

PLAN SYMBOLS

- STATE LINE
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT-OF-WAY LINE
- EXISTING RIGHT-OF-WAY LINE
- CONTROL OF ACCESS LINE
- PROPERTY LINE (Except Land Lines)
- VACATED PLATTED PROPERTY
- CORPORATE OR CITY LIMITS

- TRUNK HIGHWAY CENTER LINE
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT-OF-WAY LINE
- DRAINAGE DITCH
- DRAIN TILE
- CULVERT
- DROP INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOODEN FENCE
- CATCH BASIN
- FIRE HYDRANT
- BRIDGE

- BUILDING
- IRON PIPE OR ROD
- MONUMENT (STONE, CONCRETE, OR METAL)

- UTILITY SYMBOLS**
- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE AND POWER ON POWER POLES
- ON TELEPHONE POLES

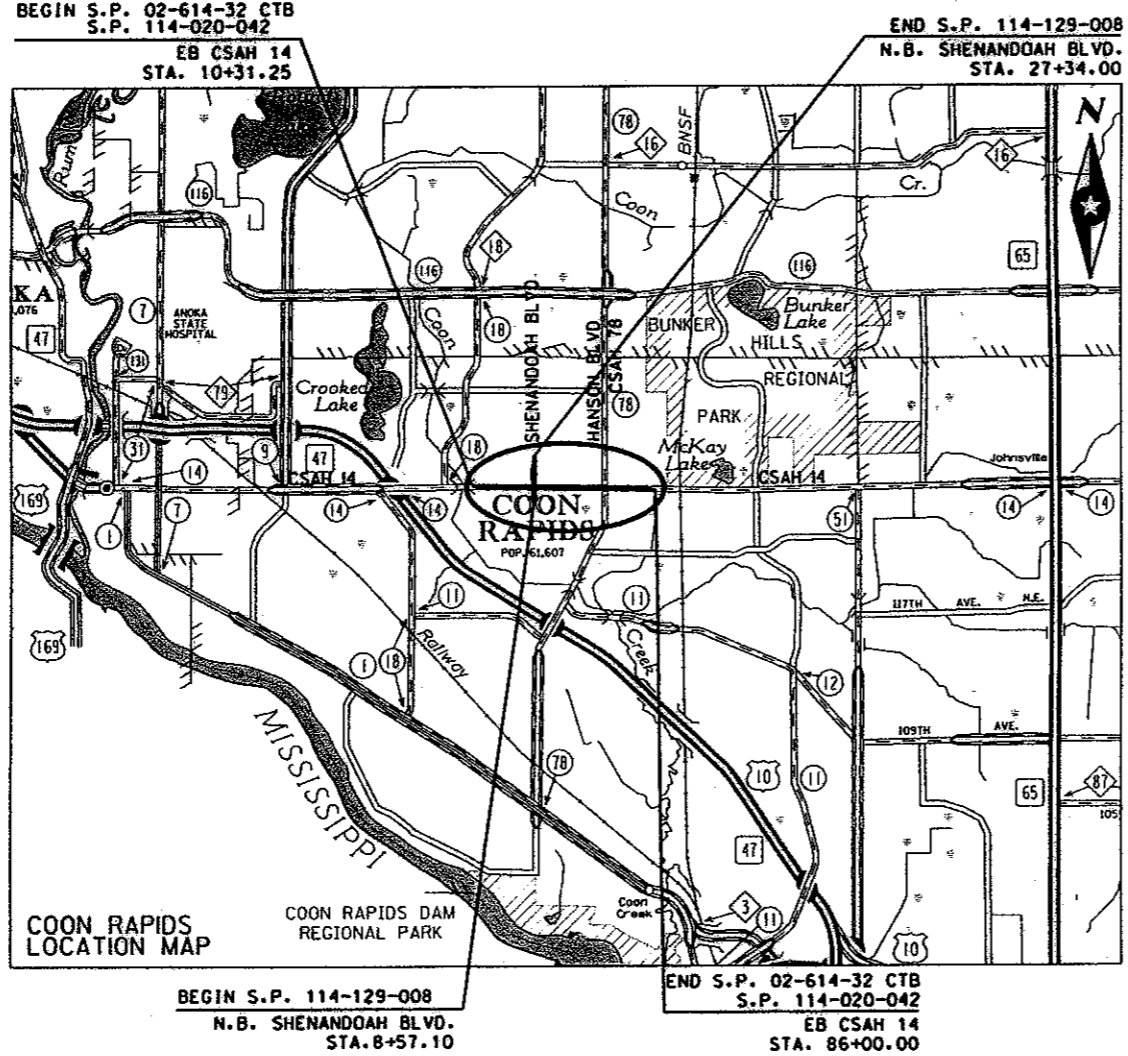
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL (TELEPHONE CABLE TERMINAL)
- GAS MAIN
- WATER MAIN
- CONDUIT
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEVISION CABLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER, (SANITARY)
- SEWER, (STORM)
- SEWER MANHOLE
- HANDHOLE
- CATCH BASIN

MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY HIGHWAY DEPARTMENT

CONSTRUCTION PLAN FOR: GRADING, BITUMINOUS PAVEMENT, DRAINAGE, CURB AND GUTTER, SIGNING, STRIPING, TRAFFIC SIGNAL, NOISE WALLS, BRIDGE 02577

S.P. NO. 02-614-32 CTB (CSAH 14), S.P. 114-020-042 (CSAH 14)
S.P. 114-129-008 (SHENANDOAH BLVD.)

LOCATED ON CSAH 14: FROM 1400' EAST OF COON CREEK BLVD.
TO 150' WEST OF AVOCET ST. N.W.



GOVERNING SPECIFICATIONS
THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

SCALES

ALIGNMENT LAYOUT	150'
PLAN	50'
PROFILE	50'
	HORIZ. 5'
	VERT. 10'
X-SECTION	10'
	HORIZ. 10'
	VERT. 10'

DESIGN DESIGNATION

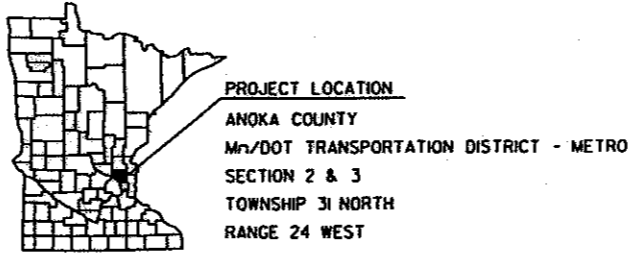
BASED ON STOPPING SIGHT DISTANCE
HEIGHT OF EYE: 3.5 FT. HEIGHT OF OBJECT: 2.0 FT.

S.A.P. 04-020-042 - MAIN STREET (CSAH 14)		
GROSS LENGTH	7,568.75 FT.	0.433 MILES
BRIDGE LENGTH	473.34 FT.	0.090 MILES
EXCEPTION LENGTH	0 FT.	0 MILES
FUNCTIONAL CLASSIFICATION		COLLECTOR
NO. OF TRAFFIC LANES	4	
NO. OF PARKING LANES	0	
STRUCTURAL DESIGN		10 TON
R VALUE		68
ESALS		4,200,000
CONSTRUCTION YEAR ADT (2010)		
COON CREEK BLVD. - SHENANDOAH BLVD.		19,200
SHENANDOAH BLVD. - HANSON BLVD.		18,900
HANSON BLVD. - CRANE ST.		22,700
20 YEAR PROJECTED ADT (2030)		
COON CREEK BLVD. - SHENANDOAH BLVD.		27,900
SHENANDOAH BLVD. - HANSON BLVD.		26,500
HANSON BLVD. - CRANE ST.		27,500
X HCAOT IN PM		2.9
DESIGN SPEED		55 MPH

S.A.P. 04-029-008 - SHENANDOAH BLVD.		
GROSS LENGTH	1,708.22 FT.	0.324 MILES
BRIDGE LENGTH	0 FT.	0 MILES
EXCEPTION LENGTH	0 FT.	0 MILES
FUNCTIONAL CLASSIFICATION		MINOR ARTERIAL
NO. OF TRAFFIC LANES	2	
NO. OF PARKING LANES	0	
STRUCTURAL DESIGN		10 TON
R VALUE		68
ESALS		4,200,000
CONSTRUCTION YEAR ADT (2010)		
SOUTH OF CSAH 14		3,850
NORTH OF CSAH 14		5,600
20 YEAR PROJECTED ADT (2030)		
SOUTH OF CSAH 14		5,500
NORTH OF CSAH 14		8,000
X HCAOT IN PM		0.5
DESIGN SPEED		N. OF CSAH 14 - 40 MPH S. OF CSAH 14 - 30 MPH

PLAN REVISIONS

DATE	SHEET NO.	APPROVED BY



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

THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, PIPELINES, ELECTRIC, AND CABLE TV ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL BEFORE COMMENCING EXCAVATION.

STATE PROJ. NO. 02-614-32 CTB
STATE PROJ. NO. 114-020-042, 114-129-008

INDEX

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THIS PLAN CONTAINS 292 SHEETS

PHONE: (651) 490-2000
3535 WADSWORTH CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY HIGHWAY DEPARTMENT
1440 BUNKER LAKE BLVD N.W.
ANDOVER, MN 55304
PHONE: (763) 862-4200
FAX: (763) 862-4201

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

Mark R. Dierling NAME: MARK R. DIERLING
DATE 1/22/2010 LIC. NO. 21098

SIGNAL DESIGN ENGINEER: I HEREBY CERTIFY THAT THESE SIGNAL PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION. THAT THIS PLAN CONFORMS TO THE CURRENT MUTCD (EXCEPT WHERE A VARIANCE HAS BEEN GRANTED), AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

John M. Gray NAME: JOHN M. GRAY
DATE 1/22/2010 LIC. NO. 22457

APPROVED *Douglas J. Vieho* 3-23-10 DATE
COON RAPIDS CITY ENGINEER

APPROVED *Rebecca T.* 3/18/10 DATE
ANOKA COUNTY ENGINEER

APPROVED *Wanil S. Hargan* 4/6 DATE 2010
STATE BRIDGE ENGINEER

APPROVED *D. E. G.* 3/30/2010 DATE
DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AND FEDERAL AID RULES/POLICY

APPROVED *D. E. G.* 2/20/2010 DATE
STATE AID ENGINEER APPROVED FOR STATE AND FEDERAL AID FUNDING

2:44:12 PM

4/8/2010

END CONSTRUCTION
S.P. 114-129-008
NB SHENANDOAH BLVD
STA. 27+34.00

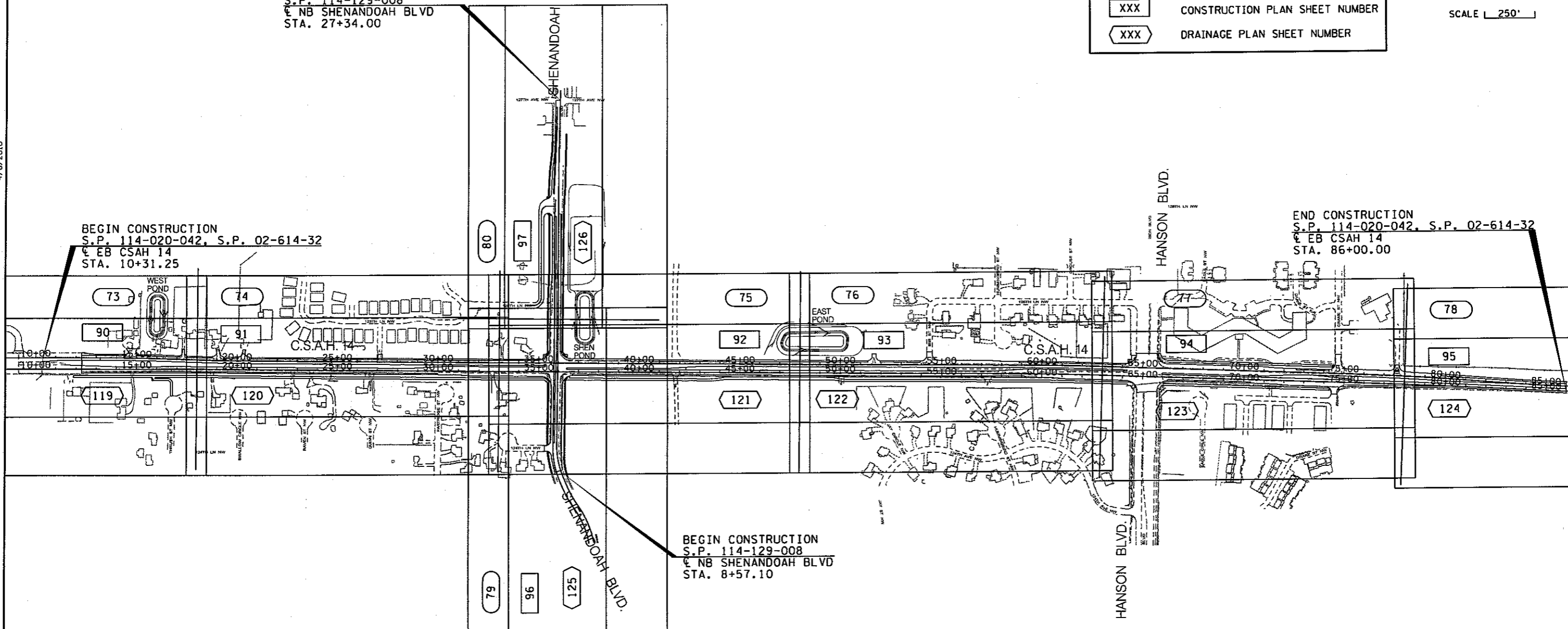
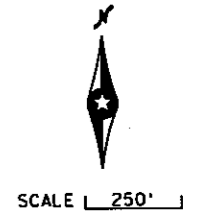
BEGIN CONSTRUCTION
S.P. 114-020-042, S.P. 02-614-32
EB CSAH 14
STA. 10+31.25

END CONSTRUCTION
S.P. 114-020-042, S.P. 02-614-32
EB CSAH 14
STA. 86+00.00

BEGIN CONSTRUCTION
S.P. 114-129-008
NB SHENANDOAH BLVD
STA. 8+57.10

LEGEND

- EXISTING PAVEMENT
- ===== NEW CONSTRUCTION
- (XXX) TOPOGRAPHY PLAN SHEET NUMBER
- [XXX] CONSTRUCTION PLAN SHEET NUMBER
- ◇XXX◇ DRAINAGE PLAN SHEET NUMBER



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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010

PHONE: 1651490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

GENERAL LAYOUT

FILE NO.	102287	2
GL 1 OF GL 1	194	

3/11/27 PM

4/8/2010

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STATEMENT OF ESTIMATED QUANTITIES

Main table with columns: TAB SHEET NO., ITEM NO., ITEM DESCRIPTION, UNIT, TOTAL ESTIMATED QUANTITY, ANOKA COUNTY SP 02-614-32 CTB, COON RAPIDS SP 114-020-042, STORM SEWER, COON RAPIDS SP 114-129-008, CITY OF COON RAPIDS LOCAL FUNDS.

BASIS OF ESTIMATED QUANTITIES table with columns: ITEM, BASIS. Includes items like LV3 BITUMINOUS PAVEMENT, TYPE SP 12.5 BITUMINOUS PAVEMENT, etc.

DESIGN TEAM section with fields for DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE, REVISIONS.

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.



ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES

TAB SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING - FEDERAL FUNDS			NON-PARTICIPATING	
					CSAH 14 CONSTRUCTION			COON RAPIDS SP 114-129-008 (LOCAL) ESTIMATED QUANTITY	CITY OF COON RAPIDS LOCAL FUNDS (LOCAL) ESTIMATED QUANTITY
					ANOKA COUNTY SP 02-614-32 CTB ESTIMATED QUANTITY	COON RAPIDS SP 114-020-042 ESTIMATED QUANTITY	STORM SEWER ESTIMATED QUANTITY		
B1	2401.512	BRIDGE SLAB CONCRETE (3Y36)	SQ FT	46821	46821				
B1	2401.513	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN FT	513	513				
B1	2401.513	TYPE F (TL-5) RAILING CONCRETE (3Y46)	LIN FT	513	513				
B1	2401.516	RAISED MEDIAN CONCRETE (3Y46)	SQ FT	7700	7700				
B1	2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	591440	591440				
B1	2401.601	STRUCTURE EXCAVATION	LUMP SUM	1	1				
B1	2401.618	BRIDGE DECK PLANING	SQ FT	31478	31478				
B1	2402.591	EXPANSION JOINT DEVICES, TYPE 4	LIN FT	196	196				
B1	2404.501	CONCRETE WEARING COURSE (3U17A)	SQ FT	34906	34906				
W	117	2411.521	GRANULAR BACKFILL (CV)	CU YD	1574	1574			
I	13	2411.602	PRECAST CONCRETE CAP	EACH	21	21			
H	12	2411.618	MODULAR BLOCK RETAINING WALL	SQ FT	1364	1364			
H	12	2411.618	CONCRETE RETAINING WALL	SQ FT	4013	4013			
W	117	2422.603	CONCRETE POSTS 12"x18"	LIN FT	12971	12971			
W	117	2422.618	WOOD NOISE ATTENUATOR WALL	SQ FT	56114	56114			
		2451.507	GRANULAR BEDDING (CV)	CU YD	430			430	
B1	2452.507	C.I.P. CONCRETE PILING DELIVERED 12"	LIN FT	4620	4620				
I	13	2452.507	C.I.P. CONCRETE PILING DELIVERED 16"	LIN FT	24380	24380			
B1	2452.508	C.I.P. CONCRETE PILING DRIVEN 12"	LIN FT	4620	4620				
I	13	2452.508	C.I.P. CONCRETE PILING DRIVEN 16"	LIN FT	24380	24380			
I	13	2452.519	C.I.P. CONC. TEST PILE, 120 FT LONG, 12"	EACH	2	2			
B1	2452.519	C.I.P. CONC. TEST PILE, 120 FT LONG, 16"	EACH	6	6				
B1	2452.519	C.I.P. CONC. TEST PILE, 150 FT LONG, 16"	EACH	2	2				
B1	2452.527	PILE REDRIVING	EACH	65	65				
I	B1,13	2452.602	PILE ANALYSIS	EACH	10	10			
J	13	2501.511	12" CS PIPE CULVERT	LIN FT	614	614			
T	16	2501.511	21" RC PIPE CULVERT CLASS IV	LIN FT	40		40		
T	16	2501.515	12" GS PIPE APRON	EACH	14	14			
T	16	2501.515	12" RC PIPE APRON	EACH	3		3		
T	16	2501.515	15" RC PIPE APRON	EACH	2		2		
T	16	2501.515	18" RC PIPE APRON	EACH	2		2		
T	16	2501.515	21" RC PIPE APRON	EACH	2		2		
T	16	2501.515	24" RC PIPE APRON	EACH	1		1		
T	16	2501.515	30" RC PIPE APRON	EACH	3		3		
T	16	2501.515	33" RC PIPE APRON	EACH	1		1		
T	16	2501.515	48" RC PIPE APRON	EACH	1		1		
T	16	2501.515	60" RC PIPE APRON	EACH	2	2			
J	13	2501.561	60" RC PIPE CULVERT DES 3006 CL V	LIN FT	144	144			
K	13	2502.541	4" PERF PE PIPE DRAIN	LIN FT	15893	15893			
B1	2502.601	DRAINAGE SYSTEM TYPE SPECIAL	LUMP SUM	1	1				
T	16	2503.541	12" RC PIPE SEWER DES 3006 CL III	LIN FT	837		837		
T	16	2503.541	12" RC PIPE SEWER DES 3006 CL IV	LIN FT	3142		3142		
T	16	2503.541	15" RC PIPE SEWER DES 3006 CL III	LIN FT	901		901		
T	16	2503.541	15" RC PIPE SEWER DES 3006 CL IV	LIN FT	853		853		
T	16	2503.541	18" RC PIPE SEWER DES 3006 CL III	LIN FT	1199		1199		
T	16	2503.541	18" RC PIPE SEWER DES 3006 CL IV	LIN FT	791		791		
T	16	2503.541	24" RC PIPE SEWER DES 3006 CL III	LIN FT	230		230		
T	16	2503.541	30" RC PIPE SEWER DES 3006 CL III	LIN FT	1181		1181		
T	16	2503.541	30" RC PIPE SEWER DES 3006 CL IV	LIN FT	988		988		
T	16	2503.541	33" RC PIPE SEWER DES 3006 CL IV	LIN FT	73		73		
T	16	2503.541	36" RC PIPE SEWER DES 3006 CL III	LIN FT	343		343		
T	16	2503.541	36" RC PIPE SEWER DES 3006 CL IV	LIN FT	404		404		

NOTE:
 ① GRANULAR BEDDING MATERIAL USED FOR STORM SEWER AND CULVERT INSTALLATION IS CONSIDERED INCIDENTAL TO THE CORRESPONDING BID ITEMS. ONSITE MATERIAL AS DEEMED ACCEPTABLE BY THE ENGINEER MAY BE USED AS GRANULAR BEDDING FOR STORM SEWER AND CULVERT INSTALLATION

3/11/13 PM
 4/8/2010
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 DeFault

DESIGN TEAM	
DRAWN BY: CIE	
DESIGNER: JEO	
CHECKED BY: MRD	
NO.	BY DATE
	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

ESTIMATED QUANTITIES	FILE NO. 102287	4
	SEQ2 OF SEQ4	194

STATEMENT OF ESTIMATED QUANTITIES

TAB SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING - FEDERAL FUNDS			NON-PARTICIPATING	
					CSAH 14 CONSTRUCTION				
					ANOKA COUNTY SP 02-614-32 CTB	COON RAPIDS SP 114-020-042	STORM SEWER	COON RAPIDS SP 114-129-008	CITY OF COON RAPIDS LOCAL FUNDS
			ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	(LOCAL) ESTIMATED QUANTITY	(LOCAL) ESTIMATED QUANTITY		
T 16	2503.541	48" RC PIPE SEWER DES 3006 CL IV	1 LIN FT	40			40		
T 16	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1			1		
T 16	2503.602	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	1			1		
L 13	2504.602	CONNECT TO EXISTING WATERMAIN	EACH	1					1
L 13	2504.602	INSTALL HYDRANT	EACH	1					1
L 13	2504.602	INSTALL GATE VALVE AND BOX	EACH	1					1
L 13	2504.602	RELOCATE HYDRANT AND VALVE	EACH	1	1				
L 13	2504.602	6" GATE VALVE AND BOX	EACH	1					1
L 13	2504.602	8" GATE VALVE AND BOX	EACH	2					2
L 13	2504.602	6" X 6" WET TAP	EACH	1					1
L 13	2504.602	12" X 8" WET TAP	EACH	1					1
L 13	2504.603	6" WATERMAIN DIP CL 52	LIN FT	20					20
L 13	2504.603	8" WATERMAIN DIP CL 52	LIN FT	1108					1108
T 16	2504.604	2" POLYSTYRENE INSULATION	SQ YD	4	4				
L 13	2504.608	DUCTILE IRON FITTINGS	POUND	628					628
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	201			201		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 54-4020	LIN FT	51			51		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT	38			38		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 66-4020	LIN FT	23			23		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 78-4020	LIN FT	23			23		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 90-4020	LIN FT	15			15		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN 96-4020	LIN FT	6			6		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN F	LIN FT	113			113		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	20			20		
T 16	2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	93			93		
T 16	2506.502	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	EACH	2			2		
M 13	2506.516	CASTING ASSEMBLY	EACH	127			127		
T 16	2511.501	RANDOM RIPRAP CLASS II	CU YD	16			16		
T 16	2511.501	RANDOM RIPRAP CLASS III	CU YD	104			104		
I 13	2511.501	RANDOM RIPRAP CLASS IV	CU YD	290	290				
N 13	2521.501	4" CONCRETE WALK	SQ FT	36587	26966			9621	
N 13	2521.501	6" CONCRETE WALK	SQ FT	628	628				
N 13	2531.501	CONCRETE CURB & GUTTER DESIGN B418	LIN FT	14425	14425				
N 13	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	13847	13847				
N 13	2531.618	TRUNCATED DOMES	SQ FT	168	168				
O 14	2554.501	TRAFFIC BARRIER DESIGN SPECIAL	LIN FT	50	50				
O 14	2554.501	TRAFFIC BARRIER DESIGN B8338	LIN FT	162.5	162.5				
O 14	2554.523	END TREATMENT - TANGENT TERMINAL	EACH	2	2				
	2557.501	WIRE FENCE DESIGN W-1 VINYL COATED	LIN FT	513	513				
P 14	2557.603	INSTALL SALVAGED FENCE	LIN FT	539	539				
V 49	2563.601	TRAFFIC CONTROL	LUMP SUM	1	97.48%	1.30%		0.77%	0.45%
X 142	2563.602	RAISED PAVEMENT MARKER TEMPORARY (WHITE)	EACH	110	97.48%	1.30%		0.77%	0.45%
X 142	2564.602	RAISED PAVEMENT MARKER TEMPORARY (YELLOW)	EACH	148	97.48%	1.30%		0.77%	0.45%
Y 143	2564.531	SIGN PANELS TYPE C	SQ FT	560	560				
Y 143	2564.537	INSTALL SIGN TYPE C	EACH	2	2				
Y 144	2564.552	HAZARD MARKER X4-2	EACH	8	8				
X 142	2564.553	CLEARANCE MARKER X4-4	EACH	2	2				
X 142	2564.554	SNOW PLOW MARKER X4-5	EACH	4	4				
	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM A	SIGNAL SYSTEM	1	50%	50%			
	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM A	LUMP SUM	1		100%			
	2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1	100%				
	2565.602	NMC LOOP DETECTOR 6' X 6'	EACH	1	50%	50%			
	2565.616	REVISE SIGNAL SYSTEM	SYSTEM	1	75%	25%			

NOTE:
 ① GRANULAR BEDDING MATERIAL USED FOR STORM SEWER AND CULVERT INSTALLATION IS CONSIDERED INCIDENTAL TO THE CORRESPONDING BID ITEMS. ONSITE MATERIAL AS DEEMED ACCEPTABLE BY THE ENGINEER MAY BE USED AS GRANULAR BEDDING FOR STORM SEWER AND CULVERT INSTALLATION

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DESIGN TEAM	
DRAWN BY: CIE	
DESIGNER: JEQ	
CHECKED BY: MRD	
NO.	BY DATE
REVISIONS	

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

FILE NO.	5
102287	
SEQ3	194
OF SEQ4	


STATEMENT OF ESTIMATED QUANTITIES

TAB SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATING - FEDERAL FUNDS			NON-PARTICIPATING	
					CSAH 14 CONSTRUCTION			COON RAPIDS SP 114-129-008	CITY OF COON RAPIDS LOCAL FUNDS
					ANOKA COUNTY SP 02-614-32 CTB	COON RAPIDS SP 114-020-042	STORM SEWER		
ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	(LOCAL) ESTIMATED QUANTITY	(LOCAL) ESTIMATED QUANTITY					
	2565.616	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	49.39%	49.39%		0.77%	0.45%
Q 14	2573.502	SILT FENCE TYPE MACHINE SLICED	LIN FT	15843	15843				
Q 14	2573.505	FLOTATION SILT CURTAIN TYPE MOVING WATER	LIN FT	32	32				
Q 14	2573.512	TEMPORARY DITCH CHECK TYPE 2	LIN FT	730	730				
Q 14	2573.530	STORM DRAIN INLET PROTECTION	EACH	112	112				
R 14	2575.502	SEED MIXTURE 240	POUND	466	466				
R 14	2575.502	SEED MIXTURE 310	POUND	201	201				
R 14	2575.502	SEED MIXTURE 350	POUND	427	427				
R 14	2575.505	SODDING TYPE SALT RESISTANT	SQ YD	16545	16545				
R 14	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	60500	60500				
Q 14	2575.571	RAPID STABILIZATION METHOD 3	MGAL	101.75	101.75				
R 14	2575.623	HYDROSEEDING	MGAL	99.74	99.74				
X 142	2582.501	PAVT MSSG (LT ARROW) PAINT	EACH	4	4				
X 142	2582.501	PAVT MSSG (RT ARROW) PAINT	EACH	3	3				
X 142	2582.501	PAVT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH	23	23				
X 142	2582.501	PAVT MSSG (RT ARROW) PREFORMED THERMOPLASTIC	EACH	17	17				
X 142	2582.502	4" SOLID LINE WHITE WHITE-PAINT	LIN FT	11810	11810				
X 142	2582.502	4" SOLID LINE YELLOW-PAINT	LIN FT	900	900				
X 142	2582.502	12" SOLID LINE YELLOW-PAINT	LIN FT	195	195				
X 142	2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	4930	4930				
X 142	2582.502	4" SOLID LINE WHITE-EPOXY	LIN FT	23370	23370				
X 142	2582.502	4" SOLID LINE YELLOW-EPOXY	LIN FT	14000	14000				
X 142	2582.502	4" BROKEN LINE WHITE-EPOXY	LIN FT	2665	2665				
X 142	2582.502	8" DOTTED LINE WHITE - EPOXY	LIN FT	100	100				
X 142	2582.502	4" BROKEN LINE YELLOW-EPOXY	LIN FT	12	12				
X 142	2582.502	12" STOP LINE WHITE-PREFORMED THERMOPLASTIC	LIN FT	360	360				
X 142	2582.502	24" SOLID LINE YELLOW-PREFORMED THERMOPLASTIC	LIN FT	620	620				
X 142	2582.502	4" DOUBLE SOLID LINE YELLOW-PREFORMED THERMOPLASTIC	LIN FT	2900	2900				
X 142	2582.503	CROSSWALK MARKING-PREFORMED THERMOPLASTIC	SQ FT	2286	2286				
X 142	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	120	120				

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DESIGN TEAM					
DRAWN BY: CIF					
DESIGNER: JEO					
CHECKED BY: MRD					
NO.	BY	DATE	REVISIONS		

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.
 Certified By: Mark R. Dierling Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



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 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

ESTIMATED QUANTITIES

FILE NO.	6
102287	
SEQ4	194
OF SEQ4	

The following Standard Plates, approved by the FEDERAL HIGHWAY ADMINISTRATION, shall apply on this project.

MN/DOT STANDARD PLATES

PLATE NUMBER	NAME OF STANDARD PLATE
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON
3040F	CORRUGATED METAL PIPE CULVERT
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128H	METAL SAFETY APRON AND GRATE
3131C	PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS
3133C	RIPRAP AT RCP OUTLETS
3134C	RIPRAP AT CMP OUTLETS
3139A	RIPRAP AT PRECAST CONCRETE END SECTIONS
3145F	CONCRETE PIPE TIES
3148A	SAFETY SLOPE METAL END SECTION FOR CIRCULAR & ARCHED PIPES
3221C	CORRUGATED STEEL PIPE COUPLING BAND
4005L	MANHOLE OR CATCH BASIN (DESIGN F)
4006L	MANHOLE OR CATCH BASIN (DESIGN G OR H)
4010H	CONCRETE SHORT CONE AND ADJUSTING RING
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN FOR USE WITH OR WITHOUT TRAFFIC LOADS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS)
4125D	CATCH BASIN FRAM CASTING (FOR SQUARE GRATE)-CASTING NO. 806
4129G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 802A
4143E	STOOL GRATE & CONCRETE FRAME - (MEDIAN DRAINS) - CASTING NO. 731
4154B	CATCH BASIN GRATE CASTING-CASTING NO. 816
4160D	CURB BOX CASTING FOR CATCH BASIN - CASTING NO 823A & 833A
4180J	MANHOLE OR CATCH BASIN STEP
7036F	PEDESTRIAN CURB RAMP FOR THE HANDICAPPED
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7109C	MEDIAN NOSE & ISLAND (UNDIVIDED TO DIVIDED ROADWAY)
7111J	INSTALLATION OF CATCH BASIN CASTINGS
7113A	CONCRETE APPROACH NOSE DETAIL
8000I	STANDARD BARRICADES
8110E	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
8111E	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
8112F	PEDESTAL FOUNDATION
8114A	PVC HANDHOLE/PULLBOX
8118D	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
8119C	GROUND MOUNTED CABINET FOUNDATION
8121F	TRANSFORMER BASE AND POLE BASE PLATE
8122E	PEDESTAL AND PEDESTAL BASE
8123F	POLE AND MAST ARM
8126I	PA90 AND PA100 POLE FOUNDATION
8150C	INSTALLATION OF CULVERT MARKERS
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCT'S
8338C	W-BEAM GUARDRAIL & END ANCHORAGES (INSTALLATION WITH STEEL POSTS)
9000D	APPROACHES AND ENTRANCES
9102D	TURF ESTABLISHMENT AREAS

SOIL & CONSTRUCTION NOTES

DEFINITIONS

1. THE TOP OF THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
2. SUITABLE 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 UNSUITABLE MATERIAL.
3. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF SPEC 3149.2B2.
4. COMMON BORROW SHALL MEET THE REQUIREMENTS OF SUITABLE GRADING MATERIAL.

GENERAL GRADING

5. UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES IN ADVANCE OF, OR CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.
6. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS 72 HOURS IN ADVANCE OF DISRUPTION TO SANITARY SEWER AND WATERMAIN SERVICES.
7. CONTRACTOR SHALL MINIMIZE INTERRUPTION OF SANITARY SEWER AND WATER SERVICE TO ADJACENT PROPERTIES. FOR ANY PROPERTY OUT OF SERVICE THE CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER AND CITY.
8. WATER SERVICE LOCATIONS ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR WITH THE CITY PRIOR TO CONSTRUCTION. SERVICE LOCATIONS MAY BE ADJUSTED AS REQUESTED BY THE CITY AND AS APPROVED BY THE ENGINEER.
9. PROVIDE FOR REMOVAL AND DISPOSAL (OUTSIDE THE CONSTRUCTION ZONE) OF ALL IN PLACE SURFACING, DEBRIS, OR OTHER STRUCTURES THAT WILL INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT LIMITS IN ACCORDANCE WITH REQUIREMENTS OF 2104.3C3.
10. ALL EXCESS EXCAVATED AND UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF 2104.3C3 AND 2105.3D.
11. SODDING QUANTITIES ALONG ROADWAY SLOPES ARE BASED ON SODDING LIMITS FROM THE BACK OF THE CURB TO THE CONSTRUCTION LIMITS.
12. COMPACTION OF GRADING EMBANKMENT PORTIONS SHALL BE ACCOMPLISHED BY THE QUALITY COMPACTION METHOD WITH TEST ROLLING AS PER MN/DOT SPEC. 2105.3F2. COMPACTION OF THE AGGREGATE BASE LAYER SHALL BE OBTAINED IN ACCORDANCE WITH THE MODIFIED PENETRATION INDEX METHOD. COMPACTION OF BITUMINOUS ITEMS SHALL BE BY THE MAXIMUM DENSITY METHOD.
13. WHEN EXCAVATING ADJACENT TO IN PLACE PAVEMENT, NO MATERIAL SHALL BE REMOVED FROM INSIDE AN APPROXIMATE 1:2 SLOPED LINE DRAWN DOWNWARD AND OUTWARD FROM THE BOTTOM OF THE IN PLACE PAVEMENT.
14. WHEN CONNECTION TO EXISTING BITUMINOUS PAVEMENT IS REQUIRED, THE EDGE OF EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE PRIOR TO CONSTRUCTING ASPHALT SURFACING.
15. PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT ON THE MILLED SURFACE AND BETWEEN ALL COURSES. THE TACK COAT SHALL BE IN ACCORDANCE WITH MN/DOT SPECIFICATION 2357 WITH THE FOLLOWING MODIFICATIONS:
 - a. THE TACK COAT SHALL CONSIST OF EMULSIFIED ASPHALT (CSS-1 OR CSS-1H) AND SHALL BE APPLIED TO THE MILLED BITUMINOUS SURFACE AND BETWEEN ALL NEWLY CONSTRUCTED COURSES.
 - b. THE TACK COAT APPLIED TO THE MILLED BITUMINOUS SURFACE SHALL HAVE WATER ADDED AT A RATE OF 30 TO 40 PERCENT OF THE VOLUME OF THE EMULSION. THIS WATER SHALL BE EXCLUDED FROM THE PAY QUANTITIES.
 - c. THE TACK COAT SHALL BE APPLIED AT A UNIFORM RATE OF 0.05 GALLONS PER SQUARE YARD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE BASED ON DILUTED TACK MATERIAL. THE QUANTITIES SHOWN IN THIS PLAN WERE COMPUTED AT 0.05 GAL/S.Y.
16. 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 0.5 FEET IN ALL AREAS.
18. ALL TOPSOIL STRIPPING WILL BE PAID AS COMMON EXCAVATION.
19. IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 3 FEET OF THE "GRADING GRADE" BENEATH THE ROADWAY, WITHIN THE LIMITS SHOWN IN THE TYPICAL SECTIONS.

20. PROVIDE FOR SUBGRADE CORRECTIONS AND SUBCUTS FOR UNIFORMITY AND COMPACTION AND EMBANKMENT CONSTRUCTION DETAILS AS INDICATED IN THE TYPICAL SECTIONS AND CROSS SECTIONS. SELECTED GRADING SOILS FROM THE ROADBED OR ADJACENT CUTS SHALL BE USED GREATER THAN 3 FEET BELOW GRADING GRADE OF THE NEW CONSTRUCTION AND THE GRANULAR MATERIAL AND/OR SELECT GRANULAR MATERIAL SHALL BE USED LESS THAN 3 FEET BELOW GRADING GRADE, UNLESS INDICATED OTHERWISE ON THE TYPICAL SECTIONS AND CROSS SECTIONS.

21. WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, EXCAVATIONS SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING THE EXISTING PAVEMENT. CUT VERTICALLY TO THE BOTTOM OF THE PROPOSED SURFACING OR NEW SURFACING, WHICHEVER IS DEEPER, THEN 2V:1H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE TREATMENT. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT EXISTING PAVEMENT DESIGNATED TO REMAIN IN PLACE IS NOT UNDERMINED BY ADJACENT EXCAVATION OR CONSTRUCTION ACTIVITY. ANY SUCH EXISTING PAVEMENT UNDERMINED OR OTHERWISE DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REMOVED AND REPLACED TO THE SATISFACTION OF THE ENGINEER, AT NO COST TO THE CITY OR COUNTY.

22. WHERE CONNECTING TO INPLACE ROADWAYS AT THE EDGE OF PROPOSED CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE TOP OF THE NEW GRADING SUBGRADE, WHICHEVER IS DEEPER, THEN AT A 1V:20H TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE TREATMENT.

23. WHERE MATCHING INTO INPLACE CROSSROADS, OR LOCAL ROADS CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR THE TOP OF THE NEW GRADING SUBGRADE, WHICHEVER IS DEEPER, THEN AT A 1(V):4(H) SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

24. 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.

25. PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.

26. SOD/SEED ALL AREAS AS INDICATED IN THE TURF ESTABLISHMENT AND EROSION CONTROL PLANS.

27. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, DATED JANUARY 2007.

28. THE EXISTING PAVEMENT THICKNESSES ARE ASSUMED TO BE AS FOLLOWS:
 CSAH 14: 7.7"
 SHENANDOAH BLVD: 4"
 (CONTRACTOR TO VERIFY PRIOR TO PLACING BID)

ALL INPLACE PAVEMENT REMOVAL ON THE PROJECT IS PAID FOR AS "REMOVE PAVEMENT" AND IS NOT INCLUDED IN THE EARTHWORK QUANTITIES.

29. WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN, IT SHALL MEAN THIS WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

30. NO WORK, INCLUDING THE STOCKPILING OF BITUMINOUS PAVEMENT, CONCRETE PAVEMENT, OR UNSUITABLE SOILS REMOVED FROM THE SITE SHALL EXTEND BEYOND THE RIGHT-OF-WAY OR TEMPORARY EASEMENT UNLESS THE CONTRACTOR HAS PROVIDED THE COUNTY WITH A COPY OF THE LANDOWNER'S PERMISSION FOR SUCH WORK. THIS MUST ALSO BE APPROVED BY THE ENGINEER.


31. EXPECT WET CONDITIONS IN THE MUCK EXCAVATION AREAS ON CSAH 14. CLEAN CRUSHED ROCK WILL LIKELY BE NECESSARY TO STABILIZE THE BOTTOM OF THE MUCK EXCAVATION FOR PLACEMENT OF FILL. DEWATERING WITH SUMP PUMPS CAN ALSO BE EXPECTED. THIS IS INCIDENTAL TO THE MUCK EXCAVATION AND BACKFILL.

32. CONTRACTOR TO STOCKPILE EXCAVATED MATERIAL FROM POND AREA FOR RE-USE, AS DIRECTED BY THE ENGINEER.

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DESIGN TEAM					
DRAWN BY: CIF					
DESIGNER: JEO					
CHECKED BY: MRD					
	NO.	BY	DATE	REVISIONS	

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010



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ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**STANDARD PLATES AND
 SOIL & CONSTRUCTION NOTES**

FILE NO. 102287	7
SCN1 OF SCN2	194

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4/8/2010

SURCHARGE & CONSTRUCTION NOTES

GENERAL SURCHARGE AND CONSTRUCTION SEQUENCE NOTES

1. Type VI geotextile, piezometer, and settlement plate installation plan shall be submitted to the Engineer for review a minimum of 20 days prior to commencing work. All geotextile submittals shall be received and approved by the Engineer prior to geotextile installation. See specifications for submittal requirements.
2. Trees and woody vegetation shall be cut off flush at the ground surface and removed from the site. Existing trunk and root systems below the surface shall remain in place in these areas. All grasses shall be pushed down and covered over by the geotextile. The Contractor shall not drive on nor disturb either the vegetation mat or the subgrade on existing embankment side slopes (where appropriate) and those areas out to the grading limits.
3. Install vibrating wire piezometers with drill rig prior to deploying geotextile. See specifications for piezometer requirements. Data collection system for piezometers shall be installed and verified by Engineer before the first lift of fill is placed.
4. Where the geotextile is deployed over the existing roadway, the existing road surface and aggregate base shall be removed.
5. The geotextile shall be placed in continuous panels with the machine or roll direction of the geotextile perpendicular to the centerline of CSAH 14. The geotextile shall be pulled taut manually to reduce the presence of folds and wrinkles. Each panel shall extend 10 feet beyond the toe of the proposed embankment.
6. Adjacent geotextile panels shall be sewn together with the seams aligned in the geotextile machine direction (perpendicular to CSAH 14 centerline). Each seam shall consist of a prayer or "J" seam and sewn with a double row of stitches. No butt seams shall be allowed.
7. Weights, pins or piles of soil fill may be used to hold the fabric in place to prevent disturbance by wind. After placement, the geotextile shall be covered as soon as practical.
8. Install settlement plates on top of the geotextile as shown. Survey the plates for location and elevation prior to any fill placement. Access to the settlement plates for monitoring purposes shall be maintained by the Contractor throughout the surcharge period.
9. Construct embankment and surcharge fill areas to the elevations shown on the plans. Spread the first 2 lifts of fill in a direction perpendicular to CSAH 14 centerline and parallel to the geotextile machine direction using a lowground pressure (less than 5 psi) and low weight (D-4 or equal) dozer. The initial lift of fill can be approximately 2 feet and shall not exceed 3 ft. in uncompacted height. Subsequent lifts shall be no more than 1 ft in loose thickness. New fill shall be enddumped on the previously placed fill to pile heights no greater than 3 feet. Fill piles shall be spread immediately to avoid local depressions. Within the surcharge area, compaction shall be the Specified Density Method (Mn/DOT 2105.3) per the Engineer.
10. At least 72 hours notice shall be provided to the Engineer prior to placing the initial lift of fill over the geotextile. The initial lift of fill shall not be placed unless the Engineer is on-site. No more than 2 ft of compacted fill shall be placed during any continuous 7-day period. The Engineer shall monitor and evaluate piezometer and settlement plate data and may adjust fill placement criteria as necessary during construction.
11. Surcharge shall be left in place for a period of up to 120 days once the top of surcharge grade has been attained or as directed by the Engineer.
12. No additional payment will be made to the Contractor for the placement and removal of the surcharge material. The cost will be included in the bid price for the material used (Granular Borrow) for the surcharge areas.

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D	12	CLEARING & GRUBBING
E	12	PAVEMENT SAWING
F	12	PAVEMENT RECLAMATION
G	12	BITUMINOUS PAVEMENT
H	12	RETAINING WALLS
I	13	CULVERT PILE CAP ITEMS
J	13	CULVERT TABULATION
K	13	SUBSURFACE DRAINAGE
L	13	WATERMAIN
M	13	CASTING ASSEMBLY SUMMARY
N	13	CONCRETE ITEMS
O	14	GUARDRAIL
P	14	INSTALL SALVAGED FENCE
Q	14	TEMPORARY EROSION CONTROL
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U	17-21	INPLACE UTILITIES
V	49	TRAFFIC CONTROL
W	117	NOISE WALLS
X	142	PAVEMENT MARKINGS
Y	143-144	SIGNING

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DESIGN TEAM			
DRAWN BY:	CJE		
DESIGNER:	JEQ		
CHECKED BY:	MRO		
	NO.	BY	DATE
			REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
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 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

SOIL & CONSTRUCTION NOTES AND INDEX TO TABULATIONS

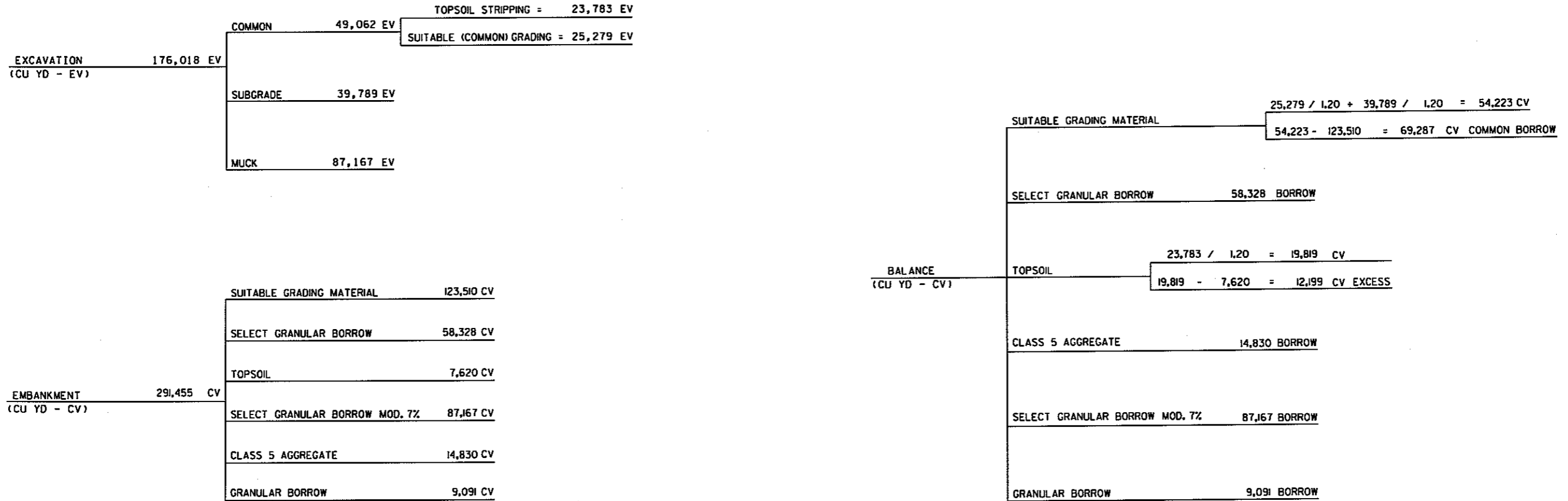
FILE NO.	8
102287	
SCN2	194
OF SCN2	

B EARTHWORK SUMMARY										
ALIGNMENT	EXCAVATION				EMBANKMENT					
	TOPSOIL	COMMON	SUBGRADE	MUCK	SUITABLE GRADING	SELECT GRANULAR	CLASS 5 AGGREGATE	SELECT GRANULAR BORROW MOD. 7%	TOPSOIL	GRANULAR BORROW
	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD
CSAH 14	20532	10841	35209	87167	118634	53696	12430	87167	6272	0
SHENANDOAH	3251	2449	3186	0	3064	3270	2400	0	1348	0
WEST POND	0	3800	0	0	0	0	0	0	0	0
SHEN POND	0	5752	0	0	0	0	0	0	0	0
EAST POND	0	2437	0	0	1812	0	0	0	0	0
SURCHARGE AREAS	0	0	0	0	0	0	0	0	0	9091
SHENANDOAH WATERMAIN	0	0	1394	0	0	1362	0	0	0	0
TOTALS	23783	25279	39789	87167	123510	58328	14830	87167	7620	9091

NOTES:

- ① FRONTAGE ROAD QUANTITIES ARE INCLUDED WITH SHENANDOAH BLVD. QUANTITIES
- ② SURCHARGE AREAS ARE SHOWN ON THE PLAN (MD6, PG. 29)

EARTHWORK BALANCE

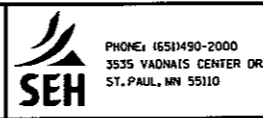


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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEQ		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/6/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

EARTHWORK SUMMARY, BALANCE, AND TABULATIONS

FILE NO.	102287	9
OF EWS	EW1	
		194

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B C.S.A.H. 14 EARTHWORK TABULATIONS									
STATION	EXCAVATION				EMBANKMENT				
	TOPSOIL	COMMON	SUBGRADE	MUCK	SUITABLE GRADING	SELECT GRANULAR	CLASS 5 AGGREGATE	SAND	TOPSOIL
	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD
77+50.00	87	59	289	0	11	307	84	0	10
78+00.00	87	78	280	0	18	303	83	0	12
78+50.00	90	81	266	0	57	297	82	0	18
79+00.00	96	72	253	0	134	289	80	0	27
79+50.00	98	73	248	0	176	280	77	0	31
80+00.00	97	84	248	0	155	278	80	0	33
80+50.00	91	93	234	0	127	266	78	0	32
81+00.00	87	91	217	0	124	248	73	0	29
81+50.00	84	78	215	0	120	243	72	0	28
82+00.00	82	64	216	0	114	237	70	0	26
82+50.00	81	56	216	0	117	232	69	0	27
83+00.00	81	51	217	0	120	227	68	0	28
83+50.00	81	48	218	0	112	223	67	0	29
84+00.00	79	57	218	0	100	219	66	0	29
84+50.00	79	65	216	0	87	217	65	0	28
85+00.00	66	60	208	0	40	208	63	0	16
85+50.00	53	60	201	0	0	201	61	0	4
86+00.00	52	62	199	0	0	199	60	0	4
TOTALS	20532	10841	35209	8767	118634	53696	12430	8767	6272


NOTE:
THE EARTHWORK TABULATION IS BASED ON THE EB CSAH 14 ALIGNMENT

B SHENANDOAH BLVD. EARTHWORK TABULATIONS							
STATION	EXCAVATION			EMBANKMENT			
	TOPSOIL	COMMON	SUBGRADE	SUITABLE GRADING	SELECT GRANULAR	CLASS 5 AGGREGATE	TOPSOIL
	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD	CUYD
8+59.42	0	0	0	0	0	0	0
9+00.55	45	30	36	21	35	28	23
9+50.19	111	79	93	100	91	68	57
10+13.36	154	125	133	275	131	111	63
10+36.70	57	50	52	128	51	43	23
11+00.00	144	130	146	259	141	101	63
11+50.00	113	95	116	192	112	79	50
12+00.00	123	82	115	276	112	79	60
12+50.00	137	59	114	350	112	81	73
13+00.00	145	35	108	380	112	82	81
13+48.00	142	41	121	341	125	103	63
14+77.11	5	3	6	7	6	5	1
15+09.25	58	52	83	8	82	60	13
15+50.00	74	70	93	11	91	67	22
16+00.00	89	106	114	13	112	82	26
16+50.00	96	111	114	16	112	82	32
17+00.00	99	92	113	54	112	82	35
17+50.00	119	86	126	61	137	97	42
18+00.00	133	93	144	28	160	109	50
18+50.00	132	91	150	32	153	105	52
19+00.00	140	100	148	60	147	101	58
19+50.00	144	121	146	69	145	99	63
20+00.00	142	141	147	52	146	100	61
20+50.00	142	146	148	50	147	101	60
21+00.00	138	143	150	36	148	101	56
21+60.75	163	133	178	52	185	127	61
21+72.25	31	21	35	10	40	29	8
22+00.00	62	41	62	14	93	67	11
22+50.00	69	49	64	28	104	73	14
23+00.01	48	35	47	28	47	37	18
23+50.02	43	29	30	22	30	28	21
24+00.02	42	31	27	16	26	25	21
24+41.31	34	15	17	22	16	17	20
25+00.03	37	10	10	27	9	16	23
25+66.12	31	3	0	20	0	12	19
26+00.00	9	1	0	6	0	3	5
26+50.00	0	0	0	0	0	0	0
26+88.10	0	0	0	0	0	0	0
27+25.05	0	0	0	0	0	0	0
27+33.98	0	0	0	0	0	0	0
TOTALS	3251	2449	3186	3064	3270	2400	1348

NOTE:
THE EARTHWORK TABULATION IS BASED ON THE NB SHENANDOAH ALIGNMENT

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEQ				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/1/2010



PHONE: 651-490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110



ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

EARTHWORK SUMMARY, BALANCE, AND TABULATIONS

FILE NO.	11
102287	
EW3	
OF EW3	194

2/4/14 PM

4/8/2010

C SALVAGE AND REMOVALS

Table with columns: STATION, LOCATION, REMOVE BITUMINOUS PAVEMENT, REMOVE CONCRETE PAVEMENT, REMOVE CURB AND GUTTER, REMOVE CONCRETE MEDIAN, REMOVE BITUMINOUS DRIVEWAY PAVT., REMOVE CONCRETE SIDEWALK, REMOVE BITUMINOUS WALK, REMOVE FENCE, REMOVE RETAINING WALL, REMOVE PIPE CULVERTS, REMOVE PIPE SEWERS, SALVAGE CHAIN LINK FENCE, SALVAGE FENCE, ABANDON CATCH BASIN, ABANDON STORM SEWER. Includes sub-totals for E.B. C.S.A.H. 14 and N.B. SHENANDOAH BLVD.

NOTES:

THE AVERAGE EXISTING BITUMINOUS PAVEMENT THICKNESS IS 7.7".

IN THE AREA OF STA. 49+00-50+50, THE EXISTING BITUMINOUS THICKNESS VARIES FROM 6.5" TO 48". SOME OF THIS MATERIAL MAY INCLUDE RECLAIMED BITUMINOUS PAVEMENT.

D CLEARING AND GRUBBING

Table with columns: STATION, LOCATION, CLEARING ACRE, CLEARING EACH, GRUBBING ACRE, GRUBBING EACH. Includes sub-totals for E.B. C.S.A.H. 14 and N.B. SHENANDOAH BLVD.

E PAVEMENT SAWING

Table with columns: STATION, LOCATION, CONST. PART., SAWING BIT. PAVEMENT * (FULL DEPTH), SAWING CONC. PAVEMENT (FULL DEPTH). Includes sub-totals for E.B. C.S.A.H. 14 and N.B. SHENANDOAH BLVD.

* INCLUDES QUANTITIES DURING STAGE 1 & 2

F PAVEMENT RECLAMATION

Table with columns: STATION, LOCATION, BITUMINOUS PAVEMENT RECLAMATION SQ YD. Includes sub-totals for N.B. SHENANDOAH BLVD.

H RETAINING WALLS

Table with columns: STATION, LOCATION, MODULAR BLOCK RETAINING WALL, WET CAST BLOCK RETAINING WALL, SELECT GRANULAR FILL MOD., SELECT GRANULAR FILL. Includes sub-totals for EB CSAH 14 and WB CSAH 14.

FOR INFORMATIONAL PURPOSES ONLY. NO COMPENSATION WILL BE MADE FOR FILL, INCIDENTAL TO WALL CONSTRUCTION.

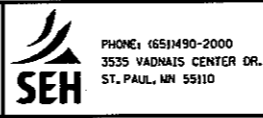
G BITUMINOUS PAVEMENT

Table with columns: STATION, LOCATION, TYPE SP 12.5 WEARING COURSE MIX (4,F), TYPE SP 12.5 WEARING COURSE MIX (3,C), TYPE LV3 WEARING COURSE MIX (B), TYPE SP 12.5 NON WEAR COURSE MIX (3,C), TYPE SP 12.5 NON WEAR COURSE MIX (4,C), BITUMINOUS MATERIAL FOR TACK COAT. Includes sub-totals for EB CSAH 14, WB CSAH 14, and SHENANDOAH BLVD.

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DESIGN TEAM table with columns: DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE, REVISIONS.

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. Certified By: [Signature] Lic. No. 21098 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TABULATIONS

Table with columns: FILE NO. 102287, TB1 OF TBS, 12, 194

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4/8/2010

I 60" CULVERT PILE CAP ITEMS			
ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
2411.602	PRECAST CONCRETE CAP	EACH	21
2452.507	C.I.P. CONCRETE PILING DELIVERED 12"	LIN FT	4620
2452.508	C.I.P. CONCRETE PILING DRIVEN 12"	LIN FT	4620
2452.519	C.I.P. CONCRETE TEST PILE 120 FT LONG 12"	EACH	2
2452.602	PILE ANALYSIS	EACH	2

CULVERT NOTES:

- ① PIPE JOINT SHALL CONFORM TO STD. PL. 3006G, R-4 GASKETED JOINT.
- ② SEE MISCELLANEOUS CULVERT DETAILS FOR MORE INFORMATION.

J CULVERT TABULATION

APRON NO.	ALIGNMENT	STATION	OFFSET	FLWS TO	INVERT ELEV.	% SLOPE	12" CS CULVERT LIN FT	60" RC CULVERT CL V EACH	12" GS PIPE APRON EACH	60" RC PIPE APRON EACH	RANDOM RIPRAP CL IV CU YD	GEOTEXTILE FABRIC TYPE IV SQ YD	REMARKS/NOTES
A100	W.B. C.S.A.H. 14	17+12.5	43.5' LT.		861.84				1				
A101	W.B. C.S.A.H. 14	17+55.9	46.1' LT.	A100	862.95	2.55	40		1				
A102	W.B. C.S.A.H. 14	18+58.3	40.9' LT.		865.49				1				
A103	W.B. C.S.A.H. 14	19+42.1	40.8' LT.	A102	867.45	2.35	80		1				
A104	W.B. C.S.A.H. 14	19+86.2	39.7' LT.		868.31				1				
A105	W.B. C.S.A.H. 14	20+79.9	41.0' LT.	A104	869.90	1.70	90		1				
A106	W.B. C.S.A.H. 14	36+65.0	39.2' LT.		865.72				1				
A107	W.B. C.S.A.H. 14	35+01.6	32.8' LT.	A106	868.99	2.00	160		1				
A108	W.B. C.S.A.H. 14	53+98.3	36.5' LT.		864.99				1				
A109	W.B. C.S.A.H. 14	55+01.7	41.8' LT.	A108	867.42	2.35	100		1				
A114	W.B. C.S.A.H. 14	51+41.0	38.4' LT.		862.32				1				
A115	W.B. C.S.A.H. 14	51+85.0	38.4' LT.	A114	862.54	0.52	42		1				
A112	E.B. C.S.A.H. 14	73+91.3	50.3' RT	A113	890.08				1				
A113	E.B. C.S.A.H. 14	74+95.7	34.7' RT		887.93	2.10	102		1				
B100	E.B. C.S.A.H. 14	45+87.6	66.6' RT.		849.90					1	240	280	
B101	W.B. C.S.A.H. 14	45+91.5	50.8' LT.	B100	850.20	0.19		144		1	50	60	①②
							TOTALS	614	144	14	2	290	340

K SUBSURFACE DRAINAGE

STATION	LOCATION	4" PE PERP PIPE DRAIN LIN FT
EB CSAH 14		
10+31 - 35+64	RT & LT	4399
36+17 - 44+58	RT & LT	1744
49+32 - 64+74	RT & LT	3163
65+70 - 77+70	RT & LT	2035
NB SHENANDOAH		
8+98 - 13+49	RT & LT	855
14+76 - 27+37		1635
FRONTAGE RD.		
10+38 - 15+90	RT & LT	1022
RETAINING WALL A		
WB CSAH 14 21+00 - 23+00	LT	200
RETAINING WALL A2		
WB CSAH 14 30+50 - 33+85	LT	335
RETAINING WALL B		
EB CSAH 14 19+30 - 19+95	RT	60
RETAINING WALL B2		
EB CSAH 14 23+50 - 26+68	RT	320
RETAINING WALL C		
EB CSAH 14 66+07 - 67+25	RT	125
TOTALS		15893

L WATERMAIN

STATION	LOCATION (FT)		SALVAGE HYDRANT EACH	SALVAGE GATE VALVE AND BOX EACH	DUCTILE IRON FITTINGS LBS	RELOCATE HYDRANT & VALVE EACH	FOR INFORMATION ONLY SEE DUCTILE IRON FITTINGS					CONNECT TO EXISTING WATERMAIN EACH	INSTALL HYDRANT EACH	INSTALL GATE VALVE AND BOX EACH	6" GATE VALVE AND BOX EACH	8" GATE VALVE AND BOX EACH	6"X6" WET TAP EACH	12"X8" WET TAP EACH	6" WATERMAIN DIP CL 52 LIN FT	8" WATERMAIN DIP CL 52 LIN FT
	LT	RT					8"X6" REDUCER EACH	8" PIPE PLUG EACH	8" PIPE BEND 45 DEGREES EACH	8"X6" TEE FITTING EACH	8"X8" TEE FITTING EACH									
WB CSAH 14																				
16+76	85					1	1													
FRONTAGE RD																				
10+62		24															1	1		450
11+02	21				175				1			1	1						20	70
15+00	0				185															
15+00	8															1				28
15+00	28				36															
15+93		50			49															
NB SHENANDOAH BLVD																				
16+97	58		1	1	36															
21+73	18				49															560
26+96	9				49															
27+05	0				49															
27+19	0				0												1			
TOTALS			1	1	628	1	1	2	4	1	1	1	1	1	2		1	1	20	1108

WATERMAIN NOTES:

- ① USE COMPACT MECHANICAL JOINT FITTINGS

N CONCRETE ITEMS

STATION	LOCATION	CONST. PART.	4" CONCRETE WALK	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B418	CONCRETE CURB & GUTTER DESIGN B424	TRUNCATED DOMES
			SQ FT	SQ FT	LIN FT	LIN FT	SQ FT
EB CSAH 14							
10+31 - 35+64	LT & RT		5386	50	2387	2306	16
36+17 - 44+58	LT & RT		2614	53	818	867	16
49+32 - 64+74	LT & RT		2625	53	1493	1574	16
65+70 - 77+70	LT & RT		6555	165	932	975	32
NB CSAH 14							
10+31 - 35+54	LT & RT			20	2502	2093	16
36+07 - 44+58	LT & RT			20	818	877	16
49+32 - 64+67	LT & RT			40	1492	1589	16
65+70 - 77+70	LT & RT			129	969	1076	24
NB SHENANDOAH BLVD							
8+98 - 13+49	LT & RT		3316	27	624	855	
	SIDEWALK		2387				
14+76 - 27+34	LT & RT		6470	71	1368	1635	16
	SIDEWALK		7234				
FRONTAGE RD.							
10+38 - 15+90	LT & RT				1022		
TOTALS			36587	628	14425	13847	168

M CASTING ASSEMBLY SUMMARY

ASSEMBLY	B-5	A-7D	M-11	SPECIAL
TOTAL	109	6	10	2

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DESIGN TEAM				
DRAWN BY: CIE				
DESIGNER: JEQ				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TABULATIONS

FILE NO. 102287
 TB2 OF TBS
 13 / 194

Q GUARD RAIL

STATION	LOCATION	TRAFFIC BARRIER DESIGN B0338	TRAFFIC BARRIER DESIGN SPECIAL	END TREATMENT-TANGENT TERMINAL
		LIN FT	LIN FT	LIN FT
EB CSAH 14				
12+28.0 - 35+84.5	RT	137.5	25	1
WB CSAH 14				
5+96.2 - 15+91.4	LT	25	25	1
TOTALS		162.5	50	2

P INSTALL SALVAGED FENCE

STATION	LOCATION	CHAIN LINK FENCE	FENCE
		LIN FT	LIN FT
EB CSAH 14			
50+80 - 53+25	RT		283
62+61 - 64+26	LT	256	
TOTAL		256	283

R TURF ESTABLISHMENT

STATION	LOCATION	SEEDING	SEED MIXTURE 240	SEED MIXTURE 310	SEED MIXTURE 350	SODDING TYPE SALT RESISTANT	EROSION CONTROL BLANKETS CAT. 3	HYDROSEEDING
		ACRE	POUND	POUND	POUND	SQ YD	SQ YD	MGAL
E.B. C.S.A.H. 14								
10+31 - 36+64	LT & RT	0.79	59			7021	3,485	4.75
36+17 - 44+58	LT & RT	0.66			56	1457	2,891	3.96
44+58 - 49+32	RT	0.50			42		2,183	3.00
49+32 - 64+74	LT & RT	0.84	56		8	3381	3,687	5.04
65+70 - 85+99	LT & RT	0.39	29			1492	1,705	2.34
W.B. C.S.A.H. 14								
10+31 - 35+54	LT	2.74	116	37	53		11,575	16.45
36+07 - 44+58	LT	0.61			51		2,665	3.66
44+58 - 49+32	LT	1.53		46	60		5,605	9.18
49+32 - 64+67	LT	1.99	78	41	28		8,245	11.94
65+70 - 75+33	LT	1.11	83			919	4,878	6.66
NB SHENANDOAH BLVD								
8+58 - 13+49	RT	0.38			32	631	1,669	2.28
14+77 - 27+34	RT	4.47		77	97	987	9,223	26.82
SB SHENANDOAH BLVD								
8+96 - 13+48	LT	0.06	4			657	259	0.35
14+76 - 27+34	LT	0.06	4				250	0.34
FRONTAGE RD.								
10+35 - 15+65	LT & RT	0.50	37				2,180	2.97
TOTALS		16.62	466	201	427	16,545	60,500	99.74

① FOR INFORMATIONAL PURPOSES ONLY

Q TEMPORARY EROSION CONTROL

STATION	LOCATION	SILT FENCE, TYPE MACHINE SLICED	FLOTATION SILT CURTAIN TYPE MOVING WATER	TEMPORARY DITCH CHECK TYPE 2	STORM DRAIN INLET PROTECTION	RAPID STABILIZATION METHOD 3
		LIN FT	LIN FT	LIN FT	EACH	MGAL
E.B. C.S.A.H. 14						
12+28 - 35+85	LT & RT	3,747		320	35	20.67
35+85 - 49+52	LT & RT	2,711	32		18	19.73
49+52 - 64+72	LT & RT	3,360		290	20	16.94
64+72 - 86+29	LT & RT	2,906		120	19	8.98
NB SHENANDOAH BLVD						
8+58 - 13+49	LT & RT	834			7	2.63
14+77 - 27+34	LT & RT	2,285			9	29.83
FRONTAGE RD.						
10+00 - 15+90	LT & RT				4	2.97
TOTALS		15,843	32	730	112	101.75

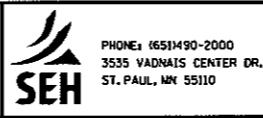
S SURCHARGE

STATION	LOCATION	GEOTEXTILE FABRIC TYPE VI	SETTLEMENT PLATES	PIEZOMETER
		SQ YD	EACH	EACH
EB CSAH 14				
44+33 - 49+56	RT & LT	9879	6	6
TOTALS		9879	6	6

NOTE:
- THE GRANULAR BORROW QUANTITY NEEDED FOR THE SURCHARGE CAN BE FOUND IN THE EARTHWORK SUMMARY

DESIGN TEAM				
DRAWN BY: CJF				
DESIGNER: JED				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Licensed Professional Engineer
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TABULATIONS

12/00/26 AM

1/21/2010

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QWEST COMMUNICATIONS - TELEPHONE

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), and REMARKS. Contains multiple rows of utility data.

QWEST COMMUNICATIONS - TELEPHONE

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), and REMARKS. Contains multiple rows of utility data.

UTILITY CONTACTS

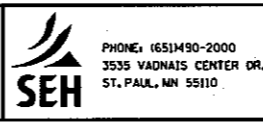
Table with columns: COMPANY, CONTACT NAME, ADDRESS, TELEPHONE. Lists utility companies like Qwest, Comcast, and Anoka County Highway Dept.

UTILITY legend table defining abbreviations like T-BUR, TEL PED, OH TEL, COM PED, FIBER OPTIC, etc.

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

DESIGN TEAM table with columns: DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE, REVISIONS.

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. Certified By: [Signature] Licensure # 21098. Printed Name: MARK R. DIERING Date: 1/21/2010



ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

FILE NO. 102287 17 INPLACE UTILITY TABULATIONS UT1 OF UT5 194

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1/21/2010

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COMCAST COMMUNICATIONS - TELE., TV, F/O

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), and REMARKS. Lists various utility adjustments and relocations for Comcast services.

COMCAST COMMUNICATIONS - TELE., TV, F/O

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), and REMARKS. Lists various utility adjustments and relocations for Comcast services.

CONNEXUS ENERGY - POWER

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), and REMARKS. Lists various utility adjustments and relocations for Connexus Energy power lines.

CONNEXUS ENERGY - POWER

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), and REMARKS. Lists various utility adjustments and relocations for Connexus Energy power lines.

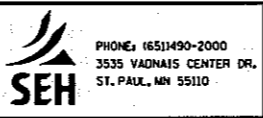
UTILITY

- T-BUR = TELEPHONE LINE-UNDERGROUND
TEL PED = TELEPHONE PEDESTAL
OH TEL = TELEPHONE LINE-OVERHEAD
COM PED = COMMUNICATION PEDESTAL
FIBER OPTIC = FIBER OPTIC LINE-UNDERGROUND
TV CABLE = TELEVISION LINE-UNDERGROUND
P POLE = POWER POLE
P-BUR = POWER LINE-UNDERGROUND
P-OH = POWER LINE-OVERHEAD
L POLE = LIGHT POLE
GAS VLV = GAS VALVE
GAS = GAS LINE-UNDERGROUND
RC PIPE = REINFORCED CONCRETE PIPE
CM CULVERT = CORRUGATED METAL CULVERT
RC CULVERT = REINFORCED CONCRETE CULVERT
ST CB = STORM SEWER CATCH BASIN
ST MH = STORM SEWER MANHOLE
HDPE PIPE = HIGH-DENSITY POLYETHYLENE PIPE
SAN = SANITARY SEWER PIPE
SAN MH = SANITARY SEWER MANHOLE
WATER = WATERMAIN PIPE
FIRE HYD = HYDRANT
WATER VLV = WATERMAIN GATE VALVE
WATER MH = WATERMAIN MANHOLE
P HH = SIGNAL HAND HOLE
SIG WIRE = SIGNAL POWER LINE-UNDERGROUND
TRAFFIC SIG LIGHT = SIGNAL LIGHT POLE

NOTES:
1 UTILITY ON CONNEXUS ENERGY POWER POLE

DESIGN TEAM table with columns: DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE, REVISIONS.

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.
Certified By: [Signature] Lic. No. 21098
Printed Name: MARK R. DIEHLING Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

INPLACE UTILITY TABULATIONS

FILE NO. 102287
18
UT2 OF UT5
194

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1/21/2010

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CITY OF COON RAPIDS - WATERMAIN						
STATION TO STATION	OFFSET	ITEM IN PLACE	REMARKS			REMARKS
			ADJUST	REMOVE	LEAVE AS IS	
65+50 R 2 - 65+71 R 2	98L - 78L	WATER			X	
65+71 R 2 - 68+82 R 2	78L - 80L	WATER			X	
67+80 R 2 - 67+81 R 2	83R - 126R	WATER			X	
67+80 R 2	81R	FIRE HYD			X	
67+81 R 2 - 68+05 R 2	126R - 180R	WATER			X	
68+05 R 2 - 68+13 R 2	180R - 526R	WATER			X	
68+07 R 2 - 70+12 R 2	268R	WATER			X	
68+12 R 2	269R	WATER VLV			X	
68+82 R 2 - 74+65 R 2	80L	WATER			X	
69+38 R 2 - 70+12 R 2	112R - 102R	WATER			X	
70+06 R 2	103R	WATER VLV			X	
70+12 R 2	102R - 268R	WATER			X	
70+12 R 2 - 72+72 R 2	102R	WATER			X	
70+51 R 2	102R - 115R	WATER			X	
70+51 R 2	115R	FIRE HYD			X	
70+67 R 2	102R	WATER VLV			X	
71+32 R 2	102R	WATER VLV			X	
71+46 R 2	86L	FIRE HYD	X			
72+56 R 2	102R - 256R	WATER			X	
72+72 R 2 - 74+63 R 2	102R	WATER			X	
73+42 R 2 - 74+53 R 2	315L - 318L	WATER			X	
73+57 R 2	102R - 114R	WATER			X	
73+91 R 2	102R	WATER VLV			X	
74+50 R 2 - 74+60 R 2	413L - 80L	WATER			X	
74+54 R 2 - 74+58 R 2	102R - 255R	WATER			X	
74+54 R 2	80L	WATER VLV	X			
74+54 R 2	318L	WATER VLV			X	
74+60 R 2	90L	WATER VLV	X			
74+65 R 2 - 77+50 R 2	80L	WATER			X	
77+48 R 2 - 77+49 R 2	80L - 40R	WATER			X	
77+49 R 2 - 91+00 R 2	40R - 42R	WATER			X	
78+01 R 2	45R	FIRE HYD			X	
78+08 R 2	40R	WATER VLV			X	
83+35 R 2	32R	WATER VLV			X	
90+94 R 2	48R	FIRE HYD			X	

CITY OF COON RAPIDS - DRAINAGE						
STATION TO STATION	OFFSET	ITEM IN PLACE	REMARKS			REMARKS
			ADJUST	REMOVE	LEAVE AS IS	
35+14 R 1	341L	ST CB			X	
35+14 R 1	314L	ST CB			X	
35+29 R 1 - 36+61 R 1	76L - 75L	RC CULVERT			X	
35+55 R 1	355 L	ST MH	X			
35+55 R 1 - 35+65 R 1	355L - 584L	PVC			X	
35+59 R 1 - 35+76 R 1	904L	PVC			X	
35+61 R 1 - 35+65 R 1	377L - 585L	PVC			X	
35+61 R 1	377L	ST CB			X	
35+65 R 1 - 36+09 R 1	585L - 584L	PVC			X	
35+76 R 1 - 36+20 R 1	905L	PVC			X	
36+09 R 1	584L - 905L	PVC			X	
36+09 R 1	584L	ST CB	X			
41+35 R 1 - 42+14 R 1	66L - 67L	CM CULVERT			X	
41+57 R 1 - 42+01 R 1	27R - 30R	CM CULVERT			X	
45+58 R 2 - 45+63 R 2	36R - 63L	CM CULVERT			X	
45+88 R 2 - 46+05 R 2	100L - 119L	CM CULVERT			X	
49+83 R 2 - 50+21 R 2	37R - 36R	CM CULVERT			X	
51+48 R 2 - 51+81 R 2	62L	CM CULVERT			X	
53+97 R 2 - 54+25 R 2	74L - 60L	RC CULVERT			X	
54+26 R 2	60L	ST CB			X	
54+54 R 2 - 54+71 R 2	60L - 73L	RC CULVERT			X	
54+54 R 2	60L	ST CB			X	
57+12 R 2 - 57+48 R 2	39R - 38R	CM CULVERT			X	
57+54 R 2 - 57+91 R 2	92L - 127L	RC PIPE			X	
57+94 R 2	128L	ST CB	X			
63+87 R 2 - 64+62 R 2	74L - 79L	RC PIPE			X	
64+21 R 2 - 65+95 R 2	49R - 27R	RC PIPE			X	
64+62 R 2 - 64+66 R 2	79L - 117L	RC PIPE			X	
64+62 R 2	79L	ST CB	X			
64+66 R 2 - 65+26 R 2	117L - 118L	RC PIPE			X	
64+66 R 2	117L	ST CB			X	
65+26 R 2 - 65+32 R 2	118L - 120L	RC PIPE			X	
65+26 R 2	118L	ST CB			X	
65+32 R 2 - 65+69 R 2	120L - 118L	RC PIPE			X	
65+32 R 2	119L	ST CB			X	
65+66 R 2 - 65+69 R 2	384L - 118L	RC PIPE			X	
65+69 R 2 - 65+96 R 2	118L - 80L	RC PIPE			X	
65+69 R 2	118L	ST CB			X	
65+73 R 2	185R	ST CB			X	
65+95 R 2 - 67+94 R 2	27R - 45R	RC PIPE			X	
65+95 R 2	27R	ST CB			X	
66+25 R 2 - 66+35 R 2	413L - 383L	RC PIPE			X	
66+35 R 2 - 66+54 R 2	383L - 368L	RC PIPE			X	
66+35 R 2	383L	ST CB			X	
66+36 R 2 - 66+54 R 2	354L - 368L	RC PIPE			X	
66+54 R 2	368L	ST CB			X	
68+38 R 2 - 68+71 R 2	47R - 49R	CM CULVERT			X	
71+20 R 2 - 71+56 R 2	43R	RC CULVERT			X	
73+96 R 2 - 75+41 R 2	57L - 58L	CM CULVERT			X	
77+49 R 2 - 77+78 R 2	59L - 60L	CM CULVERT			X	
86+13 R 2 - 86+42 R 2	18R - 57L	CM CULVERT			X	
87+39 R 2 - 88+21 R 2	67L - 66L	CM CULVERT			X	

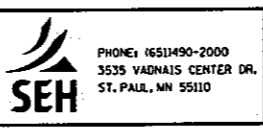
CITY OF COON RAPIDS - DRAINAGE						
STATION TO STATION	OFFSET	ITEM IN PLACE	REMARKS			REMARKS
			ADJUST	REMOVE	LEAVE AS IS	
EB CSAH 14						
10+02 R 1 - 10+31 R 1	55R - 28R	RC PIPE			X	
10+19 R 1	26R	ST CB			X	
10+27 R 1 - 10+32 R 1	36L - 37L	RC PIPE			X	
10+27 R 1 - 10+32 R 1	20L - 21L	RC PIPE			X	
10+27 R 1	36L	ST CB			X	
10+27 R 1	20L	ST CB			X	
10+31 R 1 - 12+59 R 1	28R - 26R	RC PIPE			X	
10+31 R 1 - 10+32 R 1	28R - 21L	RC PIPE			X	
10+31 R 1	28R	ST CB			X	
10+32 R 1	21L - 36L	RC PIPE			X	
10+32 R 1	36L	ST CB	X			
10+32 R 1	21L	ST CB			X	
10+33 R 1	93L - 82L	CM CULVERT			X	
10+33 R 1	82L	ST CB			X	
12+59 R 1	26R	ST MH	X			
12+84 R 1 - 12+88 R 1	91L - 27R	CM CULVERT			X	
13+99 R 1 - 15+28 R 1	85L - 86L	CM CULVERT			X	
14+41 R 1 - 15+14 R 1	32R - 31R	CM CULVERT			X	
15+71 R 1 - 16+45 R 1	85L - 83L	CM CULVERT			X	
17+09 R 1 - 17+57 R 1	82L - 81L	CM CULVERT			X	
18+37 R 1 - 19+12 R 1	32R - 30R	CM CULVERT			X	
18+70 R 1 - 19+39 R 1	77L - 78L	CM CULVERT			X	
19+90 R 1 - 20+75 R 1	76L - 74L	CM CULVERT			X	
22+09 R 1 - 24+15 R 1	26R - 23R	CM CULVERT			X	
32+88 R 1 - 33+39 R 1	62L - 63L	CM CULVERT			X	
34+27 R 1 - 35+00 R 1	70L - 74L	CM CULVERT			X	
35+06 R 1 - 36+55 R 1	134R	RC CULVERT	X			
35+14 R 1	341L - 313L	PVC			X	
35+14 R 1 - 35+61 R 1	341L - 377L	PVC			X	

UTILITY	
T-BUR = TELEPHONE LINE-UNDERGROUND	
TEL PED = TELEPHONE PEDESTAL	
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ST MH = STORM SEWER MANHOLE	
PVC = PLASTIC OR HIGH-DENSITY POLYETHYLENE PIPE	
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SAN MH = SANITARY SEWER MANHOLE	
WATER = WATERMAIN PIPE	
FIRE HYD = HYDRANT	
WATER VLV = WATERMAIN GATE VALVE	
WATER MH = WATERMAIN MANHOLE	
P HH = SIGNAL HAND HOLE	
SIG WIRE = SIGNAL POWER LINE-UNDERGROUND	
TRAFFIC SIG LIGHT = SIGNAL LIGHT POLE	

DESIGN TEAM					
DRAWN BY: CIF					
DESIGNER: JFO					
CHECKED BY: MRD					
NO.	BY	DATE	REVISIONS		

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.

Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

INPLACE UTILITY TABULATIONS

FILE NO. 102287	21
UT5 OF UT5	194

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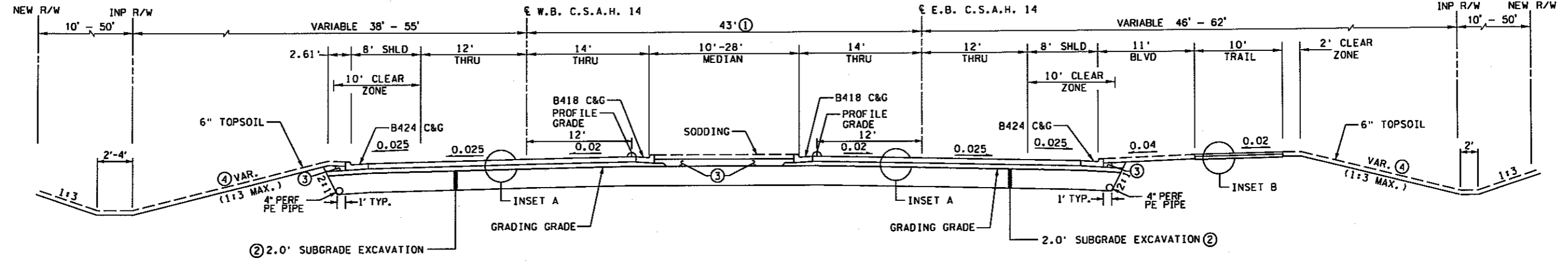
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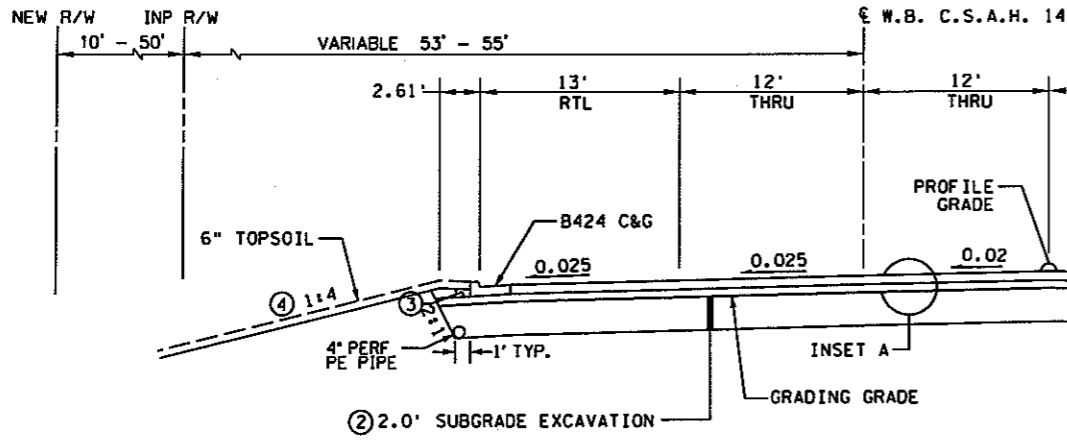
CSAH 14 (MAIN ST.)

4-LANE SECTION



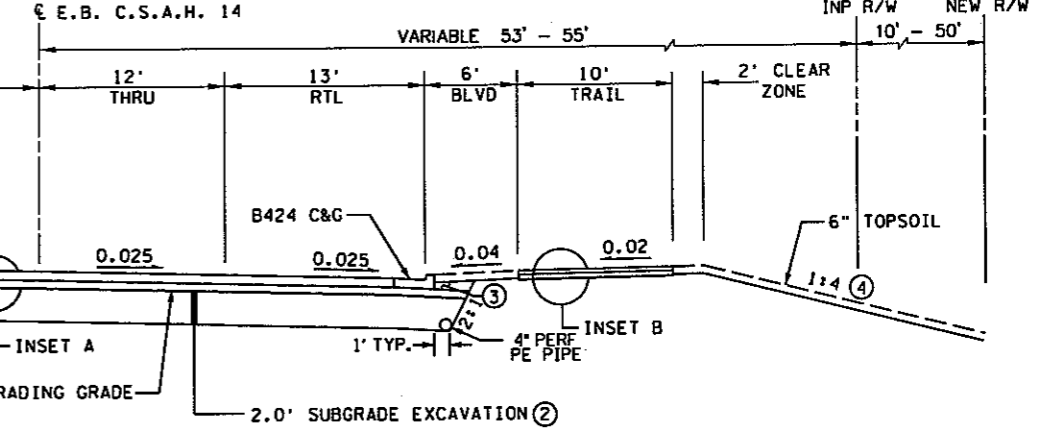
CSAH 14 (MAIN ST.)

W.B. TURN LANES



CSAH 14 (MAIN ST.)

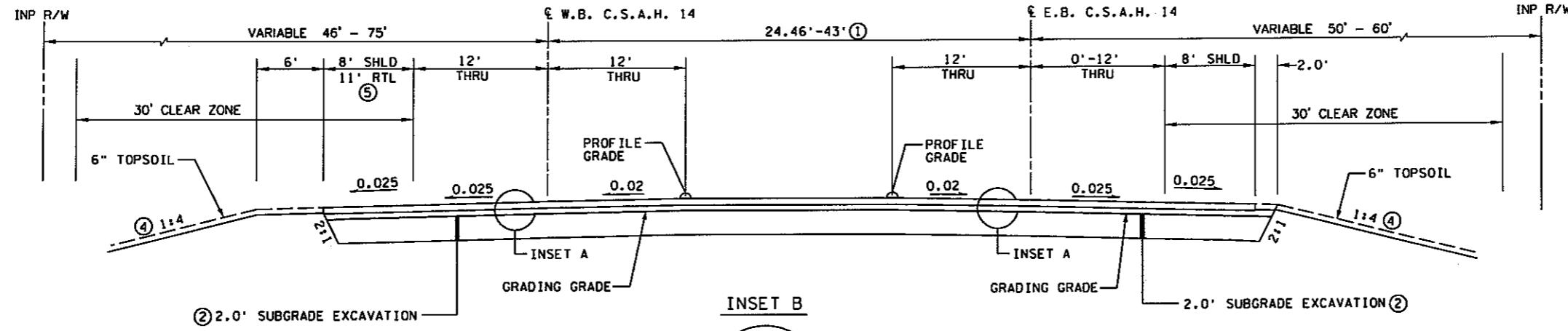
E.B. TURN LANES



CSAH 14 (MAIN ST.)

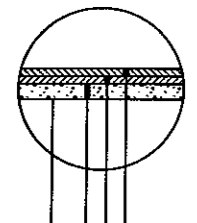
RURAL SECTION

STA. 75+82.31 - 86+00.00



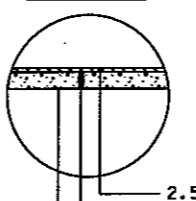
- NOTES:
- ① SEE ALIGNMENT PLAN FOR VARIATIONS.
 - ② BACKFILL WITH SELECT GRANULAR MATERIAL.
 - ③ BACKFILL WITH SUITABLE GRADING MATERIAL.
 - ④ SEE CROSS SECTIONS FOR VARIATIONS.
 - ⑤ USE MAINLINE ROADWAY PAVEMENT SECTION AT TURN LANE, W.B. C.S.A.H. 14 STA. 75+16 - 79+76, LT.

INSET A



- 4" TYPE SP 12.5 WEARING COURSE (4,F) (SPWEB440F) MNDOT SPEC. 2360
- 3" TYPE SP 12.5 NON-WEARING COURSE (4,C) (SPNWB430C) MNDOT SPEC. 2360
- 6" AGGREGATE BASE, CLASS 5 MNDOT SPEC. 3138
- GRADING GRADE

INSET B



- 2.5" TYPE LV 3 WEARING COURSE MIXTURE (B) (LVWE35035B) MNDOT SPEC. 2360
- 6" AGGREGATE BASE, CLASS 5 MNDOT SPEC. 2211
- GRADING GRADE

- GENERAL NOTES:
- CLEAR ZONES:
 URBAN SECTION WITH CURB - 10 FT. FROM EDGE OF THROUGH LANE.
 RURAL SECTION WITHOUT CURB - 30 FT. FROM EDGE OF THROUGH LANE.
 BIKE TRAIL - 2 FT. FROM EDGE OF PAVEMENT.
- ALL CROSS SLOPES ARE IN FT/FT.
 MAXIMUM ROLLOVER 0.07 FT/FT.
- UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

DESIGN TEAM			
DRAWN BY:	CJF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/1/2010

SEH
 PHONE: 1651490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



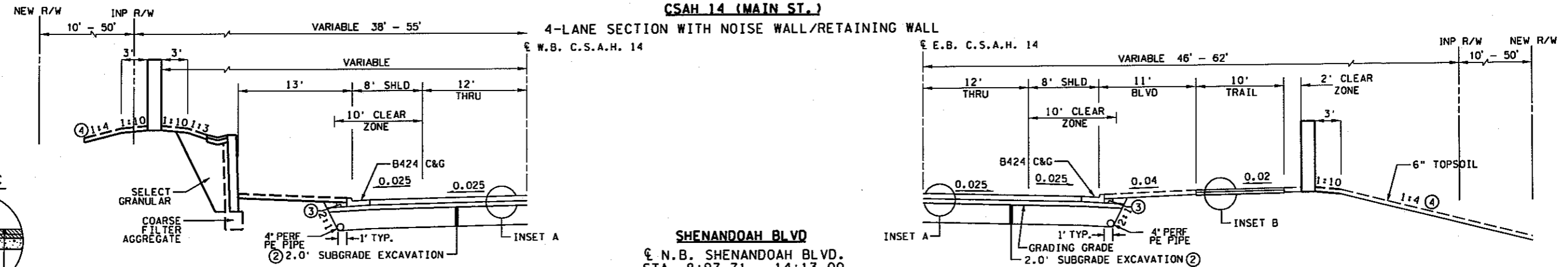
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TYPICAL SECTIONS
 CSAH 14

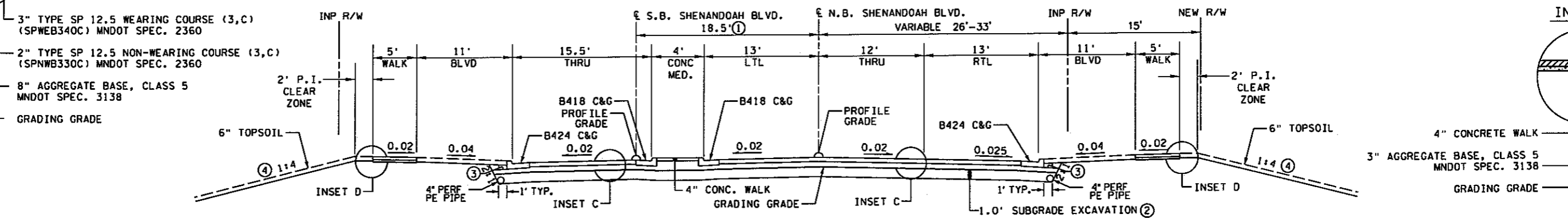
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TS2
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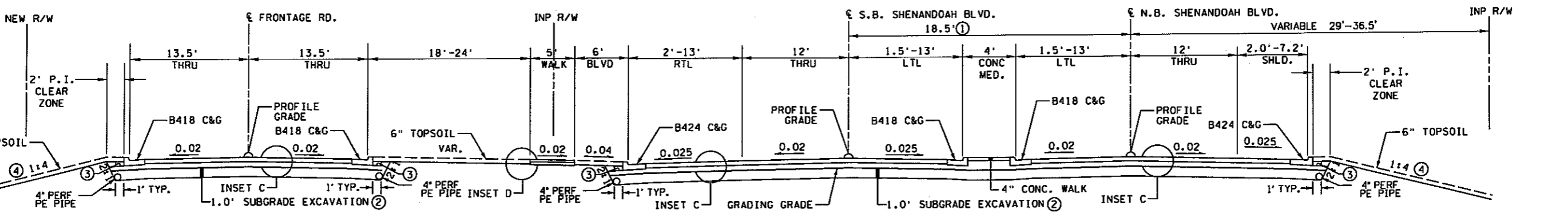
CSAH 14 (MAIN ST.)



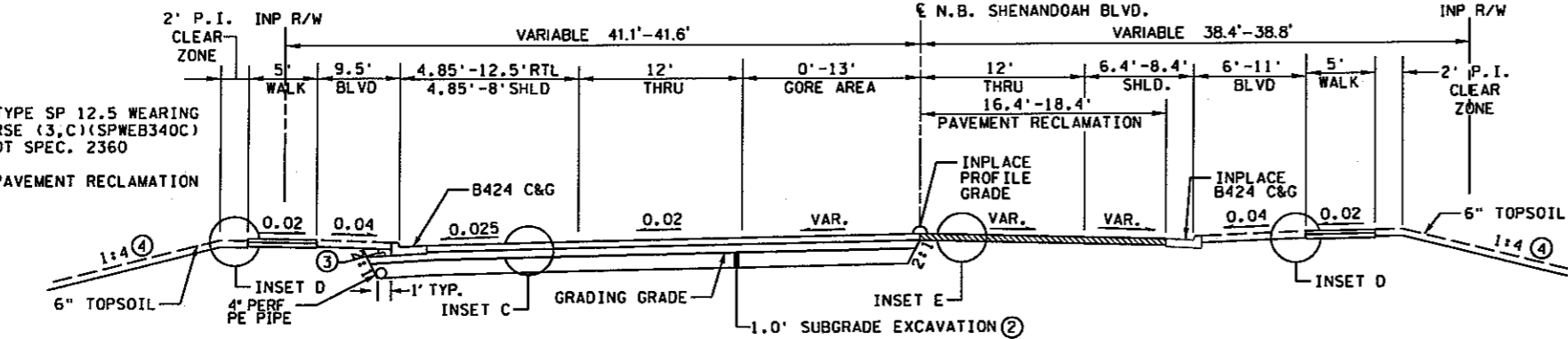
SHENANDOAH BLVD
 N.B. SHENANDOAH BLVD.
 STA. 8+97.71 - 14+13.00



SHENANDOAH BLVD
 N.B. SHENANDOAH BLVD.
 STA. 21+72.44 - 27+34.00



SHENANDOAH BLVD
 N.B. SHENANDOAH BLVD.
 STA. 27+34.00 - 34+00.00



NOTES:

- ① SEE ALIGNMENT PLAN FOR VARIATIONS.
- ② BACKFILL WITH SELECT GRANULAR MATERIAL.
- ③ BACKFILL WITH SUITABLE GRADING MATERIAL.
- ④ SEE CROSS SECTIONS FOR VARIATIONS.
- ⑤ INPLACE C&G, NB SHENANDOAH BLVD STA. 24+91.5 - 27+34.00, LT.

GENERAL NOTES:

CLEAR ZONES:
 URBAN SECTION WITH CURB - 10 FT. FROM EDGE OF THROUGH LANE.
 RURAL SECTION WITHOUT CURB - 30 FT. FROM EDGE OF THROUGH LANE.
 BIKE TRAIL - 2 FT. FROM EDGE OF PAVEMENT.

ALL CROSS SLOPES ARE IN FT/FT.
 MAXIMUM ROLLOVER 0.07 FT/FT.

UNLESS OTHERWISE SPECIFIED, THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 4/1/2010

SEH
 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TYPICAL SECTIONS
 CSAH 14 / SHENANDOAH BLVD.

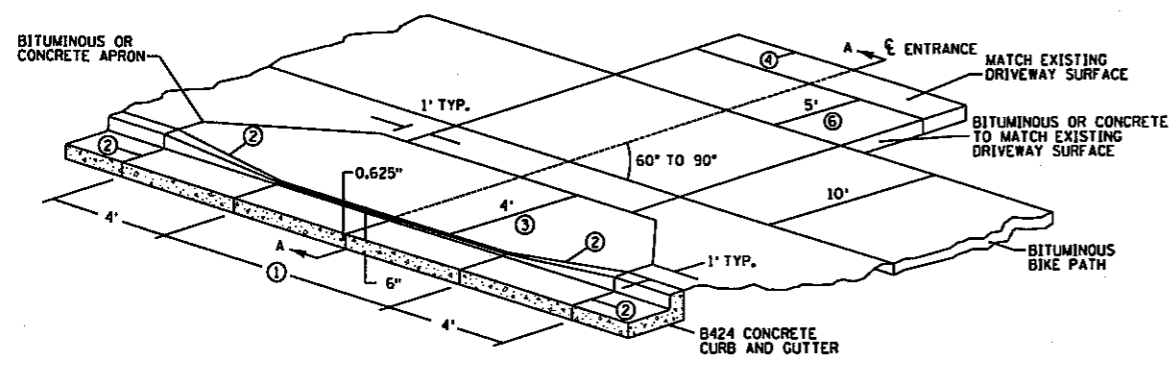
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4/2/2010

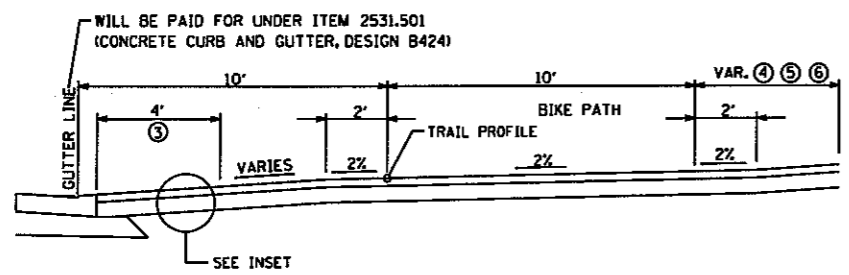
MD1

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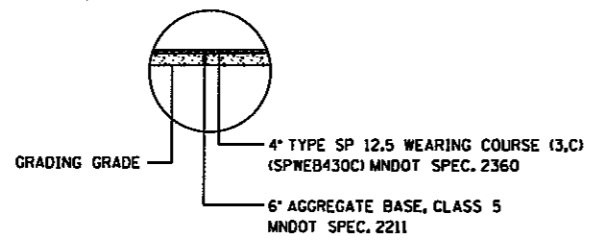


- NOTES:**
- EXACT WIDTH OF ENTRANCE SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER (12' MIN.) OR AS SHOWN IN THE PLANS.
 - 0.5" EXPANSION JOINT IF CONCRETE APRON IS USED.
 - 4' FROM BACK OF CURB TO END OF APRON.
 - REPLACE DISTURBED DRIVEWAYS TO END OF CONSTRUCTION LIMITS.
 - DRIVEWAY SLOPES WILL BE 2% FOR THE FIRST 15' BEHIND THE EDGE OF PAVEMENT, THEN MAY VARY TO MATCH EXISTING CONDITIONS. C.S.A.H. 17 DRIVEWAYS MATCH EXISTING FROM THE EDGE OF SHOULDER, WITHOUT THE 15' AT 2%. SEE PLAN SHEETS AND CROSS SECTIONS FOR CONSTRUCTION LIMITS.
 - ON INPLACE AGGREGATE DRIVEWAYS, PAVE 5' FROM BACK OF TRAIL. CONSTRUCT REMAINDER WITH AGGREGATE.

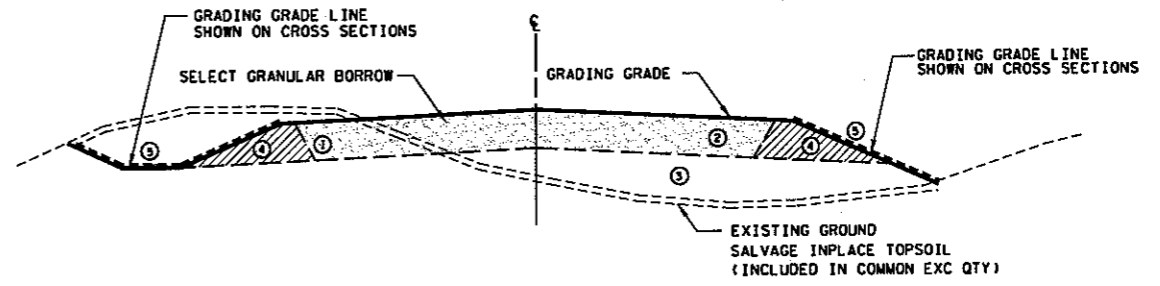
SECTION A-A



DRIVEWAY INSET

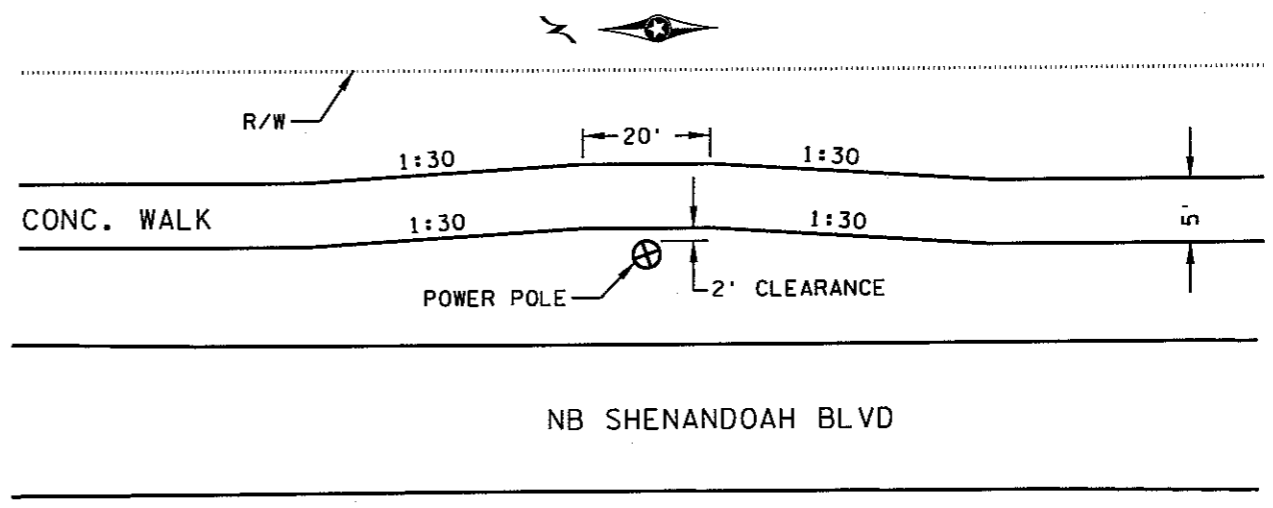


DRIVEWAY DETAIL
SEE CONSTRUCTION PLANS FOR LOCATIONS



- EXCAVATION AREAS 2' MIN. SUBGRADE EXCAVATION. BACKFILL WITH SELECT GRANULAR MATERIAL.
 - EMBANKMENT AREAS SELECT GRANULAR MATERIAL SHALL BE USED WITHIN 2' OF THE GRADING GRADE.
 - BACKFILL WITH SUITABLE EXCAVATED MATERIAL. TOPSOIL SHALL NOT BE USED IN THIS AREA.
 - PLACE SELECT GRANULAR MATERIAL 4' WIDE AT 200' INTERVALS FOR SUBGRADE DRAINAGE.
 - 6" TOPSOIL (MIN.) SHALL BE PLACED ON ALL AREAS DISTURBED BY CONSTRUCTION. PLACEMENT SHALL BE INCIDENTAL. TOPSOIL COVERING IS INCLUDED IN EMBANKMENT QUANTITIES.
 - THIS DETAIL ONLY PERTAINS TO THE RURAL (NO CURB AND GUTTER) PORTIONS OF THE PROJECT. THE PURPOSE IS TO PROVIDE GRANULAR OUTLETS FOR WATER TRAPPED IN THE SUBCUT. CONSTRUCTION OF THIS DETAIL IS INCIDENTAL.
- NOTES:**
- ALL EXCAVATED GRANULAR MATERIAL SHALL BE USED FOR BACKFILL, AS DIRECTED BY THE ENGINEER.
 - THE CONTRACTOR SHALL DISPOSE OF ALL EXCESS COMMON AND SUBGRADE EXCAVATION MATERIAL (INCIDENTAL).

EARTHWORK DETAIL - RURAL SECTION
NO SCALE



NB SHENANDOAH BLVD
5' WALK AT POWER POLES

NOTE:
THIS IS A MINOR VARIATION TO THE CONCRETE WALK ON THE EAST SIDE OF SHENANDOAH BLVD THAT WILL ONLY BE REQUIRED IF THE CITY OF COON RAPIDS CHOOSES NOT TO MOVE THE TWO LIGHT POLES BETWEEN STA 19+00 TO 23+50, RT.

DESIGN TEAM				
DRAWN BY: CJF				
DESIGNER: JEQ				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
Printed Name: MARK R. DIERLING Date: 4/2/2010

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY

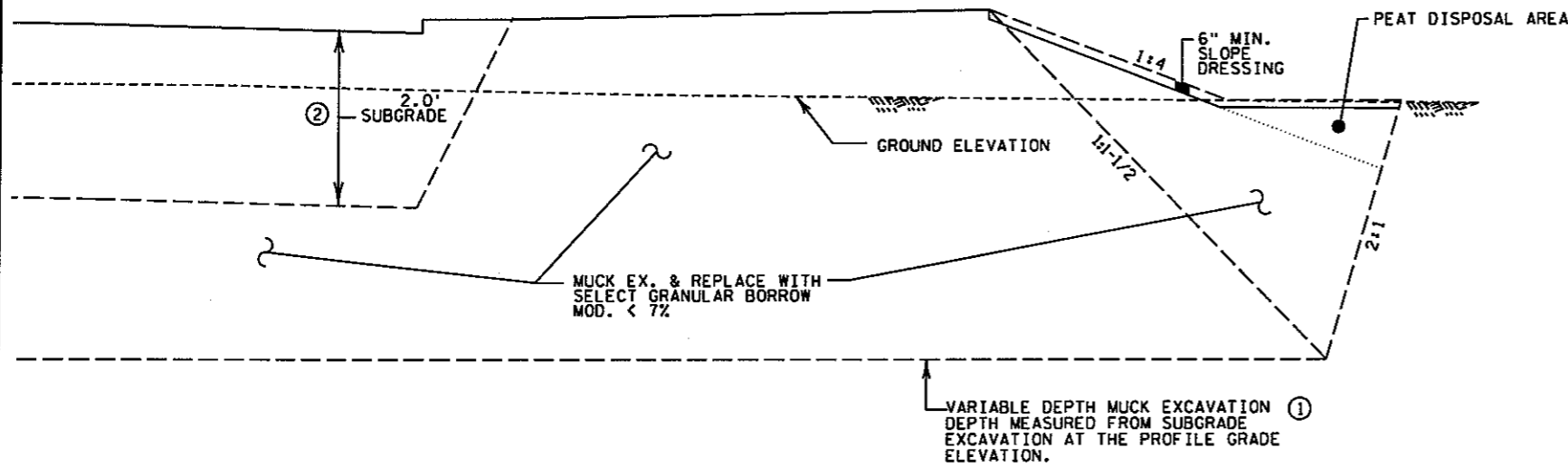
ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

MISCELLANEOUS DETAILS
DRIVEWAY DETAIL, EARTHWORK DETAIL - RURAL SECTION,
5' CONCRETE WALK AT CITY LIGHT POLE LOCATIONS

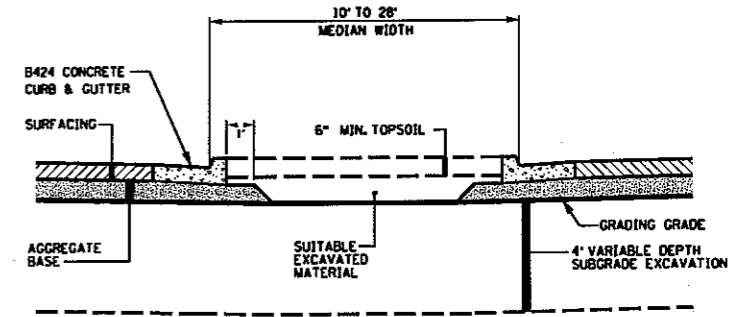
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MD1 OF MD7	194

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MD2
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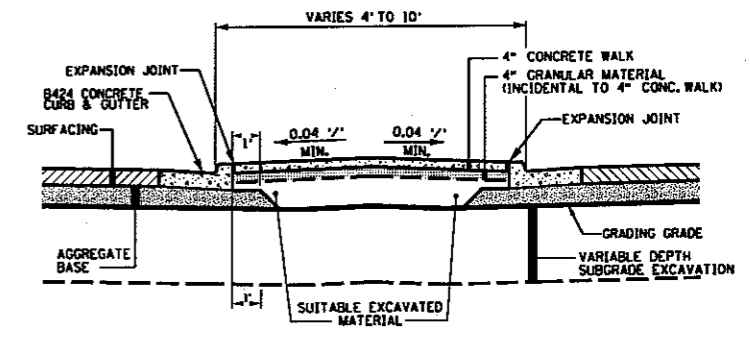
MUCK EXCAVATION AT LAND BRIDGE



- ① SEE PROFILES AND CROSS SECTIONS FOR MUCK EXCAVATION DEPTH.
- ② BACKFILL WITH SELECT GRANULAR BORROW.

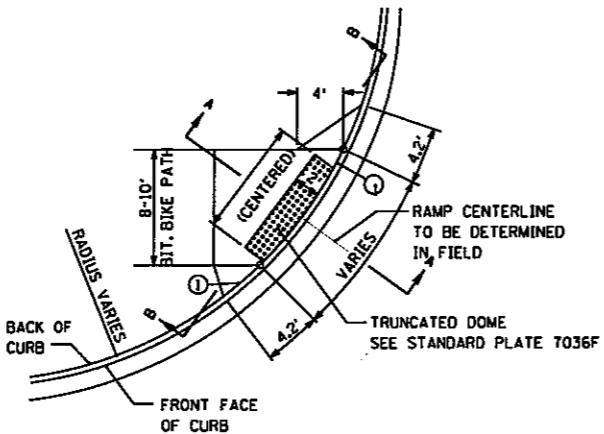
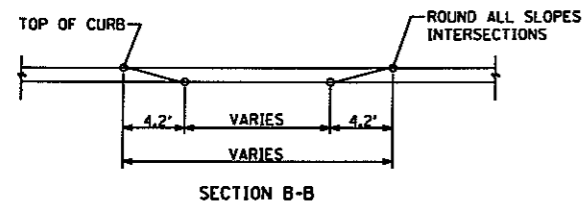


DETAIL B
LANDSCAPED MEDIAN



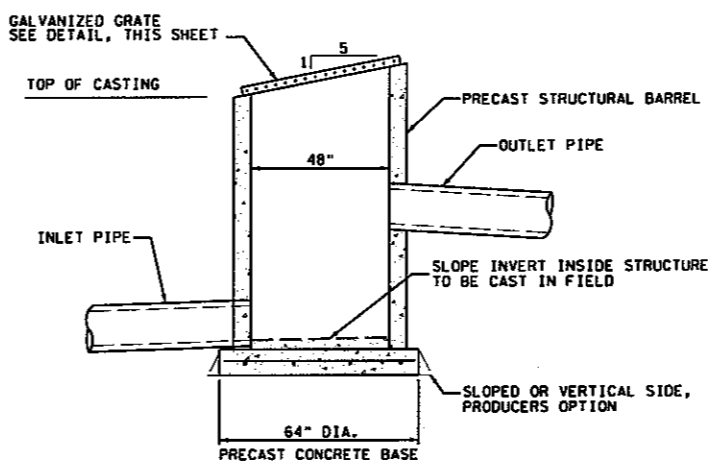
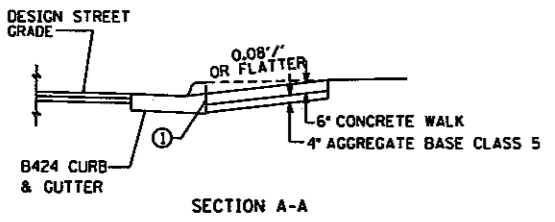
NOTE: SUBGRADE EXCAVATION, GRANULAR BORROW AND AGGREGATE BASE TO BE CARRIED THROUGH ENTIRE WIDTH OF MEDIAN WHEN MEDIAN WIDTH IS 4'.

DETAIL A
CONCRETE MEDIAN

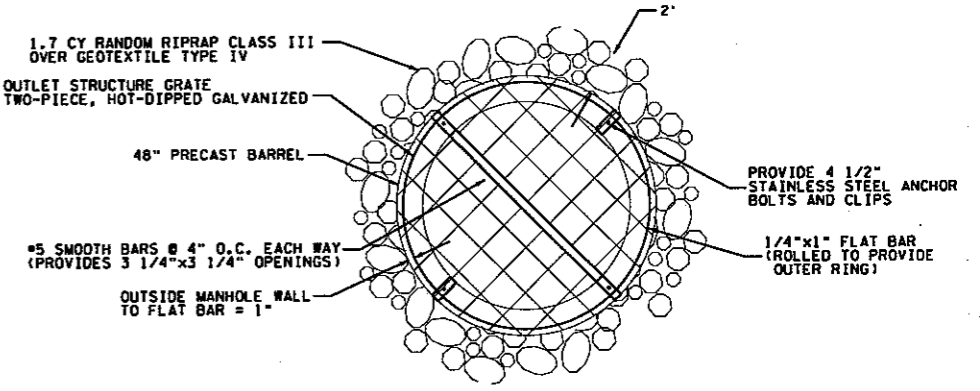


- NOTES:
- ① 1/2" PREFORMED JOINT FILLER MATERIAL, AASHTO M 213
 - ② PEDESTRIAN CURB RAMPS PLACED IN AREAS WITHOUT CURB & GUTTER SHALL BE CONSTRUCTED AS CLOSE TO THIS DETAIL AS POSSIBLE AND MUST BE APPROVED BY THE ENGINEER BEFORE FINAL PLACEMENT. MINOR GRADING TO PROVIDE A LANDING AREA AT THESE LOCATIONS IS INCIDENTAL.

PEDESTRIAN CURB RAMP DETAIL ②
NO SCALE



NOTE: PRECAST BARREL AND BASE SLAB SHALL CONFORM TO MNDOT STD. PL. 4020.
TYPICAL SECTION SKIMMER MANHOLE STRUCTURES 498 AND 598



TYPICAL SKIMMER MANHOLE GRATE AND RIPRAP DETAIL
(2506.502) CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1

DESIGN TEAM				
DRAWN BY: CJE				
DESIGNER: JEQ				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark R. Dierling* Lic. No. 21098

Printed Name: MARK R. DIERLING Date: 4/2/2010



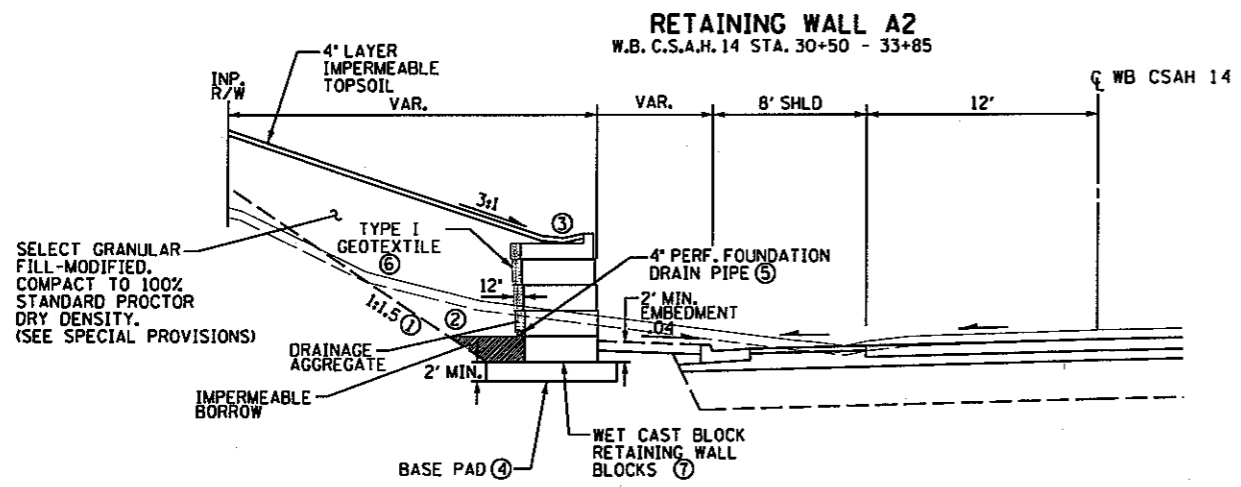
ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

MISCELLANEOUS DETAILS
DRAINAGE DESIGN SPECIAL STRUCTURE, PEDESTRIAN CURB RAMP DETAIL, CONCRETE AND LANDSCAPE MEDIAN DETAILS, MUCK EXCAVATION DETAIL

8:48:43 AM

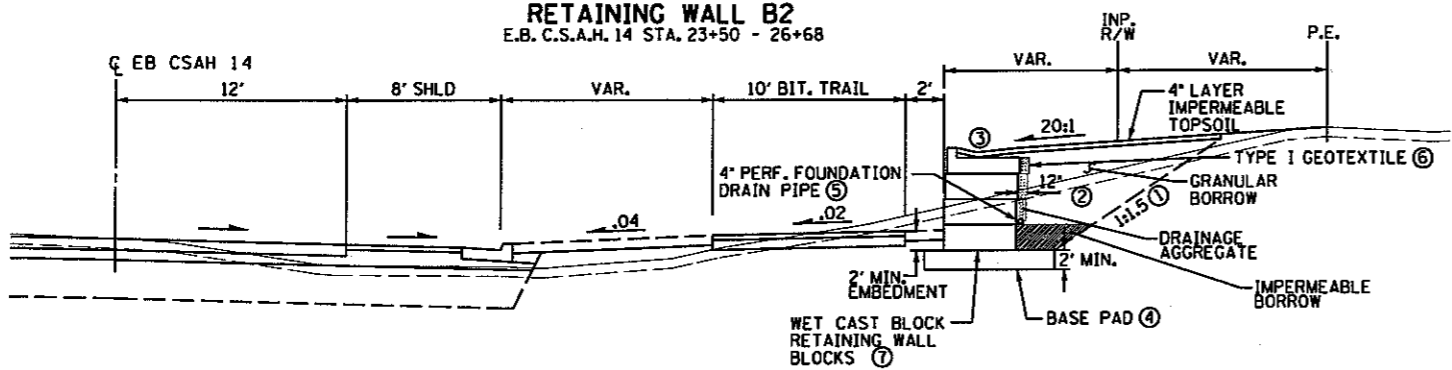
4/8/2010

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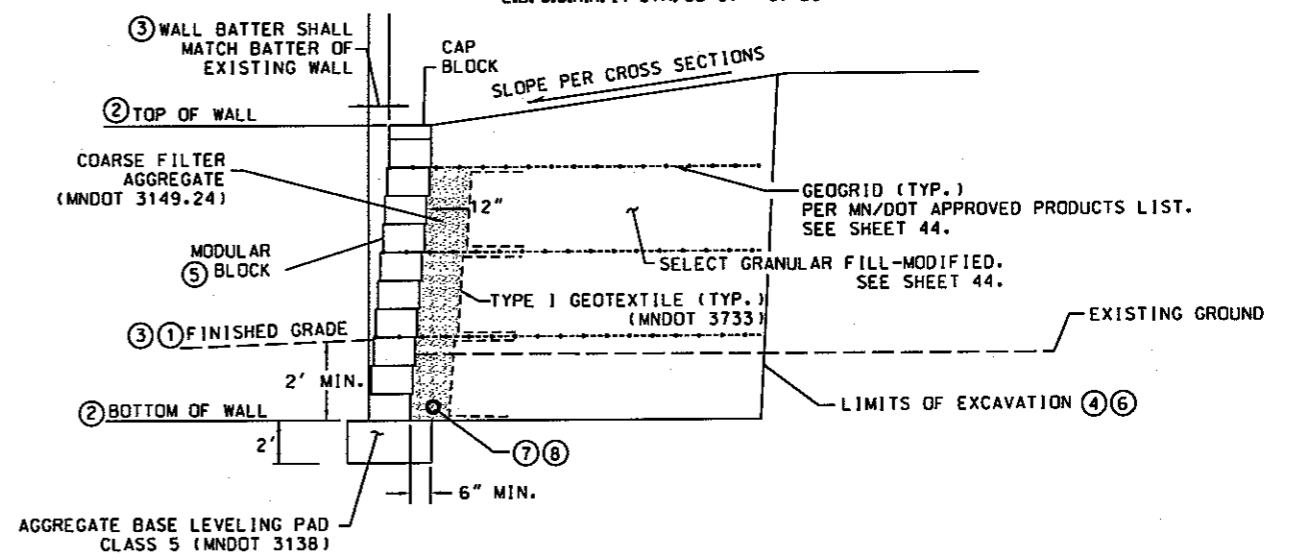
RETAINING WALL B
E.B. C.S.A.H. 14 STA. 19+30 - 19+90

RETAINING WALL B2
E.B. C.S.A.H. 14 STA. 23+50 - 26+68



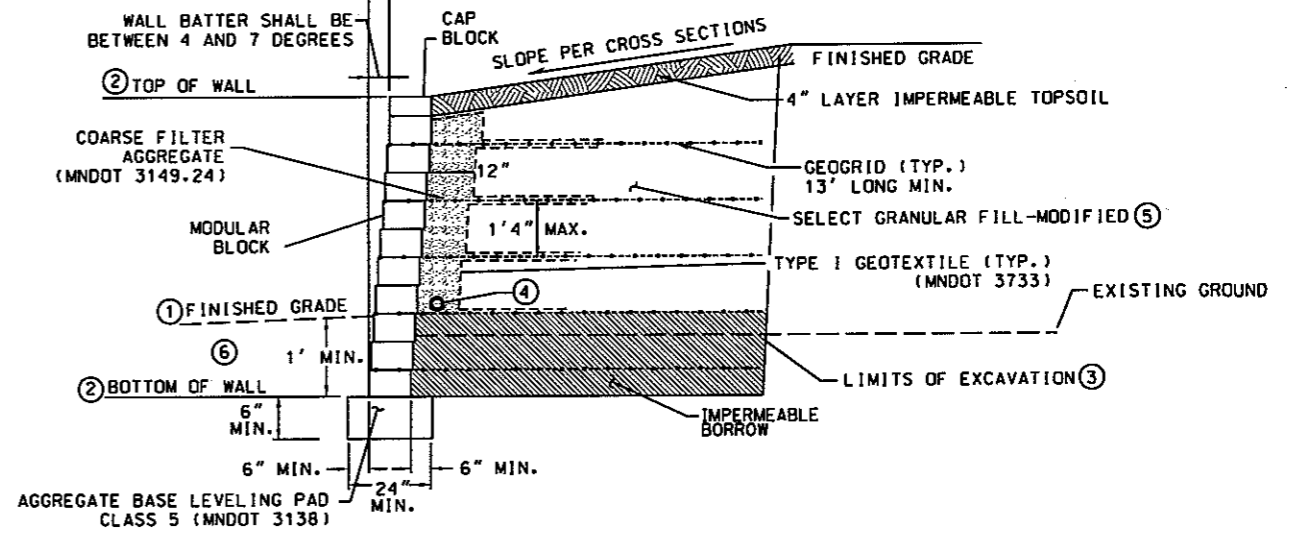
- NOTES:
- 1 MODIFY BACKSLOPE AND PROVIDE TEMPORARY EARTH SUPPORT AS NECESSARY TO MAINTAIN EXCAVATION WITHIN PERMANENT EASEMENT.
 - 2 EXISTING UTILITIES SHALL BE REMOVED OR RELOCATED PRIOR TO EXCAVATION.
 - 3 PROVIDE SWALE TO DRAIN.
 - 4 BASE OF EXCAVATION MAY BE IN FILL SOILS. FOUNDATION SOILS AT BASE OF EXCAVATION SHALL BE OBSERVED BY GEOTECHNICAL ENGINEER PRIOR TO WALL CONSTRUCTION.
 - 5 FOUNDATION DRAIN SHALL BE SLOPED TO DRAIN TO OUTLETS PROVIDED THROUGH FACE OF WALL EVERY 50'.
 - 6 WRAP DRAINAGE AGGREGATE WITH TYPE I GEOTEXTILE.
 - 7 BOTTOM BLOCK ON TOP OF BASE PAD SHALL BE 60" MINIMUM IN WIDTH, OTHER BLOCKS SHALL BE 41" MINIMUM IN WIDTH.

RETAINING WALL F 9
E.B. C.S.A.H. 14 STA. 66+07 - 67+50



- NOTES:
- 1 RETAINING WALL ALIGNMENT LOCATION IS AT BOTTOM OF FINISHED FACE OF WALL.
 - 2 TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 2 FEET ALONG ENTIRE WALL ALIGNMENT
 - 3 RETAINING WALL F SHALL TIE INTO EXISTING MODULAR BLOCK WALL. COUNTY SHALL PROVIDE BLOCK TYPE, SIZE, CUT, AND COLOR TO CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS.
 - 4 IT IS ANTICIPATED THAT PARTIAL EXHUMATION OF THE EXISTING MODULAR BLOCK WALL SHALL BE REQUIRED TO CONSTRUCT RETAINING WALL F. EXHUMATION OF EXISTING WALL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF RETAINING WALL F. EXHUMED PORTION OF EXISTING WALL SHALL BE RECONSTRUCTED IN CONJUNCTION WITH CONSTRUCTION OF RETAINING WALL F.
 - 5 EXHUMED MODULAR BLOCK AND GEOGRID REINFORCEMENT SHALL NOT BE RE-USED. EXHUMED SOIL MATERIAL AND DRAINAGE AGGREGATE MAY BE RE-USED PER APPROVAL BY ENGINEER. ENGINEER MAY REQUIRE TESTING OF EXHUMED SOIL MATERIALS TO VERIFY THEY MEET DESIGN CRITERIA. THIS TESTING SHALL BE INCIDENTAL TO CONSTRUCTION OF RETAINING WALL F.
 - 6 PAY LIMITS OF STRUCTURAL EXCAVATION, ACTUAL BACKSLOPE PER OSHA. EXCAVATION BEYOND STRUCTURAL EXCAVATION LIMITS AT CONTRACTOR'S EXPENSE
 - 7 4" THERMOPLASTIC PERFORATED PIPE (MNDOT 3245), WRAP WITH TYPE I GEOTEXTILE (MNDOT 3733), INSTALLATION PER MNDOT 2502. PRECAST CONCRETE HEADWALL AT OUTLET MAY BE REQUIRED PER ENGINEER.
 - 8 THE INTERNAL DRAINAGE COLLECTION PIPE FOR RETAINING WALL F SHALL TIE INTO COLLECTION PIPE FOR EXISTING WALL AND SHALL FACILITATE DRAINAGE OF WATER AWAY FROM WALLS.
 - 9 CONTRACTOR SHALL PREPARE AND SUBMIT FINAL DETAILED SHOP DRAWINGS FOR WALL F. FINAL DETAILED SHOP DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH MN/DOT STANDARD PLAN SHEETS FOR MODULAR BLOCK RETAINING WALL. SEE SHEETS 43-45 FOR REFERENCE.

RETAINING WALL A
E.B. C.S.A.H. 14 STA. 21+00 - 23+00



- NOTES:
- 1 RETAINING WALL ALIGNMENT LOCATION IS AT BOTTOM OF FINISHED FACE OF WALL.
 - 2 TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 2 FEET ALONG ENTIRE WALL ALIGNMENT
 - 3 PAY LIMITS OF STRUCTURAL EXCAVATION, ACTUAL BACKSLOPE PER OSHA. EXCAVATION BEYOND STRUCTURAL EXCAVATION LIMITS AT CONTRACTOR'S EXPENSE.
 - 4 4" THERMOPLASTIC PERFORATED PIPE (MNDOT 3245), WRAP WITH TYPE I GEOTEXTILE (MNDOT 3733), INSTALLATION PER MNDOT 2502. PRECAST CONCRETE HEADWALL AT OUTLET MAY BE REQUIRED PER ENGINEER.
 - 5 COMPACT TO 100% STANDARD PROCTOR DRY DENSITY. SEE SPECIAL PROVISIONS.
 - 6 LOCATION OF ALL EXISTING UTILITIES SHALL BE VERIFIED PRIOR TO CONSTRUCTION.

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEQ				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
Printed Name: MARK R. DIERLING Date: 4/8/2010



PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

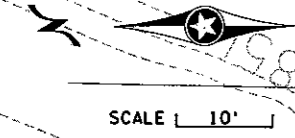


ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

MISCELLANEOUS DETAILS
RETAINING WALL DETAILS

FILE NO. 102287	26
MD3	194
OF 007	

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4/2/2010
MD4
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SCALE 10'

RANDOM RIPRAP CL IV WITH TYPE IV GEOTEXTILE FABRIC

- NOTES:
1. ANY NECESSARY GRADING AS PART OF THE CULVERT REPLACEMENT UPSTREAM OR DOWNSTREAM IS CONSIDERED INCIDENTAL TO PIPE.
 2. THE LAST 3 PIPE JOINTS AND FLARED END SECTION JOINT, AT EACH END SHALL BE TIED TOGETHER, INCIDENTAL TO PIPE.

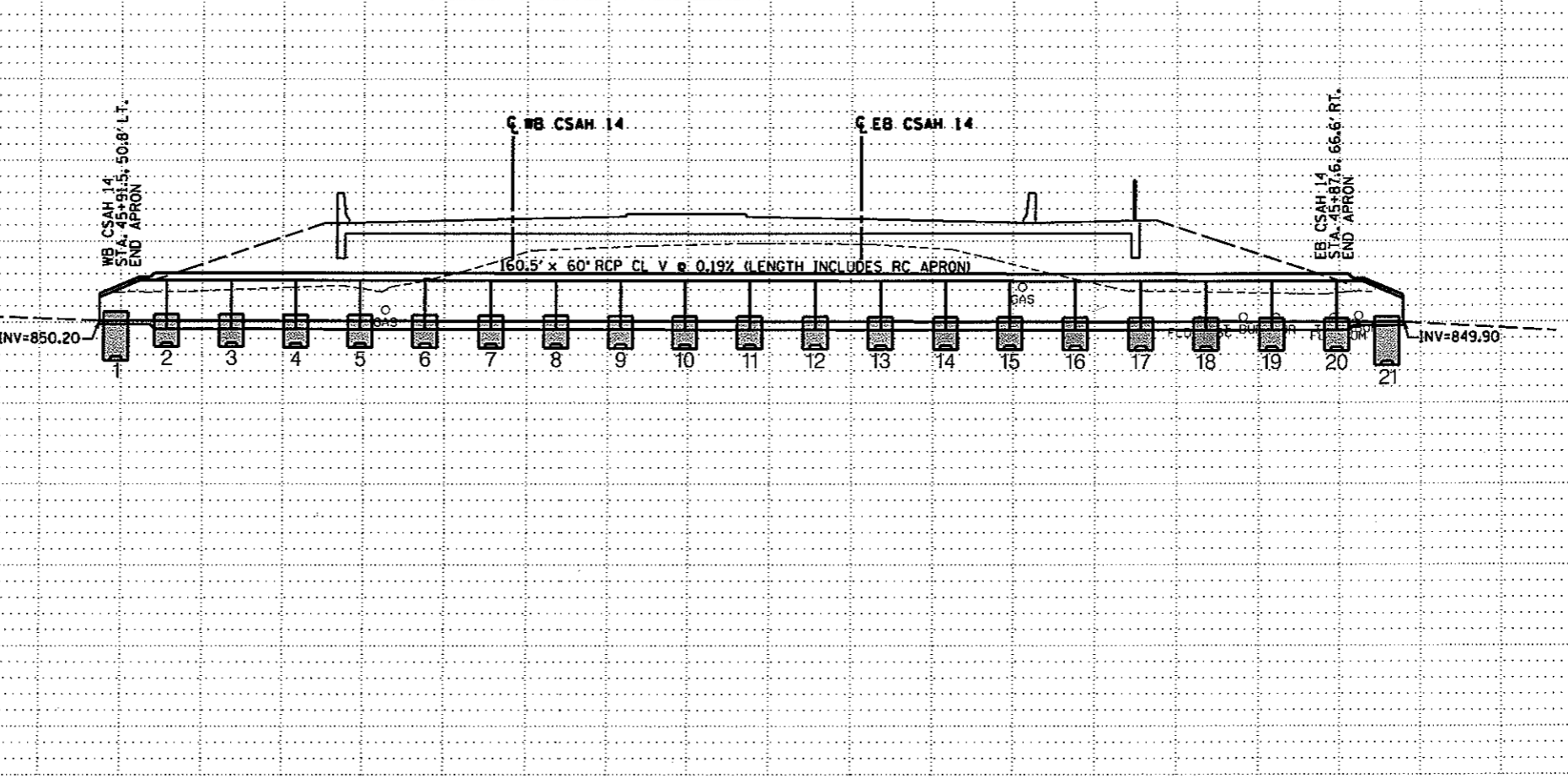
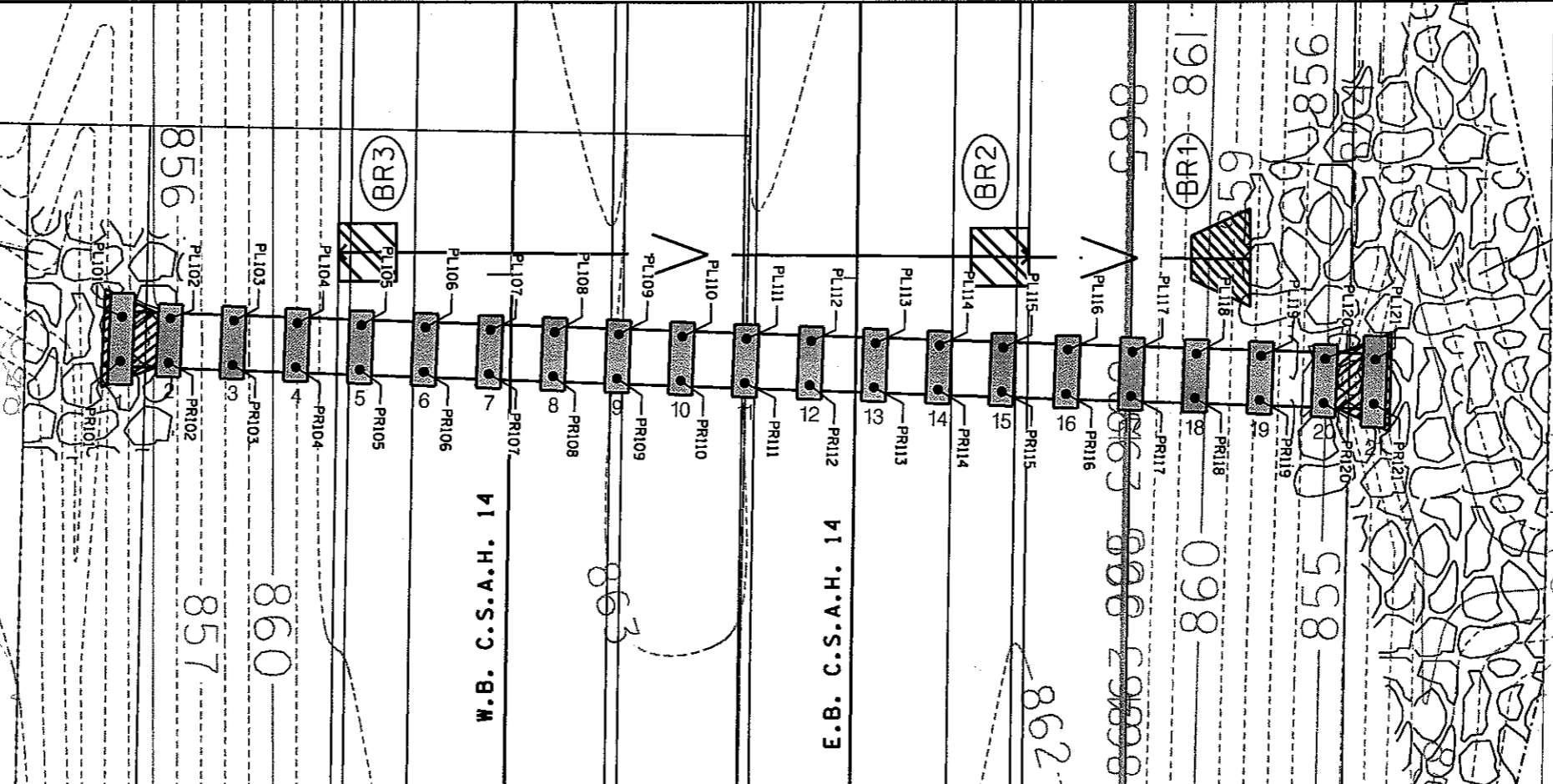
RIPRAP CL IV WITH TYPE IV GEOTEXTILE FABRIC

PILE CAP POINTS

PIPE CAP NO.	PT. NO.	OFFSET LEFT OF C/L PIPE		OFFSET RIGHT OF C/L PIPE	
		X	Y	X	Y
1	PL101	487794.7885	159223.4747	PR101	487789.2918
2	PL102	487794.5807	159217.4783	PR102	487789.0840
3	PL103	487794.3036	159209.4831	PR103	487788.8069
4	PL104	487794.0265	159201.4879	PR104	487788.5298
5	PL105	487793.7493	159193.4927	PR105	487788.2526
6	PL106	487793.4722	159185.4975	PR106	487787.9755
7	PL107	487793.1951	159177.5023	PR107	487787.6984
8	PL108	487792.9180	159169.5071	PR108	487787.4213
9	PL109	487792.6409	159161.5119	PR109	487787.1442
10	PL110	487792.3638	159153.5167	PR110	487786.8671
11	PL111	487792.0867	159145.5215	PR111	487786.5900
12	PL112	487791.8096	159137.5263	PR112	487786.3129
13	PL113	487791.5325	159129.5311	PR113	487786.0358
14	PL114	487791.2554	159121.5359	PR114	487785.7587
15	PL115	487790.9783	159113.5407	PR115	487785.4816
16	PL116	487790.7012	159105.5455	PR116	487785.2045
17	PL117	487790.4241	159097.5503	PR117	487784.9274
18	PL118	487790.1469	159089.5551	PR118	487784.6503
19	PL119	487789.8698	159081.5599	PR119	487784.3731
20	PL120	487789.5927	159073.5647	PR120	487784.0960
21	PL121	487789.3156	159065.5695	PR121	487783.8189

PILE CAP TABULATION

880	C.I.P. CONC. TEST PILE 120' LONG	PIPE CAP NO.	LENGTH FT.	TOP OF PILE ELEV.	INVERT OF PIPE ELEV.	880
	1	UP FES INV	0	850.20	850.20	
870		1	2	845.45	850.20	
		2	8.25	847.40	850.18	
		3	16.25	847.38	850.17	
		4	24.25	847.37	850.15	
		5	32.25	847.35	850.14	
860		6	40.25	847.34	850.12	
		7	48.25	847.32	850.11	
		8	56.25	847.31	850.09	
		9	64.25	847.29	850.08	
850		10	72.25	847.28	850.06	
		11	80.25	847.27	850.05	
		12	88.25	847.25	850.04	
		13	96.25	847.24	850.02	
840		14	104.25	847.22	850.01	
		15	112.25	847.21	849.99	
		16	120.25	847.19	849.98	
		17	128.25	847.18	849.96	
830		18	136.25	847.16	849.95	
		19	144.25	847.15	849.93	
		20	152.25	847.13	849.92	
	1	21	158.5	845.16	849.90	
820		DN FES INV	160.5	849.90	849.90	
810						

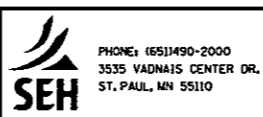


DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	

REVISIONS			

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 4/2/2010

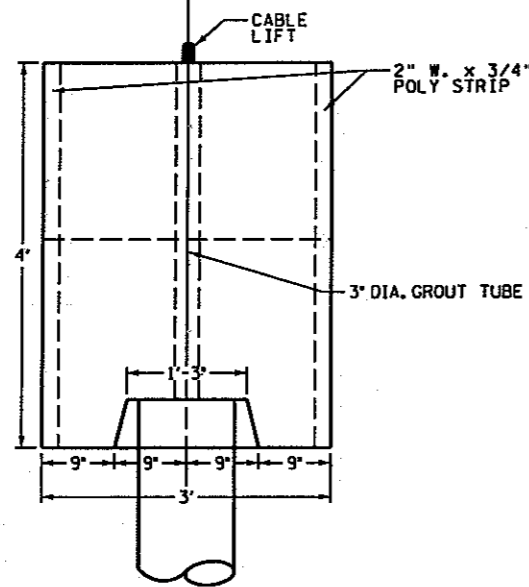
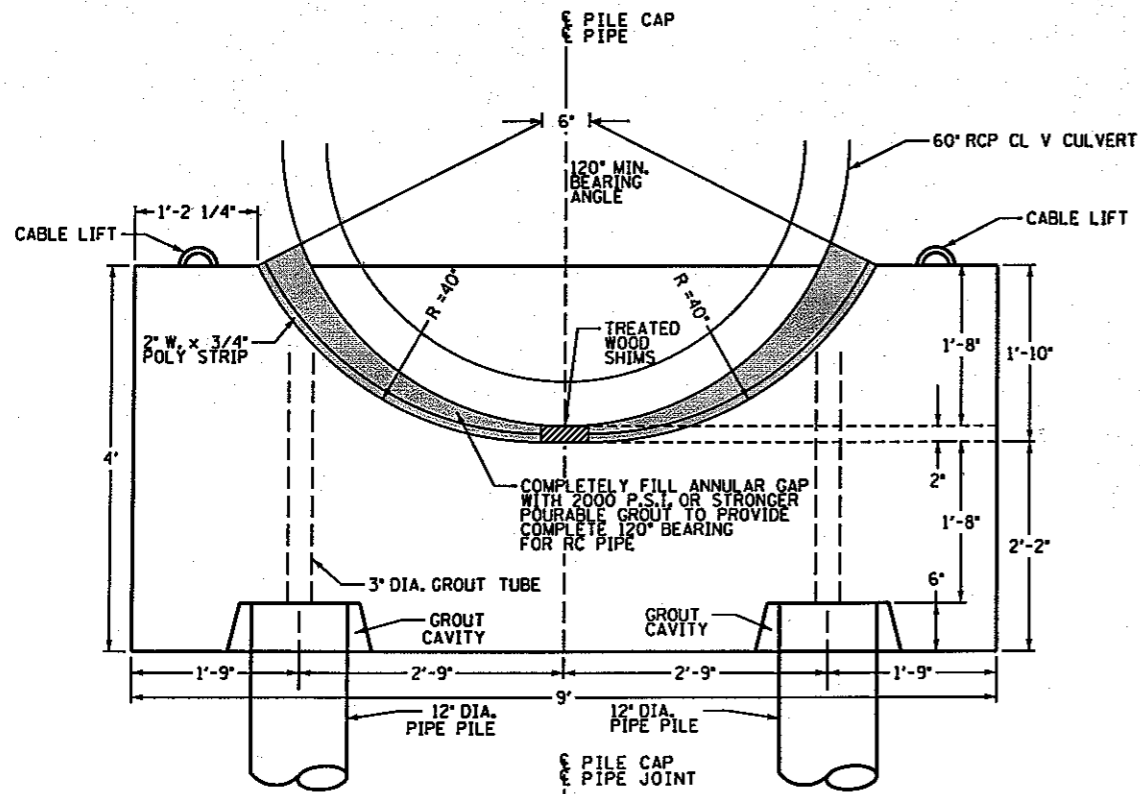


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

MISCELLANEOUS DETAILS
 60" RC PIPE CULVERT AT LAND BRIDGE

FILE NO.	27
102287	
MD4	194
OF MD7	

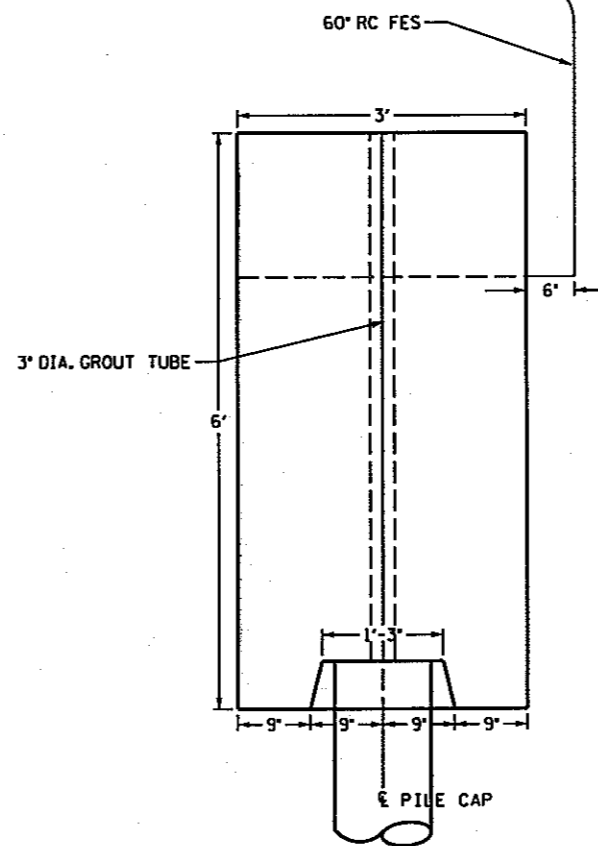
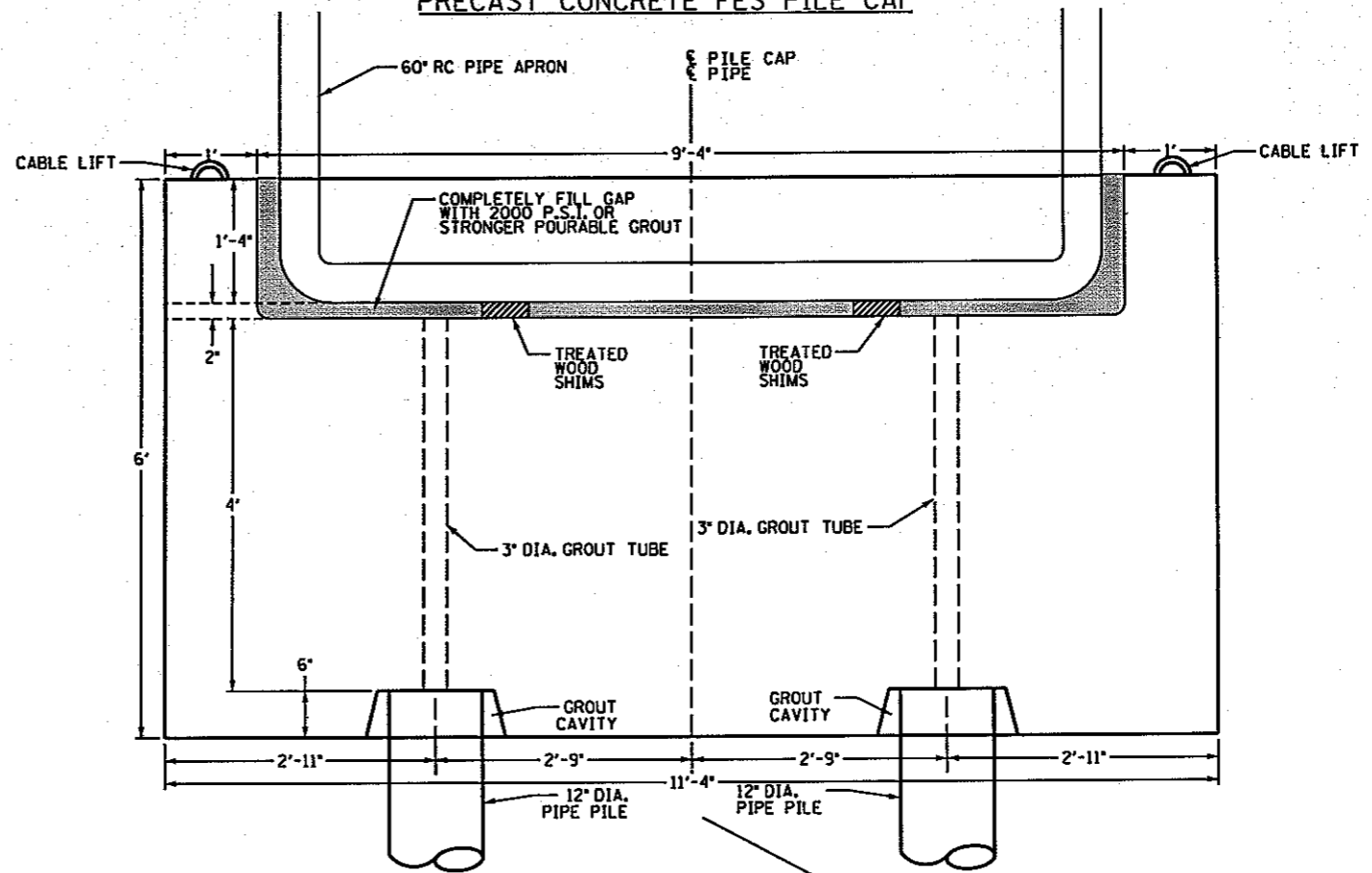
PRECAST CONCRETE PIPE PILE CAP



PIPE PILE CAP:

1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND CALCULATIONS FOR THE PRECAST CONCRETE PIPE CAPS.
2. FULLY GROUT PIPE CAP CAVITY BEFORE INSTALLING PIPE.
3. CONCRETE-
PIPE PILE CAP:
COMPRESSIVE STRENGTH IN 28 DAYS.
f'c = 4,000 PSI MIN. CONCRETE STRENGTH
AIR ENTRAINED WITH 6.5% AIR ENTRAINMENT.
3/8" AGGREGATE
4. REINFORCING STEEL -
ASTM A615 GRADE 60 (INCIDENTAL TO PILE CAPS).
Fy = 60,000 PSI
5. GROUT SHALL BE MINIMUM 2000 PSI STRENGTH POURABLE GROUT.
6. 1/4" PER FOOT TAPER ON EACH SIDE.
7. PIPE JOINT TOLERANCE ±3" OF CENTERLINE PIPE CAP.

PRECAST CONCRETE FES PILE CAP



FOUNDATION NOTES:

1. PILES SHALL BE 12" NOMINAL DIAMETER STEEL PIPES, FILLED WITH CONCRETE IN ACCORDANCE WITH MN/DOT 2452 AND MN/DOT 3371.

GENERAL NOTES:

1. DRAWING SHALL NOT BE SCALED.
2. DETAILS OF CONSTRUCTION MATERIAL AND WORKMANSHIP NOT SHOWN IN THESE PLANS, SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS.
3. 3/4" CHAMFER ON ALL EXPOSED CONCRETE EDGES UNLESS NOTED OTHERWISE.
4. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2' MIN UNLESS OTHERWISE SHOWN OR NOTED.
5. QUANTITIES FOR ALL PRECAST CONCRETE PIPE CAPS WILL BE PAID FOR PER EACH, ACCORDING TO THE UNIT PRICES IN THE BID SCHEDULE. SEPERATE PAYMENT WILL NOT BE MADE FOR THE TWO DIFFERENT TYPES OF PILE CAPS AS SHOWN IN THE DETAILS. THE PIPE PILE CAP AND FLARED END SECTION PILE CAP WILL BE PAID FOR UNDER THE SAME BID ITEM (PRECAST CONCRETE CAP).
6. SEE SITE DRAWINGS FOR LOCATION ORIENTATION OF PRECAST CONCRETE PILE CAPS.

