ABUTMENT SURCHARGE. SEE BRIDGE PLANS FOR ABUTMENT SUBCUT INFORMATION.

\* DENOTES MODIFICATIONS FROM STANDARD PLAN

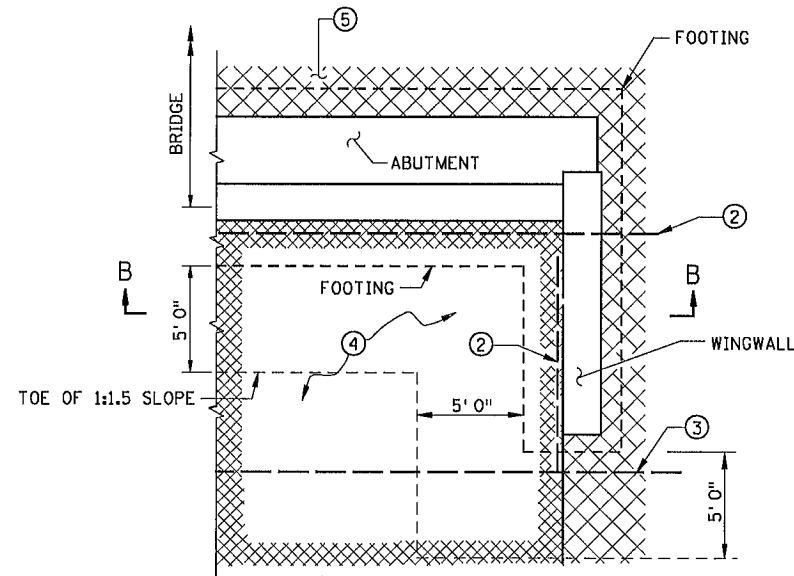
\* BRIDGE NO. 02586 EAST ABUTMENT

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.		MODIFIED	TITLE:
Print Name: CRAIG J. HASS	STANDARD SHEET NO. 5-297-233 (1 OF 2)	STANDARD APPROVED: AUGUST 1, 2011	BRIDGE ABUTMENT APPROACH TREATMENT FOR ABUTMENT ON FOOTING
Date: 09-12-10 License #: 45039	STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 60 OF 586 SHEETS		

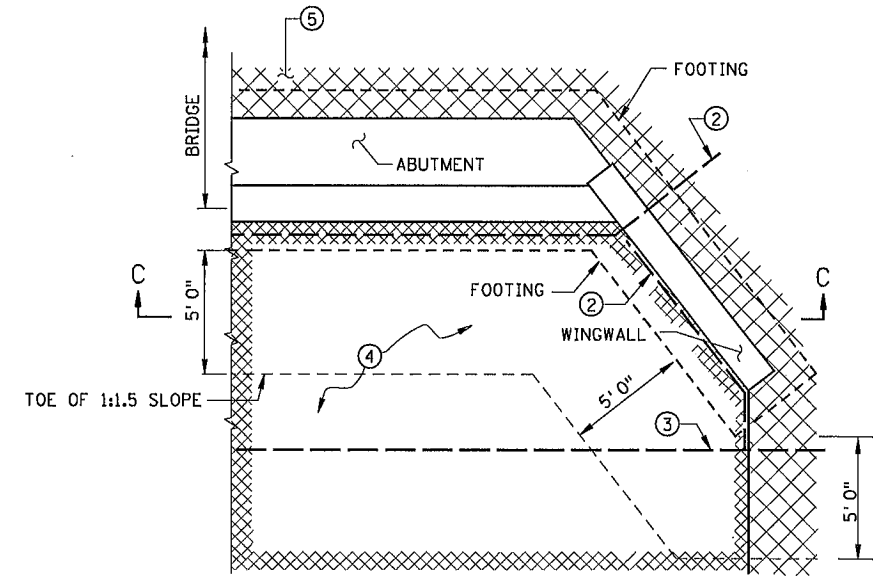
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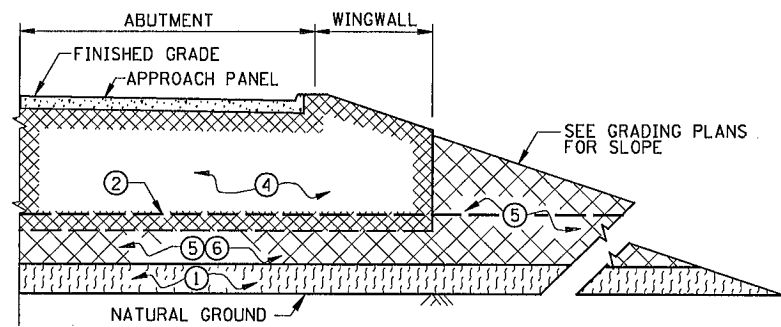
PARTIAL PLAN VIEW AT ABUTMENT  
(WINGWALL AT 180°) (FINISHED GRADING)



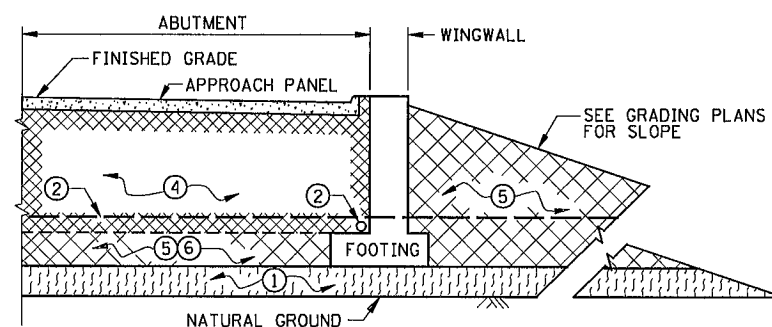
PARTIAL PLAN VIEW AT ABUTMENT  
(WINGWALL AT 90°) (FINISHED GRADING)



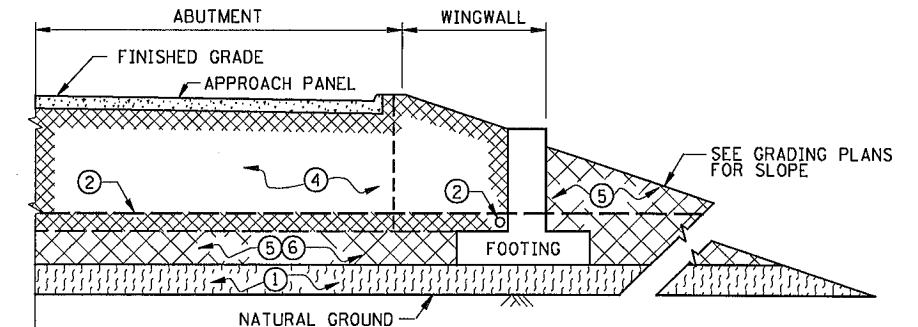
PARTIAL PLAN VIEW AT ABUTMENT  
(WINGWALL AT ANY OTHER ANGLE) (FINISHED GRADING)



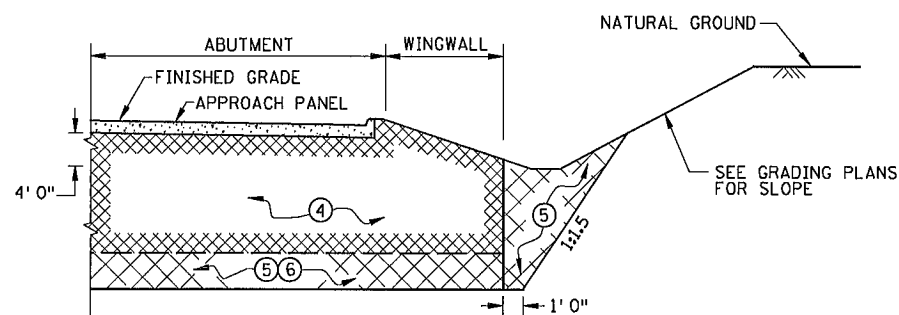
FINISHED GRADING SECTION A-A  
(FILL SECTION)



FINISHED GRADING SECTION B-B  
(FILL SECTION)



FINISHED GRADING SECTION C-C  
(FILL SECTION)



FINISHED GRADING SECTION A-A  
(CUT SECTION)  
(BRIDGE DETAIL B910 DRAIN NOT SHOWN)

NOTES:

- ① NATURAL GROUND OR SUITABLE GRADING MATERIAL.
- ② SUBSURFACE PIPE DRAIN, FURNISH AND INSTALL AT TOP OF BRIDGE FOOTING IF BRIDGE DETAIL B910 IS INCLUDED ON BRIDGE PLAN.
- ③ SUBSURFACE PIPE DRAIN. SEE GRADING PLAN FOR DETAILS. FURNISH AND INSTALL IF SHOWN IN GRADING PLAN.

STRUCTURAL BACKFILL 3149.2D2  
 \* ④ ~~SELECT GRANULAR MATERIAL MODIFIED 10% SHALL COMPLY WITH SPEC. 3149.2B2, MODIFIED TO 10% OR LESS PASSING THE NUMBER 200 SIEVE. QUANTITY OF SELECT GRANULAR MATERIAL MODIFIED 10% IS BASED ON DIMENSIONS SHOWN, AND PAYMENT IS BASED ON THIS QUANTITY. SEE GRADING PLAN FOR QUANTITY. IF THE CONTRACTOR CHOOSES TO INCREASE DIMENSIONS IN ORDER TO FACILITATE CONSTRUCTION OPERATIONS, ANY QUANTITY INCREASES SHALL BE CONSIDERED INCIDENTAL.~~  
 \* ⑤ ~~SUITABLE GRADING MATERIAL.~~  
 \* ⑥ MATERIAL SHALL HAVE SUITABLE MOISTURE CONTENT DURING PLACEMENT AND SHALL BE COMPACTED PER SPEC. 2105. ~~SELECT GRANULAR MATERIAL MODIFIED 10% MAY BE USED IN LIEU OF SUITABLE GRADING MATERIAL.~~ STRUCTURAL BACKFILL

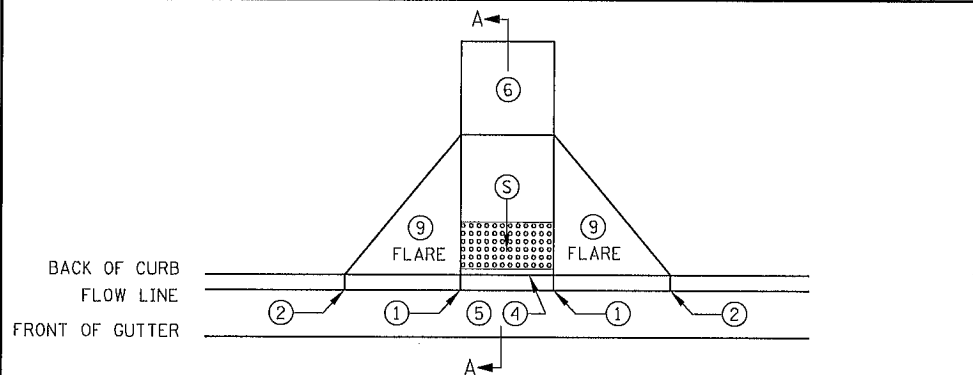
\* DENOTES MODIFICATIONS FROM STANDARD PLAN

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: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

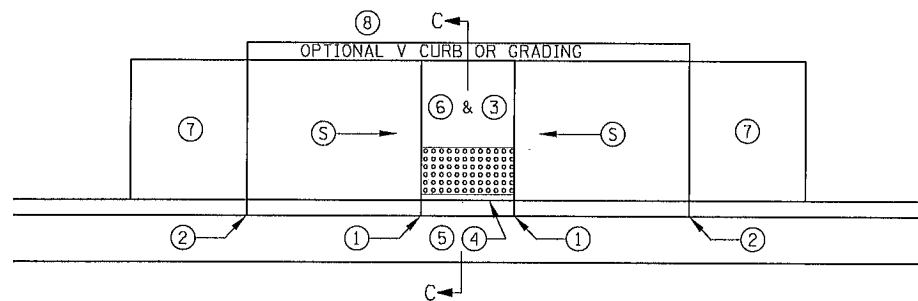
MODIFIED
STANDARD SHEET NO. 5-297.233 (2 OF 2)
STANDARD APPROVED AUGUST 1, 2011

TITLE: BRIDGE ABUTMENT APPROACH TREATMENT FOR ABUTMENT ON FOOTING

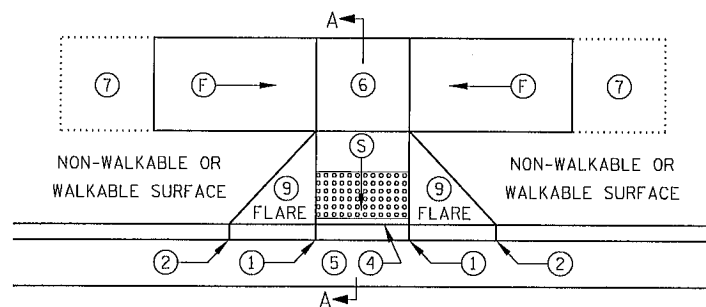
BRIDGE NO. 02586  
EAST ABUTMENT



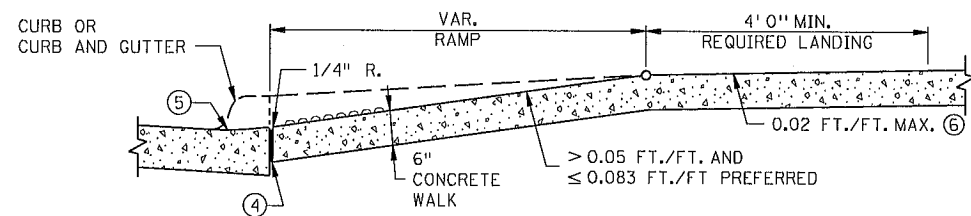
PERPENDICULAR



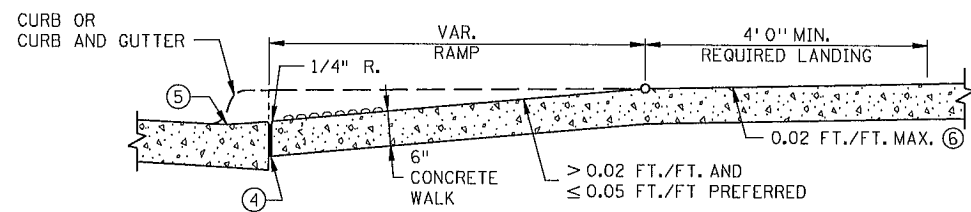
PARALLEL



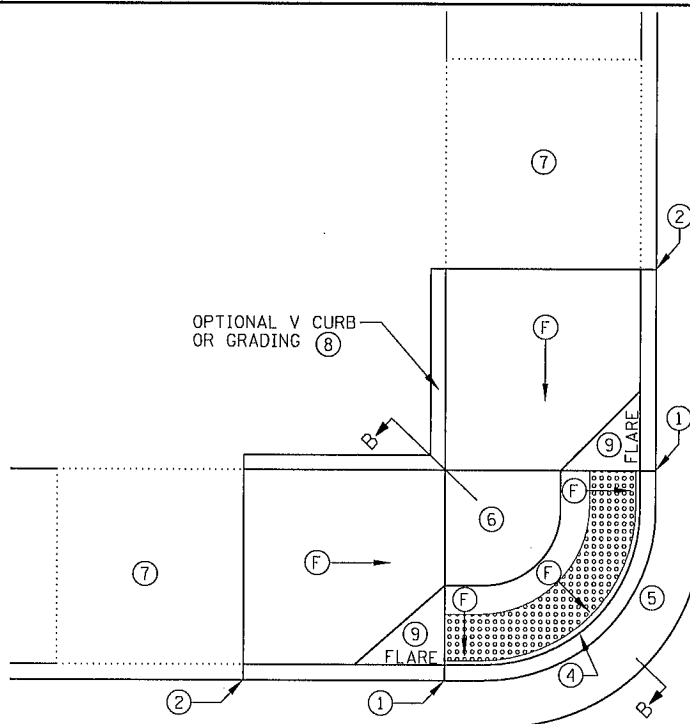
TIERED PERPENDICULAR



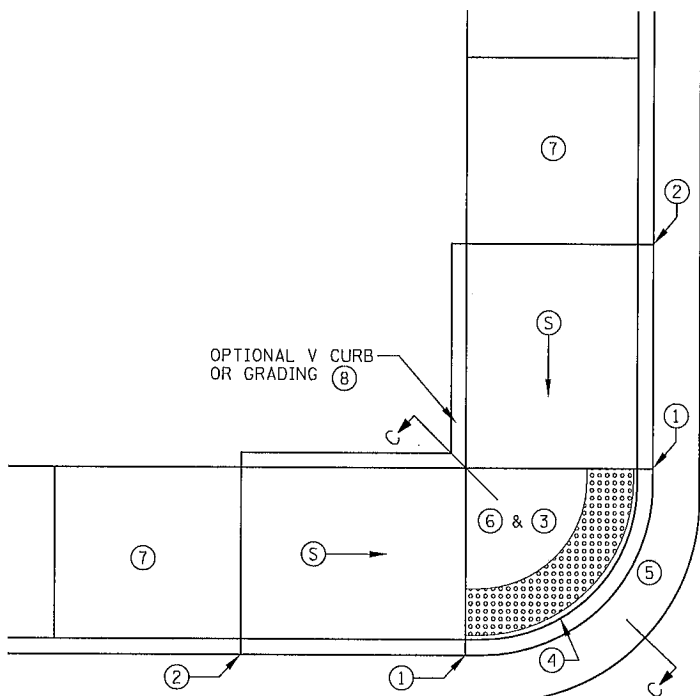
SECTION A-A  
PERPENDICULAR/TIERED/DIAGONAL



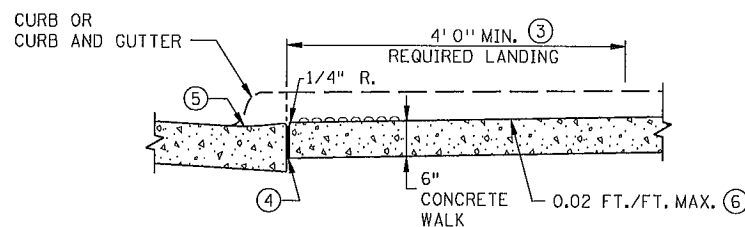
SECTION B-B  
FAN



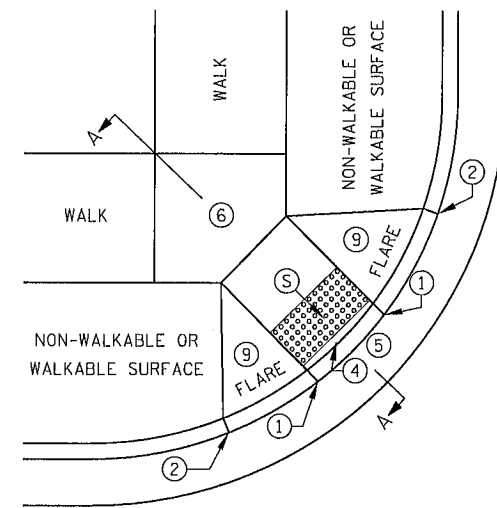
FAN



DEPRESSED CORNER



SECTION C-C  
PARALLEL/DEPRESSED CORNER



DIAGONAL 10

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
- ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- 7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
- 9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 10 DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

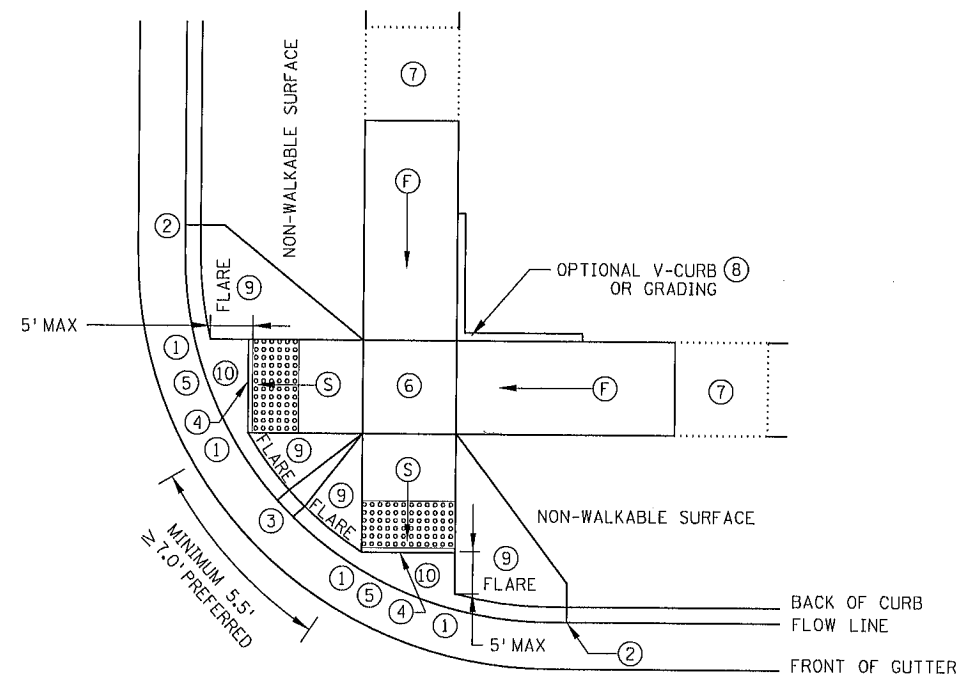
(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

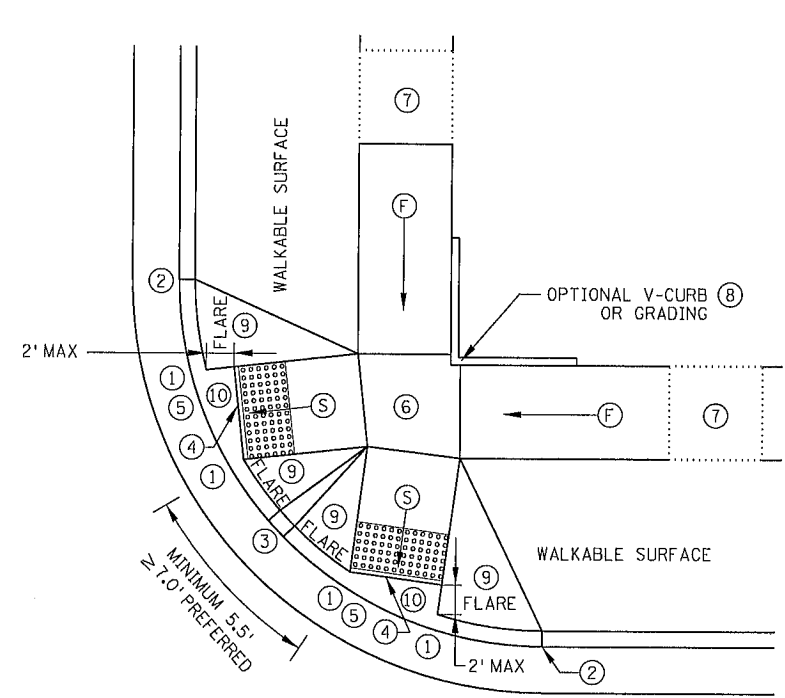
STANDARD PLAN SHEET NO.  
5-297.250 (1 OF 5)  
STANDARD APPROVED:  
APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS



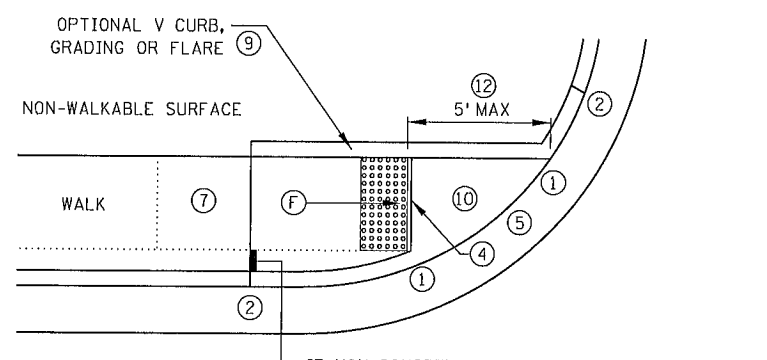


ADJACENT TO NON-WALKABLE SURFACE



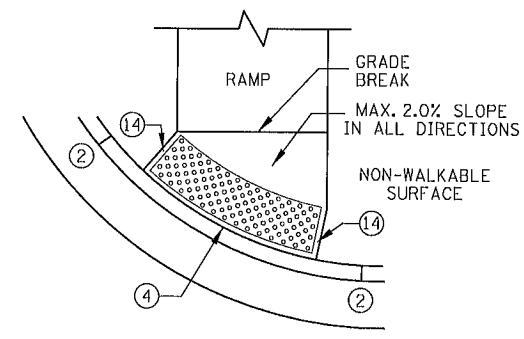
ADJACENT TO WALKABLE SURFACE

COMBINED DIRECTIONAL ⑮

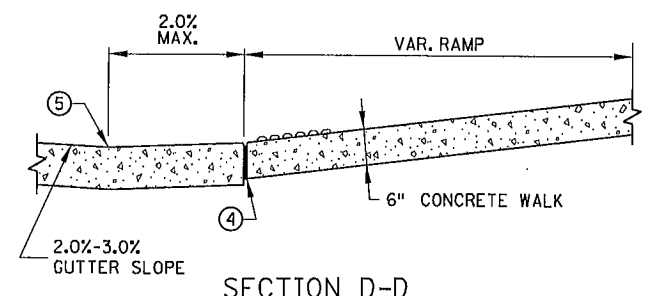
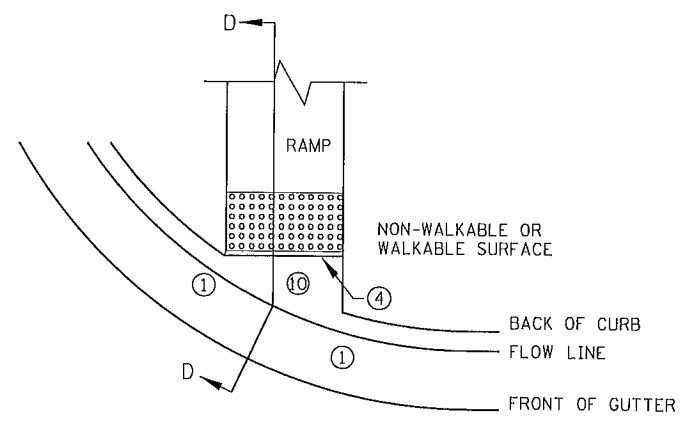
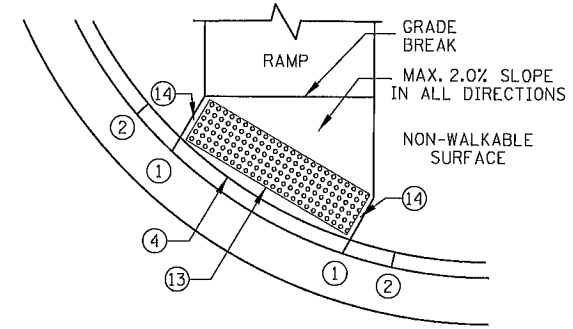


ONE-WAY DIRECTIONAL

IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑪

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
- ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.

SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

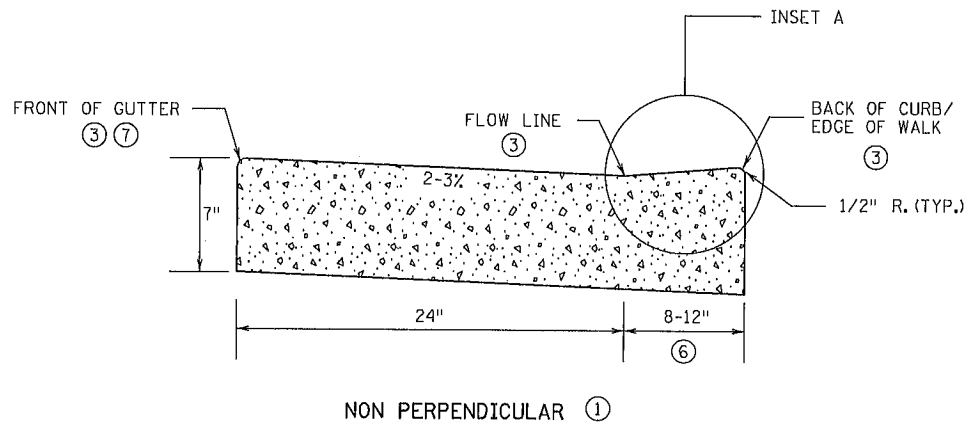
- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 3" MINIMUM CURB HEIGHT, 4" PREFERRED.
- ④ 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. FROM THE BACK OF CURB.
- ⑤ SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- ⑥ 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- ⑦ IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- ⑧ V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- ⑨ SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- ⑩ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- ⑪ TO BE USED FOR ALL DIRECTIONAL RAMPS.
- ⑫ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑬ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑭ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑮ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

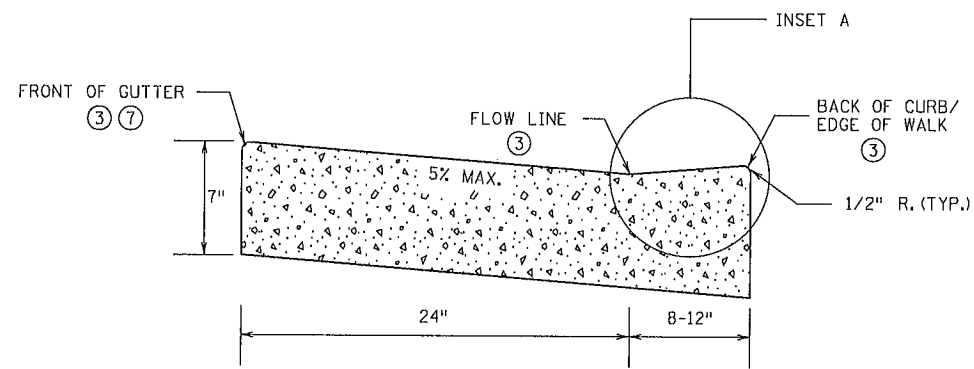
STANDARD PLAN SHEET NO. 5-297.250 (2 OF 5)
STANDARD APPROVED: APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

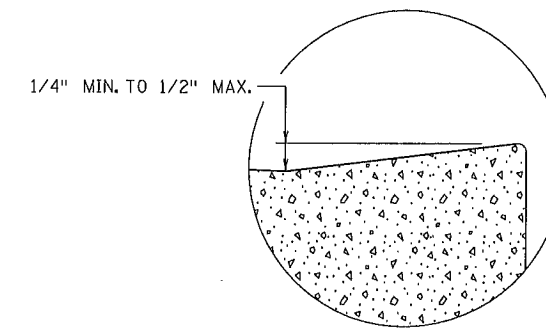
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NON PERPENDICULAR ①

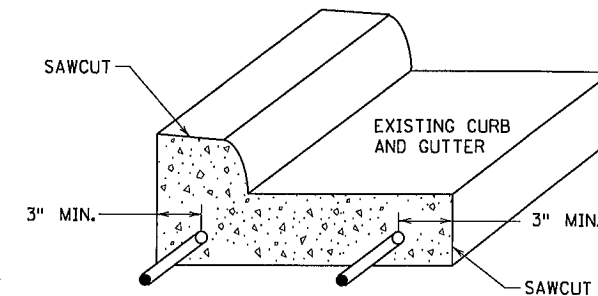
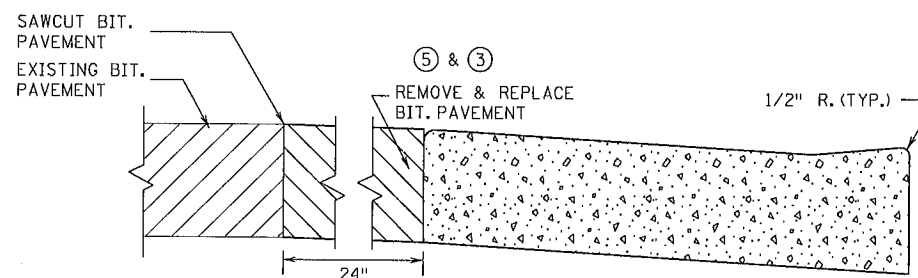
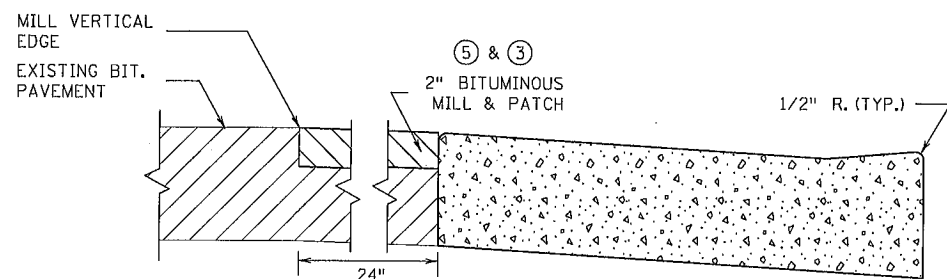


PERPENDICULAR ②

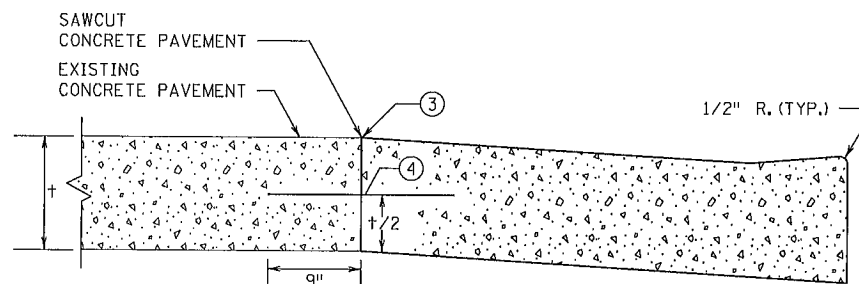
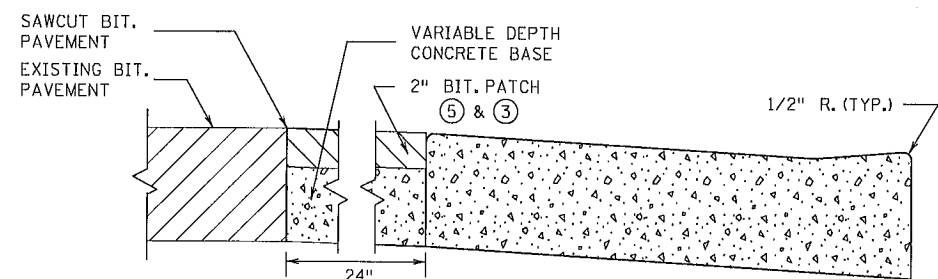


INSET A

PEDESTRIAN ACCESS ROUTE  
CURB & GUTTER DETAIL



CURB AND GUTTER  
REINFORCEMENT ⑧  
FOR USE ON CURB RAMP RETROFITS



PAVEMENT TREATMENT OPTIONS  
IN FRONT OF CURB & GUTTER  
FOR USE ON CURB RAMP RETROFITS

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.  
NO PONDING SHALL BE PRESENT IN THE PAR.  
ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

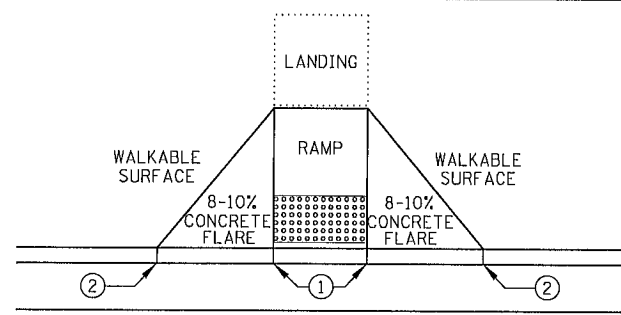
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS, DEPRESSED CORNERS, & ONE WAY AND COMBINED DIRECTIONALS.
- ② FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMP.
- ③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4\".
- ④ DRILL AND GROUT NO. 4 EPOXY-COATED 18\" LONG TIE BARS AT 30\" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT.
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS.
- ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. PAR GUTTER SHALL NOT BE OVERLAID.
- ⑧ WHERE PLAN SPECIFIES, DRILL AND GROUT 2 - NO. 4 X 12\" LONG REINFORCEMENT BARS (EPOXY COATED).

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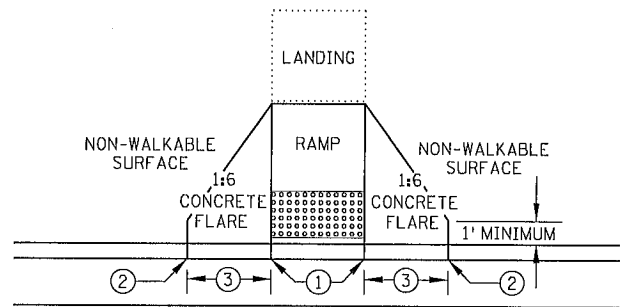
STANDARD PLAN SHEET NO. 5-297.250 (3 OF 5)
STANDARD APPROVED: APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

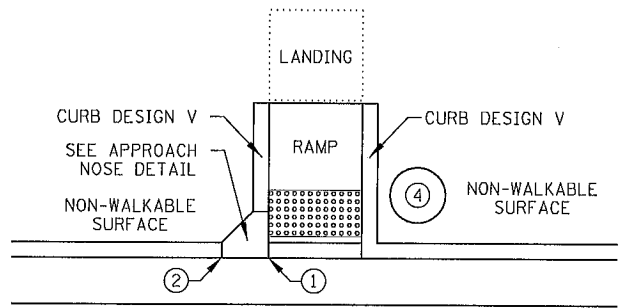
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PAVED FLARES  
ADJACENT TO WALKABLE SURFACE

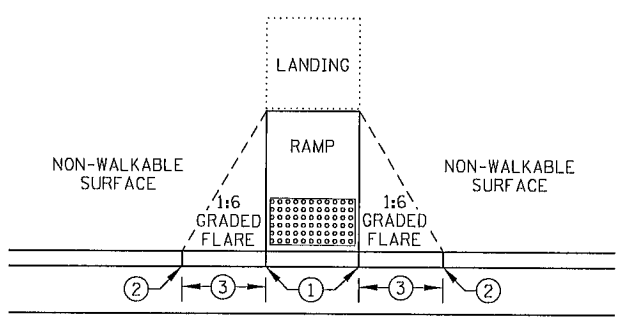


PAVED FLARES  
ADJACENT TO NON-WALKABLE SURFACE



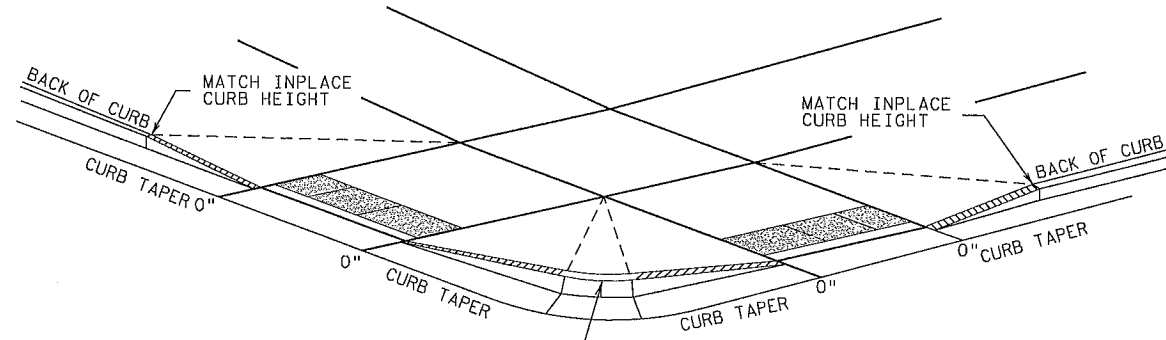
DIRECTION OF TRAFFIC ←

RETURNED CURB



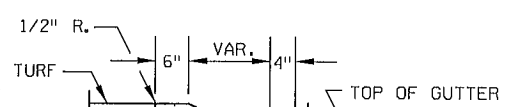
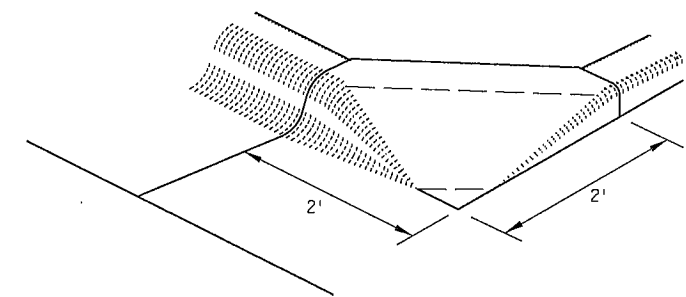
GRADED FLARES

TYPICAL SIDE TREATMENT OPTIONS ⑤



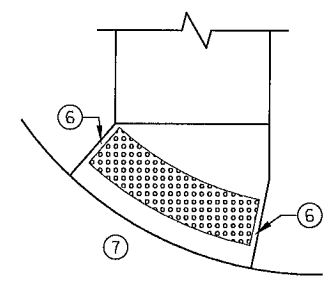
3" MINIMUM CURB HEIGHT, 4" PREFERRED  
(MEASURED AT FRONT FACE OF CURB)  
FOR A MIN. 6" LENGTH  
(MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH  
CURB AND GUTTER ⑧

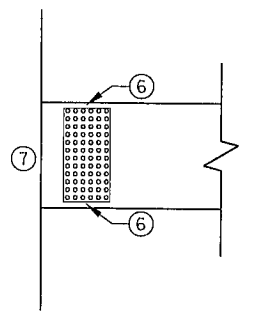


SECTION A-A

APPROACH NOSE DETAIL  
FOR DOWNSTREAM SIDE OF TRAFFIC



RADIAL DETECTABLE WARNING



RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

NOTES:

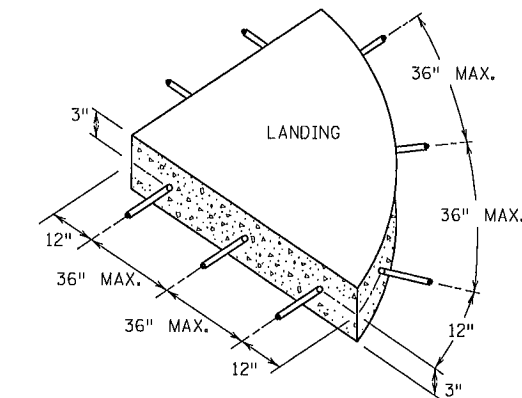
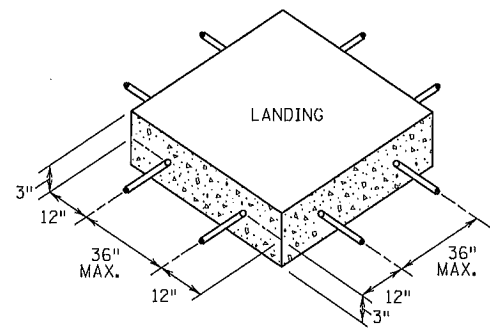
SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER. CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

- ① 0" CURB HEIGHT.
- ② FULL CURB HEIGHT.
- ③ 2' - 3' FLARE.
- ④ IMMOVABLE OBJECT OR OBSTRUCTION.
- ⑤ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE VISUAL CONTRAST.
- ⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

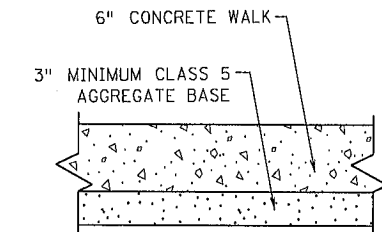
STANDARD PLAN SHEET NO.  
5-297.250 (4 OF 5)  
STANDARD APPROVED:  
APRIL 10, 2013

PEDESTRIAN CURB RAMP DETAILS

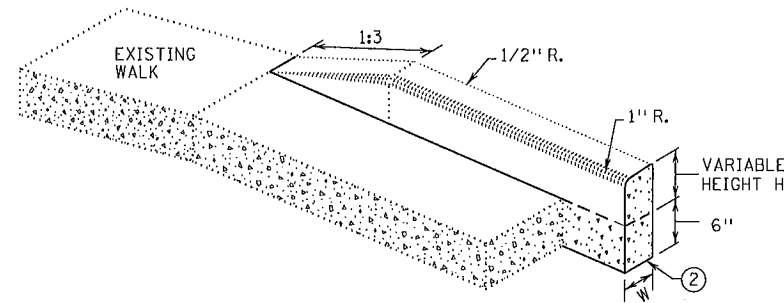
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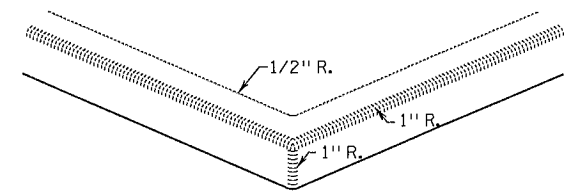
SIDEWALK REINFORCEMENT ⑤ ⑥



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

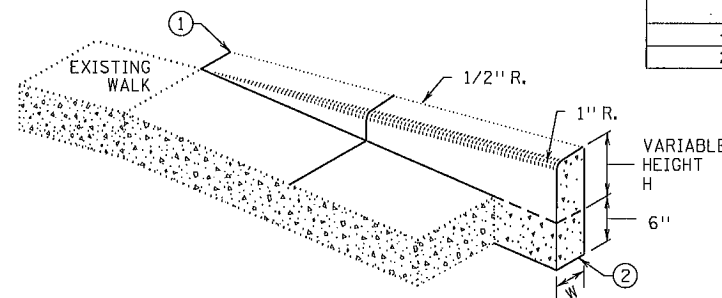


V CURB ADJACENT TO LANDSCAPE CURB WITHIN SIDEWALK LIMITS

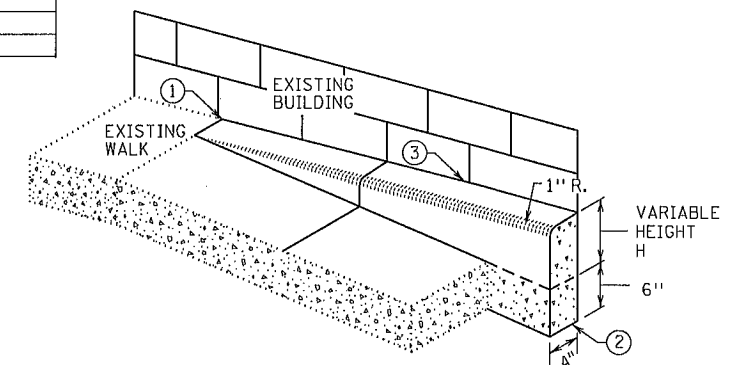


V CURB INTERSECTION

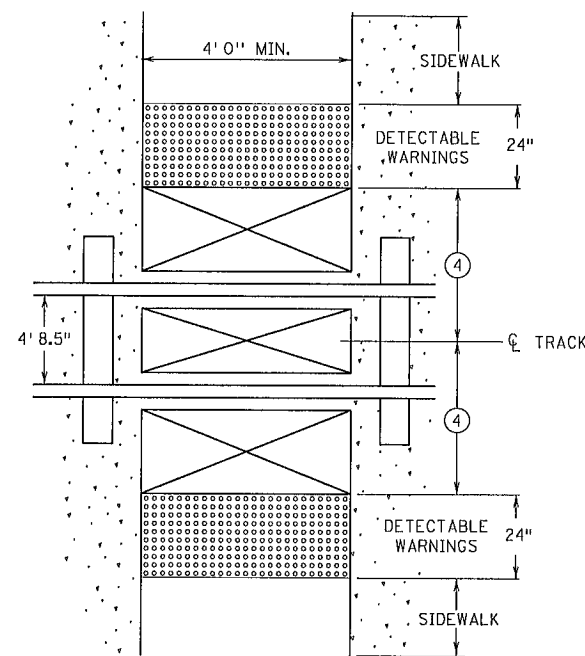
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



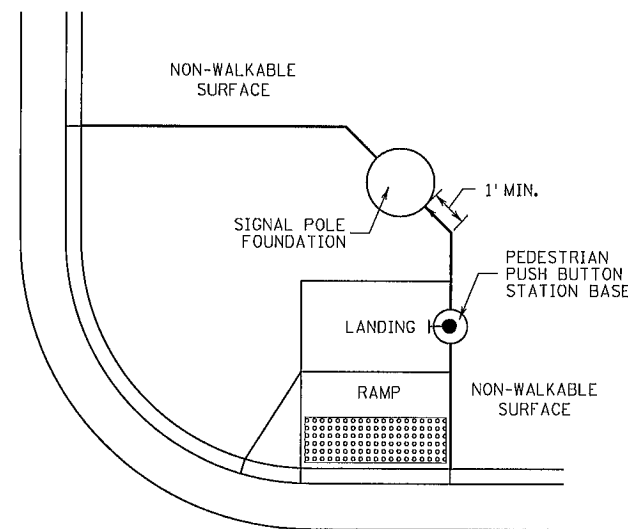
V CURB ADJACENT TO LANDSCAPE CURB OUTSIDE SIDEWALK LIMITS



V CURB ADJACENT TO BUILDING OR BARRIER



RAILROAD CROSSING PLAN VIEW



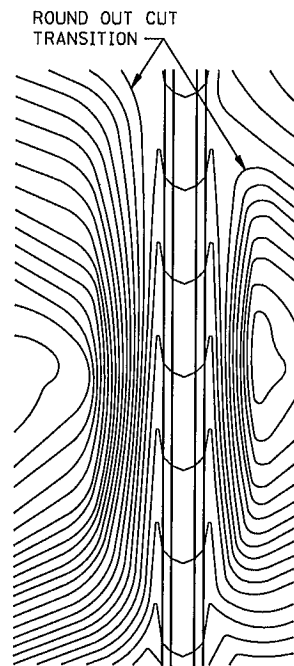
CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES

NOTES:

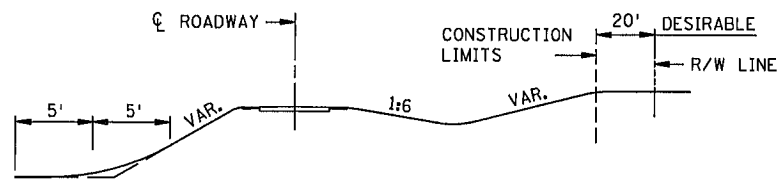
- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 15' MAXIMUM FROM THE CENTERLINE OF THE TRACK. WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 17" - 19" FROM THE APPROACHING SIDE OF THE GATE ARM.
- ⑤ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).
- ⑥ TO ENSURE RAMP AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

STANDARD PLAN SHEET NO.  
5-297.250 (5 OF 5)  
STANDARD APPROVED:  
APRIL 10, 2013

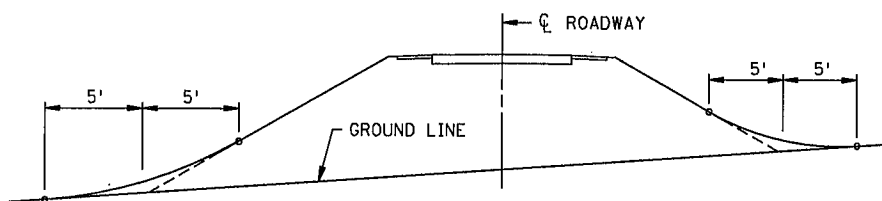
PEDESTRIAN CURB RAMP DETAILS



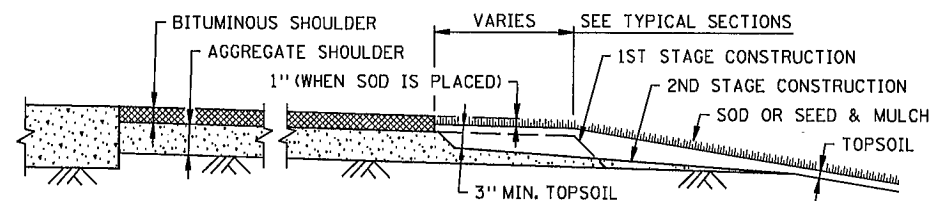
CONTOURING ROAD CUTS



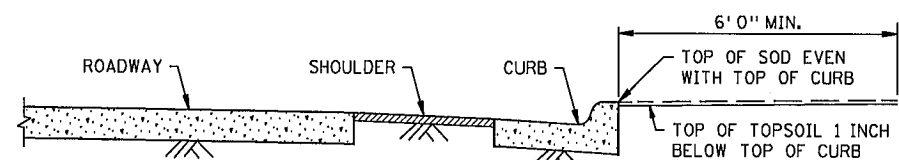
ROUNDING SHOULDERS AND BACKSLOPES



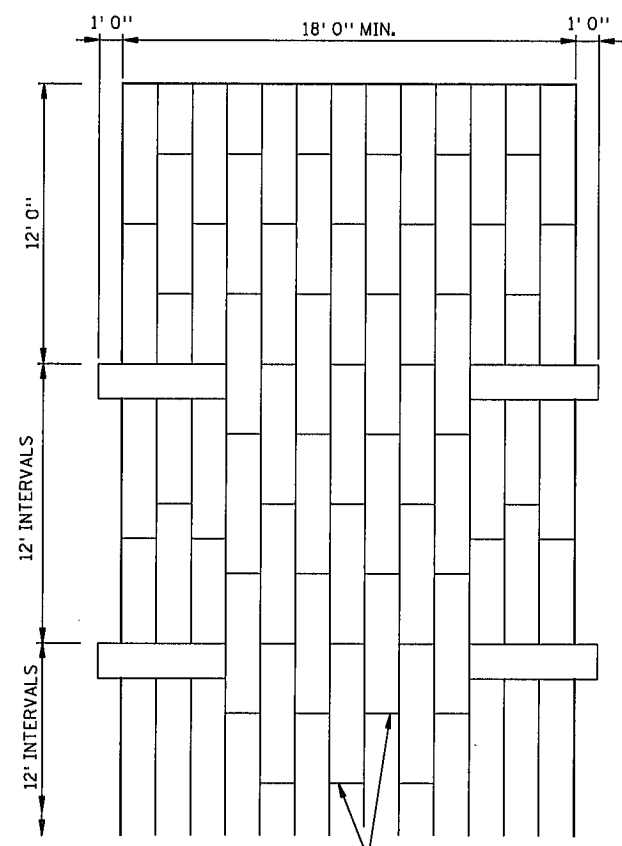
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



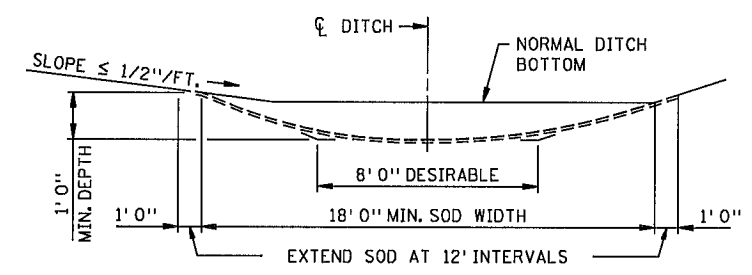
SHAPING AND TOPSOILING INSLOPES



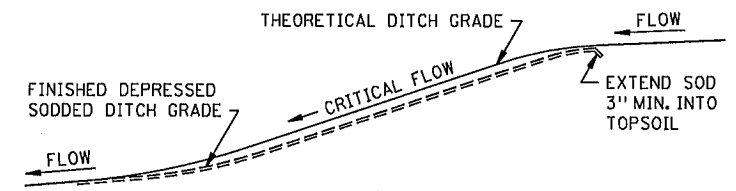
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



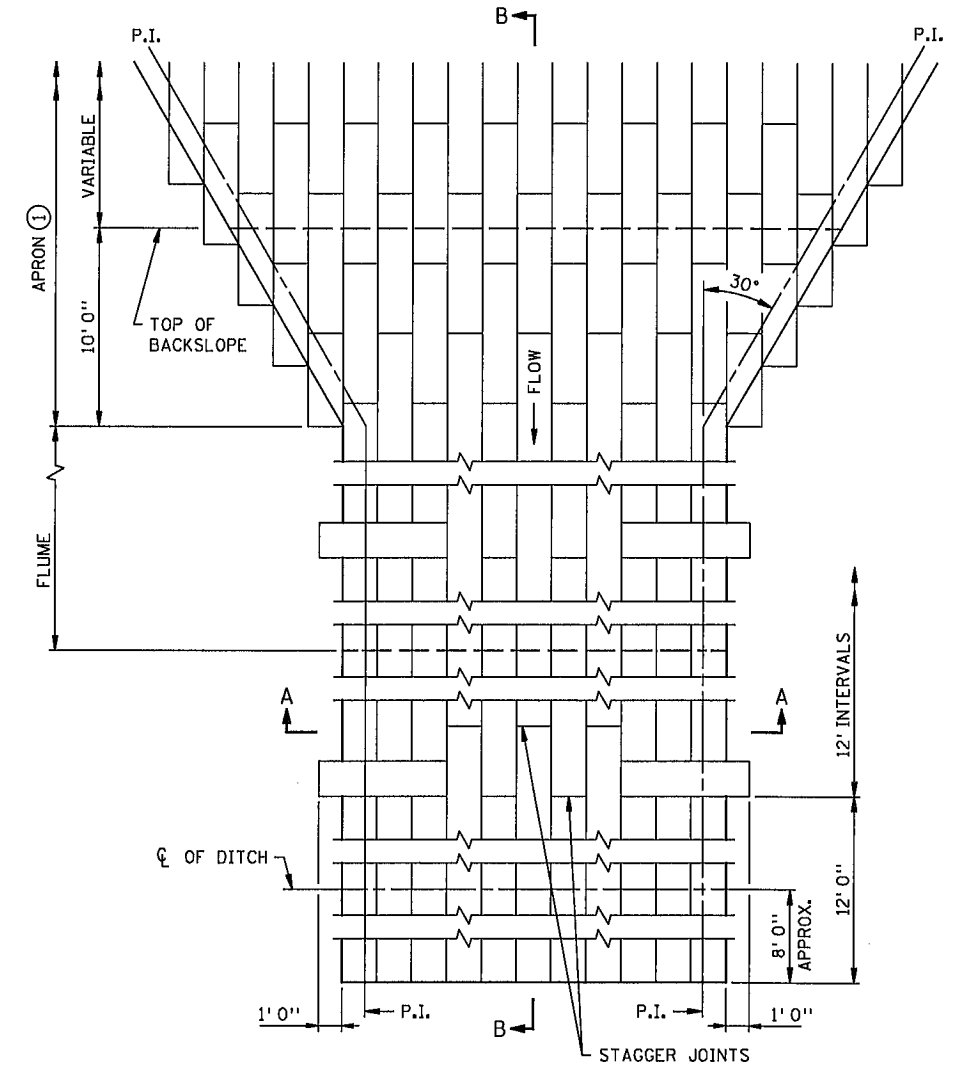
PLAN VIEW



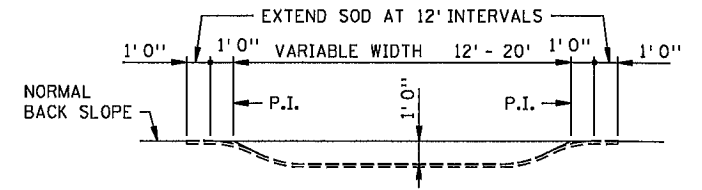
SODDED DITCH CROSS SECTION  
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



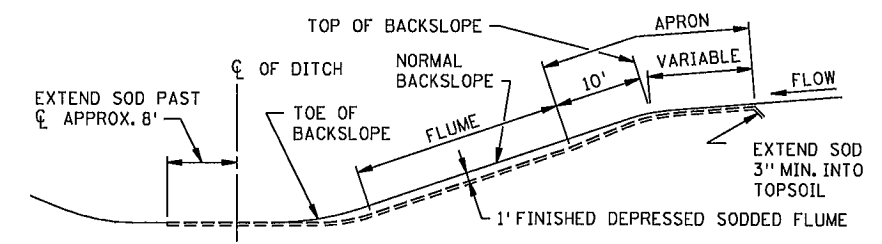
DITCH PROFILE  
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A

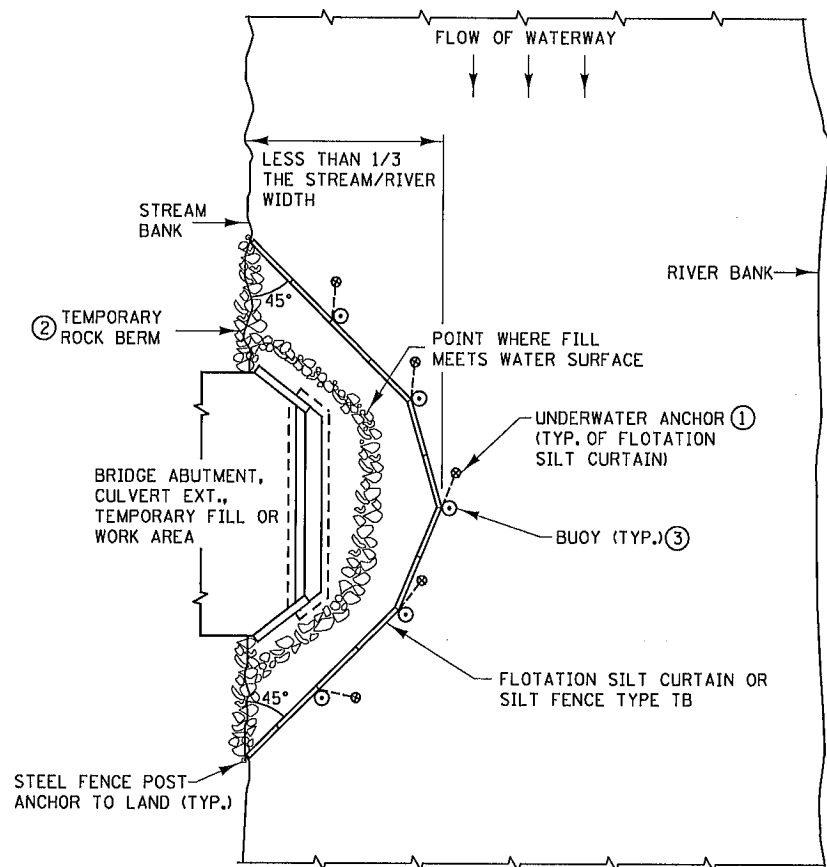


SECTION B-B  
SODDED FLUME DETAILS

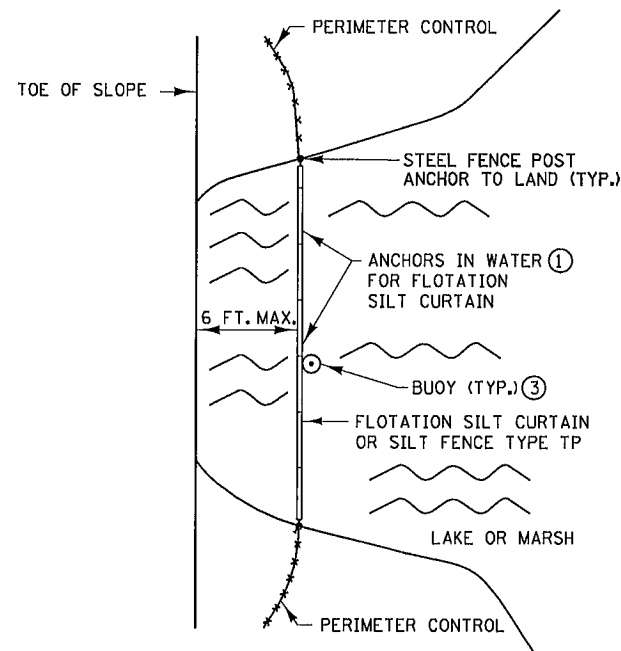
NOTES:  
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.  
① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 67 OF 586 SHEETS	

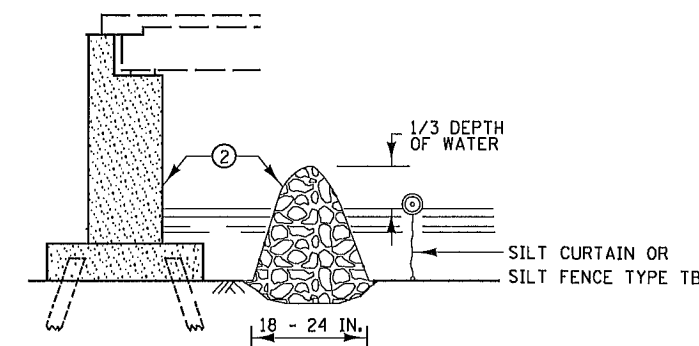
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PLAN VIEW FOR STREAM ⑤

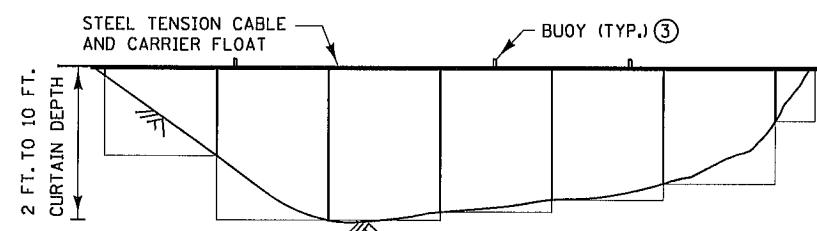


PLAN VIEW FOR LAKE OR MARSH ⑤

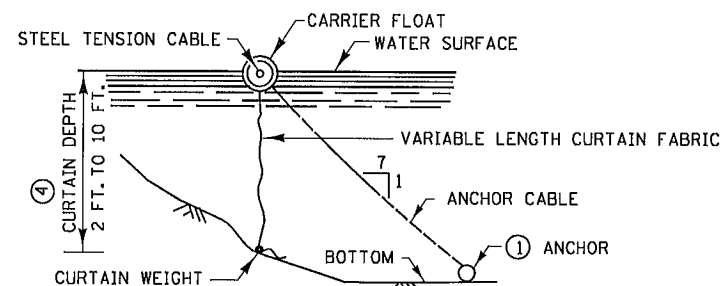


TEMPORARY ROCK BERM FOR SEDIMENT CONTROL

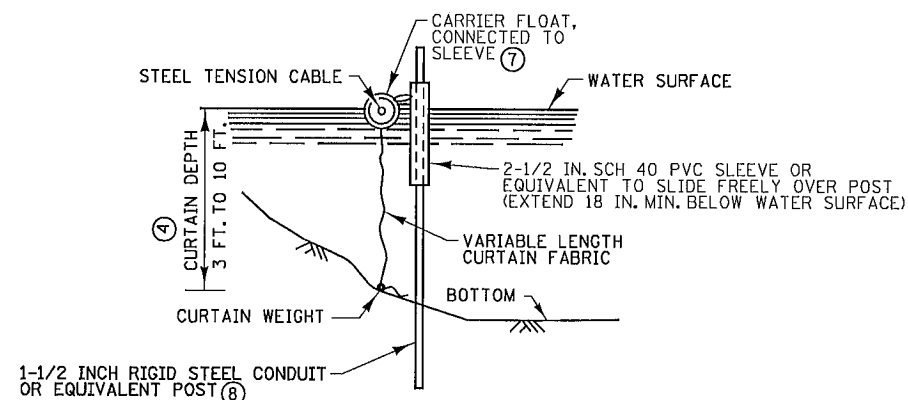
INSTALLATION GUIDELINES  
SILT FENCE TYPE TB  
MINIMUM WATER DEPTH: 1 FT.  
MAXIMUM WATER DEPTH: 3 FT.  
MAXIMUM WATER VELOCITY: 5 FT./SEC.



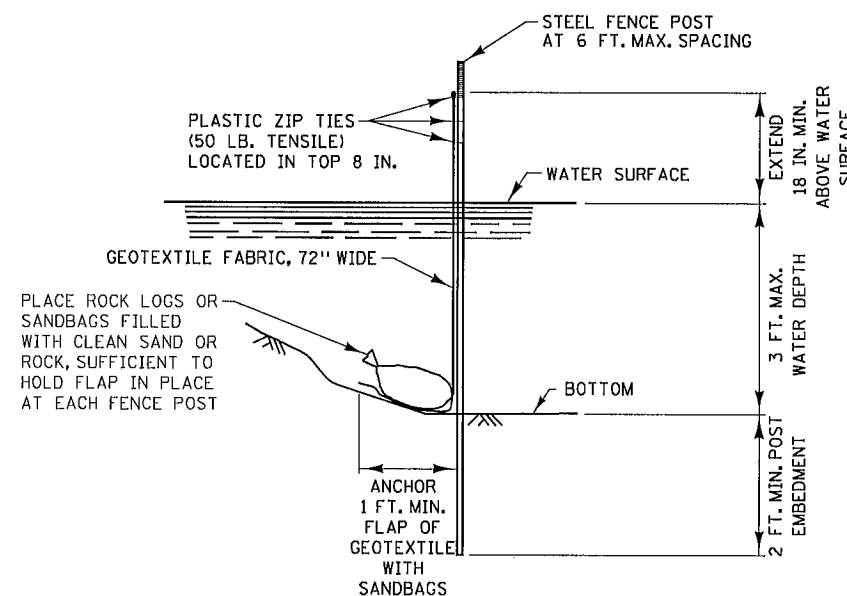
FRONT VIEW FOR FLOTATION SILT CURTAIN



FLOTATION SILT CURTAIN



ALTERNATE FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥

INSTALLATION GUIDELINES  
FLOTATION SILT CURTAIN  
TYPE: STILL WATER ④  
MINIMUM WATER DEPTH: 3 FT.  
MAXIMUM WATER DEPTH: 10 FT.  
MAXIMUM WATER VELOCITY: 2 FT./SEC.  
MAXIMUM WAVE HEIGHT: 1 FT.

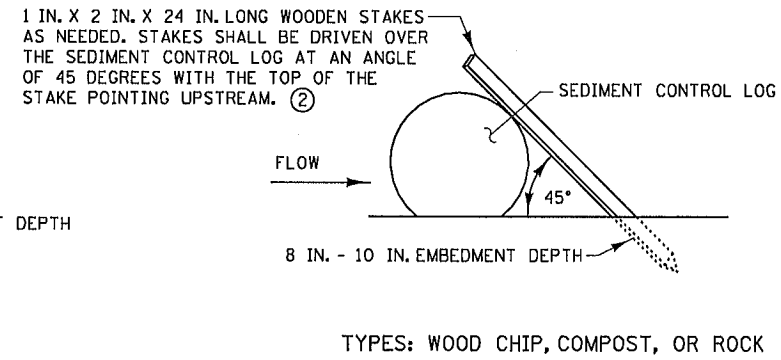
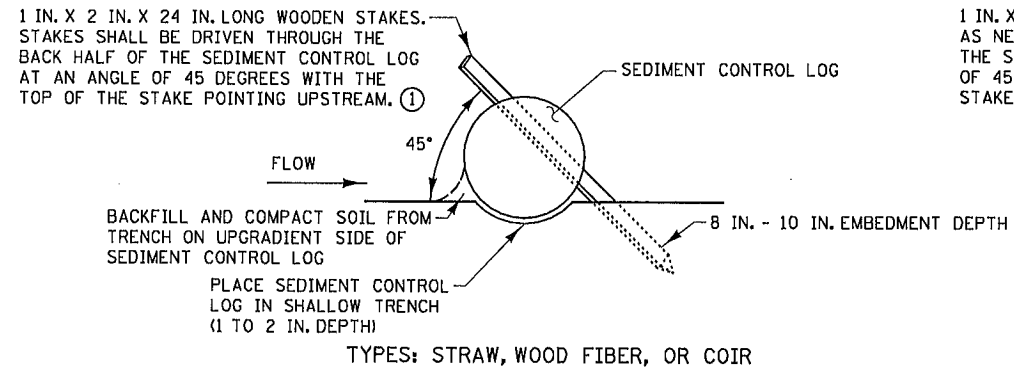
INSTALLATION GUIDELINES  
FLOTATION SILT CURTAIN  
TYPE: MOVING WATER ④  
MINIMUM WATER DEPTH: 3 FT.  
MAXIMUM WATER DEPTH: 10 FT.  
MAXIMUM WATER VELOCITY: 5 FT./SEC.  
MAXIMUM WAVE HEIGHT: 2 FT.

NOTES:

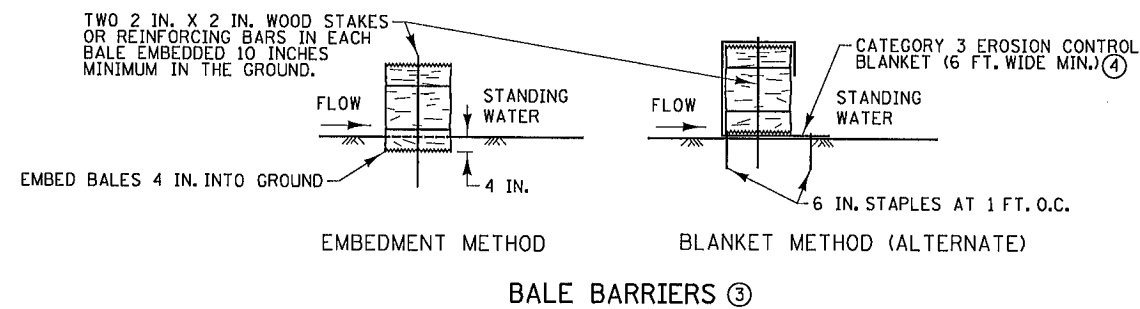
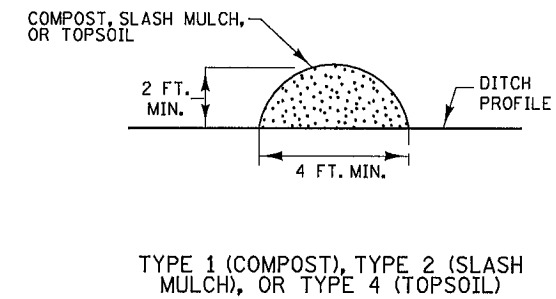
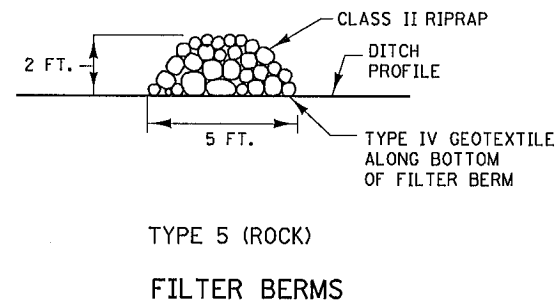
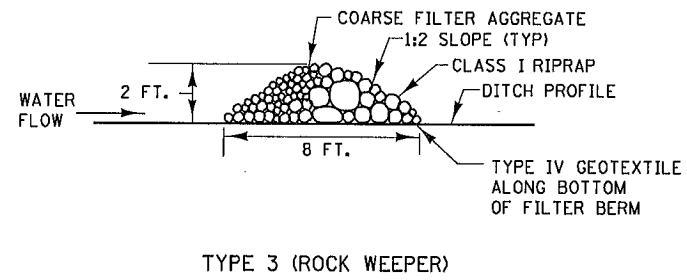
- SEE SPECS. 2573, 3886, 3887 & 3893.
- ① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
- ② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.
- ③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.
- ④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.
- ⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.
- ⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.
- ⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.
- ⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

STANDARD SHEET NO. 5-297,405 (1 OF 7)	TITLE TEMPORARY SEDIMENT CONTROL SILT CURTAIN OR SILT FENCE TYPE TB
STANDARD APPROVED: DECEMBER 11, 2013	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 68 OF 586 SHEETS	

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### SEDIMENT CONTROL LOGS



### NOTES:

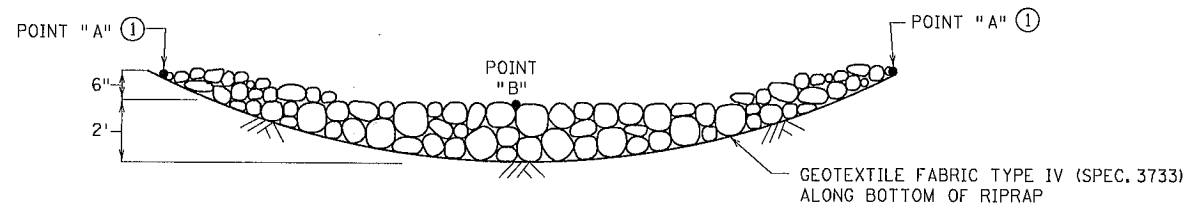
SEE SPECS. 2573, 3149, 3874, 3882, 3886, & 3897.

- ① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1 FOOT FOR DITCH CHECKS OR 2 FEET FOR OTHER APPLICATIONS.
- ② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.
- ③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6 INCH MAX. DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14 IN. X 18 IN. X 36 IN. LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.
- ④ INSTEAD OF TRENCHING, PLACE BALE ON THE BLANKET AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

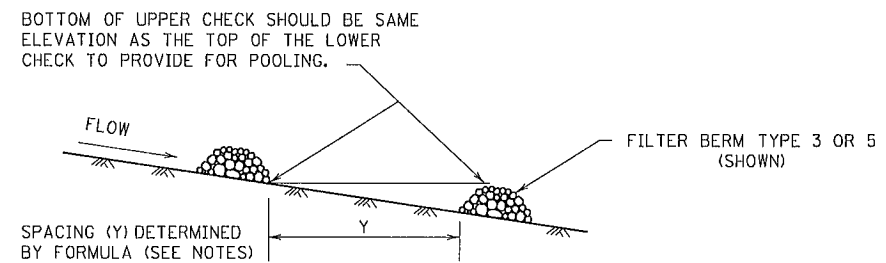
STANDARD SHEET NO.  
5-297.405 (2 OF 7)  
STANDARD APPROVED:  
DECEMBER 11, 2013

TEMPORARY SEDIMENT CONTROL  
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

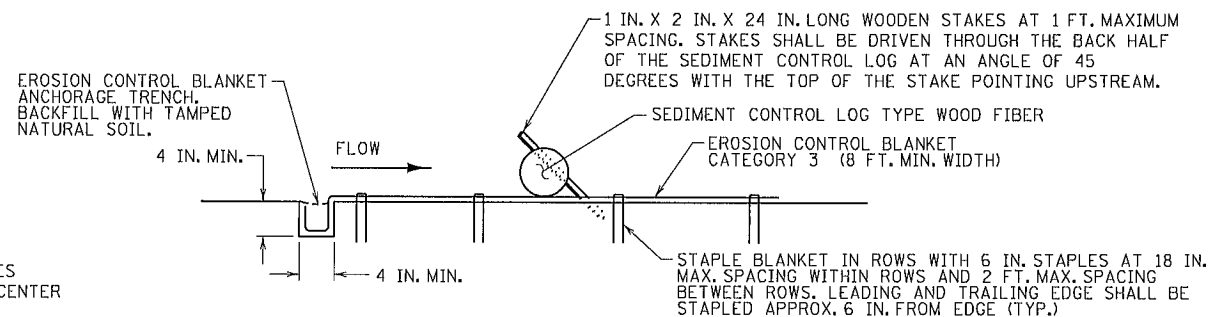
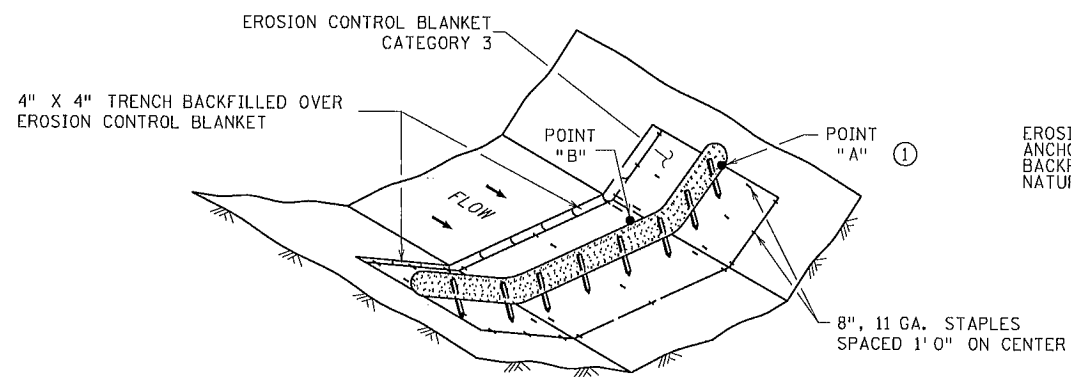
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 69 OF 586 SHEETS



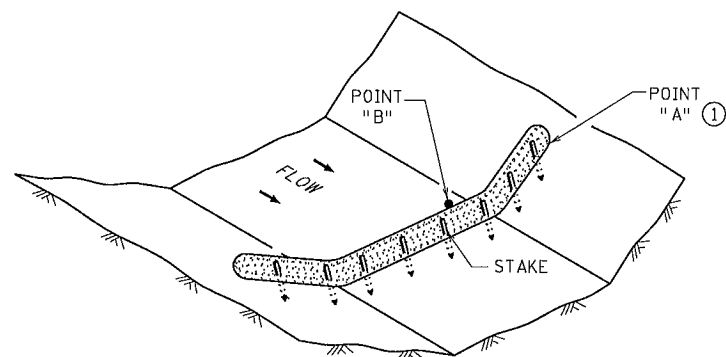
ROCK DITCH CHECKS  
 FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ②③  
 (FOR USE ON ROUGH GRADED AREAS)



DITCH CHECK SPACING  
 (FOR ALL FILTER BERM TYPES)



SEDIMENT CONTROL LOG TYPE BLANKET SYSTEM ④



SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤  
 (FOR USE ON ROUGH GRADED AREAS)

NOTES:

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\% \text{ CHANNEL SLOPE}} \times 100$$

- ① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.
- ② PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.
- ③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC..
- ④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC..
- ⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC..

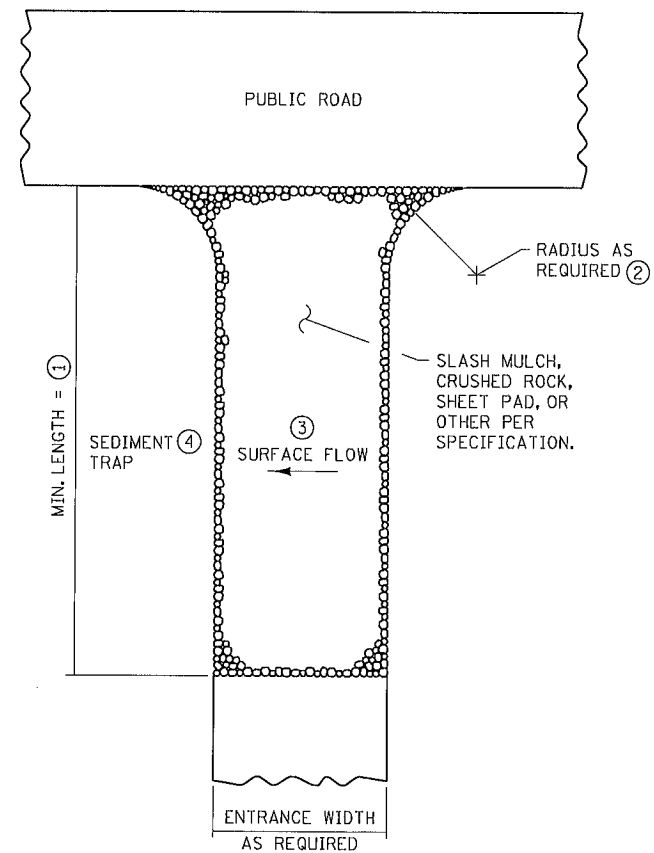
STANDARD SHEET NO.  
 5-297.405 (3 OF 7)  
 STANDARD APPROVED:  
 DECEMBER 11, 2013

TEMPORARY SEDIMENT CONTROL  
 DITCH CHECK

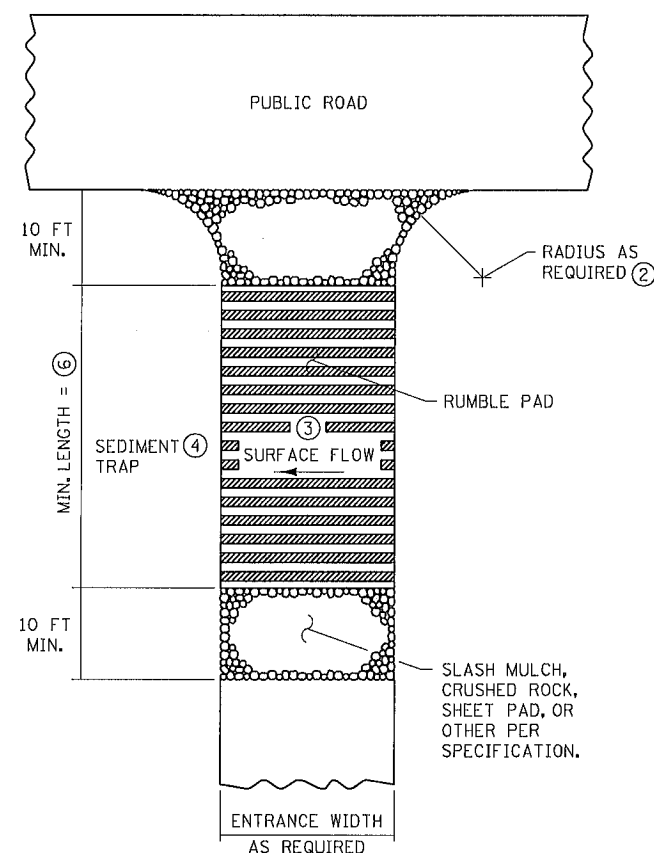
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 70 OF 586 SHEETS



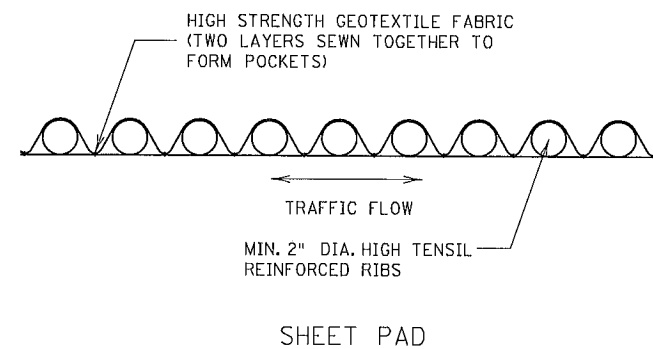
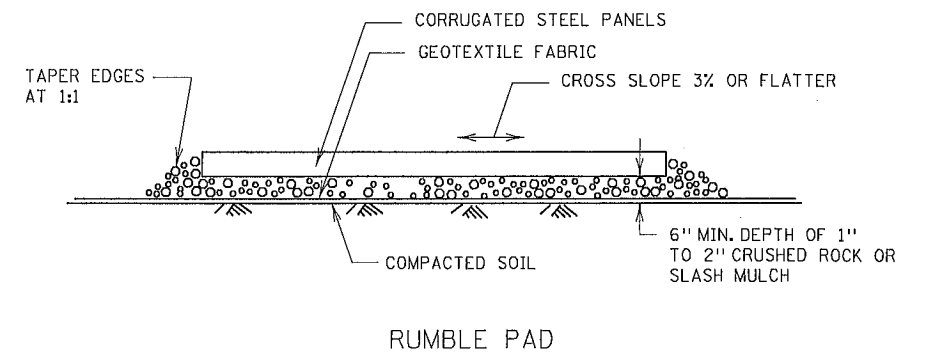




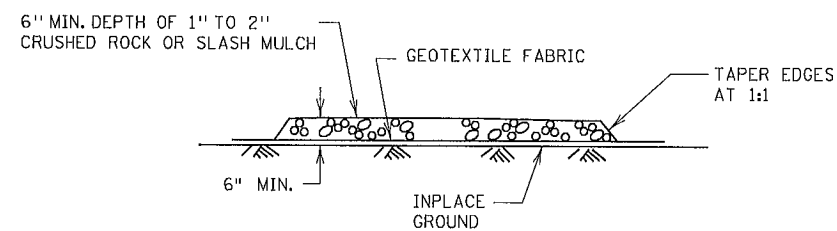
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



SHEET PAD



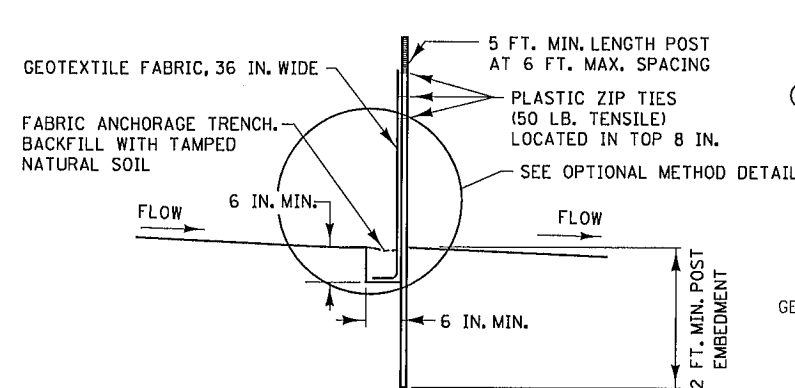
SLASH MULCH OR CRUSHED ROCK

NOTES:

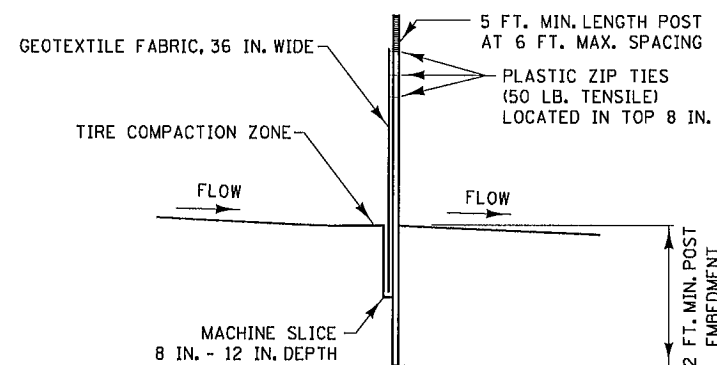
- SEE SPECS. 2573 & 3882.
- ① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
  - ② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
  - ③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
  - ④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
  - ⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
  - ⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
  - ⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

STANDARD SHEET NO.  
5-297.405 (5 OF 7)  
STANDARD APPROVED:  
DECEMBER 11, 2013

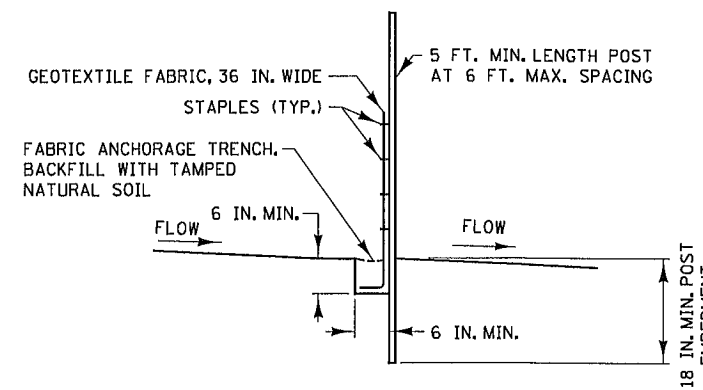
TITLE:  
TEMPORARY SEDIMENT CONTROL  
CONSTRUCTION EXITS



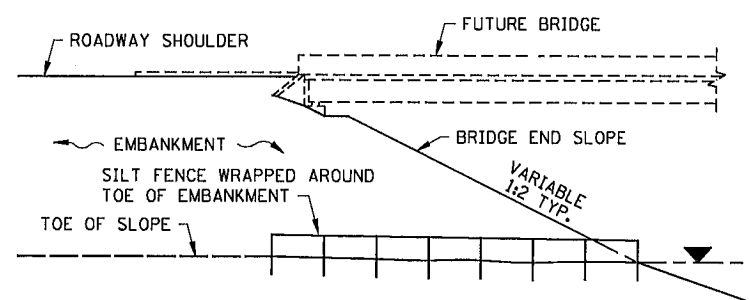
SILTS FENCE TYPE HI ②  
(HAND INSTALLED)



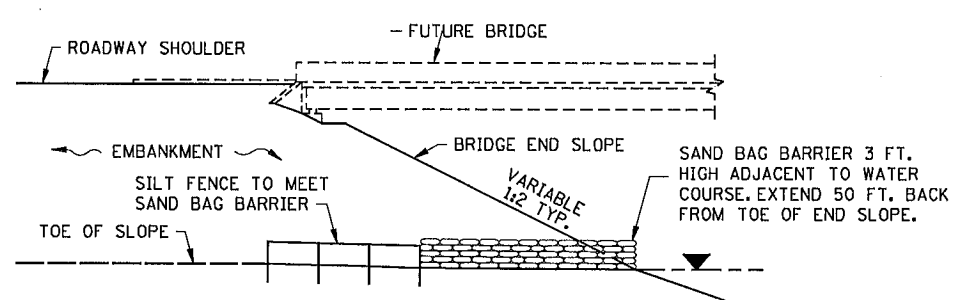
SILTS FENCE TYPE MS ②  
(MACHINE SLICED)



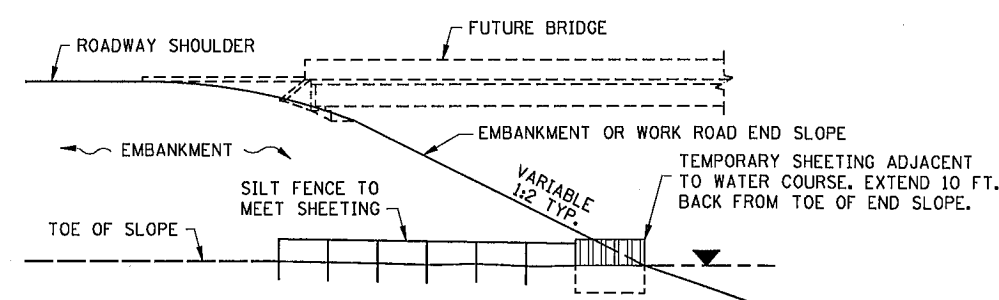
SILTS FENCE TYPE PA ③  
(PREASSEMBLED)



SILTS FENCE ONLY ④

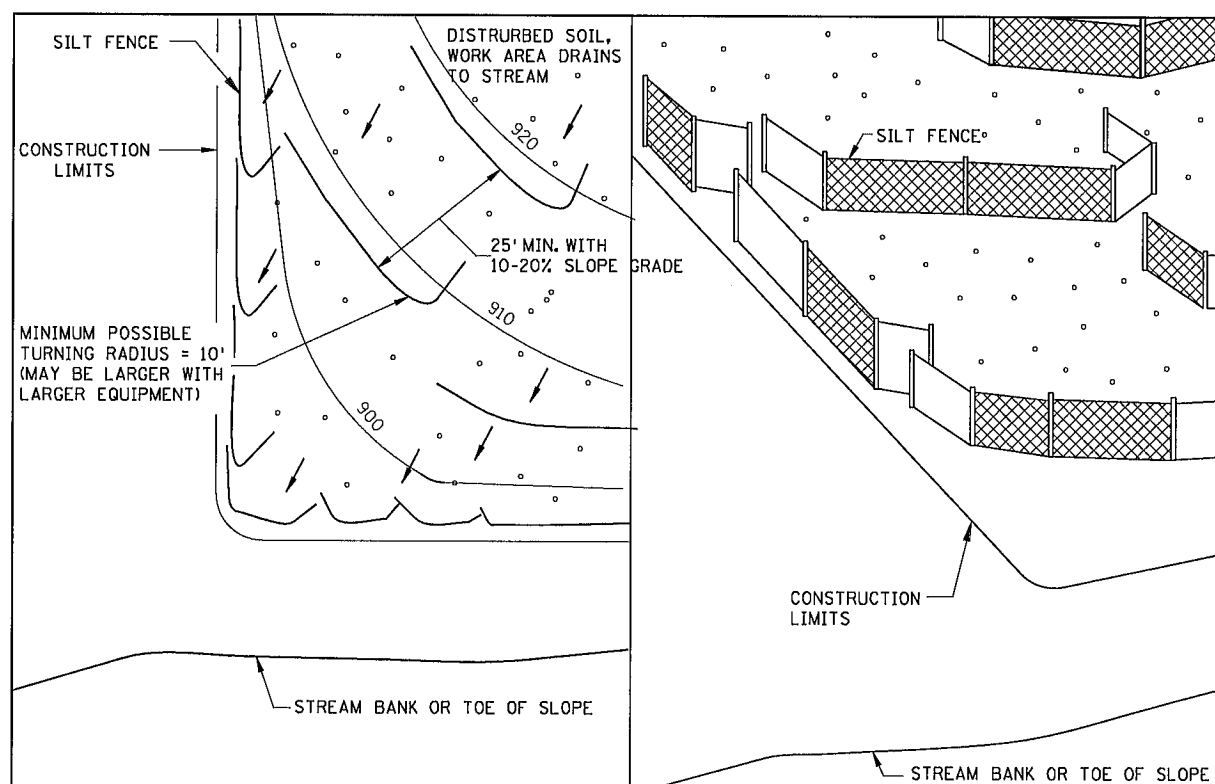


SILTS FENCE WITH SAND BAGS ⑤



SILTS FENCE WITH SHEETING ⑥

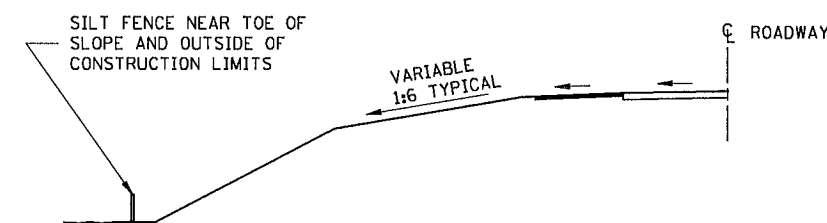
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



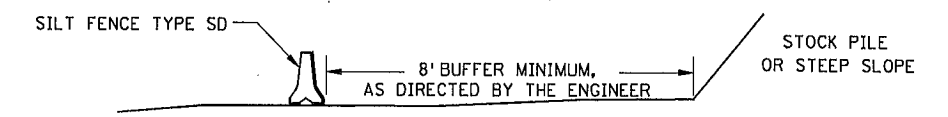
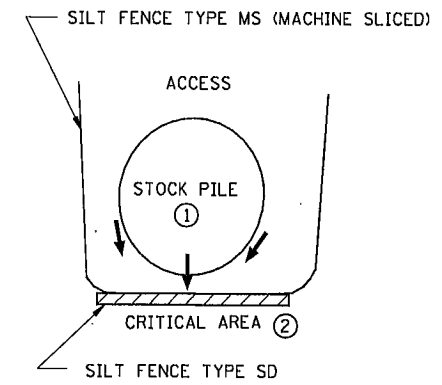
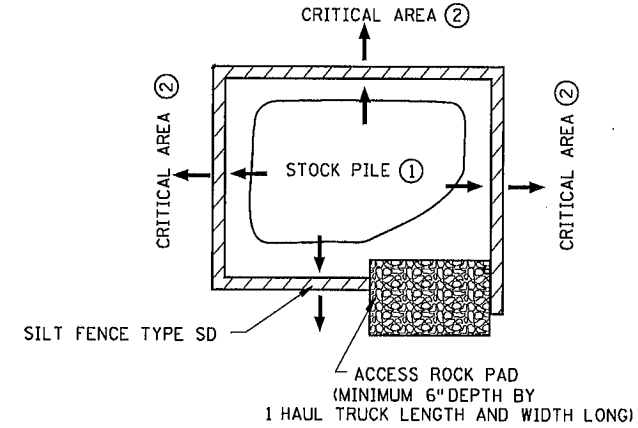
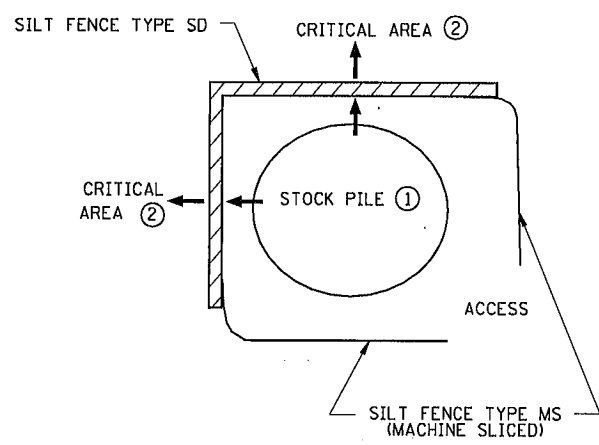
LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

- SEE SPECS. 2573, 3149 & 3886.
- ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
- ② TO PROTECT AREAS FROM SHEET FLOW, MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- ③ TO PROTECT AREAS FROM SHEET FLOW, MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.
- ④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1/2 ACRE.
- ⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1 ACRE.
- ⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

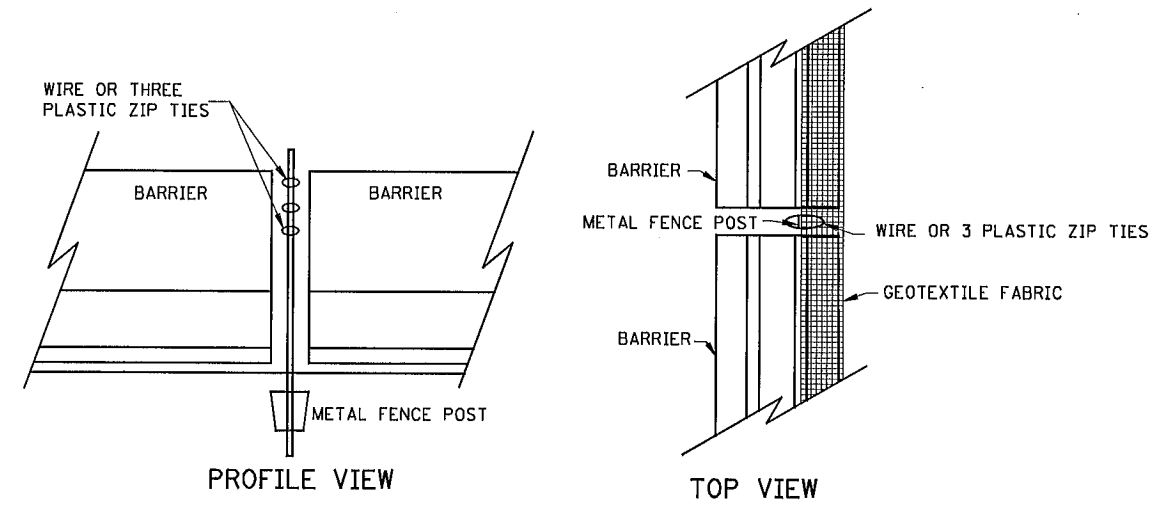
STANDARD SHEET NO. 5-297.405 (6 OF 7)	TITLE: TEMPORARY SEDIMENT CONTROL SILTS FENCE
STANDARD APPROVED: DECEMBER 11, 2013	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 73 OF 586 SHEETS	

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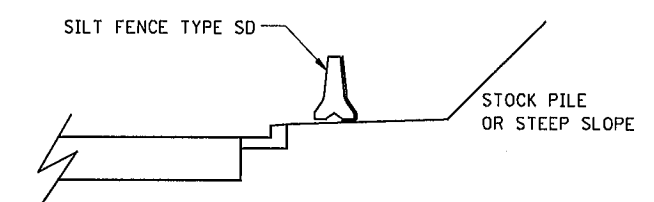


STOCKPILE SEDIMENT CONTROL

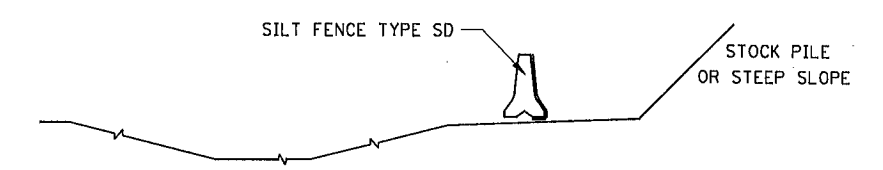
STOCK PILE CONTAINMENT



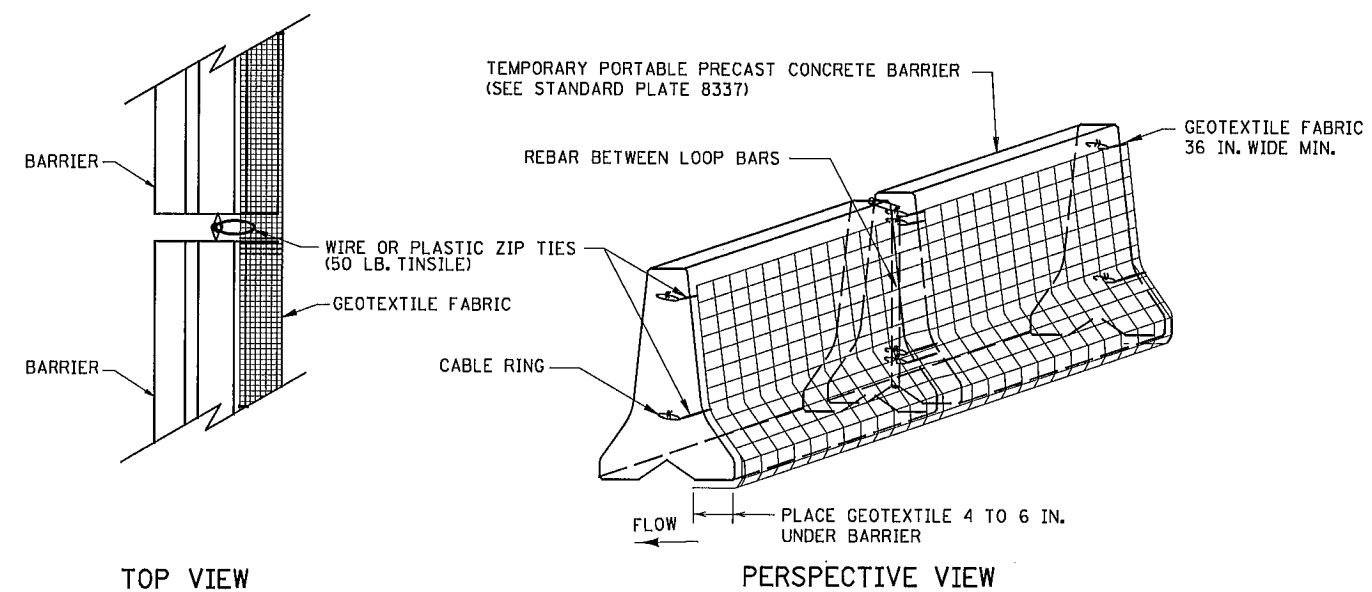
SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITHOUT LOOP BARS



CURB AND GUTTER PROTECTION SYSTEM



DITCH PROTECTION SYSTEM



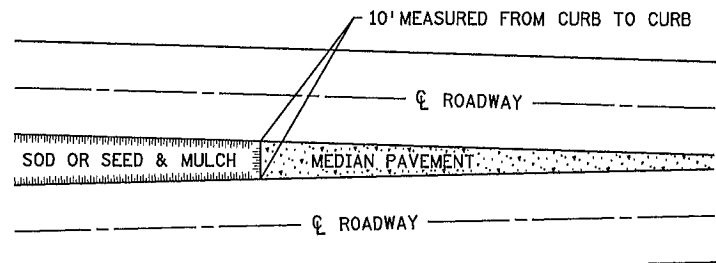
SILT FENCE TYPE SD (SUPER DUTY) BARRIER WITH LOOP BARS

NOTES:

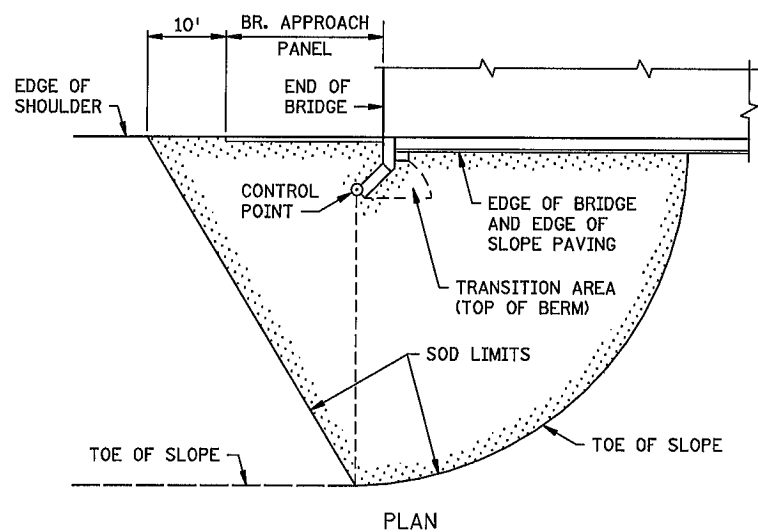
- SEE SPECS. 2533, 2573 & 3886.
- SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE INSTALLED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.
- PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.
- SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.
- ① PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- ② CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

STANDARD SHEET NO. 5-297.405 (7 OF 7)	TITLE: TEMPORARY SEDIMENT CONTROL SUPER DUTY SILT FENCE
STANDARD APPROVED: DECEMBER 11, 2013	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 74 OF 586 SHEETS	

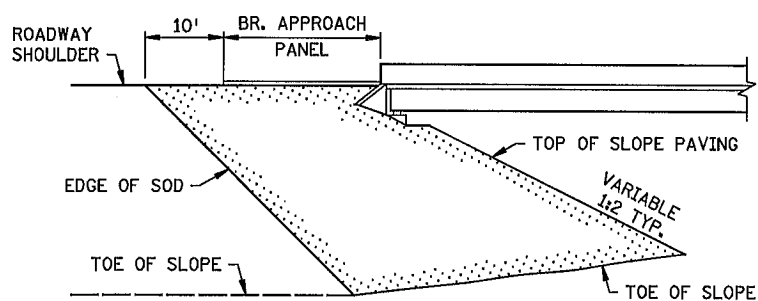
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SODDING LIMITS AT GORE AREA

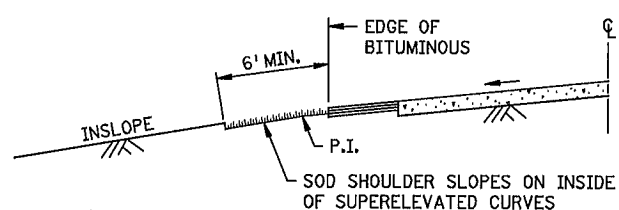


PLAN

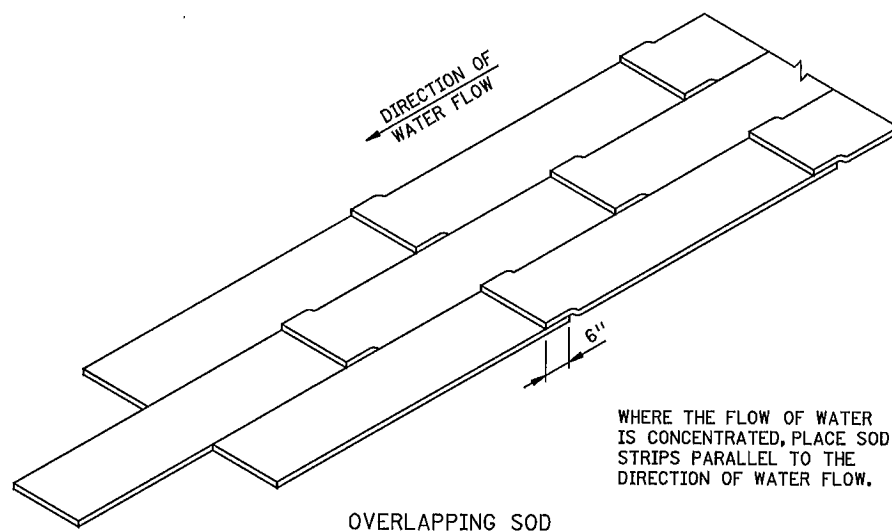


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

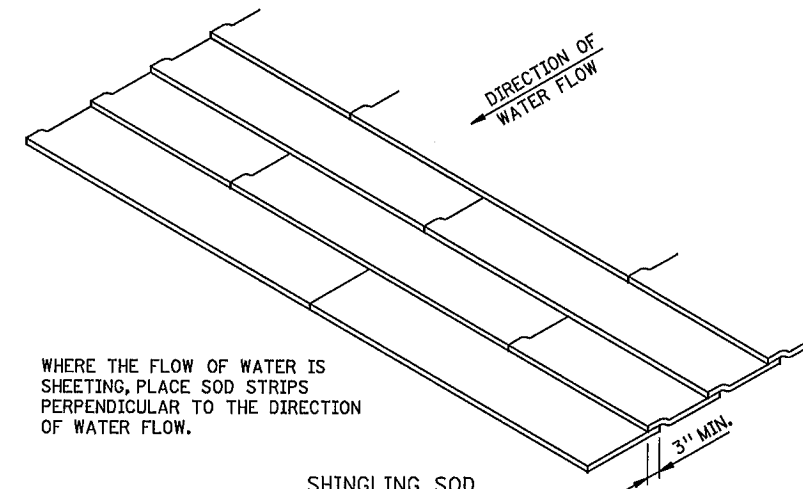


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

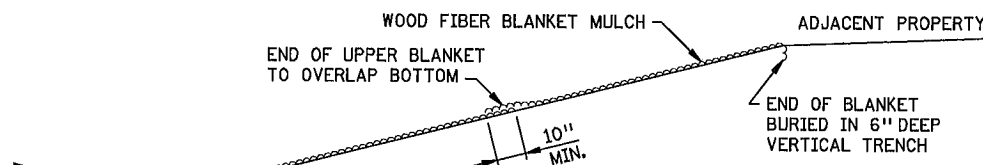
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



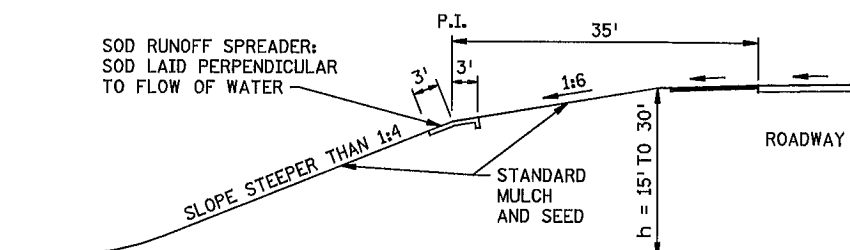
SHINGLING SOD

WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

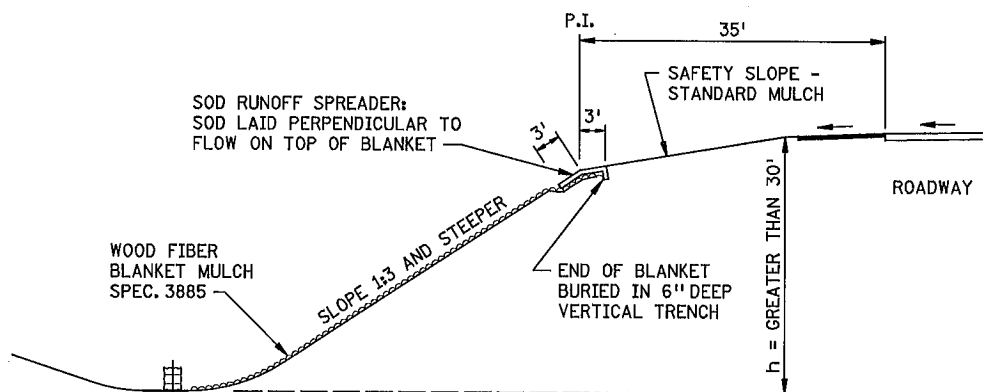
SPECIAL SOD PLACEMENT TECHNIQUES



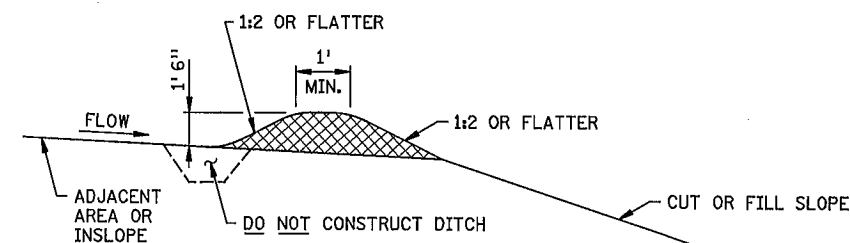
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)

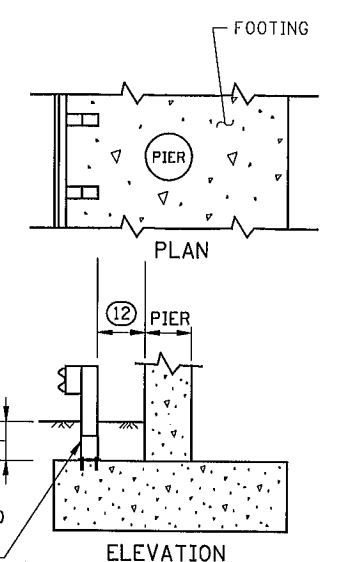
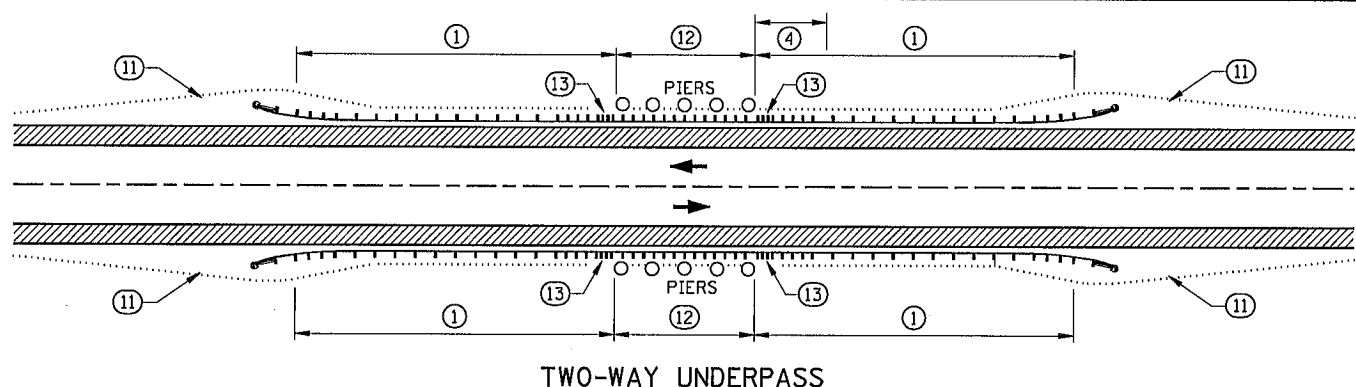
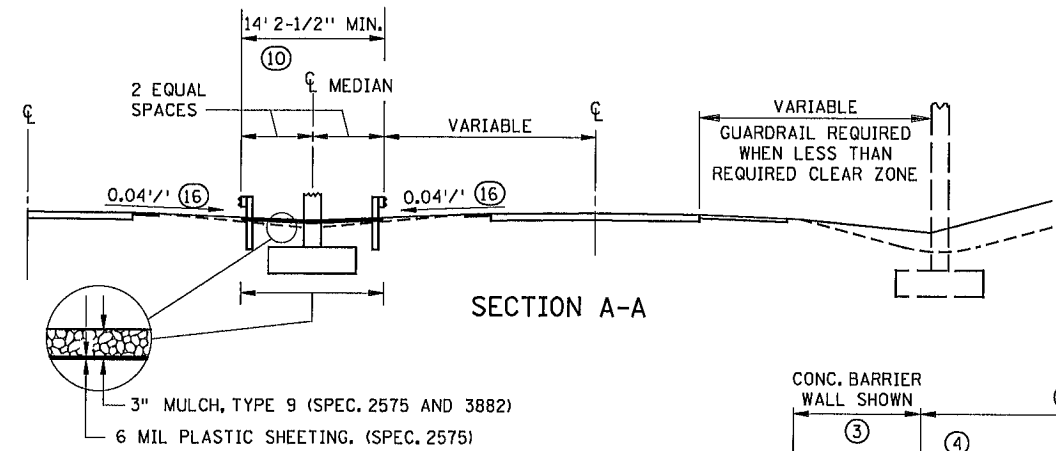


PERMANENT SLOPE PROTECTION DIKE

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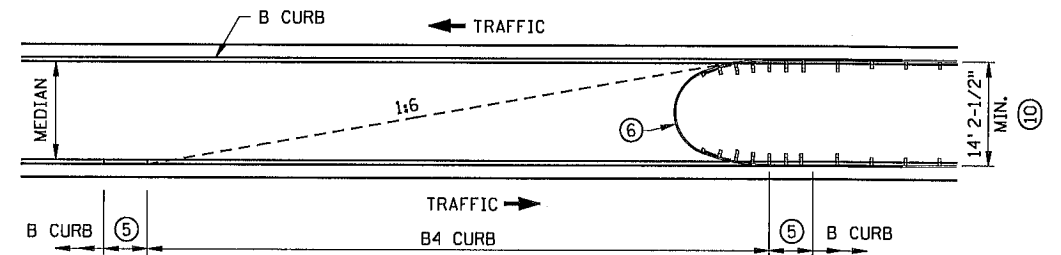
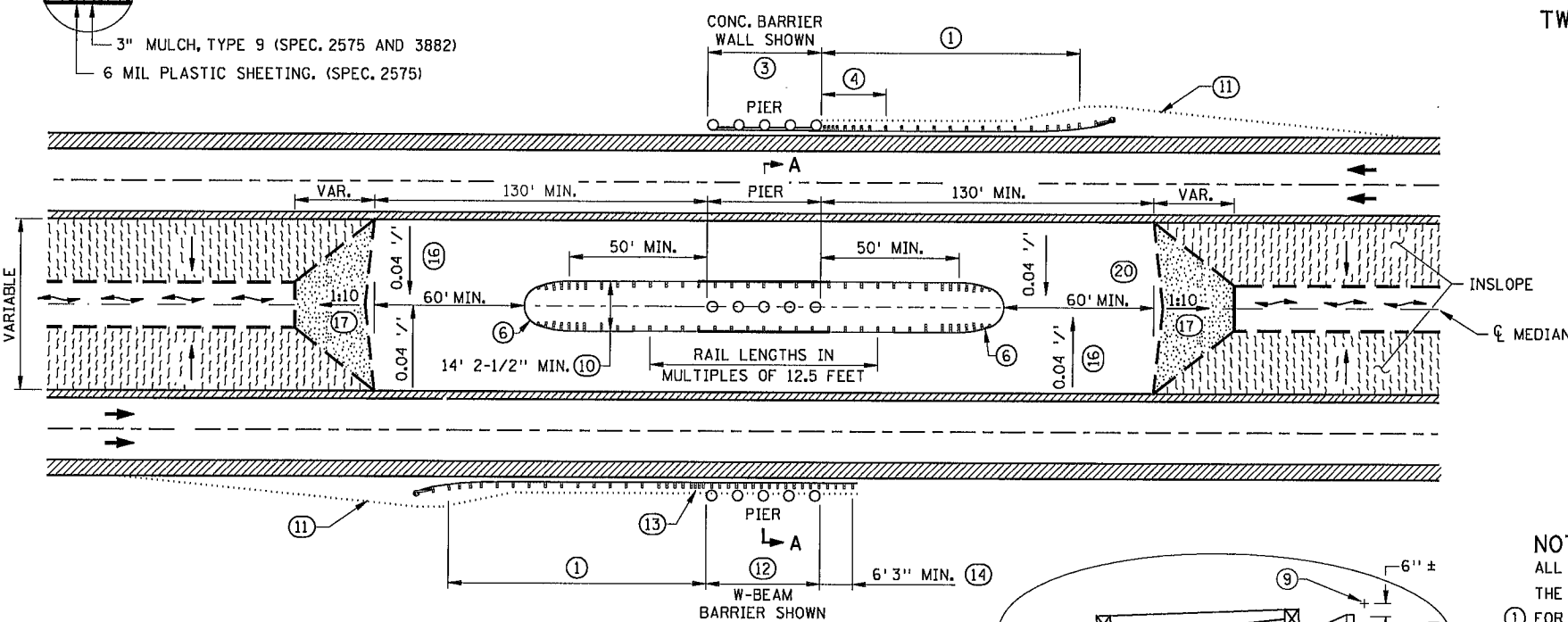
STANDARD SHEET NO. 5-297.406	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS
STANDARD APPROVED: JANUARY 31, 1985	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 75 OF 586 SHEETS	

REVISION DATE  
10-26-2000

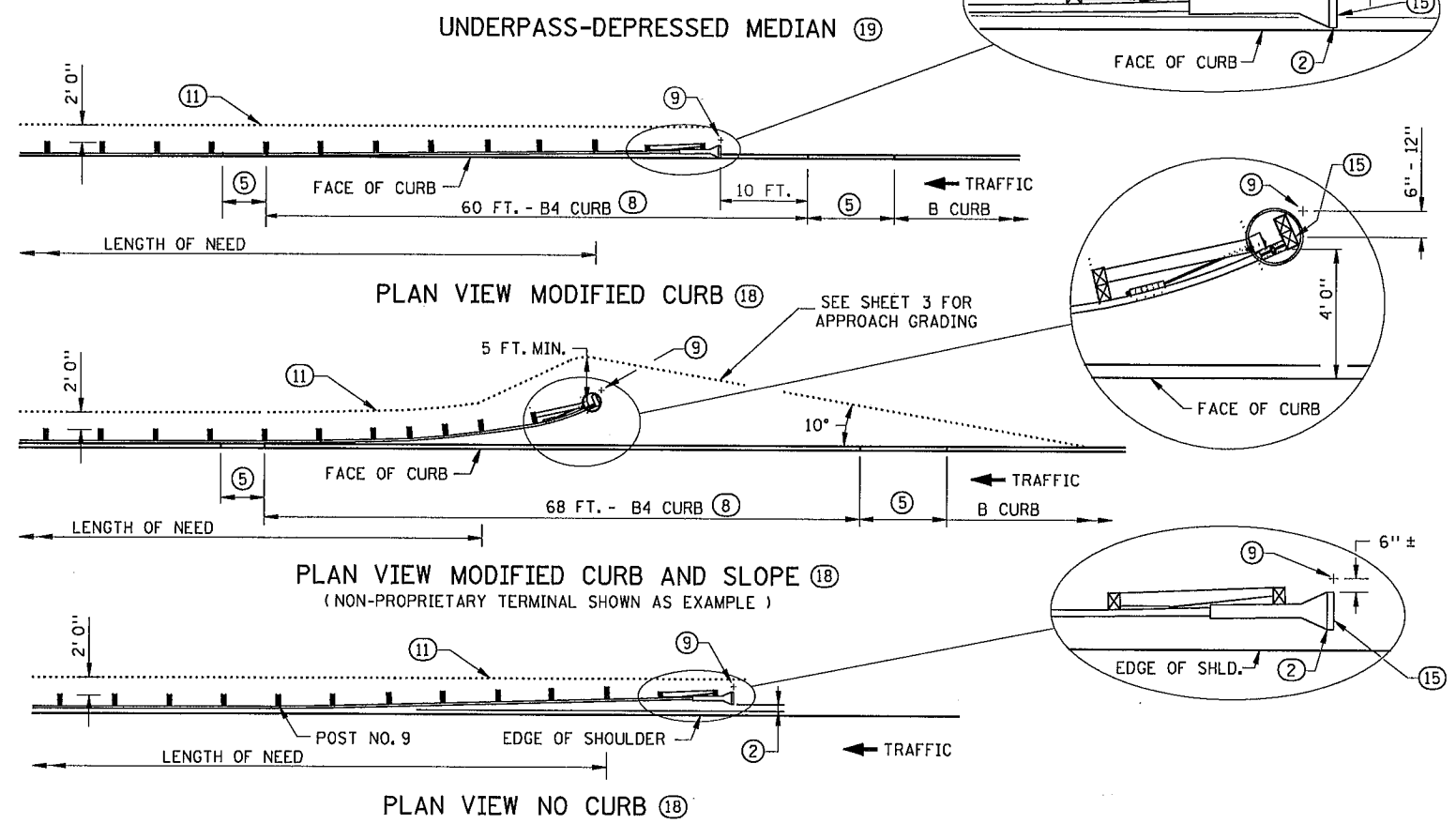


ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL

6' 3" POST SPACING	3' 0"
6' 3" POST SPACING WITH DOUBLE NESTED RAIL	2' 8"
MODIFIED 3' 1-1/2" POST SPACING	2' 3"
MODIFIED POST SPACING WITH DOUBLE NESTED RAIL	2' 0"

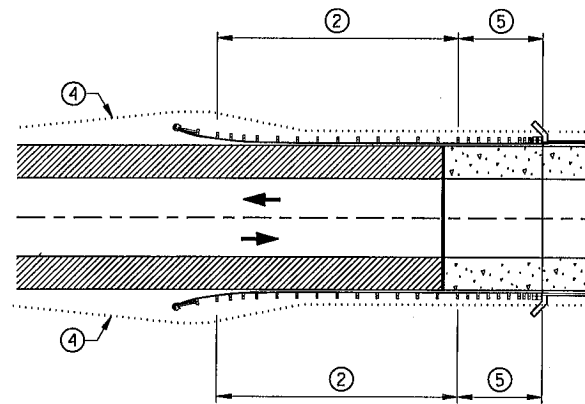


- NOTES:**
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
  - THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
  - ① FOR REQUIRED LENGTH OF INSTALLATION SEE ROAD DESIGN MANUAL CHAPTER 10.
  - ② THE LAST 50 FT. OF TANGENT TERMINALS MAY BE FLARED AT 1:50 TAPER.
  - ③ CONC. BARRIER WALL BETWEEN PIER COLUMNS MAY BE USED. IF USED, SEE BARRIER WALL DETAILS.
  - ④ AN APPROVED TRANSITION MUST BE USED.
  - ⑤ 10 FT. CURB TRANSITION, USE IF ADJACENT CURB IS GREATER THAN 4 INCHES.
  - ⑥ THRIE BEAM BULLNOSE. SEE SHEET NO. --- FOR DETAILS.
  - ⑦ IF EMBEDMENT IS GREATER THAN 3 FT. 0 IN., OR IF EMBEDMENT IS 2 FT. 6 IN. TO 3 FT. 0 IN. AND ADJACENT POSTS ARE EMBEDDED 3 FT. 0 IN. OR MORE, POST SEAT IS NOT REQUIRED.
  - ⑧ FOR CURB 6 IN. OR HIGHER, MILL TO 3 IN. HEIGHT.
  - ⑨ SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 3401) DRIVEN INTO THE GROUND, EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
  - ⑩ MEASUREMENT IS FROM BACK OF RAIL TO BACK OF RAIL.
  - ⑪ 1:10 OR FLATTER SLOPE P.I.
  - ⑫ SEE ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL.
  - ⑬ WHEN CLOSE POST SPACING OR DOUBLE NESTED RAIL IS USED, THIS POST SPACING SHOULD EXTEND A MINIMUM OF 12 FT. IN THE DIRECTION OF APPROACHING TRAFFIC.
  - ⑭ THE ANCHOR ASSEMBLY MUST BE LOCATED DOWNSTREAM OF THE HAZARD.
  - ⑮ MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING) STRIPES SLOPED DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.
  - ⑯ 0.04 FT./FT. CROSS SLOPE TYPICAL. 0.10 FT./FT. CROSS SLOPE MAXIMUM.
  - ⑰ 1:10 SLOPE OR FLATTER.
  - ⑱ USE ONLY FOR RETROFITS WITH SITE RESTRICTIONS. FOR RETROFITS WITHOUT SITE RESTRICTIONS AND NEW CONSTRUCTION, SEE SHEET 3.
  - ⑲ MEDIAN GRADING DETAIL SHOWN APPLIES TO THRIE-BEAM BULLNOSE ONLY.
  - ⑳ DRAINAGE DETAILS SHOWN ON GRADING PLAN.

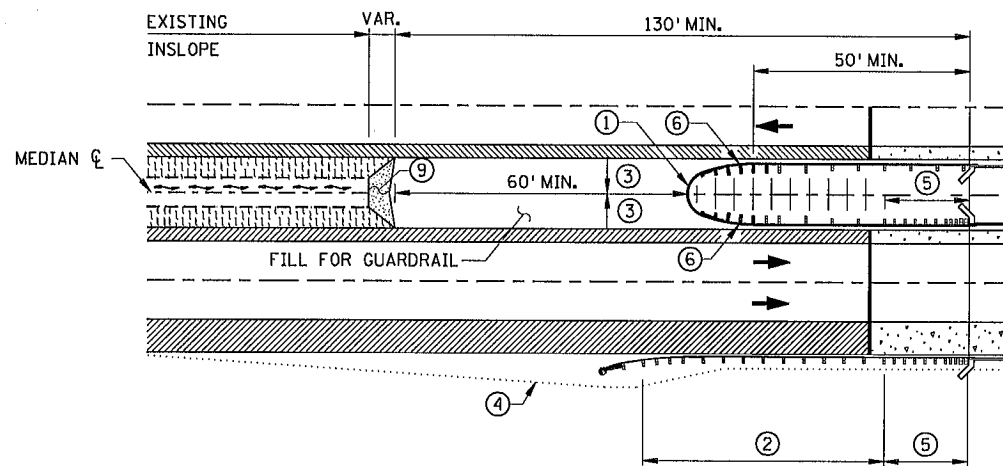


STANDARD SHEET NO. 5-297.601 (1 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 76 OF 586 SHEETS	

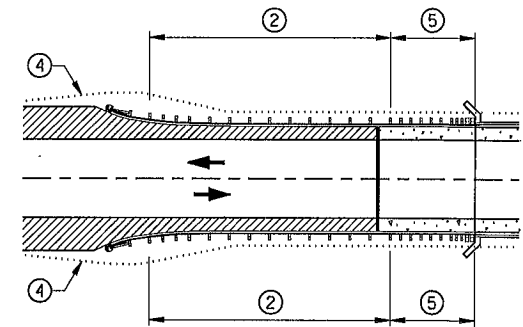
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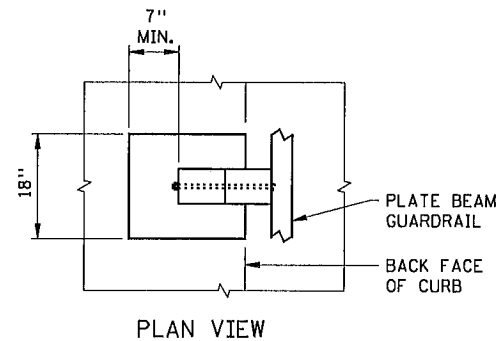
TWO - WAY BRIDGE  
WITH FULL SHOULDERS



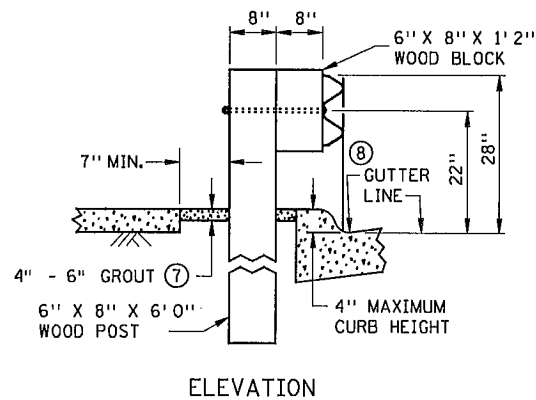
ONE - WAY BRIDGE  
WITH FULL RIGHT SHOULDER  
(FOR 14' 2-1/2" THREE BEAM BULLNOSE)



TWO - WAY BRIDGE  
WITHOUT FULL SHOULDERS

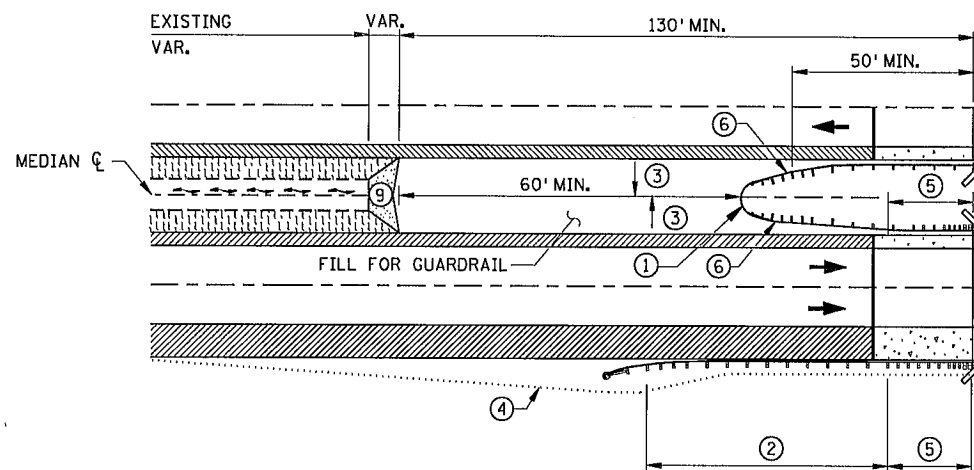


PLAN VIEW



ELEVATION

TYPICAL W-BEAM GUARDRAIL SECTION  
AT POST SET IN CONCRETE



ONE - WAY BRIDGE  
WITH FULL RIGHT SHOULDER  
(FOR MEDIANS WIDER THAN 14' 2-1/2" THREE BEAM BULLNOSE)

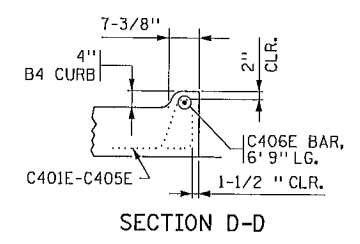
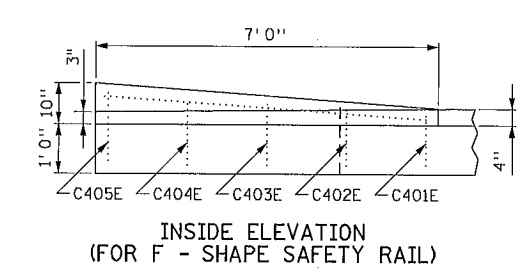
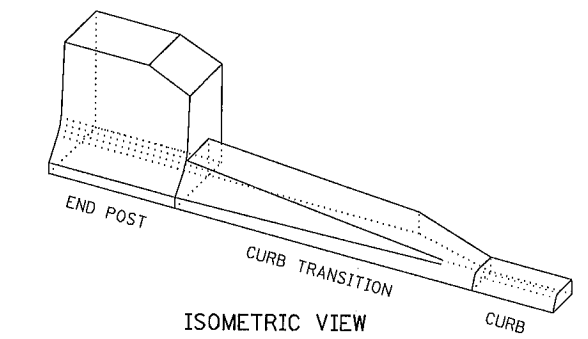
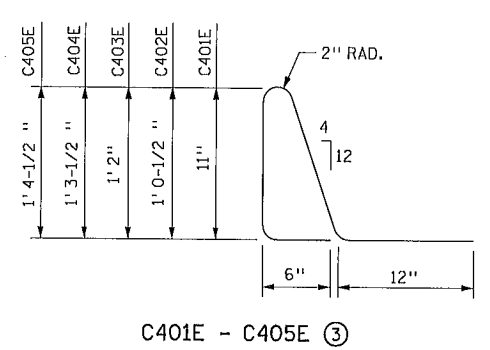
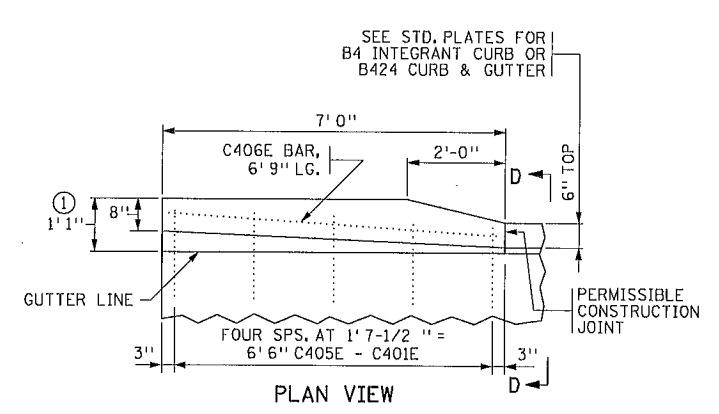
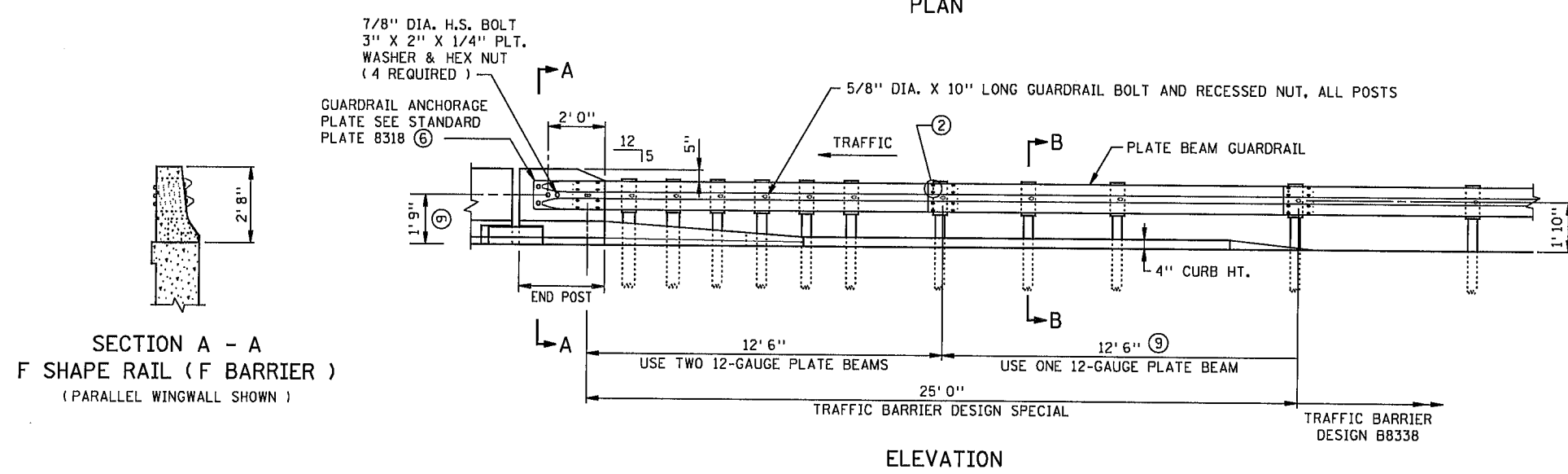
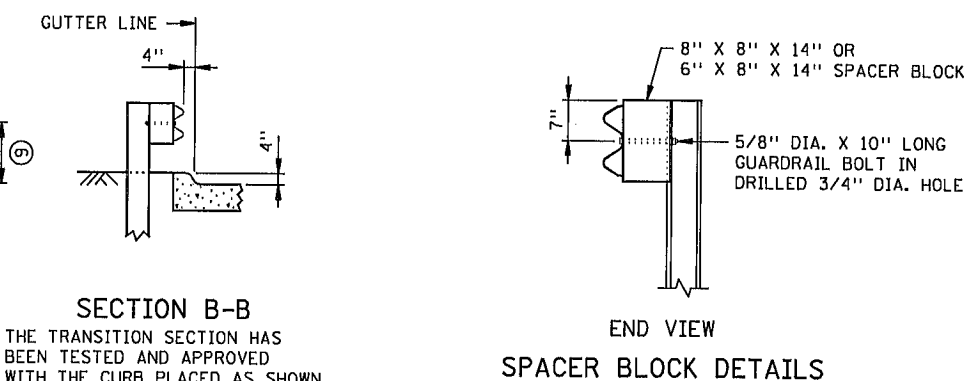
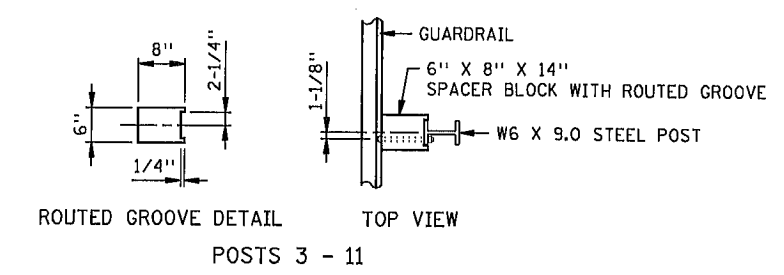
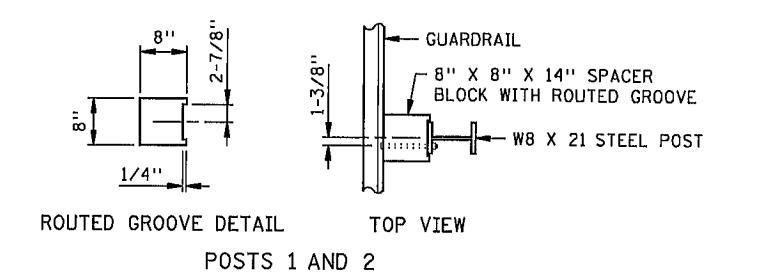
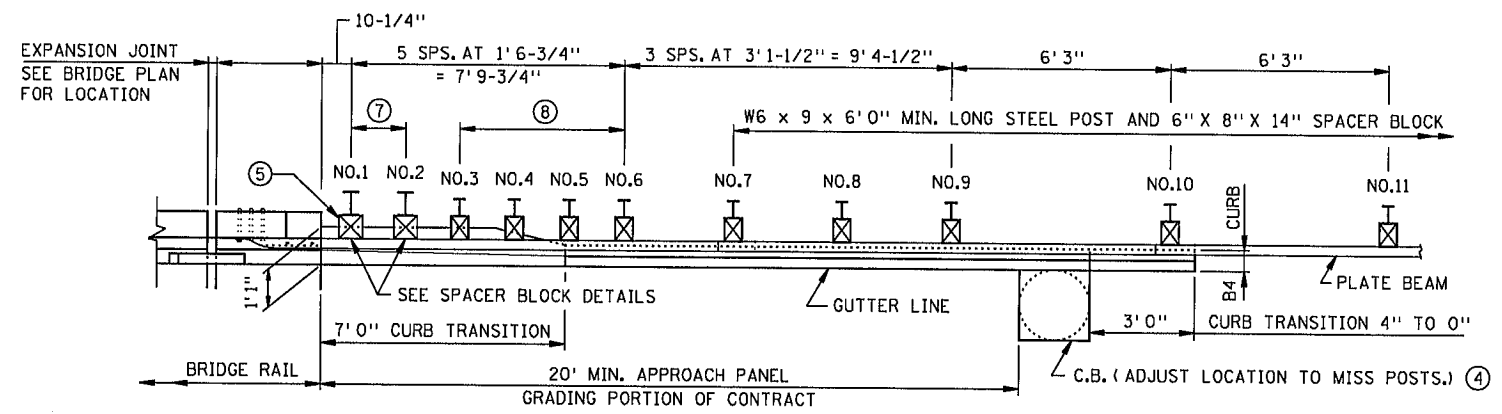
NOTES:

- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
- ① THREE BEAM BULLNOSE, SEE SHEET NO. ... FOR DETAILS.
- ② FOR THE REQUIRED LENGTH SEE ROAD DESIGN MANUAL CHAPTER 10.
- ③ 0.04 FT./FT. CROSS SLOPE TYPICAL, 0.10 FT./FT. CROSS SLOPE MAXIMUM.
- ④ 1:10 OR FLATTER SLOPE P.I.. APPROACH GRADING VARIES WITH TERMINAL TYPE.
- ⑤ PLATE BEAM GUARDRAIL ATTACHMENTS TO FIXED OBJECTS REQUIRE AN APPROVED TRANSITION SECTION.
- ⑥ FOR MEDIANS WIDER THAN THE 14 FT. 2-1/2 IN., BEFORE TAPERING THE APPROACH SIDE, TAPER THE OPPOSING SIDE AS SHOWN ON THE BULLNOSE DESIGN DETAIL. APPROACH TAPER SHOULD NOT EXCEED 1:25 IF THE BARRIER IS WITHIN THE SHY LINE OR 1:15 IF IT IS OUTSIDE.
- ⑦ GROUT MIX (BY VOLUME): 1 PART CEMENT (TYPE 1A), 14 PARTS SAND, 5 PARTS WATER).
- ⑧ PLACE FRONT FACE OF W-BEAM DIRECTLY ABOVE FRONT FACE OF CURB.
- ⑨ 1:10 SLOPE OR FLATTER.

STANDARD SHEET NO. 5-297.601 (2 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 77 OF 586 SHEETS	







CURB TRANSITION DETAILS  
F-SHAPE SAFETY BARRIER TO B4 CURB  
WITH W-BEAM GUARDRAIL BARRIER

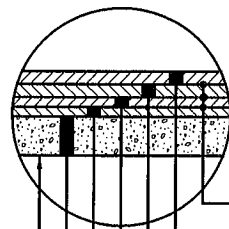
- NOTES:
- ① FROM BACK SIDE OF CURB TRANSITION TO GUTTERLINE.
  - ② 5/8" DIA. X 1-1/4" LONG GUARDRAIL BOLTS AND NUTS TYPICAL AT SPLICES.
  - ③ AS PER MNDOT 3301, USE EPOXY COATED GRADE 60 REINFORCEMENT BARS.
  - ④ SEE ROAD PLANS TO VERIFY ACTUAL DIMENSION AND LOCATION.
  - ⑤ ADDITIONAL BLOCKING MAY BE REQUIRED TO CLEAR BRIDGE STRUCTURE. VERIFY IN FIELD.
  - ⑥ SANDWICH ANCHOR PLATE BETWEEN RAIL BEAMS.
  - ⑦ POSTS 1 AND 2 TO BE W8 X 21 X 8' 0" MINIMUM LONG STEEL POST AND 8" X 8" X 14" SPACER BLOCK.
  - ⑧ POSTS 3, 4, 5, AND 6 TO BE W6 X 9 X 6' 0" MIN. LONG STEEL POST AND 6" X 8" X 14" SPACER BLOCK.
  - ⑨ GUARDRAIL CENTERLINE HEIGHT IS 1'-9" FROM 0' TO 12'-6" FROM BRIDGE. HEIGHT TRANSITIONS FROM 1'-9" TO 1'-10" BETWEEN 12'-6" AND 25' FROM BRIDGE.

TRAFFIC BARRIER DESIGN SPECIAL

STANDARD SHEET NO. 5-297.603	TITLE: W-BEAM TRANSITION TO CONCRETE F-SHAPE SAFETY RAIL WITH APPROACH CURB (STEEL POST)
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 79 OF 586 SHEETS	

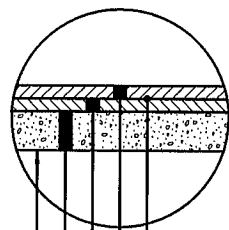
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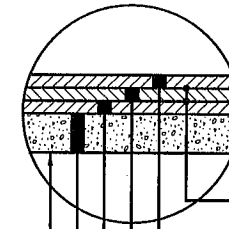
- TACK COAT (INCIDENTAL)  
MNDOT SPEC. 2357
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)  
MNDOT SPEC. 2360, SPWEB440F
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)  
MNDOT SPEC. 2360, SPWEB440F
- 1.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4,B)  
MNDOT SPEC. 2360, SPNWB430B
- 1.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4,B)  
MNDOT SPEC. 2360, SPNWB430B
- 8" AGGREGATE BASE  
CLASS 6, MNDOT SPEC. 2211
- GRADING GRADE

**INSET A**  
T.H. 10



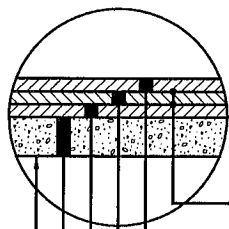
- TACK COAT (INCIDENTAL)  
MNDOT SPEC. 2357
- 2" TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)  
MNDOT SPEC. 2360, SPWEB230C
- 2" TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)  
MNDOT SPEC. 2360, SPWEB230C
- VAR. AGGREGATE BASE  
CLASS 6, MNDOT SPEC. 2211
- GRADING GRADE

**INSET B**  
T.H. 10 SHOULDERS WITH NO STAGING TRAFFIC  
RAMP SHOULDERS



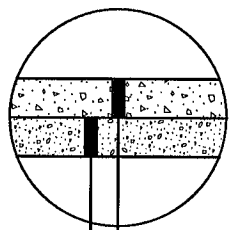
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- 1.5" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)  
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- 1.5" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)  
MNDOT SPEC. 2360, SPWEB440F
- 2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4,B)  
MNDOT SPEC. 2360, SPNWB430B
- 8" AGGREGATE BASE  
CLASS 6, MNDOT SPEC. 2211
- GRADING GRADE

**INSET C**  
RAMPS



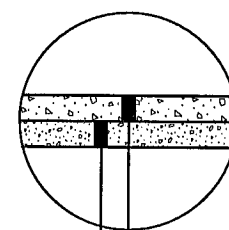
- TACK COAT (INCIDENTAL)  
MNDOT SPEC. 2357
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)  
MNDOT SPEC. 2360, SPWEB340C
- 1.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B)  
MNDOT SPEC. 2360, SPNWB330B
- 1.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B)  
MNDOT SPEC. 2360, SPNWB330B
- 9" AGGREGATE BASE  
CLASS 5 MODIFIED, MNDOT SPEC. 2211
- GRADING GRADE

**INSET D**  
RIVERDALE DR.



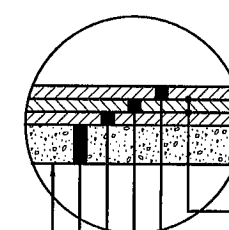
- 6.0" CONCRETE WALK,  
MNDOT SPEC. 2521
- 4" AGGREGATE BASE  
CLASS 6, MNDOT SPEC. 2211

**INSET E**



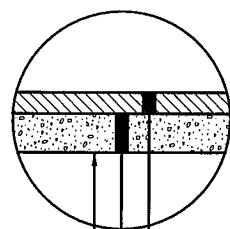
- 4.0" CONCRETE WALK,  
MNDOT SPEC. 2521
- 4" AGGREGATE BASE  
CLASS 5 MODIFIED, MNDOT SPEC. 2211

**INSET F**



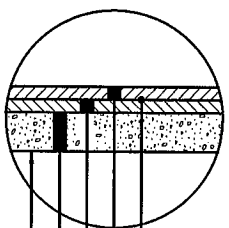
- TACK COAT (INCIDENTAL)  
MNDOT SPEC. 2357
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)  
MNDOT SPEC. 2360, SPWEB440C
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)  
MNDOT SPEC. 2360, SPWEB440C
- 2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4,B)  
MNDOT SPEC. 2360, SPNWB430B
- 10" AGGREGATE BASE  
CLASS 6, MNDOT SPEC. 2211
- GRADING GRADE

**INSET G**  
C.S.A.H. 83



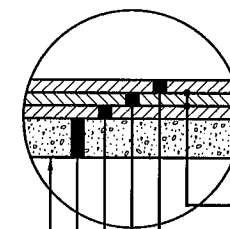
- 2.5" TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)  
MNDOT SPEC. 2360, SPWEB230C
- 4" AGGREGATE BASE  
CLASS 5 MODIFIED, MNDOT SPEC. 2211
- GRADING GRADE

**INSET H**



- TACK COAT (INCIDENTAL)  
MNDOT SPEC. 2357
- 1.5" TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)  
MNDOT SPEC. 2360, SPWEB340C
- 2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B)  
MNDOT SPEC. 2360, SPNWB330B
- 4" AGGREGATE BASE  
CLASS 5 MODIFIED, MNDOT SPEC. 2211
- GRADING GRADE

**INSET I**  
LOCAL ROADS



- TACK COAT (INCIDENTAL)  
MNDOT SPEC. 2357
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)  
MNDOT SPEC. 2360, SPWEB440F
- 2.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)  
MNDOT SPEC. 2360, SPWEB440F
- 1.5" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4,B)  
MNDOT SPEC. 2360, SPNWB430B
- VAR. AGGREGATE BASE  
CLASS 6, MNDOT SPEC. 2211
- GRADING GRADE

**INSET J**  
T.H. 10 SHOULDERS WITH STAGING TRAFFIC

**PAVEMENT  
INSETS**

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

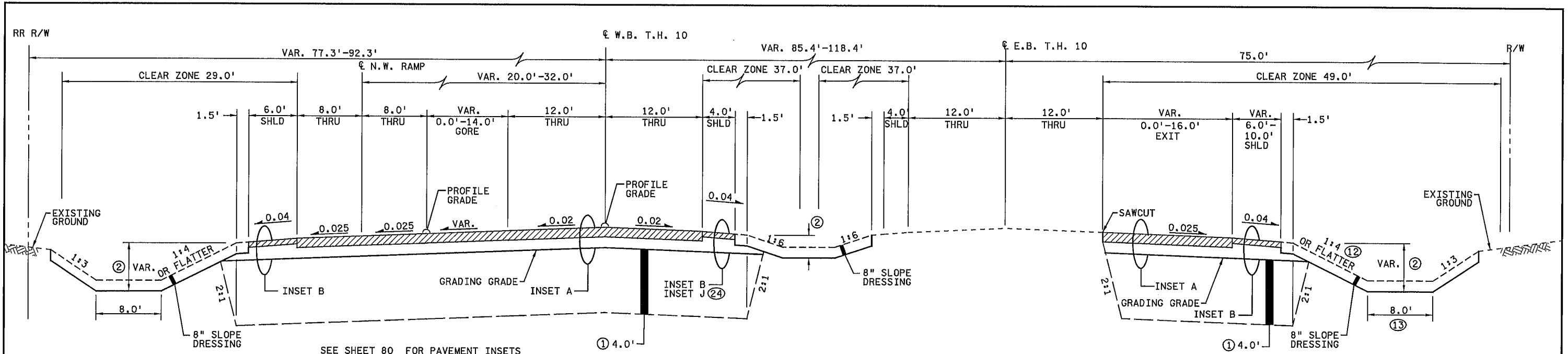
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY A. DEBRUIN  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TYPICAL SECTIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
80  
OF  
586



SEE SHEET 80 FOR PAVEMENT INSETS

NOTES:

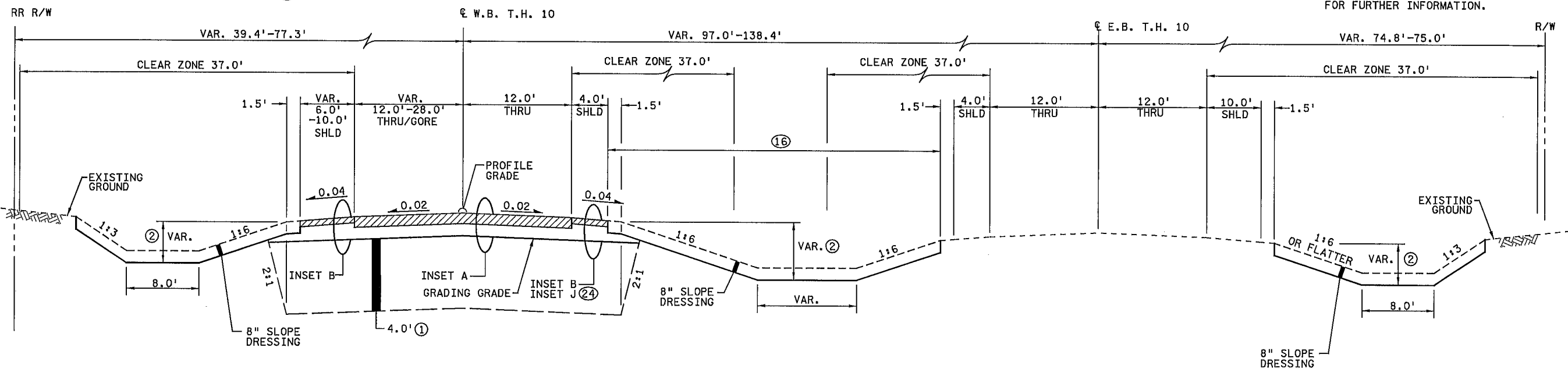
- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
- ② SEE PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES AND ELEVATIONS.
- ⑫ 1:3.5 SLOPE STA. 178+50.0 TO 179+50.0.
- ⑬ 6' DITCH WIDTH STA. 177+00.0 TO STA. 179+70.0.
- ⑯ CENTER MEDIAN GRADING FOR TURN LANE REMOVAL.
- ⑳ W.B. T.H. 10 STA. 175+57.68 TO 182+90.75 USE INSET J.

**TYPICAL SECTION NO. 2 - T.H. 10 & N.W. RAMP**

W.B. T.H. 10 STA. 175+60.9 TO STA. 178+63.6  
 E.B. T.H. 10 STA. 174+48.7 TO STA. 179+70.9  
 N.W. RAMP STA. 10+00.0 TO STA. 13+01.8

GENERAL NOTES:

- ALL CROSS SLOPES ARE IN FT. PER FT.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 7%.
- SEE SUPERELEVATION PLANS FOR SUPERELEVATION TRANSITIONS.
- RETAINING WALLS SHOWN FOR INFORMATION ONLY. SEE CONSTRUCTION PLANS AND RETAINING WALL PLANS FOR ADDITIONAL INFORMATION AND DETAILS.
- SLOPE DRESSING DEPTH INCLUDES COMPOST MATERIAL. SEE CONSTRUCTION SOILS NOTES FOR FURTHER INFORMATION.



**TYPICAL SECTION NO. 1 - T.H. 10**

W.B. T.H. 10 STA. 164+70.0 TO STA. 175+60.9  
 E.B. T.H. 10 STA. 163+41.2 TO STA. 174+48.7  
 E.B. T.H. 10 STA. 232+24.0 TO STA. 240+00.0 ⑯

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

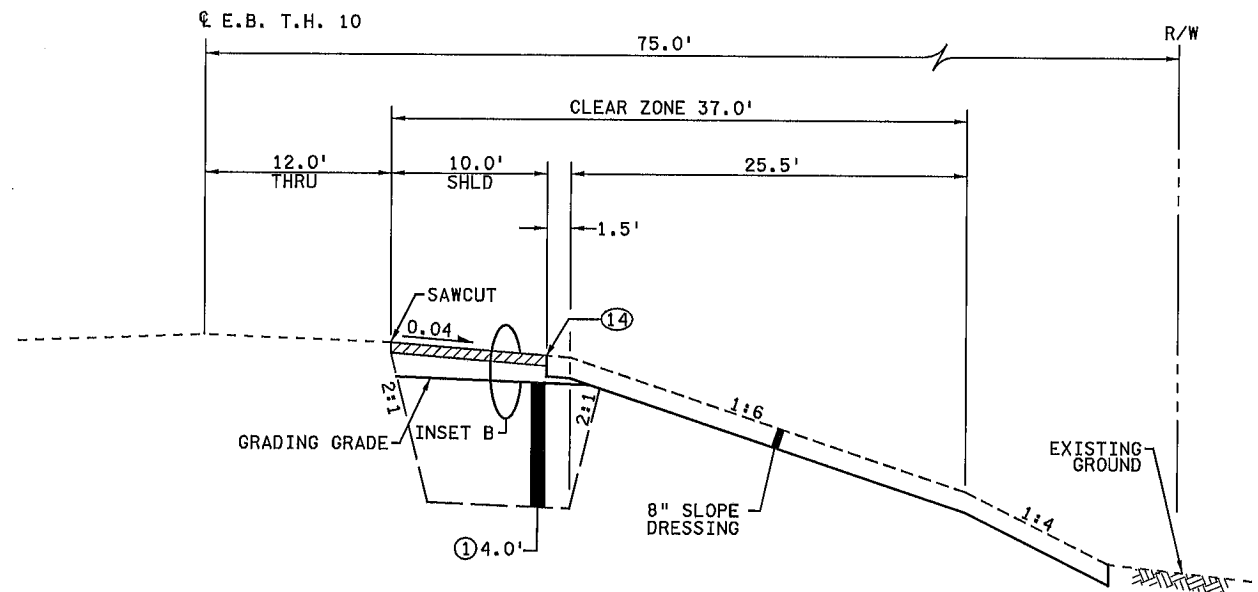
DRAWN BY A. DEBRUIN  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 TYPICAL SECTIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 81  
 OF  
 586

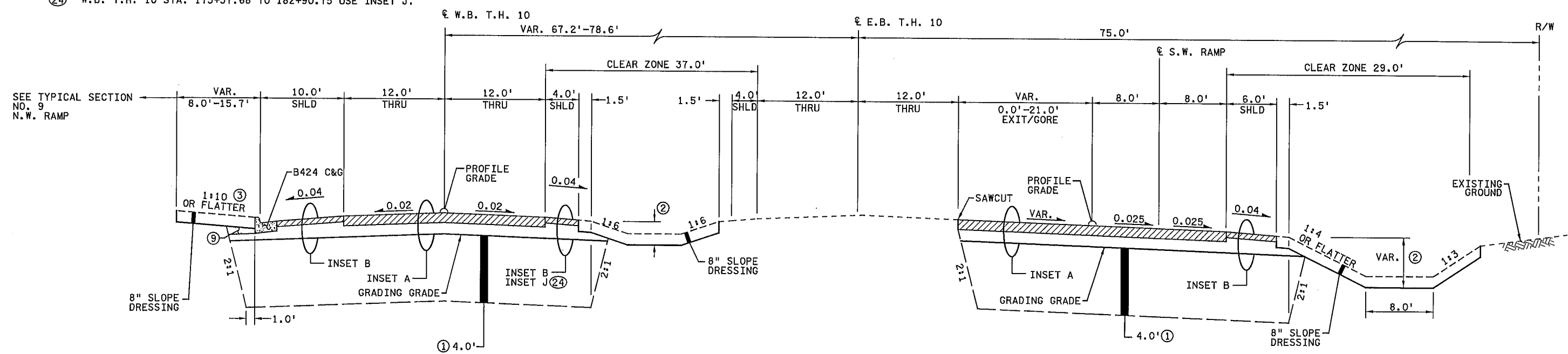


**TYPICAL SECTION NO. 4 - T.H. 10**  
 E.B. T.H. 10 STA. 182+06.9 TO STA. 187+65.5

SEE SHEET 81 FOR GENERAL NOTES AND  
 SEE SHEET 80 FOR PAVEMENT INSETS

**NOTES:**

- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
- ② SEE PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES AND ELEVATIONS.
- ③ SEE CONSTRUCTION PLANS FOR LIMITS OF CONCRETE WALK IN THIS AREA. USE INSET E.
- ④ BACKFILL WITH SELECT GRADING MATERIAL.
- ⑭ BEGIN D424 C&G AND CONCRETE WALK NEAR S.W. LOOP NOSE. SEE CONSTRUCTION PLANS AND CROSS SECTIONS. USE INSET E FOR CONCRETE WALK.
- ⑳ W.B. T.H. 10 STA. 175+57.68 TO 182+90.75 USE INSET J.



**TYPICAL SECTION NO. 3 - T.H. 10 & S.W. RAMP**  
 W.B. T.H. 10 STA. 178+63.6 TO STA. 182+00.0  
 E.B. T.H. 10 STA. 179+70.9 TO STA. 182+06.9  
 S.W. RAMP STA. 30+00.0 TO STA. 32+35.5

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NO	DATE	BY	CKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig J. Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO. 002-683-004  
 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY **A. DEBRUIN**

DESIGNED BY **D. SYMANIETZ**

CHECKED BY **C. HASS**

COMM. NO. 0138259

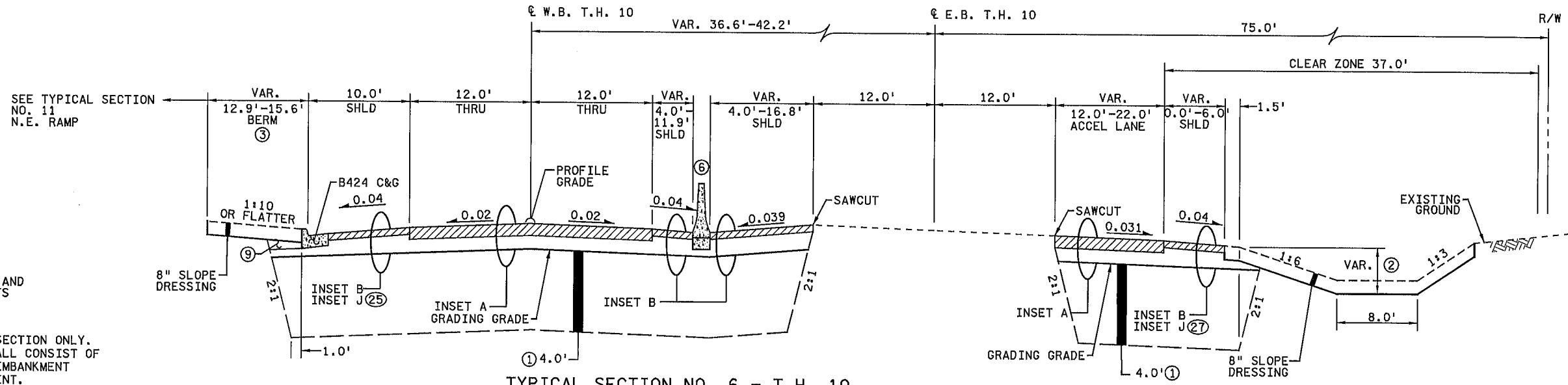


**ANOKA COUNTY**

TYPICAL SECTIONS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

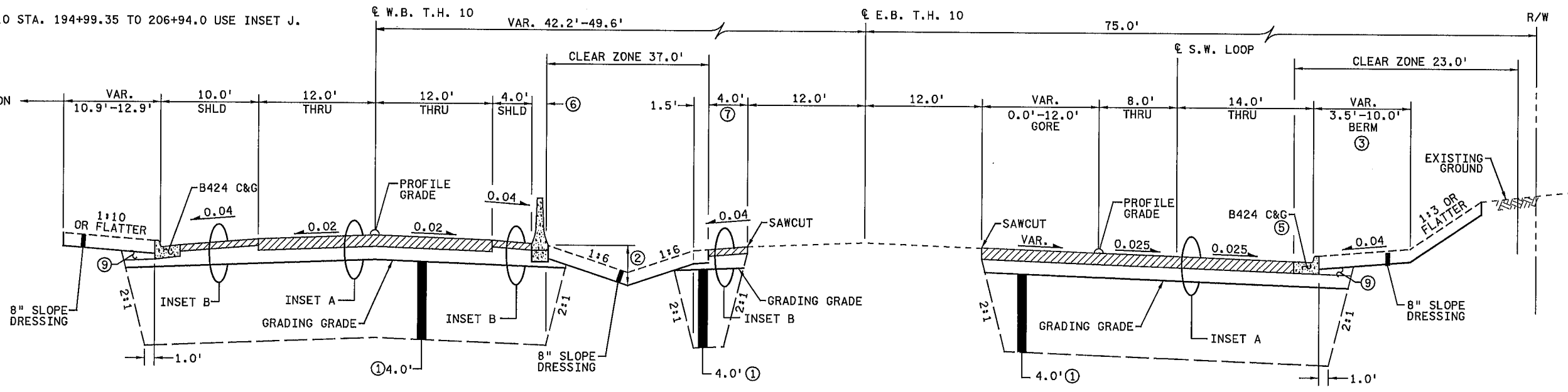
**SHEET 82 OF 586**



**TYPICAL SECTION NO. 6 - T.H. 10**  
 W.B. T.H. 10 STA. 188+45.2 TO STA. 195+85.0  
 E.B. T.H. 10 STA. 188+45.0 TO STA. 195+82.6

SEE SHEET 81 FOR GENERAL NOTES AND  
 SEE SHEET 80 FOR PAVEMENT INSETS

- NOTES:
- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
  - ② SEE PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES AND ELEVATIONS.
  - ③ SEE CONSTRUCTION PLANS FOR LIMITS OF CONCRETE WALK IN THIS AREA. USE INSET E.
  - ⑤ GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE.
  - ⑥ REINFORCED CONCRETE MEDIAN BARRIER GLARE SCREEN TYPE F, DESIGN 8309 (STD. PLATE 8309).
  - ⑦ SHLD RECONSTRUCTION BEGINS AT STA. 187+50.0.
  - ⑨ BACKFILL WITH SELECT GRADING MATERIAL.
  - ⑳ W.B. T.H. 10 STA. 194+15.91 TO 198+14.44 USE INSET J.
  - ㉑ E.B. T.H. 10 STA. 194+99.35 TO 206+94.0 USE INSET J.



**TYPICAL SECTION NO. 5 - T.H. 10 & S.W. LOOP**  
 W.B. T.H. 10 STA. 182+00.0 TO STA. 188+45.2  
 E.B. T.H. 10 STA. 187+65.5 TO STA. 188+45.0  
 S.W. LOOP STA. 44+90.5 TO STA. 47+85.0

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NO	DATE	BY	CHKD	APPR	REVISION

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.

Pr Int Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date 09-12-14 License # 45039

STATE AID PROJECT NO. 002-685-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

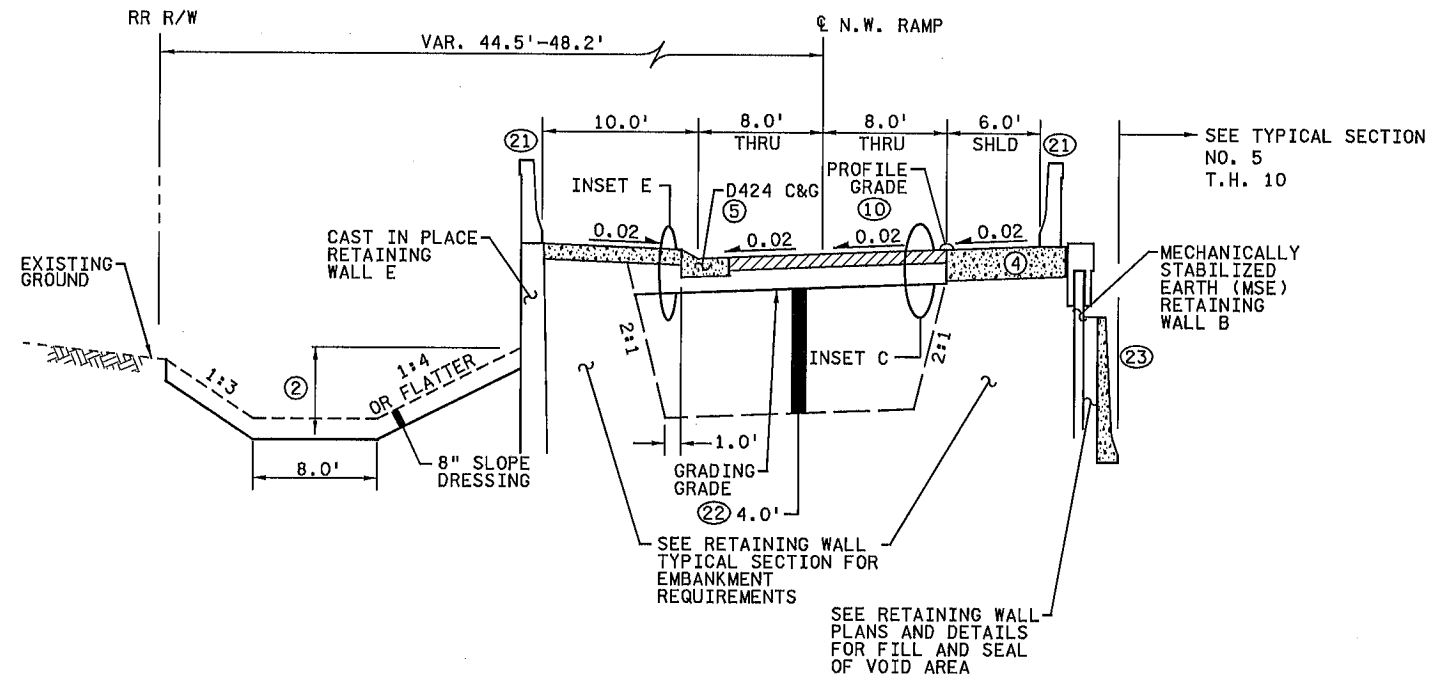
DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANJETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 TYPICAL SECTIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 83 OF 586





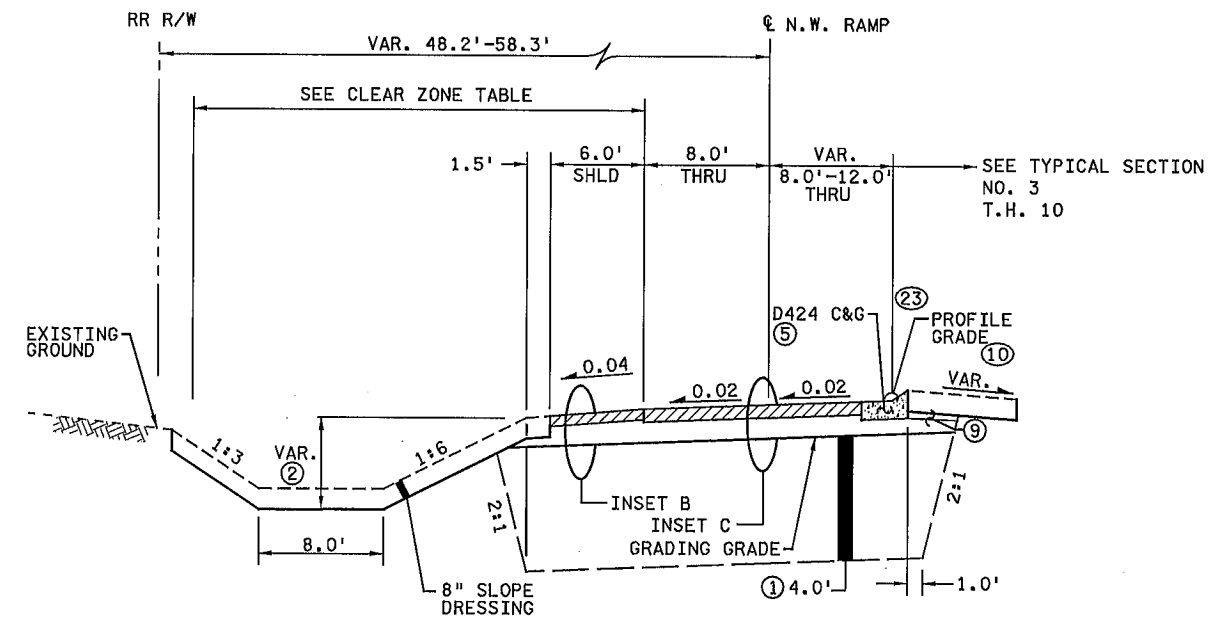
SEE SHEET 81 FOR GENERAL NOTES AND  
SEE SHEET 80 FOR PAVEMENT INSETS  
NOTES:

- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
- ② SEE PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES AND ELEVATIONS.
- ④ MOMENT SLAB. SEE RETAINING WALL PLANS AND DETAILS.
- ⑤ GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE.
- ⑨ BACKFILL WITH SELECT GRADING MATERIAL.
- ⑩ PROFILE GRADE CARRIED AT 8.0' RT.
- ⑪ SEE RETAINING WALL PLANS AND DETAILS FOR RETAINING WALL BARRIER TYPE, DIMENSIONS AND DETAILS.
- ⑫ EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF STRUCTURAL BACKFILL, SEE PROFILES FOR SUBGRADE TRANSITION LOCATION.
- ⑬ SEE MISCELLANEOUS DETAILS AND WALL DETAILS FOR CONCRETE BARRIER TRANSITION AT END OF WALL.

CLEAR ZONE TABLE		
ALIGNMENT	STATION	CLEAR ZONE
N.W. RAMP	13+01.8 - 16+53.0	29.0' LT
N.W. RAMP	16+53.0 - 17+80.8	20.0' LT

**TYPICAL SECTION NO. 10 - N.W. RAMP**

N.W. RAMP STA. 17+13.0 TO STA. 23+34.3



**TYPICAL SECTION NO. 9 - N.W. RAMP**

N.W. RAMP STA. 13+01.8 TO STA. 17+13.0

3/20/12 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_ts06.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Prt Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

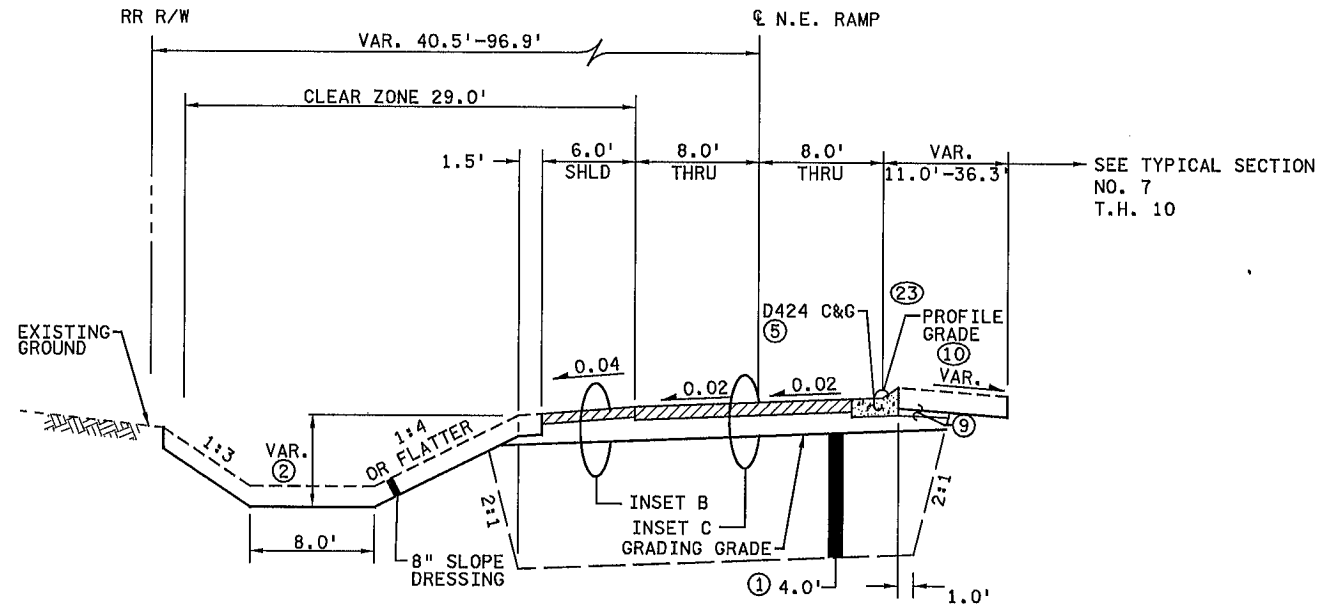
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



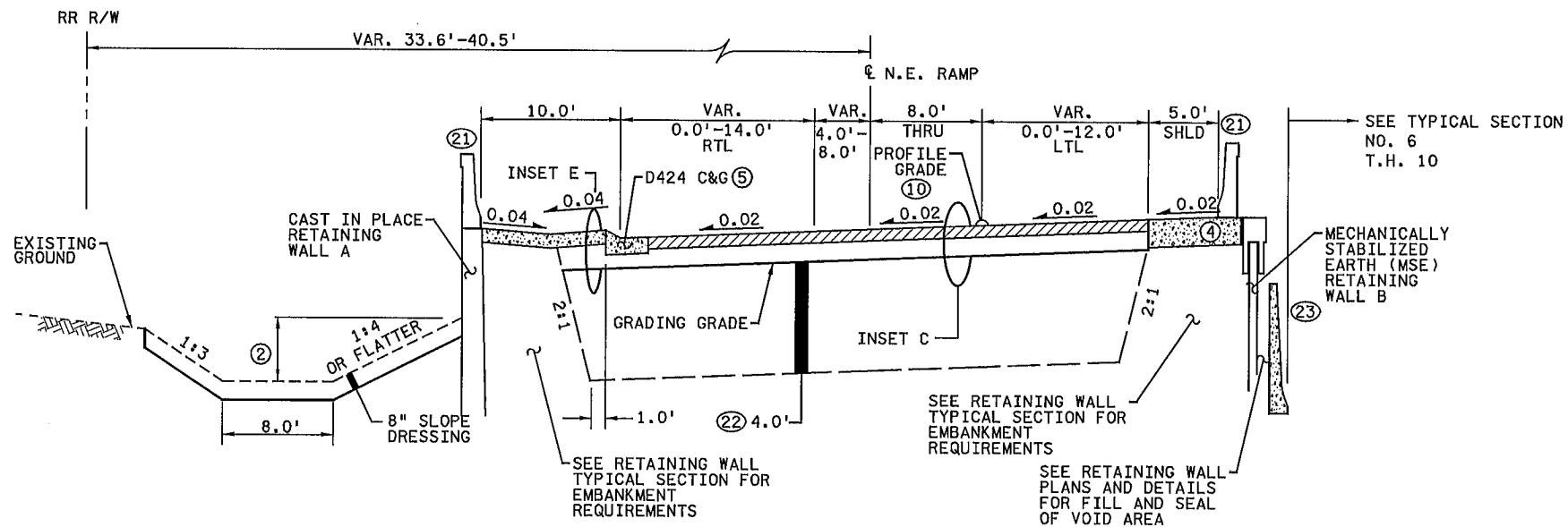
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TYPICAL SECTIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
85  
OF  
586



**TYPICAL SECTION NO. 12 - N.E. RAMP**  
N.E. RAMP STA. 29+49.1 TO STA. 32+93.0



**TYPICAL SECTION NO. 11 - N.E. RAMP**  
N.E. RAMP STA. 20+33.7 TO STA. 29+49.1

SEE SHEET 81 FOR GENERAL NOTES AND  
SEE SHEET 80 FOR PAVEMENT INSETS  
NOTES:

- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
- ② SEE PROFILES AND CROSS SECTIONS FOR SPECIAL DITCH GRADES AND ELEVATIONS.
- ④ MOMENT SLAB. SEE RETAINING WALL PLANS AND DETAILS.
- ⑤ GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE.
- ⑨ BACKFILL WITH SELECT GRADING MATERIAL.
- ⑩ PROFILE GRADE CARRIED AT 8.0' RT.
- ⑪ SEE RETAINING WALL PLANS AND DETAILS FOR RETAINING WALL BARRIER TYPE, DIMENSIONS AND DETAILS.
- ⑫ EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF STRUCTURAL BACKFILL, SEE PROFILES FOR SUBGRADE TRANSITION LOCATION.
- ⑬ SEE MISCELLANEOUS DETAILS AND WALL DETAILS FOR CONCRETE BARRIER TRANSITION AT END OF WALL.

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NO	DATE	BY	CHKD	APPR	REVISION

... \CAD\_BIM\Plan\8259\_ts07.dgn

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.  
Pr Int Name: CRAIG J. HASS  
*Craig J. Hass*  
Date: 09-12-11 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY A. DEBRUIN  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259

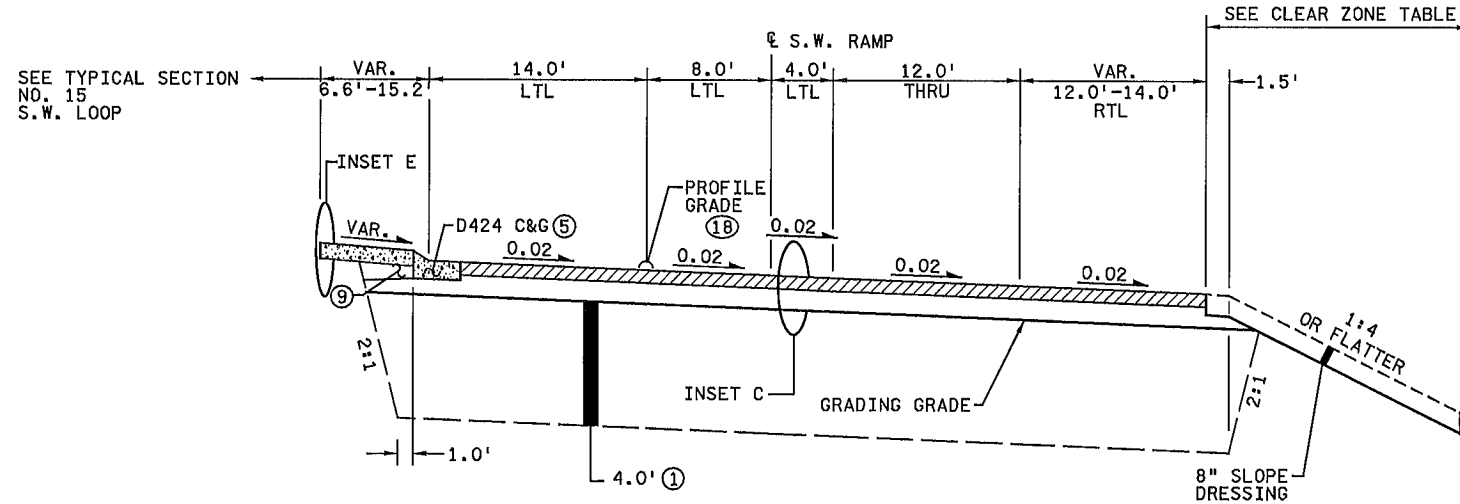


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TYPICAL SECTIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

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86  
OF  
586



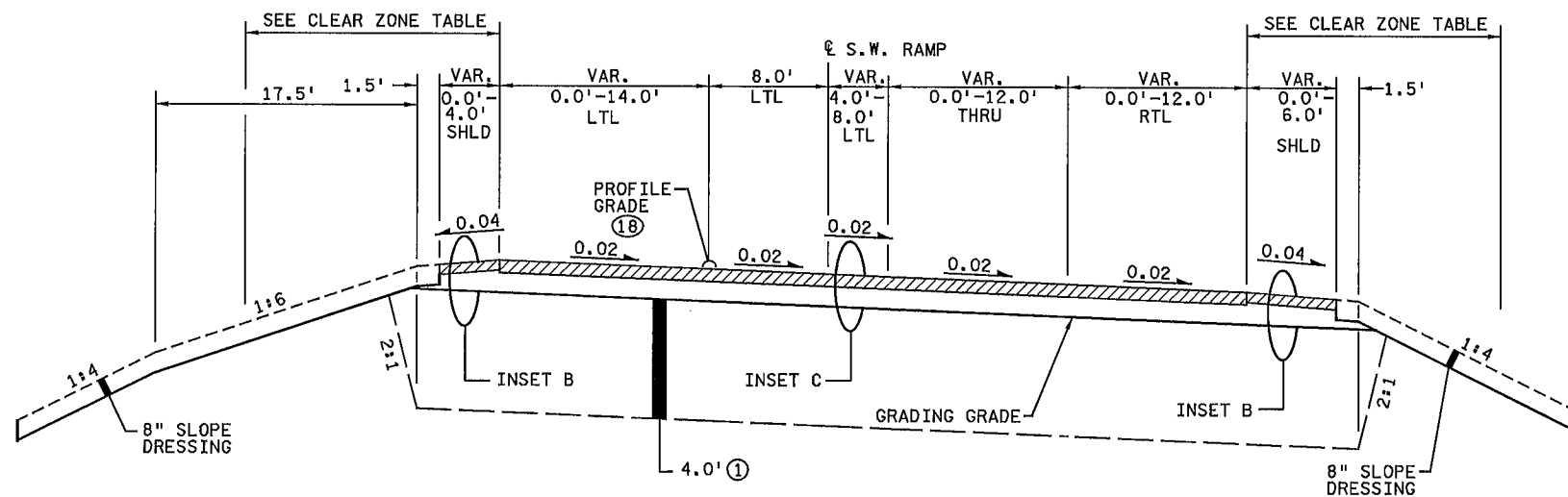


**TYPICAL SECTION NO. 14 - S.W. RAMP**  
S.W. RAMP STA. 37+75.0 TO STA. 38+54.8

CLEAR ZONE TABLE		
ALIGNMENT	STATION	CLEAR ZONE
S.W. RAMP	32+35.5 - 36+38.3	17.0' RT
S.W. RAMP	36+38.3 - 38+01.0	17.0' RT
S.W. RAMP	38+01.0 - 38+54.8	17.0' RT
S.W. RAMP	32+35.5 - 35+53.0	22.0' LT
S.W. RAMP	35+53.0 - 37+08.3	17.0' LT

SEE SHEET 81 FOR GENERAL NOTES AND  
SEE SHEET 80 FOR PAVEMENT INSETS  
NOTES:

- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
- ⑤ GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE.
- ⑨ BACKFILL WITH SELECT GRADING MATERIAL.
- ⑱ PROFILE GRADE CARRIED AT 8.0' LT.



**TYPICAL SECTION NO. 13 - S.W. RAMP**  
S.W. RAMP STA. 32+35.5 TO STA. 37+75.0

3/20/13 PM 9/11/2014 ... \CAD\_BIM\Plan\8259\_ts08.dgn

NO	DATE	BY	CHKD	APPR	REVISION

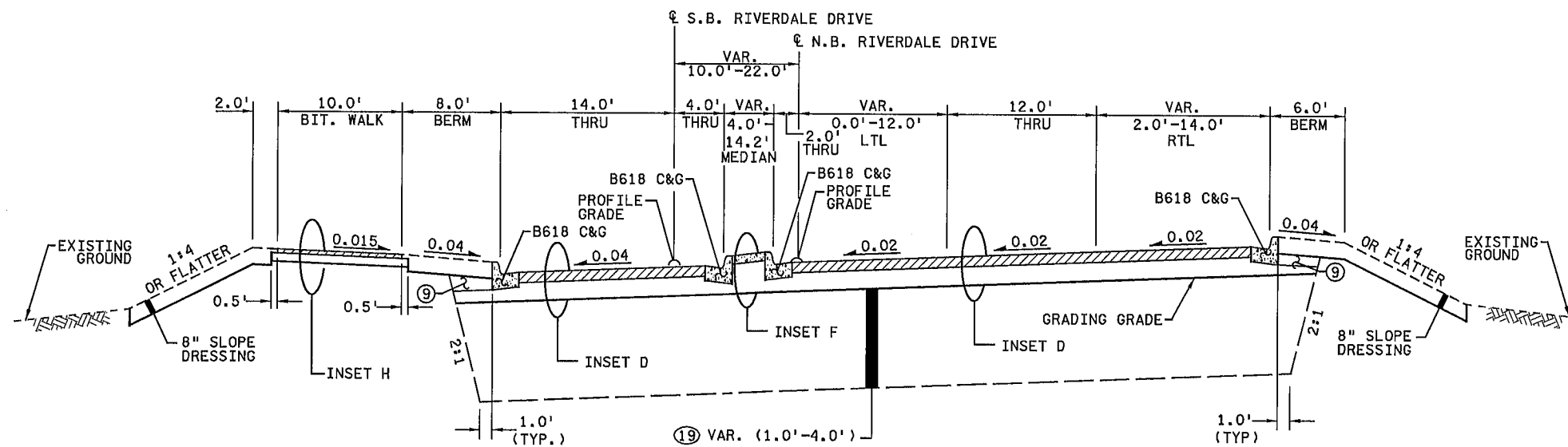
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Pr Int Name: **CRAIG J. HASS**  
*Craig Hass*  
Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO. 002-683-004 199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.        
CITY PROJECT NO.        
DRAWN BY A. DEBRUIN  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



**ANOKA COUNTY**  
TYPICAL SECTIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 87 OF 586

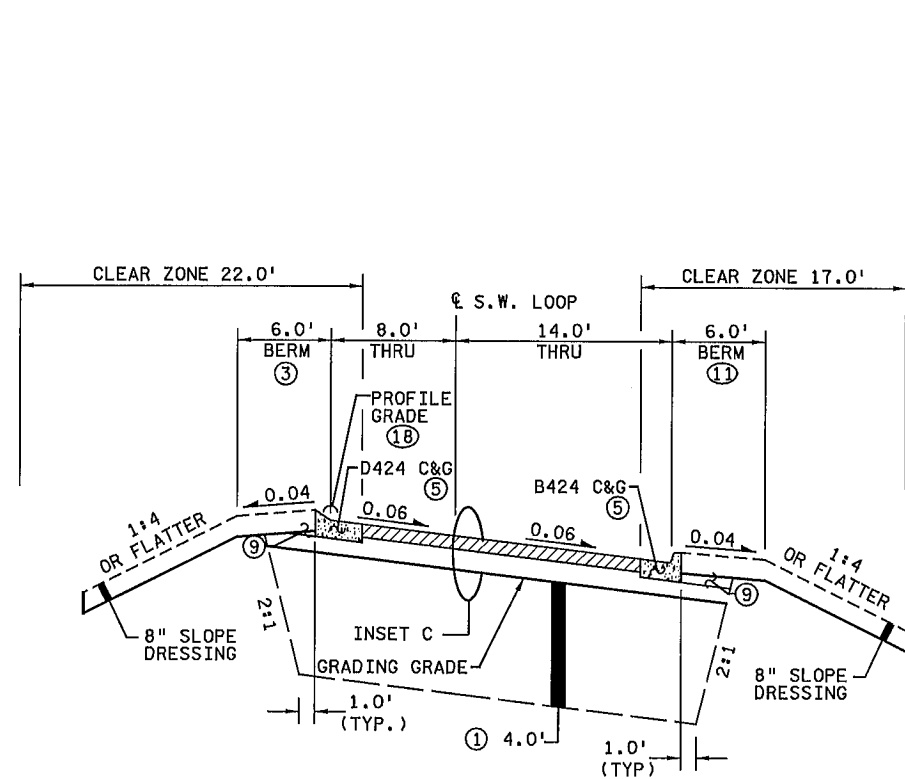


**TYPICAL SECTION NO. 17 - RIVERDALE DRIVE**

N.B. RIVERDALE DRIVE STA. 84+30.0 TO STA. 89+11.1  
 S.B. RIVERDALE DRIVE STA. 94+30.0 TO STA. 98+86.3

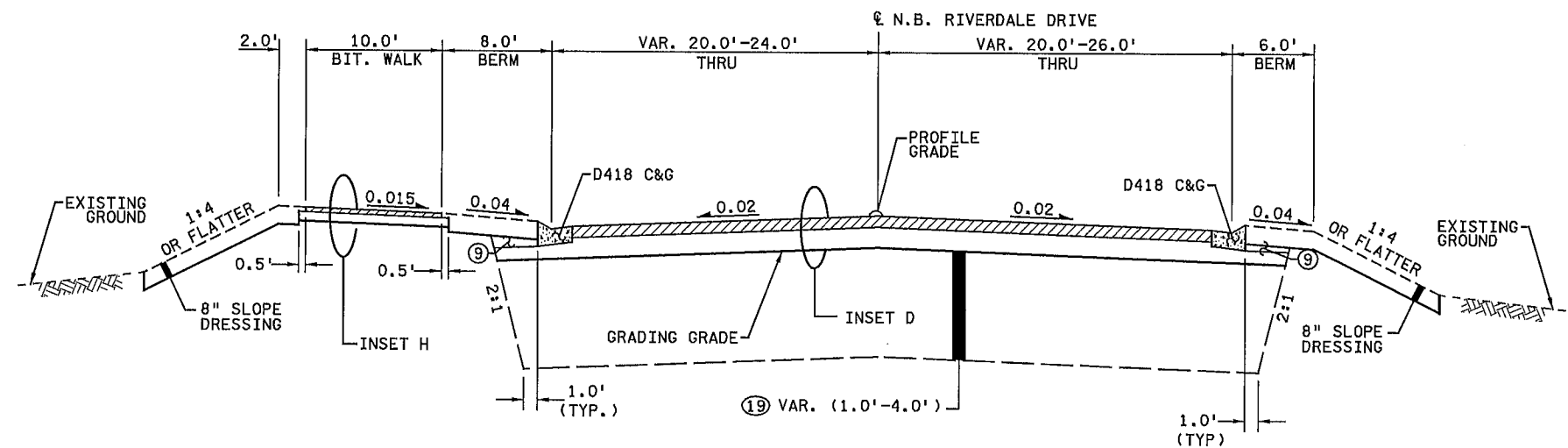
SEE SHEET 81 FOR GENERAL NOTES AND  
 SEE SHEET 80 FOR PAVEMENT INSETS  
 NOTES:

- ① EXCAVATION - SUBGRADE, CUT SECTION ONLY. 4.0' SUBGRADE EMBANKMENT SHALL CONSIST OF UPPER 1.5' SELECT GRANULAR EMBANKMENT LOWER 2.5' GRANULAR EMBANKMENT.
- ③ SEE CONSTRUCTION PLANS FOR CONCRETE WALK IN THE AREA. USE INSET E.
- ⑤ GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE.
- ⑨ BACKFILL WITH SELECT GRADING MATERIAL.
- ⑪ BERM VARIES 1.5'-10.0' NEAR BRIDGE ABUTMENT.
- ⑬ PROFILE GRADE CARRIED AT 8.0' LT.
- ⑰ EXCAVATION - SUBGRADE, CUT SECTION ONLY. SUBGRADE EMBANKMENT SHALL CONSIST OF GRANULAR EMBANKMENT. SEE PROFILES FOR SUBGRADE DEPTH.



**TYPICAL SECTION NO. 15 - S.W. LOOP**

S.W. LOOP STA. 40+22.5 TO STA. 44+90.5



**TYPICAL SECTION NO. 16 - RIVERDALE DRIVE**

N.B. RIVERDALE DRIVE STA. 80+00.0 TO STA. 84+30.0

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NO	DATE	BY	CHKD	APPR	REVISION

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 Pr Int Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

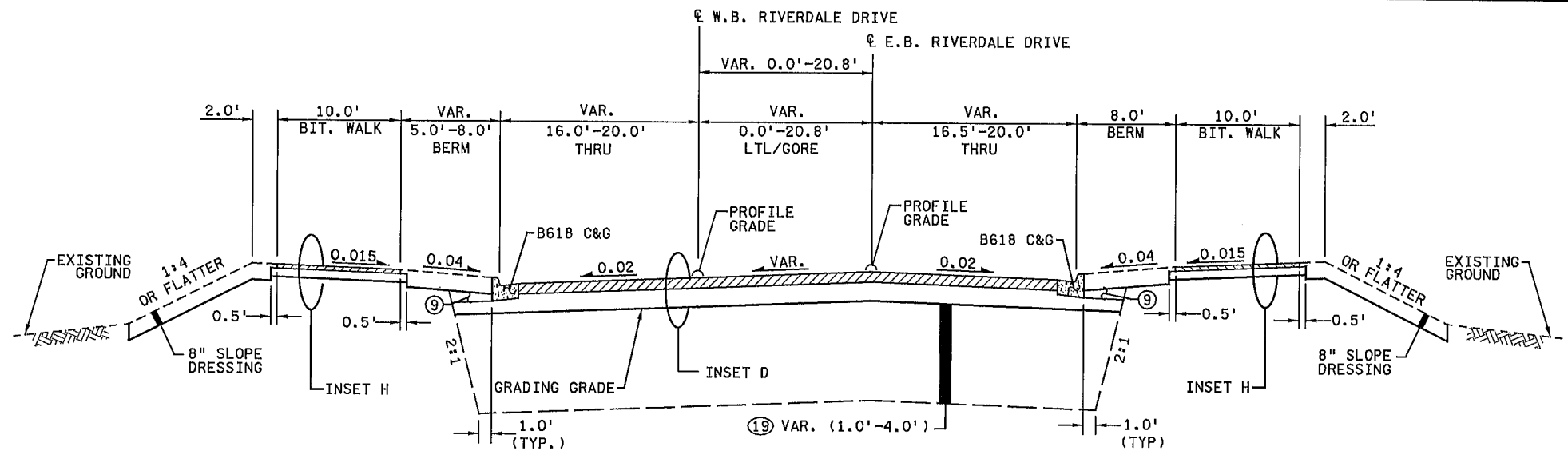
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY A. DEBRUIN  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

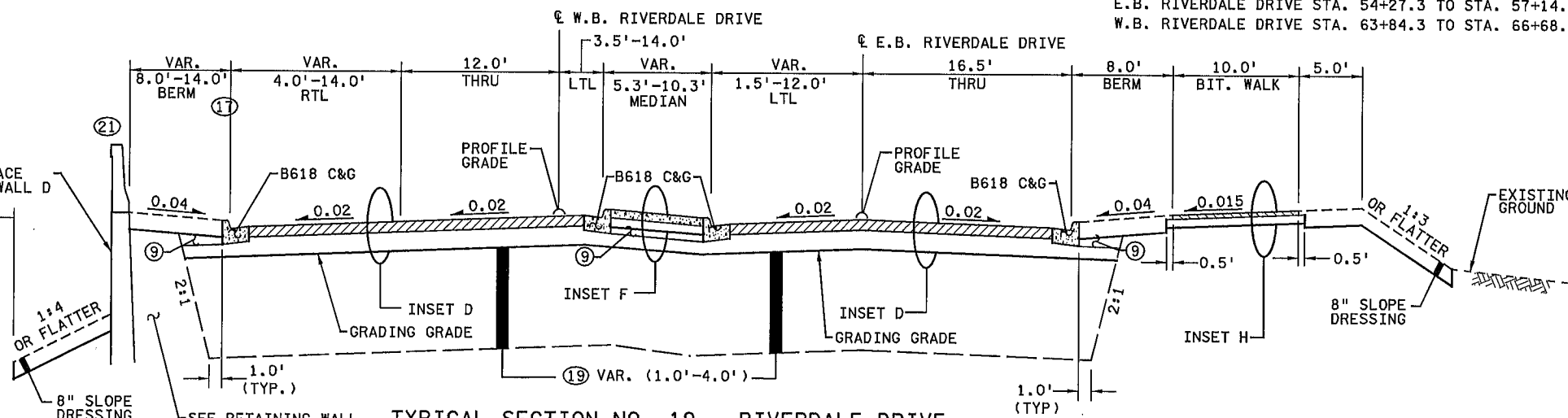
ANOKA COUNTY  
 TYPICAL SECTIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 88  
 OF  
 586



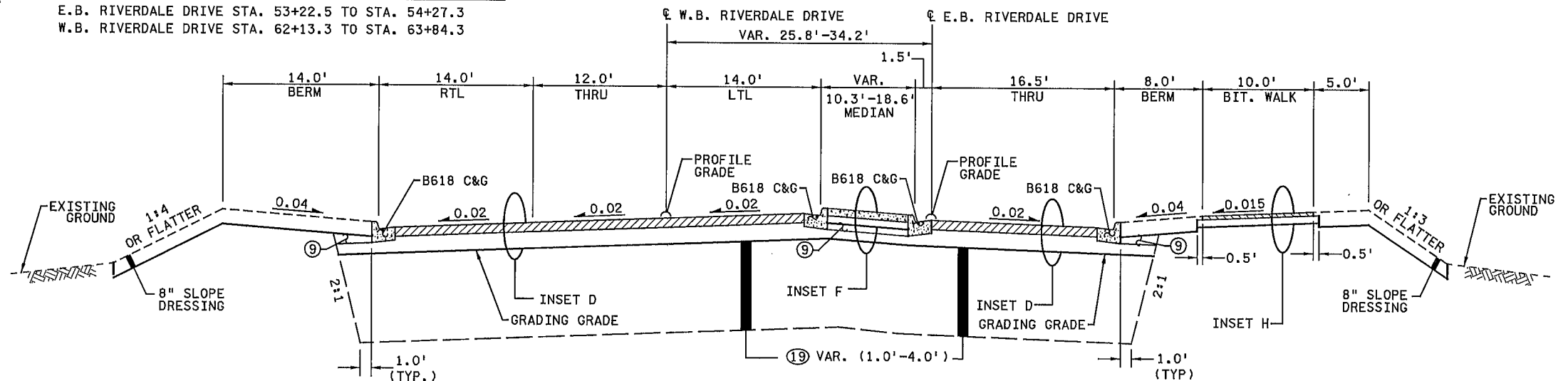
TYPICAL SECTION NO. 20 - RIVERDALE DRIVE

E.B. RIVERDALE DRIVE STA. 54+27.3 TO STA. 57+14.2  
 W.B. RIVERDALE DRIVE STA. 63+84.3 TO STA. 66+68.7



TYPICAL SECTION NO. 19 - RIVERDALE DRIVE

E.B. RIVERDALE DRIVE STA. 53+22.5 TO STA. 54+27.3  
 W.B. RIVERDALE DRIVE STA. 62+13.3 TO STA. 63+84.3



TYPICAL SECTION NO. - 18 RIVERDALE DRIVE

E.B. RIVERDALE DRIVE STA. 50+62.1 TO STA. 53+22.5  
 W.B. RIVERDALE DRIVE STA. 60+40.5 TO STA. 62+13.3

SEE SHEET 81 FOR GENERAL NOTES AND  
 SEE SHEET 80 FOR PAVEMENT INSETS  
 NOTES:

- ⑨ BACKFILL WITH SELECT GRADING MATERIAL.
- ⑰ TRAIL CONSTRUCTION, OLD ARMSTRONG BLVD. TO W.B. RIVERDALE DR. STA. 66+72.8 - SEE CROSS SECTIONS FOR BERM WIDTH OUTSIDE OF THIS AREA.
- ⑲ EXCAVATION - SUBGRADE, CUT SECTION ONLY. SUBGRADE EMBANKMENT SHALL CONSIST OF GRANULAR EMBANKMENT. SEE PROFILES FOR SUBGRADE DEPTH.
- ⑳ SEE RETAINING WALL PLANS AND DETAILS FOR RETAINING WALL BARRIER TYPE, DIMENSIONS AND DETAILS.

3/20/14 PM 8/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 A. DEBRUIN  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



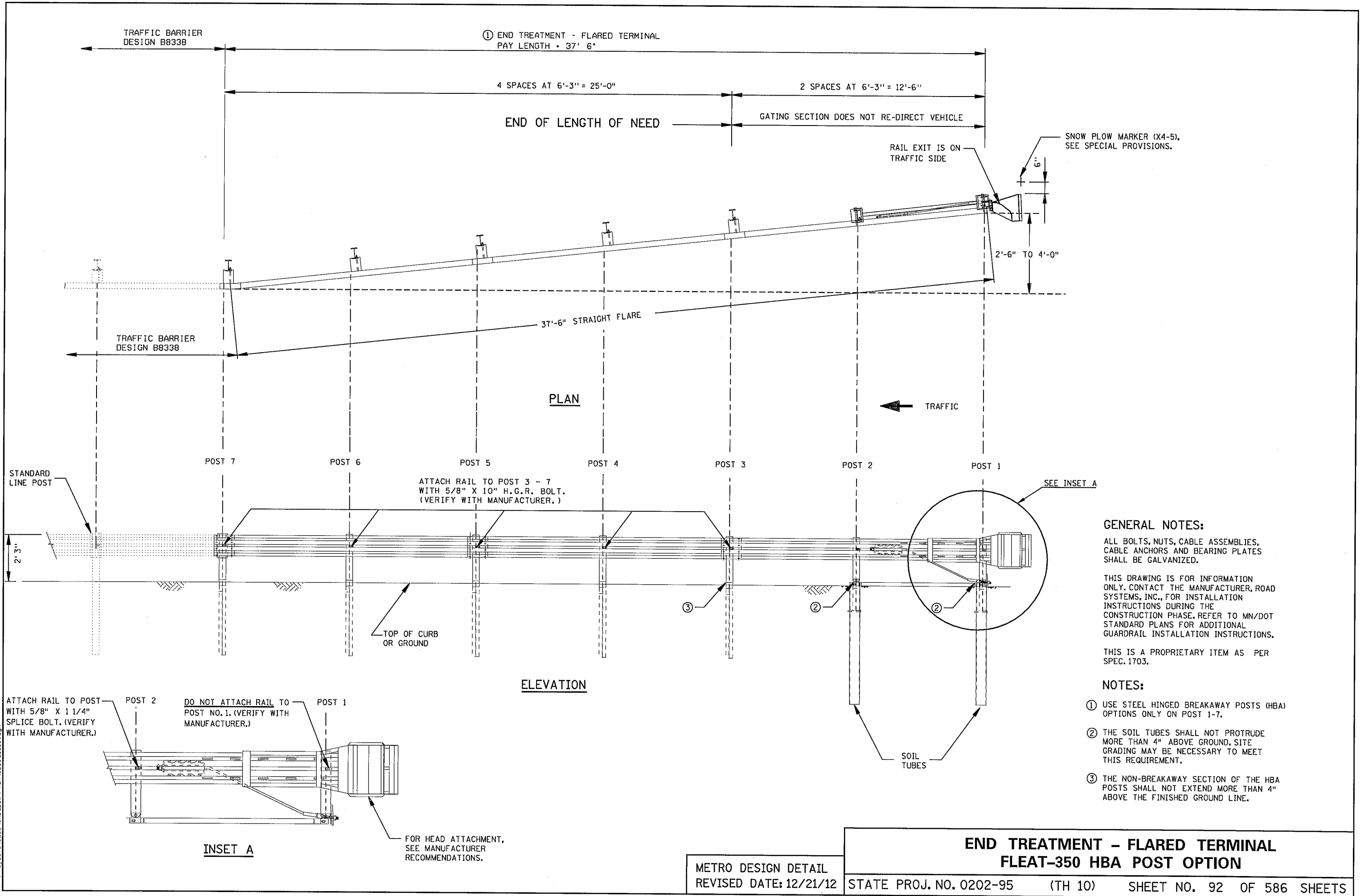
ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 TYPICAL SECTIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 89  
 OF  
 586







① END TREATMENT - FLARED TERMINAL  
PAY LENGTH = 37' 6"

4 SPACES AT 6'-3" = 25'-0"

2 SPACES AT 6'-3" = 12'-6"

END OF LENGTH OF NEED

GATING SECTION DOES NOT RE-DIRECT VEHICLE

RAIL EXIT IS ON TRAFFIC SIDE

SNOW PLOW MARKER (X4-5),  
SEE SPECIAL PROVISIONS.

2'-6" TO 4'-0"

37'-6" STRAIGHT FLARE

TRAFFIC BARRIER  
DESIGN B8338

PLAN

TRAFFIC

POST 7

POST 6

POST 5

POST 4

POST 3

POST 2

POST 1

STANDARD  
LINE POST

ATTACH RAIL TO POST 3 - 7  
WITH 5/8" X 10" H.G.R. BOLT.  
(VERIFY WITH MANUFACTURER.)

SEE INSET A

**GENERAL NOTES:**

ALL BOLTS, NUTS, CABLE ASSEMBLIES,  
CABLE ANCHORS AND BEARING PLATES  
SHALL BE GALVANIZED.

THIS DRAWING IS FOR INFORMATION  
ONLY. CONTACT THE MANUFACTURER, ROAD  
SYSTEMS, INC., FOR INSTALLATION  
INSTRUCTIONS DURING THE  
CONSTRUCTION PHASE. REFER TO MN/DOT  
STANDARD PLANS FOR ADDITIONAL  
GUARDRAIL INSTALLATION INSTRUCTIONS.

THIS IS A PROPRIETARY ITEM AS PER  
SPEC. 1703.

**NOTES:**

- ① USE STEEL HINGED BREAKAWAY POSTS (HBA)  
OPTIONS ONLY ON POST 1-7.
- ② THE SOIL TUBES SHALL NOT PROTRUDE  
MORE THAN 4" ABOVE GROUND. SITE  
GRADING MAY BE NECESSARY TO MEET  
THIS REQUIREMENT.
- ③ THE NON-BREAKAWAY SECTION OF THE HBA  
POSTS SHALL NOT EXTEND MORE THAN 4"  
ABOVE THE FINISHED GROUND LINE.

TOP OF CURB  
OR GROUND

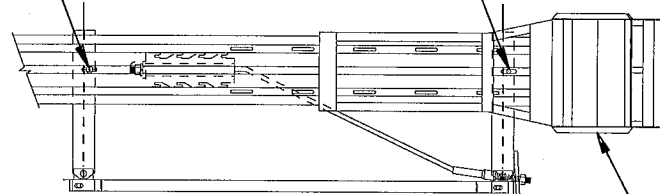
ELEVATION

ATTACH RAIL TO POST  
WITH 5/8" X 1 1/4"  
SPLICE BOLT. (VERIFY  
WITH MANUFACTURER.)

POST 2

DO NOT ATTACH RAIL TO  
POST NO. 1. (VERIFY WITH  
MANUFACTURER.)

POST 1



INSET A

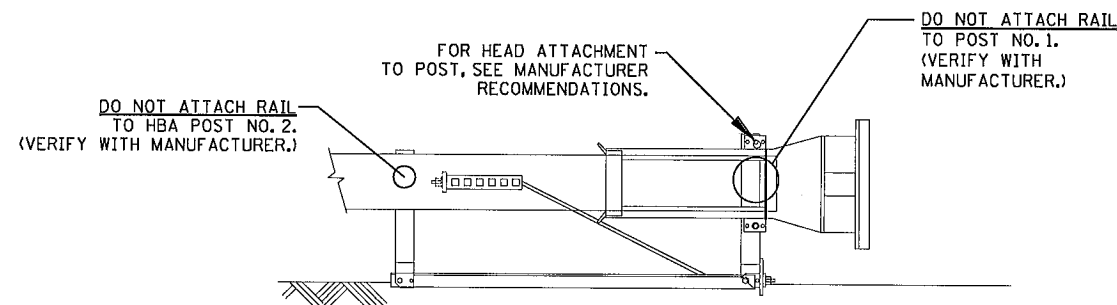
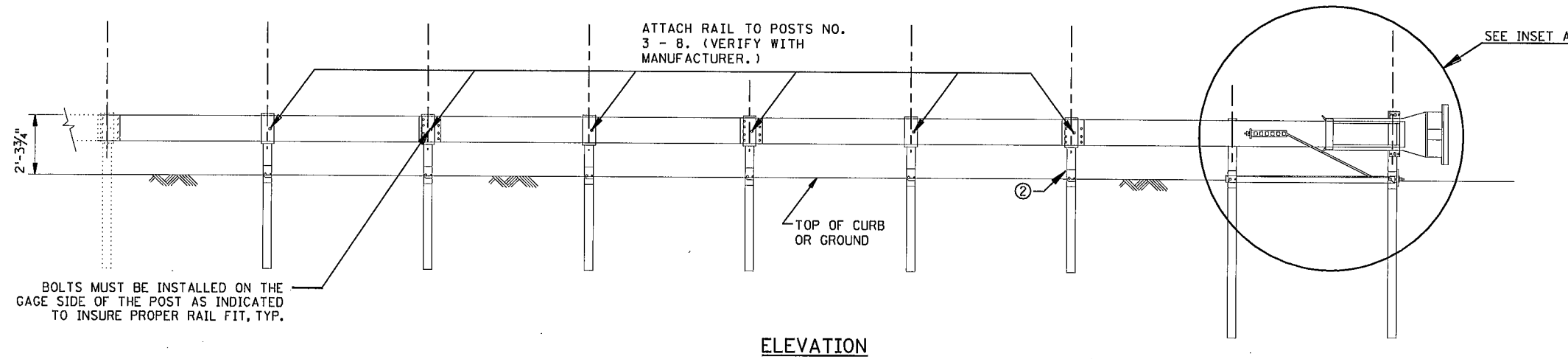
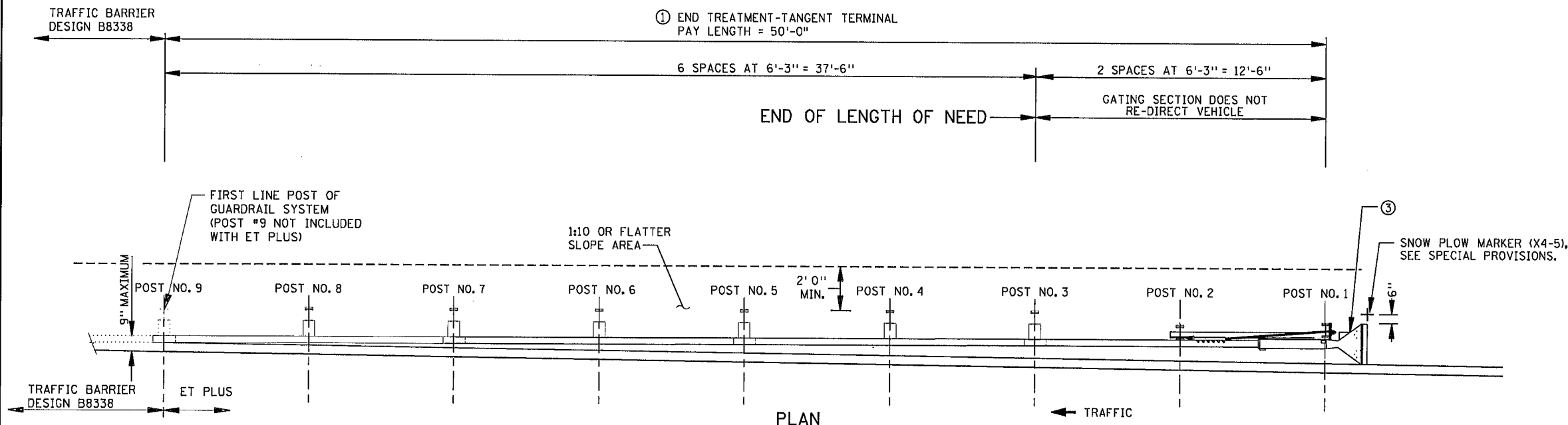
FOR HEAD ATTACHMENT,  
SEE MANUFACTURER  
RECOMMENDATIONS.

SOIL  
TUBES

METRO DESIGN DETAIL  
REVISED DATE: 12/21/12

**END TREATMENT - FLARED TERMINAL  
FLEAT-350 HBA POST OPTION**

STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 92 OF 586 SHEETS



**GENERAL NOTES:**

ALL BOLTS, NUTS, CABLE ASSEMBLIES, CABLE ANCHORS AND BEARING PLATES SHALL BE GALVANIZED.

THIS DRAWING IS FOR INFORMATION ONLY. CONTACT THE MANUFACTURER, TRINITY HIGHWAY PRODUCTS, LLC., FOR CURRENT DETAILS AND INSTALLATION INSTRUCTIONS. ALSO REFER TO MN/DOT STANDARD PLANS FOR ADDITIONAL GUARDRAIL INSTALLATION INFORMATION.

THIS IS A PROPRIETARY ITEM AS PER SPEC. 1703.

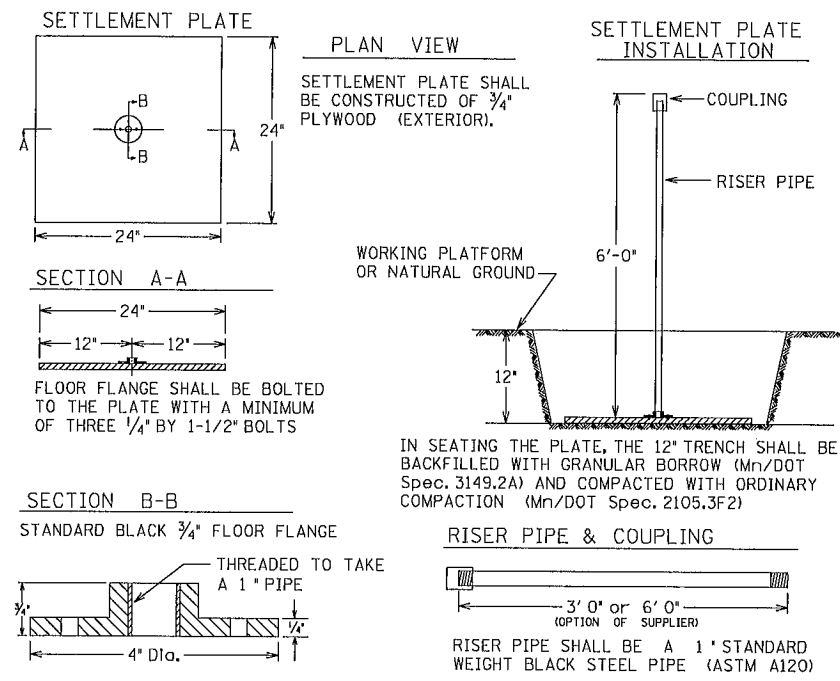
**NOTES:**

- ① USE STEEL HINGED BREAKAWAY (HBA) POSTS OPTIONS ONLY ON POSTS 1-8.
- ② THE NON-BREAKAWAY SECTION OF THE HBA POSTS SHALL NOT EXTEND MORE THAN 4" ABOVE THE FINISHED GROUND LINE.
- ③ THE RAIL IS DESIGNED TO EXIT THE TERMINAL HEAD ON THE BACK SIDE OF THE GUARDRAIL INSTALLATION.

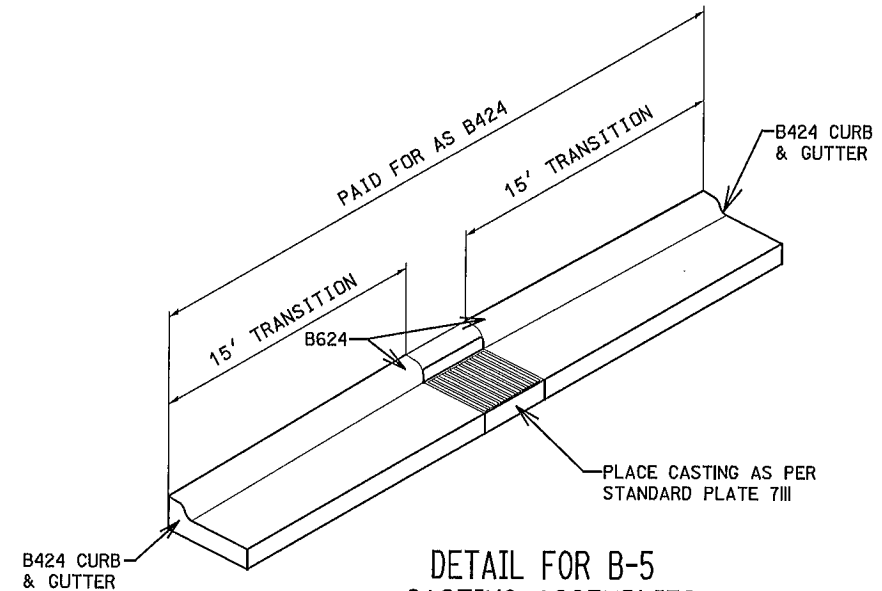
**END TREATMENT - TANGENT TERMINAL  
ET-PLUS HBA POST OPTION**

METRO DESIGN DETAIL  
REVISED DATE: 12/21/12

STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 93 OF 586 SHEETS



SETTLEMENT PLATE DETAILS



DETAIL FOR B-5 CASTING ASSEMBLIES (AT LOW POINTS ONLY)

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 9/11/2014  
 Hr:\Projects\8259\CAD\_BIM\Plan\8259\_d003.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO. 002-683-004  
 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

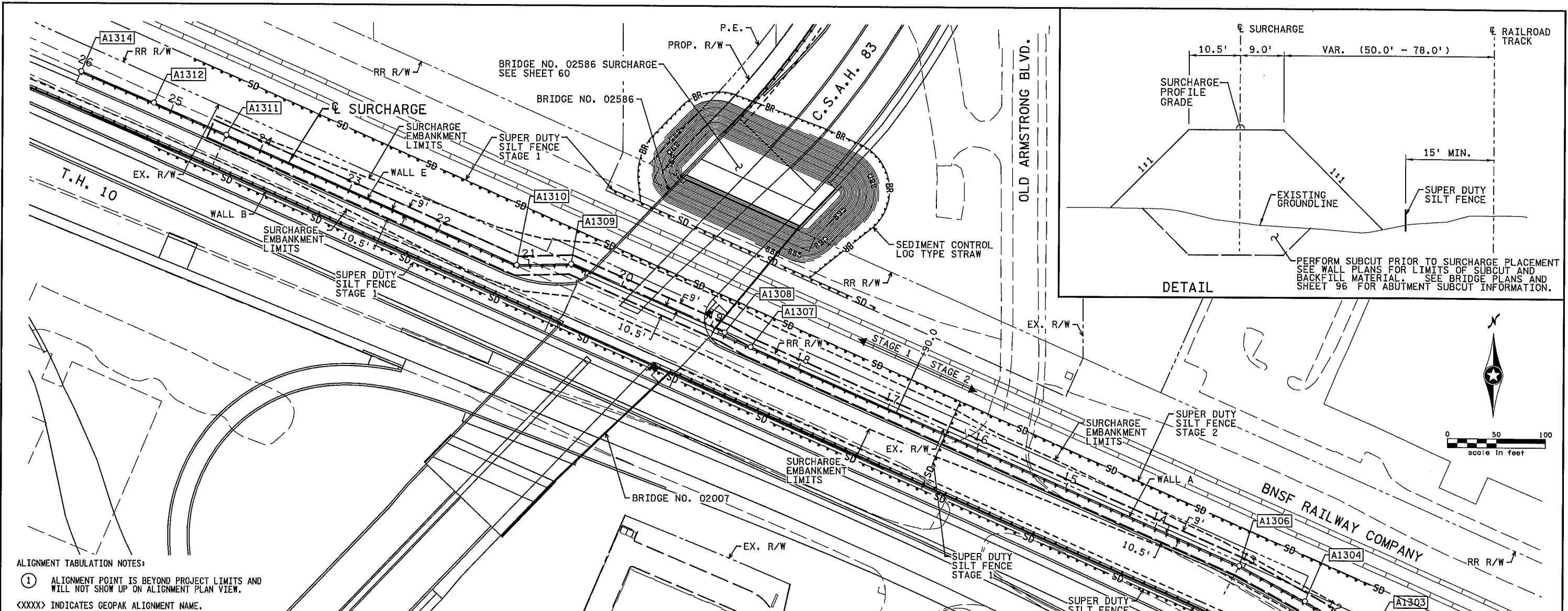
DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANJETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 MISCELLANEOUS DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 94 OF 586





ALIGNMENT TABULATION NOTES:  
 ① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND WILL NOT SHOW UP ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

**ALIGNMENT TABULATION**

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>☉ SURCHARGE &lt;SURCHARGE&gt;</b>										
A1300	PC	☉ SURCHARGE						448,028.5839	172,413.8984	299° 21' 33.37"
A1301	PI							447,962.1159	172,451.2890	PI
A1302	CC	①						446,375.0184	169,474.4084	296° 46' 06.81"
A1303	PCC							447,894.0258	172,485.6369	300° 15' 20.64"
A1304	PI							447,828.1547	172,524.0606	PI
A1305	CC	①						445,814.4775	168,920.5965	298° 08' 19.22"
A1306	PT							447,760.9092	172,560.0247	293° 49' 21.17"
A1307	POT							447,258.6835	172,781.7688	299° 04' 08.70"
A1308	POT							447,232.0255	172,796.5876	293° 49' 21.17"
A1309	POT							447,074.8205	172,865.9972	268° 37' 27.46"
A1310	POT							447,018.9614	172,864.6557	293° 49' 21.17"
A1311	PC							446,720.9078	172,996.2532	
A1312	PI							446,646.7219	173,029.0079	PI
A1313	CC	①						442,084.6174	162,495.5697	
A1314	PT	☉ SURCHARGE						446,572.0807	173,060.7112	293° 00' 46.76"

**NOTES:**

- SETTLEMENT PLATES (12 TOTAL) SHALL BE PLACED EVERY 100 FEET ALONG THE RETAINING WALL PRELOAD EMBANKMENT (☉ SURCHARGE - STA. 13+00 TO STA. 24+00) AND MONITORED TO EVALUATE THE RATE AND AMOUNT OF SETTLEMENT. THE GEOTECHNICAL ENGINEER WILL REVIEW THE MONITORING DATA AND MAKE THE DETERMINATION WHEN THE SURCHARGE MAY BE REMOVED - SEE SPECIAL PROVISIONS.
- 1 ADDITIONAL SETTLEMENT PLATE SHALL BE PLACED IN THE WEST ABUTMENT AREA OF BRIDGE NO. 02586 - SEE SPECIAL PROVISIONS.
- 3 SETTLEMENT PLATES SHALL BE PLACED IN THE EAST ABUTMENT AREA OF BRIDGE NO. 02586 - SEE SPECIAL PROVISIONS.
- PLACE SUPER DUTY SILT FENCE AT LIMITS OF STAGE 1 PRELOAD EMBANKMENT TO PROTECT THE INTERSECTION OF C.S.A.H. 83 AND T.H. 10. SEE STAGED PRELOAD EMBANKMENT PROFILE FOR EMBANKMENT LIMITS.

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 MISCELLANEOUS DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGED PRELOAD EMBANKMENT

SHEET 95 OF 586

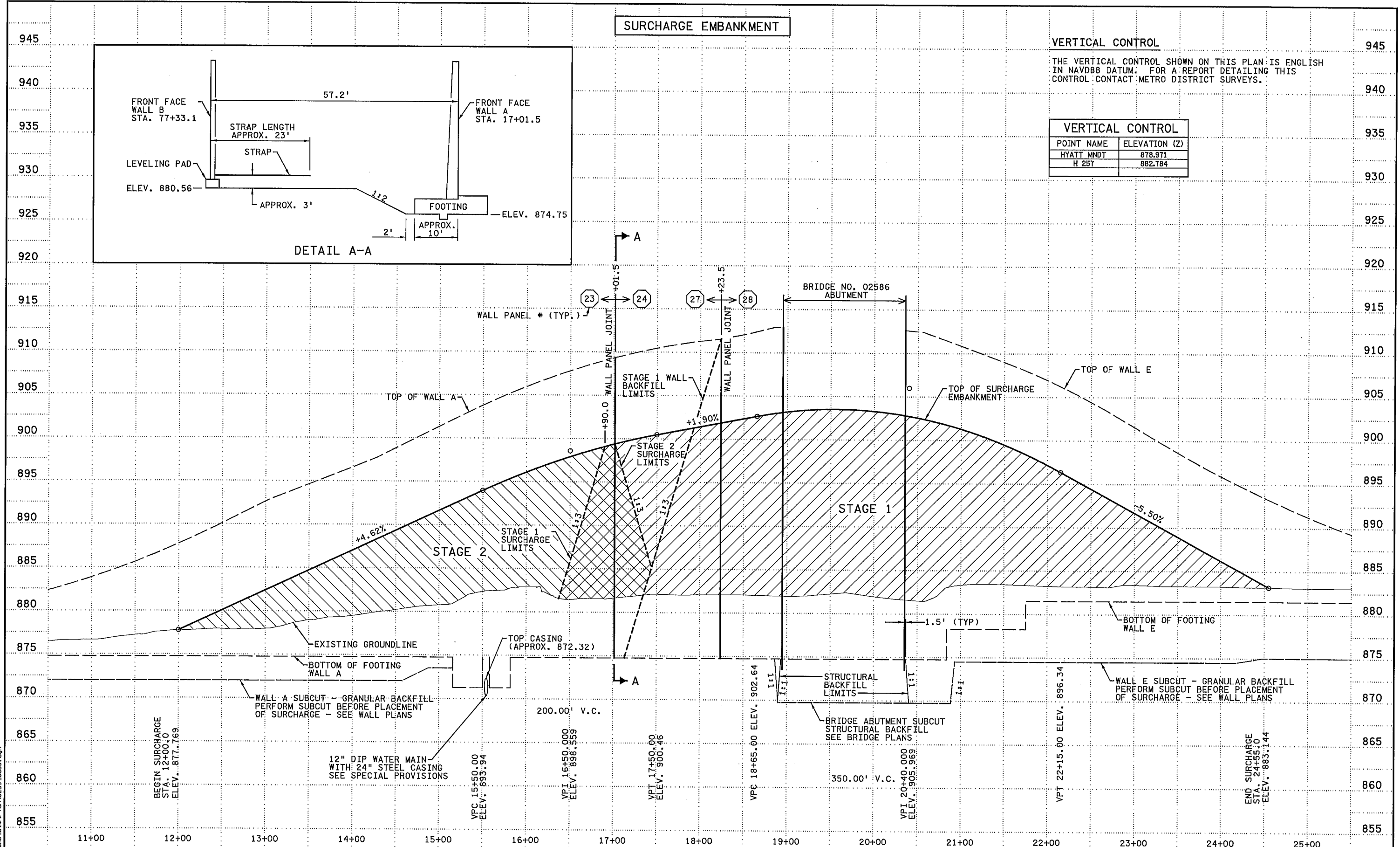
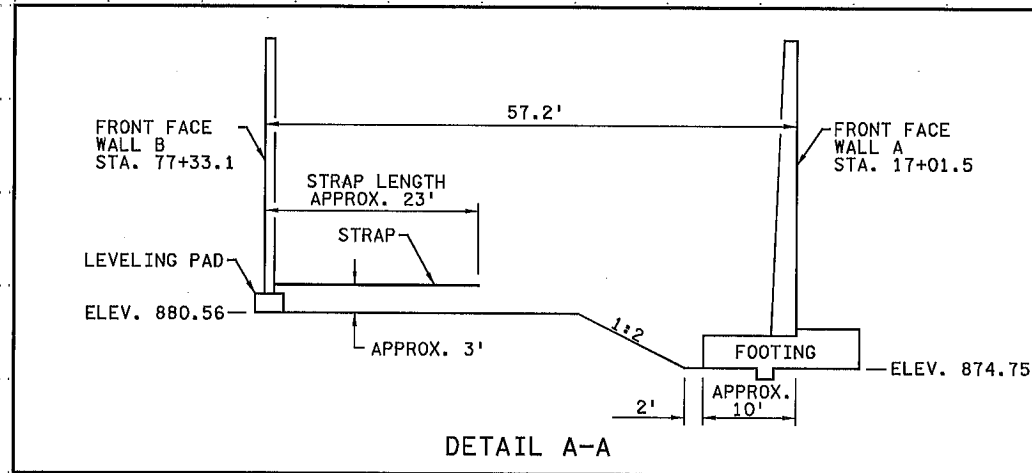
**SURCHARGE EMBANKMENT**

**VERTICAL CONTROL**

THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

**VERTICAL CONTROL**

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784



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 Prt Name: **CRAIG J. HASS**  
 Date: **09-12-14** License # **45039**

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DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
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 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 MISCELLANEOUS DETAILS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGED PRELOAD EMBANKMENT PROFILE

**SHEET**  
 96  
 OF  
 586

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
<b>BARRIER B &lt;BARRB&gt;</b>											
B2300	POT	BARRIER B	82+15.420						446,441.0255	173,079.0254	116° 32' 08.92"
B2301	PC		82+75.586						446,494.8530	173,052.1460	112° 40' 25.60"
B2302	PI		83+55.590	0° 48' 04.72" RT	0° 30' 02.89"	11,440.782'	80.004'	160.005'	446,568.6738	173,021.3058	PI
B2303	CC	①							442,084.6174	162,495.5697	
B2304	PT	BARRIER B	84+35.591						446,642.0561	172,989.4362	113° 28' 30.32"

<b>NW BARRIER B &lt;NWBARRB&gt;</b>											
B2400	POT	NW BARRIER B	12+15.420						446,441.9405	173,080.9896	114° 26' 06.23"
B2401	POT	NW BARRIER B	12+75.385						446,496.5347	173,056.1842	

GENERAL NOTES:

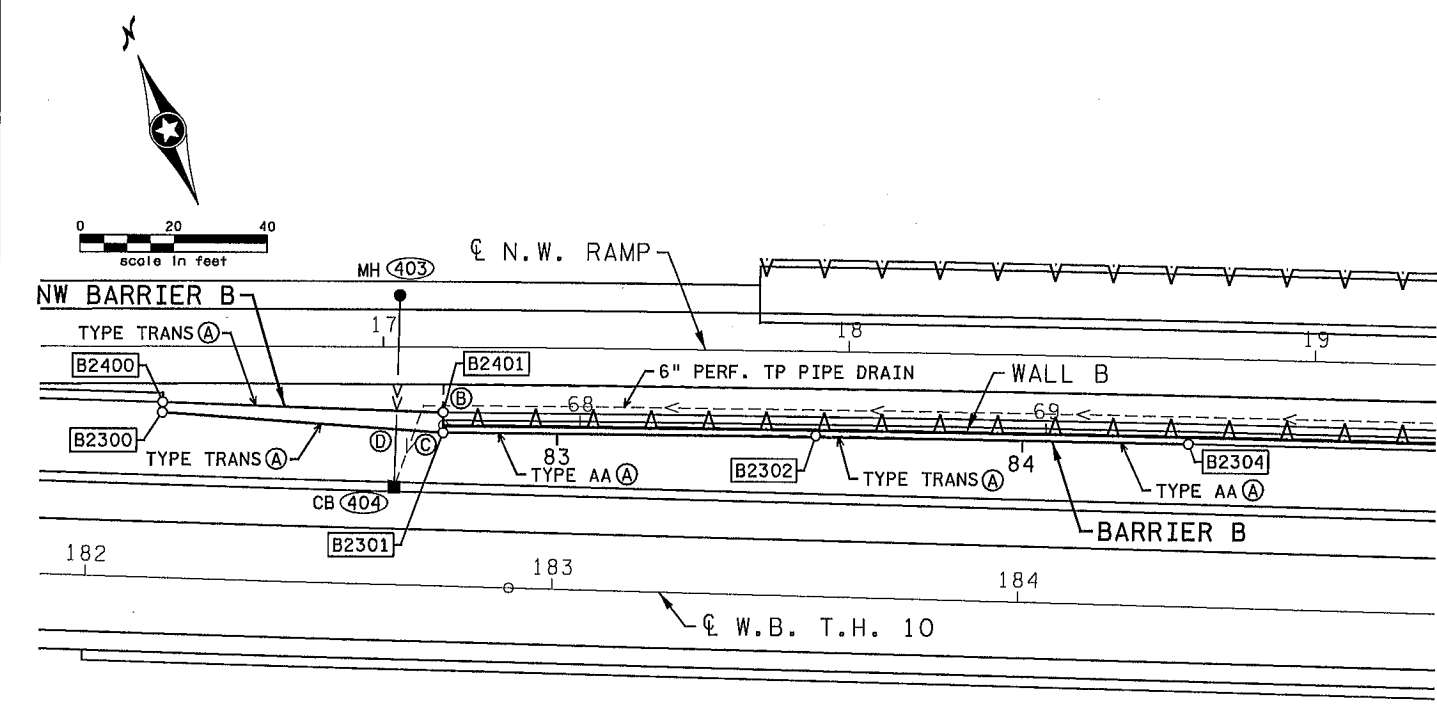
SEE RETAINING WALL PLANS FOR BARRIER TYPES AND BARRIER DETAILS ON RETAINING WALLS.

ALIGNMENT TABULATION NOTES:

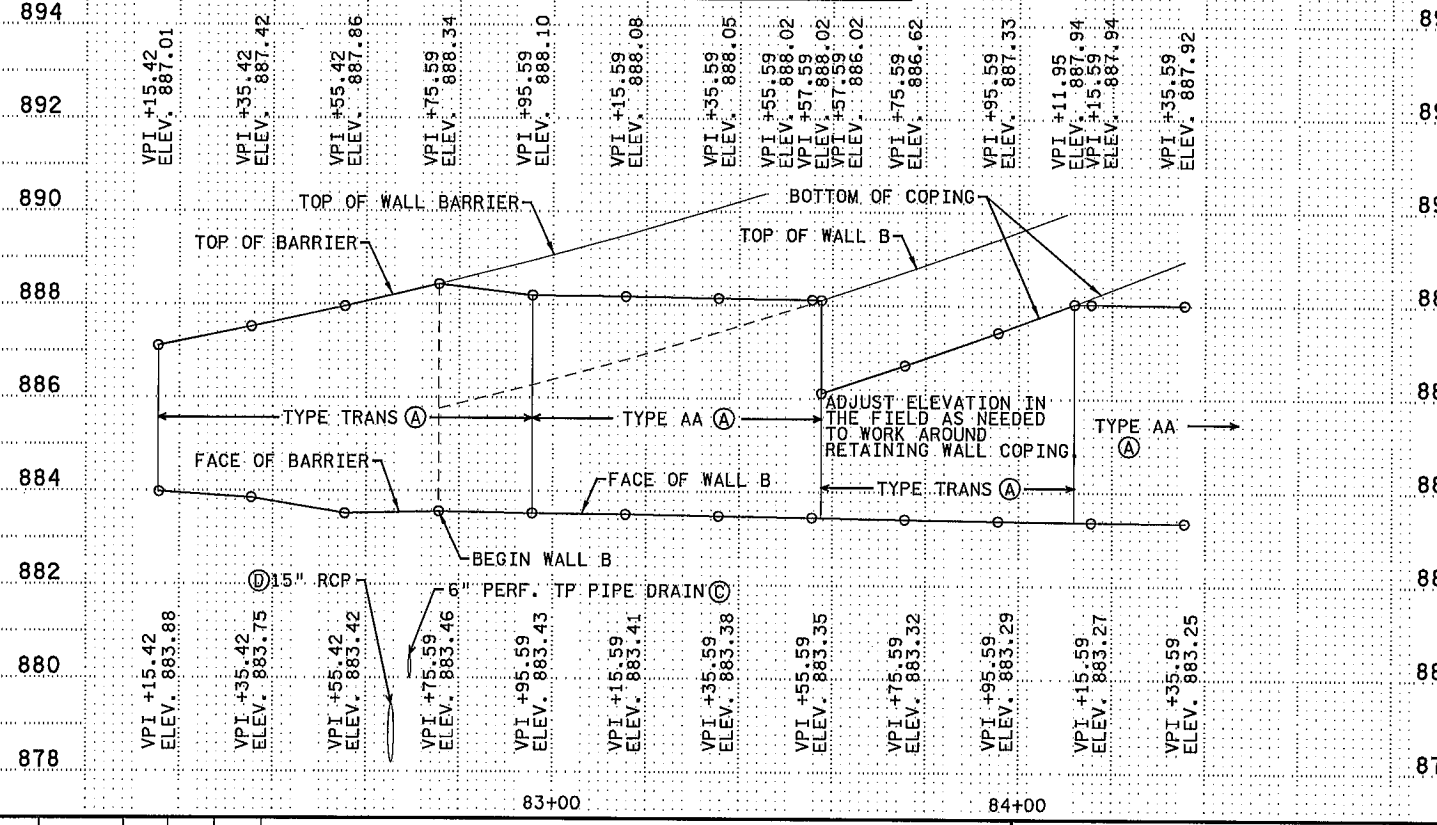
① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND WILL NOT SHOW UP ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

NOTES:

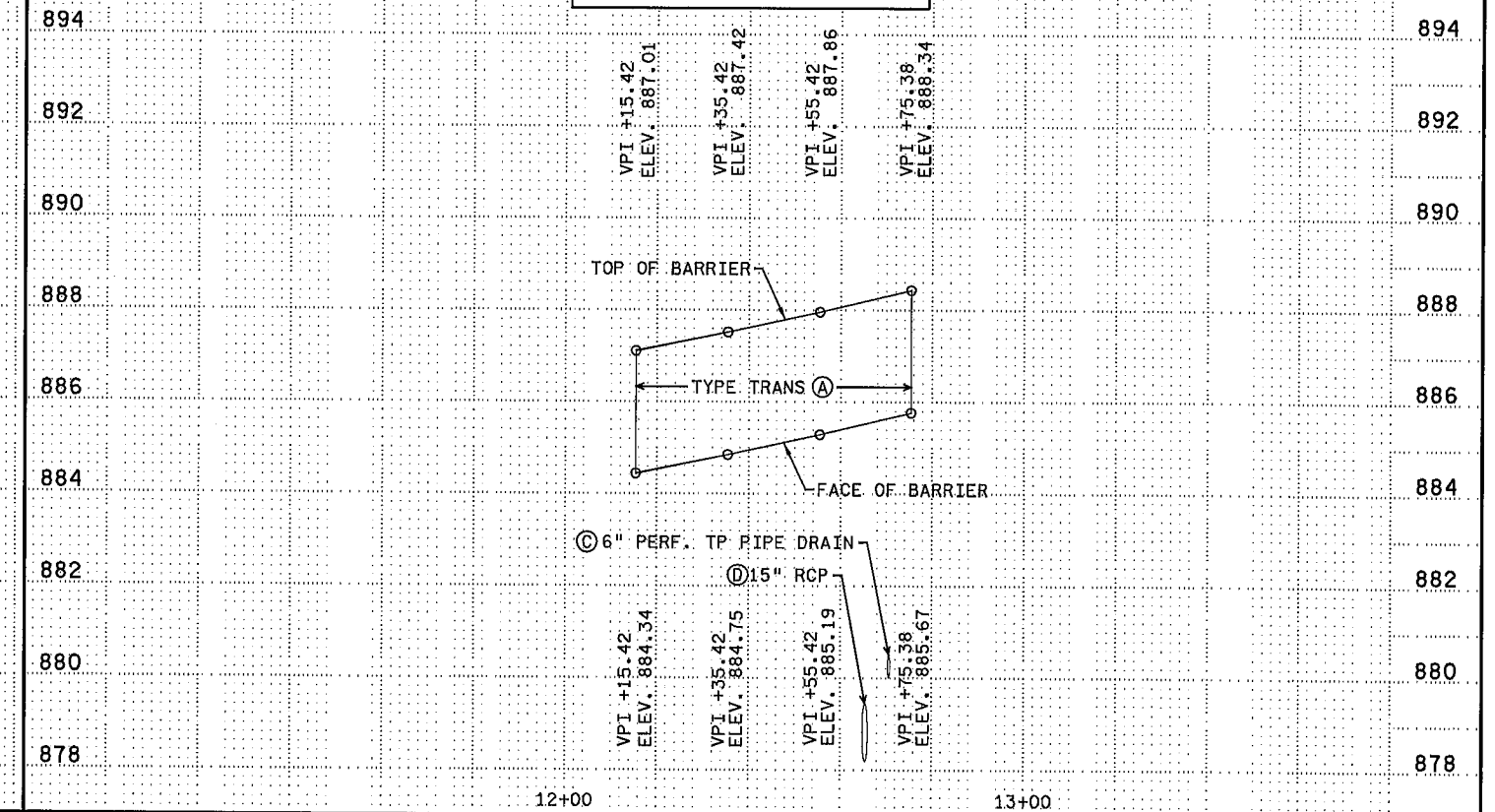
- Ⓐ REINFORCED CONCRETE MEDIAN BARRIER AND GLARE SCREEN TYPE F DESIGN 8309 (STD PLATE 8309).
- Ⓑ 10' BARRIER TRANSITION (HEIGHT AND/OR WIDTH) MATCH WALL BARRIER.
- Ⓒ SEE RETAINING WALL PLANS FOR 6" PERF. TP PIPE DRAIN LOCATION AND DETAILS.
- Ⓓ SEE DRAINAGE PLANS AND PROFILES FOR STORM SEWER LOCATION.



BARRIER B PROFILE



NW BARRIER B PROFILE



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NO	DATE	BY	CHKD	APPR	REVISION

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Pr Int Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 MISCELLANEOUS DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 WALL B BARRIER DETAIL

SHEET 97 OF 586

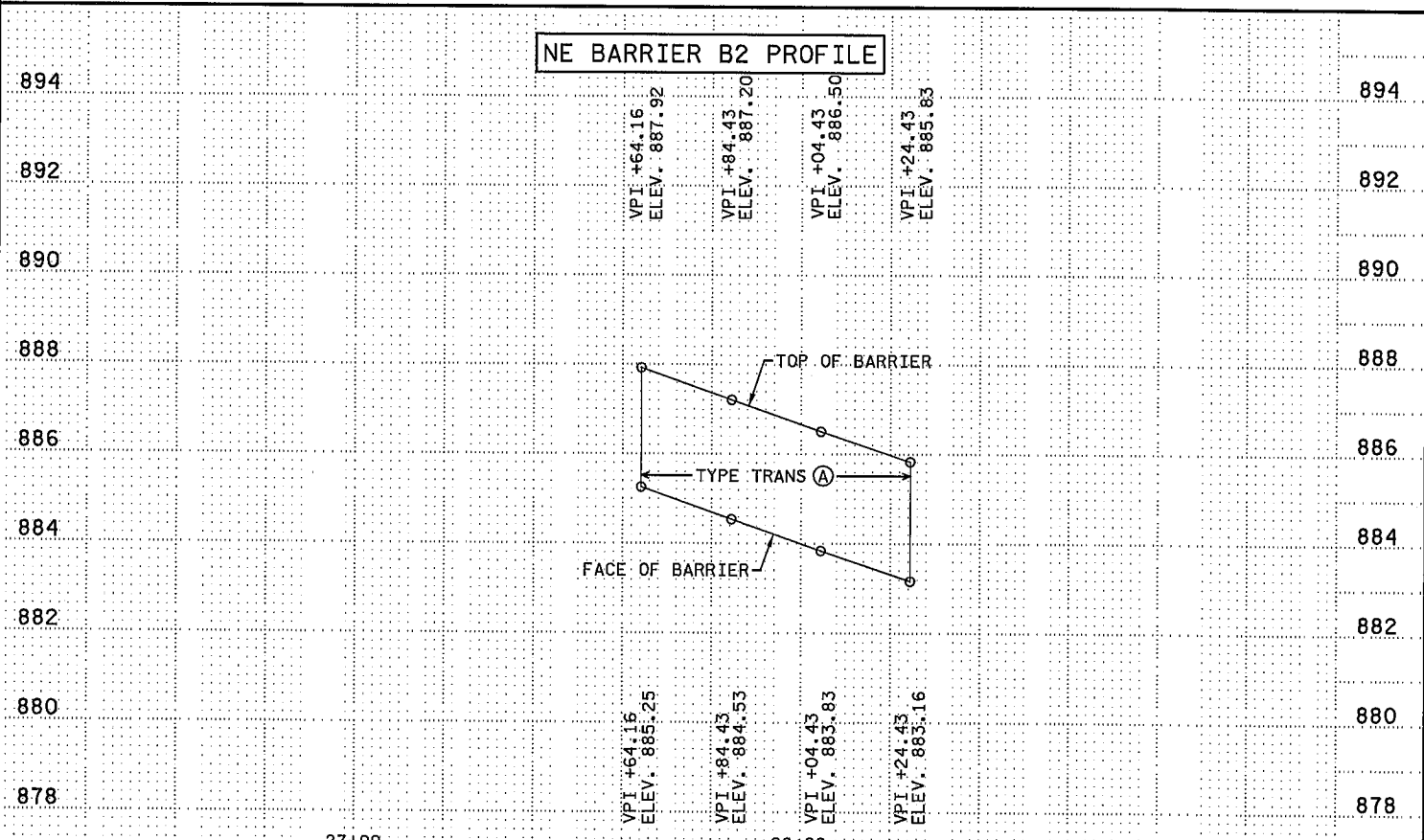
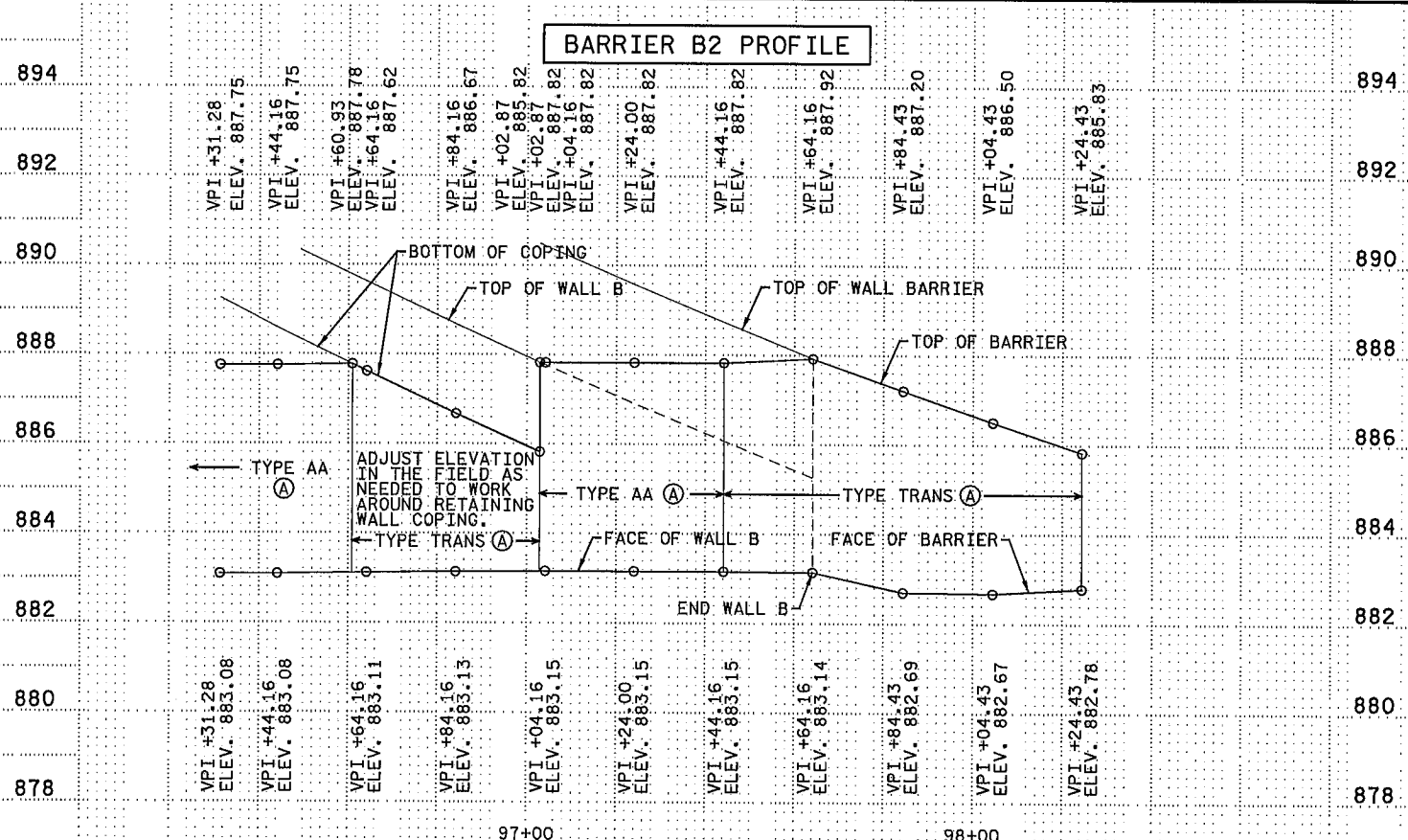
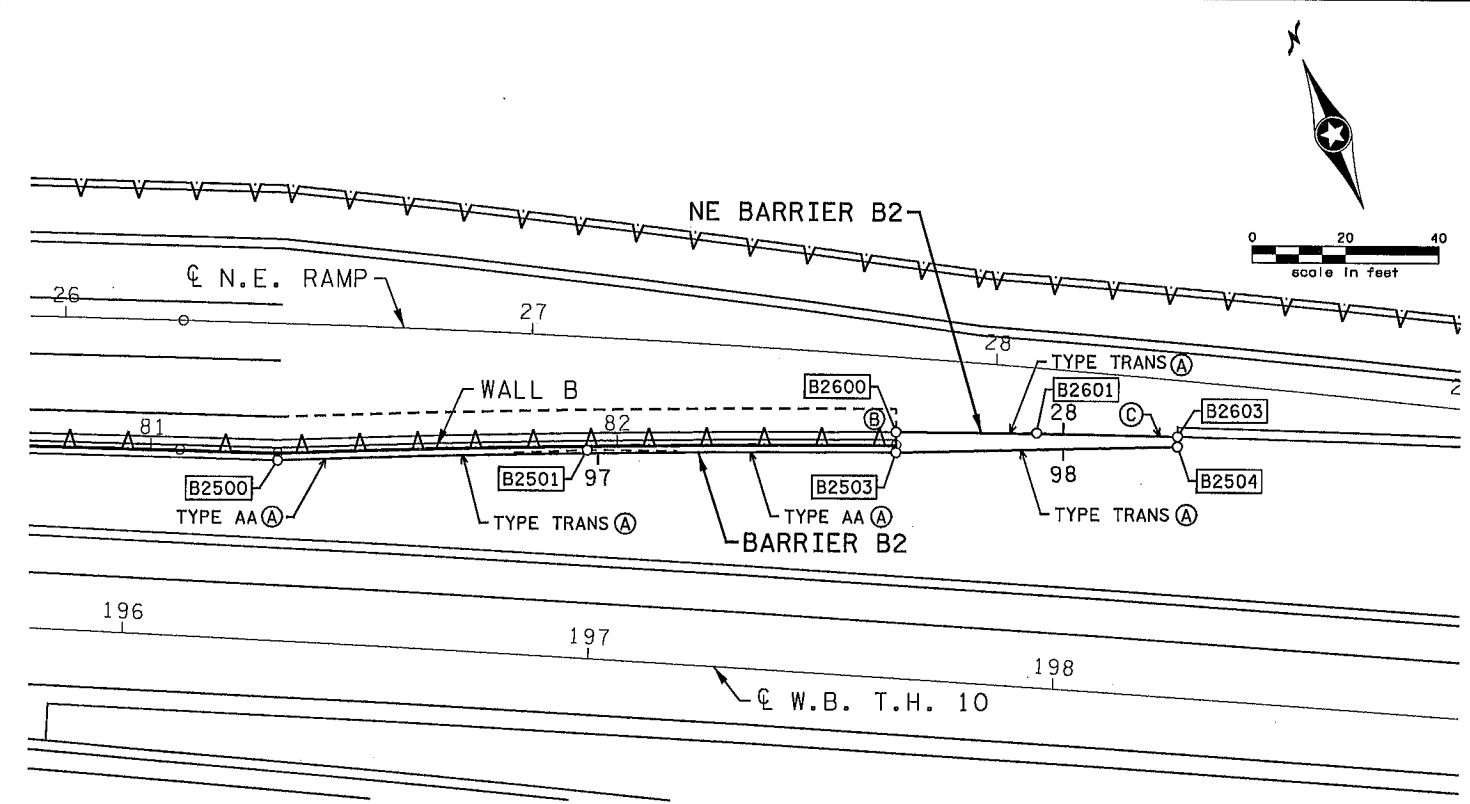
ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
<b>BARRIER B2 &lt;BARRB2&gt;</b>										
B2500	PC	BARRIER B2	96+31.280					447,736.7010	172,506.2833	110° 20' 14.67"
B2501	PI		96+97.731	2° 17' 27.81" RT	1° 43' 26.74"	3,323.238'	66.451'	447,799.0098	172,483.1883	PI
B2502	CC	①						446,581.7166	169,390.2086	
B2503	PT		97+64.165					447,860.3455	172,457.6210	112° 37' 42.48"
B2504	POT	BARRIER B2	98+24.425					447,916.5897	172,435.9885	111° 02' 15.50"
<b>NE BARRIER B2 &lt;NEBARRB2&gt;</b>										
B2600	PC	NE BARRIER B2	27+64.160					447,862.0286	172,461.6586	112° 36' 03.88"
B2601	PI		27+94.301	1° 04' 19.42" RT	1° 46' 42.44"	3,221.662'	30.141'	447,889.8550	172,450.0750	PI
B2602	CC	①						446,623.9030	169,487.4108	
B2603	PT	NE BARRIER B2	28+24.440					447,917.4597	172,437.9728	113° 40' 23.30"

GENERAL NOTES:  
 SEE RETAINING WALL PLANS FOR BARRIER TYPES AND BARRIER DETAILS ON RETAINING WALLS.

ALIGNMENT TABULATION NOTES:  
 ① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND WILL NOT SHOW UP ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

- NOTES:  
 (A) REINFORCED CONCRETE MEDIAN BARRIER AND GLARE SCREEN TYPE F DESIGN 8309 (STD PLATE 8309).  
 (B) 10' BARRIER TRANSITION (HEIGHT AND/OR WIDTH) MATCH WALL BARRIER.  
 (C) SEE GUARDRAIL CONNECTION DETAIL ON SHEET 99 .



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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

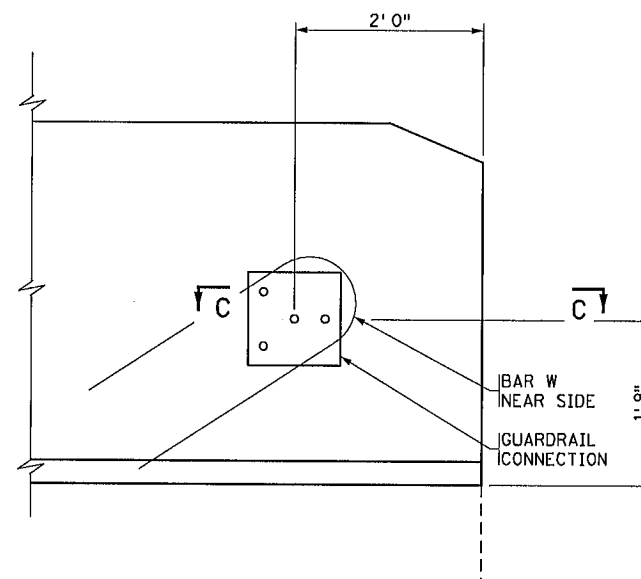
DRAWN BY S. MARTINS  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 MISCELLANEOUS DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 WALL B BARRIER DETAIL

SHEET  
 98  
 OF  
 586



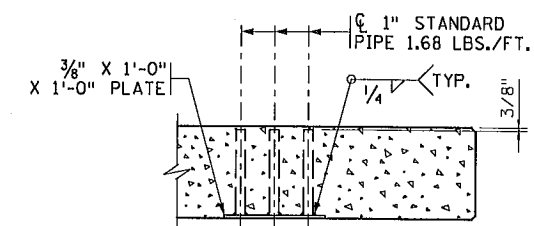
ELEVATION OF BARRIER

NOTES:

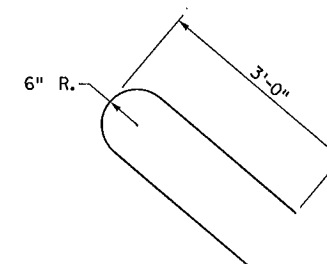
THE GUARDRAIL CONNECTION AND REINFORCEMENT IS INCLUDED IN THE PRICE BID FOR CONCRETE MEDIAN BARRIER DESIGN 8309.

GUARDRAIL CONNECTION SHALL BE STRUCTURAL STEEL, MnDOT SPEC. NO. 3306 AND GALVANIZED AFTER FABRICATION PER MnDOT SPEC. NO. 3394.

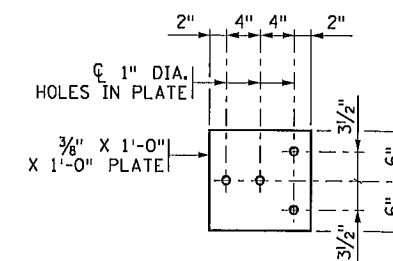
PROVIDE 2-BAR W FOR EACH CONNECTION. (#7 BAR, EPOXY COATED IN ACCORDANCE WITH MnDOT SPEC. NO. 3301..)



SECTION C-C  
(REINFORCEMENT NOT SHOWN)



BAR W



GUARDRAIL CONNECTION DETAIL

GALVANIZE AFTER FABRICATION PER MnDOT SPEC. 3394. ESTIMATED WEIGHT = 22 LBS

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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

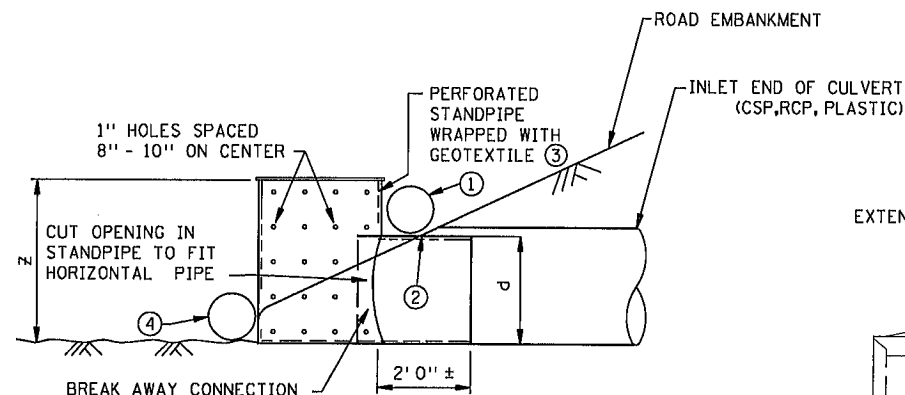
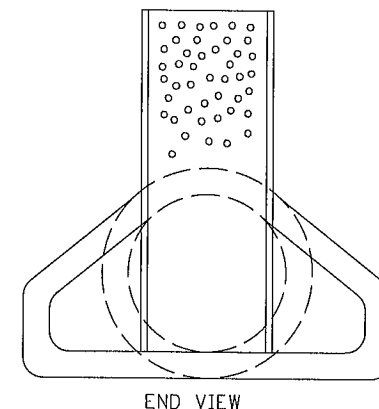
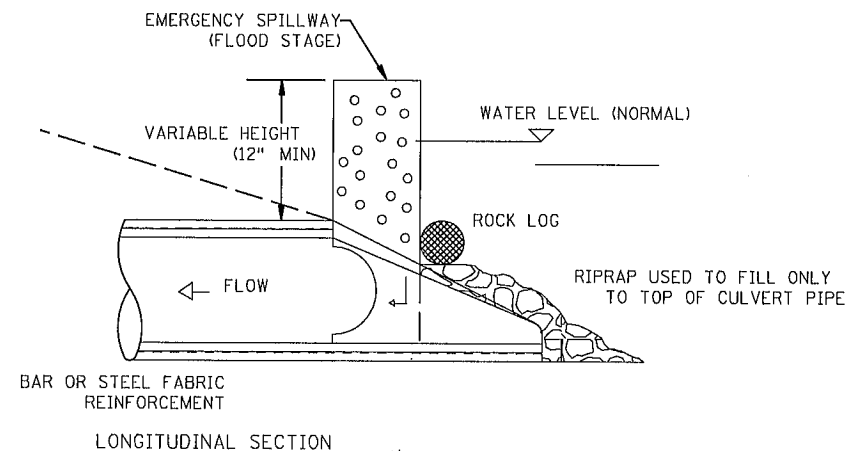
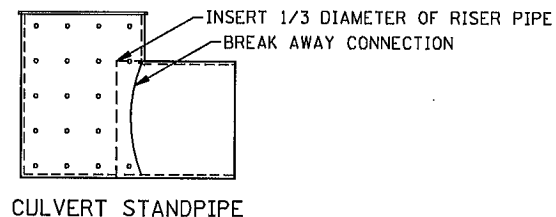
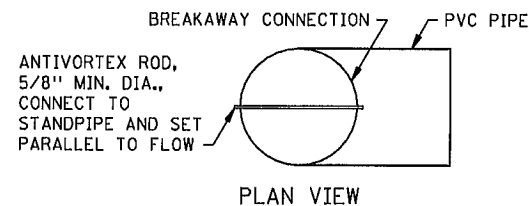
CITY PROJECT NO.

DRAWN BY J. GRONERT  
DESIGNED BY J. GRONERT  
CHECKED BY C. HASS  
COMM. NO. 0138259

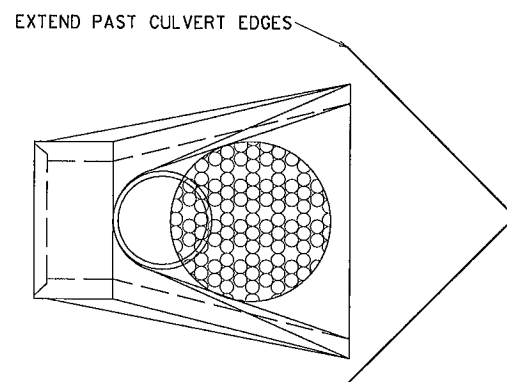
**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
MISCELLANEOUS DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
GUARDRAIL CONNECTION DETAIL

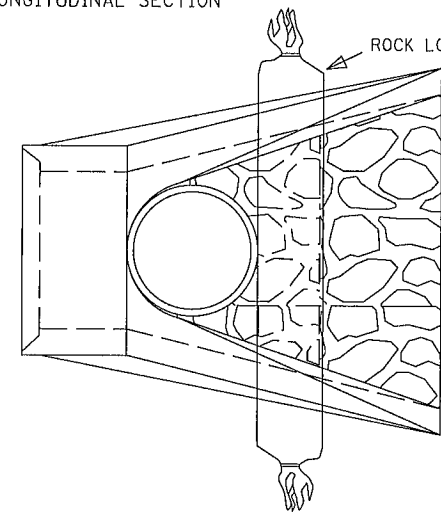
SHEET 99 OF 586



ELEVATION VIEW OF CULVERT INSTALLATION



NOTE: GABION BASKET USED TO HOLD FILTER ROCK IN PLACE



NOTE: ROCK LOG MAINLY USED TO HOLD RISER PIPE IN PLACE

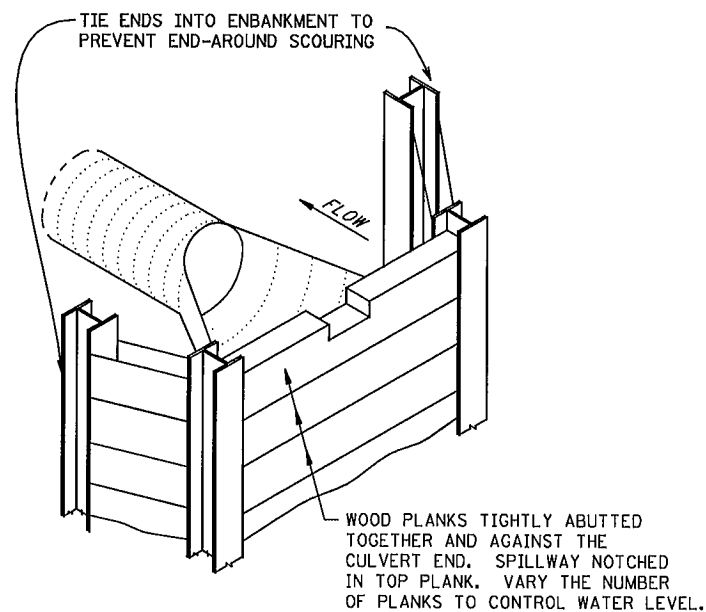
CULVERT STANDPIPE PROTECTION (D-RISER)

CULVERT SIZE: 12" - 36"

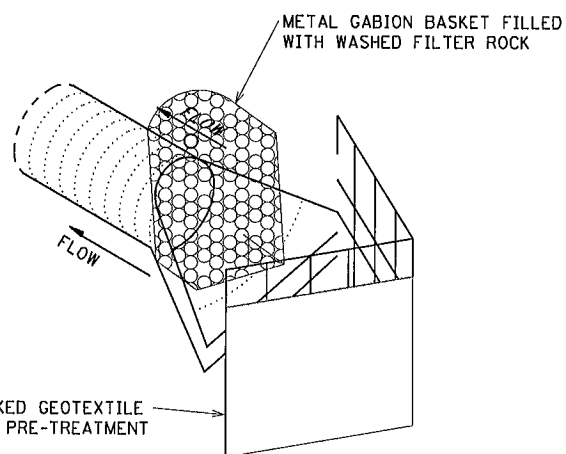
d = O.D. DIAMETER OF STANDPIPE TO FIT INTO I.D. DIAMETER OF PLAN CULVERT  
Z = LENGTH OF PERFORATED STANDPIPE (MIN d+12" )

CULVERT STANDPIPE PROTECTION (D-RISER)

FOR SEDIMENT CONTROL ON CULVERT INLET



WOOD PLANK WEIR FOR SEDIMENT CONTROL AT CULVERT INLETS



METAL GABION BASKET FOR SEDIMENT CONTROL AT CULVERT INLETS

NOTES:

SEE SPECS. 2573, 3891 & 3893.  
MANUFACTURED ALTERNATIVES LISTED ON MNDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

TEMPORARY CULVERT PROTECTION PAID FOR AS 2573 CULVERT END CONTROLS.

- ① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.
- ② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT. AFTER VEGETATION IS ESTABLISHED REMOVE TEMPORARY STANDPIPE.
- ③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.
- ④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

3/20/24 PM 9/11/2014 H:\Projects\B259\CAD\_BIM\Plan\B259\_d08.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS  
*Craig J. Hass*  
Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

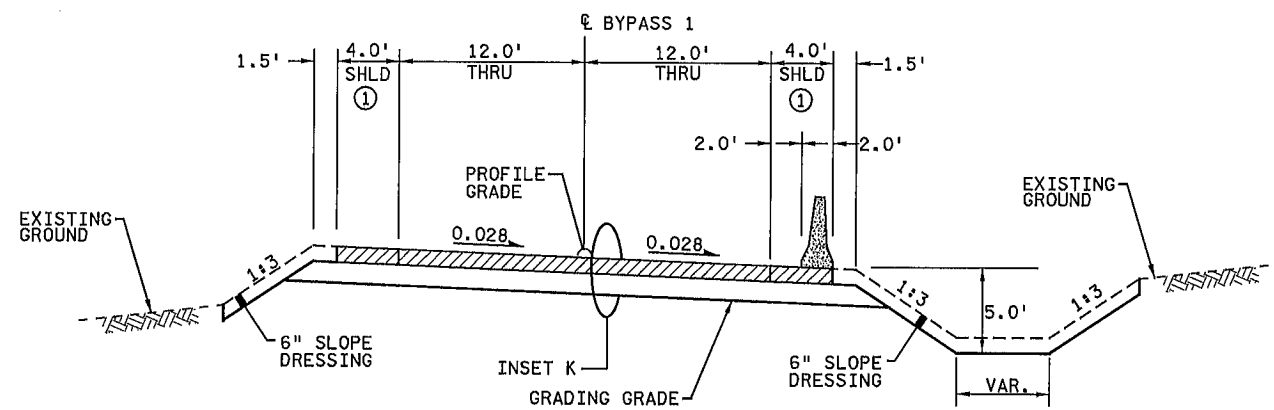
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

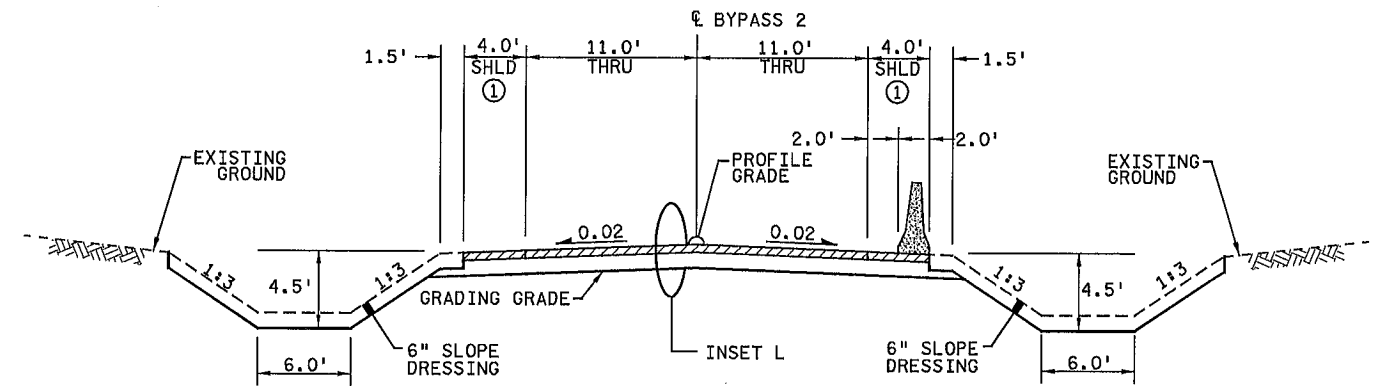
ANOKA COUNTY  
MISCELLANEOUS DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CULVERT END CONTROLS

SHEET  
100  
OF  
586



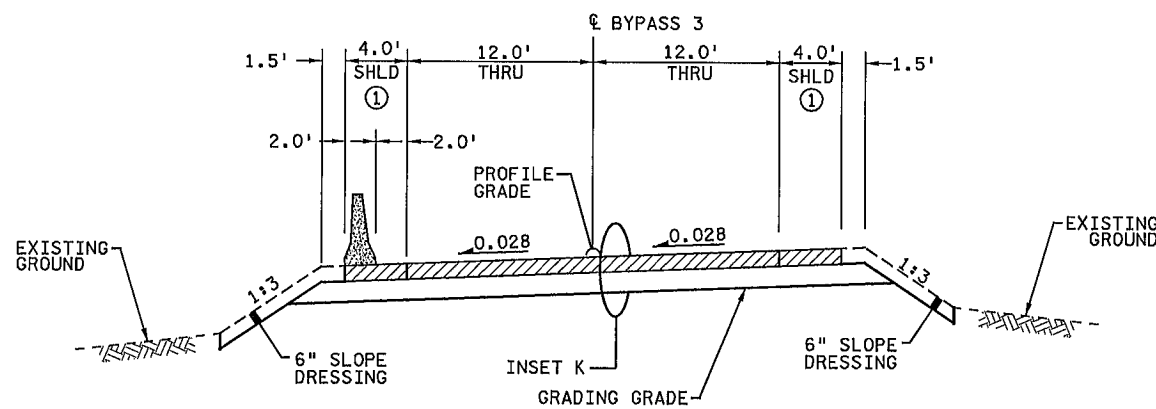
TYPICAL SECTION NO. 28 - BYPASS 1

BYPASS 1 STA. 16+78.9 TO STA. 28+38.4



TYPICAL SECTION NO. 29 - BYPASS 2

BYPASS 2 STA. 21+07.7 TO STA. 25+68.0



TYPICAL SECTION NO. 30 - BYPASS 3

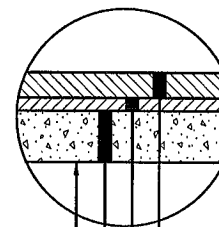
BYPASS 3 STA. 36+02.2 TO STA. 47+70.3

NOTES:

- ① SHOULDER CROSS SLOPE TO MATCH ADJACENT LANE CROSS SLOPE.

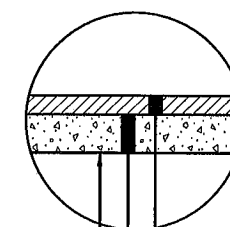
GENERAL NOTES:

- ALL CROSS SLOPES ARE IN FT. PER FT.
- MAXIMUM SHOULDER SUPERELEVATION ROLLOVER SHALL BE 7%.
- SEE BYPASS PLANS FOR BYPASS SUPERELEVATION TRANSITIONS.



- 4.0" TYPE SP 12.5 WEARING COURSE MIXTURE (4,F) (2 LIFTS) MNDOT SPEC. 2360, SPWEB440F
- 2.0" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (4,B) MNDOT SPEC. 2360, SPNB430B
- 8" AGGREGATE BASE CLASS 6, MNDOT SPEC. 2211
- GRADING GRADE

INSET K  
T.H. 10 TEMPORARY PAVEMENT



- 3.0" TYPE SP 12.5 WEARING COURSE MIXTURE (3,C) (2 LIFTS) MNDOT SPEC. 2360, SPWEB340C
- 6" AGGREGATE BASE CLASS 5 MODIFIED, MNDOT SPEC. 2211
- GRADING GRADE

INSET L  
RIVERDALE DR. TEMPORARY PAVEMENT

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

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199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS  
DESIGNED BY A. EMERSON  
CHECKED BY C. HASS  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY PAVEMENT TYPICAL SECTIONS

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586



**GENERAL TRAFFIC CONTROL AND STAGING NOTES**

1. THE CONTRACTOR SHALL FURNISH, PLACE AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
2. ALL TRAFFIC CONTROL DEVICES, TEMPORARY LANE CLOSURE ARRANGEMENTS AND PROCEDURES, ETC., SHALL CONFORM WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
3. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
4. IF THE CONTRACTOR DECIDES TO PERFORM THE CONSTRUCTION WORK IN A SEQUENCE OTHER THAN SHOWN IN THE TRAFFIC CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE COMPLETE REVISED TRAFFIC CONTROL PLANS TO BE APPROVED BY THE ENGINEER.
5. ALL DISTANCES ARE APPROXIMATE.
6. ALL TEMPORARY TRAFFIC THRU LANES SHALL BE A MINIMUM OF 11 FEET IN WIDTH UNLESS NOTED OTHERWISE.
7. REFLECTORIZED DRUMS USED FOR CHANNELIZATION SHALL HAVE 50 FOOT SPACING ALONG T.H. 10 AND 25 FOOT SPACING ALONG C.S.A.H. 83 AND CITY STREETS AS SHOWN IN THE PLANS. DRUM LOCATIONS AND SPACINGS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE SUBJECT TO REVISION BY THE ENGINEER.
8. THE CONTRACTOR SHALL MAINTAIN A 2 FOOT MINIMUM CLEAR DISTANCE BETWEEN THE EDGE OF THE TRAVEL LANE AND THE NEAREST EDGE OF ANY ADJACENT TRAFFIC CONTROL DEVICES (DRUMS, BARRICADES, BARRIERS, ETC.) UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AND BUILDING ENTRANCES THAT ARE TO REMAIN OPEN AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER (INCIDENTAL).
10. THE CONTRACTOR SHALL PROVIDE QUALIFIED FLAGGERS WITH TWO-WAY RADIOS AT ALL TIMES WHEN CONTRACTOR OPERATIONS REQUIRE ONE-LANE-TWO-WAY OPERATION OR WHEN, IN THE OPINION OF THE ENGINEER, ONE-LANE-TWO-WAY OPERATIONS ARE APPROPRIATE DUE TO SAFETY CONCERNS FROM OPEN EXCAVATIONS, ADJACENT EQUIPMENT, ETC. FLAGGERS AND FLAGGING OPERATIONS SHALL BE INCIDENTAL.
11. IN ALL WORK AREAS NOTED "CONSTRUCTION UNDER TRAFFIC" THE CONTRACTOR SHALL PROTECT THESE AREAS AT ALL TIMES TO PROVIDE FOR SAFE TRAFFIC MOVEMENT TO THE SATISFACTION OF THE ENGINEER.
12. THE ACTUAL NUMBER OF BARRICADES AT EACH LOCATION REQUIRED MAY VARY DEPENDING UPON THE SIZE OF BARRICADES USED, THE WIDTH OF THE ROAD CLOSURE AND THE MOVEMENT OF LOCAL CONSTRUCTION TRAFFIC.
13. PLACEMENT OF FINAL WEAR COURSE FOR T.H. 10 AND RAMPS SHALL BE CONSTRUCTED UPON COMPLETION OF NON-WEAR COURSE.
14. PLACEMENT OF THE FINAL WEAR COURSE FOR C.S.A.H. 83 AND THE CITY ROADS SHALL NOT BE COMPLETED UNTIL ALL OTHER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. WRITTEN NOTICE TO PROCEED MUST BE OBTAINED FROM THE ENGINEER BEFORE WEAR COURSE PLACEMENT CAN PROCEED.
15. BASED ON THIS TRAFFIC CONTROL PLAN, TRAFFIC WILL BE REQUIRED TO UTILIZE THE EXISTING SHOULDER PAVEMENT. IF THE EXISTING PAVEMENT BEGINS TO FAIL, THE CONTRACTOR SHALL IMMEDIATELY CLOSE THE LANE AND REPAIR THE PAVEMENT. PAYMENT WILL BE MADE UNDER THE APPROPRIATE ADDITIONAL TRAFFIC CONTROL ITEMS, AND REMOVAL AND BITUMINOUS BID ITEMS.
16. A FALL REVIEW OF ALL TRAFFIC CONTROL ITEMS WILL BE MADE TO PREPARE FOR WINTER MAINTENANCE OF THE PROJECT. THIS MAY INCLUDE ADJUSTMENTS OR EXCHANGE OF ONE TRAFFIC CONTROL DEVICE FOR ANOTHER. READJUSTMENTS MAY AGAIN BE REQUIRED DURING WINTER AND IN THE SPRING (INCIDENTAL).

**SIGNING**

1. THE CONTRACTOR SHALL REMOVE, SALVAGE, OR COVER, AS APPROPRIATE, ALL EXISTING SIGNING, INCLUDING OVERHEAD SIGNS, THAT CONFLICTS WITH THIS TRAFFIC CONTROL PLAN TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL RESTORE ALL APPROPRIATE ORIGINAL SIGNING AFTER APPROVAL TO DO SO BY THE ENGINEER. REMOVAL AND SALVAGE OF SIGNS SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEM. COVERING AND UNCOVERING OF SIGNS SHALL BE INCIDENTAL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER (INCIDENTAL).
3. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE PERMANENT SIGNS TO ASSURE THAT THE PERMANENT SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE PERMANENT SIGNING IS PLACED.
4. STREET IDENTIFICATION SIGNAGE SHALL BE MAINTAINED AT ALL TIMES. SIGNS LOCATED AT THE INTERSECTIONS SHALL BE MAINTAINED INPLACE OR BY TEMPORARY INSTALLATIONS (INCIDENTAL).
5. WHEN SIGNS ARE PLACED THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MN MUTCD. IF THIS IS NOT POSSIBLE THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
6. ALL ORANGE SIGNS SHALL BE MADE OF "HIGH PERFORMANCE FLUORESCENT SIGN SHEETING."
7. LONGITUNAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" FIELD MANUAL UNLESS OTHERWISE SPECIFIED IN THESE PLANS (INCIDENTAL).

**TEMPORARY PAVEMENT MARKING**

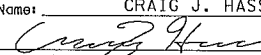
1. THE CONTRACTOR SHALL REMOVE ALL EXISTING PAVEMENT MARKINGS WHICH CONFLICT WITH THESE TRAFFIC CONTROL PLANS TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL RESTORE ALL APPROPRIATE ORIGINAL PAVEMENT MARKINGS AFTER APPROVAL TO DO SO BY THE ENGINEER. REMOVAL OF TEMPORARY PAVEMENT MARKINGS, REMOVABLE PREFORMED PAVEMENT MARKINGS, AND CONFLICTING EXISTING PAVEMENT MARKINGS SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEM.
2. THE CONTRACTOR SHALL NOT PLACE PAINTED TEMPORARY PAVEMENT MARKINGS ON PERMANENT FINAL SURFACING (OR ON OTHER SURFACING WHICH WILL NOT ULTIMATELY BE REPLACED OR COVERED BY PLANNED CONSTRUCTION) UNLESS THE TEMPORARY MARKINGS ARE IN THE SAME LOCATION AS THE PERMANENT MARKINGS.
3. THE CONTRACTOR SHALL PLACE PERMANENT PAVEMENT MARKINGS AND COORDINATE INSTALLATION OF PERMANENT SIGNING (TYPES C, D, AND OH) DURING EACH STAGE OF CONSTRUCTION AS APPROPRIATE AND CONSISTENT WITH THE REQUIREMENTS OF THE TEMPORARY TRAFFIC CONTROL.
4. THE CONTRACTOR SHALL MATCH ALL TEMPORARY PAVEMENT MARKINGS TO EXISTING STRIPING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND INSTALLATION OF TEMPORARY AND FINAL STRIPING.

**BARRIER AND DELINEATION**

1. TOP MOUNTED BARRIER DELINEATORS WILL HAVE A MINIMUM OF 24 SQ. IN. OF REFLECTIVE SURFACE AREA AND BE PLACED AT 30 FT. SPACES ON TOP OF THE BARRIER WHEN THE BARRIER IS WITHIN 10 FT. OF TRAFFIC UNLESS OTHERWISE NOTED OR AS DEEMED UNNECESSARY BY THE ENGINEER. IF THE ENGINEER REQUIRES SIDE MOUNTED BARRIER DELINEATORS, THEY WILL HAVE A MINIMUM OF 12 SQ. IN. OF REFLECTIVE SURFACE AREA AND BE PLACED AT 30 FT SPACES. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE AT ONE HALF THE SPACING. BARRIER DELINEATORS, IF REQUIRED, ARE INCIDENTAL.
2. THE CONTRACTOR SHALL DETERMINE THE NEED FOR BARRIER BASED ON THEIR CONSTRUCTION MEANS AND METHODS. TEMPORARY BARRIER NOT SPECIFICALLY SHOWN IN THE PLANS, BUT DETERMINED AS NECESSARY FOR CONSTRUCTION BY THE CONTRACTOR AND ENGINEER SHALL BE PAID FOR UNDER THE PORTABLE PRECAST CONCRETE BARRIER AND RELOCATE PORTABLE PRECAST CONCRETE BARRIER BID ITEMS.

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 GENERAL TRAFFIC CONTROL NOTES

SHEET  
 102  
 OF  
 586



SIGN DATA

SIGNS TO BE PLACED ON DRIVEN U-POSTS SHALL BE PLACED IN ACCORDANCE WITH TABLE 1 OR TABLE 2 BELOW. SIGN PANELS SHALL BE PLACED ON SIGN STRUCTURES TO MEET THE MINIMUM 5 FEET DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL, THE 7 FEET DEPICTED ON THE TYPICAL URBAN DESIGN DETAIL, OR MINIMUM 7 AND 9 FEET DEPICTED ON THE TYPICAL MOUNTING DETAIL ON THIS SHEET.

TABLE 1

STANDARD CONSTRUCTION SIGNS IN MN/DOT STANDARD SIGNS MANUAL

PANEL SIZE (IN.)	POSTS			
	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
24 x 24	2-U	18		13
30 x 24	2-U	18		13
36 x 30	2-U	24		13
36 x 36	2-U	18		14
42 x 36	2-U	30		14
48 x 48	2-U	30		15
60 x 60	2-U	42	1	16
72 x 72	2-U	42	2	17
96 x 54	2-U	54	2	16
168 x 132	4-U	48	4	20

GENERAL NOTES:

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE STANDARD SIGNS MANUAL FOR PUNCHING HOLES.

TABLE 2

SPECIAL DESIGN CONSTRUCTION SIGNS

PANEL SIZE		POSTS			
LENGTH (IN.)	HEIGHT (IN.)	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
54 - 96	78	2-U	42	2	20
102 - 138	78	3-U	45	3	20
144 - 180	78	4-U	45	4	20

DESIGNER NOTE:

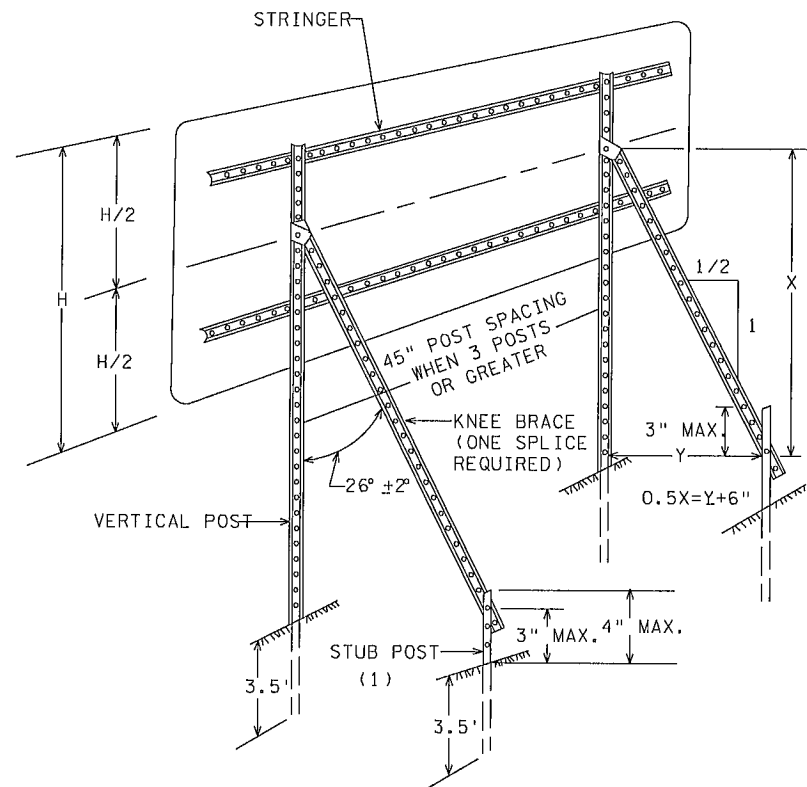
INCLUDE SPECIAL SIGN DETAILS IN THE TRAFFIC CONTROL PLAN IN TABLE TWO.

NOTES:

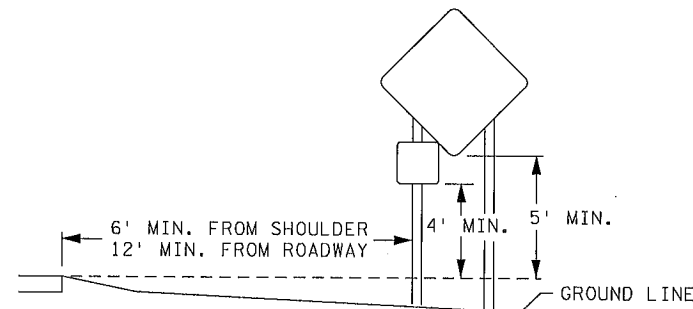
FOR TEMPORARY CONSTRUCTION SIGN FRAMING, THE CONTRACTOR MAY USE GRADE 5 ZINC PLATED BOLTS FOR ALL BOLTED CONNECTIONS, EXCEPT FOR THE KNEE BRACE CONNECTION TO THE REAR STUB POST, WHICH SHALL UTILIZE A 5/16 INCH STAINLESS STEEL BOLT AND NYLON INSERT LOCK NUT. ADDITIONAL SIGN FRAMING DETAILS CAN BE FOUND IN THE TRAFFIC ENGINEERING MANUAL PART 6.

IF THE CONTRACTOR ELECTS TO USE SOME OTHER TYPE OF SIGN SUPPORT (OTHER THAN U-CHANNEL SIGN POSTS) FOR MOUNTING CONSTRUCTION SIGNS, DETAILS OF THE PROPOSED SIGN STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE SIGN STRUCTURE COMPONENTS. ANY SIGN STRUCTURE TO BE SUBMITTED TO THE ENGINEER SHALL BE AN FHWA ACCEPTED BREAKAWAY SIGN SUPPORT. SIGN STRUCTURE SHALL ALSO BE APPROVED FOR 90 MPH WIND LOAD.

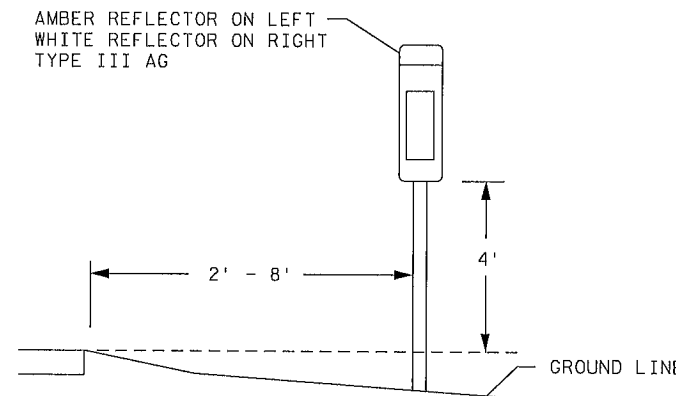
GUIDE SIGNS SHOWN TO BE COVERED SHALL BE COVERED WITH THE SAME COLOR AS THE SIGN BACKGROUND. THE CONTRACTOR SHALL PLACE COVERS OR ADDITIONAL SIGNS USING A MINIMUM 1/2" NYLON SPACER BETWEEN THE INPLACE SIGN AND THE COVERING MATERIAL. HOLES WILL BE DRILLED IN THE COVER AND THE INPLACE SIGN AND SHALL BE PLACED IN ACCORDANCE TO THE SIGN PANEL DETAIL. SPACERS ARE REQUIRED. MID-PANEL SPACING SHALL BE NO GREATER THAN 24".



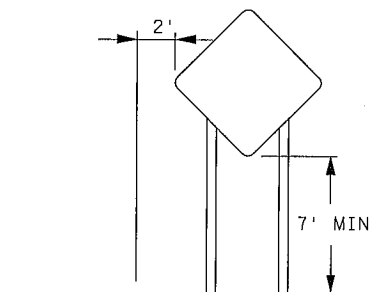
TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS



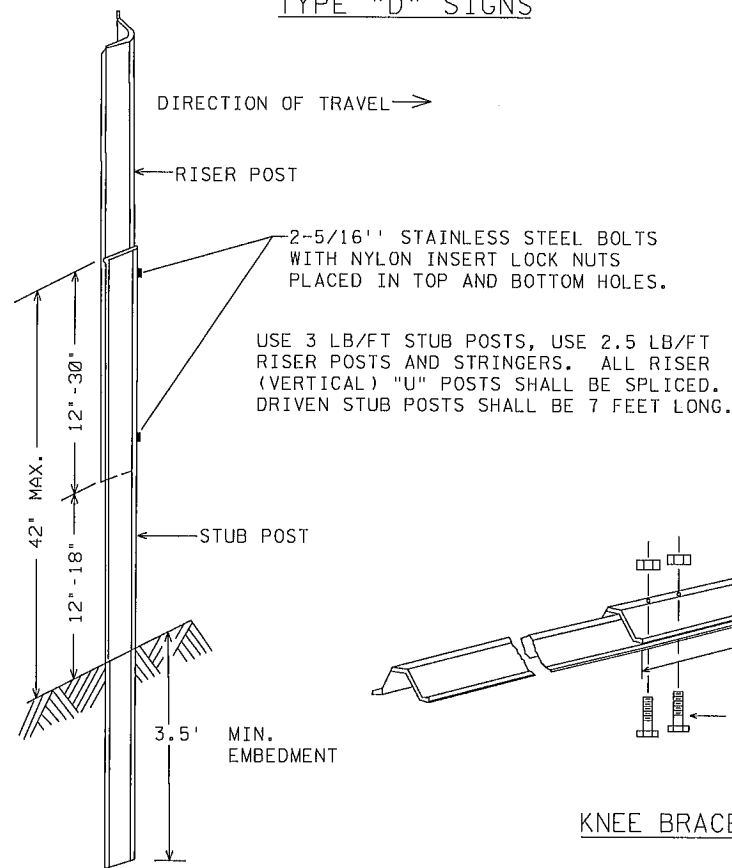
TYPICAL RURAL DESIGN



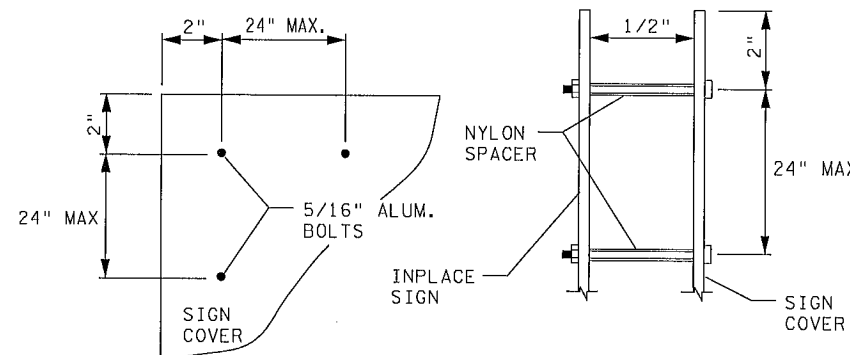
DELINEATION MOUNTING



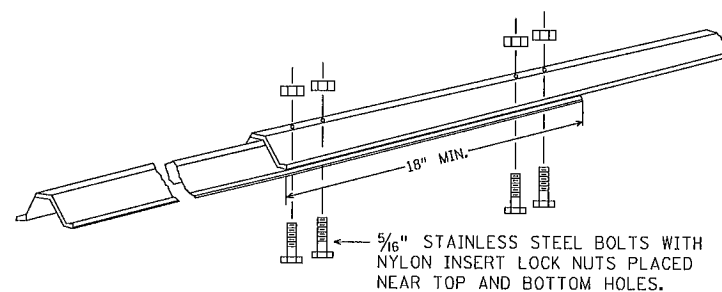
TYPICAL URBAN DESIGN



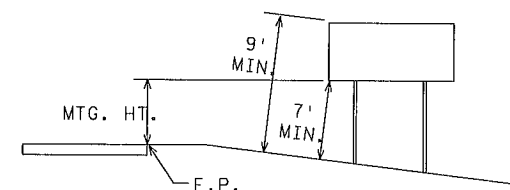
"U" POST BREAKAWAY SPLICE



SIGN PANEL OVERLAY



KNEE BRACE STRUCTURAL SPLICE



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS

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LL TRAFFIC CONTROL SIGN TABULATION			
SIGN LEGEND	SIGN DESIGNATION	SIGN	SIGN COLOR
	TYPE 'A'	FLASHER	AMBER
	TYPE III		ORANGE ON WHITE
	PORTABLE CHANGEABLE MESSAGE SIGN TYPE B		YELLOW ON BLACK
	R1-1	30 X 30	WHITE ON RED
	R1-3P	18 X 6	WHITE ON RED
	R2-1	36 X 48	BLACK ON WHITE
	R3-1	36 X 36	BLACK, RED, ON WHITE
	R3-2	36 X 36	BLACK, RED, ON WHITE
	R3-5L	30 X 36	BLACK ON WHITE
	R3-5R	30 X 36	BLACK ON WHITE
	R3-7L	36 X 36	BLACK ON WHITE
	R3-7R	36 X 36	BLACK ON WHITE
	R3-30AA	36 X 30	BLACK ON WHITE
	R3-30AC	36 X 30	BLACK ON WHITE
	R3-30ACA	54 X 30	BLACK ON WHITE
	R3-30AD	36 X 30	BLACK ON WHITE
	R3-30BA	36 X 30	BLACK ON WHITE

LL TRAFFIC CONTROL SIGN TABULATION			
SIGN LEGEND	SIGN DESIGNATION	SIGN	SIGN COLOR
	R3-30CA	36 X 30	BLACK ON WHITE
	R3-30DA	36 X 30	BLACK ON WHITE
	R6-1L	54 X 18	BLACK ON WHITE
	R6-1R	54 X 18	BLACK ON WHITE
	R8-8	24 X 30	BLACK ON WHITE
	R9-9	30 X 18	BLACK ON WHITE
	R9-11L	24 X 18	BLACK ON WHITE
	R9-11R	24 X 18	BLACK ON WHITE
	R11-2	48 X 30	BLACK ON WHITE
	G20-2A	48 X 24	BLACK ON ORANGE
	G20-X7	48 X 48	BLACK ON ORANGE
	W1-4BL	48 X 48	BLACK ON ORANGE
	W1-4BR	48 X 48	BLACK ON ORANGE
	W1-4L	36 X 36	BLACK ON ORANGE
	W1-6L	48 X 24	BLACK ON ORANGE
	W1-6R	48 X 24	BLACK ON ORANGE
	W3-3	48 X 48	BLACK, RED, AND GREEN ON ORANGE

LL TRAFFIC CONTROL SIGN TABULATION			
SIGN LEGEND	SIGN DESIGNATION	SIGN	SIGN COLOR
	W4-1R	48 X 48	BLACK ON YELLOW
	W4-2L	48 X 48	BLACK ON ORANGE
	W4-2R	48 X 48	BLACK ON ORANGE
	W8-23	48 X 48	BLACK ON ORANGE
	W10-1	36 DIA.	BLACK ON YELLOW
	W10-2L	48 X 48	BLACK ON ORANGE
	W10-2R	48 X 48	BLACK ON ORANGE
	W20-1	48 X 48	BLACK ON ORANGE
	W20-1	36 X 36	BLACK ON ORANGE
	W20-2	48 X 48	BLACK ON ORANGE
	W20-3	36 X 36	BLACK ON ORANGE
	W20-X3L	48 X 48	BLACK ON ORANGE
	W20-X3R	48 X 48	BLACK ON ORANGE
	W20-X6	36 X 36	BLACK ON ORANGE
	W20-X16	48 X 48	BLACK ON ORANGE
	W21-X5AL	48 X 48	BLACK ON ORANGE
	W21-X5AR	48 X 48	BLACK ON ORANGE

LL TRAFFIC CONTROL SIGN TABULATION			
SIGN LEGEND	SIGN DESIGNATION	SIGN	SIGN COLOR
	W21-X5L	36 X 36	BLACK ON ORANGE
	W21-X5L	48 X 48	BLACK ON ORANGE
	W21-X5R	36 X 36	BLACK ON ORANGE
	W21-X5R	48 X 48	BLACK ON ORANGE
	W24-1L	36 X 36	BLACK ON ORANGE
	W24-1R	36 X 36	BLACK ON ORANGE
	M1-4	24 X 24	BLACK ON WHITE
	M1-4	30 X 24	BLACK ON WHITE
	M1-6	36 X 36	WHITE AND YELLOW ON BLUE
	M1-6	24 X 24	WHITE AND YELLOW ON BLUE
	M3-1A	36 X 18	WHITE ON BLUE
	M3-1A	24 X 12	WHITE ON BLUE
	M3-2	24 X 12	BLACK ON WHITE
	M3-3	24 X 12	BLACK ON WHITE
	M3-4	24 X 12	BLACK ON WHITE
	M4-5	24 X 12	BLACK ON WHITE
	M4-8	36 X 18	BLACK ON ORANGE

LL TRAFFIC CONTROL SIGN TABULATION			
SIGN LEGEND	SIGN DESIGNATION	SIGN	SIGN COLOR
	M4-8	24 X 12	BLACK ON ORANGE
	M4-8a	24 X 18	BLACK ON ORANGE
	M4-9mL	42 X 36	BLACK ON ORANGE
	M4-9mR	42 X 36	BLACK ON ORANGE
	M4-9mATR90	42 X 36	BLACK ON ORANGE
	M4-9maL	30 X 24	BLACK ON ORANGE
	M4-9maR	30 X 24	BLACK ON ORANGE
	M4-9maT	30 X 24	BLACK ON ORANGE
	M5-1aL	30 X 24	WHITE ON BLUE
	M5-1aR	21 X 15	WHITE ON BLUE
	M5-1L	21 X 15	BLACK ON WHITE
	M6-1aL	30 X 24	WHITE ON BLUE
	M6-1aR	21 X 15	WHITE ON BLUE
	M6-1L	21 X 15	BLACK ON WHITE
	M6-1R	21 X 15	BLACK ON WHITE
	M6-3	21 X 15	BLACK ON WHITE
	X4-4R	12 X 36	BLACK ON YELLOW

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: **CRAIG J. HASS**  
  
 Date: **09-12-14** License #: **45039**

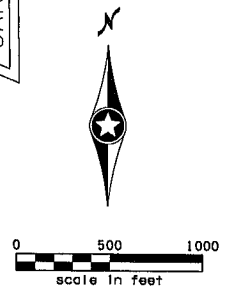
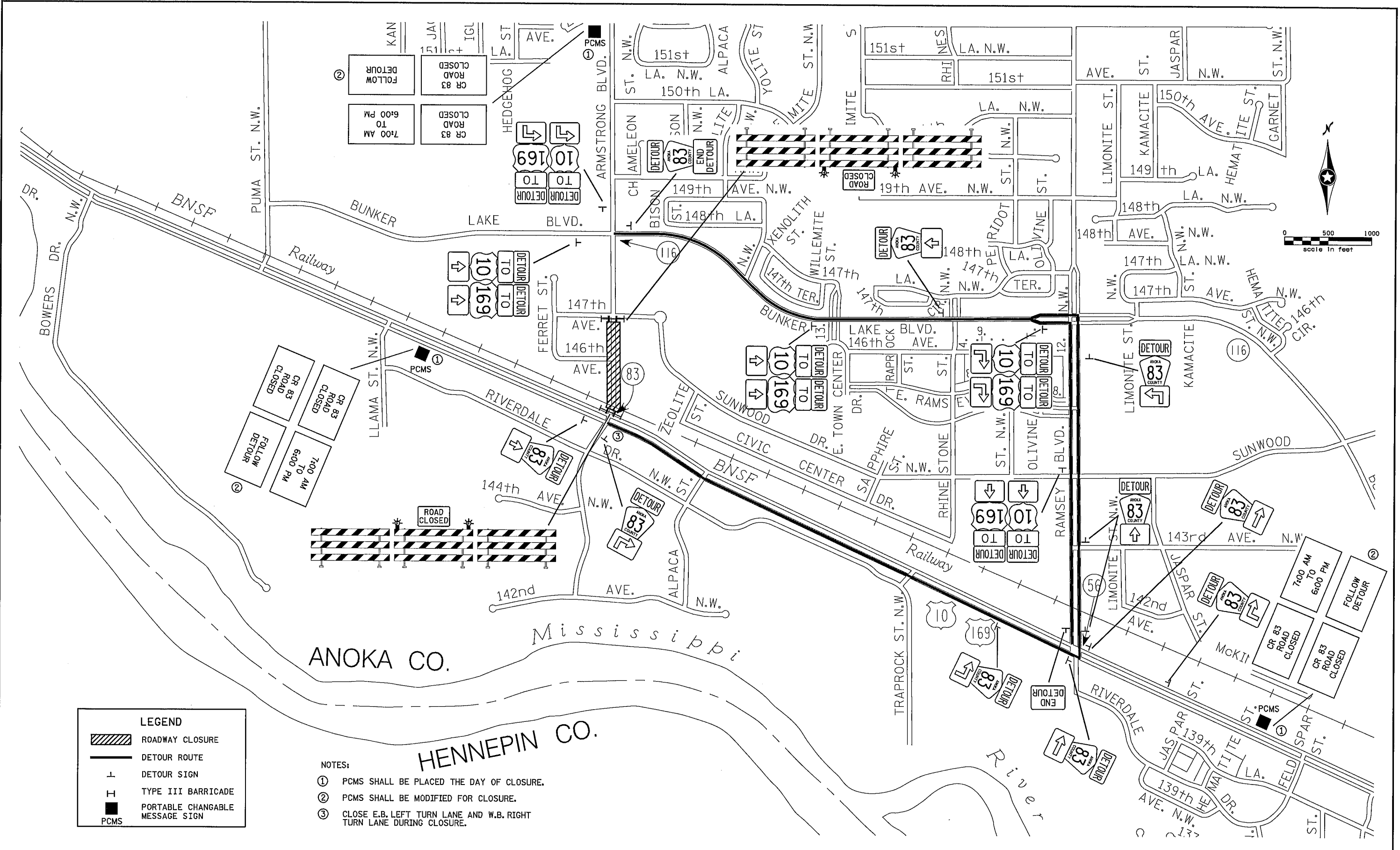
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 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.        
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**ENGINEERS PLANNERS DESIGNERS**  
 Consulting Group, Inc.

**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 TRAFFIC CONTROL SIGN TABULATION

**SHEET**  
**105**  
**OF**  
**586**





**LEGEND**

	ROADWAY CLOSURE
	DETOUR ROUTE
	DETOUR SIGN
	TYPE III BARRICADE
	PORTABLE CHANGABLE MESSAGE SIGN (PCMS)

- NOTES:**
- ① PCMS SHALL BE PLACED THE DAY OF CLOSURE.
  - ② PCMS SHALL BE MODIFIED FOR CLOSURE.
  - ③ CLOSE E.B. LEFT TURN LANE AND W.B. RIGHT TURN LANE DURING CLOSURE.

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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

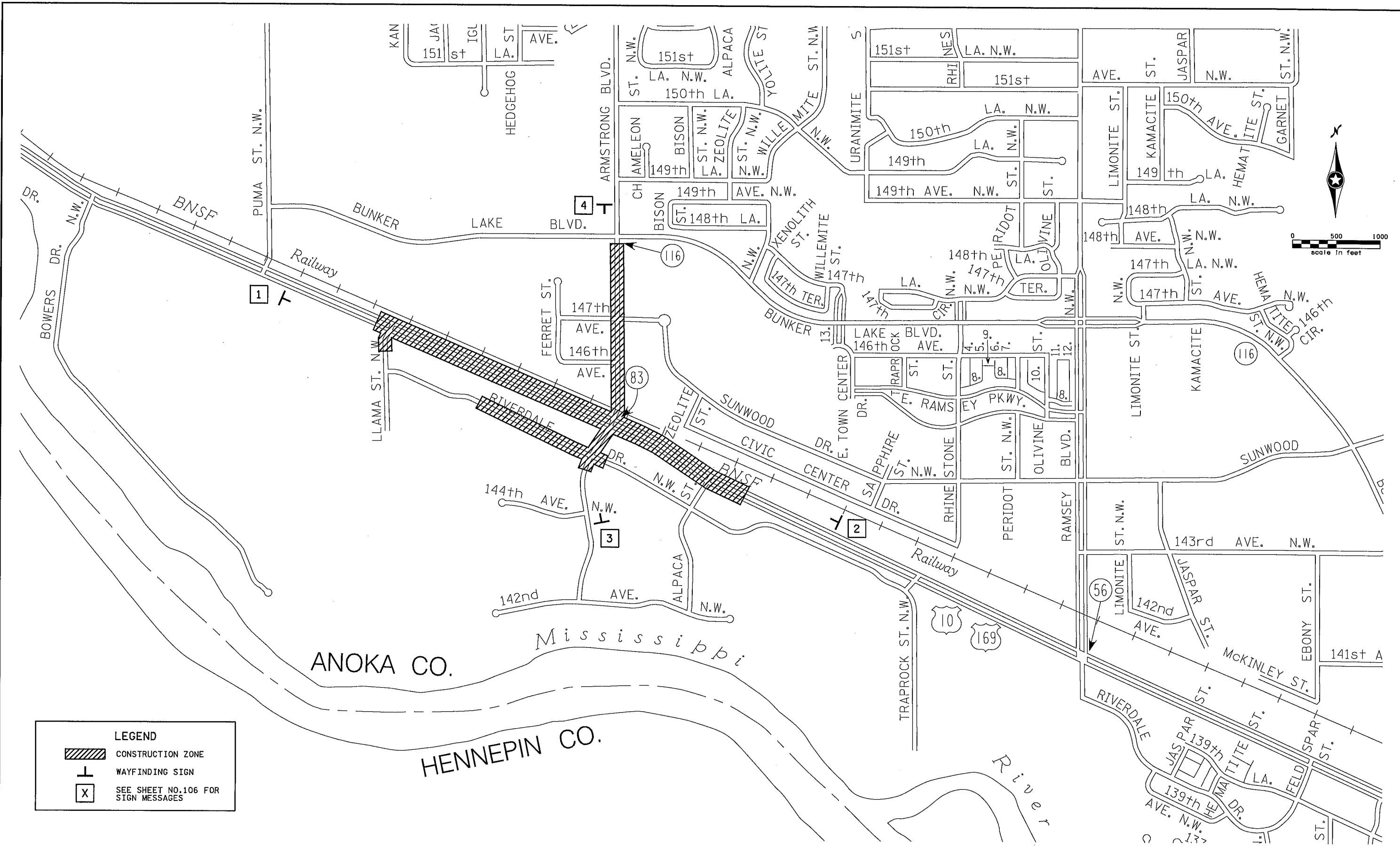
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



**ANOKA COUNTY**

STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 NIGHT CLOSURE DETOUR ROUTE

**SHEET**  
107  
**OF**  
586



LEGEND	
	CONSTRUCTION ZONE
	WAYFINDING SIGN
	SEE SHEET NO.106 FOR SIGN MESSAGES

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 Date: 09-12-14 License # 45039

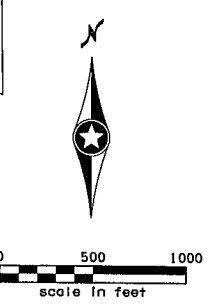
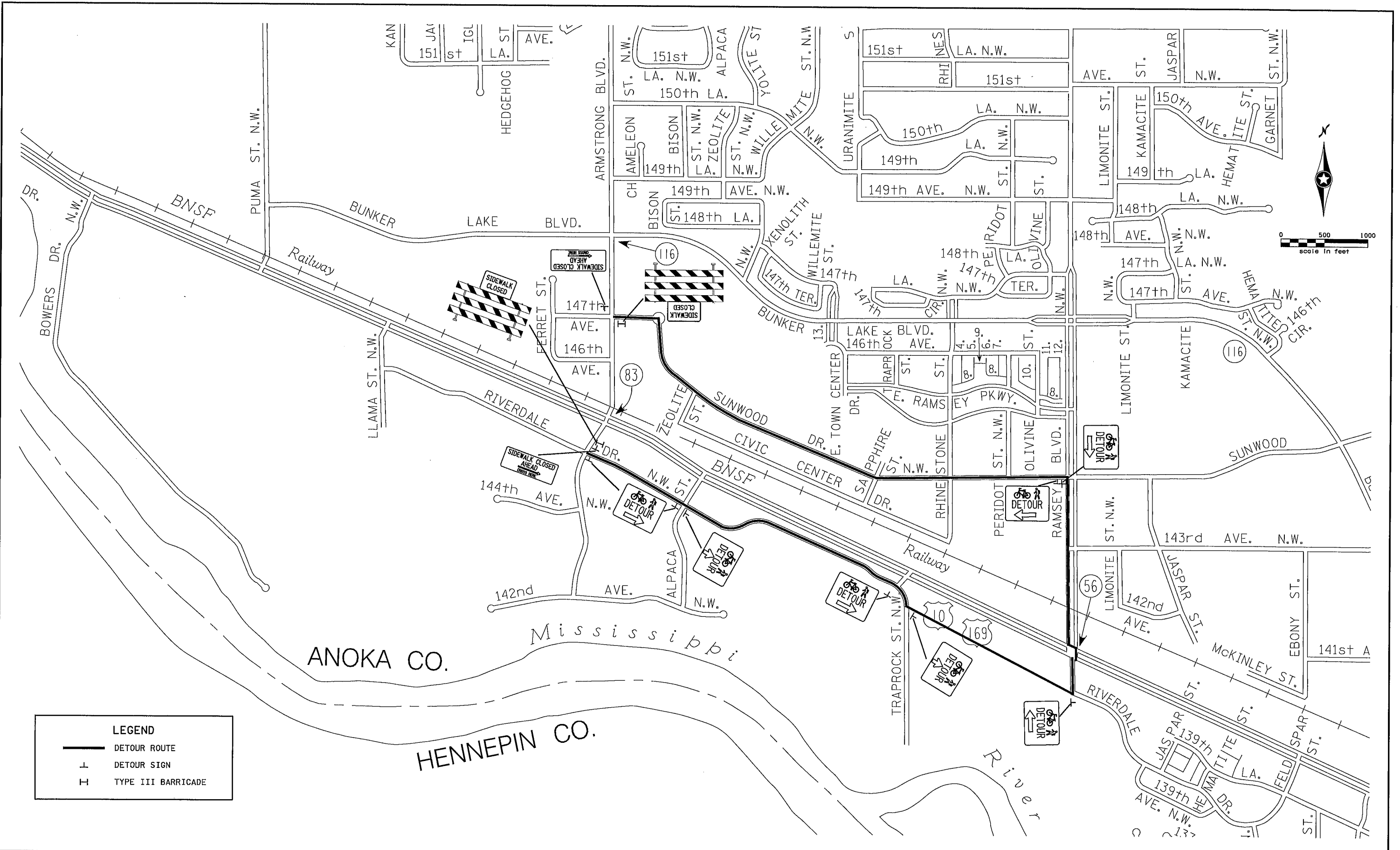
STATE AID PROJECT NO. 002-683-004  
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 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.        
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 ADVANCE WARNING

SHEET  
 108  
 OF  
 586



LEGEND	
	DETOUR ROUTE
	DETOUR SIGN
	TYPE III BARRICADE

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STATE AID PROJECT NO. 002-683-004  
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 COMM. NO. 0138259



ENGINEERS  
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 DESIGNERS

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PEDESTRIAN DETOUR ROUTE

SHEET  
 109  
 OF  
 586

SPECIAL SIGN - 1650 FEET EAST OF BOWERS DRIVE

No Right Turn at Armstrong Blvd Follow Detour

BNSF RAILWAY COMPANY

W.B. T.H. 10

E.B. T.H. 10

MATCHLINE STA. 164+35.00 SEE SHEET NO. 111

THIS LEGEND APPLIES TO ALL TRAFFIC CONTROL & STAGING PLAN SHEETS

### STRIPING KEY

- CROSSWALK BLOCK WHITE - REMOVABLE PREFORMED PLASTIC MARKING
- ◡ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING
- △ TRIANGLE - PAINT

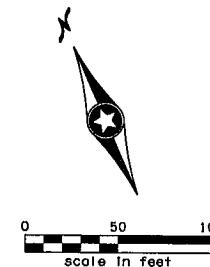
1ST DIGIT WIDTH 4", 8", ETC.	2ND DIGIT PATTERN	3RD DIGIT COLOR
S	SOLID	W - WHITE
B	BROKEN	Y - YELLOW
D	DOTTED/DOUBLE	B - BLACK

EXAMPLE: = 4" SOLID LINE WHITE - PAINT

THIS LEGEND APPLIES TO ALL TRAFFIC CONTROL & STAGING PLAN SHEETS

### LEGEND

PERMANENT CONSTRUCTION	RAPID STABILIZATION METHOD 3
CONSTRUCTION UNDER SHORT TERM CLOSURE SEE SHORT TERM CLOSURE NOTES	TEMPORARY POLY COVERING
TEMPORARY PAVEMENT	SILT FENCE (MACHINE SLICED)
TRAFFIC LOCATION AND DIRECTION	SEDIMENT CONTROL LOG TYPE STRAW
PORTABLE PRECAST CONCRETE BARRIER (PPCB) STD. PLATE 8337	STORM DRAIN INLET PROTECTION
IMPACT ATTENUATOR BARRELS (65 MPH UNLESS NOTED OTHERWISE)	CULVERT END CONTROLS
REFLECTORIZED PLASTIC DRUM	EXISTING STORM SEWER
TYPE A LOW INTENSITY WARNING FLASHER	PROPOSED STORM SEWER BUILT THIS STAGE
TYPE III BARRICADE (REFLECTORIZED BOTH SIDES)	PROPOSED STORM SEWER BUILT PREVIOUS STAGE
STANDARD SIGN (POST OR STAND MOUNTED)	TEMPORARY STRUCTURE NUMBER



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE CURRENT "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

3/20/21 PM 9/11/2014 Hr:\Projects\8259\CAD\_BIM\Plan\8259-101.dgn

NO	DATE	BY	CHKD	APPR	REVISION

... \CAD\_BIM\Plan\8259-101.dgn

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: CRAIG J. HASS

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

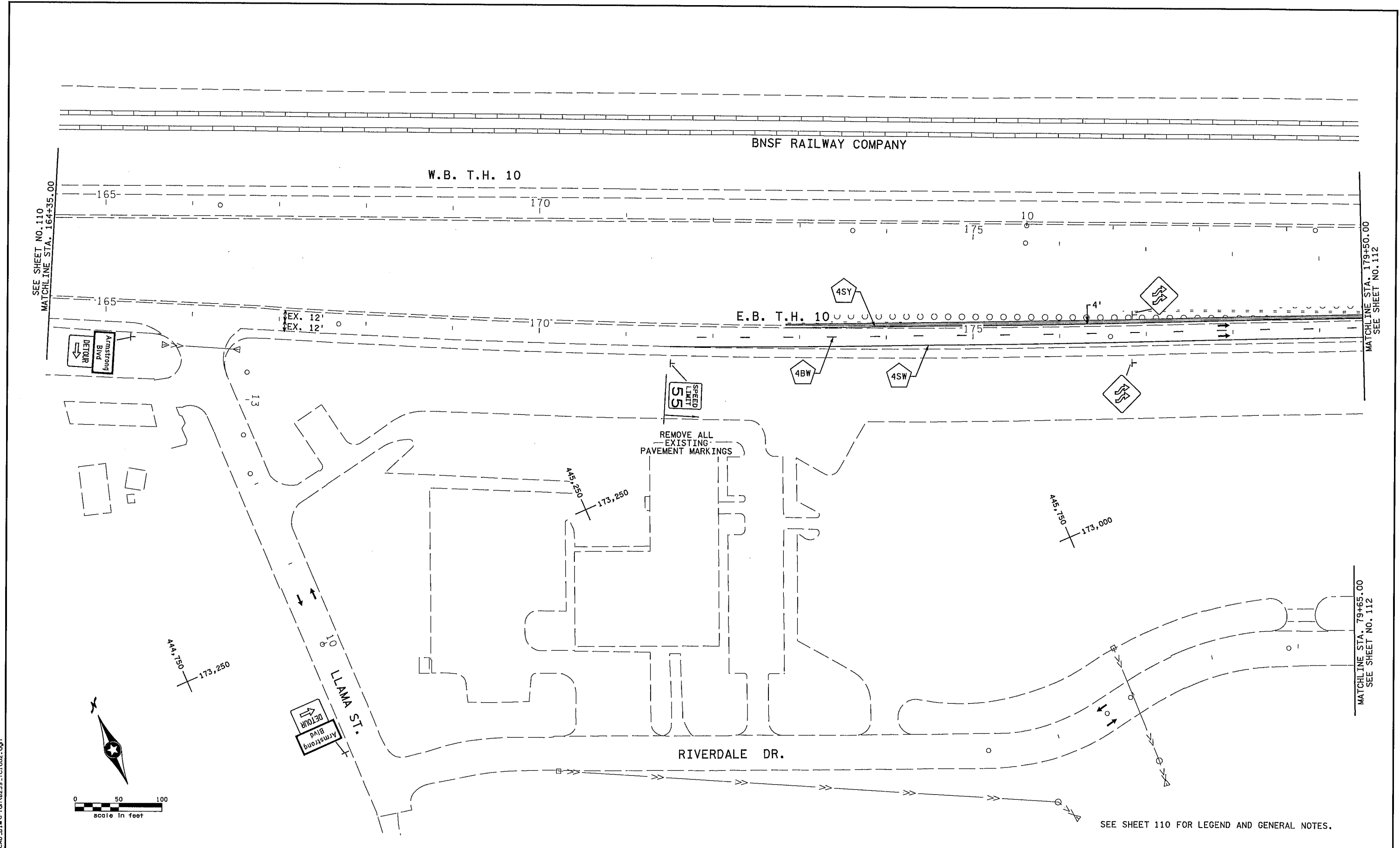
DRAWN BY S. MARTINS  
DESIGNED BY A. EMERSON  
CHECKED BY C. HASS  
COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 1A

SHEET  
110  
OF  
586





SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:32 PM  
 9/11/2014  
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 Print Name: **CRAIG J. HASS**  
*Craig Hass*  
 Date: 09-12-14 License # 45039

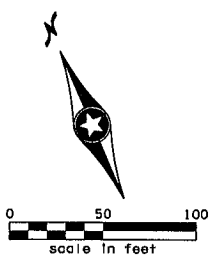
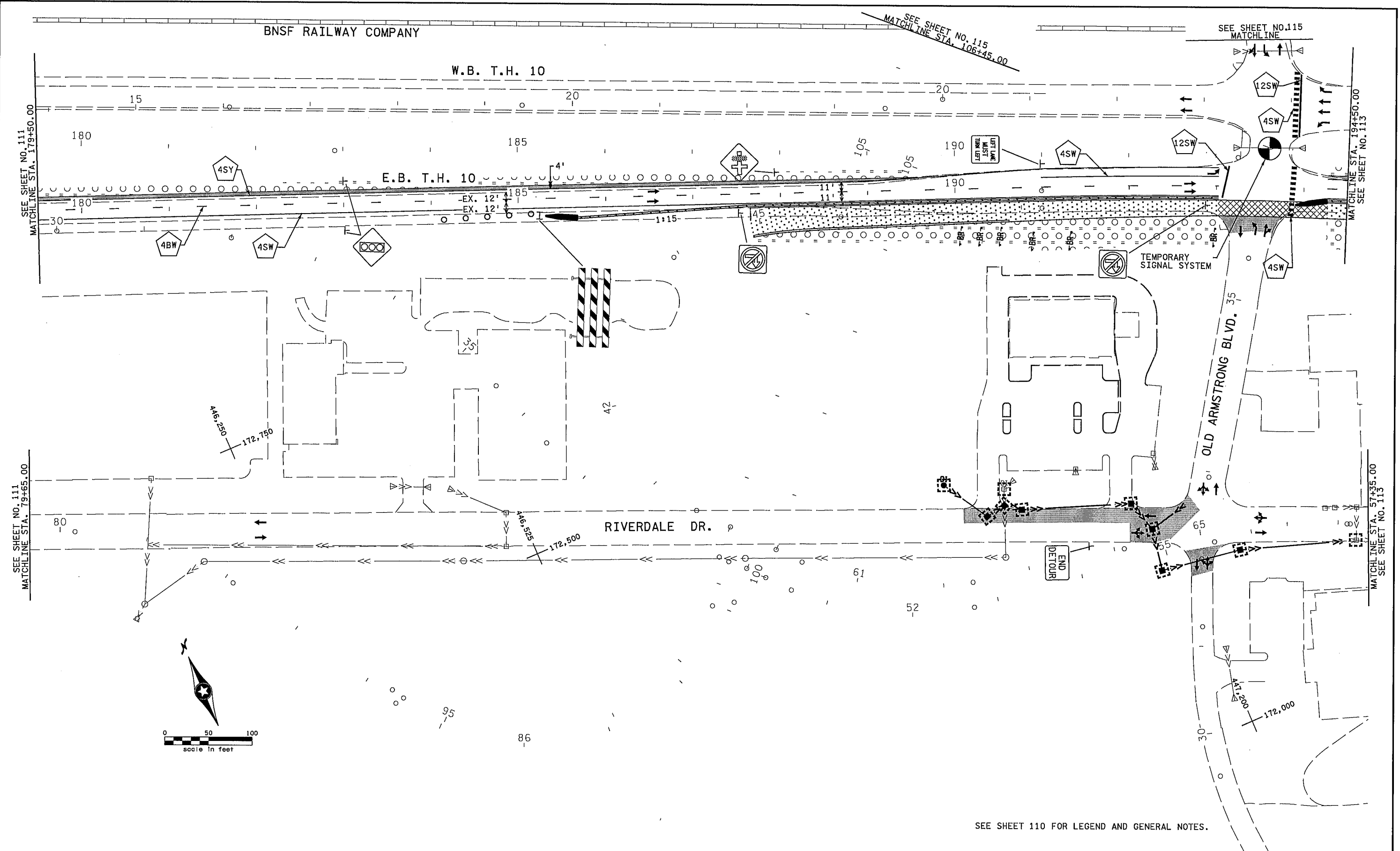
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 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
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 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 1A

**SHEET**  
**111**  
**OF**  
**586**



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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

COMM. NO. 0138259



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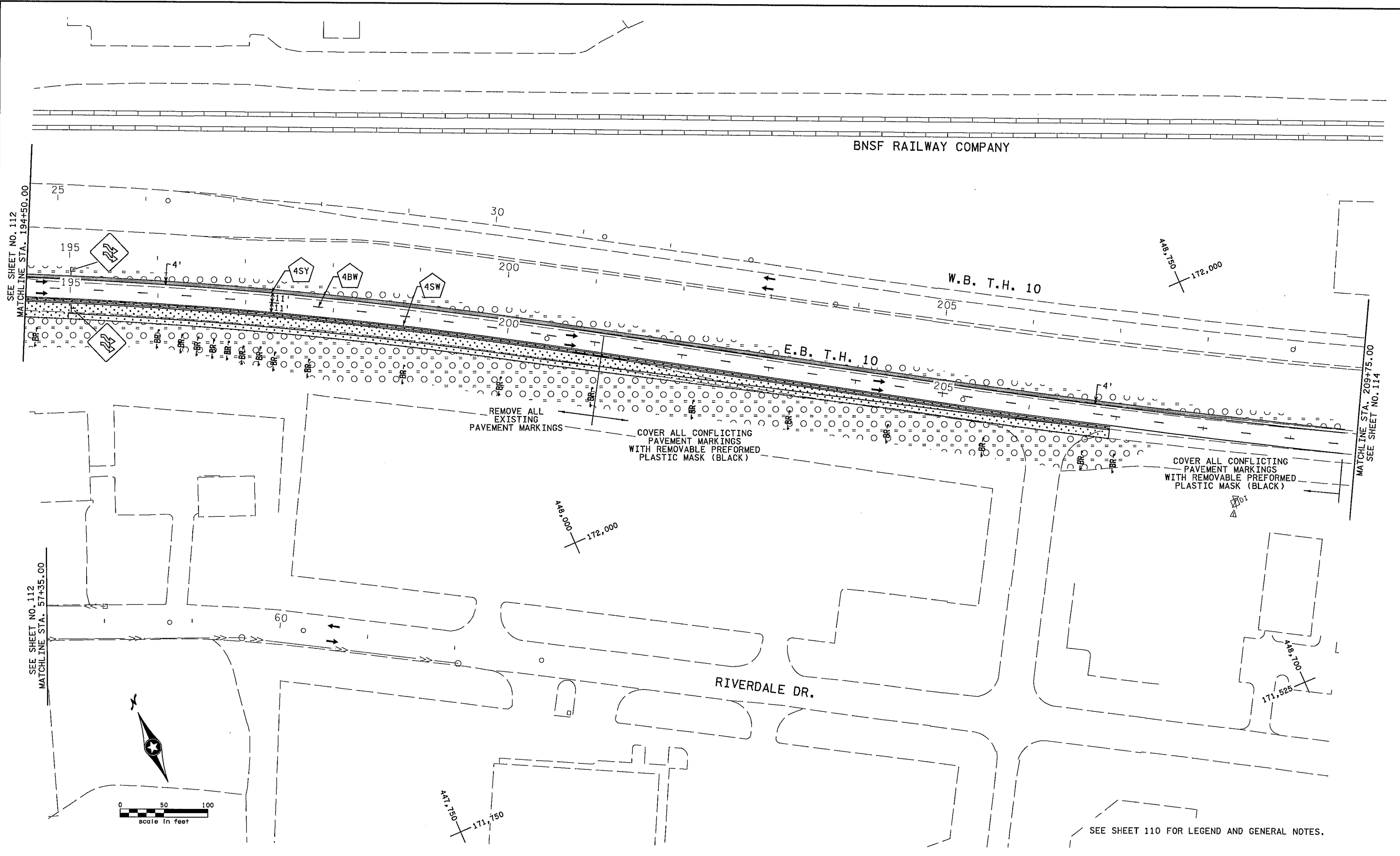
ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 1A

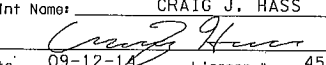
SHEET  
112  
OF  
586



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 Print Name: **CRAIG J. HASS**  
  
 Date: **09-12-14** License # **45039**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



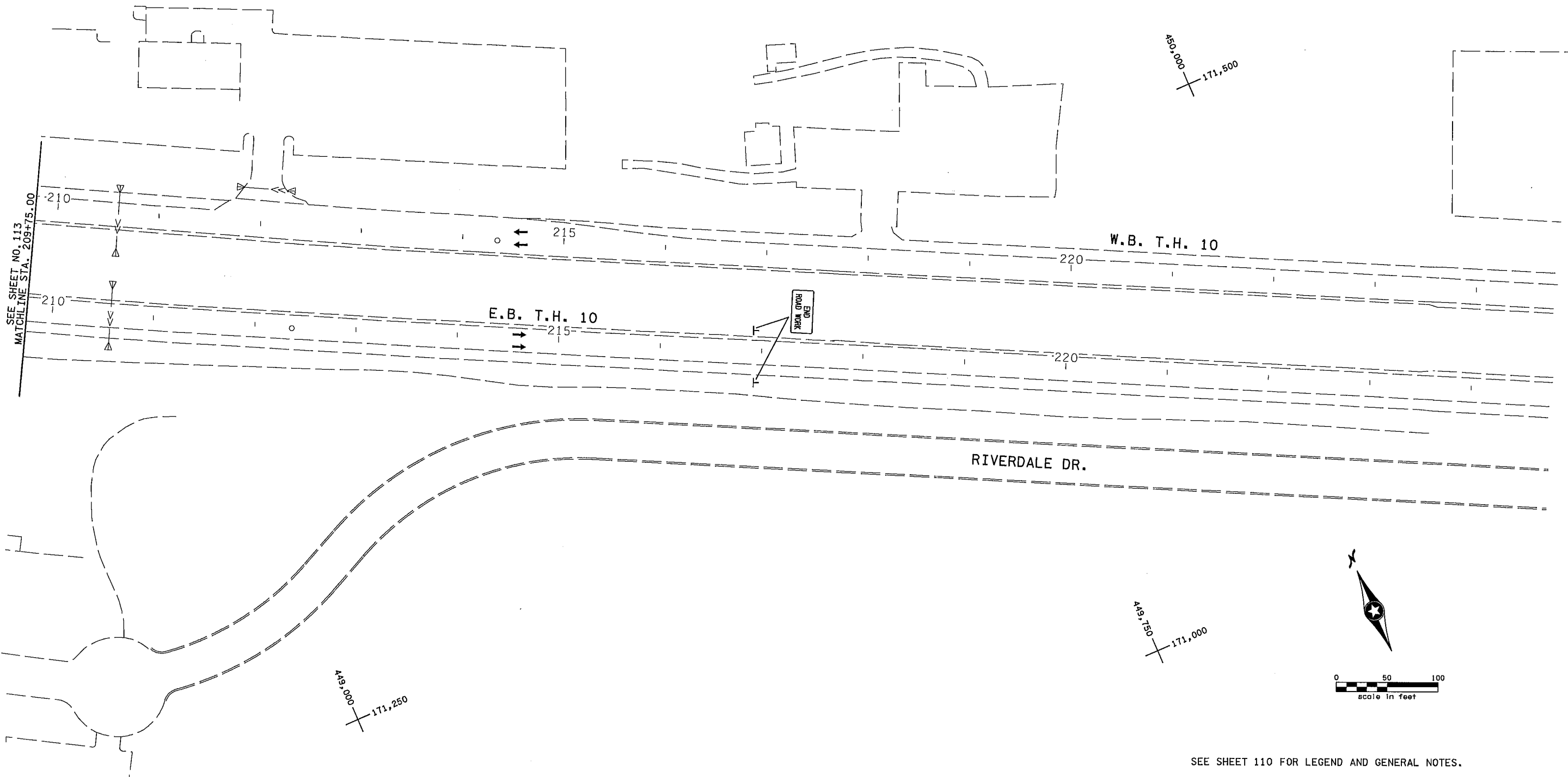
**ENGINEERS  
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 DESIGNERS**

**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 1A

**SHEET**  
**113**  
**OF**  
**586**

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

BNSF RAILWAY COMPANY



SEE SHEET NO. 113  
MATCHLINE STA. 209+75.00

450,000  
171,500

W.B. T.H. 10

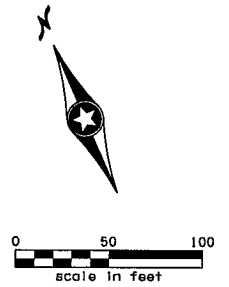
E.B. T.H. 10

END ROAD WORK

RIVERDALE DR.

450,000  
171,250

450,750  
171,000



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:33 PM  
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Pr Int Name: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

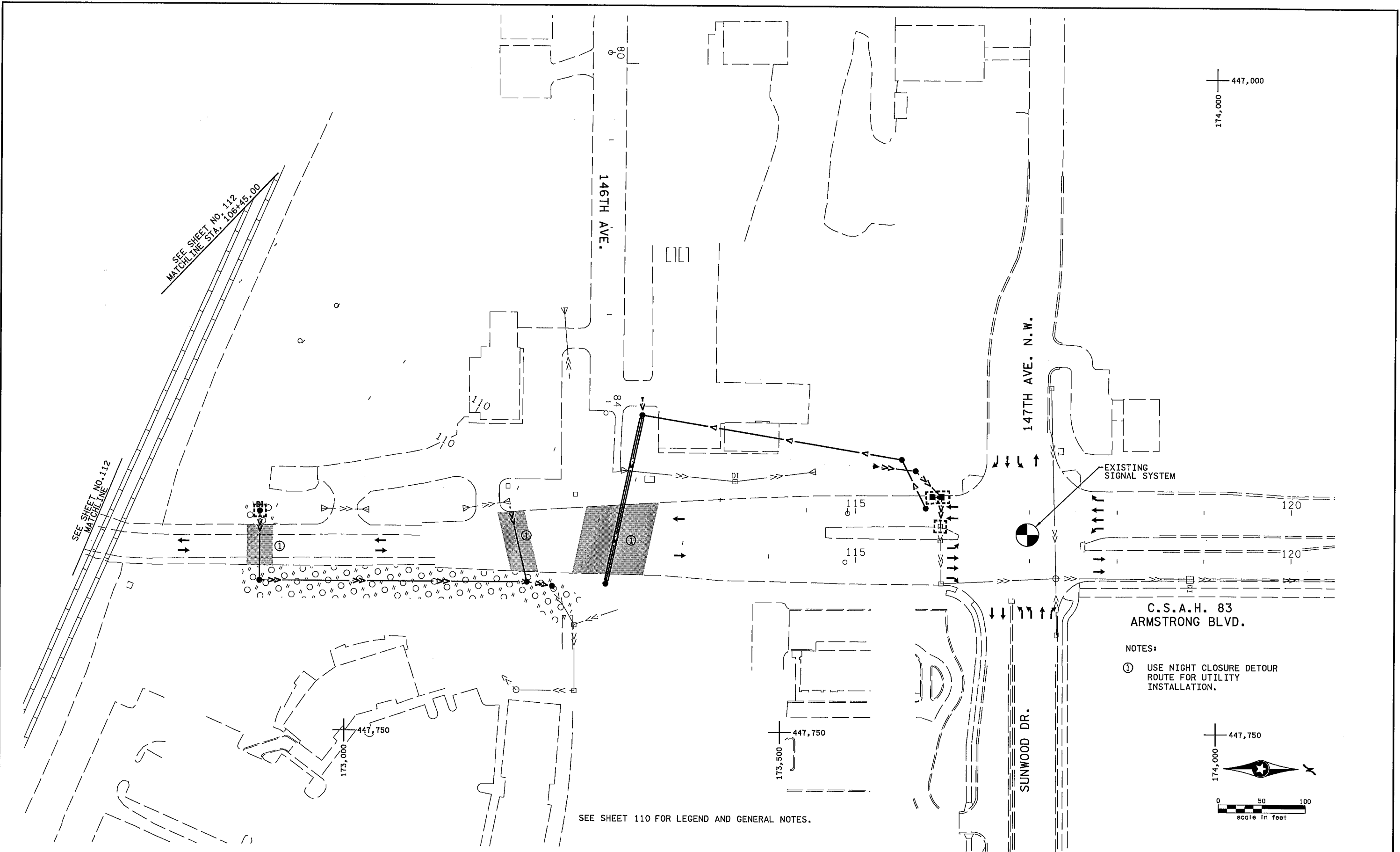
COMM. NO. 0138259



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STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 1A

SHEET  
114  
OF  
586



447,000  
174,000

SEE SHEET NO. 112  
MATCHLINE STA. 106+15.00

SEE SHEET NO. 112  
MATCHLINE

146TH AVE.

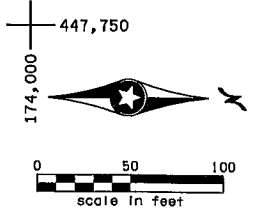
147TH AVE. N.W.

EXISTING SIGNAL SYSTEM

C.S.A.H. 83  
ARMSTRONG BLVD.

NOTES:

- ① USE NIGHT CLOSURE DETOUR ROUTE FOR UTILITY INSTALLATION.

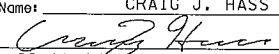


SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

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Print Name: CRAIG J. HASS  
  
 Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.                     
 CITY PROJECT NO.                   

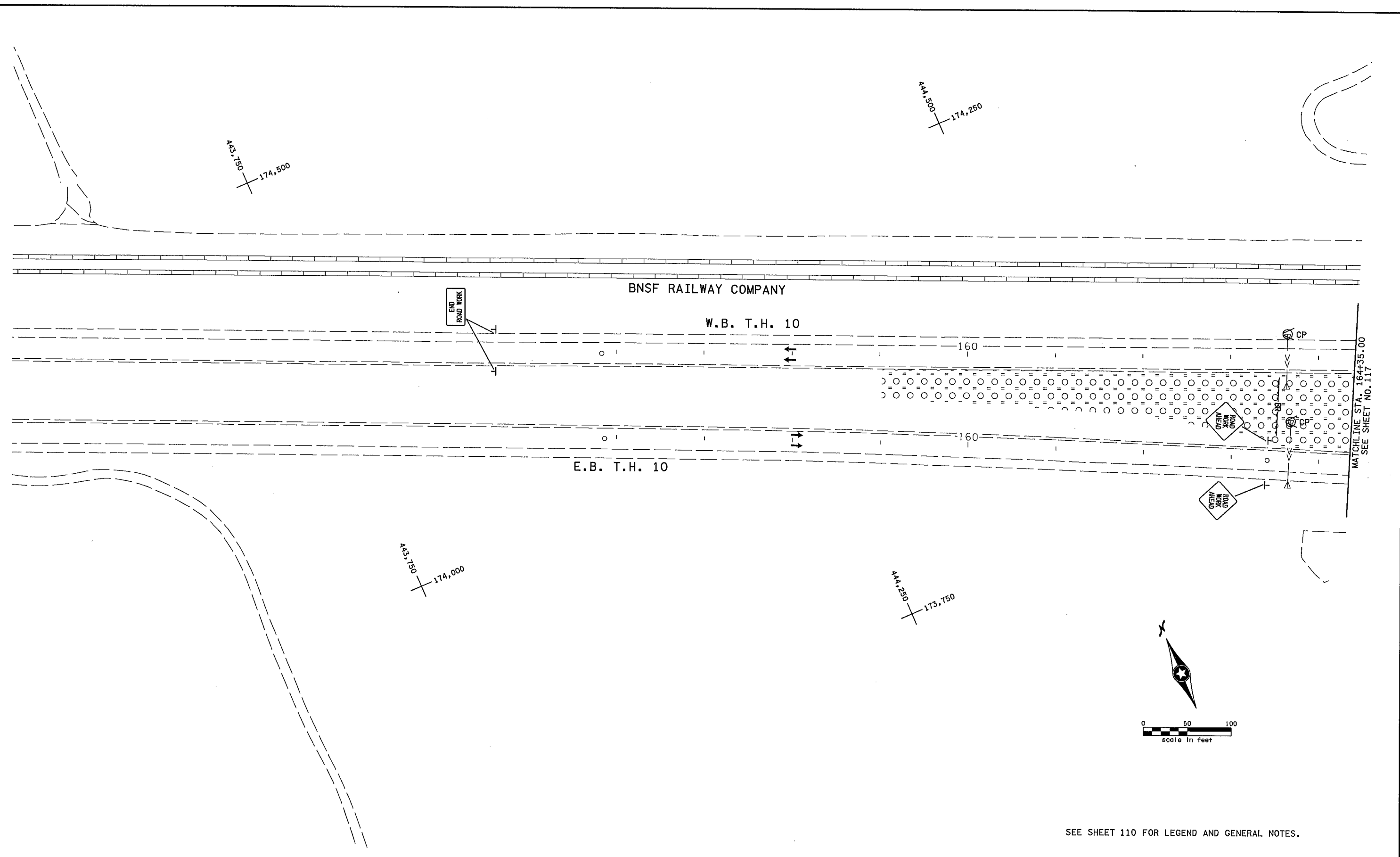
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 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



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DESIGNERS

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 1A

SHEET  
115  
OF  
586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

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Print Name: **CRAIG J. HASS**

*Craig J. Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

COMM. NO. 0138259



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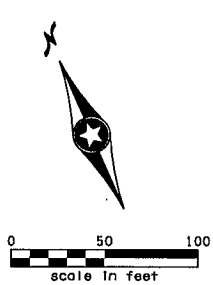
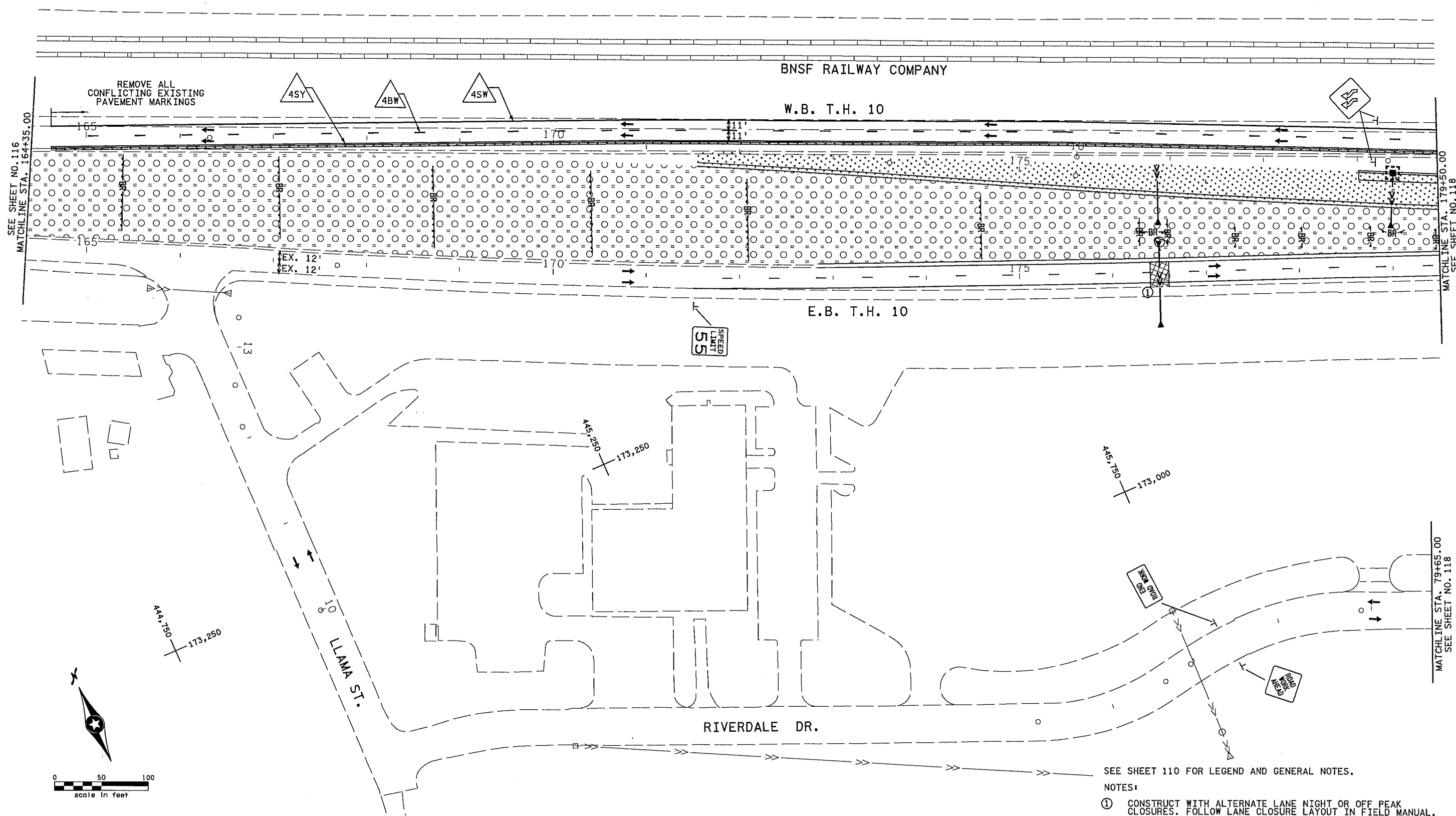
ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 1B

SHEET  
116  
OF  
586



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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

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CITY PROJECT NO.