DESIGN TEAM					
DRAWN BY: CIF					
DESIGNER: RSN					
CHECKED BY: JJW					
NO.	BY	DATE	REVISIONS		

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010

SEH
 PHONE: 651-490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

MISCELLANEOUS DETAILS
 60" RC PIPE CULVERT PIPE CAP DETAILS

FILE NO.	28
102287	
MD5	194
OF MD7	

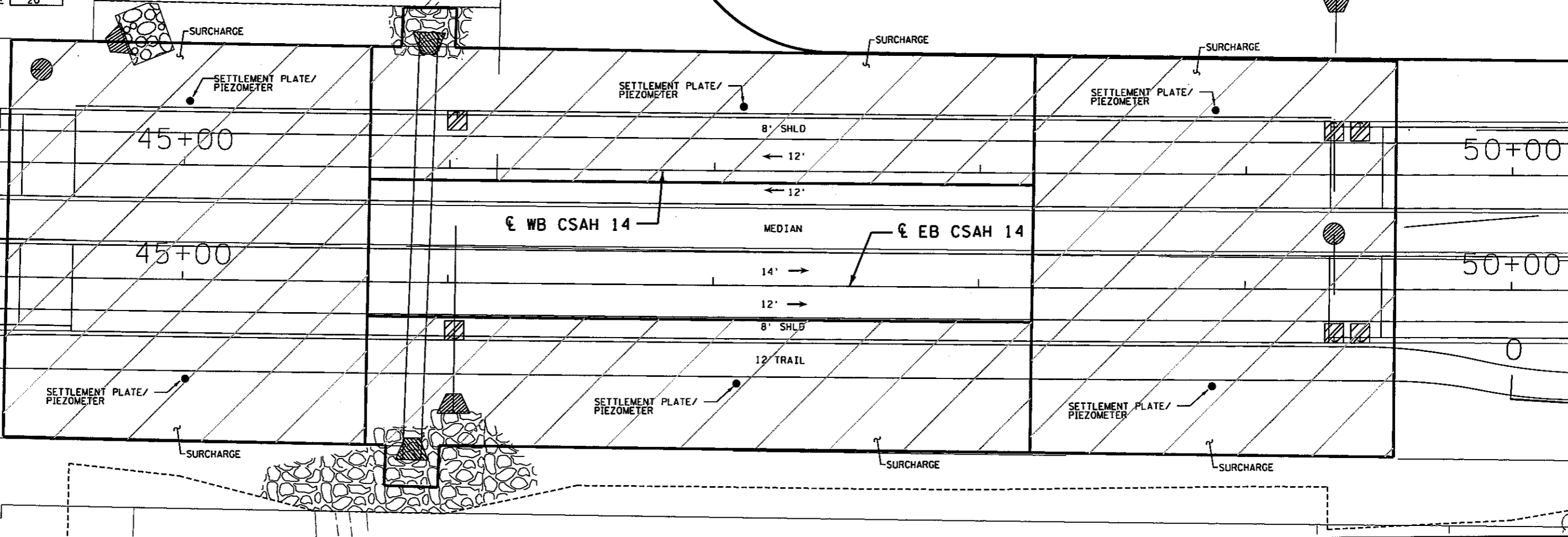
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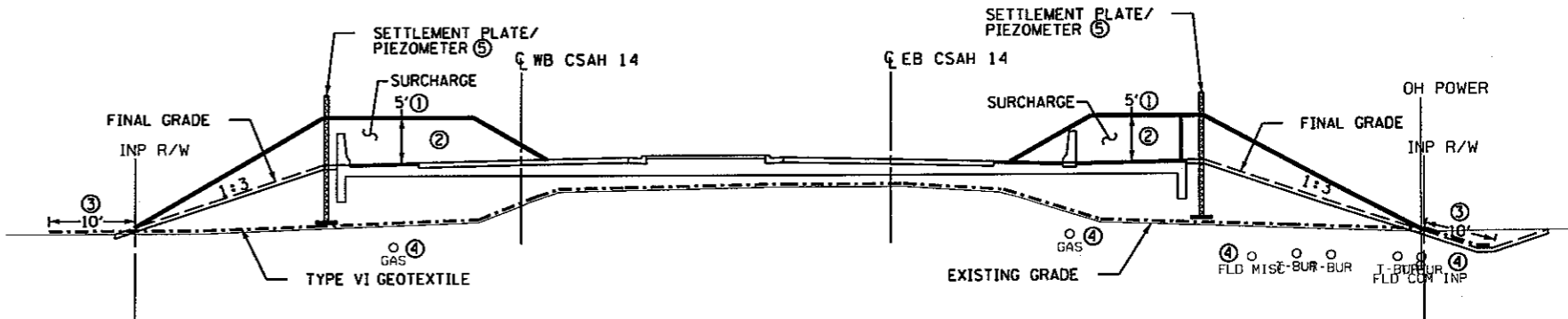
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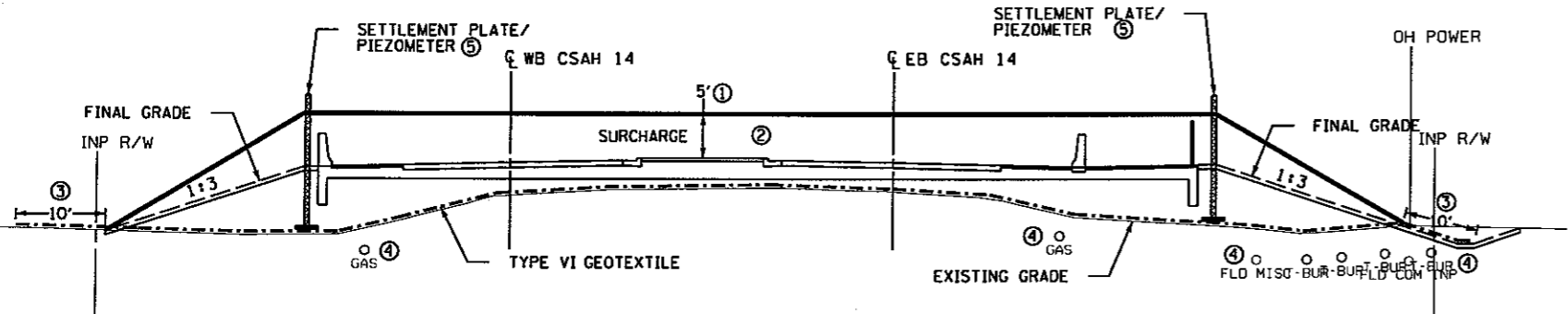
SCALE 20'



**SURCHARGE TYPICAL SECTION
MIDDLE SECTIONS**



**SURCHARGE TYPICAL SECTION
END SECTIONS**

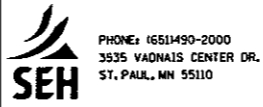


- NOTES:**
- ① SURCHARGE THICKNESS SHALL BE 5 FEET MINIMUM.
 - ② SURCHARGE SHALL CONSIST OF GRANULAR BORROW.
 - ③ TYPE VI GEOTEXTILE SHALL EXTEND 10 FEET MINIMUM BEYOND EMBANKMENT TOE.
 - ④ EXISTING SUBSURFACE UTILITIES SHALL BE RELOCATED PRIOR TO TYPE VI GEOTEXTILE INSTALLATION.
 - ⑤ SETTLEMENT PLATES AND PIEZOMETERS SHALL BE INSTALLED IN CONJUNCTION WITH TYPE VI GEOTEXTILE INSTALLATION.

DESIGN TEAM			
DRAWN BY:	CIE		
DESIGNER:	JEO		
CHECKED BY:	MJD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/2/2010



ANOKA COUNTY, MN.
CSAH 14
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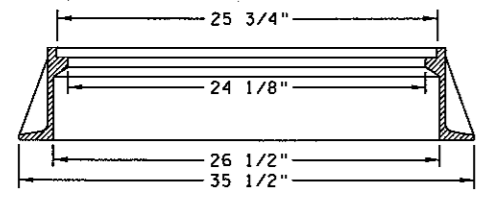
MISCELLANEOUS DETAILS
 SURCHARGE AREA AT BRIDGE

FILE NO. 102287	29
MD6 OF MD7	

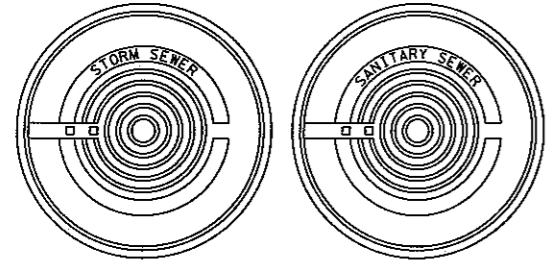
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4/7/2010

RING CASTING - NEENAH FOUNDRY NO. R-1733 SERIES MANHOLE FRAME OR APPROVED EQUAL.

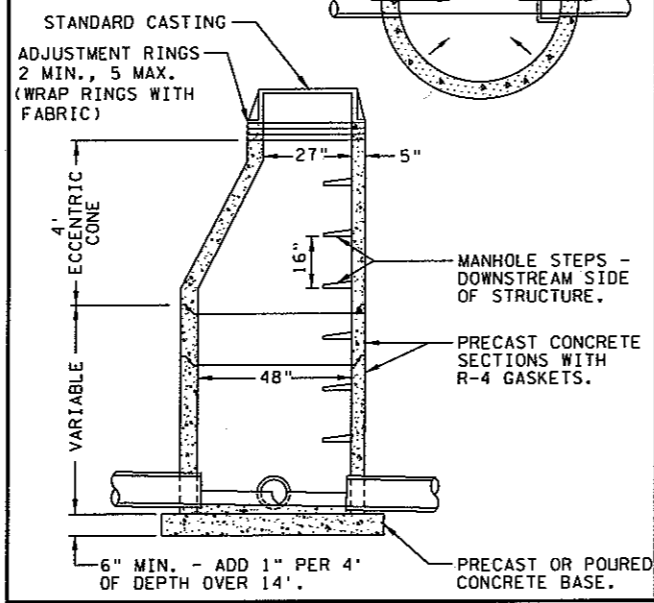


COVER - ESS BROTHERS 301-CP LID. OR EQUAL NEENAH R1733-5001 NEENAH R1733-5002

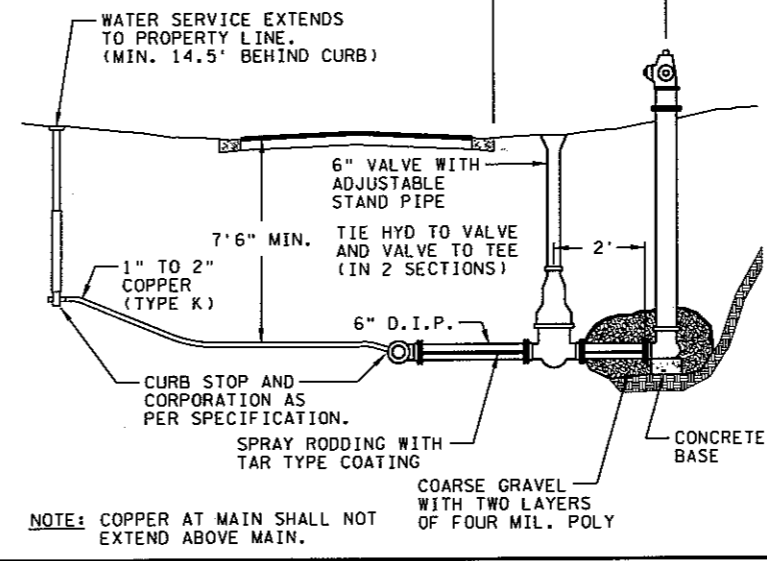


CITY OF COON RAPIDS STANDARD MANHOLE CASTINGS

GROUT BOTTOM TO 1/2 PIPE DIAMETER AND SLOPE AS SHOWN BY ARROWS.

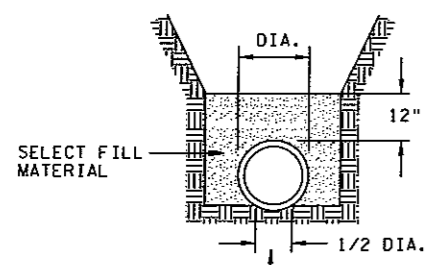


CITY OF COON RAPIDS STANDARD MANHOLE



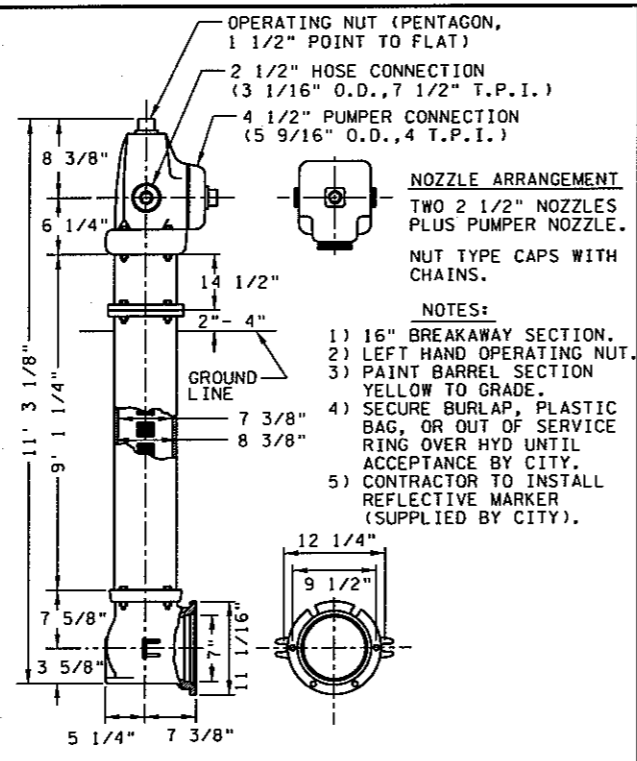
CITY OF COON RAPIDS TYPICAL HYDRANT & WATER SERVICE LAYOUT

NOTE: SURROUND THE PIPE TO A MINIMUM OF 12" ABOVE IT'S TOP WITH SELECT FILL MATERIAL, PLACED IN 2 LIFTS, FIRST LIFT NO MORE THAN 1' DEPTH, AND COMPACTED WITH GAS POWERED WHACKER FOR FULL LENGTH OF THE PIPE, TO ENSURE FILLING OF ALL VOIDS UNDER AND ADJACENT TO THE PIPE.

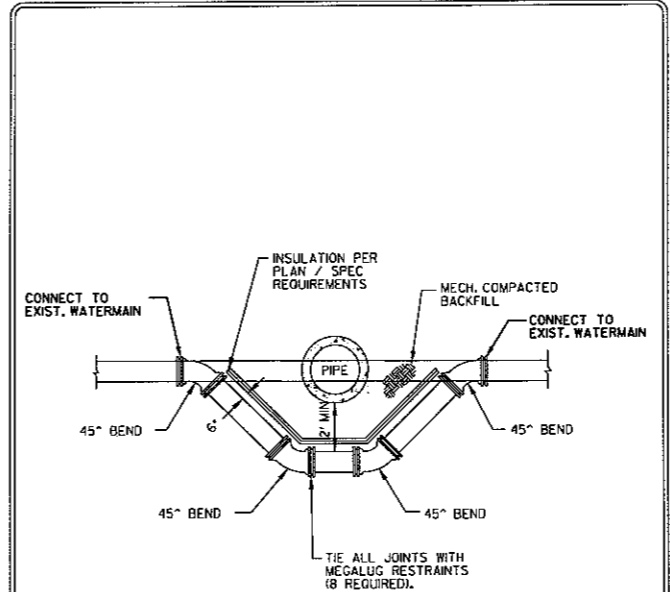


THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 1/2 OF THE OUTSIDE PIPE DIAMETER.

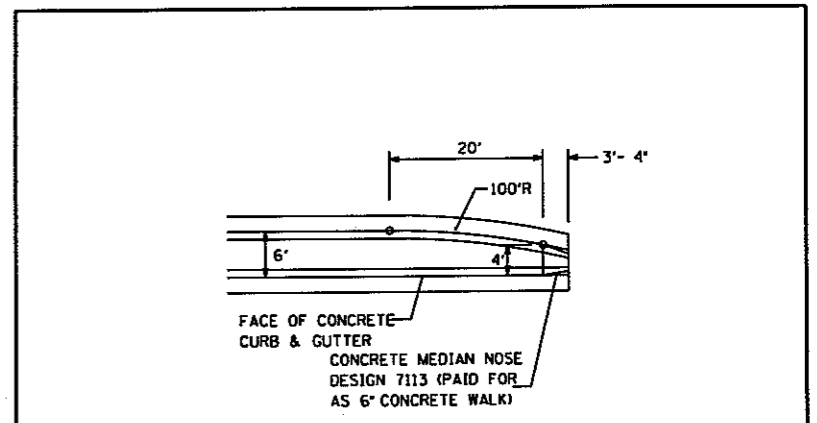
CITY OF COON RAPIDS CLASS C PIPE BEDDING



CITY OF COON RAPIDS HYDRANT DETAIL



SEH STANDARD DETAILS LOWER WATERMAIN



CONCRETE MEDIAN NOSE DETAIL NO SCALE

S:\AAE\A\Anoka\102287\5-dsgn\SI-cadd\Civil\pshshts\ano102.mxd.dgn

DESIGN TEAM				
DRAWN BY: CIE				
DESIGNER: JEO				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 4/7/2010

SEH PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

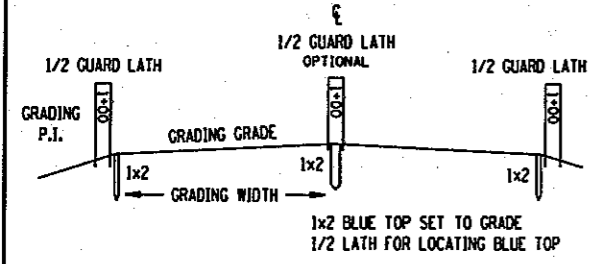
MISCELLANEOUS DETAILS
 CITY OF COON RAPIDS STANDARD DETAILS.
 LOWER WATERMAIN DETAILS, CONCRETE MEDIAN NOSE DETAIL

FILE NO. 30
 102287
 MD7
 OF MD7 194

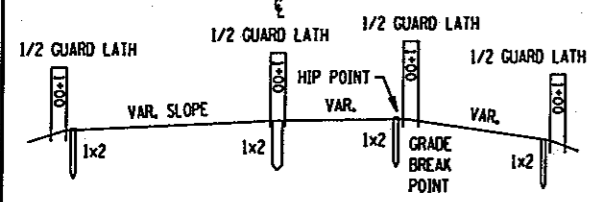
1201119 AN
 PLOTTED/REVISED: 1/21/2010
 \$\$\$DATE\$\$\$

BLUE TOPS

NORMAL SECTION

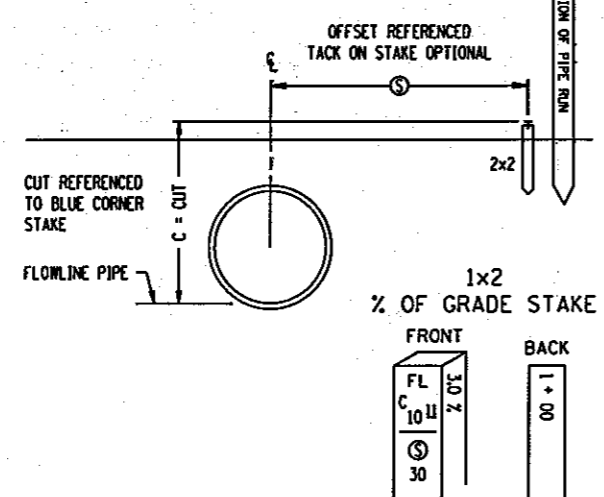


TRANSITION SECTION



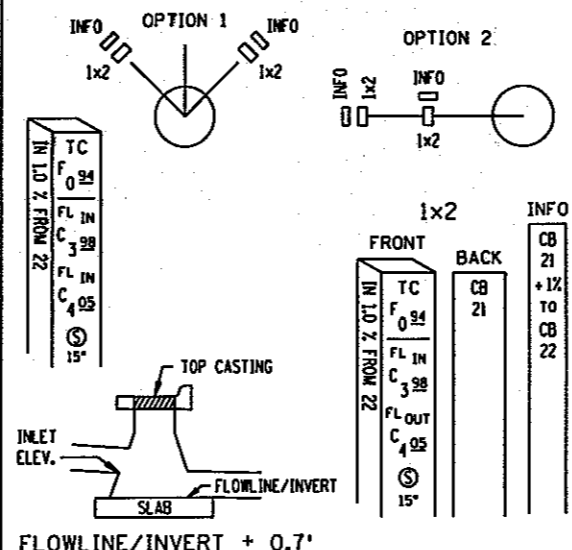
PIPE STAKING

**PROFILE VIEW
CENTERLINE PIPE**

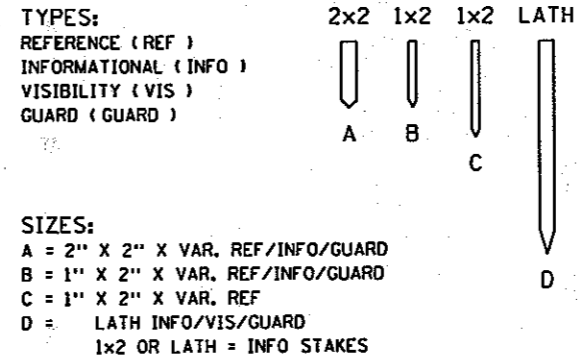


CATCH BASIN OR MANHOLE (CB/MH)

TOP VIEWS



STANDARD STAKES



TYPES:
 REFERENCE (REF)
 INFORMATIONAL (INFO)
 VISIBILITY (VIS)
 GUARD (GUARD)

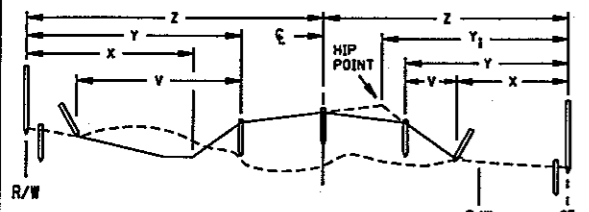
SIZES:
 A = 2" X 2" X VAR. REF/INFO/GUARD
 B = 1" X 2" X VAR. REF/INFO/GUARD
 C = 1" X 2" X VAR. REF
 D = LATH INFO/VIS/GUARD
 1x2 OR LATH = INFO STAKES

ABBREVIATIONS

- BBL = BARREL (PIPE)
- B.C. = BACK CURB
- C & G = CURB & GUTTER
- C = CUT
- CAP = CORR. ALUM. PIPE
- CB = CORNER BASIN
- CL = CENTERLINE
- CL & GR = CLEAR & GRUB
- CMP = CORR. METAL PIPE
- COR = CORNER
- CR = CROWN
- CSP = CORR. STEEL PIPE
- ☒ = 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'



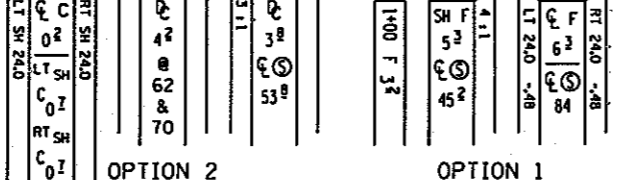
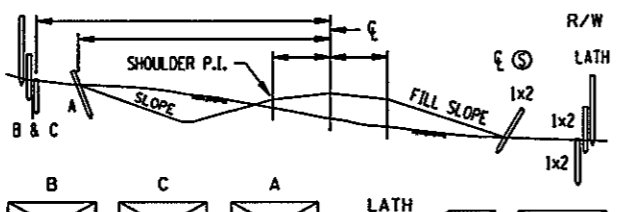
STAKE 'A'
 FULL LATH AND HUB-STATION
 DIST. TO CL WITH CUT/FILL TO CL (Z)
 DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y)(Y)
 DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
 OFFSET TO SAFETY SLOPE
 OFFSET TO HIP POINT

STAKE 'B'
 FULL LATH
 DITCH CUT/SHLD. FILL
 SLOPE RATED
 DISTANCE TO INSLOPE
 TOE (Y) OR SHOULDER
 (AS APPLIES) (V)

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

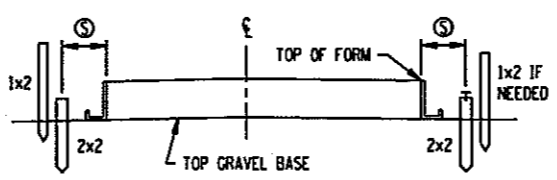
SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'B'

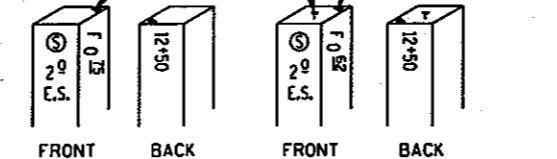


NOTE: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM CL.
 STAKE TO BOTTOM OF TOP SOIL.
KEY STAKES: BLUE TOP SET AT R/W BOUNDARY LT. & RT.
 MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION
 MARK ON CORNER OF STAKE FOR ELEVATION REFERENCE
 ALIGNMENT TACK
 MARK ON CORNER OF STAKE FOR ELEVATION REFERENCE STATIONING



NOTE: INFORMATION ON STAKE IF NECESSARY

RECOMMENDED STAKING INTERVALS

FIGURE A

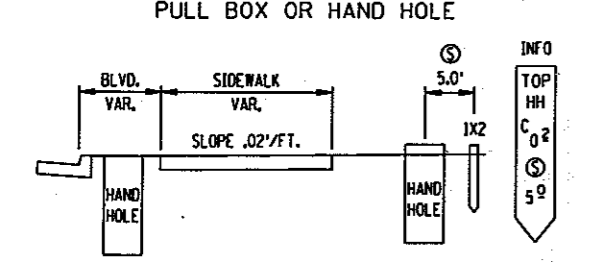
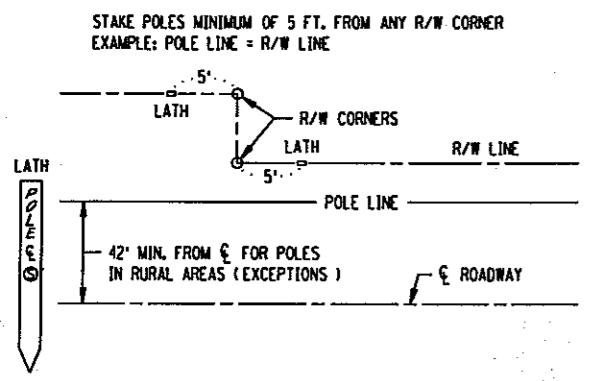
	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS
HORIZ. CURVE								
0 - 3'	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS
OVER 3' -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS
VERT. CURVE								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

STAKING TOLERANCES (FEET)

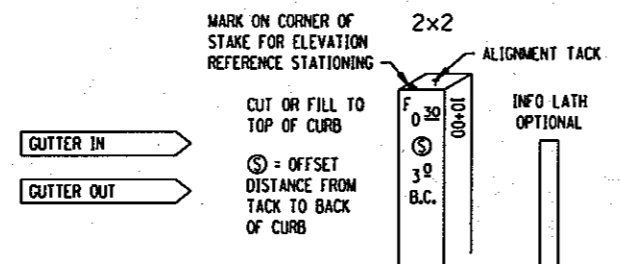
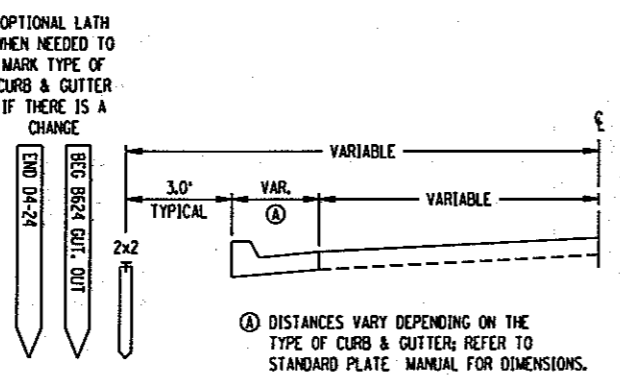
	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPE STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION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

THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

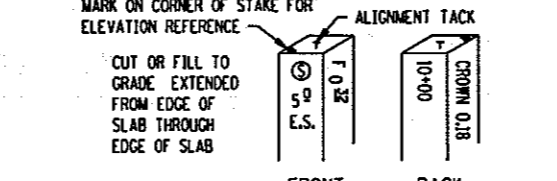
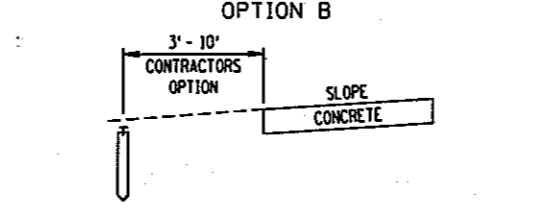
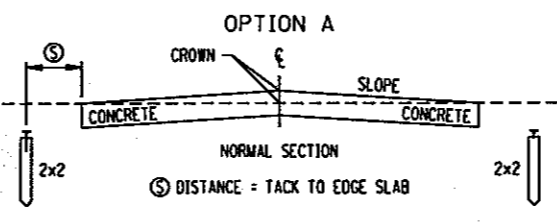


CURB & GUTTER (CURB)



NOTE: DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.
 MARK ON CORNER OF STAKE FOR ELEVATION REFERENCE STATIONING
 ALIGNMENT TACK
 INFO LATH OPTIONAL
 CUT OR FILL TO TOP OF CURB
 ☉ = OFFSET DISTANCE FROM TACK TO BACK OF CURB

CONCRETE PAVING - SLIP FORM



NOTE: DISTANCE = TACK TO EDGE SLAB
 MARK ON CORNER OF STAKE FOR ELEVATION REFERENCE
 ALIGNMENT TACK
 CUT OR FILL TO GRADE EXTENDED FROM EDGE OF SLAB THROUGH EDGE OF SLAB

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.

SPN1 OF SPN17

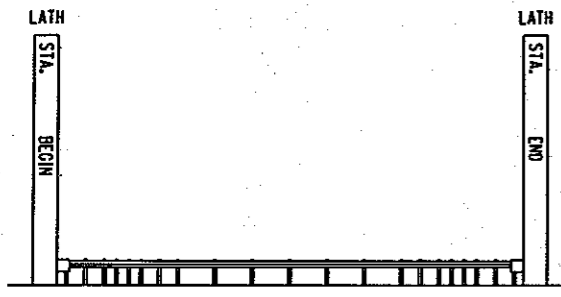
STANDARD SHEET NO.
 5-297.115 (1 OF 2)
 STANDARD APPROVED
 DECEMBER 21, 1994

STAKING INFORMATION SHEET

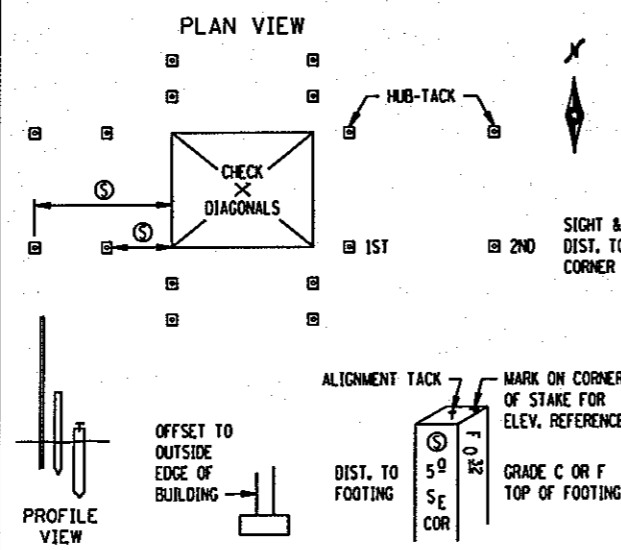
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 31 OF 194 SHEETS

DISTRICT #: \$DISTRICT\$
 USER NAME: \$USER\$
 PATH & FILENAME: \$PATH\$
 FILE NAME: \$FILENAME\$

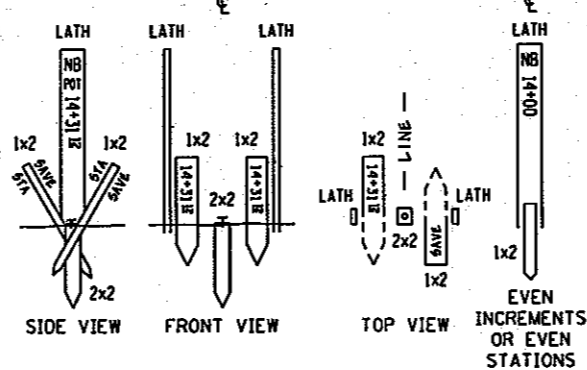
GUARDRAIL (GUARD)



**BUILDING (BUILD)
 FOUNDATION / FOOTING**

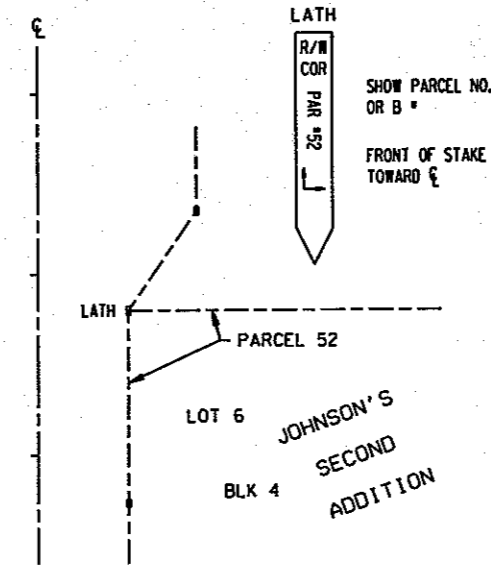


ALIGNMENT POINTS (ALIGN)

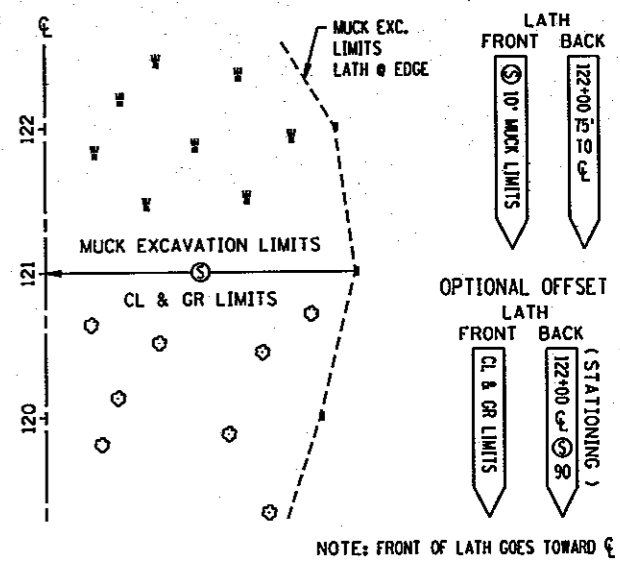


STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY W-DOT MARKER AFTER CONSTRUCTION IS COMPLETED.
 SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).
 TACK SET AT ALIGNMENT POINTS.
 STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

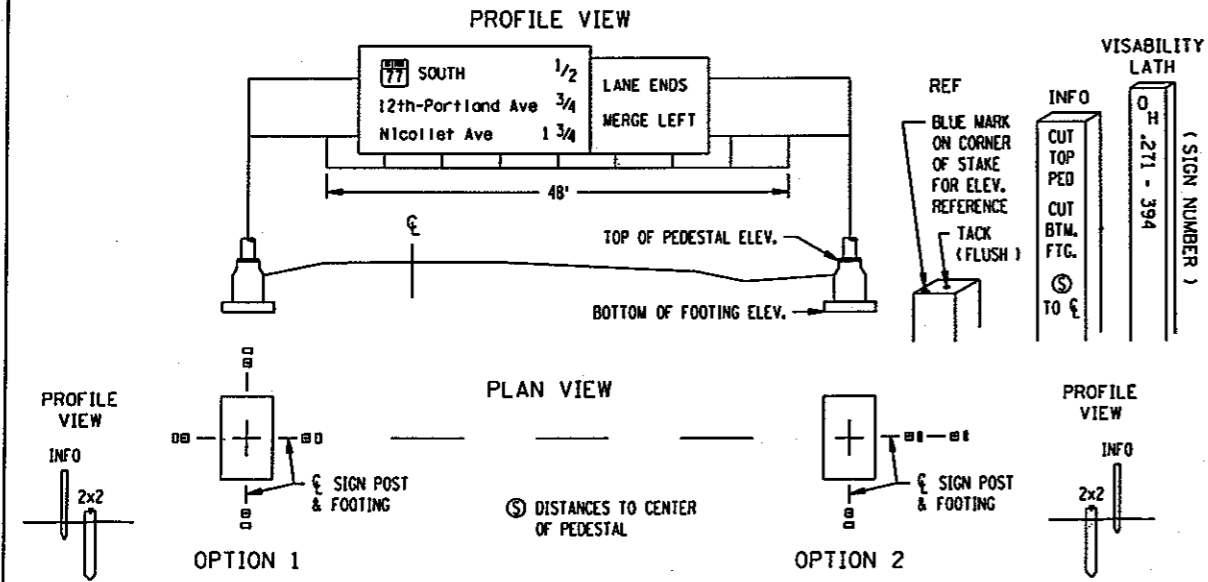
R/W & TEMP. EASEMENT (R/W)



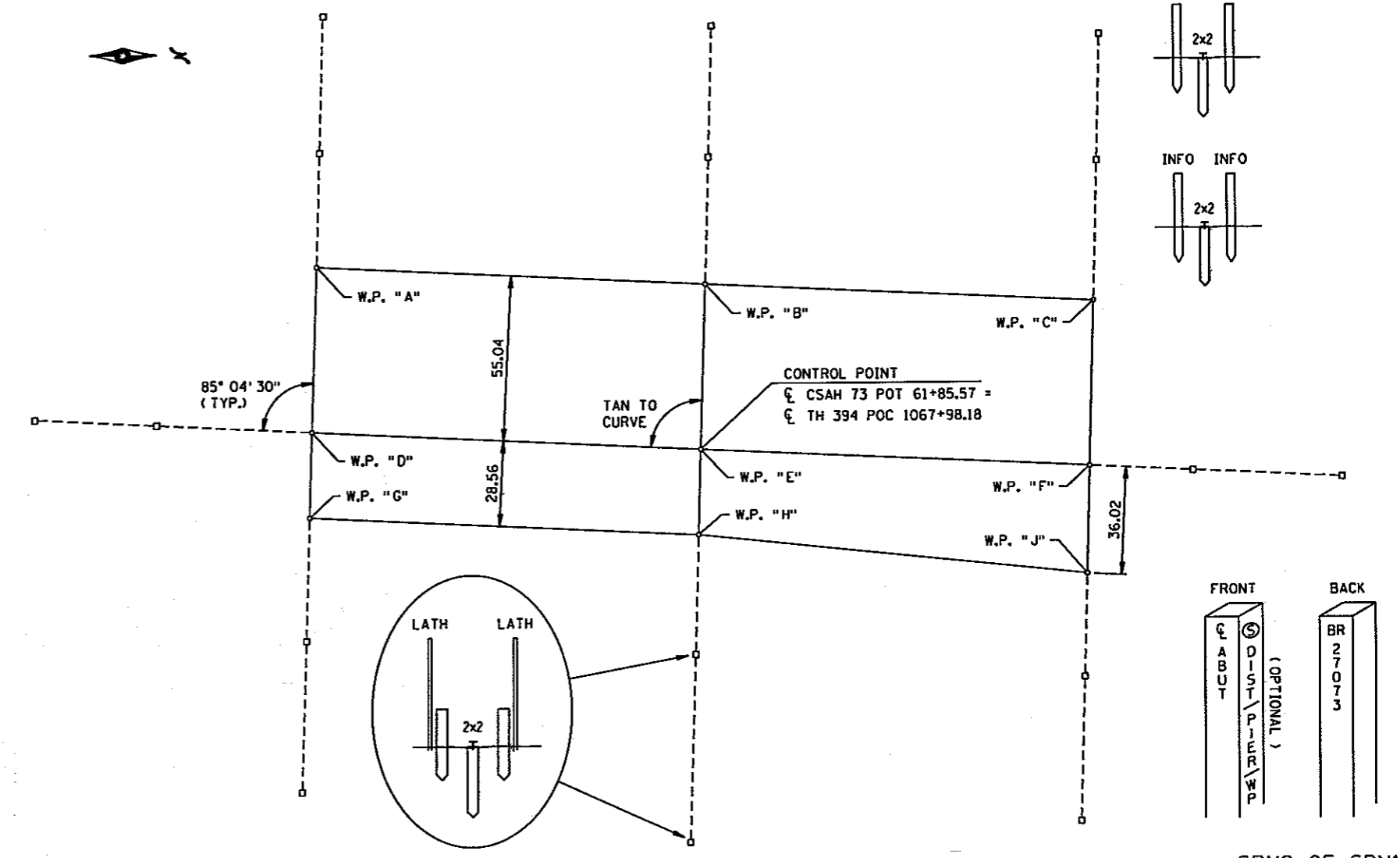
**CLEAR & GRUBBING LIMITS (CLEAR)
 OR MUCK EXCAVATION LIMITS (MUCK)**



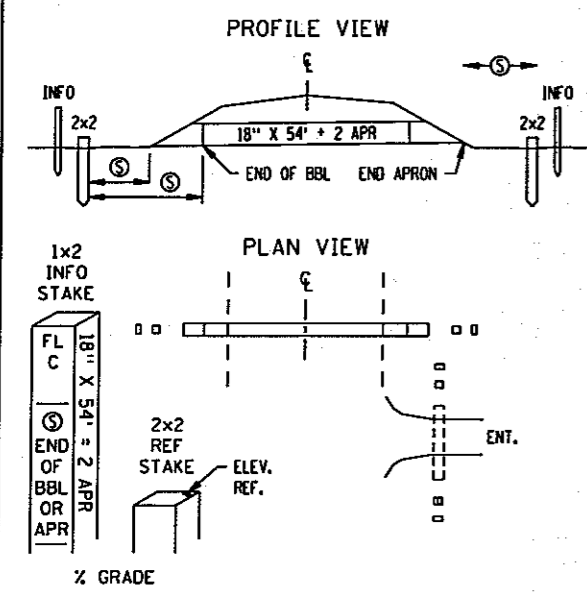
OVERHEAD SIGNS (SIGN)



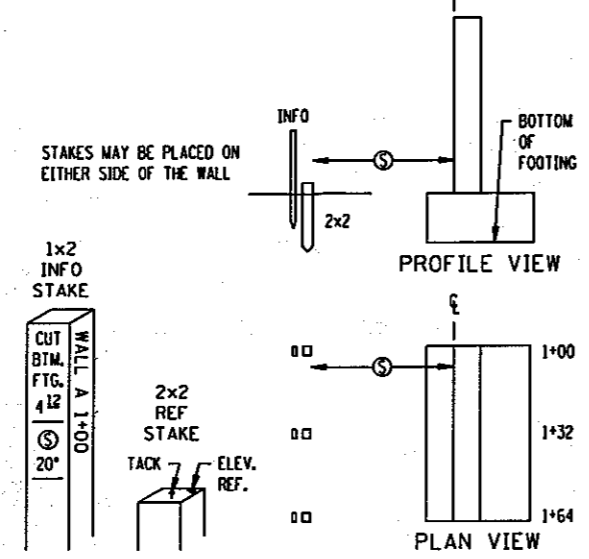
**BRIDGESTAKING (BRIDGE)
 WORKING POINTS LAYOUT**



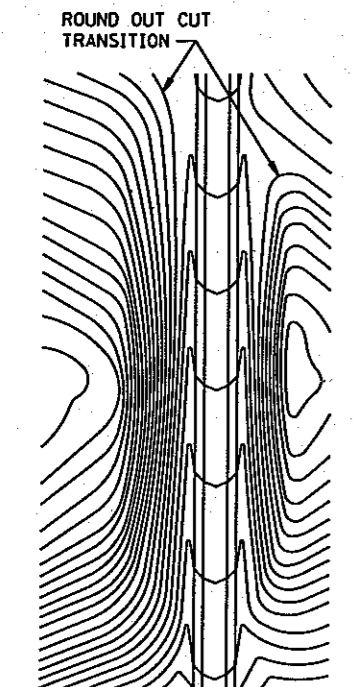
CULVERT



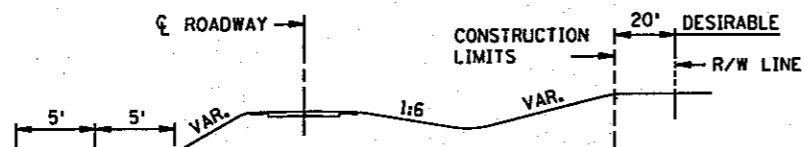
WALL



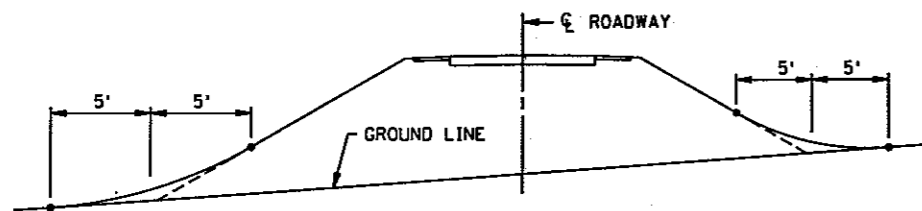
DISTRICT: \$DISTRICT\$
 USER NAME: \$USER\$
 PATH & FILENAME: \$PATH\$FILENAME\$



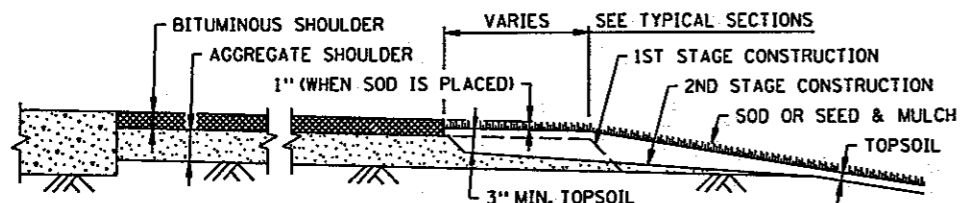
CONTOURING ROAD CUTS



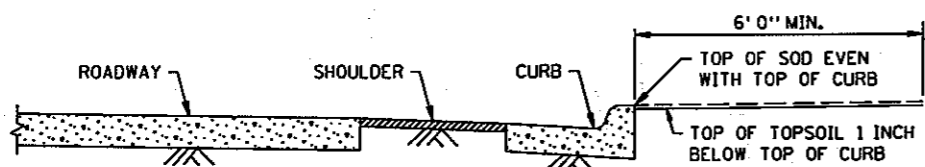
ROUNDING SHOULDERS AND BACKSLOPES



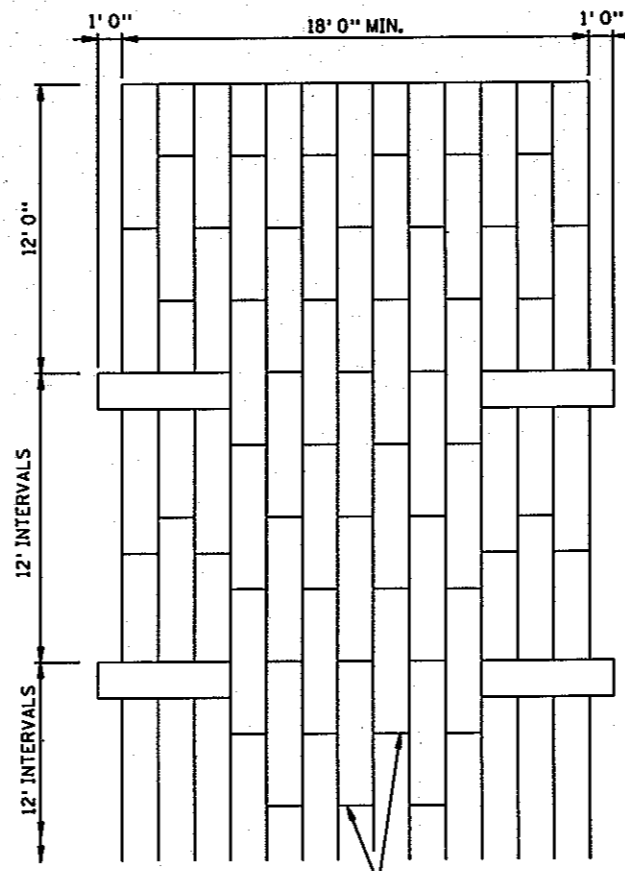
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



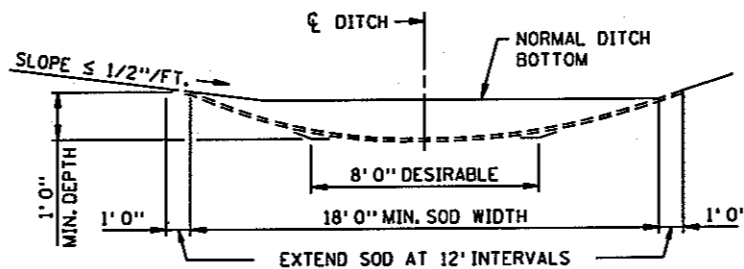
SHAPING AND TOPSOILING INSLOPES



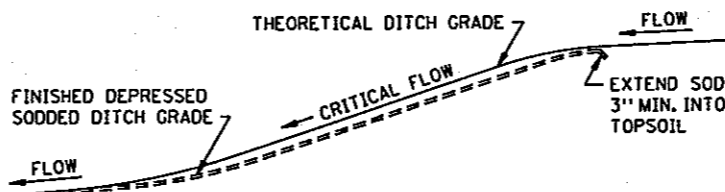
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



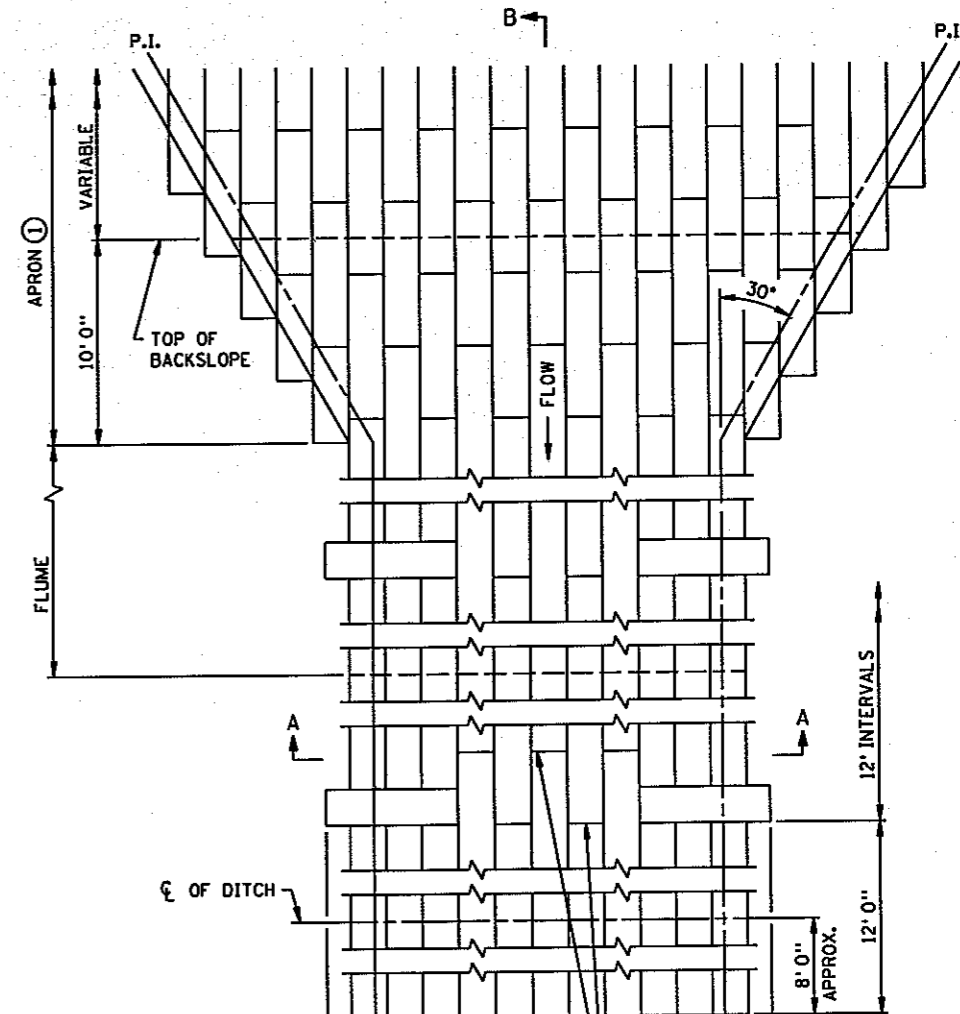
PLAN VIEW



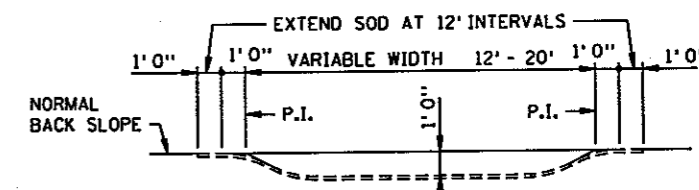
SODDED DITCH CROSS SECTION
 WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),
 FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



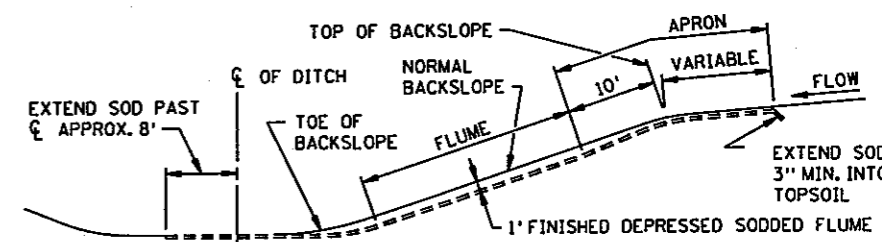
DITCH PROFILE
 SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A

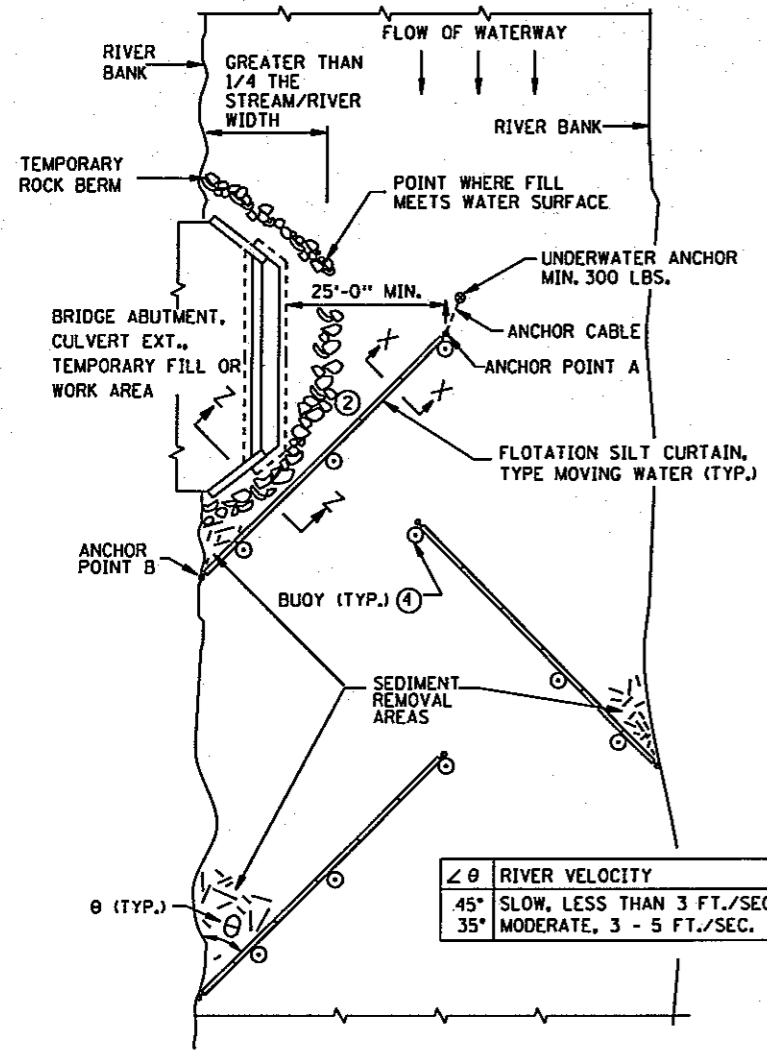


SECTION B-B
 SODDED FLUME DETAILS

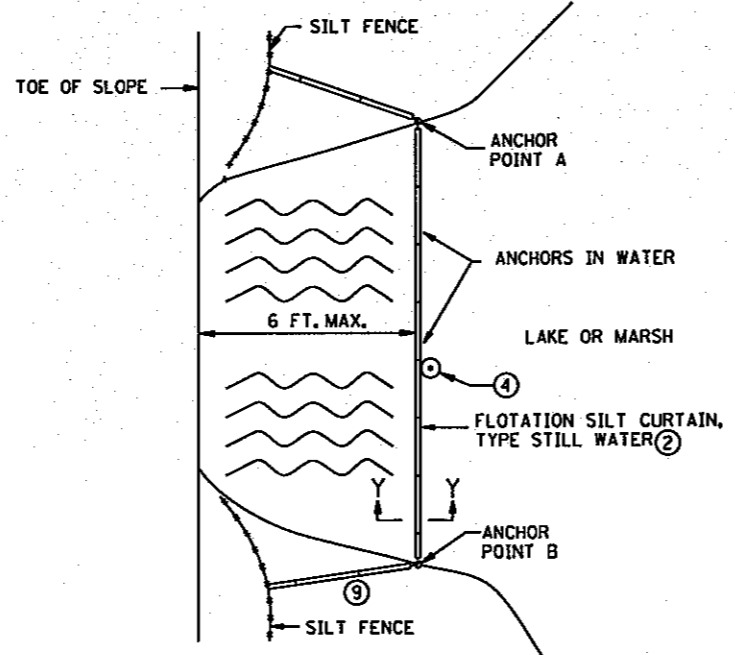
NOTES:
 SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.
 ① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO.
 5-297.404
 STANDARD APPROVED:
 NOVEMBER 20, 2002

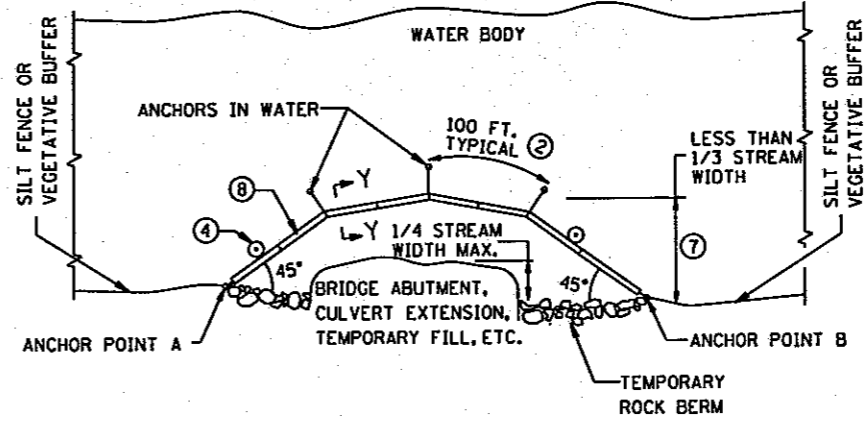
TITLE:
 PERMANENT EROSION CONTROL
 ALONG ROADWAYS, DITCHES AND FLUMES



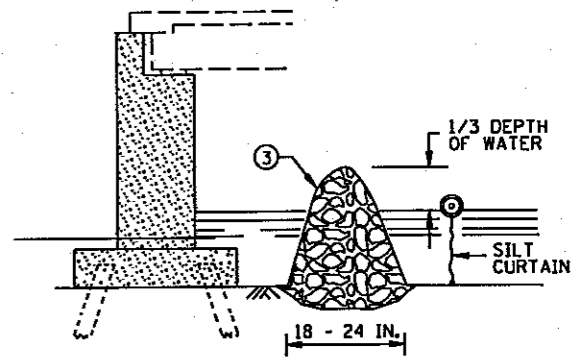
PLAN VIEW (TYPE: MOVING WATER)



PLAN VIEW (TYPE: STILL WATER)



PLAN VIEW (TYPE: WORK AREA)

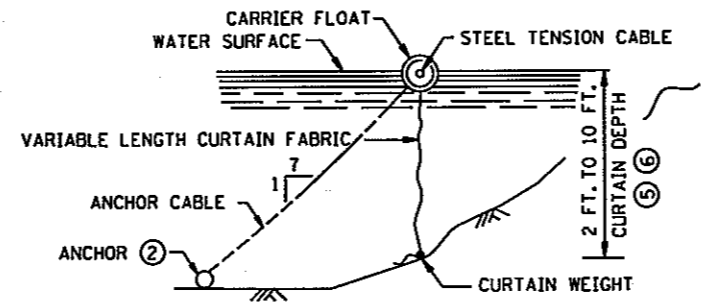


SECTION Z-Z TEMPORARY ROCK BERM FOR SEDIMENT CONTROL

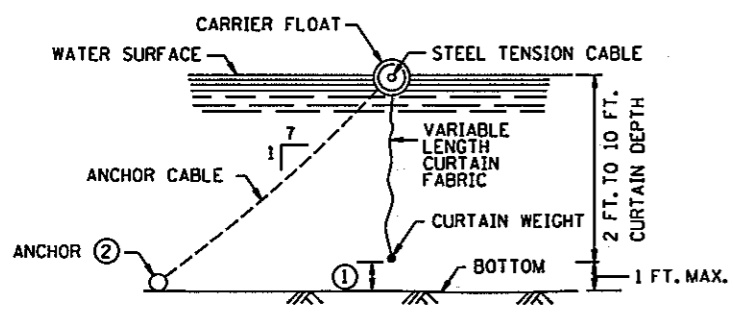
DESIGN GUIDELINES: MOVING WATER
 WHEN TEMPORARY FILL ENCLOSES MORE THAN 1/4 BUT LESS THAN 1/3 WIDTH OF THE STREAM.
 MINIMUM WATER DEPTH: 3 FT. (1) (6)
 MAXIMUM WATER DEPTH: 11 FT.
 MAXIMUM WATER VELOCITY: 5 FT./SEC.

DESIGN GUIDELINES: WORK AREA
 WHEN TEMPORARY FILL ENCLOSES LESS THAN 1/4 OF THE WIDTH OF STREAM.
 MINIMUM WATER DEPTH: 10 FT.
 MAXIMUM WATER VELOCITY: 5 FT./SEC.

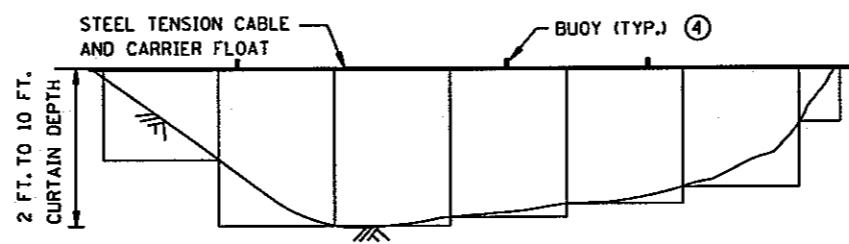
DESIGN GUIDELINES: STILL WATER (6)
 MINIMUM WATER DEPTH: 0 FT.
 MAXIMUM WATER DEPTH: 10 FT.



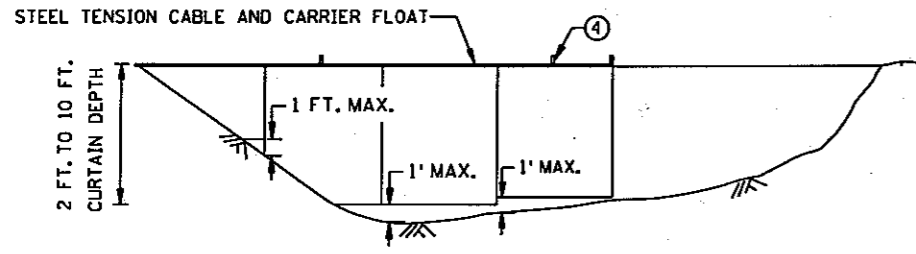
SECTION Y-Y



SECTION X-X



FLOTATION SILT CURTAIN - TYPE: WORK AREA AND STILL WATER (5)
 FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS



FLOTATION SILT CURTAIN - TYPE: MOVING WATER (5)
 USE FOR SMALLER RIVERS WITH SLOW AND MODERATE VELOCITIES

NOTES:

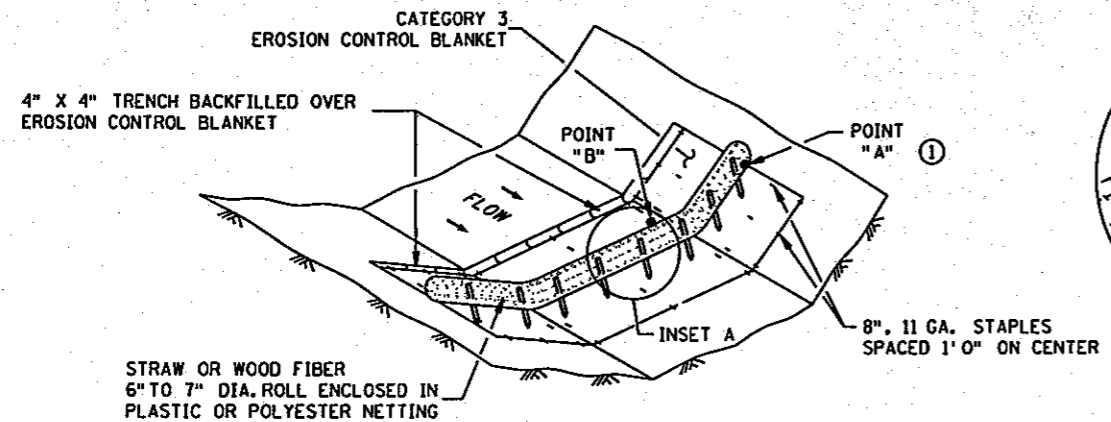
- SEE SPECS. 2573 & 3887.
- (1) CURTAIN EXTENDS TO 1 FT. MAXIMUM FROM BOTTOM OF WATER BODY.
- (2) FOR ANCHOR AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.
- (3) IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT THE BRIDGE, A TEMPORARY ROCK BERM WILL BE USED TO PROVIDE ADDITIONAL PROTECTION. THE TEMPORARY ROCK BERM IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.
- (4) 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.
- (5) WATER DEPTH CAN BE 0 TO 10 FEET, 0 TO 11 FEET FOR TYPE MOVING WATER.
- (6) SILT CURTAIN HEIGHT INCLUDES MAXIMUM WAVE HEIGHT FOR WATER BODY.
- (7) KEEP AS CLOSE TO WORK AREA AS POSSIBLE.
- (8) SILT CURTAIN, ROCK BERM OR SHEET PILE AS REQUIRED TO CONTROL THE INFILTRATION OF SILT.
- (9) IF 6 INCHES OR LESS OF WATER, USE BALE BARRIERS, SEE SHEET 2.

SPN4 OF SPN17

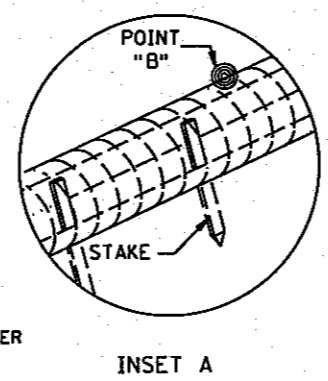
STANDARD SHEET NO. 5-297.405 (1 OF 4)	TITLE: TEMPORARY SEDIMENT CONTROL SILT CURTAIN
STANDARD APPROVED: SEPTEMBER 27, 2006	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 34 OF 194 SHEETS	

PLOTTED/REVISED: 12/01/2010
 \$\$\$DATE\$\$\$ 1/21/2010

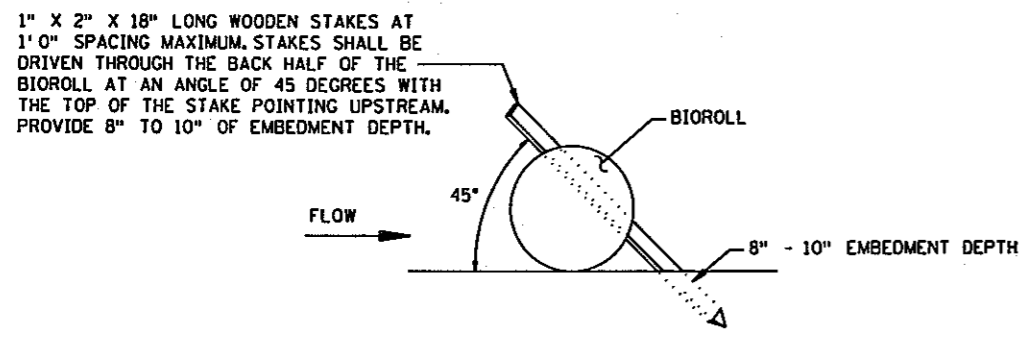
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 FILE NAME: \$\$\$FILENAME\$\$\$



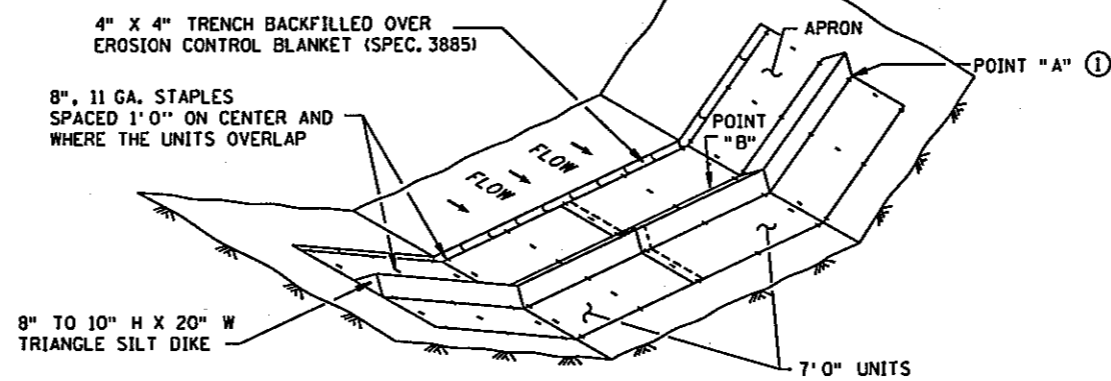
TYPE 3: BIOROLL BLANKET SYSTEM DITCH CHECK



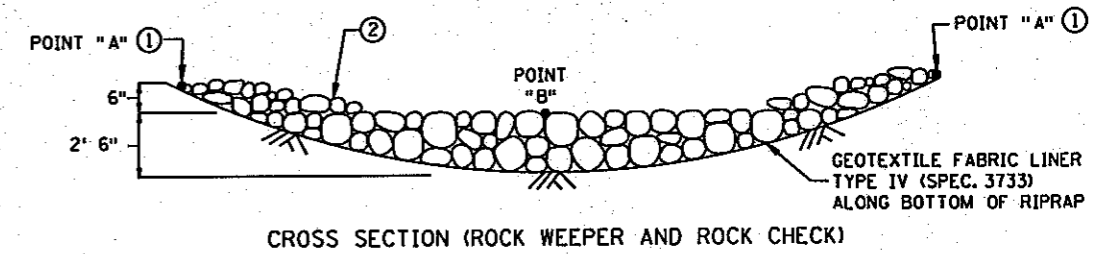
INSET A



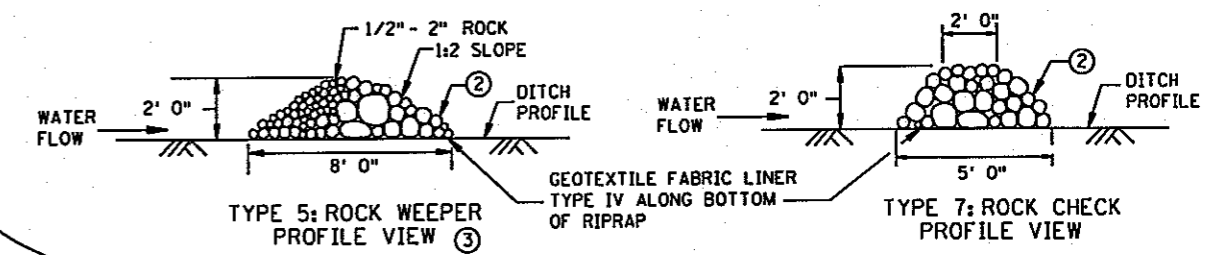
BIOROLL STAKING DETAIL



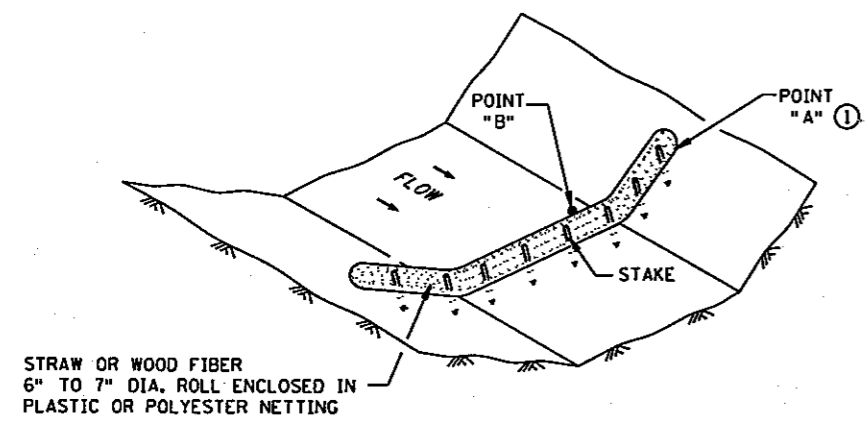
TYPE 6: GEOTEXTILE TRIANGULAR DIKE DITCH CHECK



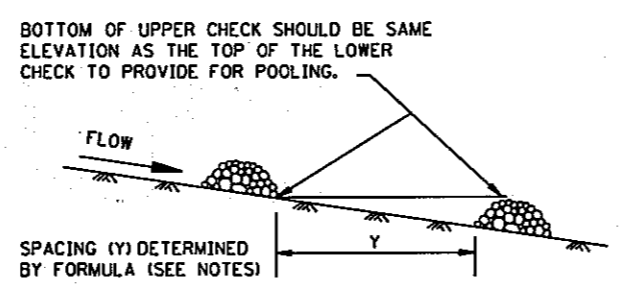
CROSS SECTION (ROCK WEEPER AND ROCK CHECK)



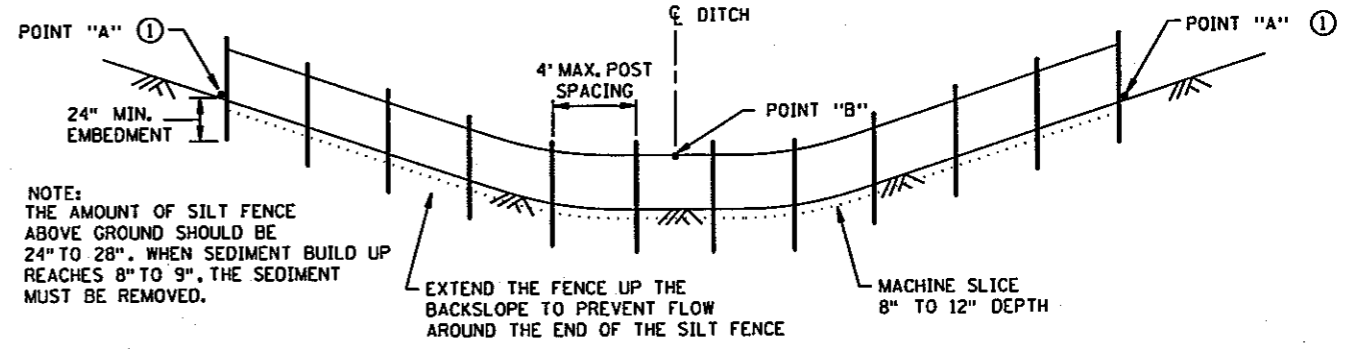
TYPE 5: ROCK WEEPER AND TYPE 7: ROCK CHECK DITCH CHECKS
 USE ON ROUGH GRADED AREAS



TYPE 2: BIOROLL DITCH CHECK
 USE ON ROUGH GRADED AREAS



DITCH CHECK SPACING ④



TYPE 1: SLICED IN SILT FENCE DITCH CHECK

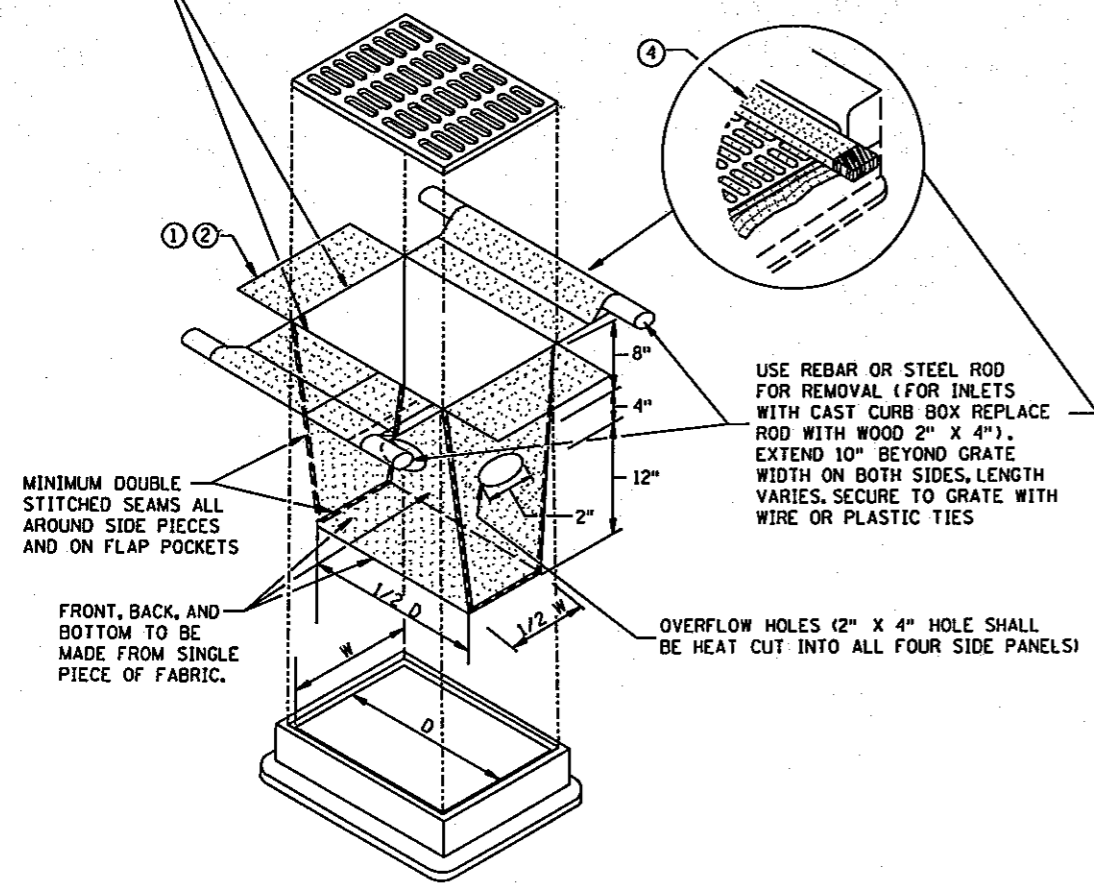
- NOTES:**
 SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.
 APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:
 APPROXIMATE SPACING OF DITCH CHECKS (FT.) = $Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\% \text{ CHANNEL SLOPE}} \times 100$
- ① POINT "A" 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 CLASS I - IV RIPRAP (SPEC. 3601) WITH GEOTEXTILE FABRIC LINER, TYPE IV (SPEC. 3733).
 - ③ THE ROCK WEEPER FILTERS SEDIMENT OUT OF THE WATER BETTER THAN THE OTHER DITCH CHECKS. THE ROCK WEEPER COULD BE USED AS A PERMANENT WATER FILTERING FEATURE.
 - ④ PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

GENERAL DESIGN GUIDELINES						
DITCH CHECK TYPE	SILT FENCE	BIOROLL	BIOROLL BLANKET	TRIANGULAR DIKE	ROCK WEEPER	ROCK CHECK
STORM FREQUENCY:	2 YR. - 24 HR.	2 YR. - 24 HR.	2 YR. - 24 HR.	2 YR. - 24 HR.	5 YR. - 24 HR.	5 YR. - 24 HR.
MAX. FLOW VELOCITY:	< 1 FT./SECOND	1.5 FT./SECOND	4.5 FT./SECOND	1.5 FT./SECOND	12 FT./SECOND	12 FT./SECOND
MAX. DITCH GRADE:	0% - 0.5%	1.5% - 3%	1.5% - 3%	1.5% - 2.0%	3% - 5%	3% - 5%
MAX. DRAINAGE AREA:	1 ACRE	2 ACRE	2 ACRE	4 ACRE	4+ ACRE	4+ ACRE

STANDARD SHEET NO.
 5-297.405 (3 OF 4)
 STANDARD APPROVED:
 SEPTEMBER 27, 2006

TEMPORARY SEDIMENT CONTROL
 DITCH CHECK/BARRIER

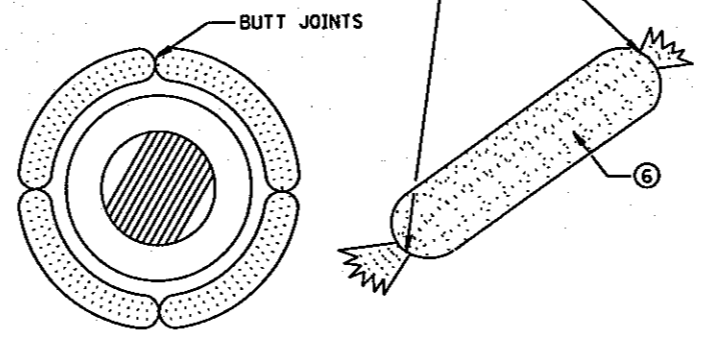
INLET SPECIFICATIONS AS PER THE PLAN DIMENSION LENGTH AND WIDTH TO MATCH FLAP POCKET



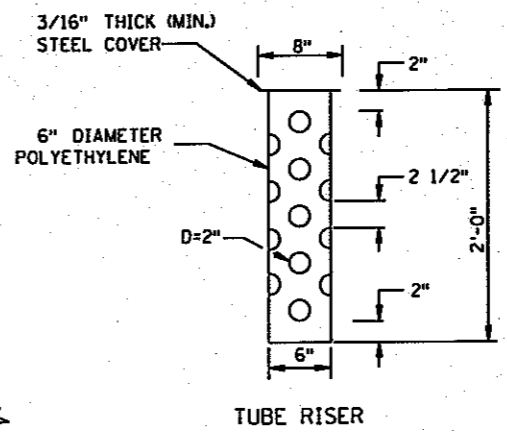
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

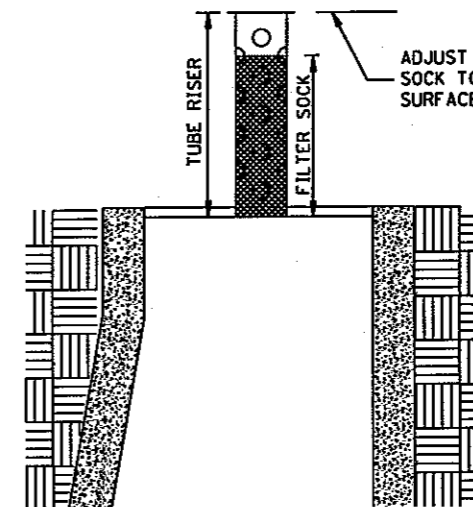
ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL. SECURED WITH 50 PSI. ZIP TIE.



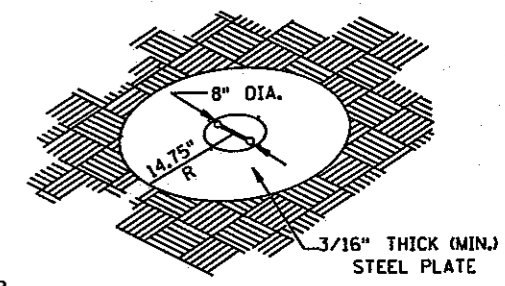
ROCK LOG/COMPOST LOG



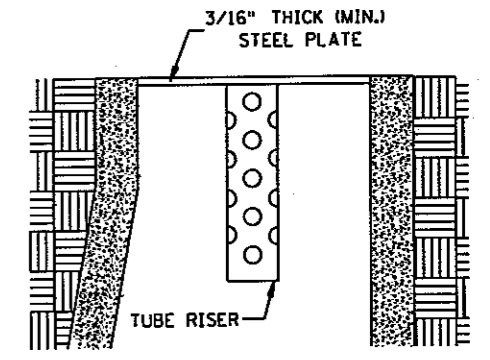
TUBE RISER



SECTION (UP POSITION)

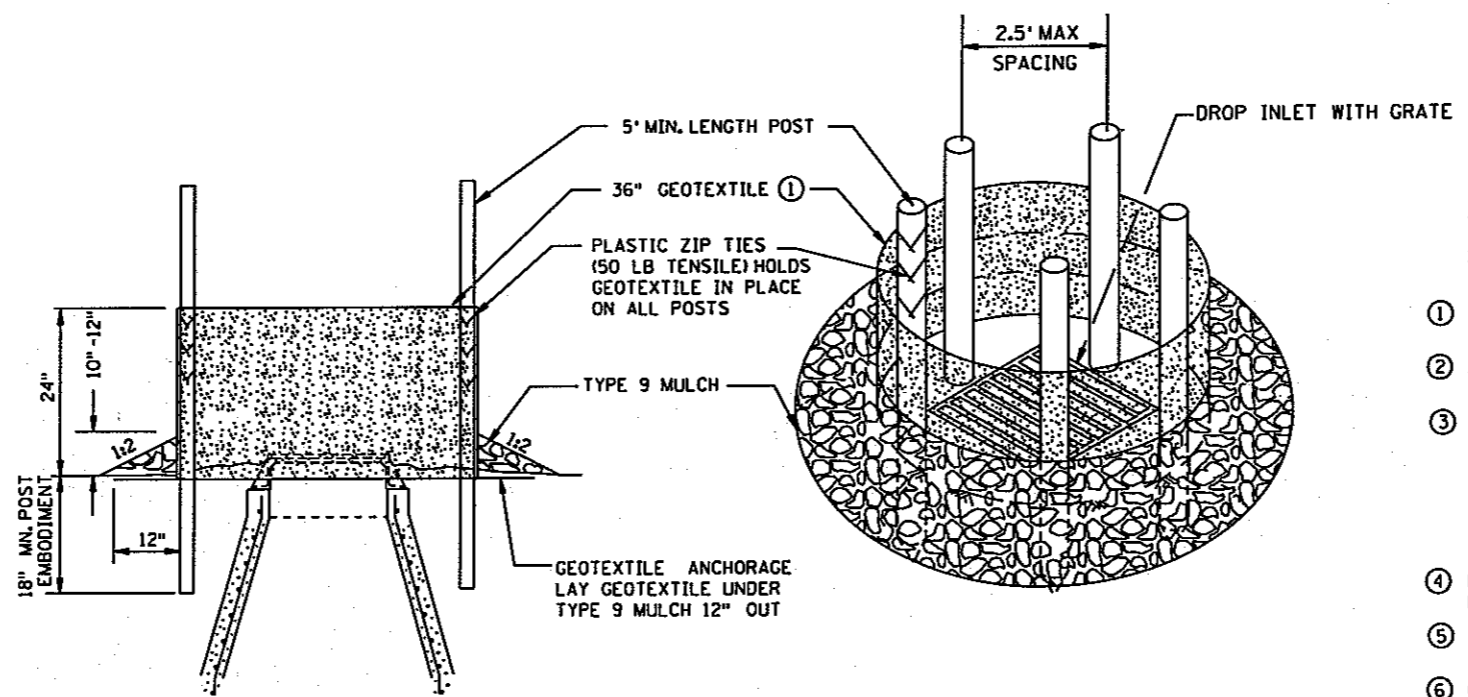


PERSPECTIVE VIEW

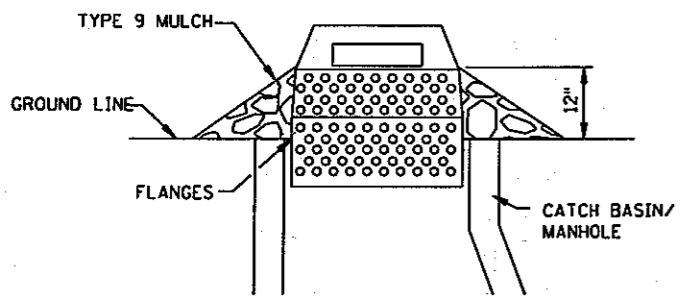


SECTION (DOWN POSITION)

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM
 USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 OR LESS



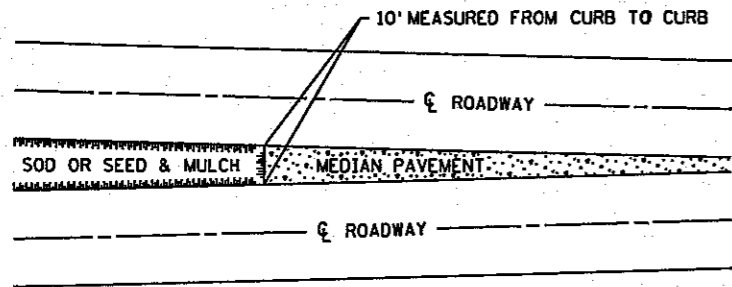
SEDIMENT CONTROL INLET HAT

NOTE:
 THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.

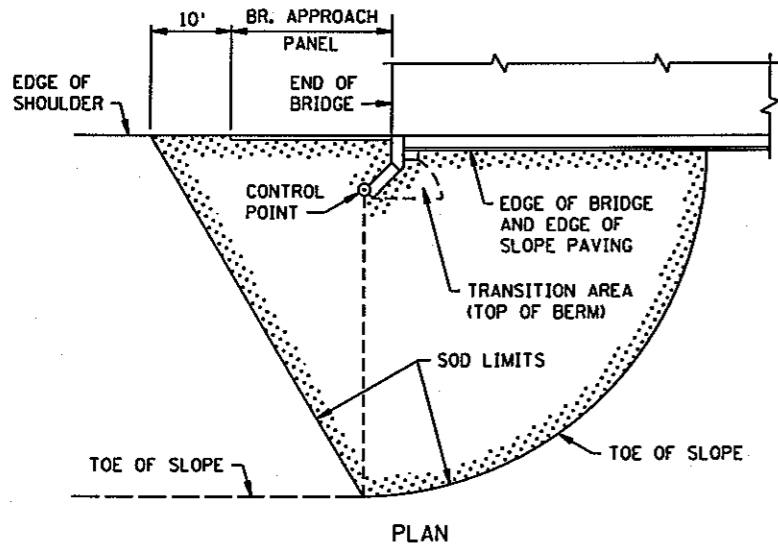
NOTES:

- SEE SPECS. 2573, 3137, 3886 & 3891.
- MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.
- ① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
- ② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ③ INSTALLATION NOTES:
 DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH CLEARANCE.
- ④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
- ⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
- ⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION. SPN6 OF SPN17

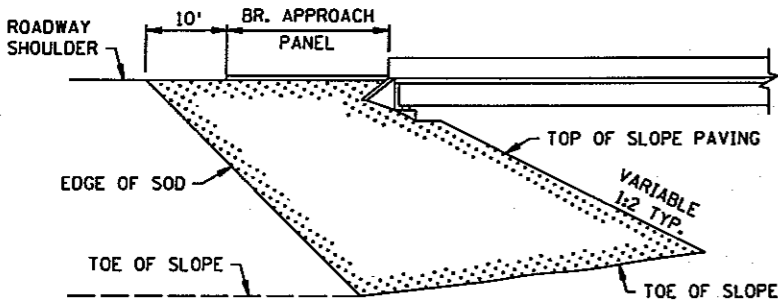
STANDARD SHEET NO. 297.405 (4 OF 4)	TITLE TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION
STANDARD APPROVED: SEPTEMBER 27, 2006	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 36 OF 194 SHEETS	



SODDING LIMITS AT GORE AREA

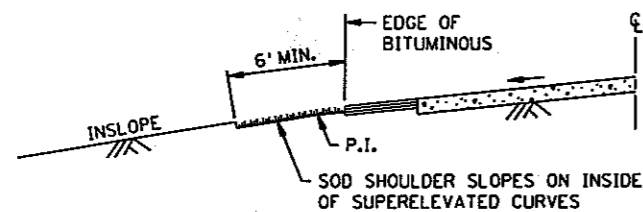


PLAN

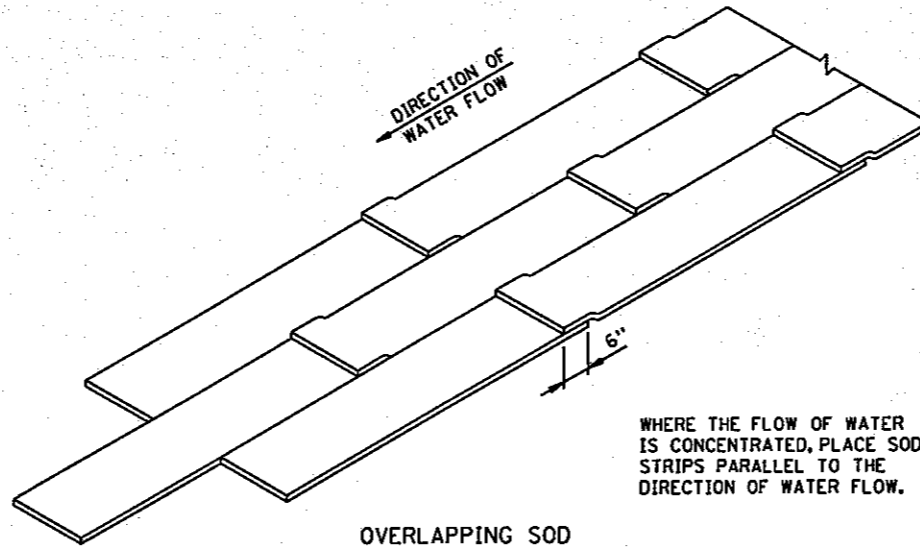


ELEVATION

SODDING LIMITS AT BRIDGE APPROACH FILLS

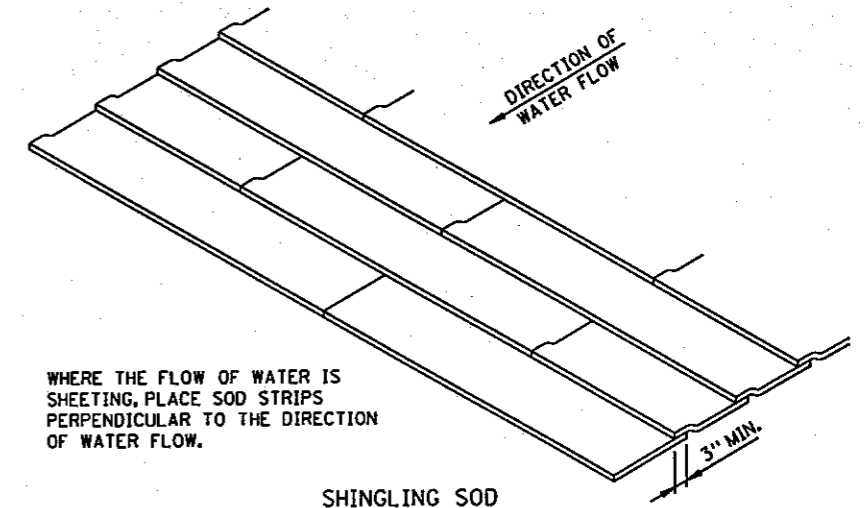


SODDING INSLOPES OF SUPERELEVATED CURVES



OVERLAPPING SOD

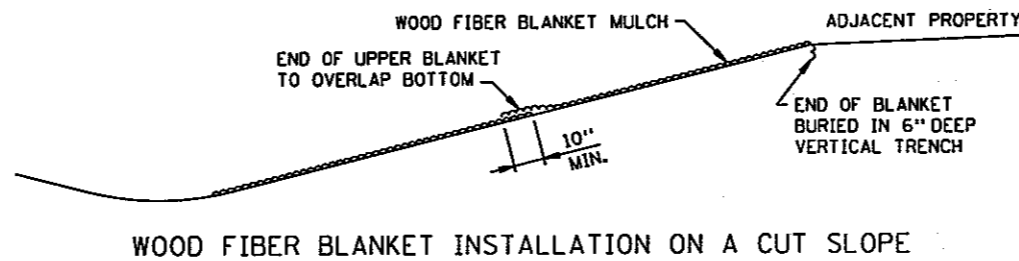
WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.



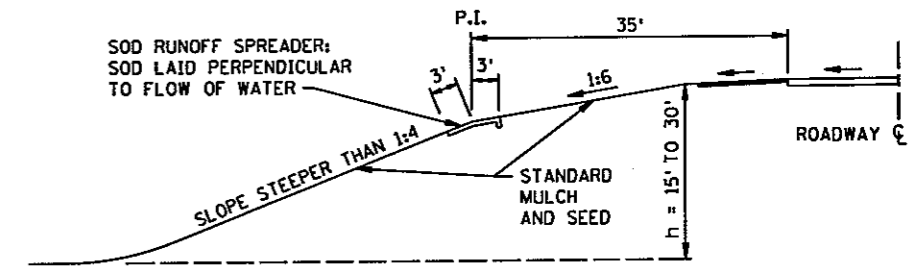
SHINGLING SOD

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

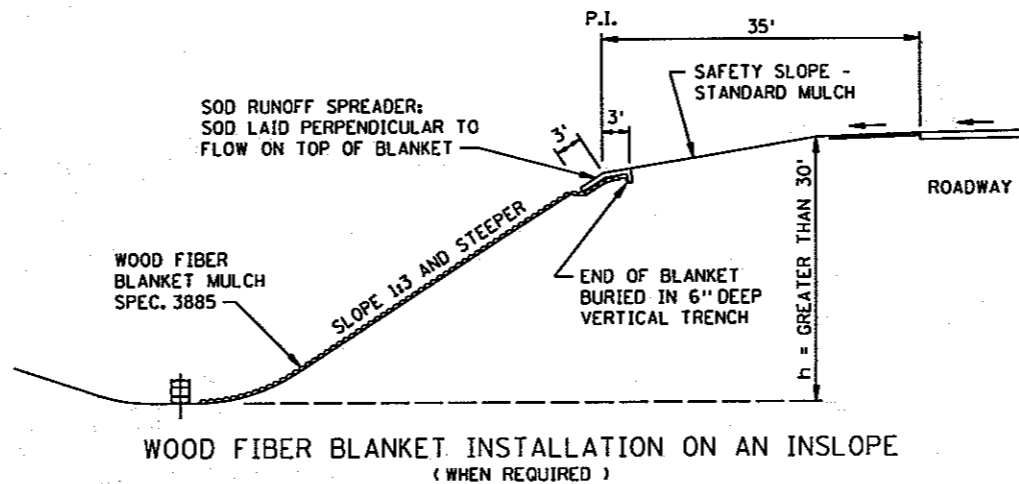
SPECIAL SOD PLACEMENT TECHNIQUES



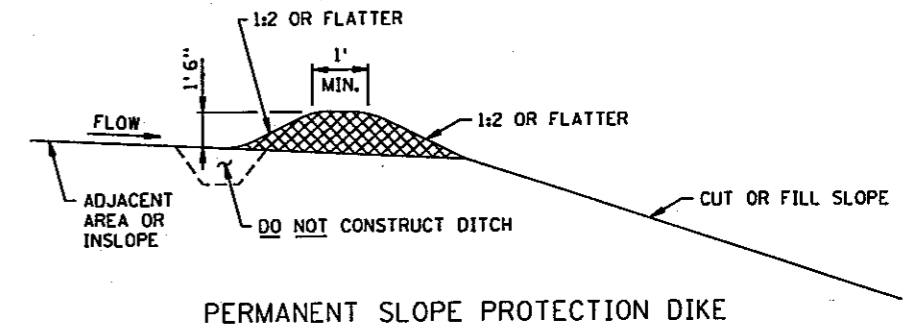
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



BROKEN-BACK SAFETY FILL SLOPE



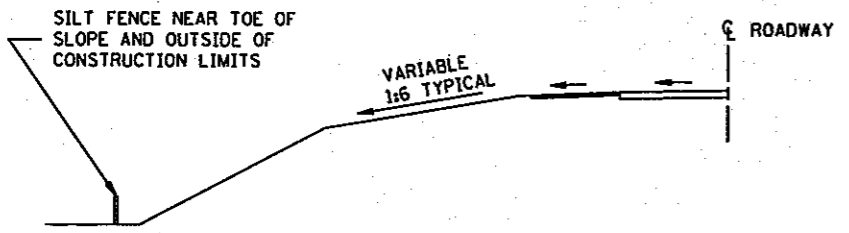
WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE (WHEN REQUIRED)



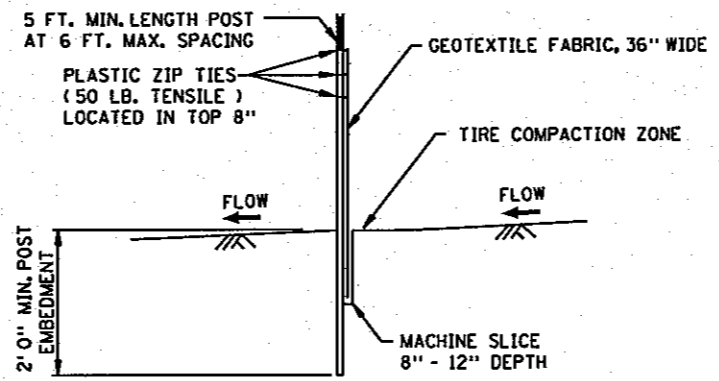
PERMANENT SLOPE PROTECTION DIKE

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. 02-614-32 (CSAH 14) SHEET NO. 37 OF 194 SHEETS	

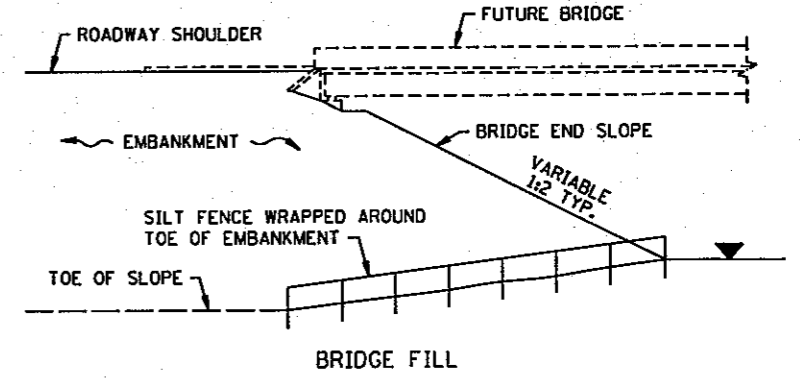
PLOTTED/REVISED: 12/01/09 AM
 \$\$\$DATE\$\$\$ 1/21/2010



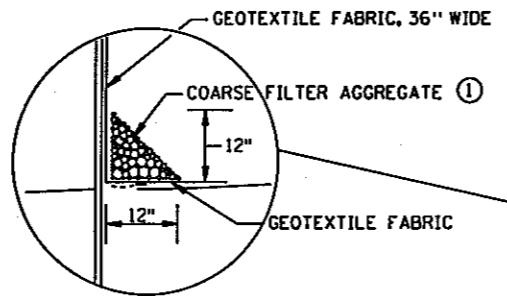
LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT



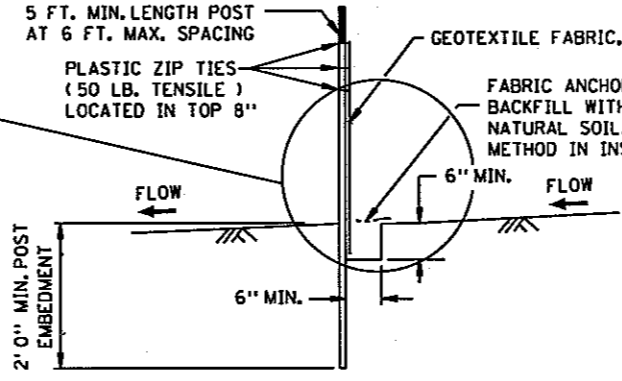
SILT FENCE, MACHINE SLICED
 DESIGN GUIDELINES:
 TO PROTECT AREAS FROM SHEET FLOW.
 MAXIMUM CONTRIBUTING AREA: 1 ACRE.



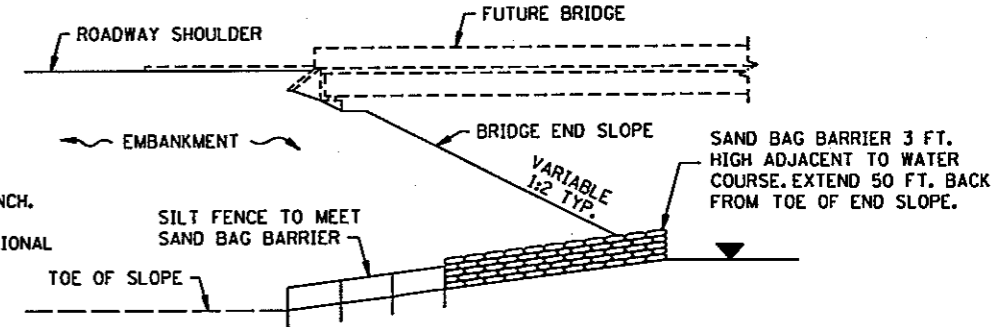
DESIGN GUIDELINES:
 WATER COURSE FLOW VELOCITY: STAGNANT
 CONTRIBUTING SLOPE AREA: 1/2 ACRE



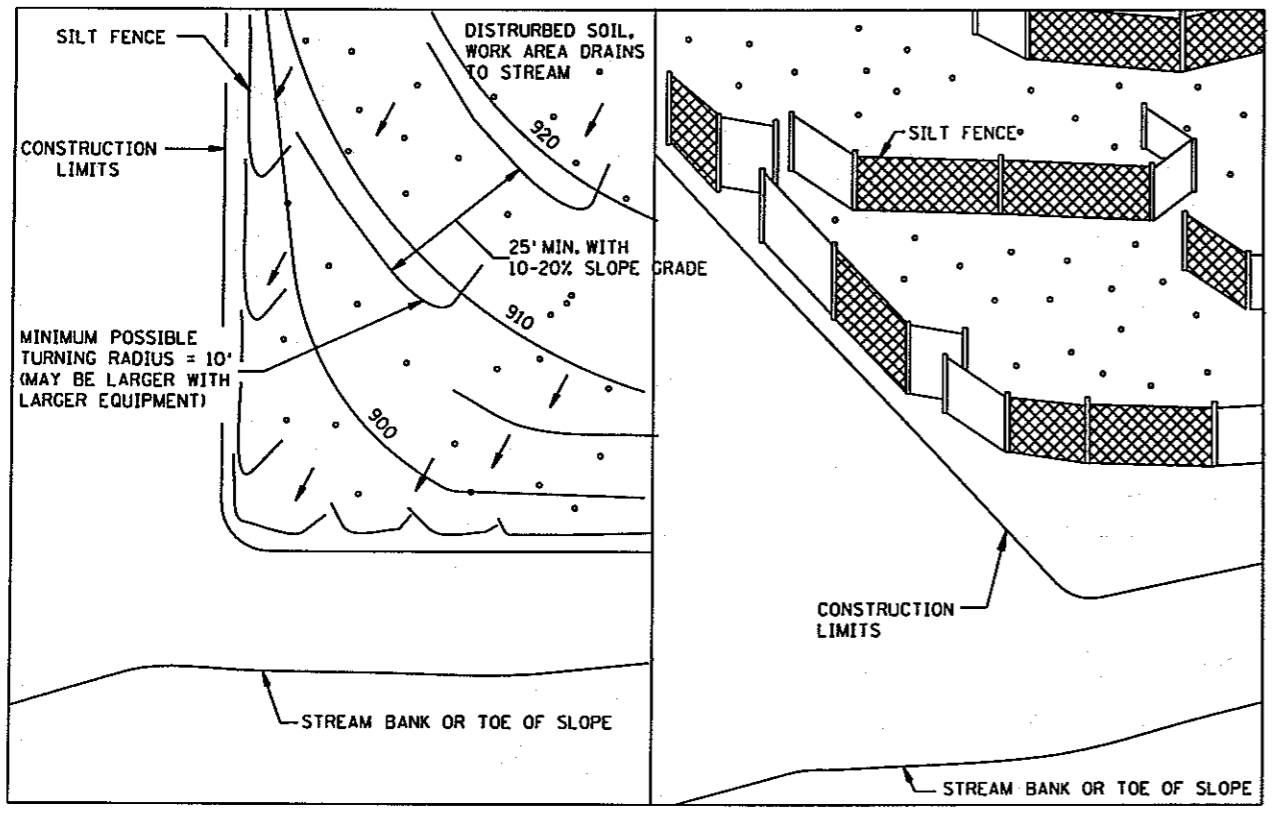
OPTIONAL METHOD FOR SILT FENCE, HEAVY DUTY



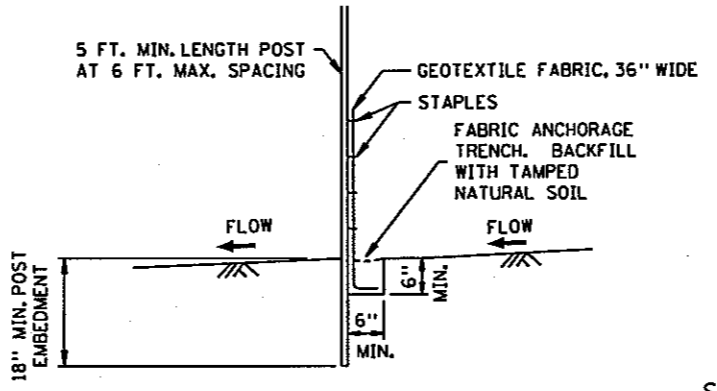
SILT FENCE, HEAVY DUTY (HAND INSTALLED)
 DESIGN GUIDELINES:
 TO PROTECT AREAS FROM SHEET FLOW.
 MAXIMUM CONTRIBUTING AREA: 1 ACRE.



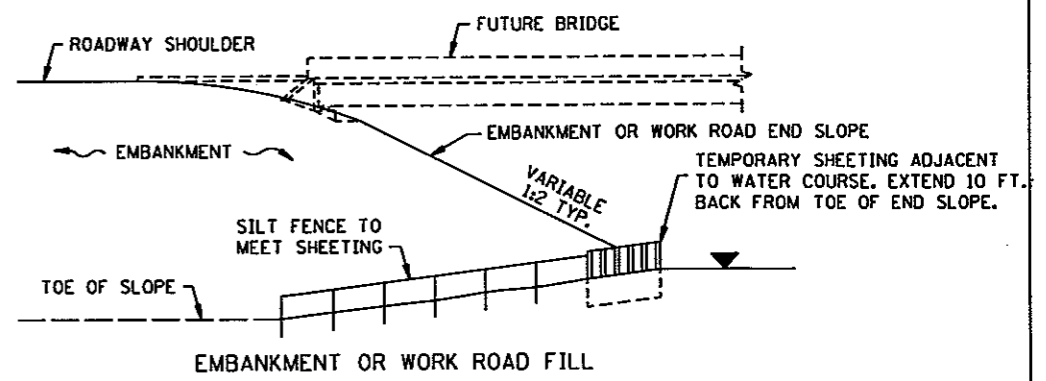
DESIGN GUIDELINES:
 WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
 CONTRIBUTING SLOPE AREA: 1 ACRE



PLAN VIEW
 SIDE VIEW
 SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED
 DESIGN GUIDELINES:
 TO PROTECT AREAS FROM SHEET FLOW.
 MAXIMUM CONTRIBUTING AREA: 1 ACRE.

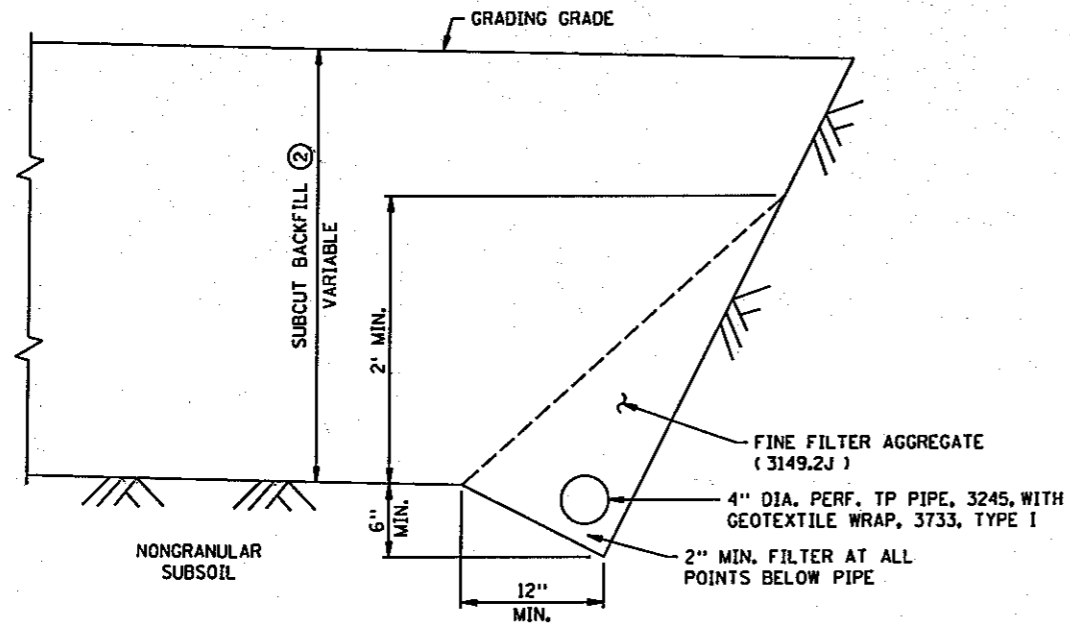


DESIGN GUIDELINES:
 WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
 CONTRIBUTING SLOPE AREA: 3 ACRES
 SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

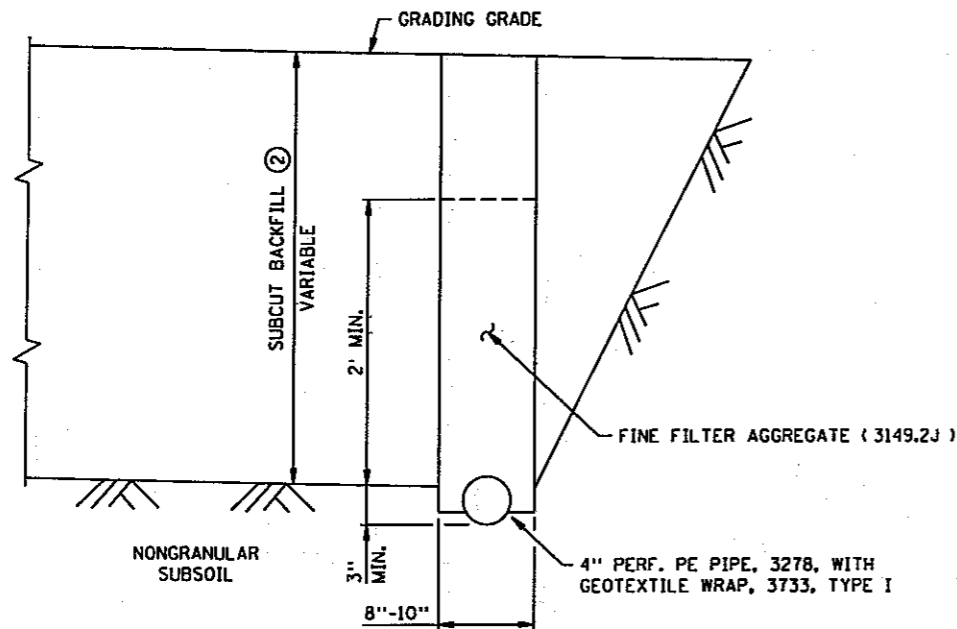
NOTES:
 SEE SPECS. 2573, 3149 & 3886.
 ① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.
 SPN8 OF SPN17

STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 38 OF 194 SHEETS	

DISTRICT #: \$DISTRICT\$
 USER NAME: \$USER\$
 PATH & FILENAME: \$PATH\$
 FILE NAME: \$FILENAME\$



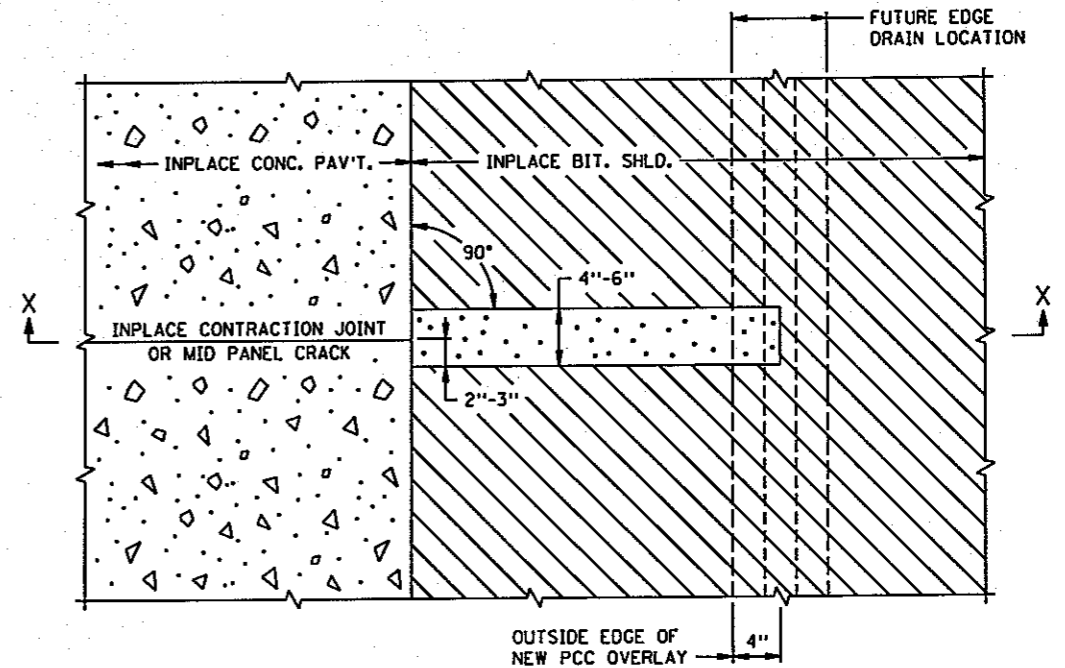
TYPICAL SECTION (OPTION NO. 1) ①



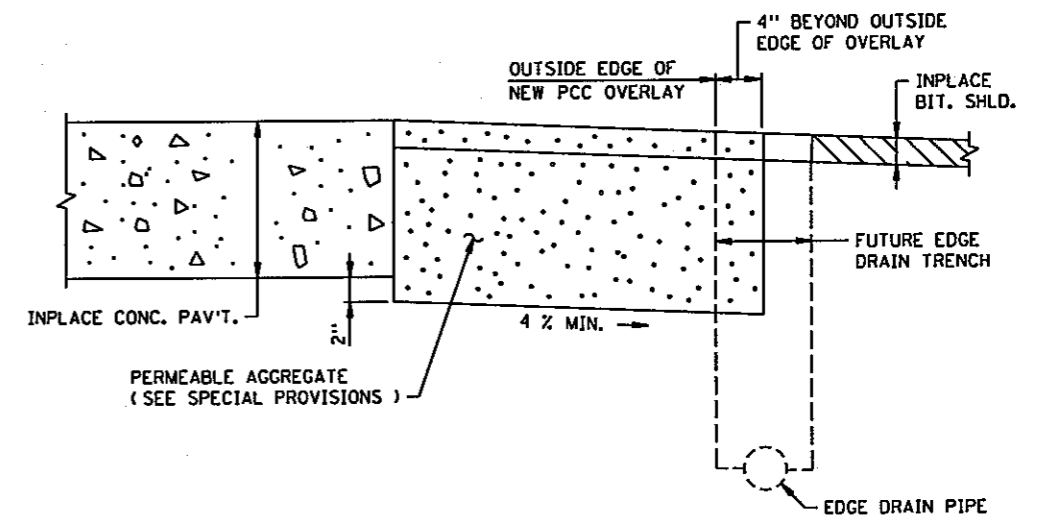
TYPICAL SECTION (OPTION NO. 2) ①

SUBSURFACE DRAIN, SUBCUT DRAIN TYPE

- NOTES:
- ① MAY NEED TO BE MODIFIED FOR SPECIFIC PROJECTS. SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS. OPTION NO. 2 MAY ONLY BE USED WHEN PIPE IS TO BE PLACED BY MACHINE TRENCHER.
 - ② GRANULAR, SELECT GRANULAR OR SELECT GRANULAR MODIFIED. (AS SHOWN IN DESIGN RECOMMENDATION LETTER).



PLAN VIEW

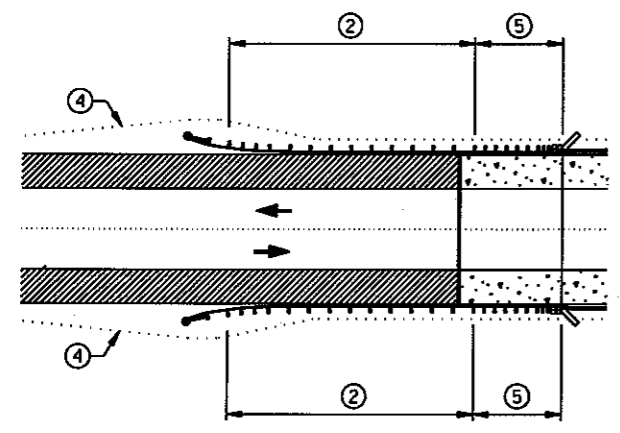


SECTION X-X

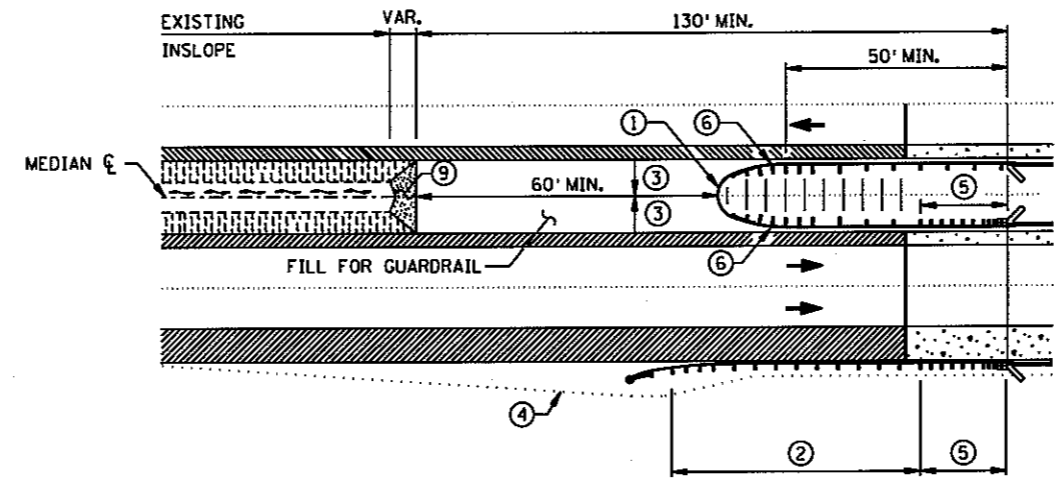
INTERCEPTOR DRAIN DETAIL ①

- NOTE:
- ① SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.

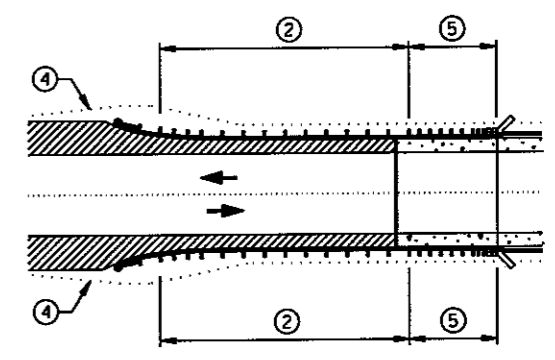
STANDARD SHEET NO. 5-297.430	TITLE: SUBSURFACE DRAINS
STANDARD APPROVED: FEBRUARY 25, 1997	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 39 OF 194 SHEETS	



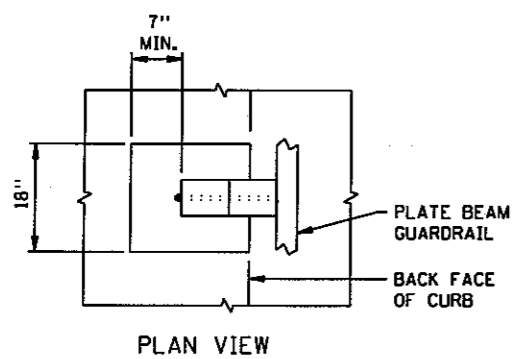
TWO - WAY BRIDGE WITH FULL SHOULDERS



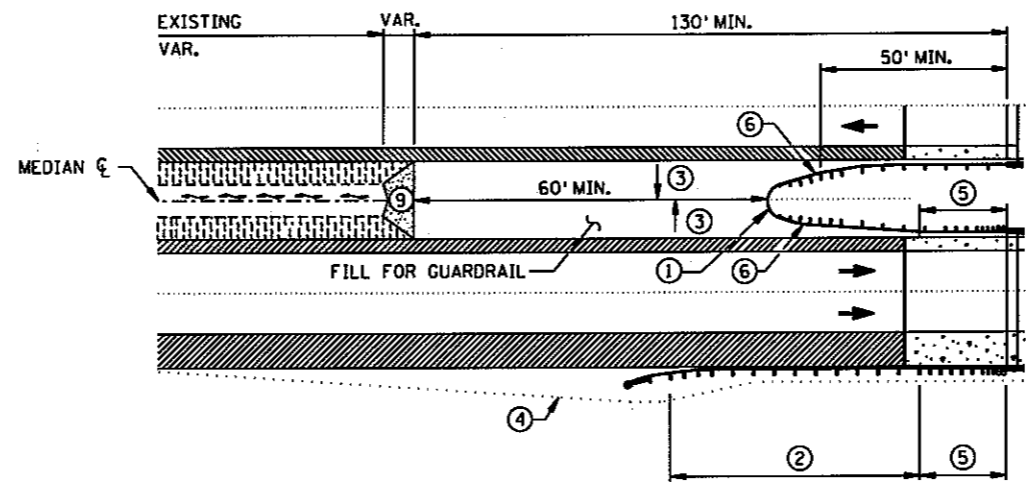
ONE - WAY BRIDGE WITH FULL RIGHT SHOULDER (FOR 14' 2-1/2" THRIE BEAM BULLNOSE)



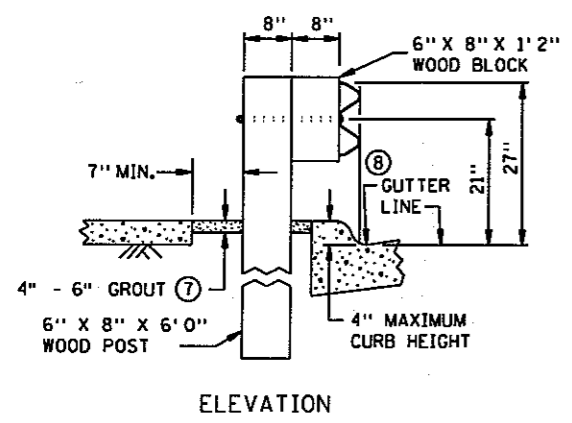
TWO - WAY BRIDGE WITHOUT FULL SHOULDERS



PLAN VIEW



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



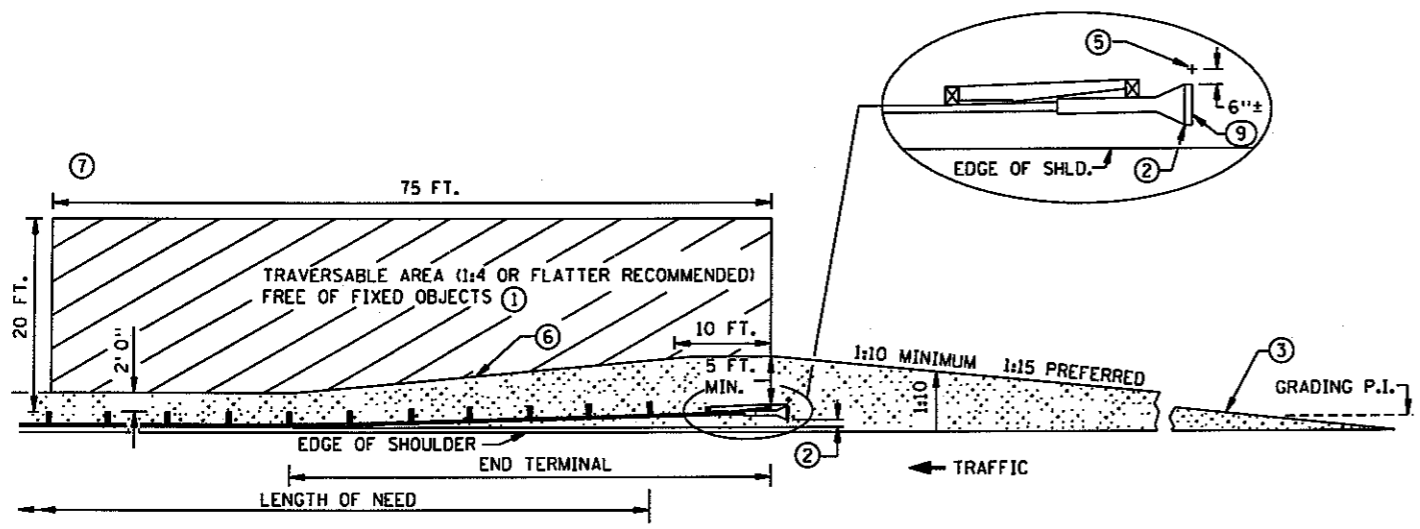
ELEVATION

TYPICAL SECTION AT POST SET IN CONCRETE

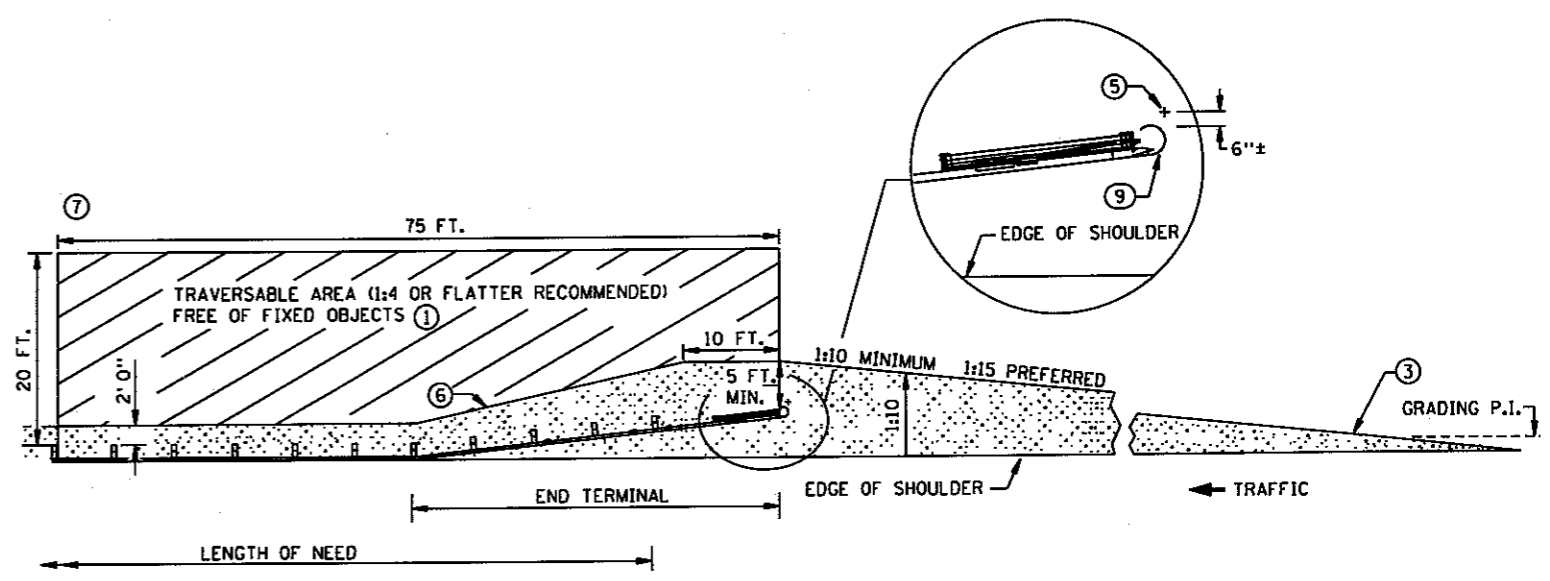
- NOTES:**
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
 - THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.
 - ① THRIE BEAM BULLNOSE, SEE SHEET NO. ... FOR DETAILS.
 - ② FOR THE REQUIRED LENGTH SEE ROAD DESIGN 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 TWO-SACK GROUT MIX (BY VOLUME: 1 PART CEMENT, 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.

DISTRICT #: \$DISTRICT\$
 USER NAME: \$USER\$
 PATH & FILENAME: \$PATH\$

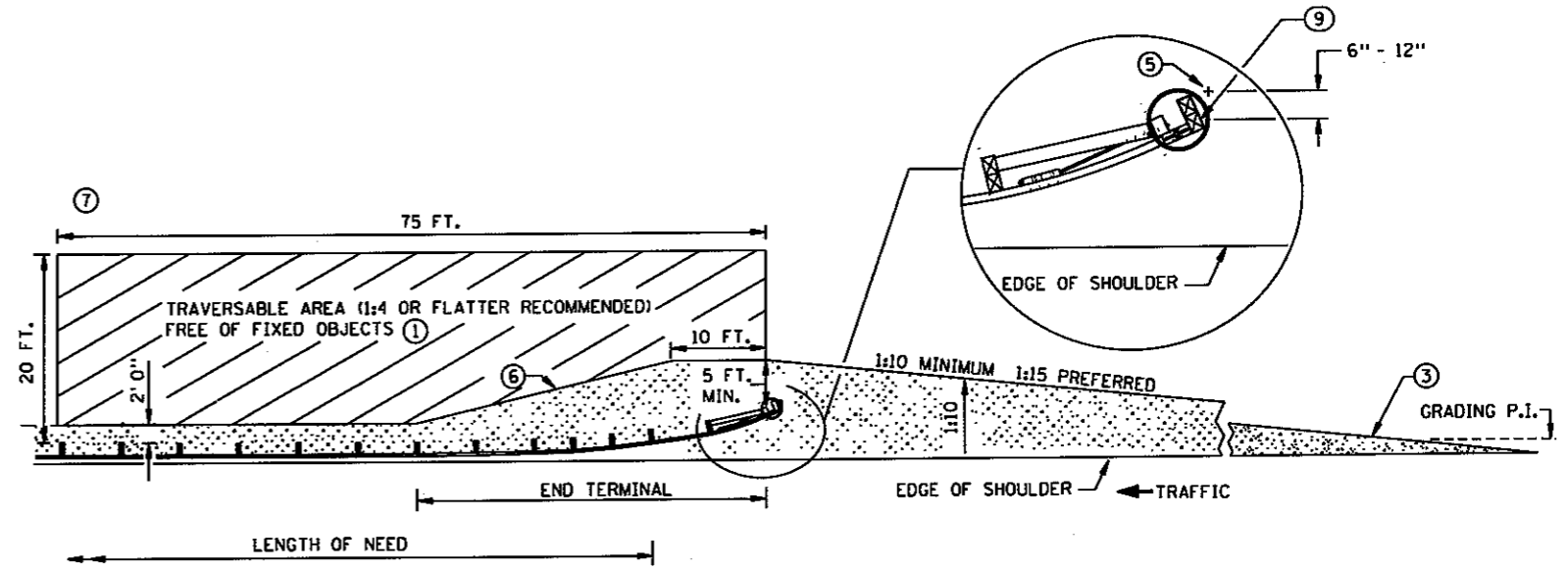
STANDARD SHEET NO. 5-297.601 (2 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: AUGUST 17, 2005	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 40 OF 194 SHEETS	



PLAN VIEW
 (PROPRIETARY TANGENT TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ⑧
 (PROPRIETARY FLARED TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ④ ⑧
 (ELT)

NOTES:

- ALL CROSS SLOPES ARE IN FOOT/FOOT UNLESS OTHERWISE NOTED.
- ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.
- CHANGES (TO SUBJECTS COVERED BY THIS SHEET) INDICATED IN THE PLANS OR ON PLATES WITH MORE RECENT APPROVAL DATES SHALL APPLY.
- GRADING AND DRAINAGE HARDWARE ARE NOT INCIDENTAL TO GUARDRAIL INSTALLATION.
- ① SLOPES BETWEEN 1:3 AND 1:4 PERMITTED WHEN 1:4 OR FLATTER IS NOT POSSIBLE. FOR SLOPES STEEPER THAN 1:3 THE AREA IMMEDIATELY BEHIND AND BEYOND THE END TERMINAL SHOULD, AT LEAST, BE SIMILAR IN CROSS SECTION TO THE UNSHIELDED ROADSIDE AREA UPSTREAM OF THE END TERMINAL.
- ② THE LAST 50 FT. OF TANGENT TERMINALS CAN BE FLARED AT 1:50 TAPER.
- ③ WHEN GRADING PLATFORMS ARE BUILT, THEY MUST BE SMOOTHLY TRANSITIONED TO EXISTING SIDE SLOPE SO THE ENTIRE ROADSIDE APPROACH TO THE BARRIER REMAINS TRAVERSABLE, AS WELL AS THE AREA IMMEDIATELY BEHIND IT.

- ④ SEE STANDARD PLATE 8329.
- ⑤ 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. MARK BOTH THE BEGINNING AND END OF PLATE BEAM GUARDRAIL INSTALLATION.
- ⑥ 1:10 OR FLATTER SLOPE P.I..
- ⑦ GRADUALLY BLEND SLOPE FROM TRAVERSABLE AREA TO STEEP EXISTING SLOPE (WHEN SLOPE IS STEEPER THAN 1:6).
- ⑧ IF THE TERRAIN BEYOND THE TERMINAL END AND IMMEDIATELY BEHIND THE BARRIER IS NOT SAFELY TRAVERSABLE, A TANGENT (ENERGY- ABSORBING) TERMINAL SHALL BE USED.

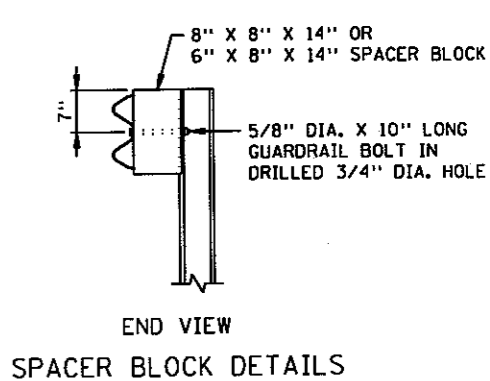
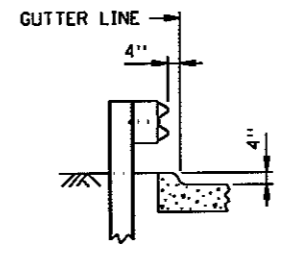
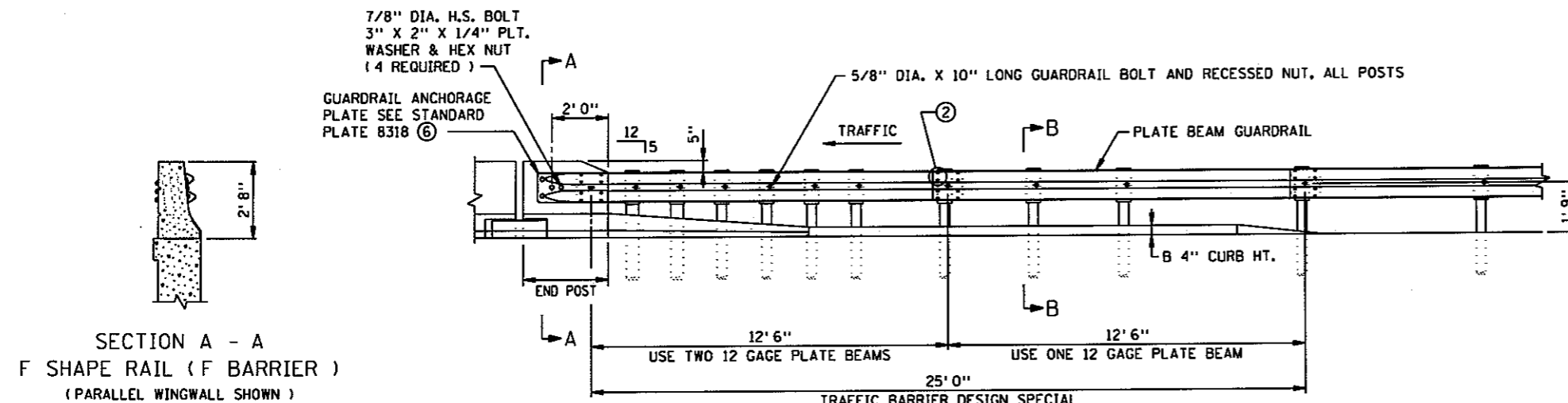
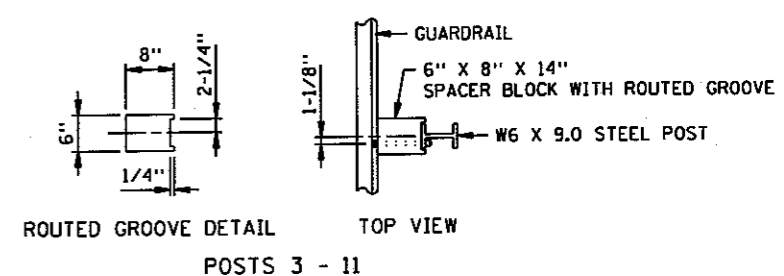
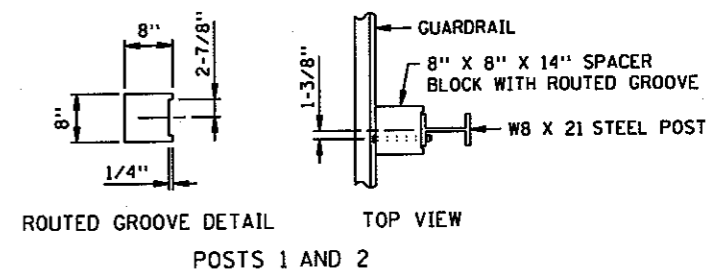
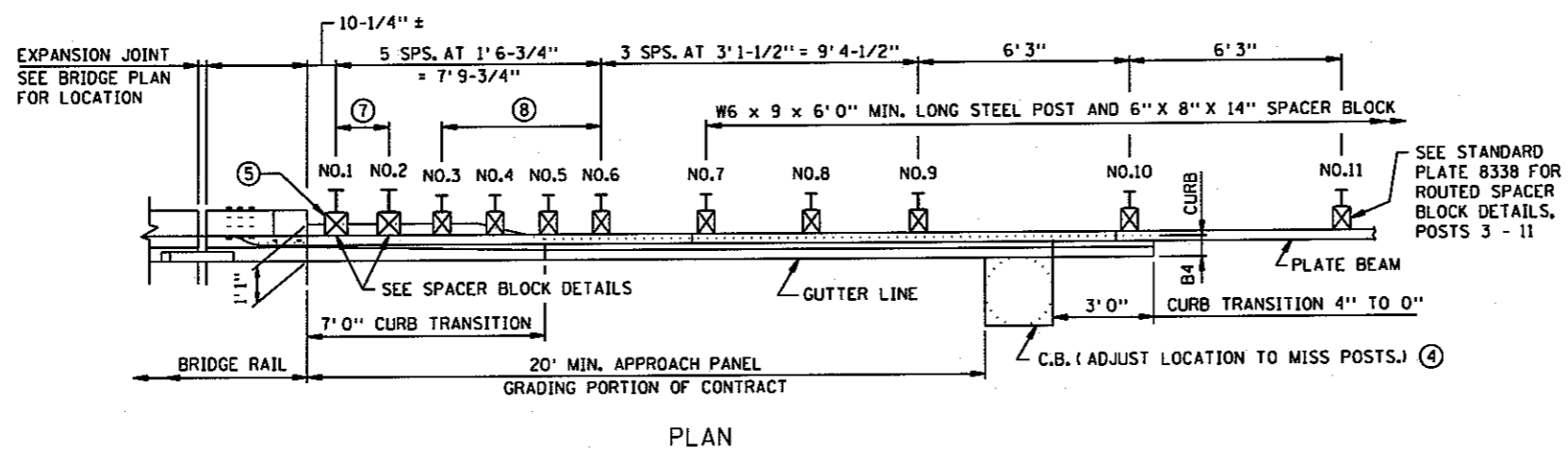
- ⑨ MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING), STRIPES SHALL SLOPE DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC 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.

SPN11 OF SPN17

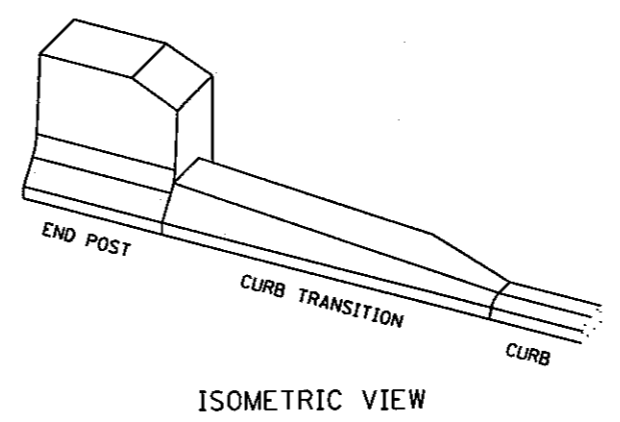
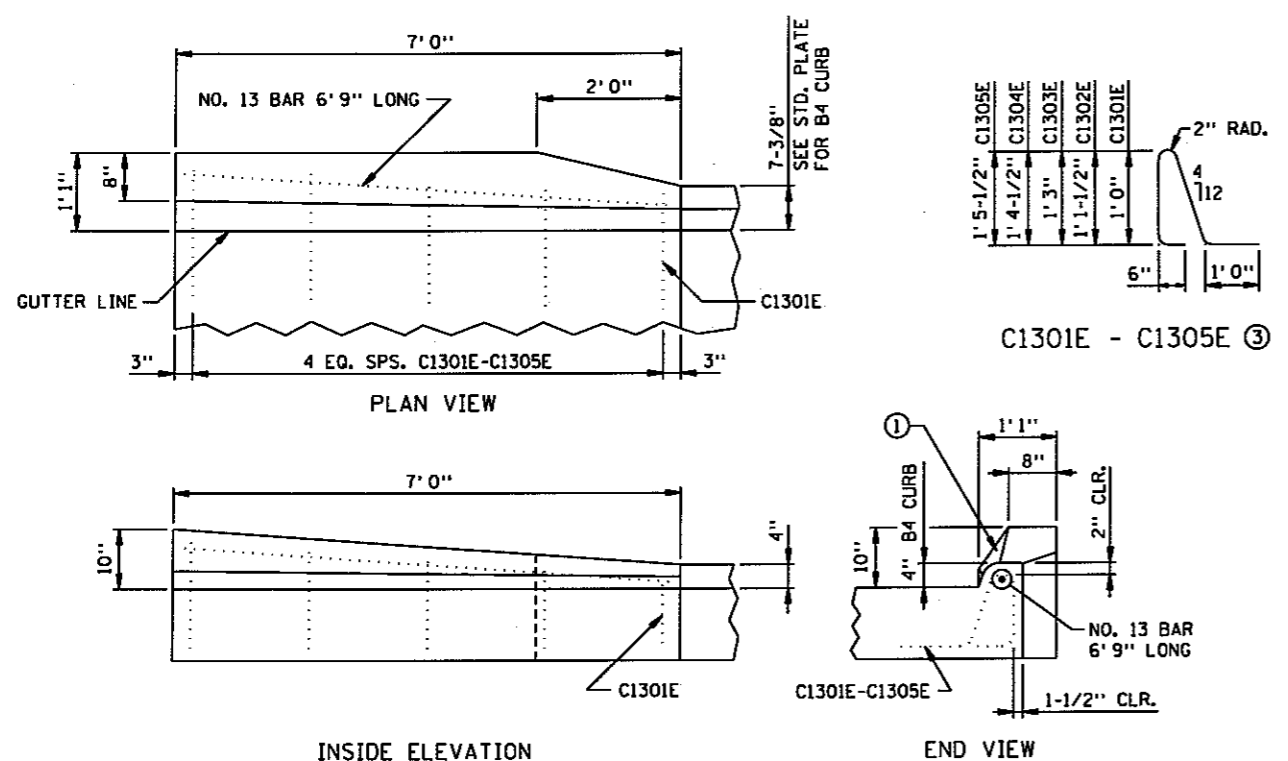
STANDARD SHEET NO. 5-297.601 (3 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS & END TREATMENTS (FOR NEW CONSTRUCTION AND RETROFITS WITHOUT SITE RESTRICTIONS)
STANDARD APPROVED: AUGUST 17, 2005	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 41 OF 194 SHEETS	

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SECTION A - A
F SHAPE RAIL (F BARRIER)
(PARALLEL WINGWALL SHOWN)



- NOTES:
- ① ALL REBARS ARE IN METRIC DESIGNATIONS
 - ① END OF TRANSITION TO MATCH BRIDGE RAIL SURFACE.
 - ② 5/8" DIA. X 1-1/4" LONG GUARDRAIL BOLTS AND NUTS TYPICAL AT SPLICES.
 - ③ REINFORCEMENT TO BE EPOXY COATED AS PER SPEC. 3301.
 - 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 6'0" 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.

TRAFFIC BARRIER DESIGN SPECIAL SPN12 OF SPN17

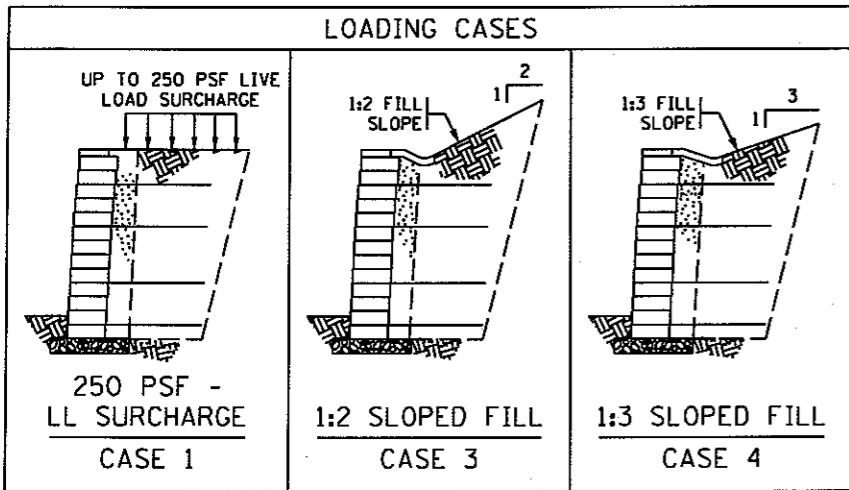
STANDARD SHEET NO. 5-297.603	TITLE NEW W-BEAM TRANSITION TO CONCRETE F-SHAPE SAFETY RAIL WITH APPROACH CURB (STEEL POST)
STANDARD APPROVED: DECEMBER 20, 2001	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 42 OF 194 SHEETS	

REVISION DATE
01-21-2006

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CASE 2
 IS OMITTED
 INTENTIONALLY
 FOR FUTURE
 RECONSIDERATION

NOTES TO CONTRACTOR:

APPROVED COMBINATIONS OF MODULAR BLOCK UNIT AND SOIL REINFORCEMENT PRODUCTS LIST WITH MBW REINFORCEMENT CLASS NOTED ARE HELD AND MAINTAINED BY THE FOUNDATIONS UNIT, AND POSTED AT www.mrr.dot.state.mn.us/geotechnical/foundations/foundations.asp UNDER FOUNDATIONS UNIT. ONLY APPROVED PRODUCT COMBINATIONS, INCLUDING BLOCK PRODUCED FROM APPROVED SOURCES MEETING DURABILITY AND QUALITY CONTROL REQUIREMENTS, MAY BE USED IN STANDARD DESIGNS.