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S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

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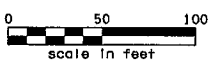
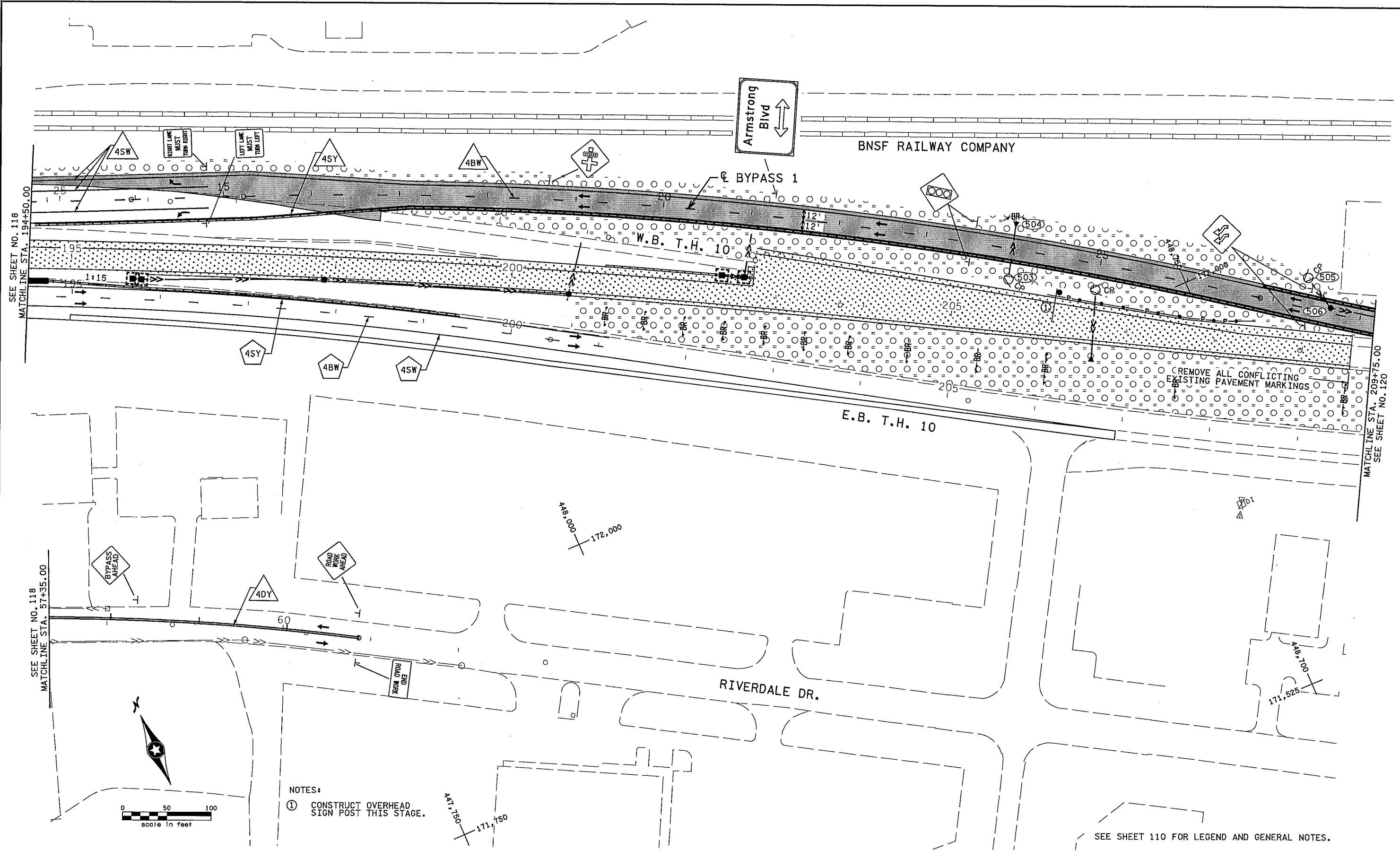
ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 1B

SHEET  
117  
OF  
586







NOTES:  
 ① CONSTRUCT OVERHEAD SIGN POST THIS STAGE.

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:37 PM  
 9/11/2014  
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Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002

STATE PROJECT NO.  
 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
 S. MARTINS

DESIGNED BY  
 D. SYMANIETZ

CHECKED BY  
 C. HASS

COMM. NO. 0138259

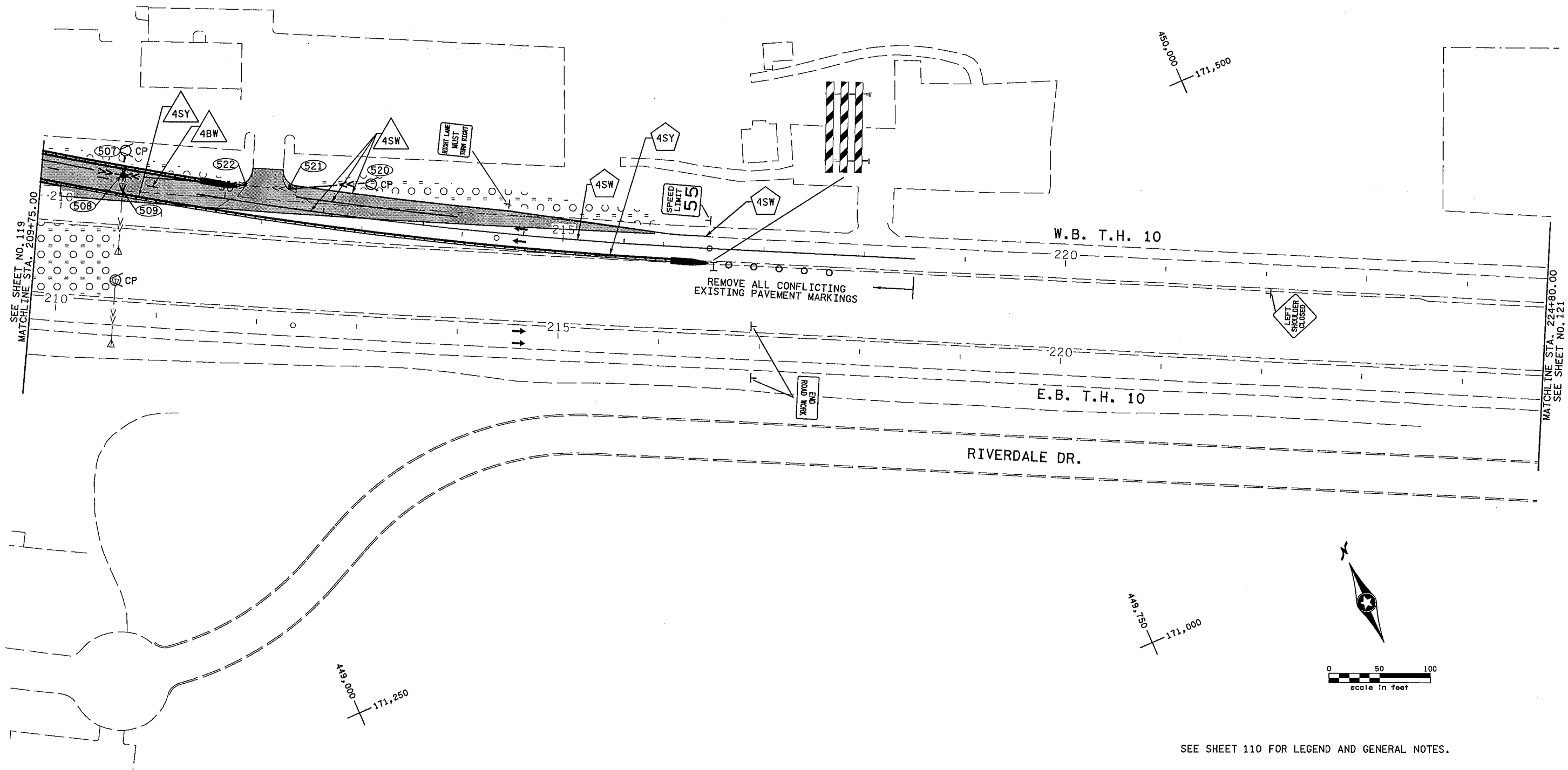


ENGINEERS  
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 1B

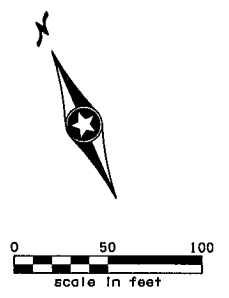
SHEET  
 119  
 OF  
 586

BNSF RAILWAY COMPANY



SEE SHEET NO. 119  
MATCHLINE STA. 209+75.00

MATCHLINE STA. 224+80.00  
SEE SHEET NO. 121



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

31:20:38 PM  
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 Print Name: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

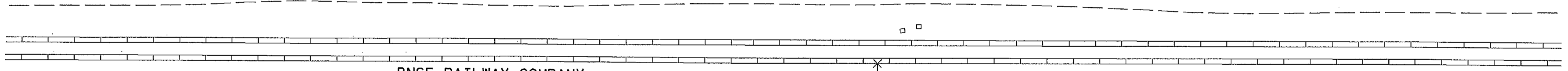
STATE AID PROJECT NO. 002-683-004  
199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.        
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



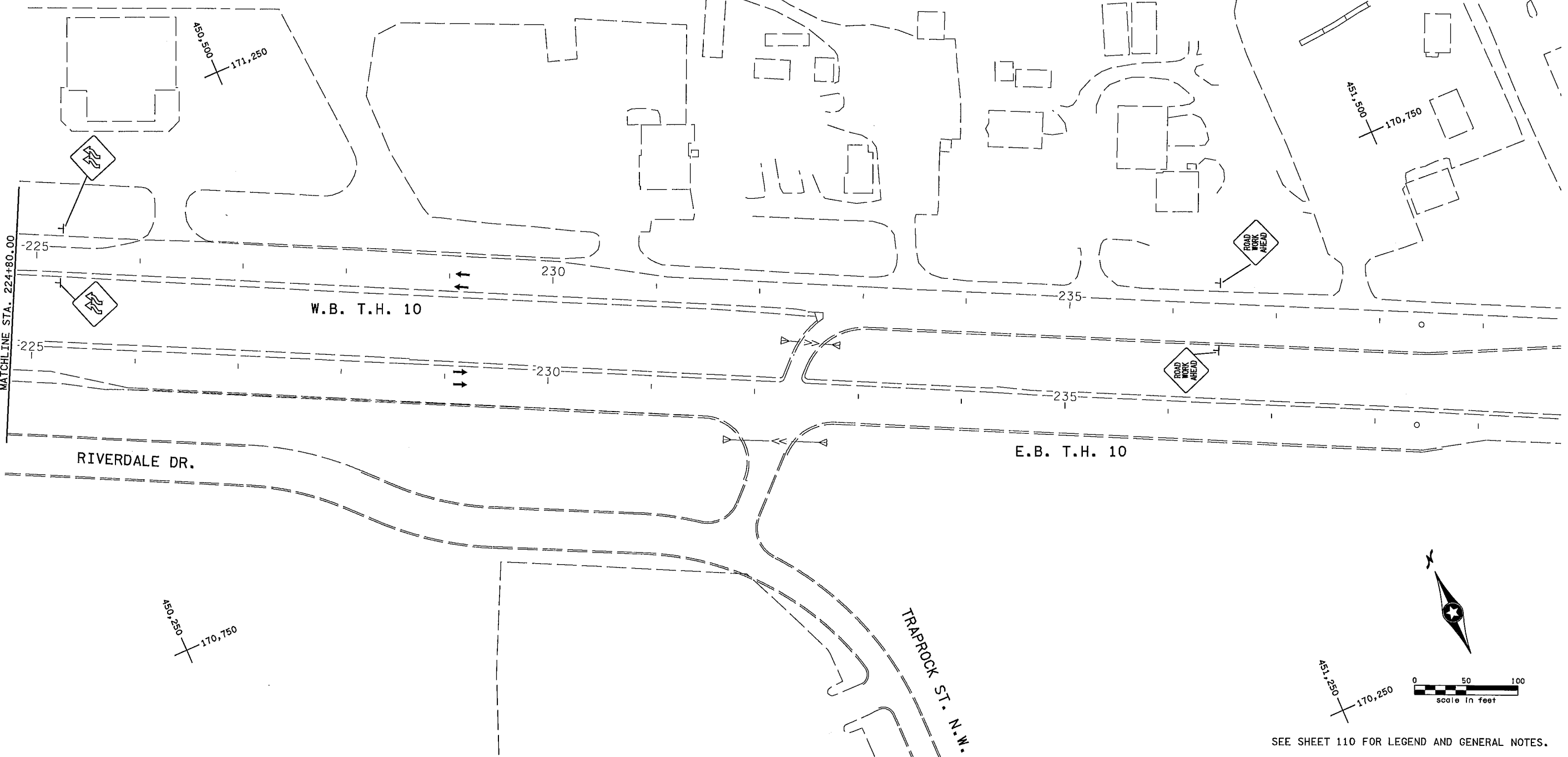
ENGINEERS  
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ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 1B

SHEET  
120  
OF  
586



BNSF RAILWAY COMPANY



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3:20:38 PM 9/11/2014 H:\Projects\8255\CAD\_BIM\Plan\8255\_tcl06.dgn

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-10 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



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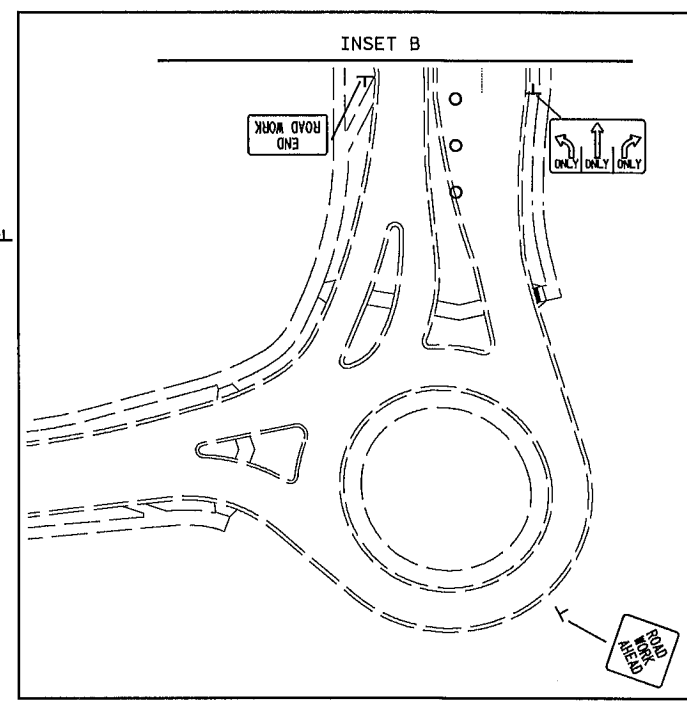
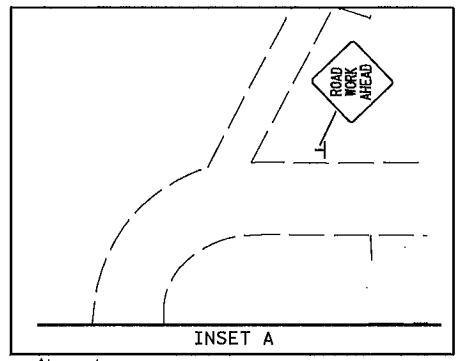
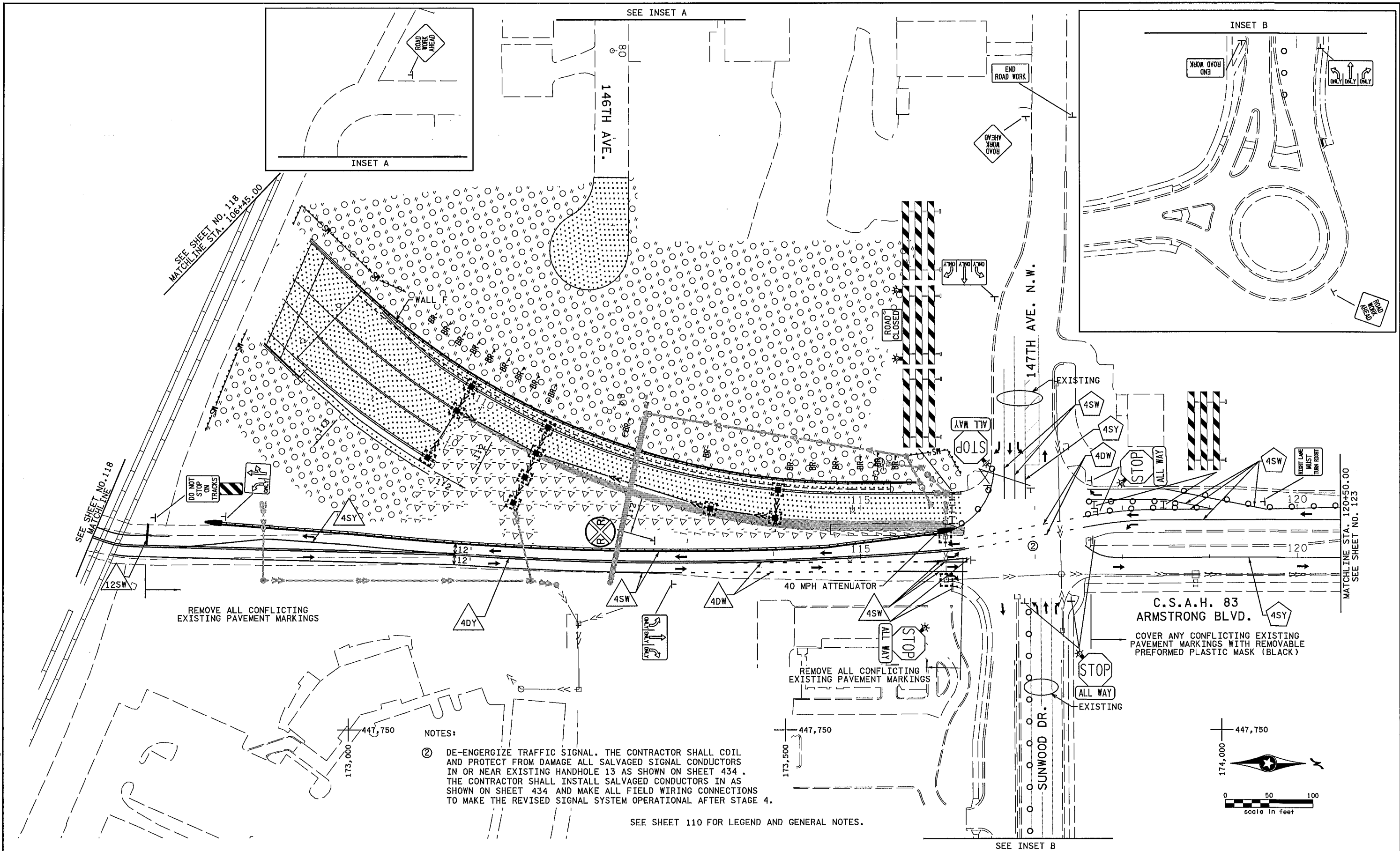
ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 1B

SHEET  
121  
OF  
586



SEE SHEET NO. 118  
MATCHLINE STA. 108+45.00

SEE SHEET NO. 118  
MATCHLINE

MATCHLINE STA. 120+50.00  
SEE SHEET NO. 123

REMOVE ALL CONFLICTING  
EXISTING PAVEMENT MARKINGS

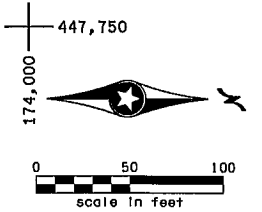
REMOVE ALL CONFLICTING  
EXISTING PAVEMENT MARKINGS

C.S.A.H. 83  
ARMSTRONG BLVD.

COVER ANY CONFLICTING EXISTING  
PAVEMENT MARKINGS WITH REMOVABLE  
PERFORMED PLASTIC MASK (BLACK)

NOTES:  
 ② DE-ENERGIZE TRAFFIC SIGNAL. THE CONTRACTOR SHALL COIL AND PROTECT FROM DAMAGE ALL SALVAGED SIGNAL CONDUCTORS IN OR NEAR EXISTING HANDHOLE 13 AS SHOWN ON SHEET 434. THE CONTRACTOR SHALL INSTALL SALVAGED CONDUCTORS IN AS SHOWN ON SHEET 434 AND MAKE ALL FIELD WIRING CONNECTIONS TO MAKE THE REVISED SIGNAL SYSTEM OPERATIONAL AFTER STAGE 4.

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.



3/20/14 9:11/2014  
H:\Projects\8259\CAD\_BIM\Plan\8259\_tcl07.dgn

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 Prt Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

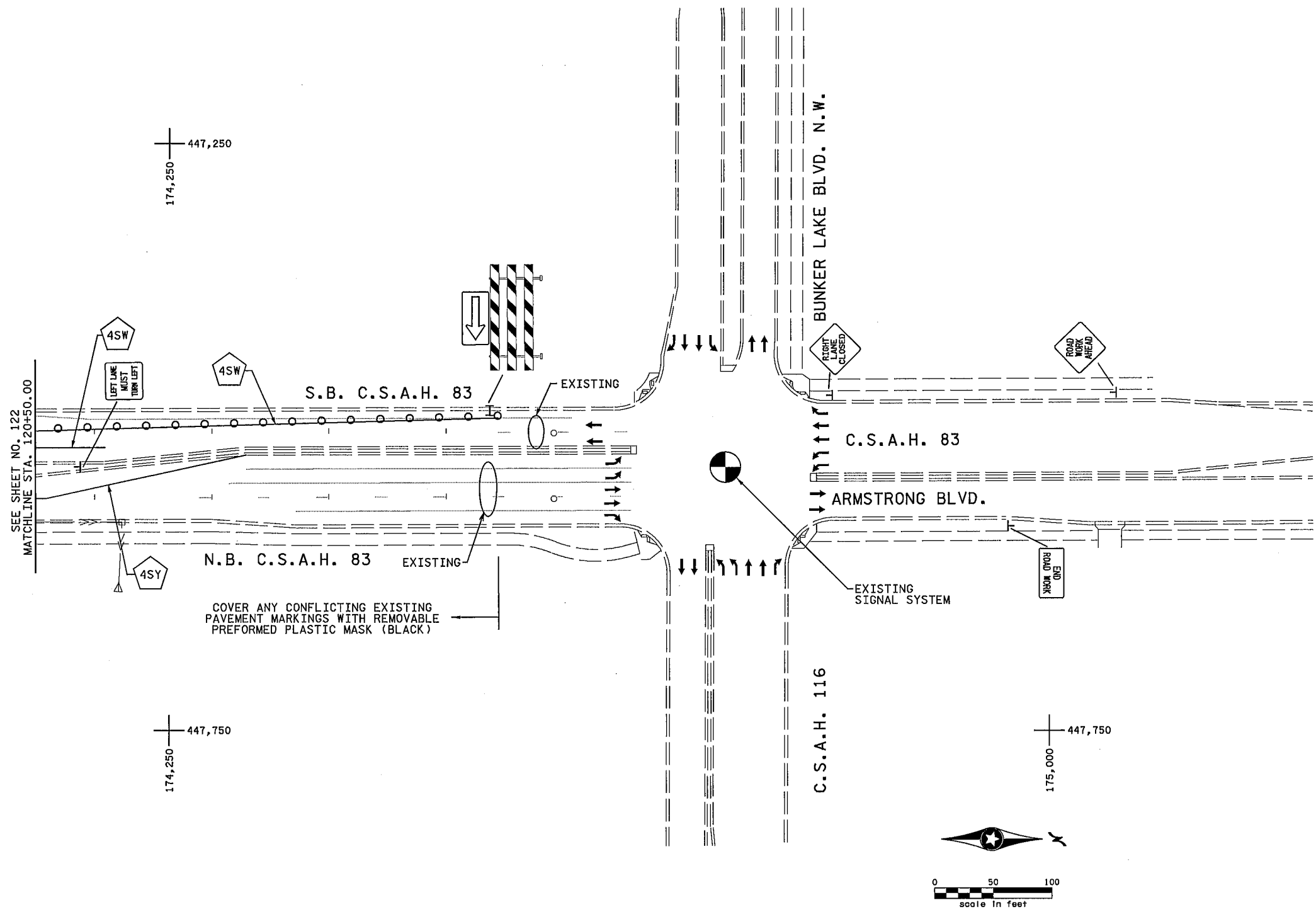
DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 1B

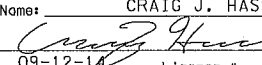
SHEET  
122  
OF  
586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

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 Date: **09-12-14** License # **45039**

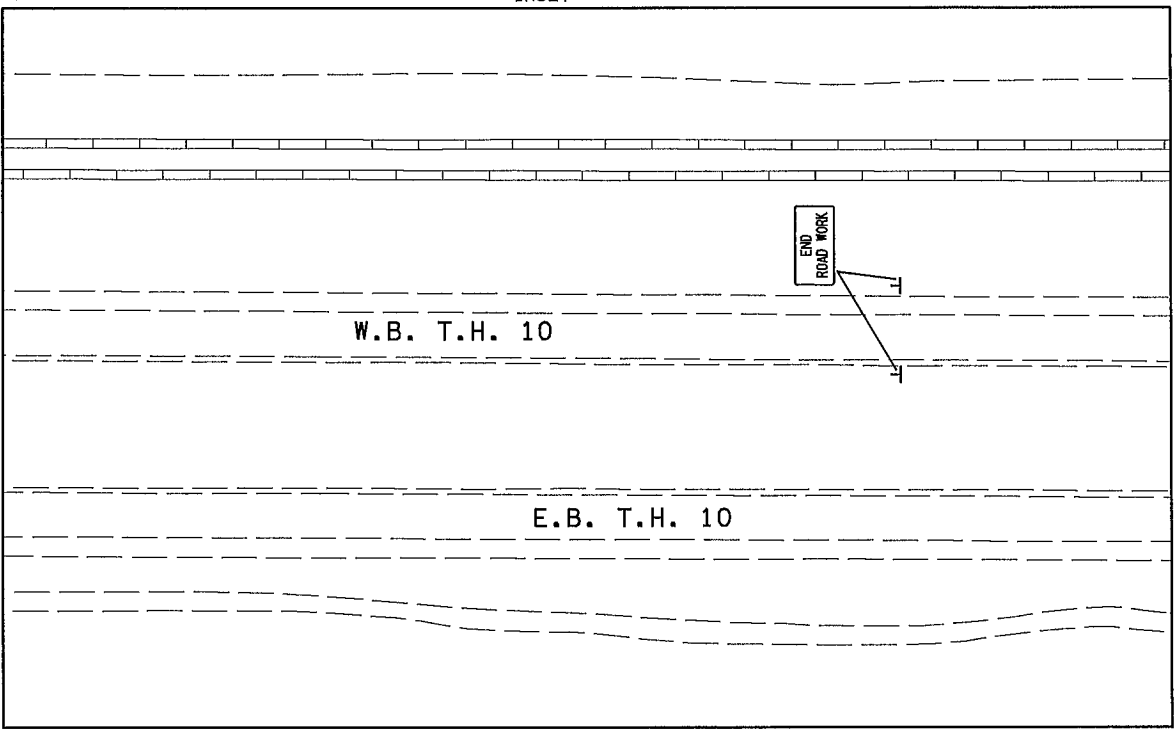
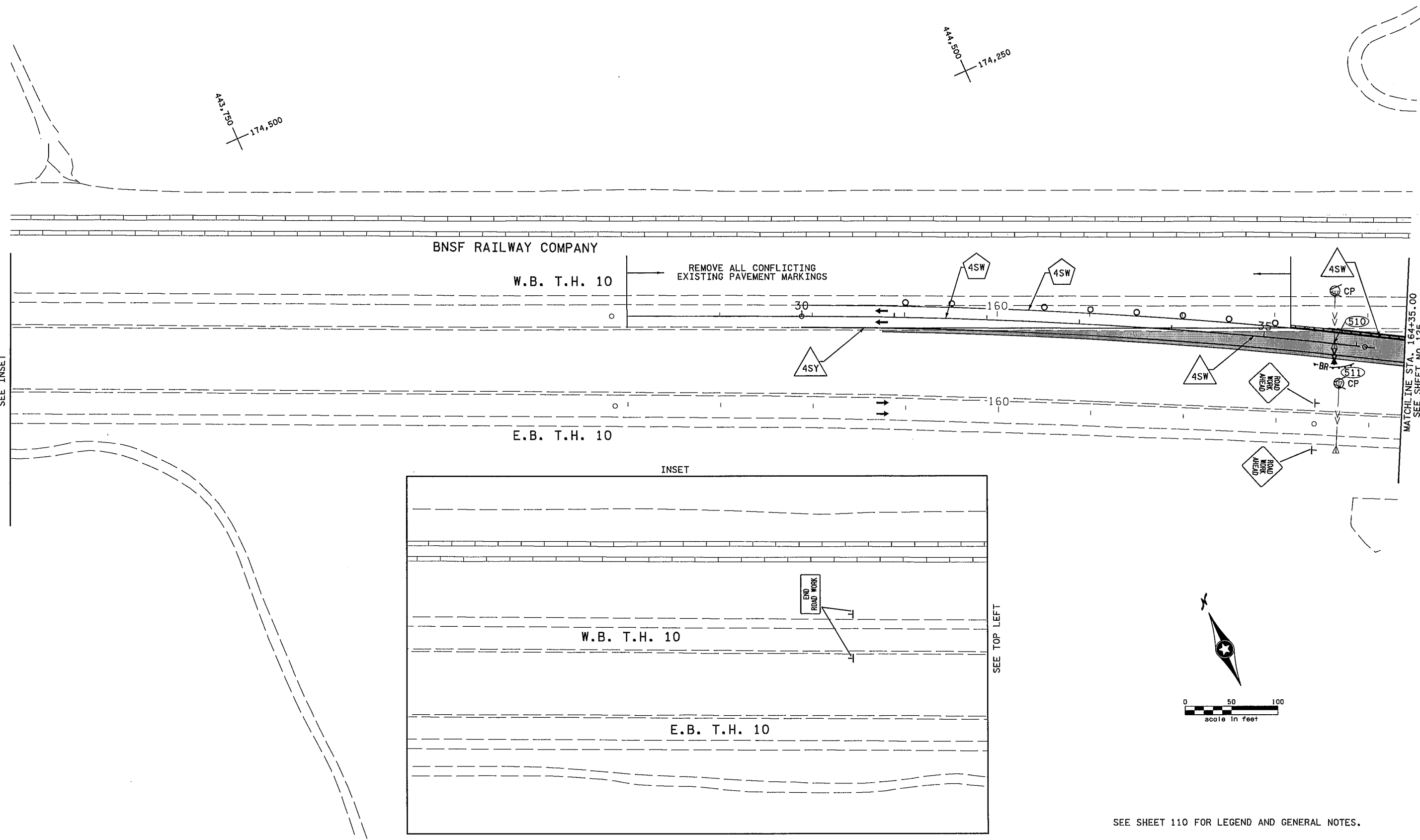
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.        
 DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



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 DESIGNERS**

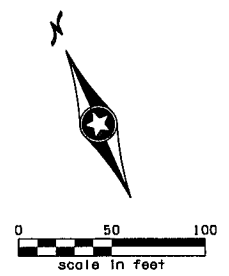
**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 1B

**SHEET  
 123  
 OF  
 586**



SEE INSET

MATCH LINE STA. 164+35.00  
SEE SHEET NO. 125



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:40 PM  
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 Q202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

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CHECKED BY  
 C. HASS

COMM. NO. 0138259

**SRF**  
 Consulting Group, Inc.

**ANOKA COUNTY**

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 PLANNERS  
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STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 2

SHEET  
 124  
 OF  
 586

BNSF RAILWAY COMPANY

W.B. T.H. 10

E.B. T.H. 10

CP BYPASS 3

Armstrong Blvd

LLAMA ST.

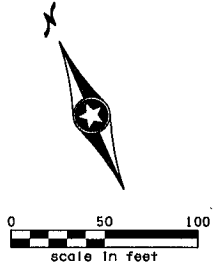
RIVERDALE DR.

SEE SHEET NO. 124  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 126

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 126

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.



3:20:41 PM  
9/11/2014  
H:\projects\8259\CAD\_BIM\plan\8259\_t202.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

COMM. NO. 0138259

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

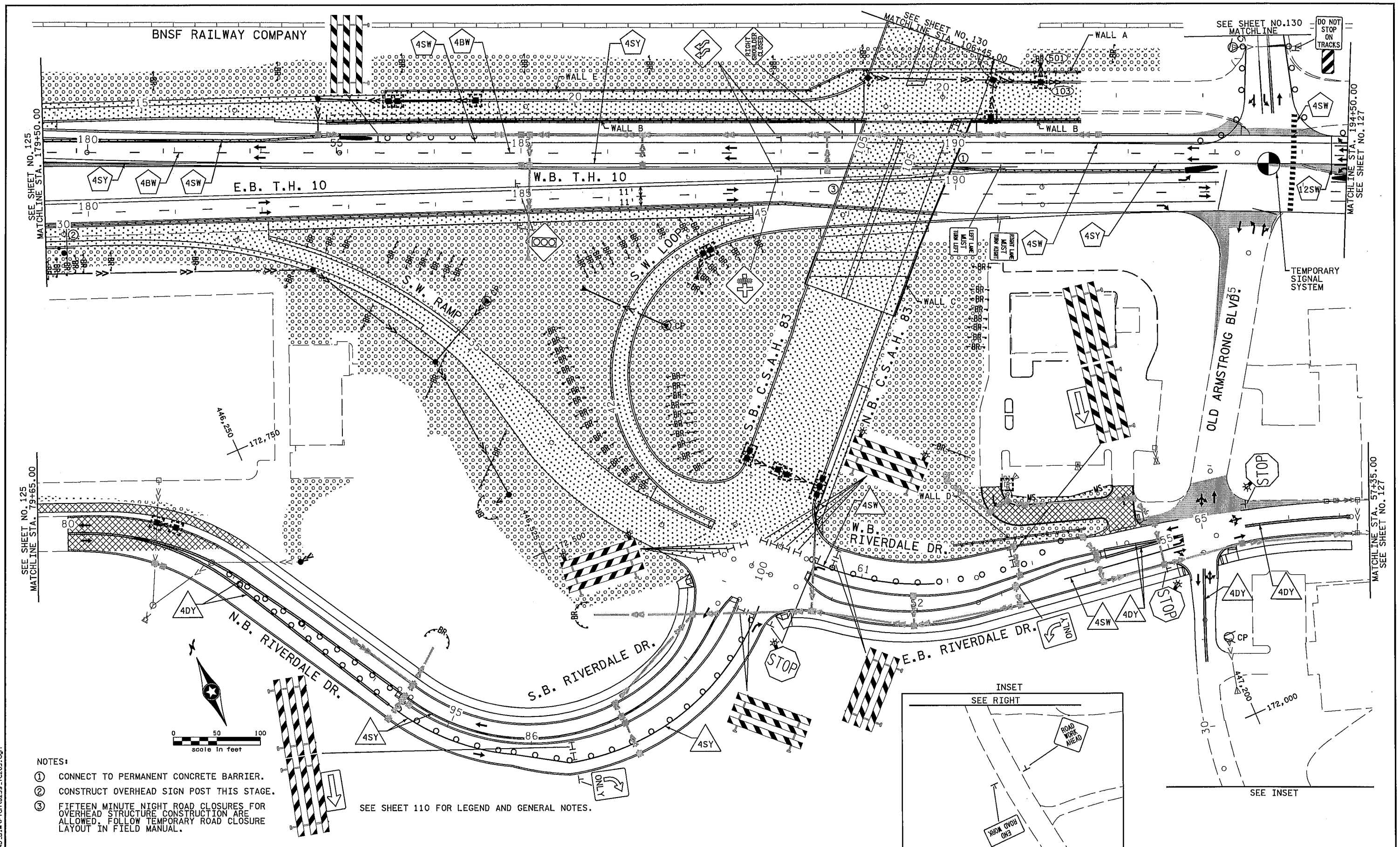
Consulting Group, Inc.

ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 2

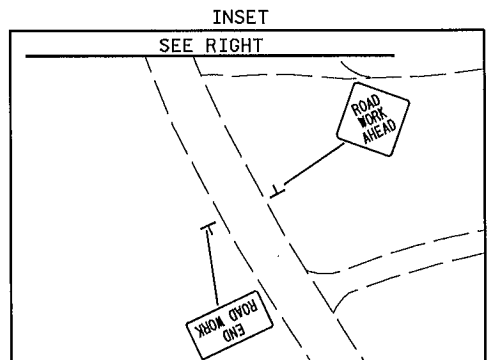
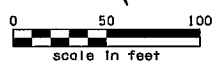
SHEET  
125  
OF  
586





- NOTES:
- ① CONNECT TO PERMANENT CONCRETE BARRIER.
  - ② CONSTRUCT OVERHEAD SIGN POST THIS STAGE.
  - ③ FIFTEEN MINUTE NIGHT ROAD CLOSURES FOR OVERHEAD STRUCTURE CONSTRUCTION ARE ALLOWED. FOLLOW TEMPORARY ROAD CLOSURE LAYOUT IN FIELD MANUAL.

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.



3:20:42 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259.tc203.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.      

DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

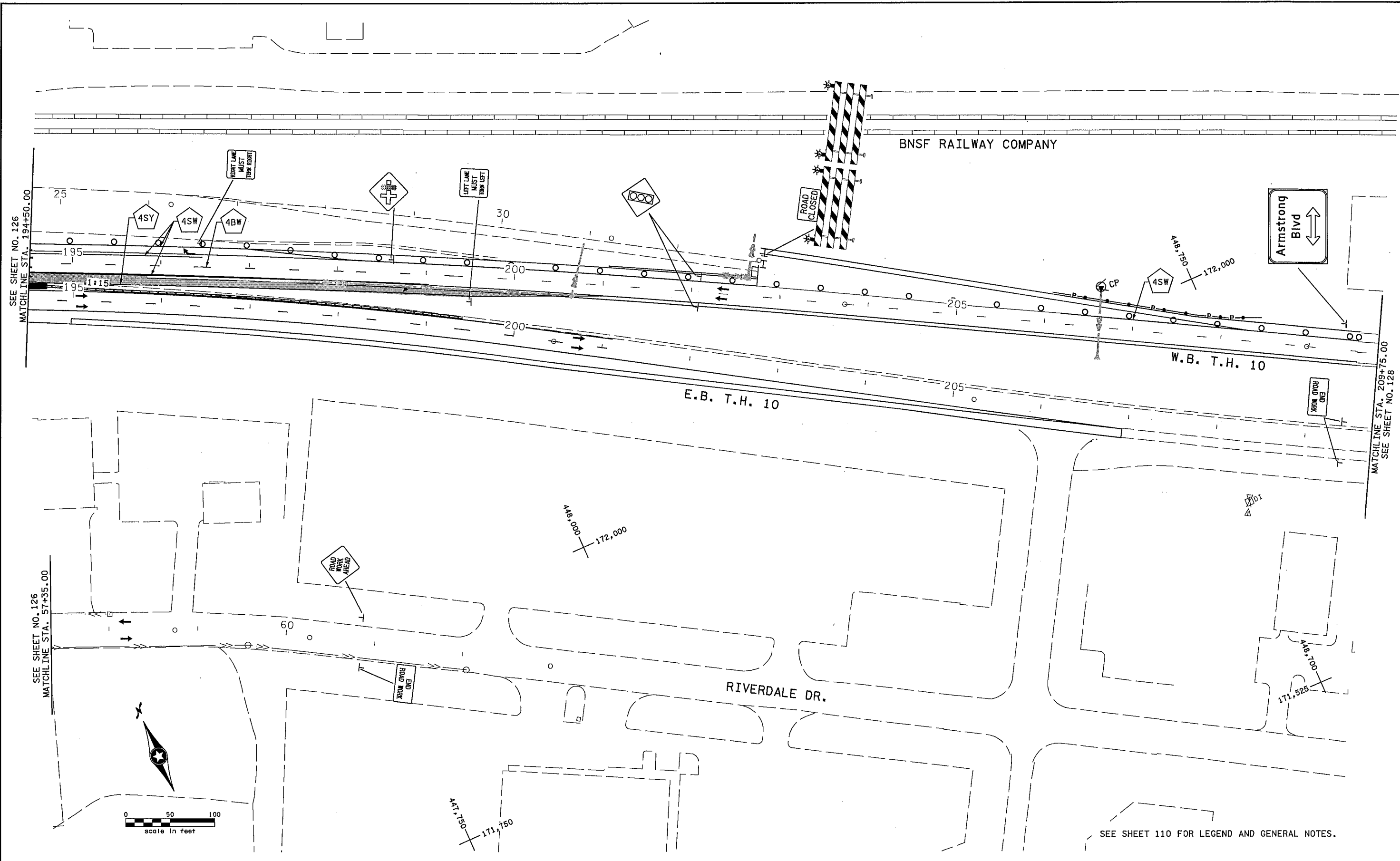
**SRH**  
 Consulting Group, Inc.

ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 2

SHEET  
 126  
 OF  
 586

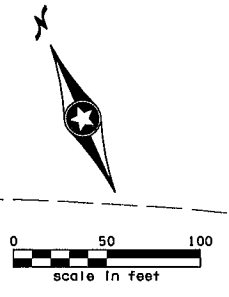




SEE SHEET NO. 126  
MATCHLINE STA. 194+50.00

MATCHLINE STA. 209+75.00  
SEE SHEET NO. 128

SEE SHEET NO. 126  
MATCHLINE STA. 57+35.00



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:00:43 PM  
 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



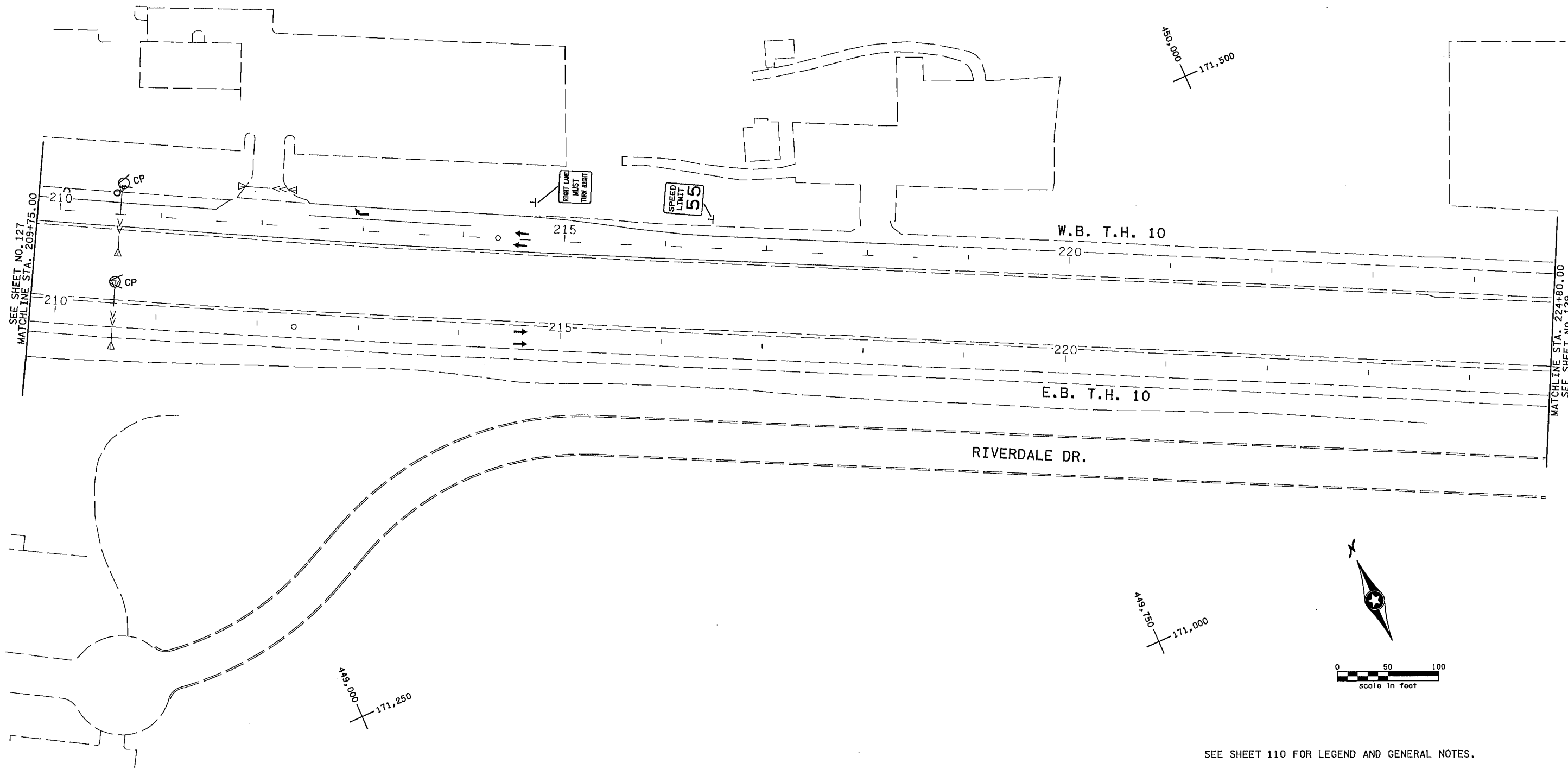
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 2

SHEET  
127  
OF  
586

BNSF RAILWAY COMPANY



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:44 PM 9/11/2014 H:\Projects\8259\CAD\_BITMAP\CAD\_BITMAP\8259\_1c205.dgn

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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-16** License # **45039**

STATE AID PROJECT NO.  
002-583-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

**SRE**  
Consulting Group, Inc.

ENGINEERS  
PLANNERS  
DESIGNERS

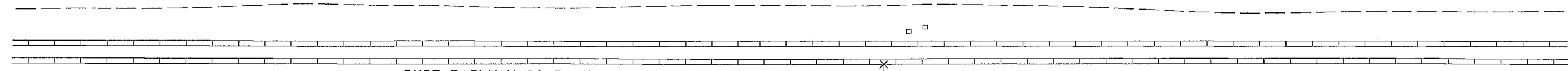
ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS

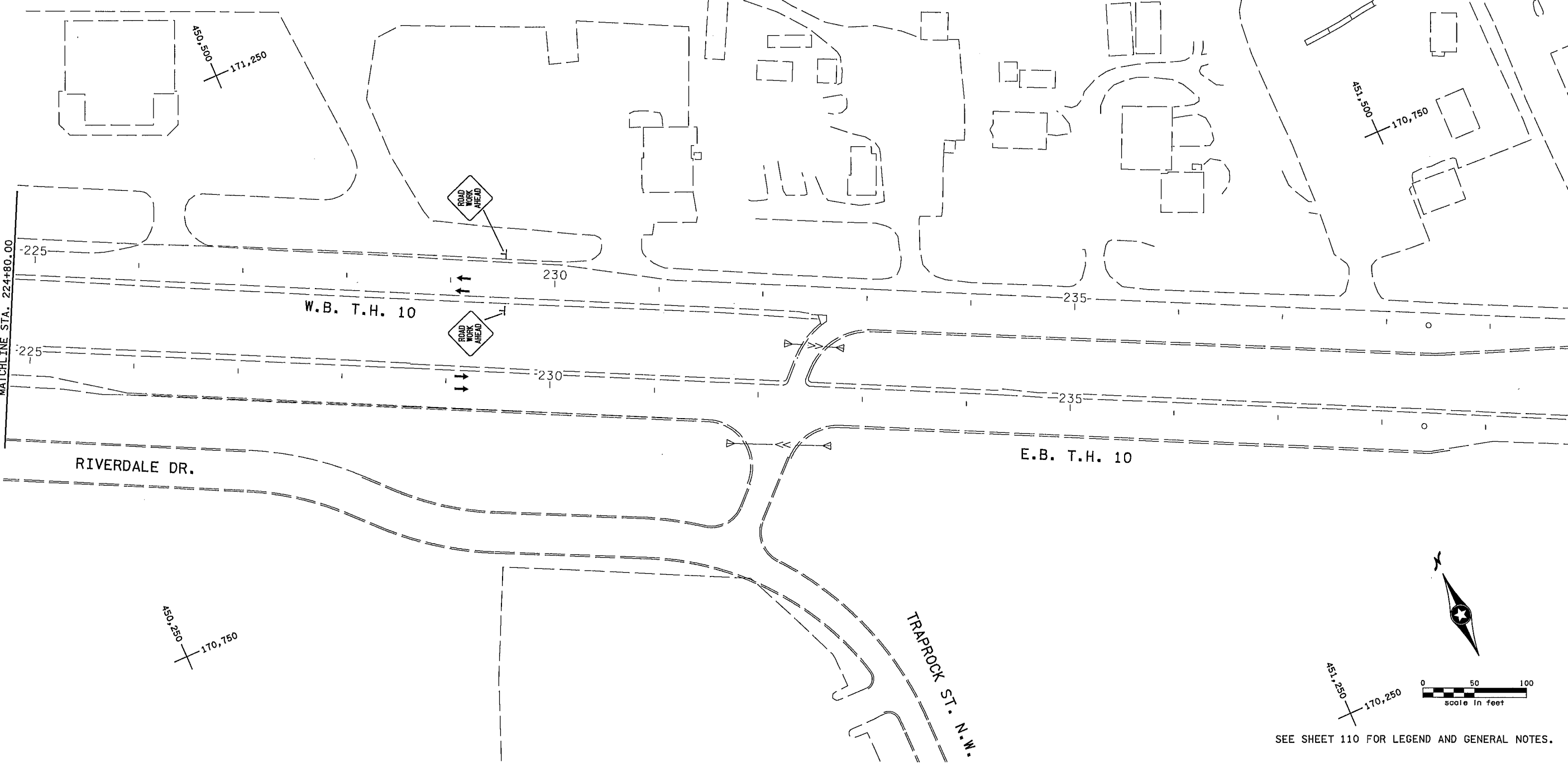
T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 2

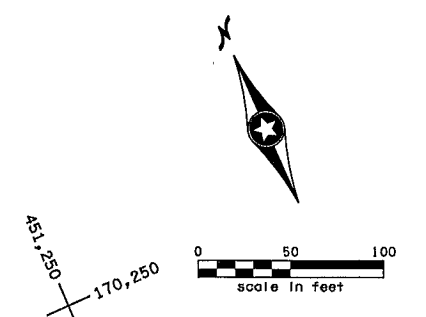
SHEET  
128  
OF  
586



BNSF RAILWAY COMPANY



SEE SHEET NO. 128  
MATCHLINE STA. 224+80.00



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/14 PM  
5/11/2014  
H:\Projects\8259\CAD\_BIM\plan\8259\_t206.dgn

NO	DATE	BY	CHKD	APPR	REVISION

... \CAD\_BIM\plan\8259\_t206.dgn

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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

**SRF**  
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ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

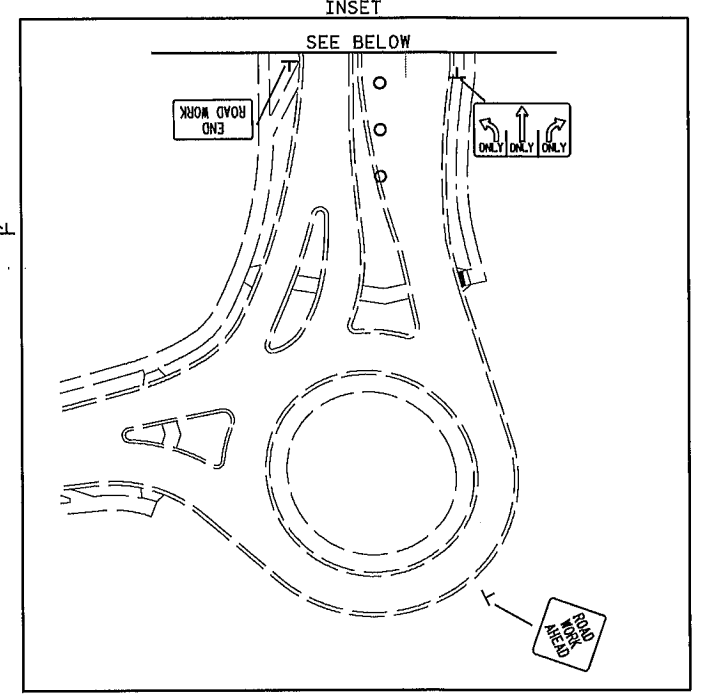
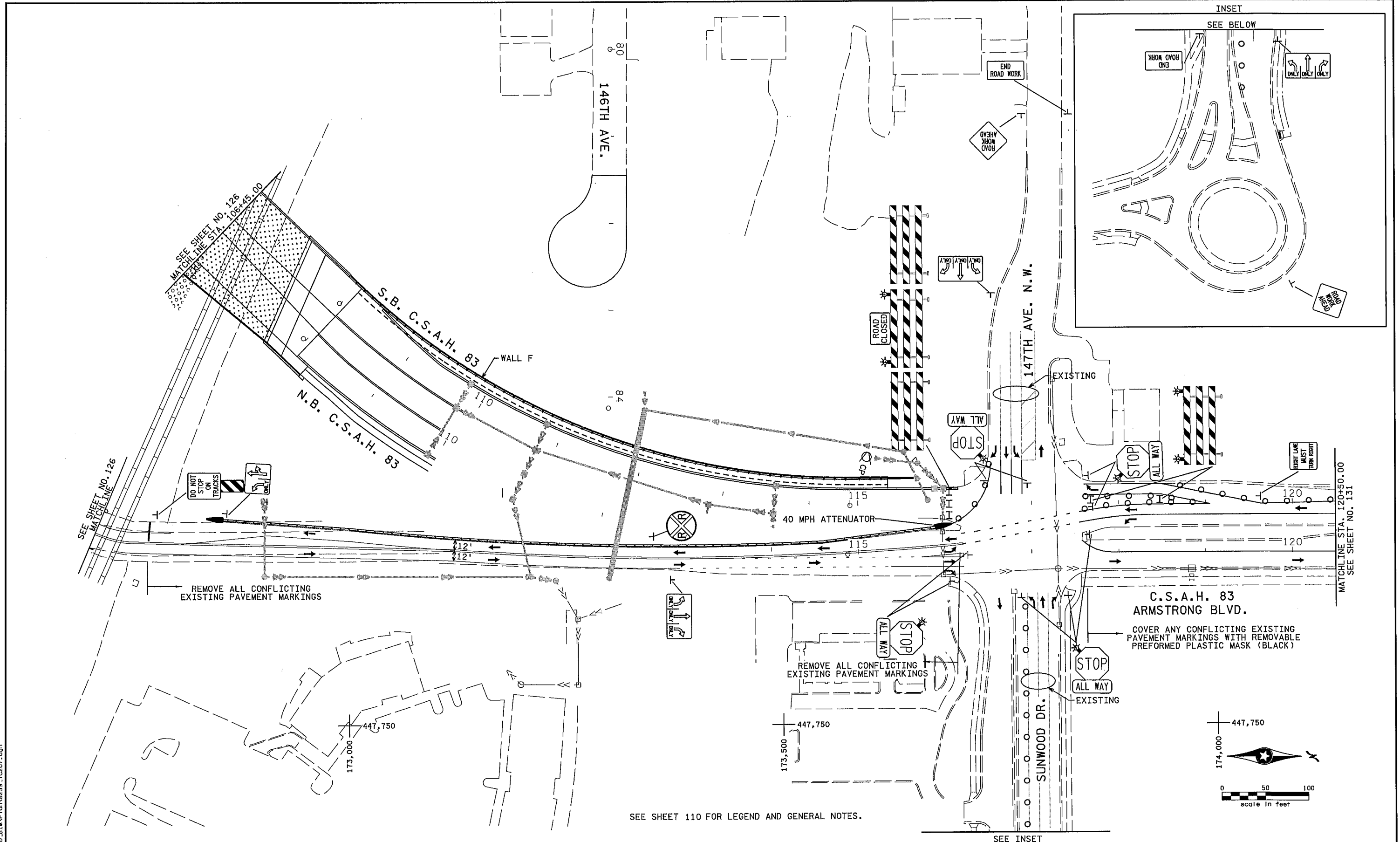
STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 2

SHEET  
129  
OF  
586

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SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

SEE INSET

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 Print Name: **CRAIG J. HASS**  
*Craig J. Hass*  
 Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

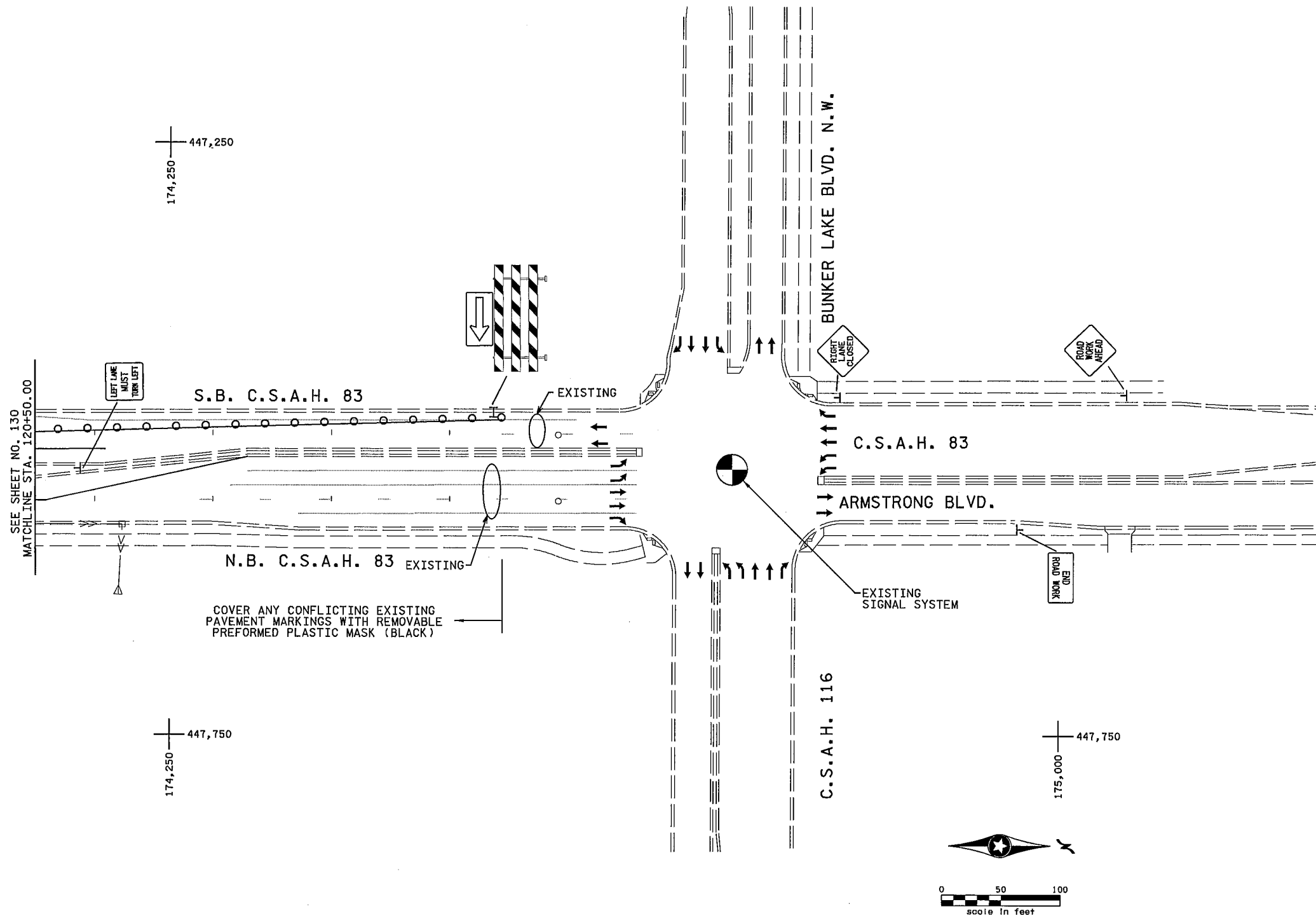
DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 A. EMERSON  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



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 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 2

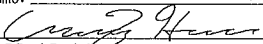
**SHEET  
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 OF  
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SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: **CRAIG J. HASS**  
  
 Date: **09-12-14** License # **45039**

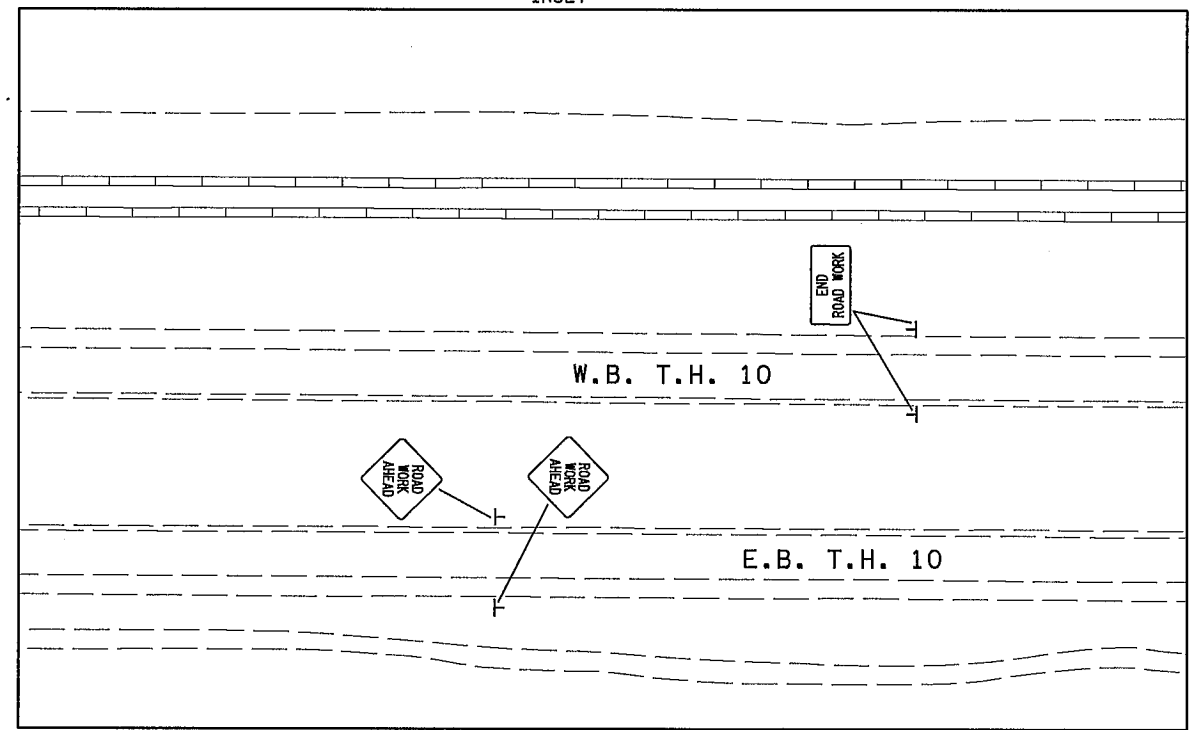
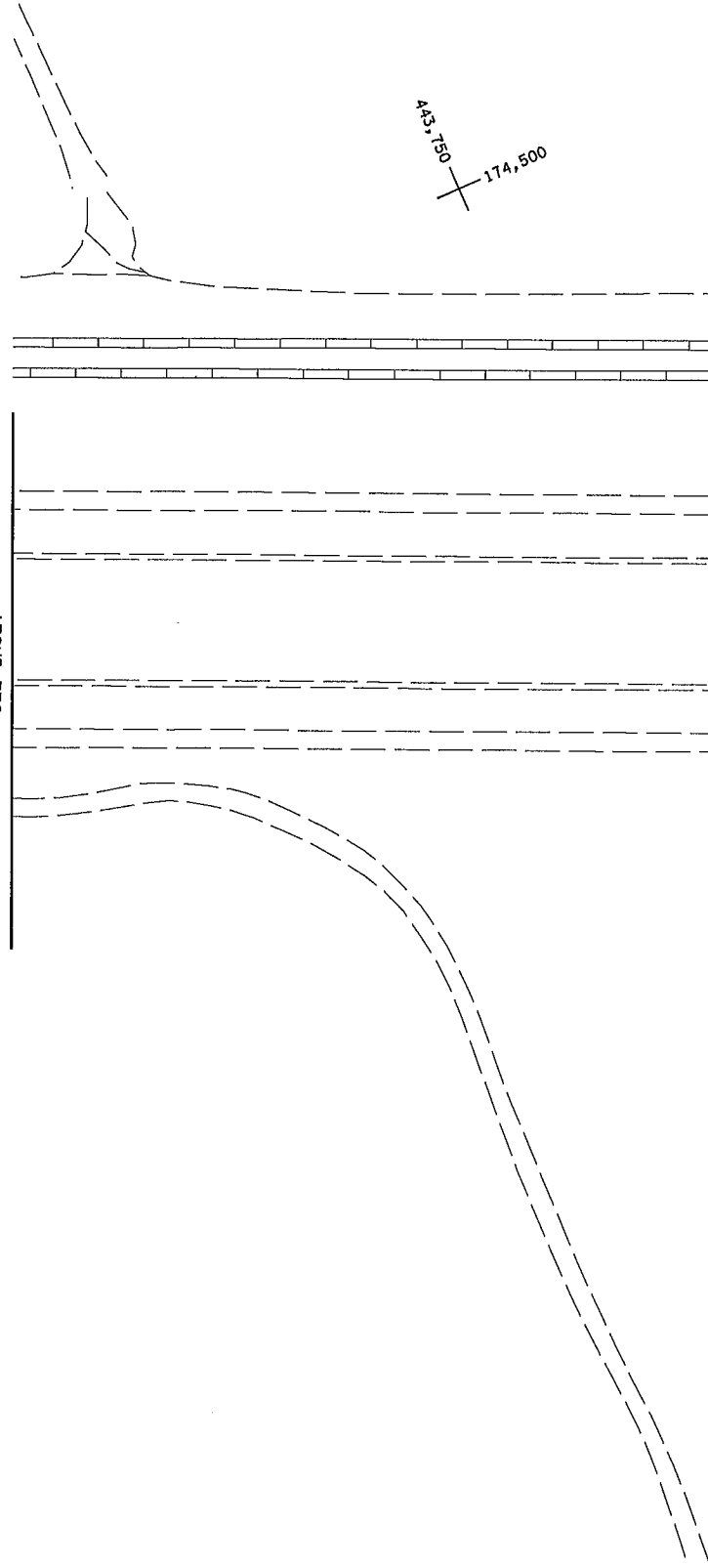
STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY S. MARTINS
STATE PROJECT NO. 0202-95 (TH 10)	DESIGNED BY A. EMERSON
COUNTY PROJECT NO.	CHECKED BY C. HASS
CITY PROJECT NO.	COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

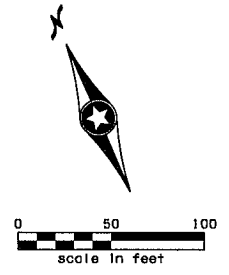
**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 2

**SHEET  
 131  
 OF  
 586**



SEE TOP LEFT

MATCHLINE STA. 164+35.00  
 SEE SHEET NO. 133



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:45 PM  
 9/12/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

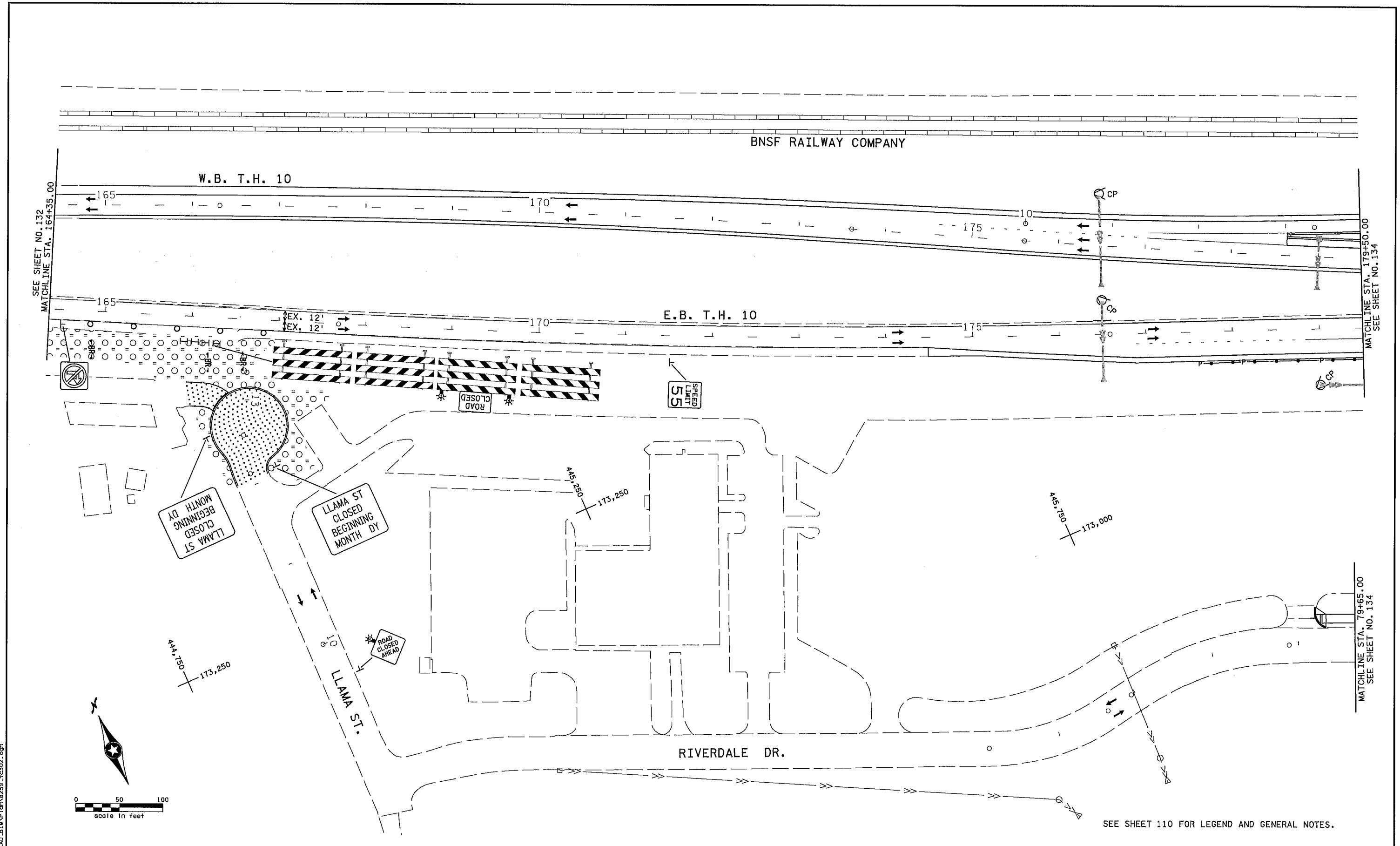
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 3

SHEET 132 OF 586



SEE SHEET NO. 132  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 134

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 134

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:47 PM  
8/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License # 45039

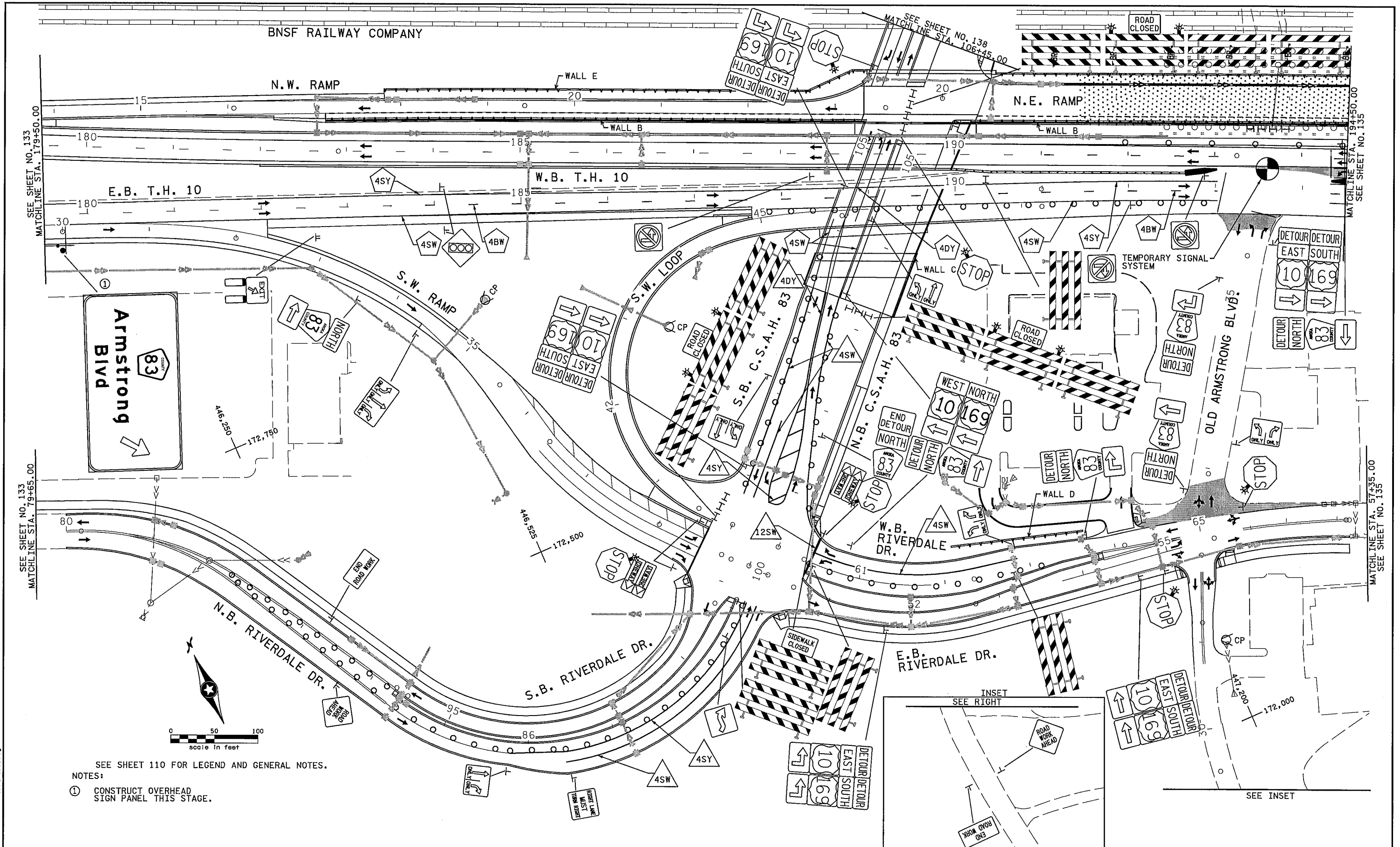
STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
S. MARTINS  
 DESIGNED BY  
A. EMERSON  
 CHECKED BY  
C. HASS  
 COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 3

SHEET  
133  
OF  
586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.  
 NOTES:  
 ① CONSTRUCT OVERHEAD SIGN PANEL THIS STAGE.

31:20:47 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BIM\Plan\8259\_t3303.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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 Prt Int Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

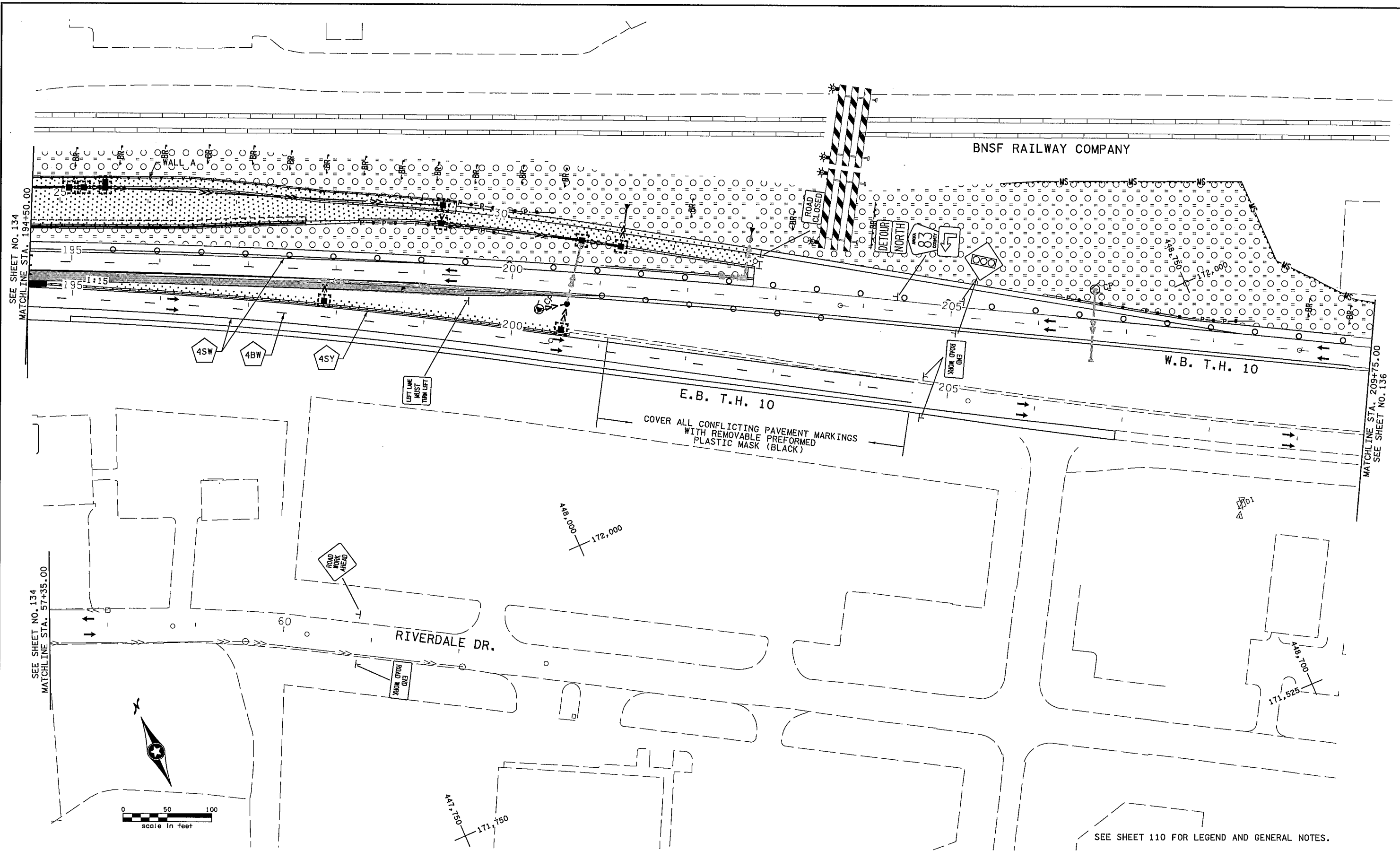
DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 STAGING AND TRAFFIC CONTROL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAGE 3

SHEET 134 OF 586





BNSF RAILWAY COMPANY

W.B. T.H. 10

E.B. T.H. 10

RIVERDALE DR.

COVER ALL CONFLICTING PAVEMENT MARKINGS WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK)

0 50 100  
scale in feet

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:20:48 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BIM\Plan\8259\_tc304.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY  
S. MARTINS  
DESIGNED BY  
D. SYMANIETZ  
CHECKED BY  
C. HASS  
COMM. NO. 0138259

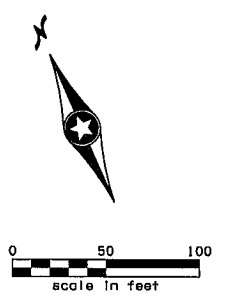
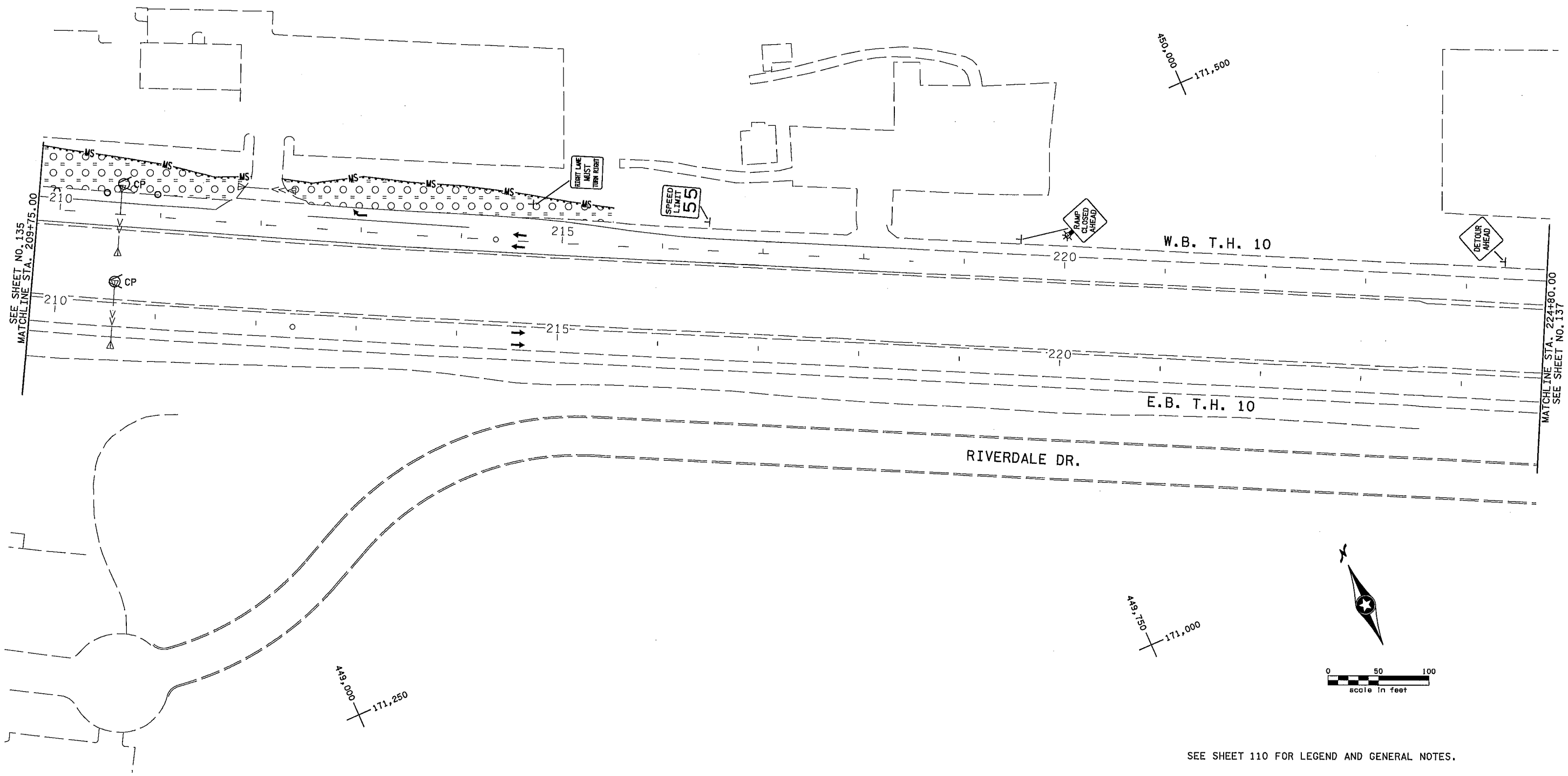


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 3

SHEET  
135  
OF  
586

BNSF RAILWAY COMPANY



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/14 9:11/2014  
 H:\Projects\8255\CAD\_BIM\Plan\8255\_tc305.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS

*Craig J. Hass*

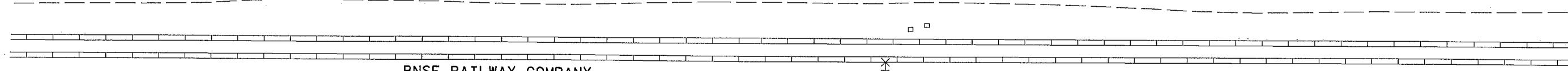
Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY S. MARTINS
STATE PROJECT NO. 0202-95 (TH 10)	DESIGNED BY D. SYMANIETZ
COUNTY PROJECT NO.	CHECKED BY C. HASS
CITY PROJECT NO.	COMM. NO. 0138259

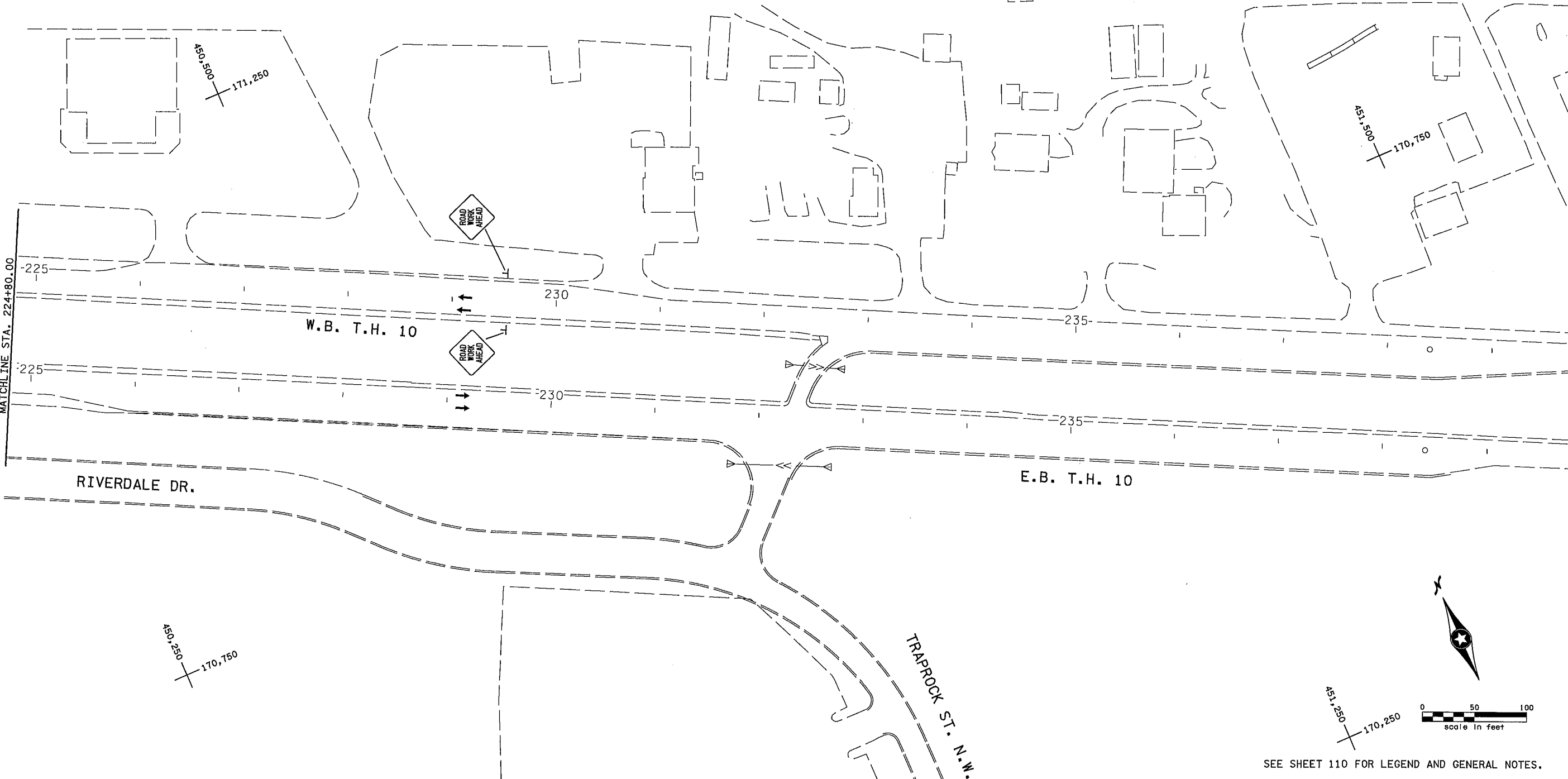
**SRE** ENGINEERS  
PLANNERS  
DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 3

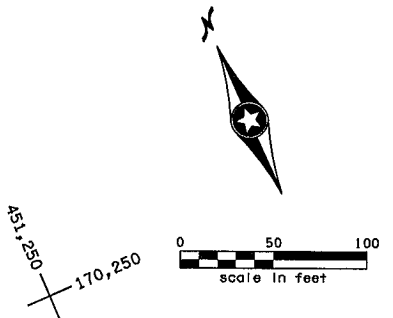
SHEET  
136  
OF  
586



BNSF RAILWAY COMPANY



SEE SHEET NO. 136  
MATCHLINE STA. 224+80.00



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/10 5:00 PM  
9/11/2014  
H:\Projects\8259\CAD\_BIM\Plan\8259\_tc306.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

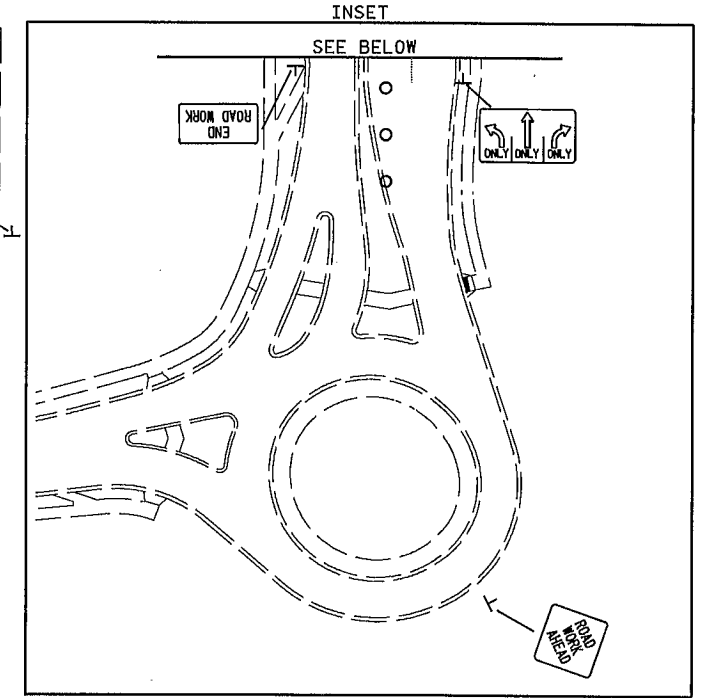
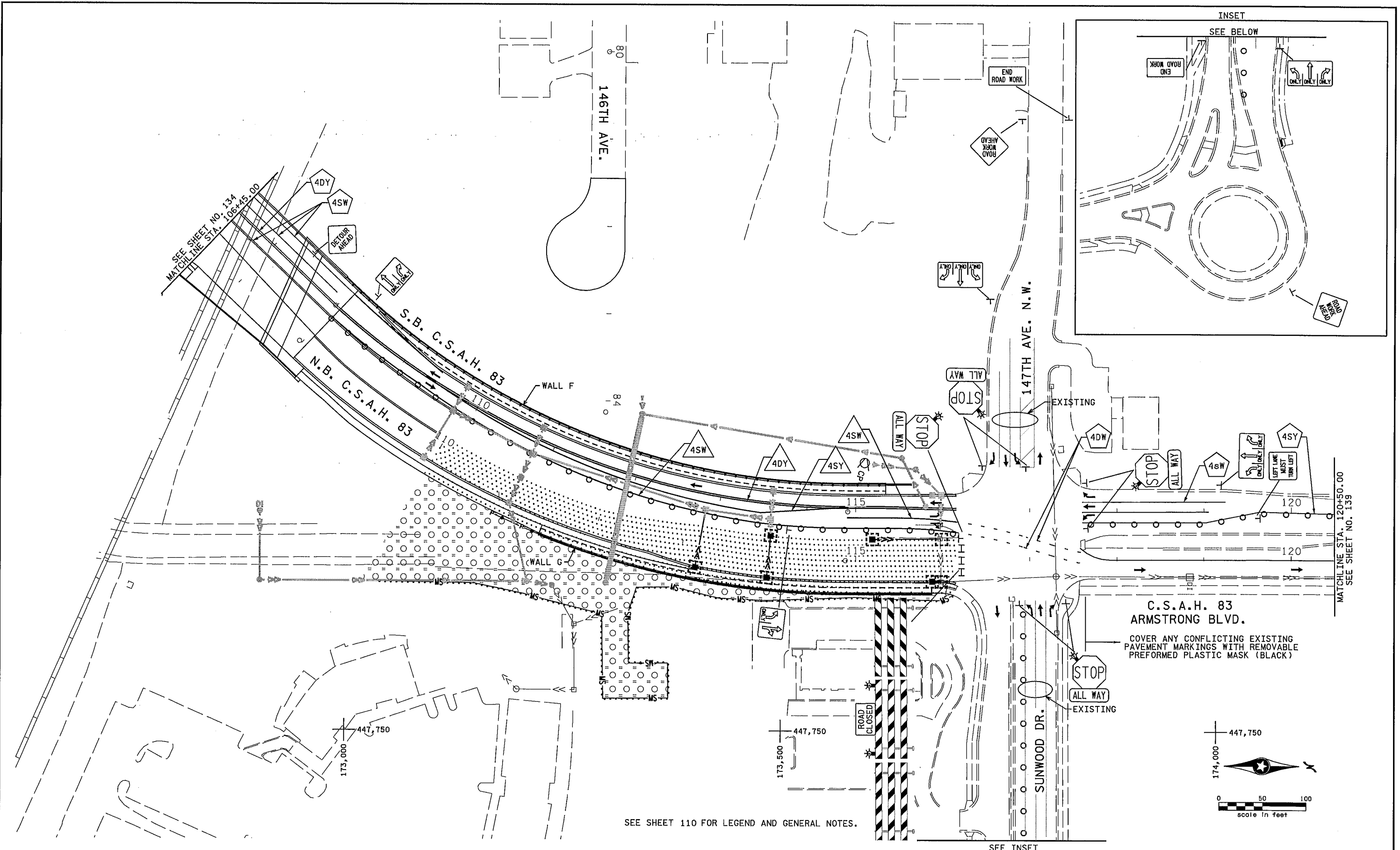
STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
S. MARTINS  
 DESIGNED BY  
D. SYMANIETZ  
 CHECKED BY  
C. HASS  
 COMM. NO. 0138259



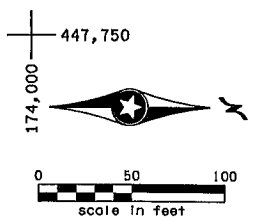
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 3

SHEET  
137  
OF  
586



C.S.A.H. 83  
ARMSTRONG BLVD.  
COVER ANY CONFLICTING EXISTING  
PAVEMENT MARKINGS WITH REMOVABLE  
PREFORMED PLASTIC MASK (BLACK)



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/10 5:00 PM  
9/11/2014  
H:\Projects\8259\CAD\_BIM\Plan\8259\_+c307.dgn

NO	DATE	BY	CHKD	APPR	REVISION

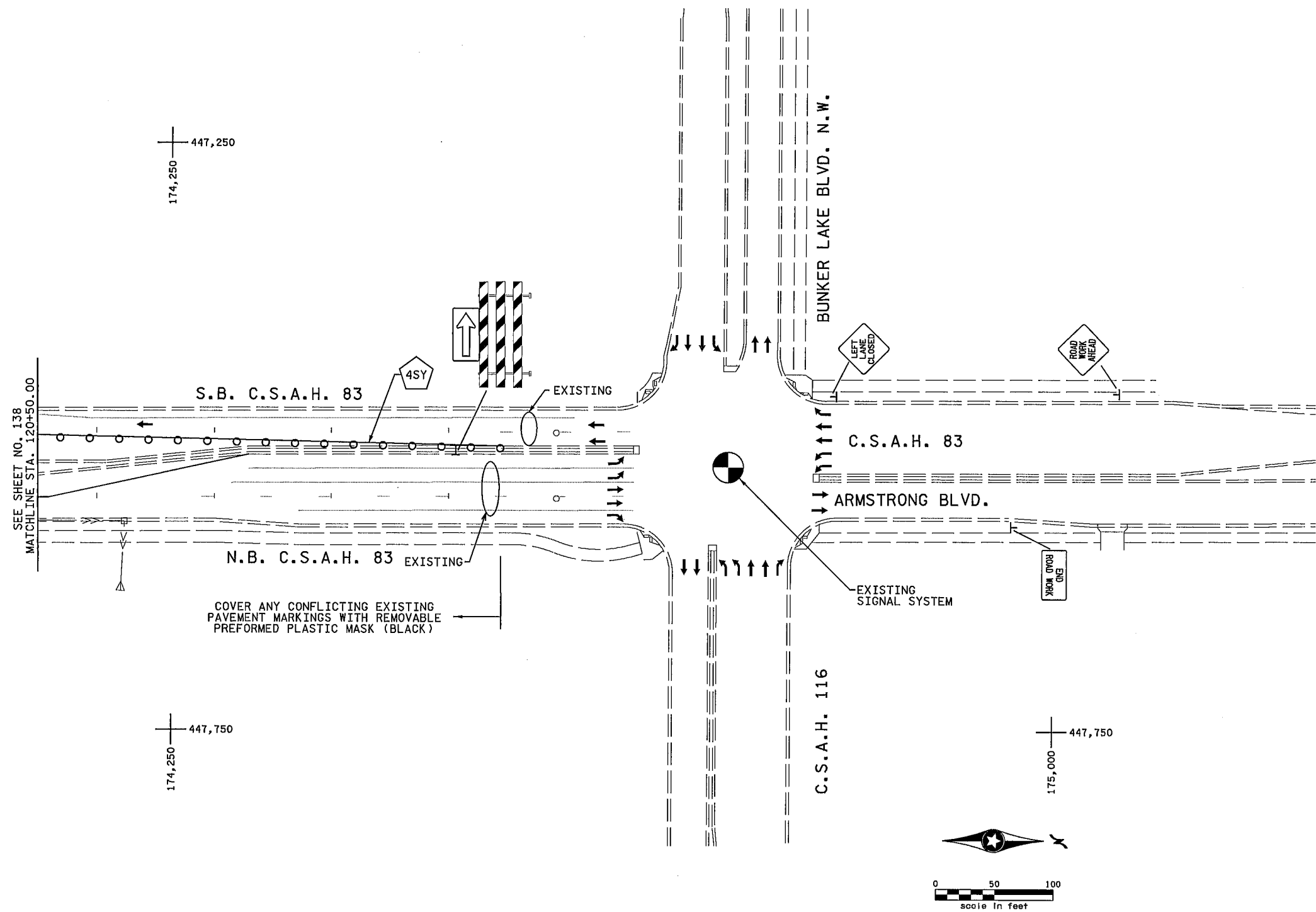
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
S. MARTINS  
 DESIGNED BY  
A. EMERSON  
 CHECKED BY  
C. HASS  
 COMM. NO. 0138259

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 3

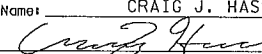
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138  
OF  
586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/14 PM  
 9/11/2014  
 H:\Projects\B259\CAD\_BIM\Plan\B259\_tc308.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: 09-12-14 License # 45039

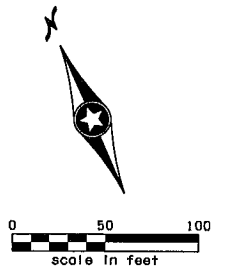
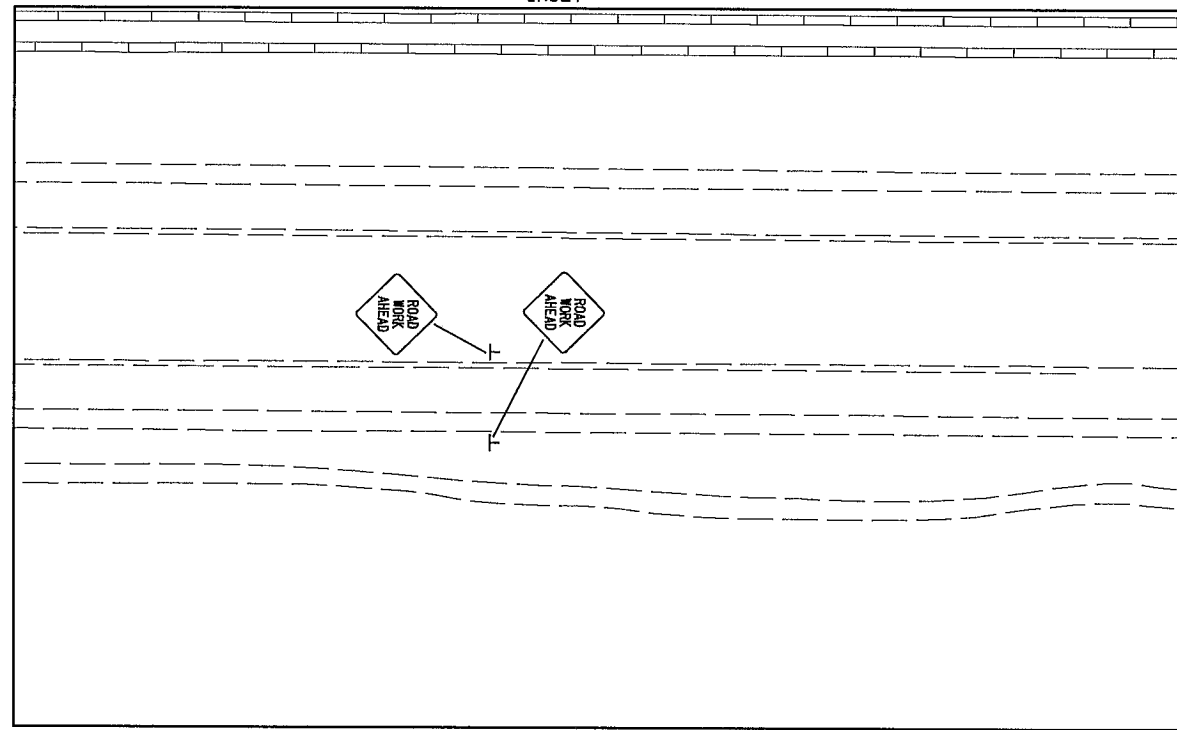
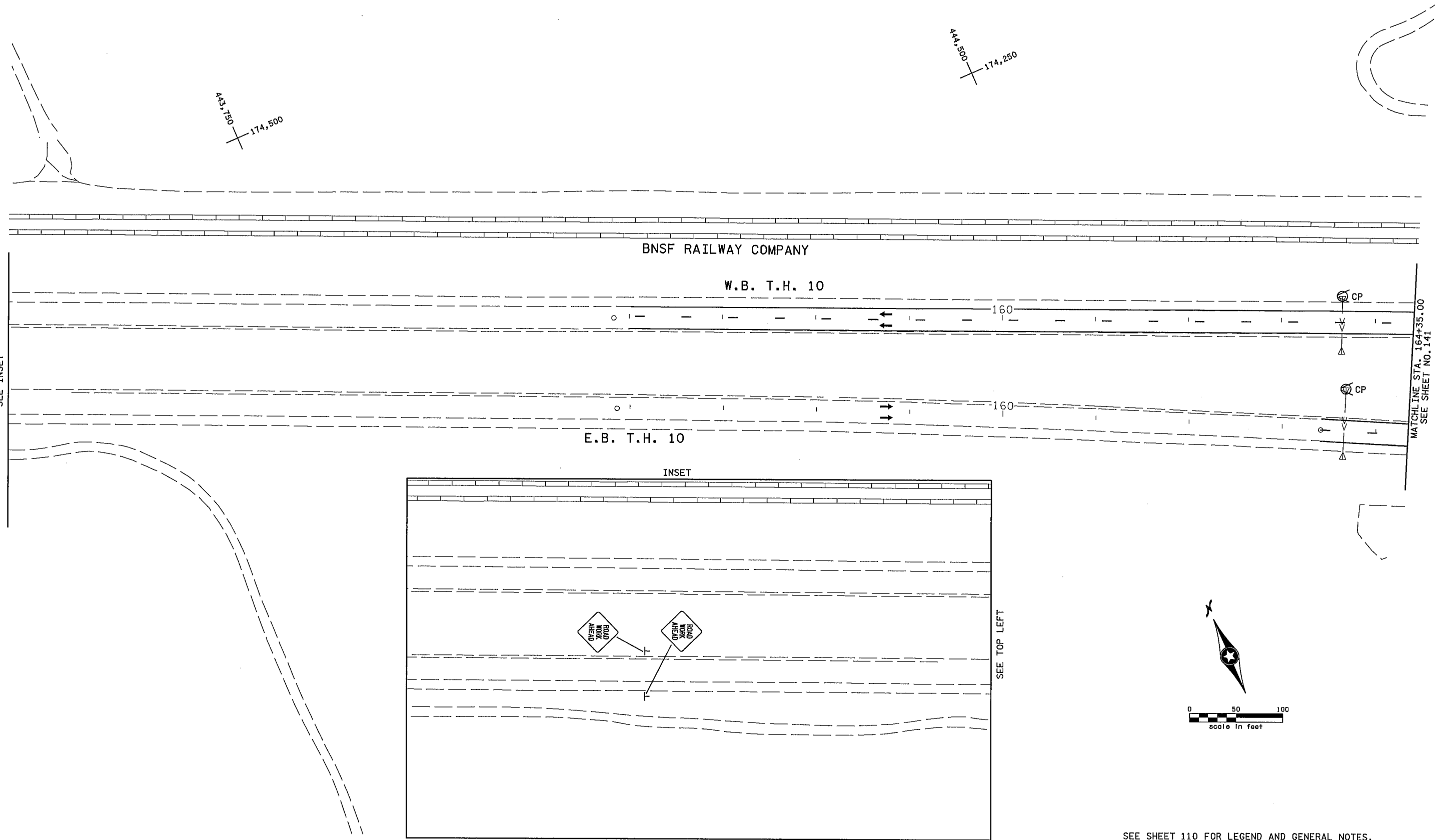
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 3

**SHEET  
 139  
 OF  
 586**



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/14 3:20:52 PM H:\Proj\ecrs\8259\CAD\_BIM\Plan\8259\_tc401.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY A. EMERSON

CHECKED BY C. HASS

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

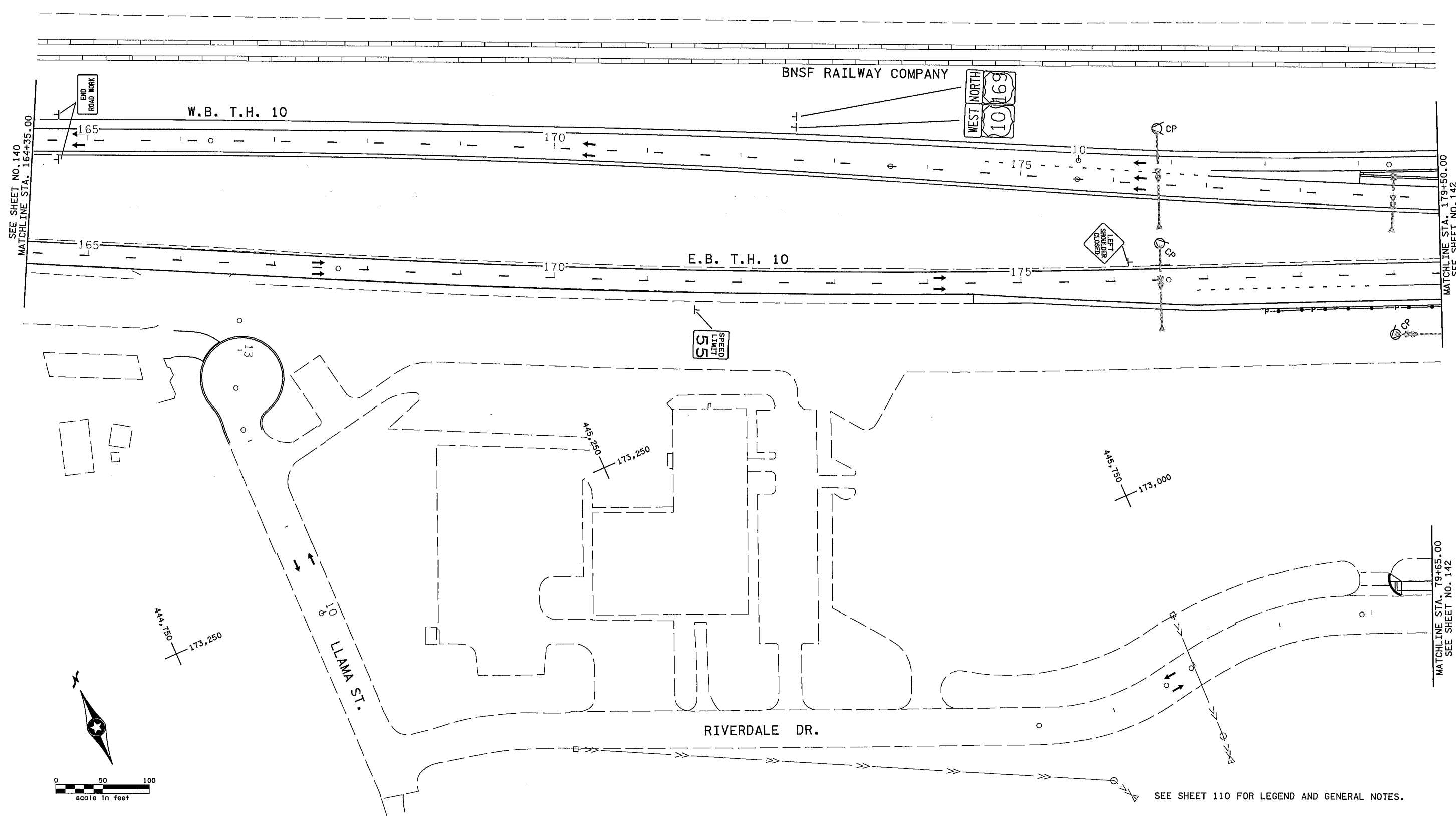
ANOKA COUNTY

STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 4

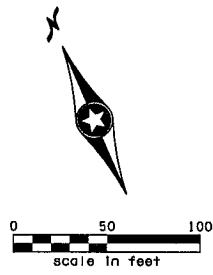
SHEET 140 OF 586



SEE SHEET NO. 140  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 142

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 142



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3/20/09 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BIM\Plan\8259\_tc402.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

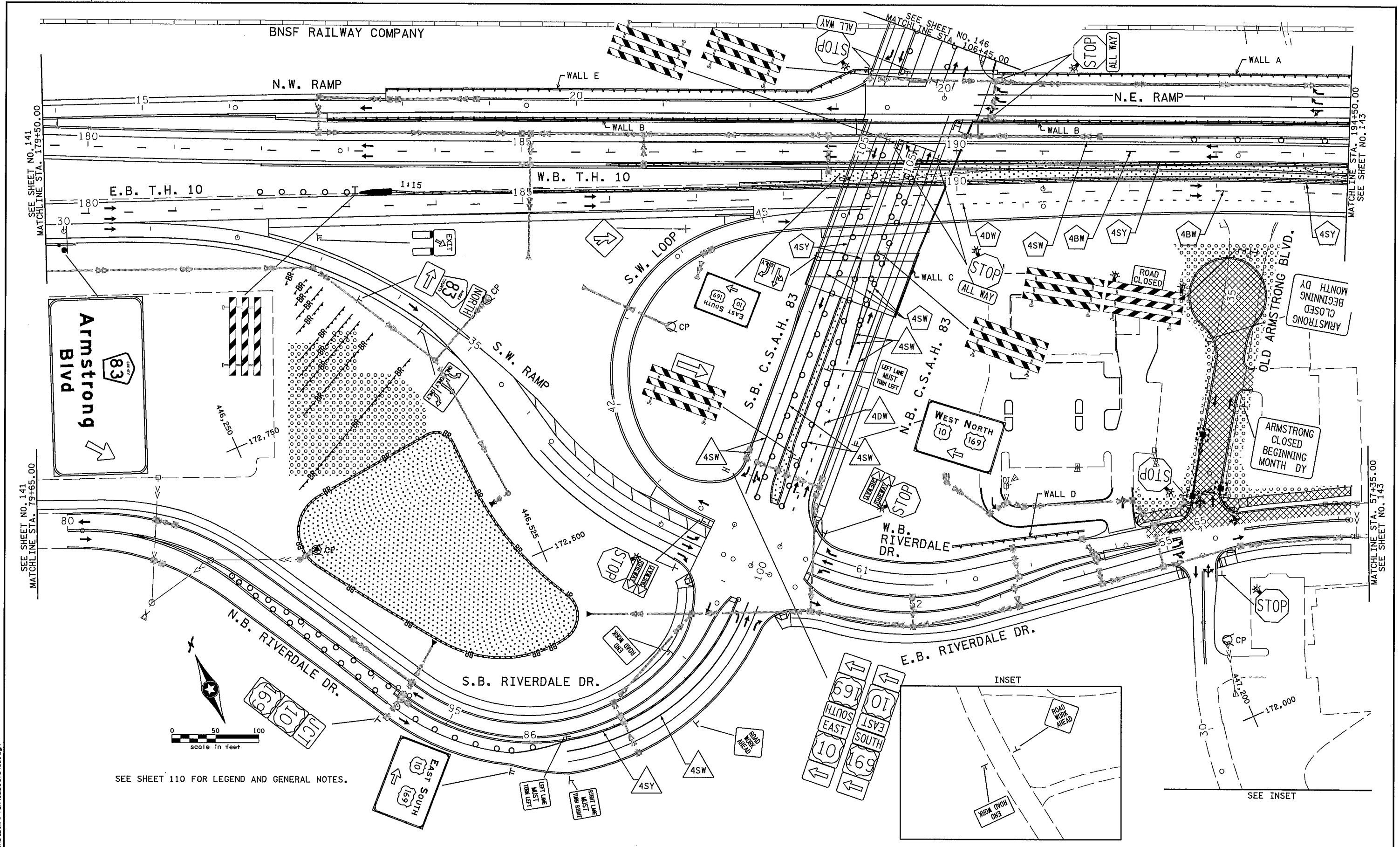
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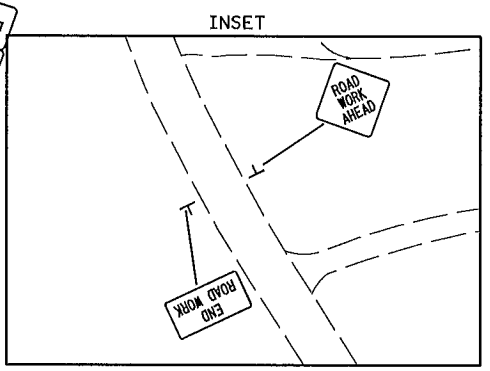
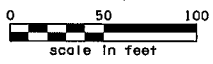
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 4

SHEET  
141  
OF  
586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.



3/20/15 5:11:20 PM H:\Projects\8259\CAD\_BIMPI on\8259 -t403.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY A. EMERSON

CHECKED BY C. HASS

COMM. NO. 0138259

**SRF** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

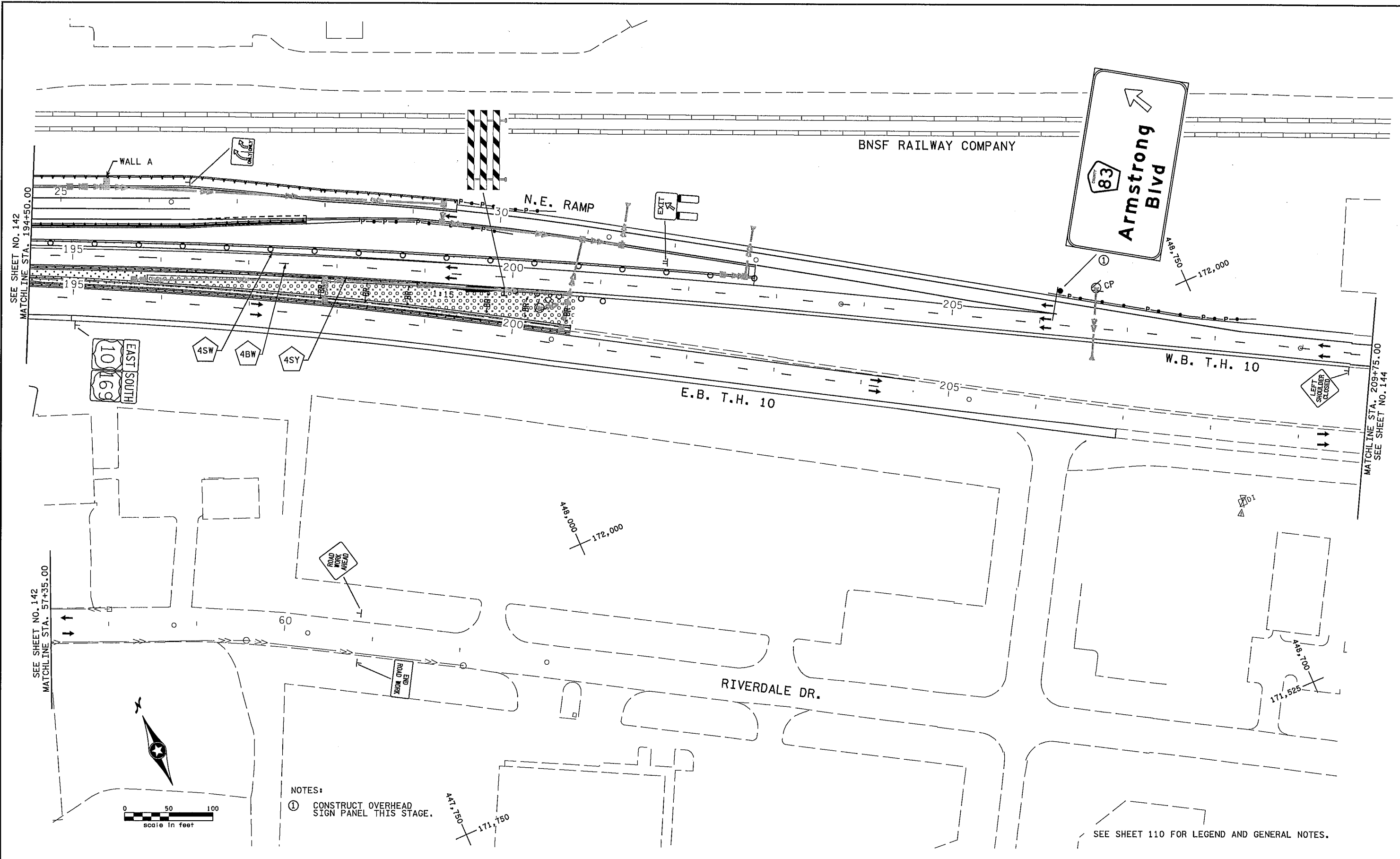
STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 4

SHEET 142 OF 586

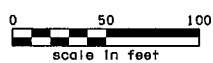




SEE SHEET NO. 142  
MATCHLINE STA. 194+50.00

SEE SHEET NO. 142  
MATCHLINE STA. 57+35.00

MATCHLINE STA. 209+75.00  
SEE SHEET NO. 144



NOTES:  
① CONSTRUCT OVERHEAD SIGN PANEL THIS STAGE.

SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:21:00 PM  
8/11/2014  
H:\projects\B259\CAD\_BIM\Plan\B259\_t0404.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.        
CITY PROJECT NO.        
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 4

SHEET  
143  
OF  
586

BNSF RAILWAY COMPANY

450,000  
171,500

W.B. T.H. 10

E.B. T.H. 10

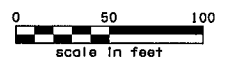
RIVERDALE DR.

SEE SHEET NO. 143  
MATCHLINE STA. 209+75.00

MATCHLINE STA. 224+80.00  
SEE SHEET NO. 145



RIGHT LANE  
MUST  
TURN RIGHT



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

3:21:00 PM  
9/11/2014  
H:\Projects\8259\CAD\_BIM\Plan\8259.tc405.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

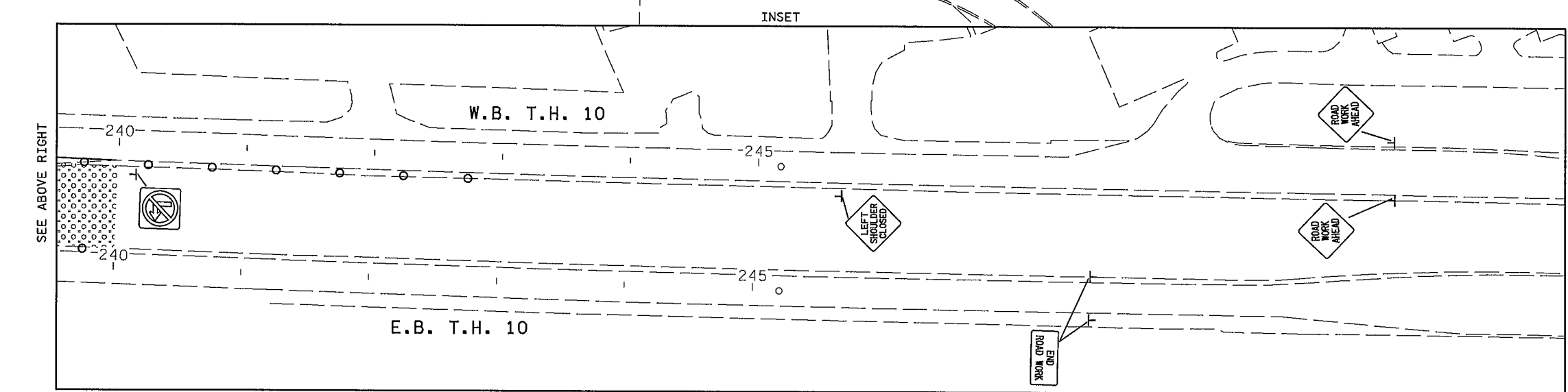
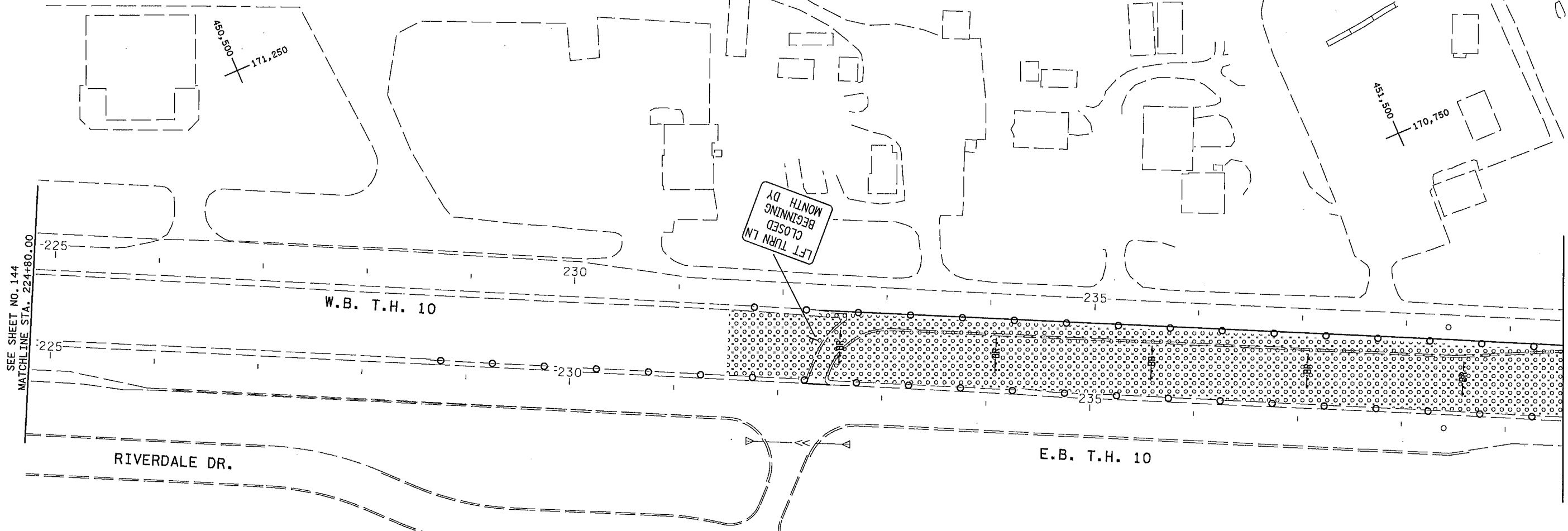
STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

STAGE 4

SHEET  
144  
OF  
586

BNSF RAILWAY COMPANY



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES

3/21/01 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BIM\Plan\8259\_t406.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig J. Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259



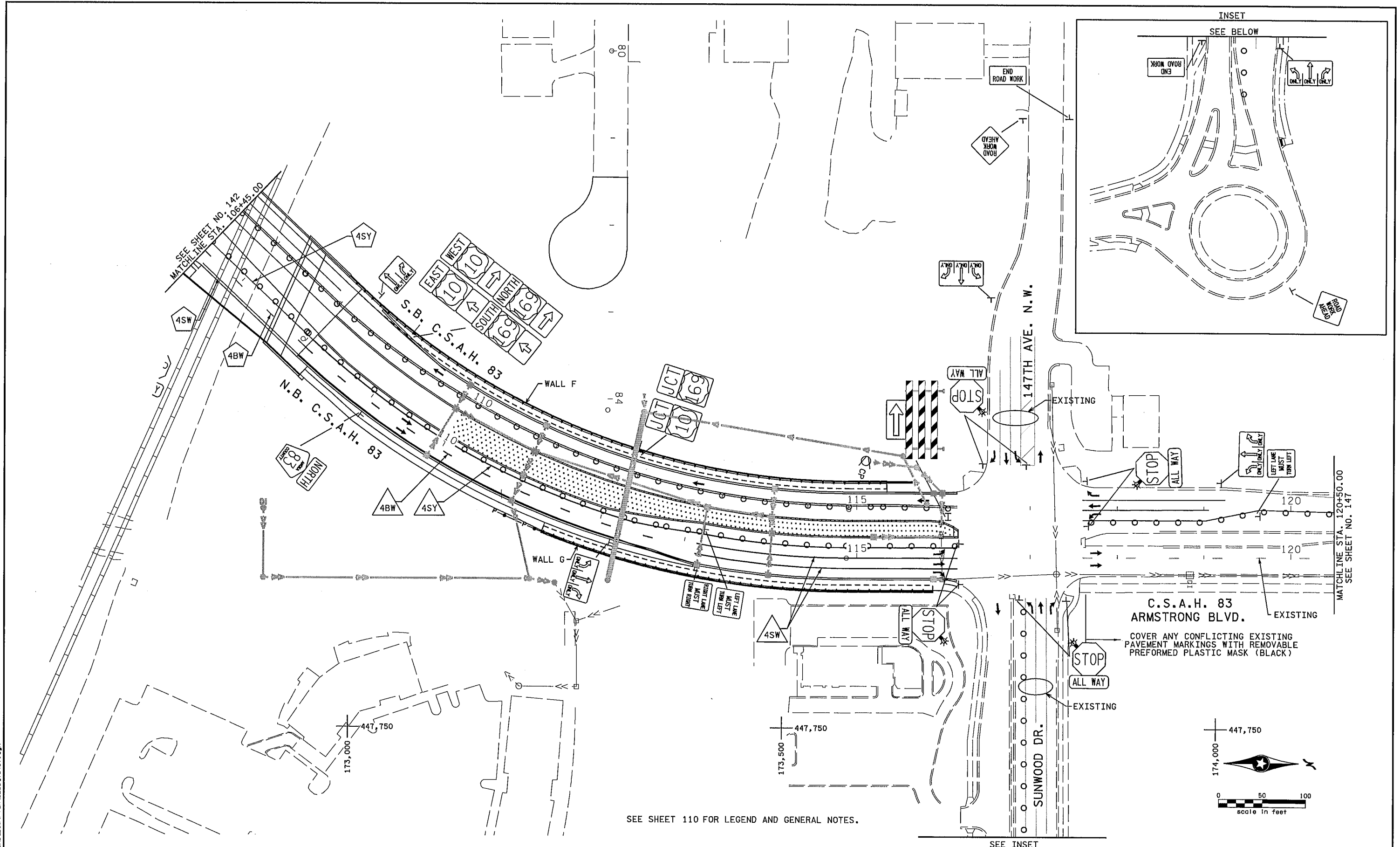
**ANOKA COUNTY**

STAGING AND TRAFFIC CONTROL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

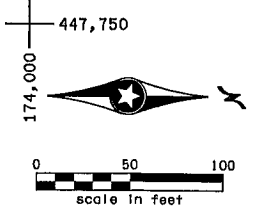
STAGE 4

SHEET 145 OF 586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

SEE INSET



3/21/02 PM  
 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig J. Hass*

Date: **09-12-14** License # **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DESIGNED BY  
S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

COMM. NO. 0138259

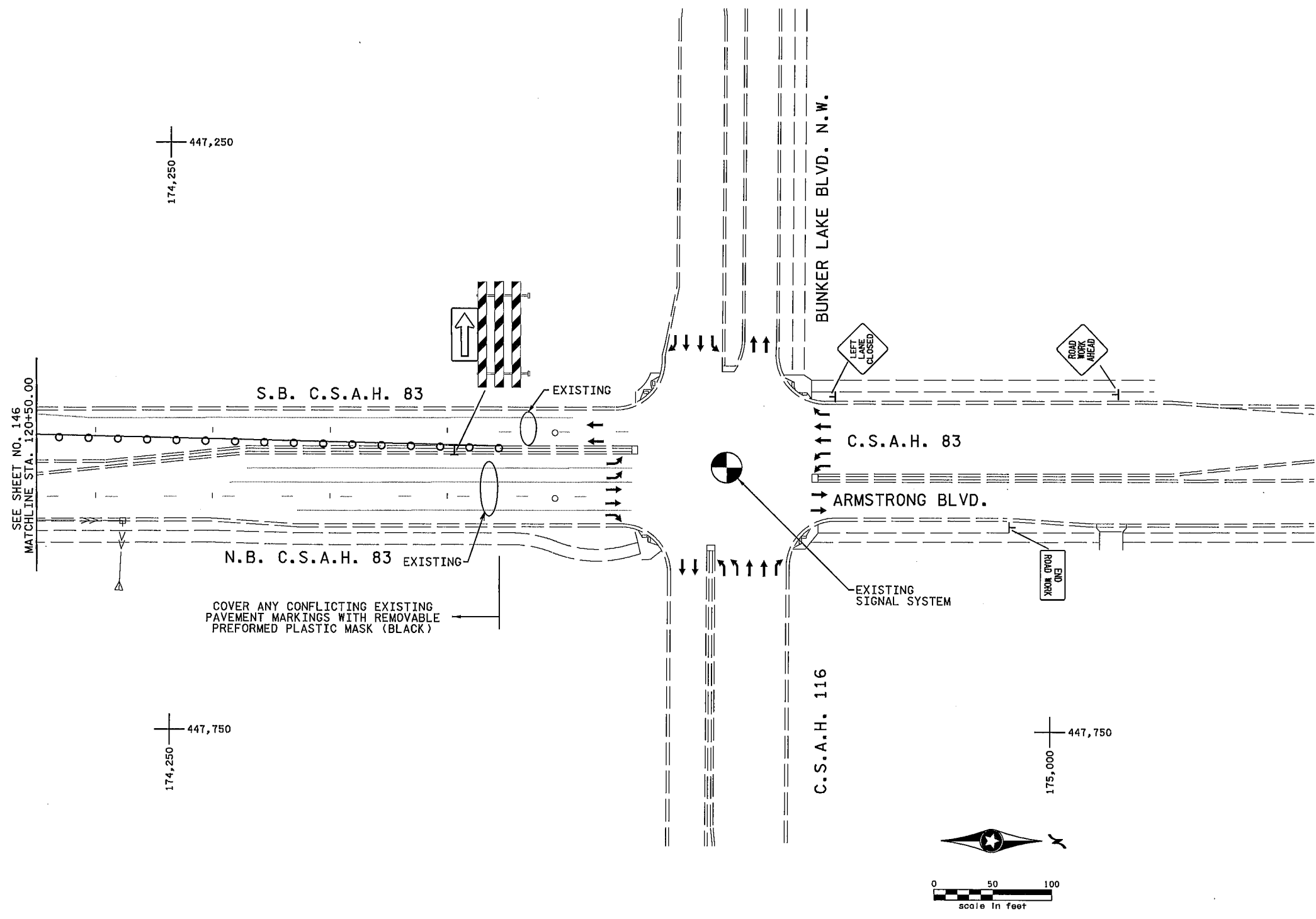
**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

Consulting Group, Inc.

**ANOKA COUNTY**

STAGING AND TRAFFIC CONTROL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
STAGE 4

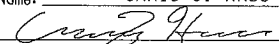
SHEET  
146  
OF  
586



SEE SHEET 110 FOR LEGEND AND GENERAL NOTES.

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 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: 09-12-14 License # 45039

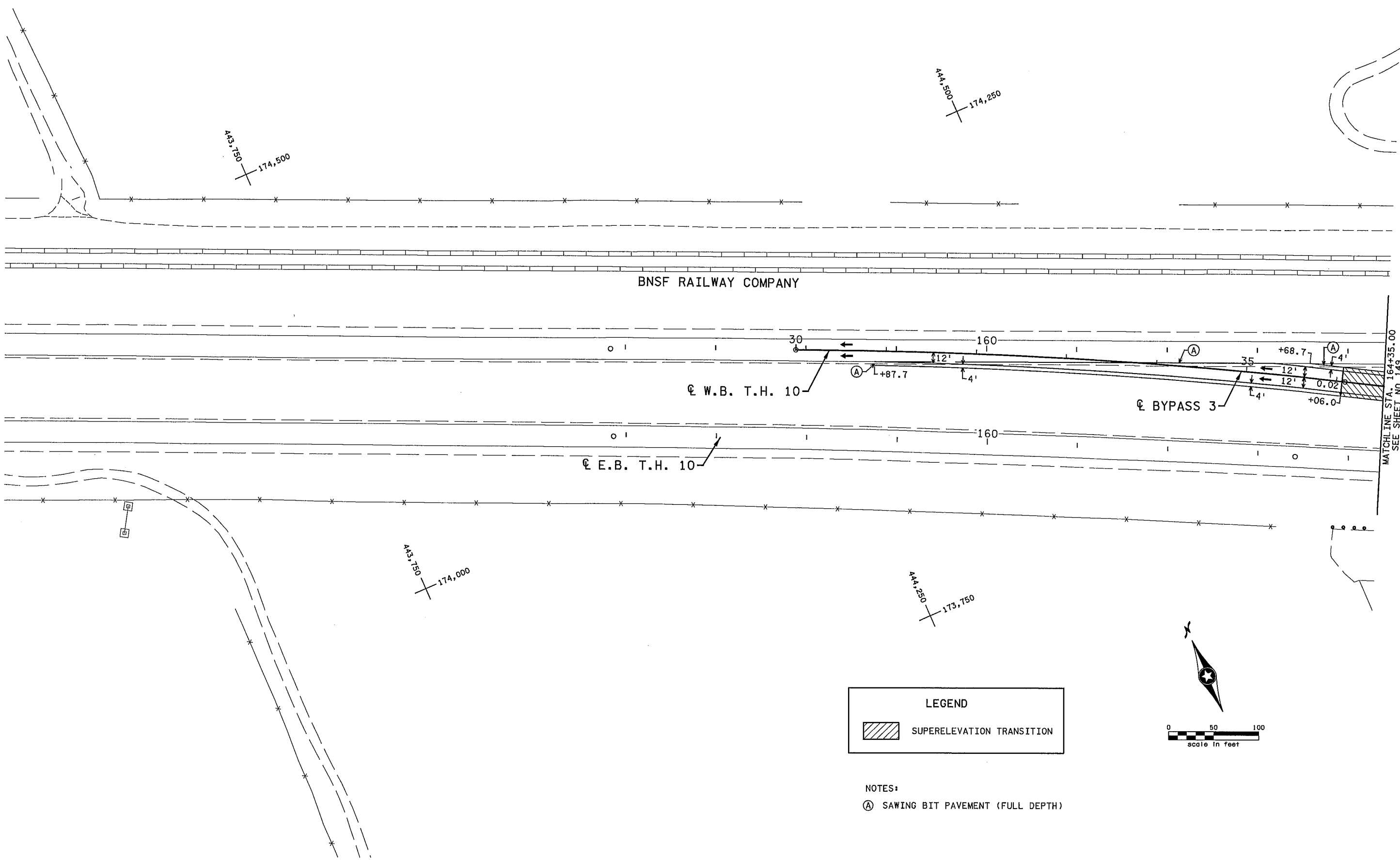
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY A. EMERSON  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 STAGING AND TRAFFIC CONTROL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 STAGE 4

**SHEET 147 OF 586**



MATCHLINE STA. 164+35.00  
SEE SHEET NO. 149

**LEGEND**

SUPERELEVATION TRANSITION

**NOTES:**  
 (A) SAWING BIT PAVEMENT (FULL DEPTH)

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9/11/2014  
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NO	DATE	BY	CKD	APPR	REVISION

... \CAD\_BIM\Plan\8259\_bp01.dgn

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: **CRAIG J. HASS**

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

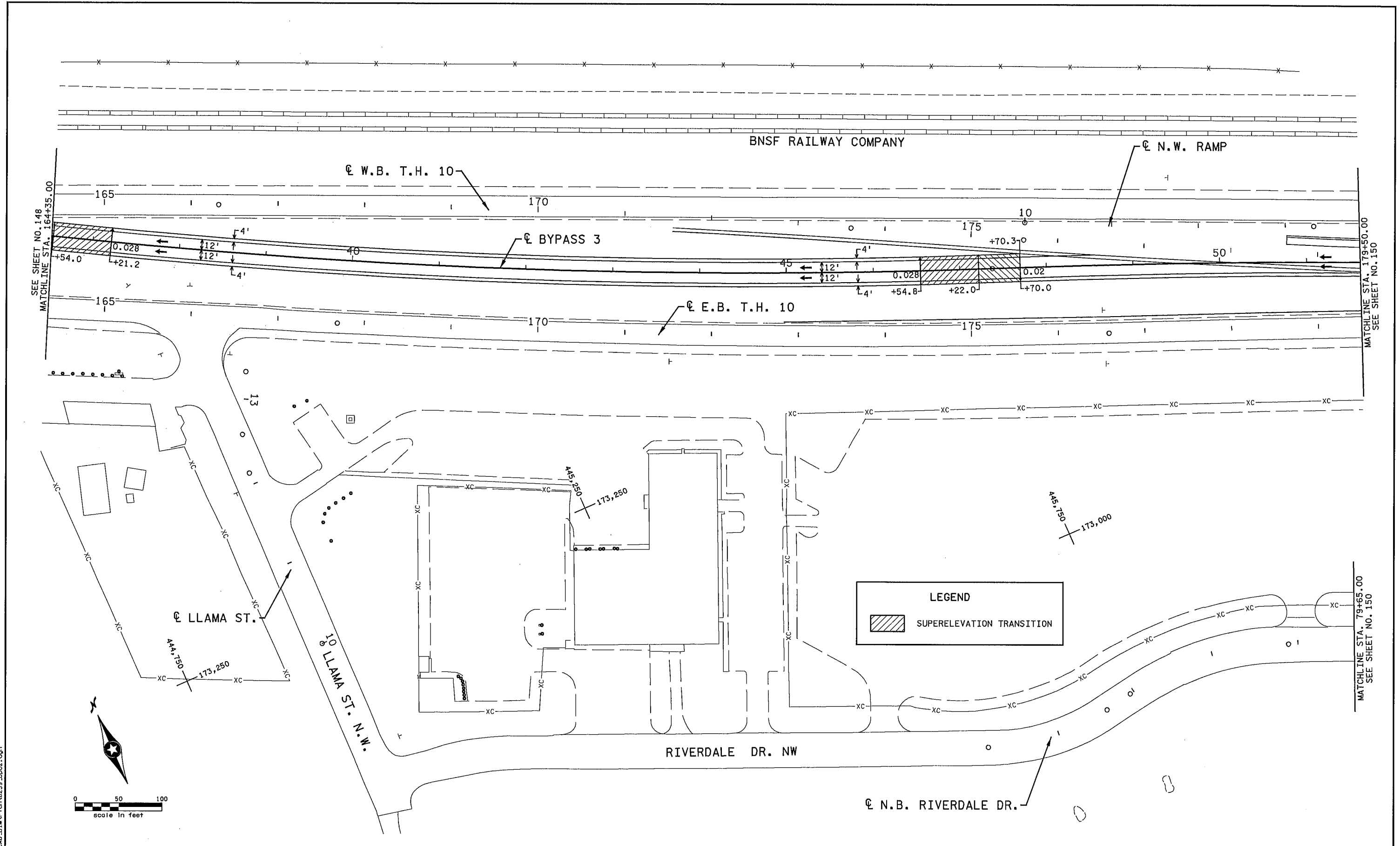


**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**

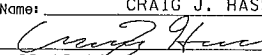
BYPASS PLANS AND PROFILES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
148  
OF  
586



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 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

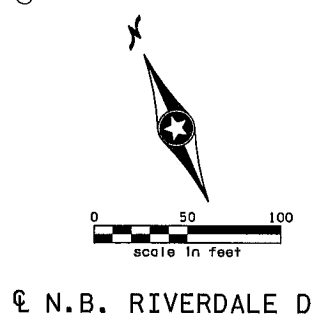
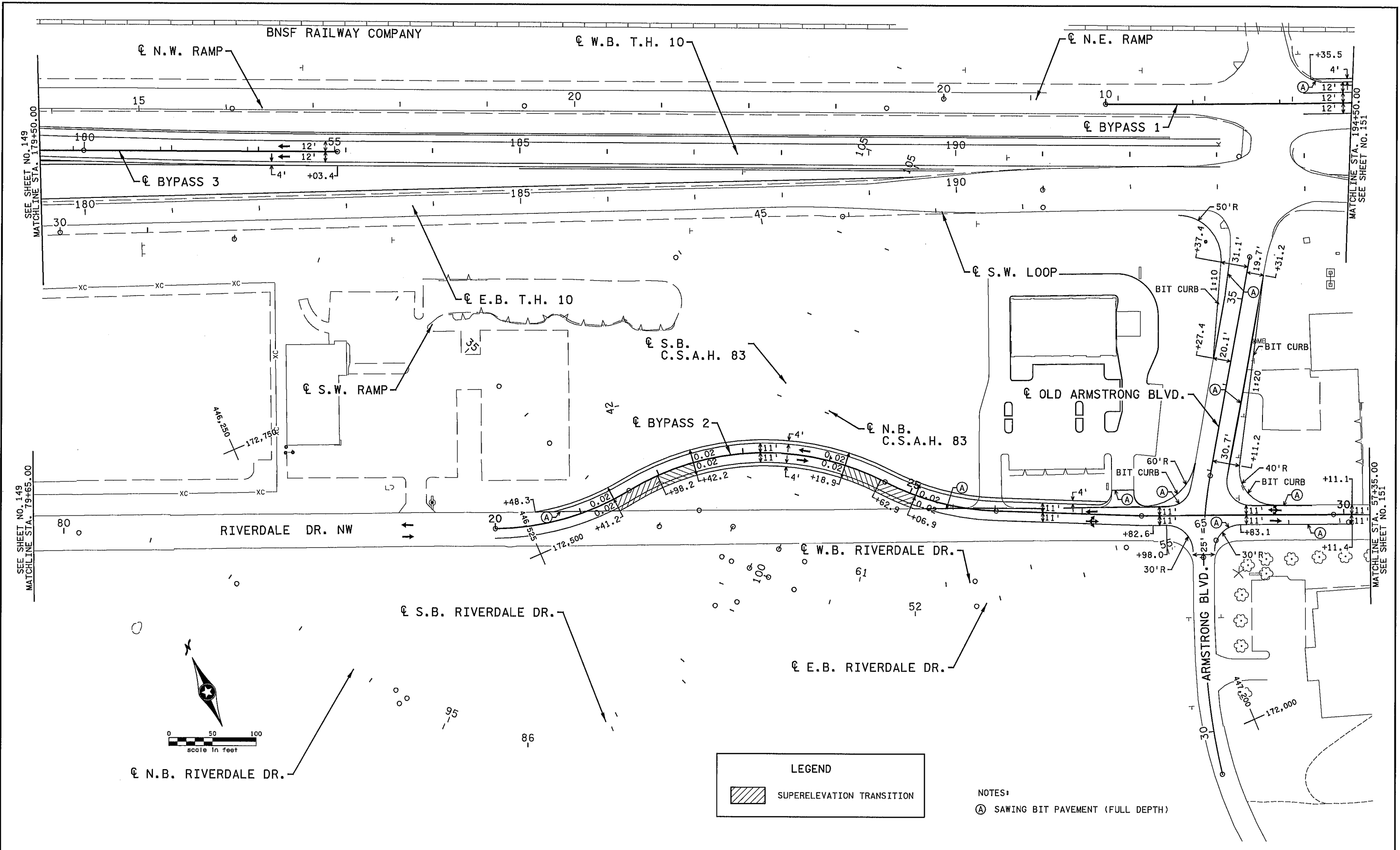
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.          
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 BYPASS PLANS AND PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 149  
 OF  
 586



**LEGEND**

SUPERELEVATION TRANSITION

NOTES:  
 (A) SAWING BIT PAVEMENT (FULL DEPTH)

3/21/04 PM  
 9/1/2014  
 H:\Projects\B259\CAD\_BIM\PI\an\B259\_bp03.dgn

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Print Name: **CRAIG J. HASS**

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

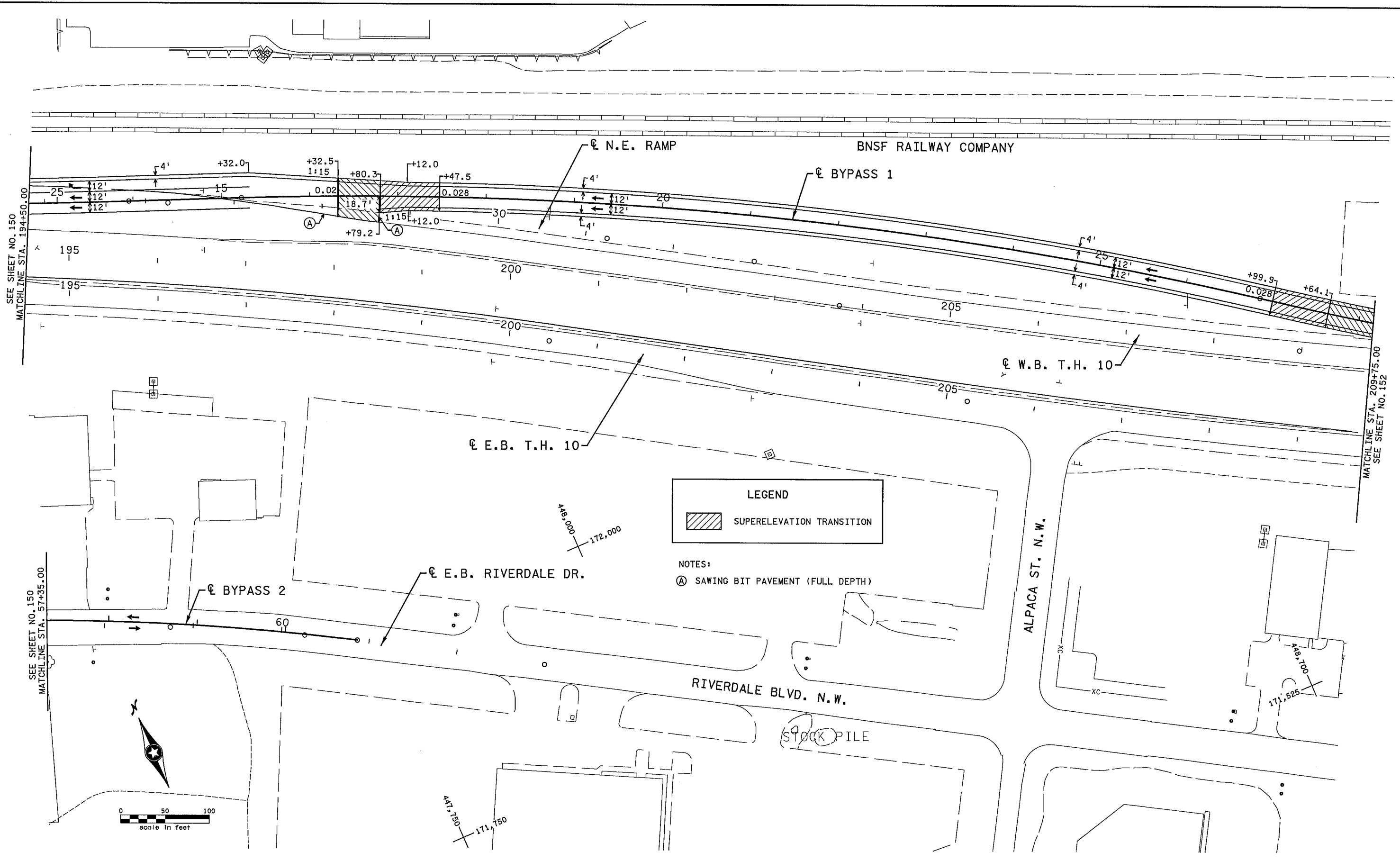


ENGINEERS  
 PLANNERS  
 DESIGNERS

**ANOKA COUNTY**  
 BYPASS PLANS AND PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 150  
 OF  
 586

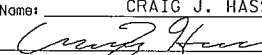




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... \CAD\_BIM\Plan\8259\_bp04.dgn

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 Print Name: **CRAIG J. HASS**  
  
 Date: **09-12-14** License # **45039**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 BYPASS PLANS AND PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

**SHEET**  
**151**  
**OF**  
**586**

BNSF RAILWAY COMPANY


☉ W.B. T.H. 10

☉ BYPASS 1

RIVERDALE BLVD. N.W.

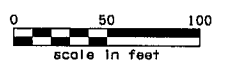
☉ E.B. T.H. 10

**LEGEND**

 SUPERELEVATION TRANSITION

**NOTES:**

(A) SAWING BIT PAVEMENT (FULL DEPTH)



SEE SHEET NO. 151  
MATCHLINE STA. 209+75.00

450,000  
171,500

449,000  
171,250

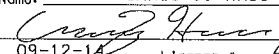
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171,000

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS



Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



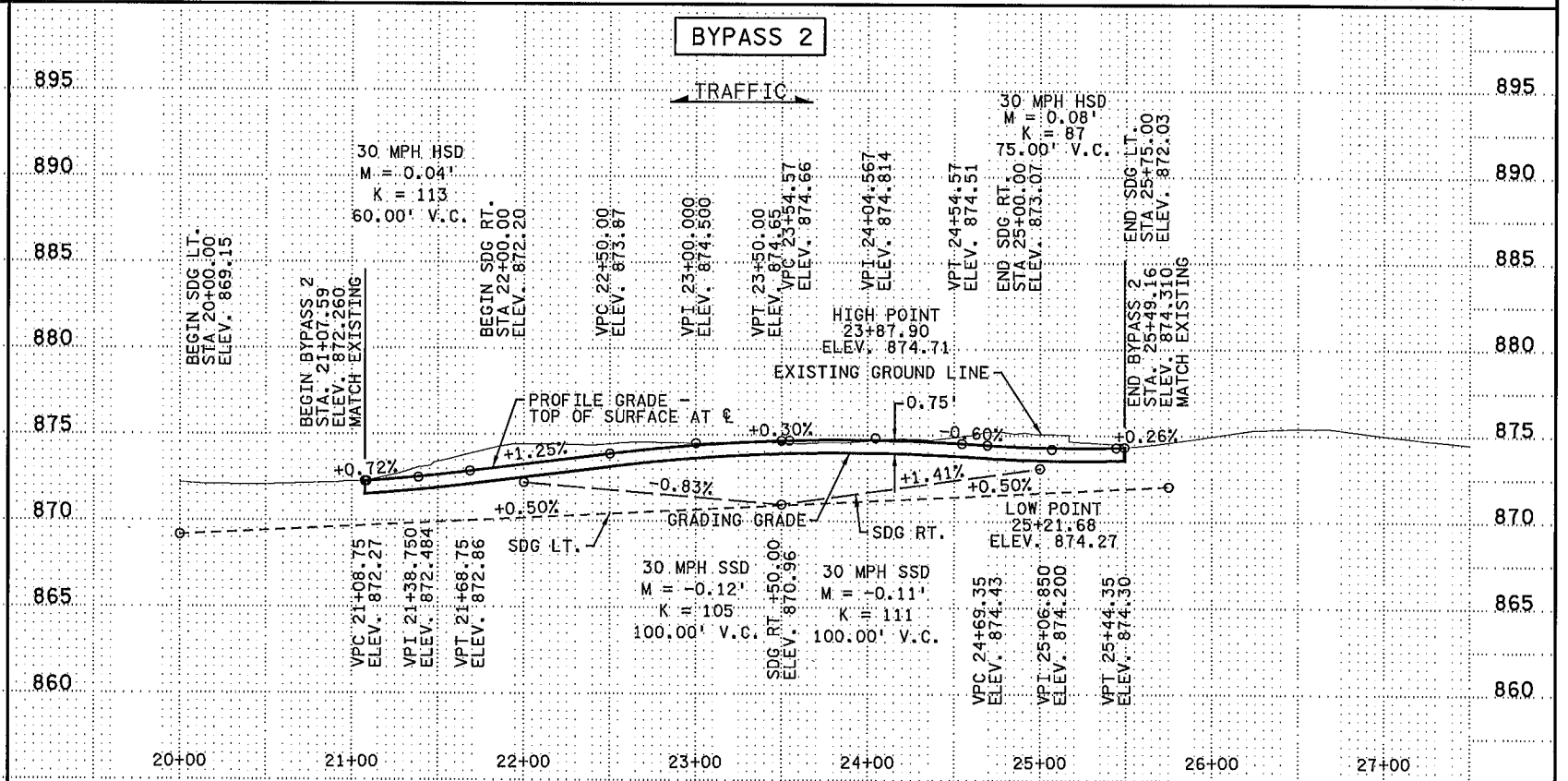
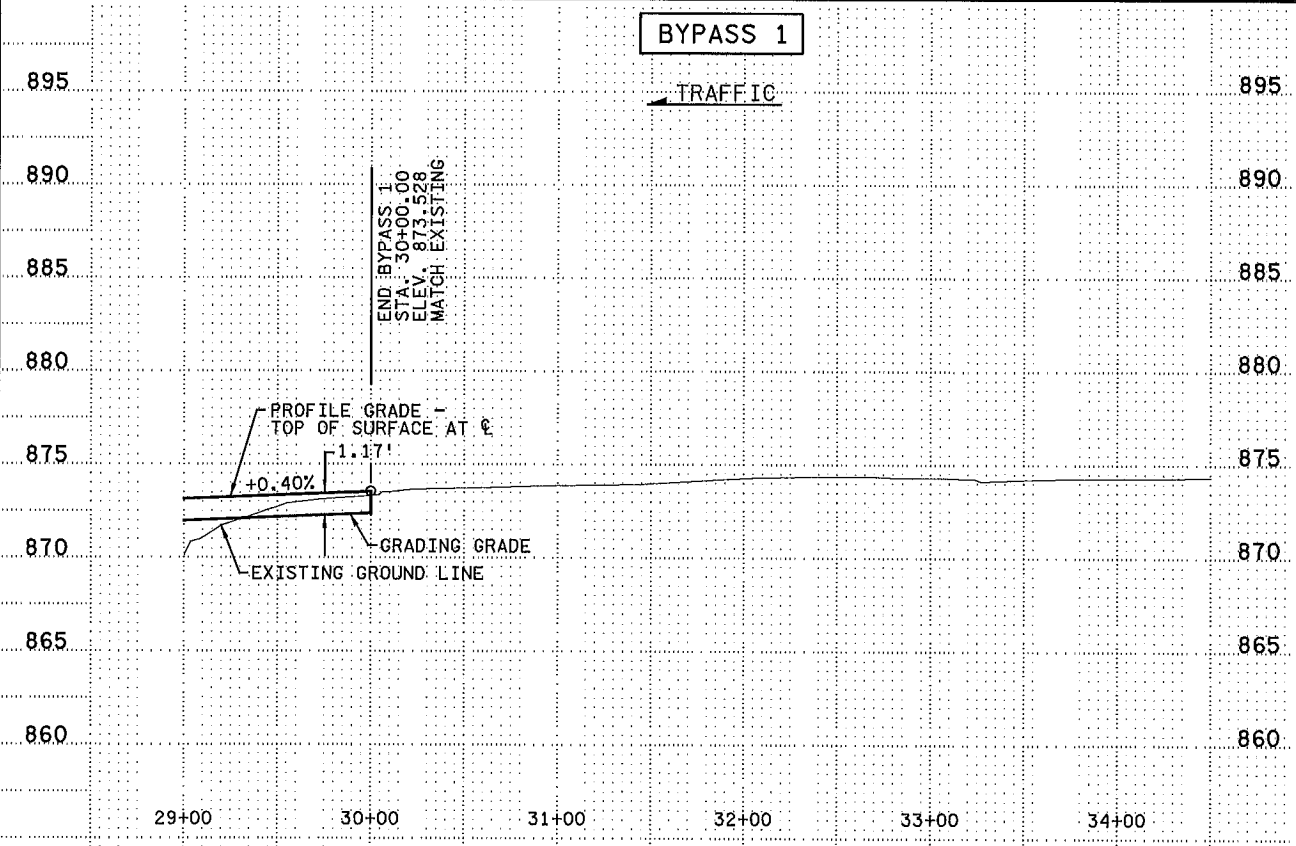
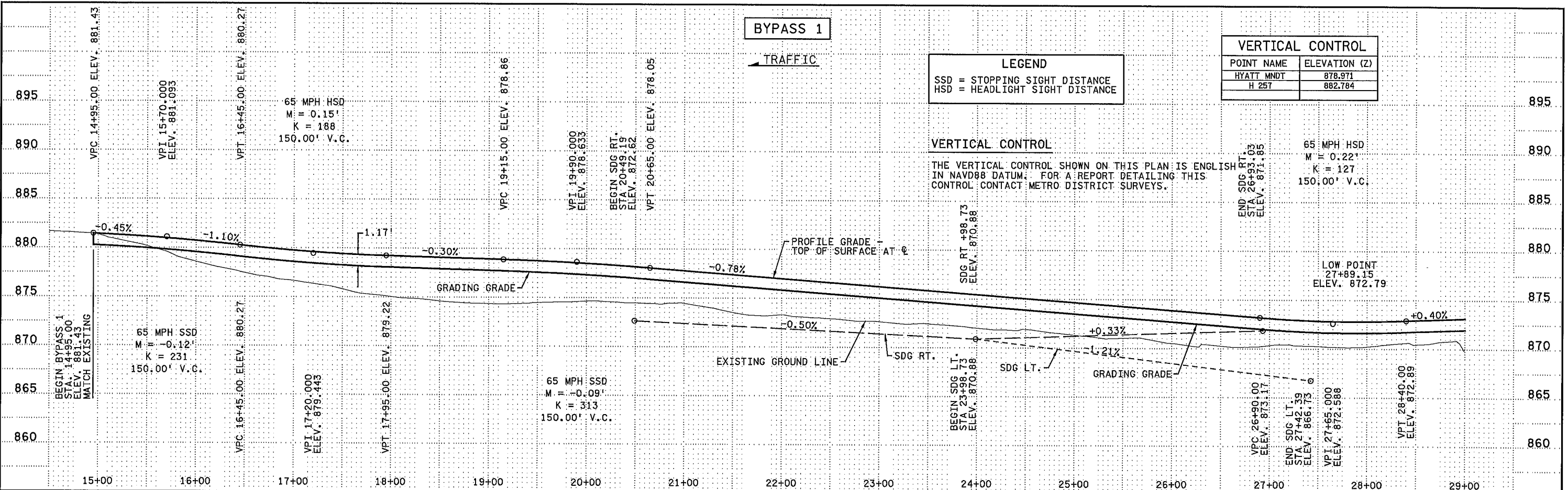
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

BYPASS PLANS AND PROFILES

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
152  
OF  
586



VERTICAL CONTROL	
POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784

**LEGEND**  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

**VERTICAL CONTROL**  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM; FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

3:21:06 PM  
 5/11/2014  
 H:\Projects\8255\CAD\_BIM\Plan\8255\_pr13.dgn

NO	DATE	BY	CHKD	APPR	REVISION

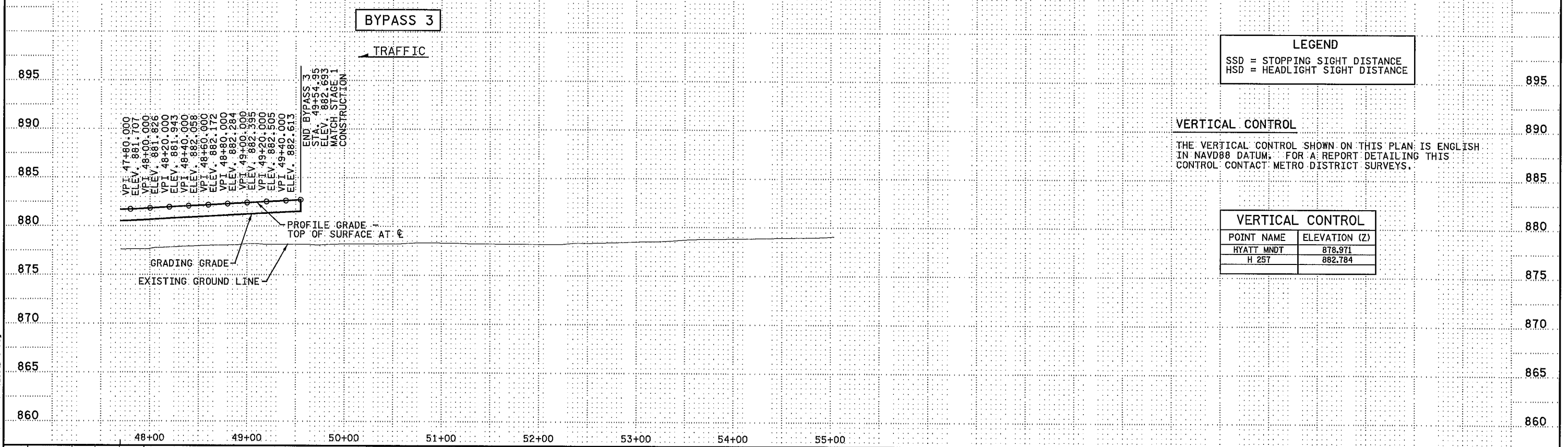
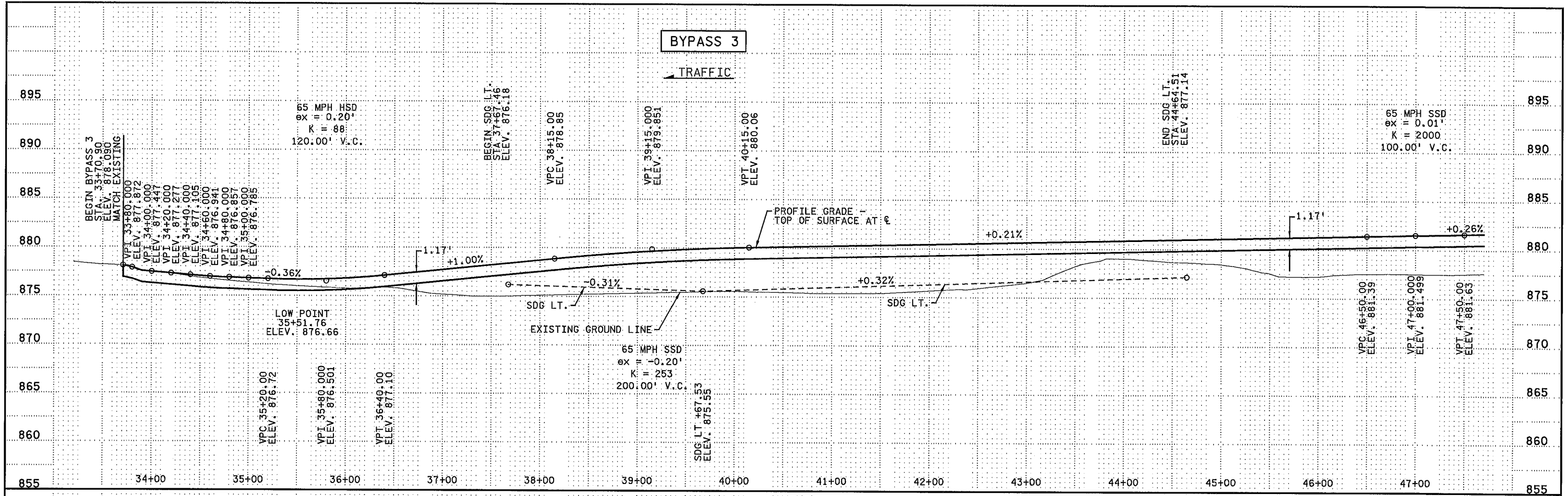
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 BYPASS PLANS AND PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 153 OF 586



**LEGEND**  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

**VERTICAL CONTROL**  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

VERTICAL CONTROL	
POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784

3:21:08 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BIM\Plan\8259\_pr14.dgn

NO	DATE	BY	CKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

**SRE**  
Consulting Group, Inc.

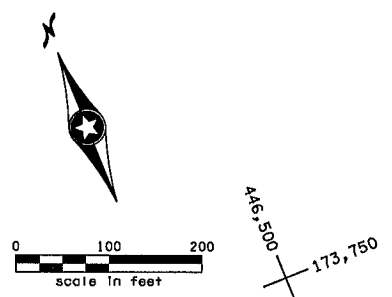
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

BYPASS PLANS AND PROFILES

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
154  
OF  
586



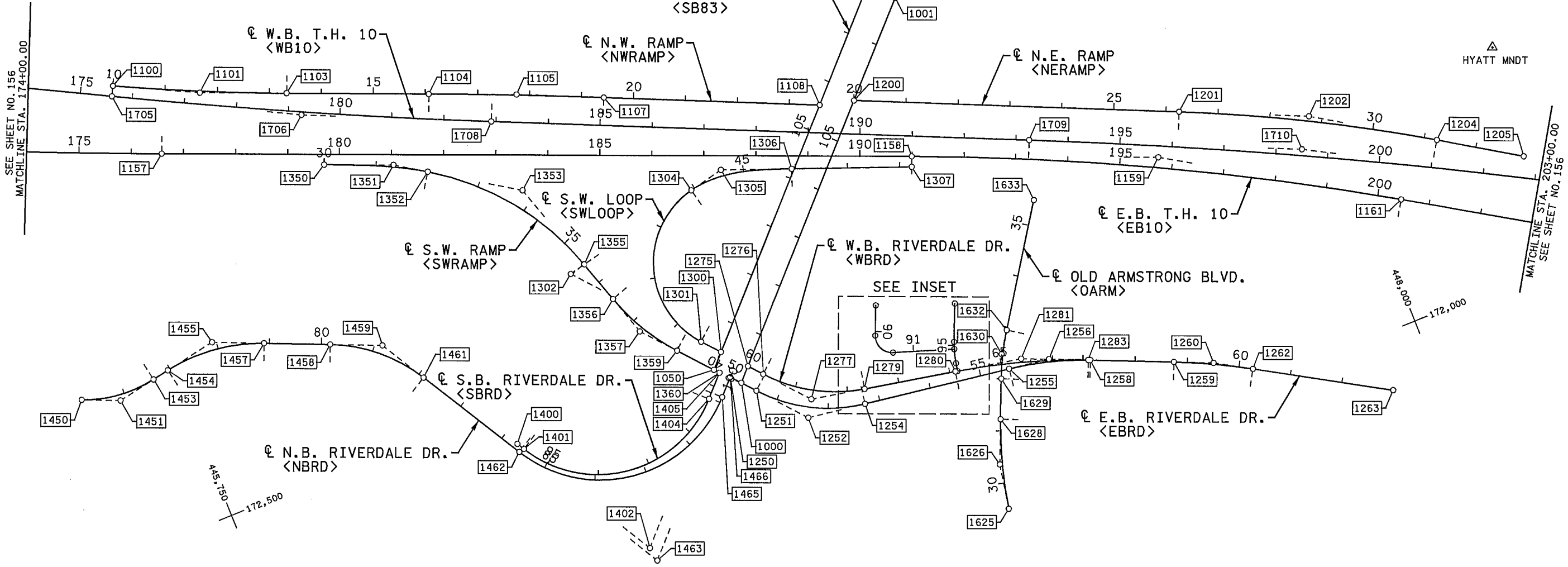
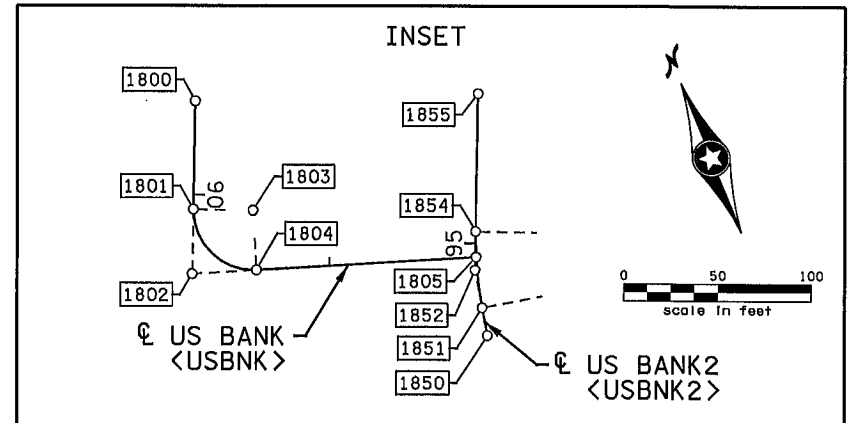
**HORIZONTAL CONTROL**  
 HORIZONTAL CONTROL BASED ON ANOKA COUNTY COORDINATE SYSTEM, NAD 83 (1986 ADJ.)

HORIZONTAL CONTROL POINTS		
PT. NAME	NORTHING	EASTING
HYATT MNDT	172433.012	448333.927
H 257	174215.752	443497.345

(NOT SHOWN ON PLAN)

FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

SEE SHEET NO. 156  
 MATCHLINE STA. 115+50.00  
 EQUATION  $\frac{114+90.79 \text{ AH}}{114+47.20 \text{ BK}}$



3/21/10 PM 9/11/2014  
 H:\Projects\8255\CAD\_BIM\Plan\8255.d101.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

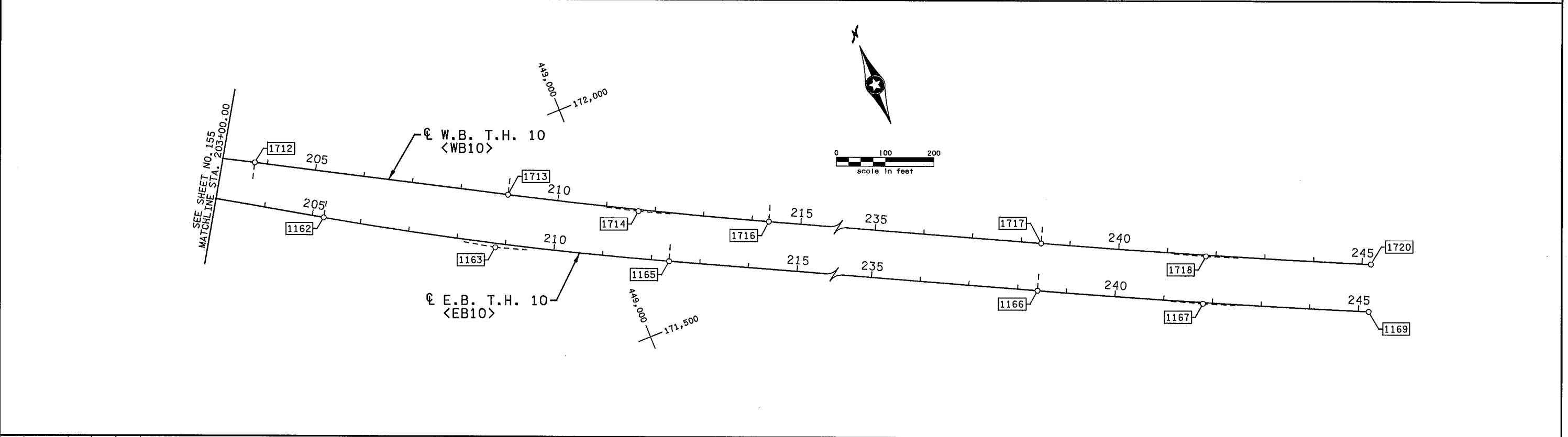
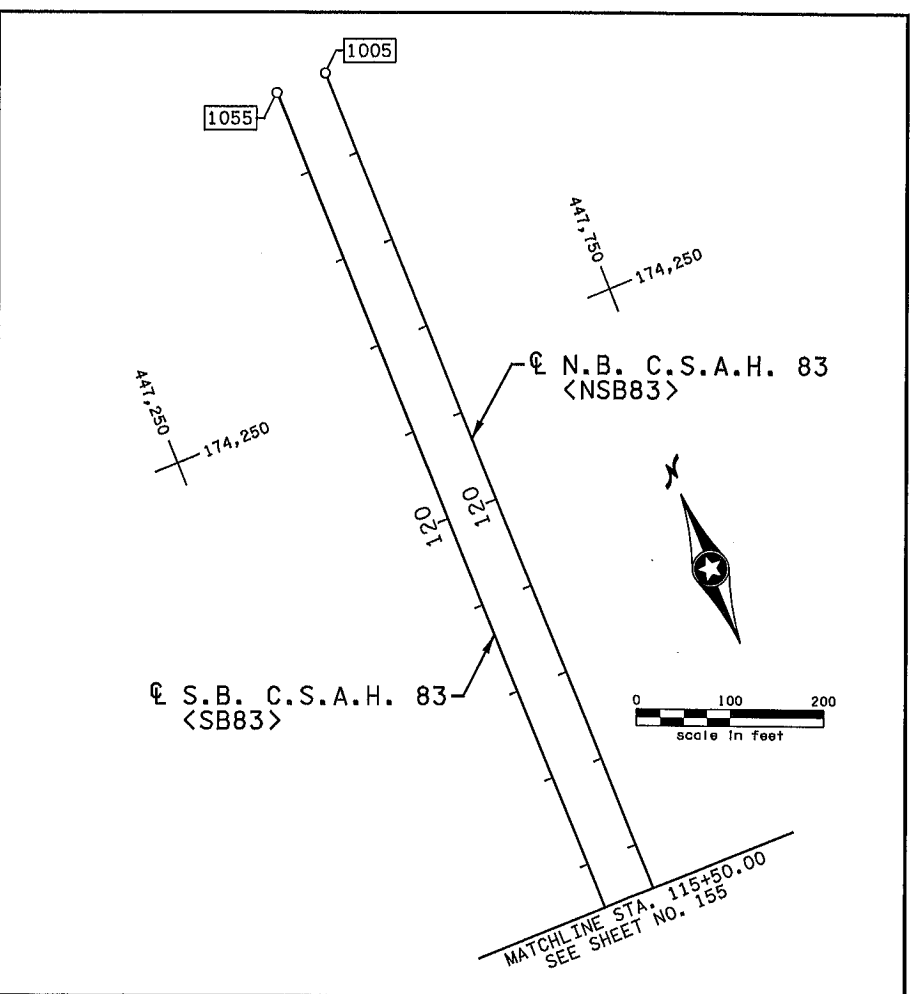
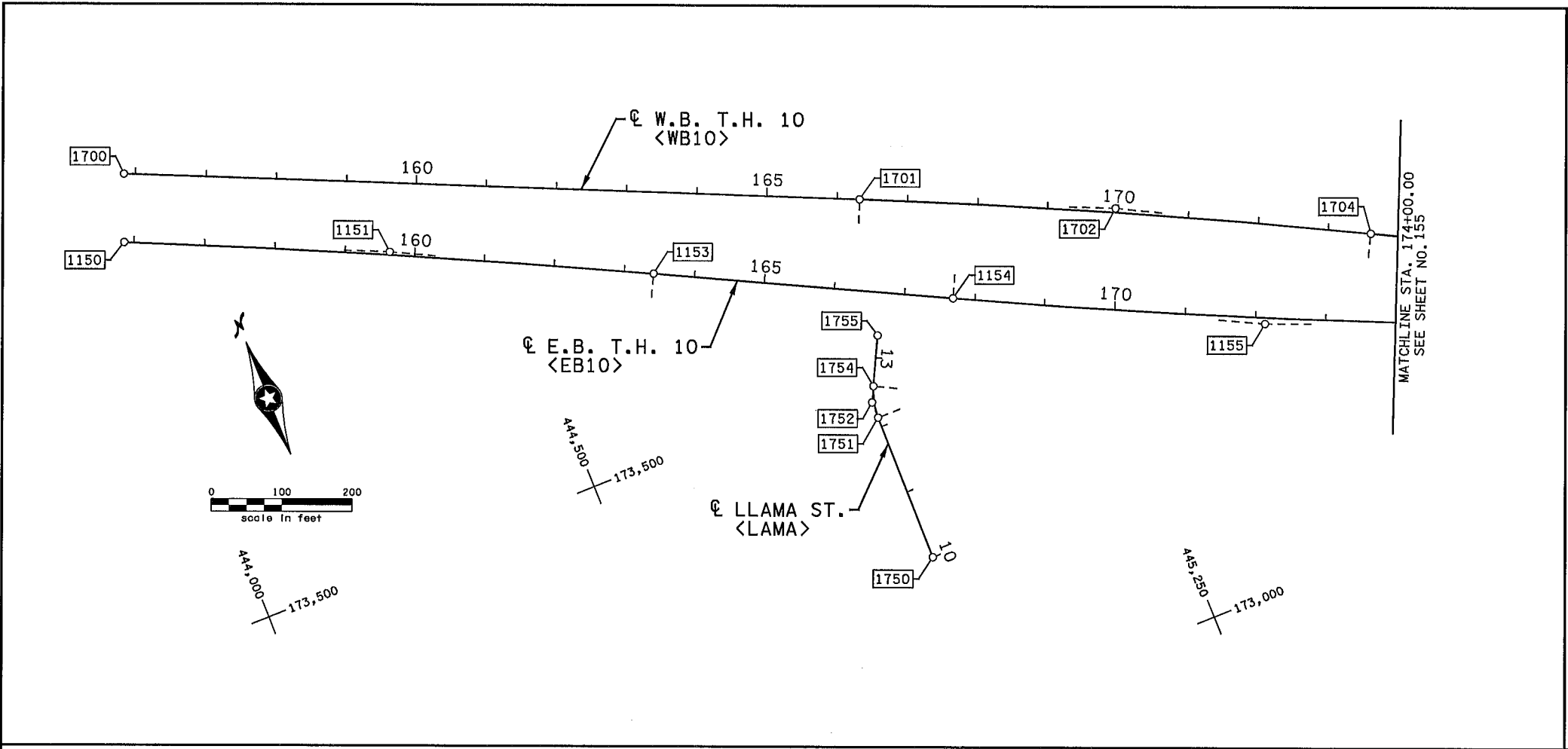
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.        
 DRAWN BY S. MARTINS  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

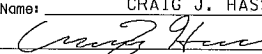
ANOKA COUNTY  
 ALIGNMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 155  
 OF  
 586



3:21:10 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BIM\Plan\8259\_a102.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

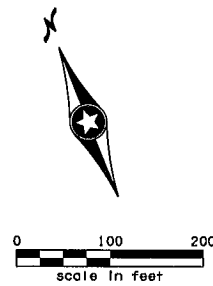
DRAWN BY S. MARTINS  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 ALIGNMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 156  
 OF  
 586



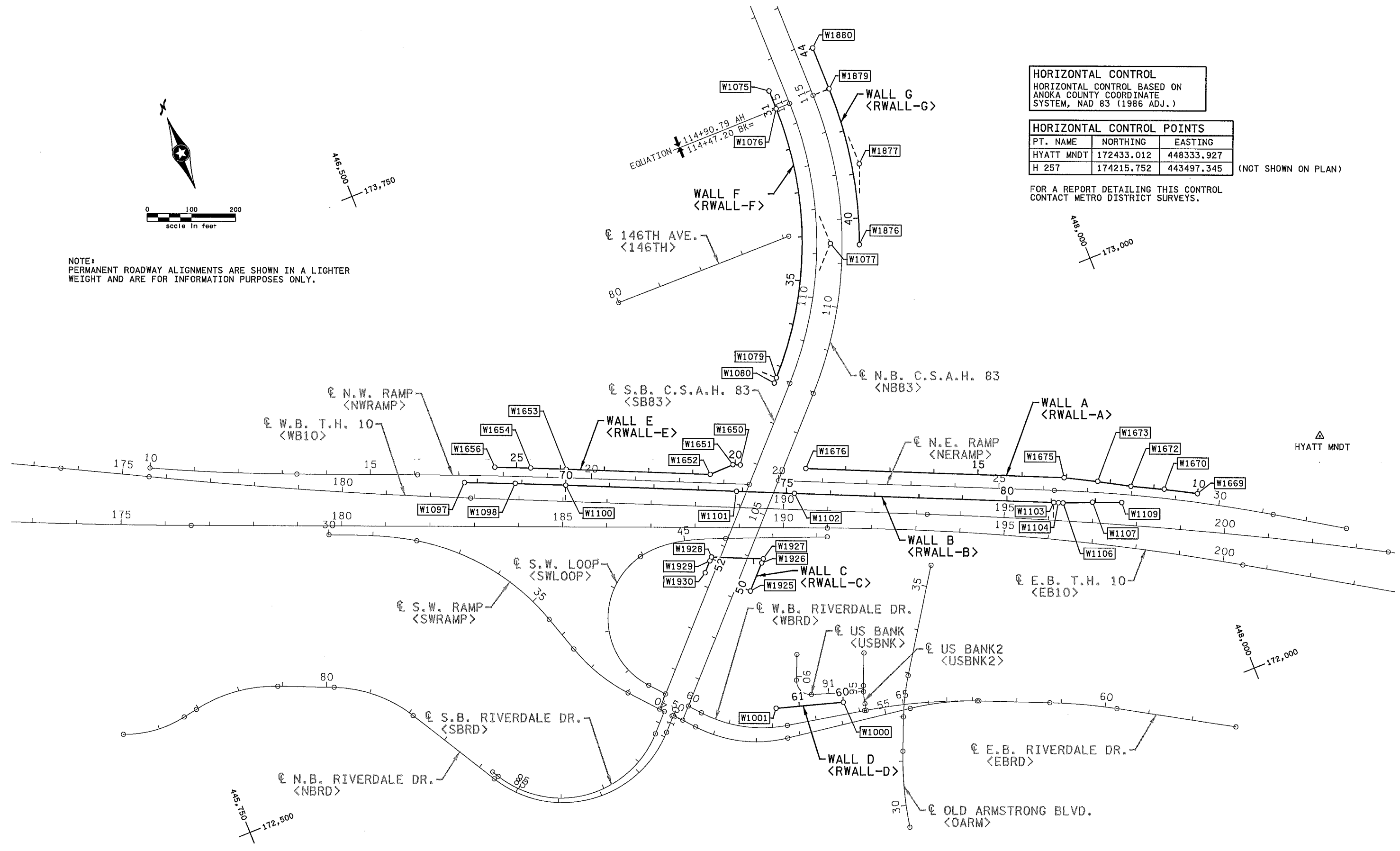
NOTE:  
PERMANENT ROADWAY ALIGNMENTS ARE SHOWN IN A LIGHTER WEIGHT AND ARE FOR INFORMATION PURPOSES ONLY.

**HORIZONTAL CONTROL**  
HORIZONTAL CONTROL BASED ON ANOKA COUNTY COORDINATE SYSTEM, NAD 83 (1986 ADJ.)

HORIZONTAL CONTROL POINTS		
PT. NAME	NORTHING	EASTING
HYATT MNDT	172433.012	448333.927
H 257	174215.752	443497.345

(NOT SHOWN ON PLAN)

FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.



3/21/11 11:11 PM  
 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
A. DEBRUIN

CHECKED BY  
C. HASS

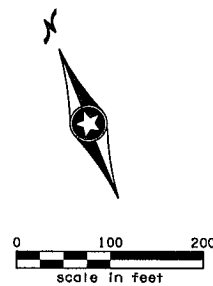
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
ALIGNMENT PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
RETAINING WALL ALIGNMENTS

SHEET  
157  
OF  
586



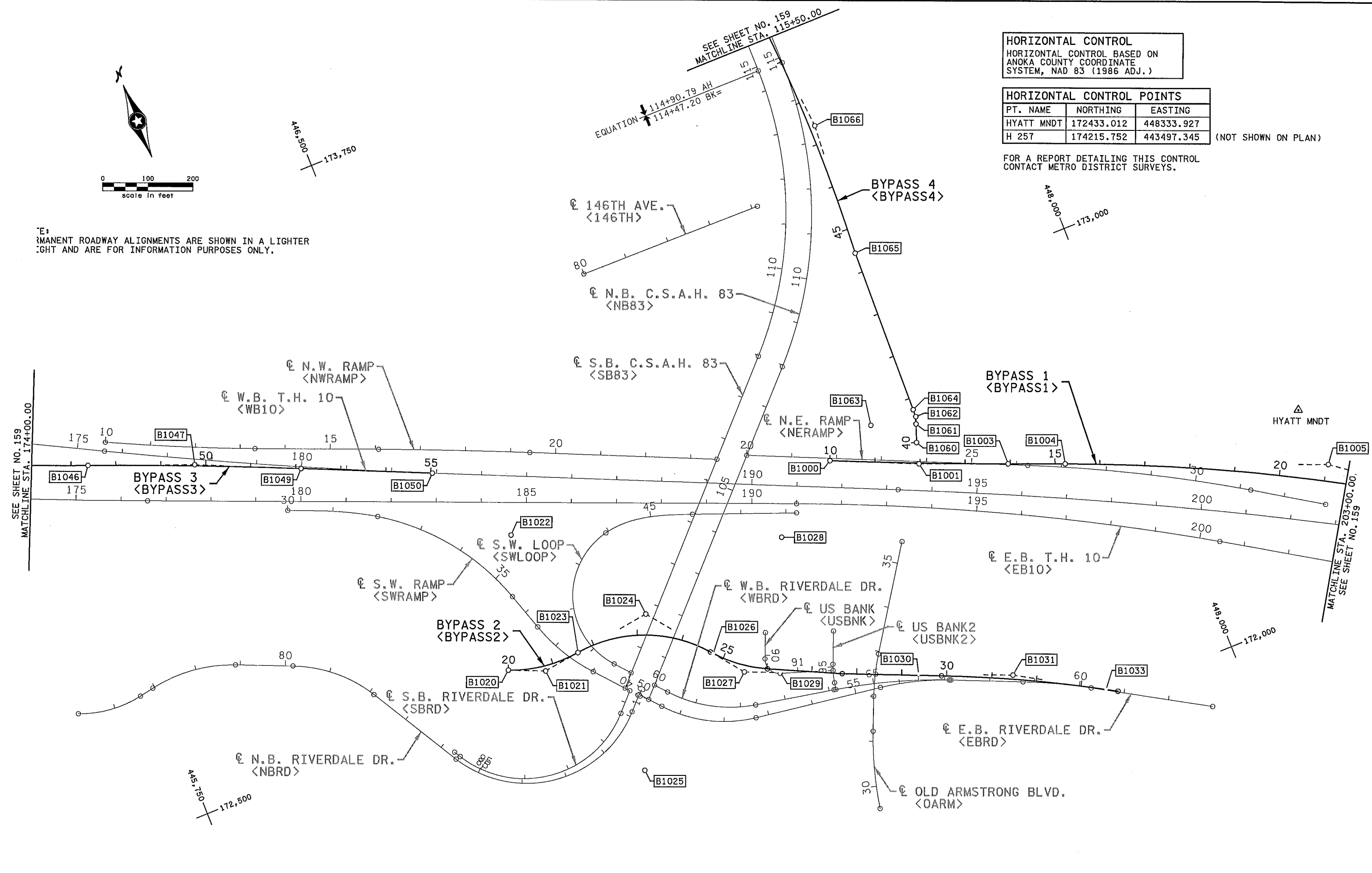
EXISTING PERMANENT ROADWAY ALIGNMENTS ARE SHOWN IN A LIGHTER WEIGHT AND ARE FOR INFORMATION PURPOSES ONLY.

**HORIZONTAL CONTROL**  
 HORIZONTAL CONTROL BASED ON ANOKA COUNTY COORDINATE SYSTEM, NAD 83 (1986 ADJ.)

HORIZONTAL CONTROL POINTS		
PT. NAME	NORTHING	EASTING
HYATT MNDT	172433.012	448333.927
H 257	174215.752	443497.345

(NOT SHOWN ON PLAN)

FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.



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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.      

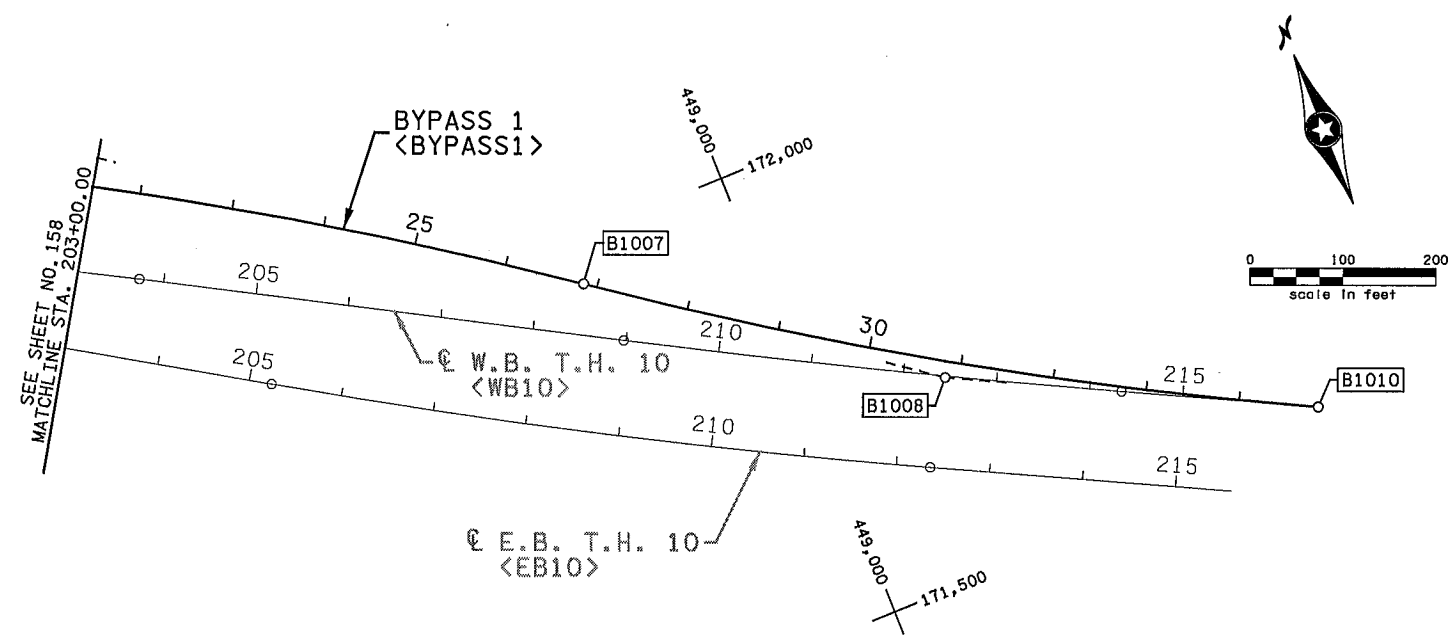
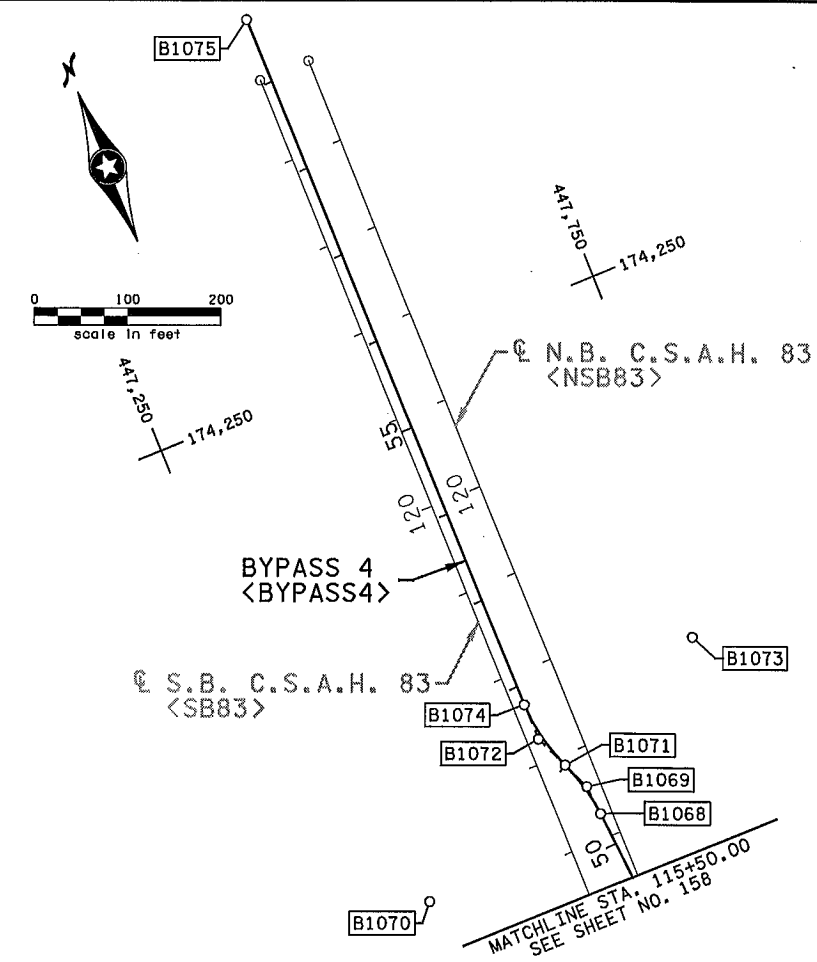
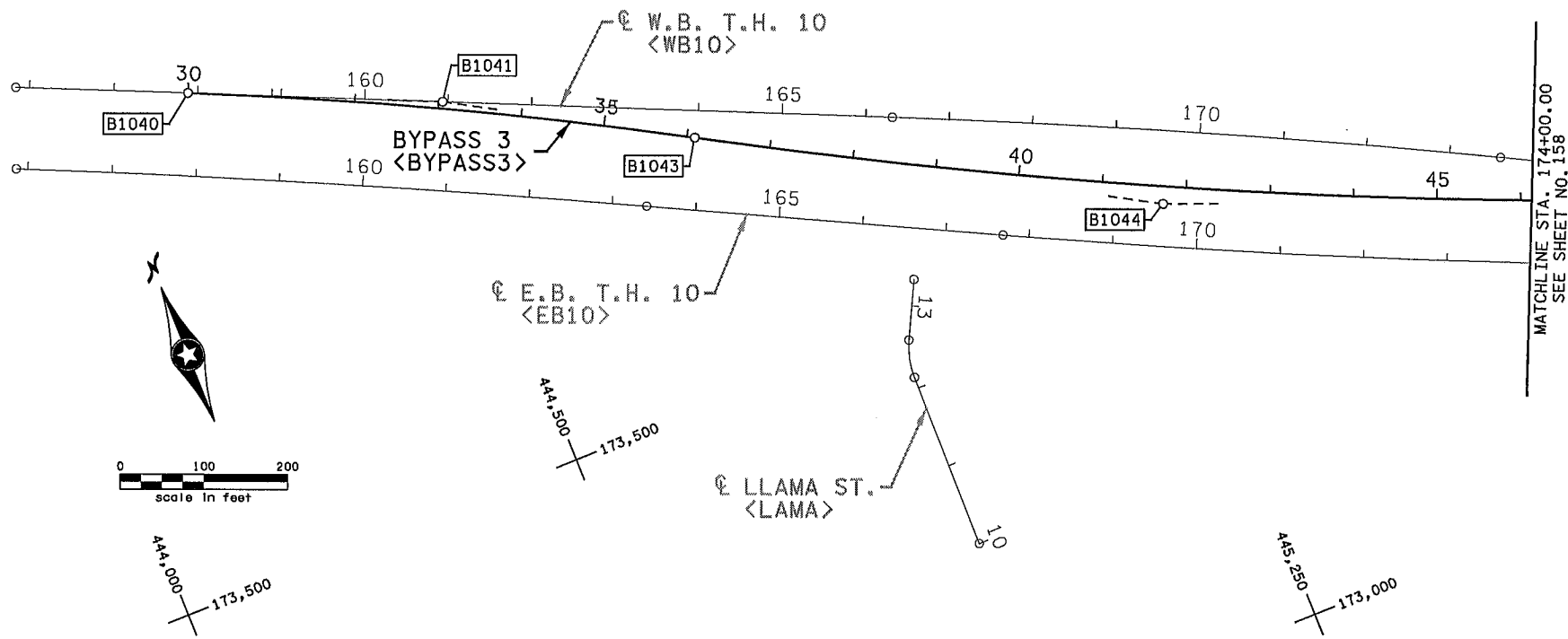
DRAWN BY S. MARTINS  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 ALIGNMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 BYPASS ALIGNMENTS

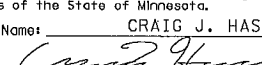
SHEET 158 OF 586





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 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.                        
 CITY PROJECT NO.                           
 DRAWN BY S. MARTINS  
 DESIGNED BY A. DEBRUIN  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 ALIGNMENT PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 BYPASS ALIGNMENTS

**SHEET**  
**159**  
**OF**  
**586**

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (θs)	DEGREE	ST	LT	LS			

☉ E.B. T.H. 10 <EB10>

1150	PC	☉ E.B. T.H. 10	155+86.141					444,007.9387	174,071.8907	113° 58' 17.15"	
1151	PI		159+63.739	2° 31' 01.30" RT	0° 20' 00.05"	17,188.000'	377.599'	755.076'	444,352.9688	173,918.4795	PI
1152	CC								437,024.7798	158,366.3873	
1153	PT		163+41.217						444,690.9288	173,750.0639	116° 29' 18.45"
1154	PC		167+68.744						445,073.5761	173,559.3792	
1155	PI		172+13.950	4° 27' 23.36" LT	0° 30' 02.70"	11,442.000'	445.206'	889.963'	445,472.0463	173,360.8095	PI
1156	CC								450,176.9085	183,800.2465	
1157	PT		176+58.707						445,884.7411	173,193.8021	112° 01' 55.09"
1158	PC		190+99.354						447,220.1843	172,653.3810	
1159	PI		195+73.451	9° 39' 46.09" RT	1° 01' 17.39"	5,609.000'	474.097'	945.945'	447,659.6600	172,475.5360	PI
1160	CC								445,116.1145	167,453.9800	
1161	PT		200+45.299						448,063.0495	172,226.4484	121° 41' 41.18"
1162	PC		205+23.978						448,470.3375	171,974.9535	
1163	PI		208+80.477	5° 20' 12.97" LT	0° 44' 56.62"	7,649.000'	356.499'	712.482'	448,773.6679	171,787.6511	PI
1164	CC								452,489.0764	178,483.1744	
1165	PT		212+36.460						449,093.1048	171,629.3742	116° 21' 28.21"
1166	PC		238+40.839						451,426.7287	170,473.0929	
1167	PI		241+80.838	1° 42' 25.02" LT	0° 15' 03.75"	22,823.300'	340.000'	679.949'	451,731.3818	170,322.1412	PI
1168	CC								461,559.7238	190,923.6536	
1169	PT	☉ E.B. T.H. 10	245+20.788						452,040.3961	170,180.3313	114° 39' 03.19"

☉ W.B. T.H. 10 <WB10>

1700	POT	☉ W.B. T.H. 10	155+83.511						444,043.5090	174,162.2312	
1701	PC		166+31.727						445,002.5490	173,739.1489	113° 48' 17.15"
1702	PI		169+96.434	3° 38' 45.20" RT	0° 30' 00.02"	11,459.000'	364.707'	729.168'	445,336.2291	173,591.9453	PI
1703	CC								440,377.4518	163,255.0105	
1704	PT		173+60.895						445,659.8732	173,423.8210	117° 27' 02.35"
1705	PC		175+60.895						445,837.3548	173,331.6241	
1706	PI		179+25.946	3° 38' 57.57" LT	0° 30' 00.02"	11,459.000'	365.051'	729.855'	446,161.3040	173,163.3413	PI
1707	CC								451,119.7762	183,500.4345	
1708	PT		182+90.750						446,495.3074	173,016.0189	113° 48' 04.78"
1709	PC		193+25.404						447,441.9644	172,598.4673	
1710	PI		198+49.868	5° 14' 27.78" RT	0° 30' 00.02"	11,459.000'	524.464'	1,048.196'	447,921.8226	172,386.8112	PI
1711	CC								442,817.4956	162,114.0517	
1712	PT		203+73.600						448,380.3407	172,132.2070	119° 02' 32.57"
1713	PC		208+97.371						448,838.2534	171,877.9388	
1714	PI		211+65.871	2° 41' 04.36" LT	0° 30' 00.02"	11,459.000'	268.500'	536.902'	449,072.9925	171,747.5938	PI
1715	CC								454,401.0986	181,896.0941	
1716	PT		214+34.273						449,313.5788	171,628.3863	116° 21' 28.21"
1717	PC		238+40.659						451,469.7944	170,560.0087	
1718	PI		241+79.214	1° 42' 25.02" LT	0° 15' 07.60"	22,726.300'	338.555'	677.060'	451,773.1526	170,409.6985	PI
1719	CC								461,559.7238	190,923.6536	
1720	PT	☉ W.B. T.H. 10	245+17.719						452,080.8536	170,268.4913	114° 39' 03.19"

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (θs)	DEGREE	ST	LT	LS			

☉ N.B. C.S.A.H. 83 <NB83>

1000	POT	☉ N.B. C.S.A.H. 83	100+00.000								446,754.1553	172,371.5647	
1001	PC		107+96.512								447,304.0839	172,947.7674	43° 39' 48.46"
1002	PI		111+60.059	43° 46' 17.87" LT	6° 19' 51.69"	905.000'	363.547'	691.383'	447,555.0848	173,210.7603	PI		
1003	CC										446,649.4001	173,572.5986	
1004	PT		114+87.895								447,554.3985	173,574.3071	359° 53' 30.59"
1005	POT	☉ N.B. C.S.A.H. 83	124+91.802								447,552.5032	174,578.2124	

☉ S.B. C.S.A.H. 83 <SB83>

1050	POT	☉ S.B. C.S.A.H. 83	100+03.655								446,714.7209	172,414.2529	
1051	PC		107+98.599								447,263.5677	172,989.3220	43° 39' 48.46"
1052	PI		111+39.651	43° 46' 17.87" LT	6° 44' 55.03"	849.000'	341.052'	648.601'	447,499.0370	173,236.0414	PI		
1053	CC										446,649.3946	173,575.4896	
1054	PT		114+47.201 BK=								447,498.3931	173,577.0924	359° 53' 30.59"
	POT		114+90.786 AH								447,498.3931	173,577.0924	
1055	POT	☉ S.B. C.S.A.H. 83	124+91.802								447,496.5033	174,578.1067	

☉ N.W. RAMP <NWRAMP>

A PT. ON ☉ W.B. T.H. 10 175+60.895=													
1100	PC	☉ N.W. RAMP	10+00.000								445,846.5745	173,349.3722	116° 18' 17.61"
1101	PI		11+66.542	4° 09' 41.05" LT	1° 14' 59.67"	4,584.000'	166.542'	332.937'	445,995.8705	173,275.5697	PI		
1102	CC										447,877.9636	177,458.6926	
1103	PT		13+32.937								446,150.1285	173,212.7956	112° 08' 36.55"
1104	PC		16+06.902								446,403.8870	173,109.5305	
1105	PI		17+74.820	1° 40' 44.62" RT	0° 30' 00.00"	11,459.156'	167.918'	335.812'	446,559.4200	173,046.2376	PI		
1106	CC										442,084.6174	162,495.5697	
1107	PT		19+42.714								446,713.0316	172,978.4146	113° 49' 21.17"
1108	POT	☉ N.W. RAMP	23+58.104=								447,093.0301	172,810.6366	
A PT. ON ☉ S.B. C.S.A.H. 83 105+51.594													

☉ N.E. RAMP <NERAMP>

A PT. ON ☉ N.B. C.S.A.H. 83 105+84.217=													
1200	POT	☉ N.E. RAMP	20+00.000								447,157.5108	172,794.1914	
1201	PC		26+25.172								447,729.4190	172,541.6809	113° 49' 21.17"
1202	PI		28+75.272	8° 31' 53.63" RT	1° 42' 31.65"	3,353.000'	250.100'	499.275'	447,958.2103	172,440.6643	PI		
1203	CC										446,375.1244	169,474.3539	
1204	PT		31+24.447								448,169.4837	172,306.8234	122° 21' 14.80"
1205	POT	☉ N.E. RAMP	32+93.053=								448,311.9147	172,216.5939	
A PT. ON ☉ W.B. T.H. 10 202+73.170													

NOTES:

- ① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND WILL NOT SHOW UP ON ALIGNMENT PLAN VIEW.
- <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

3/21/13 11:13 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_atb01.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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.

Pr Int Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259



ANOKA COUNTY

ALIGNMENT TABULATIONS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 160 OF 586

ALIGNMENT TABULATION

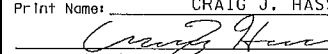

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (Θs)	DEGREE	ST	LT	LS			
<b>☉ S.W. RAMP &lt;SWRAMP&gt;</b>										
A PT. 20.00' RT OF ☉ E.B. T.H. 10 179+70.907=										
1350	TS	☉ S.W. RAMP 30+00.000						446,166.6401	173,058.1489	112° 01' 55.09"
1351	PI	31+33.592	10° 59' 50.17"	10° 59' 50.17"	66.901'	133.592'	200.000'	446,290.4761	173,008.0355	PI
1352	SC	32+00.000						446,346.5657	172,971.5697	123° 01' 45.26"
1353	PI	33+84.538	39° 00' 30.01" RT	10° 59' 50.17"	521.000'	184.538'	354.709'	446,501.2814	172,870.9839	PI
1354	CC							446,062.5859	172,534.7673	
1355	PT	35+54.709						446,558.1918	172,695.4401	162° 02' 15.28"
1356	PC	36+41.868						446,585.0709	172,612.5298	
1357	PI	37+22.509	22° 47' 47.07" LT	14° 19' 26.20"	400.000'	80.641'	159.149'	446,609.9400	172,535.8192	PI
1358	CC							446,965.5745	172,735.8871	
1359	PT	38+01.017						446,662.5887	172,474.7364	139° 14' 28.20"
1360	POT	☉ S.W. RAMP 38+92.924=						446,722.5927	172,405.1201	
A PT. ON ☉ S.B. RIVERDALE DR. 99+27.836										
<b>☉ S.W. LOOP &lt;SWLOOP&gt;</b>										
A PT. ON ☉ S.B. C.S.A.H. 83 100+40.475=										
1300	POT	☉ S.W. LOOP 40+00.000						446,740.1423	172,440.8889	
1301	PC	40+42.924						446,712.1185	172,473.4020	319° 14' 28.20"
1302	PI	43+25.524	117° 56' 29.05" RT	33° 42' 12.24"	170.000'	282.600'	349.939'	446,527.6155	172,687.4615	PI
1303	CC							446,840.8874	172,584.3910	77° 10' 57.25"
1304	CS	43+92.863						446,803.1737	172,750.1549	
1305	PI	44+61.804	33° 42' 06.17"	33° 42' 12.24"	68.941'	135.826'	199.990'	446,870.3970	172,765.4492	PI
1306	ST	45+92.853						446,997.2994	172,717.0297	110° 53' 03.42"
1307	POT	☉ S.W. LOOP 48+23.384=						447,212.6818	172,634.8415	
A PT. 20.00' RT OF ☉ E.B. T.H. 10 190+99.354										
<b>☉ N.B. RIVERDALE DR. &lt;NBRD&gt;</b>										
1450	PC	☉ N.B. RIVERDALE DR. 75+17.148						445,566.3330	172,812.1486	112° 55' 53.20"
1451	PI	75+92.091	33° 45' 25.35" LT	23° 11' 48.02"	247.000'	74.943'	145.525'	445,635.3536	172,782.9485	PI
1452	CC							445,662.5715	173,039.6286	
1453	PT	76+62.673						445,708.9631	172,797.0244	79° 10' 27.85"
1454	PC	76+95.181						445,740.8924	172,803.1300	
1455	PI	77+95.146	33° 42' 19.93" RT	17° 21' 44.49"	330.000'	99.965'	194.130'	445,839.0780	172,821.9054	PI
1456	CC							445,802.8731	172,479.0029	
1457	PT	78+89.311						445,931.1775	172,783.0390	112° 52' 47.77"
1458	PC	80+17.089						446,048.9022	172,733.3587	
1459	PI	81+17.330	36° 57' 09.45" RT	19° 05' 54.94"	300.000'	100.241'	193.483'	446,141.2561	172,694.3850	PI
1460	CC							445,932.2617	172,456.9623	
1461	PT	82+10.572						446,191.6299	172,607.7209	149° 49' 57.23"
1462	PC	84+42.266						446,308.0625	172,407.4078	
1463	PI	87+79.041	106° 10' 08.77" LT	22° 38' 47.59"	253.000'	336.775'	468.809'	446,477.3017	172,116.2452	PI
1464	CC							446,526.7964	172,534.5475	
1465	PT	89+11.075						446,709.8185	172,359.8710	43° 39' 48.46"
1466	POT	☉ N.B. RIVERDALE DR. 89+52.489						446,738.4117	172,389.8303	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
			SPIRAL CURVE DATA							
			ANGLE (Θs)	DEGREE	ST	LT	LS			
<b>☉ S.B. RIVERDALE DR. &lt;SBRD&gt;</b>										
1400	POT	☉ S.B. RIVERDALE DR. 94+30.000						446,310.5442	172,423.0377	
1401	PC	94+45.745						446,318.4566	172,409.4250	149° 49' 57.23"
1402	PI	97+53.236	106° 10' 08.77" LT	24° 48' 12.12"	231.000'	307.490'	428.043'	446,472.9793	172,143.5809	PI
1403	CC							446,518.1701	172,525.5091	
1404	PT	98+73.788						446,685.2772	172,366.0218	43° 39' 48.46"
1405	POT	☉ S.B. RIVERDALE DR. 99+27.836						446,722.5927	172,405.1201	
<b>☉ E.B. RIVERDALE DR. &lt;EBRD&gt;</b>										
1250	POT	☉ E.B. RIVERDALE DR. 49+99.726						446,738.4117	172,389.8303	
1251	PC	50+56.404						446,775.4156	172,346.8986	139° 14' 28.20"
1252	PI	51+68.803	41° 04' 41.88" LT	19° 05' 54.94"	300.000'	112.399'	215.085'	446,848.7983	172,261.7603	PI
1253	CC							447,002.6549	172,542.7616	
1254	PT	52+71.489						446,960.0586	172,245.8011	98° 09' 46.32"
1255	PC	55+56.476						447,242.1577	172,205.3366	
1256	PI	56+35.680	15° 02' 23.89" RT	9° 32' 57.47"	600.000'	79.204'	157.498'	447,320.5596	172,194.0906	PI
1257	CC							447,156.9652	171,611.4155	
1258	PT	57+13.974						447,393.3577	172,162.8850	113° 12' 10.21"
1259	PC	58+74.215						447,540.6375	172,099.7522	
1260	PI	59+50.570	7° 16' 53.76" RT	4° 46' 28.73"	1,200.000'	76.356'	152.505'	447,610.8171	172,069.6691	PI
1261	CC							447,067.8526	170,996.8132	
1262	PT	60+26.720						447,676.6177	172,030.9336	120° 29' 03.97"
1263	POT	☉ E.B. RIVERDALE DR. 62+99.705						447,911.8672	171,892.4471	
<b>☉ W.B. RIVERDALE DR. &lt;WBRD&gt;</b>										
1275	POT	☉ W.B. RIVERDALE DR. 60+00.000						446,777.8366	172,396.3774	
1276	PC	60+32.936						446,799.3395	172,371.4297	139° 14' 28.20"
1277	PI	61+37.219	38° 20' 09.51" LT	19° 05' 54.94"	300.000'	104.283'	200.727'	446,867.4235	172,292.4389	PI
1278	CC							447,026.5788	172,567.2927	
1279	PT	62+33.662						446,969.8235	172,272.7102	100° 54' 18.70"
1280	PC	64+11.329						447,144.2815	172,239.0985	
1281	PI	65+40.471	12° 02' 45.02" RT	4° 40' 51.70"	1,224.000'	129.143'	257.333'	447,271.0921	172,214.6667	PI
1282	CC							446,912.7198	171,037.2020	
1283	PT	☉ W.B. RIVERDALE DR. 66+68.662						447,390.0116	172,164.3083	112° 57' 03.71"
<b>☉ OLD ARMSTRONG BLVD. &lt;OARM&gt;</b>										
1625	PC	☉ OLD ARMSTRONG BLVD. 29+50.000						447,141.5234	171,956.9634	10° 27' 07.86"
1626	PI	30+36.499	12° 27' 31.10" RT	7° 13' 48.38"	792.461'	86.499'	172.316'	447,157.2157	172,042.0272	PI
1627	CC							447,920.8350	171,813.1991	
1628	PT	31+22.316						447,190.8896	172,121.7026	22° 54' 38.96"
1629	PC	31+99.891						447,221.0895	172,193.1580	
1630	PI	32+47.105	10° 47' 18.66" RT	11° 27' 32.96"	500.000'	47.213'	94.148'	447,239.4695	172,236.6468	PI
1631	CC							447,681.6454	171,998.5090	
1632	PT	32+94.039						447,265.6651	172,275.9264	33° 41' 57.62"
1633	POT	☉ OLD ARMSTRONG BLVD. 35+49.145						447,407.2069	172,488.1646	

NOTES:  
 ① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND WILL NOT SHOW UP ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

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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. Pr Int Name: CRAIG J. HASS  Date: 09-12-14 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259	 ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.	ANOKA COUNTY ALIGNMENT TABULATIONS T.H. 10 / C.S.A.H. 83 INTERCHANGE	SHEET 161 OF 586
NO	DATE	BY	CKD	APPR	REVISION	

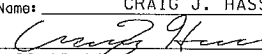
ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
ANGLE (Θs)	DEGREE	ST	LT	LS							
<b>☉ LLAMA ST. &lt;LAMA&gt;</b>											
1750	POT	☉ LLAMA ST.	10+00.000						444,909.9327	173,227.8214	
1751	PC		12+13.465						444,911.5370	173,441.2802	0° 25' 50.23"
1752	PI		12+36.664	26° 07' 21.07" RT	57° 17' 44.81"	100.000'	23.199'	45.592'	444,911.7114	173,464.4790	PI
① 1753	CC								445,011.5342	173,440.5286	
1754	PT		12+59.057						444,922.0822	173,485.2314	26° 33' 11.29"
1755	POT	☉ LLAMA ST.	13+31.606						444,954.5137	173,550.1281	
<b>146TH AVE. &lt;146TH&gt;</b>											
1900	POT	☉ 146TH AVE.	80+00.000						446,972.0435	173,302.5870	90° 27' 31.53"
1901	POT	☉ 146TH AVE.	84+13.001						447,385.0314	173,299.2803	
<b>US BANK &lt;USBK&gt;</b>											
1800	POT	☉ US BANK	89+50.000						447,049.6637	172,413.4195	
1801	PC		90+07.951						447,027.0592	172,360.0589	202° 57' 30.05"
1802	PI		90+42.508	94° 24' 03.02" LT	179° 02' 57.52"	32.000'	34.557'	52.723'	447,013.5797	172,328.2389	PI
1803	CC								447,056.5245	172,347.5769	
1804	PT		90+60.674						447,046.3403	172,317.2408	108° 33' 27.03"
1805	POT	☉ US BANK	91+78.788						447,158.3123	172,279.6504	
<b>US BANK2 &lt;USBK2&gt;</b>											
1850	POT	☉ US BANK2	94+50.000						447,148.2601	172,238.3251	
1851	PC		94+65.192						447,151.1977	172,253.2302	11° 08' 57.39"
1852	PI		94+85.810	11° 46' 19.27" RT	28° 38' 52.40"	200.000'	20.619'	41.092'	447,155.1846	172,273.4597	PI
① 1853	CC								447,347.4230	172,214.5571	
1854	PT		95+06.284						447,163.2149	172,292.4503	22° 55' 16.65"
1855	POT	☉ US BANK2	95+80.056						447,191.9465	172,360.3971	


NOTES:

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- <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

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NO	DATE	BY	CKD	APPR	REVISION
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. Pr Int Name: <b>CRAIG J. HASS</b>  Date: <u>09-12-14</u> License # <u>45039</u>					

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 ALIGNMENT TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
			ANGLE (θs)	DEGREE	ST	LT	LS				
<b>WALL A &lt;RWALL-A&gt;</b>											
W1669	PC	WALL A	10+00.000					448,028.5839	172,413.8984	299° 21' 33.37"	
W1670	PI		10+76.263	2° 35' 26.56" LT	1° 41' 55.78"	3,372.667'	76.263'	152.500'	447,962.1159	172,451.2890	PI
W1671	CC								446,375.0184	169,474.4084	296° 46' 06.81"
W1672	PCC		11+52.500						447,894.0258	172,485.6369	300° 15' 20.64"
W1673	PI		12+28.759	2° 07' 01.42" LT	1° 23' 17.66"	4,127.231'	76.259'	152.500'	447,828.1547	172,524.0606	PI
W1674	CC								445,814.4775	168,920.5965	298° 08' 19.22"
W1675	PT		13+05.000						447,760.9092	172,560.0247	293° 49' 21.17"
W1676	POT	WALL A	18+90.349						447,225.4312	172,796.4504	
<b>WALL B &lt;RWALL-B&gt;</b>											
W1097	PC	WALL B	67+70.579						446,495.4935	173,053.6840	112° 40' 25.56"
W1098	PI		68+85.293	1° 08' 55.61" RT	0° 30' 02.63"	11,442.448'	114.714'	229.421'	446,601.3422	173,009.4635	PI
W1099	CC								442,084.6174	162,495.5697	
W1100	PT		70+00.000						446,706.2830	172,963.1297	113° 49' 21.17"
W1101	POT		73+86.810						447,060.1371	172,806.8951	
W1102	POT		75+18.180						447,180.3145	172,753.8340	
W1103	PC		81+06.191						447,718.2274	172,516.3332	113° 49' 21.17"
W1104	PI		81+16.648	0° 21' 37.25" RT	1° 43' 22.91"	3,325.292'	10.457'	20.914'	447,727.7934	172,512.1097	PI
W1105	CC								446,375.1244	169,474.3539	114° 10' 58.42"
W1106	PCC		81+27.105						447,737.3325	172,507.8260	110° 20' 18.14"
W1107	PI		81+93.561	2° 17' 24.34" RT	1° 43' 23.63"	3,324.904'	66.457'	132.895'	447,799.6459	172,484.7281	PI
W1108	CC								446,581.7166	169,390.2086	
W1109	PT	WALL B	82+60.000						447,860.9865	172,459.1587	112° 37' 42.48"
<b>WALL C &lt;RWALL-C&gt;</b>											
W1925	POT	WALL C	50+00.000						447,005.6050	172,585.4809	43° 39' 48.46"
W1926	POT		50+68.510						447,052.9058	172,635.0416	
W1927	POT		50+78.505						447,059.8068	172,642.2723	293° 49' 21.17"
W1928	POT		51+96.422						446,951.9368	172,689.8993	
W1929	POT		52+05.710						446,945.5239	172,683.1800	223° 39' 48.46"
W1930	POT	WALL C	52+34.905						446,925.3671	172,662.0602	
<b>WALL D &lt;RWALL-D&gt;</b>											
W1000	POT	WALL D	60+00.000						447,106.9299	172,274.3131	286° 36' 56.83"
W1001	POT	WALL D	61+52.500						446,960.7977	172,317.9208	
<b>WALL E &lt;RWALL-E&gt;</b>											
W1650	POT	WALL E	19+88.050						447,090.4405	172,859.1006	293° 49' 21.17"
W1651	POT		20+05.125						447,074.8205	172,865.9972	268° 37' 27.46"
W1652	POT		20+61.000						447,018.9614	172,864.6557	293° 49' 21.17"
W1653	PC		23+86.813						446,720.9078	172,996.2532	
W1654	PI		24+67.908	0° 48' 34.41" LT	0° 29' 56.94"	11,478.656'	81.095'	162.187'	446,646.7219	173,029.0079	PI
W1655	CC								442,084.6174	162,495.5697	
W1656	PT	WALL E	25+49.000						446,572.0807	173,060.7112	293° 00' 46.76"

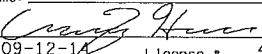
ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
			ANGLE (θs)	DEGREE	ST	LT	LS				
<b>WALL F &lt;RWALL-F&gt;</b>											
W1075	POT	WALL F	30+60.000						447,465.6027	173,620.5059	
W1076	PC		31+03.475						447,465.6848	173,577.0307	179° 53' 30.59"
W1077	PI		34+31.388	43° 46' 17.87" RT	7° 01' 08.52"	816.292'	327.912'	623.613'	447,466.3038	173,249.1189	PI
W1078	CC								446,649.3946	173,575.4896	
W1079	PT		37+27.089						447,239.9061	173,011.9046	223° 39' 48.46"
W1080	POT	WALL F	37+40.000						447,230.9919	173,002.5644	
<b>WALL G &lt;RWALL-G&gt;</b>											
W1876	PC	WALL G	39+40.000						447,526.2731	173,222.4227	21° 46' 08.78"
W1877	PI		41+22.486	21° 52' 38.19" LT	6° 04' 05.26"	944.208'	182.486'	360.528'	447,593.9513	173,391.8952	PI
W1878	CC								446,649.4001	173,572.5986	
W1879	PT		43+00.528						447,593.6068	173,574.3811	359° 53' 30.59"
W1880	POT	WALL G	44+00.001						447,593.4190	173,673.8543	

NOTES:  
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 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

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 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 ALIGNMENT TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 RETAINING WALL ALIGNMENTS

SHEET  
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 OF  
 586

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
			ANGLE (θs)	DEGREE	ST	LT	LS				
<b>BYPASS 1 &lt;BYPASS1&gt;</b>											
B1000	PC	BYPASS 1	10+00.000					447,325.3269	172,714.4511	113° 48' 17.15"	
B1001	PI		11+97.787	1° 58' 39.72" LT	0° 30' 00.02"	11,459.000'	197.787'	395.535'	447,506.2874	172,634.6201	PI
B1002	CC							451,950.4241	183,198.5895		
B1003	PT		13+95.535					447,689.8951	172,561.0816	111° 49' 37.43"	
B1004	PC		15+22.905					447,808.1342	172,513.7245	111° 49' 37.43"	
B1005	PI		21+07.254	14° 31' 45.40" RT	1° 14' 59.67"	4,584.000'	584.349'	1,162.428'	448,350.5911	172,296.4600	PI
B1006	CC							446,103.7739	168,258.3500		
B1007	PRC		26+85.333					448,821.1937	171,950.0550	126° 21' 22.83"	
B1007	PRC		26+85.333					448,821.1937	171,950.0550	126° 21' 22.83"	
B1008	PI		30+86.321	9° 59' 54.62" LT	1° 14' 59.67"	4,584.000'	400.988'	799.939'	449,144.1276	171,712.3472	PI
B1009	CC							451,538.6136	175,641.7599		
B1010	PT	BYPASS 1	34+85.272					449,503.4282	171,534.3183	116° 21' 28.20"	
<b>BYPASS 2 &lt;BYPASS2&gt;</b>											
B1020	PC	BYPASS 2	20+00.000					446,489.1650	172,547.2524	112° 59' 17.72"	
B1021	PI		20+82.634	30° 48' 00.20" LT	19° 05' 54.94"	300.000'	82.634'	161.269'	446,565.2365	172,514.9804	PI
B1022	CC							446,606.3277	172,823.4279		
B1023	PRC		21+61.269					446,647.1036	172,526.2120	82° 11' 17.52"	
B1023	PRC		21+61.269					446,647.1036	172,526.2120	82° 11' 17.52"	
B1024	PI		23+34.601	60° 02' 11.56" RT	19° 05' 54.94"	300.000'	173.333'	314.351'	446,818.8277	172,549.7713	PI
B1025	CC							446,687.8795	172,228.9960		
B1026	PRC		24+75.619					446,925.0054	172,412.7657	142° 13' 29.08"	
B1026	PRC		24+75.619					446,925.0054	172,412.7657	142° 13' 29.08"	
B1027	PI		25+55.345	29° 45' 54.13" LT	19° 05' 54.94"	300.000'	79.726'	155.849'	446,973.8427	172,349.7489	PI
B1028	CC							447,162.1313	172,596.5355		
B1029	PT		26+31.469					447,047.5212	172,319.2909	112° 27' 34.95"	
B1030	PC		29+38.974					447,331.7021	172,201.8134	112° 27' 34.95"	
B1031	PI		31+48.636	7° 59' 43.79" RT	1° 54' 35.49"	3,000.000'	209.662'	418.643'	447,525.4609	172,121.7155	PI
B1032	CC							446,185.6012	169,429.3681		
B1033	PT	BYPASS 2	33+57.618					447,706.1949	172,015.4452	120° 27' 18.74"	
<b>BYPASS 3 &lt;BYPASS3&gt;</b>											
B1040	PC	BYPASS 3	30+00.000					444,231.3768	174,079.3529	113° 48' 17.15"	
B1041	PI		33+04.931	6° 05' 32.70" RT	0° 59' 59.73"	5,730.000'	304.931'	609.287'	444,510.3658	173,956.2764	PI
B1042	CC							441,918.6264	168,836.8263		
B1043	PRC		36+09.287					444,774.7167	173,804.2853	119° 53' 49.85"	
B1043	PRC		36+09.287					444,774.7167	173,804.2853	119° 53' 49.85"	
B1044	PI		41+74.702	8° 27' 58.61" LT	0° 45' 00.15"	7,639.000'	565.416'	1,128.773'	445,264.8874	173,522.4567	PI
B1045	CC							448,582.3385	180,426.6970		
B1046	PRC		47+38.059					445,791.2095	173,315.8658	111° 25' 51.24"	
B1046	PRC		47+38.059					445,791.2095	173,315.8658	111° 25' 51.24"	
B1047	PI		49+75.133	2° 22' 13.55" RT	0° 30' 00.02"	11,459.000'	237.074'	474.080'	446,011.8916	173,229.2441	PI
B1048	CC							441,604.3334	162,649.1536		
B1049	PT		52+12.139					446,228.8021	173,133.5692	113° 48' 04.78"	
B1050	POT	BYPASS 3	55+03.417					446,495.3074	173,016.0189		

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH	
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y		
			SPIRAL CURVE DATA								
			ANGLE (θs)	DEGREE	ST	LT	LS				
<b>BYPASS 4 &lt;BYPASS4&gt;</b>											
B1060	POT	BYPASS 4	40+00.000						447,518.7748	172,680.5113	
B1061	PC		40+41.189						447,532.9413	172,719.1872	20° 07' 01.86"
B1062	PI		40+57.595	18° 38' 01.87" LT	57° 17' 44.81"	100.000'	16.406'	32.522'	447,538.5840	172,734.5923	PI
B1063	CC								447,439.0422	172,753.5814	
B1064	PT		40+73.711						447,539.0087	172,750.9927	1° 29' 00.00"
B1065	PC		44+44.684						447,548.6117	173,121.8419	4° 06' 31.20"
B1066	PI		47+41.011	9° 26' 47.46" LT	1° 35' 51.22"	3,586.456'	296.326'	591.309'	447,569.8430	173,417.4064	PI
B1067	CC								443,971.3730	173,378.8054	
B1068	PCC		50+35.994						447,542.2763	173,712.4475	354° 39' 43.74"
B1068	PCC		50+35.994						447,542.2763	173,712.4475	354° 39' 43.74"
B1069	PI		50+68.754	18° 04' 19.42" LT	27° 48' 48.55"	206.000'	32.760'	64.976'	447,539.2287	173,745.0655	PI
B1070	CC								447,337.1696	173,693.2837	
B1071	PRC		51+00.969						447,526.2129	173,775.1288	336° 35' 24.32"
B1071	PRC		51+00.969						447,526.2129	173,775.1288	336° 35' 24.32"
B1072	PI		51+40.803	23° 12' 21.85" RT	29° 32' 02.07"	194.000'	39.833'	78.574'	447,510.3869	173,811.6832	PI
B1073	CC								447,704.2440	173,852.2063	
B1074	PT		51+79.544						447,510.2452	173,851.5161	359° 47' 46.16"
B1075	POT	BYPASS 4	59+71.733						447,507.4268	174,643.6999	

NOTES:  
 ① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND WILL NOT SHOW UP ON ALIGNMENT PLAN VIEW.  
 <XXXX> INDICATES GEOPAK ALIGNMENT NAME.

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NO	DATE	BY	CKD	APPR	REVISION

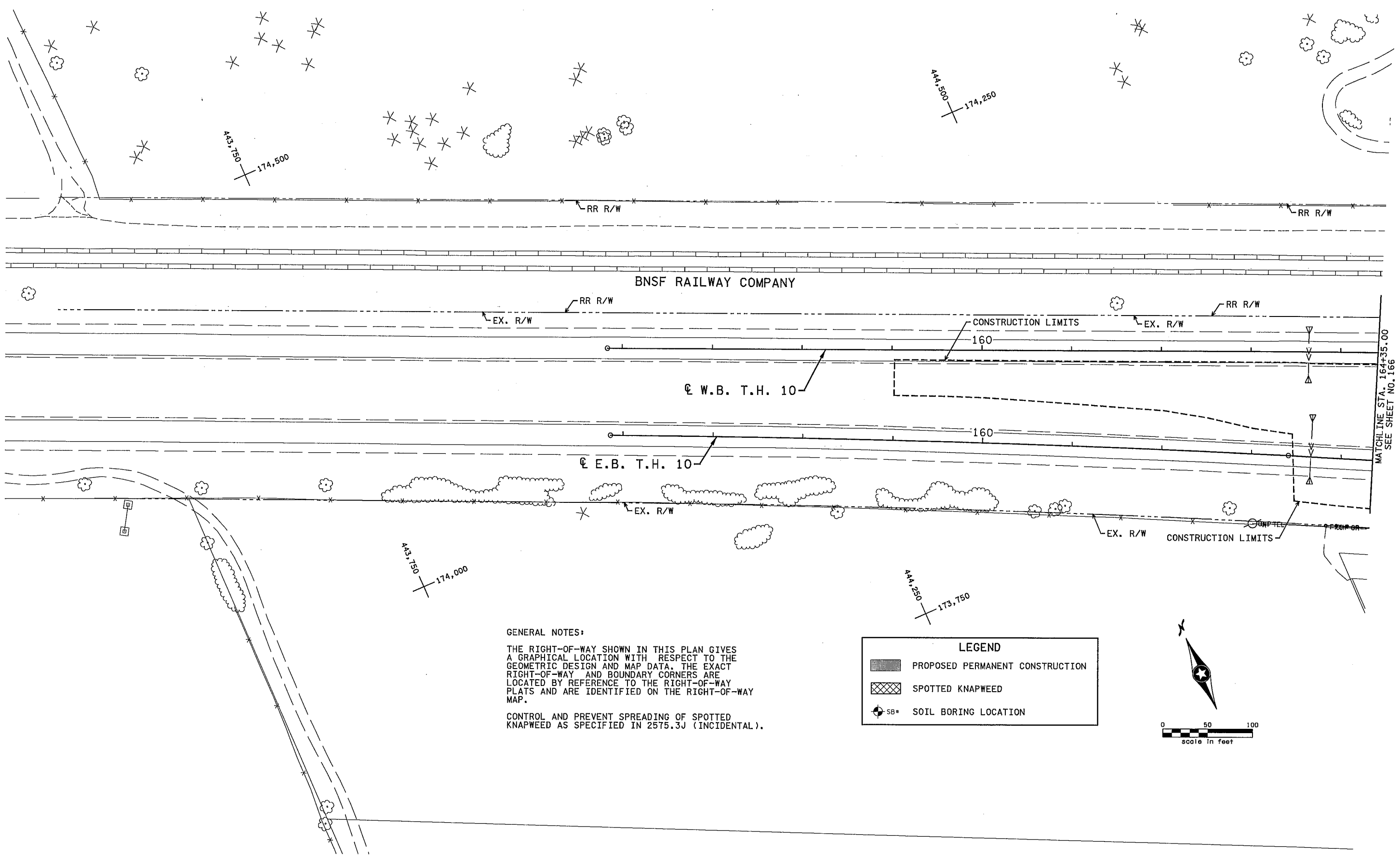
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Pr Int Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 ALIGNMENT TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 BYPASS ALIGNMENTS

SHEET 164 OF 586



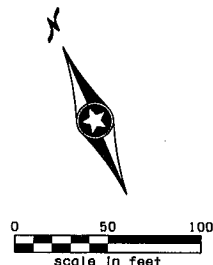
**GENERAL NOTES:**

THE RIGHT-OF-WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT-OF-WAY AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT-OF-WAY PLATS AND ARE IDENTIFIED ON THE RIGHT-OF-WAY MAP.

CONTROL AND PREVENT SPREADING OF SPOTTED KNAPWEED AS SPECIFIED IN 2575.3J (INCIDENTAL).

**LEGEND**

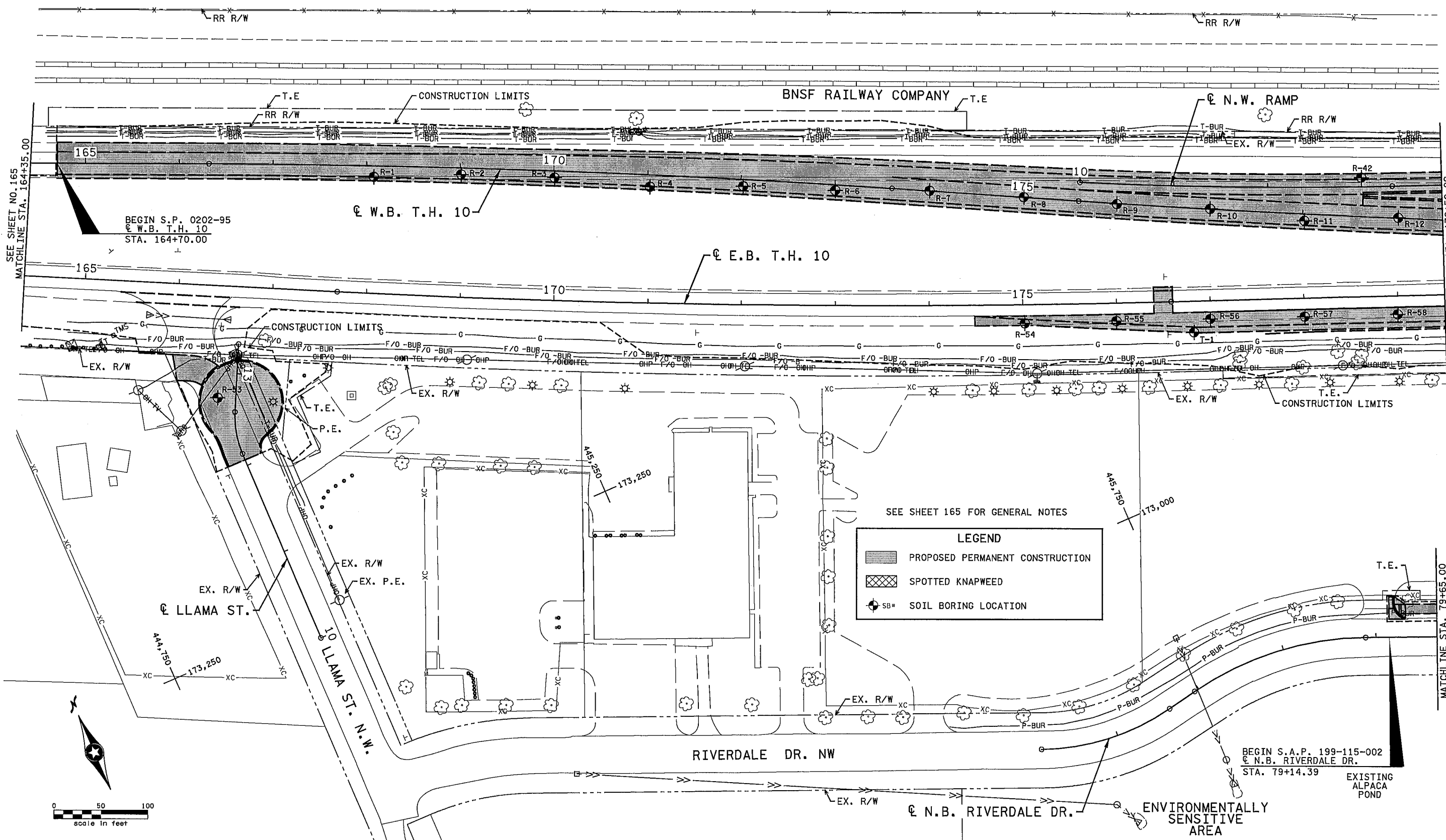
- PROPOSED PERMANENT CONSTRUCTION
- SPOTTED KNAPWEED
- SOIL BORING LOCATION



MATCHLINE STA. 164+35.00  
SEE SHEET NO. 166

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<table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHKD</th> <th>APPR</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					NO	DATE	BY	CHKD	APPR						REVISION ... \CAD_BIM\Plan\B259_top01.dgn		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: CRAIG J. HASS  Date: 09-12-18 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY S. MARTINS DESIGNED BY D. SYMANIETZ CHECKED BY C. HASS COMM. NO. 0138259				ANOKA COUNTY ENGINEERS PLANNERS DESIGNERS TOPOGRAPHY AND UTILITY PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE		SHEET 165 OF 586	
NO	DATE	BY	CHKD	APPR																								



SEE SHEET NO. 165  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 167

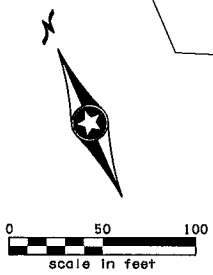
MATCHLINE STA. 79+65.00  
SEE SHEET NO. 167

BEGIN S.P. 0202-95  
W.B. T.H. 10  
STA. 164+70.00

BEGIN S.A.P. 199-115-002  
N.B. RIVERDALE DR.  
STA. 79+14.39

SEE SHEET 165 FOR GENERAL NOTES

LEGEND	
	PROPOSED PERMANENT CONSTRUCTION
	SPOTTED KNAPWEED
	SOIL BORING LOCATION



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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.  
 Prt Int Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
S. MARTINS  
 DESIGNED BY  
D. SYMANIETZ  
 CHECKED BY  
C. HASS  
 COMM. NO. 0138259

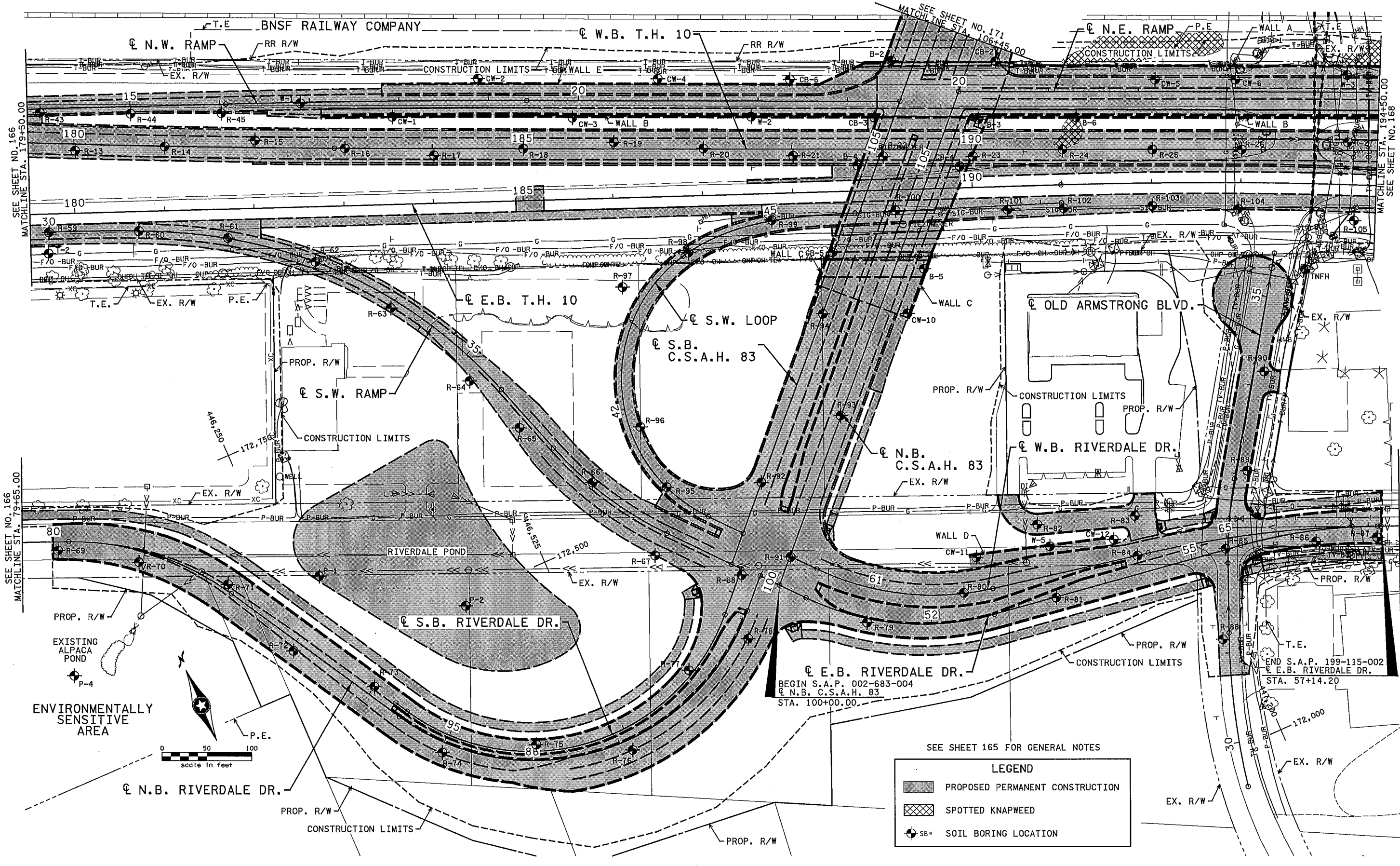


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PLANNERS  
DESIGNERS

ANOKA COUNTY  
TOPOGRAPHY AND UTILITY PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
166  
OF  
586



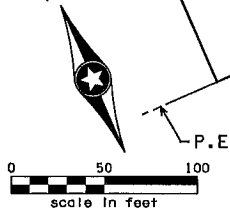


SEE SHEET NO. 166  
MATCHLINE STA. 179+50.00

MATCHLINE STA. 194+50.00  
SEE SHEET NO. 168

SEE SHEET NO. 166  
MATCHLINE STA. 79+65.00

MATCHLINE STA. 57+35.00  
SEE SHEET NO. 168



SEE SHEET 165 FOR GENERAL NOTES

**LEGEND**

- PROPOSED PERMANENT CONSTRUCTION
- SPOTTED KNAPWEED
- SB# SOIL BORING LOCATION

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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: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

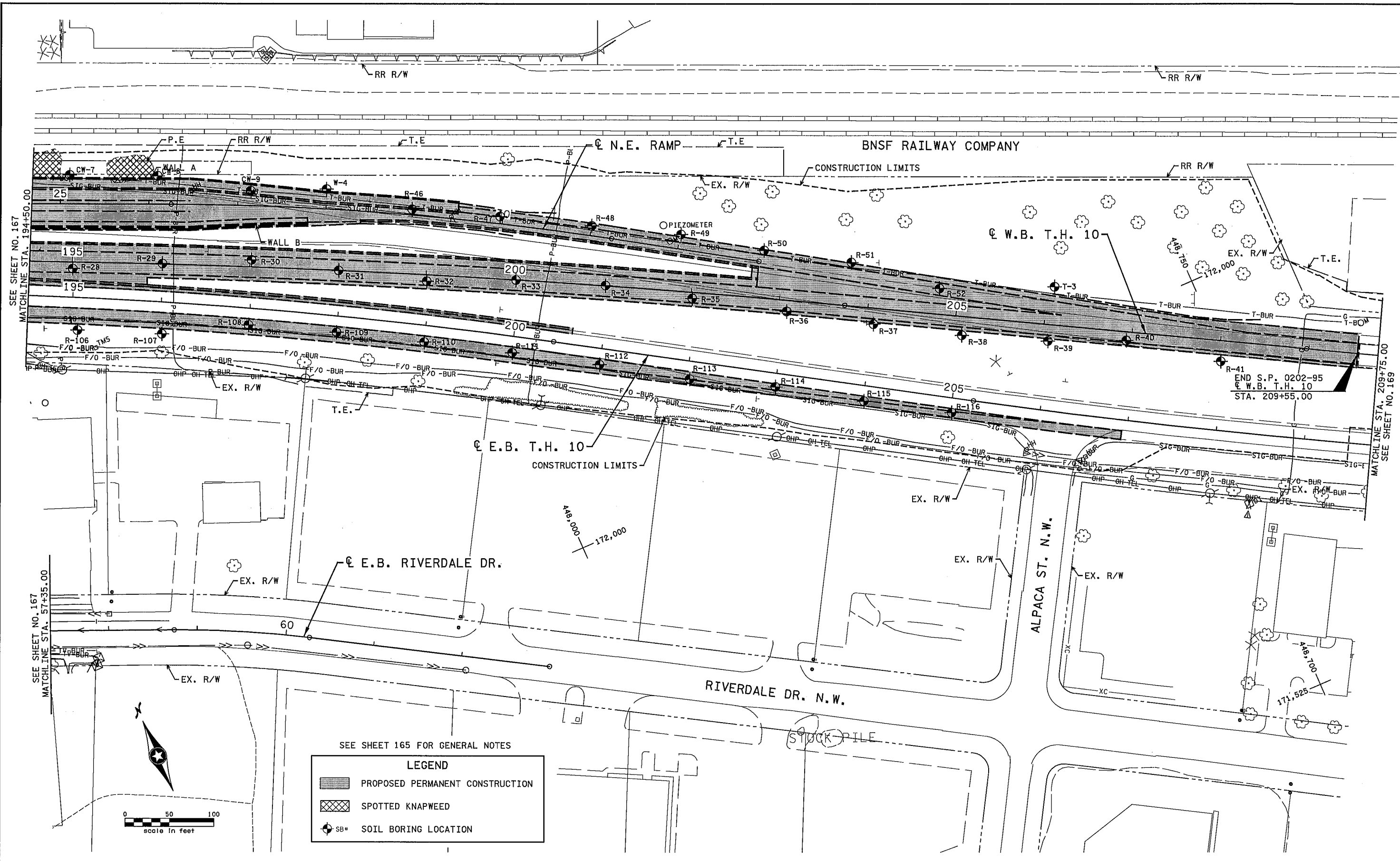
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259

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ANOKA COUNTY  
TOPOGRAPHY AND UTILITY PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 167 OF 586



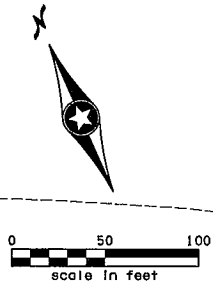
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MATCHLINE STA. 194+50.00

MATCHLINE STA. 209+75.00  
SEE SHEET NO. 169

SEE SHEET NO. 167  
MATCHLINE STA. 57+35.00

SEE SHEET 165 FOR GENERAL NOTES

LEGEND	
	PROPOSED PERMANENT CONSTRUCTION
	SPOTTED KNAPWEED
	SOIL BORING LOCATION



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Print Name: **CRAIG J. HASS**

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259

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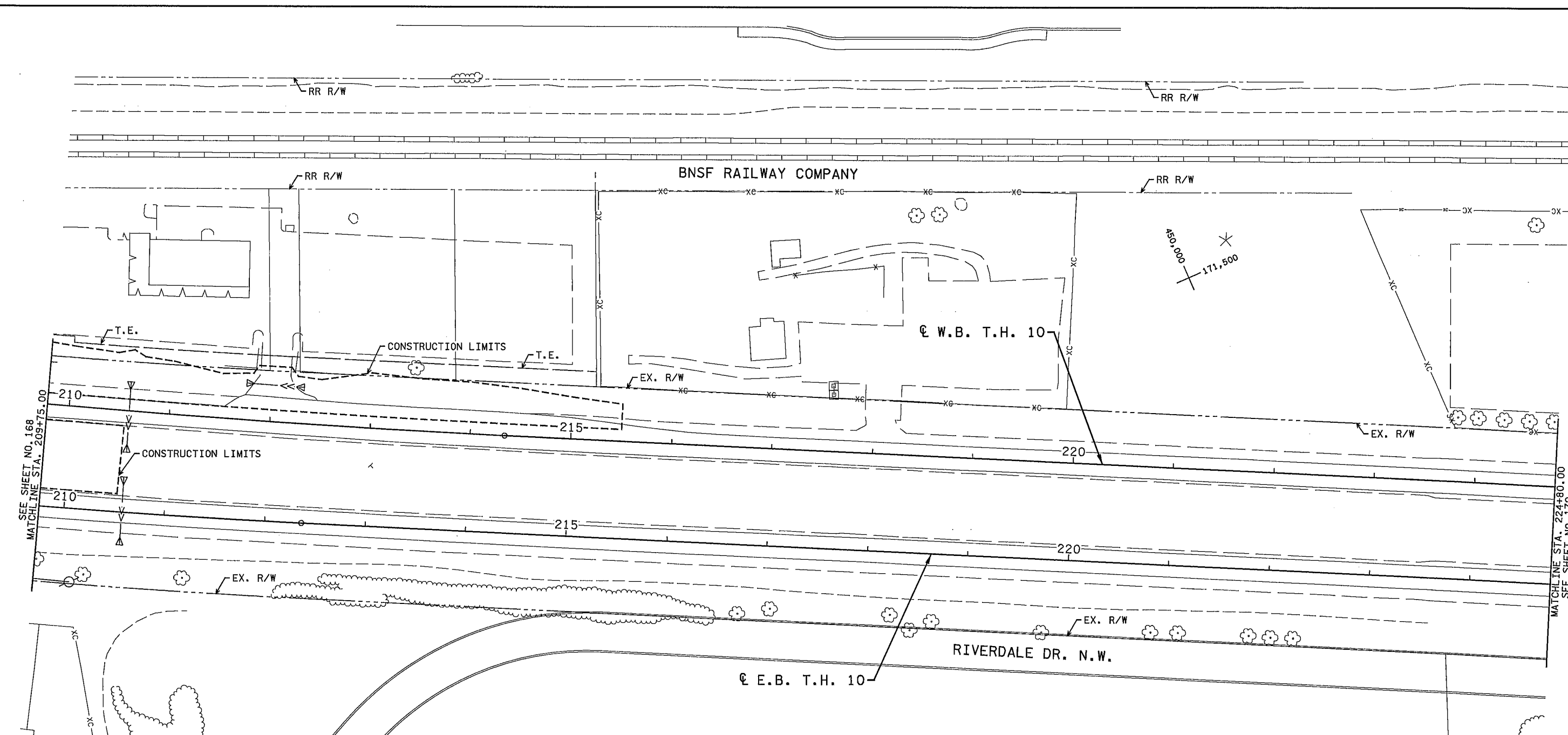
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TOPOGRAPHY AND UTILITY PLANS




T.H. 10 / C.S.A.H. 83 INTERCHANGE

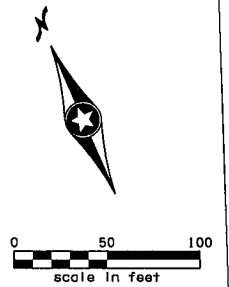
SHEET 168 OF 586



SEE SHEET 165 FOR GENERAL NOTES

**LEGEND**

-  PROPOSED PERMANENT CONSTRUCTION
-  SPOTTED KNAPWEED
-  SB\* SOIL BORING LOCATION



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Print Name: **CRAIG J. HASS**

*Craig J. Hass*

Date: 09-12-18 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

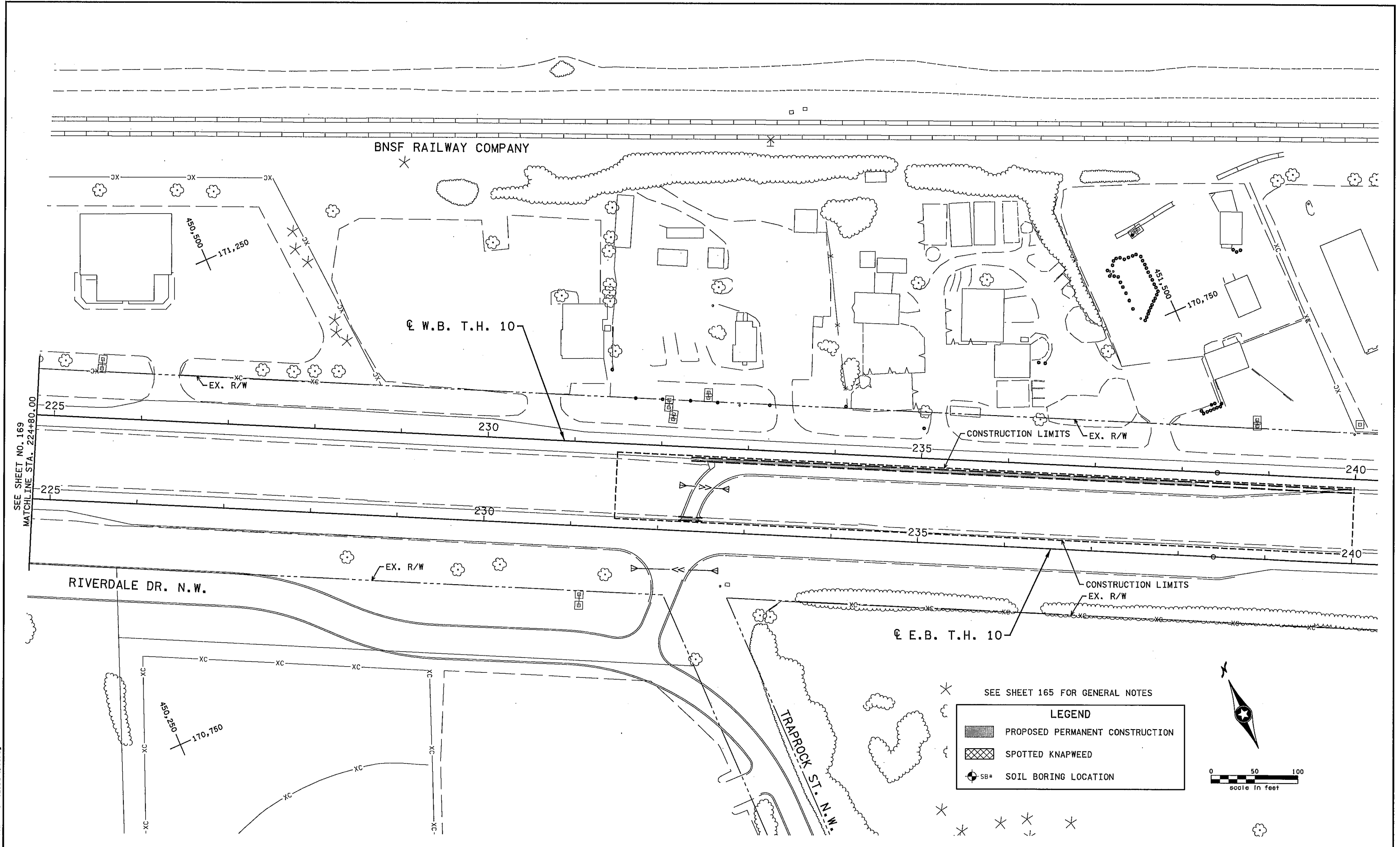
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ANOKA COUNTY

TOPOGRAPHY AND UTILITY PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
169  
OF  
586

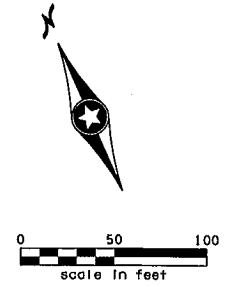


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SEE SHEET 165 FOR GENERAL NOTES

LEGEND	
	PROPOSED PERMANENT CONSTRUCTION
	SPOTTED KNAPWEED
	SOIL BORING LOCATION



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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

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DESIGNERS

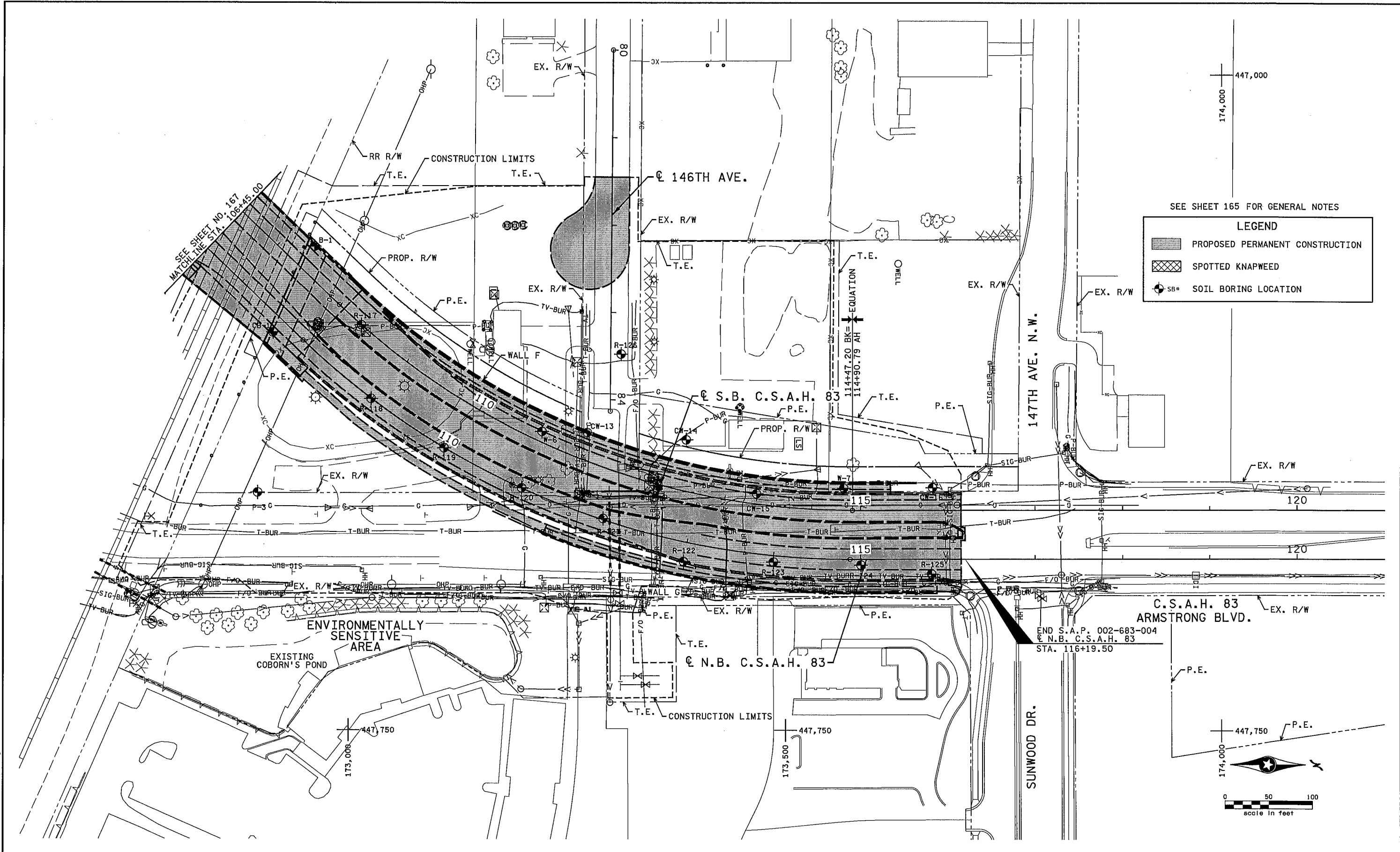
ANOKA COUNTY

TOPOGRAPHY AND UTILITY PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE




SHEET  
170  
OF  
586





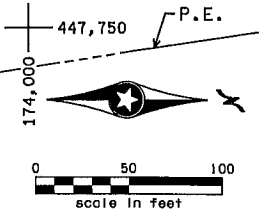
SEE SHEET 165 FOR GENERAL NOTES

**LEGEND**

-  PROPOSED PERMANENT CONSTRUCTION
-  SPOTTED KNAPWEED
-  SB\* SOIL BORING LOCATION

C.S.A.H. 83  
ARMSTRONG BLVD.

END S.A.P. 002-683-004  
C.S.A.H. 83  
STA. 116+19.50



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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

**SRF** ENGINEERS  
PLANNERS  
DESIGNERS

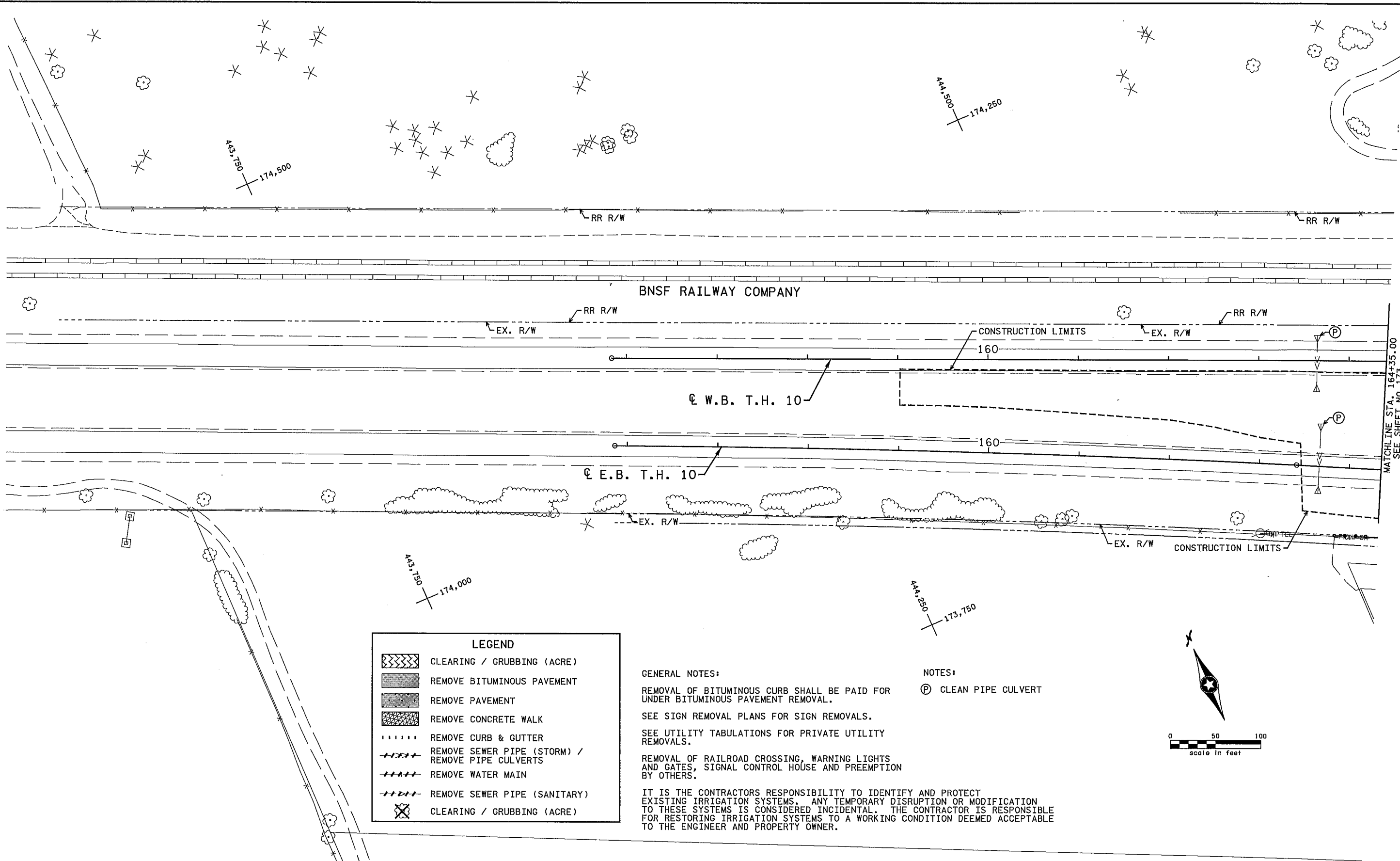
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ANOKA COUNTY

TOPOGRAPHY AND UTILITY PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
171  
OF  
586



**LEGEND**

	CLEARING / GRUBBING (ACRE)
	REMOVE BITUMINOUS PAVEMENT
	REMOVE PAVEMENT
	REMOVE CONCRETE WALK
	REMOVE CURB & GUTTER
	REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
	REMOVE WATER MAIN
	REMOVE SEWER PIPE (SANITARY)
	CLEARING / GRUBBING (ACRE)

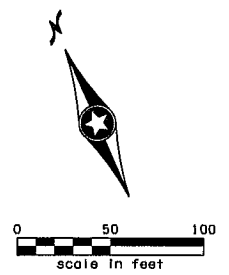
**GENERAL NOTES:**

REMOVAL OF BITUMINOUS CURB SHALL BE PAID FOR UNDER BITUMINOUS PAVEMENT REMOVAL.  
 SEE SIGN REMOVAL PLANS FOR SIGN REMOVALS.  
 SEE UTILITY TABULATIONS FOR PRIVATE UTILITY REMOVALS.  
 REMOVAL OF RAILROAD CROSSING, WARNING LIGHTS AND GATES, SIGNAL CONTROL HOUSE AND PREEMPTION BY OTHERS.

**NOTES:**

(P) CLEAN PIPE CULVERT

IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY AND PROTECT EXISTING IRRIGATION SYSTEMS. ANY TEMPORARY DISRUPTION OR MODIFICATION TO THESE SYSTEMS IS CONSIDERED INCIDENTAL. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING IRRIGATION SYSTEMS TO A WORKING CONDITION DEEMED ACCEPTABLE TO THE ENGINEER AND PROPERTY OWNER.



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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: **CRAIG J. HASS**  
*Craig J. Hass*  
 Date: **09-12-14** License #: **45039**

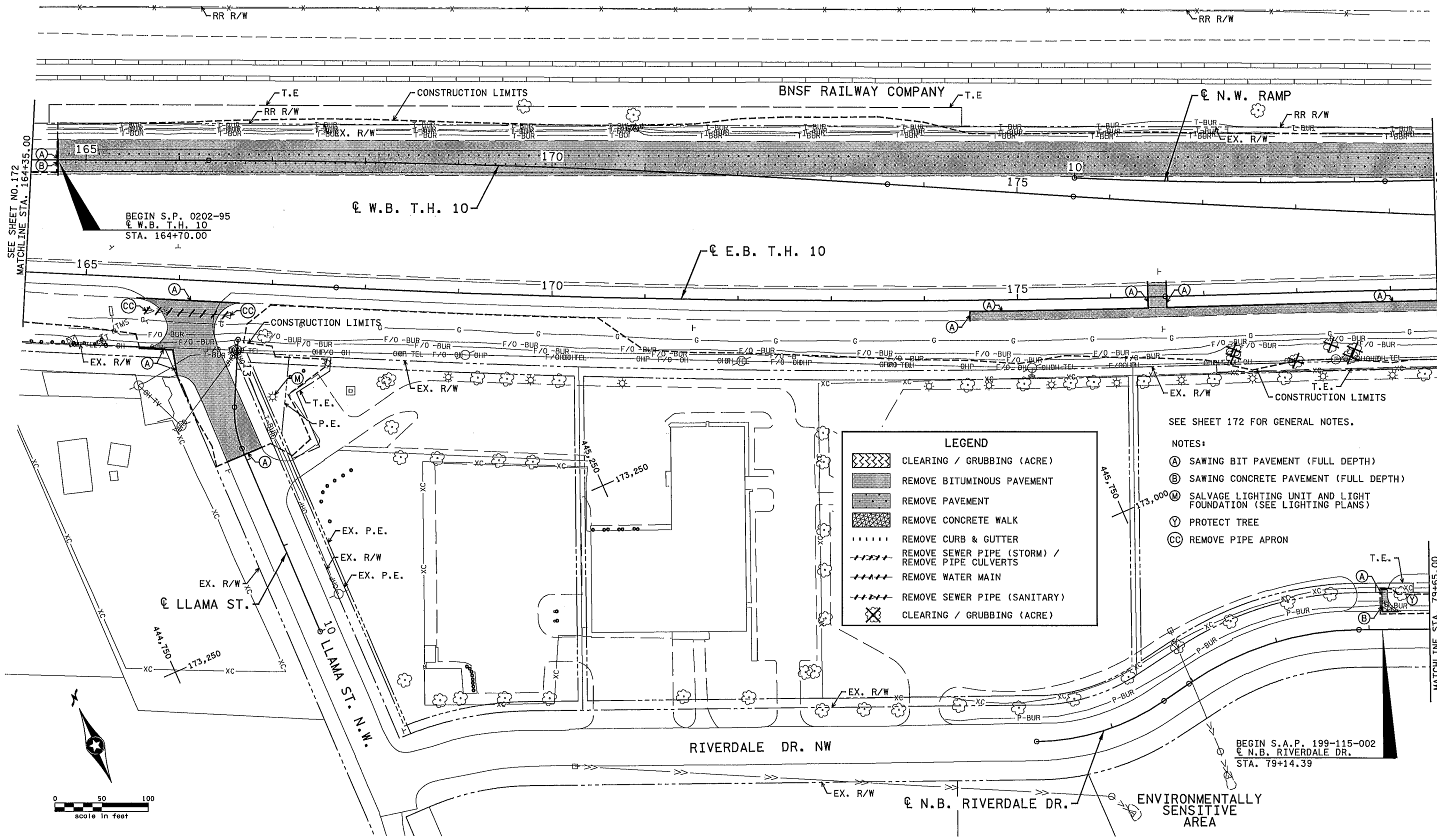
STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
**S. MARTINS**  
 DESIGNED BY  
**D. SYMANIETZ**  
 CHECKED BY  
**C. HASS**  
 COMM. NO. 0138259

**SRE**  
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**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
 REMOVAL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**  
172  
OF  
586



SEE SHEET NO. 172  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 174

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 174

BEGIN S.P. 0202-95  
C/W.B. T.H. 10  
STA. 164+70.00

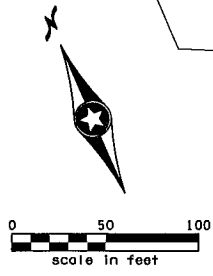
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C/N.B. RIVERDALE DR.  
STA. 79+14.39

**LEGEND**

- CLEARING / GRUBBING (ACRE)
- REMOVE BITUMINOUS PAVEMENT
- REMOVE PAVEMENT
- REMOVE CONCRETE WALK
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE SEWER PIPE (SANITARY)
- CLEARING / GRUBBING (ACRE)

SEE SHEET 172 FOR GENERAL NOTES.

- NOTES:**
- (A) SAWING BIT PAVEMENT (FULL DEPTH)
  - (B) SAWING CONCRETE PAVEMENT (FULL DEPTH)
  - (M) SALVAGE LIGHTING UNIT AND LIGHT FOUNDATION (SEE LIGHTING PLANS)
  - (Y) PROTECT TREE
  - (CC) REMOVE PIPE APRON



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **CRAIG J. HASS**

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

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PLANNERS  
DESIGNERS

Consulting Group, Inc.

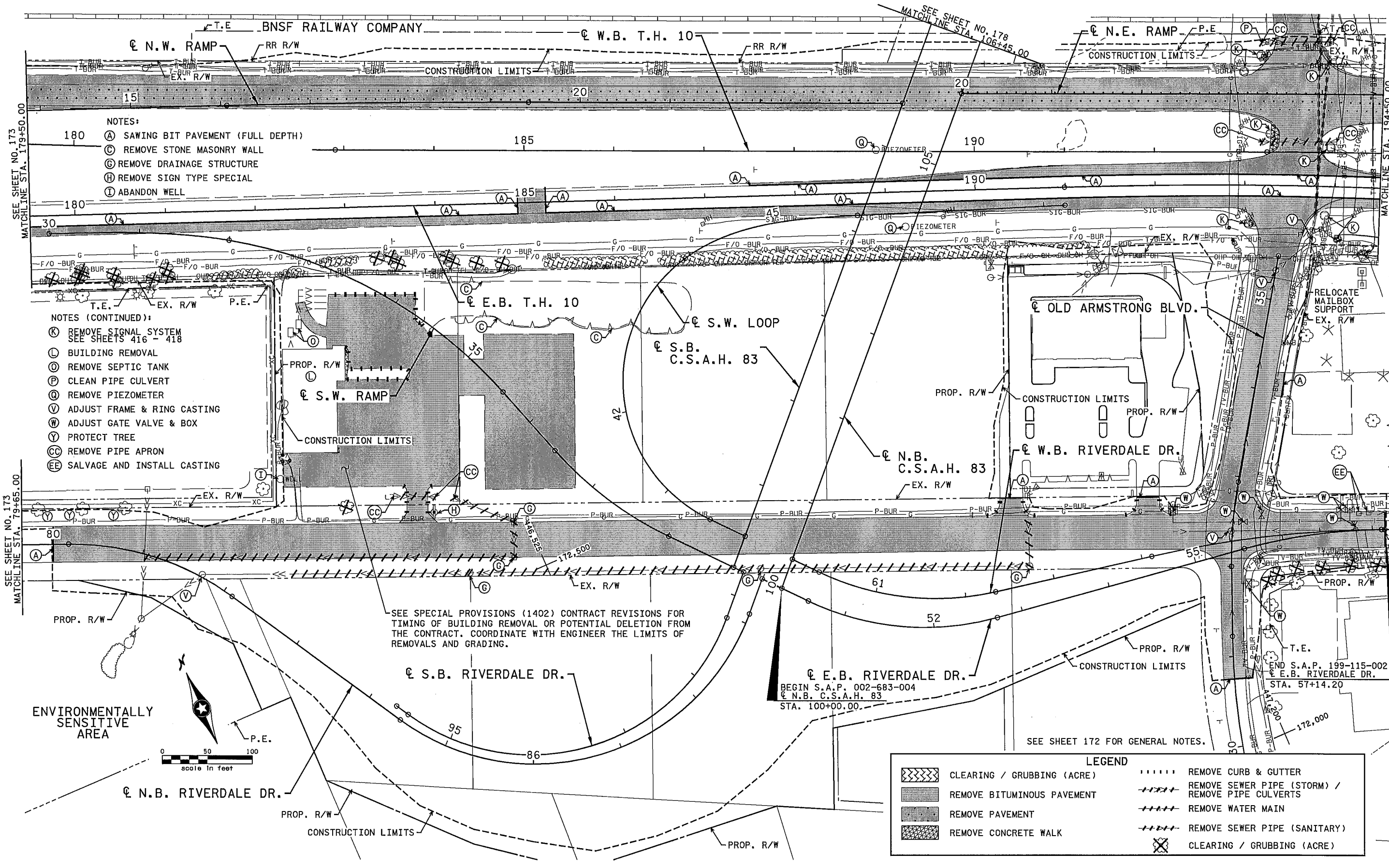
**ANOKA COUNTY**

REMOVAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

**SHEET**

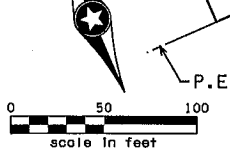
173  
OF  
586



- NOTES:
- (A) SAWING BIT PAVEMENT (FULL DEPTH)
  - (C) REMOVE STONE MASONRY WALL
  - (E) REMOVE DRAINAGE STRUCTURE
  - (H) REMOVE SIGN TYPE SPECIAL
  - (I) ABANDON WELL

- NOTES (CONTINUED):
- (K) REMOVE SIGNAL SYSTEM SEE SHEETS 416 - 418
  - (L) BUILDING REMOVAL
  - (O) REMOVE SEPTIC TANK
  - (P) CLEAN PIPE CULVERT
  - (Q) REMOVE PIEZOMETER
  - (V) ADJUST FRAME & RING CASTING
  - (W) ADJUST GATE VALVE & BOX
  - (Y) PROTECT TREE
  - (CC) REMOVE PIPE APRON
  - (EE) SALVAGE AND INSTALL CASTING

SEE SPECIAL PROVISIONS (1402) CONTRACT REVISIONS FOR TIMING OF BUILDING REMOVAL OR POTENTIAL DELETION FROM THE CONTRACT. COORDINATE WITH ENGINEER THE LIMITS OF REMOVALS AND GRADING.



LEGEND

	CLEARING / GRUBBING (ACRE)		REMOVE CURB & GUTTER
	REMOVE BITUMINOUS PAVEMENT		REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
	REMOVE PAVEMENT		REMOVE WATER MAIN
	REMOVE CONCRETE WALK		REMOVE SEWER PIPE (SANITARY)
			CLEARING / GRUBBING (ACRE)

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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig J. Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY T. BOROWICZ

CHECKED BY C. HASS

COMM. NO. 0138259



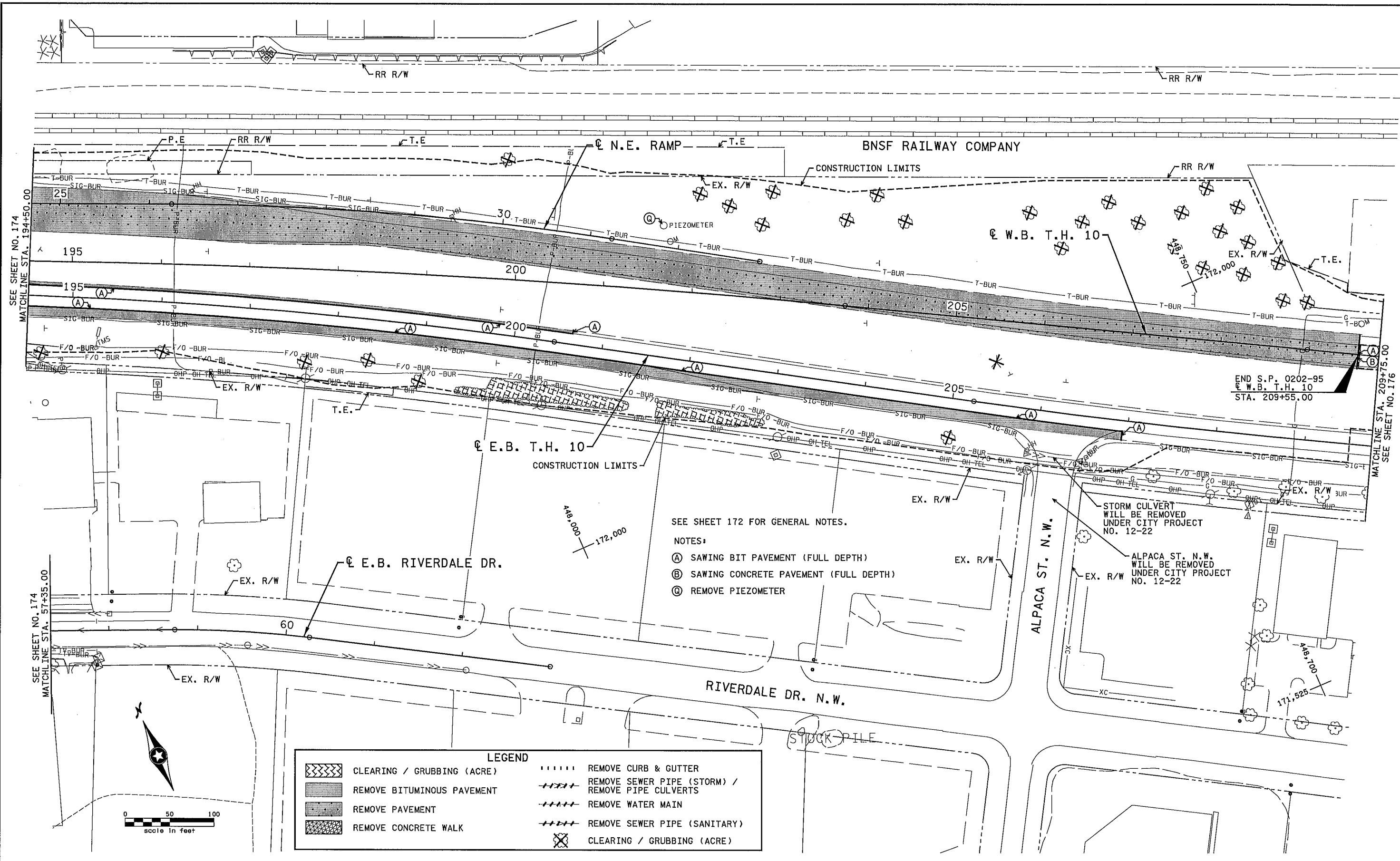
ANOKA COUNTY

REMOVAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 174 OF 586





SEE SHEET 172 FOR GENERAL NOTES.

NOTES:

- (A) SAWING BIT PAVEMENT (FULL DEPTH)
- (B) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (C) REMOVE PIEZOMETER

LEGEND	
	CLEARING / GRUBBING (ACRE)
	REMOVE CURB & GUTTER
	REMOVE BITUMINOUS PAVEMENT
	REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
	REMOVE PAVEMENT
	REMOVE WATER MAIN
	REMOVE CONCRETE WALK
	REMOVE SEWER PIPE (SANITARY)
	CLEARING / GRUBBING (ACRE)

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: CRAIG J. HASS

*Craig J. Hass*

Date 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259



ANOKA COUNTY

REMOVAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 175 OF 586

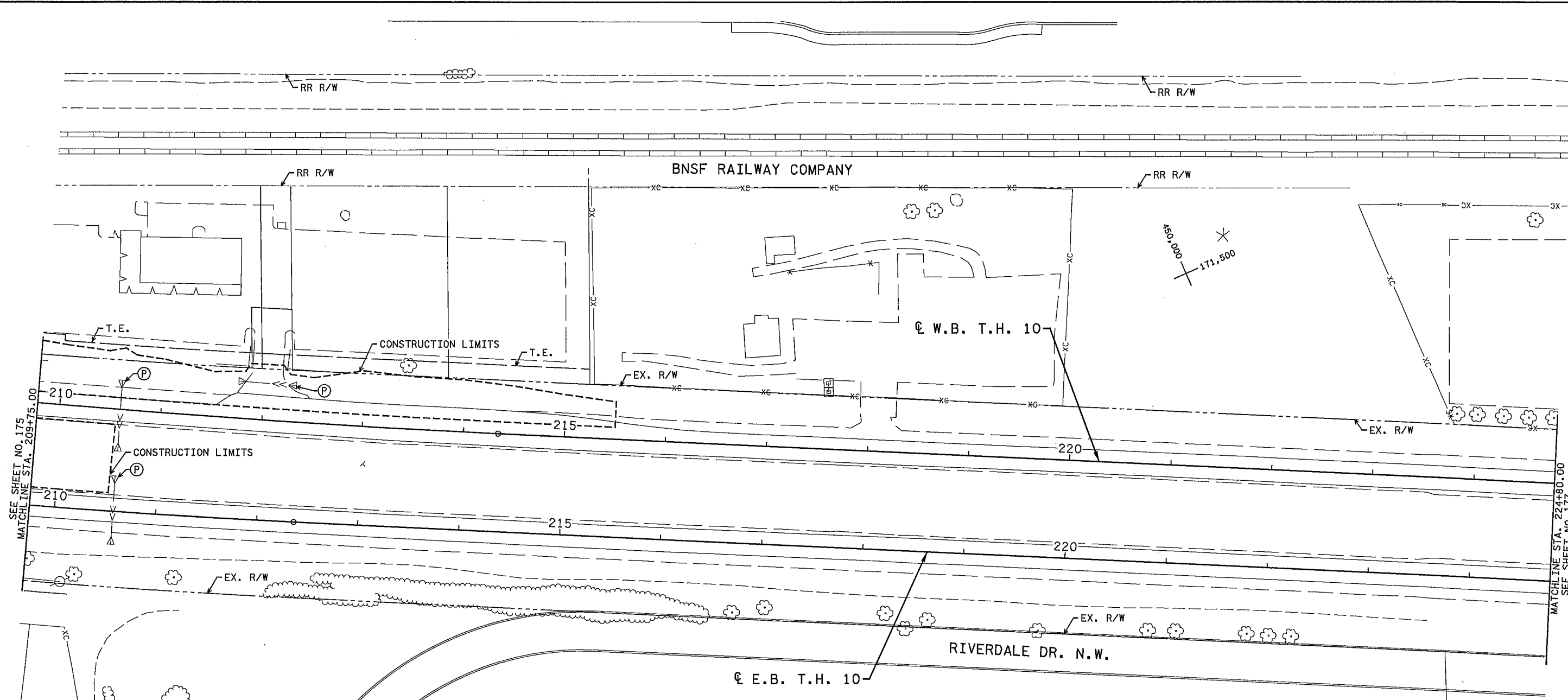
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SEE SHEET NO. 174  
 MATCHLINE STA. 194+50.00

SEE SHEET NO. 174  
 MATCHLINE STA. 57+35.00

MATCHLINE STA. 209+75.00  
 SEE SHEET NO. 176

END S.P. 0202-95  
 W.B. T.H. 10  
 STA. 209+55.00



SEE SHEET 172 FOR GENERAL NOTES.

- NOTES:  
 (P) CLEAN PIPE CULVERT

LEGEND	
	CLEARING / GRUBBING (ACRE)
	REMOVE BITUMINOUS PAVEMENT
	REMOVE PAVEMENT
	REMOVE CONCRETE WALK
	REMOVE CURB & GUTTER
	REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
	REMOVE WATER MAIN
	REMOVE SEWER PIPE (SANITARY)
	CLEARING / GRUBBING (ACRE)

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 Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date 09-12-18 License # 45039

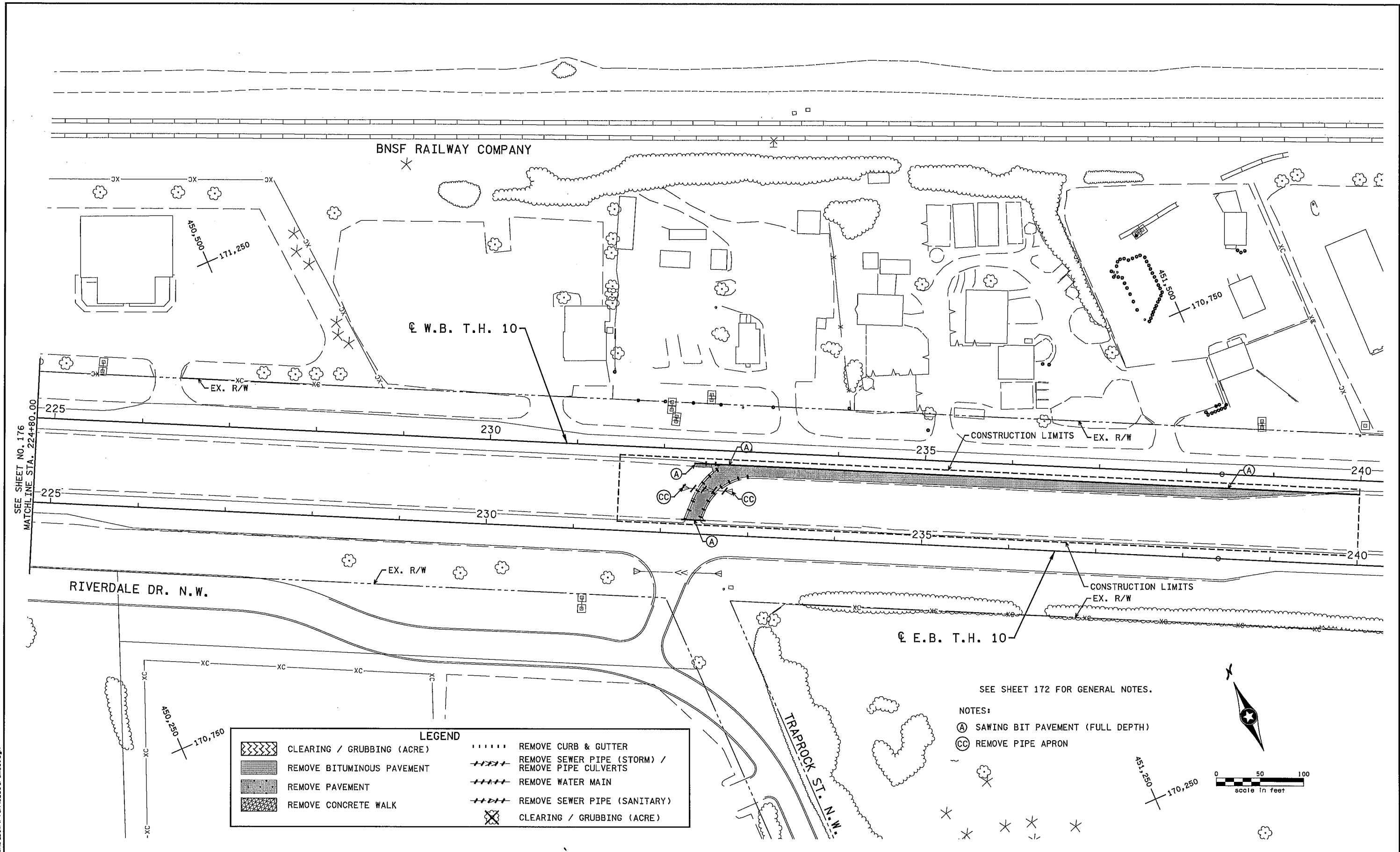
STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
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 DESIGNERS  
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ANOKA COUNTY  
 REMOVAL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 176  
 OF  
 586

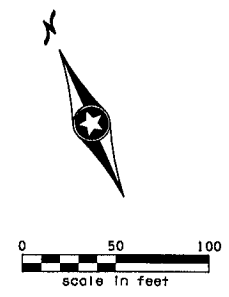


**LEGEND**

	CLEARING / GRUBBING (ACRE)		REMOVE CURB & GUTTER
	REMOVE BITUMINOUS PAVEMENT		REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
	REMOVE PAVEMENT		REMOVE WATER MAIN
	REMOVE CONCRETE WALK		REMOVE SEWER PIPE (SANITARY)
	CLEARING / GRUBBING (ACRE)		

SEE SHEET 172 FOR GENERAL NOTES.

- NOTES:
- (A) SAWING BIT PAVEMENT (FULL DEPTH)
  - (CC) REMOVE PIPE APRON



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Print Name: **CRAIG J. HASS**

*Craig J. Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**D. SYMANIETZ**

CHECKED BY  
**C. HASS**

COMM. NO. **0138259**

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

Consulting Group, Inc.

**ANOKA COUNTY**

REMOVAL PLANS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**177**  
OF  
**586**

SEE SHEET 172 FOR GENERAL NOTES.

NOTES:

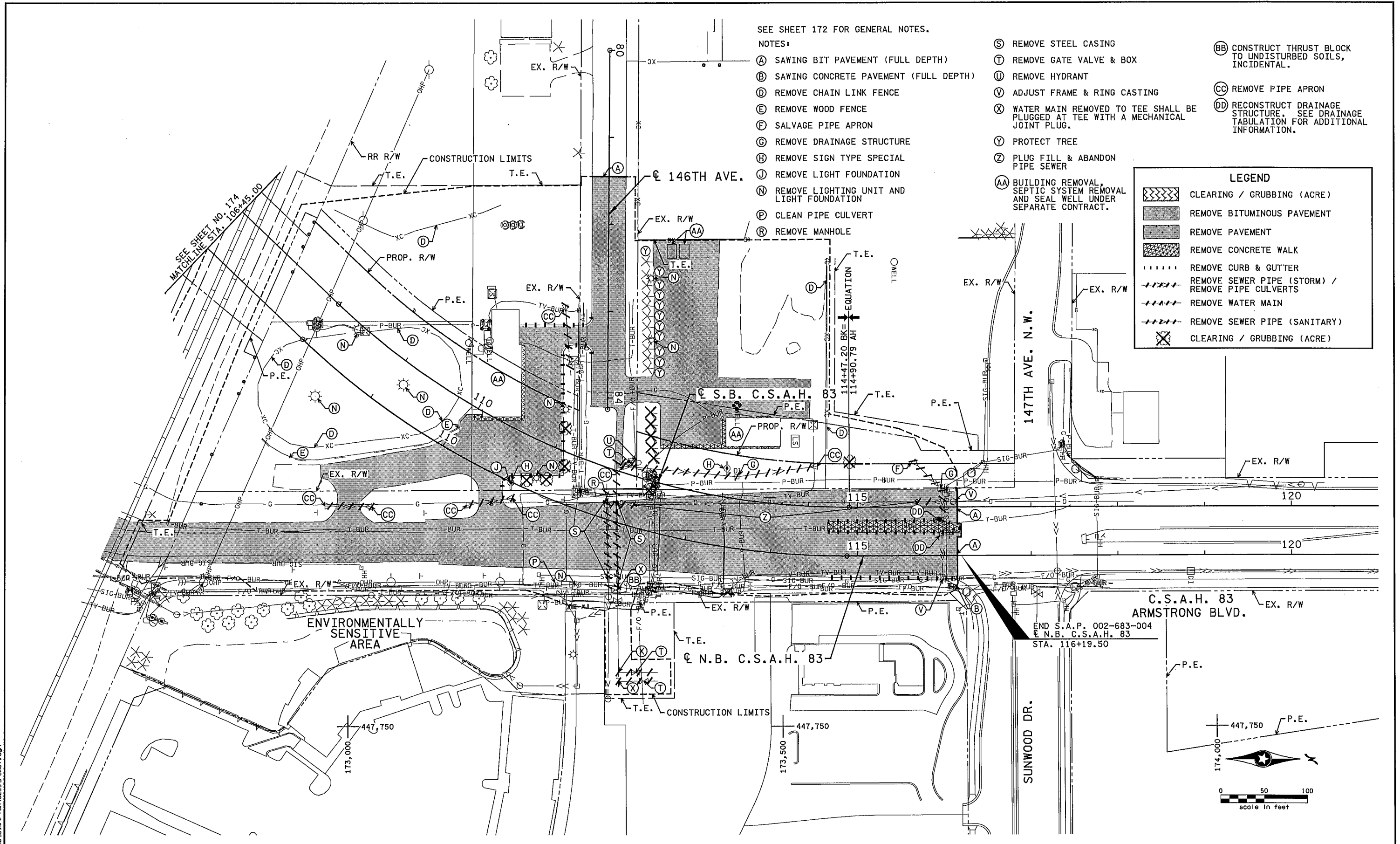
- (A) SAWING BIT PAVEMENT (FULL DEPTH)
- (B) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (D) REMOVE CHAIN LINK FENCE
- (E) REMOVE WOOD FENCE
- (F) SALVAGE PIPE APRON
- (G) REMOVE DRAINAGE STRUCTURE
- (H) REMOVE SIGN TYPE SPECIAL
- (J) REMOVE LIGHT FOUNDATION
- (N) REMOVE LIGHTING UNIT AND LIGHT FOUNDATION
- (P) CLEAN PIPE CULVERT
- (R) REMOVE MANHOLE

- (S) REMOVE STEEL CASING
- (T) REMOVE GATE VALVE & BOX
- (U) REMOVE HYDRANT
- (V) ADJUST FRAME & RING CASTING
- (X) WATER MAIN REMOVED TO TEE SHALL BE PLUGGED AT TEE WITH A MECHANICAL JOINT PLUG.
- (Y) PROTECT TREE
- (Z) PLUG FILL & ABANDON PIPE SEWER
- (AA) BUILDING REMOVAL, SEPTIC SYSTEM REMOVAL AND SEAL WELL UNDER SEPARATE CONTRACT.

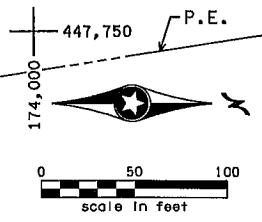
- (BB) CONSTRUCT THRUST BLOCK TO UNDISTURBED SOILS, INCIDENTAL.
- (CC) REMOVE PIPE APRON
- (DD) RECONSTRUCT DRAINAGE STRUCTURE. SEE DRAINAGE TABULATION FOR ADDITIONAL INFORMATION.

**LEGEND**

- CLEARING / GRUBBING (ACRE)
- REMOVE BITUMINOUS PAVEMENT
- REMOVE PAVEMENT
- REMOVE CONCRETE WALK
- REMOVE CURB & GUTTER
- REMOVE SEWER PIPE (STORM) / REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE SEWER PIPE (SANITARY)
- CLEARING / GRUBBING (ACRE)



C.S.A.H. 83  
 ARMSTRONG BLVD.  
 END S.A.P. 002-683-004  
 N.B. C.S.A.H. 83  
 STA. 116+19.50



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Print Name: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 193-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

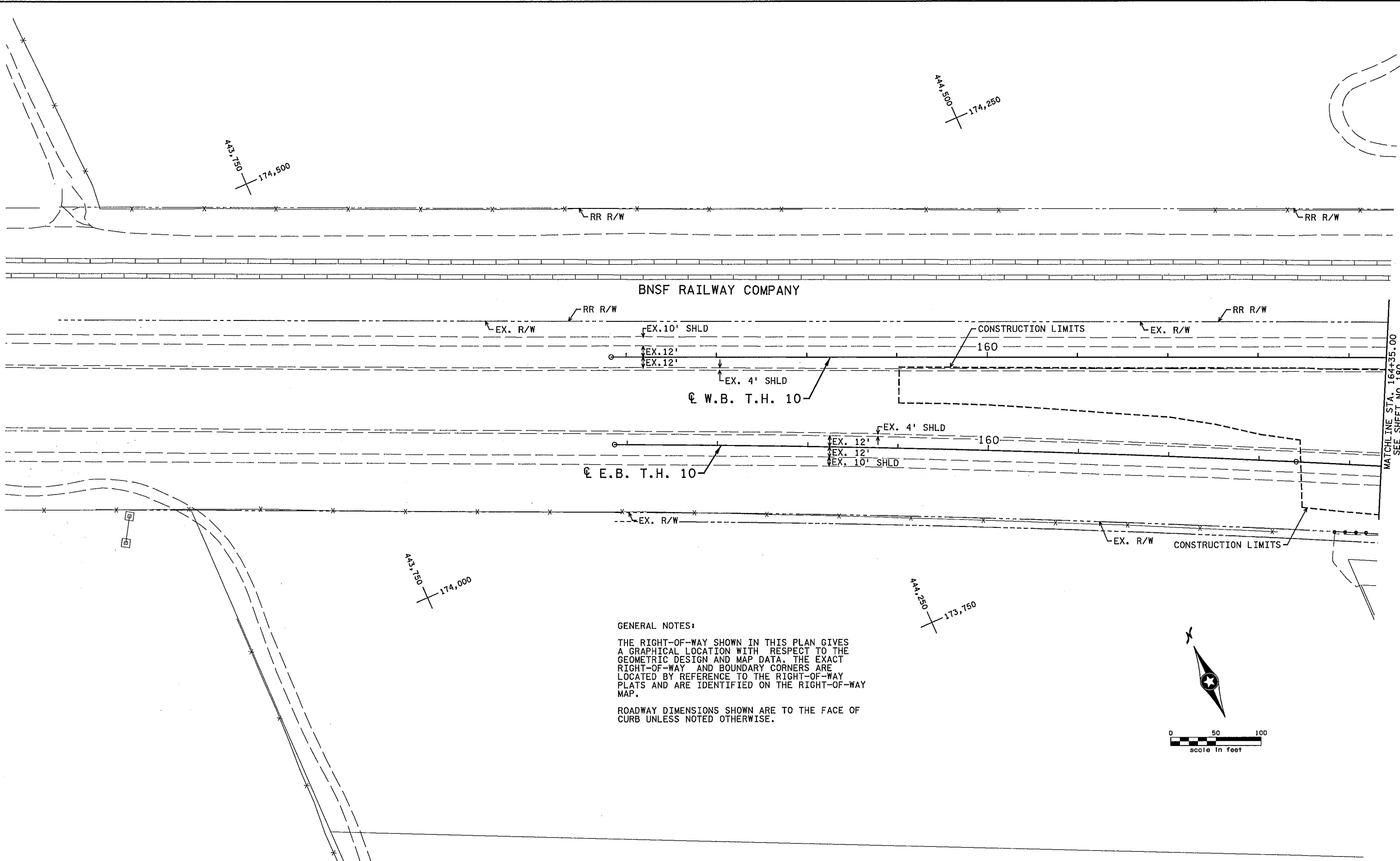
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 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**SRH**  
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ANOKA COUNTY  
 REMOVAL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 178  
 OF  
 586



**GENERAL NOTES:**

THE RIGHT-OF-WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT-OF-WAY AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT-OF-WAY PLATS AND ARE IDENTIFIED ON THE RIGHT-OF-WAY MAP.

ROADWAY DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.

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 H:\Projects\8259\CAD\_BIM\Plan\8259\_cp01.dgn

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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-18** License # **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**D. SYMANIETZ**

CHECKED BY  
**C. HASS**

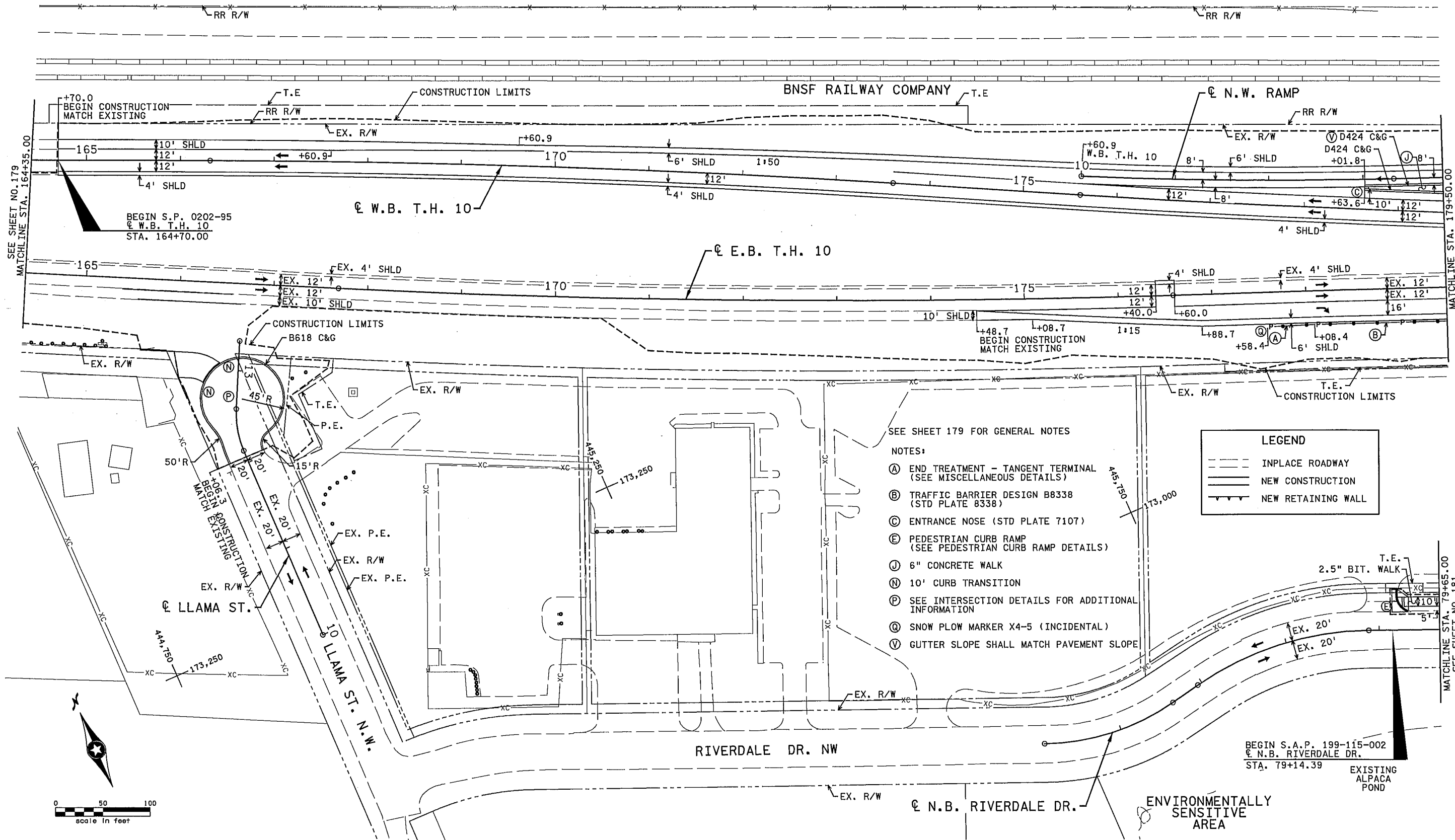
COMM. NO. **0138259**

**SRH**  
Consulting Group, Inc.

**ENGINEERS  
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DESIGNERS**

**ANOKA COUNTY**  
CONSTRUCTION PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**  
**179**  
**OF**  
**586**



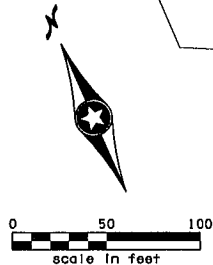
SEE SHEET NO. 179  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 181

SEE SHEET 179 FOR GENERAL NOTES

- NOTES:
- (A) END TREATMENT - TANGENT TERMINAL (SEE MISCELLANEOUS DETAILS)
  - (B) TRAFFIC BARRIER DESIGN B8338 (STD PLATE 8338)
  - (C) ENTRANCE NOSE (STD PLATE 7107)
  - (E) PEDESTRIAN CURB RAMP (SEE PEDESTRIAN CURB RAMP DETAILS)
  - (J) 6" CONCRETE WALK
  - (N) 10' CURB TRANSITION
  - (P) SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION
  - (Q) SNOW PLOW MARKER X4-5 (INCIDENTAL)
  - (V) GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE

LEGEND	
	INPLACE ROADWAY
	NEW CONSTRUCTION
	NEW RETAINING WALL



BEGIN S.A.P. 199-115-002  
 E N.B. RIVERDALE DR.  
 STA. 79+14.39  
 EXISTING ALPACA POND

ENVIRONMENTALLY SENSITIVE AREA

3:21:27 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\plan\8259\_cp02.dgn

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Print Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

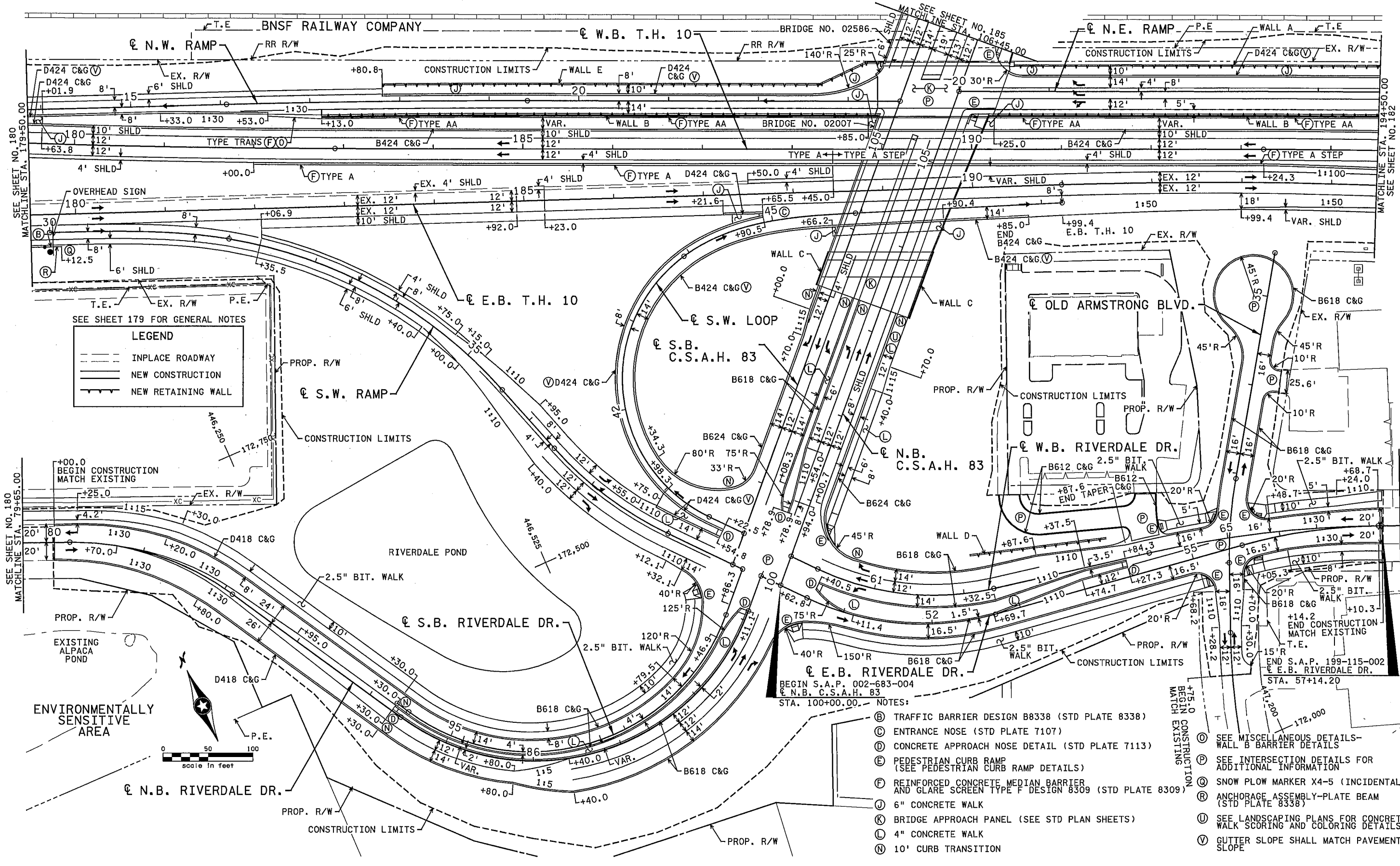


ENGINEERS  
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ANOKA COUNTY  
 CONSTRUCTION PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 180 OF 586

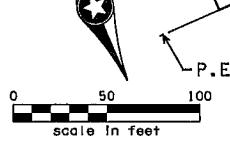




SEE SHEET 179 FOR GENERAL NOTES

**LEGEND**

- INPLACE ROADWAY
- NEW CONSTRUCTION
- NEW RETAINING WALL



- NOTES:**
- (B) TRAFFIC BARRIER DESIGN B8338 (STD PLATE 8338)
  - (C) ENTRANCE NOSE (STD PLATE 7107)
  - (D) CONCRETE APPROACH NOSE DETAIL (STD PLATE 7113)
  - (E) PEDESTRIAN CURB RAMP (SEE PEDESTRIAN CURB RAMP DETAILS)
  - (F) REINFORCED CONCRETE MEDIAN BARRIER AND GLARE SCREEN TYPE F DESIGN 8309 (STD PLATE 8309)
  - (J) 6" CONCRETE WALK
  - (K) BRIDGE APPROACH PANEL (SEE STD PLAN SHEETS)
  - (L) 4" CONCRETE WALK
  - (N) 10' CURB TRANSITION
  - (O) SEE MISCELLANEOUS DETAILS-WALL B BARRIER DETAILS
  - (P) SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION
  - (Q) SNOW PLOW MARKER X4-5 (INCIDENTAL)
  - (R) ANCHORAGE ASSEMBLY-PLATE BEAM (STD PLATE 8338)
  - (U) SEE LANDSCAPING PLANS FOR CONCRETE WALK SCORING AND COLORING DETAILS
  - (V) GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE

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Print Name: **CRAIG J. HASS**

Date: 09-12-10 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

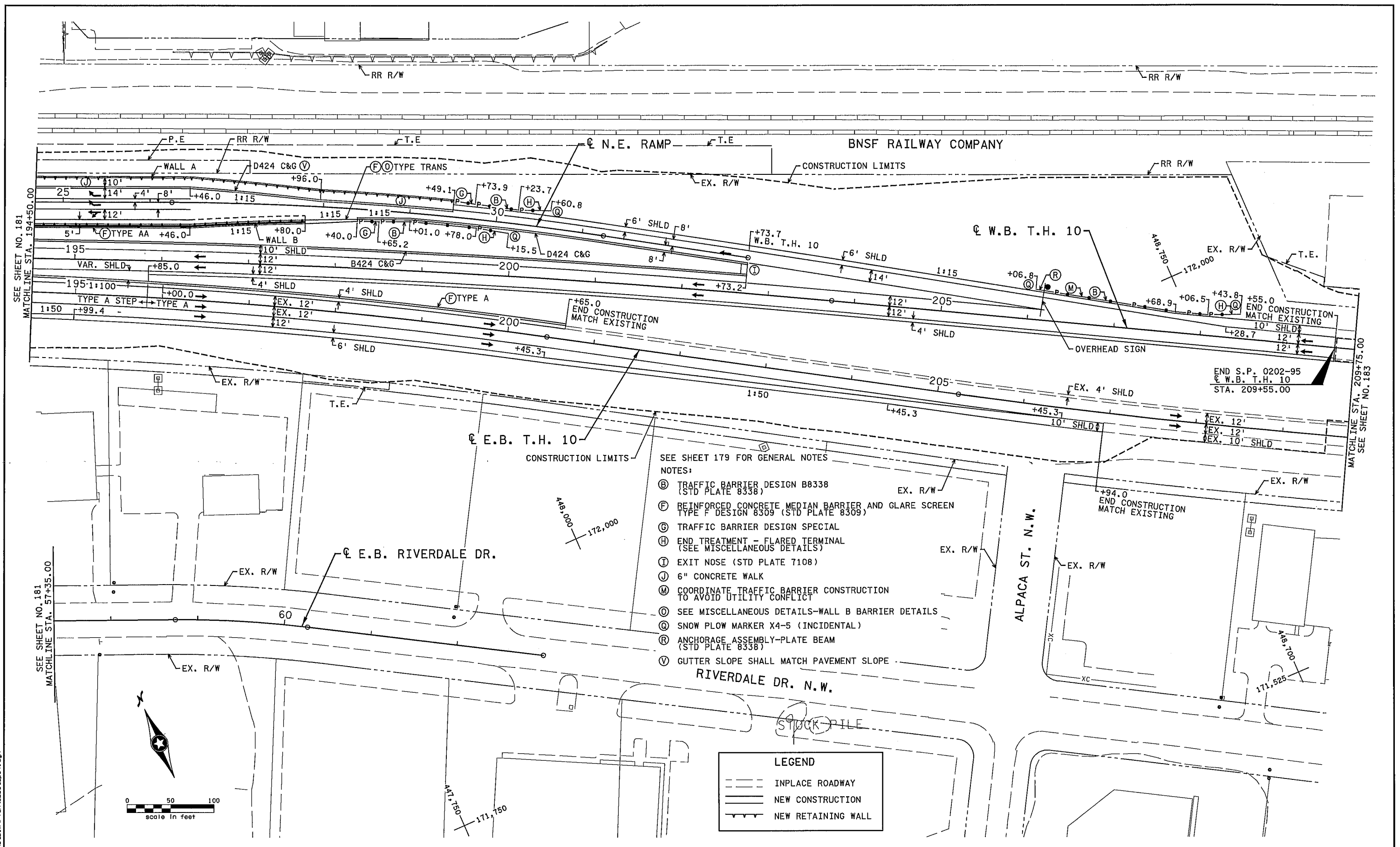
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



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ANOKA COUNTY  
CONSTRUCTION PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
181  
OF  
586



SEE SHEET 179 FOR GENERAL NOTES

- NOTES:
- (B) TRAFFIC BARRIER DESIGN B8338 (STD PLATE 8338)
  - (F) REINFORCED CONCRETE MEDIAN BARRIER AND GLARE SCREEN TYPE F DESIGN 8309 (STD PLATE 8309)
  - (C) TRAFFIC BARRIER DESIGN SPECIAL
  - (H) END TREATMENT - FLARED TERMINAL (SEE MISCELLANEOUS DETAILS)
  - (I) EXIT NOSE (STD PLATE 7108)
  - (J) 6" CONCRETE WALK
  - (M) COORDINATE TRAFFIC BARRIER CONSTRUCTION TO AVOID UTILITY CONFLICT
  - (O) SEE MISCELLANEOUS DETAILS-WALL B BARRIER DETAILS
  - (Q) SNOW PLOW MARKER X4-5 (INCIDENTAL)
  - (R) ANCHORAGE ASSEMBLY-PLATE BEAM (STD PLATE 8338)
  - (V) GUTTER SLOPE SHALL MATCH PAVEMENT SLOPE

LEGEND	
	INPLACE ROADWAY
	NEW CONSTRUCTION
	NEW RETAINING WALL

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-581-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

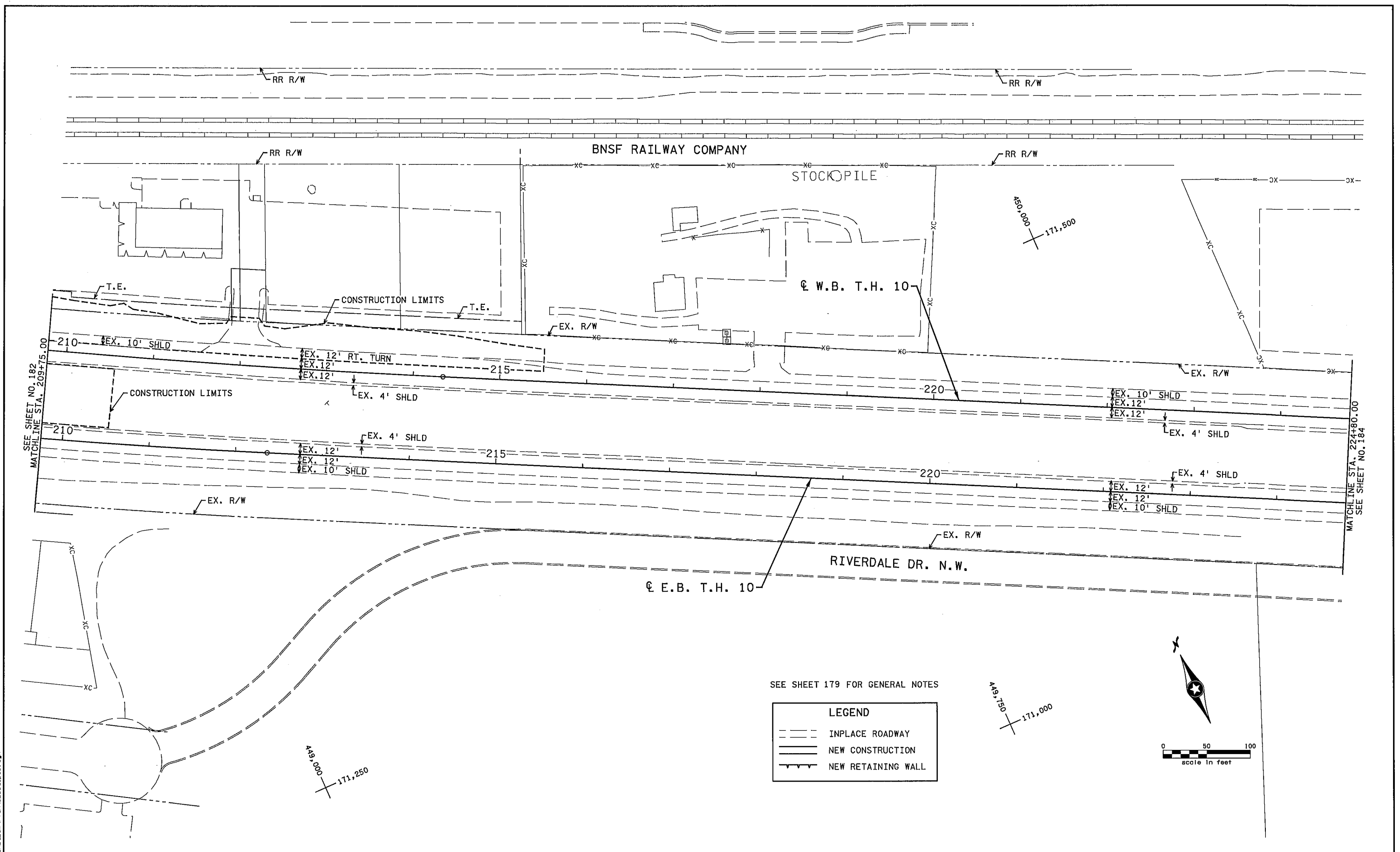
ANOKA COUNTY

CONSTRUCTION PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

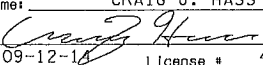
SHEET 182 OF 586





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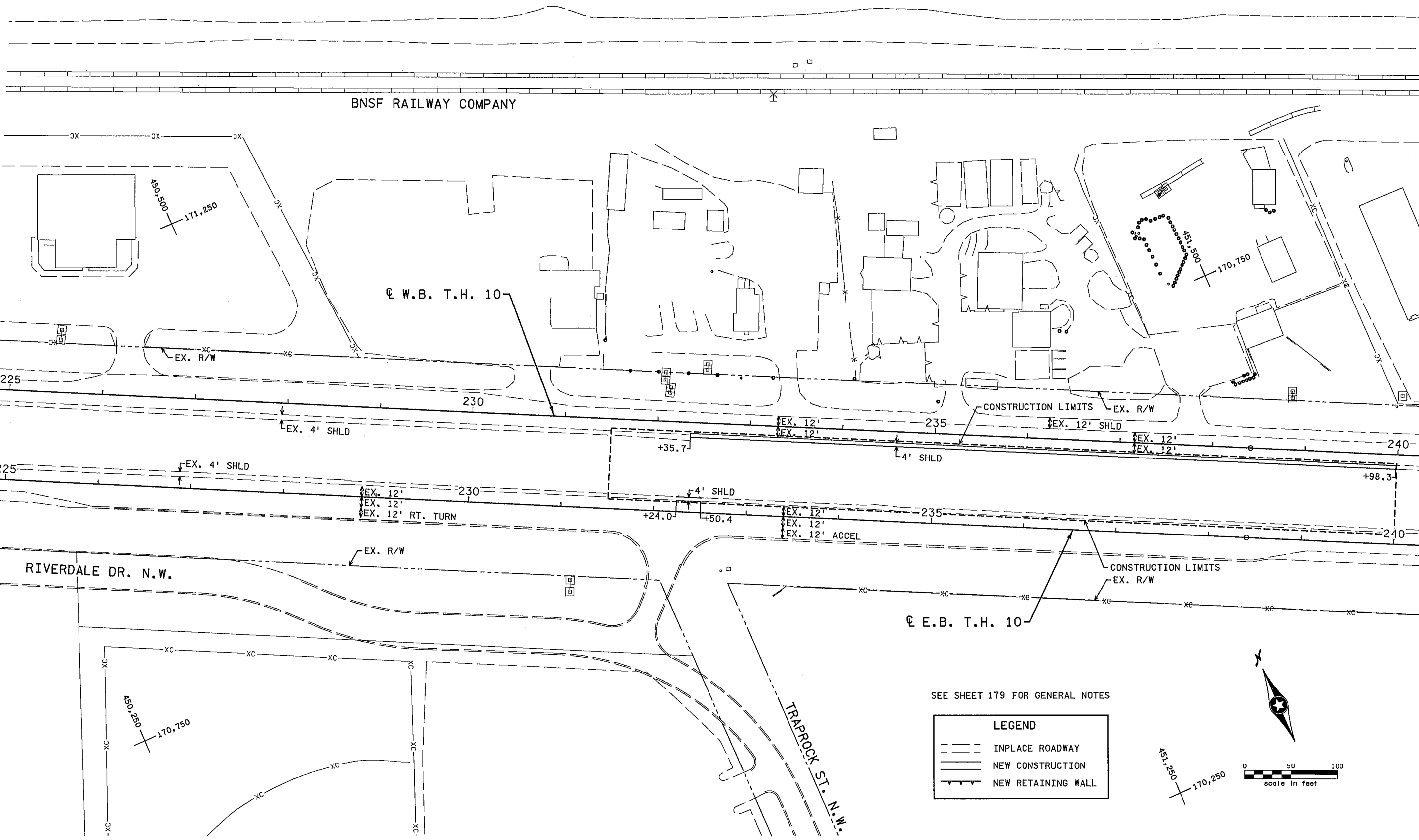
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: **CRAIG J. HASS**  
  
 Date: **09-12-18** License # **45039**

STATE AID PROJECT NO.  
 002-683-004  
 193-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259


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**ANOKA COUNTY**  
**CONSTRUCTION PLANS**  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

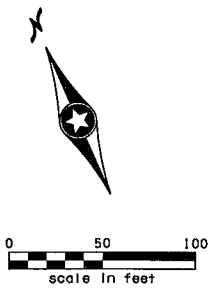
**SHEET**  
**183**  
**OF**  
**586**



SEE SHEET NO. 183  
MATCHLINE STA. 224+80.00

SEE SHEET 179 FOR GENERAL NOTES

LEGEND	
	INPLACE ROADWAY
	NEW CONSTRUCTION
	NEW RETAINING WALL



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS  
*Craig J. Hass*  
Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY  
S. MARTINS  
DESIGNED BY  
D. SYMANIETZ  
CHECKED BY  
C. HASS  
COMM. NO. 0138259

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DESIGNERS

ANOKA COUNTY  
CONSTRUCTION PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

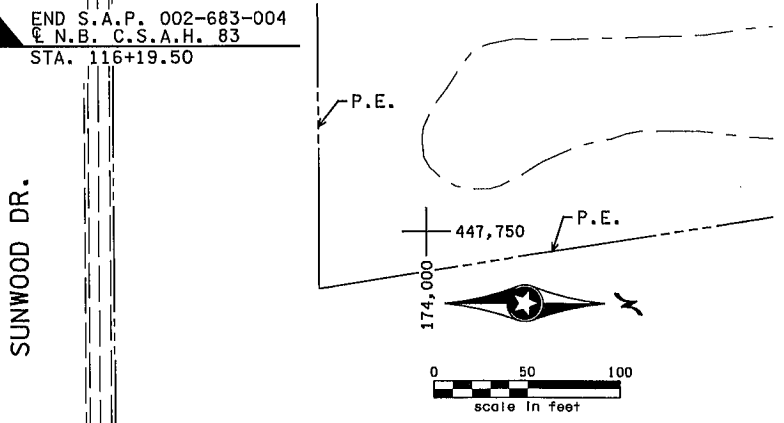
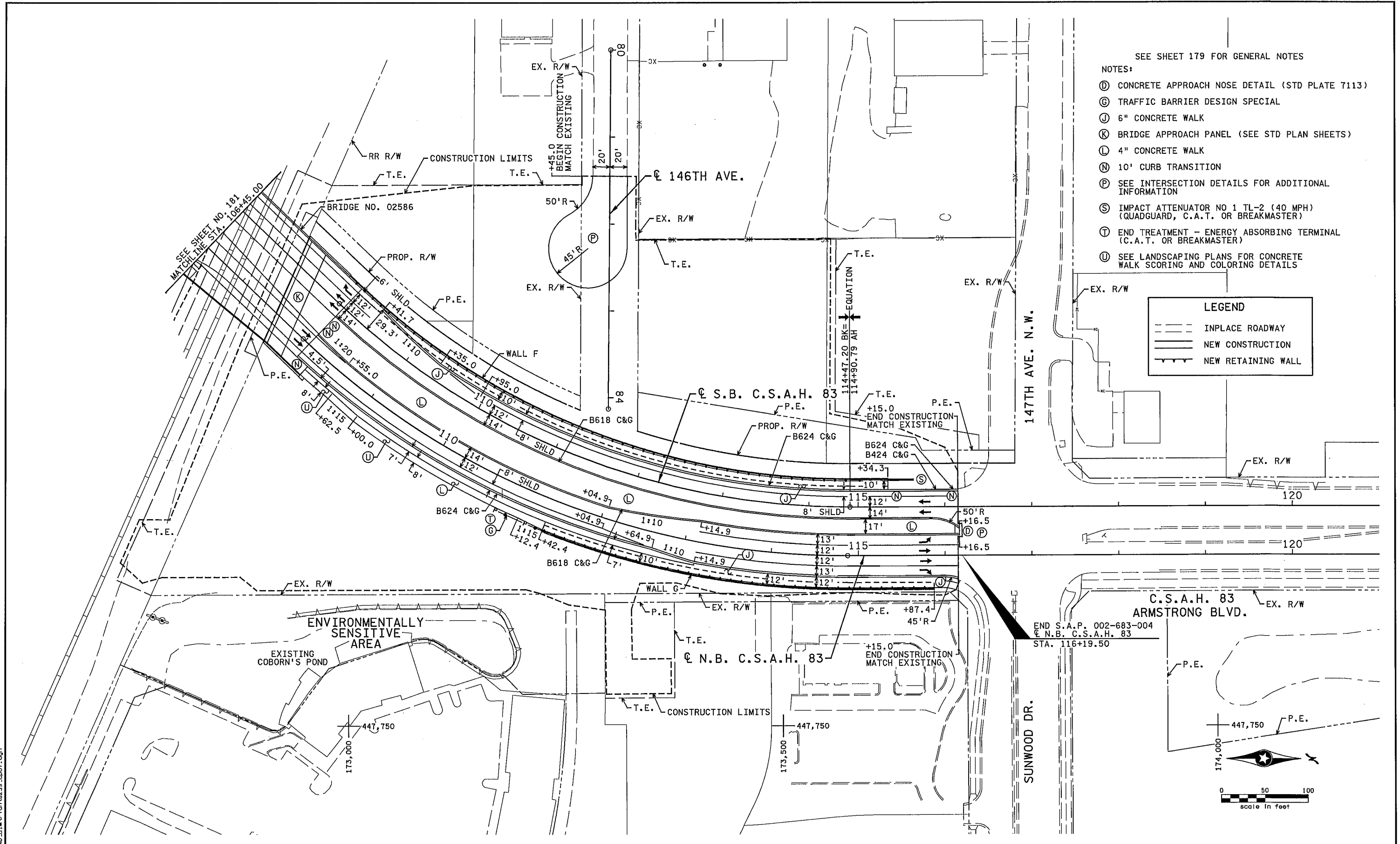
SHEET  
184  
OF  
586

SEE SHEET 179 FOR GENERAL NOTES

- NOTES:
- Ⓐ CONCRETE APPROACH NOSE DETAIL (STD PLATE 7113)
  - Ⓑ TRAFFIC BARRIER DESIGN SPECIAL
  - Ⓒ 6" CONCRETE WALK
  - Ⓓ BRIDGE APPROACH PANEL (SEE STD PLAN SHEETS)
  - Ⓔ 4" CONCRETE WALK
  - Ⓕ 10' CURB TRANSITION
  - Ⓖ SEE INTERSECTION DETAILS FOR ADDITIONAL INFORMATION
  - Ⓗ IMPACT ATTENUATOR NO 1 TL-2 (40 MPH) (QUADGUARD, C.A.T. OR BREAKMASTER)
  - Ⓙ END TREATMENT - ENERGY ABSORBING TERMINAL (C.A.T. OR BREAKMASTER)
  - Ⓚ SEE LANDSCAPING PLANS FOR CONCRETE WALK SCORING AND COLORING DETAILS

**LEGEND**

- INPLACE ROADWAY
- NEW CONSTRUCTION
- NEW RETAINING WALL



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Print Name: **CRAIG J. HASS**

*Craig J. Hass*

Date: **09-12-16** License #: **45039**

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199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**D. SYMANIETZ**

CHECKED BY  
**C. HASS**

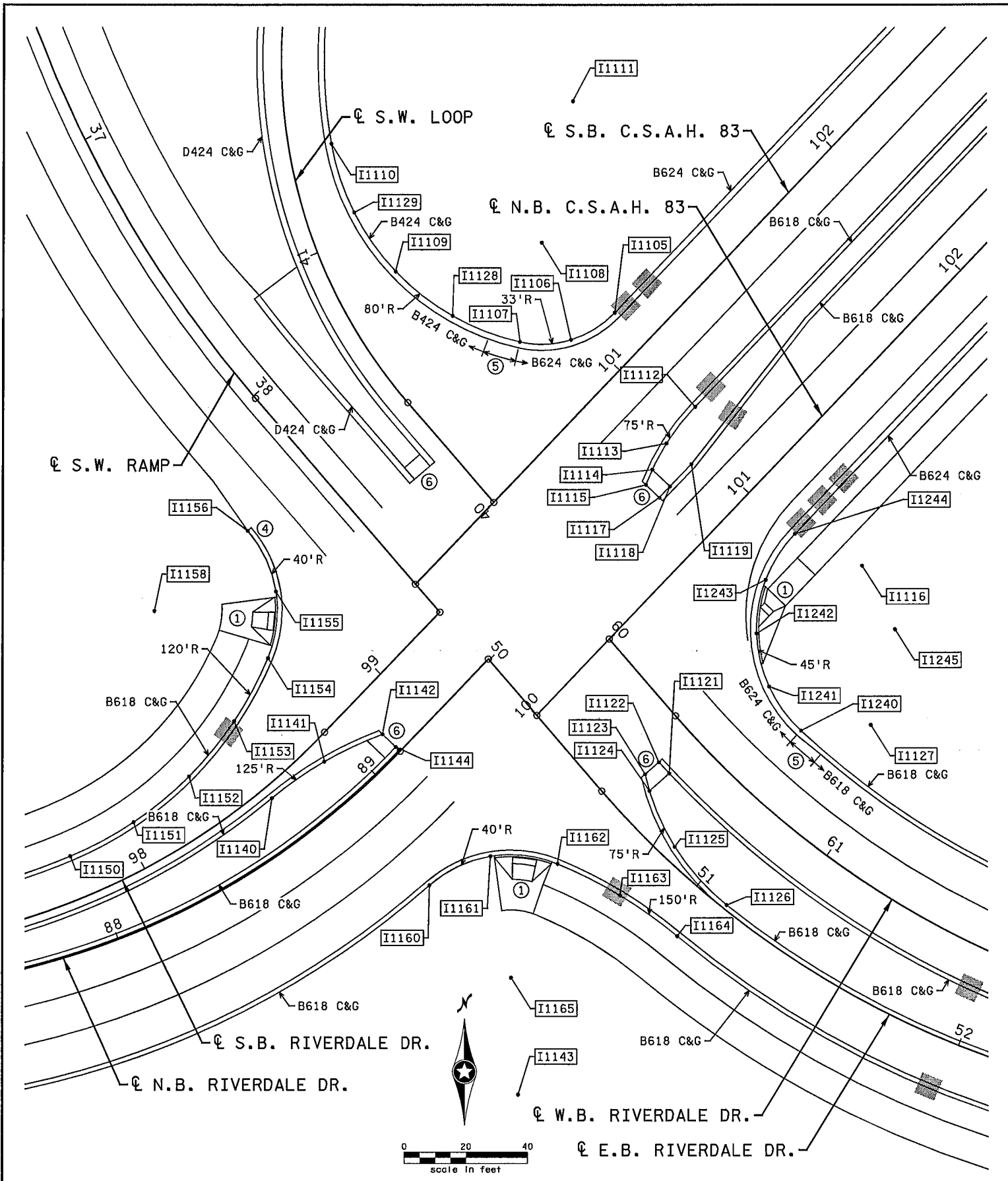
COMM. NO. **0138259**

**ANOKA COUNTY**

CONSTRUCTION PLANS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**185**  
OF  
**586**



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1105	446779.66	172502.57	EL. 898.57	S.B. C.S.A.H. 83	101+12.38	14.00' LT.
I1106	446765.36	172493.78	EL. 897.93	S.B. C.S.A.H. 83	100+96.15	18.27' LT.
I1107	446748.59	172493.15	EL. 897.27	S.B. C.S.A.H. 83	100+84.11	29.97' LT.
I1108	446755.79	172525.36	33.0' R.	S.B. C.S.A.H. 83	101+12.38	47.00' LT.
I1109	446708.19	172515.96	EL. 894.56	S.W. LOOP	40+82.92	20.70' RT.
I1110	446687.25	172557.37	EL. 892.52	S.W. LOOP	41+34.26	14.00' RT.
I1111	446766.04	172571.22	80.0' R.	S.W. LOOP	41+34.26	94.00' RT.
I1112	446805.78	172472.00	EL. 899.20	S.B. C.S.A.H. 83	101+08.29	26.00' RT.
I1113	446796.52	172460.10	EL. 898.74	S.B. C.S.A.H. 83	100+93.29	27.52' RT.
I1114	446791.88	172451.54	EL. 898.49	S.B. C.S.A.H. 83	100+83.90	30.08' RT.
I1115	446789.82	172446.59	EL. 898.41	S.B. C.S.A.H. 83	100+78.90	32.00' RT.
I1116	446860.03	172420.22	75.0' R.	N.B. C.S.A.H. 83	101+08.29	43.00' RT.
I1117	446794.16	172442.45	EL. 898.23	N.B. C.S.A.H. 83	100+78.90	20.00' LT.
I1118	446797.61	172446.07	EL. 898.30	N.B. C.S.A.H. 83	100+83.90	20.00' LT.
I1119	446804.52	172453.30	EL. 898.62	N.B. C.S.A.H. 83	100+93.90	20.00' LT.
I1121	446797.38	172352.66	EL. 894.95	E.B. RIVERDALE DR.	50+67.10	20.23' LT.
I1122	446793.99	172356.34	EL. 895.13	E.B. RIVERDALE DR.	50+61.74	20.19' LT.
I1123	446789.53	172352.42	EL. 894.81	E.B. RIVERDALE DR.	50+61.69	14.25' LT.
I1124	446790.93	172346.99	EL. 894.51	E.B. RIVERDALE DR.	50+66.87	11.63' LT.
I1125	446799.08	172328.87	EL. 893.76	E.B. RIVERDALE DR.	50+86.03	4.71' LT.
I1126	446815.87	172309.93	EL. 892.91	E.B. RIVERDALE DR.	51+11.40	1.50' LT.
I1127	446862.80	172368.43	75.0' R.	E.B. RIVERDALE DR.	51+11.40	76.50' LT.
I1128	446726.70	172501.56	EL. 895.64	S.W. LOOP	40+57.17	28.94' RT.
I1129	446694.65	172535.11	EL. 893.56	S.W. LOOP	41+08.60	15.68' RT.
I1140	446668.14	172344.59	EL. 893.10	S.B. RIVERDALE DR.	98+46.86	4.00' RT.
I1141	446685.22	172356.49	EL. 893.84	S.B. RIVERDALE DR.	98+67.04	6.64' RT.
I1142	446704.03	172365.39	EL. 894.71	S.B. RIVERDALE DR.	98+86.28	14.00' RT.
I1143	446747.92	172248.35	125.0' R.	S.B. RIVERDALE DR.	98+46.86	129.00' RT.
I1144	446708.37	172361.25	EL. 894.47	S.B. RIVERDALE DR.	98+86.28	20.00' RT.
I1150	446602.76	172325.67	EL. 890.24	S.B. RIVERDALE DR.	97+79.47	14.00' LT.
I1151	446623.20	172336.78	EL. 891.05	S.B. RIVERDALE DR.	98+04.28	15.01' LT.
I1152	446641.12	172351.61	EL. 891.77	S.B. RIVERDALE DR.	98+29.13	18.03' LT.
I1153	446655.83	172369.63	EL. 892.39	S.B. RIVERDALE DR.	98+54.08	23.03' LT.
I1154	446666.80	172390.15	EL. 893.36	S.B. RIVERDALE DR.	98+78.48	30.02' LT.
I1155	446669.36	172411.82	EL. 893.95	S.B. RIVERDALE DR.	98+95.92	43.14' LT.
I1156	446660.16	172431.61	EL. 894.20	S.B. RIVERDALE DR.	99+03.89	63.45' LT.
I1158	446629.86	172405.49	40.0' R.	S.B. RIVERDALE DR.	98+60.10	67.05' LT.
I1160	446719.26	172316.29	EL. 893.65	N.B. RIVERDALE DR.	88+89.30	38.00' RT.
I1161	446739.12	172325.74	EL. 893.83	N.B. RIVERDALE DR.	89+07.29	44.80' RT.
I1162	446760.98	172323.26	EL. 893.68	N.B. RIVERDALE DR.	89+19.91	62.29' RT.
I1163	446781.31	172312.99	EL. 893.29	N.B. RIVERDALE DR.	89+26.52	84.08' RT.
I1164	446799.86	172299.77	EL. 892.80	N.B. RIVERDALE DR.	89+29.76	106.63' RT.
I1165	446745.72	172286.28	40.0' R.	N.B. RIVERDALE DR.	88+89.30	78.00' RT.
I1240	446840.07	172366.57	EL. 895.18	N.B. C.S.A.H. 83	100+55.70	65.60' RT.
I1241	446829.72	172380.94	EL. 896.19	N.B. C.S.A.H. 83	100+58.95	48.20' RT.
I1242	446825.72	172398.18	EL. 897.08	N.B. C.S.A.H. 83	100+68.67	33.39' RT.
I1243	446828.68	172415.64	EL. 897.56	N.B. C.S.A.H. 83	100+83.34	23.48' RT.
I1244	446838.15	172430.60	EL. 898.08	N.B. C.S.A.H. 83	101+00.70	20.00' RT.
I1245	446870.70	172399.53	45.0' R.	N.B. C.S.A.H. 83	101+00.70	65.00' RT.

GENERAL NOTES:  
 OFFSETS, ELEVATIONS, AND RADIUS LENGTHS ARE TO FLOWLINE OF GUTTER, UNLESS NOTED OTHERWISE AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.  
 SEE CONSTRUCTION, DRAINAGE, BRIDGE PLANS AND PEDESTRIAN RAMP DETAILS FOR INFORMATION NOT SHOWN ON THIS SHEET.

- NOTES:
- ① PEDESTRIAN CURB RAMP (SEE PEDESTRIAN CURB RAMP DETAILS)
  - ④ 5' CURB HEIGHT TRANSITION (6" - 0")
  - ⑤ 10' CURB TRANSITION
  - ⑥ MEDIAN NOSE (STD. PLATE 7113)

**LEGEND**

■ PROPOSED CATCH BASIN

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NO	DATE	BY	CHKD	APPR	REVISION

... \CAD\_BIM\Plan\8259\_in01.dgn

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-16 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

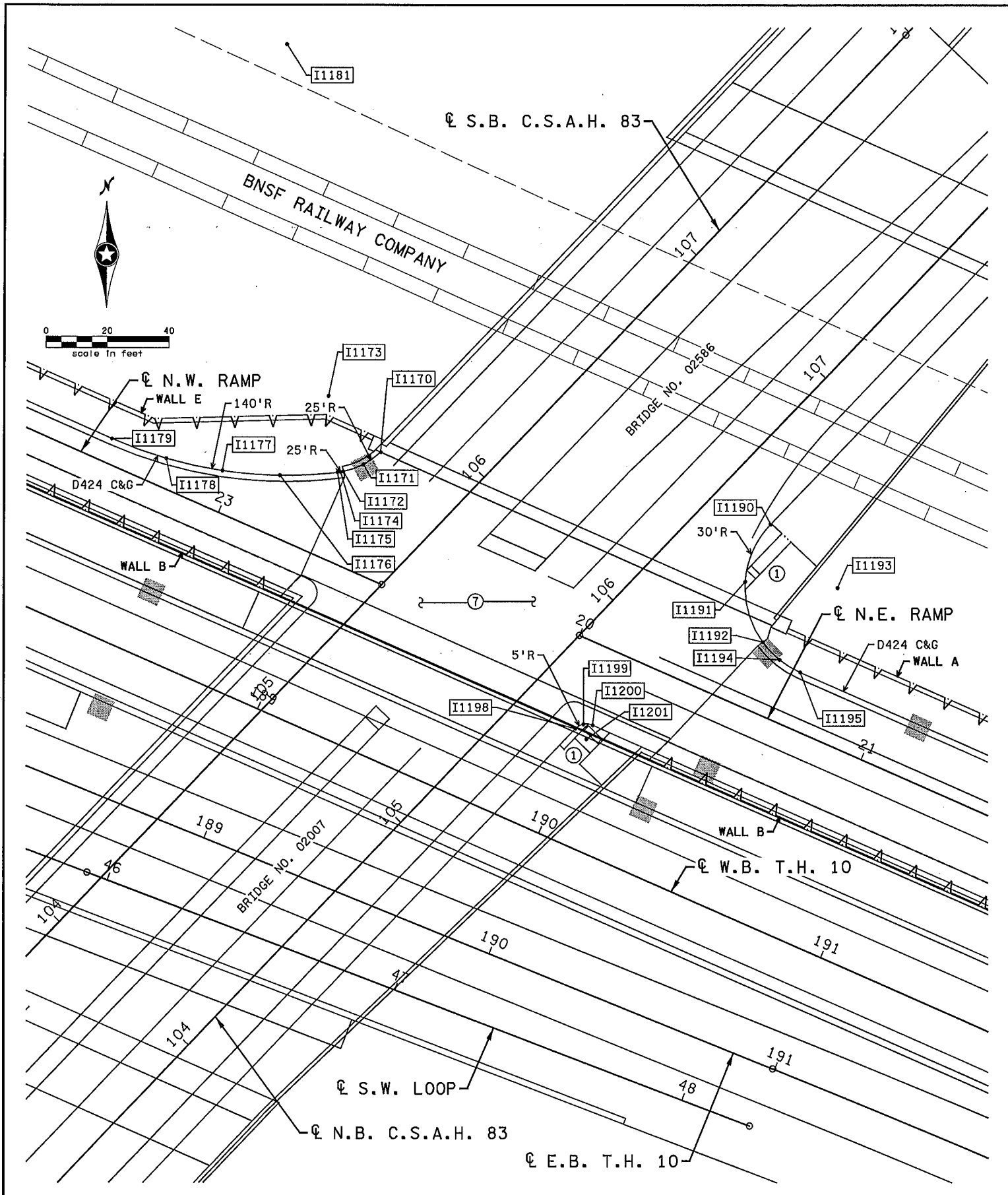
DRAWN BY S. MARTINS  
 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS

**SRH**  
 Consulting Group, Inc.

ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 INTERSECTION DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 186 OF 586



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1170	447092.65	172853.75	EL. 912.53	N.W. RAMP	23+40.34	39.29' LT.
I1171	447086.99	172849.76	EL. 912.39	N.W. RAMP	23+36.78	33.35' LT.
I1172	447080.45	172847.48	EL. 912.23	N.W. RAMP	23+31.71	28.63' LT.
I1173	447075.57	172872.00	25.0' R.	N.W. RAMP	23+17.34	49.08' LT.
I1174	447079.50	172847.31	EL. 912.20	N.W. RAMP	23+30.91	28.09' LT.
I1175	447078.55	172847.18	EL. 912.17	N.W. RAMP	23+30.10	27.58' LT.
I1176	447059.85	172846.20	EL. 911.50	N.W. RAMP	23+13.39	19.13' LT.
I1177	447041.20	172847.72	EL. 910.84	N.W. RAMP	22+95.71	12.98' LT.
I1178	447022.91	172851.71	EL. 910.21	N.W. RAMP	22+77.36	9.25' LT.
I1179	447005.31	172858.11	EL. 909.52	N.W. RAMP	22+58.69	8.00' LT.
I1181	447061.86	172986.18	140.0' R.	N.W. RAMP	22+58.69	148.00' LT.
I1190	447219.67	172830.35	EL. 913.36	N.B. C.S.A.H. 83	106+53.29	20.00' RT.
I1191	447211.44	172811.63	EL. 913.27	N.B. C.S.A.H. 83	106+34.07	26.97' RT.
I1192	447217.11	172791.99	EL. 913.11	N.B. C.S.A.H. 83	106+23.77	44.63' RT.
I1193	447241.37	172809.64	30.0' R.	N.B. C.S.A.H. 83	106+53.29	50.00' RT.
I1194	447222.53	172786.29	EL. 912.92	N.B. C.S.A.H. 83	106+23.39	52.49' RT.
I1195	447229.25	172782.19	EL. 912.78	N.B. C.S.A.H. 83	106+25.07	60.18' RT.
I1198	447156.19	172763.84	EL. 912.37	N.B. C.S.A.H. 83	105+61.34	20.00' RT.
I1199	447158.83	172765.29	EL. 912.42	N.B. C.S.A.H. 83	105+64.22	20.91' RT.
I1200	447161.82	172764.96	EL. 912.46	N.B. C.S.A.H. 83	105+66.05	23.30' RT.
I1201	447159.80	172760.38	5.0' R.	N.B. C.S.A.H. 83	105+61.34	25.00' RT.

SEE SHEET 186 FOR GENERAL NOTES.

NOTES:

- ① PEDESTRIAN CURB RAMP (SEE PEDESTRIAN CURB RAMP DETAILS)
- ⑦ BRIDGE APPROACH PANEL (SEE STD. PLANS)

**LEGEND**

■ PROPOSED CATCH BASIN

3/21/21, PN  
 3/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

... \CAD\BIM\Plan\8259\_rn02.dgn

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: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**T. BOROWICZ**

CHECKED BY  
**C. HASS**

**SRF**  
Consulting Group, Inc.

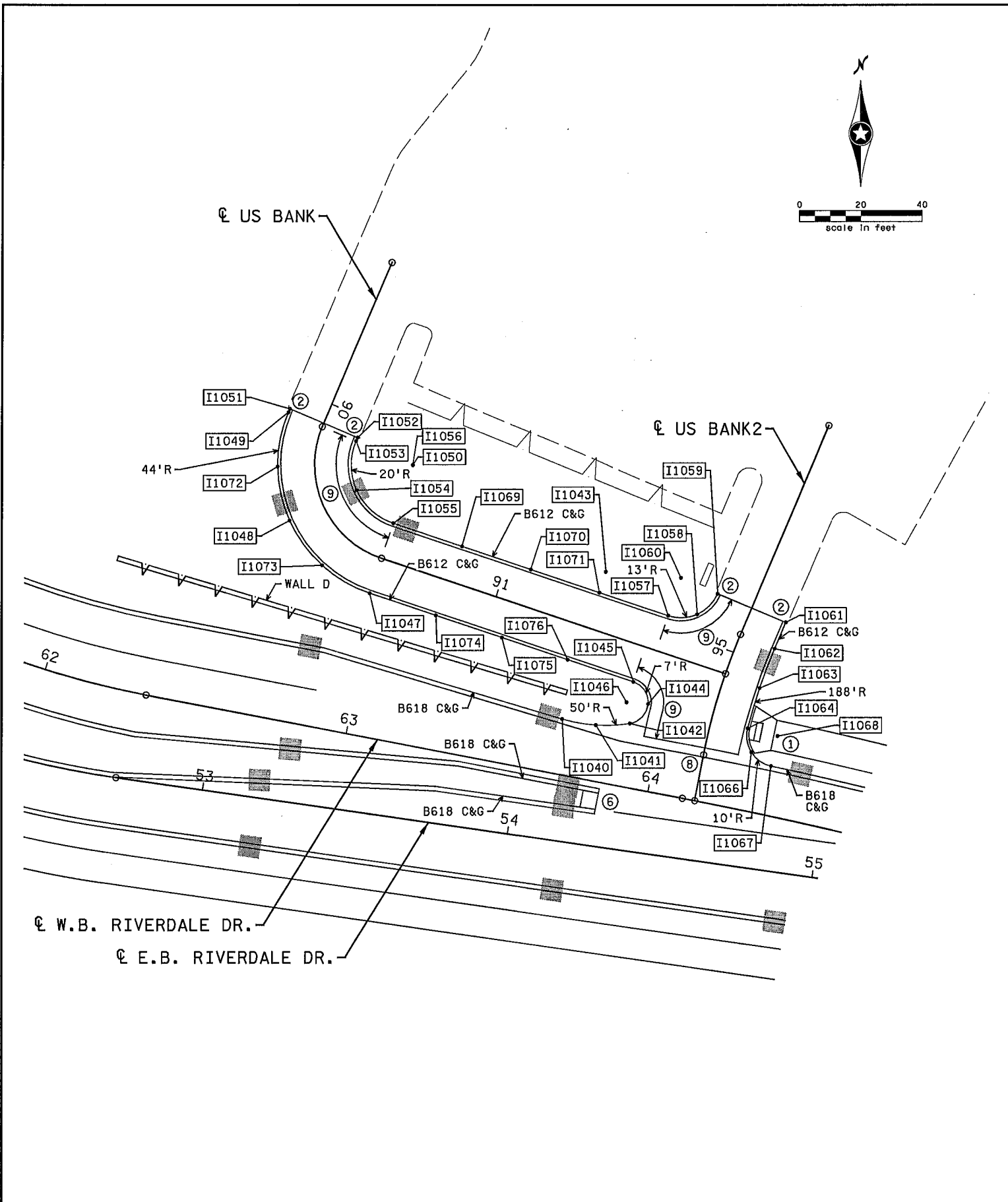
ENGINEERS  
PLANNERS  
DESIGNERS

**ANOKA COUNTY**

INTERSECTION DETAILS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**187**  
OF  
**586**



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1040	447105.18	172264.92	EL. 877.66	US BANK	91+33.11	30.87' RT.
I1041	447116.19	172262.94	EL. 877.37	US BANK	91+44.17	29.25' RT.
I1042	447127.36	172263.46	EL. 877.33	US BANK	91+54.60	25.20' RT.
I1043	447119.48	172312.83	50.0' R.	US BANK	91+31.41	19.10' LT.
I1044	447133.23	172269.79	EL. 876.09	US BANK	91+58.15	17.33' RT.
I1045	447128.48	172277.01	EL. 875.63	US BANK	91+51.35	12.00' RT.
I1046	447126.26	172270.37	7.0' R.	US BANK	91+51.35	19.00' RT.
I1047	447042.52	172305.86	EL. 875.24	US BANK	90+60.67	12.00' RT.
I1048	447016.40	172329.51	EL. 875.00	US BANK	90+34.31	12.00' RT.
I1049	447016.01	172364.74	EL. 875.11	US BANK	90+07.95	12.00' RT.
I1050	447056.52	172347.58	44.0' R.	US BANK	90+07.95	32.00' LT.
I1051	447016.49	172365.88	EL. 875.11	US BANK	90+06.71	12.00' RT.
I1052	447038.59	172356.52	EL. 875.58	US BANK	90+06.71	12.00' LT.
I1053	447038.11	172355.38	EL. 875.56	US BANK	90+07.95	12.00' LT.
I1054	447038.29	172339.37	EL. 875.20	US BANK	90+34.31	12.00' LT.
I1055	447050.16	172328.62	EL. 875.19	US BANK	90+60.67	12.00' LT.
I1056	447056.52	172347.58	20.0' R.	US BANK	90+07.95	32.00' LT.
I1057	447139.72	172298.55	EL. 875.11	US BANK	91+55.15	12.00' LT.
I1058	447149.14	172298.99	EL. 875.02	US BANK	91+63.93	15.41' LT.
I1059	447155.78	172305.67	EL. 875.08	US BANK	91+68.10	23.86' LT.
I1060	447143.86	172310.87	13.0' R.	US BANK	91+55.15	25.00' LT.
I1061	447177.88	172296.33	EL. 874.60	US BANK2	95+15.57	12.00' RT.
I1062	447174.27	172287.78	EL. 874.46	US BANK2	95+06.28	12.00' RT.
I1063	447169.40	172274.98	EL. 874.48	US BANK2	94+91.71	12.00' RT.
I1064	447165.47	172261.86	EL. 874.80	US BANK2	94+77.14	12.00' RT.
I1066	447166.64	172254.10	EL. 875.30	US BANK2	94+69.34	14.94' RT.
I1067	447173.05	172249.57	EL. 874.96	US BANK2	94+65.90	22.15' RT.
I1068	447175.15	172259.34	10.0' R.	US BANK2	94+77.14	22.00' RT.
I1069	447072.55	172321.10	EL. 875.27	US BANK	90+84.29	12.00' LT.
I1070	447094.94	172313.58	EL. 875.46	US BANK	91+07.91	12.00' LT.
I1071	447117.33	172306.07	EL. 875.45	US BANK	91+31.53	12.00' LT.
I1072	447012.53	172347.08	EL. 875.01	US BANK	90+21.13	12.00' RT.
I1073	447026.99	172314.96	EL. 875.08	US BANK	90+47.49	12.00' RT.
I1074	447064.01	172298.65	EL. 875.59	US BANK	90+83.34	12.00' RT.
I1075	447085.50	172291.44	EL. 875.89	US BANK	91+06.01	12.00' RT.
I1076	447106.99	172284.22	EL. 875.91	US BANK	91+28.68	12.00' RT.

SEE SHEET 186 FOR GENERAL NOTES.