PROVIDE DETAILED DRAWINGS FOR CONSTRUCTION CONTAINING:

- SUBMIT, WITH THE DETAILED DRAWINGS, A COPY OF Mn/DOT STANDARD SHEETS FOR LOADING CASE(S) USED WITH OPTIONS USED MARKED IN THE TABLE.
- ELEVATION VIEW WITH REINFORCEMENT PLACEMENT REQUIREMENTS, WALL FACING LAYOUT, AND GEOMETRIC INFORMATION. TOP OF WALL MAY EXTEND UP TO 4" ABOVE PLAN TOP OF WALL ELEVATION.
- PLAN VIEW WITH BOTTOM AND TOP OF WALL ALIGNMENT, AND PLAN LIMITS OF WALL ALIGNMENT.
- CROSS SECTIONS DETAILING BATTER, REINFORCEMENT, VERTICAL SPACING, REINFORCEMENT LENGTHS, SUBSURFACE DRAINAGE, SURFACE DRAINAGE, AND WATER RUNOFF COLLECTION ABOVE WALL.
- REINFORCEMENT LAYOUT: REINFORCEMENT SHALL BE PLACED AT 100% COVERAGE RATIO. REINFORCEMENT ELEVATIONS SHALL BE CONSISTENT ACROSS LENGTH OF WALL STRUCTURE.
- NOTE BLOCK, REINFORCEMENT, AND FILL PLACEMENT METHODS AND REQUIREMENTS.
- DETAIL ALL WALL FILL PENETRATIONS AND WALL FACE PENETRATIONS. DETAIL REINFORCEMENT AND/OR WALL FACING UNIT PLACEMENT AROUND PENETRATIONS.
- DETAILS THAT ARE SPECIFIC TO VENDOR PRODUCTS AND THEIR INTERACTION WITH OTHER PROJECT COMPONENTS.
- LIST INFORMATION ON APPROVED COMBINATION OF MBW UNIT AND GEOSYNTHETIC REINFORCEMENT, INCLUDING Mn/DOT CLASSIFICATION CODE, NOMINAL BLOCK WIDTH, PROPERTIES FOR FIELD IDENTIFICATION, AND INSTALLATION INSTRUCTIONS.
- DETAILS OF CAP UNITS AND INSTALLATION/FASTENING INSTRUCTIONS FOR THE CAPS. CAP UNITS SHALL BE SET IN A BED OF ADHESIVE DESIGNED TO WITHSTAND MOISTURE AND TEMPERATURE EXTREMES, REMAIN FLEXIBLE, AND SHALL BE SPECIFICALLY FORMULATED FOR BONDING MASONRY TO MASONRY.
- CERTIFICATION BY PROFESSIONAL ENGINEER THAT THE CONSTRUCTION LAYOUT MEETS THE REQUIREMENTS OF PLANS AND Mn/DOT MSEW STANDARDS. DEVIATION FROM STANDARD DESIGN TABLES ARE PERMITTED BY VALUE ENGINEERING SUBMITTAL ONLY ON PROJECTS WITH OVER 5000 SQ.FT. OF WALL.

DEFINITION OF TERMS	
MBW	MODULAR BLOCK WALL
LL	LIVE LOAD
C.I.P.	CAST-IN-PLACE
H	WALL HEIGHT
S	VERTICAL REINFORCEMENT SPACING
REINFORCEMENT COVERAGE RATIO	WIDTH OF SOIL REINFORCEMENTS TO HORIZONTAL SPACING (100% COVERAGE RATIO REQUIRED)

DESIGN CRITERIA

DESIGN CRITERIA FOLLOWS THE AASHTO SPECIFICATION FOR HIGHWAY BRIDGES (16TH EDITION WITH 1998 INTERIMS) EXCEPT FOR THE DEVIATIONS NOTED BELOW. DESIGN CRITERIA ARE IN ACCORDANCE WITH Mn/DOT POLICY, AS RECORDED IN THE Mn/DOT ROAD DESIGN MANUAL.

- A. THE MINIMUM REINFORCEMENT LENGTH IS 4 FT. OR 0.7H, WHICHEVER IS GREATER.
- B. THE REINFORCEMENT FILL FRICTION ANGLE IS 35°.
- C. THE ALLOWABLE CONNECTION LOAD, AT A GIVEN NORMAL LOAD, IS COMPUTED AS THE ULTIMATE CONNECTION STRENGTH REDUCED BY A SAFETY FACTOR EQUAL TO 2.0.
- D. THE LATERAL EARTH PRESSURE COMPUTATION FOR EXTERNAL STABILITY CALCULATIONS USES AN INTERFACE ANGLE SET EQUAL TO THE RETAINED BACKFILL ANGLE.
- E. THE LATERAL EARTH PRESSURE COMPUTATION FOR INTERNAL STABILITY CALCULATIONS INCORPORATES THE EFFECTS OF WALL FACE BATTER.

MINIMUM FACTORS OF SAFETY:
 OVERTURNING: 2.0
 SLIDING: 1.5
 ECCENTRICITY: $e < L/6$
 BEARING CAPACITY: 2.5
 DEEP SEATED STABILITY: 1.3

- BEARING:
- A. SEE FOUNDATION REPORT FOR ALLOWABLE SOIL BEARING PRESSURE.
 - B. CASES 1 AND 4 - ALLOWABLE SOIL BEARING CAPACITY (ULTIMATE BEARING CAPACITY REDUCED BY A SAFETY FACTOR OF 2.5) OF 2000 PSF IS REQUIRED FOR WALLS UP TO 10 FT. IN HEIGHT. FOR WALLS GREATER THAN 10 FT. IN HEIGHT, THE REQUIRED ALLOWABLE BEARING CAPACITY IS EQUAL TO: $2000 \text{ PSF} + (H-10)(625 \text{ PSF})$ WITH H IN FEET.
 - C. CASE 3 - ALLOWABLE SOIL BEARING CAPACITY (ULTIMATE BEARING CAPACITY REDUCED BY A SAFETY FACTOR OF 2.5) OF 2500 PSF IS REQUIRED FOR WALLS UP TO 10 FT. IN HEIGHT. FOR WALLS GREATER THAN 10 FT. IN HEIGHT, THE REQUIRED ALLOWABLE BEARING CAPACITY IS EQUAL TO: $2500 \text{ PSF} + (H-10)(850 \text{ PSF})$ WITH H IN FEET.

- REINFORCED WALL FILL CHARACTERISTICS:
- A. SELECT GRANULAR BORROW MODIFIED FOLLOWING SPEC. 3149.2B2. MODIFICATION: SELECT GRANULAR BORROW MODIFIED, FOR SPECIAL USE IN EMBANKMENT OR BACKFILL CONSTRUCTION OR OTHER SPECIFIED PURPOSES, MAY BE ANY PIT-RUN OR CRUSHER-RUN MATERIAL THAT IS GRADED FROM COARSE TO FINE, SUCH THAT 100% OF THE MATERIAL MUST PASS THE 2" SIEVE, AND THAT THE RATIO OF THE PORTION PASSING THE #200 SIEVE DIVIDED BY THE PORTION PASSING THE 1" SIEVE MAY NOT EXCEED 10% BY MASS (THAT IS: #200/1" RATIO)
 - B. INTERNAL ANGLE OF FRICTION (ϕ_r) = 35°
 - C. COHESION (C) = 0
 - D. MOIST UNIT WEIGHT (γ_r) = 125 PSF

- COARSE FILTER AGGREGATE CHARACTERISTICS:
- A. COARSE FILTER AGGREGATE TO MEET SPEC. 3149.2H. INCIDENTAL. NO DIRECT PAYMENT WILL BE MADE.

- RETAINED BACKFILL CHARACTERISTICS:
- A. INTERNAL ANGLE OF FRICTION (ϕ_b) = 30°
 - B. COHESION (C) = 0
 - C. MOIST UNIT WEIGHT (γ_b) = 120 PSF

- FOUNDATION SOILS CHARACTERISTICS:
- A. INTERNAL ANGLE OF FRICTION (ϕ_f) = 30°
 - B. COHESION (C) = 0
 - C. UNIT WEIGHT (γ_f) = 120 PSF

SUMMARY OF ESTIMATED QUANTITIES FOR MBW WALLS		
	UNIT	QUANTITY
STRUCTURE EXCAVATION CLASS ---	CU. YD.	
STRUCTURE EXCAVATION CLASS ---	CU. YD.	
REINFORCED WALL FILL (CV)	CU. YD.	
STRUCTURAL CONCRETE (1A43)	CU. YD.	
① MBW WALL	SQ. FT.	
TYPE I GEOTEXTILE	SQ. YD.	

- ① VERTICAL FACE AREA OF MODULAR BLOCK AS MEASURED FROM PLAN TOP OF WALL TO 2 FT. BELOW FINISHED GRADE AT BOTTOM OF WALL
- ② PAY ITEM FOR MBW WALLS SHALL BE 2411.

NOTES TO DESIGNER:

HEIGHT AND LOCATION RESTRICTIONS FOR ISSUES SUCH AS FREEZE-THAW DURABILITY ARE GOVERNED BY APPROPRIATE TECHNICAL MEMORANDUMS. CURRENT GOVERNING TECH. MEMO. NO.: 01-05-MRR-01 MAY BE FOUND AT www.dot.state.mn.us/tecsup/tmemo/index.html.

IN ADDITION TO THE STANDARD SHEETS, PLAN AND FRONT ELEVATION VIEWS OF THE MODULAR BLOCK RETAINING WALLS SHALL BE INCLUDED IN THE PLANS. THE PLAN VIEW MUST SHOW ALIGNMENT BASELINE, LIMITS OF BOTTOM OF WALL ALIGNMENT, AND LIMITS OF TOP OF WALL ALIGNMENT AS ALIGNMENTS VARY WITH BATTER OF WALL SYSTEM ACTUALLY SUPPLIED. THE FRONT ELEVATION MUST IDENTIFY BOTTOM AND TOP OF WALL ELEVATIONS, EXISTING GRADES, AND FINISHED GRADES.

IF THE WALL IS CURVED, THE RADIUS AT THE BOTTOM AND THE TOP OF EACH WALL SEGMENT AND THE P.C. AND P.T. STATION POINTS OFF OF BASELINE AND LIMITS OF BOTTOM AND TOP OF WALL ALIGNMENT MUST BE SHOWN.

REFERENCE STANDARD PLATES AND PROVIDE DETAILS FOR TRAFFIC BARRIERS, CURB AND GUTTER, HANDRAILS AND FENCING AS REQUIRED BY PROJECT CONDITIONS. SEE AASHTO AND Mn/DOT DESIGN MANUALS, STANDARD PLATES AND DETAILS FOR REQUIREMENTS.

SURFACE DRAINAGE PATTERNS SHALL BE SHOWN IN THE PLAN VIEW. PROVIDE DIMENSIONS FOR WIDTH AND DEPTH OF THE DRAINAGE SWALE AS WELL AS THE TYPE OF IMPERVIOUS LINER MATERIAL. SURFACE WATER RUNOFF SHOULD BE COLLECTED ABOVE AND DIVERTED AROUND WALL FACE.

DETAIL LINES AND GRADES OF THE INTERNAL DRAINAGE COLLECTION PIPE. DETAIL OR NOTE THE DESTINATION OF INTERNAL WALL DRAINS AS WELL AS THE METHOD OF TERMINATION (DAYLIGHT END OF PIPE OR CONNECTION INTO HYDRAULIC STRUCTURE). THE SPACING FOR DRAIN PIPE OUTLET SHALL NOT BE MORE THAN 250 FT.

SOFT SOILS AND/OR HIGH WATER CONDITIONS (DEFINED AS GROUNDWATER WITHIN A DEPTH EQUAL TO THE WALL HEIGHT H) MAY NOT BE SUITABLE FOR APPLICATION OF STANDARD DESIGNS AND REQUIRE SPECIAL CONSIDERATION BY THE FOUNDATIONS UNIT.

- STANDARD DESIGN CHARTS ARE NOT APPLICABLE TO:
- PROJECT/SITES WHERE FOUNDATION SOILS SHEAR STRENGTH AND/OR BEARING CAPACITY DO NOT MEET OR EXCEED VALUES USED IN THE DEVELOPMENT OF STANDARD DESIGN CHARTS.
 - PROJECTS WITH A LARGE QUANTITY OF FACE AREA WHERE PROJECT SPECIFIC DESIGNS ARE RECOMMENDED, AS DEFINED IN Mn/DOT ROAD DESIGN MANUAL.
 - WHERE SLOPES IN FRONT OF WALL ARE STEEPER THAN 1:3.
 - WHERE MAXIMUM WALL HEIGHT EXCEEDS 12 FT.
 - WHERE WALLS ARE TIERED.
 - WALLS WITH NOISE WALLS.

IF USING CONCRETE RAILING, INCLUDE STANDARD BRIDGE DETAIL "CONCRETE RAILING (TYPE F)" IN PLAN SET.

PROVIDE PROJECT SPECIFIC AESTHETIC REQUIREMENTS INCLUDING COLOR AND FASCIA SURFACING IN THE SPECIAL PROVISIONS.

CHAPTER 9 OF THE Mn/DOT "ROAD DESIGN MANUAL" CONTAINS GUIDELINES, TRAFFIC SAFETY AND OTHER ASPECTS.

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 Mn/DOT 2451.

CAST-IN-PLACE CONCRETE:
 ALL CONCRETE SHALL CONFORM TO Mn/DOT 2461, EXCEPT AS NOTED.

CONSTRUCTION:
 CONSTRUCTION SHALL BE IN ACCORDANCE WITH Mn/DOT 2411, EXCEPT AS NOTED.

GEOMETRICS AND GRADES:
 DATA FOR BASELINE GEOMETRY IS TABULATED FOR WALL ALIGNMENT, SEE LAYOUT SHEETS. WALL ALIGNMENT REFERENCE IS ALONG FRONT FACE OF WALL.

THE FILL SLOPE CONVENTION OF 1 VERTICAL TO HORIZONTAL IS USED IN THIS PLAN.

COMPACTION REQUIREMENTS:
 COMPACT REINFORCED WALL FILL IN ACCORDANCE WITH Mn/DOT SPEC. 2105.3F1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.

COMPACT GRANULAR BEDDING IN ACCORDANCE WITH Mn/DOT SPEC. 2105.3F1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.

SPN13 OF SPN17

REVISED: 11-12-02
 APPROVED: JULY 12, 2002

 STATE BRIDGE ENGINEER

STANDARD SHEET NO. 5-297.640	TITLE: MODULAR BLOCK RETAINING WALL GENERAL NOTES AND SUMMARY OF QUANTITIES
STANDARD APPROVED: JULY 12, 2002	
REVISION DATE 11-12-02	STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 43 OF 194 SHEETS

MODULAR BLOCK WALL REINFORCEMENT LAYOUT

CASE 4 - 1:3 FILL SLOPE

MBW REINFORCEMENT CLASS	STRENGTH OF SOIL REINF. (PLF)		① MINIMUM REINFORCEMENT LENGTH, L (FT.)	MAXIMUM WALL HEIGHT (FT.)	② NOMINAL BLOCK WIDTH (IN.)	WALL BATTER RANGE (DEGREES)		③ MAXIMUM UNREINFORCED WALL HT, A (IN.)	ZONE 1		ZONE 2		ZONE 3			
	LG. TERM (T _d)	DESIGN (T _d)				≥	<		H1 (FT.)	S1 _{MAX} (IN.)	H2 (FT.)	S2 _{MAX} (IN.)	H3 (FT.)	S3 _{MAX} (IN.)		
MBW-700	1050	700	0.7 H	12.0	12	0	3	24	8.5	24	3.5	16				
						3	7	24	9.2	24	2.8	16				
						7	10	24	11.2	24	0.8	16				
						10	15	24	12.0	24						
						0	3	32	4.6	32	3.9	24	3.5	16		
						3	7	32	5.2	32	3.9	24	2.9	16		
						7	10	32	5.2	32	5.9	24	0.9	16		
						10	15	32	5.9	32	6.1	24				
MBW-1050	1575	1050	0.7 H	12.0	12	0	3	24	12.0	24						
						3	7	24	12.0	24						
						7	10	24	12.0	24						
						10	15	24	12.0	24						
						0	3	42	5.6	42	3.3	32	3.1	24		
						3	7	42	8.2	42	2.6	32	1.2	24		
						7	10	42	8.5	42	3.5	32				
						10	15	42	9.8	42	2.2	32				
MBW-1400	2100	1400	0.7 H	12.0	12	0	3	24	12.0	24						
						3	7	24	12.0	24						
						7	10	24	12.0	24						
						10	15	24	12.0	24						
						0	3	42	8.9	42	3.1	32				
						3	7	42	10.8	42	1.2	32				
						7	10	42	12.0	42						
						10	15	42	12.0	42						

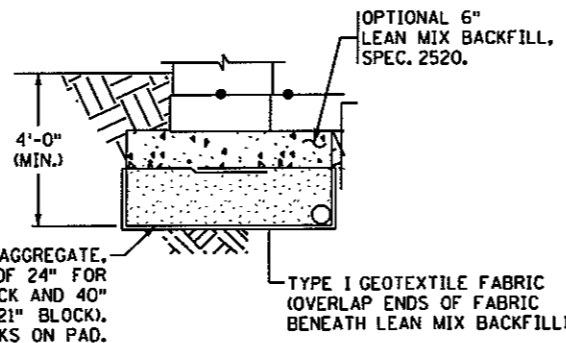
INSTRUCTIONS TO CONTRACTOR:

USE AS MANY ZONES AS WALL HEIGHT REQUIRES, STARTING WITH ZONE 1 AND ADDING ADDITIONAL ZONES TO THE BOTTOM OF THE WALL AS NEEDED TO MAKE UP THE TOTAL WALL HEIGHT (H) NEEDED.

REINFORCEMENT CLASS, NOMINAL BLOCK WIDTH AND WALL BATTER ARE GENERALLY THE CONTRACTOR'S OPTION TO SELECT FROM Mn/DOT APPROVED PRODUCTS LISTS LOCATED AT www.mrrr.dot.state.mn.us/geotechnical/foundations/foundations.asp.

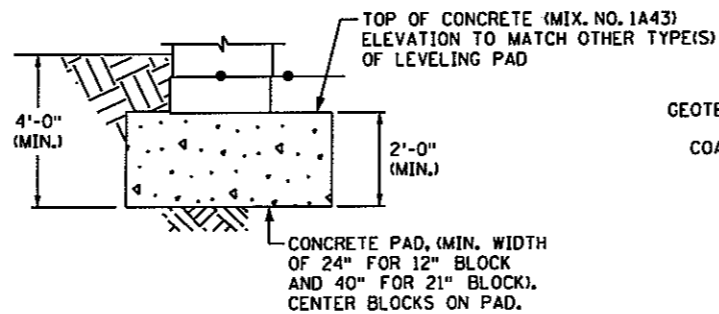
NOTES TO CONTRACTOR:

- OR 4 FT. MINIMUM, WHICHEVER IS GREATER.
- WIDTH - AS MEASURED FROM FRONT TO BACK FACE OF BLOCK UNIT.
- MAXIMUM DISTANCE FROM TOP OF WALL TO FIRST REINFORCEMENT LAYER. UNREINFORCED WALLS ARE NOT INCLUDED IN THIS STANDARD BUT MAY BE CONSTRUCTED UP TO AT LEAST THE HEIGHT GIVEN IN THE TABLE FOR A GIVEN NOMINAL BLOCK WIDTH AND THE SPECIFIED FILL MATERIALS CONTAINED IN THIS STANDARD.
- PAY LIMITS OF STRUCTURAL EXCAVATION. ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS; EXCAVATION BEYOND "LIMITS OF STRUCTURAL EXCAVATION" AT CONTRACTOR'S EXPENSE.
- THE WRAP LENGTH FOR GEOTEXTILE FABRIC SHALL NOT BE MORE THAN 6".
- INSPECT EXCAVATION SLOPES FOR ACTIVE SEEPAGE AND PLACE ADDITIONAL DRAINS WHERE SEEPAGE OCCURS AS DIRECTED BY THE ENGINEER.
- PLACE DRAIN AT BOTTOM OF REINFORCED SOIL IF PIPE CAN BE SLOPED TO OUTLET. DO NOT OUTLET ONTO A SIDEWALK.
- IF PIPE AT THIS ELEVATION CANNOT BE SLOPED TO DRAIN, OMIT DRAIN AND USE "CONCRETE PAD WITHOUT DRAIN" DETAIL.
- 4" THERMOPLASTIC PERFORATED PIPE, SPEC. 3245, WRAP WITH TYPE I GEOTEXTILE, SPEC. 3733 (TYP.) INSTALLATION AS PER SPEC. 2502, WITH PRECAST CONCRETE HEAD WALL AT OUTLET.
- S_{MAX} = 0.5 S1_{MAX} IF THE WALL HEIGHT IS WITHIN ZONE 1.
S_{MAX} = 0.5 S2_{MAX} IF THE WALL HEIGHT IS WITHIN ZONE 2.
S_{MAX} = 0.5 S3_{MAX} IF THE WALL HEIGHT IS WITHIN ZONE 3.
- THE REINFORCED WALL FILL DRAIN MAY BE CONNECTED INTO FOOTING DRAIN, INSTEAD OF OUT LETTING THROUGH THE WALL, IF CAPACITY IS ADEQUATE TO TRANSMIT THE FLOW.



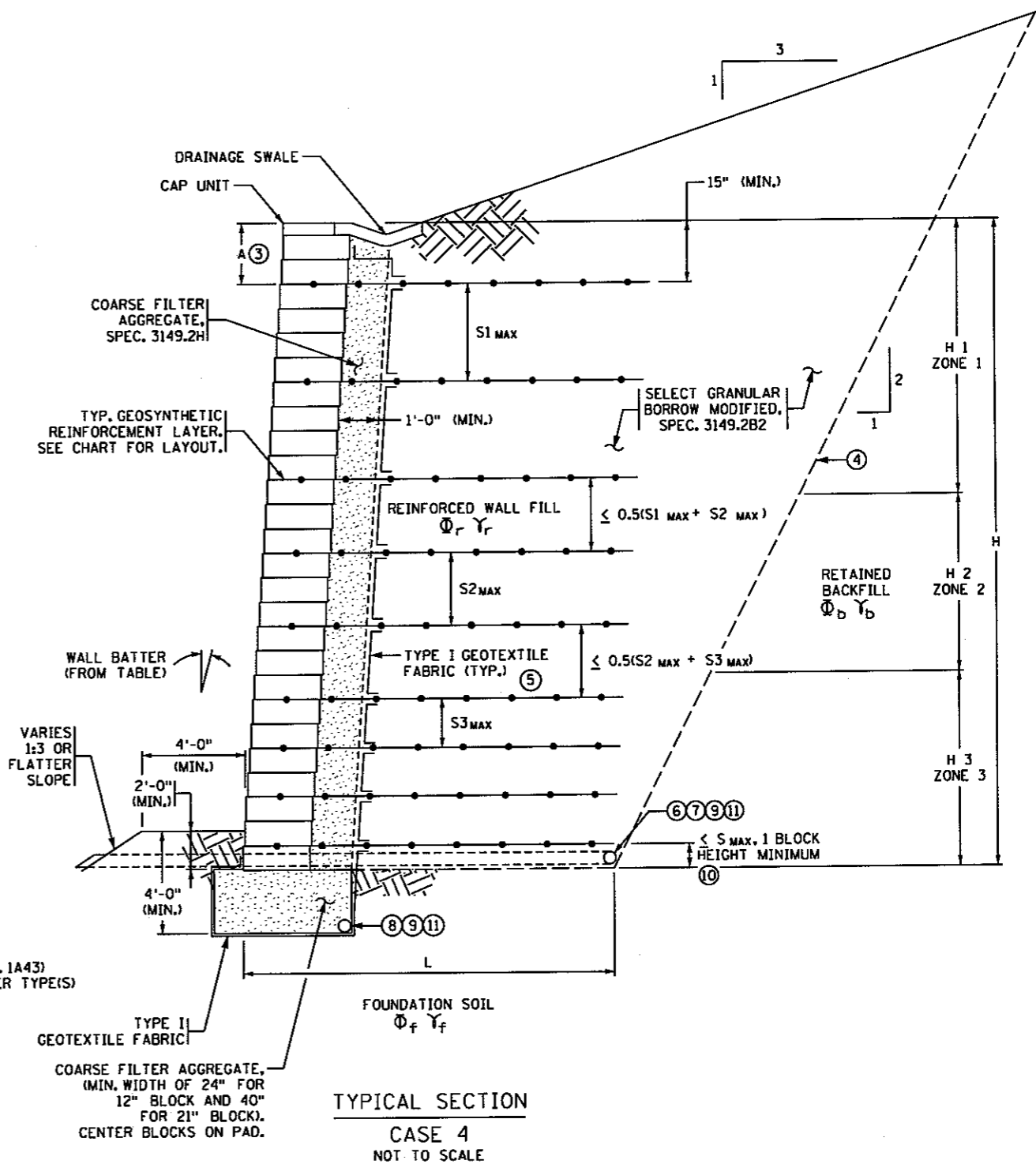
OPTIONAL CONCRETE LEVELING PAD

NOT TO SCALE



CONCRETE PAD WITHOUT DRAIN

NOT TO SCALE



TYPICAL SECTION

CASE 4
NOT TO SCALE

SPN14 OF SPN17

PLOTTED/REVISED: 4/6/2010 4:02:05 PM

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USER NAME: \$USER\$NAME\$\$\$
PATH & FILENAME: \$\$\$PATH\$FILENAME\$\$\$

FILE NAME: \$FILENAME\$

REVISED: 11-12-02
APPROVED: JULY 12, 2002
Samuel Johnson
STATE BRIDGE ENGINEER

STANDARD SHEET NO. 5-297.644	TITLE: MODULAR BLOCK RETAINING WALL SOIL REINFORCEMENT FOR 1:3 FILL SLOPE, CASE 4
STANDARD APPROVED: JULY 12, 2002	
REVISION DATE 11-12-02	STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 44 OF 194 SHEETS

PLOTTED/REVISED: 12/06/54 AM
 \$\$\$DATE\$\$\$ 1/21/2010

NOTES:

CORRECT ORIENTATION OF GEOSYNTHETIC TO OBTAIN PROPER STRENGTH SHALL BE DETAILED ON CONTRACTOR DRAWINGS.

ADJACENT WIDTHS OF REINFORCEMENT SHALL BE EXTENDED AS NECESSARY AND NOT PLACED DIRECTLY ON TOP OF EACH OTHER.

MINIMUM OF 3" OF SOIL FILL IS REQUIRED BETWEEN OVERLAPPING REINFORCEMENT FOR PROPER ANCHORAGE

STAGGER REINFORCEMENT BY ONE BLOCK HEIGHT. REINFORCEMENTS SHALL NOT BE PLACED DIRECTLY ON TOP OF EACH OTHER.

REINFORCEMENT PLACEMENT AROUND CURVES AND CORNERS

REINFORCEMENT IS TO BE PLACED ON LEVEL BACKFILL AND EXTENDED TO FRONT FACE OF OVERLYING BLOCKS. PLACE NEXT UNIT. PULL REINFORCEMENT TAUT AND BACKFILL AS REQUIRED.

REINFORCEMENT PLACEMENT BETWEEN BLOCK UNITS

POST DETAIL
TYPICAL HANDRAIL AND/OR FENCE POST

STEEL PLATE BEAM GUARDRAIL DETAIL 1

- OPTION A: 4" CONCRETE
- OPTION B: 6" CLAY OR CLAY LOAM, TOPSOIL AND SOD.
- OPTION C: IMPERVIOUS 20 mil OR THICKER GEOMEMBRANE, TOPSOIL AND SOD WITH NO STAKES THROUGH GEOMEMBRANE.

TYPICAL DRAIN SWALE DETAIL

NOTES:

DIMENSIONS TO BE DETERMINED BY DESIGN ENGINEER BASED ON SITE REQUIREMENTS.

$X = Y$

SEE PLAN VIEW FOR SURFACE DRAINAGE PATTERNS.

STEEL PLATE BEAM GUARDRAIL DETAIL 2

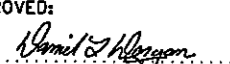
(AADT SHALL BE LESS THAN 5000) STEEL PLATE BEAM GUARDRAIL SHOWN.

NOTES:

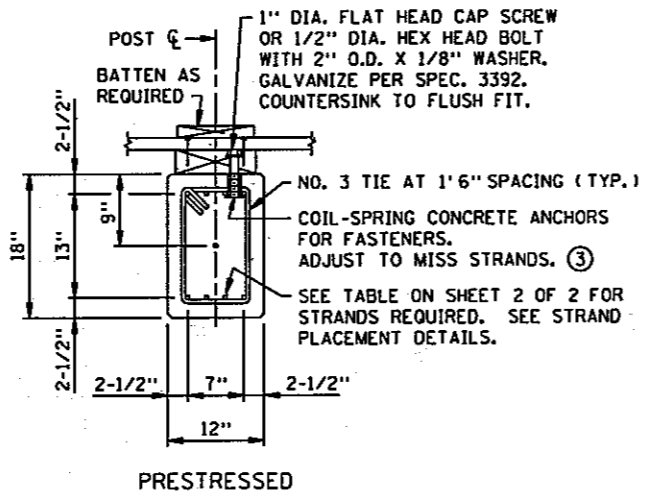
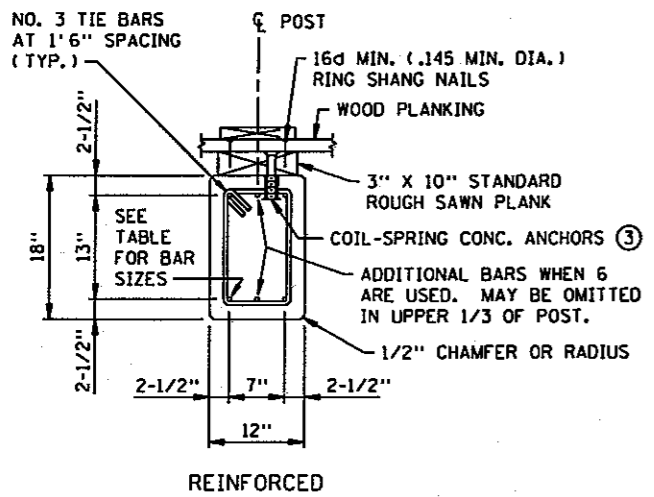
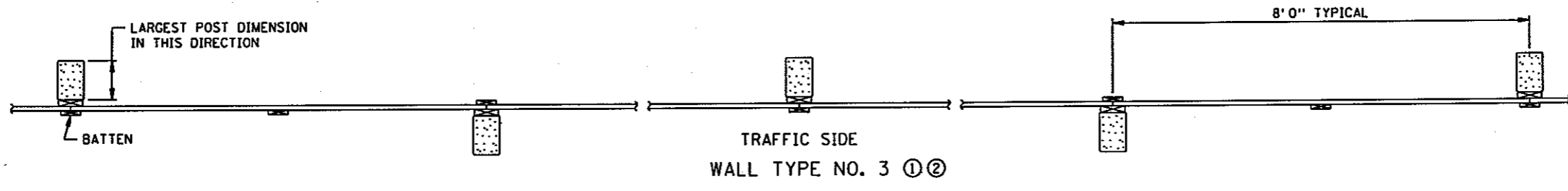
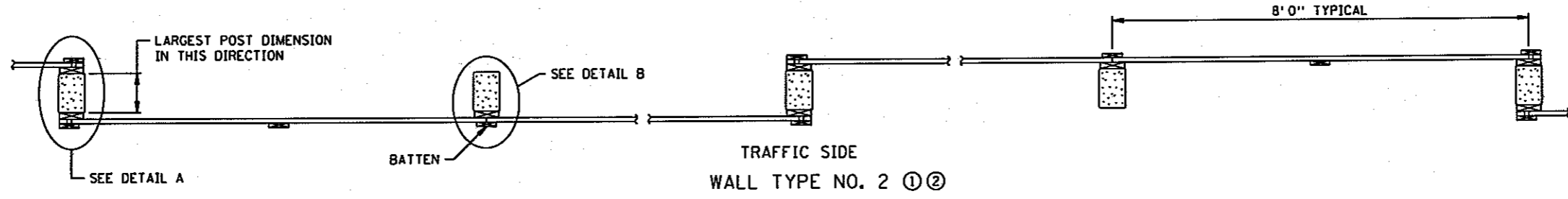
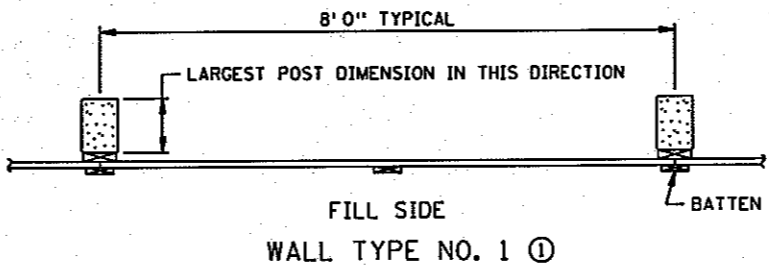
- ① USE CAUTION WHEN PLACING CURB WITH GUARDRAIL. CURBS ADVERSELY AFFECT THE PERFORMANCE OF THE GUARDRAIL. GENERALLY PLACE CURB DIRECTLY BELOW GUARDRAIL. SEE PLANS OR REFER TO STANDARD PLAN 5-297.601 (2). FOR CURB LOCATIONS ON NCHRP REPORT NO. 350 APPROVED BRIDGE TRANSITIONS, SEE STANDARD PLANS 5-297.603, .605, .606 ETC..

SPN15 OF SPN17

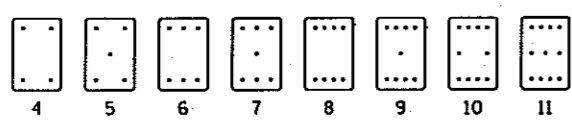
DISTRICT #: \$DISTRICT\$
 USER NAME: \$USER\$
 PATH & FILENAME: \$PATH\$

REVISED:
 APPROVED:

 STATE BRIDGE ENGINEER

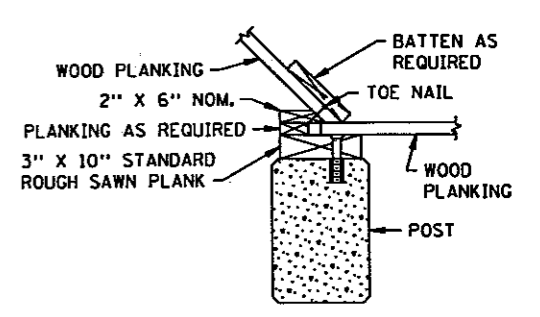
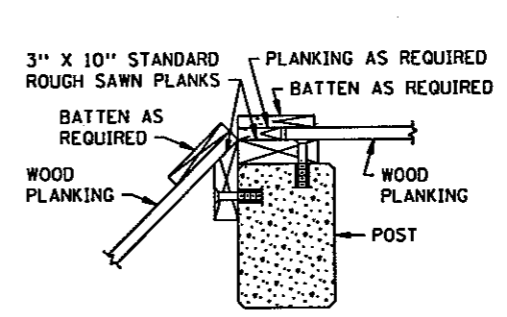
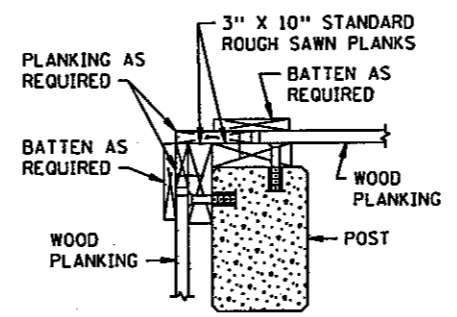
STANDARD SHEET NO. 5-297.645	TITLE: MODULAR BLOCK RETAINING WALL DETAILS
STANDARD APPROVED: MARCH 19, 2003	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 45 OF 194 SHEETS	



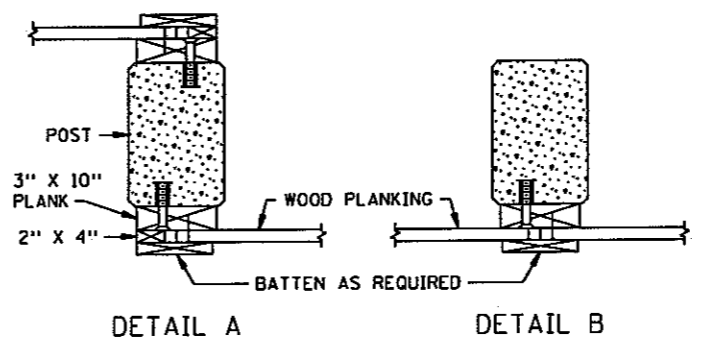
POST DETAILS



STRAND PLACEMENT DETAILS



POST LOCATIONS FOR ANGLE TURNS



DETAIL A

DETAIL B

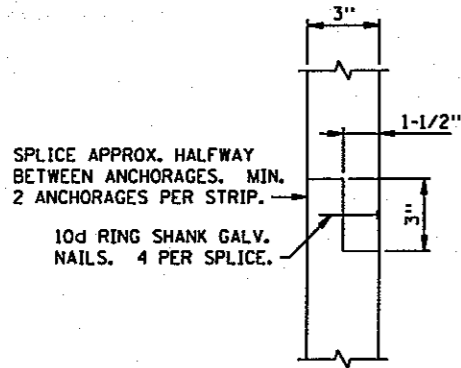
- NOTES:
- ① SEE SHEET(S) _____ FOR WALL TYPE REQUIRED.
 - ② TYPE NO. 2 AND 3 SHALL BE USED IN NON-FILL CONDITIONS ONLY.
 - ③ SPACE AT 4' 0" ON ALTERNATE SIDES OF POST. ULTIMATE PULL-OUT 2.25K PER ANCHOR.

SPN16 OF SPN17

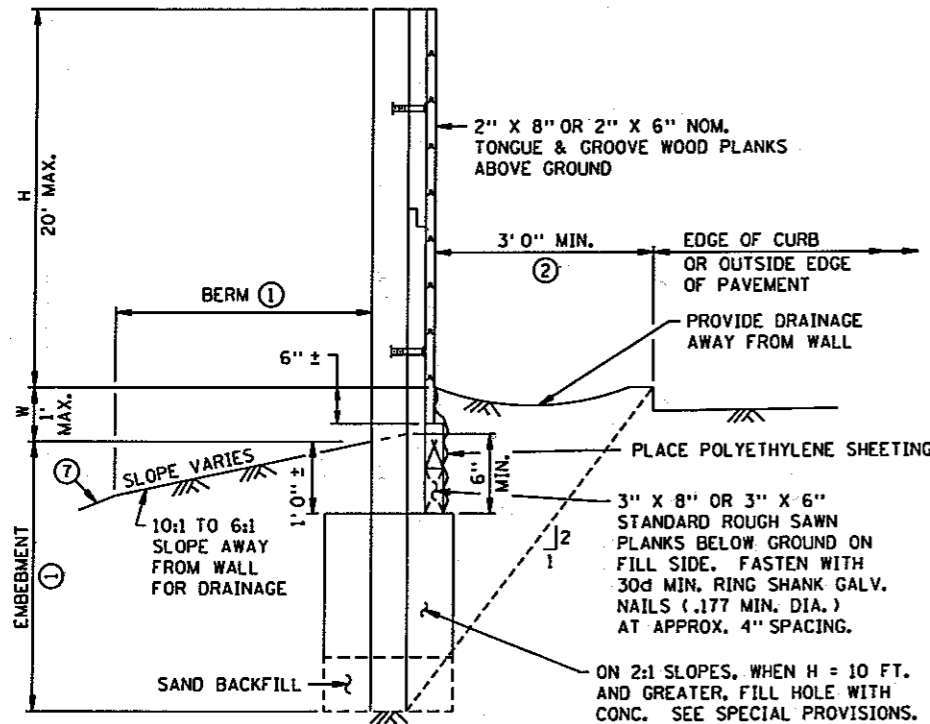
STANDARD SHEET NO. 5-297.661 (1 OF 2)	TITLE: WOOD PLANKING NOISE BARRIER WITH CONCRETE POSTS
STANDARD APPROVED: JANUARY 4, 1994	
STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 46 OF 194 SHEETS	

FILL HEIGHT W = 0' TO 1'

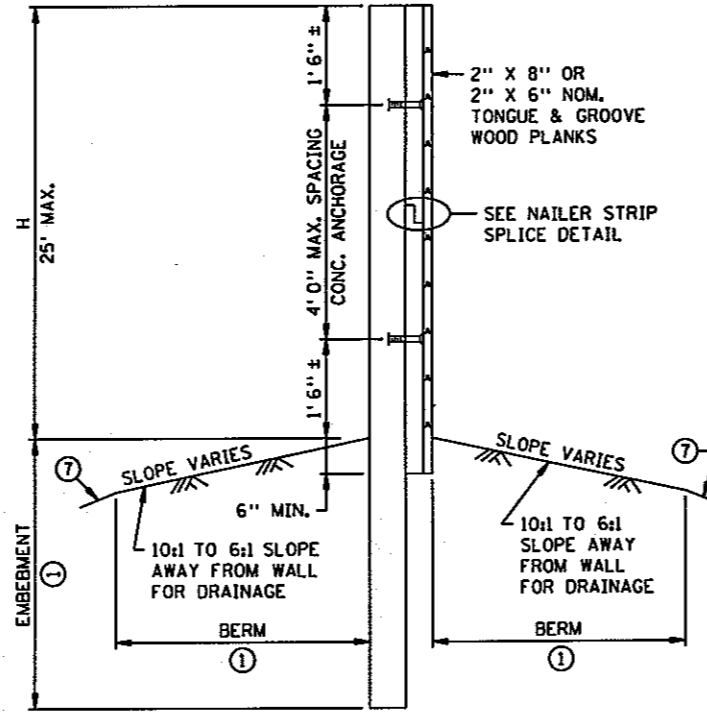
"H" WALL HEIGHT (FT.)	POST SPACING (FT.)	POST SIZE (IN.)	REINF. BARS	PRE-STRESSED STRANDS	POST EMBEDMENT		
					LEVEL GROUND	2:1 SLOPE	3:1 SLOPE
5	8	12 X 18	4 NO. 4	4	5' 0"	8' 0"	7' 0"
6	8	12 X 18	4 NO. 4	4	6' 0"	9' 0"	8' 0"
7	8	12 X 18	4 NO. 4	4	6' 0"	9' 0"	8' 0"
8	8	12 X 18	4 NO. 4	4	7' 0"	10' 0"	9' 0"
9	8	12 X 18	4 NO. 4	4	7' 0"	11' 0"	10' 0"
10	8	12 X 18	4 NO. 4	4	8' 0"	11' 0"	10' 0"
11	8	12 X 18	4 NO. 5	4	8' 0"	12' 0"	11' 0"
12	8	12 X 18	4 NO. 5	4	8' 0"	12' 0"	11' 0"
13	8	12 X 18	4 NO. 5	4	9' 0"	13' 0"	11' 0"
14	8	12 X 18	4 NO. 5	4	9' 0"	13' 0"	11' 0"
15	8	12 X 18	6 NO. 5	4	9' 0"	13' 0"	11' 0"
16	8	12 X 18	6 NO. 5	4	9' 0"	14' 0"	12' 0"
17	8	12 X 18	6 NO. 5	4	10' 0"	14' 0"	12' 0"
18	8	12 X 18	6 NO. 6	4	10' 0"	15' 0"	13' 0"
19	8	12 X 18	6 NO. 6	5	10' 0"	15' 0"	13' 0"
20	8	12 X 18	6 NO. 6	5	10' 0"	15' 0"	13' 0"
21	8	12 X 18	6 NO. 6	6	11' 0"	16' 0"	14' 0"
22	8	12 X 18	6 NO. 7	6	11' 0"	16' 0"	14' 0"
23	8	12 X 18	6 NO. 7	7	11' 0"	17' 0"	14' 0"
24	8	12 X 18	6 NO. 7	8	11' 0"	17' 0"	14' 0"
25	8	12 X 18	6 NO. 7	9	12' 0"	17' 0"	14' 0"



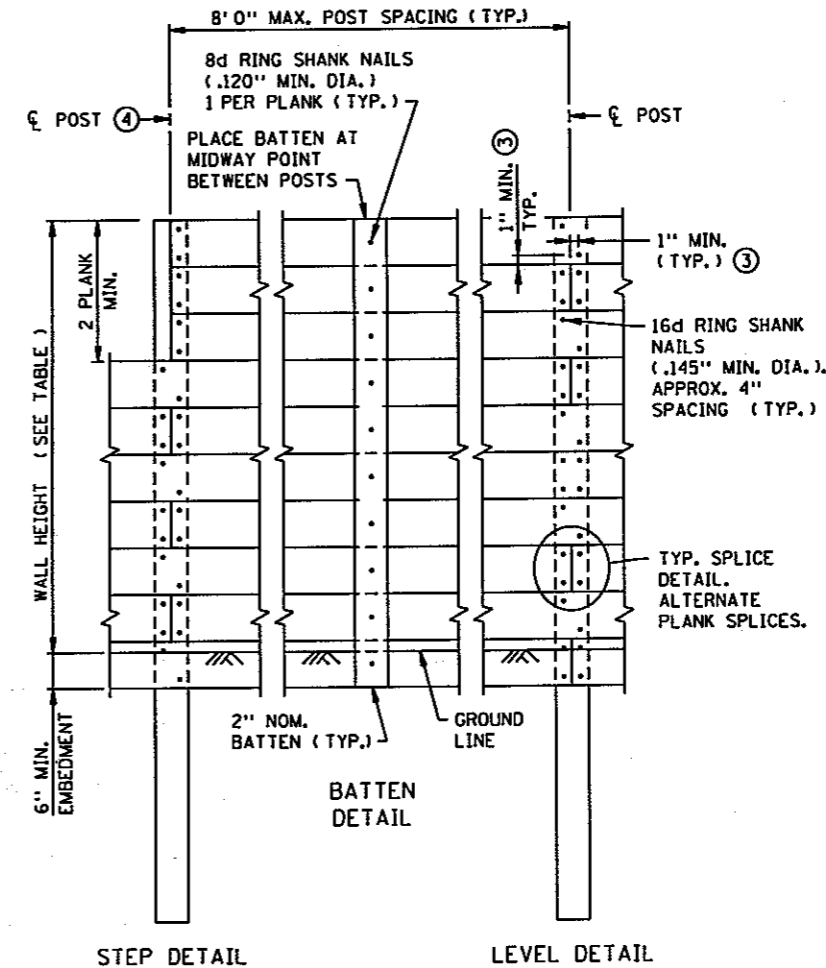
NAILER STRIP SPLICE DETAIL



SECTION AT POST WITH EARTH FILL



SECTION AT POST WITHOUT EARTH FILL



FRONT ELEVATION POST BATTENS NOT SHOWN

DESIGN CRITERIA:
 φ = 30° (GRANULAR)
 WIND LOAD = 23 P.S.F.
 f_b = 4000 P.S.I. CONCRETE POSTS.
 f_b = 1400 P.S.I. WOOD PLANKING.
 f_b = 1200 P.S.I. ALL OTHER WOOD MEMBERS.
 STRESS LEVEL SYMBOL
 PER AITC-117-(LATEST ADDITION):
 24F = 2400 PSI ALLOWABLE BENDING STRESS
 20F = 2000 PSI ALLOWABLE BENDING STRESS

POST DESIGN CRITERIA

NO. OF STRANDS	f'c (6)	f'c (5)
6 OR LESS	4000 PSI	5500 PSI
7 OR MORE	4000 PSI	6000 PSI

NOTES:
 EMBEDMENT LENGTH IS BASED ON THE WATER TABLE BEING BELOW THE EMBEDMENT DEPTH OTHER CONDITIONS REQUIRE A SPECIAL DESIGN.

FOR SLOPES BETWEEN THOSE SHOWN, USE THE EMBEDMENTS FOR THE STEEPER SLOPE OR USE INTERPOLATION.

FOR SLOPES 6:1 OR FLATTER, USE LEVEL GROUND EMBEDMENT.

THE FINISHED WIDE FACE DIMENSION FOR THE ROUGH SAWN 3" PLANKS SHALL BE THE SAME AS THE FINISHED WIDE FACE DIMENSION FOR THE 2" PLANKS.

GALVANIZE NAILS PER SPEC. 3392. NAILING REQUIREMENTS SHOWN ARE BASED ON FULL HEAD NAILS AND ENTIRE LENGTH OF SHANK BEING DEFORMED. SEE SPECIAL PROVISIONS FOR POWER NAILS ALTERNATE.

SOIL TESTS AT 200 FT. INTERVALS SHALL BE REQUIRED AT EACH SITE LOCATION AND THE RESULTS REVIEWED BY THE SOILS ENGINEER FOR RECOMMENDATIONS.

SOIL TREATMENT AND BACKFILL SHALL CONFORM TO SPEC. 2451.

SEE SPEC. 2554 FOR ADDITIONAL CONST. INFORMATION, UNLESS OTHERWISE NOTED.

CONCRETE POSTS WITH THE SAME TOTAL LENGTH SHALL USE THE LARGEST NUMBER OF PRESTRESSED STRANDS REQUIRED FOR THAT POST LENGTH.

PRESTRESSED STEEL STRANDS ARE 1/2" DIA. (AREA = 0.153 SQ. IN.), MIN. OF 2 SPACES, 270 KIP ULTIMATE STRENGTH. INITIAL PRESTRESS EQUALS 28,900 LBS./STRAND.

STEEL STRANDS PER SPEC. 3348 AND PAINT THE EXPOSED ENDS OF THE STRANDS WITH AN APPROVED GRAY EPOXY.

ALL REINF. BARS SHALL BE EPOXY COATED GRADE 60 PER SPEC. 3301 AND HAVE A MIN. 2" CLEAR UNLESS OTHERWISE NOTED.

- ① EMBEDMENT DEPTHS IN THE TABLES ARE BASED ON A 3 FT. MIN. BERM IN FRONT OF THE WALL.
- ② WHEN THE CURB LINE IS CLOSER THAN 2:1 SLOPE, A SPECIAL DESIGN IS REQUIRED.
- ③ 1" MIN. DISTANCE FROM EDGE OR END OF PLANK.
- ④ USE THE POST SIZE AND EMBEDMENT FOR THE HIGHER WALL SECTION AT THE STEP.
- ⑤ MINIMUM CONCRETE STRENGTH AT THE TIME OF PRESTRESS TRANSFER.
- ⑥ MIN. CONCRETE STRENGTH THE POST CAN BE TRANSPORTED AND INSTALLED. THE CONCRETE SHALL BE PER SPEC. 2461.4A4b.
- ⑦ SEE POST EMBEDMENT TABLES.

SPN17 OF SPN17

STANDARD SHEET NO.
 5-297.661 (2 OF 2)
 STANDARD APPROVED:
 JANUARY 4, 1994

TITLE:
 WOOD PLANKING NOISE BARRIER
 WITH CONCRETE POSTS

REVISION DATE
 4-1-99

STATE PROJ. NO. 02-614-32 (CSAH 14) SHEET NO. 47 OF 194 SHEETS

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THIS PROJECT. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, DATE JANUARY 2007.
2. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
3. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
4. ALL DISTANCES ARE APPROXIMATE.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
6. THE CONTRACTOR SHALL PROVIDE COMPLETE TRAFFIC CONTROL PLANS FOR PHASING AND TRAFFIC CONTROL FOR WORK NOT SHOWN IN THIS TRAFFIC CONTROL PLAN. SEE SPECIAL PROVISIONS FOR PHASING AND TRAFFIC CONTROL REQUIREMENTS.
7. THE CONTRACTOR SHALL PROVIDE ACCESS TO LOCAL TRAFFIC AS DIRECTED BY THE ENGINEER. ALL SIGNS AND DEVICES NEEDED TO PROVIDE THIS ACCESS AND TO PROTECT THE WORK AREA SHALL BE CONSIDERED INCIDENTAL.
8. ALL BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES.

SIGNING:

1. THE CONTRACTOR SHALL COVER, REMOVE, OR CHANGE INPLACE SIGNS THAT CONFLICT WITH THE TRAFFIC PATTERNS AS DIRECTED BY THE ENGINEER. ALL SIGNS ALTERED BY THE CONTRACTOR SHALL BE RETURNED TO THEIR ORIGINAL STATUS UPON COMPLETION OF THE PROJECT. ALL SIGN COVERED WITH OTHER SIGNS PANELS OR BLANKS SHALL HAVE NYLON WASHERS SPACED BETWEEN THE SIGN AND THE PANEL.
2. WHEN SIGNS ARE INSTALLED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MNMUTCD. IF THIS IS NOT POSSIBLE THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
4. ALL ORANGE SIGNS SHALL BE MADE OF "HIGH PERFORMANCE FLUORESCENT SIGN SHEETING" OR AN APPROVED SUBSTITUTE.
5. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" FIELD MANUAL UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
6. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE INSTALLED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS INSTALLED.

PAVEMENT MARKING:

1. OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
2. PAINT, POLYMER LANE TAPE AND/OR TRPM'S ARE ACCEPTABLE TEMPORARY STRIPING ALTERNATIVES ACCORDING TO ACTUAL CONDITIONS ENCOUNTERED AS DIRECTED BY THE ENGINEER. GENERALLY, ONLY PAINT WILL BE USED BEFORE MAY 1ST OR WHEN THE OTHER MANUFACTURERS' SPECIFICATIONS CANNOT BE MET.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND INSTALLATION OF TEMPORARY AND FINAL STRIPING, WITH APPROVAL BY THE ENGINEER. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING, AND DETERMINE NECESSARY STARTING AND CUTOFF POINTS.

BARRIER & DELINEATION:

1. TOP MOUNTED BARRIER DELINEATORS WILL HAVE A MINIMUM OF 24 IN² OF REFLECTIVE SURFACE AREA AND BE PLACED AT 30' SPACES ON TOP OF THE BARRIER WHEN THE BARRIER IS WITHIN 10' OF TRAFFIC UNLESS OTHERWISE NOTED OR AS DIRECTED BY THE ENGINEER. IF THE TRAFFIC ENGINEER REQUIRES SIDE MOUNTED BARRIER DELINEATORS, THEY WILL HAVE A MINIMUM OF 12 IN² OF REFLECTIVE SURFACE AREA AND BE PLACED AT 30' SPACES. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE AT ONE HALF THE SPACING AND ONE HALF THE BID PRICE.

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

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

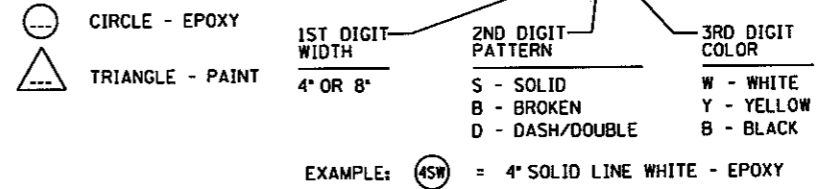
SYMBOL

- AREA CLOSED TO TRAFFIC / WORK AREA
- CONSTRUCT UNDER TRAFFIC
- MEDIAN PAVEMENT REMOVAL AND TEMPORARY PAVEMENT PLACEMENT
- POST OR STAND MOUNTED SIGN
- TYPE III BARRICADE =
- REBOUNDABLE PLASTIC DRUM = (100' SPACING UNLESS NOTED OTHERWISE)
- PLASTIC DELINEATOR TUBE = (10' SPACING UNLESS NOTED OTHERWISE)
- DIRECTION OF TRAFFIC
- TRAFFIC SIGNAL
- TEMPORARY RAISED PAVEMENT MARKERS AT 10' SPACES

SYMBOL

- EXISTING SIGN
- EXISTING PAVEMENT MARKINGS

STRIPING KEY



INDEX

TRAFFIC CONTROL SHEET NO. DESCRIPTIONS.

TC1	TITLE SHEET, PAY ITEMS, AND TABULATION
TC2	TRAFFIC CONTROL TABULATION SHEET
TC3	DETOUR ROUTE STAGES 1 AND 2
TC4-TC12	TRAFFIC CONTROL STAGE 1
TC13-TC21	TRAFFIC CONTROL STAGE 2

V TRAFFIC CONTROL - QUANTITIES SUMMARY (PAY ITEMS)				
ITEM	UNIT	STAGE 1	STAGE 2	TOTAL
PAVEMENT MARKING REMOVAL	LF	1100		1100
REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LF	120		120
RAISED PAVEMENT MARKER TEMPORARY (WHITE)	EACH	110		110
RAISED PAVEMENT MARKER TEMPORARY (YELLOW)	EACH	148		148
PAVEMENT MESSAGE (LEFT ARROW) PAINT	EACH	1	3	4
PAVEMENT MESSAGE (RIGHT ARROW) PAINT	EACH	1	2	3
4" SOLID LINE WHITE-PAINT	LIN FT	5520	6290	11810
4" SOLID LINE YELLOW-PAINT	LIN FT	600	300	900
12" SOLID LINE YELLOW-PAINT	LIN FT		195	195
4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	2110	2820	4930
* 4" SOLID LINE WHITE - EPOXY	LIN FT		770	770
* 4" BROKEN LINE WHITE - EPOXY	LIN FT		65	65
* PAVEMENT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH		5	5

* MARKINGS TO REPLACE EXISTING MARKINGS REMOVED FOR TEMPORARY TRAFFIC CONTROL.

U TRAFFIC CONTROL SIGNS / DEVICES (INCIDENTAL)				ESTIMATED QUANTITY BY STAGE								NOTES	
SIGN OR DEVICE	CODE NO.	COLOR	SIZE	DETOUR	STAGE 1	HANSON BLVD STAGE 1 PHASE 1	HANSON BLVD STAGE 1 PHASE 2	HANSON BLVD STAGE 1 PHASE 3	STAGE 2	HANSON BLVD STAGE 2 PHASE 1	HANSON BLVD STAGE 2 PHASE 2	HANSON BLVD STAGE 2 PHASE 3	
	R1-1	WHITE ON RED	48"x48"		6				9				
	R1-4	WHITE ON RED	18"x6"		4				4				
	R1-4MOD	WHITE ON RED	18"x6"		2				2				
	R3-1	BLACK & RED ON WHITE	24"x24"		1	2	2	2	8	2	2	2	
	R3-2	BLACK & RED ON WHITE	24"x24"		2	2	2	2	4	2	2	2	
	R3-7L	BLACK ON WHITE	30"x30"								1		

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4/8/2010
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DESIGN TEAM				
DRAWN BY: MIT				
DESIGNER: MPM				
CHECKED BY: MPM				
NO.	BY	DATE	REVISIONS	

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.
Certified By: *Michael P. McCurdy* Lic. No. 45902
Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC CONTROL TITLE SHEET, PAY ITEMS, & TABULATION

FILE NO. 102287
TC1 OF TC21
48
194

TRAFFIC CONTROL SIGNS / DEVICES (INCIDENTAL)				ESTIMATED QUANTITY BY STAGE									NOTES
SIGN OR DEVICE	CODE NO.	COLOR	SIZE	DETOUR	STAGE 1	HANSON BLVD STAGE 1 PHASE 1	HANSON BLVD STAGE 1 PHASE 2	HANSON BLVD STAGE 1 PHASE 3	STAGE 2	HANSON BLVD STAGE 2 PHASE 1	HANSON BLVD STAGE 2 PHASE 2	HANSON BLVD STAGE 2 PHASE 3	
	R3-7R	BLACK ON WHITE	30"x30"		1	1		1	1				
	R3-30AA	BLACK ON WHITE	36"x30"		1				1				
	R3-30AB	BLACK ON WHITE	36"x30"		2				2				
	R3-30ABC	BLACK ON WHITE	54"x30"		2				2				
	R3-30AC	BLACK ON WHITE	36"x30"		1				1				
	R11-2	BLACK ON WHITE	48"x30"		16				11				
	R11-4	BLACK ON WHITE	60"x30"		1				1				
	W1-4L	BLACK ON ORANGE	48"x48"		1								
	W1-4R	BLACK ON ORANGE	48"x48"						2				
	W1-4BL	BLACK ON ORANGE	48"x48"		1				1				
	W1-6	BLACK ON ORANGE	48"x24"			2	2	2		2	2	1	
	W3-1	BLACK, RED, & WHITE ON YELLOW	36"x36"		2				2				
	W4-2L	BLACK ON ORANGE	48"x48"			1				1			
	W4-2R	BLACK ON ORANGE	48"x48"				1				1		
	W6-3	BLACK ON YELLOW	48"x48"		1				1				
	W8-1AA	BLACK ON YELLOW	48"x48"		6				2				
	W9-1R	BLACK ON ORANGE	48"x48"		2				2				
	W13-1	BLACK ON YELLOW	30"x30"		1				2				
	W20-1	BLACK ON ORANGE	48"x48"		8	3	3	2	8	3	3	2	
	W20-2	BLACK ON ORANGE	48"x48"		3				3				
	W20-3	BLACK ON ORANGE	48"x48"		5				5				
	W20-100P	BLACK ON ORANGE	42"x18"		2				2				
	W20-100P	BLACK ON ORANGE	42"x18"		1	1	3	3	1	1	3	3	
	W20-100P	BLACK ON ORANGE	42"x18"		3				3				
	W20-X3L	BLACK ON ORANGE	48"x48"			1		1		1		1	
	W20-X3R	BLACK ON ORANGE	48"x48"				2				2		

TRAFFIC CONTROL SIGNS / DEVICES (INCIDENTAL)				ESTIMATED QUANTITY BY STAGE									NOTES
SIGN OR DEVICE	CODE NO.	COLOR	SIZE	DETOUR	STAGE 1	HANSON BLVD STAGE 1 PHASE 1	HANSON BLVD STAGE 1 PHASE 2	HANSON BLVD STAGE 1 PHASE 3	STAGE 2	HANSON BLVD STAGE 2 PHASE 1	HANSON BLVD STAGE 2 PHASE 2	HANSON BLVD STAGE 2 PHASE 3	
	W21-X5L	BLACK ON ORANGE	48"x48"					3				3	
	W20-X18	BLACK ON ORANGE	48"x48"			1	3	3		1	3	3	
	W21-X5R	BLACK ON ORANGE	48"x48"			2		1		2		1	
	M1-6	WHITE & YELLOW ON BLUE	24"x24"	29	4	1	1	1	4	1	1	1	
	M3-2ma	WHITE ON BLUE	24"x12"	13	2				2				
	M3-4ma	WHITE ON BLUE	24"x12"	14	2	1	1	1	2	1	1	1	
	M4-6a	WHITE ON BLUE	30"x15"	2									
	M4-8	BLACK ON ORANGE	30"x15"	29	4	1	1	1	4	1	1	1	
	M4-10L	BLACK ON ORANGE	48"x18"		2				2				
	M4-10R	BLACK ON ORANGE	48"x18"		1				1				
	M5-1aL	WHITE ON BLUE	21"x15"	4	1				1				
	M5-1aR	WHITE ON BLUE	21"x15"	4	1				1				
	M6-1a	WHITE ON BLUE	21"x15"	6	2	1	1	1	2	1	1	1	
	M6-3a	WHITE ON BLUE	21"x15"	8		1	1	1		1	1	1	
	M6-6aR	WHITE ON BLUE	21"x15"			1	1	1		1	1	1	
	G20-X1	BLACK ON ORANGE	72"x60"		4								
	G20-X2	BLACK ON ORANGE	96"x84"	2									
	G20-X2	BLACK ON ORANGE	96"x84"	2									
		WHITE ON ORANGE	8'		63	12	15	11	52	10	12	12	
		ORANGE ON WHITE	36" (MIN)		88	57	68	64	134	57	86	52	
		ORANGE ON WHITE	36" (MIN)		7				9				

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

DESIGN TEAM				
DRAWN BY: MII				
DESIGNER: MPM				
CHECKED BY: MPM				
NO.	BY	DATE	REVISIONS	

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.
 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010



PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



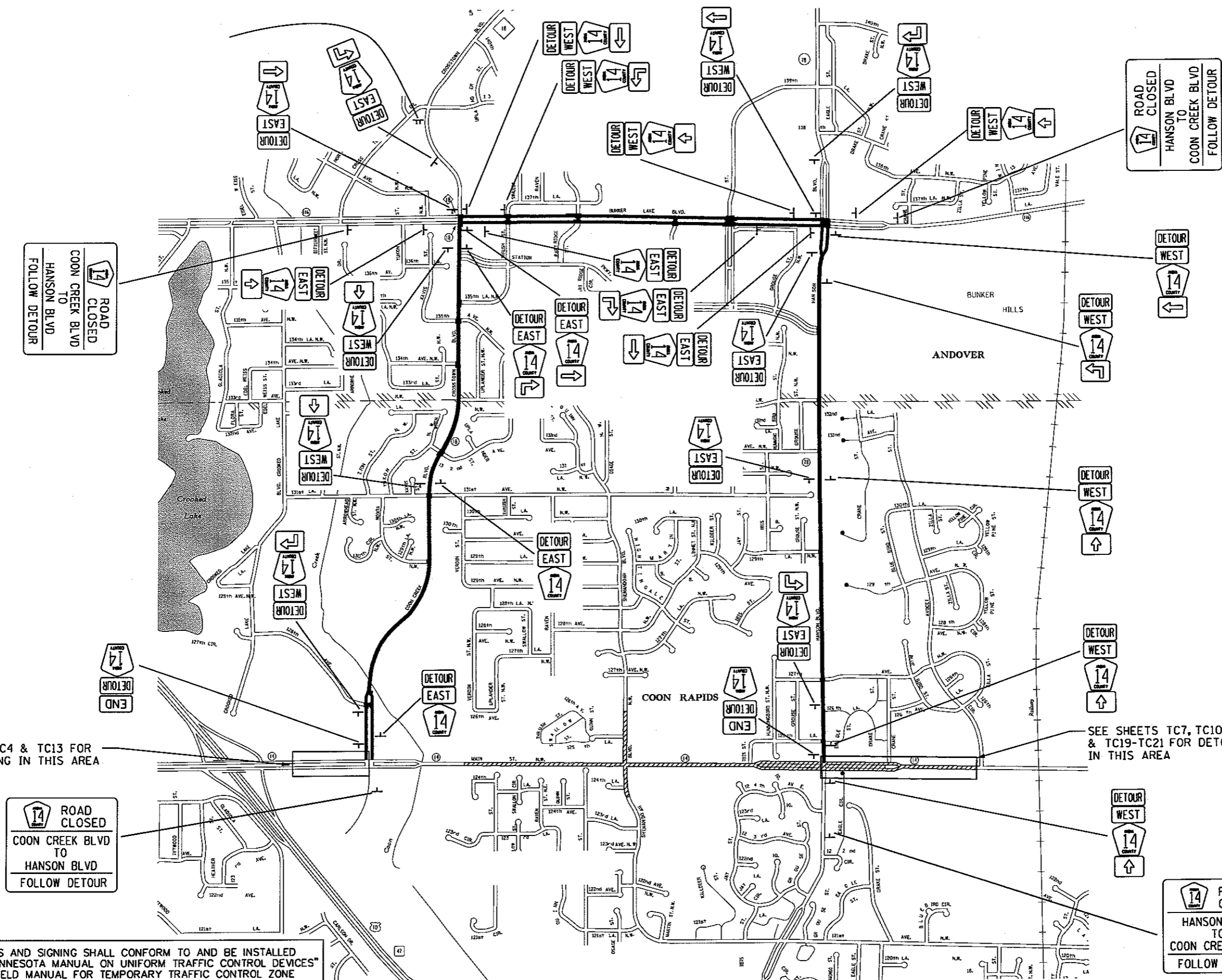
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC CONTROL TABULATION

FILE NO.	49
102287	
TC2	
OF TC21	194



SCALE 750'



ROAD CLOSED
COON CREEK BLVD
TO
HANSON BLVD
FOLLOW DETOUR

ROAD CLOSED
HANSON BLVD
TO
COON CREEK BLVD
FOLLOW DETOUR

DETOUR ROUTE
XXXX EXISTING SIGN
CONSTRUCTION AREA

SEE SHEETS TC4 & TC13 FOR
DETOUR SIGNING IN THIS AREA

SEE SHEETS TC7, TC10-TC12, TC16,
& TC19-TC21 FOR DETOUR SIGNING
IN THIS AREA

ROAD CLOSED
COON CREEK BLVD
TO
HANSON BLVD
FOLLOW DETOUR

ROAD CLOSED
HANSON BLVD
TO
COON CREEK BLVD
FOLLOW DETOUR

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH 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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Certified By: *Michael P. McClure* Lic. No. 45902
Printed Name: MICHAEL P. MCCLURE Date: 4/8/2010



PHONE: 1651-490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DETOUR ROUTE
STAGES 1 AND 2

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

FILE NO. 102287	50
TC3 OF TC21	194

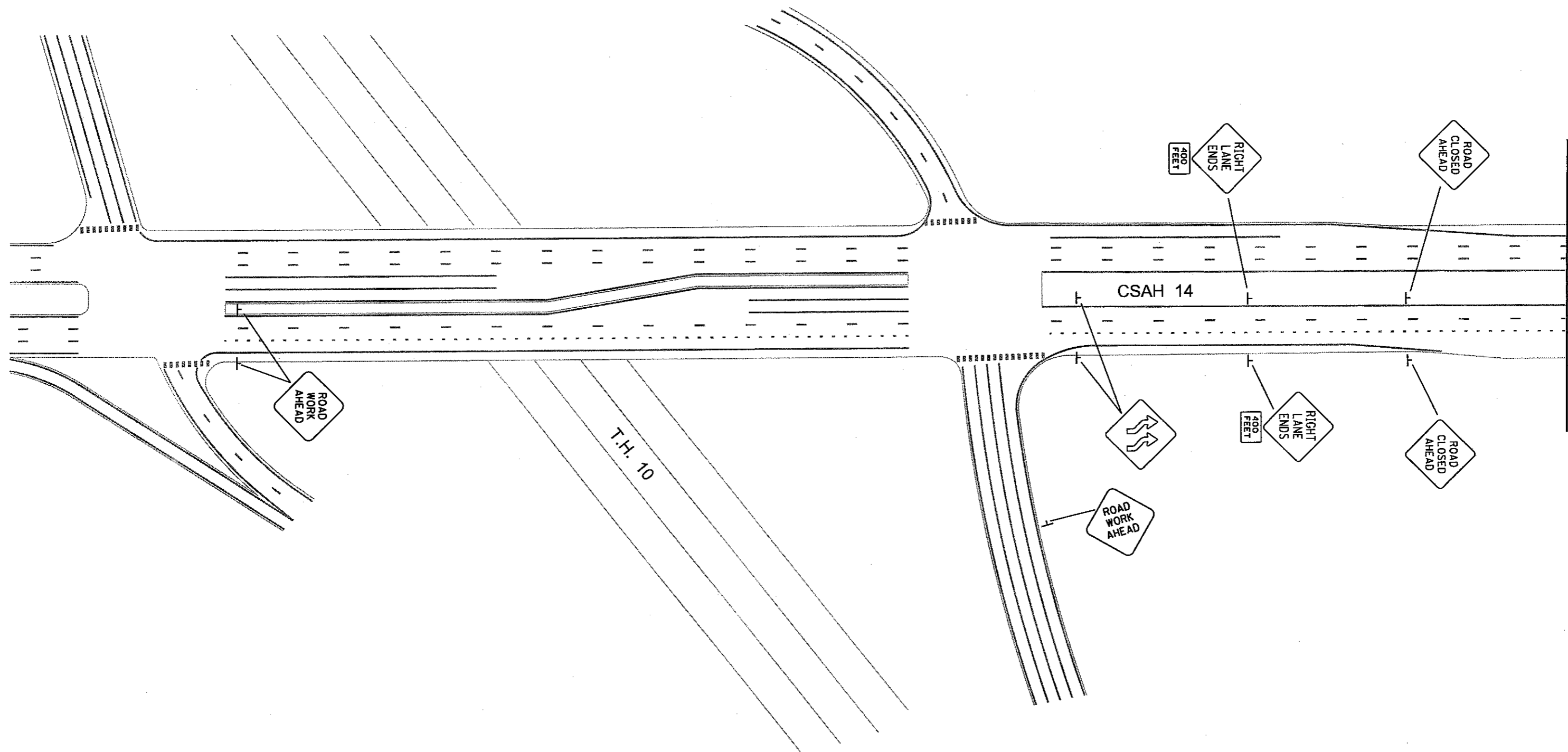
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4/8/2010

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sitc1

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

SCALE 1" = 50'




MATCH LINE - SEE NEXT SHEET

DESIGN TEAM				REVISIONS			
DRAWN BY:	MIT			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010



PHONE: (651)490-2000
 3535 YADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1

FILE NO.	51
102287	
TC4	
OF TC21	194

4/8/2010 9:57:41 AM

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

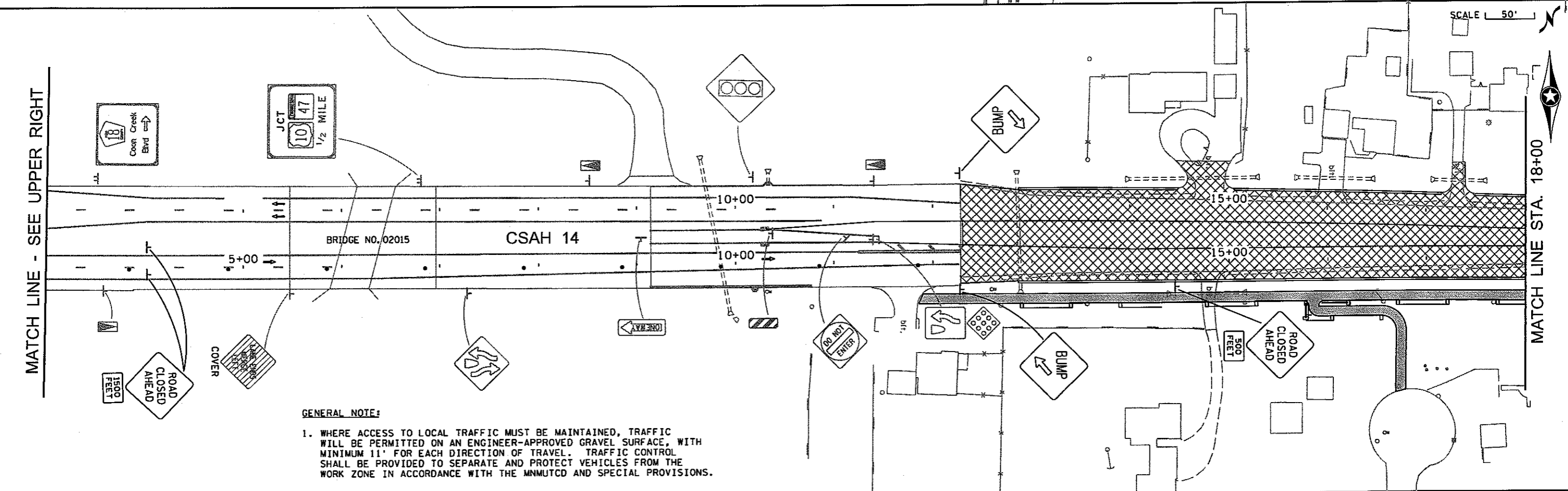
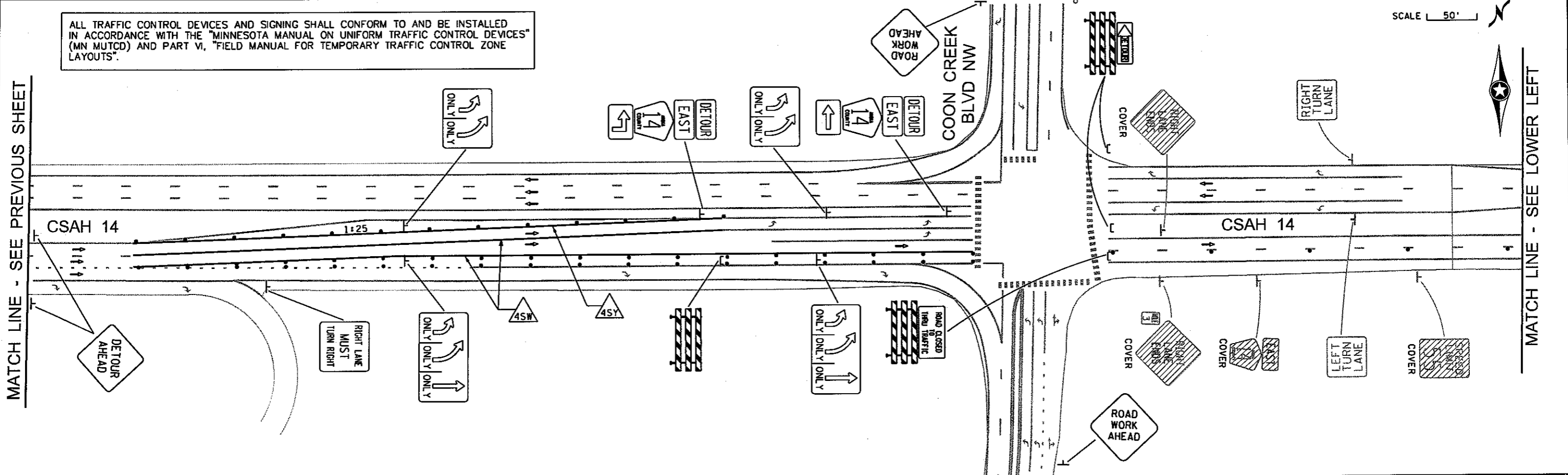
SCALE 50'

MATCH LINE - SEE PREVIOUS SHEET

MATCH LINE - SEE LOWER LEFT

MATCH LINE - SEE UPPER RIGHT

MATCH LINE STA. 18+00



GENERAL NOTE:

- WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.