- NOTES:
- ② EXISTING ELEVATION - VERIFY IN FIELD
  - ⑥ MEDIAN NOSE (STD. PLATE 7113)
  - ⑧ CROSS GUTTER (CITY OF RAMSEY STD. PLATE STR-2)
  - ⑨ SLOPE GUTTER OUT ALONG RADIUS

**LEGEND**

■ PROPOSED CATCH BASIN

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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

Date: **09-12-18** License #: **45039**

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY T. BOROWICZ

CHECKED BY C. HASS

COMM. NO. 0138259

**SRF** ENGINEERS PLANNERS DESIGNERS

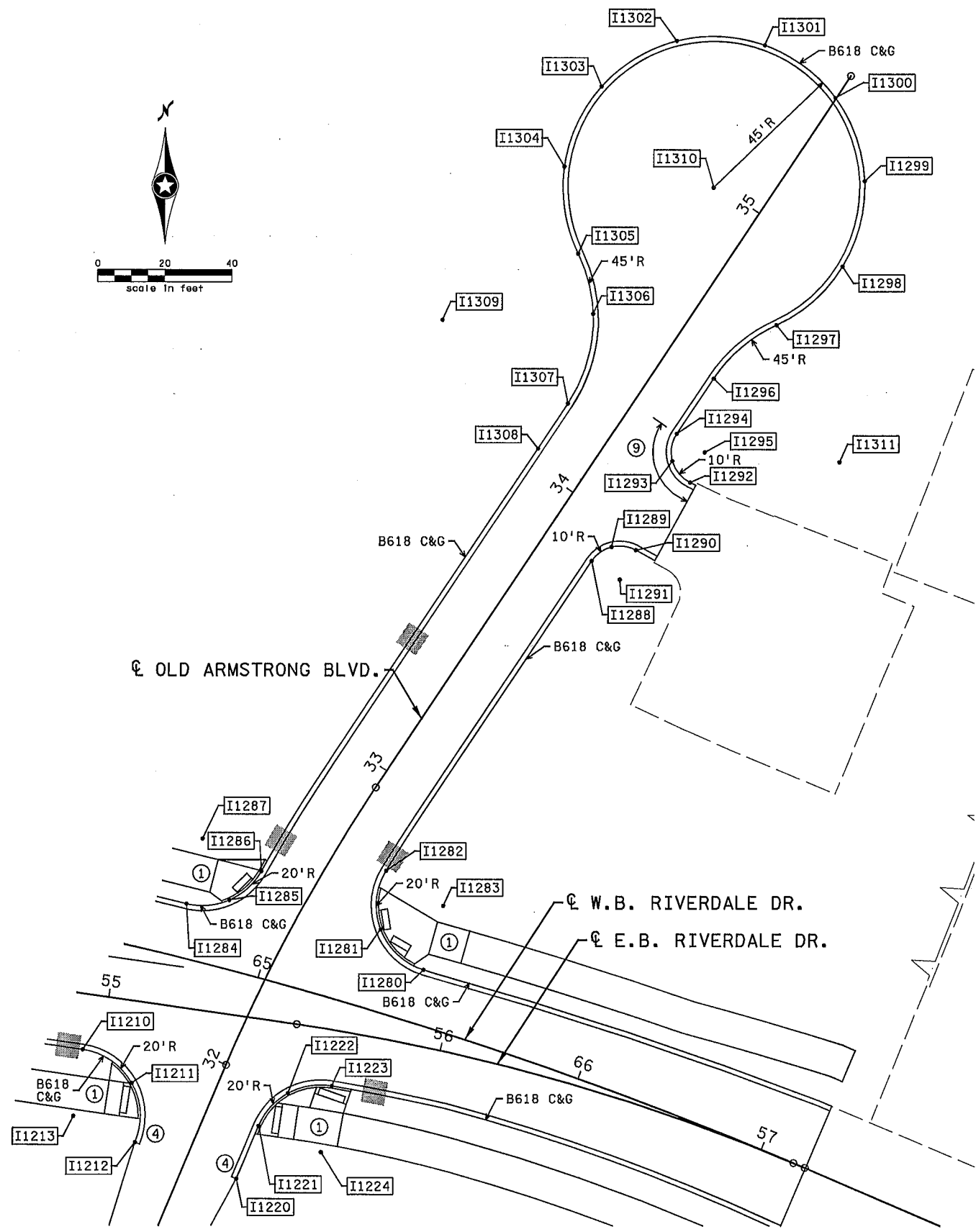
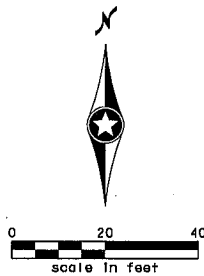
Consulting Group, Inc.

**ANOKA COUNTY**

INTERSECTION DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 188 OF 586



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1210	447178.44	172197.81	EL. 874.85	E.B. RIVERDALE DR.	54+94.48	16.50' RT.
I1211	447193.02	172187.85	EL. 874.24	E.B. RIVERDALE DR.	55+10.32	24.29' RT.
I1212	447194.03	172170.22	EL. 874.07	E.B. RIVERDALE DR.	55+13.82	41.59' RT.
I1213	447175.60	172178.01	20.0' R.	E.B. RIVERDALE DR.	54+94.48	36.50' RT.
I1220	447224.19	172159.40	EL. 873.25	E.B. RIVERDALE DR.	55+45.21	48.03' RT.
I1221	447230.83	172175.09	EL. 873.39	E.B. RIVERDALE DR.	55+49.55	31.55' RT.
I1222	447239.60	172184.83	EL. 873.32	E.B. RIVERDALE DR.	55+56.87	20.66' RT.
I1223	447252.52	172187.04	EL. 873.21	E.B. RIVERDALE DR.	55+69.70	16.50' RT.
I1224	447249.25	172167.31	20.0' R.	E.B. RIVERDALE DR.	55+69.70	36.50' RT.
I1280	447279.94	172221.58	EL. 872.80	W.B. RIVERDALE DR.	65+46.36	16.00' LT.
I1281	447267.14	172233.63	EL. 873.00	W.B. RIVERDALE DR.	65+30.87	23.82' LT.
I1282	447268.80	172251.12	EL. 873.20	W.B. RIVERDALE DR.	65+27.60	41.07' LT.
I1283	447285.86	172240.68	20.0' R.	W.B. RIVERDALE DR.	65+46.36	36.00' LT.
I1284	447209.32	172241.21	EL. 873.92	W.B. RIVERDALE DR.	64+74.01	16.00' LT.
I1285	447222.06	172242.28	EL. 873.63	W.B. RIVERDALE DR.	64+85.93	20.15' LT.
I1286	447231.55	172250.85	EL. 873.57	W.B. RIVERDALE DR.	64+92.81	30.82' LT.
I1287	447214.11	172260.63	20.0' R.	W.B. RIVERDALE DR.	64+74.01	36.00' LT.
I1288	447330.03	172343.61	EL. 876.22	OLD ARMSTRONG BLVD.	33+86.06	16.00' RT.
I1289	447335.96	172347.77	EL. 876.47	OLD ARMSTRONG BLVD.	33+92.81	18.62' RT.
I1290	447343.14	172346.84	EL. 876.73	OLD ARMSTRONG BLVD.	33+96.02	25.11' RT.
I1291	447338.35	172338.06	10.0' R.	OLD ARMSTRONG BLVD.	33+86.06	26.00' RT.
I1292	447359.36	172367.05	EL. 877.50	OLD ARMSTRONG BLVD.	34+21.83	27.39' RT.
I1293	447354.05	172373.42	EL. 877.48	OLD ARMSTRONG BLVD.	34+24.19	19.44' RT.
I1294	447355.38	172381.61	EL. 877.47	OLD ARMSTRONG BLVD.	34+31.74	16.00' RT.
I1295	447363.70	172376.06	10.0' R.	OLD ARMSTRONG BLVD.	34+31.74	26.00' RT.
I1296	447366.35	172398.07	EL. 877.84	OLD ARMSTRONG BLVD.	34+51.52	16.00' RT.
I1297	447385.06	172414.02	EL. 878.58	OLD ARMSTRONG BLVD.	34+75.17	22.72' RT.
I1298	447404.71	172431.43	EL. 879.32	OLD ARMSTRONG BLVD.	35+00.56	29.40' RT.
I1299	447411.30	172456.85	EL. 879.51	OLD ARMSTRONG BLVD.	35+25.36	20.78' RT.
I1300	447402.57	172481.62	EL. 879.72	OLD ARMSTRONG BLVD.	35+41.13	0.22' LT.
I1301	447381.51	172497.30	EL. 879.10	OLD ARMSTRONG BLVD.	35+42.49	26.44' LT.
I1302	447355.29	172498.56	EL. 878.48	OLD ARMSTRONG BLVD.	35+28.99	48.96' LT.
I1303	447332.82	172484.97	EL. 877.70	OLD ARMSTRONG BLVD.	35+05.22	60.11' LT.
I1304	447321.77	172461.15	EL. 877.37	OLD ARMSTRONG BLVD.	34+79.27	56.10' LT.
I1305	447325.88	172435.22	EL. 877.04	OLD ARMSTRONG BLVD.	34+59.98	38.28' LT.
I1306	447330.40	172417.29	EL. 876.78	OLD ARMSTRONG BLVD.	34+47.56	24.58' LT.
I1307	447322.87	172390.54	EL. 876.51	OLD ARMSTRONG BLVD.	34+21.13	16.00' LT.
I1308	447313.93	172377.13	EL. 876.11	OLD ARMSTRONG BLVD.	34+05.02	16.00' LT.
I1309	447285.43	172415.51	45.0' R.	OLD ARMSTRONG BLVD.	34+21.13	61.00' LT.
I1310	447366.34	172454.94	45.0' R.	OLD ARMSTRONG BLVD.	34+98.82	15.57' LT.
I1311	447403.79	172373.10	45.0' R.	OLD ARMSTRONG BLVD.	34+51.52	61.00' RT.

SEE SHEET 186 FOR GENERAL NOTES.

- NOTES:
- ① PEDESTRIAN CURB RAMP (SEE PEDESTRIAN CURB RAMP DETAILS)
  - ④ 5' CURB HEIGHT TRANSITION (6" - 0")
  - ⑨ SLOPE GUTTER OUT ALONG RADIUS

**LEGEND**

■ PROPOSED CATCH BASIN

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY T. BOROWICZ

CHECKED BY C. HASS

COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

INTERSECTION DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 189 OF 586

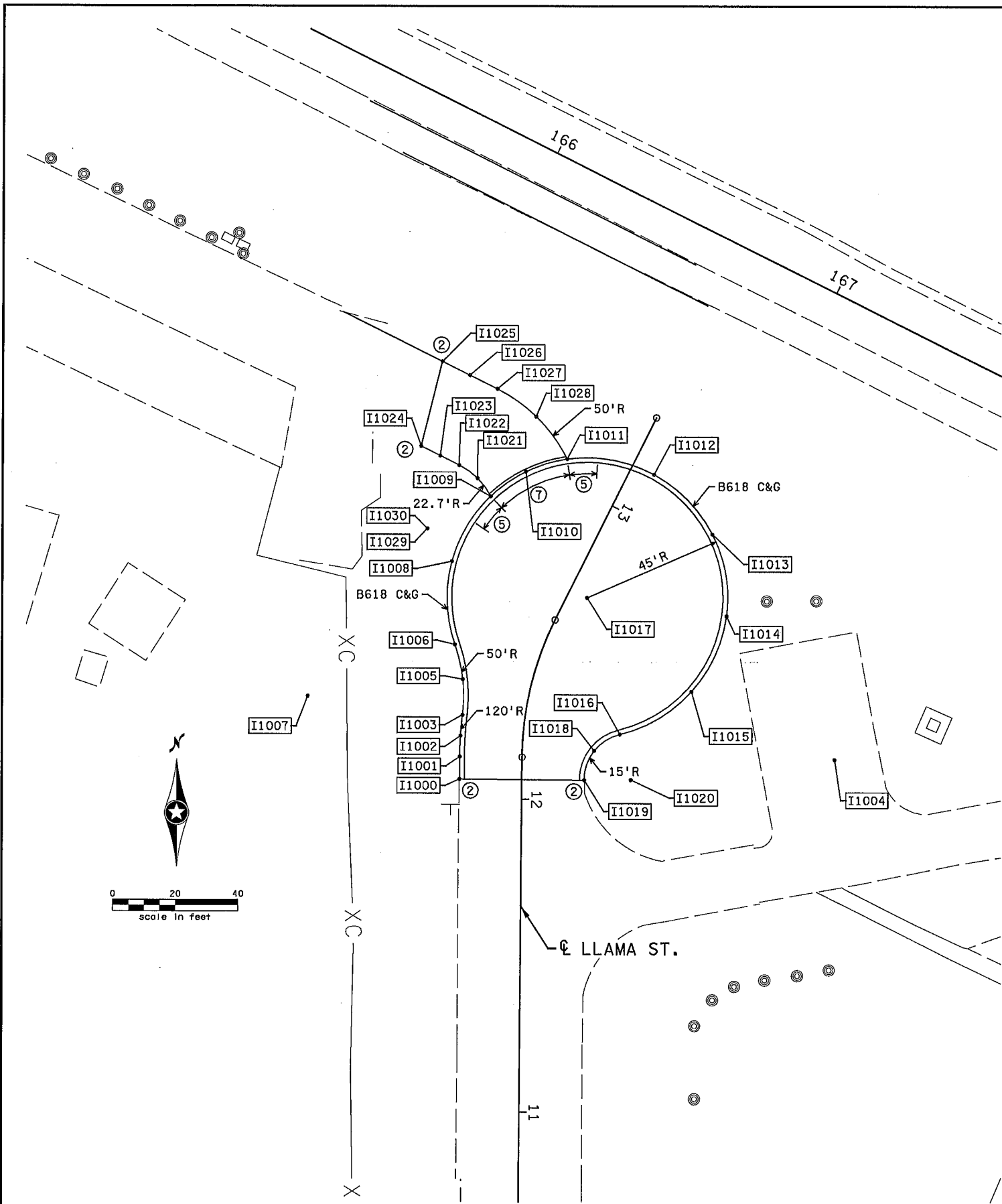


POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1000	444891.48	173434.26	EL. 876.26	LLAMA ST.	12+06.29	20.00' LT.
I1001	444891.54	173441.43	EL. 876.30	LLAMA ST.	12+13.46	20.00' LT.
I1002	444891.78	173448.13	EL. 876.40	LLAMA ST.	12+19.05	20.00' LT.
I1003	444892.39	173454.81	EL. 876.47	LLAMA ST.	12+24.64	20.00' LT.
I1004	445011.53	173440.53	120.0' R.	LLAMA ST.	12+13.46	100.00' RT.
I1005	444892.44	173466.24	EL. 876.54	LLAMA ST.	12+33.97	21.84' LT.
I1006	444889.90	173477.38	EL. 876.55	LLAMA ST.	12+42.13	27.09' LT.
I1007	444842.74	173460.76	50.0' R.	LLAMA ST.	12+24.64	70.00' LT.
I1008	444888.89	173504.03	EL. 876.63	LLAMA ST.	12+61.03	38.10' LT.
I1009	444901.26	173524.88	EL. 876.94	LLAMA ST.	12+85.21	36.35' LT.
I1010	444912.57	173532.76	EL. 877.15	LLAMA ST.	12+97.32	29.76' LT.
I1011	444925.81	173536.86	EL. 877.36	LLAMA ST.	13+06.91	19.74' LT.
I1012	444953.80	173531.89	EL. 877.66	LLAMA ST.	13+14.97	7.51' RT.
I1013	444972.42	173512.80	EL. 877.94	LLAMA ST.	13+06.22	32.70' RT.
I1014	444976.96	173486.53	EL. 878.27	LLAMA ST.	12+84.75	48.51' RT.
I1015	444965.84	173462.29	EL. 877.34	LLAMA ST.	12+57.16	49.39' RT.
I1016	444942.95	173448.61	EL. 876.41	LLAMA ST.	12+24.44	30.94' RT.
I1017	444932.34	173492.34	45.0' R.	LLAMA ST.	12+70.00	6.00' RT.
I1018	444934.73	173443.35	EL. 876.31	LLAMA ST.	12+16.38	23.14' RT.
I1019	444931.48	173433.96	EL. 876.23	LLAMA ST.	12+06.29	20.00' RT.
I1020	444946.48	173434.03	15.0' R.	LLAMA ST.	12+06.48	35.00' RT.
I1021	444897.01	173530.68	EL. 877.10	LLAMA ST.	12+88.51	42.75' LT.
I1022	444891.16	173534.87	EL. 877.14	LLAMA ST.	12+89.64	49.85' LT.
I1023	444885.07	173537.91	EL. 876.86	LLAMA ST.	12+89.63	56.66' LT.
I1024	444878.98	173540.94	EL. 876.59	LLAMA ST.	12+89.63	63.46' LT.
I1025	444885.73	173568.08	EL. 877.04	LLAMA ST.	13+16.92	69.56' LT.
I1026	444894.53	173563.70	EL. 877.34	LLAMA ST.	13+16.93	59.72' LT.
I1027	444903.34	173559.31	EL. 877.65	LLAMA ST.	13+16.94	49.88' LT.
I1028	444915.83	173550.46	EL. 877.57	LLAMA ST.	13+14.61	34.75' LT.
I1029	444881.04	173514.56	22.7' R.	LLAMA ST.	12+66.94	49.83' LT.
I1030	444881.04	173514.56	50.0' R.	LLAMA ST.	12+66.94	49.83' LT.

SEE SHEET 186 FOR GENERAL NOTES.

NOTES:

- ② EXISTING ELEVATION - VERIFY IN FIELD
- ⑤ 10' CURB TRANSITION
- ⑦ DRIVEWAY FOR B618 (SEE CITY OF RAMSEY STD. PLATE STR-1)



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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS  
DESIGNED BY T. BOROWICZ  
CHECKED BY C. HASS  
COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
INTERSECTION DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 190 OF 586

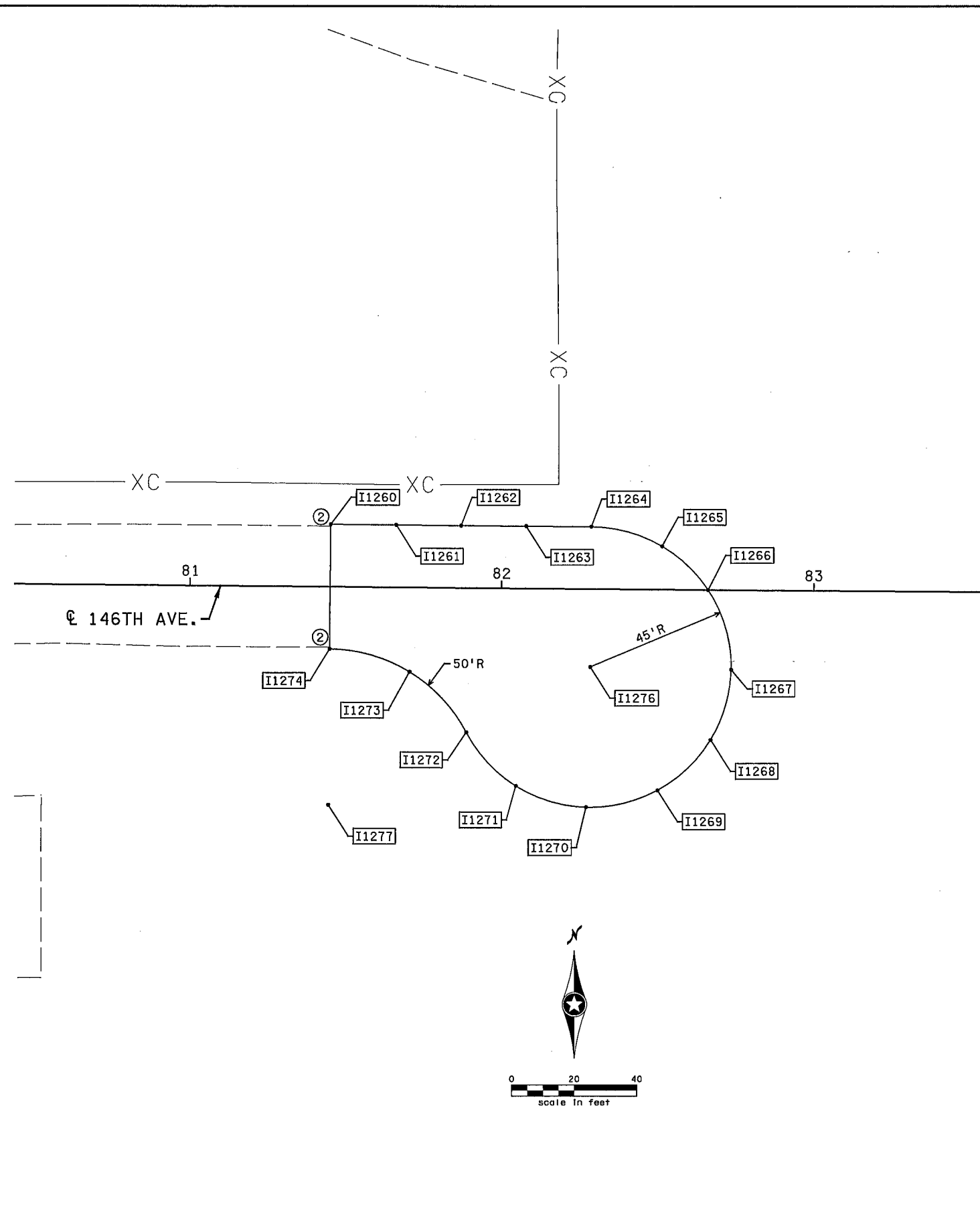


POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1260	447117.20	173321.43	EL. 874.27	146TH AVE.	81+45.00	20.00' LT.
I1261	447138.11	173321.26	EL. 874.16	146TH AVE.	81+65.92	20.00' LT.
I1262	447159.03	173321.09	EL. 874.06	146TH AVE.	81+86.83	20.00' LT.
I1263	447179.95	173320.92	EL. 873.95	146TH AVE.	82+07.75	20.00' LT.
I1264	447200.86	173320.76	EL. 873.85	146TH AVE.	82+28.67	20.00' LT.
I1265	447223.46	173314.46	EL. 873.83	146TH AVE.	82+51.31	13.89' LT.
I1266	447238.12	173300.46	EL. 873.68	146TH AVE.	82+66.08	0.00' RT.
I1267	447245.49	173274.89	EL. 873.52	146TH AVE.	82+73.66	25.51' RT.
I1268	447238.94	173252.36	EL. 873.61	146TH AVE.	82+67.29	48.08' RT.
I1269	447221.95	173236.20	EL. 873.72	146TH AVE.	82+50.43	64.39' RT.
I1270	447199.13	173230.78	EL. 873.81	146TH AVE.	82+27.65	69.99' RT.
I1271	447176.68	173237.58	EL. 873.95	146TH AVE.	82+05.15	63.36' RT.
I1272	447160.70	173254.76	EL. 874.08	146TH AVE.	81+89.03	46.32' RT.
I1273	447142.47	173274.14	EL. 874.18	146TH AVE.	81+70.65	27.08' RT.
I1274	447116.88	173281.43	EL. 874.27	146TH AVE.	81+45.00	20.00' RT.
I1276	447200.50	173275.76	45.0' R.	146TH AVE.	82+28.67	25.00' RT.
I1277	447116.48	173231.43	50.0' R.	146TH AVE.	81+45.00	70.00' RT.

SEE SHEET 186 FOR GENERAL NOTES.

NOTES:

- ② EXISTING ELEVATION - VERIFY IN FIELD



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NO.	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-685-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY T. BOROWICZ

CHECKED BY C. HASS

COMM. NO. 0138259

**SRF** ENGINEERS PLANNERS DESIGNERS

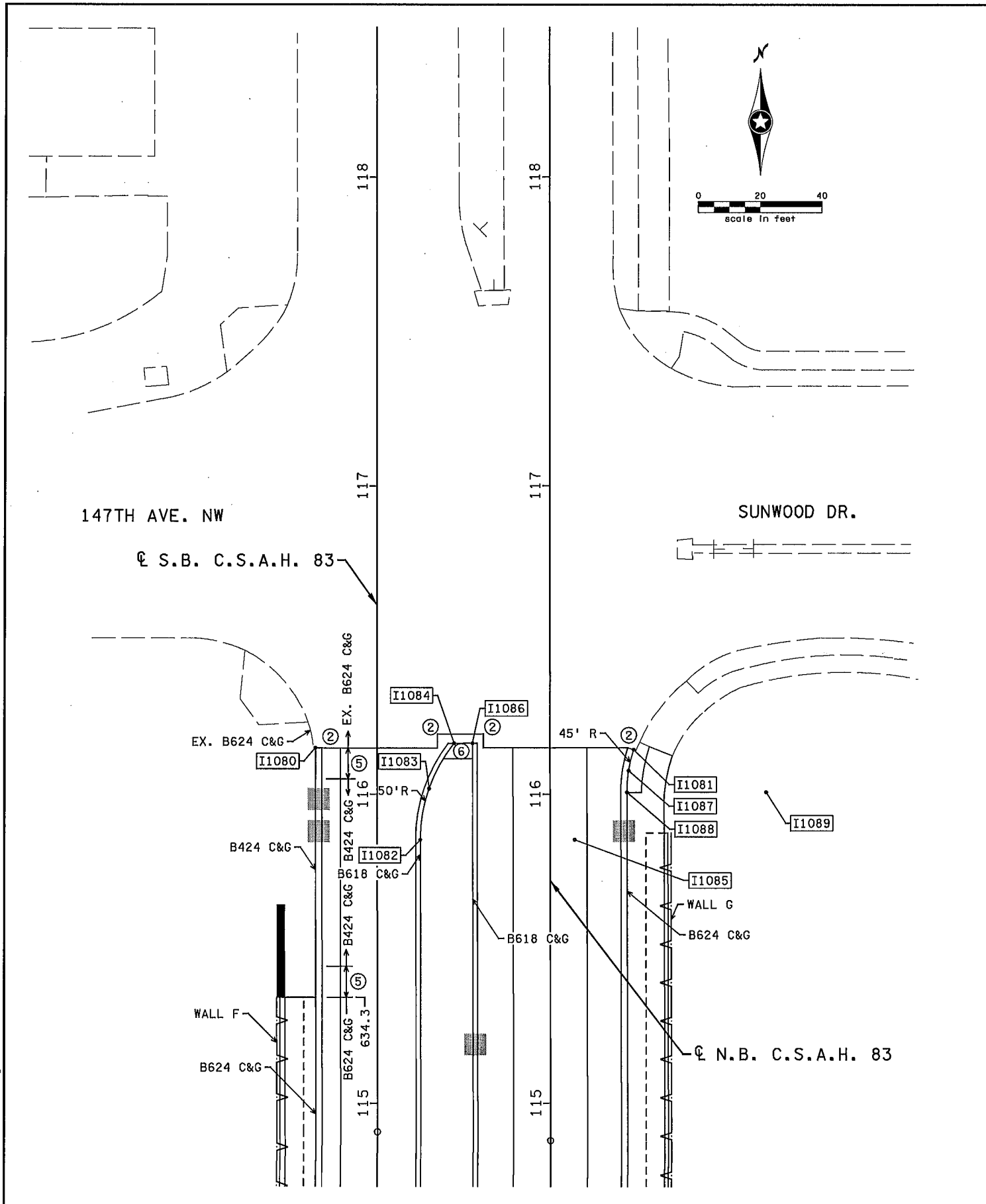
Consulting Group, Inc.

ANOKA COUNTY

INTERSECTION DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 191 OF 586



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
I1080	447478.16	173701.27	EL. 877.27	N.B. C.S.A.H. 83	116+15.00	76.00' LT.
I1081	447581.34	173700.85	EL. 877.16	N.B. C.S.A.H. 83	116+14.39	27.18' RT.
I1082	447512.21	173671.55	EL. 878.74	N.B. C.S.A.H. 83	115+85.21	42.00' LT.
I1083	447515.01	173688.14	EL. 878.28	N.B. C.S.A.H. 83	116+01.80	39.17' LT.
I1084	447523.16	173702.86	EL. 878.03	N.B. C.S.A.H. 83	116+16.50	31.00' LT.
I1085	447562.21	173671.64	50.0' R.	N.B. C.S.A.H. 83	115+85.21	8.00' RT.
I1086	447529.16	173702.87	EL. 878.22	N.B. C.S.A.H. 83	116+16.50	25.00' LT.
I1087	447579.72	173694.01	EL. 877.38	N.B. C.S.A.H. 83	116+07.55	25.55' RT.
I1088	447579.19	173687.01	EL. 877.58	N.B. C.S.A.H. 83	116+00.55	25.00' RT.
I1089	447624.19	173687.10	45.0' R.	N.B. C.S.A.H. 83	116+00.55	70.00' RT.

SEE SHEET 186 FOR GENERAL NOTES.

- NOTES:
- ② EXISTING ELEVATION - VERIFY IN FIELD
  - ⑤ 10' CURB TRANSITION
  - ⑥ MEDIAN NOSE (STD. PLATE 7113)

**LEGEND**

PROPOSED CATCH BASIN

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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

Date: 09-12-18 License # 45039

STATE AID PROJECT NO. 002-685-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**SRF** Consulting Group, Inc.

ANOKA COUNTY  
 INTERSECTION DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 192 OF 586

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1000	446660.16	172431.61	EL. 894.20	S.W. RAMP	38+32.10	30.00' RT.
P1001	446669.60	172410.08	EL. 893.91	S.W. RAMP	38+54.57	36.91' RT.
P1002	446671.36	172405.07	EL. 893.89	S.W. RAMP	38+59.51	38.84' RT.
P1003	446669.86	172405.10	EL. 893.86	S.W. RAMP	38+58.51	39.96' RT.
P1004	446670.81	172398.78	EL. 893.80	S.W. RAMP	38+63.92	43.36' RT.
P1005	446669.33	172399.02	EL. 893.77	S.W. RAMP	38+62.77	44.33' RT.
P1006	446668.22	172394.14	EL. 893.55	S.W. RAMP	38+65.74	48.36' RT.
P1007	446666.80	172390.15	EL. 893.36	S.W. RAMP	38+67.84	52.04' RT.
P1008	446629.86	172405.49	40.0' R.	S.W. RAMP	38+32.10	70.00' RT.
P1009	446666.94	172405.13	EL. 893.89	S.W. RAMP	38+65.74	42.15' RT.
P1010	446666.45	172399.49	EL. 893.80	S.W. RAMP	38+60.54	46.20' RT.
P1011	446661.86	172405.17	EL. 893.94	S.W. RAMP	38+53.23	45.97' RT.
P1012	446661.44	172400.32	EL. 893.85	S.W. RAMP	38+56.63	49.46' RT.
P1013	446661.67	172409.00	EL. 894.00	S.W. RAMP	38+50.20	43.61' RT.
P1014	446651.75	172407.66	EL. 894.15	S.W. RAMP	38+44.75	52.00' RT.
P1015	446650.96	172399.25	EL. 894.24	S.W. RAMP	38+50.60	58.10' RT.
P1016	446660.54	172396.41	EL. 894.09	S.W. RAMP	38+59.01	52.68' RT.

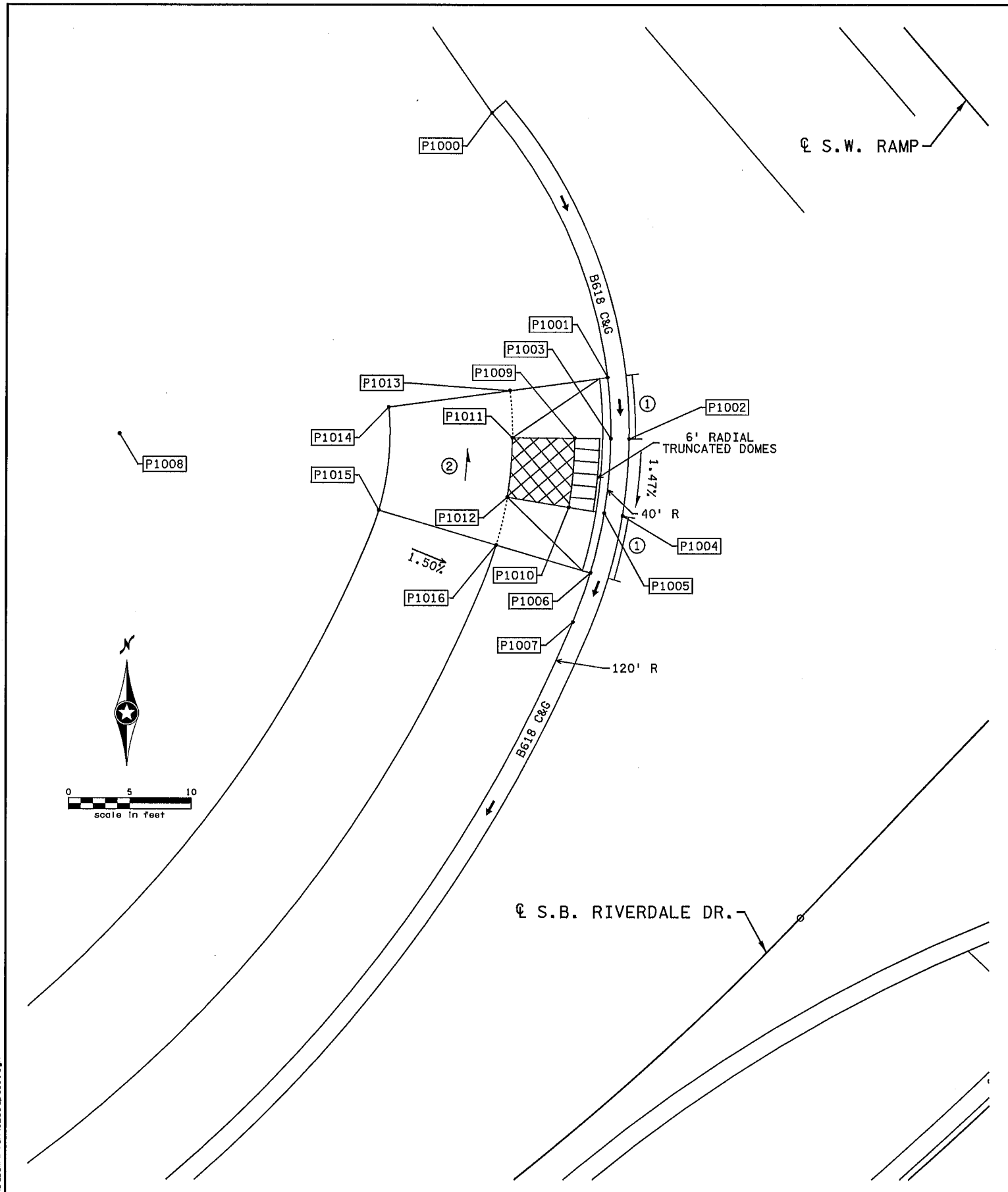
GENERAL NOTES:

OFFSETS, ELEVATIONS, AND RADIUS LENGTHS ARE TO FLOWLINE OF GUTTER, UNLESS NOTED OTHERWISE AND DO NOT INCLUDE DRAINAGE STRUCTURE SUMPS.

SEE CONSTRUCTION, DRAINAGE, BRIDGE PLANS AND INTERSECTION DETAILS FOR INFORMATION NOT SHOWN ON THIS SHEET.

NOTES:

- ① CURB HEIGHT TAPER SECTION, ADJUST GUTTER SLOPE TO 2% SLOPING INWARD TOWARDS FACE OF CURB
- ② RAMP AREA, ≤ 8.3% SLOPE IN DIRECTION SHOWN
- [Hatched Box] TRUNCATED DOMES, SEE STANDARD PLATE 7038
- [Cross-hatched Box] LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
- ← FLOW ARROW



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NO	DATE	BY	CKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY T. BOROWICZ

CHECKED BY C. HASS

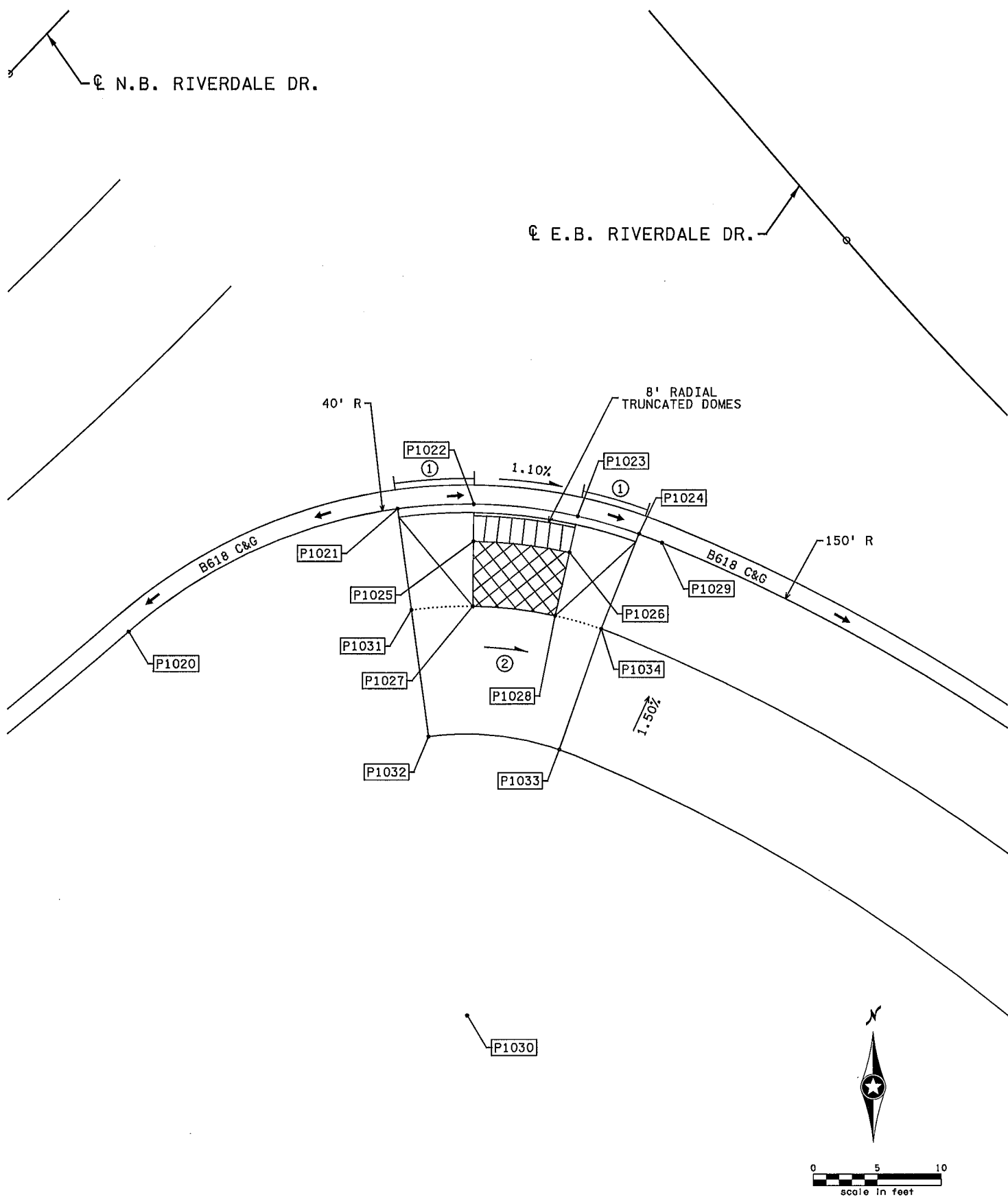
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
PEDESTRIAN RAMP DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
193  
OF  
586



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1020	446719.26	172316.29	EL. 893.65	N.B. RIVERDALE DR.	88+89.30	38.00' RT.
P1021	446740.30	172325.92	EL. 893.84	N.B. RIVERDALE DR.	89+08.09	45.51' RT.
P1022	446746.26	172326.28	EL. 893.82	N.B. RIVERDALE DR.	89+11.94	49.56' RT.
P1023	446754.38	172325.33	EL. 893.73	N.B. RIVERDALE DR.	89+16.86	56.08' RT.
P1024	446759.20	172323.96	EL. 893.69	N.B. RIVERDALE DR.	89+19.19	60.52' RT.
P1025	446746.23	172323.36	EL. 893.85	N.B. RIVERDALE DR.	89+10.02	51.55' RT.
P1026	446753.74	172322.49	EL. 893.76	N.B. RIVERDALE DR.	89+14.36	57.59' RT.
P1027	446746.18	172318.28	EL. 893.90	N.B. RIVERDALE DR.	89+06.98	55.06' RT.
P1028	446752.62	172317.53	EL. 893.81	N.B. RIVERDALE DR.	89+10.21	60.20' RT.
P1029	446760.98	172323.26	EL. 893.68	N.B. RIVERDALE DR.	89+19.91	62.29' RT.
P1030	446745.72	172286.28	40.0' R.	N.B. RIVERDALE DR.	88+89.30	78.00' RT.
P1031	446741.38	172317.99	EL. 894.00	N.B. RIVERDALE DR.	89+04.02	51.87' RT.
P1032	446742.74	172308.08	EL. 894.15	N.B. RIVERDALE DR.	88+99.15	59.92' RT.
P1033	446752.95	172307.06	EL. 894.14	N.B. RIVERDALE DR.	89+04.43	67.77' RT.
P1034	446756.23	172316.51	EL. 893.99	N.B. RIVERDALE DR.	89+11.75	63.52' RT.

SEE SHEET 193 FOR GENERAL NOTES.

- NOTES:
- ① CURB HEIGHT TAPER SECTION. ADJUST GUTTER SLOPE TO 2% SLOPING INWARD TOWARDS FACE OF CURB
  - ② RAMP AREA, ≤ 8.3% SLOPE IN DIRECTION SHOWN
  - ▤ TRUNCATED DOMES, SEE STANDARD PLATE 7038
  - ▨ LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
  - ← FLOW ARROW

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

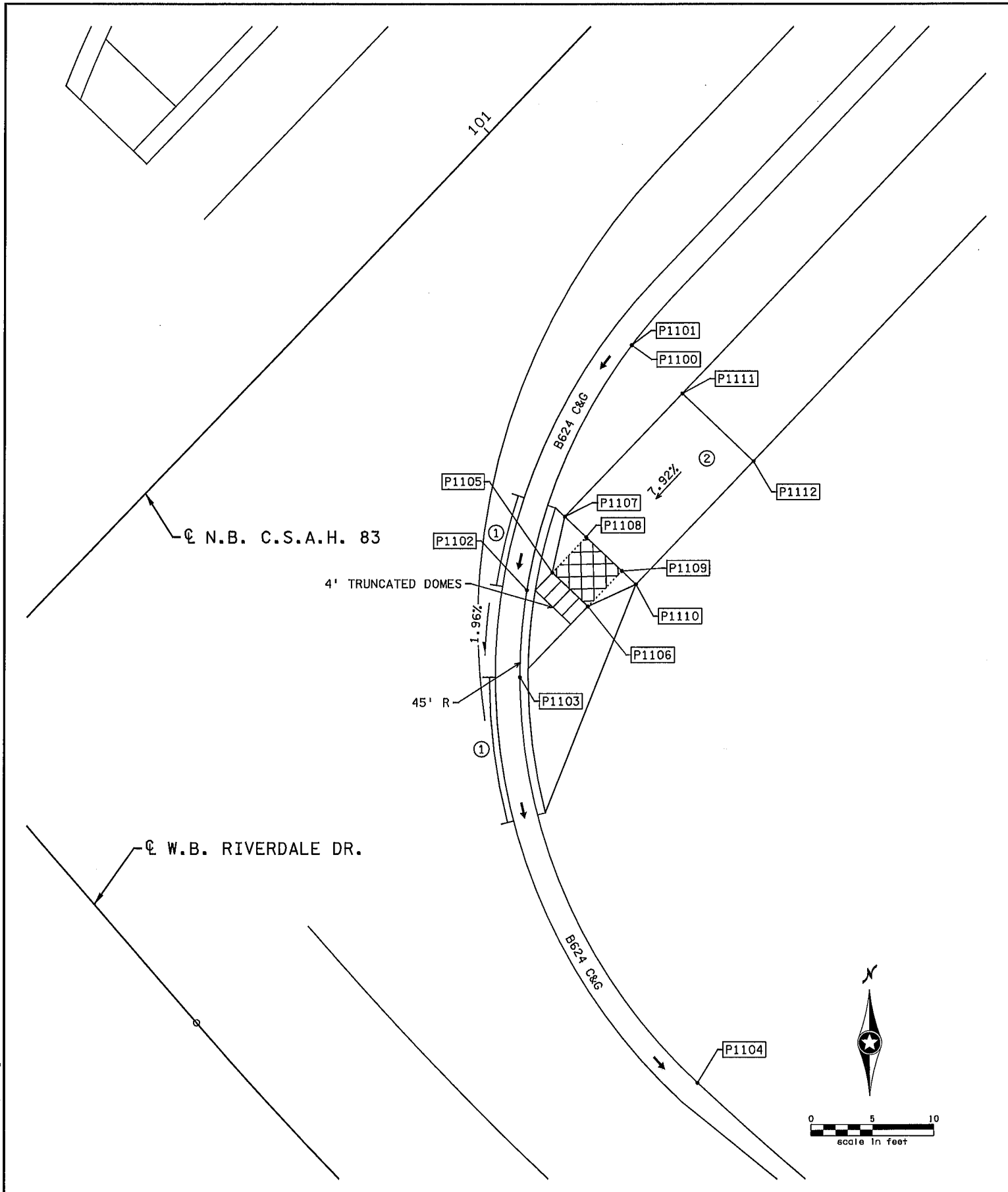
DRAWN BY S. MARTINS  
 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 PEDESTRIAN RAMP DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 194 OF 586



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1100	446834.80	172426.66	EL. 897.90	N.B. C.S.A.H. 83	100+95.53	20.30' RT.
P1101	446834.80	172426.66	EL. 898.40	N.B. C.S.A.H. 83	100+95.53	20.30' RT.
P1102	446826.27	172406.68	EL. 897.29	N.B. C.S.A.H. 83	100+75.19	27.93' RT.
P1103	446825.70	172399.57	EL. 897.15	N.B. C.S.A.H. 83	100+69.66	32.42' RT.
P1104	446840.07	172366.57	EL. 895.18	W.B. RIVERDALE DR.	60+66.15	26.00' LT.
P1105	446828.33	172408.12	EL. 897.34	N.B. C.S.A.H. 83	100+77.65	28.42' RT.
P1106	446831.22	172405.36	EL. 897.31	N.B. C.S.A.H. 83	100+77.65	32.42' RT.
P1107	446829.34	172412.68	EL. 897.40	N.B. C.S.A.H. 83	100+81.65	26.00' RT.
P1108	446831.09	172411.01	EL. 897.42	N.B. C.S.A.H. 83	100+81.65	28.42' RT.
P1109	446833.98	172408.25	EL. 897.39	N.B. C.S.A.H. 83	100+81.65	32.42' RT.
P1110	446835.13	172407.16	EL. 897.38	N.B. C.S.A.H. 83	100+81.65	34.00' RT.
P1111	446838.92	172422.72	EL. 898.45	N.B. C.S.A.H. 83	100+95.53	26.00' RT.
P1112	446844.71	172417.20	EL. 898.53	N.B. C.S.A.H. 83	100+95.53	34.00' RT.

SEE SHEET 193 FOR GENERAL NOTES.

NOTES:

- ① CURB HEIGHT TAPER SECTION, ADJUST GUTTER SLOPE TO 2% SLOPING INWARD TOWARDS FACE OF CURB
- ② RAMP AREA, ≤ 8.3% SLOPE IN DIRECTION SHOWN
- ④ ELEVATION AT TOP OF CURB
- ▤ TRUNCATED DOMES, SEE STANDARD PLATE 7038
- ▣ LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
- ← FLOW ARROW

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-10 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 1TH 101  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 PEDESTRIAN RAMP DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE




SHEET 195 OF 586

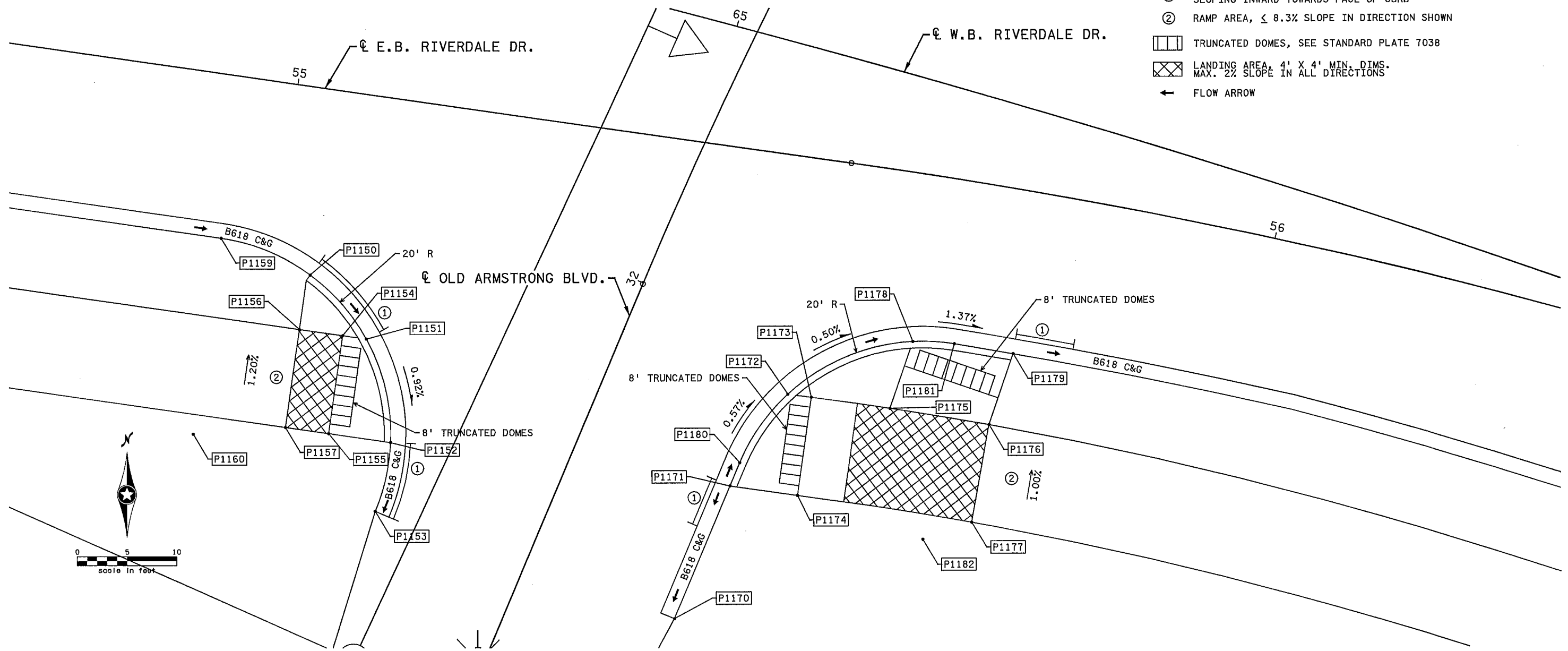
POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1150	447187.21	172194.30	EL. 874.51	OLD ARMSTRONG BLVD.	31+87.75	31.65' LT.
P1151	447193.15	172187.62	EL. 874.24	OLD ARMSTRONG BLVD.	31+83.91	23.58' LT.
P1152	447195.59	172177.16	EL. 874.14	OLD ARMSTRONG BLVD.	31+75.23	17.26' LT.
P1153	447194.03	172170.22	EL. 874.07	OLD ARMSTRONG BLVD.	31+68.23	16.00' LT.
P1154	447190.76	172187.96	EL. 874.16	OLD ARMSTRONG BLVD.	31+83.30	25.91' LT.
P1155	447189.34	172178.06	EL. 874.28	OLD ARMSTRONG BLVD.	31+73.63	23.36' LT.
P1156	447186.39	172188.58	EL. 874.22	OLD ARMSTRONG BLVD.	31+82.17	30.18' LT.
P1157	447184.97	172178.69	EL. 874.34	OLD ARMSTRONG BLVD.	31+72.50	27.63' LT.
P1159	447178.44	172197.81	EL. 874.85	OLD ARMSTRONG BLVD.	31+87.57	41.09' LT.
P1160	447175.60	172178.01	20.0' R.	OLD ARMSTRONG BLVD.	31+68.23	36.00' LT.

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1170	447224.19	172159.40	EL. 873.25	OLD ARMSTRONG BLVD.	31+70.00	16.00' RT.
P1171	447229.83	172172.75	EL. 873.40	OLD ARMSTRONG BLVD.	31+84.50	16.00' RT.
P1172	447235.68	172182.00	EL. 873.34	OLD ARMSTRONG BLVD.	31+95.29	17.78' RT.
P1173	447238.04	172181.68	EL. 873.37	OLD ARMSTRONG BLVD.	31+95.92	20.08' RT.
P1174	447236.63	172171.77	EL. 873.47	OLD ARMSTRONG BLVD.	31+86.24	22.64' RT.
P1175	447245.97	172180.54	EL. 873.30	OLD ARMSTRONG BLVD.	31+97.96	27.83' RT.
P1176	447255.98	172178.87	EL. 873.21	OLD ARMSTRONG BLVD.	32+00.34	37.70' RT.
P1177	447254.20	172169.03	EL. 873.31	OLD ARMSTRONG BLVD.	31+90.55	39.89' RT.
P1178	447248.30	172187.29	EL. 873.27	OLD ARMSTRONG BLVD.	32+05.38	27.32' RT.
P1179	447258.45	172186.02	EL. 873.13	OLD ARMSTRONG BLVD.	32+08.50	37.12' RT.
P1180	447230.83	172175.09	EL. 873.39	OLD ARMSTRONG BLVD.	31+87.04	16.00' RT.
P1181	447252.52	172187.04	EL. 873.21	OLD ARMSTRONG BLVD.	32+06.93	31.29' RT.
P1182	447249.25	172167.31	20.0' R.	OLD ARMSTRONG BLVD.	31+87.04	36.00' RT.

SEE SHEET 193 FOR GENERAL NOTES.

NOTES:

- ① CURB HEIGHT TAPER SECTION, ADJUST GUTTER SLOPE TO 2% SLOPING INWARD TOWARDS FACE OF CURB
- ② RAMP AREA, ≤ 8.3% SLOPE IN DIRECTION SHOWN
-  TRUNCATED DOMES, SEE STANDARD PLATE 7038
-  LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
-  FLOW ARROW

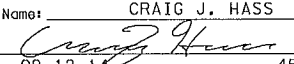


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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS



Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.      

CITY PROJECT NO.      

DRAWN BY S. MARTINS

DESIGNED BY T. BOROWICZ

CHECKED BY C. HASS

COMM. NO. 0138259



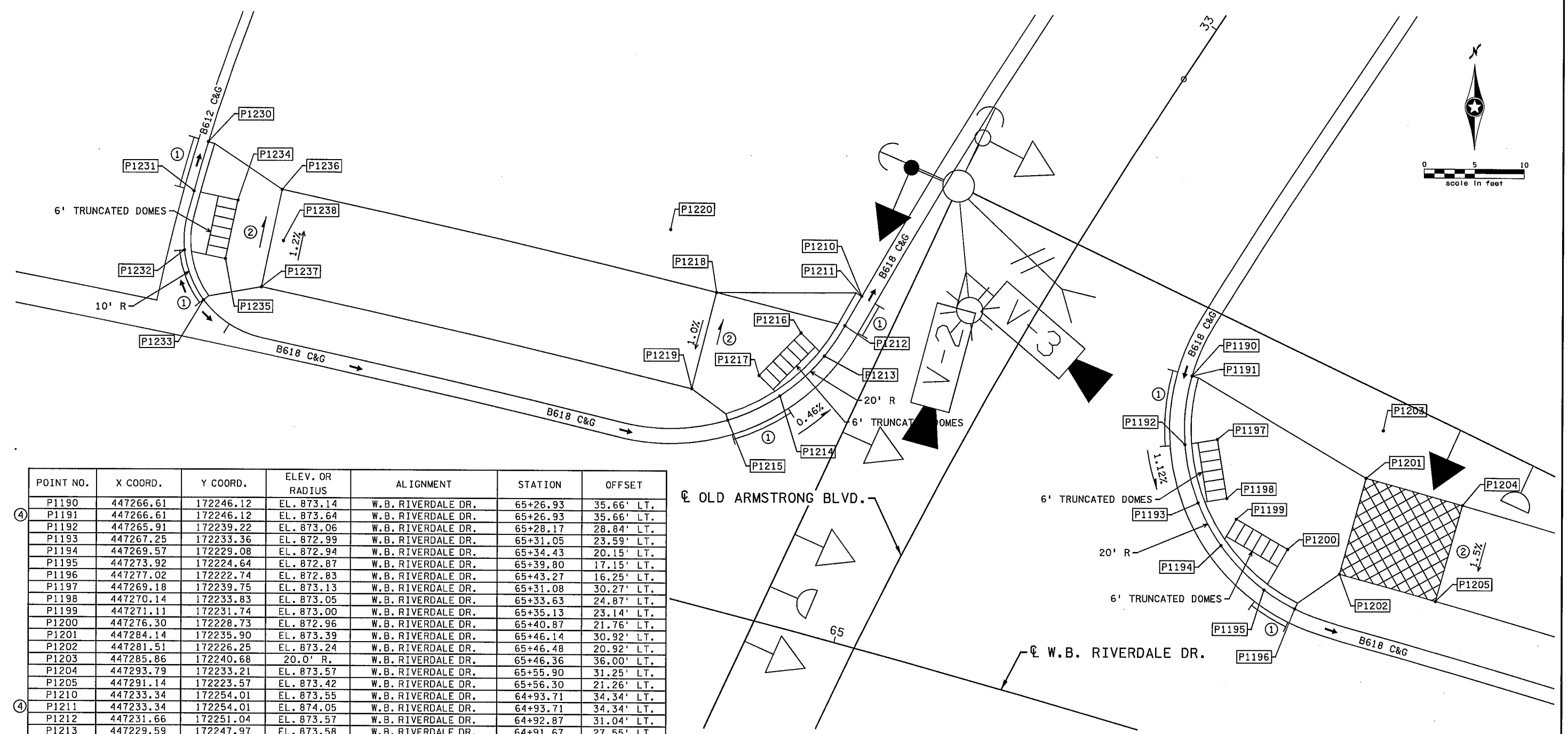
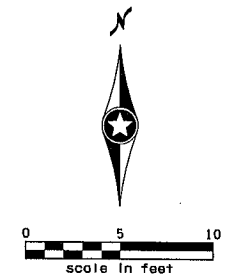
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

PEDESTRIAN RAMP DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 196 OF 586



POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
④ P1190	447266.61	172246.12	EL. 873.14	W.B. RIVERDALE DR.	65+26.93	35.66' LT.
P1191	447266.61	172246.12	EL. 873.64	W.B. RIVERDALE DR.	65+26.93	35.66' LT.
P1192	447265.91	172239.22	EL. 873.06	W.B. RIVERDALE DR.	65+28.17	28.84' LT.
P1193	447267.25	172233.36	EL. 872.99	W.B. RIVERDALE DR.	65+31.05	23.59' LT.
P1194	447269.57	172229.08	EL. 872.94	W.B. RIVERDALE DR.	65+34.43	20.15' LT.
P1195	447273.92	172224.64	EL. 872.87	W.B. RIVERDALE DR.	65+39.80	17.15' LT.
P1196	447277.02	172222.74	EL. 872.83	W.B. RIVERDALE DR.	65+43.27	16.25' LT.
P1197	447269.18	172239.75	EL. 873.13	W.B. RIVERDALE DR.	65+31.08	30.27' LT.
P1198	447270.14	172233.83	EL. 873.05	W.B. RIVERDALE DR.	65+33.63	24.87' LT.
P1199	447271.11	172231.74	EL. 873.00	W.B. RIVERDALE DR.	65+35.13	23.14' LT.
P1200	447276.30	172228.73	EL. 872.96	W.B. RIVERDALE DR.	65+40.87	21.76' LT.
P1201	447284.14	172235.90	EL. 873.39	W.B. RIVERDALE DR.	65+46.14	30.92' LT.
P1202	447281.51	172226.25	EL. 873.24	W.B. RIVERDALE DR.	65+46.48	20.92' LT.
P1203	447285.86	172240.68	20.0' R.	W.B. RIVERDALE DR.	65+46.36	36.00' LT.
P1204	447293.79	172233.21	EL. 873.57	W.B. RIVERDALE DR.	65+55.90	31.25' LT.
P1205	447291.14	172223.57	EL. 873.42	W.B. RIVERDALE DR.	65+56.30	21.26' LT.
④ P1210	447233.34	172254.01	EL. 873.55	W.B. RIVERDALE DR.	64+93.71	34.34' LT.
P1211	447233.34	172254.01	EL. 874.05	W.B. RIVERDALE DR.	64+93.71	34.34' LT.
P1212	447231.66	172251.04	EL. 873.57	W.B. RIVERDALE DR.	64+92.87	31.04' LT.
P1213	447229.59	172247.97	EL. 873.58	W.B. RIVERDALE DR.	64+91.67	27.55' LT.
P1214	447225.13	172243.94	EL. 873.61	W.B. RIVERDALE DR.	64+88.44	22.52' LT.
P1215	447219.90	172241.48	EL. 873.64	W.B. RIVERDALE DR.	64+84.06	18.84' LT.
P1216	447227.22	172250.29	EL. 873.64	W.B. RIVERDALE DR.	64+88.86	29.19' LT.
P1217	447223.03	172245.99	EL. 873.66	W.B. RIVERDALE DR.	64+85.94	23.98' LT.
P1218	447218.73	172254.32	EL. 874.10	W.B. RIVERDALE DR.	64+79.86	31.00' LT.
P1219	447216.28	172244.63	EL. 874.00	W.B. RIVERDALE DR.	64+79.84	21.00' LT.
P1220	447214.11	172260.63	20.0' R.	W.B. RIVERDALE DR.	64+74.01	36.00' LT.
P1230	447167.55	172269.24	EL. 874.62	W.B. RIVERDALE DR.	64+28.01	34.12' LT.
P1231	447166.13	172264.31	EL. 874.74	W.B. RIVERDALE DR.	64+27.62	29.00' LT.
P1232	447165.20	172258.38	EL. 875.02	W.B. RIVERDALE DR.	64+27.91	23.00' LT.
P1233	447167.13	172253.37	EL. 875.35	W.B. RIVERDALE DR.	64+30.77	18.49' LT.
P1234	447170.54	172263.39	EL. 874.83	W.B. RIVERDALE DR.	64+32.03	29.00' LT.
P1235	447169.31	172257.51	EL. 874.95	W.B. RIVERDALE DR.	64+32.03	23.00' LT.
P1236	447175.01	172264.49	EL. 875.06	W.B. RIVERDALE DR.	64+36.08	31.00' LT.
P1237	447172.95	172254.70	EL. 875.18	W.B. RIVERDALE DR.	64+36.11	21.00' LT.
P1238	447175.15	172259.34	10.0' R.	W.B. RIVERDALE DR.	64+37.26	26.00' LT.

SEE SHEET 193 FOR GENERAL NOTES.

NOTES:

- ① CURB HEIGHT TAPER SECTION, ADJUST GUTTER SLOPE TO 2% SLOPING INWARD TOWARDS FACE OF CURB
- ② RAMP AREA, < 8.3% SLOPE IN DIRECTION SHOWN
- ④ ELEVATION AT TOP OF CURB
- [Hatched Box] TRUNCATED DOMES, SEE STANDARD PLATE 7038
- [Cross-hatched Box] LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
- ← FLOW ARROW

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.      

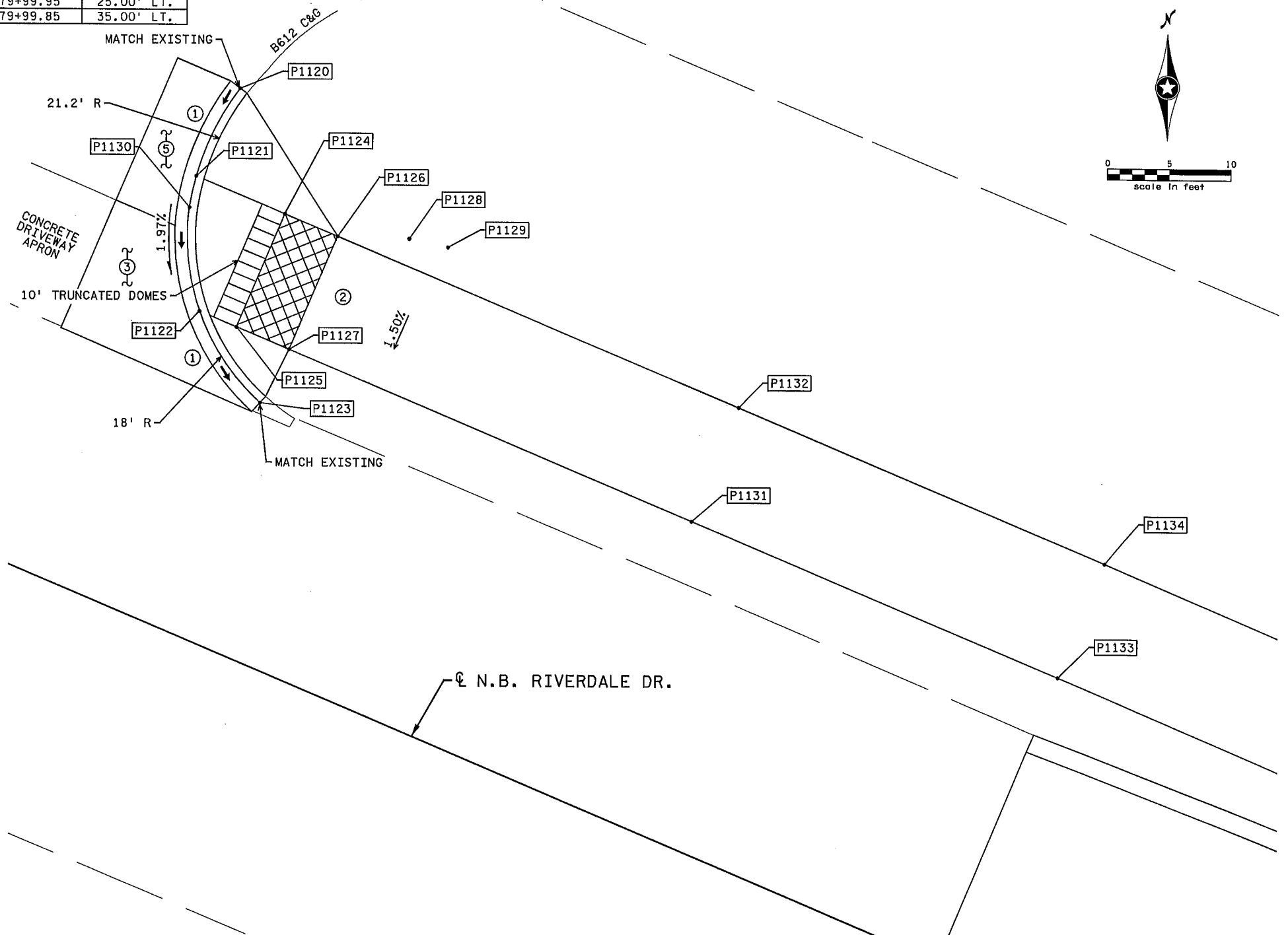
DRAWN BY S. MARTINS  
 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 PEDESTRIAN RAMP DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 197 OF 586

POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1120	445976.24	172810.64	EL. 876.15	N.B. RIVERDALE DR.	79+20.10	42.95' LT.
P1121	445972.70	172803.50	EL. 875.64	N.B. RIVERDALE DR.	79+19.61	35.00' LT.
P1122	445973.01	172792.52	EL. 875.42	N.B. RIVERDALE DR.	79+24.17	25.00' LT.
P1123	445977.96	172785.10	EL. 874.85	N.B. RIVERDALE DR.	79+31.61	20.09' LT.
P1124	445979.91	172800.46	EL. 875.68	N.B. RIVERDALE DR.	79+27.43	35.00' LT.
P1125	445976.02	172791.25	EL. 875.48	N.B. RIVERDALE DR.	79+27.43	25.00' LT.
P1126	445984.19	172798.66	EL. 875.71	N.B. RIVERDALE DR.	79+32.08	35.00' LT.
P1127	445980.30	172789.44	EL. 875.56	N.B. RIVERDALE DR.	79+32.08	25.00' LT.
P1128	445990.00	172798.49	18.0' R.	N.B. RIVERDALE DR.	79+37.49	37.11' LT.
P1129	445993.14	172797.81	21.2' R.	N.B. RIVERDALE DR.	79+40.66	37.70' LT.
P1130	445972.16	172800.95	EL. 875.59	N.B. RIVERDALE DR.	79+20.10	32.44' LT.
P1131	446013.02	172775.64	EL. 875.03	N.B. RIVERDALE DR.	79+67.59	25.00' LT.
P1132	446016.83	172784.88	EL. 875.18	N.B. RIVERDALE DR.	79+67.51	35.00' LT.
P1133	446042.83	172763.06	EL. 874.68	N.B. RIVERDALE DR.	79+99.95	25.00' LT.
P1134	446046.62	172772.31	EL. 874.83	N.B. RIVERDALE DR.	79+99.85	35.00' LT.



SEE SHEET 193 FOR GENERAL NOTES.

NOTES:

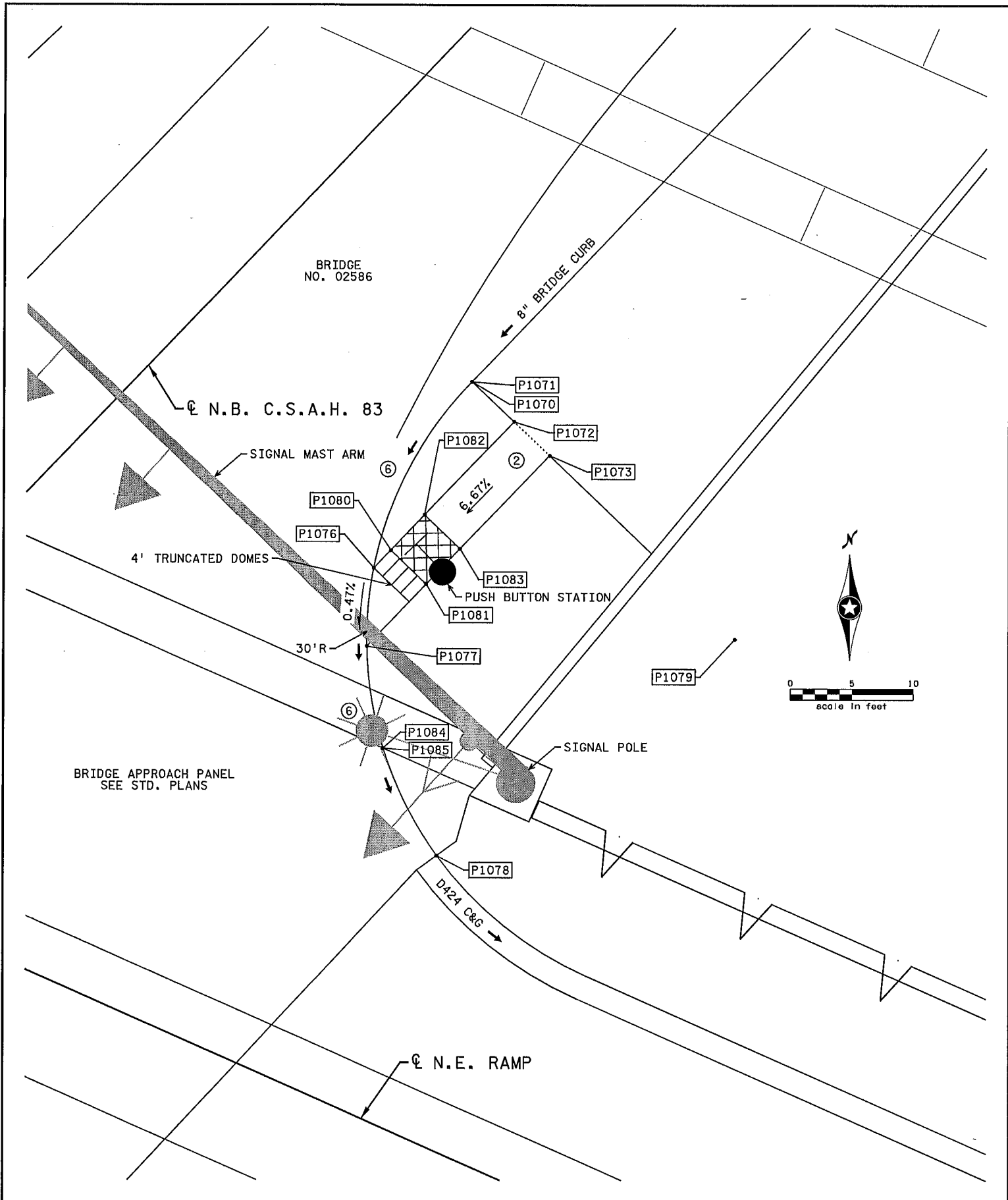
- ① CURB HEIGHT TAPER SECTION, ADJUST GUTTER SLOPE TO 2% SLOPING INWARD TOWARDS FACE OF CURB
- ② RAMP AREA,  $\leq$  8.3% SLOPE IN DIRECTION SHOWN
- ③ PAID FOR AS 6" CONCRETE WALK. MATCH EXISTING APRON DEPTH
- ⑤ USE INSET I ON SHEET 80 FOR PAVEMENT SECTION
- ▭ TRUNCATED DOMES, SEE STANDARD PLATE 7038
- ▣ LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
- ← FLOW ARROW

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<table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>				NO	DATE	BY	CKD	APPR	REVISION																			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: CRAIG J. HASS  Date: 09-12-14 License #: 45039		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY S. MARTINS DESIGNED BY T. BOROWICZ CHECKED BY C. HASS COMM. NO. 0138259		<b>SRF</b> ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.		ANOKA COUNTY PEDESTRIAN RAMP DETAILS T.H. 10 / C.S.A.H. 83 INTERCHANGE		SHEET 198 OF 586
NO	DATE	BY	CKD	APPR	REVISION																																	







POINT NO.	X COORD.	Y COORD.	ELEV. OR RADIUS	ALIGNMENT	STATION	OFFSET
P1070	447219.91	172830.61	EL. 913.36	N.B. C.S.A.H. 83	106+53.65	20.00' RT.
④ P1071	447219.91	172830.61	EL. 914.03	N.B. C.S.A.H. 83	106+53.65	20.00' RT.
P1072	447223.33	172827.35	EL. 914.08	N.B. C.S.A.H. 83	106+53.65	24.71' RT.
P1073	447226.22	172824.59	EL. 914.12	N.B. C.S.A.H. 83	106+53.65	28.71' RT.
P1076	447211.93	172815.42	EL. 913.29	N.B. C.S.A.H. 83	106+37.15	24.71' RT.
P1077	447211.37	172809.04	EL. 913.26	N.B. C.S.A.H. 83	106+32.15	28.71' RT.
P1078	447217.11	172791.99	EL. 913.11	N.E. RAMP	20+55.41	22.06' LT.
P1079	447241.37	172809.64	30.0' R.	N.B. C.S.A.H. 83	106+53.29	50.00' RT.
P1080	447213.31	172816.86	EL. 913.32	N.B. C.S.A.H. 83	106+39.15	24.71' RT.
P1081	447216.21	172814.10	EL. 913.37	N.B. C.S.A.H. 83	106+39.15	28.71' RT.
P1082	447216.08	172819.76	EL. 913.38	N.B. C.S.A.H. 83	106+43.15	24.71' RT.
P1083	447218.97	172817.00	EL. 913.43	N.B. C.S.A.H. 83	106+43.15	28.71' RT.
P1084	447212.72	172800.74	EL. 913.23	N.B. C.S.A.H. 83	106+27.07	35.42' RT.
④ P1085	447212.72	172800.74	EL. 913.56	N.B. C.S.A.H. 83	106+27.07	35.42' RT.

SEE SHEET 193 FOR GENERAL NOTES.

NOTES:

- ② RAMP AREA, ≤ 8.3% SLOPE IN DIRECTION SHOWN
- ④ ELEVATION AT TOP OF CURB
- ⑥ CURB HEIGHT TAPER SECTION
- ▤ TRUNCATED DOMES, SEE STANDARD PLATE 7038
- ▣ LANDING AREA, 4' X 4' MIN. DIMS. MAX. 2% SLOPE IN ALL DIRECTIONS
- ← FLOW ARROW

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199-115-002

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CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY T. BOROWICZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 PEDESTRIAN RAMP DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 200 OF 586

GENERAL NOTES:

ALL UTILITIES SHOWN ON PROFILES ARE EXISTING UNLESS NOTED OTHERWISE.

SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED. SOME NEW UTILITIES MAY HAVE BEEN RECENTLY CONSTRUCTED AND MAY NOT BE SHOWN.

SEE INPLACE TOPOGRAPHY AND UTILITY PLANS FOR OVERHEAD UTILITY LOCATIONS.

DITCH GRADES ARE SHOWN TO BOTTOM OF SLOPE DRESSING.

**LEGEND**

SSD = STOPPING SIGHT DISTANCE  
HSD = HEADLIGHT SIGHT DISTANCE

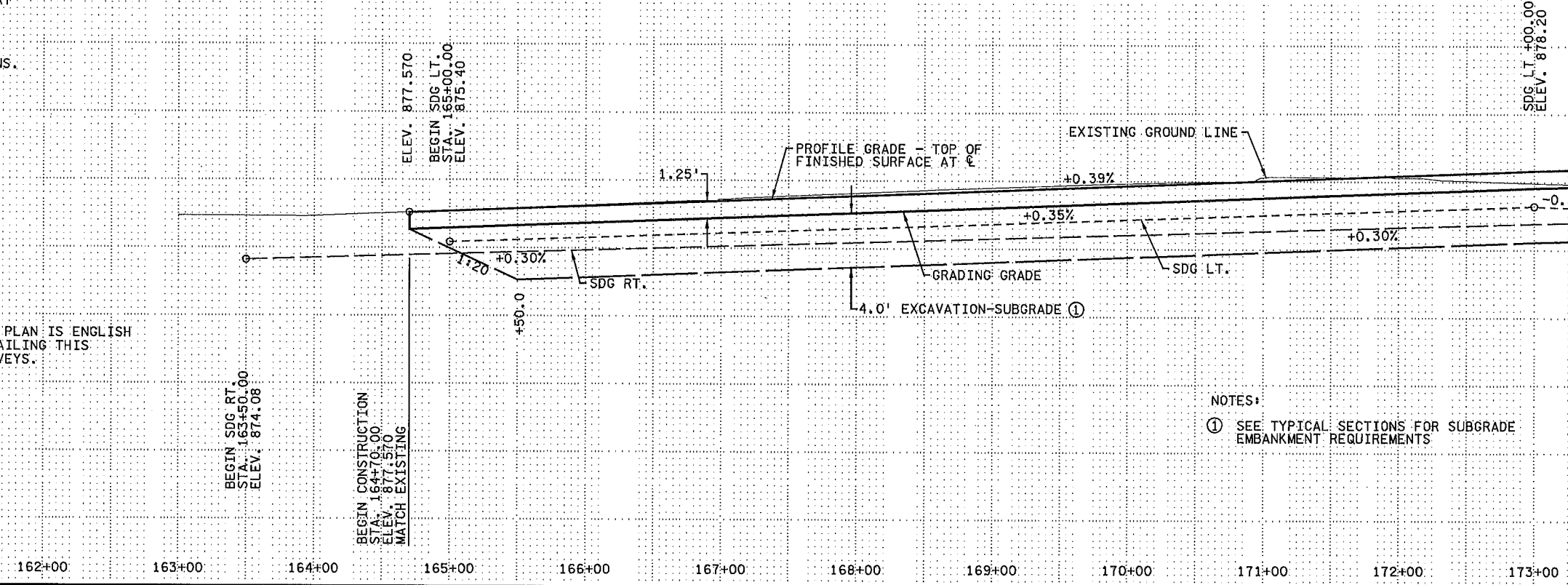
VERTICAL CONTROL

THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784

**W.B. T.H. 10**

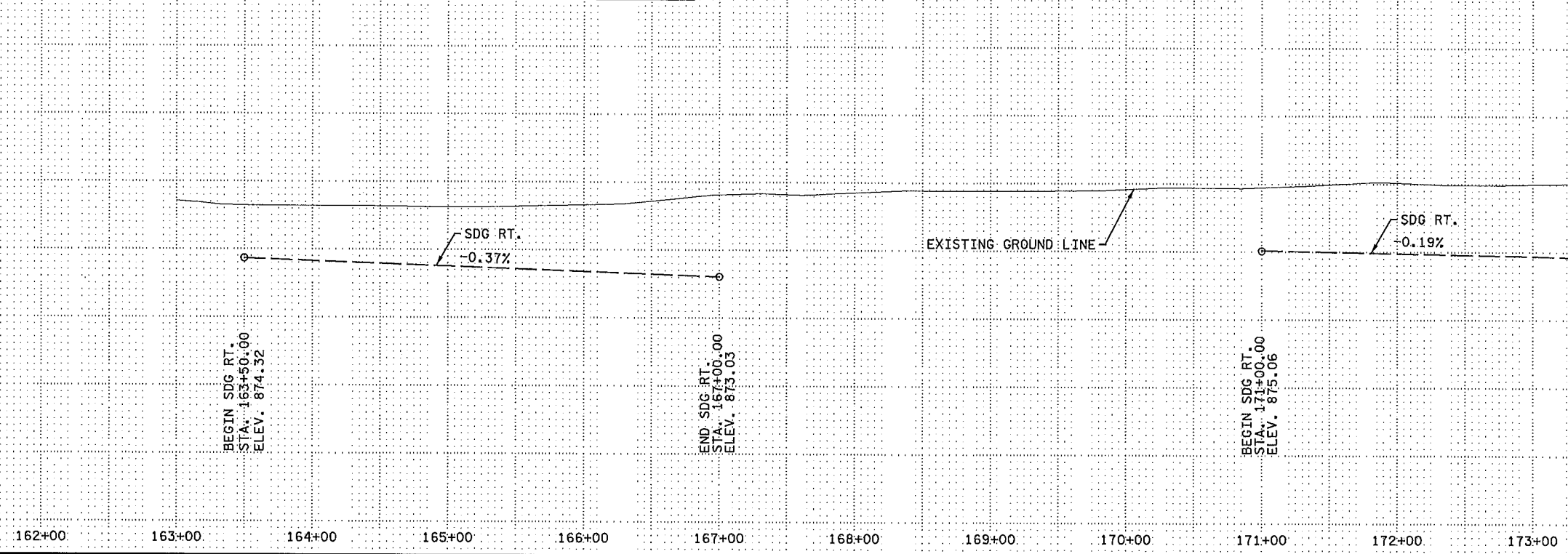
TRAFFIC



NOTES:  
① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS

**E.B. T.H. 10**

TRAFFIC



3:21:40 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_pr01.dgn

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199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
PROFILES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

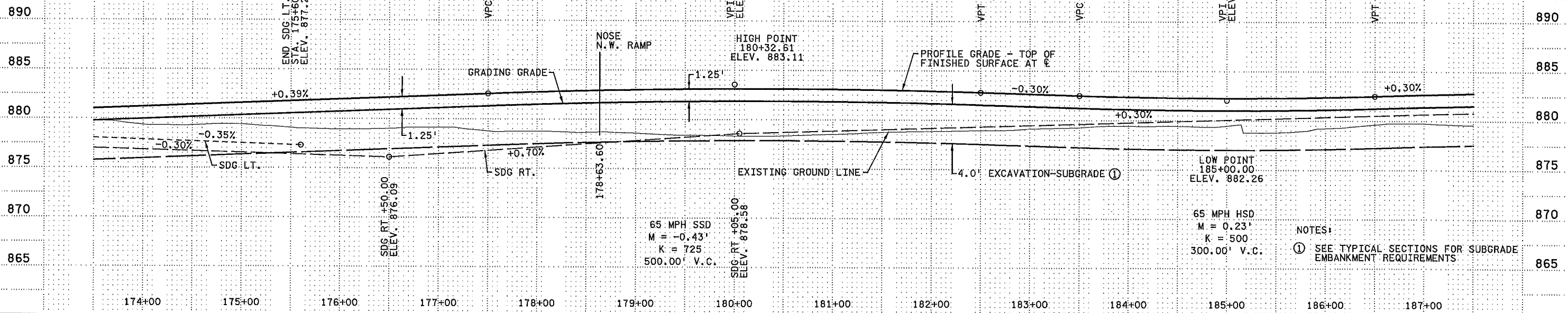
SHEET  
201  
OF  
586

905 GENERAL NOTES:  
 900 ALL UTILITIES SHOWN ON PROFILES ARE  
 895 EXISTING UNLESS NOTED OTHERWISE.  
 890 SOME UTILITIES MAY HAVE BEEN REMOVED  
 885 OR ABANDONED. SOME NEW UTILITIES MAY  
 880 HAVE BEEN RECENTLY CONSTRUCTED AND  
 875 MAY NOT BE SHOWN.  
 870 SEE INPLACE TOPOGRAPHY AND UTILITY  
 865 PLANS FOR OVERHEAD UTILITY LOCATIONS.  
 DITCH GRADES ARE SHOWN TO BOTTOM  
 OF SLOPE DRESSING.

W.B. T.H. 10

TRAFFIC ←

LEGEND  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE



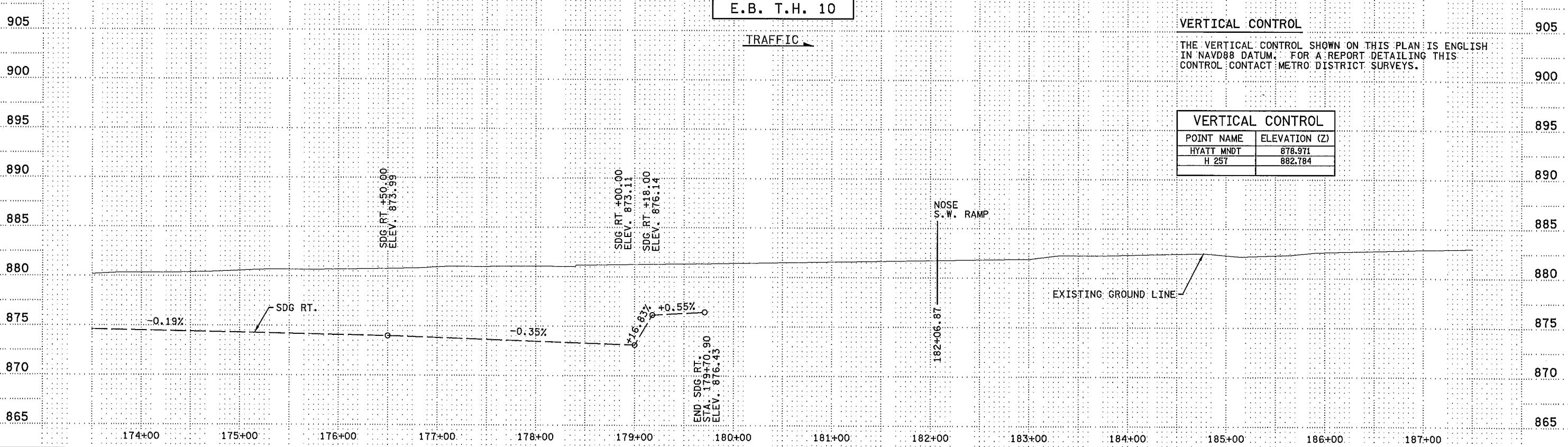
NOTES:  
 ① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS.

E.B. T.H. 10

TRAFFIC →

VERTICAL CONTROL  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784



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NO	DATE	BY	CHKD	APPR	REVISION

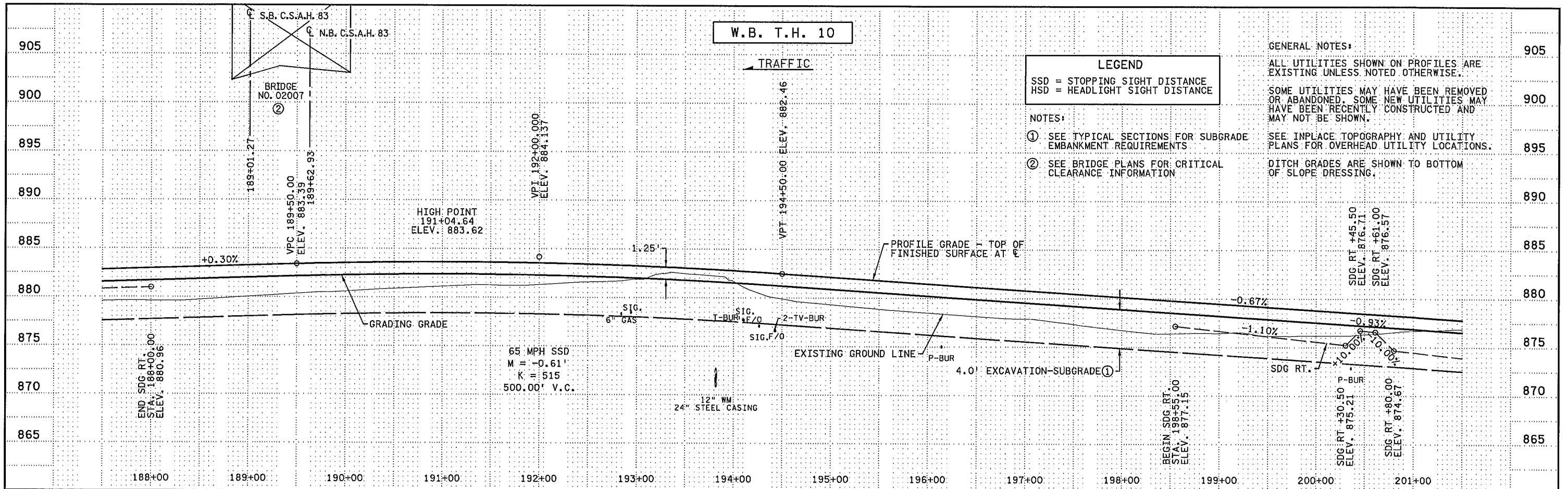
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

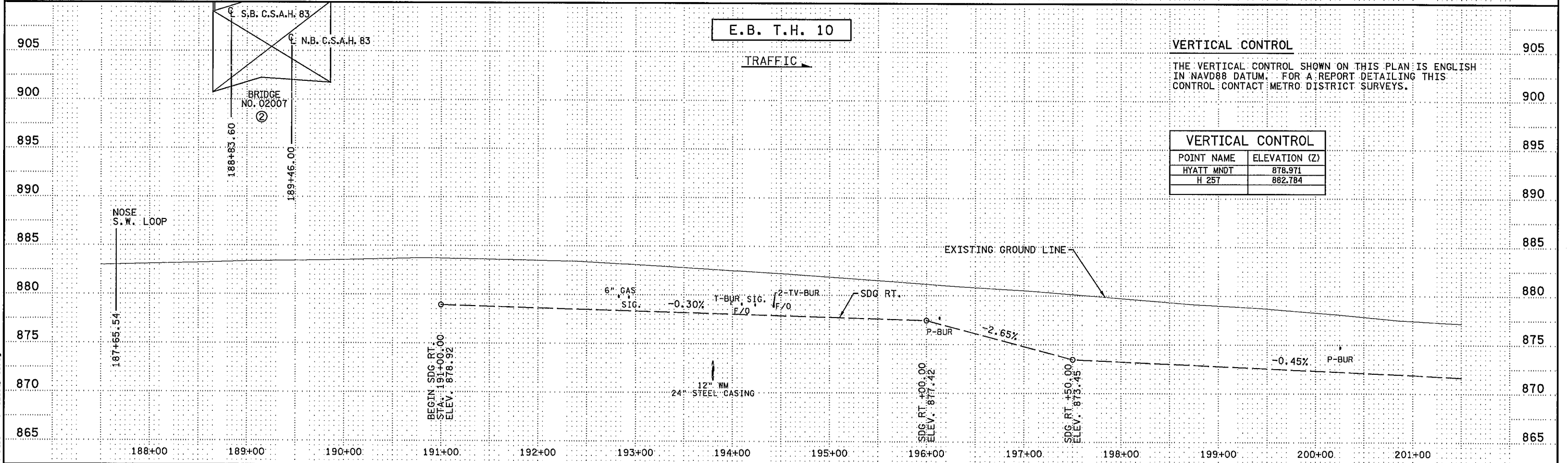
SHEET 202 OF 586



**LEGEND**  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

**NOTES:**  
 ① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS  
 ② SEE BRIDGE PLANS FOR CRITICAL CLEARANCE INFORMATION

**GENERAL NOTES:**  
 ALL UTILITIES SHOWN ON PROFILES ARE EXISTING UNLESS NOTED OTHERWISE.  
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 SEE INPLACE TOPOGRAPHY AND UTILITY PLANS FOR OVERHEAD UTILITY LOCATIONS.  
 DITCH GRADES ARE SHOWN TO BOTTOM OF SLOPE DRESSING.



**VERTICAL CONTROL**  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 25T	882.784

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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 203  
 OF  
 586





S.B. C.S.A.H. 83

← TRAFFIC

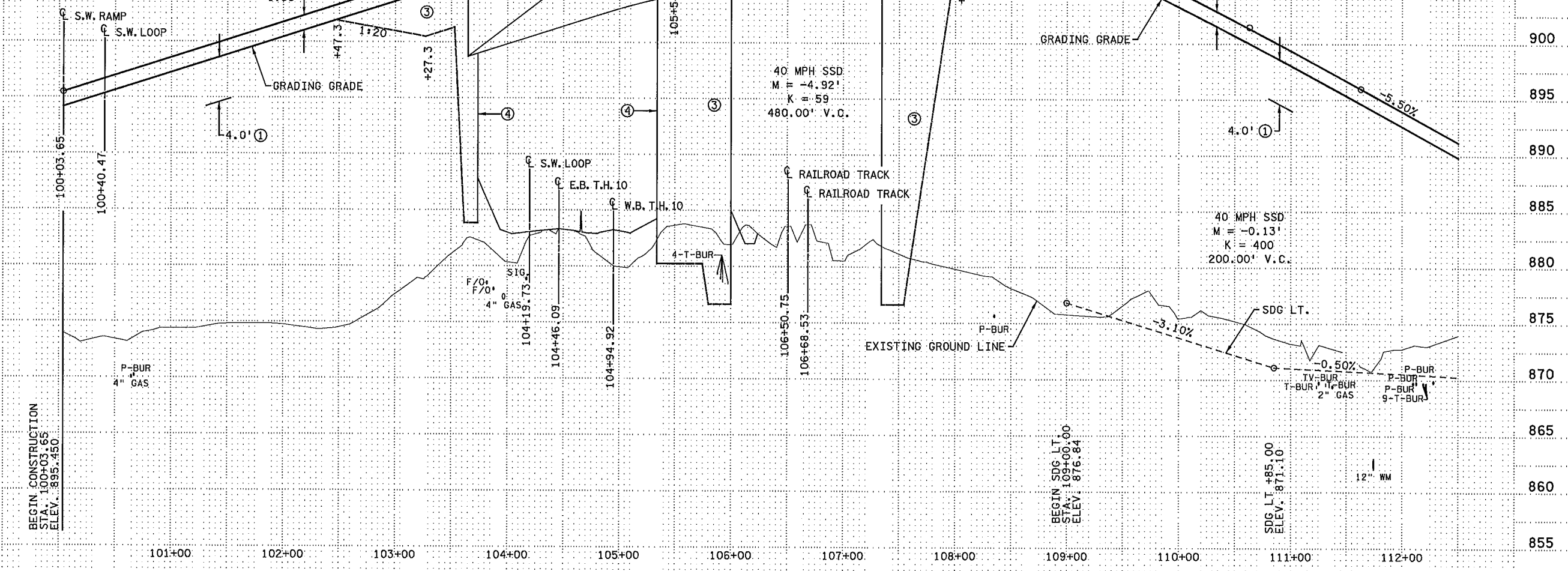
GENERAL NOTES:  
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NOTES:  
 ① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS.  
 ② SEE BRIDGE PLANS FOR CRITICAL CLEARANCE INFORMATION.  
 ③ SEE STANDARD PLANS BRIDGE APPROACH PANEL TREATMENT FOR GRADING AND EMBANKMENT REQUIREMENTS.  
 ④ SEE RETAINING WALL PLANS FOR MSE WALL ABUTMENTS.

LEGEND  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

VERTICAL CONTROL  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784



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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Prt Int Name: CRAIG J. HASS  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 205 OF 586

N.B. C.S.A.H. 83

TRAFFIC

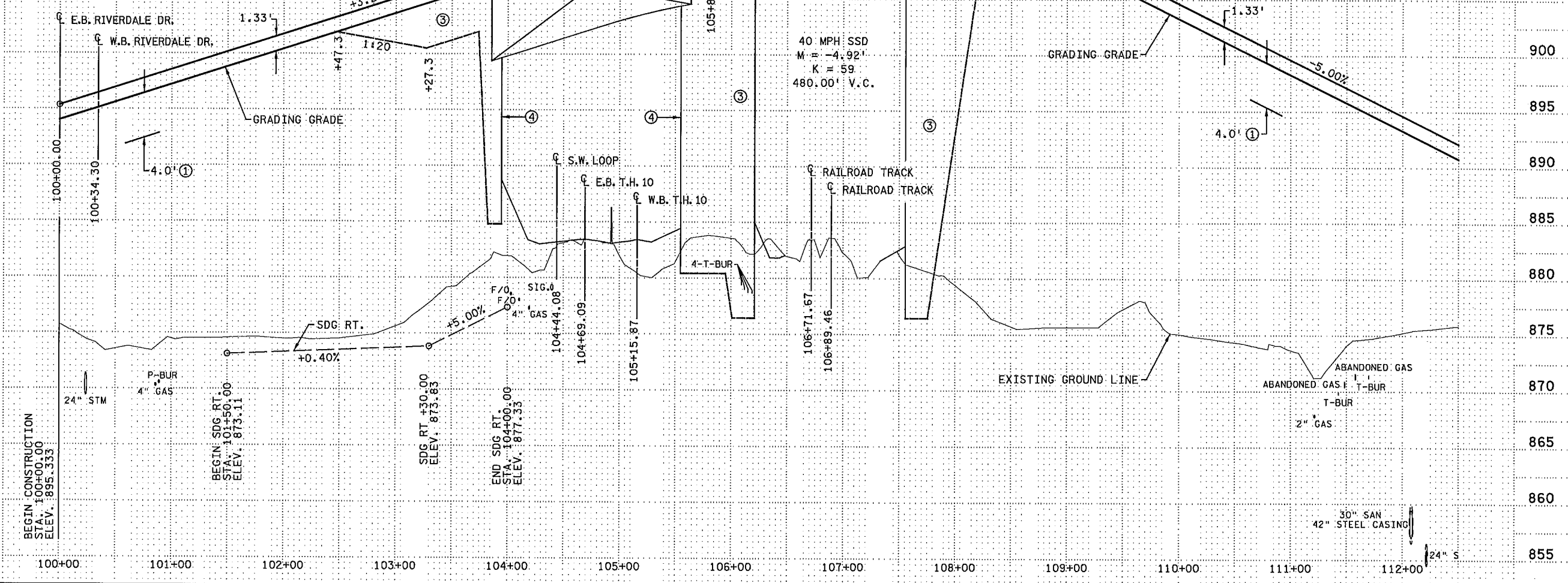
GENERAL NOTES:  
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NOTES:  
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LEGEND  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

VERTICAL CONTROL  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.764



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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 206  
 OF  
 586



S.B. C.S.A.H. 83

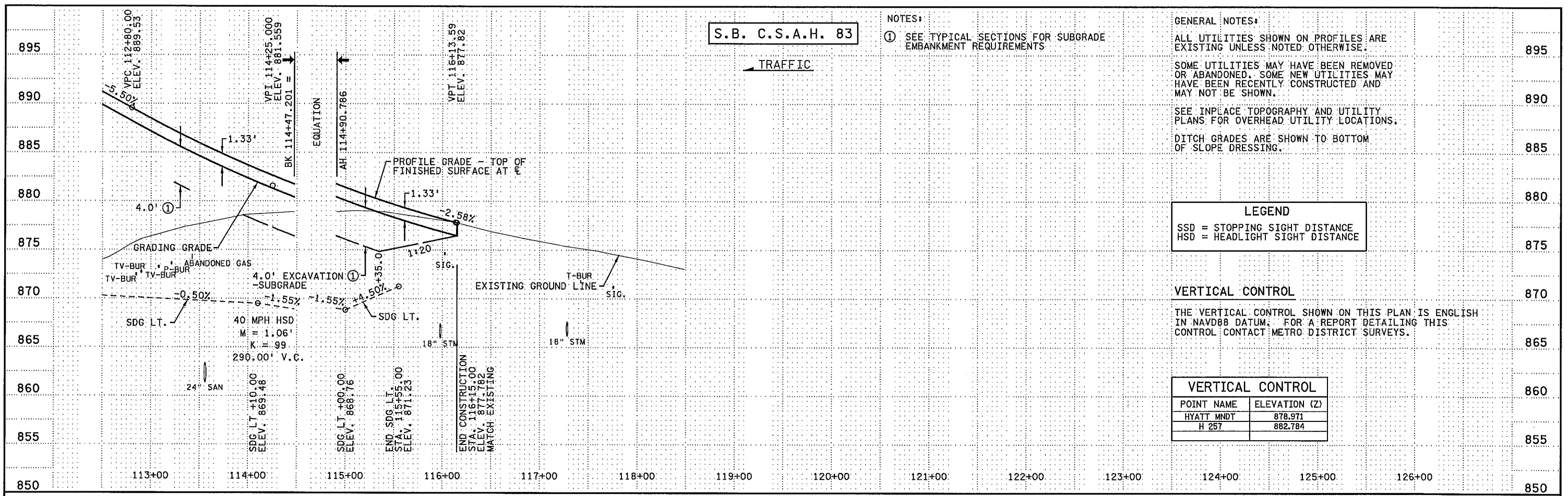
NOTES:  
 ① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS

GENERAL NOTES:  
 ALL UTILITIES SHOWN ON PROFILES ARE EXISTING UNLESS NOTED OTHERWISE.  
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LEGEND  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

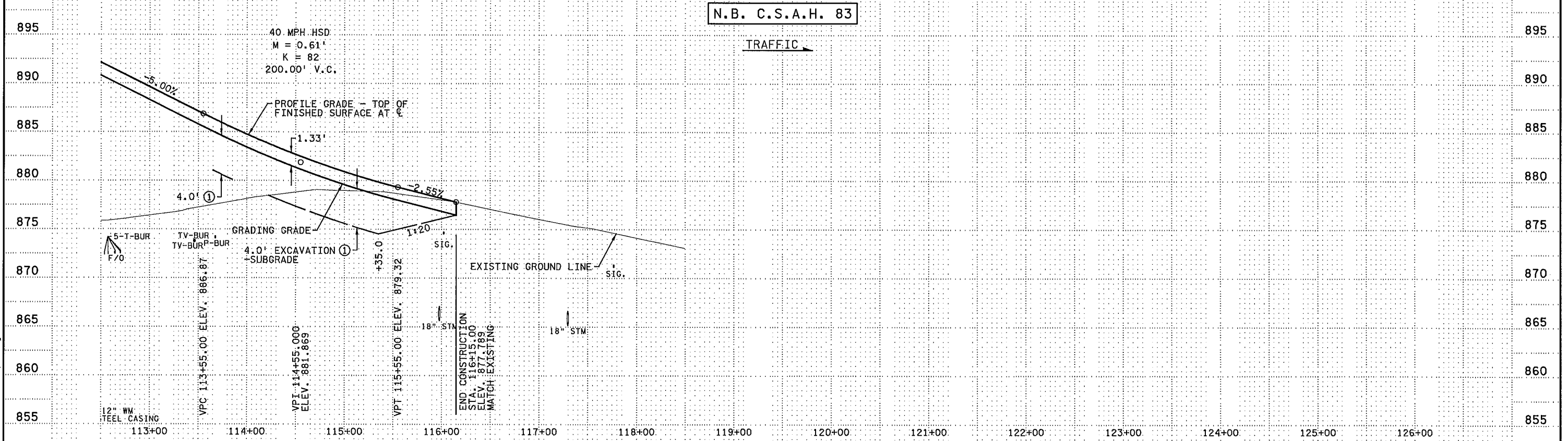
VERTICAL CONTROL  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

VERTICAL CONTROL	
POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784



N.B. C.S.A.H. 83

TRAFFIC



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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Prt Name: CRAIG J. HASS  
 Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 207  
 OF  
 586

NOTES:

① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS

**LEGEND**  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

GENERAL NOTES:

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SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED. SOME NEW UTILITIES MAY HAVE BEEN RECENTLY CONSTRUCTED AND MAY NOT BE SHOWN.

SEE INPLACE TOPOGRAPHY AND UTILITY PLANS FOR OVERHEAD UTILITY LOCATIONS.

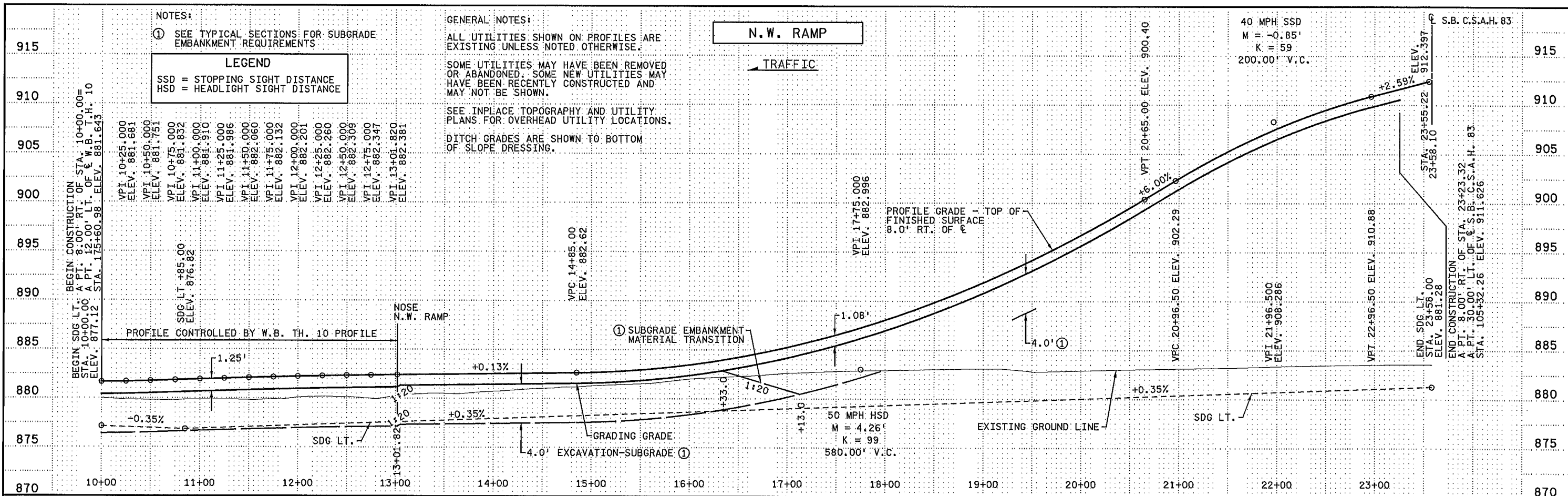
DITCH GRADES ARE SHOWN TO BOTTOM OF SLOPE DRESSING.

**N.W. RAMP**

← TRAFFIC

40 MPH SSD  
 M = -0.85'  
 K = 59  
 200.00' V.C.

S.B. C.S.A.H. 83



**N.E. RAMP**

← TRAFFIC

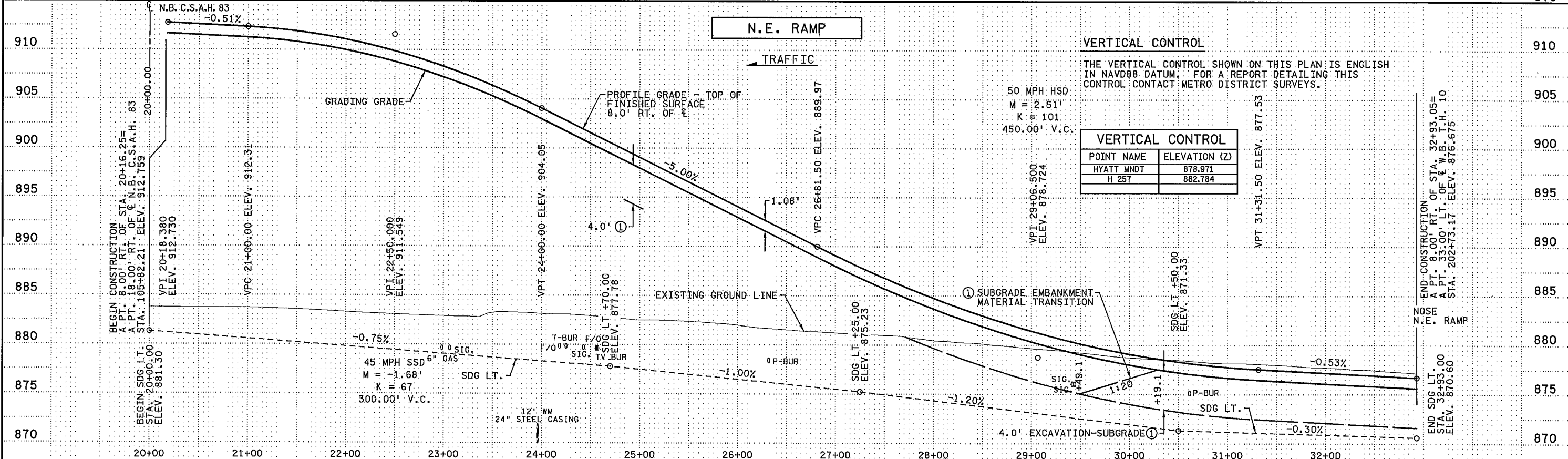
**VERTICAL CONTROL**

THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

50 MPH HSD  
 M = 2.51'  
 K = 101  
 450.00' V.C.

**VERTICAL CONTROL**

POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784



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NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 208  
 OF  
 586



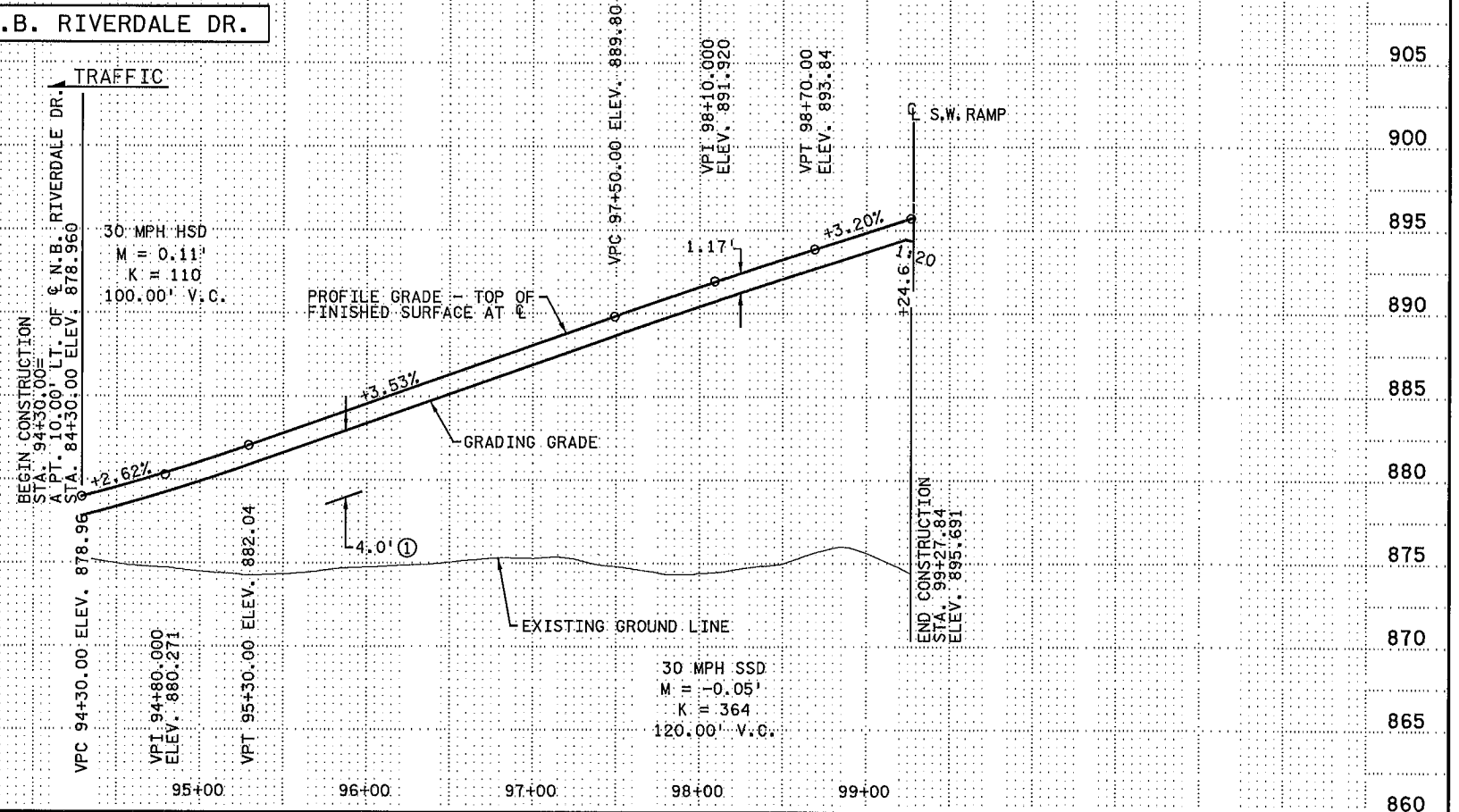
**S.B. RIVERDALE DR.**

**LEGEND**  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

**VERTICAL CONTROL**  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

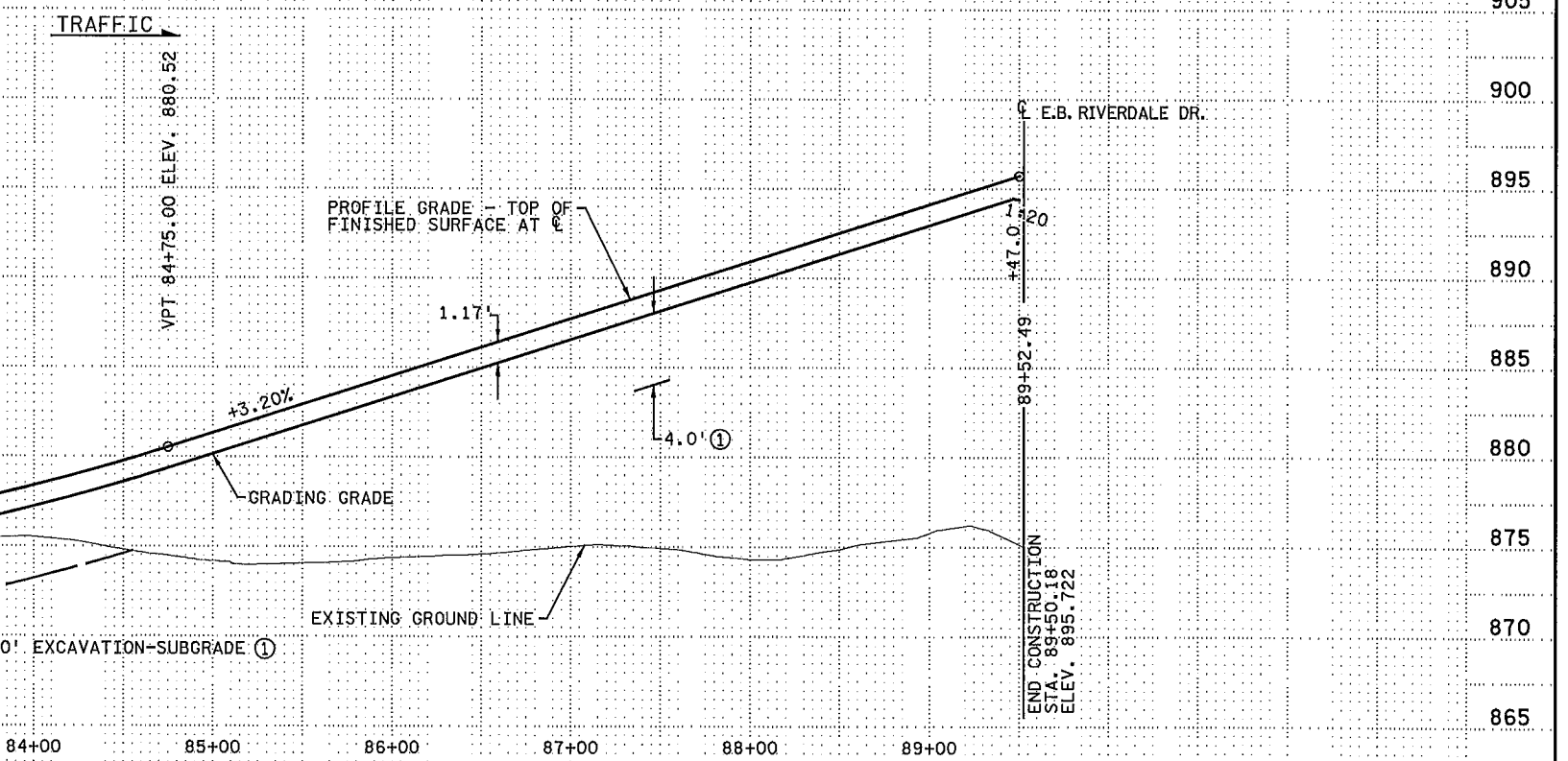
POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784

**NOTES:**  
 ① SEE TYPICAL SECTIONS FOR SUBGRADE EMBANKMENT REQUIREMENTS



**N.B. RIVERDALE DR.**

**GENERAL NOTES:**  
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 SEE INPLACE TOPOGRAPHY AND UTILITY PLANS FOR OVERHEAD UTILITY LOCATIONS.  
 DITCH GRADES ARE SHOWN TO BOTTOM OF SLOPE DRESSING.



3:21:58 PM 9/11/2014 H:\Projects\8259\CAD\_BITMAP\an\8259\_pr10.dgn

NO	DATE	BY	CHK	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

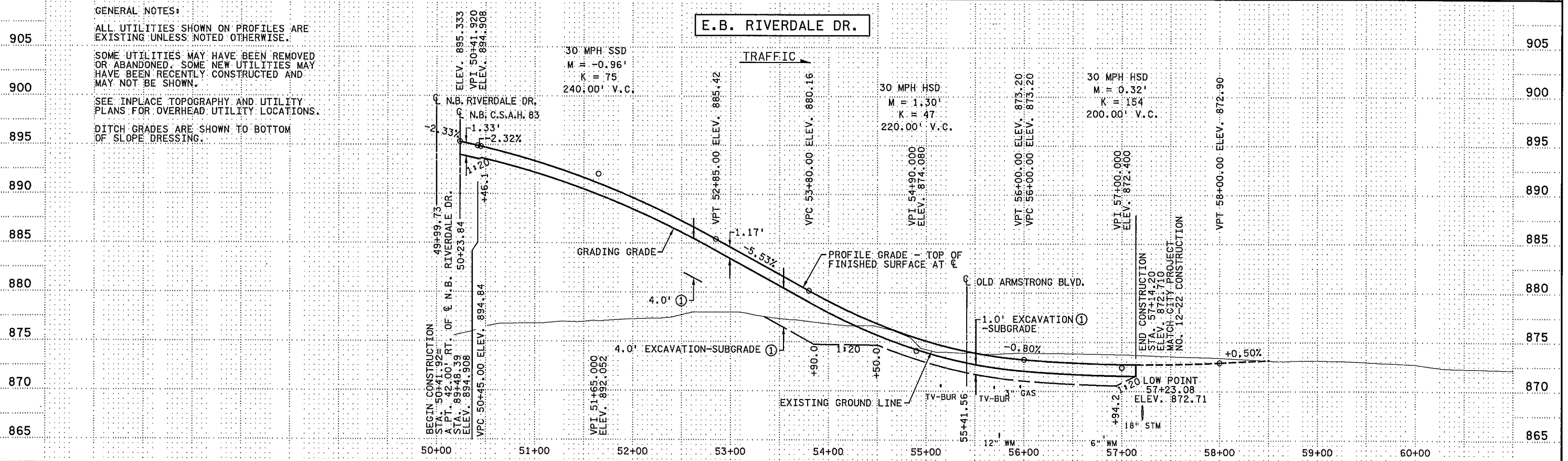
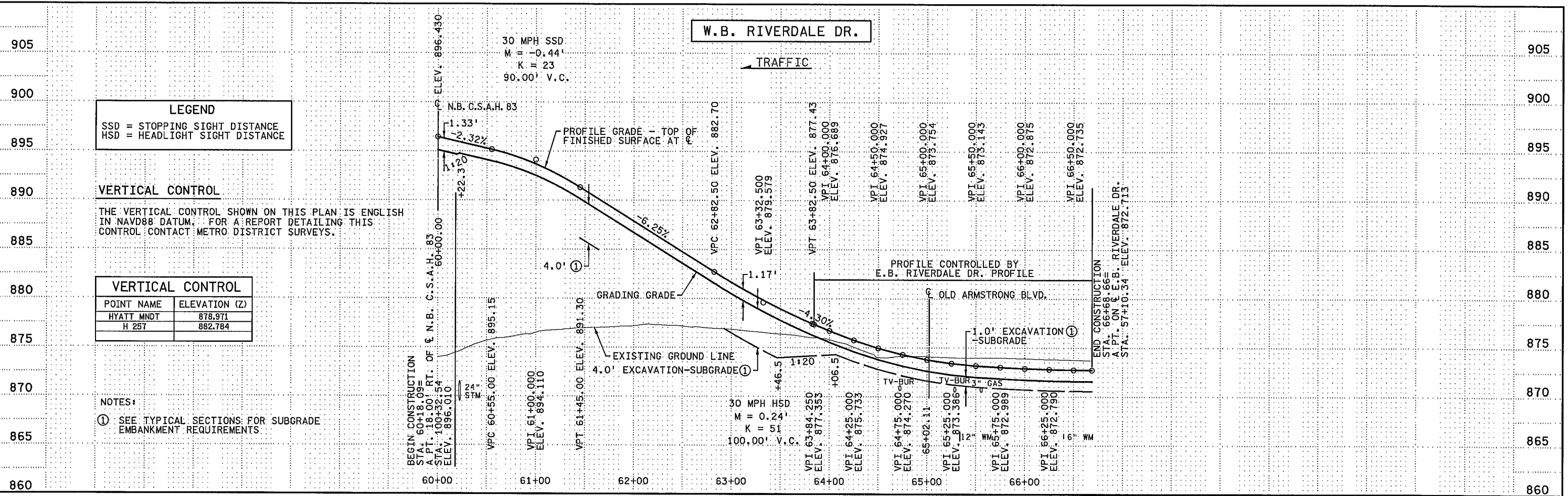


ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 210  
 OF  
 586





3:22:01 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\plan\8259\_pr11.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-18 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY D. SYMANIETZ

CHECKED BY C. HASS

COMM. NO. 0138259



ANOKA COUNTY  
PROFILES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 211 OF 586

GENERAL NOTES:  
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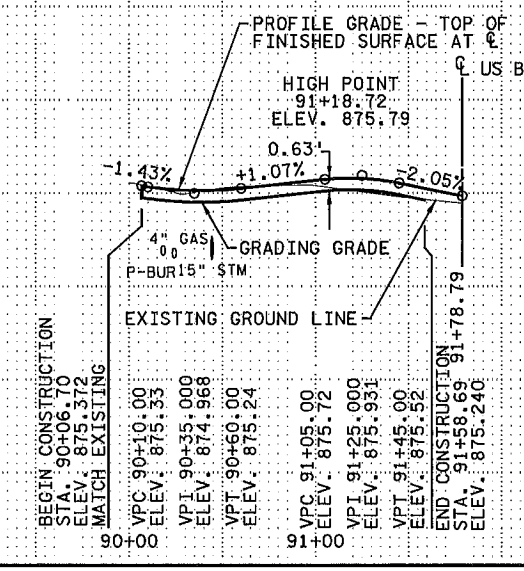
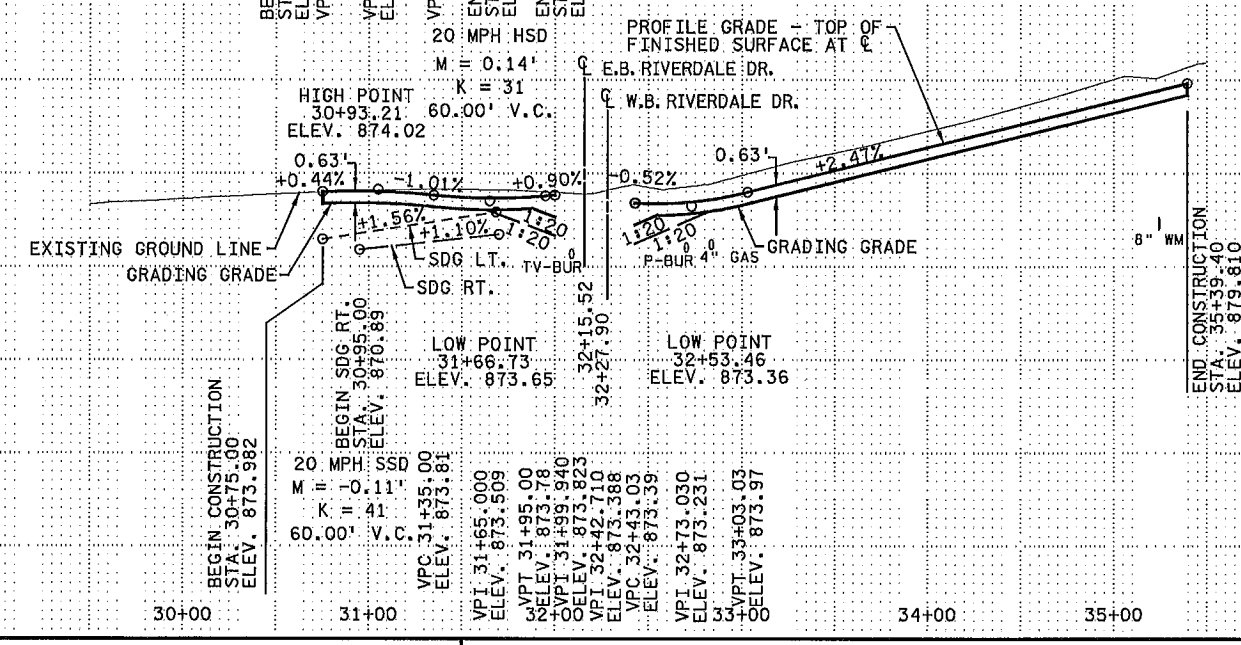
**OLD ARMSTRONG BLVD.**

**LEGEND**  
 SSD = STOPPING SIGHT DISTANCE  
 HSD = HEADLIGHT SIGHT DISTANCE

**US BANK**

**VERTICAL CONTROL**  
 THE VERTICAL CONTROL SHOWN ON THIS PLAN IS ENGLISH IN NAVD88 DATUM. FOR A REPORT DETAILING THIS CONTROL CONTACT METRO DISTRICT SURVEYS.

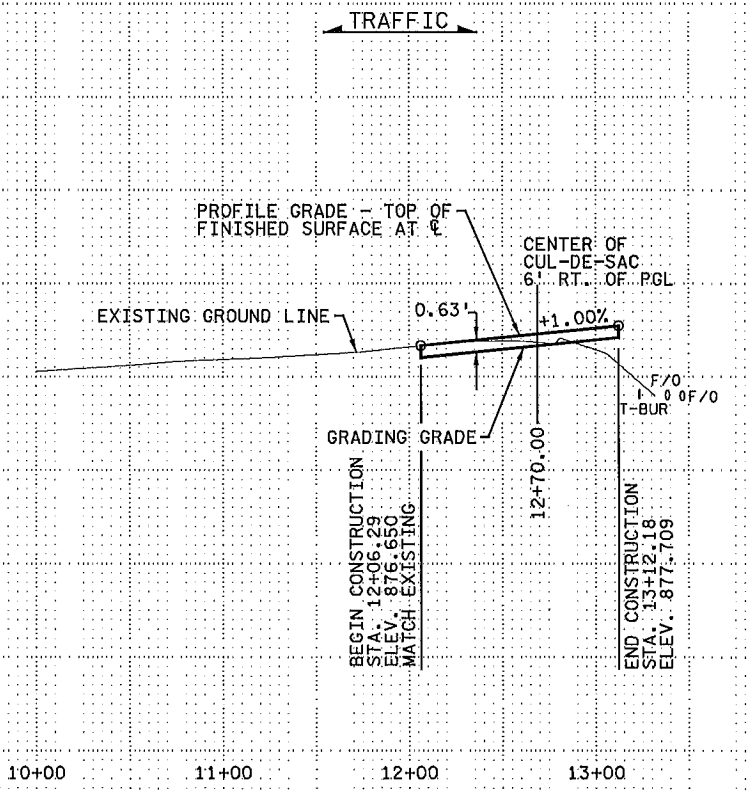
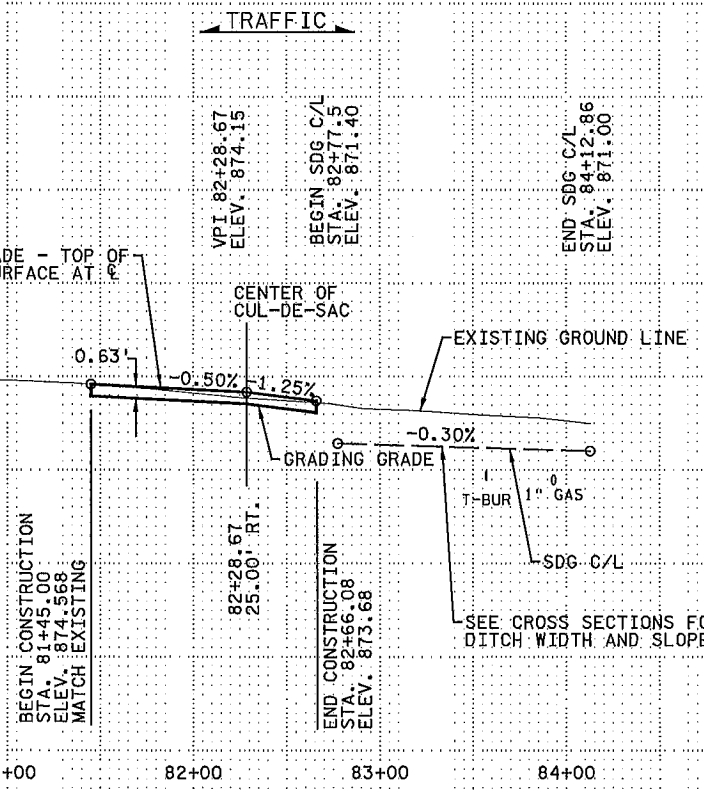
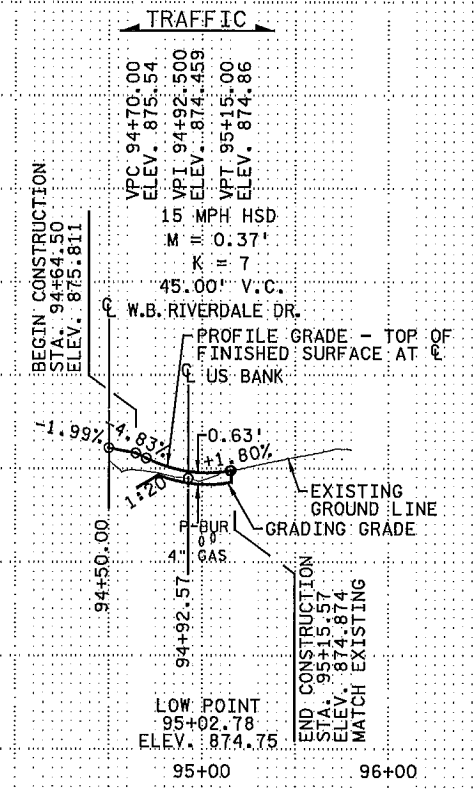
POINT NAME	ELEVATION (Z)
HYATT MNDT	878.971
H 257	882.784



**US BANK2**

**146TH AVE.**

**LLAMA ST.**



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 9/11/2014  
 H:\V-Proj\cvs\8259\CAD\_BIM\PI\on\8259\_pr12.dgn

NO	DATE	BY	CHK	APPR	REVISION

Pr Int Name: CRAIG J. HASS  
 Date: 09-12-18 License #: 45039

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.

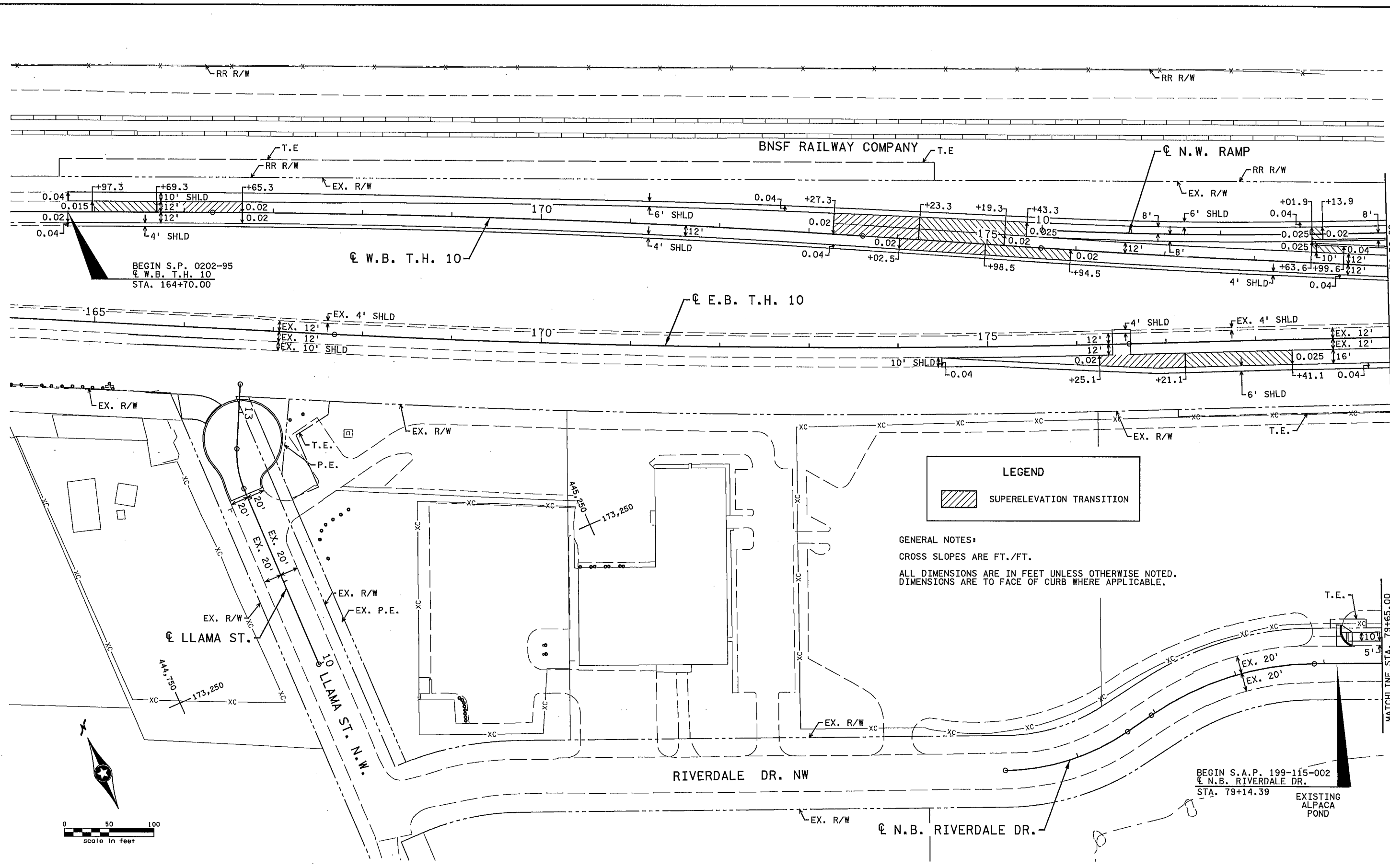
STATE AID PROJECT NO. 002-683-004  
 89-15-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ANOKA COUNTY  
 PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 212 OF 586



**LEGEND**

SUPERELEVATION TRANSITION

**GENERAL NOTES:**  
 CROSS SLOPES ARE FT./FT.  
 ALL DIMENSIONS ARE IN FEET UNLESS OTHERWISE NOTED.  
 DIMENSIONS ARE TO FACE OF CURB WHERE APPLICABLE.

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 214

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 214

3/22/05 PM  
9/11/2014  
H:\Projects\8259\CAD\_BIM\plan\8259\_se01.dgn

NO	DATE	BY	CKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License # 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259

**SRH** ENGINEERS  
PLANNERS  
DESIGNERS

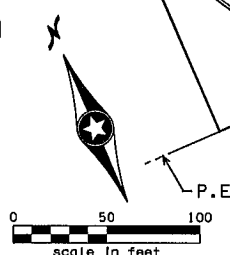
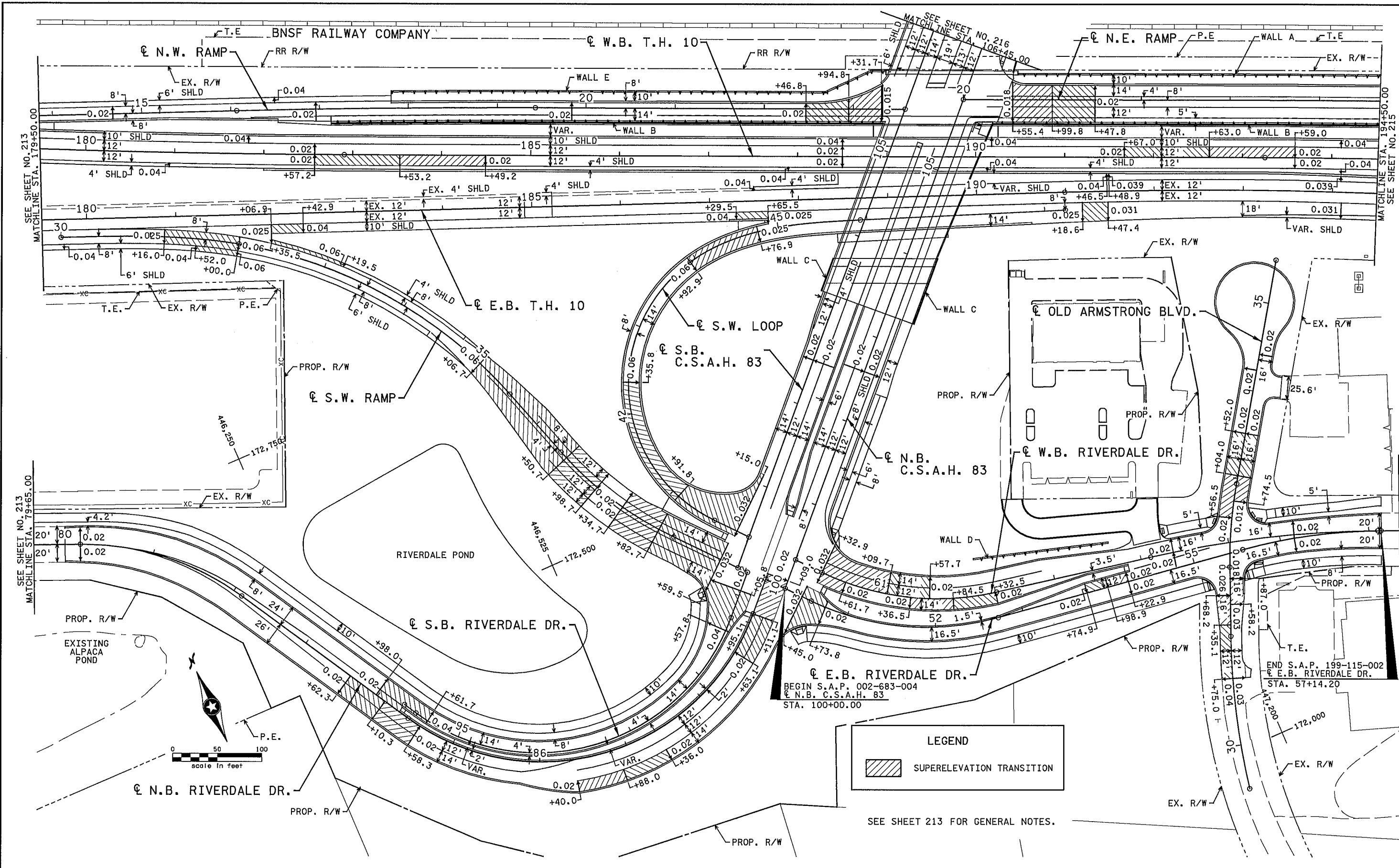
Consulting Group, Inc.

**ANOKA COUNTY**

SUPERELEVATION PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
213  
OF  
586



**LEGEND**

SUPERELEVATION TRANSITION

SEE SHEET 213 FOR GENERAL NOTES.

3/29/05 PM  
 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**D. SYMANIETZ**

CHECKED BY  
**C. HASS**

COMM. NO. **0138259**



**ENGINEERS  
PLANNERS  
DESIGNERS**

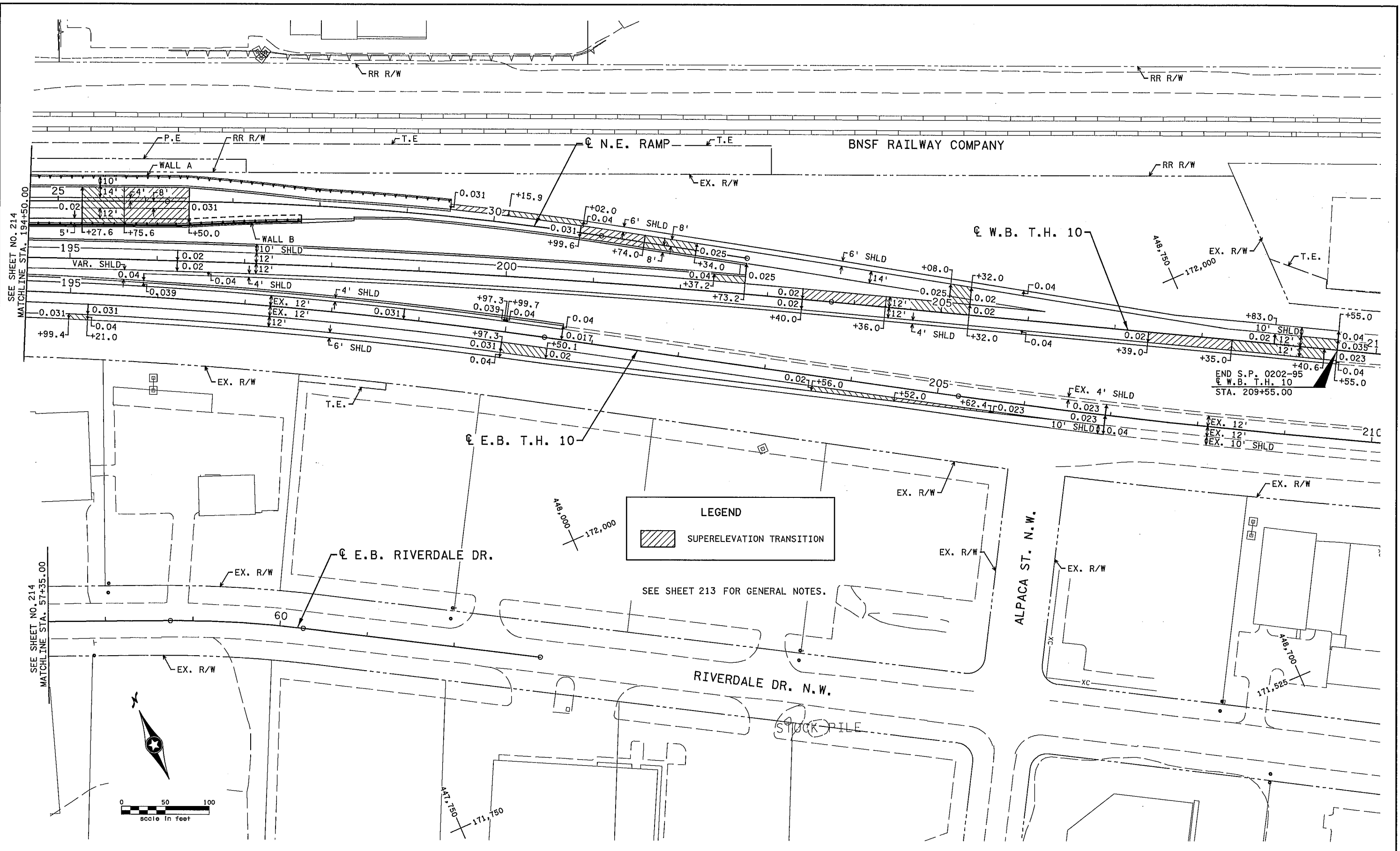
**ANOKA COUNTY**

**SUPERELEVATION PLANS**

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

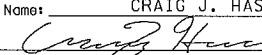
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214  
OF  
586**





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NO	DATE	BY	CKD	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: **09-12-14** License #: **45039**


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 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259


**ENGINEERS PLANNERS DESIGNERS**  
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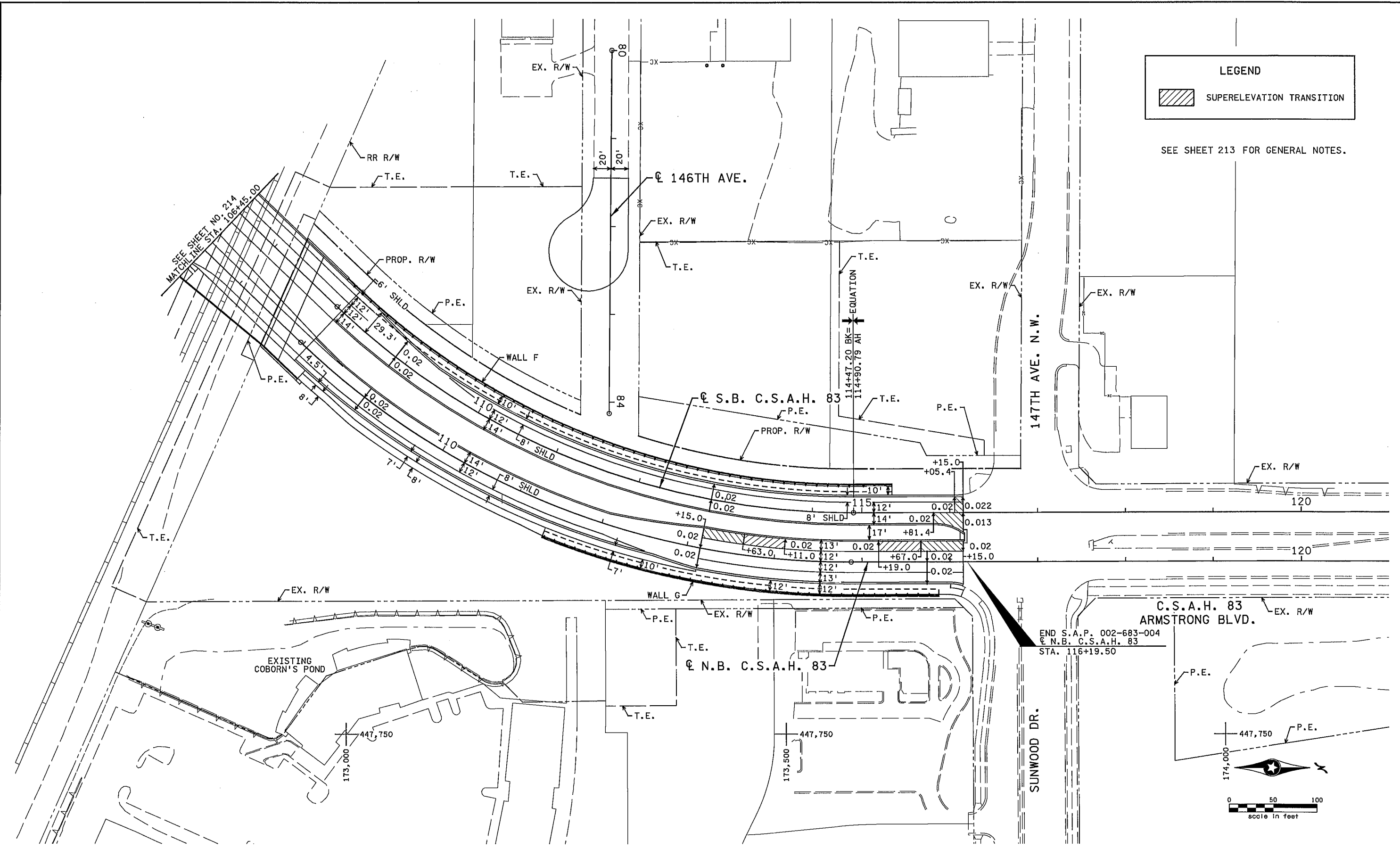
**ANOKA COUNTY**  
 SUPERELEVATION PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET 215 OF 586**

**LEGEND**

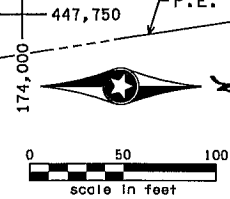
 SUPERELEVATION TRANSITION

SEE SHEET 213 FOR GENERAL NOTES.



END S.A.P. 002-683-004  
 N.B. C.S.A.H. 83  
 STA. 116+19.50

C.S.A.H. 83  
 ARMSTRONG BLVD.



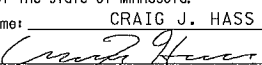
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 DESIGNED BY D. SYMANIETZ  
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 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
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 OF  
 586

**WATER RESOURCES NOTES**

THE FOLLOWING NOTES GIVE INFORMATION ABOUT CRITICAL FEATURES AND ELEVATIONS FOR THE DRAINAGE ON THIS PROJECT:

1. CHANGING THE FLOW DIRECTION SHOWN ON THE PLANS COULD HAVE ADVERSE EFFECTS OFF THE PROJECT CORRIDOR. DIRECTION CHANGES SHOULD BE REVIEWED WITH THE WATER RESOURCES ENGINEER. SEE SWPPP SHEETS FOR CONTACT INFORMATION.

**2. STRUCTURE DESIGNS**

DRAINAGE STRUCTURES SHALL BE PER MNDOT STANDARD STRUCTURE DESIGNS UNLESS NOTED OTHERWISE. DRAINAGE CASTINGS ALONG T.H. 10 AND RAMPS SHALL BE MNDOT STANDARD ASSEMBLIES, DRAINAGE CASTINGS ALONG C.S.A.H. 83 SHALL BE MNDOT OR ANOKA COUNTY STANDARD CASTING ASSEMBLIES, AND DRAINAGE CASTINGS ALONG RIVERDALE DRIVE SHALL BE CITY OF RAMSEY STANDARD CASTING ASSEMBLIES.

**SPECIAL STRUCTURES**

STRUCTURE 375 (DESIGN SPECIAL 2) - OUTLET CONTROL STRUCTURE FOR RIVERDALE POND. THIS STRUCTURE PROVIDES SKIMMING AND RATE CONTROL VIA A SUBMERGED PIPE AND A WEIR WITH AN ORIFICE. THE ORIFICE ELEVATION CONTROLS THE NORMAL WATER LEVEL (NWL) OF THE POND.

**3. PONDING AREAS**

THE SYSTEM ALSO INCLUDES THE PONDING AREAS FOR STORMWATER TREATMENT LISTED BELOW. SEE THE DRAINAGE PLANS AND CONTOUR PLANS FOR LOCATIONS.

POND NAME	LOCATION	BOTTOM ELEV.	NORMAL WATER LEVEL	NWL CONTROL	HIGH WATER LEVEL	HWL CONTROL	POND FUNCTION
RIVERDALE POND	BETWEEN SW RAMP AND RIVERDALE DRIVE (WEST OF CSAH 83)	864.0	870.0	ORIFICE IN STR. NO. 375	873.0	OVERFLOW GRATE IN STR. NO. 375	SEDIMENT RATE CONTROL SKIMMING

**4. ENVIRONMENTALLY SENSITIVE AREAS**

AREAS MARKED "ENVIRONMENTALLY SENSITIVE AREAS" IN THIS PLAN ARE TO BE TREATED AS SUCH. BEST MANAGEMENT PRACTICES ARE TO BE USED FOR EROSION AND SEDIMENT CONTROL THROUGHOUT THE JOB SITE.

**5. THE FOLLOWING CONSTRUCTION PERMITS APPLY TO THE PROJECT**

NPDES CONSTRUCTION PERMIT  
LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION

PLEASE REFER TO THE PERMIT APPLICATIONS AND PERMITS FOR SPECIAL CONDITIONS.

**6. GENERAL DRAINAGE PATTERNS**

**6. GENERAL DRAINAGE PATTERNS**

**100-SERIES STORM SEWER** - THESE PROPOSED STORM SEWER SYSTEMS WILL DRAIN THE PORTION OF THE PROJECT EAST OF APPROXIMATELY T.H. 10, STA 191+00, DISCHARGING THROUGH NE DRY DITCH AND ULTIMATELY TO THE EXISTING DITCH ON THE SOUTH SIDE OF T.H. 10. THE EXISTING DITCH DRAINS INTO AN EXISTING POND SYSTEM AND ULTIMATELY DRAINS TO THE MISSISSIPPI RIVER. THE DITCHES WILL PROVIDE SOME TREATMENT AS WELL AS RATE CONTROL PRIOR TO LEAVING THE PROJECT AREA.

**200-SERIES STORM SEWER** - THESE PROPOSED STORM SEWER SYSTEMS WILL DRAIN THE PORTION OF THE PROJECT NORTH OF C.S.A.H. 83, STA. 107+00, DISCHARGING TO EXISTING COBORN'S POND AND EXISTING C.S.A.H. 83 POND. THE EXISTING POND SYSTEM (WHICH ULTIMATELY DRAINS TO THE MISSISSIPPI RIVER) WAS DESIGNED TO ACCEPT THIS DRAINAGE AREA.

**300-SERIES AND 400-SERIES STORM SEWER** - THESE PROPOSED STORM SEWER SYSTEMS WILL DRAIN THE PORTION OF THE PROJECT WEST OF APPROXIMATELY T.H. 10, STA 191+00 AND SOUTH OF C.S.A.H. 83, STA. 107+00. THE MAJORITY OF THIS AREA WILL DISCHARGE TO PROPOSED RIVERDALE POND FOR RATE CONTROL AND TREATMENT PRIOR TO DISCHARGING TO THE EXISTING ALPACA POND. ALPACA POND IS A LANDLOCKED BASIN, CONSTRUCTED AS AN INFILTRATION BASIN. IN AN EXTREME EVENT, ALPACA POND MAY OVERFLOW OVERLAND TO THE SOUTH, ULTIMATELY DRAINING TO THE MISSISSIPPI RIVER. THE PORTION OF RIVERDALE DRIVE EAST OF WESTBOUND STA 53+00 WILL DISCHARGE TO EXISTING STORM SEWER DRAINING OFF THE PROJECT TO THE EAST. THIS STORM SEWER SYSTEM, WHICH DRAINS TO AN EXISTING POND SYSTEM (AND ULTIMATELY TO THE MISSISSIPPI RIVER), WAS DESIGNED TO ACCEPT THIS DRAINAGE AREA.

**500-SERIES STORM SEWER** - THESE SYSTEMS ARE TEMPORARY AND WILL BE USED TO MAINTAIN DRAINAGE DURING VARIOUS STAGES OF THE PROJECT. ALL OF THESE SYSTEMS WILL BE REMOVED OR ABANDONED WHEN THE PROJECT IS COMPLETE.

**600-SERIES STORM SEWER** - STRUCTURES NUMBERED IN THIS SERIES ARE EXISTING DRAINAGE STRUCTURES WHICH WILL BE CONNECTED TO THE PROPOSED DRAINAGE SYSTEM AND WILL REMAIN IN PLACE WHEN THE PROJECT IS COMPLETE.

SERIES NUMBERS ABOVE GENERALLY DRAIN TO THE DISCHARGE POINTS DESCRIBED. PORTIONS OF THESE SYSTEMS MAY HAVE ALTERNATE DISCHARGE POINTS. SEE DRAINAGE PLANS.

**7. EXISTING STORM SEWER REMOVAL**

IT IS THE INTENT OF THE DRAINAGE DESIGN TO FACILITATE REMOVAL OF THE MAJORITY OF EXISTING STORM SEWER UNDER NEW PAVEMENT AS SHOWN IN THE EXISTING DRAINAGE TABULATION.

P CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING (A)	CURB BOX	STANDARD PLATE NO.	QUANTITY (EACH)	REMARKS
A - 7D	700-7	715	N/A	4101	13	MANHOLE
		4110				
B - 5	802A	816	823A	4129	4	LOW POINT CATCH BASIN
				4154		
				4160		
B - 9	805	816	N/A	4132	22	CATCH BASIN
				4154		
				4154		
D - 4	805	816	N/A	4132	22	CATCH BASIN
				4154		
				4154		
M - 2	700-7	720	N/A	4101	2	DROP INLET
				4140		
M - 11	ROUND CONC	731	N/A	4143	2	DROP INLET
				4143		
C - 1	(B)	(B)	(B)	(B)	11	ANOKA COUNTY MEDIAN CATCH BASIN
				(B)		
C - 2	(C)	(C)	(C)	(C)	31	CITY OF RAMSEY CATCH BASIN
				(C)		
				(C)		
C - 3	(D)	(D)	N/A	(D)	5	CITY OF RAMSEY SURMOUNTABLE CURB CATCH BASIN
				(D)		
PROJECT TOTALS:					112	

**NOTES:**

- (A) USE BENT BOLT WITH 816 GRATE.
- (B) CASTING TYPE: NEENAH R-3448-C; EAST JORDAN IRON WORKS PRODUCT NO. 00500050C01; D & L FOUNDRY MODEL NO. I-3741 STYLE 5; OR APPROVED EQUAL.
- (C) CASTING TYPE: NEENAH R-3246 WITH TYPE R GRATE; EAST JORDAN IRON WORKS 7030Z1/7030T4/7030M5 COMBINATION (PRODUCT NO. 00703055C41); D&L FOUNDRY MODEL NO. I-3519; OR APPROVED EQUAL.
- (D) CASTING TYPE: NEENAH R-3067-C OR APPROVED EQUAL.

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NO	DATE	BY	CHKD	APPR	REVISION

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: JEREMY L. NIELSEN  
 Date: 09/12/14 License #: 45047

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY P. ENGELMEYER  
 CHECKED BY J. NIELSEN  
 COMM. NO. 0138259



ANOKA COUNTY  
 WATER RESOURCES NOTES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

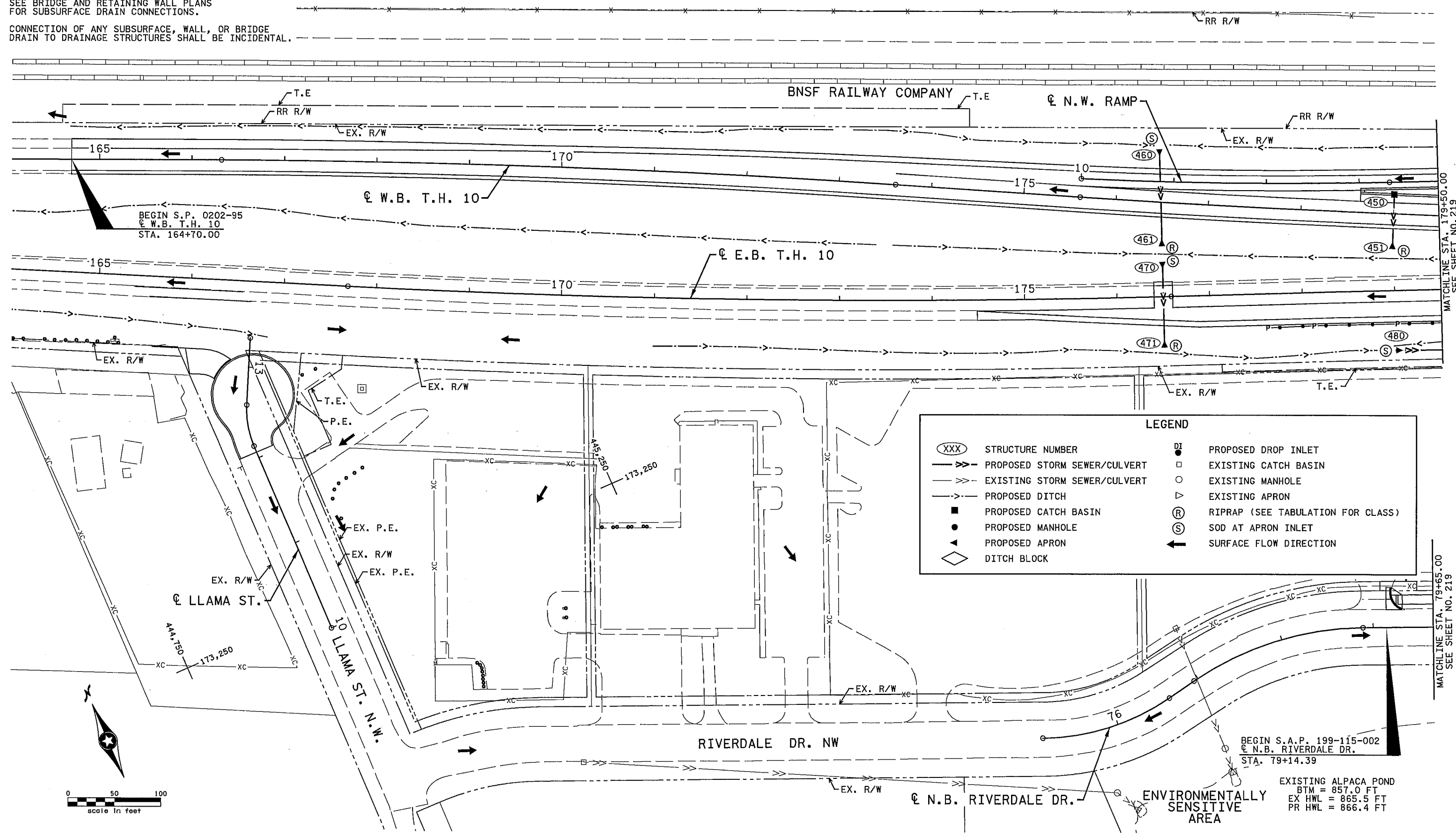
SHEET 217 OF 586

**GENERAL NOTES:**

SEE CONTOUR PLANS FOR PROPOSED AND EXISTING CONTOURS AT PROPOSED POND LOCATIONS.

SEE BRIDGE AND RETAINING WALL PLANS FOR SUBSURFACE DRAIN CONNECTIONS.

CONNECTION OF ANY SUBSURFACE, WALL, OR BRIDGE DRAIN TO DRAINAGE STRUCTURES SHALL BE INCIDENTAL.



**LEGEND**

(XXX)	STRUCTURE NUMBER	DI	PROPOSED DROP INLET
—>—	PROPOSED STORM SEWER/CULVERT	□	EXISTING CATCH BASIN
- - ->- - -	EXISTING STORM SEWER/CULVERT	○	EXISTING MANHOLE
- - ->- - -	PROPOSED DITCH	▽	EXISTING APRON
■	PROPOSED CATCH BASIN	(R)	RIPRAP (SEE TABULATION FOR CLASS)
●	PROPOSED MANHOLE	(S)	SOD AT APRON INLET
▲	PROPOSED APRON	←	SURFACE FLOW DIRECTION
◇	DITCH BLOCK		

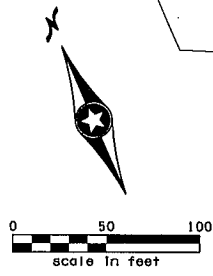
BEGIN S.A.P. 199-115-002  
 C.N.B. RIVERDALE DR.  
 STA. 79+14.39

EXISTING ALPACA POND  
 BTM = 857.0 FT  
 EX HWL = 865.5 FT  
 PR HWL = 866.4 FT

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 219

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 219

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Print Name: JEREMY L. NIELSEN

*Jeremy L. Nielsen*

Date 09/12/14 License # 45047

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002

STATE PROJECT NO.  
 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
 S. MARTINS

DESIGNED BY  
 P. ENGELMEYER

CHECKED BY  
 J. NIELSEN

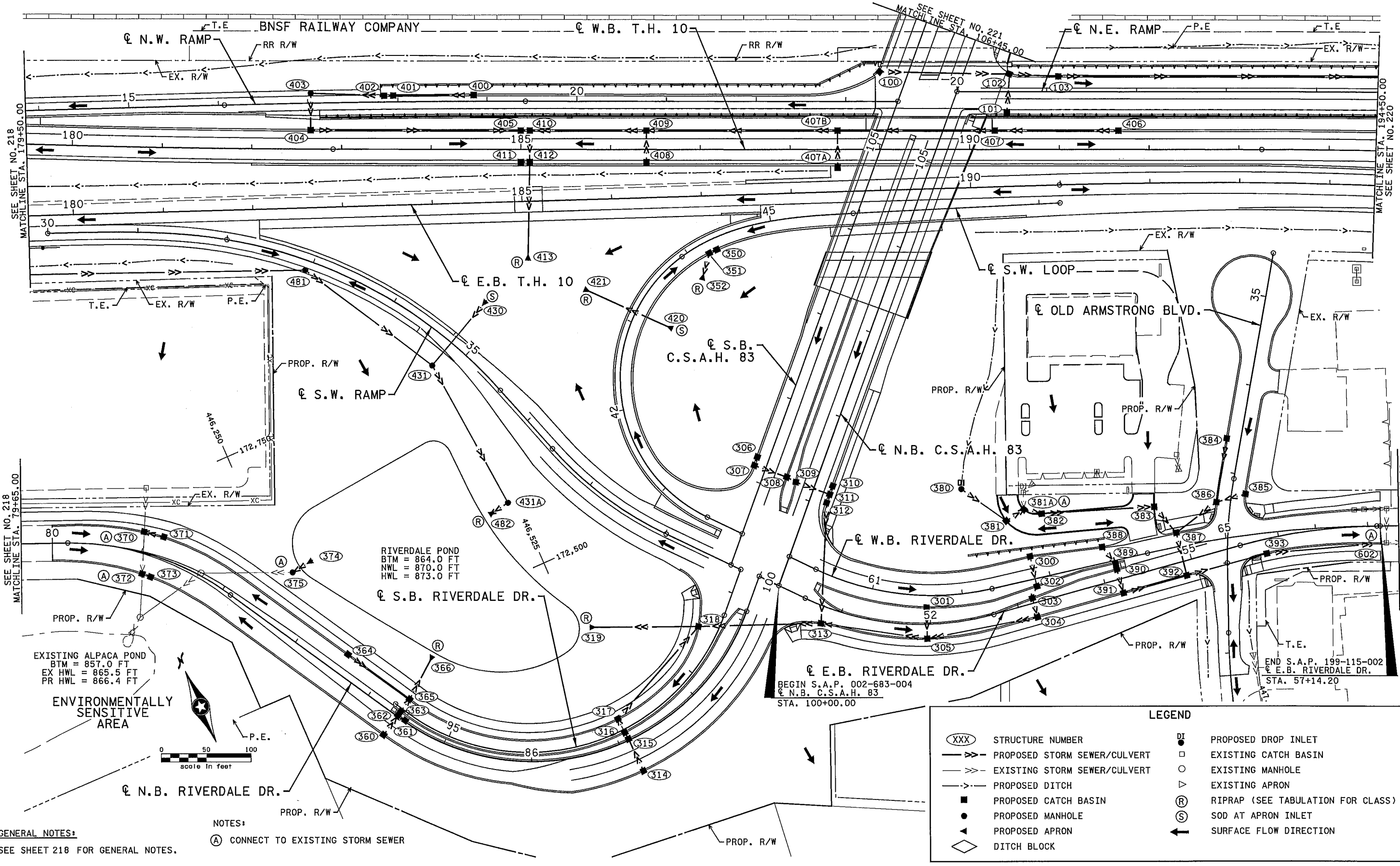
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ANOKA COUNTY  
 DRAINAGE PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 218  
 OF  
 586



SEE SHEET NO. 218  
MATCHLINE STA. 179+50.00

MATCHLINE STA. 194+50.00  
SEE SHEET NO. 220

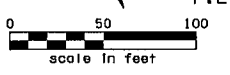
SEE SHEET NO. 218  
MATCHLINE STA. 79+65.00

MATCHLINE STA. 57+35.00  
SEE SHEET NO. 220

RIVERDALE POND  
BTM = 864.0 FT  
NWL = 870.0 FT  
HWL = 873.0 FT

EXISTING ALPACA POND  
BTM = 857.0 FT  
EX HWL = 865.5 FT  
PR HWL = 866.4 FT

ENVIRONMENTALLY SENSITIVE AREA



GENERAL NOTES:  
SEE SHEET 218 FOR GENERAL NOTES.

NOTES:  
(A) CONNECT TO EXISTING STORM SEWER

LEGEND	
(XXX)	STRUCTURE NUMBER
—>>—	PROPOSED STORM SEWER/CULVERT
->>-	EXISTING STORM SEWER/CULVERT
->-	PROPOSED DITCH
■	PROPOSED CATCH BASIN
●	PROPOSED MANHOLE
▲	PROPOSED APRON
◇	DITCH BLOCK
DI	PROPOSED DROP INLET
□	EXISTING CATCH BASIN
○	EXISTING MANHOLE
▽	EXISTING APRON
(R)	RIPRAP (SEE TABULATION FOR CLASS)
(S)	SOD AT APRON INLET
←	SURFACE FLOW DIRECTION

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Print Name: JEREMY L. NIELSEN  
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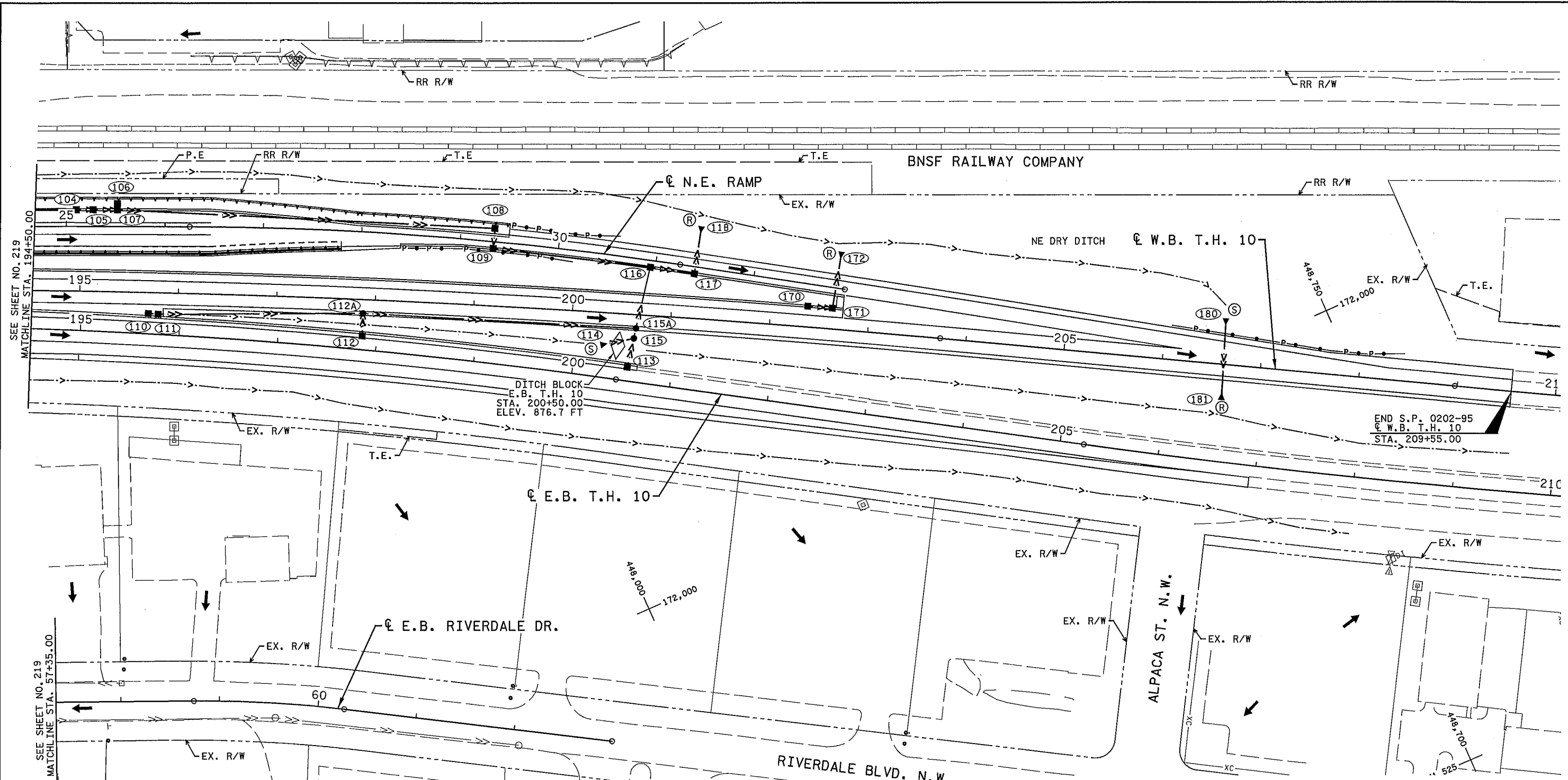
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199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY  
S. MARTINS  
DESIGNED BY  
P. ENGELMEYER  
CHECKED BY  
J. NIELSEN  
COMM. NO. 0138259

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DESIGNERS

ANOKA COUNTY  
DRAINAGE PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
219  
OF  
586



SEE SHEET NO. 219  
MATCHLINE STA. 194+50.00

SEE SHEET NO. 219  
MATCHLINE STA. 57+35.00

DITCH BLOCK  
E.B. T.H. 10  
STA. 200+50.00  
ELEV. 876.7 FT

END S.P. 0202-95  
E.B. T.H. 10  
STA. 209+55.00

**GENERAL NOTES:**  
SEE SHEET 218 FOR GENERAL NOTES.

LEGEND	
(XXX)	STRUCTURE NUMBER
—>—	PROPOSED STORM SEWER/CULVERT
->-	EXISTING STORM SEWER/CULVERT
->-	PROPOSED DITCH
■	PROPOSED CATCH BASIN
●	PROPOSED MANHOLE
▲	PROPOSED APRON
◇	DITCH BLOCK
DI	PROPOSED DROP INLET
□	EXISTING CATCH BASIN
○	EXISTING MANHOLE
▽	EXISTING APRON
(R)	RIPRAP (SEE TABULATION FOR CLASS)
(S)	SOD AT APRON INLET
↑	SURFACE FLOW DIRECTION

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OF  
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**GENERAL NOTES:**

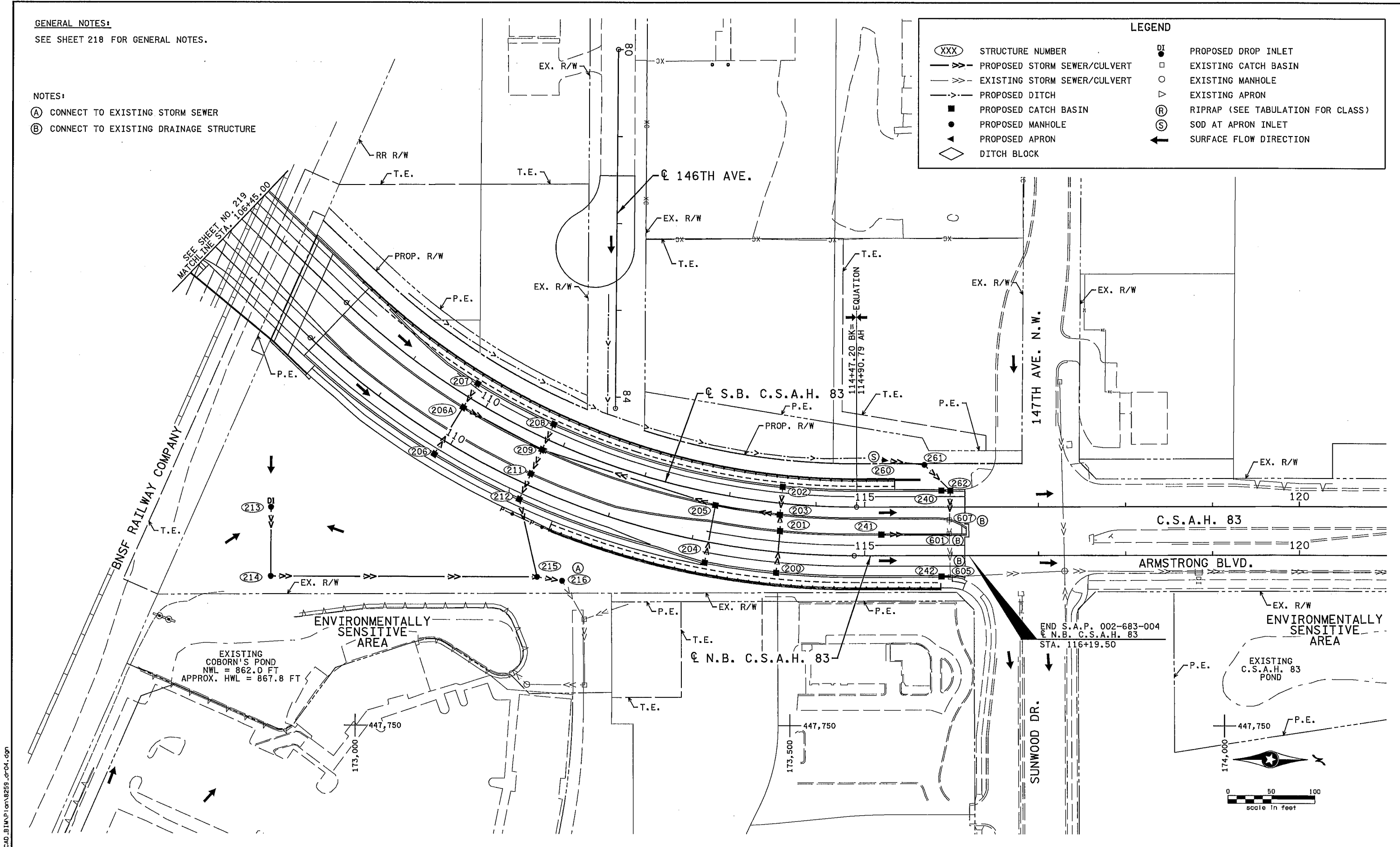
SEE SHEET 218 FOR GENERAL NOTES.

**NOTES:**

- (A) CONNECT TO EXISTING STORM SEWER
- (B) CONNECT TO EXISTING DRAINAGE STRUCTURE

**LEGEND**

(XXX)	STRUCTURE NUMBER	DI	PROPOSED DROP INLET
—V—	PROPOSED STORM SEWER/CULVERT	□	EXISTING CATCH BASIN
- - -V - - -	EXISTING STORM SEWER/CULVERT	○	EXISTING MANHOLE
- - -	PROPOSED DITCH	▽	EXISTING APRON
■	PROPOSED CATCH BASIN	(R)	RIPRAP (SEE TABULATION FOR CLASS)
●	PROPOSED MANHOLE	(S)	SOD AT APRON INLET
▲	PROPOSED APRON	←	SURFACE FLOW DIRECTION
◇	DITCH BLOCK		



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*Jeremy L. Nielsen*

Date: 09/12/14 License #: 45047

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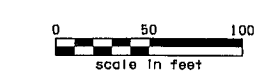
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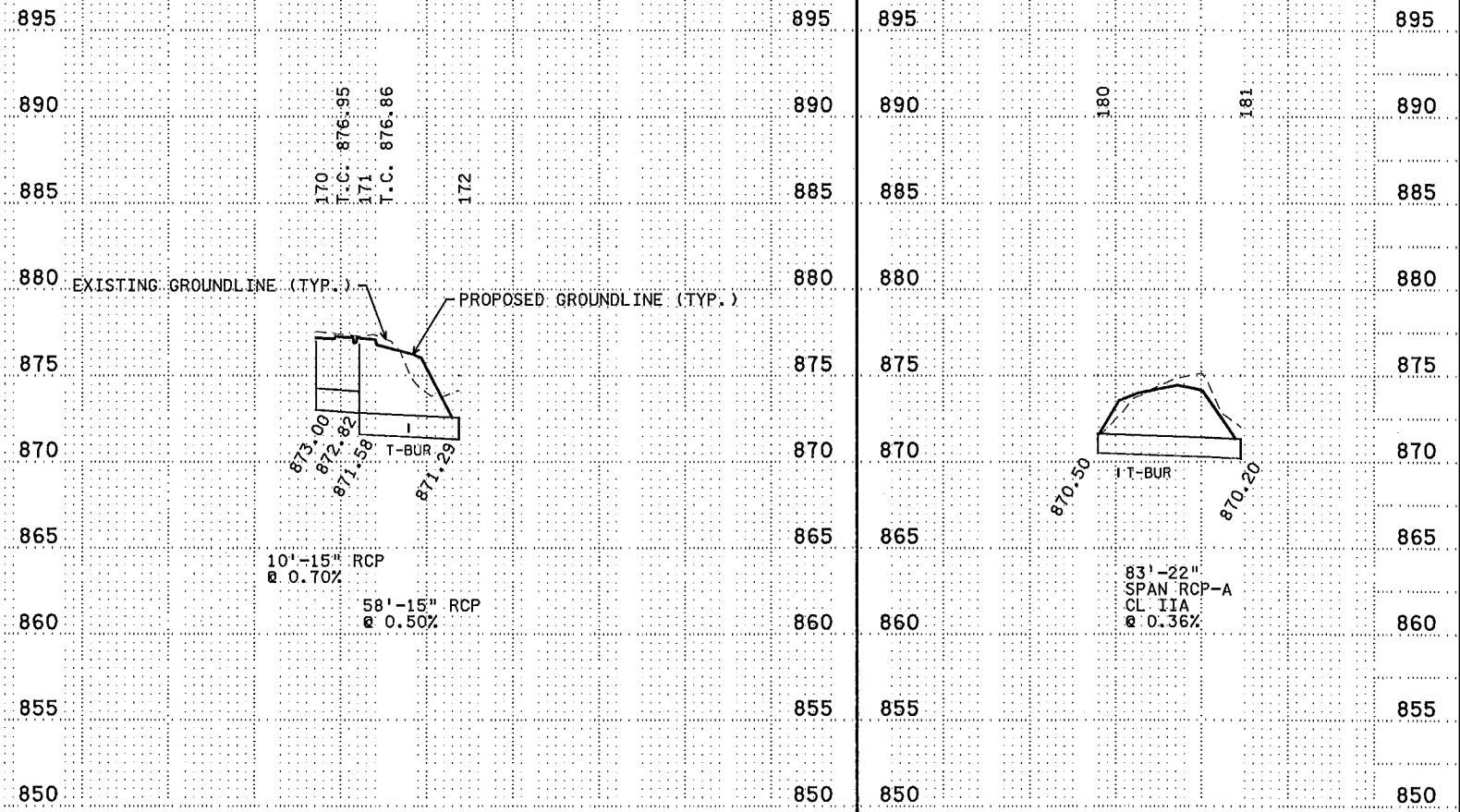
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OF  
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**NOTES:**

- INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).
- TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.
- APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PAY LENGTH OF PIPE).
- ALL RC PIPES 12" - 15" ARE CL V.
- ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

**STRUCTURES ON THIS SHEET**

- 170
- 171
- 172
- 180
- 181

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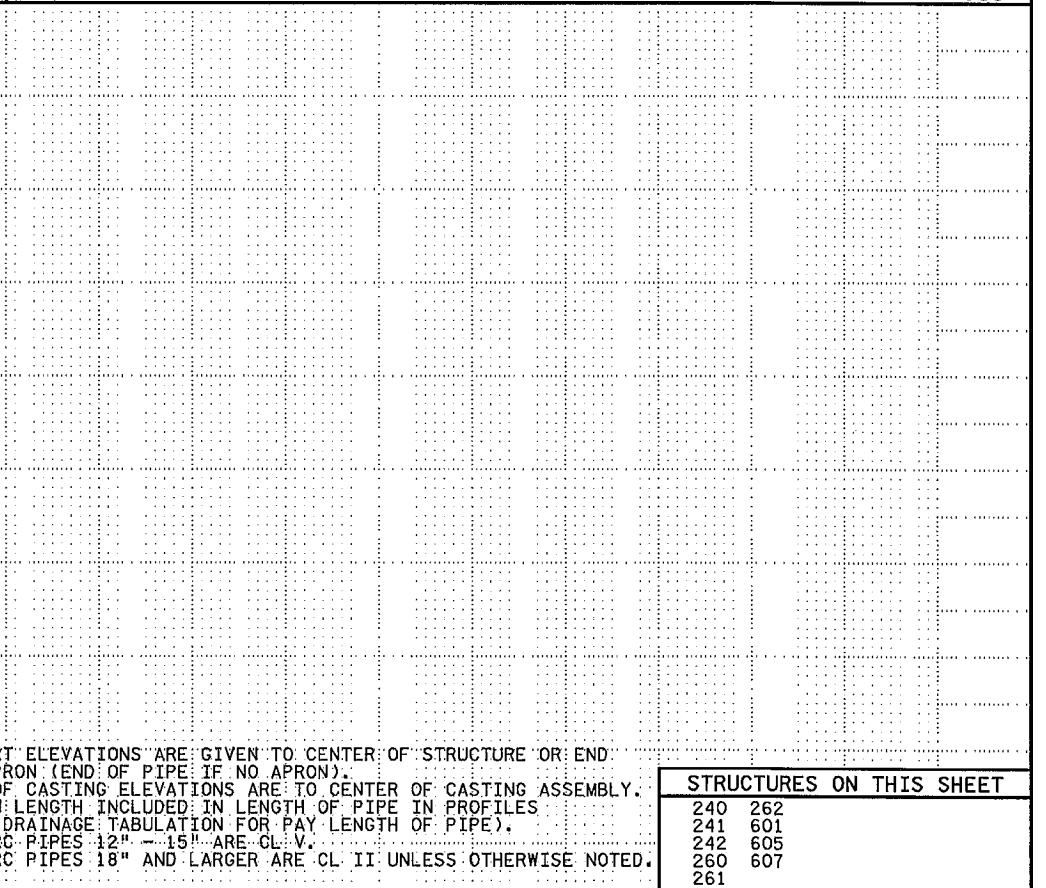
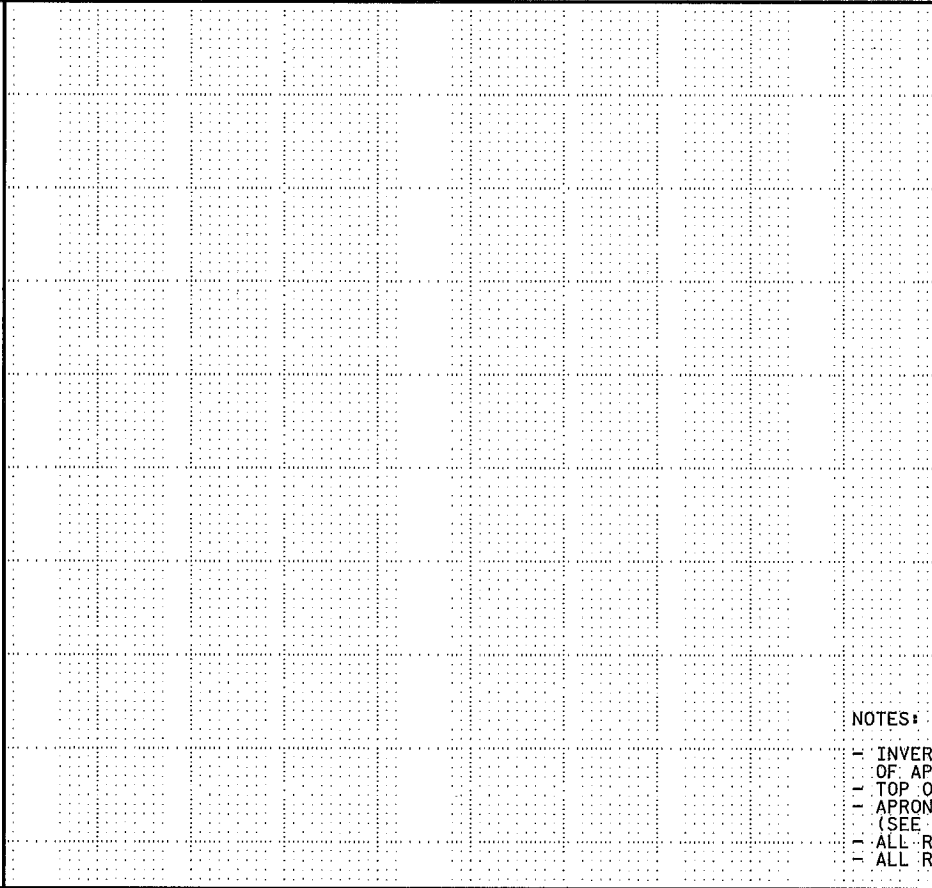
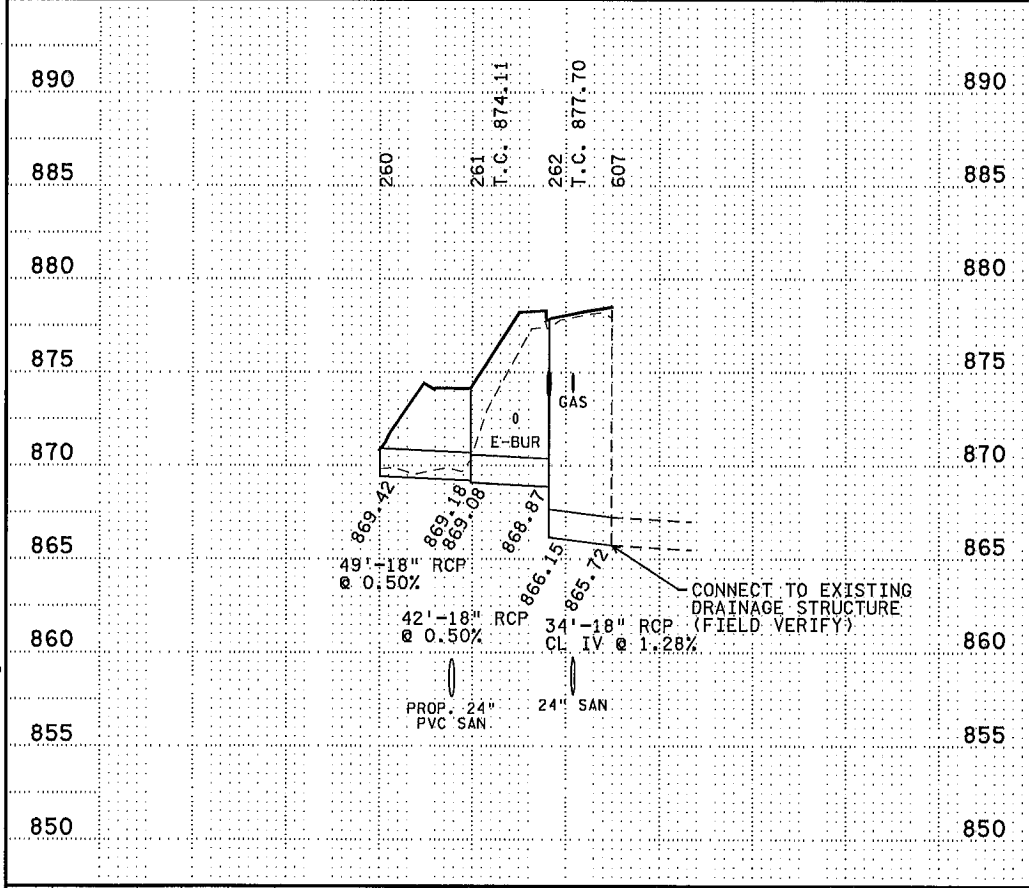
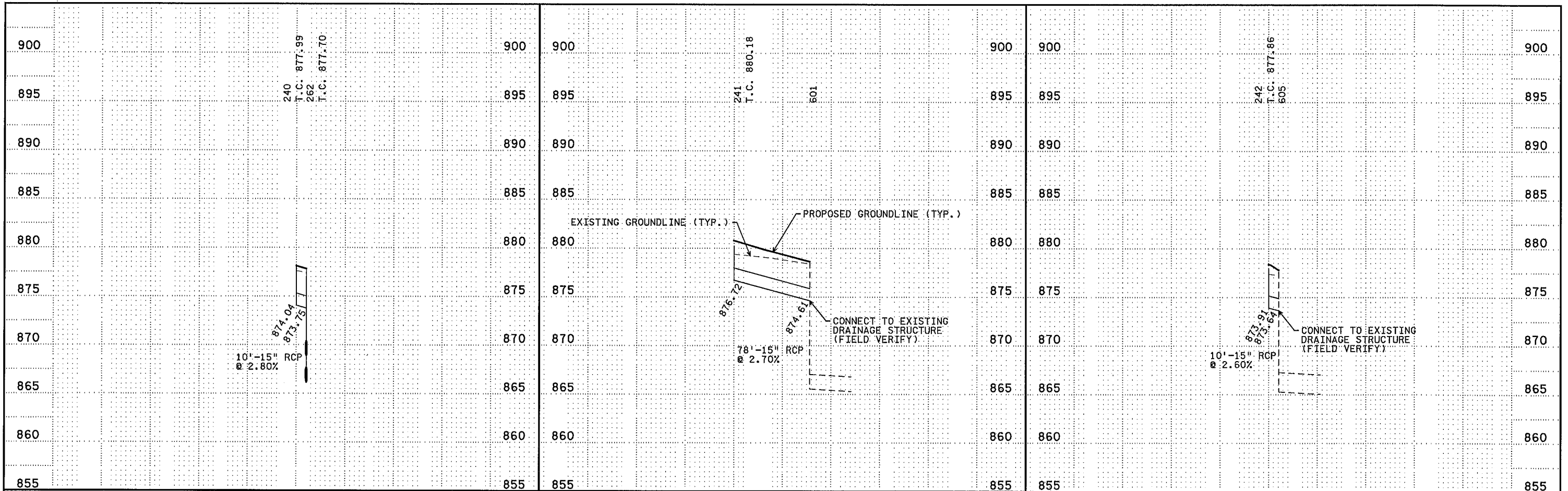


**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
DRAINAGE PROFILES  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**  
223  
OF  
586





NOTES:  
 - INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 - TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
 - APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PIPE LENGTH OF PIPE).  
 - ALL RC PIPES 12" - 15" ARE CL V.  
 - ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET	
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241	601
242	605
260	607
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*Jeremy L. Nielsen*  
 Date: 09-12-14 License #: 45047

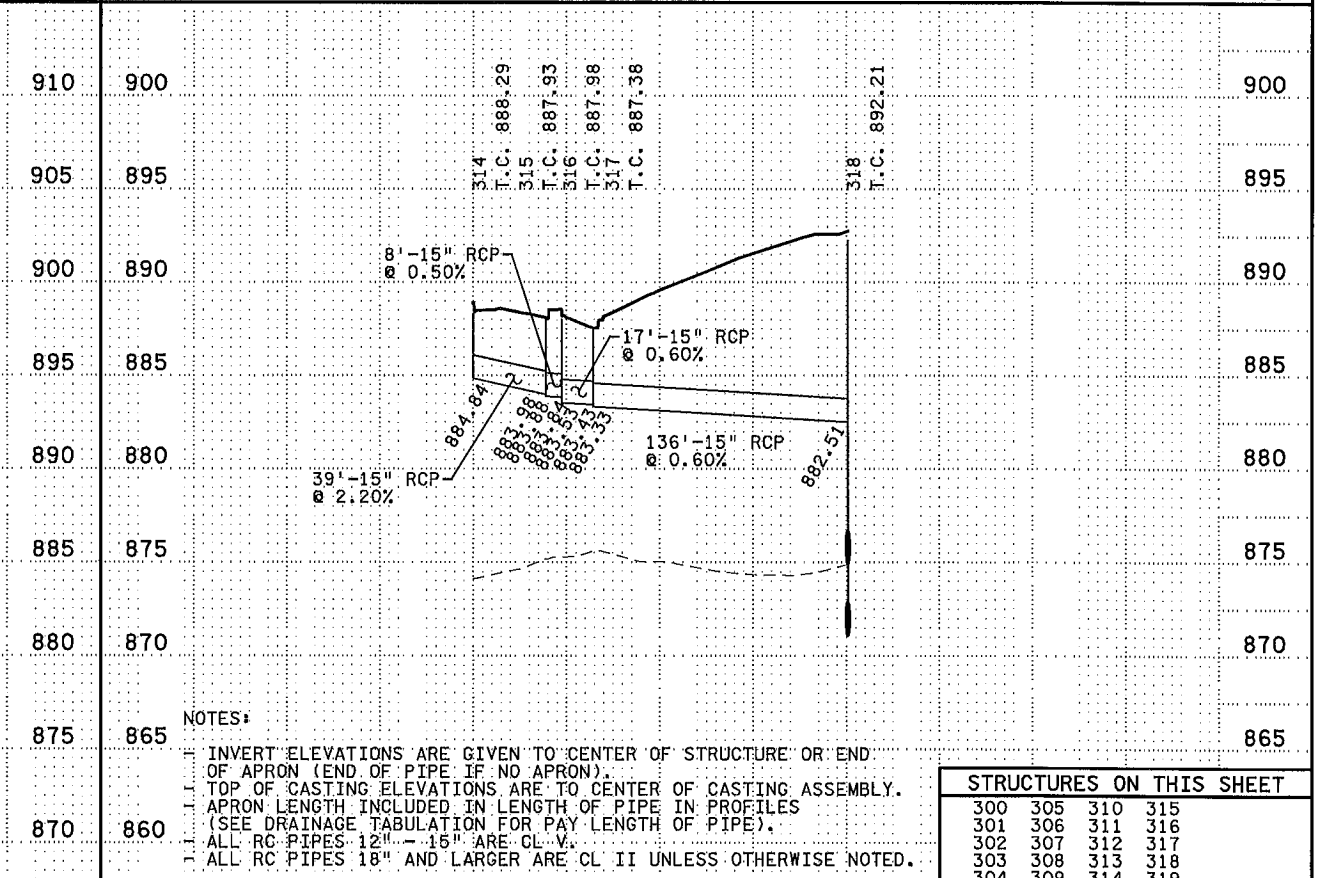
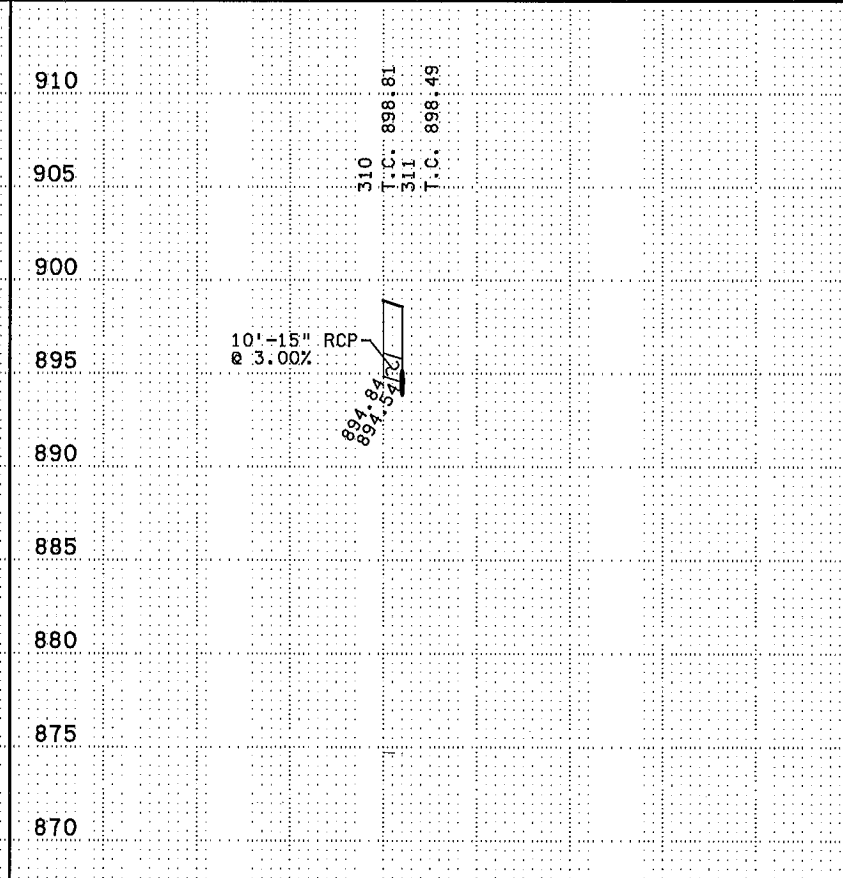
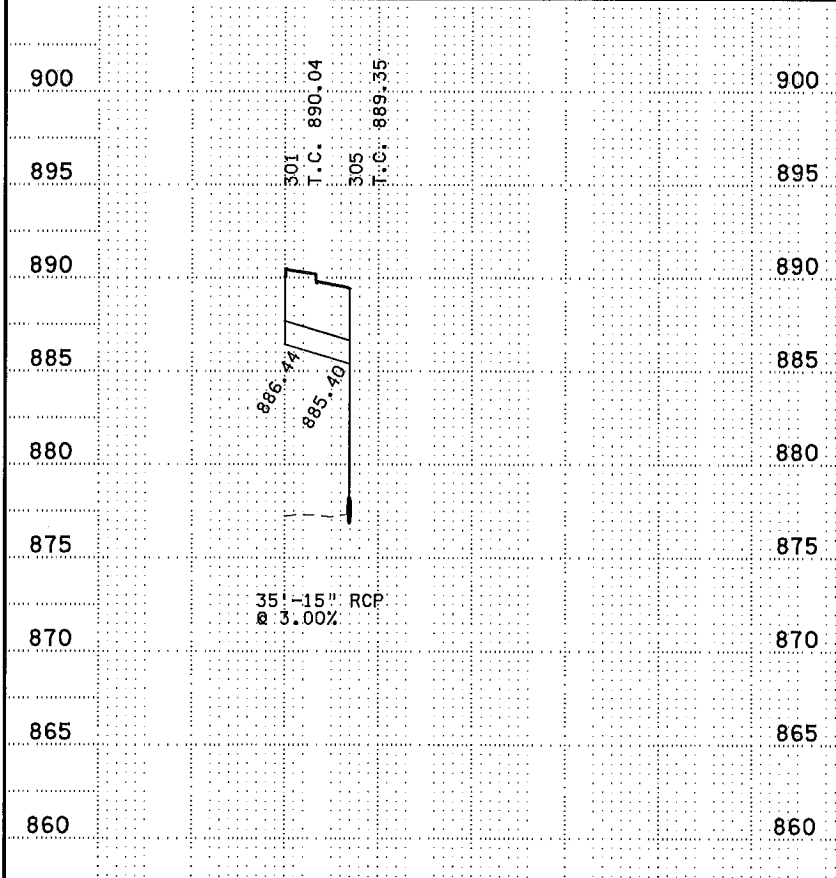
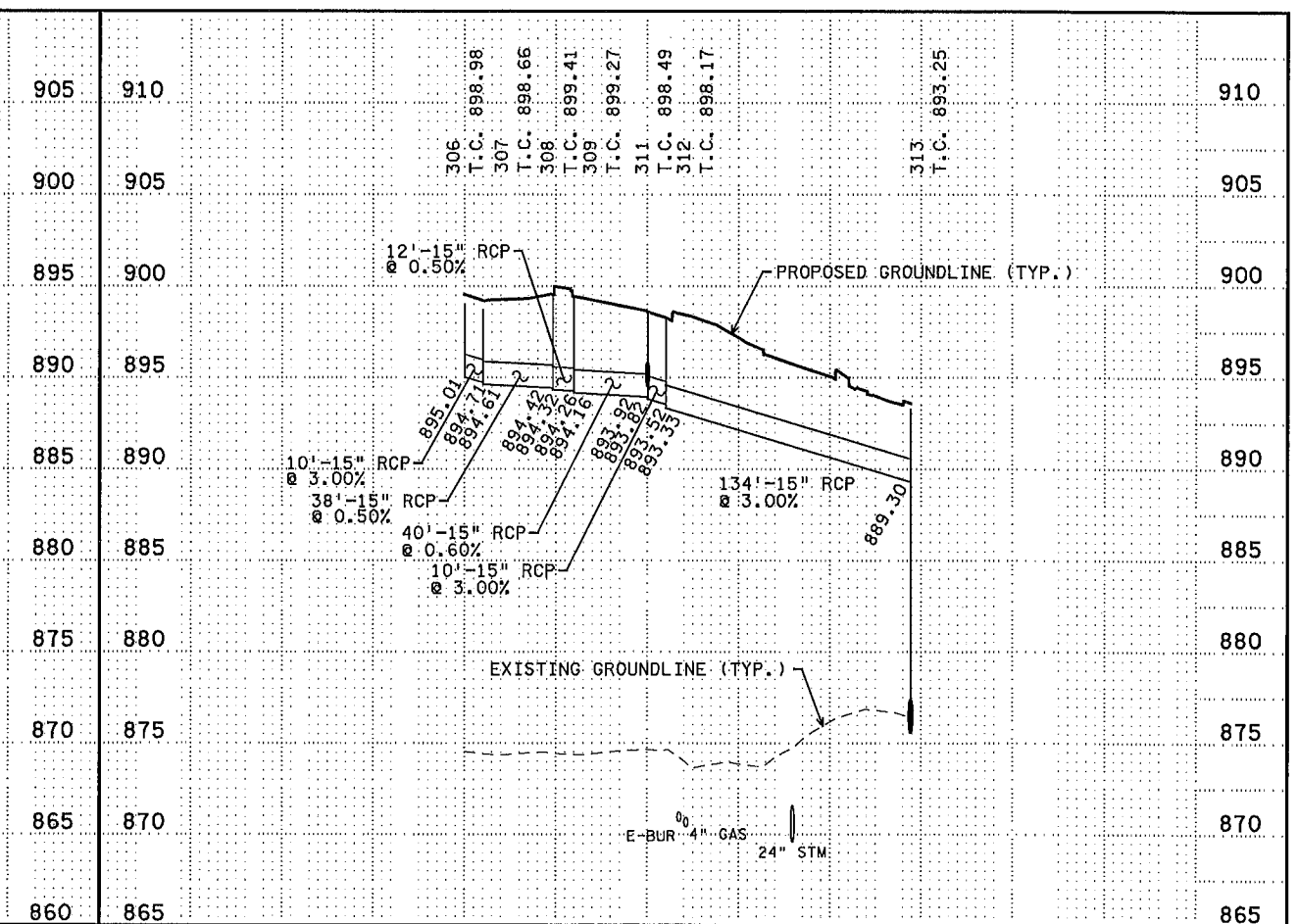
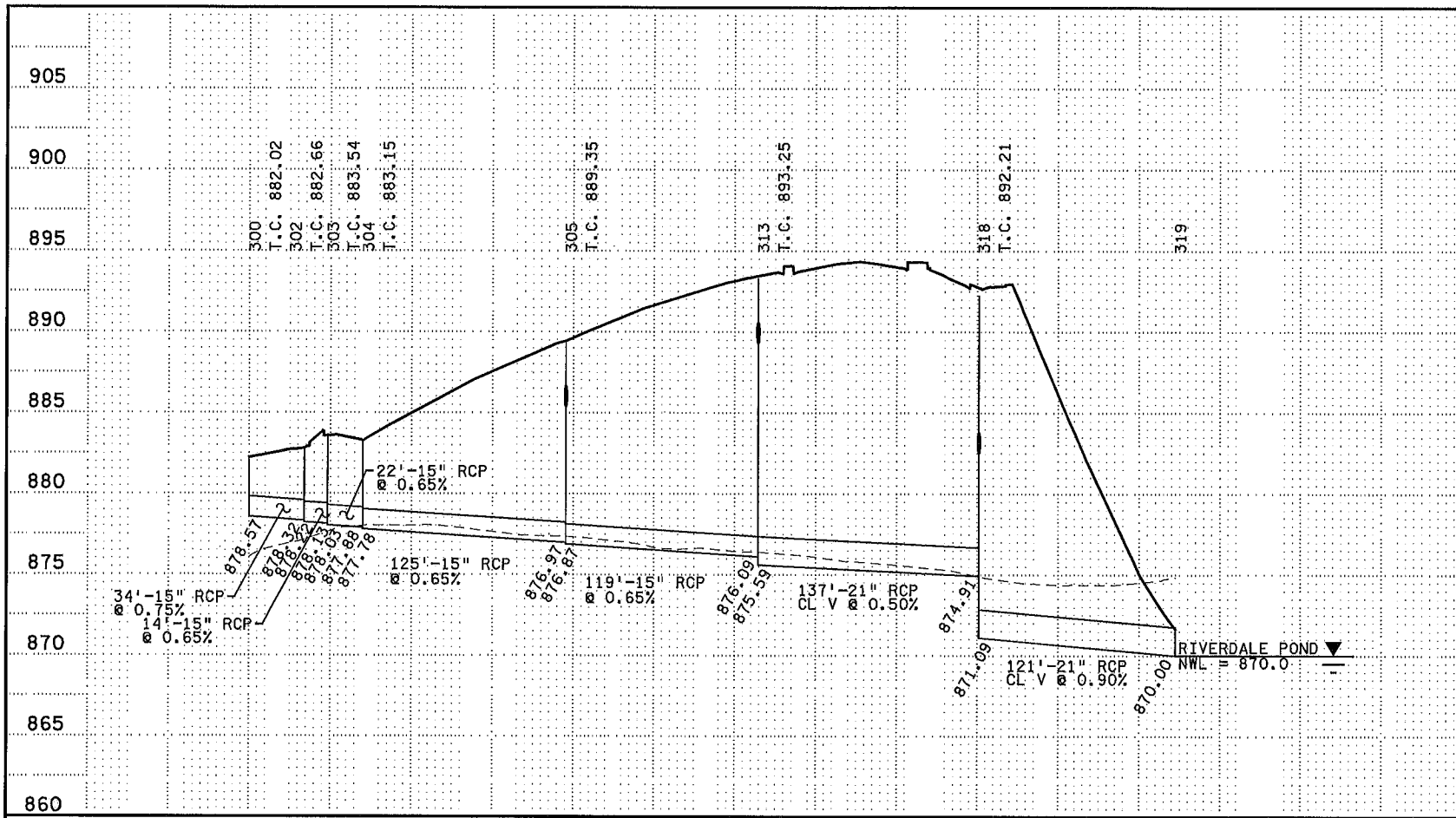
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY P. ENGELMEYER  
 CHECKED BY J. NIELSEN  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 DRAINAGE PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 225  
 OF  
 586



NOTES:  
 1. INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 2. TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
 3. APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PIPE LENGTH OF PIPE).  
 4. ALL RC PIPES 12" - 15" ARE CL V.  
 5. ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET			
300	305	310	315
301	306	311	316
302	307	312	317
303	308	313	318
304	309	314	319

3/22/21 PM 5:11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_d1300.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: JEREMY L. NIELSEN  
*Jeremy L. Nielsen*  
 Date: 09/12/14 License #: 45047

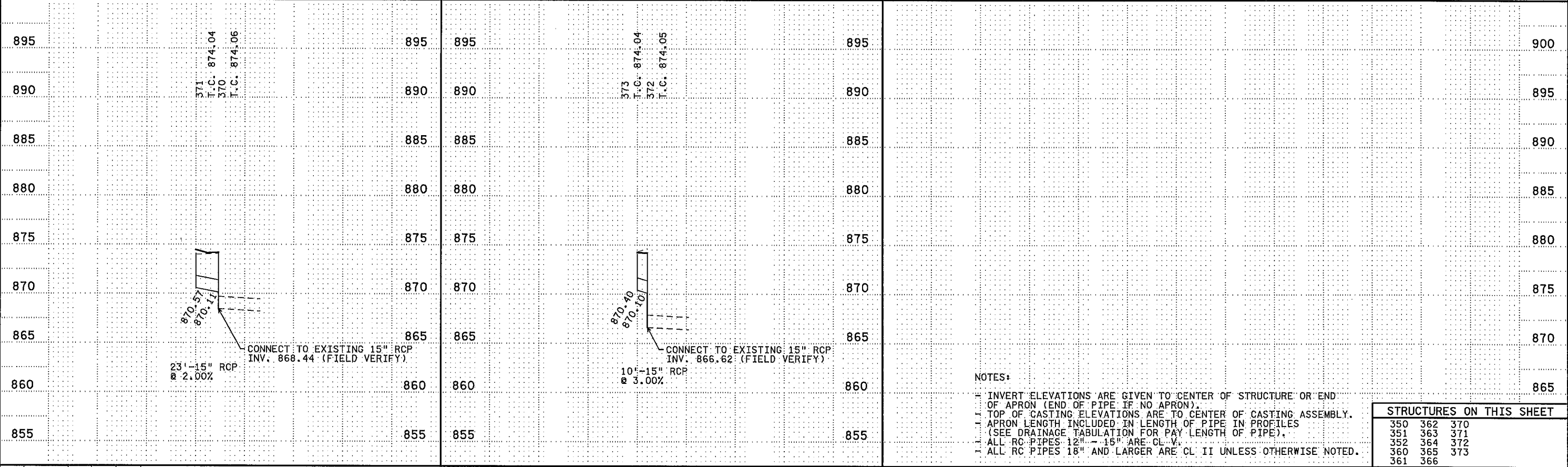
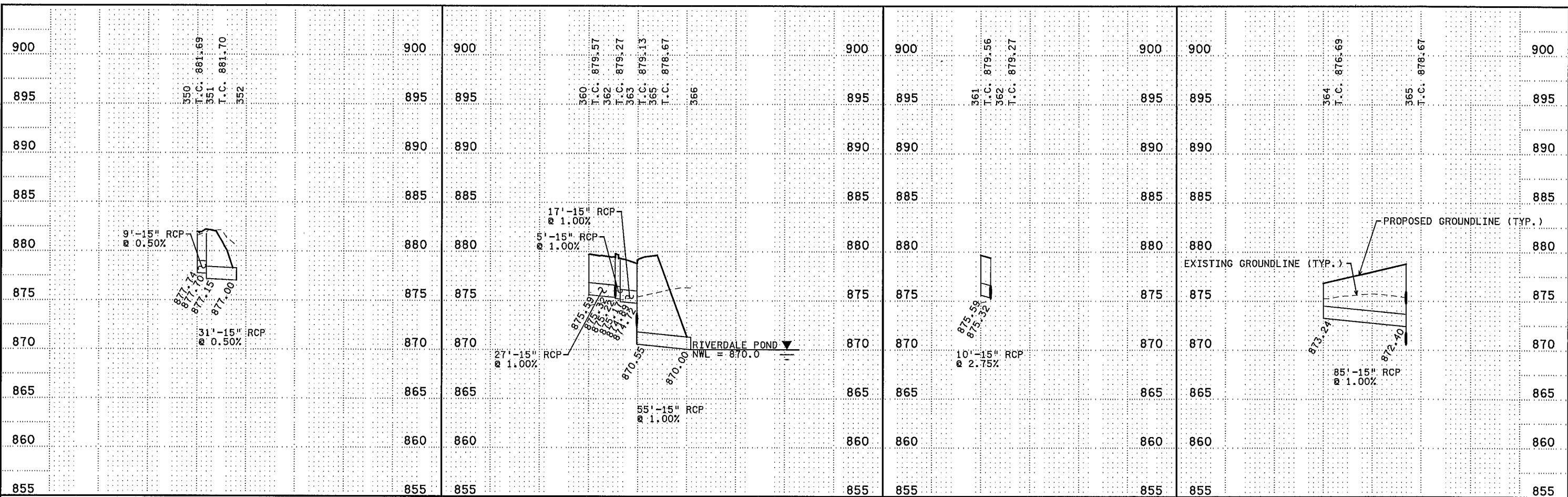
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
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 DRAWN BY S. MARTINS  
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 COMM. NO. 0138259



ANOKA COUNTY  
 DRAINAGE PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 226 OF 586





NOTES:  
 - INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 - TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
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 - ALL RC PIPES 12" - 15" ARE CL V.  
 - ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET		
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352	364	372
360	365	373
361	366	

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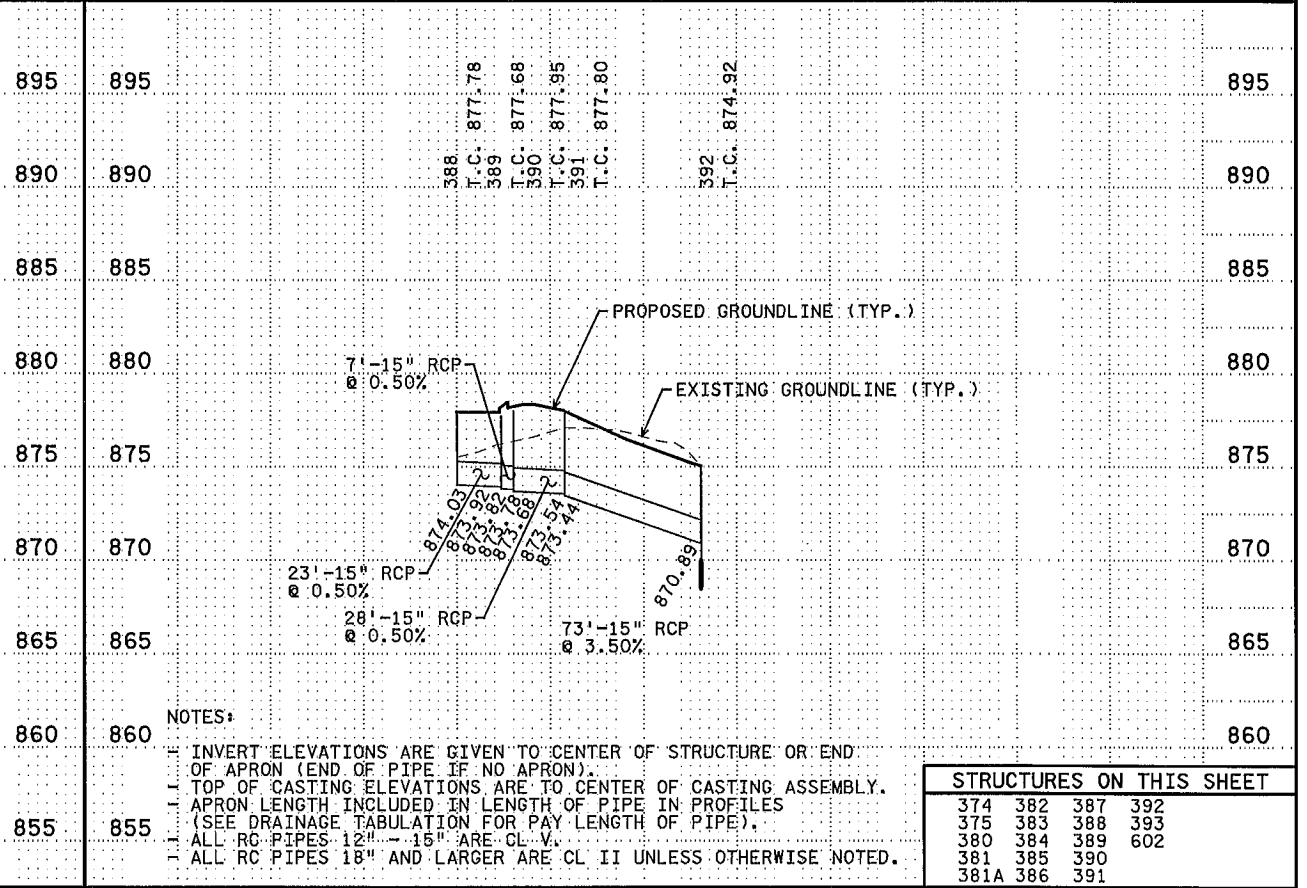
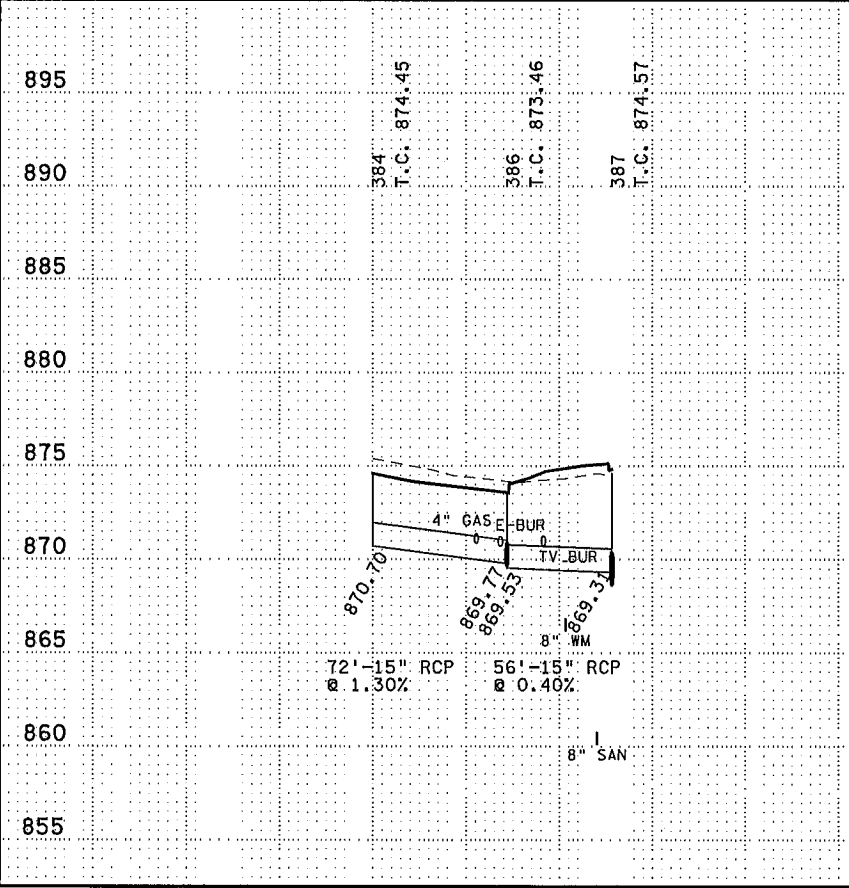
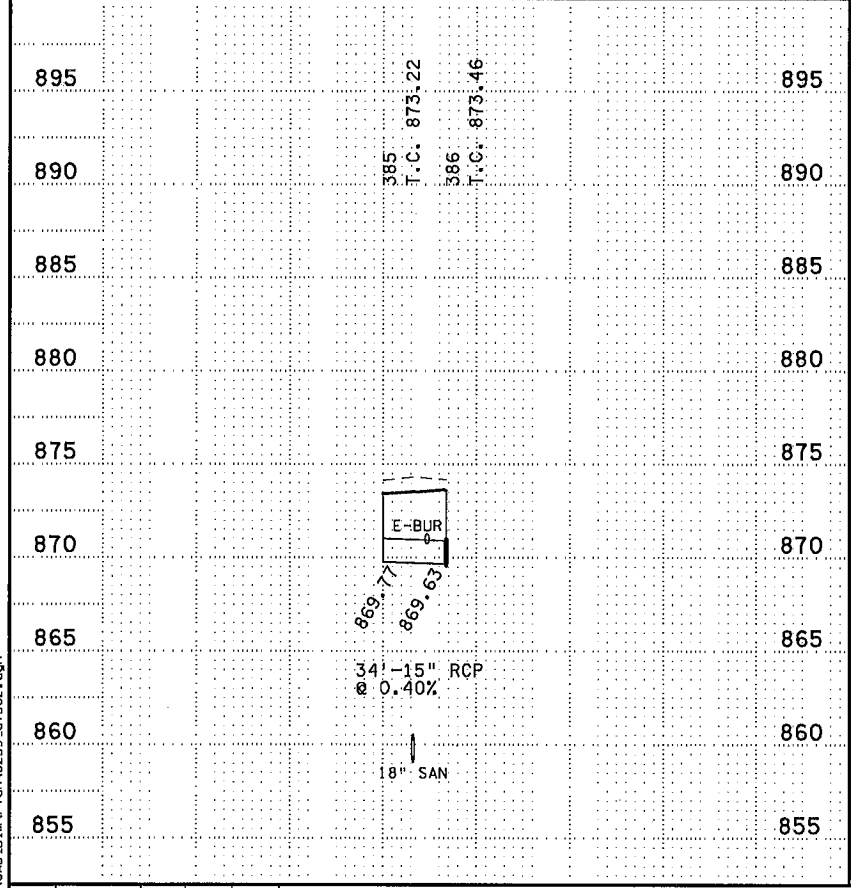
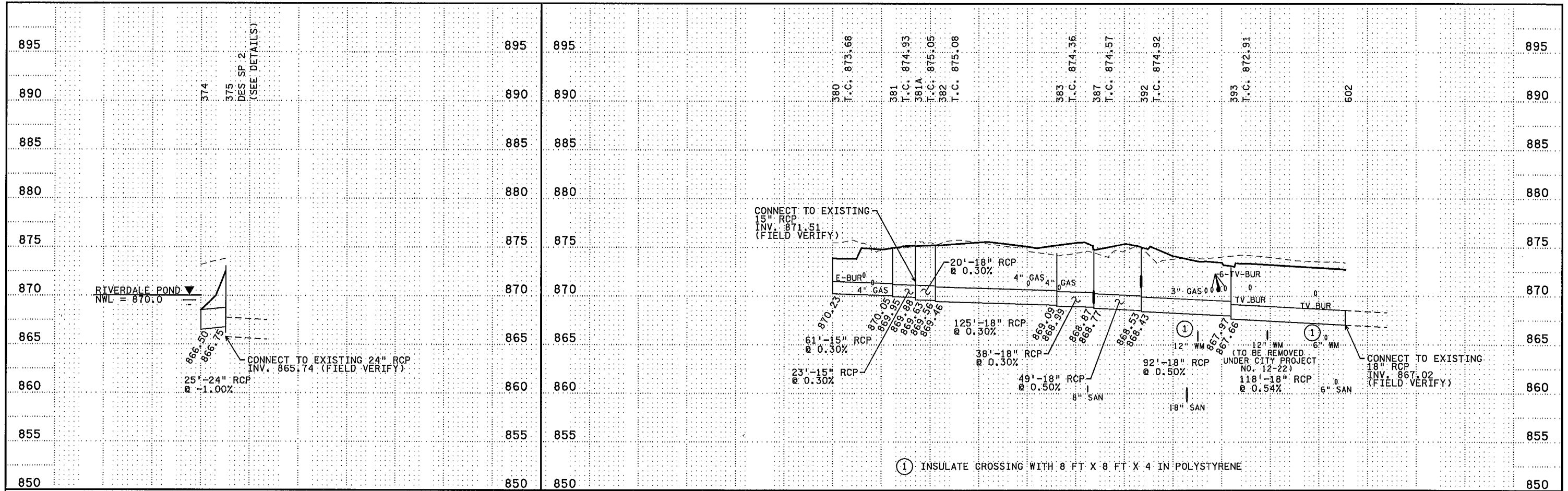
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: JEREMY L. NIELSEN  
*Jeremy L. Nielsen*  
 Date: 09/12/14 License #: 45047

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 COMM. NO. 0138259



ANOKA COUNTY  
 DRAINAGE PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 227 OF 586



NOTES:  
 1. INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 2. TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
 3. APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PIPE LENGTH OF PIPE).  
 4. ALL RC PIPES 12" - 15" ARE CL-V.  
 5. ALL RC PIPES 18" AND LARGER ARE CL-II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET			
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375	383	388	393
380	384	389	602
381	385	390	
381A	386	391	

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 Print Name: JEREMY L. NIELSEN  
*Jeremy L. Nielsen*  
 Date: 09/12/14 License #: 45047

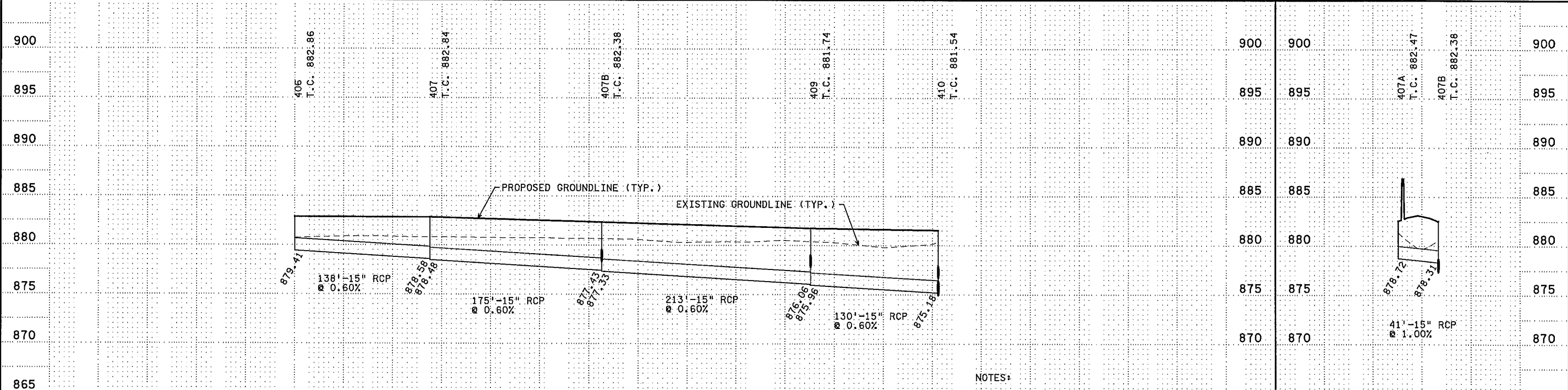
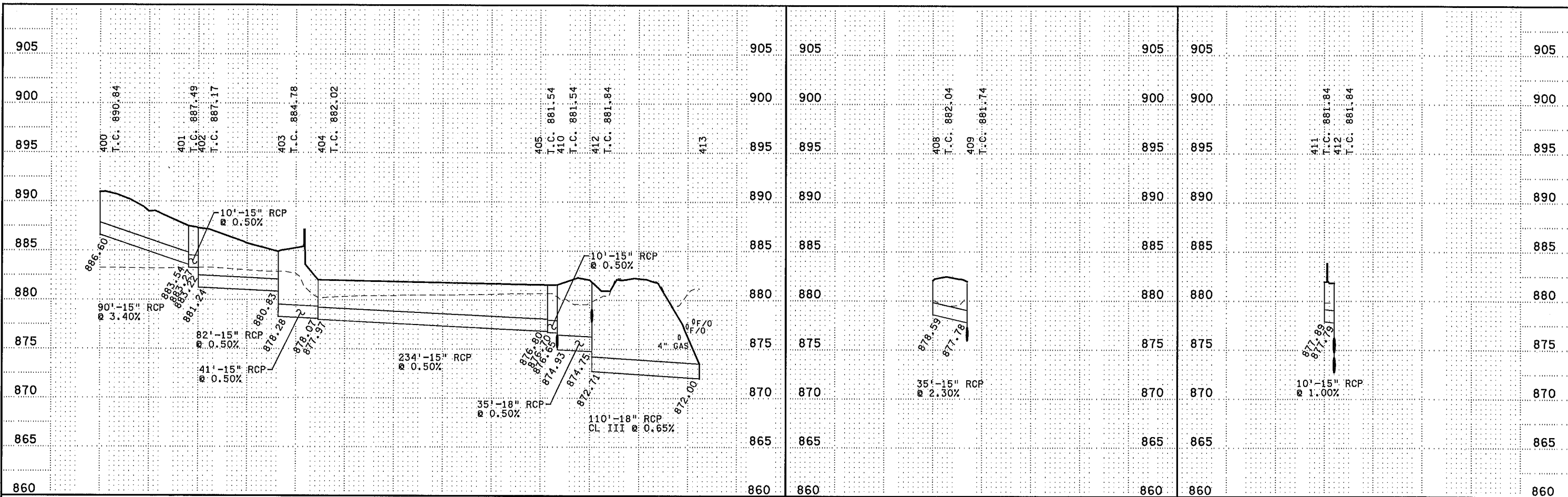
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
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 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY P. ENGELMEYER  
 CHECKED BY J. NIELSEN  
 COMM. NO. 0138259



ANOKA COUNTY  
 DRAINAGE PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 228 OF 586



NOTES:  
 1. INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 2. TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY. APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PIPE LENGTH OF PIPE).  
 3. ALL RC PIPES 12" - 15" ARE CL V.  
 4. ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET			
400	405	408	413
401	406	409	
402	407	410	
403	407A	411	
404	407B	412	

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 H:\Projects\8259\CAD\_BIM\Plan\8259\_d1400.dgn

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 Print Name: JEREMY L. NIELSEN  
*Jeremy L. Nielsen*  
 Date: 09/12-14 License #: 45047

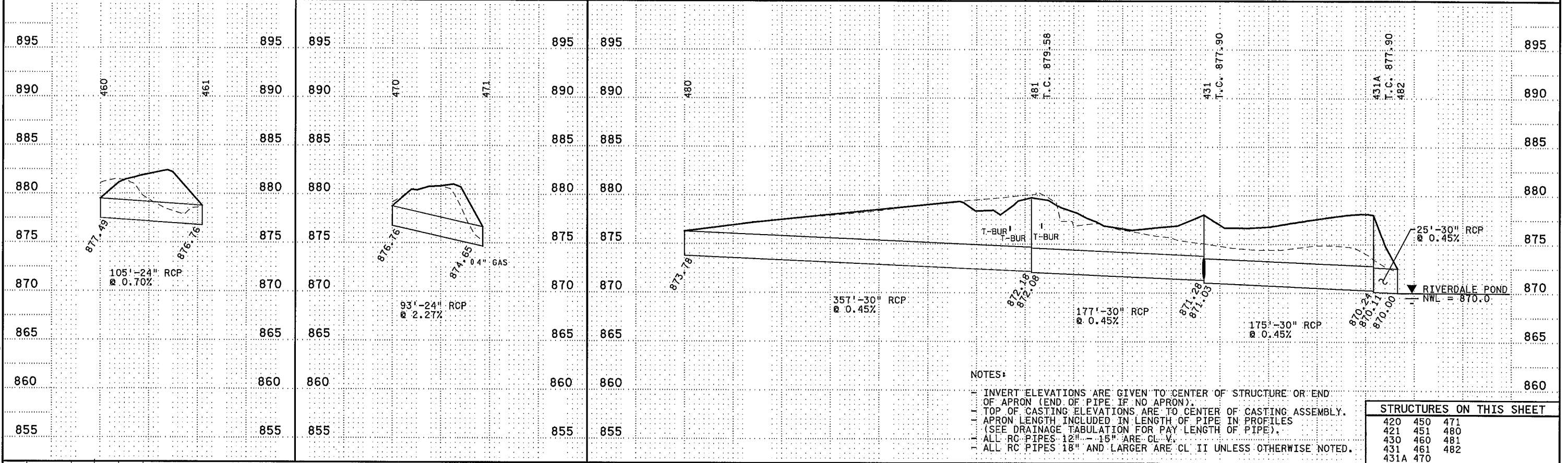
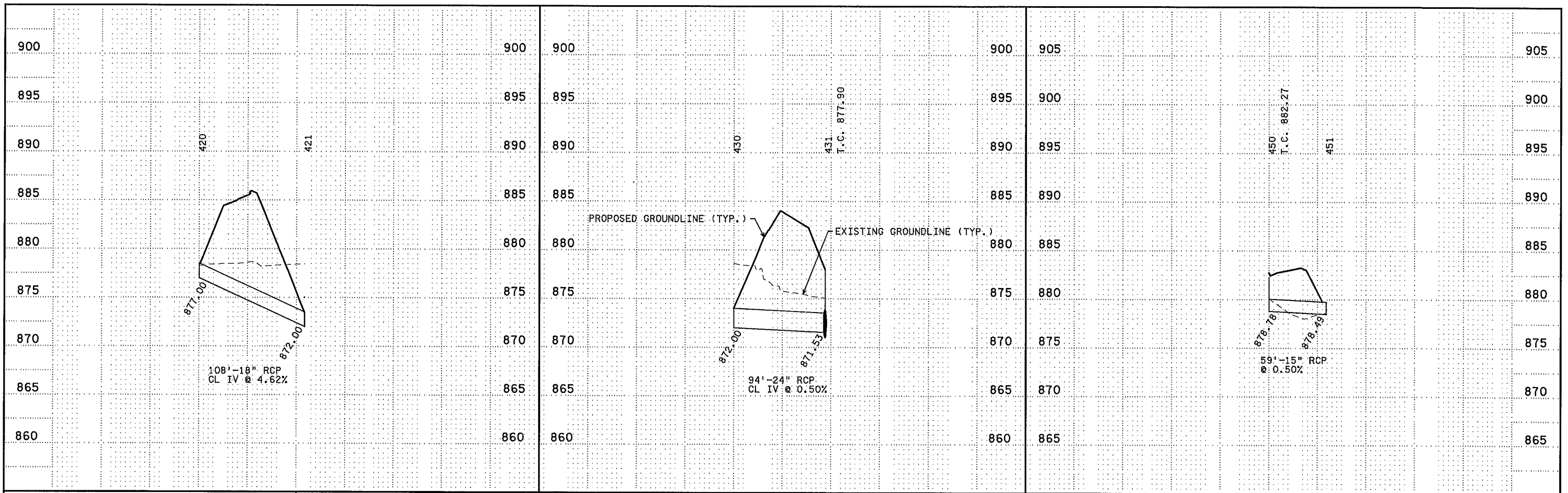
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY P. ENGELMEYER  
 CHECKED BY J. NIELSEN  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 DRAINAGE PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 229  
 OF  
 586



NOTES:

- INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).
- TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.
- APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PIPE LENGTH OF PIPE).
- ALL RC PIPES 12" - 15" ARE CL IV.
- ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET		
420	450	471
421	451	480
430	460	481
431	461	482
431A	470	

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NO	DATE	BY	CKD	APPR	REVISION

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Print Name: JEREMY L. NIELSEN

Date: 09-12-14 License #: 45047

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY P. ENGELMEYER

CHECKED BY J. NIELSEN

COMM. NO. 0138259

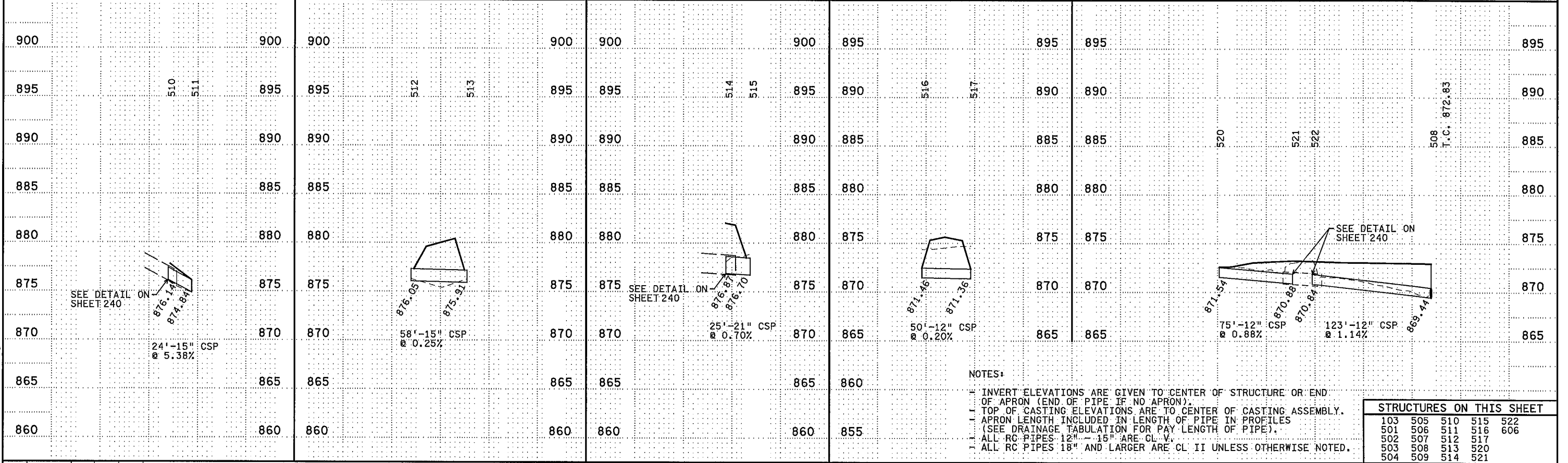
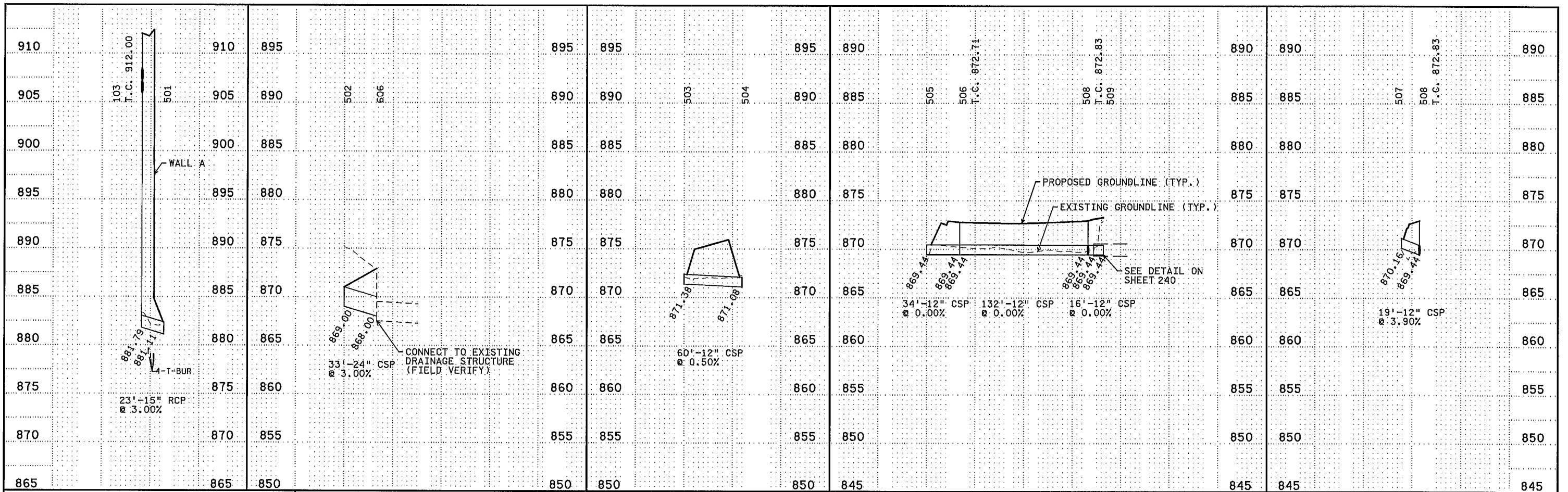


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
DRAINAGE PROFILES  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
230  
OF  
586





NOTES:  
 1. INVERT ELEVATIONS ARE GIVEN TO CENTER OF STRUCTURE OR END OF APRON (END OF PIPE IF NO APRON).  
 2. TOP OF CASTING ELEVATIONS ARE TO CENTER OF CASTING ASSEMBLY.  
 3. APRON LENGTH INCLUDED IN LENGTH OF PIPE IN PROFILES (SEE DRAINAGE TABULATION FOR PIPE LENGTH OF PIPE).  
 4. ALL RC PIPES 12" - 15" ARE CL V.  
 5. ALL RC PIPES 18" AND LARGER ARE CL II UNLESS OTHERWISE NOTED.

STRUCTURES ON THIS SHEET				
103	505	510	515	522
501	506	511	516	606
502	507	512	517	
503	508	513	520	
504	509	514	521	

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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: JEREMY L. NIELSEN  
*Jeremy L. Nielsen*  
 Date: 09/12/14 License #: 45047

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 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY P. ENGELMEYER  
 CHECKED BY J. NIELSEN  
 COMM. NO. 0138259



ANOKA COUNTY  
 TEMPORARY DRAINAGE PROFILES  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 231 OF 586



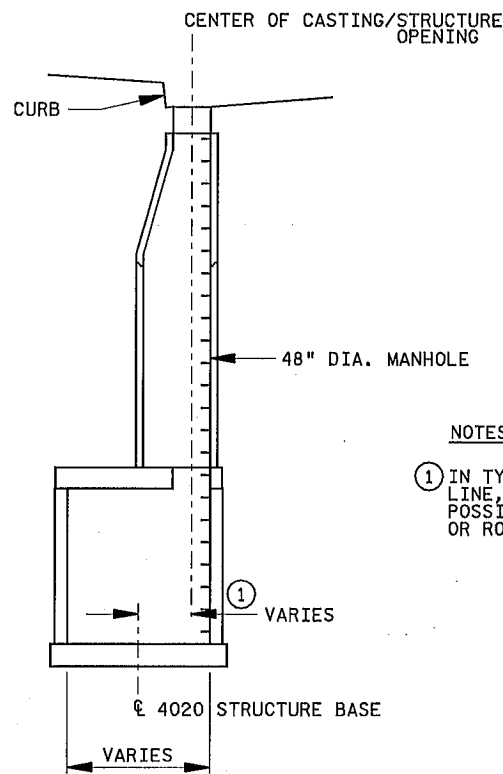






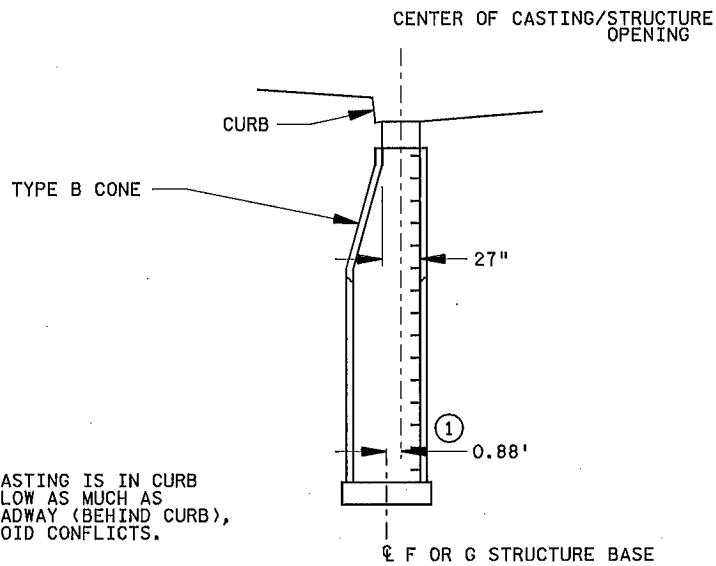






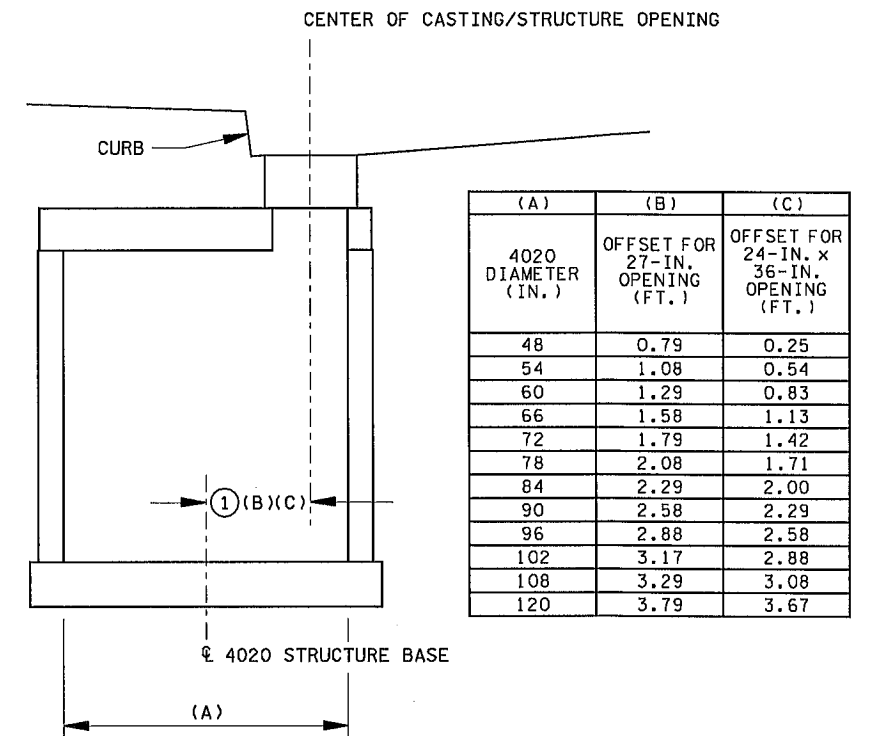
NOTES:  
 ① IN TYPICAL LOCATIONS WHERE CASTING IS IN CURB LINE, ROTATE STRUCTURE TO ALLOW AS MUCH AS POSSIBLE TO BE OUTSIDE OF ROADWAY (BEHIND CURB), OR ROTATE AS NECESSARY TO AVOID CONFLICTS.

STAKING DETAIL: DESIGN F/XX-4020 COMBINATION STRUCTURE  
 NOT TO SCALE

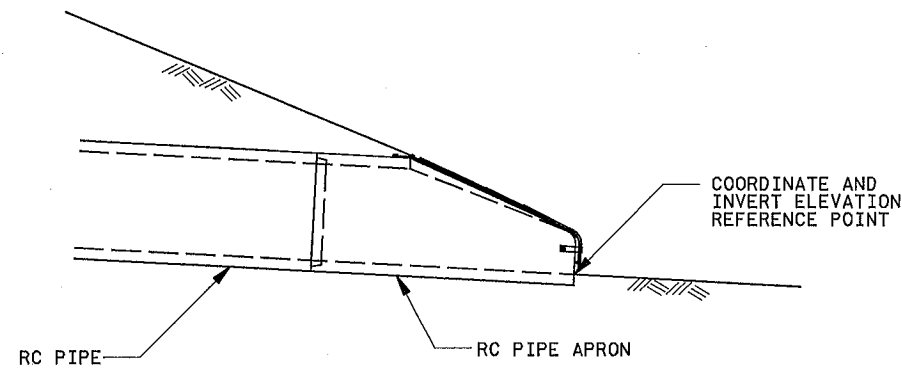


LOCATE CENTER OF STRUCTURE 0.88' FROM CENTER OF STRUCTURE OPENING.

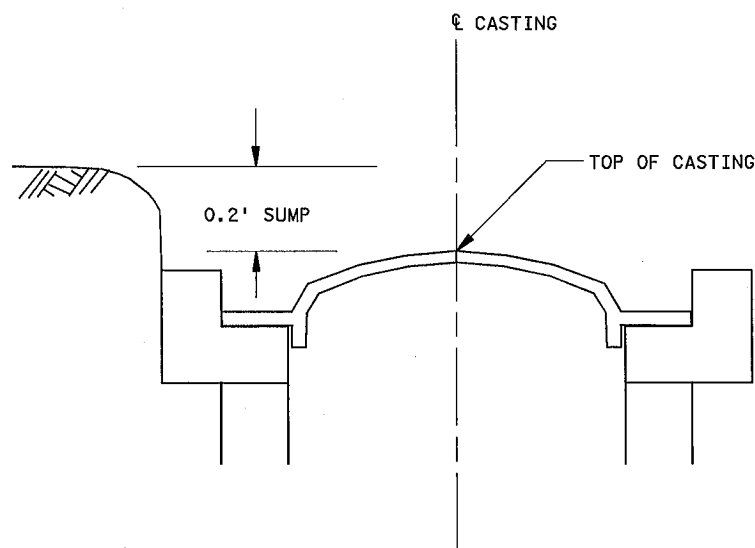
STAKING DETAIL: F OR G STRUCTURE AT CURB AND GUTTER  
 NOT TO SCALE



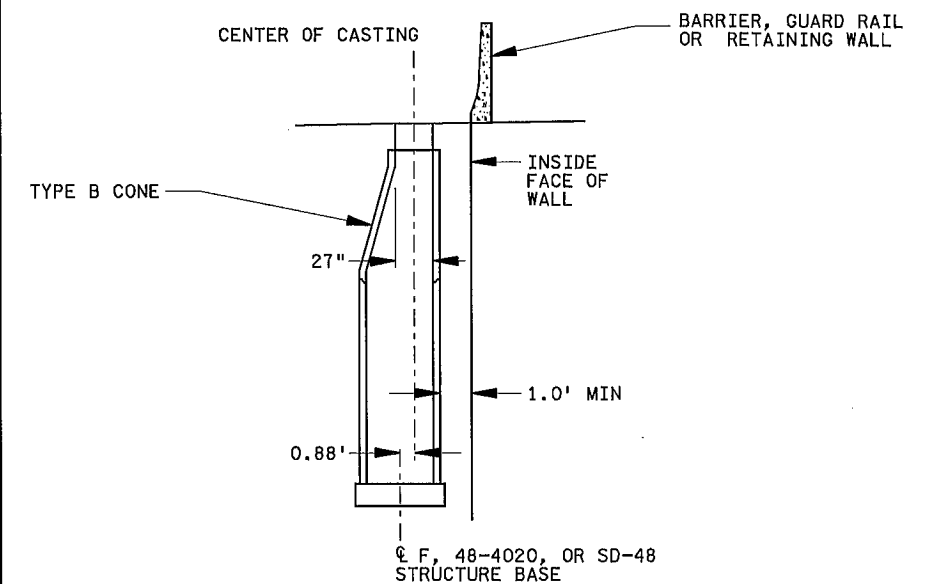
STAKING DETAIL: DESIGN XX-4020 OR SD-XX STRUCTURE  
 NOT TO SCALE



STAKING DETAILS: PIPE APRONS  
 NOT TO SCALE



STAKING DETAIL: CASTING ASSEMBLY M-11  
 NOT TO SCALE



LOCATE CENTER OF STRUCTURE 0.88' FROM CENTER OF CASTING OPENING.

ROTATE STRUCTURE TO MAXIMIZE DISTANCE BETWEEN STRUCTURE AND BARRIER, GUARDRAIL, OR RETAINING WALL.

STAKING DETAIL: F, 48-4020, OR SD-48 STRUCTURE AT BARRIERS, GUARDRAILS OR RETAINING WALLS  
 NOT TO SCALE

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NO	DATE	BY	CHK	APPR	REVISION

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 Date: 09/12/14 License #: 45047

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 199-115-002  
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 DRAWN BY S. MARTINS  
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 COMM. NO. 0138259



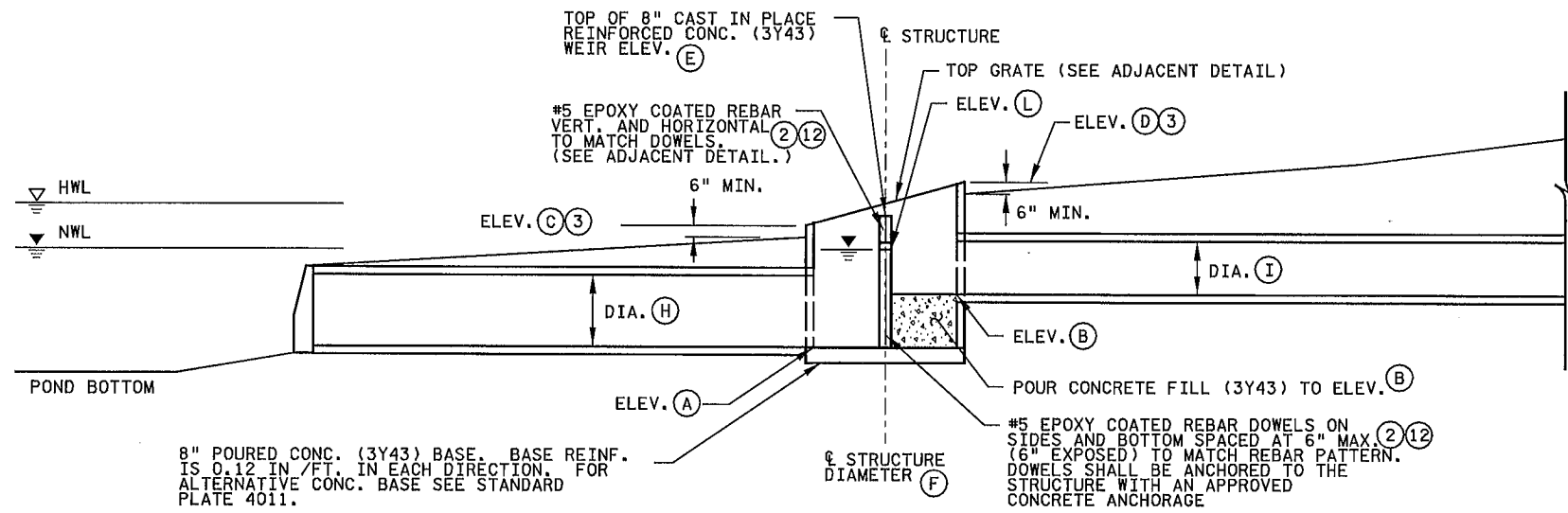
ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 DRAINAGE DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 STAKING DETAILS

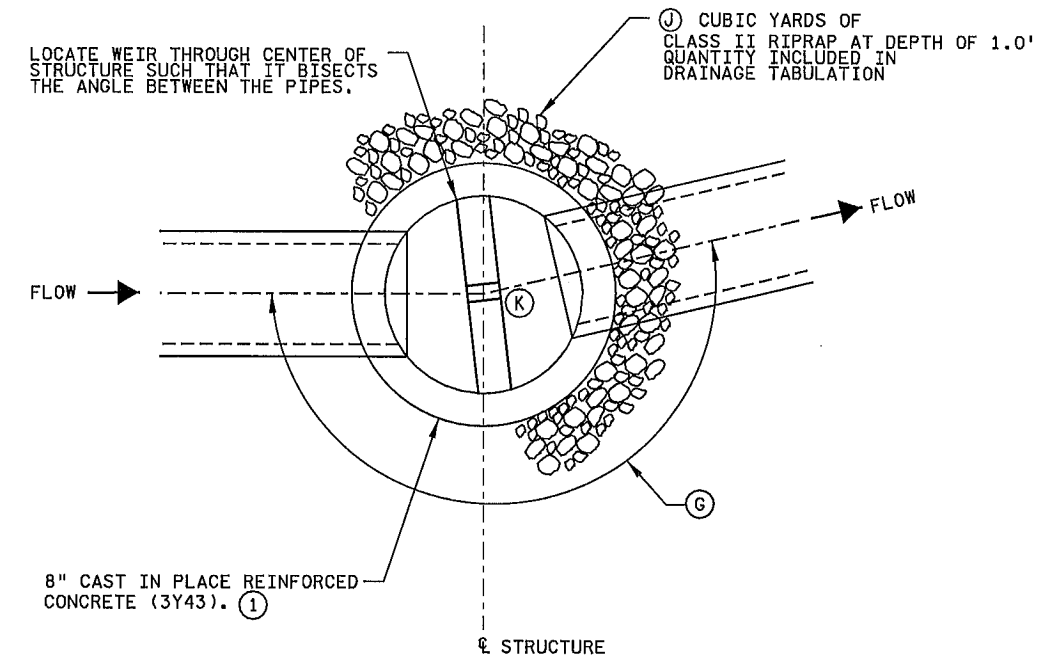
SHEET  
 237  
 OF  
 586



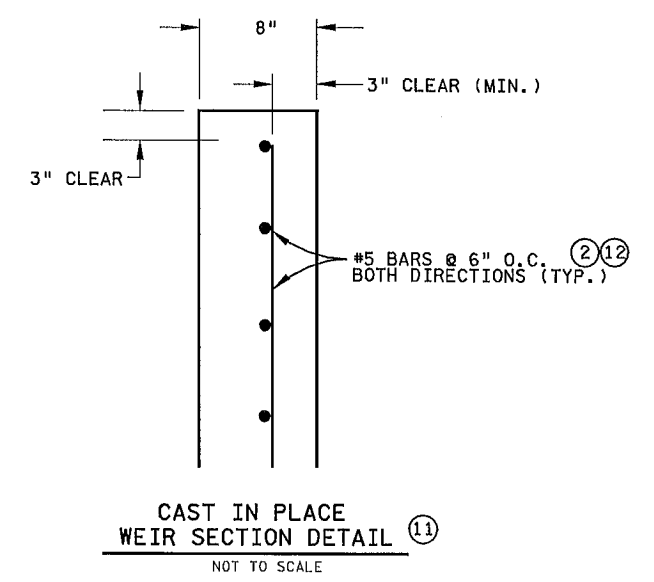
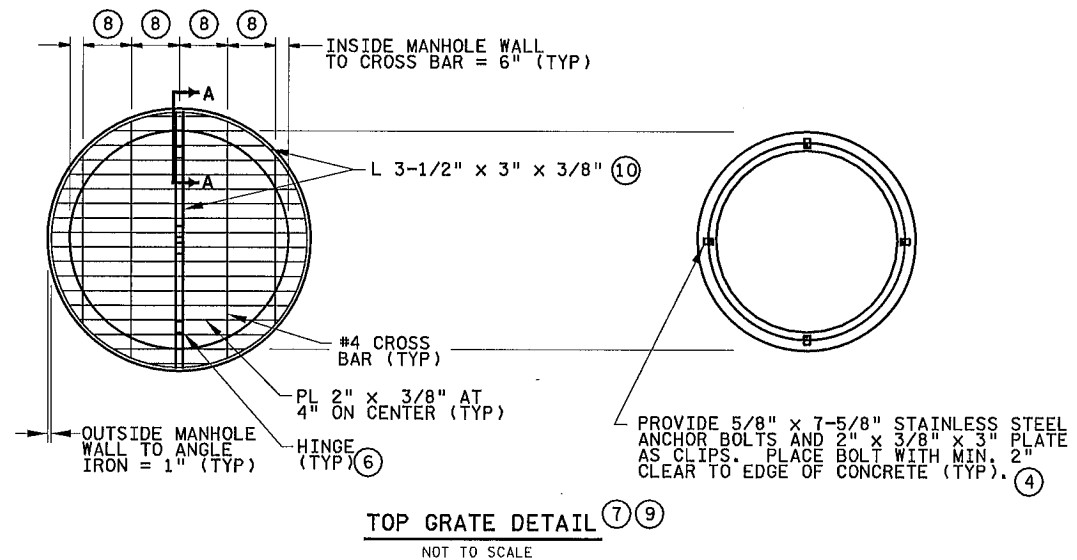
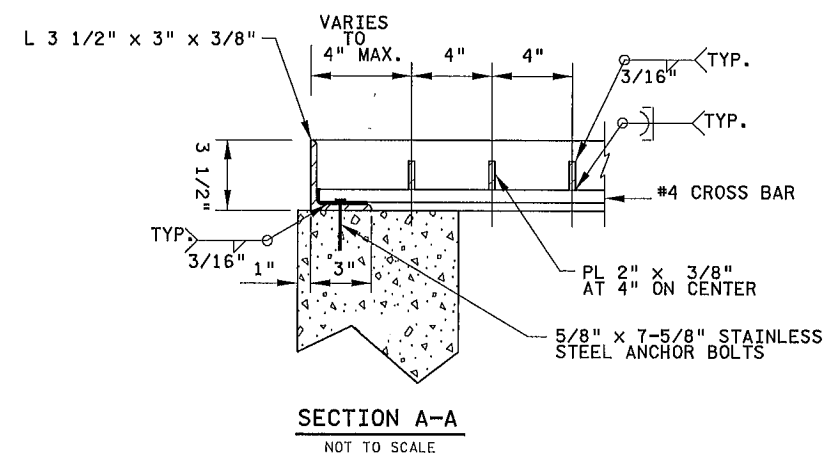
STRUCTURE	DESIGN SPECIAL	POND	NWL	BOTTOM	HWL	ELEV. (A)	ELEV. (B)	ELEV. (C)	ELEV. (D)	ELEV. (E)	DIA. (IN) (F)	ANGLE (DEG) (G)	DIA. (IN) (H)	DIA. (IN) (I)	VOL. (CY) (J)	ORIFICE DIA. (IN) (K)	ORIFICE ELEV. (L)	NOTES
375	2	RIVERDALE POND	870.0	864.0	873.1	866.75	865.74	872.25	873.75	872.00	72	149	24	24	2.2	6	870.00	(13)



5 POND OUTLET STRUCTURE - DESIGN SPECIAL 2  
NOT TO SCALE



OUTLET STRUCTURE PLAN VIEW AND RIPRAP DETAIL  
NOT TO SCALE



NOTES:

- (1) WALL CONSTRUCTION MAY BE CLASS II PRECAST RC PIPE. SEE STANDARD PLATE 3000.
- (2) ALL REBAR SIZES ARE ENGLISH UNLESS OTHERWISE NOTED.
- (3) ELEVATION (C) OCCURS INLINE WITH THE CENTERLINE OF PIPE (A). ELEVATION (D) OCCURS DIRECTLY ACROSS STRUCTURE FROM (C). ELEVATIONS (C) AND (D) ARE AT INSIDE EDGE OF MANHOLE.
- (4) BOLTS AND NUTS SHALL MEET THE REQUIREMENTS OF A.S.T.M. A307. MATERIALS FOR BASE PLATES AND ANCHOR BOLTS ASSEMBLIES SHALL CONFORM TO STRUCTURAL STEEL (WELDABLE A36).
- (5) PAYMENT FOR DRAINAGE DESIGN SPECIAL PER EACH WILL INCLUDE ALL MATERIALS, DETAILS AND WORK REQUIRED TO CONSTRUCT THE DRAINAGE STRUCTURE AS DETAILED ON THIS SHEET, EXCEPT THE RC PIPE, APRON AND RIPRAP, WHICH WILL BE PAID FOR SEPARATELY.
- (6) GRATE SHALL BE CONSTRUCTED IN TWO PIECES, WITH MINIMUM OF THREE HINGES TO PROVIDE ACCESS.
- (7) HOT DIP GALVANIZE GRATES AFTER FABRICATION.
- (8) 12" MAX., 8" MIN. SPACING BETWEEN CROSS BARS. CROSS BARS MUST BE EVENLY SPACED AND MUST ALLOW FOR PLACEMENT OF HINGES AT CENTER OF GRATE.
- (9) CONTRACTOR TO PROVIDE GRATE AS SHOWN OR ENGINEER PRE-APPROVED EQUAL.
- (10) ANGLE AROUND CIRCUMFERENCE MAY BE FABRICATED FROM FLAT BARS RESULTING IN EQUIVALENT SIZE.
- (11) WEIR MUST BE CAST IN PLACE. PRE-CAST WEIR WILL NOT BE ALLOWED AS AN ALTERNATE.
- (12) ADJUST REBAR LOCATIONS AT ORIFICE.
- (13) CONNECT TO EXISTING STORM SEWER. SEE DRAINAGE PROFILES.

3/22/17 PM 9/11/2014 H:\Projects\B259\CAD\_BIM\PI\an\B259\_drd02.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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Pr Int Name: JEREMY L. NIELSEN

*Jeremy L. Nielsen*

Date: 09/12-14 License #: 45047

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STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS

DESIGNED BY P. ENGELMEYER

CHECKED BY J. NIELSEN

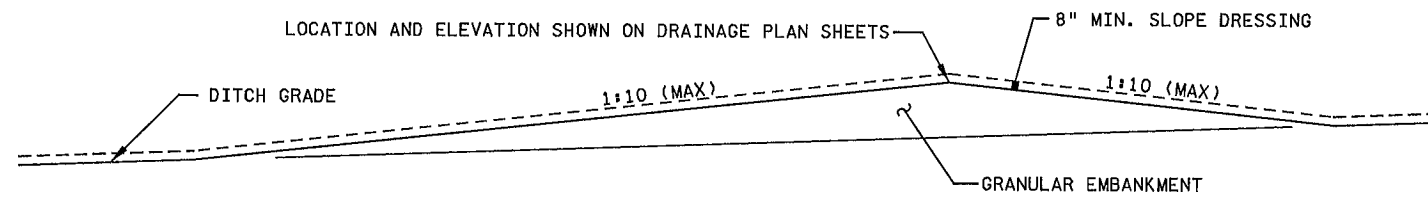
COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

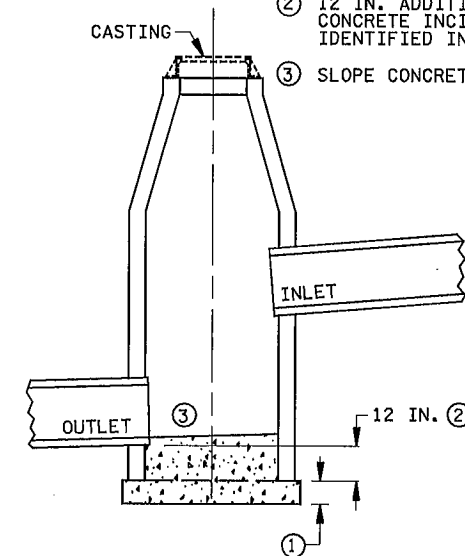
ANOKA COUNTY  
DRAINAGE DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
OUTLET CONTROL STRUCTURE - DESIGN SPECIAL 2

SHEET 238 OF 586

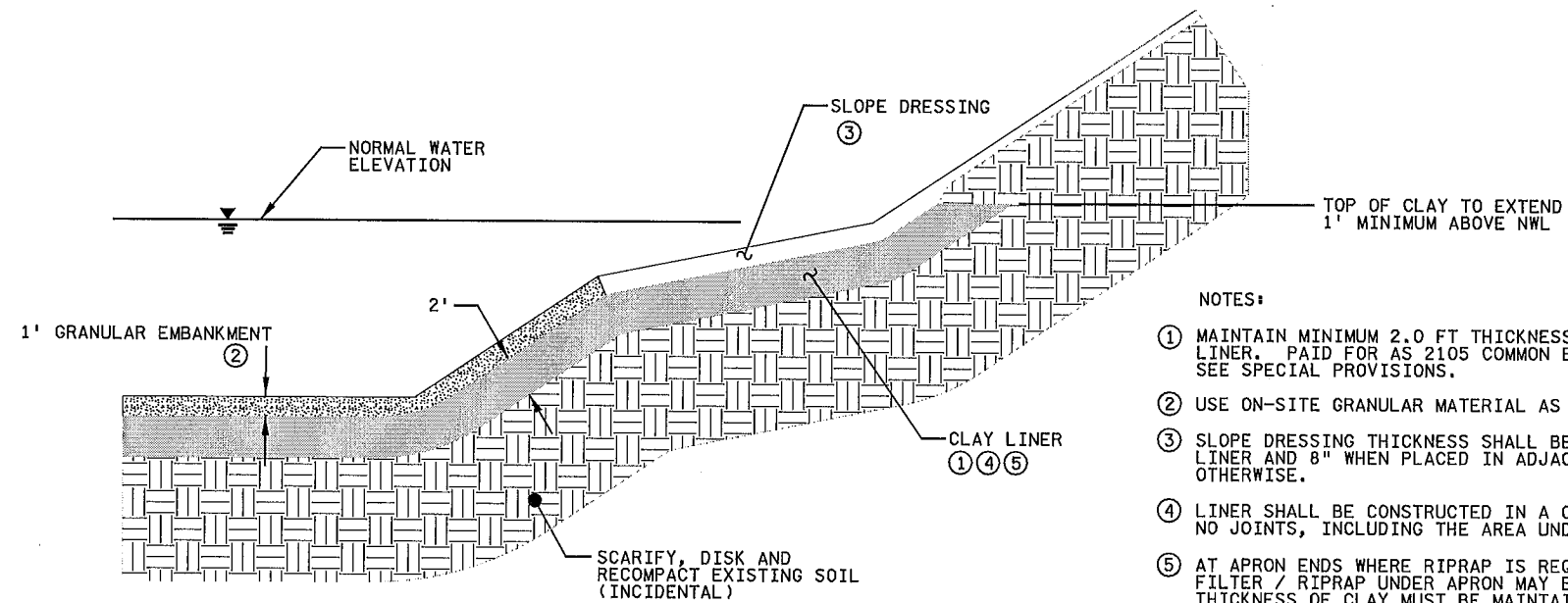


**DITCH BLOCK**  
NOT TO SCALE

- NOTES:**
- ① NORMAL CONCRETE BASE. SEE STANDARD PLATE 4000/4005 FOR A/F STRUCTURES. SEE STANDARD PLATE 4020 FOR DESIGN 4020 STRUCTURES. FOR ALTERNATE BASE, SEE STANDARD PLATE 4011.
  - ② 12 IN. ADDITIONAL POURED CONCRETE INCIDENTAL. LOCATIONS IDENTIFIED IN THE DRAINAGE TABULATIONS.
  - ③ SLOPE CONCRETE TO DRAIN



**SUPER BASE MANHOLE**  
**MANHOLE WITH 12" ADDITIONAL CONCRETE BASE**  
NOT TO SCALE



- NOTES:**
- ① MAINTAIN MINIMUM 2.0 FT THICKNESS OF CLAY FOR POND LINER. PAID FOR AS 2105 COMMON BORROW SPECIAL (CV). SEE SPECIAL PROVISIONS.
  - ② USE ON-SITE GRANULAR MATERIAL AS DIRECTED BY ENGINEER
  - ③ SLOPE DRESSING THICKNESS SHALL BE 1' WHEN PLACED OVER CLAY LINER AND 8" WHEN PLACED IN ADJACENT AREAS UNLESS NOTED OTHERWISE.
  - ④ LINER SHALL BE CONSTRUCTED IN A CONTINUOUS OPERATION WITH NO JOINTS, INCLUDING THE AREA UNDER PIPE APRONS.
  - ⑤ AT APRON ENDS WHERE RIPRAP IS REQUIRED, GRANULAR FILTER / RIPRAP UNDER APRON MAY BE OMITTED. 2 FT. MINIMUM THICKNESS OF CLAY MUST BE MAINTAINED UNDER / AROUND APRONS UP TO THE ELEVATION INDICATED.

**CLAY LINER - POND SOIL PROFILE (RIVERDALE POND)**  
NOT TO SCALE

3/21/17 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_dr-d03.dgn

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*Jeremy L. Nielsen*

Date: 09-12-14 License #: 45047

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ENGINEERS  
PLANNERS  
DESIGNERS

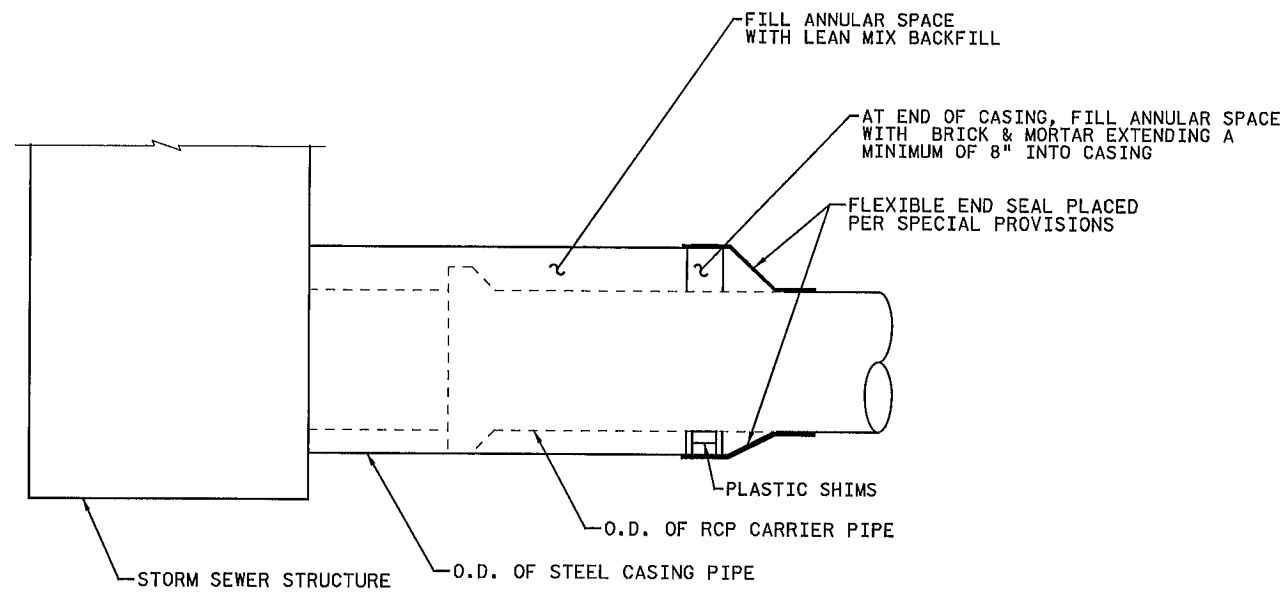
ANOKA COUNTY

DRAINAGE DETAILS

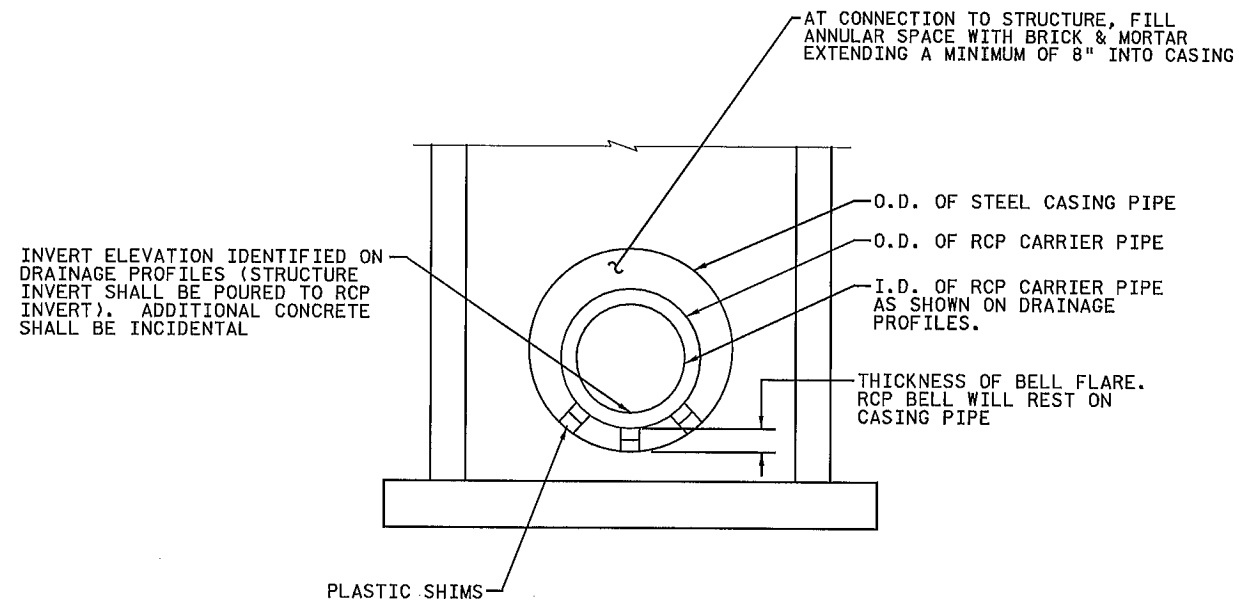
T.H. 10 / C.S.A.H. 83 INTERCHANGE

CLAY LINER / DITCH BLOCK / SUPER BASE MANHOLE

SHEET 239 OF 586



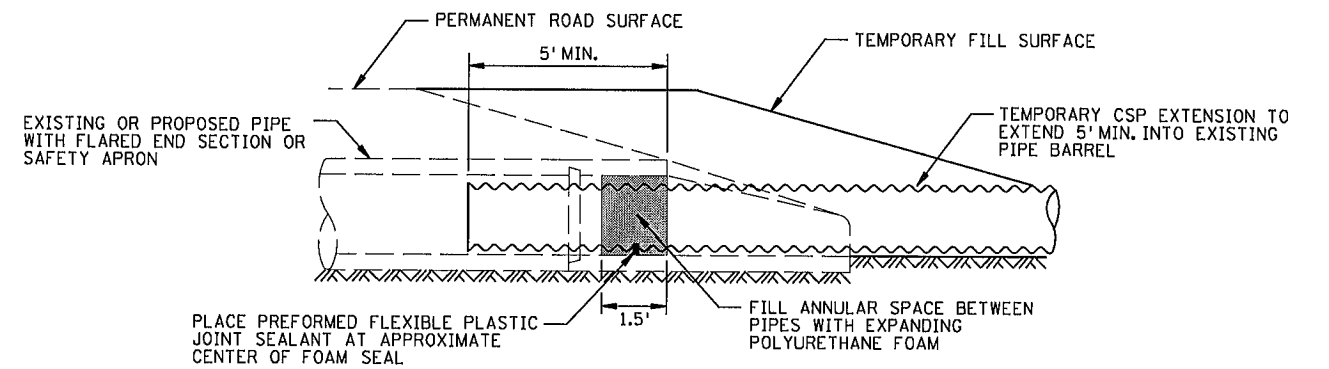
**CASING AND CASING END SEAL DETAIL**  
NOT TO SCALE



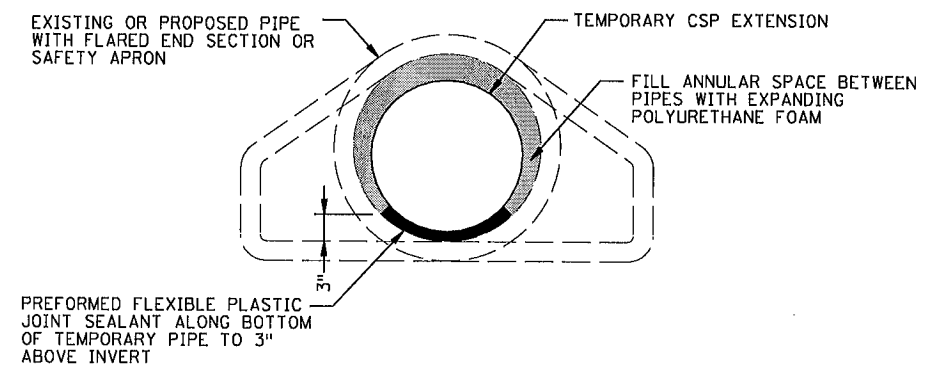
**DETAIL OF CONNECTION OF CASIED PIPE TO STRUCTURE**  
NOT TO SCALE

**NOTES:**

- 1 END SEAL, LEAN MIX BACKFILL, BRICK & MORTAR, & SHIMS ARE INCIDENTAL.
- 2 PAY HEIGHT FOR DRAINAGE STRUCTURES WITH CASIED OUTLET PIPE IS INCREASED BY 6" FOR EXTRA DEPTH TO ACCOMODATE CASING.



**SECTION VIEW**



**END VIEW**

**NOTE:**

1. TEMPORARY PIPE PAID FOR AS CS PIPE. CONNECTION SHALL BE PAID FOR AS CONNECT TO EXISTING STORM SEWER. ALL OTHER ITEMS ARE INCIDENTAL.
2. PREFORMED FLEXIBLE PLASTIC JOINT SEALANT TO BE PLACED AND ADHERED TO THE BOTTOM OF THE CSP PRIOR TO PLACEMENT OF CSP INTO EXISTING PIPE. SEALANT MUST BE PLACED IN THE BOTTOM OF A CORRUGATION AND EXTEND 1/2" MINIMUM ABOVE CORRUGATION.
3. EXISTING CULVERTS SHALL BE CLEANED PRIOR TO MAKING TEMPORARY CONNECTION.

**TEMPORARY CULVERT CONNECTION DETAIL**  
NOT TO SCALE

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: JEREMY L. NIELSEN  
*Jeremy L. Nielsen*  
 Date: 09-12-14 License # 45047

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

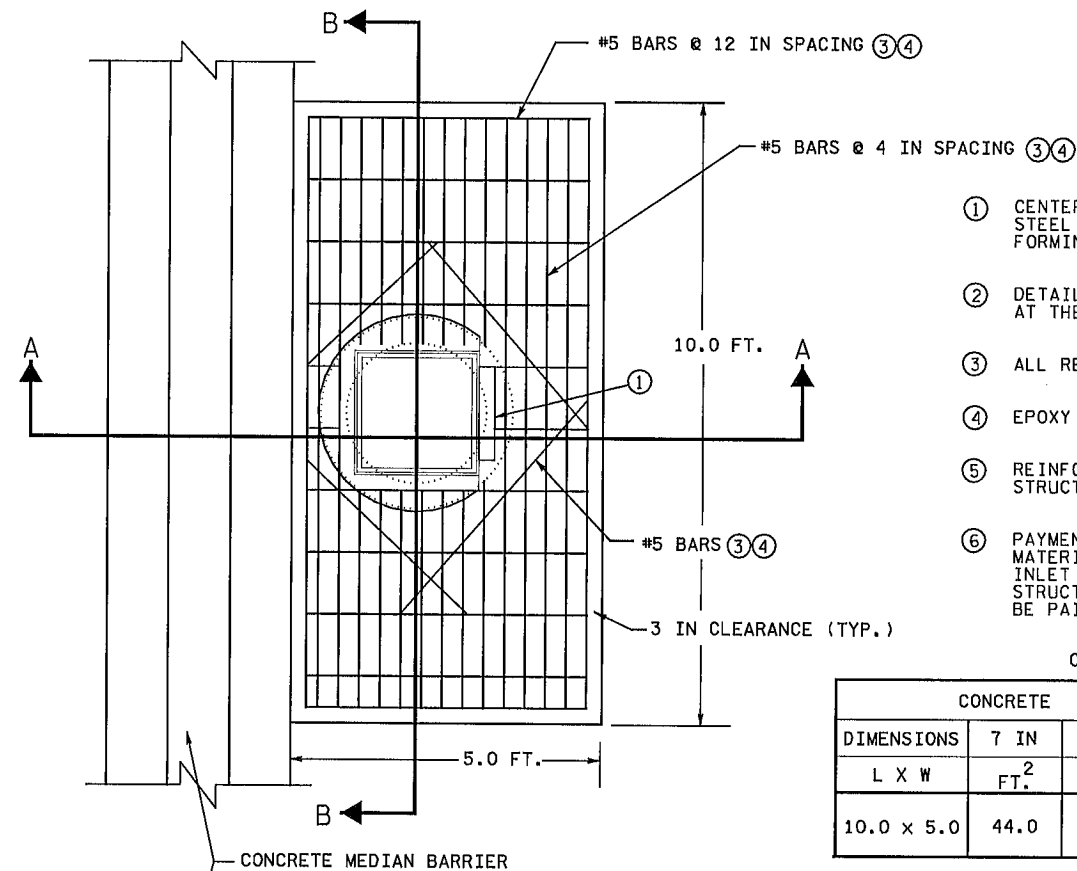
DRAWN BY S. MARTINS  
DESIGNED BY P. ENGELMEYER  
CHECKED BY J. NIELSEN  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
DRAINAGE DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CASING / TEMPORARY CONNECTION

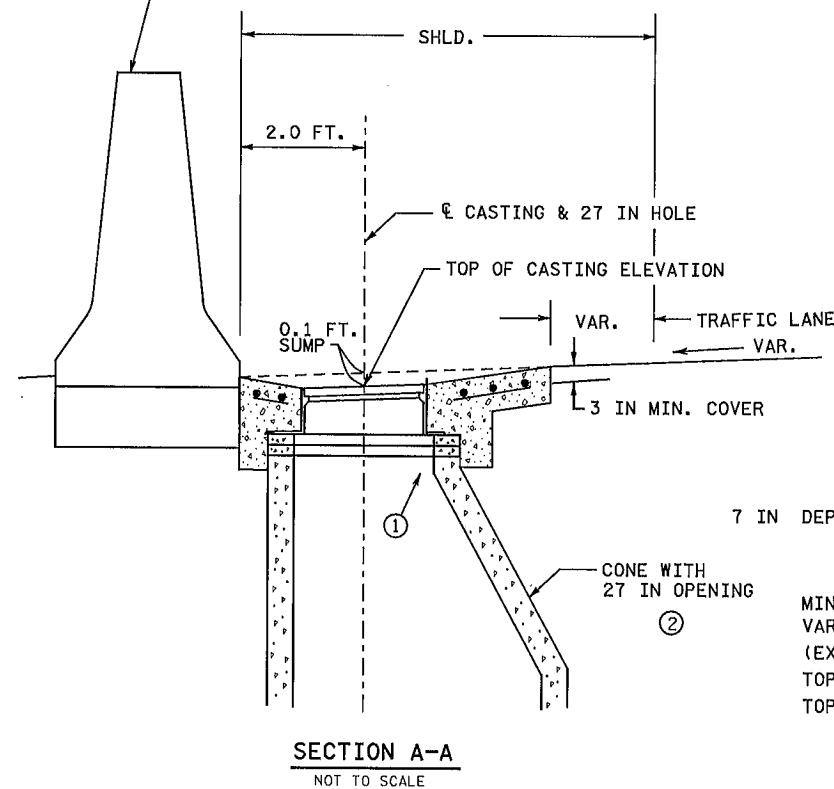
SHEET  
240  
OF  
586



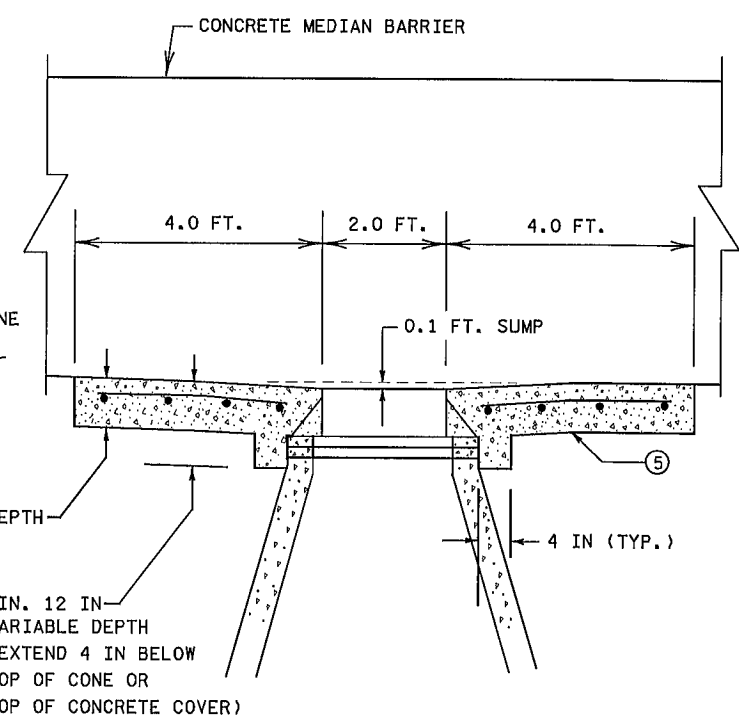
- ① CENTER CASTING ON 27 IN HOLE, USE 3 IN x 18 IN STEEL PLATE (INCIDENTAL) TO COVER GAP WHILE FORMING PAD AND COLLAR.
- ② DETAIL APPLIES TO DESIGN G, F, AND 4020 STRUCTURES AT THE MEDIAN BARRIER.
- ③ ALL REBAR SIZES ARE ENGLISH UNLESS OTHERWISE DESIGNATED.
- ④ EPOXY COATED.
- ⑤ REINFORCED CONCRETE MIX (3A41). STRUCTURES
- ⑥ PAYMENT FOR CONCRETE INLET PAD PER EACH WILL INCLUDE ALL MATERIALS, DETAILS AND WORK REQUIRED TO CONSTRUCT THE INLET PAD AS DETAILED ON THIS SHEET, EXCEPT THE DRAINAGE STRUCTURES, CASTINGS, AND MEDIAN BARRIER, WHICH WILL BE PAID FOR SEPARATELY.

CONCRETE PAD QUANTITIES

DIMENSIONS L X W	CONCRETE		REINFORCEMENT
	7 IN FT. <sup>2</sup>	MIX 3A41 YD. <sup>3</sup>	NO 5 BARS (EPOXY COATED) ③ WEIGHT LB.
10.0 x 5.0	44.0	1.18	216.0



SECTION A-A  
NOT TO SCALE



SECTION B-B  
NOT TO SCALE

MANHOLE OR CATCH BASIN STRUCTURE WITH CONCRETE INLET PAD ⑥

NOT TO SCALE

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NO	DATE	BY	CHKD	APPR	REVISION

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: JEREMY L. NIELSEN

*Jeremy L. Nielsen*

Date: 09/12/14 License #: 45047

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
P. ENGELMEYER

CHECKED BY  
J. NIELSEN

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
DRAINAGE DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CONCRETE INLET PAD

SHEET  
241  
OF  
586

**STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (SHEET 1 OF 3)**

**PROJECT DESCRIPTION/LOCATION AND SCOPE**

SEE COVER SHEET FOR LOCATION MAP, PROJECT NUMBERS AND DESCRIPTION OF PROJECT SCOPE. PERMANENT STORMWATER BEST MANAGEMENT PRACTICES (BMPs) UTILIZED ON THE PROJECT INCLUDE EXISTING AND PROPOSED WET SEDIMENTATION BASINS, AN EXISTING INFILTRATION BASIN AND VEGETATED SWALES. SEE WATER RESOURCES NOTES FOR ADDITIONAL INFORMATION.

**SPECIAL AND IMPAIRED WATERS**

THE FOLLOWING SPECIAL/IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE.

THE MISSISSIPPI RIVER REACH IN THIS AREA IS A SCENIC AND RECREATIONAL OUTSTANDING RESOURCE VALUE WATER.

**ENVIRONMENTALLY SENSITIVE AREAS**

ALL ENVIRONMENTALLY SENSITIVE AREAS ARE LABELED AS "ENVIRONMENTALLY SENSITIVE AREAS" IN THE PLANS. NO WETLANDS WERE IDENTIFIED IN THE PROJECT AREA.

**LONG TERM MAINTENANCE AND OPERATION**

MAINTENANCE STAFF FROM MNDOT AND THE CITY OF RAMSEY ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEMS DIVIDED ACCORDING TO THE OWNERSHIP OF THE RIGHT OF WAY (RIVERDALE POND WILL BE MAINTAINED BY MNDOT). MNDOT AND THE CITY OF RAMSEY EACH HAVE AN MS4 SWPPP THAT IS AVAILABLE ONLINE OR UPON REQUEST.

**SWPPP DEVELOPMENT AND MAINTENANCE**

THIS SWPPP WAS PREPARED BY PERSONNEL WHO ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE AVAILABLE UPON REQUEST.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR WHO IS RESPONSIBLE FOR FINALIZING, CERTIFYING, AND MAINTAINING THE SWPPP DOCUMENT AND FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP, SEE PAGE 2 OF THE SWPPP NARRATIVE FOR ADDITIONAL RESPONSIBILITIES OF THE EROSION AND SEDIMENT CONTROL SUPERVISOR.

**SWPPP AMENDMENTS**

THE SWPPP MUST BE AMENDED WHEN:

- A. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASON HAVING A SIGNIFICANT EFFECT ON DISCHARGE OF POLLUTANTS.
- B. INSPECTIONS INDICATE THE SWPPP IS NOT EFFECTIVE.
- C. A WATER QUALITY STANDARD CHANGES AND THE MPCA DETERMINES THE SWPPP MUST BE AMENDED TO COMPLY.

A DESCRIPTION OF ANY CHANGE TO THE SWPPP, ALONG WITH THE DATE AND NAME OF THE REVISION SHALL BE RECORDED AND INCLUDED WITH THE SWPPP AND RETAINED ON SITE. THE OWNER SHALL RETAIN ALL RECORDS AFTER COMPLETION OF THE PROJECT.

**ENVIRONMENTAL REVIEW**

THE REQUIREMENTS OF LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION AND THE CITY OF RAMSEY ARE SATISFIED BY THE PERMANENT BMPs LISTED IN THE PROJECT DESCRIPTION ABOVE AND THE TEMPORARY MEASURES INCLUDED. THERE ARE NO ADDITIONAL STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW.

**DRINKING WATER SOURCE MANAGEMENT AREA (DWSMA) AND KARST REGIONS**

THE PROJECT IS NOT LOCATED IN A KARST AREA, HOWEVER IT IS LOCATED ENTIRELY IN THE DWSMA FOR THE CITY OF RAMSEY MUNICIPAL WELLS. INFILTRATION OF STORMWATER IS NOT PERMITTED IN THE DWSMA, THEREFORE ONLY CLAY LINED PERMANENTLY WET STORMWATER PONDS ARE INCLUDED IN THE PROJECT AREA.

**SOIL TYPES**

SOIL TYPES FOUND ON THIS PROJECT ARE GENERALLY SANDY. SOILS CONSIST PRIMARILY OF GRANULAR TERRACE (ALLUVIUM) DEPOSITS OF FINE AND COARSE SANDS. BORINGS ALSO INDICATE AREAS OF FILL AND OTHER SOILS INCLUDING SAND, LOAMY SAND AND NON-PLASTIC SANDY LOAM. NO ROCK WAS FOUND WITHIN THE DEPTHS EXPLORED.

**LAND FEATURE CHANGES**

TOTAL DISTURBED AREA: 46.8 ACRES  
 TOTAL EXISTING IMPERVIOUS SURFACE AREA: 12.6 ACRES  
 TOTAL PROPOSED IMPERVIOUS SURFACE AREA: 19.2 ACRES  
 TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA: 6.6 ACRES

**PROJECT CONTACTS**

THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR THE IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED.

ORGANIZATION	CONTACT NAME	PHONE
CITY OF RAMSEY	LEONARD LINTON	763-433-9834
ANOKA COUNTY	JASON ORCUTT	763-862-4200
MINNESOTA POLLUTION CONTROL AGENCY	SARA THOMSON	651-757-2094
LOWER RUM RIVER WMO	BOB OBERMEYER	952-832-2600
MNDOT WATER RESOURCES (MS4)	CAROLYN ADAMSON	651-775-0921
SRF WATER RESOURCES	JEREMY NIELSEN	763-475-0010

MPCA 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451  
 800-422-0798

**LOCATION OF SWPPP REQUIREMENTS**

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2014 EDITION), CONSTRUCTION DIARIES OR ON FILE WITH THE PROJECT OWNER. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET. IN ADDITION, THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT SHOULD BE REVIEWED AND CONSULTED BY THE EROSION AND SEDIMENT CONTROL SUPERVISOR.

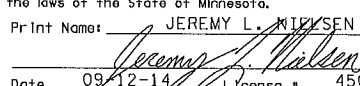

**LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN**

DESCRIPTION	LOCATION
TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND STAGING	SHEET NOS. 101 TO 147
PERMANENT EROSION AND SEDIMENT CONTROL MEASURES	SHEET NOS. 317 TO 323
DIRECTION OF FLOW	SHEET NOS. 218 TO 221
FINAL STABILIZATION	SHEET NOS. 317 TO 323
SOILS AND CONSTRUCTION NOTES	SHEET NOS. 14 TO 16
DRAINAGE STRUCTURES	SHEET NOS. 218 TO 221
DRAINAGE TABULATION	SHEET NOS. 232 TO 236
STORM SEWER PROFILE SHEETS	SHEET NOS. 222 TO 231
STORM SEWER TABULATION	SHEET NOS. 232 TO 236
EROSION AND SEDIMENT CONTROL DETAILS	SHEET NOS. 67 TO 75
EROSION CONTROL TABULATION	SHEET NOS. 40 TO #TB19
TURF ESTABLISHMENT TABULATION	SHEET NOS. 40 TO #TB19
STATEMENT OF ESTIMATED QUANTITIES	SHEET NOS. 4 TO 9

**SITE MAPS AND DESIGN CALCULATIONS**

IN ADDITION TO WHAT IS LOCATED WITHIN THIS PLAN, SITE MAPS AND BMP DESIGN CALCULATIONS ARE AVAILABLE UPON REQUEST. PLEASE CONTACT THE PROJECT ENGINEER WITH ANY QUESTIONS REGARDING THE SITE MAPS OR CALCULATIONS.

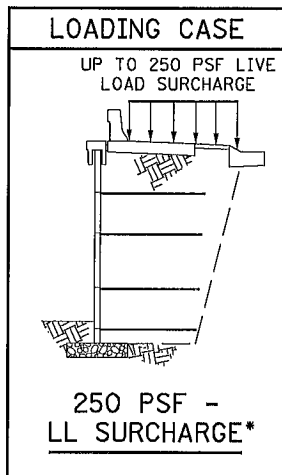
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Pr Int Name: <u>JEREMY L. NIELSEN</u>  Date: <u>09-12-14</u> License # <u>45047</u>				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY S. MARTINS DESIGNED BY P. ENGELMEYER CHECKED BY J. NIELSEN COMM. NO. 0138259	 ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY STORM WATER POLLUTION PREVENTION PLAN (SWPPP) T.H. 10 / C.S.A.H. 83 INTERCHANGE	SHEET 242 OF 586
NO DATE BY CKD APPR REVISION				... \CAD_BIMP\on\8259_swp01.dgn				









\*DIAGRAM DOES NOT SHOW IMPACT LOAD DESIGN REQUIREMENTS. SEE SPECIAL PROVISIONS.

DEFINITION OF TERMS	
MSE	MECHANICALLY STABILIZED EARTH
LL	LIVE LOAD
H	WALL HEIGHT

**LEGEND**

■ SHADED AREAS = MOMENT SLAB

**DESIGN CRITERIA**

THE DESIGN SHALL CONSIDER THE INTERNAL, EXTERNAL, AND COMPOUND STABILITY OF THE WALL MASS INCLUDING ECCENTRICITY, SLIDING, BEARING PRESSURE AND STABILITY OF TEMPORARY CONSTRUCTION SLOPES. THE DESIGN SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS, THE MSE WALL DESIGN AND CONSTRUCTION PROVISIONS OF THE 2010 AND CURRENT INTERIM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE FEDERAL HIGHWAY ADMINISTRATION REQUIREMENTS AS REPORTED IN PUBLICATION NO. FHWA NHI-10-024/025, ENTITLED "DESIGN AND CONSTRUCTION OF MECHANICALLY STABILIZED EARTH WALLS AND REINFORCED SOIL SLOPES - VOLUME I & II" SHALL GOVERN. THE DESIGN SHALL BE PERFORMED USING THE LRFD METHOD.

DESIGN LIFE FOR SOIL REINFORCEMENT, CONNECTIONS AND CORROSION PROTECTION OF ALL COMPONENTS SHALL BE 100 YEARS; OTHERWISE FOR ALL OTHER WALL SYSTEM COMPONENTS THE DESIGN LIFE SHALL BE 75 YEARS.

MSE WALLS SHEET INDEX	
SHEET NO.	WALL NO.
245	GENERAL NOTES
246	SUMMARY OF QUANTITIES
247 - 250	ARCHITECTURAL DETAILS
251 - 260	MSE RETAINING WALL DETAILS
261 - 268	RETAINING WALL B
269 - 271	RETAINING WALL C
272 - 275	RETAINING WALL F
276 - 278	RETAINING WALL G

SEE SHEETS 279 - 316 FOR CIP WALLS.

SEE SPECIAL PROVISIONS DIVISION SB FOR ADDITIONAL DESIGN, SUBMITTAL, MATERIALS, AND CONSTRUCTION REQUIREMENTS.

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<table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					NO	DATE	BY	CHKD	APPR	REVISION							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: JANET ELIZABETH GRONERT  Date: 09-12-14 License # 44325		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY E. JOHNSON DESIGNED BY A. RENSTROM CHECKED BY J. GRONERT COMM. NO. 0138259		<b>SRE</b> ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.		ANOKA COUNTY MSE RETAINING WALL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE GENERAL NOTES		MSE SHEET 245 OF 586
NO	DATE	BY	CHKD	APPR	REVISION																						

R SUMMARY OF QUANTITIES FOR MSE RETAINING WALLS																							
WALL	STRUCTURAL CONCRETE (1)	RAILING CONCRETE (3Y46) (8)			REINFORCEMENT BARS	ORNAMENTAL METAL RAILING TYPE SPECIAL 1	MECHANICALLY STABILIZED EARTH WALL (6)	AESTHETICS					DRAINAGE					CONDUIT SYSTEM (SIGNALS) (7)					
	3Y43 (MOMENT SLAB)	TYPE MOD F (TL-4) (2,3)	TYPE MOD P-4 (TL-4) (4)	TYPE MOD P-1(TL-2) (5)	EPOXY			ARCH. CONCRETE TEXTURE (CUT STONE)	ARCH. CONCRETE TEXTURE (THIN BRICK)	SPECIAL SURFACE FINISH (11)	ARCH. SURFACE FINISH (MULTI-COLOR)	ARCH. SURFACE FINISH (SINGLE COLOR)	ANTI-GRAFFITTI COATING	4" TP PIPE DRAIN	4" PERF TP PIPE DRAIN	4" PRECAST CONCRETE HEADWALL (9)	6" TP PIPE DRAIN	6" PERF TP PIPE DRAIN	6" PRECAST CONCRETE HEADWALL (9)	2" RIGID STEEL CONDUIT	HANDHOLE	CONDUIT CAP	
	CU YD	LIN FT	LIN FT	LIN FT	POUND	LIN FT	SQ YD	SQ FT	SQ FT	SQ FT	SQ FT	SQ FT	SQ FT	SQ FT	LIN FT	LIN FT	EACH	LIN FT	LIN FT	EACH	LIN FT	EACH	EACH
B	420	-	1360	-	60870	-	3085	-	1480	33400	1480	-	16900	-	-	-	600	4500	2	120	2	4	
C	-	-	-	-	-	-	316	1430	-	1800	-	1430	2000	111	705	1	-	-	-	-	-	-	
F	189	660	-	-	32250	-	1658	-	960	17160	960	-	7910	-	-	-	290	2040	4	-	-	-	
G	123	-	-	460	21170	460	650	-	330	7300	330	-	5700	-	-	-	180	1380	2	-	-	-	
10 E.ABUT.	7	-	-	-	1329	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL	739	660	1360	460	115619	460	5709	1430	2770	59650	2770	1430	32510	111	705	1	1070	7920	8	120	2	4	

WALL A, B, C AND E WILL BE UNDER S.P. 0202-95

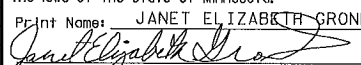

WALL D WILL BE UNDER S.A.P. 199-115-002

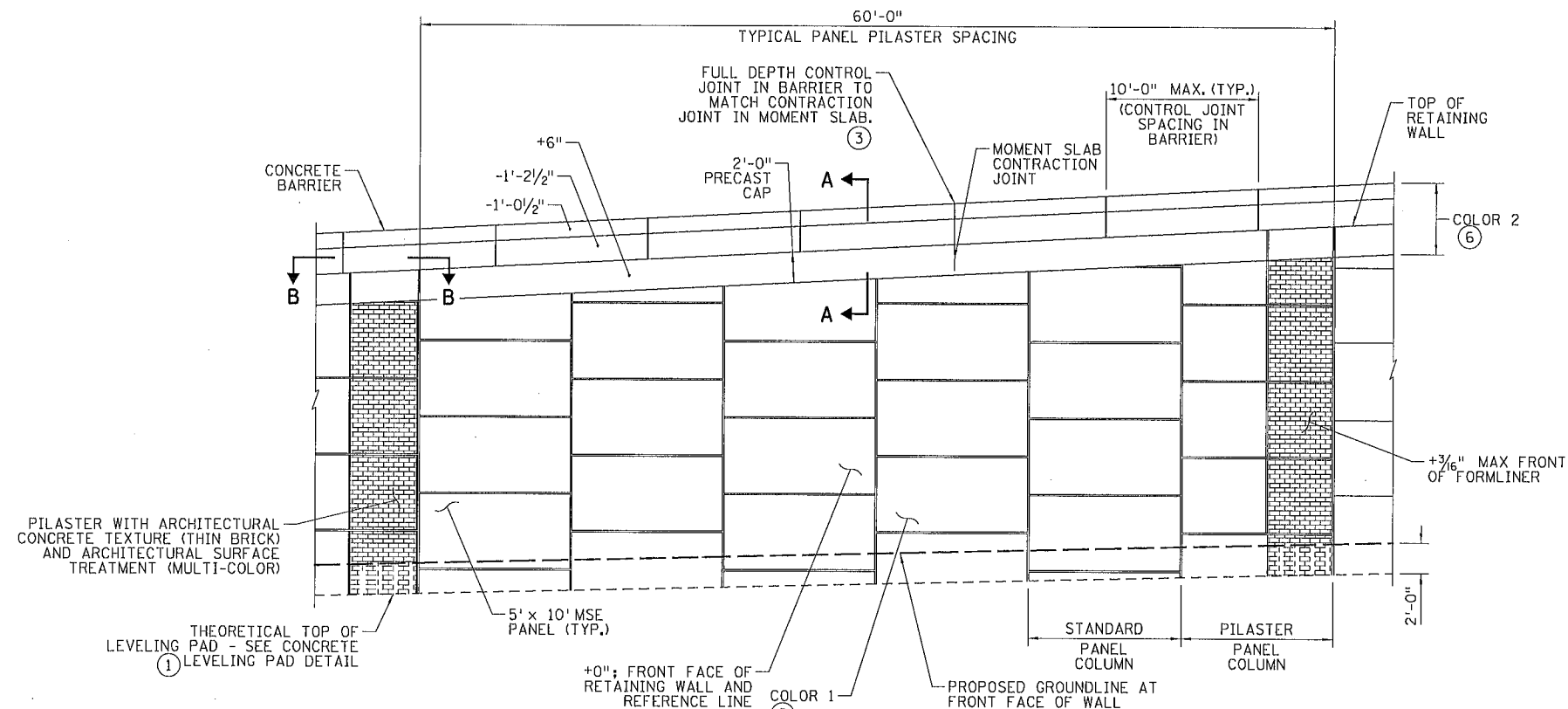
WALL F AND G WILL BE UNDER S.A.P. 002-683-004

**NOTES:**

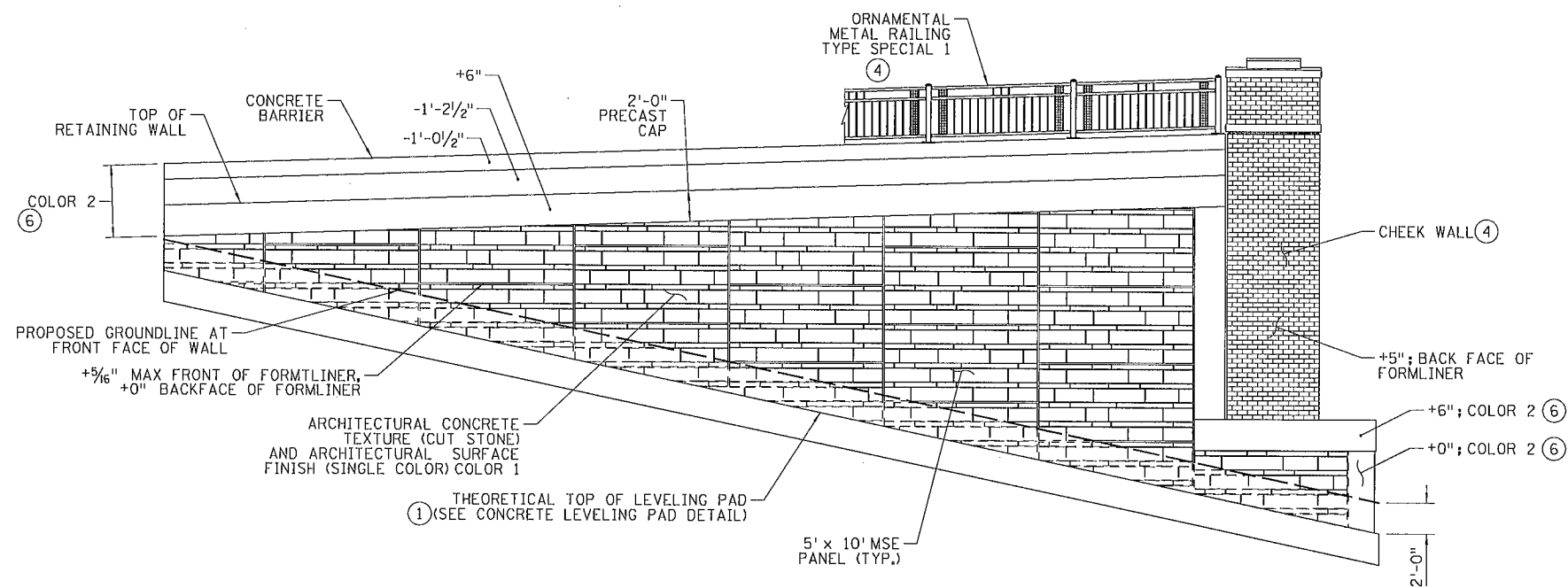
- (1) MOMENT SLAB (RETAINING WALL B, TYPE 1) VOLUME IS APPROXIMATELY 0.284 CU. YDS./FT. MOMENT SLAB (RETAINING WALL B, TYPE 2) VOLUME IS APPROXIMATELY 0.329 CU. YDS./FT. MOMENT SLAB (RETAINING WALL F, TYPE 1) VOLUME IS APPROXIMATELY 0.284 CU. YDS./FT. MOMENT SLAB (RETAINING WALL F, TYPE 4) VOLUME IS APPROXIMATELY 0.284 CU. YDS./FT. MOMENT SLAB (RETAINING WALL G, TYPE 3) VOLUME IS APPROXIMATELY 0.265 CU. YDS./FT.
- (2) TYPE MOD F (TL-4) RAILING CONCRETE (3Y46) IS APPROXIMATELY 0.115 CU. YDS./FT.
- (3) TYPE MOD F (TL-4) RAILING CONCRETE (3Y46) ON WALL F, TYPE 4 MOMENT SLAB IS APPROXIMATELY 0.170 CU. YDS./FT. QUANTITY SHALL BE INCLUDED IN THE TYPE MOD F (TL-4) RAILING CONCRETE (3Y46) QUANTITY.
- (4) TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46) IS APPROXIMATELY 0.140 CU. YDS./FT.
- (5) TYPE MOD P-1 (TL-2) RAILING CONCRETE (3Y46) IS APPROXIMATELY 0.093 CU. YDS./FT.
- (6) PAY ITEM INCLUDES MSE WALL PANELING, SURFACE TEXTURE, SOIL REINFORCEMENT, PRECAST CAP, IMPERVIOUS MEMBRANE, LEVELING PAD, PIPE SLEEVES AND OTHER ITEMS AS SHOWN IN THE SPECIAL PROVISIONS.
- (7) ALL MATERIALS LISTED ARE INCLUDED IN PRICE BID FOR "CONDUIT SYSTEM (SIGNALS)", LUMP SUM. QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES, ANY ADDITIONAL MINOR ITEMS OR CHANGES IN QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.
- (8) WEIGHT OF REINFORCEMENT IN BARRIERS SHALL BE INCLUDED IN THE PAY ITEM FOR "TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)", "TYPE MOD F (TL-4) RAILING CONCRETE (3Y46)", AND "TYPE MOD P-1 (TL-2) RAILING CONCRETE (3Y46)".
- (9) PRECAST CONCRETE HEADWALLS ARE INCIDENTAL.
- (10) TYPE MOD P-1 (TL-2) PARAPET, SIDEWALK, ORNAMENTAL METAL RAILING INCLUDED IN BRIDGE NO. 02586 PLANS.
- (11) "SPECIAL SURFACE FINISH" INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS

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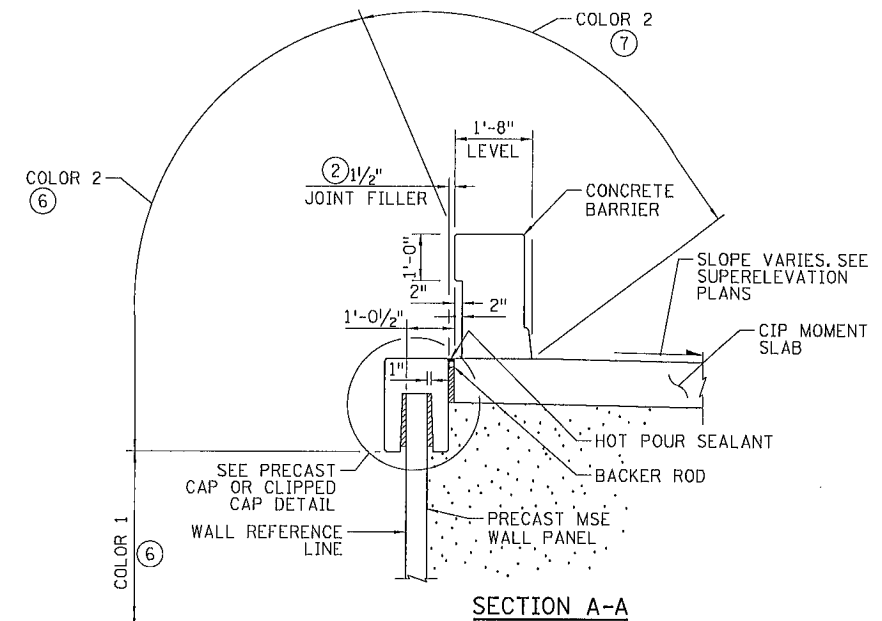
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NO DATE BY CKD APPR REVISION					... \Retaining Walls\8259_WR02.dgn					



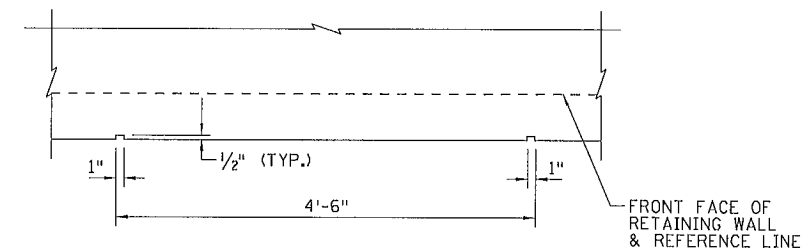
ARCHITECTURAL ELEVATION (5)  
RETAINING WALLS B, F & G



ARCHITECTURAL ELEVATION - CUT STONE (4)  
RETAINING WALL C WINGWALL



SECTION A-A



SECTION B-B  
COPING REVEAL

NOTES:

- ① LINE REPRESENTS THE MINIMUM 2'-0" BURIED DEPTH FOR MSE WALL PANELS. HOWEVER, THE BOTTOM OF PANEL AND LEVELING PAD SHALL BE CONSTRUCTED LEVEL AND STEPPED WHERE NECESSARY.
- ② SEE MSE WALL SPECIAL PROVISIONS.
- ③ CONTRACTION JOINTS IN MOMENT SLAB TO BE SPACED BETWEEN 35' MIN. AND 400' MAX. SEE PLAN AND PROFILES FOR LOCATIONS.
- ④ SEE BRIDGE NO. 02007 PLANS FOR COORDINATION OF AESTHETIC DETAILS.
- ⑤ SEE BRIDGE NO. 02586 PLANS FOR COORDINATION OF AESTHETIC DETAILS.
- ⑥ PAY ITEM IS "SPECIAL SURFACE FINISH". QUANTITY INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS.
- ⑦ ROADWAY FACE AND TOP OF BARRIER SHALL BE COATED WITH ACRYLIC PAINT AND IS INCIDENTAL. SEE SPECIAL PROVISIONS.

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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: JANET ELIZABETH GRONERT  
  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
E. JOHNSON

DESIGNED BY  
A. RENSTROM

CHECKED BY  
J. GRONERT

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

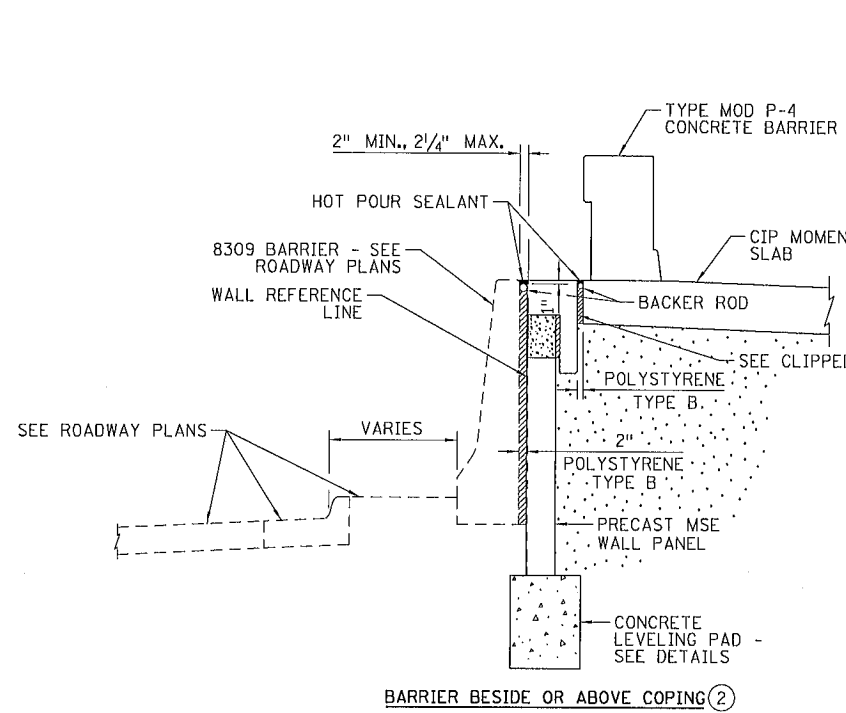
ANOKA COUNTY

MSE RETAINING WALL PLANS

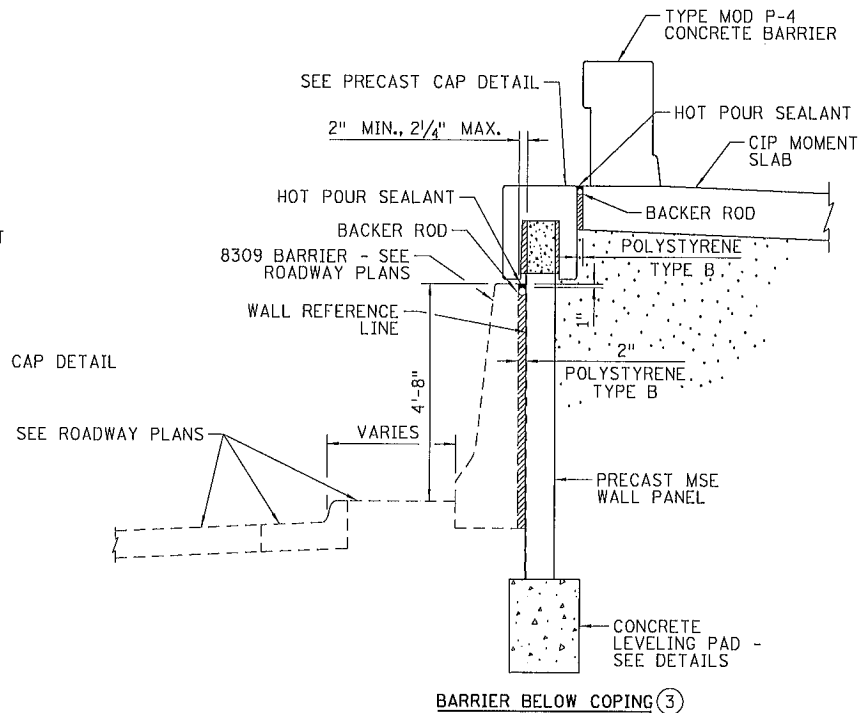
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ARCHITECTURAL DETAILS (SHEET 1 OF 4)

MSE  
SHEET  
247  
OF  
586

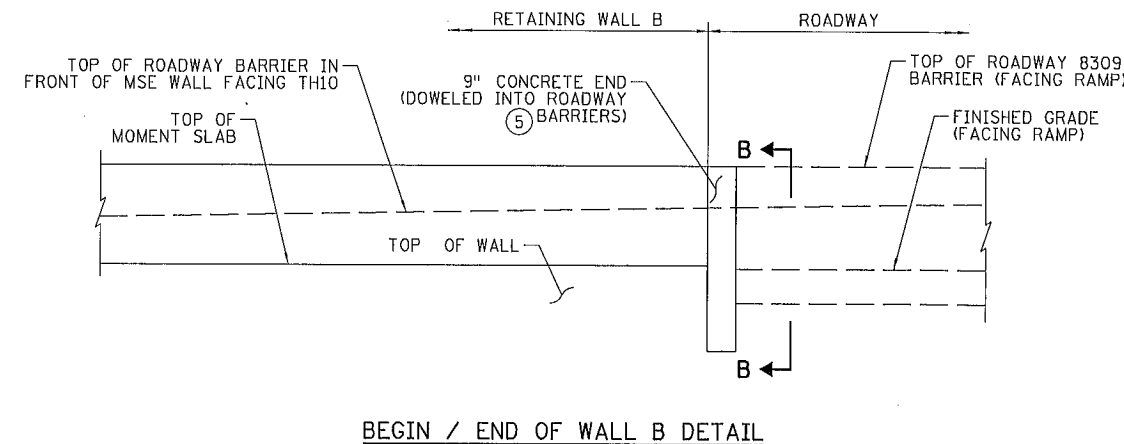


BARRIER BESIDE OR ABOVE COPING (2)

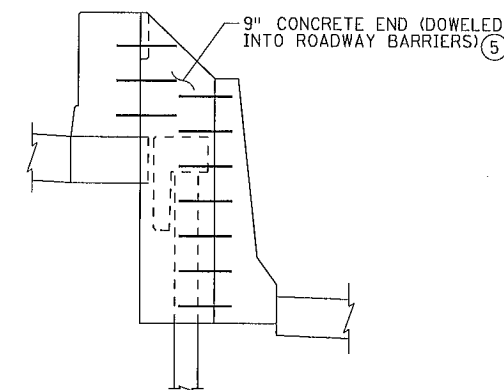


BARRIER BELOW COPING (3)

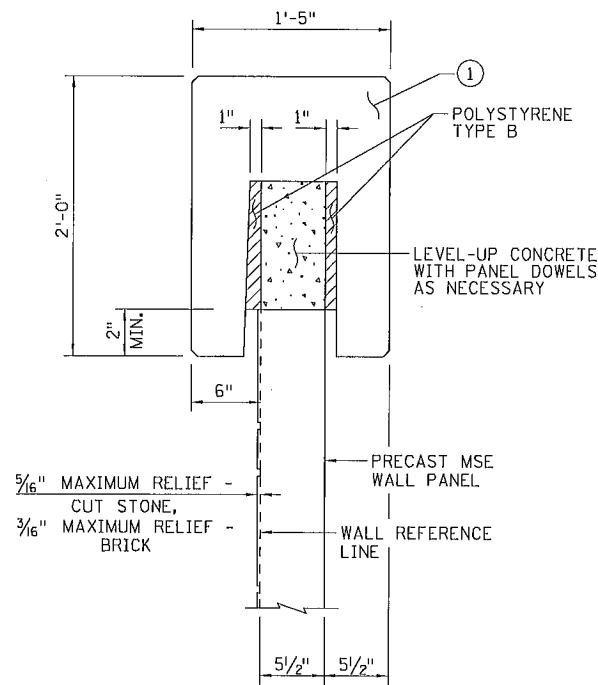
MSE BARRIER PROTECTION DETAIL



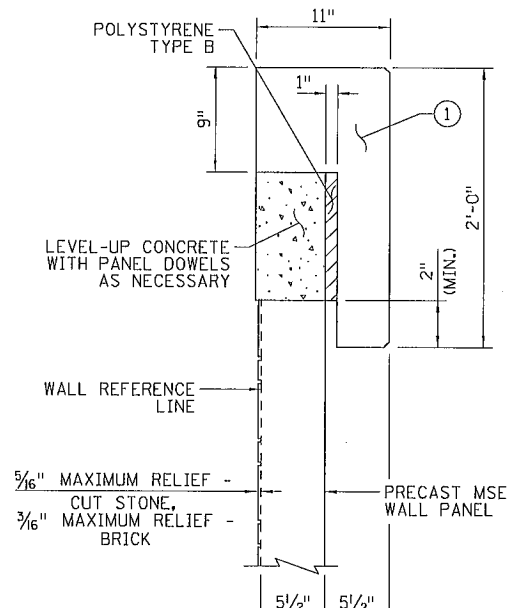
BEGIN / END OF WALL B DETAIL



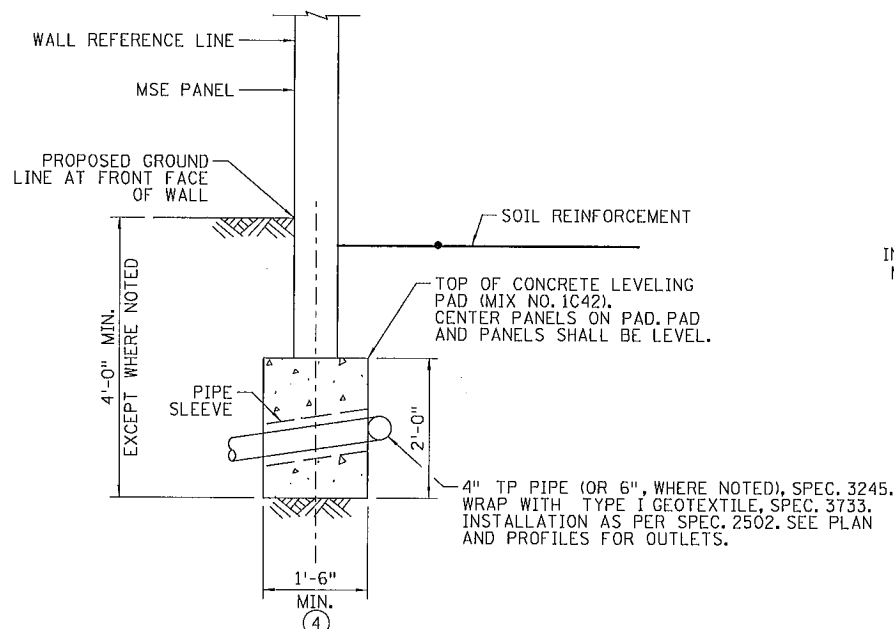
SECTION B-B  
(SEE WALL B BARRIER DETAIL IN MISCELLANEOUS DETAILS FOR MEDIAN BARRIER TRANSITIONS)



PRECAST CAP DETAIL



CLIPPED CAP DETAIL



CONCRETE LEVELING PAD DETAIL  
(NOT TO SCALE)

NOTES:

- ① PRECAST COPING AND REINFORCEMENT TO BE DESIGNED BY THE CONTRACTOR. CONTRACTOR MAY SHORTEN CAP TO AID IN PLACEMENT OF SOIL REINFORCEMENT WITH THE APPROVAL OF THE ENGINEER.
- ② AT RETAINING WALL B FROM STA. 67+70.58 TO 68+52.58 AND STA. 81+98.71 TO 82+60.00
- ③ AT RETAINING WALL B FROM STA. 69+06.94 TO 81+56.77
- ④ THE LEVELING PAD WIDTH MAY NEED TO BE INCREASED TO ACCOMMODATE CURVED WALL SECTIONS.
- ⑤ USE 15" LONG NO.16 BARS AT 9" VERTICAL SPACING WHILE MISSING REINFORCEMENT FOR ROADWAY BARRIERS, BARS SHOULD EXTEND 9" INTO CONCRETE END. WORK AND MATERIALS ARE INCIDENTAL.

3/22/14 9:11/2014 H:\Projects\8259\BRP\Plans\Retaining Walls\8259\_WR04.dgn

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 Pr. Int Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

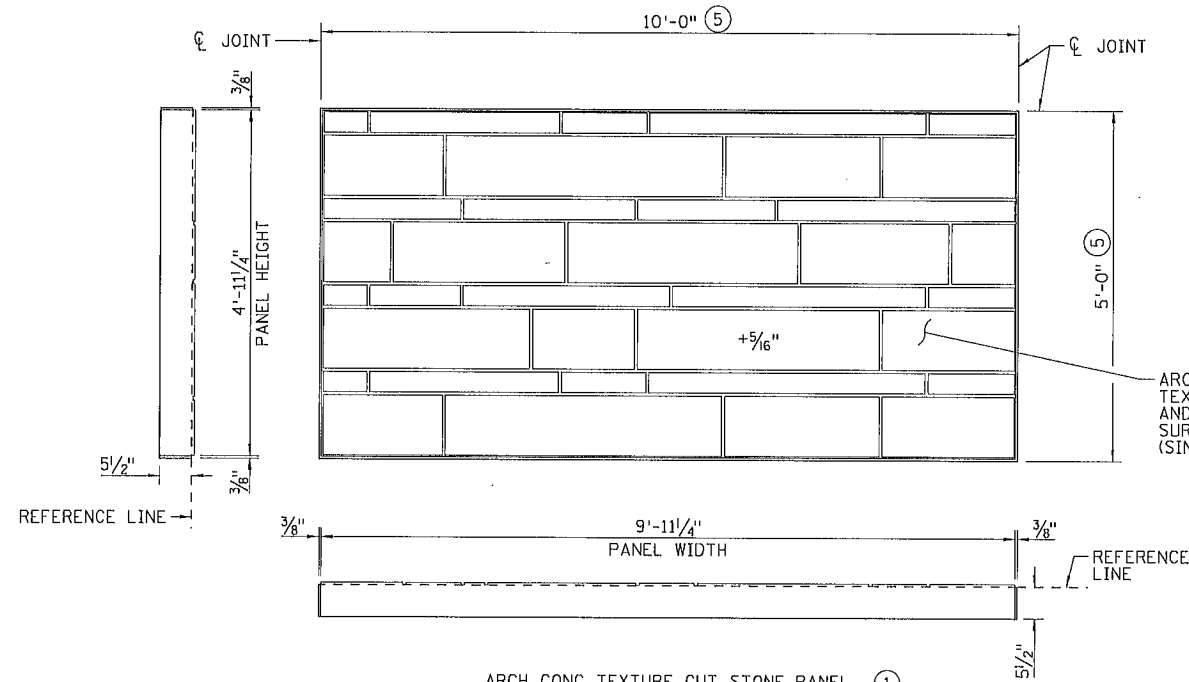


ENGINEERS  
 PLANNERS  
 DESIGNERS

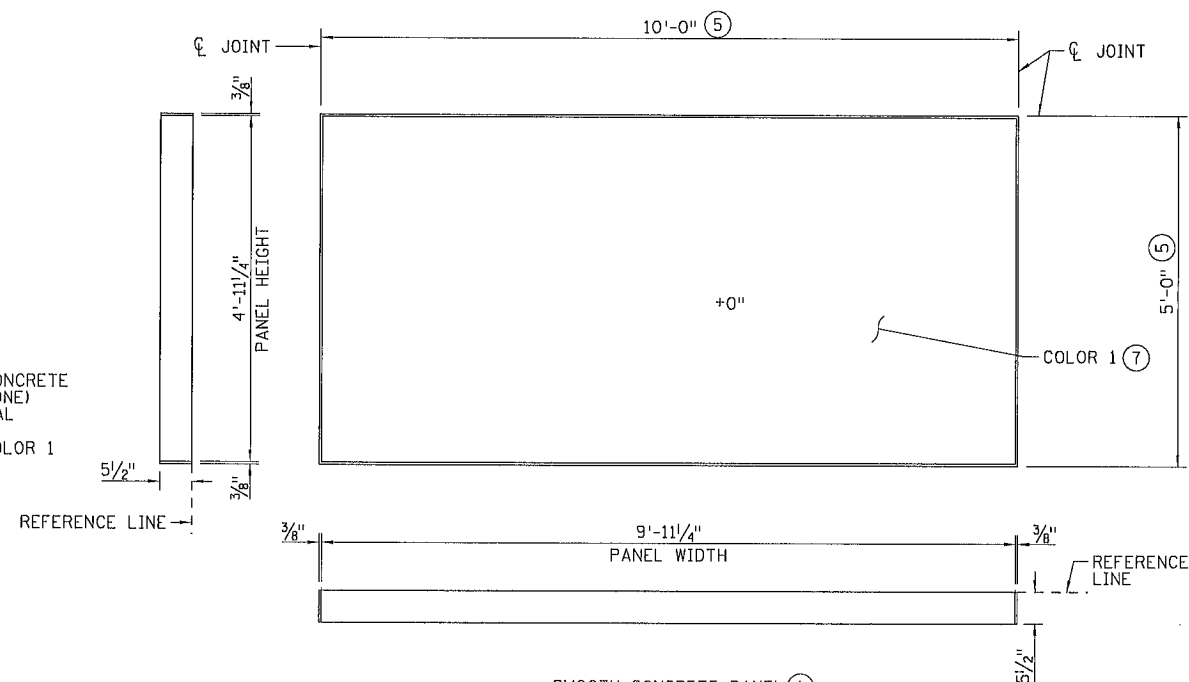
ANOKA COUNTY  
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 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 ARCHITECTURAL DETAILS (SHEET 2 OF 4)

MSE  
 SHEET  
 248  
 OF  
 586

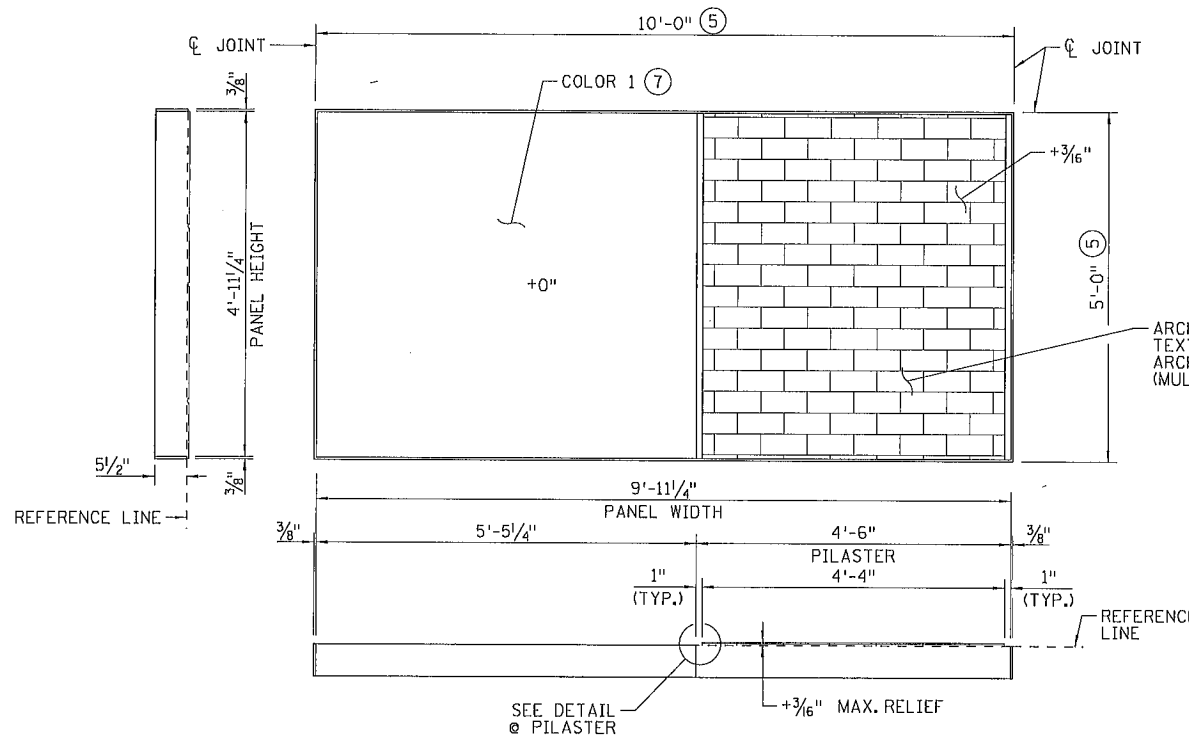




ARCH. CONC. TEXTURE CUT STONE PANEL ①

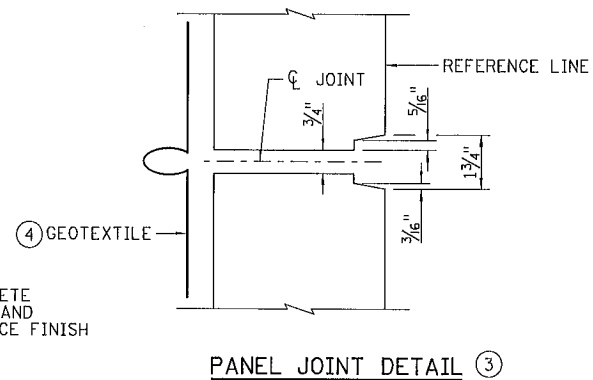


SMOOTH CONCRETE PANEL ①

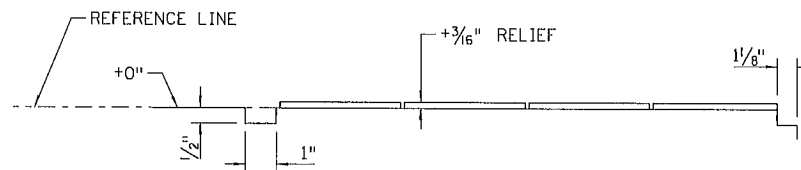


BRICK PILASTER PANEL ①

TYPICAL MSE WALL PANELS ②



PANEL JOINT DETAIL ③



DETAIL @ PILASTER

**NOTES:**

- ① CONTRACTOR TO SUBMIT DRAWINGS FROM SUPPLIER SHOWING PANEL SIZE TO BE USED AND MODIFICATIONS TO AESTHETIC TREATMENT FOR APPROVAL BY THE ENGINEER. ENTIRE WIDTH OF PILASTER MUST FIT WITHIN ONE PANEL.
- ② PANELS SHOWN ARE OF TYPICAL SIZES. SIZES MAY VARY BASED ON PANEL LOCATION. THE MINIMUM PANEL HEIGHT IN THE TOP ROW IS 1'-6". THE MINIMUM PANEL HEIGHT IN THE BOTTOM ROW IS 2'-6".
- ③ BEARING PAD REQUIRED AT ALL HORIZONTAL JOINTS. SEE SPECIAL PROVISIONS.
- ④ TYPE 1 GEOTEXTILE AT ALL PANEL JOINTS. SEE SPECIAL PROVISIONS.
- ⑤ DIMENSION IS FROM  $\phi$  OF JOINT TO  $\phi$  OF JOINT.
- ⑥ MANUFACTURERS THAT HAVE BEEN APPROVED FOR A 9' WIDE TYPICAL PANEL DIMENSION ON MNDOT'S APPROVED PRODUCTS LIST FOR MSE WALLS SHALL PROVIDE ALL NECESSARY AESTHETIC, PANEL JOINT, MOMENT SLAB AND MISCELLANEOUS ADJUSTMENTS IN THE SHOP DRAWING SUBMITTALS FOR APPROVAL.
- ⑦ PAY ITEM IS "SPECIAL SURFACE FINISH". SEE SPECIAL PROVISIONS.

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*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

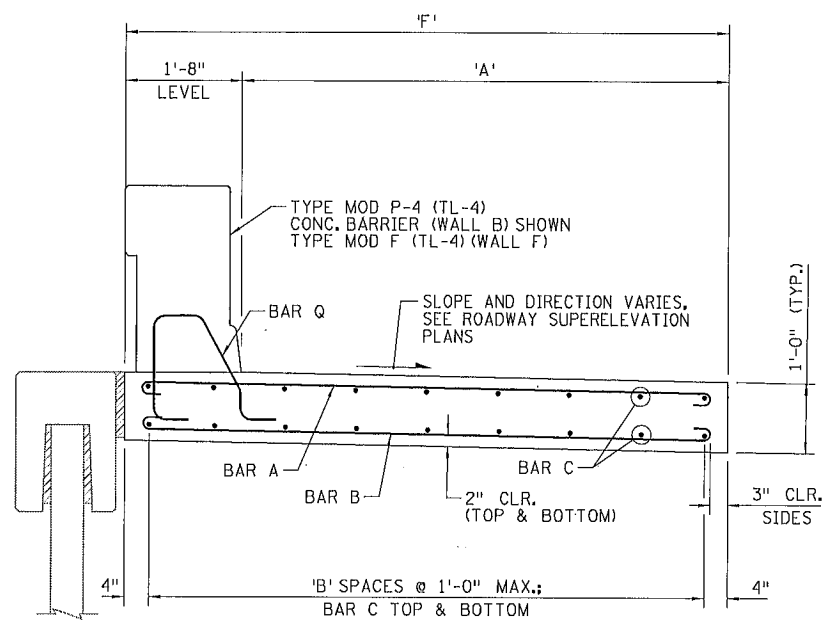
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 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 CDMM. NO. 0138259



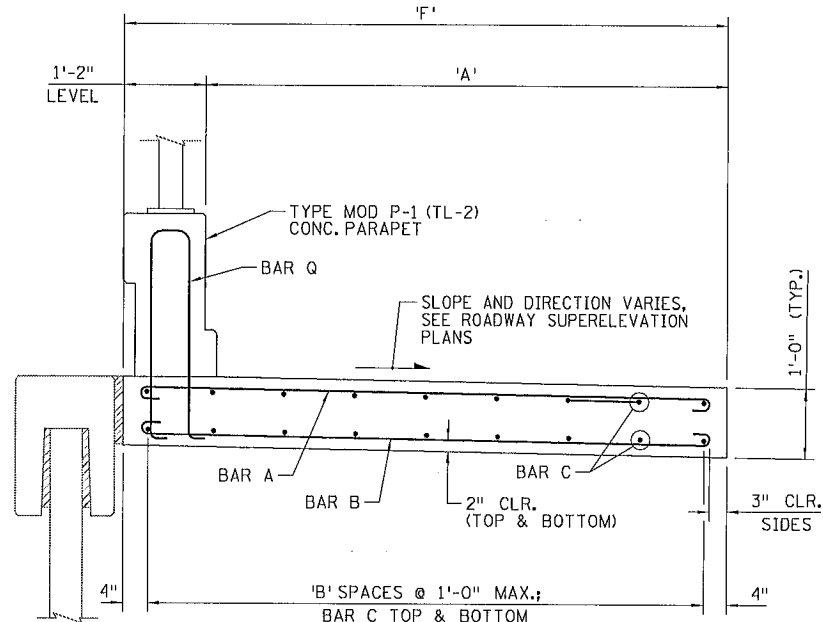
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 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 ARCHITECTURAL DETAILS (SHEET 4 OF 4)

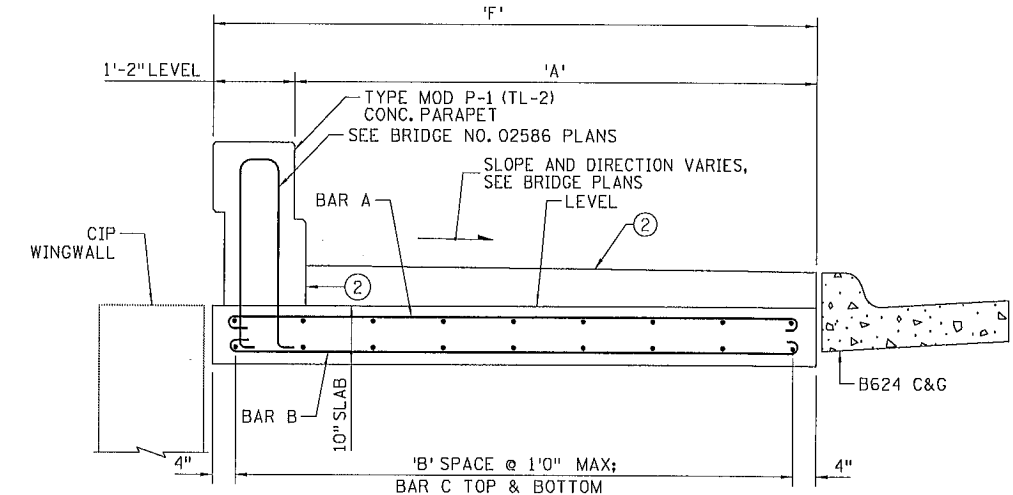
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 SHEET  
 250  
 OF  
 586



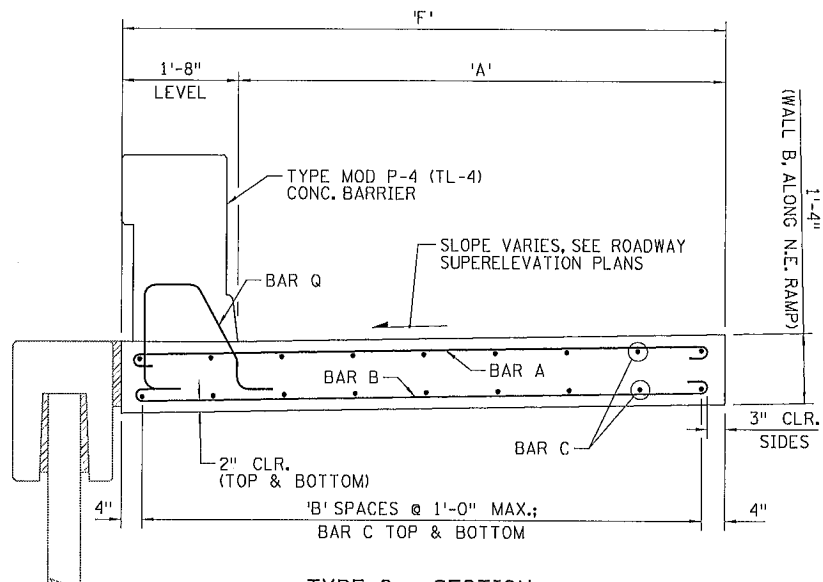
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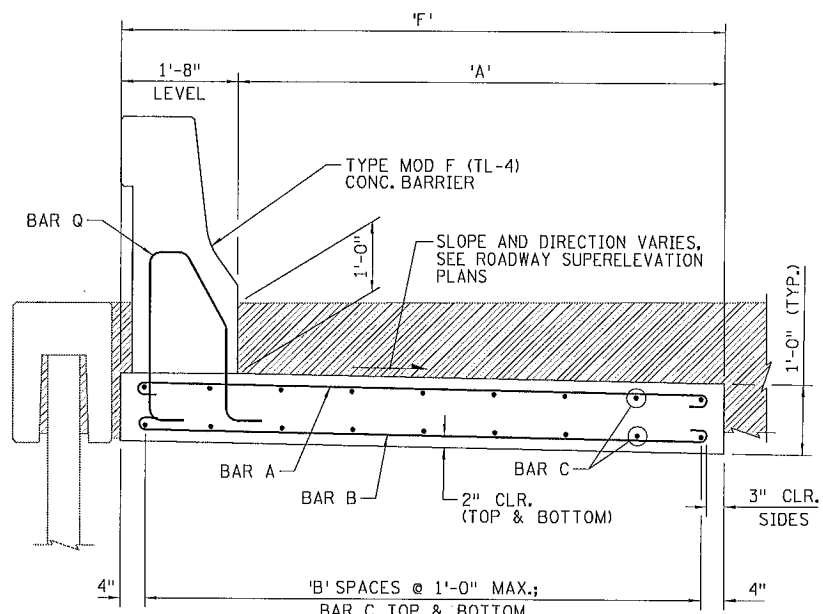
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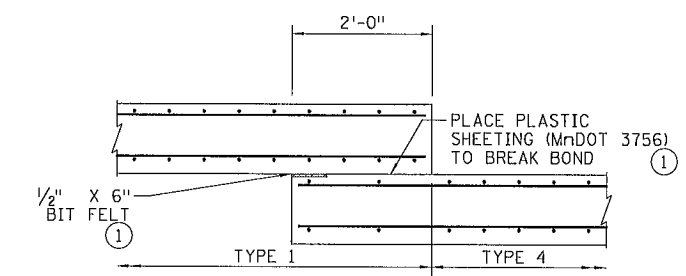
TYPE 5 - SECTION



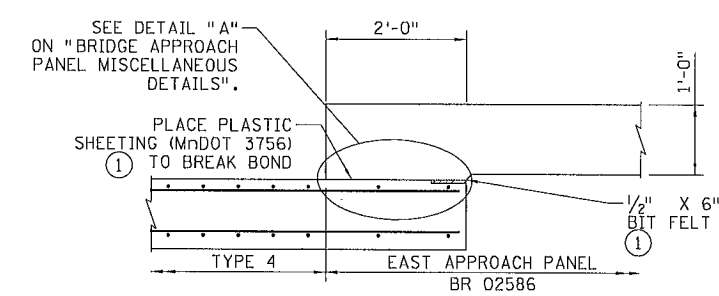
TYPE 2 - SECTION



TYPE 4 - SECTION



MOMENT SLAB - STEPPED DETAIL, WALL F



MOMENT SLAB AT APPROACH PANEL, WALL F

MOMENT SLAB DIMENSIONS					
WALL	TYPE	'A'	'B'	'F'	BARRIER
RETAINING WALL B	1	6' - 0"	7'	7' - 8"	TYPE MOD P-4 (TL-4)
RETAINING WALL B	2	5' - 0"	6'	6' - 8"	TYPE MOD P-4 (TL-4)
RETAINING WALL F	1	6' - 0"	7'	7' - 8"	TYPE MOD F (TL-4)
RETAINING WALL F	4	6' - 0"	7'	7' - 8"	TYPE MOD F (TL-4)
RETAINING WALL G	3	6' - 0"	7'	7' - 2"	TYPE MOD P-1 (TL-2)
EAST ABUTMENT	5	11' - 6"	12'	12' - 8"	TYPE MOD P-1 (TL-2)

NOTES:

- ① BIT, FELT AND PLASTIC SHEETING ARE INCIDENTAL.
- ② SIDEWALK IS PAID FOR IN THE PLANS FOR BRIDGE NO. 02586. SEE BRIDGE PLANS FOR DETAILS.

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 Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

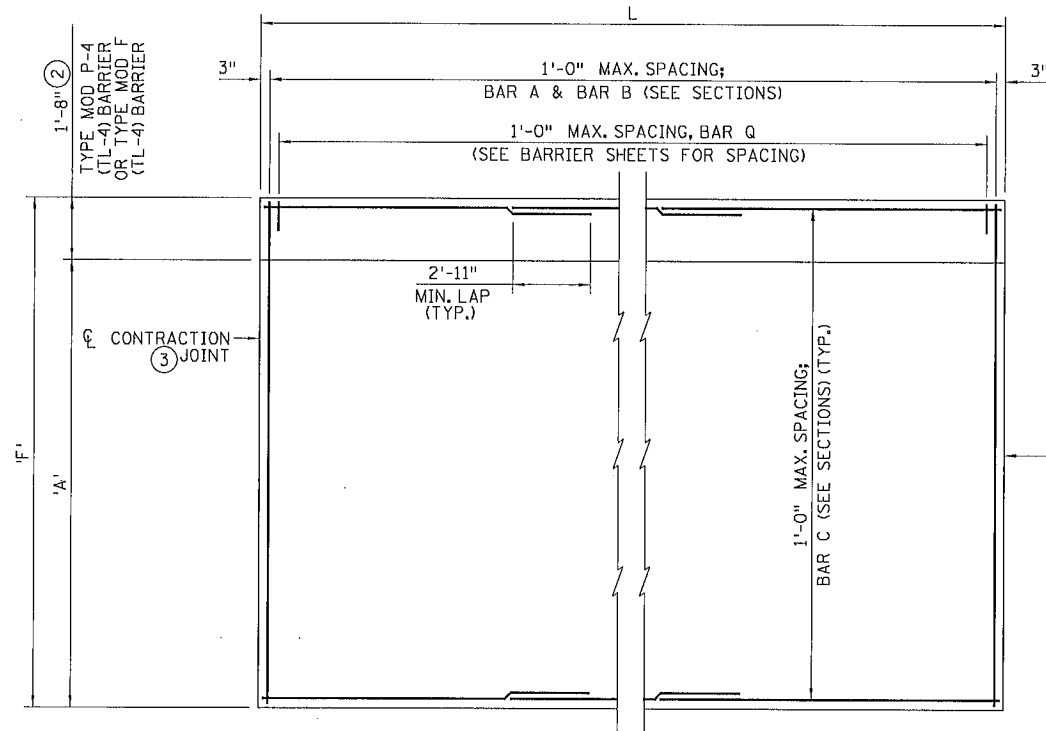


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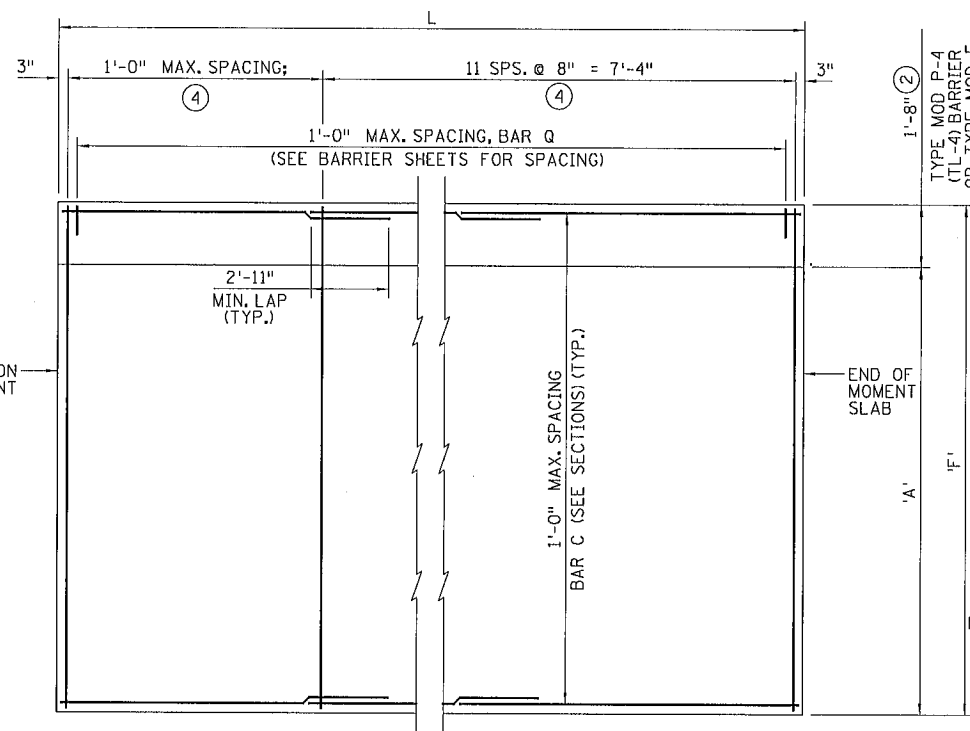
ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 MSE RETAINING WALL DETAILS (SHEET 1 OF 10)

MSE  
SHEET  
251  
OF  
586

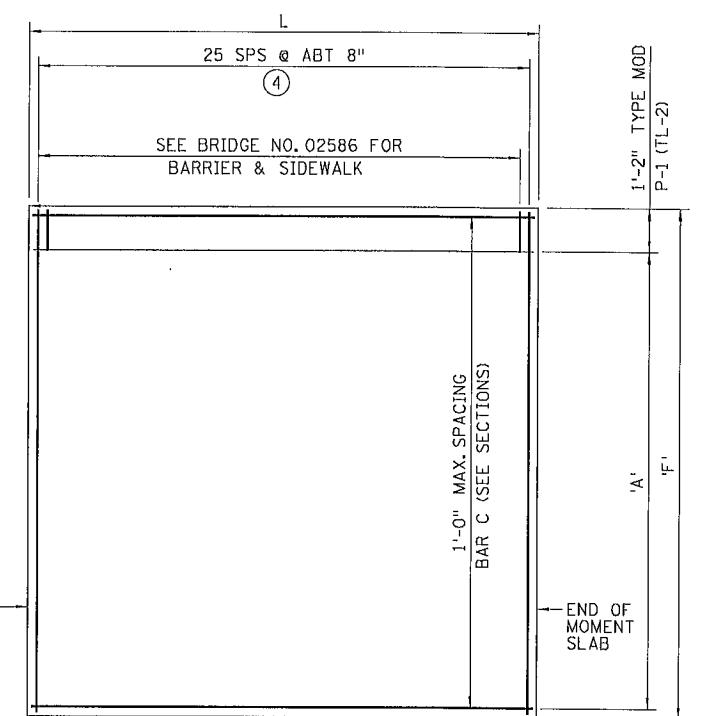




MOMENT SLAB TYPICAL PANEL PLAN



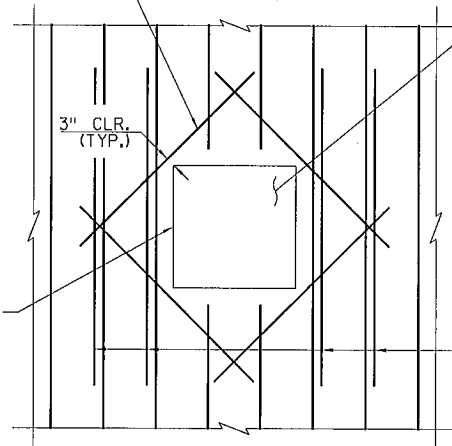
MOMENT SLAB END PANEL PLAN



MOMENT SLAB @ E. ABUT TYPE 5, PLAN

MOMENT SLAB TYPE 5 SHALL BE DOWELED TO APPROACH PANEL. SEE APPROACH PANEL SHEETS

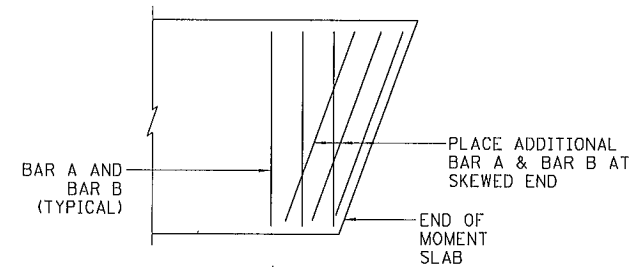
#5 X 6' LONG REBAR TOP AND BOTTOM (INCIDENTAL)



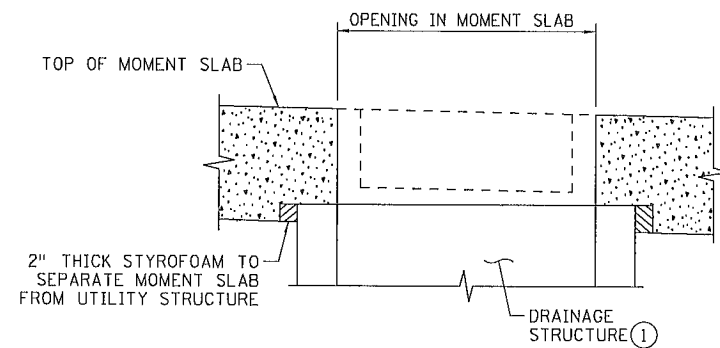
UTILITY BLOCKOUT DETAIL ①

BLOCKOUT FOR UTILITY, CAST TO MATCH SHAPE OF UTILITY

ADD ADDITIONAL TRANSVERSE BARS, 6' 8\"/>



SKEWED END PANEL DETAIL



MOMENT SLAB SECTION AT DRAINAGE STRUCTURE

NOTES:

- ① SEE DRAINAGE PLANS FOR DRAINAGE STRUCTURE LOCATIONS. SEE SIGNALS PLANS FOR HAND HOLE LOCATIONS.
- ② 1'-2\"/>
- ③ SEE MnDOT STANDARD PLATE 1103 FOR DETAILS, DOWEL BAR ASSEMBLIES ARE INCLUDED IN THE PAY ITEM FOR "STRUCTURAL CONCRETE (3Y43)."
- ④ BAR A & BAR B (SEE SECTIONS).

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*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY	
MSE RETAINING WALL PLANS	
T.H. 10 / C.S.A.H. 83 INTERCHANGE	
MSE RETAINING WALL DETAILS (SHEET 2 OF 10)	

MSE
SHEET
252
OF
586

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 1, WALL B (TYPICAL) L = 205'-5 1/4"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M601E	206	6	8 - 6	15	7 - 2	0 - 8	-	TOP TRANS.	2630	REINFORCEMENT
B	M502E	206	5	8 - 4	15	7 - 2	0 - 7	-	BOTTOM TRANS.	1790	(EPOXY)
C	M503E	64	5	53 - 6	STR	-	-	-	T & B LONG.	3571	9569
Q	M504E	252	5	6 - 0	36	0 - 9	1 - 7	-	BARRIER	1577	

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 5, EAST ABUT (END) L = 16'-9"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M601E	26	6	13 - 6	15	12 - 2	0 - 8	-	TOP TRANS.	527	REINFORCEMENT
B	M502E	26	5	13 - 4	16	12 - 2	0 - 7	-	BOTTOM TRANS.	362	(EPOXY)
C	M503E	26	5	16 - 3	STR	-	-	-	T & B LONG.	441	1329

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 1, WALL B (END) L = 205'-5 1/4"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M601E	213	6	8 - 6	15	7 - 2	0 - 8	-	TOP TRANS.	2719	REINFORCEMENT
B	M502E	213	5	8 - 4	15	7 - 2	0 - 7	-	BOTTOM TRANS.	1851	(EPOXY)
C	M503E	64	5	54 - 2	STR	-	-	-	T & B LONG.	3616	9763
Q	M504E	252	5	6 - 0	36	0 - 9	1 - 7	-	BARRIER	1577	

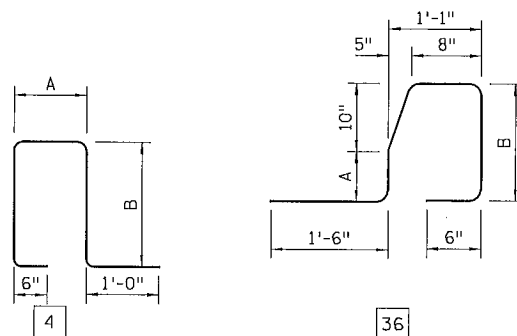
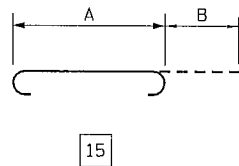
BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 1, WALL F (END) L = 270'-0"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M601E	275	6	8 - 6	15	7 - 2	0 - 8	-	TOP TRANS.	3511	REINFORCEMENT
B	M502E	275	5	8 - 4	15	7 - 2	0 - 7	-	BOTTOM TRANS.	2390	(EPOXY)
C	M503E	80	5	56 - 6	STR	-	-	-	T & B LONG.	4714	12668
Q	M504E	328	5	6 - 0	36	0 - 9	1 - 7	-	BARRIER	2053	

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 2, WALL B (TYPICAL) L = 247'-3"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M601E	248	6	7 - 6	15	6 - 2	0 - 8	-	TOP TRANS.	2794	REINFORCEMENT
B	M502E	248	5	7 - 4	15	6 - 2	0 - 7	-	BOTTOM TRANS.	1897	(EPOXY)
C	M503E	70	5	51 - 9	STR	-	-	-	T & B LONG.	3778	10541
Q	M504E	298	5	6 - 8	36	1 - 1	1 - 11	-	BARRIER	2072	

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 4, WALL F (END) L = 120'-0"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M701E	132	7	8 - 10	15	7 - 2	0 - 10	-	TOP TRANS.	2383	REINFORCEMENT
B	M502E	132	5	8 - 4	15	7 - 2	0 - 7	-	BOTTOM TRANS.	1147	(EPOXY)
C	M503E	48	5	43 - 6	STR	-	-	-	T & B LONG.	2178	6910
Q	M504E	144	5	8 - 0	36	1 - 9	2 - 7	-	BARRIER	1202	

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 2, WALL B (END) L = 247'-3"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M601E	252	6	7 - 6	15	6 - 2	0 - 8	-	TOP TRANS.	2839	REINFORCEMENT
B	M502E	252	5	7 - 4	15	6 - 2	0 - 7	-	BOTTOM TRANS.	1927	(EPOXY)
C	M503E	70	5	51 - 9	STR	-	-	-	T & B LONG.	3778	10617
Q	M504E	298	5	6 - 8	36	1 - 1	1 - 11	-	BARRIER	2072	

BILL OF REINFORCEMENT: MOMENT SLAB PANEL TYPE 3, WALL G (END) L = 230'-0"											
BAR	MARK	NO	SIZE	LENGTH [FT - IN]	SHAPE	DIMENSION [FT-IN]			LOCATION	WT.	QUANTITIES [LB.]
						A	B	C			
A	M501E	235	5	7 - 10	15	6 - 8	0 - 7	-	TOP TRANS.	1920	REINFORCEMENT
B	M502E	235	5	7 - 10	15	6 - 8	0 - 7	-	BOTTOM TRANS.	1920	(EPOXY)
C	M503E	64	5	60 - 0	STR	-	-	-	T & B LONG.	4005	10585
Q	M504E	318	5	8 - 2	4	0 - 8	3 - 0	-	BARRIER	2709	
U	M505E	2	5	7 - 8	4	0 - 8	2 - 9	-	BARRIER	16	
V	M506E	2	5	7 - 4	4	0 - 8	2 - 7	-	BARRIER	15	



NOTE:  
 1. QUANTITIES ARE PER PANEL.  
 2. MOMENT SLAB LENGTHS (L) ARE MEASURED ALONG THE RETAINING WALL REFERENCE LINE.

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 Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

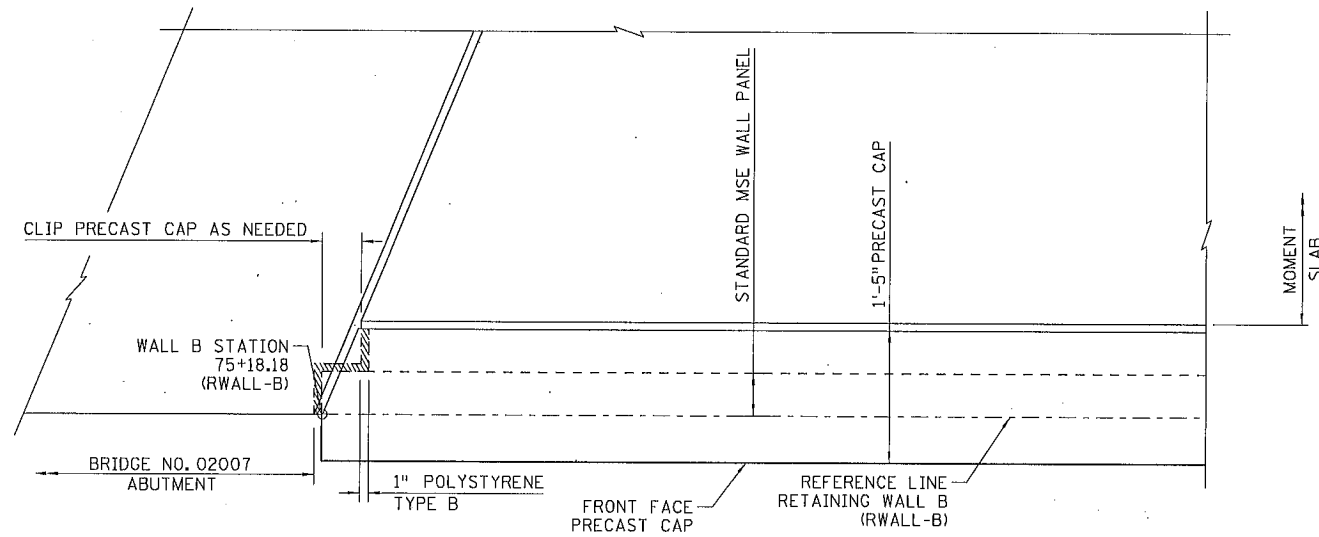
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 CITY PROJECT NO. \_\_\_\_\_



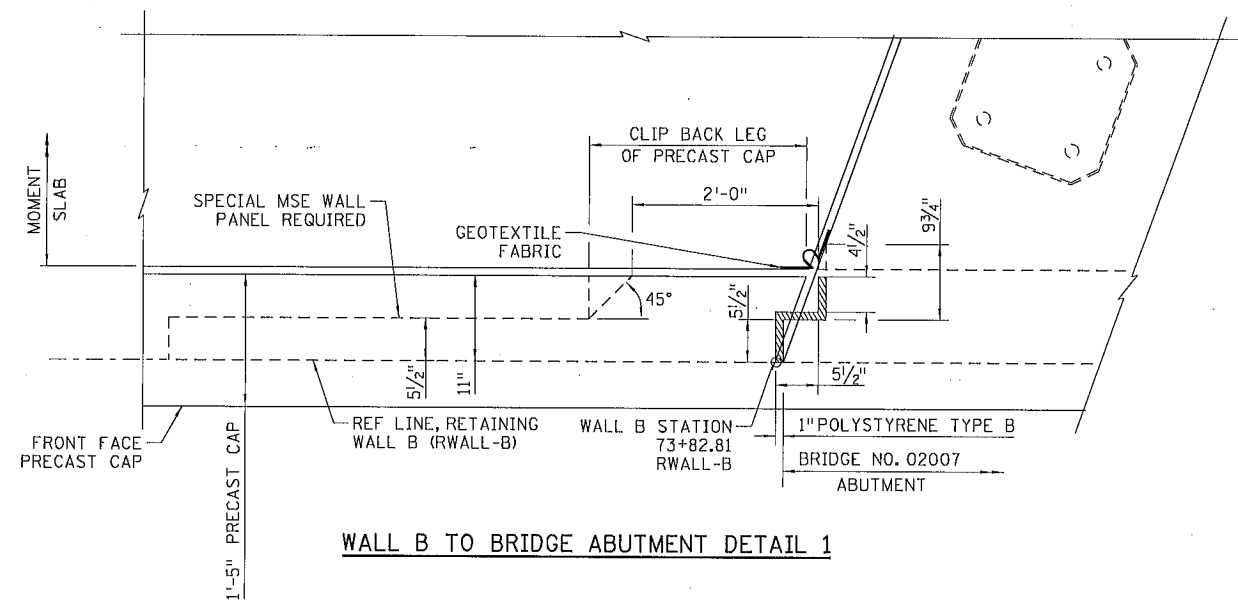
ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
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 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 MSE RETAINING WALL DETAILS (SHEET 3 OF 10)

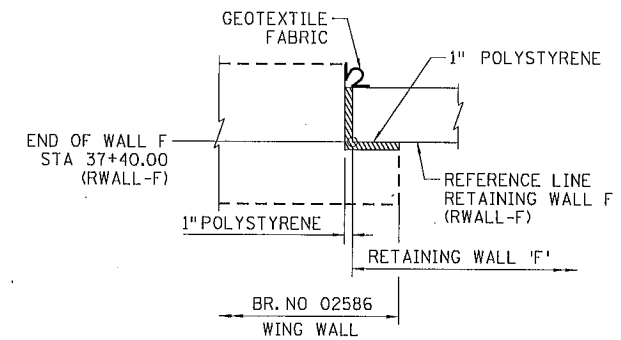
MSE  
 SHEET  
 253  
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 586



WALL B TO BRIDGE ABUTMENT DETAIL 2



WALL B TO BRIDGE ABUTMENT DETAIL 1



WALL F TO BRIDGE WING WALL DETAIL

3:22:53 PM 9/11/2014 H:\Projects\8259\BRAP\Plans\Retaining Walls\8259\_WR4.dgn

NO	DATE	BY	CKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date 09-12-14 License # 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

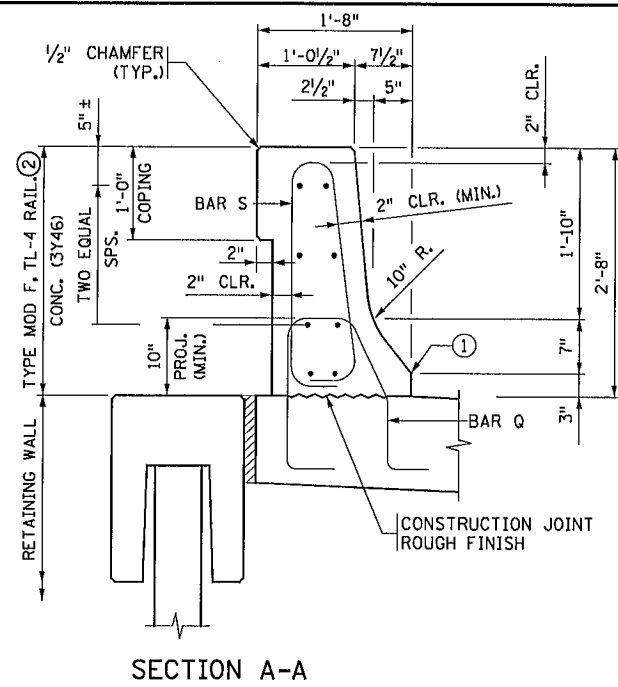
DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



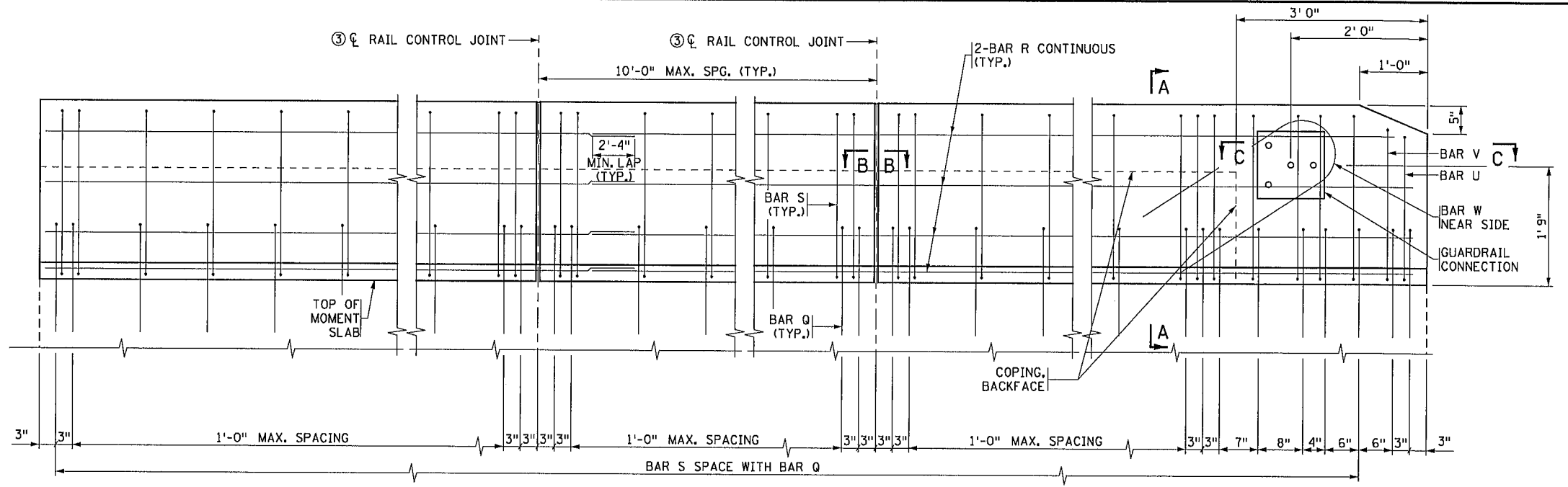
ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 MSE RETAINING WALL DETAILS (SHEET 4 OF 10)

MSE  
 SHEET  
 254  
 OF  
 586



SECTION A-A

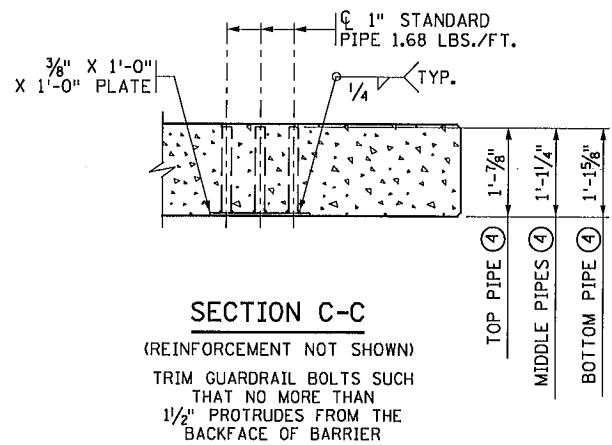


INSIDE ELEVATION OF RAILING

RAIL MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350

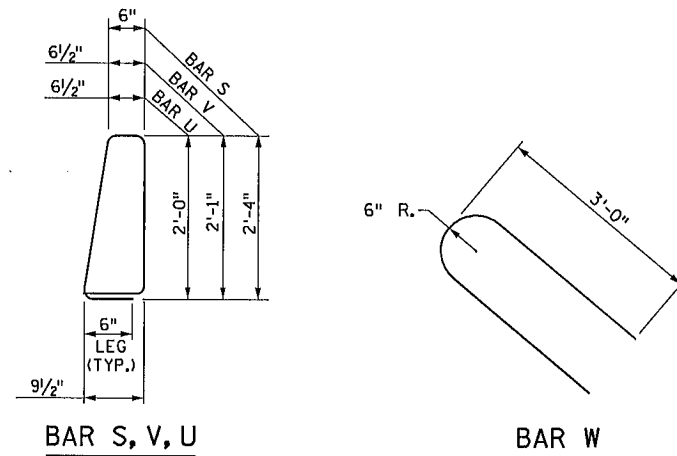
NOTES:

- CONCRETE RAILING: 464 LBS./FT. (0.115 CU. YDS./FT.)
- MAXIMUM SPACING OF RAIL CONTROL JOINTS SHALL BE 10'-0".
- FOR MOMENT SLAB REINFORCEMENT AND DETAILS SEE MSE DETAIL SHEETS.
- THE GUARDRAIL CONNECTION IS INCLUDED IN THE PRICE BID FOR TYPE MOD F, TL-4 CONCRETE (3Y46).
- BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH MnDOT SPEC. NO. 3301.
- CONCRETE RAIL (TYPE MOD F, TL-4) SHALL BE PAID FOR ON A LINEAL FOOT BASIS.
- GUARDRAIL CONNECTION SHALL BE STRUCTURAL STEEL, MnDOT SPEC. NO. 3306 AND GALVANIZED AFTER FABRICATION PER MnDOT SPEC. NO. 3394.
- ① NO CHAMFER.
- ② REINFORCEMENT AND CONCRETE ARE INCLUDED IN THE PAY ITEM "TYPE MOD F, (TL-4) RAILING CONCRETE (3Y46)."
- ③ RAIL CONTROL JOINTS TO MATCH MOMENT SLAB CONTRACTION JOINTS. SEE WALL PLAN AND PROFILE SHEETS FOR CONTRACTION JOINT SPACING, WHILE ALSO COMPLYING WITH THE 10'-0" MAX. SPACING.
- ④ DIMENSIONS INCLUDE 3/8" PLATE.
- ⑤ RAIL LENGTH IS MEASURED ALONG WALL REFERENCE LINE.
- ⑥ SEE SPECIAL PROVISIONS FOR JOINT SEALING REQUIREMENTS.



SECTION C-C

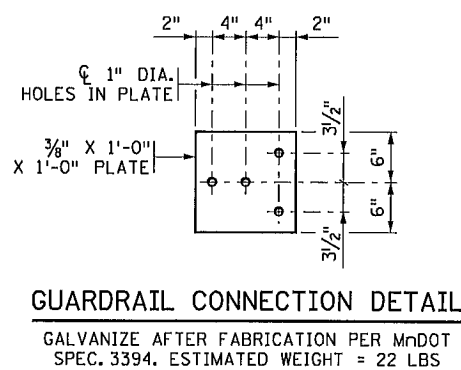
(REINFORCEMENT NOT SHOWN)  
TRIM GUARDRAIL BOLTS SUCH THAT NO MORE THAN 1/2" PROTRUDES FROM THE BACKFACE OF BARRIER



BAR S, V, U

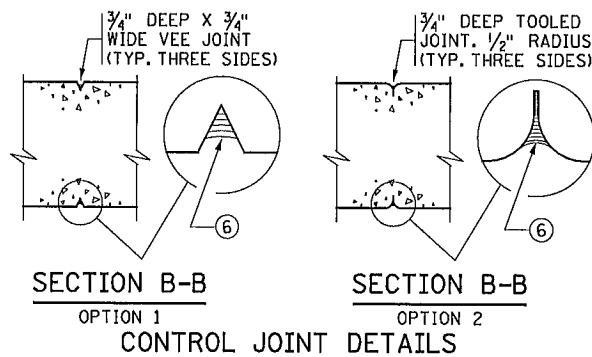
BAR W

BILL OF REINFORCEMENT					
TYPICAL RAILING ON RETAINING WALL F ⑤ (MOMENT SLAB TYPE 1)					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
S	R501E	307	6'-6"	BENT	RAILING - VERTICAL
R	R404E	64	36'-0"	STR.	RAILING - HORIZONTAL
TYPE MOD F CONC. (3Y46)			REINFORCEMENT BARS (EPOXY)		
31.1 CU. YDS. ②			3622 POUND ②		
TYPICAL RAILING ON RETAINING WALL F ⑤ (MOMENT SLAB TYPE 1) WITH GUARDRAIL CONNECTION					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
S	R501E	303	6'-6"	BENT	RAILING - VERTICAL
V	R502E	2	6'-1"	BENT	RAILING - VERTICAL
U	R503E	2	5'-11"	BENT	RAILING - VERTICAL
R	R404E	64	36'-0"	STR.	RAILING - HORIZONTAL
W	R705E	1	6'-7"	BENT	RAILING - VERTICAL
TYPE MOD F CONC. (3Y46)			REINFORCEMENT BARS (EPOXY)		
31.1 CU. YDS. ②			3635 POUND ②		



GUARDRAIL CONNECTION DETAIL

GALVANIZE AFTER FABRICATION PER MnDOT SPEC. 3394. ESTIMATED WEIGHT = 22 LBS



SECTION B-B

SECTION B-B

OPTION 1 CONTROL JOINT DETAILS

OPTION 2

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NO	DATE	BY	CKD	APPR	REVISION

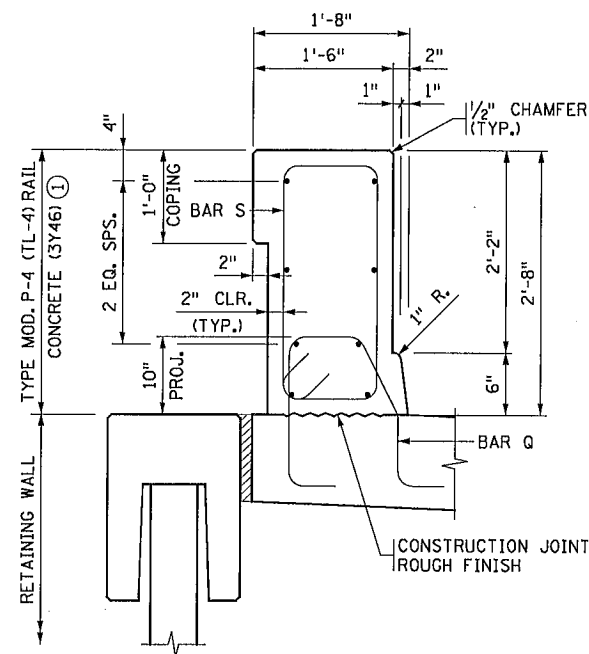
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 STATE PROJECT NO. 0202-95 (TH 10)  
 CHECKED BY J. GRONERT  
 COUNTY PROJECT NO.  
 CITY PROJECT NO. COMM. NO. 0138259

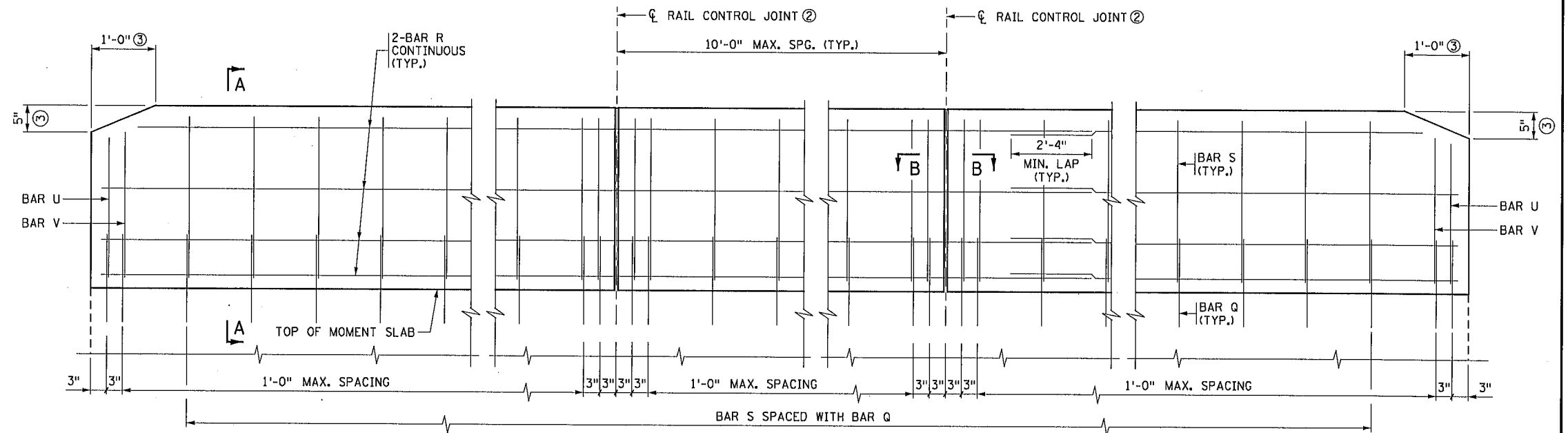
**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

MSE	MODIFIED	TYPE MOD F (TL-4) BARRIER/RAILING	STANDARD SHEET NO. 5-297.634	SHEET 255 OF 586
ANOKA COUNTY			MSE RETAINING WALL PLANS	
T.H. 10 / C.S.A.H. 83 INTERCHANGE			MSE RETAINING WALL DETAILS (SHEET 5 OF 10)	



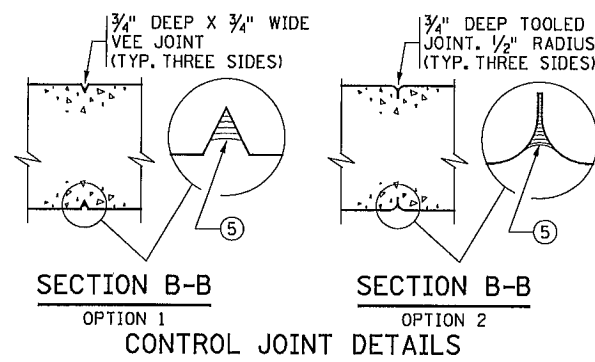


SECTION A-A



INSIDE ELEVATION OF BARRIER

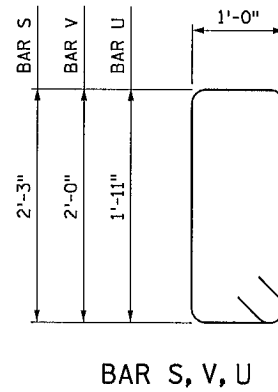
BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350



SECTION B-B

SECTION B-B

OPTION 1  
OPTION 2  
CONTROL JOINT DETAILS



BAR S, V, U

BILL OF REINFORCEMENT					
TYPICAL RAILING ON RETAINING WALL B (4) (MOMENT SLAB TYPE 1)					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
S	R501E	233	7'-5"	BENT	RAILING - VERTICAL
V	R502E	2	6'-11"	BENT	RAILING - VERTICAL
U	R503E	2	6'-9"	BENT	RAILING - VERTICAL
R	R404E	48	36'-3"	STR.	RAILING - HORIZONTAL
TYPE MOD P-4 CONC. (3Y46)			REINFORCEMENT BARS (EPOXY)		
28.8 CU. YDS. (1)			2996 POUND (1)		
TYPICAL RAILING ON RETAINING WALL B (4) (MOMENT SLAB TYPE 2)					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
S	R501E	279	7'-5"	BENT	RAILING - VERTICAL
V	R502E	2	6'-11"	BENT	RAILING - VERTICAL
U	R503E	2	6'-9"	BENT	RAILING - VERTICAL
R	R404E	56	37'-6"	STR.	RAILING - HORIZONTAL
TYPE MOD P-4 CONC. (3Y46)			REINFORCEMENT BARS (EPOXY)		
34.7 CU. YDS. (1)			3592 POUND (1)		

NOTES:

LENGTH OF "TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE BARRIER.

CONCRETE BARRIER: 568 LBS./FT. (0.140 CU. YDS./FT.)

FINISH ALL EDGES OF BARRIER WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.

MAXIMUM SPACING OF RAIL CONTROL JOINTS SHALL BE 10'-0".

GALVANIZE STRUCTURAL STEEL PER MnDOT SPEC. 3394 AFTER FABRICATION.

CONCRETE BARRIER (TYPE MOD P-4, TL-4) SHALL BE PAID FOR ON A LINEAL FOOT BASIS.

(1) REINFORCEMENT AND CONCRETE ARE INCLUDED IN THE PAY ITEM "TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)."

(2) RAIL CONTROL JOINTS TO MATCH MOMENT SLAB CONTRACTION JOINTS. SEE WALL PLAN AND PROFILE SHEETS FOR CONTRACTION JOINT SPACING WHILE ALSO COMPLYING WITH THE 10'-0" MAX. SPACING.

(3) NO TAPER AT BRIDGE.

(4) RAIL LENGTH IS MEASURED ALONG WALL REFERENCE LINE.

(5) SEE SPECIAL PROVISIONS FOR JOINT SEALING REQUIREMENTS.

REVISED: 04-17-2013

APPROVED: JULY 25, 2005

*Janet Elizabeth Gronert*  
STATE BRIDGE ENGINEER

NO.	DATE	BY	CHKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0138259

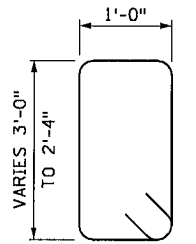
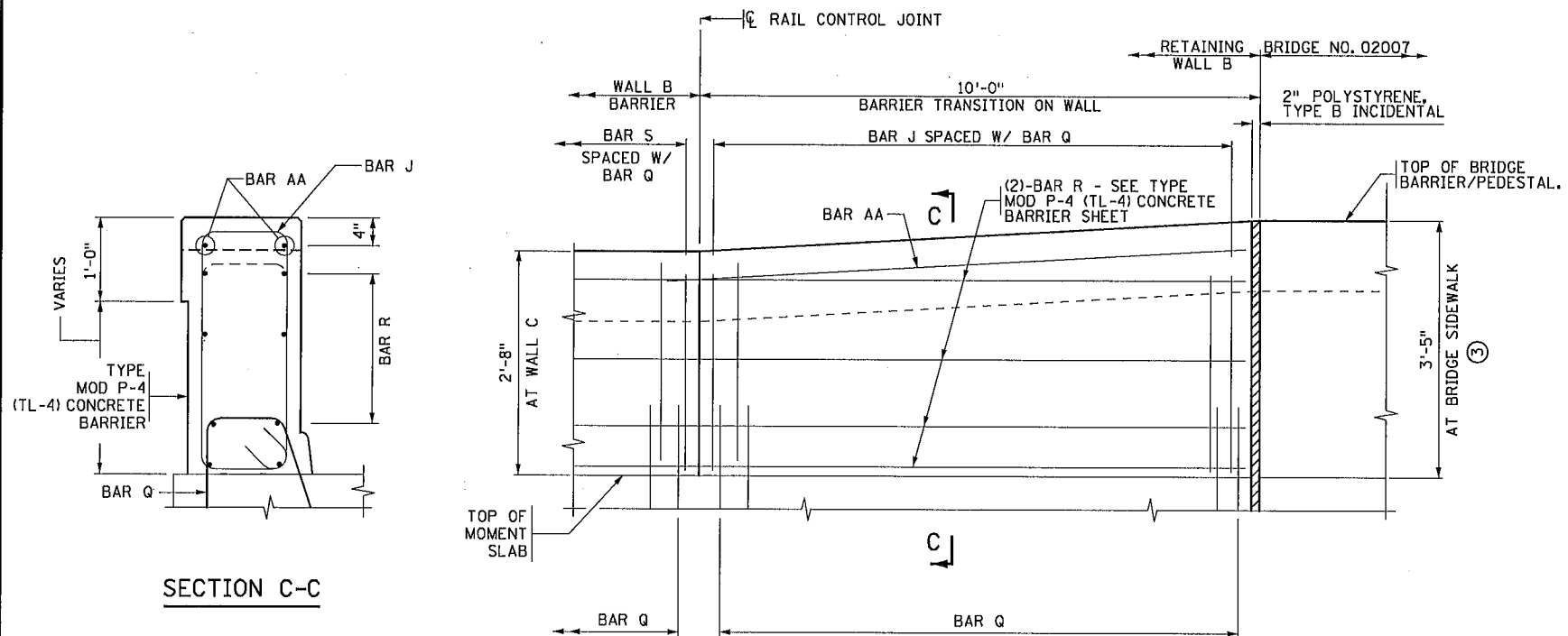


ENGINEERS  
PLANNERS  
DESIGNERS

MSE	MODIFIED	SHEET
TYPE MOD P-4 (TL-4) CONCRETE BARRIER	FIG. 5-397.173	257
ANOKA COUNTY	MSE RETAINING WALL PLANS	OF
T.H. 10 / C.S.A.H. 83 INTERCHANGE	MSE RETAINING WALL DETAILS (SHEET 7 OF 10)	586

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BILL OF REINFORCEMENT PER TRANSITION					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
J	R505E	11	VARIES 7'-7" TO 8'-11"	BENT	BARRIER - VERTICAL
AA	R406E	2	12'-4"	STR.	BARRIER - HORIZONTAL
ADDITIONAL REINFORCEMENT BARS					111 POUNDS (4)



**BAR J**  
(TRANSITION BAR)

**BARRIER TRANSITION DETAIL, INSIDE ELEVATION**  
(RETAINING WALL NOT SHOWN FOR CLARITY)

**NOTES:**

- ALL REINFORCEMENT BARS SHALL HAVE 2" CLEAR, EXCEPT AS NOTED.
- SEE TYPE MOD P-4 (TL-4) CONCRETE BARRIER SHEETS FOR ADDITIONAL INFORMATION.
- ELEVATION MAY BE ADJUSTED AS NEEDED TO MATCH TOP OF BRIDGE BARRIER.
- REINFORCEMENT AND CONCRETE ARE INCLUDED IN THE PAY ITEM "TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)."

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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COUNTY PROJECT NO. 0202-95 (TH 10)  
 CITY PROJECT NO. COMM. NO. 0138259

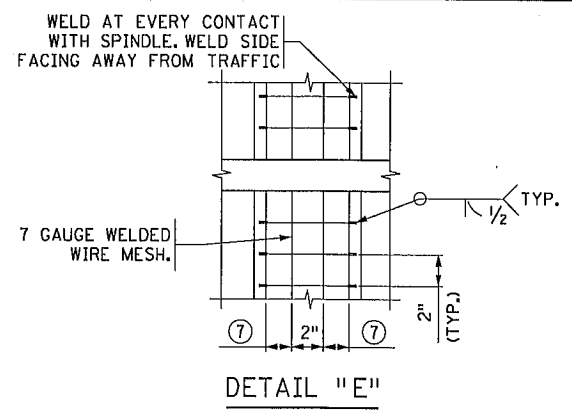
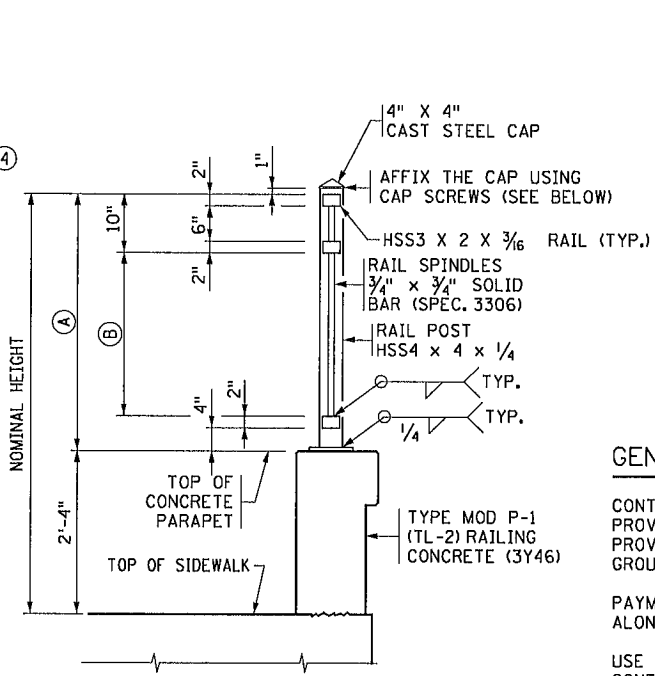
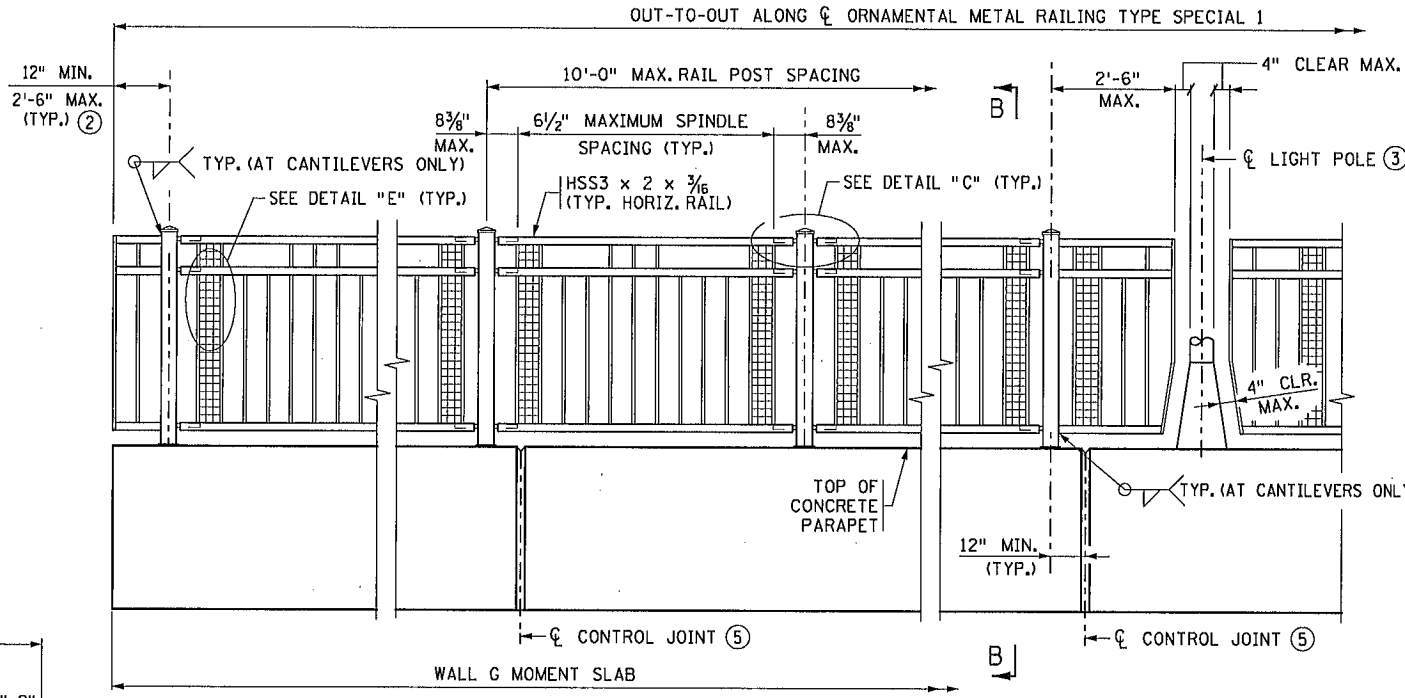


ENGINEERS  
PLANNERS  
DESIGNERS

TYPE MOD P-4 (TL-4) TRANSITION DETAIL	MSE
ANOKA COUNTY	
MSE RETAINING WALL PLANS	
T.H. 10 / C.S.A.H. 83 INTERCHANGE	
MSE RETAINING WALL DETAILS (SHEET 8 OF 10)	
SHEET	258
OF	586







**GENERAL NOTES**

CONTINUOUSLY GROUND ALL METAL RAILINGS; SEE THE SPECIAL PROVISIONS. REFER TO THE ELECTRICAL PLANS AND ELECTRICAL SPECIAL PROVISIONS FOR DETAILS REGARDING BONDING MULTIPLE ELECTRICAL GROUNDING SYSTEMS.

PAYMENT LENGTH SHALL BE MEASURED AS THE OUT TO OUT LENGTH ALONG THE CENTERLINE OF THE RAILING BETWEEN THE OUTSIDE ENDS.

USE A500, GRADE B STRUCTURAL STEEL TUBING (HSS) IN THE RAIL CONFORMING TO SPEC. 3361. FINAL CAPS SHALL BE SPEC. 3322. ALL OTHER STEEL SHALL CONFORM TO SPEC. 3306.

DRILL VENT HOLES IN THE RAIL POST BASE AND THE RAIL TUBES AS NECESSARY TO FACILITATE GALVANIZING.

GALVANIZE BOLTS, NUTS, WASHERS AND ANCHORS PER SPEC. 3392. GALVANIZE ALL OTHER STRUCTURAL STEEL PER SPEC. 3394, AFTER FABRICATION.

PAINT THE RAILING, BASE PLATES, AND PROTRUDING PORTIONS OF BOLTS, NUTS, ANCHORS, AND WASHERS IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

INSTALL RAIL POSTS AND SPINDLES PLUMB.

CURVE HORIZONTAL RAILS WHERE APPLICABLE AND PLACE RAILS PARALLEL TO THE EDGE OF SIDEWALK PROFILE.

SEE SPECIAL PROVISIONS FOR REQUIREMENTS NOT INCLUDED ON THIS SHEET AND FOR BASIS OF PAYMENT.

① ADHESIVE ANCHORAGE WITH 5/8\"/>

② PLACE CL OF END POST 12\"/>

③ IF LIGHT POLE IS MOUNTED ON BLISTER, RAILING MAY BE CONTINUOUS IN FRONT OF LIGHT POLE (SEE PARAPET & LIGHT POLE DETAILS).

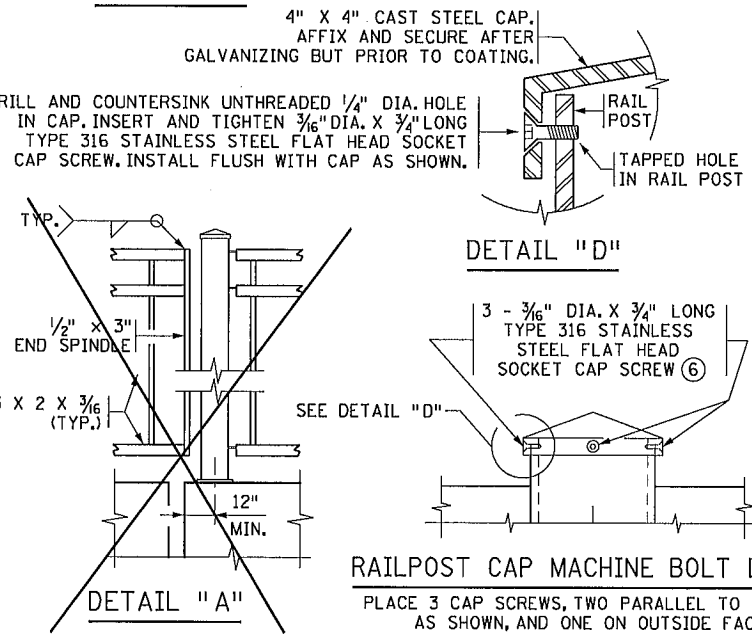
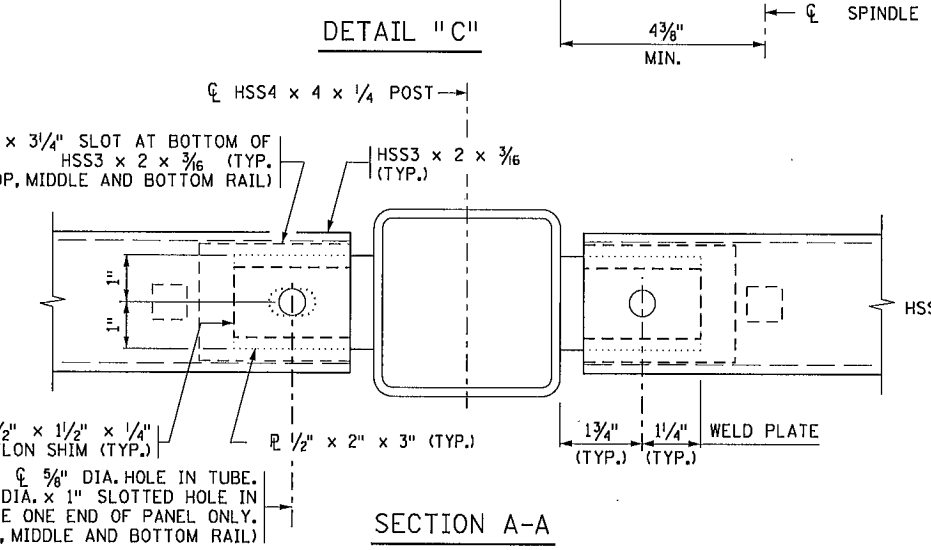
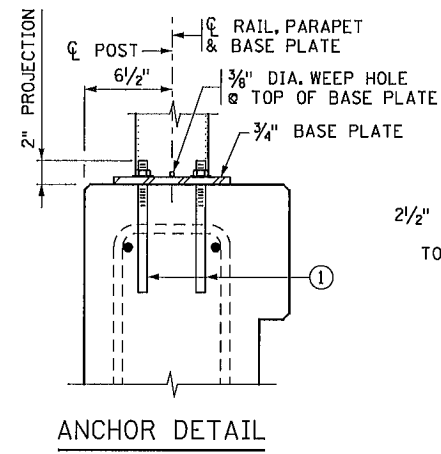
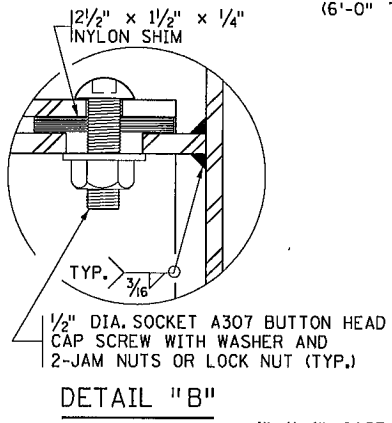
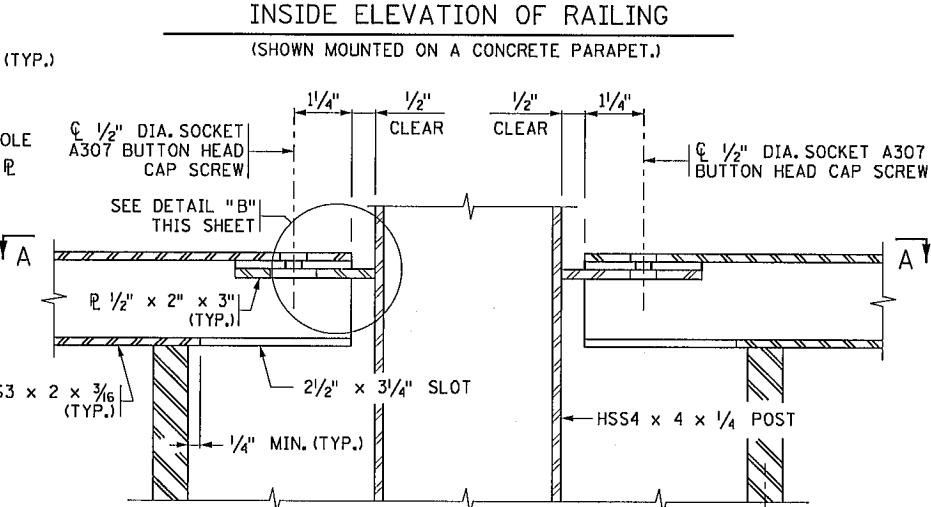
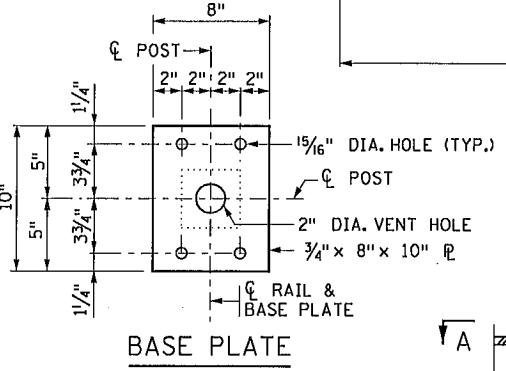
④ THE CONTRACTOR SHALL COORDINATE LIGHT POLE DETAILS WITH THE RAILING FABRICATOR TO ENSURE PROPER CLEARANCES AND RAILING CONFIGURATION ADJACENT TO THE POLE.

⑤ SEE TYPE MOD P-1 (TL-2) CONCRETE PARAPET SHEET FOR CONTROL JOINT SPACING AND DETAILS.

⑥ SHOP INSTALL CAST STEEL CAP FIRMLY SEATED TO TOP OF POST SUCH THAT THE CAP DOES NOT ROCK OR WOBBLE.

⑦ EQUAL SPACES.

NOMINAL HEIGHT	A	B
4'-6"	2'-2"	10"
6'-0"	3'-8"	2'-4"
8'-0"	5'-8"	4'-4"



REVISION:  
 APPROVED: NOVEMBER 6, 2013  
 Nancy S. Sibenberger  
 STATE BRIDGE ENGINEER

NO	DATE	BY	CHKD	APPR	REVISION

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 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ORNAMENTAL METAL RAILING TYPE SPECIAL 1	FIG. 5-397.162	MSE
ANOKA COUNTY	MODIFIED	
MSE RETAINING WALL PLANS		
T.H. 10 / C.S.A.H. 83 INTERCHANGE		
MSE RETAINING WALL DETAILS (SHEET 10 OF 10)		
SHEET 260		
OF 586		

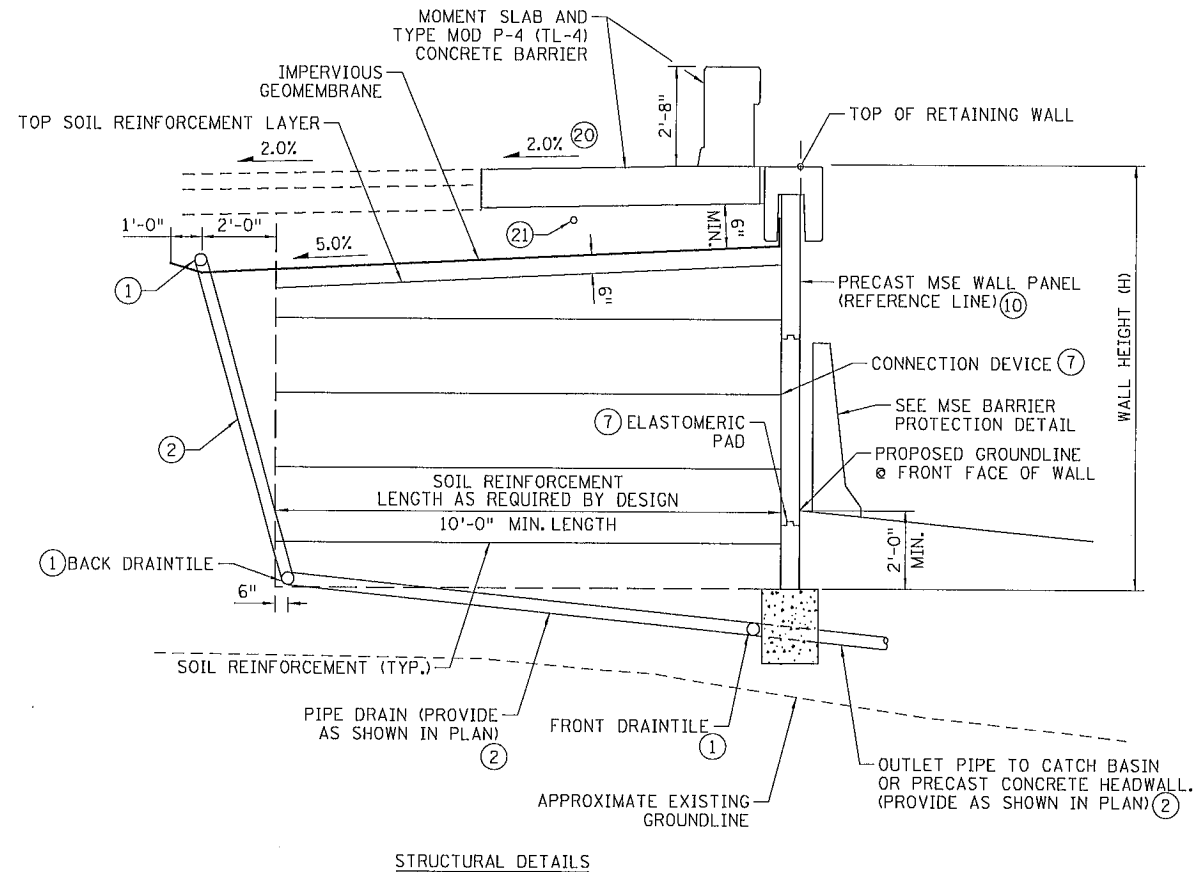
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**SUMMARY OF QUANTITIES FOR RETAINING WALL B (3)**

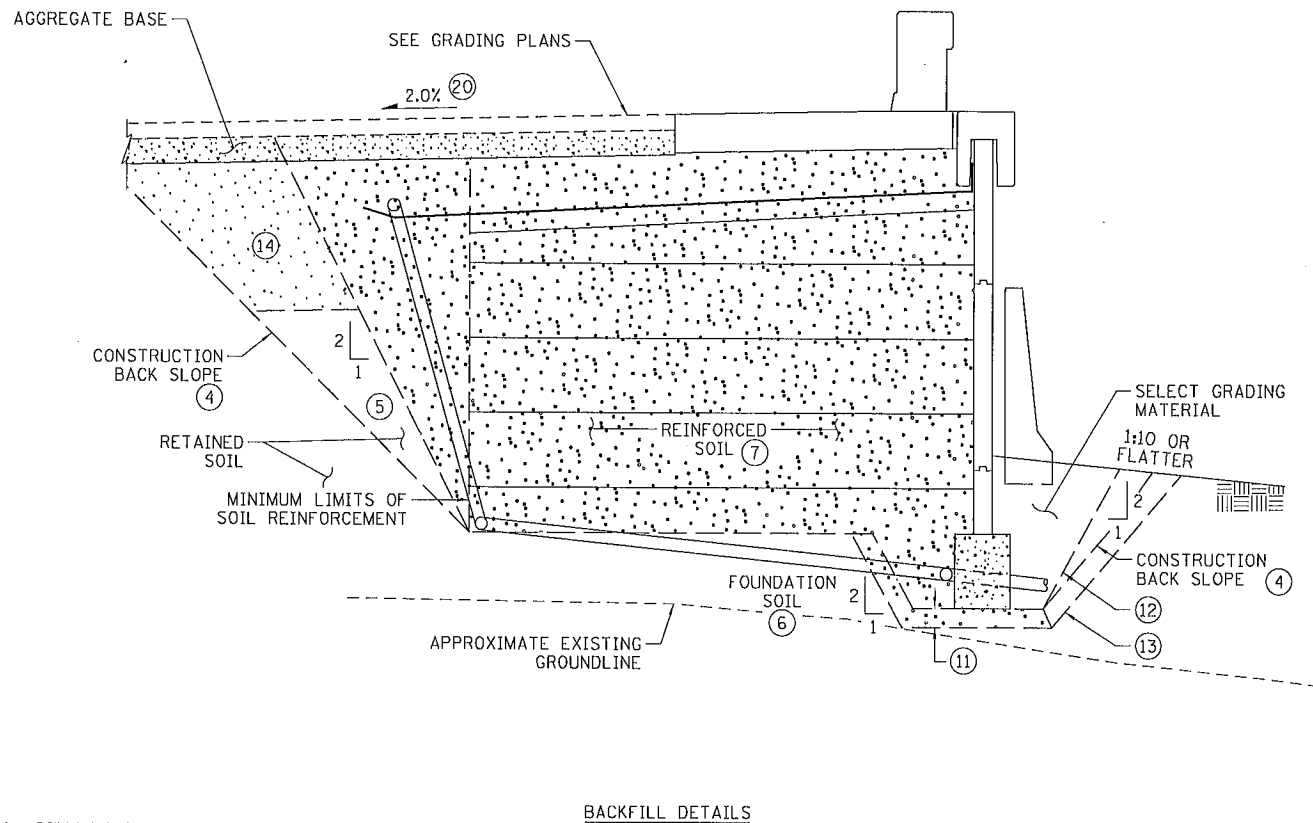
ITEM	UNIT	QUANTITY
(16) TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)	LIN FT	1360
(15) STRUCTURAL CONCRETE (3Y43)	CU YD	420
REINFORCEMENT BARS (EPOXY COATED)	POUND	60870
(17) MECHANICALLY STABILIZED EARTH WALL	SQ YD	3085
(18) ARCHITECTURAL CONCRETE TEXTURE (THIN BRICK)	SQ FT	1480
(18) SPECIAL SURFACE FINISH	SQ FT	33400
(18) ARCH. SURFACE FINISH (MULTI-COLOR)	SQ FT	1480
(19) ANTI-GRAFFITI COATING	SQ FT	16900
6" TP PIPE DRAIN	LIN FT	600
6" PERF TP PIPE DRAIN	LIN FT	4500
CONDUIT SYSTEM (SIGNALS)	LUMP SUM	1
6" PRECAST CONCRETE HEADWALL	EACH	2
(22) 2" RIGID STEEL CONDUIT	LIN FT	120
(22) HANDHOLE	EACH	2
(22) CONDUIT CAP	EACH	4

**NOTES:**

- ① 6" PERF TP PIPE DRAIN MNDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE.
- ② 6" TP PIPE DRAIN.
- ③ DRAINAGE TEES, DRAINAGE ELBOWS, DRAINAGE END CAPS AND HEADWALLS SHALL BE INCIDENTAL.
- ④ ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS.
- ⑤ BETWEEN THE REINFORCED ZONE AND CONSTRUCTION BACK SLOPE, PLACE GRANULAR BACKFILL COMPACTED IN ACCORDANCE WITH MNDOT SPEC. 2106.
- ⑥ SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MNDOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- ⑦ SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
8. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
9. SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ⑩ FOR ARCHITECTURAL TREATMENTS, SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEETS.
- ⑪ SUBCUT LIMITS, IF REQUIRED.
- ⑫ PAY LIMITS WHEN NO SUBCUT IS REQUIRED.
- ⑬ PAY LIMITS WHEN SUBCUT IS REQUIRED.
- ⑭ REPRESENTS ROADWAY GRADING. GRADING TO FOLLOW REQUIREMENTS FOR TYPICAL ROADWAY SECTIONS AT THIS LOCATION. QUANTITIES INCLUDED UNDER ROADWAY GRADING ITEMS.
- ⑮ MOMENT SLAB (RETAINING WALL B, TYPE 1) VOLUME IS APPROXIMATELY 0.284 CU. YDS./FT. MOMENT SLAB (RETAINING WALL B, TYPE 2) VOLUME IS APPROXIMATELY 0.329 CU. YDS./FT.
- ⑯ TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46) IS APPROXIMATELY 0.140 CU. YDS./FT.
- ⑰ PAY ITEM INCLUDES MSE WALL PANELING, SURFACE TEXTURE, SOIL REINFORCEMENT, PRECAST CAP, IMPERVIOUS MEMBRANE, LEVELING PAD, PIPE SLEEVES AND ANY OTHER ITEMS AS SHOWN IN THE SPECIAL PROVISIONS. PAYMENT IS BASED ON WALL FACE AREA USING A VERTICAL PLANE FROM THE TOP OF WALL TO 2'-0" BELOW PROPOSED GROUNDLINE.
- ⑱ SURFACE FINISH IS TO BE APPLIED TO ALL EXPOSED SURFACES TO 2'-0" BELOW FRONT FACE GROUNDLINE WHICH INCLUDES THE COPING, PILASTERS AND ALL SURFACES OF THE BARRIERS/PARAPETS (EXCEPT THE ROADWAY FACE AND TOP OF BARRIER). SEE SPECIAL PROVISIONS.
- ⑲ ANTI-GRAFFITI COATING IS TO BE APPLIED 2'-0" BELOW FRONT FACE GROUNDLINE TO A HEIGHT OF 10'-0" VERTICAL ABOVE FRONT FACE GROUNDLINE.
- ⑳ SLOPE MAY VARY. SEE GRADING PLANS.
- ㉑ 2" RIGID STEEL CONDUIT. SEE SIGNAL PLANS FOR CONDUIT SYSTEM DETAILS.
- ㉒ ALL MATERIALS LISTED ARE INCLUDED IN PRICE BID FOR "CONDUIT SYSTEM (SIGNALS)", LUMP SUM. QUANTITIES LISTED ARE FOR INFORMATIONAL PURPOSES, ANY ADDITIONAL MINOR ITEMS OR CHANGES IN QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.



STRUCTURAL DETAILS



BACKFILL DETAILS

TYPICAL SECTIONS  
(NOT TO SCALE)

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr. Int Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date 09-12-14 License # 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



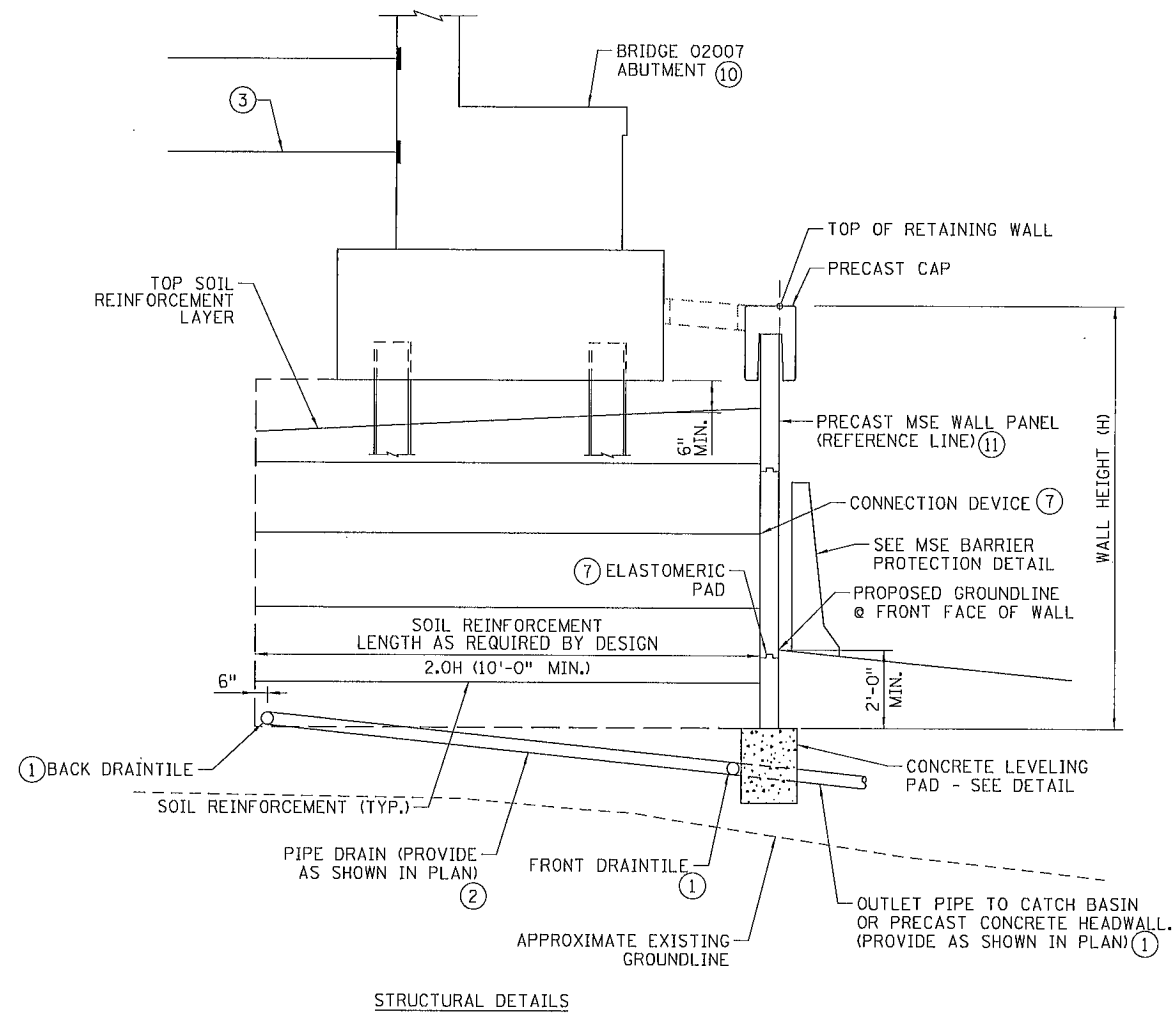
ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TYPICAL SECTION & SUMMARY OF QUANTITIES - WALL B  
 (SHEET 1 OF 2)

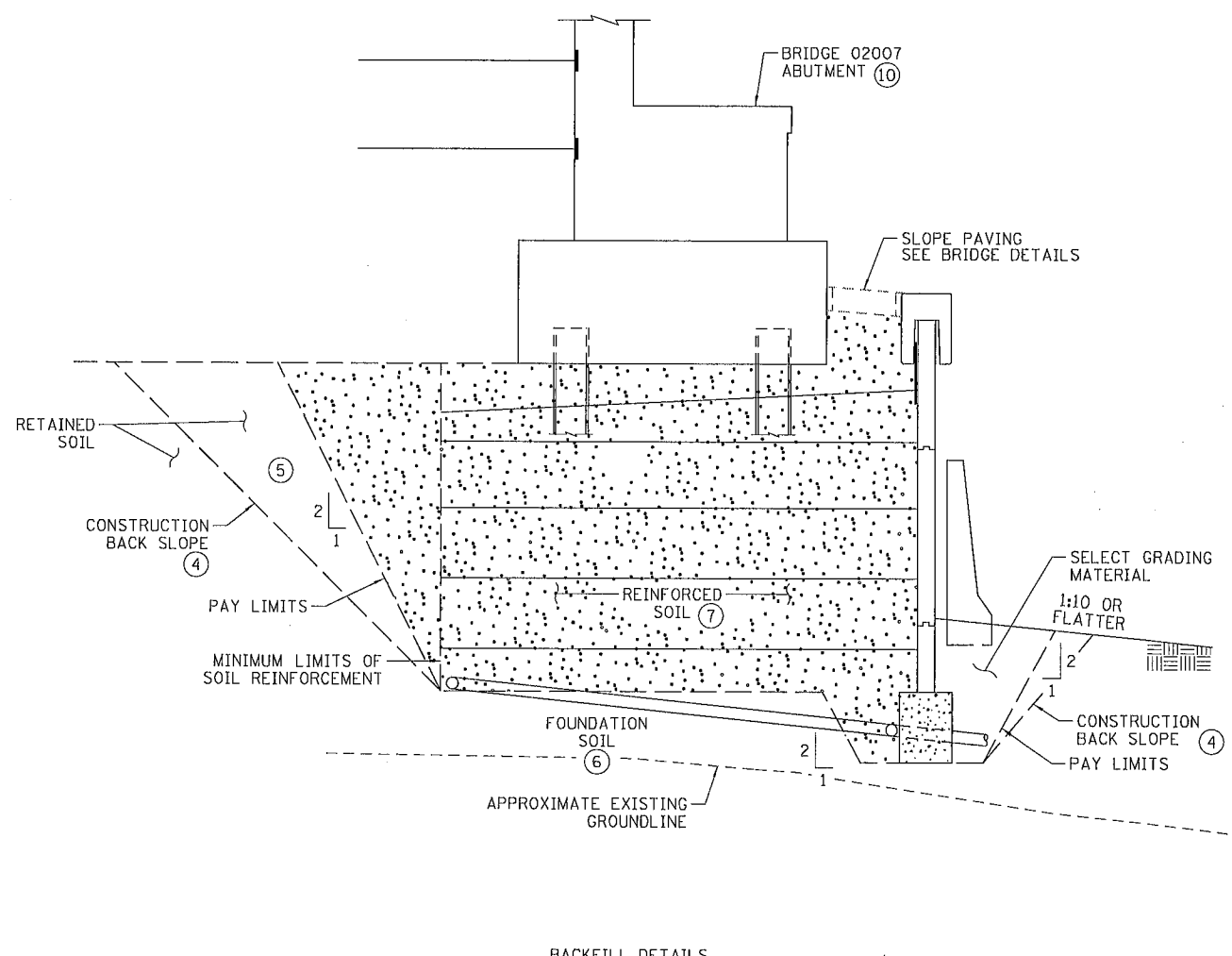
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**NOTES:**

- ① 6" PERF TP PIPE DRAIN MndOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE.
- ② 6" TP PIPE DRAIN.
- ③ SOIL REINFORCEMENT AT BRIDGE ABUTMENT. SEE BRIDGE PLANS FOR LOCATION AND LATERAL LOADS FOR DESIGN.
- ④ ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS.
- ⑤ BETWEEN THE REINFORCED ZONE AND CONSTRUCTION BACK SLOPE, FOLLOW BRIDGE GRADING REQUIREMENTS FOR BACKFILL BEYOND THE MSE REINFORCED SOIL PAY LIMITS, WHERE APPLICABLE OTHERWISE, PLACE GRANULAR BACKFILL COMPACTED IN ACCORDANCE WITH MndOT SPEC. 2106.
- ⑥ SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MndOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- ⑦ SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- 8. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
- 9. SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ⑩ SEE BRIDGE PLANS FOR DIMENSIONS AND BRIDGE DETAILS.
- ⑪ FOR ARCHITECTURAL TREATMENTS, SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEETS.



STRUCTURAL DETAILS



BACKFILL DETAILS

TYPICAL SECTION E-E - RETAINING WALL B  
(NOT TO SCALE)

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
E. JOHNSON

DESIGNED BY  
A. RENSTROM

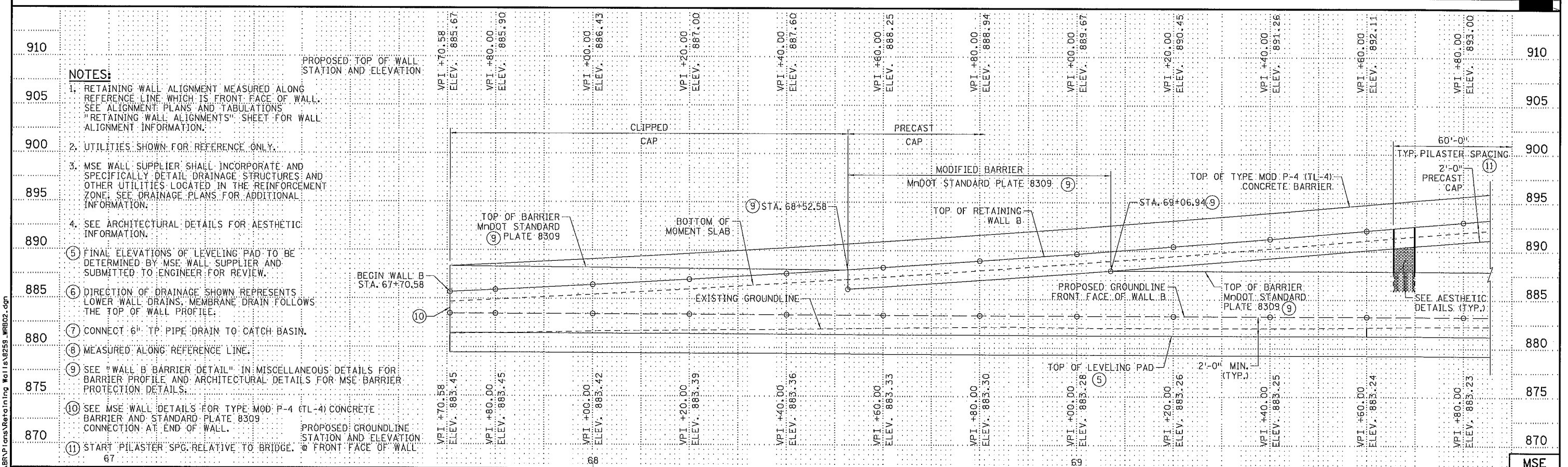
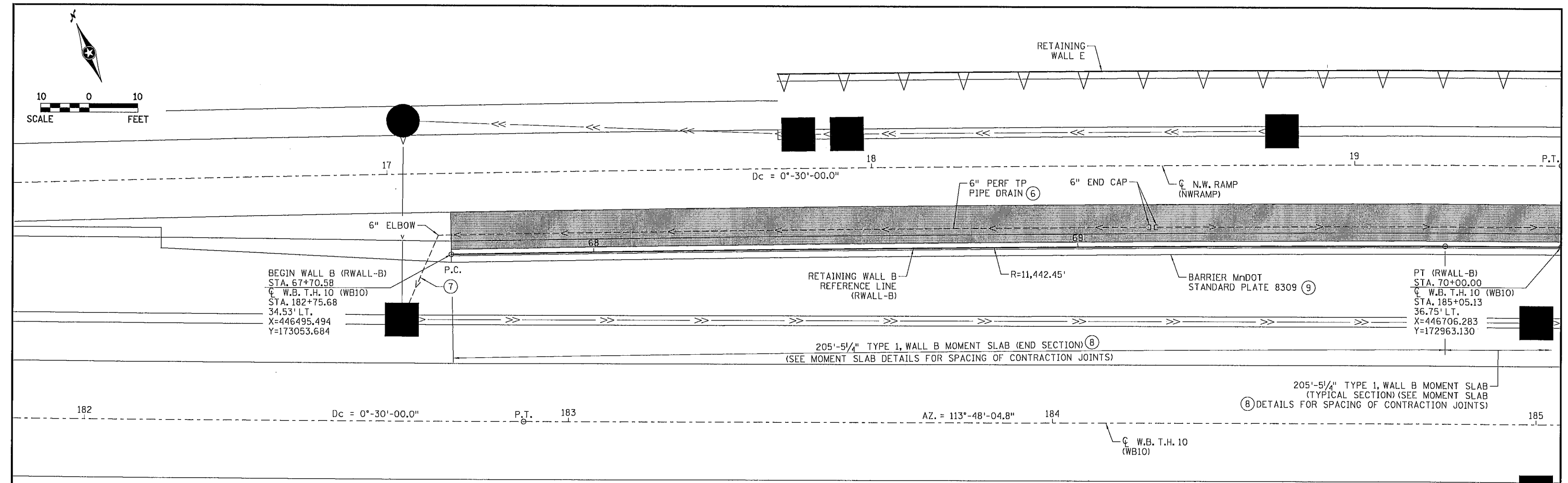
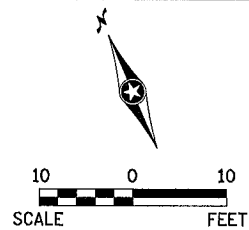
CHECKED BY  
J. GRONERT

COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TYPICAL SECTION & SUMMARY OF QUANTITIES - WALL B  
 (SHEET 2 OF 2)

MSE  
 SHEET  
 262  
 OF  
 586



**NOTES:**

1. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
2. UTILITIES SHOWN FOR REFERENCE ONLY.
3. MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE; SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
5. FINAL ELEVATIONS OF LEVELING PAD TO BE DETERMINED BY MSE WALL SUPPLIER AND SUBMITTED TO ENGINEER FOR REVIEW.
6. DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
7. CONNECT 6" TP PIPE DRAIN TO CATCH BASIN.
8. MEASURED ALONG REFERENCE LINE.
9. SEE "WALL B BARRIER DETAIL" IN MISCELLANEOUS DETAILS FOR BARRIER PROFILE AND ARCHITECTURAL DETAILS FOR MSE BARRIER PROTECTION DETAILS.
10. SEE MSE WALL DETAILS FOR TYPE MOD P-4 (TL-4) CONCRETE BARRIER AND STANDARD PLATE B309 CONNECTION AT END OF WALL.
11. START PILASTER SPG. RELATIVE TO BRIDGE. SEE AESTHETIC DETAILS (TYP.)

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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-15-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

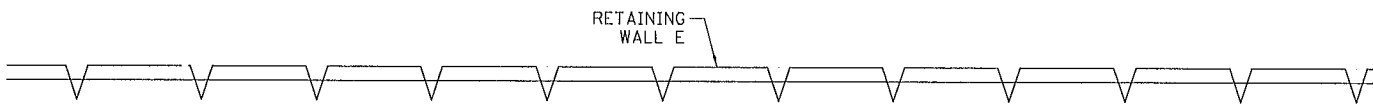
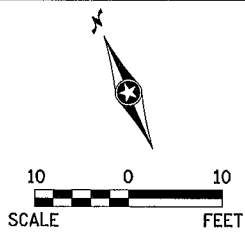
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 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



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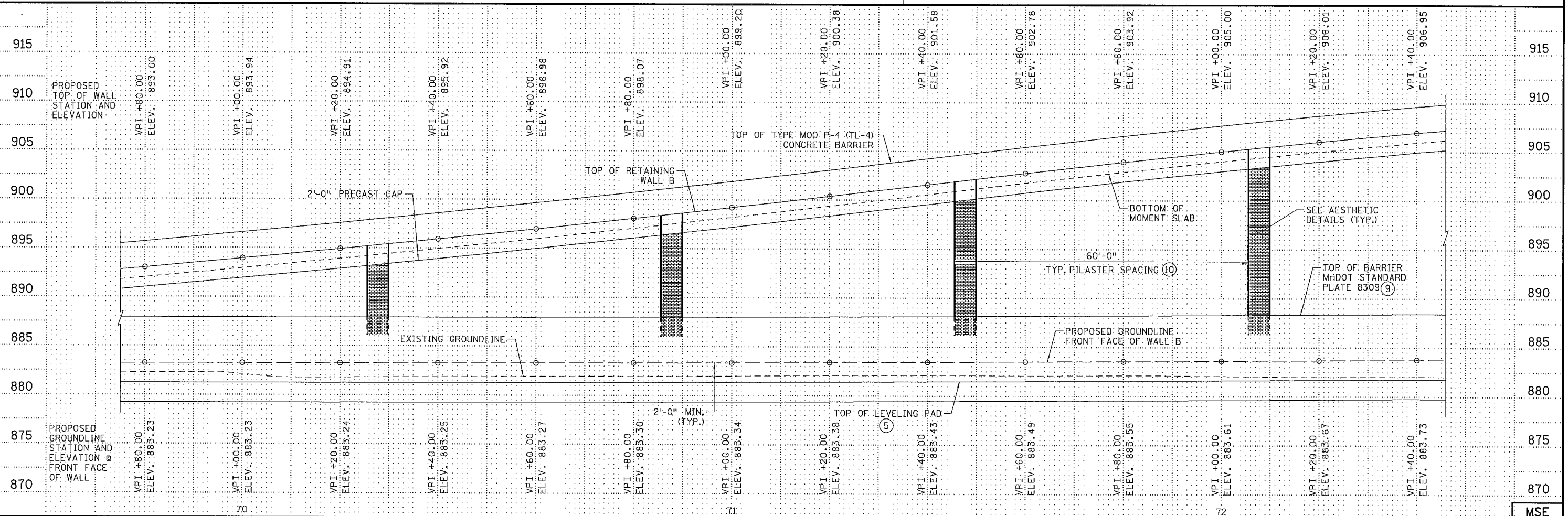
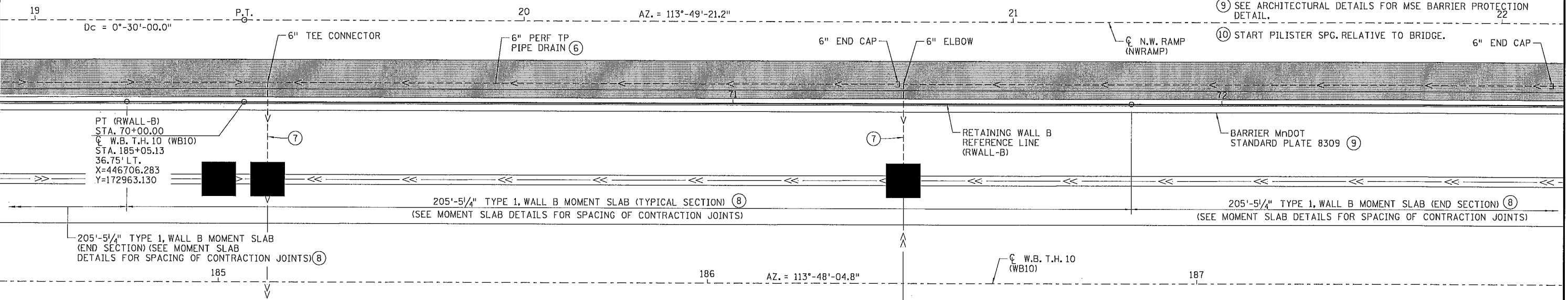
ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL B (SHEET 1 OF 6)

MSE  
 SHEET  
 263  
 OF  
 586



**NOTES:**

1. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
2. UTILITIES SHOWN FOR REFERENCE ONLY.
3. MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
5. FINAL ELEVATIONS OF LEVELING PAD TO BE DETERMINED BY MSE WALL SUPPLIER AND SUBMITTED TO ENGINEER FOR REVIEW.
6. DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
7. CONNECT 6" TP PIPE DRAIN TO CATCH BASIN.
8. MEASURED ALONG REFERENCE LINE.
9. SEE ARCHITECTURAL DETAILS FOR MSE BARRIER PROTECTION DETAIL.
10. START PILASTER SPG. RELATIVE TO BRIDGE.



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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: JANET ELIZABETH GRONERT  
  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



**ENGINEERS  
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 DESIGNERS**

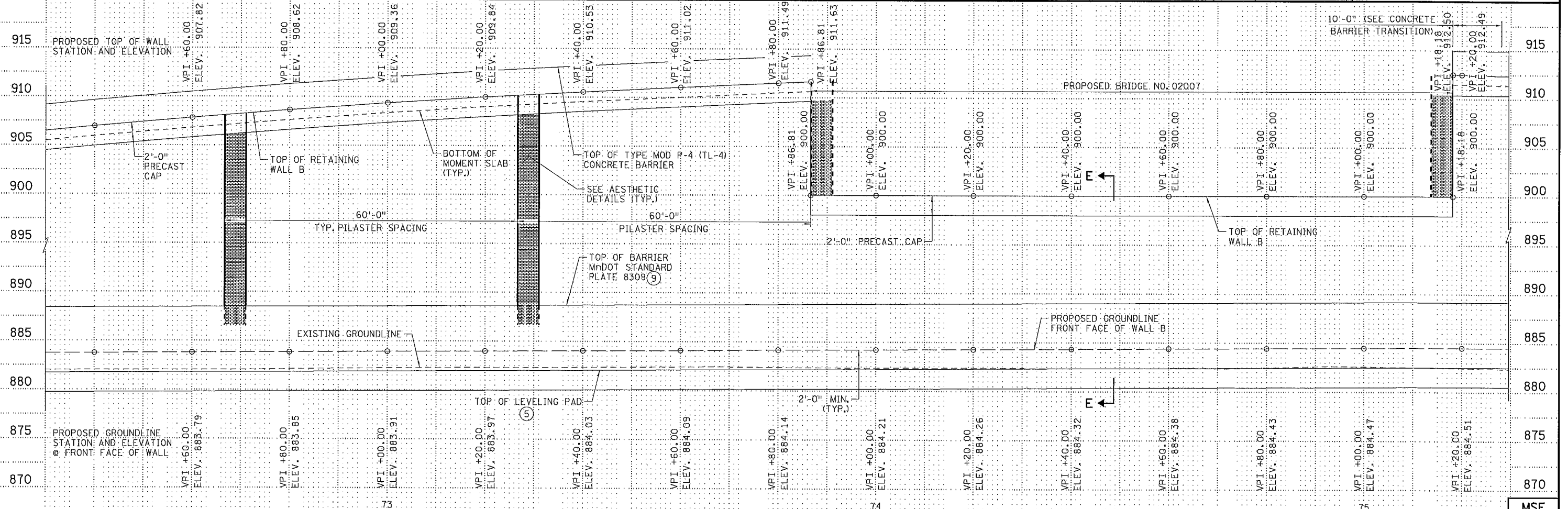
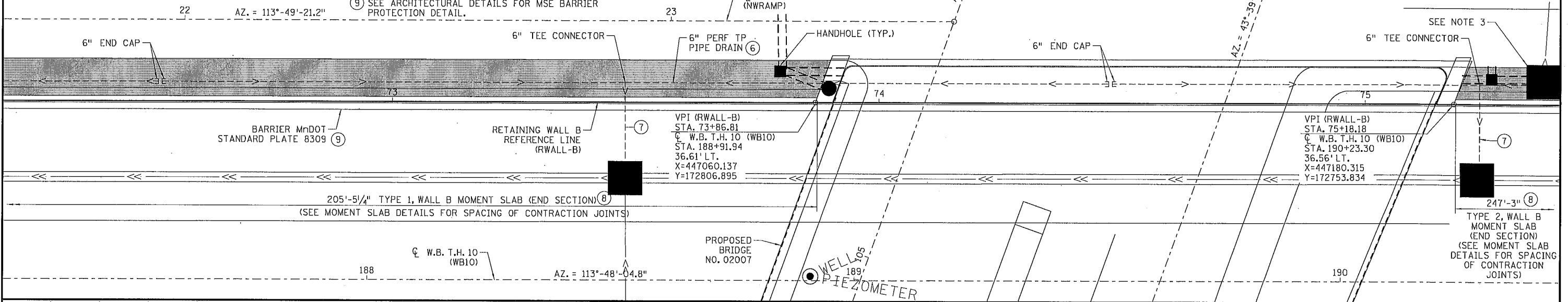
**ANOKA COUNTY**  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL B (SHEET 2 OF 6)

MSE  
 SHEET 264 OF 586



**NOTES:**

- RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
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- CONNECT 6" TP PIPE DRAIN TO CATCH BASIN.
- MEASURED ALONG REFERENCE LINE.
- SEE ARCHITECTURAL DETAILS FOR MSE BARRIER PROTECTION DETAIL.



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 Date: 09/12/14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
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 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

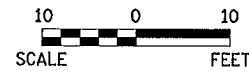
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 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



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 DESIGNERS

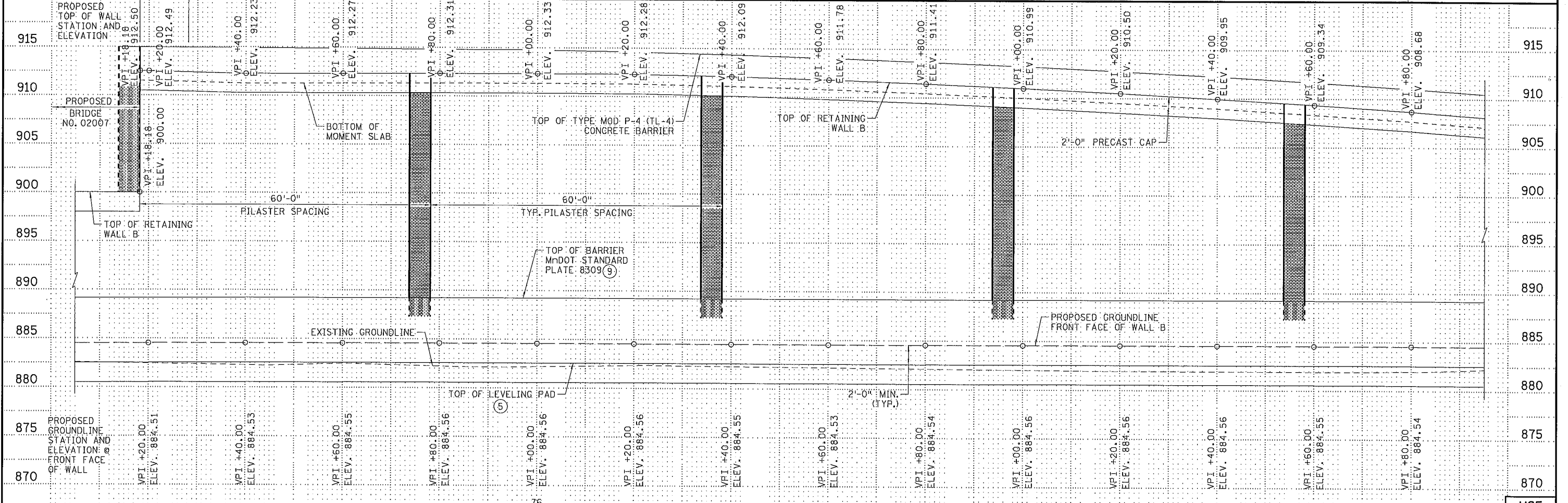
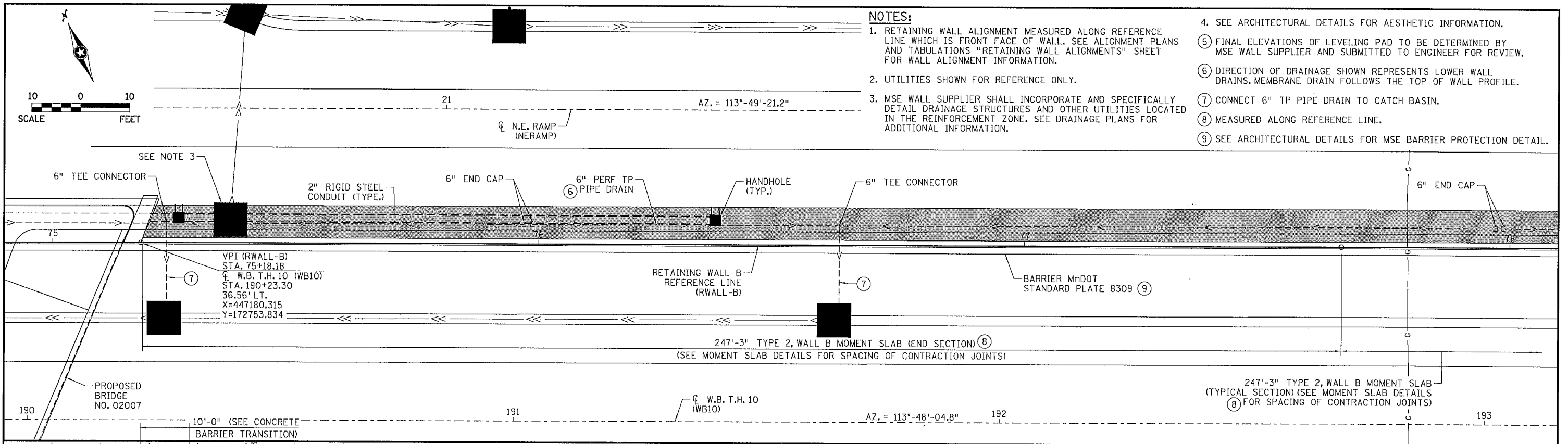
ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL B (SHEET 3 OF 6)

MSE  
 SHEET  
 265  
 OF  
 586



**NOTES:**

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- MEASURED ALONG REFERENCE LINE.
- SEE ARCHITECTURAL DETAILS FOR MSE BARRIER PROTECTION DETAIL.



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 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL B (SHEET 4 OF 6)

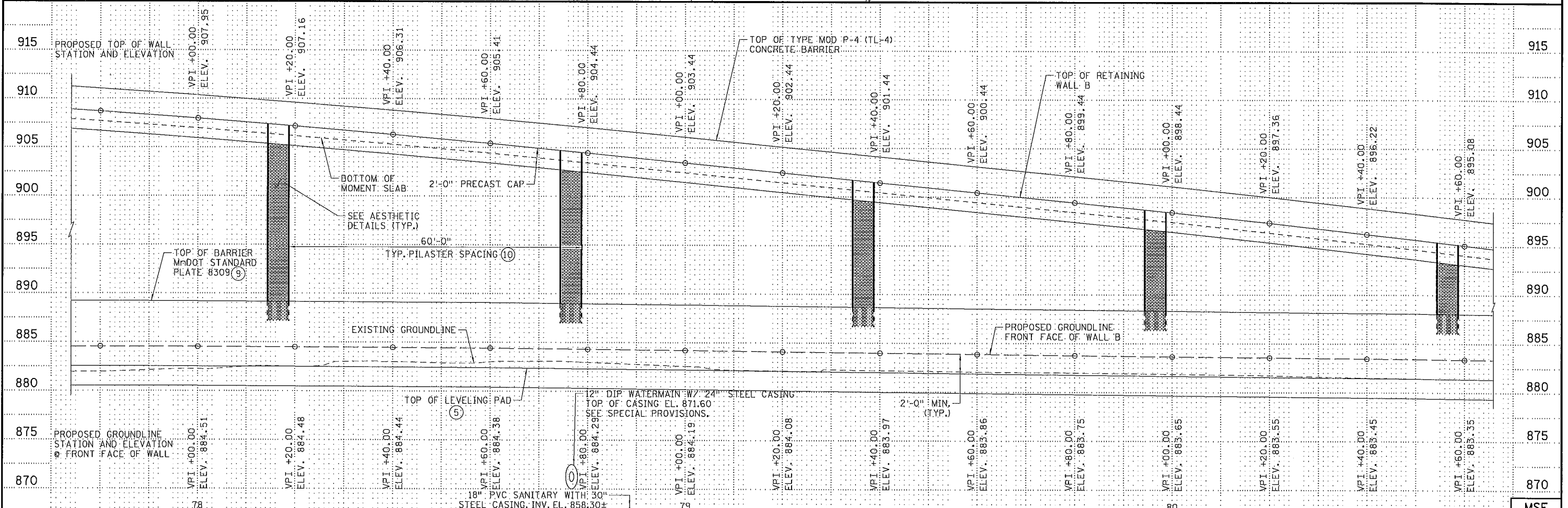
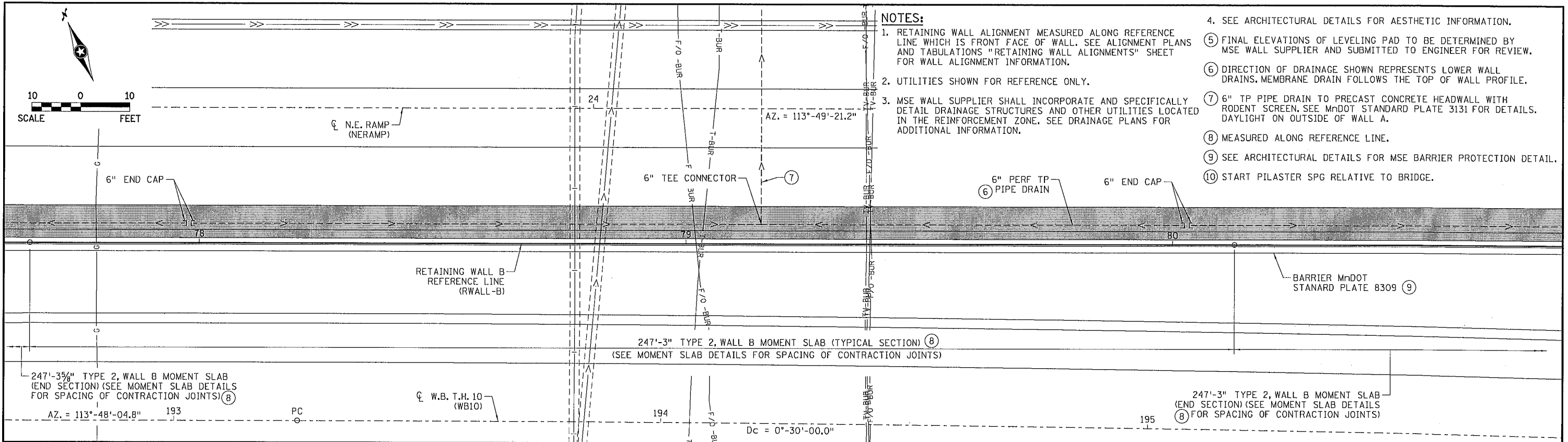
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**NOTES:**

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7. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MnDOT STANDARD PLATE 3131 FOR DETAILS. DAYLIGHT ON OUTSIDE OF WALL A.
8. MEASURED ALONG REFERENCE LINE.
9. SEE ARCHITECTURAL DETAILS FOR MSE BARRIER PROTECTION DETAIL.
10. START PILASTER SPG RELATIVE TO BRIDGE.



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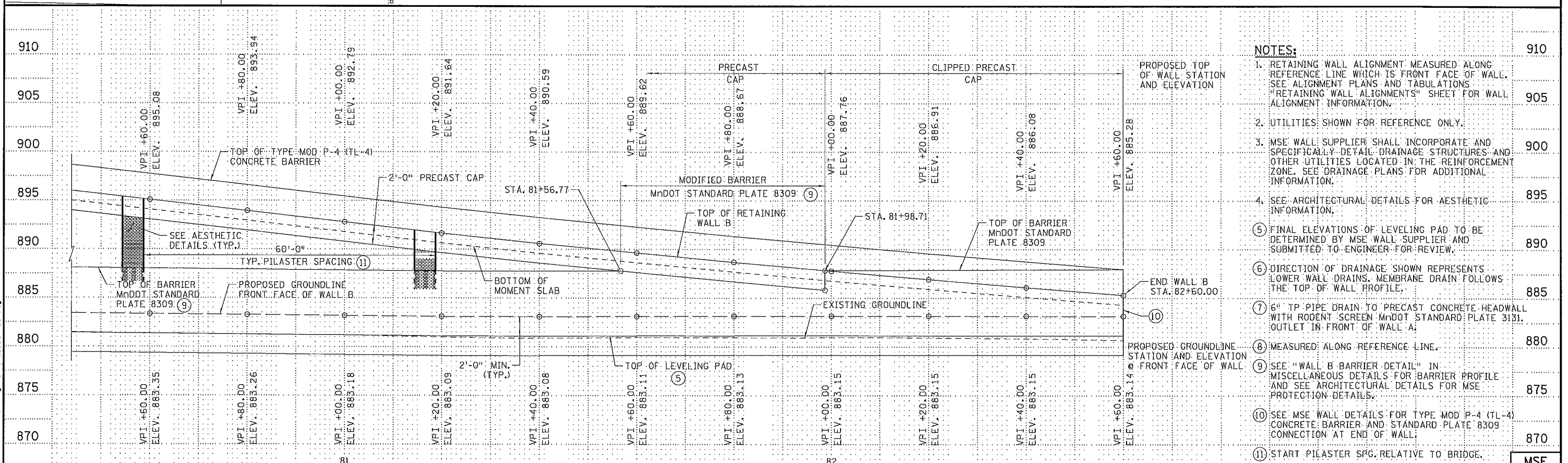
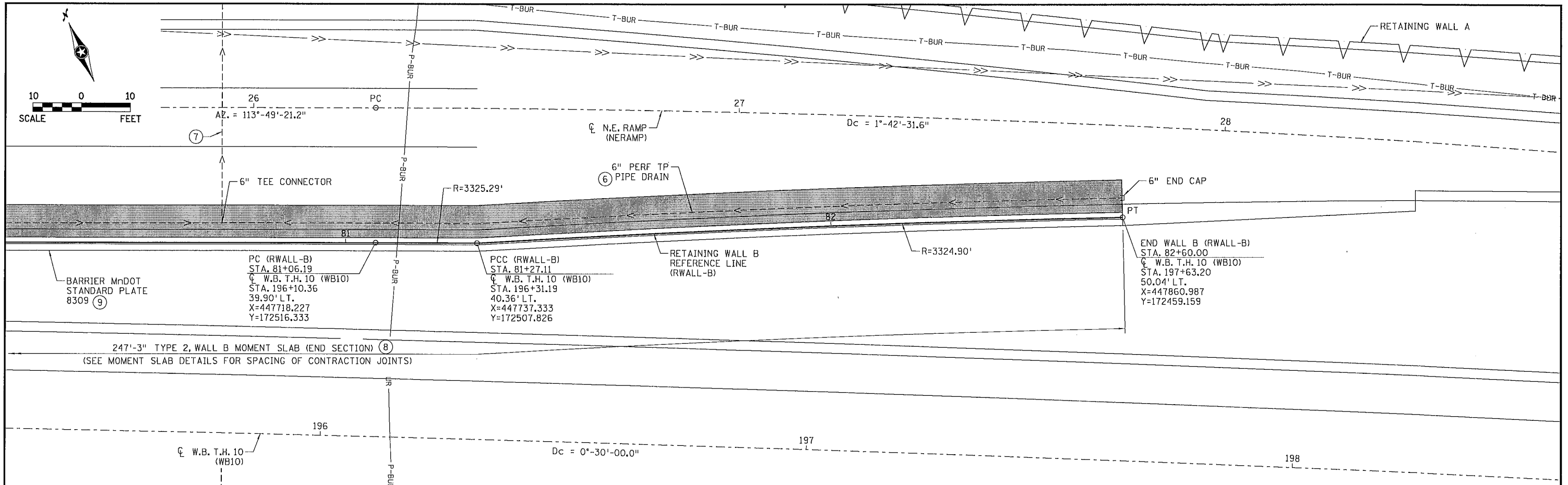
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL B (SHEET 5 OF 6)

MSE  
 SHEET  
 267  
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- NOTES:**
- RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
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  - DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
  - 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN MNDOT STANDARD PLATE 3131. OUTLET IN FRONT OF WALL A.
  - MEASURED ALONG REFERENCE LINE.
  - SEE "WALL B BARRIER DETAIL" IN MISCELLANEOUS DETAILS FOR BARRIER PROFILE AND SEE ARCHITECTURAL DETAILS FOR MSE PROTECTION DETAILS.
  - SEE MSE WALL DETAILS FOR TYPE MOD P-4 (TL-4) CONCRETE BARRIER AND STANDARD PLATE 8309 CONNECTION AT END OF WALL.
  - START PILASTER SPG. RELATIVE TO BRIDGE.

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 Date: 09-12-14 License #: 44325

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STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
E. JOHNSON

DESIGNED BY  
A. RENSTROM

CHECKED BY  
J. GRONERT

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

MSE RETAINING WALL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

PLAN & PROFILE - WALL B (SHEET 6 OF 6)

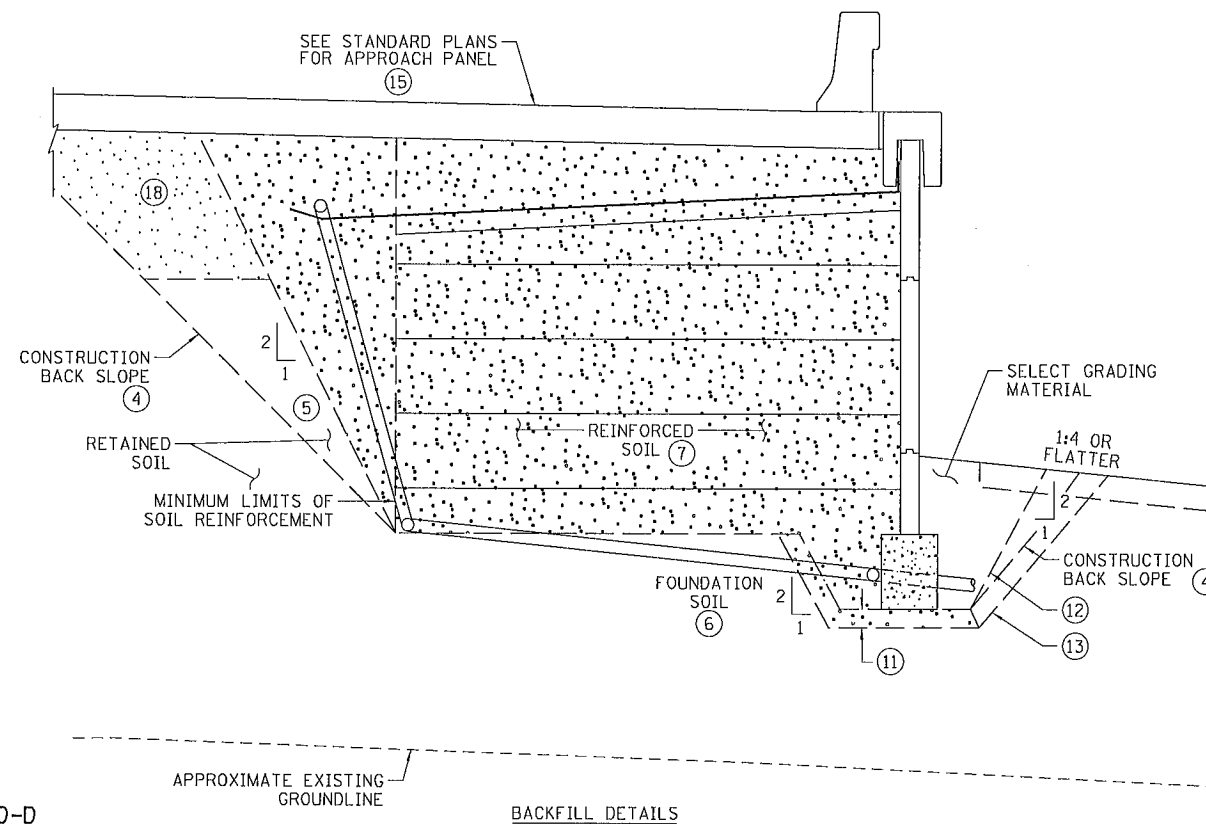
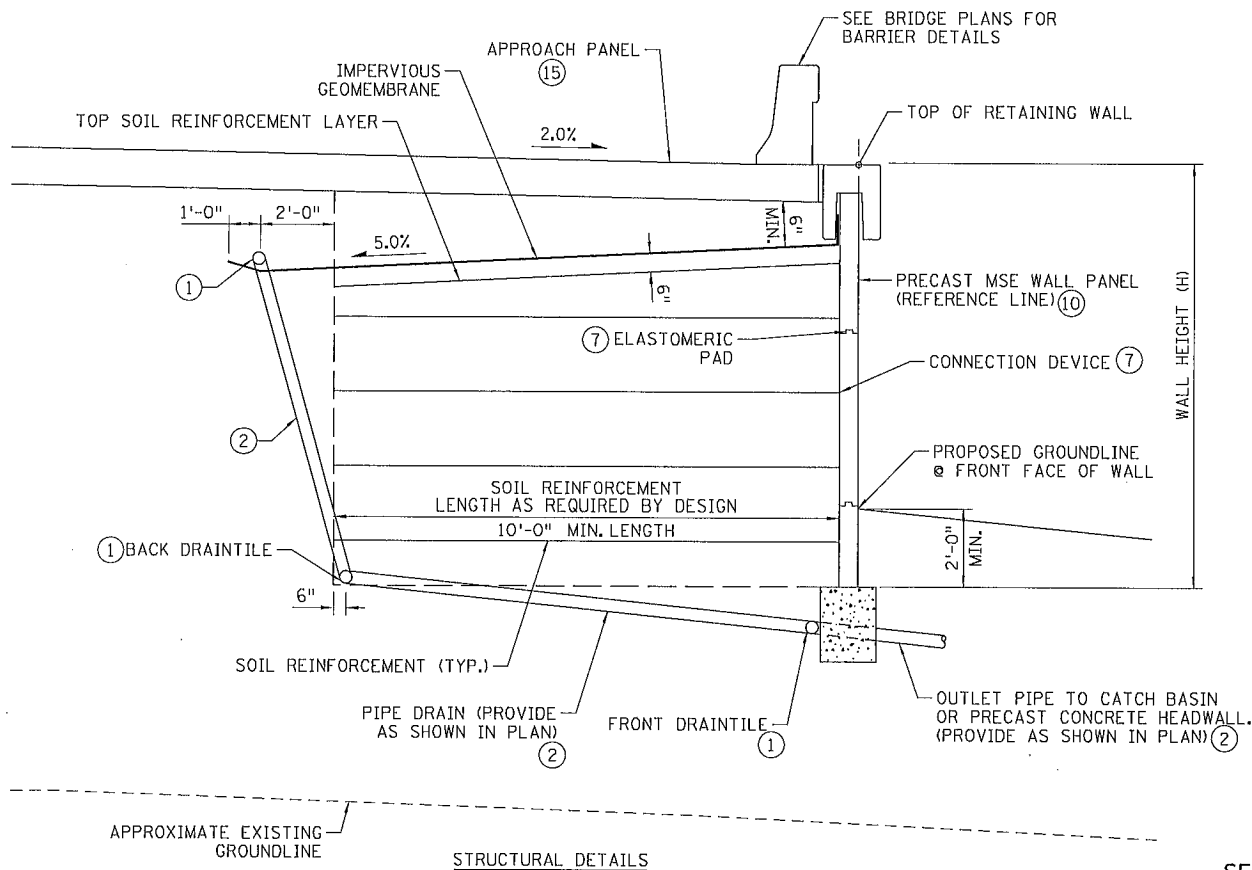
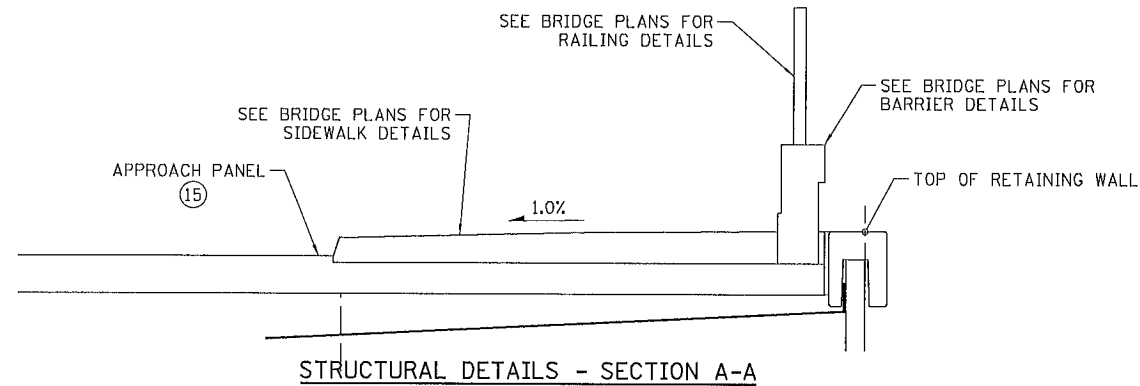
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**SUMMARY OF QUANTITIES FOR RETAINING WALL C ③**

ITEM	UNIT	QUANTITY
⑭ MECHANICALLY STABILIZED EARTH WALL	SQ YD	316
⑮ ARCHITECTURAL CONCRETE TEXTURE (CUT STONE)	SQ FT	1430
⑯ SPECIAL SURFACE FINISH	SQ FT	1800
⑯ ARCHITECTURAL SURFACE FINISH (SINGLE COLOR)	SQ FT	1430
⑰ ANTI-GRAFFITI COATING	SQ FT	2000
4" TP PIPE DRAIN	LIN FT	111
4" PERF TP PIPE DRAIN	LIN FT	705
4" PRECAST CONCRETE HEADWALL	EACH	1

**NOTES:**

- ① 4" PERF TP PIPE DRAIN MnDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE.
- ② 4" TP PIPE DRAIN.
- ③ DRAINAGE TEES, DRAINAGE ELBOWS, DRAINAGE END CAPS AND HEADWALLS SHALL BE INCIDENTAL.
- ④ ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS.
- ⑤ BETWEEN THE REINFORCED ZONE AND CONSTRUCTION BACK SLOPE, PLACE GRANULAR BACKFILL COMPACTED IN ACCORDANCE WITH MnDOT SPEC. 2106.
- ⑥ SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- ⑦ SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
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- 9. SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ⑩ FOR ARCHITECTURAL TREATMENTS, SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEETS.
- ⑪ SUBCUT LIMITS, IF REQUIRED.
- ⑫ PAY LIMITS WHEN NO SUBCUT IS REQUIRED.
- ⑬ PAY LIMITS WHEN SUBCUT IS REQUIRED.
- ⑭ PAY ITEM INCLUDES MSE WALL PANELING, SURFACE TEXTURE, SOIL REINFORCEMENT, PRECAST CAP, IMPERVIOUS MEMBRANE, LEVELING PAD, PIPE SLEEVES AND ANY OTHER ITEMS AS SHOWN IN THE SPECIAL PROVISIONS. PAYMENT IS BASED ON WALL FACE AREA USING A VERTICAL PLANE FROM THE TOP OF WALL TO 2'-0" BELOW PROPOSED GROUNDLINE (EXCEPT WHERE REQUIREMENTS FOR BOTTOM OF LEVELING PAD ELEVATIONS ARE NOTED).
- ⑮ SLAB CONCRETE IS INCLUDED IN APPROACH PANEL CONCRETE.
- ⑯ SURFACE FINISH IS TO BE APPLIED TO ALL EXPOSED SURFACES TO 2'-0" BELOW FRONT FACE GROUNDLINE WHICH INCLUDES THE COPING, PILASTERS AND ALL SURFACES OF THE BARRIERS/PARAPETS. (EXCEPT THE ROADWAY AND TOP OF BARRIER) SEE SPECIAL PROVISIONS.
- ⑰ ANTI-GRAFFITI COATING IS TO BE APPLIED 2'-0" BELOW FRONT FACE GROUNDLINE TO A HEIGHT OF 10'-0" VERTICAL ABOVE FRONT FACE GROUNDLINE.
- ⑱ REPRESENTS ROADWAY GRADING AND SHALL FOLLOW THE REQUIREMENT FOR TYPICAL ROADWAY SECTION AT THIS LOCATION. QUANTITIES INCLUDED UNDER ROADWAY GRADING ITEMS.



**SECTION D-D**  
(SECTION A-A SIMILAR)  
(NOT TO SCALE)

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NO	DATE	BY	CHKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

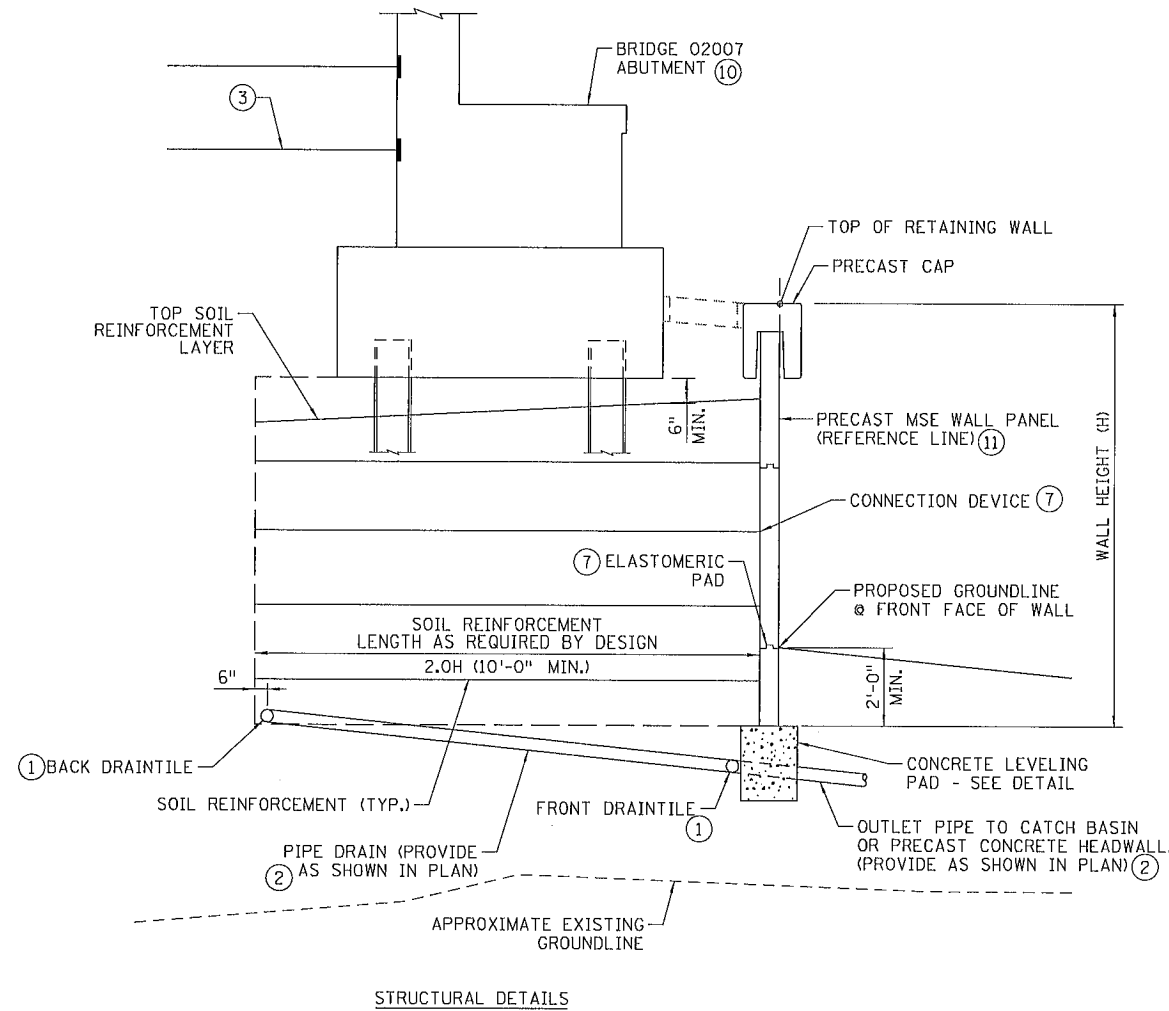


ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TYPICAL SECTION & SUMMARY OF QUANTITIES - WALL C  
 (SHEET 1 OF 2)

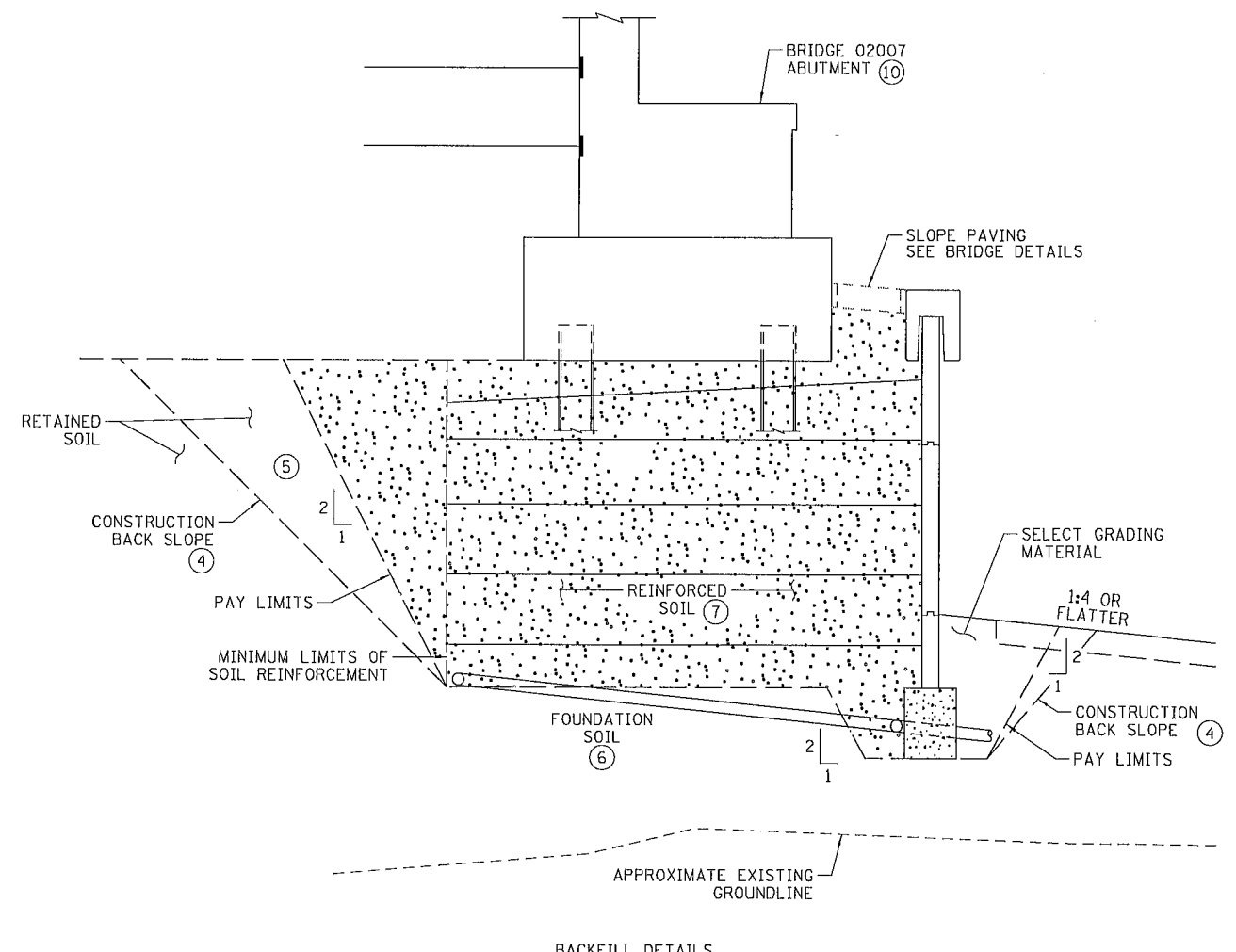
MSE  
 SHEET  
 269  
 OF  
 586

**NOTES:**

- ① 4" PERF TP PIPE DRAIN MnDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE.
- ② 4" TP PIPE DRAIN.
- ③ SOIL REINFORCEMENT AT BRIDGE ABUTMENT. SEE BRIDGE PLANS FOR LOCATION AND LATERAL LOADS FOR DESIGN.
- ④ ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS.
- ⑤ BETWEEN THE REINFORCED ZONE AND CONSTRUCTION BACK SLOPE, FOLLOW BRIDGE GRADING REQUIREMENTS FOR BACKFILL BEYOND THE MSE REINFORCED SOIL PAY LIMITS, WHERE APPLICABLE OTHERWISE, PLACE GRANULAR BACKFILL COMPACTED IN ACCORDANCE WITH MnDOT SPEC. 2106.
- ⑥ SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MnDOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- ⑦ SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
- 8. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
- 9. SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ⑩ SEE BRIDGE PLANS FOR DIMENSIONS AND BRIDGE DETAILS.
- ⑪ FOR ARCHITECTURAL TREATMENTS, SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEETS.



STRUCTURAL DETAILS



BACKFILL DETAILS

TYPICAL SECTION B-B - RETAINING WALL C  
(NOT TO SCALE)

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 ...Retaining Walls\8255\_MRC03.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



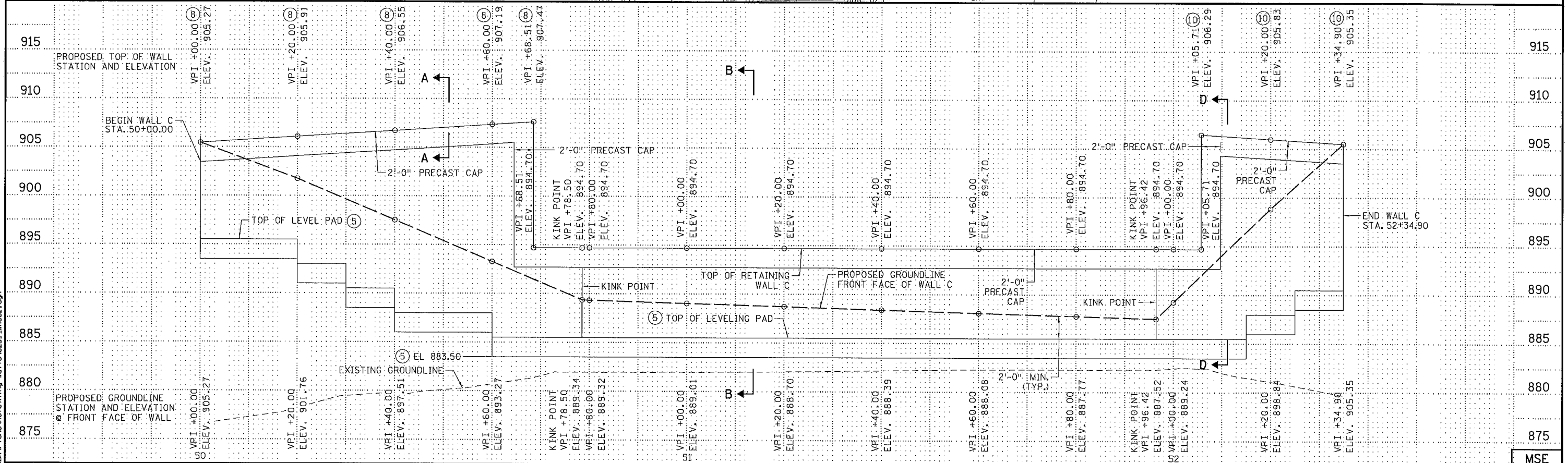
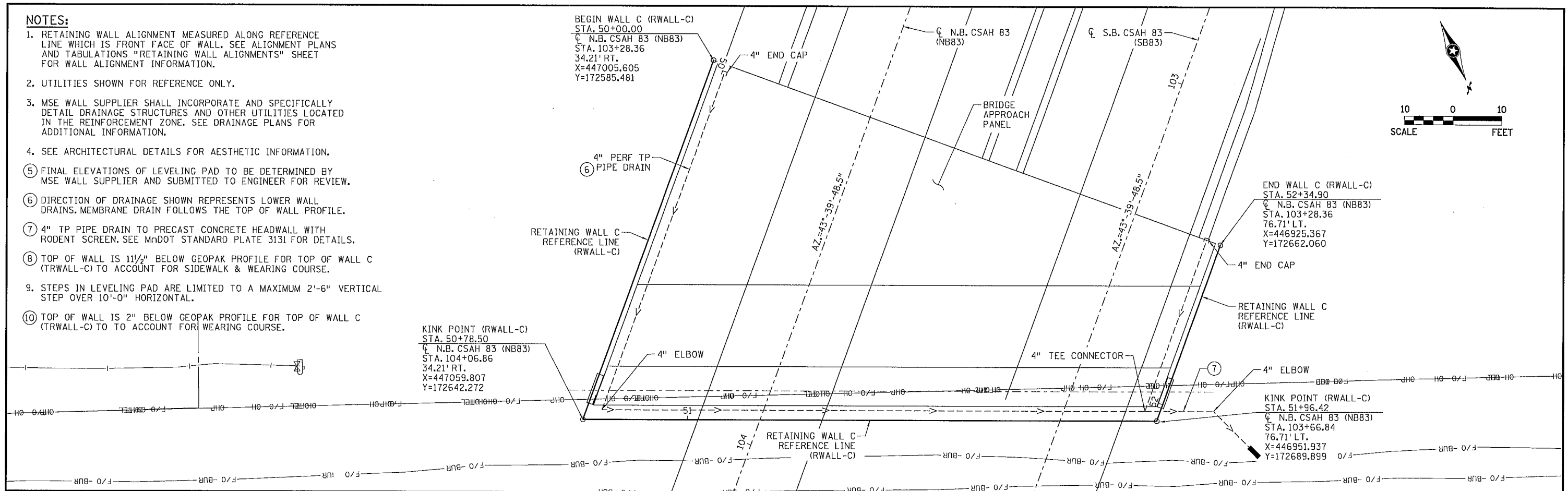
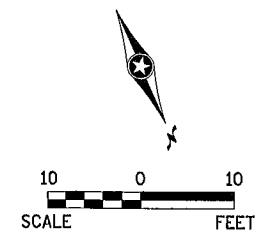
ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TYPICAL SECTION & SUMMARY OF QUANTITIES - WALL C  
 (SHEET 2 OF 2)

MSE  
 SHEET  
 270  
 OF  
 586

**NOTES:**

1. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
2. UTILITIES SHOWN FOR REFERENCE ONLY.
3. MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
5. FINAL ELEVATIONS OF LEVELING PAD TO BE DETERMINED BY MSE WALL SUPPLIER AND SUBMITTED TO ENGINEER FOR REVIEW.
6. DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
7. 4" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MnDOT STANDARD PLATE 3131 FOR DETAILS.
8. TOP OF WALL IS 1 1/2" BELOW GEOPAK PROFILE FOR TOP OF WALL C (TRWALL-C) TO ACCOUNT FOR SIDEWALK & WEARING COURSE.
9. STEPS IN LEVELING PAD ARE LIMITED TO A MAXIMUM 2'-6" VERTICAL STEP OVER 10'-0" HORIZONTAL.
10. TOP OF WALL IS 2" BELOW GEOPAK PROFILE FOR TOP OF WALL C (TRWALL-C) TO ACCOUNT FOR WEARING COURSE.



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STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

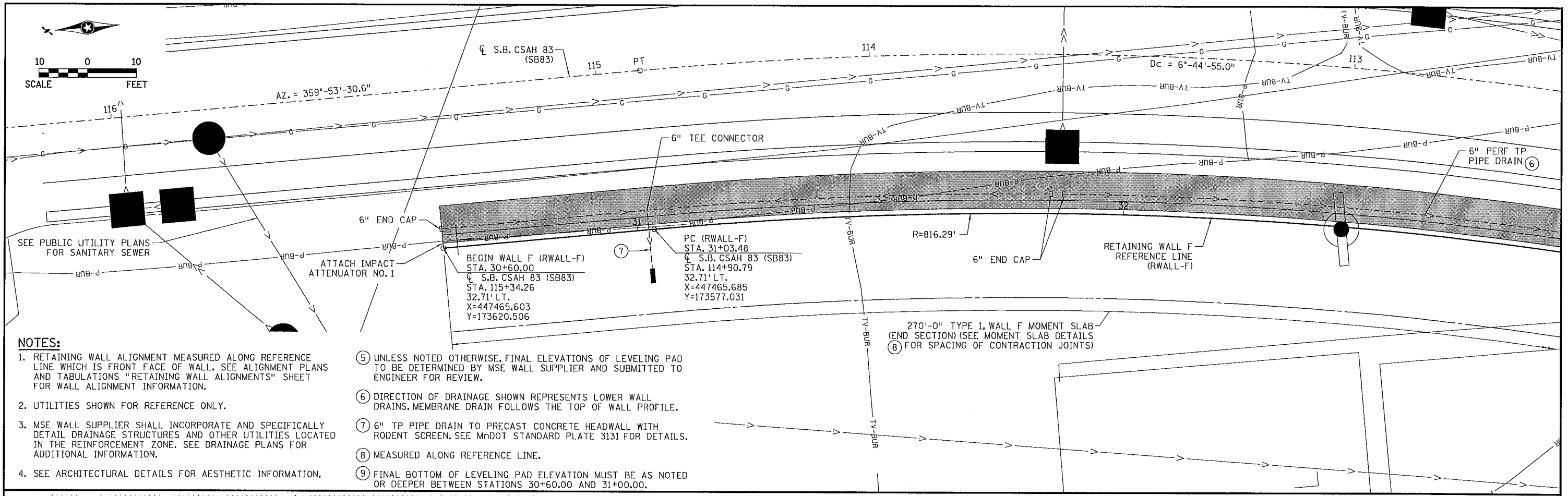
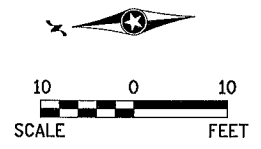


ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL C

MSE SHEET 271 OF 586

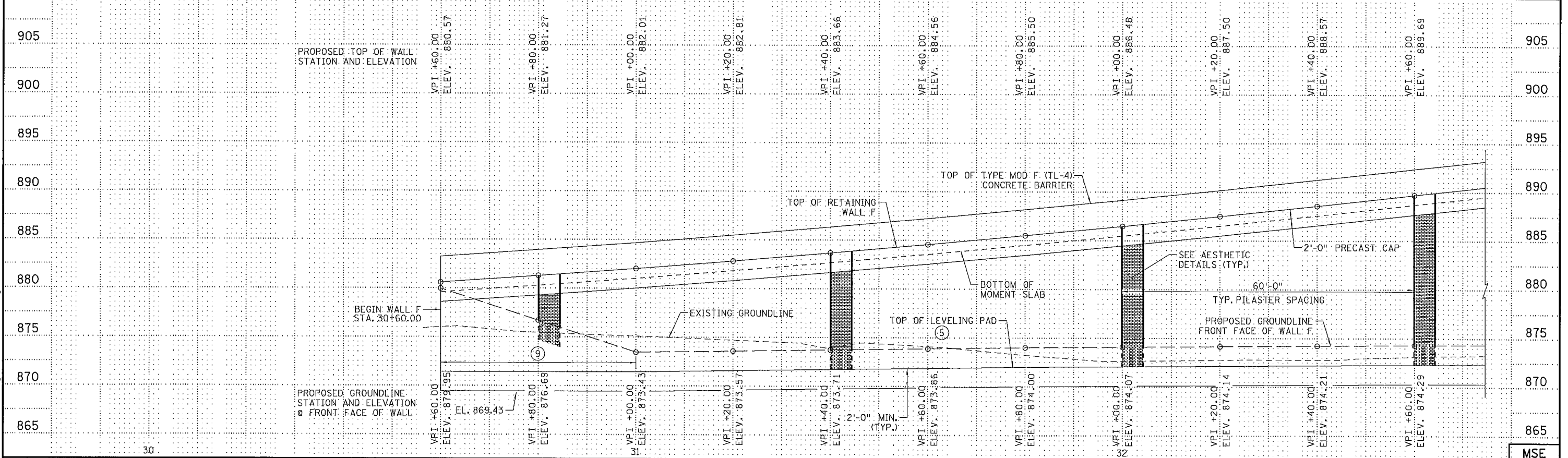






**NOTES:**

1. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
2. UTILITIES SHOWN FOR REFERENCE ONLY.
3. MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
5. UNLESS NOTED OTHERWISE, FINAL ELEVATIONS OF LEVELING PAD TO BE DETERMINED BY MSE WALL SUPPLIER AND SUBMITTED TO ENGINEER FOR REVIEW.
6. DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
7. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MnDOT STANDARD PLATE 3131 FOR DETAILS.
8. MEASURED ALONG REFERENCE LINE.
9. FINAL BOTTOM OF LEVELING PAD ELEVATION MUST BE AS NOTED OR DEEPER BETWEEN STATIONS 30+60.00 AND 31+00.00.



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 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

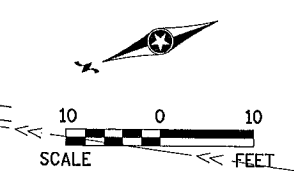
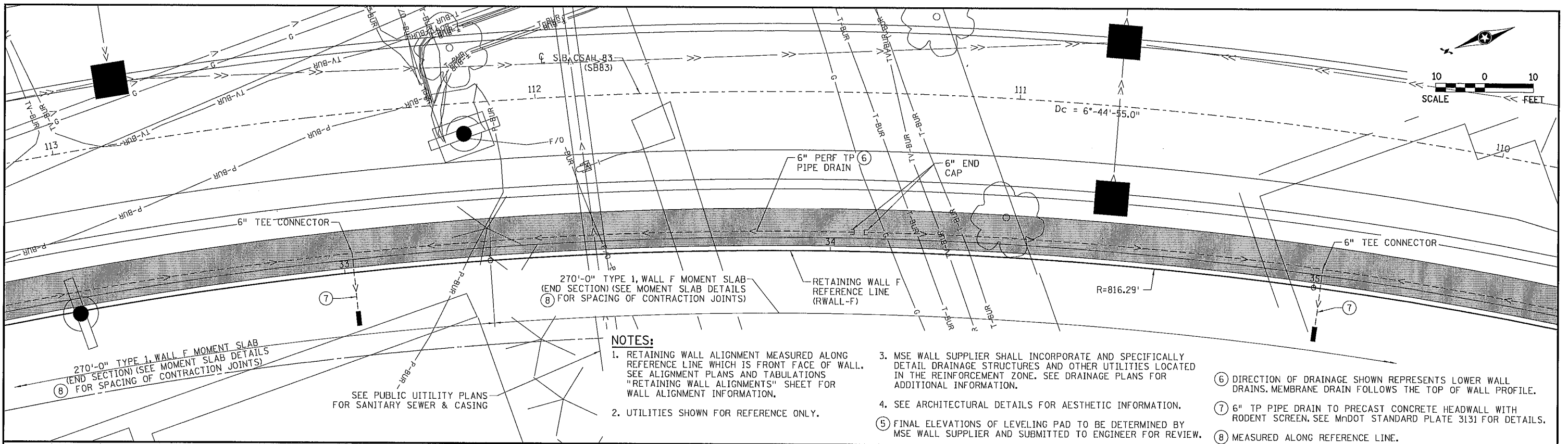
DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**SRF**  
 Consulting Group, Inc.  
 ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL F (SHEET 1 OF 3)

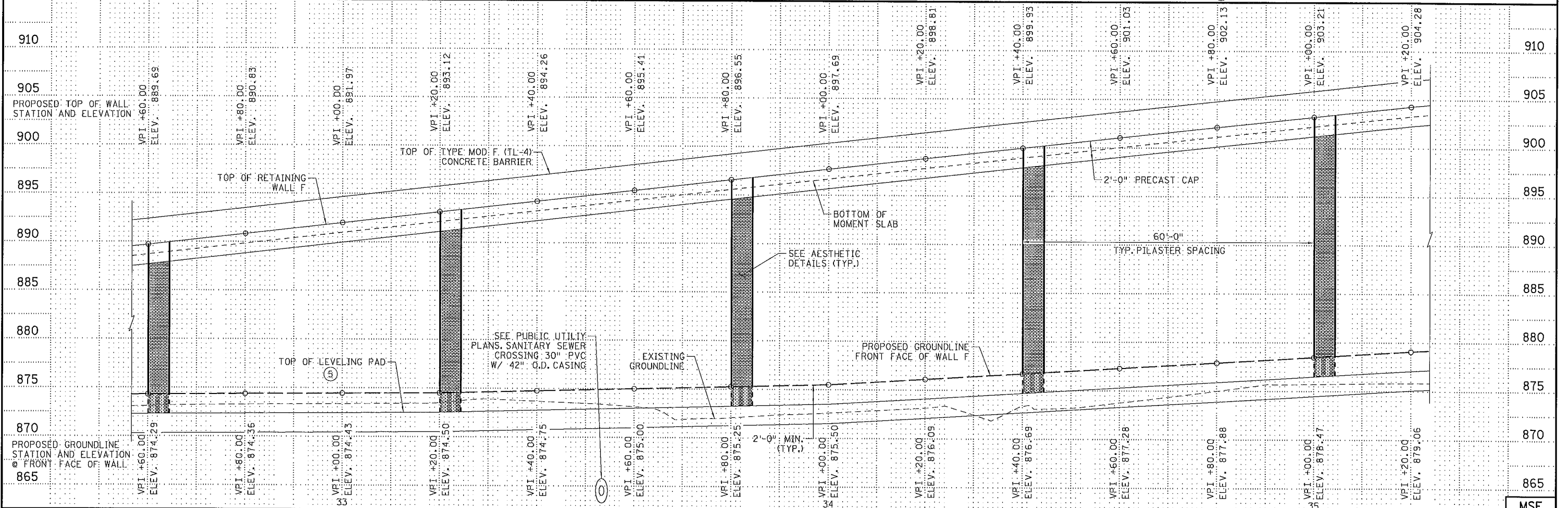
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**NOTES:**

- RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
- UTILITIES SHOWN FOR REFERENCE ONLY.
- MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
- SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
- FINAL ELEVATIONS OF LEVELING PAD TO BE DETERMINED BY MSE WALL SUPPLIER AND SUBMITTED TO ENGINEER FOR REVIEW.
- DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
- 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MNDOT STANDARD PLATE 313J FOR DETAILS.
- MEASURED ALONG REFERENCE LINE.



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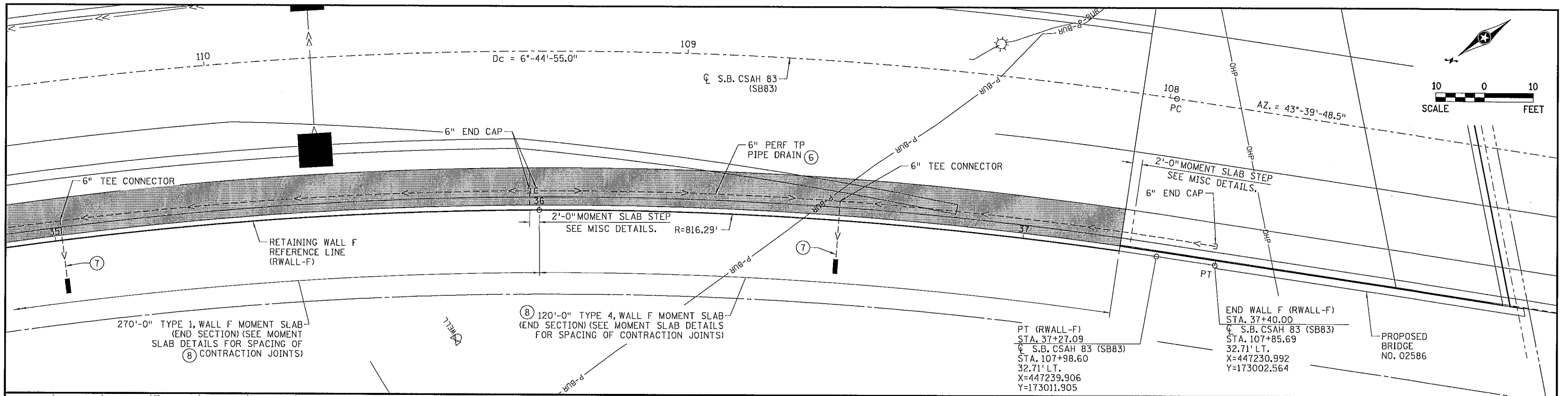
STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 E. JOHNSON  
 DESIGNED BY  
 A. RENSTROM  
 CHECKED BY  
 J. GRONERT  
 COMM. NO. 0138259



**ANOKA COUNTY**  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL F (SHEET 2 OF 3)

MSE  
 SHEET  
 274  
 OF  
 586



- NOTES:**
1. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS. "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
  2. UTILITIES SHOWN FOR REFERENCE ONLY.
  3. MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
  4. SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
  5. FINAL ELEVATIONS OF LEVELING PAD TO BE DETERMINED BY MSE WALL SUPPLIER AND SUBMITTED TO ENGINEER FOR REVIEW.
  6. DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
  7. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MnDOT STANDARD PLATE 3131 FOR DETAILS.
  8. MEASURED ALONG REFERENCE LINE.
  9. TOP OF BARRIER SHALL MATCH TOP OF BRIDGE WING WALL PILASTER.

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STATE AID PROJECT NO.  
 002-683-004  
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 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 E. JOHNSON  
 DESIGNED BY  
 A. RENSTROM  
 CHECKED BY  
 J. GRONERT  
 COMM. NO. 0138259

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 Consulting Group, Inc.

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL F (SHEET 3 OF 3)

MSE  
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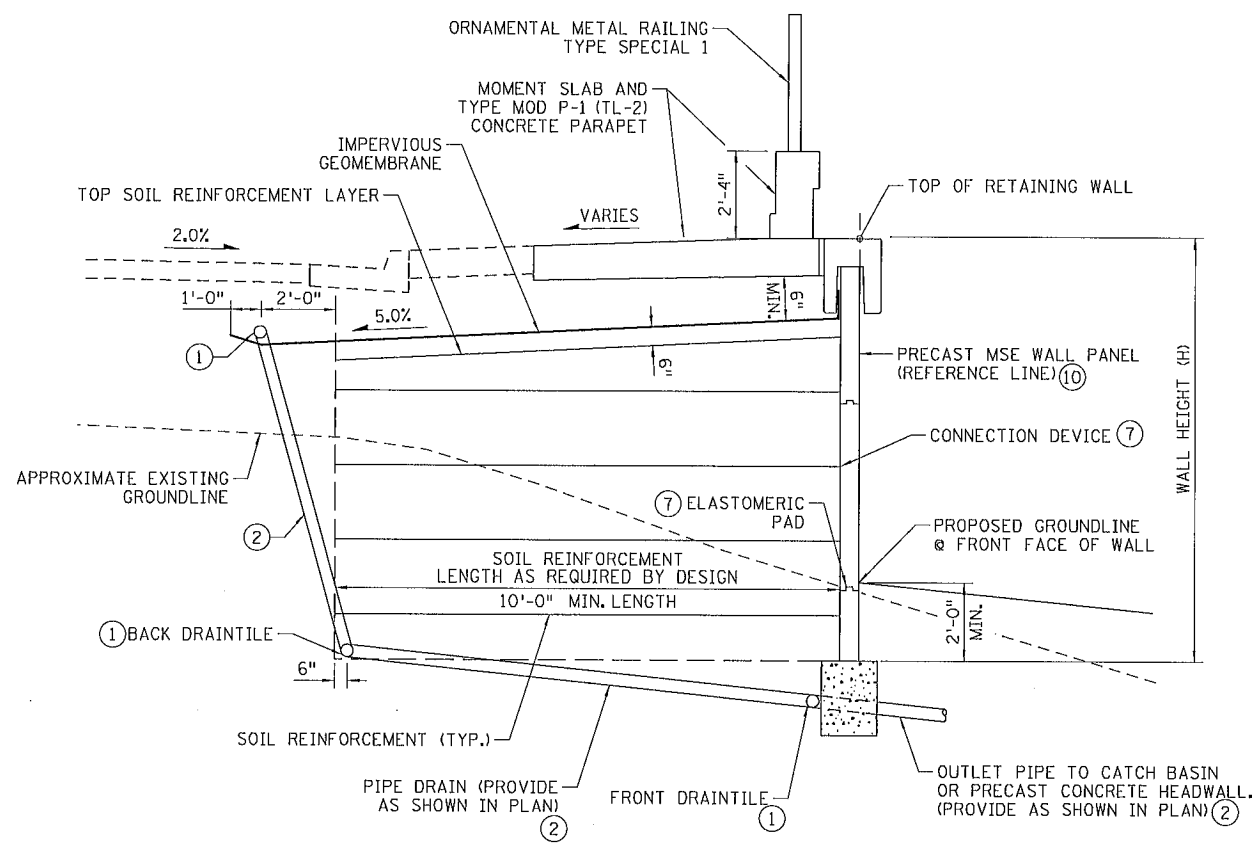
**SUMMARY OF QUANTITIES FOR RETAINING WALL G ③**

ITEM	UNIT	QUANTITY
⑬ TYPE MOD P-1 (TL-2) RAILING CONCRETE (3Y46)	LIN FT	460
ORNAMENTAL METAL RAILING TYPE SPECIAL 1	LIN FT	460
⑭ STRUCTURAL CONCRETE (3Y43)	CU YD	123
REINFORCEMENT BARS (EPOXY COATED)	POUND	21170
⑮ MECHANICALLY STABILIZED EARTH WALL	SQ YD	650
ARCHITECTURAL CONCRETE TEXTURE (THIN BRICK)	SQ FT	330
⑯ SPECIAL SURFACE FINISH	SQ FT	7300
ARCH. SURFACE FINISH (MULTI-COLOR)	SQ FT	330
⑰ ANTI-GRAFFITI COATING	SQ FT	5700
6" TP PIPE DRAIN	LIN FT	180
6" PERF. TP PIPE DRAIN	LIN FT	1380
6" PRECAST CONCRETE HEADWALL	EACH	2

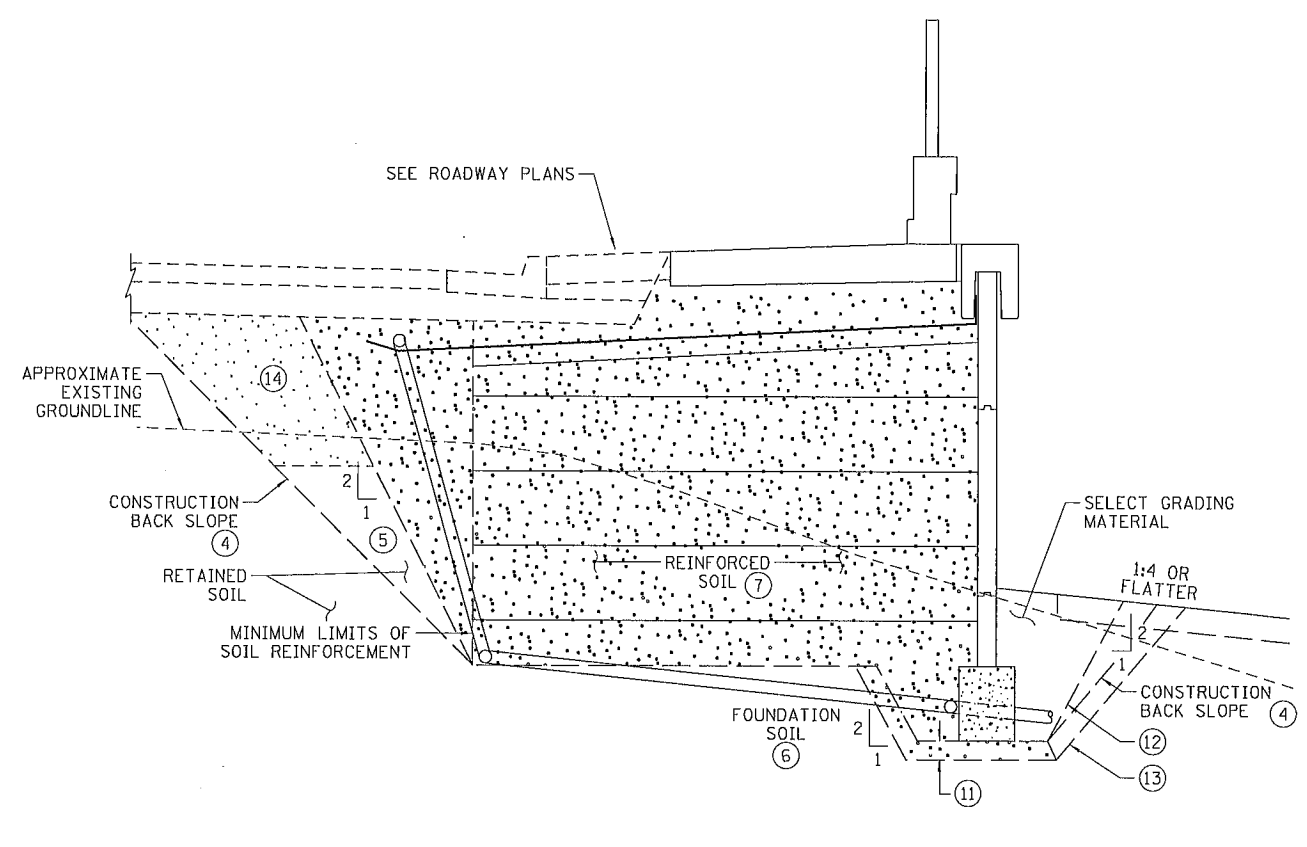
**NOTES:**

- ① 6" PERF TP PIPE DRAIN MnDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE.
- ② 6" TP PIPE DRAIN.
- ③ DRAINAGE TEES, DRAINAGE ELBOWS, DRAINAGE END CAPS AND HEADWALLS SHALL BE INCIDENTAL.
- ④ ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS.
- ⑤ BETWEEN THE REINFORCED ZONE AND CONSTRUCTION BACK SLOPE, PLACE GRANULAR BACKFILL COMPACTED IN ACCORDANCE WITH MnDOT SPEC. 2106.
- ⑥ SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MnDOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- ⑦ SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
8. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
9. SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.

- ⑩ FOR ARCHITECTURAL TREATMENTS, SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEETS.
- ⑪ SUBCUT LIMITS, IF REQUIRED.
- ⑫ PAY LIMITS WHEN NO SUBCUT IS REQUIRED.
- ⑬ PAY LIMITS WHEN SUBCUT IS REQUIRED.
- ⑭ REPRESENTS ROADWAY GRADING. GRADING TO FOLLOW REQUIREMENTS FOR TYPICAL ROADWAY SECTION AT THIS LOCATION. QUANTITIES INCLUDED UNDER ROADWAY GRADING ITEMS.
- ⑮ MOMENT SLAB (RETAINING WALL G, TYPE 3) VOLUME IS APPROXIMATELY 0.265 CU. YDS./FT.
- ⑯ TYPE MOD P-1 (TL-2) RAILING CONCRETE (3Y46) IS APPROXIMATELY 0.093 CU. YDS./FT.
- ⑰ PAY ITEM INCLUDES MSE WALL PANELING, SURFACE TEXTURE, SOIL REINFORCEMENT, PRECAST CAP, IMPERVIOUS MEMBRANE, LEVELING PAD, PIPE SLEEVES AND ANY OTHER ITEMS AS SHOWN IN THE SPECIAL PROVISIONS. PAYMENT IS BASED ON WALL FACE AREA USING A VERTICAL PLANE FROM THE TOP OF WALL TO 2'-0" BELOW PROPOSED GROUNDLINE (EXCEPT WHERE REQUIREMENTS FOR BOTTOM OF LEVELING PAD ELEVATIONS ARE NOTED).
- ⑱ SURFACE FINISH IS TO BE APPLIED TO ALL EXPOSED SURFACES TO 4'-0" BELOW FRONT FACE GROUNDLINE WHICH INCLUDES THE COPING, PILASTERS AND ALL EXPOSED SURFACES OF THE BARRIERS/PARAPETS. (EXCEPT THE ROADWAY FACE AND TOP OF BARRIER.) SEE SPECIAL PROVISIONS.



STRUCTURAL DETAILS



TYPICAL SECTION (NOT TO SCALE)

BACKFILL DETAILS

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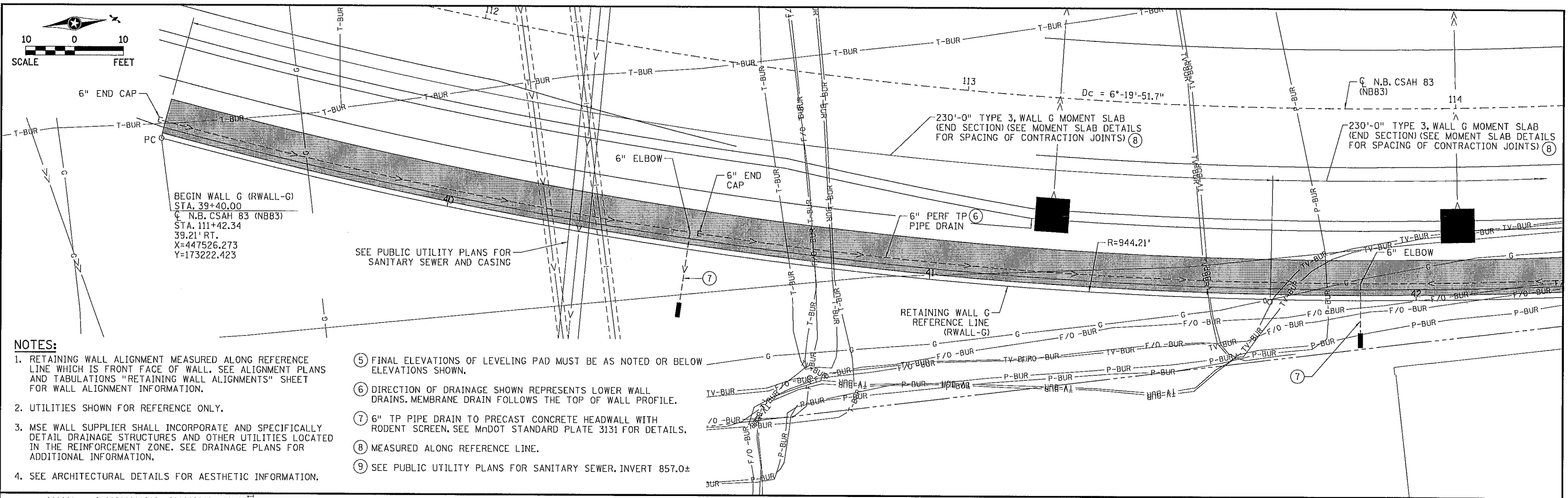
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.                        
 CITY PROJECT NO.                      

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**SRF** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

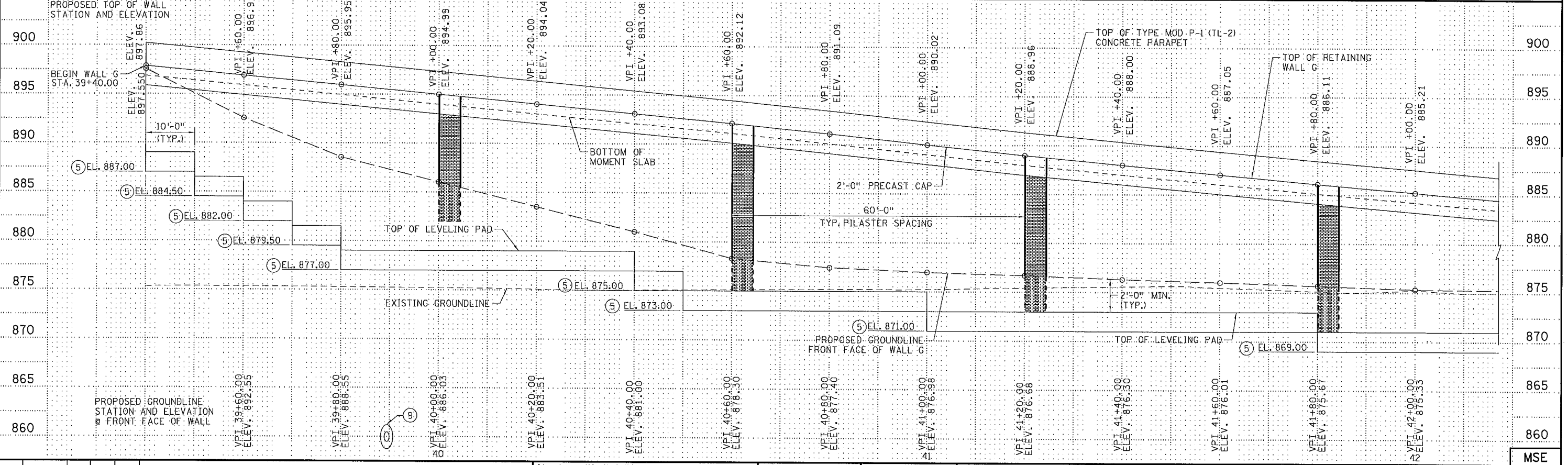
ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 GEOMETRICS AND SUMMARY OF QUANTITIES - WALL G

MSE SHEET 276 OF 586



**NOTES:**

1. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
2. UTILITIES SHOWN FOR REFERENCE ONLY.
3. MSE WALL SUPPLIER SHALL INCORPORATE AND SPECIFICALLY DETAIL DRAINAGE STRUCTURES AND OTHER UTILITIES LOCATED IN THE REINFORCEMENT ZONE. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.
4. SEE ARCHITECTURAL DETAILS FOR AESTHETIC INFORMATION.
5. FINAL ELEVATIONS OF LEVELING PAD MUST BE AS NOTED OR BELOW ELEVATIONS SHOWN.
6. DIRECTION OF DRAINAGE SHOWN REPRESENTS LOWER WALL DRAINS. MEMBRANE DRAIN FOLLOWS THE TOP OF WALL PROFILE.
7. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MDDOT STANDARD PLATE 3131 FOR DETAILS.
8. MEASURED ALONG REFERENCE LINE.
9. SEE PUBLIC UTILITY PLANS FOR SANITARY SEWER, INVERT 857.0±



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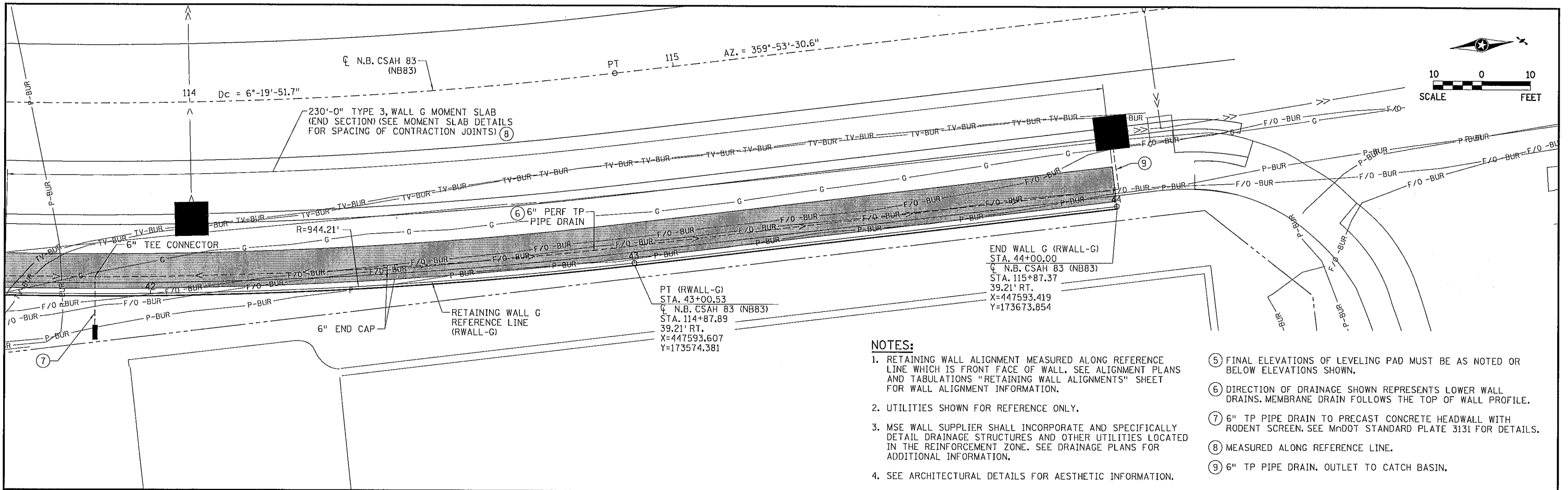
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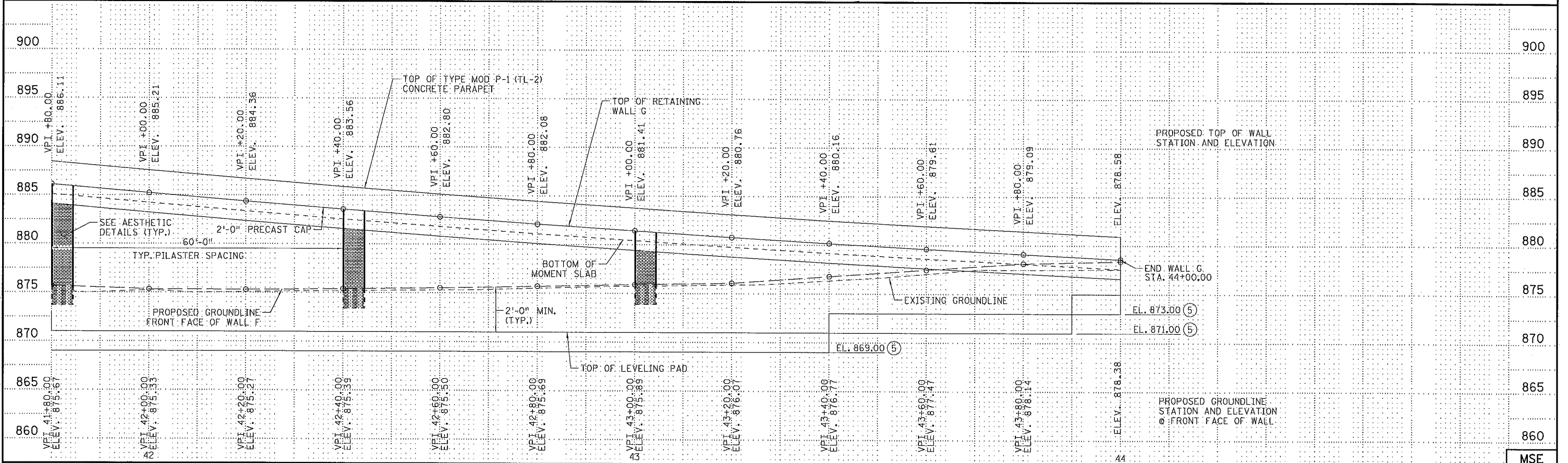
ANOKA COUNTY  
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 PLAN & PROFILE - WALL G (SHEET 1 OF 2)

MSE SHEET 277 OF 586





- NOTES:**
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  7. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MUDOT STANDARD PLATE 3131 FOR DETAILS.
  8. MEASURED ALONG REFERENCE LINE.
  9. 6" TP PIPE DRAIN. OUTLET TO CATCH BASIN.



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*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

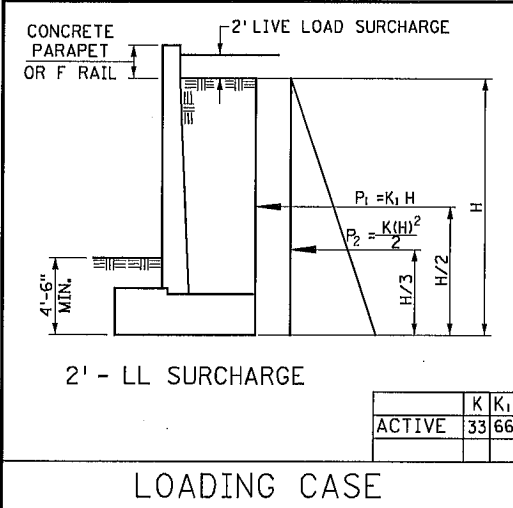
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.      

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**SRI** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 MSE RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL G (SHEET 2 OF 2)

MSE SHEET 278 OF 586



**DESIGN CRITERIA**

1992 AASHTO DESIGN SPECIFICATIONS  
 WORKING STRESS-STABILITY, FOUNDATIONS  
 LOAD FACTOR DESIGN-REINFORCED CONCRETE  
 $f'_c = 4000$  PSI  
 $f_y = 60000$  PSI       $n = 8$

SEE FOUNDATION REPORT FOR RECOMMENDED FOUNDATION TYPE.

BACKFILL CHARACTERISTICS:  
 INTERNAL ANGLE OF FRICTION: 35°  
 EQUIVALENT FLUID PRESSURE (k), IN PCF, IS SHOWN IN LOADING CASE TABLES.  
 UNIT WEIGHT      125 PCF  
 COEFFICIENT OF FRICTION      0.55  
 $\beta_e = 1.0$

**BAR LAP (CLASS C)**

BAR SIZE	PLAIN ②	EPOXY ②
4		1'-8"
5	2'-5"	2'-11"
6	2'-11"	3'-10"
7	3'-8"	4'-11"
8	4'-10"	6'-5"
9	6'-1"	8'-1"

**BAR LAP (CLASS A)**

BAR SIZE		EPOXY ②
5		1'-11"
6		2'-3"
7		2'-11"
8		3'-9"
9		4'-9"

LOADING CASE

**GENERAL NOTES:**

**UTILITIES:**  
 EXISTING AND PROPOSED UTILITIES ARE SHOWN IN THE GRADING PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FACILITIES AND SHALL EXERCISE CARE IN ADJACENT CONSTRUCTION.

**EXCAVATION AND EARTHWORK:**  
 ALL EXCAVATION AND EMBANKMENT WORK SHALL CONFORM TO SPEC. 2451.

**CONCRETE:**  
 ALL CONCRETE SHALL CONFORM TO SPEC. 2461.

TRANSVERSE CONSTRUCTION JOINTS IN FOOTING ARE PERMISSIBLE. KEYWAYS AND CONTINUOUS REINFORCEMENT ARE REQUIRED THROUGH THESE JOINTS.

THE THICKNESS OF THE ARCHITECTURAL CONCRETE TEXTURE VARIES WITH THE TEXTURE RELIEF. THE STRUCTURAL CONCRETE 3Y43 QUANTITIES DO NOT INCLUDE THE MATERIAL WITHIN THE ARCHITECTURAL CONCRETE TEXTURE. CONCRETE NEEDED FOR THE TEXTURING IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE. SEE SPECIAL PROVISIONS 2411.

FOR RETAINING WALLS THAT ABUT A BRIDGE OR BRIDGE WING WALL, NOTE THAT THE DESIGNATION OF "FRONT FACE" MAY VARY FROM THE BRIDGE PLANS TO THE RETAINING WALL PLANS.

**POURING SEQUENCE:**  
 THE POURING SEQUENCE SHALL BE AT THE CONTRACTOR'S OPTION BUT MUST BE SUBMITTED (WITH ADEQUATE APPROVAL TIME) TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING THE FIRST POUR.

**CONSTRUCTION:**  
 CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPEC. 2411, EXCEPT AS NOTED.

**REINFORCING STEEL:**  
 REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS CONFORMING TO SPEC. 3301, GRADE 60 AND EPOXY COATED EXCEPT AS NOTED.

THE CLEAR DISTANCE BETWEEN REINFORCEMENT BARS AND FACE OF CONCRETE SHALL BE 3 INCHES IN FOOTINGS, 5 INCHES IN BOTTOM OF SPREAD FOOTINGS, 2 INCHES ON ARCHITECTURAL CONCRETE TEXTURE, AND 2 INCHES ELSEWHERE UNLESS OTHERWISE NOTED.

THE FIRST DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE.

ALL BENT BAR DIMENSIONS ARE GIVEN OUT-TO-OUT.

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED. ALL BARS WHICH COME OUT OF THE FOOTING AND ALL BARS WHICH ARE ABOVE THE FOOTING SHALL BE EPOXY COATED.

THE CONTRACTOR HAS THE OPTION OF SUBSTITUTING 60'-0" LONG BARS FOR THE LONGITUDINAL FOOTING STEEL SHOWN. CHANGES IN THE BILL OF REINFORCEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT WILL BE BASED ON QUANTITIES SHOWN.

FOR VARIABLE STEM HEIGHTS, VARY THE LAP LENGTH OF THE VERTICAL REINFORCEMENT. MINIMUM LAP LENGTHS ARE GIVEN IN THE TABLE ON THIS SHEET. SMALLER BAR GOVERNS LAP LENGTH.

**DOWEL BAR ASSEMBLIES:**  
 DOWELED JOINTS/CONSTRUCTION JOINTS ARE SHOWN ON SHEET 292. THESE JOINTS ARE INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR SOME OF THE CORK & DOWEL JOINTS AT THE CONTRACTOR'S OPTION. CORK & DOWEL JOINTS MUST BE SPACED AT 91'-6" MAXIMUM.

CORK & DOWEL JOINTS MUST BE USED IN VERTICAL JOINTS AT FOOTING STEP LOCATIONS.

**GEOMETRICS AND GRADES:**  
 DATA FOR BASELINE GEOMETRY IS TABULATED FOR WALL ALIGNMENT, SEE LAYOUT SHEETS. WALL ALIGNMENT REFERENCE IS ALONG FRONT FACE OF WALL.

ON UP TO 10% SLOPES, THE CONTRACTOR HAS THE OPTION OF POURING FOOTINGS SLOPED OR STEPPED. ADDITIONAL CONCRETE VOLUMES AND CHANGES TO THE BILL OF REINFORCEMENT WHICH MAY RESULT FROM CONTRACTOR REQUESTED OPTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE.

**NOTES:**

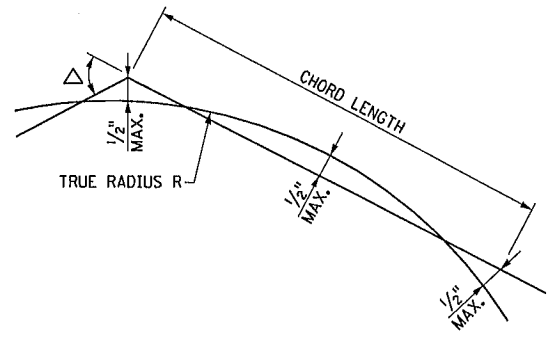
- ① CURVED FORMS MAY BE USED FOR ANY WALL WITH A RADIUS, BUT MUST BE USED ON WALLS WITH RADIUS LESS THAN 23 FEET.
- ② LAPS ARE GIVEN FOR THE TOP BAR CONDITION.
- ③ LIMITING CRITERIA.

**CIP WALLS SHEET INDEX**

SHEET NO.	WALL NO.
279	GENERAL NOTES
280	SUMMARY OF QUANTITIES
281	ARCHITECTURAL DETAILS
282 - 290	CIP WALL PANEL DETAILS
291 - 292	CIP WALL MISCELLANEOUS DETAILS
293 - 295	CIP WALL BARRIER DETAILS
296 - 303	PANEL TABULATIONS
304 - 309	RETAINING WALL A
310 - 311	RETAINING WALL D
312 - 316	RETAINING WALL E

**CURVED RETAINING WALLS ALLOWABLE CHORD LENGTH ①**

MAXIMUM DEGREE OF CURVE	RADIUS	ALLOWABLE CHORD LENGTH	DEVIATION FROM TRUE RADIUS	MAXIMUM DEFLECTION ANGLE Δ
4°-00'	1432'	30'-6"	± 1/2" (3)	1°-15'
8°-00'	716'	21'-10"	± 1/2" (3)	1°-45'
16°-30'	347'	15'-3"	± 1/2" (3)	2°-30'
23°-00'	249'	12'-11"	± 1/2" (3)	2°-57'
65°-30'	87'	7'-7 1/2"	± 1/2"	5°-00' (3)
114°-30'	50'	4'-4 5/8"	± 1/4"	5°-00' (3)
250°-00'	23'	2'-0"	± 1/8"	5°-00' (3)



SEE SHEETS 245 - 278 FOR MSE WALLS.  
 SEE SPECIAL PROVISIONS DIVISION SB FOR ADDITIONAL DESIGN, SUBMITTAL MATERIALS, AND CONSTRUCTION REQUIREMENTS.

REVISED: 6/14/2010  
 APPROVED: MAY 31, 2006  
*Janet Elizabeth Gronert*  
 STATE BRIDGE ENGINEER

CIP  
 MODIFIED  
 STANDARD SHEET NO.  
 5-297.620  
 STANDARD APPROVED:  
 JUNE 14, 2010

NO	DATE	BY	CKD	APPR	REVISION

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.  
 Pr. Int Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ANOKA COUNTY  
 CIP RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 GENERAL NOTES

SHEET  
 279  
 OF  
 586

3/23/21 PM 9/11/2014 H:\Projects\B259\BR\Plans\Retaining Walls\B259\_WR20.dgn

S SUMMARY OF QUANTITIES FOR CIP RETAINING WALLS ①④															
WALL	STRUCTURAL CONCRETE		REINFORCEMENT BARS		RAILING CONCRETE (3Y46)		AESTHETICS				DRAINAGE				
	1A43 (FOOTING)	3Y43 (STEM)	PLAIN ⑤⑥	EPOXY ⑤⑥	TYPE MOD P-4 (TL-4) ③	TYPE MOD F (TL-4) ②	ARCH. CONCRETE TEXTURE (THIN BRICK)	SPECIAL SURFACE FINISH ⑦	ARCH. SURFACE FINISH (MULTI-COLOR)	ANTI-GRAFFITI COATING	4" TP PIPE DRAIN	4" PERF. TP PIPE DRAIN	6" TP PIPE DRAIN	6" PERF. TP PIPE DRAIN	6" PRECAST CONCRETE HEADWALL ⑧
	CU. YD.	CU. YD.	POUND	POUND	LIN. FT.	LIN. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH
A	1273	1716	108426	286641	891	-	940	17500	940	9820	-	-	100	891	5
D	53	89	4316	9673	-	153	50	1349	50	1398	75	153	-	-	-
E	617	795	51681	119704	561	-	460	9900	460	6124	-	-	80	561	4
TOTAL	1943	2599	164423	416018	1452	153	1450	28749	1450	17342	75	153	180	1452	9

WALL A, B, C AND E WILL BE UNDER S.P. 0202-95

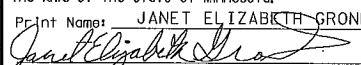

WALL D WILL BE UNDER S.A.P. 199-115-002

WALL F AND G WILL BE UNDER S.A.P. 002-683-004

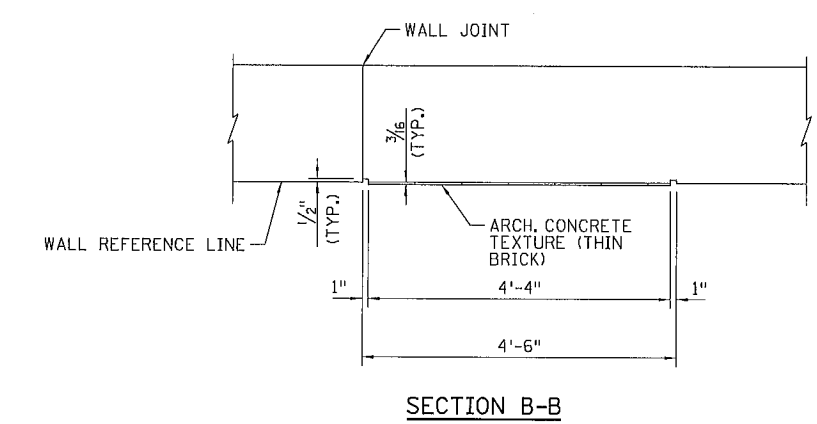
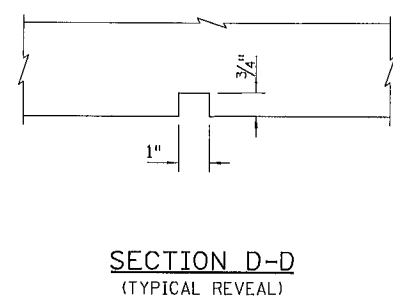
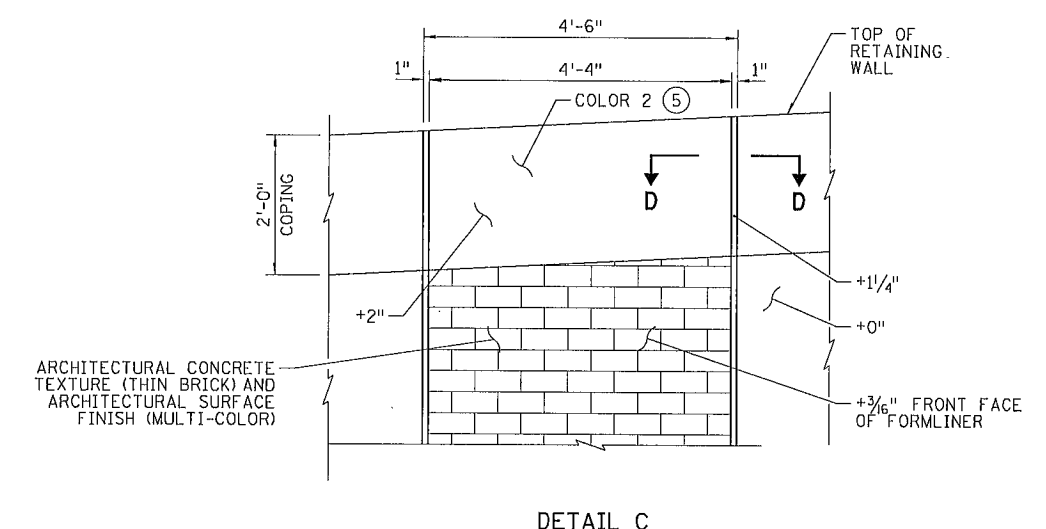
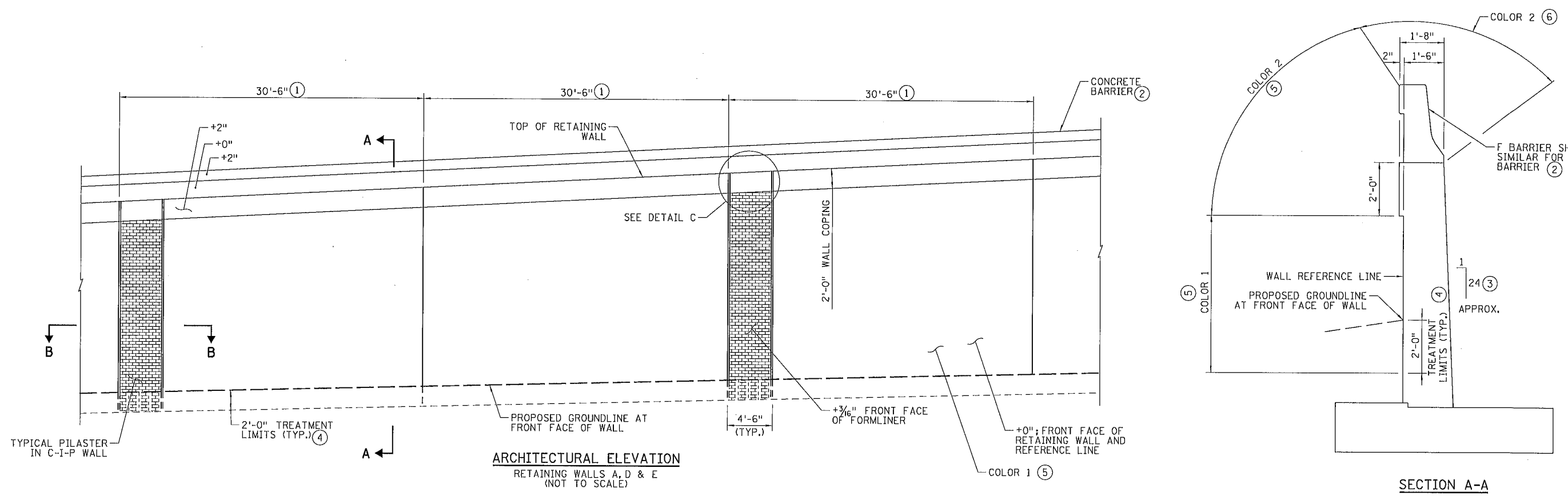
**NOTES:**

- ① SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ② TYPE MOD F (TL-4) RAILING CONCRETE MIX NO. (3Y46) IS APPROXIMATELY 0.115 CU YD/FT.
- ③ TYPE MOD P-4 (TL-4) RAILING CONCRETE MIX NO. (3Y46) IS APPROXIMATELY 0.143 CU YD/FT.
- ④ DRAINAGE TEES, DRAINAGE ELBOWS, DRAINAGE END CAPS, DOWEL BAR ASSEMBLIES, JOINT WATERPROOFING AND JOINT FILLER SHALL BE INCIDENTAL.
- ⑤ REINFORCEMENT OR REINFORCEMENT MODIFICATIONS FOR CONSTRUCTION JOINTS, FOOTING STEPS, AND UTILITY BLOCKOUTS SHALL BE INCIDENTAL. SEE CIP WALL DETAILS FOR MORE INFORMATION.
- ⑥ DOES NOT INCLUDE WEIGHT OF REINFORCEMENT IN CONCRETE BARRIERS. WEIGHT OF REINFORCEMENT IN BARRIERS SHALL BE INCLUDED IN THE PAY ITEM FOR TYPE MOD P-4 (TL-4) CONCRETE BARRIER AND TYPE MOD F (TL-4) CONCRETE BARRIER.
- ⑦ "SPECIAL SURFACE FINISH" INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS.
- ⑧ PRECAST CONCRETE HEADWALLS ARE INCIDENTAL.

3/23/22 PM 9/11/2014 H:\Projects\8259\BRAP\ans\Retaining Walls\8259\_WR21.dgn

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: JANET ELIZABETH GRONERT  Date: 09-12-14 License #: 44325					STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY E. JOHNSON DESIGNED BY A. RENSTROM CHECKED BY J. GRONERT COMM. NO. 0138259	 <b>ENGINEERS PLANNERS DESIGNERS</b>	<b>ANOKA COUNTY</b> CIP RETAINING WALL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE SUMMARY OF QUANTITIES	CIP SHEET 280 OF 586	
NO DATE BY CKD APPR REVISION										





- NOTES:**
- ① TYPICAL JOINT SPACING UNLESS NOTED OTHERWISE. SEE PROFILES FOR JOINT TYPES.
  - ② SEE INDIVIDUAL WALL GEOMETRIC SHEETS FOR WALL SPECIFIC BARRIERS AT TOP OF WALL.
  - ③ WALL PANELS OVER 29' ARE BATTERED AT A 1:12 ANGLE. WALL PANELS A18, A19 ARE BATTERED AT 0.75:12.
  - ④ LIMITS OF ARCHITECTURAL CONCRETE TEXTURE, SURFACE FINISH AND ANTI-GRAFFITI COATING.
  - ⑤ PAY ITEM IS "SPECIAL SURFACE FINISH" INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS.
  - ⑥ ROADWAY FACE AND TOP OF BARRIER ARE TO BE COATED WITH ACRYLIC PAINT AND IS INCIDENTAL. SEE SPECIAL PROVISION.

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NO	DATE	BY	CHKD	APPR	REVISION

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: **JANET ELIZABETH GRONERT**

*Janet Elizabeth Gronert*  
Date: 09-12-14 License #: 44325

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
E. JOHNSON

DESIGNED BY  
A. RENSTROM

CHECKED BY  
J. GRONERT

COMM. NO. 0138259

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

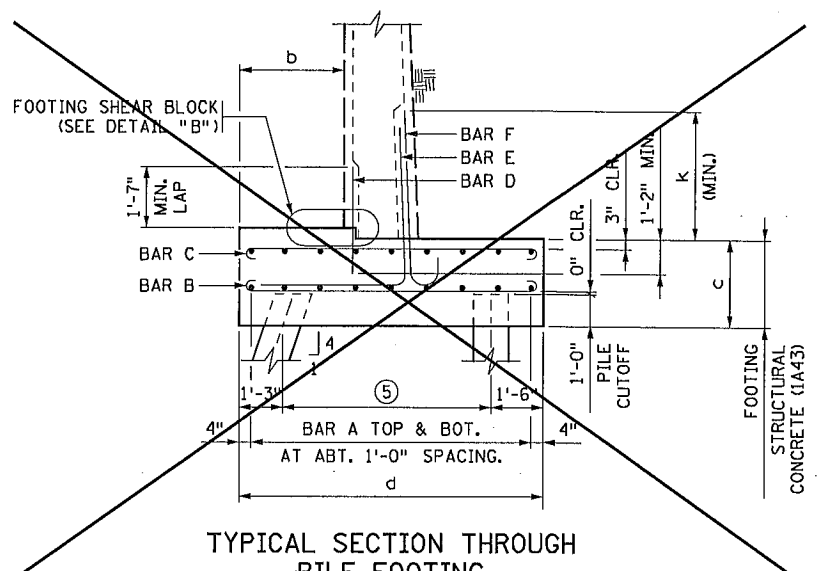
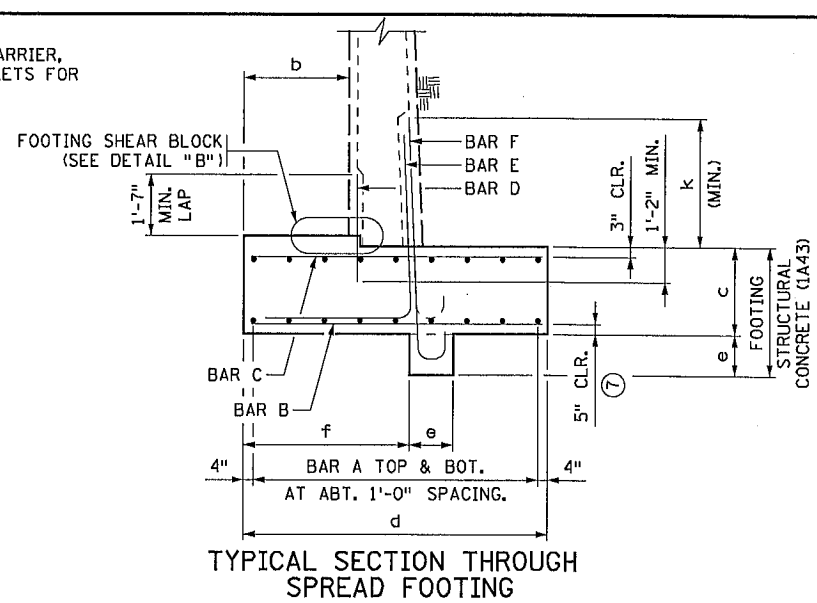
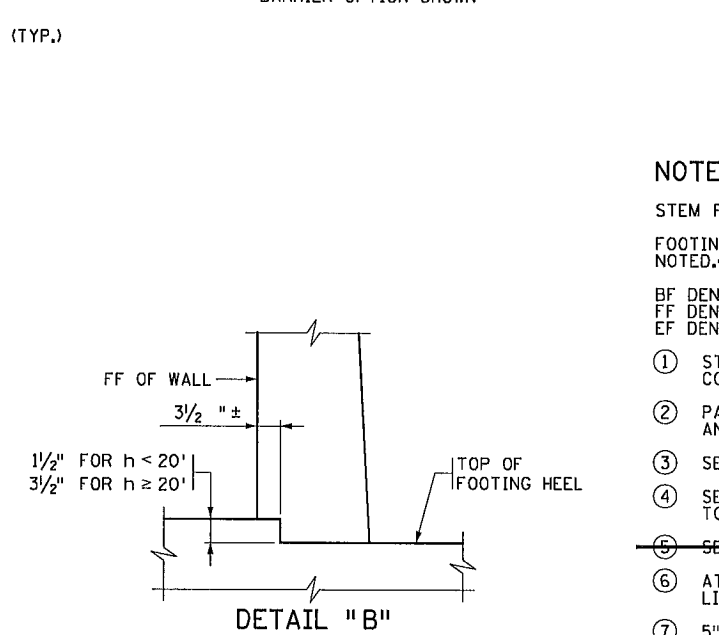
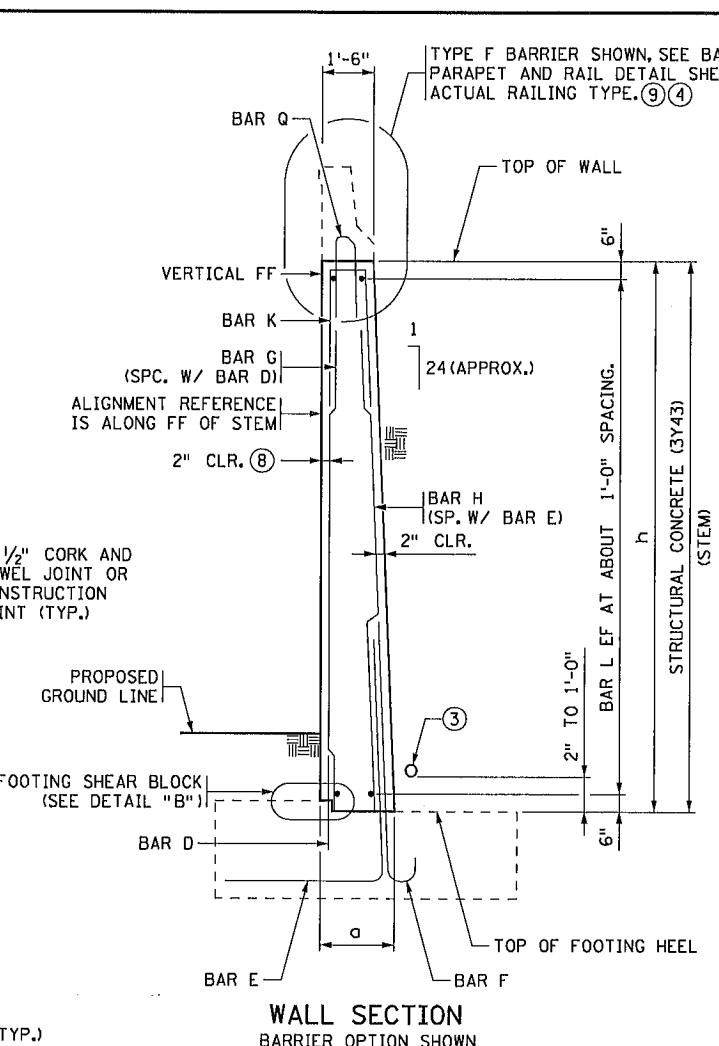
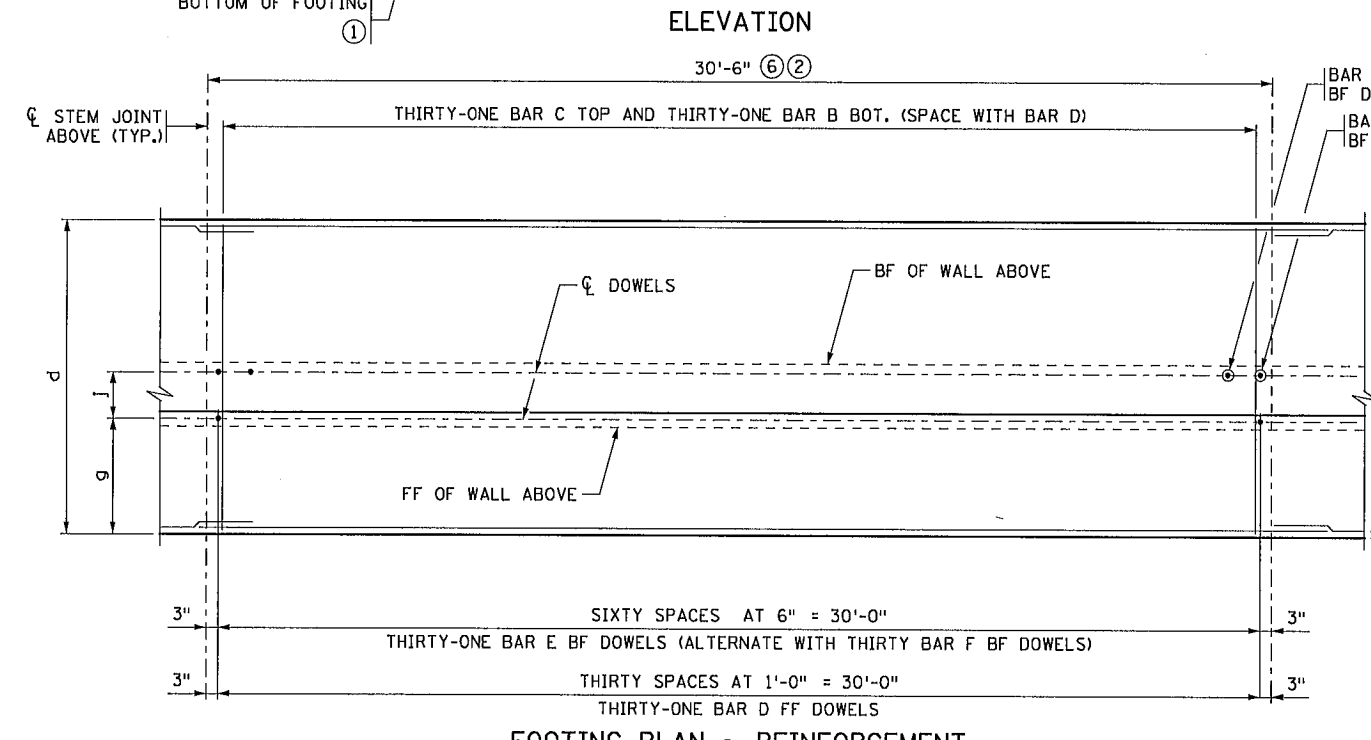
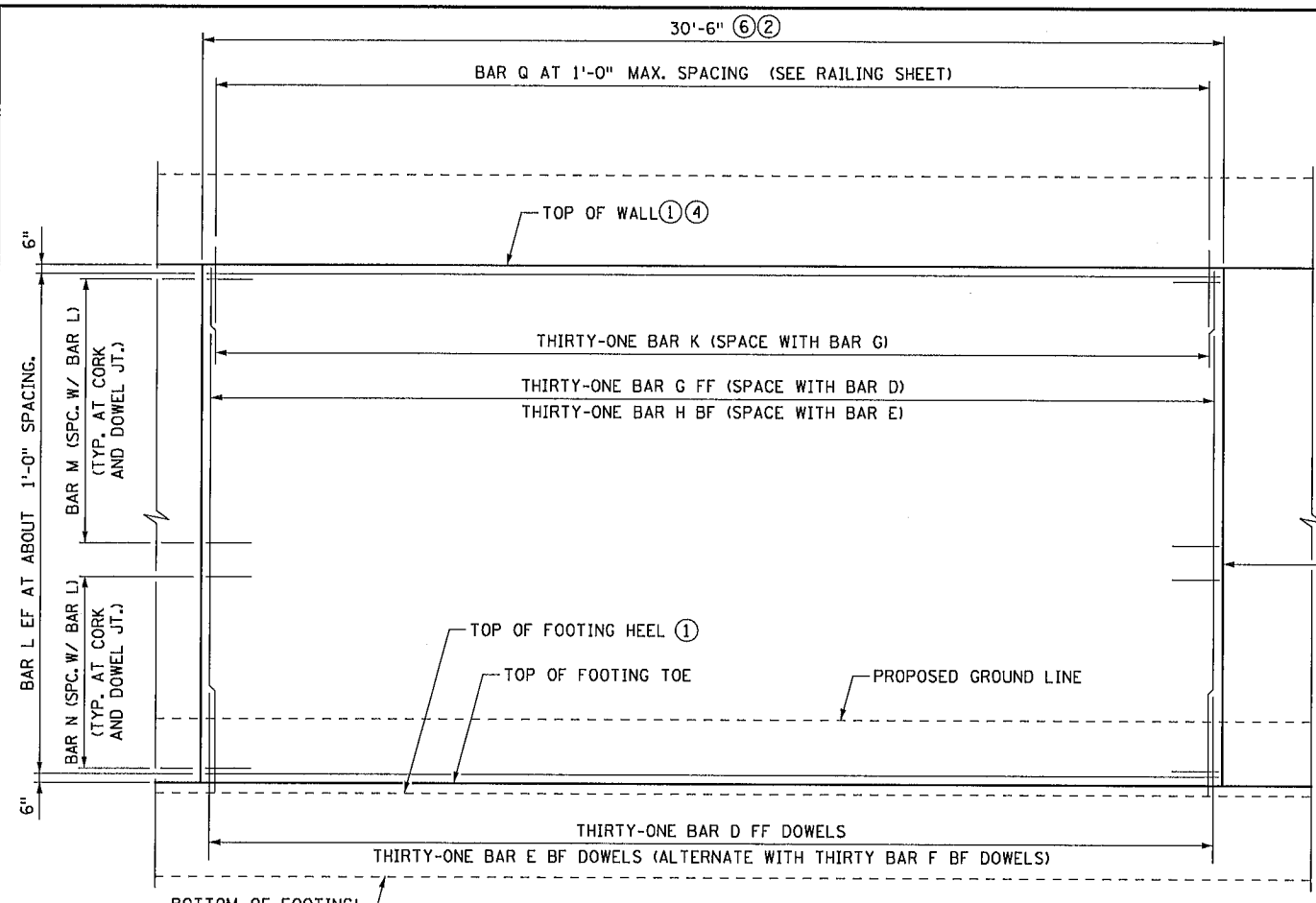
Consulting Group, Inc.

**ANOKA COUNTY**

CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
ARCHITECTURAL DETAILS

CIP  
SHEET  
281  
OF  
586





- NOTES:**
- STEM REINFORCEMENT IS TO BE SYMMETRICALLY/EQUALLY SPACED BETWEEN STEM JOINTS.
  - FOOTING REINFORCEMENT TO BE SYMMETRICAL ABOUT STEM JOINT ABOVE UNLESS OTHERWISE NOTED. SEE RETAINING WALL PLAN & PROFILES FOR PILE SPACING AND LAYOUT.
  - BF DENOTES BACK FACE.  
FF DENOTES FRONT FACE.  
EF DENOTES EACH FACE.
  - ① STRAIGHT LINE BETWEEN ELEVATIONS SHOWN ON WALL ELEVATION (EXCEPT FOR STEPPED CONDITIONS). IF A BARRIER IS NOT USED, TOPS OF RETAINING WALL COULD BE USED.
  - ② PANEL LENGTH MAY VARY. SEE PLAN AND PROFILE SHEETS AND PANEL TABULATIONS FOR LENGTH.
  - ③ SEE WALL TYPICAL SECTIONS FOR SPECIFIC WALL DRAINAGE INFORMATION.
  - ④ SEE WALL TYPICAL SECTIONS AND PLAN AND PROFILE SHEETS FOR SPECIFIC TOP OF WALL DETAILS.
  - ⑤ SEE PLAN AND PROFILE FOR PILE SPACING.
  - ⑥ AT THE CONTRACTOR'S OPTION, PANEL LENGTH MAY VARY UP TO ± 1'-0". BAR CUTTING LISTS SHALL BE REVISED ACCORDINGLY BY CONTRACTOR.
  - ⑦ 5" CLR. FOR ALL BARS EXCEPT 2" CLR. FOR BAR D.
  - ⑧ ARCHITECTURAL CONCRETE TEXTURE NOT SHOWN FOR CLARITY.
  - ⑨ REBAR AND CONCRETE ARE INCLUDED IN THE PAY ITEM BY LINEAR FEET FOR THE BARRIER.

3/23/24 PM 9/11/2014 H:\Projects\B259\B259\B259\Retaining Walls\B259\_WR27.dgn

REVISED: 5-28-2010  
 APPROVED: MAY 31, 2006  
*David S. Morgan*  
 STATE BRIDGE ENGINEER

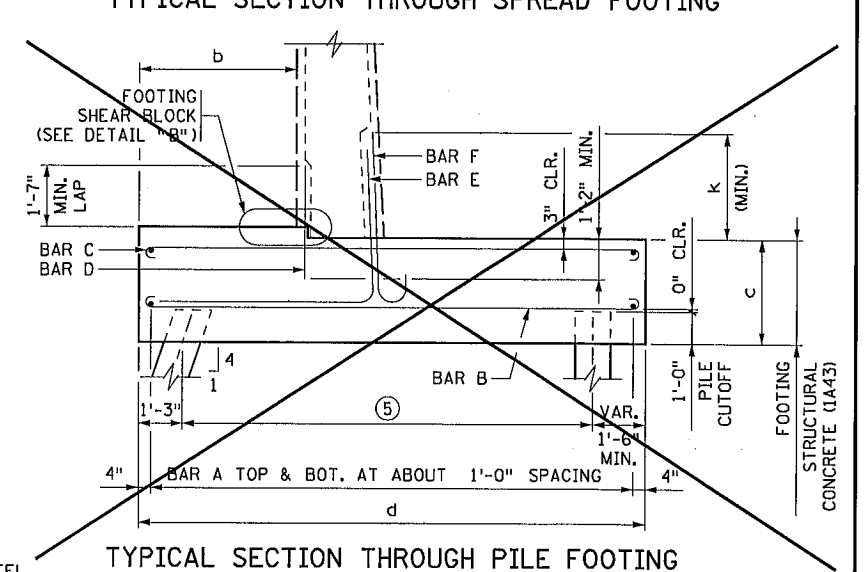
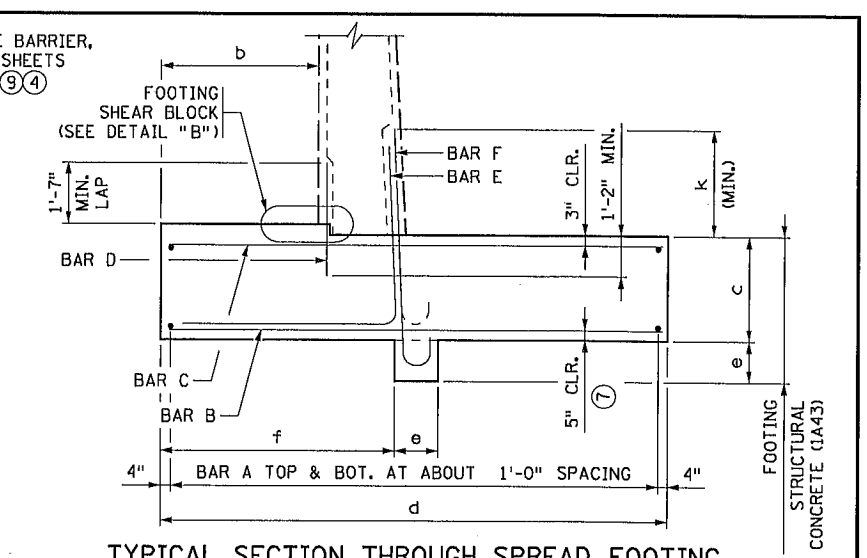
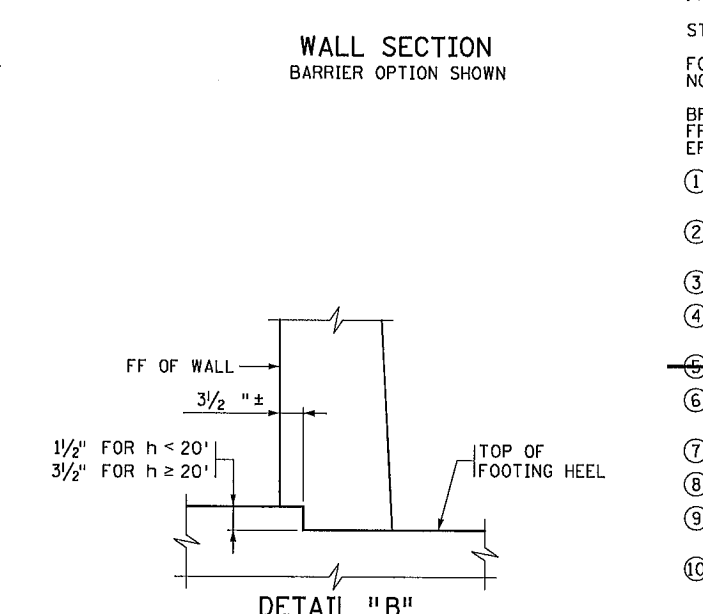
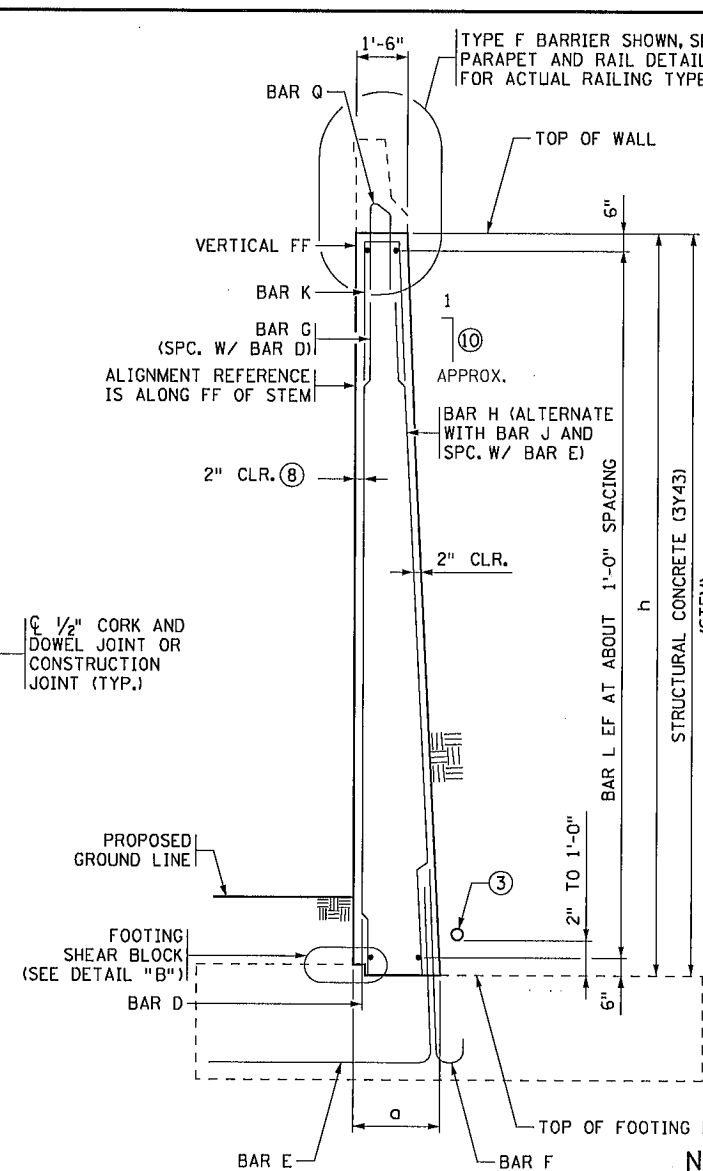
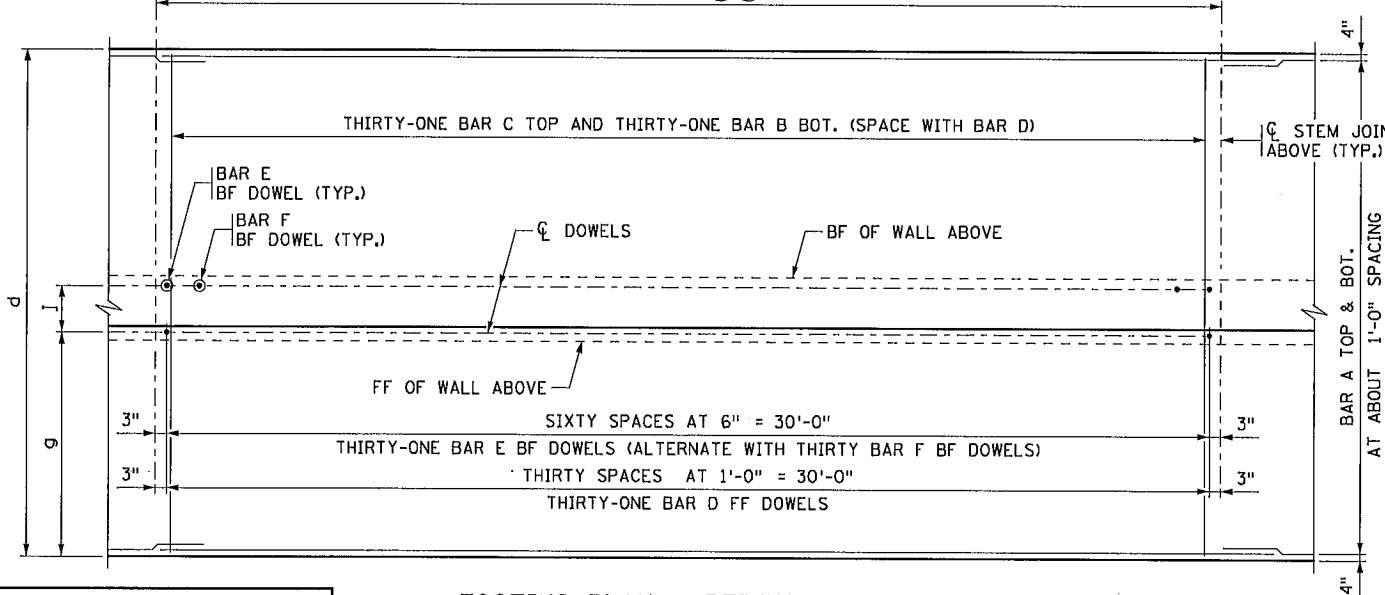
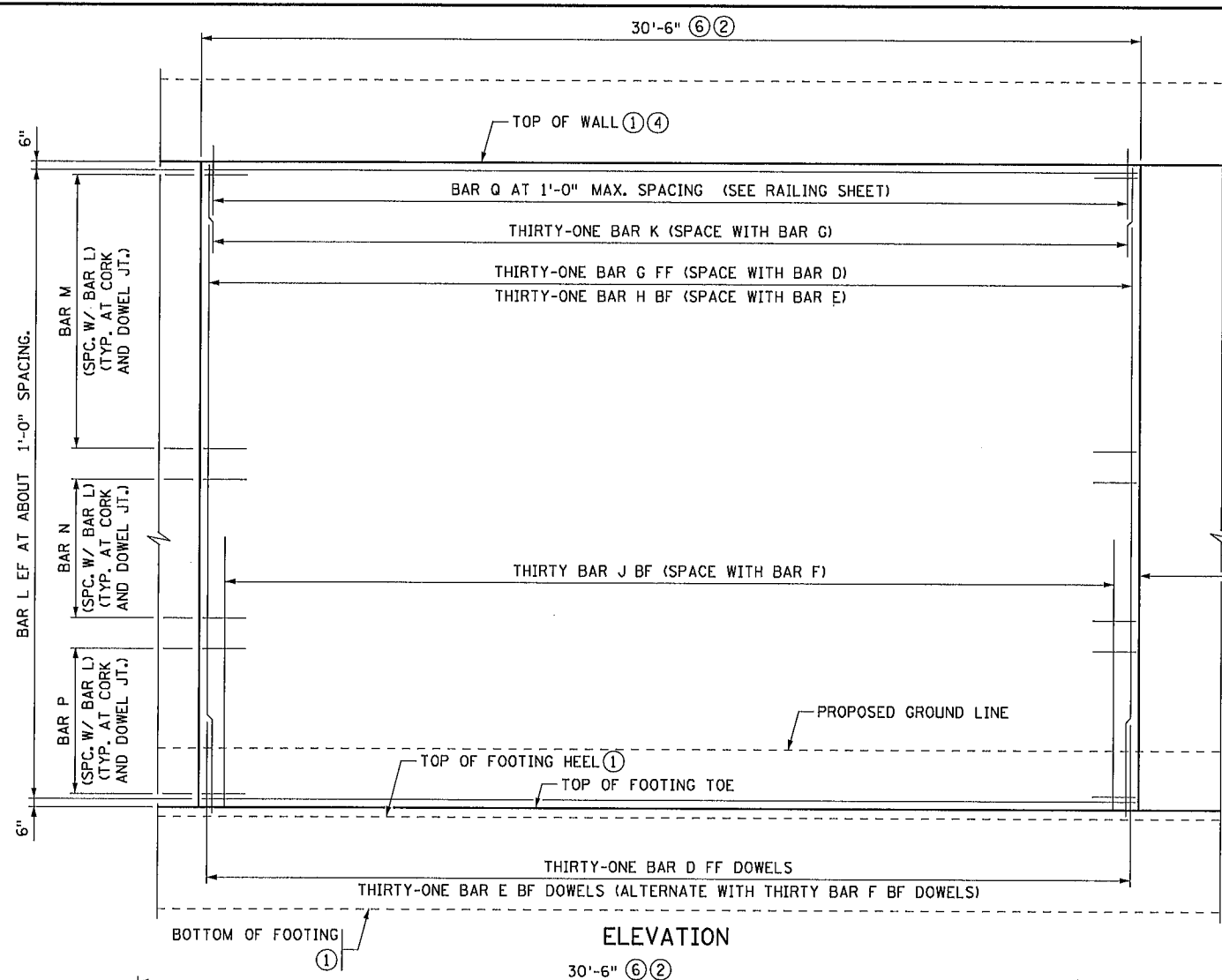
NO	DATE	BY	CKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.        
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



RETAINING WALL REINFORCEMENT (MEDIUM WALLS)	STANDARD SHEET NO. 5-297.622	CIP
ANOKA COUNTY		SHEET 283
CIP RETAINING WALL DETAILS		OF
T.H. 10 / C.S.A.H. 83 INTERCHANGE		586
CIP WALL PANEL DETAILS (SHEET 2 OF 9)		



- NOTES:**
- STEM REINFORCEMENT IS TO BE SYMMETRICALLY/EQUALLY SPACED BETWEEN STEM JOINTS.
  - FOOTING REINFORCEMENT TO BE SYMMETRICAL ABOUT STEM JOINT ABOVE UNLESS OTHERWISE NOTED. SEE RETAINING WALL PLAN & PROFILES FOR PILE SPACING AND LAYOUT.
  - BF DENOTES BACK FACE, FF DENOTES FRONT FACE, EF DENOTES EACH FACE.
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  - ③ SEE WALL TYPICAL SECTIONS FOR SPECIFIC WALL DRAINAGE INFORMATION.
  - ④ SEE WALL TYPICAL SECTIONS AND PLAN AND PROFILE SHEETS FOR SPECIFIC TOP OF WALL DETAILS.
  - ⑤ SEE PLAN AND PROFILE FOR PILE SPACING.
  - ⑥ AT THE CONTRACTOR'S OPTION, PANEL LENGTH MAY VARY UP TO ± 1'-0". BAR CUTTING LISTS SHALL BE REVISED ACCORDINGLY BY CONTRACTOR.
  - ⑦ 5" CLR. FOR ALL BARS EXCEPT 2" CLR. FOR BAR D.
  - ⑧ ARCHITECTURAL CONCRETE TEXTURE NOT SHOWN FOR CLARITY.
  - ⑨ REBAR AND CONCRETE ARE INCLUDED IN THE PAY ITEM BY LINEAR FEET FOR THE BARRIER.
  - ⑩ 24 FOR h ≤ 29', 12 FOR h > 29'

REVISED: 5-28-2010  
 APPROVED: MAY 31, 2006  
 State Bridge Engineer

**FOOTING PLAN ~ REINFORCEMENT**

NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: JANET ELIZABETH GRONERT  
 Date: 09-12-14 License #: 44325

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 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.      

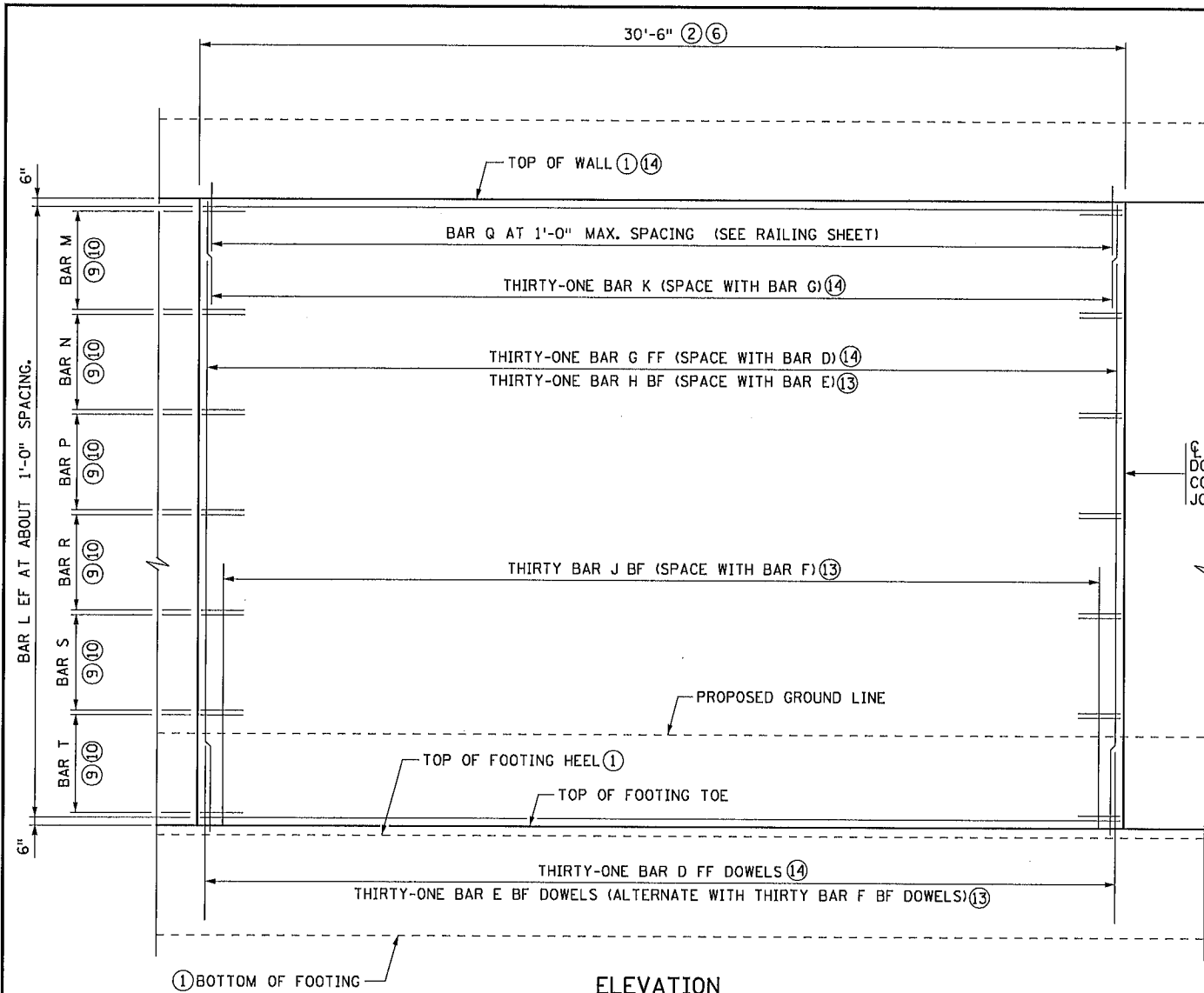
DRAWN BY E. JOHNSON  
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 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

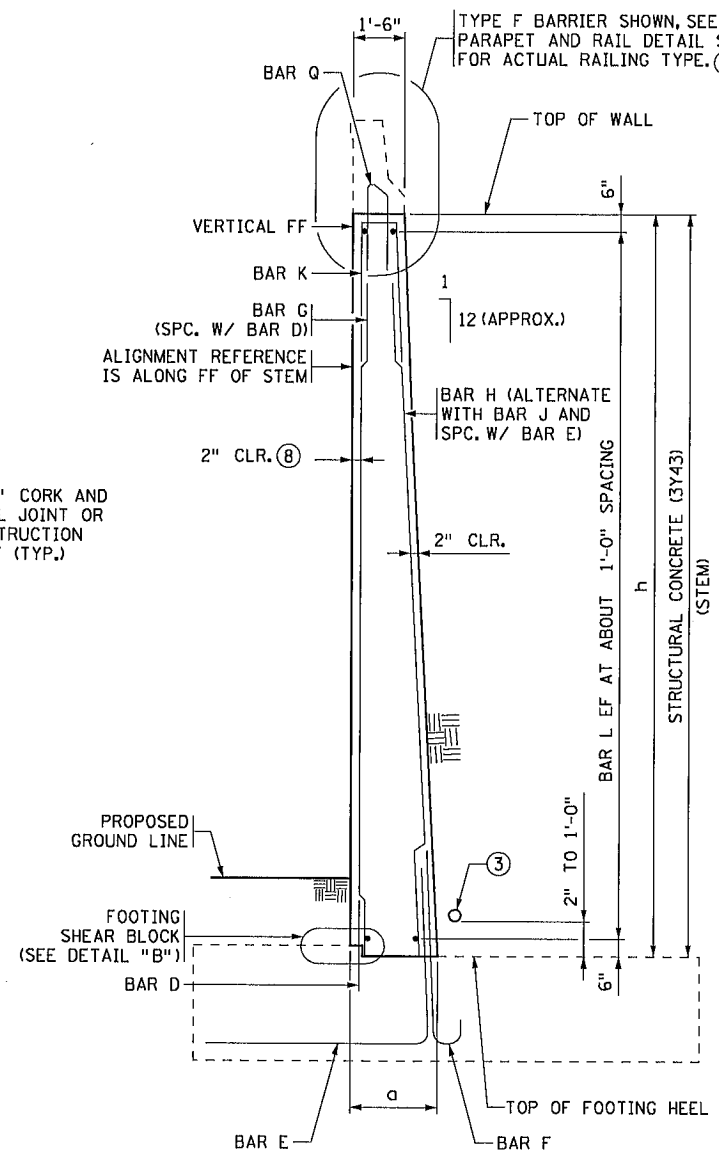
RETAINING WALL REINFORCEMENT (TALL WALLS)  
 ANOKA COUNTY  
 CIP RETAINING WALL DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 CIP WALL PANEL DETAILS (SHEET 3 OF 9)

STANDARD SHEET NO. 5-297.623  
 SHEET 284 OF 586

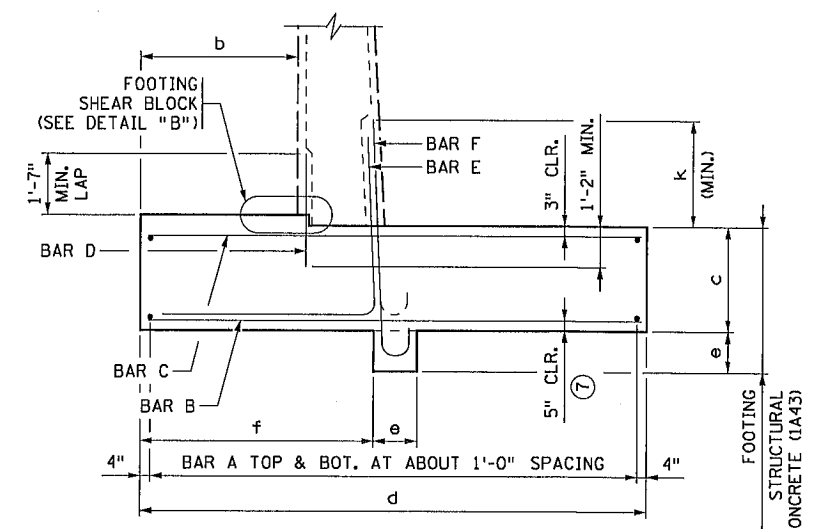
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ELEVATION



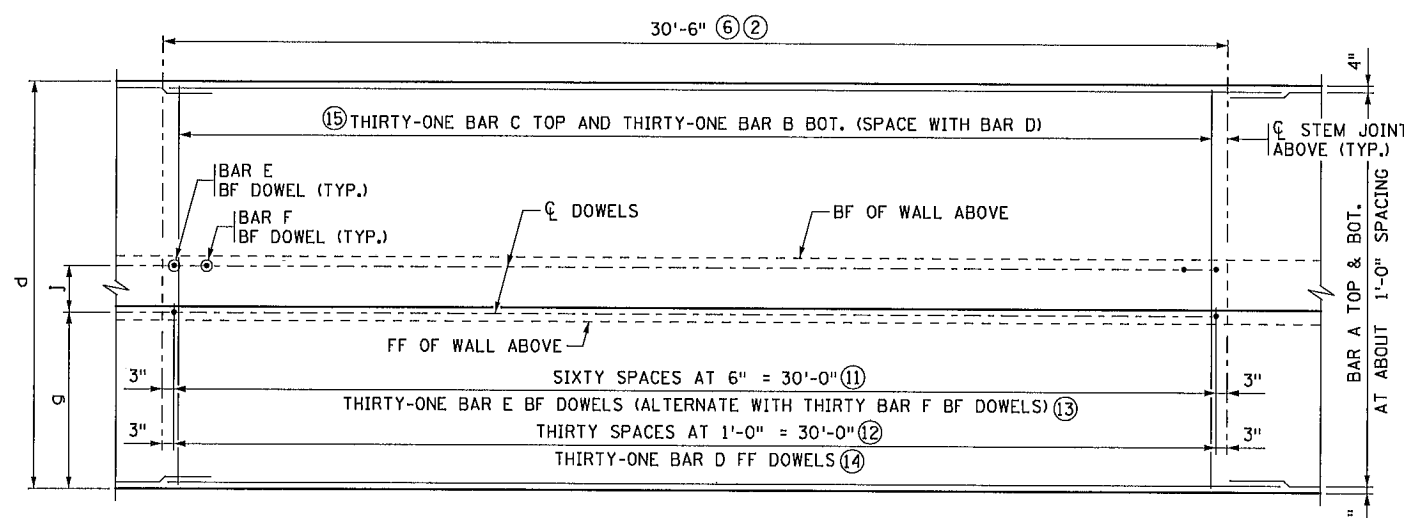
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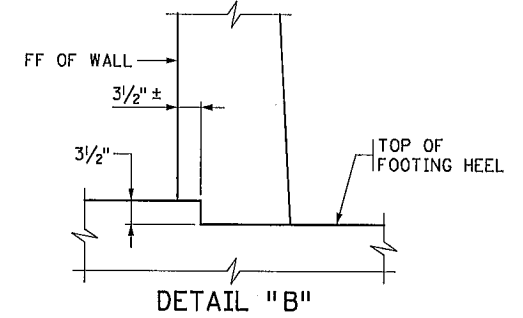
TYPICAL SECTION THROUGH SPREAD FOOTING

NOTES:

- STEM REINFORCEMENT IS TO BE SYMMETRICALLY/EQUALLY SPACED BETWEEN STEM JOINTS.
- FOOTING REINFORCEMENT TO BE SYMMETRICAL ABOUT STEM JOINT ABOVE UNLESS OTHERWISE NOTED.
- BF DENOTES BACK FACE, FF DENOTES FRONT FACE, EF DENOTES EACH FACE.
- ① STRAIGHT LINE BETWEEN ELEVATIONS SHOWN ON WALL ELEVATION (EXCEPT FOR STEPPED CONDITIONS). IF A BARRIER IS NOT USED, TOPS OF RETAINING WALL COULD BE USED.
- ② PANEL LENGTH MAY VARY, SEE PLAN AND PROFILE SHEETS AND PANEL TABULATIONS FOR LENGTH, SEE PANEL TABULATIONS FOR CONCRETE AND REINFORCEMENT QUANTITIES.
- ③ SEE WALL TYPICAL SECTIONS FOR SPECIFIC WALL DRAINAGE INFORMATION.
- ④ SEE WALL TYPICAL SECTIONS AND PLAN AND PROFILE SHEETS FOR SPECIFIC TOP OF WALL DETAILS.
- ⑤ REBAR AND CONCRETE ARE INCLUDED IN THE PAY ITEM BY LINEAR FEET FOR THE BARRIER.
- ⑥ AT THE CONTRACTOR'S OPTION, PANEL LENGTH MAY VARY UP TO ± 1'-0". BAR CUTTING LISTS SHALL BE REVISED ACCORDINGLY BY CONTRACTOR.
- ⑦ 5" CLR. FOR ALL BARS EXCEPT 2" CLR. FOR BAR D.
- ⑧ ARCHITECTURAL CONCRETE TEXTURE NOT SHOWN FOR CLARITY.
- ⑨ SPACE WITH BAR L.
- ⑩ TYP. AT CORK AND DOWEL JOINT.
- ⑪ PANEL A(30): 44 SPS @ ABT 5" = 17'-8"; A(29): 40 SPS @ ABT 5 1/2" = 17'-8"; A(28): 66 SPS @ ABT 5 1/2" = 30'-0".
- ⑫ PANEL A(30): 18 SPS @ ABT 1'-0" = 17'-8"; A(29): 18 SPS @ ABT 1'-0" = 17'-8".
- ⑬ PANEL A(30): 23 BAR E AND H, 22 BAR F AND J; PANEL A(29) 21 BAR E AND H; 20 BAR F AND J.
- ⑭ A(29), A(30): 19 BARS.
- ⑮ A(23)-A(28) & A(21): SIXTY ONE BAR B BOT. SPACE AT 6".



FOOTING PLAN ~ REINFORCEMENT



DETAIL "B"

3/23/25 PM 9/11/2014 H:\Projects\8259\BRP\ams\Retaining Wall\8259\_WR29.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

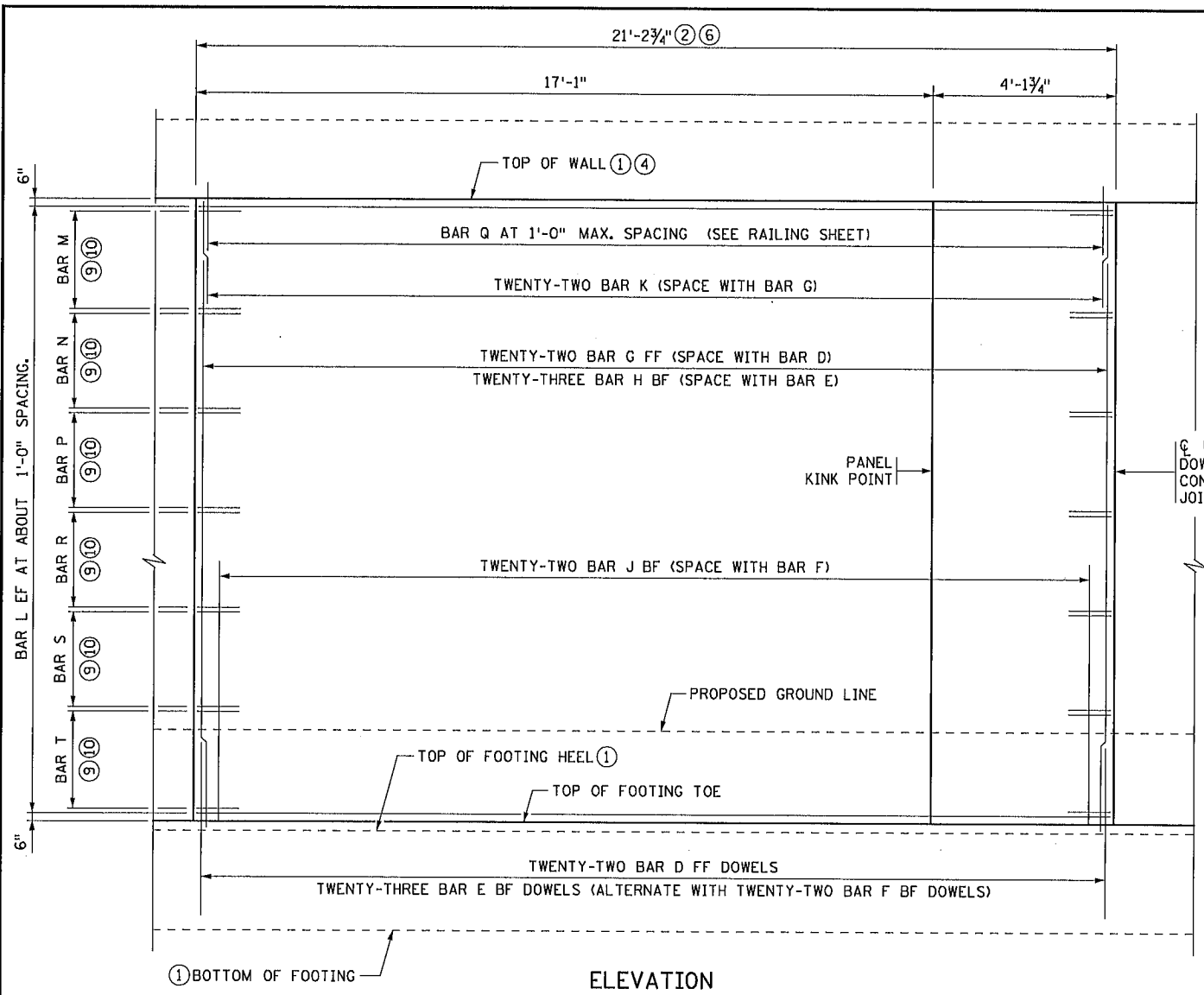
CITY PROJECT NO.

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

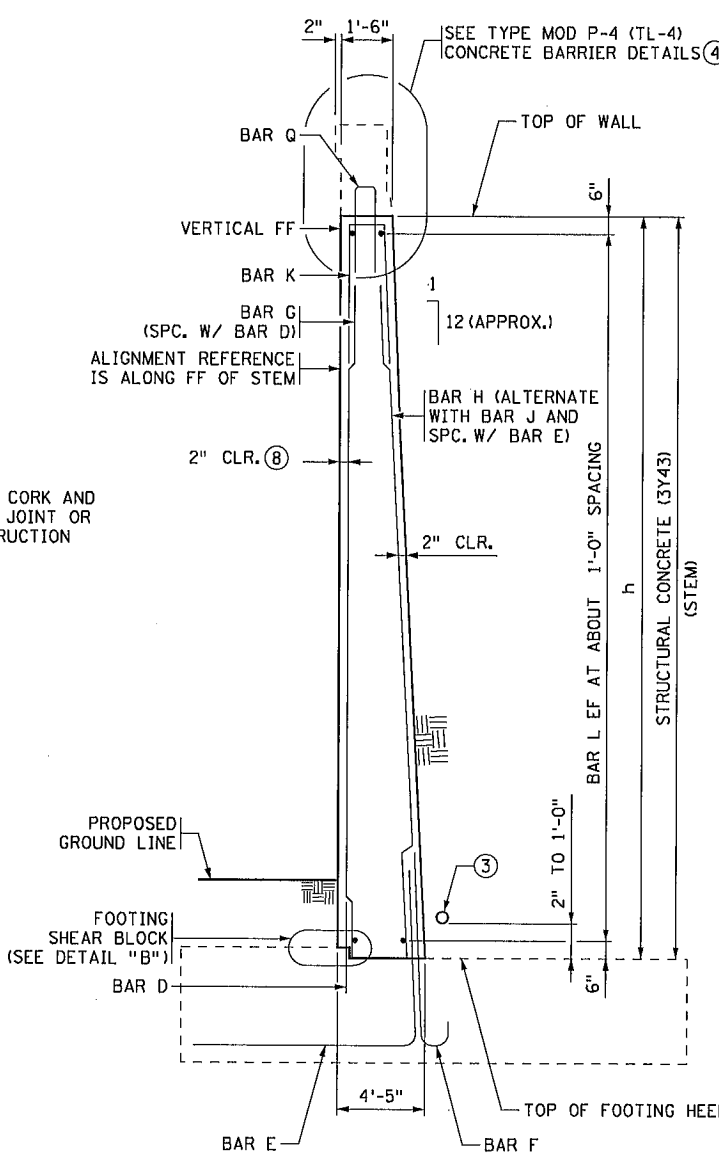


RETAINING WALL REINFORCEMENT (OVERSIZED WALLS)	CIP
ANOKA COUNTY	SHEET 285 OF 586
CIP RETAINING WALL DETAILS	
T.H. 10 / C.S.A.H. 83 INTERCHANGE	
CIP WALL PANEL DETAILS (SHEET 4 OF 9)	

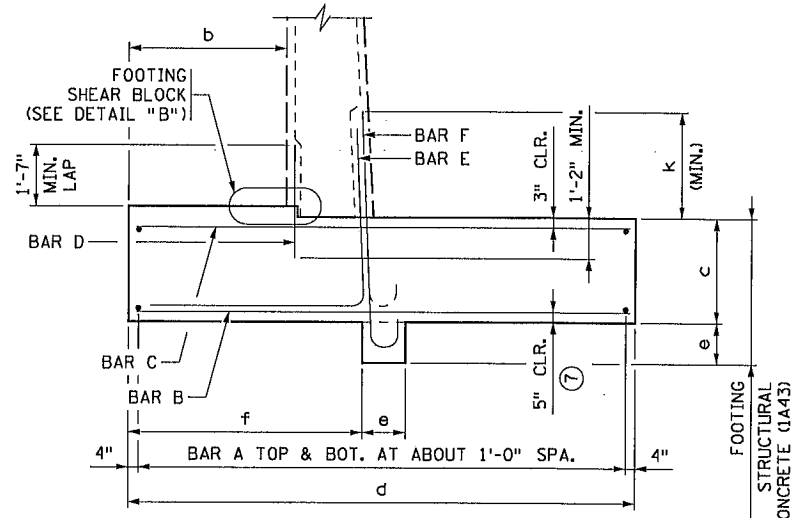




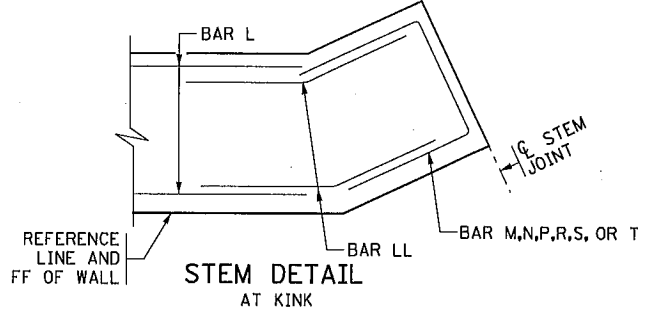
ELEVATION



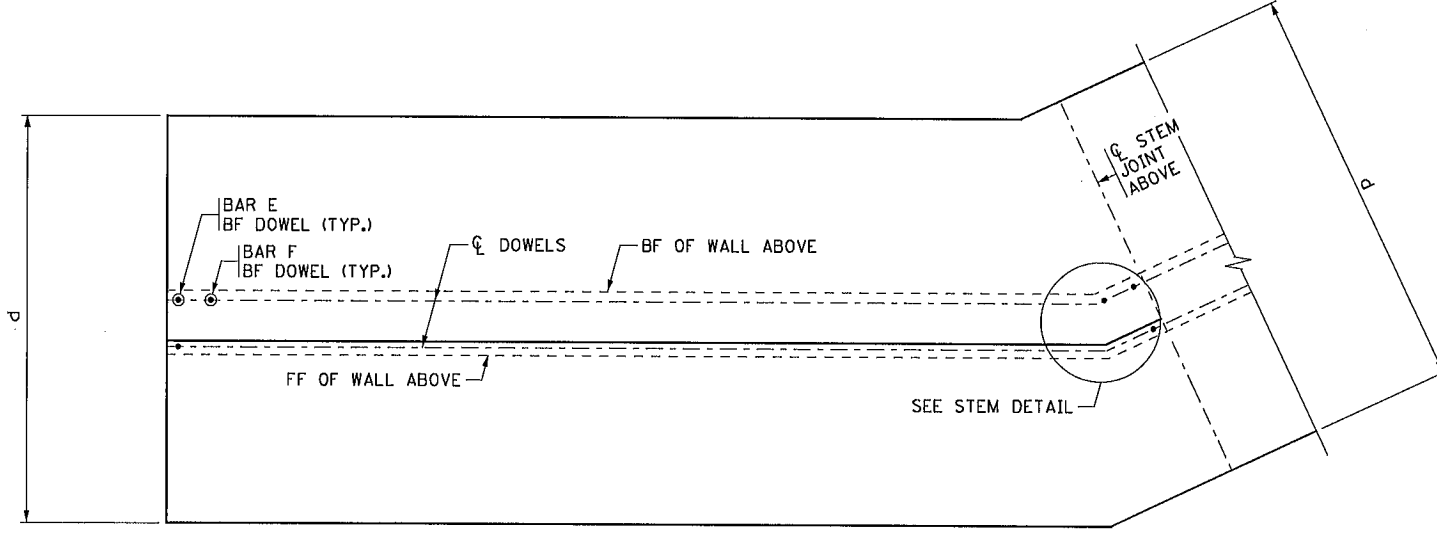
WALL SECTION  
BARRIER OPTION SHOWN



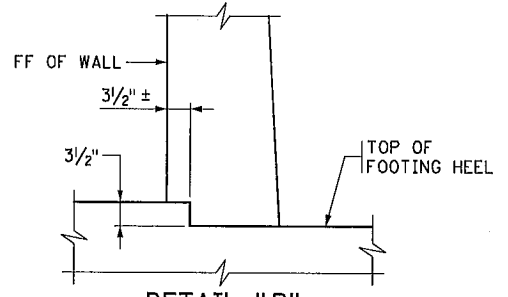
TYPICAL SECTION THROUGH SPREAD FOOTING



STEM DETAIL  
AT KINK



FOOTING PLAN ~ REINFORCEMENT  
(SEE E1-E2 FOOTING REINFORCEMENT PLAN ON SHEET 288 FOR FOOTING GEOMETRY AND REINFORCEMENT)



DETAIL "B"

- NOTES:**
- STEM REINFORCEMENT IS TO BE SYMMETRICALLY/EQUALLY SPACED BETWEEN STEM JOINTS.
  - FOOTING REINFORCEMENT TO BE SYMMETRICAL ABOUT STEM JOINT ABOVE UNLESS OTHERWISE NOTED.
  - BF DENOTES BACK FACE.
  - FF DENOTES FRONT FACE.
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  - ① STRAIGHT LINE BETWEEN ELEVATIONS SHOWN ON WALL ELEVATION (EXCEPT FOR STEPPED CONDITIONS). IF A BARRIER IS NOT USED, TOPS OF RETAINING WALL COULD BE USED.
  - ② PANEL LENGTH MAY VARY. SEE PLAN AND PROFILE SHEETS AND PANEL TABULATIONS FOR LENGTH.
  - ③ SEE WALL TYPICAL SECTIONS FOR SPECIFIC WALL DRAINAGE INFORMATION.
  - ④ SEE WALL TYPICAL SECTIONS AND PLAN AND PROFILE SHEETS FOR SPECIFIC TOP OF WALL DETAILS.
  - ⑤ REBAR AND CONCRETE ARE INCLUDED IN THE PAY ITEM BY LINEAR FEET FOR THE BARRIER.
  - ⑥ AT THE CONTRACTOR'S OPTION, PANEL LENGTH MAY VARY UP TO ± 1'-0". BAR CUTTING LISTS SHALL BE REVISED ACCORDINGLY BY CONTRACTOR.
  - ⑦ 5" CLR. FOR ALL BARS EXCEPT 2" CLR. FOR BAR D.
  - ⑧ ARCHITECTURAL CONCRETE TEXTURE NOT SHOWN FOR CLARITY.
  - ⑨ SPACE WITH BAR L.
  - ⑩ TYP. AT CORK AND DOWEL JOINT.

3/23/26 PM 9/11/2014 H:\Projects\255\BRP\Plans\Retaining Walls\255\_WR40.dgn

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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

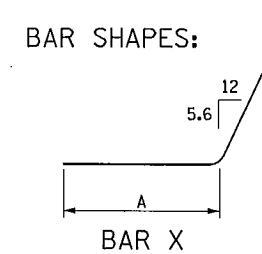
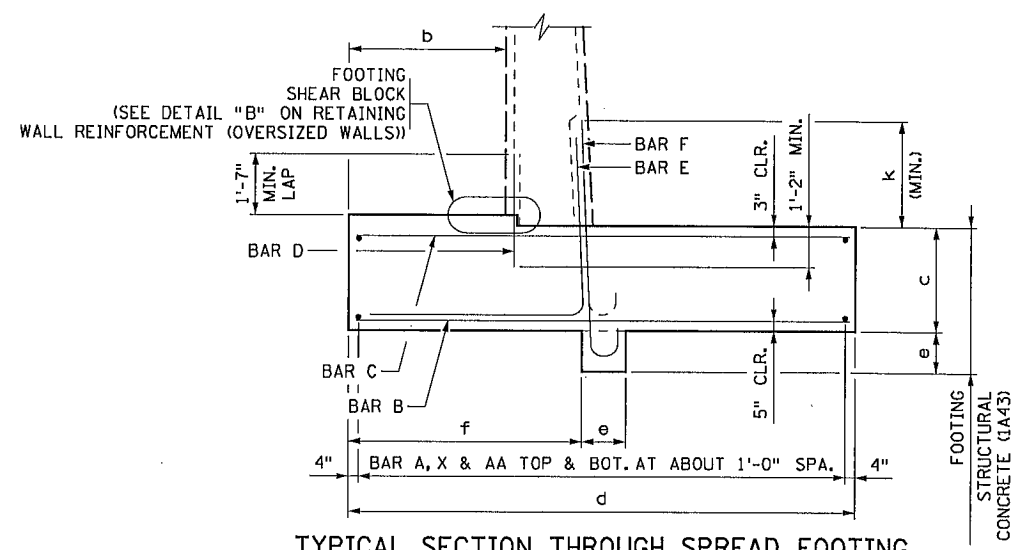
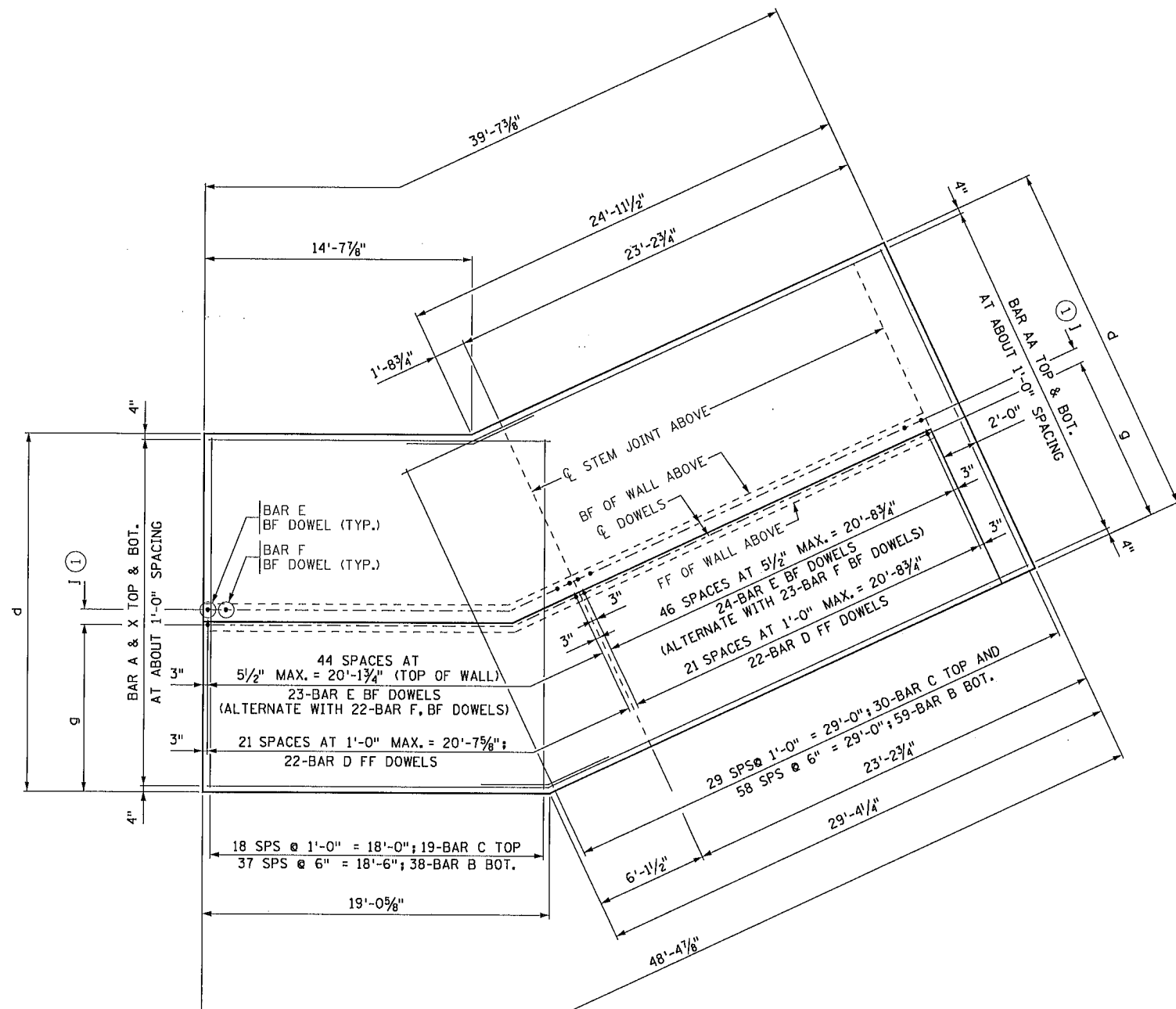
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.                        
 CITY PROJECT NO.                      

DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

RETAINING WALL REINFORCEMENT (OVERSIZED WALLS) (PANEL E1)	CIP
ANOKA COUNTY	SHEET
CIP RETAINING WALL DETAILS	287
T.H. 10 / C.S.A.H. 83 INTERCHANGE	OF
CIP WALL PANEL DETAILS (SHEET 6 OF 9)	586





PANEL E(1), E(2) FOOTING										
SPREAD FOOTING REINFORCEMENT						SPREAD FOOTING DIMENSIONS				
BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	b	e	f	
A	F701	40	18'-9"	STR.	LONG T & B	1533	b	8'-10"	e	1'-9"
B	F902	97	19'-2"	STR.	TRANS BOT	6322	c	3'-6"	f	13'-0"
C	F903	49	19'-2"	STR.	TRANS TOP	3194	d	19'-8"	g	9'-0 5/16"
X	F713	40	7'-4"	3'-8"	LONG T & B	600				
AA	F714	40	29'-1"	STR.	LONG T & B	2378				
						REINFORCEMENT (PLAIN)				
						POUNDS				
						14027				

NOTES:  
 ① SEE PANEL TABULATION FOR E(1), E(2)

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 Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

FOOTING REINFORCEMENT (PANELS E1-E2)	CIP
ANOKA COUNTY	
CIP RETAINING WALL DETAILS	
T.H. 10 / C.S.A.H. 83 INTERCHANGE	
CIP WALL PANEL DETAILS (SHEET 7 OF 9)	
SHEET 288	OF 586

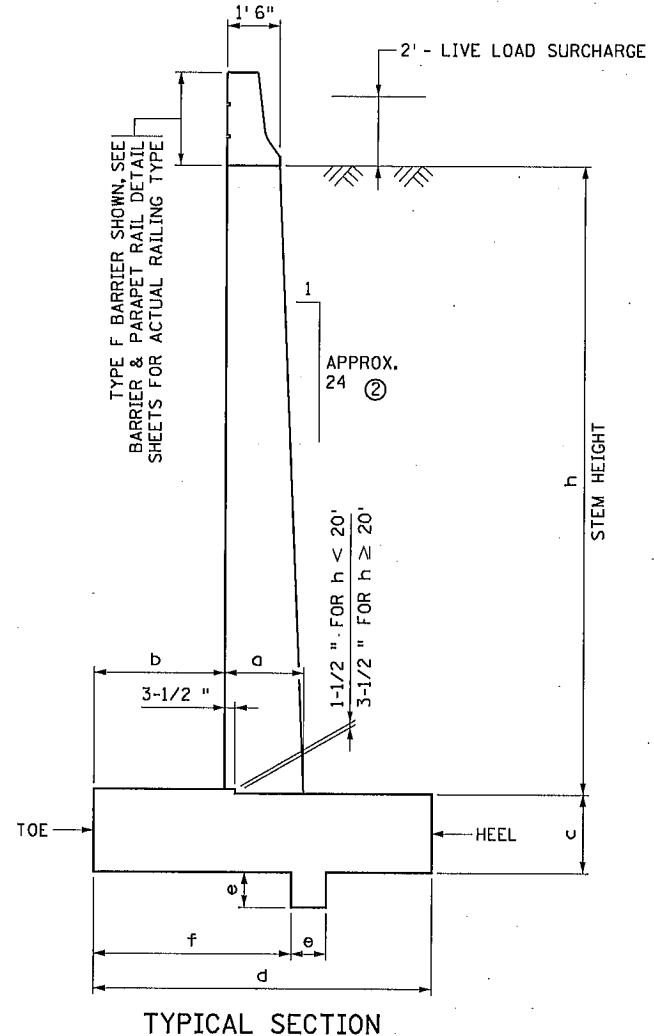


WALL LOADING CASE:  
2' - LIVE LOAD SURCHARGE

STEM HEIGHT h	WALL GEOMETRICS AND DATA - SPREAD FOOTING						QUANTITIES PER FOOT - SPREAD FOOTING				WALL DETAILING SCHEME ①	BASE PRESSURE KIPS/SQ. FT.	
	STEM WIDTH a	TOE WIDTH b	FOOTING THICKNESS c	FOOTING WIDTH d	SHEAR KEY SIZE e	SHEAR KEY LOCATION f	STRUCTURAL CONCRETE		REINFORCEMENT			TOE	HEEL
							1A43 (CU.YD.) FOOTING	3Y43 (CU.YD.) STEM	PLAIN (POUND)	EPOXY (POUND)			
5	1'-8 1/2"	1'-0"	1'-5"	3'-6"	N/A	N/A	0.187	0.296	15.38	88.16	SHORT	1.670	0.070
6	1'-9"	1'-2"	1'-5"	4'-1"	N/A	N/A	0.211	0.360	16.43	41.74	SHORT	1.820	0.090
7	1'-9 1/2"	1'-4"	1'-5"	4'-6"	N/A	N/A	0.235	0.425	19.70	45.34	SHORT	1.970	0.120
8	1'-10"	1'-6"	1'-5"	5'-0"	N/A	N/A	0.259	0.492	20.75	48.89	SHORT	2.110	0.150
9	1'-10 1/2"	1'-8"	1'-5"	5'-6"	N/A	N/A	0.283	0.561	24.13	52.69	SHORT	2.250	0.180
10	1'-11"	1'-9"	1'-5"	6'-0"	N/A	N/A	0.306	0.631	25.18	62.49	MEDIUM	2.446	0.199
11	1'-11 1/2"	2'-0"	1'-5"	6'-6"	N/A	N/A	0.331	0.703	31.28	66.85	MEDIUM	2.536	0.239
12	2'-0"	2'-3"	1'-5"	6'-9"	1'-0"	3'-10 5/8"	0.380	0.776	35.38	72.23	MEDIUM	2.758	0.156
13	2'-0 1/2"	2'-6"	1'-5"	7'-0"	1'-0"	4'-2 1/8"	0.393	0.851	40.30	76.82	MEDIUM	2.986	0.013
14	2'-1"	2'-9"	1'-6"	7'-8"	1'-0"	4'-5 3/4"	0.477	0.928	40.49	81.74	MEDIUM	3.147	0.078
15	2'-1 1/2"	3'-0"	1'-6"	8'-2"	1'-0"	4'-9 1/4"	0.506	1.006	40.10	99.57	TALL	3.239	0.111
16	2'-2"	3'-3"	1'-9"	8'-8"	1'-0"	5'-0 1/8"	0.615	1.085	41.38	105.97	TALL	3.494	0.056
17	2'-2 1/2"	3'-6"	1'-9"	9'-2"	1'-0"	5'-4 3/8"	0.649	1.166	49.02	111.90	TALL	3.586	0.089
18	2'-3"	3'-9"	1'-9"	9'-8"	1'-0"	5'-7 7/8"	0.682	1.249	50.52	129.74	TALL	3.679	0.121
19	2'-3 1/2"	4'-0"	2'-0"	10'-2"	1'-0"	5'-11 1/2"	0.810	1.353	54.26	137.41	TALL	3.935	0.066
20	2'-4"	4'-3"	2'-0"	10'-8"	1'-0"	6'-3"	0.875	1.417	61.38	165.51	TALL	4.056	0.090
21	2'-4 1/2"	4'-6"	2'-0"	11'-2"	1'-0"	6'-6 1/2"	0.916	1.504	71.34	174.30	TALL	4.151	0.122
22	2'-5"	4'-9"	2'-3"	11'-8"	1'-0"	6'-10 1/8"	1.064	1.593	85.93	183.51	TALL	4.407	0.067
23	2'-5 1/2"	5'-0"	2'-6"	12'-2"	1'-4"	7'-1 1/4"	1.221	1.683	84.82	224.49	TALL	4.663	0.012
24	2'-6"	5'-3"	2'-9"	12'-9"	1'-4"	7'-5 3/8"	1.396	1.775	94.03	234.03	TALL	4.872	0.020
25	2'-6 1/2"	5'-6"	2'-9"	13'-3"	1'-6"	7'-8 7/8"	1.449	1.868	100.13	288.16	TALL	4.967	0.052
26	2'-7"	5'-10"	3'-0"	13'-9"	1'-6"	8'-1 1/2"	1.671	1.963	102.26	299.67	TALL	5.189	0.000
27	2'-7 1/2"	6'-2"	3'-3"	14'-4"	1'-6"	8'-6 1/8"	1.832	2.059	127.34	315.84	TALL	5.364	0.000
28	2'-8"	6'-6"	3'-3"	15'-0"	1'-7"	8'-10 5/8"	1.916	2.157	140.92	394.98	TALL	5.334	0.140
29	2'-8 1/2"	6'-10"	3'-6"	15'-6"	1'-7"	9'-3 1/4"	2.123	2.257	148.00	407.90	TALL	5.558	0.077
30	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTE:  
① SEE STANDARD PLANS 5-297.621 TO .623 FOR REINFORCING DETAILS.  
② DOES NOT APPLY TO OVERSIZED PANELS.

DESIGN CRITERIA
1992 A.A.S.H.T.O. DESIGN SPECIFICATIONS
DESIGN METHOD: WORKING STRESS - STABILITY, FOUNDATIONS
LOAD FACTOR DESIGN - REINFORCED CONCRETE
f'c = 4,000 PSI
fy = 60,000 PSI
FACTOR OF SAFETY OVERTURNING: 2.0 MINIMUM
FACTOR OF SAFETY SLIDING: 1.5 MINIMUM
LOCATION OF RESULTANT: MIDDLE 1/3 OF FOOTING NEGLECTING SOIL IN FRONT OF WALL.
SEE FOUNDATION REPORT FOR ALLOWABLE BEARING PRESSURE AND COEFFICIENT OF FRICTION.
BACKFILL CHARACTERISTICS: INTERNAL ANGLE OF FRICTION: 35° = 33 PCF EQUIVALENT FLUID PRESSURE ACTIVE STATE = 53 PCF EQUIVALENT FLUID PRESSURE AT REST STATE βe = 1.0 COEFFICIENT OF FRICTION: 0.55 UNIT WEIGHT: 125 PCF



3/23/28 PM 9/11/2014 H:\Projects\B259\BRI\Plans\Retaining Walls\B259\_WR31.dgn

REVISED: 5-28-2010  
APPROVED: MAY 31, 2006  
*David A. Johnson*  
STATE BRIDGE ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

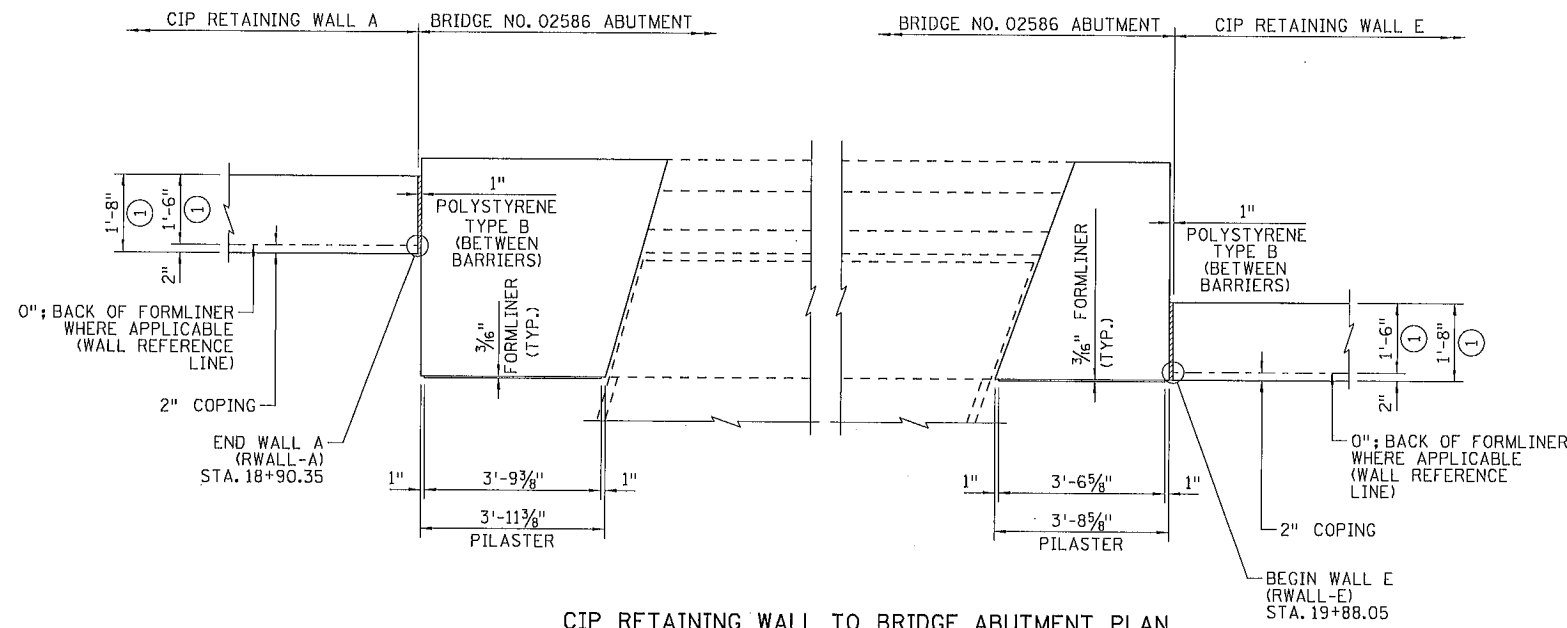
DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0138259



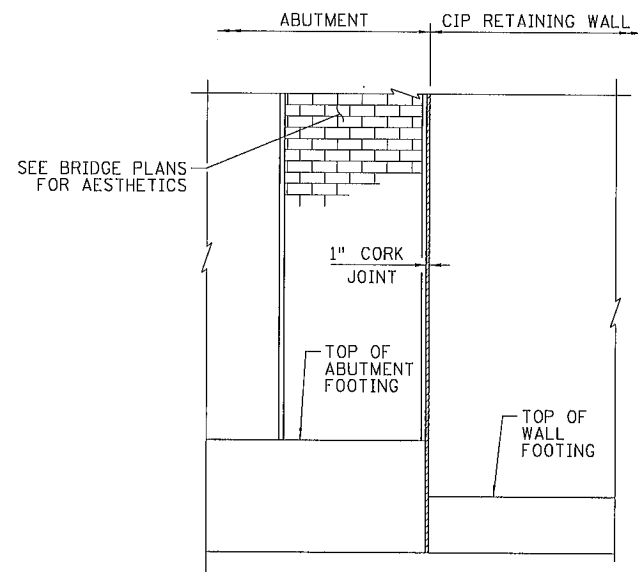
ANOKA COUNTY  
CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CIP WALL PANEL DETAILS (SHEET 9 OF 9)

CIP  
MODIFIED  
STANDARD SHEET NO. 5-297.632

SHEET 290 OF 586



**CIP RETAINING WALL TO BRIDGE ABUTMENT PLAN**  
(BARRIERS NOT SHOWN FOR CLARITY)



**CIP RETAINING WALL TO BRIDGE ABUTMENT ELEVATION**  
(RETAINING WALL E SHOWN) (RETAINING WALL A SIMILAR)

**NOTE:**  
 ① MEASURED AT TOP OF WALL.  
 2. SEE PLANS FOR BRIDGE NO. 02586.

3:23:29 PM 9/17/2014 H:\Projects\02586\BR\Plans\Retaining Walls\0259\_WR23.dgn

NO	DATE	BY	CHKD	APPR	REVISION

...Retaining Walls\0259\_WR23.dgn

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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date 09-12-14 License # 44325

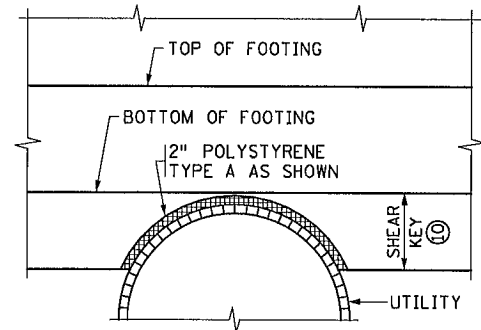
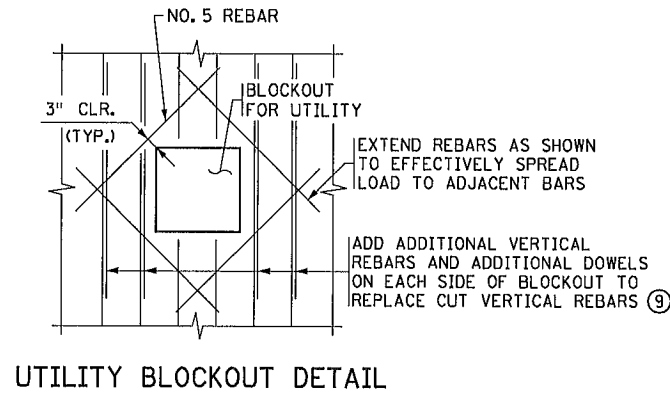
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 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259

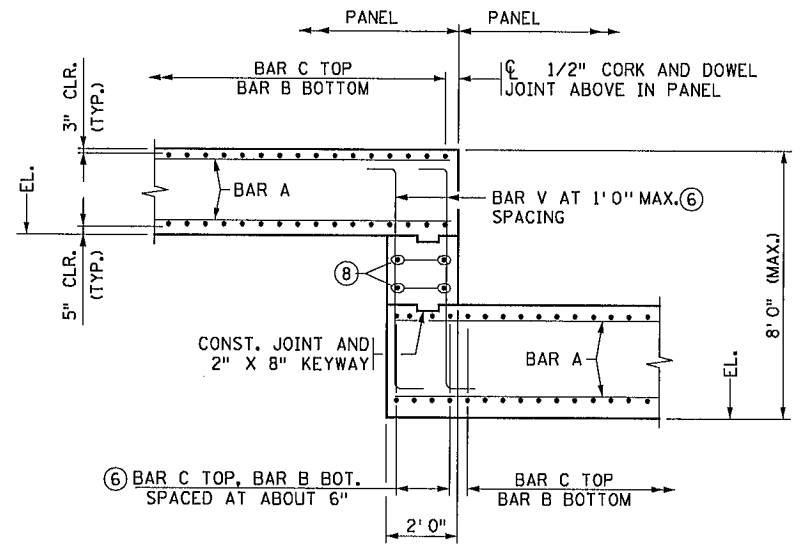
**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 CIP RETAINING WALL DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 CIP WALL MISCELLANEOUS DETAILS (SHEET 1 OF 2)

CIP SHEET 291 OF 586

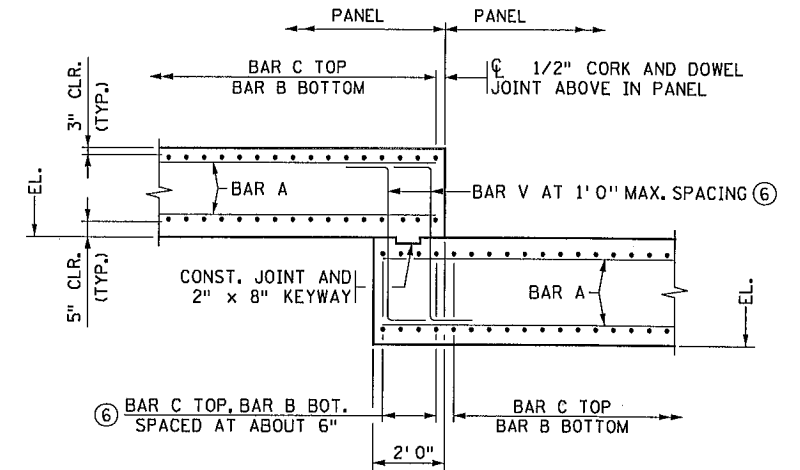


**PIPE UNDER SPREAD FOOTING (THROUGH SHEAR KEY)**  
CHECK PIPE TO DETERMINE IF IT CAN TAKE THE LOAD



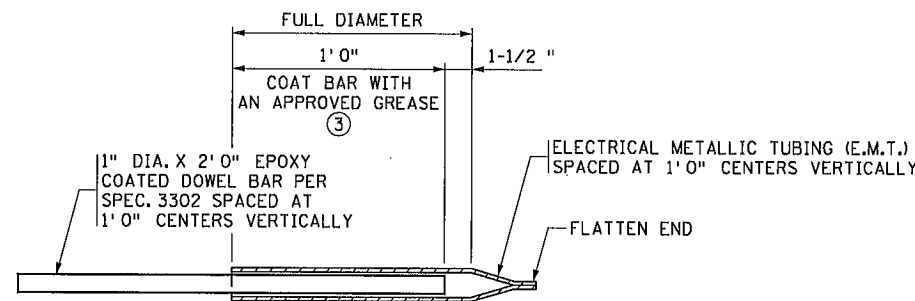
**STEPPED FOOTING DETAIL - LONGIT. SECTION (6) (7)**

TYPE 1 - VARIABLE STEP HEIGHT  
(SPREAD FOOTING SHOWN)

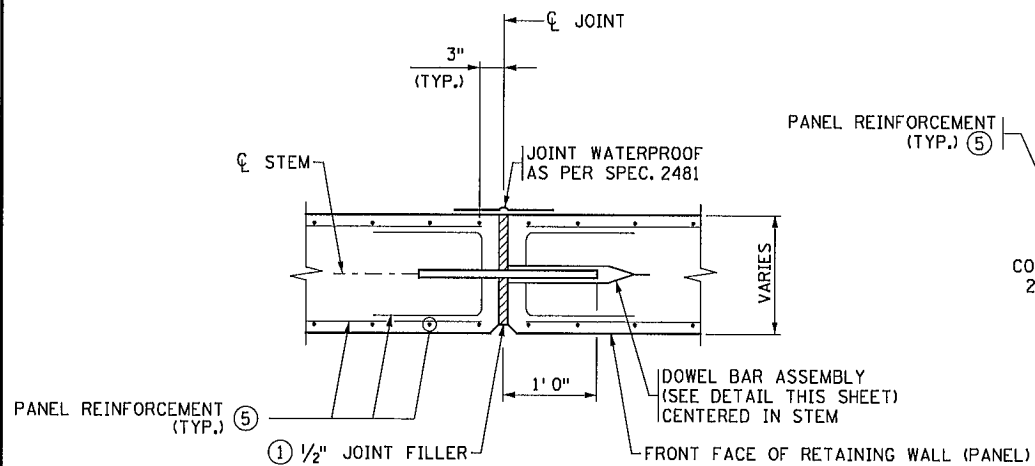


**STEPPED FOOTING DETAIL - LONGIT. SECTION (6) (7)**

TYPE 2 - MINIMUM STEP HEIGHT  
(SPREAD FOOTING SHOWN)



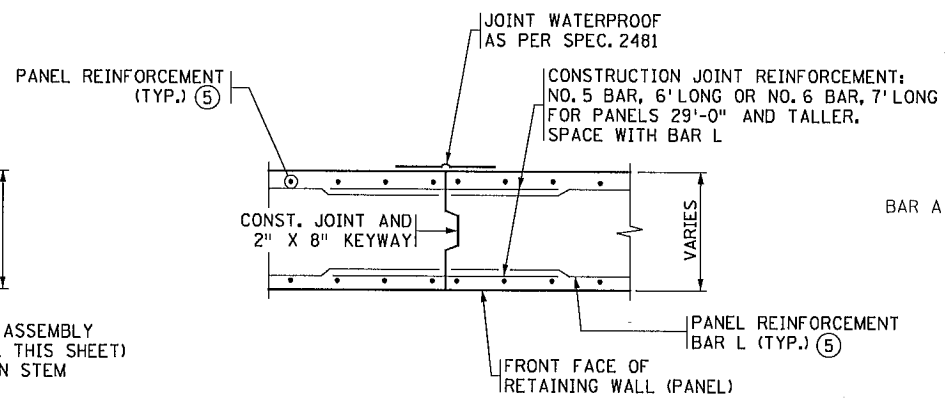
**DOWEL BAR ASSEMBLY**



**CORK AND DOWELED JOINT DETAIL**

(TYPICAL SECTION THROUGH JOINT)

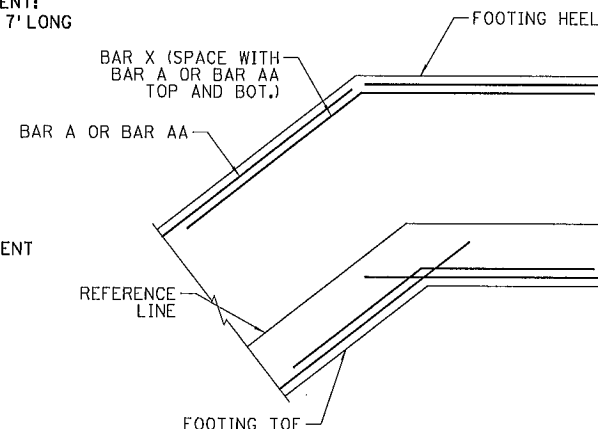
(2) (4)



**CONSTRUCTION JOINT DETAIL**

(TYPICAL SECTION THROUGH JOINT)

(2) (4)



**BAR X DETAIL**

NOT TO SCALE

**NOTES:**

THE MATERIALS AND PLACEMENT OF THE CORK AND DOWEL JOINT/ CONSTRUCTION JOINT (DOWEL BAR ASSEMBLIES, NO. 5 AND NO. 6 REINFORCING BARS, JOINT FILLER, AND JOINT WATERPROOFING) ARE INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL ASSIGN TO THE REINFORCING BAR SUPPLIER THE RESPONSIBILITY OF SUPPLYING THE NECESSARY MATERIALS ASSOCIATED WITH THE DETAILS SHOWN ON THIS SHEET.

- (1) JOINT FILLER SHALL BE CORK (SPEC. 2401.3E3).
- (2) CONSTRUCTION JOINT(S) MAY BE SUBSTITUTED FOR SOME OF THE CORK AND DOWEL JOINT(S) AT THE CONTRACTOR'S OPTION. CORK AND DOWEL JOINT(S) MUST BE SPACED AT 91'-6" MAXIMUM. CORK AND DOWEL JOINT(S) MUST BE USED IN VERTICAL JOINT(S) AT FOOTING STEP LOCATIONS.
- (3) GREASE SHALL BE AN APPROVED HIGH PRESSURE TYPE THAT IS EFFECTIVE OVER THE FULL RANGE OF EXPECTED TEMPERATURES AND RESISTANT TO CHEMICAL ACTION.
- (4) DOWEL BAR ASSEMBLY MUST BE CONSTRUCTED PERPENDICULAR TO JOINT AND PARALLEL TO THE WALL FACE, AND TO EACH OTHER.
- (5) SEE PANEL SHEETS FOR REINFORCING DETAILS.
- (6) ALL BARS OR BAR MODIFICATIONS RELATED TO STEPPED FOOTING AND CORNER CONSTRUCTION SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.
- (7) ALL STRUCTURAL CONCRETE (1A43) RELATED TO THE STEPPED FOOTING SHALL BE INCIDENTAL WITH NO DIRECT COMPENSATION.
- (8) 6 INCH MAX. SPACING. BARS TO BE SAME TYPE AS BAR B OF THE LOWER FOOTING. NO BARS REQUIRED IF DISTANCE BETWEEN FOOTINGS IS LESS THAN 6 INCHES.
- (9) FIELD CUT/ADJUST VERTICAL AND HORIZONTAL REINFORCEMENT AS NECESSARY TO CLEAR BLOCKOUT. PLACE REINFORCEMENT AS SHOWN.
- (10) MODIFY FOR INTERRUPTION.

3/23/25, PM 9:11:20.4  
 H:\Projects\8259\BR\Plans\Retaining Walls\8259\_WR30.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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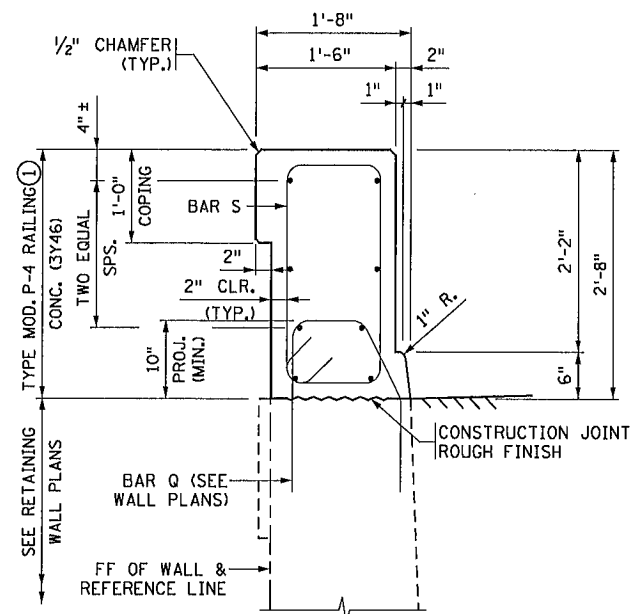
Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.        
 CITY PROJECT NO.      

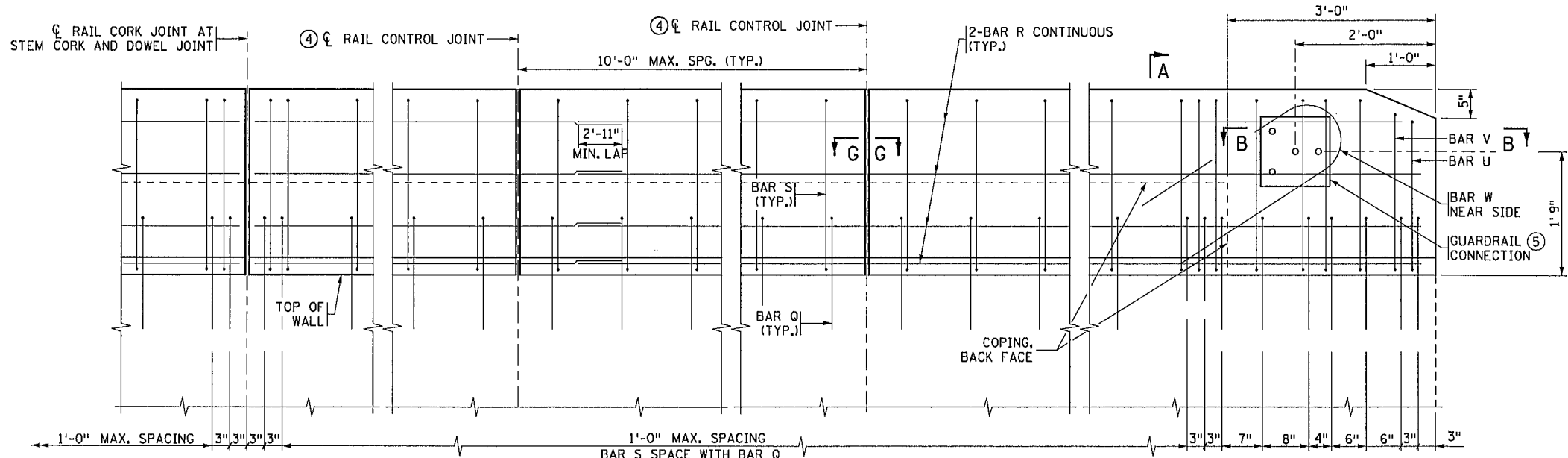
DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY		CIP
CIP RETAINING WALL DETAILS		SHEET
T.H. 10 / C.S.A.H. 83 INTERCHANGE		292
CIP WALL MISCELLANEOUS DETAILS (SHEET 2 OF 2)		OF
		586



SECTION A-A

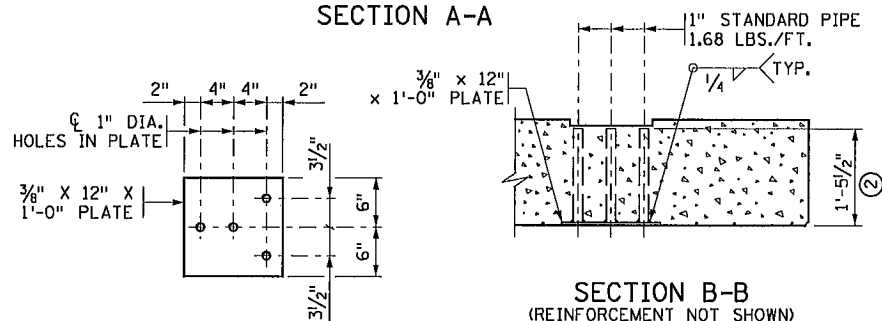


AT RAIL CORK JOINT

INSIDE ELEVATION OF RAILING

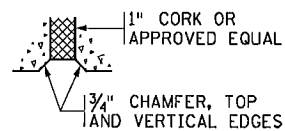
AT GUARDRAIL CONNECTION ⑤

RAIL MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350

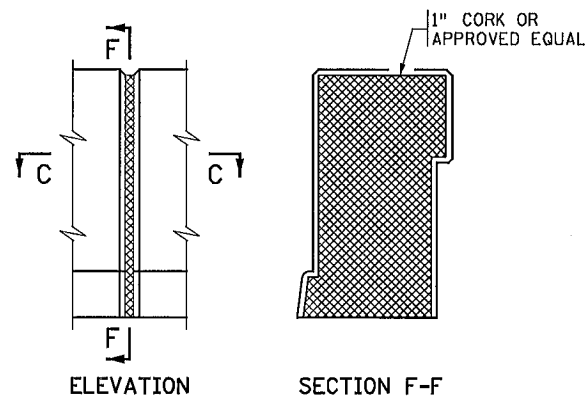


SECTION B-B  
(REINFORCEMENT NOT SHOWN)

GUARDRAIL CONNECTION DETAIL ⑤  
GALVANIZE AFTER FABRICATION PER SPEC. 3394. ESTIMATED WEIGHT = 22 LBS



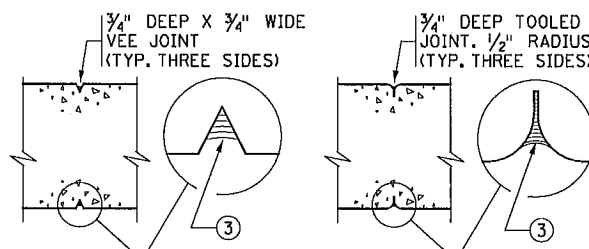
SECTION C-C



ELEVATION

SECTION F-F

MATCH RAIL CORK JOINTS WITH RETAINING WALL STEM CORK AND DOWEL JOINTS. CORK AND DOWEL JOINTS ARE TO BE SPACED AT 91'-6\"/>

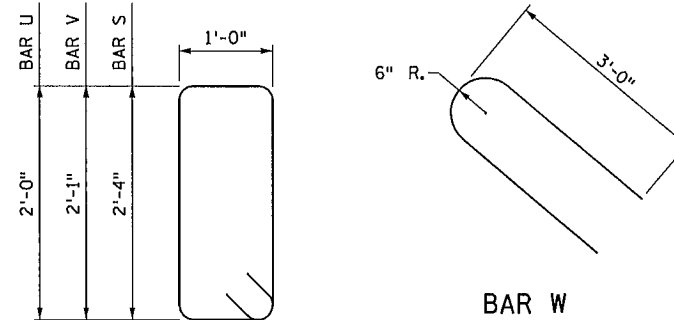


SECTION G-G  
OPTION 1

SECTION G-G  
OPTION 2

CONTROL JOINT DETAILS

BILL OF REINFORCEMENT											
TYPICAL RAILING ON RETAINING WALL WITH 30'-6\"/>						TYPICAL RAILING ON RETAINING WALL WITH 91'-6\"/>					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION	BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
S	R501E	33	7'-7\"/>	BENT	RAILING - VERTICAL	S	R501E	94	7'-7\"/>	BENT	RAILING - VERTICAL
R	R404E	8	30'-2\"/>	STR.	RAILING - HORIZONTAL	R	R407E	24	32'-4\"/>	STR.	RAILING - HORIZONTAL
TYPE MOD. P-4 RAIL CONC. (3Y46) 4.3 CU YD ①						TYPE MOD. P-4 RAIL CONC. (3Y46) 12.9 CU YD ①					
REINFORCEMENT BARS (EPOXY) 422 POUND ①						REINFORCEMENT BARS (EPOXY) 1262 POUND ①					
TYPICAL RAILING ON RETAINING WALL WITH 61'-0\"/>						91'-6\"/>					
BAR	MARK	NO.	LENGTH	SHAPE	LOCATION	BAR	MARK	NO.	LENGTH	SHAPE	LOCATION
S	R501E	63	7'-7\"/>	BENT	RAILING - VERTICAL	S	R501E	98	7'-7\"/>	BENT	RAILING - VERTICAL
R	R406E	16	31'-10\"/>	STR.	RAILING - HORIZONTAL	V	R502E	1	7'-1\"/>	BENT	RAILING - VERTICAL
TYPE MOD. P-4 RAIL CONC. (3Y46) 8.6 CU YD ①						TYPE MOD. P-4 RAIL CONC. (3Y46) 12.9 CU YD ①					
REINFORCEMENT BARS (EPOXY) 818 POUND ①						REINFORCEMENT BARS (EPOXY) 908 POUND ①					



BAR S, V, U

BAR W

NOTES:

- 1 CONCRETE RAILING: 568 LBS./FT. (0.140 CU. YDS./FT.)
- 2 MAXIMUM SPACING OF RAIL CONTROL JOINTS SHALL BE 10'-0\"/>
- 3 FOR TYPICAL RETAINING WALL REINFORCEMENT AND DETAILS, SEE RETAINING WALL DETAILS AND REINFORCEMENT SHEETS.
- 4 THE GUARDRAIL CONNECTION IS INCLUDED IN THE PRICE BID FOR TYPE MOD. P-4 RAIL CONCRETE (3Y46).
- 5 BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH MNDOT SPEC. 3301.
- 6 CONCRETE RAIL (TYPE MOD. P-4 (TL-4)) SHALL BE PAID FOR ON A LINEAL FOOT BASIS.
- 7 GUARDRAIL CONNECTION SHALL BE STRUCTURAL STEEL, MNDOT SPEC. 3306 AND GALVANIZED AFTER FABRICATION PER MNDOT SPEC. 3394.
- 8 ① REBAR AND CONCRETE ARE INCLUDED IN THE PAY ITEM BY LINEAL FEET FOR THE BARRIER "TYPE MOD. P-4 (TL-4) RAILING CONCRETE (3Y46)".
- 9 ② DIMENSIONS INCLUDE 3/8\"/>
- 10 ③ SEE SPECIAL PROVISIONS FOR JOINT SEALING REQUIREMENTS.
- 11 ④ RAIL CONTROL JOINTS TO MATCH STEM CONSTRUCTION JOINTS WHILE ALSO COMPLYING WITH THE 10'-0\"/>
- 12 ⑤ GUARDRAIL CONNECTION @ END OF WALL A ONLY. DISCONTINUE COPING AT GUARDRAIL CONNECTION.

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: JANET ELIZABETH GRONERT  
Date: 09/12/14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
199-115-002  
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DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
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ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
CIP WALL BARRIER DETAILS (SHEET 1 OF 3)

CIP

MODIFIED

TYPE MOD P-4 BARRIER/RAILING STANDARD SHEET NO. 5-397.173

SHEET  
293  
OF  
586

NO	DATE	BY	CHKD	APPR	REVISION



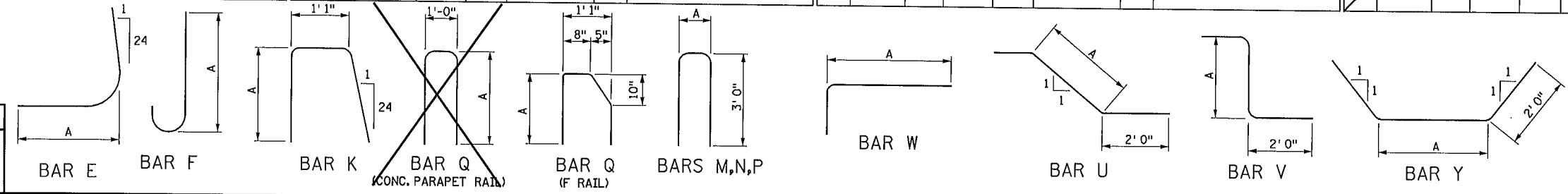




BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES									
h = 5' PANELS: L=30'-6"								h = 6' PANELS: A(1), E(19) L=30'-6"								h = 7' PANELS: A(2), E(18) L=30'-6"								h = 8' PANELS: A(3), E(17) L=30'-6"																			
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																			
A	F501	8	32'-11"	STR.	LONG T & B	275	SPREAD FOOTING		A	F501	8	32'-11"	STR.	LONG T & B	275	SPREAD FOOTING		A	F501	10	32'-11"	STR.	LONG T & B	343	SPREAD FOOTING		A	F501	10	32'-11"	STR.	LONG T & B	343	SPREAD FOOTING									
B	F502	31	3'-0"	STR.	TRANS BOT	97	b	1'-0"	e	-----	B	F502	31	3'-6"	STR.	TRANS BOT	113	b	1'-2"	e	-----	B	F502	31	4'-0"	STR.	TRANS BOT	129	b	1'-4"	e	-----	B	F502	31	4'-6"	STR.	TRANS BOT	145	b	1'-6"	e	-----
C	F503	31	3'-0"	STR.	TRANS TOP	97	c	1'-5"	f	-----	C	F503	31	3'-6"	STR.	TRANS TOP	113	c	1'-5"	f	-----	C	F503	31	4'-0"	STR.	TRANS TOP	129	c	1'-5"	f	-----	C	F503	31	4'-6"	STR.	TRANS TOP	145	c	1'-5"	f	-----
							d	3'-6"	g	1'-2 5/16"							d	4'-0"	g	1'-4 5/16"							d	4'-6"	g	1'-6 5/16"							d	5'-0"	g	1'-8 5/16"			
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																			
A	F..01	12	34'-2"	STR.	LONG T & B	838	b	1'-9"	d	5'-9"	A	F701	12	34'-2"	STR.	LONG T & B	838	b	1'-9"	d	5'-9"	A	F..01	12	34'-2"	STR.	LONG T & B	838	b	1'-9"	d	5'-9"	A	F..01	12	34'-2"	STR.	LONG T & B	838	b	1'-9"	d	5'-9"
B	F502	31	6'-5"	STR.	TRANS BOT	207	c	1'-11 1/2"	g	1'-11 1/2"	B	F502	31	6'-5"	STR.	TRANS BOT	207	c	1'-11 1/2"	g	1'-11 1/2"	B	F502	31	6'-5"	STR.	TRANS BOT	207	c	1'-11 1/2"	g	1'-11 1/2"	B	F502	31	6'-5"	STR.	TRANS BOT	207	c	1'-11 1/2"	g	1'-11 1/2"
C	F503	31	6'-5"	STR.	TRANS TOP	207					C	F503	31	6'-5"	STR.	TRANS TOP	207					C	F503	31	6'-5"	STR.	TRANS TOP	207					C	F503	31	6'-5"	STR.	TRANS TOP	207				
STEM								STEM								STEM								STEM																			
							a	1'-8 1/2"	k	2'-0"							a	1'-9"	k	2'-0"							a	1'-9 1/2"	k	2'-0"							a	1'-10"	k	2'-0"			
							J	1'-3 3/8"									J	1'-4 3/8"									J	1'-4 7/8"									J	1'-5 3/8"					
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT																			
D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)									
E	F505E	16	4'-1"	0'-10"	DOWEL BF	68	(FOOTING)		E	F505E	16	4'-1"	0'-10"	DOWEL BF	68	(FOOTING)		E	F505E	16	4'-1"	0'-10"	DOWEL BF	68	(FOOTING)		E	F505E	16	4'-1"	0'-10"	DOWEL BF	68	(FOOTING)									
F	F506E	15	4'-3"	3'-3"	DOWEL BF	66	SPREAD	5.8	CU YD	F	F506E	15	4'-3"	3'-3"	DOWEL BF	66	SPREAD	6.6	CU YD	F	F506E	15	4'-3"	3'-3"	DOWEL BF	66	SPREAD	7.4	CU YD	F	F506E	15	4'-3"	3'-3"	DOWEL BF	66	SPREAD	8.5	CU YD				
G	S401E	31	4'-0"	STR.	VERT FF	83	PILE		CU YD	G	S401E	31	4'-2"	STR.	VERT FF	87	PILE		CU YD	G	S401E	31	5'-5"	STR.	VERT FF	113	PILE		CU YD	G	S401E	31	6'-3"	STR.	VERT FF	130	PILE		CU YD				
H	S502E	31	4'-0"	STR.	VERT BF	129	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	4'-2"	STR.	VERT BF	135	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	5'-5"	STR.	VERT BF	176	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	6'-3"	STR.	VERT BF	203	STRUCTURAL CONCRETE (3Y43)									
J	S503E	---	---	STR.	VERT BF	---	(STEM)		J	S503E	---	---	STR.	VERT BF	---	(STEM)		J	S503E	---	---	STR.	VERT BF	---	(STEM)		J	S503E	---	---	STR.	VERT BF	---	(STEM)									
K	S504E	31	7'-1"	3'-0"	TIE	229	9.0		CU YD	K	S504E	31	8'-9"	3'-10"	TIE	283	E(19)=9.7, A(1)=10.5		CU YD	K	S504E	31	8'-7"	3'-9"	TIE	278	E(18)=12.1, A(2)=11.6		CU YD	K	S504E	31	8'-7"	3'-9"	TIE	278	E(17)=14.0, A(3)=13.5		CU YD				
L	S405E	10	30'-0"	STR.	HORIZ EF	200	REINFORCEMENT (PLAIN)		L	S405E	12	30'-0"	STR.	HORIZ EF	240	REINFORCEMENT (PLAIN)		L	S405E	14	30'-0"	STR.	HORIZ EF	281	REINFORCEMENT (PLAIN)		L	S405E	16	30'-0"	STR.	HORIZ EF	321	REINFORCEMENT (PLAIN)									
M	S506E	10	7'-4"	1'-4"	EXP JT TIE	76	SPREAD	469	LB	M	S506E	12	7'-4"	1'-4"	EXP JT TIE	92	SPREAD	501	LB	M	S506E	14	7'-4"	1'-4"	EXP JT TIE	107	SPREAD	601	LB	M	S506E	16	7'-4"	1'-4"	EXP JT TIE	122	SPREAD	633	LB				
N	S507E	---	7'-9"	1'-9"	EXP JT TIE	---	PILE		LB	N	S507E	---	7'-9"	1'-9"	EXP JT TIE	---	PILE	1178	LB	N	S507E	---	7'-9"	1'-9"	EXP JT TIE	---	PILE		LB	N	S507E	---	7'-9"	1'-9"	EXP JT TIE	---	PILE		LB				
P	S508E	---	8'-2"	2'-2"	EXP JT TIE	---	REINFORCEMENT (EPOXY)		P	S508E	---	8'-2"	2'-2"	EXP JT TIE	---	REINFORCEMENT (EPOXY)		P	S508E	---	8'-2"	2'-2"	EXP JT TIE	---	REINFORCEMENT (EPOXY)		P	S508E	---	8'-2"	2'-2"	EXP JT TIE	---	REINFORCEMENT (EPOXY)									
Q	S509E	33	9'-0"	4'-0"	RAIL DOWEL	310	948		LB	Q	S509E	33	9'-0"	4'-0"	RAIL DOWEL	310	1281		LB	Q	S509E	33	9'-0"	4'-0"	RAIL DOWEL	310	1388		LB	Q	S509E	33	9'-0"	4'-0"	RAIL DOWEL	310	1498		LB				
Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213				Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213				Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213				Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213							

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES									
h = 9' PANELS: A(4) L=30'-6"								h = 10' PANELS: A(5), E(16) L=30'-6"								h = 11' PANELS: A(6), E(15) L=30'-6"								h = PANELS: L=																			
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																			
A	F501	12	32'-11"	STR.	LONG T & B	412	SPREAD FOOTING		A	F501	12	32'-11"	STR.	LONG T & B	412	SPREAD FOOTING		A	F501	14	32'-11"	STR.	LONG T & B	481	SPREAD FOOTING		A	F..01						SPREAD FOOTING									
B	F502	31	5'-0"	STR.	TRANS BOT	162	b	1'-8"	e	-----	B	F502	31	5'-6"	STR.	TRANS BOT	178	b	1'-9"	e	-----	B	F602	31	6'-0"	STR.	TRANS BOT	279	b	2'-0"	e	-----	B	F..02						b		e	-----
C	F503	31	5'-0"	STR.	TRANS TOP	162	c	1'-5"	f	-----	C	F503	31	5'-6"	STR.	TRANS TOP	178	c	1'-5"	f	-----	C	F503	31	6'-0"	STR.	TRANS TOP	194	c	1'-5"	f	-----	C	F..03						c		f	-----
							d	5'-6"	g	1'-10 5/16"							d	6'-0"	g	1'-11 1/2"								d	6'-6"	g	2'-2 5/16"								d		g		
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																			
A	F701	12	34'-2"	STR.	LONG T & B	838	b	1'-9"	d	5'-9"	A	F..01	12	34'-2"	STR.	LONG T & B	838	b	2'-0"	d	6'-0"	A	F..01	14	34'-2"	STR.	LONG T & B	838	b	2'-2"	d	6'-6"	A	F..01						b		d	
B	F502	31	6'-5"	STR.	TRANS BOT	207	c	1'-11 1/2"	g	1'-11 1/2"	B	F502	31	6'-8"	STR.	TRANS BOT	216	c	1'-11 1/2"	g	2'-2 5/16"	B	F502	31	7'-2"	STR.	TRANS BOT	232	c	1'-11 1/2"	g	2'-4 5/16"	B	F..02						c		g	
C	F503	31	6'-5"	STR.	TRANS TOP	207					C	F503	31	6'-8"	STR.	TRANS TOP	216					C	F503	31	7'-2"	STR.	TRANS TOP	232					C	F..03						c		g	
STEM								STEM								STEM								STEM																			
							a	1'-10 1/2"	k	2'-0"							a	1'-11"	k	2'-6"							a	1'-11 1/2"	k	3'-3"							a		k				
							J	1'-5 7/8"									J	1'-6 3/8"									J	1'-6 3/8"									J		k				
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT																			
D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (IA43)									
E	F505E	16	4'-4"	0'-10"	DOWEL BF	72	(FOOTING)		E	F505E	31	4'-10"	0'-10"	DOWEL BF	156	(FOOTING)		E	F505E	31	5'-7"	0'-10"	DOWEL BF	181	(FOOTING)		E	F..05E						(FOOTING)									
F	F506E	15	4'-6"	3'-6"	DOWEL BF	70	SPREAD	9.1	CU YD	F	F506E	30	5'-0"	4'-0"	DOWEL BF	156	SPREAD	9.9	CU YD	F	F506E	30	5'-9"	4'-9"	DOWEL BF	180	SPREAD	10.8	CU YD	F	F..06E						SPREAD		CU YD				
G	S401E	31	7'-2"	STR.	VERT FF	149	PILE		CU YD	G	S401E	31	7'-3"	STR.	VERT FF	150	PILE		CU YD	G	S401E	31	8'-3"	STR.	VERT FF	171	PILE		CU YD	G	S401E						PILE		CU YD				
H	S502E	31	7'-2"	STR.	VERT BF	232	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	7'-3"	STR.	VERT BF	234	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	8'-3"	STR.	VERT BF	267	STRUCTURAL CONCRETE (3Y43)		H	S..02E						STRUCTURAL CONCRETE (3Y43)									
J	S503E	---	---	STR.	VERT BF	---	(STEM)		J	S503E	---	---	STR.	VERT BF	---	(STEM)		J	S503E	---	---	STR.	VERT BF	---	(STEM)		J	S..03E						(STEM)									
K	S504E	31	8'-9"	3'-10"	TIE	283	15.5		CU YD	K	S504E	31	10'-7"	4'-9"	TIE	342	E(16)=17.1, A(5)=17.7		CU YD	K	S504E	31	10'-7"	4'-9"	TIE	342	E(15)=19.9, A(6)=19.1		CU YD	K	S504E						TIE		CU YD				
L	S405E	18	30'-0"	STR.	HORIZ EF	361	REINFORCEMENT (PLAIN)		L	S405E	20	30'-0"	STR.	HORIZ EF	401	REINFORCEMENT (PLAIN)		L	S405E	22	30'-0"	STR.	HORIZ EF	441	REINFORCEMENT (PLAIN)		L	S405E						REINFORCEMENT (PLAIN)									
M	S506E	18	7'-4"	1'-4"	EXP JT TIE	138	SPREAD	736	LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD	768	LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD	954	LB	M	S506E						SPREAD		LB				
N	S507E																																										

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES	
h = 12' PANELS: L=30'-6"								h = 13' PANELS: A(7), E(14) L=30'-6"								h = 14' PANELS: A(8), E(13) L=30'-6"								h = 15' PANELS: L=30'-6"											
h = 15' PANELS: L=30'-6"								h = 16' PANELS: A(9), E(12) L=30'-6"								h = 17' PANELS: A(10), E(11) L=30'-6"								h = 18' PANELS: L=30'-6"											
h = 18' PANELS: L=30'-6"								h = 19' PANELS: L=30'-6"								h = 20' PANELS: L=30'-6"								h = 21' PANELS: L=30'-6"											
h = 21' PANELS: L=30'-6"								h = 22' PANELS: L=30'-6"								h = 23' PANELS: L=30'-6"								h = 24' PANELS: L=30'-6"											
h = 24' PANELS: L=30'-6"								h = 25' PANELS: L=30'-6"								h = 26' PANELS: L=30'-6"								h = 27' PANELS: L=30'-6"											
h = 27' PANELS: L=30'-6"								h = 28' PANELS: L=30'-6"								h = 29' PANELS: L=30'-6"								h = 30' PANELS: L=30'-6"											



**NOTES:**  
L = PANEL LENGTH  
F.F. = FRONT FACE  
B.F. = BACK FACE  
E.F. = EACH FACE  
BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.

REVISED: 9-13-06  
APPROVED: MAY 31, 2006  
*Janet Elizabeth Gronert*  
STATE BRIDGE ENGINEER

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0138259



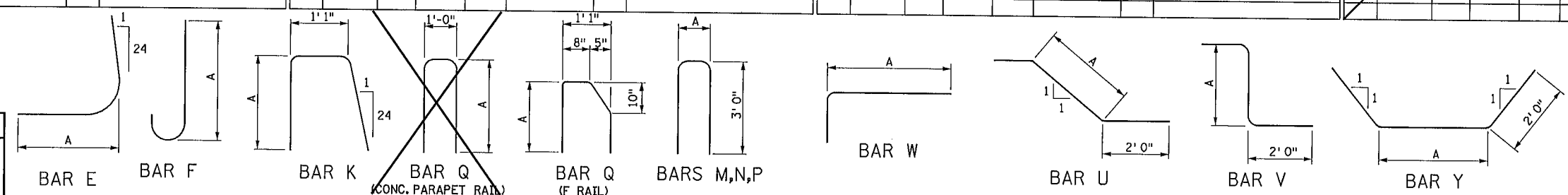
ANOKA COUNTY  
CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
WALL A/E PANEL TABULATIONS (SHEET 2 OF 6)

MODIFIED  
STANDARD SHEET NO. 5-297.628 (2 OF 4)

SHEET 297 OF 586

3:23:33 PM 9/11/2014

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES	
h = 18' PANELS: A(11) L=30'-6"								h = 19' PANELS: A(12), E(10) L=30'-6"								h = 20' PANELS: A(13) L=30'-6"								h = PANELS: L=											
h = 21' PANELS: A(14), E(9) L=30'-6"								h = 22' PANELS: E(8) L=30'-6"								h = 23' PANELS: A(15), E(7) L=30'-6"								h = PANELS: L=											
h = 22' PANELS: E(8) L=30'-6"								h = 23' PANELS: A(15), E(7) L=30'-6"								h = 24' PANELS: A(16), E(6) L=30'-6"								h = PANELS: L=											
h = 23' PANELS: A(15), E(7) L=30'-6"								h = 24' PANELS: A(16), E(6) L=30'-6"								h = 25' PANELS: A(17), E(5) L=30'-6"								h = PANELS: L=											
h = 24' PANELS: A(16), E(6) L=30'-6"								h = 25' PANELS: A(17), E(5) L=30'-6"								h = 26' PANELS: A(18), E(4) L=30'-6"								h = PANELS: L=											
h = 25' PANELS: A(17), E(5) L=30'-6"								h = 26' PANELS: A(18), E(4) L=30'-6"								h = 27' PANELS: A(19), E(3) L=30'-6"								h = PANELS: L=											
h = 26' PANELS: A(18), E(4) L=30'-6"								h = 27' PANELS: A(19), E(3) L=30'-6"								h = 28' PANELS: A(20), E(2) L=30'-6"								h = PANELS: L=											
h = 27' PANELS: A(19), E(3) L=30'-6"								h = 28' PANELS: A(20), E(2) L=30'-6"								h = 29' PANELS: A(21), E(1) L=30'-6"								h = PANELS: L=											
h = 28' PANELS: A(20), E(2) L=30'-6"								h = 29' PANELS: A(21), E(1) L=30'-6"								h = 30' PANELS: A(22), E(0) L=30'-6"								h = PANELS: L=											



**NOTES:**  
L = PANEL LENGTH  
F.F. = FRONT FACE  
B.F. = BACK FACE  
E.F. = EACH FACE  
BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.

REVISED: 5-28-2010  
APPROVED: MAY 31, 2006  
*Janet Elizabeth Gronert*  
STATE BRIDGE ENGINEER

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.  
Pr: Int Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
Date: 09/12/14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0139259



ANOKA COUNTY  
CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
WALL A/E PANEL TABULATIONS (SHEET 3 OF 6)  
MODIFIED  
STANDARD SHEET NO. 5-297.628 (3 OF 4)  
SHEET 298 OF 586

3:23:33 PM 9/11/2014

NO.	DATE	BY	CHKD	APPR	REVISION

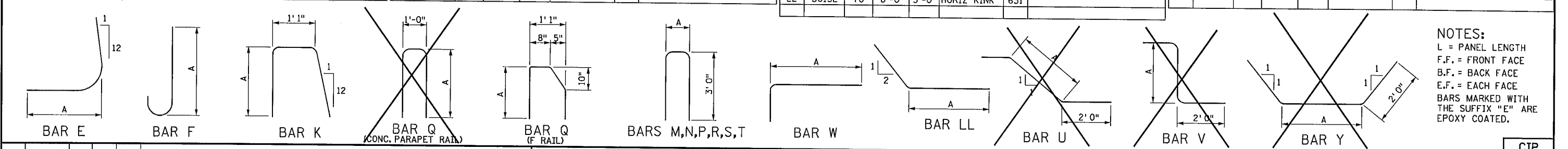


BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES									
h = 24' PANELS: A(16), E(6) L=30'-6"								h = 25' PANELS: A(17) L=30'-6"								h = 26' PANELS: L=30'-6"								h = 30' PANELS: A(18) L=30'-6"																			
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																			
DIMENSIONS								DIMENSIONS								DIMENSIONS								DIMENSIONS																			
A	F601	26	33'-5"	STR.	LONG T & B	1305	b	5'-3"	e	1'-4"	A	F601	28	33'-5"	STR.	LONG T & B	1405	b	5'-3"	e	1'-6"	A	F601	28	33'-5"	STR.	LONG T & B	1405	b	5'-10"	e	1'-6"	A	F701	2	32'-11"	STR.	LONG T & B	2462	b	7'-3"	e	1'-7"
B	F602	31	12'-1"	STR.	TRANS BOT	563	c	2'-9"	f	7'-5 1/2"	B	F602	31	12'-9"	STR.	TRANS BOT	594	c	2'-9"	f	7'-8 7/8"	B	F602	31	13'-3"	STR.	TRANS BOT	617	c	3'-0"	f	8'-1 1/2"	B	F1002	35	16'-9"	STR.	TRANS BOT	2523	c	3'-6"	f	10'-0"
C	F803	31	12'-1"	STR.	TRANS TOP	1000	d	12'-9"	g	5'-5 5/8"	C	F803	31	12'-9"	STR.	TRANS TOP	1055	d	13'-3"	g	5'-8 5/8"	C	F803	31	13'-3"	STR.	TRANS TOP	1097	d	13'-9"	g	6'-0 5/8"	C	F803	35	16'-9"	STR.	TRANS TOP	1566	d	17'-3"	g	7'-5 5/8"
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																			
PILE FOUNDATION								PILE FOUNDATION								PILE FOUNDATION								PILE FOUNDATION																			
A	F...01	26	13'-7"	STR.	LONG T & B	632	b	5'-0"	d	12'-9"	A	F...01	28	14'-1"	STR.	LONG T & B	656	b	5'-3"	d	13'-3"	A	F...01	28	14'-7"	STR.	LONG T & B	679	b	5'-6"	d	13'-9"	A	F...01	30	13'-2"	STR.	LONG T & B	2462	b	5'-9"	d	14'-3"
B	F602	31	12'-3"	STR.	TRANS BOT	532	c	2'-9"	f	7'-5 1/2"	B	F602	31	12'-9"	STR.	TRANS BOT	596	c	2'-9"	f	7'-5 5/8"	B	F602	31	14'-7"	STR.	TRANS BOT	679	c	3'-0"	f	8'-1 1/2"	B	F...02	31	13'-2"	STR.	TRANS BOT	2462	c	3'-6"	f	10'-0"
C	F803	31	14'-1"	STR.	TRANS TOP	1166	d	12'-9"	g	5'-5 5/8"	C	F803	31	14'-7"	STR.	TRANS TOP	1207	d	13'-3"	g	5'-8 5/8"	C	F803	31	15'-1"	STR.	TRANS TOP	1248	d	13'-9"	g	6'-0 5/8"	C	F803	31	16'-3"	STR.	TRANS TOP	1713	d	17'-3"	g	7'-5 5/8"
STEM								STEM								STEM								STEM																			
QUANTITIES								QUANTITIES								QUANTITIES								QUANTITIES																			
D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)									
E	F905E	31	15'-10"	7'-0"	DOWEL BF	1669	(FOOTING)		E	F1005E	31	16'-0"	7'-3"	DOWEL BF	2134	(FOOTING)		E	F1005E	31	16'-7"	7'-7"	DOWEL BF	2212	(FOOTING)		E	F1105E	34	20'-7"	7'-10"	DOWEL BF	3718	(FOOTING)									
F	F906E	30	11'-7"	10'-4"	DOWEL BF	1148	SPREAD	43.4	CU YD	F	F1006E	30	11'-10"	10'-5"	DOWEL BF	1463	SPREAD	45.6	CU YD	F	F1006E	30	12'-1"	10'-5"	DOWEL BF	1495	SPREAD	51.2	CU YD	F	F1106E	33	15'-4"	11'-6"	DOWEL BF	2688	SPREAD	78.5	CU YD				
G	S401E	31	21'-3"	STR.	VERT FF	440	PILE		G	S401E	31	22'-3"	STR.	VERT FF	461	PILE		G	S401E	31	23'-3"	STR.	VERT FF	481	PILE		G	S401E	31	27'-0"	STR.	VERT FF	559	PILE									
H	S702E	31	21'-3"	STR.	VERT BF	1346	STRUCTURAL CONCRETE (3Y43)		H	S802E	31	22'-3"	STR.	VERT BF	1842	STRUCTURAL CONCRETE (3Y43)		H	S802E	31	23'-3"	STR.	VERT BF	1924	STRUCTURAL CONCRETE (3Y43)		H	S1102E	34	27'-0"	STR.	VERT BF	4877	STRUCTURAL CONCRETE (3Y43)									
J	S703E	30	12'-0"	STR.	VERT BF	736	(STEM)		J	S803E	30	10'-6"	STR.	VERT BF	841	(STEM)		J	S803E	30	11'-6"	STR.	VERT BF	921	(STEM)		J	S1103E	33	16'-8"	STR.	VERT BF	2922	(STEM)									
K	S504E	31	10'-7"	4'-9"	TIE	342	E(6)=52.8, A(16)=49.7 CU YD		K	S504E	31	10'-7"	4'-9"	TIE	342	55.1 CU YD		K	S504E	31	10'-7"	4'-9"	TIE	342	59.9 CU YD		K	S504E	31	10'-11"	4'-11"	TIE	353	79.3 CU YD									
L	S405E	48	30'-0"	STR.	HORIZ EF	962	REINFORCEMENT (PLAIN)		L	S405E	50	30'-0"	STR.	HORIZ EF	1002	REINFORCEMENT (PLAIN)		L	S405E	52	30'-0"	STR.	HORIZ EF	1042	REINFORCEMENT (PLAIN)		L	S405E	60	30'-0"	STR.	HORIZ EF	1202	REINFORCEMENT (PLAIN)									
M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD	2868	LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD	3054	LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD	3119	LB	M	S506E	14	7'-4"	1'-4"	EXP JT TIE	107	SPREAD	6551	LB				
N	S507E	20	7'-9"	1'-9"	EXP JT TIE	162	PILE		N	S507E	20	7'-9"	1'-9"	EXP JT TIE	162	PILE		N	S507E	20	7'-9"	1'-9"	EXP JT TIE	162	PILE		N	S507E	14	7'-9"	1'-9"	EXP JT TIE	113	PILE									
P	S508E	8	8'-2"	2'-2"	EXP JT TIE	68	REINFORCEMENT (EPOXY)		P	S508E	10	8'-2"	2'-2"	EXP JT TIE	85	REINFORCEMENT (EPOXY)		P	S508E	12	8'-2"	2'-2"	EXP JT TIE	102	REINFORCEMENT (EPOXY)		P	S508E	14	8'-2"	2'-2"	EXP JT TIE	119	REINFORCEMENT (EPOXY)									
Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213	7336		LB	Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213	8795		LB	Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213	8997		LB	Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213	17187		LB				
R	S510E	14	8'-7"	2'-7"	EXP JT TIE	125			R	S510E	14	8'-7"	2'-7"	EXP JT TIE	125			R	S510E	14	8'-7"	2'-7"	EXP JT TIE	125			R	S510E	14	8'-7"	2'-7"	EXP JT TIE	125										
S	S511E	10	9'-0"	3'-0"	EXP JT TIE	94			S	S511E	10	9'-0"	3'-0"	EXP JT TIE	94			S	S511E	10	9'-0"	3'-0"	EXP JT TIE	94			S	S511E	10	9'-0"	3'-0"	EXP JT TIE	94										

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES														
h = 31' PANELS: A(19) L=30'-6"								h = 28' PANELS: E(5) L=30'-6"								h = 29' PANELS: A(20) L=30'-6"								h = 29' PANELS: E(4) L=30'-6"																								
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																								
DIMENSIONS								DIMENSIONS								DIMENSIONS								DIMENSIONS																								
A	F701	36	22'-5"	STR.	LONG T & B	1650	b	7'-3"	e	1'-7"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								A	F701	32	34'-2"	STR.	LONG T & B	2235	b	6'-10"	e	1'-7"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								A	F...01	32	17'-3"	STR.	LONG T & B	1818	b	6'-2"	d	15'-3"
B	F1002	24	16'-9"	STR.	TRANS BOT	1730	c	3'-6"	f	10'-0"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								B	F602	31	15'-0"	STR.	TRANS BOT	698	c	3'-6"	f	9'-3 1/2"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								B	F...02	31	16'-1"	STR.	TRANS BOT	1495	c	3'-6"	f	10'-0"
C	F803	24	16'-9"	STR.	TRANS TOP	1074	d	17'-3"	g	7'-5 5/8"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								C	F903	31	15'-0"	STR.	TRANS TOP	1581	d	15'-6"	g	7'-0 5/8"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								C	F...03	31	17'-3"	STR.	TRANS TOP	1818	d	15'-6"	g	7'-0 5/8"
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																								
PILE FOUNDATION								PILE FOUNDATION								PILE FOUNDATION								PILE FOUNDATION																								
A							b		d		SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								A	F...01	32	17'-3"	STR.	LONG T & B	1818	b	6'-2"	d	15'-3"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								A	F...01	32	17'-3"	STR.	LONG T & B	1818	b	6'-2"	d	15'-3"
B							c		g		SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								B	F602	31	16'-1"	STR.	TRANS BOT	1495	c	3'-6"	f	10'-0"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								B	F...02	31	16'-1"	STR.	TRANS BOT	1495	c	3'-6"	f	10'-0"
C							d		g		SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								C	F903	31	15'-0"	STR.	TRANS TOP	1581	d	15'-6"	g	7'-0 5/8"	SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								C	F...03	31	17'-3"	STR.	TRANS TOP	1818	d	15'-6"	g	7'-0 5/8"
STEM								STEM								STEM								STEM																								
QUANTITIES								QUANTITIES								QUANTITIES								QUANTITIES																								
D	F504E	24	3'-0"	STR.	DOWEL FF	75	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)														
E	F1105E	28	20'-7"	7'-10"	DOWEL BF	3062	(FOOTING)		E	F1105E	31	19'-0"	8'-2"	DOWEL BF	3143	(FOOTING)		E	F1105E	31	19'-6"	8'-4"	DOWEL BF	3212	(FOOTING)		E	F1105E	32	19'-6"	8'-4"	DOWEL BF	3316	(FOOTING)														
F	F1106E	26	15'-4"	11'-6"	DOWEL BF	2118	SPREAD	60.1	CU YD	F	F1106E	30	14'-3"	12'-8"	DOWEL BF	2178	SPREAD	75.0	CU YD	F	F1106E	30	14'-6"	12'-11"	DOWEL BF	2218	SPREAD	66.5	CU YD	F	F1106E	31	14'-6"	12'-11"	DOWEL BF	2389	SPREAD	71.1	CU YD									
G	S401E	31	27'-0"	STR.	VERT FF	559	PILE		G	S401E	31	25'-3"	STR.	VERT FF	523	PILE		G	S401E	31	26'-3"	STR.	VERT FF	544	PILE		G	S401E	31	26'-3"	STR.	VERT FF	544	PILE														
H	S1102E	34	27'-0"	STR.	VERT BF	4877	STRUCTURAL CONCRETE (3Y43)		H	S902E	31	25'-3"	STR.	VERT BF	2661	STRUCTURAL CONCRETE (3Y43)		H	S902E	31	26'-3"	STR.	VERT BF	2767	STRUCTURAL CONCRETE (3Y43)		H	S902E	32	26'-3"	STR.	VERT BF	2856	STRUCTURAL CONCRETE (3Y43)														
J	S1103E	33	16'-8"	STR.	VERT BF	2922	(STEM)		J	S903E	30	13'-0"	STR.	VERT BF	1326	(STEM)		J	S903E	30	14'-0"	STR.	VERT BF	1428	(STEM)		J	S903E	31	14'-0"	STR.	VERT BF	1476	(STEM)														
K	S504E	31	10'-11"	4'-11"	TIE	353	83.4		CU YD	K	S504E	31	10'-7"	4'-9"	TIE	342	64.6		CU YD	K	S504E	31	10'-7"	4'-9"	TIE	342	66.0		CU YD	K	S504E	31	10'-7"	4'-9"	TIE	342	68.0		CU YD									
L	S505E	60	30'-0"	STR.	HORIZ EF	1877	REINFORCEMENT (PLAIN)		L	S405E	56	30'-0"	STR.	HORIZ EF	1122	REINFORCEMENT (PLAIN)		L	S405E	58	30'-0"	STR.	HORIZ EF	1162	REINFORCEMENT (PLAIN)		L	S405E	58	30'-0"	STR.	HORIZ EF	1162	REINFORCEMENT (PLAIN)														
M	S506E	14	7'-4"	1'-4"	EXP JT TIE	107	SPREAD	4454	LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD		LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD	4514	LB	M	S506E	20	7'-4"	1'-4"	EXP JT TIE	153	SPREAD		LB									
N	S507E	14	7'-9"	1'-9"	EXP JT TIE	113	PILE		N	S507E	20	7'-9"	1'-9"	EXP JT TIE	162	PILE		N	S507E	20	7'-9"	1'-9"	EXP JT TIE	162	PILE		N	S507E	20	7'-9"	1'-9"	EXP JT TIE	162	PILE														
P	S508E	14	8'-2"	2'-2"	EXP JT TIE	119	REINFORCEMENT (EPOXY)		P	S508E	16	8'-2"	2'-2"	EXP JT TIE	136	REINFORCEMENT (EPOXY)		P	S508E	18	8'-2"	2'-2"	EXP JT TIE	153	REINFORCEMENT (EPOXY)		P	S508E	18	8'-2"	2'-2"	EXP JT TIE	153	REINFORCEMENT (EPOXY)														
Q	S509E	33	6'-2"	2'-8"																																												

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES	
h = 30' PANELS: A(21) L=30'-6"								h = 30' PANELS: E(3) L=30'-6"								h = 31' PANELS: A(22) L=30'-6"								h = 32' PANELS: A(23) L=30'-6"											
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT											
SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								SEE FOOTING REINFORCEMENT DESIGN (PANELS E3-E5)								SEE FOOTING REINFORCEMENT DESIGN (PANELS E1-E2)								SEE FOOTING REINFORCEMENT DESIGN (PANELS E1-E2)											
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT											
STEM								STEM								STEM								STEM											
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT											
QUANTITIES								QUANTITIES								QUANTITIES								QUANTITIES											
STRUCTURAL CONCRETE (IA43)								STRUCTURAL CONCRETE (IA43)								STRUCTURAL CONCRETE (IA43)								STRUCTURAL CONCRETE (IA43)											
(FOOTING)								(FOOTING)								(FOOTING)								(FOOTING)											
REINFORCEMENT (PLAIN)								REINFORCEMENT (PLAIN)								REINFORCEMENT (PLAIN)								REINFORCEMENT (PLAIN)											
REINFORCEMENT (EPOXY)								REINFORCEMENT (EPOXY)								REINFORCEMENT (EPOXY)								REINFORCEMENT (EPOXY)											

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES	
h = 33' PANELS: A(24), A(25) L=30'-6"								h = 34' PANELS: A(26), A(27) L=30'-6"								h = 35' PANELS: E(1) L=21'-2 3/4"								h = 35' PANELS: E(2) L=21'-2 3/4"											
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT											
SEE FOOTING REINFORCEMENT DESIGN (PANELS E1-E2)								SEE FOOTING REINFORCEMENT DESIGN (PANELS E1-E2)								SEE FOOTING REINFORCEMENT DESIGN (PANELS E1-E2)								SEE FOOTING REINFORCEMENT DESIGN (PANELS E1-E2)											
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT											
STEM								STEM								STEM								STEM											
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT											
QUANTITIES								QUANTITIES								QUANTITIES								QUANTITIES											
STRUCTURAL CONCRETE (IA43)								STRUCTURAL CONCRETE (IA43)								STRUCTURAL CONCRETE (IA43)								STRUCTURAL CONCRETE (IA43)											
(FOOTING)								(FOOTING)								(FOOTING)								(FOOTING)											
REINFORCEMENT (PLAIN)								REINFORCEMENT (PLAIN)								REINFORCEMENT (PLAIN)								REINFORCEMENT (PLAIN)											
REINFORCEMENT (EPOXY)								REINFORCEMENT (EPOXY)								REINFORCEMENT (EPOXY)								REINFORCEMENT (EPOXY)											



NOTES:  
 L = PANEL LENGTH  
 F.F. = FRONT FACE  
 B.F. = BACK FACE  
 E.F. = EACH FACE  
 BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.

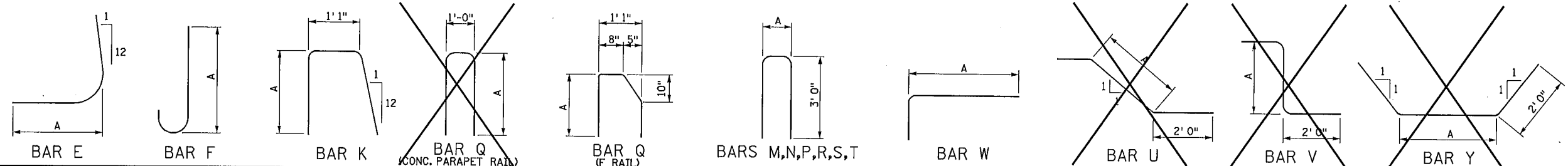
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date 09/12/14 License # 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259  
**SRH** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

CIP ANOKA COUNTY  
 SHEET 300 OF 586  
 CIP RETAINING WALL DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 WALL A/E PANEL TABULATIONS (SHEET 5 OF 6)

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BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES							
h = 35' PANELS; A(28) L=30'-6"								h = 35' PANELS; A(29) L=18'-2 1/8"								h = 36' PANELS; A(30) L=18'-2 1/8"																
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																
DIMENSIONS								DIMENSIONS								DIMENSIONS																
A	F701	40	34'-2"	STR.	LONG T & B	2794	b	8'-10"	e	1'-9"	A	F701	40	21'-10"	STR.	LONG T & B	1786	b	8'-10"	e	1'-9"	A	F701	42	21'-10"	STR.	LONG T & B	1875	b	9'-2"	e	1'-9"
B	F902	61	19'-2"	STR.	TRANS BOT	3975	c	3'-6"	f	13'-0"	B	F902	37	19'-2"	STR.	TRANS BOT	2411	c	3'-6"	f	13'-0"	B	F902	37	19'-10"	STR.	TRANS BOT	2495	c	3'-6"	f	13'-5"
C	F903	31	19'-2"	STR.	TRANS TOP	2021	d	19'-8"	g	9'-0 5/16"	C	F903	19	19'-2"	STR.	TRANS TOP	1239	d	19'-8"	g	9'-0 5/16"	C	F903	19	19'-10"	STR.	TRANS TOP	1282	d	20'-4"	g	9'-4 5/16"
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																
PILE FOUNDATION								PILE FOUNDATION								PILE FOUNDATION																
A	F..01			STR.	LONG T & B		b		d		A	F..01			STR.	LONG T & B		b		d		A	F..01			STR.	LONG T & B		b		d	
B	F..02			STR.	TRANS BOT		c		g		B	F..02			STR.	TRANS BOT		c		g		B	F..02			STR.	TRANS BOT		c		g	
C	F..03			STR.	TRANS TOP		d		g		C	F..03			STR.	TRANS TOP		d		g		C	F..03			STR.	TRANS TOP		d		g	
STEM								STEM								STEM																
QUANTITIES								QUANTITIES								QUANTITIES																
D	F504E	35	3'-0"	STR.	DOWEL FF	110	STRUCTURAL CONCRETE (1A43)		D	F504E	19	3'-0"	STR.	DOWEL FF	60	STRUCTURAL CONCRETE (1A43)		D	F504E	19	3'-0"	STR.	DOWEL FF	60	STRUCTURAL CONCRETE (1A43)							
E	F1105E	38	20'-7"	8'-4"	DOWEL BF	4156	(FOOTING)		E	F1105E	21	20'-7"	8'-4"	DOWEL BF	2297	(FOOTING)		E	F1105E	23	20'-7"	8'-4"	DOWEL BF	2516	(FOOTING)							
F	F1106E	37	15'-4"	13'-9"	DOWEL BF	3015	SPREAD	84.3	CU YD	F	F1106E	20	15'-4"	13'-9"	DOWEL BF	1630	SPREAD	50.2	CU YD	F	F1106E	22	15'-4"	13'-9"	DOWEL BF	1793	SPREAD	51.9	CU YD			
G	S401E	35	32'-3"	STR.	VERT FF	755	PILE		G	S401E	19	32'-3"	STR.	VERT FF	410	PILE		G	S401E	19	33'-3"	STR.	VERT FF	423	PILE							
H	S1102E	38	32'-3"	STR.	VERT BF	6512	STRUCTURAL CONCRETE (3Y43)		H	S1102E	21	32'-3"	STR.	VERT BF	3599	STRUCTURAL CONCRETE (3Y43)		H	S1102E	23	33'-3"	STR.	VERT BF	4064	STRUCTURAL CONCRETE (3Y43)							
J	S1103E	37	20'-0"	STR.	VERT BF	3932	(STEM)		J	S1103E	20	20'-0"	STR.	VERT BF	2126	(STEM)		J	S1103E	22	21'-0"	STR.	VERT BF	2455	(STEM)							
K	S504E	31	10'-7"	4'-9"	TIE	342	114.8		CU YD	K	S504E	19	10'-7"	4'-9"	TIE	210	69.4		CU YD	K	S504E	19	10'-7"	4'-9"	TIE	210	71.1		CU YD			
L	S605E	70	30'-0"	STR.	HORIZ EF	3154	REINFORCEMENT (PLAIN)		L	S605E	70	17'-8"	STR.	HORIZ EF	2235	REINFORCEMENT (PLAIN)		L	S605E	72	17'-8"	STR.	HORIZ EF	2235	REINFORCEMENT (PLAIN)							
M	S506E	12	7'-4"	1'-4"	EXP JT TIE	92	SPREAD	8790	LB	M	S506E	12	7'-4"	1'-4"	EXP JT TIE	92	SPREAD	5435	LB	M	S506E	12	7'-4"	1'-4"	EXP JT TIE	92	SPREAD	5651	LB			
N	S507E	12	7'-10"	1'-10"	EXP JT TIE	99	PILE		N	S507E	12	7'-10"	1'-10"	EXP JT TIE	99	PILE		N	S507E	12	7'-10"	1'-10"	EXP JT TIE	99	PILE							
P	S508E	12	8'-4"	2'-4"	EXP JT TIE	105	REINFORCEMENT (EPOXY)		P	S508E	12	8'-4"	2'-4"	EXP JT TIE	105	REINFORCEMENT (EPOXY)		P	S508E	12	8'-4"	2'-4"	EXP JT TIE	105	REINFORCEMENT (EPOXY)							
Q	S509E	33	6'-2"	2'-8"	F-RAILDOWEL	213	22816		LB	Q	S509E	20	6'-2"	2'-8"	F-RAILDOWEL	129	13323		LB	Q	S509E	20	6'-2"	2'-8"	F-RAILDOWEL	129	14533		LB			
R	S510E	12	8'-10"	2'-10"	EXP JT TIE	111			R	S510E	12	8'-10"	2'-10"	EXP JT TIE	111			R	S510E	12	8'-10"	2'-10"	EXP JT TIE	111								
S	S511E	12	9'-4"	3'-4"	EXP JT TIE	117			S	S511E	12	9'-4"	3'-4"	EXP JT TIE	117			S	S511E	12	9'-4"	3'-4"	EXP JT TIE	117								
T	S512E	10	9'-10"	3'-10"	EXP JT TIE	103			T	S512E	10	9'-10"	3'-10"	EXP JT TIE	103			T	S512E	12	9'-10"	3'-10"	EXP JT TIE	124								



NOTES:  
L = PANEL LENGTH  
F.F. = FRONT FACE  
B.F. = BACK FACE  
E.F. = EACH FACE  
BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.

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: JANET ELIZABETH GRONERT  
Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004 199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0138259



ANOKA COUNTY  
CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
WALL A/E PANEL TABULATIONS (SHEET 6 OF 6)

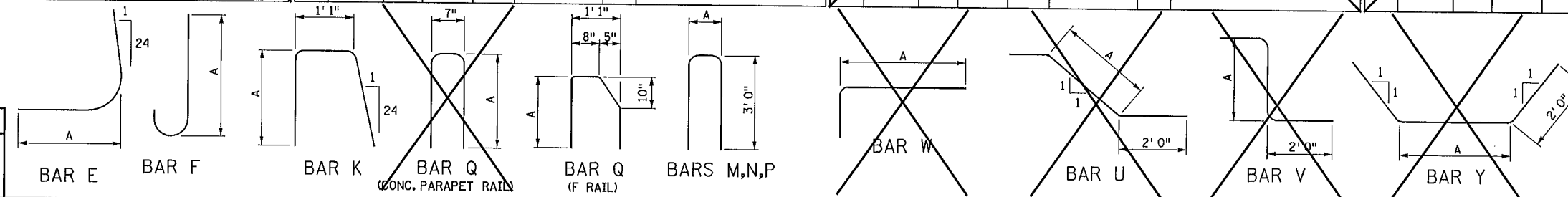
CIP SHEET 301 OF 586

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NO.	DATE	BY	CHK	APPR	REVISION



BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES	
h = 5' PANELS: L=30'-6"								h = 6' PANELS: L=30'-6"								h = 7' PANELS: D(1) L=30'-6"								h = 8' PANELS: D(2) L=30'-6"											
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT											
DIMENSIONS								DIMENSIONS								DIMENSIONS								DIMENSIONS											
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT											
STEM								STEM								STEM								STEM											
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT											
QUANTITIES								QUANTITIES								QUANTITIES								QUANTITIES											
h = 9' PANELS: L=30'-6"								h = 10' PANELS: D(3) L=30'-6"								h = 11' PANELS: L=30'-6"								h = PANELS: L=											
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT											
DIMENSIONS								DIMENSIONS								DIMENSIONS								DIMENSIONS											
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT											
STEM								STEM								STEM								STEM											
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT											
QUANTITIES								QUANTITIES								QUANTITIES								QUANTITIES											



NOTES:  
L = PANEL LENGTH  
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B.F. = BACK FACE  
E.F. = EACH FACE  
BARS MARKED WITH THE SUFFIX "E" ARE EPOXY COATED.

REVISED: 9-13-06  
APPROVED: MAY 31, 2006  
Janet Elzabeth Gronert  
STATE BRIDGE ENGINEER

MODIFIED  
STANDARD SHEET NO.  
5-297.628 (1 OF 4)

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: JANET ELZABETH GRONERT  
Date: 09/12/14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
199-115-002  
DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0138259



ANOKA COUNTY  
CIP RETAINING WALL DETAILS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
WALL D PANEL TABULATIONS (SHEET 1 OF 2)  
SHEET 302 OF 586

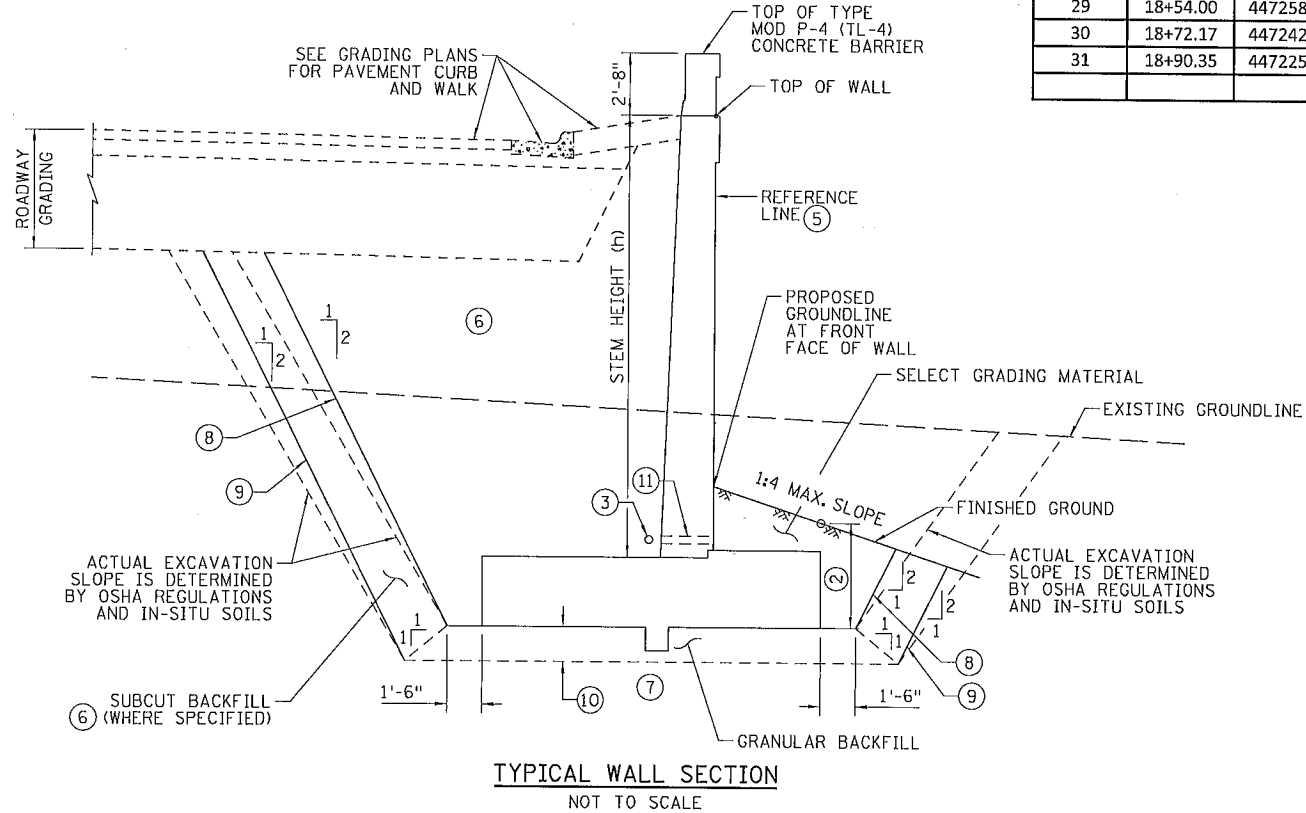
3/23/13 36 PM  
9/11/2014  
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NO.	DATE	BY	CHKD	APPR	REVISION

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES									
h = 12' PANELS: D(4) L=30'-6"								h = 13' PANELS: L=30'-6"								h = 14' PANELS: D(5) L=30'-6"								h = 15' PANELS: L=30'-6"																			
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																			
A	F501	14	32'-11"	STR.	LONG T & B	481	SPREAD FOOTING		A	F501	14	32'-11"	STR.	LONG T & B	481	SPREAD FOOTING		A	F501	16	32'-11"	STR.	LONG T & B	549	SPREAD FOOTING		A	F...01			STR.	LONG T & B		SPREAD FOOTING									
B	F702	31	6'-3"	STR.	TRANS BOT	396	b	2'-3"	e	1'-0"	B	F802	31	6'-6"	STR.	TRANS BOT	538	b	2'-6"	e	1'-0"	B	F702	31	7'-2"	STR.	TRANS BOT	454	b	2'-9"	e	1'-0"	B	F...02			STR.	TRANS BOT		b		e	
C	F503	31	6'-3"	STR.	TRANS TOP	202	c	1'-5"	f	3'-10 5/8"	C	F503	31	6'-6"	STR.	TRANS TOP	210	c	1'-5"	f	4'-2 1/8"	C	F503	31	7'-2"	STR.	TRANS TOP	232	c	1'-6"	f	4'-5 3/4"	C	F...03			STR.	TRANS TOP		c		f	
							d	6'-9"	g	2'-5 1/8"							d	7'-0"	g	2'-8 5/8"								d	7'-8"	g	2'-11 1/8"								d		g		
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																			
A	F...01	14		STR.	LONG T & B		b	2'-4"	d	7'-0"	A	F...01	16		STR.	LONG T & B		b	2'-6"	d	7'-6"	A	F...01	16		STR.	LONG T & B		b	2'-9"	d	8'-0"	A	F...01			STR.	LONG T & B		b		d	
B	F...02	31		STR.	TRANS BOT		c	1'-6"	f	4'-9 1/4"	B	F...02	31		STR.	TRANS BOT		c	1'-6"	f	4'-9 1/4"	B	F...02	31		STR.	TRANS BOT		c	1'-6"	f	4'-9 1/4"	B	F...02			STR.	TRANS BOT		c		f	
C	F503	31	7'-8"	STR.	TRANS TOP	248	c	1'-5"	f	3'-10 5/8"	C	F503	31	7'-0"	STR.	TRANS TOP	264	c	1'-5"	f	4'-2 1/8"	C	F503	31	8'-8"	STR.	TRANS TOP	280	c	1'-6"	f	4'-5 3/4"	C	F...03			STR.	TRANS TOP		c		f	
							d	6'-9"	g	2'-5 1/8"							d	7'-0"	g	2'-8 5/8"								d	7'-8"	g	2'-11 1/8"								d		g		
STEM								STEM								STEM								STEM																			
							a	2'-0"	k	4'-3"							a	2'-0 1/2"	k	5'-3"								a	2'-1"	k	6'-3"								a		k		
							J	1'-7 3/8"									J	1'-7 3/8"										J	1'-8 3/8"										J				
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT																			
D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)									
E	F505E	31	6'-10"	STR.	DOWEL BF	221	(FOOTING)		E	F505E	31	7'-10"	STR.	DOWEL BF	263	(FOOTING)		E	F505E	31	8'-10"	STR.	DOWEL BF	286	(FOOTING)		E	F...05E			STR.	DOWEL BF		(FOOTING)									
F	F506E	30	7'-3"	STR.	DOWEL BF	227	SPREAD	12.3	CU YD	F	F506E	30	8'-3"	STR.	DOWEL BF	258	SPREAD	12.8	CU YD	F	F506E	30	9'-6"	STR.	DOWEL BF	297	SPREAD	14.6	CU YD	F	F...06E			STR.	DOWEL BF		SPREAD		CU YD				
G	S401E	31	9'-3"	STR.	VERT FF	192	PILE		G	S401E	31	10'-3"	STR.	VERT FF	212	PILE		G	S401E	31	11'-3"	STR.	VERT FF	233	PILE		G	S...01E			STR.	VERT FF		PILE									
H	S502E	31	9'-3"	STR.	VERT BF	299	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	10'-3"	STR.	VERT BF	331	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	11'-3"	STR.	VERT BF	364	STRUCTURAL CONCRETE (3Y43)		H	S...02E			STR.	VERT BF		STRUCTURAL CONCRETE (3Y43)									
J	S503E			STR.	VERT BF		(STEM)		J	S503E			STR.	VERT BF		(STEM)		J	S503E			STR.	VERT BF		(STEM)		J	S...03E			STR.	VERT BF		(STEM)									
K	S504E	31	10'-7"	STR.	TIE	342	21.5		K	S504E	31	10'-7"	STR.	TIE	342	26.0		K	S504E	31	10'-7"	STR.	TIE	342	25.6		K	S504E			STR.	TIE		25.6									
L	S405E	24	30'-0"	STR.	HORIZ EF	481	REINFORCEMENT (PLAIN)		L	S405E	26	30'-0"	STR.	HORIZ EF	521	REINFORCEMENT (PLAIN)		L	S405E	28	30'-0"	STR.	HORIZ EF	561	REINFORCEMENT (PLAIN)		L	S405E			STR.	HORIZ EF		REINFORCEMENT (PLAIN)									
M	S506E	20	7'-4"	STR.	EXP JT TIE	153	SPREAD	1079	LB	M	S506E	20	7'-4"	STR.	EXP JT TIE	153	SPREAD	1229	LB	M	S506E	20	7'-4"	STR.	EXP JT TIE	153	SPREAD	1235	LB	M	S506E			STR.	EXP JT TIE		SPREAD		LB				
N	S507E	4	7'-9"	STR.	EXP JT TIE	32	PILE		N	S507E	6	7'-9"	STR.	EXP JT TIE	48	PILE		N	S507E	8	7'-9"	STR.	EXP JT TIE	65	PILE		N	S507E			STR.	EXP JT TIE		PILE									
P	S508E			STR.	EXP JT TIE		REINFORCEMENT (EPOXY)		P	S508E			STR.	EXP JT TIE		REINFORCEMENT (EPOXY)		P	S508E			STR.	EXP JT TIE		REINFORCEMENT (EPOXY)		P	S508E			STR.	EXP JT TIE		REINFORCEMENT (EPOXY)									
Q	S509E	33	6'-2"	STR.	F-RAILDOWEL	213	2257		Q	S509E	33	6'-2"	STR.	F-RAILDOWEL	213	2215		Q	S509E	33	6'-2"	STR.	F-RAILDOWEL	213	2611		Q	S509E			STR.	F-RAILDOWEL		2611									

BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES		BAR	MARK	NO.	LENGTH	A	LOCATION	WT.	DIMENSIONS & QUANTITIES									
h = 15' PANELS: L=30'-6"								h = 16' PANELS: L=30'-6"								h = 17' PANELS: L=30'-6"								h = 18' PANELS: L=30'-6"																			
SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT								SPREAD FOOTING REINFORCEMENT																			
A	F501	18	32'-11"	STR.	LONG T & B	618	SPREAD FOOTING		A	F501	18	32'-11"	STR.	LONG T & B	618	SPREAD FOOTING		A	F501	20	32'-11"	STR.	LONG T & B	687	SPREAD FOOTING		A	F...01			STR.	LONG T & B		SPREAD FOOTING									
B	F602	31	7'-8"	STR.	TRANS BOT	357	b	3'-0"	e	1'-0"	B	F602	31	8'-2"	STR.	TRANS BOT	380	b	3'-3"	e	1'-0"	B	F602	31	8'-8"	STR.	TRANS BOT	404	b	3'-6"	e	1'-0"	B	F...02			STR.	TRANS BOT		b		e	
C	F503	31	7'-8"	STR.	TRANS TOP	248	c	1'-6"	f	4'-9 1/4"	C	F503	31	8'-2"	STR.	TRANS TOP	264	c	1'-9"	f	5'-0 7/8"	C	F603	31	8'-8"	STR.	TRANS TOP	404	c	1'-9"	f	5'-4 3/4"	C	F...03			STR.	TRANS TOP		c		f	
							d	8'-2"	g	3'-2 5/8"							d	8'-8"	g	3'-5 1/8"								d	9'-2"	g	3'-8 5/8"								d		g		
PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT								PILE FOUNDATION REINFORCEMENT																			
A	F...01	18		STR.	LONG T & B		b	3'-0"	d	8'-6"	A	F801	18	35'-4"	STR.	LONG T & B	1698	b	3'-3"	d	9'-0"	A	F...01	20		STR.	LONG T & B		b	3'-6"	d	9'-6"	A	F...01			STR.	LONG T & B		b		d	
B	F602	31	9'-4"	STR.	TRANS BOT	435	c	1'-6"	f	4'-9 1/4"	B	F602	31	9'-10"	STR.	TRANS BOT	458	c	1'-6"	f	4'-9 1/4"	B	F...02	31		STR.	TRANS BOT		c	1'-6"	f	4'-9 1/4"	B	F...02			STR.	TRANS BOT		c		f	
C	F503	31	9'-2"	STR.	TRANS TOP	296	c	1'-5"	f	3'-10 5/8"	C	F503	31	9'-8"	STR.	TRANS TOP	313	c	1'-5"	f	4'-2 1/8"	C	F503	31	10'-2"	STR.	TRANS TOP	329	c	1'-6"	f	4'-5 3/4"	C	F...03			STR.	TRANS TOP		c		f	
							d	6'-9"	g	2'-5 1/8"							d	7'-0"	g	2'-8 5/8"								d	7'-8"	g	2'-11 1/8"								d		g		
STEM								STEM								STEM								STEM																			
							a	2'-1 1/2"	k	2'-6"							a	2'-2"	k	3'-6"								a	2'-2 1/2"	k	4'-6"								a		k		
							J	1'-8 3/8"									J	1'-9 3/8"										J	1'-9 3/8"										J				
FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT								FOOTING DOWELS & STEM REINFORCEMENT																			
D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)		D	F504E	31	3'-0"	STR.	DOWEL FF	97	STRUCTURAL CONCRETE (1A43)									
E	F605E	31	8'-10"	STR.	DOWEL BF	411	(FOOTING)		E	F605E	31	10'-2"	STR.	DOWEL BF	473	(FOOTING)		E	F605E	31	11'-5"	STR.	DOWEL BF	532	(FOOTING)		E	F...05E			STR.	DOWEL BF		(FOOTING)									
F	F606E	30	5'-9"	STR.	DOWEL BF	259	SPREAD	15.4	CU YD	F	F606E	30	7'-0"	STR.	DOWEL BF	315	SPREAD	18.8	CU YD	F	F606E	30	8'-0"	STR.	DOWEL BF	360	SPREAD	19.8	CU YD	F	F...06E			STR.	DOWEL BF		SPREAD		CU YD				
G	S401E	31	12'-3"	STR.	VERT FF	254	PILE		G	S401E	31	12'-10"	STR.	VERT FF	266	PILE		G	S401E	31	14'-3"	STR.	VERT FF	295	PILE		G	S401E			STR.	VERT FF		PILE									
H	S502E	31	12'-3"	STR.	VERT BF	396	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	12'-10"	STR.	VERT BF	415	STRUCTURAL CONCRETE (3Y43)		H	S502E	31	14'-3"	STR.	VERT BF	461	STRUCTURAL CONCRETE (3Y43)		H	S...02E			STR.	VERT BF		STRUCTURAL CONCRETE (3Y43)									
J	S503E	30	7'-3"	STR.	VERT BF	227	(STEM)		J	S503E	30	8'-3"	STR.	VERT BF	258	(STEM)		J	S503E	30	9'-3"	STR.	VERT BF	289	(STEM)		J	S...03E			STR.	VERT BF		(STEM)									
K	S504E	31	10'-7"	STR.	TIE	342	30.7		K	S504E	31	11'-5"	STR.	TIE	370	33.1		K	S504E	31	10'-7"	STR.	TIE	342	35.6		K	S504E			STR.	TIE		35.6									
L	S405E	30	30'-0"	STR.	HORIZ EF	601	REINFORCEMENT (PLAIN)		L	S405E	32	30'-0"	STR.	HORIZ EF	641	REINFORCEMENT (PLAIN)		L	S405E	34	30'-0"	STR.	HORIZ EF	681	REINFORCEMENT (PLAIN)		L	S405E			STR.	HORIZ EF		REINFORCEMENT (PLAIN)									
M	S506E	20	7'-4"	STR.	EXP JT TIE	153	SPREAD	1223	LB	M	S506E	20	7'-4"	STR.	EXP JT TIE	153	SPREAD	1262	LB	M	S506E	20	7'-4"	STR.	EXP JT TIE	153	SPREAD	1495	LB	M	S506E			STR.	EXP JT TIE		SPREAD		LB				
N	S507E	10	7'-9"	STR.	EXP JT TIE	81	PILE		N	S507E	12	7'-9"	STR.	EXP JT TIE	97	PILE		N	S507E	14	7'-9"	STR.	EXP JT TIE	113	PILE		N	S507E			STR.	EXP JT TIE		PILE									
P	S508E																																										

GEOMETRICS FOR RETAINING WALL 'A'													
JOINT NUMBER	WALL STATION	COORDINATES (1)		FRONT FACE GROUND ELEVATION	TOP OF WALL ELEVATION	STEM HEIGHT (h) DOWNSTATION (FT)	STEM HEIGHT (h) UPSTATION (FT)	TOP OF FOOTING HEEL ELEVATION DOWNSTATION	TOP OF FOOTING HEEL ELEVATION UPSTATION	BOTTOM OF FOOTING ELEVATION DOWNSTATION	BOTTOM OF FOOTING ELEVATION UPSTATION	PANEL LENGTH (FT)	PANEL NUMBER
		X	Y										
1	10+00.00	448028.584	172413.898	881.15	881.25	-	5.08	-	876.17	-	874.75	30' - 6"	A(1)
2	10+30.50	448001.934	172428.732	880.33	881.79	5.62	5.62	876.17	876.17	874.75	874.75	30' - 6"	A(2)
3	10+61.00	447975.151	172443.323	880.56	882.62	6.45	6.45	876.17	876.17	874.75	874.75	30' - 6"	A(3)
4	10+91.50	447948.237	172457.672	880.79	883.56	7.39	7.39	876.17	876.17	874.75	874.75	30' - 6"	A(4)
5	11+22.00	447921.195	172471.777	881.01	884.59	8.42	8.42	876.17	876.17	874.75	874.75	30' - 6"	A(5)
6	11+52.50	447894.026	172485.637	881.24	885.71	9.54	9.54	876.17	876.17	874.75	874.75	30' - 6"	A(6)
7	11+83.00	447867.624	172500.907	881.47	886.98	10.81	10.81	876.17	876.17	874.75	874.75	30' - 6"	A(7)
8	12+13.50	447841.110	172515.982	881.70	888.34	12.17	12.09	876.17	876.25	874.75	874.75	30' - 6"	A(8)
9	12+44.00	447814.485	172530.860	881.84	889.79	13.54	13.29	876.25	876.50	874.75	874.75	30' - 6"	A(9)
10	12+74.50	447787.751	172545.541	881.99	891.34	14.84	14.84	876.50	876.50	874.75	874.75	30' - 6"	A(10)
11	13+05.00	447760.909	172560.025	882.13	892.87	16.37	16.37	876.50	876.50	874.75	874.75	30' - 6"	A(11)
12	13+35.50	447733.008	172572.344	882.28	894.05	17.55	17.30	876.50	876.75	874.75	874.75	30' - 6"	A(12)
13	13+66.00	447705.106	172584.663	882.42	895.25	18.50	18.50	876.75	876.75	874.75	874.75	30' - 6"	A(13)
14	13+96.50	447677.205	172596.982	882.57	896.45	19.70	19.70	876.75	876.75	874.75	874.75	30' - 6"	A(14)
15	14+27.00	447649.303	172609.301	882.71	897.67	20.92	20.42	876.75	877.25	874.75	874.75	30' - 6"	A(15)
16	14+57.50	447621.402	172621.620	882.86	899.19	21.94	21.69	877.25	877.50	874.75	874.75	30' - 6"	A(16)
17	14+88.00	447593.501	172633.939	883.00	900.72	23.22	23.22	877.50	877.50	874.75	874.75	30' - 6"	A(17)
18	15+18.50	447565.599	172646.259	883.20	902.25	24.75	27.50	877.50	874.75	874.75	871.25	30' - 6"	A(18)
19	15+49.00	447537.698	172658.578	883.40	903.77	29.02	29.02	874.75	874.75	871.25	871.25	30' - 6"	A(19)
20	15+79.50	447509.796	172670.897	883.60	905.24	30.49	26.99	874.75	878.25	871.25	874.75	30' - 6"	A(20)
21	16+10.00	447481.895	172683.216	883.80	906.56	28.31	28.31	878.25	878.25	874.75	874.75	30' - 6"	A(21)
22	16+40.50	447453.994	172695.535	884.00	907.75	29.50	29.50	878.25	878.25	874.75	874.75	30' - 6"	A(22)
23	16+71.00	447426.092	172707.854	884.12	908.80	30.55	30.55	878.25	878.25	874.75	874.75	30' - 6"	A(23)
24	17+01.50	447398.191	172720.173	884.24	909.71	31.46	31.46	878.25	878.25	874.75	874.75	30' - 6"	A(24)
25	17+32.00	447370.289	172732.492	884.36	910.48	32.23	32.23	878.25	878.25	874.75	874.75	30' - 6"	A(25)
26	17+62.50	447342.388	172744.811	884.48	911.11	32.86	32.86	878.25	878.25	874.75	874.75	30' - 6"	A(26)
27	17+93.00	447314.486	172757.131	884.60	911.61	33.36	33.36	878.25	878.25	874.75	874.75	30' - 6"	A(27)
28	18+23.50	447286.585	172769.450	884.72	912.18	33.93	33.93	878.25	878.25	874.75	874.75	30' - 6"	A(28)
29	18+54.00	447258.684	172781.769	884.84	912.72	34.47	34.47	878.25	878.25	874.75	874.75	30' - 6"	A(29)
30	18+72.17	447242.057	172789.110	884.91	913.15	34.90	34.90	878.25	878.25	874.75	874.75	18' - 2 7/8"	A(29)
31	18+90.35	447225.431	172796.450	885.00	913.54	35.29	-	878.25	-	874.75	-	18' - 2 7/8"	A(30)



- NOTES:**
- COORDINATES ARE LOCATED AT REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL.
  - MINIMUM EMBEDMENT IS 4'-6".
  - 6" PERF TP PIPE DRAIN MnDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE. SEE PLAN AND PROFILE FOR OUTLET LOCATIONS.
  - RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEETS FOR WALL ALIGNMENT INFORMATION.
  - FOR ARCHITECTURAL TREATMENTS SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEET.
  - STRUCTURAL BACKFILL PER MnDOT 3149.2D2. COMPACTION SHALL BE IN ACCORDANCE WITH MnDOT SPEC. 2105.3F1.
  - SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MnDOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
  - PAY LIMITS FOR STRUCTURE EXCAVATION WHEN NO SUBCUT IS REQUIRED.
  - PAY LIMITS FOR STRUCTURE EXCAVATION WHEN A SUBCUT IS SPECIFIED.
  - SUBCUT IS SHOWN ON PLAN AND PROFILE SHEETS.
  - PIPE SLEEVE FOR 6" DIAMETER DRAIN PIPE. SLEEVES WILL BE CONSIDERED INCIDENTAL.