S:\AE\Anokc\102287\5-dsgn\51-cadd\Civil\plans\hsh\ano102_sitc.dgn

DESIGN TEAM			
DRAWN BY:	MIT		
DESIGNER:	MPM		
CHECKED BY:	MEM		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1

FILE NO.	52
102287	
TC5	
OF TC21	194

9:57:42 AM

4/8/2010

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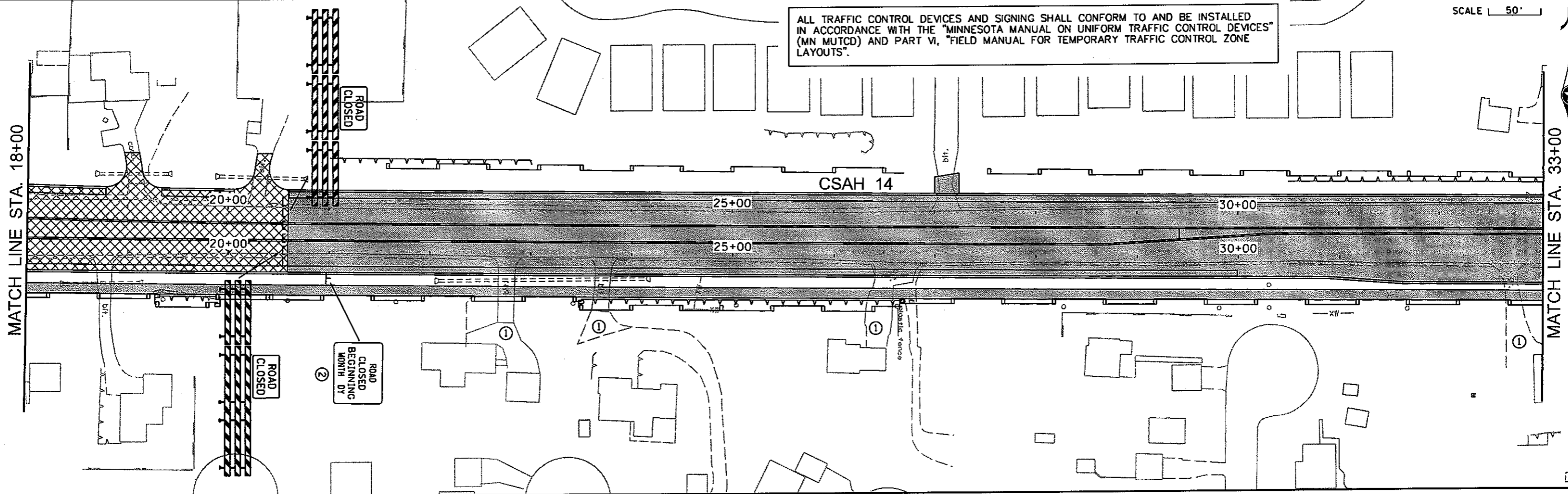
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

SCALE 50'



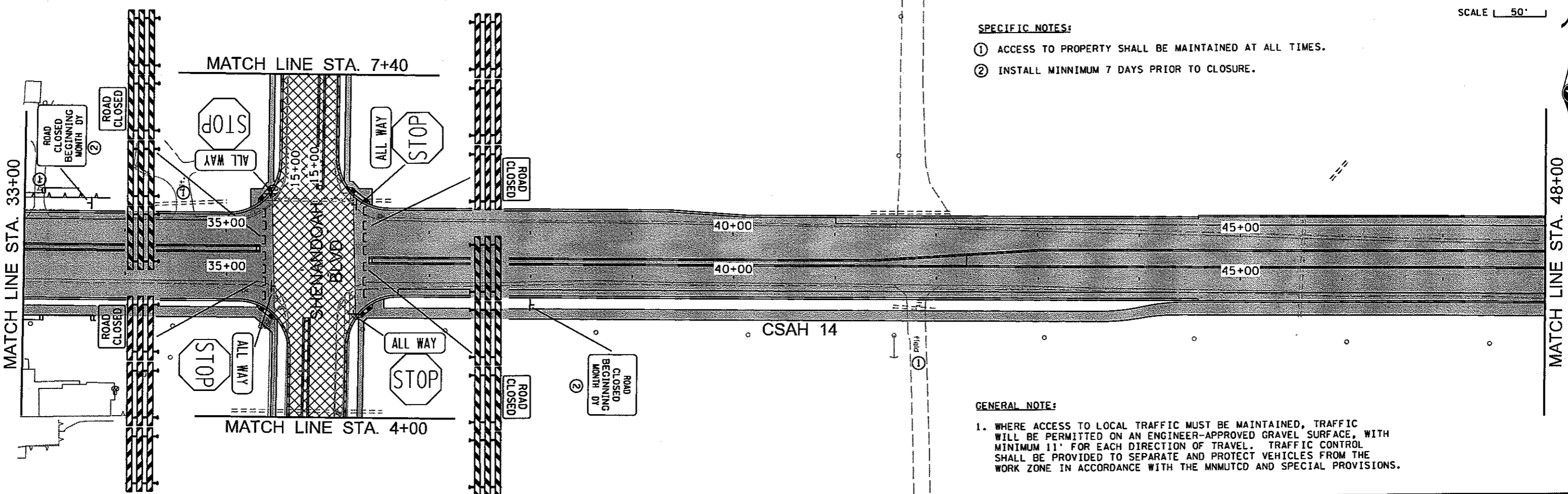
MATCH LINE STA. 18+00

MATCH LINE STA. 33+00



MATCH LINE STA. 33+00

MATCH LINE STA. 48+00



SCALE 50'



SPECIFIC NOTES:

- ① ACCESS TO PROPERTY SHALL BE MAINTAINED AT ALL TIMES.
- ② INSTALL MINIMUM 7 DAYS PRIOR TO CLOSURE.

GENERAL NOTE:

- 1. WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.

DESIGN TEAM					
DRAWN BY:	MTT				
DESIGNER:	MPM				
CHECKED BY:	MPM				
	NO.	BY	DATE		REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: 651-490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1

FILE NO. 53
 102287
 TC6
 OF TC21
 194

9:57:44 AM

4/8/2010

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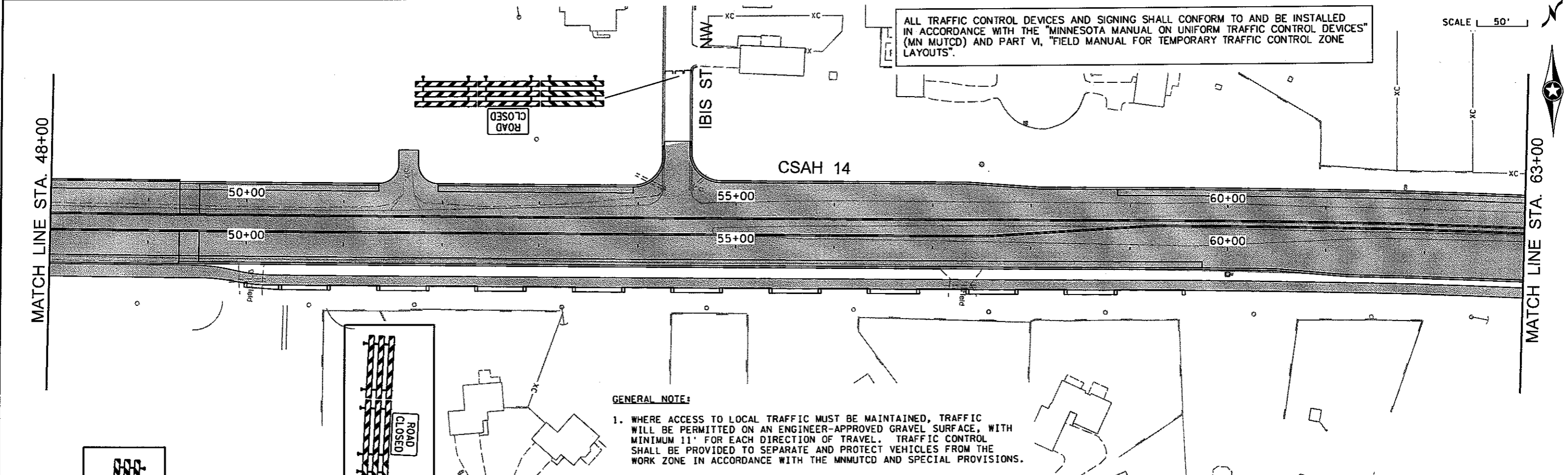
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

SCALE 50'



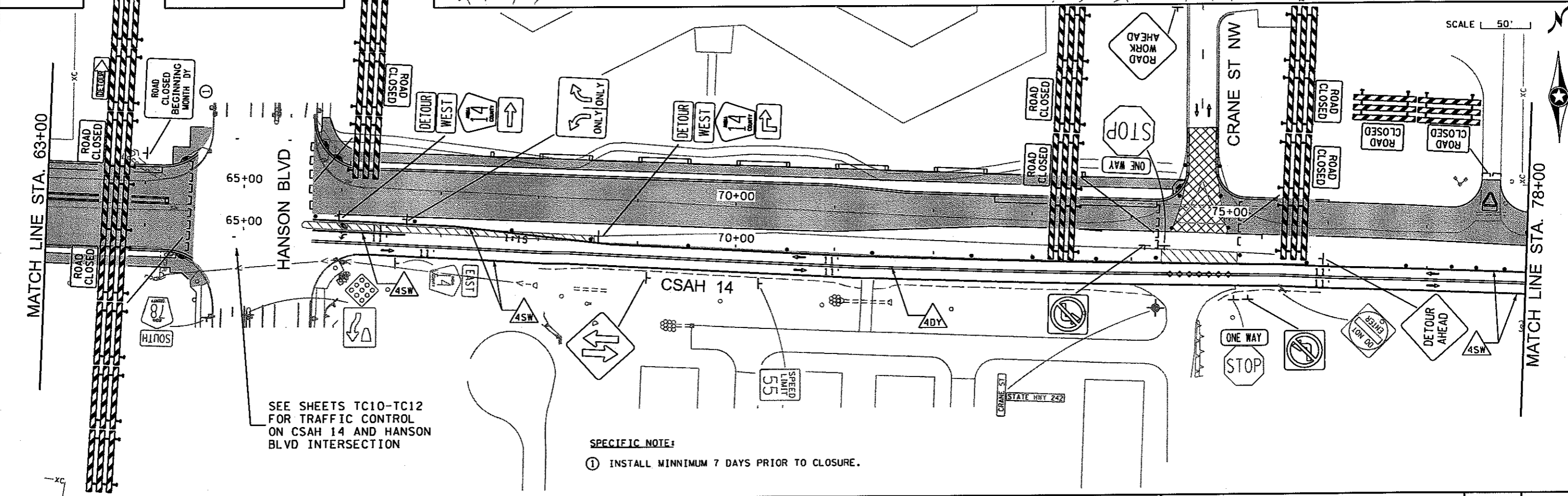
MATCH LINE STA. 48+00

MATCH LINE STA. 63+00



MATCH LINE STA. 63+00

MATCH LINE STA. 78+00



SEE SHEETS TC10-TC12 FOR TRAFFIC CONTROL ON CSAH 14 AND HANSON BLVD INTERSECTION

DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1

FILE NO. 54
 102287
 TC7 OF TC21
 194

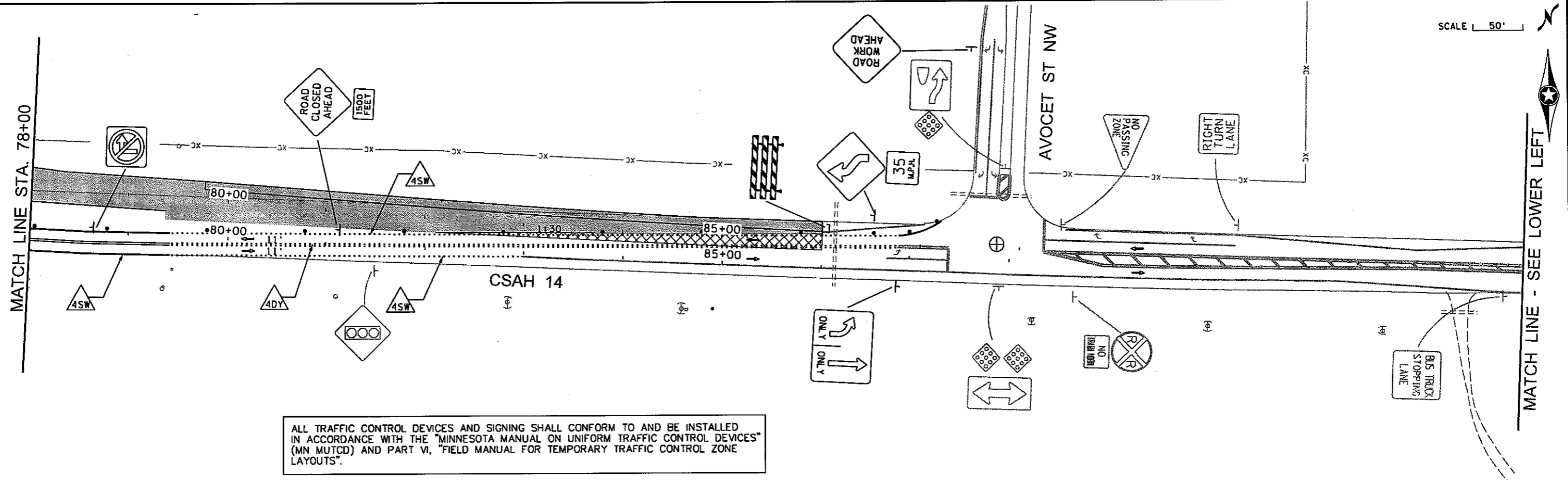
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4/8/2010

SCALE 50'

MATCH LINE STA. 78+00

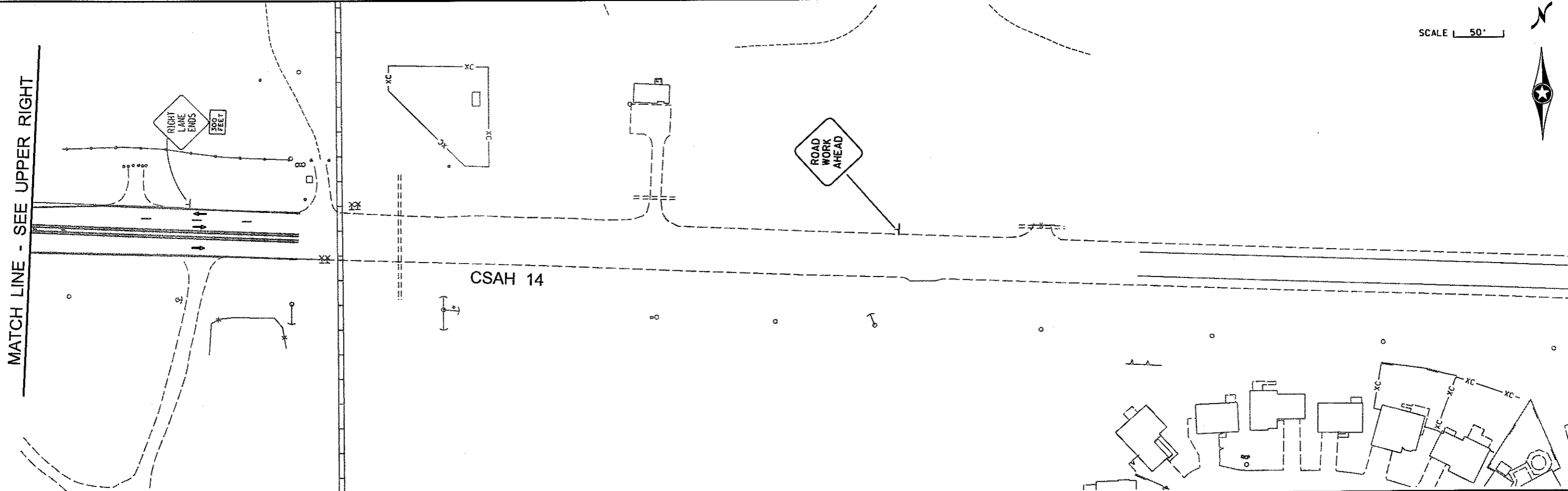
MATCH LINE - SEE LOWER LEFT



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

SCALE 50'

MATCH LINE - SEE UPPER RIGHT



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DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1

FILE NO. 55
 102287
 TC8
 OF TC21
 194

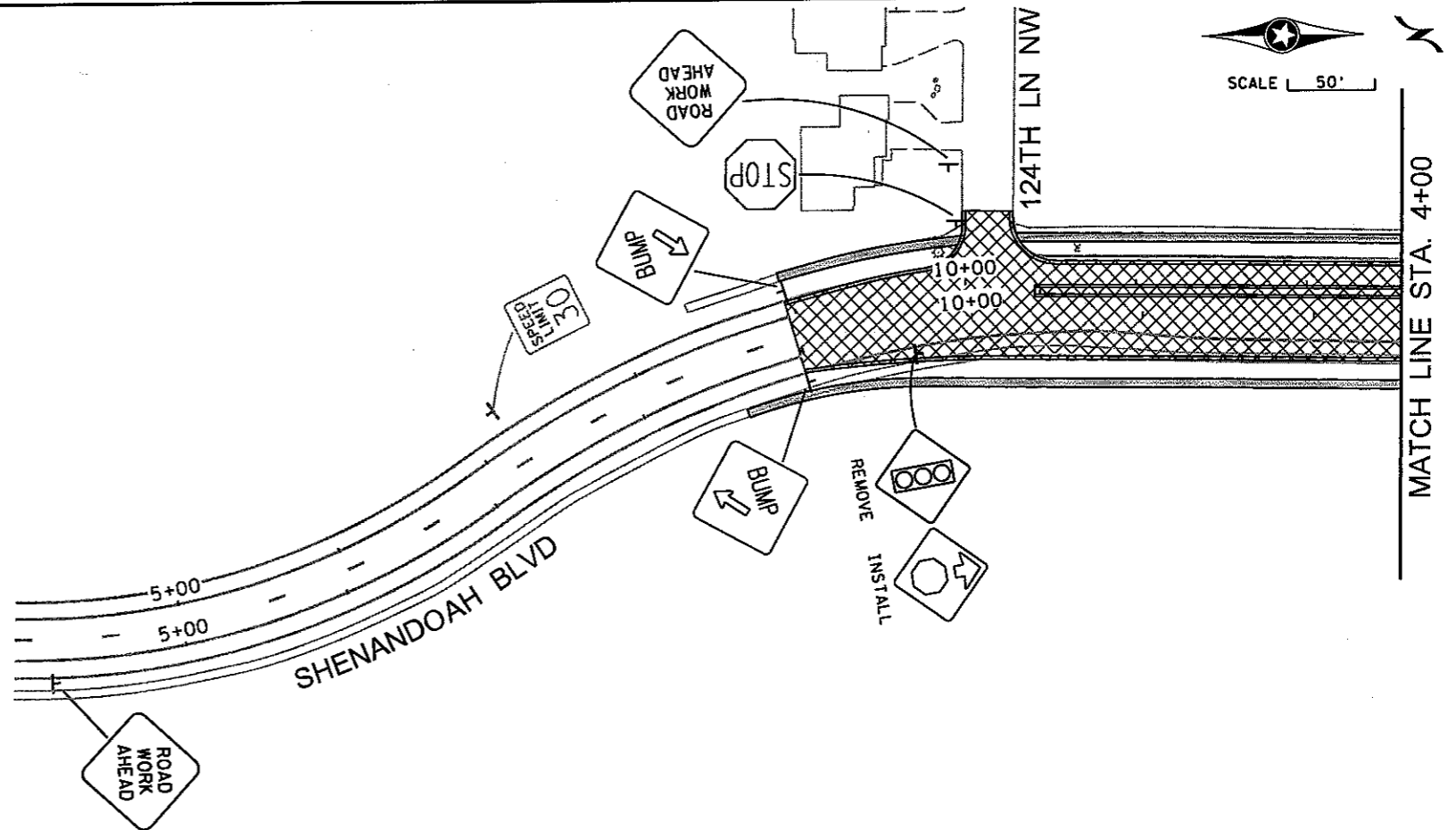
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4/8/2010

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

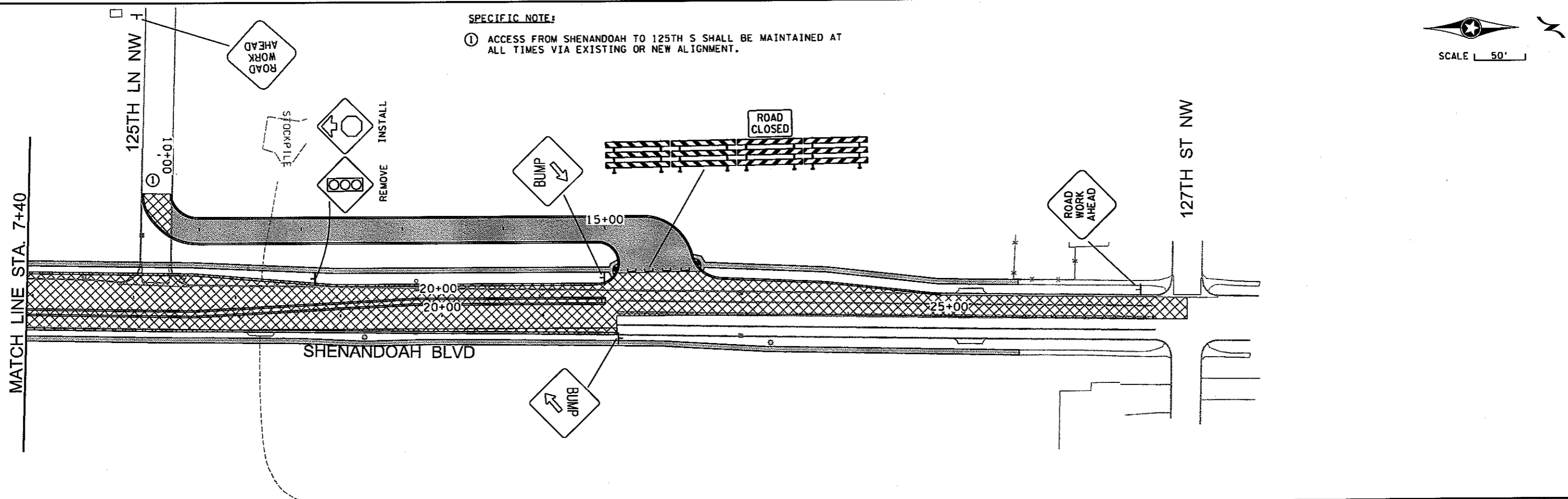
GENERAL NOTE:

- 1. WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.



SPECIFIC NOTE:

- ① ACCESS FROM SHENANDOAH TO 125TH S SHALL BE MAINTAINED AT ALL TIMES VIA EXISTING OR NEW ALIGNMENT.



S:\AE\AA\Anoka\102287\5-dsgn\51-cadd\Civil\plans\15-onol02_sitc.dgn

DESIGN TEAM					
DRAWN BY: MTT					
DESIGNER: MPM					
CHECKED BY: MPM					
	NO.	BY	DATE		REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 A Licensed Professional Engineer
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

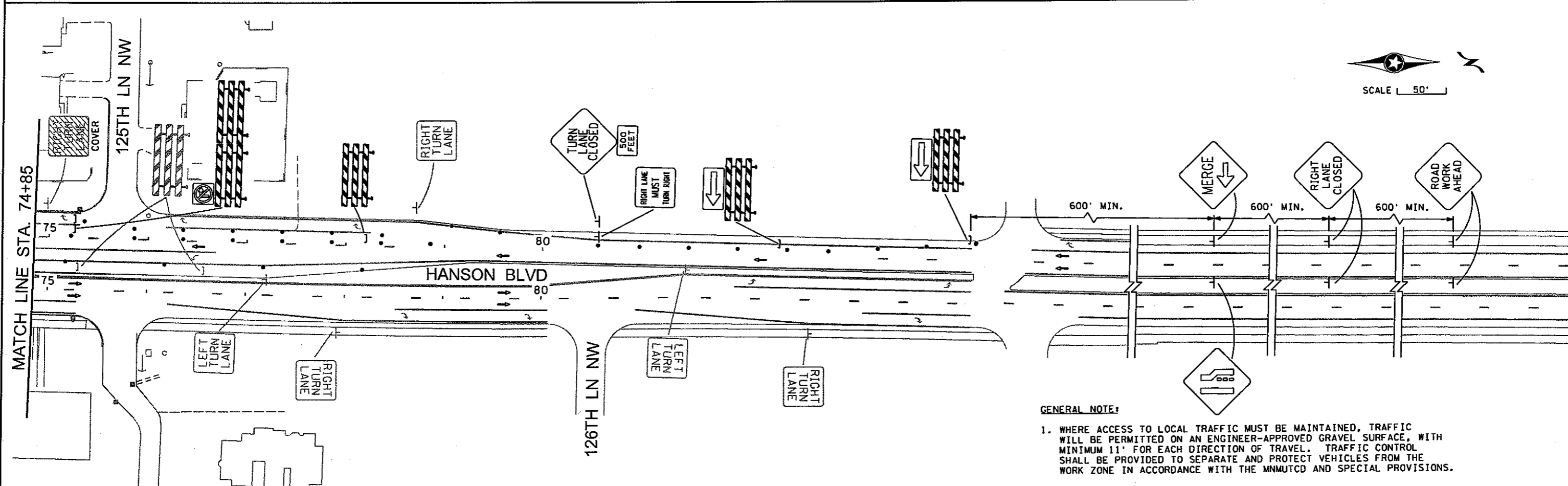
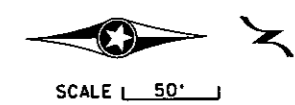
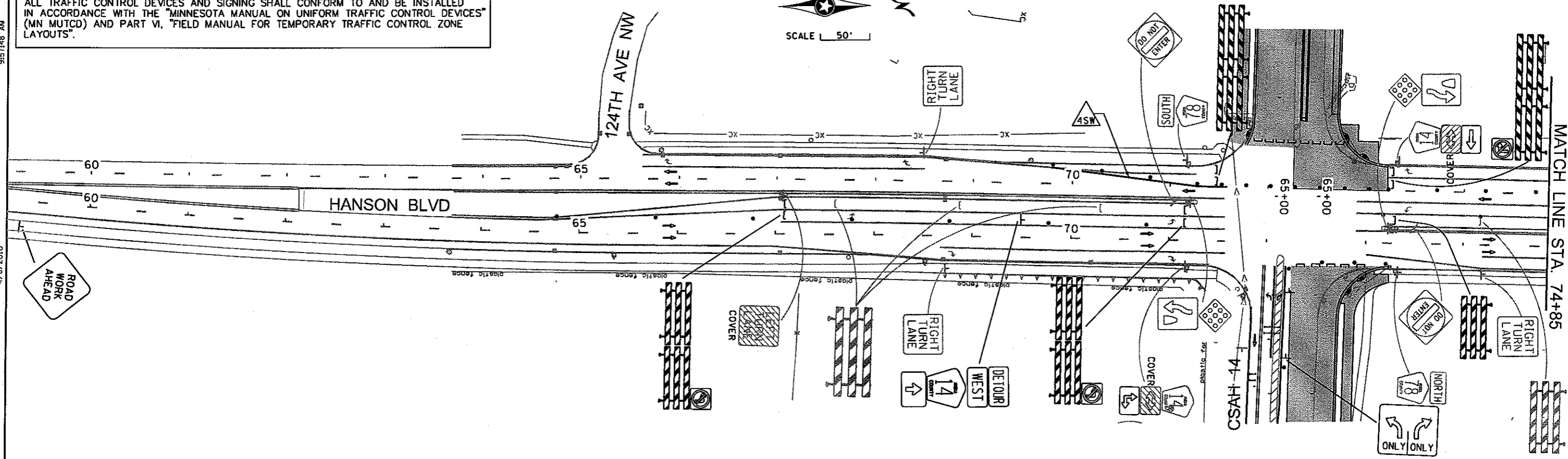
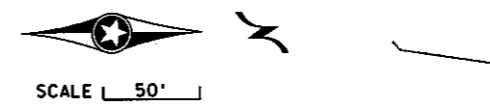
STAGING & TRAFFIC CONTROL
 STAGE 1

FILE NO.	56
102287	
TC9	
OF TC21	194

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

9:57:48 AM

4/8/2010



GENERAL NOTE:
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DESIGN TEAM				REVISIONS			
DRAWN BY:	MTT	NO.	BY	DATE			
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.
 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



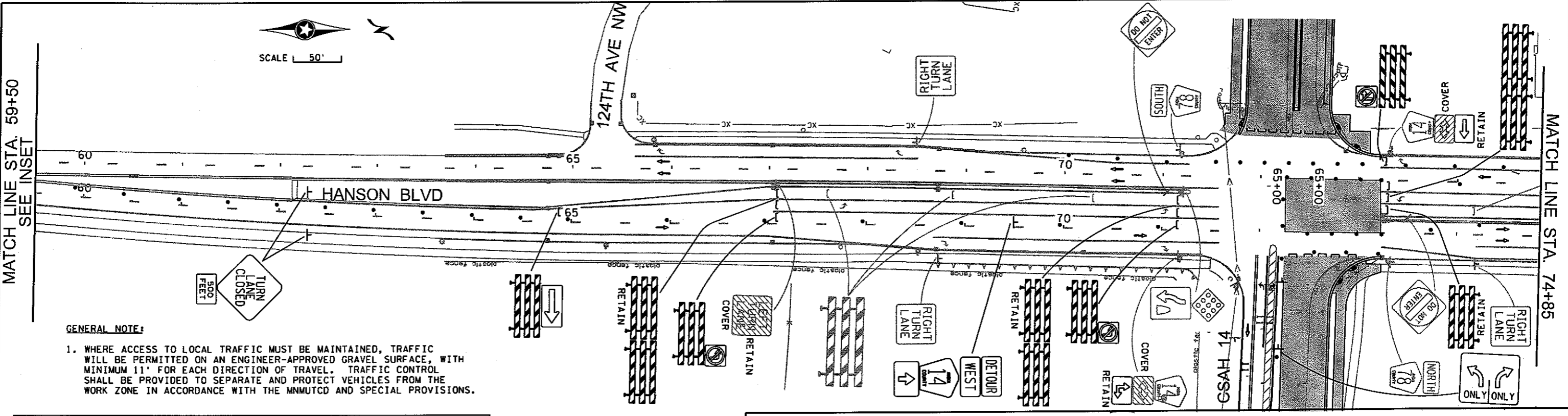
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1, PHASE 1
 HANSON BLVD

FILE NO.	57
102287	
TC10	194
OF TC21	

9:57:50 AM

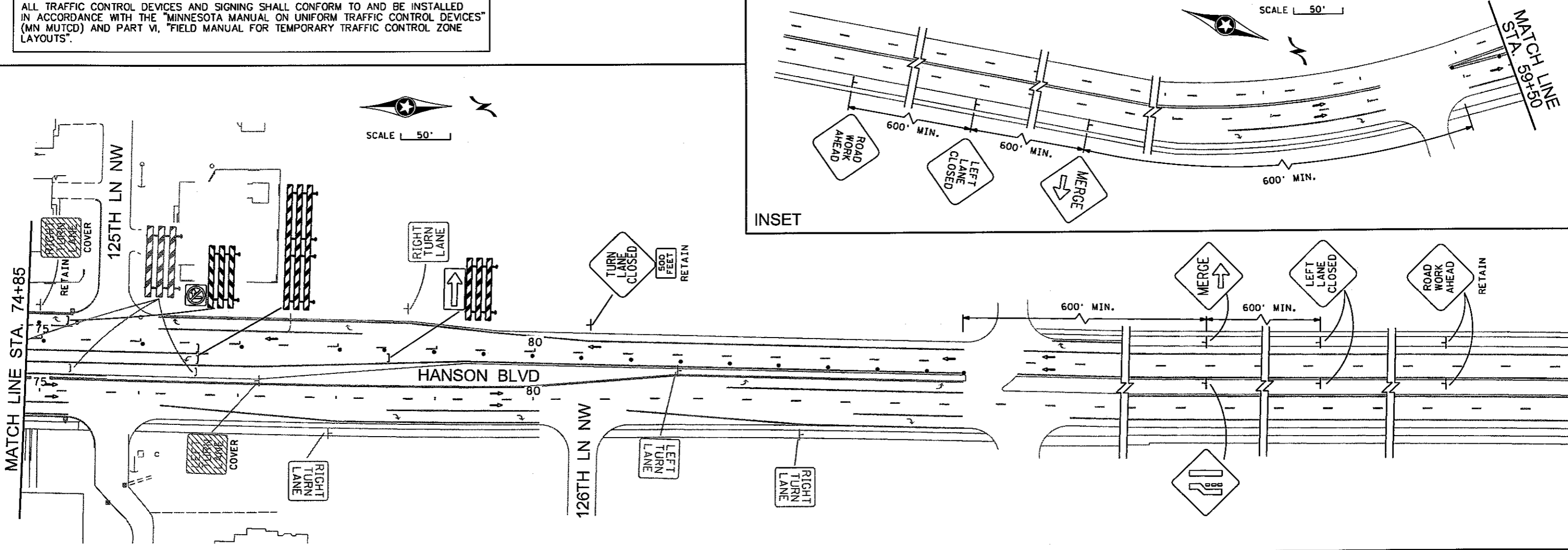
4/8/2010



GENERAL NOTE:

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DESIGN TEAM				REVISIONS			
DRAWN BY:	MTT			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: 651.490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

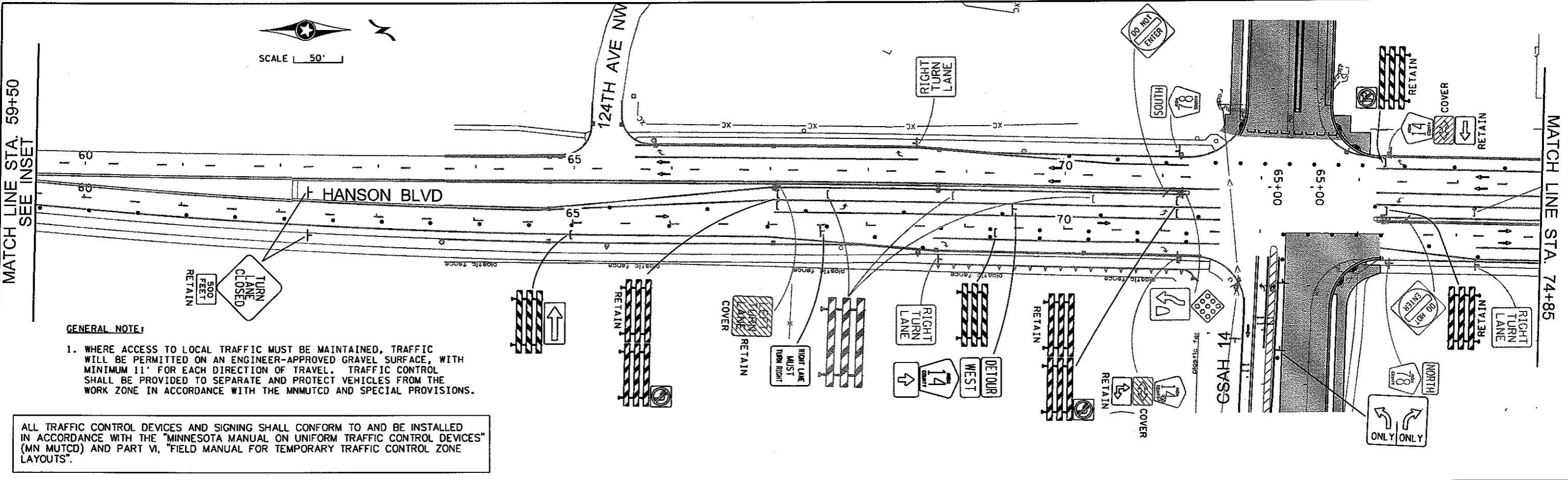
STAGING & TRAFFIC CONTROL
 STAGE 1, PHASE 2
 HANSON BLVD

FILE NO. 102287	58
TC11 OF TC21	194

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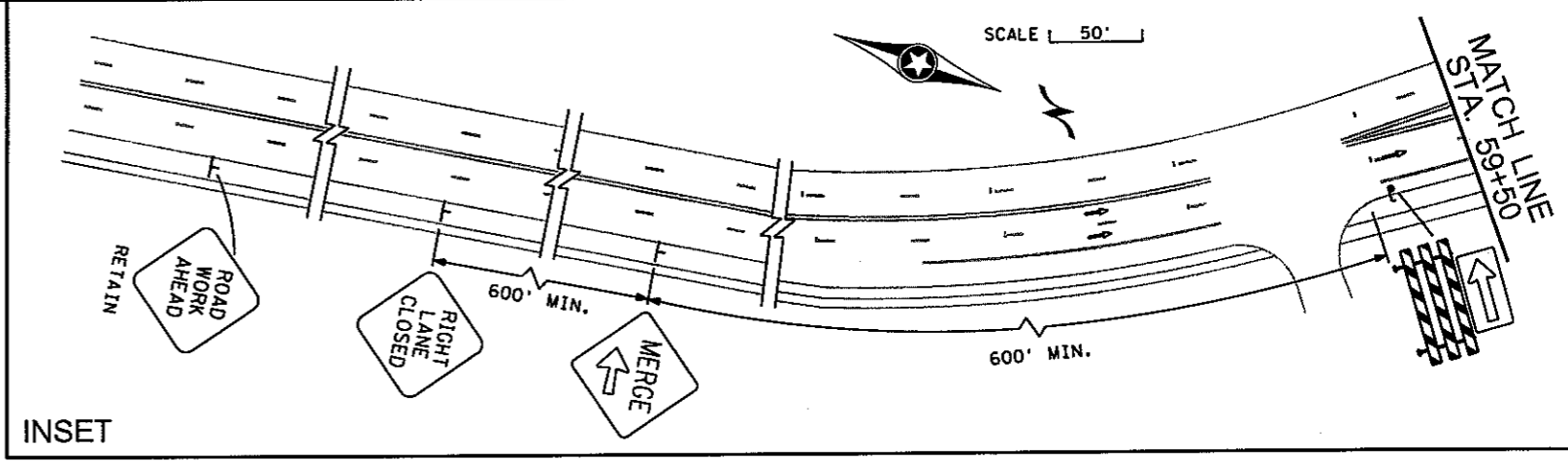
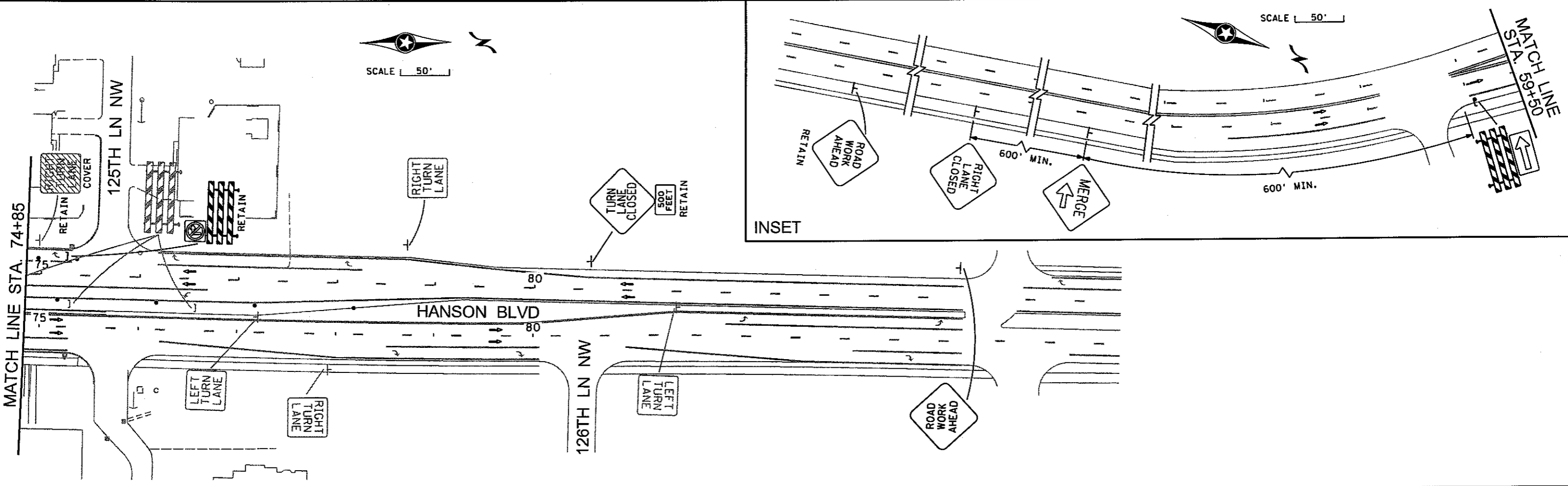
4/8/2010



GENERAL NOTE:

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DESIGN TEAM				REVISIONS			
DRAWN BY:	MIT			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010

SEH
 PHONE: 651-490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

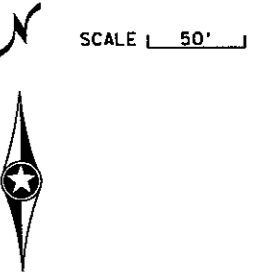


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 1, PHASE 3
 HANSON BLVD

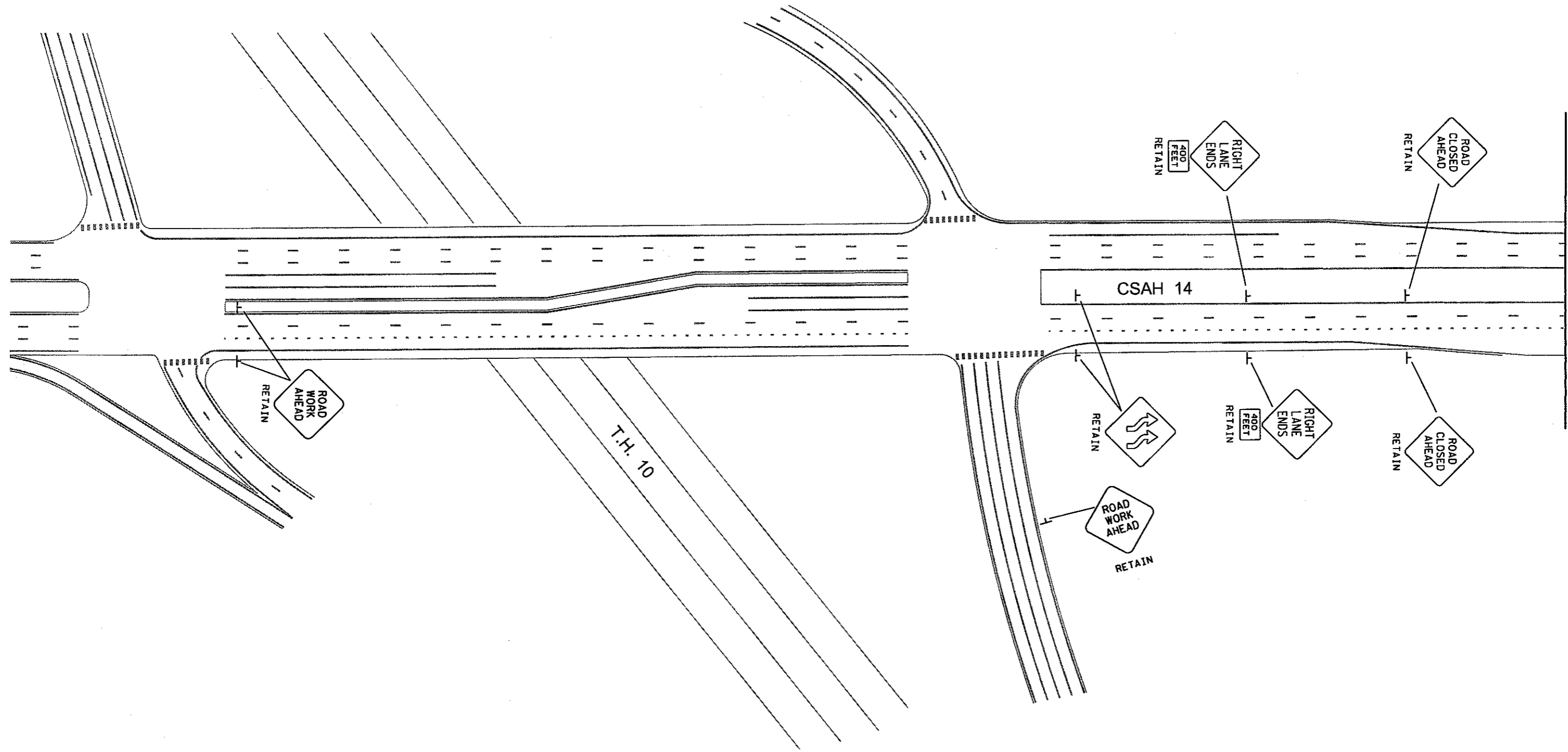
FILE NO. 59
 102287
 TC12 OF TC21
 194

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



9:57:55 AM

4/8/2010



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DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 2

FILE NO.	102287	60
TC13	OF TC21	
		194

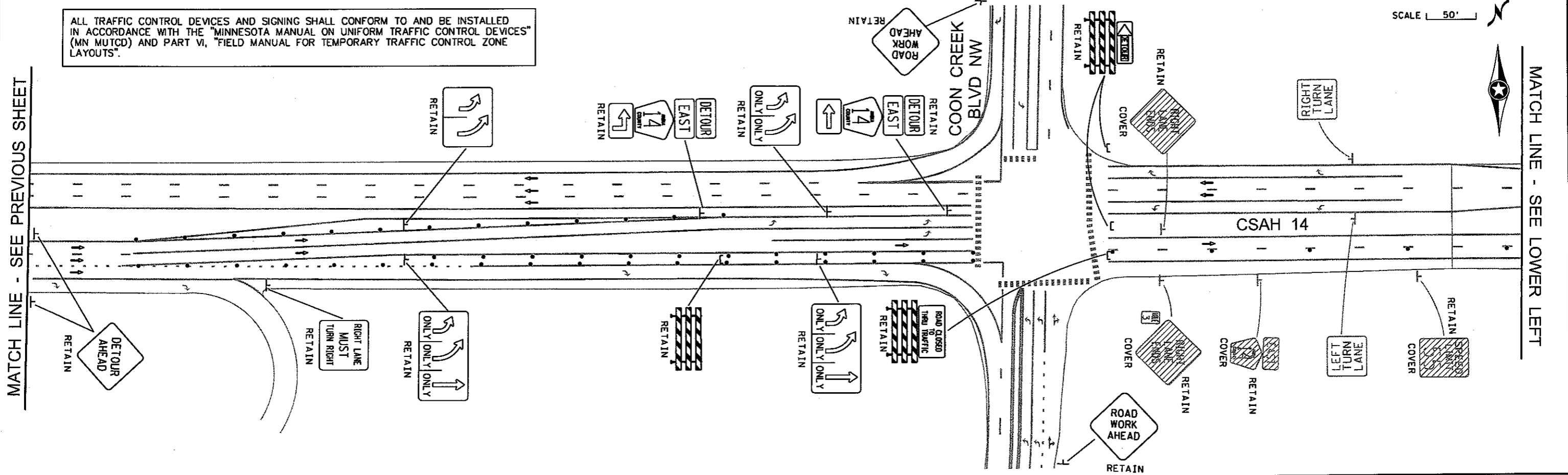
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

SCALE 50'



MATCH LINE - SEE LOWER LEFT

MATCH LINE - SEE PREVIOUS SHEET

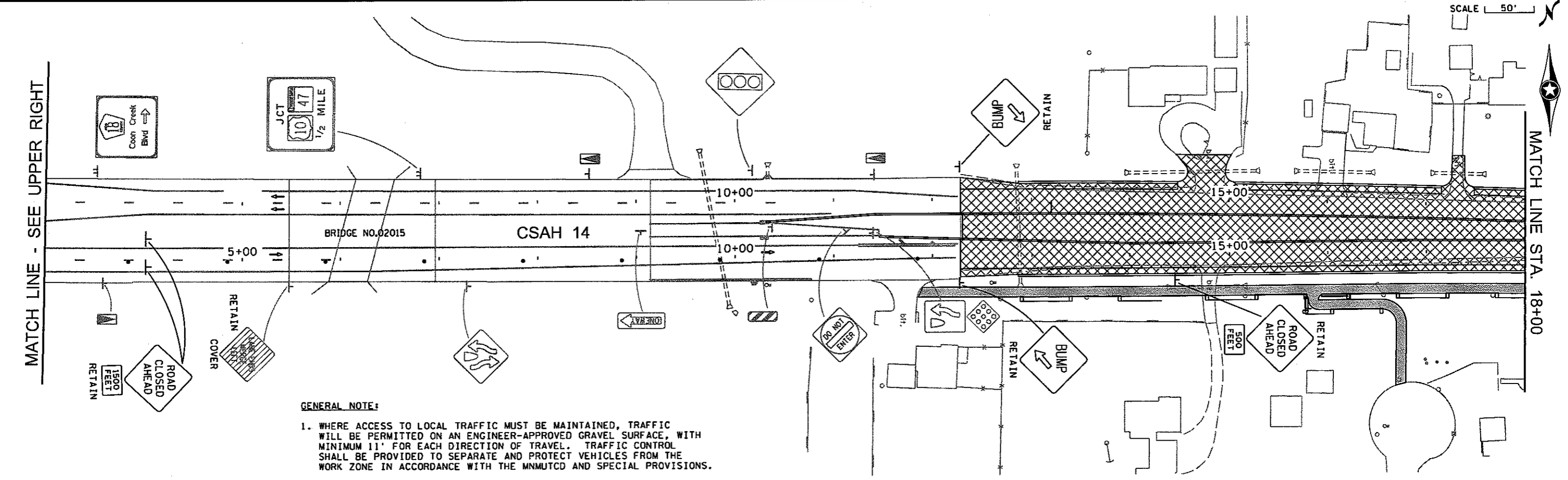


SCALE 50'



MATCH LINE STA. 18+00

MATCH LINE - SEE UPPER RIGHT



GENERAL NOTE:

- WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.

DESIGN TEAM					
DRAWN BY:	MIT				
DESIGNER:	MPM				
CHECKED BY:	MPM				
	NO.	BY	DATE		REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Licensed Professional Engineer
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: 651-490-2000
 3535 VAONAS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 2

FILE NO.	61
102287	
TC14	
OF TC21	194

9:57:58 AM

4/8/2010

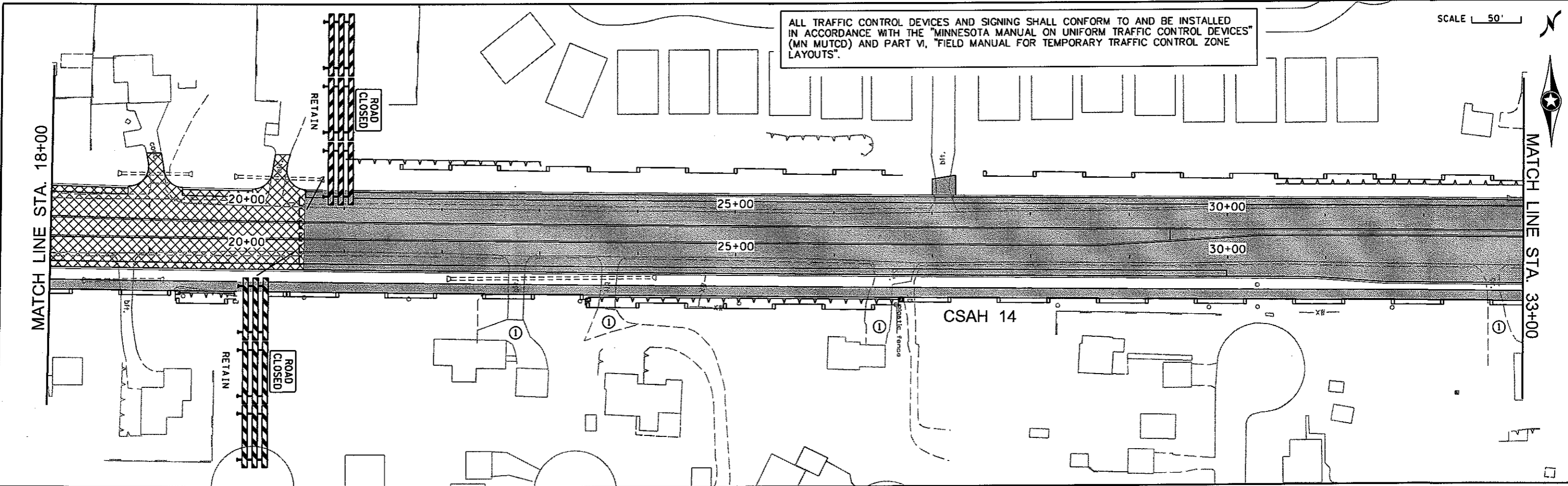
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD) AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

SCALE 50'



MATCH LINE STA. 18+00

MATCH LINE STA. 33+00



SPECIFIC NOTE:

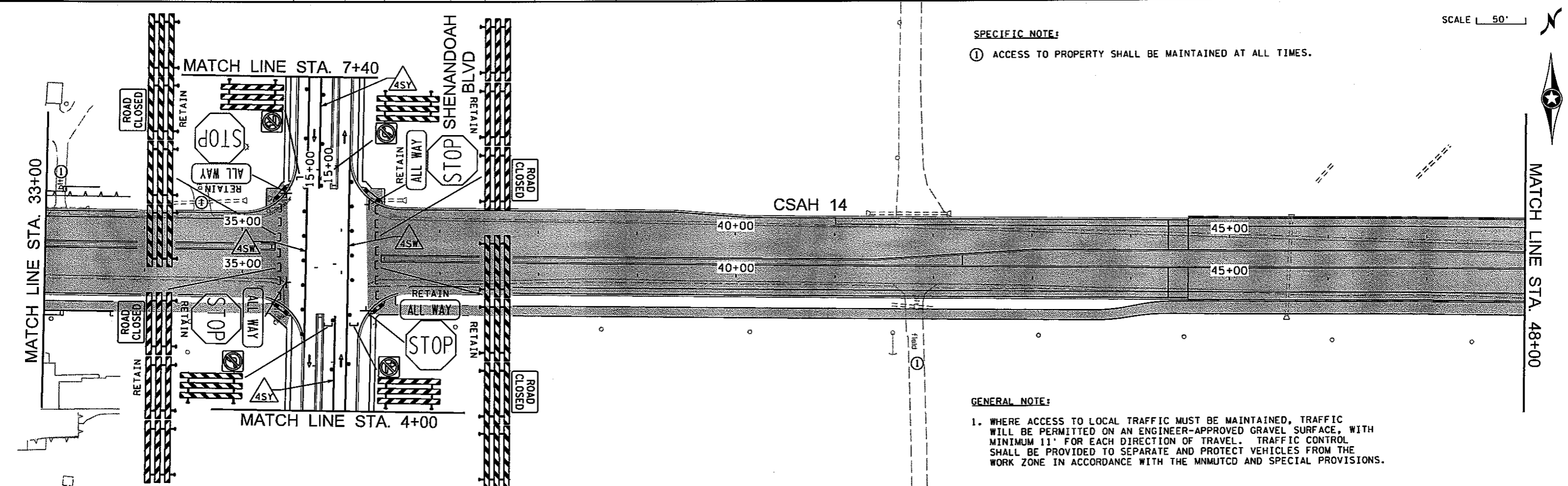
- ① ACCESS TO PROPERTY SHALL BE MAINTAINED AT ALL TIMES.

SCALE 50'



MATCH LINE STA. 33+00

MATCH LINE STA. 48+00



GENERAL NOTE:

- WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.

S:\AEVA\Anokac\102287\5-dsgn\51-cadd\Civil\planshts\ano102.s2fc.dgn

DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: 651-490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 2

FILE NO.	62
102287	
TC15	194
OF TC21	

9:58:00 AM

4/8/2010

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

SCALE 1" = 50'

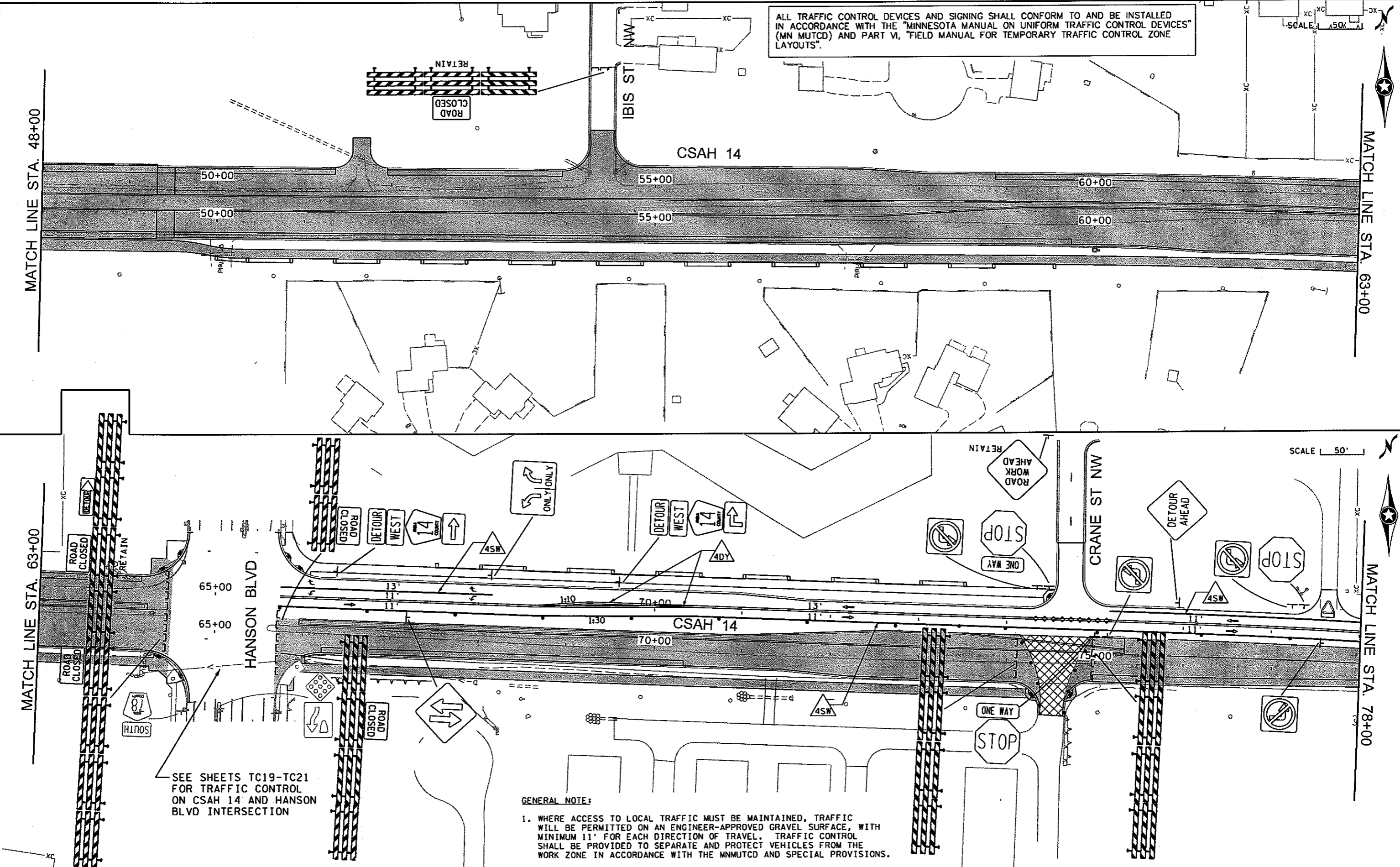
MATCH LINE STA. 63+00

MATCH LINE STA. 48+00

MATCH LINE STA. 63+00

MATCH LINE STA. 78+00

SCALE 1" = 50'



SEE SHEETS TC19-TC21 FOR TRAFFIC CONTROL ON CSAH 14 AND HANSON BLVD INTERSECTION

GENERAL NOTE:

- WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.

DESIGN TEAM			
DRAWN BY:	MIT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)90-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



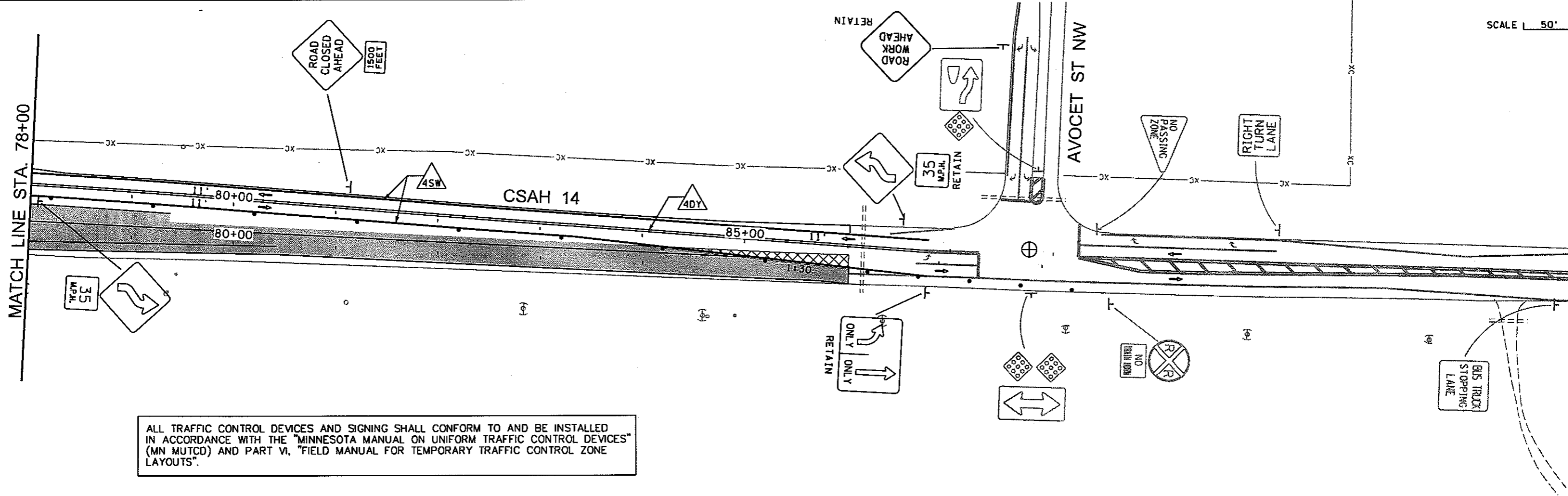
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 2

FILE NO. 63
 102287
 TC16 OF TC21
 194

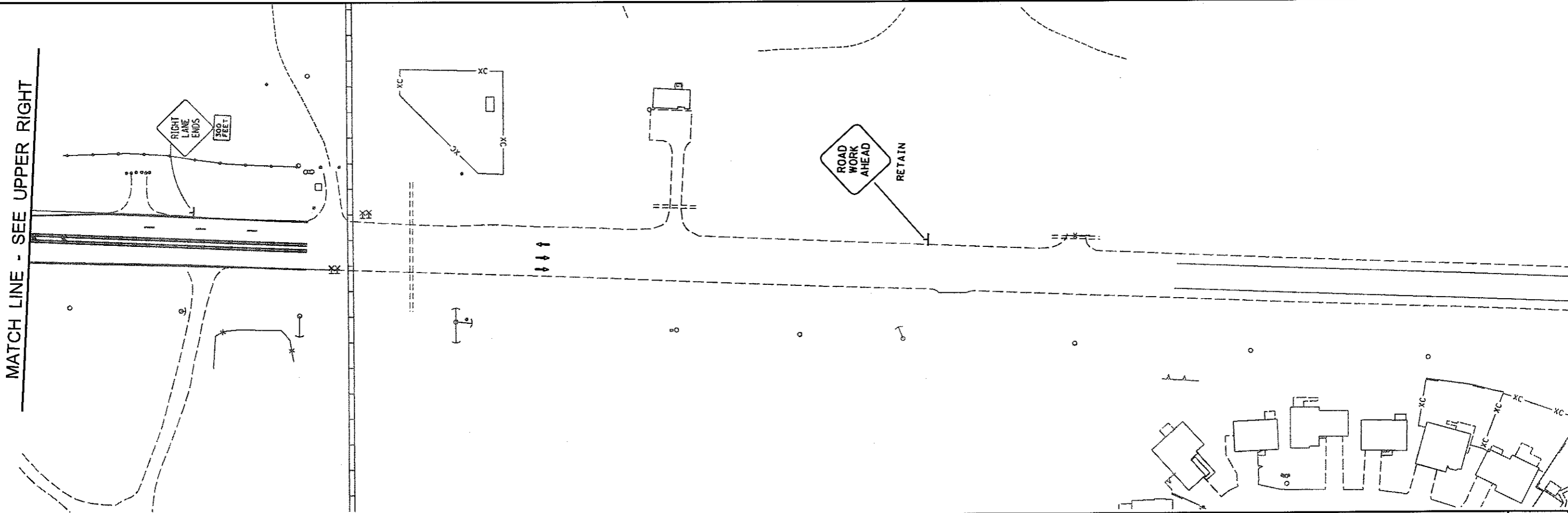
MATCH LINE STA. 78+00

MATCH LINE - SEE LOWER LEFT



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

MATCH LINE - SEE UPPER RIGHT



DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI						
DESIGNER:	MPM						
CHECKED BY:	MPM						
	NO.	BY	DATE				

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.
 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 YADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

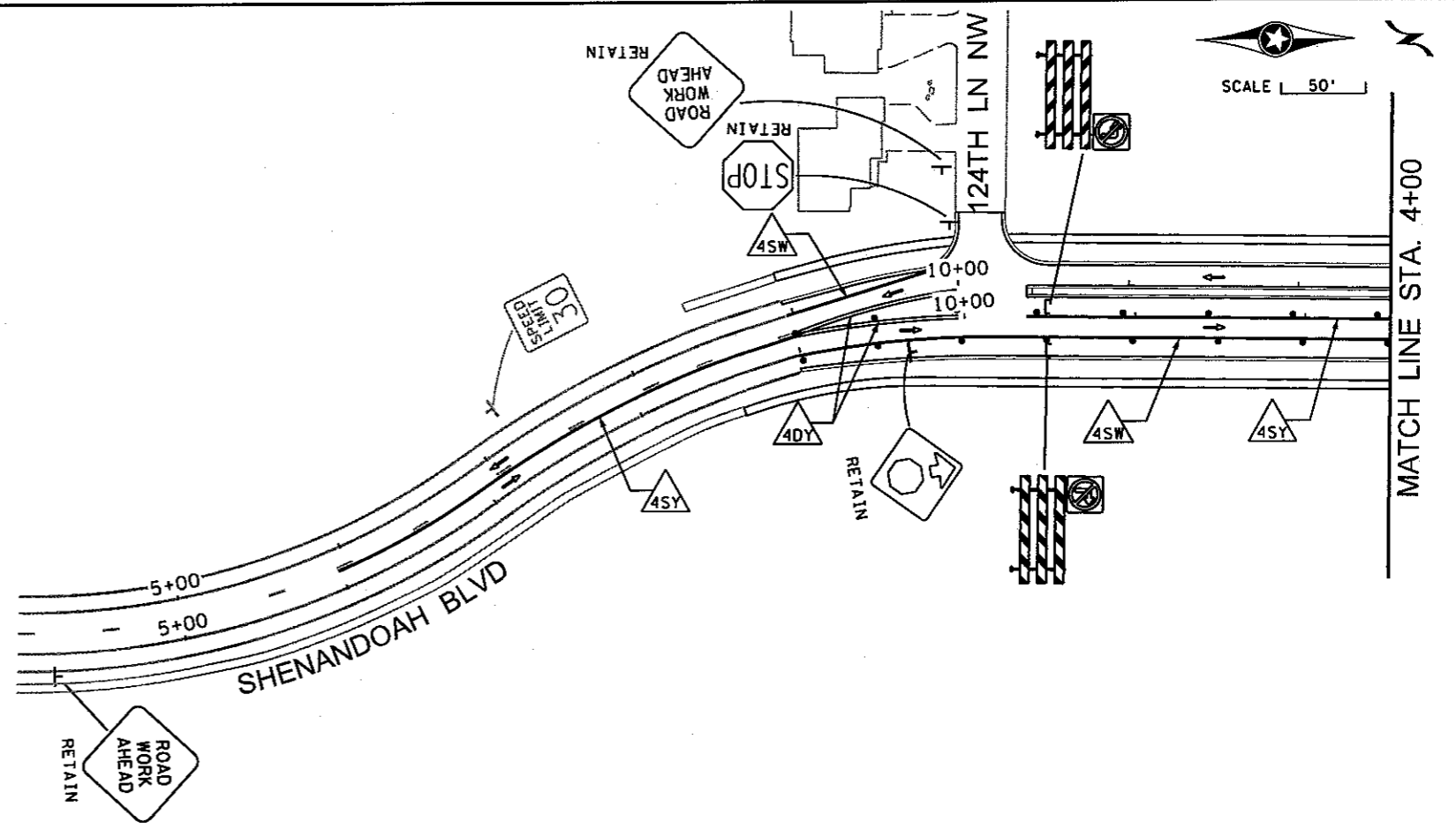
STAGING & TRAFFIC CONTROL
 STAGE 2

FILE NO.	64
102287	
TC17	
OF TC21	194

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

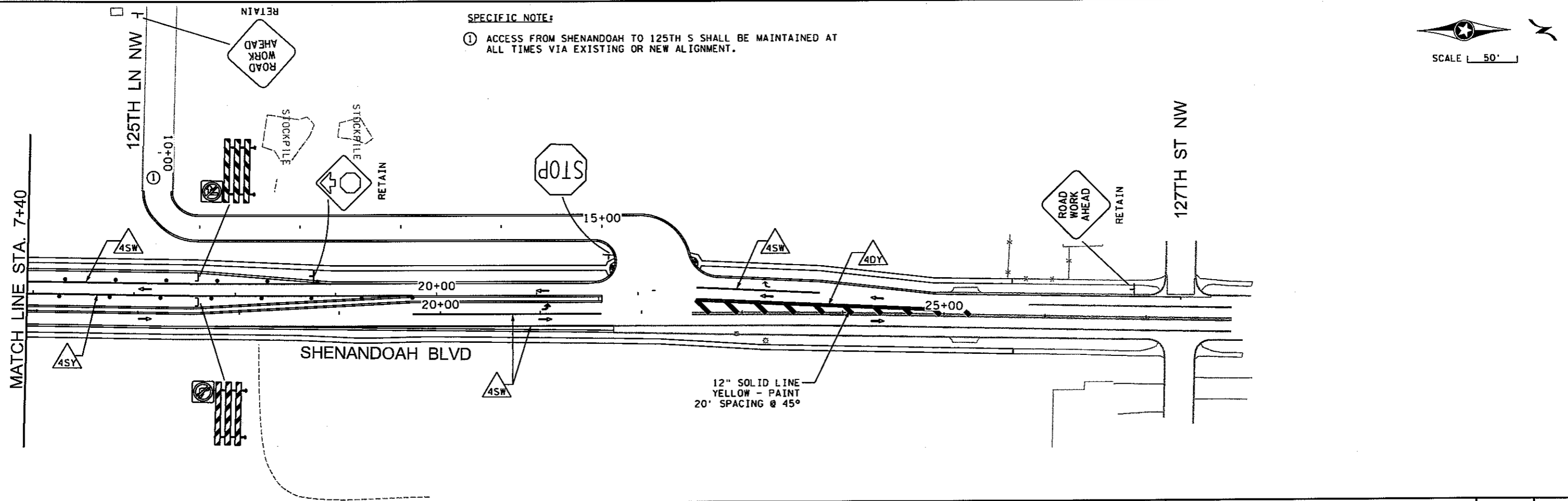
GENERAL NOTE:

1. WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.



SPECIFIC NOTE:

① ACCESS FROM SHENANDOAH TO 125TH S SHALL BE MAINTAINED AT ALL TIMES VIA EXISTING OR NEW ALIGNMENT.



955803 AM
4/8/2010
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S27C

DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.
 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010

SEH
 PHONE: 651-490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

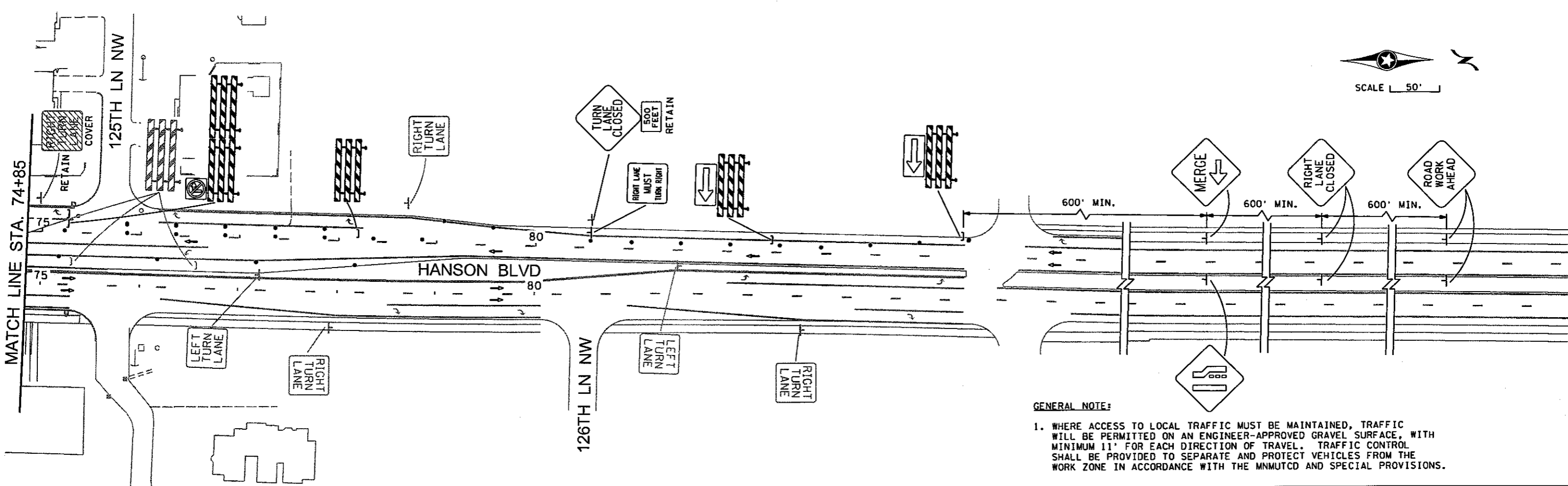
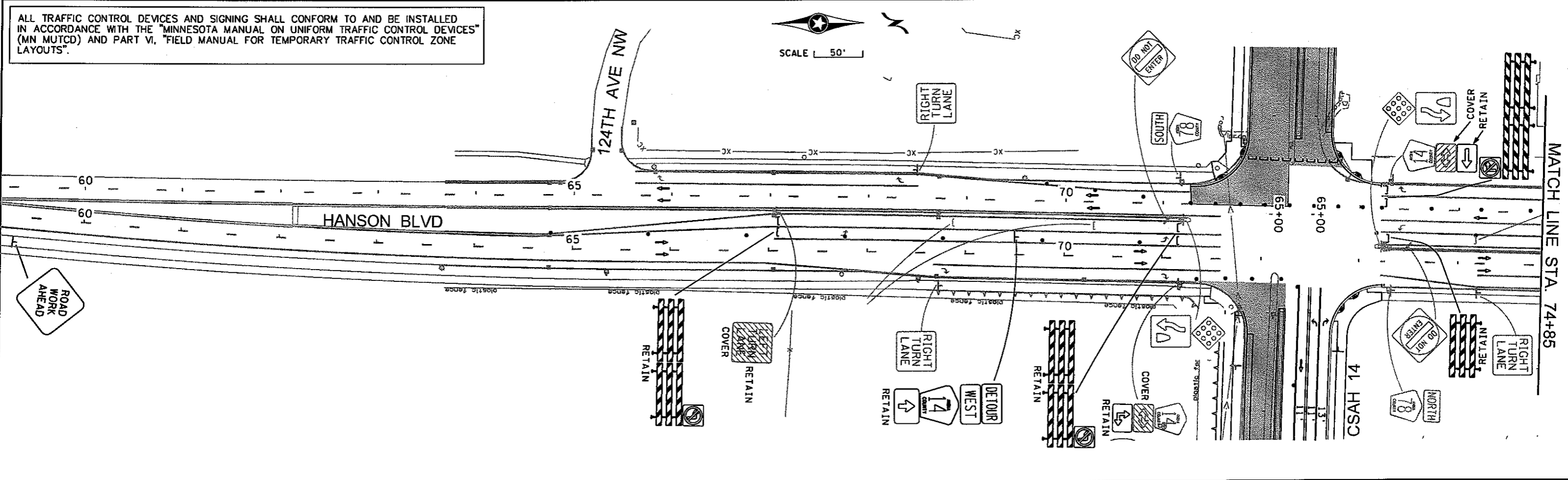
STAGING & TRAFFIC CONTROL
 STAGE 2

FILE NO. 102287	65
TC18 OF TC21	194

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

9/5/05 AM

4/8/2010



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DESIGN TEAM				REVISIONS			
DRAWN BY:	MTT	NO.	BY	DATE			
DESIGNER:	MPM						
CHECKED BY:	MPM						

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.
 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

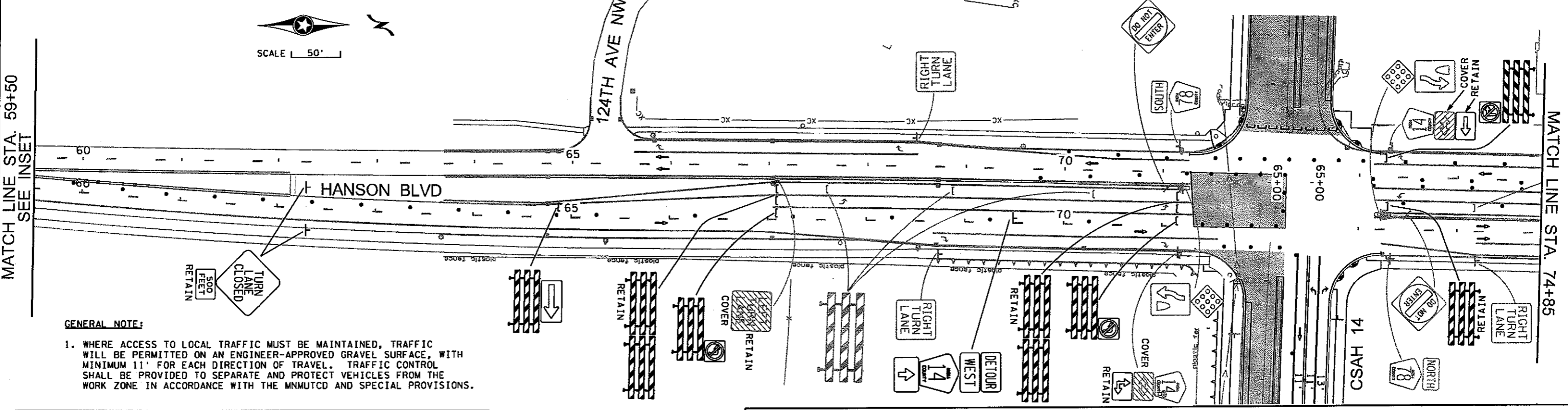
SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 2, PHASE 1
 HANSON BLVD

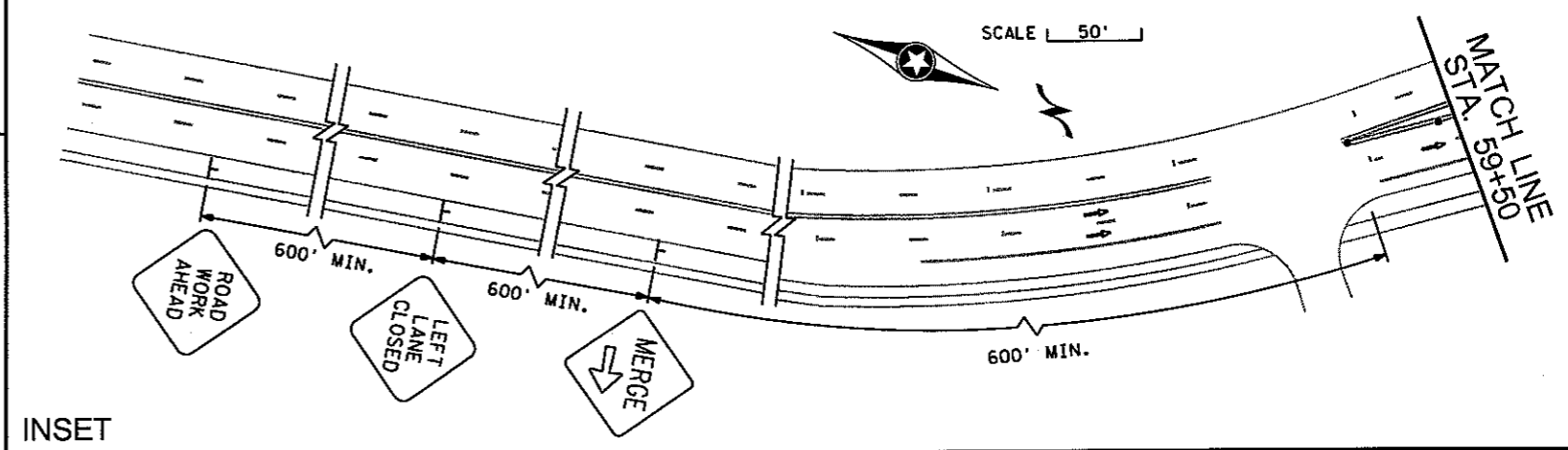
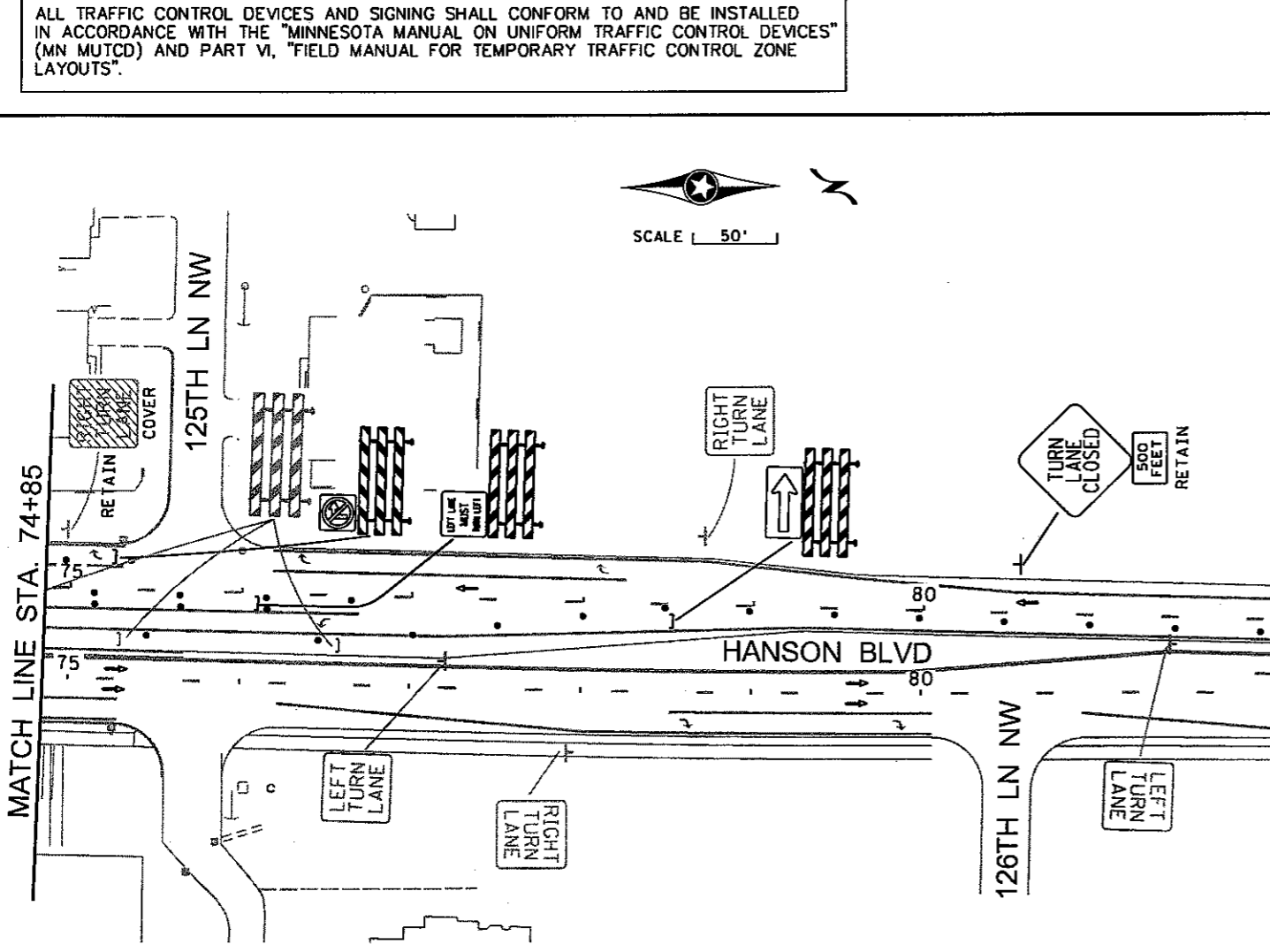
FILE NO. 66
 102287
 TC19 OF TC21
 194



GENERAL NOTE:

1. WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MN MUTCD AND SPECIAL PROVISIONS.

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DESIGN TEAM		NO.		BY		DATE		REVISIONS	
DRAWN BY:	MTT								
DESIGNER:	MPM								
CHECKED BY:	MPM								

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.

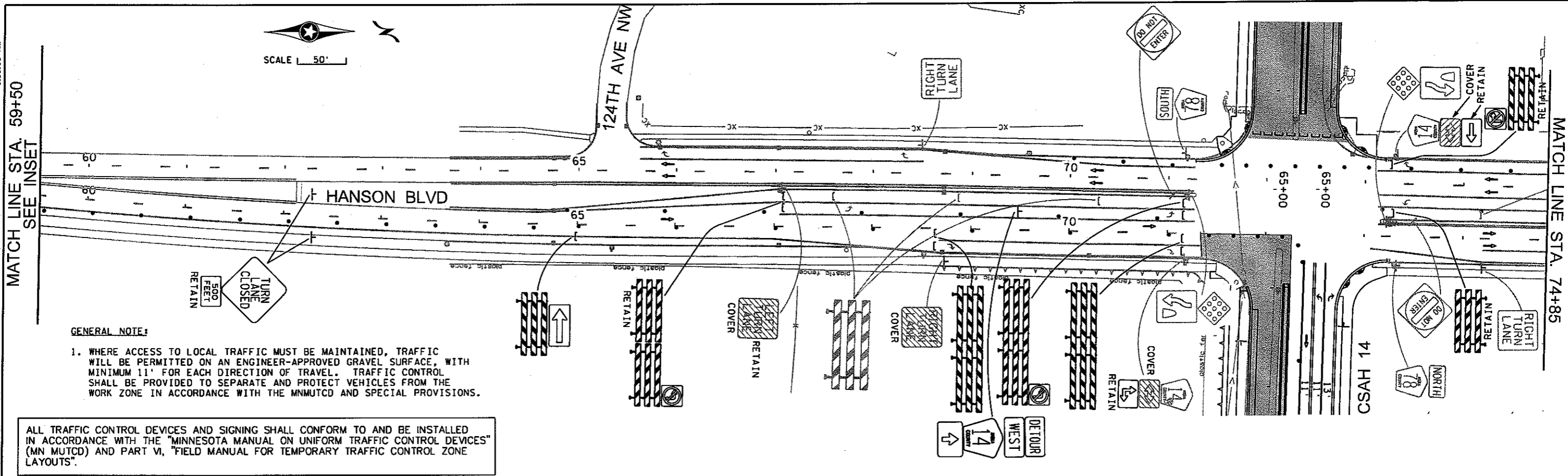
Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

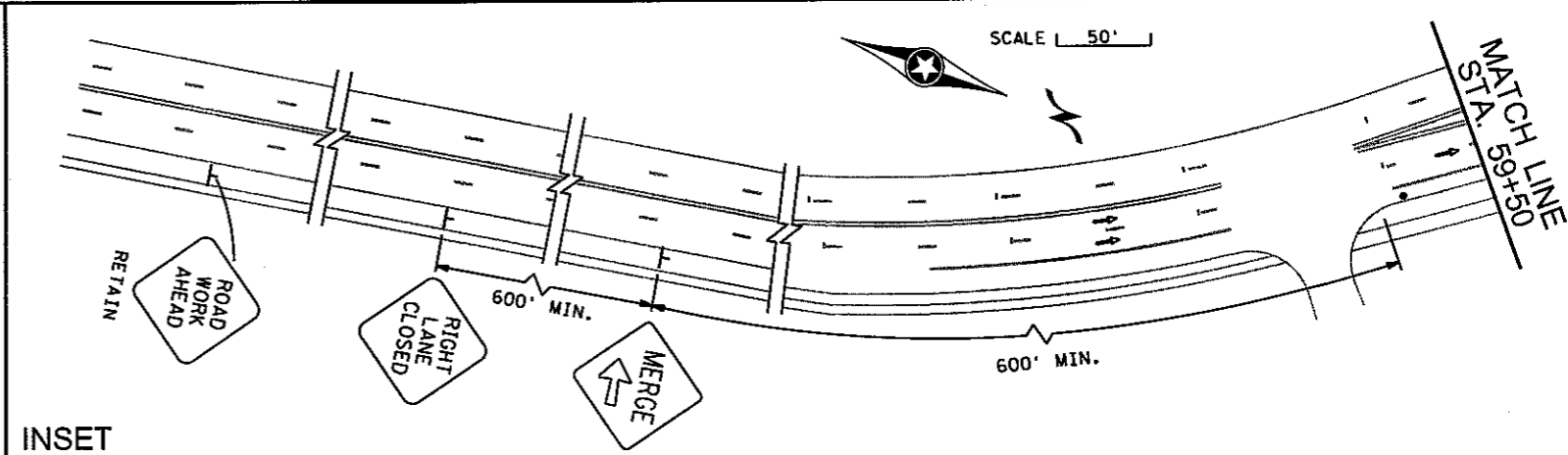
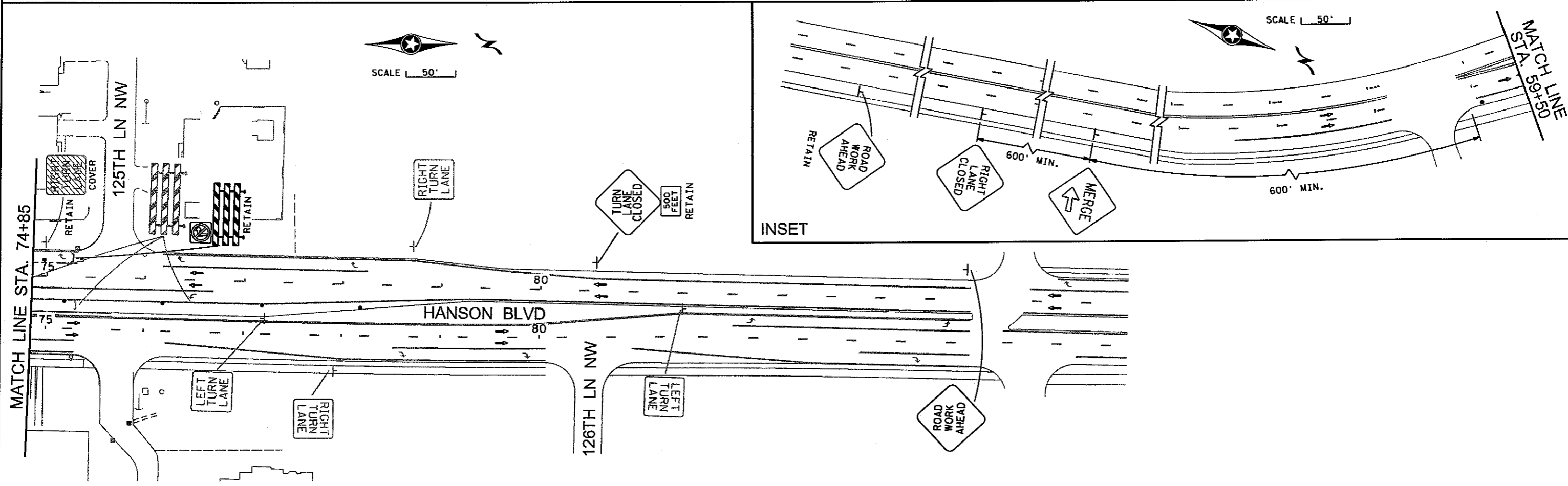
STAGING & TRAFFIC CONTROL
 STAGE 2, PHASE 2
 HANSON BLVD

FILE NO. 67
 102287
 TC20
 OF TC21
 194



GENERAL NOTE:
 1. WHERE ACCESS TO LOCAL TRAFFIC MUST BE MAINTAINED, TRAFFIC WILL BE PERMITTED ON AN ENGINEER-APPROVED GRAVEL SURFACE, WITH MINIMUM 11' FOR EACH DIRECTION OF TRAVEL. TRAFFIC CONTROL SHALL BE PROVIDED TO SEPARATE AND PROTECT VEHICLES FROM THE WORK ZONE IN ACCORDANCE WITH THE MNMUTCD AND SPECIAL PROVISIONS.

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DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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.
 Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: 651-949-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STAGING & TRAFFIC CONTROL
 STAGE 2, PHASE 3
 HANSON BLVD

FILE NO.	68
102287	
TC21	194
OF TC21	

12/11/14 AM
1/21/2010
S:\AEVA\Anoka\102287\5-dsgn\51-cadd\Civil\Prints\anno102.dwg ALL

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		EB CSAH 14								
1000	PC	10+00.000					484,200.6135	159,162.2124	N 89° 49' 12.65" E	
1005	PI	11+58.145	0° 31' 39.30" RT	0° 10' 00.50"	4,348.925'	158.145'	316.288'	484,358.7577	159,162.7087	PI
1006	CC						484,308.4149	124,813.4567		
1009	PRC	13+16.288					484,516.8998	159,161.7488	S 89° 39' 08.04" E	
1009	PRC	13+16.288					484,516.8998	159,161.7488	S 89° 39' 08.04" E	
1010	PI	13+73.854	0° 30' 07.96" LT	0° 26' 10.33"	3,135.144'	57.567'	115.133'	484,574.4654	159,161.3994	PI
1011	CC						484,596.6252	172,296.6512		
1012	PT	14+31.420					484,632.0319	159,161.5546	N 89° 50' 44.00" E	
1029	PC	16+19.823					484,820.4334	159,162.0625	N 89° 50' 44.00" E	
1030	PI	16+95.487	0° 45' 14.20" RT	0° 29' 53.61"	1,500.000'	75.664'	151.326'	484,896.0975	159,162.2664	PI
1031	CC						484,851.4325	147,662.1042		
1032	PT	17+71.149					484,971.7576	159,161.4747	S 89° 24' 01.80" E	
1018	POT	44+00.000					487,599.6224	159,133.9777		
1034	PC	59+15.262					489,114.8019	159,118.1235	S 89° 24' 01.80" E	
1035	PI	60+77.684	1° 37' 26.85" RT	0° 30' 00.02"	1,459.000'	162.421'	324.821'	489,277.2142	159,116.4241	PI
1036	CC						488,994.9058	147,659.7507		
1037	PT	62+40.083					489,439.5130	159,110.1221	S 87° 46' 34.95" E	
1039	PC	76+58.321					490,856.6834	159,055.0947	S 87° 46' 34.95" E	
1040	PI	77+31.362	0° 43' 49.48" RT	0° 30' 00.02"	1,459.000'	73.041'	146.080'	490,929.6695	159,052.2608	PI
1041	CC						490,412.0762	147,604.7233		
1042	PT	78+04.402					491,002.6135	159,048.4966	S 87° 02' 45.47" E	
1044	PC	84+79.153					491,676.4686	159,013.7234	S 87° 02' 45.47" E	
1045	PI	85+54.362	0° 45' 07.50" LT	0° 30' 00.02"	1,459.000'	75.208'	150.415'	491,751.5771	159,009.8476	PI
1046	CC						492,267.0060	170,457.4967		
1047	PT	86+29.568					491,826.7300	159,006.9579	S 87° 47' 52.97" E	
1048	POT	86+41.568					491,827.1911	159,018.9490		
1050	POT	88+66.087					492,051.5439	159,010.3226		

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
		WB CSAH 14								
1300	PC	10+00.000					484,200.4343	159,219.2986	N 89° 49' 12.65" E	
1305	PI	11+58.407	0° 31' 39.30" RT	0° 09' 59.50"	4,406.011'	158.407'	316.812'	484,358.8409	159,219.7950	PI
1306	CC						484,308.4149	124,813.4567		
1309	PCC	13+16.812					484,517.2453	159,218.8343	S 89° 39' 08.05" E	
1309	PCC	13+16.812					484,517.2453	159,218.8343	S 89° 39' 08.05" E	
1310	PI	15+30.256	1° 51' 42.94" RT	0° 26' 10.33"	3,135.144'	213.444'	426.850'	484,730.6849	159,217.5388	PI
1311	CC						484,437.5204	146,083.9319		
1314	PRC	17+43.662					484,943.9697	159,209.3091	S 87° 47' 25.11" E	
1314	PRC	17+43.662					484,943.9697	159,209.3091	S 87° 47' 25.11" E	
1315	PI	19+05.266	1° 36' 36.69" LT	0° 29' 53.61"	1,500.000'	161.604'	323.186'	485,105.4532	159,203.0781	PI
1316	CC						485,387.3732	170,700.7578		
1317	PT	20+66.848					485,267.0481	159,201.3873	S 89° 24' 01.80" E	
1319	PC	59+15.262					489,115.2518	159,161.1211	S 89° 24' 01.80" E	
1320	PI	60+78.293	1° 37' 26.85" RT	0° 29' 53.30"	1,502.000'	163.031'	326.039'	489,278.2735	159,159.4153	PI
1321	CC						488,994.9058	147,659.7507		
1322	PT	62+41.302					489,441.1814	159,153.0898	S 87° 46' 34.95" E	
1324	PC	75+31.896					490,730.8035	159,103.0149	S 87° 46' 34.95" E	
1325	PI	77+69.493	2° 22' 32.38" RT	0° 30' 00.02"	1,459.000'	237.597'	475.126'	490,968.2215	159,093.7962	PI
1326	CC						490,286.1962	147,652.6435		
1327	PT	80+07.022					491,205.0534	159,074.7442	S 85° 24' 02.57" E	
1329	PC	82+37.873					491,435.1618	159,056.2330	S 85° 24' 02.57" E	
1330	PI	84+73.281	2° 20' 43.40" LT	0° 29' 53.61"	1,500.000'	235.408'	470.750'	491,669.8116	159,037.3564	PI
1331	CC						492,357.3067	170,519.2015		
1332	PT	87+08.623					491,905.0373	159,028.0984	S 87° 44' 45.97" E	
1335	POT	88+55.716					492,052.0159	159,022.3135		

DESIGN TEAM

DRAWN BY: CIF

DESIGNER: JEO

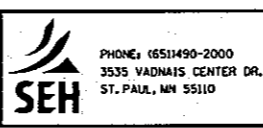
CHECKED BY: JMB

NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098

Printed Name: MARK R. DIERLING Date: 1/21/2010



ANOKA COUNTY, MN.

CSAH 14

S.P. NO. 02-614-32 CTB

S.P. NO. 114-020-042 (C.S.A.H. 14)

S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

ALIGNMENT TABULATION

FILE NO. 102287

69

AL 1 OF AL 4

194

7:39:32 AM

4/6/2010

ALIGNMENT TABULATION

Table with columns: POINT NUMBER, POINT, STATION, CIRCULAR CURVE DATA (DELTA, DEGREE, RADIUS, TANGENT, LENGTH), COORDINATES (X, Y), AZIMUTH. Rows include NB SHENANDOAH BLVD and SB SHENANDOAH BLVD.

ALIGNMENT TABULATION

Table with columns: POINT NUMBER, POINT, STATION, CIRCULAR CURVE DATA (DELTA, DEGREE, RADIUS, TANGENT, LENGTH), COORDINATES (X, Y), AZIMUTH. Rows include FRONTAGE RD.

ALIGNMENT TABULATION (LOCATED AT THE FRONT FACE OF WALL)

Table with columns: POINT NUMBER, POINT, STATION, CIRCULAR CURVE DATA (DELTA, DEGREE, RADIUS, TANGENT, LENGTH), COORDINATES (X, Y), AZIMUTH. Rows include RETAINING WALL A, B, B2, F.

S:\A\A\Anokc\102287\5-dsgn\51-cadd\Civil\planshfts\anot02.dwg

DESIGN TEAM table with columns: DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE, REVISIONS.

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. Certified By: Mark R. Dierling, Lic. No. 21098. Printed Name: MARK R. DIERLING, Date: 4/6/2010.

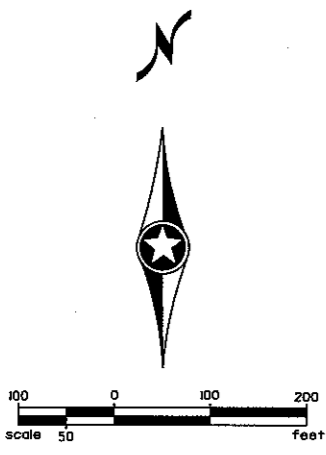


ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

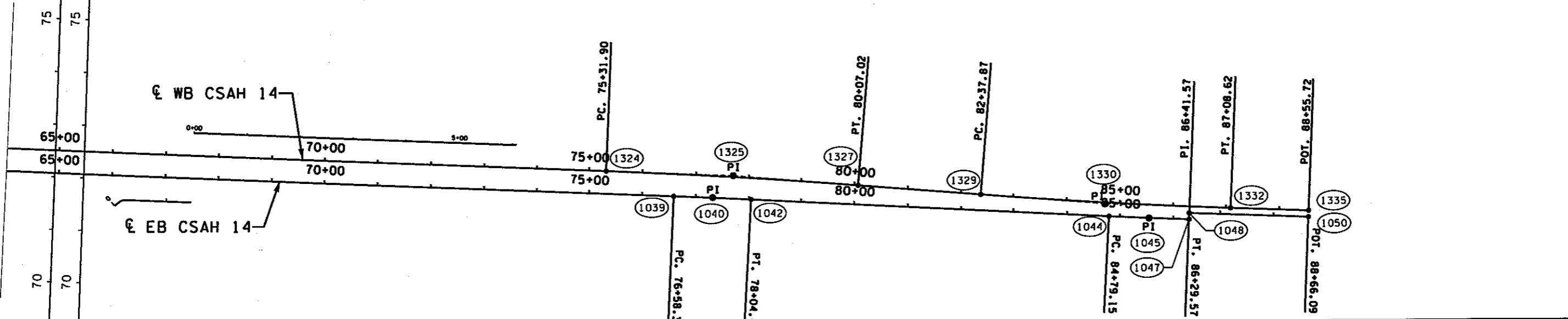
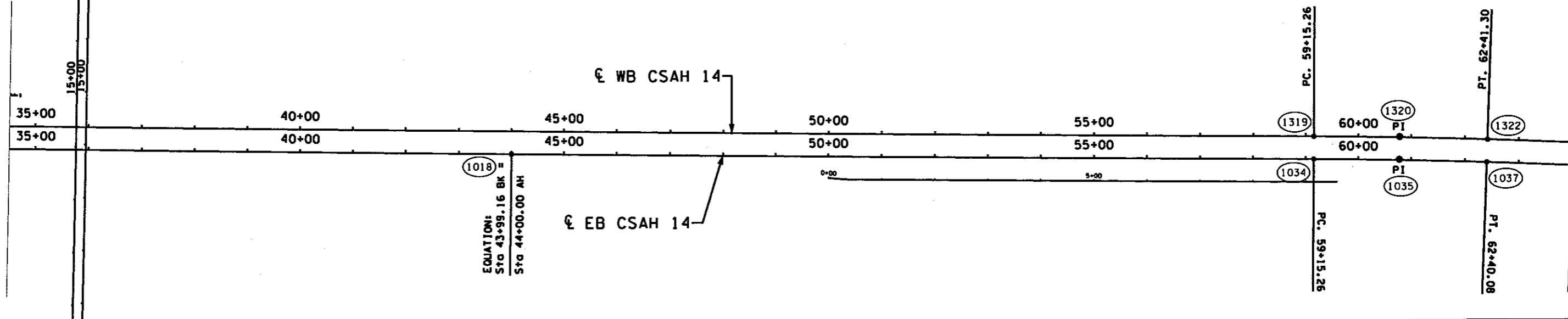
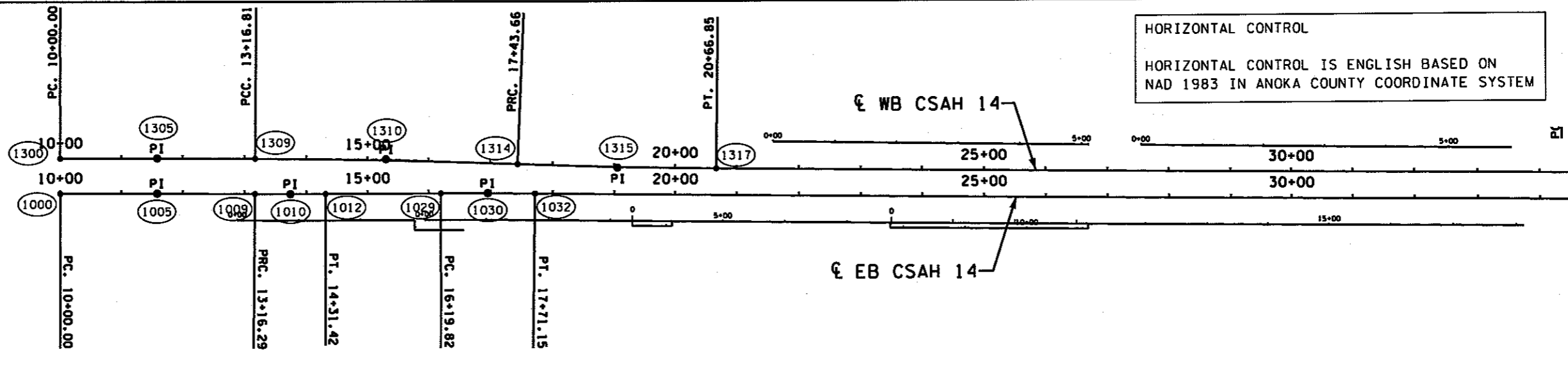
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7:27:43 PM

4/7/2010



HORIZONTAL CONTROL
 HORIZONTAL CONTROL IS ENGLISH BASED ON
 NAD 1983 IN ANOKA COUNTY COORDINATE SYSTEM



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DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: MRD				
	NO.	BY	DATE	REVISIONS

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.
 Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 4/7/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

ALIGNMENT PLAN

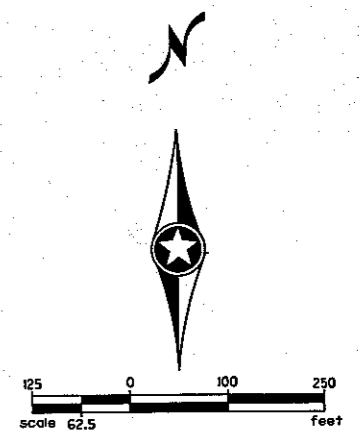
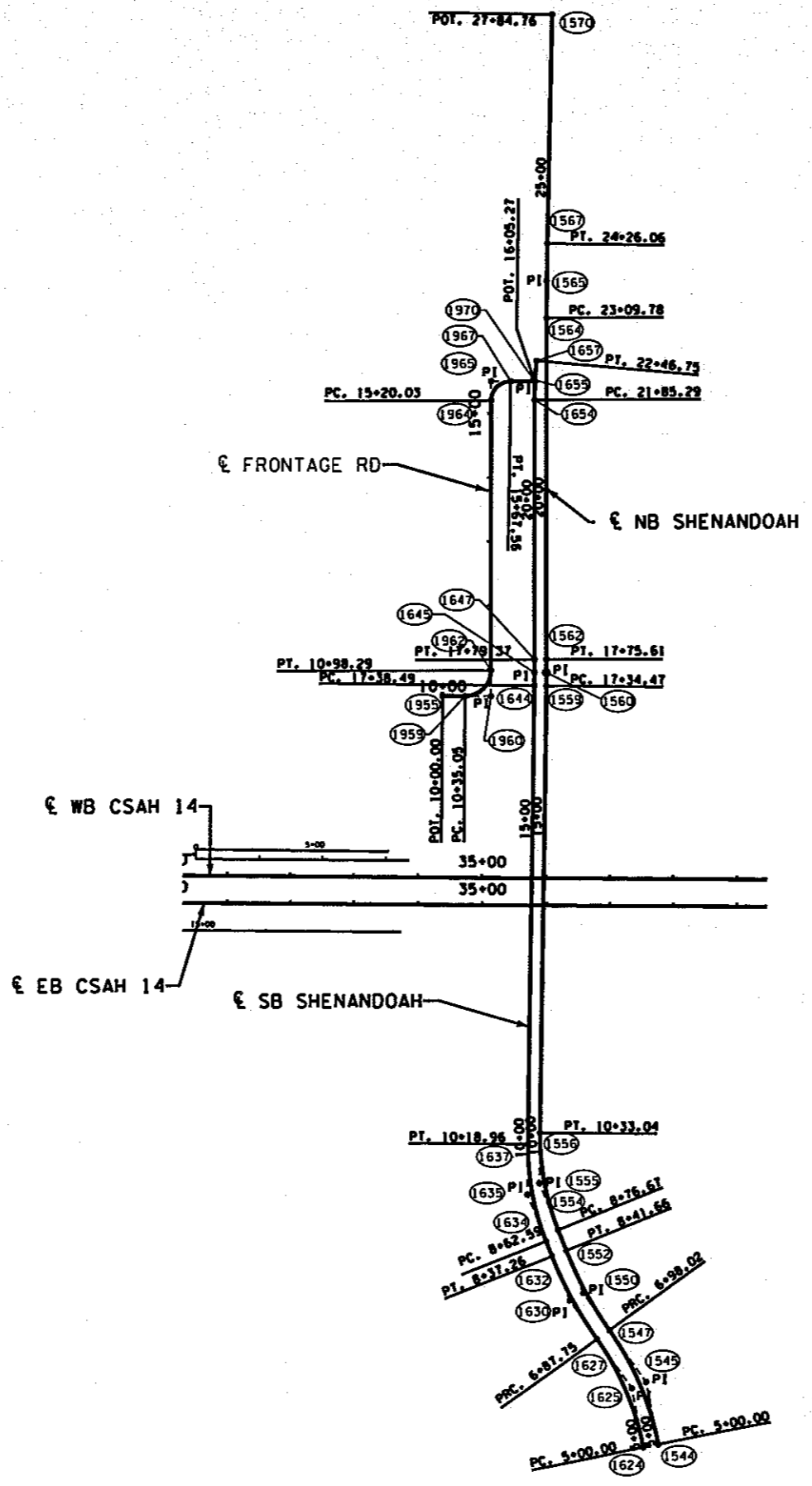
FILE NO.	71
102287	
AL3	
OF AL4	194

12/11/21 AM

1/21/2010

AL 4

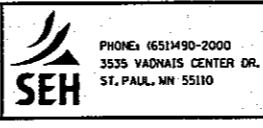
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HORIZONTAL CONTROL
 HORIZONTAL CONTROL IS ENGLISH BASED ON
 NAD 1983 IN ANOKA COUNTY COORDINATE SYSTEM

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

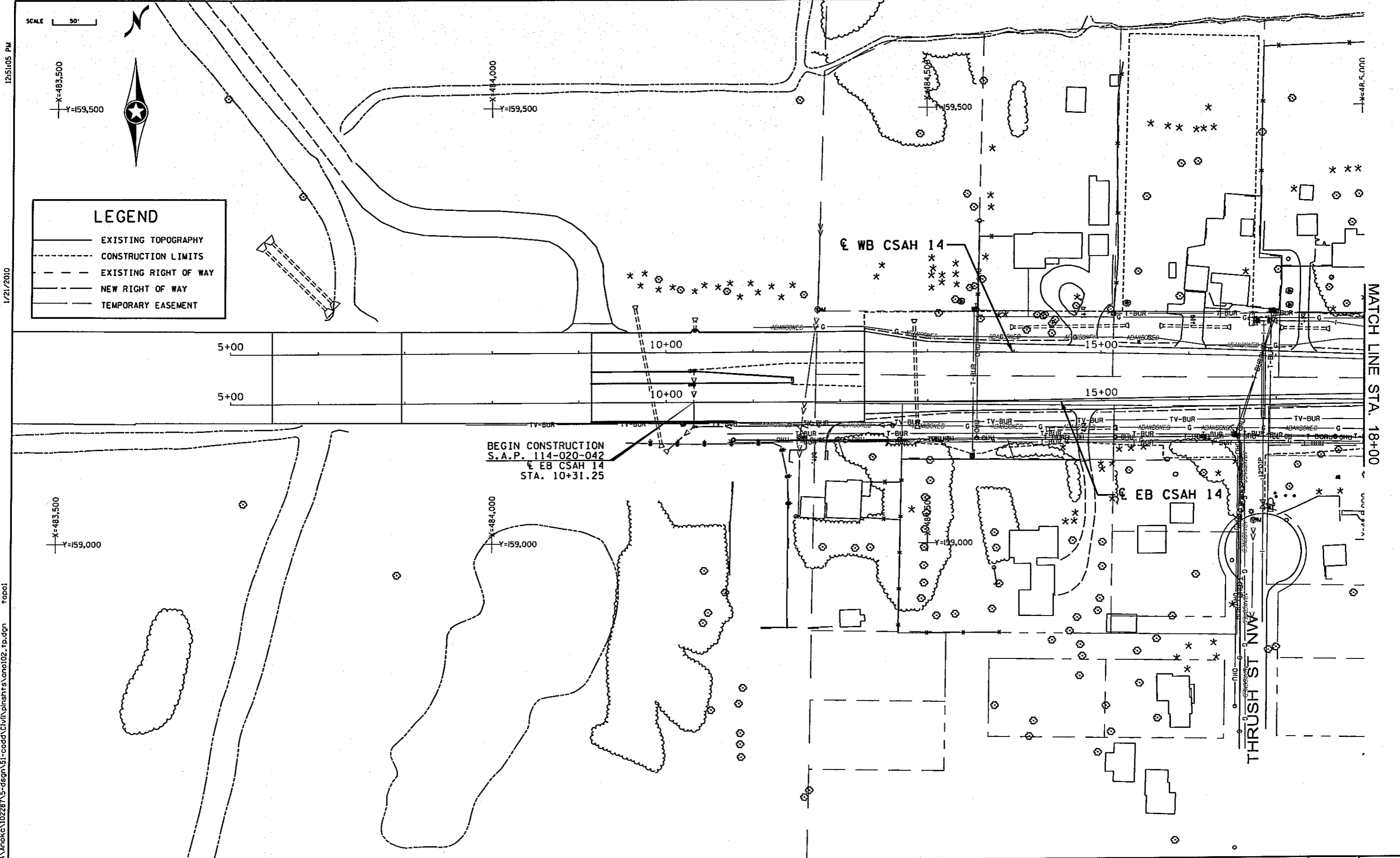
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Certified By: *Mark B. Dierling* Lic. No. 21098
 Printed Name: MARK B. DIERLING Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

ALIGNMENT PLAN

FILE NO. 102287	72
AL 4 OF AL 4	194



LEGEND

- EXISTING TOPOGRAPHY
- - - CONSTRUCTION LIMITS
- - - EXISTING RIGHT OF WAY
- - - NEW RIGHT OF WAY
- - - TEMPORARY EASEMENT

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

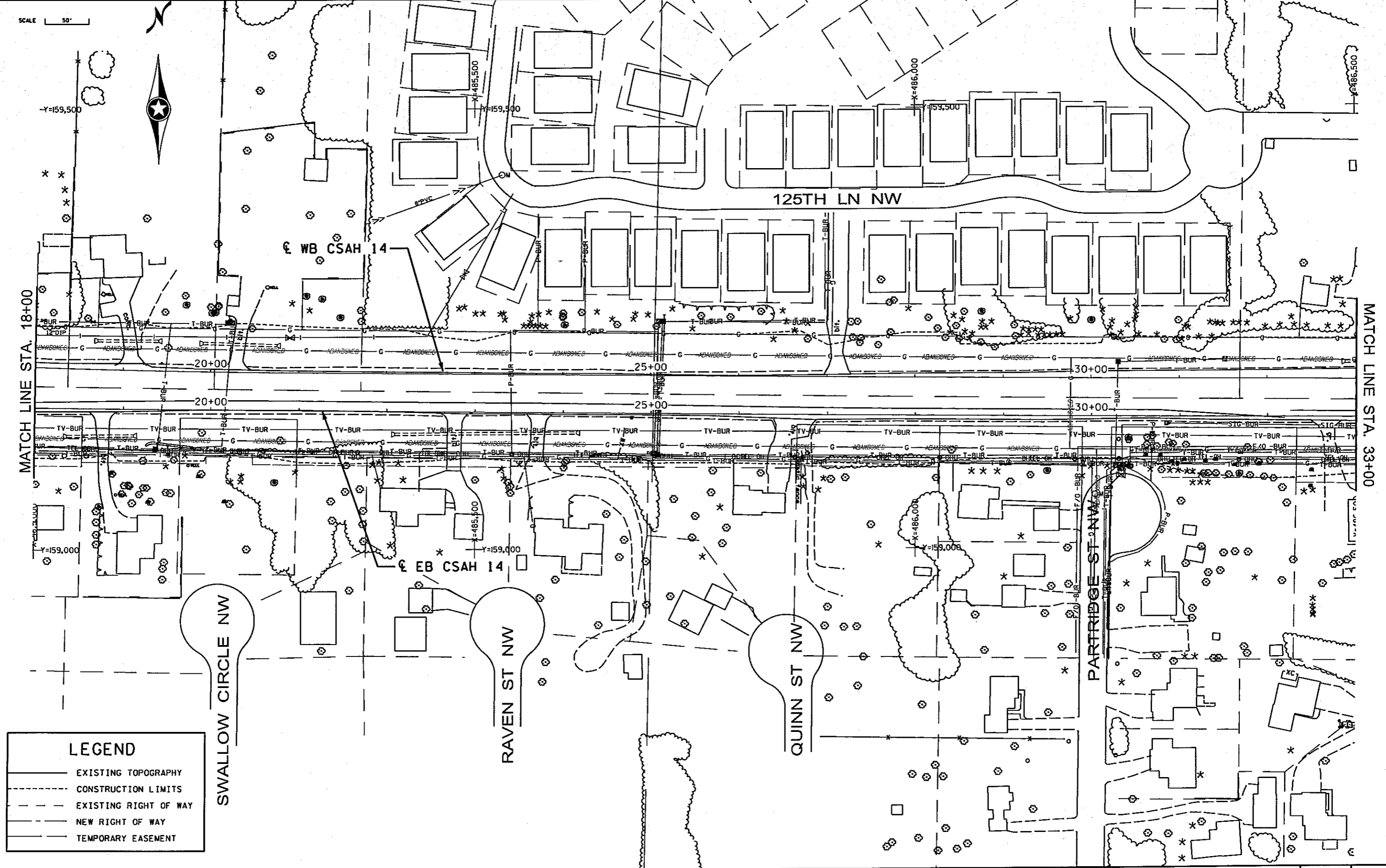
TOPOGRAPHY & INPLACE UTILITY PLAN
 EB CSAH 14 STA. 10+31.25 - 18+00.00

FILE NO.	73
102287	
TP1	194
OF TP8	

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 1/21/2010
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1/21/2010
S:\AEVA\Anoka\102287\5-dsgn\51-cadd\Civil\p1mshrs\anok102-fp.dgn Topo2

SCALE 50'



LEGEND	
	EXISTING TOPOGRAPHY
	CONSTRUCTION LIMITS
	EXISTING RIGHT OF WAY
	NEW RIGHT OF WAY
	TEMPORARY EASEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010

SEH
 PHONE: 651-490-2000
 3535 VAONAS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**TOPOGRAPHY & INPLACE
 UTILITY PLAN**
 EB CSAH 14 STA. 18+00.00 - 33+00.00

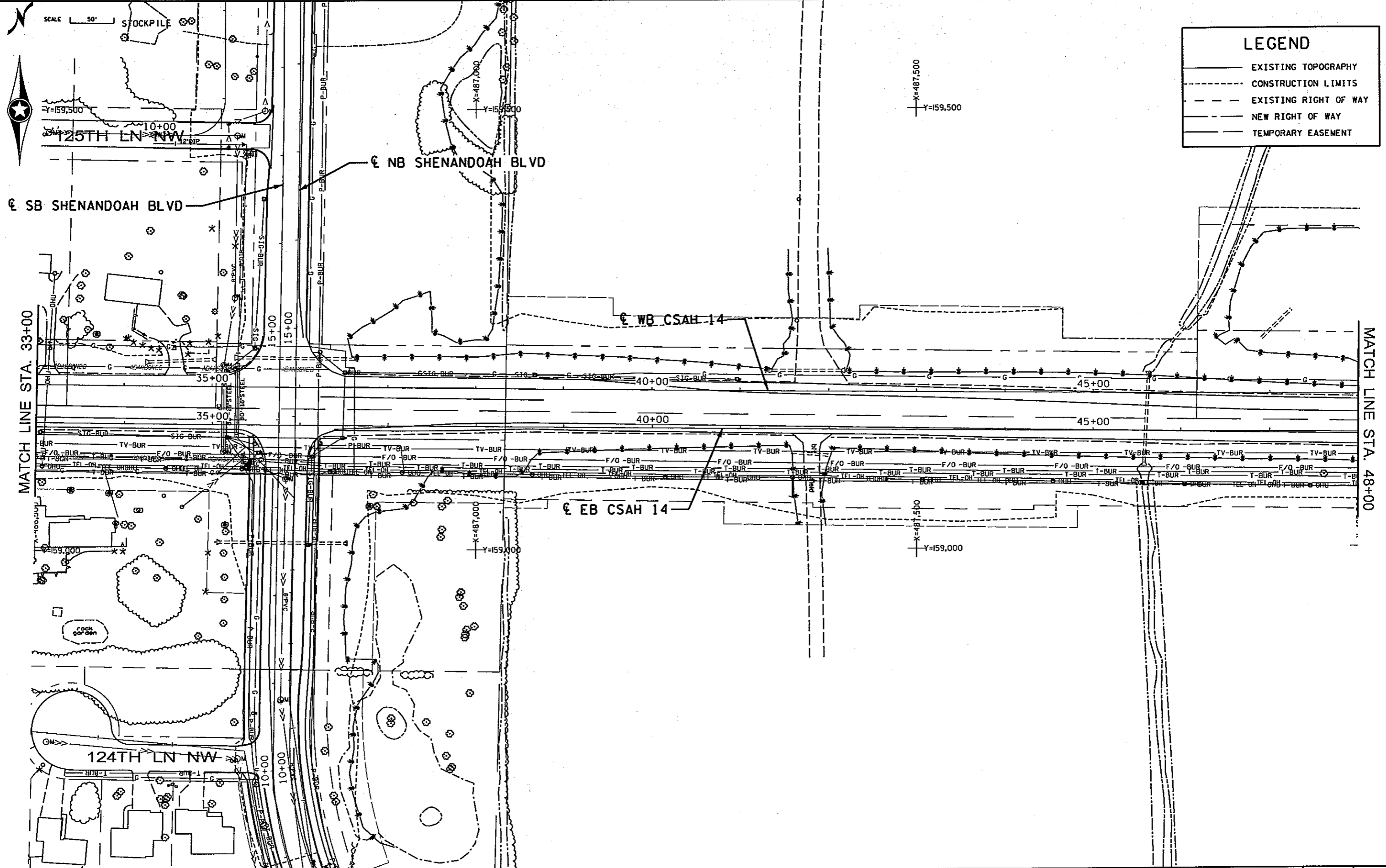
FILE NO. 102287	74
TP2 OF TP8	194

12/11/13 PM

1/21/2010

Topo3

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DESIGN TEAM			
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Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 1/21/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**TOPOGRAPHY & INPLACE
 UTILITY PLAN**
 EB CSAH 14 STA. 33+00.00 - 48+00.00

FILE NO.	75
102287	
TP3	194
OF TP8	

12/5/17 PM

1/21/2010

top04

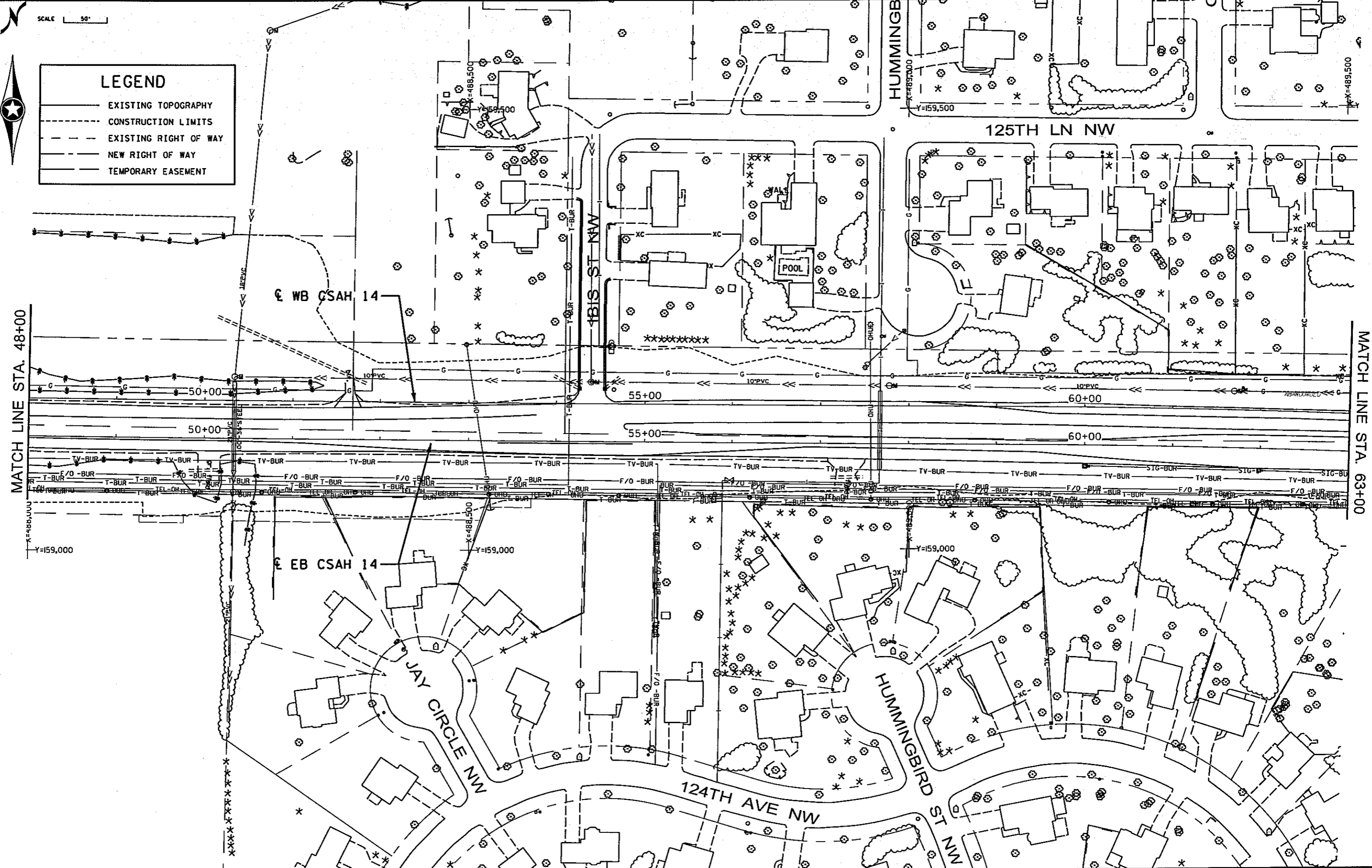
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SCALE 50'



LEGEND

- EXISTING TOPOGRAPHY
- - - CONSTRUCTION LIMITS
- - - EXISTING RIGHT OF WAY
- - - NEW RIGHT OF WAY
- - - TEMPORARY EASEMENT



DESIGN TEAM			
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DESIGNER:	JEO		
CHECKED BY:	MED		
NO.	BY	DATE	REVISIONS

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 Printed Name: MARK R. DIEBLING Date: 1/21/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

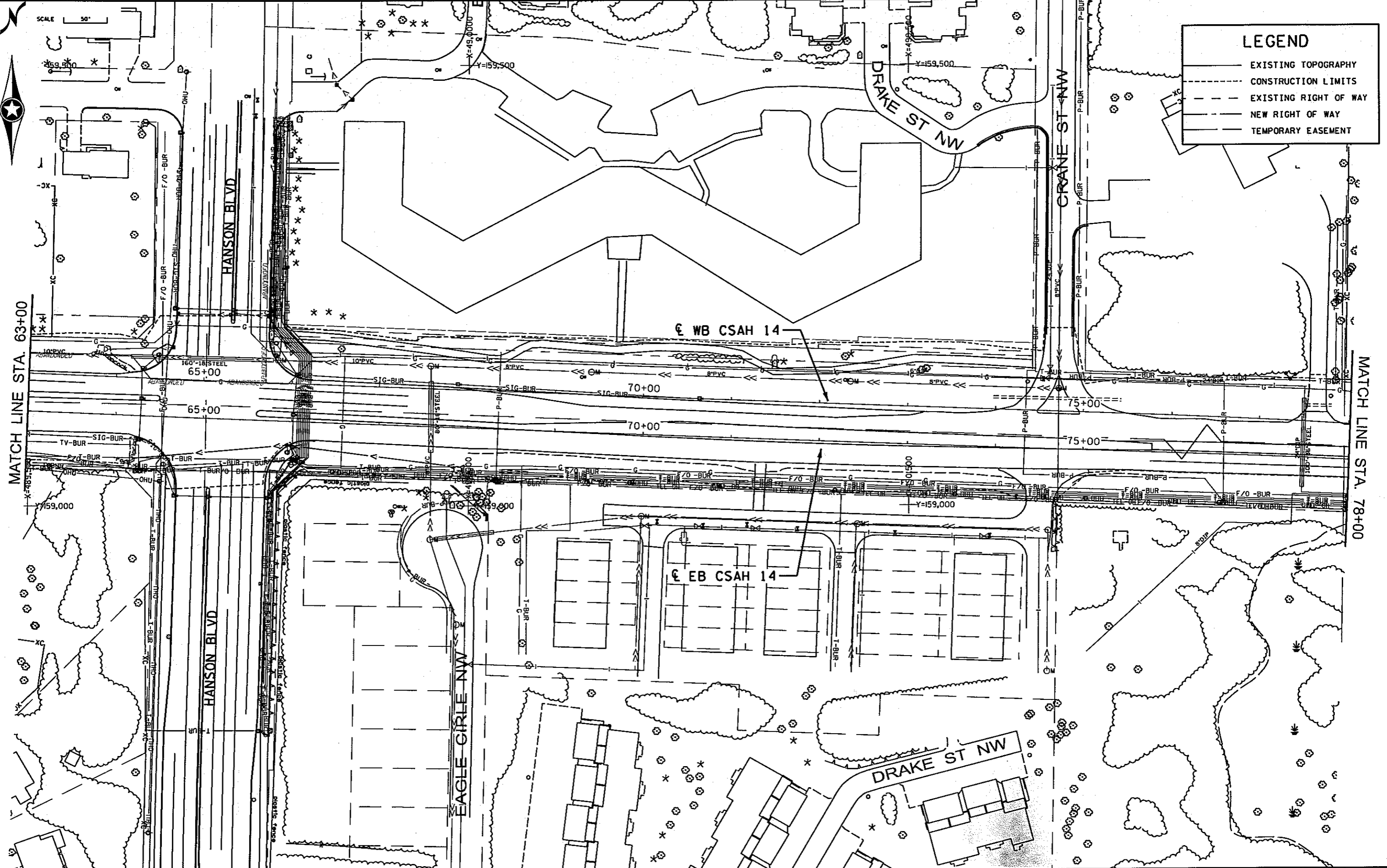
TOPOGRAPHY & INPLACE UTILITY PLAN
 EB CSAH 14 STA. 48+00.00 - 63+00.00

FILE NO.	102287	76
TP4		
OF TP8		194

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1/21/2010

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LEGEND

- EXISTING TOPOGRAPHY
- - - CONSTRUCTION LIMITS
- - - EXISTING RIGHT OF WAY
- - - NEW RIGHT OF WAY
- - - TEMPORARY EASEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark B. Dierling* Lic. No. 21098
 Printed Name: MARK B. DIERLING Date: 1/21/2010

SEH
 PHONE: 651/490-2000
 3535 VAONAS CENTER DR.
 ST. PAUL, MN 55110

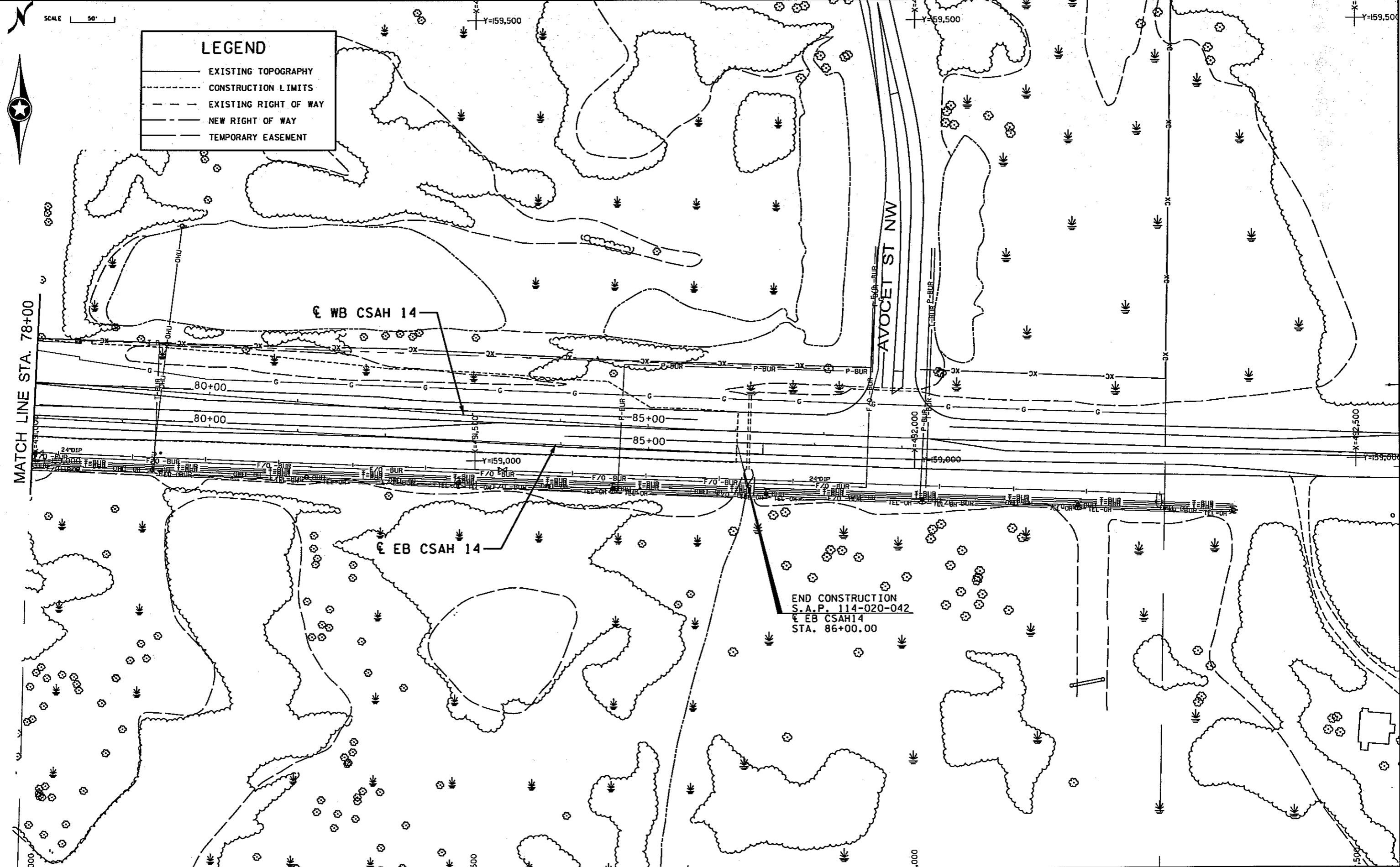


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TOPOGRAPHY & INPLACE UTILITY PLAN
 EB CSAH 14 STA. 63+00.00 - 78+00.00

FILE NO.	77
102287	
TP5	194
OF TP8	

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topo6
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LEGEND

- EXISTING TOPOGRAPHY
- - - CONSTRUCTION LIMITS
- - - EXISTING RIGHT OF WAY
- - - NEW RIGHT OF WAY
- - - TEMPORARY EASEMENT

MATCH LINE STA. 78+00

€ WB CSAH 14

€ EB CSAH 14

END CONSTRUCTION
S.A.P. 114-020-042
€ EB CSAH14
STA. 86+00.00

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark R. Diebling* Lic. No. 21098
Printed Name: MARK R. DIEBLING Date: 1/21/2010

SEH
PHONE: 651-490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**TOPOGRAPHY & INPLACE
UTILITY PLAN**
EB CSAH 14 STA. 78+00.00 - 86+00.00

FILE NO. 102287	78
TP6 OF TP8	194

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1/21/2010

Topo7

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SCALE 50'

X=486,500
Y=158,000

X=486,500
Y=158,500

X=487,000
Y=158,000

X=487,000
Y=158,500

LEGEND

- EXISTING TOPOGRAPHY
- - - CONSTRUCTION LIMITS
- - - EXISTING RIGHT OF WAY
- - - NEW RIGHT OF WAY
- - - TEMPORARY EASEMENT

3RD LN NW

124TH LN NW

SB SHENANDOAH BLVD

NB SHENANDOAH BLVD

SHENANDOAH BLVD

EB CSAH 14

WB CSAH 14

MATCH LINE STA. 16+50

BEGIN CONSTRUCTION
S.A.P. 114-129-008
NB SHENANDOAH BLVD
STA. 8+57.10

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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Certified By: *Mark B. Diebling* Lic. No. 21098
 Printed Name: MARK B. DIEBLING Date: 1/21/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



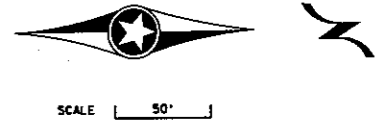
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**TOPOGRAPHY & INPLACE
 UTILITY PLAN**
 NB SHENANDOAH BLVD STA. 8+57.10 - 16+50.00

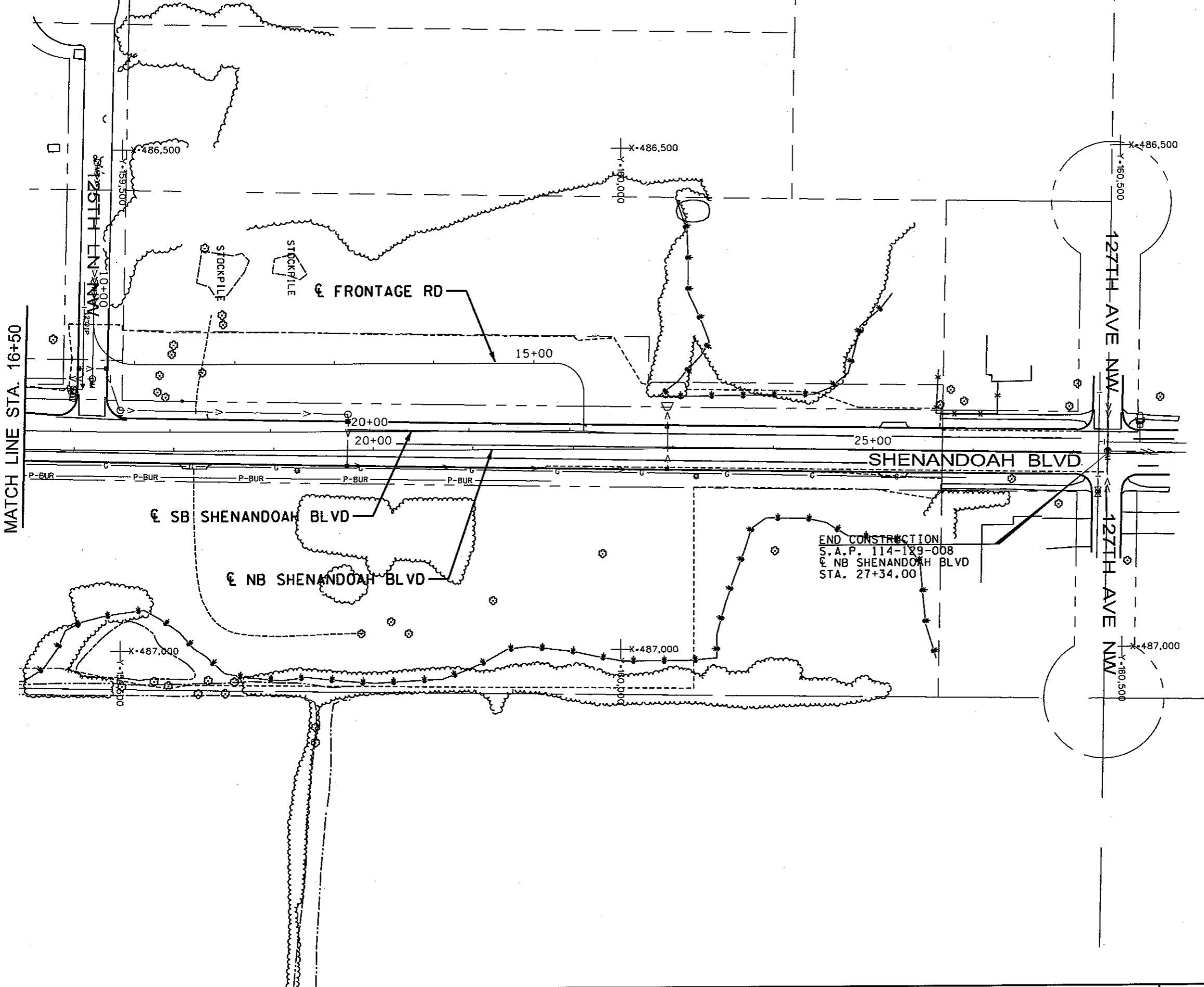
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TP7 OF TP8	194

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4/8/2010



LEGEND	
	EXISTING TOPOGRAPHY
	CONSTRUCTION LIMITS
	EXISTING RIGHT OF WAY
	NEW RIGHT OF WAY
	TEMPORARY EASEMENT

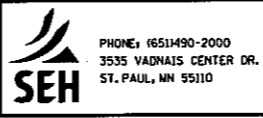


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DESIGN TEAM				REVISIONS			
DRAWN BY:	CIF			NO.	BY	DATE	
DESIGNER:	JEO						
CHECKED BY:	MRD						

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Certified By: *Mark R. Dierling* Lic. No. 21098
 Licensed Professional Engineer
 Printed Name: MARK R. DIERLING Date: 4/8/2010

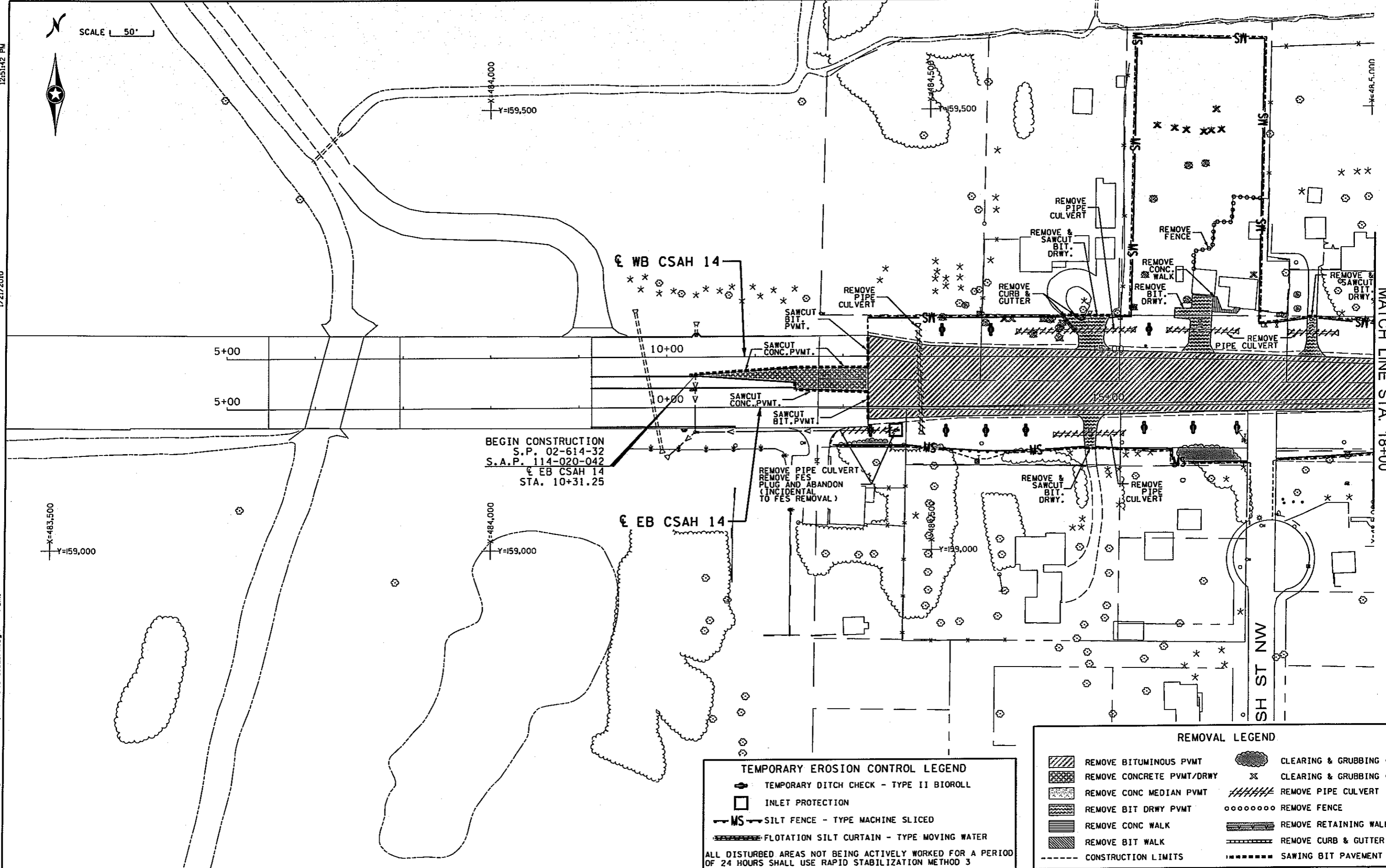
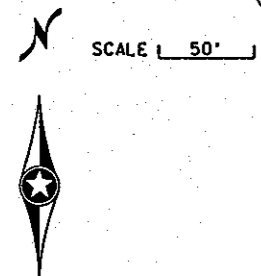


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TOPOGRAPHY & INPLACE UTILITY PLAN
 NB SHENANDOAH BLVD STA. 16+50.00 - 27+34.00

FILE NO.	102287	80
TP8 OF TP8		
		194

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1/21/2010
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BEGIN CONSTRUCTION
S.P. 02-614-32
S.A.P. 114-020-042
EB CSAH 14
STA. 10+31.25

MATCH LINE STA. 18+00

TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- MS SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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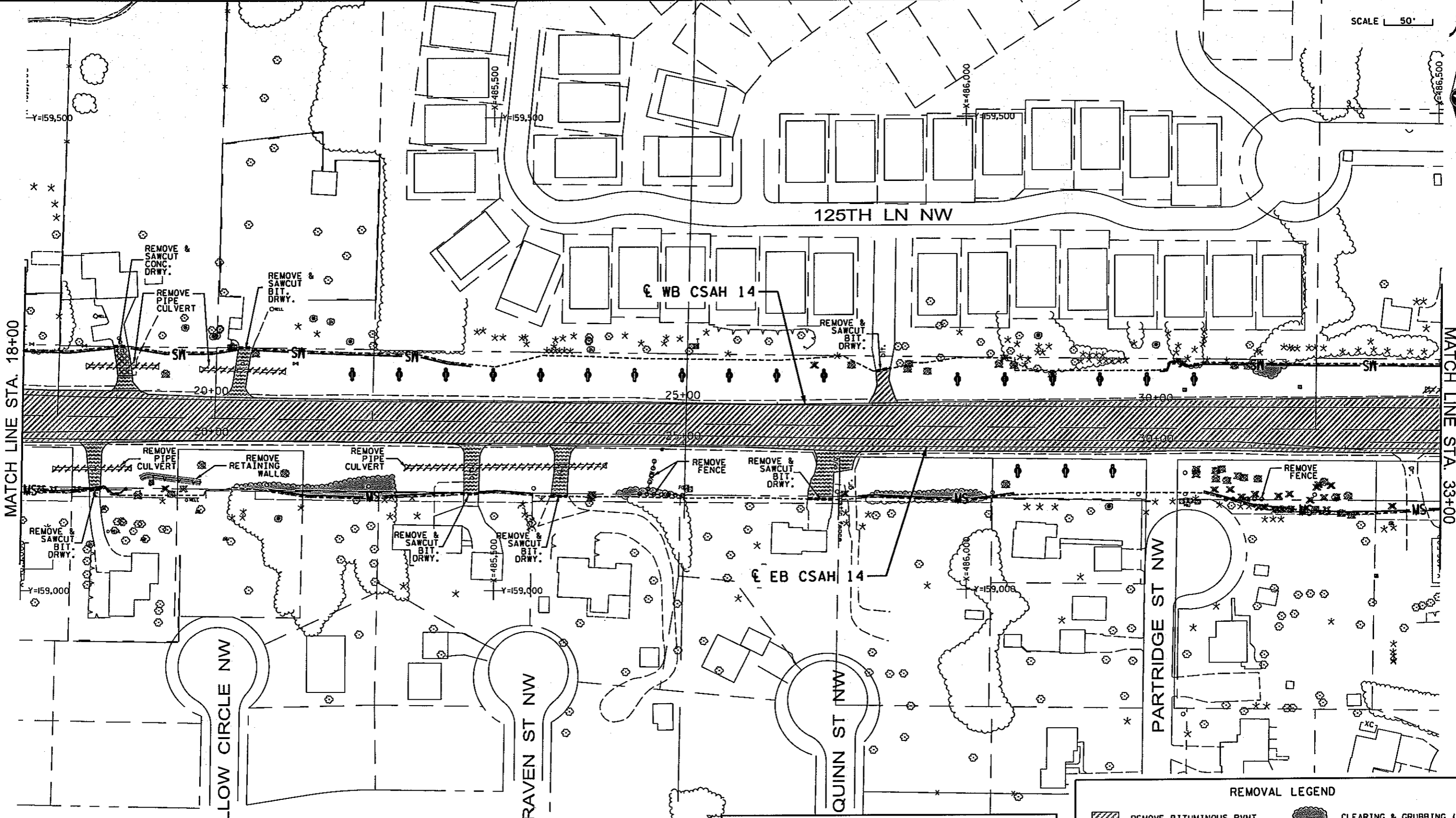
ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**REMOVALS AND
TEMPORARY EROSION CONTROL PLAN**
EB CSAH 14 STA. 10+31.25 - 18+00.00

FILE NO. 102287	81
RM1 OF RM8	194

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1/21/2010
rem2
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SCALE 50'



TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- MS SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

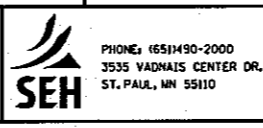
REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MJD		
NO.	BY	DATE	REVISIONS

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Printed Name: MARK R. DIERLING Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**REMOVALS AND
TEMPORARY EROSION CONTROL PLAN**
EB CSAH 14 STA. 18+00.00 - 33+00.00