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NO	DATE	BY	CKD	APPR	REVISION

...Retaining Walls\8259\_WRA01.dgn

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: JANET ELIZABETH GRONERT

*Janet Elizabeth Gronert*

Date 09/12-14 License # 44325

STATE AID PROJECT NO. 002-683-004 199-115-002

DESIGNED BY E. JOHNSON

STATE PROJECT NO. 0202-95 (TH 10)

CHECKED BY A. RENSTROM

COUNTY PROJECT NO. J. GRONERT

CITY PROJECT NO. COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

CIP RETAINING WALL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

GEOMETRICS - WALL A

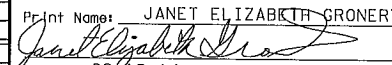

CIP SHEET 304 OF 586

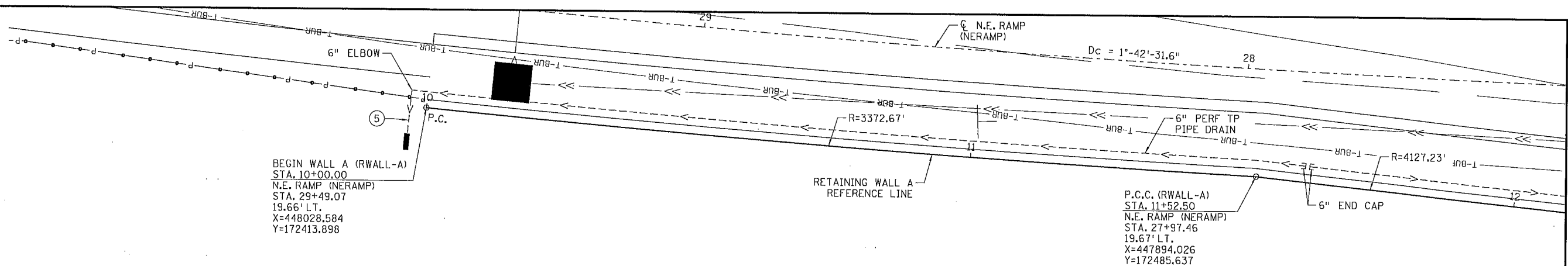
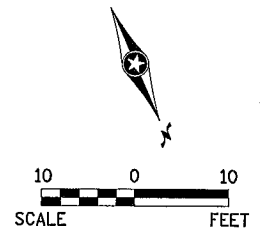
SUMMARY OF QUANTITIES FOR RETAINING WALL 'A' (2)(3)												
PANEL	STRUCTURAL CONCRETE		REINFORCEMENT BARS		RAILING CONCRETE (3Y46)	AESTHETICS				DRAINAGE		
	1A43 (FOOTING)	3Y43 (STEM)	PLAIN (1)(7)	EPOXY (1)(7)	TYPE MOD P-4 (TL-4)	ARCH. CONCRETE TEXTURE (THIN BRICK)	SPECIAL SURFACE FINISH (4)(6)	ARCH. SURFACE FINISH (MULTI-COLOR) (6)	ANTI-GRAFFITI COATING (5)	6" TP PIPE DRAIN	6" PERF. TP PIPE DRAIN	6" PRECAST CONCRETE HEADWALL
	CU. YD.	CU. YD.	POUND	POUND	LIN. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	EACH
1	6.6	10.4	501	1300	30.5	-	182	-	166	20	30.5	1
2	7.4	11.6	601	1388	30.5	-	212	-	196	-	30.5	-
3	8.5	13.5	633	1498	30.5	13	219	13	216	-	30.5	-
4	9.1	15.5	736	1615	30.5	-	255	-	240	-	30.5	-
5	9.9	17.7	768	1902	30.5	21	274	21	265	-	30.5	-
6	10.8	19.1	954	2061	30.5	-	310	-	295	-	30.5	-
7	12.8	23.4	1229	2428	30.5	30	314	30	328	-	30.5	-
8	14.5	26.3	1235	2611	30.5	-	381	-	366	20	30.5	1
9	18.8	29.5	1262	3295	30.5	42	380	42	366	-	30.5	-
10	19.8	33.0	1495	3536	30.5	-	464	-	366	-	30.5	-
11	20.8	38.1	1541	4145	30.5	53	448	53	366	-	30.5	-
12	24.7	38.8	1655	4442	30.5	-	533	-	366	-	30.5	-
13	26.7	41.8	1872	5154	30.5	63	503	63	366	20	30.5	1
14	27.9	44.9	2176	5515	30.5	-	598	-	366	-	30.5	-
15	38.1	47.8	2587	6848	30.5	74	562	74	366	-	30.5	-
16	43.4	49.7	2868	7336	30.5	-	677	-	366	-	30.5	-
17	45.6	55.1	3054	8795	30.5	86	633	86	366	-	30.5	-
18	82.0	79.3	6551	17187	30.5	-	759	-	366	-	30.5	-
19	55.4	83.4	4454	17275	30.5	100	701	100	366	-	30.5	-
20	66.5	66.0	4514	12451	30.5	-	834	-	366	20	30.5	1
21	70.5	90.2	5384	15916	30.5	105	732	105	366	-	30.5	-
22	72.6	95.1	5762	16221	30.5	-	866	-	366	-	30.5	-
23	75.1	99.6	6362	18058	30.5	111	785	111	366	-	30.5	-
24	78.1	103.8	7015	18514	30.5	-	922	-	366	-	30.5	-
25	78.1	106.1	7015	18514	30.5	120	826	120	366	-	30.5	-
26	81.5	109.4	8163	18982	30.5	-	961	-	366	20	30.5	1
27	81.5	111.2	8163	18982	30.5	122	853	122	366	-	30.5	-
28	84.3	114.8	8790	22816	30.5	-	987	-	366	-	30.5	-
29	50.2	69.4	5435	13323	18.2	-	661	-	219	-	18.2	-
30	51.9	71.1	5651	14533	18.2	-	668	-	219	-	18.2	-
TOTAL	1273.1	1715.6	108426	286641	891	940	17500	940	9820	100	891	5

**NOTES:**

- ① REINFORCEMENT OR REINFORCEMENT MODIFICATIONS FOR CONSTRUCTION JOINTS, FOOTING STEPS, AND UTILITY BLOCKOUTS SHALL BE INCIDENTAL. SEE CIP WALL DETAILS SHEETS FOR FURTHER INFORMATION.
- ② SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ③ DOWEL BAR ASSEMBLIES, JOINT FILLER, JOINT WATERPROOFING, DRAINAGE TEES, ELBOWS DRAINAGE END CAPS, AND PRECAST CONCRETE HEADWALLS SHALL BE INCIDENTAL.
- ④ THE PAY ITEM "SPECIAL SURFACE FINISH" INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS.
- ⑤ ANTI-GRAFFITI COATING IS TO BE APPLIED 2'-0" BELOW FRONT FACE GROUNDLINE TO A HEIGHT OF 10'-0" VERTICAL ABOVE FRONT FACE GROUNDLINE.
- ⑥ SURFACE FINISH IS TO BE APPLIED TO ALL EXPOSED SURFACES (INCLUDES WALL COPING, OUTSIDE FACE OF BARRIER) TO 2'-0" BELOW FRONT FACE GROUNDLINE.
- ⑦ DOES NOT INCLUDE WEIGHT OF REINFORCEMENT IN CONCRETE BARRIER. WEIGHT OF REINFORCEMENT IN BARRIER SHALL BE INCLUDED IN THE PAY ITEM FOR "TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)".

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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: JANET ELIZABETH GRONERT  Date: 09/12/14 License #: 44325					STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY E. JOHNSON DESIGNED BY A. RENSTROM CHECKED BY J. GRONERT COMM. NO. 0138259	 <b>ENGINEERS PLANNERS DESIGNERS</b> Consulting Group, Inc.	<b>ANOKA COUNTY</b> CIP RETAINING WALL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE SUMMARY OF QUANTITIES - WALL A	CIP SHEET 305 OF 586	
NO DATE BY CKD APPR REVISION					...Retaining Walls\8255_WRA02.dgn					



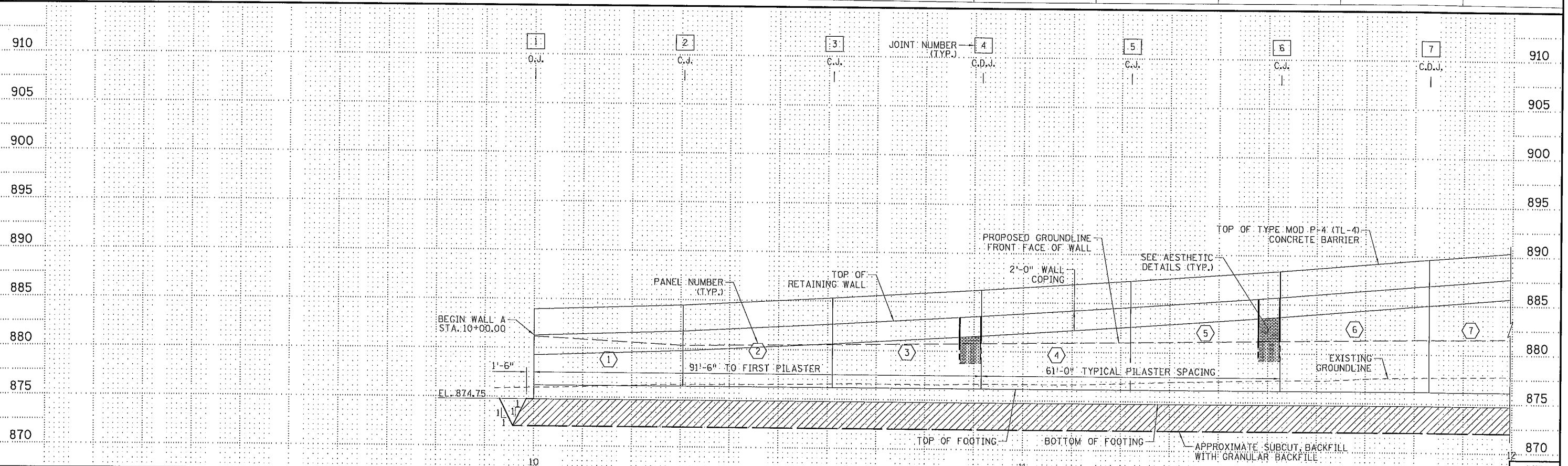
BEGIN WALL A (RWALL-A)  
 STA. 10+00.00  
 N.E. RAMP (NERAMP)  
 STA. 29+49.07  
 19.66' LT.  
 X=448028.584  
 Y=172413.898

P.C.C. (RWALL-A)  
 STA. 11+52.50  
 N.E. RAMP (NERAMP)  
 STA. 27+97.46  
 19.67' LT.  
 X=447894.026  
 Y=172485.637

- NOTES:**
1. C.J. = CONSTRUCTION JOINT  
 C.D.J. = CORK & DOWEL JOINT  
 O.J. = OPEN JOINT
  2. FOR RETAINING WALL STATIONS AND ELEVATIONS, SEE WALL GEOMETRICS SHEET.
  3. UTILITIES SHOWN FOR REFERENCE ONLY.
  4. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
  5. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN, SEE MNDOT STANDARD PLATE 3131 FOR DETAILS.
  6. SEE STAGED PRELOAD EMBANKMENT PROFILE SHEET FOR PRELOAD INFORMATION.

BNSF RAILROAD ROW

CL BNSF RAILROAD



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NO	DATE	BY	CHKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

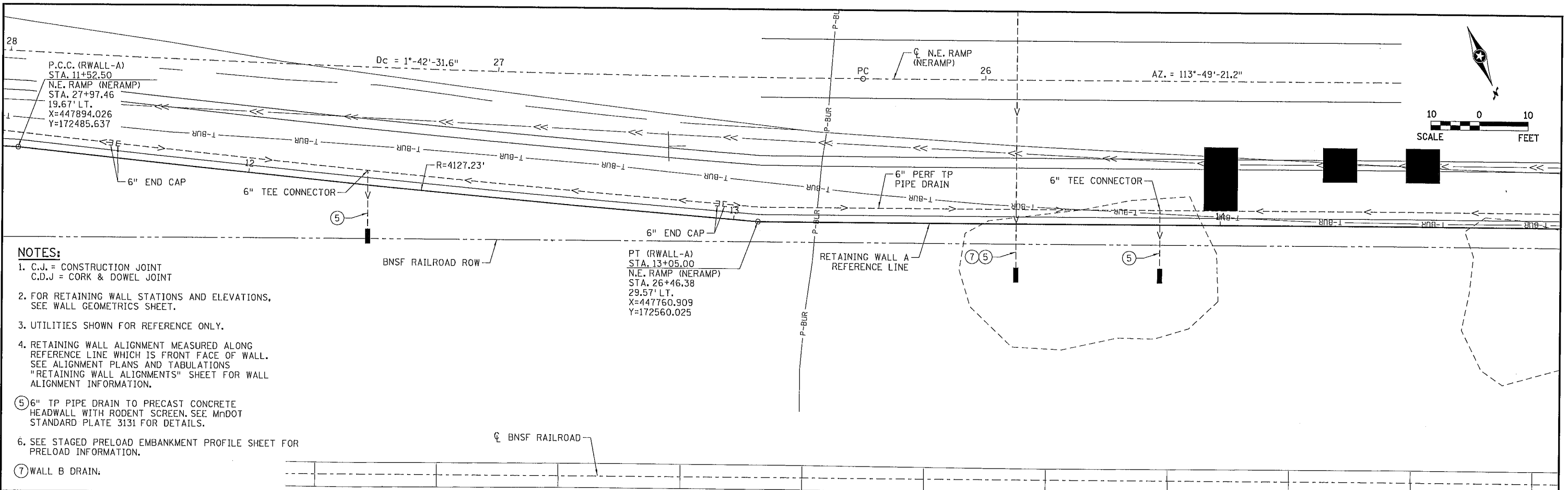
DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0139259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

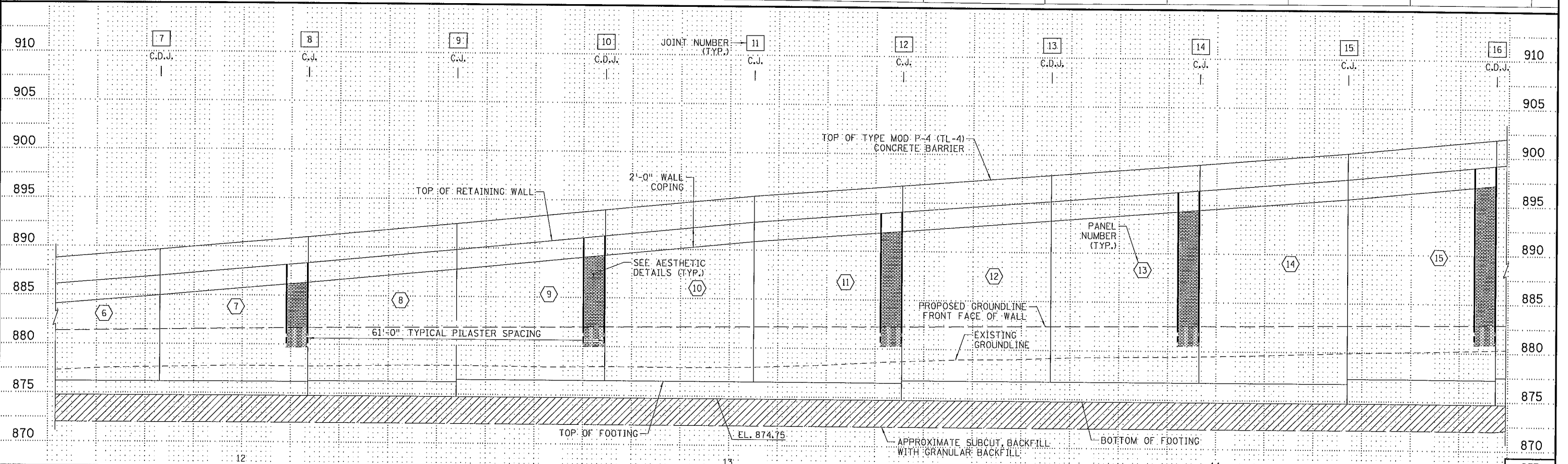
ANOKA COUNTY  
 CIP RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL A (SHEET 1 OF 4)

CIP  
 SHEET 306 OF 586





- NOTES:**
1. C.J. = CONSTRUCTION JOINT  
C.D.J. = CORK & DOWEL JOINT
  2. FOR RETAINING WALL STATIONS AND ELEVATIONS, SEE WALL GEOMETRICS SHEET.
  3. UTILITIES SHOWN FOR REFERENCE ONLY.
  4. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
  5. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MNDOT STANDARD PLATE 3131 FOR DETAILS.
  6. SEE STAGED PRELOAD EMBANKMENT PROFILE SHEET FOR PRELOAD INFORMATION.
  7. WALL B DRAIN.



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NO	DATE	BY	CHKD	APPR	REVISION

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 Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

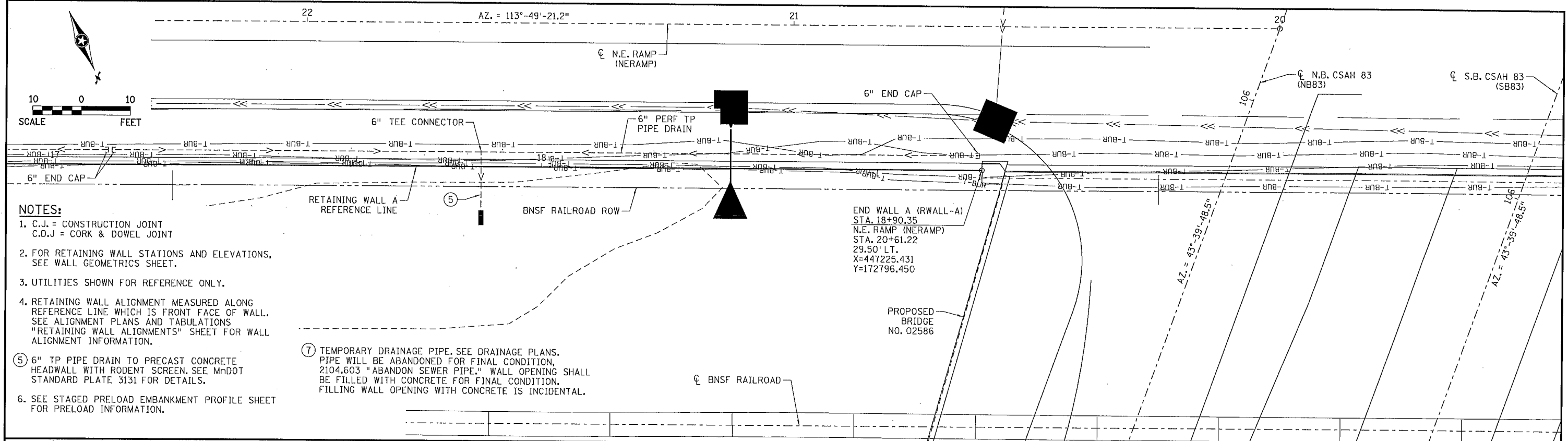


ANOKA COUNTY  
 CIP RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL A (SHEET 2 OF 4)

SHEET 307 OF 586  
 CIP



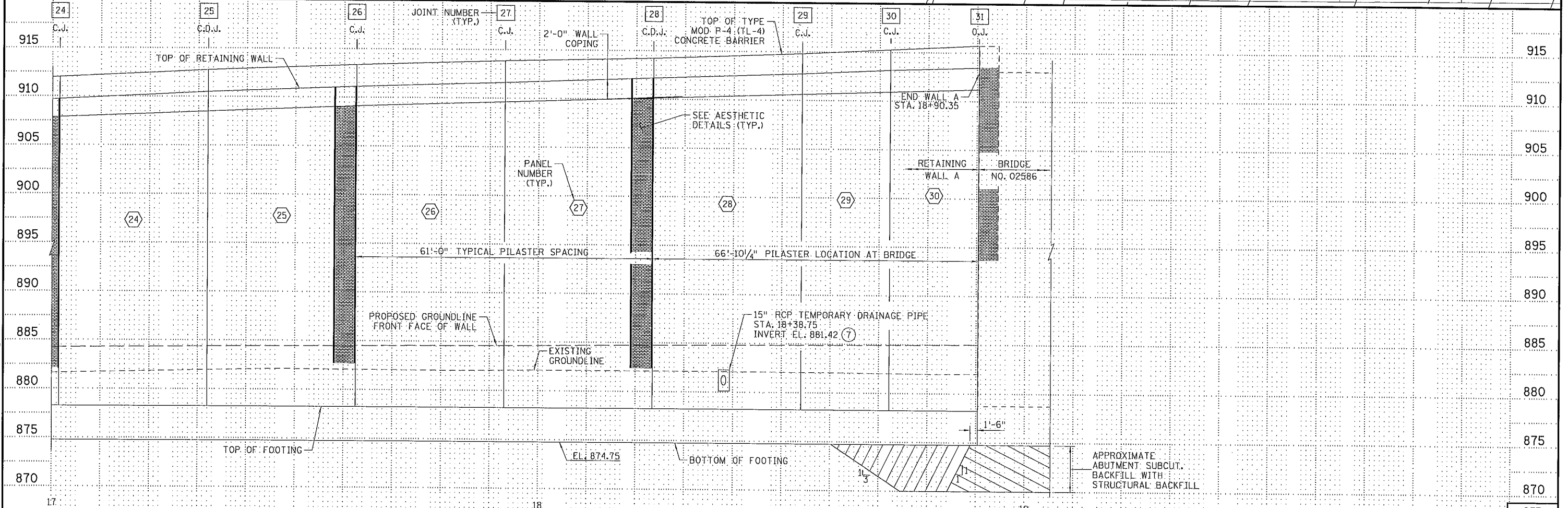




- NOTES:**
1. C.J. = CONSTRUCTION JOINT  
C.D.J. = CORK & DOWEL JOINT
  2. FOR RETAINING WALL STATIONS AND ELEVATIONS, SEE WALL GEOMETRICS SHEET.
  3. UTILITIES SHOWN FOR REFERENCE ONLY.
  4. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
  5. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MNDOT STANDARD PLATE 3131 FOR DETAILS.
  6. SEE STAGED PRELOAD EMBANKMENT PROFILE SHEET FOR PRELOAD INFORMATION.

7. TEMPORARY DRAINAGE PIPE. SEE DRAINAGE PLANS. PIPE WILL BE ABANDONED FOR FINAL CONDITION. 2104.603 "ABANDON SEWER PIPE." WALL OPENING SHALL BE FILLED WITH CONCRETE FOR FINAL CONDITION. FILLING WALL OPENING WITH CONCRETE IS INCIDENTAL.

END WALL A (RWALL-A)  
STA. 18+90.35  
N.E. RAMP (NERAMP)  
STA. 20+61.22  
29.50' LT.  
X=447225.431  
Y=172796.450



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NO.	DATE	BY	CHKD	APPR	REVISION

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: **JANET ELIZABETH GRONERT**

*Janet Elizabeth Gronert*

Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.      

CITY PROJECT NO.      

DRAWN BY E. JOHNSON  
DESIGNED BY A. RENSTROM  
CHECKED BY J. GRONERT  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

CIP RETAINING WALL PLANS

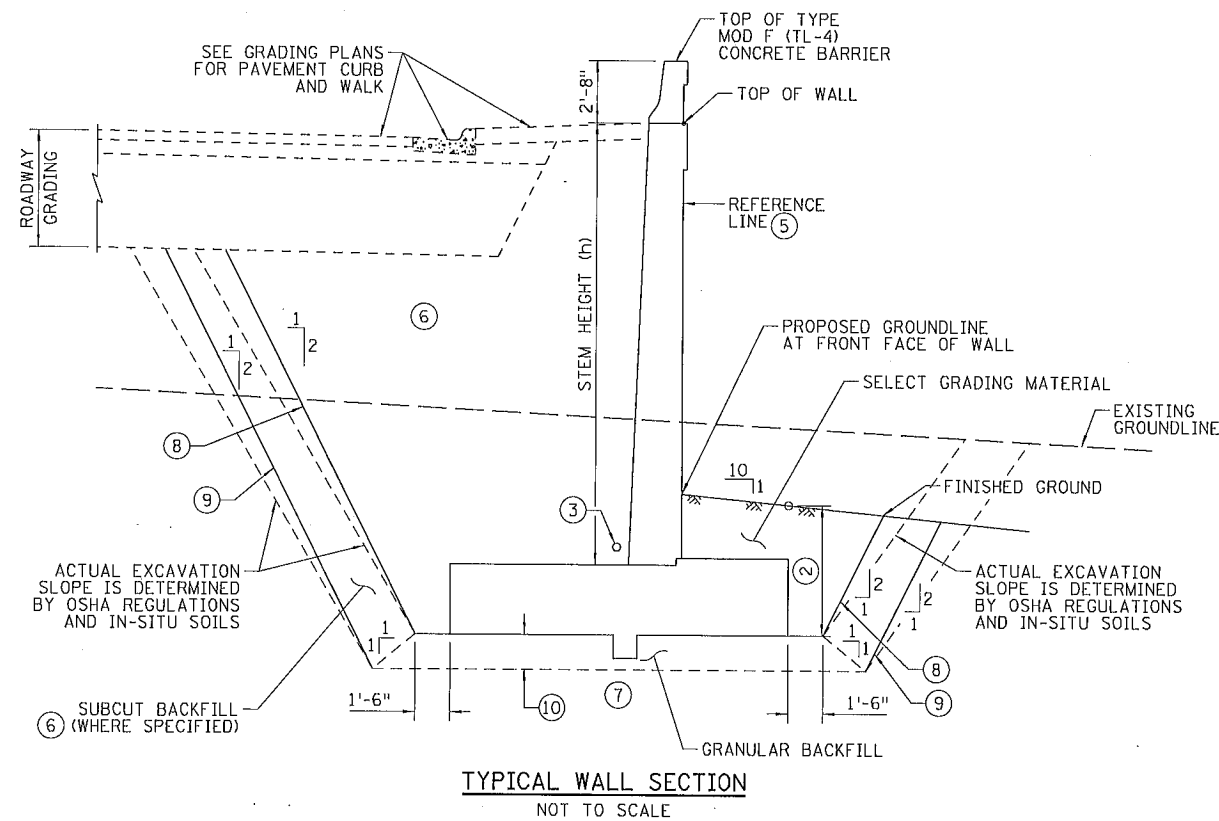
T.H. 10 / C.S.A.H. 83 INTERCHANGE

PLAN & PROFILE - WALL A (SHEET 4 OF 4)

CIP SHEET 309 OF 586

SUMMARY OF QUANTITIES FOR RETAINING WALL 'D' (12)(13)											
PANEL	STRUCTURAL CONCRETE		REINFORCEMENT BARS		RAILING CONCRETE (3Y46)	AESTHETICS				DRAINAGE	
	1A43 (FOOTING)	3Y43 (STEM)	PLAIN (11)(16)	EPOXY (11)(16)	TYPE MOD F (TL-4)	ARCH. CONCRETE TEXTURE (THIN BRICK)	SPECIAL SURFACE FINISH (14)(17)	ARCH. SURFACE FINISH (MULTI-COLOR) (14)	ANTI-GRAFFITI COATING (15)	4" TP PIPE DRAIN	4" PERF. TP PIPE DRAIN
	CU. YD.	CU. YD.	POUND	POUND	LIN. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.
D(1)	7.5	10.6	601	1401	30.5	-	216	-	216	-	30.5
D(2)	8.5	13.6	633	1502	30.5	21	247	21	268	-	30.5
D(3)	9.9	17.3	768	1902	30.5	-	309	-	308	-	30.5
D(4)	12.3	21.5	1079	2257	30.5	29	307	29	336	40	30.5
D(5)	14.6	25.6	1235	2611	30.5	-	270	-	270	-	30.5
TOTAL	52.8	88.6	4316	9673	153	50	1349	50	1398	40	153

GEOMETRICS FOR RETAINING WALL 'D'													
JOINT NUMBER	WALL STATION	COORDINATES (1)		FRONT FACE GROUND ELEVATION	TOP OF WALL ELEVATION	STEM HEIGHT (h) DOWNSTATION (FT)	STEM HEIGHT (h) UPSTATION (FT)	TOP OF FOOTING HEEL ELEVATION DOWNSTATION	TOP OF FOOTING HEEL ELEVATION UPSTATION	BOTTOM OF FOOTING ELEVATION DOWNSTATION	BOTTOM OF FOOTING ELEVATION UPSTATION	PANEL LENGTH (FT)	PANEL NUMBER
		X	Y										
1	60+00.00	447106.930	172274.313	877.39	878.45	-	4.78	-	873.67	-	872.25		
2	60+30.50	447077.703	172283.035	877.18	879.87	6.20	6.20	873.67	873.67	872.25	872.25	30' - 6"	D(1)
3	60+61.00	447048.477	172291.756	876.97	881.47	7.80	7.80	873.67	873.67	872.25	872.25	30' - 6"	D(2)
4	60+91.50	447019.251	172300.478	878.00	883.31	9.64	9.64	873.67	873.67	872.25	872.25	30' - 6"	D(3)
5	61+22.00	446990.024	172309.199	879.03	885.33	11.66	11.58	873.67	873.75	872.25	872.25	30' - 6"	D(4)
6	61+52.50	446960.798	172317.921	886.50	887.50	13.75	-	873.75	-	872.25	-	30' - 6"	D(5)

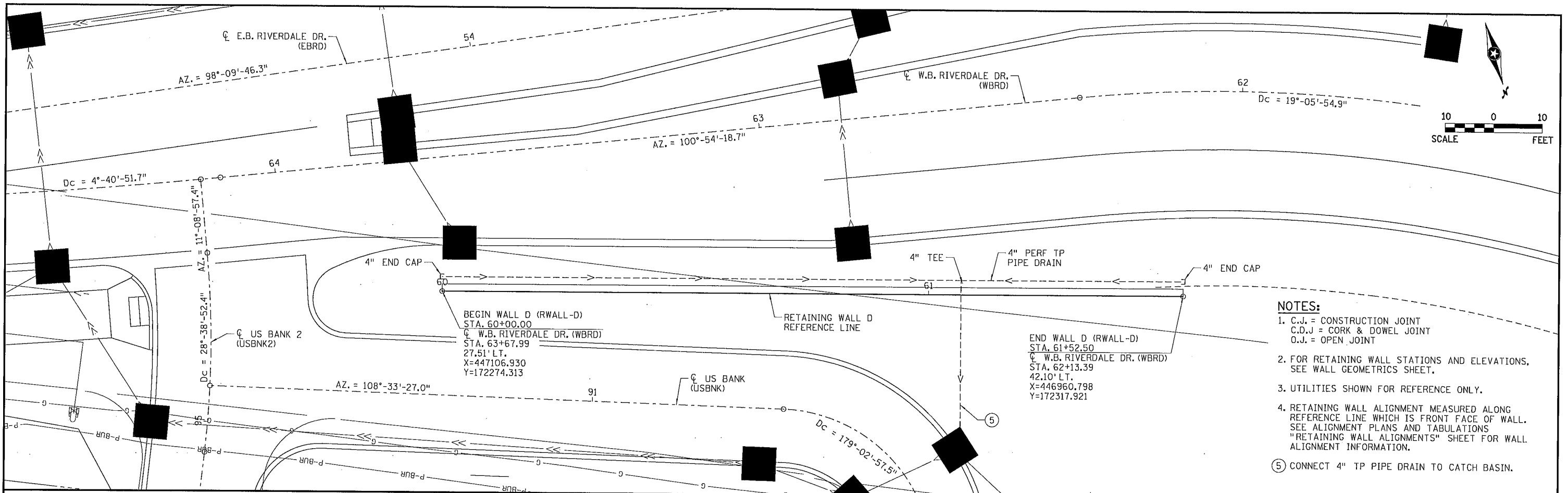


**NOTES:**

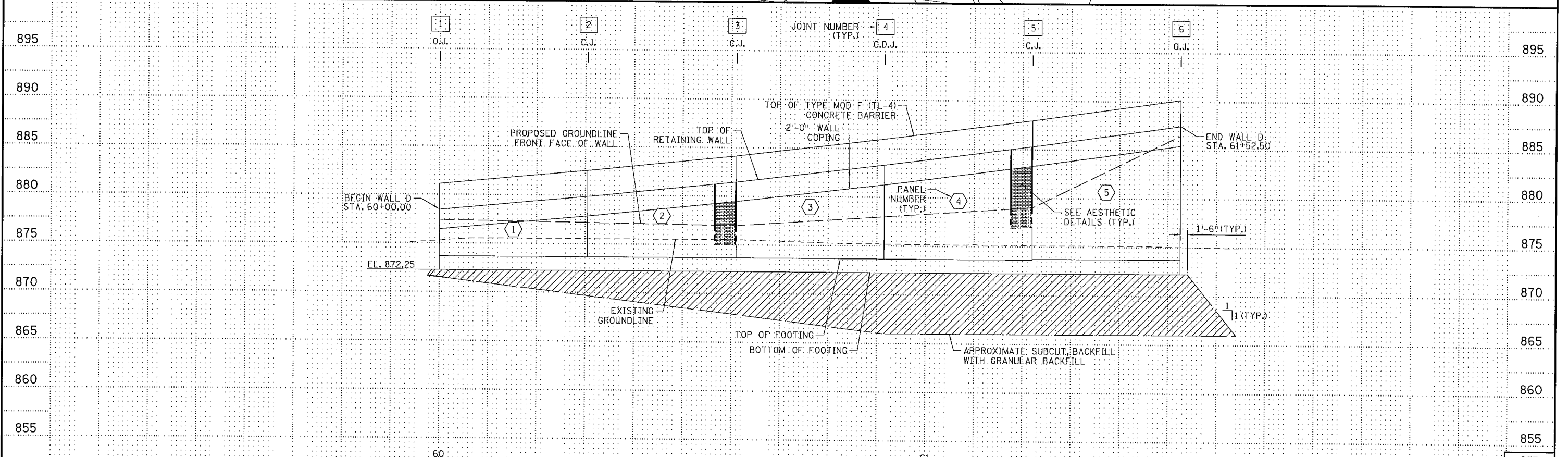
- ① COORDINATES ARE LOCATED AT REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL.
- ② MINIMUM EMBEDMENT IS 4'-6".
- ③ 4" PERF TP PIPE DRAIN MnDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE. SEE PLAN AND PROFILE FOR OUTLET LOCATIONS.
- ④ RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEETS FOR WALL ALIGNMENT INFORMATION.
- ⑤ FOR ARCHITECTURAL TREATMENTS SEE ARCHITECTURAL DETAILS SHEET.
- ⑥ STRUCTURAL BACKFILL PER MnDOT 3149.2D2. COMPACTION SHALL BE IN ACCORDANCE WITH MnDOT SPEC. 2105.3F1.
- ⑦ SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MnDOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- ⑧ PAY LIMITS FOR STRUCTURE EXCAVATION WHEN NO SUBCUT IS REQUIRED.
- ⑨ PAY LIMITS FOR STRUCTURE EXCAVATION WHEN A SUBCUT IS SPECIFIED.
- ⑩ SUBCUT AS SHOWN ON PLAN AND PROFILE SHEETS.
- ⑪ REINFORCEMENT OR REINFORCEMENT MODIFICATIONS FOR CONSTRUCTION JOINTS, FOOTING STEPS, AND UTILITY BLOCKOUTS SHALL BE INCIDENTAL. SEE CIP WALL DETAILS SHEETS FOR FURTHER INFORMATION.
- ⑫ SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ⑬ DOWEL BAR ASSEMBLIES, JOINT FILLER, JOINT WATERPROOFING, DRAINAGE TEES, ELBOWS, DRAINAGE END CAPS AND PRECAST CONCRETE HEADWALLS SHALL BE INCIDENTAL.
- ⑭ SURFACE FINISH IS TO BE APPLIED TO ALL EXPOSED SURFACES (INCLUDING WALL COPING, OUTSIDE FACE OF BARRIER) TO 2'-0" BELOW FRONT FACE GROUNDLINE.
- ⑮ ANTI-GRAFFITI COATING IS TO BE APPLIED FROM TOP OF BARRIER TO 2'-0" BELOW FRONT FACE GROUNDLINE.
- ⑯ DOES NOT INCLUDE WEIGHT OF REINFORCEMENT IN CONCRETE BARRIER. WEIGHT OF REINFORCEMENT IN BARRIER SHALL BE INCLUDED IN THE PAY ITEM "TYPE MOD F (TL-4) RAILING CONCRETE (3Y46)".
- ⑰ THE PAY ITEM "SPECIAL SURFACE FINISH" INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS.

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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: JANET ELIZABETH GRONERT  Date: 09-12-14 License #: 44325				STATE AID PROJECT NO. 02-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY E. JOHNSON DESIGNED BY A. RENSTROM CHECKED BY J. GRONERT COMM. NO. 0138259	<b>ENGINEERS PLANNERS DESIGNERS</b> Consulting Group, Inc.	ANOKA COUNTY CIP RETAINING WALL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE SUMMARY OF QUANTITIES AND GEOMETRICS - WALL D	CIP SHEET 310 OF 586
NO DATE BY CKD APPR REVISION				...Retaining Wall\8259.WRD01.dgn				



- NOTES:**
- C.J. = CONSTRUCTION JOINT  
C.D.J. = CORK & DOWEL JOINT  
O.J. = OPEN JOINT
  - FOR RETAINING WALL STATIONS AND ELEVATIONS, SEE WALL GEOMETRICS SHEET.
  - UTILITIES SHOWN FOR REFERENCE ONLY.
  - RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
- ⑤ CONNECT 4" TP PIPE DRAIN TO CATCH BASIN.



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Print Name: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

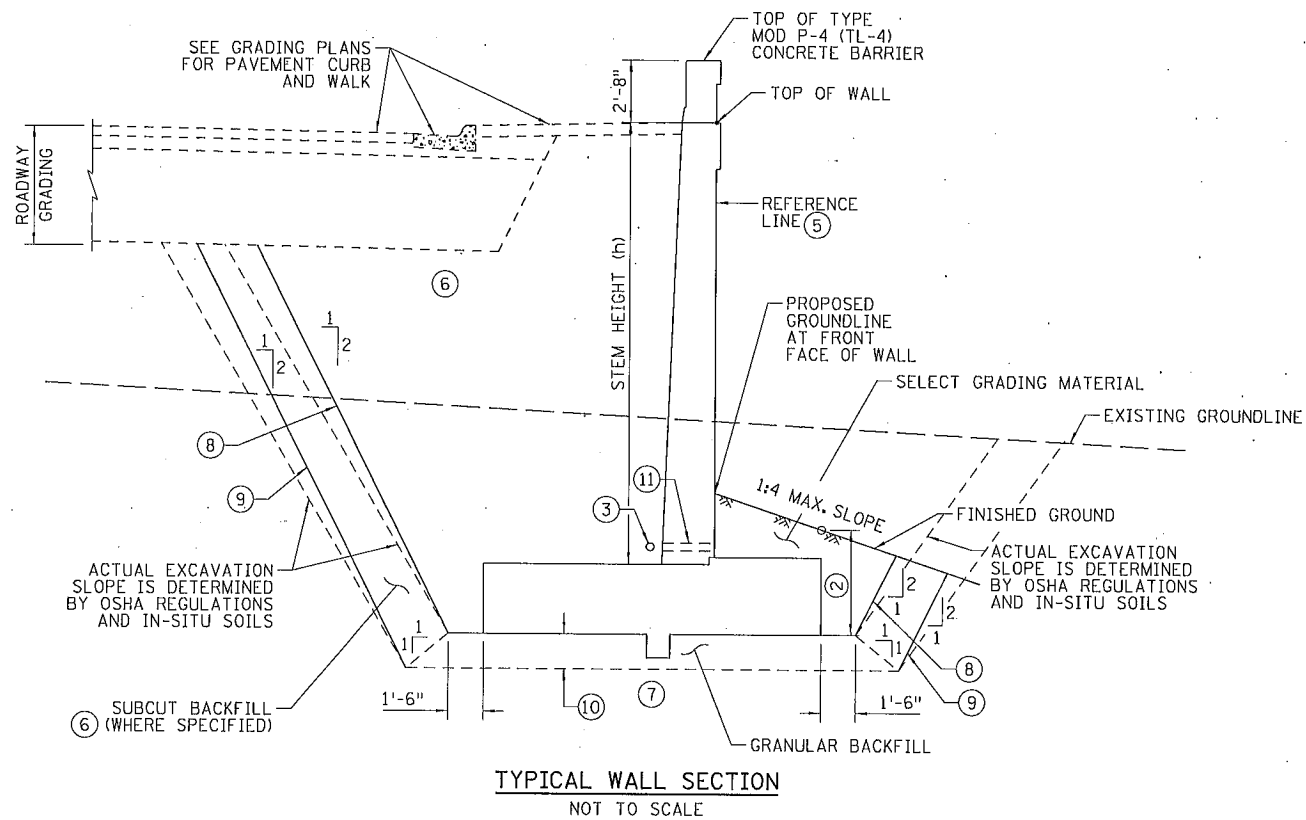
DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ANOKA COUNTY  
 CIP RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL D

SHEET 311 OF 586

GEOMETRICS FOR RETAINING WALL 'E'													
JOINT NUMBER	WALL STATION	COORDINATES (1)		FRONT FACE GROUND ELEVATION	TOP OF WALL ELEVATION	STEM HEIGHT (h) DOWNSTATION (FT)	STEM HEIGHT (h) UPSTATION (FT)	TOP OF FOOTING HEEL ELEVATION DOWNSTATION	TOP OF FOOTING HEEL ELEVATION UPSTATION	BOTTOM OF FOOTING ELEVATION DOWNSTATION	BOTTOM OF FOOTING ELEVATION UPSTATION	PANEL LENGTH (FT)	PANEL NUMBER
		X	Y										
1	19+88.05	447090.444	172859.099	885.00	912.57	-	34.32	-	878.25	-	874.75	21' - 2 1/4"	E(1)
2	20+09.27	447070.673	172865.898	885.45	912.27	34.02	34.02	878.25	878.25	874.75	874.75	21' - 2 1/4"	E(2)
3	20+30.50	447049.453	172865.388	886.50	911.50	33.25	29.75	878.25	881.75	874.75	878.25	30' - 6"	E(3)
4	20+61.00	447018.961	172864.656	888.00	910.38	28.63	28.63	881.75	881.75	878.25	878.25	30' - 6"	E(4)
5	20+91.50	446991.060	172876.975	887.88	909.26	27.51	27.76	881.75	881.50	878.25	878.25	30' - 6"	E(5)
6	21+22.00	446963.159	172889.294	887.75	908.09	26.59	23.84	881.50	884.25	878.25	881.50	30' - 6"	E(6)
7	21+52.50	446935.257	172901.613	887.63	906.76	22.51	22.76	884.25	884.00	881.50	881.50	30' - 6"	E(7)
8	21+83.00	446907.356	172913.932	887.50	905.27	21.27	21.52	884.00	883.75	881.50	881.50	30' - 6"	E(8)
9	22+13.50	446879.454	172926.251	887.38	903.62	19.87	20.12	883.75	883.50	881.50	881.50	30' - 6"	E(9)
10	22+44.00	446851.553	172938.570	887.25	901.82	18.32	18.32	883.50	883.50	881.50	881.50	30' - 6"	E(10)
11	22+74.50	446823.651	172950.890	887.13	900.00	16.50	16.75	883.50	883.25	881.50	881.50	30' - 6"	E(11)
12	23+05.00	446795.750	172963.209	887.00	898.24	14.99	14.99	883.25	883.25	881.50	881.50	30' - 6"	E(12)
13	23+35.50	446767.849	172975.528	887.00	896.59	13.34	13.59	883.25	883.00	881.50	881.50	30' - 6"	E(13)
14	23+66.00	446739.947	172987.847	887.00	895.02	12.02	12.10	883.00	882.92	881.50	881.50	30' - 6"	E(14)
15	23+96.50	446712.044	173000.162	887.00	893.55	10.63	10.63	882.92	882.92	881.50	881.50	30' - 6"	E(15)
16	24+27.00	446684.116	173012.421	887.00	892.18	9.26	9.26	882.92	882.92	881.50	881.50	30' - 6"	E(16)
17	24+57.50	446656.155	173024.605	887.00	890.90	7.98	7.98	882.92	882.92	881.50	881.50	30' - 6"	E(17)
18	24+88.00	446628.162	173036.715	887.00	889.72	6.80	6.80	882.92	882.92	881.50	881.50	30' - 6"	E(18)
19	25+18.50	446600.138	173048.750	887.00	888.62	5.70	5.70	882.92	882.92	881.50	881.50	30' - 6"	E(19)
20	25+49.00	446572.081	173060.711	887.00	887.27	4.35	-	882.92	-	881.50	-	30' - 6"	E(19)



**NOTES:**

- COORDINATES ARE LOCATED AT REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL.
- MINIMUM EMBEDMENT IS 4'-6".
- 6" PERF TP PIPE DRAIN MNDOT SPEC. 3245, WRAP WITH TYPE 1 GEOTEXTILE. SEE PLAN AND PROFILE FOR OUTLET LOCATIONS.
- RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF RETAINING WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEETS FOR WALL ALIGNMENT INFORMATION.
- FOR ARCHITECTURAL TREATMENTS SEE PLAN AND PROFILE SHEETS AND ARCHITECTURAL DETAILS SHEET.
- STRUCTURAL BACKFILL PER MNDOT 3149.2D2. COMPACTION SHALL BE IN ACCORDANCE WITH MNDOT SPEC. 2105.3F1.
- SOIL EXPOSED IN THE CUT AREA BENEATH THE WALL SHOULD BE OBSERVED BY THE MNDOT GEOTECHNICAL ENGINEER OR REPRESENTATIVE AND A DETERMINATION MADE ON THE EXTENT/DEPTH OF ANY SOIL CORRECTION NECESSARY DUE TO POSSIBLE LOCALIZED SOFT ZONES.
- PAY LIMITS FOR STRUCTURE EXCAVATION WHEN NO SUBCUT IS REQUIRED.
- PAY LIMITS FOR STRUCTURE EXCAVATION WHEN A SUBCUT IS SPECIFIED.
- SUBCUT AS SHOWN ON PLAN AND PROFILE SHEETS.
- PIPE SLEEVE FOR 6" DIAMETER DRAIN PIPE. SLEEVES WILL BE CONSIDERED INCIDENTAL.

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NO	DATE	BY	CKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
  
 Date: 09/12/14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (1H 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259



ANOKA COUNTY  
 CIP RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 GEOMETRICS - WALL E



CIP SHEET 312 OF 586

SUMMARY OF QUANTITIES FOR RETAINING WALL 'E' (2) (3)												
PANEL	STRUCTURAL CONCRETE		REINFORCEMENT BARS		RAILING CONCRETE (3Y46)	AESTHETICS				DRAINAGE		
	1A43 (FOOTING)	3Y43 (STEM)	PLAIN (1) (8)	EPOXY (1) (8)	TYPE MOD P-4 (TL-4)	ARCH. CONCRETE TEXTURE (THIN BRICK)	SPECIAL SURFACE FINISH (9) (4)	ARCH. SURFACE FINISH (MULTI-COLOR)	ANTI-GRAFFITI COATING (5)	6" TP PIPE DRAIN	6" PERF. TP PIPE DRAIN	6" PRECAST CONCRETE HEADWALL
	CU. YD.	CU. YD.	POUND	POUND	LIN. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	LIN. FT.	LIN. FT.	EACH
E(1)	60.0	79.0	14027	14533	21.2	-	690	-	255	20	21.2	1
E(2)	64.0	76.1	(6)	14790	21.2	-	660	-	255	-	21.2	-
E(3)	71.1	92.6	17069	15434	30.5	103	780	103	366	-	30.5	-
E(4)	71.1	68.0	(7)	12863	30.5	-	830	-	366	-	30.5	-
E(5)	75.0	64.6	(7)	12056	30.5	94	705	94	366	20	30.5	1
E(6)	43.4	52.8	2868	7336	30.5	-	760	-	366	-	30.5	-
E(7)	38.1	49.6	2587	6848	30.5	82	645	82	366	-	30.5	-
E(8)	32.4	46.2	2621	5887	30.5	-	660	-	366	-	30.5	-
E(9)	27.9	42.5	2176	5515	30.5	68	565	68	366	-	30.5	-
E(10)	24.7	37.8	1655	4442	30.5	-	580	-	366	-	30.5	-
E(11)	19.8	33.6	1495	3536	30.5	53	475	53	366	-	30.5	-
E(12)	18.8	29.6	1262	3295	30.5	-	475	-	366	20	30.5	1
E(13)	14.5	26.3	1235	2611	30.5	36	395	36	366	-	30.5	-
E(14)	12.8	23.1	1229	2428	30.5	-	380	-	366	-	30.5	-
E(15)	10.8	19.9	954	2061	30.5	24	315	24	322	-	30.5	-
E(16)	9.9	17.1	768	1902	30.5	-	300	-	281	-	30.5	-
E(17)	8.5	14.0	633	1498	30.5	-	258	-	243	-	30.5	-
E(18)	7.4	12.1	601	1388	30.5	-	224	-	209	-	30.5	-
E(19)	6.6	9.7	501	1281	30.5	-	183	-	167	20	30.5	1
TOTAL	616.8	794.6	51681	119704	561	460	9900	460	6124	80	561	4

**NOTES:**

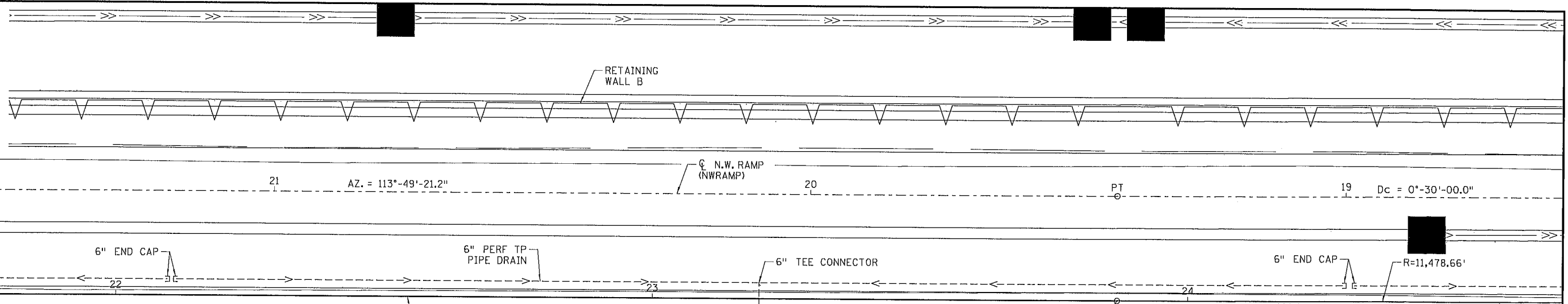
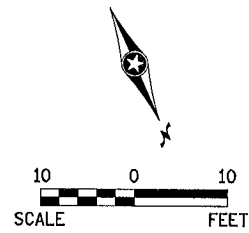
- ① REINFORCEMENT OR REINFORCEMENT MODIFICATIONS FOR CONSTRUCTION JOINTS, FOOTING STEPS, AND UTILITY BLOCKOUTS SHALL BE INCIDENTAL. SEE CIP WALL DETAILS SHEETS FOR FURTHER INFORMATION.
- ② SEE EARTHWORK SUMMARY AND TABULATIONS FOR STRUCTURE EXCAVATION AND BACKFILL QUANTITIES.
- ③ DOWEL BAR ASSEMBLIES, JOINT FILLER, JOINT WATERPROOFING, DRAINAGE TEES, ELBOWS, DRAINAGE END CAPS AND PRECAST CONCRETE HEAD WALL SHALL BE INCIDENTAL.
- ④ THE PAY ITEM "SPECIAL SURFACE FINISH" INCLUDES COLOR 1 AND COLOR 2. SEE SPECIAL PROVISIONS.
- ⑤ ANTI-GRAFFITI COATING IS TO BE APPLIED 2'-0" BELOW FRONT FACE GROUNDLINE TO A HEIGHT OF 10'-0" VERTICAL ABOVE FRONT FACE GROUNDLINE.
- ⑥ REINFORCEMENT QUANTITY FOR PANEL 1 IS THE TOTAL WEIGHT OF FOOTING REINFORCEMENT FOR PANELS 1 AND 2.
- ⑦ REINFORCEMENT QUANTITY FOR PANEL 3 IS THE TOTAL WEIGHT OF FOOTING REINFORCEMENT FOR PANELS 3, 4 AND 5.
- ⑧ DOES NOT INCLUDE WEIGHT OF REINFORCEMENT IN CONCRETE BARRIER. WEIGHT OF REINFORCEMENT IN BARRIER SHALL BE INCLUDED IN THE PAY ITEM FOR "TYPE MOD P-4 (TL-4) RAILING CONCRETE (3Y46)".
- ⑨ SURFACE FINISH IS TO BE APPLIED TO ALL EXPOSED SURFACES (INCLUDES WALL COPING, OUTSIDE FACE OF BARRIER) TO 2'-0" BELOW FRONT FACE GROUNDLINE.

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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: JANET ELIZABETH GRONERT  Date: 09-12-14 License #: 44325					STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY E. JOHNSON DESIGNED BY A. RENSTROM CHECKED BY J. GRONERT COMM. NO. 0138259	 <b>ENGINEERS PLANNERS DESIGNERS</b> Consulting Group, Inc.	ANOKA COUNTY CIP RETAINING WALL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE SUMMARY OF QUANTITIES - WALL E	CIP SHEET 313 OF 586																			
<table border="1"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO	DATE	BY	CKD	APPR	REVISION																				STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	...Retaining Wall\8259_WRE02.dgn	
NO	DATE	BY	CKD	APPR	REVISION																							

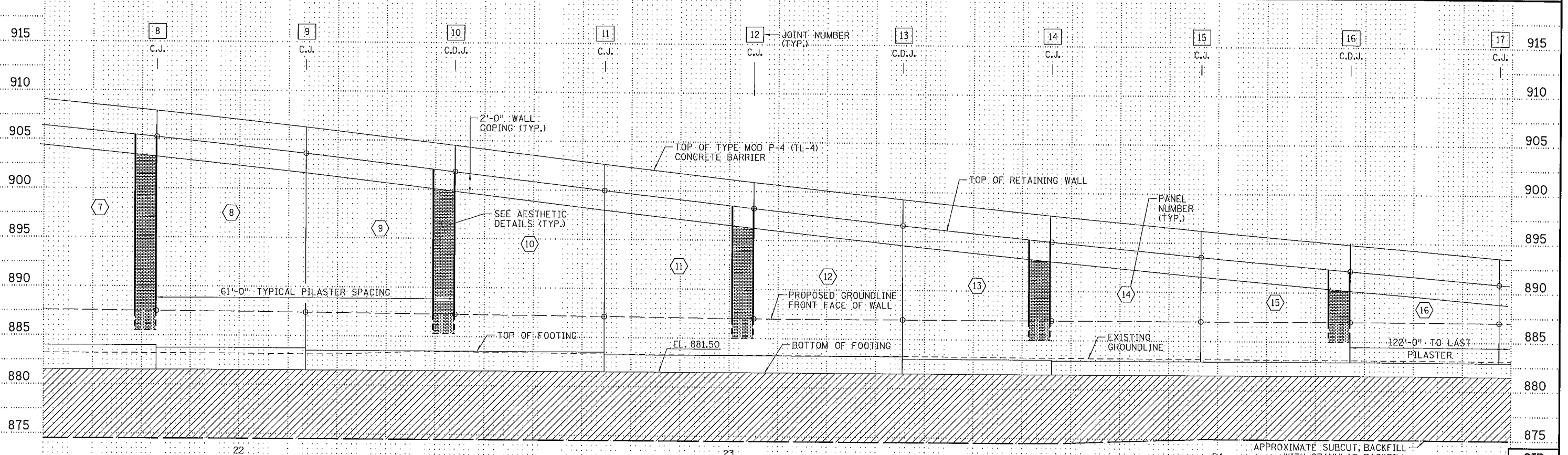






PC (RWALL-E)  
 STA. 23+86.81  
 N.W. RAMP (NWRAMP)  
 STA. 19+42.71  
 19.50' LT.  
 X=446720.908  
 Y=172996.253

- NOTES:**
1. C.J. = CONSTRUCTION JOINT  
 C.D.J. = CORK & DOWEL JOINT  
 O.J. = OPEN JOINT
  2. FOR RETAINING WALL STATIONS AND ELEVATIONS, SEE WALL GEOMETRICS SHEET.
  3. UTILITIES SHOWN FOR REFERENCE ONLY.
  4. RETAINING WALL ALIGNMENT MEASURED ALONG REFERENCE LINE WHICH IS FRONT FACE OF WALL. SEE ALIGNMENT PLANS AND TABULATIONS "RETAINING WALL ALIGNMENTS" SHEET FOR WALL ALIGNMENT INFORMATION.
  5. 6" TP PIPE DRAIN TO PRECAST CONCRETE HEADWALL WITH RODENT SCREEN. SEE MNDOT STANDARD PLATE 3131 FOR DETAILS.
  6. SEE STAGED PRELOAD EMBANKMENT PROFILE SHEET FOR PRELOAD INFORMATION.



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NO	DATE	BY	CHKD	APPR	REVISION

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: JANET ELIZABETH GRONERT  
*Janet Elizabeth Gronert*  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002

STATE PROJECT NO.  
 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
 E. JOHNSON

DESIGNED BY  
 A. RENSTROM

CHECKED BY  
 J. GRONERT

COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY

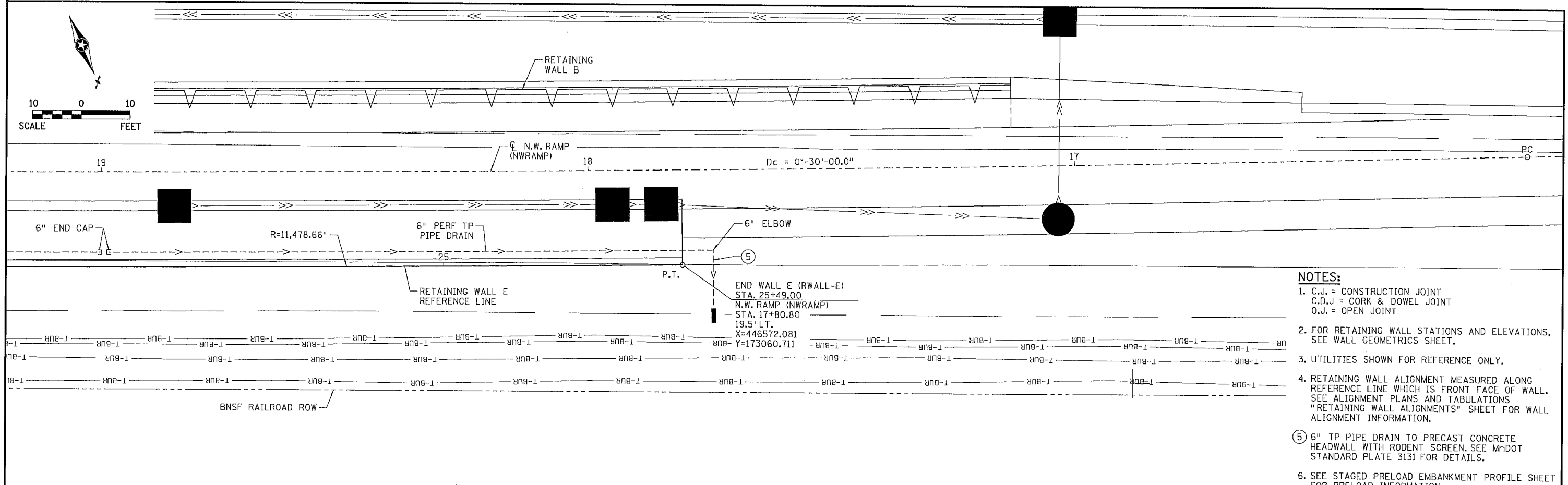
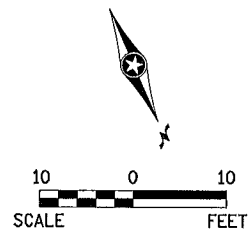
CIP RETAINING WALL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

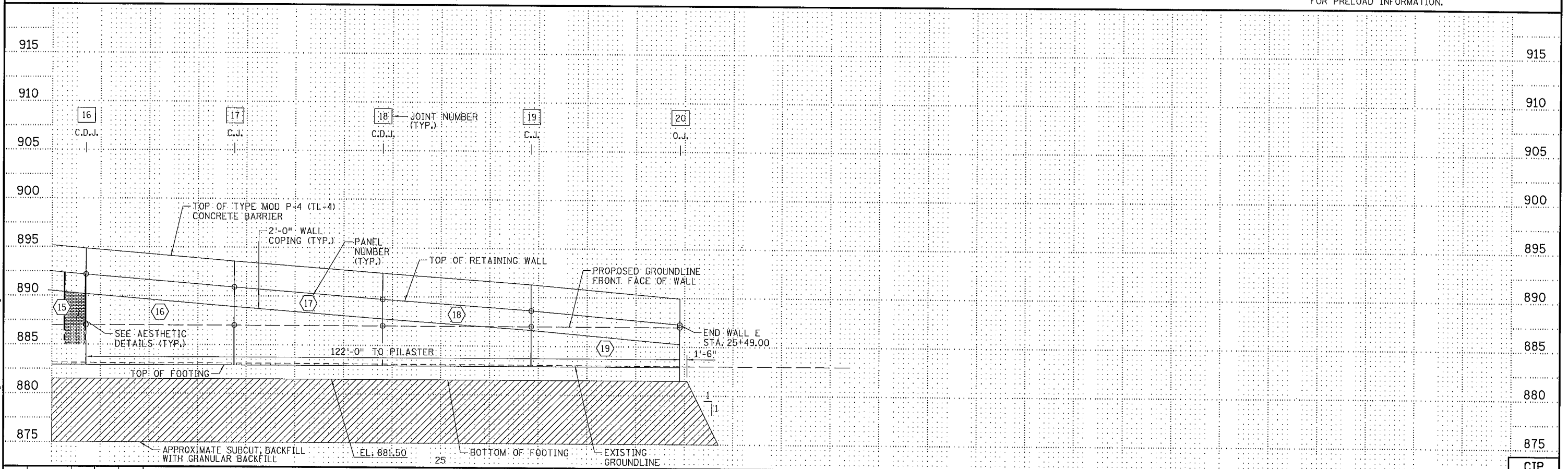
PLAN & PROFILE - WALL E (SHEET 2 OF 3)

CIP SHEET 315 OF 586





- NOTES:**
1. C.J. = CONSTRUCTION JOINT  
C.D.J. = CORK & DOWEL JOINT  
O.J. = OPEN JOINT
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  6. SEE STAGED PRELOAD EMBANKMENT PROFILE SHEET FOR PRELOAD INFORMATION.



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NO	DATE	BY	CHKD	APPR	REVISION

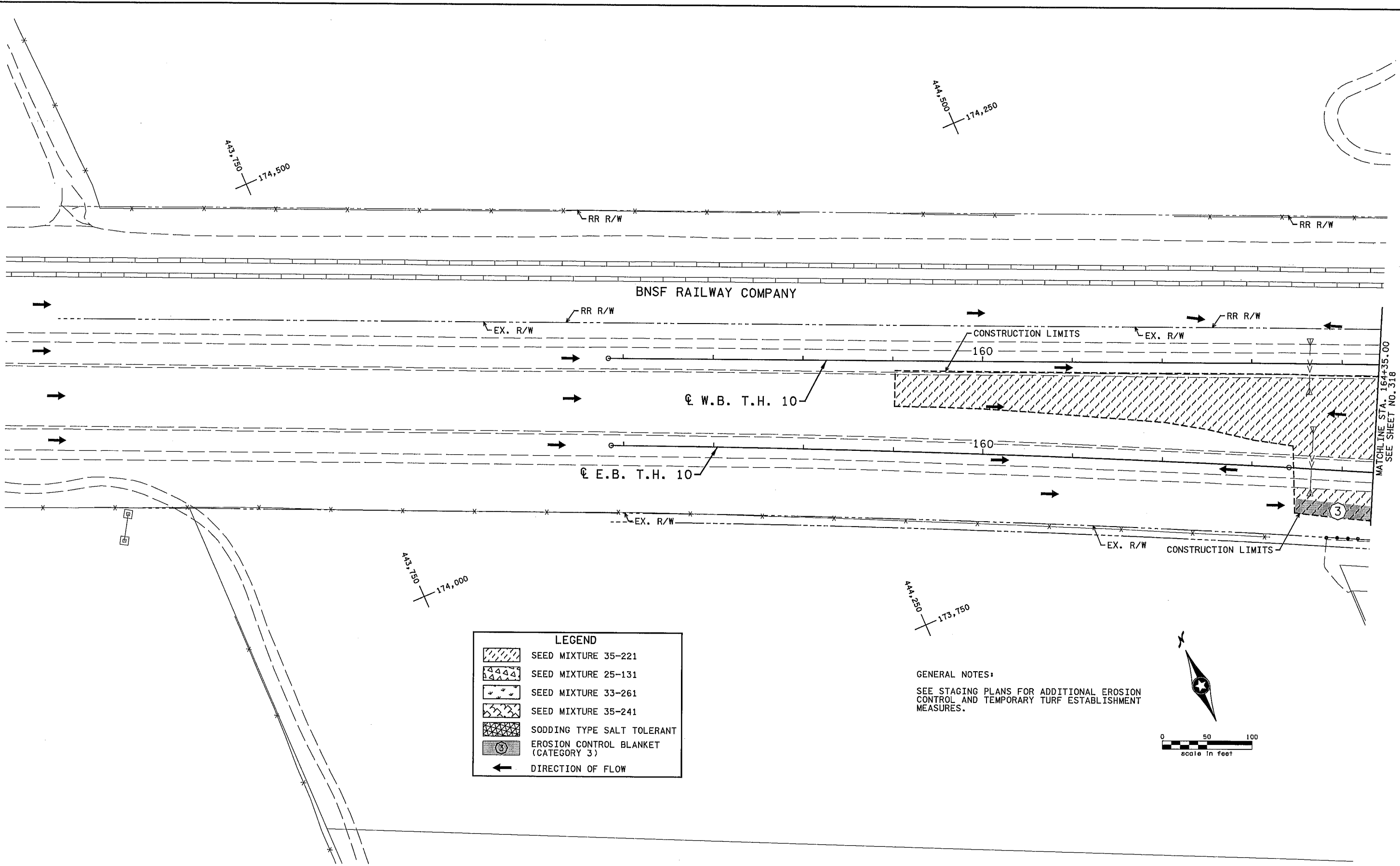
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Print Name: JANET ELIZABETH GRONERT  
  
 Date: 09-12-14 License #: 44325

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY E. JOHNSON  
 DESIGNED BY A. RENSTROM  
 CHECKED BY J. GRONERT  
 COMM. NO. 0138259

**ENGINEERS PLANNERS DESIGNERS**

**ANOKA COUNTY**  
 CIP RETAINING WALL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 PLAN & PROFILE - WALL E (SHEET 3 OF 3)

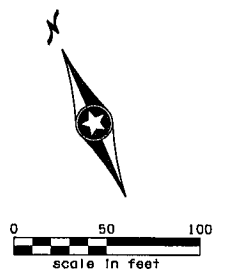
CIP  
 SHEET  
 316  
 OF  
 586



**LEGEND**

	SEED MIXTURE 35-221
	SEED MIXTURE 25-131
	SEED MIXTURE 33-261
	SEED MIXTURE 35-241
	SODDING TYPE SALT TOLERANT
	EROSION CONTROL BLANKET (CATEGORY 3)
	DIRECTION OF FLOW

**GENERAL NOTES:**  
 SEE STAGING PLANS FOR ADDITIONAL EROSION CONTROL AND TEMPORARY TURF ESTABLISHMENT MEASURES.



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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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

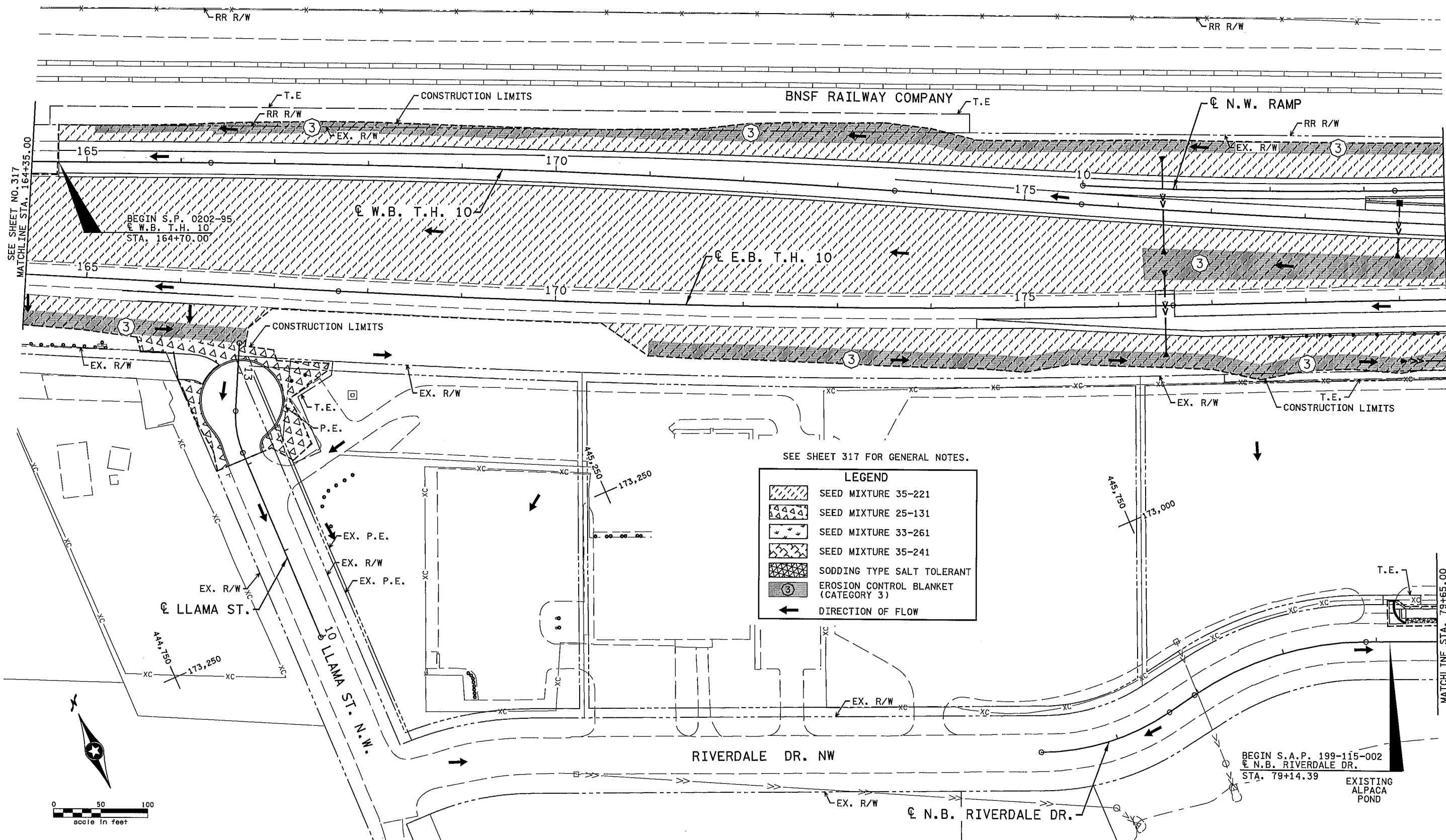
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY G. HASS  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

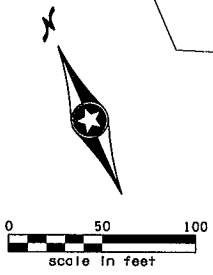
SHEET 317 OF 586



SEE SHEET 317 FOR GENERAL NOTES.

**LEGEND**

- SEED MIXTURE 35-221
- SEED MIXTURE 25-131
- SEED MIXTURE 33-261
- SEED MIXTURE 35-241
- SODDING TYPE SALT TOLERANT
- EROSION CONTROL BLANKET (CATEGORY 3)
- DIRECTION OF FLOW



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Print Name: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**D. SYMANJETZ**

CHECKED BY  
**C. HASS**

COMM. NO. **0138259**

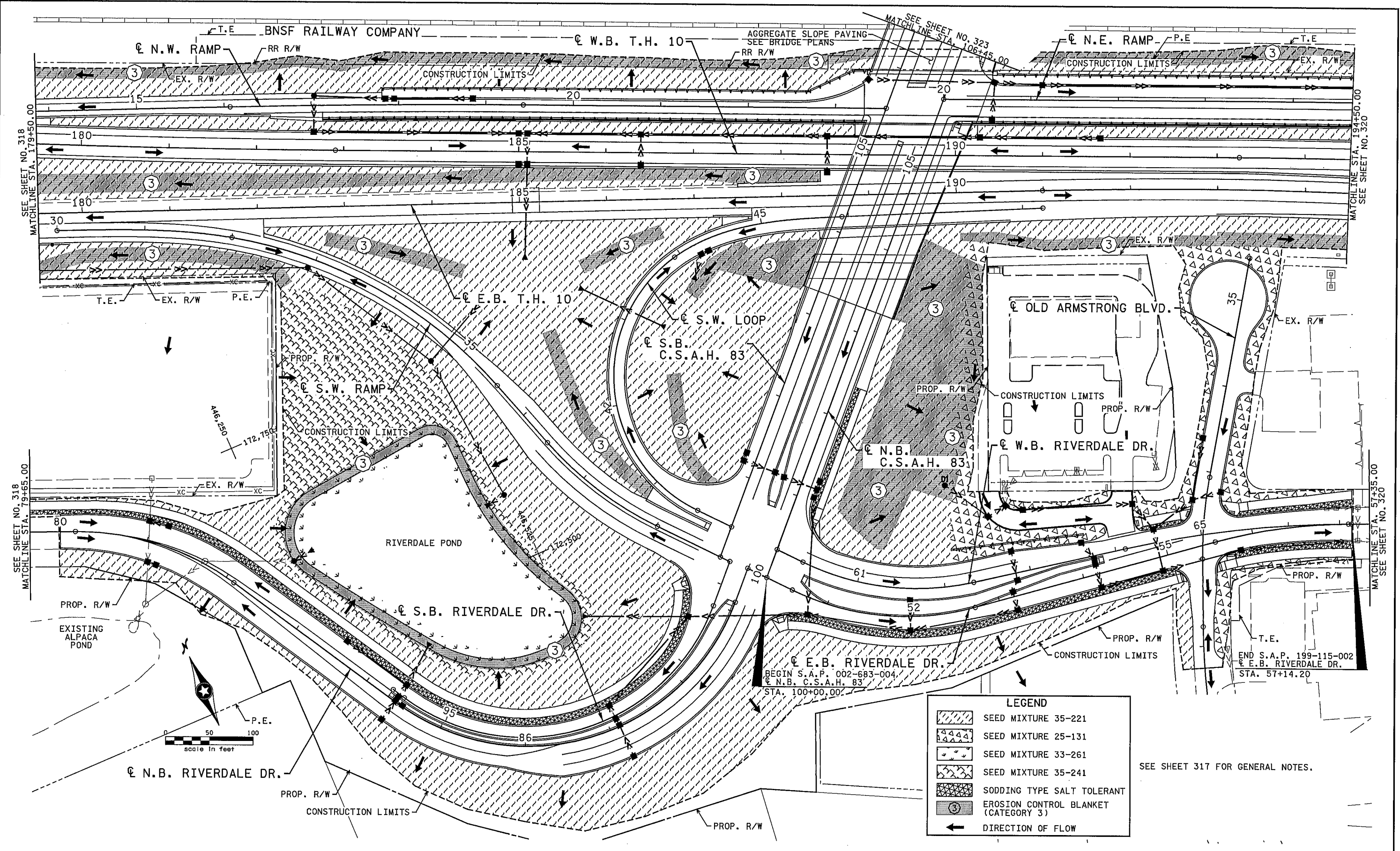
**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
318  
OF  
586



**LEGEND**

	SEED MIXTURE 35-221
	SEED MIXTURE 25-131
	SEED MIXTURE 33-261
	SEED MIXTURE 35-241
	SODDING TYPE SALT TOLERANT
	EROSION CONTROL BLANKET (CATEGORY 3)
	DIRECTION OF FLOW

SEE SHEET 317 FOR GENERAL NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-14** License #: **45039**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
A. EMERSON

CHECKED BY  
C. HASS

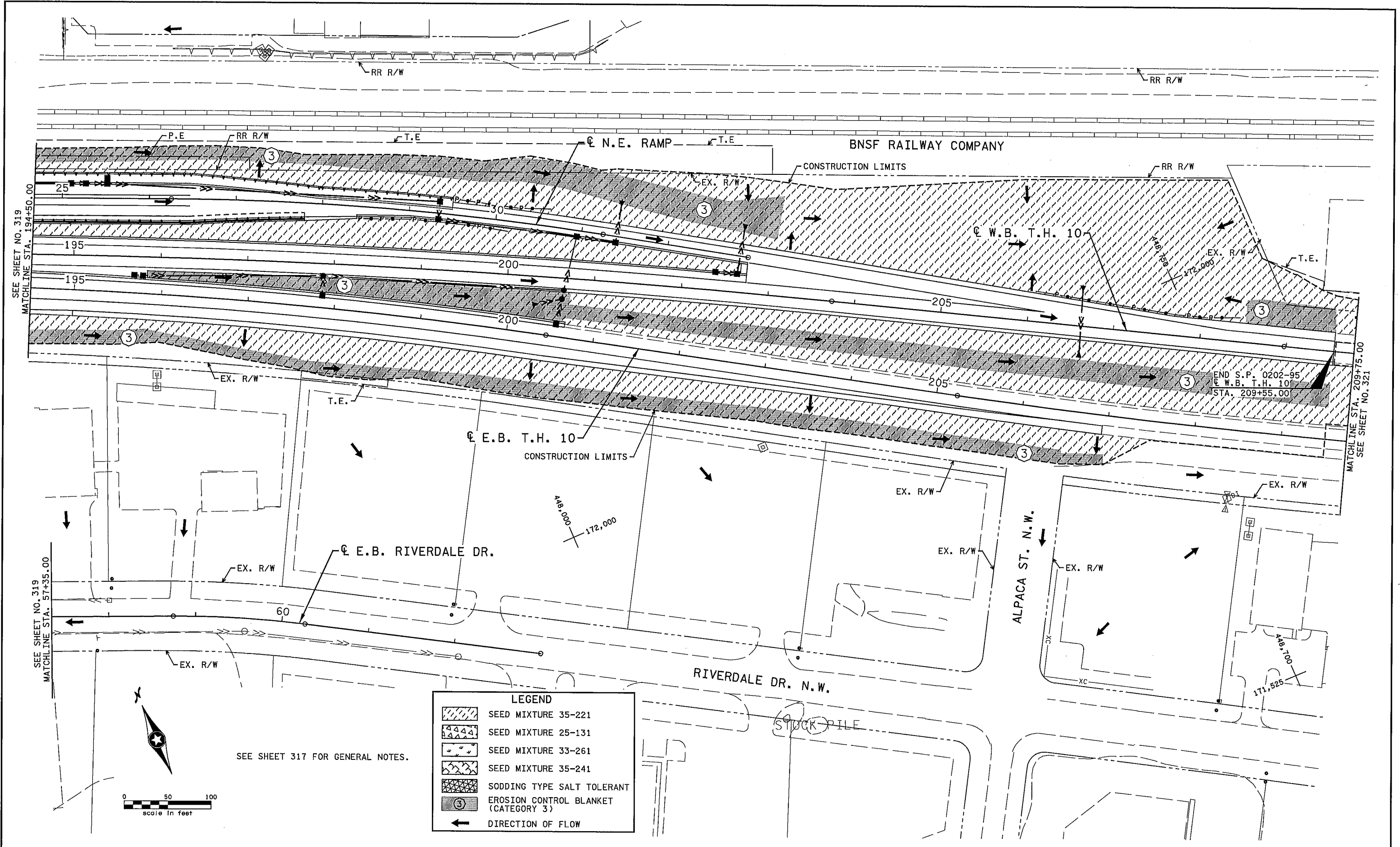
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**ANOKA COUNTY**

EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

**SHEET**  
319  
**OF**  
586



**LEGEND**

	SEED MIXTURE 35-221
	SEED MIXTURE 25-131
	SEED MIXTURE 33-261
	SEED MIXTURE 35-241
	SODDING TYPE SALT TOLERANT
	EROSION CONTROL BLANKET (CATEGORY 3)
	DIRECTION OF FLOW

SEE SHEET 317 FOR GENERAL NOTES.

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Pr Int Name: **CRAIG J. HASS**

*Craig Hass*

Date: **09-12-16** License #: **45039**

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259



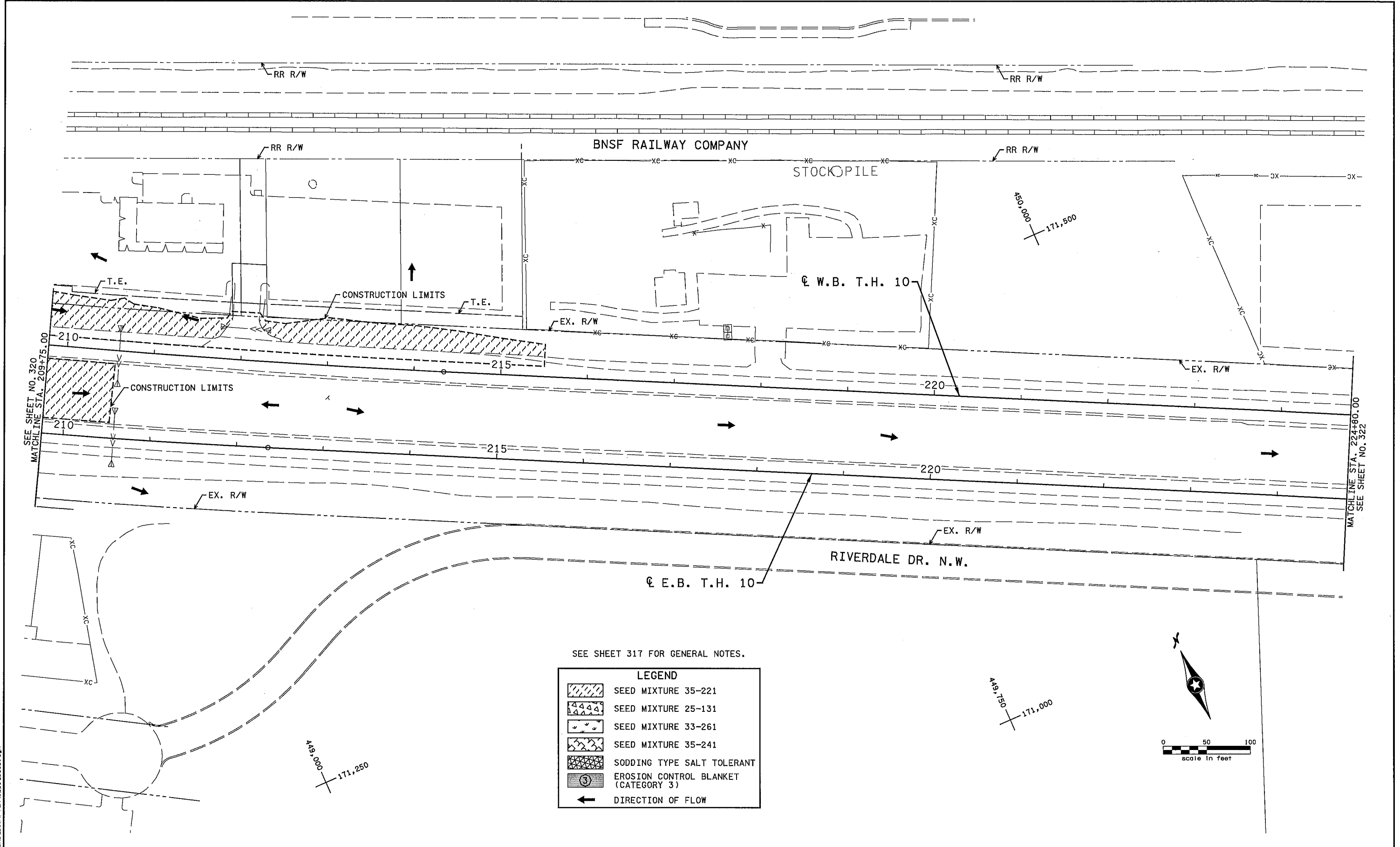
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PLANNERS  
DESIGNERS**

**ANOKA COUNTY**

**EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE**

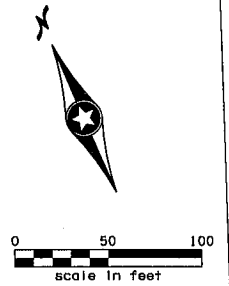
**SHEET  
320  
OF  
586**





SEE SHEET 317 FOR GENERAL NOTES.

LEGEND	
	SEED MIXTURE 35-221
	SEED MIXTURE 25-131
	SEED MIXTURE 33-261
	SEED MIXTURE 35-241
	SODDING TYPE SALT TOLERANT
	EROSION CONTROL BLANKET (CATEGORY 3)
	DIRECTION OF FLOW



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 Print Name: **CRAIG J. HASS**  
  
 Date: 09-12-14 License # 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
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 CITY PROJECT NO.

DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



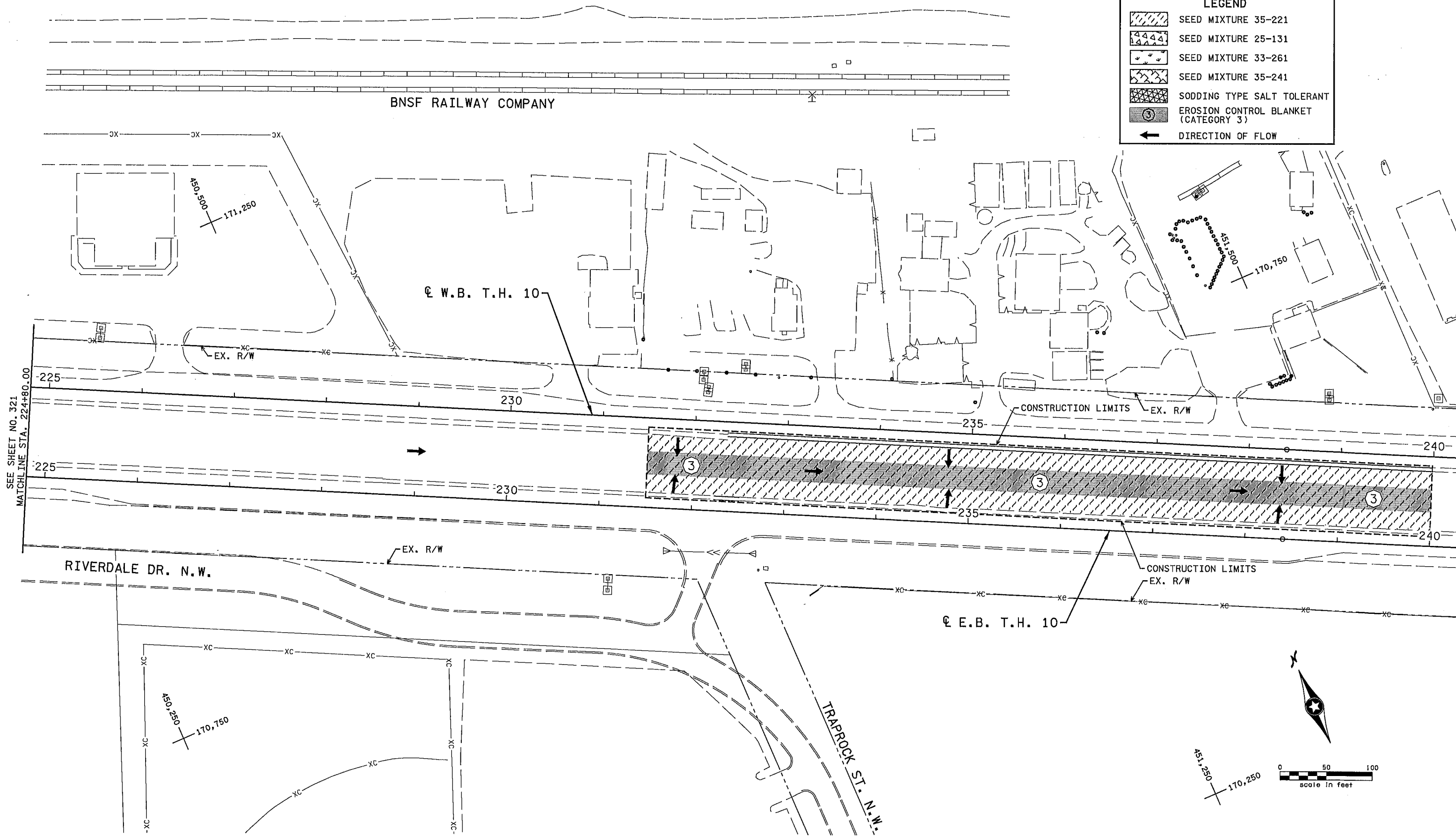
**ENGINEERS  
 PLANNERS  
 DESIGNERS**

ANOKA COUNTY  
**EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET  
 321  
 OF  
 586**

SEE SHEET 317 FOR GENERAL NOTES.

LEGEND	
	SEED MIXTURE 35-221
	SEED MIXTURE 25-131
	SEED MIXTURE 33-261
	SEED MIXTURE 35-241
	SODDING TYPE SALT TOLERANT
	EROSION CONTROL BLANKET (CATEGORY 3)
	DIRECTION OF FLOW



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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**  
  
 Date: **09-12-14** License # **45039**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
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DRAWN BY  
 S. MARTINS  
 DESIGNED BY  
 D. SYMANIETZ  
 CHECKED BY  
 C. HASS  
 COMM. NO. 0138259

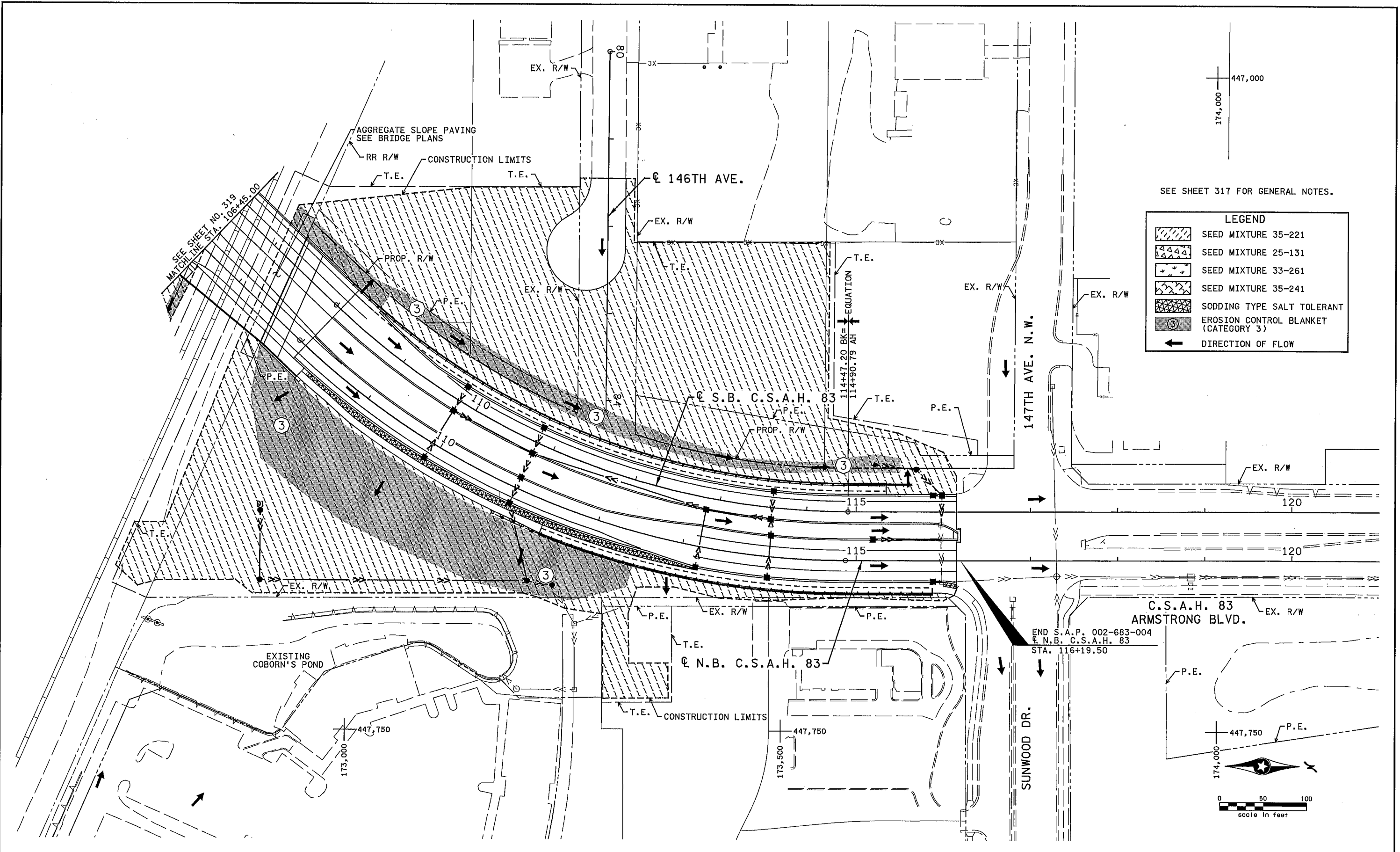


**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

**SHEET  
 322  
 OF  
 586**





SEE SHEET 317 FOR GENERAL NOTES.

LEGEND	
	SEED MIXTURE 35-221
	SEED MIXTURE 25-131
	SEED MIXTURE 33-261
	SEED MIXTURE 35-241
	SODDING TYPE SALT TOLERANT
	EROSION CONTROL BLANKET (CATEGORY 3)
	DIRECTION OF FLOW

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NO	DATE	BY	CKD	APPR	REVISION

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: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARTINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 EROSION CONTROL AND TURF ESTABLISHMENT PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 323  
 OF  
 586

# PERMANENT PAVEMENT MARKING PLAN

## NOTES & GUIDELINES

### GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

### EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

FOR 20 MIL APPLICATIONS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES °F OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

### POLY PREFORM INLAY APPLICATION:

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120° F. APPLICATION BELOW 120° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15th AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

### POLY PREFORM GROOVED APPLICATION:

CONCRETE PAVEMENT SURFACES AND BITUMINOUS PAVEMENT SURFACES WHERE PAVEMENT MARKINGS CANNOT BE INLAID IN THE HOT MAT, SHALL BE GROOVED FOR THE INSTALLATION OF DURABLE REFLECTORIZED PAVEMENT MARKINGS. SEE SPECIAL PROVISIONS.

### PREFORM THERMOPLASTIC APPLICATION:

SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION REGARDING INSTALLATION PROCEDURES FOR PREFORM THERMOPLASTIC PAVEMENT MARKINGS.

ALL MARKINGS DENOTED AS PREFORM THERMOPLASTIC SHALL BE PAID FOR UNDER THE "PAVEMENT MARKING SPECIAL" PAY ITEMS (SEE PAVEMENT MARKING TABULATION).

### PAINT:



AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.






EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

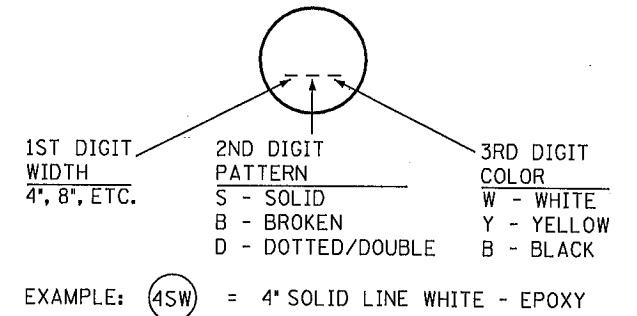
THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

## SYMBOLS & MATERIALS LEGEND

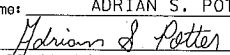
-  CROSSWALK BLOCK WHITE
-  PAVEMENT MESSAGE (LEFT ARROW)

### STRIPING KEY

-  CIRCLE - EPOXY
-  SQUARE - POLY PREFORM
-  HEXAGON - PREFORMED THERMOPLASTIC
-  TRIANGLE - PAINT
-  PENTAGON - REMOVEABLE PREFORMED PLASTIC MARKING




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<table border="1"> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHKD</th> <th>APPR</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>					NO	DATE	BY	CHKD	APPR	REVISION							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: <b>ADRIAN S. POTTER</b>  Date: <b>09-12-14</b> License # <b>42785</b>		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. _____ CITY PROJECT NO. _____		DRAWN BY <b>B. BETTS</b> DESIGNED BY <b>B. BETTS</b> CHECKED BY <b>A. POTTER</b> COMM. NO. 0138259		<b>SRF</b> ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.		ANOKA COUNTY PAVEMENT MARKING PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE PAVEMENT MARKING TITLE SHEET		SHEET 324 OF 586
NO	DATE	BY	CHKD	APPR	REVISION																						

DD		PAVEMENT MARKINGS									
ALIGNMENT	STATION TO STATION	PAVT MSSG (LT ARROW) POLY PREF-GR IN (EACH)	PAVT MSSG (RT ARROW) POLY PREF-GR IN (EACH)	4" SOLID LINE WHITE-POLY PREF-GR IN (LIN FT)	8" SOLID LINE WHITE-POLY PREF-GR IN (LIN FT)	24" SOLID LINE WHITE-POLY PREF-GR IN (LIN FT)	4" BROKEN LINE WHITE-POLY PREF-GR IN (LIN FT)	4" DOTTED LINE WHITE-POLY PREF-GR IN (LIN FT)	8" DOTTED LINE WHITE-POLY PREF-GR IN (LIN FT)	24" SOLID LINE YELLOW-POLY PREF-GR IN (LIN FT)	4" SOLID LINE WHITE-EPOXY (LIN FT)
<b>S.P. 0202-95</b>											
N.B. C.S.A.H. 83	103+28 - 106+19										1020
N.E. RAMP	20+00 - 32+93		4	1220							
N.W. RAMP	14+02 - 23+58										
S.W. LOOP	40+23 - 44+90										
S.W. RAMP	32+36 - 38+55	2	2	440		60				158	
W.B. T. H. 10	164+70 - 209+55		2	170	1840		2000	280	40		
<b>S.P. 0202-95 TOTAL</b>		<b>2</b>	<b>8</b>	<b>1830</b>	<b>1840</b>	<b>60</b>	<b>2000</b>	<b>280</b>	<b>40</b>	<b>158</b>	<b>1020</b>
<b>S.A.P. 199-115-002</b>											
E.B. RIVERDALE DR. N.W.	50+91 - 57+14										1660
N.B. RIVERDALE DR. N.W.	80+00 - 89+52										2410
OLD ARMSTRONG BLVD.	30+75 - 31+69										220
OLD ARMSTRONG BLVD.	32+64 - 35+49										
<b>S.A.P. 199-115-002 TOTAL</b>											<b>4290</b>
<b>S.A.P. 002-683-004</b>											
N.B. C.S.A.H. 83	100+00 - 103+28										1130
N.B. C.S.A.H. 83	106+19 - 116+17										2800
<b>S.A.P. 002-683-004 TOTAL</b>											<b>3930</b>
<b>PROJECT TOTALS</b>		<b>2</b>	<b>8</b>	<b>1830</b>	<b>1840</b>	<b>60</b>	<b>2000</b>	<b>280</b>	<b>40</b>	<b>158</b>	<b>9240</b>

NOTES:  
 (DD-1) TURN ARROW EQUALS 15.4 SQ FT.  
 (DD-2) MEASURED IN LIN FT INDEPENDENT OF WIDTH.

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NO DATE BY CKD APPR REVISION				... \CAD_BIMP\on\8255_tbl8.dgn				

DD PAVEMENT MARKINGS									
ALIGNMENT	STATION TO STATION	4" BROKEN LINE WHITE-EPOXY (LIN FT)	4" SOLID LINE YELLOW-EPOXY (LIN FT)	4" DOUBLE SOLID LINE YELLOW-EPOXY (LIN FT)	4" SOLID LINE WHITE-EPOXY-GR IN (LIN FT)	4" SOLID LINE YELLOW-EPOXY-GR IN (LIN FT)	CROSSWALK MARKING-POLY PREFORM-GR IN (SQ FT)	(DD-2) PAVEMENT MARKING SPECIAL (LIN FT)	(DD-1) PAVEMENT MARKING SPECIAL (SQ FT)
<b>S.P. 0202-95</b>									
N.B. C.S.A.H. 83	103+28 - 106+19	40	390					40	50
N.E. RAMP	20+00 - 32+93				1230	1260	180		
N.W. RAMP	14+02 - 23+58				1040	1030			
S.W. LOOP	40+23 - 44+90				430	490			
S.W. RAMP	32+36 - 38+55				610	920			
W.B. T. H. 10	156+00 - 240+00				10510	10810			
<b>S.P. 0202-95 TOTAL</b>		<b>40</b>	<b>390</b>		<b>13820</b>	<b>14510</b>	<b>180</b>	<b>40</b>	<b>50</b>
<b>S.A.P. 199-115-002</b>									
E.B. RIVERDALE DR. N.W.	50+91 - 57+14		720	310				50	500
N.B. RIVERDALE DR. N.W.	80+00 - 89+52		980	790				270	370
OLD ARMSTRONG BLVD.	30+75 - 31+69			110					110
OLD ARMSTRONG BLVD.	32+64 - 35+49								110
<b>S.A.P. 199-115-002 TOTAL</b>			<b>1700</b>	<b>1210</b>				<b>320</b>	<b>1090</b>
<b>S.A.P. 002-683-004</b>									
N.B. C.S.A.H. 83	100+00 - 103+28	50	500						50
N.B. C.S.A.H. 83	106+19 - 116+17	380	2030					270	100
<b>S.A.P. 002-683-004 TOTAL</b>		<b>430</b>	<b>2530</b>					<b>270</b>	<b>150</b>
<b>PROJECT TOTALS</b>		<b>470</b>	<b>4620</b>	<b>1210</b>	<b>13820</b>	<b>14510</b>	<b>180</b>	<b>630</b>	<b>1290</b>

NOTES:

- (DD-1) TURN ARROW EQUALS 15.4 SQ FT.
- (DD-2) MEASURED IN LIN FT INDEPENDENT OF WIDTH.

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: 09-12-14 License # 42785

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
L. JAMES

DESIGNED BY  
L. JAMES

CHECKED BY  
A. POTTER

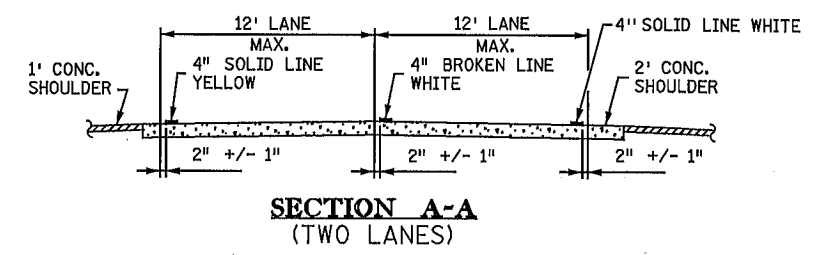
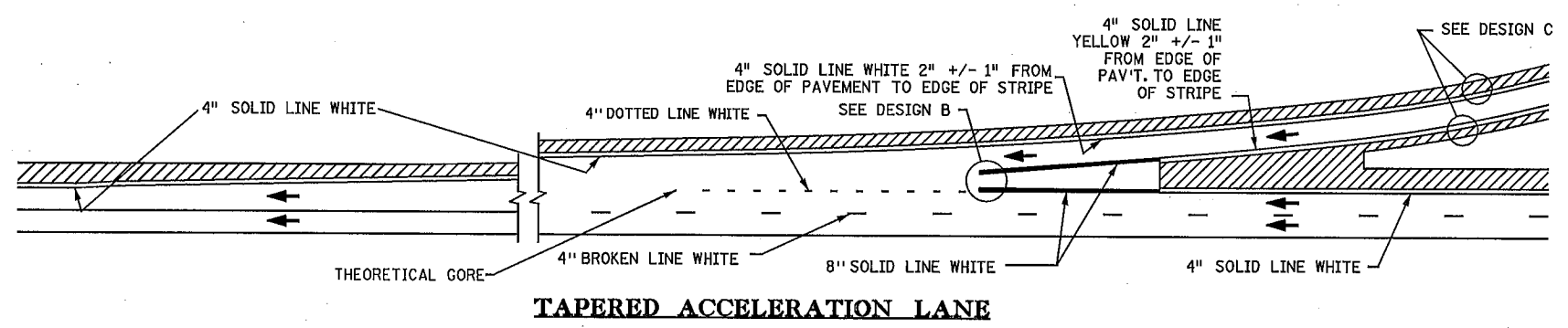
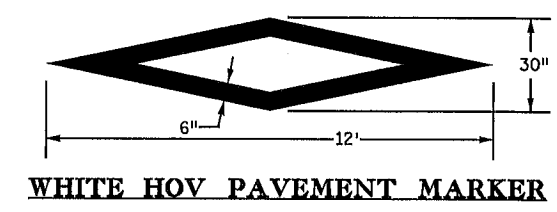
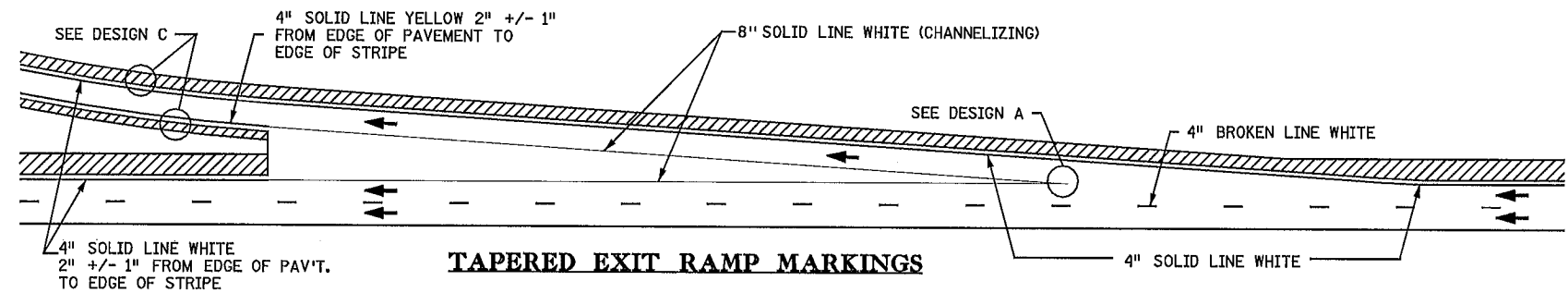
COMM. NO. 0138259



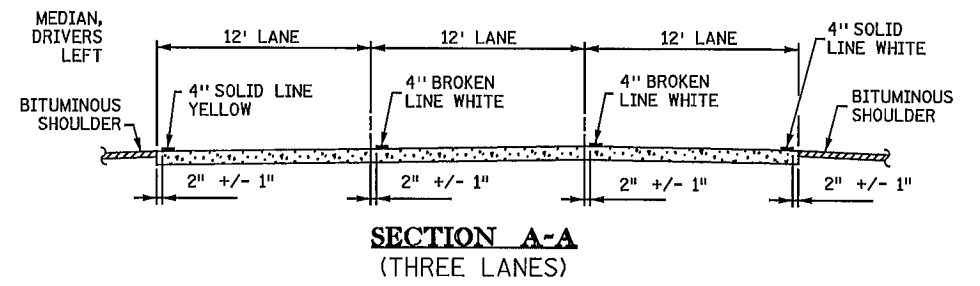
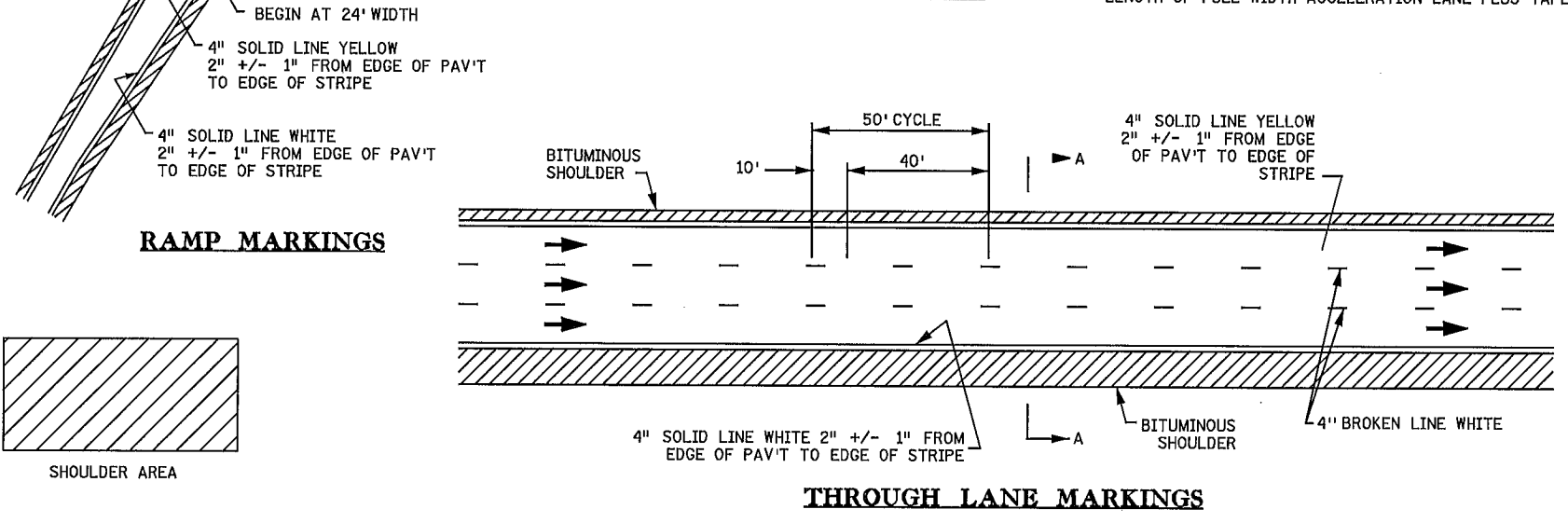
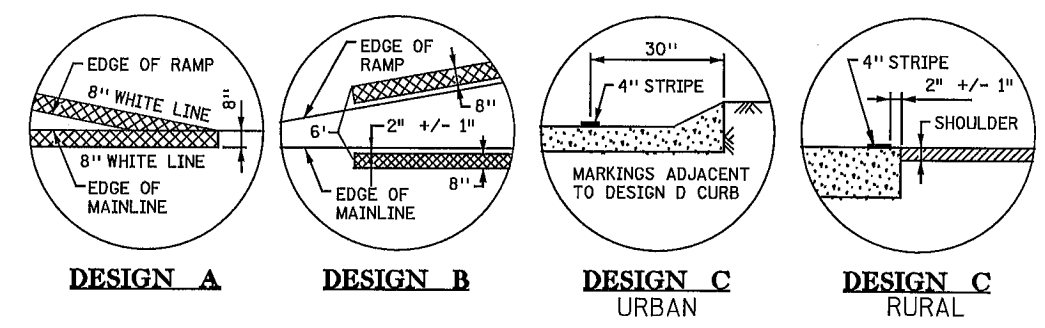
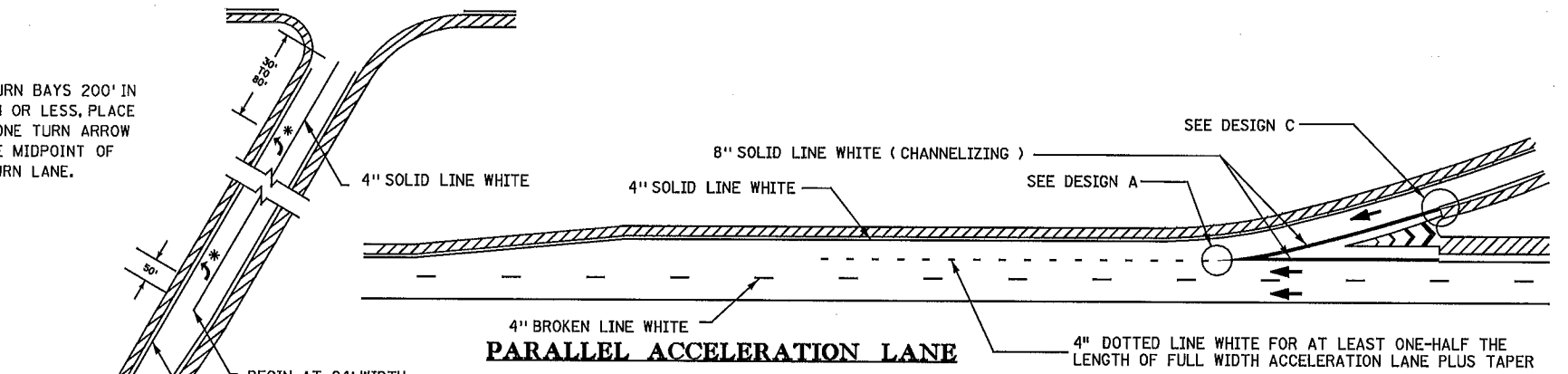
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
PAVEMENT MARKING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TABULATIONS

SHEET  
326  
OF  
586



\* FOR TURN BAYS 200' IN LENGTH OR LESS, PLACE ONLY ONE TURN ARROW AT THE MIDPOINT OF THE TURN LANE.



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REVISED: 20-NOV-2013

NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

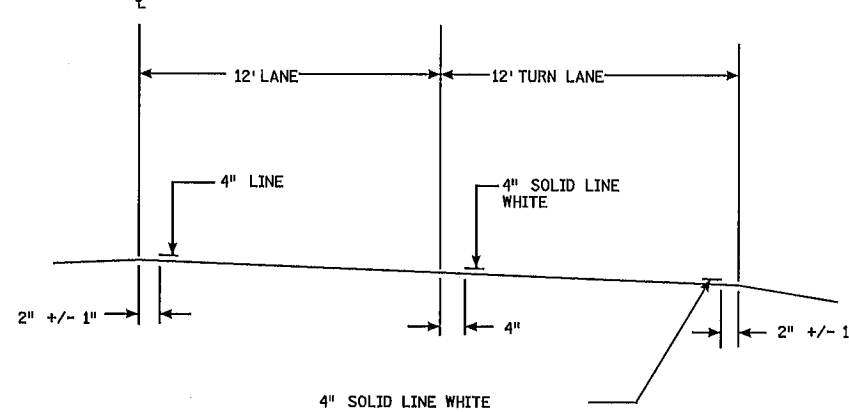
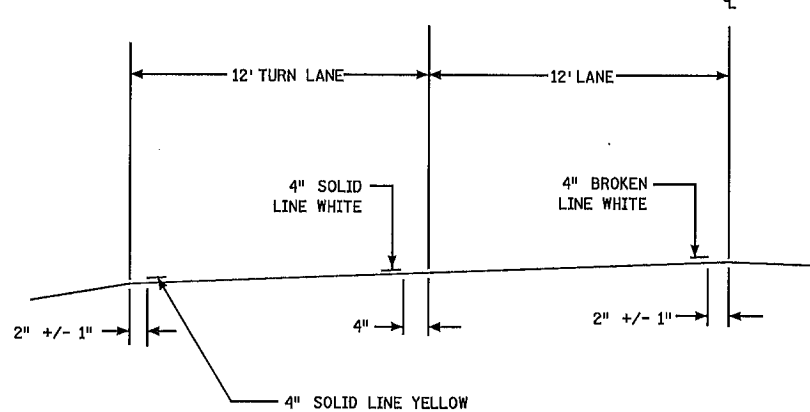
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STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO. \_\_\_\_\_  
CITY PROJECT NO. \_\_\_\_\_  
DRAWN BY H. TRAN  
DESIGNED BY H. TRAN  
CHECKED BY A. POTTER  
COMM. NO. 0138259



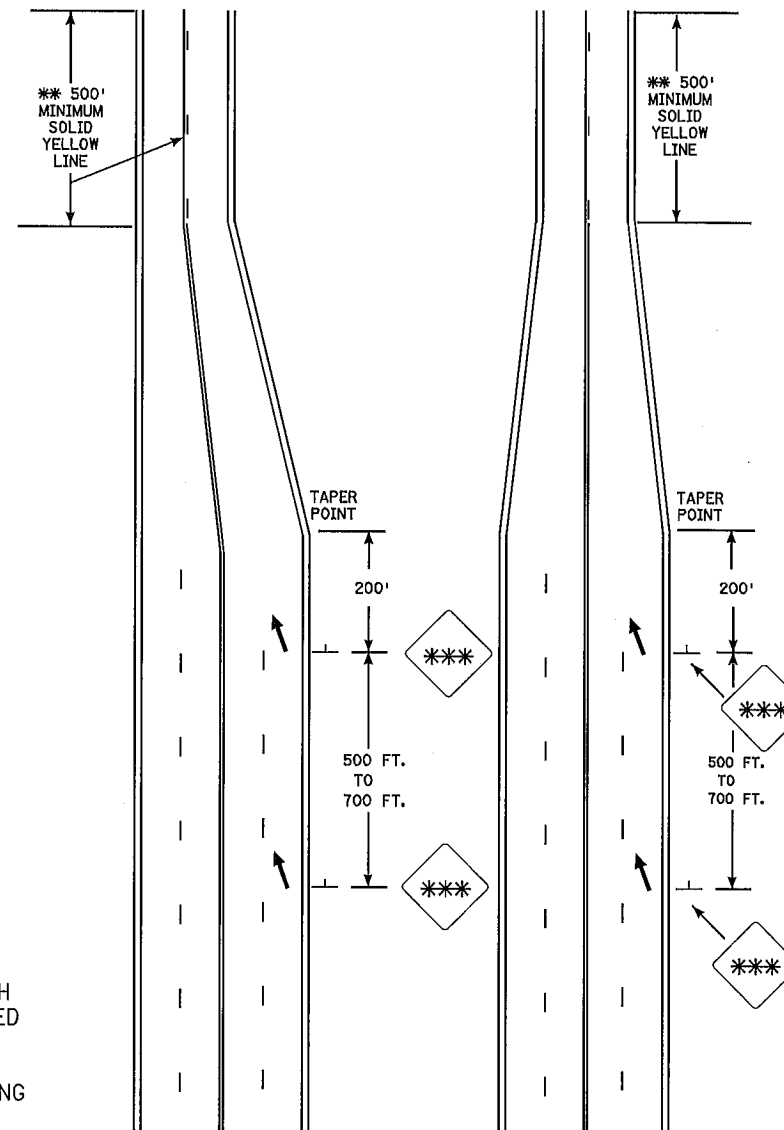
ANOKA COUNTY  
PAVEMENT MARKING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
DETAILS FOR MNDOT ROADS AND RAMPS

SHEET 327 OF 586

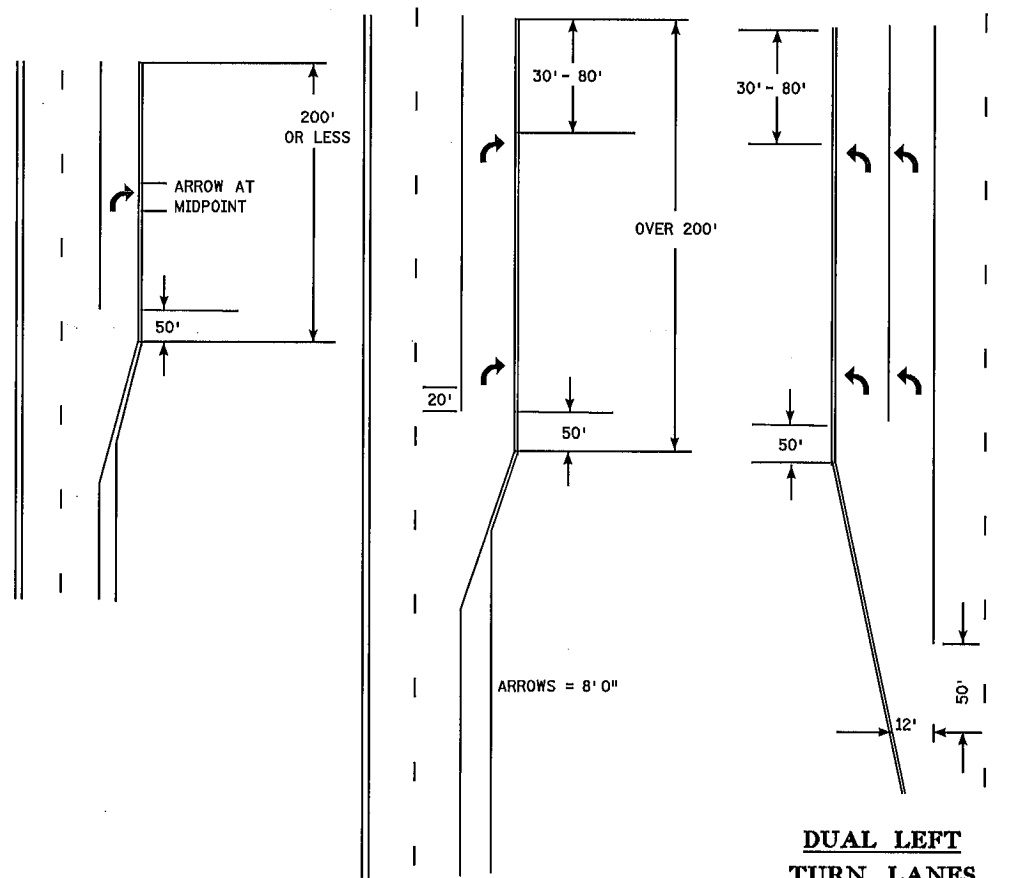
**TYPICAL LEFT TURN LANE**



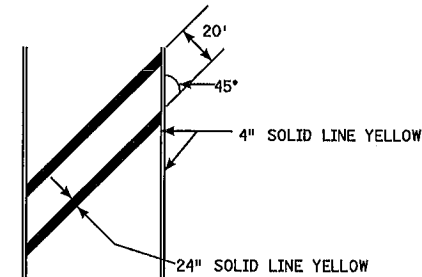
**TYPICAL LANE REDUCTION TRANSITION**



**TYPICAL MESSAGE PLACEMENT FOR TURN LANES**



**TYPICAL MARKINGS FOR LEFT TURN ISLANDS**



AT SPEEDS LESS THAN 40 MPH THE WIDTH OF THE CROSSHATCH LINE MAY BE REDUCED TO 12\".

AT SPEEDS 40 MPH AND OVER THE SPACING MAY BE INCREASED TO 30' BETWEEN CROSSHATCH LINES.

\* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.

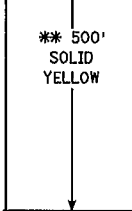
\*\* IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

39 MPH SPEED LIMIT OR LESS..... 500'  
 40-54 MPH SPEED LIMIT..... 650'  
 55 MPH SPEED LIMIT..... 800'

\*\*\* PLACE TRANSITION ARROWS ADJACENT TO LANE REDUCTION SIGNS. REFER TO SIGNING TYPICALS FOR SIGN DETAILS AND PLACEMENT.

\*\*\*\* LANE REDUCTION TRANSITION ARROWS ARE OPTIONAL FOR SPEEDS LESS THAN 45 MPH.

**DUAL LEFT TURN LANES**



REVISED: 20-NOV-2013

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 Date: **09-12-14** License #: **42785**

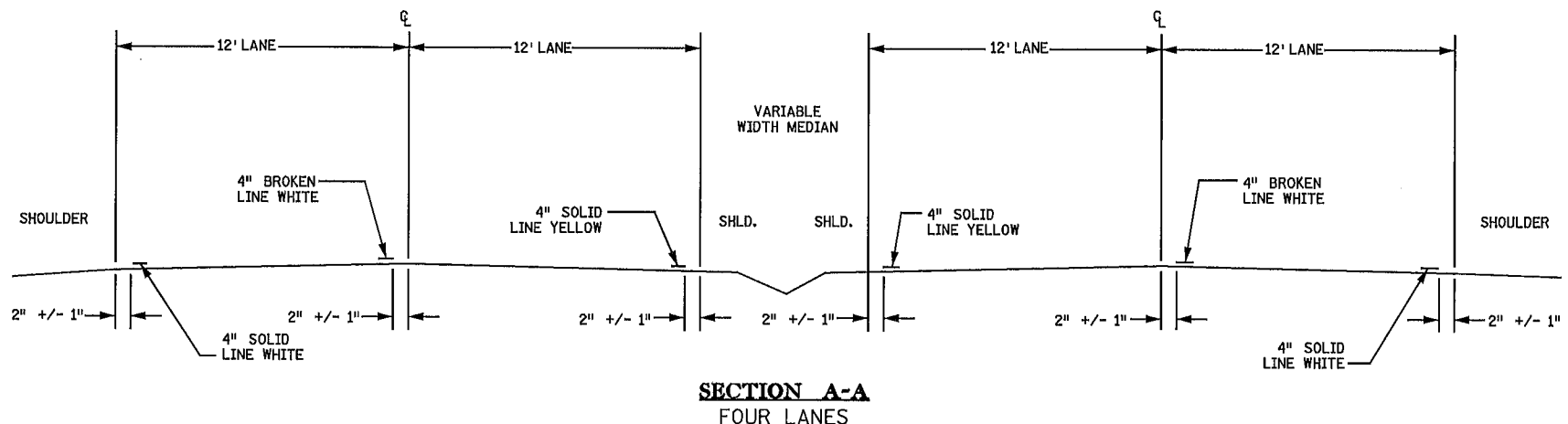
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY H. TRAN  
 DESIGNED BY H. TRAN  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259

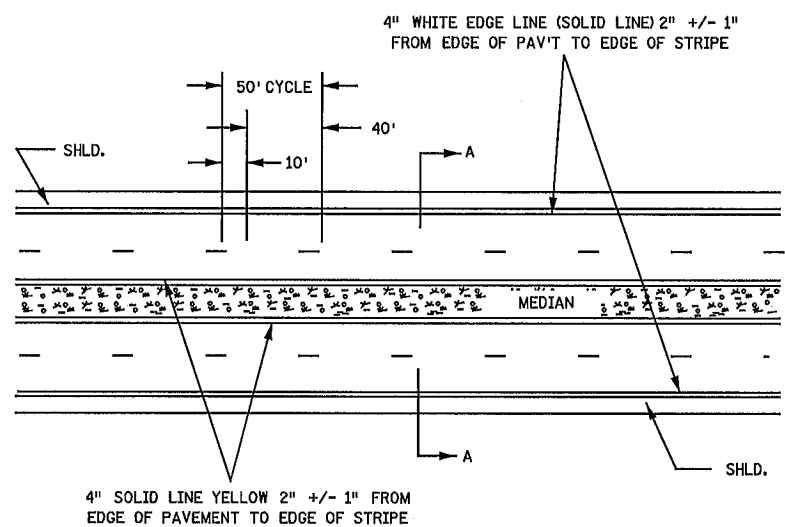
**SRH** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 PAVEMENT MARKING PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 DETAILS FOR MNDOT ROADS AND RAMPS

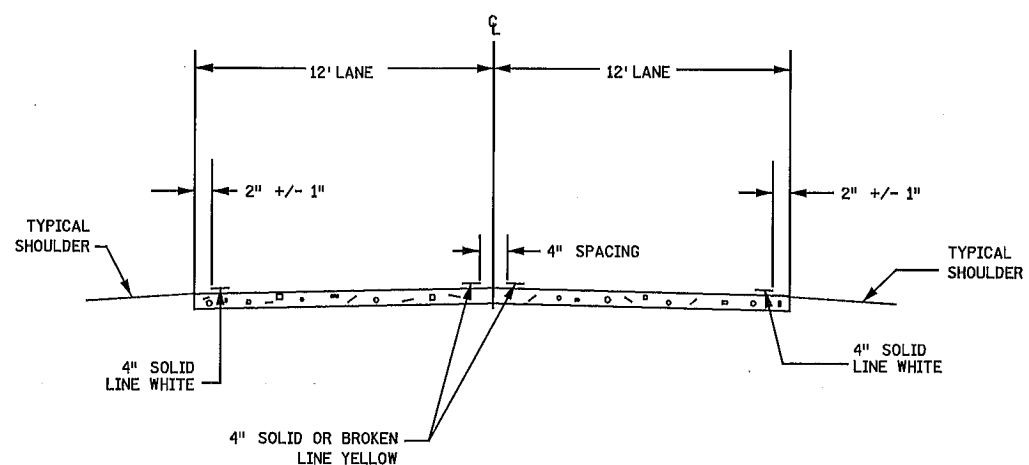
SHEET 328 OF 586



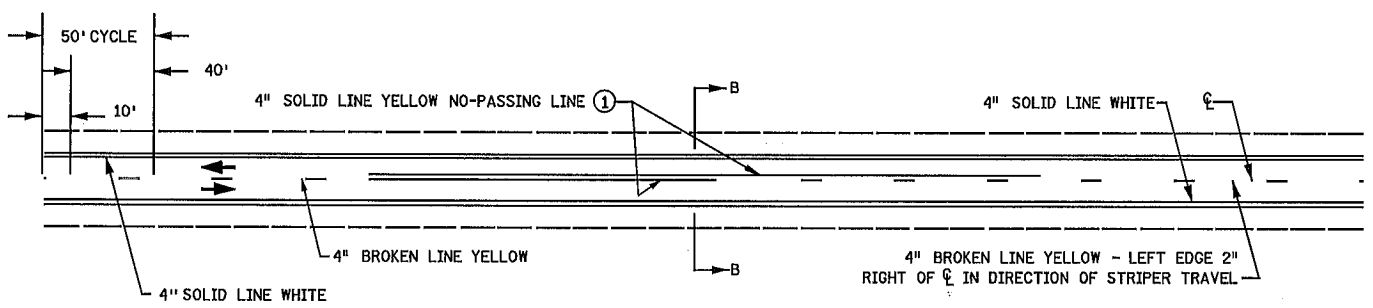
**SECTION A-A  
FOUR LANES**



**TYPICAL 4-LANE DIVIDED LANE MARKINGS**

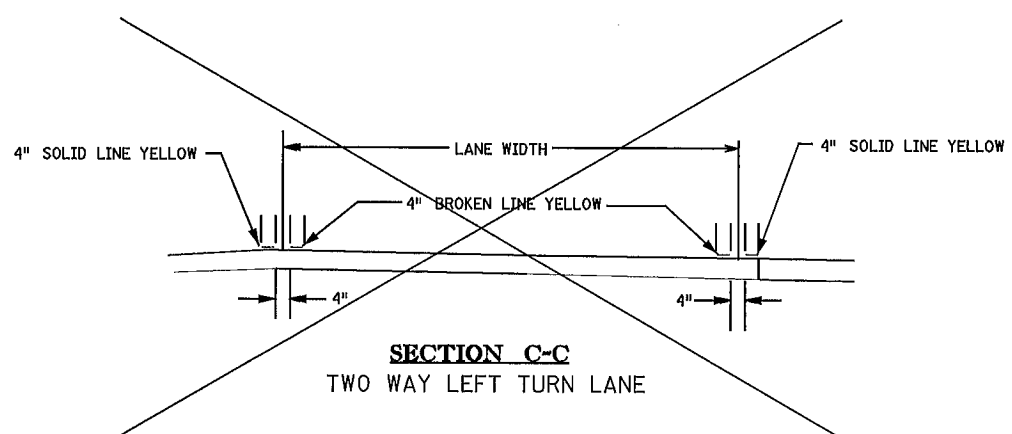


**SECTION B-B**

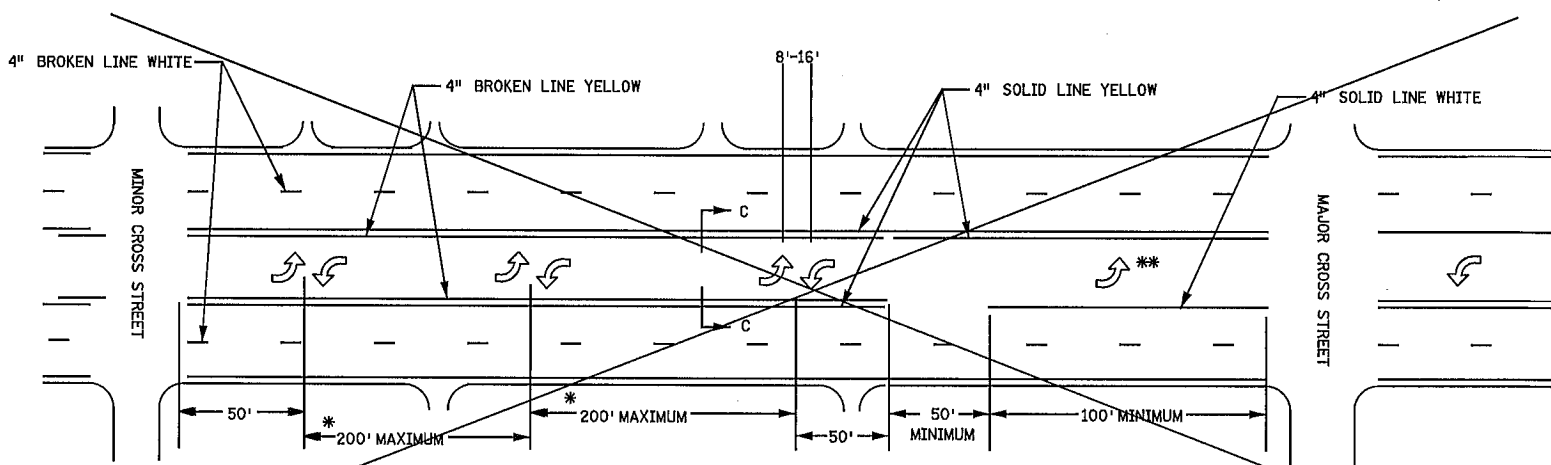


**TWO LANE-TWO WAY TRAFFIC MARKINGS**

① CONTACT TRAFFIC ENGINEER FOR NO PASSING ZONE SURVEY.



**SECTION C-C  
TWO WAY LEFT TURN LANE**



**TWO WAY LEFT TURN LANE**

\* THESE DISTANCES SHOULD BE EQUAL. THE PAVEMENT ARROWS ARE PLACED TO SHOW THE OPERATION AND DO NOT HAVE TO LINE UP WITH ANY OF THE DRIVEWAYS.

NOTE:  
SINGLE-DIRECTION LEFT-TURN ARROWS SHALL NOT BE USED IN LANES BORDERDED ON BOTH SIDES BY TWO-WAY LEFT-TURN LANE MARKINGS

\*\* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER AND PLACEMENT OF ARROWS.

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REVISED: 20-NOV-2013

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*Adrian S. Potter*

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STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY H. TRAN

DESIGNED BY H. TRAN

CHECKED BY A. POTTER

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

PAVEMENT MARKING PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

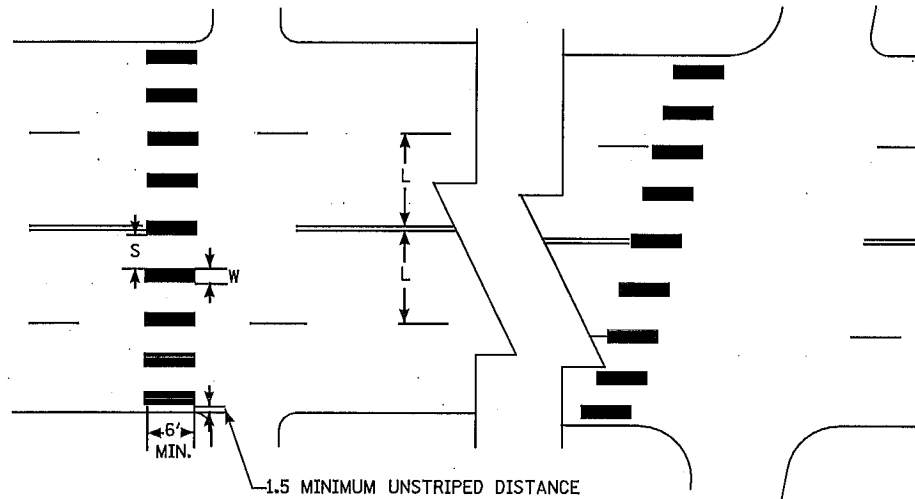
DETAILS FOR MNDOT ROADS AND RAMPS

SHEET 329 OF 586



**MARKINGS FOR PEDESTRIAN CROSSWALKS**

(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

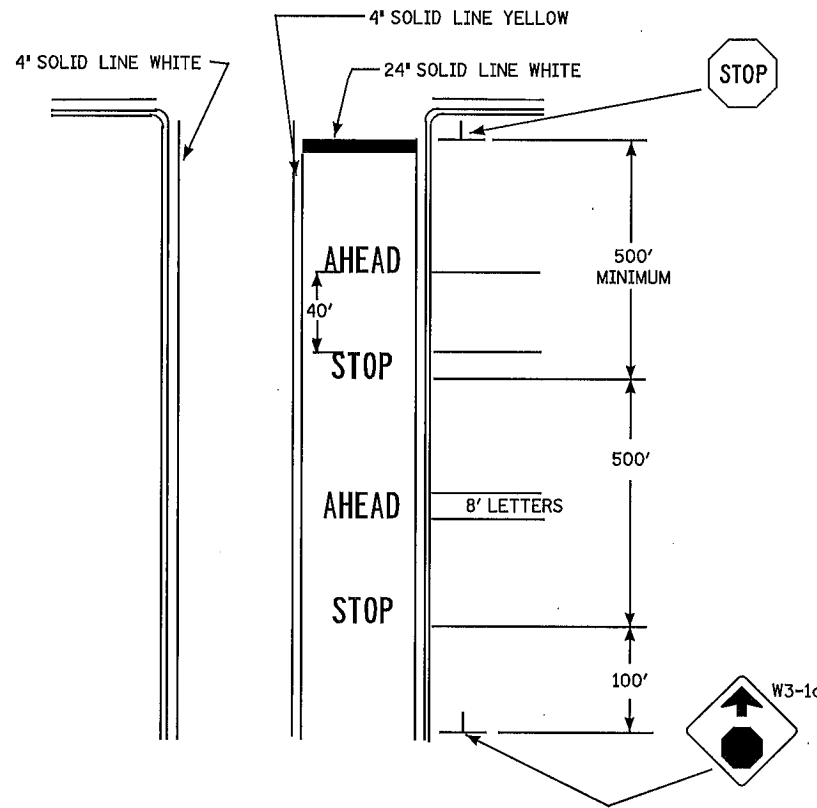


**NOTES:**

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.

REVISED: 20-NOV-2013

**PLACEMENT FOR "STOP AHEAD" MARKINGS AND STOP LINES**



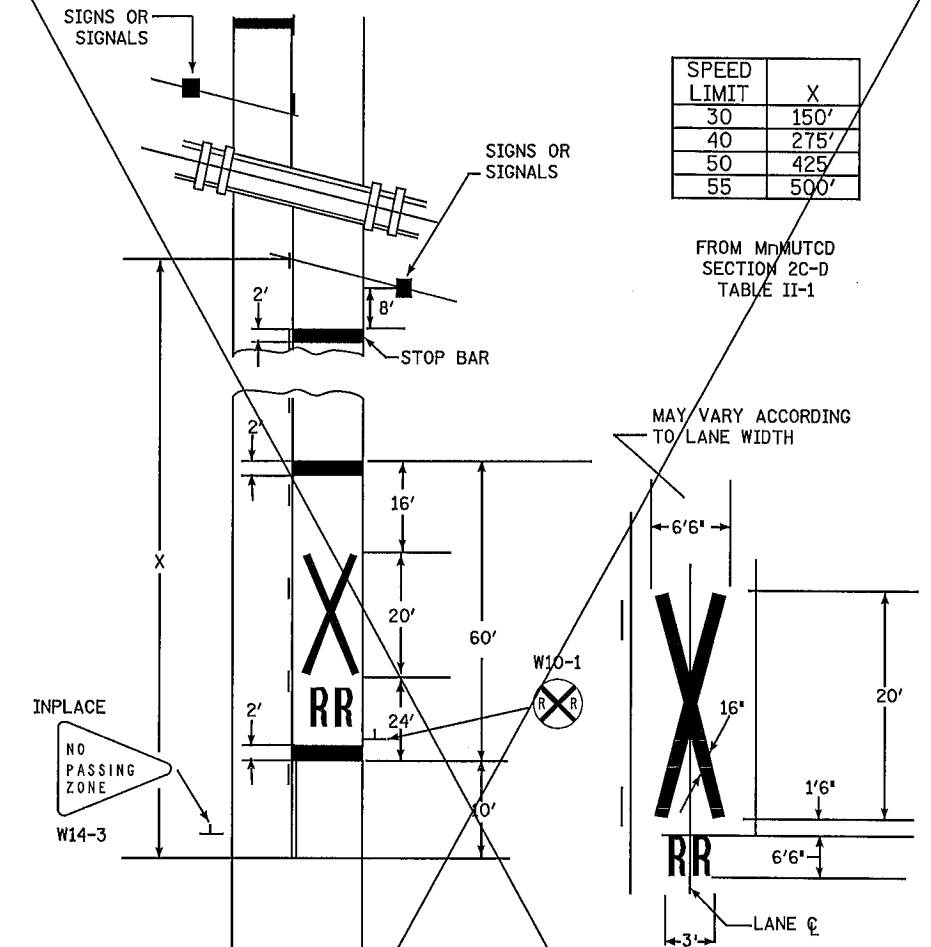
**NOTES:**

1. DOUBLE PAVEMENT MESSAGE AS SHOWN SHOULD BE PLACED WHENEVER THE STOP AHEAD SIGN IS PLACED A MINIMUM OF 1100' IN ADVANCE OF THE STOP SIGN.
2. IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.
 

35 MPH SPEED LIMIT OR LESS	..... 500'
40-50 MPH SPEED LIMIT	..... 650'
55 MPH SPEED LIMIT	..... 800'
3. WHERE STOP LINES ARE USED WITHOUT A MARKED CROSSWALK, THE STOP LINE SHOULD BE PLACED AT THE DESIRED STOPPING POINT, AND IN NO CASE NO MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING CURB LINE OR THE NEAR EDGE OF THE SHOULDER. WHERE STOP LINES AND CROSSWALK MARKINGS ARE USED TOGETHER, THE STOP LINE SHOULD BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK LINE.

IF A STOP LINE IS USED IN CONJUNCTION WITH A STOP SIGN, IT SHOULD ORDINARILY BE PLACED IN LINE WITH THE STOP SIGN. HOWEVER, IF THE SIGN CANNOT BE LOCATED EXACTLY WHERE VEHICLES ARE EXPECTED TO STOP, THE STOP LINE SHOULD BE PLACED AT THE STOPPING POINT.

**MARKINGS FOR RAILROAD CROSSINGS**



**NOTES:**

1. THE DISTANCE FROM THE RAILROAD CROSSING MARKING TO THE NEAREST TRACK WILL VARY ACCORDING TO THE APPROACH SPEED AND SIGHT DISTANCE OF THE VEHICULAR TRAFFIC APPROACHING, BUT SHOULD NOT BE LESS THAN 50 FEET.
2. ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
3. THE STOP LINE MAY BE PARALLEL TO AND 15 FEET FROM THE TRACKS WHERE THERE ARE RAILROAD CROSSBUCK SIGNS.

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NO	DATE	BY	CHK	APPR	REVISION

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 Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

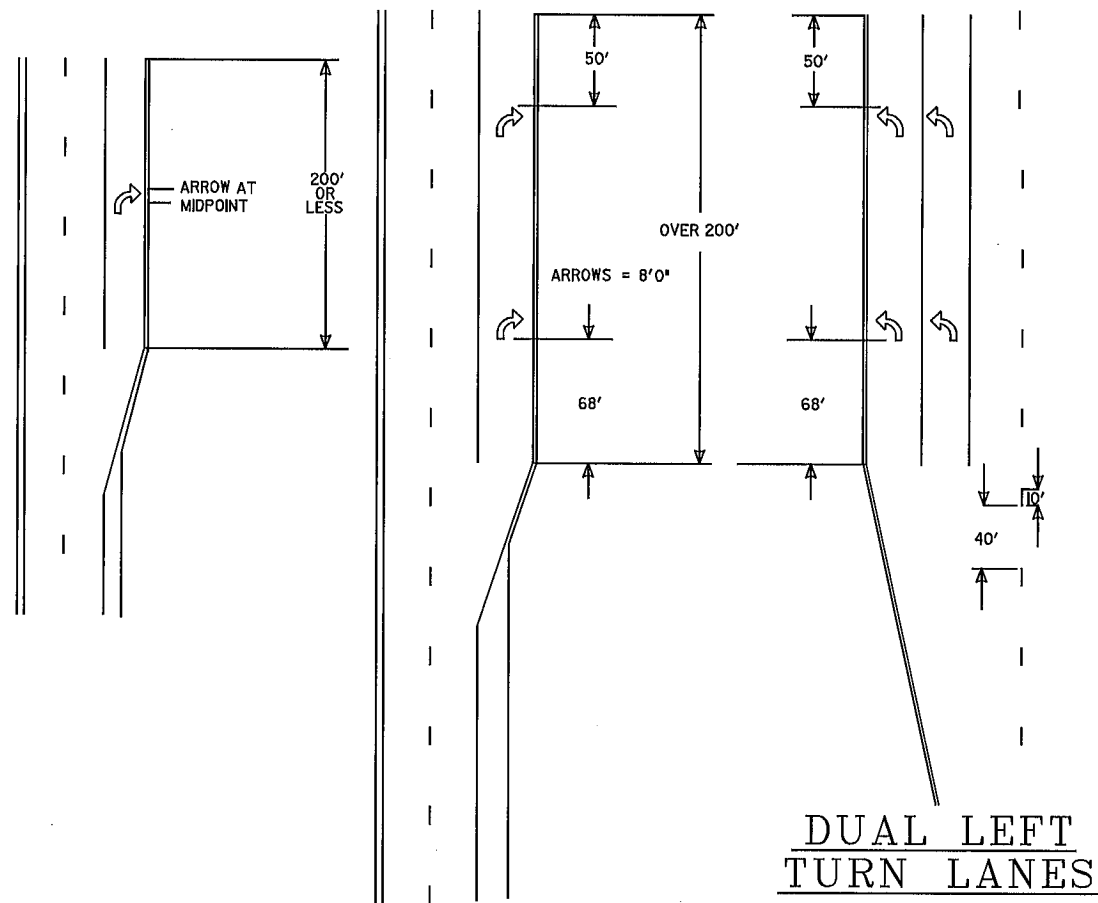
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 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 DRAWN BY H. TRAN  
 DESIGNED BY H. TRAN  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259

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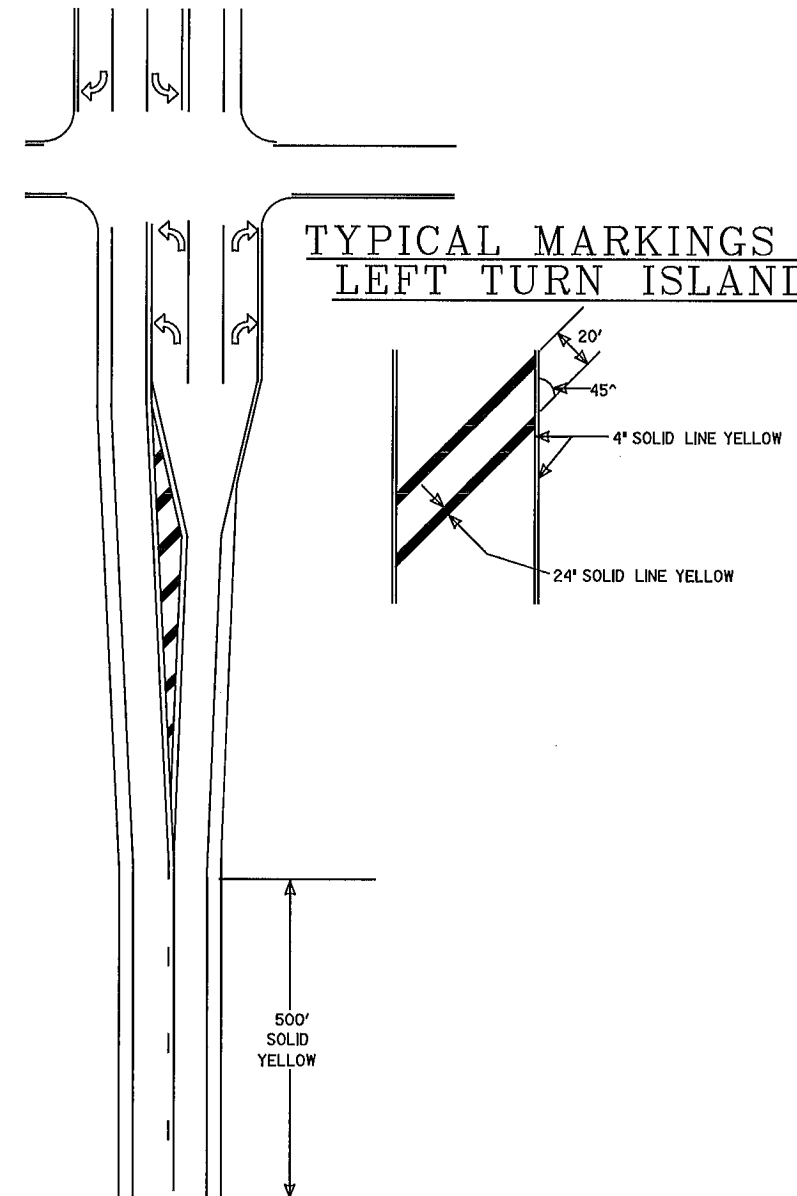
ANOKA COUNTY  
 PAVEMENT MARKING PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 DETAILS FOR MNDOT ROADS AND RAMPS

SHEET  
**330**  
 OF  
**586**

TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES



TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS



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*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

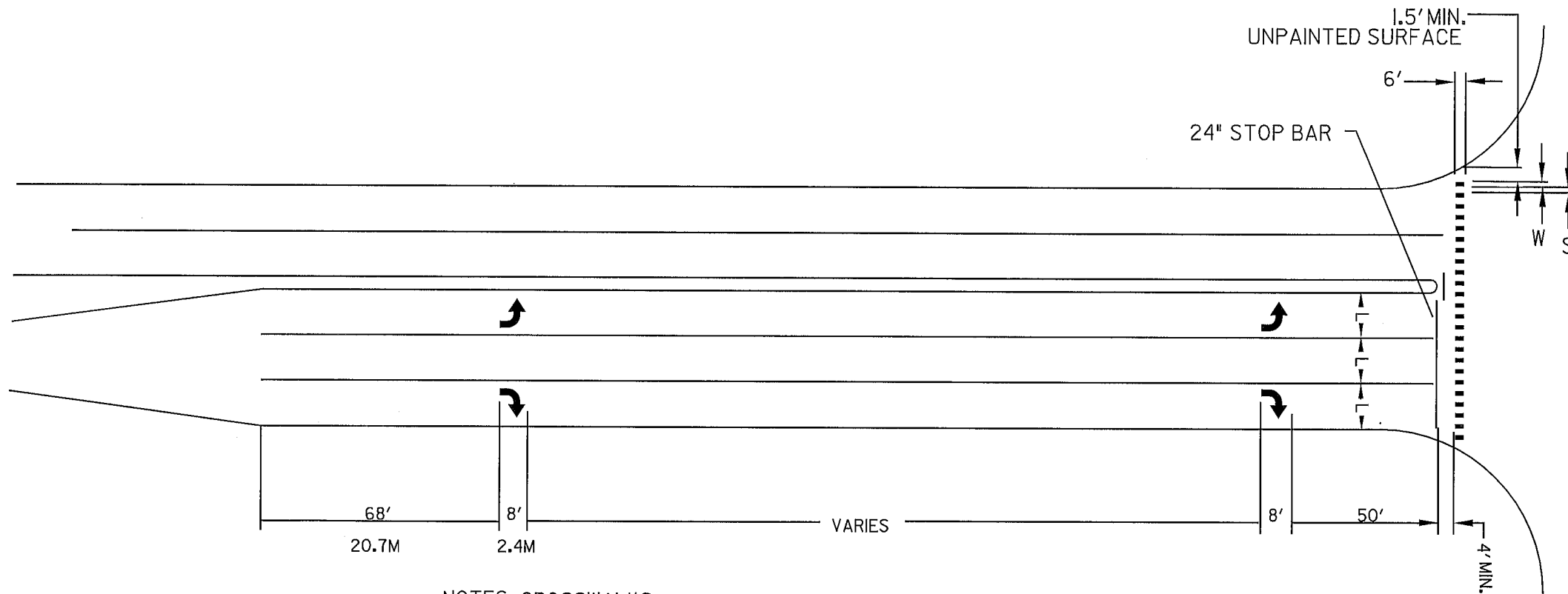
STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY H. TRAN
STATE PROJECT NO. 0202-95 (TH 10)	DESIGNED BY H. TRAN
COUNTY PROJECT NO.	CHECKED BY A. POTTER
CITY PROJECT NO.	COMM. NO. 0138259

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**ANOKA COUNTY**  
 PAVEMENT MARKING PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 DETAILS FOR COUNTY AND LOCAL ROADS

**SHEET**  
**331**  
**OF**  
**586**

# MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

### NOTES: CROSSWALKS:

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPs ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES, EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3m) INSIDE LANE.

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*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

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 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_

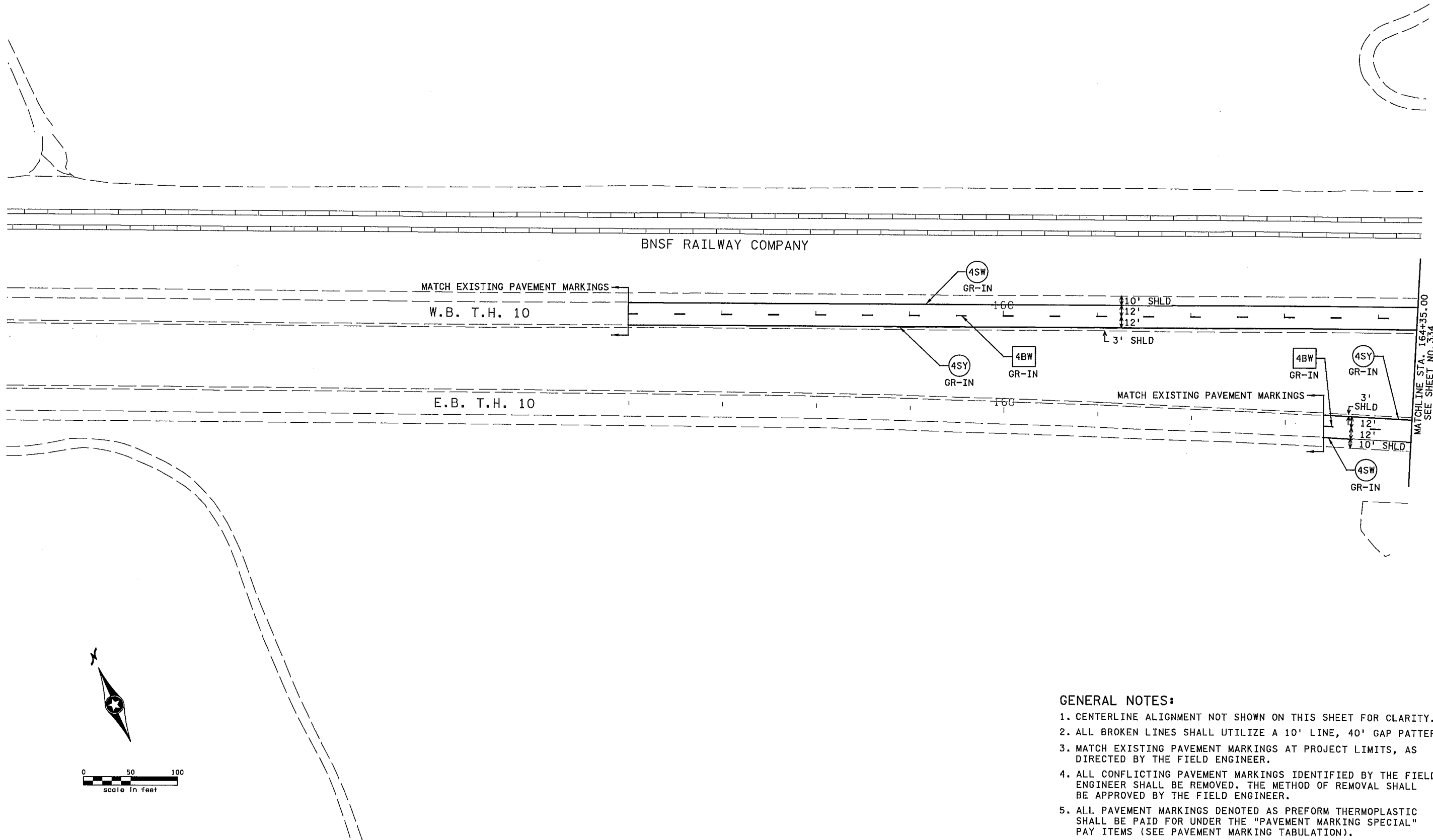
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 DESIGNED BY H. TRAN  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259



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**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 DETAILS FOR COUNTY AND LOCAL ROADS

SHEET  
**332**  
 OF  
**586**



**GENERAL NOTES:**

1. CENTERLINE ALIGNMENT NOT SHOWN ON THIS SHEET FOR CLARITY.
2. ALL BROKEN LINES SHALL UTILIZE A 10' LINE, 40' GAP PATTERN.
3. MATCH EXISTING PAVEMENT MARKINGS AT PROJECT LIMITS, AS DIRECTED BY THE FIELD ENGINEER.
4. ALL CONFLICTING PAVEMENT MARKINGS IDENTIFIED BY THE FIELD ENGINEER SHALL BE REMOVED. THE METHOD OF REMOVAL SHALL BE APPROVED BY THE FIELD ENGINEER.
5. ALL PAVEMENT MARKINGS DENOTED AS PREFORM THERMOPLASTIC SHALL BE PAID FOR UNDER THE "PAVEMENT MARKING SPECIAL" PAY ITEMS (SEE PAVEMENT MARKING TABULATION).
6. ALL MARKINGS DENOTED WITH "GR-IN" SHALL BE GROUND IN.

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: 09-12-14 License # 42785

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002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
B. BETTS

DESIGNED BY  
B. BETTS

CHECKED BY  
A. POTTER

COMM. NO. 0138259

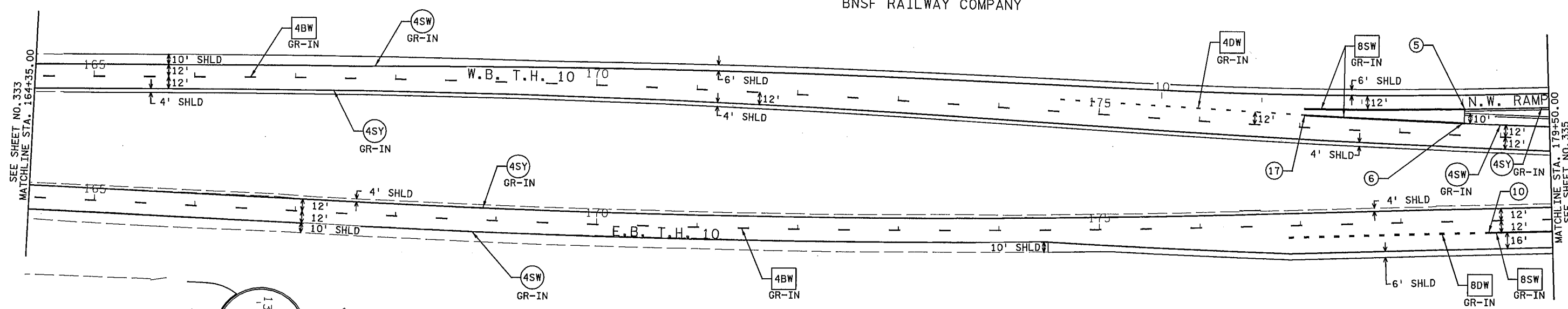


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ANOKA COUNTY  
PAVEMENT MARKING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
333  
OF  
586

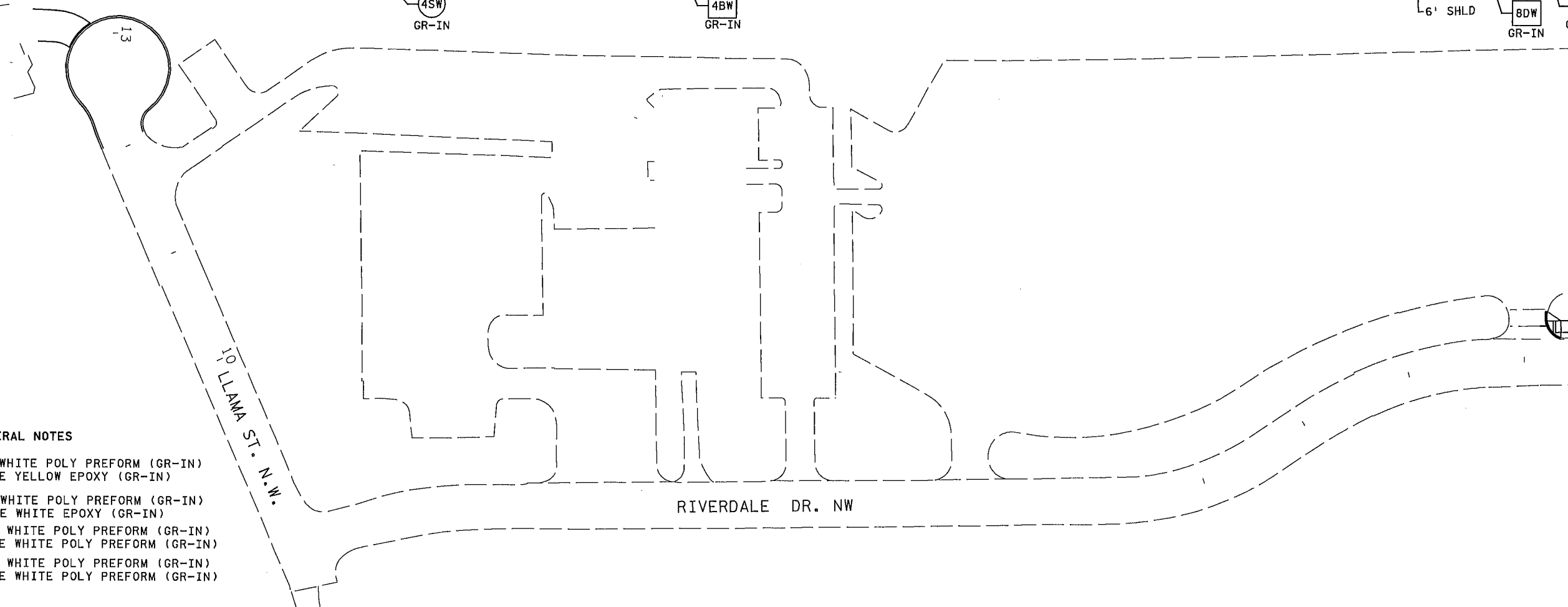
BNSF RAILWAY COMPANY



SEE SHEET NO. 333  
MATCHLINE STA. 164+35.00

MATCHLINE STA. 179+50.00  
SEE SHEET NO. 335

MATCHLINE STA. 79+65.00  
SEE SHEET NO. 335



10 LLAMA ST. N.W.

RIVERDALE DR. NW

**NOTES:**

SEE SHEET 333 FOR GENERAL NOTES

- ⑤ END 8" SOLID LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 4" SOLID LINE YELLOW EPOXY (GR-IN)
- ⑥ END 8" SOLID LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 4" SOLID LINE WHITE EPOXY (GR-IN)
- ⑩ END 8" DOTTED LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)
- ⑰ END 4" DOTTED LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)

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Print Name: ADRIAN S. POTTER  
*Adrian S. Potter*  
Date: 09-12-14 License # 42785

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY B. BETTS  
DESIGNED BY B. BETTS  
CHECKED BY A. POTTER  
COMM. NO. 0138259



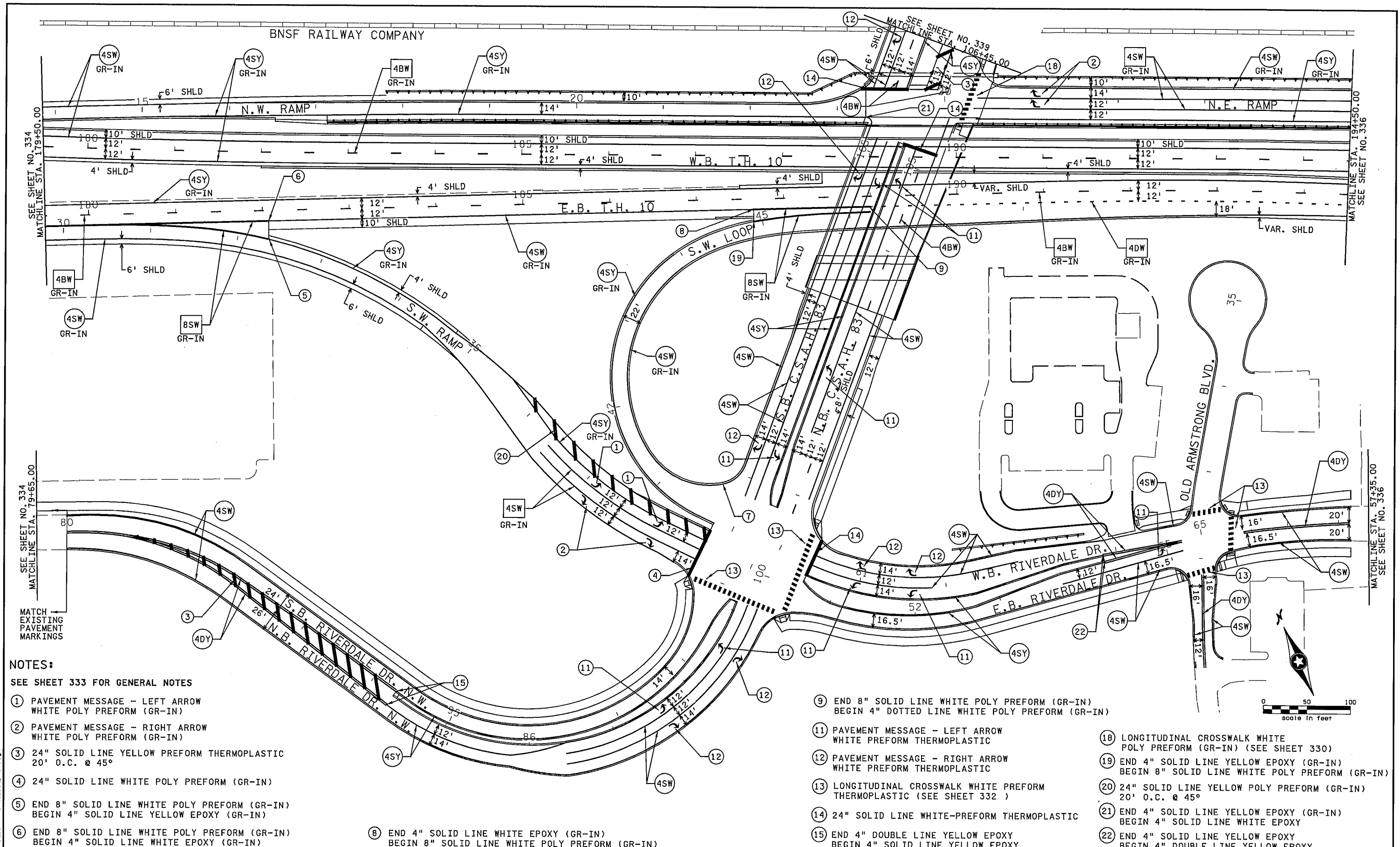
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PAVEMENT MARKING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
334  
OF  
586

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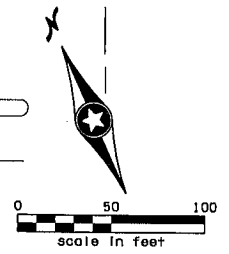
NO	DATE	BY	CHKD	APPR	REVISION



**NOTES:**

SEE SHEET 333 FOR GENERAL NOTES

- ① PAVEMENT MESSAGE - LEFT ARROW  
WHITE POLY PREFORM (GR-IN)
- ② PAVEMENT MESSAGE - RIGHT ARROW  
WHITE POLY PREFORM (GR-IN)
- ③ 24" SOLID LINE YELLOW PREFORM THERMOPLASTIC  
20' O.C. @ 45°
- ④ 24" SOLID LINE WHITE POLY PREFORM (GR-IN)
- ⑤ END 8" SOLID LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 4" SOLID LINE YELLOW EPOXY (GR-IN)
- ⑥ END 8" SOLID LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 4" SOLID LINE WHITE EPOXY (GR-IN)
- ⑦ END 4" SOLID LINE WHITE EPOXY (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)
- ⑧ END 4" SOLID LINE WHITE EPOXY (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)
- ⑨ END 8" SOLID LINE WHITE POLY PREFORM (GR-IN)  
BEGIN 4" DOTTED LINE WHITE POLY PREFORM (GR-IN)
- ⑩ PAVEMENT MESSAGE - LEFT ARROW  
WHITE PREFORM THERMOPLASTIC
- ⑪ PAVEMENT MESSAGE - RIGHT ARROW  
WHITE PREFORM THERMOPLASTIC
- ⑫ LONGITUDINAL CROSSWALK WHITE PREFORM  
THERMOPLASTIC (SEE SHEET 332 )
- ⑬ 24" SOLID LINE WHITE-PREFORM THERMOPLASTIC
- ⑭ END 4" DOUBLE LINE YELLOW EPOXY  
BEGIN 4" SOLID LINE YELLOW EPOXY
- ⑮ LONGITUDINAL CROSSWALK WHITE  
POLY PREFORM (GR-IN) (SEE SHEET 330)
- ⑯ END 4" SOLID LINE YELLOW EPOXY (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)
- ⑰ 24" SOLID LINE YELLOW POLY PREFORM (GR-IN)  
20' O.C. @ 45°
- ⑱ END 4" SOLID LINE YELLOW EPOXY (GR-IN)  
BEGIN 4" SOLID LINE WHITE EPOXY
- ⑳ END 4" SOLID LINE YELLOW EPOXY  
BEGIN 4" DOUBLE LINE YELLOW EPOXY



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*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

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199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

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DESIGNED BY  
**B. BETTS**

CHECKED BY  
**A. POTTER**

COMM. NO. **0138259**

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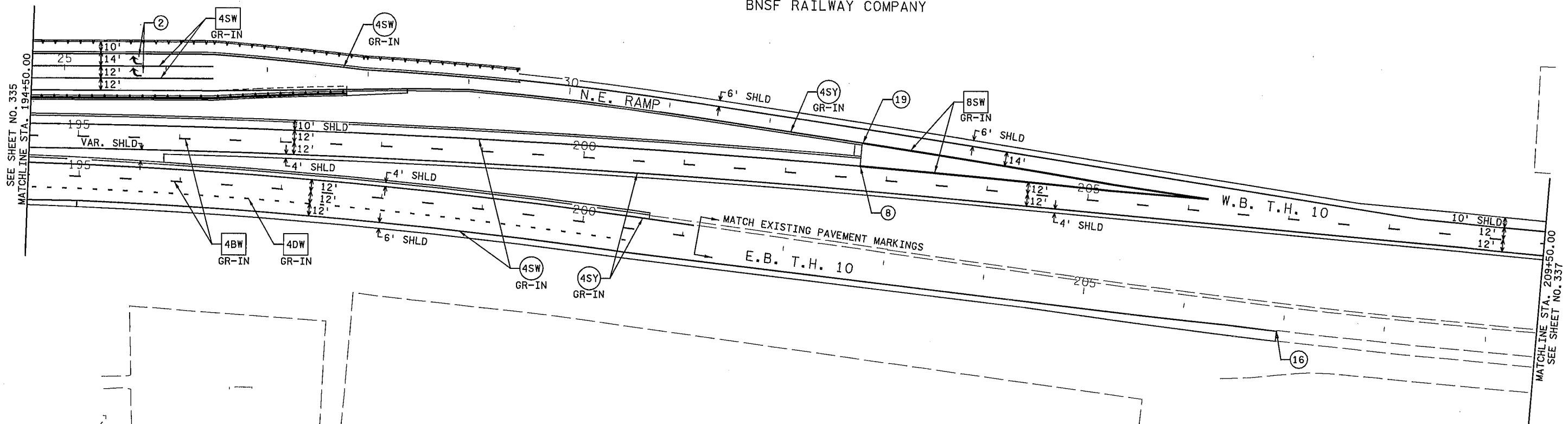
**ANOKA COUNTY**

PAVEMENT MARKING PLANS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

SHEET  
**335**  
OF  
**586**

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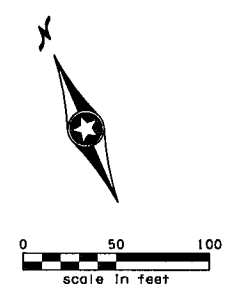
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MATCHLINE STA. 194+50.00

MATCHLINE STA. 209+50.00  
SEE SHEET NO. 337

SEE SHEET NO. 335  
MATCHLINE STA. 57+35.00

**NOTES:**

- SEE SHEET 333 FOR GENERAL NOTES
- ② PAVEMENT MESSAGE - RIGHT ARROW  
WHITE POLY PREFORM (GR-IN)
- ⑧ END 4" SOLID LINE WHITE EPOXY (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)
- ⑩ END 4" SOLID LINE WHITE EPOXY (GR-IN)  
MATCH EXISTING SOLID WHITE EDGELINE
- ⑪ END 4" SOLID LINE YELLOW EPOXY (GR-IN)  
BEGIN 8" SOLID LINE WHITE POLY PREFORM (GR-IN)



RIVERDALE DR. N.W.

ALPACA ST. N.W.

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*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

STATE AID PROJECT NO. 002-683-004  
199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_

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 DESIGNED BY B. BETTS  
 CHECKED BY A. POTTER  
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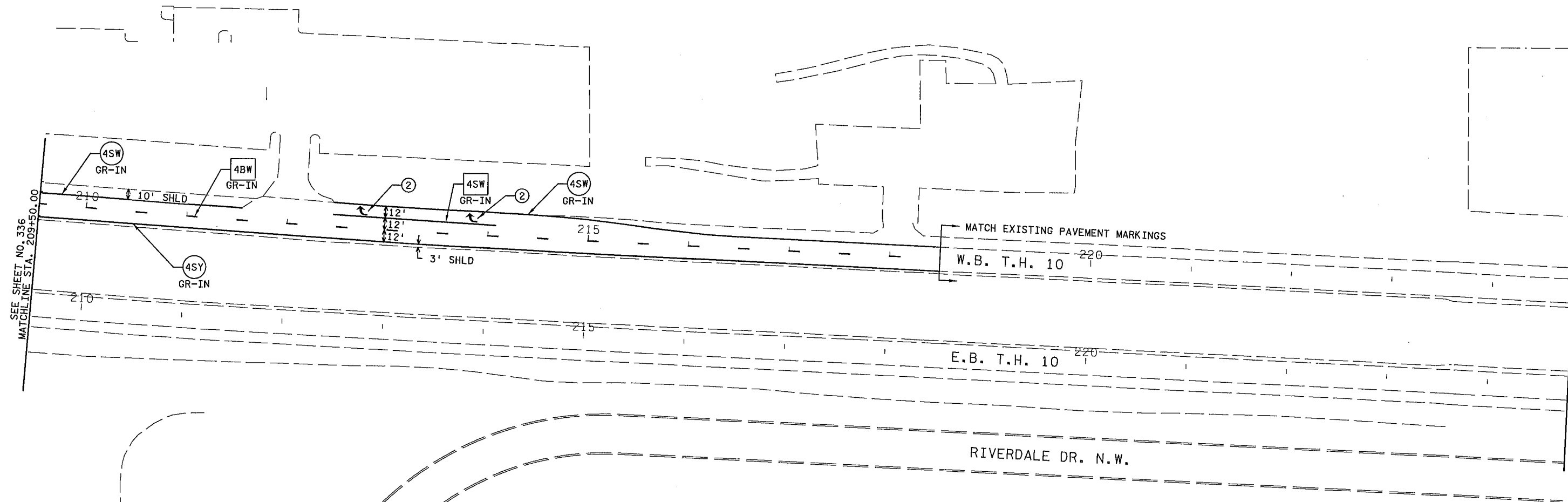
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 PAVEMENT MARKING PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 336 OF 586



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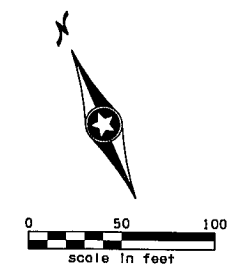


SEE SHEET NO. 336  
MATCHLINE STA. 209+50.00

MATCHLINE STA. 224+80.00  
SEE SHEET NO. 338

NOTES:

- SEE SHEET 333 FOR GENERAL NOTES
- ② PAVEMENT MESSAGE - RIGHT ARROW  
WHITE POLY PREFORM (GR IN)



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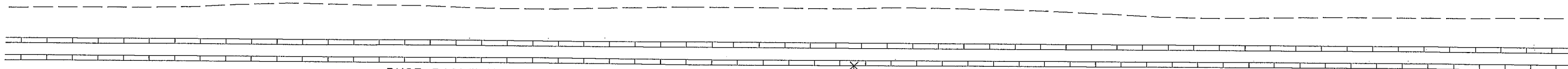
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*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

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 STATE PROJECT NO.  
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B. BETTS  
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 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 337  
 OF  
 586



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W.B. T.H. 10

E.B. T.H. 10

SEE SHEET NO. 337  
MATCHLINE STA. 224+80.00

225

230

(4SY)  
GR-IN

235

12' SHLD

240

225

230

SHLD

12'  
12'  
12' ACCEL

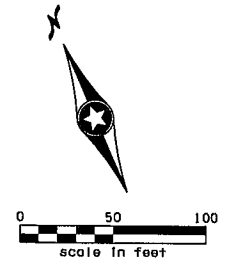
235

240

RIVERDALE DR. N.W.

TRAPROCK ST. N.W.

NOTE:  
SEE SHEET 333 FOR GENERAL NOTES



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199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

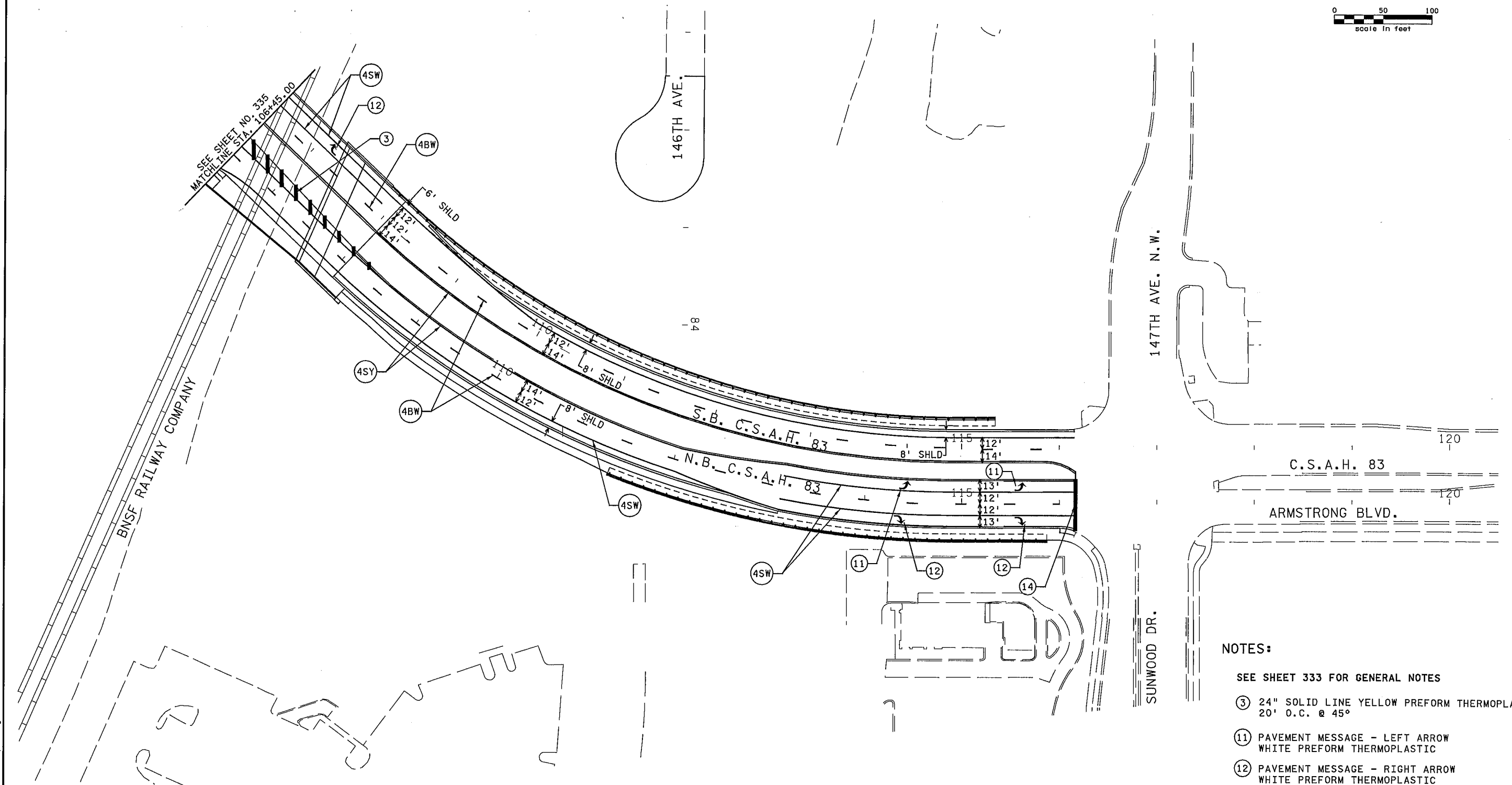
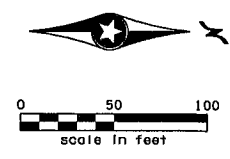
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DESIGNED BY  
B. BETTS  
CHECKED BY  
A. POTTER  
COMM. NO. 0138259



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DESIGNERS

ANOKA COUNTY  
PAVEMENT MARKING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
338  
OF  
586



- NOTES:**
- SEE SHEET 333 FOR GENERAL NOTES
  - ③ 24" SOLID LINE YELLOW PREFORM THERMOPLASTIC  
20' O.C. @ 45°
  - ⑪ PAVEMENT MESSAGE - LEFT ARROW  
WHITE PREFORM THERMOPLASTIC
  - ⑫ PAVEMENT MESSAGE - RIGHT ARROW  
WHITE PREFORM THERMOPLASTIC
  - ⑭ 24" SOLID LINE WHITE PREFORM THERMOPLASTIC

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*Adrian S. Potter*

Date: **09-12-14** License # **42785**

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0202-95 (TH 10)

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DESIGNED BY  
B. BETTS

CHECKED BY  
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COMM. NO. 0138259

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PAVEMENT MARKING PLANS

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SHEET  
339  
OF  
586

BNSF RAILWAY COMPANY

W.B. T.H. 10

E.B. T.H. 10

②  
SPEED  
LIMIT  
65

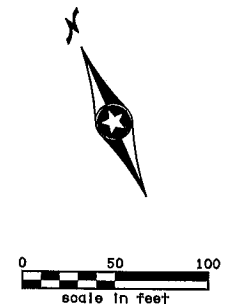
MATCHLINE STA. 164+35.00  
SEE SHEET NO. 341

GENERAL NOTES:

1. ALL EXISTING CONFLICTING SIGNING SHALL BE REMOVED.

NOTES:

- ② INPLACE
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C



3:24:11 PM  
9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: ADRIAN S. POTTER  
*Adrian S. Potter*  
 Date: 09-12-14 License # 42785

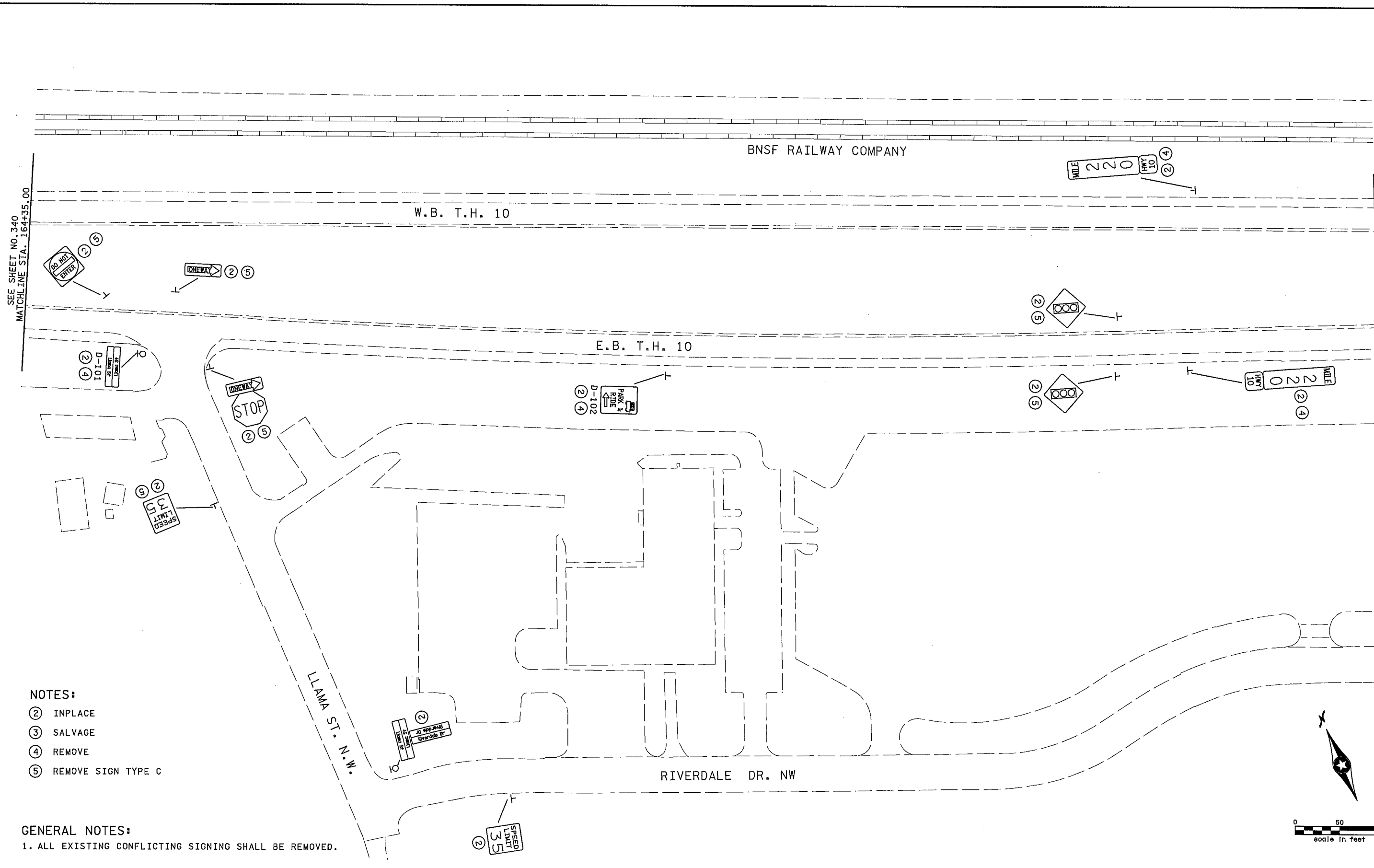
STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY B. BETTS
STATE PROJECT NO. 0202-95 (TH 10)	DESIGNED BY B. BETTS
COUNTY PROJECT NO.	CHECKED BY A. POTTER
CITY PROJECT NO.	COMM. NO. 0138259

**SRH** ENGINEERS  
PLANNERS  
DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING REMOVAL PLANS

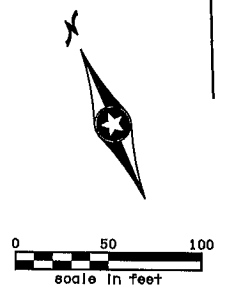
SHEET  
340  
OF  
586

3:24:18 PM  
9/11/2014  
H:\Projects\8259\CAD\_BITMAP\an\8259\_r.emsgn03.dgn



- NOTES:**
- ② INPLACE
  - ③ SALVAGE
  - ④ REMOVE
  - ⑤ REMOVE SIGN TYPE C

**GENERAL NOTES:**  
1. ALL EXISTING CONFLICTING SIGNING SHALL BE REMOVED.



NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
B. BETTS

DESIGNED BY  
B. BETTS

CHECKED BY  
A. POTTER

COMM. NO. 0138259



**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING REMOVAL PLANS

**SHEET  
341  
OF  
586**

BNSF RAILWAY COMPANY

W.B. T.H. 10

E.B. T.H. 10

RIVERDALE DR. NW

SEE SHEET NO. 345  
MATCHLINE STA. 126+30.00

MATCHLINE STA. 194+50.00  
SEE SHEET NO. 343

SEE SHEET NO. 341  
MATCHLINE STA. 179+50.00

SEE SHEET NO. 341  
MATCHLINE STA. 79+65.00

MATCHLINE STA. 57+35.00  
SEE SHEET NO. 343

REST AREA  
2 MILES  
ON LEFT  
D-105

Armstrong  
Blvd  
D-104

D-103

WEST NORTH  
10169

OLD ARMSTRONG BLVD.

WATCH FOR BUSES ON SHOULDER  
D-109

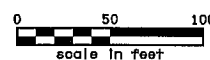
NO SHOULDER REVERSING BY  
D-106

NOTES:

- ② INPLACE
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C

GENERAL NOTES:

1. ALL EXISTING CONFLICTING SIGNING SHALL BE REMOVED.



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9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License # **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
B. BETTS

DESIGNED BY  
B. BETTS

CHECKED BY  
A. POTTER

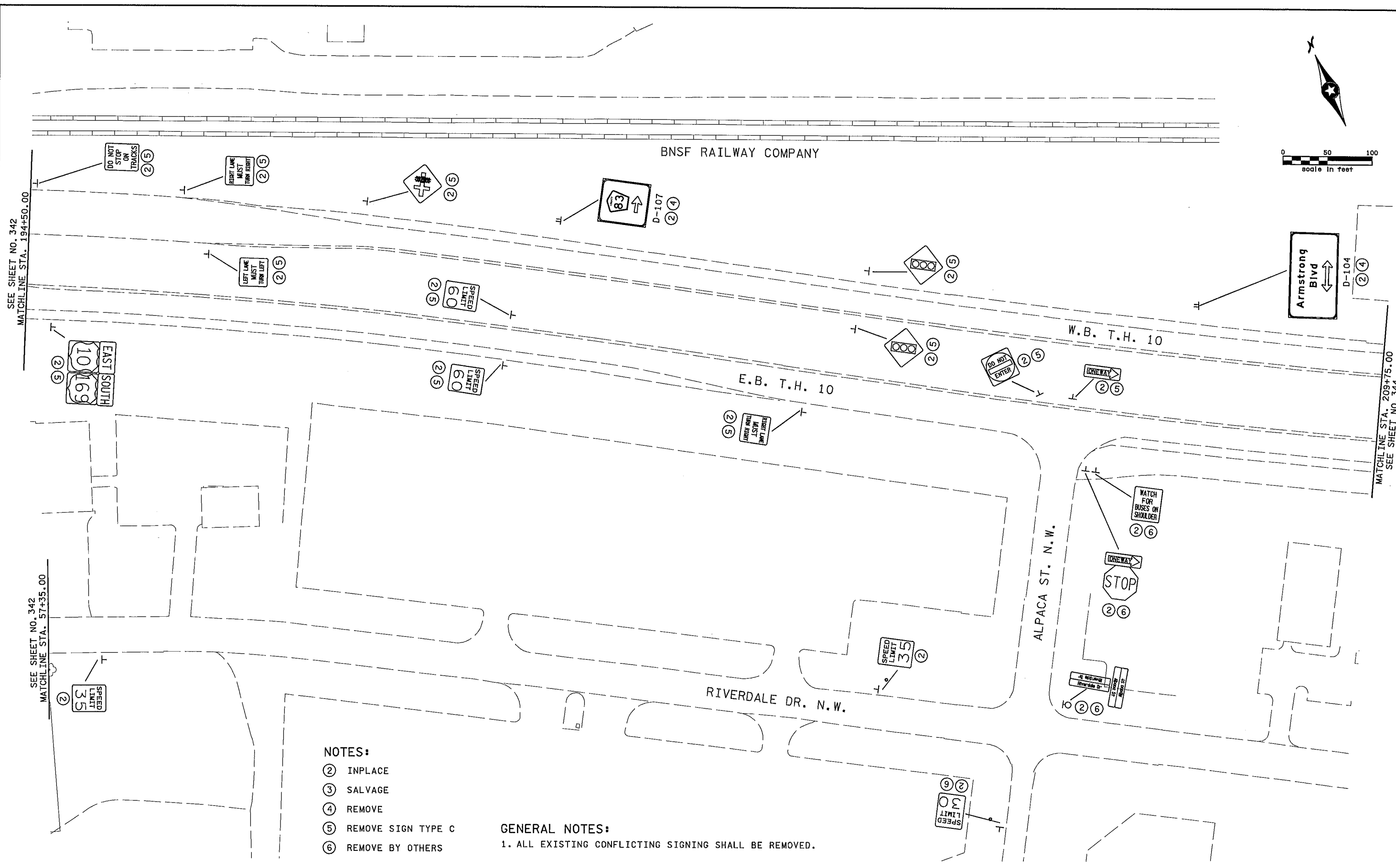
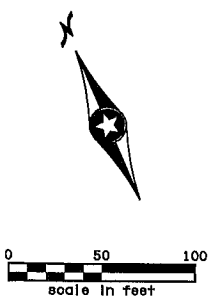
COMM. NO. 0138259

**SRE**  
Consulting Group, Inc.

**ENGINEERS  
PLANNERS  
DESIGNERS**

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING REMOVAL PLANS

SHEET  
342  
OF  
586



- NOTES:**
- ② INPLACE
  - ③ SALVAGE
  - ④ REMOVE
  - ⑤ REMOVE SIGN TYPE C
  - ⑥ REMOVE BY OTHERS

**GENERAL NOTES:**  
 1. ALL EXISTING CONFLICTING SIGNING SHALL BE REMOVED.

3/24/18 PM 9/11/2014 H:\Projects\8255\CAD\_BIM\Plan\8255\_r\_emsngn05.dgn

NO	DATE	BY	CKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.                        
 CITY PROJECT NO.                      

DRAWN BY B. BETTS  
 DESIGNED BY B. BETTS  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259

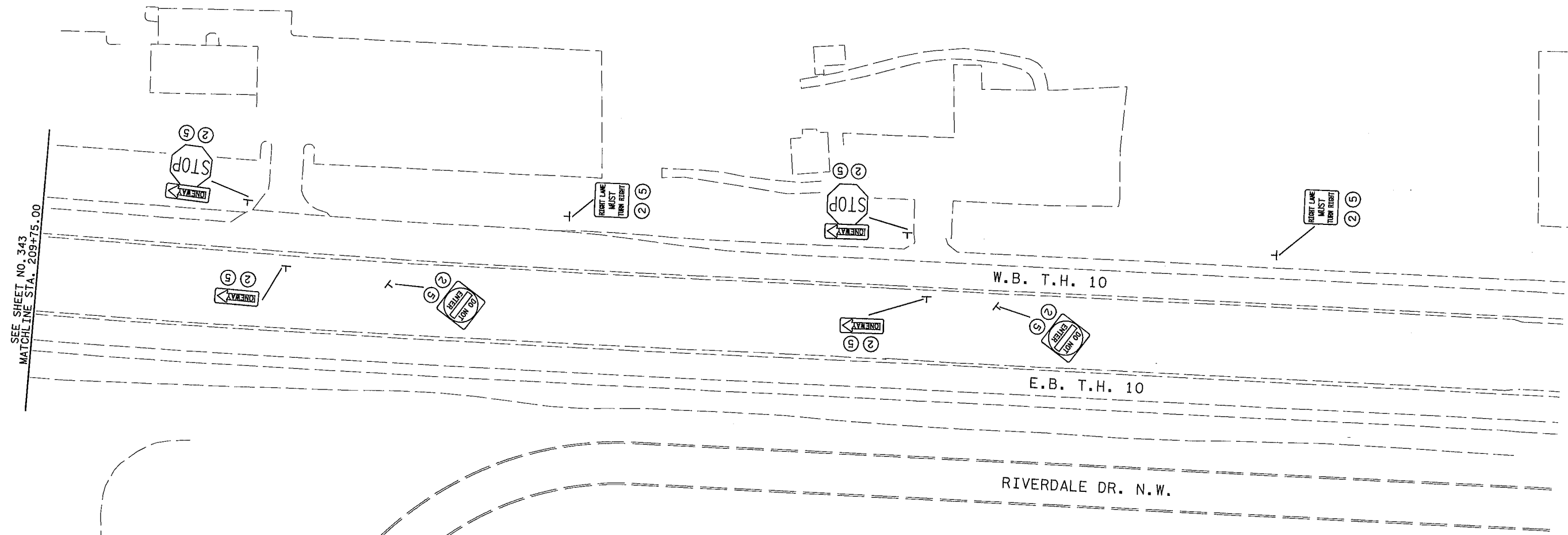
**SRH** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 SIGNING PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 SIGNING REMOVAL PLANS

SHEET 343 OF 586



BNSF RAILWAY COMPANY

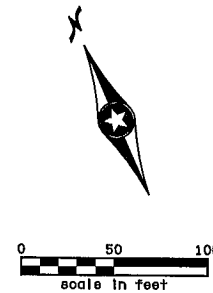


**GENERAL NOTES:**

1. ALL EXISTING CONFLICTING SIGNING SHALL BE REMOVED.

**NOTES:**

- ② INPLACE
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C



3:24:18 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_remsgn06.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

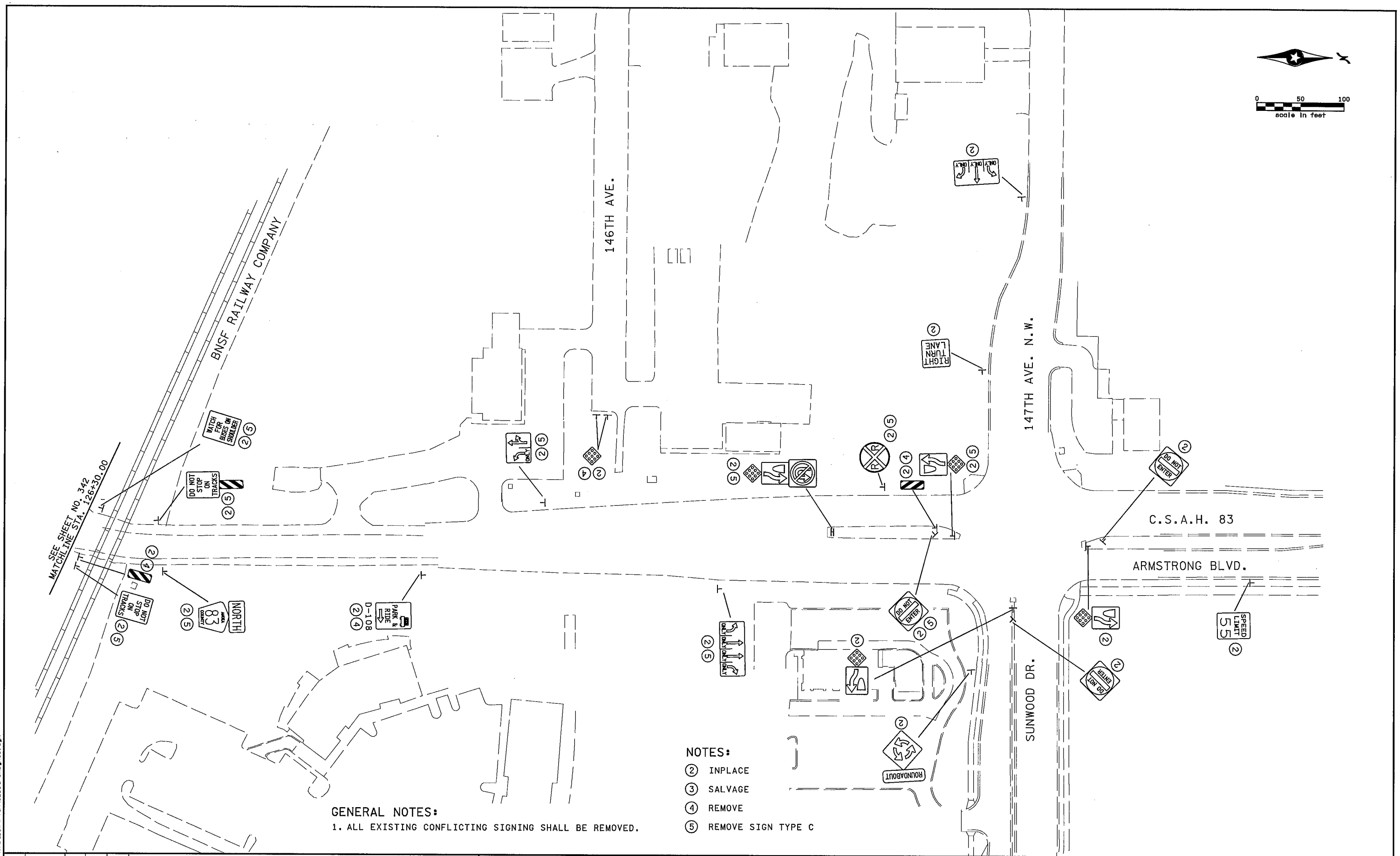
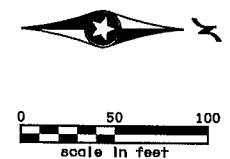
STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY  
**B. BETTS**  
DESIGNED BY  
**B. BETTS**  
CHECKED BY  
**A. POTTER**  
COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING REMOVAL PLANS

SHEET  
344  
OF  
586



**GENERAL NOTES:**  
 1. ALL EXISTING CONFLICTING SIGNING SHALL BE REMOVED.

- NOTES:**
- ② INPLACE
  - ③ SALVAGE
  - ④ REMOVE
  - ⑤ REMOVE SIGN TYPE C

3:24:20 PM  
 9/11/2014  
 H:\Projects\8259\CAD\_BITMAP\CAD\_BITMAP\8259\_remsgn08.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: 09-12-14 License # 42785

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
B. BETTS

DESIGNED BY  
B. BETTS

CHECKED BY  
A. POTTER

COMM. NO. 0138259



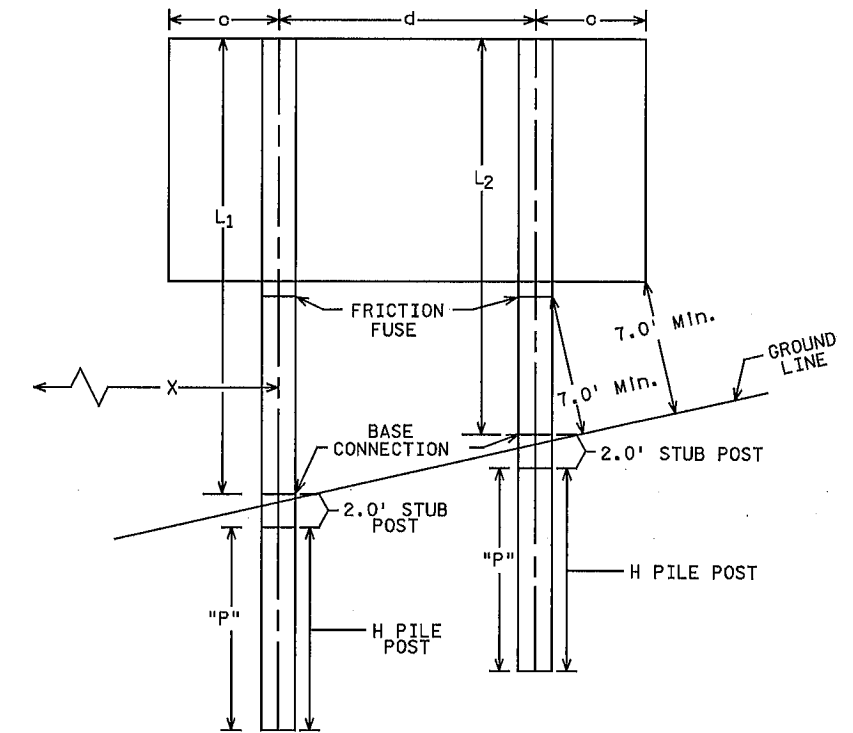
**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
 SIGNING PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 SIGNING REMOVAL PLANS

**SHEET**  
 345  
 OF  
 586

RR		SIGN TYPE A (H PILE FOOTINGS) (1)														
SIGN NO.	LOCATION	PANEL		POST						PILE				TOTAL WEIGHT STRUCTURAL STEEL (LBS)	"X" (FT)	"H" (FT)
		SIZE (IN)	AREA (SQ FT)	SIZE	QUANT.	LENGTH (FT)		ADDITIONAL STEEL PER POST (LBS)	WEIGHT (LBS)	c (IN)	d (IN)	"P" (FT)	WEIGHT (LBS)			
		L1	L2													
A-1	APPROX. 275' EAST FROM T.H. 10 WB STA. 156+00.00	192 X 144	192	W8X24	2	20.0	19.0	118	1172.0	40	112	12	576	1748	30.0	6.25
A-2	T.H. 10 EB STA. 231+43.40	192 X 144	192	W8X24	2	20.0	19.0	118	1172.0	40	112	12	576	1748	30.0	5.00
PROJECT TOTAL			384											3496.0		

SPECIFIC NOTE:  
 (1) ALL QUANTITIES PAID FOR UNDER S.P. 0202-95.



BREAKAWAY POSTS-H-PILE FOOTING  
 (L1 IS POST NEAREST ROADWAY)  
 TYPE A SIGNS

POST QUANTITIES	
POST SIZE	QUANTITY (1A)
W8X24	118+24 LBS/FT

SPECIFIC NOTE:  
 (1A) CONSTANT INCLUDES STUB POST WEIGHT.

3/24/21 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_sgn15.dgn

NO.	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.      CITY PROJECT NO.      DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 SIGNING TABULATIONS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 A SIGN DATA SHEET

SHEET 346 OF 586

SIGN NO	QTY			TOTAL QTY	POSTS			MTG HT (1)	PANEL					CODE NO	PANEL LEGEND		
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002		NO & TYPE	KNEE BRACES QTY	LEN FEET		SIZE INCH	AREA SQ FT	S.P. 0202-95		S.A.P. 002-683-004			TOTAL AREA SQ FT	
											SQ FT	SQ FT	SQ FT				SQ FT
C-1	1			1	2-U	1	15	7	36 x 48	12.00	12.00			12.00	R2-1	SPEED LIMIT 65	
C-2	1			1	2-U	1	15	7	36 x 18	4.50	4.50			4.50	M3-4	WEST	
C-3	1			1	2-U	1	15	7	36 x 36	9.00	9.00			9.00	M1-4	10	
C-4	1			1	2-U	1	15	7	36 x 18	4.50	4.50			4.50	M3-1	NORTH	
C-5			2	2	2-U		13	7	45 x 36	11.25	11.25			11.25	M1-4	169	
C-6		1	1	2	2-U	1	16	7	36 x 48	12.00	12.00			12.00	W13-2	EXIT 35 MPH	
C-7		1		1	1-0		12.5	7	24 x 30	5.00			10.00	10.00	R2-1	SPEED LIMIT 35	
C-8			1	1	2-U	1	14	7	21 x 15	2.19		2.19	2.19	4.38	M2-1	JCT	
C-9		1	1	2	1-0			7	24 x 24	4.00		4.00	4.00	8.00	M1-4	10	
C-10	2			2	1-ST		11	7	30 x 24	5.00		5.00	5.00	10.00	M1-4	169	
C-11	1			1	2-U	1	13	7	24 x 24	4.00		4.00		4.00	M1-4	10	
C-12	3		2	5	2-U	1	14	7	30 x 24	5.00		5.00		5.00	M1-4	169	
C-13	1			1	1-ST		11	7	24 x 18	3.00		3.00		3.00	M5-6	RIGHT LANE	
C-14			2	2	1-0			7	36 x 36	9.00			9.00	9.00	W6-1	DIVIDED HIGHWAY BEGINS	
C-15		2	2	4	1-ST		11	7	36 x 36	9.00		9.00	9.00	18.00	W11-2	PEDESTRIAN	
C-16	2		1	3	2-U	1	15	7	24 x 30	5.00	10.00			10.00	R4-7	KEEP RIGHT	
C-17			2	2	2-U	1	14	7	18 x 18	(4)					X4-2	HAZARD MARKER	
C-18	4			4	2-U	1	14	7	54 x 30	11.25	11.25			11.25	R3-30ACA	LANE USE CONTROL (LT, THRU, RT)	
C-19	1			1	2-U	1	14	7	36 x 36	9.00	27.00		18.00	45.00	R3-7R	RIGHT LANE MUST TURN RIGHT	
C-20	2			2	2-U	1	13	7	36 x 36	9.00	9.00			9.00	R3-7L	LEFT LANE MUST TURN LEFT	
C-21	1			1	1-ST		11	7	36 x 36	9.00			18.00	18.00	W11-2	PEDESTRIAN	
C-22	1			1	2-U	1	15	7	30 x 24	5.00		10.00	10.00	10.00	W16-7MPL	LEFT DIAGONAL DOWNWARD ARROW	
C-23	1			1	2-U	1	14	7	36 x 36	9.00		18.00	18.00	36.00	R5-1	DO NOT ENTER	
C-24	2			2	2-U	1	15	7	54 x 18	6.75	13.50		6.75	20.25	R6-1L	ONE WAY LEFT	
C-25	2			2	2-U	1	15	7	54 x 18	6.75	13.50		6.75	20.25	R6-1R	ONE WAY RIGHT	
C-26	2			2	2-U	1	12	7	36 x 36	9.00	18.00		9.00	27.00	R1-1	STOP	
C-27	2			2	2-U	1	15	7	36 x 36	9.00			18.00	18.00	R1-1	STOP	
C-28	2			2	1-ST		11	7	36 x 36	9.00	36.00			9.00	R5-1	DO NOT ENTER	
C-29			1	1	2-U	1	14	7	36 x 36	9.00	9.00			9.00	R16-X4	FREEWAY ENTRANCE RAMP INFO	
C-30	1			1	2-U	1	16	7	42 x 30	8.75	17.50			17.50	R5-1A	WRONG WAY	
C-31	1			1	2-U	1	16	7	48 x 48	16.00	16.00			16.00	W3-1	STOP AHEAD	
C-32	1			1	1-ST		12	7	36 x 48	12.00	12.00			12.00	R4-7	KEEP RIGHT	
C-33	1			1	2-U	1	14	7	18 x 18	(4)					X4-2	HAZARD MARKER	
C-34	2			2	2-U	1	15	7	30 x 36	7.50	7.50			7.50	R3-5L	LEFT ONLY	
C-35	1			1	2-U	1	15	7	18 x 24	3.00	6.00			6.00	R5-10D	PROHIBITED TRAFFIC	
C-36	1			1	2-U	1	15	7	54 x 18	6.75	13.50			13.50	R6-1R	ONE WAY RIGHT	
C-37	1			1	2-U	1	15	7	36 x 36	9.00	18.00			18.00	R1-1	STOP	
C-38		1		1	2-U	1	16	7	54 x 18	6.75	13.50			13.50	R6-1R	ONE WAY RIGHT	
									48 x 48	16.00	32.00			32.00	W4-1R	MERGING TRAFFIC RIGHT	
									36 x 30	7.50	15.00			15.00	R3-30BA	DUAL RIGHT TURN ONLY	
									36 x 36	9.00			9.00	9.00	W6-2	DIVIDED HIGHWAY ENDS	
									42 x 12	3.50	3.50			3.50	R4-X7PB	BEGIN	
									42 x 48	14.00	14.00			14.00	R4-X7	SHOULDER AUTHORIZED BUSES ONLY	
									42 x 12	3.50	3.50			3.50	R4-X7PE	END	
									42 x 48	14.00	14.00			14.00	R4-X7	SHOULDER AUTHORIZED BUSES ONLY	
									30 x 36	7.50	7.50			7.50	W14-X9	WATCH FOR BUSES ON SHOULDER	
									84 x 48	28.00	28.00			28.00	R3-48DBA	LANE USE CONTROL (LT/THRU, RT, RT)	
									36 x 48	12.00	24.00			24.00	R2-1	SPEED LIMIT 60	
									36 x 18	4.50	4.50			4.50	M3-2	EAST	
									36 x 36	9.00	9.00			9.00	M1-4	10	
									36 x 18	4.50	4.50			4.50	M3-3	SOUTH	
									45 x 36	11.25	11.25			11.25	M1-4	169	
									24 x 12	2.00		2.00		2.00	W3-1A	NORTH	
									24 x 24	4.00		4.00		4.00	M1-6	ANOKA 83 COUNTY	
									36 x 36	9.00		9.00		9.00	W1-2L	CURVE LEFT	
									24 x 24	4.00		4.00		4.00	W13-1P	40 MPH	
									SUBTOTAL 1	475.25	69.19	152.69	697.13				


**SPECIFIC NOTES:**

- (1) MOUNTING HEIGHT IS MINIMUM. SEE SHEET 366 FOR TYPICAL MOUNTING ON MNDOT ROADS AND RAMP. SEE SHEET 387 FOR TYPICAL MOUNTING ON COUNTY AND LOCAL ROADS.
- (2) MOUNT IN CONCRETE, SEE SHEET 369 FOR SIGNS ON MNDOT ROADS AND RAMP.
- (3) MOUNT IN CONCRETE, SEE SHEET 386 FOR SIGNS ON COUNTY AND LOCAL ROADS.
- (4) SEE MARKERS TABULATION ON SHEET 350.
- (5) MOUNT SIGN PANELS BACK TO BACK.
- (6) C-35 AND C-36 MOUNTED ON SAME ASSEMBLY.
- (7) C-39 AND C-40 MOUNTED ON SAME ASSEMBLY.
- (8) MOUNT ON WALL, SEE SHEET 372.
- (9) MOUNT ON WALL, SEE SHEET 370.
- (10) MOUNT ON BRIDGE RAIL, SEE SHEET 371.
- (11) MOUNT ON RRFB, SEE SHEET 373.

**GENERAL NOTES:**

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE SHEETS 363 TO 365 FOR STRUCTURAL DETAILS FOR SIGNS ON MNDOT ROADS AND RAMP.
3. SEE SHEET 385 FOR STRUCTURAL DETAILS FOR SIGNS ON COUNTY AND LOCAL ROADS.
4. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGN PANELS.

3/24/21 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\plan\8259\_sgn11.dgn

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: <b>ADRIAN S. POTTER</b> <i>Adrian S. Potter</i> Date: <b>09-12-14</b> License #: <b>42785</b>				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY H. TRAN DESIGNED BY H. TRAN CHECKED BY A. POTTER COMM. NO. 0138259	 <b>ENGINEERS PLANNERS DESIGNERS</b> Consulting Group, Inc.	<b>ANOKA COUNTY</b> SIGNING TABULATIONS <b>T.H. 10 / C.S.A.H. 83 INTERCHANGE</b> C SIGN DATA SHEET	<b>SHEET</b> <b>347</b> <b>OF</b> <b>586</b>
NO DATE BY CKD APPR REVISION								

SIGN NO	QTY			QTY	POSTS			MTG HT (1)	PANEL					CODE NO	PANEL LEGEND	
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002		NO & TYPE	KNEE BRACES QTY	LEN FEET		SIZE INCH	AREA SQ FT	S.P. 0202-95					TOTAL AREA SQ FT
											S.A.P. 002-683-004	S.A.P. 199-115-002	S.A.P. 199-115-002			
C-39	1			1	2-U	1	15	7	24 x 12	2.00	2.00		2.00	M3-2	EAST	
									24 x 24	4.00	4.00		4.00	M1-4	10	
									21 x 15	2.19	2.19		2.19	M6-1L	LEFT DIRECTIONAL ARROW	
									24 x 12	2.00	2.00		2.00	M3-3	SOUTH	
									30 x 24	5.00	5.00		5.00	M1-4	169	
									21 x 15	2.19	2.19		2.19	M6-1R	RIGHT DIRECTIONAL ARROW	
C-40	1			1	2-U	1	15	7	24 x 12	2.00	2.00		2.00	M3-3	SOUTH	
									30 x 24	5.00	5.00		5.00	M1-4	169	
									21 x 15	2.19	2.19		2.19	M6-1L	LEFT DIRECTIONAL ARROW	
									24 x 12	2.00	2.00		2.00	M3-2	EAST	
									24 x 24	4.00	4.00		4.00	M1-4	10	
									21 x 15	2.19	2.19		2.19	M6-1R	RIGHT DIRECTIONAL ARROW	
C-41		2	4	6	1-ST		11	7	24 x 30	5.00		10.00	20.00	30.00	R4-7	KEEP RIGHT
									18 x 18	(4)					X4-2	HAZARD MARKER
C-42		1	2	3	1-ST		11	7	36 x 36	9.00		9.00	18.00	27.00	R3-7L	LEFT LANE MUST TURN LEFT
C-43		1		1	2-U	1	16	7	36 x 36	9.00		9.00		9.00	W1-2R	CURVE RIGHT
									24 x 24	4.00		4.00		4.00	W13-1P	40 MPH
C-44	12			12	2-U	1	14	7	30 x 36	7.50	90.00			90.00	W1-8	CHEVRON
C-45	1			1	2-U	1	16	7	36 x 36	9.00	9.00			9.00	W1-4R	REVERSE CURVE RIGHT
									24 x 24	4.00	4.00			4.00	W13-1P	35 MPH
C-46	1			1	1-0		10	7	36 x 36	9.00	9.00			9.00	R3-7R	RIGHT LANE MUST TURN RIGHT
C-47		1		1	1-0		10	7	36 x 36	9.00		9.00		9.00	R3-7R	RIGHT LANE MUST TURN RIGHT
C-48		1		1	2-U	1	14	7	36 x 36	9.00		9.00		9.00	R3-X1	RIGHT TURN LANE
C-49		1		1	1-ST		11	7	36 x 36	9.00		9.00		9.00	R3-X2	LEFT TURN LANE
C-50	2			2	1-ST		11	7	36 x 36	9.00	18.00			18.00	R5-1	DO NOT ENTER
C-51	1			1	1-ST		11	7	36 x 36	9.00	9.00			9.00	R16-X4	FREEWAY ENTRANCE RAMP INFO
C-52	1			1	1-ST		11	7	42 x 30	8.75	8.75			8.75	R5-1A	WRONG WAY
C-53	1			1	1-ST		10	7	18 x 24	3.00	3.00			3.00	R5-10D	PROHIBITED TRAFFIC
C-54	1			1	1-ST		12	7	48 x 48	16.00	16.00			16.00	W3-3	SIGNAL AHEAD
C-55	1			1	1-0		10	7	36 x 36	9.00	9.00			9.00	R5-1	DO NOT ENTER
C-56	1			1	1-0		9	7	42 x 30	8.75	8.75			8.75	R5-1A	WRONG WAY
C-57	1			1	1-0		9	7	18 x 24	3.00	3.00			3.00	R5-10D	PROHIBITED TRAFFIC
									SUBTOTAL 2		222.26	59.00	38.00	319.26		
									TOTAL		697.51	128.19	190.69	1016.39		

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM. SEE SHEET 366 FOR TYPICAL MOUNTING ON MNDOT ROADS AND RAMPS. SEE SHEET 387 FOR TYPICAL MOUNTING ON COUNTY AND LOCAL ROADS.
- (2) MOUNT IN CONCRETE, SEE SHEET 369 FOR SIGNS ON MNDOT ROADS AND RAMPS.
- (3) MOUNT IN CONCRETE, SEE SHEET 386 FOR SIGNS ON COUNTY AND LOCAL ROADS.
- (4) SEE MARKERS TABULATION ON SHEET 350.
- (5) MOUNT SIGN PANELS BACK TO BACK.
- (6) C-35 AND C-36 MOUNTED ON SAME ASSEMBLY.
- (7) C-39 AND C-40 MOUNTED ON SAME ASSEMBLY.
- (8) MOUNT ON WALL, SEE SHEET 372.
- (9) MOUNT ON WALL, SEE SHEET 370.
- (10) MOUNT ON BRIDGE RAIL, SEE SHEET 371.
- (11) MOUNT ON RRFB, SEE SHEET 373.

GENERAL NOTES:

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE SHEETS 363 TO 365 FOR STRUCTURAL DETAILS FOR SIGNS ON MNDOT ROADS AND RAMPS.
3. SEE SHEET 385 FOR STRUCTURAL DETAILS FOR SIGNS ON COUNTY AND LOCAL ROADS.
4. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGN PANELS.

W		REMOVE SIGN TYPE C	
QTY.			
S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002	
33	10	12	
TOTAL		55	

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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: <b>ADRIAN S. POTTER</b> Date: <b>09-12-14</b> License #: <b>42785</b>				STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.		DRAWN BY H. TRAN DESIGNED BY H. TRAN CHECKED BY A. POTTER COMM. NO. 0138259		<b>SRE</b> ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.		ANOKA COUNTY SIGNING TABULATIONS <b>T.H. 10 / C.S.A.H. 83 INTERCHANGE</b> C SIGN DATA SHEET		SHEET <b>348</b> OF <b>586</b>
NO	DATE	BY	CKD	APPR	REVISION							

SIGN NO	SIGN PANELS TYPE D															PANEL LEGEND
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002	TOTAL QTY	POSTS				MTG HT (1)	PANEL						
					NO & TYPE	KNEE BRACES QTY	LEN FEET	SPACING INCH		SIZE INCH	AREA SQ FT	S.P. 0202-95 SQ FT	S.A.P. 002-683-004 SQ FT	S.A.P. 199-115-002 SQ FT	TOTAL AREA SQ FT	
D-1			1	1	3-U	3	16	45	7	108 x 66	49.50			49.50	49.50	
D-2		1		1	3-U	3	16	45	7	108 x 66	49.50		49.50	49.50	49.50	
D-3	1			1	1-0		11.5		7	108 x 66	49.50	49.50		49.50	49.50	
D-4		1		1	1-0		11.5		7	108 x 66	49.50		49.50	49.50	49.50	
D-5	2			2	2-U	2	16	42	7	72 x 60	30.00	60.00			60.00	
										8 x 24	(4)					
										8 x 24	(4)					
D-6			1	1	1-0		12		7	48 x 9	3.00			3.00	3.00	
				1						1				1.88	1.88	1.88
D-7		1		1	2-U	1	14		7	30 x 36	7.50		7.50	7.50	7.50	
<b>TOTAL</b>												<b>109.50</b>	<b>106.50</b>	<b>54.38</b>	<b>270.38</b>	

**NOTES:**

- (1) MOUNTING HEIGHT IS MINIMUM. SEE SHEET 366 FOR TYPICAL MOUNTING ON MNDOT ROADS AND RAMPS. SEE SHEET 387 FOR TYPICAL MOUNTING ON COUNTY AND LOCAL ROADS.
- (2) MOUNT ON BRIDGE RAIL, SEE SHEET 371.
- (3) MOUNT ON WALL, SEE SHEET 370.
- (4) SEE MARKERS TABULATION ON SHEET 350.

**GENERAL NOTES:**

- 1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
- 2. SEE SHEETS 363 TO 365 FOR STRUCTURAL DETAILS FOR SIGNS ON MNDOT ROADS AND RAMPS.
- 3. SEE SHEET 385 FOR STRUCTURAL DETAILS FOR SIGNS ON COUNTY AND LOCAL ROADS.
- 4. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE D SIGN PANELS.

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NO	DATE	BY	CHKD	APPR	REVISION

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 Pr Int Name: **ADRIAN S. POTTER**  
  
 Date: 09-12-14 License # 42785

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 DRAWN BY H. TRAN  
 DESIGNED BY H. TRAN  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259



**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 SIGNING TABULATIONS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 D SIGN DATA SHEET

**SHEET  
 349  
 OF  
 586**

SIGN NO	REMOVE SIGN TYPE D							PANEL LEGEND
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002	TOTAL QTY	POSTS		PANEL	
					NO & TYPE	KNEE BRACES QTY	SIZE INCH	
D-101	1			1	1-0		30 x 9	Llama St Llama St
D-102	1			1	2-U	2	48 x 60	
D-103	1			1	2-U	1	48 x 60	
D-104	2			2	3-U	3	108 x 66	Armstrong Blvd 
D-105	1			1	3-U	3	108 x 72	REST AREA 2 MILES ON LEFT
D-106			1	1	1-0		48 x 9	Armstrong Blvd NW Armstrong Blvd NW
							30 x 9	Riverdale Dr Riverdale Dr
D-107	1			1	2-U	1	48 x 60	
D-108		1		1	1-U		30 x 36	
D-109			1	1	1-0		48 x 9	Armstrong Blvd NW Armstrong Blvd NW
<b>TOTAL</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>10</b>				

CODE NO	REFERENCE POST MARKER				TOTAL QTY	SIZE INCH	LEGEND
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002				
	D10-3	2					
D10-X2	2			2	10 x 10	HWY 10	
<b>TOTAL</b>				<b>4</b>			

CODE NO	DELINEATORS & MARKERS				TOTAL QTY	LOCATION
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002			
	X4-2	3	2	4		
X4-4	2	1		3	EXIT NOSES, EDGE OF BRIDGE	
X4-6	14			14	EXIT NOSES	
X4-11			3	3	DEAD END	
<b>TOTAL</b>				<b>29</b>		

CODE NO	REMOVE REFERENCE POST MARKER				TOTAL QTY	SIZE INCH	LEGEND
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002				
	D10-3						
D10-X2	2			2	10 x 10	HWY 10	
<b>TOTAL</b>				<b>2</b>			

CODE NO	REMOVE MARKERS				TOTAL QTY	LOCATION
	S.P. 0202-95	S.A.P. 002-683-004	S.A.P. 199-115-002			
	X4-4L		1			
X4-4R		1		1	MEDIAN	
X4-11		2		2	DEAD END	
<b>TOTAL</b>				<b>4</b>		

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NO	DATE	BY	CHK	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License # **42785**

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY H. TRAN  
DESIGNED BY H. TRAN  
CHECKED BY A. POTTER  
COMM. NO. 0138259

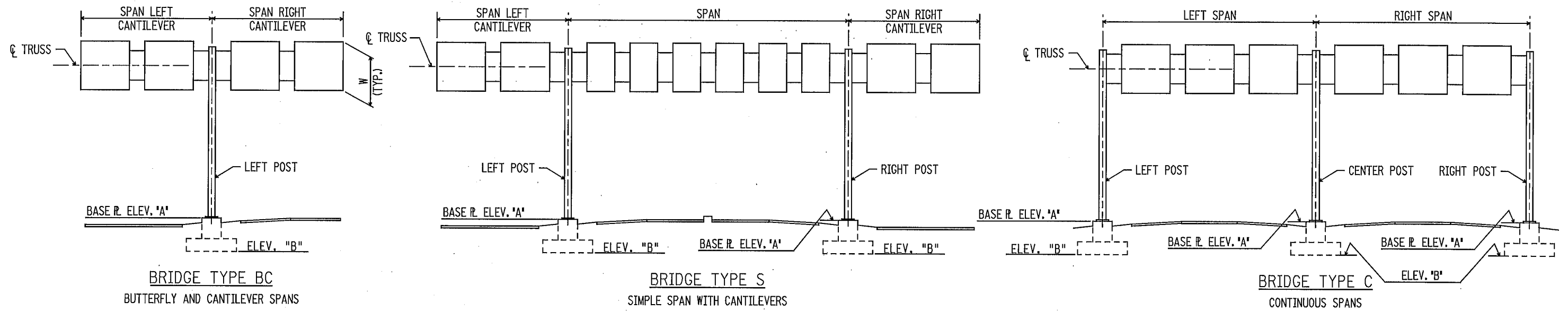


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
SIGNING TABULATIONS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
D SIGN AND MARKERS DATA SHEET

SHEET  
350  
OF  
586





OVERHEAD SIGN STRUCTURES (2)

SIGN NO	STATION	BRIDGE TYPE	TRUSS TYPE	SPAN LENGTHS				LOW STEEL ELEVATION SEE ST-1	LEFT POST			CENTER POST		RIGHT POST			
				LEFT CANT.	RIGHT CANT.	SPAN OR LEFT SPAN	RIGHT SPAN		ELEVATION (1)		TYPE	ELEVATION (1)		TYPE	ELEVATION (1)		TYPE
									A	B		A	B		A	B	
OH 10-106	EB 179+70.93	BC	A	29'-6"				118.47						99.48	92.15	3E	
OH 10-107	WB 206+17.55	BC	A	28'-6"				118.45						99.68	92.87	3E	

SPECIFIC NOTES:

- (1) CENTER LINE ELEVATION = 100.00.
- (2) BASED ON TABULATED ELEVATIONS AND DIMENSIONS. REVISE IF NECESSARY USING QUANTITY TABLES ON ST-2.

GENERAL NOTES:

- 3. THE SUBSCRIPTION E ON THE POST DENOTES THE POST WHICH HAS THE HAND HOLE AND PROVISIONS FOR GROUNDING, I.E. POST TYPE 3E.
- 4. TABULATED ELEVATIONS AND DIMENSIONS ARE APPROXIMATE ONLY. FABRICATION DEPENDENT ON THESE ELEVATIONS AND DIMENSIONS SHALL NOT BE STARTED UNTIL THE ENGINEER HAS MADE FINAL DETERMINATION OF THEM IN THE FIELD.
- 5. LEFT AND RIGHT DESIGNATIONS ARE SHOWN LOOKING IN DIRECTION OF TRAFFIC FLOW. WHEN TWO DIRECTIONS OF TRAFFIC ARE SPANNED THE DESIGNATIONS ARE SHOWN LOOKING UP STATIONING.
- 6. SEE SHEETS 376 - 384 FOR DETAILS.
- 7. SEE SHEETS 390 - 391 FOR CROSS SECTIONS.

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: 09-12-14 License # 42785

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
L. JAMES

DESIGNED BY  
L. JAMES

CHECKED BY  
A. POTTER

COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

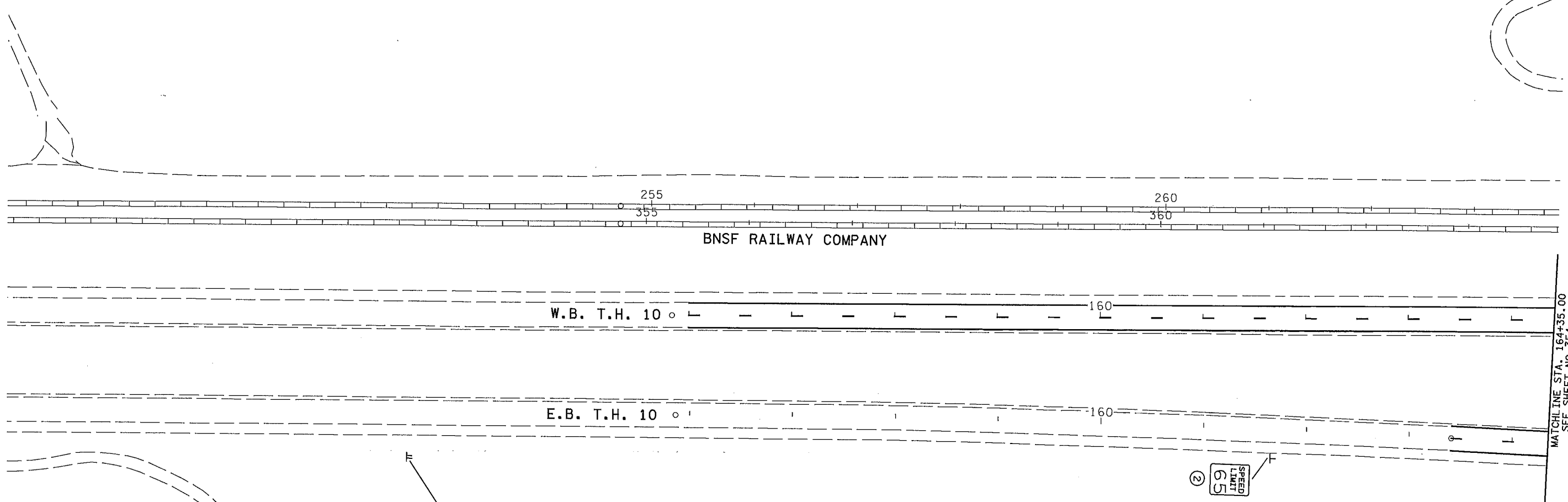
SIGNING TABULATIONS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

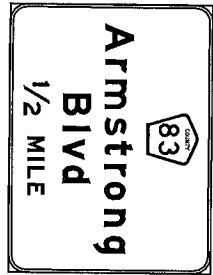
OH SIGN DATA SHEET

SHEET 351 OF 586

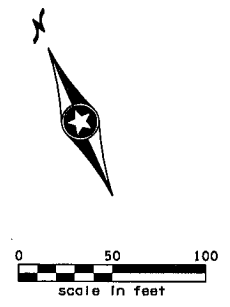




MATCHLINE STA. 164+35.00  
SEE SHEET NO. 354



A-1  
①



- SIGNING NOTES:**
- ① FURNISH AND INSTALL
  - ② INPLACE
  - ③ SALVAGE
  - ④ REMOVE
  - ⑤ REMOVE SIGN TYPE C

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

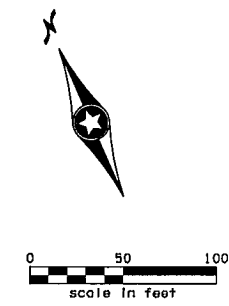
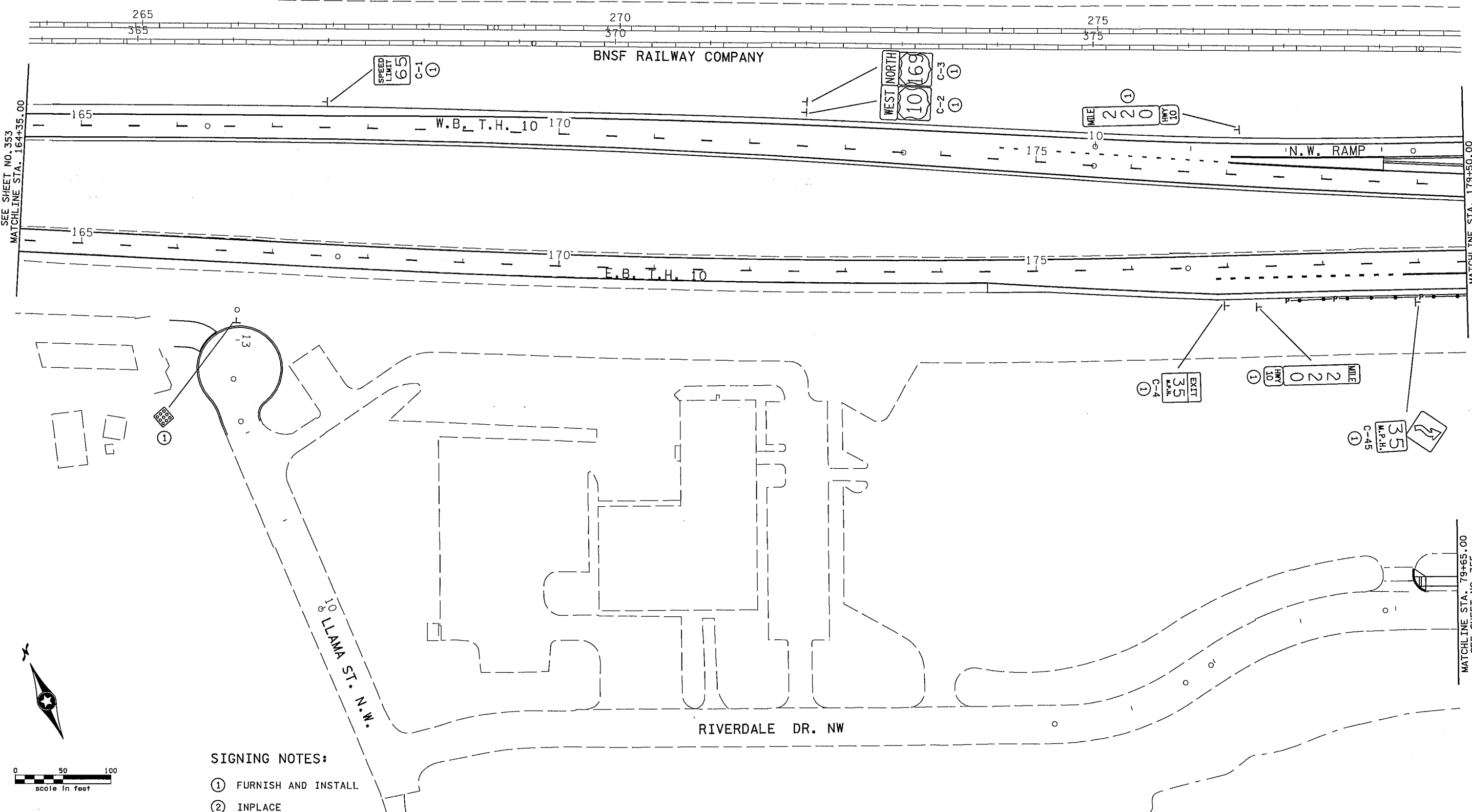
Date: **09-12-14** License # **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY B. BETTS
STATE PROJECT NO. 0202-95 (TH 10)	DESIGNED BY B. BETTS
COUNTY PROJECT NO.	CHECKED BY A. POTTER
CITY PROJECT NO.	COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
353  
OF  
586



**SIGNING NOTES:**  
 ① FURNISH AND INSTALL  
 ② INPLACE

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 Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

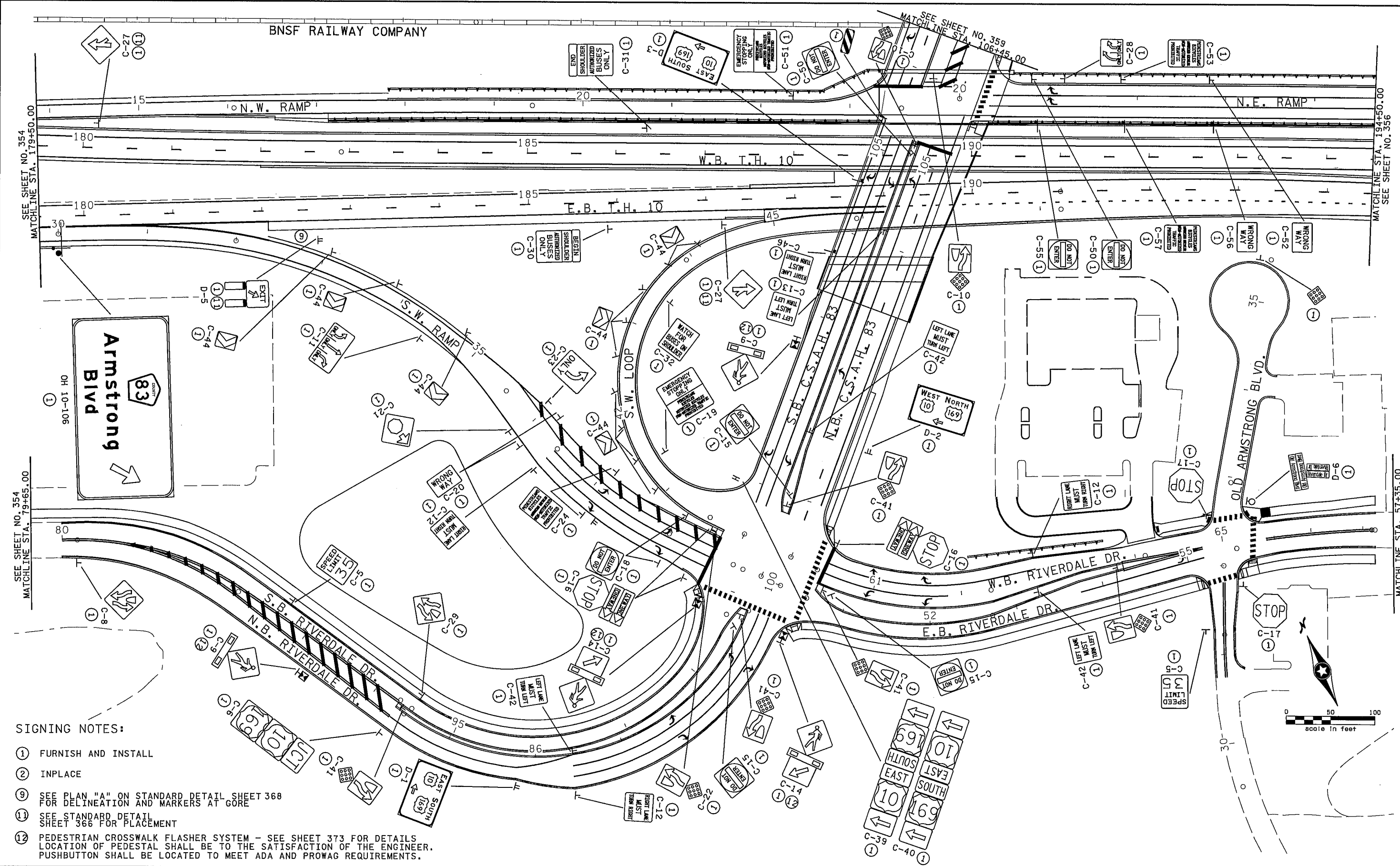
DRAWN BY  
 B. BETTS  
 DESIGNED BY  
 B. BETTS  
 CHECKED BY  
 A. POTTER  
 COMM. NO. 0138259

**SRE**  
 Consulting Group, Inc.

**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 SIGNING PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE.**

**SHEET**  
**354**  
**OF**  
**586**



**SIGNING NOTES:**

- ① FURNISH AND INSTALL
- ② INPLACE
- ③ SEE PLAN "A" ON STANDARD DETAIL SHEET 368 FOR DELINEATION AND MARKERS AT GORE
- ④ SEE STANDARD DETAIL SHEET 366 FOR PLACEMENT
- ⑤ PEDESTRIAN CROSSWALK FLASHER SYSTEM - SEE SHEET 373 FOR DETAILS. LOCATION OF PEDESTAL SHALL BE TO THE SATISFACTION OF THE ENGINEER. PUSHBUTTON SHALL BE LOCATED TO MEET ADA AND PROWAG REQUIREMENTS.

3/21/95 PN  
 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: 09-12-14 License #: 42785

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
B. BETTS

DESIGNED BY  
B. BETTS

CHECKED BY  
A. POTTER

COMM. NO. 0138259

**SRH**  
Consulting Group, Inc.

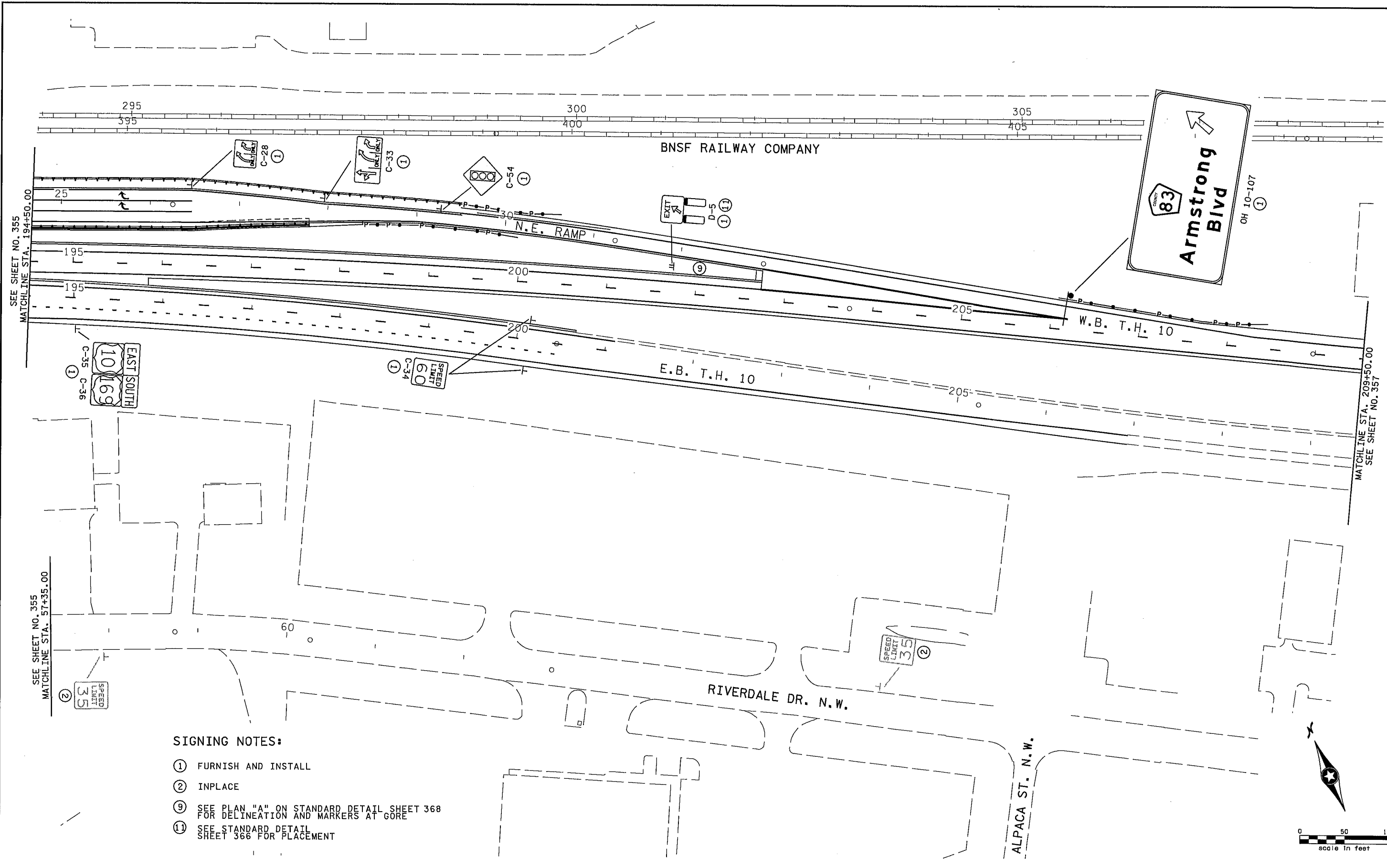
**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**

**SIGNING PLANS**

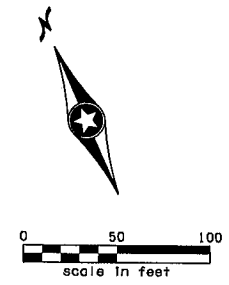
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**  
**355**  
**OF**  
**586**



**SIGNING NOTES:**

- ① FURNISH AND INSTALL
- ② INPLACE
- ⑨ SEE PLAN "A" ON STANDARD DETAIL SHEET 368 FOR DELINEATION AND MARKERS AT GORE
- ⑩ SEE STANDARD DETAIL SHEET 366 FOR PLACEMENT



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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
B. BETTS

DESIGNED BY  
B. BETTS

CHECKED BY  
A. POTTER

COMM. NO. 0138259



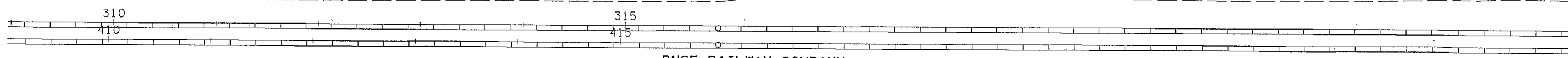
**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**

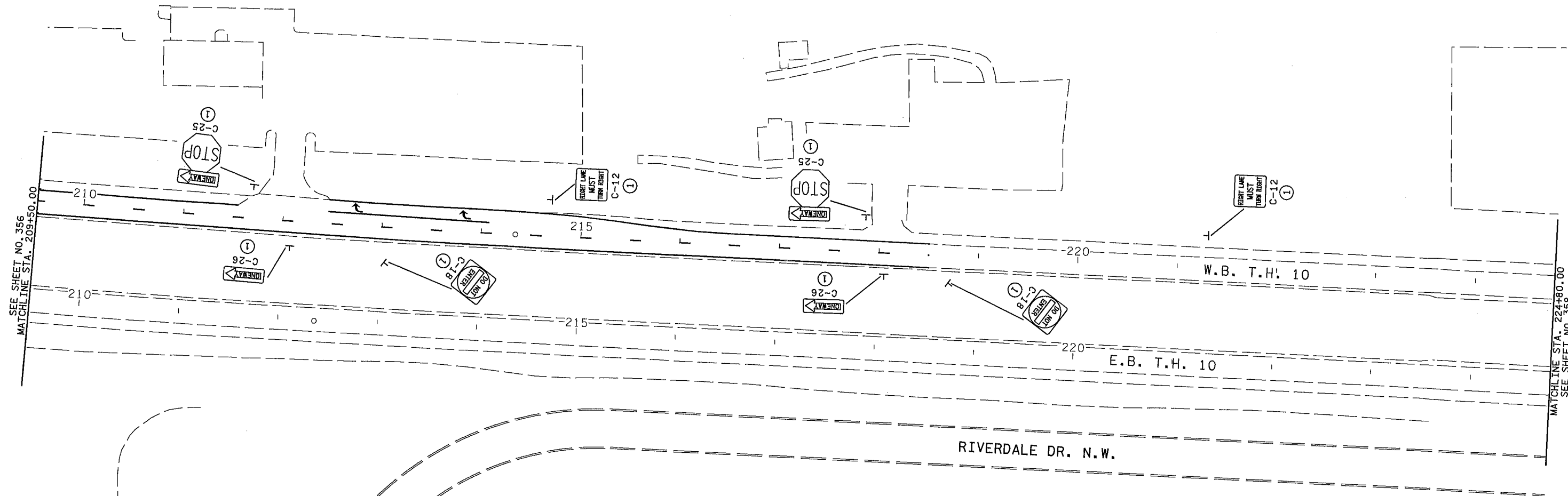
SIGNING PLANS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SHEET**  
356  
**OF**  
586



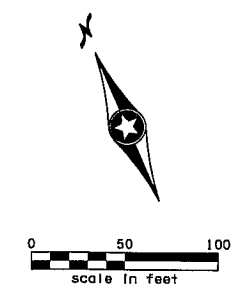
BNSF RAILWAY COMPANY



SEE SHEET NO. 356  
MATCHLINE STA. 209+50.00

MATCHLINE STA. 224+80.00  
SEE SHEET NO. 358

**SIGNING NOTES:**  
① FURNISH AND INSTALL



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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

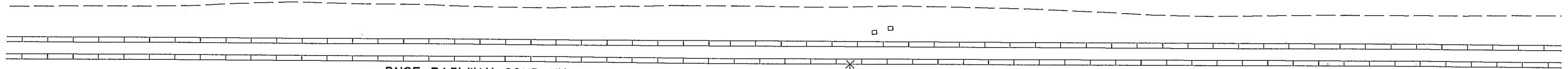
STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY  
B. BETTS  
DESIGNED BY  
B. BETTS  
CHECKED BY  
A. POTTER  
COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

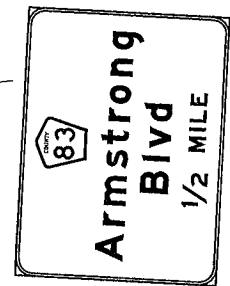
ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
357  
OF  
586



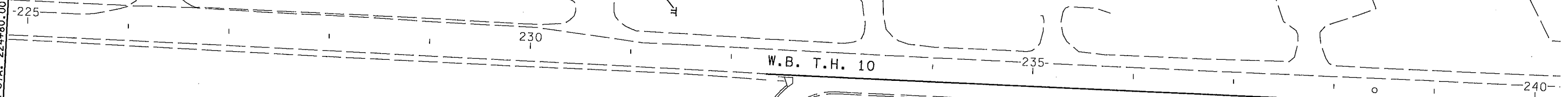


BNSF RAILWAY COMPANY

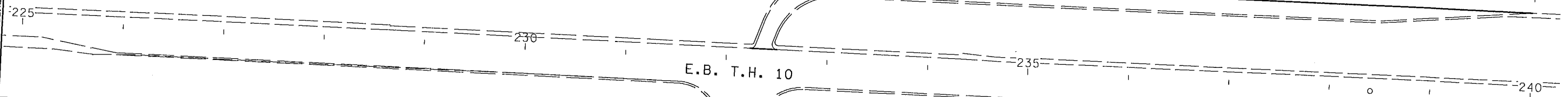


A-2 ①

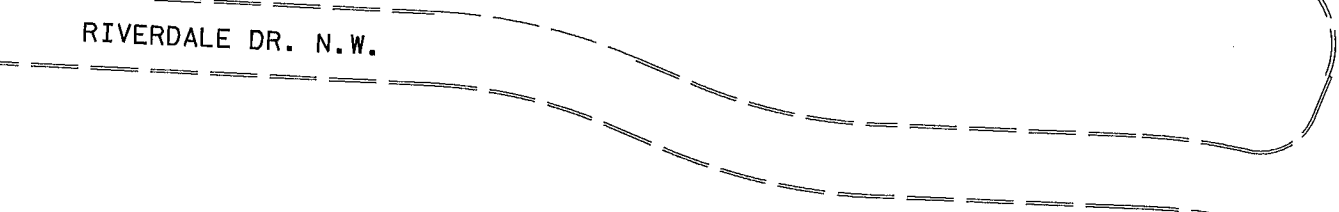
SEE SHEET NO. 357  
MATCHLINE STA. 224+80.00



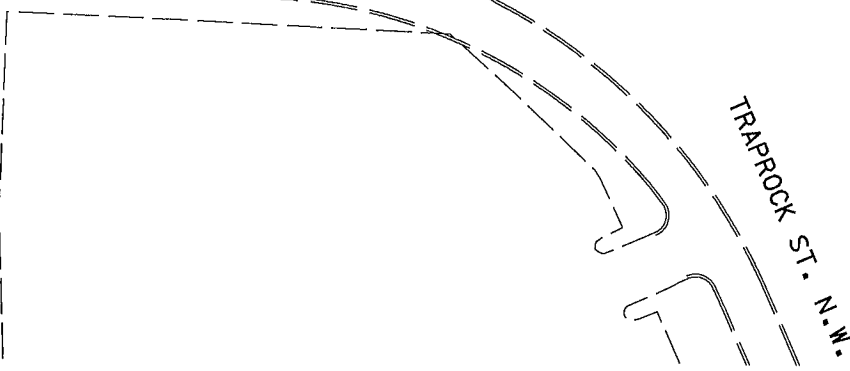
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E.B. T.H. 10

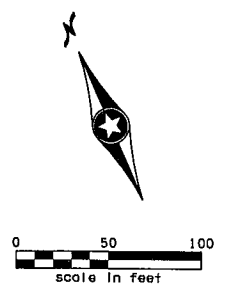


RIVERDALE DR. N.W.



TRAPROCK ST. N.W.

SIGNING NOTES:  
① FURNISH AND INSTALL



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9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License # **42785**

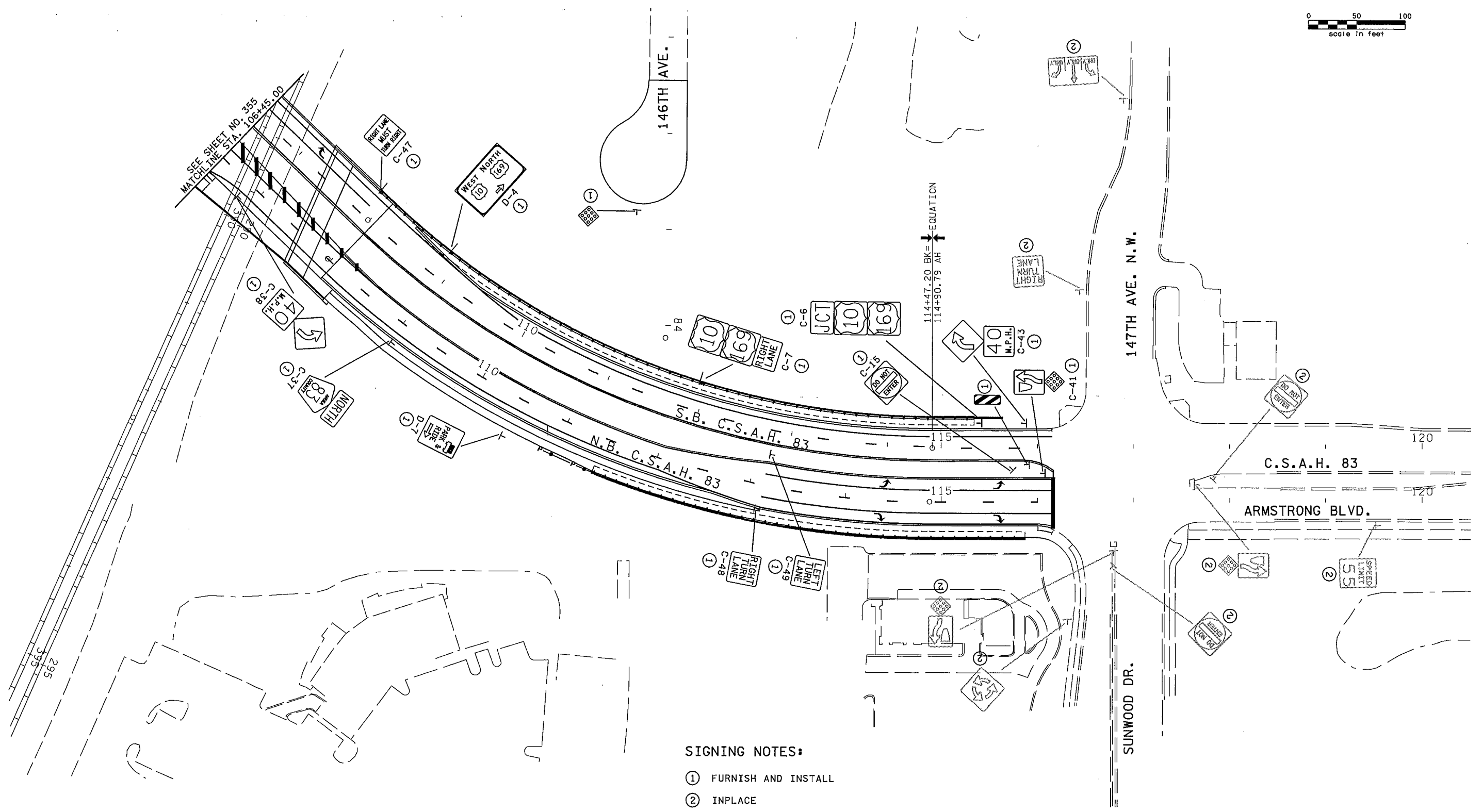
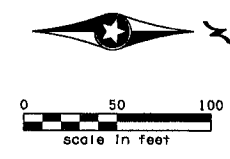
STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY  
B. BETTS  
DESIGNED BY  
B. BETTS  
CHECKED BY  
A. POTTER  
COMM. NO. 0138259

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
358  
OF  
586



**SIGNING NOTES:**

- ① FURNISH AND INSTALL
- ② INPLACE

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 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**B. BETTS**

DESIGNED BY  
**B. BETTS**

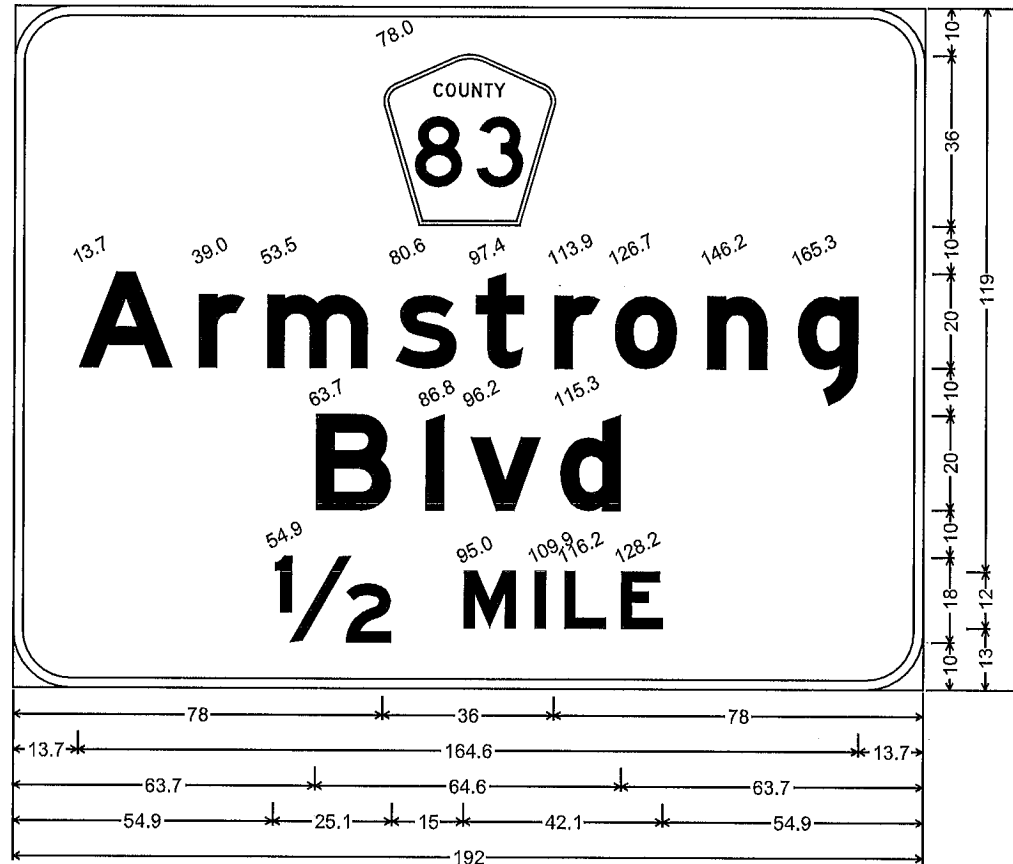
CHECKED BY  
**A. POTTER**

COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
359  
OF  
586




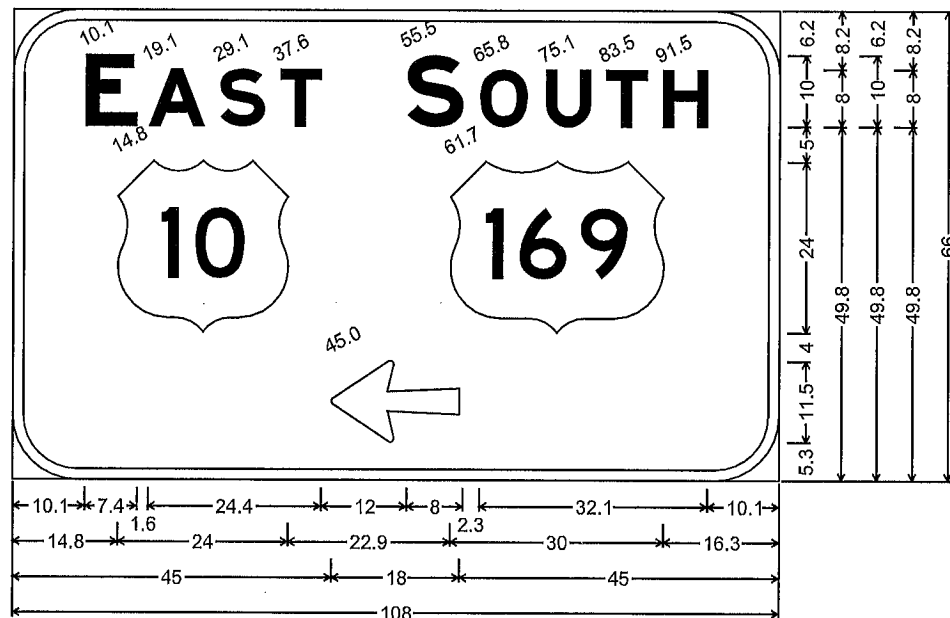
A-1, A-2; 12.0" Radius, 2.0" Border, White on Green;  
 [Armstrong] E Mod; [Blvd] E Mod; [1/2 MILE] E Mod;

- GENERAL NOTES:
1. CORNERS OF THE SIGN PANEL EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
  2. SEE STANDARD SIGNS MANUAL FOR ARROW, AND OVERLAY DETAILS.

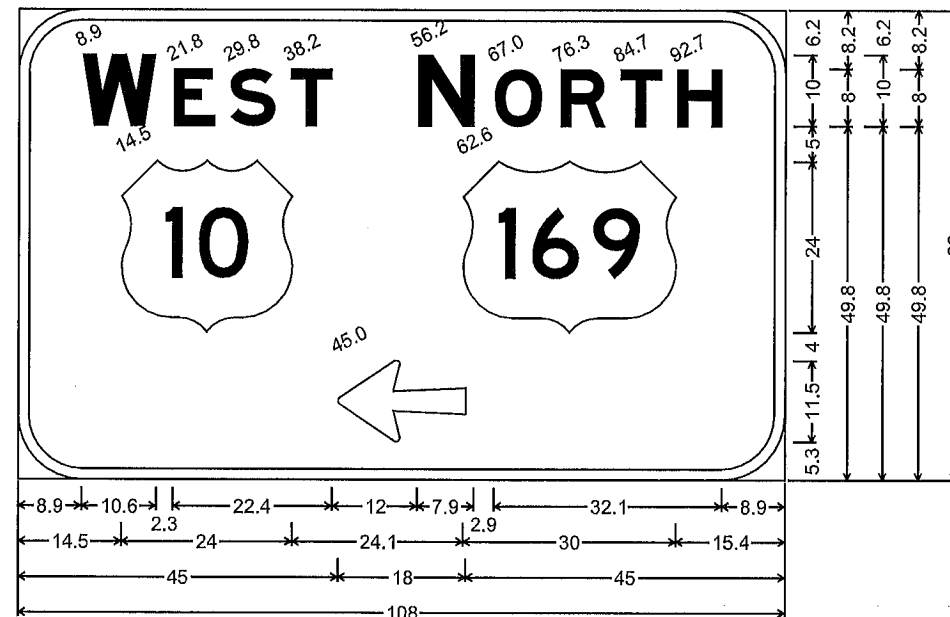
TYPE A SIGN PANEL

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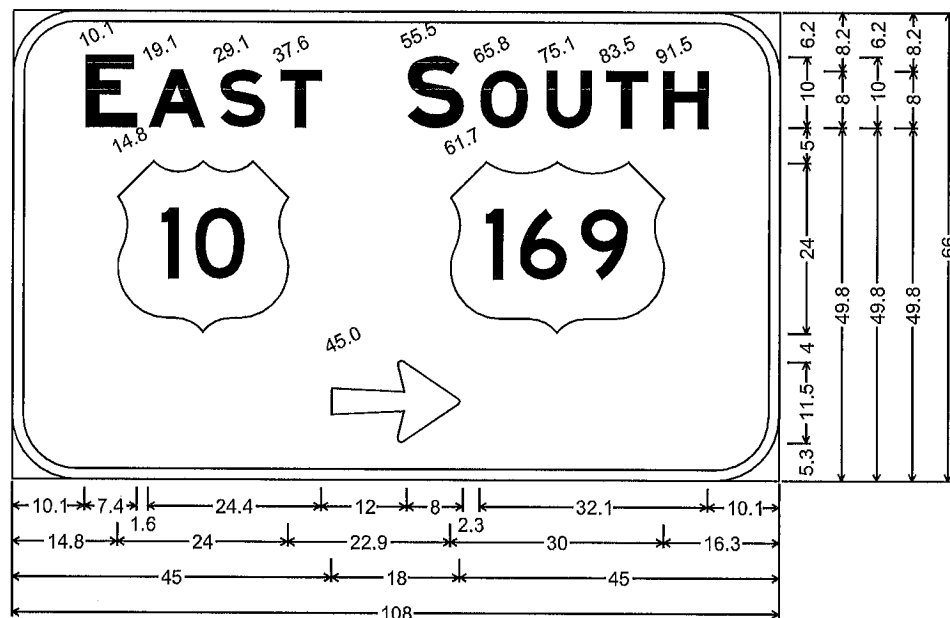
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NO	DATE	BY	CHKD	APPR	REVISION																						



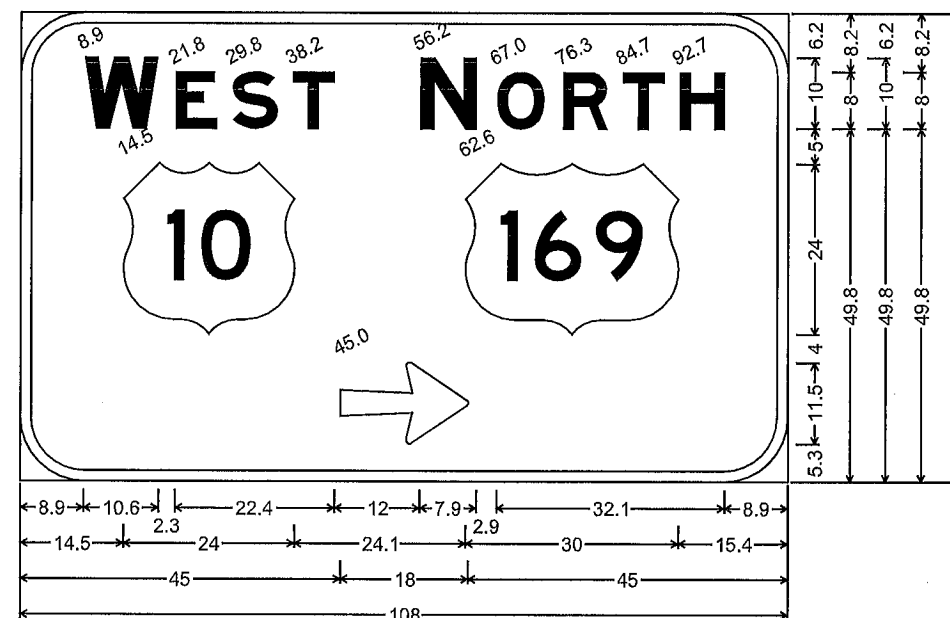
D-1; 9.0" Radius, 1.5" Border, White on Green;  
 [EAST] E Mod; [SOUTH] E Mod; Arrow 14 - 18.0" 180°;



D-2; 9.0" Radius, 1.5" Border, White on Green;  
 [WEST] E Mod; [NORTH] E Mod; Arrow 14 - 18.0" 180°;



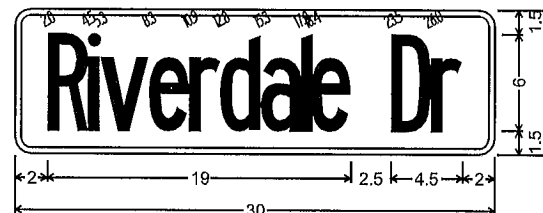
D-3; 9.0" Radius, 1.5" Border, White on Green;  
 [EAST] E Mod; [SOUTH] E Mod; Arrow 14 - 18.0" 0°;



D-4; 9.0" Radius, 1.5" Border, White on Green;  
 [WEST] E Mod; [NORTH] E Mod; Arrow 14 - 18.0" 0°;



D-6; 1.0" Radius, 0.4" Border, White on Green;  
 [Old] Highway B; [Armstrong] Highway B; [Blvd] Highway B;



D-6; 1.0" Radius, 0.4" Border, White on Green;  
 [Riverdale] Highway B; [Dr] Highway B;

GENERAL NOTES:

1. TYPE "D" SIGN PANEL OVERLAYS SHALL HAVE WHITE LEGEND ON GREEN BACKGROUND, EXCEPT AS NOTED ON PANEL LAYOUTS.
2. CORNERS OF THE SIGN PANEL OVERLAYS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. SEE STANDARD SIGNS MANUAL FOR ARROW, AND OVERLAY DETAILS.

TYPE D SIGN PANELS

3:24:30 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_sp03.dgn

NO	DATE	BY	CKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259

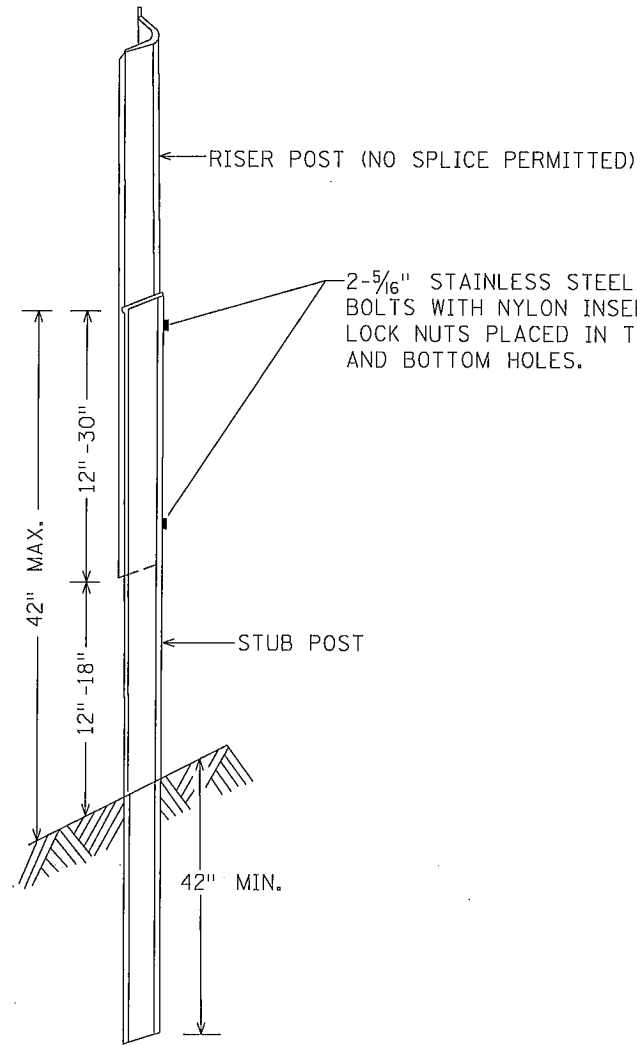


ANOKA COUNTY  
 SIGNING PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TYPE D SIGN PANEL DETAILS

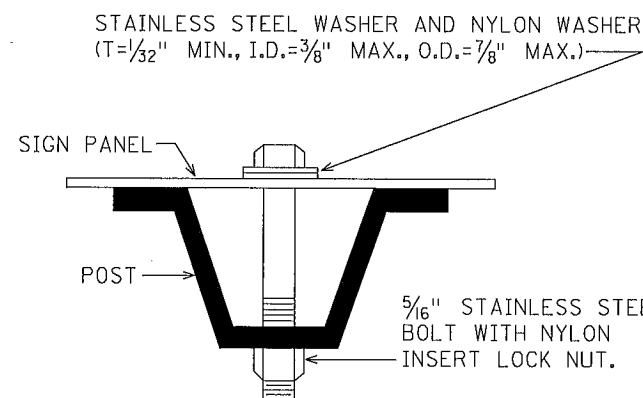
SHEET  
 361  
 OF  
 586



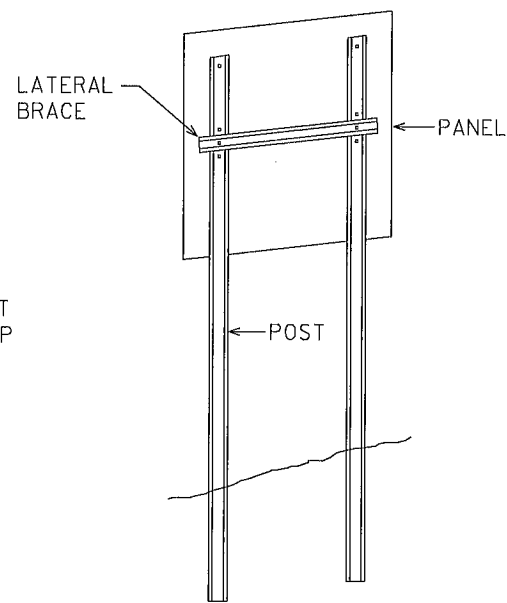
TYPE C & D POST



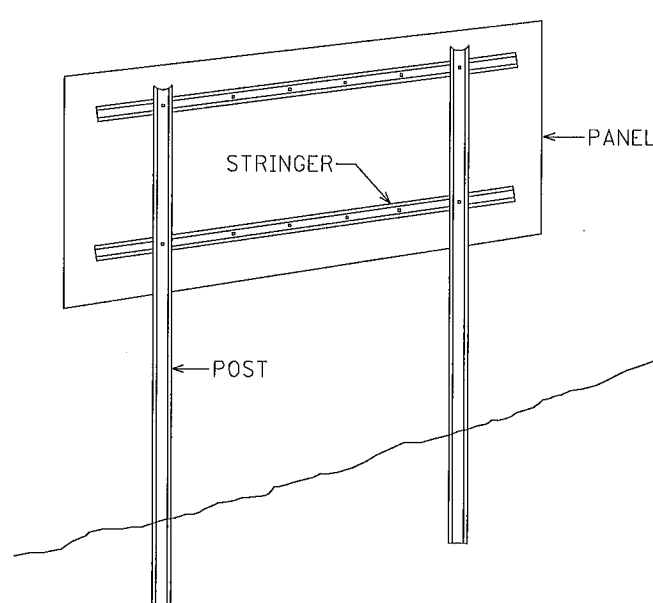
U POST BREAKAWAY SPLICE



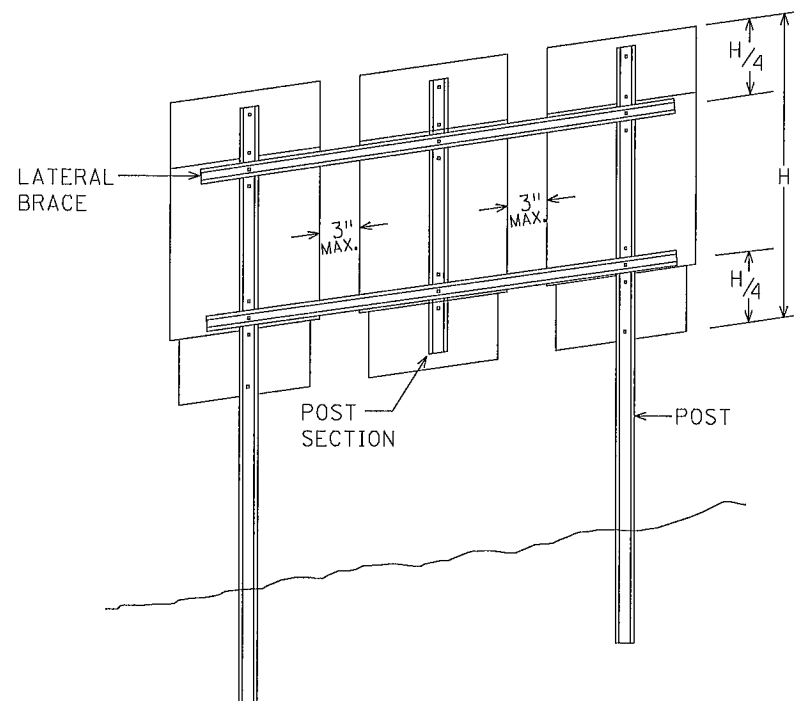
U POST MOUNTING  
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION

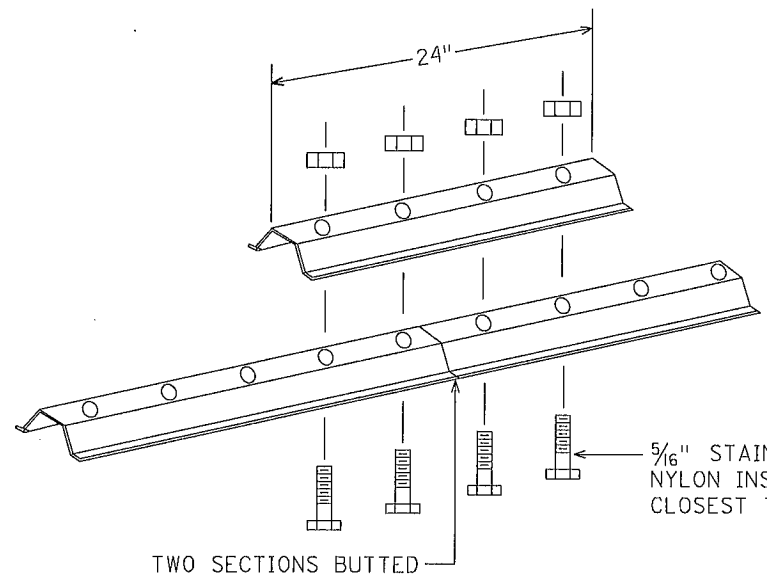


MODIFIED TYPE C INSTALLATION

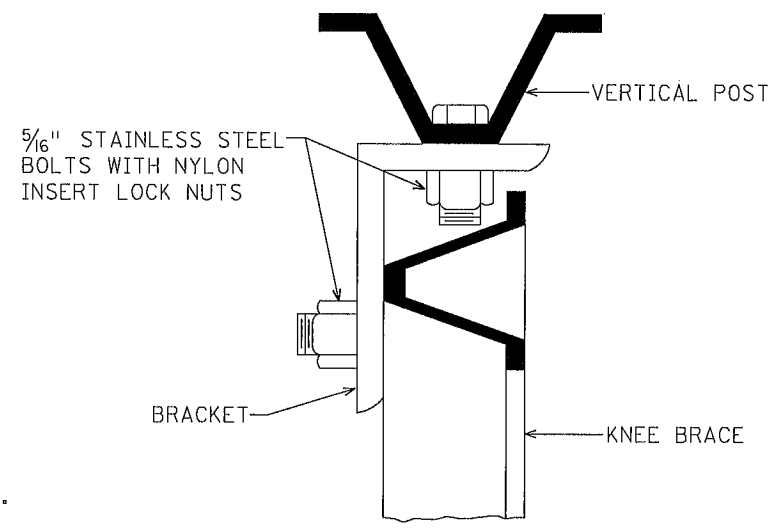
NOTES:

1. USE 3 LB/FT STUB POSTS, SHALL CONFORM TO MNDOT 3401.
2. USE 2.5 LB/FT RISER POSTS, STRINGERS, KNEE BRACES AND LATERAL BRACES. ALL SHALL CONFORM TO MNDOT 3401.
3. SEE SIGN DATA SHEETS FOR NUMBER OF POSTS, KNEE BRACES, POST LENGTHS AND SPACINGS, AS DETERMINED FROM TEM CHARTS 6.3 AND 6.4.
4. IF MORE THAN TWO POSTS ARE NEEDED, THE MINIMUM SPACING SHALL BE 45" BETWEEN POSTS.
5. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 42".
11. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394.
12. COLLARS SHALL BE USED TO SHIM OVERLAYS AND LEGEND COMPONENTS AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MNDOT 3352.2A6.
13. 2 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.
14. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
15. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED Laterally BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

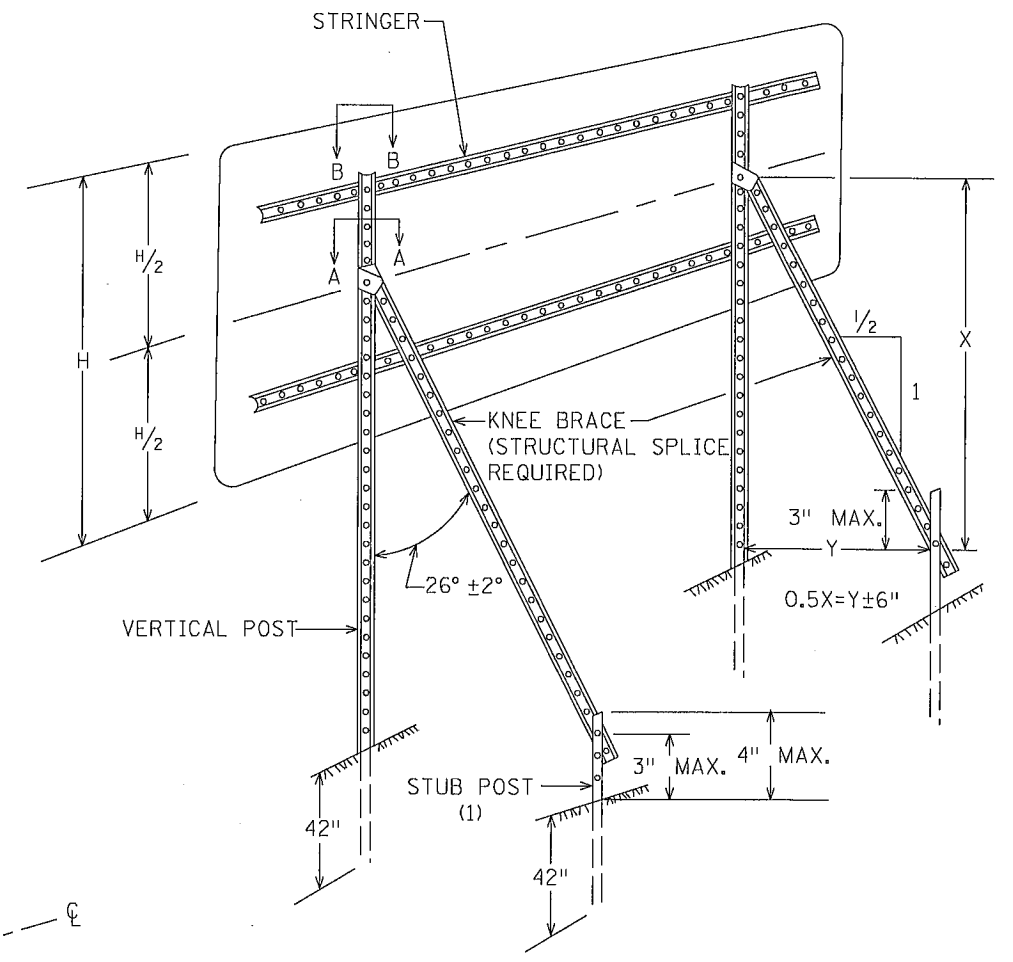
TYPE C & D SIGN  
STRUCTURAL DETAILS



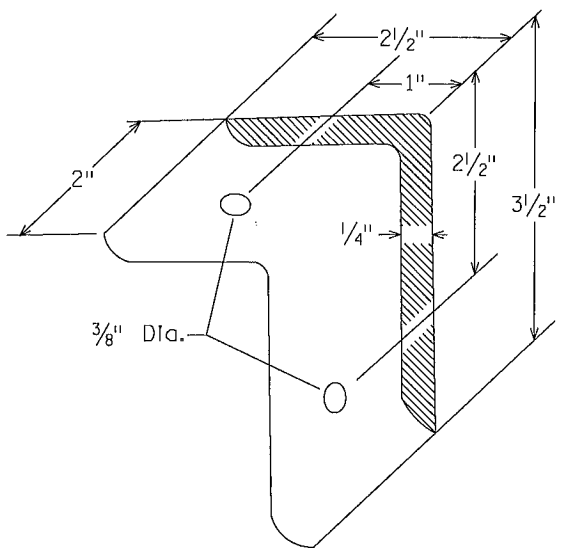
LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

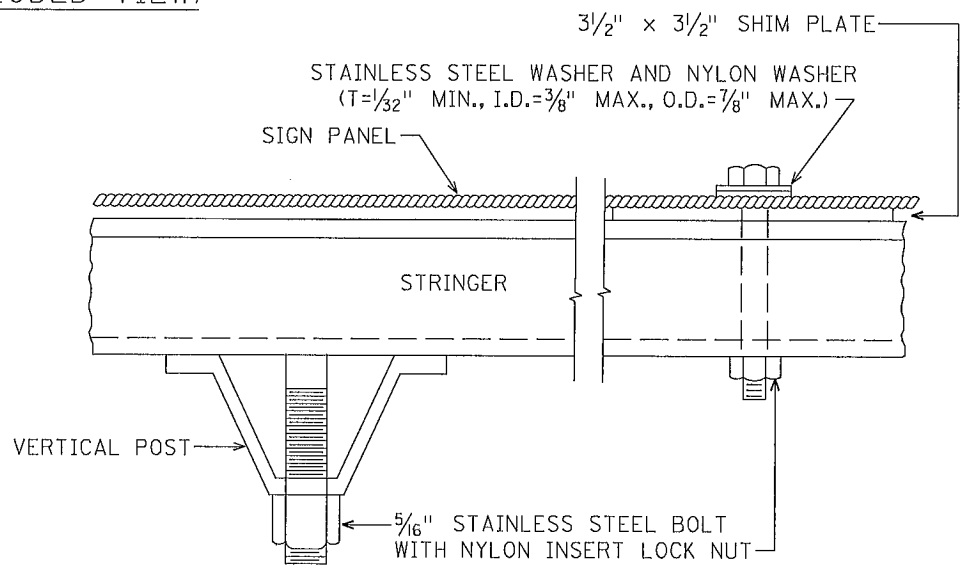


TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS

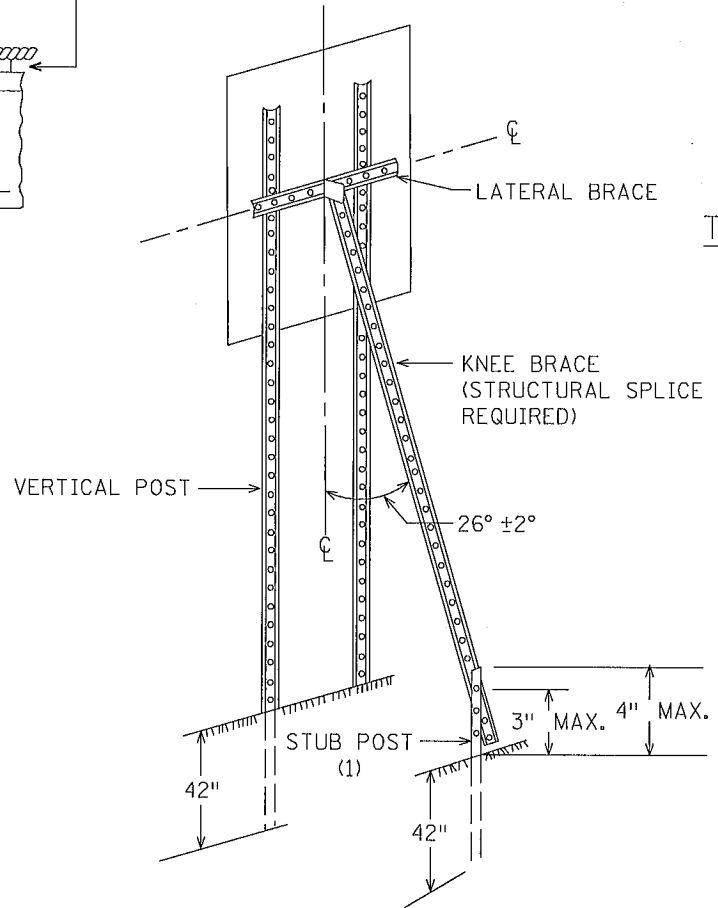


A-FRAME BRACKET

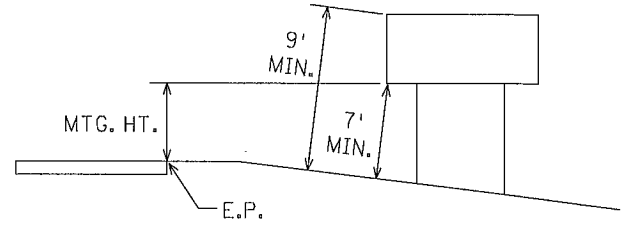
(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)



SECTION B-B

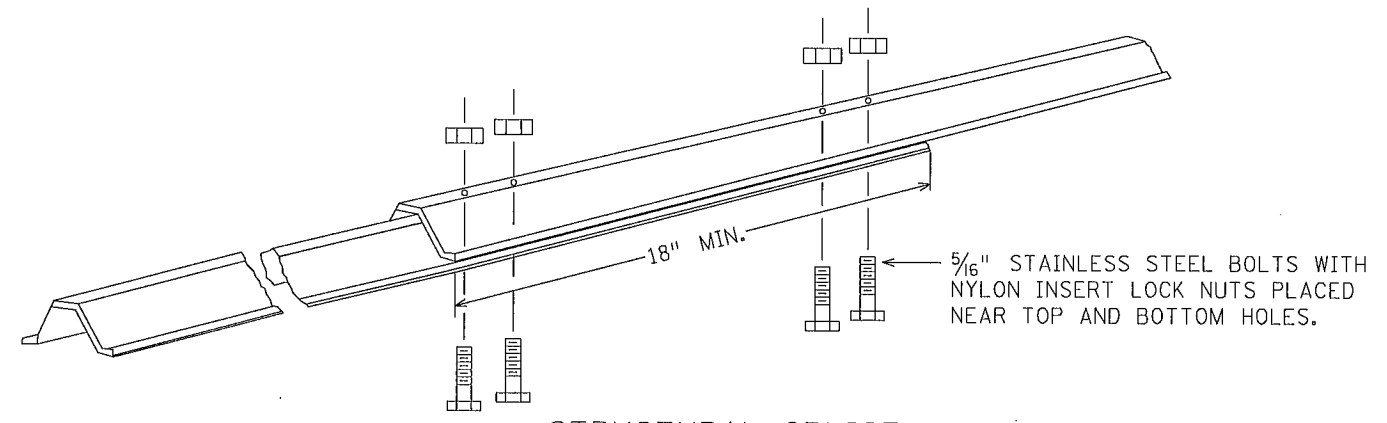


TYPICAL "A-FRAME" INSTALLATION  
TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY  
RELATIVE TO VERTICAL POST. ATTACH STUB  
POST AND KNEE BRACE BACK TO BACK.



STRUCTURAL SPLICE

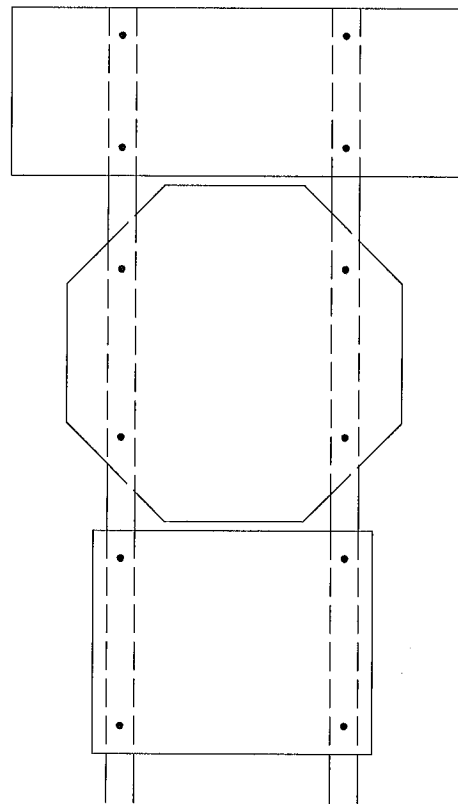
(USE WHEN IT IS NECESSARY TO FABRICATE THE CORRECT LENGTH OF POST FROM TWO PIECES)

TYPE C & D SIGN  
STRUCTURAL DETAILS

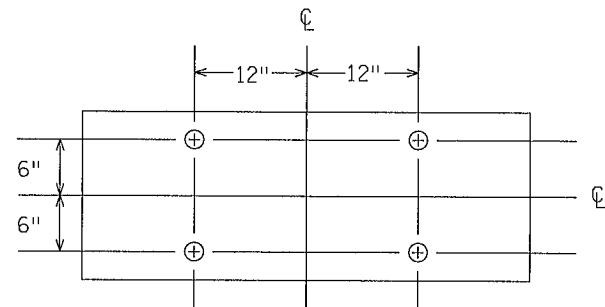
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REVISED: 12-4-2013

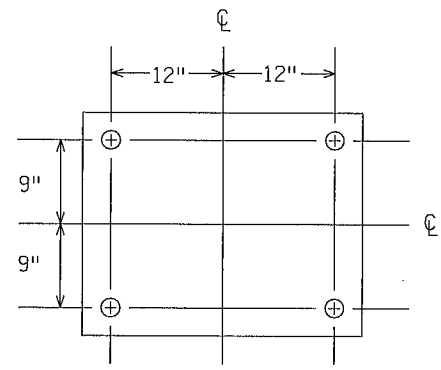




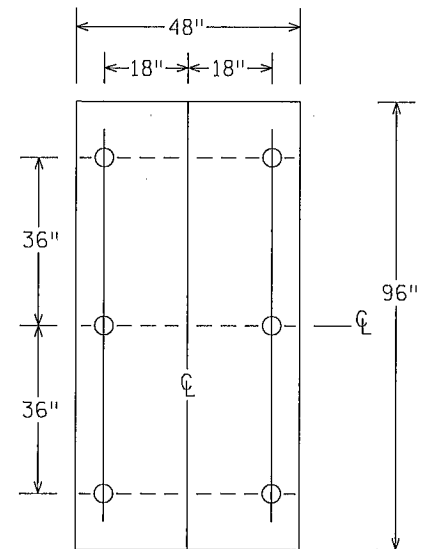
R6-1, R1-1 & (R6-3 OR R6-3a)  
MOUNTING



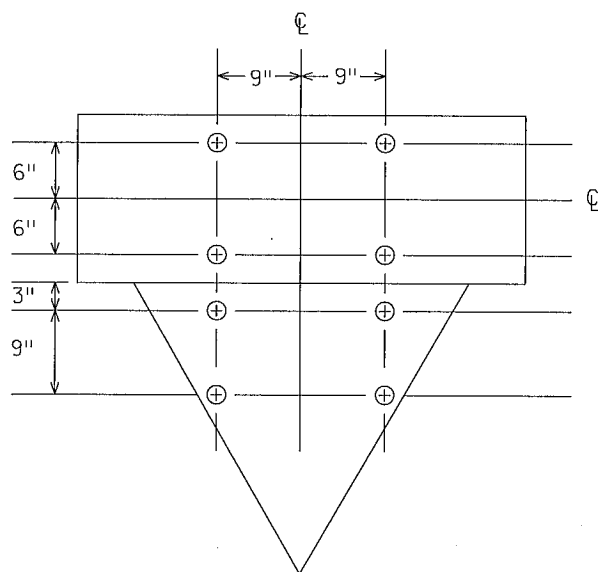
PUNCHING FOR R6-1(54" x 18")



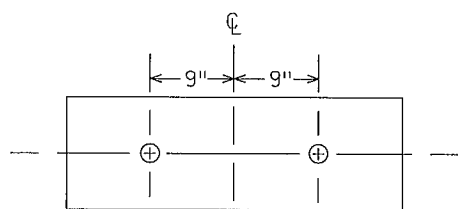
PUNCHING FOR R6-3 OR R6-3a(30" x 24")



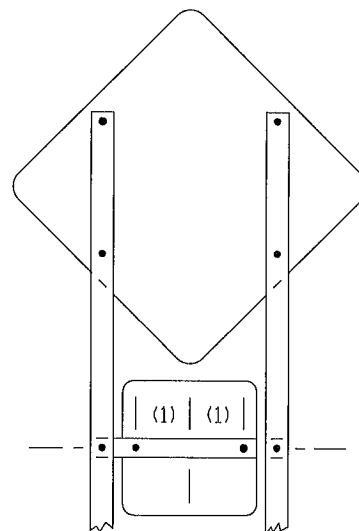
PUNCHING FOR R2-4b  
SPEED LIMIT



PUNCHING FOR R6-1(54" x 18")  
& R1-2(36" x 36" x 36")



PUNCHING FOR R6-1(36" x 12")



WARNING SIGN [30" x 30 OR 48" x 48"] AND  
WARNING PLAQUE [18" x 18" OR 30" x 30"]  
PUNCHING AND MOUNTING

- (1) 6" FOR WARNING PLAQUE (18" x 18")
- 12" FOR WARNING PLAQUE (30" x 30")

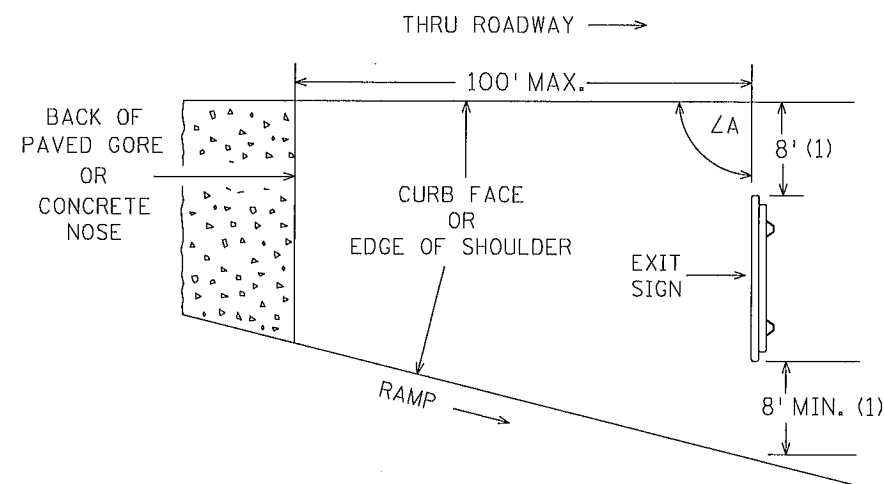
TYPE C & D SIGN  
STRUCTURAL DETAILS

Sheet 3 of 3

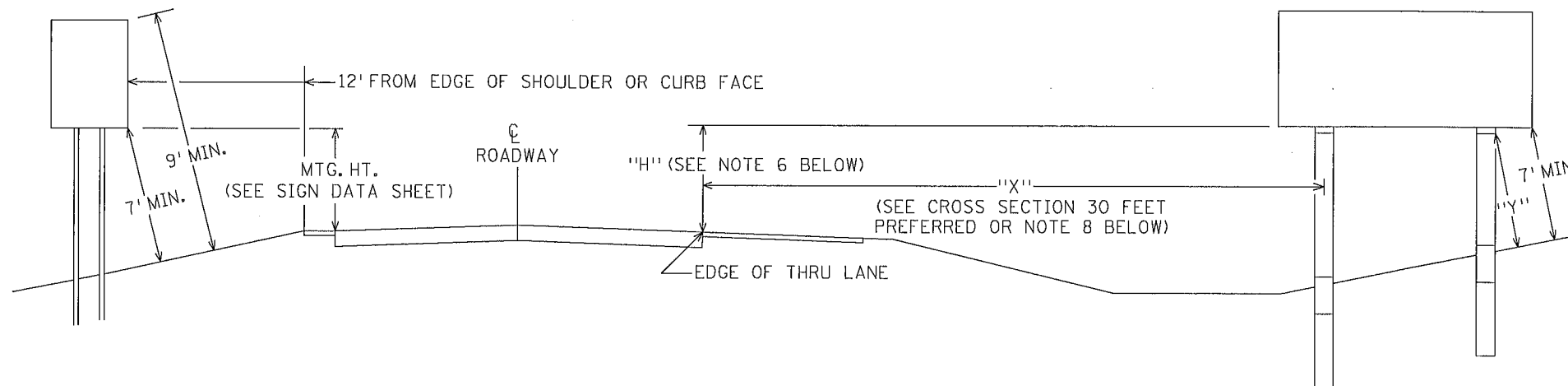
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REVISED: 10-2-2013

GORE PLACEMENT

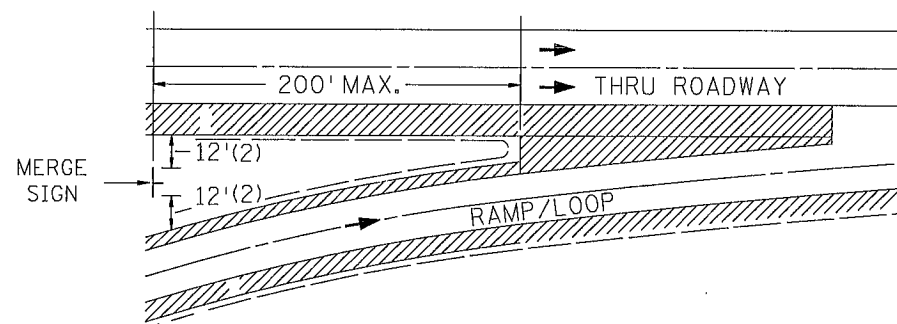


ROADSIDE PLACEMENT



ROUTE MARKER, REGULATORY & WARNING SIGNS - TYPE C  
GUIDE SIGNS - TYPE D

GUIDE SIGN - TYPE A



SPECIFIC NOTES:

(1) EXIT SIGNS

IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER WHO WILL CONSULT WITH THE STATE SIGNING ENGINEER.

(2) MERGE SIGNS

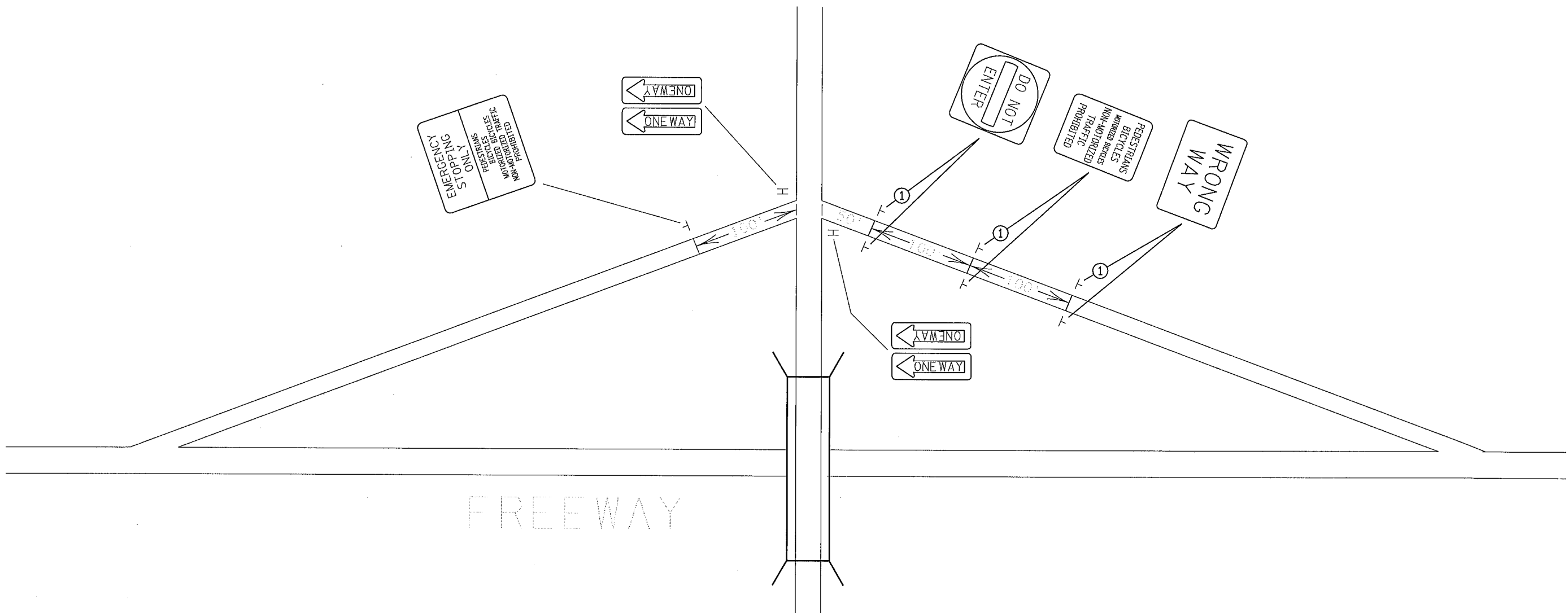
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER WHO WILL CONSULT WITH THE STATE SIGNING ENGINEER.

NOTES:

1. ALL ROUTE MARKERS, WARNING & REGULATORY SIGNS SHALL BE AT LEAST 7' ABOVE EDGE OF THRU LANE.
2. SIGN FACES SHALL BE VERTICAL.
3. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
4. TO AVOID SPECULAR GLARE, ∠A SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF THRU LANE AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF THRU LANE. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
5. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
6. WHERE "X" IS LESS THAN 30', "H" SHALL BE 7' ± 6". WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
7. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
8. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 8 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

SIGN PLACEMENT

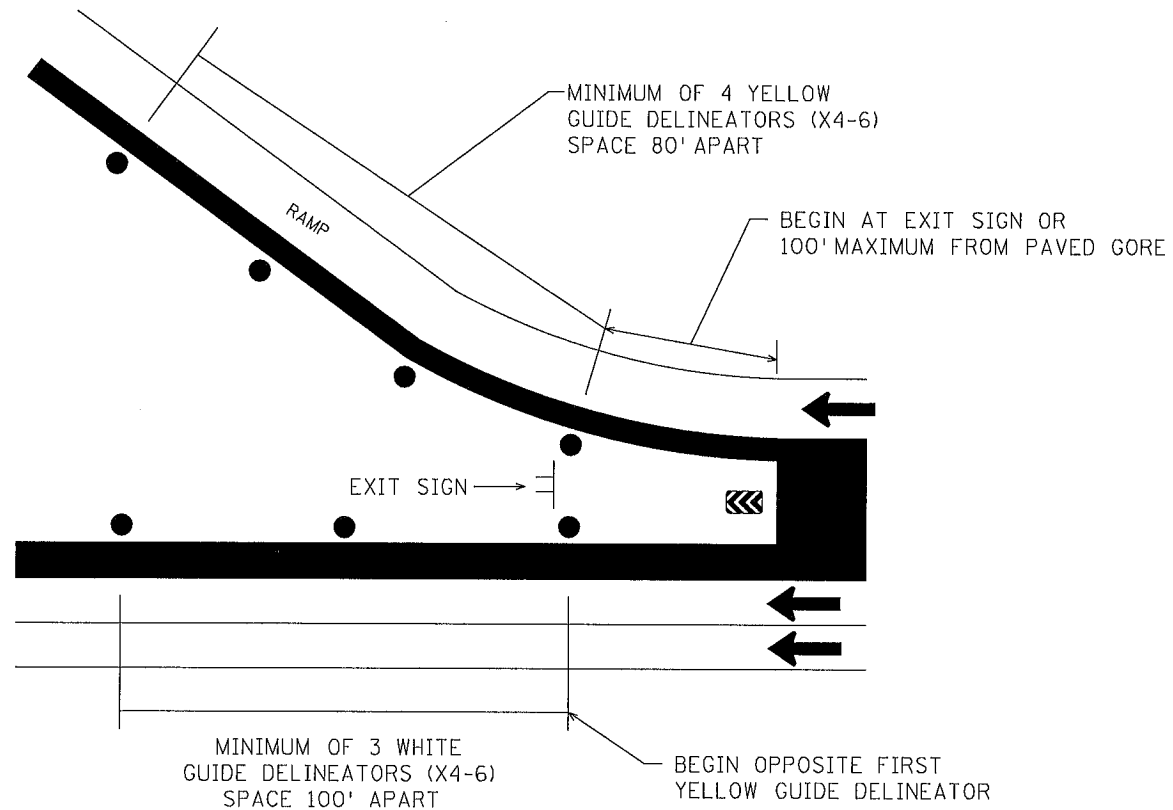
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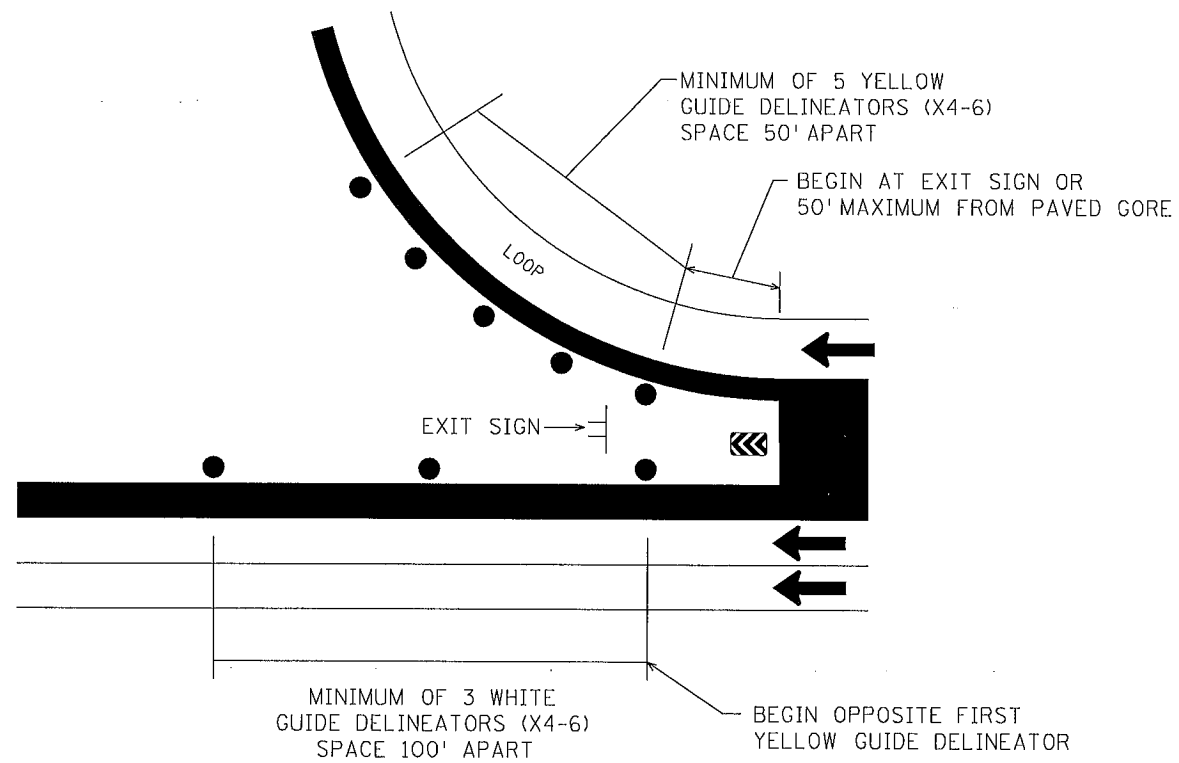
① ADDITIONAL SIGN REQUIRED WHEN RAMP IS 3 LANES OR WIDER

STANDARD SIGN PLACEMENT  
 REGULATORY SIGNS ON  
 DIAMOND INTERCHANGE RAMPS

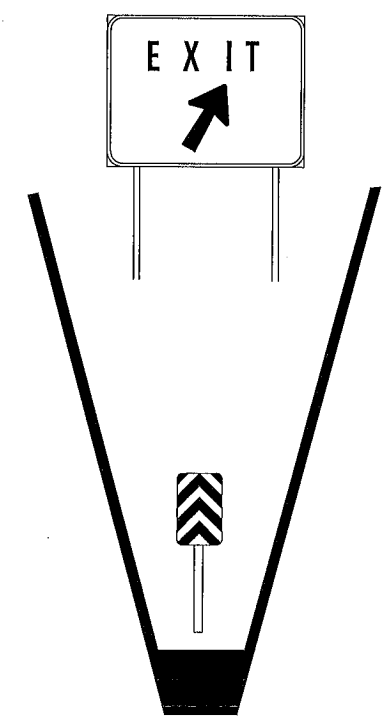
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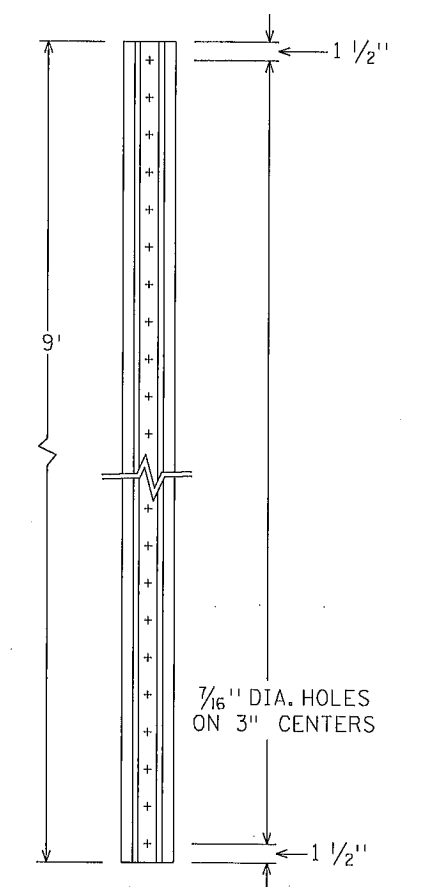
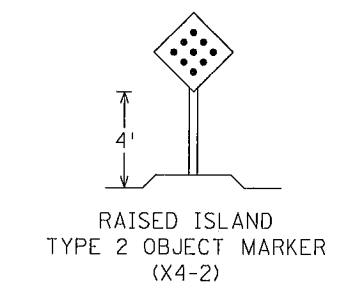
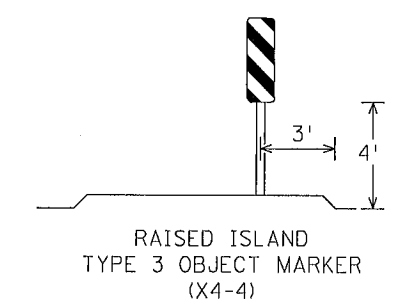
PLAN A  
RAMP DELINEATION



PLAN B  
LOOP DELINEATION

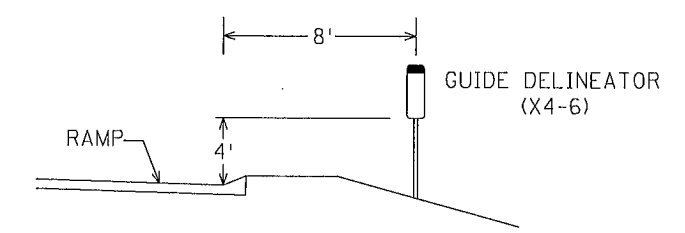
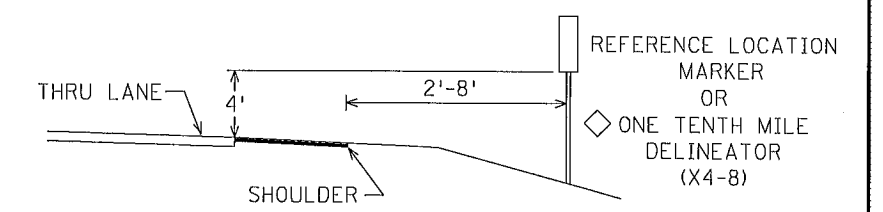
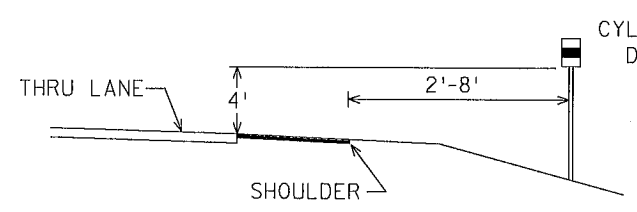


TYPE 3 OBJECT MARKER  
12" X 24" (X4-4C)



MNDOT 3401  
NORMAL WEIGHT = 2 LB./FT.

DELINEATOR POST

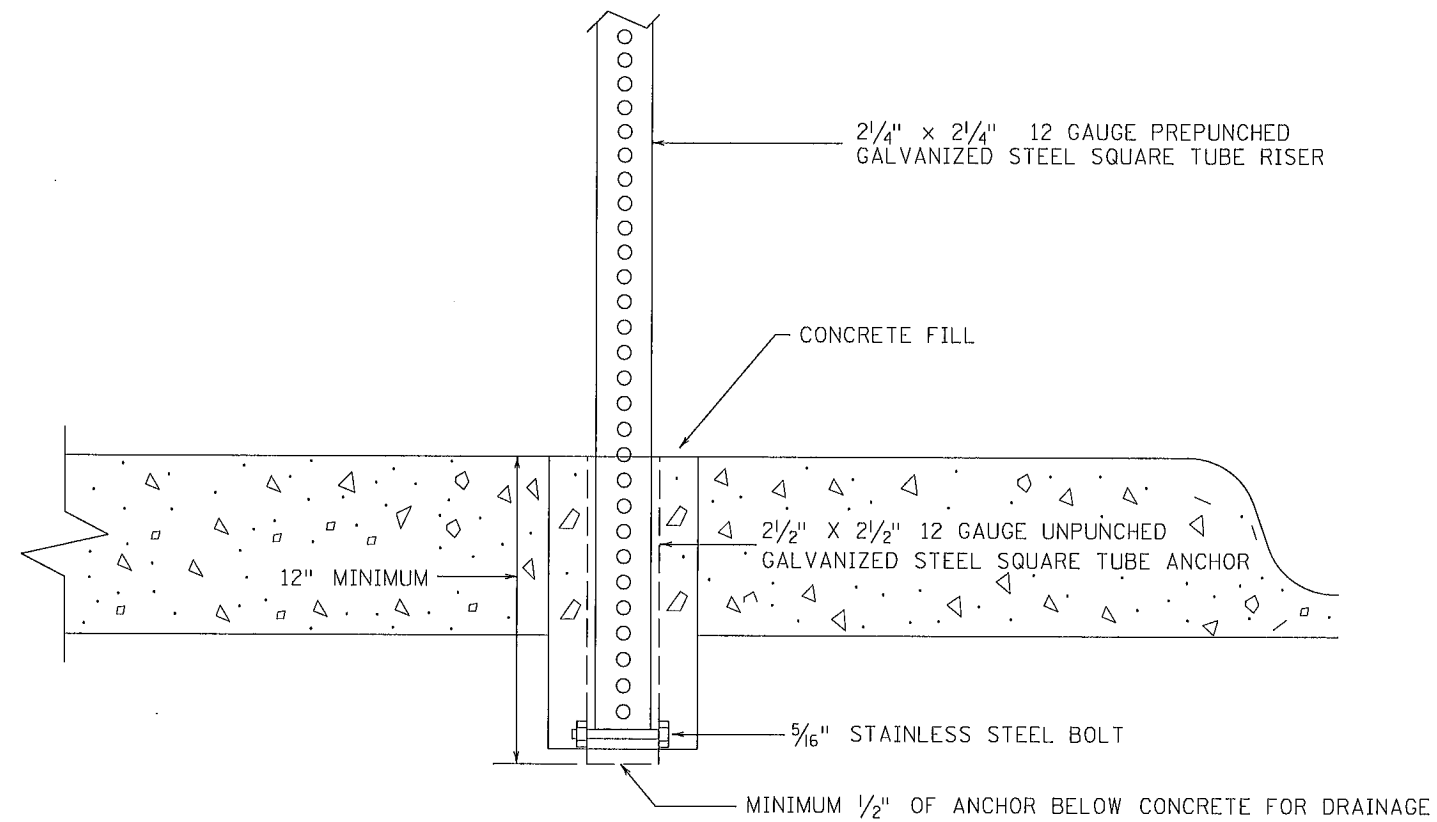


TYPICAL PLACEMENT

DELINEATORS AND MARKERS

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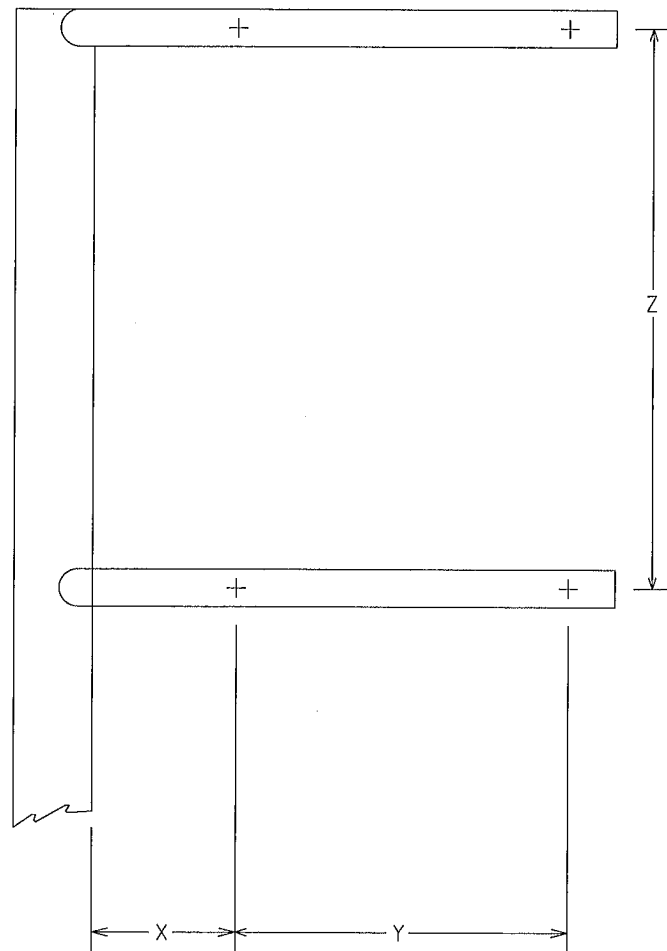
REVISED: 10-2-2013



NOTES;

1. DRILL AN 8" DIAMETER HOLE THE FULL DEPTH OF THE ANCHOR.
2. DRILL  $\frac{3}{8}$ " HOLES ON OPPOSITE SIDES OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR APPROX. 1" FROM THE BOTTOM OF THE ANCHOR. INSERT A  $\frac{5}{16}$ " STAINLESS STEEL BOLT THROUGH THE HOLES AND SECURE WITH A STAINLESS STEEL LOCK NUT WITH NYLON INSERT. THE PREPUNCHED GALVANIZED STEEL SQUARE TUBE RISER (TO BE INSERTED INSIDE THE UNPUNCHED GALVANIZED SQUARE TUBE ANCHOR) WILL REST ON BOLT.
3. INSERT THE ANCHOR IN THE HOLE.
4. AFTER INSTALLATION OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR, FILL THE HOLE WITH A CONCRETE MIX APPROVED BY THE ENGINEER AND LEVEL OFF THE TOP OF CONCRETE.

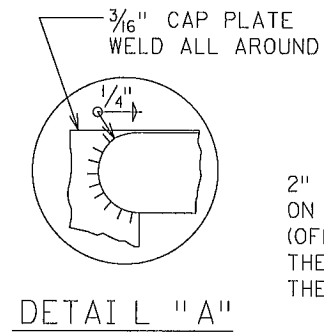
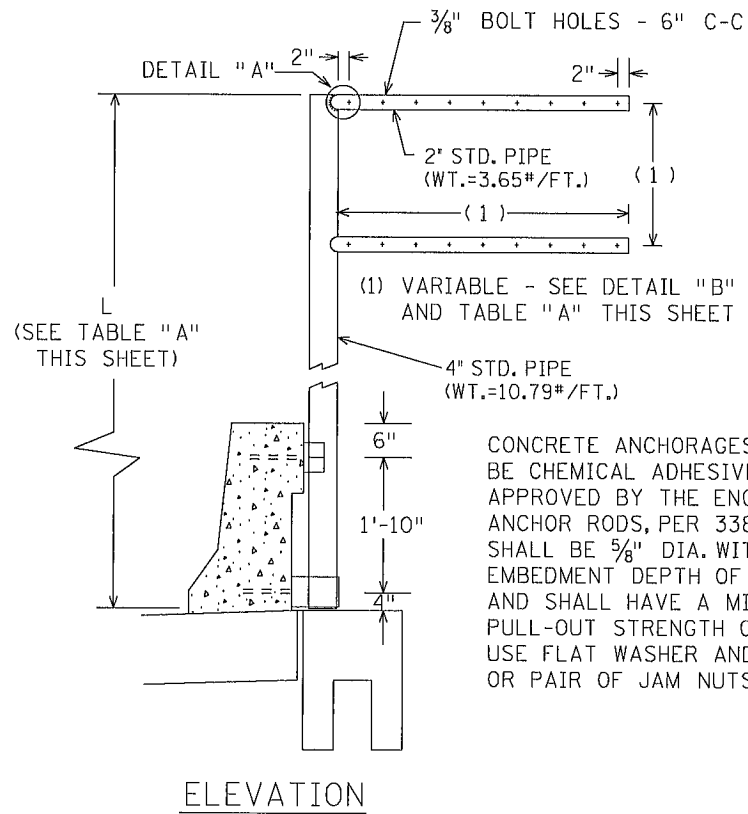
TYPE C SIGNS, DELINEATORS &  
MARKERS IN CONCRETE



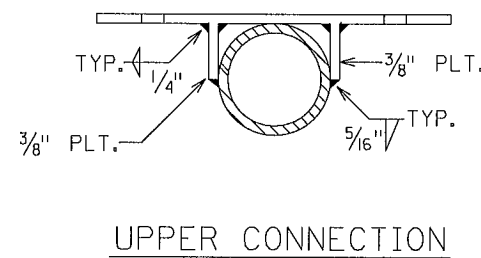
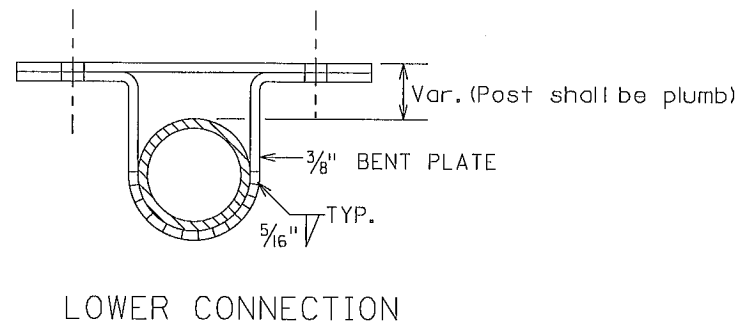
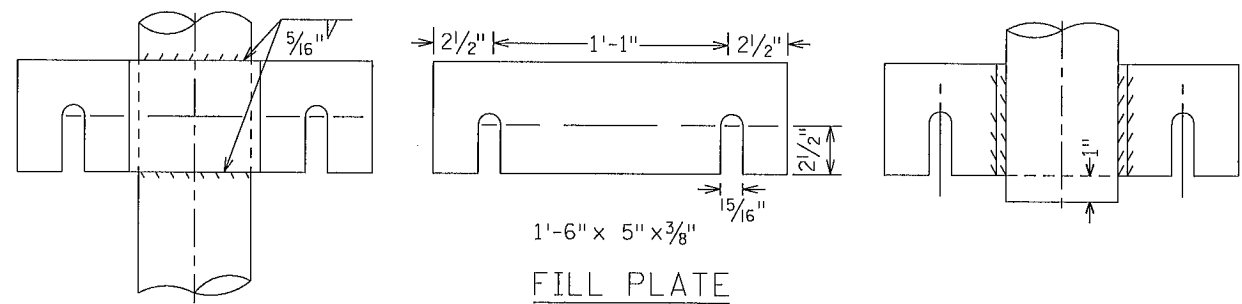
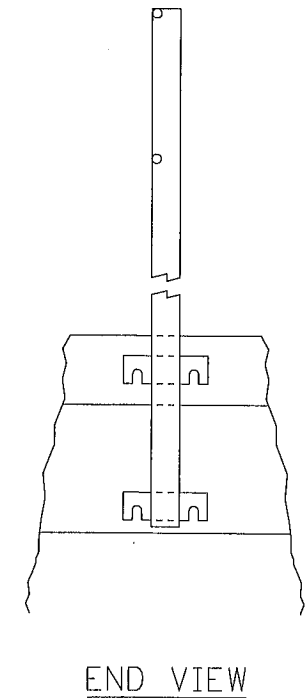
DETAIL "B"

SIGN NO.	X (IN.)	Y (IN.)	Z (IN.)	L (FT.)
C-7	14	18	60	12.5
C-47	8	30	30	10.0
D-4	14	96	42	11.5

TABLE "A"



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

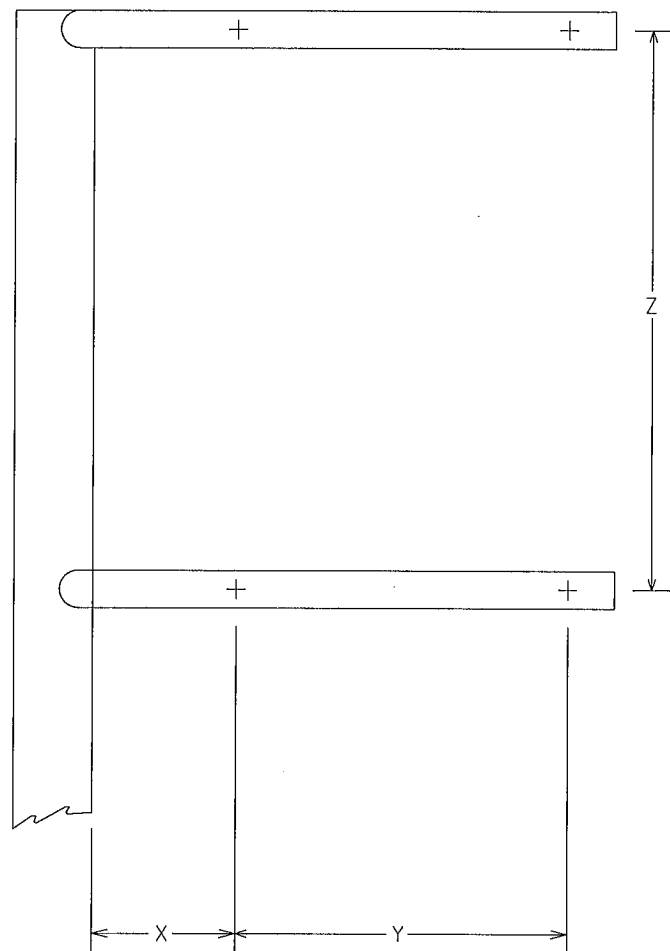


NOTES:

1. ALL PIPE MATERIAL SHALL CONFORM TO ASTM DESIGNATION A53, GRADE B, 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 SIGNS MOUNTED ON RAIL

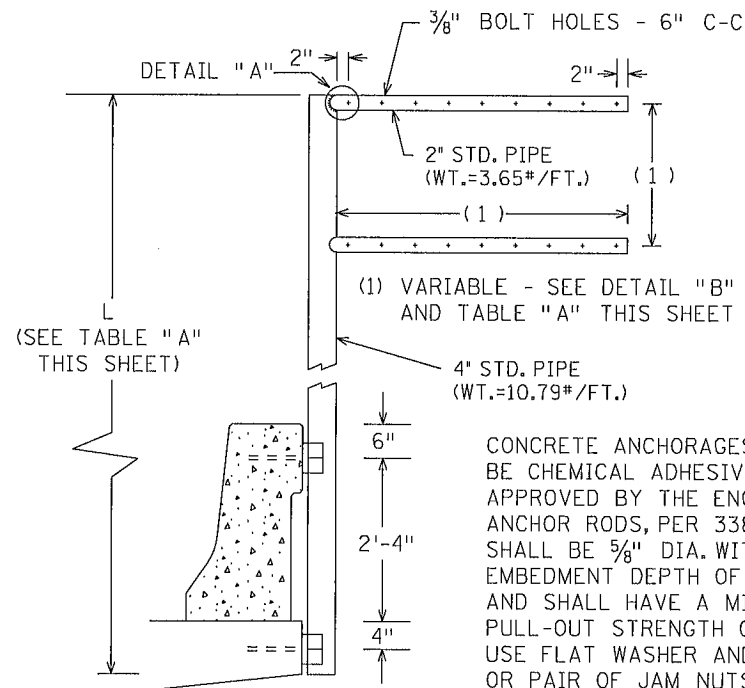
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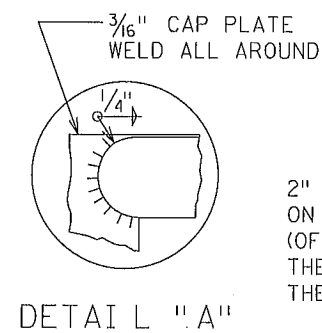
DETAIL "B"

SIGN NO.	X (IN.)	Y (IN.)	Z (IN.)	L (FT.)
C-46	8	30	30	10.0
D-3	14	96	42	11.5

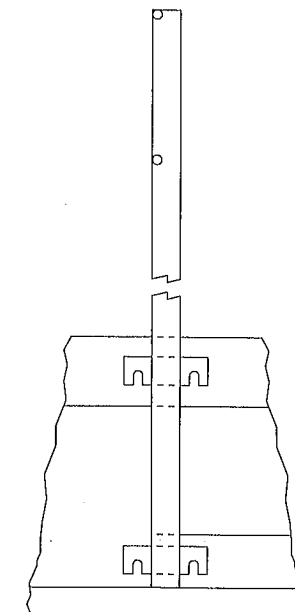
TABLE "A"



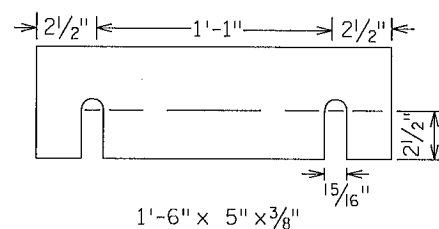
ELEVATION



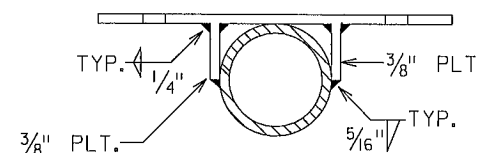
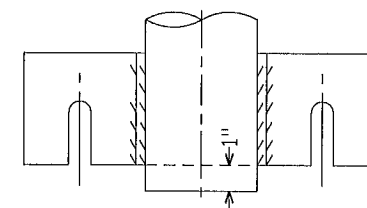
2" PIPE OFFSET ON 4" PIPE (OFFSET SHALL BE IN THE SAME DIRECTION AS THE SIGN IS FACING)



END VIEW



FILL PLATE



CONNECTION

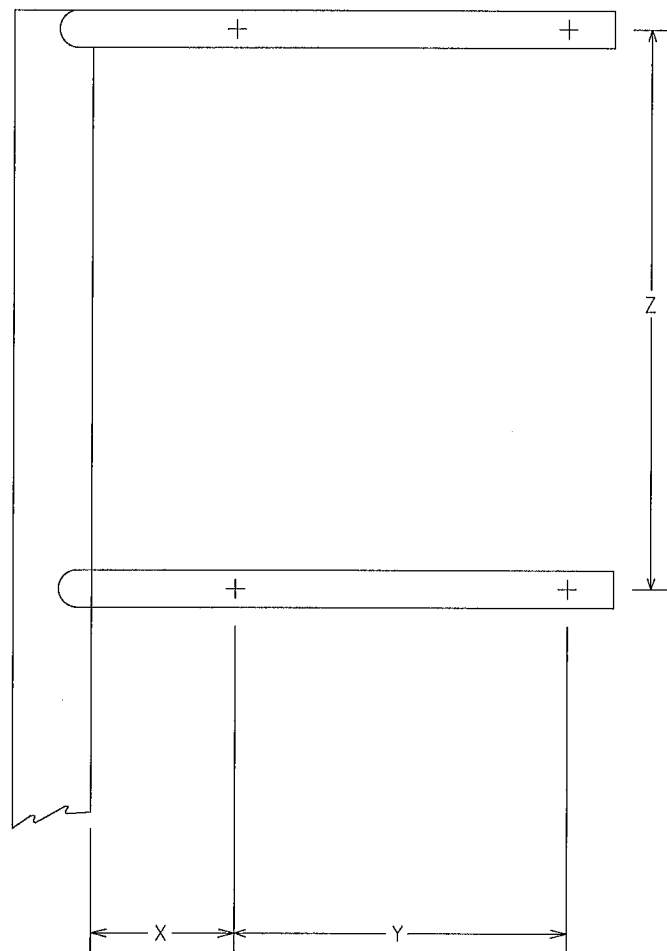
NOTES:

1. ALL PIPE MATERIAL SHALL CONFORM TO ASTM DESIGNATION A53, GRADE B, 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 SIGNS  
MOUNTED ON BRIDGE RAIL

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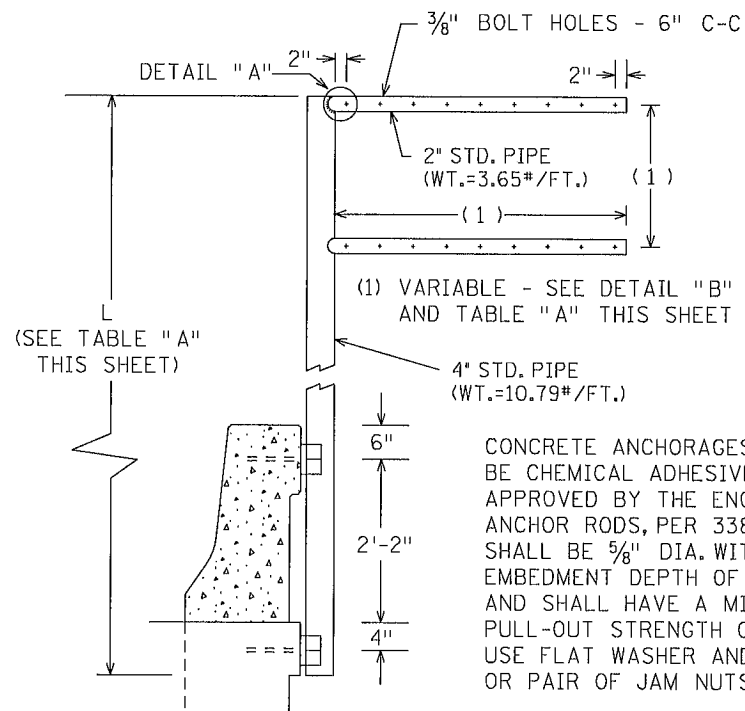




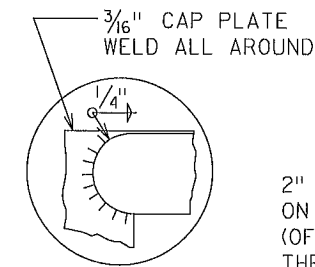
DETAIL "B"

SIGN NO.	X (IN.)	Y (IN.)	Z (IN.)	L (FT.)
C-55	8	30	30	10
C-56	14	30	18	9
C-57	8	12	18	9

TABLE "A"

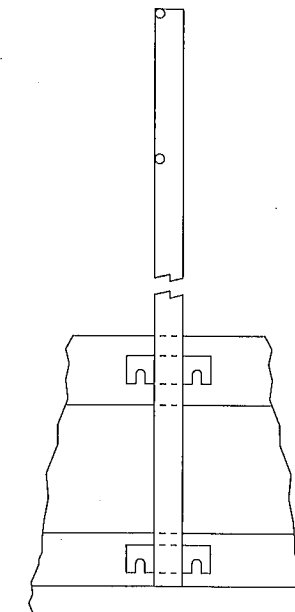


ELEVATION

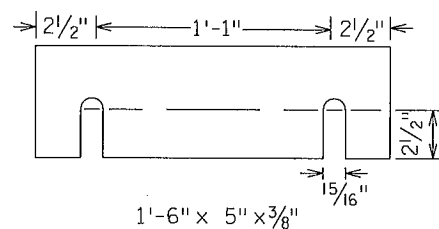


DETAIL "A"

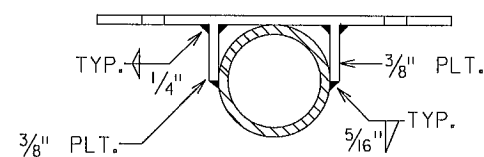
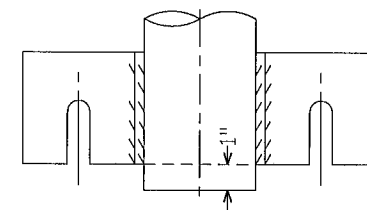
2" PIPE OFFSET ON 4" PIPE (OFFSET SHALL BE IN THE SAME DIRECTION AS THE SIGN IS FACING)



END VIEW



FILL PLATE

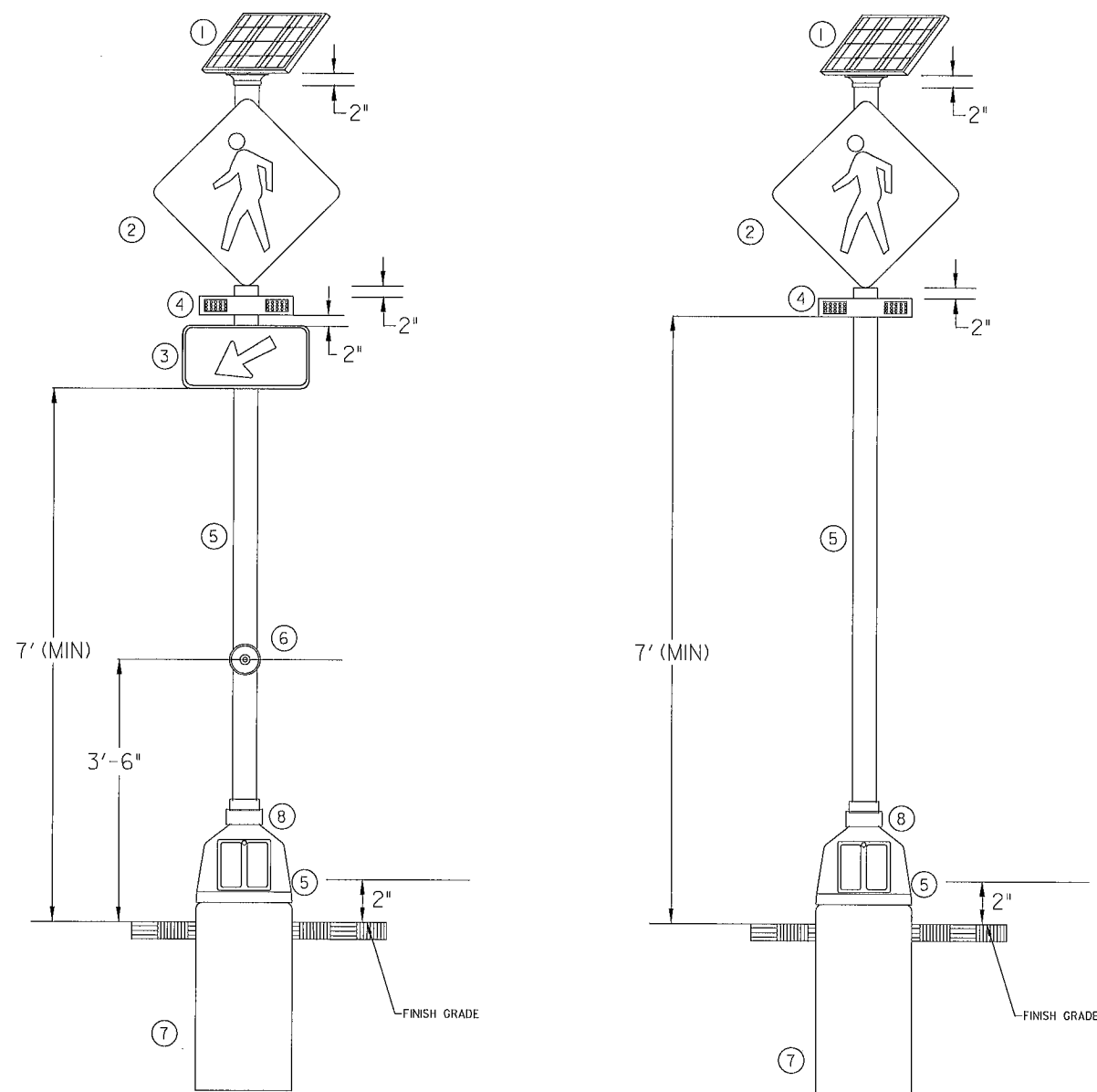


CONNECTION

NOTES:

1. ALL PIPE MATERIAL SHALL CONFORM TO ASTM DESIGNATION A53, GRADE B, 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 SIGNS  
MOUNTED ON WALL RAIL



## RECTANGULAR RAPID FLASHING BEACON

### SPECIFIC NOTES

- ① SOLAR PANEL MOUNTED AT 45°-60° SOLAR PANEL TO BE POSITIONED FACING SOUTH.
- ② WII-2 FLOURESCENT YELLOW-GREEN.
- ③ W16-7P (L) FLOURESCENT YELLOW-GREEN.
- ④ RECTANGULAR RAPID-FLASHING BEACON (RRFB).
- ⑤ SEE MNDOT STANDARD PLATE No. 8122F "PEDESTAL AND PEDESTAL BASE" FOR PEDESTAL DETAILS.
- ⑥ SOLID STATE PEDESTRIAN PUSHBUTTON.
- ⑦ SEE MNDOT STANDARD PLATE No. 8112G "PEDESTAL FOUNDATION" FOR PEDESTAL FOUNDATION DETAILS.
- ⑧ FURNISH AND INSTALL WIND COLLAR ASSEMBLY.

### GENERAL NOTES

1. ALL WIRING SHALL BE KEPT INSIDE POLE. POLE OPENINGS SHALL BE MADE WATER TIGHT USING APPROVED GASKETS, GROMMETS & SEALANT.
2. PEDESTRIAN PUSH BUTTON & SOLAR PANEL SHALL BE MOUNTED PER MANUFACTURER SPECIFICATION USING VANDAL PROOF HARDWARE.
3. PAID FOR UNDER ITEM "PEDESTRIAN CROSSWALK FLASHER SYSTEM".
4. SEE SPECIAL PROVISIONS FOR WIRELESS COMMUNICATION AND CABINET SPECIFICATIONS

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NO	DATE	BY	CHKD	APPR	REVISION

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 Electrical Engineer under the laws of the State of Minnesota.  
 Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

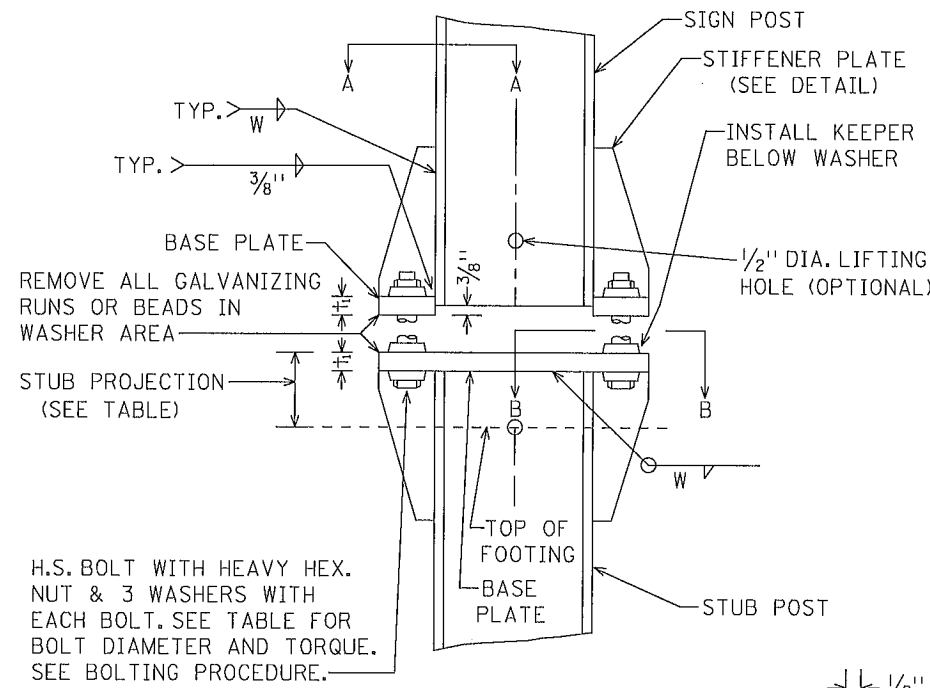
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 DESIGNED BY  
 H. TRAN  
 CHECKED BY  
 A. POTTER  
 COMM. NO. 0138259



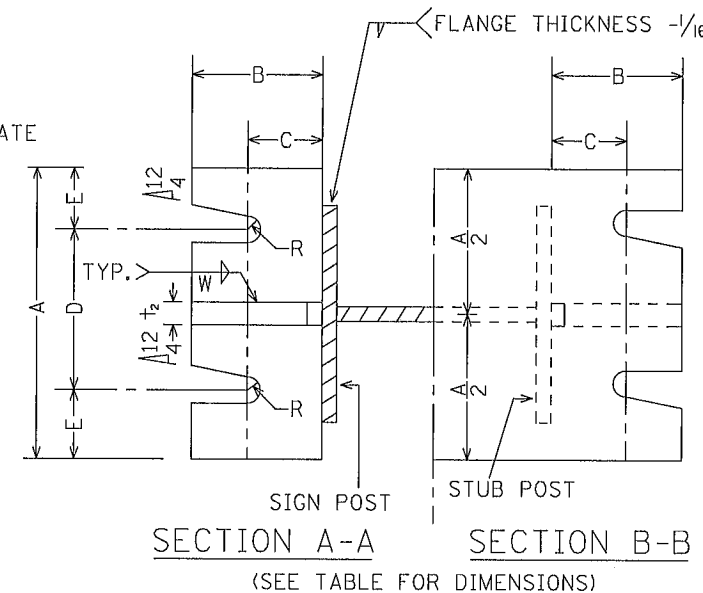
**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**  
 SIGNING PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 PEDESTRIAN CROSSWALK FLASHER SYSTEM DETAILS

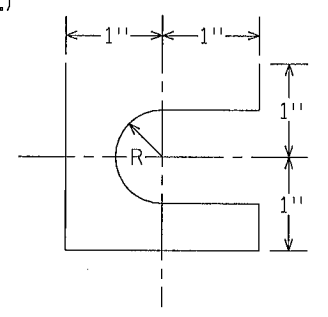
SHEET  
**373**  
 OF  
**586**



SIGN POST AND STUB POST ELEVATION



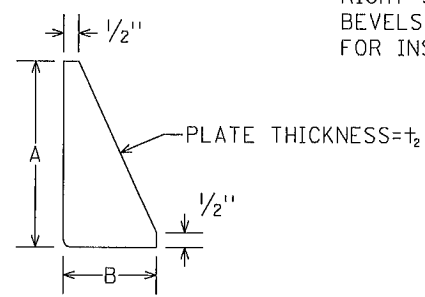
SECTIONS SHOWN ARE FOR INSTALLATIONS ON RIGHT SHOULDER AND IN GORE. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT SHOWN FOR INSTALLATIONS ON LEFT SHOULDER.



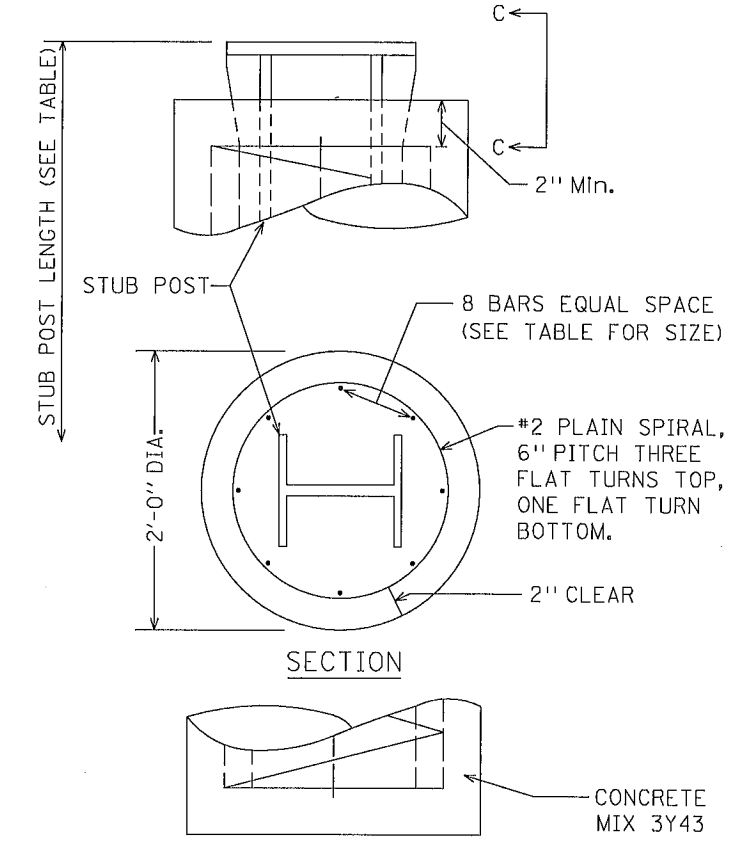
FURNISH TWO-.012"± THICK AND TWO-.032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M. B36.

**BOLTING PROCEDURE - BASE CONNECTION**

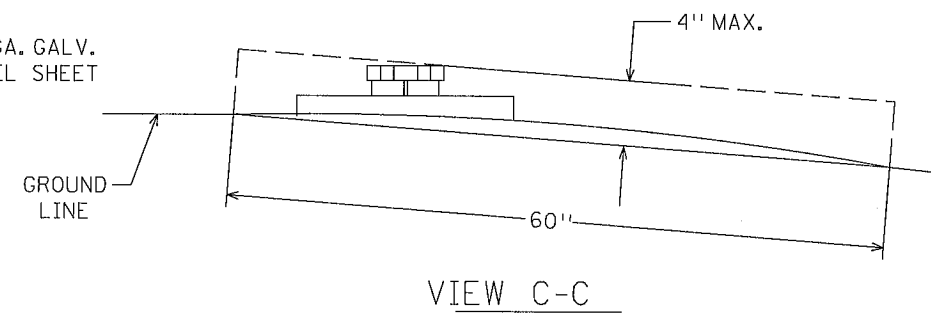
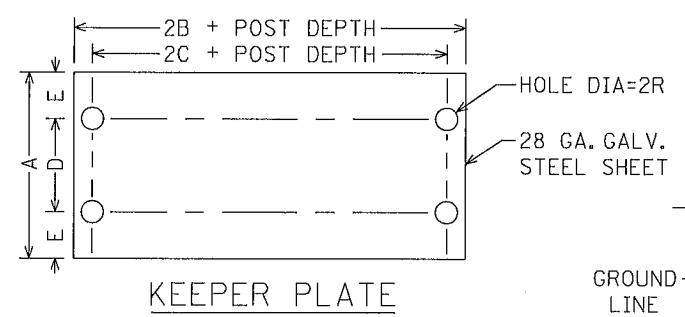
1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND WITH ONE OF THE FLAT WASHERS ON EACH BOLT BETWEEN PLATES.
2. SHIM AS REQUIRED TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.



MAXIMUM PROJECTION OF STUB POST AND FOOTING SHALL NOT EXTEND BEYOND A LINE, ABOVE AND 4" PARALLEL TO ANY CHORD, WHICH IS PERPENDICULAR TO (OR ALIGNED RADIALLY TO) THE CENTERLINE OF THE HIGHWAY AND HAS ITS (THE CHORD'S) END POINTS ON THE GROUND SURFACE ON OPPOSITE SIDES OF THE FOOTING. TOP OF FOOTING MAY BE SLOPED IF NECESSARY. IN FLAT LEVEL AREAS, TOP OF FOOTING SHOULD BE FLUSH WITH GROUND LINE.



- SPECIFIC NOTES:
- ① #11 (10 BARS EQUAL SPACE)
  - ② MEASURED FROM TOP OF BASE PLATE
  - ③ OLD BEAM DEPTH = 10". NEW REVISED BEAM DEPTH = 9-7/8". KEEPER PLATES MUST BE FABRICATED ACCORDINGLY



DIMENSION POST SIZE	BASE CONNECTION DATA BOLT SIZE AND TORQUE	BASE CONNECTION DATA										FUZE AND HINGE PLATE DATA										FOOTING DATA		
		A	B	C	D	E	t <sub>1</sub>	t <sub>2</sub>	W	R	G	H	J	K	L	M	d <sub>1</sub>	d <sub>2</sub>	t <sub>3</sub>	BOLT DIA.	BOLT LENGTH	STUB POST LENGTH ②	STUB POST PROJECTION	BAR SIZE
W4X13	3/4" DIA. x 3-1/2"	6"	2 1/2"	1 1/2"	3 1/2"	1 1/4"	1"	1/2"	1/4"	13/32"	2"	1 1/4"	4"	2 1/4"	7/8"	1"	1 1/16"	3/4"	3/8"	5/8"	2"	2'	2"	#5
W5X16	TORQUE=600" #	6"	2 1/2"	1 1/2"	3 1/2"	1 1/4"	1"	1/2"	1/4"	13/32"	2 1/2"	1 1/4"	5"	2 3/4"	1 1/8"	1 1/8"	1 3/16"	7/8"	3/8"	3/4"	2"	2'	2"	#6
W6X20	7/8" DIA. x 4-1/4"	8"	3"	1 3/4"	4"	2"	1 1/4"	1/2"	1/4"	15/32"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	1 3/8"	1 3/16"	1 1/8"	3/8"	3/4"	2"	2'	2 1/2"	#7
W8X24	TORQUE=800" #	8"	3"	1 3/4"	4"	2"	1 1/4"	1/2"	1/4"	15/32"	2 1/2"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	1 1/2"	1 5/16"	1 1/4"	1/2"	7/8"	2 1/2"	2'	2 1/2"	#9
W8X28	1" DIA. x 5" TORQUE=1000" #	8"	3"	2"	4"	2"	1 1/2"	3/4"	5/16"	17/32"	2 1/2"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	1 5/8"	1 1/16"	1 1/8"	1/2"	1"	2 1/2"	2'	3"	#10
W8X31	1-1/8" DIA. x 5"	9"	3 1/2"	2"	5"	2"	1 1/2"	3/4"	5/16"	19/32"	3"	1 3/4"	8"	5 1/2"	1 1/4"	2"	1 1/16"	1 1/2"	1 1/2"	1"	2 1/2"	2'	3"	#10
W10X39	TORQUE=1200" #	9"	3 1/2"	2"	5"	2"	1 1/2"	3/4"	5/16"	19/32"	3"	1 3/4"	8"	5 1/2"	1 1/4"	1 7/8"	1 3/16"	1 3/8"	1/2"	1 1/8"	2 3/4"	2'	3"	①

TYPE A SIGN STRUCTURAL DETAILS  
CONCRETE FOOTING  
SHEET 1 OF 2

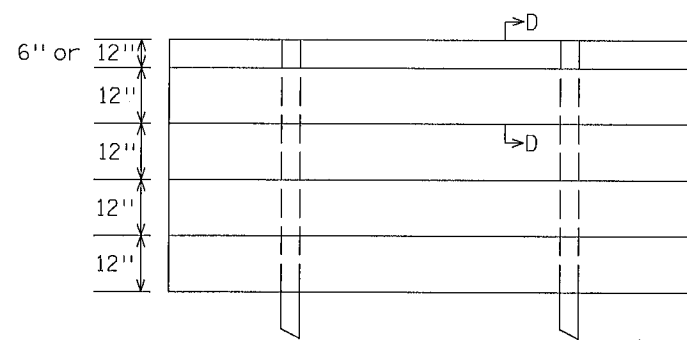
REVISED: 10-2-2013

SIGNING DETAIL FOR MNDOT ROADS

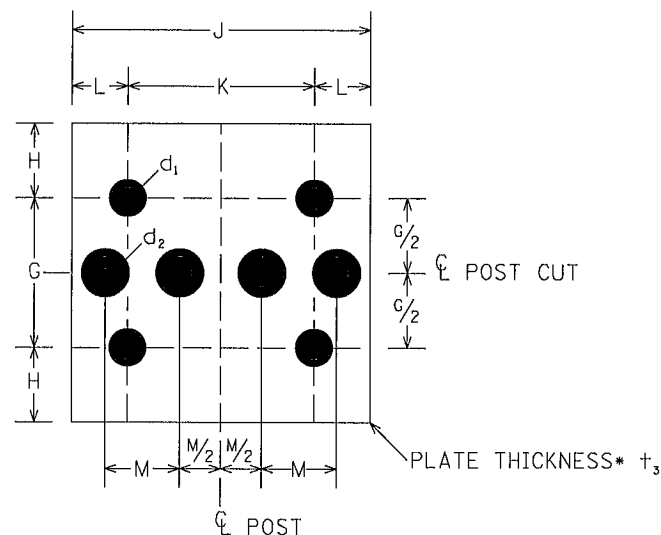
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SHEET NO. 374 OF 586 SHEETS

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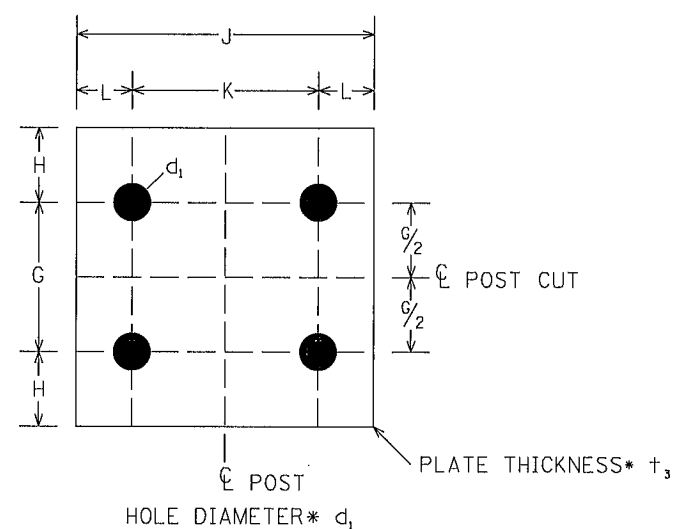


TYPICAL PANEL MOUNTING



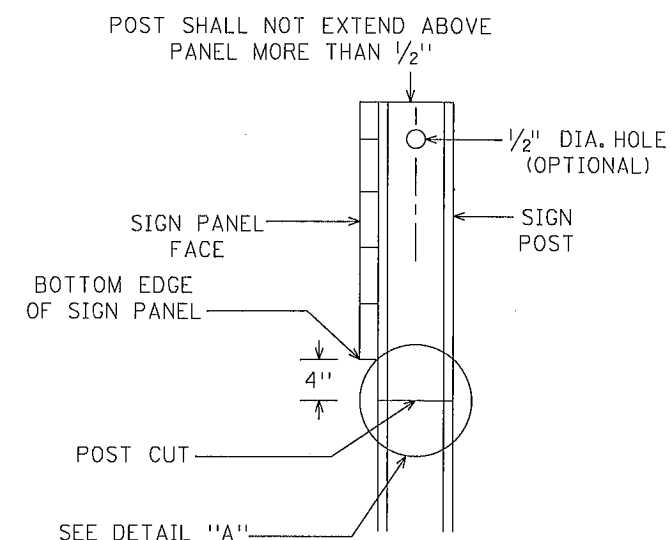
FRICITION FUSE PLATE DETAIL

(SEE TABLE ON SHEET 1 OF 2 FOR DIMENSIONS)

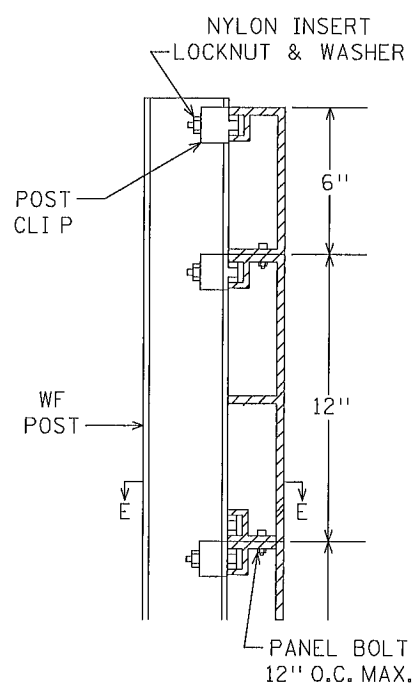


HINGE PLATE DETAIL

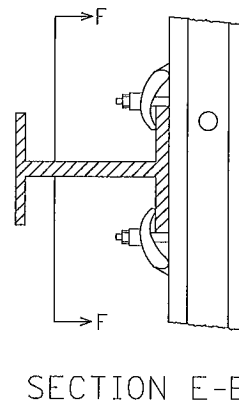
(SEE TABLE ON SHEET 1 OF 2 FOR DIMENSIONS)



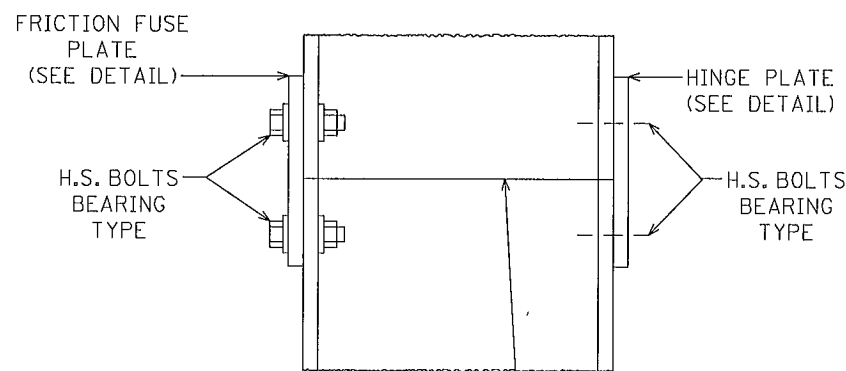
FRICITION FUSE SIDE VIEW



SECTION D-D



SECTION E-E



DETAIL 'A' FRICTION FUSE

POST SHALL BE SAW CUT BEFORE GALVANIZING. USE H.S. BOLTS WITH HEX. HD., HEX. NUT, AND TWO FLAT WASHERS.

CONTRACTOR NOTE: ALL FRICTION FUSE BOLTS SHALL BE TORQUE WRENCH TIGHTENED IN THE FIELD IN THE PRESENCE OF THE ENGINEER OR HIS REPRESENTATIVE. NUTS SHALL HAVE BEEN RETAPPED AND BOLT THREADS SHALL HAVE BEEN CLEANED WITH A 1/64" OVERSIZED RETHREADING DIE AFTER GALVANIZING. BEFORE TIGHTENING MAY BEGIN, THE TORQUE WRENCH SHALL BE CALIBRATED WITH A BOLT-TENSION-CALIBRATOR USING TYPICAL BOLT-NUT-WASHER ASSEMBLIES OF EACH SIZE AND LOT TO BE USED SO AS TO SHOW THE TORQUE NECESSARY TO OBTAIN THE FOLLOWING MINIMUM RESIDUAL TENSION IN EACH BOLT.

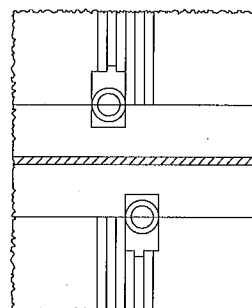
BOLT SIZE	MIN. RESIDUAL BOLT TENSION
1/2" DIA.	12,050#
5/8" DIA.	19,200#
3/4" DIA.	28,400#
7/8" DIA.	39,250#
1" DIA.	51,500#
1-1/8" DIA.	56,450#

GENERAL NOTES:

- STRUCTURAL STEEL SHALL CONFORM TO MNDOT 3308. REINFORCING BARS SHALL CONFORM TO MNDOT 3301. SPIRALS SHALL CONFORM TO MNDOT 3305-NO SPLICES. HIGH STRENGTH BOLTS SHALL CONFORM TO A.S.T.M.-A325.
- FORMS WILL BE REQUIRED FOR THE EXPOSED VERTICAL SURFACES OF THE FOOTINGS.
- REFER TO "SIGN DATA" SHEET FOR SPECIFIC DATA ON EACH INDIVIDUAL SIGN INSTALLATION.
- FRICTION FUSE PLATE SHALL BE INSTALLED ON SIDE OF POST FACING TRAFFIC.
- ALL POST CUTS SHALL BE SAW CUTS. PLATES MAY BE SHEARED OR FLAME CUT USING A MECHANICALLY GUIDED CUTTING TORCH. EDGE PREPARATION SHALL BE IN ACCORDANCE WITH MNDOT 2471.3.C.4 AND MNDOT 2471.3.D.4.

NOTE: POST CLIPS SHALL BE INSTALLED ON BOTH SIDES OF EACH POST AT EACH PANEL JOINT AS INDICATED.

SECTION F-F

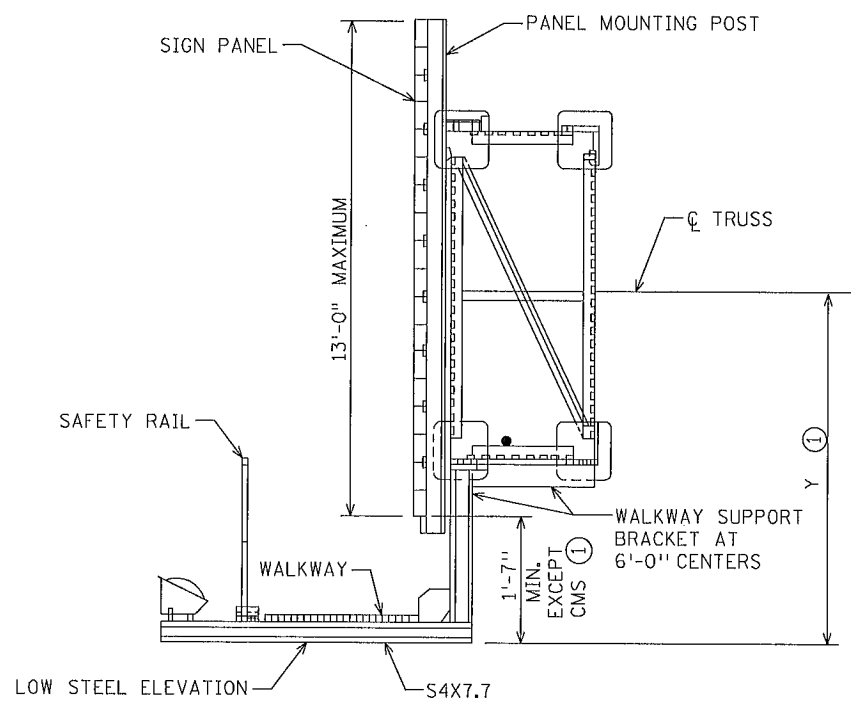
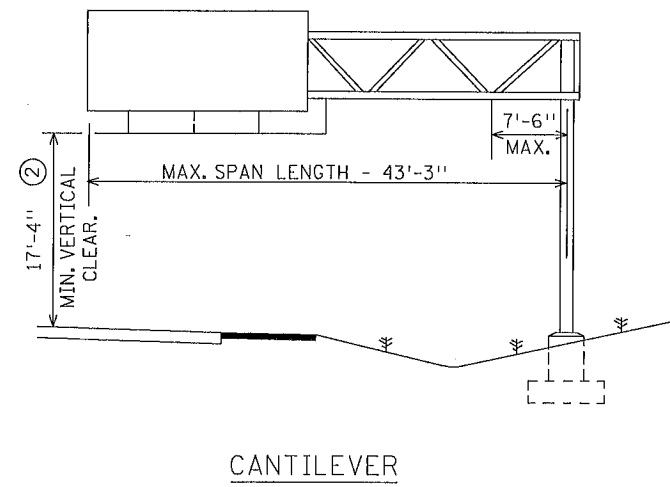
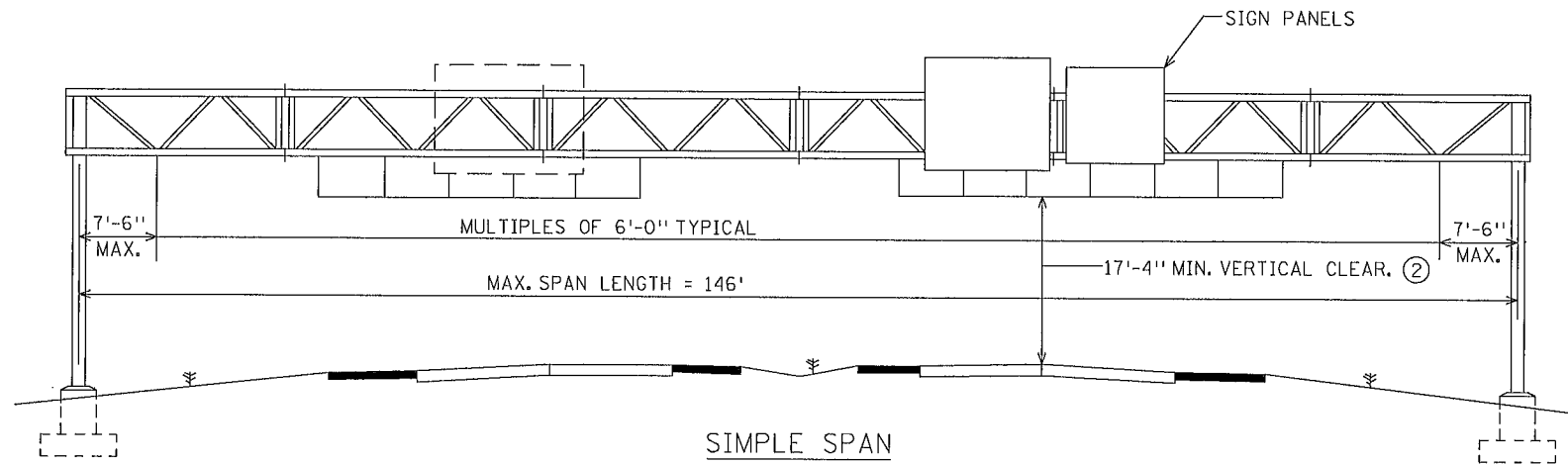


TYPE A SIGN STRUCTURAL DETAILS

SHEET 2 OF 2

REVISED: 10-2-2013

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- SPECIFIC NOTES:**
- ① DIMENSION Y IS CONSTANT AND BASED ON THE DEEPEST SIGN PANEL ABOVE THAT WALKWAY. WHEN STANDARD SIGN PANEL(S) AND CMS ARE MOUNTED ON THE SAME SPAN, DIMENSION Y SHALL BE GOVERNED BY THE CMS.
  - ② MINIMUM CLEARANCE WILL BE MEASURED FROM THE HIGHEST ELEVATION OF PAVEMENT, SHOULDERS, AND MOUNTABLE CURBS, OR IF INSURMOUNTABLE CURBS ARE USED, THE HIGHEST ELEVATION BETWEEN CURB LINES.

**GENERAL NOTES:**

**DESIGN SPECIFICATIONS:**  
 TRUSS, POST, & HARDWARE:  
 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS DATED 1999.

**LOADING:**  
 WIND LOAD 90 M.P.H. NORMAL TO SIGN FACE IN COMBINATION WITH OTHER LOADS OUTLINED IN THE DESIGN SPECIFICATIONS.

**UNIT STRESSES:**  
 CONCRETE----- F<sub>c</sub> = 1,600 PSI  
 REINFORCEMENT STEEL----- F<sub>s</sub> = 24,000 PSI  
 FOOTING SOIL PRESSURE----- 1-1/4 TONS PER SQ. FT.

**MATERIALS:**  
 STRUCTURAL STEEL (EXCEPT POST, TUBES)- MNDOT 3306  
 POST STEEL----- VARIES  
 HIGH STRENGTH BOLTS----- MNDOT 3391.2B  
 ANCHOR RODS----- MNDOT 3385  
 CASTINGS----- MNDOT 3322  
 REINFORCEMENT  
 BARS----- MNDOT 3301  
 SPIRAL----- MNDOT 3305 NO SPLICES  
 WALKWAY GRATING----- FEDERAL SPECIFICATIONS RR-G-661b, TYPE 1, STEEL  
 CONCRETE----- MNDOT 2461 (MIX 3Y43)

**FINISH:**  
 ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION EXCEPT REINFORCEMENT BARS, LOWER PORTION OF ANCHOR RODS, ALUMINUM, AND OTHER NON FERROUS INCIDENTALS. GALVANIZING SHALL CONFORM TO MNDOT 3392 OR MNDOT 3394 AS APPLICABLE. BEARING SURFACES MUST BE SMOOTH.

**FABRICATION:**  
 FABRICATION OF STRUCTURAL METALS SHALL BE IN ACCORDANCE WITH MNDOT 2471, MNDOT 2564 AND THE APPLICABLE SPECIAL PROVISIONS. ALL WELDING TO BE CONTINUOUS. ALL CONTACT SURFACES MUST BE COMPLETELY SEALED.

**INSPECTION:**  
 INSPECTION BEFORE AND AFTER GALVANIZING PER MNDOT 1511 AND MNDOT 2471.

**INDEX OF STANDARD SIGN DRAWINGS**

DRAWING	TITLE
ST-1	GENERAL ELEVATION AND NOTES
ST-2	CAMBER, POST IDENTIFICATION AND ESTIMATED QUANTITIES
ST-3	FOUNDATIONS AND ANCHOR RODS
ST-4	TRUSS/POST CONNECTION & BASEPLATE
ST-5	SIGN TRUSS DETAILS - TYPE A
ST-6	SIGN TRUSS DETAILS - TYPE B
ST-7	SIGN TRUSS DETAILS - TYPE C
ST-8	WALKWAY DETAILS
ST-9	FOLDING HANDRAIL
ST-10	SIGN PANEL AND PANEL MOUNTING POST DETAILS
ST-11	ELECTRICAL DETAILS
ST-12	ELECTRICAL DETAILS
ST-13	ELECTRICAL DETAILS (CMS SIGNS)

SIGN HEIGHT	Y ①	
6'-6"	4'-4"	CMS (NEW LED)
7'-0"	4'-7"	
7'-6"	4'-10"	
8'-0"	5'-1"	CMS (LED)
8'-6"	5'-4"	
9'-0"	5'-7"	CMS (DRUM)
9'-6"	5'-10"	
10'-0"	6'-1"	
10'-6"	6'-4"	
11'-0"	6'-7"	
11'-6"	6'-10"	
12'-0"	7'-1"	
12'-6"	7'-4"	
13'-0"	7'-7"	

STANDARD OVERHEAD SIGN SUPPORTS  
 INTERIM DESIGN B

GENERAL ELEVATIONS  
 AND NOTES

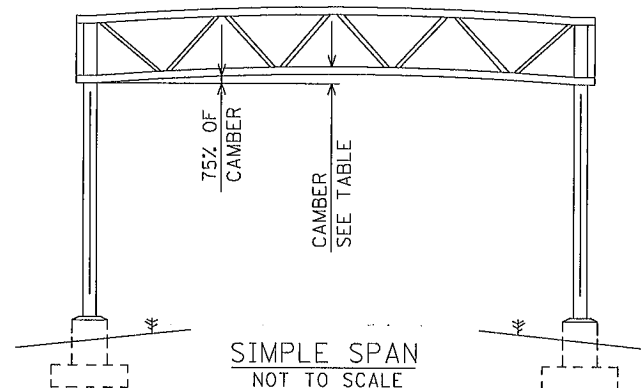
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**SIMPLE SPAN**

SIMPLE SPAN TRUSS CAMBER												
SPAN	40	50	60	70	80	90	100	110	120	130	140	150
CAMBER	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 5/8	1 3/4
DL DEFLECTION	0	1/16	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
RESIDUAL CAMBER	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 5/8	1 3/4

NOTE:  
CAMBER AND DEFLECTIONS SHOWN ARE AT @ SPAN.  
THE DEFLECTIONS AND CAMBER AT THE QUARTER  
POINTS SHALL BE APPROXIMATELY 75% OF THESE  
VALUES.



TRUSS QUANTITIES		
USE LENGTH FROM @ POST WHEN CALCULATING TOTAL WEIGHTS.		
TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE C
123 LBS./FT.	168 LBS./FT.	196 LBS./FT.

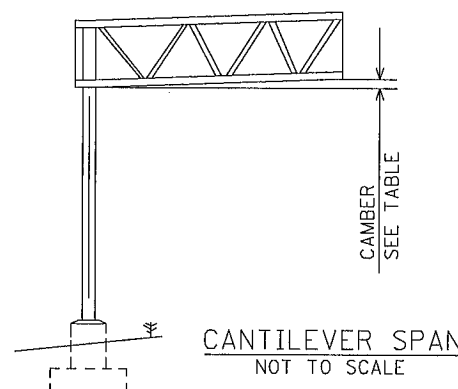
PANEL MOUNTING POST QUANTITIES INCLUDES MOUNTING ANGLES	
PANEL HEIGHT	WEIGHT/POST
6'-6"	70
7'-0"	74
7'-6"	78
8'-0"	82
8'-6"	86
9'-0"	90
9'-6"	93
10'-0"	97
10'-6"	101
11'-0"	105
11'-6"	160
12'-0"	166
12'-6"	172
13'-0"	178

**CANTILEVER SPAN**

CANTILEVER SPAN TRUSS CAMBER					
SPAN	15'	20'	30'	40'	45'
CAMBER	1/8	1/4	3/8	1/2	3/4
DL DEFLECTION	0	0	1/16	3/16	1/4
RESIDUAL CAMBER	1/8	1/4	3/8	1/2	3/4

NOTE:  
CAMBER AND DEFLECTIONS SHOWN ARE SHOWN AT  
END OF CANTILEVER.

WHEN ERECTING CANTILEVER TRUSSES, THE POSTS  
SHALL BE SET 1/8" PER FOOT OUT OF PLUMB TO  
COMPENSATE FOR THE BENDING OF THE POSTS.



WALKWAY SUPPORT QUANTITIES			
USE MAXIMUM PANEL HEIGHT ON SPAN TO CALCULATE QUANTITIES. WHEN CONVENTIONAL SIGN PANEL(S) AND CMS ARE MOUNTED ON THE SAME SPAN, QUANTITIES SHALL BE GOVERNED BY THE CMS.			
PANEL HEIGHT	TRUSS TYPE (WEIGHT/SUPPORT)		
	A	B	C
6'-6"	99	105	113
7'-0"	101	107	115
7'-6"	103	109	117
8'-0"	105	111	119
8'-6"	107	113	121
9'-0"	109	115	123
9'-6"	111	117	125
10'-0"	113	119	127
10'-6"	115	121	129
11'-0"	135	142	151
11'-6"	138	144	153
12'-0"	141	147	156
12'-6"	143	150	159
13'-0"	146	153	162

TABLE 1 - POST IDENTIFICATION					
POST IDENTIFICATION NUMBER	BASEPLATE DESIGN	PERMISSIBLE PIPE SECTIONS			
		MIN. YIELD=35 KSI		MIN. YIELD=42 KSI	
		OUTSIDE DIAMETER (INCH)	WALL THICKNESS (INCH)	OUTSIDE DIAMETER (INCH)	WALL THICKNESS (INCH)
1	A	N.A.	N.A.	18	0.250
2	A	18	0.375	18	0.312
3	A	18	0.500	18	0.375
4	A	18	0.562	18	0.500
5	B	18	0.938	18	0.750
6	B	20	0.594	20	0.500
7	B	N.A.	N.A.	20	0.812

WALL THICKNESS IS MINIMUM, THINNER WALLS WILL NOT BE APPROVED

**POST IDENTIFICATION NOTES:**

POST MATERIAL SHALL CONFORM TO ONE OF THE FOLLOWING SPECIFICATIONS:  
ASTM A709, GRADE 36  
ASTM A53, GRADE B  
API 5L, GRADES B, X42, X46, X52, X56, X60, X65

CONTRACTOR SHALL DEMONSTRATE THAT THE POST MATERIAL MEETS THE REQUIREMENTS  
OF ONE OF THE ABOVE CITED SPECIFICATIONS AND THE MINIMUM YIELD STRENGTH.

NO SPLICES OF ANY KIND WILL BE PERMITTED IN POSTS INTENDED FOR USE IN CANTILEVER  
TYPE STRUCTURES (BRIDGE TYPE BC).

ONE OF TWO POSTS FOR SIMPLE SPAN STRUCTURES (BRIDGE TYPE S) MAY INCORPORATE ONE  
WELDED CIRCUMFERENTIAL BUTT SPLICE CONFORMING TO AWS D1.1 DETAIL B-U2 IN THE  
UPPER 1/3 OF ITS LENGTH. BACK UP RINGS FOR THESE WELDED SPLICES SHALL BE  
COMMERCIAL PRODUCTS. BUTT WELDS REQUIRE RADIOGRAPHIC INSPECTION (MNDOT 2471.3).

ALL RADIOGRAPHIC INSPECTIONS AND MAGNETIC PARTICLE TESTING REPORTS AND  
RADIOGRAPHIC FILMS SHALL BECOME THE PROPERTY OF THE DEPARTMENT.

SEE DRAWING ST-4 FOR BASEPLATE DETAILS.

FOR FOUNDATION QUANTITIES SEE DRAWING ST-3

**WALKWAY WEIGHTS:**

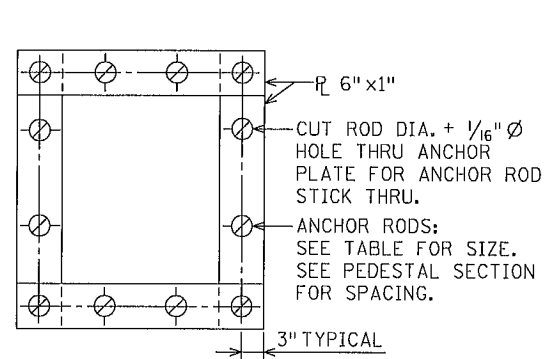
- USE 3'-4 3/4" WIDE GRATING @ 44 LBS/FT.
- WEIGHT INCLUDES HANDRAIL (12 LBS/FT.) AND FIXTURE MOUNTING CHANNELS (4 LBS/FT.).

POST QUANTITIES					
QUANTITIES INCLUDE ANCHORAGE ASSEMBLY AND TRUSS CONNECTION PLATES. PAY LENGTH OF POSTS IS FROM THE BOTTOM OF THE BASE PLATE (ELEV. A) TO THE TOP OF THE TRUSS. POST QUANTITIES ARE BASED ON GRADE 42 STEEL. NO ADJUSTMENTS WILL BE MADE IN THE QUANTITIES FOR THE USE OF GRADE 35 STEEL POSTS.					
POST TYPE	CANTILEVER		SIMPLE SPAN		
	TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE A	TRUSS TYPE B	TRUSS TYPE C
1	1880+47 LBS/FT	1910+47 LBS/FT	1870+47 LBS/FT	1890+47 LBS/FT	1915+47 LBS/FT
2	1880+59 LBS/FT	1910+59 LBS/FT	1870+59 LBS/FT	1890+59 LBS/FT	1915+59 LBS/FT
3	1880+71 LBS/FT	1910+71 LBS/FT	1870+71 LBS/FT	1890+71 LBS/FT	1915+71 LBS/FT
4	1880+94 LBS/FT	1910+94 LBS/FT	1870+94 LBS/FT	1890+94 LBS/FT	1915+94 LBS/FT
5	2470+138 LBS/FT	2500+138 LBS/FT	2460+138 LBS/FT	2480+138 LBS/FT	2505+138 LBS/FT
6	N/A	2500+104 LBS/FT	N/A	2545+104 LBS/FT	2570+104 LBS/FT
7	N/A	2500+167 LBS/FT	N/A	2545+167 LBS/FT	2570+167 LBS/FT

STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

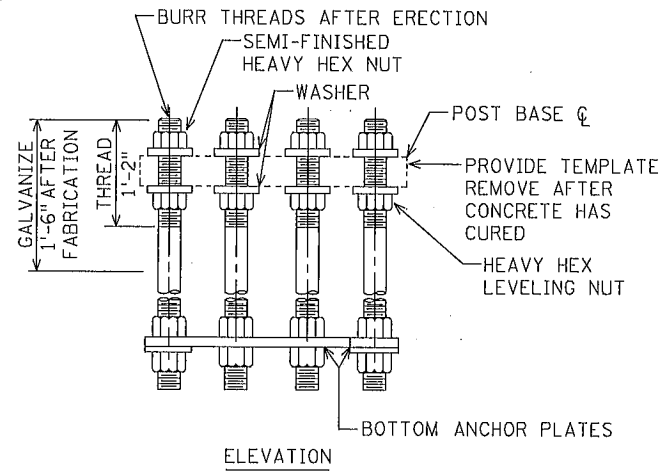
CAMBER, POST IDENTIFICATION  
AND ESTIMATED QUANTITIES

DRAWING ST-2

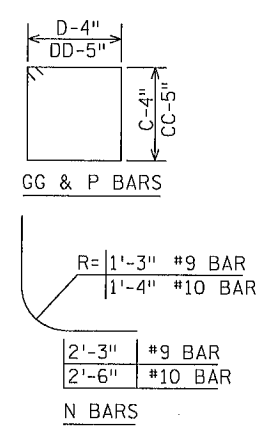


NOTE: ANCHOR PLATES SHOWN TYPICAL FOR ALL ANCHOR ROD SPACING.

ANCHOR PLATE PLAN

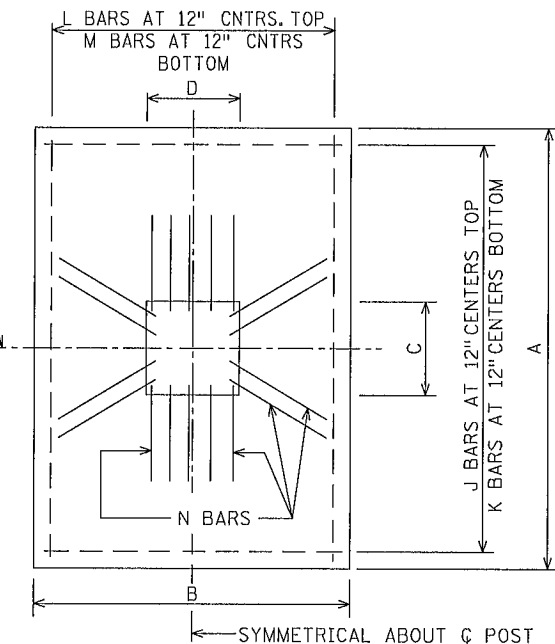


ANCHOR ROD DETAILS



J, K, L, M, FF AND HH ARE STRAIGHT BARS  
BAR BENDING DIAGRAMS

SYMMETRICAL ABOUT  $\bar{C}$  SIGN TRUSS



PLAN

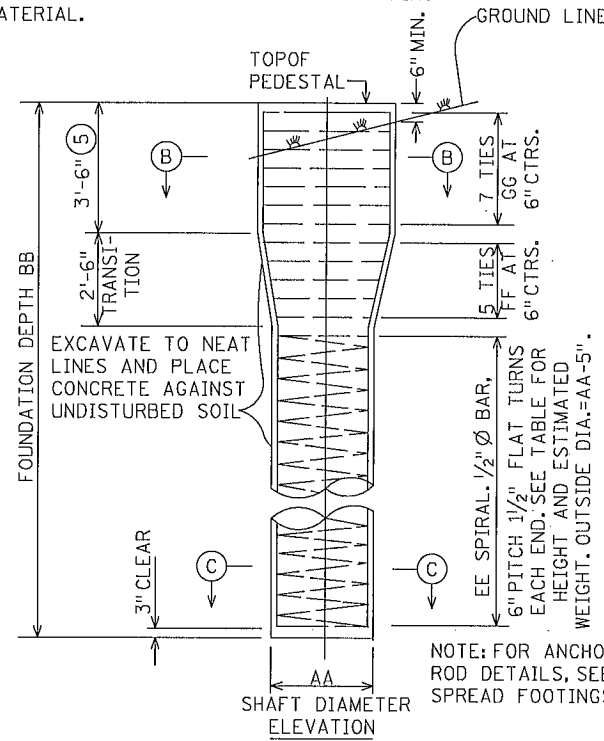
**SPECIFIC NOTES:**

- G IS IN FEET. ROUND UP TO WHOLE NUMBER. E.G. G=4.10/2G=8.2 NO. REQ'D=9.
- G AND R ARE IN FEET.
- BEND AS REQUIRED TO FORM A CLOSED LOOP.
- FOR STRUCTURE STEEL SEE SPREAD FOOTING.
- MUST BE FORMED A MIN. OF 6" BELOW THE GROUND SURFACE. THE SOIL EXCAVATED FOR FORMING SHALL BE BACKFILLED AND TAMPED TO EQUIVALENT COMPACTION AS SURROUNDING MATERIAL.
- SPECIAL LARGE RADIUS BENDS ARE REQUIRED. SEE "BAR BENDING DIAGRAMS" FOR SIZES OF RADII.

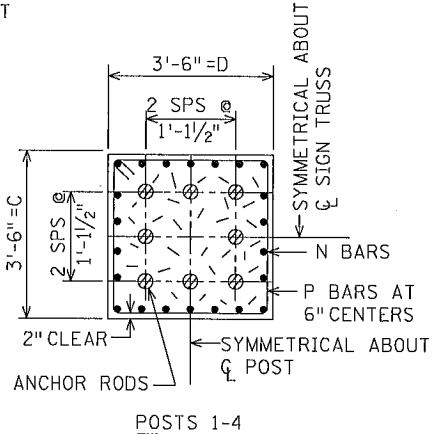
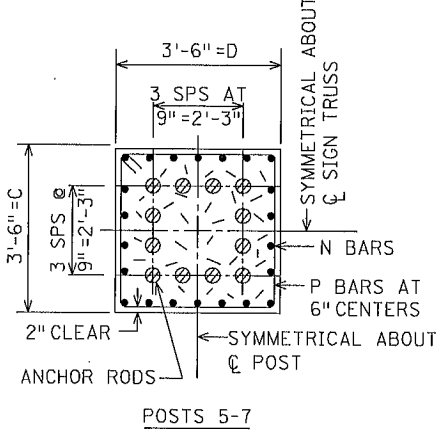
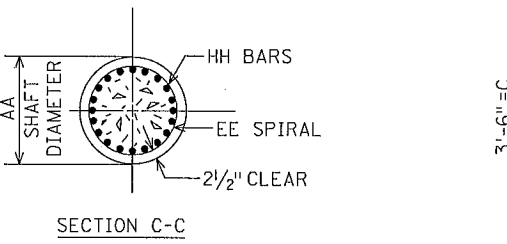
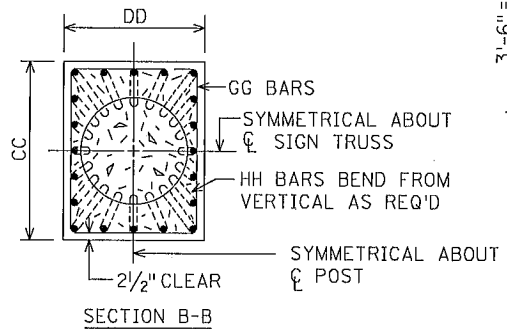
**GENERAL NOTES:**

- SEE THE FORMAT SHEET FOR FOOTING LOCATIONS, POST DESIGNATIONS, TOP OF PEDESTAL ELEVATIONS AND BOTTOM OF FOOTING ELEVATIONS.
- ALL CONCRETE SHALL CONFORM TO CONCRETE MIX 3Y43 (MNDOT 2461).
- ALL BAR DIMENSIONS ARE OUT TO OUT OF BARS.
- ALL SPREAD FOOTINGS HAVE AN ALLOWABLE DESIGN BEARING PRESSURE OF 1 1/4 T PER SQUARE FOOT.
- DRILLED SHAFTS SHALL BE USED ONLY WHEN SPECIFIED IN THE CONTRACT PLANS.
- THE DRILLED SHAFTS HAVE AN ALLOWABLE DESIGN LATERAL BEARING PRESSURE OF 250 LBS. PER SQ. FT. PER FOOT OF DEPTH.
- UNLESS OTHERWISE NOTED, ALL REINFORCEMENT BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH MNDOT3301. SPIRAL BARS AND J, K, L, & M BARS NEED NOT BE EPOXY COATED.
- THE FOLLOWING TORQUE VALUES SHALL BE USED WHEN INSTALLING ALL ANCHOR NUTS FOR OVERHEAD SIGN STRUCTURES:  
ANCHOR  
BOLT DIAMETER TORQUE (FT./LBS.)  
2 1/4" 375  
2 1/2" 450  
THE CONTRACTOR SHALL BURR THE THREADS OF THE ANCHOR BOLTS IN ACCORDANCE WITH MNDOT 2402.3H AFTER TORQUING NUTS.

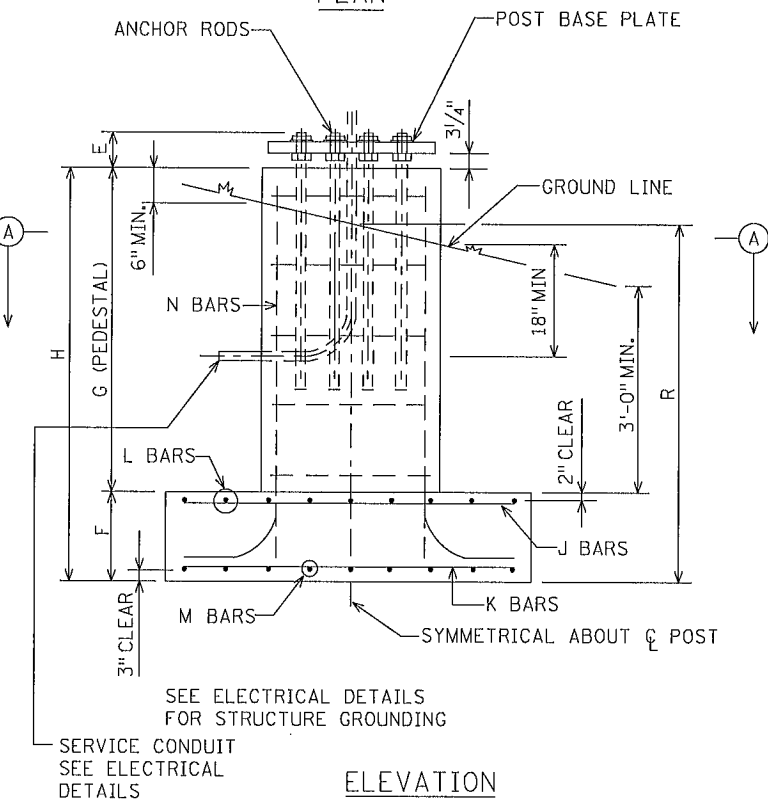
NOTE (5): MUST BE FORMED A MINIMUM OF 6" BELOW THE GROUND SURFACE. THE EXCAVATED AREA FOR FORMING SHALL BE BACKFILLED AND TAMPED WITH EQUIVALENT TO SURROUNDING MATERIAL.



DRILLED SHAFT



PEDESTAL CROSS SECTIONS A-A



POST NO.	DIMENSIONS				REINFORCING BARS			ESTIMATED QUANTITIES (4)		
	AA	BB	CC	DD	EE	FF (3)	GG	HH	CONCRETE CY	REIN. STEEL LBS.
1-4	3'-0" Ø	23'-0"	3'-6"	3'-6"	16'-6" x 197 LBS.	5 #5x 14'-1"	7 #5x 14'-1"	20 #9x 22'-7"	6.9	1910
5-7	4'-0" Ø	29'-0"	4'-0"	4'-0"	22'-6" x 362 LBS.	5 #5x 16'-1"	7 #5x 16'-1"	24 #10x 28'-7"	14.1	3490

POST NO.	DIMENSIONS				REINFORCING BARS				ESTIMATED QUANTITIES (4)			
	AA	BB	CC	DD	EE	FF (3)	GG	HH	CONCRETE CY	REIN. STEEL LBS.	ANCH. ASSM. LBS	ST. EXC. C.Y. (2)
1-4	3'-0" Ø	23'-0"	3'-6"	3'-6"	16'-6" x 197 LBS.	5 #5x 14'-1"	7 #5x 14'-1"	20 #9x 22'-7"	6.9	1910	781	7.4 R
5-7	4'-0" Ø	29'-0"	4'-0"	4'-0"	22'-6" x 362 LBS.	5 #5x 16'-1"	7 #5x 16'-1"	24 #10x 28'-7"	14.1	3490	1320	12.1 R

POST NO.	DIMENSIONS						REINFORCING BARS																				
	A	B	C	D	E	F	ANCHOR RODS		J REIN. BARS			K REIN. BARS			L REIN. BARS			M REIN. BARS			(6) N REIN. BARS		P REIN. BARS (1)				
							NO. REQ'D	DIA.	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH	NO. REQ'D	SIZE	LENGTH
1-4	14'-0"	9'-0"	3'-6"	3'-6"	8 1/2"	2'-0"	8	2 1/4"	3'-10 1/2"	14	#4	8'-6"	14	#6	8'-6"	10	#5	13'-6"	10	#7	13'-6"	20	#9	H + 2'-6"	2G	#5	14'-3"
5-7	18'-0"	12'-6"	3'-6"	3'-6"	9"	2'-0"	12	2 1/2"	4'-0"	19	#4	12'-0"	19	#6	12'-0"	13	#6	17'-6"	13	#10	17'-6"	24	#10	H + 2'-9"	2G	#5	14'-3"

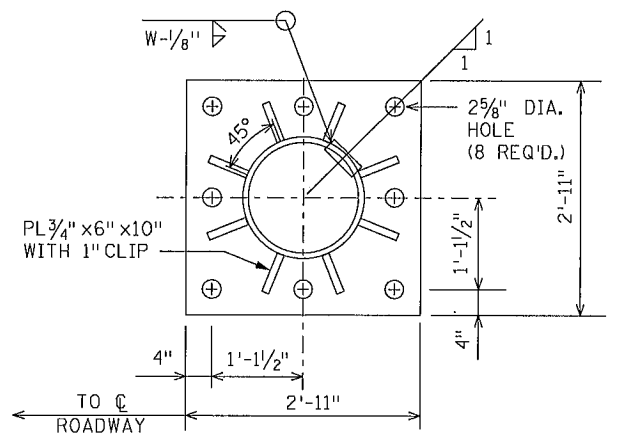
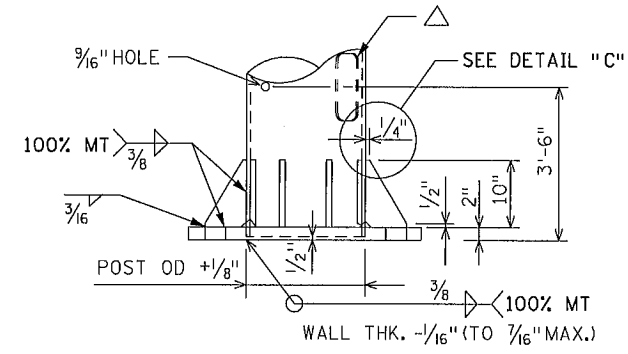
STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

FOUNDATIONS AND  
ANCHOR RODS

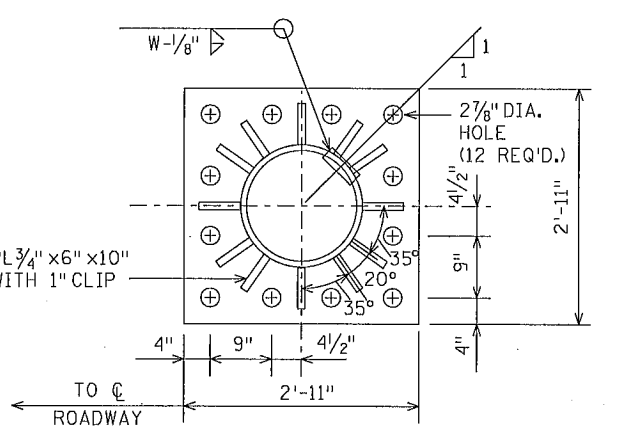
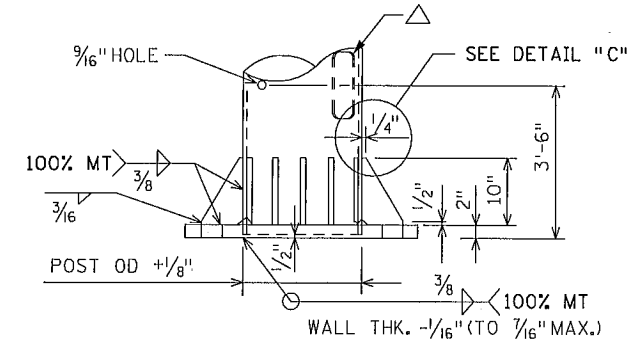
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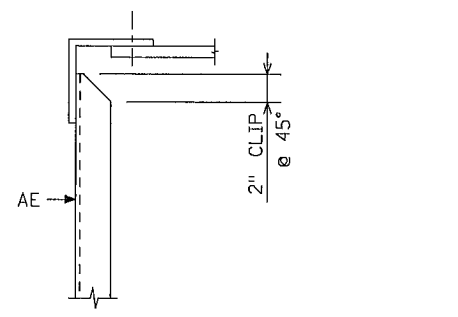




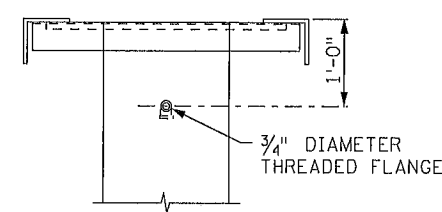
PLAN & ELEVATION - BASEPLATE TYPE A  
POST NO. 1 THRU 4



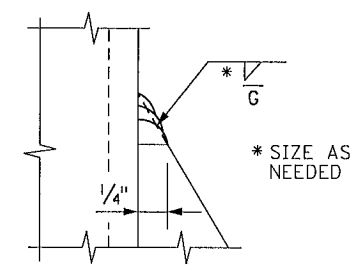
PLAN & ELEVATION - BASEPLATE TYPE B  
POST NO. 5 THRU 7



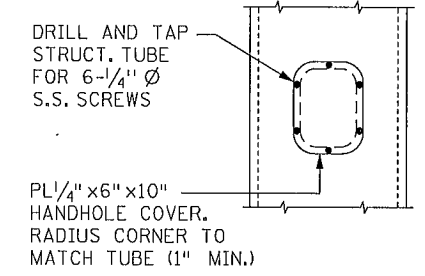
VIEW A-A



VIEW B-B  
(TYPE 'E' POSTS)

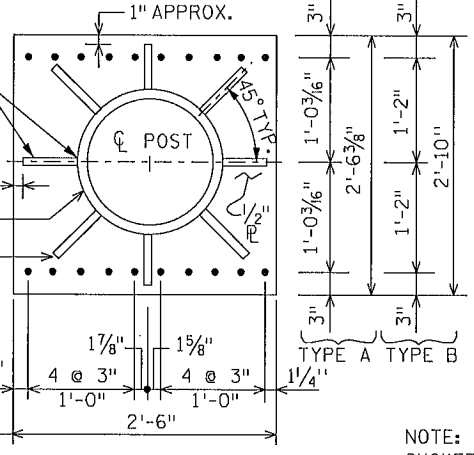
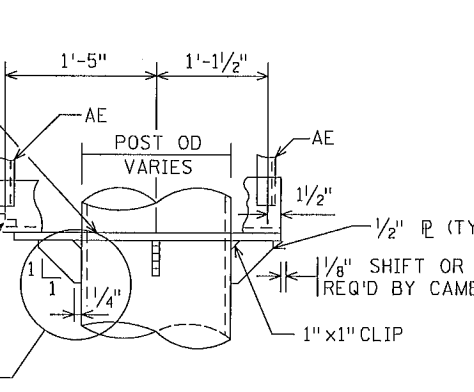
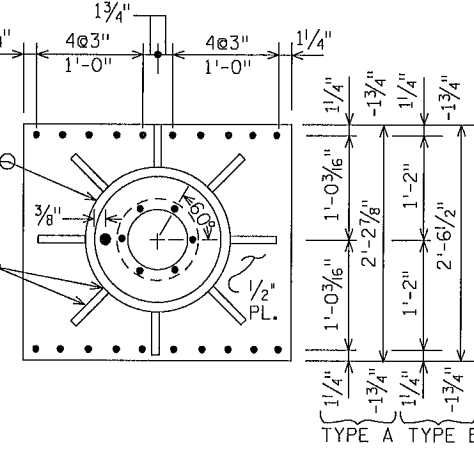
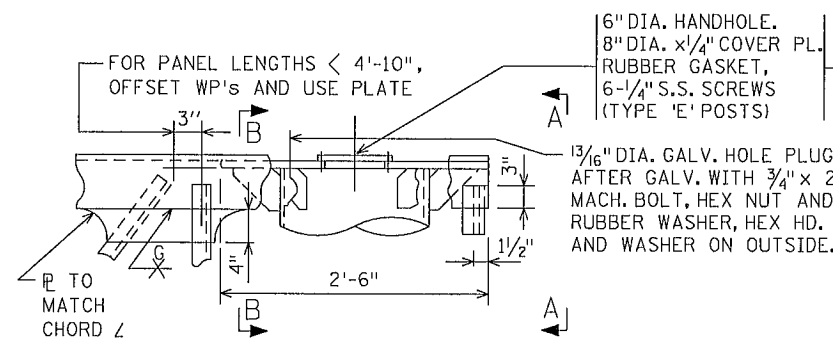


DETAIL "C"

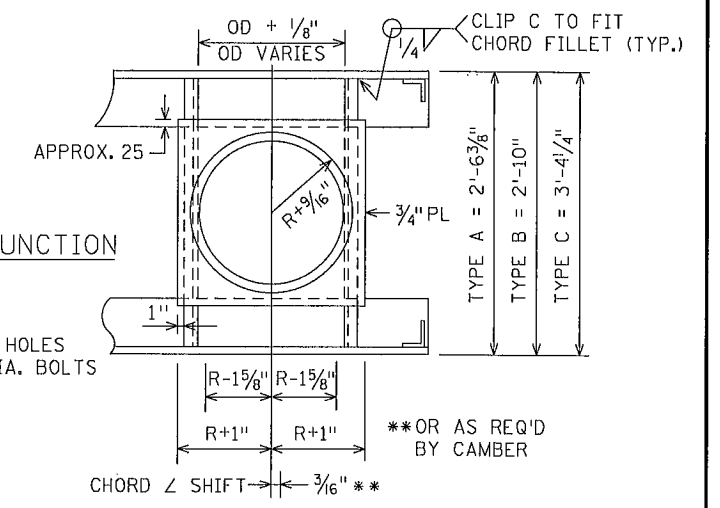
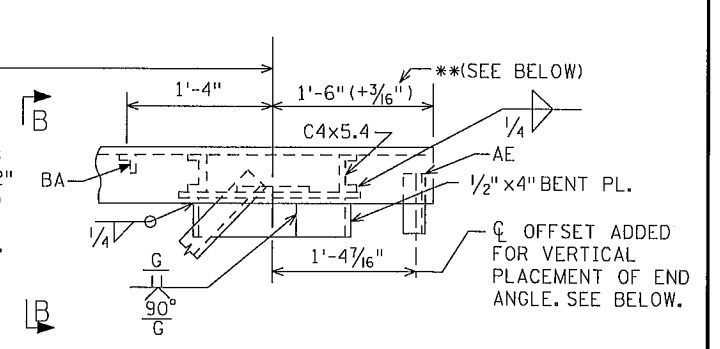


HANDHOLE & COVER PLATE DETAIL  
(TYPE 'E' POSTS)

△ = FOR TYPE 'E' POST ONLY: LOCATE 45° AWAY FROM TRAFFIC. 10" x 6" x 1/2" x 0'-2" STRUCTURAL TUBE OR EQUAL W/1/4" RUBBER GASKET.

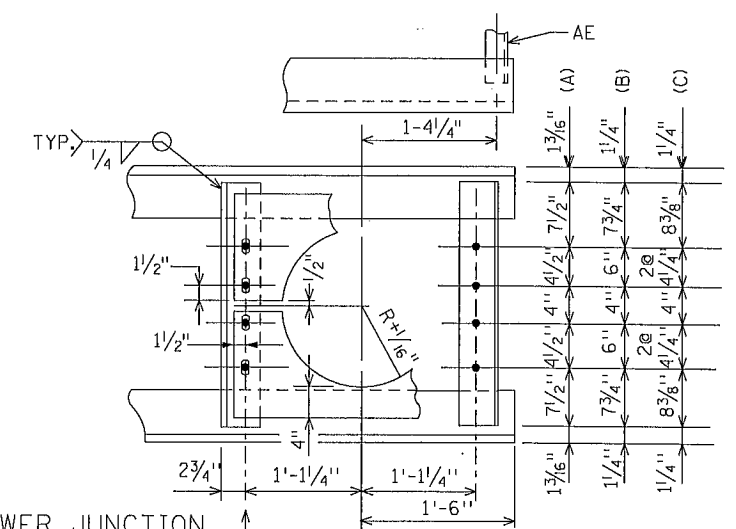
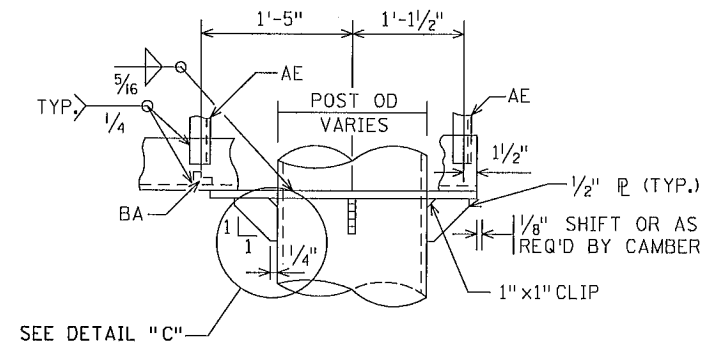


CANTILEVER TRUSS



UPPER JUNCTION

TYPE A = 2'-6 3/8"  
TYPE B = 2'-10"  
TYPE C = 3'-4 1/4"  
CHORD Δ SHIFT = 3/16" \*\*



LOWER JUNCTION

SIMPLE TRUSS

NOTE: CHOKER PLATES AND HANDHOLE COVERS SHALL BE GALVANIZED SEPARATELY.

STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B
TRUSS/POST CONNECTION & BASEPLATES
DRAWING ST-4

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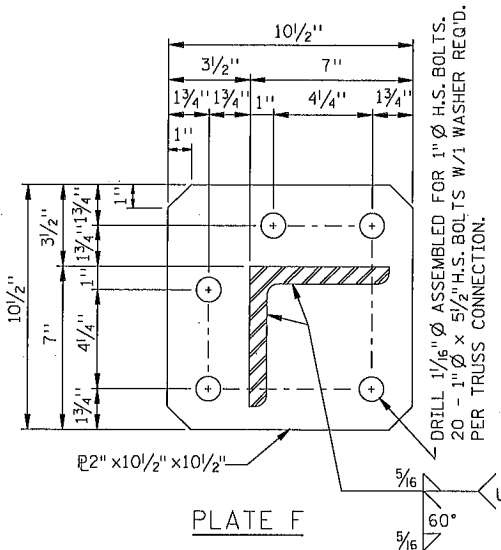
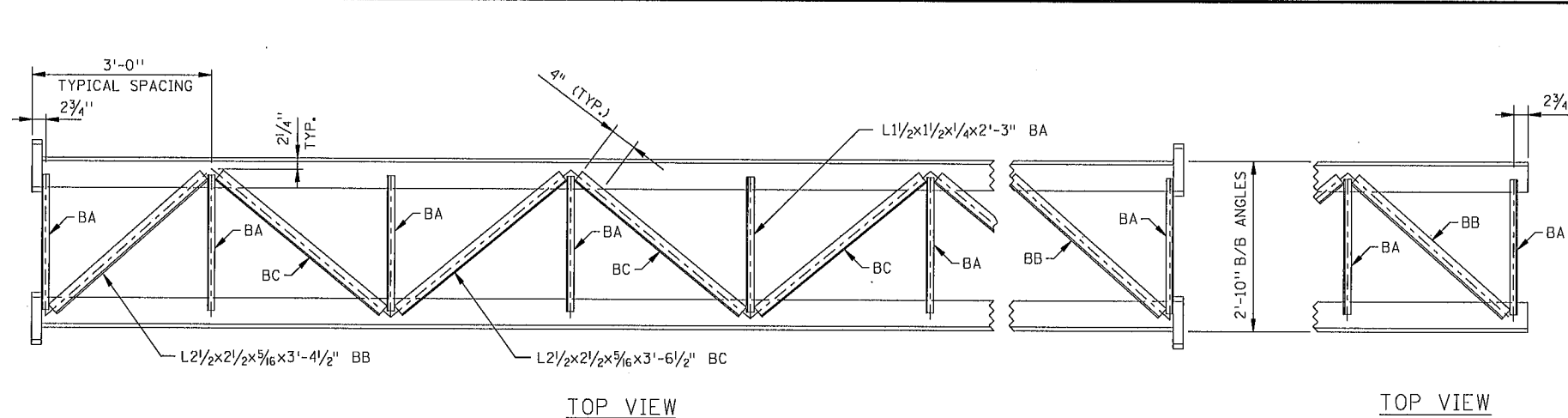
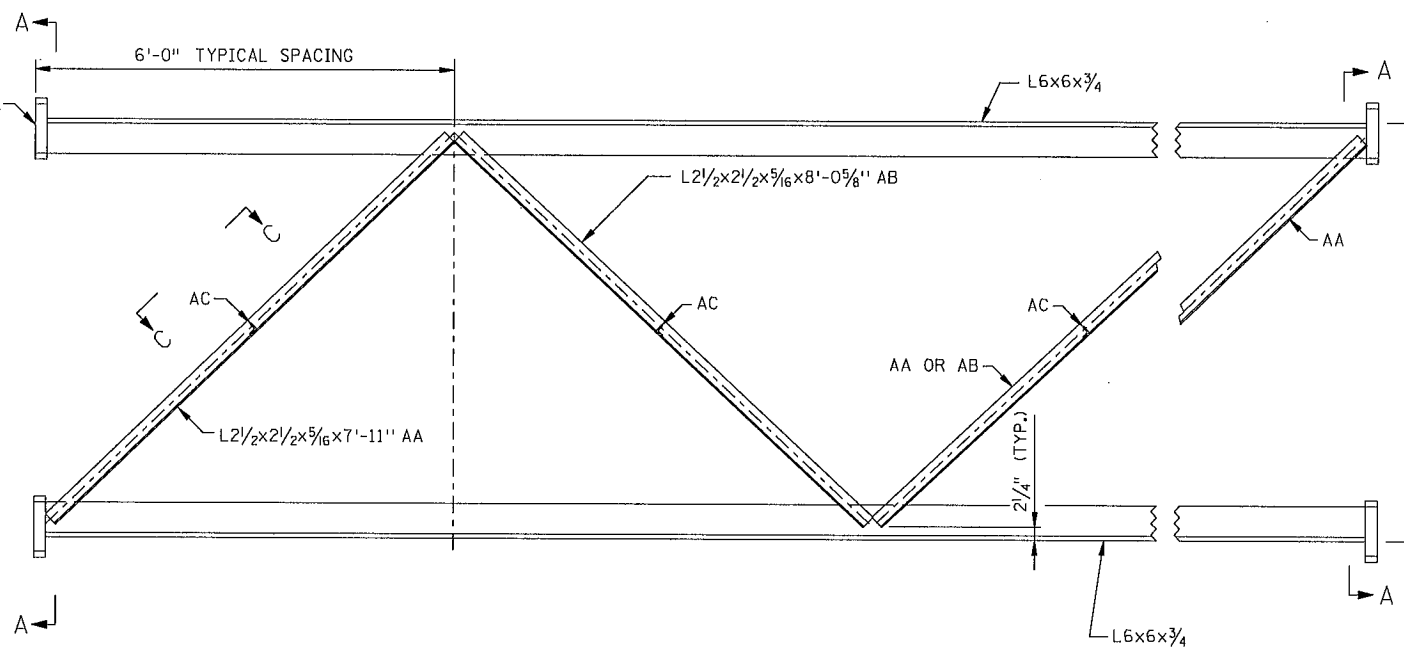
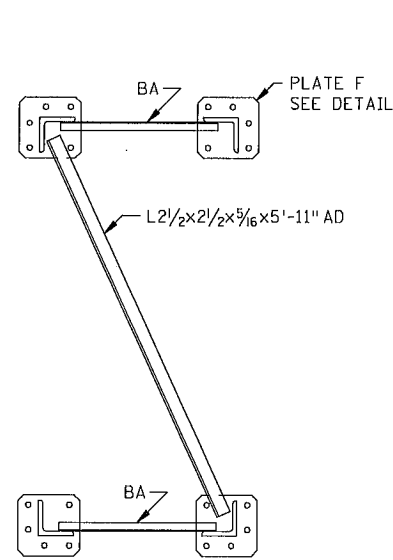


PLATE F

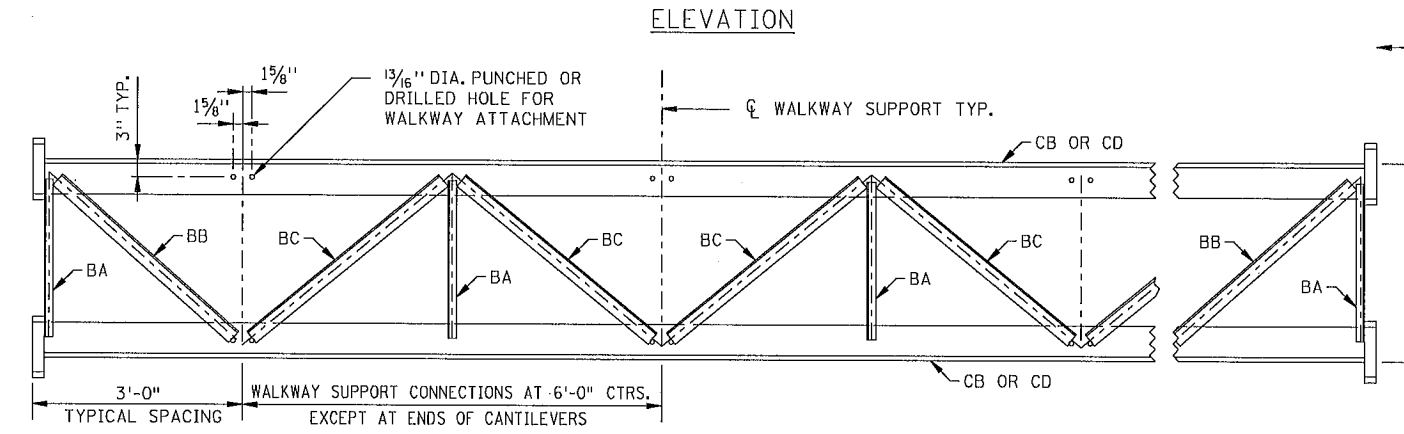
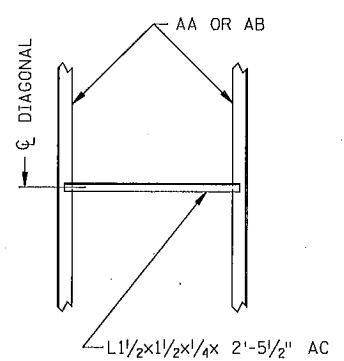
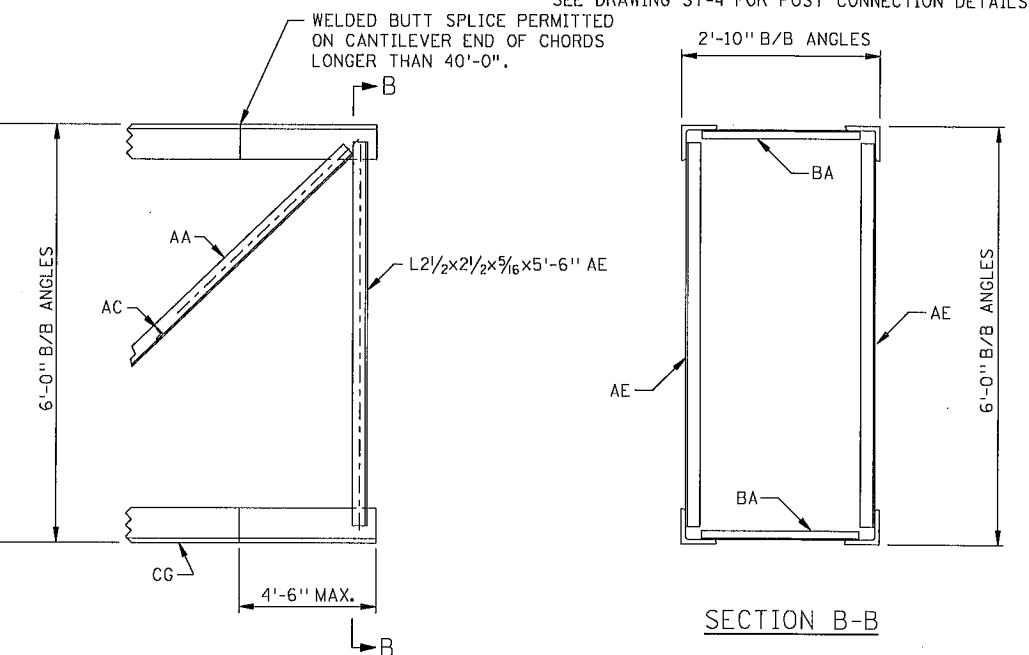


TOP VIEW

NOTES:  
TRUSS SECTIONS SHALL BE MADE IN MULTIPLES OF 6'-0", EXCEPT THAT THE BRACING PANEL NEAREST EACH POST MAY VARY TO MAKE UP THE NEEDED SECTION LENGTH. WELDED CHORD SPLICES ARE NOT PERMITTED EXCEPT IN CANTILEVER TRUSSES AS NOTED BELOW.  
CANTILEVER TRUSSES SHALL BE SUPPLIED AS A SINGLE UNIT WHENEVER POSSIBLE. WHEN CANTILEVER TRUSS LENGTH EXCEEDS 40'-0" CHORDS MAY BE SPLICED, AS SHOWN, IN THE END BRACING PANEL ONLY. CHORD SPLICE WELD SHALL BE COMPLETE PENETRATION, WITH 100% UT AND MT TESTING PER 2471.3M.  
UNLESS OTHERWISE SHOWN, ALL WELDS SHALL BE 1/4" FILLET WELDS ALL AROUND.  
BOLTED SPLICES SHALL NOT BE LOCATED BEHIND CMS SIGNS.  
PROVIDE 2- 1/16" BRASS, STAINLESS STEEL OR GALVANIZED STEEL SHIMS AT EACH FLANGE TO BRING TRUSS INTO CORRECT CAMBER AND ALIGNMENT.  
TRUSSES SHALL BE SHOP ASSEMBLED AND MATCH MARKED.  
ALL VIEWS OF THE TRUSSES ARE DRAWN FROM THE INSIDE OF THE TRUSS LOOKING OUT.  
SEE DRAWING ST-4 FOR POST CONNECTION DETAILS.

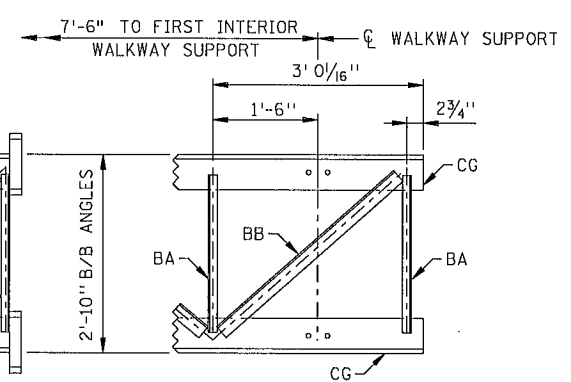


ELEVATION



BOTTOM VIEW  
SIMPLE SPAN

NOTE:  
THE BOTTOM VIEW IS DETAILED TO PROVIDE FOR WALKWAY ATTACHMENT. WHERE THE WALKWAY IS OMITTED, PROVIDE STRUT BA AS INDICATED IN THE TOP VIEW.



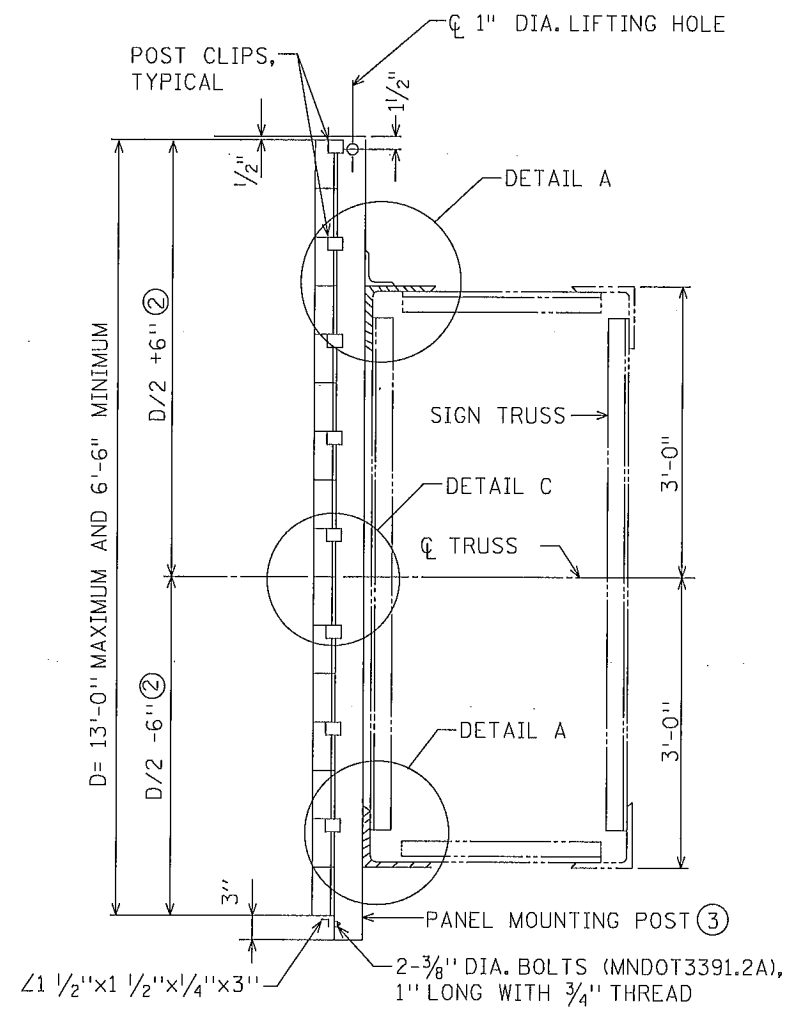
BOTTOM VIEW  
CANTILEVER END

DETAILS SHOWN ARE FOR THE FREE ENDS OF THE CANTILEVER SPANS. ALL OTHER DETAILS FOR CANTILEVER TRUSSES SHALL BE AS SHOWN FOR THE SIMPLE SPANS.

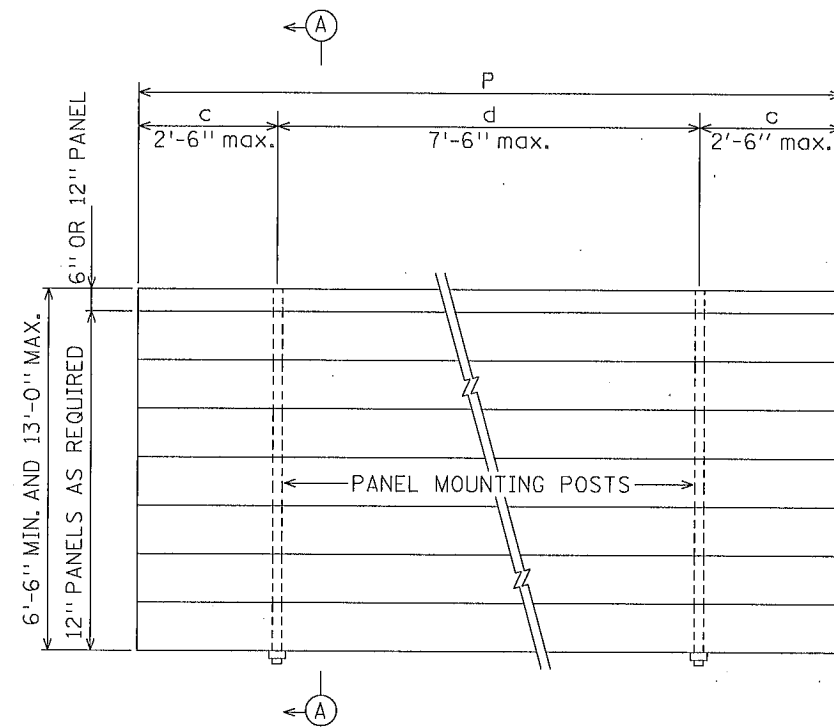
STANDARD OVERHEAD SIGN SUPPORTS INTERIM DESIGN B
SIGN TRUSS DETAILS TRUSS TYPE B
DRAWING ST-6

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5/11/2014  
H:\Projects\1255\CAD\_BIM\PI\m\B259\_sgn012.dgn  
REV. 10-2-2013





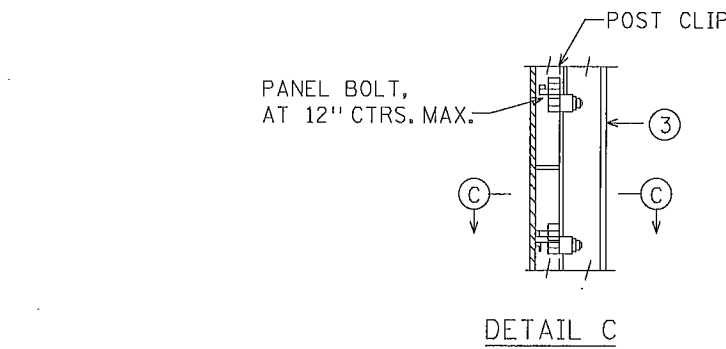
SECTION A-A



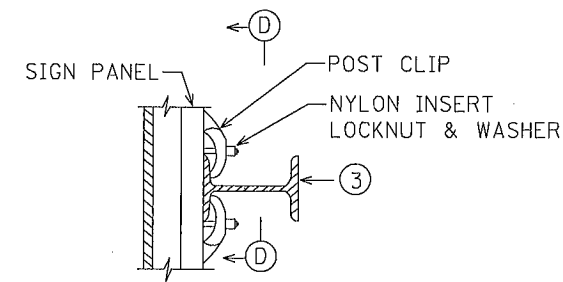
PANEL MOUNTING POST	
NO. OF POSTS	
2	P=144" OR LESS, c=.207P, d=.586P
3	P=150" THRU 204", c=.145P, d=.355P
4	P=210" THRU 276", c=.107P, d=.262P
5	P=282" THRU 348", c=.084P, d=.208P
6	P=354" THRU 420", c=.070P, d=.172P
7	P=426" THRU 492", c=.059P, d=.147P

POST SPACING MAY BE ADJUSTED AS REQUIRED IF CONFLICT WITH TRUSS DETAILS IS ENCOUNTERED.

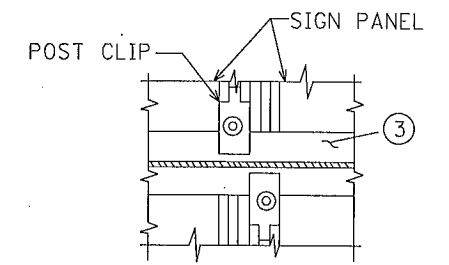
SIGN PANEL ELEVATION



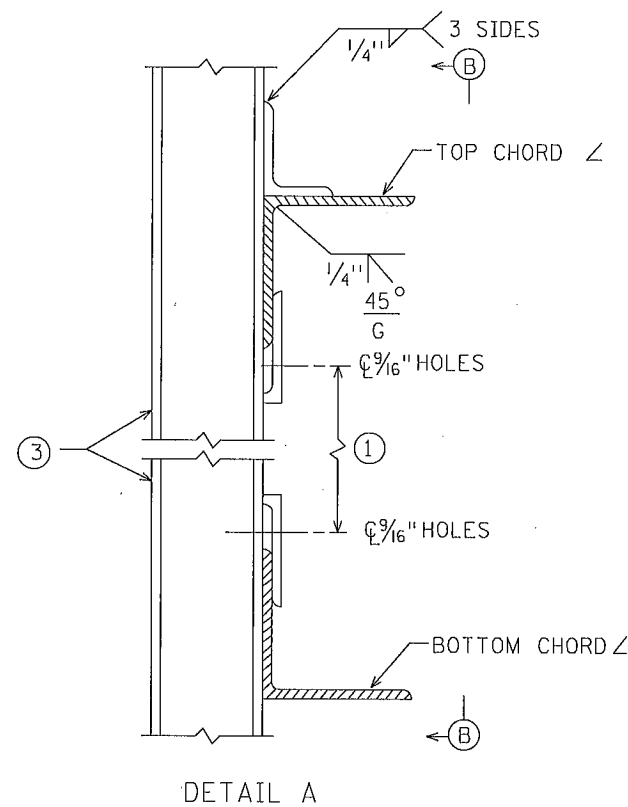
DETAIL C



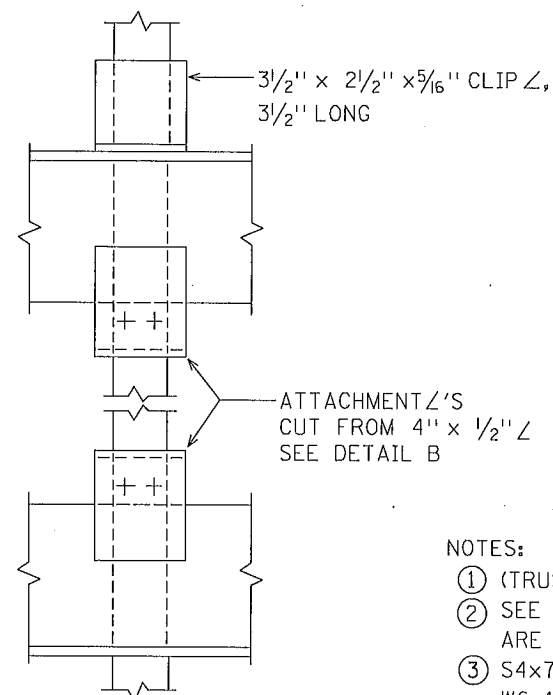
SECTION C



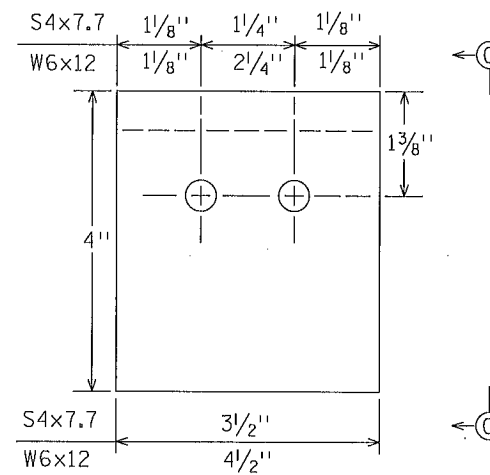
SECTION D-D



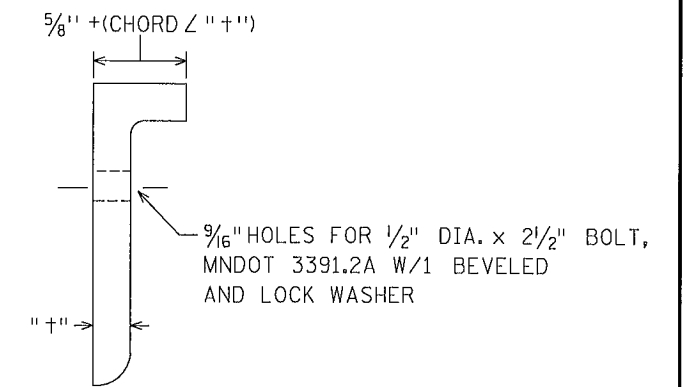
DETAIL A



VIEW B-B



DETAIL B



VIEW G-G

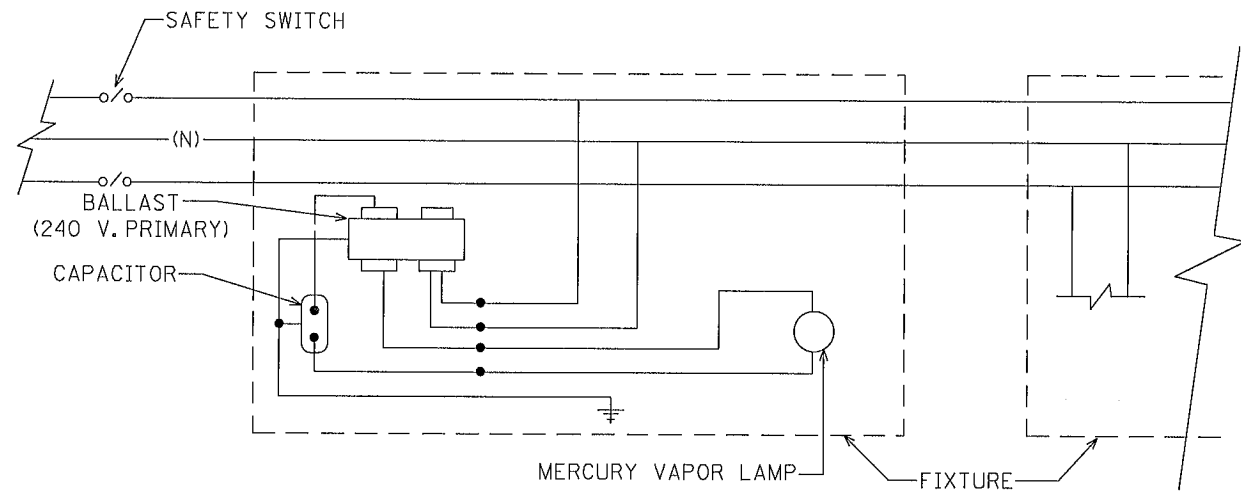
NOTES:

- ① (TRUSS DEPTH)-(TOP & BOTTOM CHORD Z LEGS)-1 1/4"
- ② SEE NOTE 1 ON ST-1 WHEN STANDARD PANELS AND CMS ARE MOUNTED ON THE SAME SPAN
- ③ S4x7.7 FOR SIGN HEIGHTS ≤ 11'-0"  
W6x12 FOR SIGN HEIGHTS OVER 11'-0"

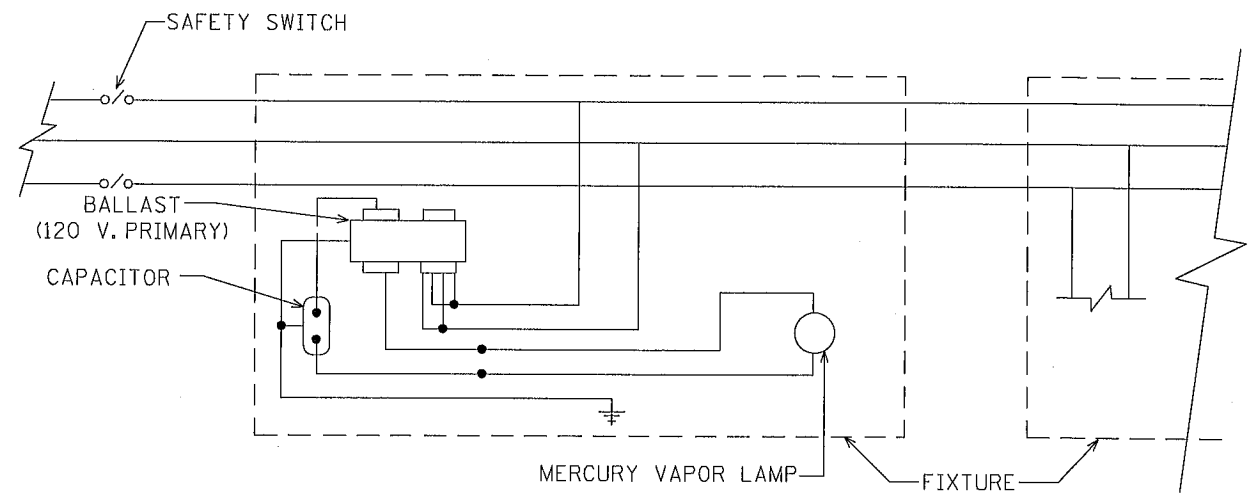
STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

SIGN PANEL AND PANEL  
MOUNTING POST DETAILS

DRAWING ST-10

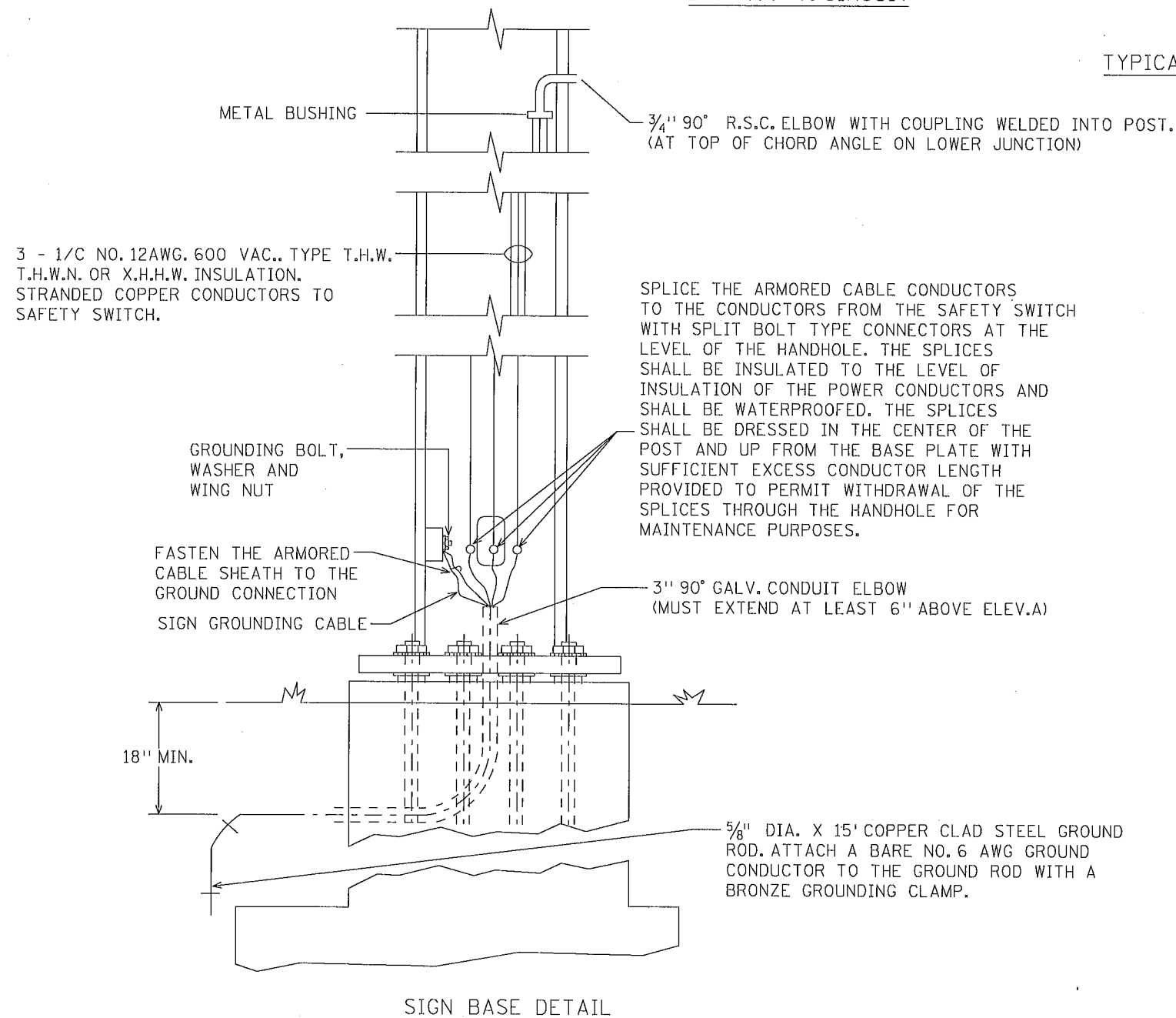


240/480 V. CIRCUIT



120/240 V. CIRCUIT

TYPICAL CIRCUIT DIAGRAMS



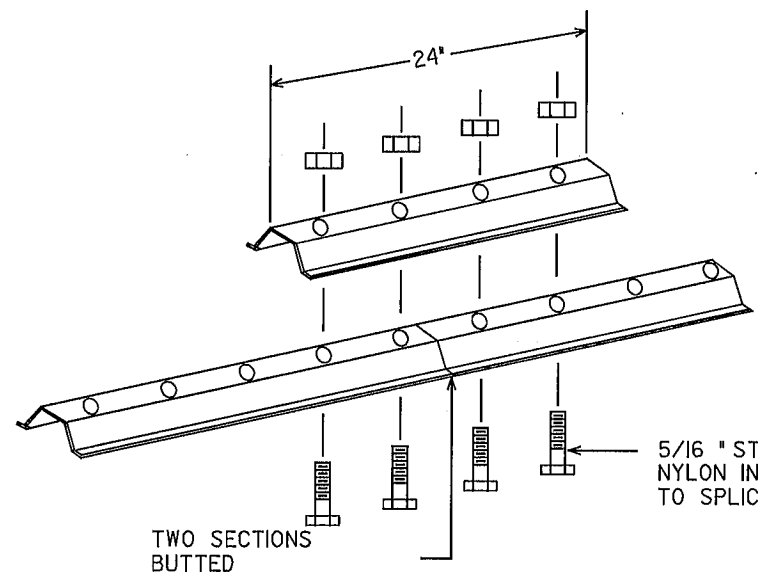
ELECTRICAL NOTES:

1. WHEN SIGN LIGHTING SYSTEMS HAVE BEEN COMPLETED, THE CONTRACTOR SHALL, WITHOUT FURTHER COMPENSATION, CONDUCT BURNING AND RESISTANCE TESTS FOR FINAL ACCEPTANCE. THE RESISTANCE TO GROUND OF EACH UNGROUNDED CONDUCTOR SHALL BE NOT LESS THAN 8 MEGOHMS.
2. ALL FITTINGS, HUBS, UNIONS, BUSHINGS, ETC. SHALL BE SUPPLIED AS PART OF CONDUIT, CONDUIT ENTERING SIGN POSTS SHALL HAVE INSULATED GROUNDING BUSHINGS INSTALLED BEFORE PULLING WIRE.
3. CONDUIT ON STRUCTURE SHALL BE SURFACED MOUNTED, STRAPPED AT EVERY ANGLE BRACE WITH U-BOLT TYPE CLAMPS.
4. SUCCESSIVE LIGHTING FIXTURES SHALL BE CONNECTED ON ALTERNATE SIDES OF THE 3-WIRE CIRCUIT.
5. THE CABLE SHEATH SHALL EXTEND AT LEAST 4" ABOVE THE TOP OF THE CONDUIT END AND THE TAPE ARMOR OF ARMORED CABLE SHALL BE CONNECTED TO THE GROUNDING BOLT IN THE SIGN POSTS.
6. WIRING FROM THE SAFETY SWITCH TO LIGHTING FIXTURES SHALL BE 1/C NO. 12 AWG AND SHALL BE RUN IN 3/4" R.S.C. ALL SPLICING SHALL BE ACCOMPLISHED WITH A WIRE NUT AND WATERPROOF COATING. ALL CONDUIT CONNECTIONS SHALL BE RAIN TIGHT.

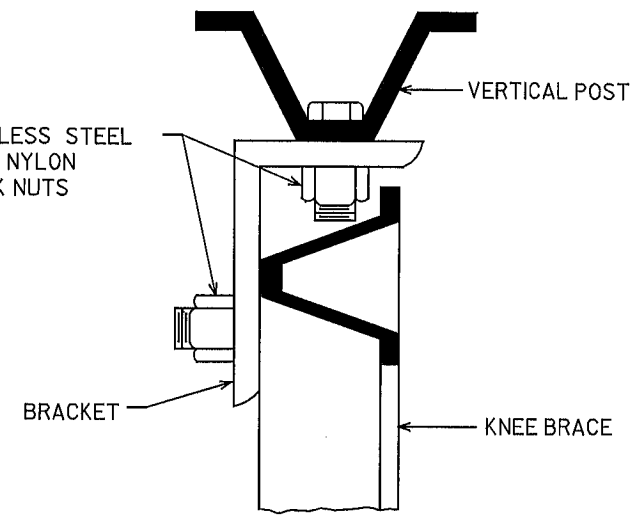
STANDARD OVERHEAD SIGN SUPPORTS  
INTERIM DESIGN B

ELECTRICAL DETAILS

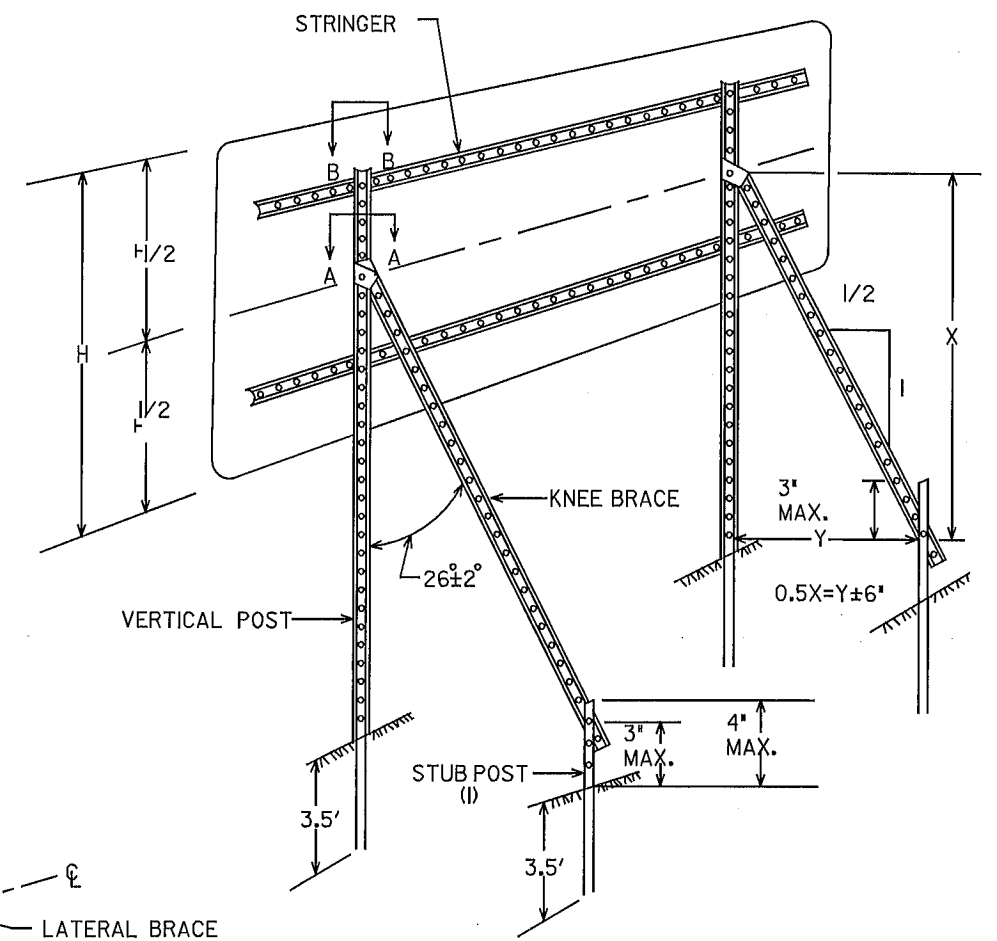
DRAWING ST-12



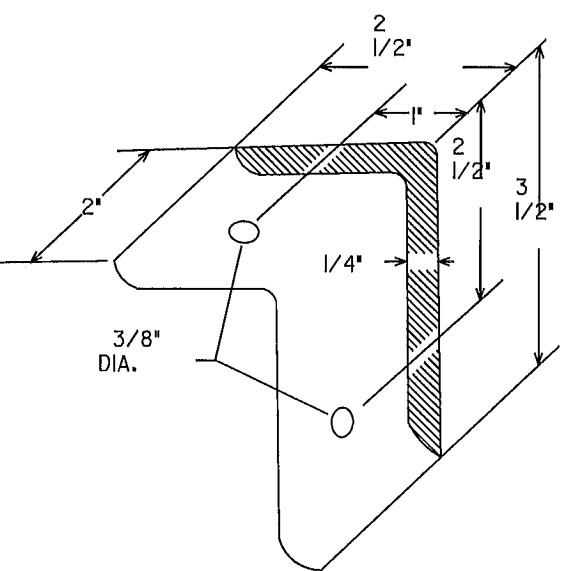
LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)



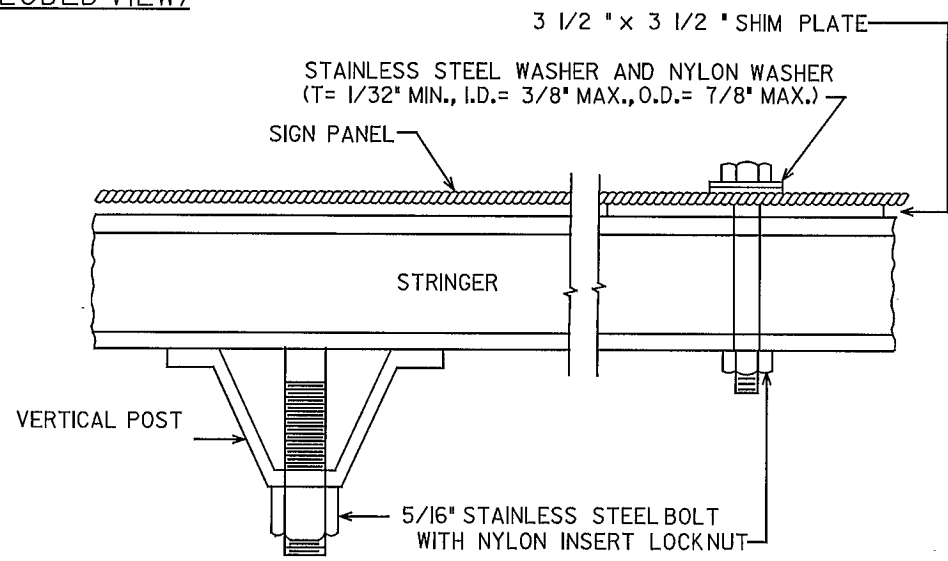
SECTION A-A



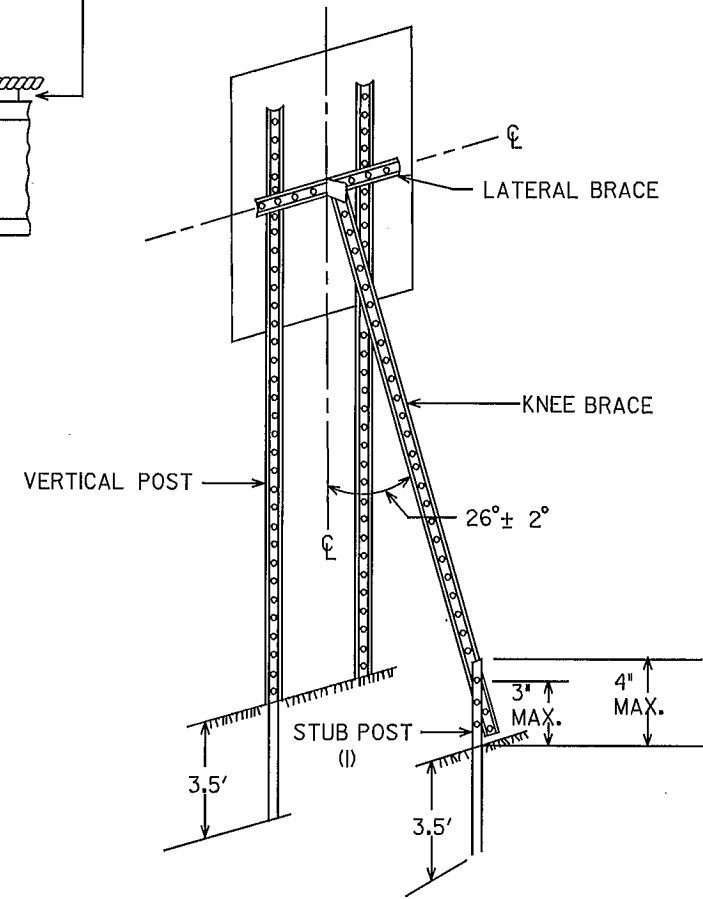
TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS



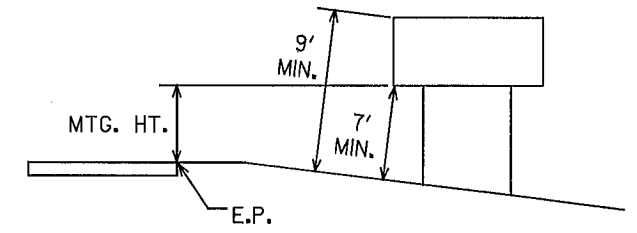
A-FRAME BRACKET  
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B



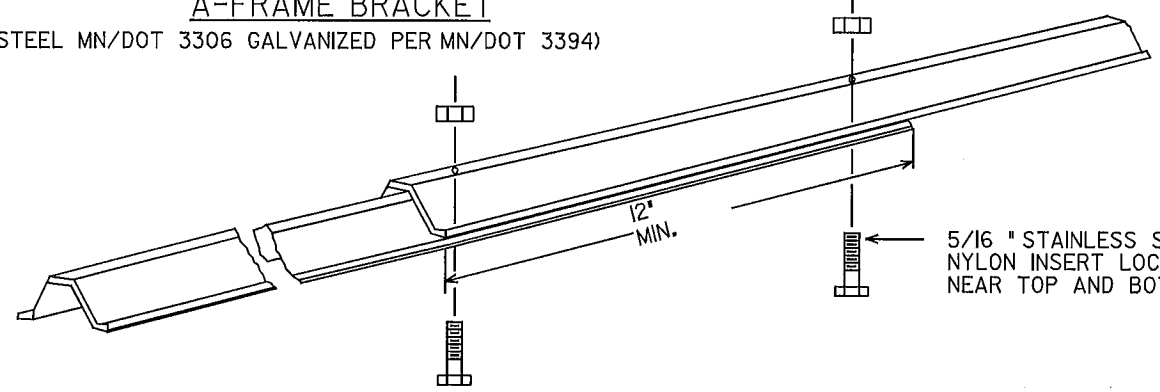
TYPICAL "A-FRAME" INSTALLATION  
TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY  
RELATIVE TO VERTICAL POST.

TYPE C & D SIGN  
STRUCTURAL DETAILS



KNEE BRACE SPLICE

3/24/14 2 PM 9/11/2014 H:\P\Projects\8255\CAD\_BIM\1 on\8255\_sgn21.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

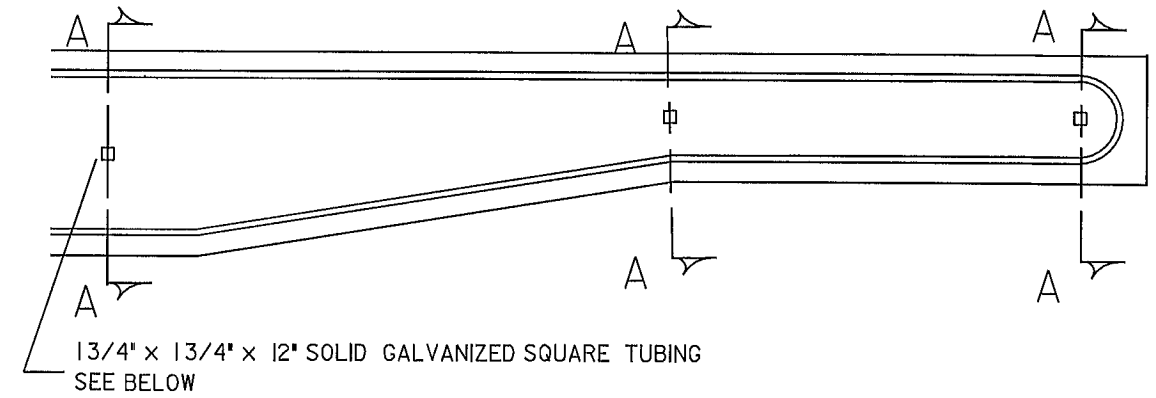
DRAWN BY  
H. TRAN  
 DESIGNED BY  
H. TRAN  
 CHECKED BY  
A. POTTER  
 COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

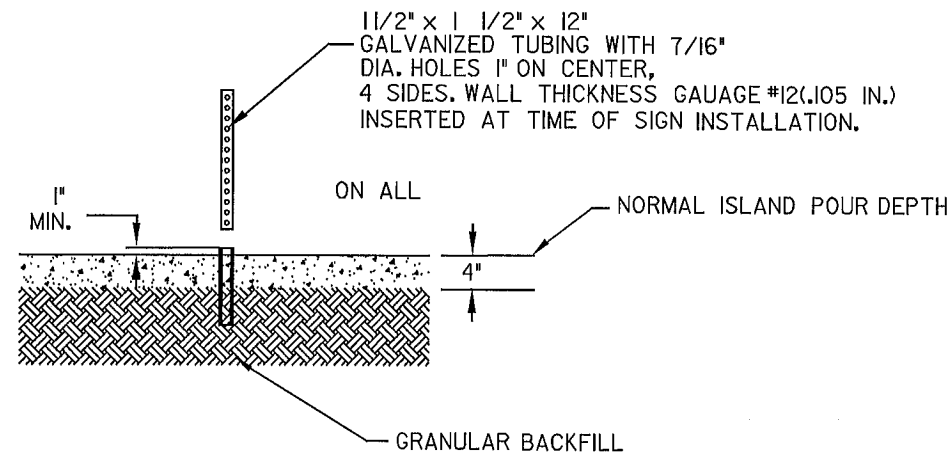
ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING DETAIL FOR COUNTY AND LOCAL ROADS

SHEET  
385  
OF  
586

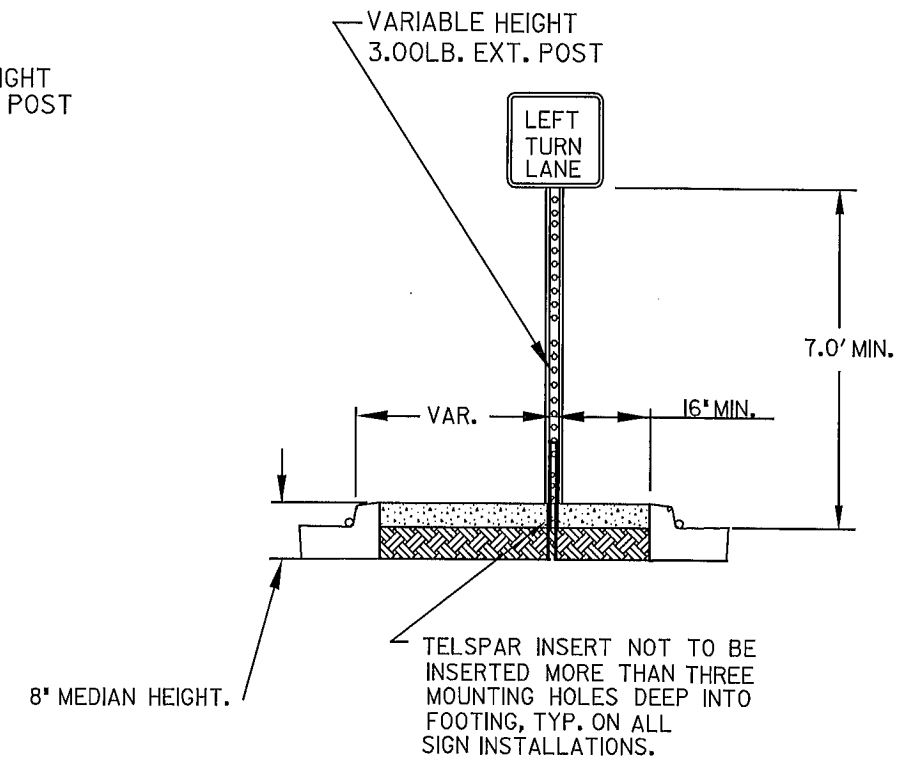
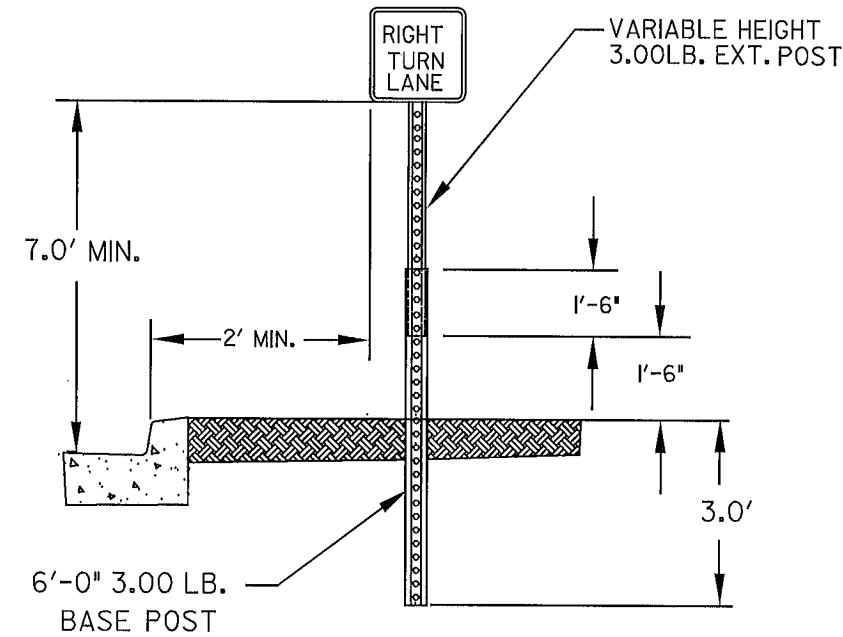


GROUND POST MOUNT SIGN  
INSTALLATION TYPICAL

ISLAND MOUNT BREAK-AWAY SIGN  
INSTALLATION TYPICAL



SECTION A - A



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 Electrical Engineer under the laws of the State of Minnesota.  
 Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: 09-12-14 License #: 42785

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

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H. TRAN  
DESIGNED BY  
H. TRAN  
CHECKED BY  
A. POTTER  
COMM. NO. 0138259



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PLANNERS  
DESIGNERS

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING DETAIL FOR COUNTY AND LOCAL ROADS

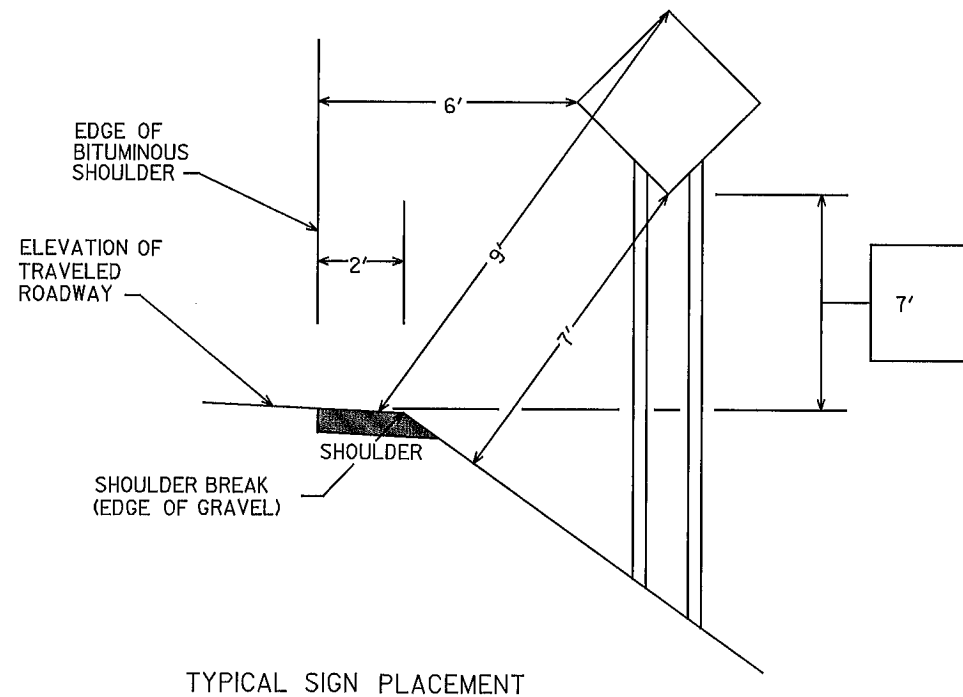
SHEET  
386  
OF  
586

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NO	DATE	BY	CHKD	APPR	REVISION



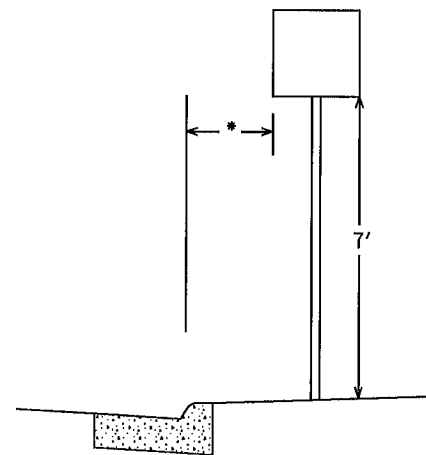
RURAL



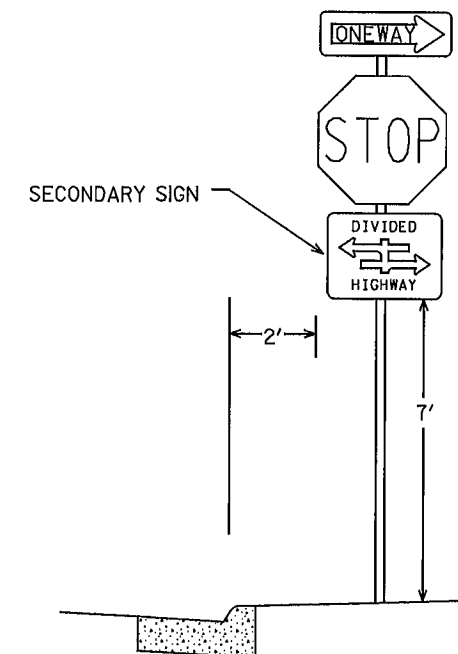
TYPICAL SIGN PLACEMENT

URBAN

\* 2' - NARROW BOULEVARD (< 8' WIDE)  
6' - WIDE BOULEVARD



TYPICAL SIGN PLACEMENT



NOTE:  
- ALL DIMENSIONS ARE MINIMUMS  
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

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Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: 09-12-14 License # 42785

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY H. TRAN  
DESIGNED BY H. TRAN  
CHECKED BY A. POTTER  
COMM. NO. 0138259

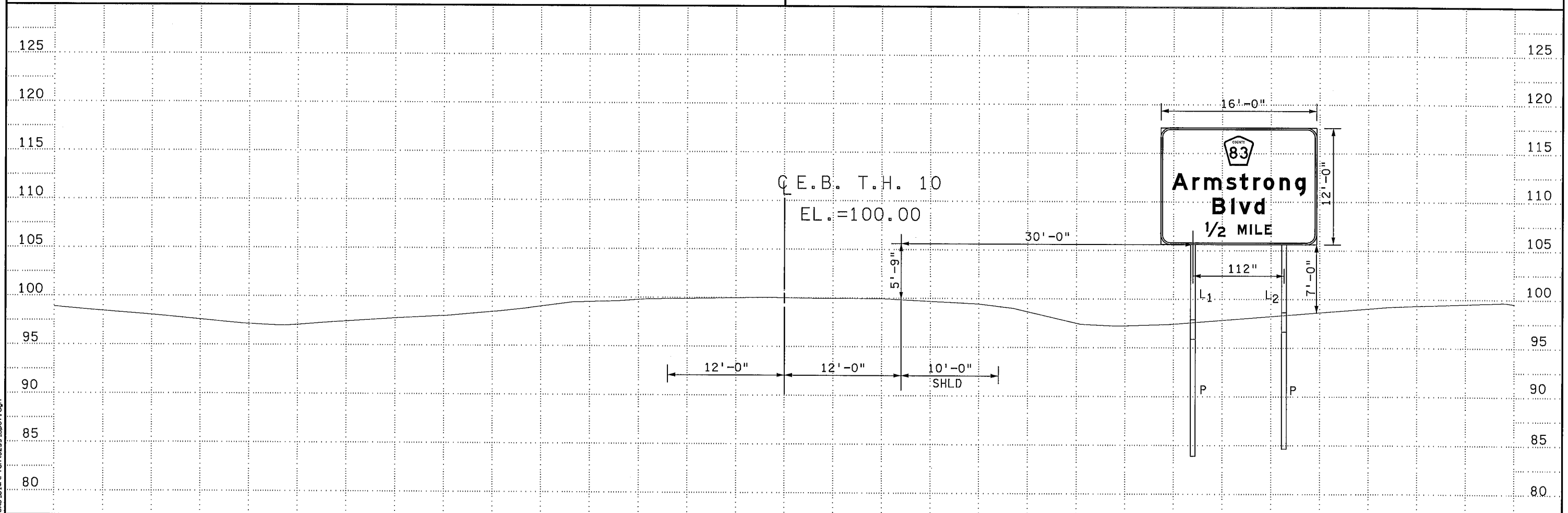
**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
SIGNING PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SIGNING DETAIL FOR COUNTY AND LOCAL ROADS

SHEET 387 OF 586

A-1  
 E.B. T.H. 10  
 APPROX. 275' EAST FROM STA 156+00.00  
QUANTITIES

	<u>DESIGN</u>	<u>FINAL</u>
POST STEEL	W8 X 24	_____
POST LENGTH L <sub>1</sub>	20.0 FT.	_____
POST LENGTH L <sub>2</sub>	19.0 FT.	_____
PILE FOOTING P	12.0 FT.	_____



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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**M. BRESSLER**

DESIGNED BY  
**M. BRESSLER**

CHECKED BY  
**A. POTTER**

COMM. NO. **0138259**

**SRH**  
 Consulting Group, Inc.

**ENGINEERS  
 PLANNERS  
 DESIGNERS**

**ANOKA COUNTY**

**SIGNING PLANS**

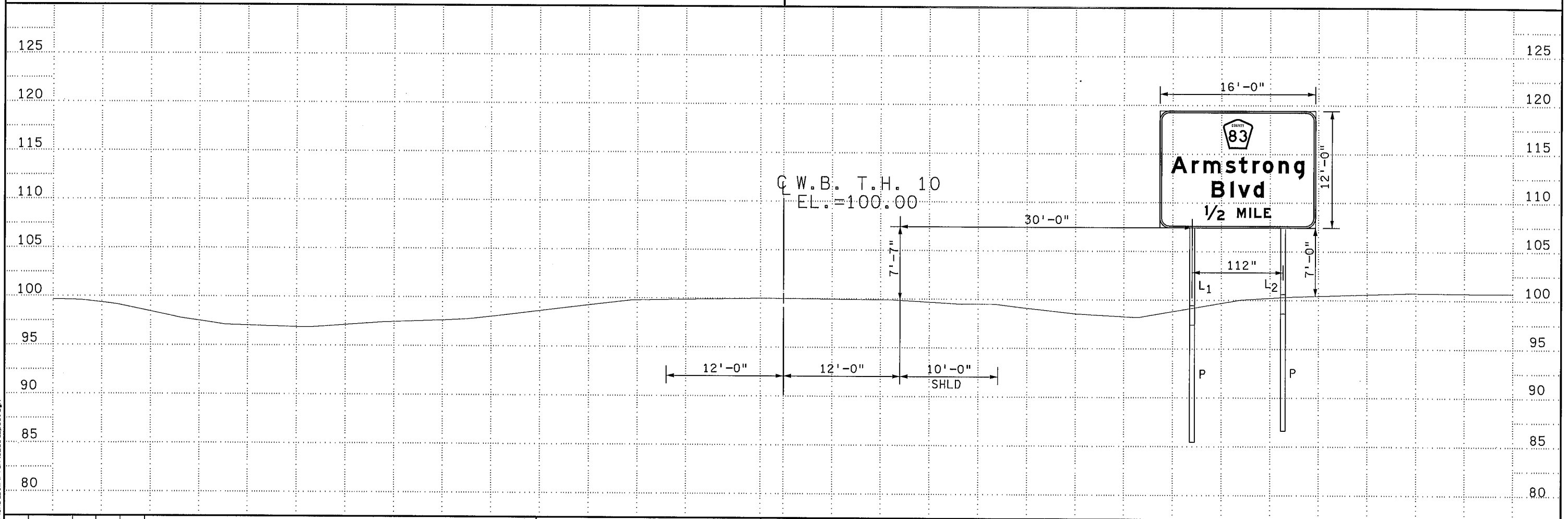
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

**SIGNING CROSS SECTION A-1**

**SHEET**  
**388**  
**OF**  
**586**

A-2  
W.B. T.H. 10  
STA 231+43.40  
QUANTITIES

	<u>DESIGN</u>	<u>FINAL</u>
POST STEEL	W8 X 24	_____
POST LENGTH L <sub>1</sub>	20.0 FT.	_____
POST LENGTH L <sub>2</sub>	19.0 FT.	_____
PILE FOOTING P	12.0 FT.	_____



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY  
**M. BRESSLER**  
DESIGNED BY  
**M. BRESSLER**  
CHECKED BY  
**A. POTTER**  
COMM. NO. 0138259



**ENGINEERS  
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DESIGNERS**

**ANOKA COUNTY**  
- SIGNING PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
SIGNING CROSS SECTION A-2

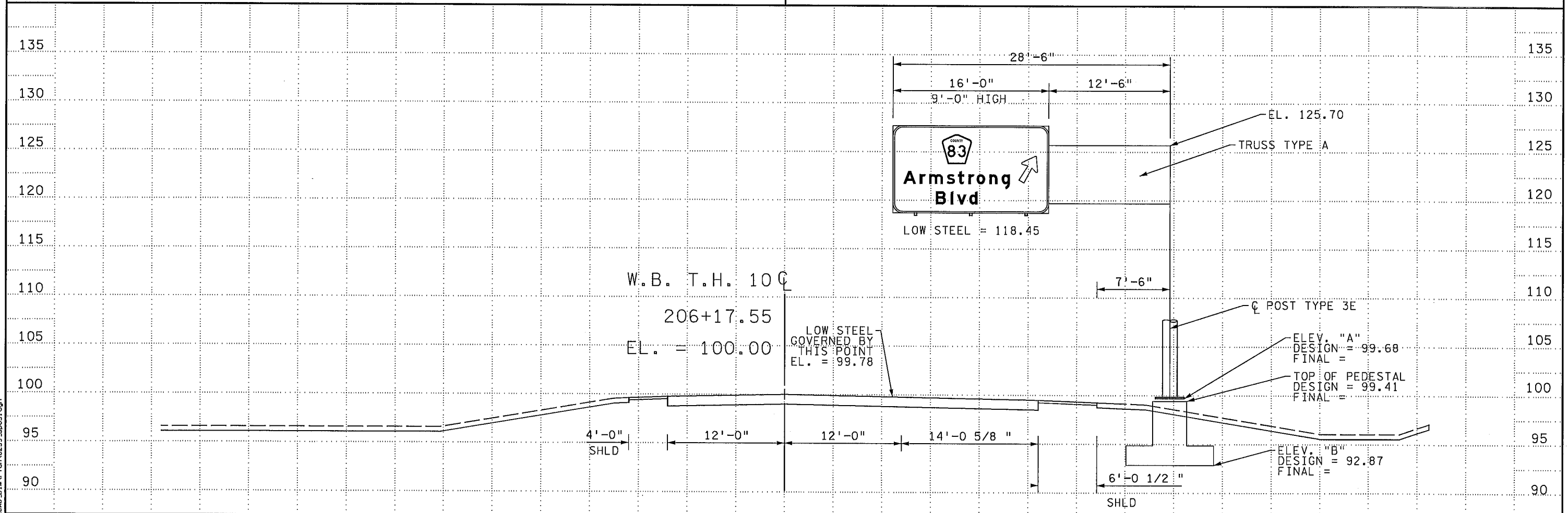
**SHEET**  
**389**  
**OF**  
**586**



- NOTES:
1. LOW STEEL IS BOTTOM OF PANEL MOUNTING POSTS.
  2. SEE DRAWING ST-12 ON SHEET 384 FOR CONDUIT REQUIREMENTS.
  3. STRUCTURE IS DESIGNED FOR FUTURE WALKWAY.

OH 10-107  
 W.B. T.H. 10  
 STA. 206+17.55  
QUANTITIES

	DESIGN	FINAL
POST STEEL	3728 LBS	_____
TRUSS STEEL	3506 LBS	_____
PANEL MOUNTING POST STEEL	270 LBS	_____
CONCRETE (SPREAD) FOOTING	11.4 CU YD	_____
SIGN PANEL TYPE OH	144 SQ FT	_____



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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: 09-12-14 License # 42785

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY N. OLLRICH  
 DESIGNED BY N. OLLRICH  
 CHECKED BY S. POSKA  
 COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 SIGNING PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 SIGNING CROSS SECTION OH 10-107

SHEET 391 OF 586

FF LIGHTING TABULATION				
ITEM DESCRIPTION	UNIT	TOTAL	SP 0202-95	SAP 199-115-002
SALVAGE LIGHT FOUNDATION	EACH	1		1
SALVAGE LIGHTING UNIT	EACH	1		1
LIGHTING UNIT TYPE 9-40	EACH	20	20	
UNDERPASS LUMINAIRES TYPE LED	EACH	2	2	
LIGHT FOUNDATION DESIGN E	EACH	20	20	
0.75" RIGID STEEL CONDUIT	LIN FT	61	61	
1" RIGID STEEL CONDUIT	LIN FT	150	150	
2" RIGID STEEL CONDUIT	LIN FT	16	16	
2" NON-METALLIC CONDUIT	LIN FT	95	95	
3" NON-METALLIC CONDUIT	LIN FT	491	491	
UNDERGROUND WIRE 1 COND NO 2	LIN FT	81	81	
UNDERGROUND WIRE 1 COND NO 10	LIN FT	3168	3168	
DIRECT BURIED LIGHTING CABLE 4 COND NO 4	LIN FT	5524	5524	
SERVICE CABINET - TYPE L1	EACH	1		
UNDERGROUND CABLE SPLICE	EACH	1	1	
EQUIPMENT PAD B	EACH	1	1	
JUNCTION BOX	EACH	2	2	
HANDHOLE	EACH	1	1	
INSTALL LIGHTING UNIT	EACH	1		1
INSTALL LIGHT FOUNDATION	EACH	1		1
0.75" LIQUIDTIGHT FLEXIBLE CONDUIT	LIN FT	24	24	
1" LIQUIDTIGHT FLEXIBLE CONDUIT	LIN FT	6	6	

LEGEND	
	LIGHTING UNIT TYPE 9-40
	UNDERPASS LUMINAIRES TYPE LED
	PERMANENT GROUND ROD (25 OHMS OR LESS)
	SERVICE CABINET - TYPE L1
	PAD MOUNTED SOURCE OF POWER (BY OTHERS)
	HANDHOLE
	DIRECT BURIED LIGHTING CABLE
	3" NON-METALLIC CONDUIT (UNLESS OTHERWISE NOTED)
	SALVAGED LIGHTING UNIT
	EXISTING LIGHTING UNIT
	EXISTING HANDHOLE (F&I IN TRAFFIC SIGNAL PLANS)
	EXISTING CONDUIT (F&I IN TRAFFIC SIGNAL PLANS)

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NO	DATE	BY	CKD	APPR	REVISION

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: STEVE MCHENRY  
  
 Date: 09-12-14 License #: 46710

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002  
 STATE PROJECT NO.  
 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

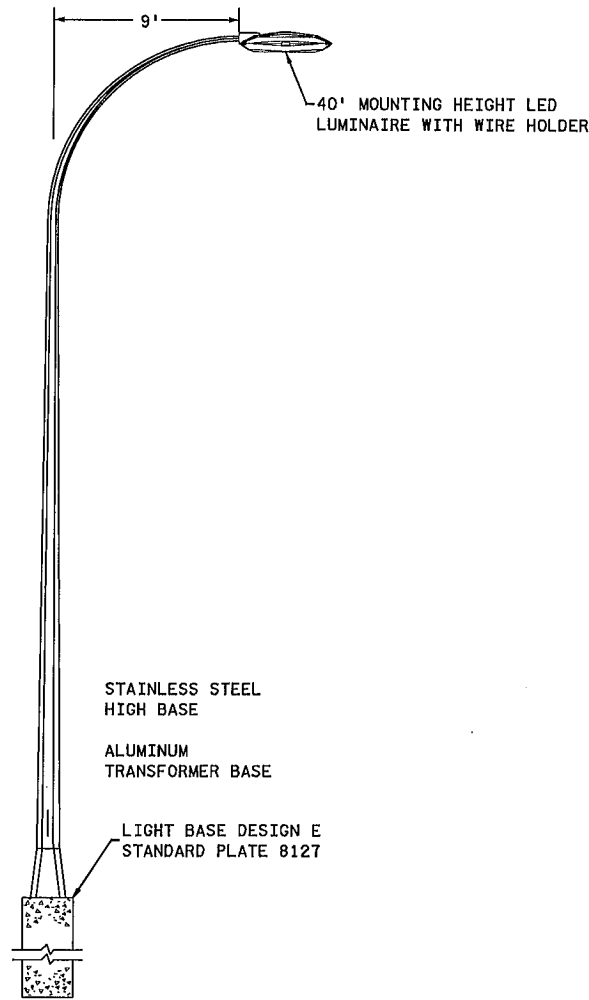
DRAWN BY  
 T. RICHARDSON  
 DESIGNED BY  
 T. RICHARDSON  
 CHECKED BY  
 S. MCHENRY  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 LIGHTING PLANS AND DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TABULATION AND LEGEND

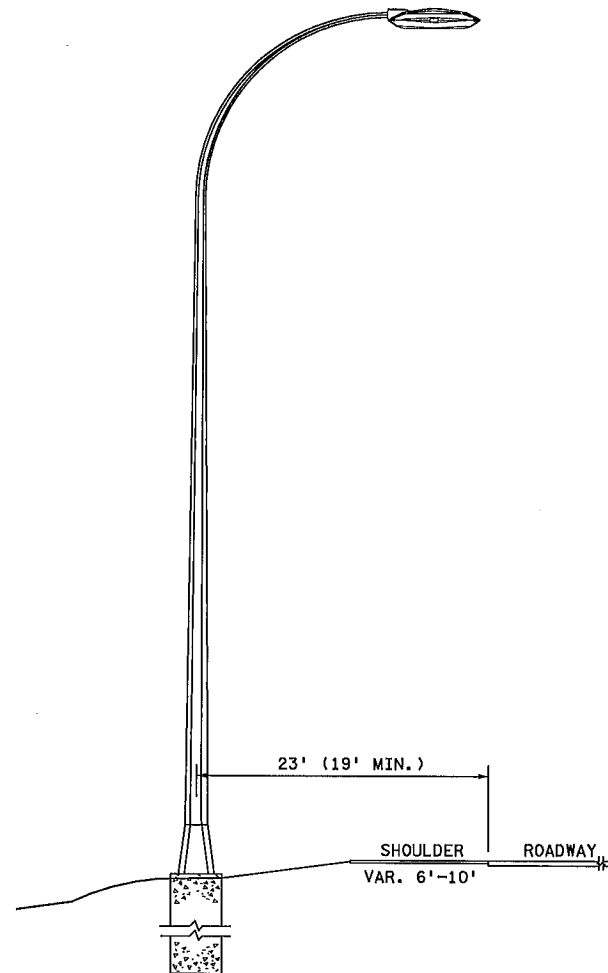
SHEET  
 392  
 OF  
 586



LIGHTING UNIT TYPE 9-40  
(BREAKAWAY)

RADIUS CHART (ENGLISH)

MAST ARM LENGTH	RADIUS
6	5
9	8
12	10



PLACEMENT OF LIGHTING UNIT  
TYPE 9-40

NOTES:

1. USE THE MAXIMUM DISTANCE WHENEVER POSSIBLE, IF THE MINIMUM DISTANCE CANNOT BE OBTAINED CONTACT THE DISTRICT/DIVISION TRAFFIC ENGINEER.
2. LIGHT BASES SHALL BE PLACED IN ACCORDANCE WITH 2545.3F2.
3. DISTANCES SHALL BE MEASURED FROM THE EDGE OF DRIVING LANE OR TURN LANE.

3/24/14 PN  
 9/11/2014  
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NO	DATE	BY	CHKD	APPR	REVISION

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: STEVE MCHENRY

*Steve Mchenry*

Date: 09-12-14 License #: 46710

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
T. RICHARDSON

DESIGNED BY  
T. RICHARDSON

CHECKED BY  
S. MCHENRY

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

LIGHTING PLANS AND DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

LIGHTING DETAILS

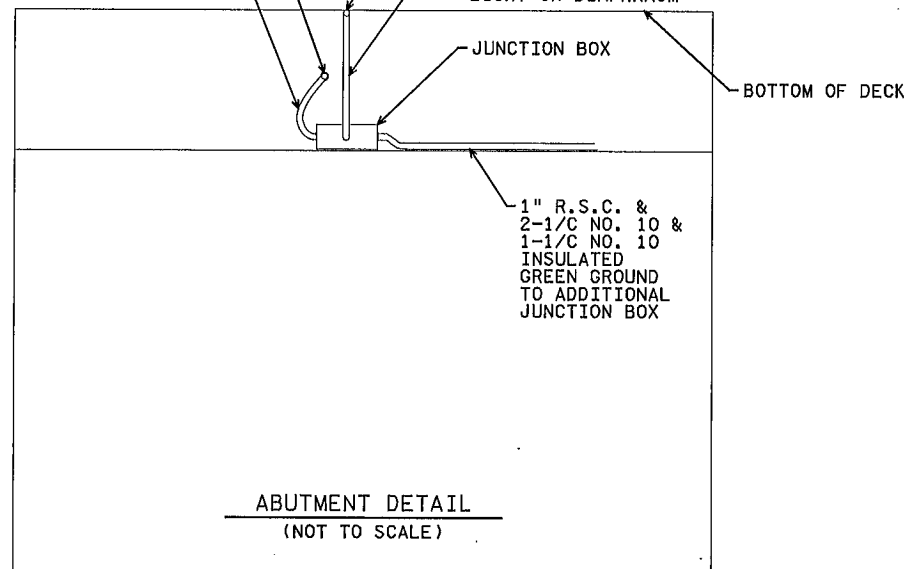
SHEET  
393  
OF  
586

1" R.S.C. THRU ABUTMENT SLEEVE (SLEEVE F&I IN BRIDGE 02007 PLANS) WITH 3-1/4" NO. 10 & 1-1/4" NO. 10 INSULATED GREEN GROUND. SEE BRIDGE 02007 DETAILS FOR EXACT LOCATION.

1" LIQUIDTIGHT FLEXIBLE CONDUIT (6' MAX) & 2-1/4" NO. 10 & 1-1/4" NO. 10 INSULATED GREEN GROUND TO JUNCTION BOX

3/4" R.S.C. MOUNTED TO BOTTOM OF BRIDGE DECK

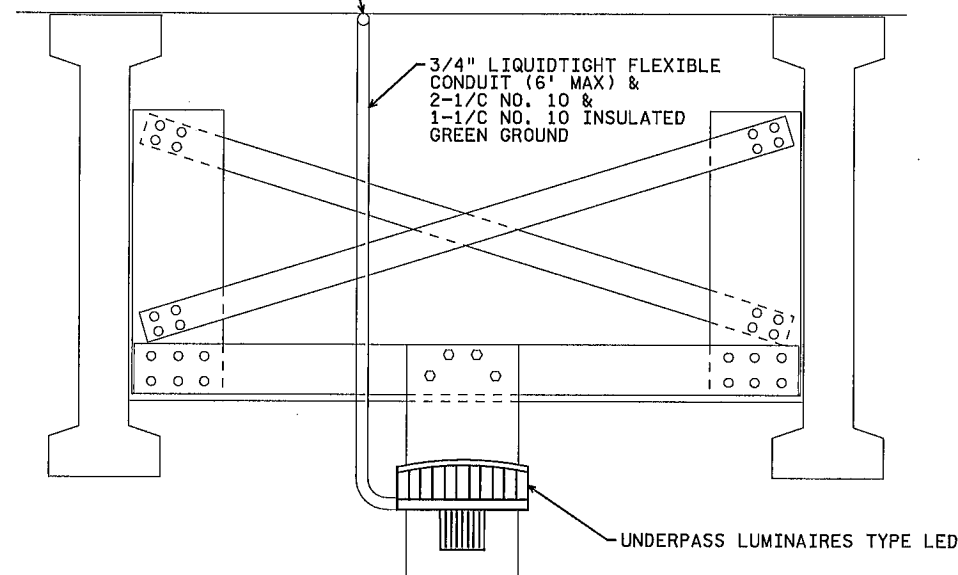
3/4" LIQUIDTIGHT FLEXIBLE CONDUIT (6' MAX) & 2-1/4" NO. 10 & 1-1/4" NO. 10 INSULATED GREEN GROUND TO UNDERPASS LIGHT ON DIAPHRAGM



ABUTMENT DETAIL  
(NOT TO SCALE)

3/4" R.S.C. MOUNTED TO BOTTOM OF BRIDGE DECK

3/4" LIQUIDTIGHT FLEXIBLE CONDUIT (6' MAX) & 2-1/4" NO. 10 & 1-1/4" NO. 10 INSULATED GREEN GROUND



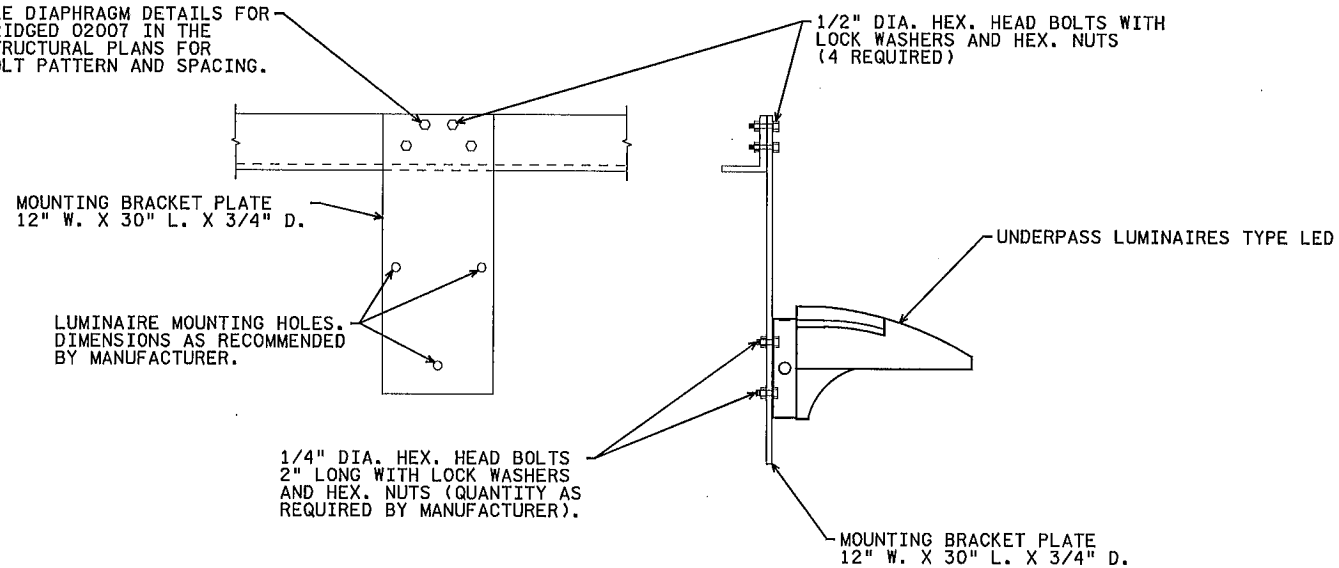
UNDERPASS LUMINAIRES TYPE LED

MOUNTED ON CROSS FRAME DIAPHRAGM  
(NOT TO SCALE)

PLACE UNDERPASS LUMINAIRE ON DIAPHRAGM CLOSEST TO ROADWAY BUT NOT OVER ROADWAY.

TOP OF UNDERPASS LUMINAIRE SHALL BE MOUNTED SO THAT THE TOP OF THE LUMINAIRE FIXTURE SHALL BE BELOW THE BOTTOM OF THE ADJACENT BEAMS ON EITHER SIDE.

SEE DIAPHRAGM DETAILS FOR BRIDGED 02007 IN THE STRUCTURAL PLANS FOR BOLT PATTERN AND SPACING.



MOUNTING PLATE DETAIL  
(NOT TO SCALE)

NOTES:

1. THE JUNCTION BOXES SHALL BE 8-1/2" L. X 8-1/2" W. X 4" D. WITH REMOVABLE HUB PLATES AND MOUNTING LUGS.
2. FASTEN RIGID STEEL CONDUIT WITH CABLE CLAMPS ABOUT 5'-0" ON CENTER.
3. FASTEN CLAMPS AND JUNCTION BOXES TO CONCRETE WITH MASONRY ANCHORAGES OR POWER ACTIVATED STUDS.
4. 3/4" LIQUIDTIGHT NON-METALLIC FLEXIBLE CONDUIT SHOULD HAVE NO MORE THAN A MAX. LENGTH OF 6'-0".
5. ALL THREADED RIGID STEEL CONDUITS AND FITTINGS MUST HAVE ALL THREADS PROTECTED WITH A BRUSH ON CORROSION RESISTANT COMPOUND IN ACCORDANCE WITH NEC ARTICLE 300.6.
6. STEEL PLATES AND SHAPES SHALL BE GALVANIZED IN ACCORDANCE WITH MNDOT SPEC. 3394.
7. GALVANIZE BOLTS, NUTS, AND WASHERS PER MNDOT SPEC. 3392.

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Print Name: STEVE MCHENRY

Date: 09-12-14 License #: 46710

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY T. RICHARDSON

DESIGNED BY T. RICHARDSON

CHECKED BY S. MCHENRY

COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

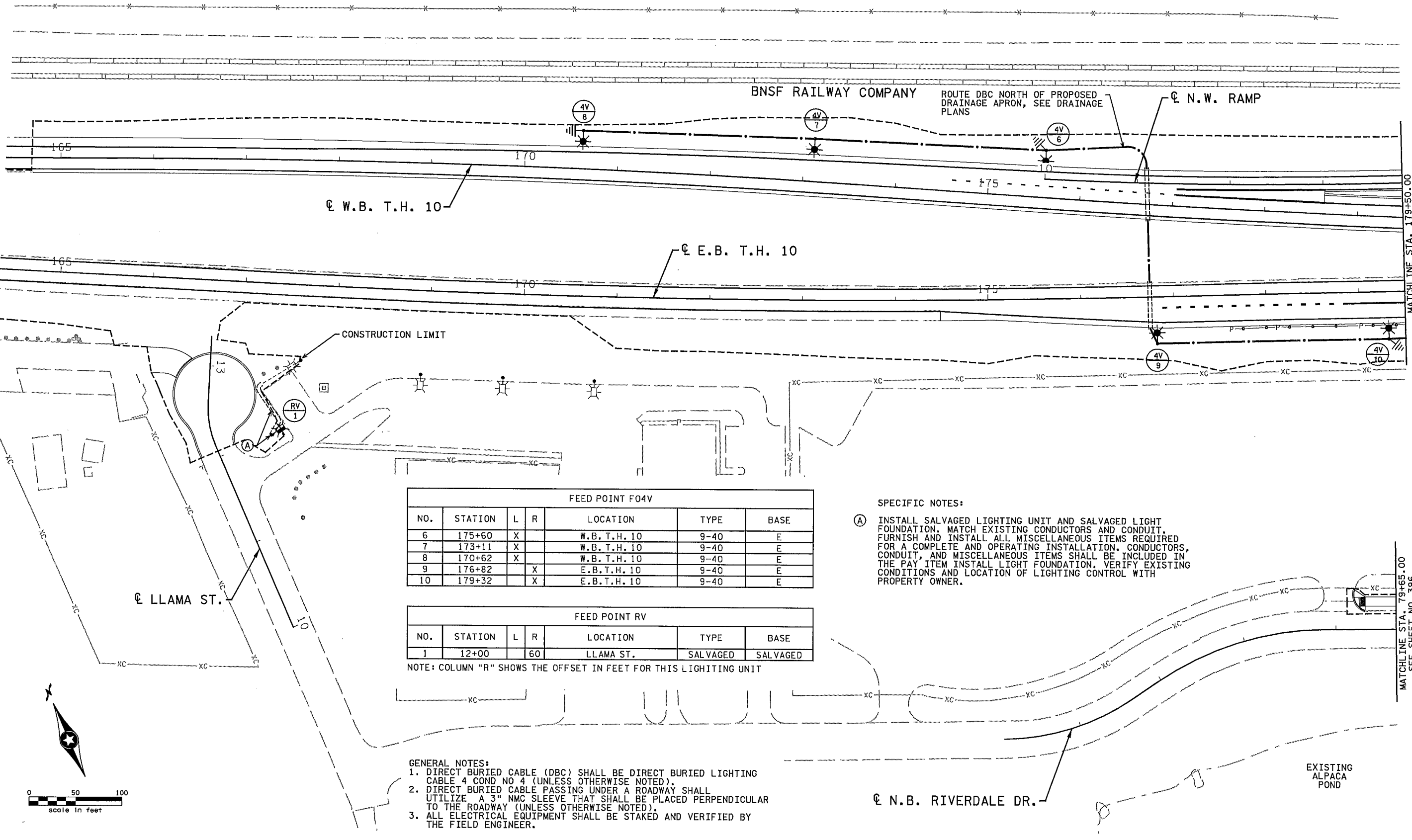
LIGHTING PLANS AND DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

LIGHTING DETAILS

SHEET 394 OF 586





FEED POINT F04V					
NO.	STATION	L	R	LOCATION	BASE
6	175+60	X		W.B. T.H. 10	E
7	173+11	X		W.B. T.H. 10	E
8	170+62	X		W.B. T.H. 10	E
9	176+82		X	E.B. T.H. 10	E
10	179+32		X	E.B. T.H. 10	E

FEED POINT RV					
NO.	STATION	L	R	LOCATION	BASE
1	12+00		60	LLAMA ST.	SALVAGED

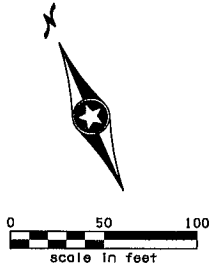
NOTE: COLUMN "R" SHOWS THE OFFSET IN FEET FOR THIS LIGHTING UNIT

**SPECIFIC NOTES:**

(A) INSTALL SALVAGED LIGHTING UNIT AND SALVAGED LIGHT FOUNDATION. MATCH EXISTING CONDUCTORS AND CONDUIT. FURNISH AND INSTALL ALL MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE AND OPERATING INSTALLATION. CONDUCTORS, CONDUIT, AND MISCELLANEOUS ITEMS SHALL BE INCLUDED IN THE PAY ITEM INSTALL LIGHT FOUNDATION. VERIFY EXISTING CONDITIONS AND LOCATION OF LIGHTING CONTROL WITH PROPERTY OWNER.

**GENERAL NOTES:**

- DIRECT BURIED CABLE (DBC) SHALL BE DIRECT BURIED LIGHTING CABLE 4 COND NO 4 (UNLESS OTHERWISE NOTED).
- DIRECT BURIED CABLE PASSING UNDER A ROADWAY SHALL UTILIZE A 3" NMC SLEEVE THAT SHALL BE PLACED PERPENDICULAR TO THE ROADWAY (UNLESS OTHERWISE NOTED).
- ALL ELECTRICAL EQUIPMENT SHALL BE STAKED AND VERIFIED BY THE FIELD ENGINEER.



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **STEVE MCHENRY**

Date: **09-12-14** License #: **46710**

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY T. RICHARDSON

DESIGNED BY T. RICHARDSON

CHECKED BY S. MCHENRY

COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

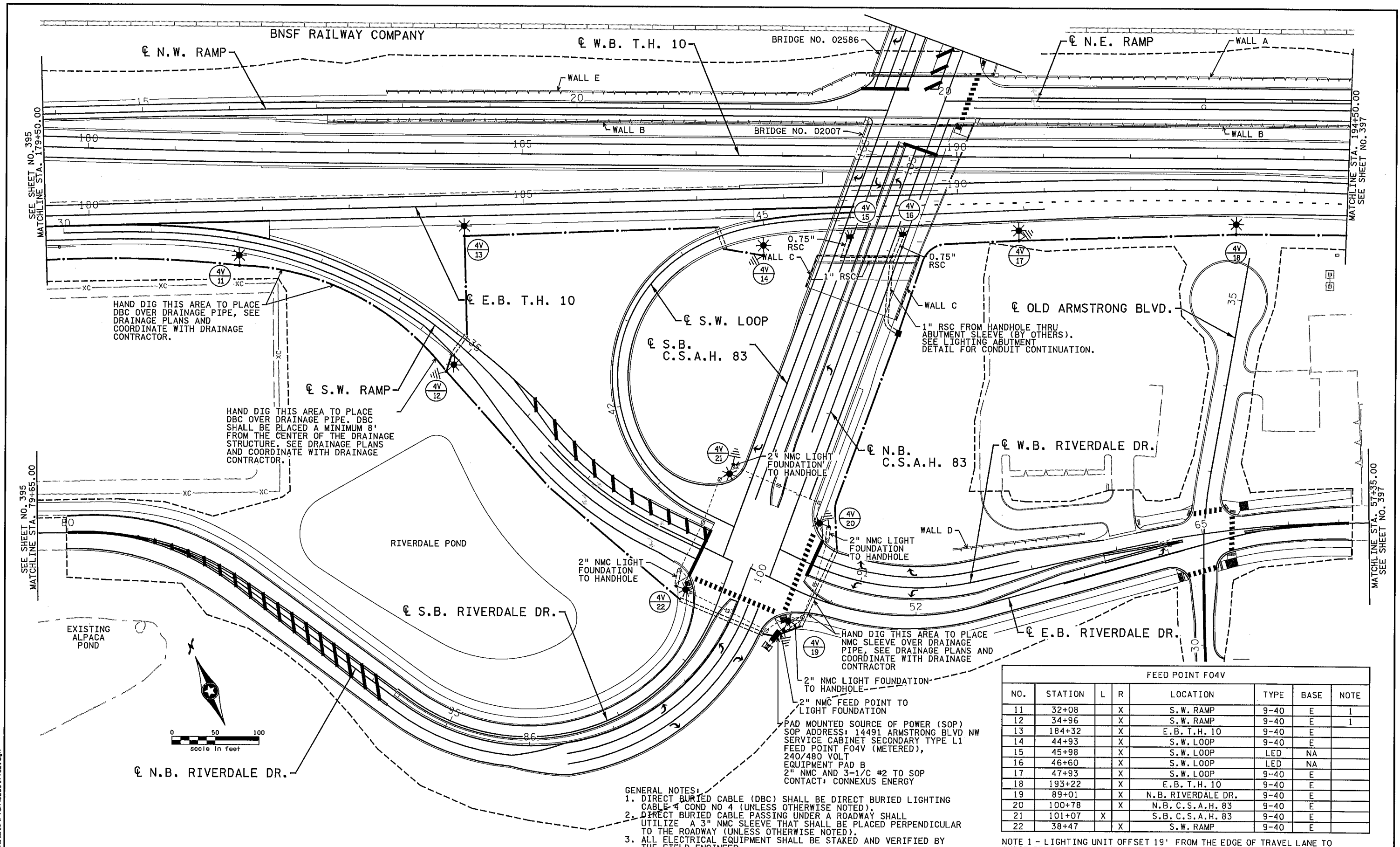
LIGHTING PLANS AND DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 395 OF 586

MATCHLINE STA. 179+50.00 SEE SHEET NO. 396

MATCHLINE STA. 79+65.00 SEE SHEET NO. 396



HAND DIG THIS AREA TO PLACE DBC OVER DRAINAGE PIPE, SEE DRAINAGE PLANS AND COORDINATE WITH DRAINAGE CONTRACTOR.

HAND DIG THIS AREA TO PLACE DBC OVER DRAINAGE PIPE, DBC SHALL BE PLACED A MINIMUM 8' FROM THE CENTER OF THE DRAINAGE STRUCTURE. SEE DRAINAGE PLANS AND COORDINATE WITH DRAINAGE CONTRACTOR.

HAND DIG THIS AREA TO PLACE NMC SLEEVE OVER DRAINAGE PIPE, SEE DRAINAGE PLANS AND COORDINATE WITH DRAINAGE CONTRACTOR

PAD MOUNTED SOURCE OF POWER (SOP)  
 SOP ADDRESS: 14491 ARMSTRONG BLVD NW  
 SERVICE CABINET SECONDARY TYPE L1  
 FEED POINT F04V (METERED),  
 240/480 VOLT  
 EQUIPMENT PAD B  
 2" NMC AND 3-1/C #2 TO SOP  
 CONTACT: CONNEXUS ENERGY

- GENERAL NOTES:
1. DIRECT BURIED CABLE (DBC) SHALL BE DIRECT BURIED LIGHTING CABLE 4 COND NO 4 (UNLESS OTHERWISE NOTED).
  2. DIRECT BURIED CABLE PASSING UNDER A ROADWAY SHALL UTILIZE A 3" NMC SLEEVE THAT SHALL BE PLACED PERPENDICULAR TO THE ROADWAY (UNLESS OTHERWISE NOTED).
  3. ALL ELECTRICAL EQUIPMENT SHALL BE STAKED AND VERIFIED BY THE FIELD ENGINEER.

FEED POINT F04V							
NO.	STATION	L	R	LOCATION	TYPE	BASE	NOTE
11	32+08		X	S.W. RAMP	9-40	E	1
12	34+96		X	S.W. RAMP	9-40	E	1
13	184+32		X	E.B. T.H. 10	9-40	E	
14	44+93		X	S.W. LOOP	9-40	E	
15	45+98		X	S.W. LOOP	LED	NA	
16	46+60		X	S.W. LOOP	LED	NA	
17	47+93		X	S.W. LOOP	9-40	E	
18	193+22		X	E.B. T.H. 10	9-40	E	
19	89+01		X	N.B. RIVERDALE DR.	9-40	E	
20	100+78		X	N.B. C.S.A.H. 83	9-40	E	
21	101+07	X		S.B. C.S.A.H. 83	9-40	E	
22	38+47		X	S.W. RAMP	9-40	E	

NOTE 1 - LIGHTING UNIT OFFSET 19' FROM THE EDGE OF TRAVEL LANE TO AVOID CONFLICT WITH DRAINAGE PIPE. SEE DRAINAGE PLANS.

3/24/15 11:20:4 AM H:\Projects\8255\CAD\_BIM\PI on\8255\_1102.dgn

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Print Name: STEVE MCHENRY

*Steve Mchenry*

Date: 09-12-14 License #: 46710

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

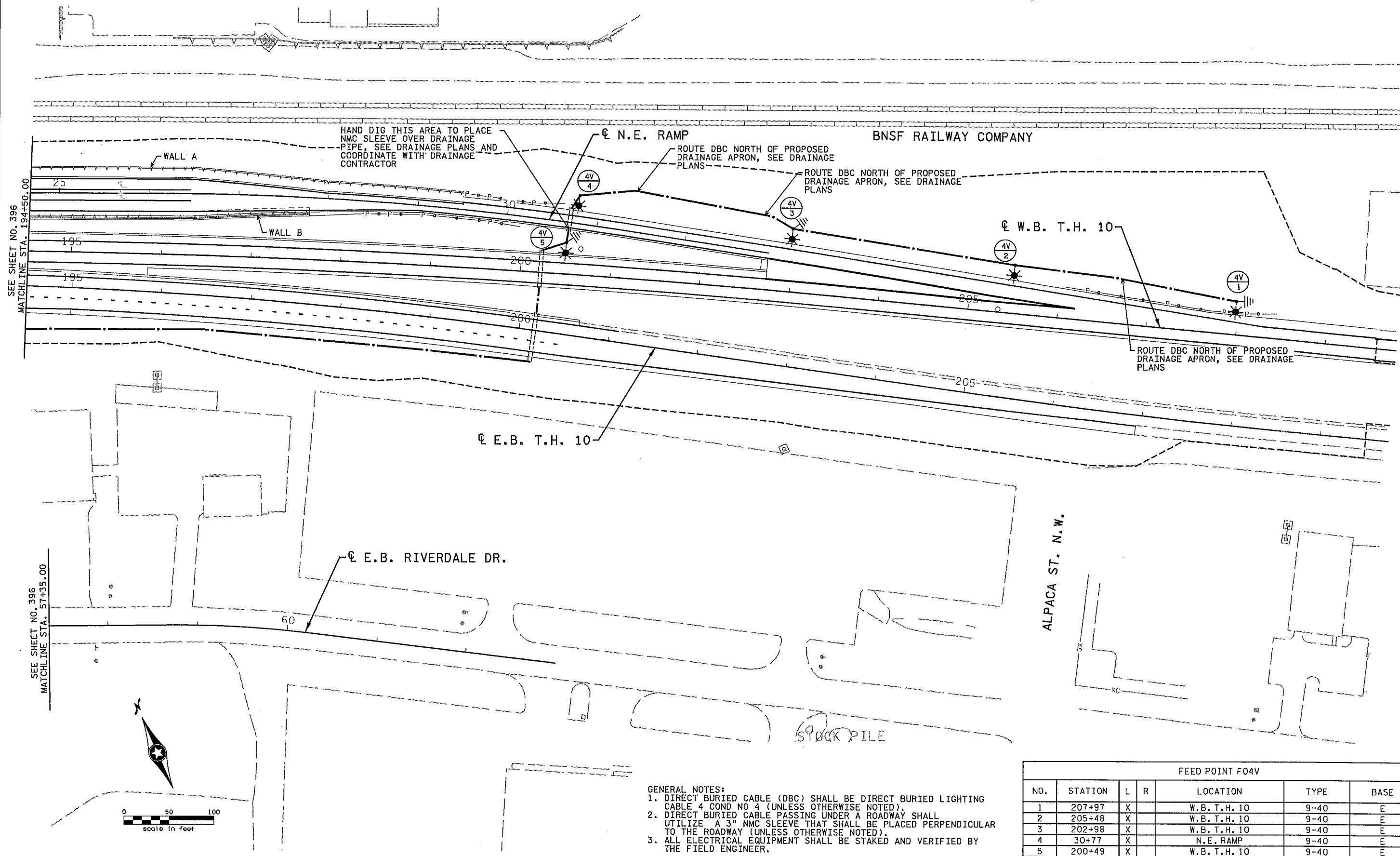
COMM. NO. 0138259

DRAWN BY T. RICHARDSON  
 DESIGNED BY T. RICHARDSON  
 CHECKED BY S. MCHENRY

**SRH** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 LIGHTING PLANS AND DETAILS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 396 OF 586



HAND DIG THIS AREA TO PLACE NMC SLEEVE OVER DRAINAGE PIPE, SEE DRAINAGE PLANS AND COORDINATE WITH DRAINAGE CONTRACTOR

☐ N.E. RAMP

BNSF RAILWAY COMPANY

ROUTE DBC NORTH OF PROPOSED DRAINAGE APRON, SEE DRAINAGE PLANS

ROUTE DBC NORTH OF PROPOSED DRAINAGE APRON, SEE DRAINAGE PLANS

☐ W.B. T.H. 10

ROUTE DBC NORTH OF PROPOSED DRAINAGE APRON, SEE DRAINAGE PLANS

☐ E.B. T.H. 10

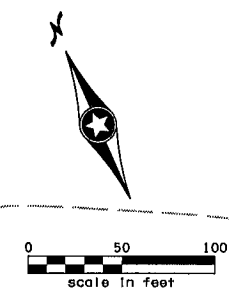
☐ E.B. RIVERDALE DR.

ALPACA ST. N.W.

STOCK PILE

SEE SHEET NO. 396  
MATCHLINE STA. 194+50.00

SEE SHEET NO. 396  
MATCHLINE STA. 57+35.00



- GENERAL NOTES:
1. DIRECT BURIED CABLE (DBC) SHALL BE DIRECT BURIED LIGHTING CABLE 4 COND NO 4 (UNLESS OTHERWISE NOTED).
  2. DIRECT BURIED CABLE PASSING UNDER A ROADWAY SHALL UTILIZE A 3" NMC SLEEVE THAT SHALL BE PLACED PERPENDICULAR TO THE ROADWAY (UNLESS OTHERWISE NOTED).
  3. ALL ELECTRICAL EQUIPMENT SHALL BE STAKED AND VERIFIED BY THE FIELD ENGINEER.

FEED POINT F04V						
NO.	STATION	L	R	LOCATION	TYPE	BASE
1	207+97	X		W.B. T.H. 10	9-40	E
2	205+48	X		W.B. T.H. 10	9-40	E
3	202+98	X		W.B. T.H. 10	9-40	E
4	30+77	X		N.E. RAMP	9-40	E
5	200+49	X		W.B. T.H. 10	9-40	E

3/24/15, PM 9/11/2014 H:\Projects\8255\CAD\_BIM\Plan\8255\_1103.dgn

NO	DATE	BY	CHK	APPR	REVISION

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: STEVE MCHENRY

*Steve Mchenry*

Date 09-12-14 License # 46710

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY T. RICHARDSON

DESIGNED BY T. RICHARDSON

CHECKED BY S. MCHENRY

COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS

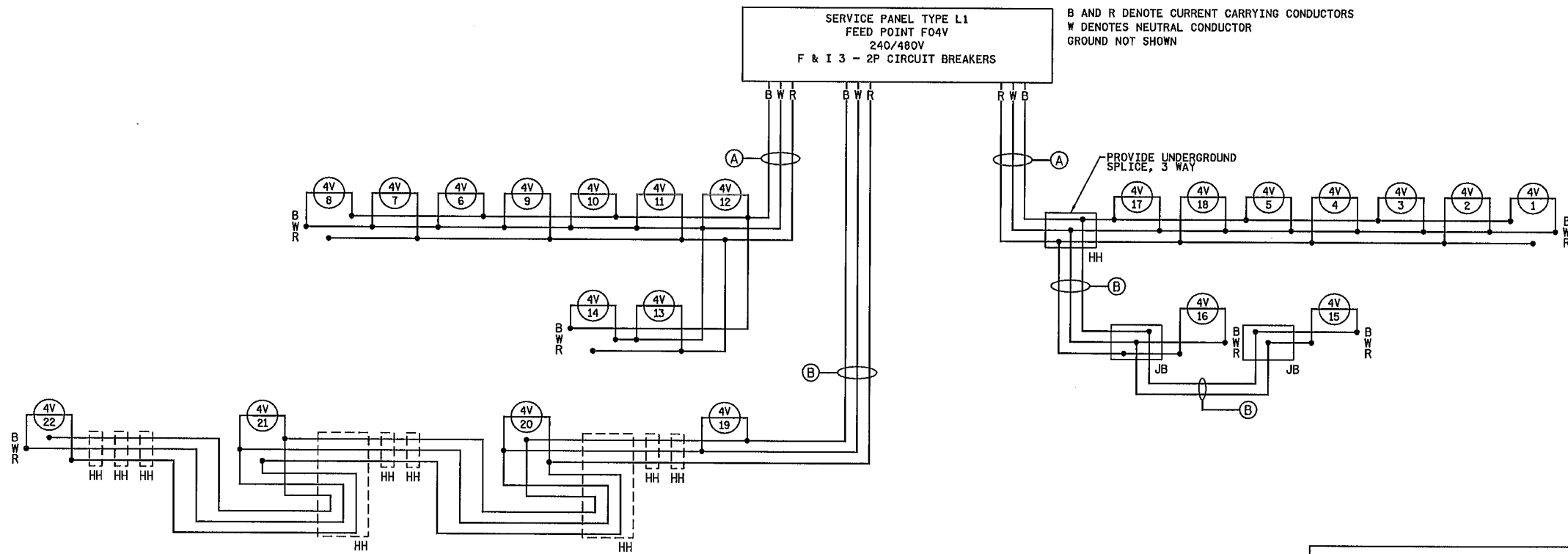
Consulting Group, Inc.

ANOKA COUNTY

LIGHTING PLANS AND DETAILS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET 397 OF 586



B AND R DENOTE CURRENT CARRYING CONDUCTORS  
 W DENOTES NEUTRAL CONDUCTOR  
 GROUND NOT SHOWN

**LEGEND**

PROPOSED LUMINAIRE	XX X	PROPOSED CIRCUITRY	—
PROPOSED HANDHOLE (HH) OR JUNCTION BOX (JB)	□	PROPOSED SPLICE	•
		EXISTING HANDHOLE (HH) OR JUNCTION BOX (JB)	□

Ⓐ DIRECT BURIED LIGHTING CABLE  
4 COND NO. 4

Ⓑ 1-1/2" NO. 10

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NO	DATE	BY	CKD	APPR	REVISION

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: **STEVE MCHENRY**

*Steve McHenry*

Date: 09-12-14 License # 46710

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**T. RICHARDSON**

DESIGNED BY  
**T. RICHARDSON**

CHECKED BY  
**S. MCHENRY**

COMM. NO. 0138259



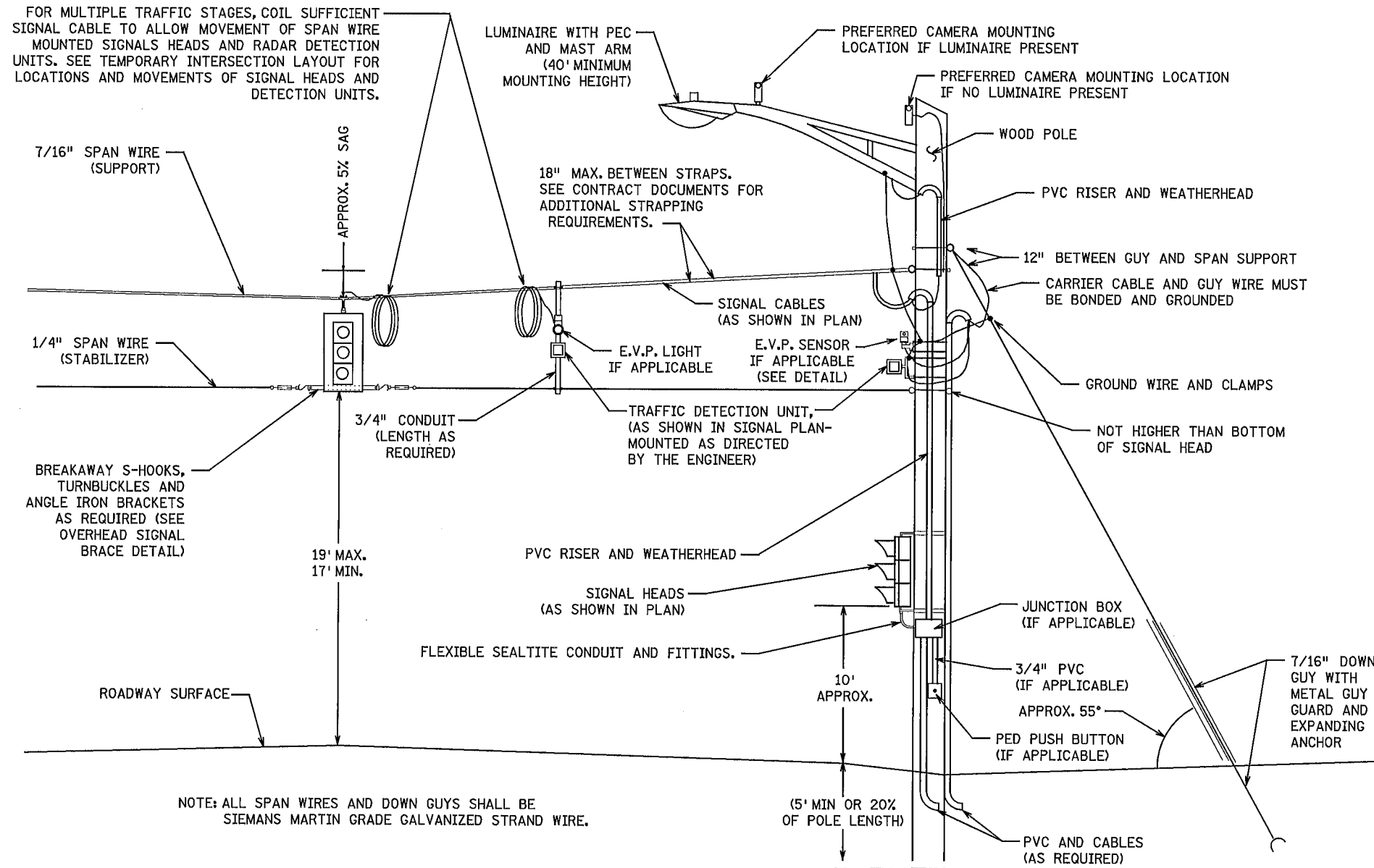
**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
 LIGHTING PLANS AND DETAILS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 WIRING DIAGRAM

**SHEET**  
398  
**OF**  
586

**TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS**

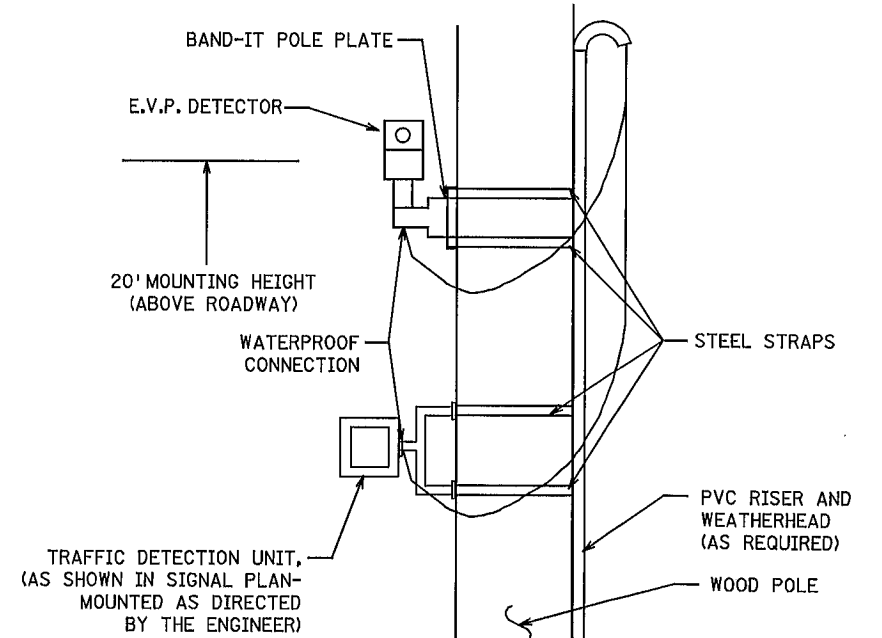
(NOT TO SCALE)



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

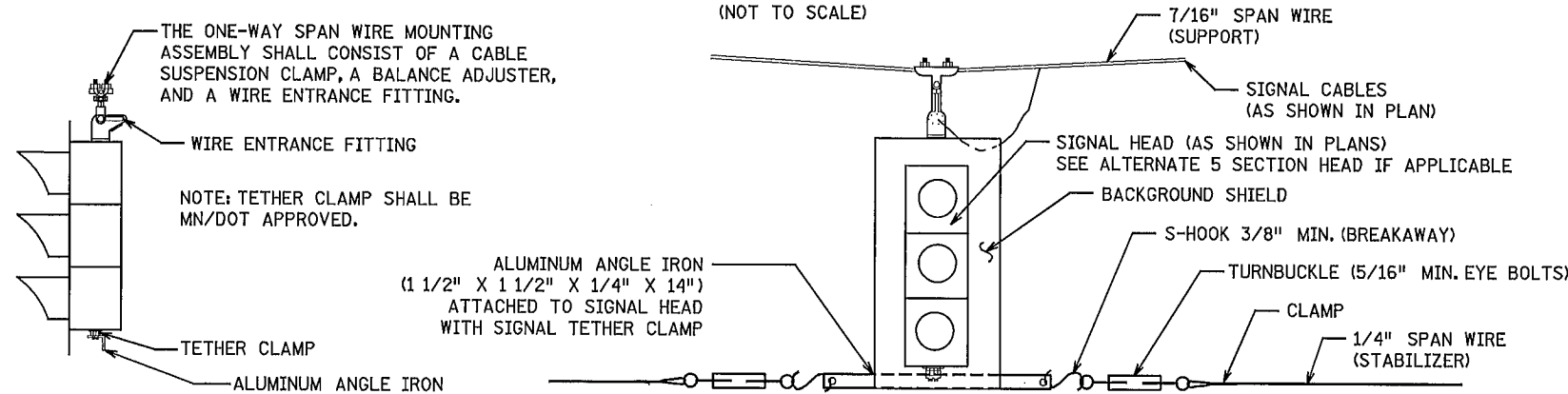
**E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT**

(NOT TO SCALE)



**OVERHEAD SIGNAL BRACE DETAIL**

(NOT TO SCALE)



THE ONE-WAY SPAN WIRE MOUNTING ASSEMBLY SHALL CONSIST OF A CABLE SUSPENSION CLAMP, A BALANCE ADJUSTER, AND A WIRE ENTRANCE FITTING.

WIRE ENTRANCE FITTING

NOTE: TETHER CLAMP SHALL BE MN/DOT APPROVED.

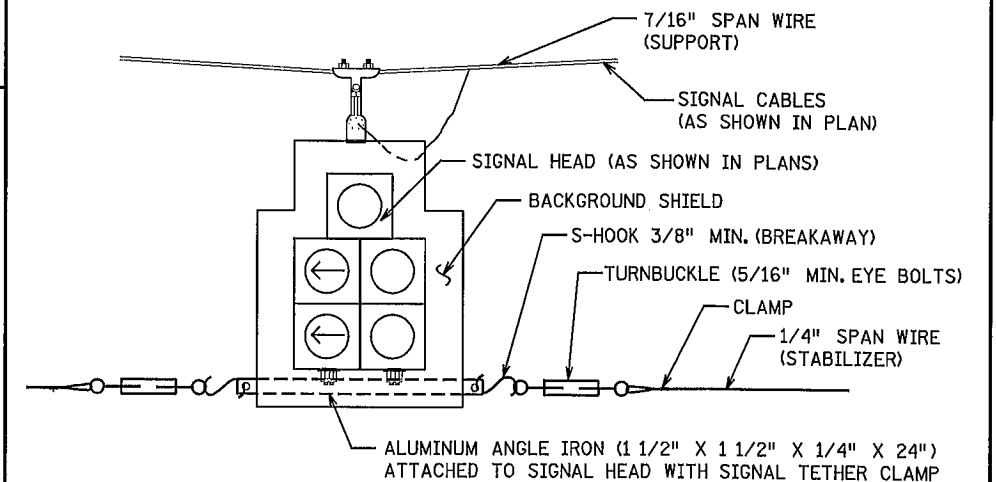
TETHER CLAMP

ALUMINUM ANGLE IRON

ALUMINUM ANGLE IRON (1 1/2\"/>

**5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL**

(NOT TO SCALE)



3/24/15 5:53 PM 9/11/2014 H:\Projects\8259\CAD\_BIM\PI\an\8259\_sd06.dgn

NO	DATE	BY	CHK	APPR	REVISION

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.  
 Prt Int Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.      CITY PROJECT NO.      COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 TRAFFIC SIGNAL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 TYPICAL WOOD POLE/SPAN WIRE SIGNAL SYSTEM DETAIL  
 WITH LOWER BREAKAWAY STABILIZER WIRE

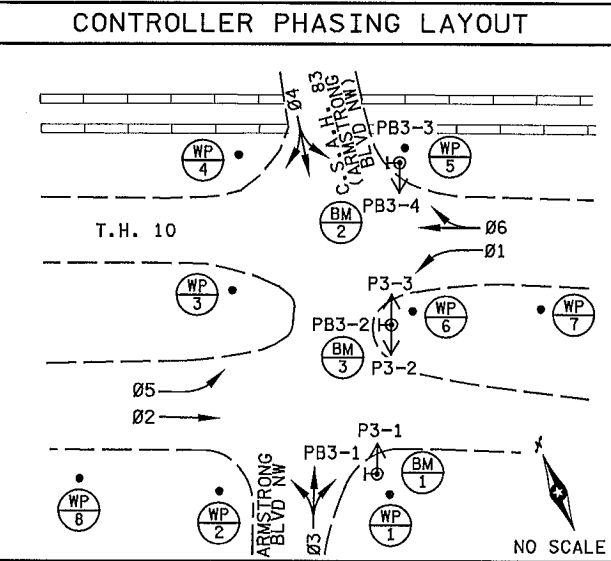
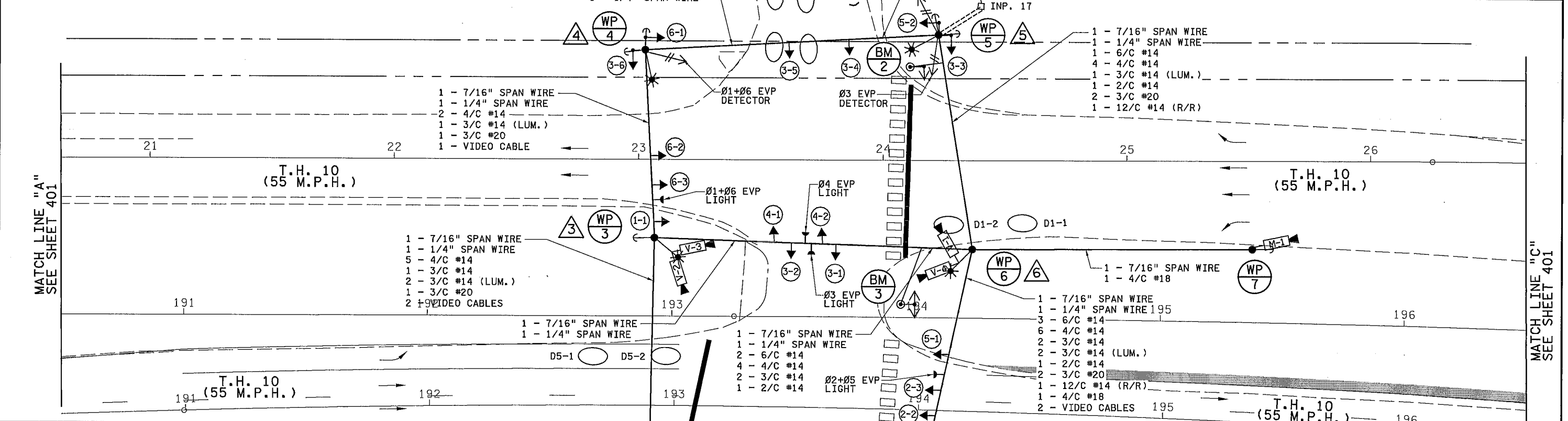
SHEET  
**399**  
 OF  
**586**

LED SIGNAL INDICATIONS					
FACE	R	Y	G	YLA	GLA
1-1,1-2	←	←	←		
2-1,2-2,2-3	●	●	●		
3-1,3-3,3-4	●	●	●		
3-2,3-5	●	●	●		←
3-6	●	●	●		←
4-1,4-3,4-4	●	●	●		←
4-2,4-5	●	●	●		←
4-6	●	●	●		←
5-1,5-2	←	←	←		
6-1,6-2,6-3	●	●	●		

ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"  
EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD

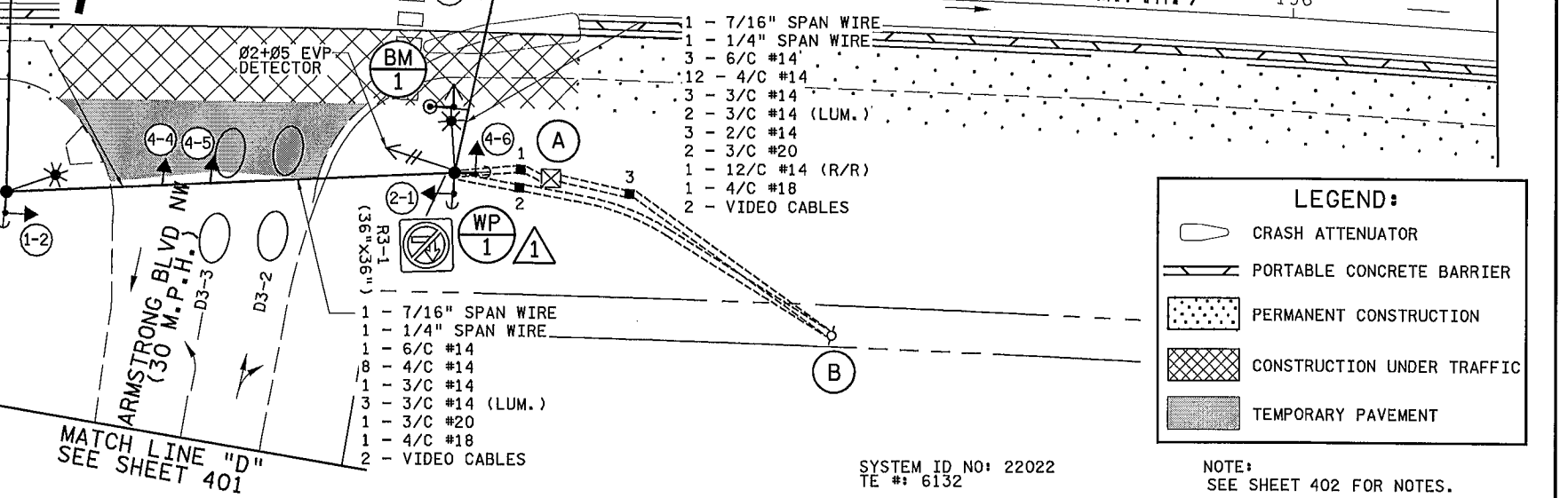
DETECTORS			
DESIGNATION	DETECTOR	MOUNT	LOCATION
D1-1	V-3	LUMINAIRE	40'
D1-2	V-3	LUMINAIRE	10'
D2-1,D2-2	M-2	LUMINAIRE	475'
D3-1	V-2	LUMINAIRE	120'
D3-2,D3-3	V-2	LUMINAIRE	5',20'
D4-1	V-1	LUMINAIRE	250'
D4-2,D4-3	V-1	LUMINAIRE	5'
D4-4,D4-5	V-1	LUMINAIRE	AS SHOWN
D5-1	V-4	LUMINAIRE	40'
D5-2	V-4	LUMINAIRE	10'
D6-1,D6-2	M-1	LUMINAIRE	475'

LOCATION = DISTANCE IN FEET FROM CROSSWALK/ STOP BAR TO FRONT OF DETECTION AREA



**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 6 PHASE WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND PHASES 3 AND 4 BEING SEQUENTIAL (SPLIT) PHASES
- Ø3 AND Ø4 SHALL OPERATE WITH TIMED OVERLAP FOR SIGNAL HEADS 3-3, 3-4, 3-5, 3-6, 4-3, 4-4, 4-5 AND 4-6
- FLASH MODE SHALL BE ALL RED
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL
- R.R. PREEMPTION



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NO	DATE	BY	CKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: 09-12-14 License #: 42785

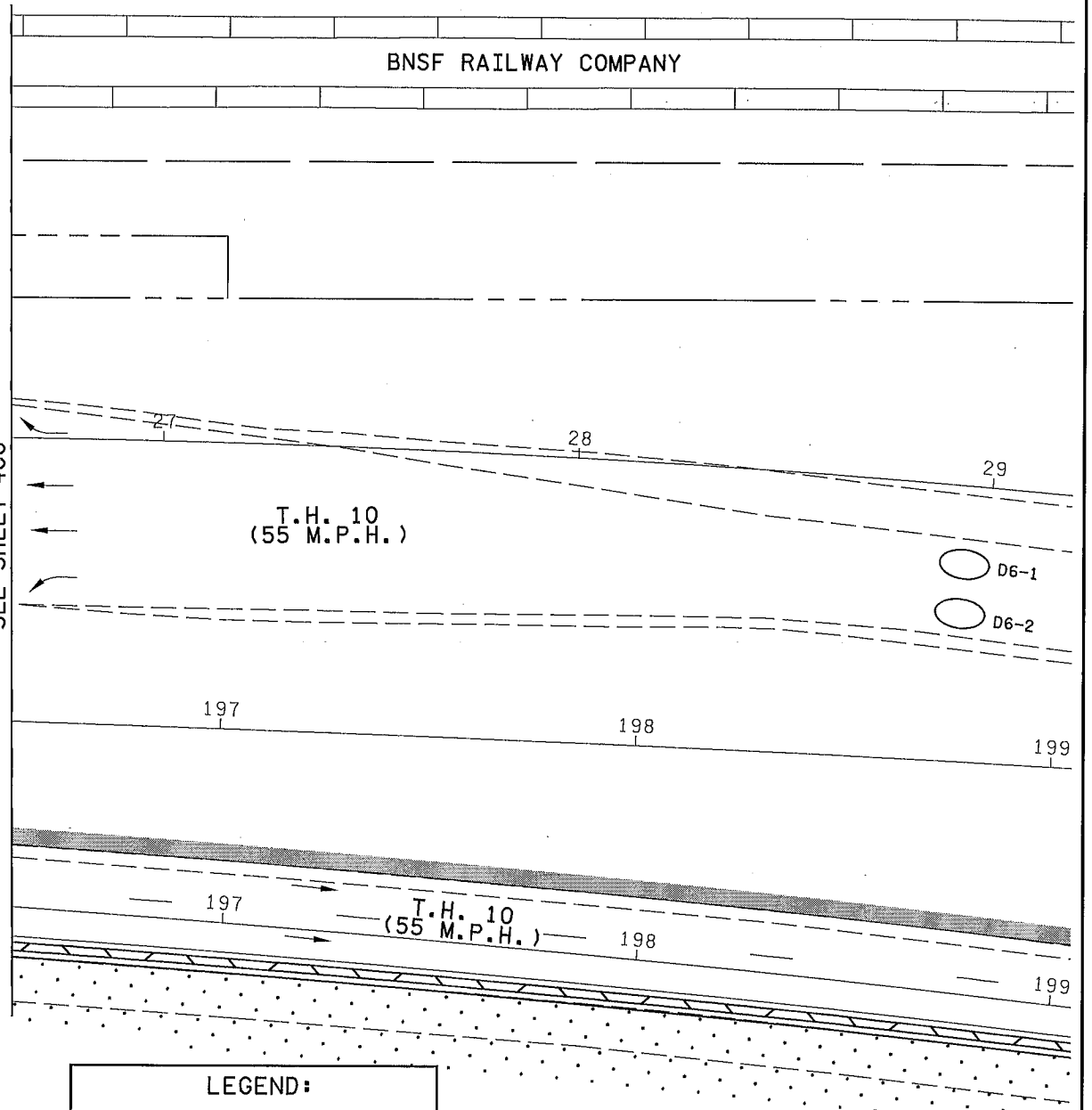
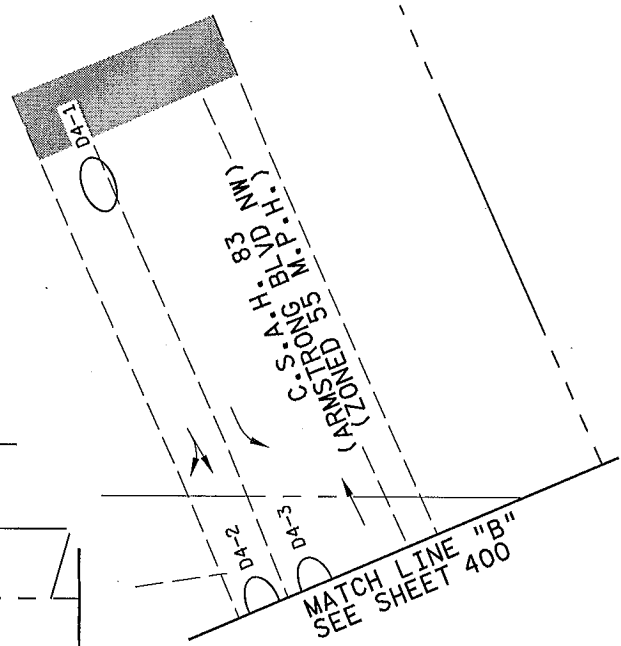
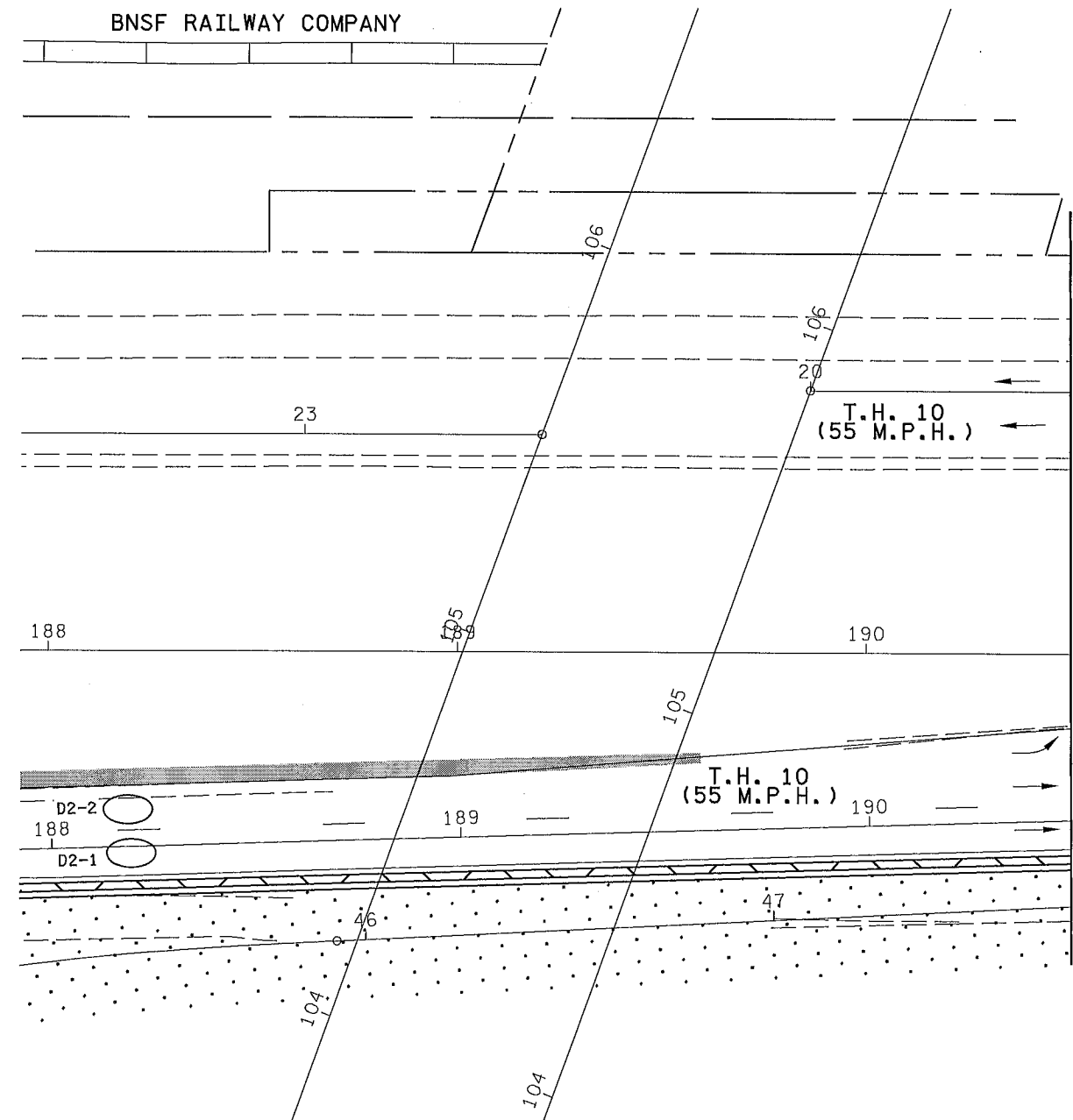
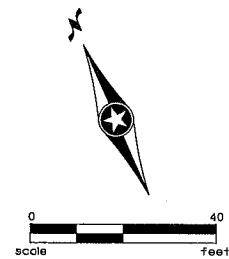
STATE AID PROJECT NO. 002-683-004 139-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259



ANOKA COUNTY  
 TRAFFIC SIGNAL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TEMPORARY INTERSECTION LAYOUT (STAGE 1A)  
 T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET 400 OF 586



**LEGEND:**

- CRASH ATTENUATOR
- PORTABLE CONCRETE BARRIER
- PERMANENT CONSTRUCTION
- TEMPORARY PAVEMENT

NOTE:  
SEE SHEET 402 FOR NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER

COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY MATCH LINE LAYOUT (STAGE 1A)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET 401 OF 586

**WP 1** STA 193+98.84, 83.86' RT  
 WB T.H. 10  
 WOOD POLE  
 2 - DOWNGUYS, GUARDS & ANCHORS  
 2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
 1 - ONE WAY EVP DETECTOR (PHASES 2+5) WOOD POLE MOUNTED  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 1 - VIDEO CAMERA (V-1) MOUNTED ON LUMINAIRE EXTENSION  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 1 - R9-3 SIGN FACING WP2  
 1 - R3-1 (36"x36") SIGN  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 1 - VIDEO CABLE  
 4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
 3 - 6/C #14  
 14 - 4/C #14  
 3 - 3/C #14  
 3 - 2/C #14  
 3 - 3/C #20  
 1 - 12/C #14 (R/R)  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
 1 - 6/C #14  
 8 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #20  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 2" CONDUIT RISER & WEATHERHEAD TO HH-2:  
 6 - 3/C #14 (LUM.)

**WP 2** STA 192+90.21, 89.14' RT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 2 - R9-3 SIGNS FACING WP1 AND WP3  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 2" CONDUIT RISER & WEATHERHEAD  
 ABOVE JUNCTION BOX WITH:  
 2 - 4/C #14

**WP 3** STA 192+92.74, 32.04' LT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 2 - VIDEO CAMERAS (V-2, V-3) MOUNTED ON LUMINAIRE EXTENSION  
 2 - R9-3 SIGNS FACING WP2 AND WP4  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 2 - VIDEO CABLES

**WP 4** STA 192+88.78, 109.02' LT  
 WB T.H. 10  
 WOOD POLE  
 2 - DOWNGUYS, GUARDS & ANCHORS  
 2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
 1 - ONE WAY EVP DETECTOR (PHASES 1+6) WOOD POLE MOUNTED  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 2 - R9-3 SIGNS FACING WP3 AND WP5  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 2" CONDUIT RISER & WEATHERHEAD  
 ABOVE JUNCTION BOX WITH:  
 2 - 4/C #14  
 1 - 3/C #20

**WP 5** STA 194+07.92, 115.81' LT  
 WB T.H. 10  
 WOOD POLE  
 2 - DOWNGUYS, GUARDS & ANCHORS  
 2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
 1 - ONE WAY EVP DETECTOR (PHASE 3) WOOD POLE MOUNTED  
 1 - ONE WAY EVP DETECTOR (PHASE 4) WOOD POLE MOUNTED  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 1 - R9-3 SIGN FACING WP4  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 2" CONDUIT RISER & WEATHERHEAD  
 ABOVE JUNCTION BOX WITH:  
 2 - 4/C #14  
 2 - 3/C #20  
 1 - 12/C #14 (R/R)  
 2" CONDUIT BELOW JUNCTION BOX TO INP. HH-17 WITH:  
 1 - 12/C #14 (R/R)

**WP 6** STA 194+22.62, 29.11' LT  
 WB T.H. 10  
 WOOD POLE  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 2 - VIDEO CAMERAS (V-1, V-4) MOUNTED ON LUMINAIRE EXTENSION  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 2 - VIDEO CABLES

**BM 1** BARREL MOUNTED PEDESTAL POLE  
 8' PEDESTAL POLE  
 1 - TYPE 4A  
 1 - PEDESTRIAN PUSH BUTTON AND SIGN  
 (R10-3) (LEFT)  
 1 - 4/C #14  
 1 - 2/C #14

**BM 2** BARREL MOUNTED PEDESTAL POLE  
 8' PEDESTAL POLE  
 1 - TYPE 4A  
 1 - PEDESTRIAN PUSH BUTTON AND SIGN  
 (R10-3) (RIGHT)  
 1 - 4/C #14  
 1 - 2/C #14

**BM 3** BARREL MOUNTED PEDESTAL POLE  
 8' PEDESTAL POLE  
 1 - TYPE 4B  
 1 - PEDESTRIAN PUSH BUTTON AND SIGN  
 (R10-3) (LEFT/RIGHT)  
 2 - 4/C #14  
 1 - 2/C #14

**WP 7** STA 195+37.08, 29.89' LT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 1 - MICROWAVE DETECTOR (M-1)  
 1 - 4/C #18

**WP 8** STA 191+87.87, 89.05' RT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 1 - MICROWAVE DETECTOR (M-2)  
 1 - 4/C #18

**A** STA 194+22.26, 84.94' RT  
 WB T.H. 10  
 TEMPORARY SIGNAL CABINET BASE  
 TEMPORARY CABINET WITH CONTROLLER (STATE FURNISHED)  
 EXTEND 4" CONDUIT TO HH-1:  
 3 - 6/C #14  
 14 - 4/C #14  
 3 - 3/C #14  
 3 - 2/C #14  
 3 - 3/C #20  
 1 - 12/C #14 (R/R)  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 EXTEND 4" CONDUIT TO HH-1:  
 1 - 6/C #14  
 8 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #20  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 EXTEND 2" CONDUIT TO HH-3:  
 3 - 1/C #2

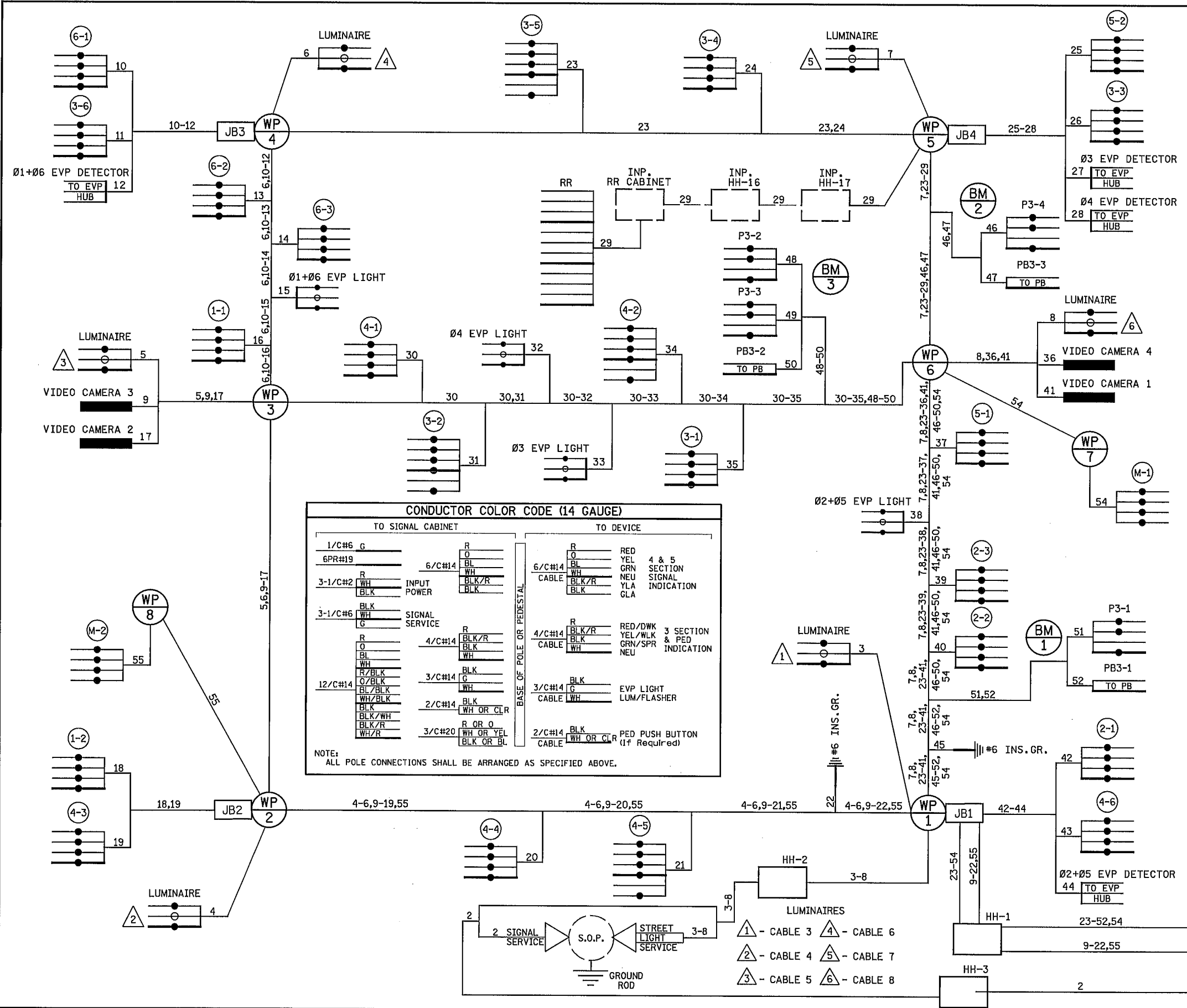
**B** STA 194+91.14, 121.90' RT  
 WB T.H. 10  
 SOP - INP. WOOD POLE WITH SERVICE  
 EQUIPMENT AND DISCONNECT  
 EXTEND 2" CONDUIT INTO HH-3:  
 3 - 1/C #2  
 EXTEND 2" CONDUIT INTO HH-2:  
 6 - 3/C #14 (LUM.)

- NOTES:
- CONDUIT SHALL BE SCHEDULE 80 PVC OR SCHEDULE 80 HDPE.
  - SEE THE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, VIDEO DETECTION LED VEHICLE INDICATIONS, AND EMERGENCY VEHICLE PREEMPTION (EVP).
  - THE EXACT LOCATION OF HANDHOLES, POLES, DETECTORS AND TEMPORARY CABINET BASE SHALL BE VERIFIED IN THE FIELD BY MNDDOT TRAFFIC OFFICE PERSONNEL.
  - THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
  - THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
  - ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND CARRY 1-1/C #6 INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLAN.
  - SEE STAGING AND TRAFFIC CONTROL PLANS FOR TEMPORARY PAVEMENT MARKINGS.
  - REMOVAL OF THE EXISTING SIGNAL SYSTEM IS INCIDENTAL. THE EXISTING SIGNAL SYSTEM SHALL BE SHUT DOWN AND REMOVED ONCE THE TEMPORARY SIGNAL SYSTEM IS IN OPERATION.
  - SEE STAGING AND TRAFFIC CONTROL PLANS FOR STAGING. MOVEMENT OF HEADS AND DETECTORS FOR EACH STAGE OR PHASE OF CONSTRUCTION SHALL BE COMPLETED BY THE CONTRACTOR.
  - COIL A SUFFICIENT LENGTH OF CABLE AT ALL SPAN WIRE MOUNTED SIGNAL FACES, BARREL MOUNTED SIGNALS, EVP DETECTORS AND INDICATOR LIGHTS, AND VIDEO AND MICROWAVE DETECTORS TO COORDINATE STAGING SHIFTS.
  - SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
  - ALL TEMPORARY SIGNAL COMPONENTS, EXCEPT THE SIGNAL CABINET AND CONTROLLER, ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE COMPONENTS MAY BE NEW OR USED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN THE TEMPORARY SIGNAL IS REMOVED.

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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. Pr Int Name: <u>ADRIAN S. POTTER</u> <i>Adrian S. Potter</i> Date: <u>09-12-14</u> License # <u>42785</u>					STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY M. BRESSLER DESIGNED BY M. BRESSLER CHECKED BY A. POTTER COMM. NO. 0138259	<b>SRF</b> Consulting Group, Inc.	<b>ENGINEERS          PLANNERS          DESIGNERS</b>	<b>ANOKA COUNTY</b> TRAFFIC SIGNAL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE TEMP. INTERSECTION/POLE NOTES (STAGE 1A) T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.	<b>SHEET</b> 402 OF 586
NO	DATE	BY	CHKD	APPR	REVISION					

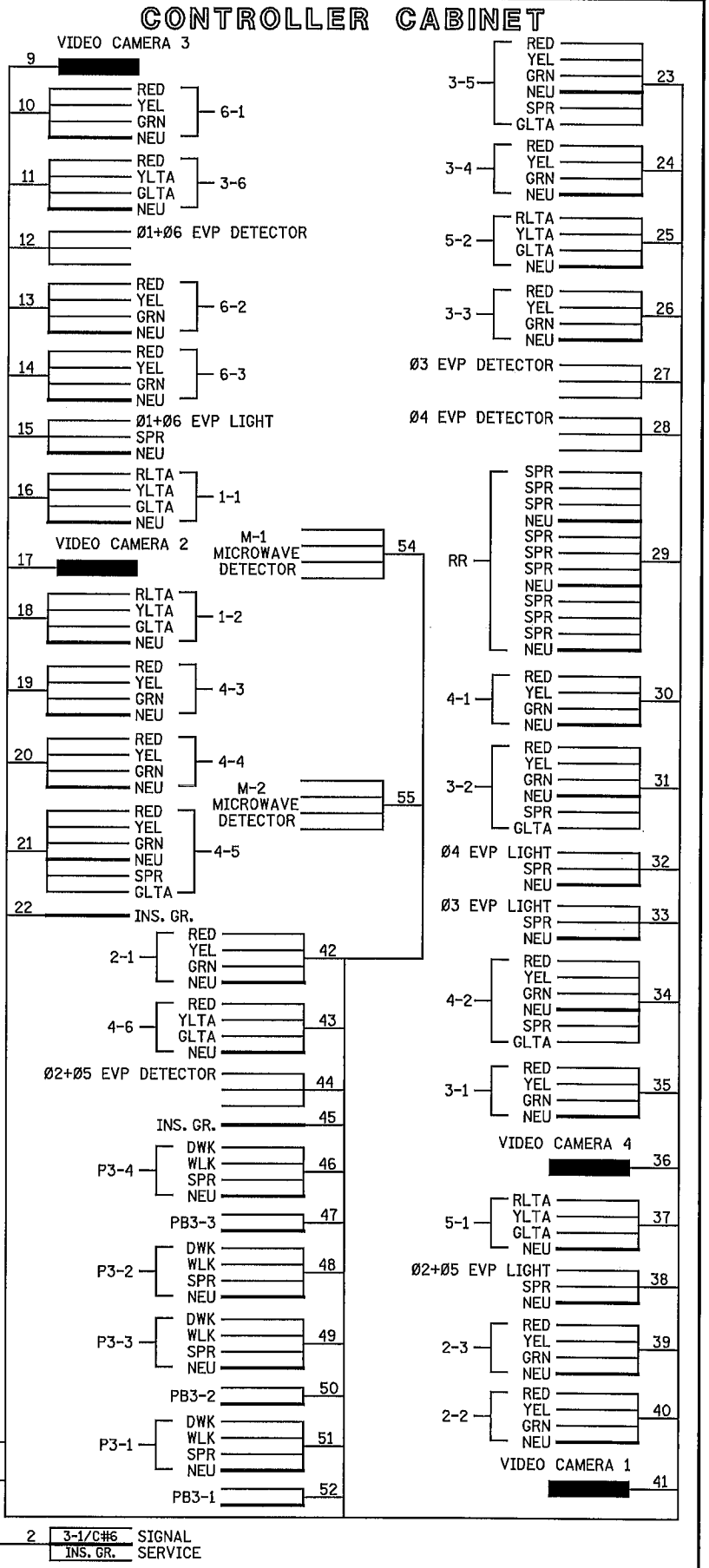




**CONDUCTOR COLOR CODE (14 GAUGE)**

TO SIGNAL CABINET		TO DEVICE	
1/C#6 G	R	R	RED
6PR#19	BLK	BLK	4 & 5 SECTION
3-1/C#2 WH	BLK/R	WH	NEU SIGNAL
BLK	BLK	BLK/R	YLA INDICATION
3-1/C#6 WH	BLK	BLK	GLA
G	BLK	R	RED/DWK 3 SECTION
	BLK/R	BLK	YEL/WLK & PED
	BLK	WH	GRN/SPR INDICATION
	WH	WH	NEU
	BLK	BLK	RED/DWK 3 SECTION
	R/BLK	BLK/R	YEL/WLK & PED
	O/BLK	BLK	GRN/SPR INDICATION
	BLK/BLK	WH	NEU
	WH/BLK	BLK	RED/DWK 3 SECTION
	BLK/WH	BLK/R	YEL/WLK & PED
	BLK/R	WH	GRN/SPR INDICATION
	WH/R	WH/R	NEU
		BLK	EVP LIGHT LUM/FLASHER
		WH	
		BLK	PED PUSH BUTTON (If Required)
		WH OR CLR	

NOTE: ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



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*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

DRAWN BY M. BRESSLER

DESIGNED BY M. BRESSLER

CHECKED BY A. POTTER

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

**ANOKA COUNTY**

TRAFFIC SIGNAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

TEMPORARY FIELD WIRING DIAGRAM (STAGE 1A)

T.H.10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

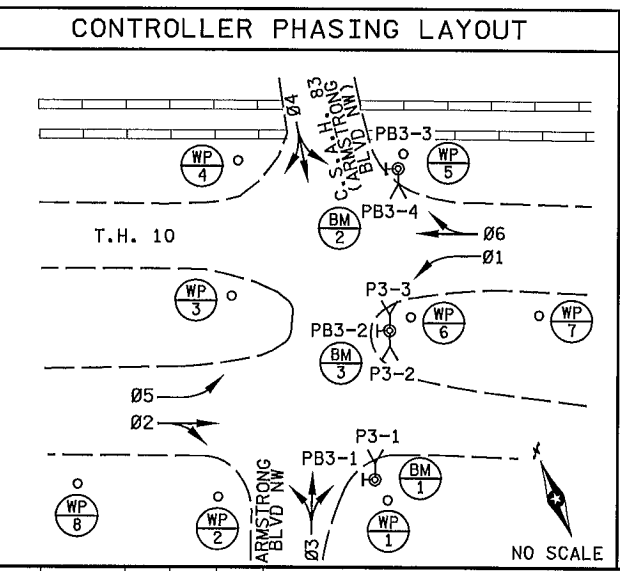
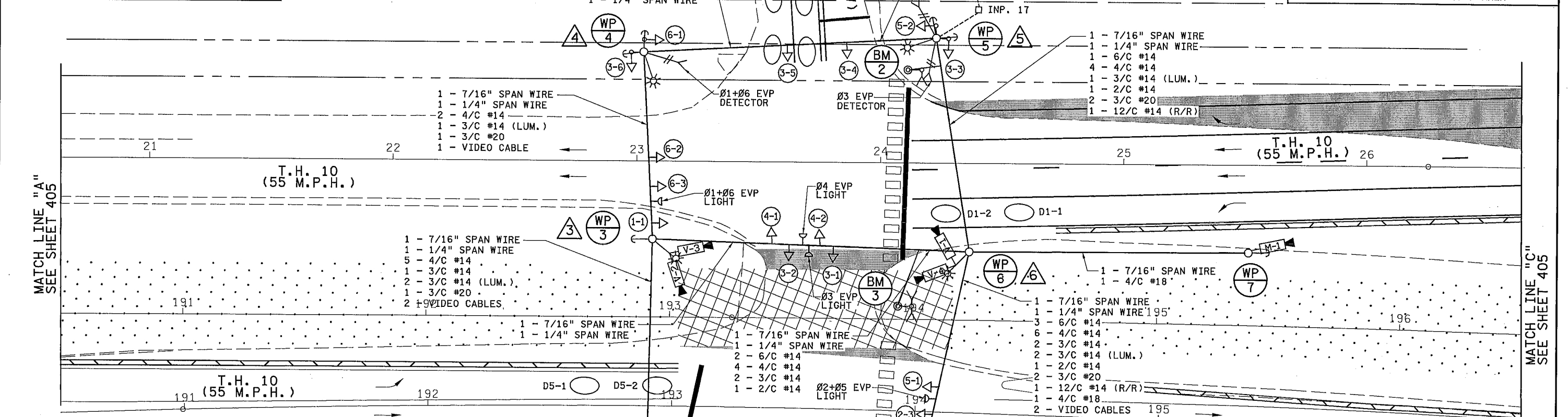
SHEET 403 OF 586

LED SIGNAL INDICATIONS					
FACE	R	Y	G	YLA	GLA
1-1,1-2	←	←	←		
2-1,2-2,2-3	○	○	○		
3-1,3-3,3-4	○	○	○		
3-2,3-5	○	○	○		↑
4-1,4-3,4-4	○	○	○		↑
4-2,4-5	○	○	○		↑
4-6	○	○	○		↑
5-1,5-2	←	←	←		↑
6-1,6-2,6-3	○	○	○		

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"  
-EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD

DETECTORS				
DESIGNATION	DETECTOR	MOUNT	LOCATION	
D1-1	V-3	LUMINAIRE	40'	
D1-2	V-3	LUMINAIRE	10'	
D2-1,D2-2	M-2	LUMINAIRE	475'	
D3-1	V-2	LUMINAIRE	120'	
D3-2,D3-3	V-2	LUMINAIRE	5',20'	
D4-1	V-1	LUMINAIRE	250'	
D4-2,D4-3	V-1	LUMINAIRE	5'	
D4-4,D4-5	V-1	LUMINAIRE	AS SHOWN	
D5-1	V-4	LUMINAIRE	40'	
D5-2	V-4	LUMINAIRE	10'	
D6-1,D6-2	M-1	LUMINAIRE	475'	

LOCATION = DISTANCE IN FEET FROM CROSSWALK/ STOP BAR TO FRONT OF DETECTION AREA



**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 6 PHASE WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND PHASES 3 AND 4 BEING SEQUENTIAL (SPLIT) PHASES
- Ø3 AND Ø4 SHALL OPERATE WITH TIMED OVERLAP FOR SIGNAL HEADS 3-3, 3-4, 3-5, 3-6, 4-3, 4-4, 4-5 AND 4-6
- FLASH MODE SHALL BE ALL RED
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL
- R.R. PREEMPTION

**LEGEND:**

- CRASH ATTENUATOR
- PORTABLE CONCRETE BARRIER
- PERMANENT CONSTRUCTION
- CONSTRUCTION UNDER TRAFFIC
- TEMPORARY PAVEMENT

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NO	DATE	BY	CKD	APPR	REVISION

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PrInt Name: **ADRIAN S. POTTER**  
Date: 09-12-14 License #: 42785

STATE AID PROJECT NO. 002-683-004 199-115-002  
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CITY PROJECT NO.

DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259

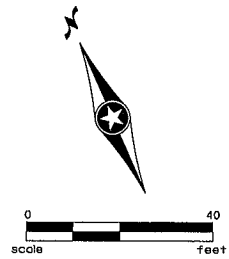
**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY INTERSECTION LAYOUT (STAGE 1B)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

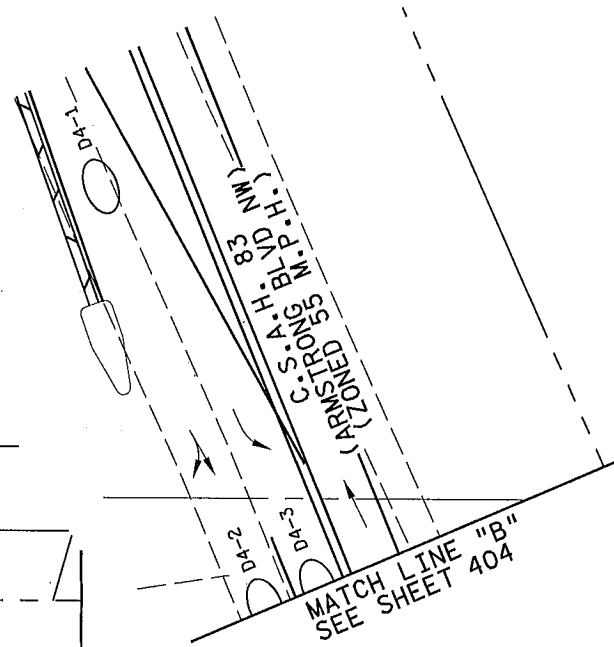
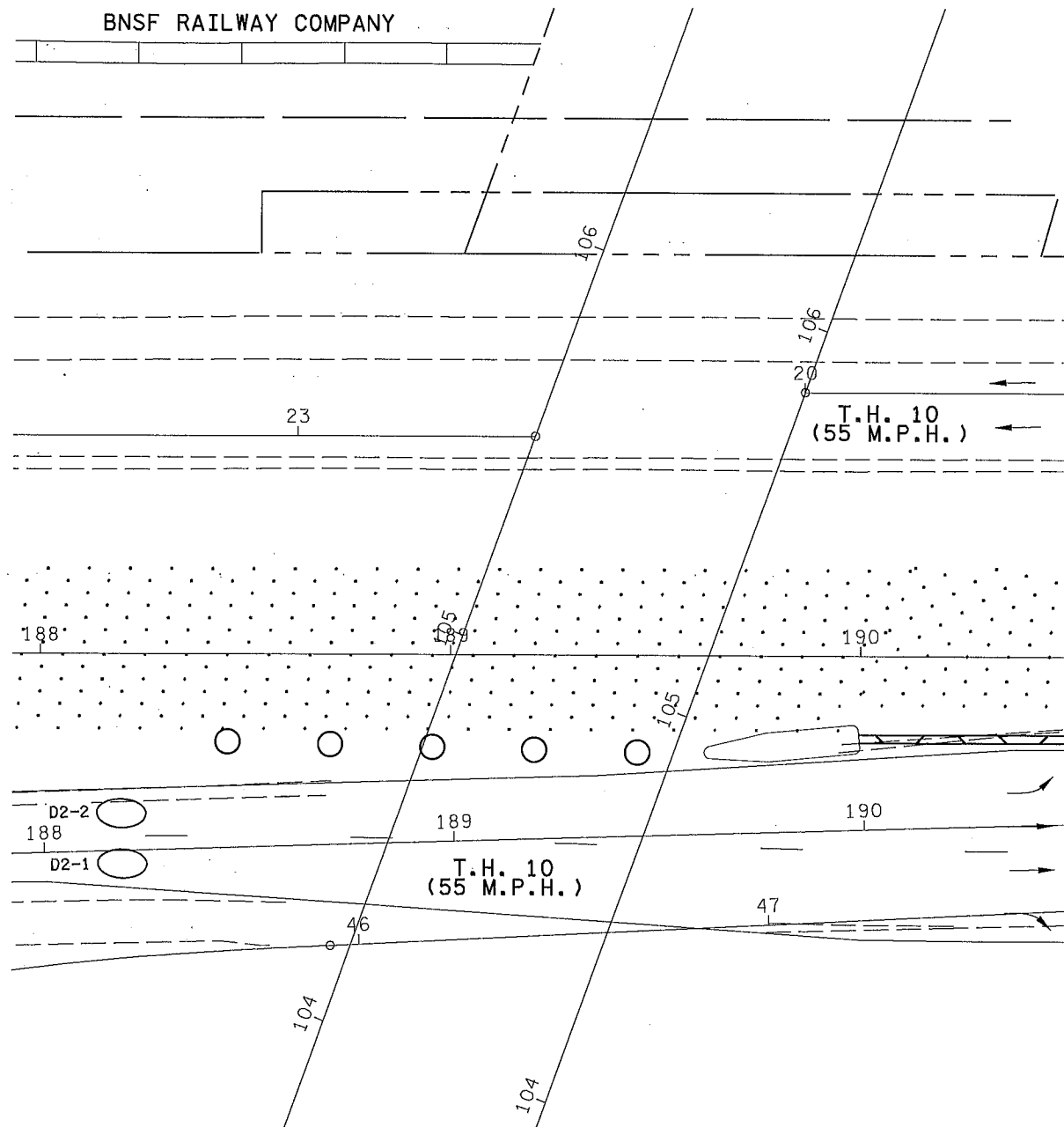
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NOTE: SEE SHEET 406 FOR NOTES.

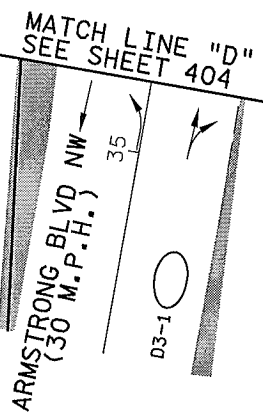
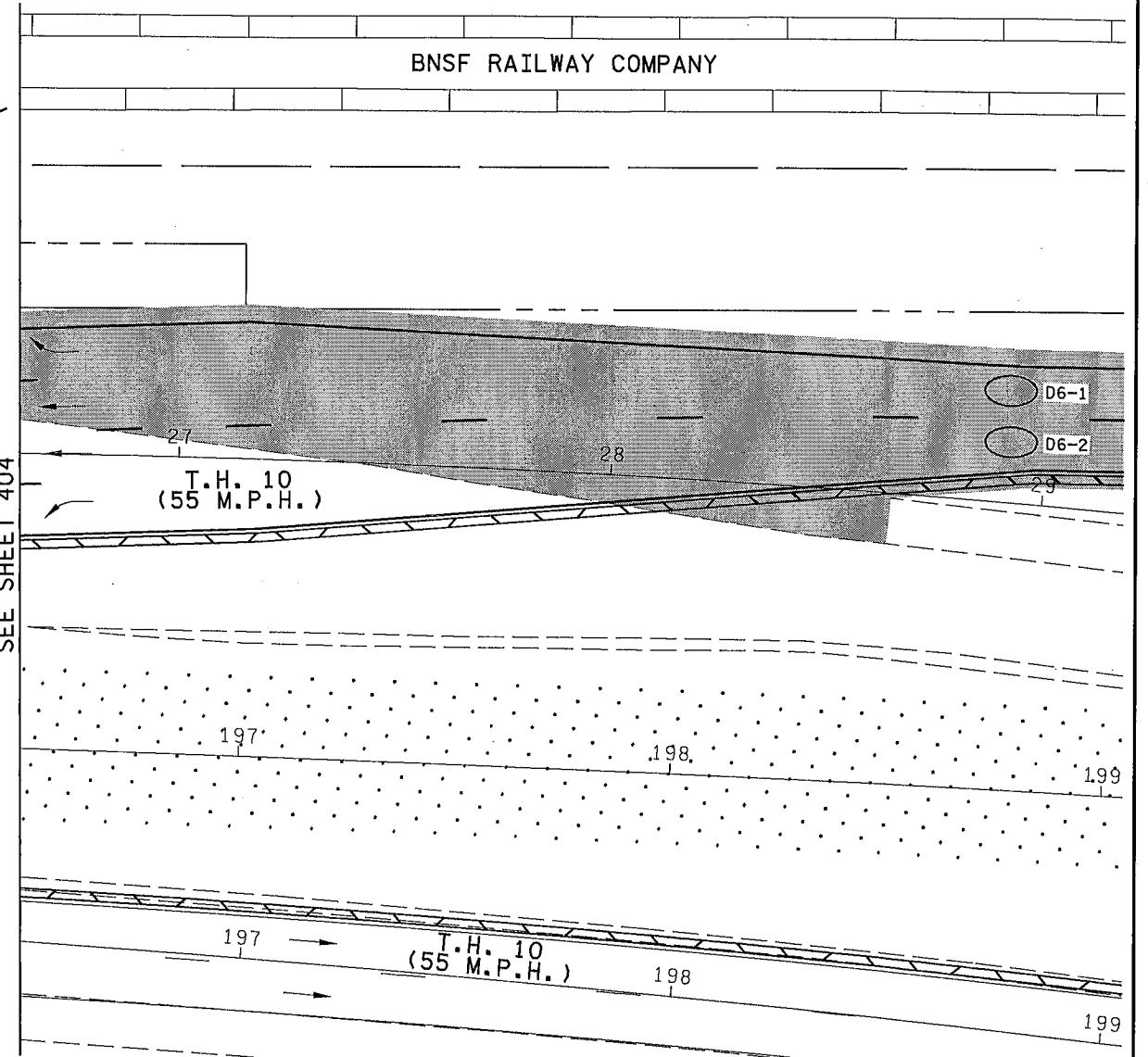
SHEET 404 OF 586



BNSF RAILWAY COMPANY



BNSF RAILWAY COMPANY



**LEGEND:**

- CRASH ATTENUATOR
- PORTABLE CONCRETE BARRIER
- PERMANENT CONSTRUCTION
- TEMPORARY PAVEMENT

NOTE:  
SEE SHEET 406 FOR NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

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199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

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DRAWN BY **M. BRESSLER**

DESIGNED BY **M. BRESSLER**

CHECKED BY **A. POTTER**

COMM. NO. **D138259**

**SRE** ENGINEERS  
PLANNERS  
DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
TEMPORARY MATCH LINE LAYOUT (STAGE 1B)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET  
405  
OF  
586

**WP 1** STA 193+98.84, 83.86' RT  
WB T.H. 10  
WOOD POLE  
2 - DOWNGUYS, GUARDS & ANCHORS  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
1 - ONE WAY EVP DETECTOR (PHASES 2+5) WOOD POLE MOUNTED  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
1 - VIDEO CAMERA (V-1) MOUNTED ON LUMINAIRE EXTENSION  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
1 - R9-3 SIGN FACING WP2  
SALVAGE- 1 - R3-1 (36"x36") SIGN  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
1 - VIDEO CABLE  
4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
3 - 6/C #14  
14 - 4/C #14  
3 - 3/C #14  
3 - 2/C #14  
3 - 3/C #20  
1 - 12/C #14 (R/R)  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
1 - 6/C #14  
8 - 4/C #14  
1 - 3/C #14  
1 - 3/C #20  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
2" CONDUIT RISER & WEATHERHEAD TO HH-2:  
6 - 3/C #14 (LUM.)

**WP 2** STA 192+90.21, 89.14' RT  
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METAL JUNCTION BOX WITH TERMINAL BLOCK  
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1 - 3/C #14 (LUM.)  
2" CONDUIT RISER & WEATHERHEAD  
ABOVE JUNCTION BOX WITH:  
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**WP 3** STA 192+92.74, 32.04' LT  
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WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
2 - VIDEO CAMERAS (V-2, V-3) MOUNTED ON LUMINAIRE EXTENSION  
2 - R9-3 SIGNS FACING WP2 AND WP4  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2 - VIDEO CABLES

**WP 4** STA 192+88.78, 109.02' LT  
WB T.H. 10  
WOOD POLE  
2 - DOWNGUYS, GUARDS & ANCHORS  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
1 - ONE WAY EVP DETECTOR (PHASES 1+6) WOOD POLE MOUNTED  
15' LUM. ARM (40' MOUNTING HEIGHT)  
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METAL JUNCTION BOX WITH TERMINAL BLOCK  
2 - R9-3 SIGNS FACING WP3 AND WP5  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2" CONDUIT RISER & WEATHERHEAD  
ABOVE JUNCTION BOX WITH:  
2 - 4/C #14  
1 - 3/C #20

**WP 5** STA 194+07.92, 115.81' LT  
WB T.H. 10  
WOOD POLE  
2 - DOWNGUYS, GUARDS & ANCHORS  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
1 - ONE WAY EVP DETECTOR (PHASE 3) WOOD POLE MOUNTED  
1 - ONE WAY EVP DETECTOR (PHASE 4) WOOD POLE MOUNTED  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
1 - R9-3 SIGN FACING WP4  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2" CONDUIT RISER & WEATHERHEAD  
ABOVE JUNCTION BOX WITH:  
2 - 4/C #14  
2 - 3/C #20  
1 - 12/C #14 (R/R)  
2" CONDUIT BELOW JUNCTION BOX TO INP. HH-17 WITH:  
1 - 12/C #14 (R/R)

**WP 6** STA 194+22.62, 29.11' LT  
WB T.H. 10  
WOOD POLE  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
2 - VIDEO CAMERAS (V-1, V-4) MOUNTED ON LUMINAIRE EXTENSION  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2 - VIDEO CABLES

**BM 1** BARREL MOUNTED PEDESTAL POLE  
8' PEDESTAL POLE  
1 - TYPE 4A  
1 - PEDESTRIAN PUSH BUTTON AND SIGN  
(R10-3) (LEFT)  
1 - 4/C #14  
1 - 2/C #14

**BM 2** BARREL MOUNTED PEDESTAL POLE  
8' PEDESTAL POLE  
1 - TYPE 4A  
1 - PEDESTRIAN PUSH BUTTON AND SIGN  
(R10-3) (RIGHT)  
1 - 4/C #14  
1 - 2/C #14

**BM 3** BARREL MOUNTED PEDESTAL POLE  
8' PEDESTAL POLE  
1 - TYPE 4B  
1 - PEDESTRIAN PUSH BUTTON AND SIGN  
(R10-3) (LEFT/RIGHT)  
2 - 4/C #14  
1 - 2/C #14

**WP 7** STA 195+37.08, 29.89' LT  
WB T.H. 10  
WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
1 - MICROWAVE DETECTOR (M-1)  
1 - 4/C #18

**WP 8** STA 191+87.87, 89.05' RT  
WB T.H. 10  
WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
1 - MICROWAVE DETECTOR (M-2)  
1 - 4/C #18

**A** STA 194+22.26, 84.94' RT  
WB T.H. 10  
TEMPORARY SIGNAL CABINET BASE  
TEMPORARY CABINET WITH CONTROLLER (STATE FURNISHED)  
EXTEND 4" CONDUIT TO HH-1:  
3 - 6/C #14  
14 - 4/C #14  
3 - 3/C #14  
3 - 2/C #14  
3 - 3/C #20  
1 - 12/C #14 (R/R)  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
EXTEND 4" CONDUIT TO HH-1:  
1 - 6/C #14  
8 - 4/C #14  
1 - 3/C #14  
1 - 3/C #20  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
EXTEND 2" CONDUIT TO HH-3:  
3 - 1/C #2

**B** STA 194+91.14, 121.90' RT  
WB T.H. 10  
SOP - INP. WOOD POLE WITH SERVICE  
EQUIPMENT AND DISCONNECT  
EXTEND 2" CONDUIT INTO HH-3:  
3 - 1/C #2  
EXTEND 2" CONDUIT INTO HH-2:  
6 - 3/C #14 (LUM.)

**NOTES:**

- ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL PROTECT AND MAINTAIN INPLACE ITEMS (SEE SPECIAL PROVISIONS).
- CONDUIT SHALL BE SCHEDULE 80 PVC OR SCHEDULE 80 HDPE.
- SEE THE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, VIDEO DETECTION LED VEHICLE INDICATIONS, AND EMERGENCY VEHICLE PREEMPTION (EVP).
- THE EXACT LOCATION OF HANDHOLES, POLES, DETECTORS AND TEMPORARY CABINET BASE SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
- THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
- ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND CARRY 1-1/C #6 INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLAN.
- SEE STAGING AND TRAFFIC CONTROL PLANS FOR TEMPORARY PAVEMENT MARKINGS.
- REMOVAL OF THE EXISTING SIGNAL SYSTEM IS INCIDENTAL. THE EXISTING SIGNAL SYSTEM SHALL BE SHUT DOWN AND REMOVED ONCE THE TEMPORARY SIGNAL SYSTEM IS IN OPERATION.
- SEE STAGING AND TRAFFIC CONTROL PLANS FOR STAGING. MOVEMENT OF HEADS AND DETECTORS FOR EACH STAGE OR PHASE OF CONSTRUCTION SHALL BE COMPLETED BY THE CONTRACTOR.
- COIL A SUFFICIENT LENGTH OF CABLE AT ALL SPAN WIRE MOUNTED SIGNAL FACES, BARREL MOUNTED SIGNALS, EVP DETECTORS AND INDICATOR LIGHTS, AND VIDEO AND MICROWAVE DETECTORS TO COORDINATE STAGING SHIFTS.
- SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
- ALL TEMPORARY SIGNAL COMPONENTS, EXCEPT THE SIGNAL CABINET AND CONTROLLER, ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE COMPONENTS MAY BE NEW OR USED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN THE TEMPORARY SIGNAL IS REMOVED.

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.  
Pr Int Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259



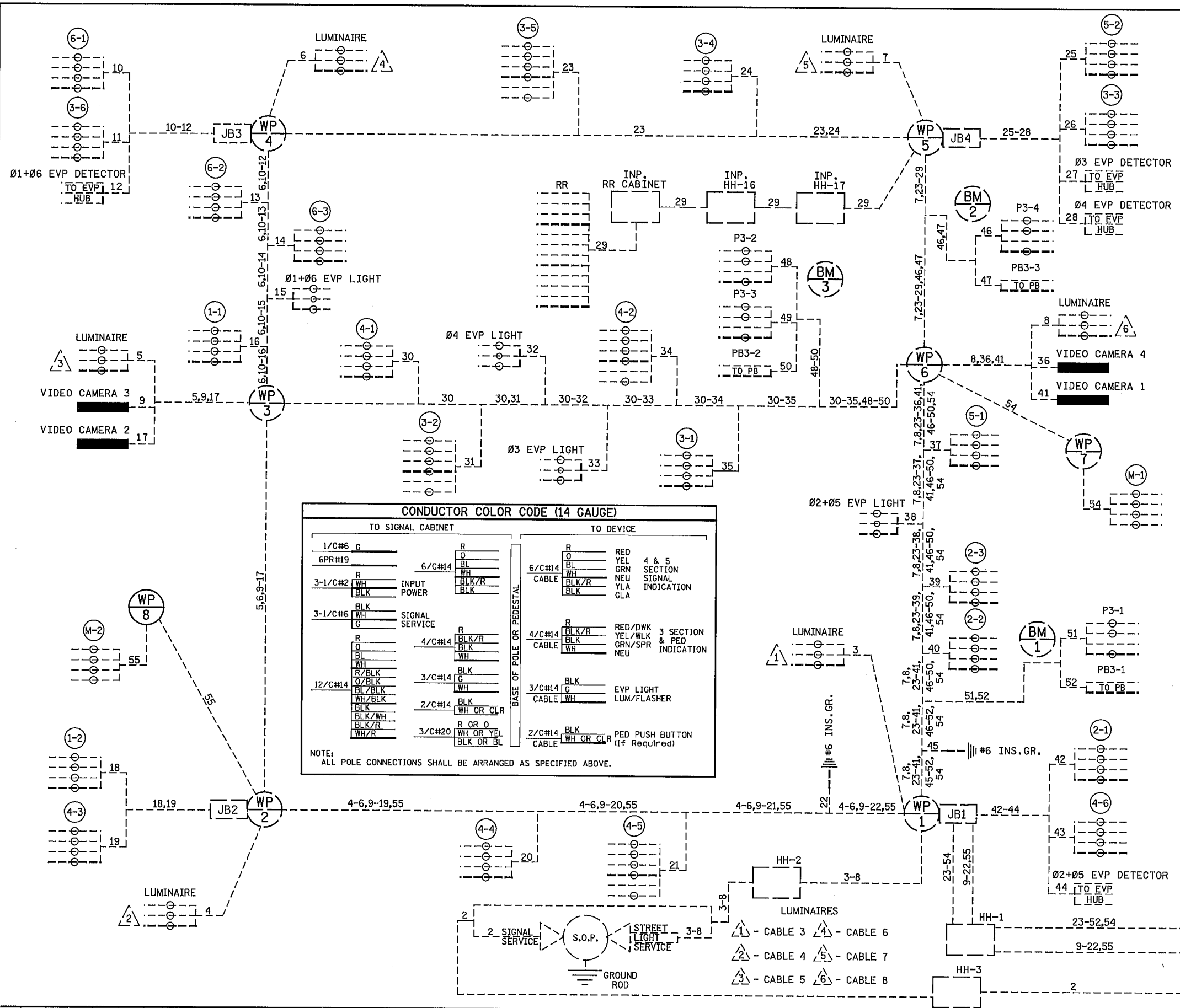
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMP. INTERSECTION/POLE NOTES (STAGE 1B)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET  
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OF  
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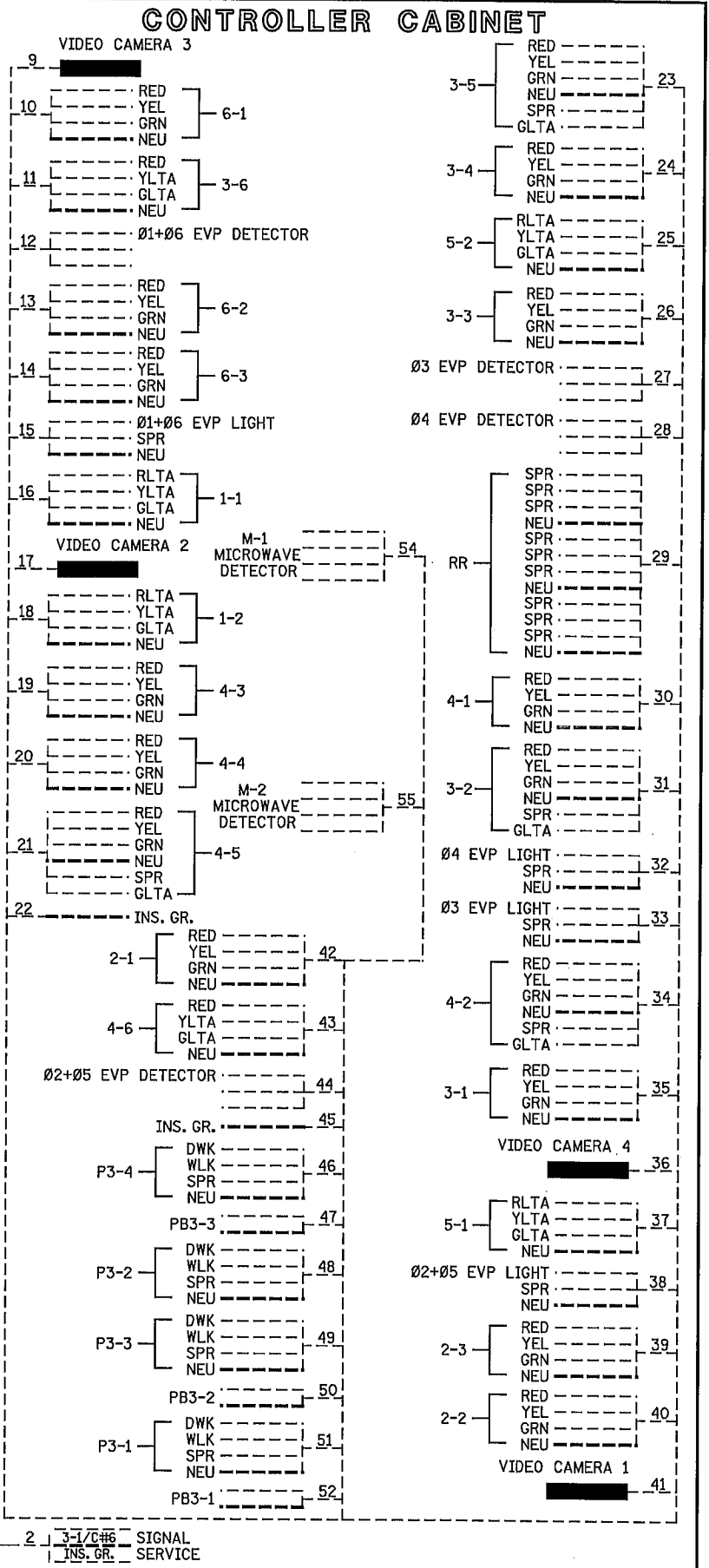
NO	DATE	BY	CHKD	APPR	REVISION



**CONDUCTOR COLOR CODE (14 GAUGE)**

TO SIGNAL CABINET		TO DEVICE	
1/C#6 G	R	6/C#14 BLK	RED
6PR#19	O	6/C#14 WH	YEL
3-1/C#2 R	BLK	6/C#14 BLK/R	GRN
INPUT POWER	WH	6/C#14 BLK/R	NEU
3-1/C#2 BLK	BLK/R	6/C#14 BLK	YLA
3-1/C#6 WH	BLK	6/C#14 WH	GLA
SIGNAL SERVICE	WH		
4/C#14 BLK/R	R	4/C#14 BLK/R	RED/DWK
4/C#14 BLK	BLK	4/C#14 BLK	YEL/WLK & PED
4/C#14 WH	WH	4/C#14 BLK	GRN/SPR
3-1/C#6 G	BLK	4/C#14 WH	NEU
3-1/C#6 WH	WH		
12/C#14 R/BLK	BLK	3/C#14 BLK	EVP LIGHT
12/C#14 O/BLK	WH	3/C#14 G	LUM/FLASHER
12/C#14 BLK/BLK	BLK	3/C#14 WH	
12/C#14 BLK/WH	WH		
12/C#14 BLK/R	BLK	2/C#14 WH OR CLR	PED PUSH BUTTON (If Required)
12/C#14 WH/R	WH	2/C#14 WH OR CLR	

NOTE: ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004  
 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259



**ANOKA COUNTY**

TRAFFIC SIGNAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TEMPORARY FIELD WIRING DIAGRAM (STAGE 1B)  
 T.H.10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

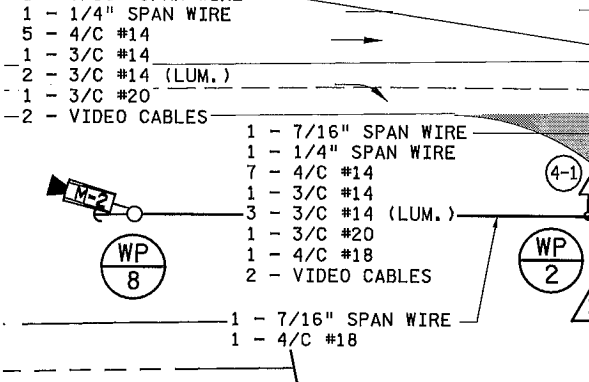
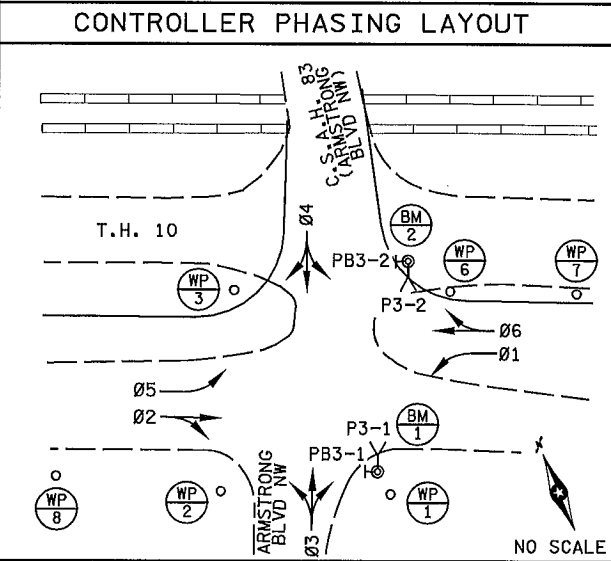
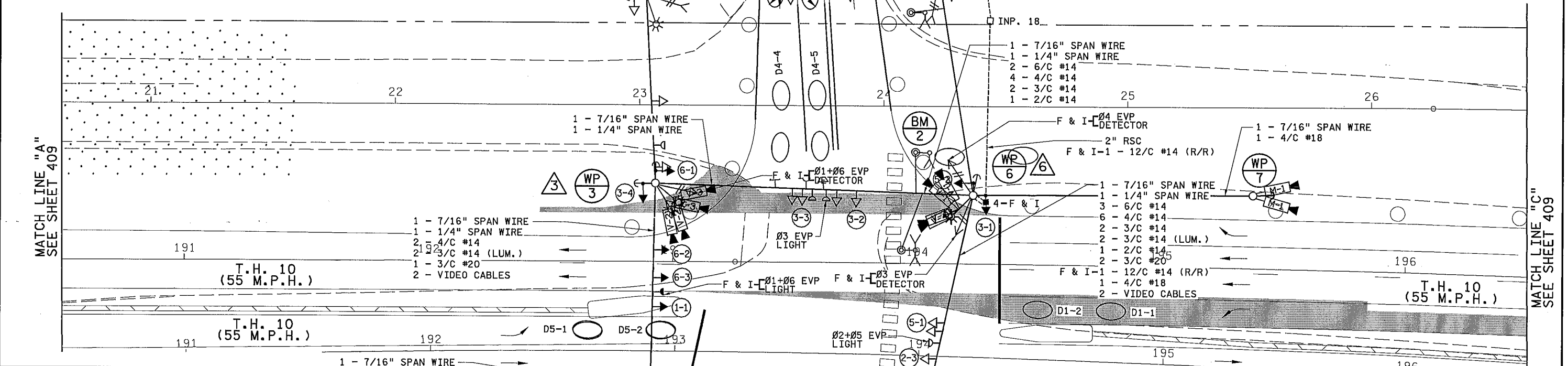
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 407  
 OF  
 586

LED SIGNAL INDICATIONS					
FACE	R	Y	G	YLA	GLA
1-1	←	←	←		
1-2	←	←	←		
2-1, 2-2, 2-3	○	○	○		
3-1	●	●	●		
3-2	○	○	○		
3-3	○	○	○		←
3-4	○	○	○		←
4-1, 4-2	○	○	○	←	←
4-3	○	○	○		←
4-4	○	○	○		←
5-1	←	←	←		
5-2	←	←	←		
6-1, 6-2, 6-3	●	●	●		

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"  
-EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD

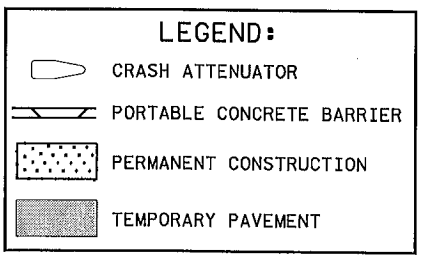
DETECTORS			
DESIGNATION	DETECTOR	MOUNT	LOCATION
D1-1	V-3	LUMINAIRE	40'
D1-2	V-3	LUMINAIRE	10'
D2-1, D2-2	M-2	LUMINAIRE	475'
D3-1	V-2	LUMINAIRE	120'
D3-2, D3-3	V-2	LUMINAIRE	5', 20'
D4-1	V-1	LUMINAIRE	250'
D4-2, D4-3	V-1	LUMINAIRE	5'
D4-4, D4-5	V-1	LUMINAIRE	AS SHOWN
D5-1	V-4	LUMINAIRE	40'
D5-2	V-4	LUMINAIRE	10'
D6-1, D6-2	M-1	LUMINAIRE	475'

LOCATION = DISTANCE IN FEET FROM CROSSWALK/ STOP BAR TO FRONT OF DETECTION AREA



**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 6 PHASE WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND PHASES 3 AND 4 BEING SEQUENTIAL (SPLIT) PHASES
- FLASH MODE SHALL BE ALL RED
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL
- R.R. PREEMPTION



NOTE: SEE SHEET 410 FOR NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: 09-12-14 License #: 42785

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

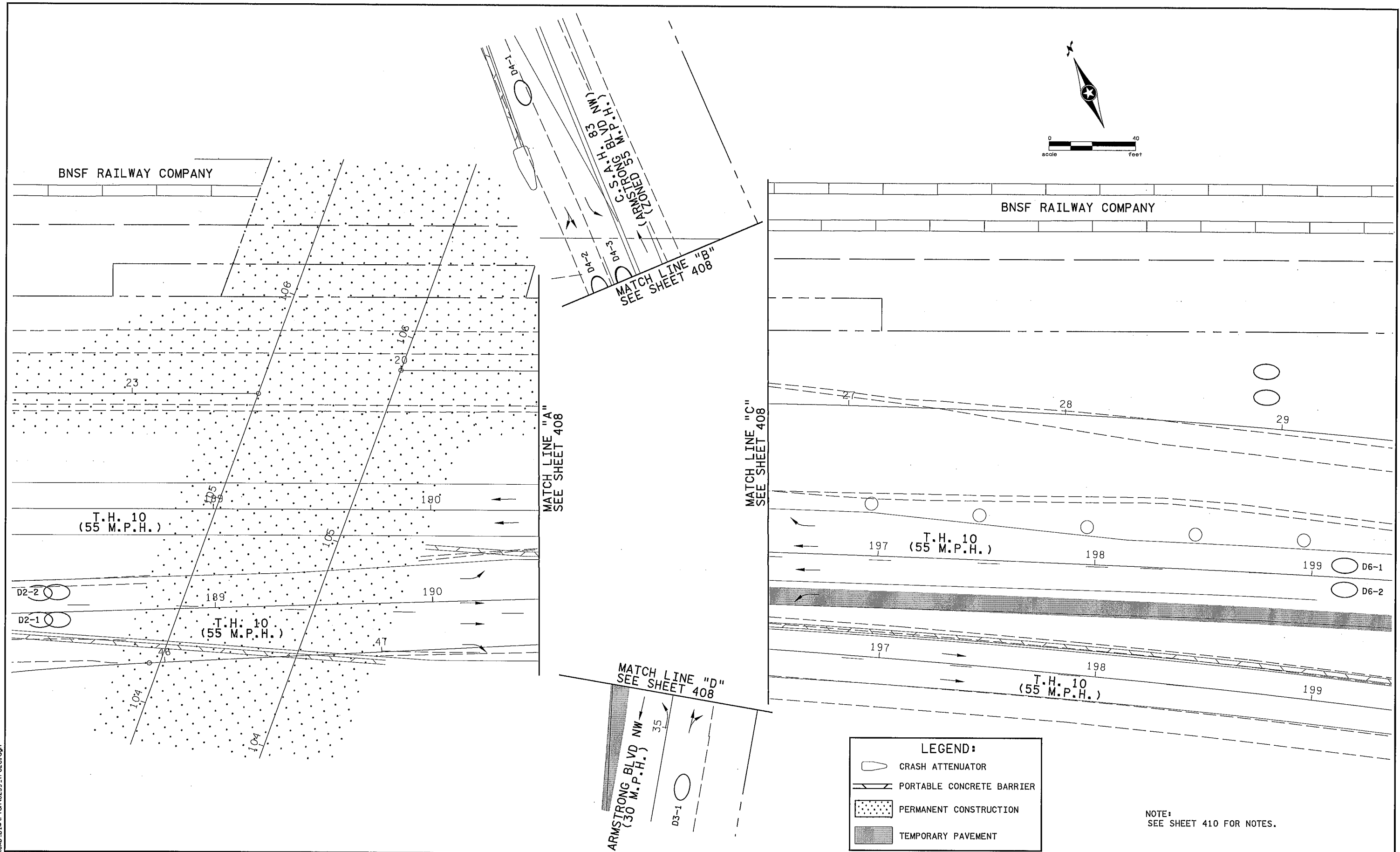
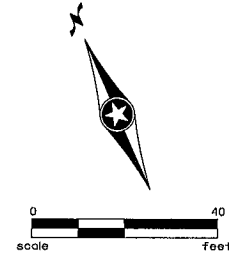
DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
 Consulting Group, Inc.

ANOKA COUNTY  
 TRAFFIC SIGNAL PLANS  
**T.H. 10 / C.S.A.H. 83 INTERCHANGE**  
 TEMPORARY INTERSECTION LAYOUT (STAGE 2)  
 T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET 408 OF 586





**LEGEND:**

- CRASH ATTENUATOR
- PORTABLE CONCRETE BARRIER
- PERMANENT CONSTRUCTION
- TEMPORARY PAVEMENT

NOTE:  
SEE SHEET 410 FOR NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

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*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

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199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY MATCH LINE LAYOUT (STAGE 2)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET 409 OF 586

**WP 1** STA 193+98.84, 83.86' RT  
WB T.H. 10  
WOOD POLE  
2 - DOWNGUYS, GUARDS & ANCHORS  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
1 - ONE WAY EVP DETECTOR (PHASES 2+5) WOOD POLE MOUNTED  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
1 - VIDEO CAMERA (V-1) MOUNTED ON LUMINAIRE EXTENSION  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
1 - R9-3 SIGN FACING WP2  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
1 - VIDEO CABLE  
4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
3 - 6/C #14  
14 - 4/C #14  
3 - 3/C #14  
3 - 2/C #14  
3 - 3/C #20  
F & I-1 - 12/C #14 (R/R)  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
1 - 6/C #14  
8 - 4/C #14  
1 - 3/C #14  
1 - 3/C #20  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
2" CONDUIT RISER & WEATHERHEAD TO HH-2:  
6 - 3/C #14 (LUM.)

**WP 2** STA 192+90.21, 89.14' RT  
WB T.H. 10  
WOOD POLE  
2 - DOWNGUYS, GUARDS & ANCHORS  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
2 - R9-3 SIGNS FACING WP1 AND WP3  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2" CONDUIT RISER & WEATHERHEAD  
ABOVE JUNCTION BOX WITH:  
2 - 4/C #14

**WP 3** STA 192+92.74, 32.04' LT  
WB T.H. 10  
WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
1 - DOWNGUY, GUARD & ANCHOR  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
1 - ONE WAY EVP DETECTOR (PHASES 1+6) WOOD POLE MOUNTED  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
2 - VIDEO CAMERAS (V-2, V-3) MOUNTED ON LUMINAIRE EXTENSION  
2 - R9-3 SIGNS FACING WP2 AND WP6  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2 - VIDEO CABLES  
2" CONDUIT RISER & WEATHERHEAD  
ABOVE JUNCTION BOX WITH:  
2 - 4/C #14  
1 - 3/C #20

**WP 6** STA 194+22.62, 28.11' LT  
WB T.H. 10  
WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
2 - TYPE 10A WOOD POLE MOUNTED AT 90° AND 180°  
1 - ONE WAY EVP DETECTOR (PHASE 3) WOOD POLE MOUNTED  
1 - ONE WAY EVP DETECTOR (PHASE 4) WOOD POLE MOUNTED  
METAL JUNCTION BOX WITH TERMINAL BLOCK  
15' LUM. ARM (40' MOUNTING HEIGHT)  
LUMINAIRE 250 WATT H.P.S.  
2 - VIDEO CAMERAS (V-1, V-4) MOUNTED ON LUMINAIRE EXTENSION  
1" CONDUIT RISER & WEATHERHEAD  
ABOVE SPAN WIRE WITH:  
1 - 3/C #14 (LUM.)  
2 - VIDEO CABLES  
2" CONDUIT RISER & WEATHERHEAD  
ABOVE JUNCTION BOX WITH:  
2 - 4/C #14  
2 - 3/C #20  
1 - 12/C #12 (R/R)  
2" CONDUIT BELOW JUNCTION BOX TO HH-4 WITH:  
1 - 12/C #12 (R/R)

**BM 1** BARREL MOUNTED PEDESTAL POLE  
8' PEDESTAL POLE  
1 - TYPE 4A  
1 - PEDESTRIAN PUSH BUTTON AND SIGN  
(R10-3) (LEFT)  
1 - 4/C #14  
1 - 2/C #14

**BM 2** BARREL MOUNTED PEDESTAL POLE  
8' PEDESTAL POLE  
1 - TYPE 4A  
1 - PEDESTRIAN PUSH BUTTON AND SIGN  
(R10-3) (RIGHT)  
2 - 4/C #14  
1 - 2/C #14

**WP 7** STA 195+37.08, 29.89' LT  
WB T.H. 10  
WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
1 - MICROWAVE DETECTOR (M-1)  
1 - 4/C #18

**WP 8** STA 191+87.87, 89.05' RT  
WB T.H. 10  
WOOD POLE  
1 - DOWNGUY, GUARD & ANCHOR  
1 - MICROWAVE DETECTOR (M-2)  
1 - 4/C #18

**A** STA 194+22.26, 84.94' RT  
WB T.H. 10  
TEMPORARY SIGNAL CABINET BASE  
TEMPORARY CABINET WITH CONTROLLER (STATE FURNISHED)  
EXTEND 4" CONDUIT TO HH-1:  
3 - 6/C #14  
14 - 4/C #14  
3 - 3/C #14  
3 - 2/C #14  
3 - 3/C #20  
F & I-1 - 12/C #14 (R/R)  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
EXTEND 4" CONDUIT TO HH-1:  
1 - 6/C #14  
8 - 4/C #14  
1 - 3/C #14  
F & I-1 - 3/C #14  
1 - 3/C #20  
1 - 4/C #18  
2 - VIDEO CABLES  
1 - 1/C #6 INS.GR.  
EXTEND 2" CONDUIT TO HH-3:  
3 - 1/C #2

**B** STA 194+91.14, 121.90' RT  
WB T.H. 10  
SOP - INP. WOOD POLE WITH SERVICE  
EQUIPMENT AND DISCONNECT  
EXTEND 2" CONDUIT INTO HH-3:  
3 - 1/C #2  
EXTEND 2" CONDUIT INTO HH-2:  
6 - 3/C #14 (LUM.)

NOTES:

- ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL PROTECT AND MAINTAIN INPLACE ITEMS (SEE SPECIAL PROVISIONS).
- CONDUIT SHALL BE SCHEDULE 80 PVC OR SCHEDULE 80 HDPE.
- SEE THE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, VIDEO DETECTION LED VEHICLE INDICATIONS, AND EMERGENCY VEHICLE PREEMPTION (EVP).
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- ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND CARRY 1-1/C #6 INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLAN.
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- SEE STAGING AND TRAFFIC CONTROL PLANS FOR STAGING. MOVEMENT OF HEADS AND DETECTORS FOR EACH STAGE OR PHASE OF CONSTRUCTION SHALL BE COMPLETED BY THE CONTRACTOR.
- COIL A SUFFICIENT LENGTH OF CABLE AT ALL SPAN WIRE MOUNTED SIGNAL FACES, BARREL MOUNTED SIGNALS, EVP DETECTORS AND INDICATOR LIGHTS, AND VIDEO AND MICROWAVE DETECTORS TO COORDINATE STAGING SHIFTS.
- SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
- ALL TEMPORARY SIGNAL COMPONENTS, EXCEPT THE SIGNAL CABINET AND CONTROLLER, ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE COMPONENTS MAY BE NEW OR USED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN THE TEMPORARY SIGNAL IS REMOVED.

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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

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DESIGNED BY M. BRESSLER  
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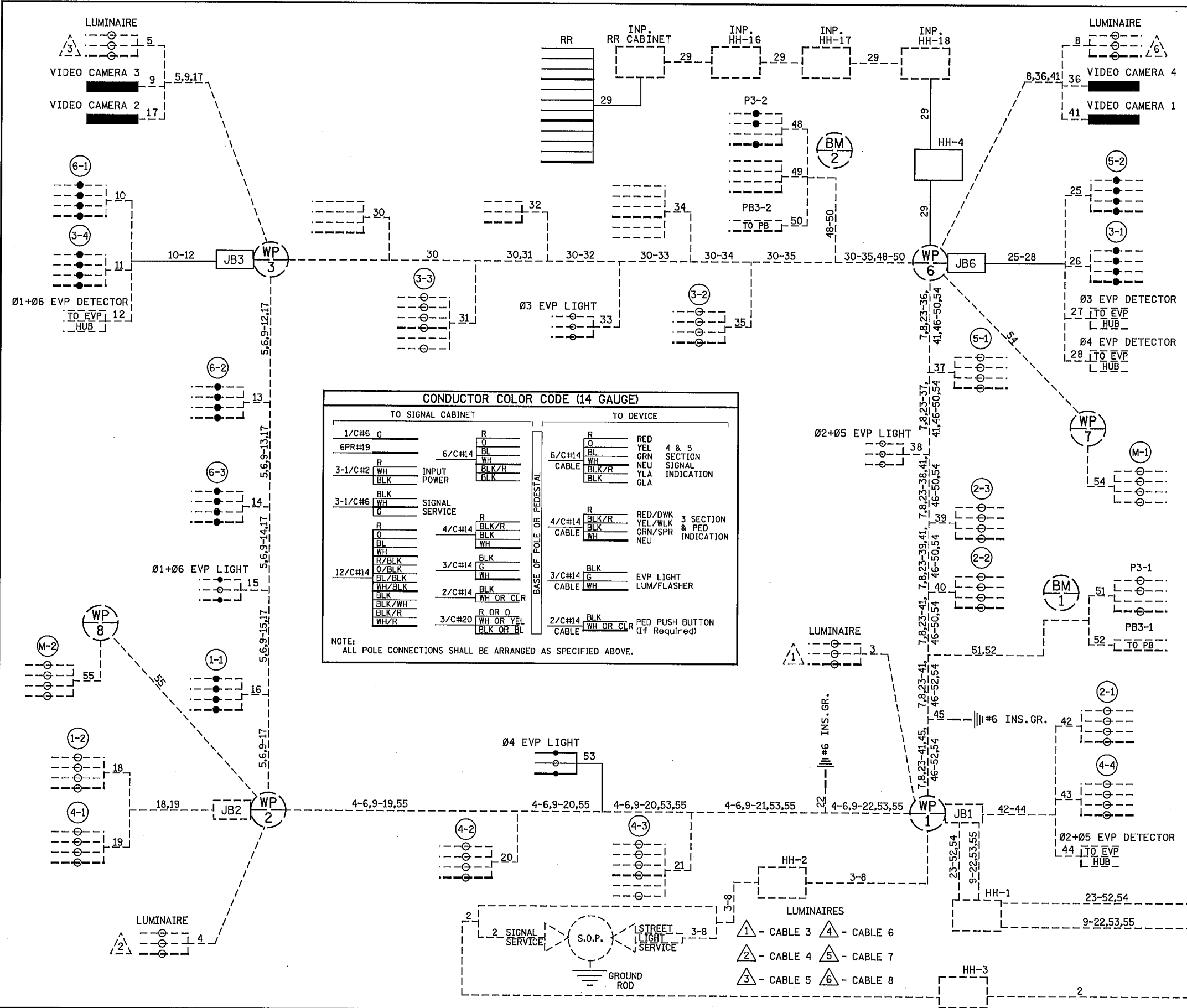


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY INTERSECTION/POLE NOTES (STAGE 2)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET  
410  
OF  
586

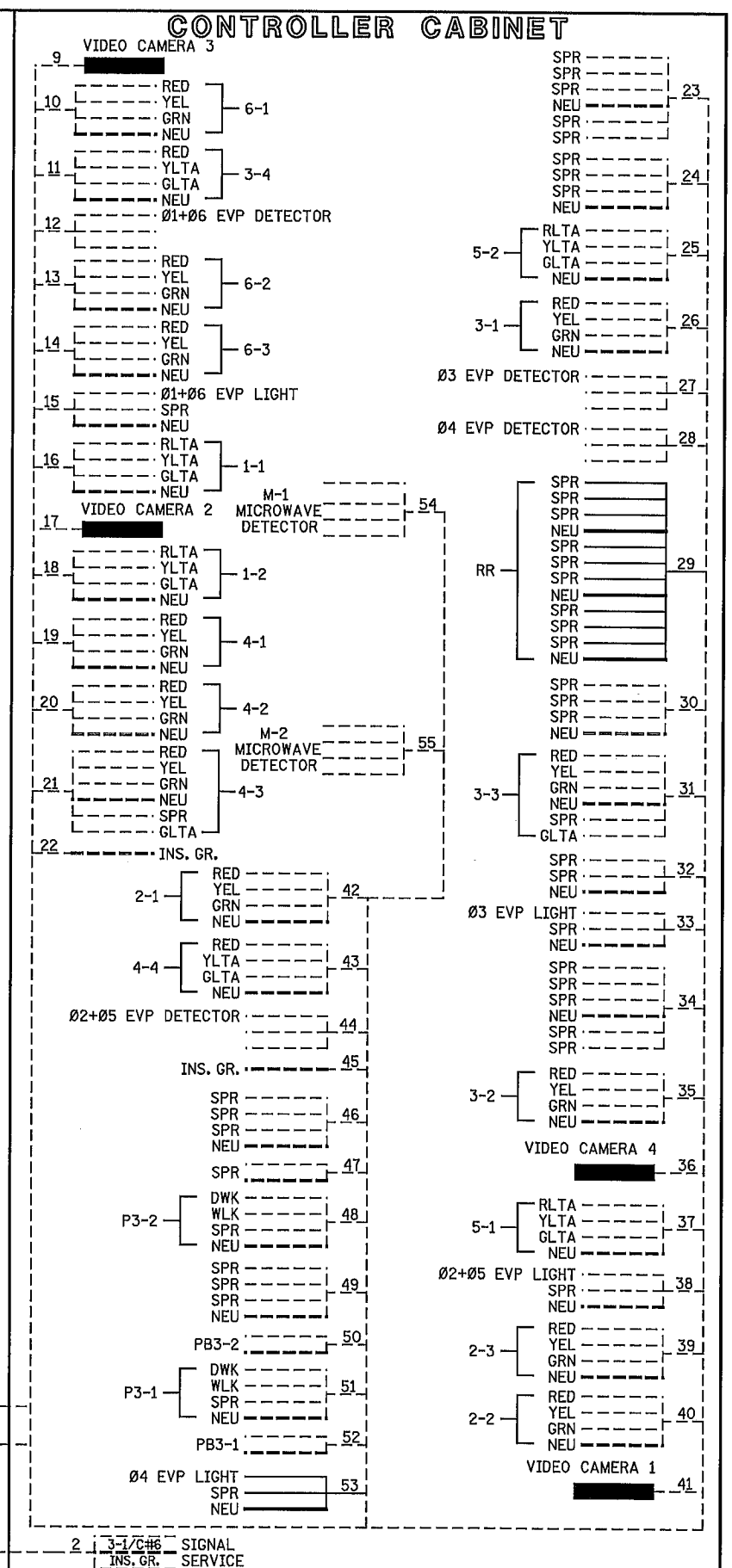




**CONDUCTOR COLOR CODE (14 GAUGE)**

TO SIGNAL CABINET		TO DEVICE	
1/C#6 G	R	R	RED
6PR#19	O	BL	YEL
3-1/C#2 R	6/C#14 BLK	BL	4 & 5 SECTION
WH	WH	WH	NEU SIGNAL
BLK	BLK/R	BLK	YLA
INPUT POWER	BLK	BLK	GLA INDICATION
3-1/C#6 WH	R	4/C#14 BLK/R	RED/DWK 3 SECTION
G	BLK/R	BLK	YEL/WLK & PED
SIGNAL SERVICE	WH	WH	GRN/SPR INDICATION
R	4/C#14 BLK	3/C#14 BLK	EVP LIGHT
O	WH	G	LUM/FLASHER
R7/BLK	3/C#14 BLK	2/C#14 WH OR CLR	PED PUSH BUTTON (if Required)
O/BLK	WH	3/C#20 R OR O	
BL/BLK	2/C#14 WH OR CLR	WH OR YEL	
WH/BLK	3/C#20 BLK OR BL	BLK OR BL	
BLK			
BLK/WH			
BLK/R			
WH/R			

NOTE: ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER

COMM. NO. 0138259



**ANOKA COUNTY**

TRAFFIC SIGNAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY FIELD WIRING DIAGRAM (STAGE 2)  
T.H.10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

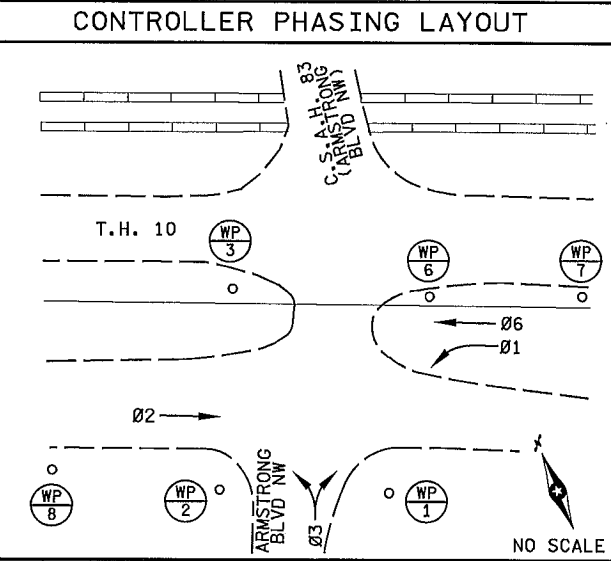
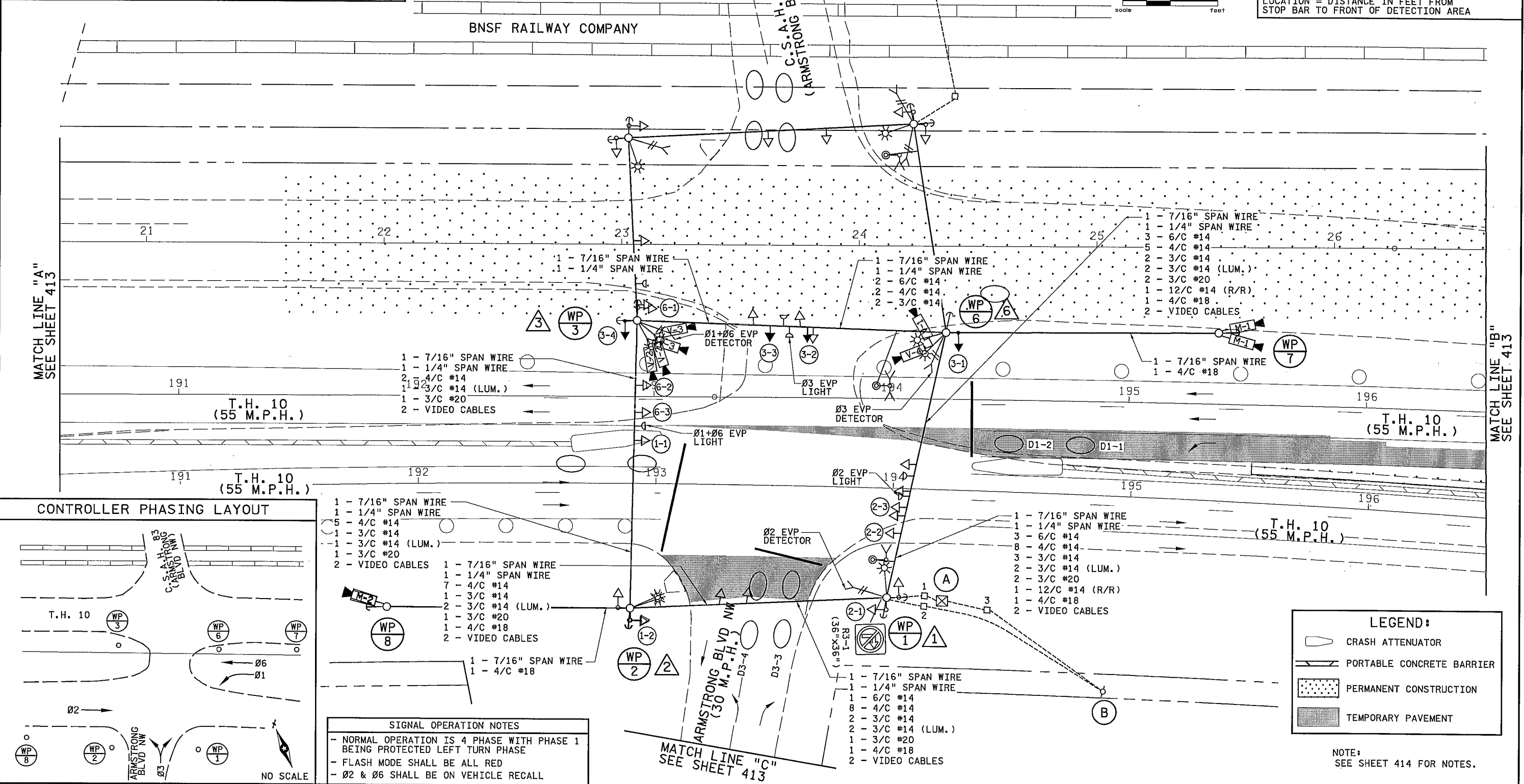
SHEET 411 OF 586

LED SIGNAL INDICATIONS									
FACE	R	Y	G	RLA	YLA	GLA	RRA	YRA	GRA
1-1,1-2	←	←	←						
2-1,2-2,2-3	○	○	○						
3-1,3-2							→	→	→
3-3,3-4				←	←	←			
6-1,6-2,6-3	○	○	○						

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"  
-EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD

DETECTORS			
DESIGNATION	DETECTOR	MOUNT	LOCATION
D1-1	V-3	LUMINAIRE	40'
D1-2	V-3	LUMINAIRE	10'
D2-1,D2-2	M-2	LUMINAIRE	475'
D3-1,D3-2	V-2	LUMINAIRE	120'
D3-3,D3-4	V-2	LUMINAIRE	5',20'
D6-1,D6-2	M-1	LUMINAIRE	475'

LOCATION = DISTANCE IN FEET FROM STOP BAR TO FRONT OF DETECTION AREA



**SIGNAL OPERATION NOTES**

- NORMAL OPERATION IS 4 PHASE WITH PHASE 1 BEING PROTECTED LEFT TURN PHASE
- FLASH MODE SHALL BE ALL RED
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL

LEGEND:	
	CRASH ATTENUATOR
	PORTABLE CONCRETE BARRIER
	PERMANENT CONSTRUCTION
	TEMPORARY PAVEMENT

NOTE:  
SEE SHEET 414 FOR NOTES.

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NO	DATE	BY	CHKD	APPR	REVISION

Print Name: **ADRIAN S. POTTER**  
Date: 09-12-14 License #: 42785

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.

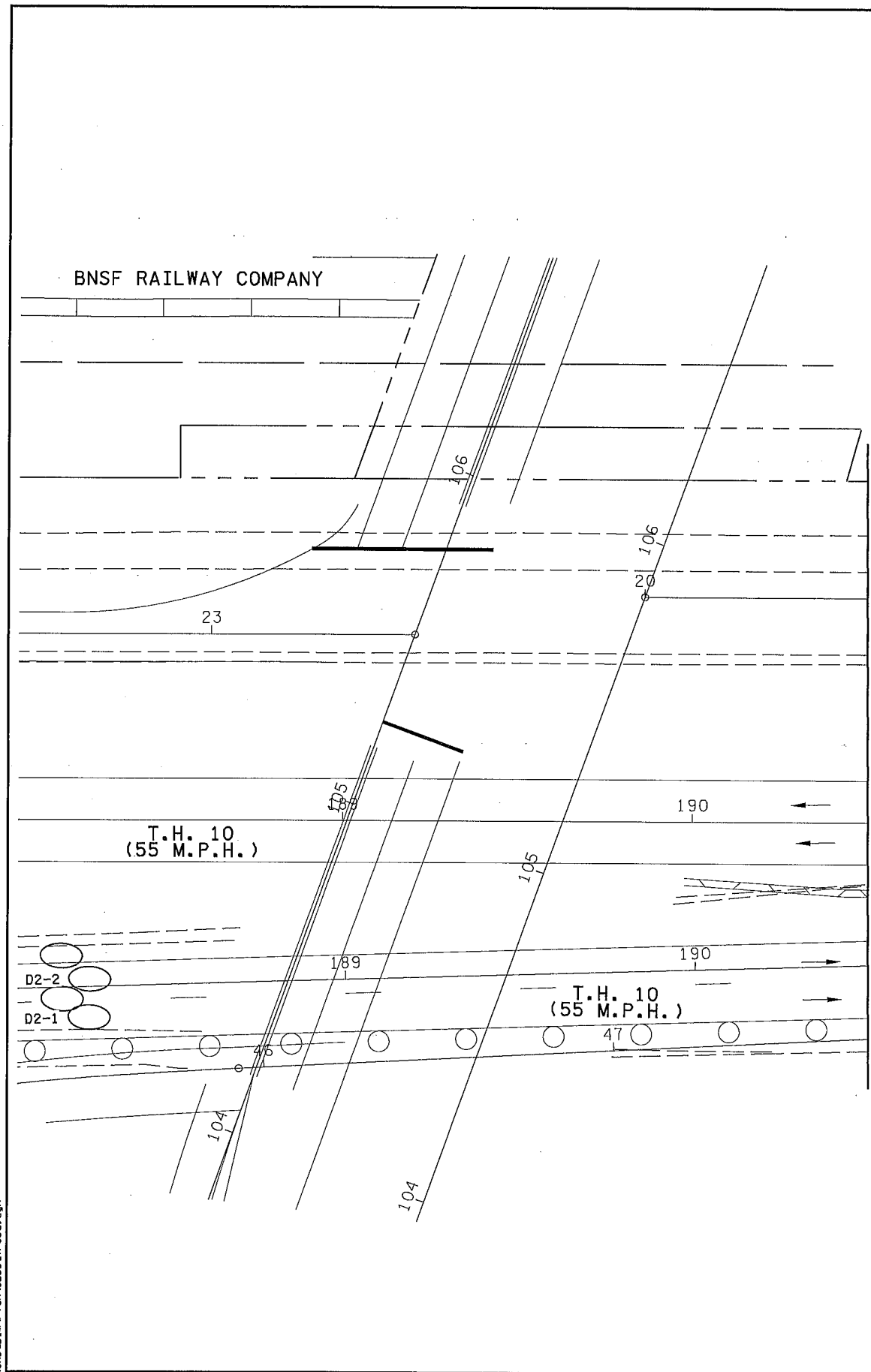
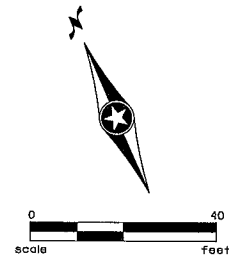
STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY INTERSECTION LAYOUT (STAGE 3)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

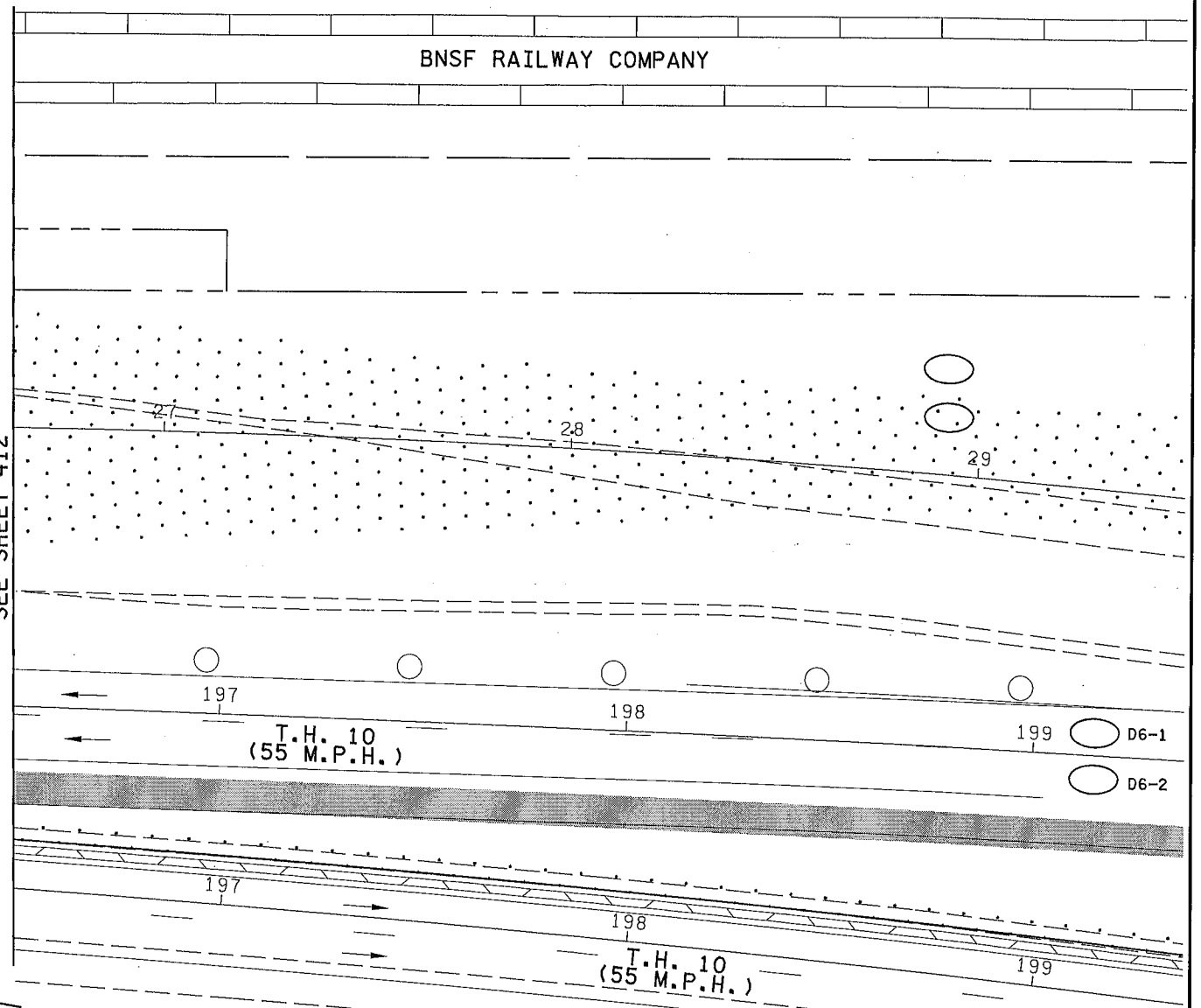
SHEET 412 OF 586



MATCH LINE "A"  
SEE SHEET 412

MATCH LINE "B"  
SEE SHEET 412

MATCH LINE "C"  
SEE SHEET 412



**LEGEND:**

- CRASH ATTENUATOR
- PORTABLE CONCRETE BARRIER
- PERMANENT CONSTRUCTION
- TEMPORARY PAVEMENT

NOTE:  
SEE SHEET 414 FOR NOTES.

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NO.	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**M. BRESSLER**

DESIGNED BY  
**M. BRESSLER**

CHECKED BY  
**A. POTTER**

COMM. NO. 0138259

**SRH** ENGINEERS  
PLANNERS  
DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE  
TEMPORARY MATCH LINE LAYOUT (STAGE 3)  
T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET  
413  
OF  
586

**WP 1** STA 193+98.84, 83.86' RT  
 WB T.H. 10  
 WOOD POLE  
 2 - DOWNGUYS, GUARDS & ANCHORS  
 1 - TYPE 10A WOOD POLE MOUNTED AT 180°  
 1 - ONE WAY EVP DETECTOR (PHASE 2) WOOD POLE MOUNTED  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 1 - VIDEO CAMERA (V-1) MOUNTED ON LUMINAIRE EXTENSION  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 1 - R9-3 SIGN FACING WP2  
 F & I-1 - R9-3 SIGN FACING WP6  
 INSTALL-1 - R3-1 (36"x36") SIGN  
 SALVAGED 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 1 - VIDEO CABLE  
 4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
 3 - 6/C #14  
 10 - 4/C #14  
 3 - 3/C #14  
 3 - 3/C #20  
 1 - 12/C #14 (R/R)  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 4" CONDUIT BELOW JUNCTION BOX TO HH-1 WITH:  
 1 - 6/C #14  
 8 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #20  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 2" CONDUIT RISER & WEATHERHEAD TO HH-2:  
 6 - 3/C #14 (LUM.)

**WP 2** STA 192+90.21, 89.14' LT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 1 - TYPE 10A WOOD POLE MOUNTED AT 90°  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 2 - R9-3 SIGNS FACING WP1 AND WP3  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 1 - VIDEO CABLE  
 2" CONDUIT RISER & WEATHERHEAD  
 ABOVE JUNCTION BOX WITH:  
 2 - 4/C #14

**WP 3** STA 192+92.74, 32.04' LT  
 WB T.H. 10  
 WOOD POLE  
 2 - DOWNGUYS, GUARDS & ANCHORS  
 F & I-1 - TYPE 10A WOOD POLE MOUNTED AT 90°  
 1 - TYPE 10A WOOD POLE MOUNTED AT 180°  
 1 - ONE WAY EVP DETECTOR (PHASES 1+6) WOOD POLE MOUNTED  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 2 - VIDEO CAMERAS (V-2, V-3) MOUNTED ON LUMINAIRE EXTENSION  
 2 - R9-3 SIGNS FACING WP2 AND WP6  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 2 - VIDEO CABLES  
 2" CONDUIT RISER & WEATHERHEAD  
 ABOVE JUNCTION BOX WITH:  
 2 - 4/C #14  
 1 - 3/C #20

**WP 6** STA 194+22.62, 28.11' LT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 F & I-1 - TYPE 10A WOOD POLE MOUNTED AT 180°  
 1 - ONE WAY EVP DETECTOR (PHASE 3) WOOD POLE MOUNTED  
 METAL JUNCTION BOX WITH TERMINAL BLOCK  
 15' LUM. ARM (40' MOUNTING HEIGHT)  
 LUMINAIRE 250 WATT H.P.S.  
 F & I-2 - R9-3 SIGNS FACING WP1 AND WP3  
 1" CONDUIT RISER & WEATHERHEAD  
 ABOVE SPAN WIRE WITH:  
 1 - 3/C #14 (LUM.)  
 1 - VIDEO CABLE  
 2" CONDUIT RISER & WEATHERHEAD  
 ABOVE JUNCTION BOX WITH:  
 2 - 4/C #14  
 2 - 3/C #20

**WP 7** STA 195+37.08, 29.89' LT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 1 - MICROWAVE DETECTOR (M-1)  
 1 - 4/C #18

**WP 8** STA 191+87.87, 89.05' RT  
 WB T.H. 10  
 WOOD POLE  
 1 - DOWNGUY, GUARD & ANCHOR  
 1 - MICROWAVE DETECTOR (M-2)  
 1 - 4/C #18

**A** STA 194+22.26, 84.94' RT  
 WB T.H. 10  
 TEMPORARY SIGNAL CABINET BASE  
 TEMPORARY CABINET WITH CONTROLLER (STATE FURNISHED)  
 EXTEND 4" CONDUIT TO HH-1:  
 3 - 6/C #14  
 10 - 4/C #14  
 3 - 3/C #14  
 3 - 3/C #20  
 1 - 12/C #14 (R/R)  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 EXTEND 4" CONDUIT TO HH-1:  
 1 - 6/C #14  
 8 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #20  
 1 - 4/C #18  
 2 - VIDEO CABLES  
 1 - 1/C #6 INS.GR.  
 EXTEND 2" CONDUIT TO HH-3:  
 3 - 1/C #2

**B** STA 194+91.14, 121.90' RT  
 WB T.H. 10  
 SOP - INP. WOOD POLE WITH SERVICE  
 EQUIPMENT AND DISCONNECT  
 EXTEND 2" CONDUIT INTO HH-3:  
 3 - 1/C #2  
 EXTEND 2" CONDUIT INTO HH-2:  
 6 - 3/C #14 (LUM.)

- NOTES:
- ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL PROTECT AND MAINTAIN INPLACE ITEMS (SEE SPECIAL PROVISIONS).
  - CONDUIT SHALL BE SCHEDULE 80 PVC OR SCHEDULE 80 HDPE.
  - SEE THE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, VIDEO DETECTION LED VEHICLE INDICATIONS, AND EMERGENCY VEHICLE PREEMPTION (EVP).
  - THE EXACT LOCATION OF HANDHOLES, POLES, DETECTORS AND TEMPORARY CABINET BASE SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
  - THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
  - THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
  - ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND CARRY 1-1/C #6 INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLAN.
  - SEE STAGING AND TRAFFIC CONTROL PLANS FOR TEMPORARY PAVEMENT MARKINGS.
  - REMOVAL OF THE EXISTING SIGNAL SYSTEM IS INCIDENTAL. THE EXISTING SIGNAL SYSTEM SHALL BE SHUT DOWN AND REMOVED ONCE THE TEMPORARY SIGNAL SYSTEM IS IN OPERATION.
  - SEE STAGING AND TRAFFIC CONTROL PLANS FOR STAGING. MOVEMENT OF HEADS AND DETECTORS FOR EACH STAGE OR PHASE OF CONSTRUCTION SHALL BE COMPLETED BY THE CONTRACTOR.
  - COIL A SUFFICIENT LENGTH OF CABLE AT ALL SPAN WIRE MOUNTED SIGNAL FACES, BARREL MOUNTED SIGNALS, EVP DETECTORS AND INDICATOR LIGHTS, AND VIDEO AND MICROWAVE DETECTORS TO COORDINATE STAGING SHIFTS.
  - SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
  - ALL TEMPORARY SIGNAL COMPONENTS, EXCEPT THE SIGNAL CABINET AND CONTROLLER, ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE COMPONENTS MAY BE NEW OR USED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR WHEN THE TEMPORARY SIGNAL IS REMOVED.

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NO	DATE	BY	CHKD	APPR	REVISION

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 Prt Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

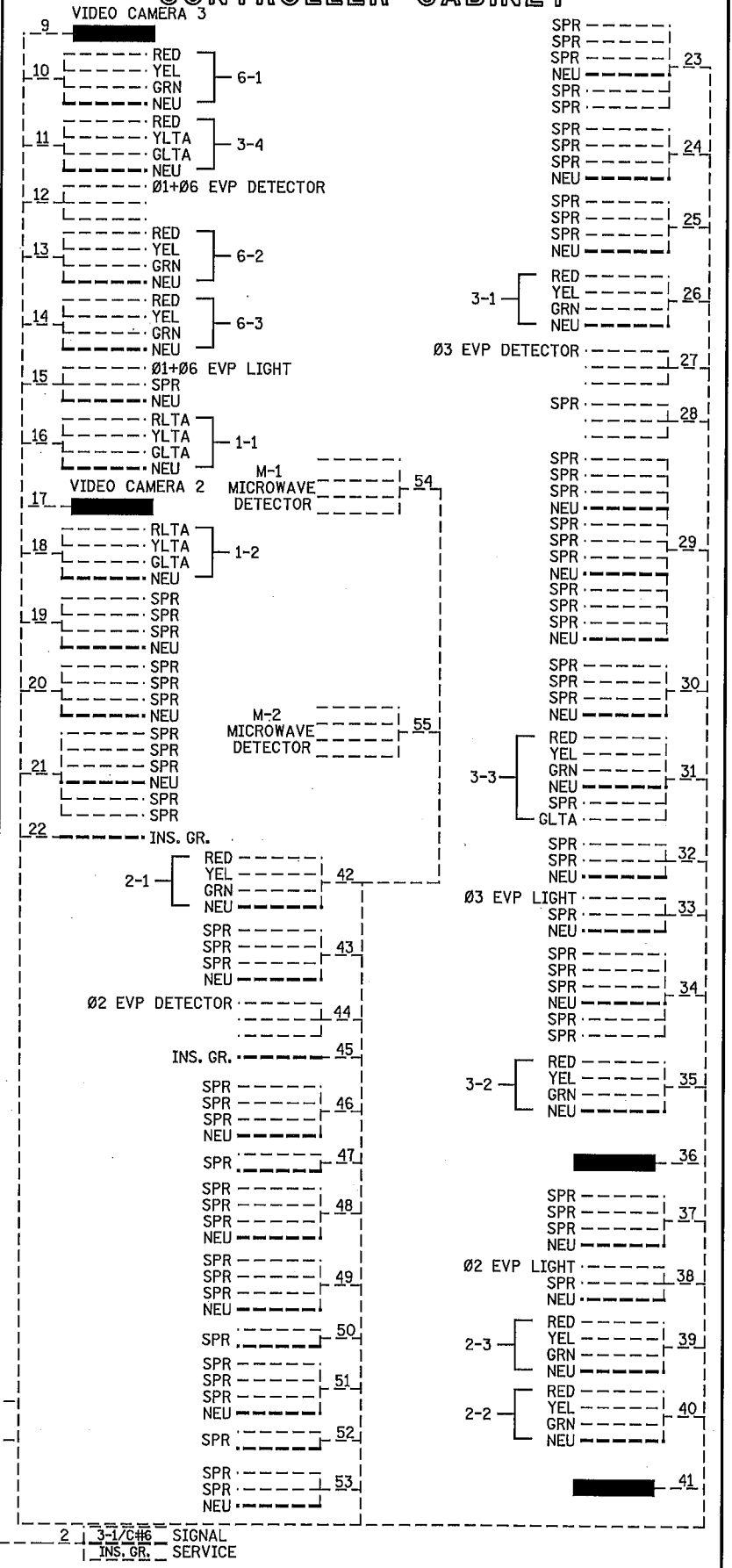
STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY M. BRESSLER  
 DESIGNED BY M. BRESSLER  
 CHECKED BY A. POTTER  
 COMM. NO. 0138259



ANOKA COUNTY  
 TRAFFIC SIGNAL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 TEMPORARY INTERSECTION/POLE NOTES (STAGE 3)  
 T.H. 10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET  
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 OF  
 586

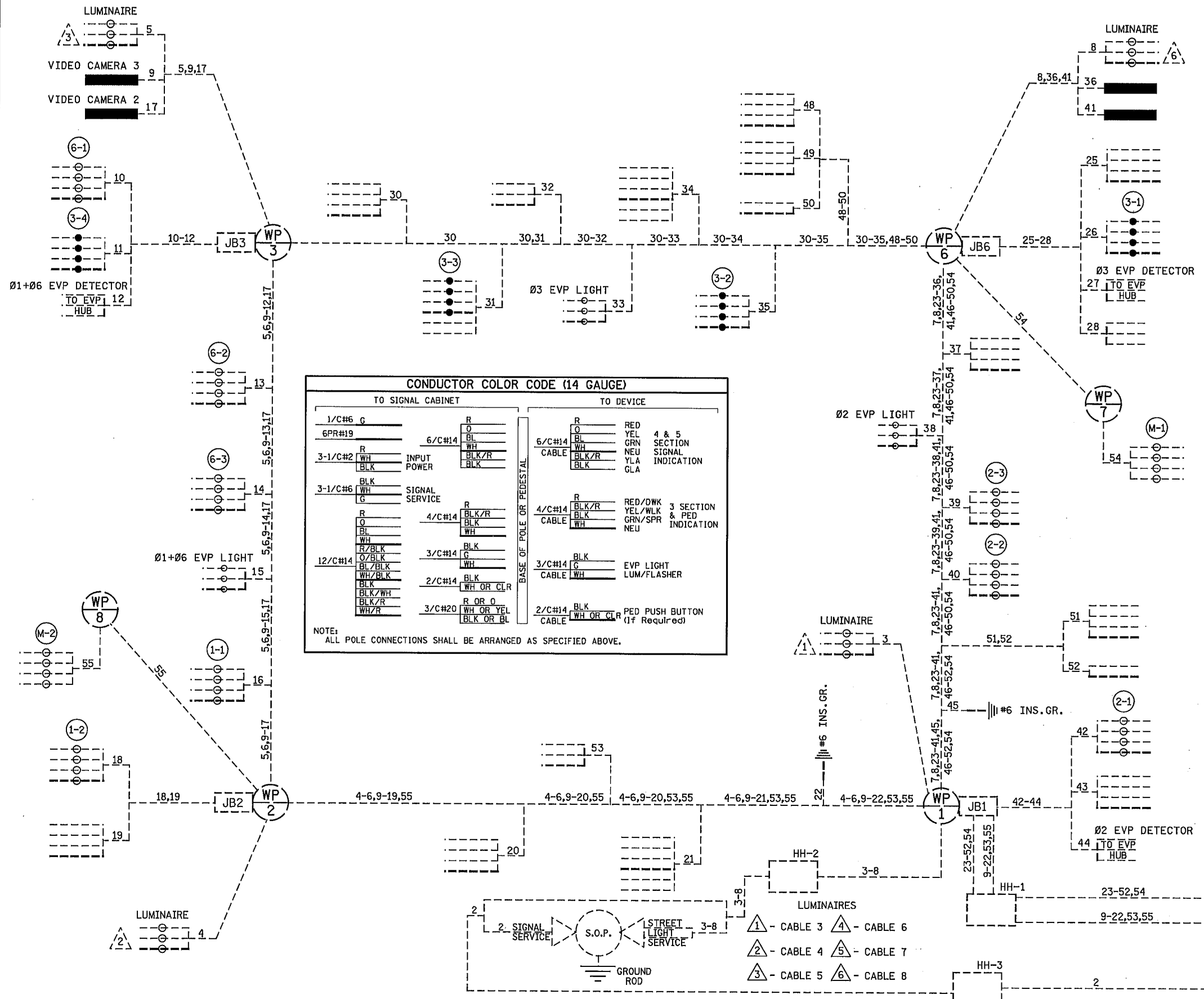
**CONTROLLER CABINET**



**CONDUCTOR COLOR CODE (14 GAUGE)**

TO SIGNAL CABINET		TO DEVICE	
1/C#6 G	R	R	RED 4 & 5
6PR#19	BLK	BLK	YEL SECTION
3-1/C#2	WH	WH	GRN SIGNAL
BLK	BLK/R	BLK/R	YLA INDICATION
INPUT POWER	BLK	BLK	GLA
3-1/C#6	WH	R	RED/DWK 3 SECTION
BLK	BLK/R	BLK/R	YEL/WLK & PED
SIGNAL SERVICE	BLK	BLK	GRN/SPR INDICATION
G	WH	WH	NEU
R	4/C#14	4/C#14	RED/DWK 3 SECTION
O	BLK/R	BLK/R	YEL/WLK & PED
BL	BLK	BLK	GRN/SPR INDICATION
WH	WH	WH	NEU
R/BLK	3/C#14	3/C#14	BLK
O/BLK	BLK	G	EVP LIGHT
BL/BLK	WH	WH	LUM/FLASHER
WH/BLK	2/C#14	2/C#14	BLK
BLK	WH OR CLR	WH OR CLR	PED PUSH BUTTON (If Required)
BLK/WH	R OR O	2/C#14	BLK
BLK/R	WH OR YEL	WH OR CLR	WH OR CLR
WH/R	BLK OR BL		

NOTE: ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**M. BRESSLER**

DESIGNED BY  
**M. BRESSLER**

CHECKED BY  
**A. POTTER**

COMM. NO. 0138259



**ANOKA COUNTY**

TRAFFIC SIGNAL PLANS

**T.H. 10 / C.S.A.H. 83 INTERCHANGE**

TEMPORARY FIELD WIRING DIAGRAM (STAGE 3)

T.H.10 AT C.S.A.H. 83/ARMSTRONG BLVD. N.W.

SHEET  
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OF  
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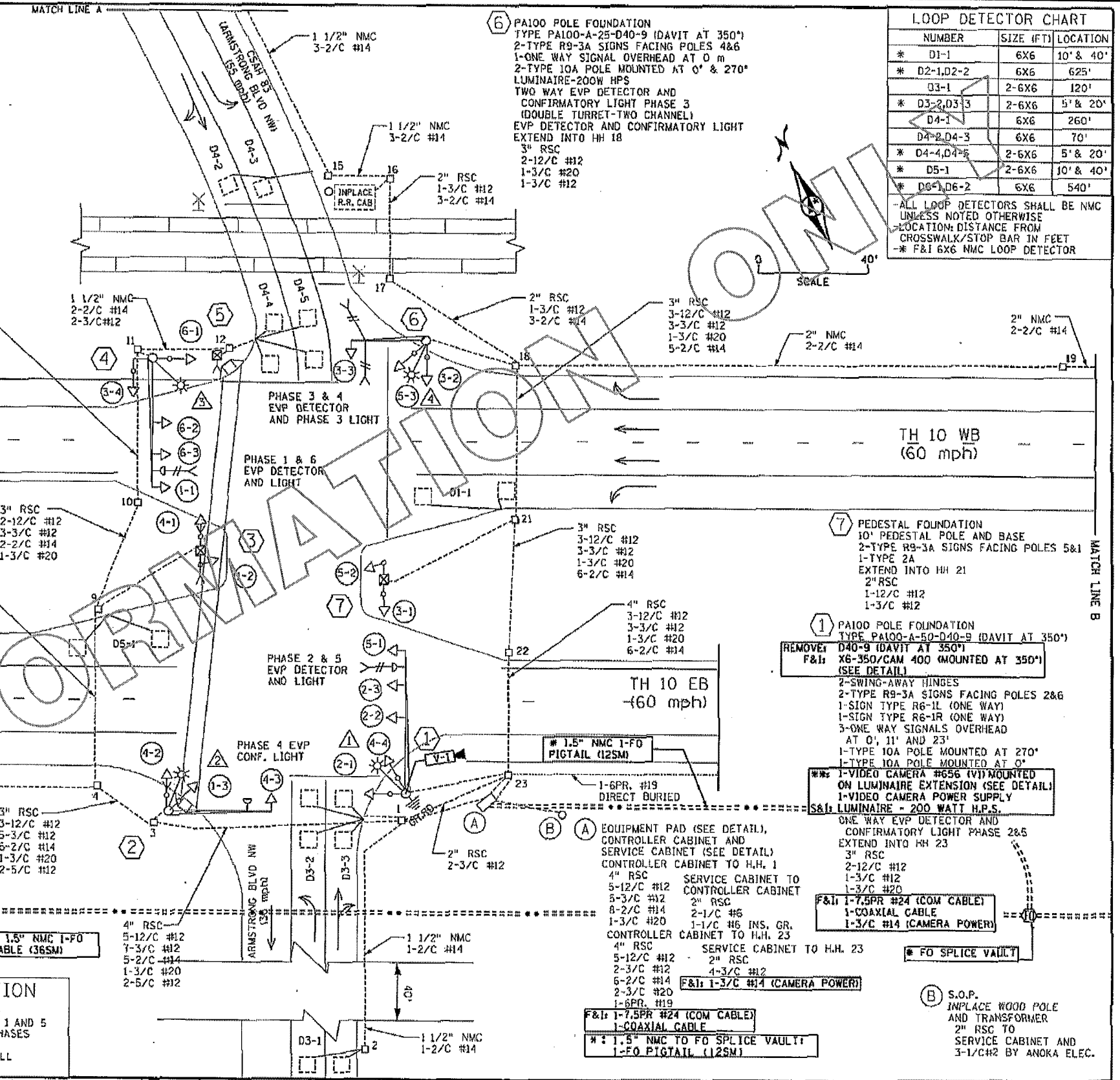
FACE	R	Y	G	Y	G
1-1, 1-2, 1-3	←	←	←		
2-1, 2-2, 2-3	○	○	○		
3-1, 3-2	○	○	○	←	←
3-3	○	○	○		
3-4	○	○	○	←	←
4-1, 4-2	○	○	○		
4-3	○	○	○	←	←
4-4	○	○	○		
5-1, 5-2, 5-3	←	←	←		
6-1, 6-2, 6-3	○	○	○		

-ALL SIGNAL INDICATIONS SHALL BE 12"  
-ALL SIGNAL INDICATIONS SHALL BE LED  
-ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD

**NOTES:**  
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, VIDEO CAMERA, AND CAMERA POWER SUPPLY.  
2. ALL ITEMS ARE INPLACE UNLESS NOTED.  
3. ITEMS SHOWN AS \* (SEE YMS PLANS)  
4. ITEMS SHOWN AS \*\* ARE F&I BY MN/DOT

**5** PEDESTAL FOUNDATION  
10' PEDESTAL AND BASE  
PEDESTRIAN INDICATION  
1-PEDESTRIAN PUSH BUTTON AND SIGN  
EXTEND INTO HH 12;  
2" RSC  
2-3/C #12

**4** PA100 POLE FOUNDATION  
TYPE PA100-A-45-D40-9 (DAVIT AT 350")  
2-SWING-AWAY HINGES  
1-TYPE R9-3A SIGN FACING POLE 5  
1-SIGN TYPE R6-1L (ONE WAY)  
1-SIGN TYPE R6-1R (ONE WAY)  
3-ONE WAY SIGNALS OVERHEAD  
AT 0', 11' AND 23'  
1-TYPE 10A POLE MOUNTED AT 270"  
1-TYPE 10A POLE MOUNTED AT 90"  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND  
CONFIRMATORY LIGHT PHASE 1&6  
EXTEND INTO HH 11  
3" RSC  
2-12/C #12  
3-3/C #12  
2-2/C #14  
1-3/C #20  
2-3/C #12

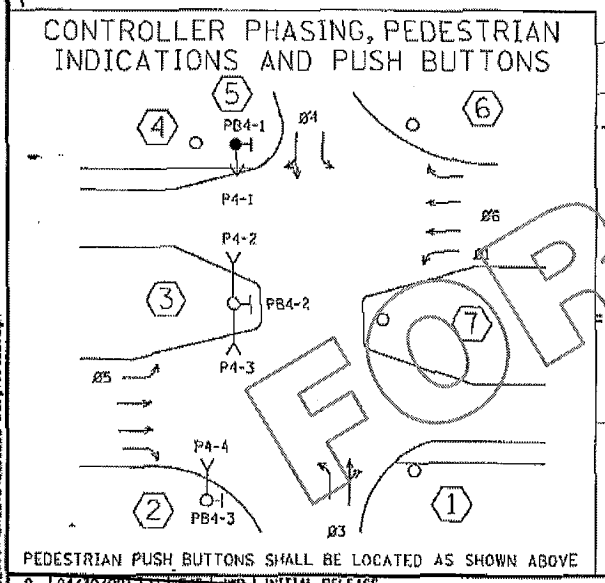


NUMBER	SIZE (FT)	LOCATION
* D1-1	6X6	10' & 40'
* D2-1, D2-2	6X6	625'
D3-1	2-6X6	120'
* D3-2, D3-3	2-6X6	5' & 20'
D4-1	6X6	260'
D4-2, D4-3	6X6	70'
* D4-4, D4-5	2-6X6	5' & 20'
* D5-1	2-6X6	10' & 40'
* D6-1, D6-2	6X6	540'

-ALL LOOP DETECTORS SHALL BE NMC UNLESS NOTED OTHERWISE  
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET  
-\* F&I 6X6 NMC LOOP DETECTOR

**3** PEDESTAL FOUNDATION  
10' PEDESTAL POLE AND BASE  
1-TYPE 2C  
1-PED PUSH BUTTON AND SIGN  
EXTEND INTO HH 9  
2" RSC  
1-12/C #12  
2-3/C #12

**2** PA100 POLE FOUNDATION  
TYPE PA100-A-35-D40-9  
DAVIT AT 350"  
1-TYPE R9-3A SIGN FACING POLE 1  
1-ONE WAY SIGNAL OVERHEAD AT 0'  
1-TYPE 10A POLE MOUNTED AT 0"  
1-TYPE 10B POLE MOUNTED AT 270"  
1-PED PUSH BUTTON AND SIGN  
LUMINAIRE-200W HPS  
EVP LIGHT PHASE 4  
EXTEND INTO HH 3  
3" RSC  
2-12/C #12  
2-3/C #12



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND PHASES 3 AND 4 BEING SEQUENTIAL (SPLIT) PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL
- R.R. PREEMPTION

NO	DATE	BY	CHKD	APPR	REVISION
0	04/30/09	TJK	RMS	JWB	INITIAL RELEASE

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: THOMAS JENSEN  
Date: 04/30/09 License: 44247

STATE AID PROJECT NO. 002-683-004  
STATE PROJECT NO. 0025-345  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY: KAS  
DESIGNED BY: TJK  
CHECKED BY: RJG

**ALLIANT ENGINEERING INCORPORATED**  
233 PARK AVENUE SOUTH  
SUITE 200  
MINNEAPOLIS, MN 55415  
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(612) 758-3005 FAX

**MEIRO WIDE FIBER CABLE INSTALLATION**  
REVISION SIGNAL SYSTEM B  
TH 10 AT CSAH 83 (ARMSTRONG BLVD)  
INTERSECTION LAYOUT

SHEET 166 OF 181

NO	DATE	BY	CHKD	APPR	REVISION
1	04/30/09	TJK	RMS	JWB	INITIAL RELEASE

STATE AID PROJECT NO. 002-683-004  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY: [Blank]  
DESIGNED BY: [Blank]  
CHECKED BY: [Blank]  
COMM. NO. 0138259

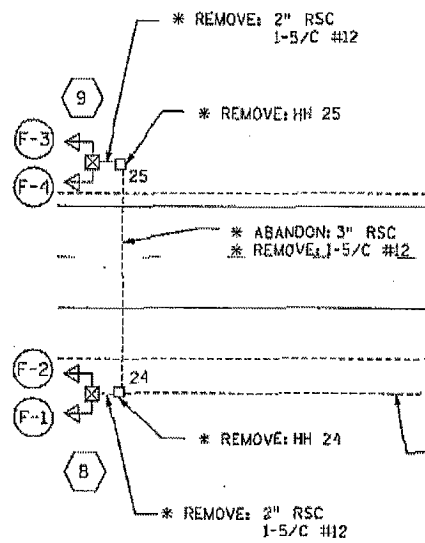
**SRE ENGINEERS PLANNERS DESIGNERS**  
Consulting Group, Inc.

**ANOKA COUNTY**  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
FOR INFORMATION ONLY

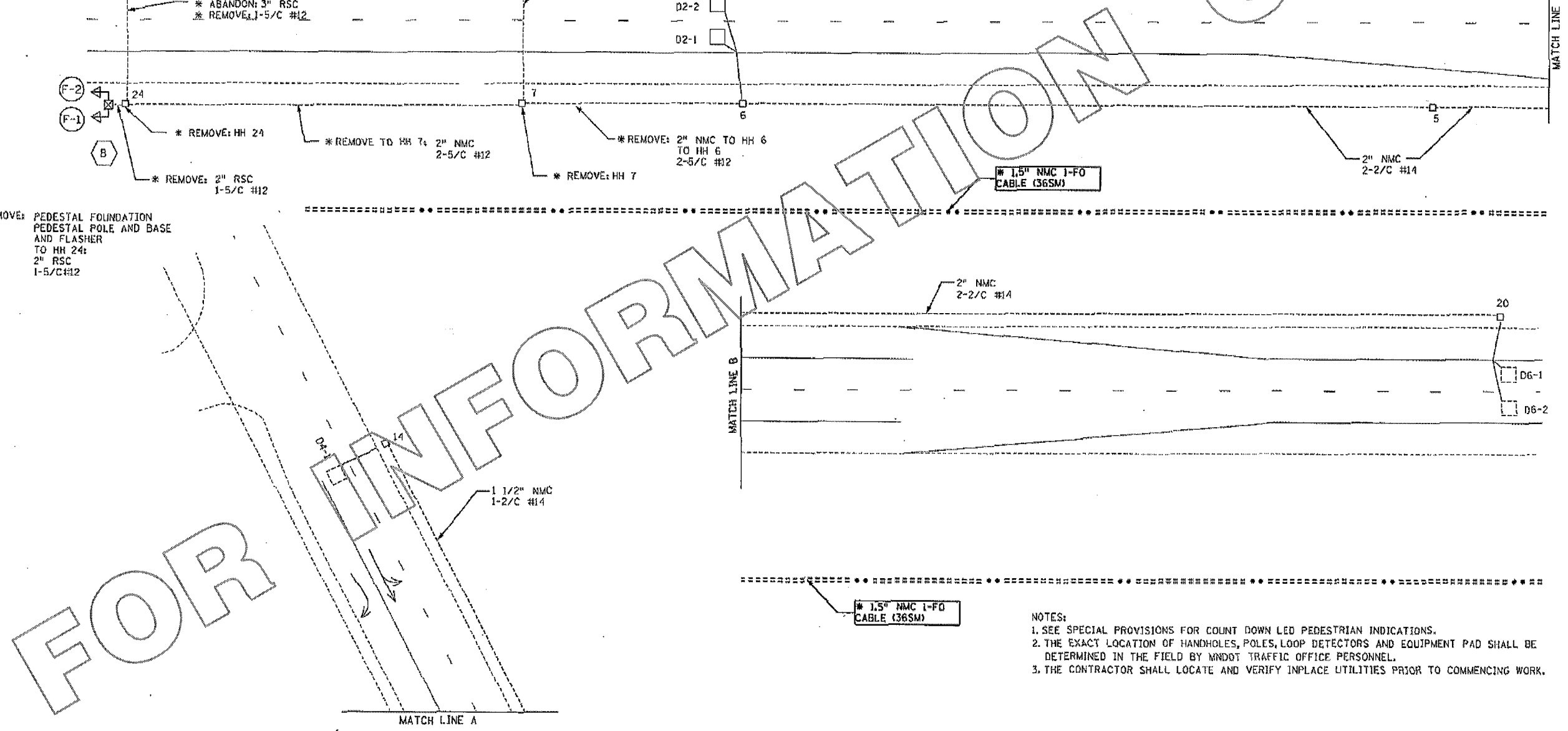
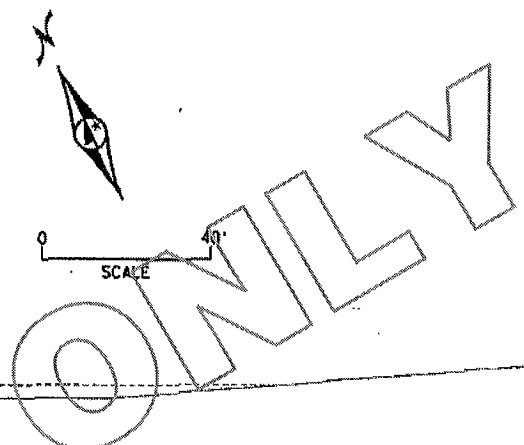
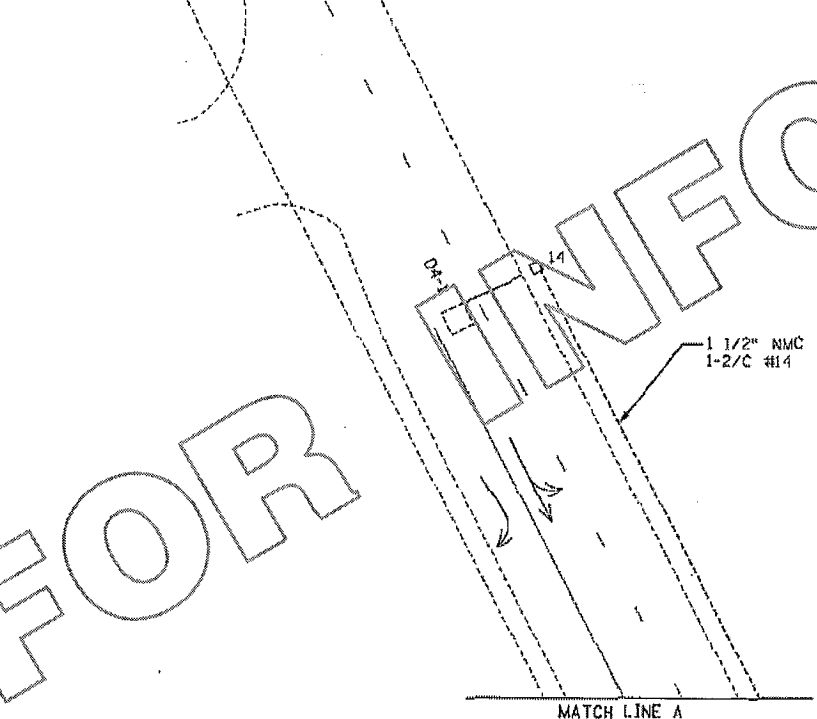
SHEET 416 OF 586

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9 \* REMOVE: PEDESTAL FOUNDATION  
PEDESTAL POLE AND BASE  
AND FLASHER  
TO HH 25;  
2" RSC  
1-5/C#12



8 \* REMOVE: PEDESTAL FOUNDATION  
PEDESTAL POLE AND BASE  
AND FLASHER  
TO HH 24;  
2" RSC  
1-5/C#12



FOR INFORMATION ONLY

- NOTES:
1. SEE SPECIAL PROVISIONS FOR COUNT DOWN LED PEDESTRIAN INDICATIONS.
  2. THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
  3. THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.

NO	DATE	BY	CHKD	APPR	REVISION
0	04/30/09	JJD	RGD	JWB	INITIAL RELEASE

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: THOMAS JENSEN  
Date: 04/30/09 License # 44247

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 8028-345  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY: KAS  
DESIGNED BY: JJD  
CHECKED BY: RJG  
COMM. NO. 0138259



**METRO WIDE FIBER CABLE INSTALLATION**  
REVISE SIGNAL SYSTEM B  
TH 10 AT CSAH 83 (ARMSTRONG BLVD)  
INTERSECTION LAYOUT MATCHLINE

SHEET 167 OF 181

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NO	DATE	BY	CHKD	APPR	REVISION

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

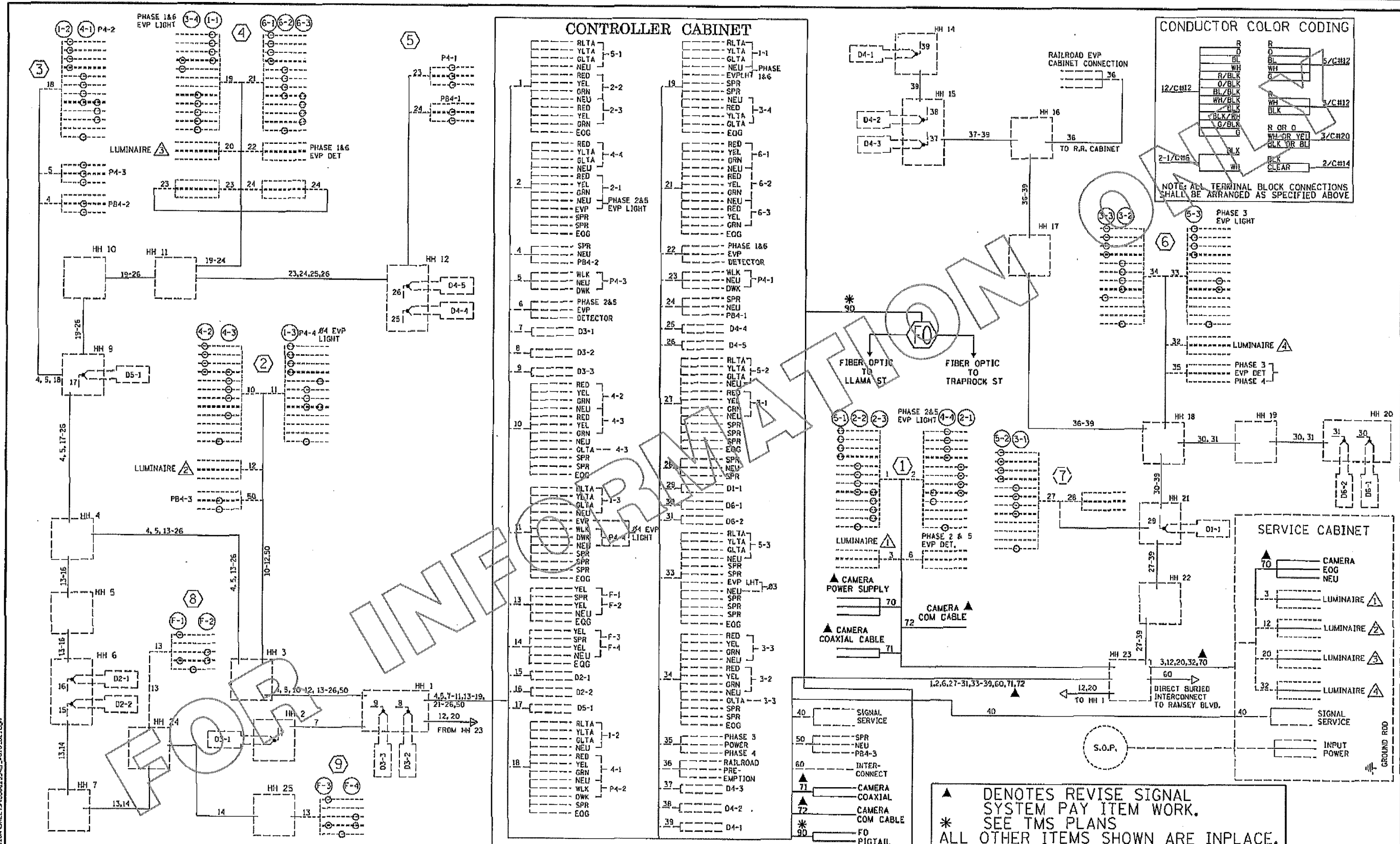
DRAWN BY: KAS  
DESIGNED BY: JJD  
CHECKED BY: RJG  
COMM. NO. 0138259



**ANOKA COUNTY**  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
FOR INFORMATION ONLY

SHEET 417 OF 586





0	04/30/09	TJ	ADD	AWB	INITIAL RELEASE
NO	DATE	BY	CHKD	APPR	REVISION
1	04/30/09	TJ	ADD	AWB	INITIAL RELEASE

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Print Name: THOMAS JENSEN

Date: 04/30/09 License # 44247

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY: XAS  
DESIGNED BY: TJM  
CHECKED BY: RJG



**METRO WIDE FIBER CABLE INSTALLATION**

REVISE SIGNAL SYSTEM B  
TH 10 AT CSAH 83 (ARMSTRONG BLVD)

WIRING DIAGRAM

SHEET 168 OF 181

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NO	DATE	BY	CHKD	APPR	REVISION

STATE AID PROJECT NO. 002-683-004  
199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY: XAS  
DESIGNED BY: TJM  
CHECKED BY: RJG

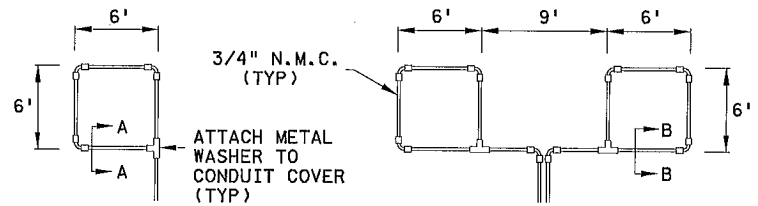


**ANOKA COUNTY**

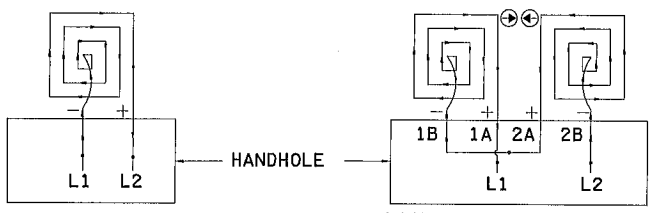
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
FOR INFORMATION ONLY

SHEET 418 OF 586





3/4" N.M.C. (TYP)  
ATTACH METAL WASHER TO CONDUIT COVER (TYP)

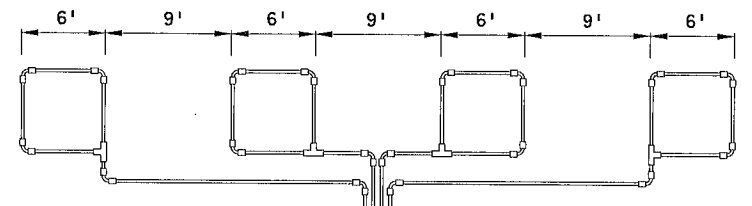


**LOOP DETECTOR DETAIL 'A'**  
(LOOP PHASING FOR SINGLE CONNECTION)

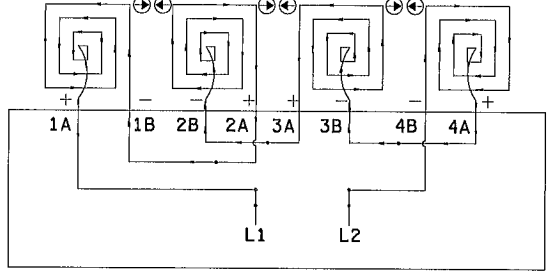
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

- L1 TO 1A
- 1B TO 2A
- 2B TO L2

**LOOP DETECTOR DETAIL 'B'**  
(LOOP PHASING FOR SERIES CONNECTION)



LOOP RETURN CONDUITS MAY BE PLACED IN COMMON TRENCH (TYP) TO HANDHOLE

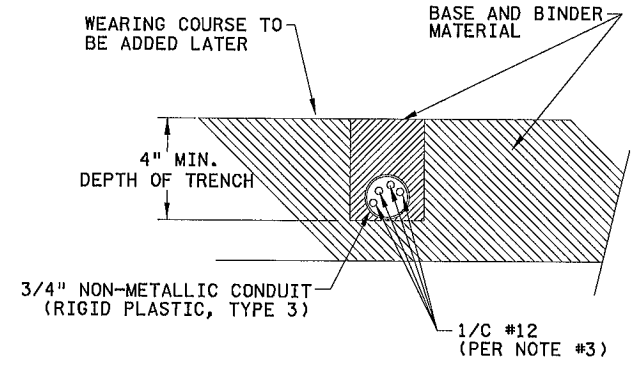


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

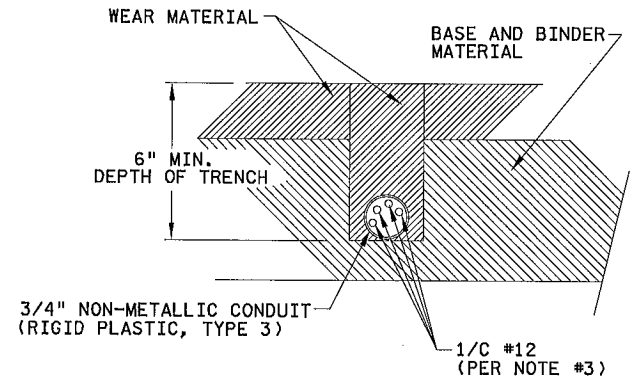
- L1 TO 1A
- 1B TO 2A
- 2B TO 3A
- 3B TO 4A
- 4B TO L2

SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

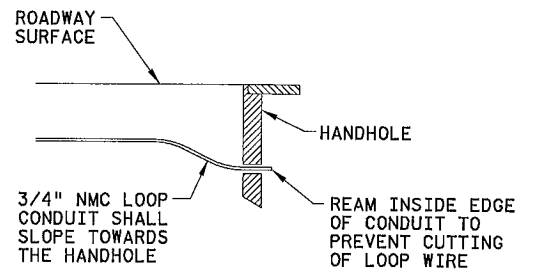
**LOOP DETECTOR DETAIL 'C'**  
(LOOP PHASING FOR SERIES CONNECTION)



**SECTION A-A**  
DETAIL FOR LOOP INSTALLATION IN NEW ROADWAY



**SECTION B-B**  
DETAIL FOR LOOP INSTALLATION IN EXISTING ROADWAY



**DRAINAGE DETAIL**

**LOOP DETECTOR WIRING**

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

**LEGEND OF SYMBOLS**

CONTROLLER AND SERVICE EQUIP. NO'S	⊙
SIGNAL BASE NO.	⊙
SIGNAL FACE NO.	⊙
LUMINAIRE NO.	⊙
CONTROLLER AND CABINET	□
CONTROLLER AND CABINET - IN PLACE	□
HANDHOLE	□
HANDHOLE - IN PLACE	□
RIGID STEEL CONDUIT (RSC)	— — — — —
RIGID STEEL CONDUIT (RSC) - IN PLACE	— — — — —
SIGNAL FACE WITH BACKGROUND SHIELD	→
SIGNAL FACE W/O BACKGROUND SHIELD	→
SIGNAL FACE - IN PLACE	→
PEDESTRIAN INDICATORS	→
PEDESTRIAN INDICATORS - IN PLACE	→
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	⊙
PEDESTRIAN PUSH BUTTON STATION	⊙
TRAFFIC SIGNAL PEDESTAL	⊙
TRAFFIC SIGNAL PEDESTAL - INPLACE	⊙
TRAFFIC SIGNAL POLE AND MAST ARM	⊙
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	⊙
STREET LIGHT POLE AND LUMINAIRE	⊙
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	⊙
MAST ARM AND LUMINAIRE	⊙
MAST ARM AND LUMINAIRE - INPLACE	⊙
WOOD POLE	⊙
WOOD POLE - IN PLACE	⊙
SOURCE OF POWER	⊙
RAILROAD SIGNAL - IN PLACE	⊙
RIGHT OF WAY LINE	— — — — —
CENTERLINE	— — — — —
EDGE OF ROADWAY	— — — — —
SHOULDERLINE	— — — — —
CURB LINE	— — — — —
STOP BAR	— — — — —
EMERGENCY VEHICLE PREEMPTION DETECTOR	→

**ABBREVIATIONS**

3-1(EG)	SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG)	PED INDICATION PHASE "2" - NO. "1"
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE "2" - NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	PED	PEDESTRIAN
DWK	DON'T WALK	R	RED
EQG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR. R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

**CONDUCTOR COLOR CODE**

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License # **42785**

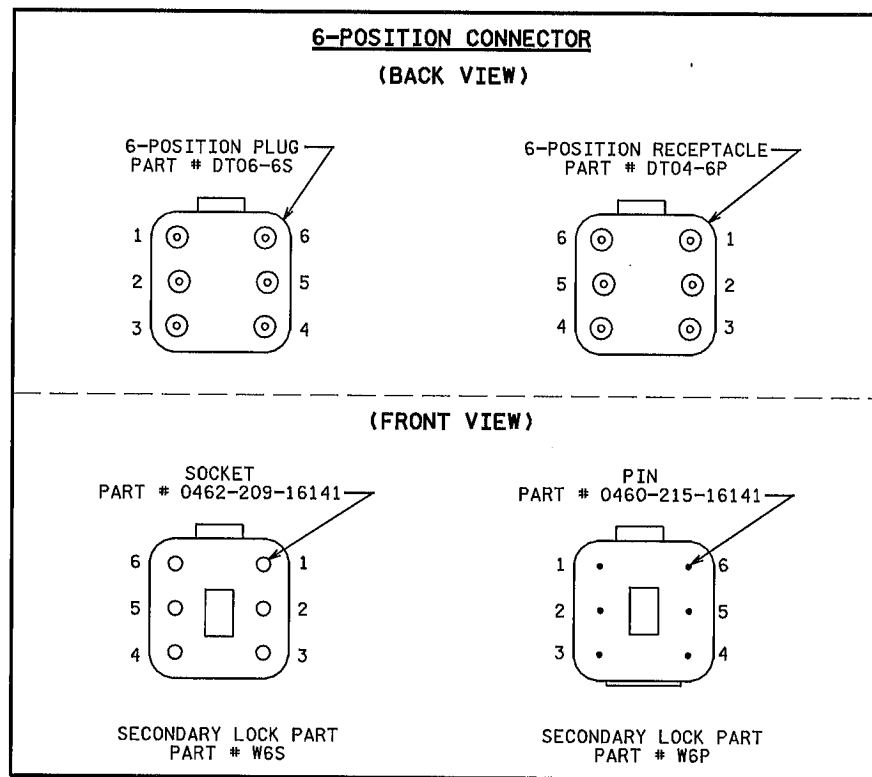
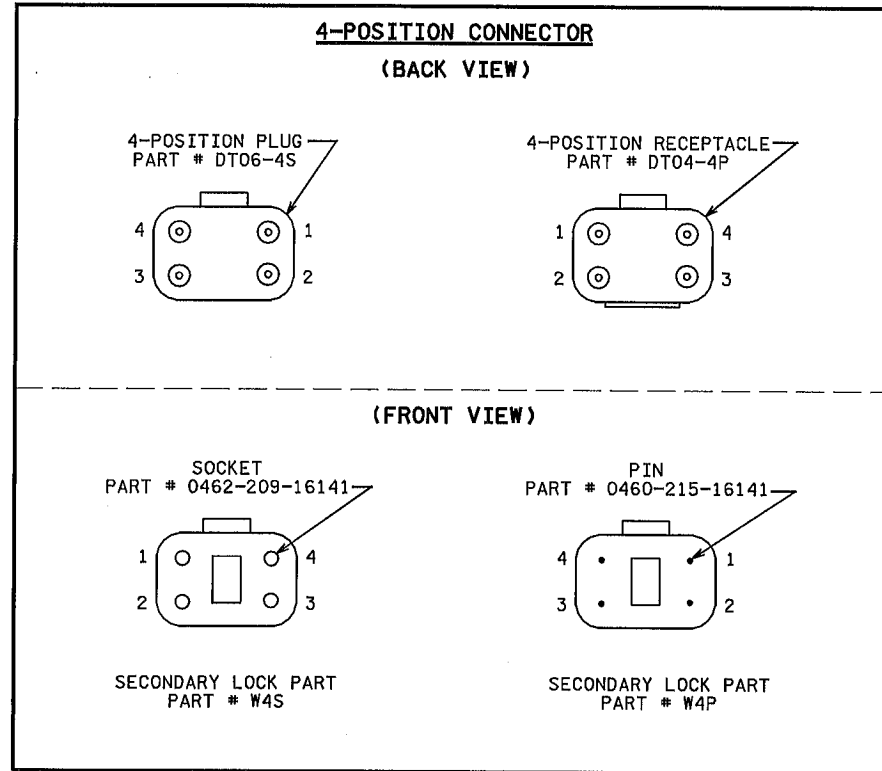
STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
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 CITY PROJECT NO. \_\_\_\_\_



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
DETAILS AND STANDARD PLATES

SHEET  
419  
OF  
586



**WIRE COLOR CODE KEY**

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

**WIRE SPECIFICATION CHART**

Type	Name	Specification Number
1/C#2	Power Conductors	3815.2B.1
1/C#6	Power Conductors	3815.2B.1
1/C#6 INS.GR.	Grounding Conductors	3815.2B.5
2/C#14	Loop Detector Lead-In Cable	3815.2C.4
3/C#14	Signal Control Cable	3815.2C.3
4/C#14	Signal Control Cable	3815.2C.3
6/C#14	Signal Control Cable	3815.2C.3
12/C#14	Signal Control Cable	3815.2C.3
6PR#19	Telephone Cables Outdoor	3815.2C.6.b
3/C#20	EVP Detector Cable	3815.2C.5

**TABLE 2a 4 Position DT Connector (3 Section Head/DWK/WLK)**

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R or R/BLK or BLK	1	R	RED or DWK
O or O/BLK or BLK/WH or BLK	2	BLK/R	YEL or WLK
BL or BL/BLK or BLK/R or BLK	3	BLK	GRN or SPR
WH or WH/BLK or WH/R	4	WH	NEU

**TABLE 3 6 Position DT Connector (4 and 5 Section Heads)**

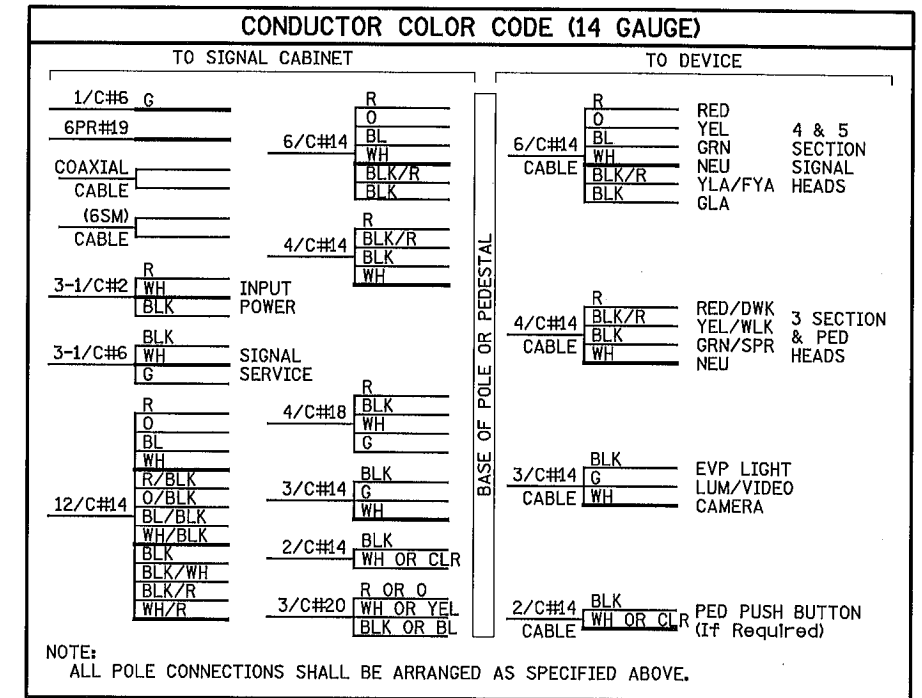
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	RED
O	2	O	YEL
BL	3	BL	GRN
WH	4	WH	NEU
O/BLK or BLK/R (6/C)	5	BLK/R	YLA or FYLA
BL/BLK or BLK (6/C)	6	BLK	GLA

**TABLE 2b 4 Position DT Connector (EVP LHT/LUM/Flasher)**  
(Used with 3 Conductor Cable Only)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

**NOTES:**

- DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
- DT06-S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
- THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE/JUNCTION BOX.
- STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
- STRIP .250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
- CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
- WIRES MUST BE TERMINATED AS DETAILED IN TABLES 1 THRU 3 DEPENDING ON WIRE COUNT.
- ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
- LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

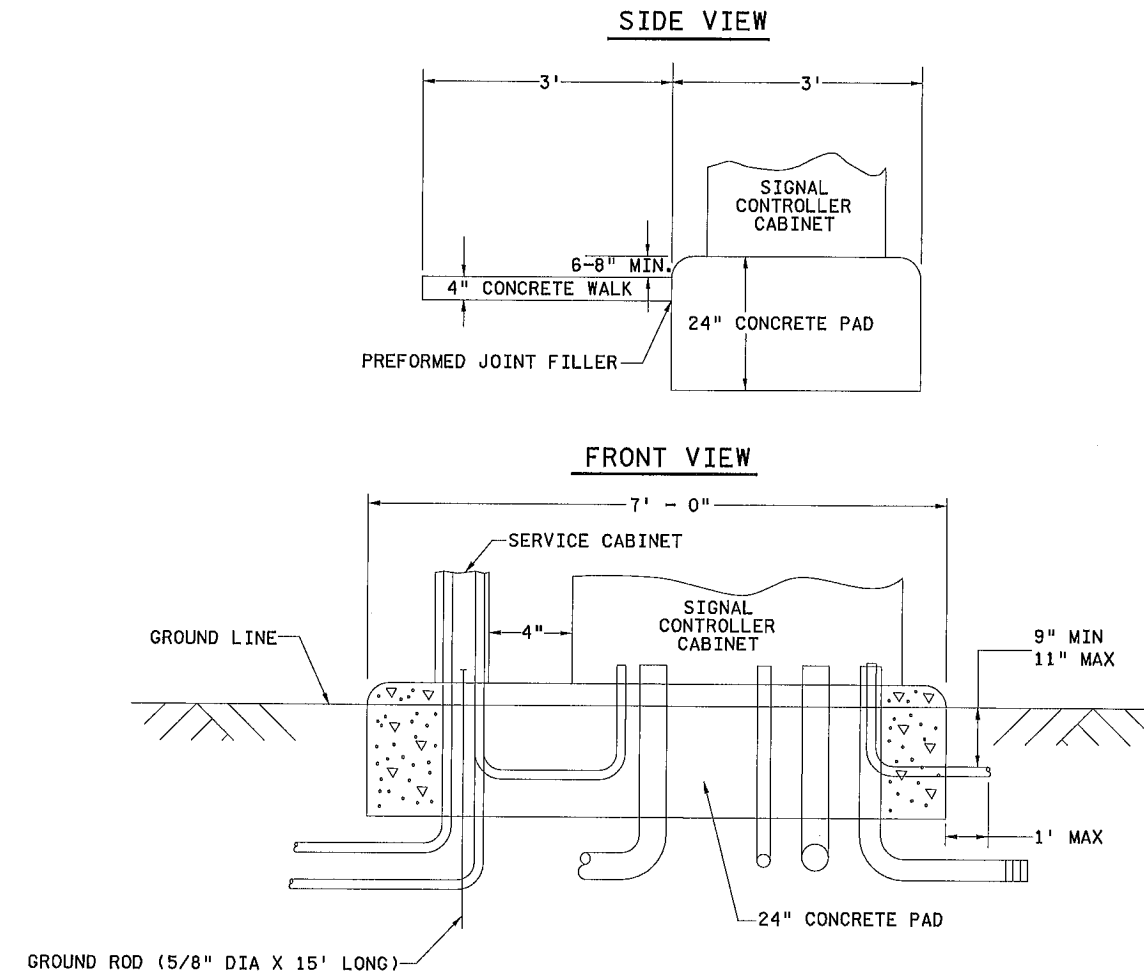
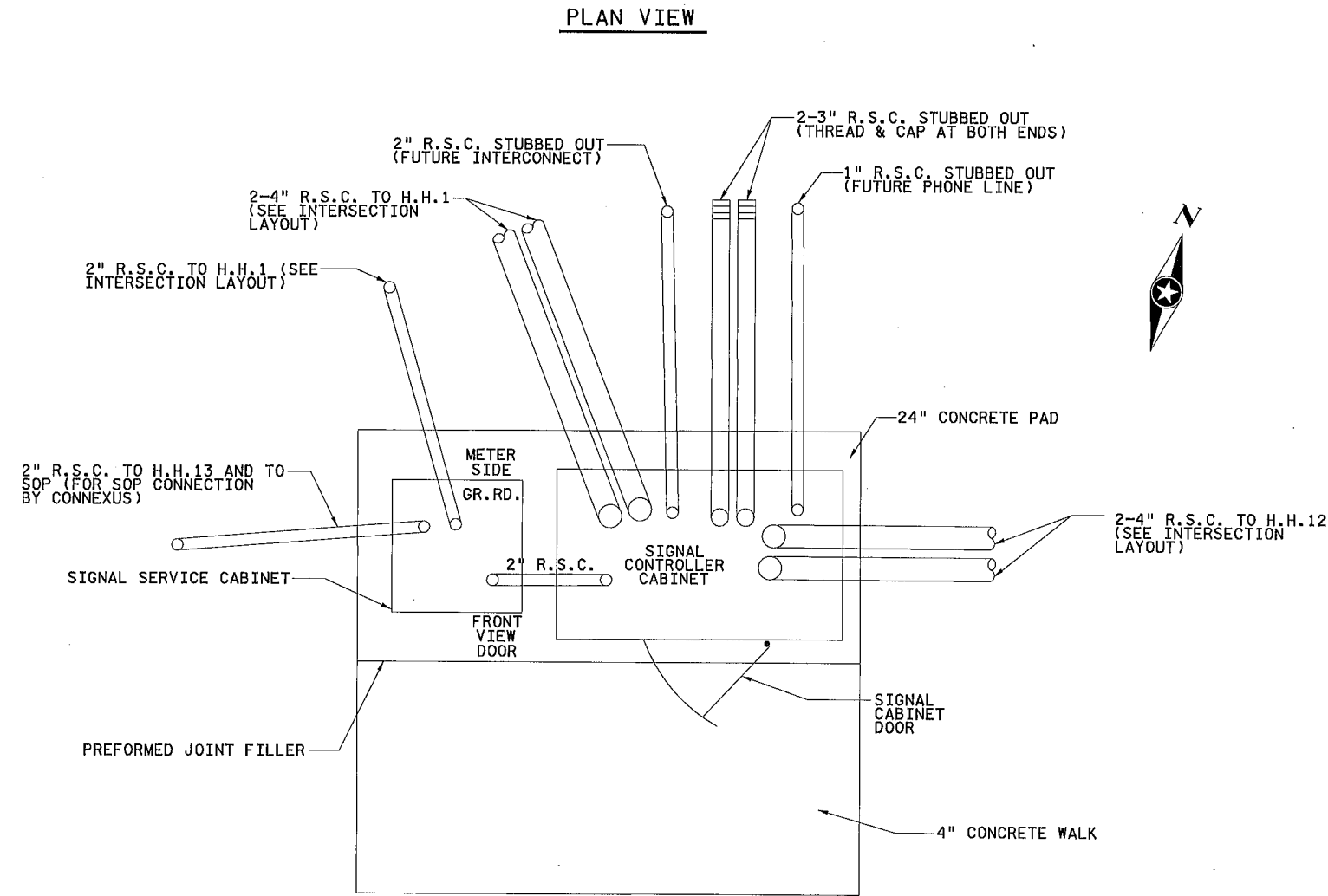


NOTE:  
ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

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<table border="1"> <thead> <tr><th>NO</th><th>DATE</th><th>BY</th><th>CHKD</th><th>APPR</th><th>REVISION</th></tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO	DATE	BY	CHKD	APPR	REVISION							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: <b>ADRIAN S. POTTER</b> <i>Adrian S. Potter</i> Date: <b>09-12-14</b> License # <b>42785</b>	STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY <b>M. BRESSLER</b> DESIGNED BY <b>M. BRESSLER</b> CHECKED BY <b>A. POTTER</b> COMM. NO. 0138259		<b>ENGINEERS PLANNERS DESIGNERS</b>	<p align="center"><b>ANOKA COUNTY</b></p> <p align="center">TRAFFIC SIGNAL PLANS</p> <p align="center"><b>T.H. 10 / C.S.A.H. 83 INTERCHANGE</b></p> <p align="center">TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL (SYS "A")</p> <p align="center">C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS</p>	<p align="center">SHEET</p> <p align="center">420</p> <p align="center">OF</p> <p align="center">586</p>
NO	DATE	BY	CHKD	APPR	REVISION														

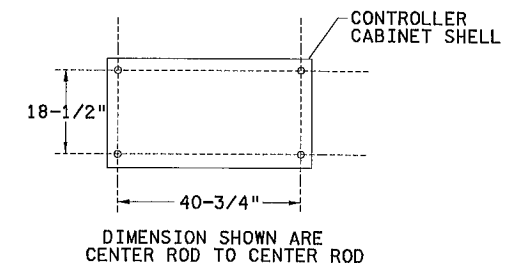
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET  
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)



NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF THE NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
9. CONTRACTOR SHALL PROVIDE MINIMUM 4-INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATION AS SHOWN.

CONTROLLER CABINET  
TYPE "P" & "R"  
BOLT PATTERN



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NO	DATE	BY	CHKD	APPR	REVISION

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: ADRIAN S. POTTER  
*Adrian S. Potter*  
Date: 09-12-14 License # 42785

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DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259

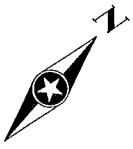


ENGINEERS  
PLANNERS  
DESIGNERS

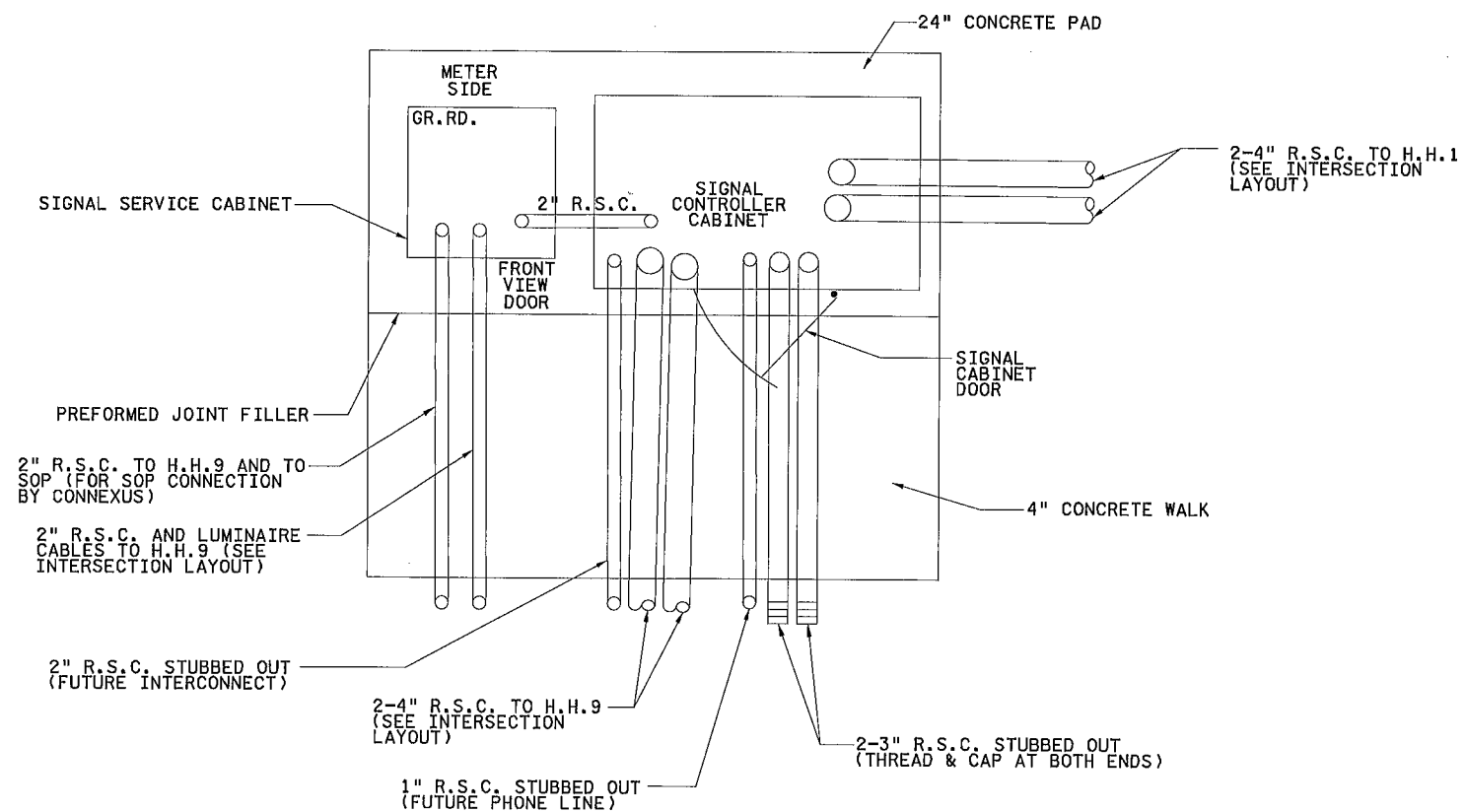
ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
EQUIPMENT PAD FOUNDATION  
C.S.A.H. 83 (ARMSTRONG BLVD) AT EB T.H. 10 RAMPS

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OF  
586

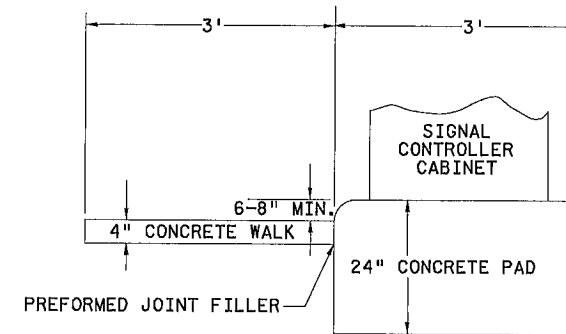
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET  
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)



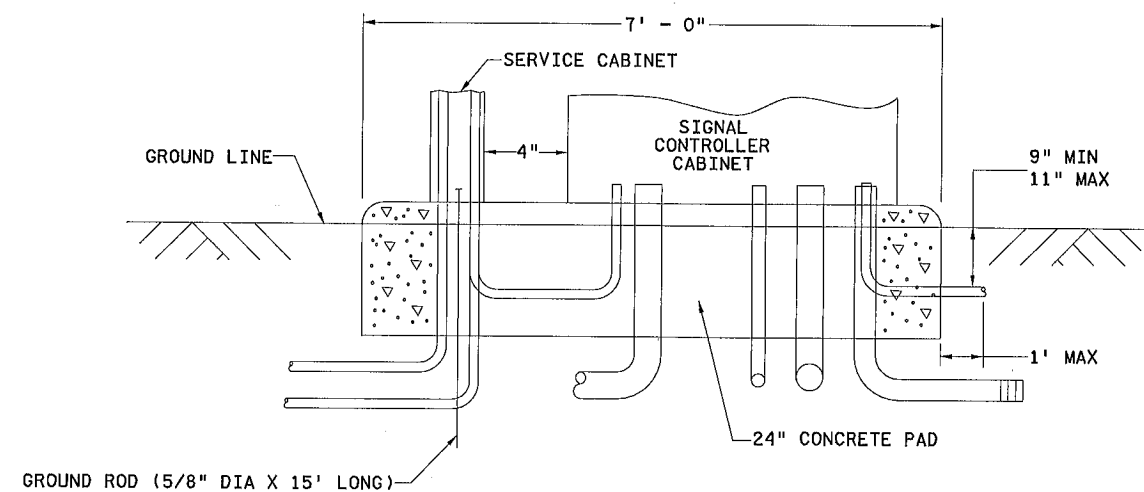
PLAN VIEW



SIDE VIEW



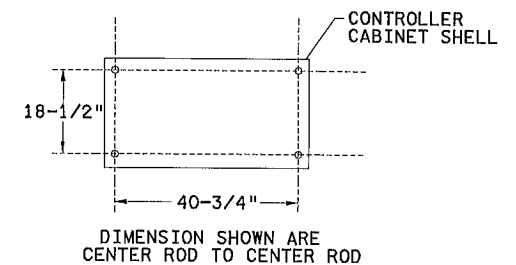
FRONT VIEW



NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLER AND CABINET SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF THE NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
9. CONTRACTOR SHALL PROVIDE MINIMUM 4-INCH CLEARANCE BETWEEN CONTROLLER AND SERVICE CABINETS ON THE EQUIPMENT PAD FOUNDATION AS SHOWN.

CONTROLLER CABINET  
TYPE "P" & "R"  
BOLT PATTERN



3/25/18 PM 9/11/2014 H:\Projects\8259\CAD\_BITMAP\CAD\_BITMAP.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.        
CITY PROJECT NO.      

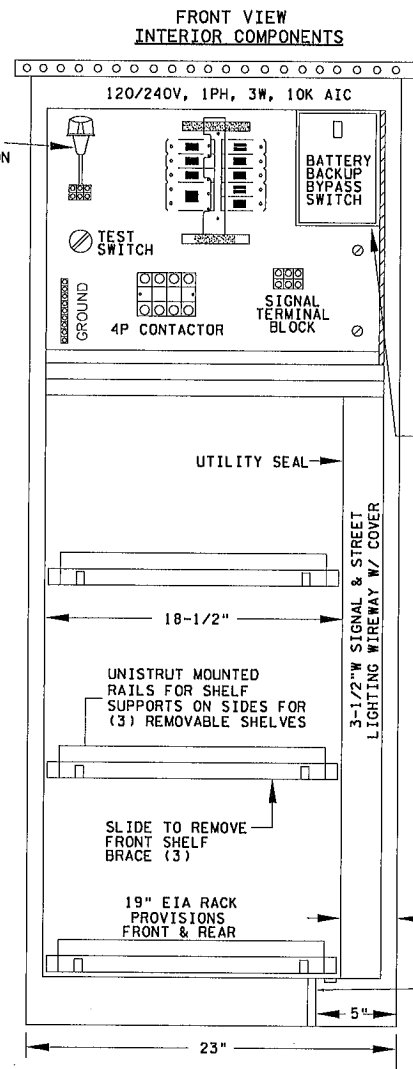
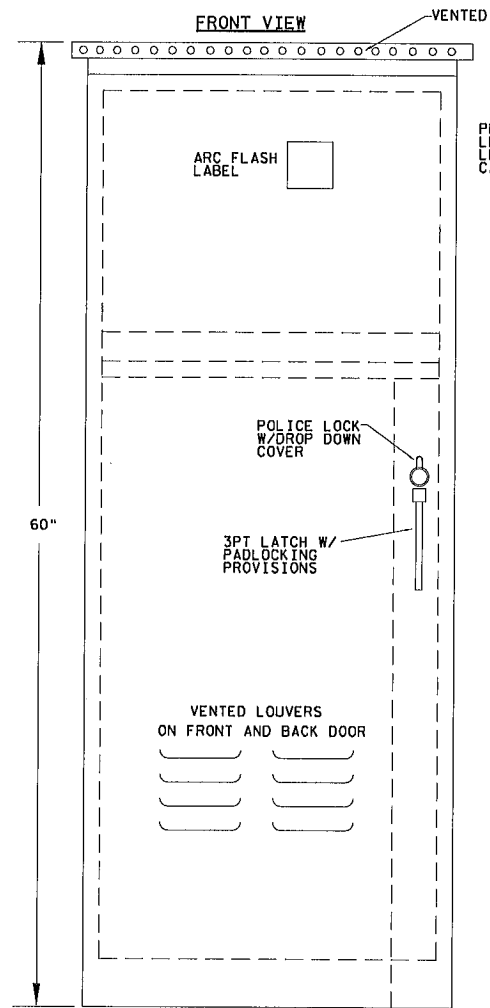
DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
EQUIPMENT PAD FOUNDATION (SYSTEM "A")  
C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS

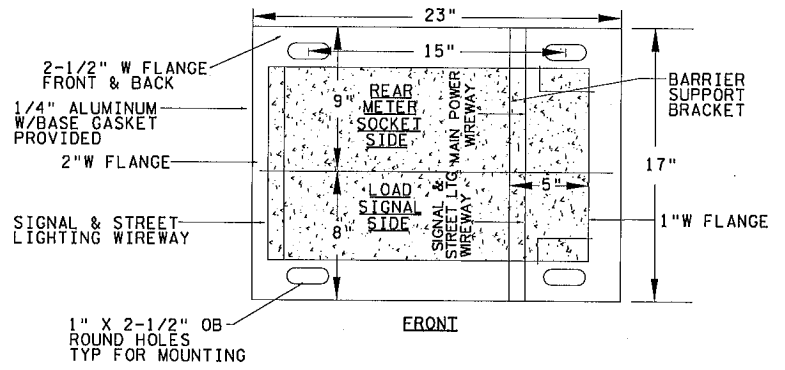
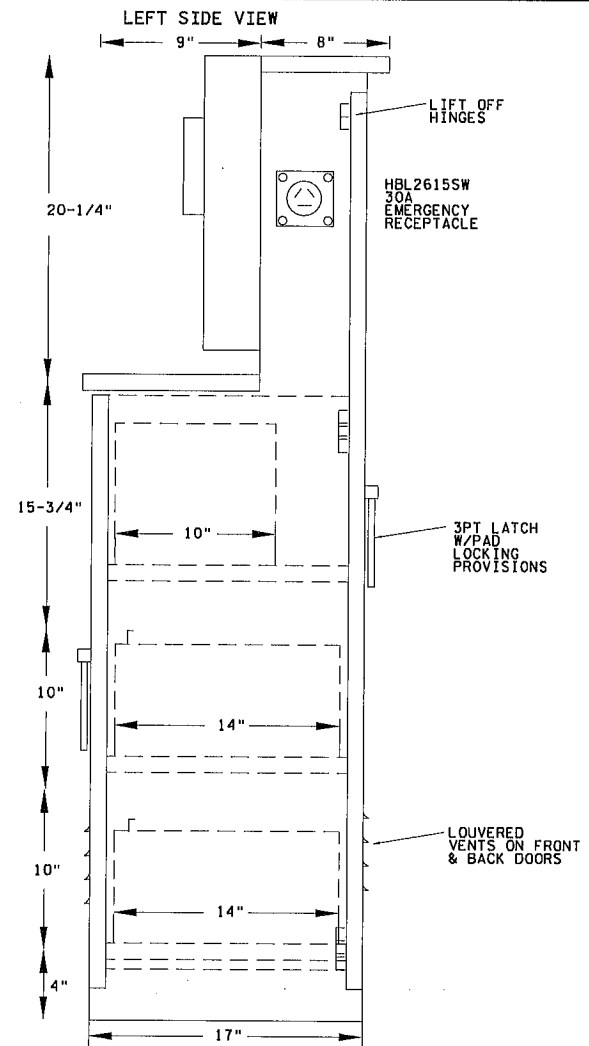
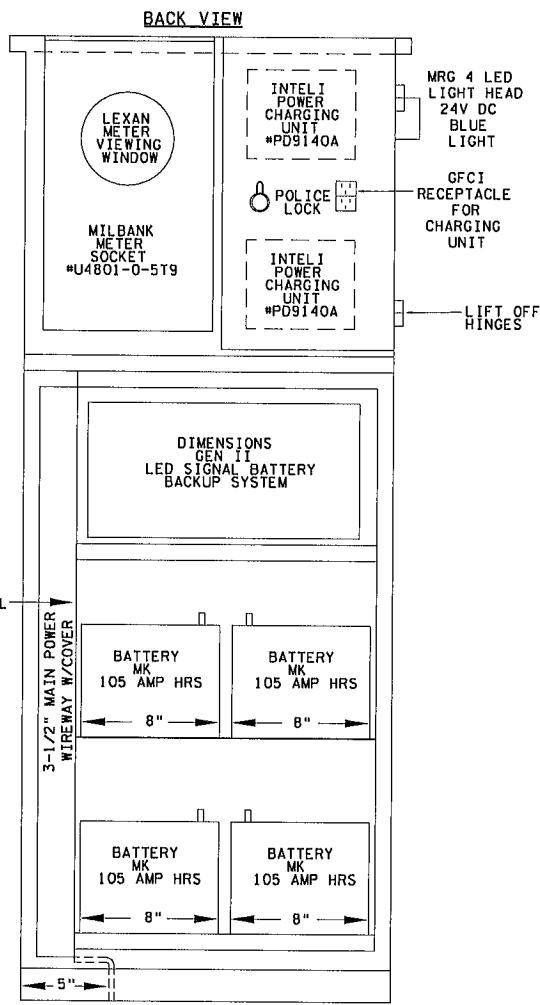
SHEET  
422  
OF  
586



LOAD CENTER  
CIRCUIT  
BREAKERS  
ITE "Q" TYPE  
1-100A/2P  
SERVICE  
DISCONNECT  
1-20A/1P GFCI  
RECEPTACLE  
1-15/1P  
PHOTOCELL  
4-15A/1P  
LUMINAIRES  
1-30A/1P  
SIGNAL SVC  
1 SPARE

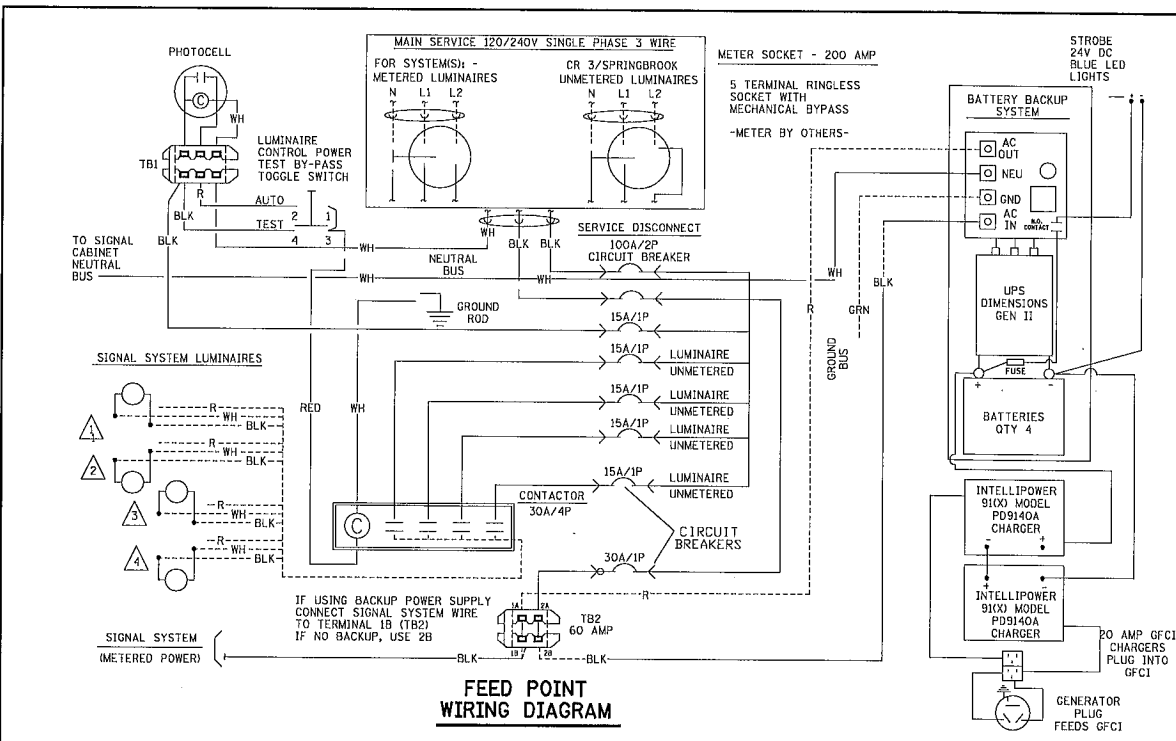
CUTOUT PROVISIONS IN  
DEAD FRONT FOR BATTERY  
BACKUP BYPASS SWITCH

INTERIOR  
COMPONENTS  
BEHIND HINGED  
DEAD FRONT  
W/ (2)-1/4"  
TURN LATCHES



**CABINET CONSTRUCTION**

- NEMA 3R
- 1/8" ALUMINUM 5052-H32
- ANODIZED 30 MINUTE CLEAR
- NEOPRENE GASKETED DOORS
- NON-CORRODING HARDWARE
- ETL LISTED IN ACCORDANCE W/UL508A



3/25/18 PM 9/11/2014 H:\projects\8259\CAD\_BIM\Plan\8259\_sd03.dgn

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*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

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STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER

DESIGNED BY M. BRESSLER

CHECKED BY A. POTTER

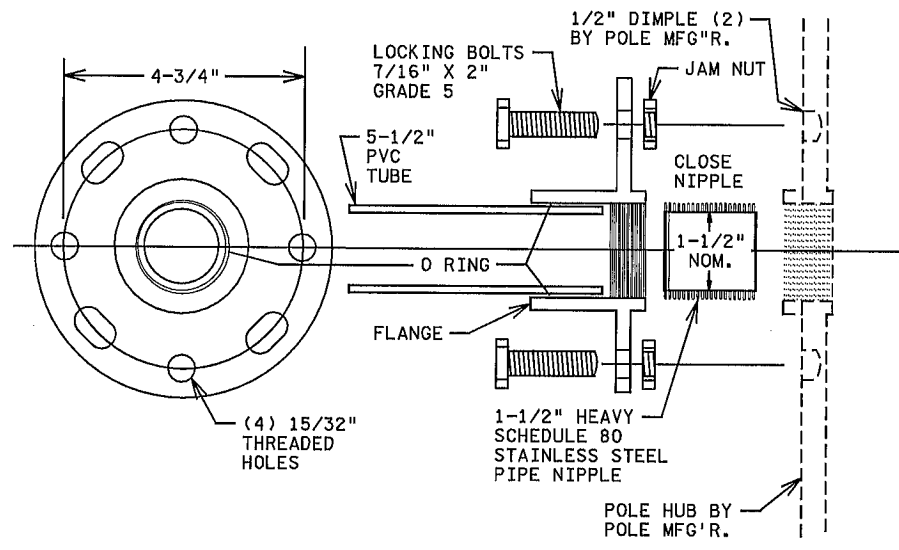
COMM. NO. 0138259



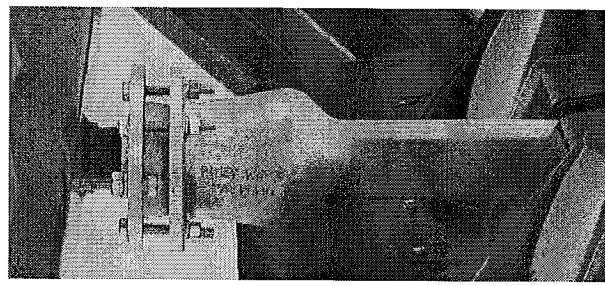
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
SERVICE CABINET DETAILS (SYSTEM "A")  
C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS

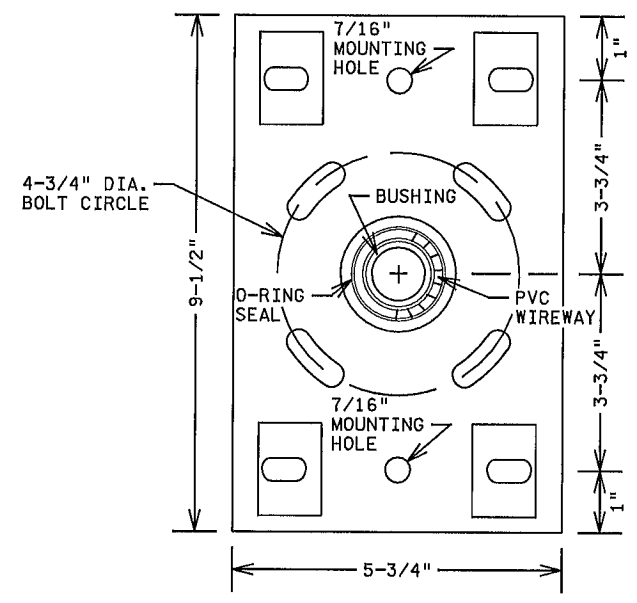
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423  
OF  
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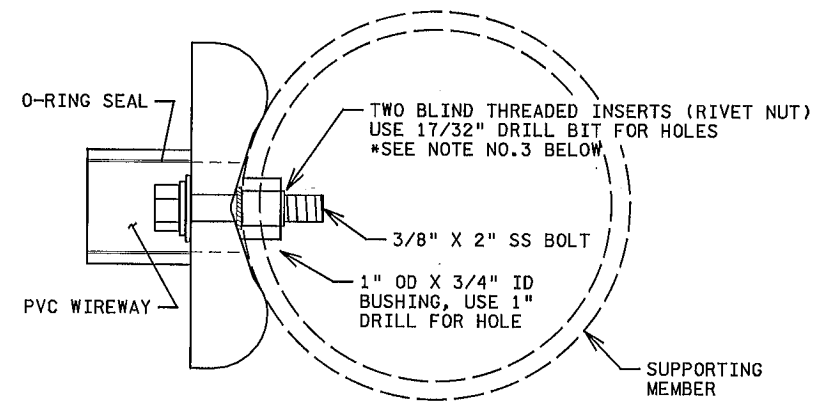
**THREADED HUB AND FLANGE POLE ADAPTOR**



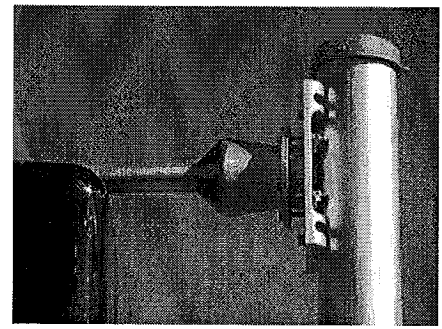
- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
  2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
  3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



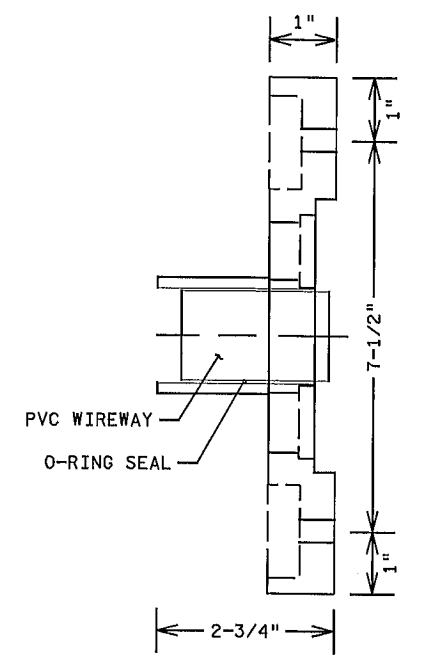
**BOLT ON HUB & FLANGE**



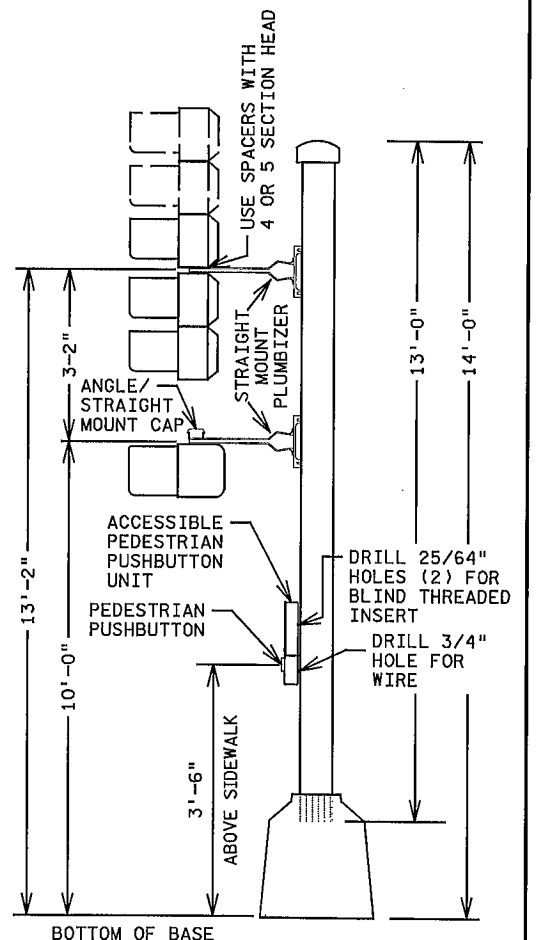
**TOP VIEW**



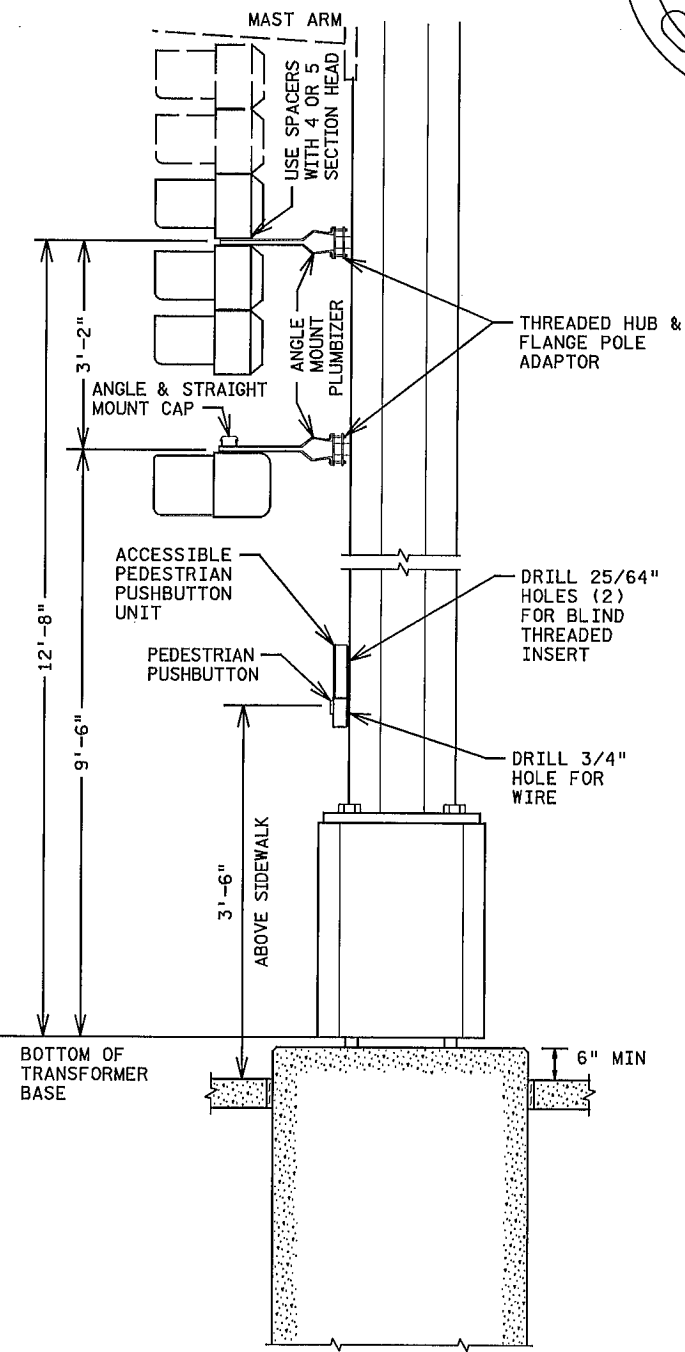
- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
  2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
  3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
  4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



**SIDE VIEW**



**TYPICAL PEDESTAL MOUNTING**  
NOT TO SCALE



**TYPICAL SIGNAL POLE MOUNTING**  
NOT TO SCALE

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*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002

STATE PROJECT NO. 0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER

DESIGNED BY M. BRESSLER

CHECKED BY A. POTTER

COMM. NO. 0138259

**SRE** ENGINEERS PLANNERS DESIGNERS

Consulting Group, Inc.

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

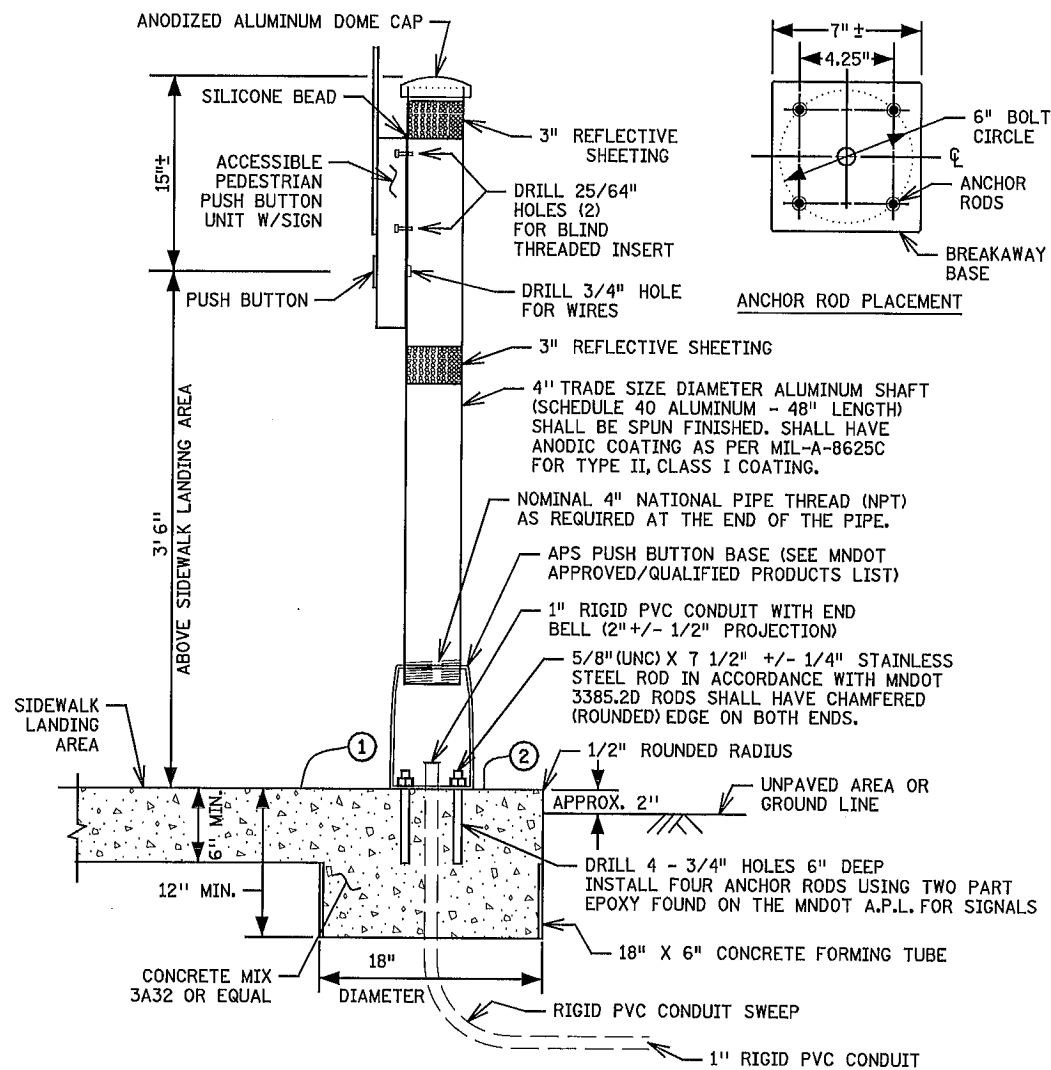
T.H. 10 / C.S.A.H. 83 INTERCHANGE

ONE-WAY POLE MOUNT DETAILS (SYSTEM "A")

C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS

SHEET 424 OF 586

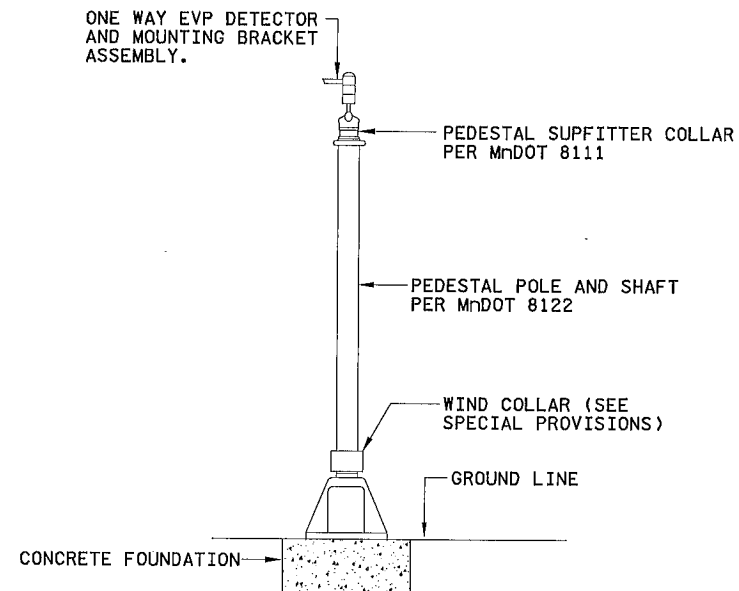
# APS PUSH BUTTON STATION



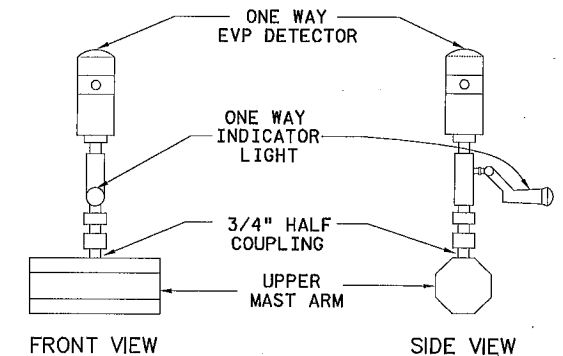
## NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
  - ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.
  - PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.
  - BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
  - BLIND THREADED INSERTS SHALL BE ZINC PLATED STEEL WITH 1/4 - 20 UNC THREADS. INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT QUALIFIED PRODUCTS LIST FOR SIGNALS.
  - A.P.S. MOUNTING BOLTS SHALL BE 1/4 - 20 STAINLESS STEEL. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
  - APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.
  - THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (QPL) FOR APPROVED TUBE DELINEATOR SHEETING.
  - ANTI-SEIZE COMPOUND MUST BE USED ON ALL THREADED BOLTS WHEN INSTALLING PEDESTRIAN PUSH BUTTON STATIONS.
- ① THE PUSH BUTTON STATION FOUNDATION IS CONSTRUCTED AS PART OF THE SIDEWALK. INCREASE THE SIDEWALK THICKNESS TO 12" THICK (MIN.) TO PROVIDE FOR THE PUSH BUTTON STATION FOUNDATION.
- ② ALL JOINTS SHALL BE A MINIMUM OF 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

## PEDESTAL POLE MOUNTED EVP DETECTOR DETAIL



## EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



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Pr Int Name: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

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CITY PROJECT NO.

DRAWN BY M. BRESSLER

DESIGNED BY M. BRESSLER

CHECKED BY A. POTTER

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

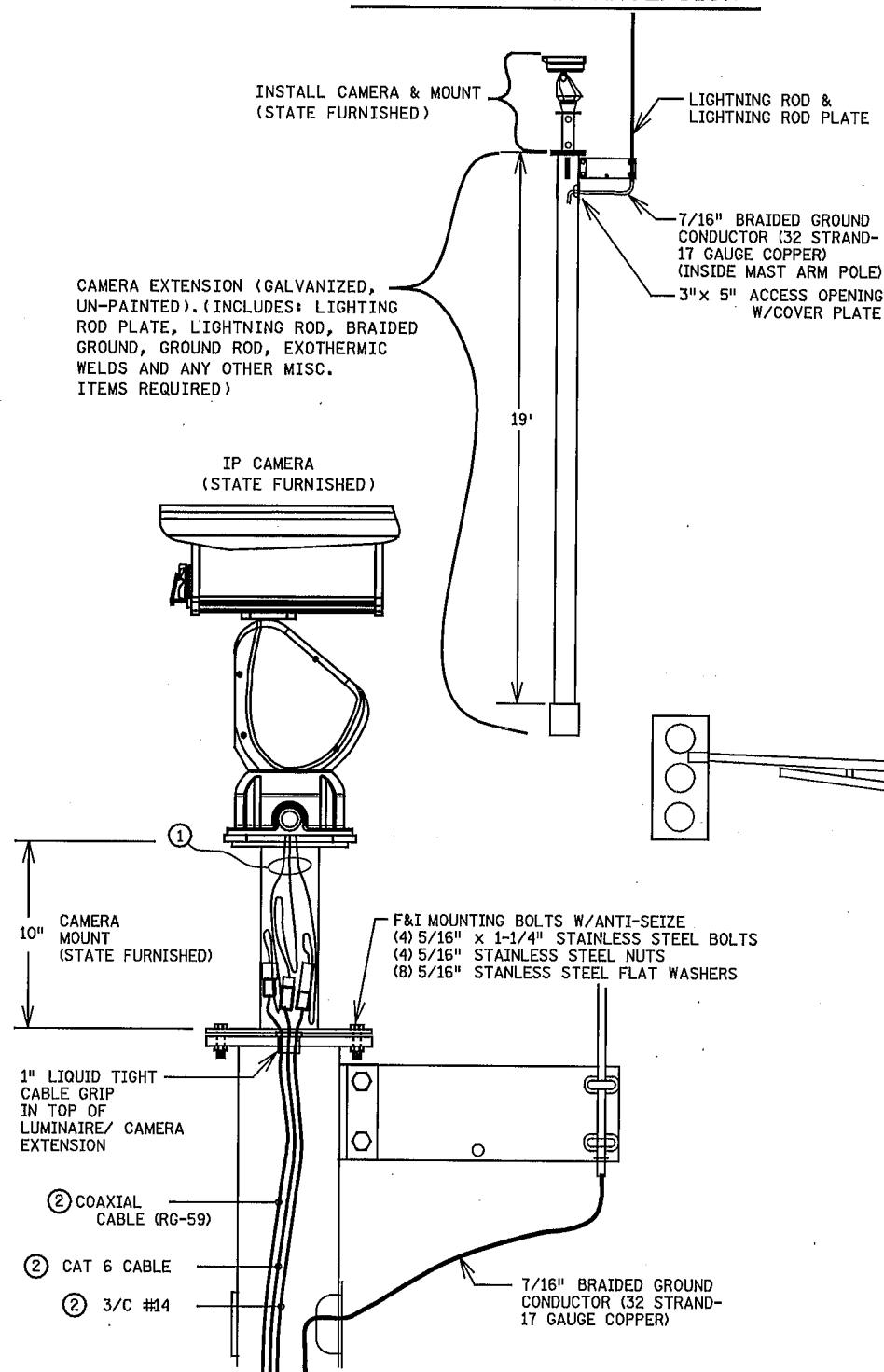
T.H. 10 / C.S.A.H. 83 INTERCHANGE

MISCELLANEOUS DETAILS (SYSTEM "A")

C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS

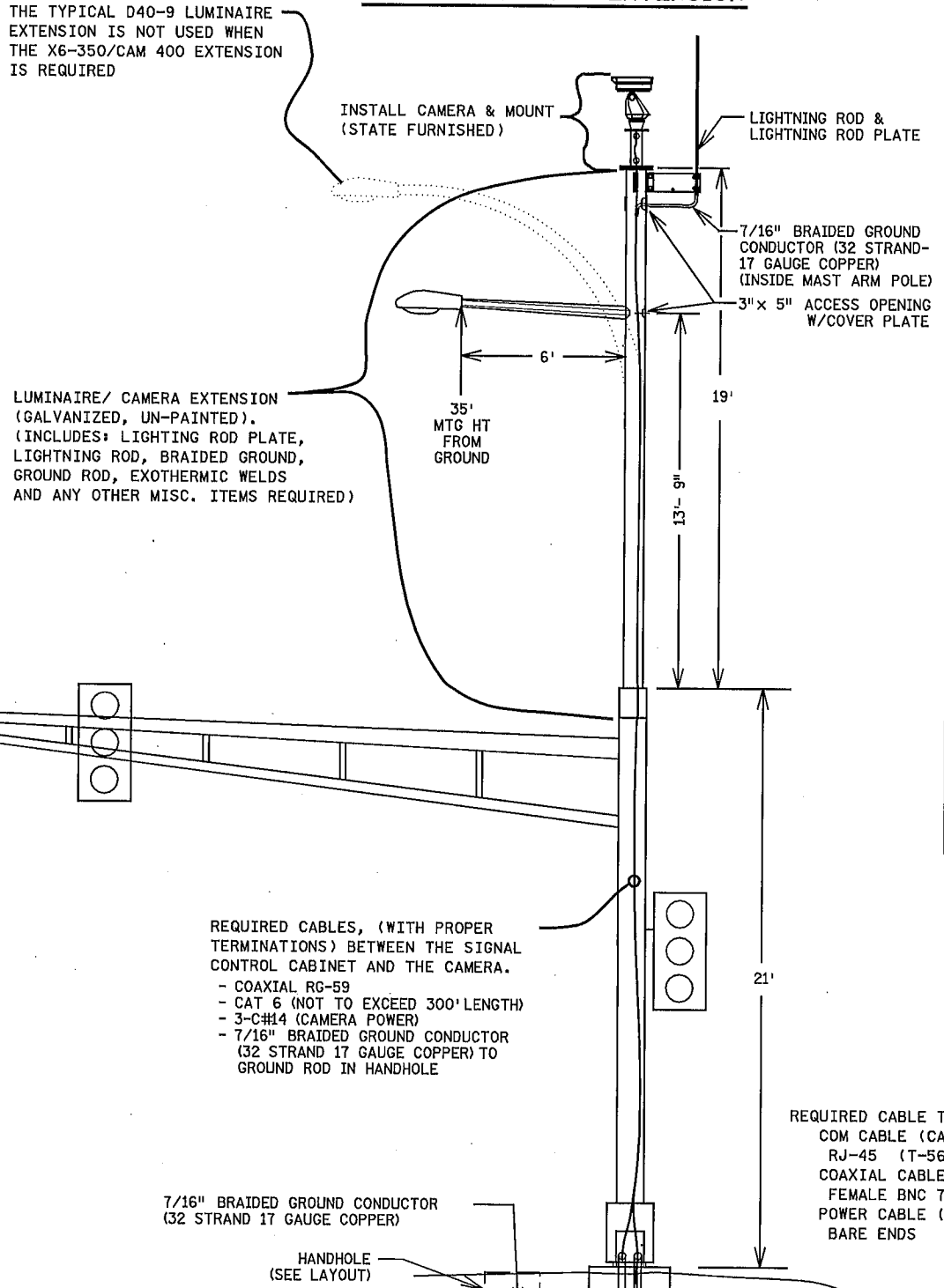
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586

**X-400 CAMERA EXTENSION**

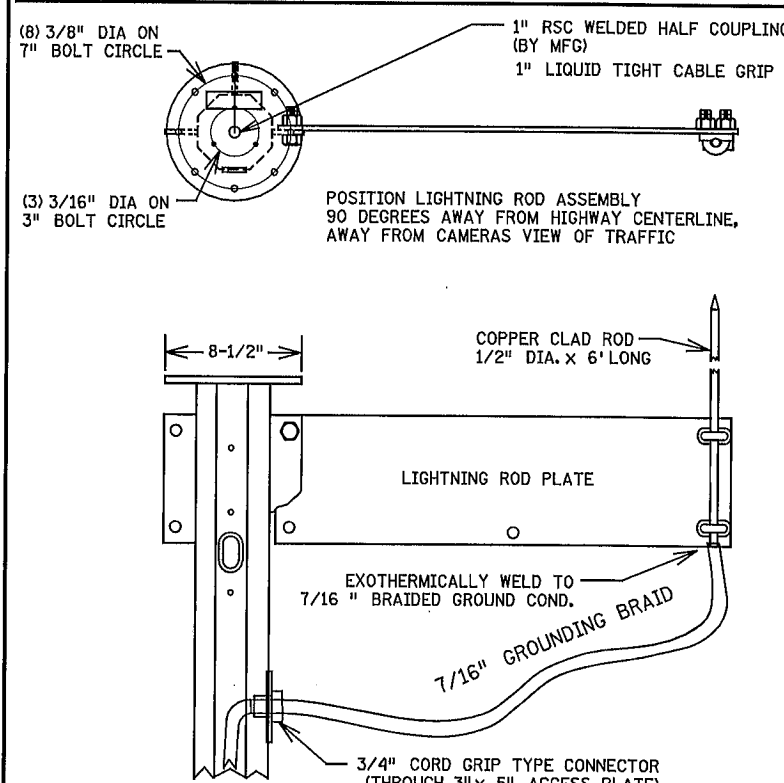


THE TYPICAL D40-9 LUMINAIRE EXTENSION IS NOT USED WHEN THE X6-350/CAM 400 EXTENSION IS REQUIRED

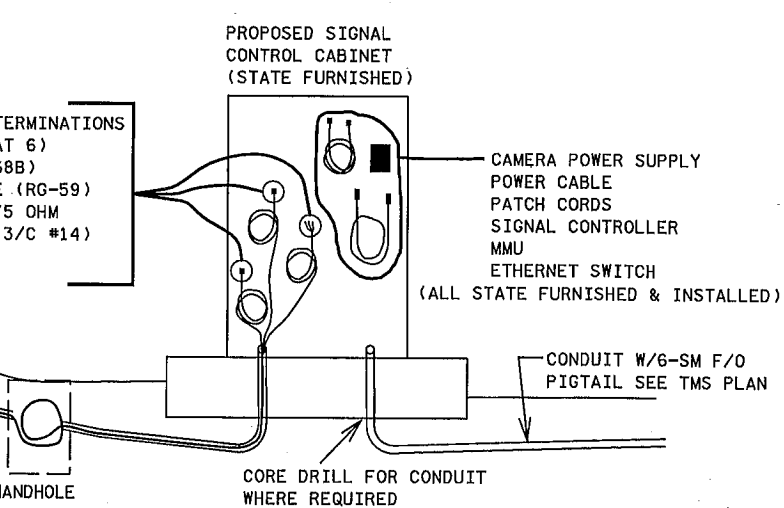
**X6-350/CAM 400 EXTENSION**



**EXTENSION TOP & LIGHTNING PROTECTION DETAIL**



- NOTES:**
- 1) FURNISH & INSTALL 7/16" BRAIDED GROUND CONDUCTOR INSIDE MAST ARM POLE AND THROUGH INPLACE CONDUIT TO CLOSEST HANDHOLE (SEE LAYOUT).
  - 2) CONTRACTOR SHALL EXOTHERMICALLY WELD 7/16" BRAIDED GROUND WIRE TO GROUND ROD IN HANDHOLE.
  - 3) NO SPLICES ALLOWED IN 7/16" BRAIDED GROUND WIRE.
  - 4) CONTRACTOR SHALL CUT A 3/4" INCH KNOCK OUT HOLE IN THE INSPECTION PLATE NEAR THE CAMERA AND PLACE A 3/4" INCH CORD GRIP TYPE FITTING TO RUN THE 7/16" INCH BRAIDED GROUND CONDUCTOR INTO THE POLE.



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NO	DATE	BY	CHKD	APPR	REVISION

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*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004 199-115-002

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COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY M. BRESSLER

DESIGNED BY M. BRESSLER

CHECKED BY A. POTTER

COMM. NO. 0138259



ENGINEERS PLANNERS DESIGNERS

ANOKA COUNTY

TRAFFIC SIGNAL PLANS

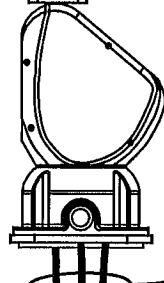
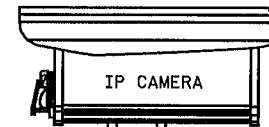
T.H. 10 / C.S.A.H. 83 INTERCHANGE

LUMINAIRE/CAMERA EXTENSION DETAIL (SYS "A")

C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS

SHEET 426 OF 586

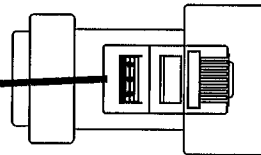




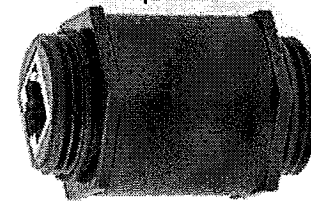
FACTORY INSTALLED 20" CABLE  
PIGTAILS WITH CONNECTORS  
(CAMERA IS STATE FURNISHED)

ETHERNET CABLE 4/PR

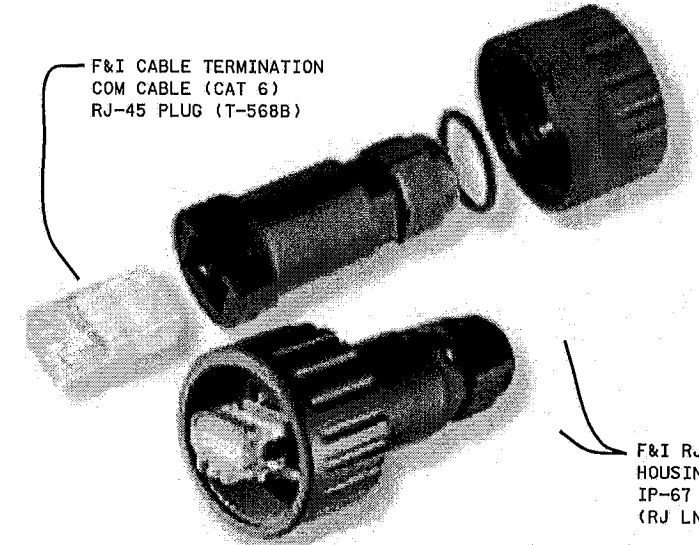
RJ-45 PLUG (T-568B)  
WITH CONNECTOR  
HOUSING MEETING  
IP-67 REQUIREMENTS  
(SUPPLIED WITH CAMERA)



F&I RJ-45 IN-LINE ADAPTER  
(MALE PLUG TO MALE PLUG)  
W/ CONNECTOR HOUSING MEETING  
IP-67 REQUIREMENTS  
(RJ LNXX RJB616821)

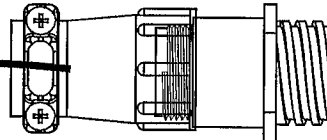


F&I CABLE TERMINATION  
COM CABLE (CAT 6)  
RJ-45 PLUG (T-568B)



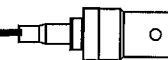
F&I RJ-45 CONNECTOR  
HOUSING MEETING  
IP-67 REQUIREMENTS  
(RJ LNXX ENSAM315)

POWER CABLE 3/C

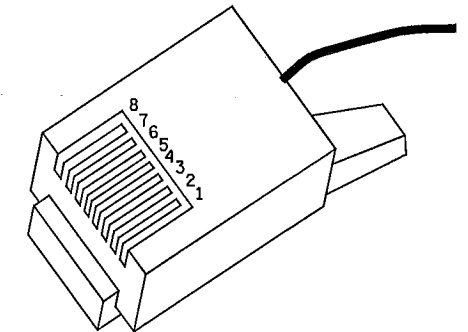


9 PIN RECEPTACLE  
(SUPPLIED WITH CAMERA)

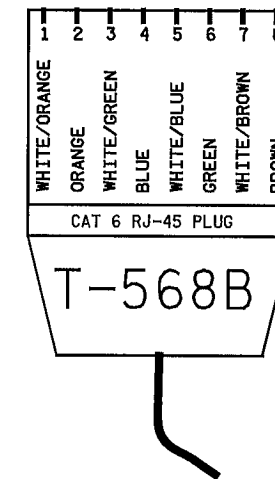
VIDEO CABLE (COAXIAL RG-59)



FEMALE BNC 75 OHM (RG-59)  
(SUPPLIED WITH CAMERA)



CABLE TYPE	CAMERA SIDE CONNECTOR (SUPPLIED WITH CAMERA)	MATING CONNECTOR (FURNISH & INSTALL)
VIDEO CABLE (COAXIAL RG-59)	(RG-59) 75 OHM FEMALE BNC	(RG-59) 75 OHM MALE BNC
POWER CABLE (3/C#14)	AMP PART 206705-2 RECEPTACLE AMP PART 66103-4 24-20 AWG MALE CONTACT (YELLOW DOT) AMP PART 66099-4 18-16 AWG MALE CONTACT (BLUE DOT) AMP PART 206966-7 CABLE CLAMP KIT	AMP PART 206708-1 PLUG AMP PART 66360-4 18-14 AWG FEMALE CONTACT (BLUE DOT) (QTY 3) AMP PART 206966-7 CABLE CLAMP KIT
COMMUNICATIONS & CONTROL CABLE (CATEGORY 6)	RJ LYNXX INDUSTRIAL FEMALE-FREE END (RJ-45 JACK WITH HOUSING MEETING IP-67 REQUIREMENTS)	RJ LYNXX PART ENSAM315 (RJ-45 PLUG WITH HOUSING MEETING IP-67 REQUIREMENTS)



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<table border="1"> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CHKD</th> <th>APPR</th> <th>REVISION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>				NO	DATE	BY	CHKD	APPR	REVISION							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>ADRIAN S. POTTER</u> <i>Adrian S. Potter</i> Date: <u>09-12-14</u> License # <u>42785</u>		STATE AID PROJECT NO. 002-583-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. _____ CITY PROJECT NO. _____ DRAWN BY M. BRESSLER DESIGNED BY M. BRESSLER CHECKED BY A. POTTER COMM. NO. 0138259				ENGINEERS PLANNERS DESIGNERS		ANOKA COUNTY TRAFFIC SIGNAL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE IP CAMERA CONNECTORS DETAIL (SYS "A") C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS		SHEET 427 OF 586	
NO	DATE	BY	CHKD	APPR	REVISION																						



LED SIGNAL INDICATIONS

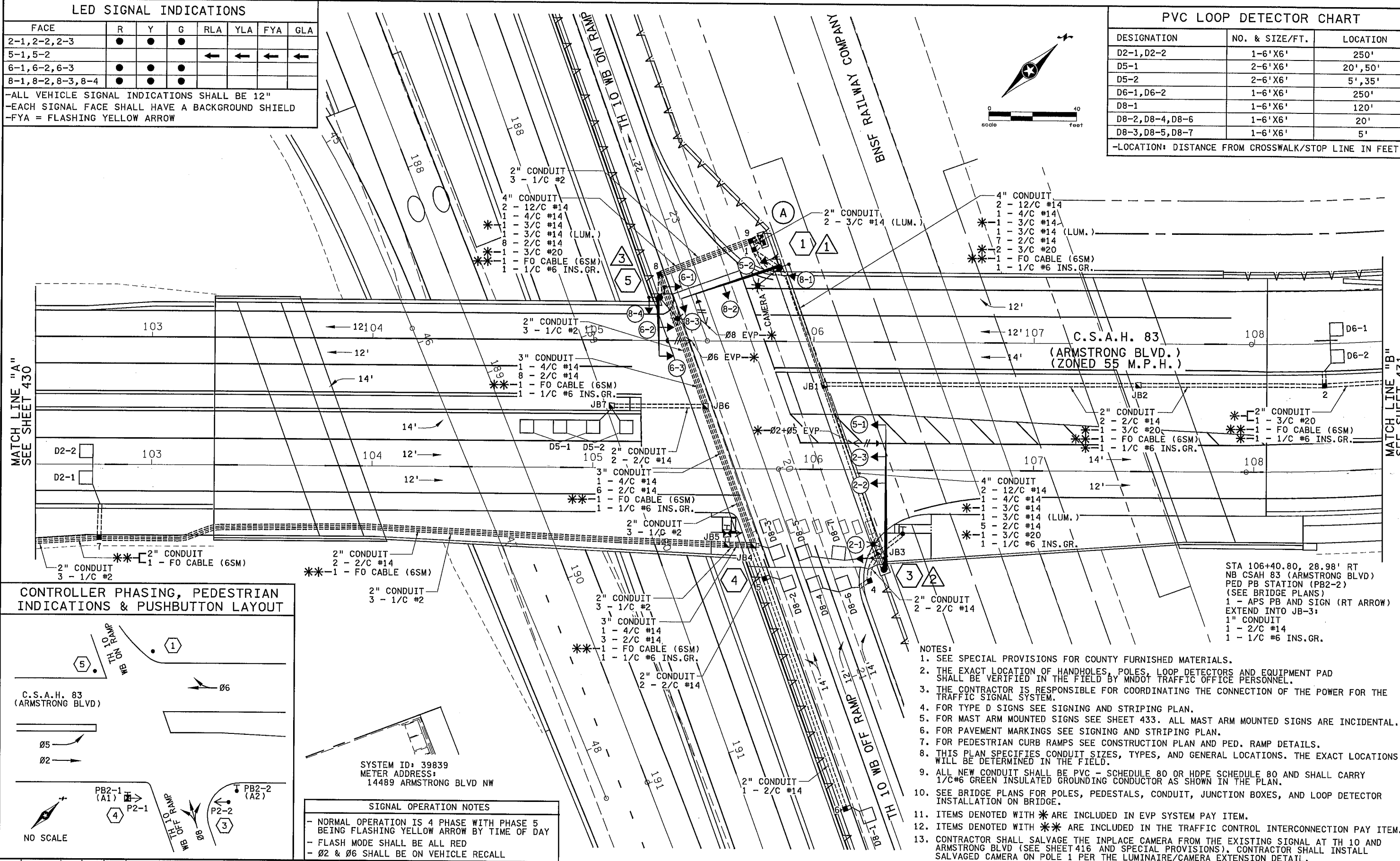
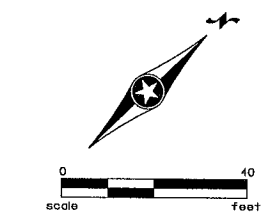
FACE	R	Y	G	RLA	YLA	FYA	GLA
2-1, 2-2, 2-3	●	●	●				
5-1, 5-2				←	←	←	←
6-1, 6-2, 6-3	●	●	●				
8-1, 8-2, 8-3, 8-4	●	●	●				

-ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12"  
 -EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD  
 -FYA = FLASHING YELLOW ARROW

PVC LOOP DETECTOR CHART

DESIGNATION	NO. & SIZE/FT.	LOCATION
D2-1, D2-2	1-6' X6'	250'
D5-1	2-6' X6'	20', 50'
D5-2	2-6' X6'	5', 35'
D6-1, D6-2	1-6' X6'	250'
D8-1	1-6' X6'	120'
D8-2, D8-4, D8-6	1-6' X6'	20'
D8-3, D8-5, D8-7	1-6' X6'	5'

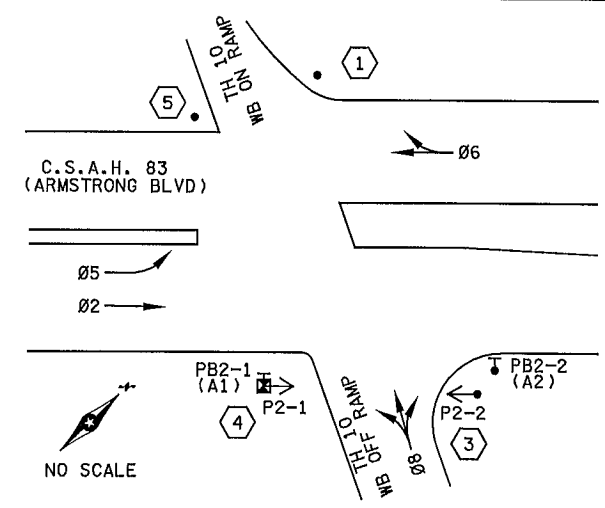
-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET



MATCH LINE "A" SEE SHEET 430

MATCH LINE "B" SEE SHEET 431

CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT



SYSTEM ID: 39839  
 METER ADDRESS: 14489 ARMSTRONG BLVD NW

SIGNAL OPERATION NOTES

- NORMAL OPERATION IS 4 PHASE WITH PHASE 5 BEING FLASHING YELLOW ARROW BY TIME OF DAY
- FLASH MODE SHALL BE ALL RED
- Ø2 & Ø6 SHALL BE ON VEHICLE RECALL

NOTES:

- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
- FOR TYPE D SIGNS SEE SIGNING AND STRIPING PLAN.
- FOR MAST ARM MOUNTED SIGNS SEE SHEET 433. ALL MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
- FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLAN.
- FOR PEDESTRIAN CURB RAMPS SEE CONSTRUCTION PLAN AND PED. RAMP DETAILS.
- THIS PLAN SPECIFIES DETECTOR SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
- ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/2" #6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
- SEE BRIDGE PLANS FOR POLES, PEDESTALS, CONDUIT, JUNCTION BOXES, AND LOOP DETECTOR INSTALLATION ON BRIDGE.
- ITEMS DENOTED WITH \* ARE INCLUDED IN EVP SYSTEM PAY ITEM.
- ITEMS DENOTED WITH \*\* ARE INCLUDED IN THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
- CONTRACTOR SHALL SALVAGE THE INPLACE CAMERA FROM THE EXISTING SIGNAL AT TH 10 AND ARMSTRONG BLVD (SEE SHEET 416 AND SPECIAL PROVISIONS). CONTRACTOR SHALL INSTALL SALVAGED CAMERA ON POLE 1 PER THE LUMINAIRE/CAMERA EXTENSION DETAIL.

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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. Pr Int Name: <b>ADRIAN S. POTTER</b> Date: <b>09-12-14</b> License # <b>42785</b>		STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY M. BRESSLER DESIGNED BY M. BRESSLER CHECKED BY A. POTTER COMM. NO. 0138259	<b>SRH</b> CONSULTING GROUP, INC. ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY TRAFFIC SIGNAL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE INTERSECTION LAYOUT (SYSTEM "A") C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS	SHEET 429 OF 586
---	--	---	--	---	--	------------------

INTERSECTION NOTES:

1 STA 105+83.99, 91.33' LT  
 NB CSAH 83 (ARMSTRONG BLVD)  
 TYPE PA100-A-45-D35-9 (DAVIT AT 350 DEG)  
 (SEE BRIDGE PLANS FOR FOUNDATION DETAILS)  
 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 19'  
 2 - ANGLE MOUNT SIGNALS AT 90 & 180 DEG  
 \* ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 8)  
 LUMINAIRE - LED (250 W HPS REPLACEMENT)  
 X6 - 350/CAM 400 EXTENSION  
 INSTALL - IP CAMERA (SEE NOTE 13)  
 TYPE D SIGNS - SEE MAST ARM SIGNING SHEETS  
 2 - R9-3 SIGNS FACING POLES 3 & 5  
 EXTEND INTO HH-1:  
 3" CONDUIT  
 2 - 12/C #14  
 \* - 1 - 3/C #14  
 1 - 3/C #14 (LUM.)  
 \* - 1 - 3/C #20  
 1 - 3/C #14 (CAMERA POWER)  
 1 - CAT 6  
 1 - COAXIAL CABLE  
 1 - 1/C #6 INS.GR.

3 STA 106+32.46, 45.20' RT  
 NB CSAH 83 (ARMSTRONG BLVD)  
 TYPE BA-65-D30-9 (DAVIT AT 350 DEG)  
 (SEE BRIDGE PLANS FOR FOUNDATION DETAILS)  
 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2 - STRAIGHT MOUNT SIGNALS OVERHEAD AT 13' & 25'  
 1 - ANGLE MOUNT SIGNAL AT 0 DEG  
 1 - ANGLE MOUNT C.D. PED IND AT 0 DEG  
 \* ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASES 2+5)  
 LUMINAIRE - LED (250 W HPS REPLACEMENT)  
 1 - R10-X12 SIGN ADJACENT TO  
 SIGNAL INDICATION 5-1  
 TYPE D SIGNS - SEE MAST ARM SIGNING SHEETS  
 1 - R9-3 SIGN FACING POLE 1  
 EXTEND INTO JB-3:  
 3" CONDUIT  
 2 - 12/C #14  
 1 - 4/C #14  
 \* - 1 - 3/C #14  
 1 - 3/C #14 (LUM.)  
 \* - 1 - 3/C #20  
 1 - 1/C #6 INS.GR.

5 STA 105+29.90, 77.50' LT  
 SB CSAH 83 (ARMSTRONG BLVD)  
 TYPE PA85-A-25-D30-9 (DAVIT AT 350 DEG)  
 (SEE BRIDGE PLANS FOR FOUNDATION DETAILS)  
 1 - ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1 - STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'  
 2 - ANGLE MOUNT SIGNALS AT 90 & 180 DEG  
 \* ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 6)  
 LUMINAIRE - LED (250 W HPS REPLACEMENT)  
 TYPE D SIGNS - SEE MAST ARM SIGNING SHEETS  
 2 - R9-3 SIGNS FACING POLE 1 & PEDESTAL 4  
 EXTEND INTO HH-8:  
 3" CONDUIT  
 2 - 12/C #14  
 \* - 1 - 3/C #14  
 1 - 3/C #14 (LUM.)  
 \* - 1 - 3/C #20  
 1 - 1/C #6 INS.GR.

A STA 105+76.41, 104+06' LT  
 NB CSAH 83 (ARMSTRONG BLVD NW)  
 EQUIPMENT PAD - SEE DETAIL  
 SERVICE CABINET  
 INSTALL - CONTROLLER AND CABINET (COUNTY FURNISHED)  
 2 - 4" CONDUIT TO HH-1:  
 4 - 12/C #14  
 1 - 4/C #14  
 \* - 2 - 3/C #14  
 7 - 2/C #14  
 \* - 3 - 3/C #20  
 \* - 1 - FO CABLE (6SM)  
 1 - 3/C #14 (CAMERA POWER)  
 1 - CAT 6  
 1 - COAXIAL CABLE  
 1 - 1/C #6 INS. GR.  
 2 - 4" CONDUIT TO HH-9:  
 2 - 12/C #14  
 1 - 4/C #14  
 \* - 1 - 3/C #14  
 8 - 2/C #14  
 \* - 1 - 3/C #20  
 \* - 1 - FO CABLE (6SM)  
 1 - 1/C #6 INS. GR.  
 2 - 3" CONDUIT STUBBED OUT CAPPED BOTH ENDS  
 2" CONDUIT STUBBED OUT CAPPED BOTH ENDS  
 1" CONDUIT STUBBED OUT CAPPED BOTH ENDS  
 2" CONDUIT TO SERVICE CABINET  
 2 - 1/C #6  
 1 - 1/C #6 INS. GR.  
 2" CONDUIT TO HH-9:  
 3 - 3/C #14 (LUM.)  
 SERVICE CABINET TO HH-9:  
 2" CONDUIT  
 3 - 1/C #2

B STA 88+80.61, 57.34' RT  
 NB CSAH 83 (ARMSTRONG BLVD NW)  
 SOP - GROUND MOUNTED  
 TRANSFORMER  
 EXTEND INTO HH-13:  
 2" CONDUIT  
 3 - 1/C #2  
 EXTEND INTO HH-13:  
 2" CONDUIT

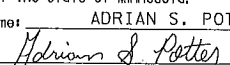
2 STA 110+50.43, 29.64' LT  
 NB CSAH 83 (ARMSTRONG BLVD)  
 PEDESTAL FOUNDATION  
 10' PEDESTAL POLE PLUS BASE  
 \* ONE WAY EVP DETECTOR (PHASE 6)  
 EXTEND INTO HH-3:  
 3" CONDUIT  
 1 - 3/C #20  
 1 - 1/C #6 INS.GR.

4 STA 105+61.05, 29.43' RT  
 NB CSAH 83 (ARMSTRONG BLVD)  
 10' PEDESTAL POLE PLUS BASE  
 PEDESTAL FOUNDATION (SEE BRIDGE PLANS)  
 1 - STRAIGHT MOUNT C.D. PED IND AT 0 DEG  
 1 - APS PB AND SIGN (LT ARROW) (PB2-1)  
 1 - R9-3 SIGN FACING POLE 5  
 EXTEND INTO JB-5:  
 2" CONDUIT  
 1 - 4/C #14  
 1 - 2/C #14  
 1 - 1/C #6 INS.GR.

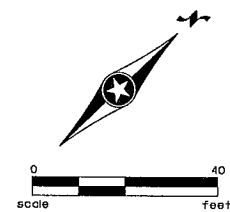
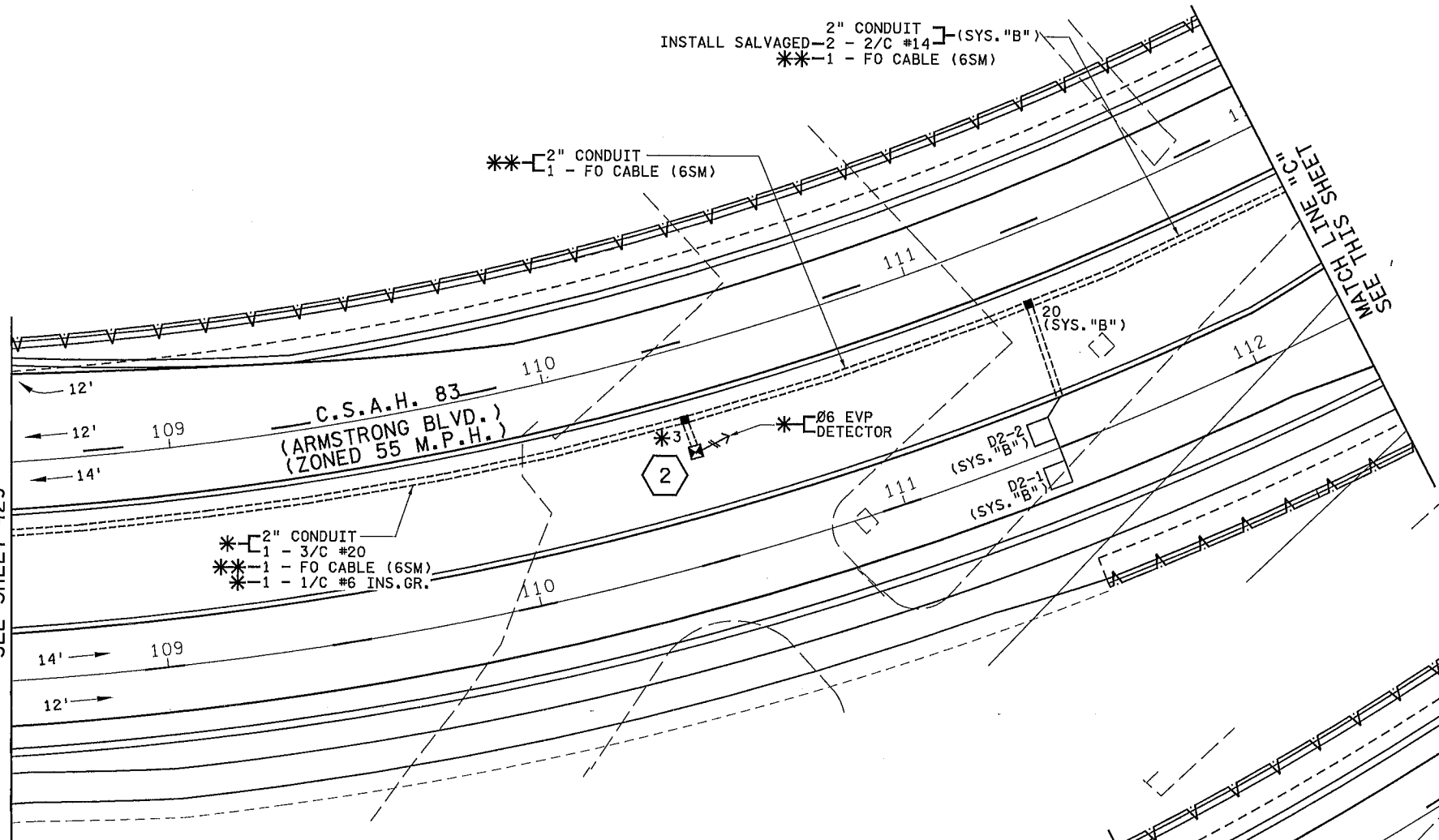
- NOTES:
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
  - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  - FOR TYPE D SIGNS SEE SIGNING AND STRIPING PLAN.
  - FOR MAST ARM MOUNTED SIGNS SEE SHEET 433. ALL MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
  - FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLAN.
  - FOR PEDESTRIAN CURB RAMPS SEE CONSTRUCTION PLAN AND PED. RAMP DETAILS.
  - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
  - ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
  - SEE BRIDGE PLANS FOR POLES, PEDESTALS, CONDUIT, JUNCTION BOXES, AND LOOP DETECTOR INSTALLATION ON BRIDGE.
  - ITEMS DENOTED WITH \* ARE INCLUDED IN EVP SYSTEM PAY ITEM.
  - ITEMS DENOTED WITH \*\* ARE INCLUDED IN THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
  - CONTRACTOR SHALL SALVAGE THE INPLACE CAMERA FROM THE EXISTING SIGNAL AT TH 10 AND ARMSTRONG BLVD (SEE SHEET 416 AND SPECIAL PROVISIONS). CONTRACTOR SHALL INSTALL SALVAGED CAMERA ON POLE 1 PER THE LUMINAIRE/CAMERA EXTENSION DETAIL.

SYSTEM ID: 39839  
 METER ADDRESS:  
 14489 ARMSTRONG BLVD NW

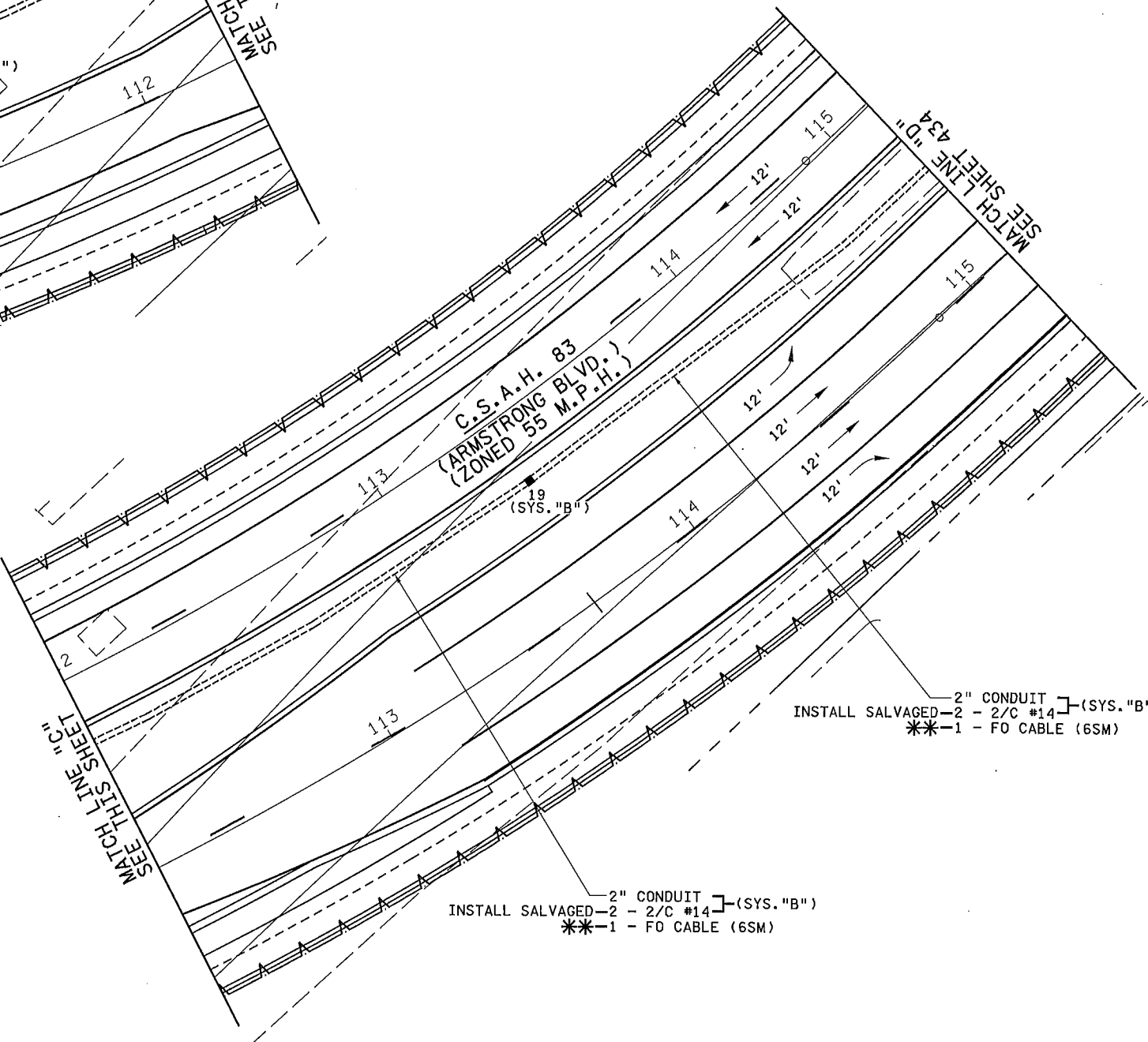
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 H:\Prof\elects\8259\CAD\_BIM\Plan\8259\_m101.dgn

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. Pr Int Name: <b>ADRIAN S. POTTER</b>  Date: <u>09-12-14</u> License # <u>42785</u>					STATE AID PROJECT NO. 002-683-004 199-115-002	DRAWN BY M. BRESSLER DESIGNED BY M. BRESSLER CHECKED BY A. POTTER	<b>SRF</b> ENGINEERS PLANNERS DESIGNERS Consulting Group, Inc.	ANOKA COUNTY TRAFFIC SIGNAL PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE MATCH LINE LAYOUT/INTERSECTION NOTES (SYSTEM "A") C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS	SHEET 430 OF 586
NO. DATE BY CKD APPR REVISION	STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO.	CITY PROJECT NO.	COMM. NO. 0138259						

MATCH LINE "B"  
SEE SHEET 429



MATCH LINE "C"  
SEE THIS SHEET



INSTALL SALVAGED 2" CONDUIT (SYS. "B")  
-2 - 2/C #14  
\*\* -1 - FO CABLE (6SM)

INSTALL SALVAGED 2" CONDUIT (SYS. "B")  
-2 - 2/C #14  
\*\* -1 - FO CABLE (6SM)

- NOTES:
1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  2. THE EXACT LOCATION OF HANDHOLES, POLES AND LOOP DETECTORS SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
  3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  4. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLAN.
  5. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
  6. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
  7. ITEMS DENOTED WITH \* ARE INCLUDED IN EVP SYSTEM PAY ITEM.
  8. ITEMS DENOTED WITH \*\* ARE INCLUDED IN THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
  9. REFER TO FOR INFORMATION ONLY SHEETS FOR LOCATIONS OF EXISTING CONDUIT, HANDHOLES, LOOP DETECTORS, AND CONDUCTORS.

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NO	DATE	BY	CHKD	APPR	REVISION

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: **ADRIAN S. POTTER**

*Adrian S. Potter*

Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
**M. BRESSLER**

DESIGNED BY  
**M. BRESSLER**

CHECKED BY  
**A. POTTER**

COMM. NO. **0138259**



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY

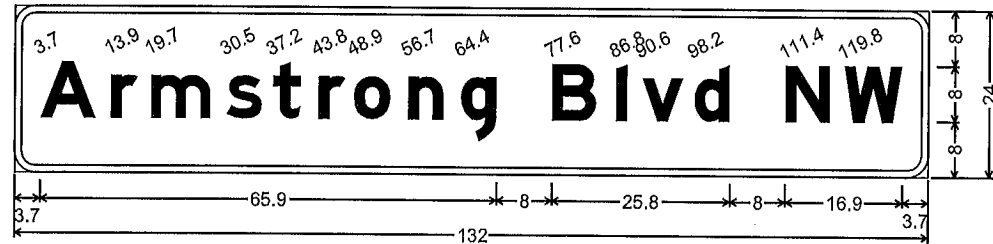
TRAFFIC SIGNAL PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

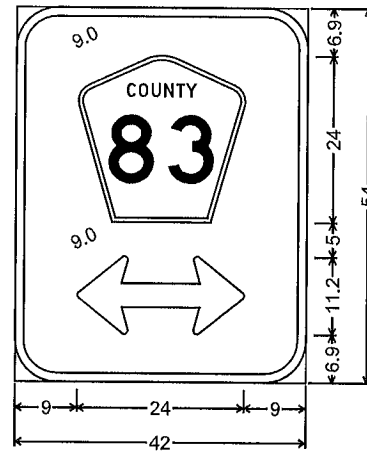
MATCH LINE LAYOUT (SYSTEM "A" & SYSTEM "B")

SHEET  
431  
OF  
586

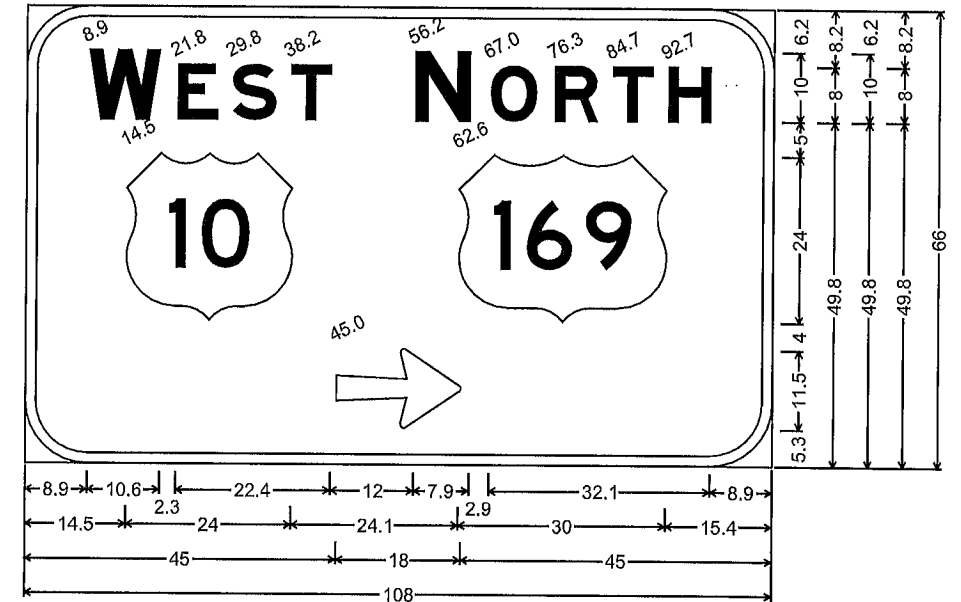




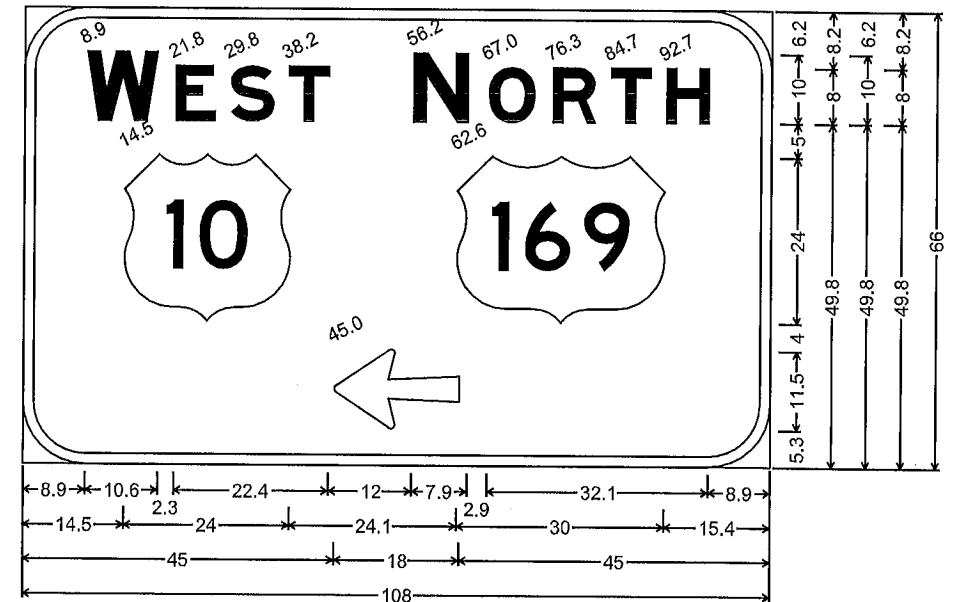
D-8; 3.0" Radius, 1.0" Border, White on Green;  
[Armstrong Blvd NW] E Mod;



D-9;  
6.0" Radius, 1.3" Border, White on Green;  
Double Headed Arrow 5 - 24.0" 0°;



D-10; 9.0" Radius, 1.5" Border, White on Green;  
[WEST] E Mod; [NORTH] E Mod; Arrow 14 - 18.0" 0°;

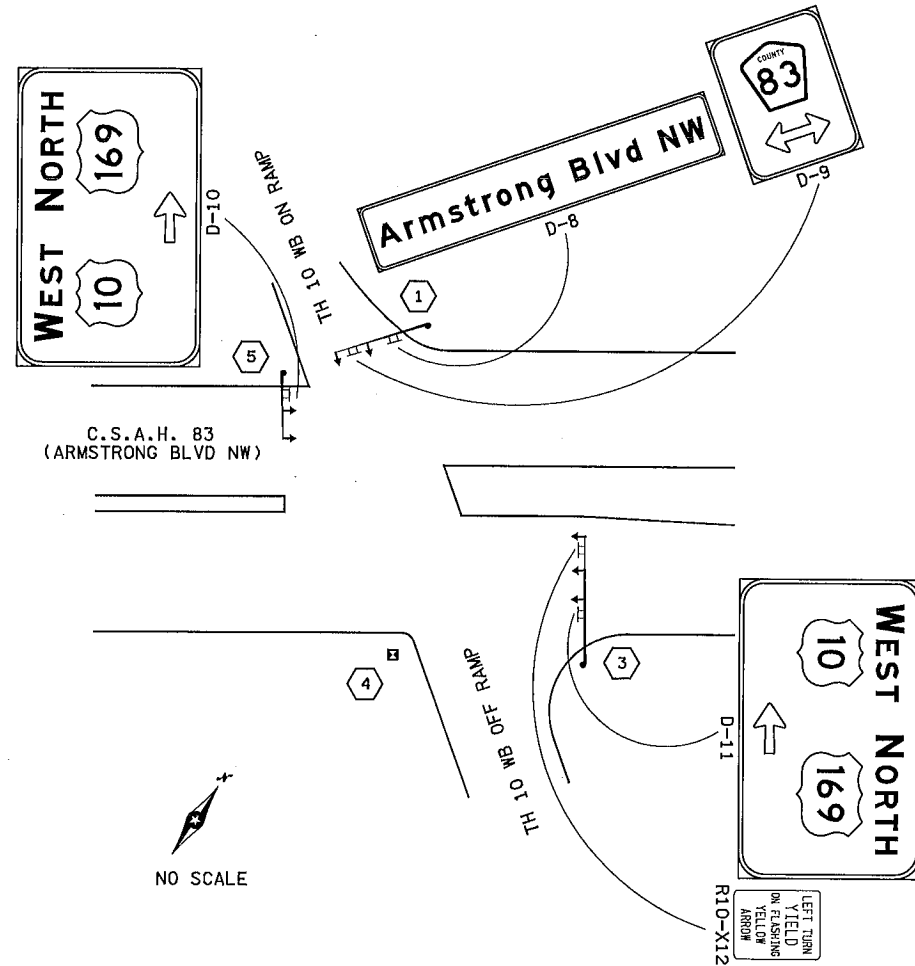
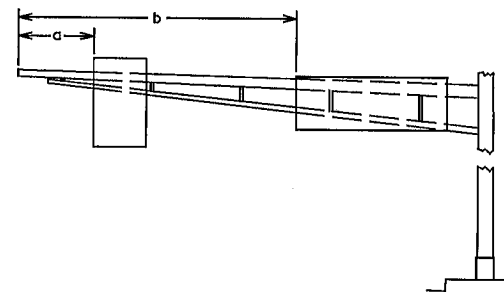


D-11; 9.0" Radius, 1.5" Border, White on Green;  
[WEST] E Mod; [NORTH] E Mod; Arrow 14 - 18.0" 180°;

MAST ARM MOUNTED SIGNS								
SIGN PANEL OR SIGN NO.	POLE NO.	a (FEET)	b (FEET)	SIZE (INCHES)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.
					NUMBER	SPACING (1)		
D-8	1		27	132 X 24	5		22	1
D-9	1		10	42 X 54	2		15.75	1
D-10	5		15	108 X 66	5		49.5	1
D-11	3		30	108 X 66	5		49.5	1
R10-X12	3	2		42 X 48	2		14	1

SPECIFIC NOTE:  
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/07) FOR BRACKET SPACING REQUIREMENTS.

MAST ARM SIGN LOCATION



T.H. 10 AT C.S.A.H. 83 (ARMSTRONG BLVD NW)  
SIGN LAYOUT

GENERAL NOTES:

- CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
- TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
- FOR TYPE "D" STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
- THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
Pr Int Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.        
CITY PROJECT NO.        
DRAWN BY M. BRESSLER  
DESIGNED BY M. BRESSLER  
CHECKED BY A. POTTER  
COMM. NO. 0138259

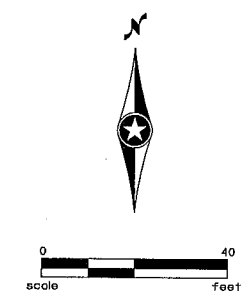


ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
MAST ARM SIGN DETAILS (SYSTEM "A")  
C.S.A.H. 83 (ARMSTRONG BLVD) AT WB T.H. 10 RAMPS

SHEET 433 OF 586

PVC LOOP DETECTOR CHART		
DESIGNATION	NO. & SIZE/FT.	LOCATION
D2-1, D2-2	1-6'X6'	475'
D5-1	1-6'X6'	40'
D5-2	1-6'X6'	10'

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET



C.S.A.H. 83  
(ARMSTRONG BLVD.)  
(ZONED 55 M.P.H.)

147TH AVE NW  
(30 M.P.H.)

SUNWOOD DRIVE  
(30 M.P.H.)

- 4" RSC  
 4 - 12/C #14  
 3 - 4/C #14  
 2 - 3/C #14  
 13 - 2/C #14  
 2 - 3/C #20  
 1 - 1/C #6 (GRD)  
 \*\* 1 - FO CABLE (6SM)

- 4" CONDUIT  
 4 - 12/C #14  
 3 - 4/C #14  
 2 - 3/C #14  
 2 - 3/C #14 (LUM.)  
 13 - 2/C #14  
 2 - 3/C #20  
 1 - 1/C #6 (GRD)  
 \*\* 1 - FO CABLE (6SM)

- 3" RSC  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #14 (LUM.)  
 6 - 2/C #14  
 1 - 3/C #20  
 1 - 1/C #6 (GRD)  
 \*\* 1 - FO CABLE (6SM)

- 4" CONDUIT  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #14 (LUM.)  
 6 - 2/C #14  
 1 - 3/C #20  
 1 - 1/C #6 (GRD)  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 1 - 3/C #14 (LUM.)  
 4 - 2/C #14  
 1 - 3/C #20  
 1 - 1/C #6 (GRD)  
 \*\* 1 - FO CABLE (6SM)

- 2" CONDUIT  
 2 - 2/C #14  
 \*\* 1 - FO CABLE (6SM)

- 4" CONDUIT  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 SALVAGE (SEE NOTE 12)  
 1 - 3/C #14 (LUM.)  
 4 - 2/C #14  
 1 - 3/C #20  
 1 - 1/C #6 (GRD)  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 INSTALL  
 SALVAGED  
 1 - 3/C #14 (LUM.)  
 1 - 3/C #20  
 1 - 1/C #6 (GRD)

- 4" RSC  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 SALVAGE (SEE NOTE 12)  
 1 - 3/C #14 (LUM.)  
 2 - 2/C #14  
 1 - 3/C #20  
 1 - 1/C #6 INS.GR.  
 2 - 12/C #14  
 1 - 4/C #14  
 1 - 3/C #14  
 INSTALL  
 SALVAGED  
 1 - 3/C #14 (LUM.)  
 2 - 2/C #14  
 1 - 3/C #20  
 1 - 1/C #6 INS.GR.

- NOTES:  
 1. ALL ITEMS SHOWN SHALL BE FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE.  
 2. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.  
 3. THE EXACT LOCATION OF HANDHOLES AND LOOP DETECTORS SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.  
 4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.  
 5. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLAN.  
 6. FOR PEDESTRIAN CURB RAMPS SEE CONSTRUCTION PLAN AND PED. RAMP DETAILS.  
 7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.  
 8. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.  
 9. SEE SHEETS 435 - 437 FOR EXISTING SIGNAL DESIGN.  
 10. ITEMS DENOTED WITH \*\* ARE INCLUDED IN THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.  
 11. REFER TO FOR INFORMATION ONLY SHEETS FOR LOCATIONS OF EXISTING CONDUIT, HANDHOLES, LOOP DETECTORS, AND CONDUCTORS.  
 12. CONTRACTOR SHALL COIL AND PROTECT SALVAGED CONDUCTORS IN EXISTING HANDHOLE 13. CONTRACTOR SHALL INSTALL SALVAGED CONDUCTORS AS SHOWN AND MAKE ALL FIELD WIRING CONNECTIONS TO MAKE THE REVISED SIGNAL SYSTEM OPERATIONAL TO THE SATISFACTION OF THE ENGINEER.

MATCH LINE "D"  
SEE SHEET 431

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Pr Int Name: **ADRIAN S. POTTER**  
*Adrian S. Potter*  
 Date: **09-12-14** License #: **42785**

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
STATE PROJECT NO.  
0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY  
**M. BRESSLER**  
DESIGNED BY  
**M. BRESSLER**  
CHECKED BY  
**A. POTTER**  
COMM. NO. **0138259**



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
REVISED INTERSECTION LAYOUT (REVISED SYSTEM "B")  
C.S.A.H. 83 (ARMSTRONG BLVD) AT SUNWOOD DR.

SHEET  
434  
OF  
586



**NOTES:**

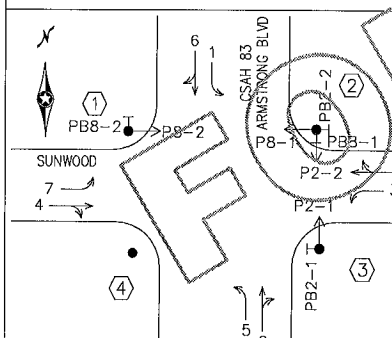
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS, COUNTDOWN PEDESTRIAN INDICATIONS, LED INDICATIONS, AND PAINTING OF SIGNAL SYSTEM.
- THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF MAST ARM.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
- THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
- SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL).
- EACH PEDESTRIAN INDICATION SHALL BE LED, ONE SECTION "FILLED" HAND/WALKING PERSON INDICATION.
- ALL POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS AND SPECIAL PROVISIONS.
- LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" NMC. SEE SPECIAL PROVISIONS.
- ALL VEHICLES AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELD, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- (\* EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- DISTANCE OFF SHOULDER OR CURB FOR EVP CONDUIT SHALL BE 1-2 FEET.
- (\*\* FIBER OPTIC) DENOTES INTERCONNECT FIBER TO BE FURNISHED AND INSTALLED WITH THE SIGNAL SYSTEM. SEE INTERCONNECT LAYOUT AND SPECIAL PROVISIONS 2565 FOR REQUIREMENTS. (INCIDENTAL)

**EQUIPMENT PAD - SEE DETAIL**  
 SERVICE CABINET  
 CONTROLLER AND CABINET  
 4" RSC TO HH 1:  
 4-12/c#14  
 3-4/c#14  
 \* 2-3/c#14 (EVP)  
 \* 2-3/c#20 (EVP)  
 \* 15-2/c#14  
 \* 1-6SM/6MM FO

**SOP-TRANSFORMER (POWER BY CONNEXUS)**  
 4" RSC TO HH 16:  
 4-12/c#14  
 3-4/c#14  
 \* 2-3/c#14 (EVP)  
 \* 2-3/c#20 (EVP)  
 \* 13-2/c#14

**3" RSC STUBBED OUT (THREAD AND CAP FOR FUTURE USE)**  
 2" RSC STUBBED OUT (THREAD AND CAP FOR FUTURE USE)  
 1" NMC STUBBED OUT (CAP FOR FUTURE TELEPHONE LINE)

**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE WITH PHASES 1, 3, 5 AND 7 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

**PA100 POLE FOUNDATION**  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 18'  
 2-ANGLE MOUNT SIGNAL AT 90 AND 180 DEG  
 1-ANGLE MOUNT C. D. PED IND AT 180 DEG  
 \* 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3 & 8)  
 LUMINAIRE-250W HPS  
 1-PUSH BUTTON AND SIGN  
 1-SIGN D-1 ARMSTRONG BLVD  
 1-SIGN R6-1L ONE WAY  
 1-SIGN R6-1R ONE WAY  
 1-SIGN R9-3 FACING POLE 4  
 3" RSC INTO HH 1:  
 2-12/c#14  
 1-4/c#14  
 1-3/c#14 (LUM)  
 2-2/c#14  
 \* 1-3/c#14 (EVP)  
 \* 1-3/c#20 (EVP)  
 1-1/c#6 (GRD)

4" CONDUIT  
 4-12/c#14  
 3-4/c#14  
 2-3/c#14 (LUM)  
 13-2/c#14  
 \* 2-3/c#14 (EVP)  
 \* 2-3/c#20 (EVP)  
 1-1/c#6 (GRD)  
 \*\* 1-6SM/6MM FO

**PA100 POLE FOUNDATION**  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11' AND 23'  
 2-ANGLE MOUNT SIGNAL AT 90 AND 180 DEG  
 \* 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1 & 6)  
 LUMINAIRE-250W HPS  
 1-SIGN D-2 SUNWOOD DR & 147TH AVE  
 1-SIGN R6-1L ONE WAY  
 1-SIGN R6-1R ONE WAY  
 2-SIGN R9-3 FACING POLE 1 & 3  
 3" RSC INTO HH 14:  
 2-12/c#14  
 2-4/c#14  
 1-3/c#14 (LUM)  
 2-2/c#14  
 2-2/c#14  
 \* 1-3/c#14 (EVP)  
 \* 1-3/c#20 (EVP)  
 1-1/c#6 (GRD)

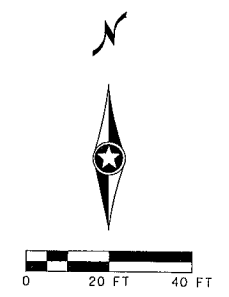
3" RSC  
 2-12/c#14  
 1-4/c#14  
 1-3/c#14 (LUM)  
 6-2/c#14  
 \* 1-3/c#14 (EVP)  
 \* 1-3/c#20 (EVP)  
 1-1/c#6 (GRD)

**PA100 POLE FOUNDATION**  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11' AND 23'  
 2-ANGLE MOUNT SIGNAL AT 90 AND 180 DEG  
 2-ANGLE MOUNT C. D. PED IND AT 90 AND 180 DEG  
 \* 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2 & 5)  
 LUMINAIRE-250W HPS  
 2-PUSH BUTTONS AND SIGNS  
 1-SIGN D-3 SUNWOOD DR & 147TH AVE  
 1-SIGN R6-1L ONE WAY  
 1-SIGN R6-1R ONE WAY  
 3" RSC INTO HH 6:  
 2-12/c#14  
 2-4/c#14  
 1-3/c#14 (LUM)  
 2-2/c#14  
 \* 1-3/c#14 (EVP)  
 \* 1-3/c#20 (EVP)  
 1-1/c#6 (GRD)

**SIGNAL FACE CHART**

FACE	R	Y	G	Y	G
1-1, 1-2	●	●	●	●	●
2-1, 2-2, 2-3	●	●	●	●	●
3-1, 3-2	●	●	●	●	●
4-1, 4-2	●	●	●	●	●
5-1, 5-2	●	●	●	●	●
6-1, 6-2, 6-3	●	●	●	●	●
7-1, 7-2	●	●	●	●	●
8-1, 8-2	●	●	●	●	●

ALL SIGNAL INDICATIONS SHALL BE 12" LED  
 ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS



**LOOP DETECTOR CHART**

NUMBER	SIZE (FT)	LOCATION	FUNCTION
D1-1, 5-1	6x6	40	1
D1-2, D5-2	6x6	10	1
D2-1, D2-2	6x6	475	1
D3-1, 3-2	6x6	40	1
D3-3, D3-4	6x6	10	1
D4-1, D8-1	6x6	120	3, 8
D4-2	2-6x6	5 & -5	7
D4-3	2-6x6	5 & 20	1
D6-1, D6-2	6x6	475	1
D7-1	6x6	20 & 50	1
D7-2	6x6	5 & 35	1
D8-2	2-6x6	5 & -5	7
D8-3	2-6x6	5 & 20	1

- ALL LOOP DETECTORS SHALL BE PVC  
 - LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET  
 - LOOP DETECTOR FUNCTIONS:  
 (1) CALL AND EXTEND  
 (2) EXTEND ONLY  
 (3) DELAYED CALL, IMMEDIATE EXTEND  
 (4) CARRY OVER (STRETCH)

NO. DATE BY CHK REVISIONS

--	--	--	--	--

Design By: SD  
 Plan By: MAS  
 Checked By: NEH  
 Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE EXERCISE OF MY STATE LICENSE.

SEAN GILMORE, PE  
 LICENSED PROFESSIONAL ENGINEER - SEAN GILMORE, PE  
 DATE: 5/20/14 LIC. NO. 40945

701 Xenia Avenue South, Suite 300  
 Minneapolis, MN 55416  
 www.wsbeng.com

**WSB**  
 & Associates, Inc.  
 INFRASTRUCTURE ENGINEERING PLANNING CONSTRUCTION

**Armstrong Blvd at Sunwood Drive**  
 City of Ramsey, Minnesota

CITY OF RAMSEY, MINNESOTA  
 TRAFFIC CONTROL SIGNAL SYSTEM INTERSECTION LAYOUT  
**SIGNAL PLAN**  
 S.A.P. 199-020-010 / C.P. 42-20

SHEET  
**125**  
 OF  
**153**  
 SHEETS

NO. DATE BY CKD APPR REVISION

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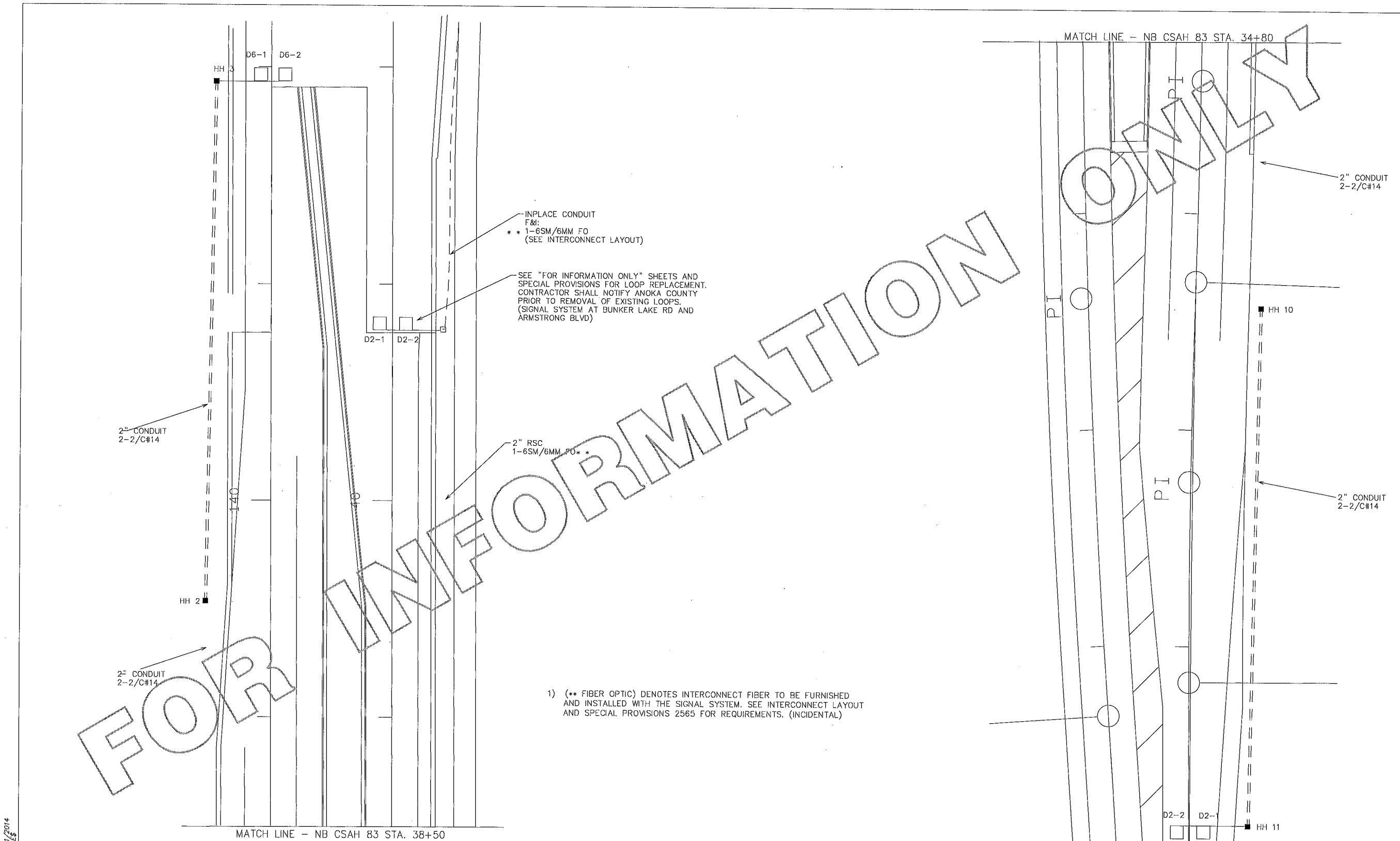
STATE AID PROJECT NO. 002-683-004  
 139-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 DESIGNED BY  
 CHECKED BY  
 COMM. NO. 0138259

**SRE**  
 Consulting Group, Inc.

ANOKA COUNTY  
 TRAFFIC SIGNAL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE  
 FOR INFORMATION ONLY

SHEET  
**435**  
 OF  
**586**



FOR INFORMATION ONLY

INPLACE CONDUIT  
F&:  
\*\* 1-6SM/6MM FO  
(SEE INTERCONNECT LAYOUT)

SEE "FOR INFORMATION ONLY" SHEETS AND  
SPECIAL PROVISIONS FOR LOOP REPLACEMENT.  
CONTRACTOR SHALL NOTIFY ANOKA COUNTY  
PRIOR TO REMOVAL OF EXISTING LOOPS.  
(SIGNAL SYSTEM AT BUNKER LAKE RD AND  
ARMSTRONG BLVD)

1) (\*\* FIBER OPTIC) DENOTES INTERCONNECT FIBER TO BE FURNISHED  
AND INSTALLED WITH THE SIGNAL SYSTEM. SEE INTERCONNECT LAYOUT  
AND SPECIAL PROVISIONS 2565 FOR REQUIREMENTS. (INCIDENTAL)

NO.	DATE	BY	CHKD	APPR	REVISION

Design By: SD  
Plan By: MAS  
Checked By: NEH  
Approved By: SD  
DATE: 9/11/2014  
LIC. NO.: 40945

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
**WSB**  
& Associates, Inc.  
701 Xenia Avenue South, Suite 300  
Minneapolis, MN 55416  
www.wsbeng.com  
313-541-4800 - Fax 783-541-7000  
INFRASTRUCTURE ENGINEERING PLANNING CONSTRUCTION

**Armstrong Blvd at Sunwood Drive**  
City of Ramsey, Minnesota

CITY OF RAMSEY, MINNESOTA  
TRAFFIC CONTROL SIGNAL SYSTEM MATCH LINE  
**SIGNAL PLAN**  
S.A.P. 199-020-040 / C.P. 12-20

SHEET  
126  
OF  
153  
SHEETS

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NO.	DATE	BY	CKD	APPR	REVISION

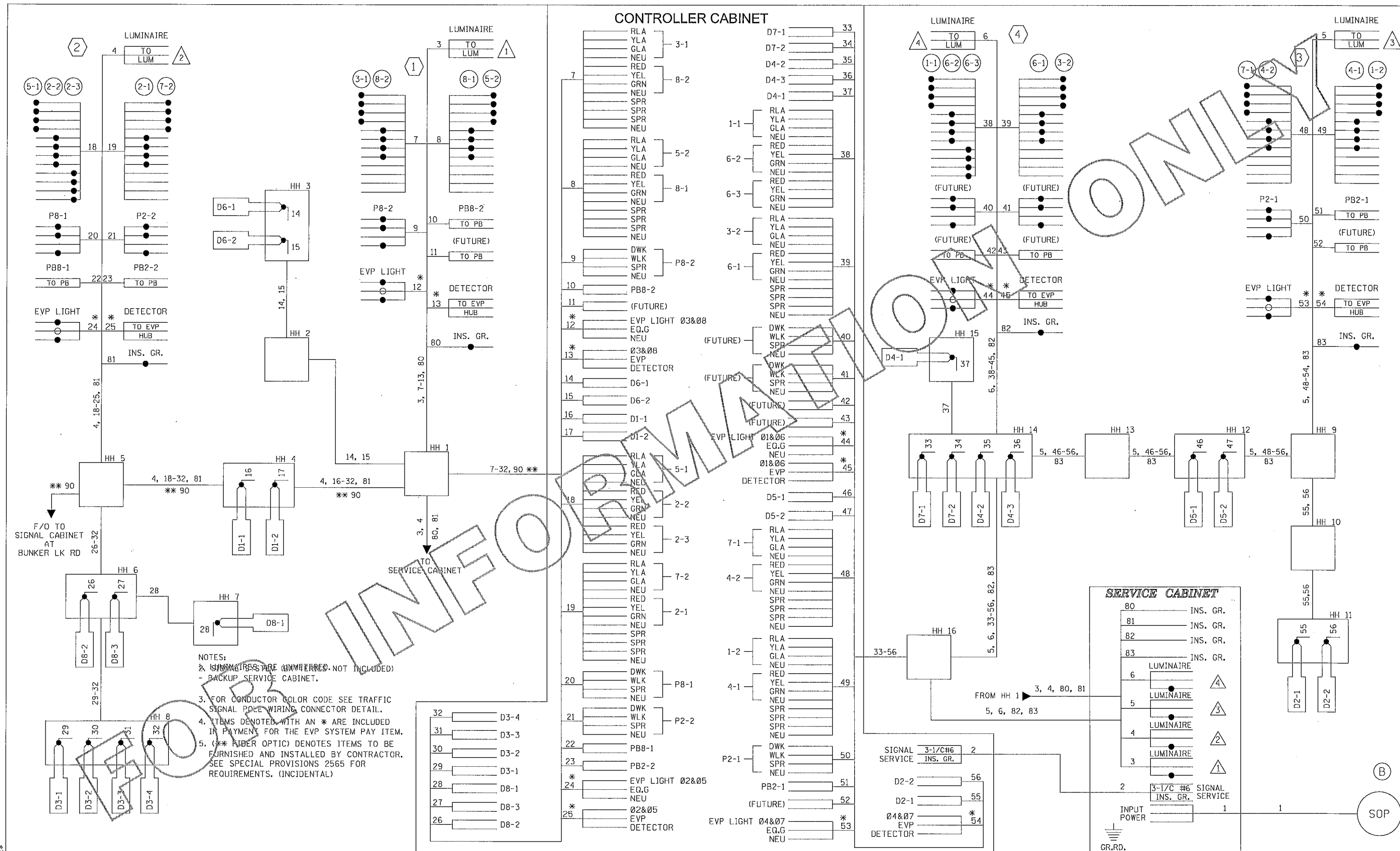
STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

DRAWN BY  
DESIGNED BY  
CHECKED BY  
COMM. NO. 0138259

**SRE**  
Consulting Group, Inc.  
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
TRAFFIC SIGNAL PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
FOR INFORMATION ONLY

SHEET  
436  
OF  
586



NOTES:  
 2. SIGNALS ARE UNINTERFERRED. NOT INCLUDED) - BACKUP SERVICE CABINET.  
 3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.  
 4. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.  
 5. (\*\* FIBER OPTIC) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR. SEE SPECIAL PROVISIONS 2565 FOR REQUIREMENTS. (INCIDENTAL)

Date Printed: 9/11/2014  
 WSB Filename: 8145

NO.	DATE	BY	CHK	REVISIONS

Design By: SD  
 Plan By: MAS  
 Checked By: NEH  
 Approved By: SD

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

CERTIFIED BY: *Sean Delmore*  
 LICENSED PROFESSIONAL ENGINEER - SEAN DELMORE, PE  
 DATE: 9/11/2014 LIC. NO. 40945

701 Xenia Avenue South, Suite 300  
 Minneapolis, MN 55416  
 www.wsbgroup.com

**WSB**  
 & Associates, Inc.  
 INFRASTRUCTURE • ENGINEERING • PLANNING • CONSTRUCTION

**Armstrong Blvd at Sunwood Drive**  
 City of Ramsey, Minnesota

**CITY OF RAMSEY, MINNESOTA**  
 TRAFFIC CONTROL SIGNAL SYSTEM WIRING DIAGRAM  
**SIGNAL PLAN**  
 S.A.P. 199-020-040 / C.P. 12-20

SHEET 127 OF 153 SHEETS

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NO.	DATE	BY	CHKD	APPR	REVISION

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
 DESIGNED BY  
 CHECKED BY  
 COMM. NO. 0138259



**ANOKA COUNTY**  
 TRAFFIC SIGNAL PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE.  
 FOR INFORMATION ONLY

SHEET 437 OF 586

LEGEND OF SYMBOLS	
-----	CONDUIT - INPLACE
=====	CONDUIT - F&I
--- • • ---	CONDUIT FIBER ONLY - INPLACE
==== • • =====	CONDUIT FIBER ONLY - F&I
--- • • ---	DIRECT BURIED COMMUNICATION CABLE - INPLACE
--- • ---	DIRECT BURIED POWER CABLE - INPLACE
□	LOOP DETECTOR-DESIGN (SPECIFY)
P	LOOP DETECTOR- DESIGN PREFORMED
S	LOOP DETECTOR- DESIGN SAWCUT
N	LOOP DETECTOR- DESIGN NMC
V	LOOP DETECTOR- DESIGN VIRTUAL
☒→	WARNING FLASHER - INPLACE
☒→	WARNING FLASHER - F&I
—	GATE ARM - INPLACE
—	FOUNDATION INPLACE, GATE ARM - F&I
—	FOUNDATION F&I, GATE ARM - F&I
☀	TOLLING BEACON - INPLACE
☀	TOLLING BEACON - F&I
⚡	TOLLING READER
⊕	HANDHOLE - INPLACE
⊕	HANDHOLE - F&I
☐	JUNCTION BOX OR CONDULET - INPLACE
☐	JUNCTION BOX OR CONDULET - F&I
—	OVERHEAD SIGN STRUCTURE - INPLACE
—	OVERHEAD SIGN STRUCTURE - F&I
T	SIGN (TYPE DMS) - (SPECIFY)
□	FOUNDATION/CABINET (SPECIFY) - INPLACE
■	FOUNDATION/CABINET (SPECIFY) - F&I

-----GPS-----  
 LINSTYLES WITH GPS DESIGNATION  
 HAVE BEEN FIELD LOCATED

LEGEND OF SYMBOLS	
☒	PEDESTAL - INPLACE
☒	PEDESTAL - F&I
☒→	RAMP CONTROL SIGNAL (DESIGN ONE-WAY) - INPLACE
☒→	RAMP CONTROL SIGNAL (DESIGN ONE-WAY) - F&I
☒↔	RAMP CONTROL SIGNAL (DESIGN TWO-WAY) - INPLACE
☒↔	RAMP CONTROL SIGNAL (DESIGN TWO-WAY) - F&I
⊗→	RAMP CONTROL SIGNAL (DESIGN ONE-WAY)(SCREW IN BASE) - INPLACE
□	SHELTER CABINET (TMS) - INPLACE
■	SHELTER CABINET (TMS) - F&I
⊕	SPLICE CABINET - (SPECIFY)
⊕	SPLICE VAULT (FIBER OPTIC) - (SPECIFY)
TV	TELEVISION CAMERA (CCTV) - (SPECIFY)
TV	NON-INTRUSIVE DETECTION/POLE
TV	NON-INTRUSIVE DETECTION/POLE & CAMERA
I	INTELLIGENT LANE CONTROL SIGN - INPLACE
I	INTELLIGENT LANE CONTROL SIGN - F&I
LCS	LANE CONTROL SIGNAL - SPECIFY
○	WOOD POLE - INPLACE
●	WOOD POLE - F&I
□	WOOD POLE INPLACE, SERVICE INSTALLATION - INPLACE
□	WOOD POLE INPLACE, SERVICE INSTALLATION - F&I
PV	PULL VAULT - SPECIFY
E	ELECTRICAL SERVICE - INPLACE
E	ELECTRICAL SERVICE - F&I
T	POWER COMPANY TRANSFORMER/PEDESTAL
GEN	GENERATOR
☒→	PEDESTRIAN GATE - F&I

NN

TABULATION OF TMS ESTIMATED QUANTITIES (SP 0202-95 TH 10)

ITEM	NOTES	UNIT	TOTAL TMS SP 0202-95 ESTIMATED QUANTITIES
CONSTRUCTION SURVEYING	(1)	LUMP SUM	1
SALVAGE FIBER OPTIC VAULT	(2)	EACH	1
REMOVE CABLES		LUMP SUM	1
FIBEROPTIC SPLICE VAULT		EACH	1
OUTDOOR FIBER SPLICE ENCLOSURE		EACH	1
BURIED CABLE SIGN		EACH	10
1.5" NON-METALLIC CONDUIT		LIN FT	5378
FIBER OPTIC CABLE TESTING		LUMP SUM	1
FIBER OPTIC CABLE SPLICING		EACH	2
FIBER OPTIC PIGTAIL TERMINATION		EACH	1
PULL VAULT		EACH	1
1.5" BORED CONDUIT		LIN FT	541
REROUTE CABLE		LIN FT	100
ARMORED FIBER OPTIC PIGTAIL CABLE 12SM		LIN FT	2025
FIBER OPTIC TRUNK CABLE 36SM		LIN FT	4200

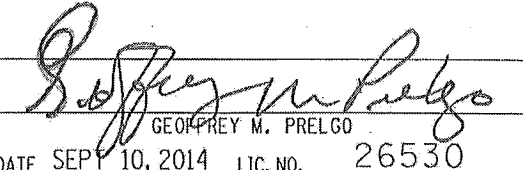
NOTES:

- (1) GPS AS-BUILT LOCATING FOR TMS COMPONENTS
- (2) INCLUDES OUTDOOR FIBER SPLICE ENCLOSURE, MARKER POSTS AND DELIVERY TO A LOCATION WITH THE METRO AREA

GENERAL NOTES:

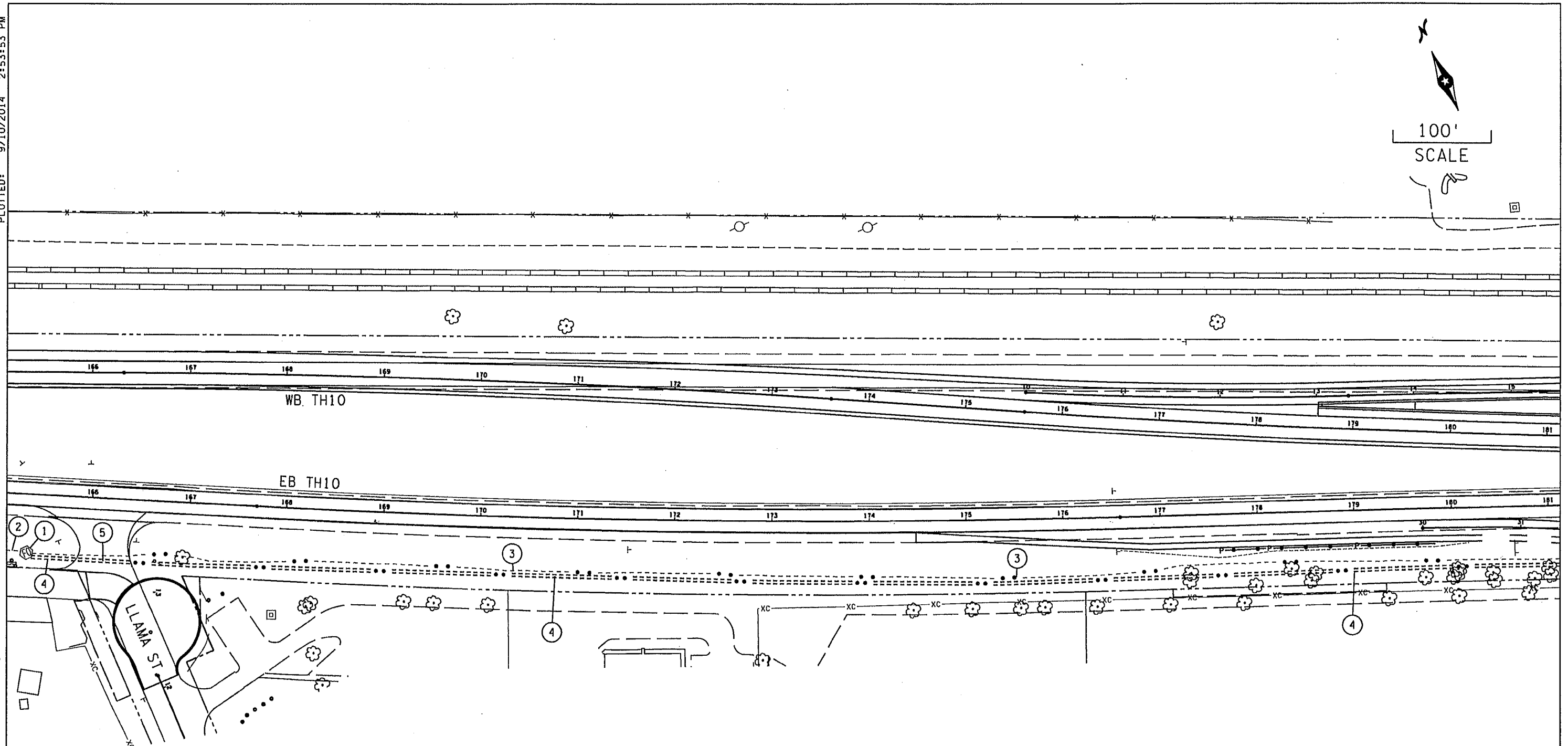
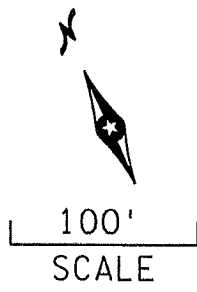
TURF ESTABLISHMENT & EROSION CONTROL FOR TRAFFIC MANAGEMENT SYSTEM  
 PLACEMENT SHALL BE CONSIDERED INCIDENTAL, APPLIED TO ALL DISTURBED  
 AREAS, IN ACCORDANCE WITH MN/DOT 2575.1, 2575.2, 2575.3

I HEREBY CERTIFY THAT SHEETS 438 THROUGH 453 OF THIS PLAN  
 WERE 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.

  
 GEOFFREY M. PRELGO  
 DATE SEPT 10, 2014 LIC. NO. 26530  
 DESIGNER Scott Coozennoy

TMS COMPONENTS & TMS TAB. OF ESTIMATED QUANTITIES

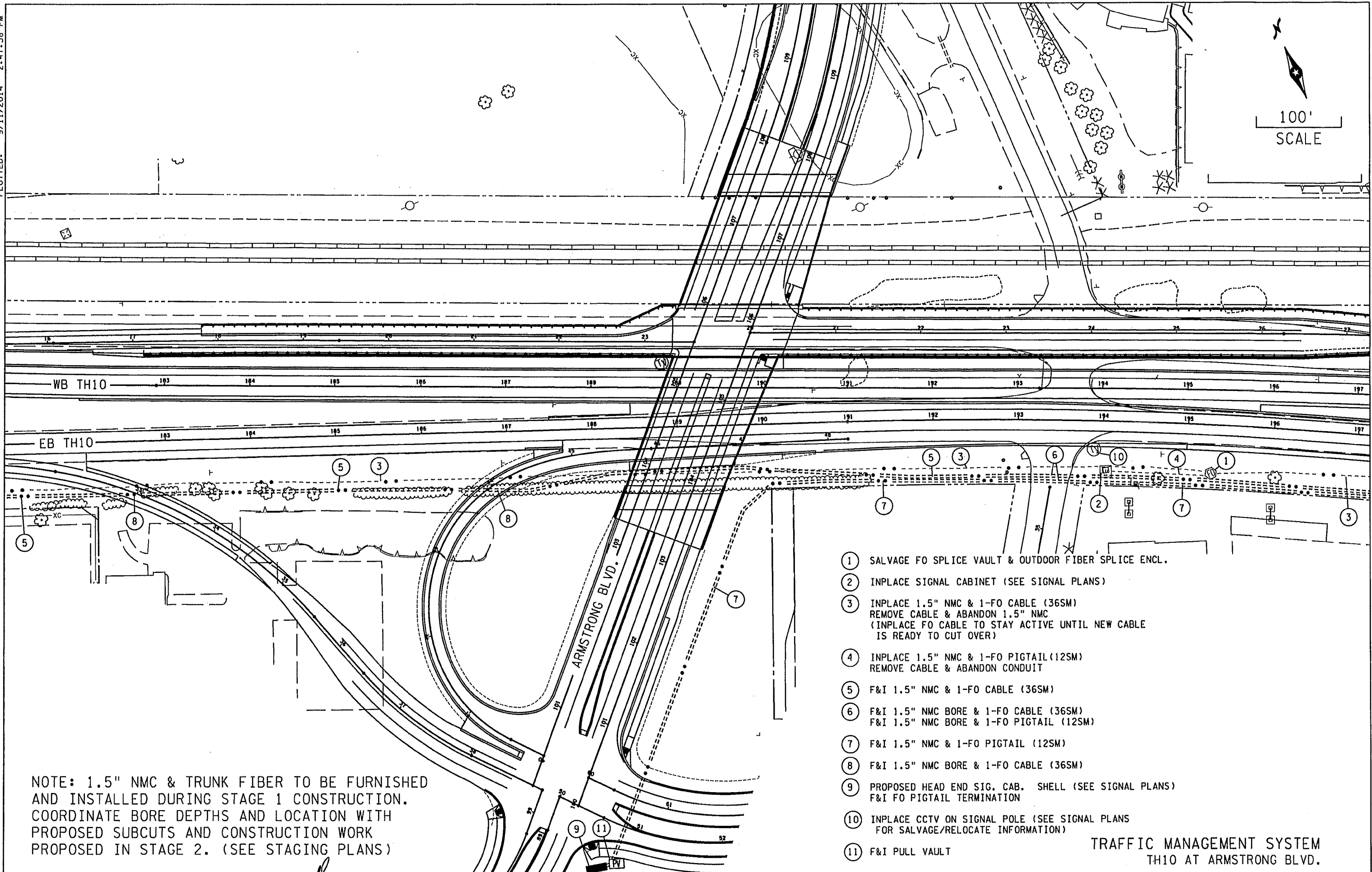
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REV. NO.	DATE: / /



- ① INPLACE FO SPLICE VAULT & OUTDOOR FIBER SPLICE ENCL.  
F&I FO CABLE SPLICING
- ② INPLACE 1.5" NMC & 1-FO CABLE (36SM)
- ③ INPLACE 1.5" NMC & 1-FO CABLE (36SM)  
REMOVE CABLE & ABANDON 1.5" NMC  
(INPLACE FO CABLE TO STAY ACTIVE UNTIL NEW CABLE  
IS READY TO CUT OVER)
- ④ F&I 1.5" NMC & 1-FO CABLE (36SM)
- ⑤ F&I 1.5" NMC BORE & 1-FO CABLE (36SM)

NOTE: 1.5" NMC & TRUNK FIBER TO BE FURNISHED  
 AND INSTALLED DURING STAGE 1 CONSTRUCTION.  
 COORDINATE BORE DEPTHS AND LOCATION WITH  
 PROPOSED SUBCUTS AND CONSTRUCTION WORK  
 PROPOSED IN STAGE 2. (SEE STAGING PLANS)

TRAFFIC MANAGEMENT SYSTEM  
 TH10 WEST OF ARMSTRONG BLVD.



NOTE: 1.5" NMC & TRUNK FIBER TO BE FURNISHED AND INSTALLED DURING STAGE 1 CONSTRUCTION. COORDINATE BORE DEPTHS AND LOCATION WITH PROPOSED SUBCUTS AND CONSTRUCTION WORK PROPOSED IN STAGE 2. (SEE STAGING PLANS)

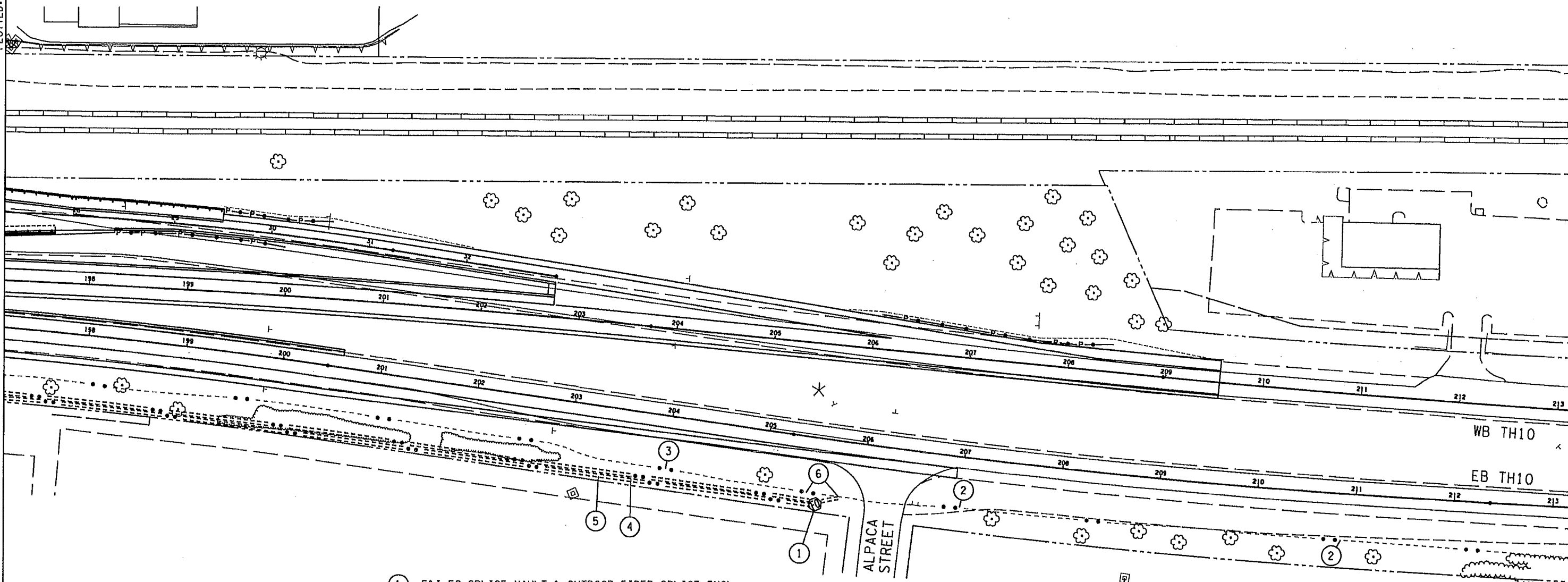
- ① SALVAGE FO SPLICE VAULT & OUTDOOR FIBER SPLICE ENCL.
- ② INPLACE SIGNAL CABINET (SEE SIGNAL PLANS)
- ③ INPLACE 1.5" NMC & 1-FO CABLE (36SM)  
 REMOVE CABLE & ABANDON 1.5" NMC  
 (INPLACE FO CABLE TO STAY ACTIVE UNTIL NEW CABLE IS READY TO CUT OVER)
- ④ INPLACE 1.5" NMC & 1-FO PIGTAIL (12SM)  
 REMOVE CABLE & ABANDON CONDUIT
- ⑤ F&I 1.5" NMC & 1-FO CABLE (36SM)
- ⑥ F&I 1.5" NMC BORE & 1-FO CABLE (36SM)  
 F&I 1.5" NMC BORE & 1-FO PIGTAIL (12SM)
- ⑦ F&I 1.5" NMC & 1-FO PIGTAIL (12SM)
- ⑧ F&I 1.5" NMC BORE & 1-FO CABLE (36SM)
- ⑨ PROPOSED HEAD END SIG. CAB. SHELL (SEE SIGNAL PLANS)  
 F&I FO PIGTAIL TERMINATION
- ⑩ INPLACE CCTV ON SIGNAL POLE (SEE SIGNAL PLANS FOR SALVAGE/RELOCATE INFORMATION)
- ⑪ F&I PULL VAULT

TRAFFIC MANAGEMENT SYSTEM  
 TH10 AT ARMSTRONG BLVD.

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NOTE: 1.5" NMC & TRUNK FIBER TO BE FURNISHED AND INSTALLED DURING STAGE 1 CONSTRUCTION. COORDINATE BORE DEPTHS AND LOCATION WITH PROPOSED SUBCUTS AND CONSTRUCTION WORK PROPOSED IN STAGE 2. (SEE STAGING PLANS)

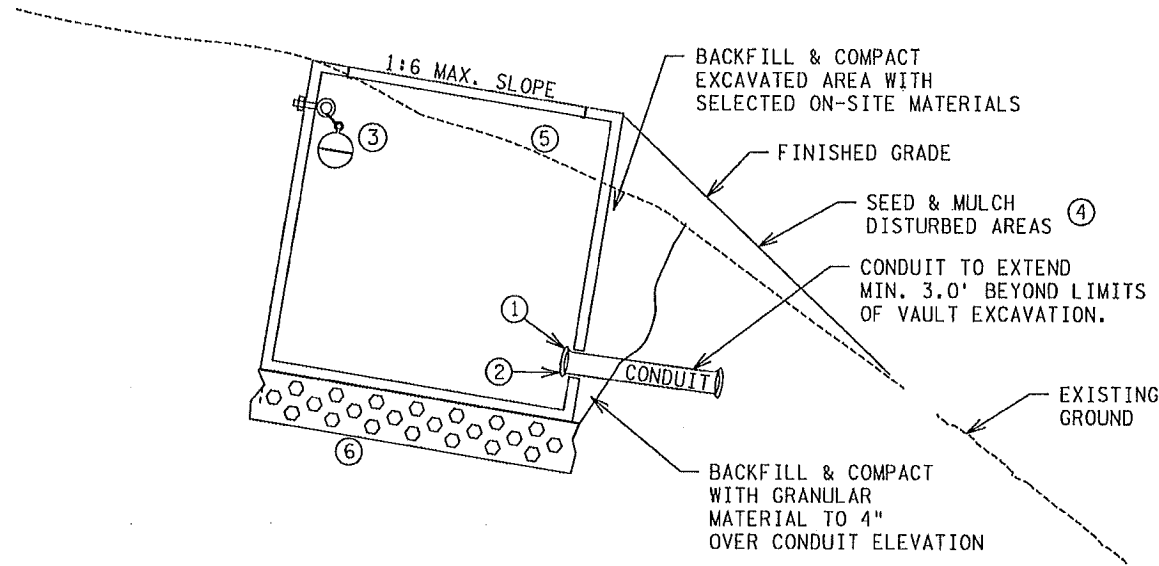


- ① F&I FO SPLICE VAULT & OUTDOOR FIBER SPLICE ENCL. F&I FO CABLE SPLICING
- ② INPLACE 1.5" NMC & 1-FO CABLE (36SM)
- ③ INPLACE 1.5" NMC & 1-FO CABLE (36SM) REMOVE CABLE & ABANDON 1.5" NMC (INPLACE FO CABLE TO STAY ACTIVE UNTIL NEW CABLE IS READY TO CUT OVER)
- ④ F&I 1.5" NMC & 1-FO CABLE (36SM)
- ⑤ F&I 1.5" NMC & 1-FO PIGTAIL(12SM)
- ⑥ REROUTE INPLACE 1.5" NMC & 1-FO CABLE TO F&I SPLICE VAULT REROUTE 1-FO CABLE FROM WEST TO PROVIDE 70' OF CABLE STORAGE WITHIN VAULT.

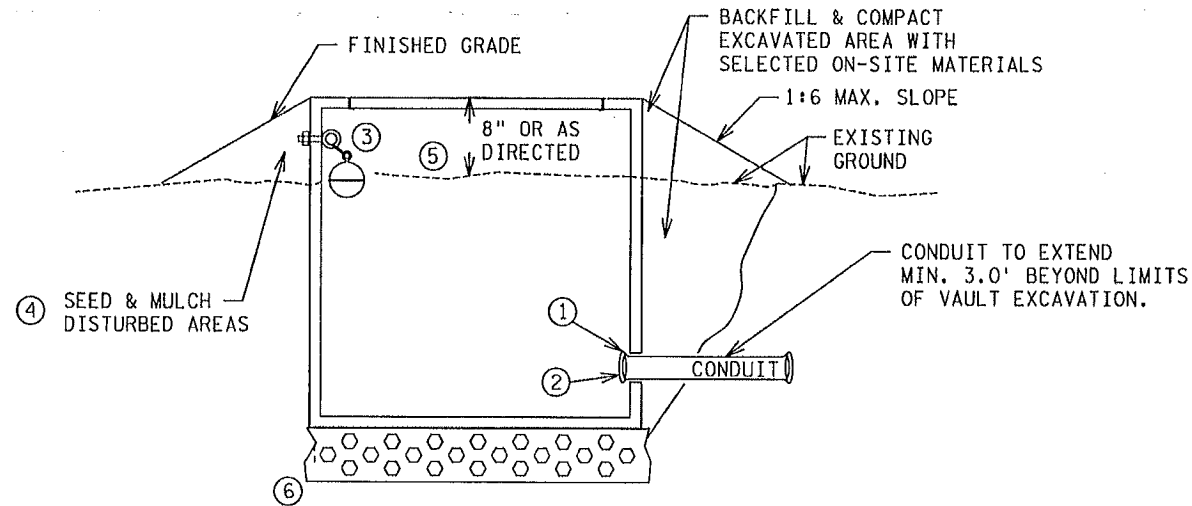
TRAFFIC MANAGEMENT SYSTEM  
 TH10 EAST OF ARMSTRONG BLVD.

REV. NO.	DATE: / /	CERTIFIED BY <i>[Signature]</i> <small>LICENSED PROFESSIONAL ENGINEER</small>	LIC.NO. 26530	SEPT 10 2014	STATE PROJ. NO. 0202-95 (TH 10)	SHEET NO. 441	OF 586	SHEETS
REV. NO.	DATE: / /							

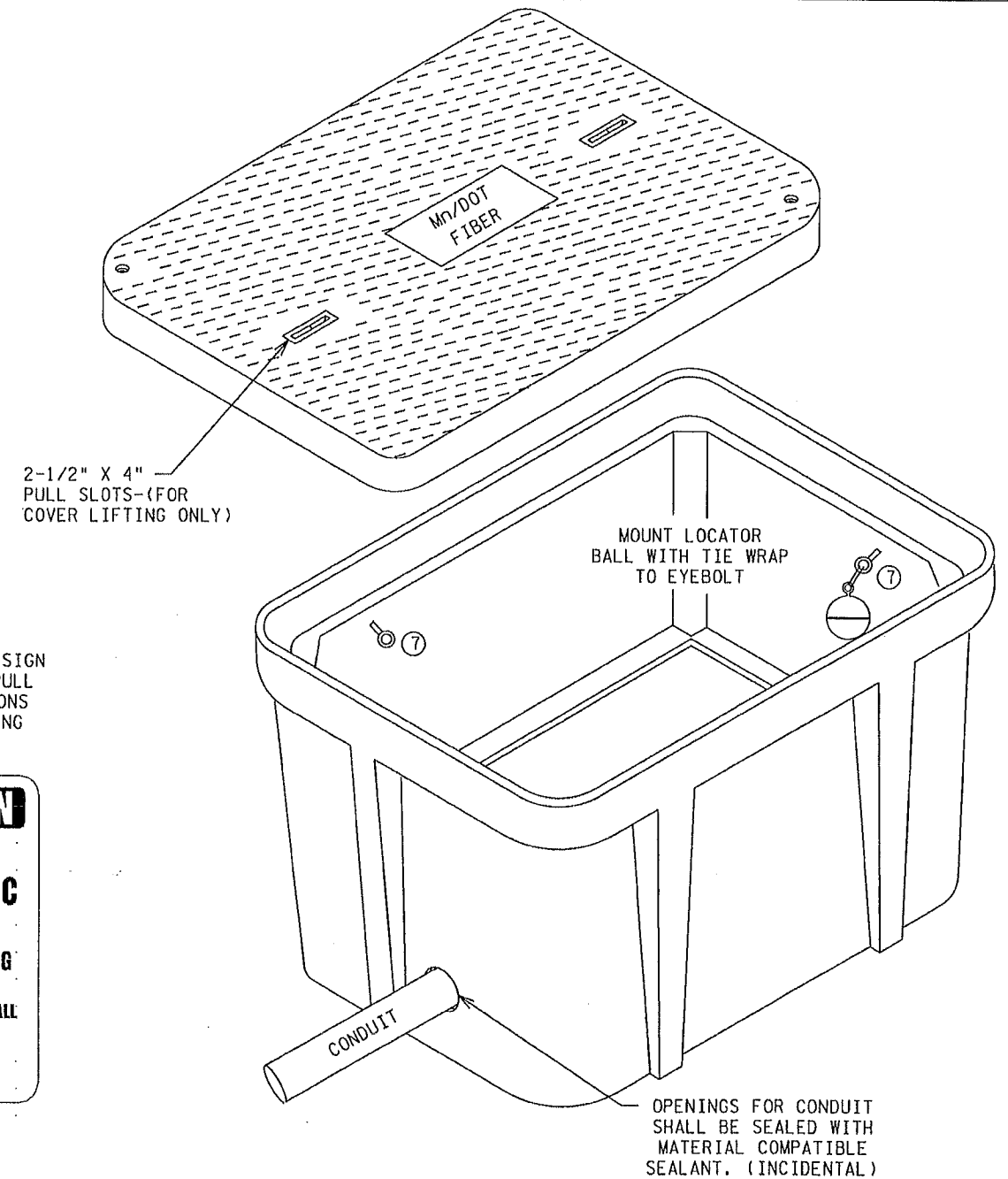




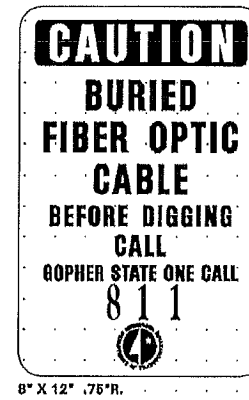
VAULT INSTALLATION (SLOPED AREAS)



VAULT INSTALLATION (LEVEL GROUND)



F&I BURIED CABLE SIGN  
 WITHIN 2.0' OF PULL  
 VAULT AT LOCATIONS  
 WHERE NO SPLICING  
 OCCURS



SPECIFIC NOTES

- ① OPENINGS FOR CONDUIT SHALL BE SEALED WITH MATERIAL COMPATIBLE SEALANT. (INCIDENTAL)
- ② PLUG CONDUIT OPENING WITH A DRAINABLE COMPOUND (INCIDENTAL)
- ③ MOUNT LOCATOR BALL WITH TIE WRAP TO EYE BOLT
- ④ RESTORE DISTURBED AREAS FOR TMS INSTALLATION WITH SEED AND TYPE I MULCH PER MNDOT 2575.3 (INCIDENTAL)
- ⑤ STRIP TOPSOIL FROM VAULT AND SLOPE AREAS PRIOR TO VAULT INSTALLATION (INCIDENTAL)
- ⑥ F&I 1.0' COARSE FILTER AGGREGATE UNDER BASE COMPLYING WITH MN/DOT 3149.2H.
- ⑦ TWO TYPE 2 SHOULDER SS EYEBOLTS, 3/8\"/>

GENERAL NOTES

1. GROUND CONNECTIONS SHALL BE COATED WITH OXIDATION PROHIBITING COMPOUND.
2. DO NOT LIFT ENTIRE PULL VAULT WITH COVER ATTACHED BY COVER LIFTING SLOTS.

FIBER OPTIC PULL VAULT  
 INSTALLATION DETAIL

REV. NO.	DATE: / /
REV. NO.	DATE: / /

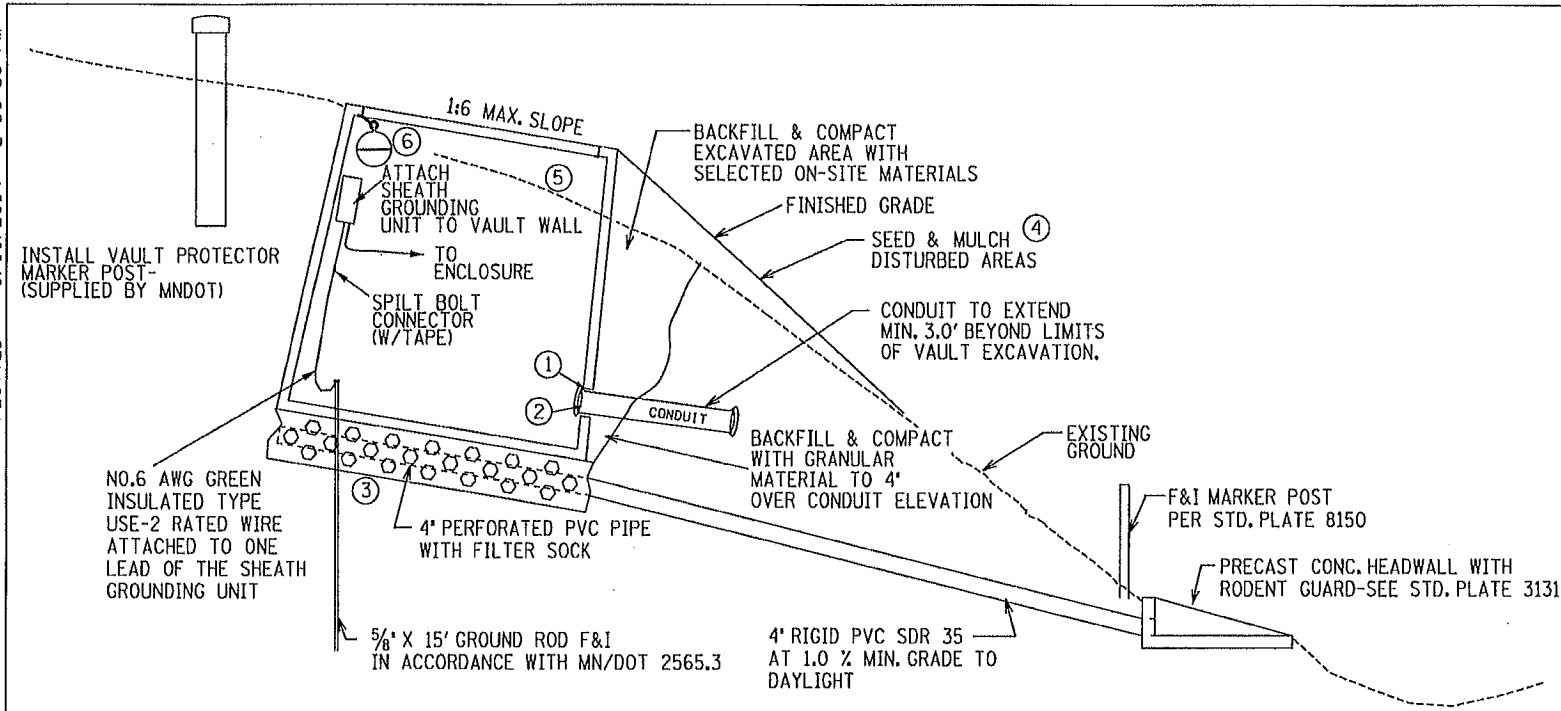
CERTIFIED BY

*[Signature]*  
 LICENSED PROFESSIONAL ENGINEER

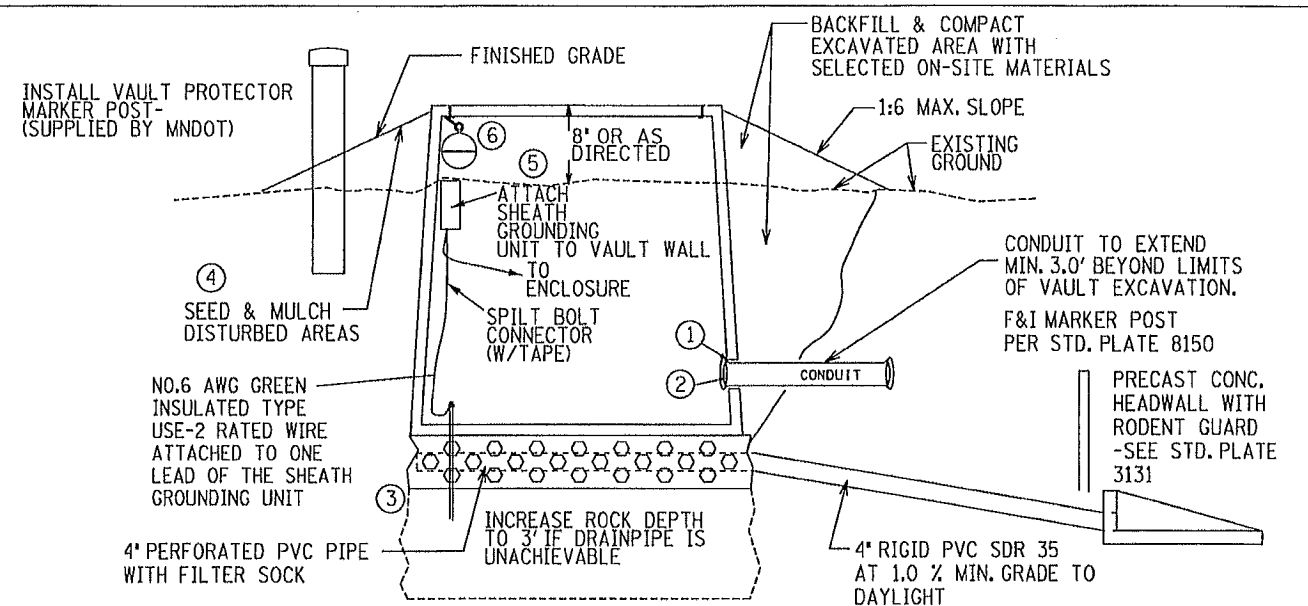
LIC. NO. 26530 SEPT 10 2014

STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 442 OF 586 SHEETS

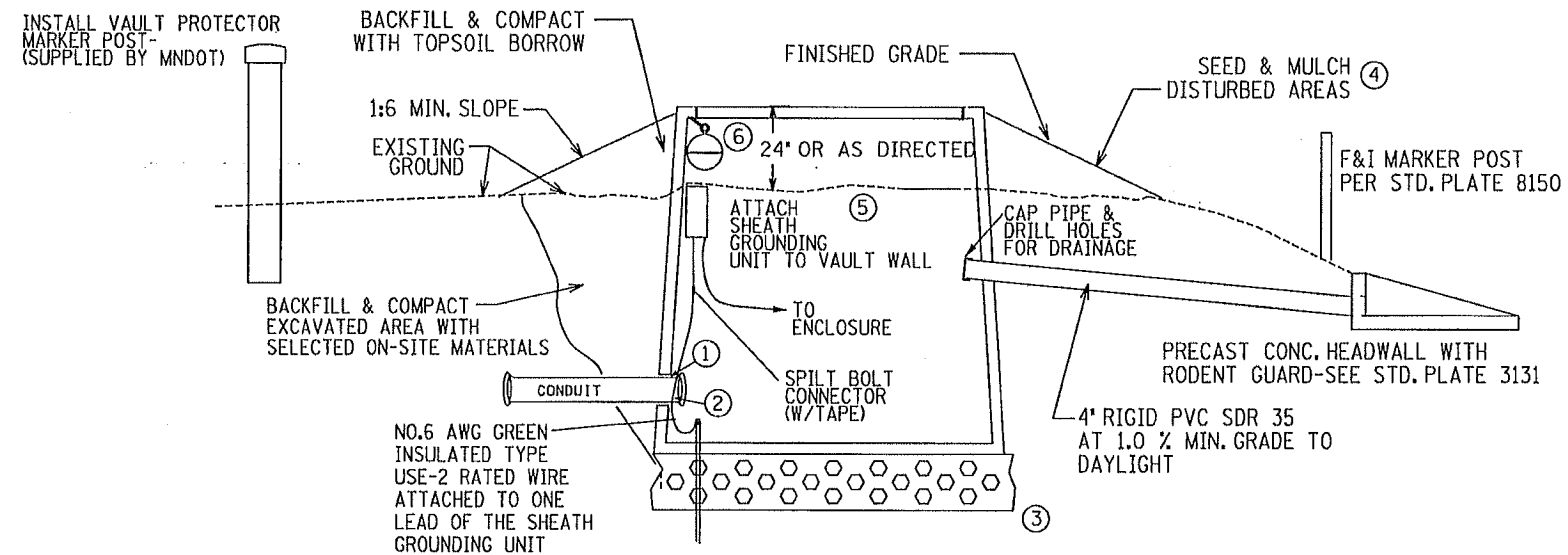




VAULT INSTALLATION & DRAINAGE SYSTEM (SLOPED AREAS)



VAULT INSTALLATION & DRAINAGE SYSTEM (LEVEL GROUND & ACHIEVABLE DRAINAGE AREAS)



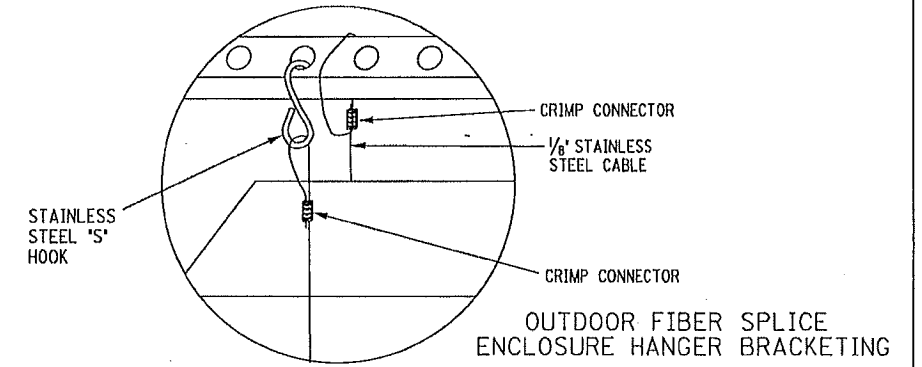
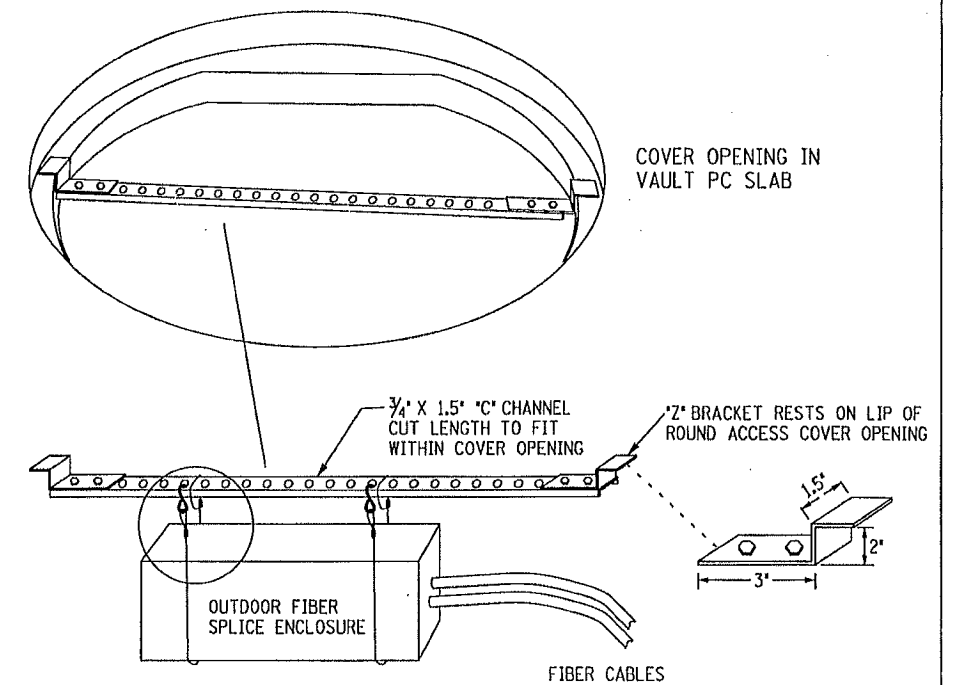
VAULT INSTALLATION & DRAINAGE SYSTEM (LEVEL GROUND & MINIMUM ACHIEVABLE DRAINAGE AREAS)

SPECIFIC NOTES

- ① OPENINGS FOR CONDUIT SHALL BE SEALED WITH MATERIAL COMPATIBLE SEALANT. (INCIDENTAL)
- ② PLUG CONDUIT OPENING WITH A DRAINABLE COMPOUND (INCIDENTAL)
- ③ F&I 1.0' COARSE FILTER AGGREGATE UNDER BASE COMPLYING WITH MN/DOT 3149.2H. F&I 4' PERFORATED PVC PIPE WITH FILTER SOCK TO PROVIDE DRAINAGE. (INCIDENTAL)
- ④ RESTORE DISTURBED AREAS FOR TMS INSTALLATION WITH SEED AND TYPE I MULCH PER MNDOT 2575.3 (INCIDENTAL)
- ⑤ STRIP TOPSOIL FROM VAULT AND SLOPE AREAS PRIOR TO VAULT INSTALLATION (INCIDENTAL)
- ⑥ MOUNT LOCATOR BALL WITH TIE WRAP TO COVER LEDGE

GENERAL NOTES

1. GROUND CONNECTIONS SHALL BE COATED WITH OXIDATION PROHIBITING COMPOUND.
2. CABLE SHALL ENTER BELOW THE SUPPORT BRACKETS WITH MIN. 70' OF SLACK FOR EACH CABLE OUTSIDE OF THE ENCLOSURE. CABLE SHALL BE COILED AROUND INSIDE OF SUPPORT BRACKETS. CABLES SHALL BE CUT TO THE SAME LENGTH AT THE ENCLOSURE.
3. ALL HARDWARE SHALL BE STAINLESS STEEL WITH EXCEPTION OF THE "C" CHANNEL MOUNTING BAR.
4. THE FRAME AND LID OF THE VAULT SHALL BE IN ACCORDANCE WITH AASHTO LOAD RATING H-10



FIBER OPTIC SPLICE VAULT INSTALLATION

REV. NO.	DATE: / /
REV. NO.	DATE: / /

CERTIFIED BY

*Jeffrey M. Puleo*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26530

SEPT 10 2014

STATE PROJ. NO.

0202-95 (TH 10)

SHEET NO.

443 OF

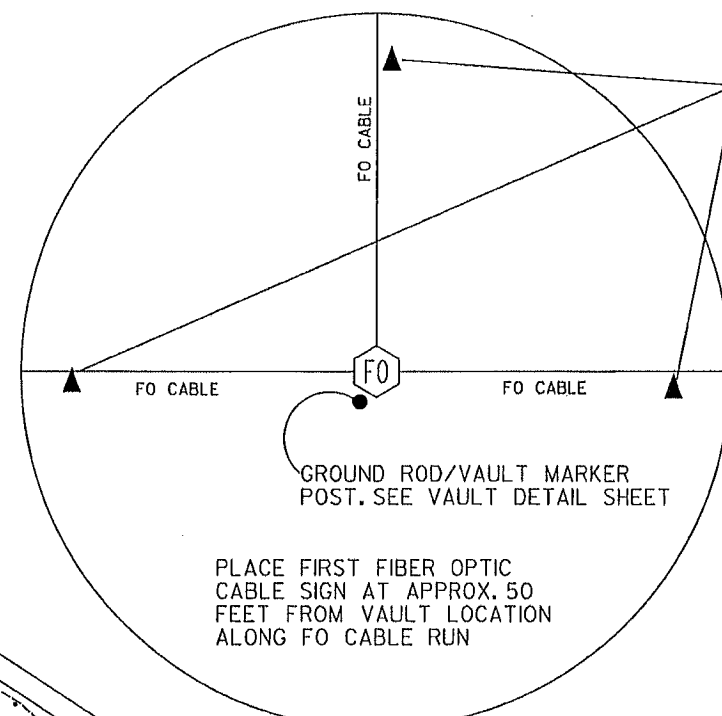
586 SHEETS

**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**

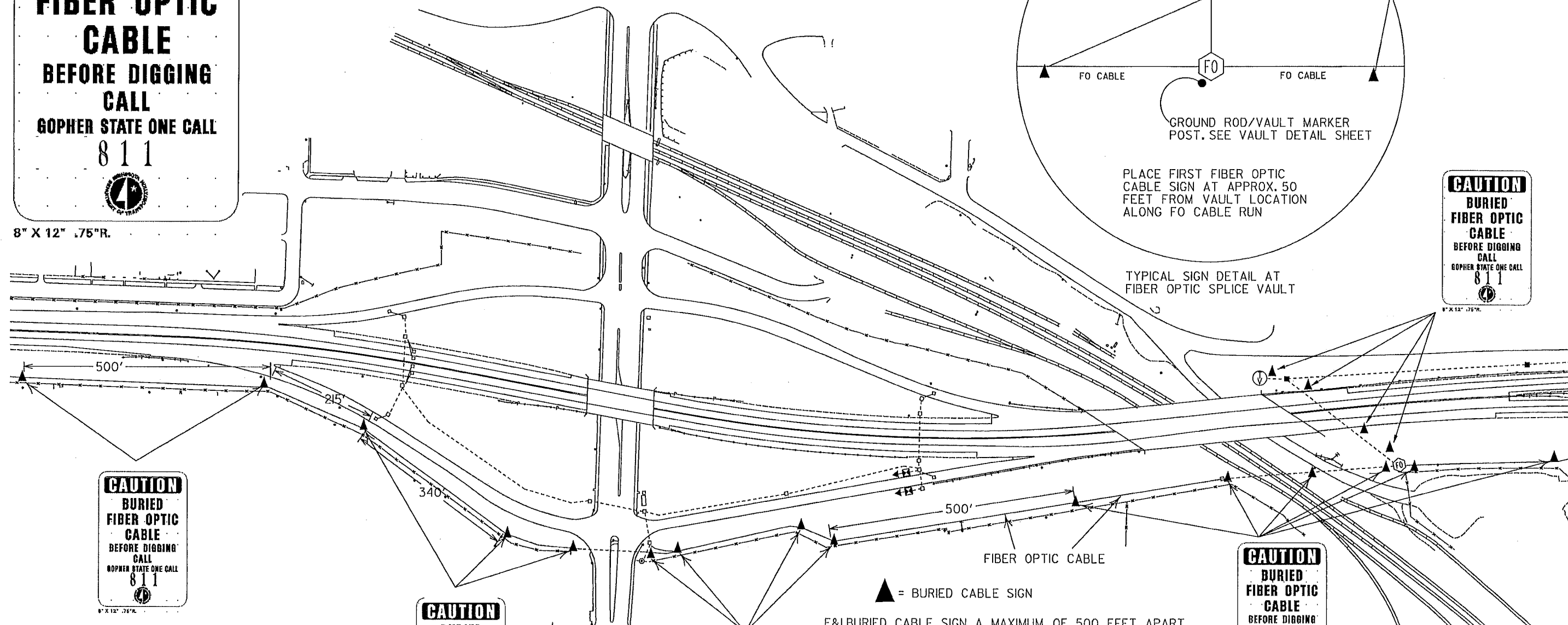
8" X 12" .75"R.

**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**

**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**



TYPICAL SIGN DETAIL AT FIBER OPTIC SPLICE VULT

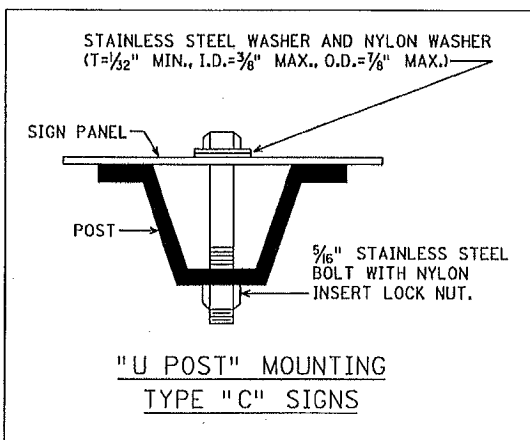


**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**

**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**

**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**

**CAUTION**  
**BURIED FIBER OPTIC CABLE**  
**BEFORE DIGGING CALL**  
**GOPHER STATE ONE CALL**  
**8 1 1**



▲ = BURIED CABLE SIGN

F&IBURIED CABLE SIGN A MAXIMUM OF 500 FEET APART.  
 F&IBURIED CABLE SIGN AT CHANGE IN CABLE DIRECTION TO INDICATE CHANGE POINT AND NEW DIRECTION.  
 F&IBURIED CABLE SIGNS 16 FEET BEHIND CURB OR EDGE OF ROADWAY AT ROADWAY CROSSINGS.  
 F&IBURIED CABLE SIGNS 25 FEET FROM RAILROAD OR AS DIRECTED IN CROSSING PERMIT.  
 AT VULT LOCATIONS MARKER POST IS PER VULT DETAIL.  
 F&IBURIED CABLE SIGN IF UNABLE TO SEE FROM SIGN TO SIGN (THIS INCLUDES CHANGES IN ELEVATION).  
 F&IBURIED CABLE SIGNS BETWEEN CABLE AND R/W FENCE, 3.0' FROM CABLE WITH SIGN PANEL PARALLEL TO BURIED CABLE  
 NOTE: SIGNS MAY BE MOUNTED ON FACE OF WALLS WHERE NECESSARY AND AS APPROVED BY THE ENGINEER

BURIED CABLE SIGN PLACEMENT TYPICAL

REV. NO.	DATE: / /
REV. NO.	DATE: / /

CERTIFIED BY

*Jeffrey M. Pulpo*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26530 SEPT 10 2014

STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 444 OF 586 SHEETS



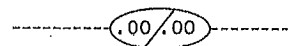
coozi.sco MDROSRW7D023 TMS  
 PLOTTED: 9/10/2014 2:50:53 PM

**INDEX OF REFRACTION**

PROVIDE CABLE MANUFACTURERS INDEX OF REFRACTION USED FOR TESTING ON PROJECT.

U = FURNISHED SPLICE, NO SPLICE OTDR READING REQUIRED AT THIS LOCATION

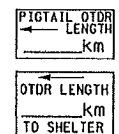
(X,X) POWER METER TEST POINT  
 INSERT OPTICAL LINK LOSS IN dB  
 (TEST MULTI MODE FIBER AT 1300)  
 (TEST SINGLE MODE FIBER AT 1550)



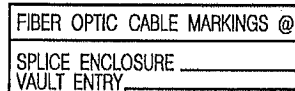
INSERT OTDR SPLICE LOSS SHOT FROM THIS DIRECTION

FO CABLE SPLICE POINT & OTDR TEST SPLICE READING

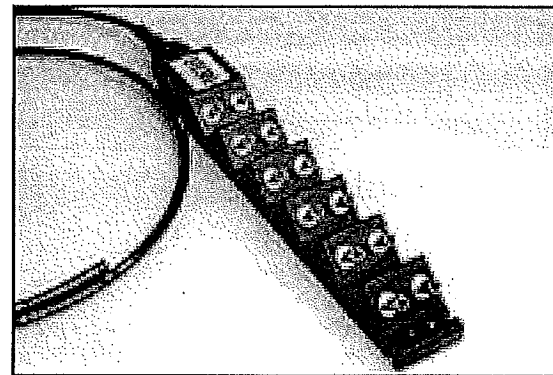
OTDR TEST SPLICE READING ON INPLACE CABLE



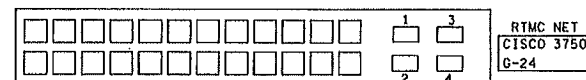
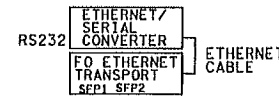
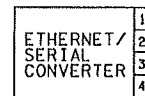
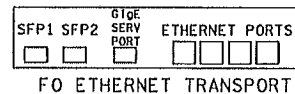
PROVIDE TRUNK AND PIGTAIL OTR FIBER LENGTH MEASUREMENTS USING OTR READINGS FROM CONNECTORS AT SHELTER OR CABINETS TO SPLICE POINTS IN VAULTS



PROVIDE TRUNK CABLE JACKET DISTANCE MARKINGS AT ENTRY TO VAULT AND AT ENTRY TO OUTDOOR FIBER SPLICE ENCLOSURE



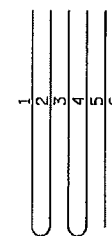
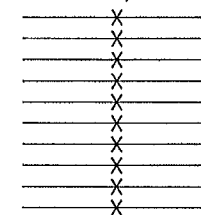
FACTORY PRE-TERMINATED/ARMORED FIBER OPTIC PIGTAIL



ETHERNET SWITCH

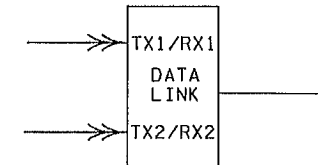
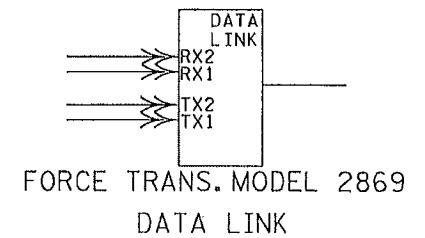
**COMMON ETHERNET EQUIPMENT**

EXISTING FO CABLE SPLICE POINT

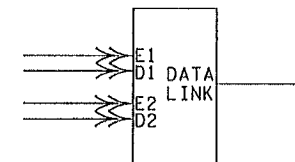


**FIBER OPTIC PIGTAIL SPLICE DIAGRAM**

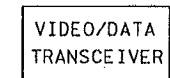
(SPLICE UNUSED FIBERS TOGETHER IN THE SPLICE VAULT SO THAT THE FIBERS CAN BE TESTED)



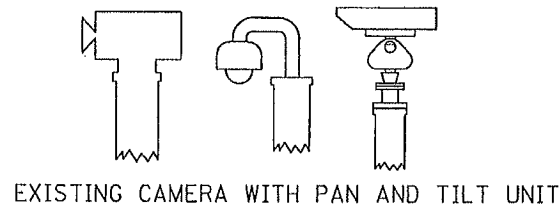
OPTELECOM MODEM DATA LINK



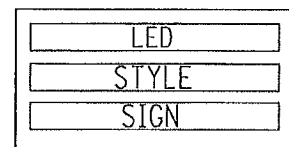
EIA/TIA 232 DATA LINK



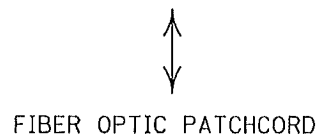
VIDEO & DATA TRANSCEIVER TRANSMITTER



F&I CAMERA WITH PAN AND TILT UNIT



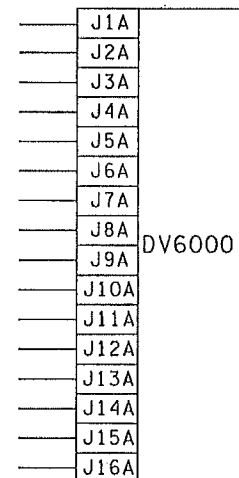
DYNAMIC MESSAGE SIGN



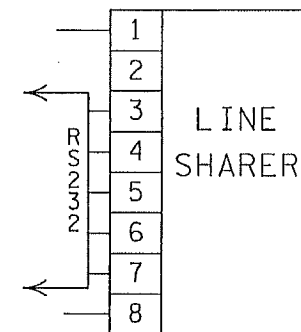
FIBER OPTIC PATCHCORD



TWISTED PAIR INTERCONNECT



DTS EQUIPMENT



RS 232 LINE SHARER

- [170] 170 CONTROLLER
- [DMS] CHANGEABLE MESSAGE SIGN
- [FLS] FLASHER
- [RCS] RAMP CONTROL SIGNAL
- [LDS] LOOP DETECTOR STATION
- [LD] LOOP DETECTOR'S"
- [ILCS] INTELLIGENT LANE CONTROL SIGN

**LEGEND FOR COMMUNICATION SCHEMATICS**

REV. NO.	DATE: / /
REV. NO.	DATE: / /

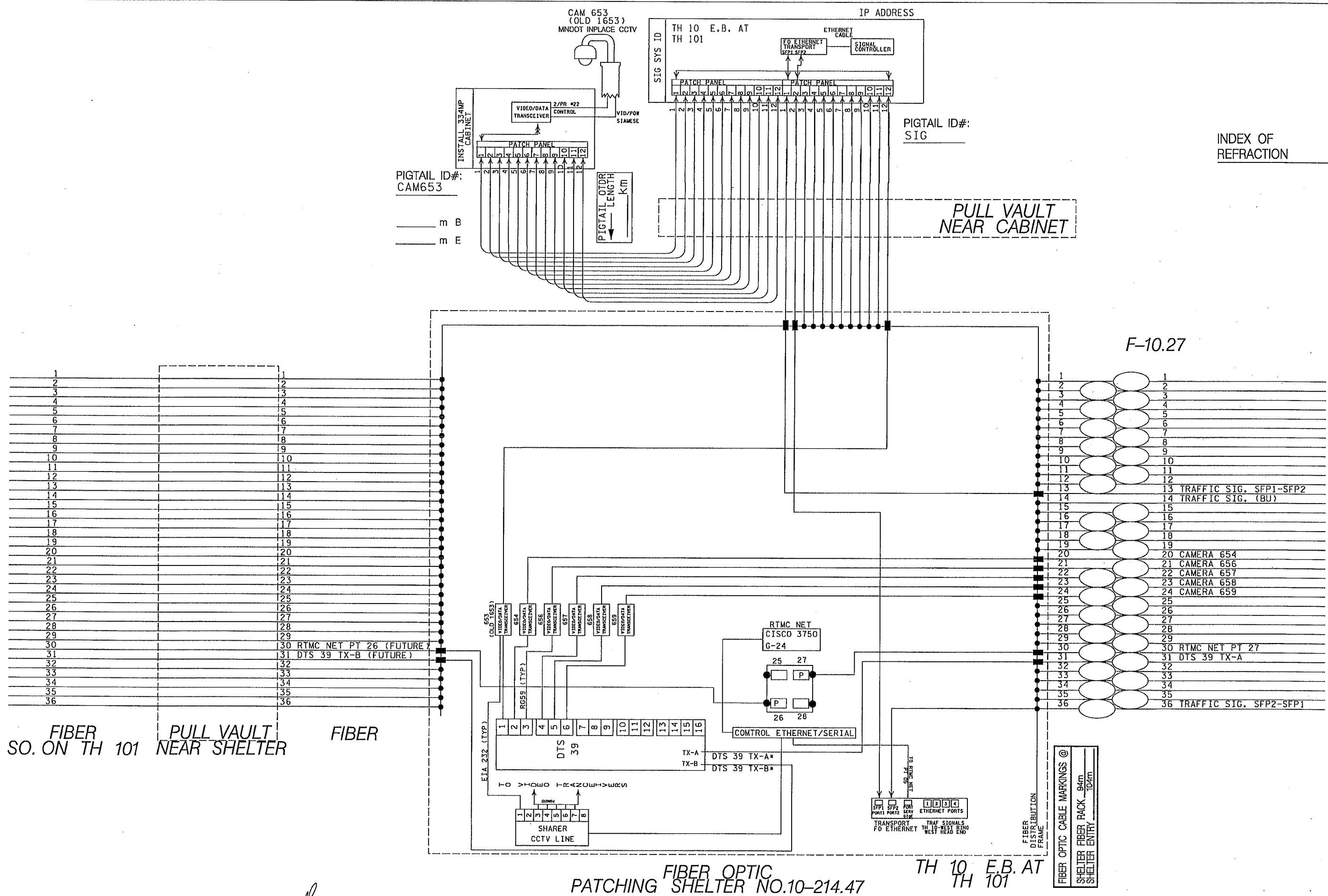
CERTIFIED BY

*[Signature]*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26530 SEPT 10 2014

STATE PROJ. NO. 0202-95 (TH 10) SHEET NO. 446 OF 586 SHEETS

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INDEX OF REFRACTION

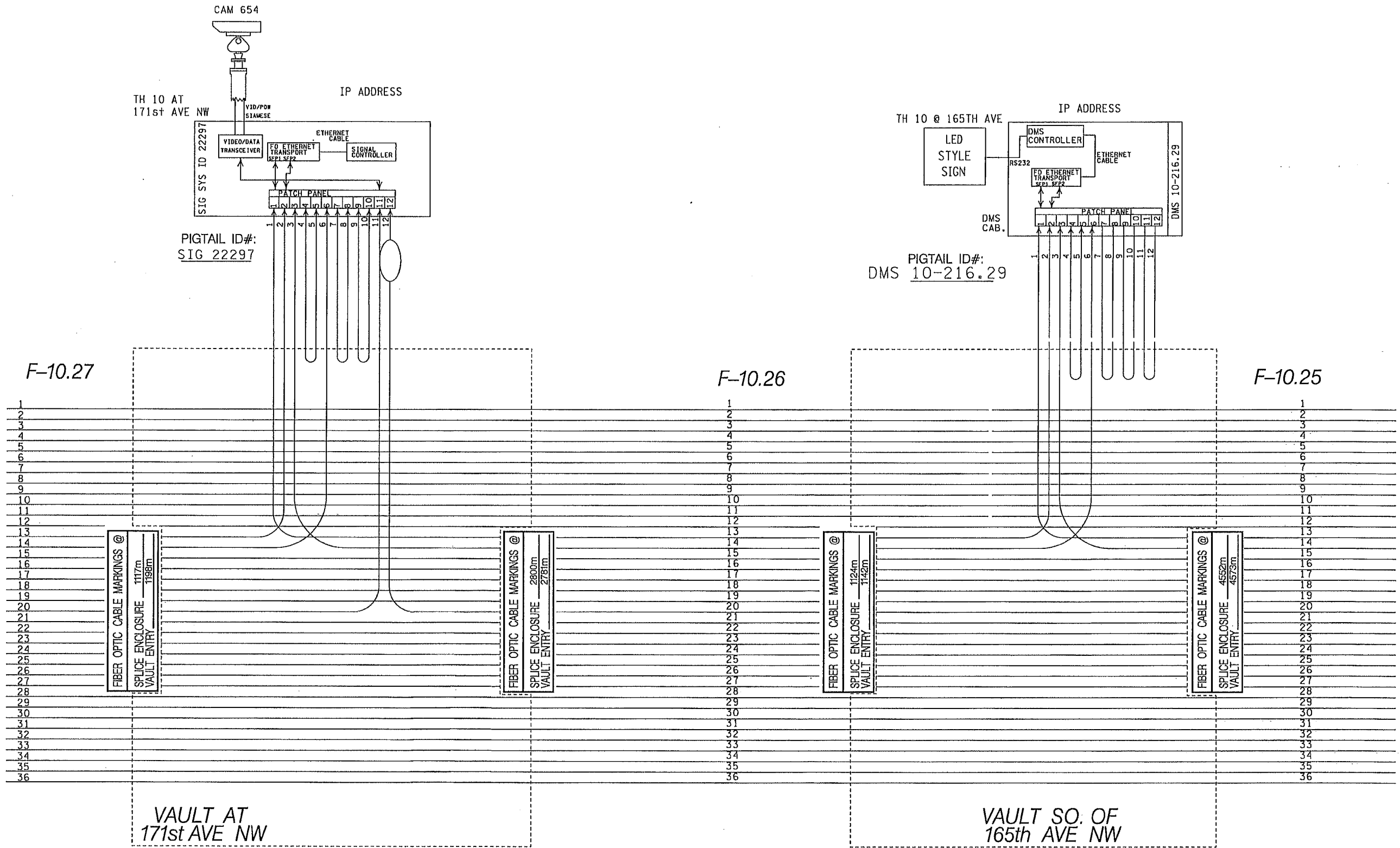
PULL VAULT NEAR CABINET

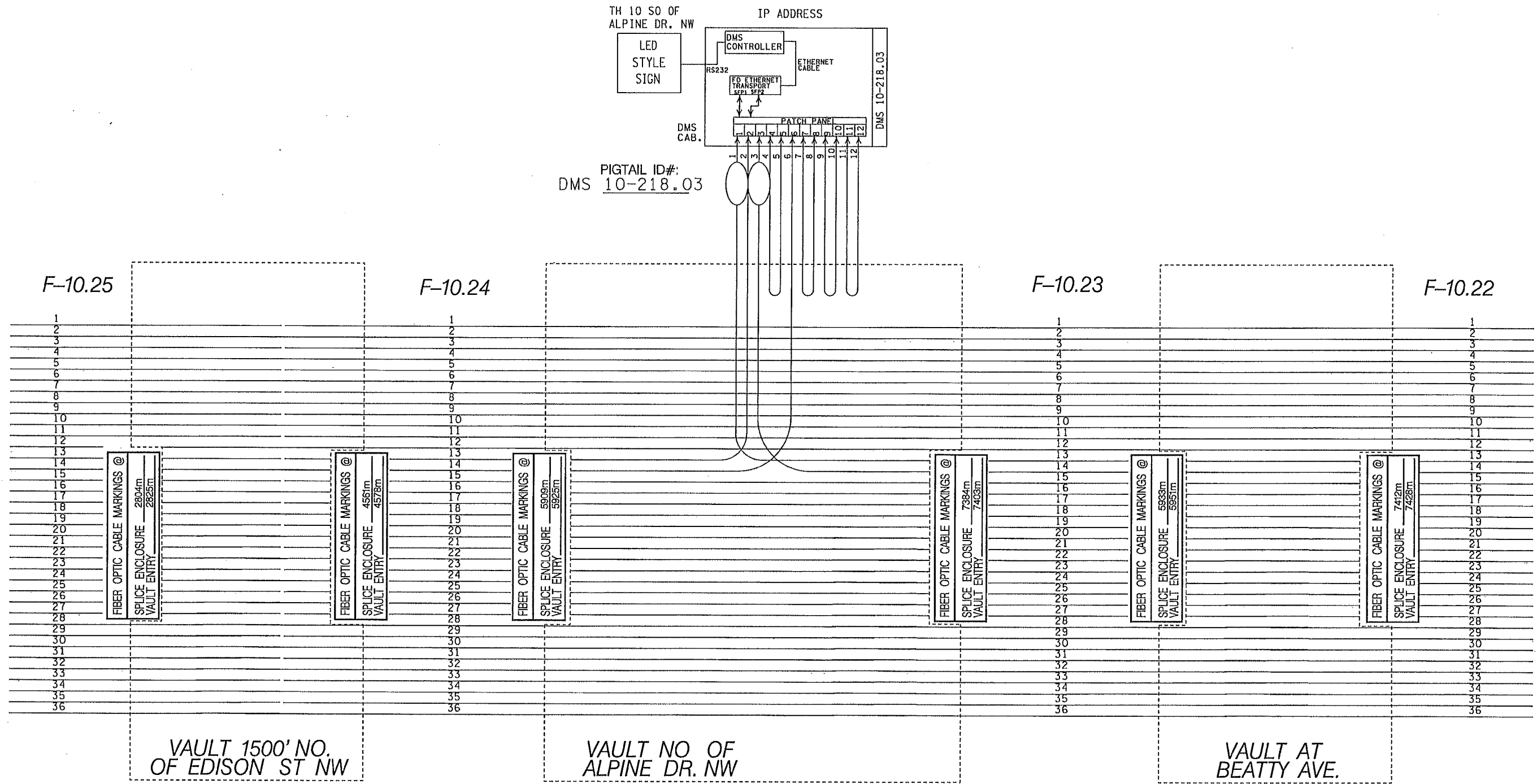
F-10.27

FIBER SO. ON TH 101 PULL VAULT NEAR SHELTER FIBER

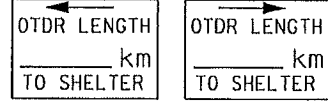
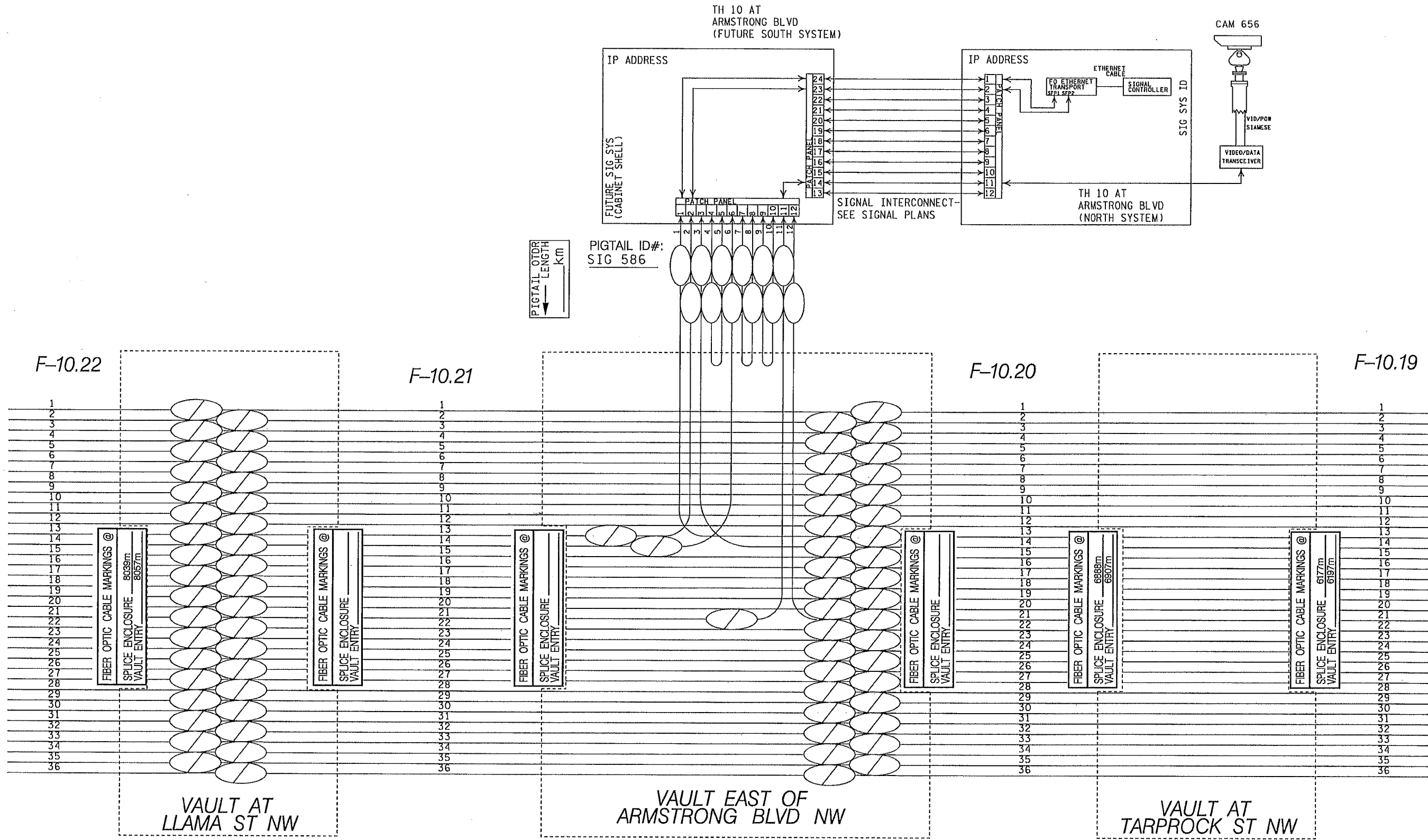
FIBER OPTIC PATCHING SHELTER NO.10-214.47 TH 10 E.B. AT TH 101

FIBER OPTIC CABLE MARKINGS @
SHELTER FIBER RACK 94m
SHELTER ENTRY

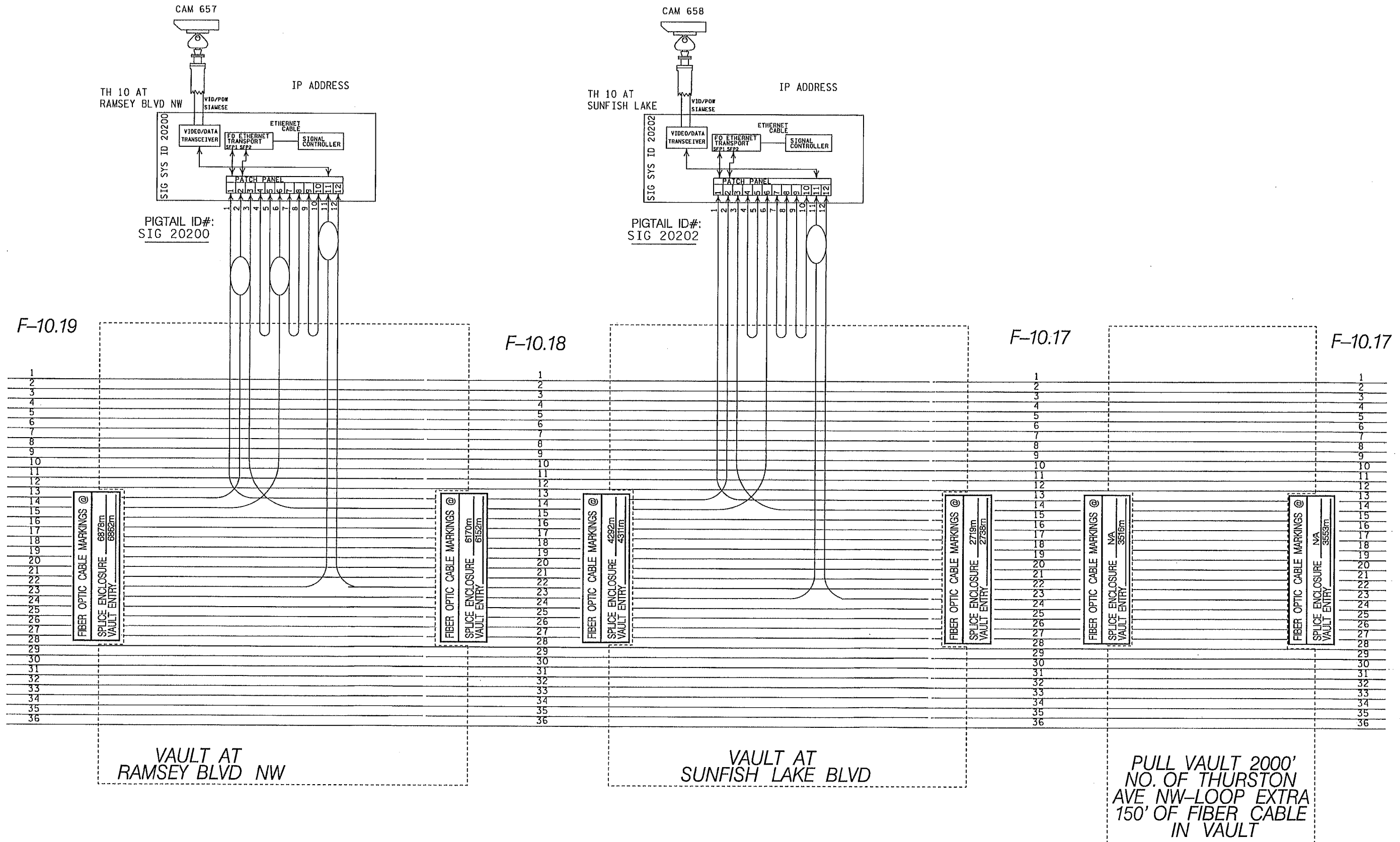


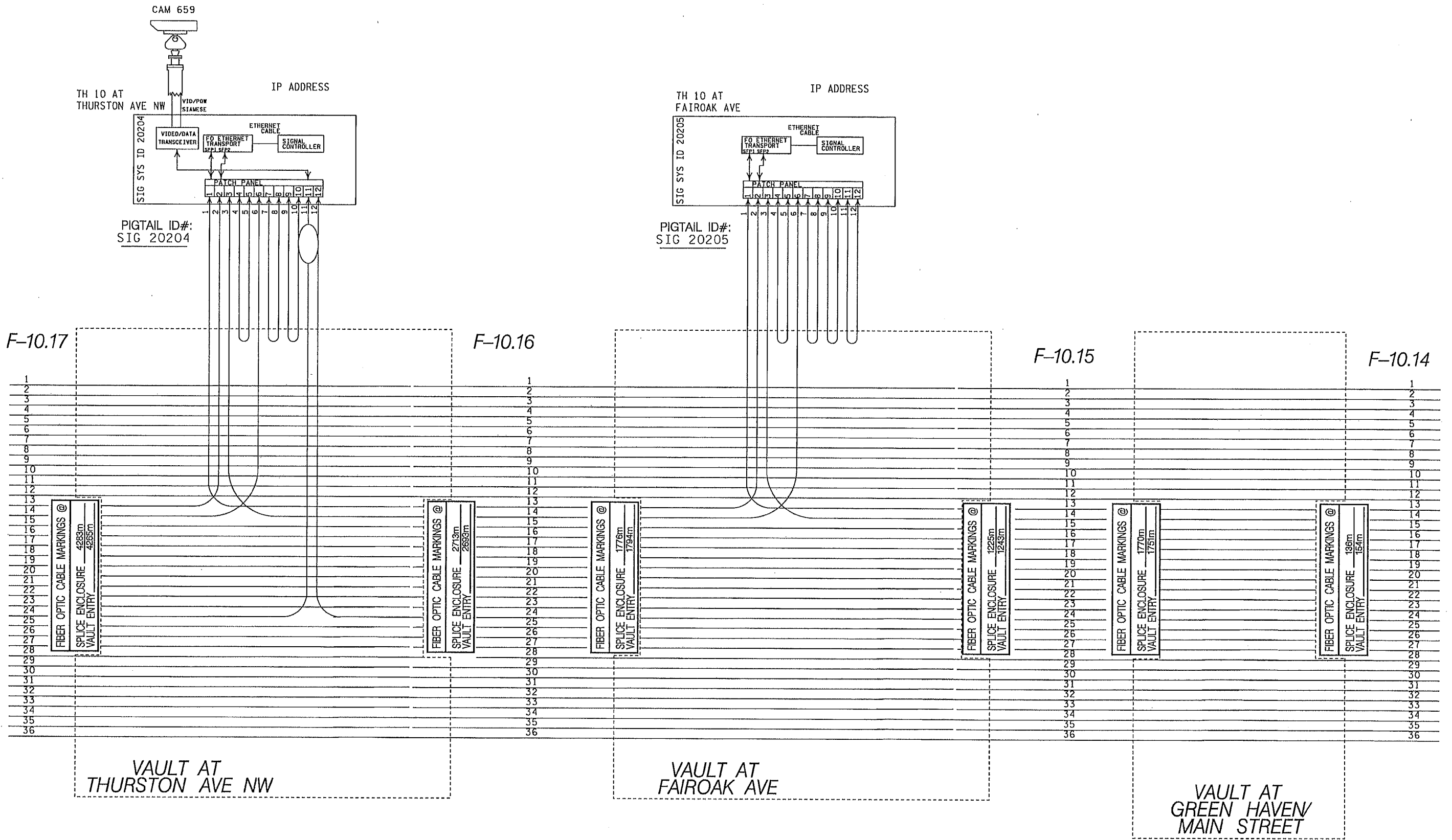




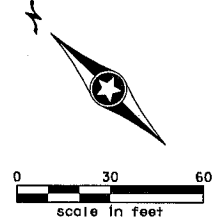
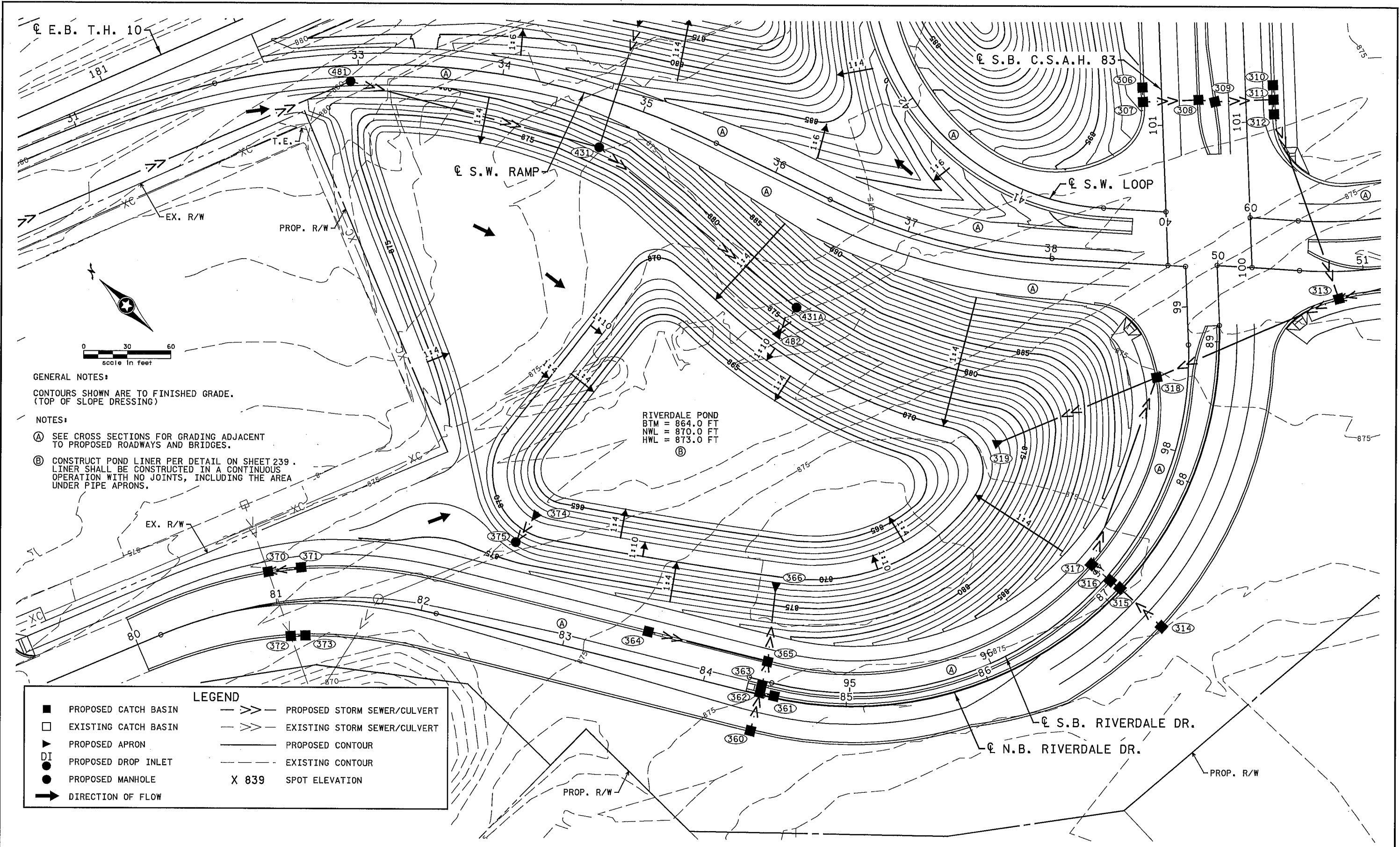












**GENERAL NOTES:**

CONTOURS SHOWN ARE TO FINISHED GRADE.  
(TOP OF SLOPE DRESSING)

**NOTES:**

- (A) SEE CROSS SECTIONS FOR GRADING ADJACENT TO PROPOSED ROADWAYS AND BRIDGES.
- (B) CONSTRUCT POND LINER PER DETAIL ON SHEET 239. LINER SHALL BE CONSTRUCTED IN A CONTINUOUS OPERATION WITH NO JOINTS, INCLUDING THE AREA UNDER PIPE APRONS.

RIVERDALE POND  
BTM = 864.0 FT  
NWL = 870.0 FT  
HWL = 873.0 FT

LEGEND	
■	PROPOSED CATCH BASIN
□	EXISTING CATCH BASIN
▼	PROPOSED APRON
DI	PROPOSED DROP INLET
●	PROPOSED MANHOLE
→	DIRECTION OF FLOW
- - - - -	PROPOSED STORM SEWER/CULVERT
- - - - -	EXISTING STORM SEWER/CULVERT
— — — — —	PROPOSED CONTOUR
— — — — —	EXISTING CONTOUR
X 839	SPOT ELEVATION

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 9/11/2014  
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NO	DATE	BY	CHK	APPR	REVISION

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: **CRAIG J. HASS**

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

COMM. NO. 0138259

DRAWN BY  
**S. MARTINS**

DESIGNED BY  
**D. SYMANIETZ**

CHECKED BY  
**C. HASS**

**SRH**  
Consulting Group, Inc.

**ENGINEERS  
PLANNERS  
DESIGNERS**

ANOKA COUNTY

CONTOUR PLANS

T.H. 10 / C.S.A.H. 83 INTERCHANGE

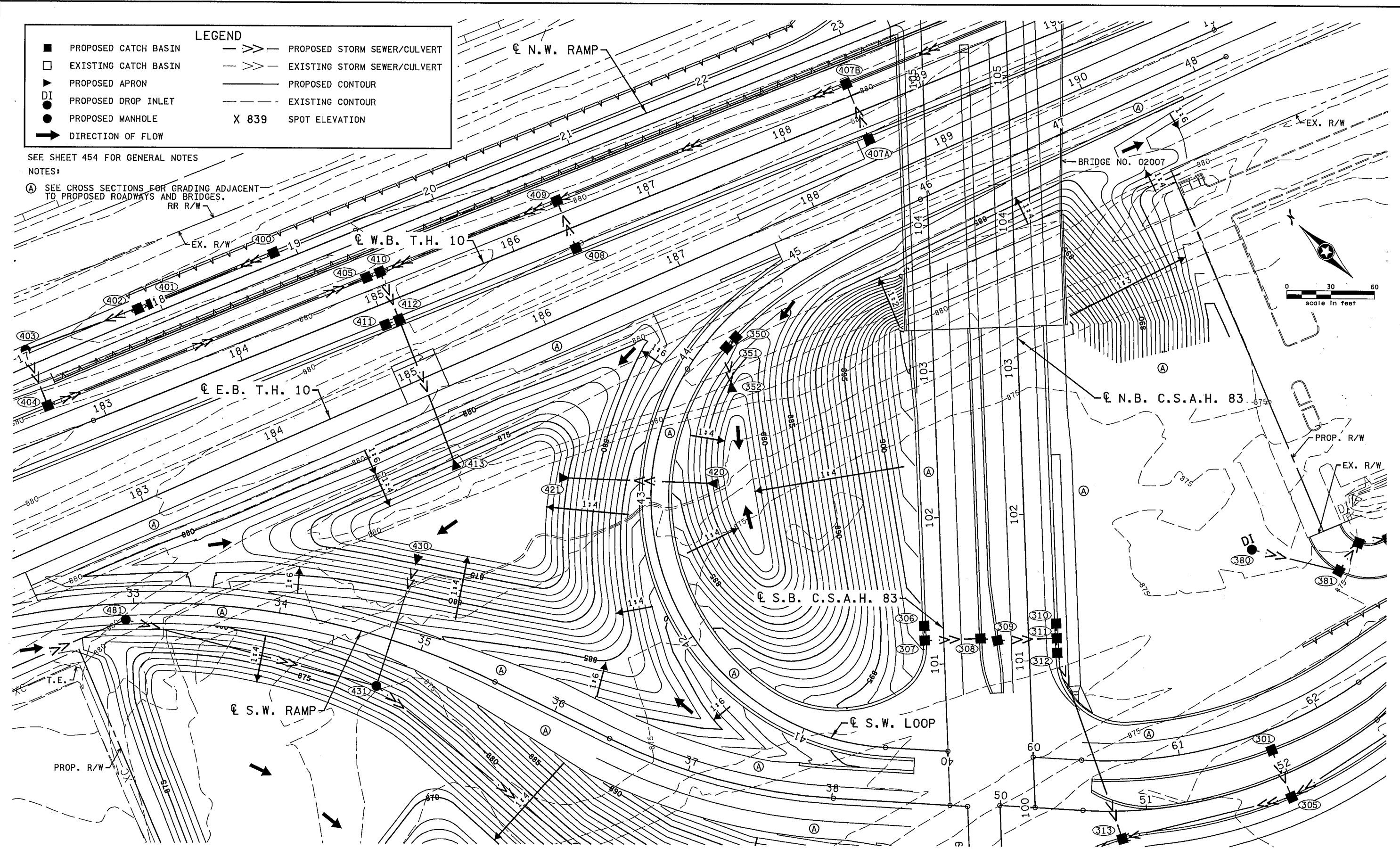
SHEET  
454  
OF  
586

**LEGEND**

- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- ▶ PROPOSED APRON
- DI PROPOSED DROP INLET
- PROPOSED MANHOLE
- ➔ DIRECTION OF FLOW
- >> — PROPOSED STORM SEWER/CULVERT
- - - - - EXISTING STORM SEWER/CULVERT
- — — — — PROPOSED CONTOUR
- - - - - EXISTING CONTOUR
- X 839 SPOT ELEVATION

SEE SHEET 454 FOR GENERAL NOTES  
NOTES:

(A) SEE CROSS SECTIONS FOR GRADING ADJACENT TO PROPOSED ROADWAYS AND BRIDGES.  
RR R/W



3:25:35 PM 5/11/2014 H:\Projects\8259\CAD\_BIM\Plan\8259\_cn02.dgn

NO	DATE	BY	CHKD	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004 199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.  
DRAWN BY S. MARTINS  
DESIGNED BY D. SYMANIETZ  
CHECKED BY C. HASS  
COMM. NO. 0138259

**SRH** ENGINEERS PLANNERS DESIGNERS  
Consulting Group, Inc.

ANOKA COUNTY  
CONTOUR PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

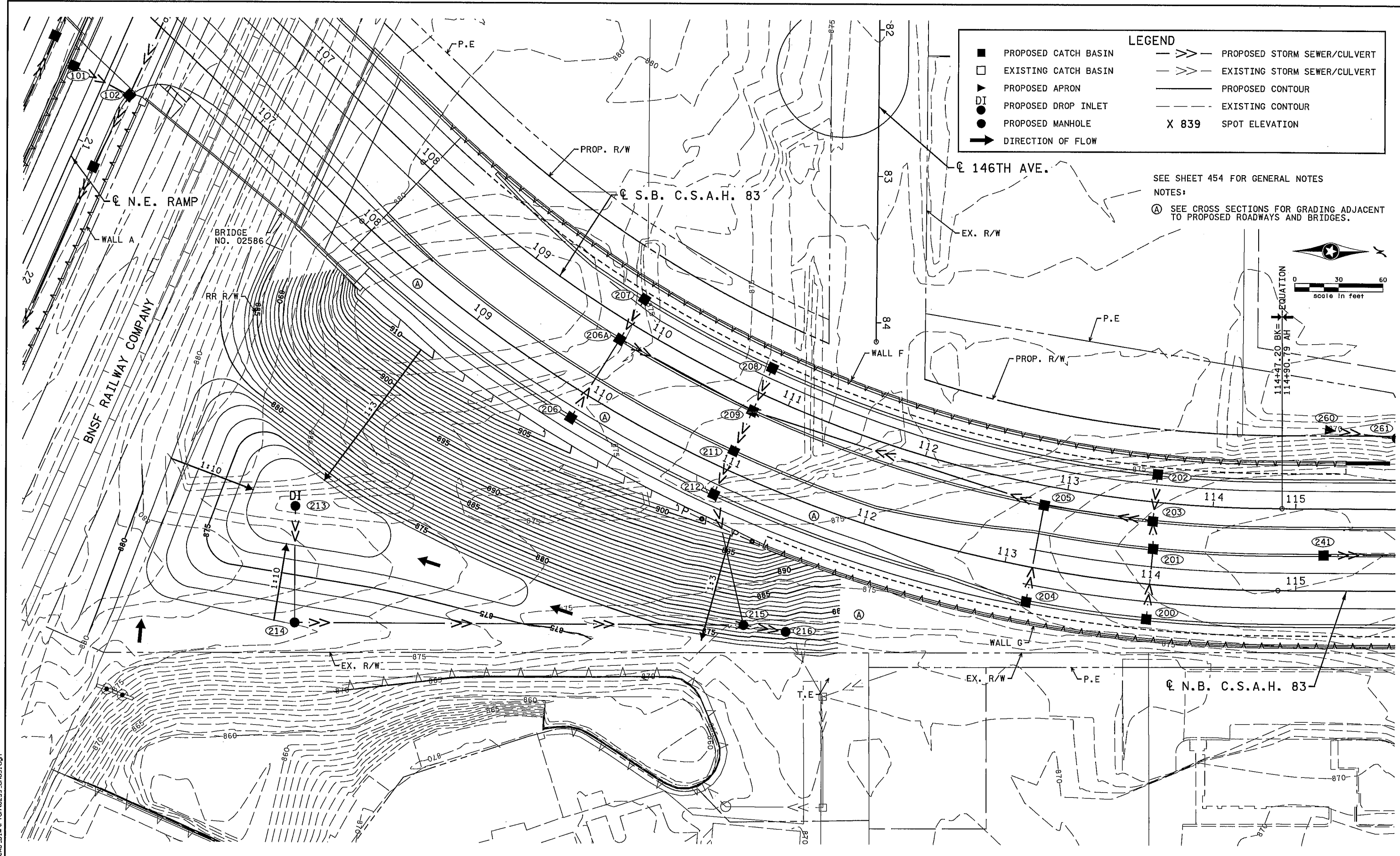
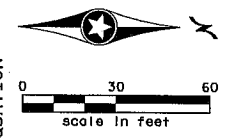
SHEET 455 OF 586



**LEGEND**

- PROPOSED CATCH BASIN
- EXISTING CATCH BASIN
- ▶ PROPOSED APRON
- DI PROPOSED DROP INLET
- PROPOSED MANHOLE
- ➔ DIRECTION OF FLOW
- >> — PROPOSED STORM SEWER/CULVERT
- - - >> - - - EXISTING STORM SEWER/CULVERT
- — — PROPOSED CONTOUR
- - - - - EXISTING CONTOUR
- X 839 SPOT ELEVATION

SEE SHEET 454 FOR GENERAL NOTES  
 NOTES:  
 (A) SEE CROSS SECTIONS FOR GRADING ADJACENT TO PROPOSED ROADWAYS AND BRIDGES.



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NO	DATE	BY	CHKD	APPR	REVISION

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: **CRAIG J. HASS**

*Craig Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



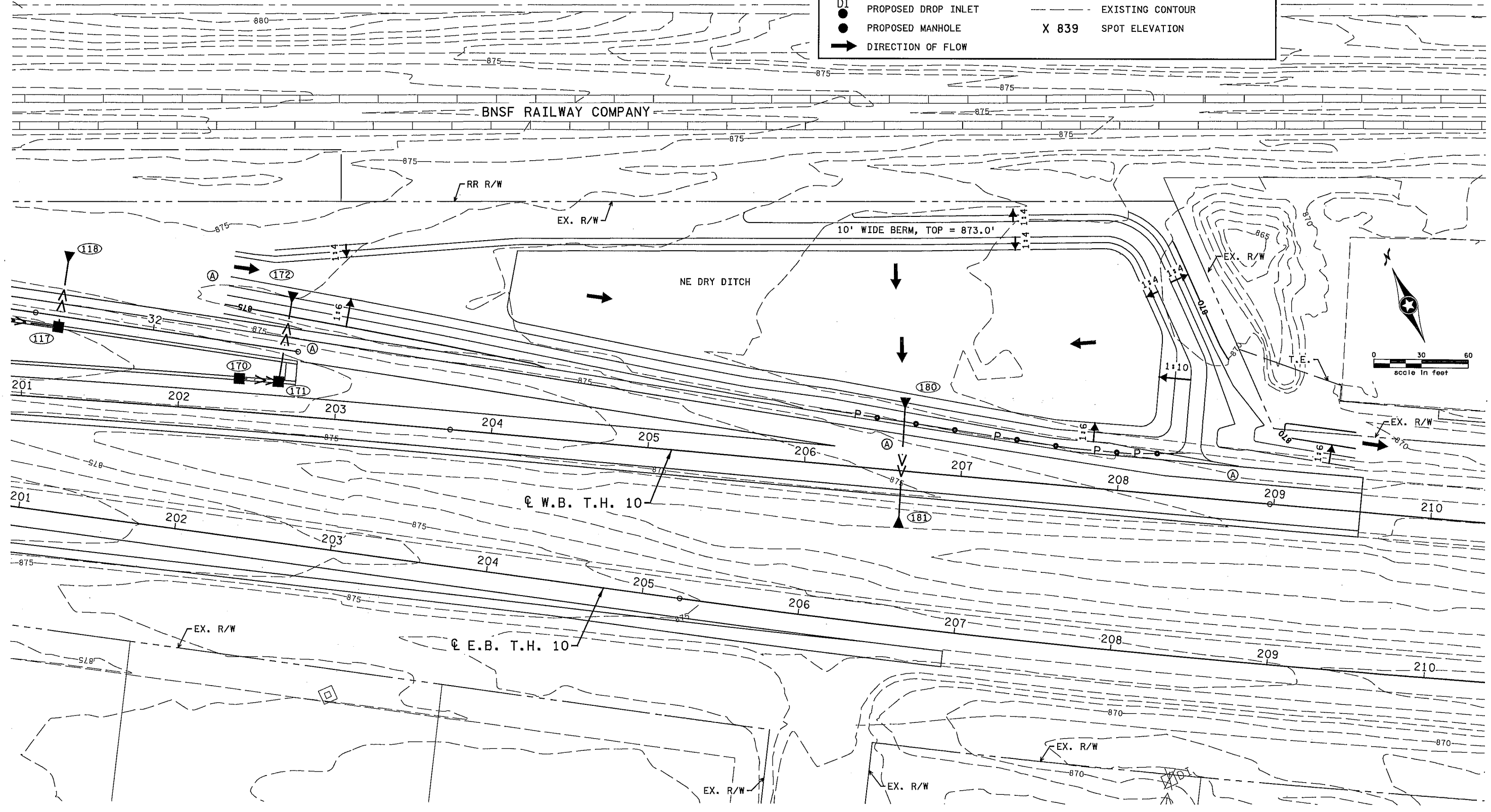
**ENGINEERS  
PLANNERS  
DESIGNERS**

**ANOKA COUNTY**  
 CONTOUR PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

**SHEET**  
 456  
 OF  
 586

SEE SHEET 454 FOR GENERAL NOTES  
 NOTES:  
 (A) SEE CROSS SECTIONS FOR GRADING ADJACENT TO PROPOSED ROADWAYS AND BRIDGES.

LEGEND			
■	PROPOSED CATCH BASIN	— >> —	PROPOSED STORM SEWER/CULVERT
□	EXISTING CATCH BASIN	- - - >> - - -	EXISTING STORM SEWER/CULVERT
▶	PROPOSED APRON	—	PROPOSED CONTOUR
DI	PROPOSED DROP INLET	- - -	EXISTING CONTOUR
●	PROPOSED MANHOLE	X 839	SPOT ELEVATION
→	DIRECTION OF FLOW		



3:25:43 PM  
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NO	DATE	BY	CHK	APPR	REVISION

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: CRAIG J. HASS  
*Craig J. Hass*  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
 002-683-004  
 199-115-002

STATE PROJECT NO.  
 0202-95 (TH 10)

COUNTY PROJECT NO.

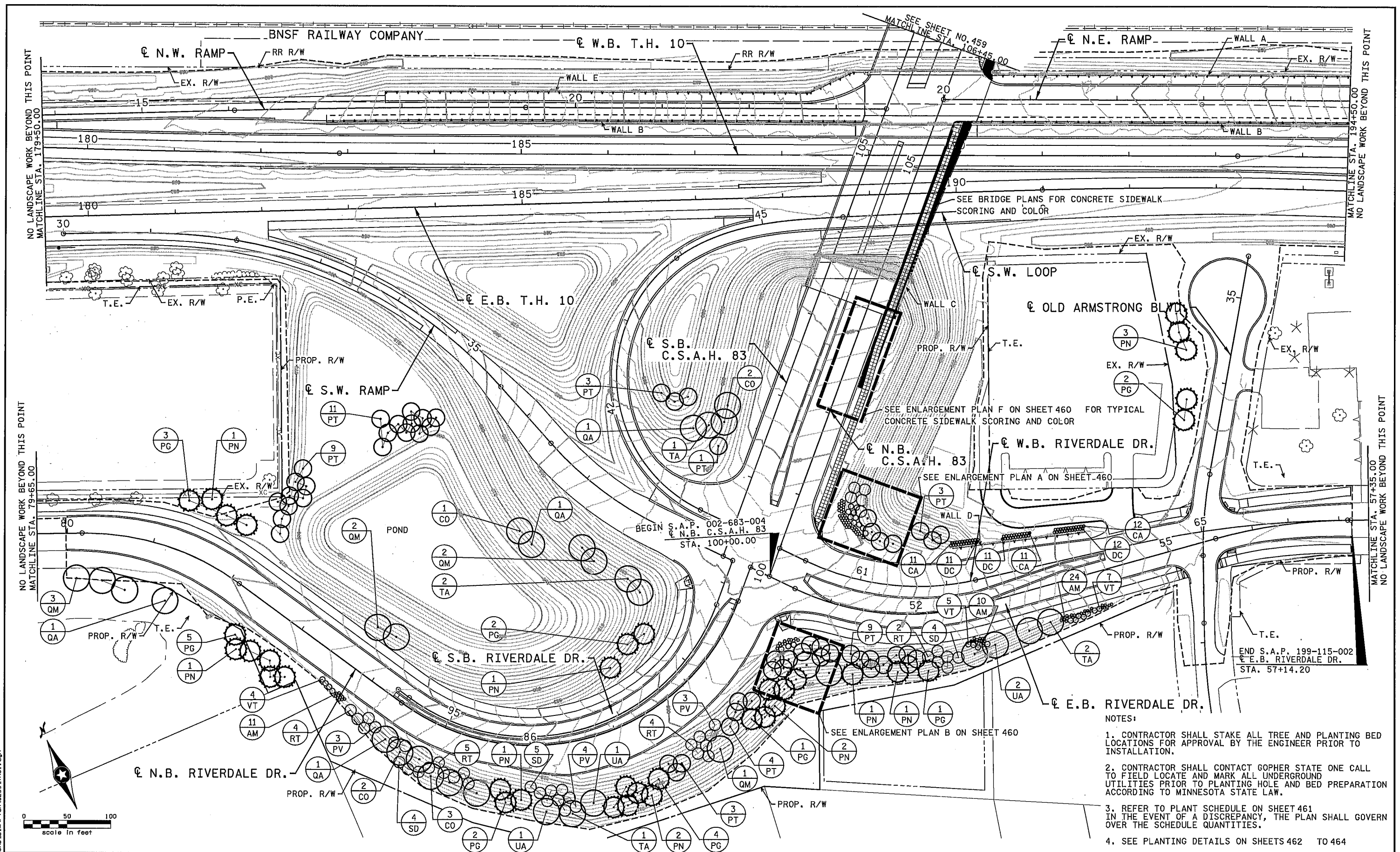
CITY PROJECT NO.

COMM. NO. 0138259


**ENGINEERS  
 PLANNERS  
 DESIGNERS**  
 Consulting Group, Inc.

ANOKA COUNTY  
 CONTOUR PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 457  
 OF  
 586



- NOTES:
1. CONTRACTOR SHALL STAKE ALL TREE AND PLANTING BED LOCATIONS FOR APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION.
  2. CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL TO FIELD LOCATE AND MARK ALL UNDERGROUND UTILITIES PRIOR TO PLANTING HOLE AND BED PREPARATION ACCORDING TO MINNESOTA STATE LAW.
  3. REFER TO PLANT SCHEDULE ON SHEET 461 IN THE EVENT OF A DISCREPANCY, THE PLAN SHALL GOVERN OVER THE SCHEDULE QUANTITIES.
  4. SEE PLANTING DETAILS ON SHEETS 462 TO 464

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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Print Name: MICHAEL J. JISCHKE  
*Michael Jischke*  
 Date: 09-12-14 License # 42191

STATE AID PROJECT NO.  
002-683-004  
199-115-002  
 STATE PROJECT NO.  
0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY  
A. ELIAS  
 DESIGNED BY  
A. ELIAS  
 CHECKED BY  
M. JISCHKE  
 COMM. NO. 0138259

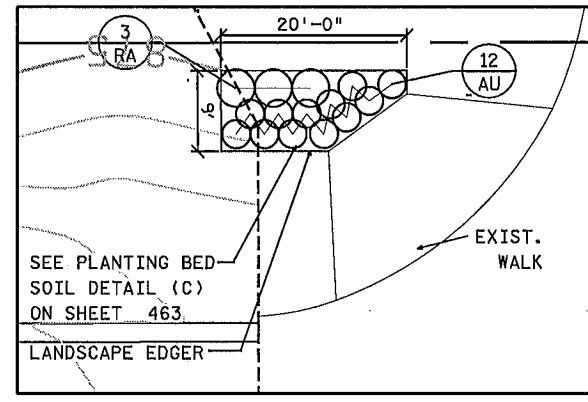
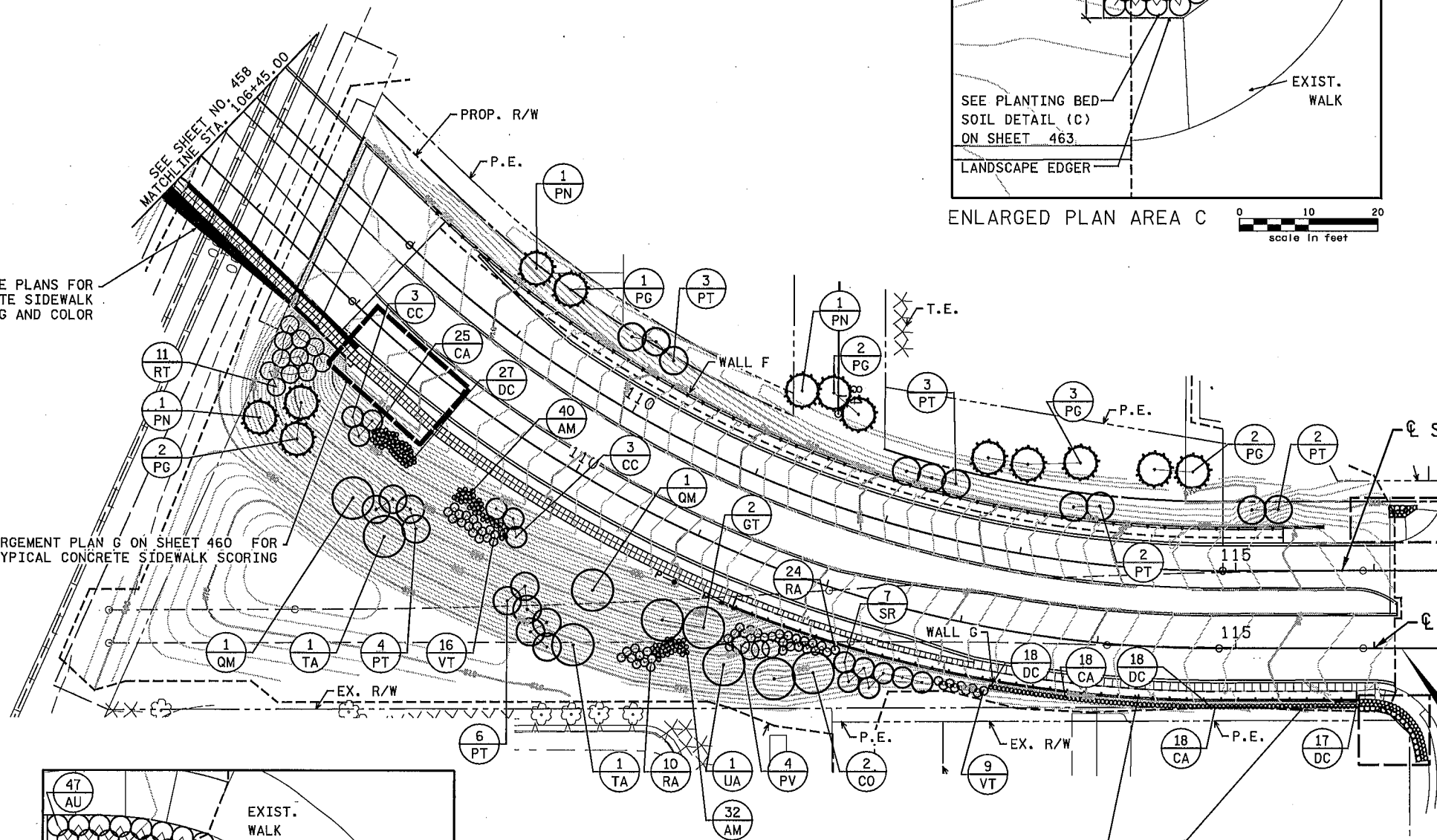


ENGINEERS  
PLANNERS  
DESIGNERS

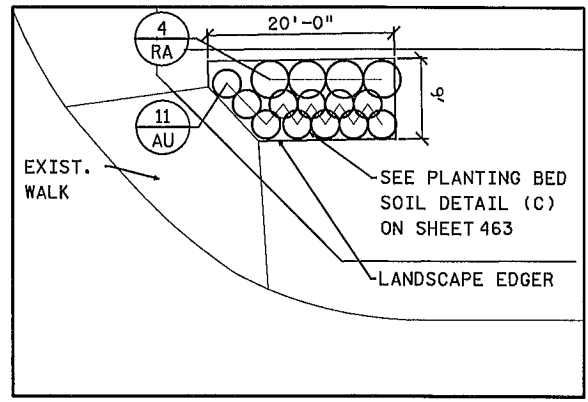
ANOKA COUNTY  
 LANDSCAPE PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

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458  
OF  
586

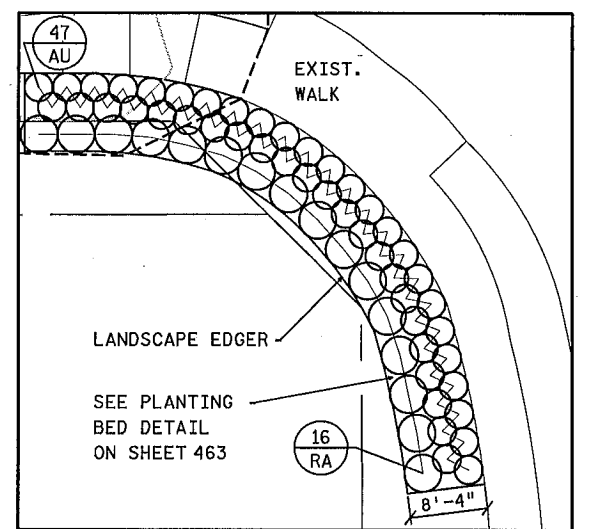




ENLARGED PLAN AREA C  
0 10 20  
scale in feet



ENLARGED PLAN AREA D  
0 10 20  
scale in feet



ENLARGED PLAN AREA E  
0 10 20  
scale in feet

NO ADDITIONAL JOINTING ON MOMENT SLAB EXCEPT AS REQUIRED BY THE RETAINING WALL PLANS

PLANTINGS ALONG THE FACE OF WALL G NORTH OF STATION 113+20 SHALL BE LOCATED WITHIN 4' OF THE WALL TO AVOID THE PROPOSED UNDERGROUND UTILITY TRENCH

- NOTES:
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  2. CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL TO FIELD LOCATE AND MARK ALL UNDERGROUND UTILITIES PRIOR TO PLANTING HOLE AND BED PREPARATION ACCORDING TO MINNESOTA STATE LAW.
  3. REFER TO PLANT SCHEDULE ON SHEET 461 IN THE EVENT OF A DISCREPANCY, THE PLAN SHALL GOVERN OVER THE SCHEDULE QUANTITIES.
  4. SEE PLANTING DETAILS ON SHEETS 462 TO 464

SEE BRIDGE PLANS FOR CONCRETE SIDEWALK SCORING AND COLOR

SEE ENLARGEMENT PLAN G ON SHEET 460 FOR TYPICAL CONCRETE SIDEWALK SCORING

SEE ENLARGED PLAN AREA C THIS SHEET

SEE ENLARGED PLAN AREA D THIS SHEET

SEE ENLARGED PLAN AREA E THIS SHEET

END S.A.P. 002-683-004  
N.B. C.S.A.H. 83  
STA. 116+19.50

SUNWOOD DR.



0 50 100  
scale in feet

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NO	DATE	BY	CKD	APPR	REVISION

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.  
 Pr Int Name: MICHAEL J. JISCHKE  
*Michael Jischke*  
 Date: 09-12-14 License #: 42191

STATE AID PROJECT NO. 002-683-004  
199-115-002  
STATE PROJECT NO. 0202-95 (TH 10)  
COUNTY PROJECT NO.  
CITY PROJECT NO.

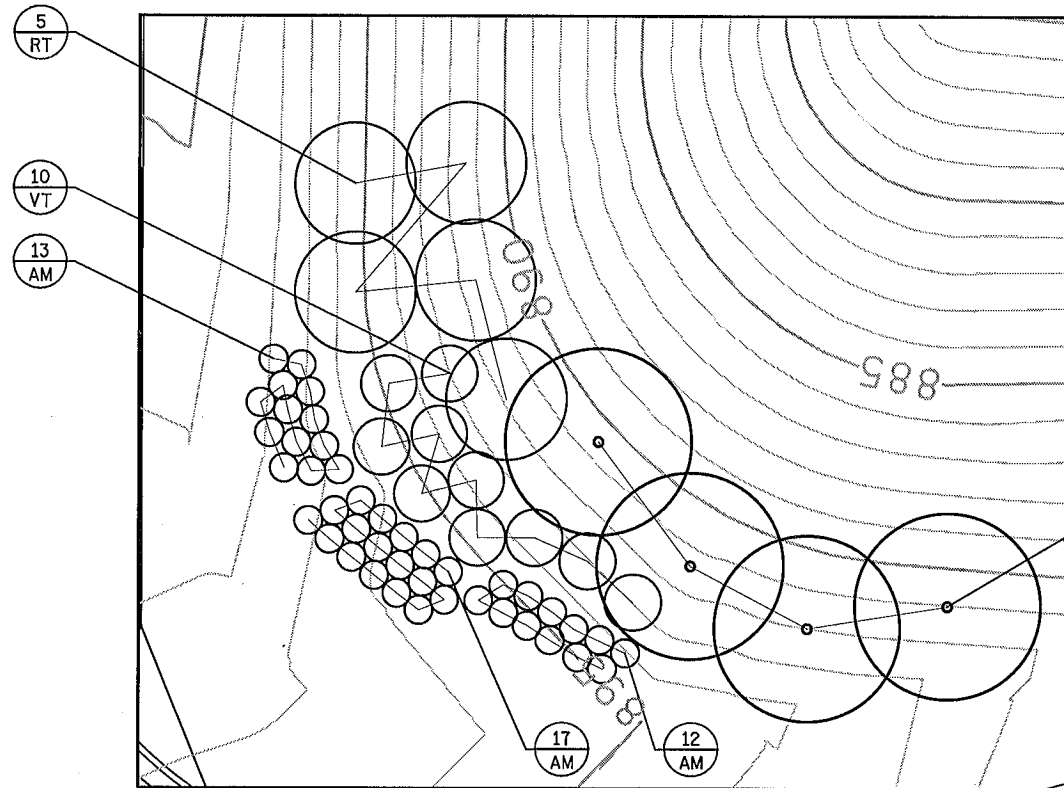
DRAWN BY A. ELIAS  
DESIGNED BY A. ELIAS  
CHECKED BY M. JISCHKE  
COMM. NO. 0138259



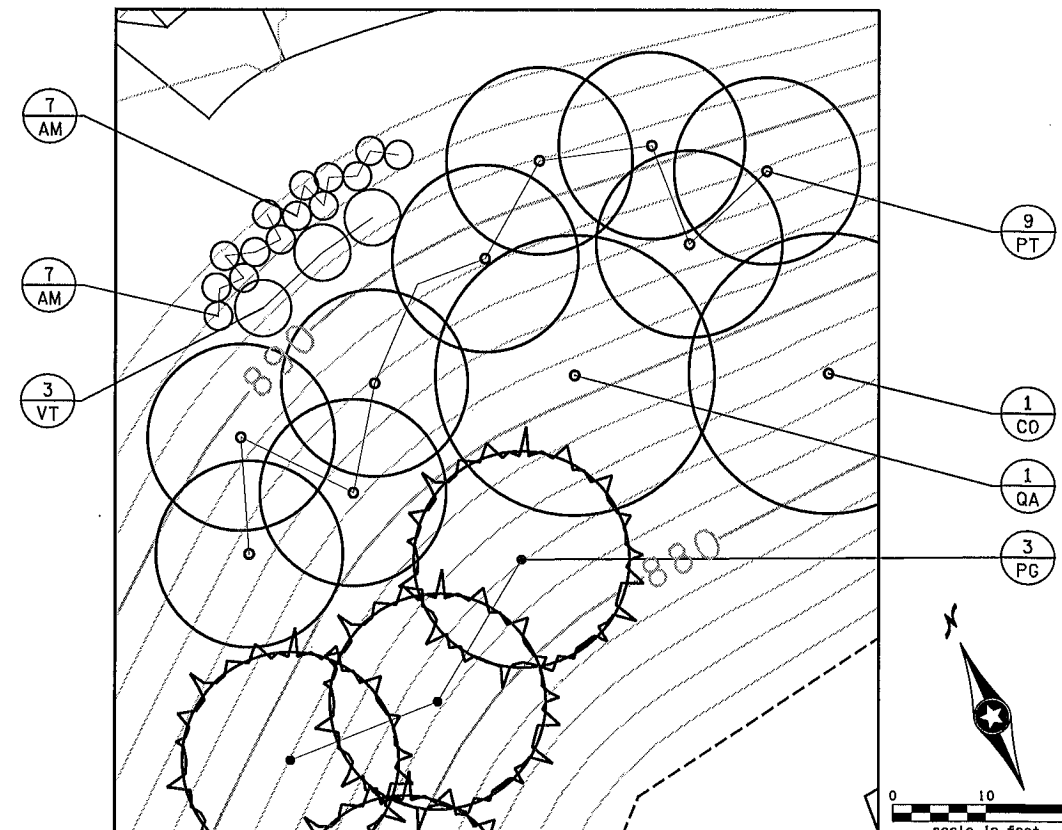
ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
LANDSCAPE PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE

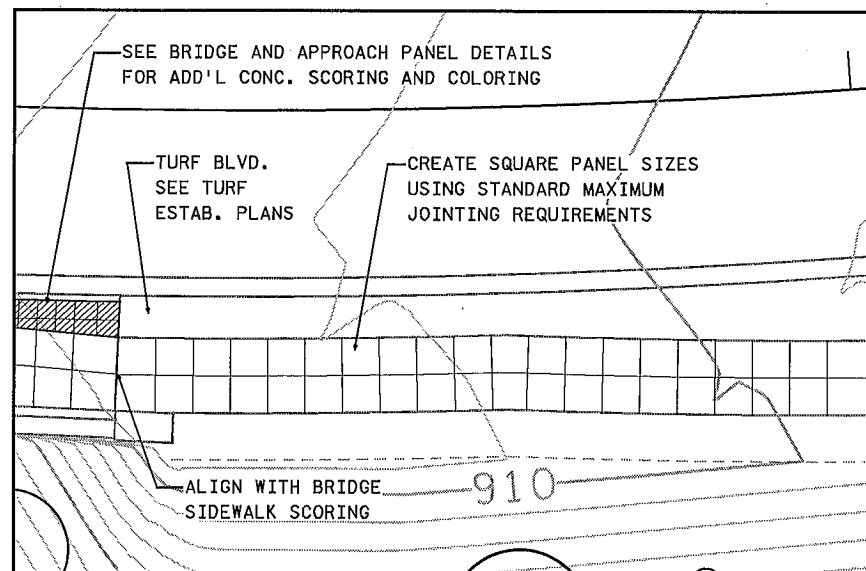
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OF  
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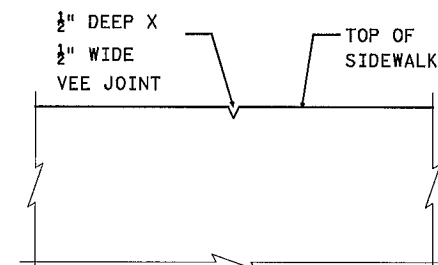
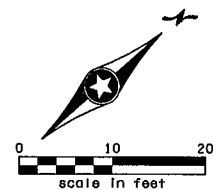
ENLARGED PLAN AREA A



ENLARGED PLAN AREA B



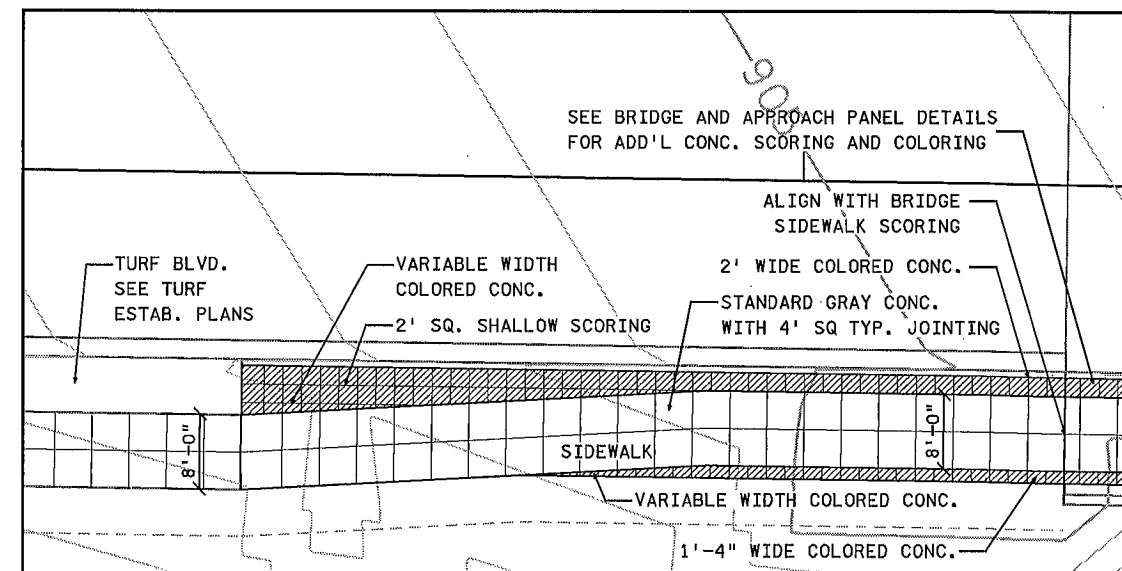
ENLARGED PLAN AREA G  
TYPICAL SIDEWALK NORTH OF TH 10



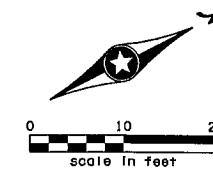
SHALLOW SCORING DETAIL  
FOR COLORED CONC. AREA

NOTES:

1. SEE SPECIAL PROVISIONS FOR MORE DETAIL ON SIDEWALK COLOR SYSTEM AND SIDEWALK SCORING. PAYMENT FOR AESTHETIC SCORING SHALL ONLY BE MADE FOR THE COLORED CONCRETE AREA. ALL OTHER SIDEWALK JOINTING ON THE ROADWAY PLANS SHALL BE INCIDENTAL.
2. FOLLOW MNDOT STANDARD JOINTING REQUIREMENTS EXCEPT IN COLORED CONC. AREAS.



ENLARGED PLAN AREA F  
TYPICAL SIDEWALK SOUTH OF TH 10



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NO	DATE	BY	CHKD	APPR	REVISION

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.  
 Print Name: MICHAEL J. JISCHKE  
*Michael Jischke*  
 Date: 09-12-14 License #: 42191

STATE AID PROJECT NO. 002-683-004 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.

DRAWN BY A. ELIAS  
 DESIGNED BY A. ELIAS  
 CHECKED BY M. JISCHKE  
 COMM. NO. 0138259



ENGINEERS  
 PLANNERS  
 DESIGNERS

ANOKA COUNTY  
 LANDSCAPE PLANS  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
 460  
 OF  
 586



**GENERAL NOTES**

SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS.

REFER TO MnDOT SPECIFICATIONS 2571.3861, THE "2011 INSPECTION AND CONTRACT ADMINISTRATION MANUAL FOR MnDOT LANDSCAPE PROJECTS" FOR GENERAL REQUIREMENTS.

COMPLETE PREPARATORY WORK BEFORE STARTING INITIAL PLANTING OPERATIONS.

ACCEPT ALL PLANT STOCK IN ACCORDANCE WITH MnDOT 3861 PRIOR TO PLANTING.

THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR SOIL CULTIVATION OPERATIONS AS CALLED FOR IN (MnDOT2571.3D2 (STEP 4))

THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR ALL PLANT INSTALLATION OPERATIONS AS CALL FOR IN (MnDOT2571.3F1a)

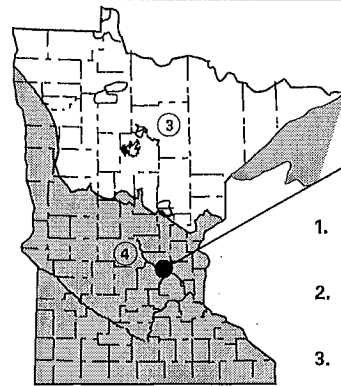
RODENT PROTECTION	SEE SPECIAL PROVISIONS
FERTILIZER	SEE SPECIAL PROVISIONS
COMPOST	MnDOT 3890 TYPE 2 UNLESS OTHERWISE SPECIFIED.
MULCH MATERIAL	MnDOT 3882 TYPE 6 UNLESS OTHERWISE SPECIFIED.
MASS PLANTING BEDS	PREPARE MASS PLANTING BEDS FOR PLANTS PLACED AT 8' OR LESS, UNLESS OTHERWISE SPECIFIED ON SHEETS. PLANT BEDS IN STAGGERED ROWS ON THE PERIMETER FIRST, THEN UNIFORMLY FILL IN WITH REMAINING PLANTS. USE TRIANGULAR SPACING, UNLESS SPECIFIED OTHERWISE. PROVIDE 5' RADIUS CLEAR OF SHRUBS AROUND EACH DECIDUOUS TREE AND 8' CLEAR RADIUS AROUND EACH CONIFER TREE. RADIUS WILL BE MEASURED FROM THE CENTER OF THE TREE TO THE CENTER OF THE SHRUB. NOTIFY ENGINEER OF GROSS PLANT QUANTITY SURPLUS OR DEFICIENCY IMMEDIATELY. MULCH ENTIRE MASS PLANTING BED.

PLANTING PLAN DIMENSIONS  
STATED DIMENSIONS SUPERCEDE SCALING FROM PLAN.

WATERING GUIDELINES (MnDOT 2571.G)

PLANT TYPE	AVERAGE GALLONS OF WATER PER APPLICATION PER PLANT
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 AMOUNTS LISTED ABOVE ARE GUIDELINES, NOT REQUIREMENTS.



**PROJECT LOCATION**

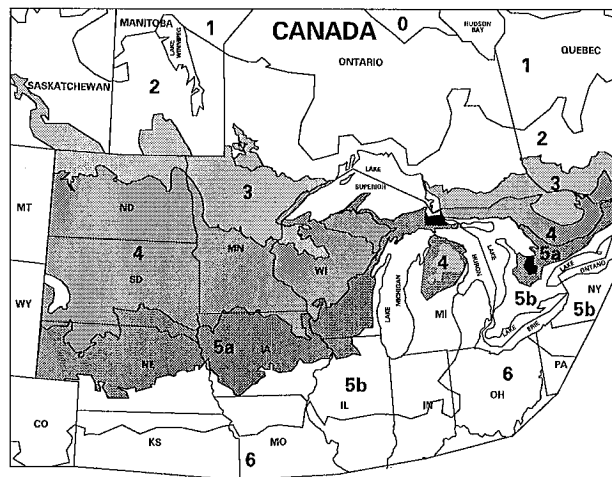
- BARE ROOT PERENNIALS MUST BE INSTALLED IN THE SPRING NO LATER THAN JUNE 1ST OR FOLLOW THE FALL DECIDUOUS PLANTING DATES.
- ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
- FALL PLANTING IS NOT ALLOWED FOR BARE ROOT FORM OF THE FOLLOWING SPECIES: HAWTHORN, DOGWOOD, POPLAR, HACKBERRY, LINDEN, IRONWOOD, HONEYLOCUST, BIRCH, MOUNTAIN ASH, MAPLE, WILLOW, CRABAPPLE, PLUM/CHERRY, OAKS, AND SUMAC.
- ALL REPLACEMENT PLANTS MUST BE INSTALLED DURING THE MONTH OF MAY DURING THE FIRST YEAR OF THE PLANT ESTABLISHMENT PERIOD.

**PLANTING DATES BY ZONE**

KEY	SPRING				FALL	
	DECIDUOUS	CONIFEROUS	PERENNIALS	SEEDLINGS	DECIDUOUS	CONIFEROUS
③	APRIL 21 TO JUNE 1	APRIL 21 TO JUNE 1	MAY 1 TO JUNE 15	APRIL 21 TO JUNE 1	OCT. 1 TO NOV. 1	AUG. 25 TO SEPT. 15
④	APRIL 7 TO JUNE 1	APRIL 7 TO MAY 17	MAY 1 TO JUNE 15	APRIL 7 TO MAY 17	OCT. 10 TO NOV. 15	AUG. 25 TO SEPT. 15

**PLANT INSTALLATION PERIOD**

(MnDOT 2571.3F2)



ZONES	LEGEND	MIN. TEMP.
3	[Shaded]	-34.4° TO -40° F
4	[Shaded]	-28.9° TO -34.4° F
5a	[Shaded]	-26.1° TO -28.9° F

ZONES	LEGEND
0, 1, 2, 5b and 6	[Unshaded]

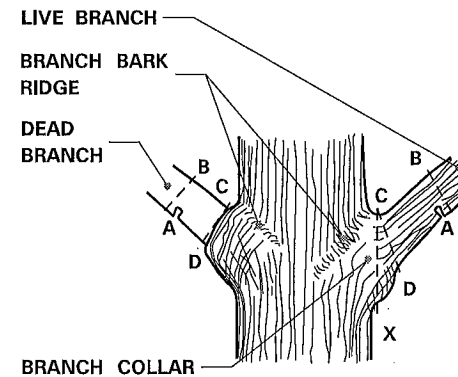
FOR ALL PLANT STOCK, DOCUMENT ACCEPTABILITY FOR HARDINESS IN THE MINNESOTA ZONE WHERE THE PROJECT SITE IS LOCATED, AS FOLLOWS:

- A. PLANT STOCK CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN.
- OR
- B. PLANT STOCK, GROWN OUTSIDE THE ACCEPTABLE GROWING RANGE LIMITS, HAVING SEED SOURCE OR ROOT AND GRAFT STOCK ORIGINATING FROM THE ACCEPTABLE LIMITS SHOWN.

**ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS**

SOURCE: USDA PLANT HARDINESS ZONE MAP

(MnDOT 3861.2C)

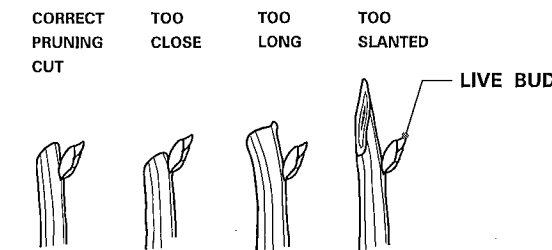


**BRANCHES PRUNED AT TRUNK**  
(SHIGO METHOD)

- STEPS TO PRUNING WITH PRUNING SAW:
- CUT PART WAY THROUGH THE BRANCH AT POINT A.
  - CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
  - AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

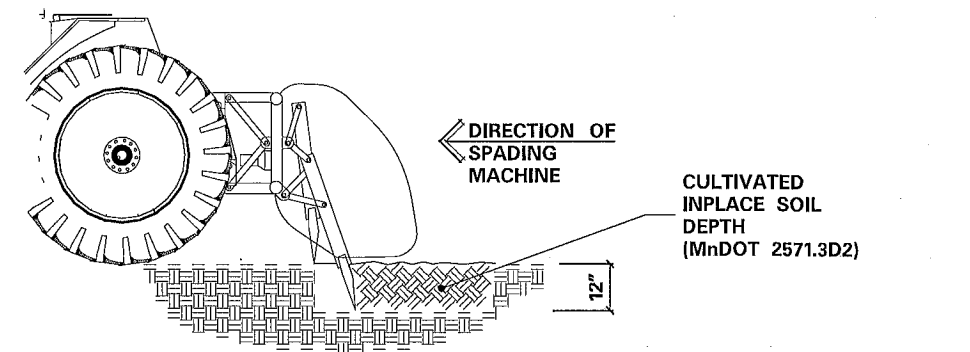


- PRUNING NOTES:
- PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
  - THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
  - AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
  - IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

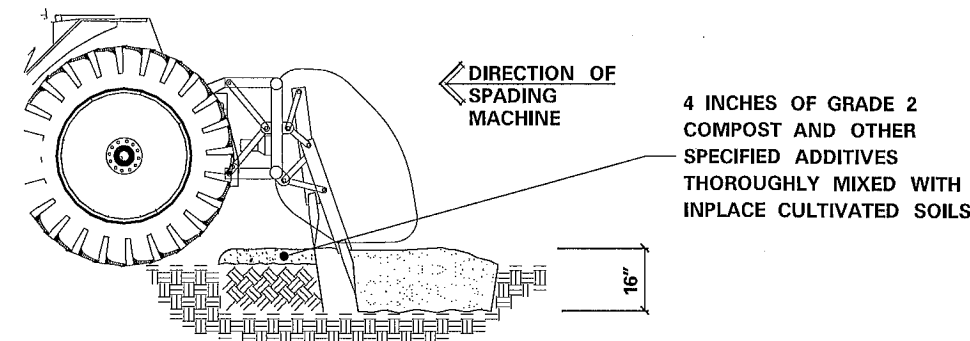
**BRANCHES PRUNED TO LIVE BUD**

**PRUNING**

(MnDOT 2571.3K2a9 and 2571.3E1)



**PRIMARY TILLAGE - PASS 1**



**INCORPORATION TILLAGE - PASS 2**

**PLANTING SOIL**

NOTE: DOES NOT APPLY TO PLANTING BEDS AT SUNWOOD DRIVE INTERSECTION

(MnDOT 2571.3D2)

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NO	DATE	BY	CHKD	APPR	REVISION

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.

Pr Int Name: MICHAEL J. JISCHKE

*Michael J. Jischke*

Date: 09-12-14 License #: 42191

STATE AID PROJECT NO. 002-683-004  
199-115-002

DESIGNED BY A. ELIAS

STATE PROJECT NO. 0202-95 (TH 10)

CHECKED BY M. JISCHKE

COUNTY PROJECT NO.

COMM. NO. 0138259

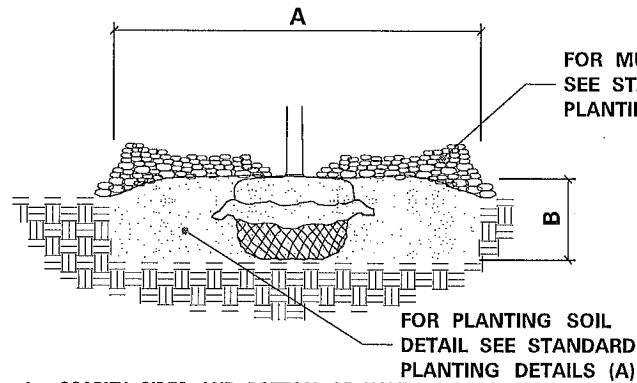


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
LANDSCAPE PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
DETAILS

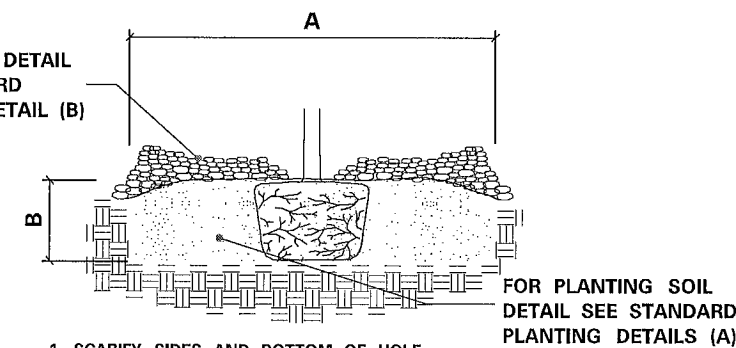
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462  
OF  
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PLANTING HOLE DIMENSIONS			
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLAIR TO BOTTOM OF SOIL BALL.			
PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
DECIDUOUS & ORNAMENTAL TREES	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"
	4" B.B.	42"	11"
	5" B.B.	48"	12"
	6" B.B.	52"	14"
	8" B.B.	66"	16"
	10" B.B.	66"	16"
	12" B.B.	48"	16"
	1" B.B.	54"	14"
	1.25" B.B.	56"	15"
	1.5" B.B.	61"	15"
	1.75" B.B.	66"	16"
	2" B.B.	72"	16"
	2.5" B.B.	84"	19"
3" B.B.	96"	20"	
3.5" B.B.	114"	23"	
4" B.B.	126"	25"	
DECIDUOUS SHRUBS, ROSES AND PERENNIALS	12" B.R.	24"	7"
	15" B.R.	28"	8"
	18" B.R.	30"	8"
	2" B.R.	33"	9"
	3" B.R.	42"	11"
	4" B.B.	48"	12"
PERENNIAL HOLE DEPTH AND WIDTH SHALL BE BASED UPON ON-CENTER SPACING IN A CONTINUOUS TRENCH.	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"	



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4. SLIT REMAINING TREATED BURLAP AT 6" INTERVALS.
5. BACKFILL TO WITHIN APPROXIMATELY 12" OF THE TOP OF THE ROOTBALL, THEN WATER PLANT.
6. REMOVE THE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/3 OF THE BALL. REMOVE ALL TWINE. REMOVE OR CORRECT STEM GIRDLING ROOTS.
7. PLUMB AND BACKFILL WITH PLANTING SOIL.
8. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
9. BACK FILL VOIDS AND WATER A SECOND TIME.
10. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

**BALLED & BURLAPPED STOCK**



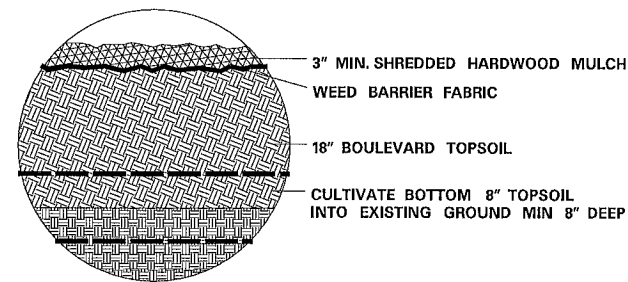
1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
3. REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS. REMOVE OR CORRECT STEM GIRDLING ROOTS.
4. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE TOP OF THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
5. PLUMB AND BACKFILL WITH PLANTING SOIL.
6. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7. BACK FILL VOIDS AND WATER A SECOND TIME.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

**CONTAINER STOCK**

PLANTING HOLE DIMENSIONS			
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLAIR TO BOTTOM OF SOIL BALL.			
PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES	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"
	12" B.B.	114"	24"
CONIFEROUS SHRUBS (UPRIGHT)	18" B.B.	24"	7"
	3" B.B.	48"	12"
CONIFEROUS SHRUBS (SPREADING)	18" SPR B.B.	30"	8"
	2" SPR B.B.	36"	9"
CONTAINER GROWN PLANTS	CELLPACKS / PLUGS	6"	2.5"
	2.25" CONT.	7"	3"
	3.5" CONT.	10"	3"
	4" CONT.	11"	4"
	4.5" CONT.	13"	4"
	6" Q1 CONT.	15"	5.5"
	1# CONT.	18"	6"
	2# CONT.	23"	7.5"
	3# CONT.	25"	8.5"
	5# CONT.	30"	11"
	7# CONT.	37"	11"
	15# CONT.	44"	14"
SEEDLINGS	10# CONT.	45"	15"
	20# CONT.	60"	16"
	25# CONT.	72"	17"
	6" SEEDLING	15"	14"
	9" SEEDLING	18"	14"
	12" SEEDLING	23"	16"
VINES	18" SEEDLING	30"	16"
	2" SEEDLING	36"	18"
	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"	

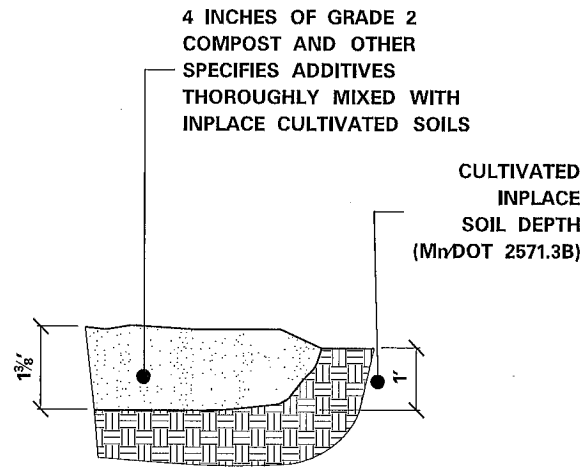
**INSTALLATION OF PLANTS**

(MnDOT 2571.3F)



**PLANTING BED SOIL DETAIL (C)**

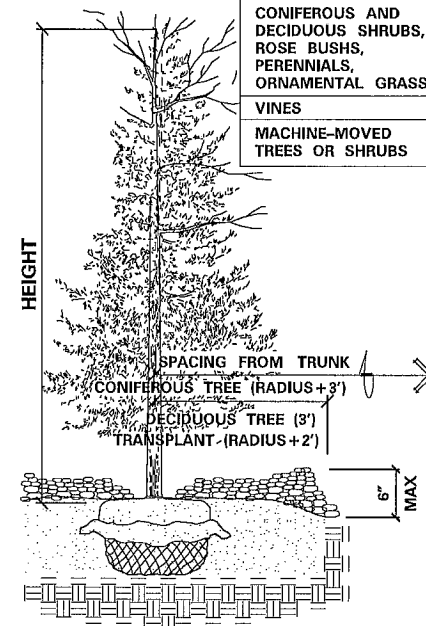
USE ONLY FOR PLANTING BEDS AT SUNWOOD DR. INTERSECTION



**PLANTING SOIL DETAIL (A)**

(MnDOT 2571.D2)

MULCH AREA CALCULATOR	
TYPE OF PLANT	SQ. FT. PER PLANT
CONIFEROUS TREES	$\left[\left(\frac{3}{5} \times \text{HEIGHT}\right) + 3\right]^2 \times \uparrow$
DECIDUOUS AND ORNAMENTAL TREES	$3^2 \times \uparrow$
CONIFEROUS AND DECIDUOUS SHRUBS, ROSE BUSHES, PERENNIALS, ORNAMENTAL GRASS	SPACING x SPACING
VINES	SPACING x 2
MACHINE-MOVED TREES OR SHRUBS	$\left[\left(\frac{\text{SPADE DIAMETER}}{2}\right) + 1\right]^2 \times \uparrow$
$\uparrow = 3.1416$	



1. PULL MULCH BACK NO LESS THAN 3" AND NO MORE THAN 6" FROM TRUNK AND SHRUBS AT THE TRUNK OR MAIN STEM.
2. SUBSIDING OR DETERIORATING MULCH IS ACCEPTABLE THROUGHOUT THE ESTABLISHED PERIOD IF THE MULCH DEPTH IS MAINTAINED AT A MINIMUM 3" DEPTH.
3. ADD MULCH WHEN BELOW THE 3" MINIMUM DEPTH, DO NOT EXCEED THE 6" MAXIMUM DEPTH.
4. MULCH CONTAMINATED WITH SOIL MUST BE REMOVED AND REPLACED.

**MULCH PLACEMENT DETAIL (B)**

(MnDOT 2571.3H)

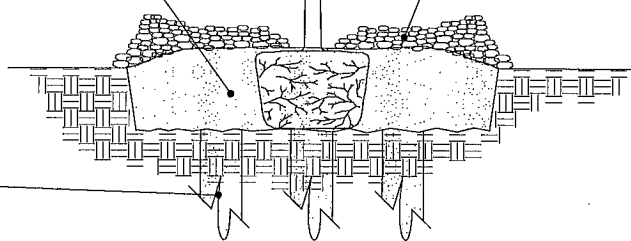
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota. Pr Int Name: MICHAEL J. JISCHKE  Date: 09-12-14 License #: 42191					STATE AID PROJECT NO. 002-683-004 199-115-002 STATE PROJECT NO. 0202-95 (TH 10) COUNTY PROJECT NO. CITY PROJECT NO.	DRAWN BY A. ELIAS DESIGNED BY A. ELIAS CHECKED BY M. JISCHKE COMM. NO. 0138259	ENGINEERS PLANNERS DESIGNERS	ANOKA COUNTY LANDSCAPE PLANS T.H. 10 / C.S.A.H. 83 INTERCHANGE DETAILS	SHEET 463 OF 586	
NO	DATE	BY	CKD	APPR	REVISION					
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FOR PLANTING SOIL  
DETAIL SEE STANDARD  
PLANTING DETAILS (A)

FOR MULCH DETAIL  
SEE STANDARD  
PLANTING DETAIL (B)

8" AUGER HOLES

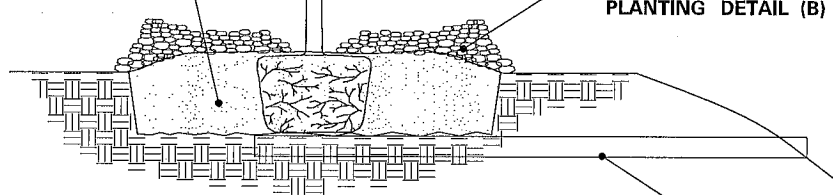


- EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF ROOT MASS 1"-3" HIGHER THAN FINISHED GRADE.
- AUGER 8" DIAMETER HOLES ENTIRELY THROUGH IMPERVIOUS OR POORLY DRAINED HARD PAN SOIL LAYER TO ADEQUATELY DRAIN SUBSOIL.
- TEST FOR POSITIVE DRAINAGE. RE-AUGER AN ADDITIONAL 8" IF NECESSARY FOR POSITIVE DRAINAGE.
- THOROUGHLY BACKFILL AUGER HOLES WITH A UNIFORM INCORPORATED MIXTURE OF 50% SAND AND 50% INPLACE SOIL.
- COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (B).

**INSTALL GRANULAR FILTER**

FOR PLANTING SOIL  
DETAIL SEE STANDARD  
PLANTING DETAILS (A)

FOR MULCH DETAIL  
SEE STANDARD  
PLANTING DETAIL (B)

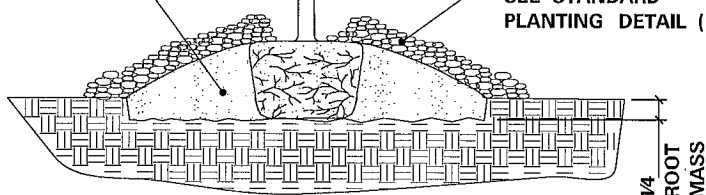


- EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF THE ROOT MASS 1"-3" HIGHER THAN FINISHED GRADE.
- INSTALL 4" MINIMUM DIAMETER DRAIN TILE DAYLIGHTING AT A LOWER GRADE.
- COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (B).

**INSTALL TILE DRAINAGE**

FOR PLANTING SOIL  
DETAIL SEE STANDARD  
PLANTING DETAILS (A)

FOR MULCH DETAIL  
SEE STANDARD  
PLANTING DETAIL (B)



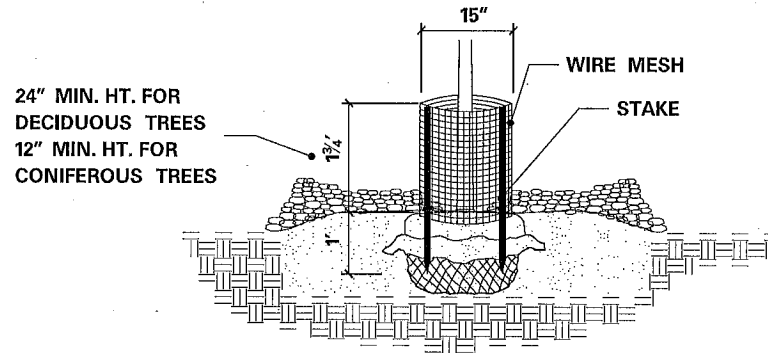
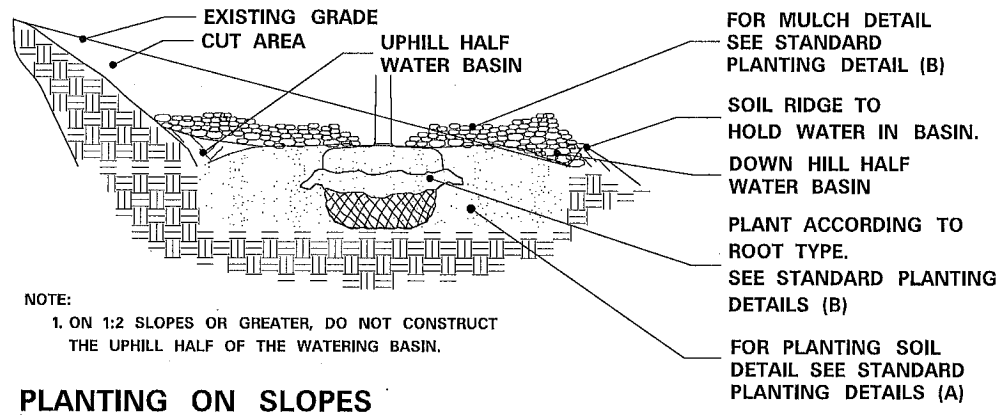
- EXCAVATE HOLE OR BED 1/4 THE DEPTH OF THE ROOT MASS.
- SET ROOT MASS IN HOLE.
- CONSTRUCT BERM WITH PLANTING SOIL. EXTEND THE BERM BASE TO A WIDTH OF 3 TIMES THE BERM HEIGHT.
- COMPLETE PLANTING ACCORDING ROOT TYPE. SEE STANDARD PLANTING DETAILS (B).

**INSTALL MINI-BERM**

- NOTE:
- THE NEED FOR USING PLANTING DETAILS FOR POORLY DRAINED SOILS AND WHICH TYPE TO USE ARE DETERMINED BY THE CONTRACTOR, SUBJECT TO ENGINEER APPROVAL.

**PLANTING DETAIL FOR POORLY DRAINED SOILS**

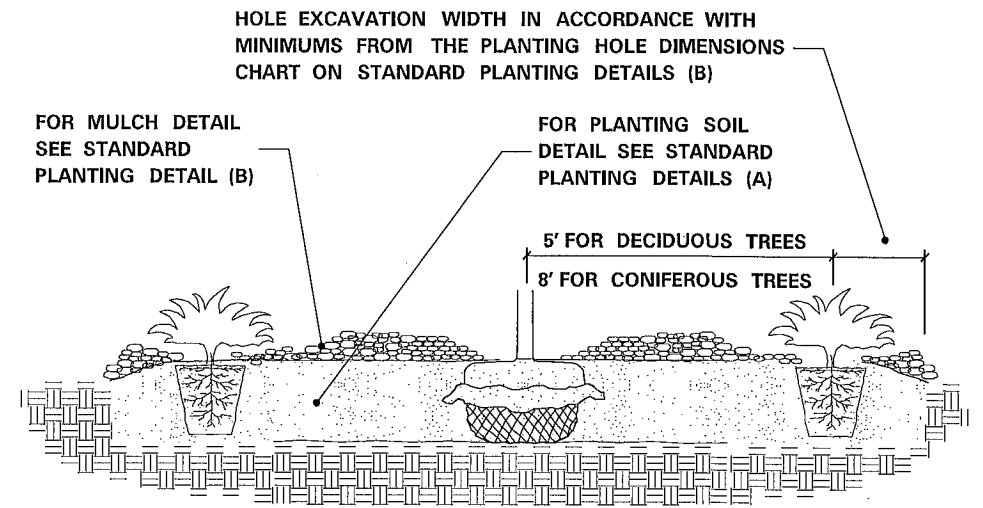
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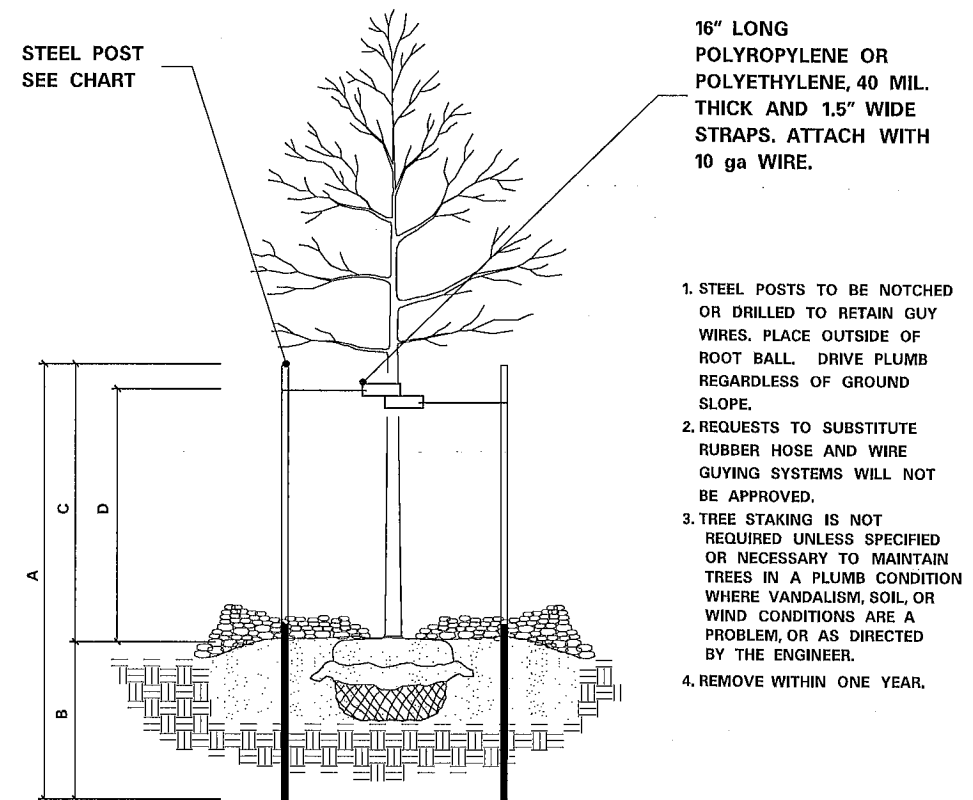
- FORM A DOUBLE-LAYERED CYLINDER USING 0.25" GRID GALVANIZED WELDED WIRE MESH (HARDWARE CLOTH). OVERLAP THE CUT END 2".
- DRIVE TWO 1" x 1" OPPOSING HEARTWOOD WHITE OAK STAKES INTO THE GROUND, 7" FROM THE CENTER OF THE TREE STEM.
- SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER, SCREWS AND WASHERS OR CABLE-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.
  - CABLE-TIES SHALL BE NYLON, AT LEAST 8" LONG AND BETWEEN 75LB TO 120LB TENSILE STRENGTH.
- EMBED 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. STAKE WILL BE 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 AND LARCH BRANCHES MAY HAVE TO BE REMOVED TO PERMIT INSTALLATION OF 12" MIN. HEIGHT RODENT GUARDS.
- INSTALL ON ALL DECIDUOUS, PINE AND LARCH TREES, DO NOT PLACE ON SPRUCE TREES.

**RODENT PROTECTION**

(MnDOT 2571.3I2)



**PLANT SPACING IN MASS BEDS**



**STEEL POST SIZING**

CALIPER	STEEL POST TYPE	A	B	C	D
LESS THEN 4 INCHES	ROLLED STEEL FENCE POST (MnDOT 3403) OR APPROVED EQUAL.	7'-0"	3'-0" MIN.	4'-0"	3'-0"
GREATER THEN 4 INCHES	10', 2.2 LB, FLANGED CHANNEL STEEL SIGN POST (MnDOT 3401) OR APPROVED EQUAL.	10'-0"	4'-0" MIN.	6'-0"	5'-0"

**STAKING AND GUYING**

(MnDOT 2571.3I1)

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NO	DATE	BY	CHKD	APPR	REVISION

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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.

Pr Int Name: MICHAEL J. JISCHKE

*Michael Jischke*

Date: 09-12-14 License #: 42191

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
A. ELIAS

DESIGNED BY  
A. ELIAS

CHECKED BY  
M. JISCHKE

COMM. NO. 0138259

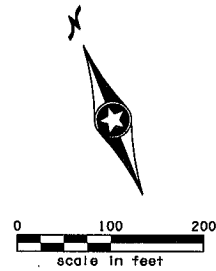


ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
LANDSCAPE PLANS  
T.H. 10 / C.S.A.H. 83 INTERCHANGE  
DETAILS

SHEET  
464  
OF  
586



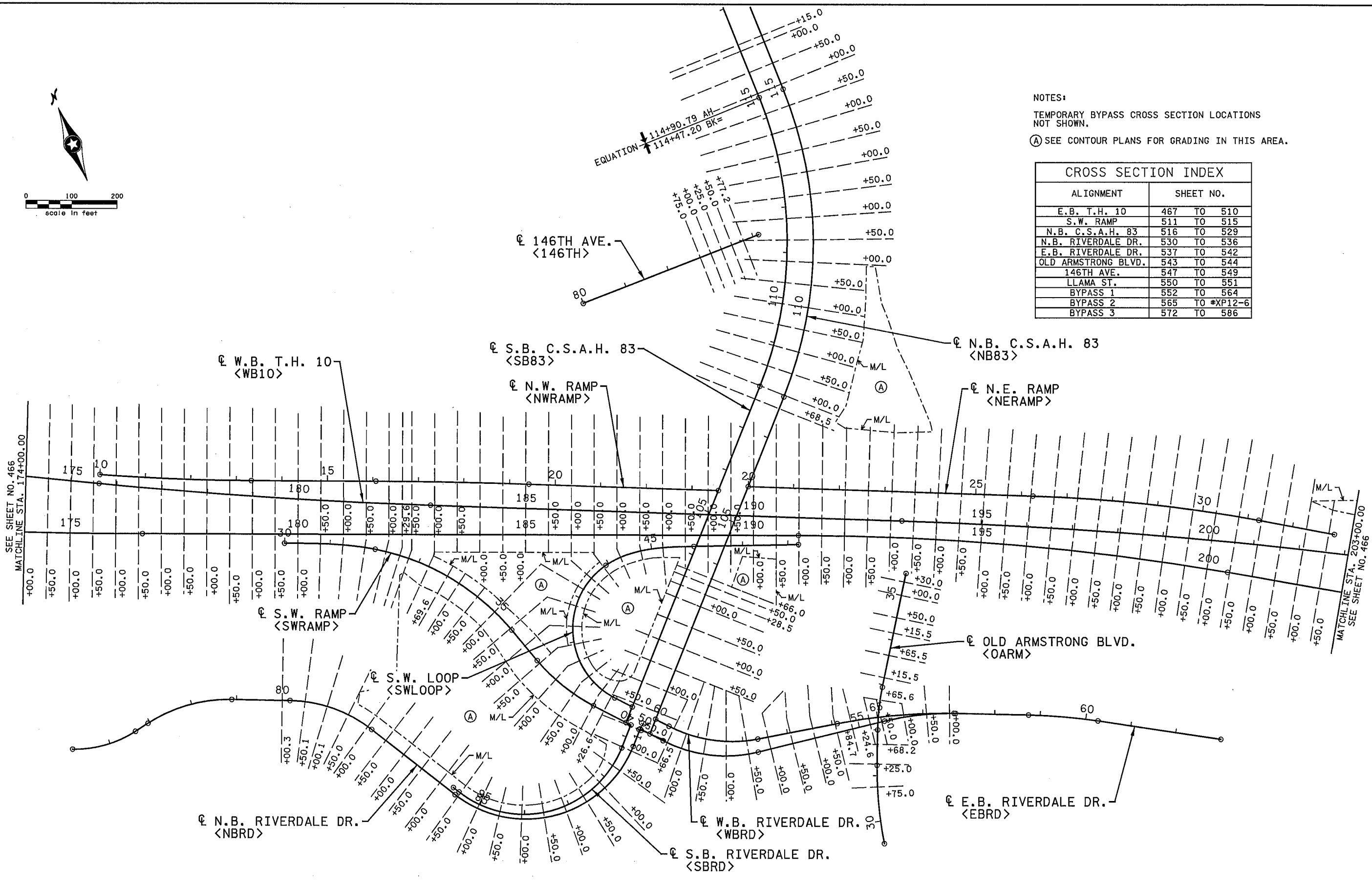


NOTES:

TEMPORARY BYPASS CROSS SECTION LOCATIONS NOT SHOWN.

(A) SEE CONTOUR PLANS FOR GRADING IN THIS AREA.

CROSS SECTION INDEX	
ALIGNMENT	SHEET NO.
E.B. T.H. 10	467 TO 510
S.W. RAMP	511 TO 515
N.B. C.S.A.H. 83	516 TO 529
N.B. RIVERDALE DR.	530 TO 536
E.B. RIVERDALE DR.	537 TO 542
OLD ARMSTRONG BLVD.	543 TO 544
146TH AVE.	547 TO 549
LLAMA ST.	550 TO 551
BYPASS 1	552 TO 564
BYPASS 2	565 TO *XP12-6
BYPASS 3	572 TO 586



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NO	DATE	BY	CHKD	APPR	REVISION

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Print Name: CRAIG J. HASS

*Craig J. Hass*

Date: 09-12-14 License #: 45039

STATE AID PROJECT NO.  
002-683-004  
199-115-002

STATE PROJECT NO.  
0202-95 (TH 10)

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY  
S. MARTINS

DESIGNED BY  
D. SYMANIETZ

CHECKED BY  
C. HASS

COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

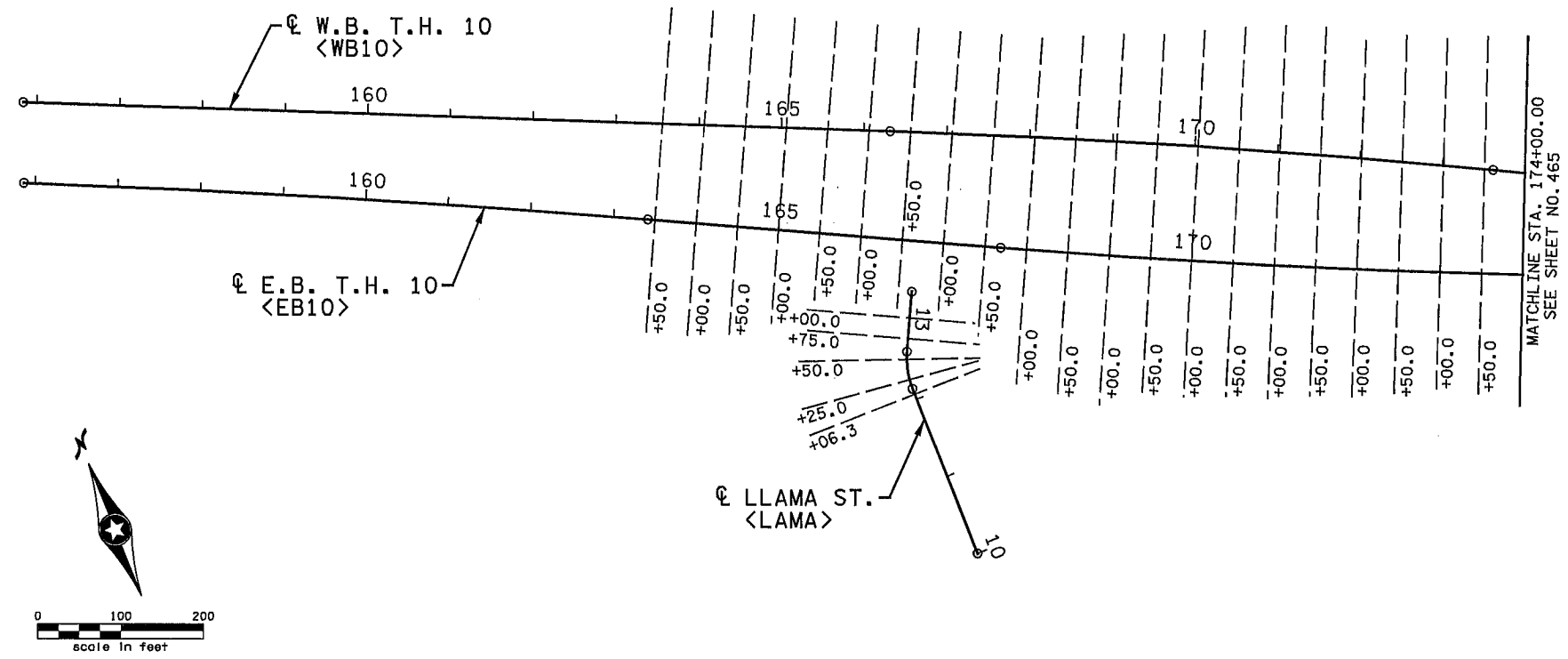
ANOKA COUNTY

CROSS SECTION MATCH LINE LAYOUT

T.H. 10 / C.S.A.H. 83 INTERCHANGE

SHEET  
465  
OF  
586

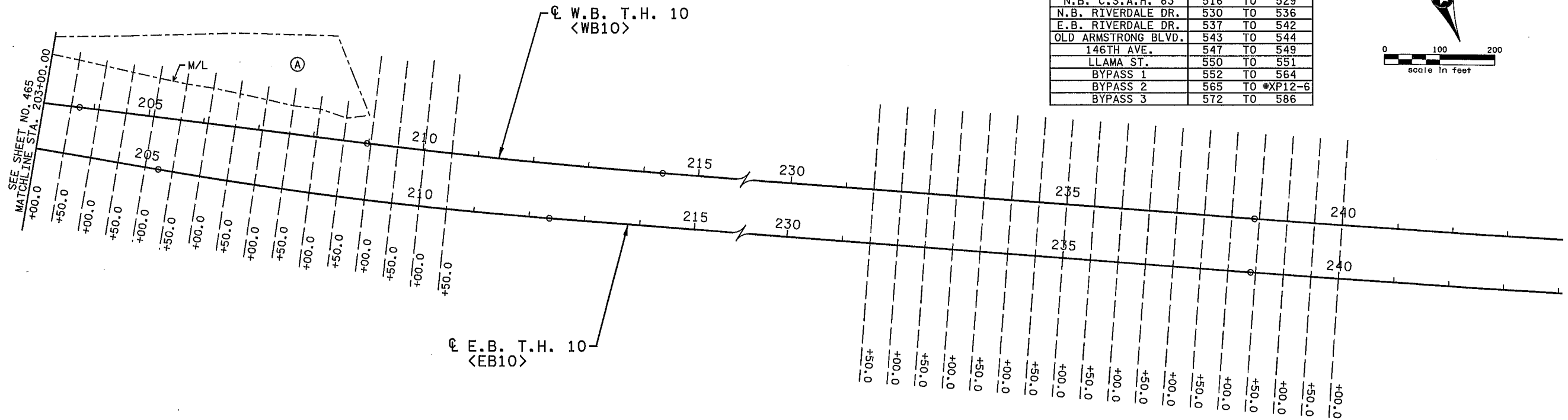




MATCHLINE STA. 174+00.00  
SEE SHEET NO. 465

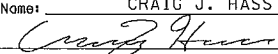
NOTES:  
TEMPORARY BYPASS CROSS SECTION LOCATIONS NOT SHOWN.  
(A) SEE CONTOUR PLANS FOR GRADING IN THIS AREA.

CROSS SECTION INDEX	
ALIGNMENT	SHEET NO.
E.B. T.H. 10	467 TO 510
S.W. RAMP	511 TO 515
N.B. C.S.A.H. 83	516 TO 529
N.B. RIVERDALE DR.	530 TO 536
E.B. RIVERDALE DR.	537 TO 542
OLD ARMSTRONG BLVD.	543 TO 544
146TH AVE.	547 TO 549
LLAMA ST.	550 TO 551
BYPASS 1	552 TO 564
BYPASS 2	565 TO #XP12-6
BYPASS 3	572 TO 586



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 Print Name: CRAIG J. HASS  
  
 Date: 09-12-14 License #: 45039

STATE AID PROJECT NO. 002-683-004  
 199-115-002  
 STATE PROJECT NO. 0202-95 (TH 10)  
 COUNTY PROJECT NO.  
 CITY PROJECT NO.  
 DRAWN BY S. MARINS  
 DESIGNED BY D. SYMANIETZ  
 CHECKED BY C. HASS  
 COMM. NO. 0138259



ENGINEERS  
PLANNERS  
DESIGNERS

ANOKA COUNTY  
 CROSS SECTION MATCH LINE LAYOUT  
 T.H. 10 / C.S.A.H. 83 INTERCHANGE

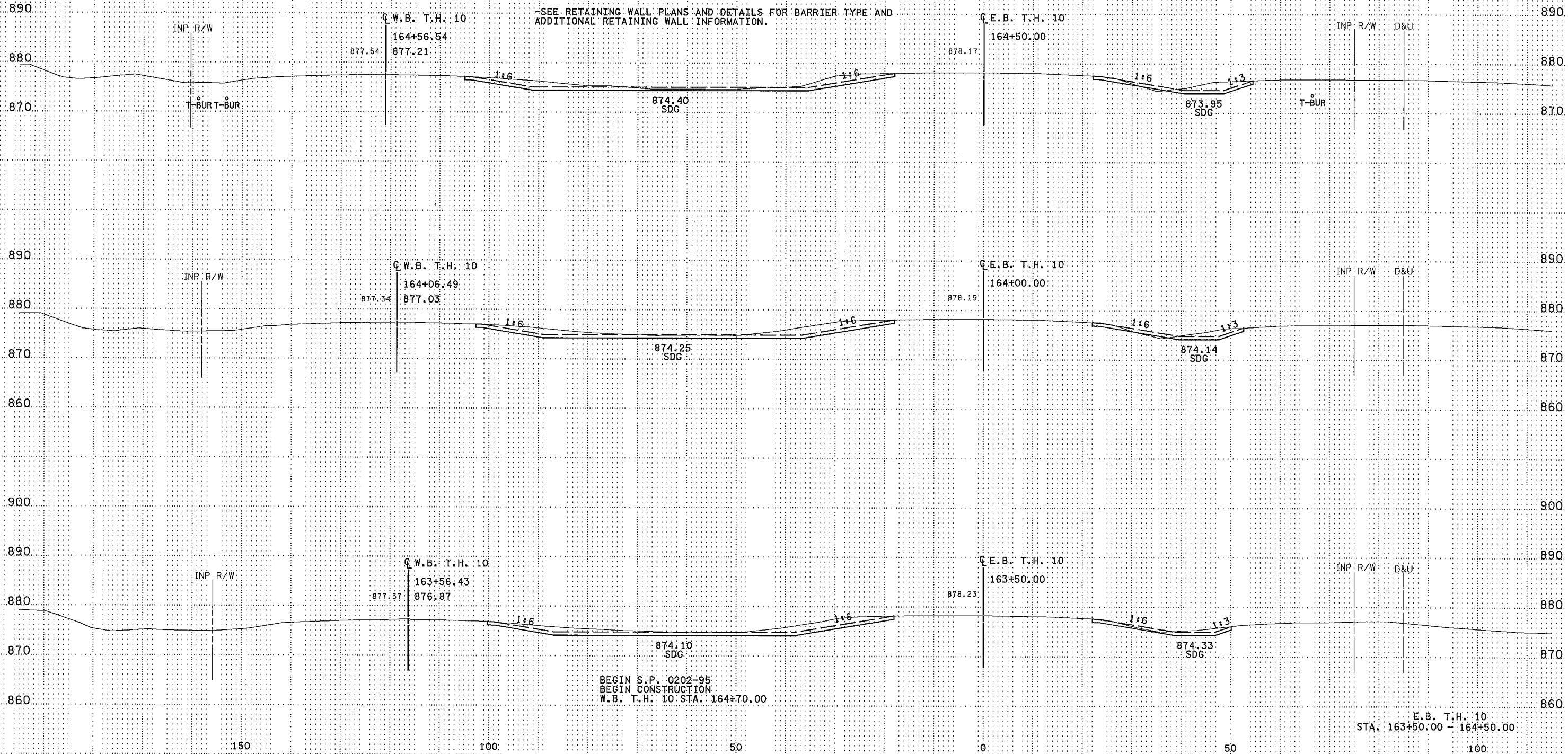
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OF  
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GENERAL CROSS SECTION NOTES:

- SPECIAL DITCH GRADES ARE IDENTIFIED ON THE CROSS SECTIONS AND PROFILES.
- DITCH GRADES AND TOP OF DITCH BLOCK ELEVATIONS ARE TO THE BOTTOM OF SLOPE DRESSING.
- FOR ADDITIONAL SLOPE OR DITCH DETAILS, SEE TYPICAL SECTIONS.
- UTILITY AND DRAINAGE STRUCTURES SHOWN ON THE CROSS SECTIONS ARE IN PLACE UNLESS NOTED OTHERWISE.
- SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED. SOME NEW UTILITIES MAY HAVE BEEN RECENTLY CONSTRUCTED AND MAY NOT BE SHOWN.
- SEE IN PLACE TOPOGRAPHY AND UTILITY PLANS FOR OVERHEAD UTILITY LOCATIONS.
- SEE CONTOUR PLANS FOR ADDITIONAL GRADING NOT SHOWN ON CROSS SECTIONS.
- PROFILE GRADE IS NOT ALWAYS CARRIED ON CENTERLINE. SEE PROFILES AND TYPICAL SECTIONS FOR PROFILE GRADE LOCATIONS.
- SEE RETAINING WALL PLANS AND DETAILS FOR BARRIER TYPE AND ADDITIONAL RETAINING WALL INFORMATION.

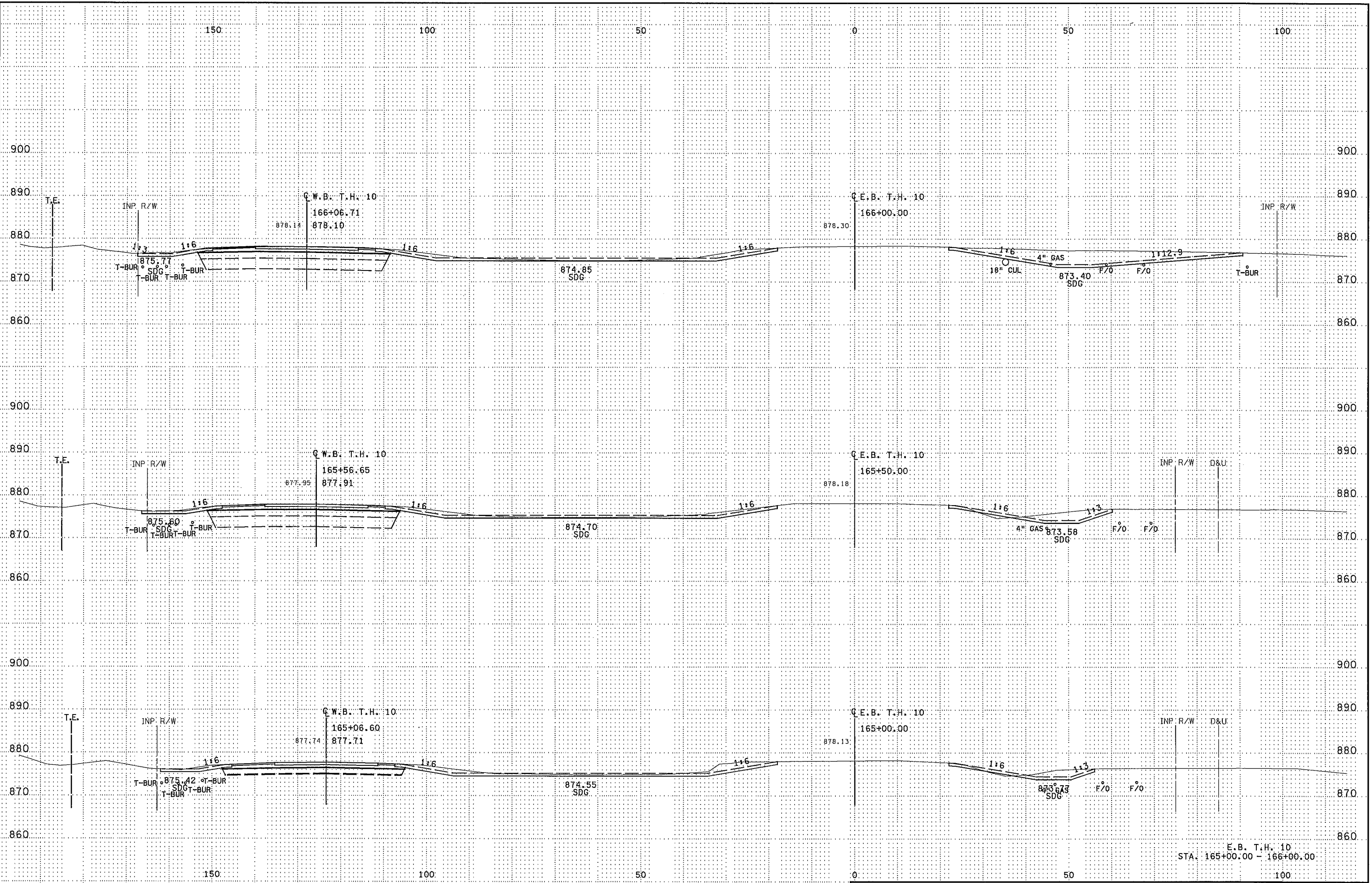
GENERAL CROSS SECTION NOTES (CONTINUED):

- CONSTRUCTION LIMITS THAT FALL OUTSIDE THE RIGHT-OF-WAY ON THE NORTH SIDE OF W.B. T.H. 10 ARE LOCATED WITHIN THE BNSF RAILWAY COMPANY RIGHT-OF-WAY. ACCESS FOR GRADING OF THESE IMPACTS HAS BEEN OBTAINED FROM THE BNSF RAILWAY COMPANY.
- SEE CONSTRUCTION PLANS FOR RIGHT-OF-WAY, TEMPORARY EASEMENTS AND PERMANENT EASEMENTS THAT FALL OUTSIDE THE LIMITS OF THE CROSS SECTION SHEETS.

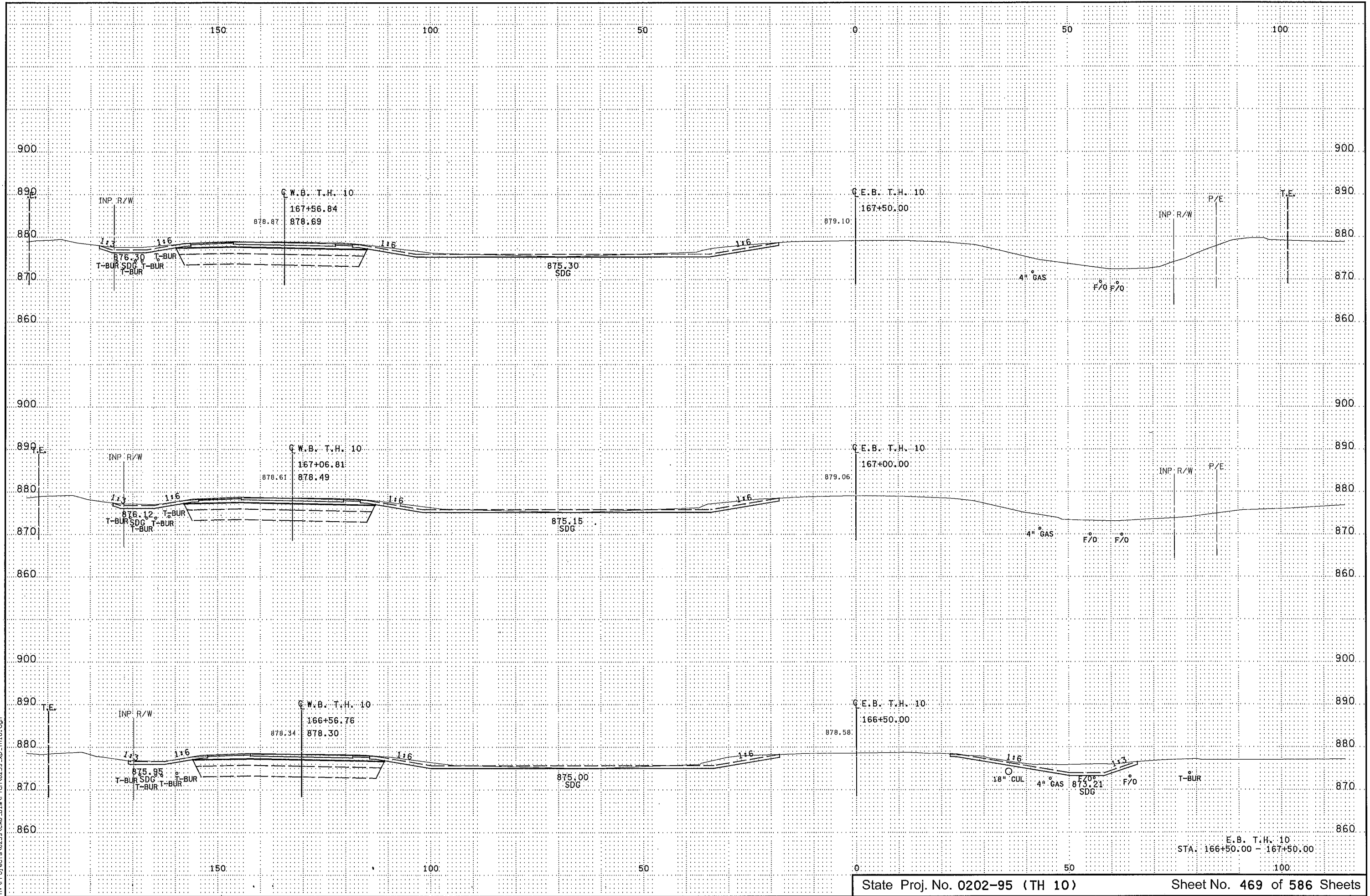


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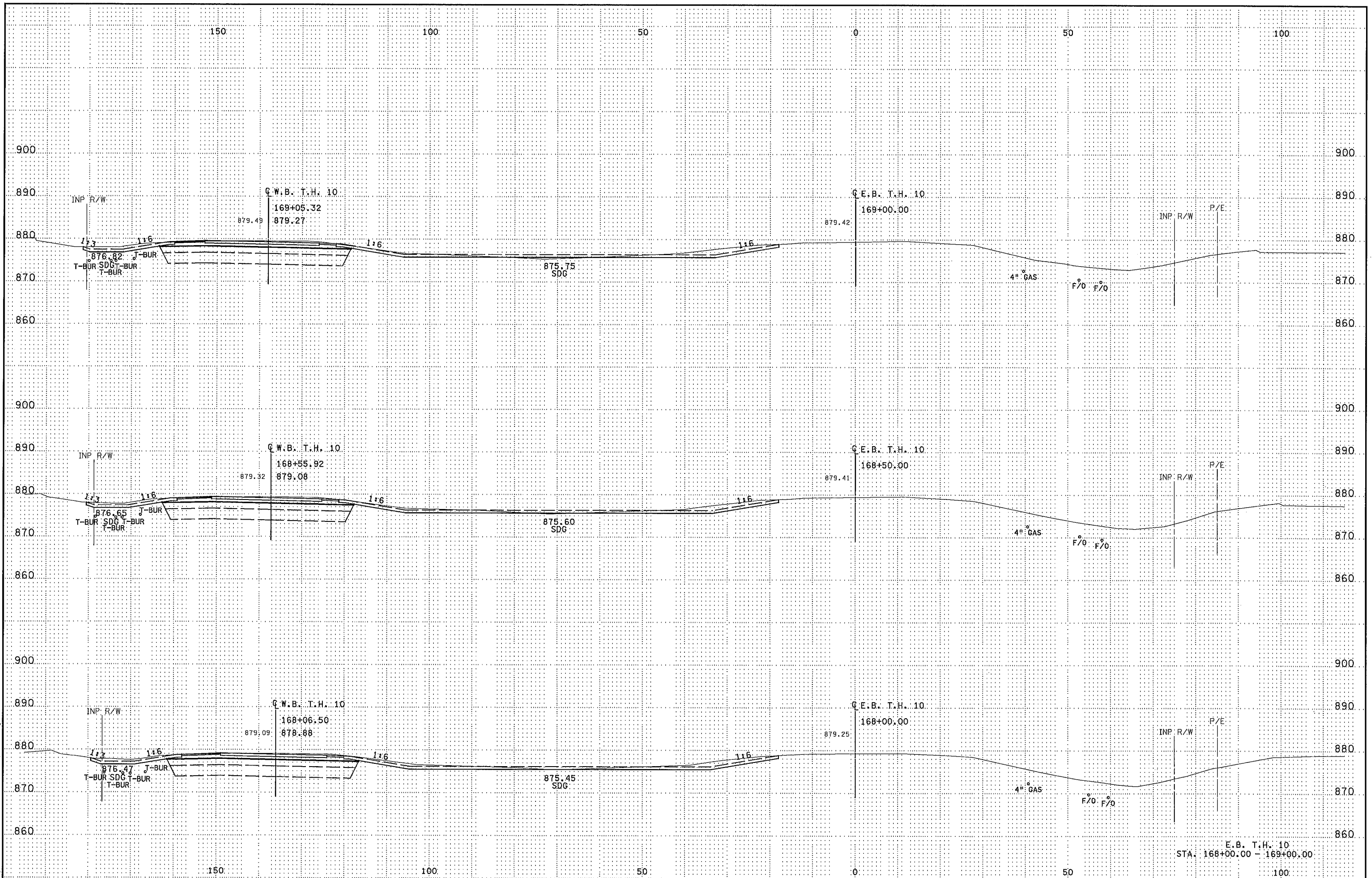
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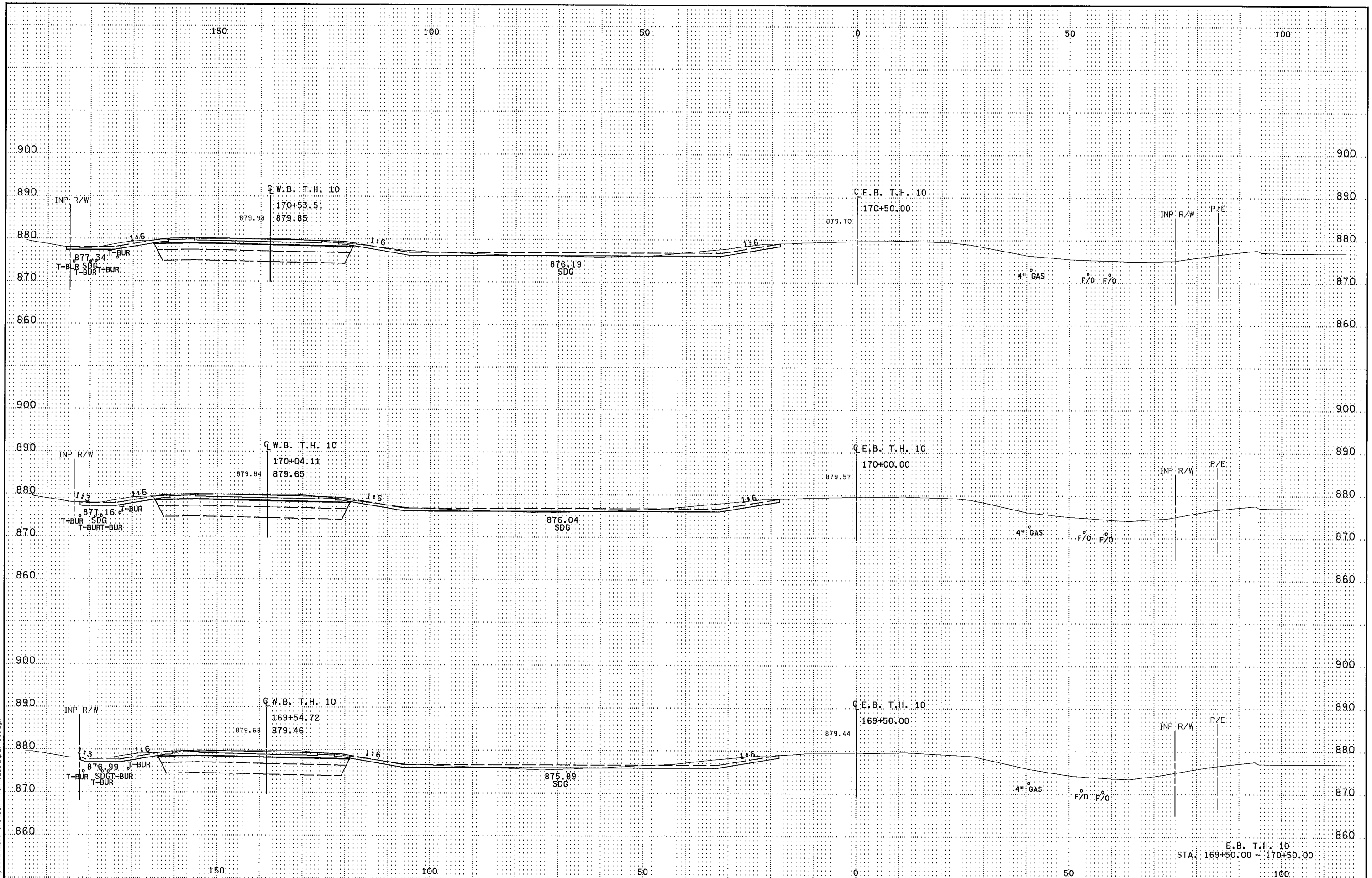
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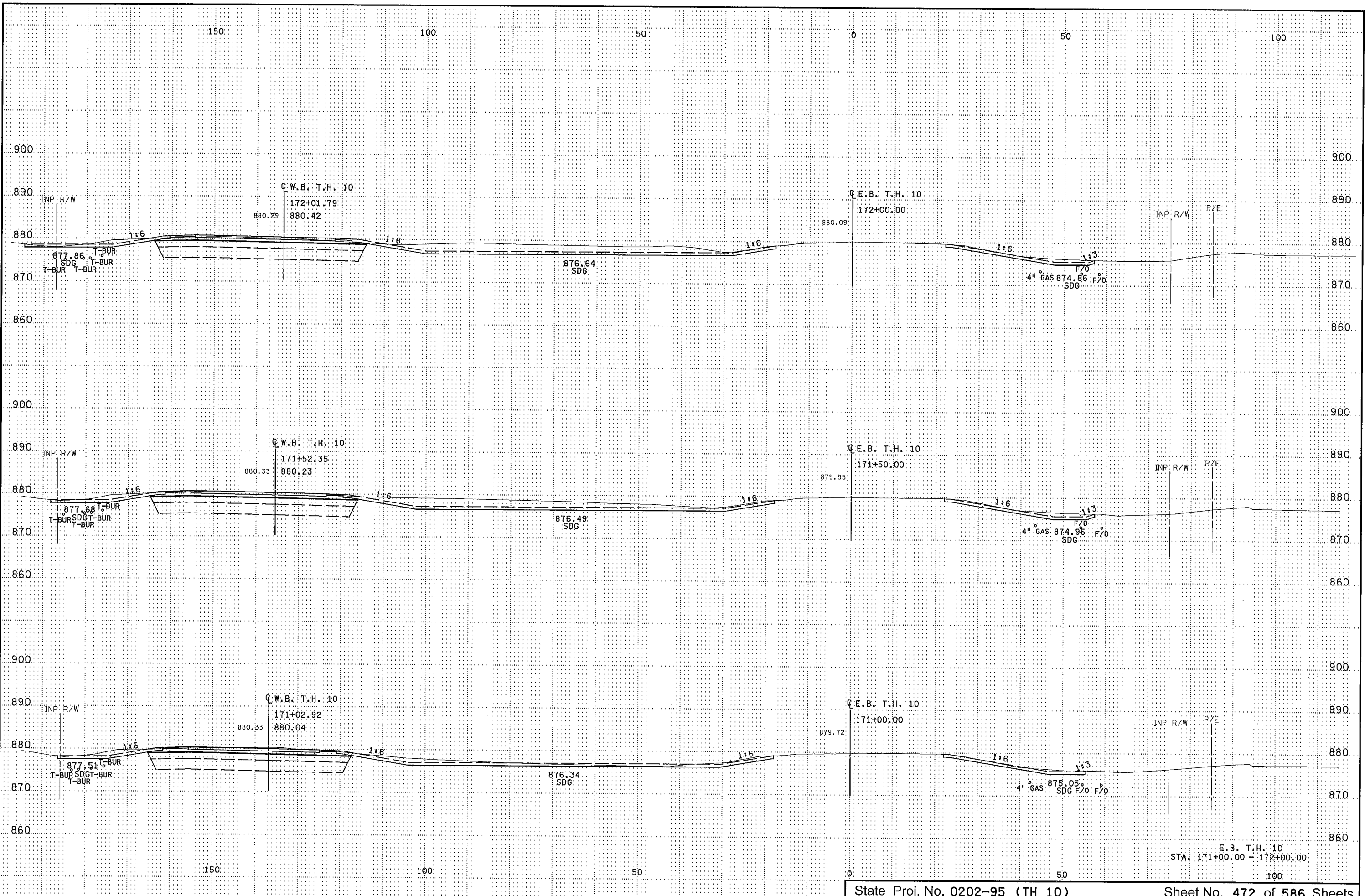
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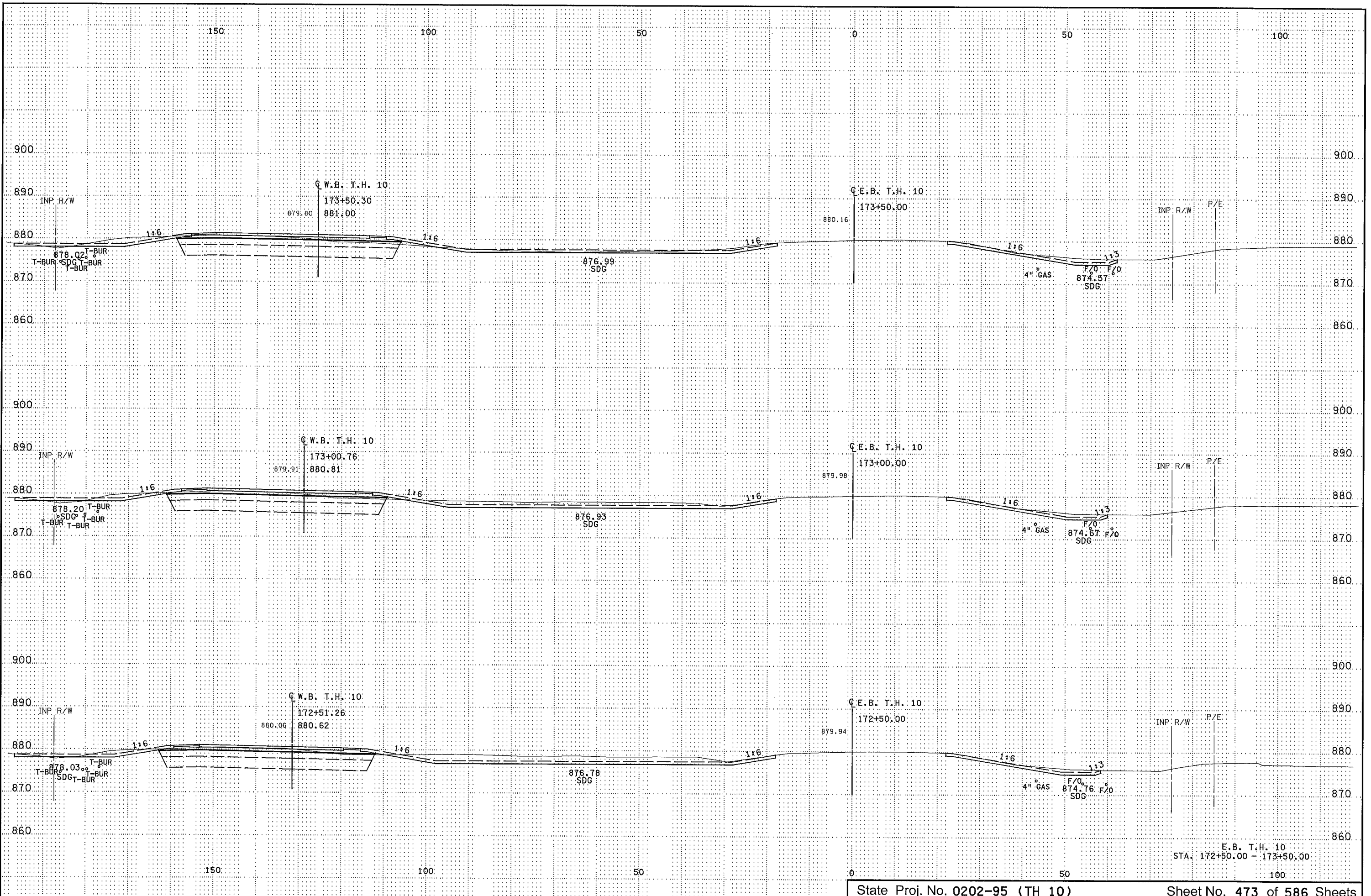


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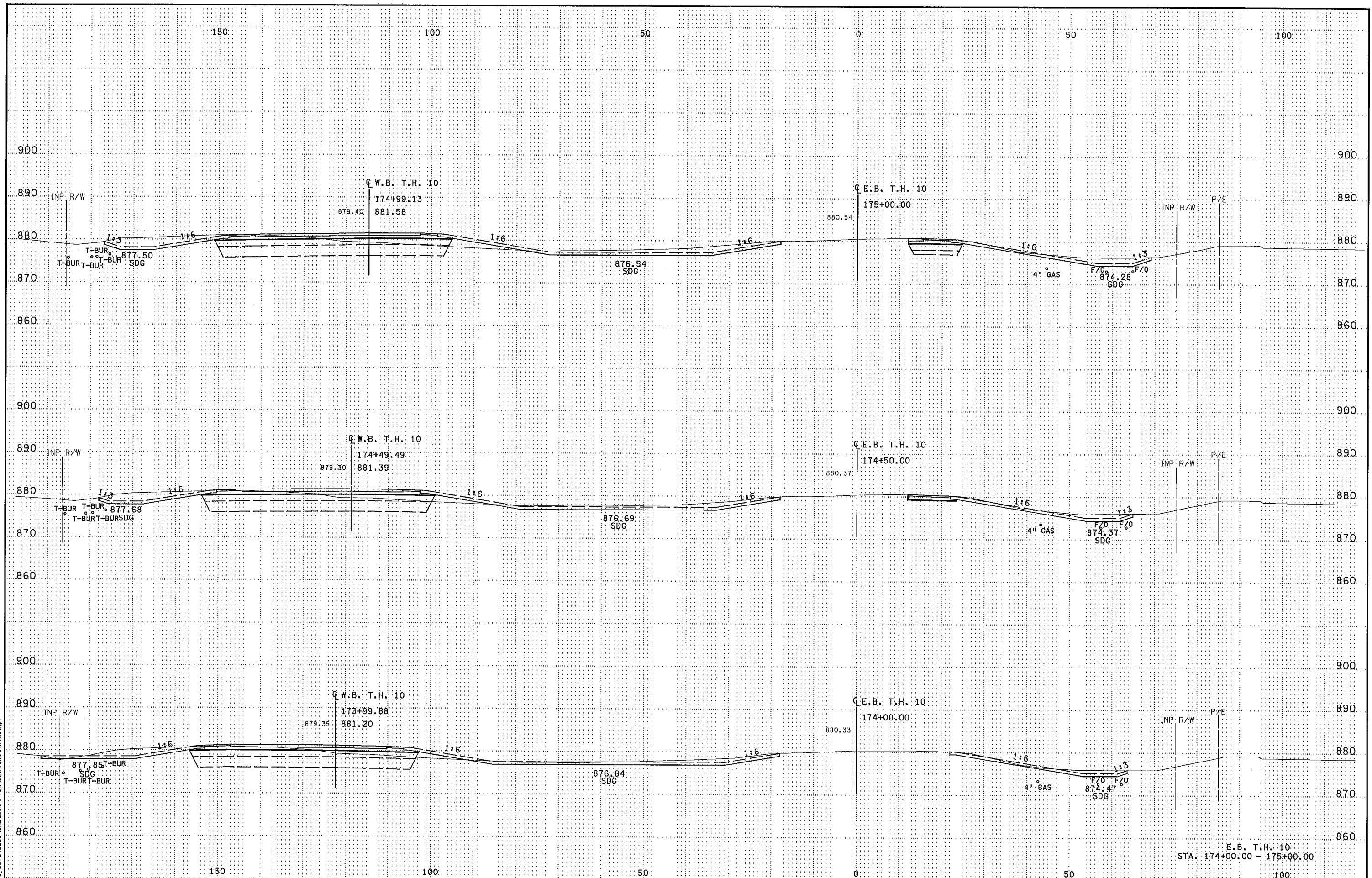




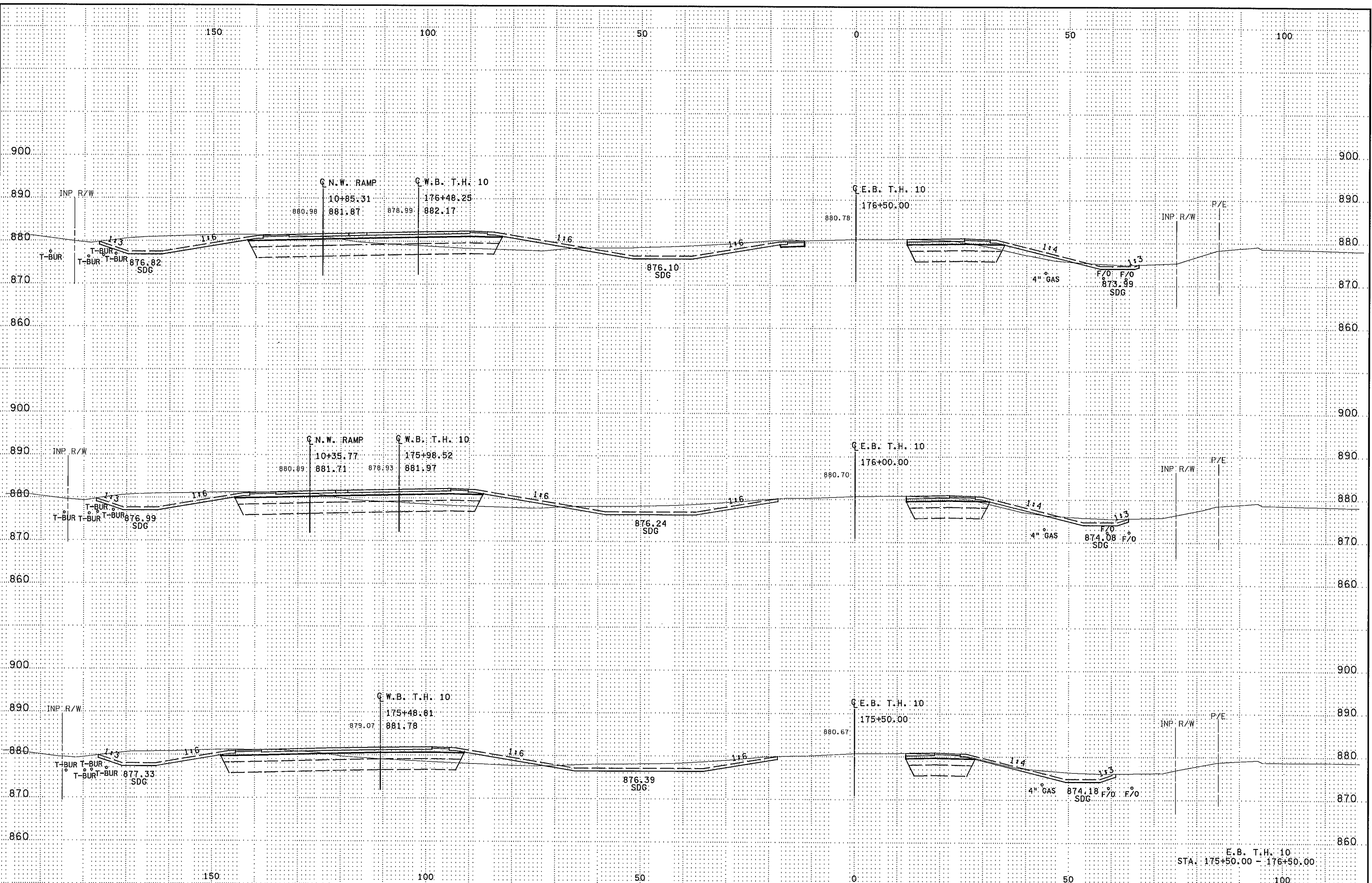
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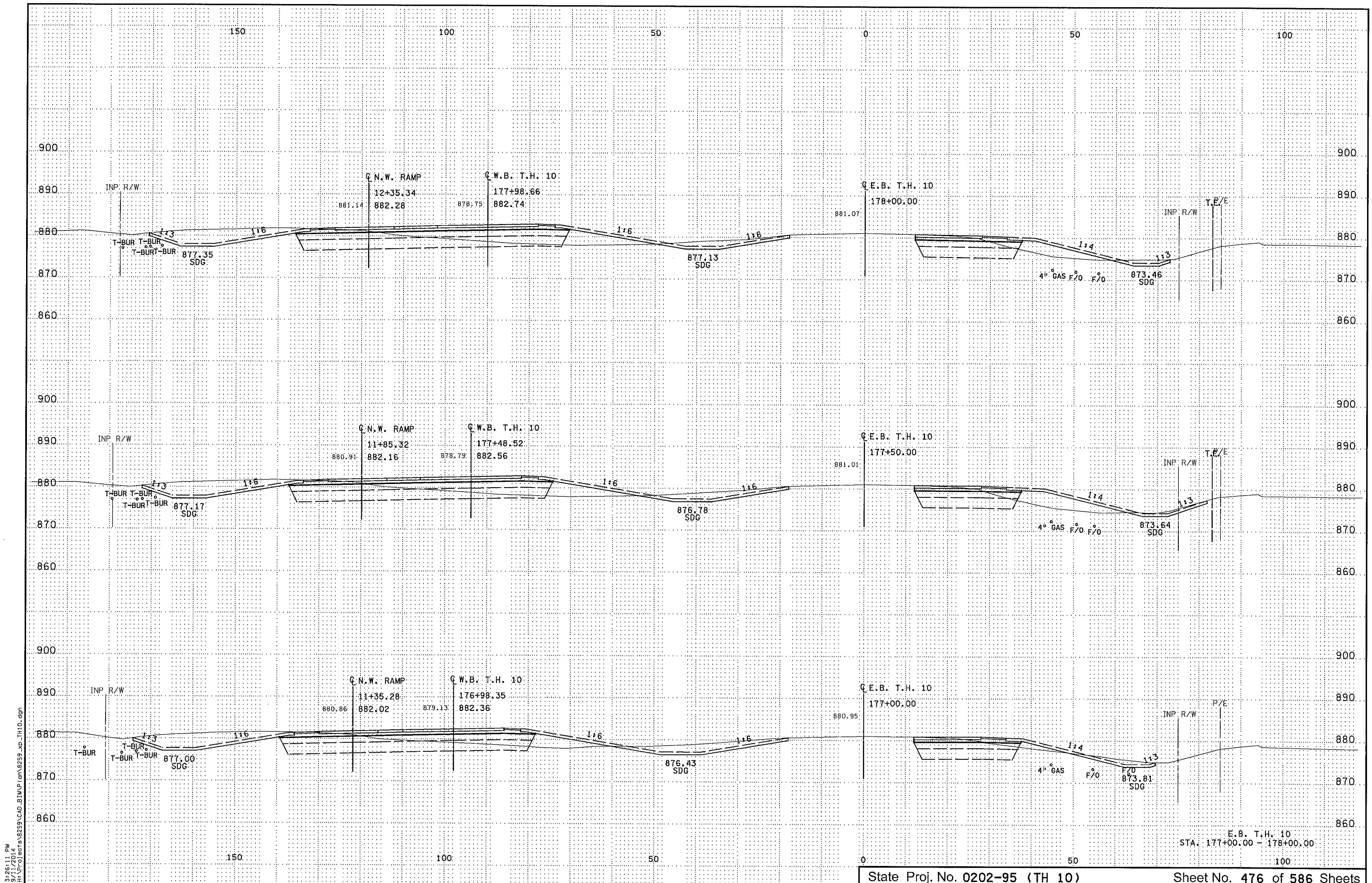
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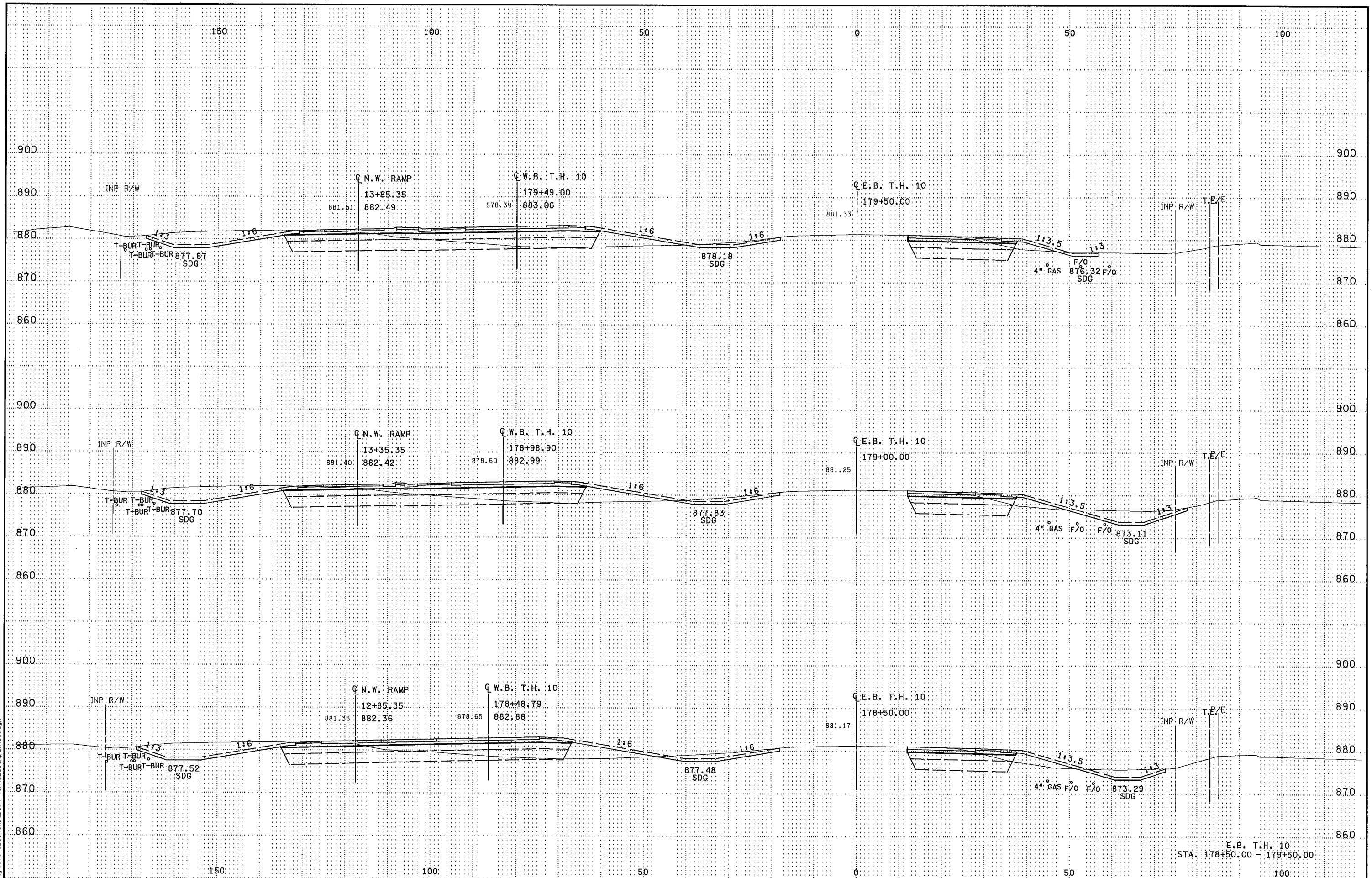
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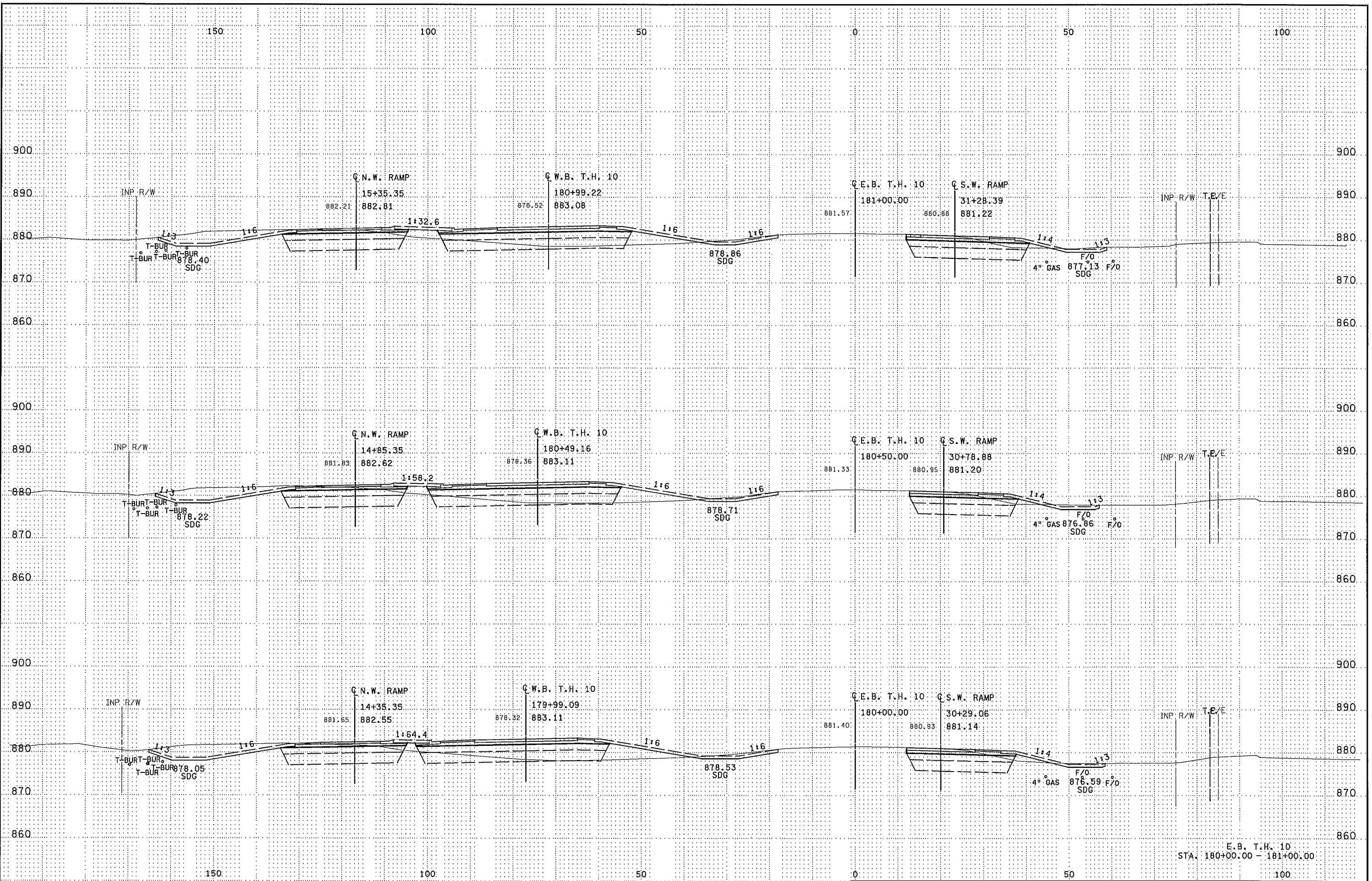
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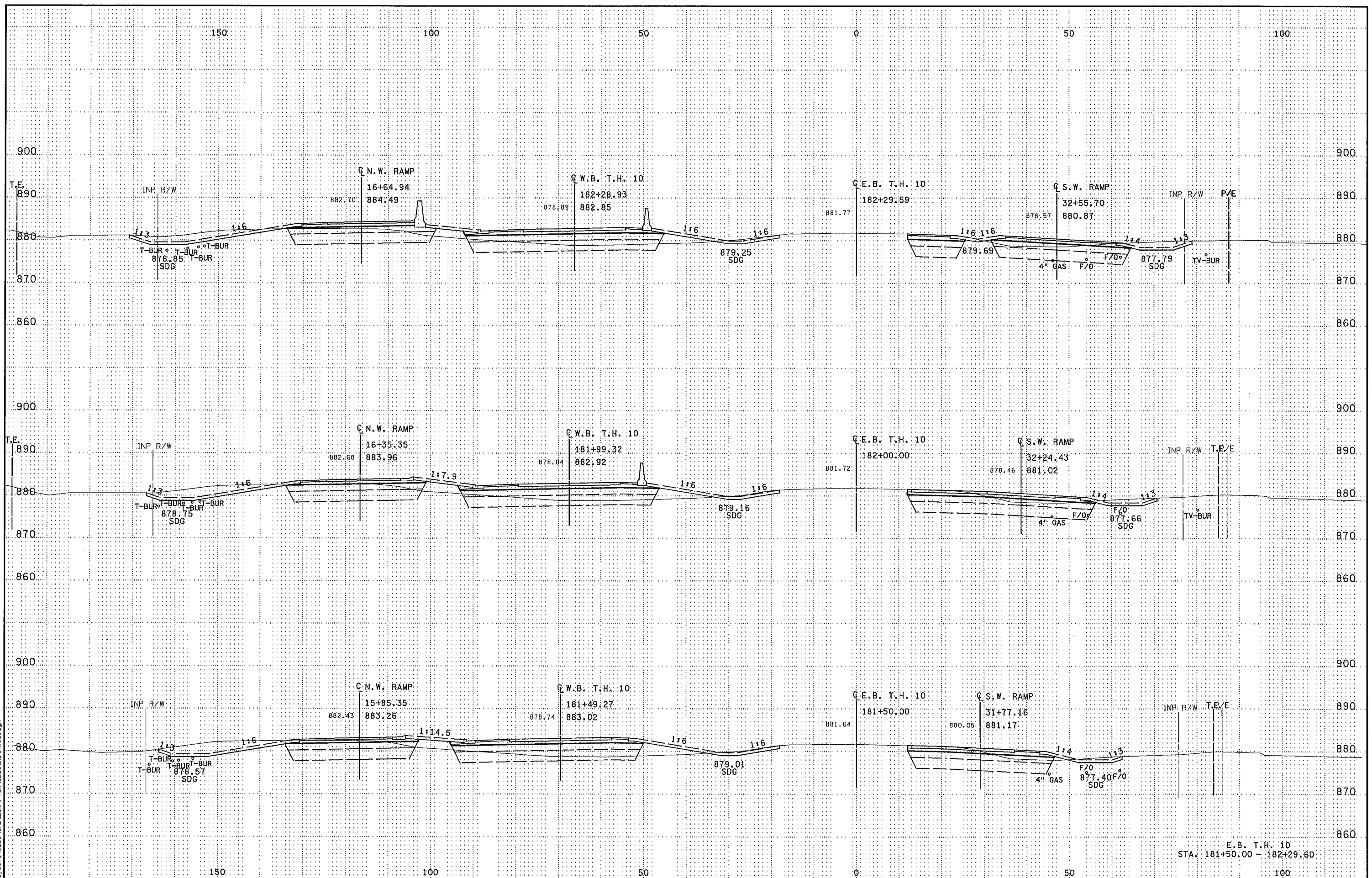
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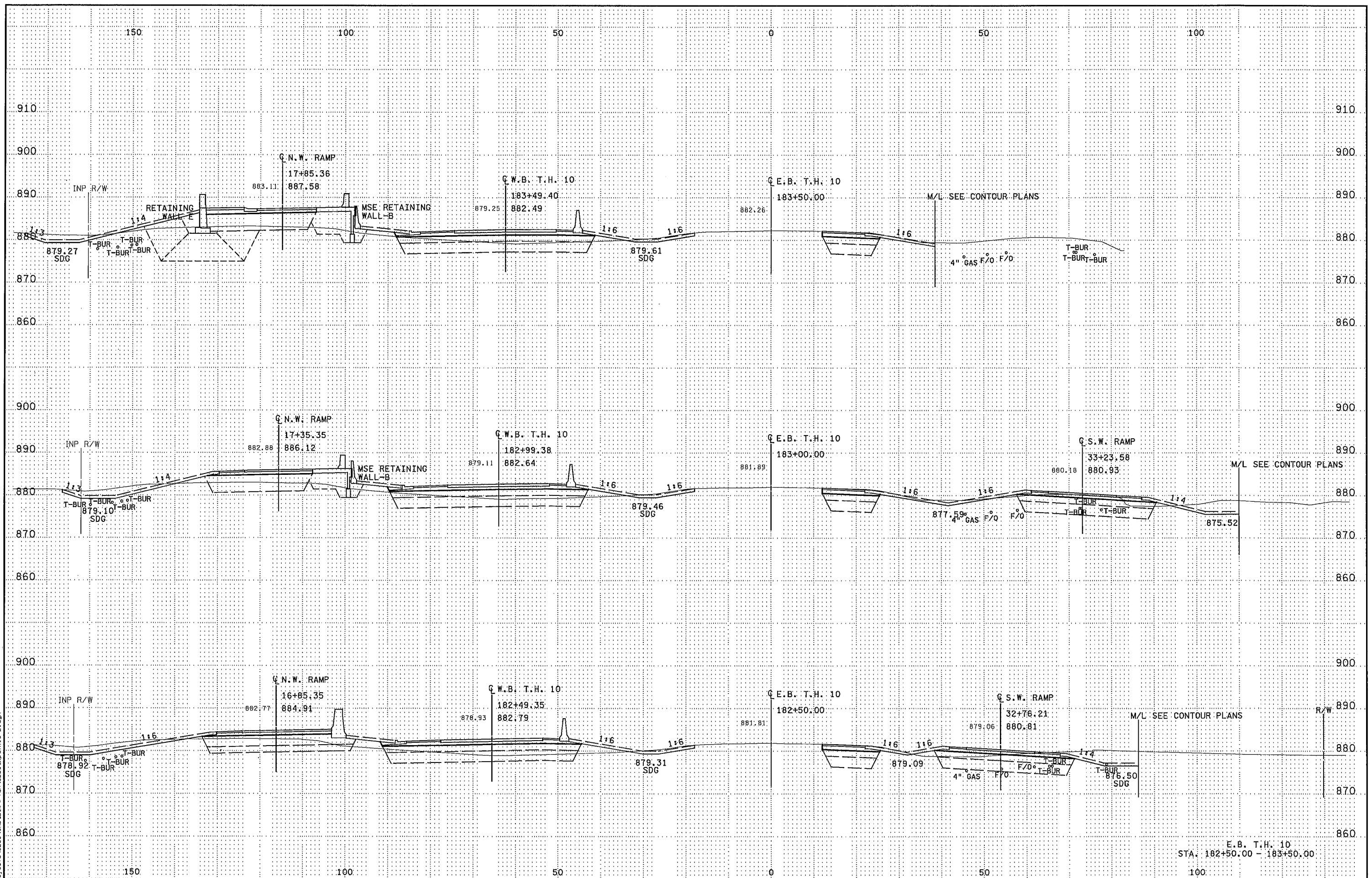
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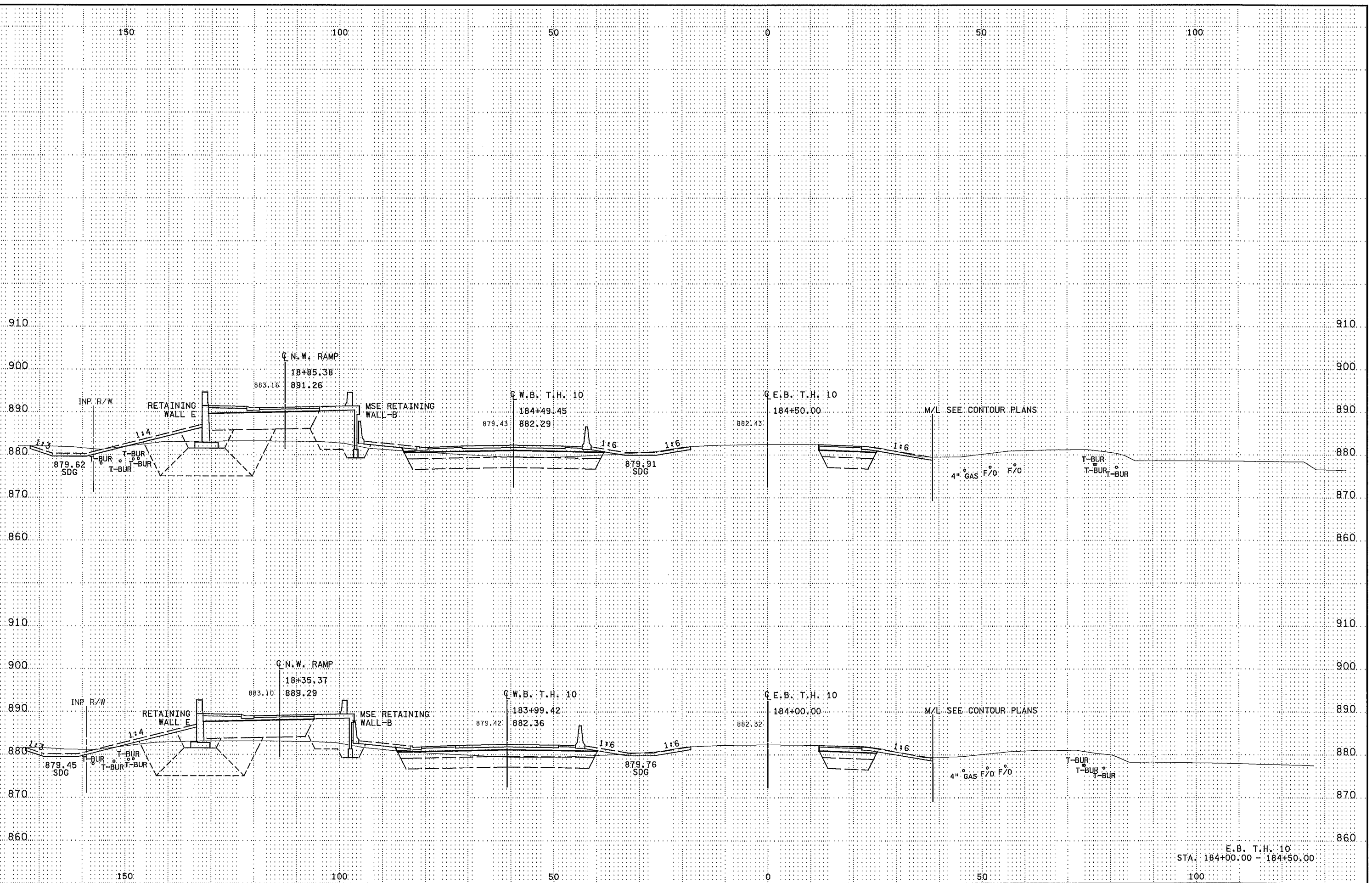


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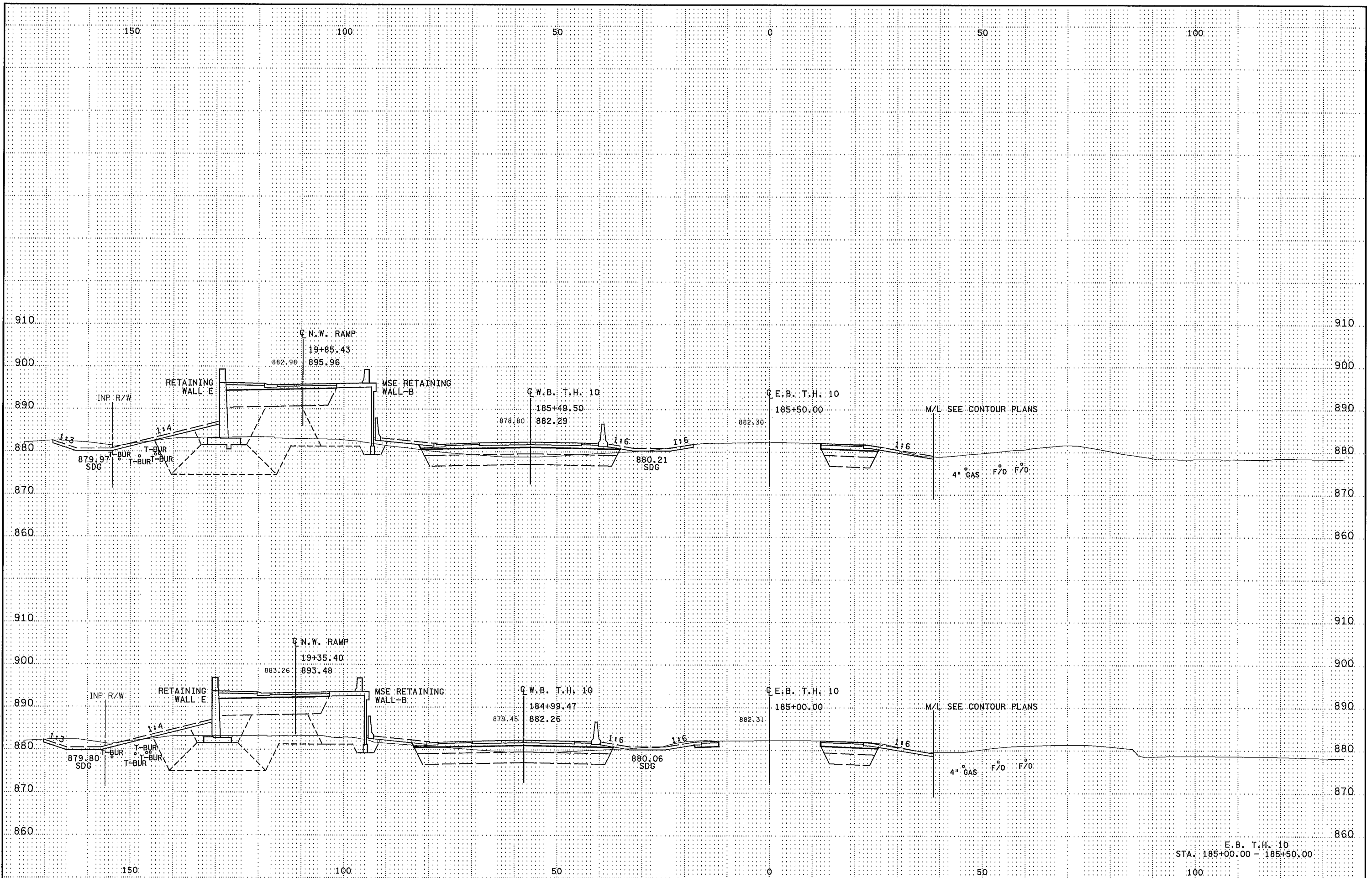


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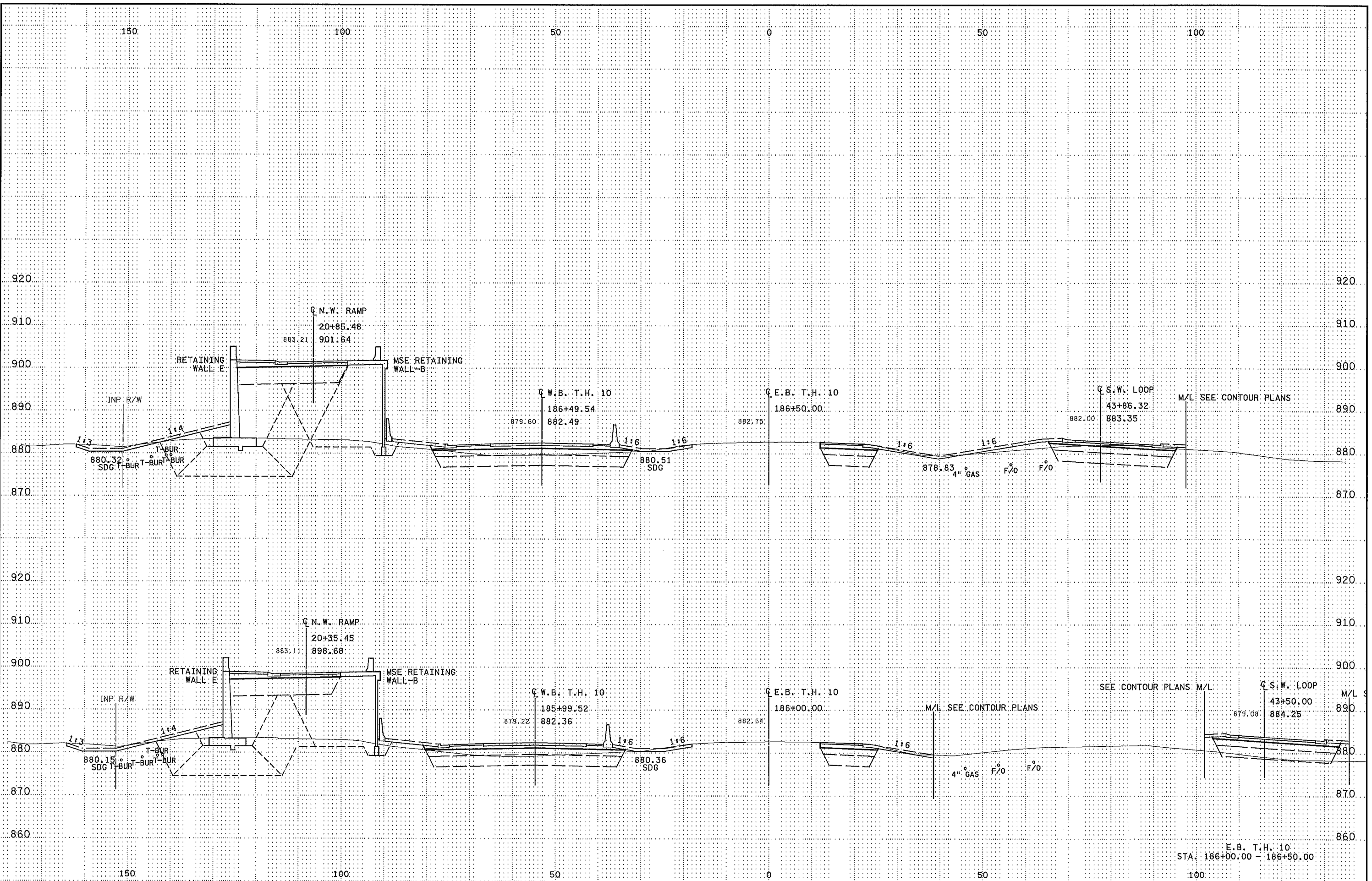
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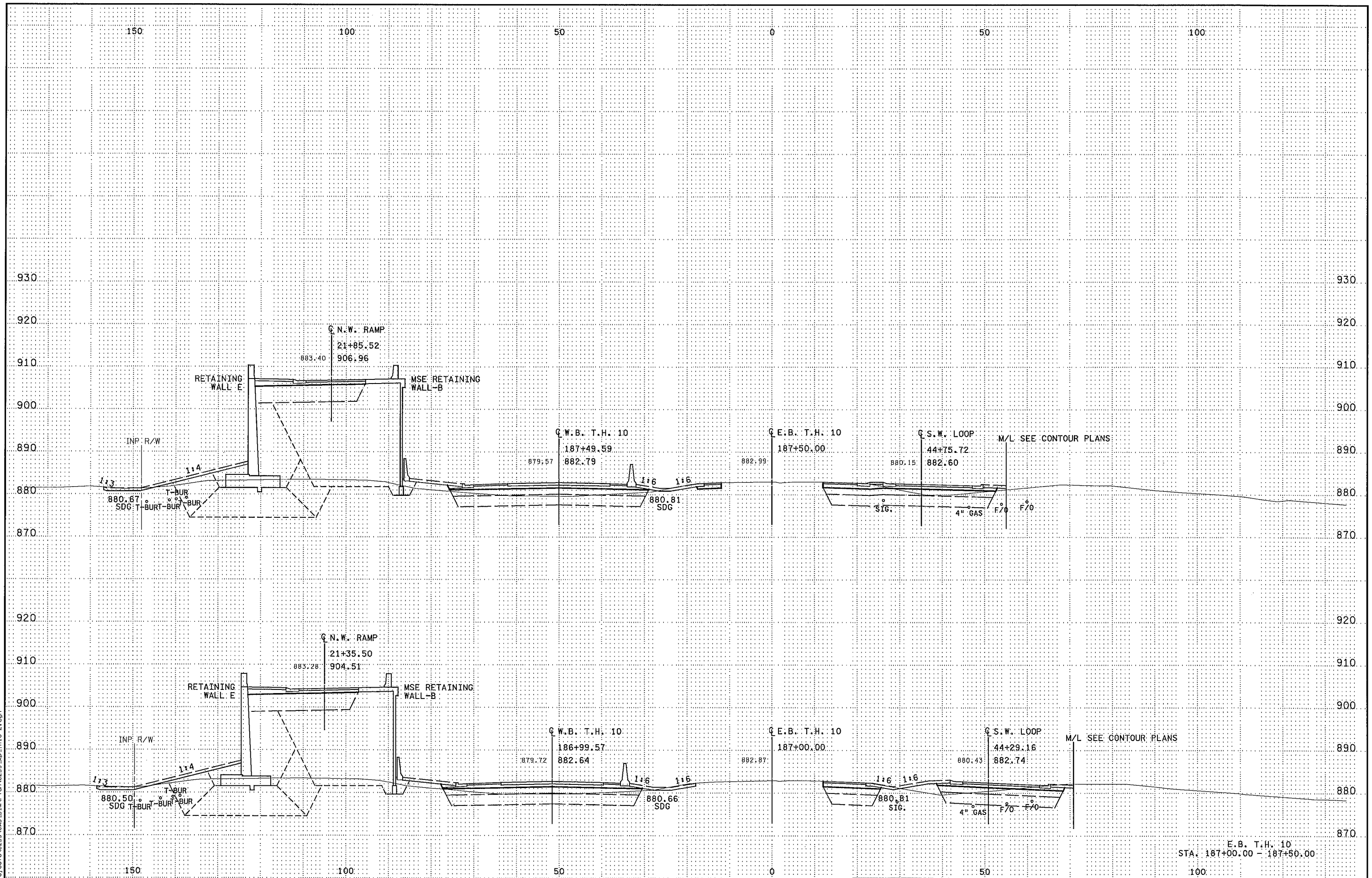


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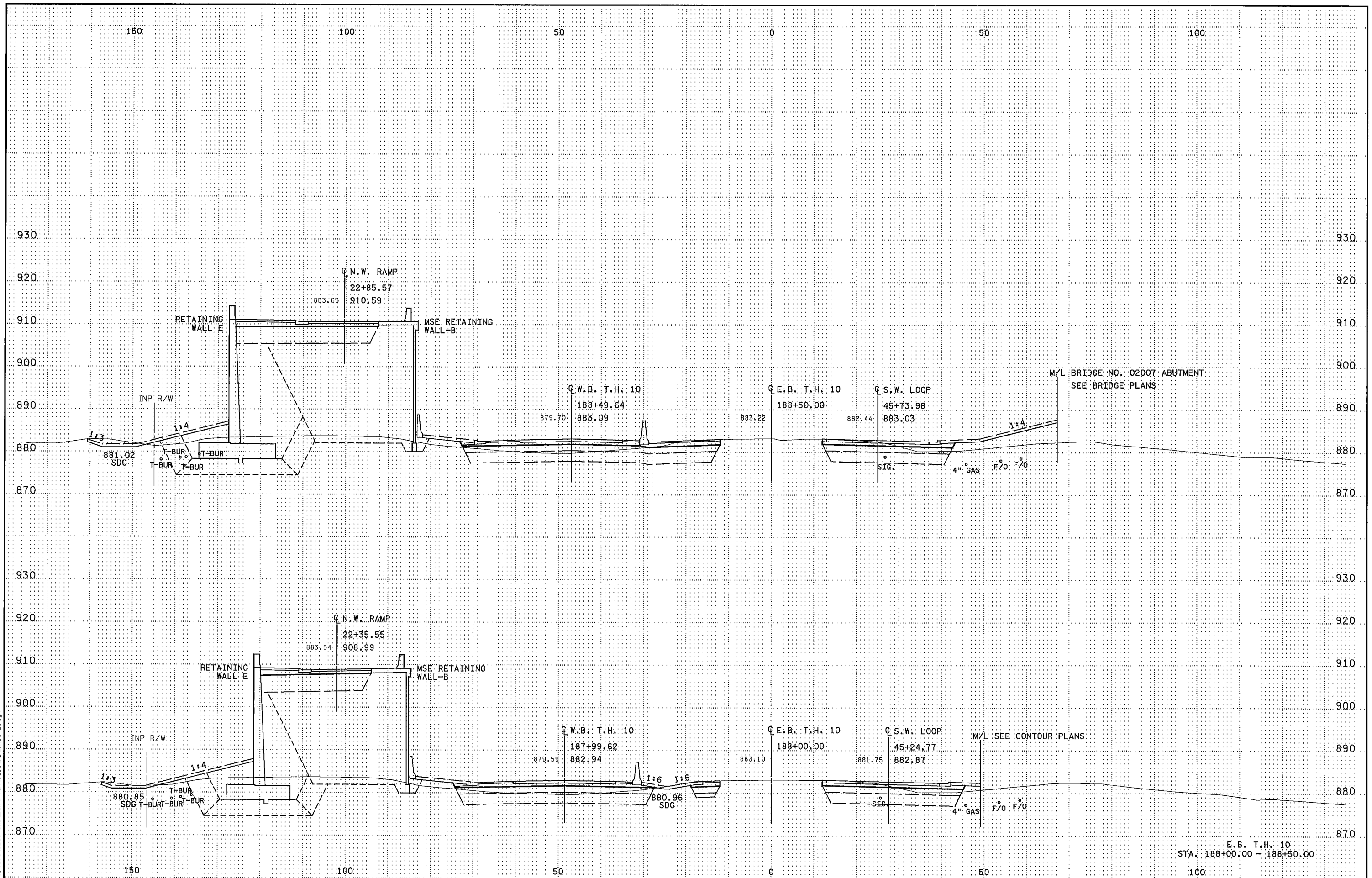




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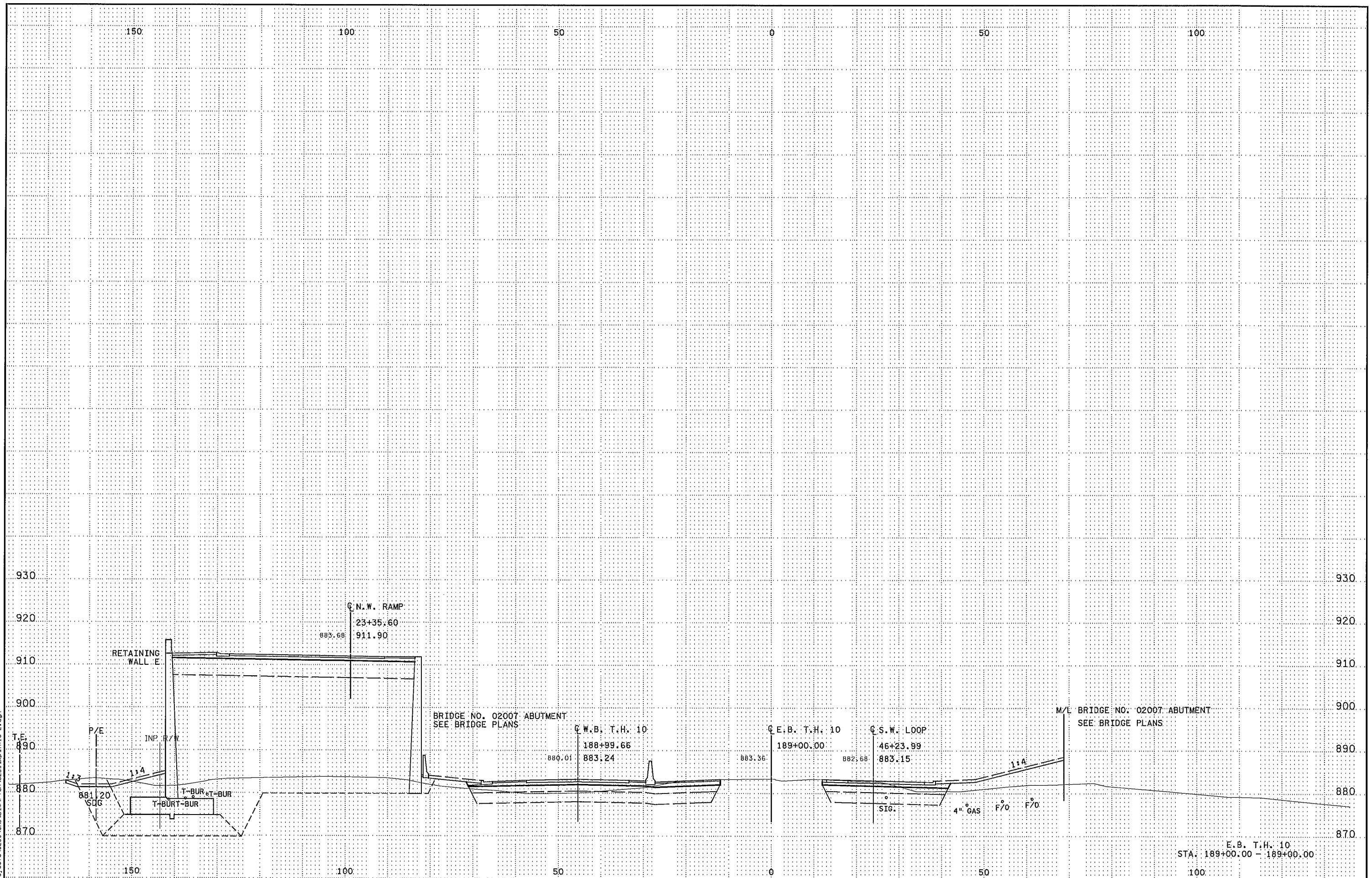
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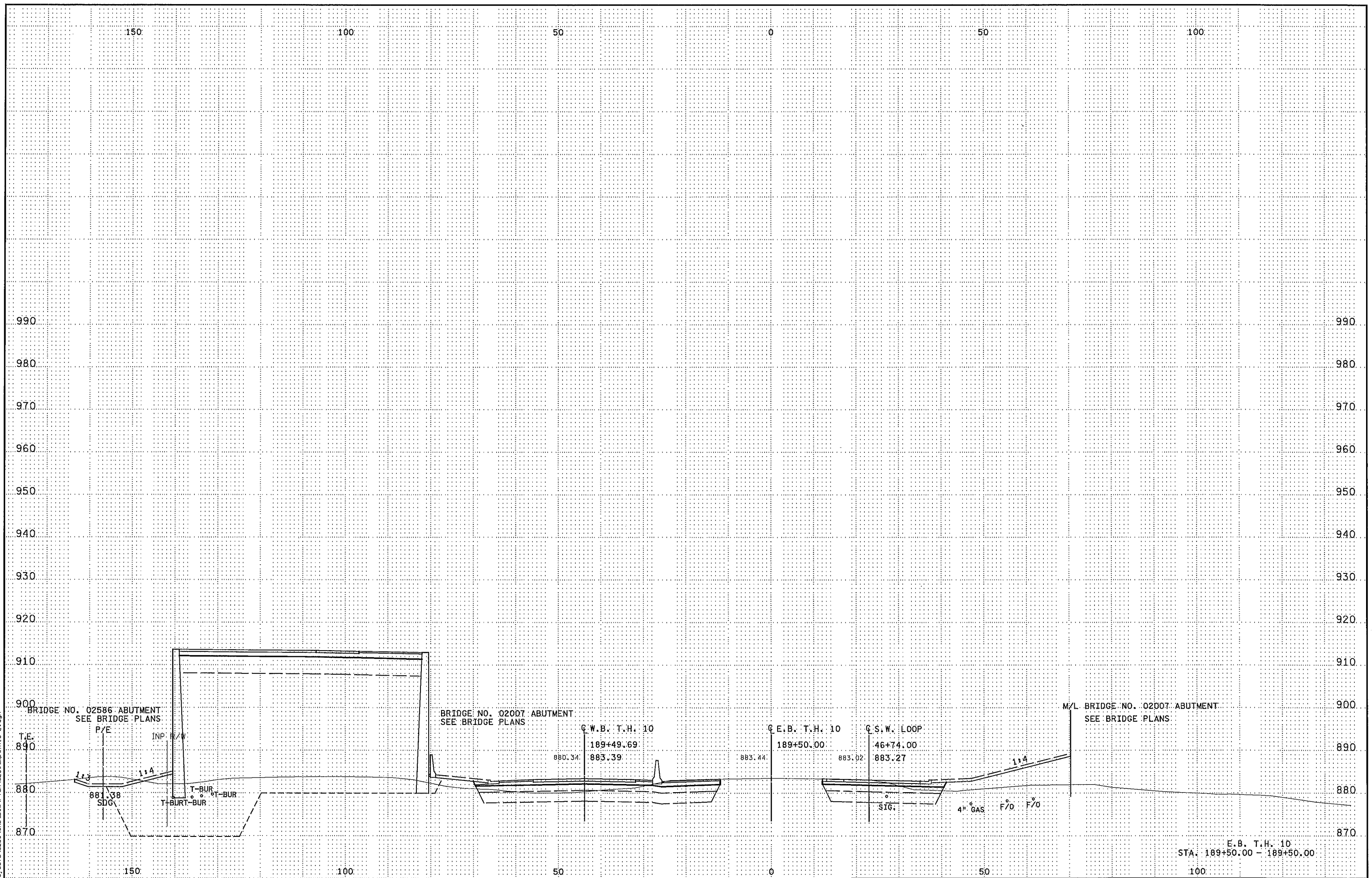
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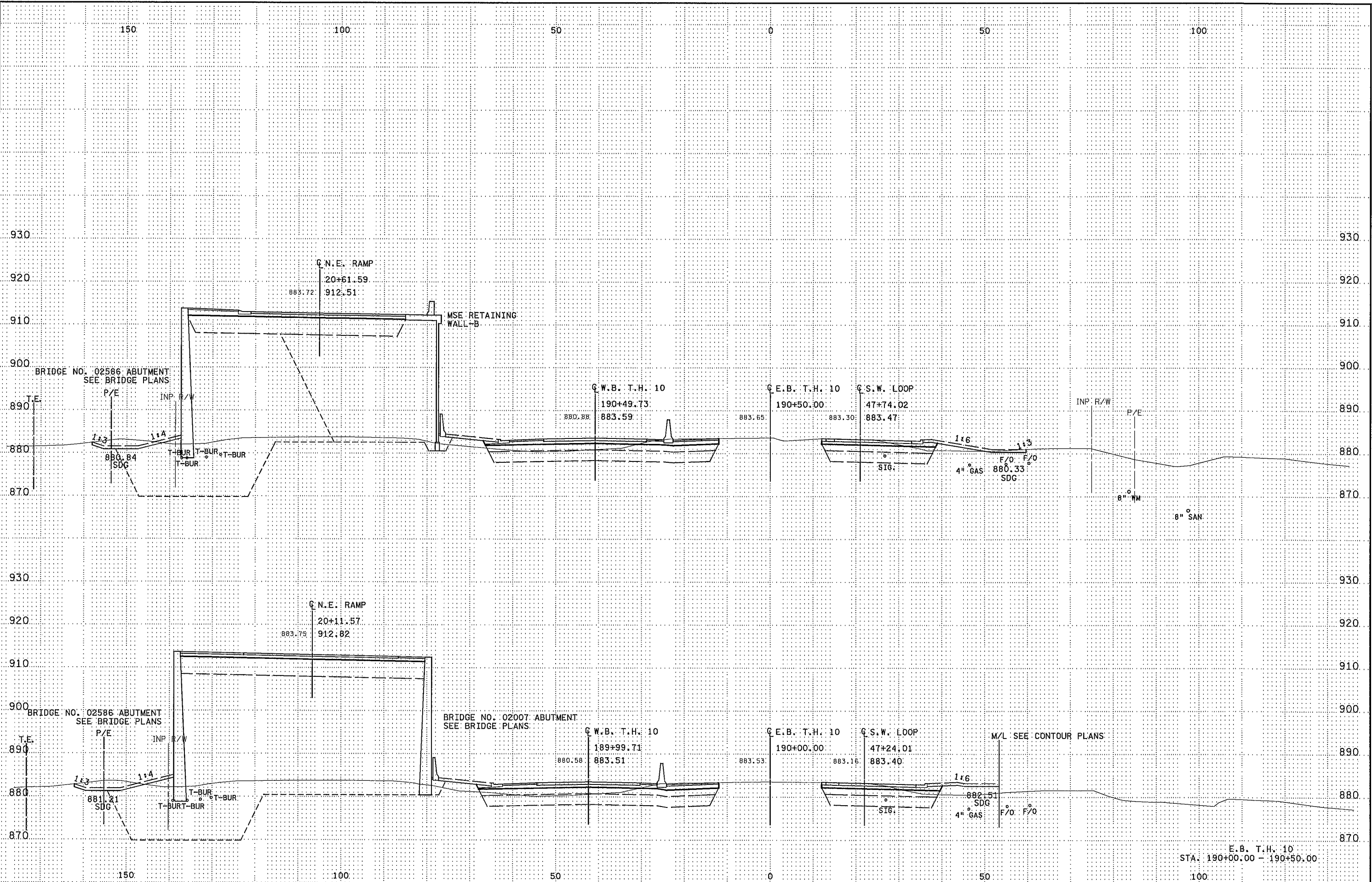




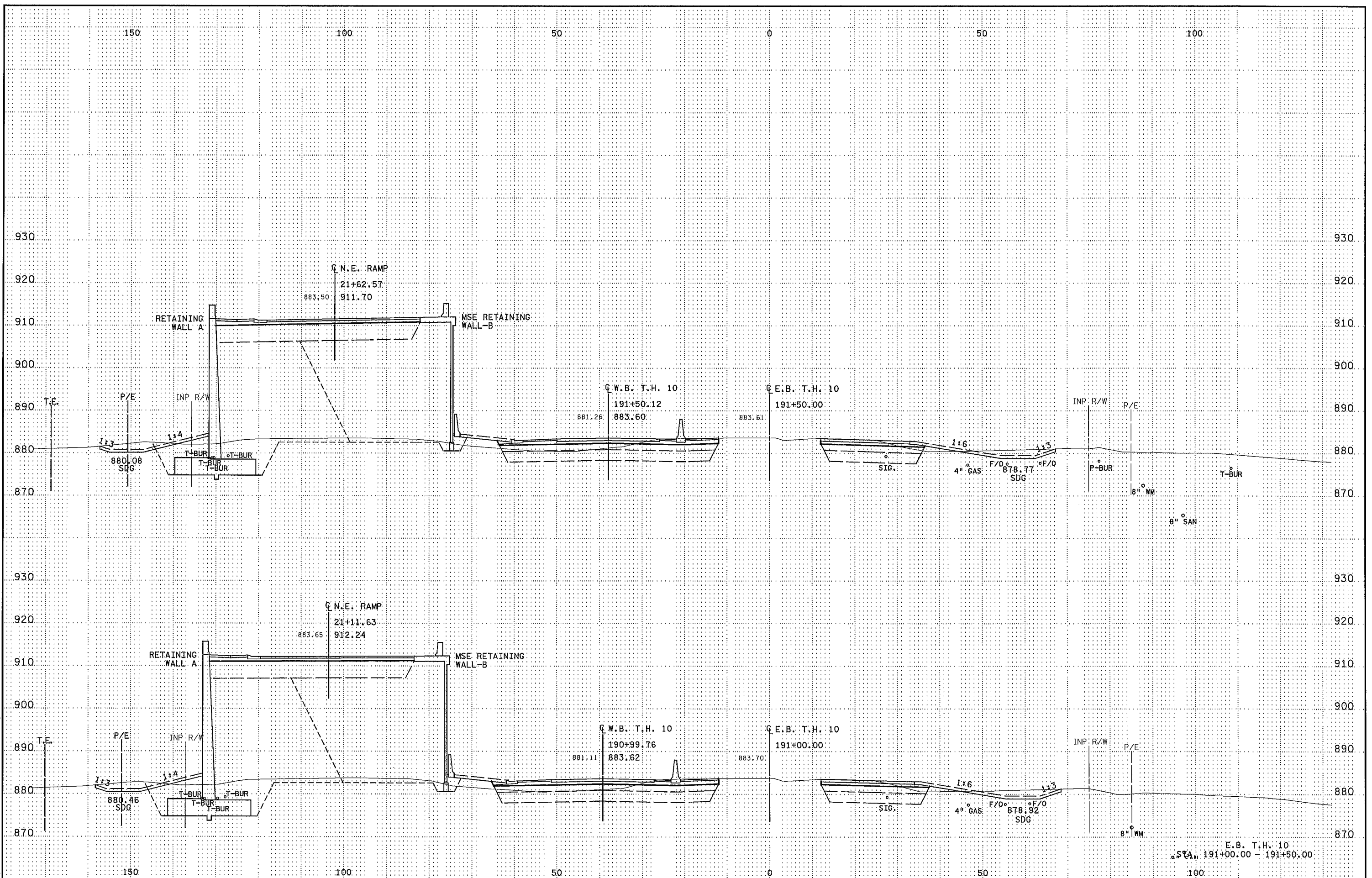
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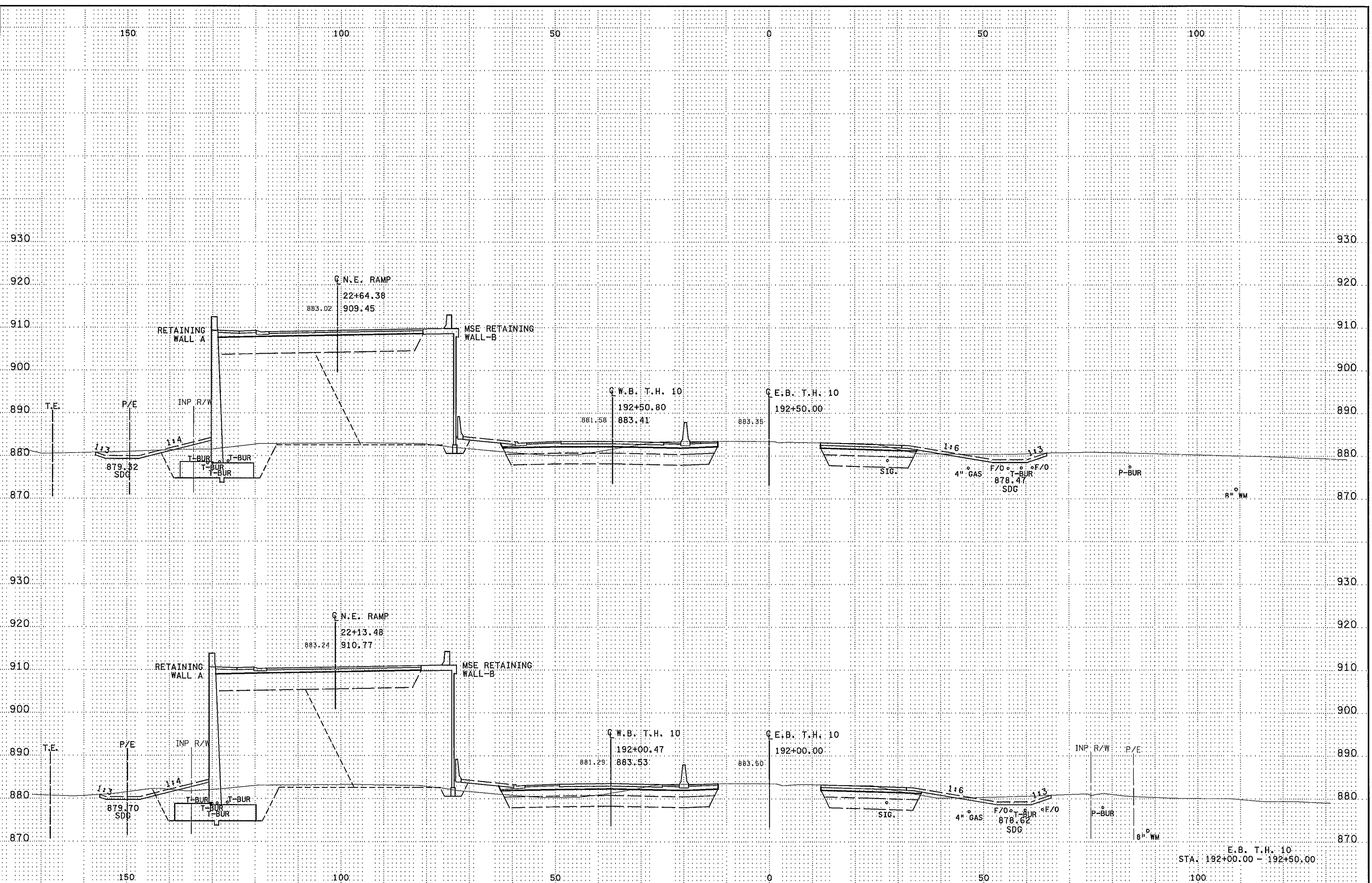
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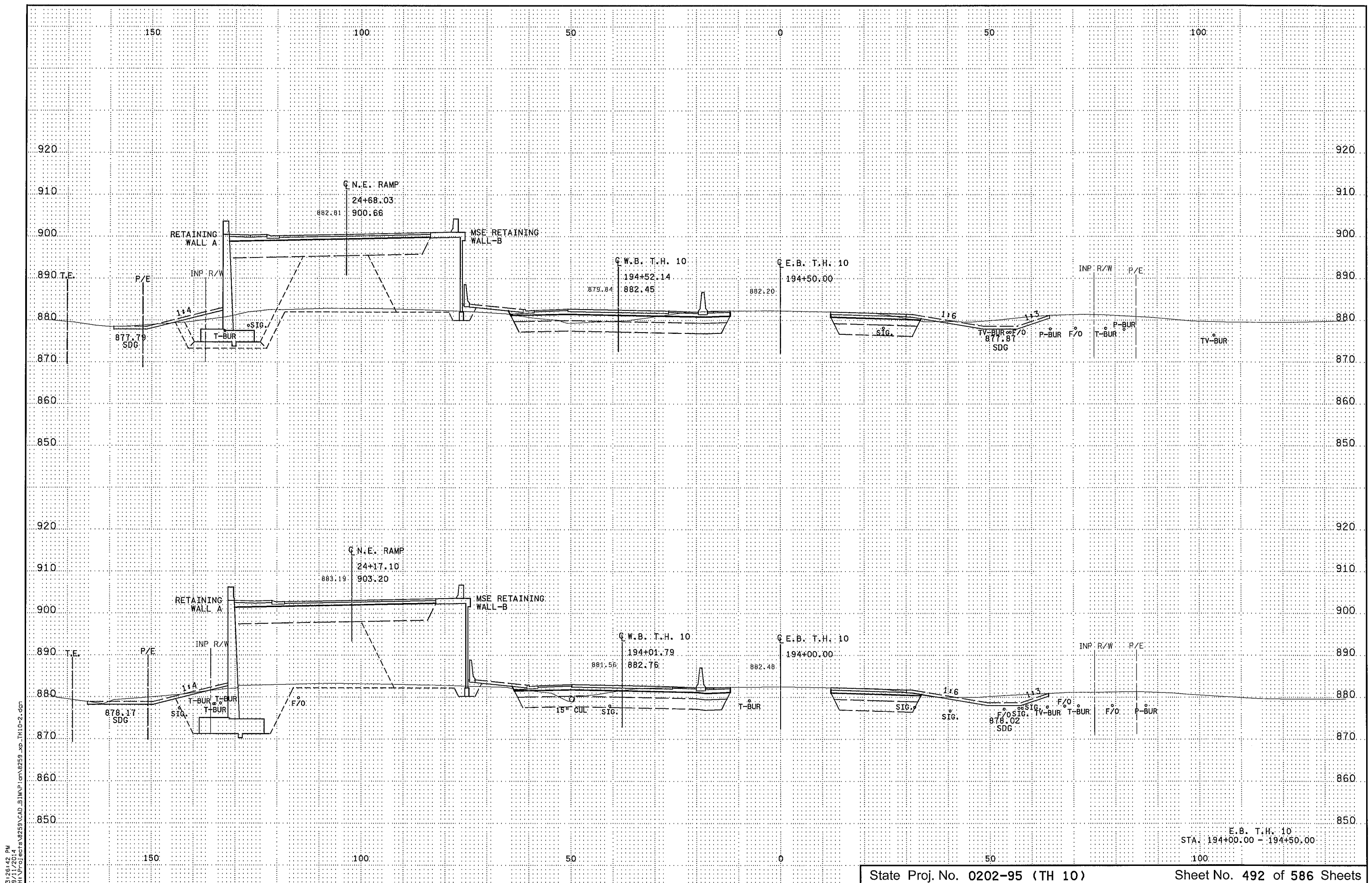


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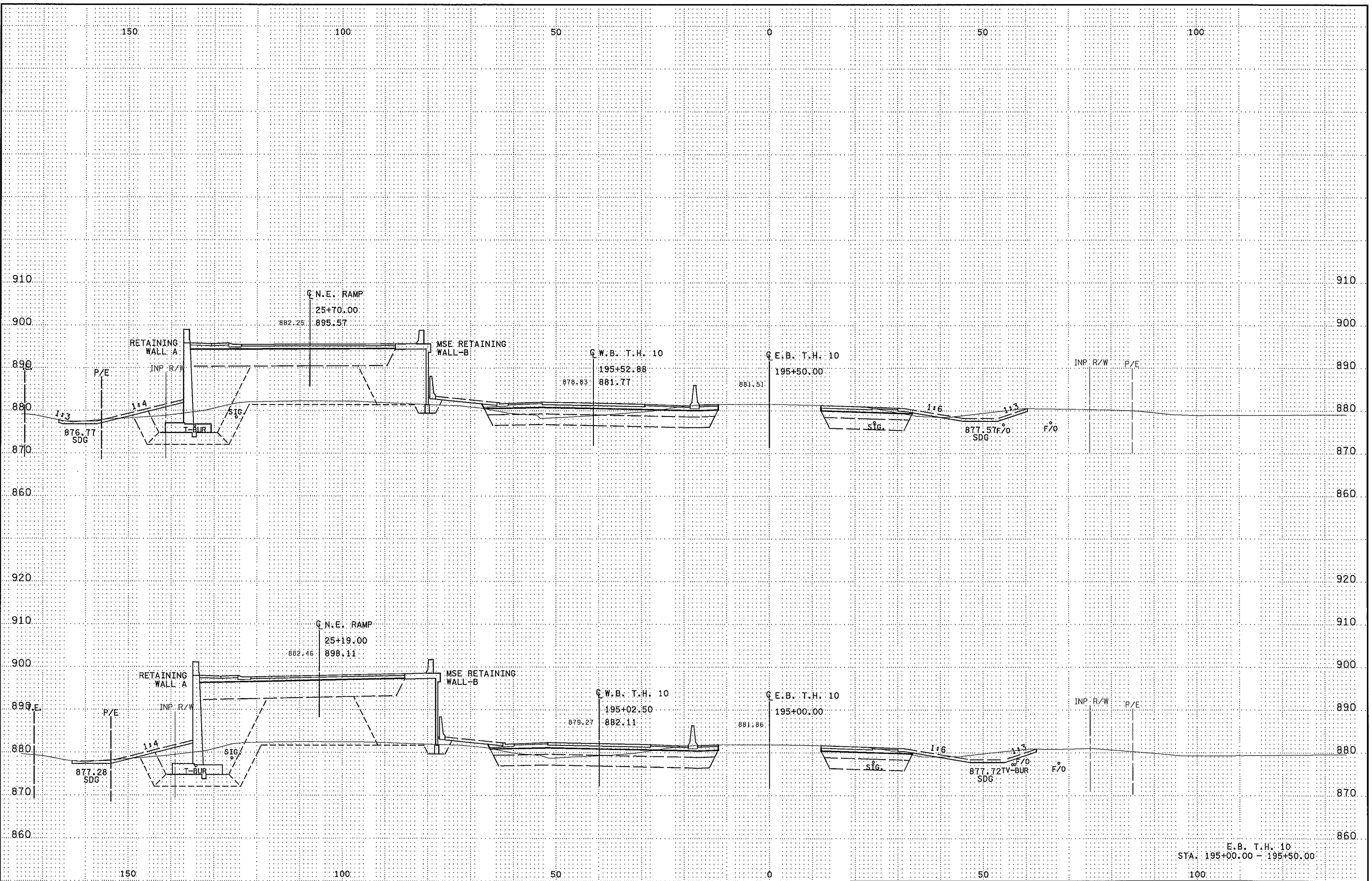




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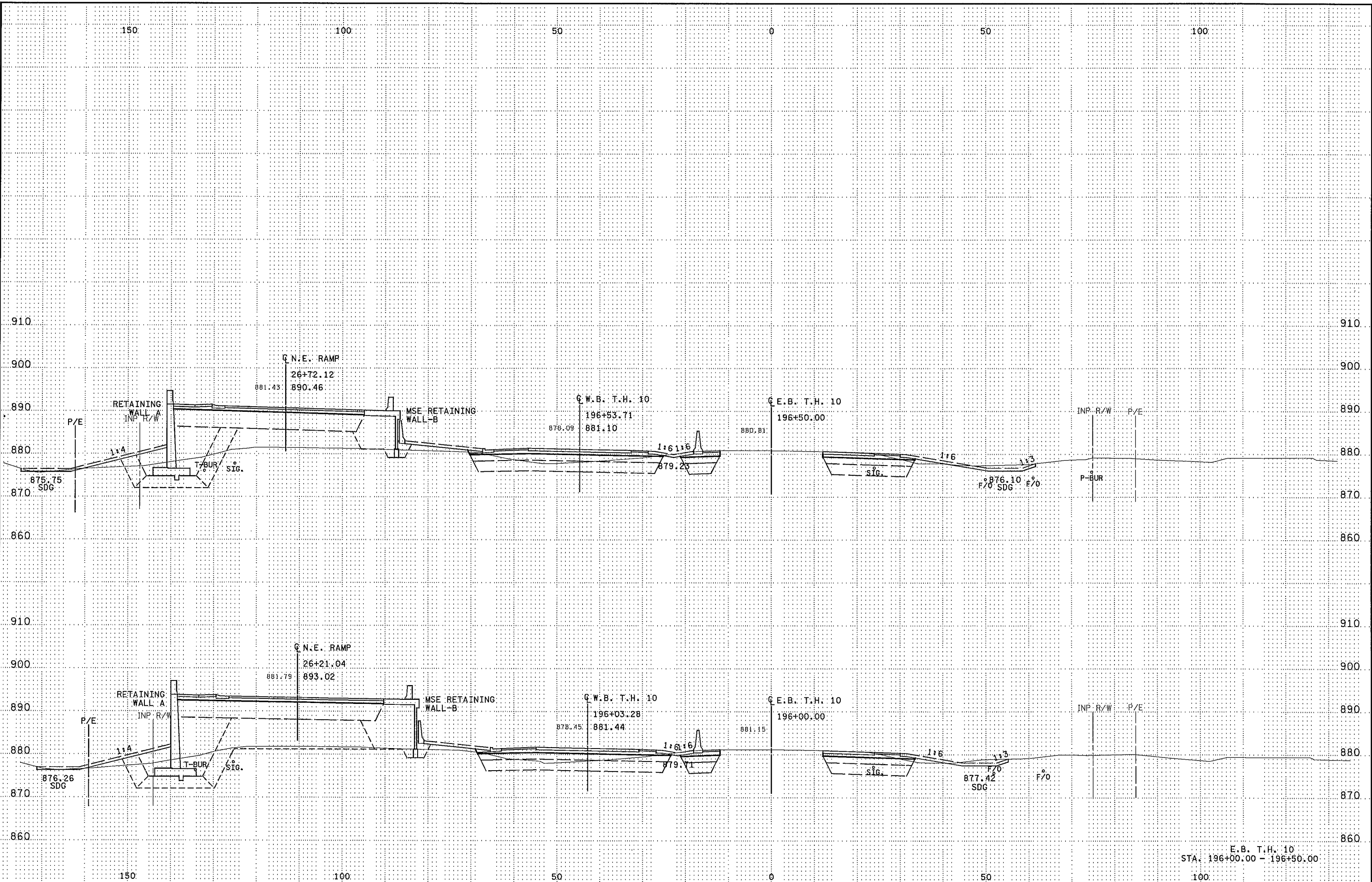
E.B. T.H. 10  
 STA. 194+00.00 - 194+50.00

3/26/14 4:44 PM  
9/11/2014  
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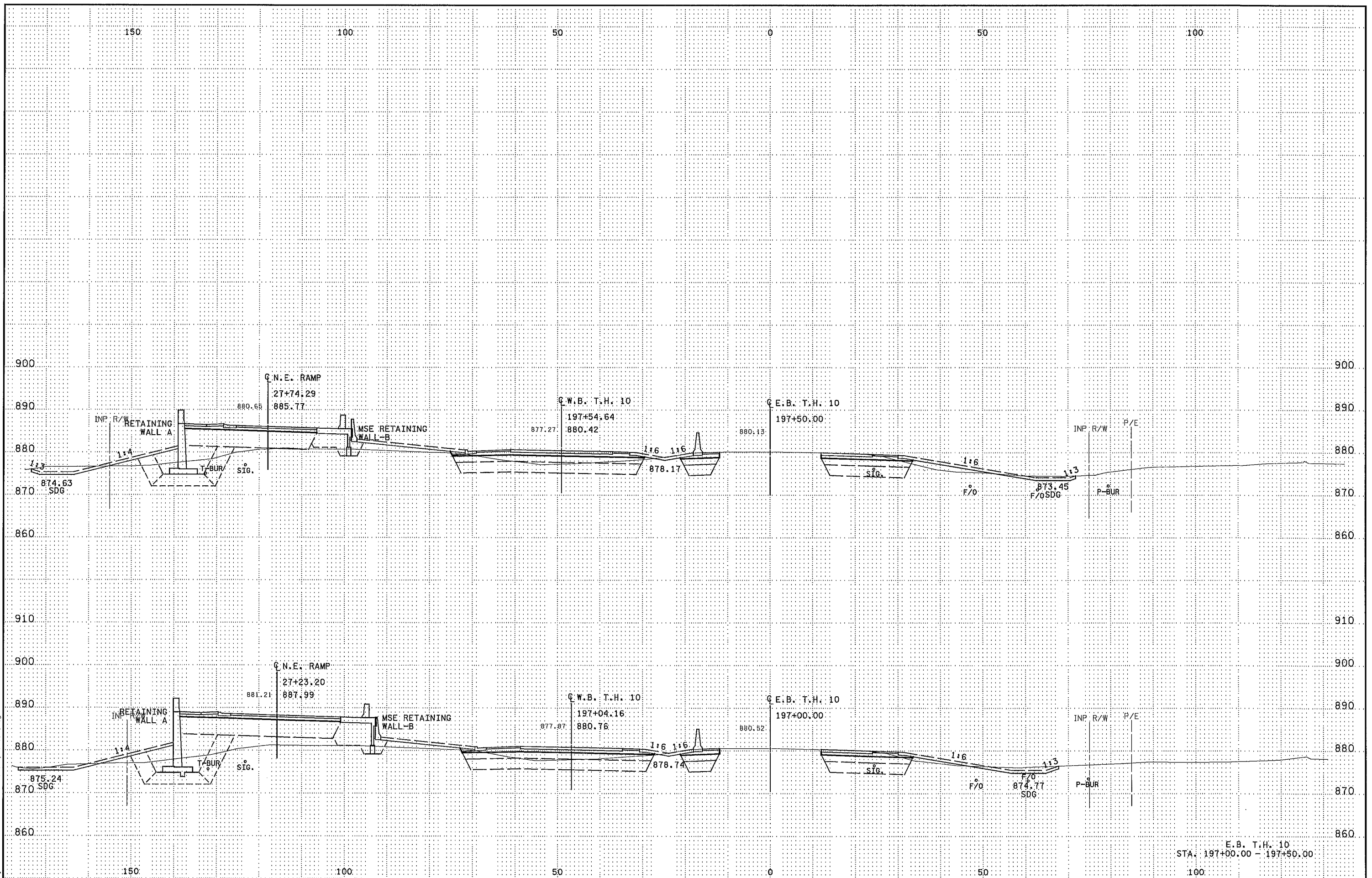
E.B. T.H. 10  
STA. 195+00.00 - 195+50.00





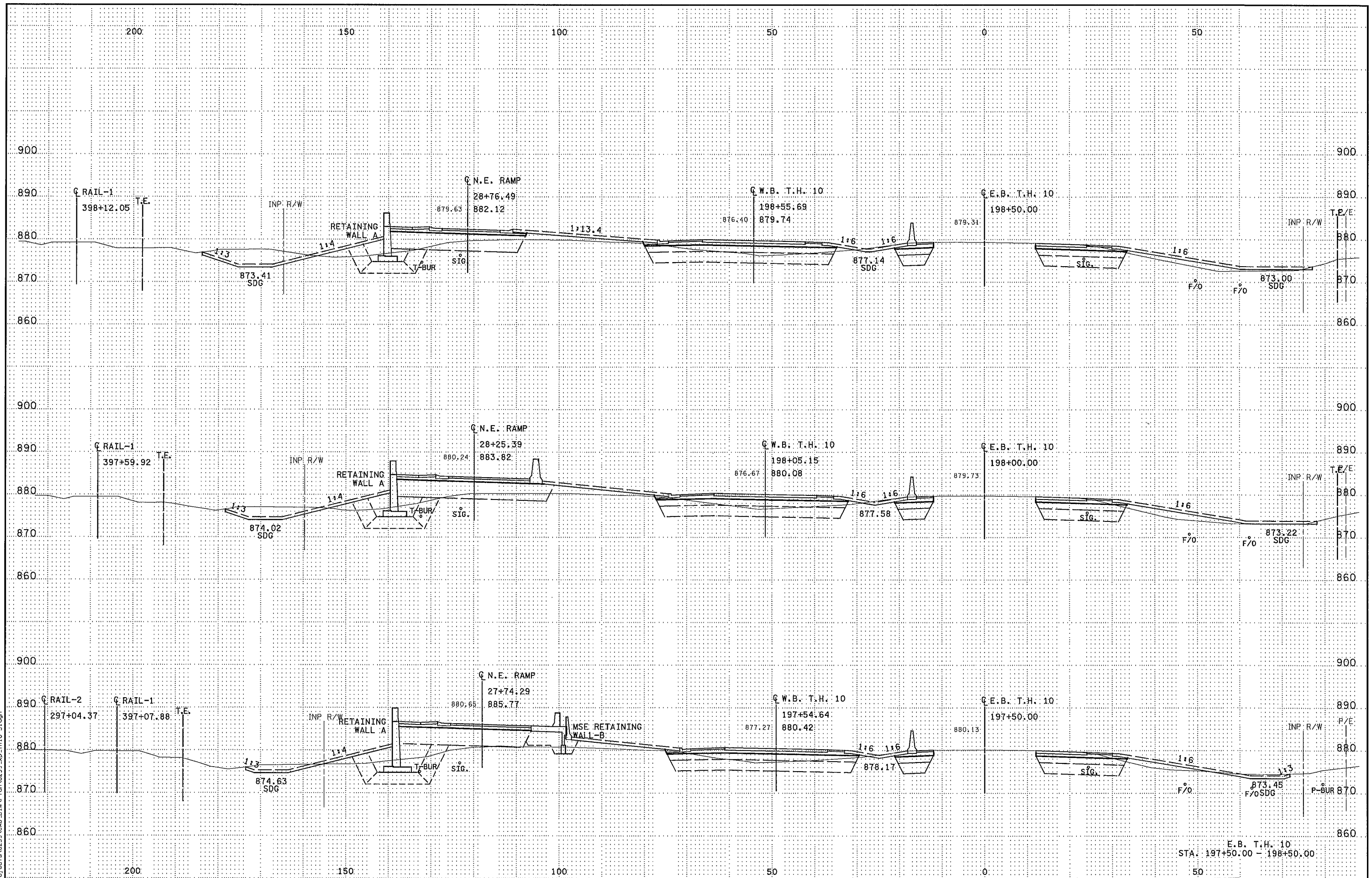
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3:26:48 PM  
9/11/2014  
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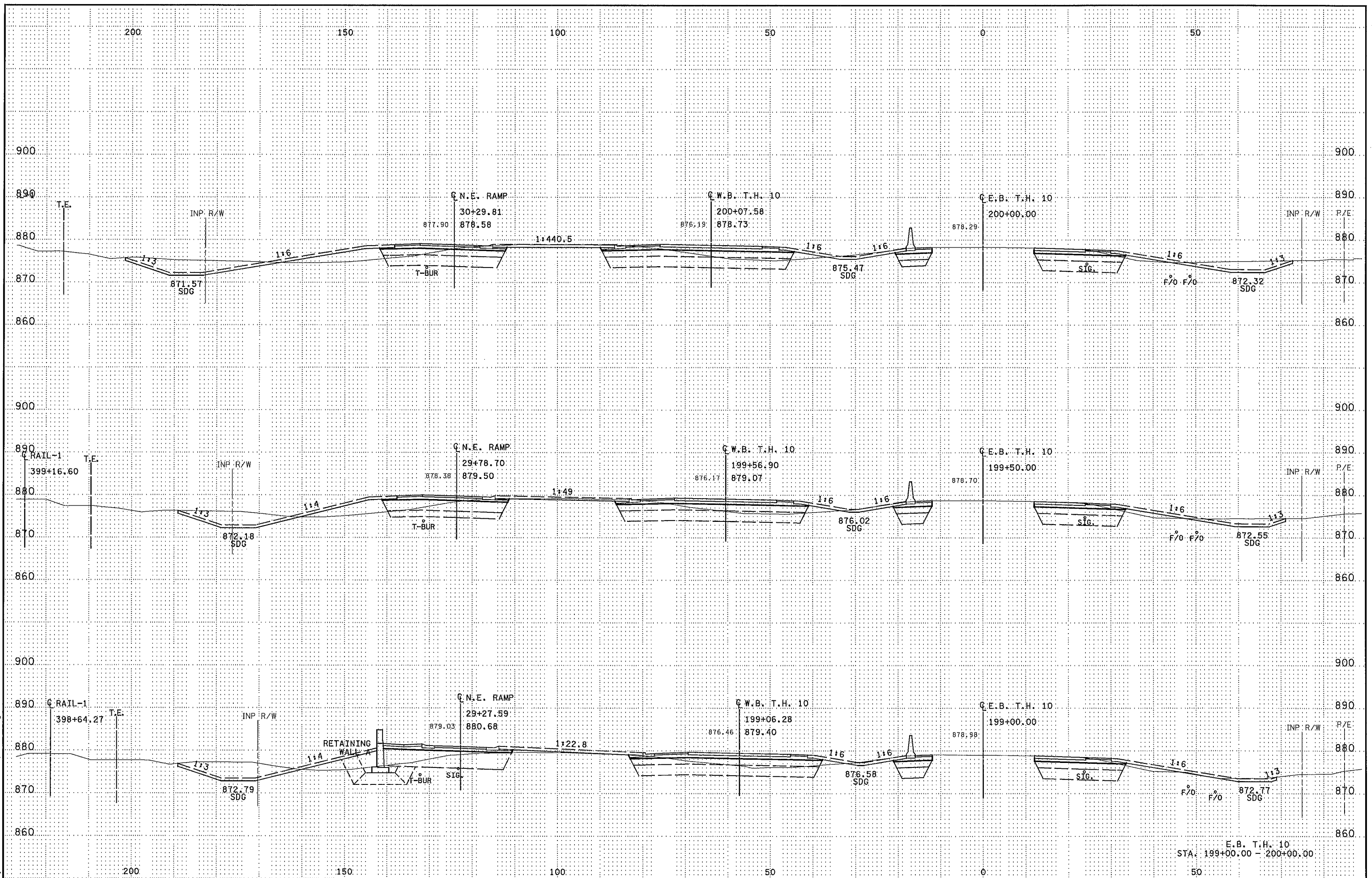


E.B. T.H. 10  
STA. 197+00.00 - 197+50.00

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9/11/2014  
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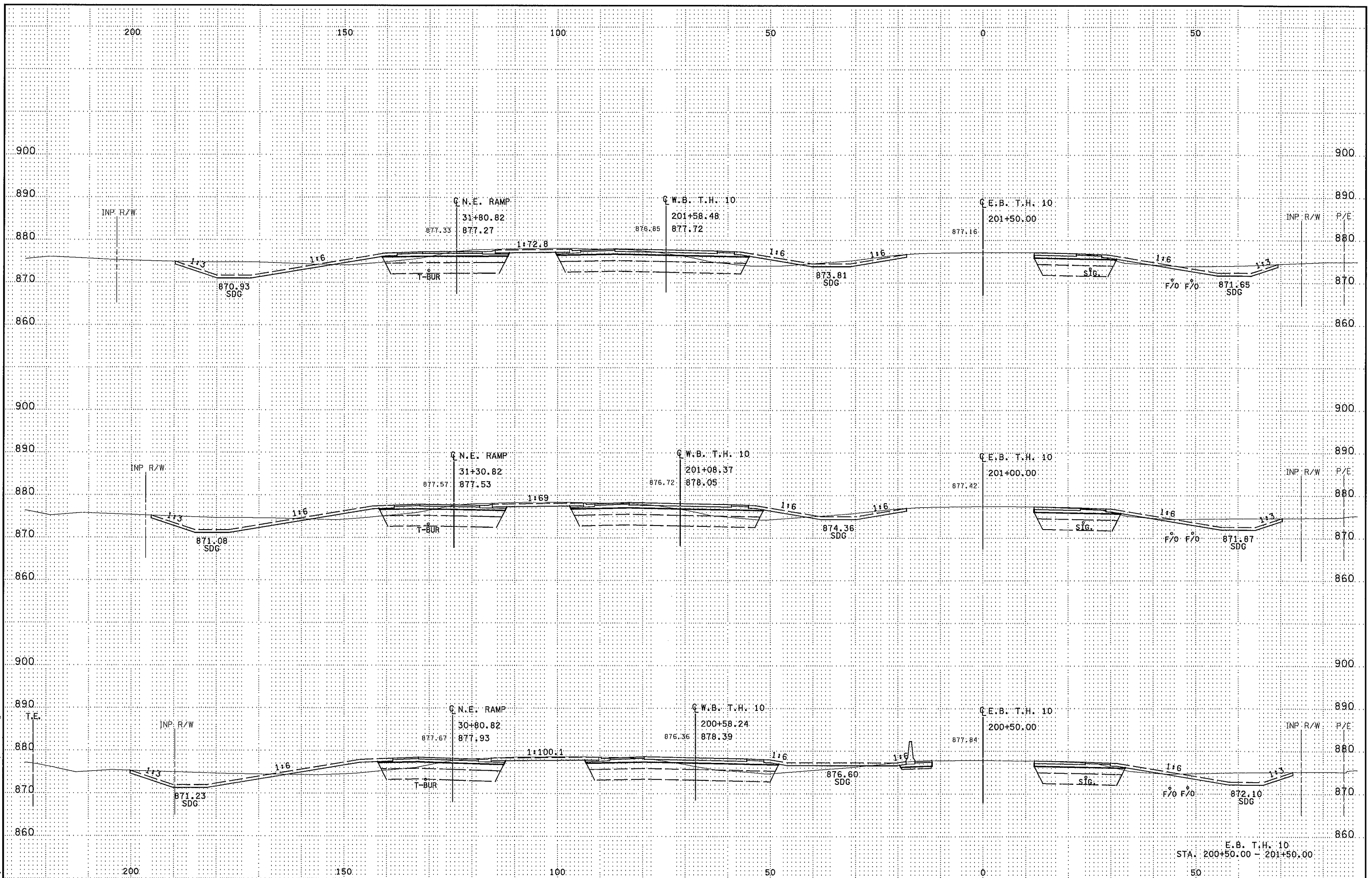


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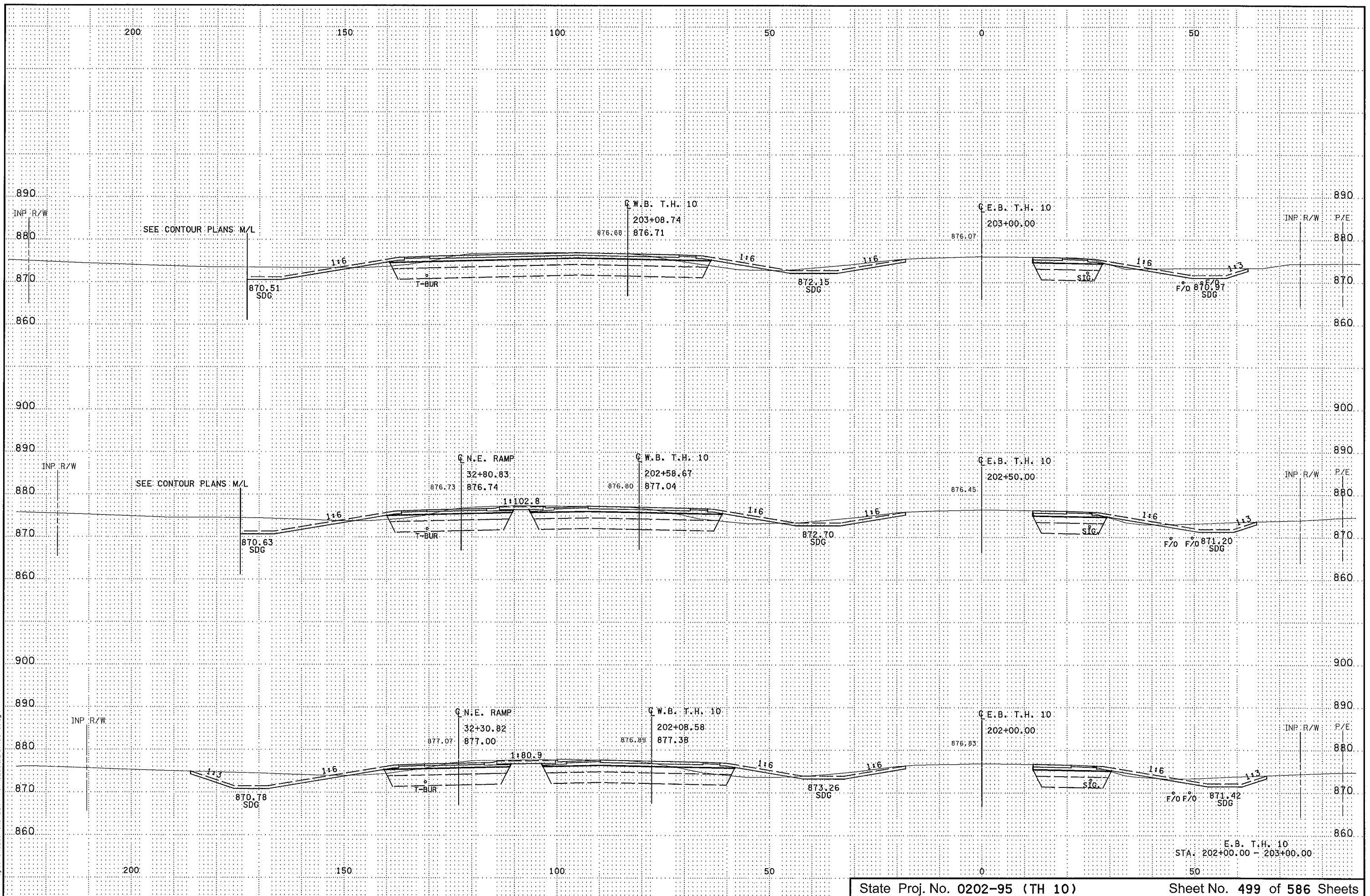




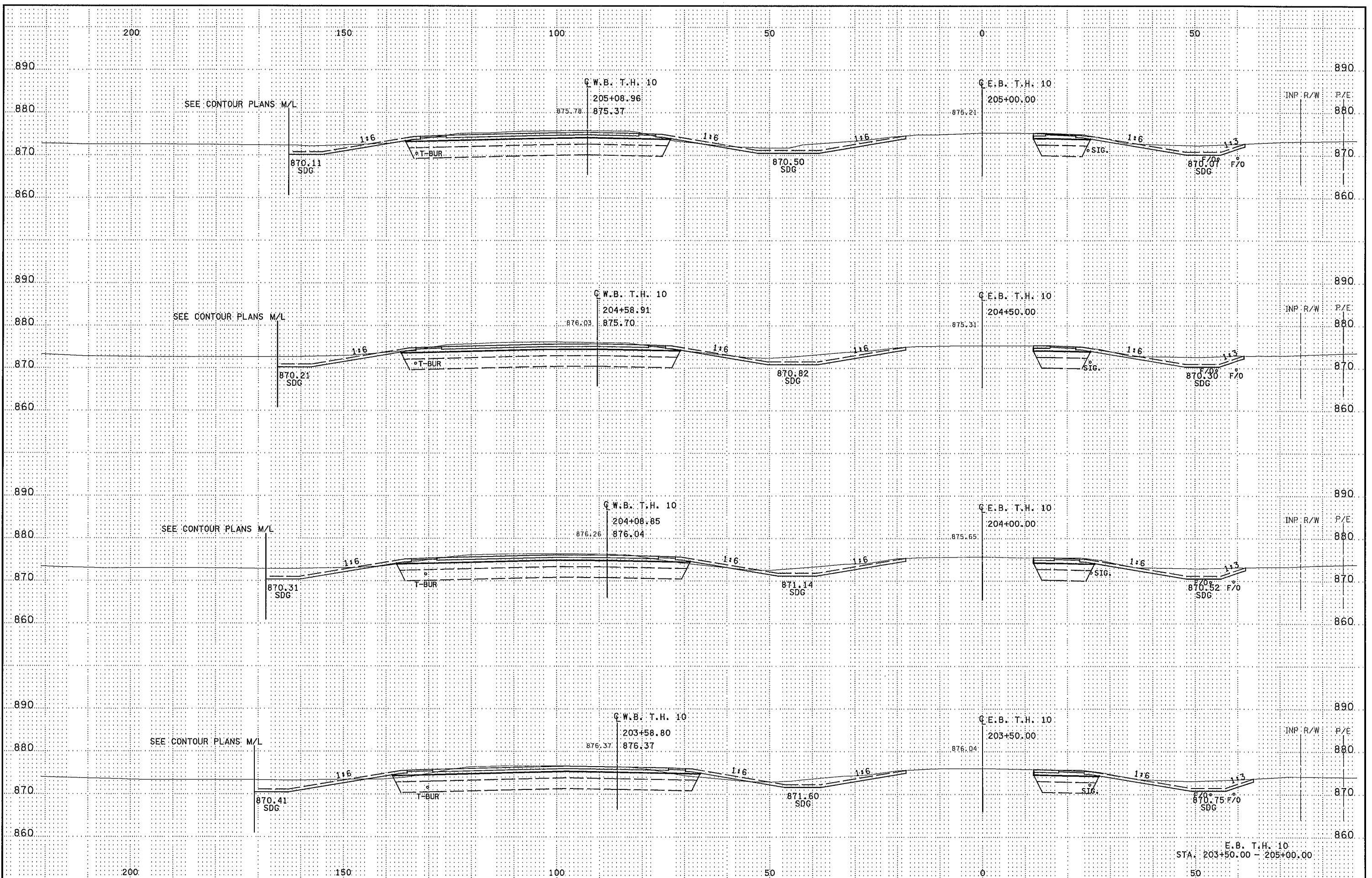
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3:26:56 PM  
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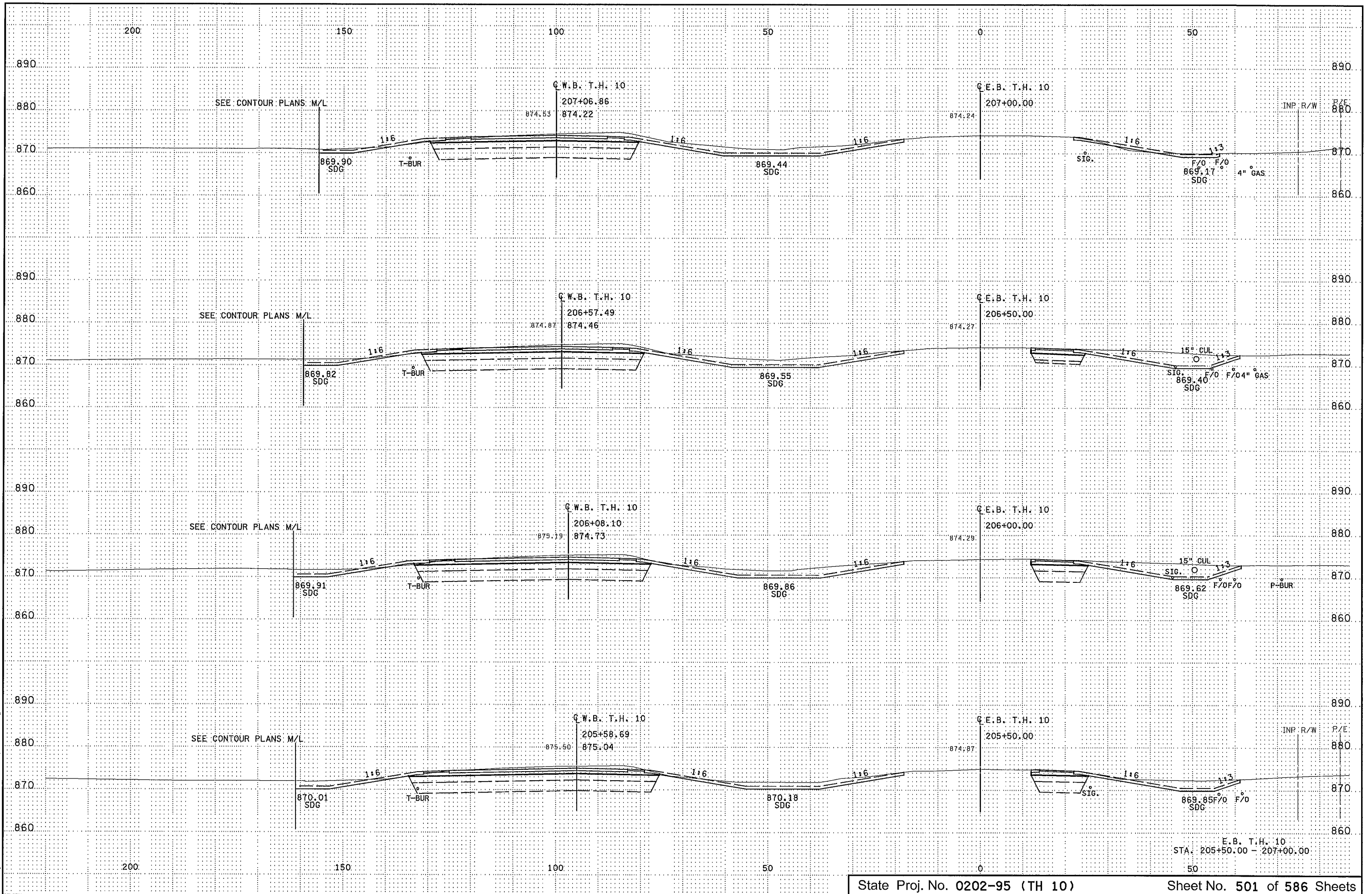


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9/11/2014  
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E.B. T.H. 10  
STA. 203+50.00 - 205+00.00

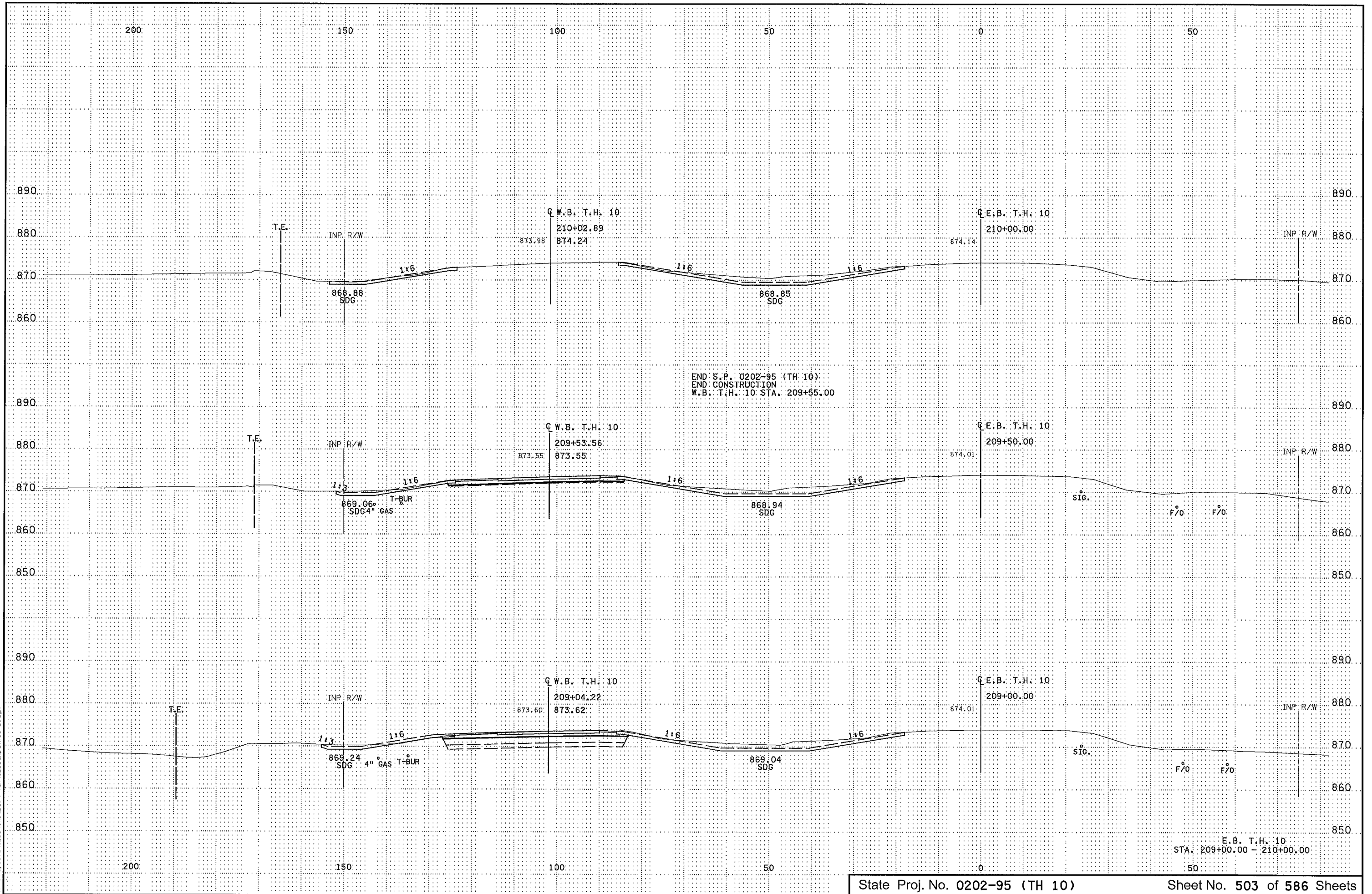




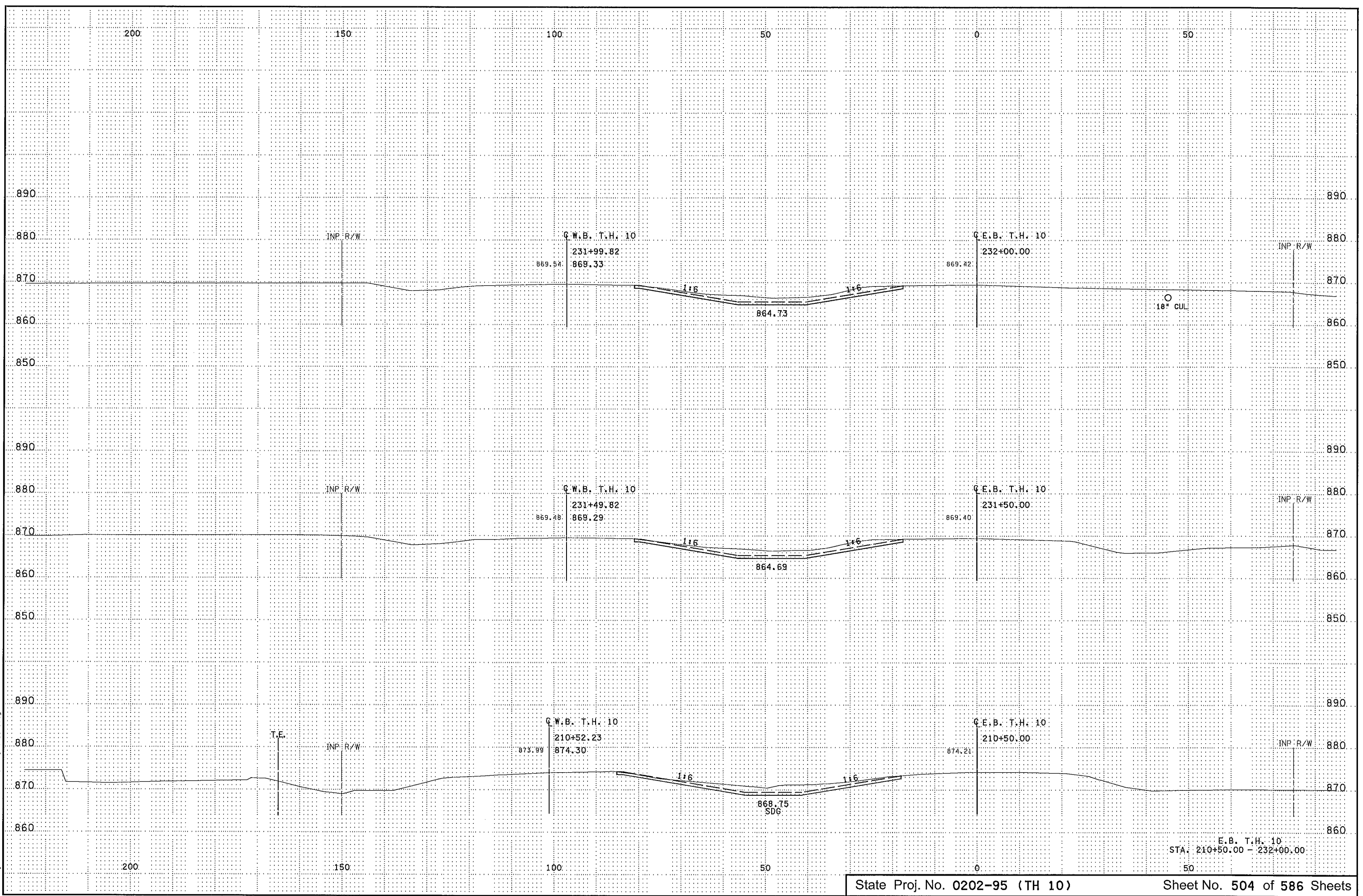
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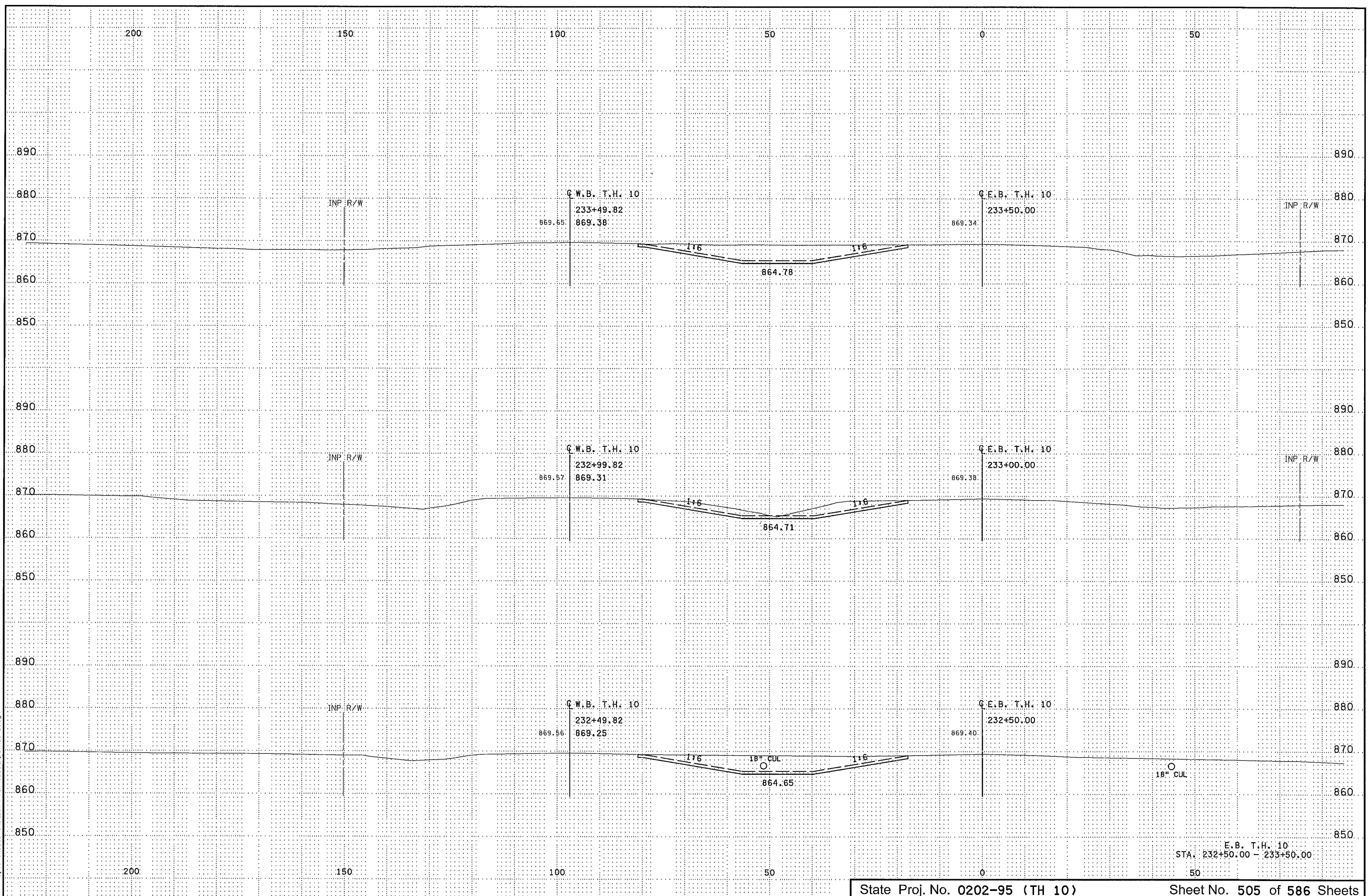


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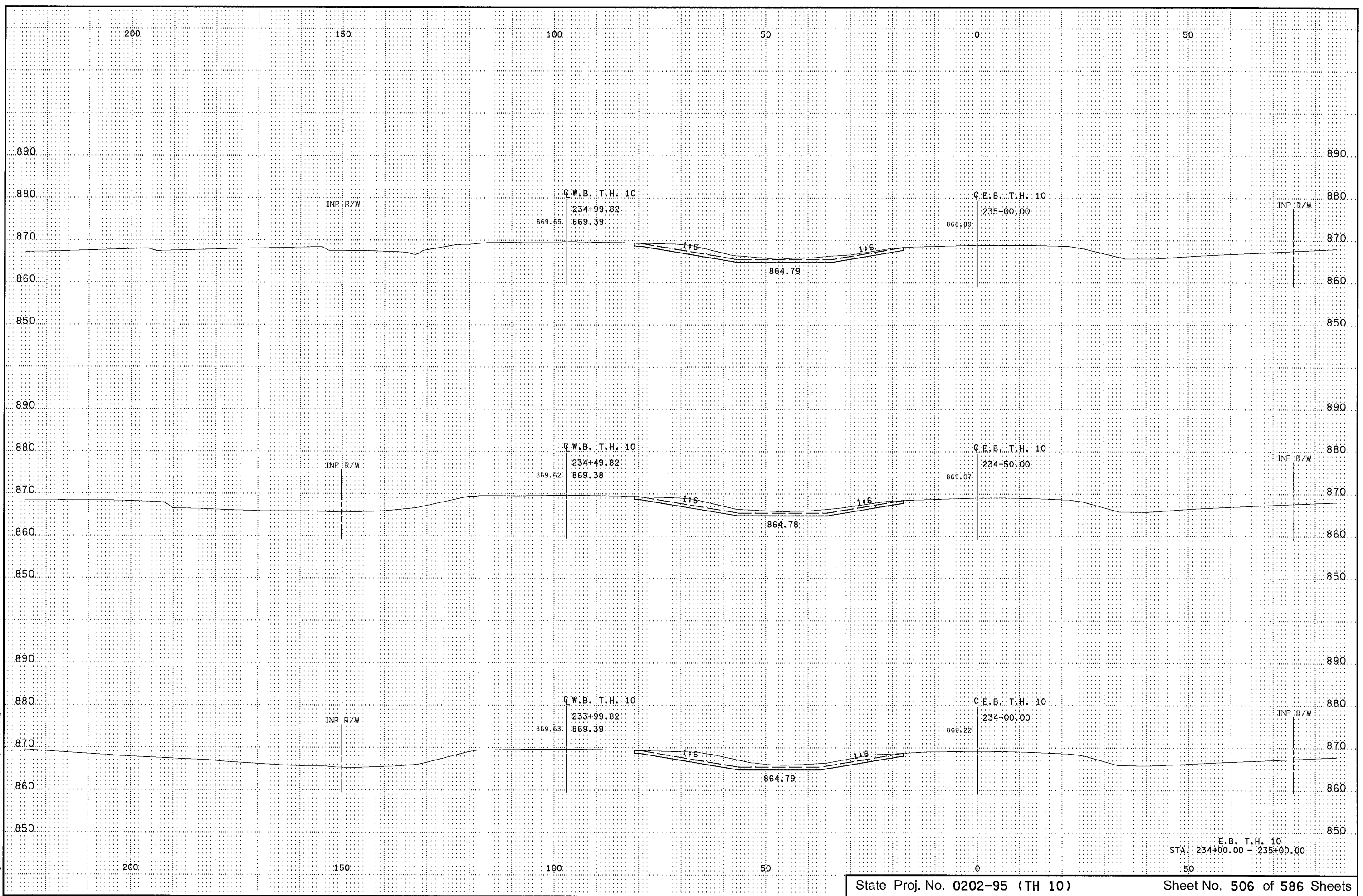




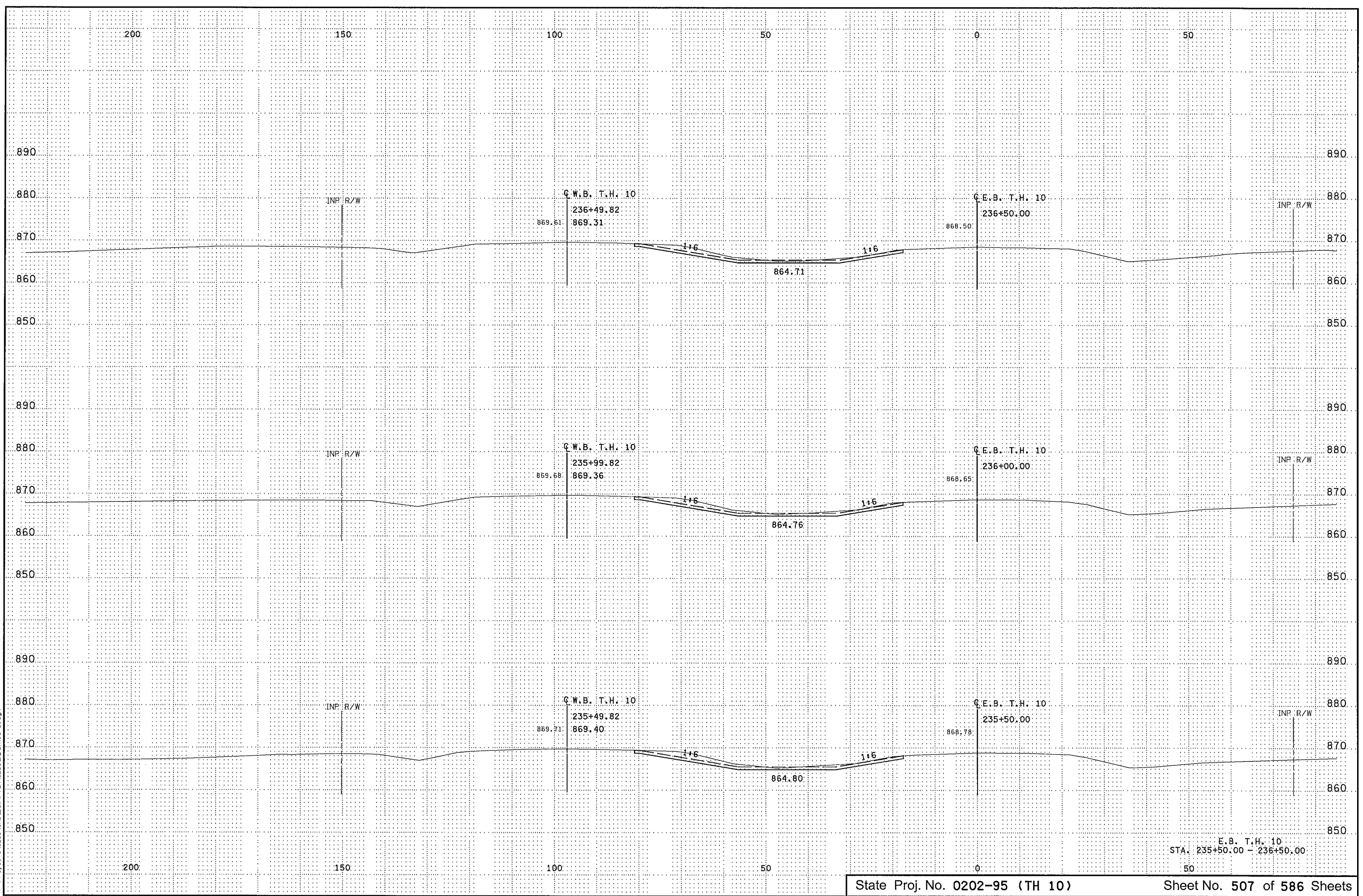
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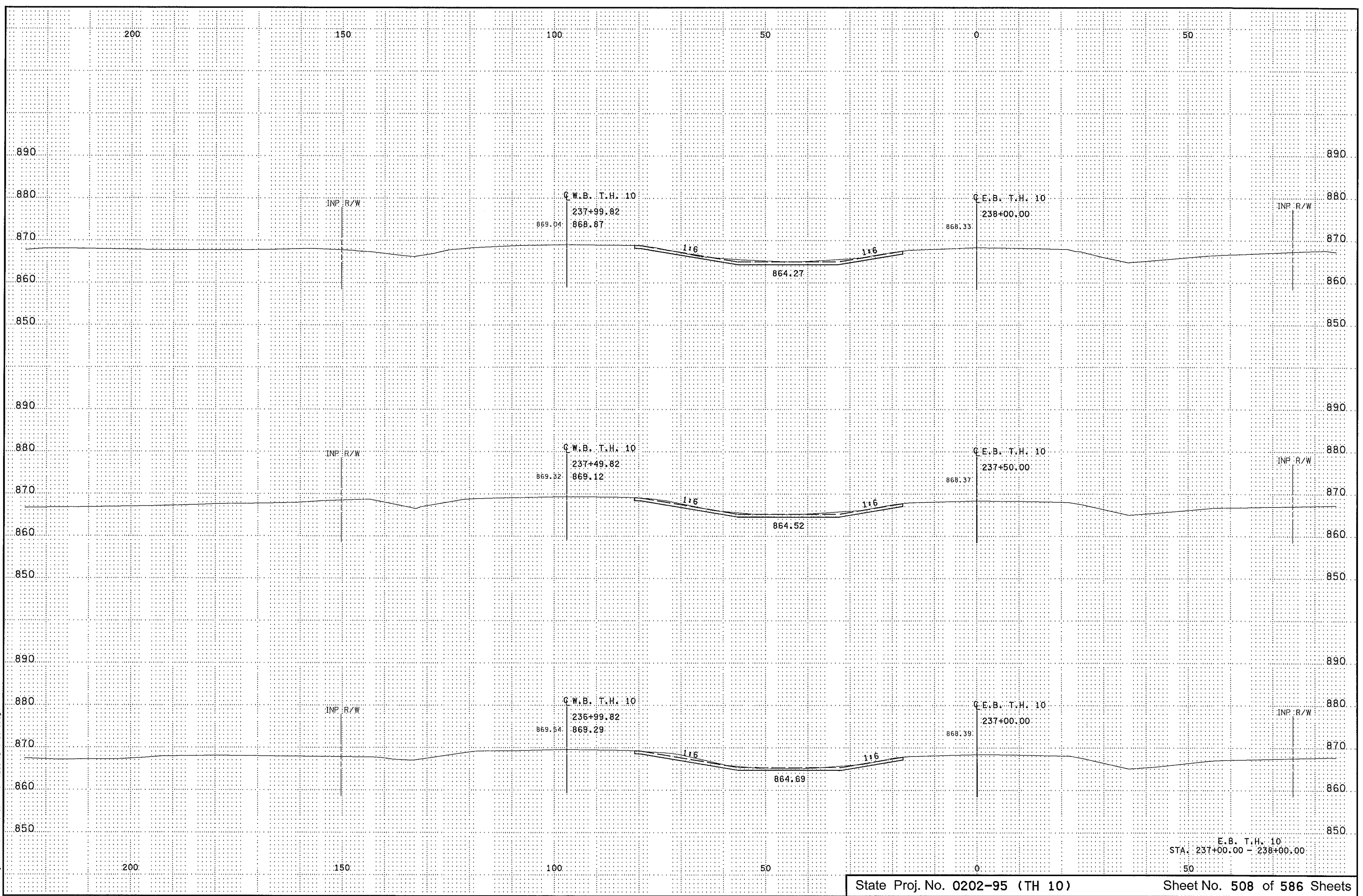


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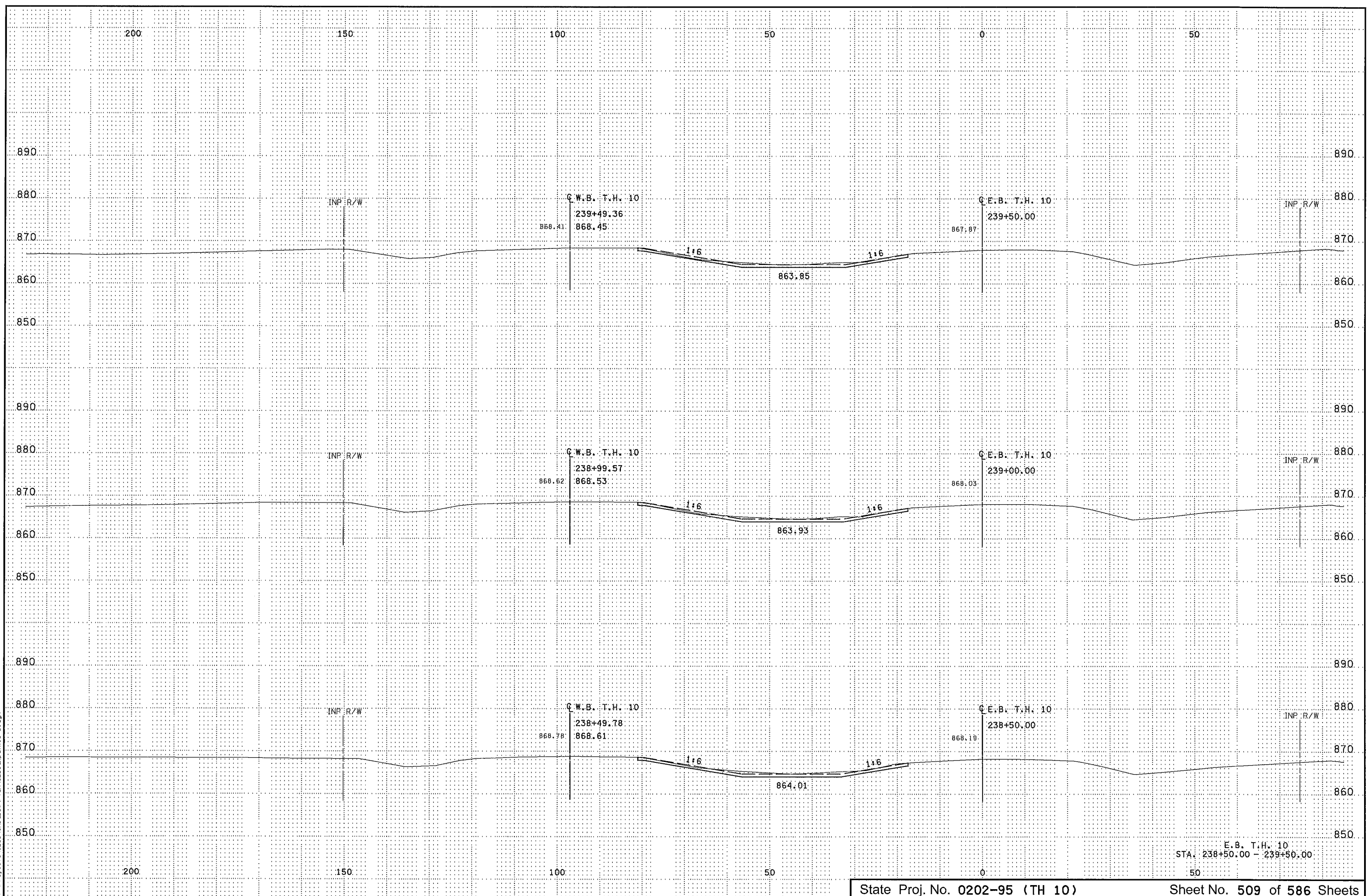


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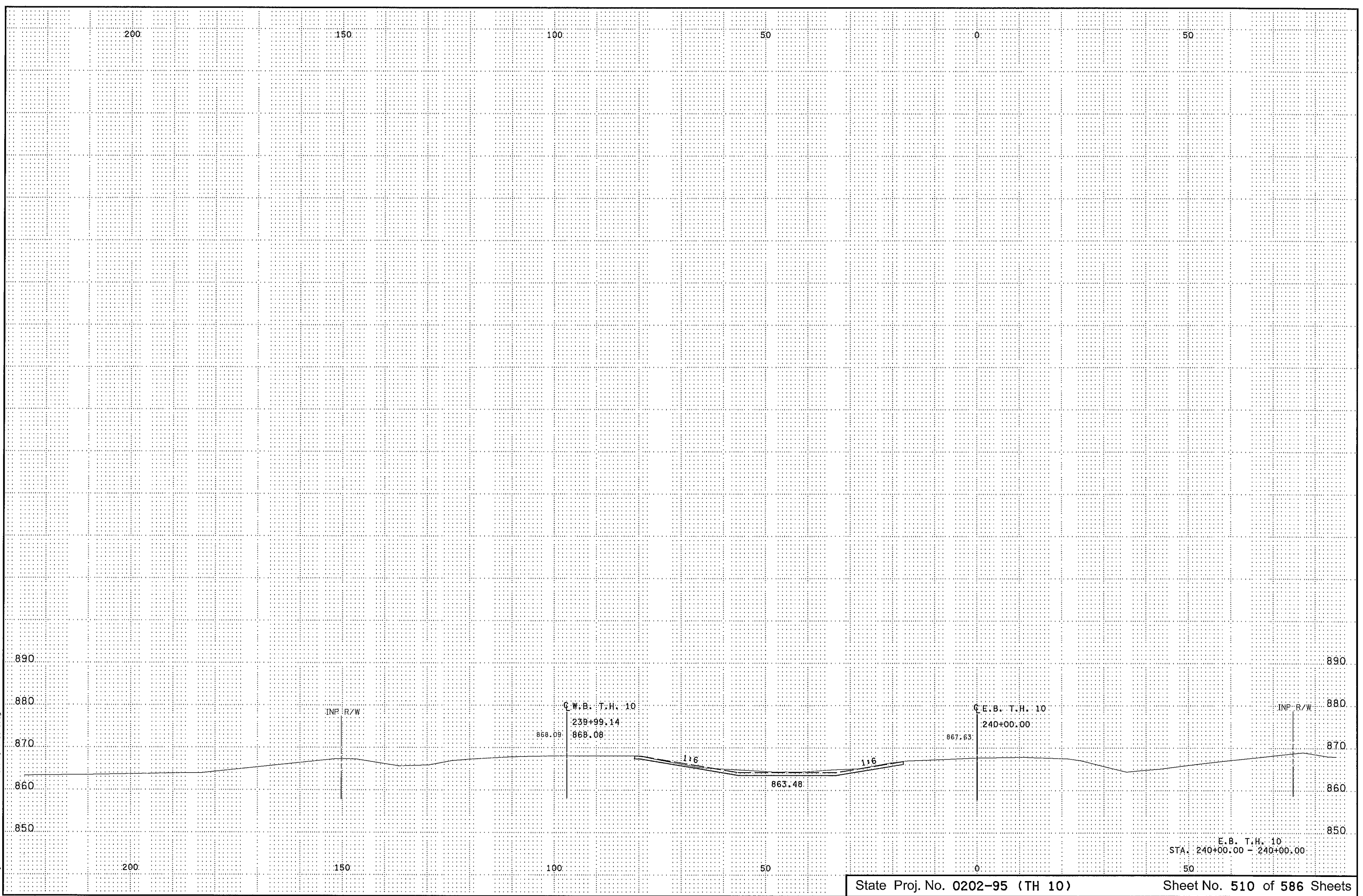
E.B. T.H. 10  
STA. 237+00.00 - 238+00.00

3:27:14 PM  
9/11/2014  
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E.B. T.H. 10  
STA. 238+50.00 - 239+50.00

3:27:16 PM  
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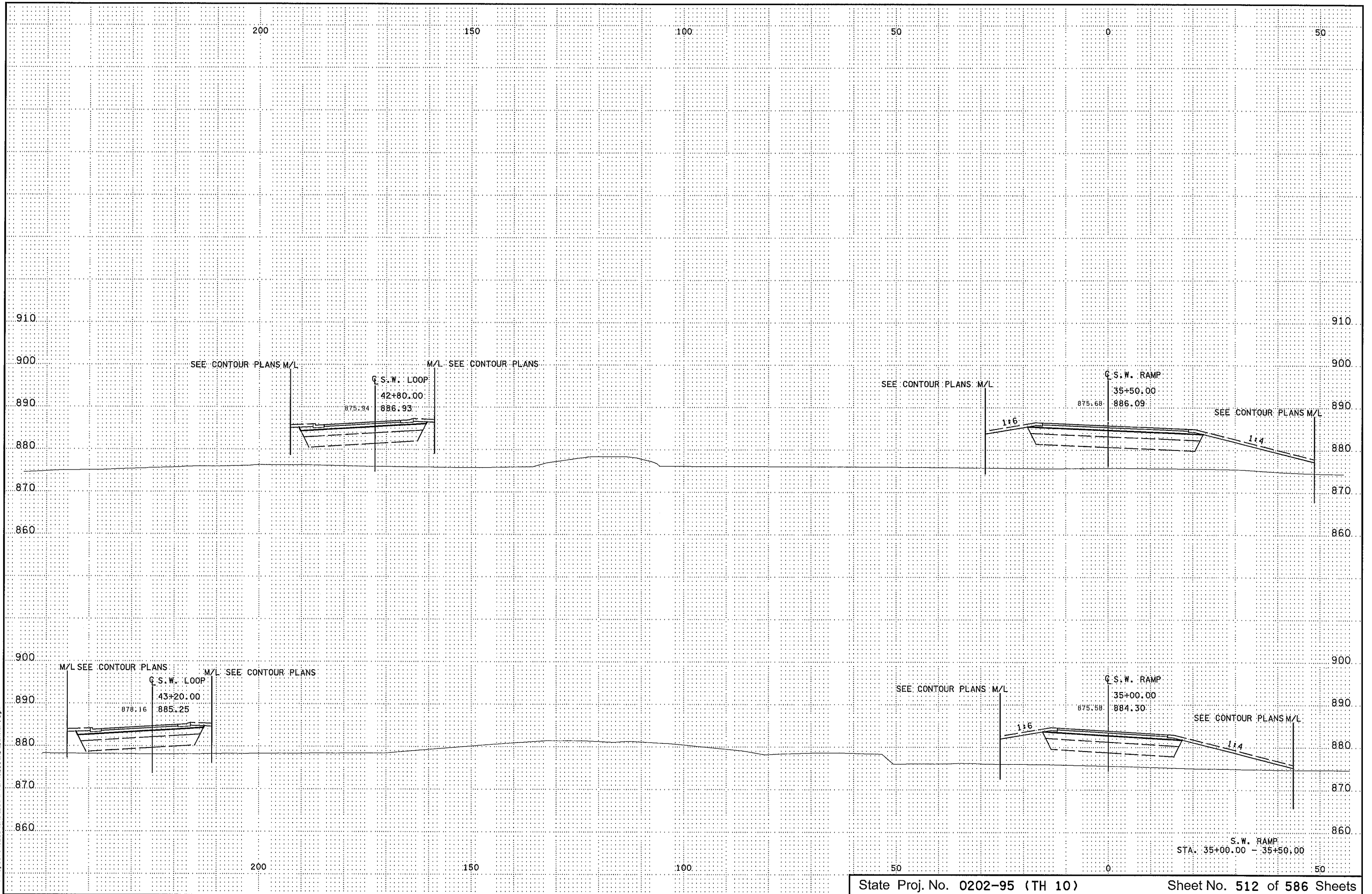


E.B. T.H. 10  
STA. 240+00.00 - 240+00.00

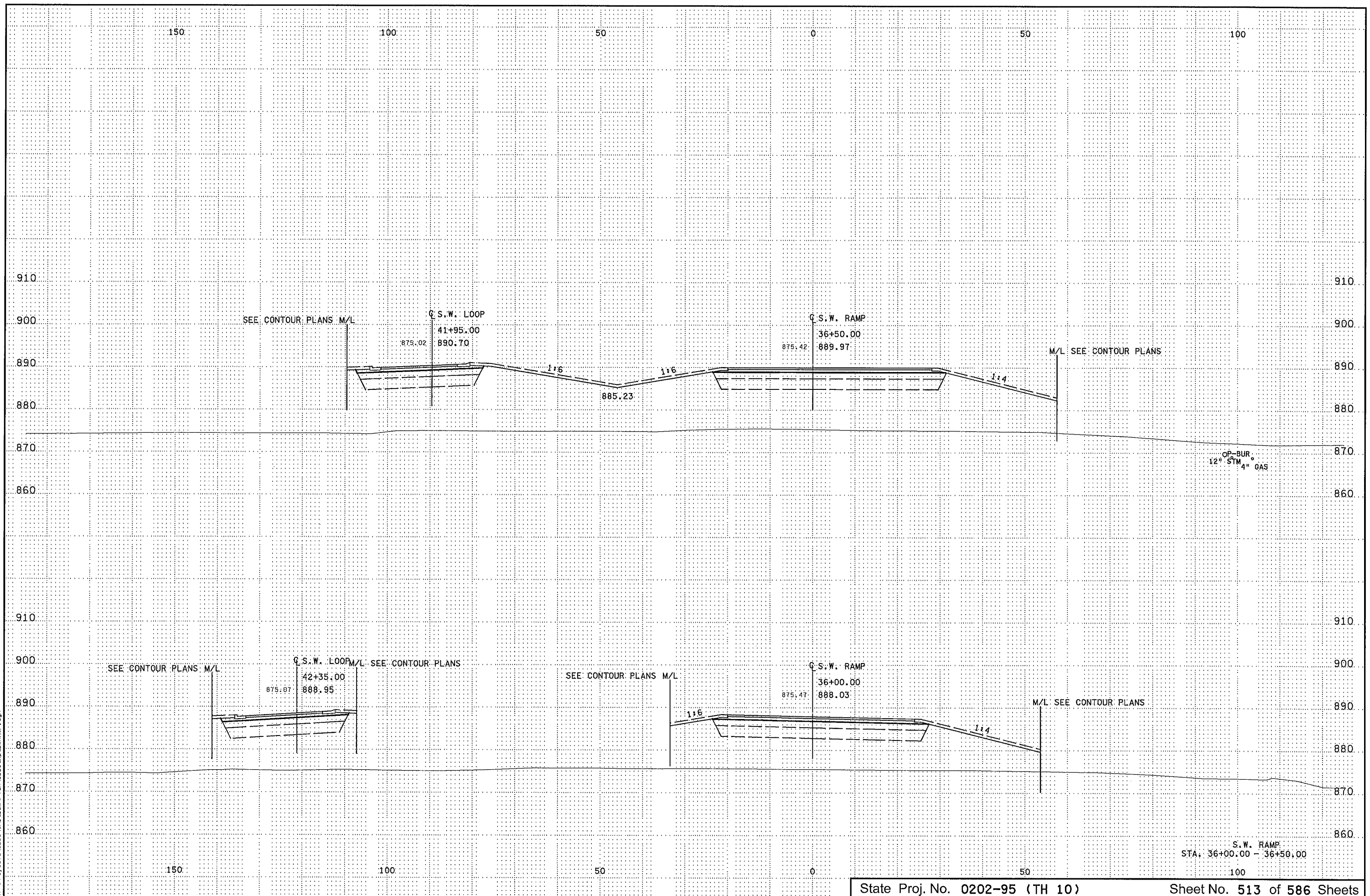




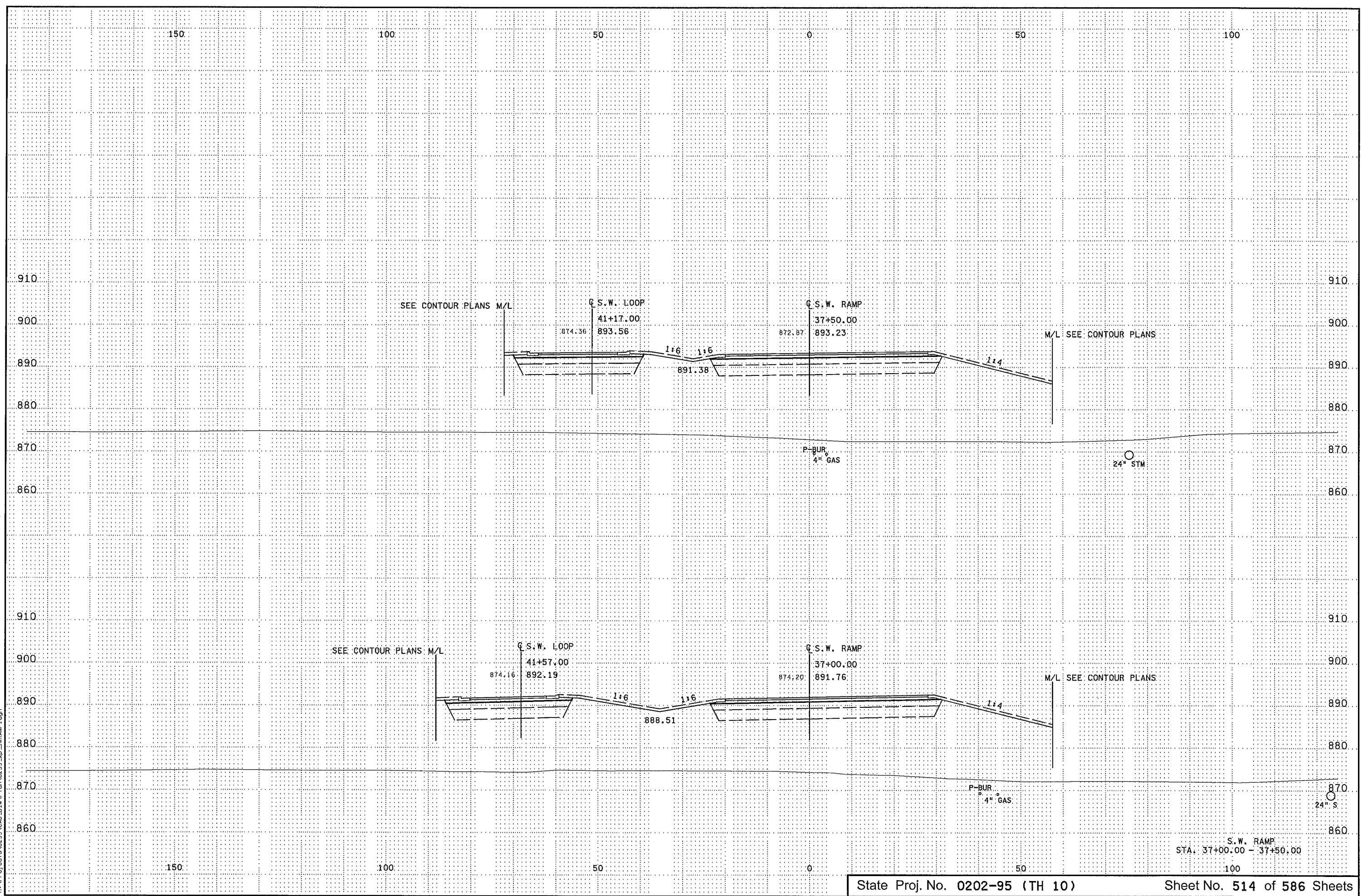
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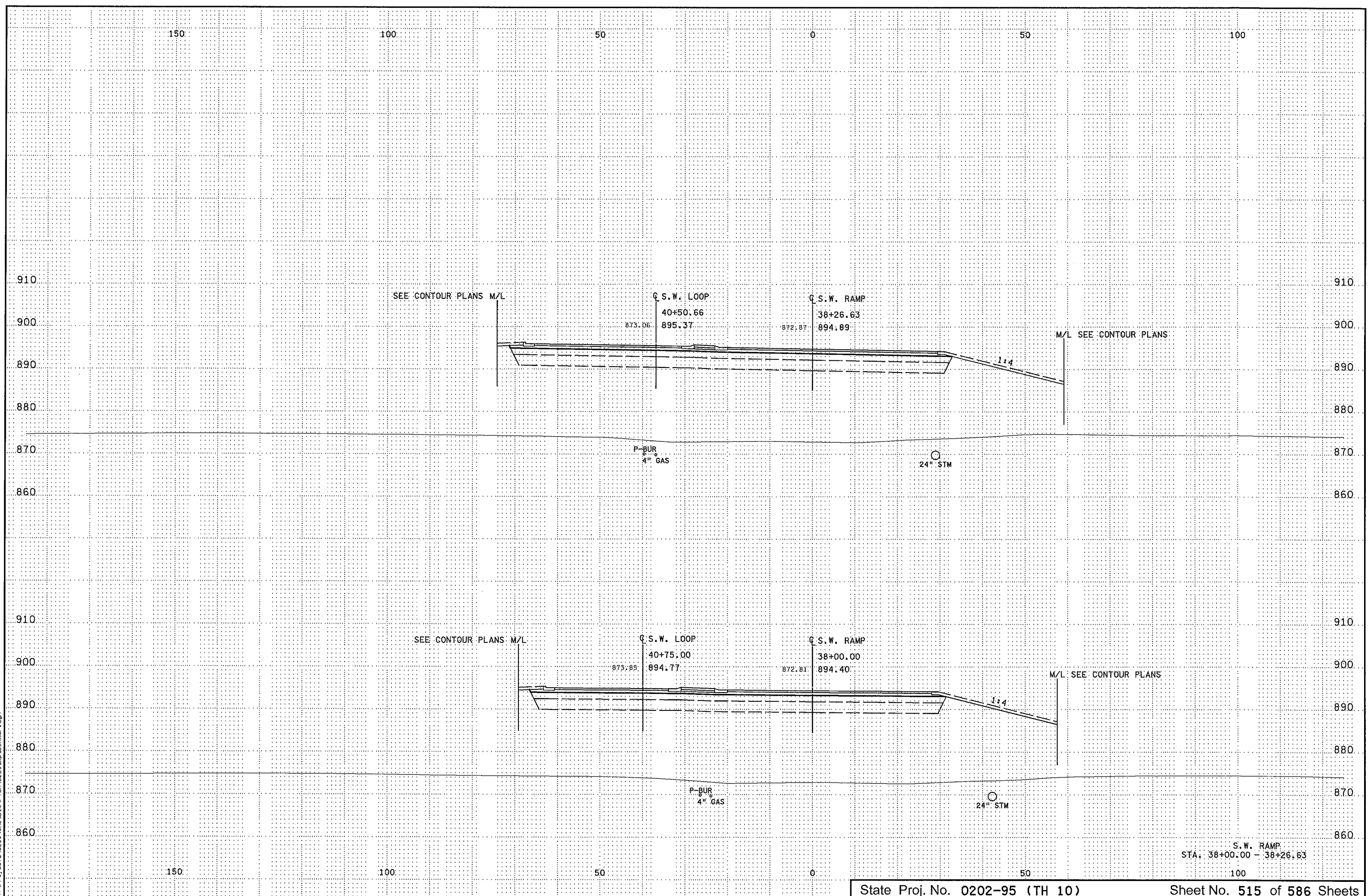


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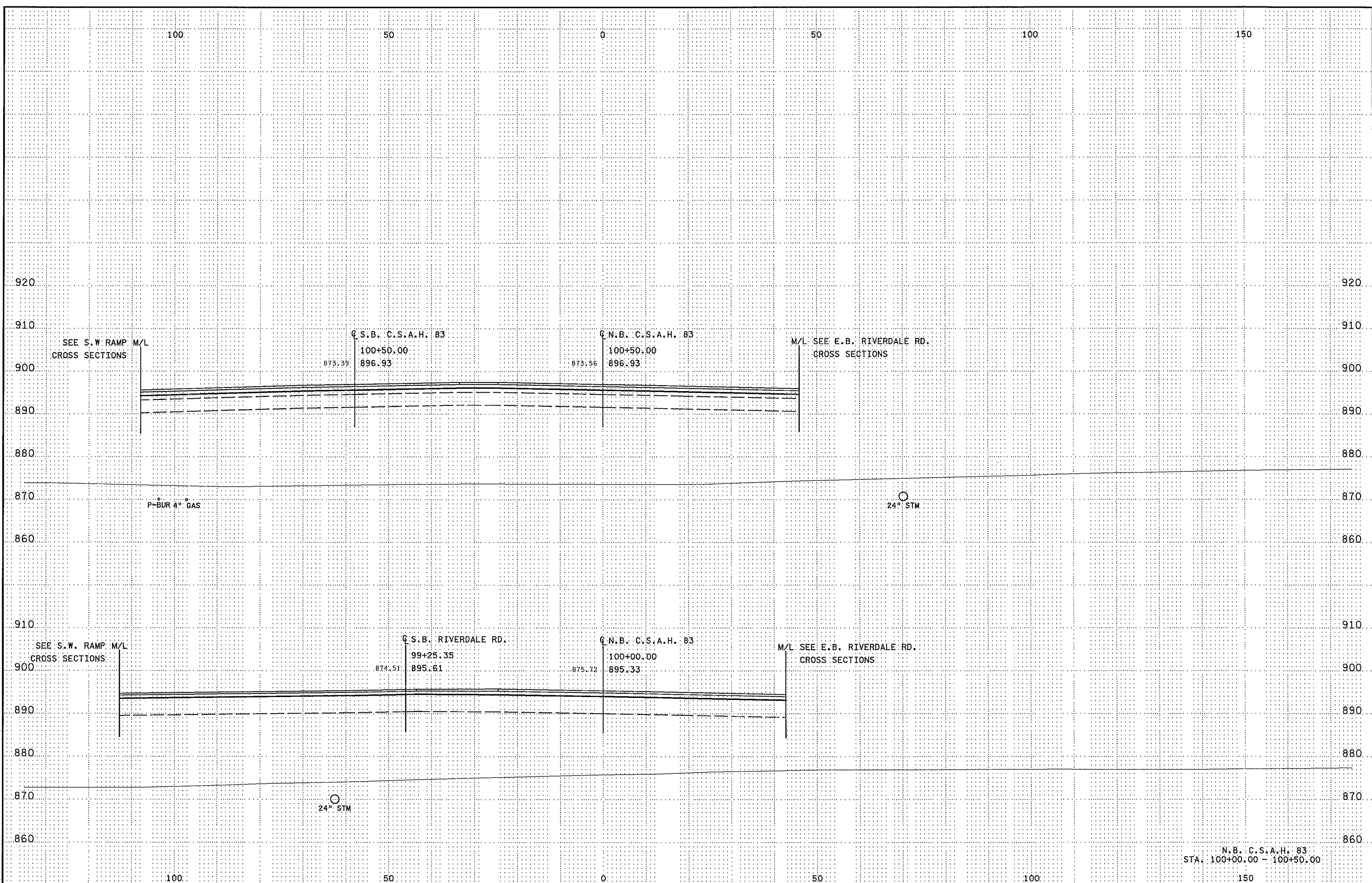




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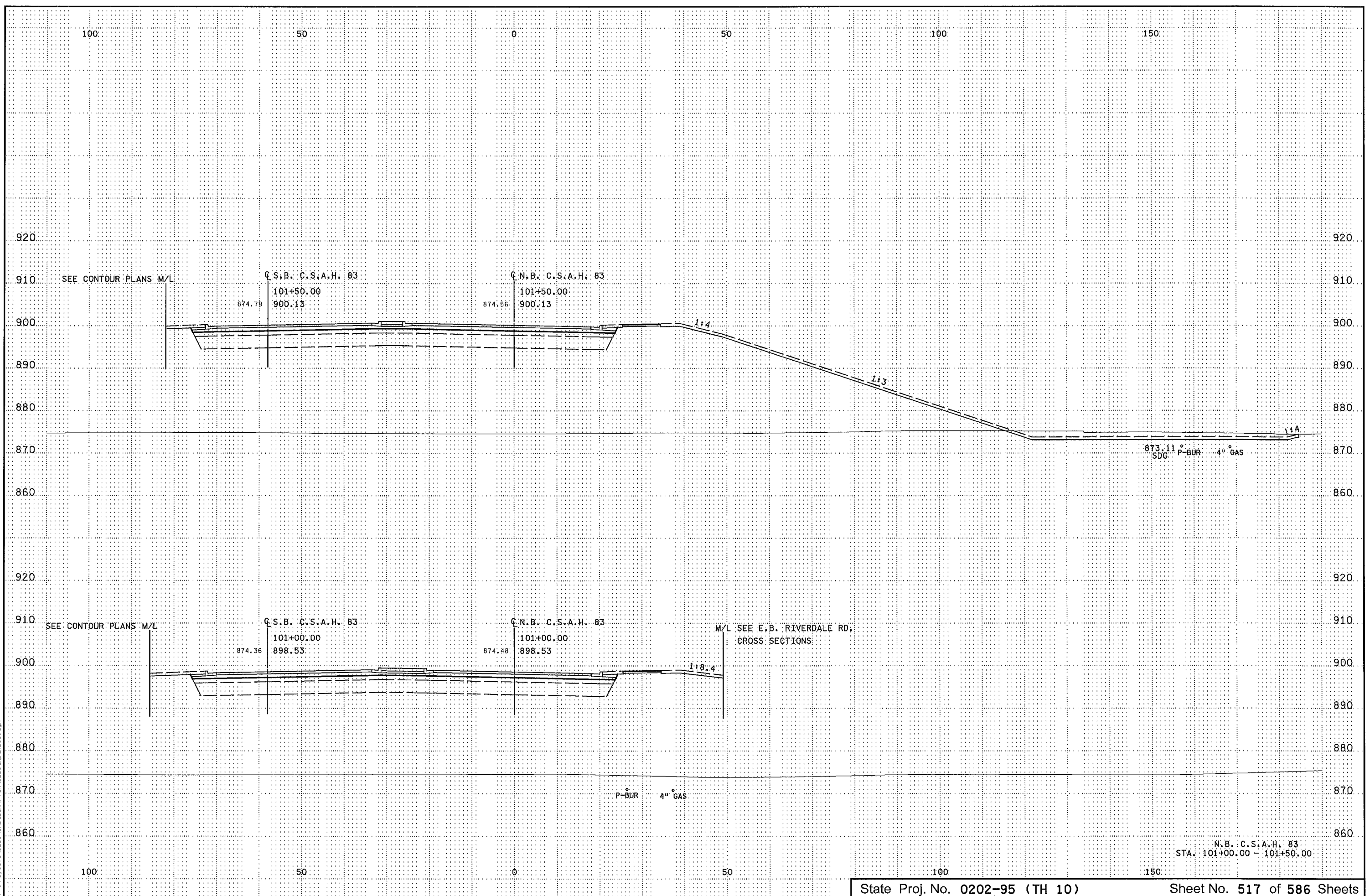


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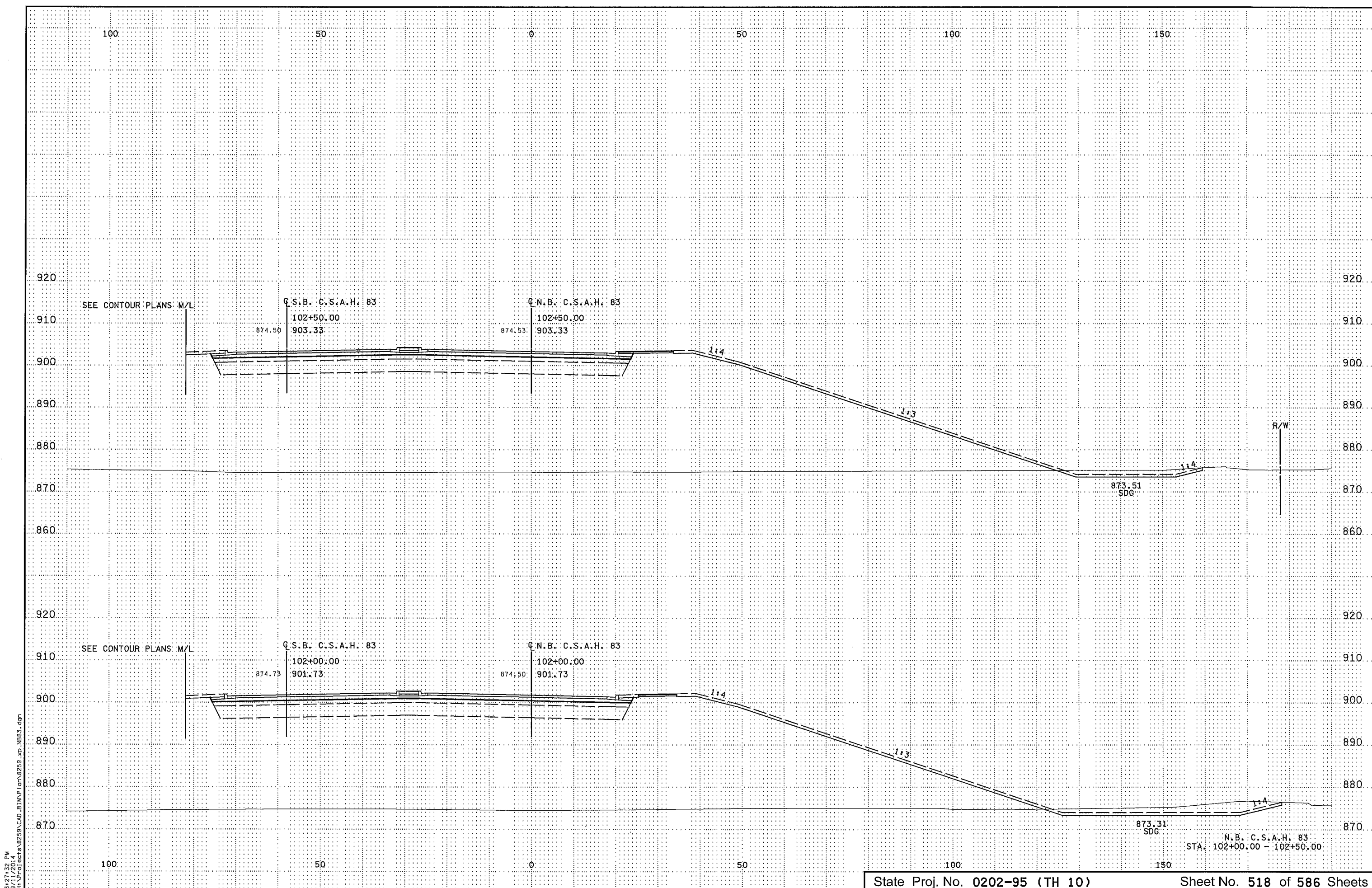


N.B. C.S.A.H. 83  
STA. 100+00.00 - 100+50.00

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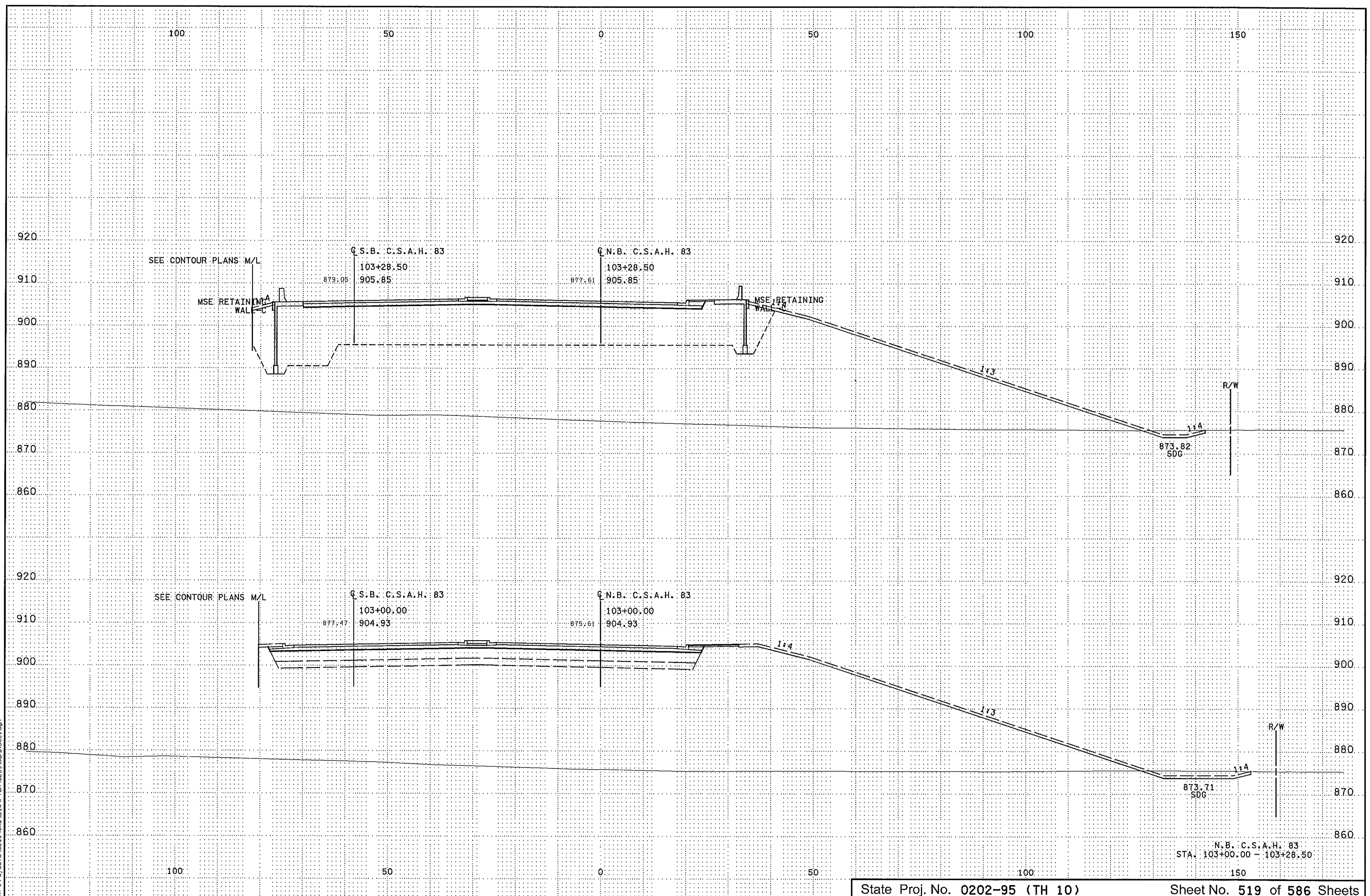
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STA. 101+00.00 - 101+50.00



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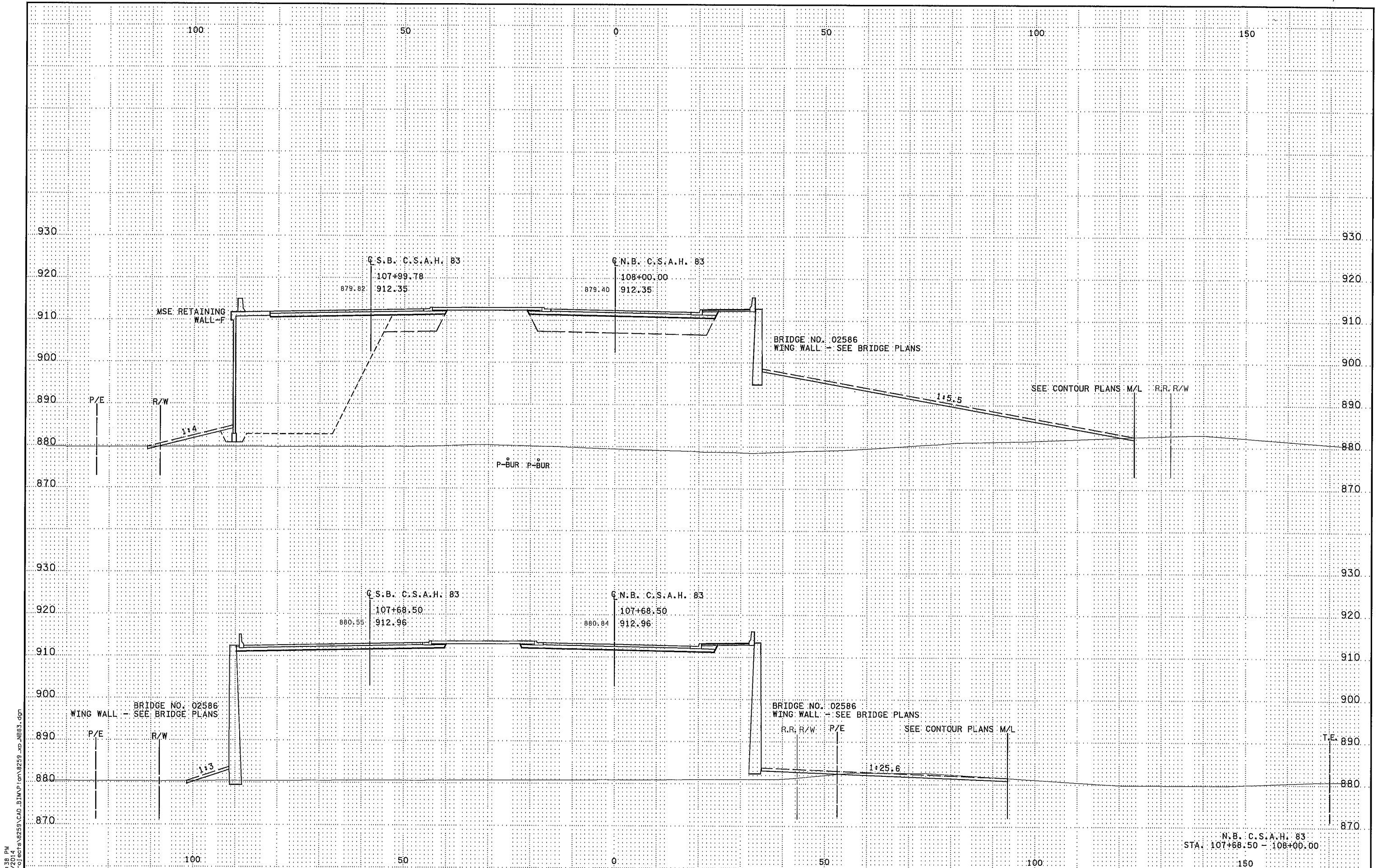


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N.B. C.S.A.H. 83  
STA. 103+00.00 - 103+28.50



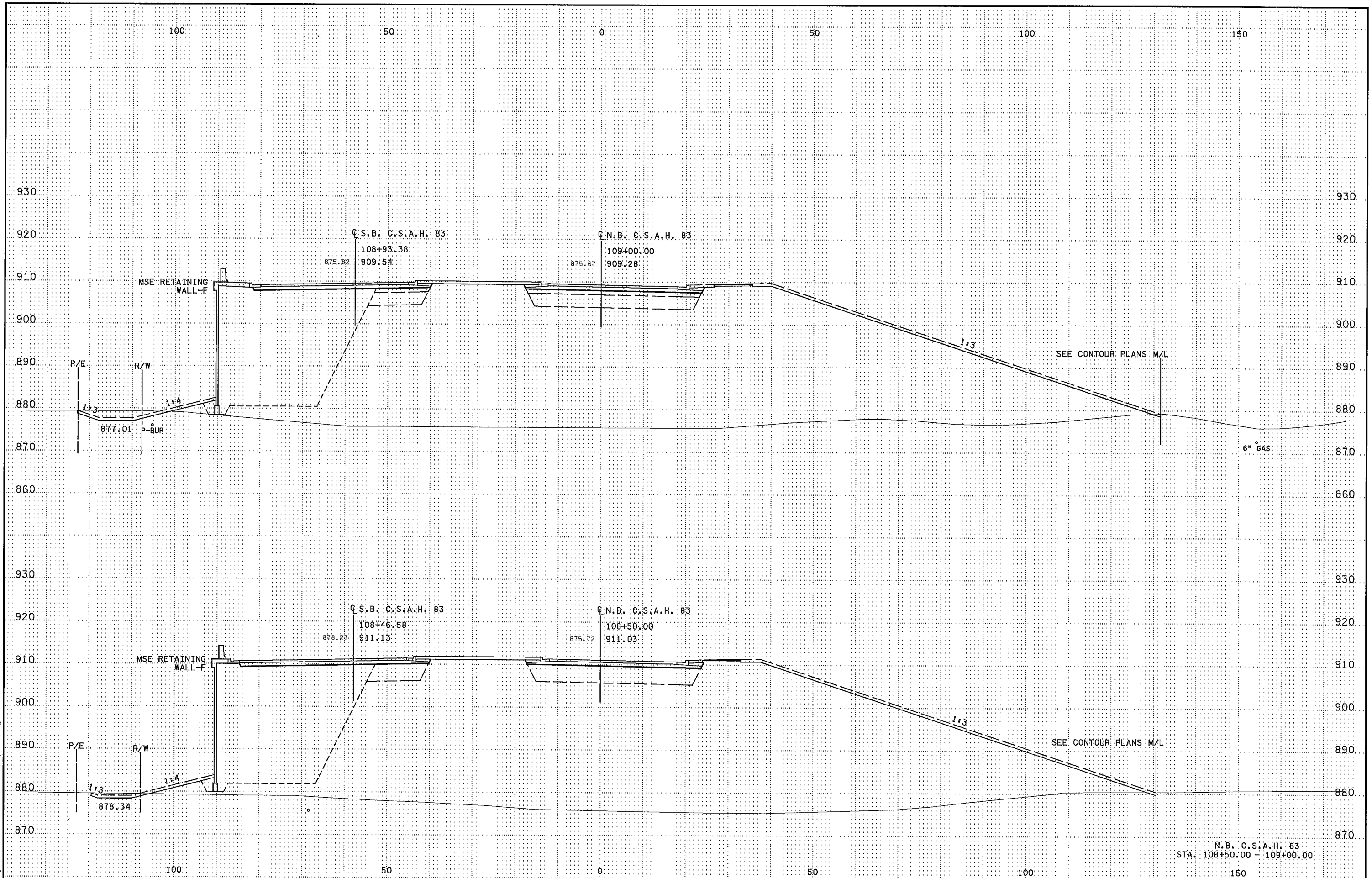


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N.B. C.S.A.H. 83  
 STA. 107+68.50 - 108+00.00

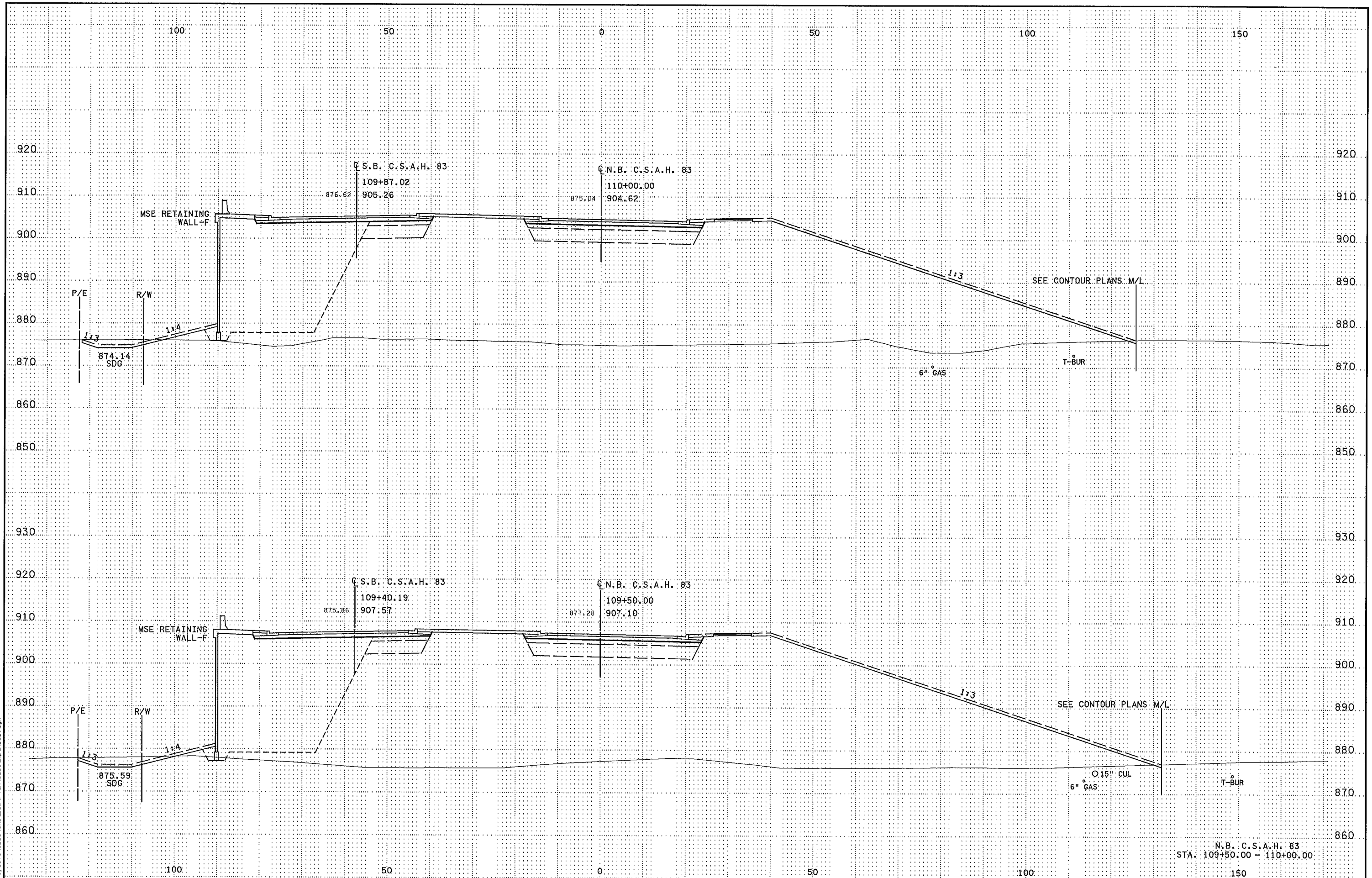


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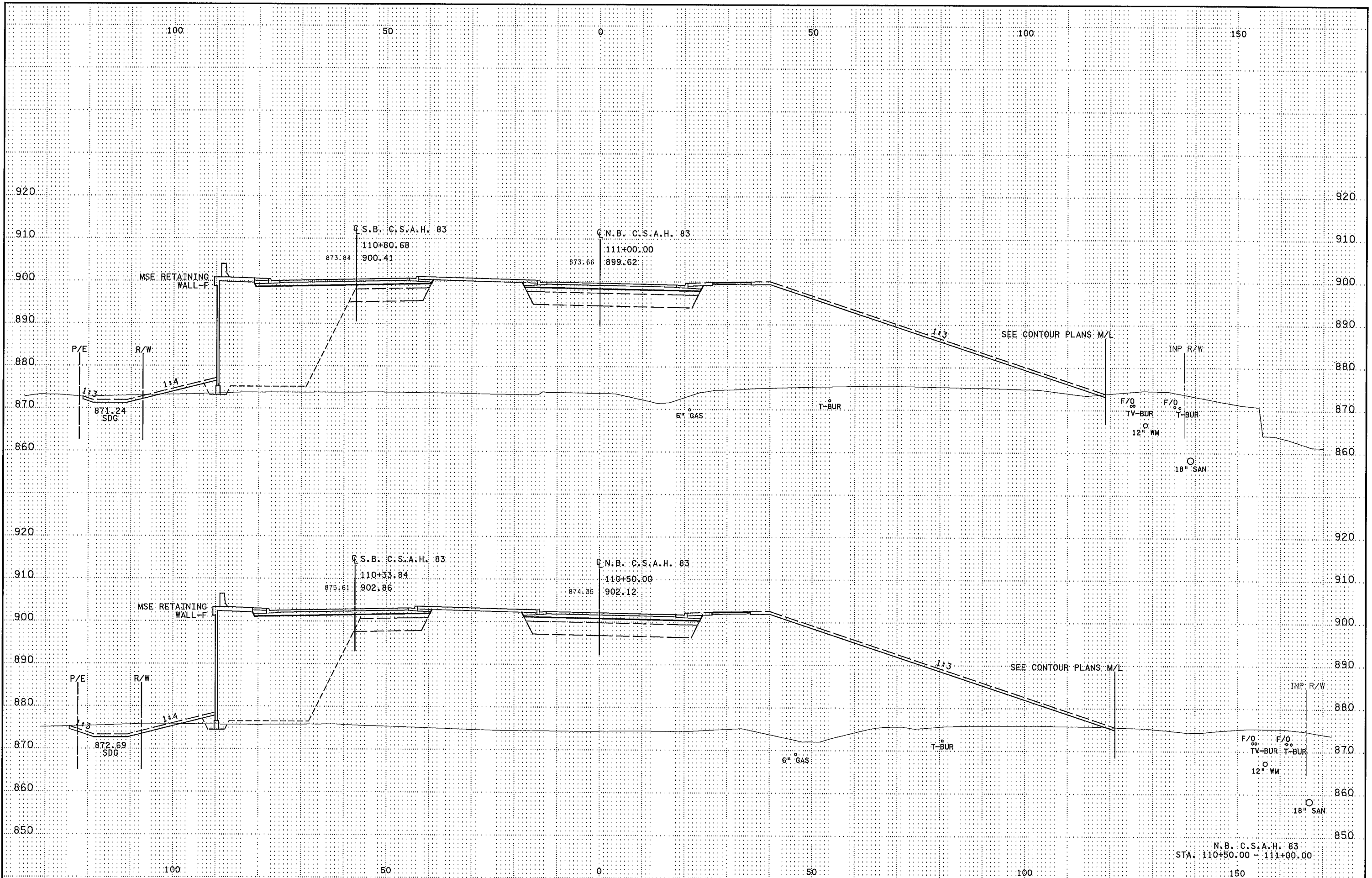
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STA. 108+50.00 - 109+00.00

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N.B. C.S.A.H. 83  
STA. 109+50.00 - 110+00.00

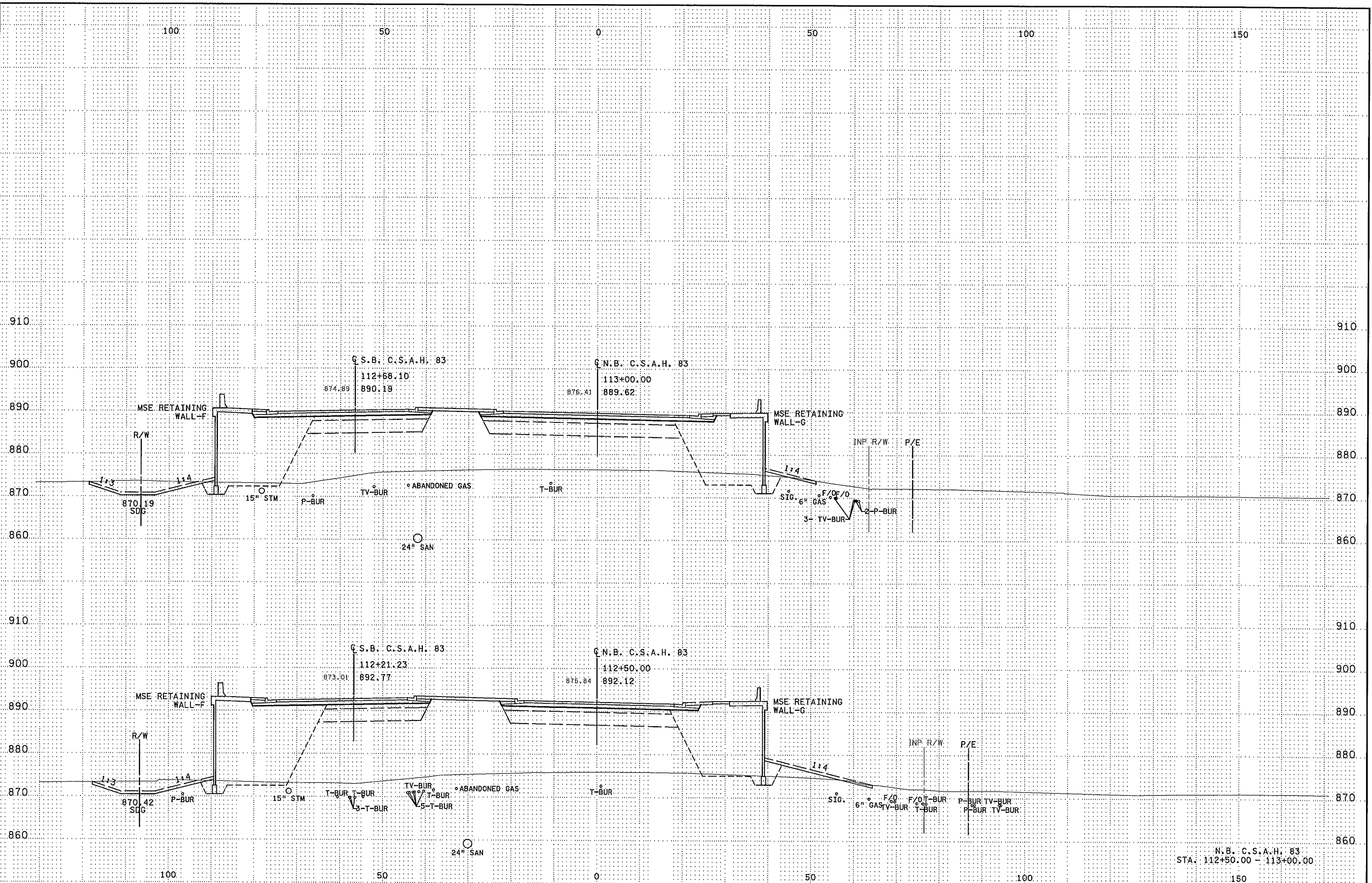
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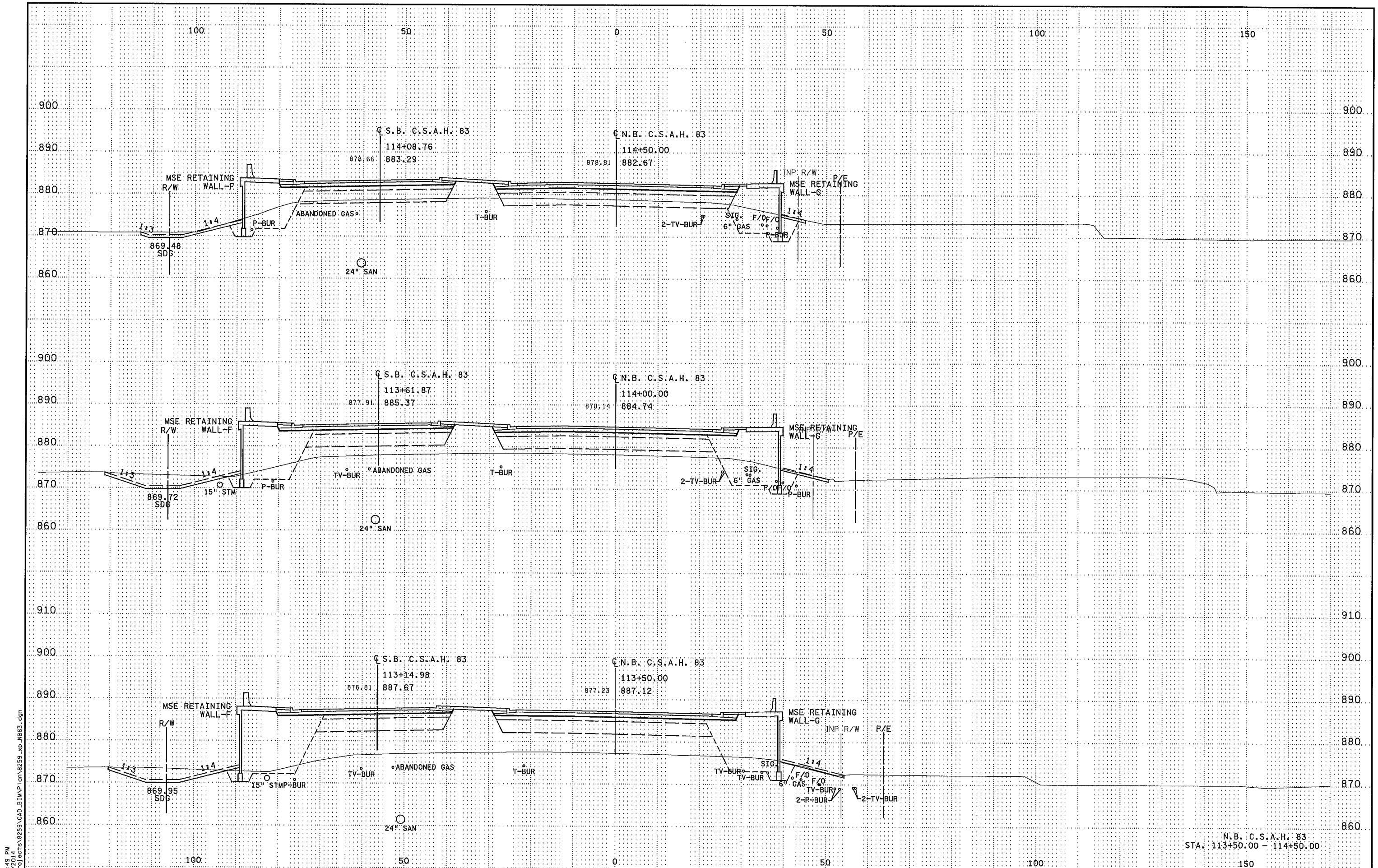




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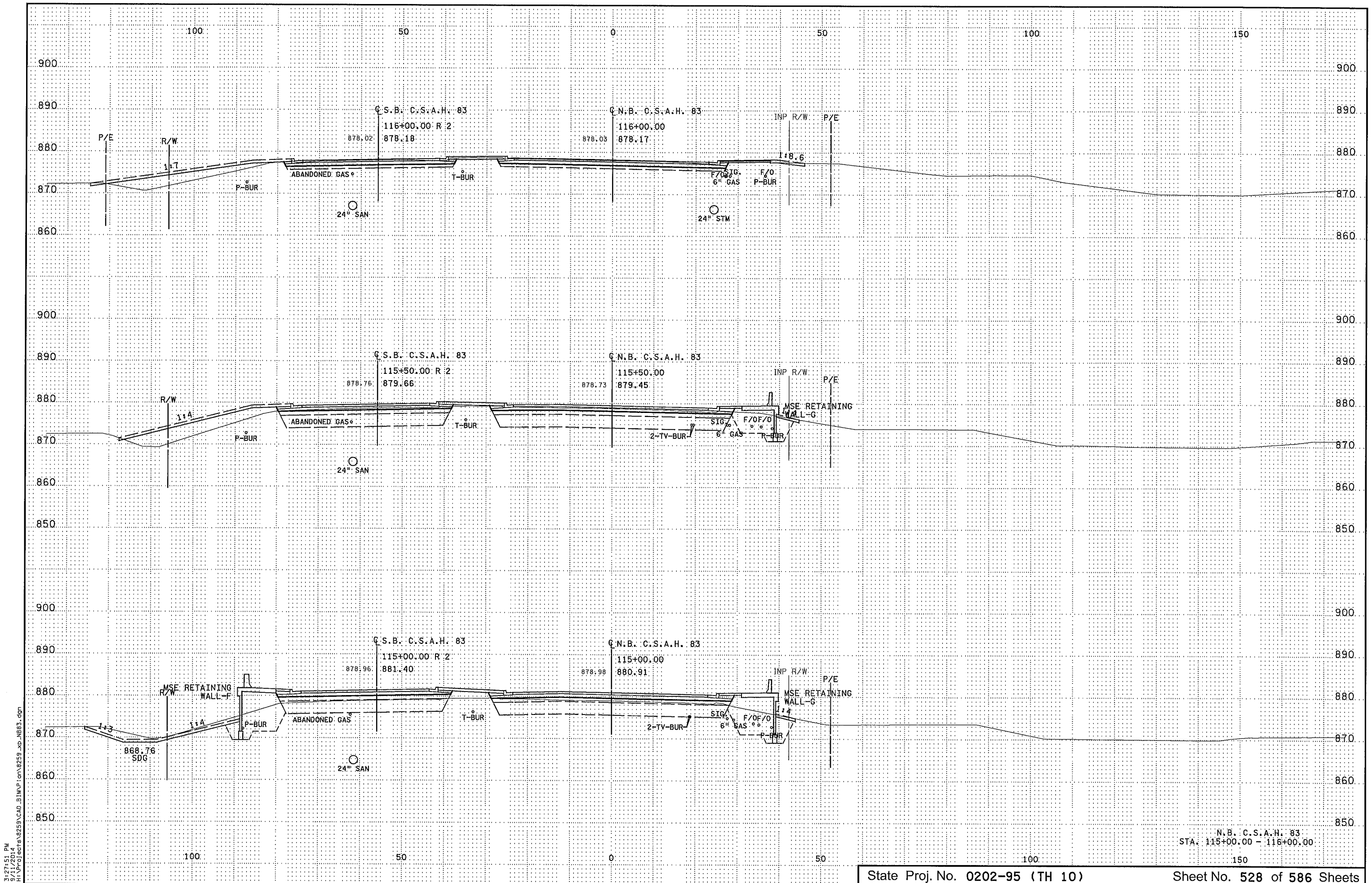


N.B. C.S.A.H. 83  
STA. 112+50.00 - 113+00.00



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 9/11/2014  
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N.B. C.S.A.H. 83  
 STA. 113+50.00 - 114+50.00

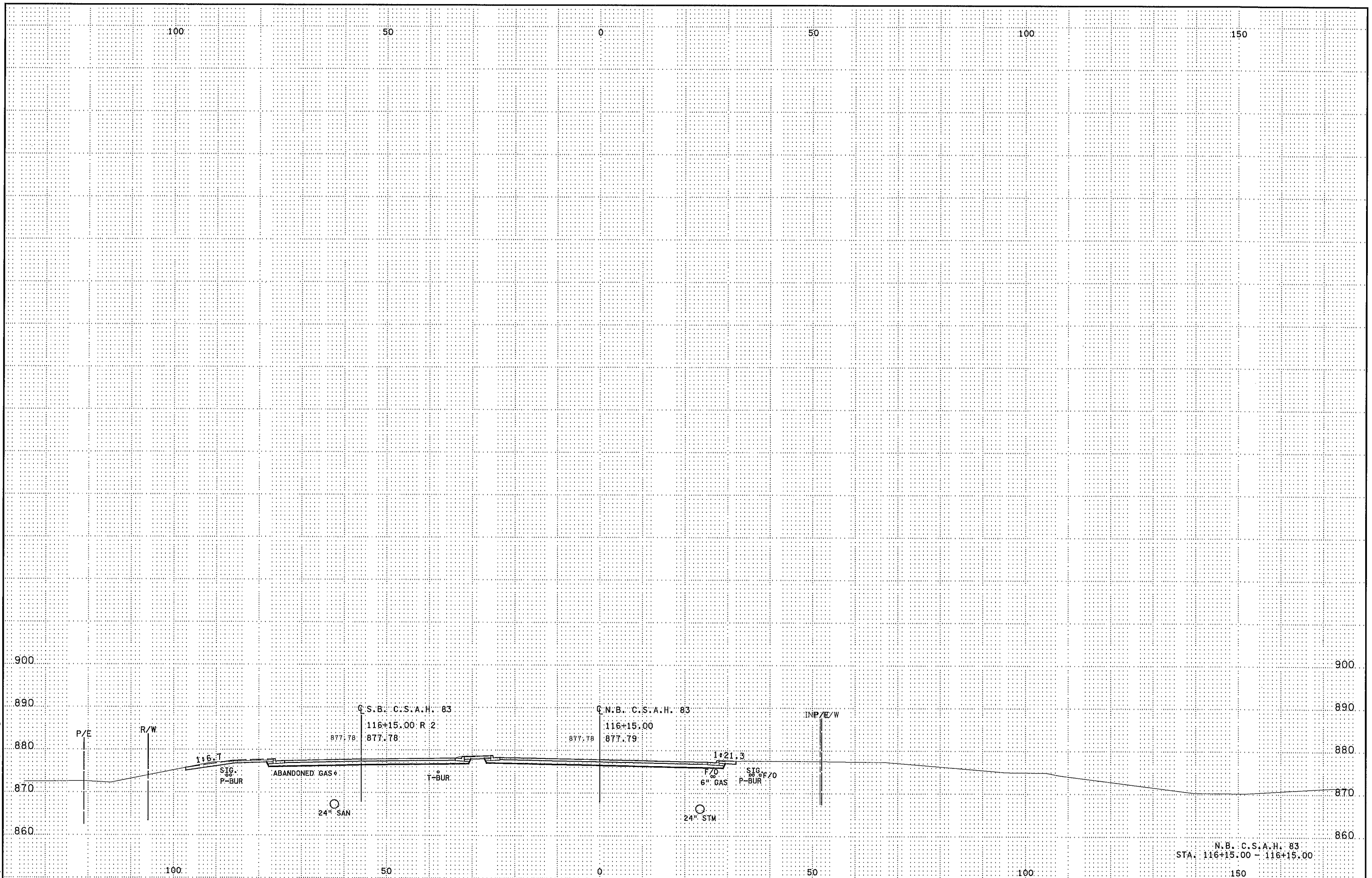


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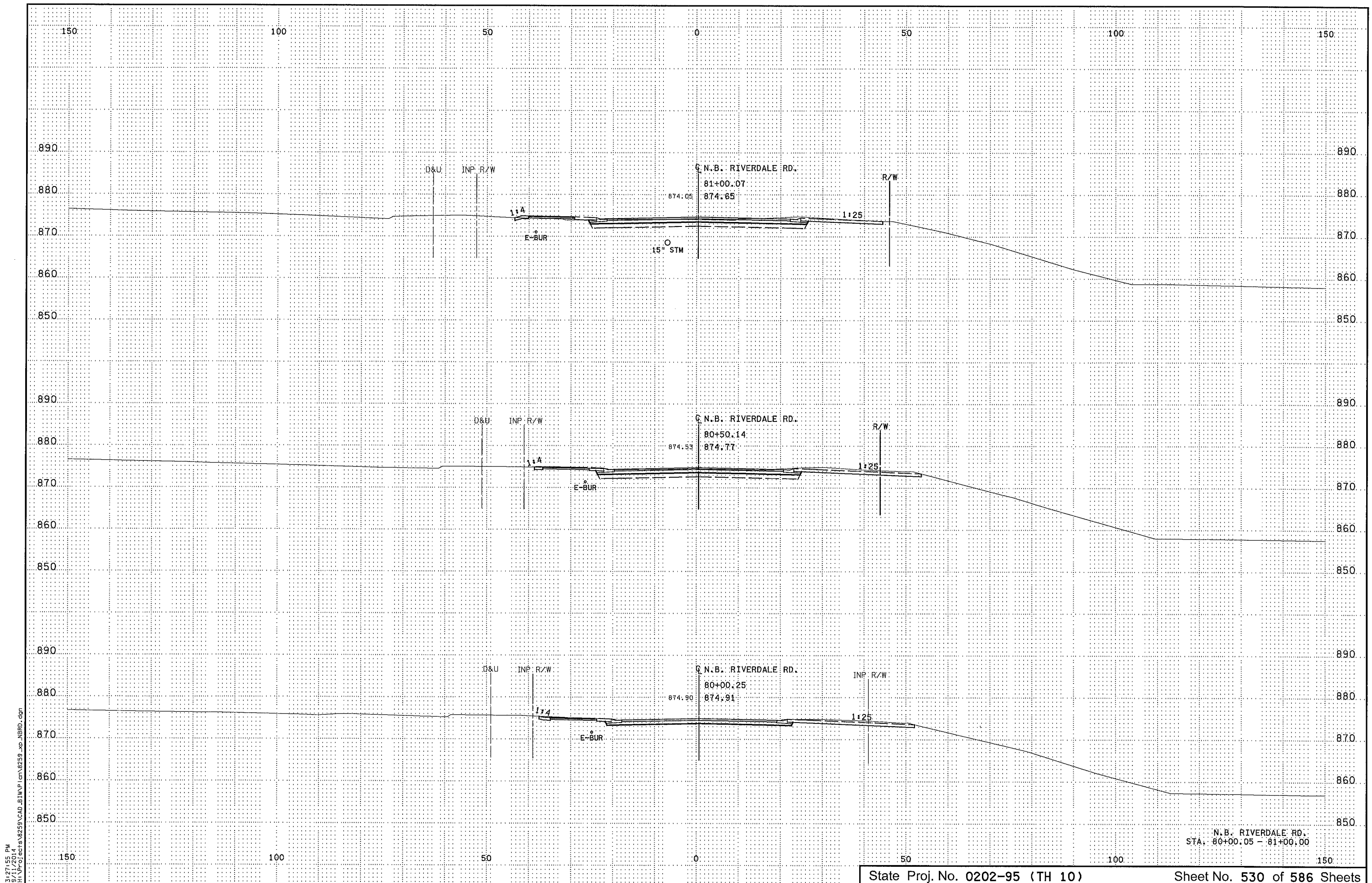
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 STA. 115+00.00 - 116+00.00



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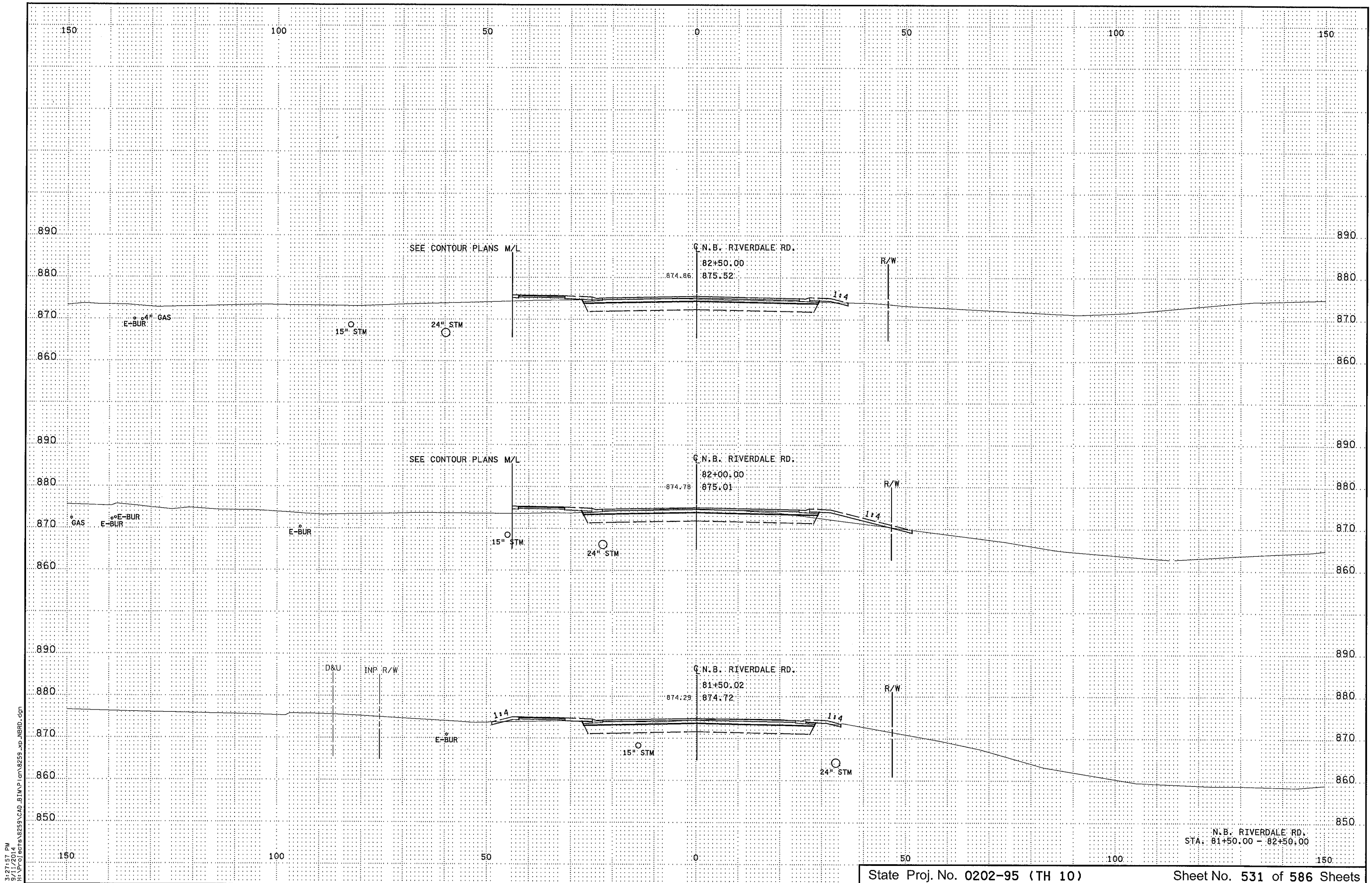


N.B. C.S.A.H. 83  
STA. 116+15.00 - 116+15.00



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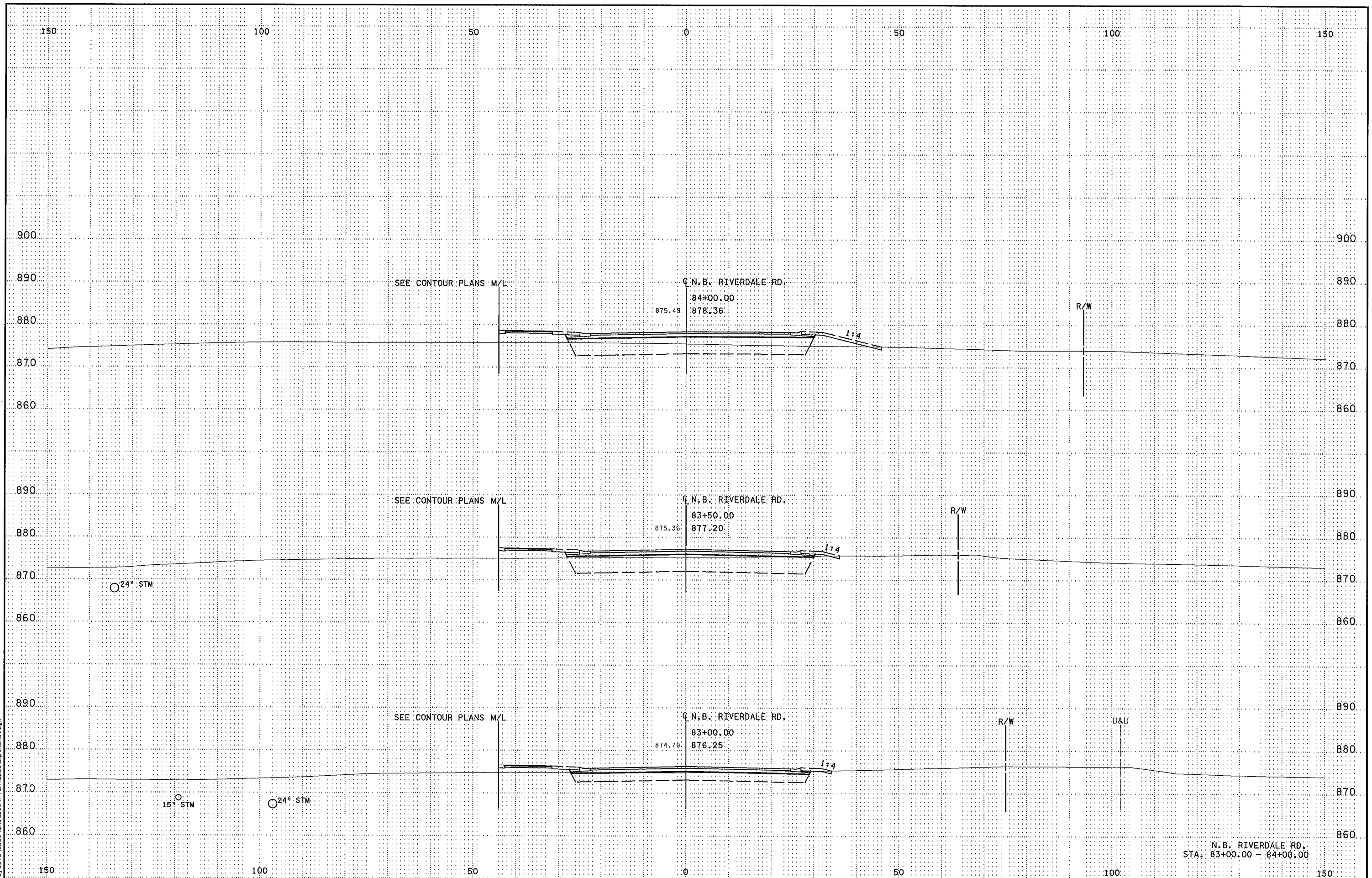
N.B. RIVERDALE RD.  
 STA. 80+00.05 - 81+00.00



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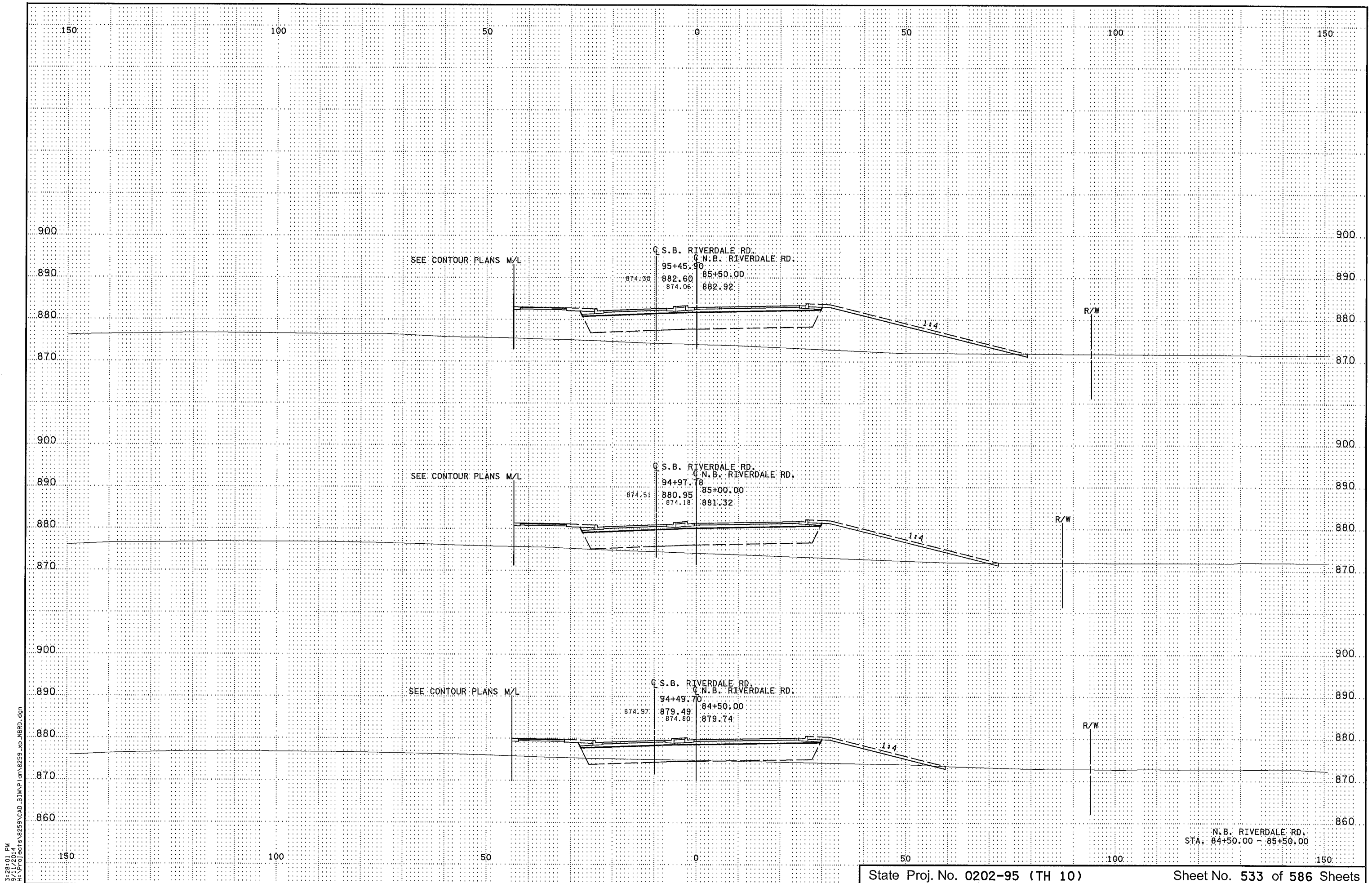
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 STA. 81+50.00 - 82+50.00

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9/11/2014  
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N.B. RIVERDALE RD.  
STA. 83+00.00 - 84+00.00

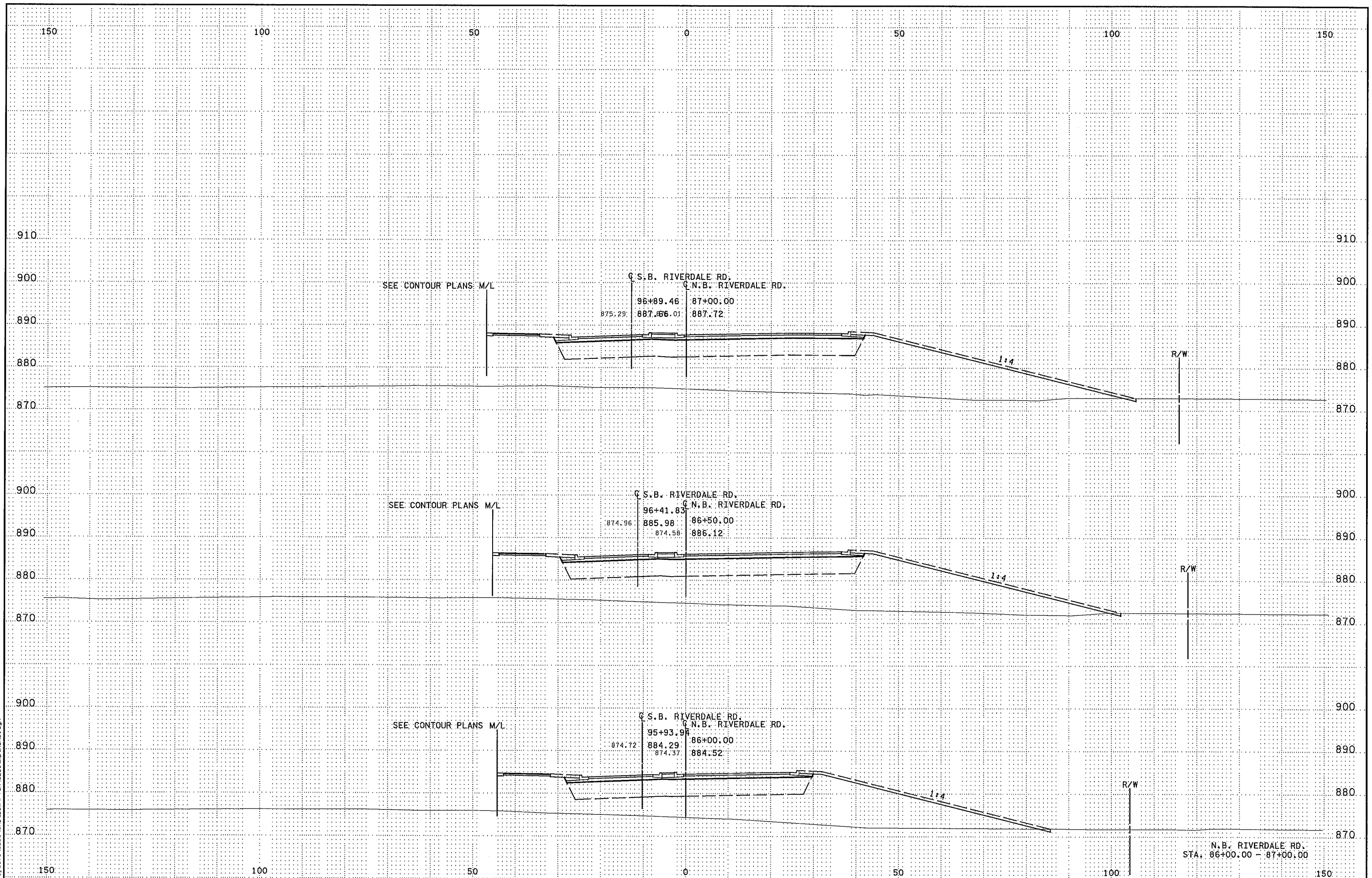


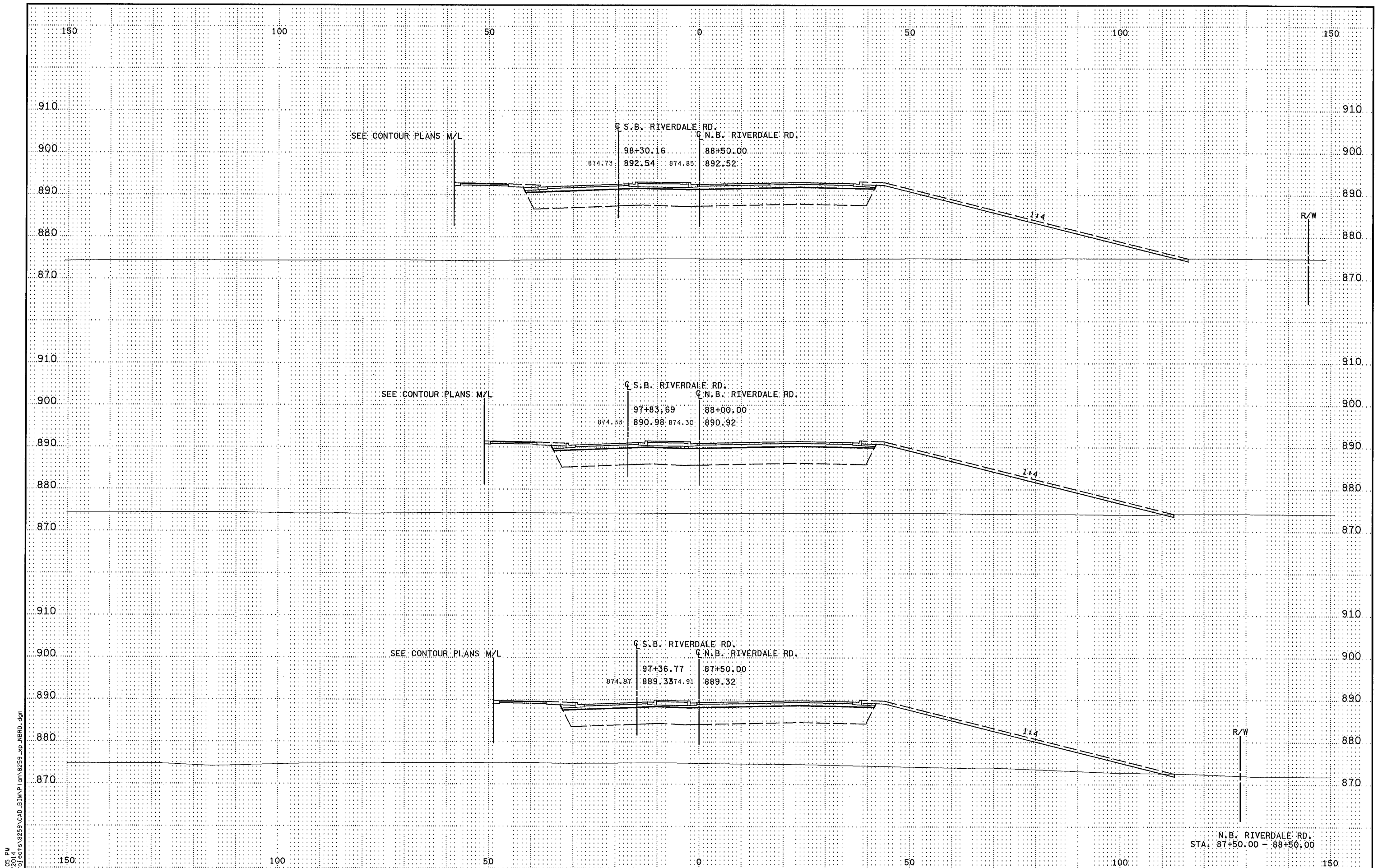


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N.B. RIVERDALE RD.  
STA. 84+50.00 - 85+50.00

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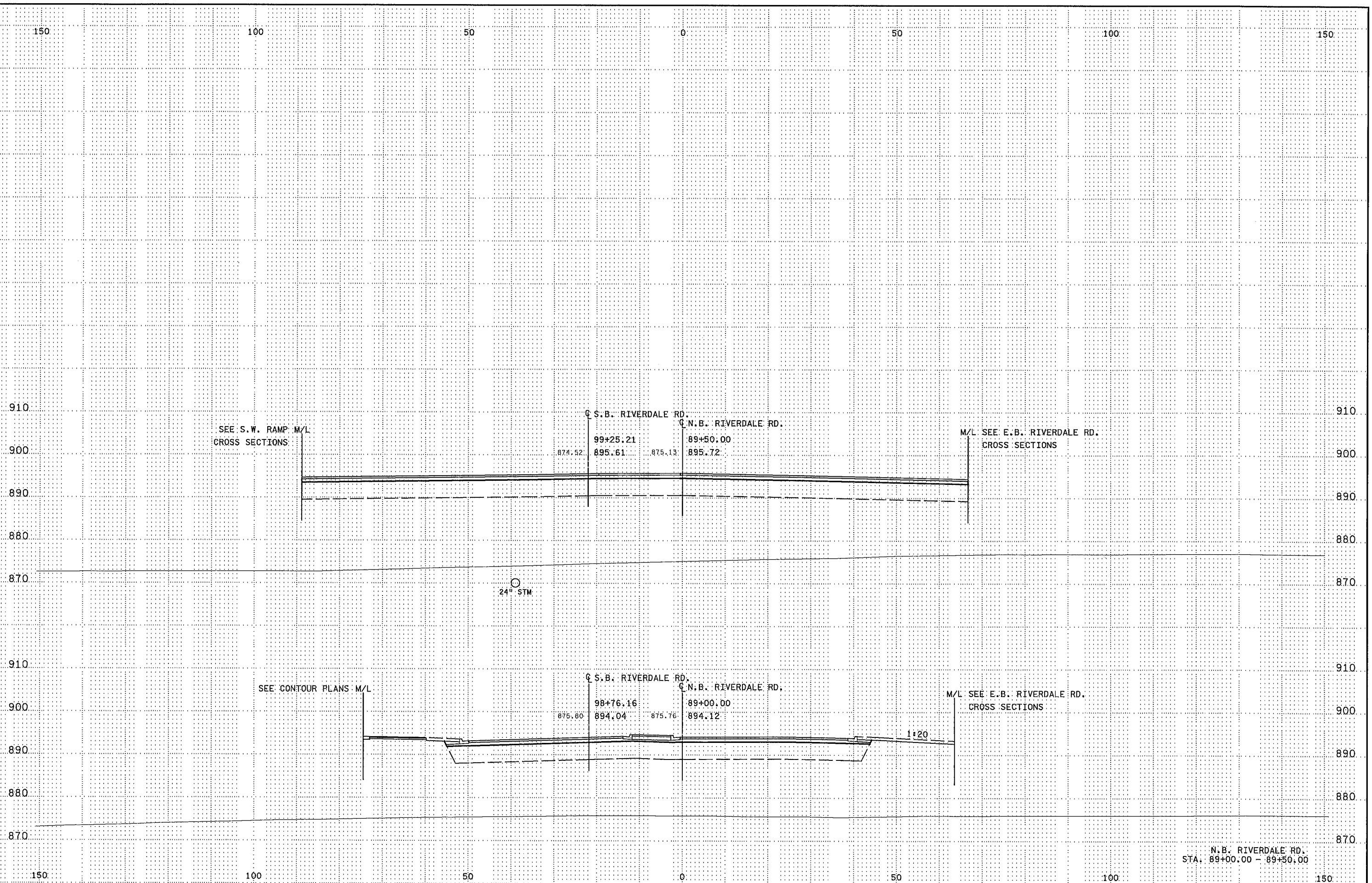


N.B. RIVERDALE RD.  
STA. 87+50.00 - 88+50.00

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9/11/2014  
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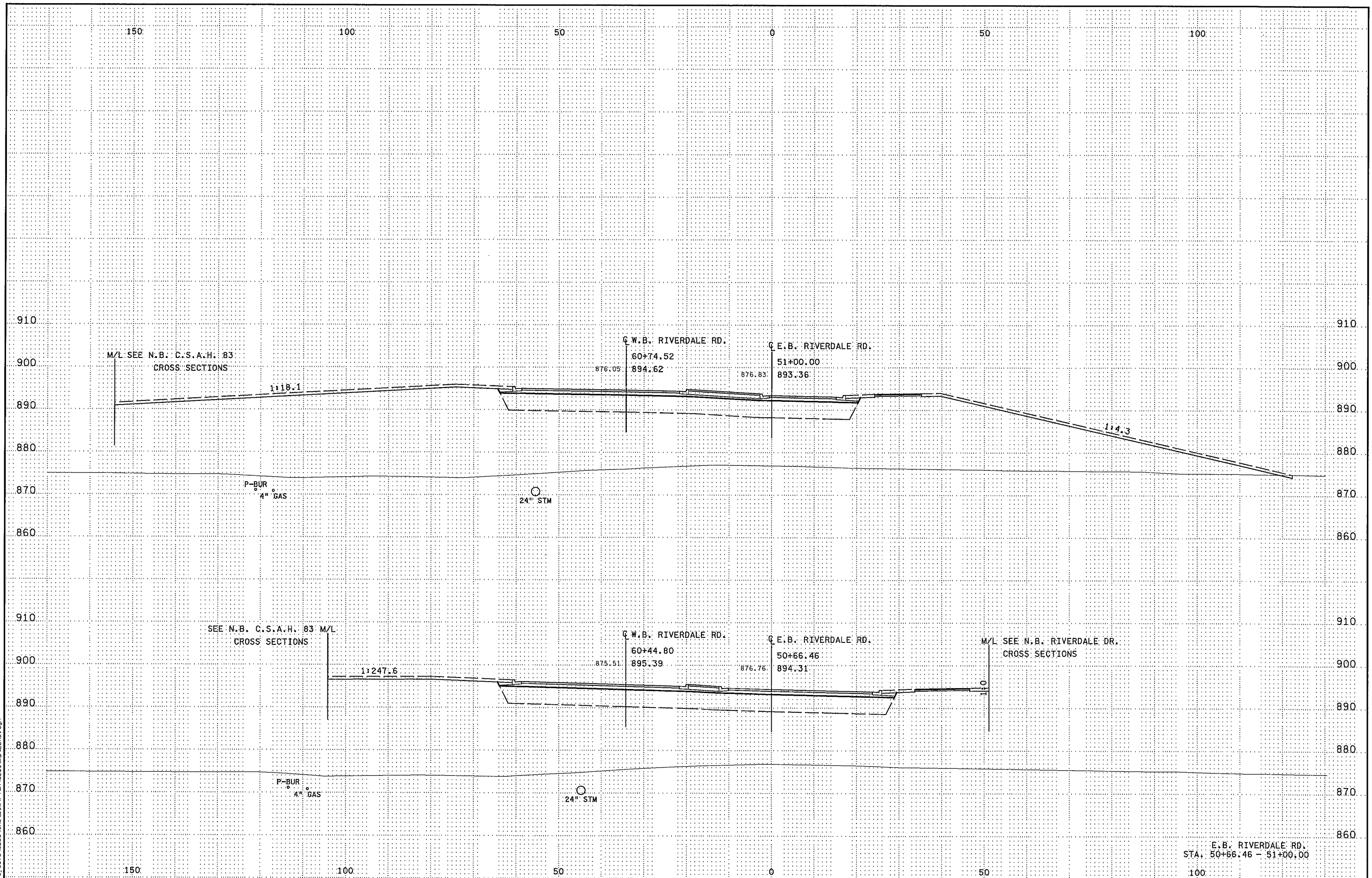


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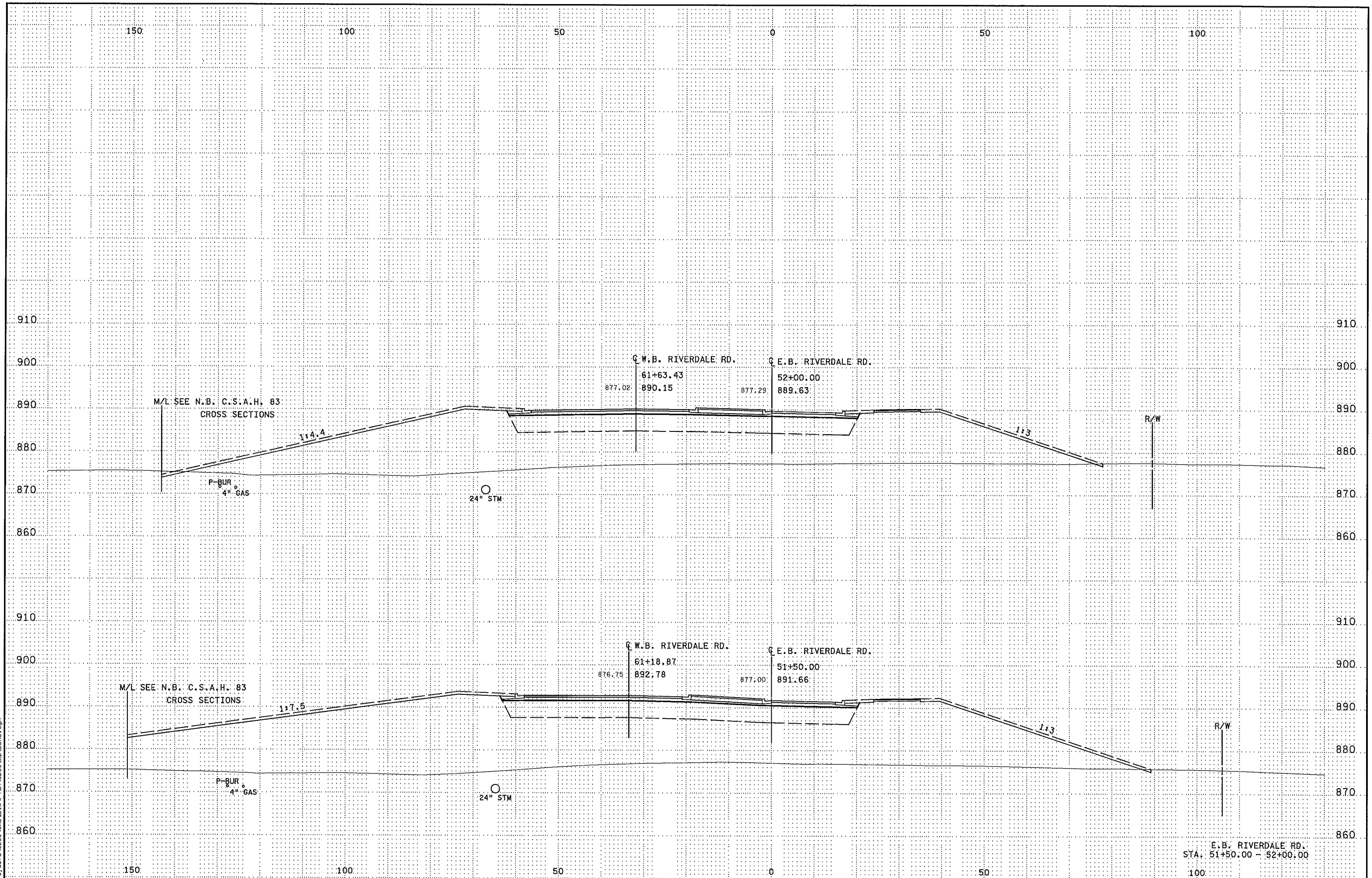


N.B. RIVERDALE RD.  
STA. 89+00.00 - 89+50.00

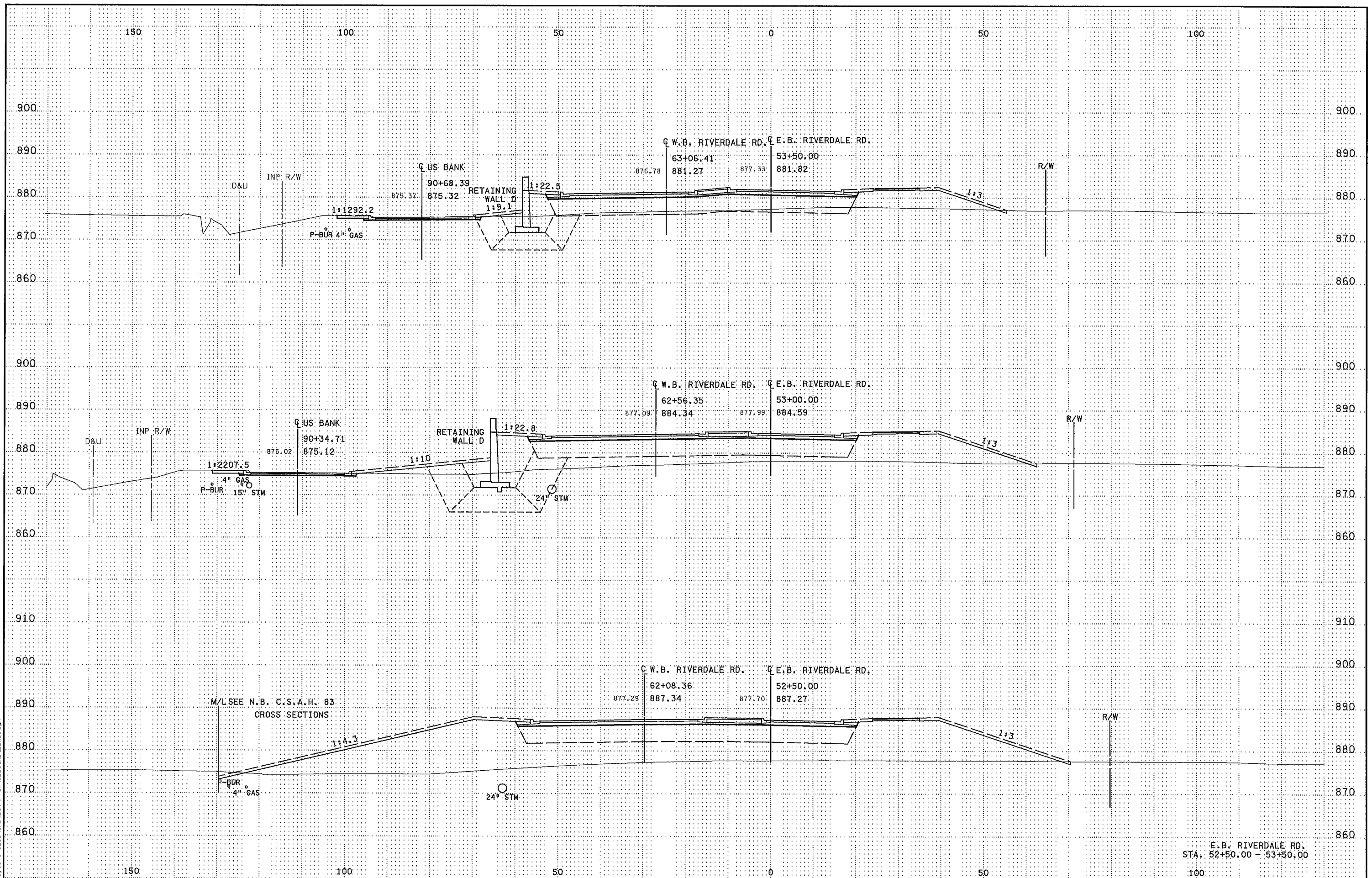
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3:28:11 PM  
9/11/2014  
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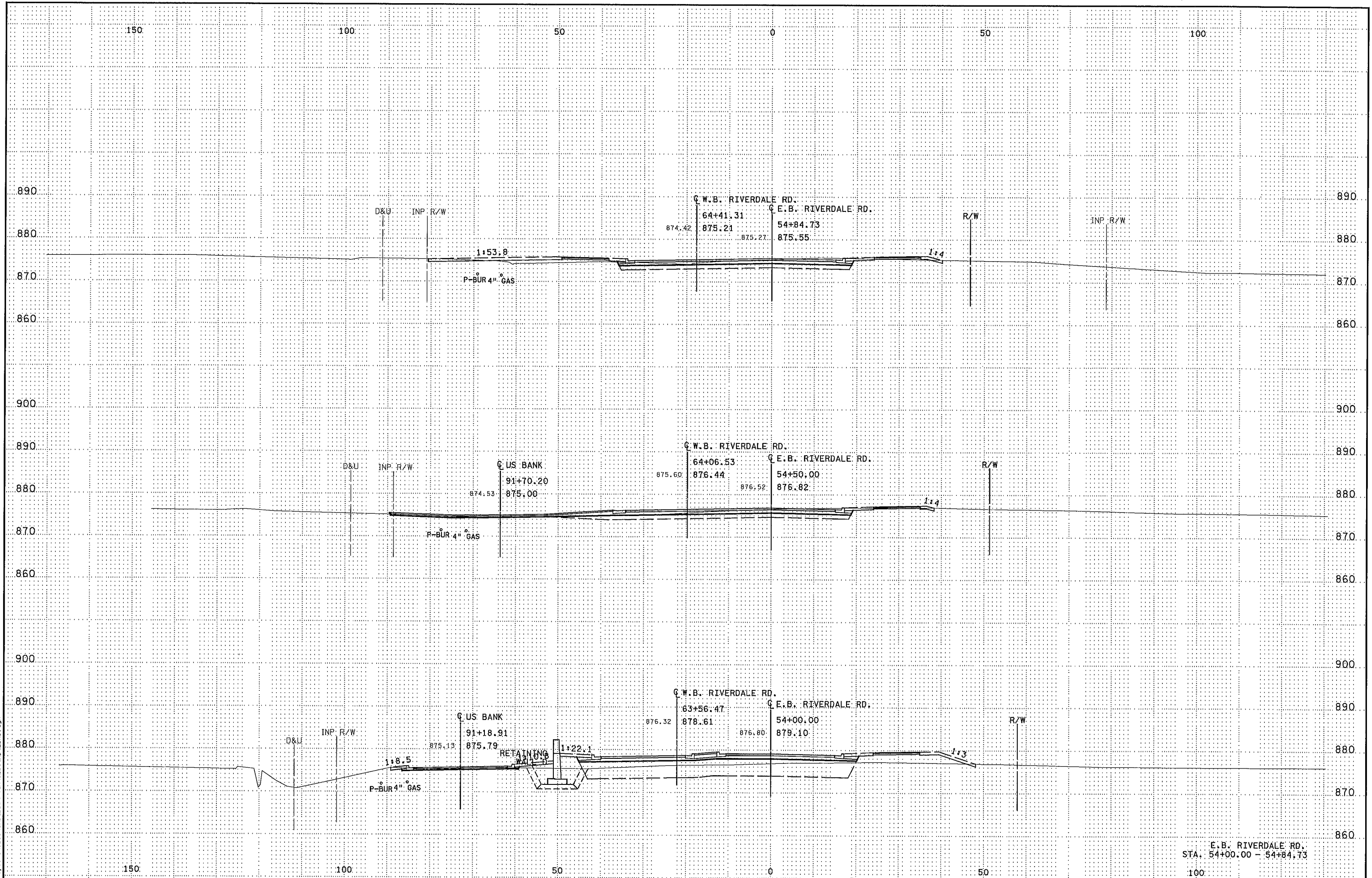


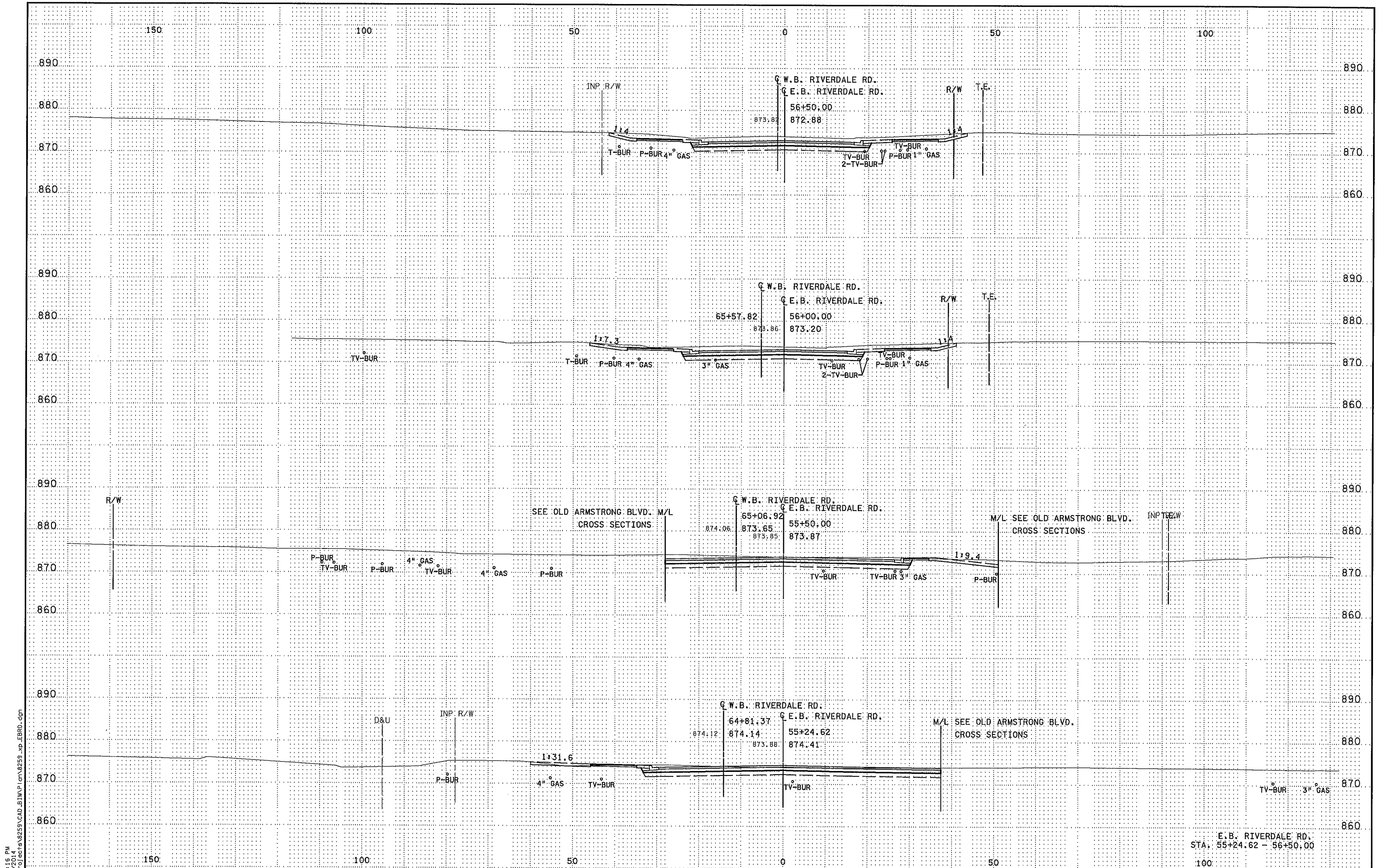
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3:28:14 PM  
5/11/2014  
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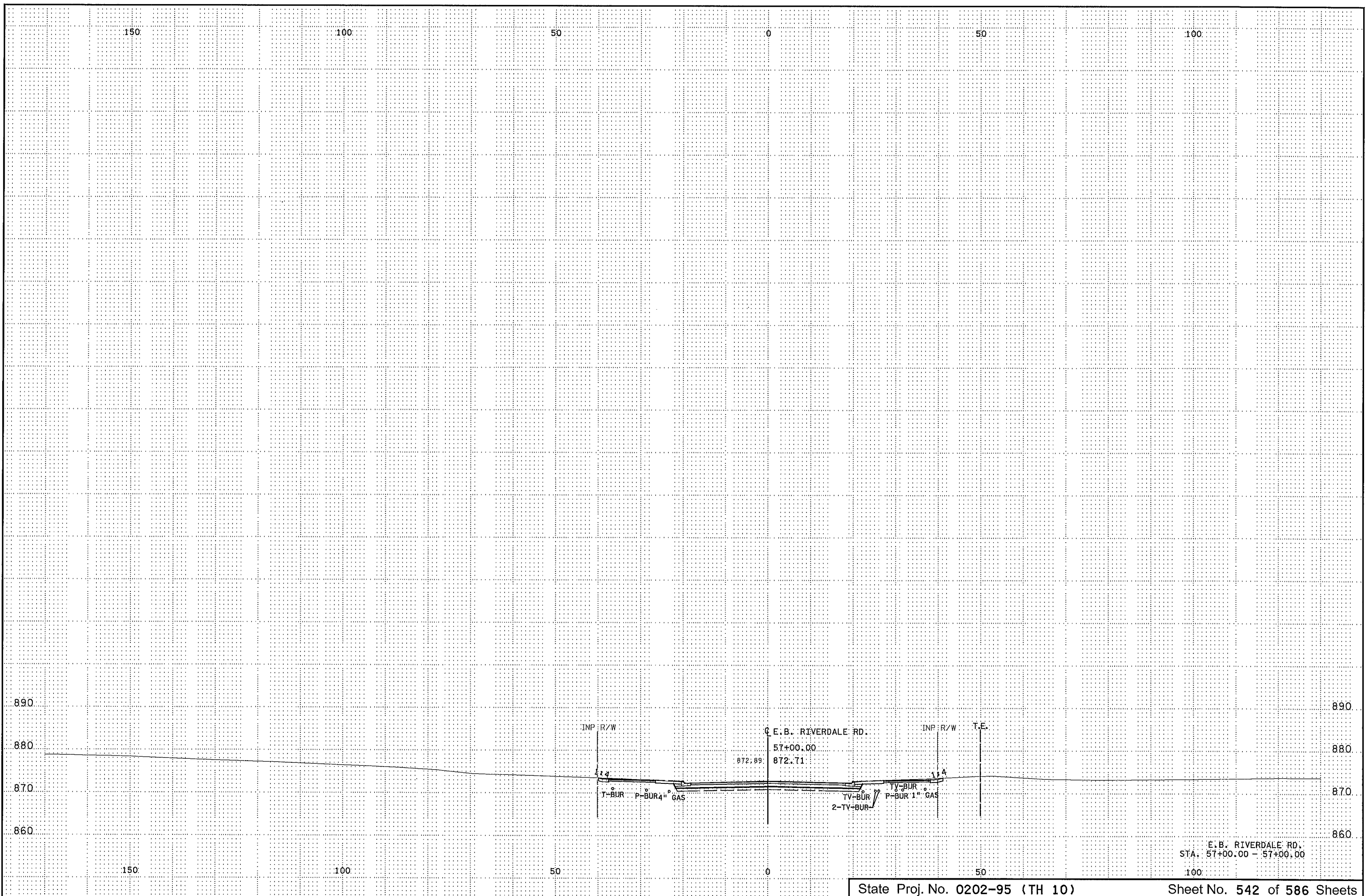




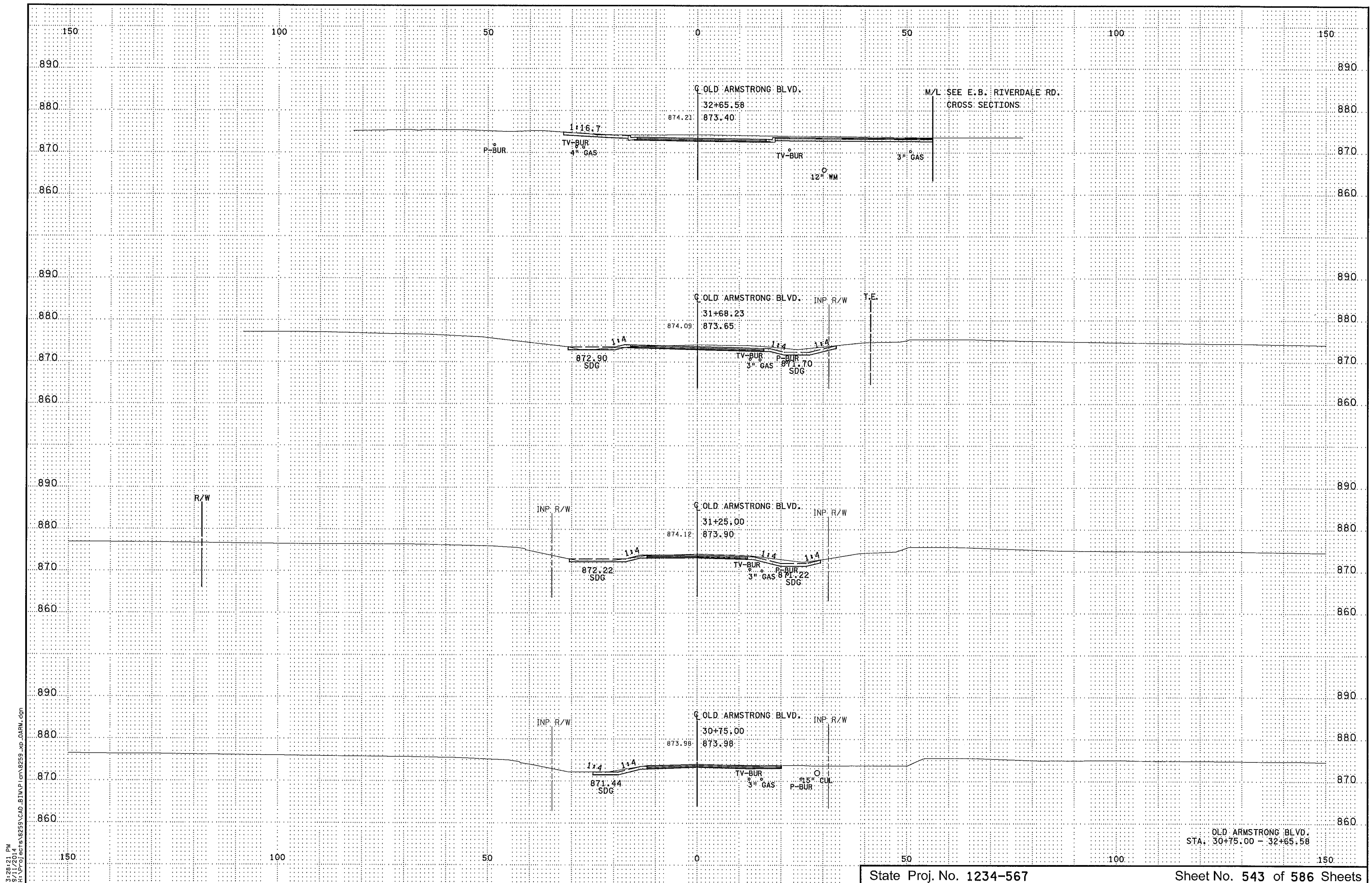
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 9/11/2014  
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E.B. RIVERDALE RD.  
 STA. 55+24.62 - 56+50.00

3:28:18 PM  
9/11/2014  
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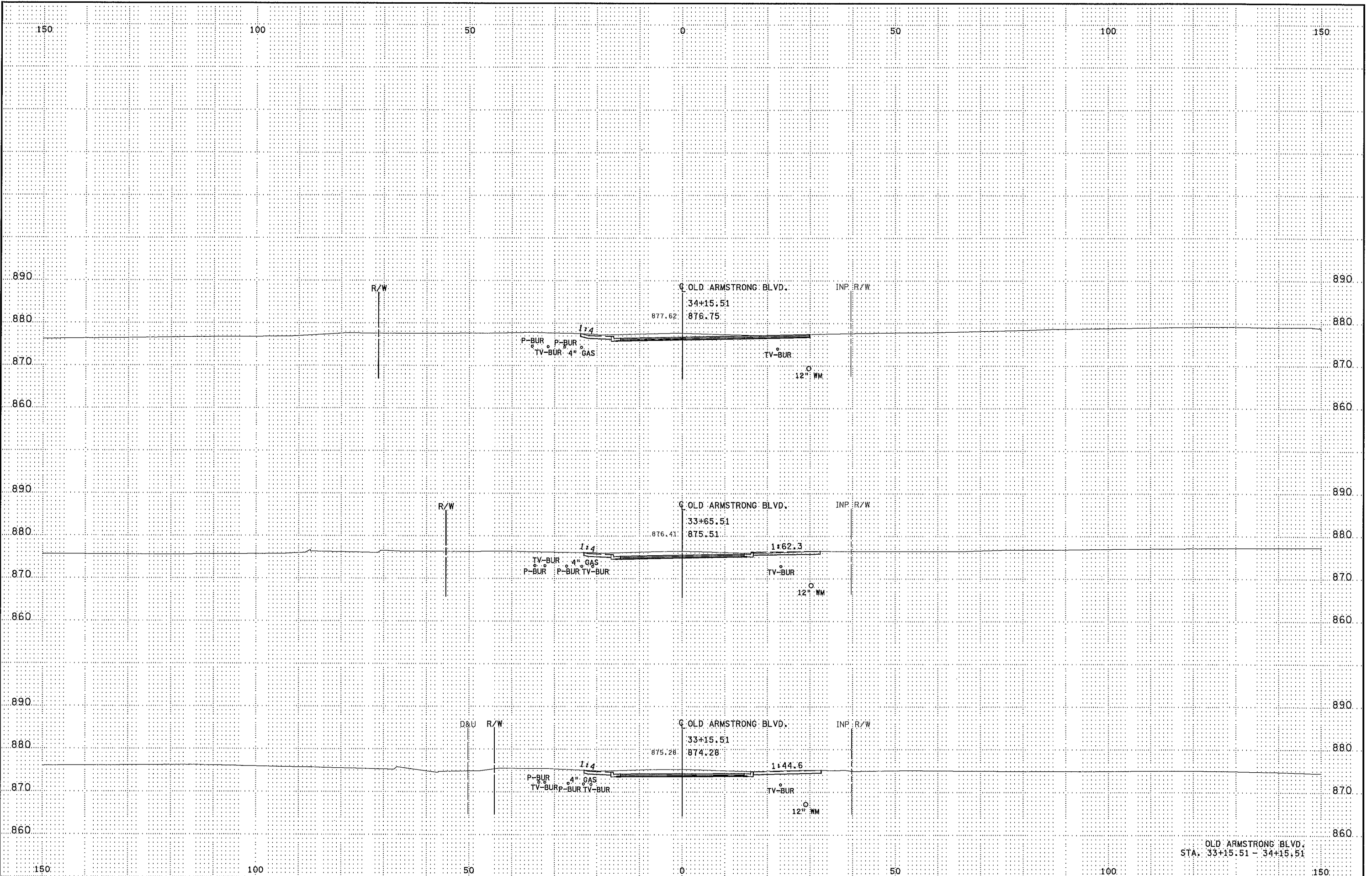




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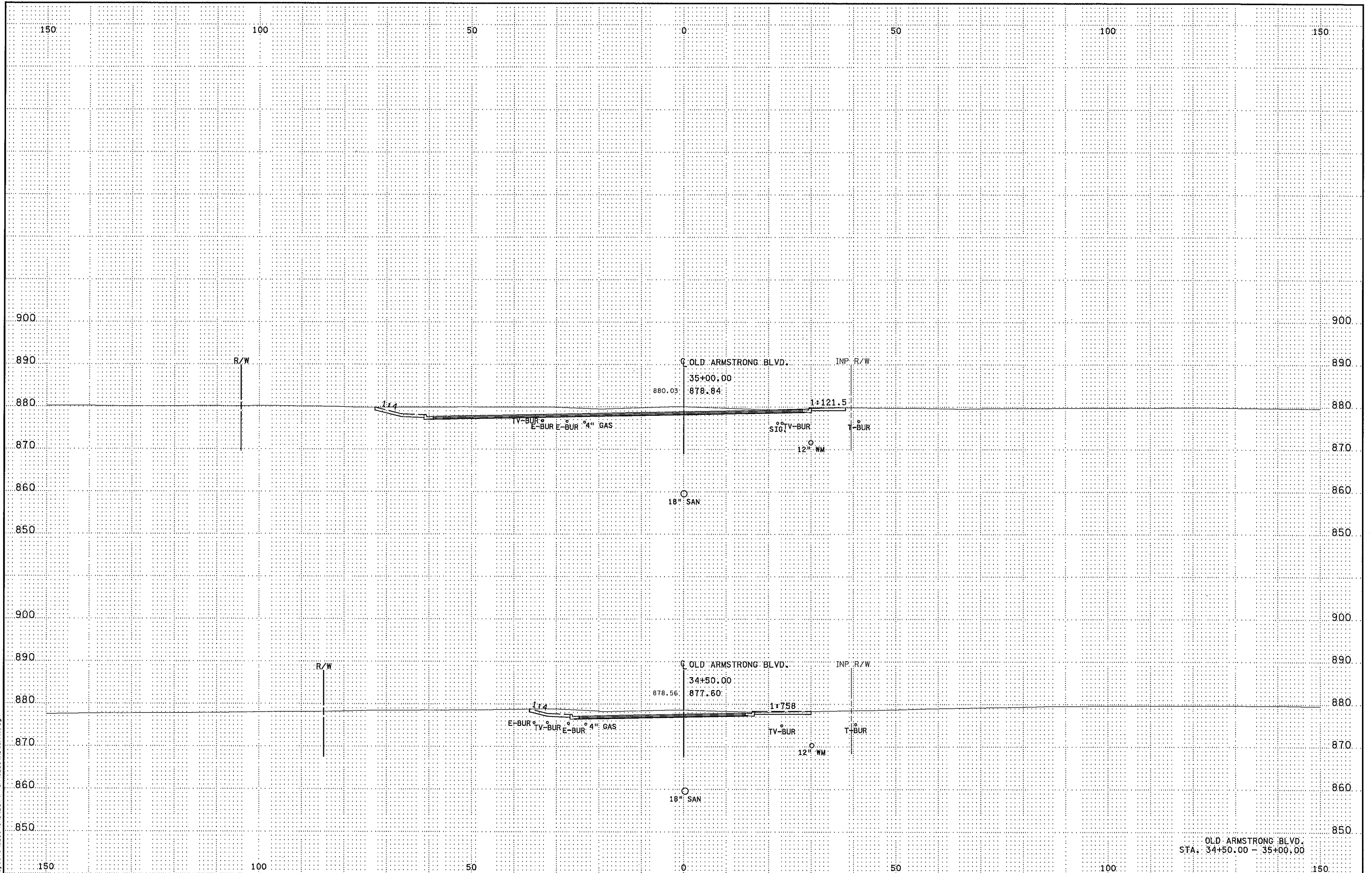
OLD ARMSTRONG BLVD.  
 STA. 30+75.00 - 32+65.58

3/28/22 PM  
9/11/2014  
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OLD ARMSTRONG BLVD.  
STA. 33+15.51 - 34+15.51

3:28:24 PM  
9/11/2014  
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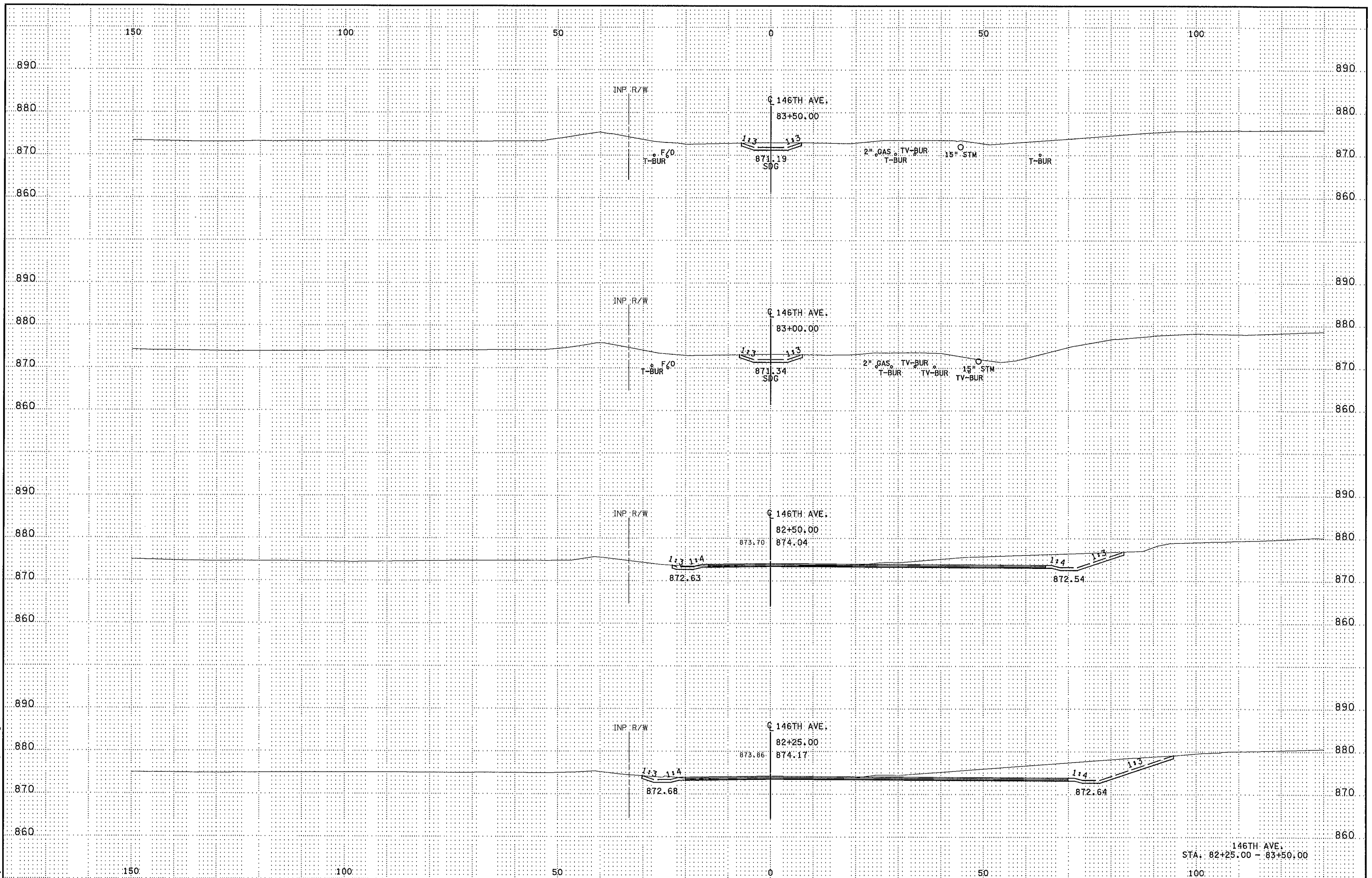




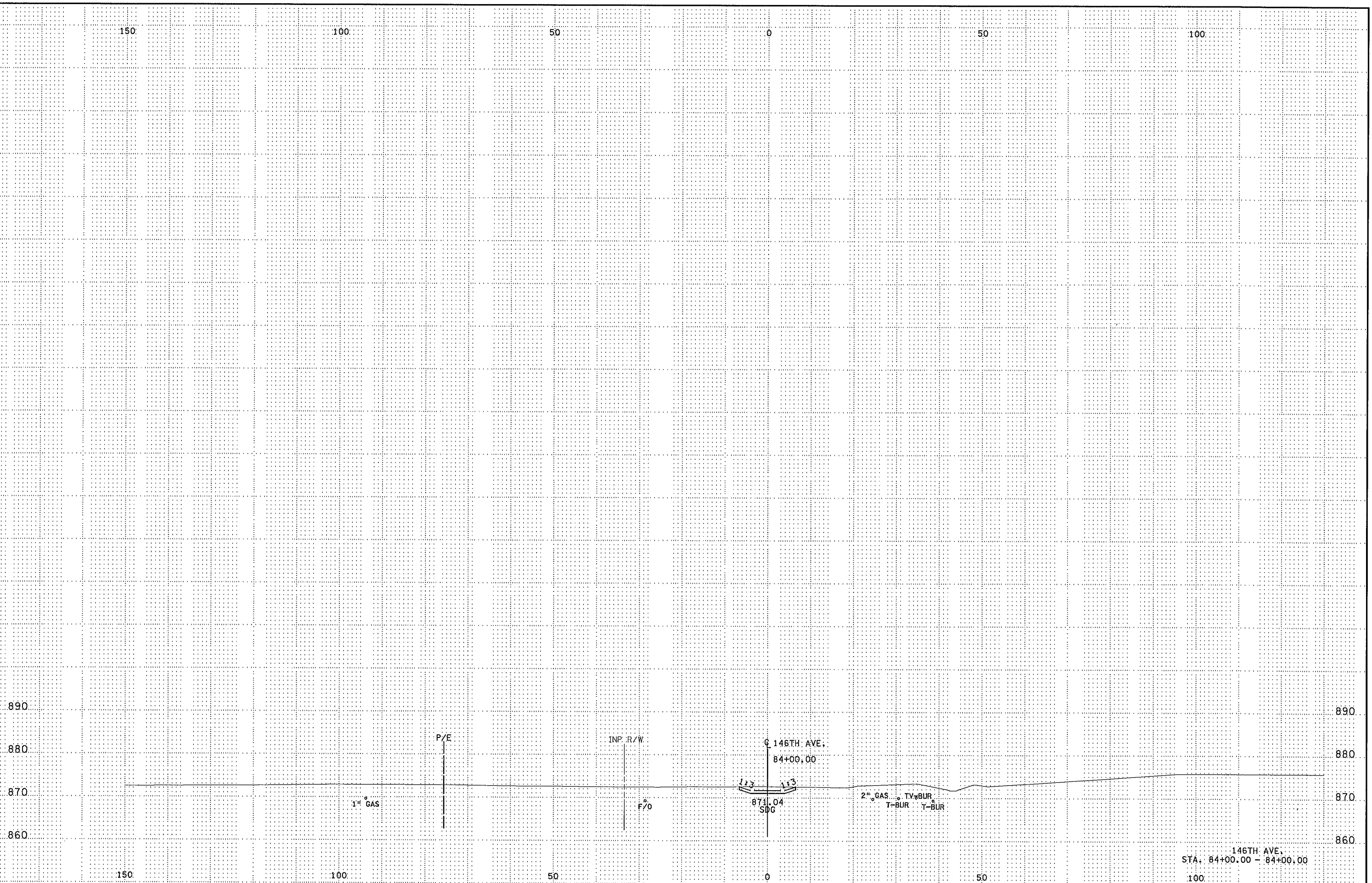




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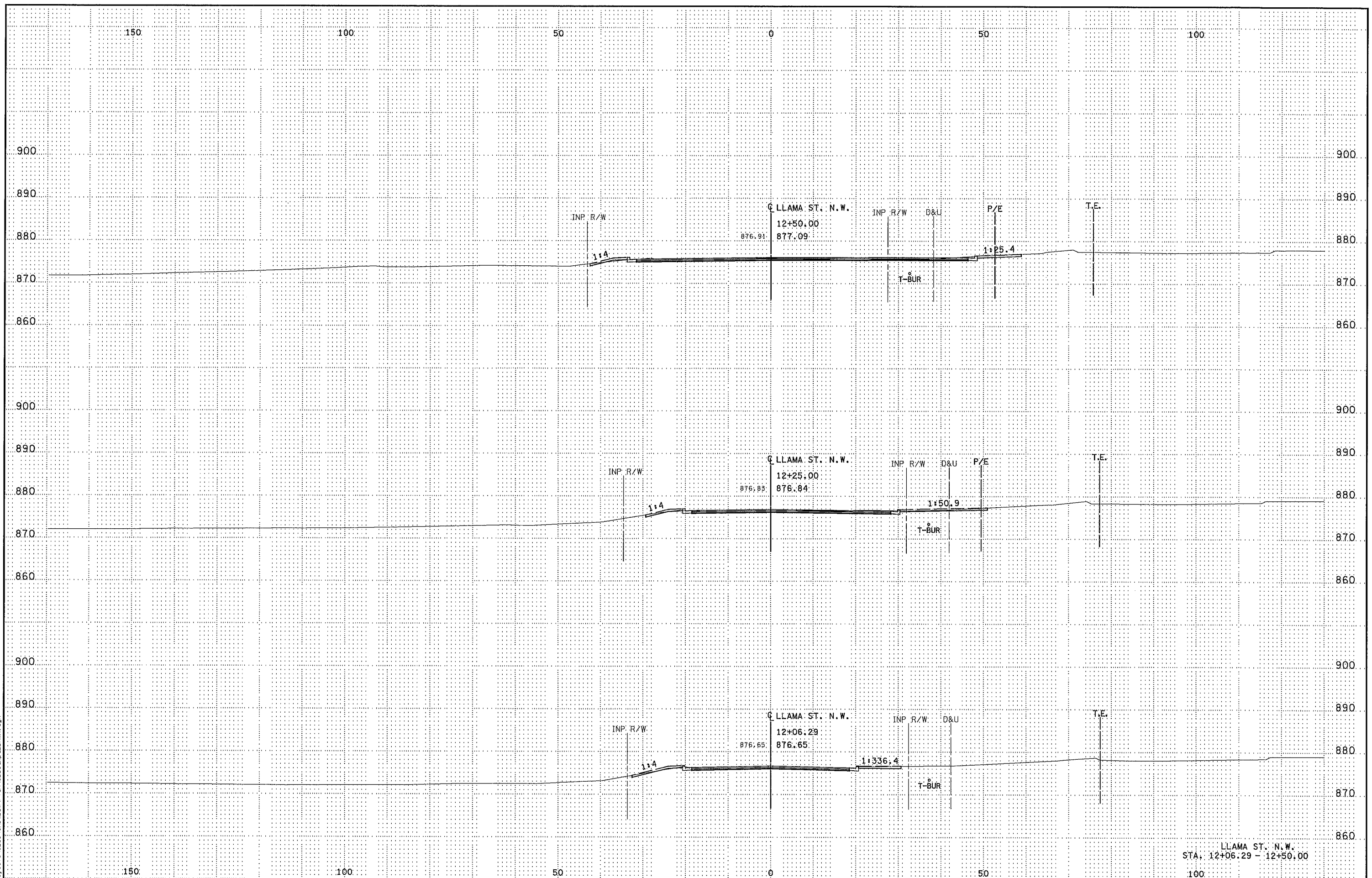


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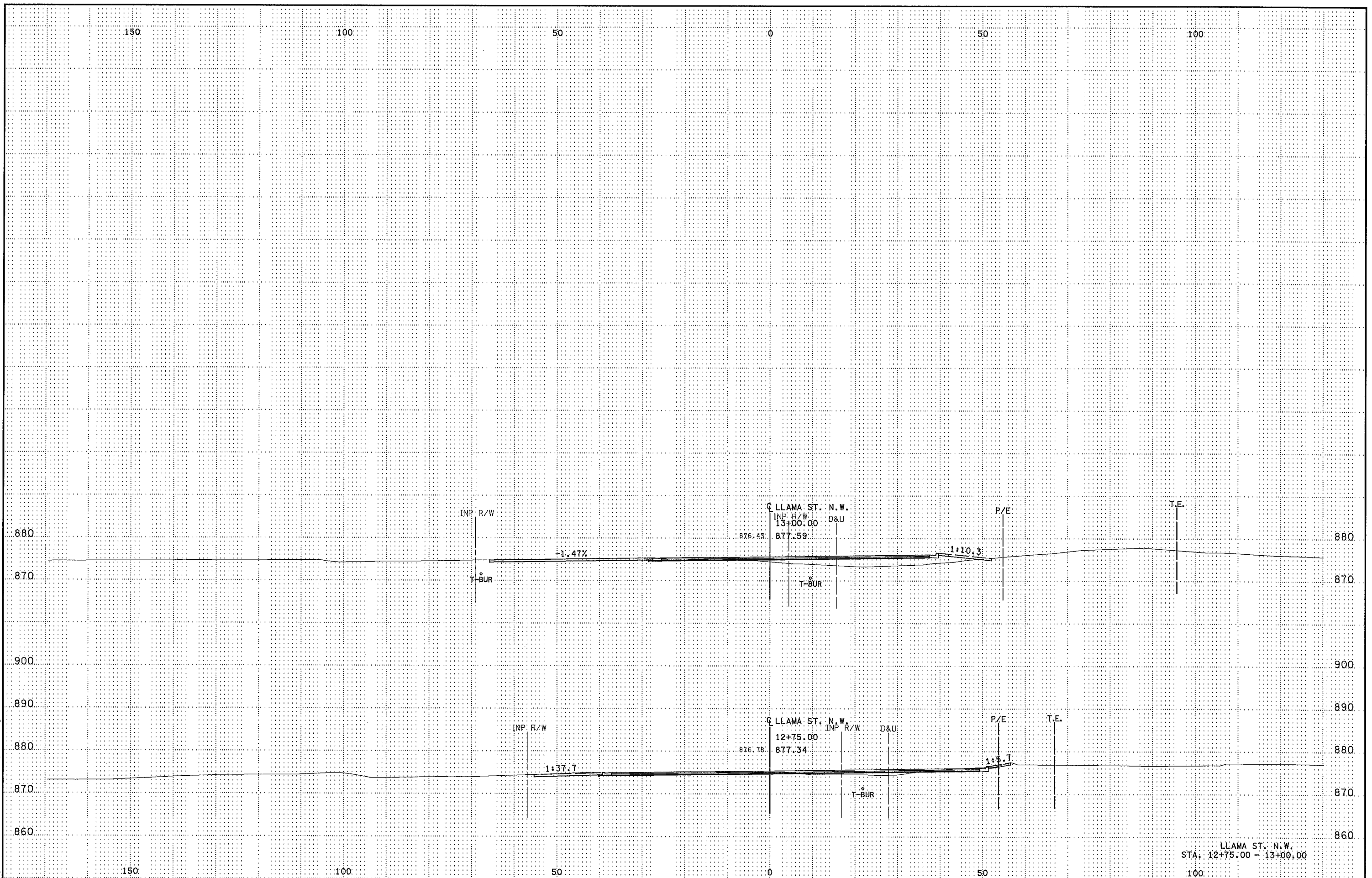


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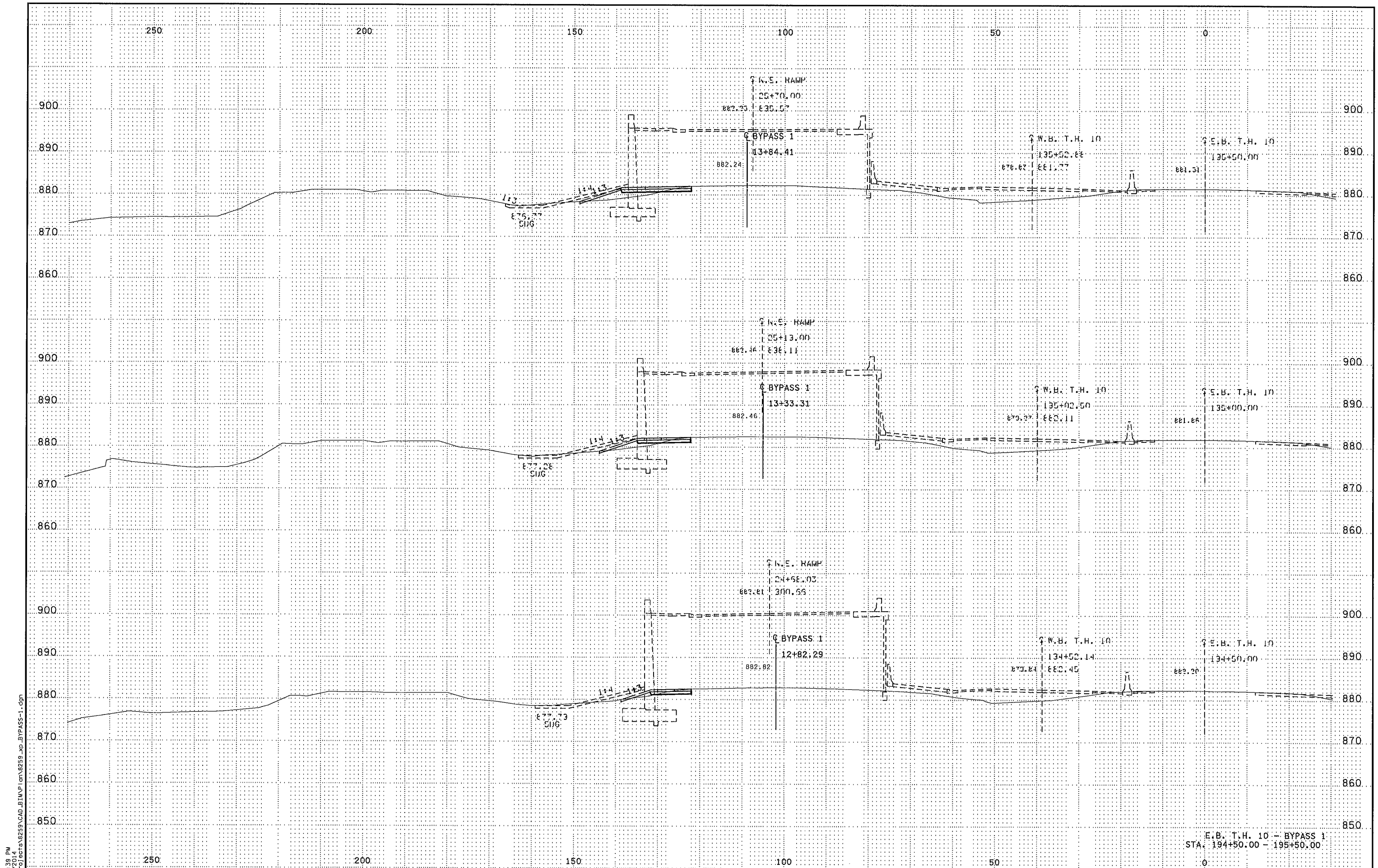


LLAMA ST. N.W.  
STA. 12+06.29 - 12+50.00

3:28:36 PM  
9/11/2014  
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LLAMA ST. N.W.  
STA. 12+75.00 - 13+00.00  
100



3:28:38 PM  
9/11/2014  
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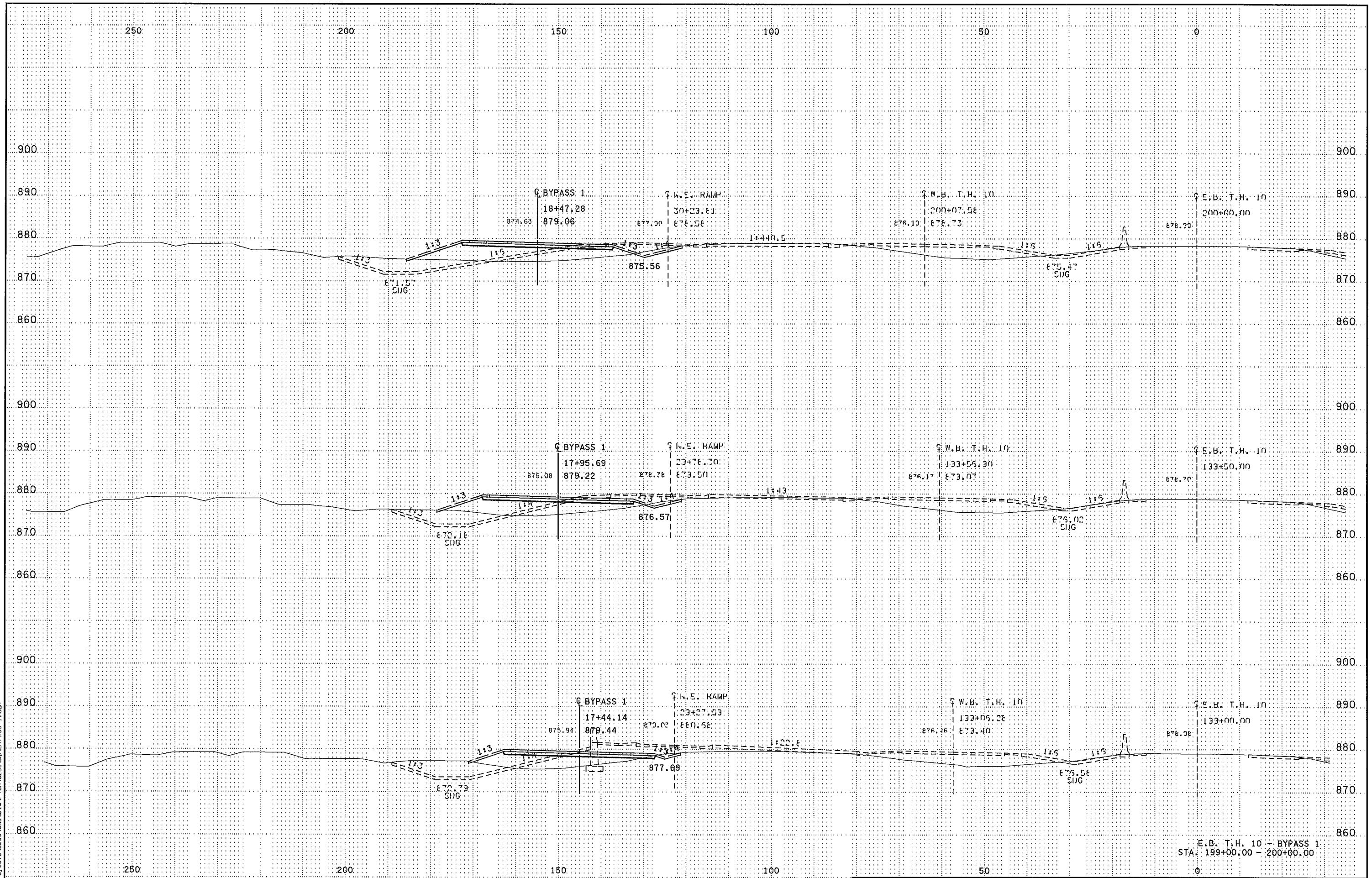
E.B. T.H. 10 - BYPASS 1  
STA. 194+50.00 - 195+50.00



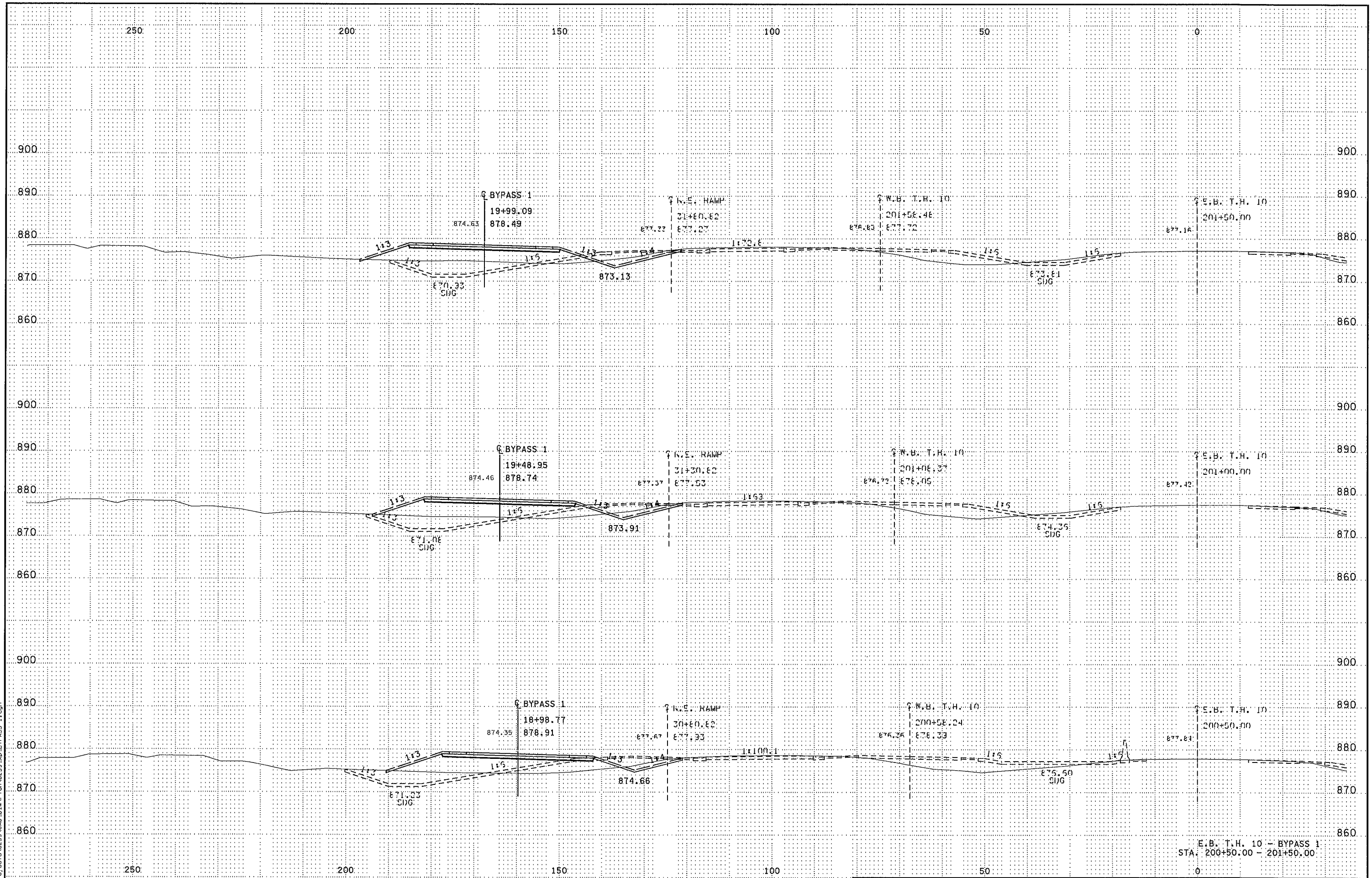




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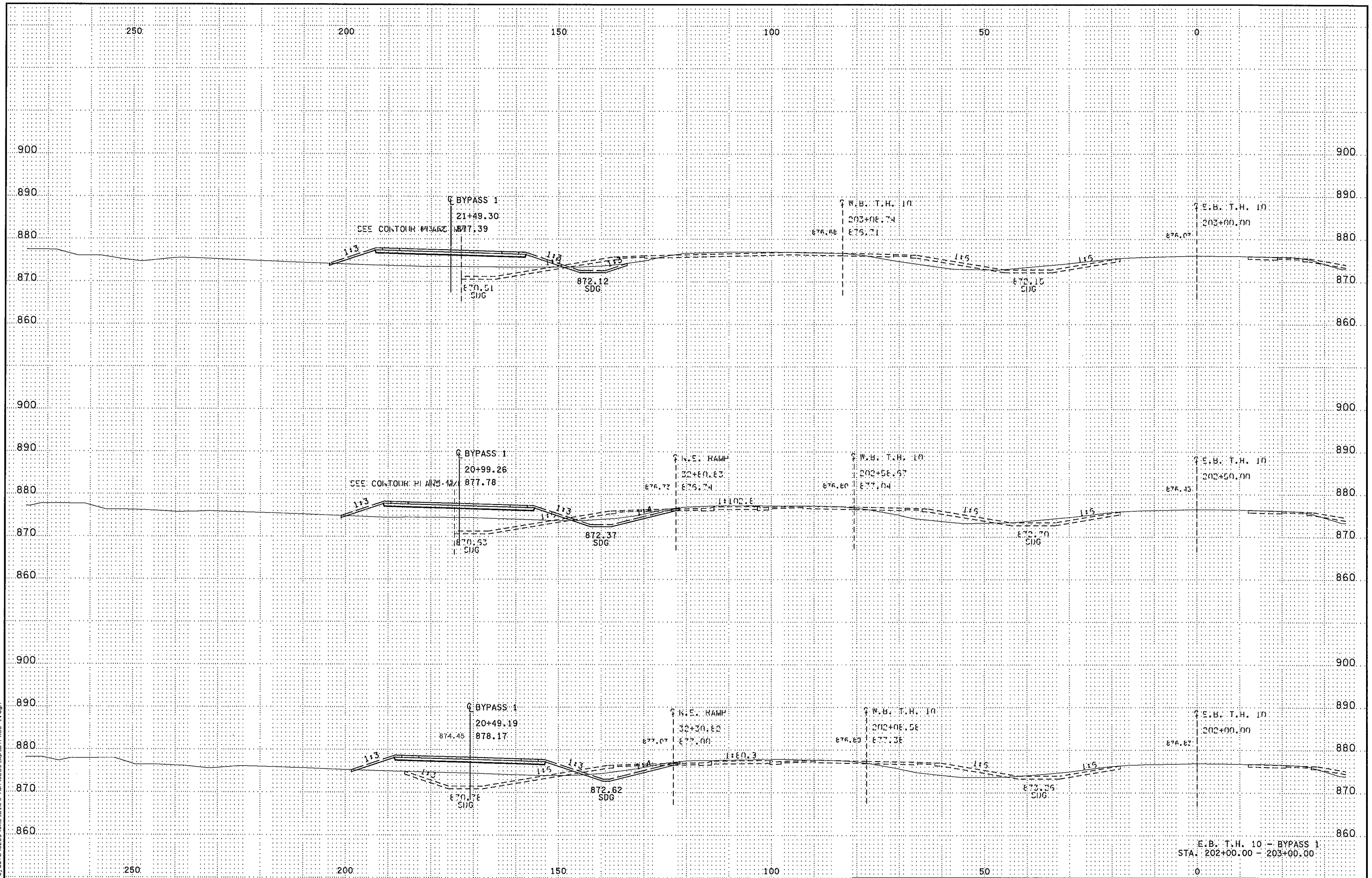
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9/11/2014  
H:\Projects\8255\CAD\BIM\10\8255\_xp\_BYPASS-1.dgn



E.B. T.H. 10 - BYPASS 1  
STA. 200+50.00 - 201+50.00

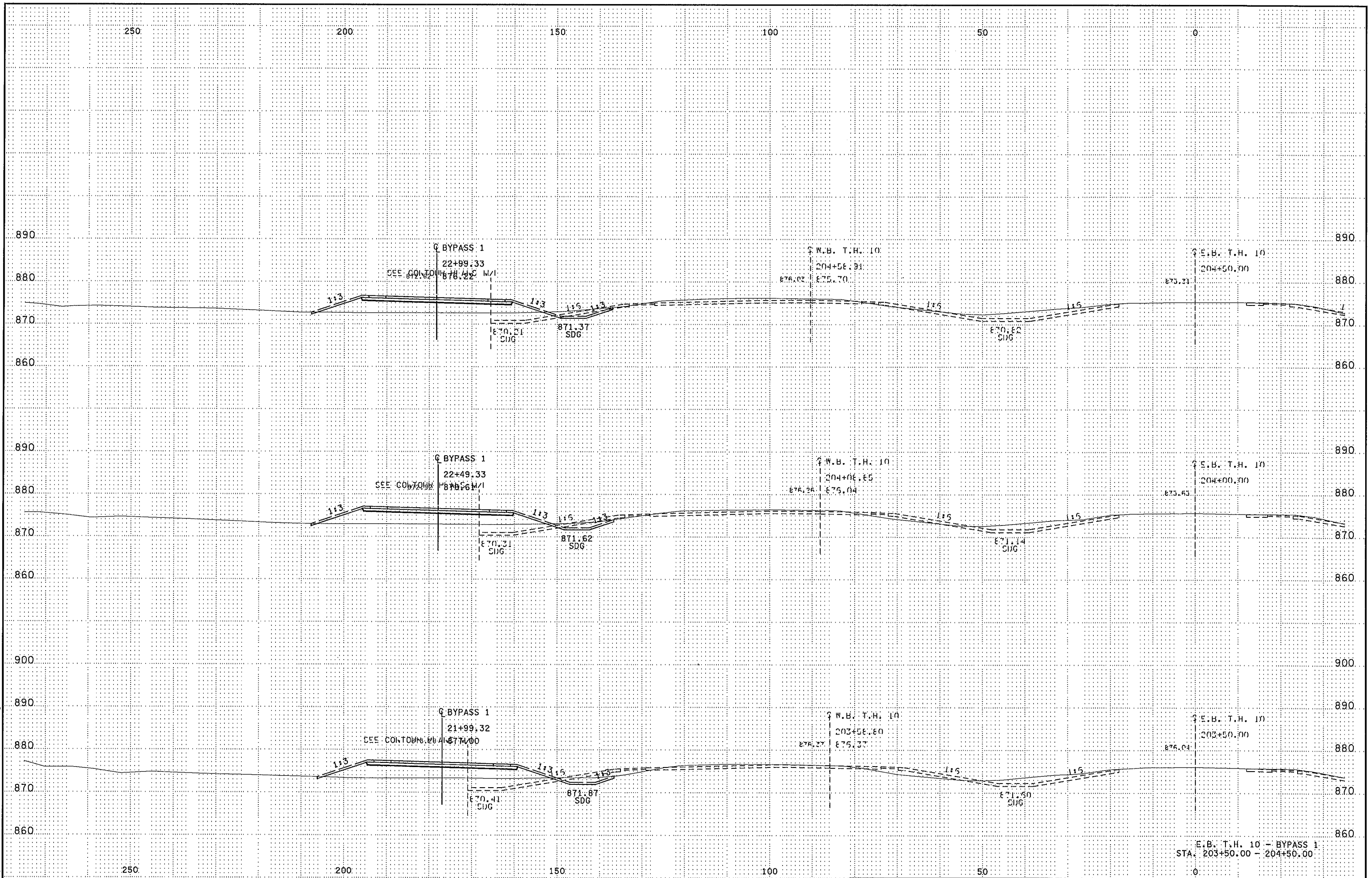


3:28:56 PM  
9/11/2014  
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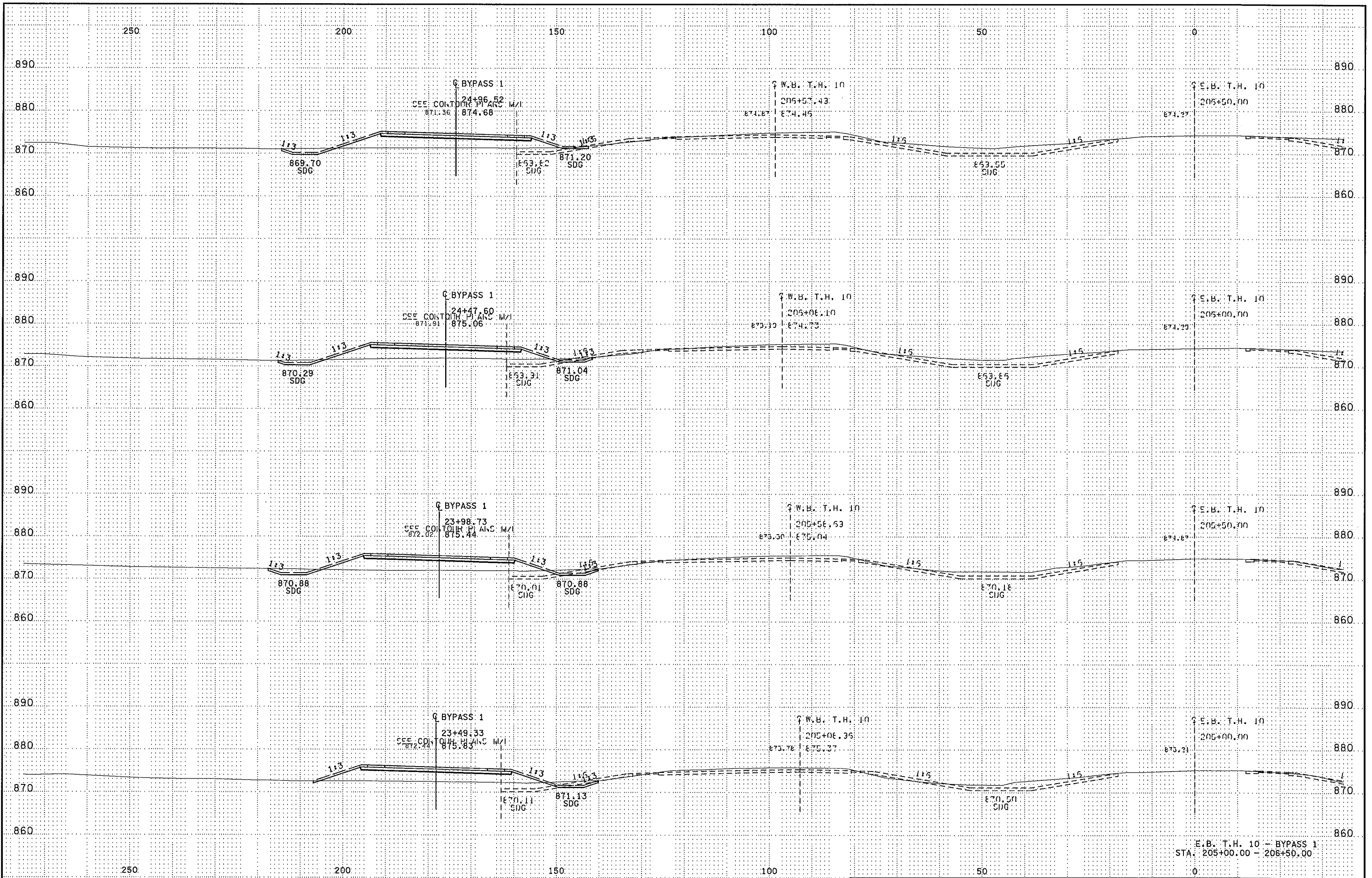
E.B. T.H. 10 - BYPASS 1  
STA. 202+00.00 - 203+00.00

3:28:58 PM  
9/11/2014  
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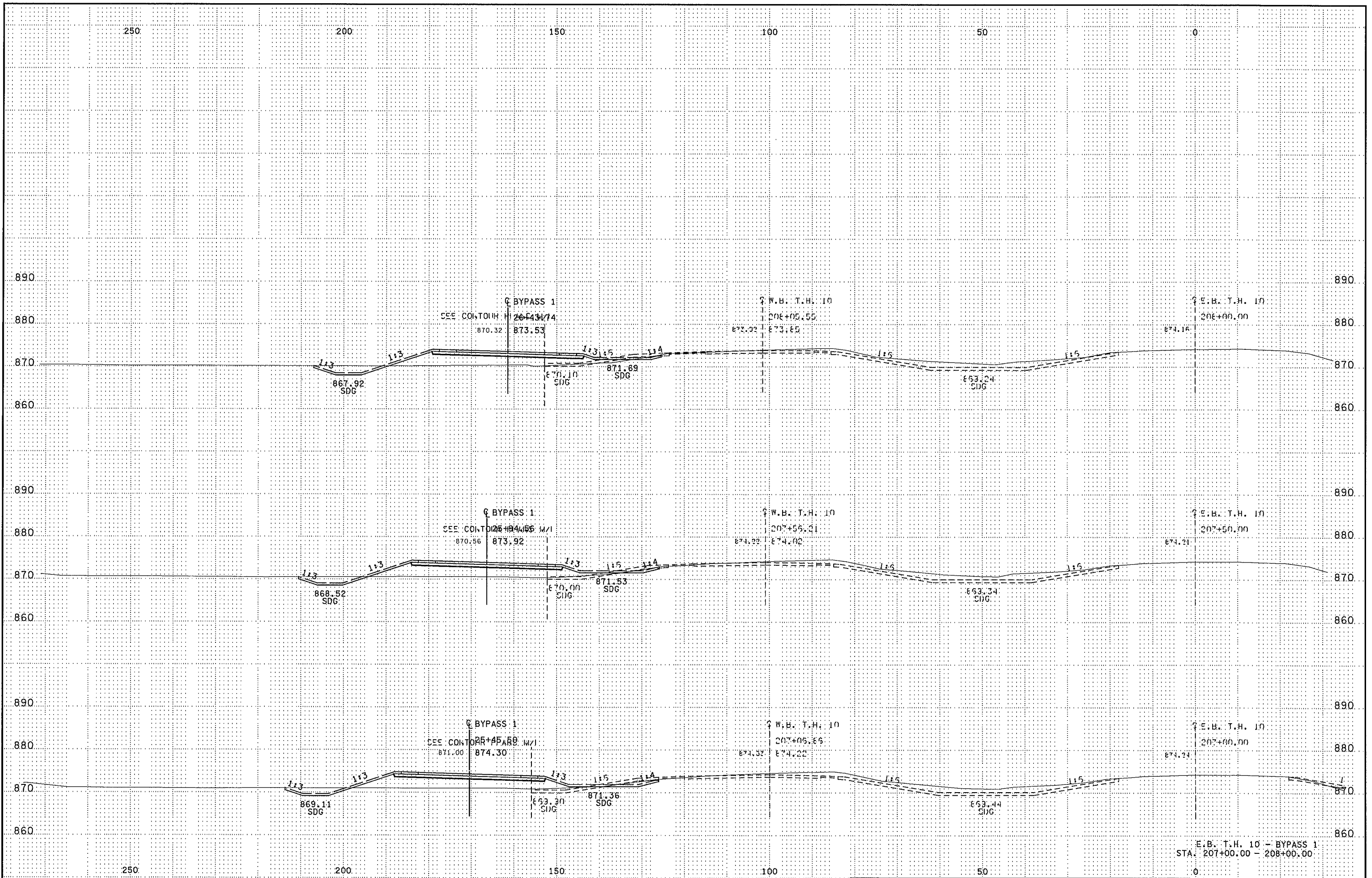
E.B. T.H. 10 - BYPASS 1  
STA. 203+50.00 - 204+50.00

3:29:00 PM  
9/11/2014  
H:\PROJ\0202\0295\CAD\BYPASS\CAD\_BYPASS-1.dgn



E.B. T.H. 10 - BYPASS 1  
STA. 205+00.00 - 206+50.00

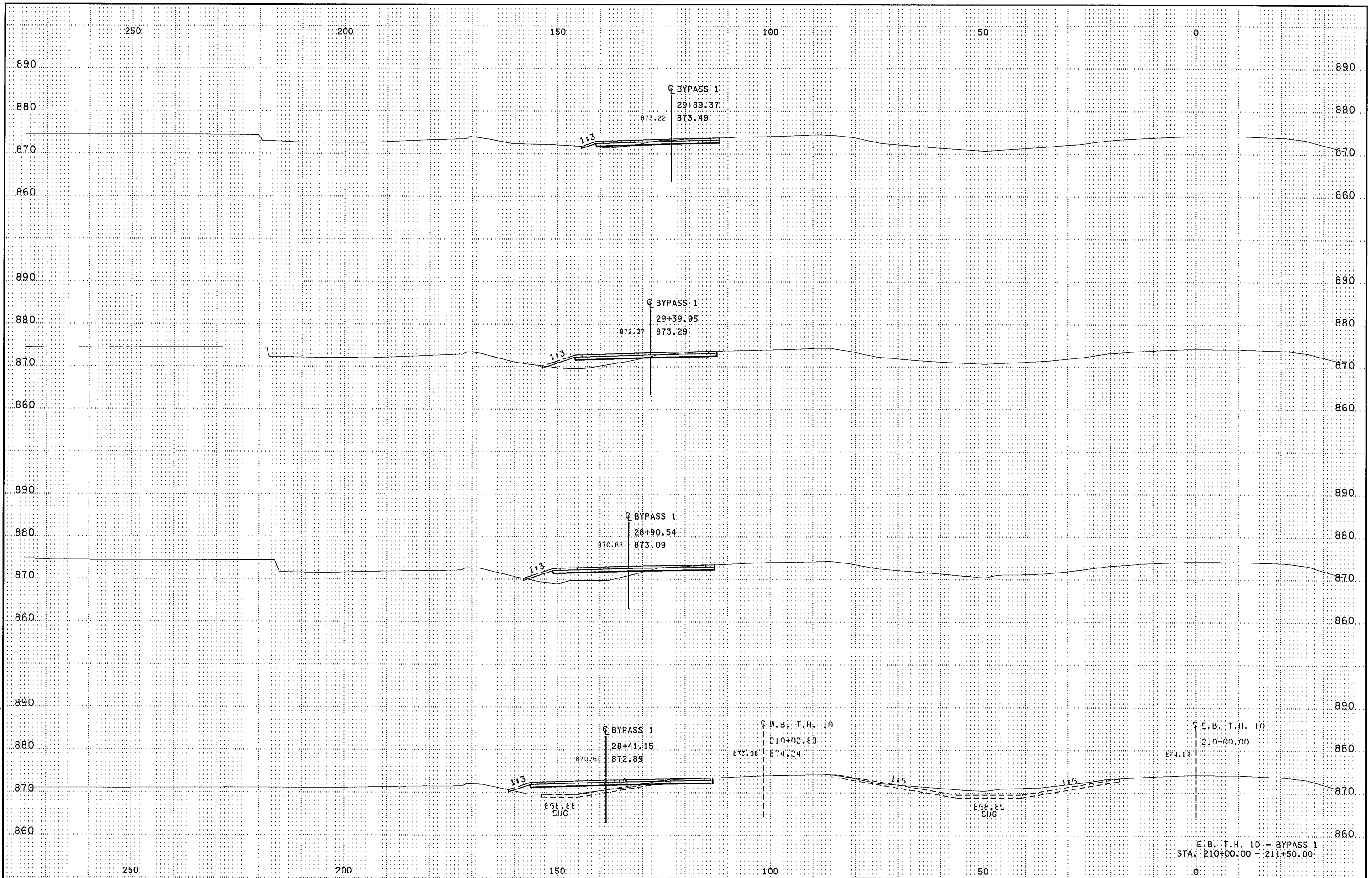
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9/11/2014  
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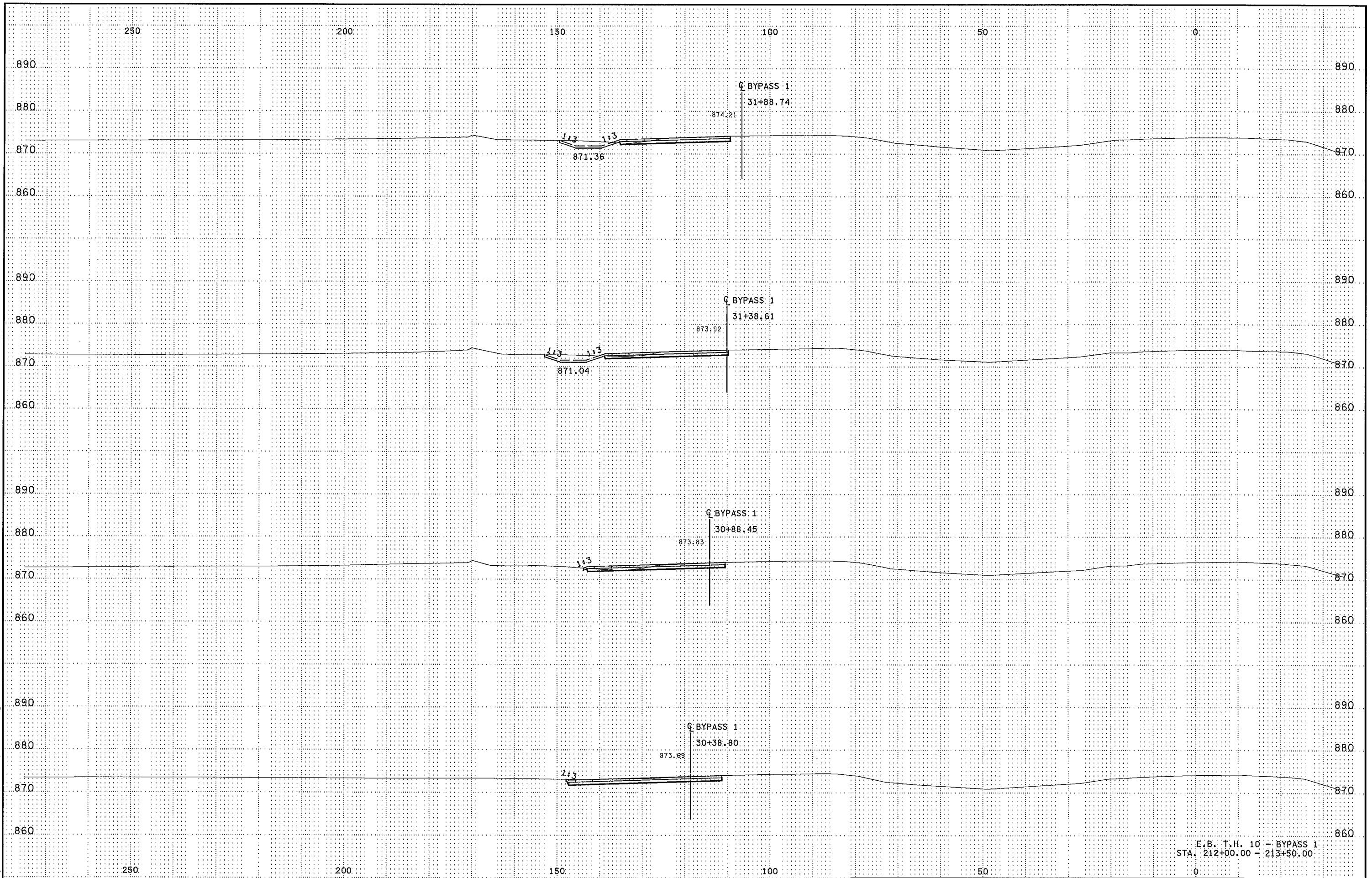




3:29:06 PM  
9/11/2014  
H:\Proj\cfs\0259\CAD\BIM\PI\cfs\0259\_xp\BYPASS-1.dgn



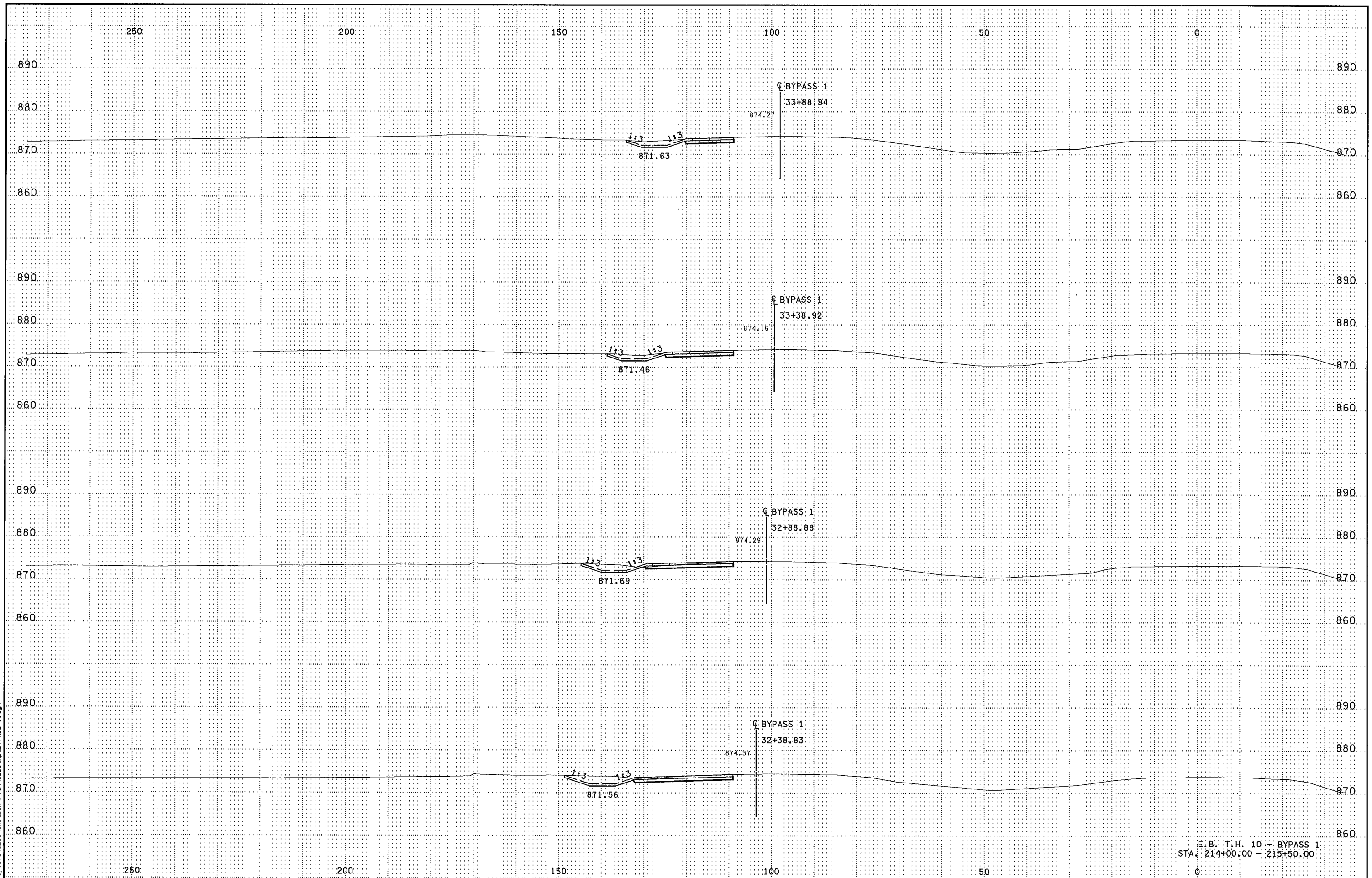
3:29:07 PM  
9/11/2014  
H:\Projects\259\CAD\_BITMAP\cm\259xp\_BYPASS-1.dgn



E.B. T.H. 10 - BYPASS 1  
STA. 212+00.00 - 213+50.00

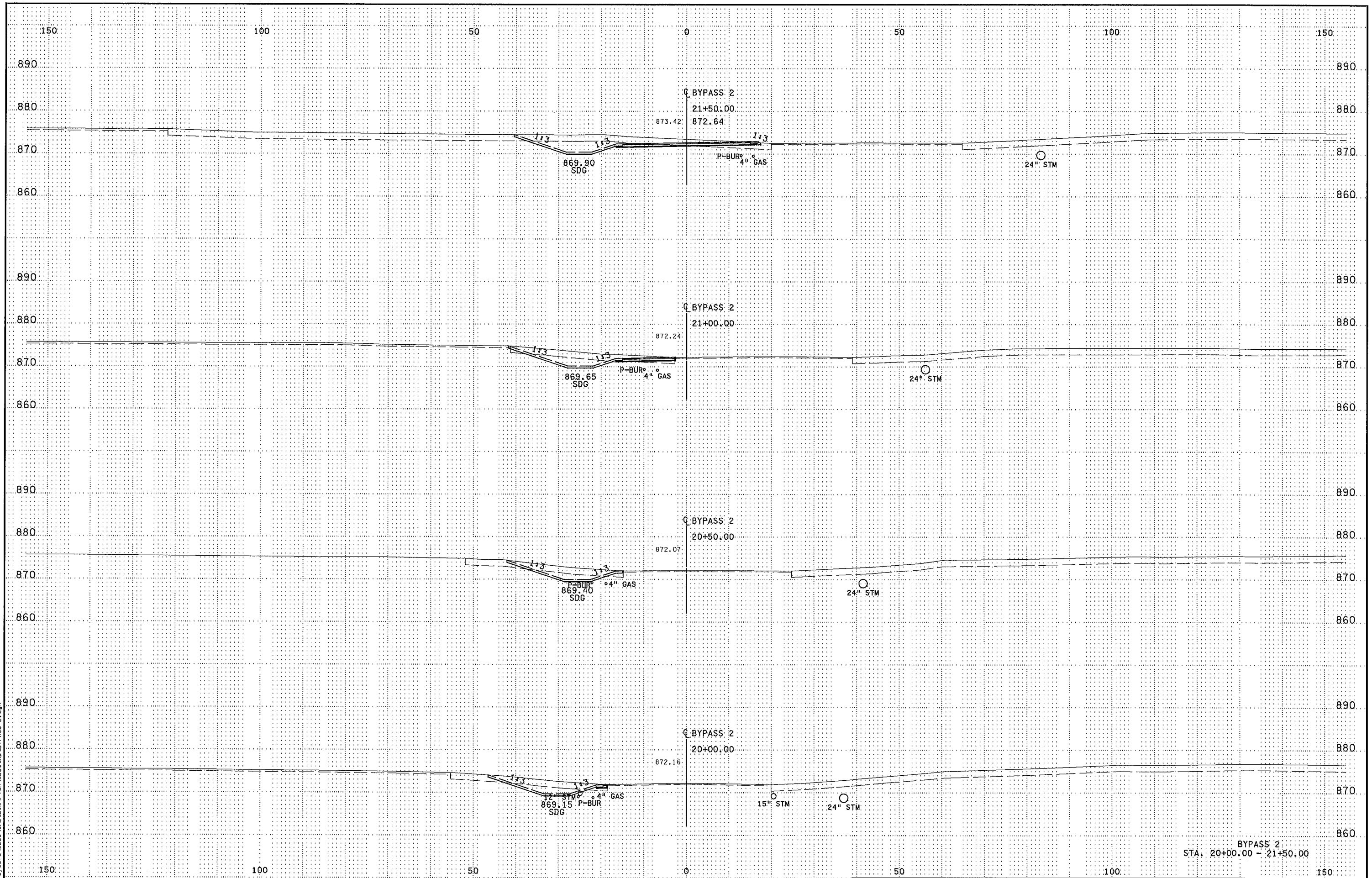


3:29:05 PM  
9/11/2014  
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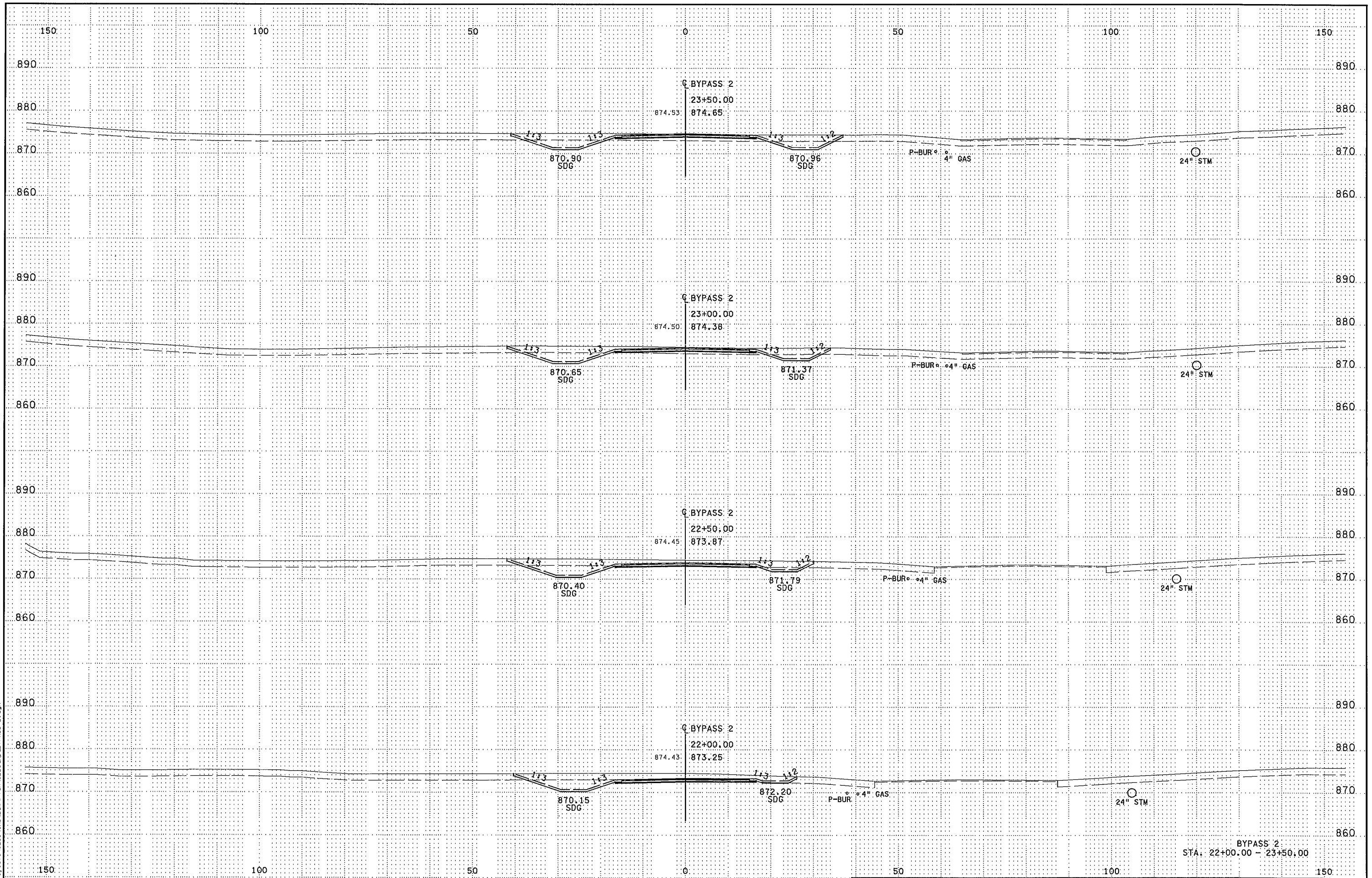
E.B. T.H. 10 - BYPASS 1  
STA. 214+00.00 - 215+50.00

3:29:12 PM  
9/11/2014  
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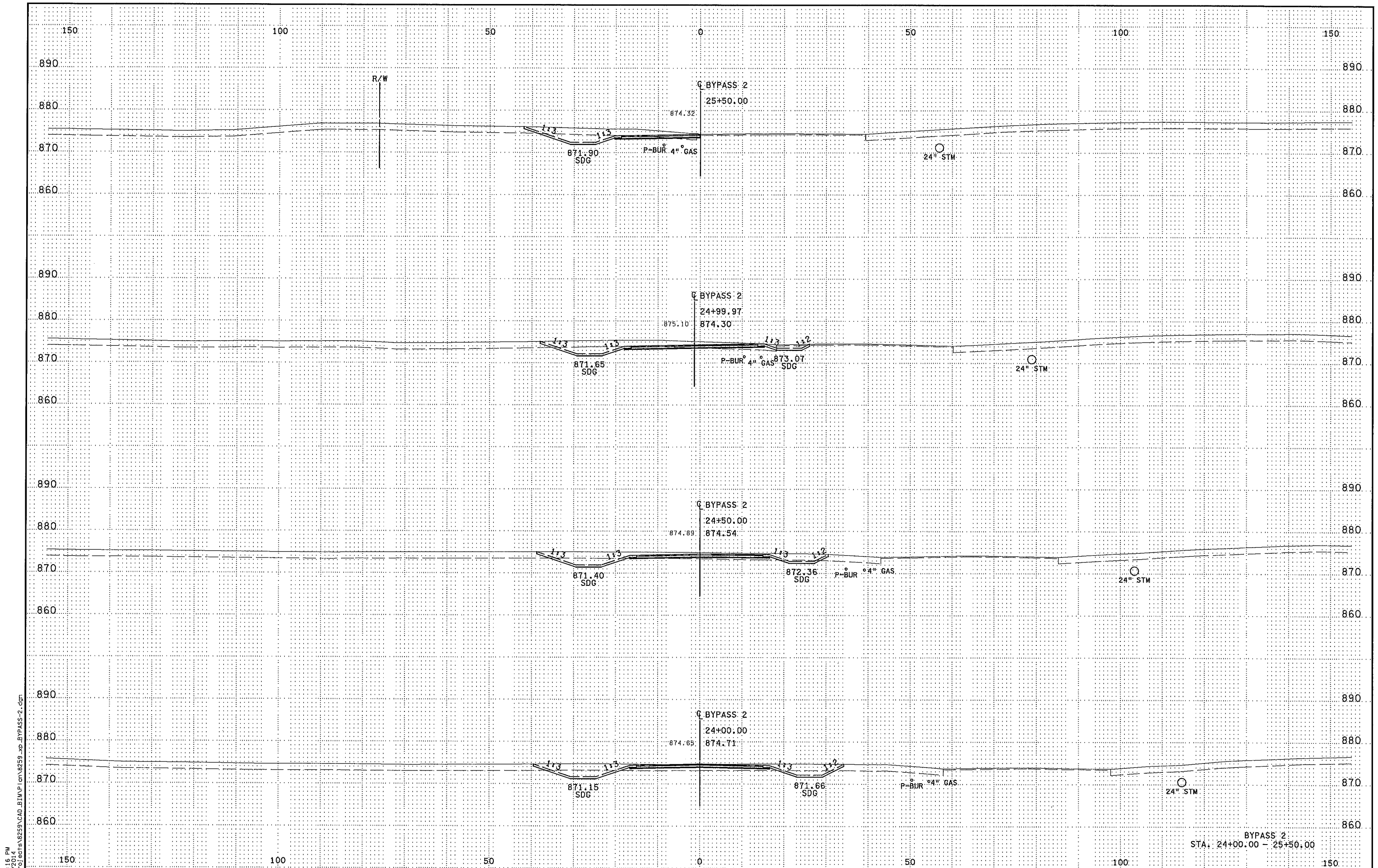


BYPASS 2  
STA. 20+00.00 - 21+50.00

3:29:14 PM  
9/11/2014  
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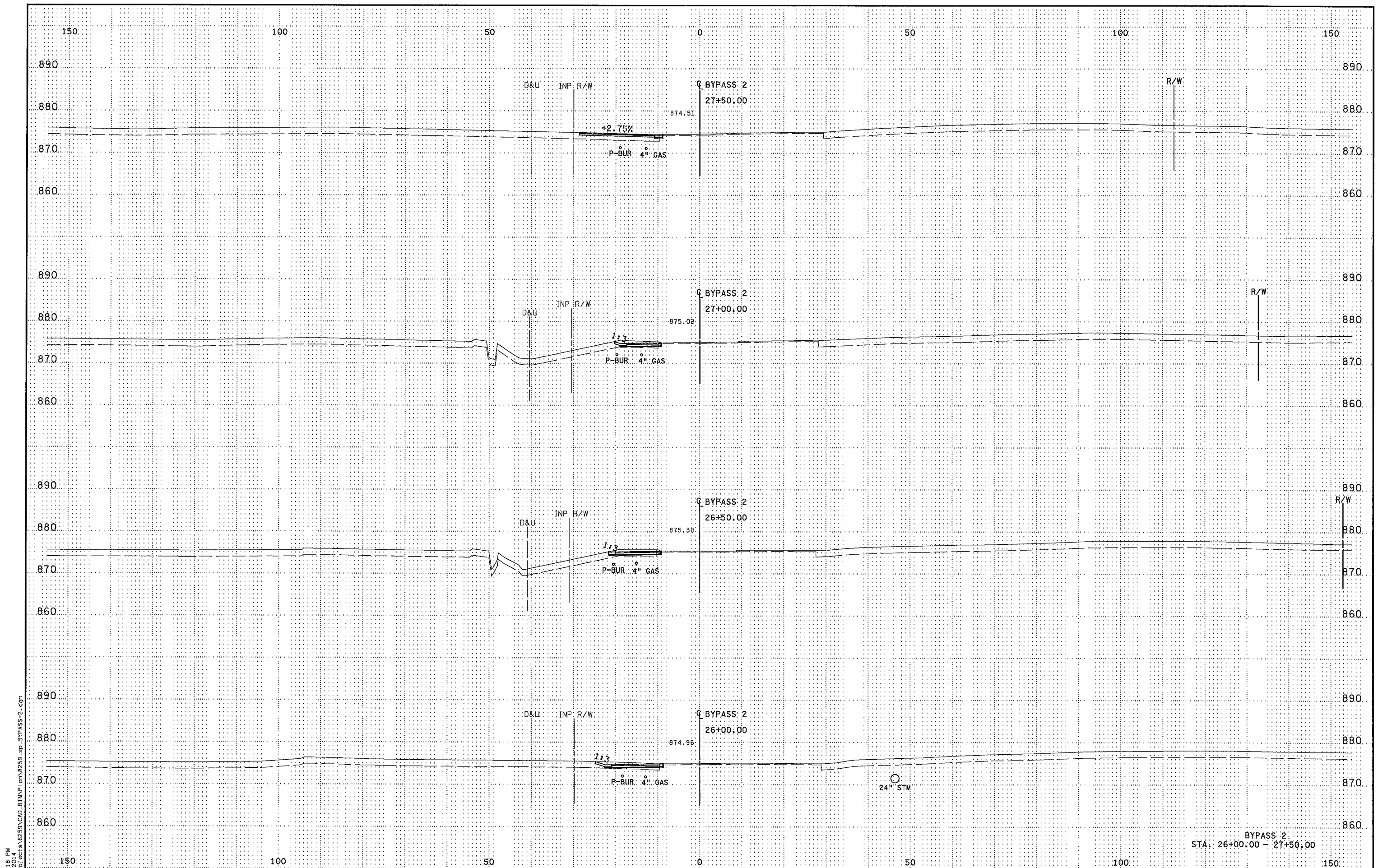
BYPASS 2  
STA: 22+00.00 - 23+50.00



3:29:16 PM  
 9/11/2014  
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BYPASS 2  
 STA. 24+00.00 - 25+50.00

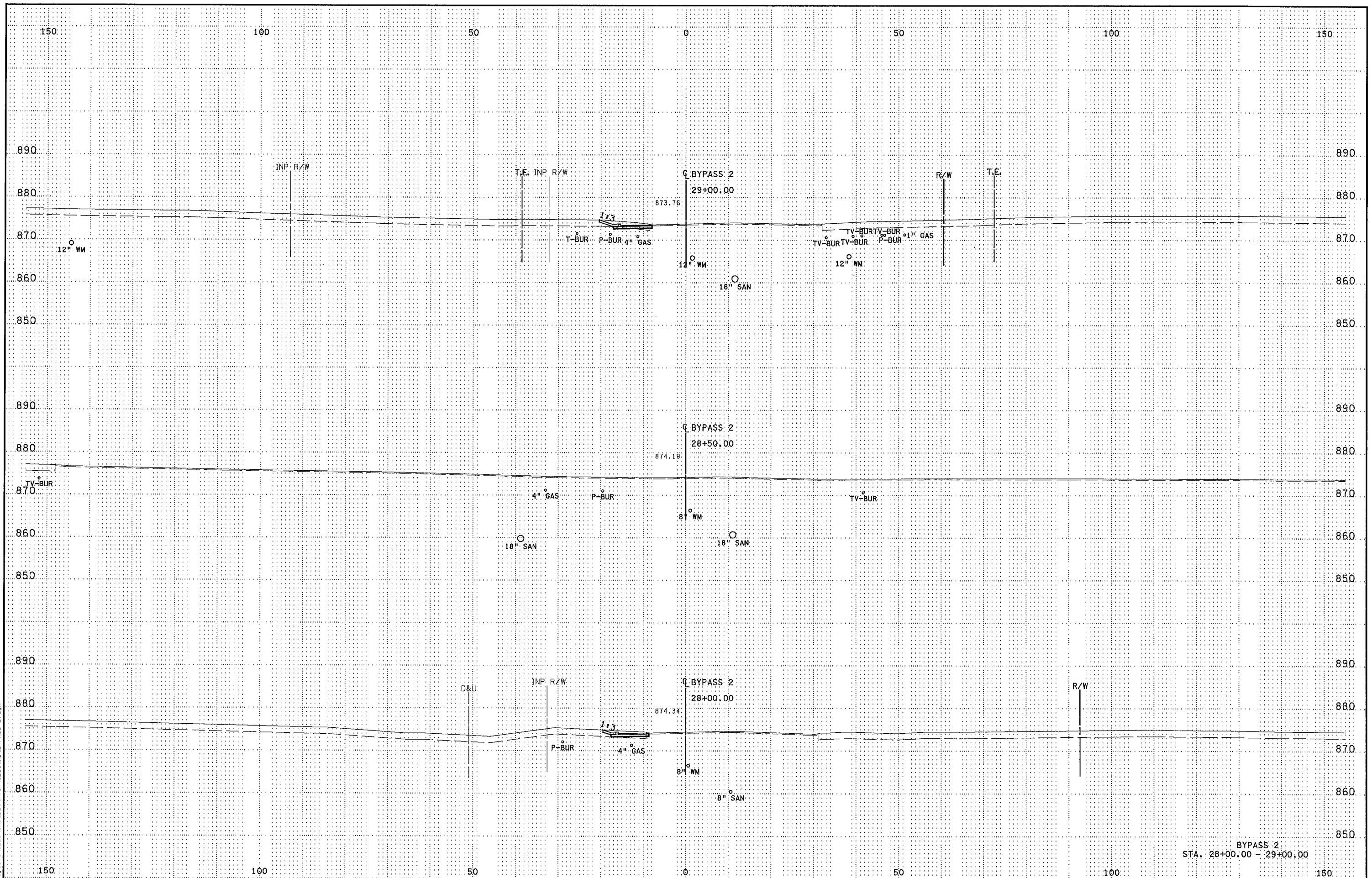




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9/11/2014  
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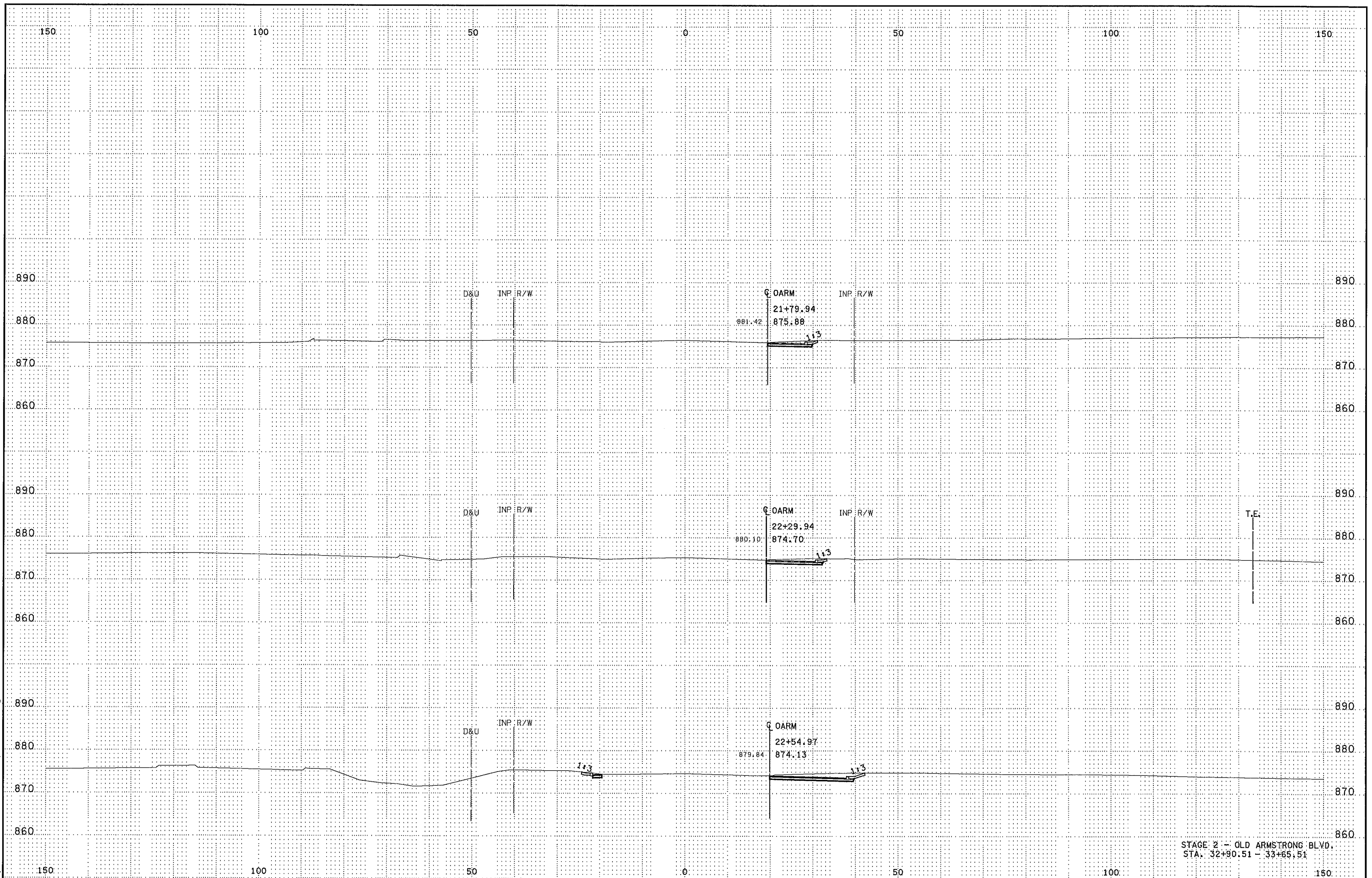
BYPASS 2  
STA. 26+00.00 - 27+50.00

3:29:20 PM  
9/11/2014  
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BYPASS 2  
STA. 28+00.00 - 29+00.00

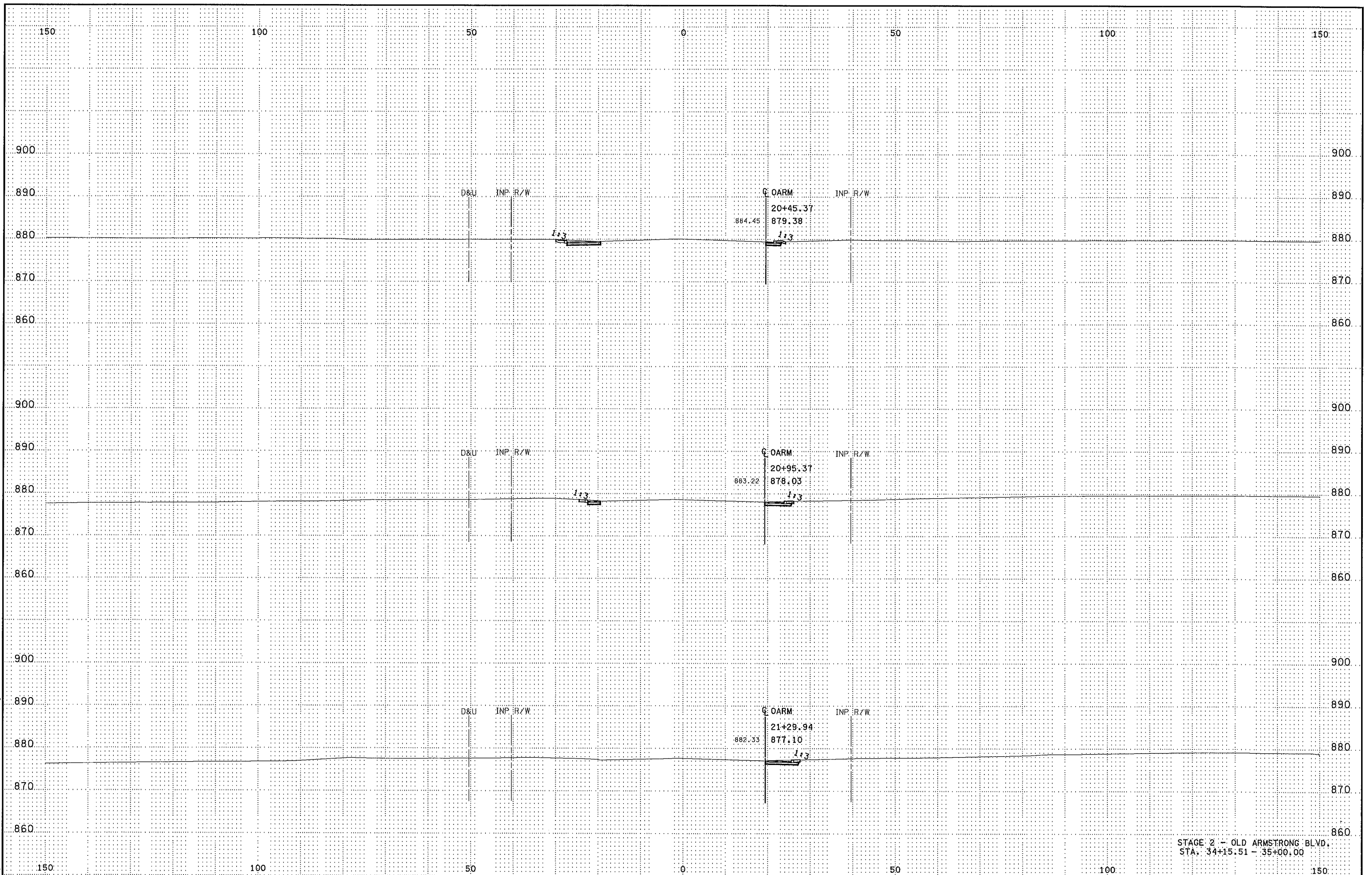
3:29:22 PM  
9/11/2014  
H:\Projects\0202\020259\CAD\_B\IMP\020259\_xp\_OARM-WIDEN.dgn



STAGE 2 - OLD ARMSTRONG BLVD.  
STA. 32+90.51 - 33+65.51

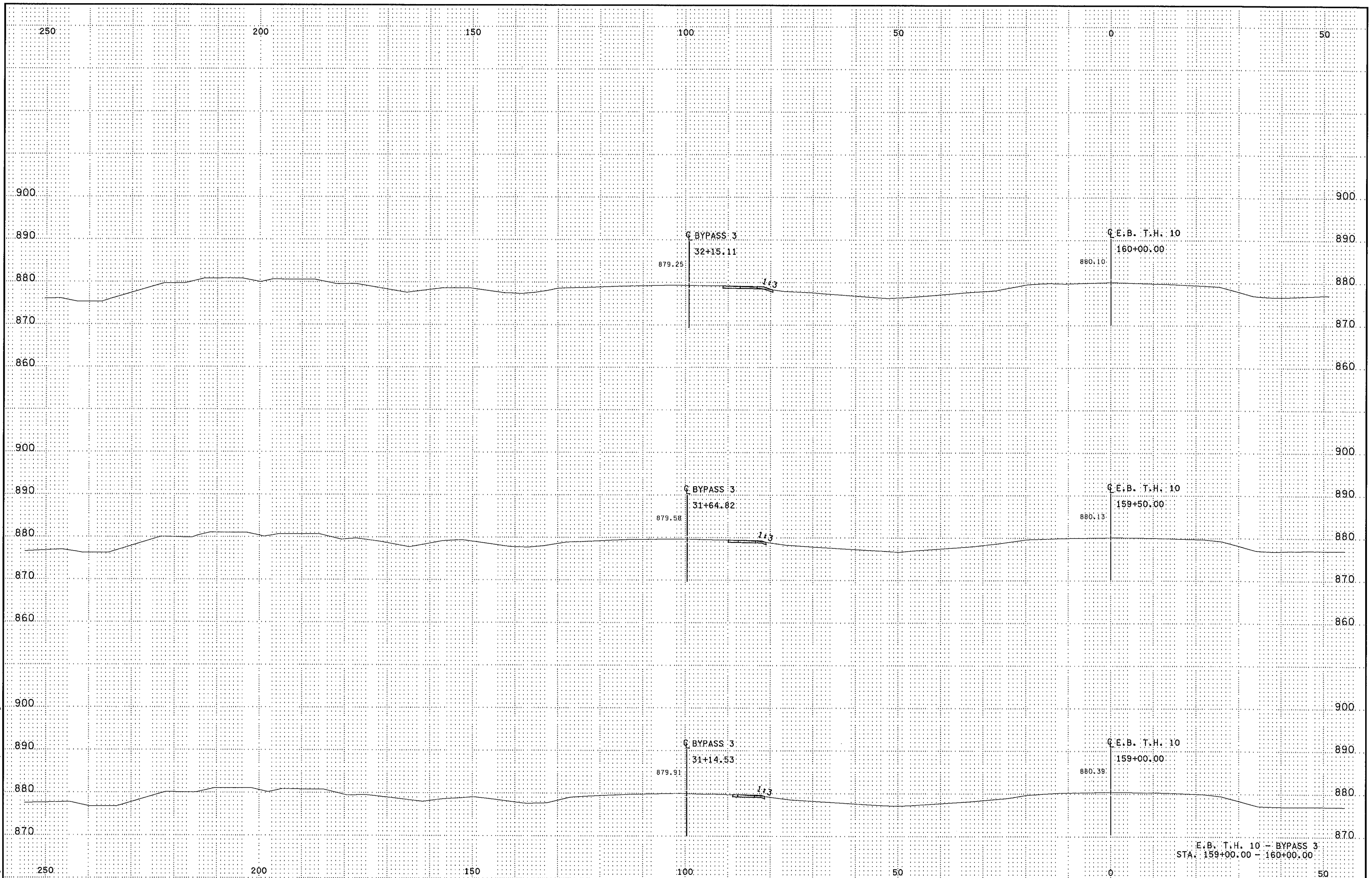


3:29:24 PM  
9/11/2014  
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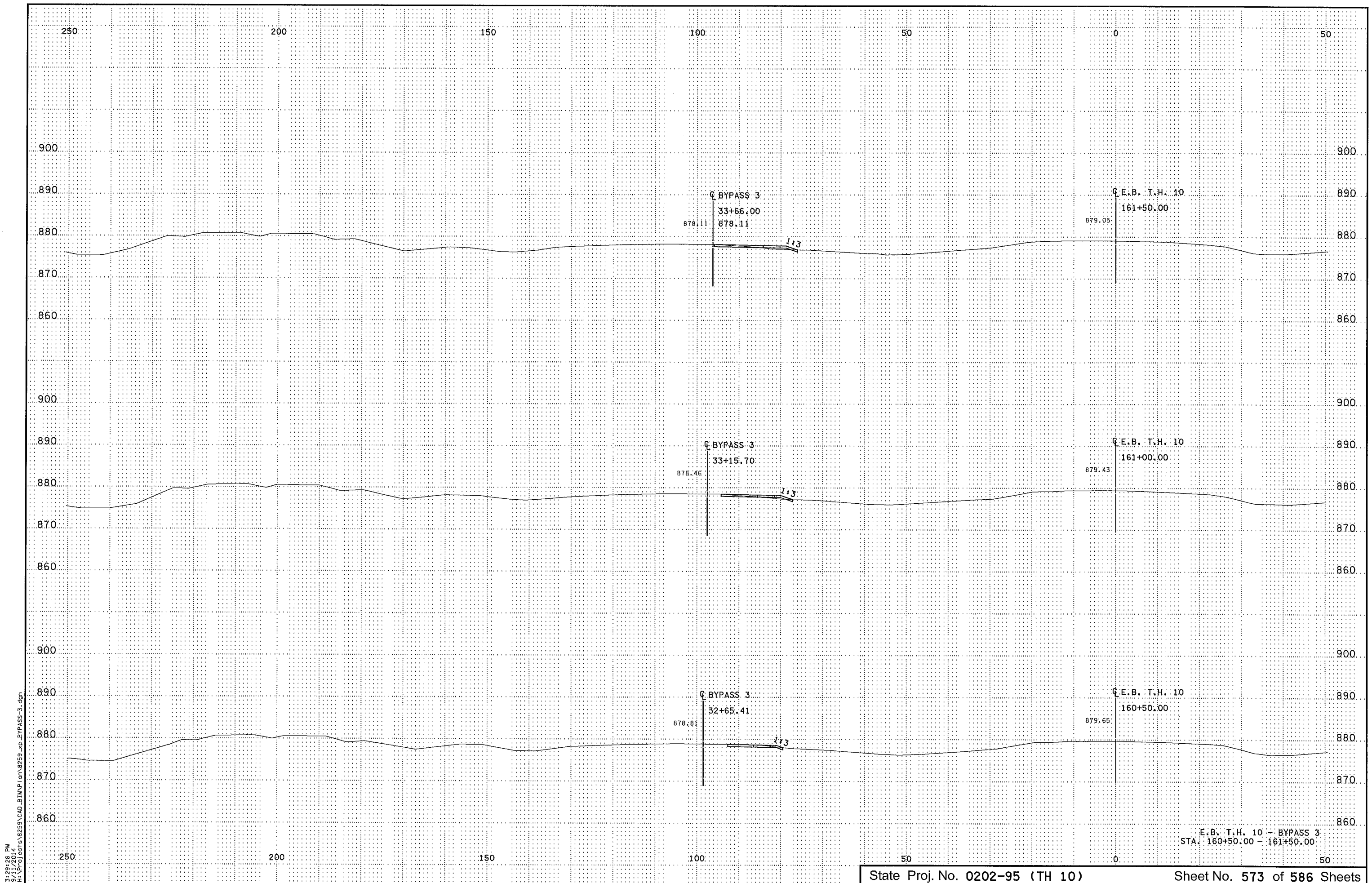


STAGE 2 - OLD ARMSTRONG BLVD.  
STA. 34+15.51 - 35+00.00

3:29:26 PM  
9/11/2014  
H:\Projects\0202-95\TH 10\BYPASS 3.dgn

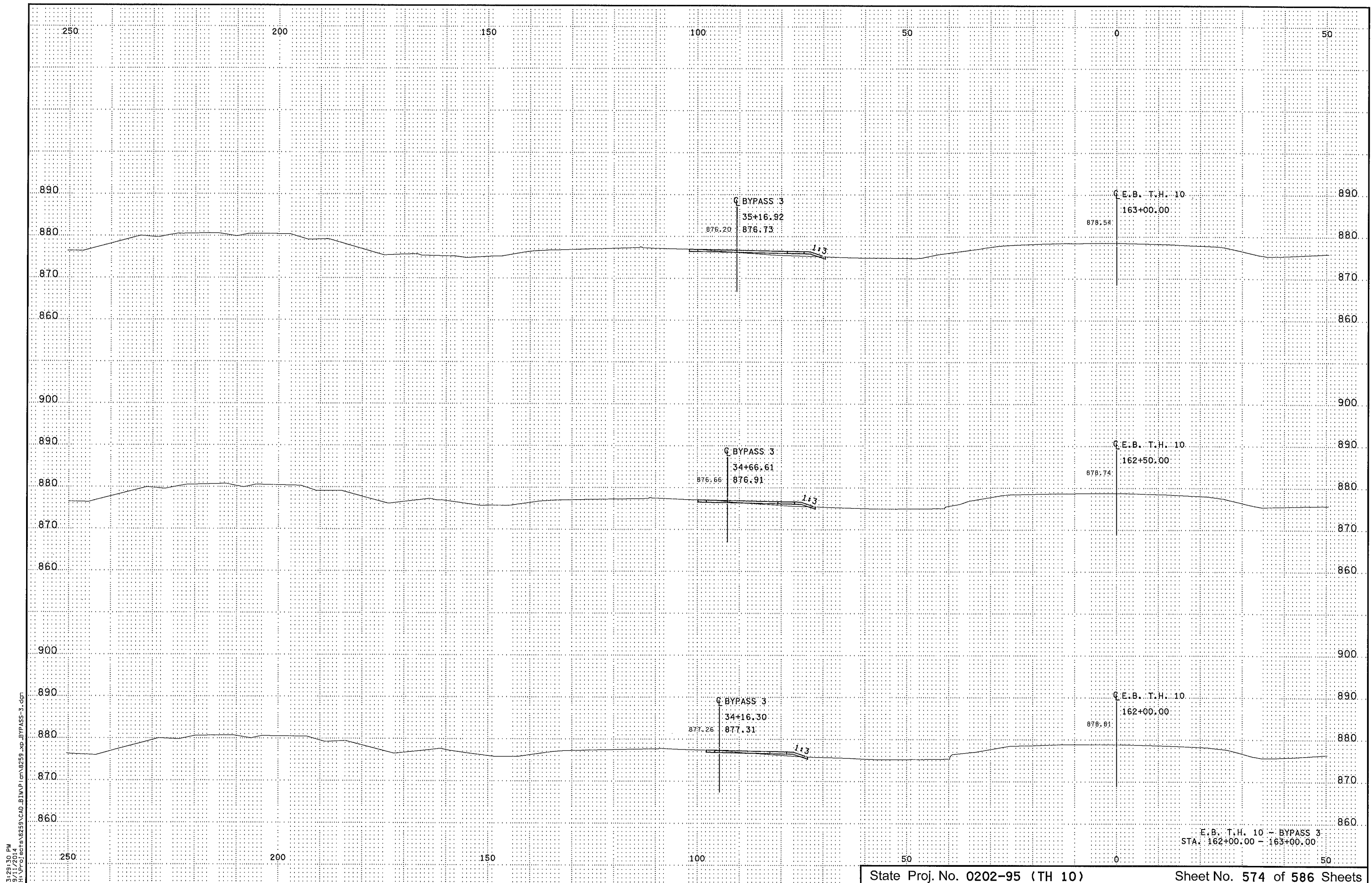


E.B. T.H. 10 - BYPASS 3  
STA. 159+00.00 - 160+00.00



3:29:28 PM  
 9/11/2014  
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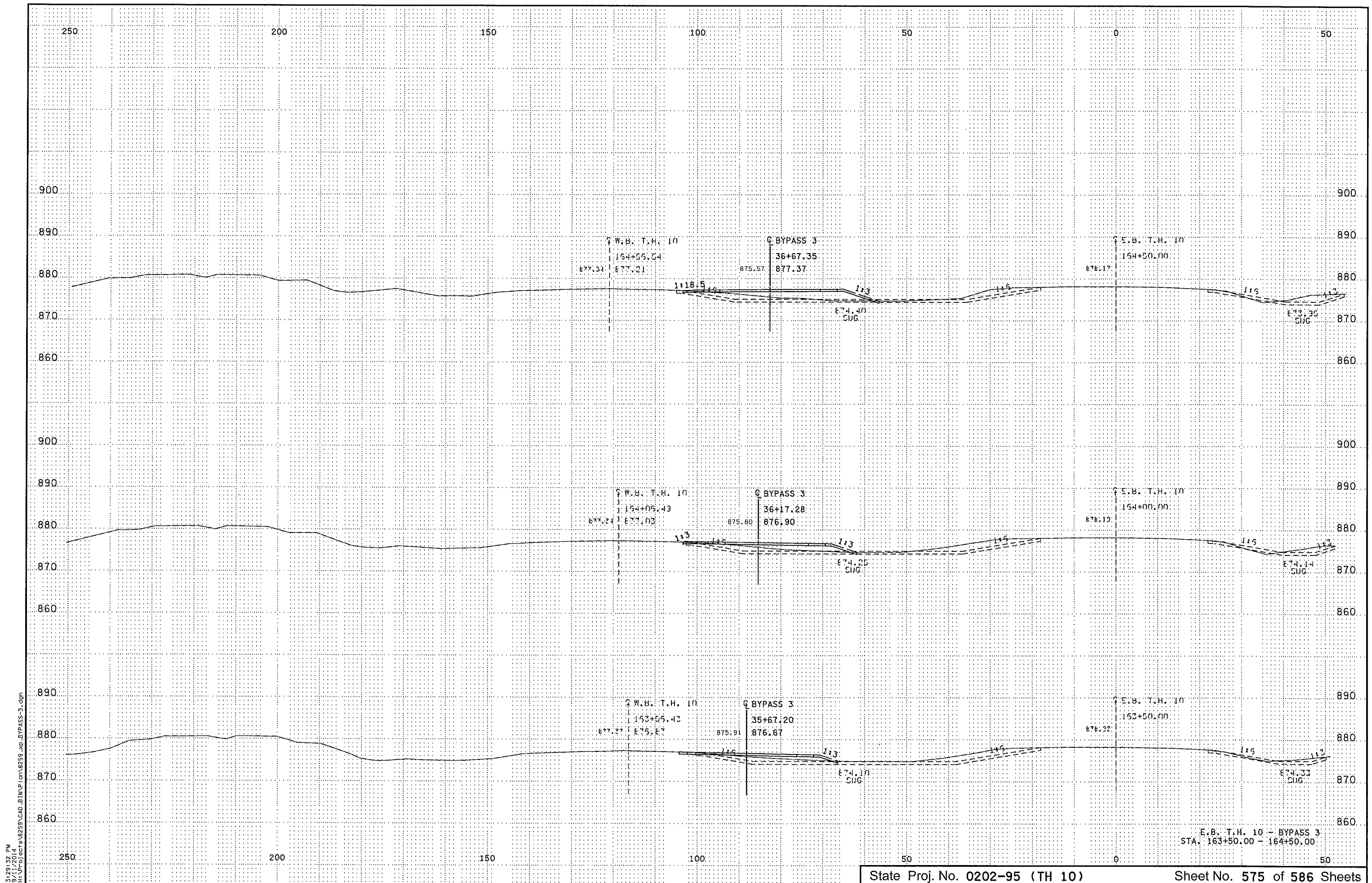
E.B. T.H. 10 - BYPASS 3  
 STA. 160+50.00 - 161+50.00



3:29:30 PM  
 9/11/2014  
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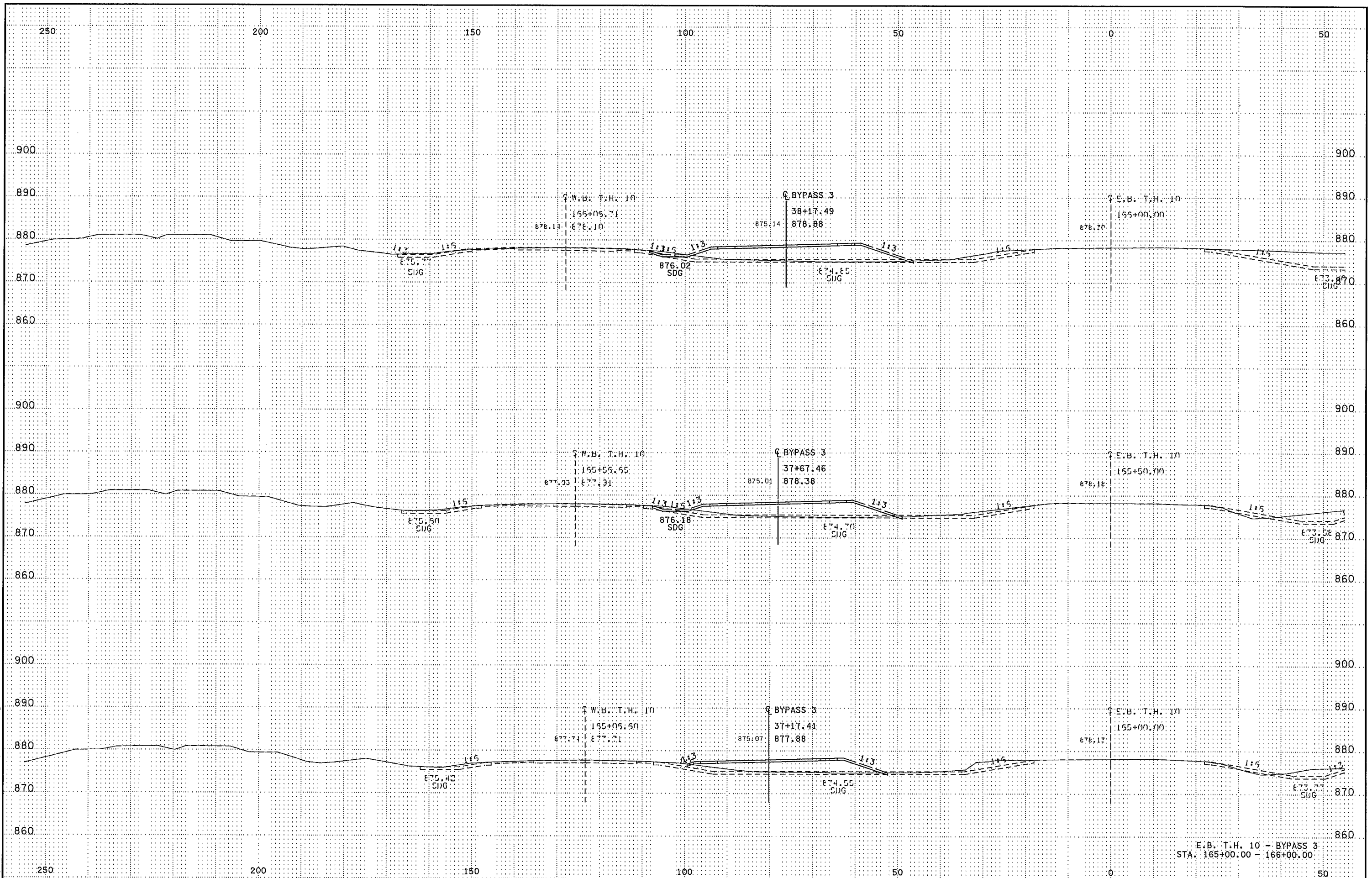
E.B. T.H. 10 - BYPASS 3  
 STA. 162+00.00 - 163+00.00





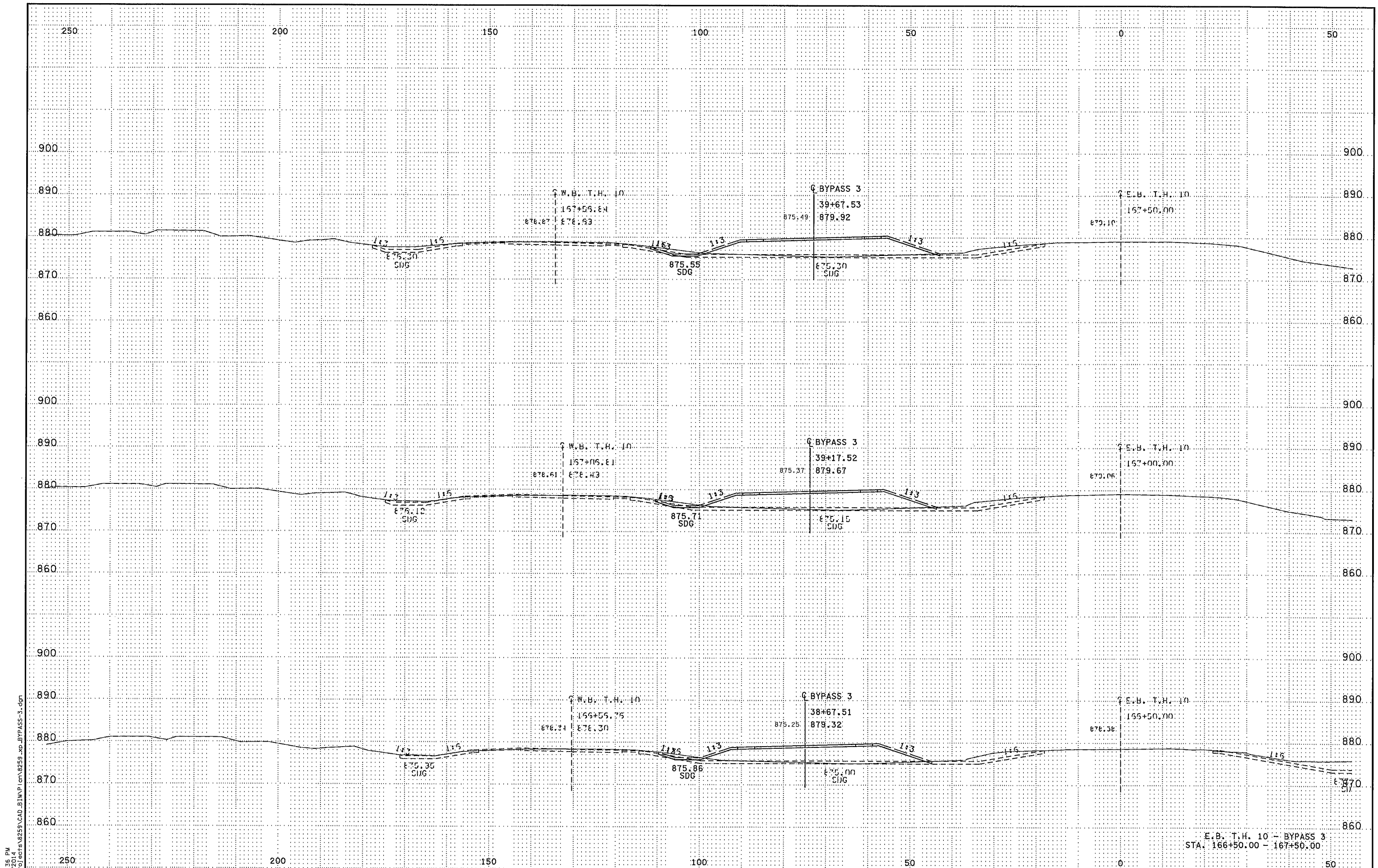
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 9/11/2014  
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3:29:34 PM  
9/11/2014  
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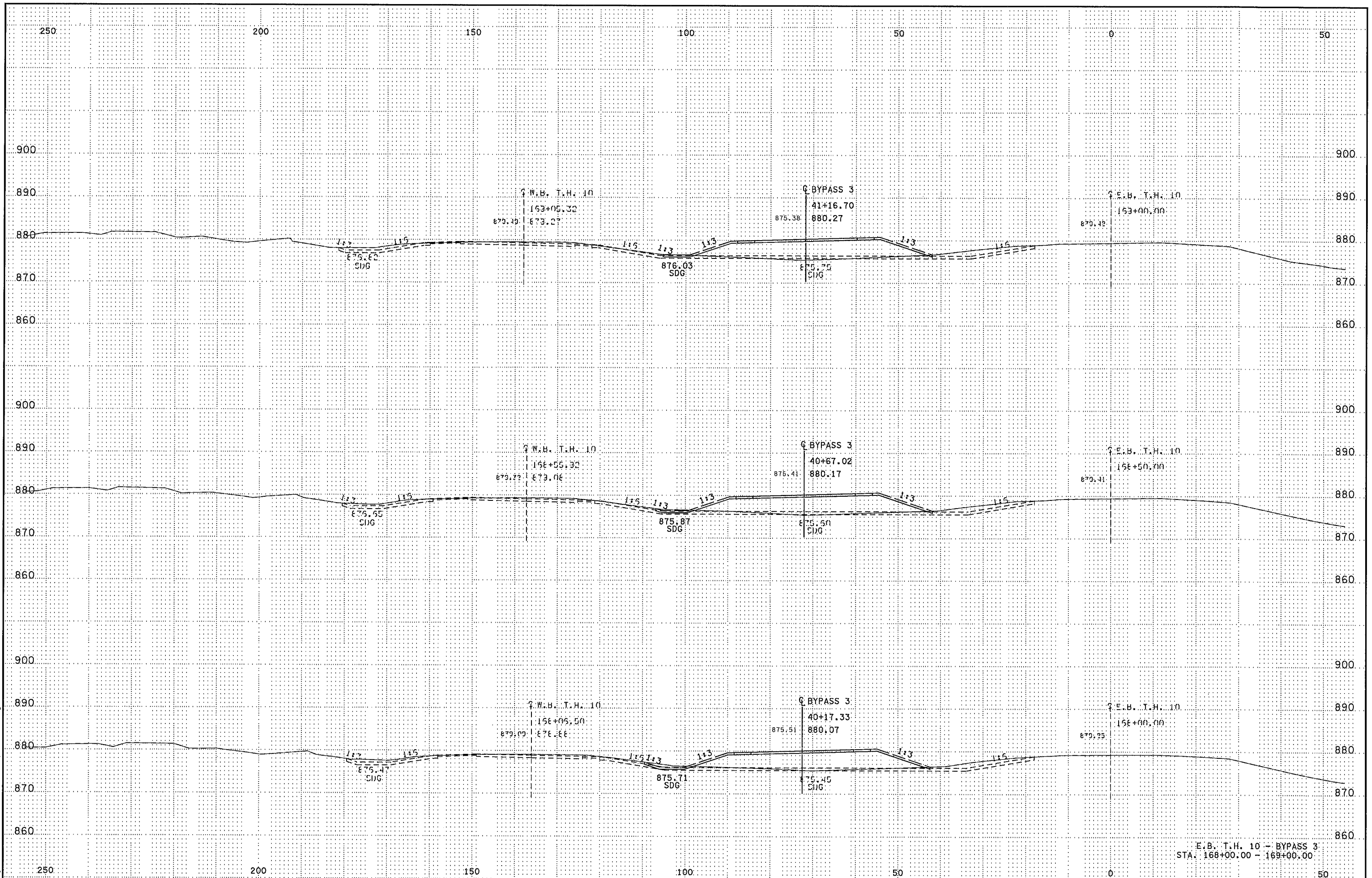
E.B. T.H. 10 - BYPASS 3  
STA. 155+00.00 - 166+00.00





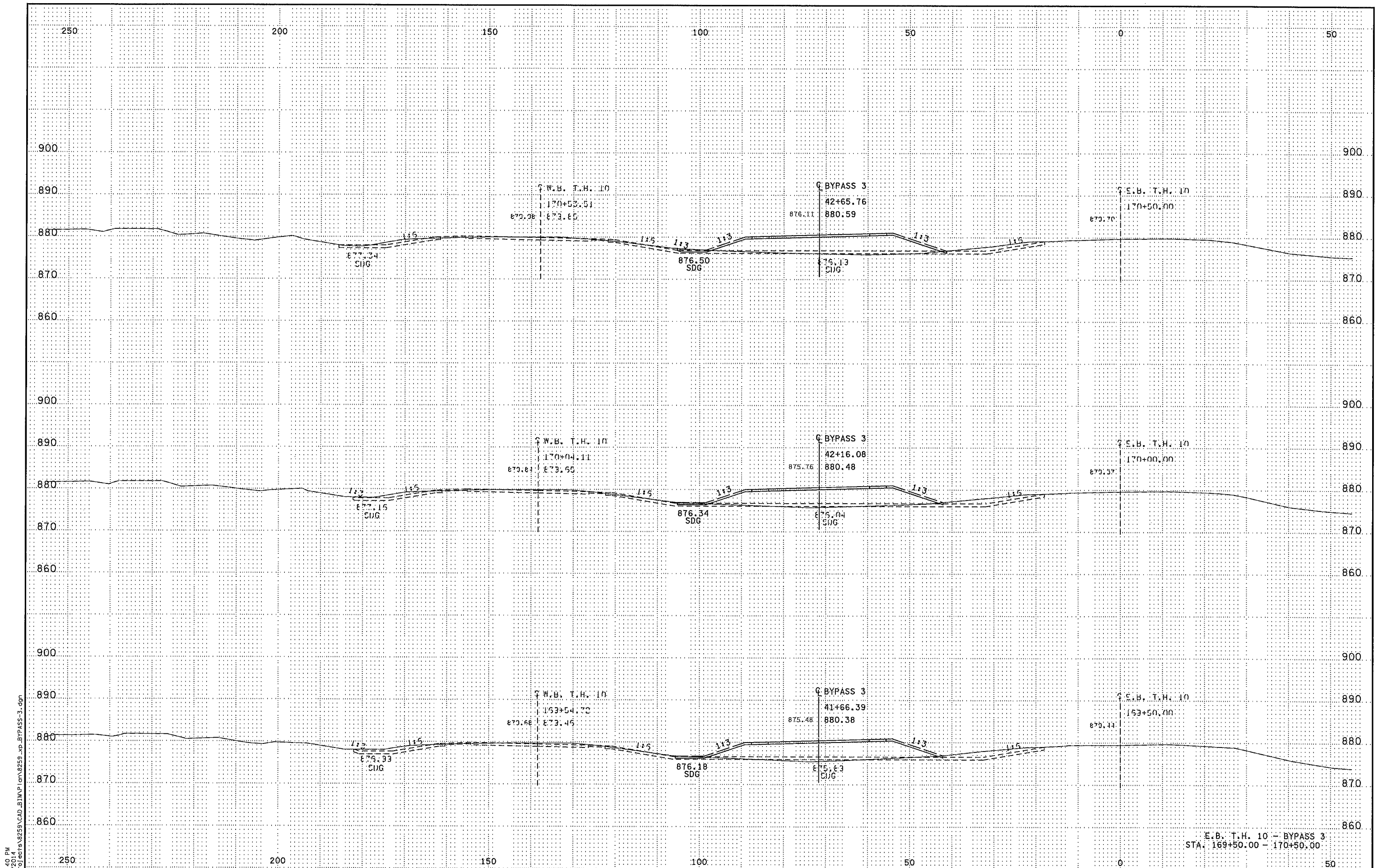
3:29:36 PM  
 9/11/2014  
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E.B. T.H. 10 - BYPASS 3  
 STA. 166+50.00 - 167+50.00



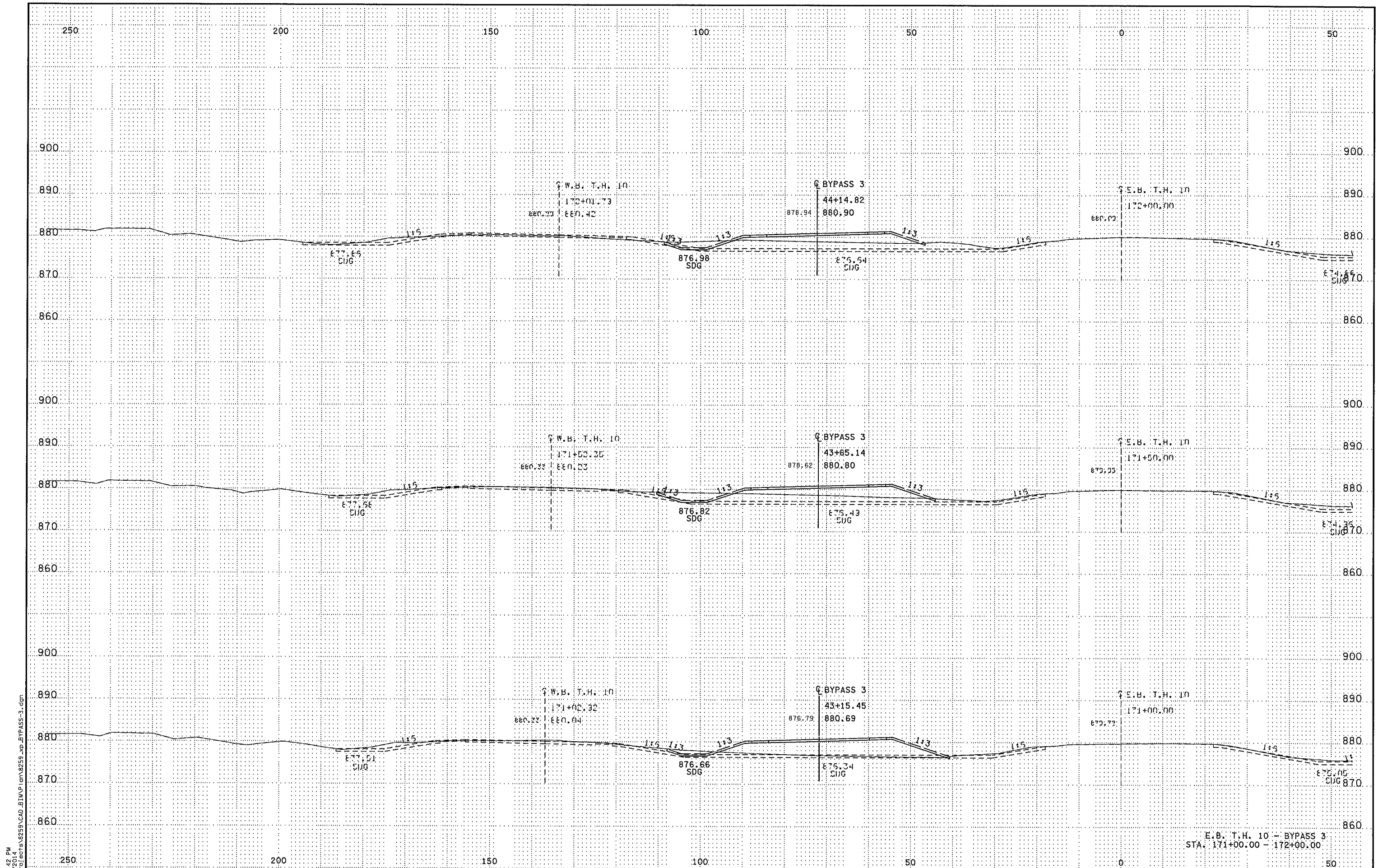
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 9/11/2014  
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E.B. T.H. 10 - BYPASS 3  
 STA: 168+00.00 - 169+00.00



3:29:40 PM  
 9/11/2014  
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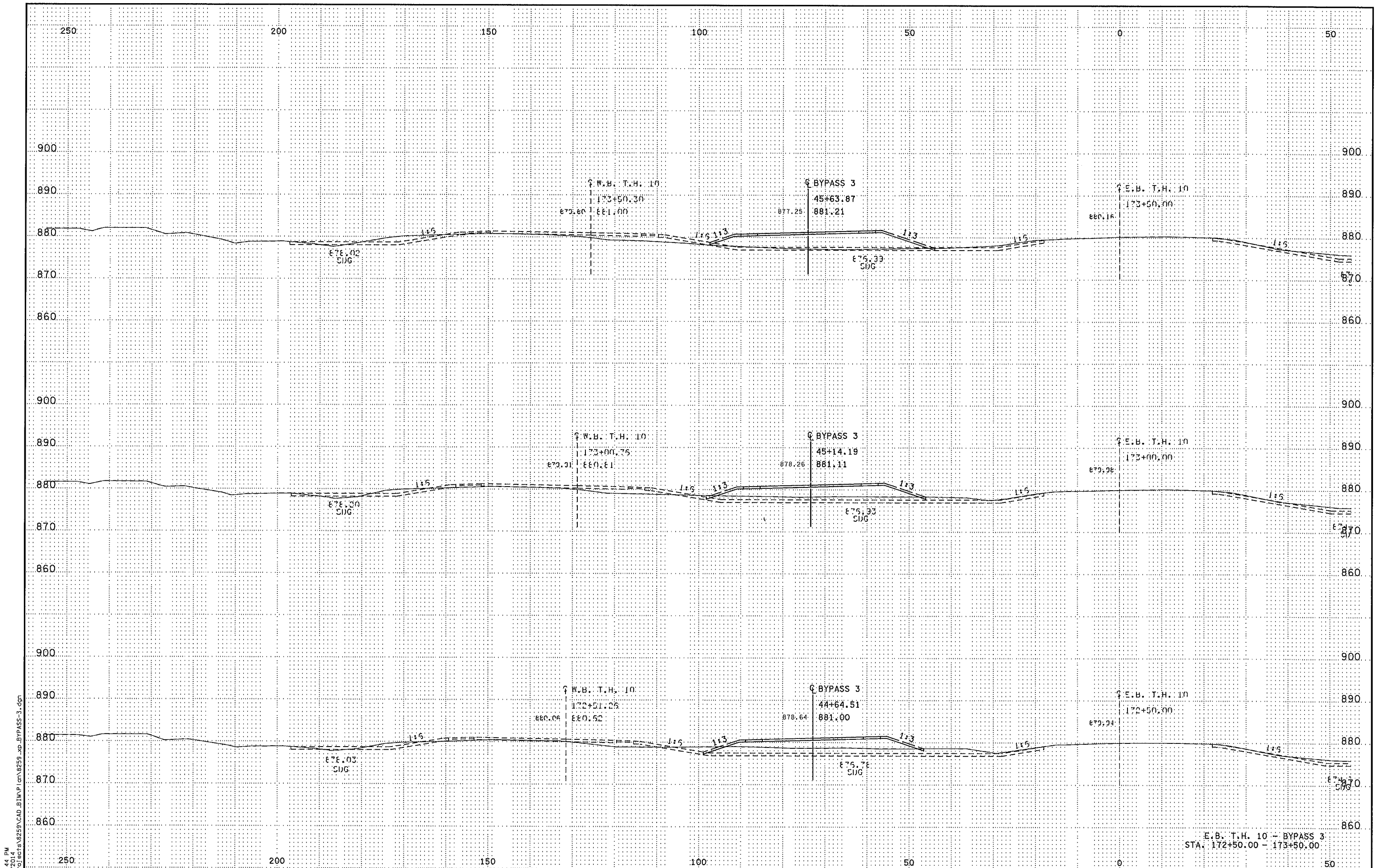
E.B. T.H. 10 - BYPASS 3  
 STA. 169+50.00 - 170+50.00



3:29:42 PM  
 9/11/2014  
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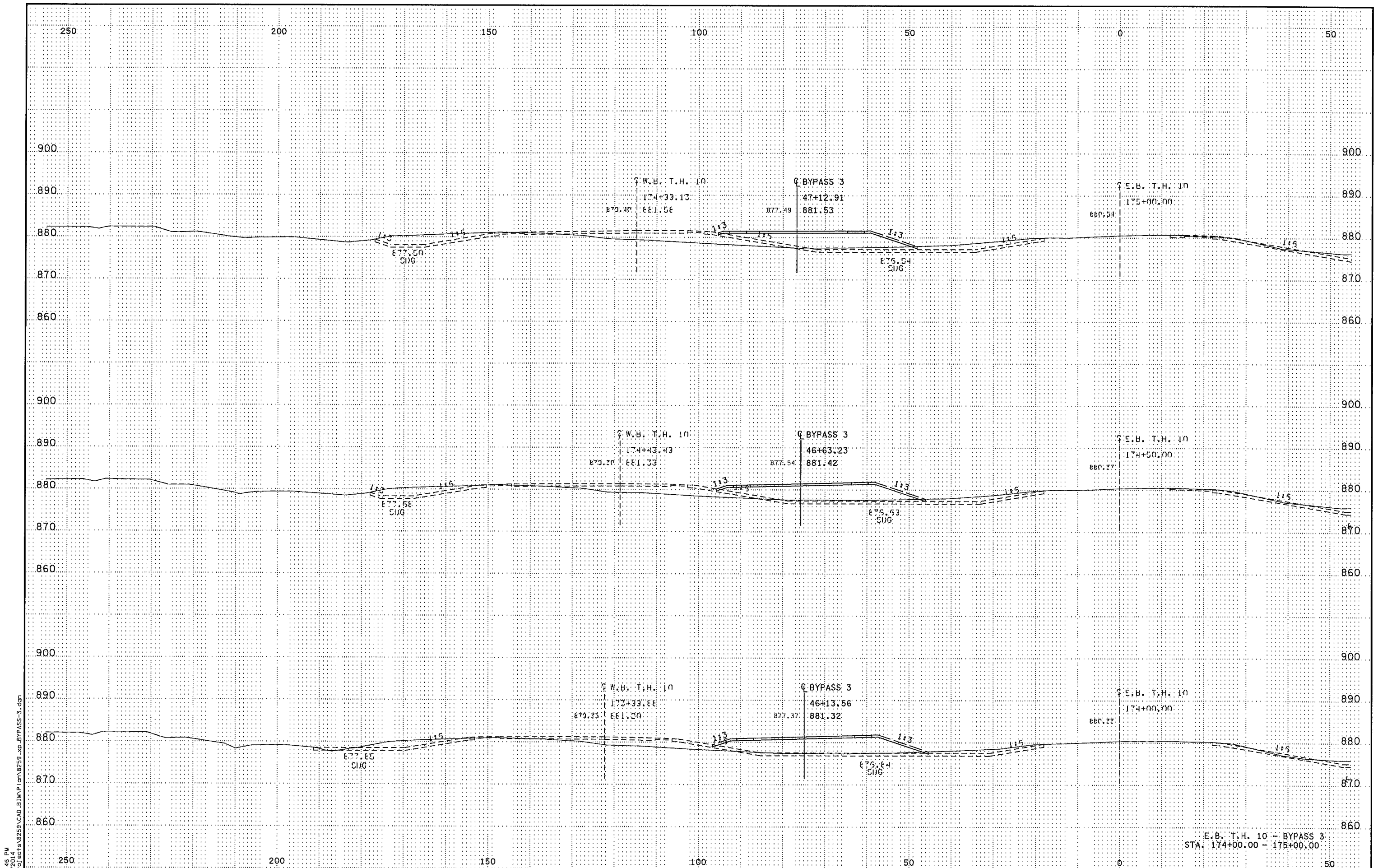
E.B. T.H. 10 - BYPASS 3  
 STA. 171+00.00 - 172+00.00





3:29:44 PM  
 9/11/2014  
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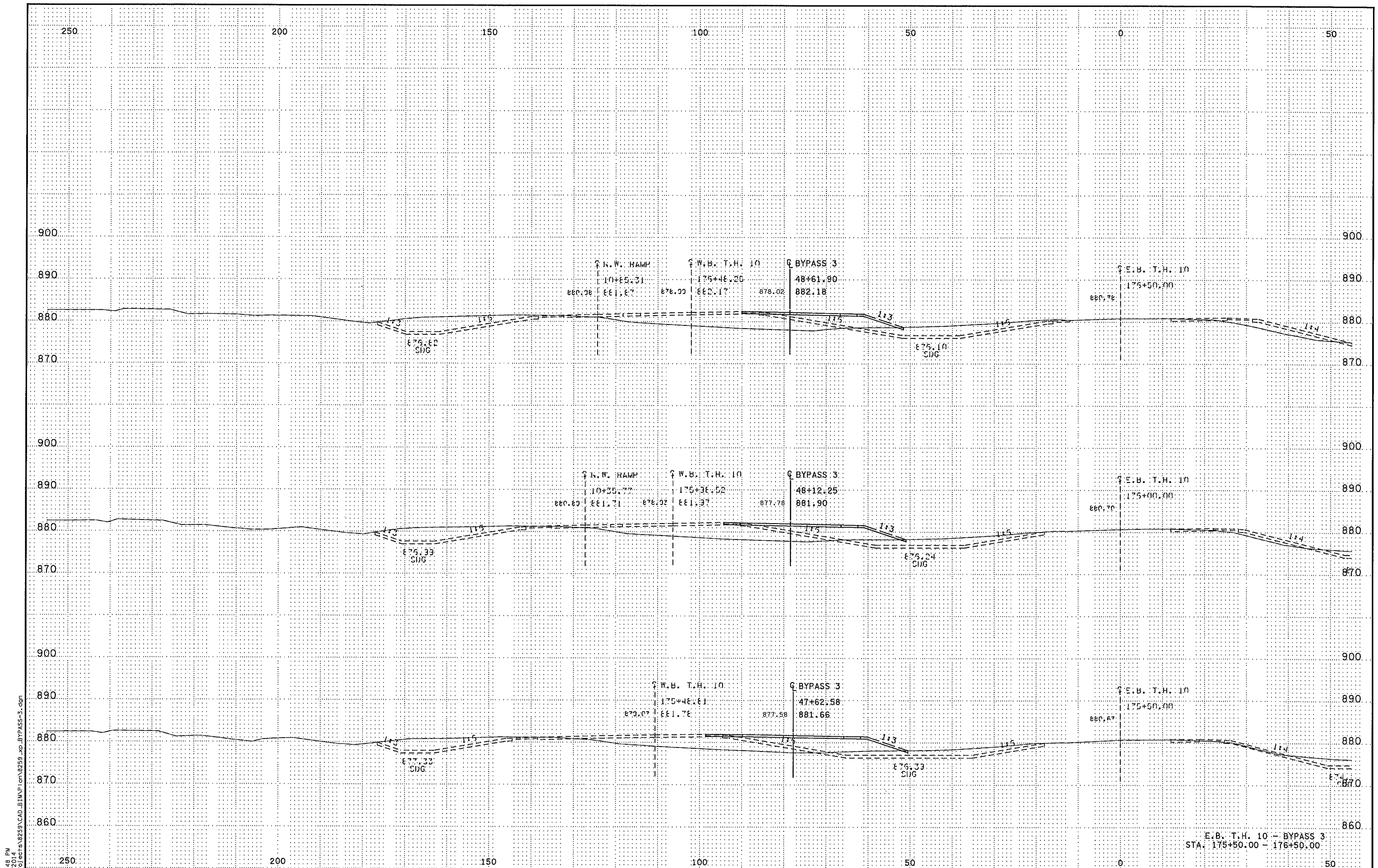
E.B. T.H. 10 - BYPASS 3  
 STA. 172+50.00 - 173+50.00



3:29:46 PM  
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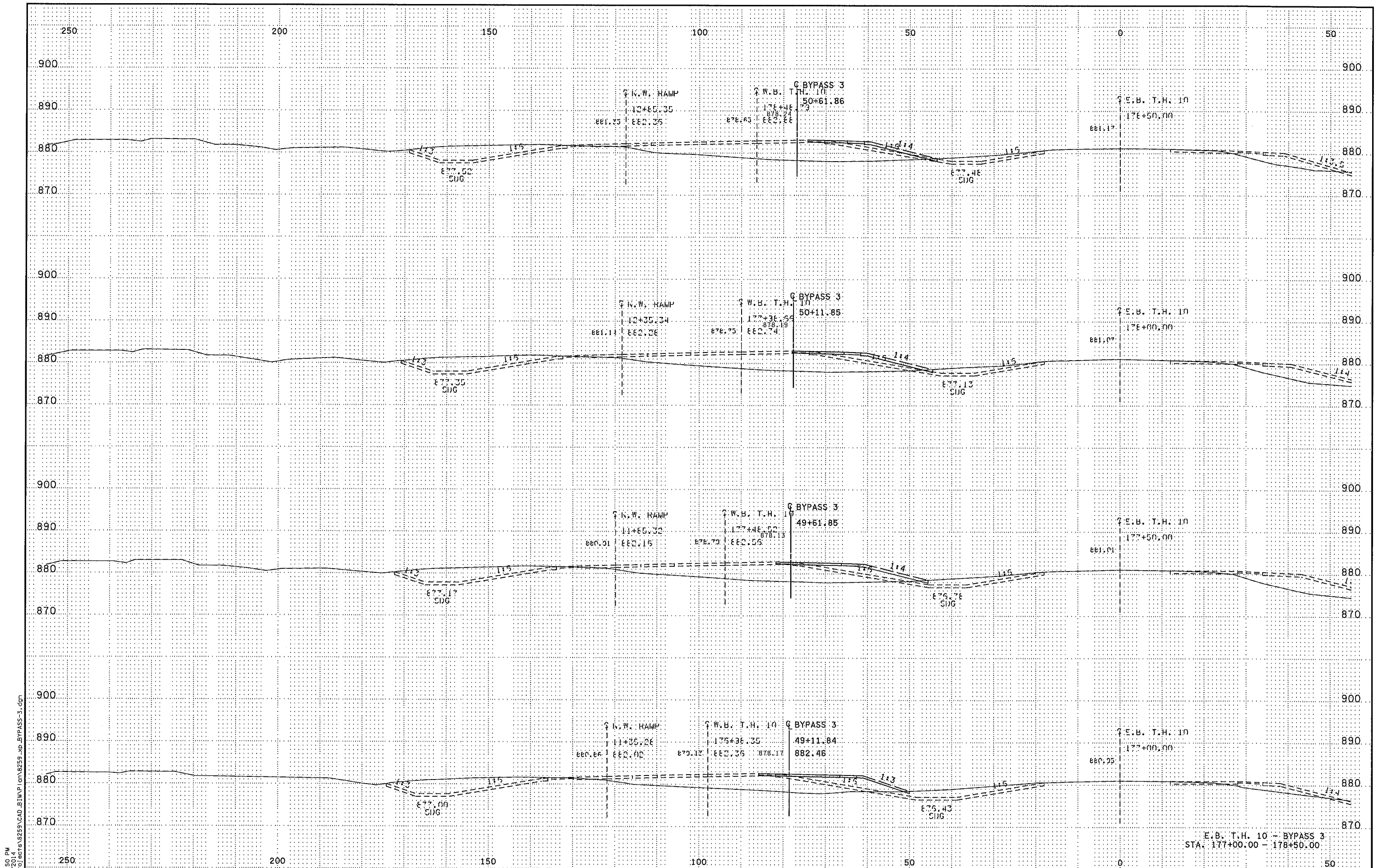
E.B. T.H. 10 - BYPASS 3  
 STA. 174+00.00 - 175+00.00





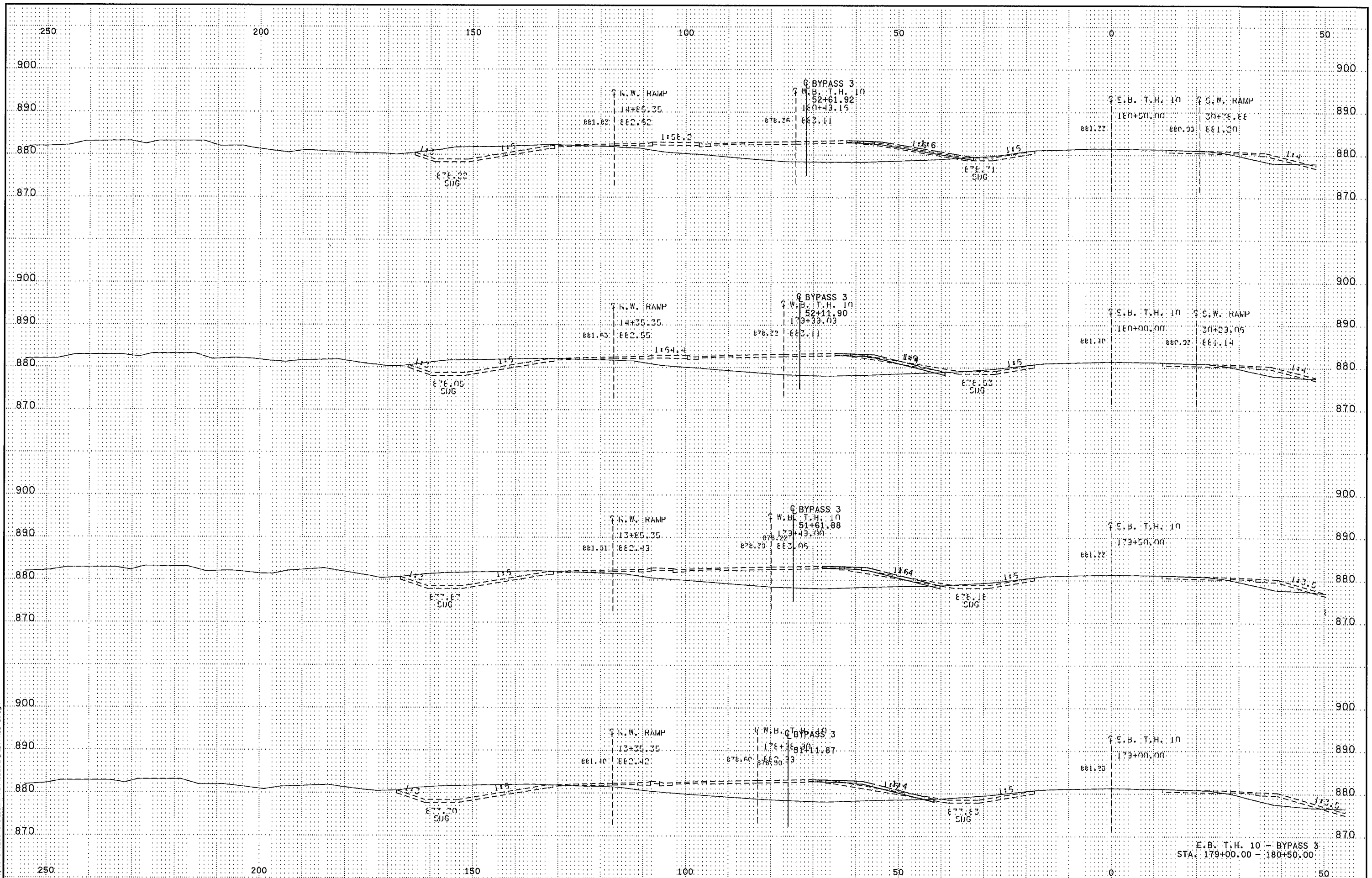
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E.B. T.H. 10 - BYPASS 3  
 STA. 175+50.00 - 176+50.00



3:29:50 PM  
 9/11/2014  
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E.B. T.H. 10 - BYPASS 3  
 STA. 177+00.00 - 178+50.00



3:29:52 PM  
 9/11/2014  
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E.B. T.H. 10 - BYPASS 3  
 STA. 179+00.00 - 180+50.00

3:29:54 PM  
9/11/2014  
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