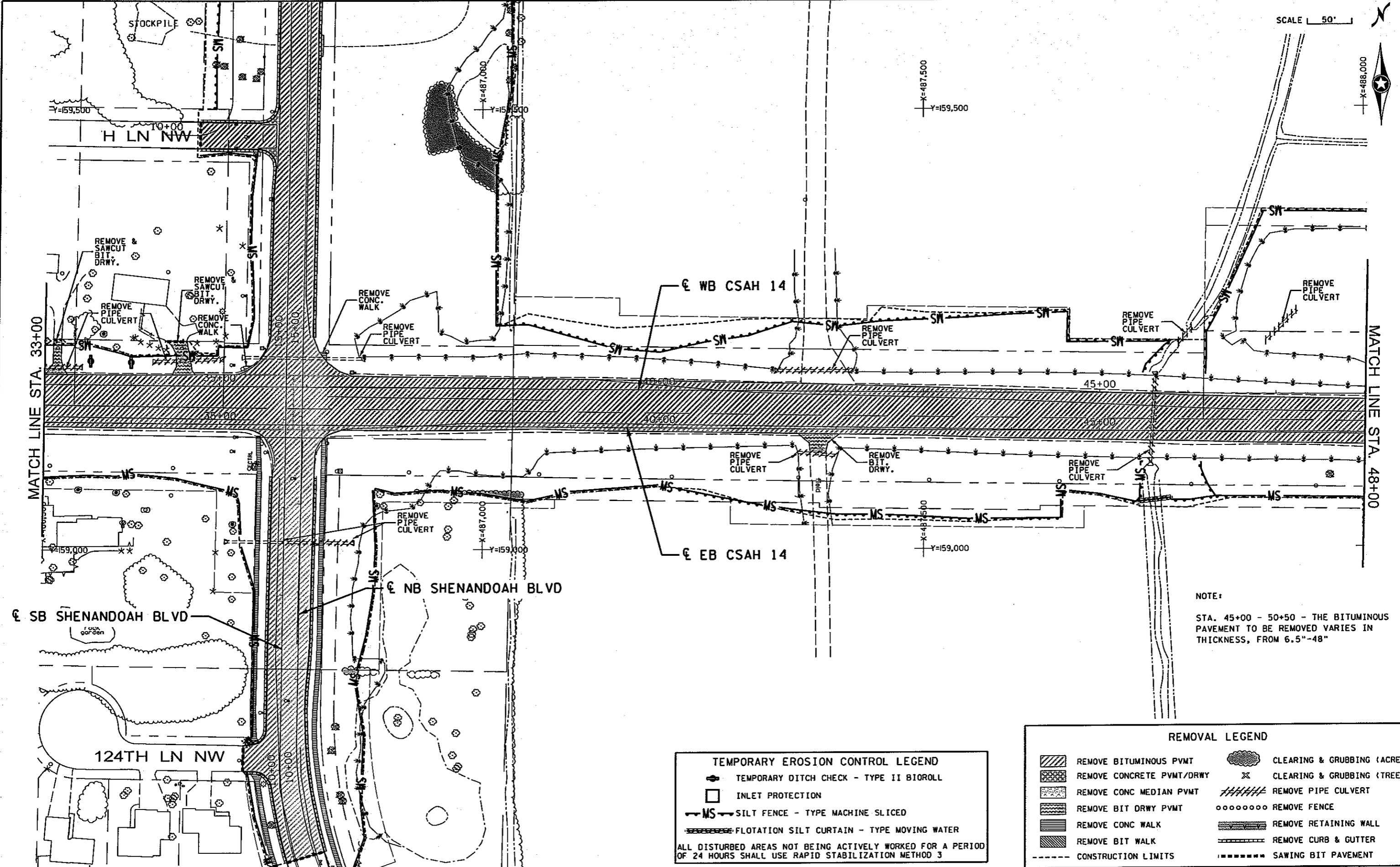
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RM2 OF RMB	194

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1/21/2010

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SCALE 50'



NOTE:
STA. 45+00 - 50+50 - THE BITUMINOUS PAVEMENT TO BE REMOVED VARIES IN THICKNESS, FROM 6.5" - 48"

TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010

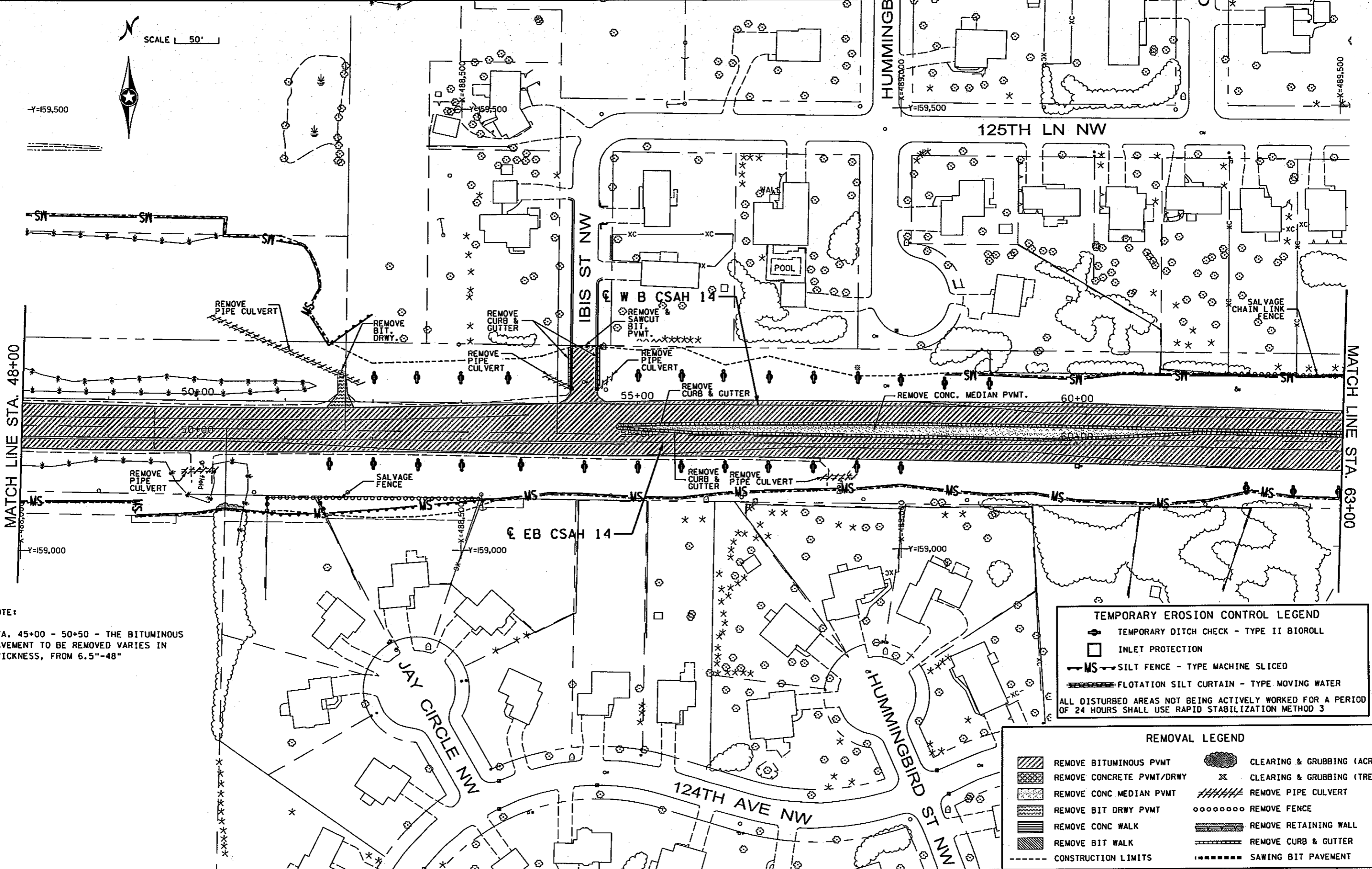
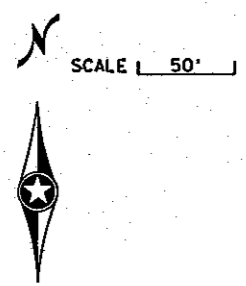


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

REMOVALS AND TEMPORARY EROSION CONTROL PLAN
 EB CSAH 14 STA. 33+00.00 - 48+00.00

FILE NO.	83
102287	
RM3 OF RM8	194

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1/21/2010
rem4
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NOTE:
STA. 45+00 - 50+50 - THE BITUMINOUS PAVEMENT TO BE REMOVED VARIES IN THICKNESS, FROM 6.5"-48"

TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- MS SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM				
DRAWN BY:	CJE			
DESIGNER:	JEO			
CHECKED BY:	MBD			
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark R. Diebling* Lic. No. 21098
Printed Name: MARK R. DIEBLING Date: 1/21/2010

SEH
PHONE: (651)490-2000
3535 VAUGHAN CENTER DR.
ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

REMOVALS AND TEMPORARY EROSION CONTROL PLAN
EB CSAH 14 STA. 48+00.00 - 63+00.00

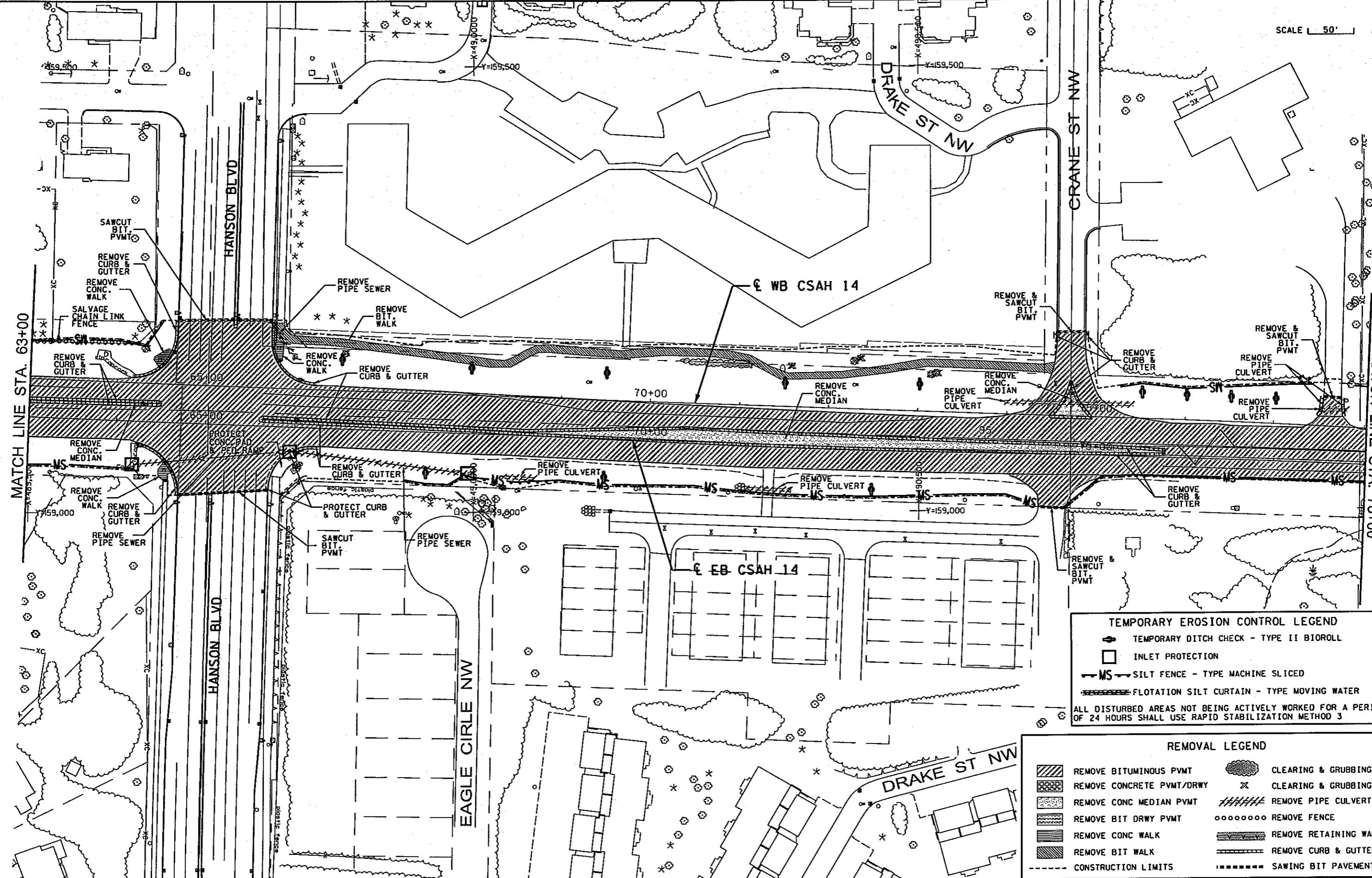
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RM4	
OF RMB	194

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1/21/2010

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SCALE 50'



TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- MS SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010

SEH
 PHONE: (651)90-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

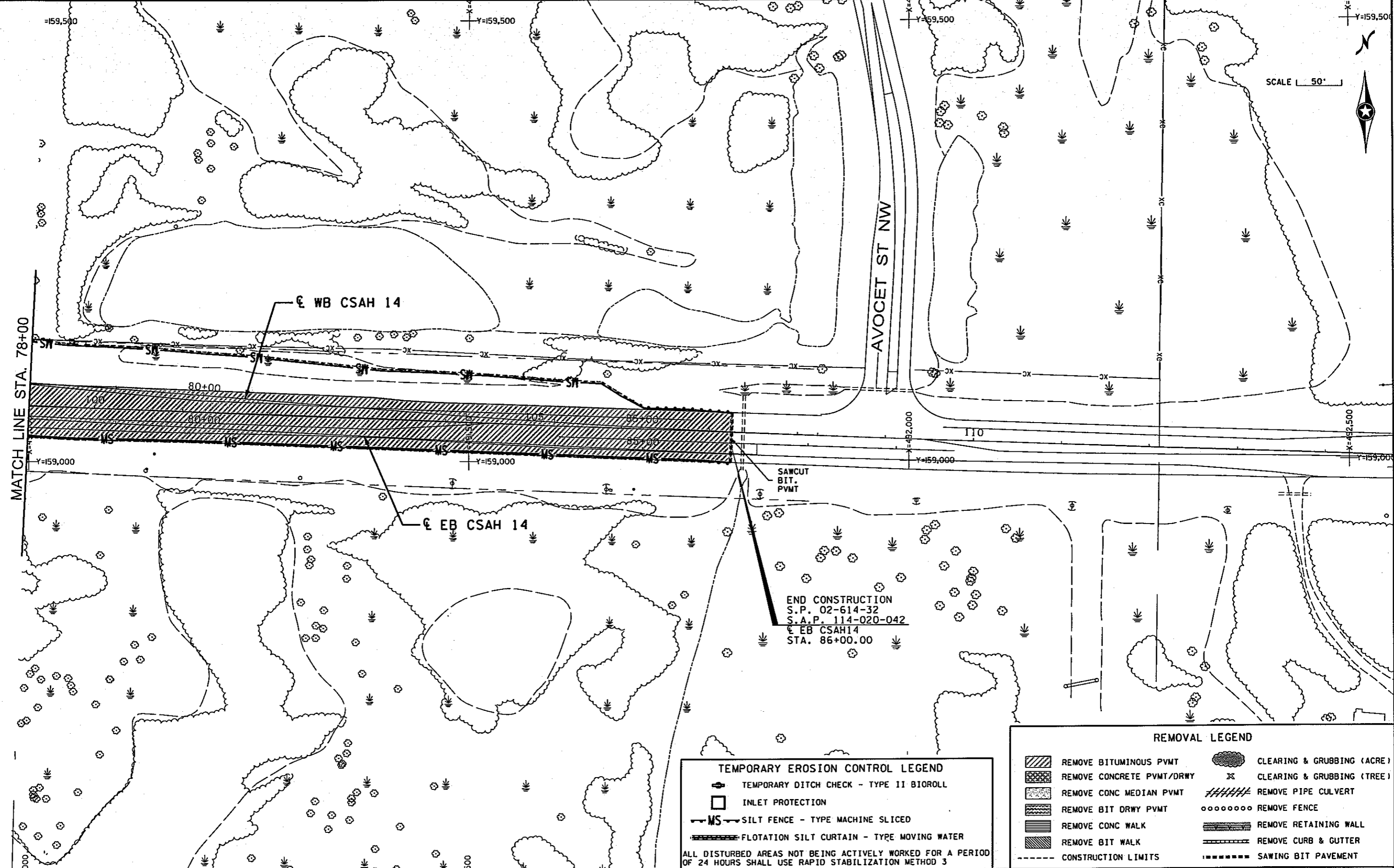
REMOVALS AND TEMPORARY EROSION CONTROL PLAN
 EB CSAH 14 STA. 63+00.00 - 78+00.00

FILE NO.	102287	85
OF RMB	RM5	194

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1/21/2010

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TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM			
DRAWN BY:	CJF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 1/21/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**REMOVALS AND
 TEMPORARY EROSION CONTROL PLAN**
 EB CSAH 14 STA. 78+00.00 - 86+00.00

FILE NO. 102287	86
RM6 OF RMB	194

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1/21/2010

rem7

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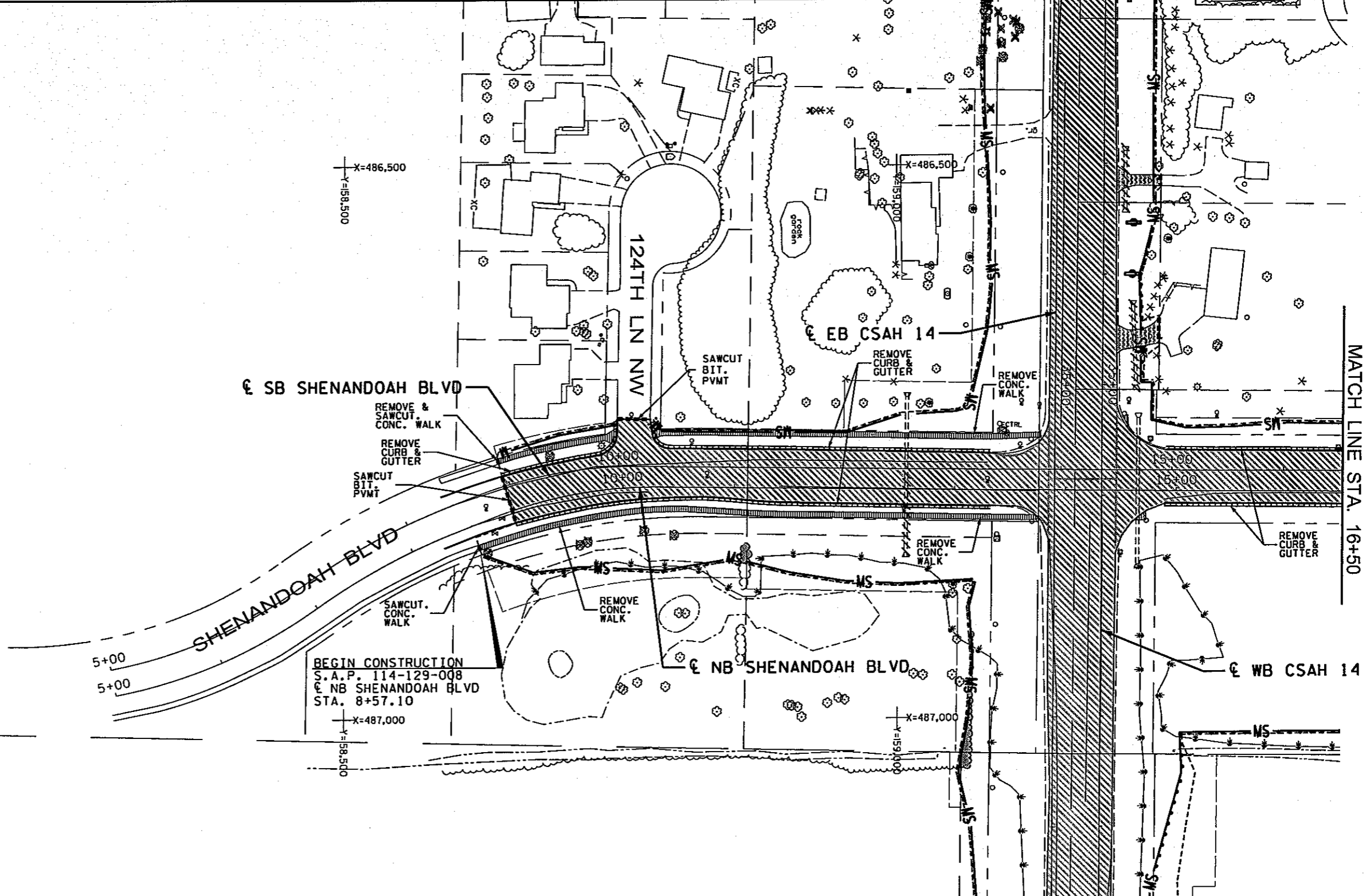


X=486,500
Y=158,000

X=486,500
Y=158,500

X=487,000
Y=158,000

X=487,000
Y=158,500



SB SHENANDOAH BLVD

124TH LN NW

EB CSAH 14

NB SHENANDOAH BLVD

WB CSAH 14

MATCH LINE STA. 16+50

BEGIN CONSTRUCTION
S.A.P. 114-129-008
NB SHENANDOAH BLVD
STA. 8+57.10

TEMPORARY EROSION CONTROL LEGEND

- TEMPORARY DITCH CHECK - TYPE II BIOROLL
- INLET PROTECTION
- SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- REMOVE BITUMINOUS PVMT
- REMOVE CONCRETE PVMT/DRWY
- REMOVE CONC MEDIAN PVMT
- REMOVE BIT DRWY PVMT
- REMOVE CONC WALK
- REMOVE BIT WALK
- CONSTRUCTION LIMITS
- CLEARING & GRUBBING (ACRE)
- CLEARING & GRUBBING (TREE)
- REMOVE PIPE CULVERT
- REMOVE FENCE
- REMOVE RETAINING WALL
- REMOVE CURB & GUTTER
- SAWING BIT PAVEMENT

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010



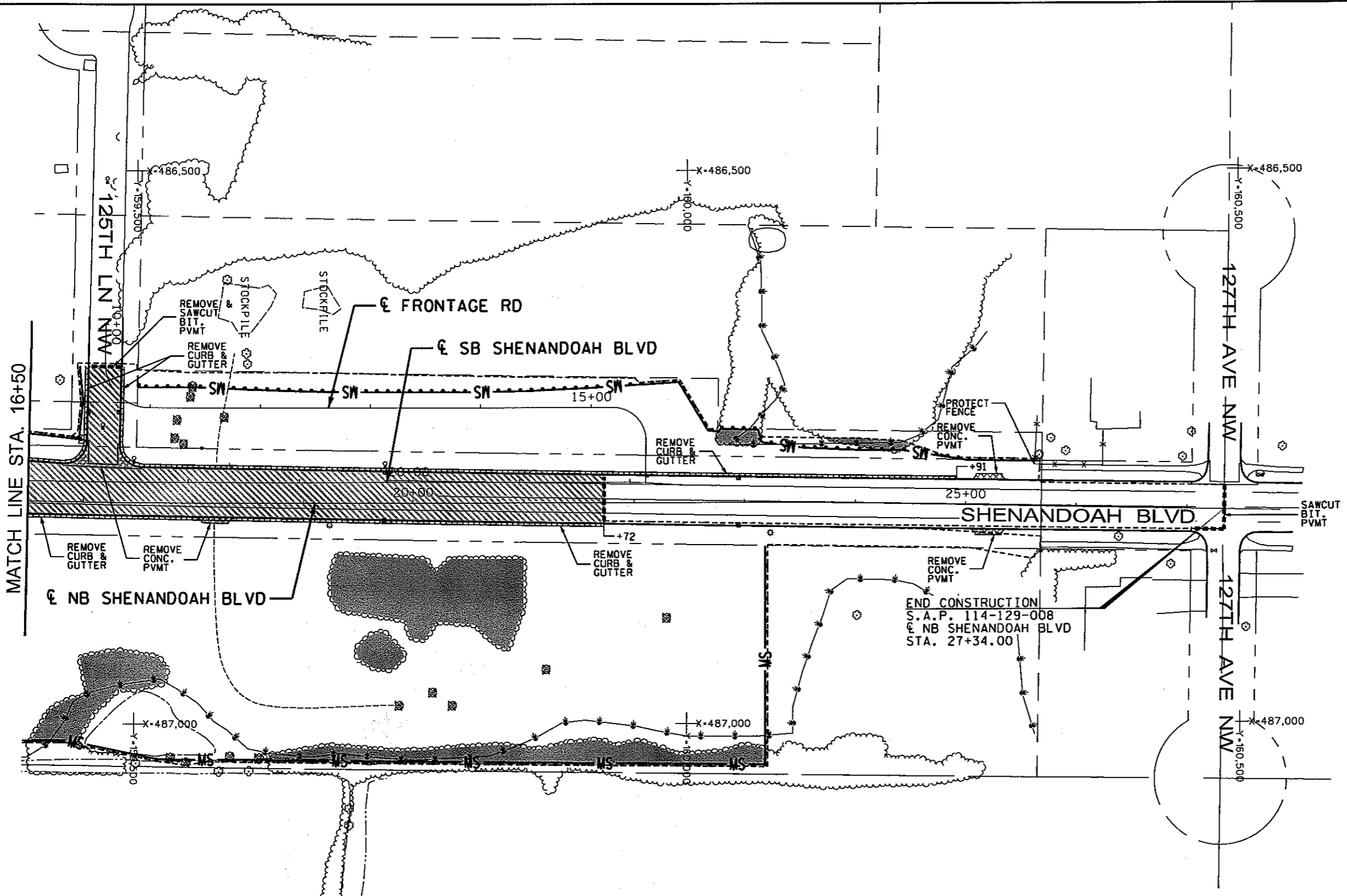
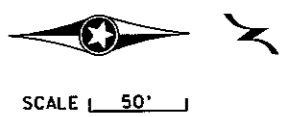
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**REMOVALS AND
 TEMPORARY EROSION CONTROL PLAN**
 NB SHENANDOAH BLVD STA. 8+57.10 - 16+50.00

FILE NO.	102287	87
RM7		
OF RMB		194

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4/8/2010



MATCH LINE STA. 16+50

SAWCUT BIT. PVMT

END CONSTRUCTION
S.A.P. 114-129-008
NB SHENANDOAH BLVD
STA. 27+34.00

TEMPORARY EROSION CONTROL LEGEND

- ☞ TEMPORARY DITCH CHECK - TYPE II BIOROLL
- ☐ INLET PROTECTION
- MS--- SILT FENCE - TYPE MACHINE SLICED
- FLOTATION SILT CURTAIN - TYPE MOVING WATER

ALL DISTURBED AREAS NOT BEING ACTIVELY WORKED FOR A PERIOD OF 24 HOURS SHALL USE RAPID STABILIZATION METHOD 3

REMOVAL LEGEND

- [Hatched] REMOVE BITUMINOUS PVMT
- [Cross-hatched] REMOVE CONCRETE PVMT/DRWY
- [Dotted] REMOVE CONC MEDIAN PVMT
- [Wavy] REMOVE BIT DRWY PVMT
- [Horizontal lines] REMOVE CONC WALK
- [Vertical lines] REMOVE BIT WALK
- [Diagonal lines] REMOVE BIT WALK
- [Dashed] CONSTRUCTION LIMITS
- [Cloud] CLEARING & GRUBBING (ACRE)
- [X] CLEARING & GRUBBING (TREE)
- [Diagonal lines] REMOVE PIPE CULVERT
- [Dotted] REMOVE FENCE
- [Horizontal lines] REMOVE RETAINING WALL
- [Vertical lines] REMOVE CURB & GUTTER
- [Dashed] SAWING BIT PAVEMENT

DESIGN TEAM				REVISIONS			
DRAWN BY:	CIF			NO.	BY	DATE	
DESIGNER:	JEO						
CHECKED BY:	MRD						

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010

SEH
 PHONE: (651)90-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

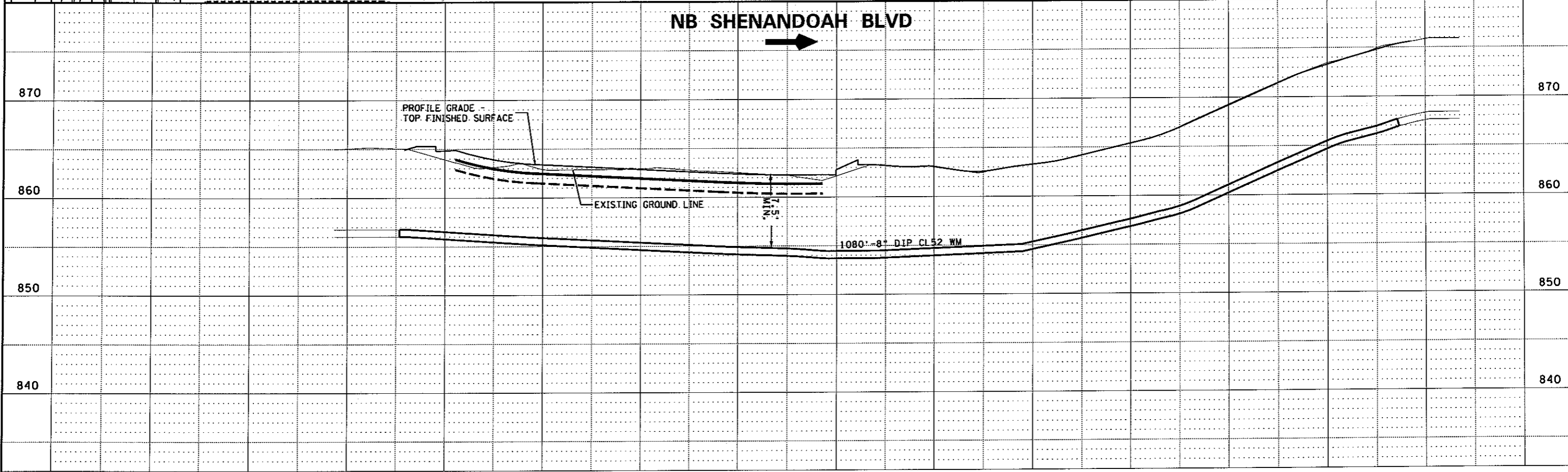
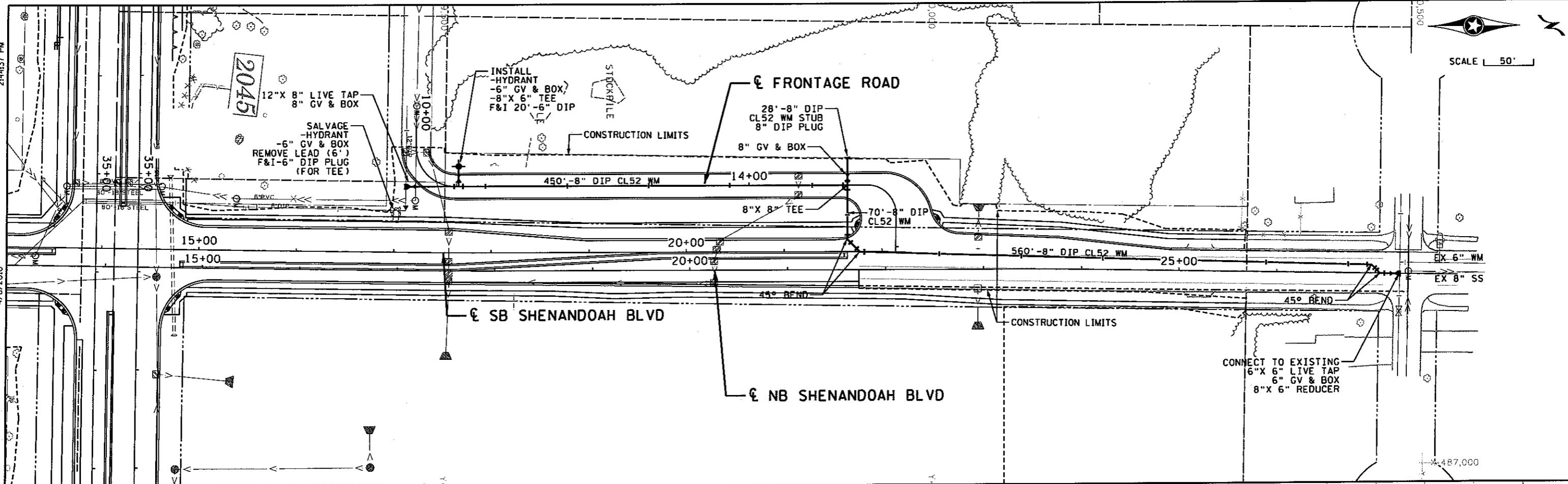
**REMOVALS AND
 TEMPORARY EROSION CONTROL PLAN**
 NB SHENANDOAH BLVD STA. 16+50.00 - 27+34.00

FILE NO. 102287	88
OF RMB RM8	194

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4/8/2010



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DESIGN TEAM				REVISIONS			
DRAWN BY:	CIF			NO.	BY	DATE	
DESIGNER:	JEO						
CHECKED BY:	MRD						

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.

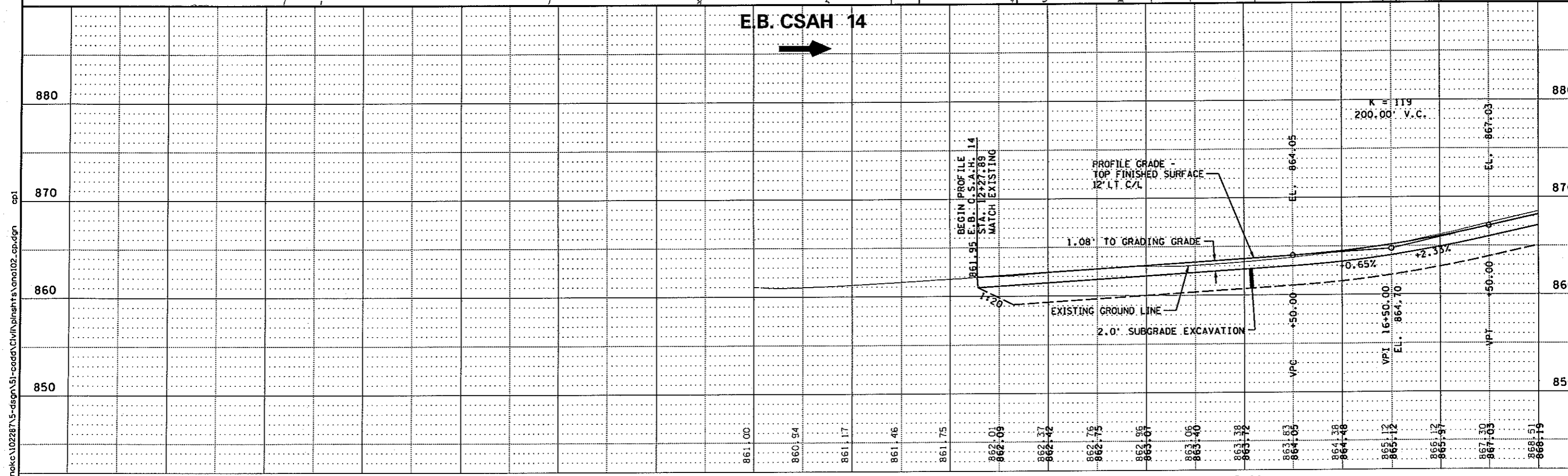
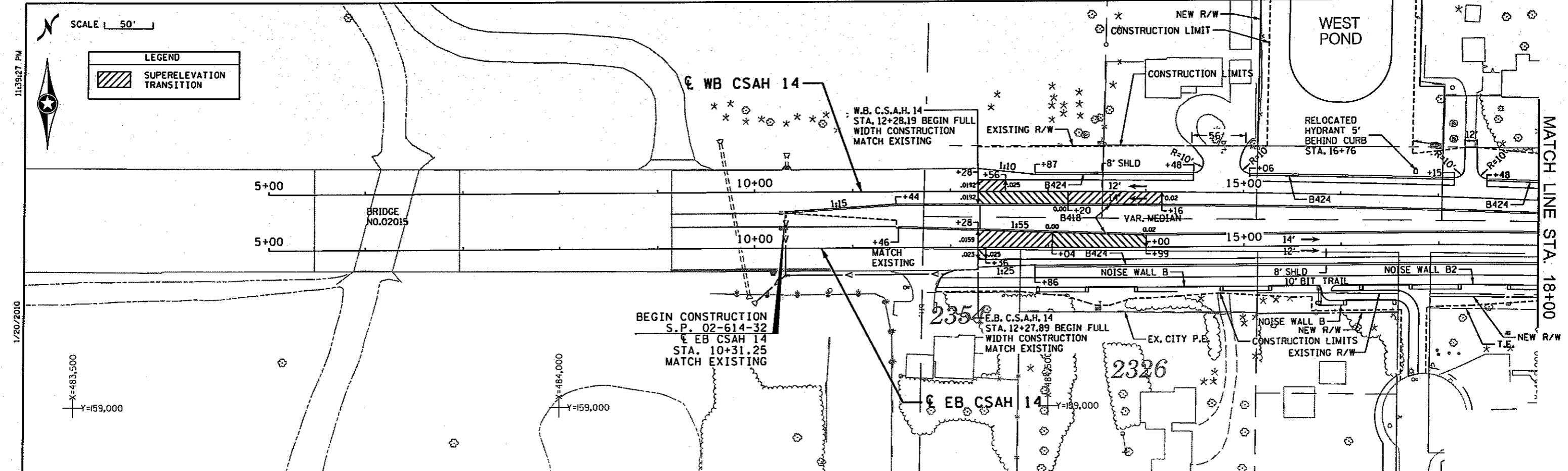
Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

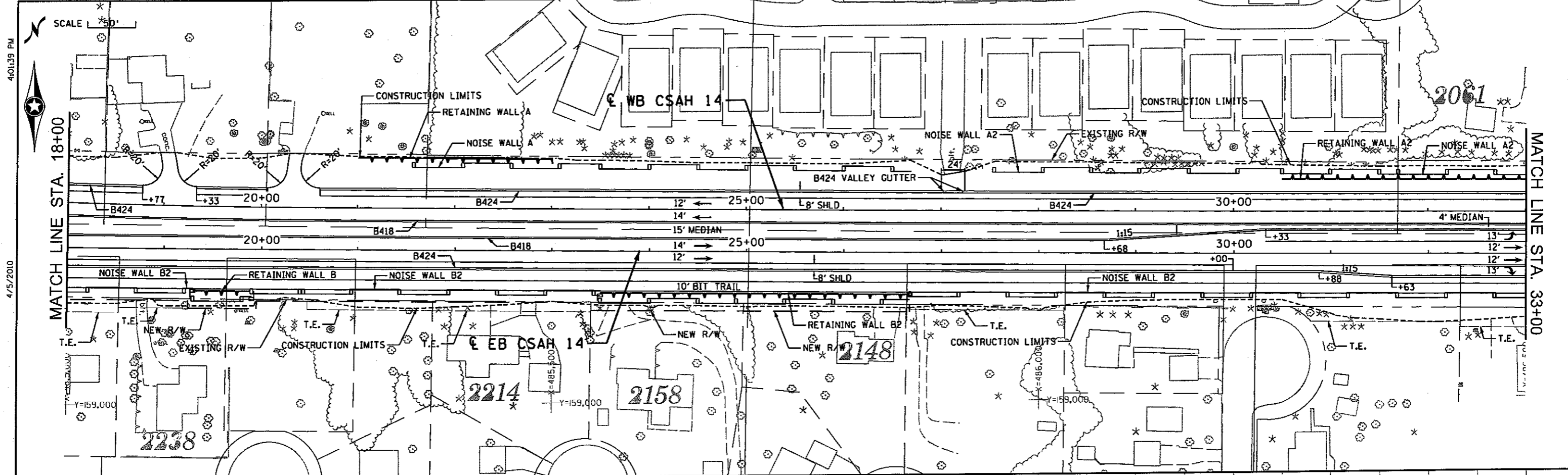
WATERMAIN PLAN AND PROFILE
 NB SHENANDOAH BLVD STA. 13+00.00 - 27+34.00

FILE NO. 102287	89
WM1 OF WM1	
194	

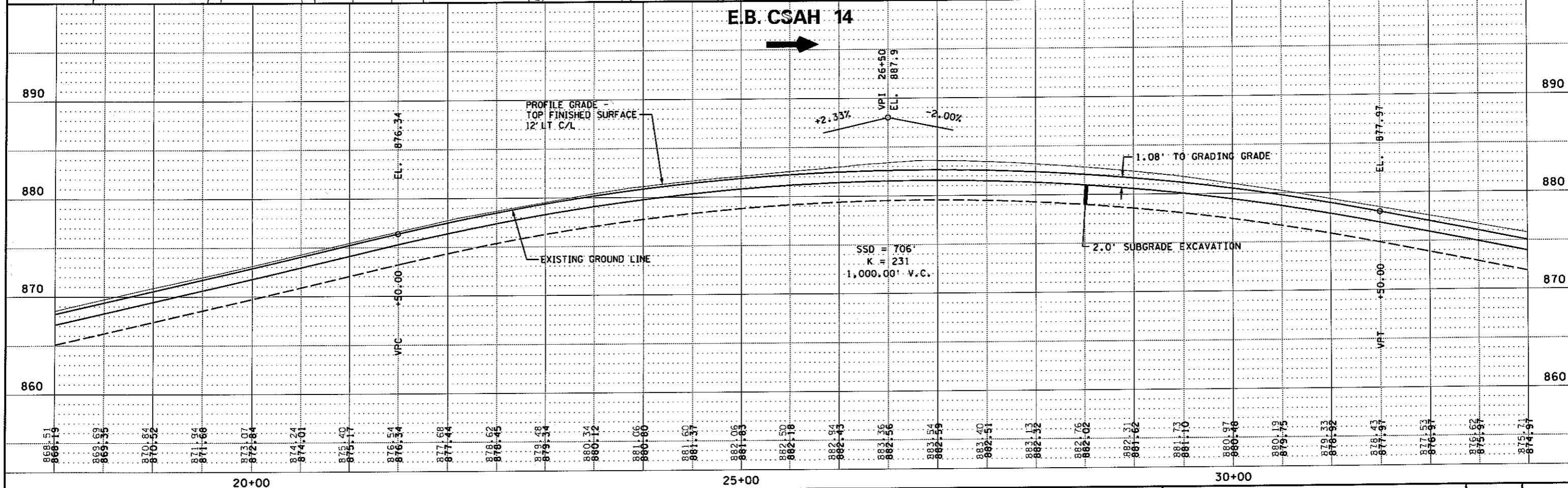


DESIGN TEAM DRAWN BY: CIF DESIGNER: JEO CHECKED BY: MRD			I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>Mark R. Dierling</i> Lic. No. 21098 Printed Name: MARK R. DIERLING Date: 1/20/2010			ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)			CONSTRUCTION PLAN AND PROFILE EB CSAH 14 STA. 10+31.25 - 18+00.00			FILE NO. 90 102287 CP1 OF CP8 194		
NO.	BY	DATE	NO.	BY	DATE	NO.	BY	DATE	NO.	BY	DATE	NO.	BY	DATE

11/30/27 PM
 1/20/2010
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 Y=159,000
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 Y=159,000
 S:\E\A\Anoka\102287\5-dgn\51-cadd\Civil\plansh\102_cp.dgn cp1



E.B. CSAH 14



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark B. Dierling* Lic. No. 21098
 Printed Name: MARK B. DIERLING Date: 4/5/2010

SEH
 PHONE: 651/490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

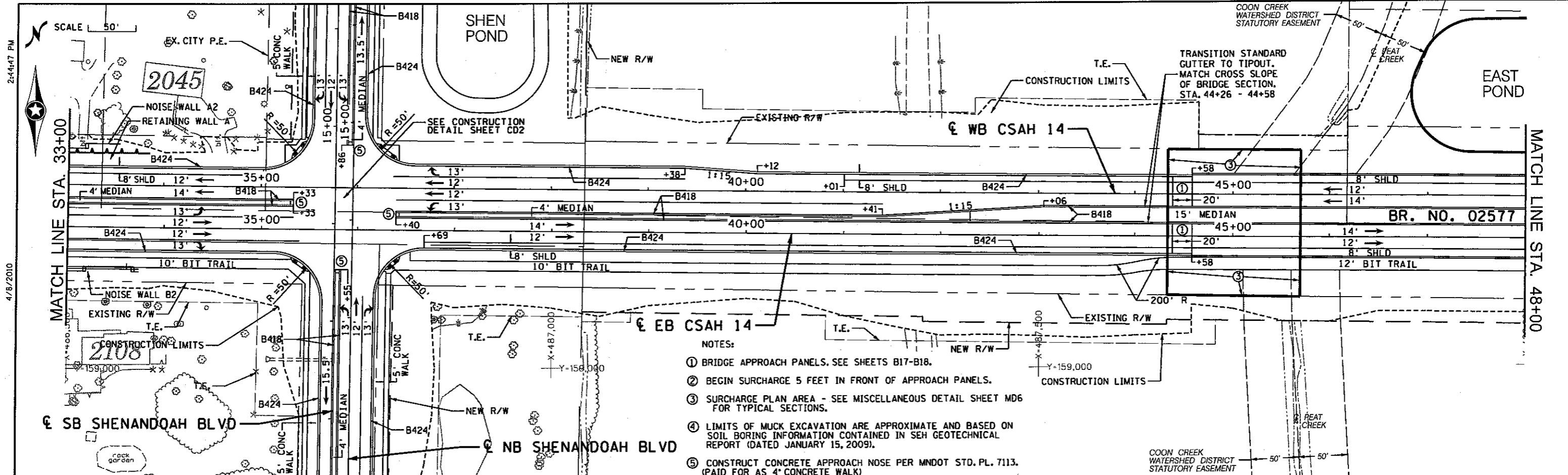
ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

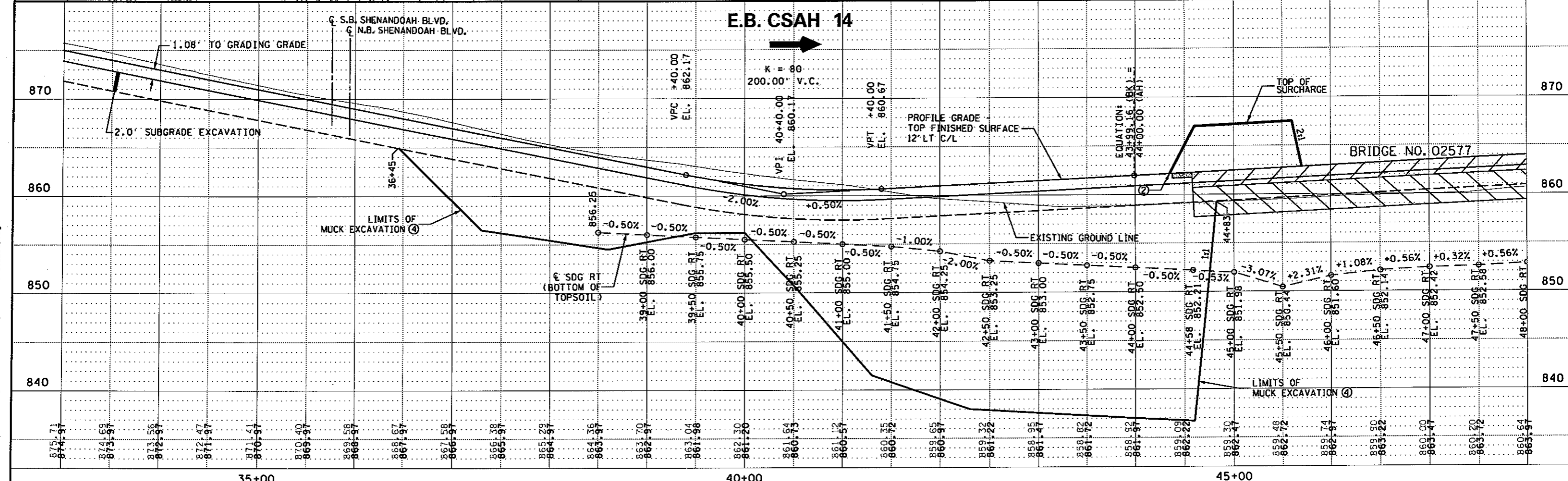
CONSTRUCTION PLAN AND PROFILE
 EB CSAH 14 STA. 18+00.00 - 33+00.00

FILE NO. 91
 102287
 CP2
 OF CPB 194

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 CP2



- NOTES:
- BRIDGE APPROACH PANELS, SEE SHEETS B17-B18.
 - BEGIN SURCHARGE 5 FEET IN FRONT OF APPROACH PANELS.
 - SURCHARGE PLAN AREA - SEE MISCELLANEOUS DETAIL SHEET MD6 FOR TYPICAL SECTIONS.
 - LIMITS OF MUCK EXCAVATION ARE APPROXIMATE AND BASED ON SOIL BORING INFORMATION CONTAINED IN SEH GEOTECHNICAL REPORT (DATED JANUARY 15, 2009).
 - CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PL. 7113. (PAID FOR AS 4' CONCRETE WALK)



NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

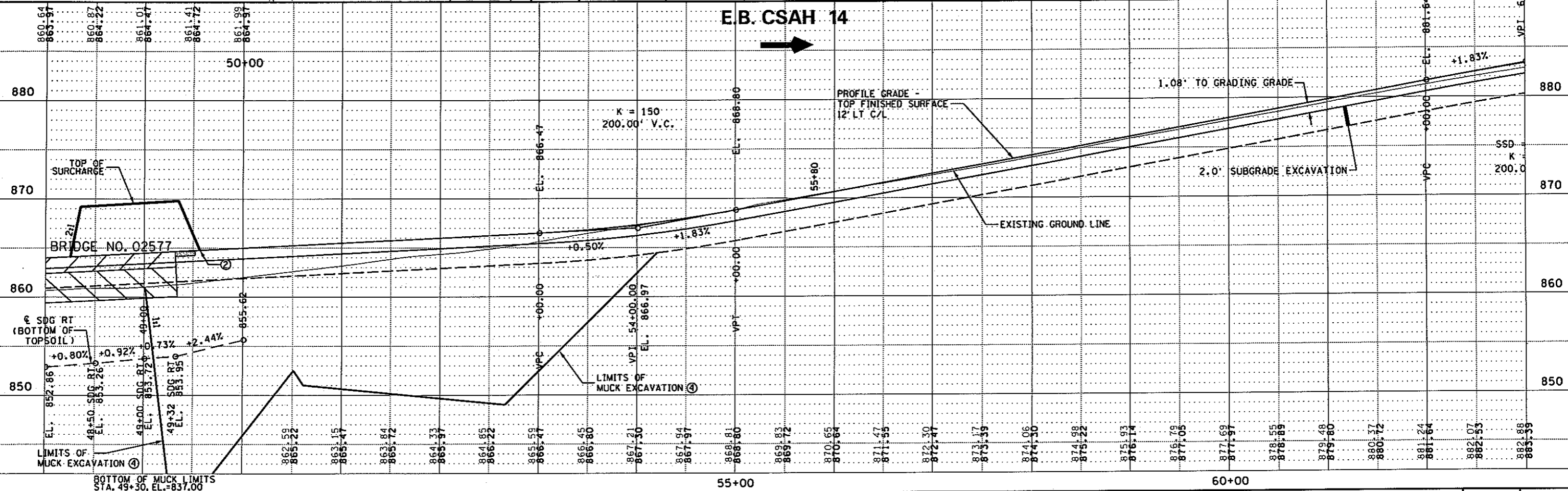
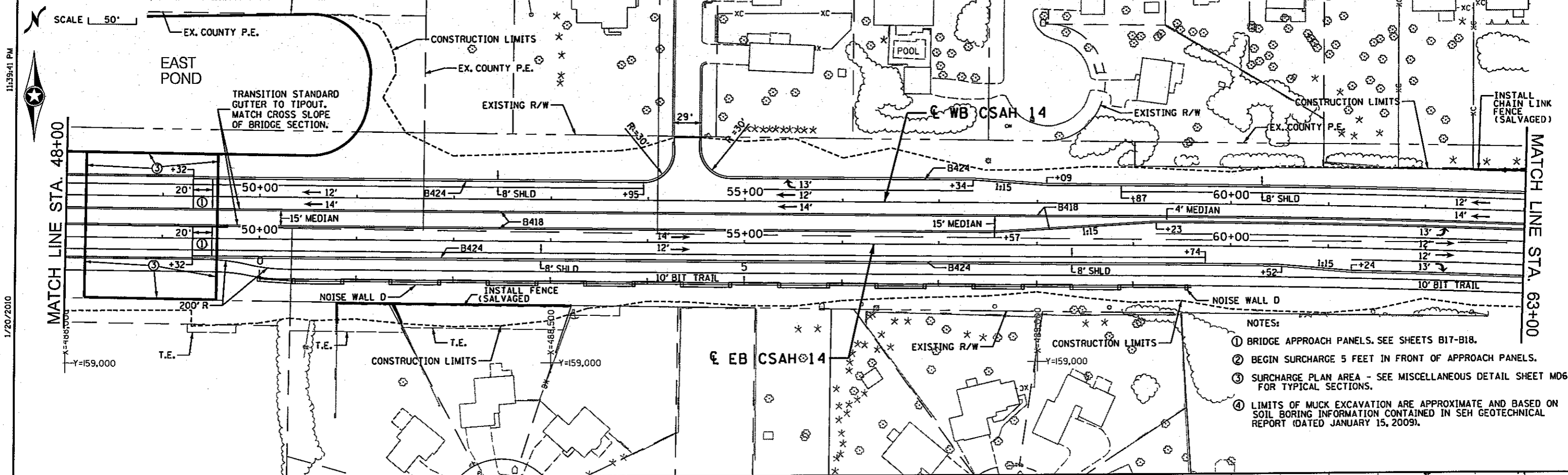
CONSTRUCTION PLAN AND PROFILE
 EB CSAH 14 STA. 33+00.00 - 48+00.00

FILE NO. 102287
 CP3 OF CPB
 92
 194

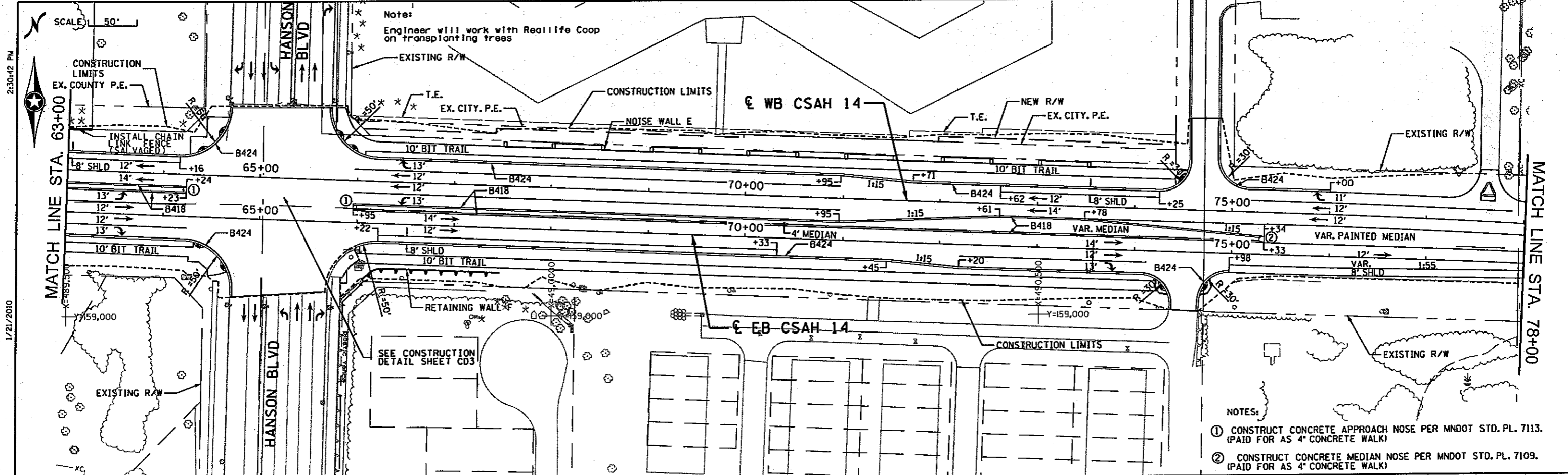
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4/8/2010

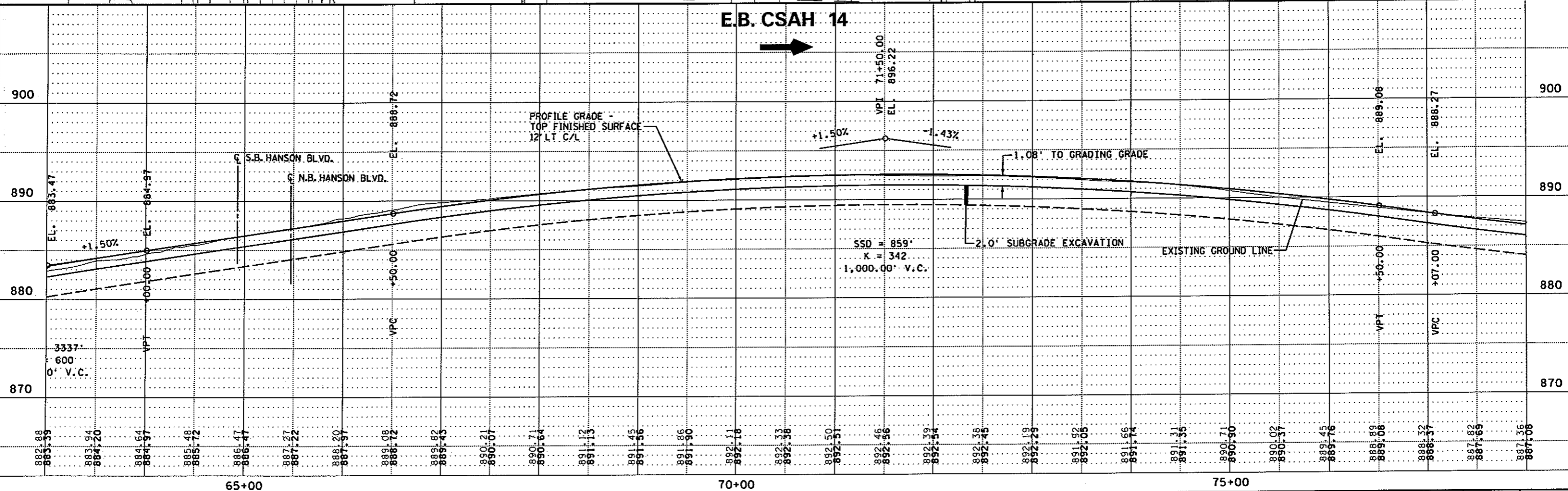
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DESIGN TEAM DRAWN BY: CIF DESIGNER: JEQ CHECKED BY: JRD	NO. BY DATE REVISIONS	I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Certified By: <i>Mark R. Dierling</i> Lic. No. 21098 Printed Name: MARK R. DIERLING Date: 1/20/2010	 SEH PHONE: (651)490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110	 ANOKA COUNTY ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)	CONSTRUCTION PLAN AND PROFILE EB CSAH 14 STA. 48+00.00 - 63+00.00	FILE NO. 93 102287 CP4 OF CP8 194
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- NOTES:
- CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PL. 7113. (PAID FOR AS 4" CONCRETE WALK)
 - CONSTRUCT CONCRETE MEDIAN NOSE PER MNDOT STD. PL. 7109. (PAID FOR AS 4" CONCRETE WALK)



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010

SEH PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION PLAN AND PROFILE
 EB CSAH 14 STA. 63+00.00 - 78+00.00

FILE NO. 94
 102287
 CP5
 OF CPB 194

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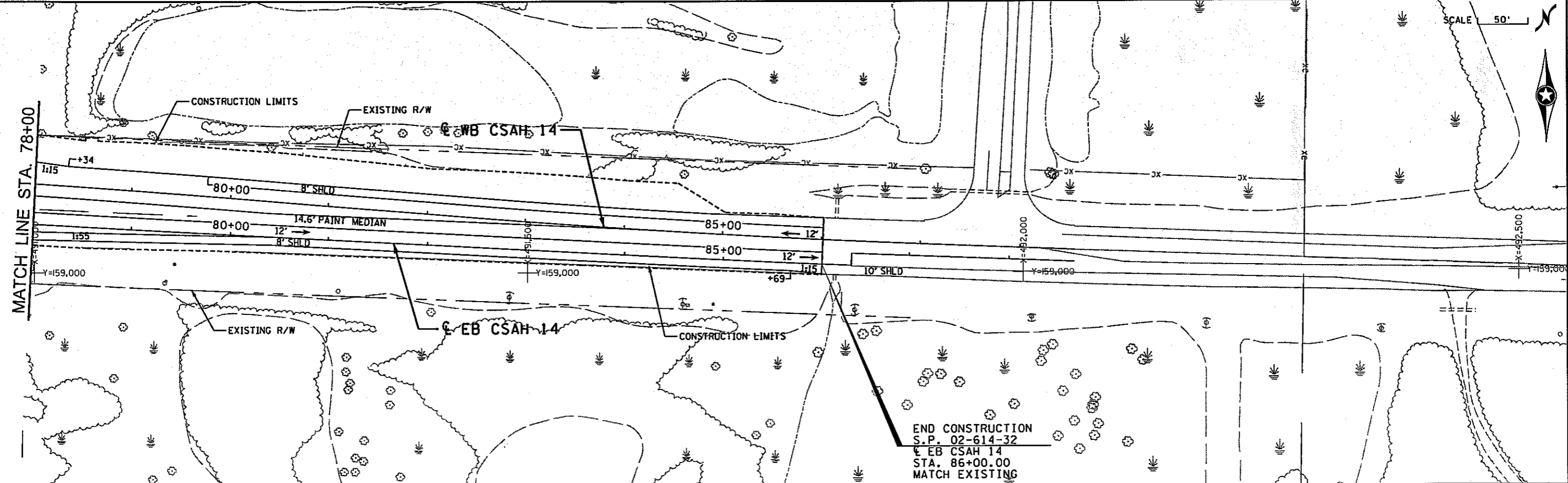
1/20/2010

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SCALE 50'

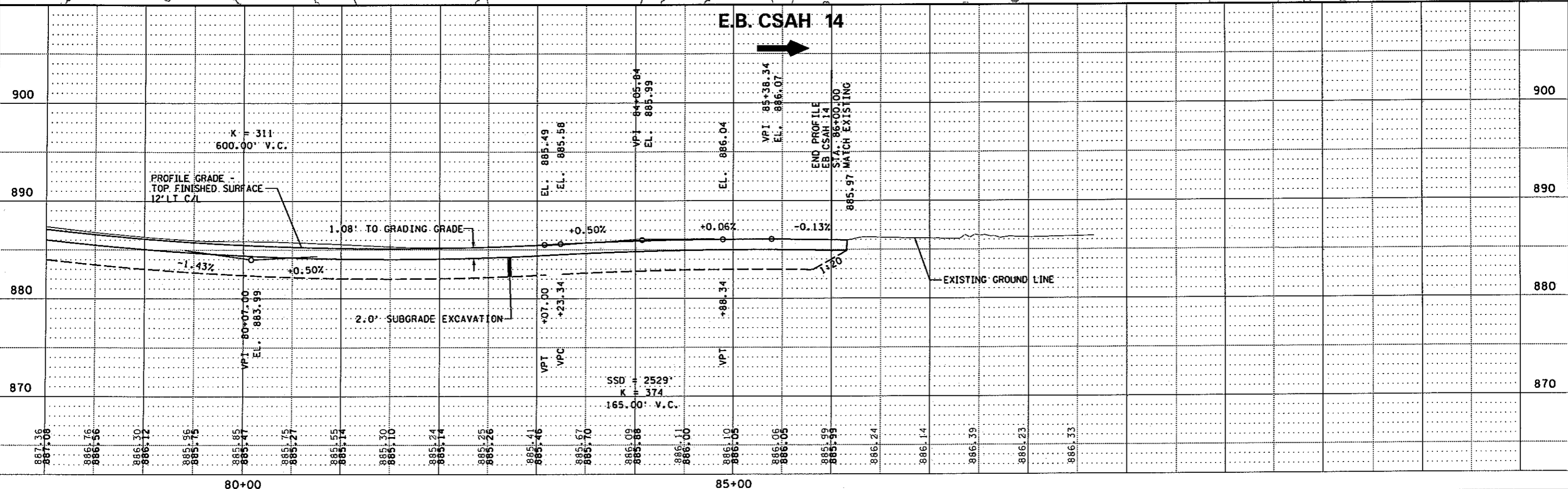


MATCH LINE STA. 78+00



END CONSTRUCTION
 S.P. 02-614-32
 EB CSAH 14
 STA. 86+00.00
 MATCH EXISTING

E.B. CSAH 14



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010

SEH PHONE: (651)490-2000
 3535 VAONAI CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION PLAN AND PROFILE
 EB CSAH 14 STA. 78+00.00 - 86+00.00

FILE NO. 102287
 CP6 OF CPB
 95
 194



SCALE 50'

NOTES:

- 1 CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PL. 7113. (PAID FOR AS 4" CONCRETE WALK)

SB SHENANDOAH BLVD

SB SHENANDOAH BLVD
STA. 8+95.53 BEGIN FULL
WIDTH CONSTRUCTION
MATCH EXISTING

BEGIN CONSTRUCTION
NB SHENANDOAH BLVD
STA. 8+57.10

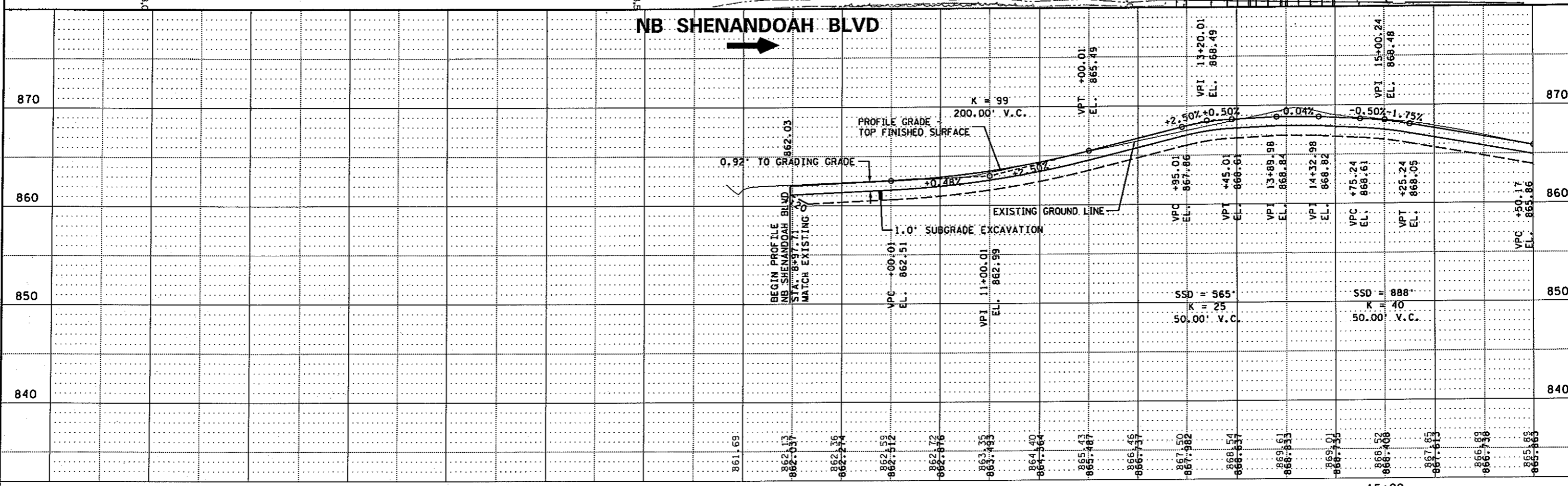
NB SHENANDOAH BLVD

NB SHENANDOAH BLVD
STA. 8+97.71 BEGIN (FULL)
WIDTH CONSTRUCTION
MATCH EXISTING

2045
SEE CONSTRUCTION
DETAIL SHEET CD2

MATCH LINE STA. 16+50

NB SHENANDOAH BLVD



DESIGN TEAM			
DRAWN BY: CIF			
DESIGNER: JEO			
CHECKED BY: MRD			
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
Printed Name: MARK R. DIERLING Date: 8DATE#

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY

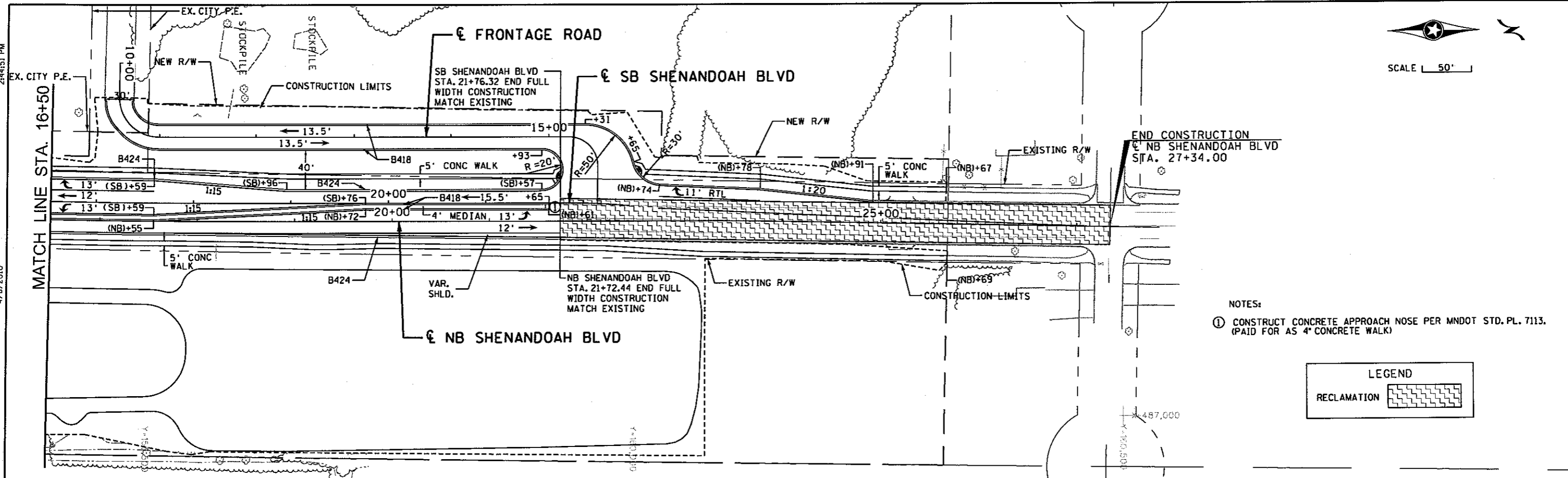
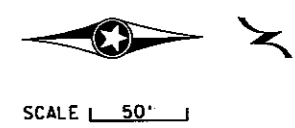
ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION PLAN AND PROFILE
NB SHENANDOAH BLVD STA. 8+57.10 - 16+50.00

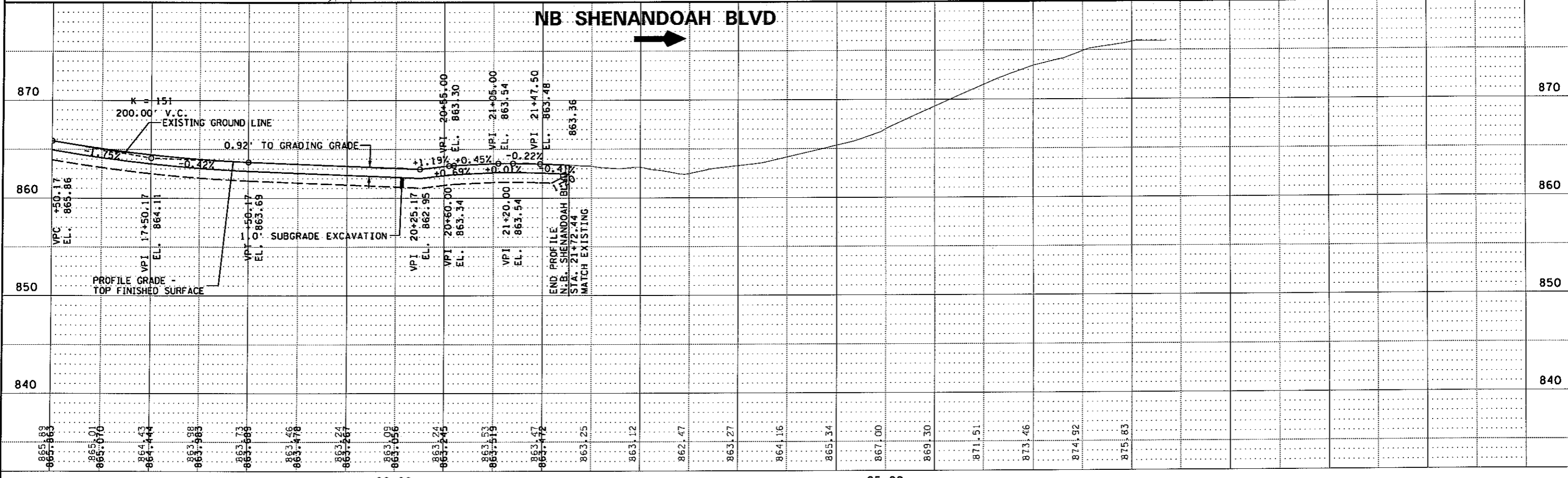
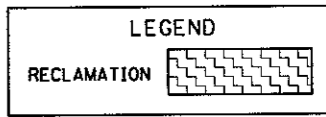
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102287
CP7
OF CP8
194

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4/8/2010



NOTES:
 ① CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PL. 7113. (PAID FOR AS 4" CONCRETE WALK)

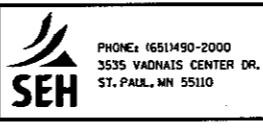


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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION PLAN AND PROFILE
 NB SHENANDOAH BLVD STA. 16+50.00 - 27+34.00

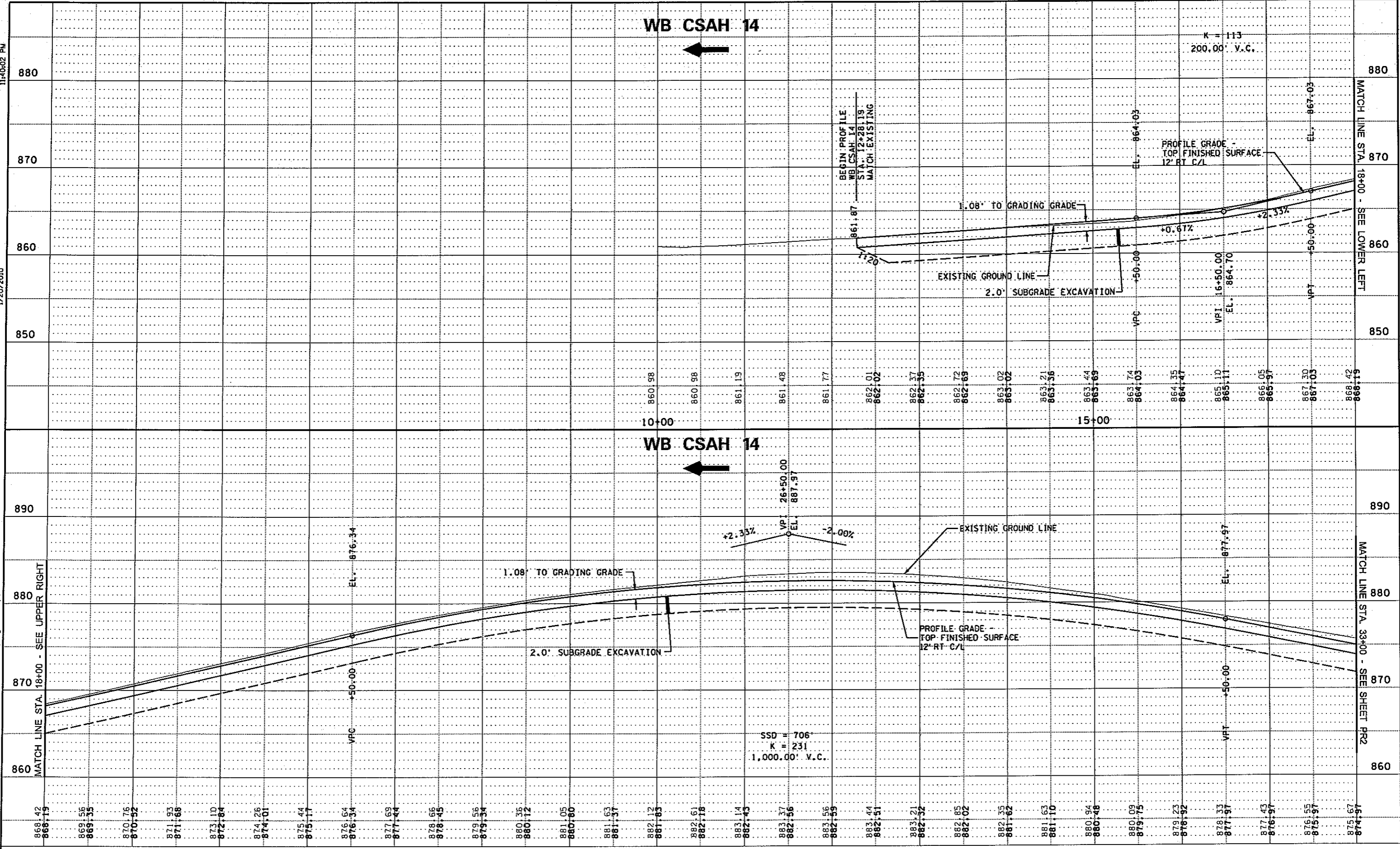
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CP8	
OF CP8	194

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WB CSAH 14

WB CSAH 14

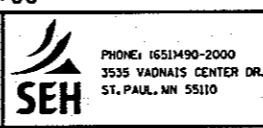
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200.00' V.C.



DESIGN TEAM				REVISIONS			
NO.	BY	DATE		NO.	BY	DATE	
1	CIF						
2	JEO						
3	MRD						

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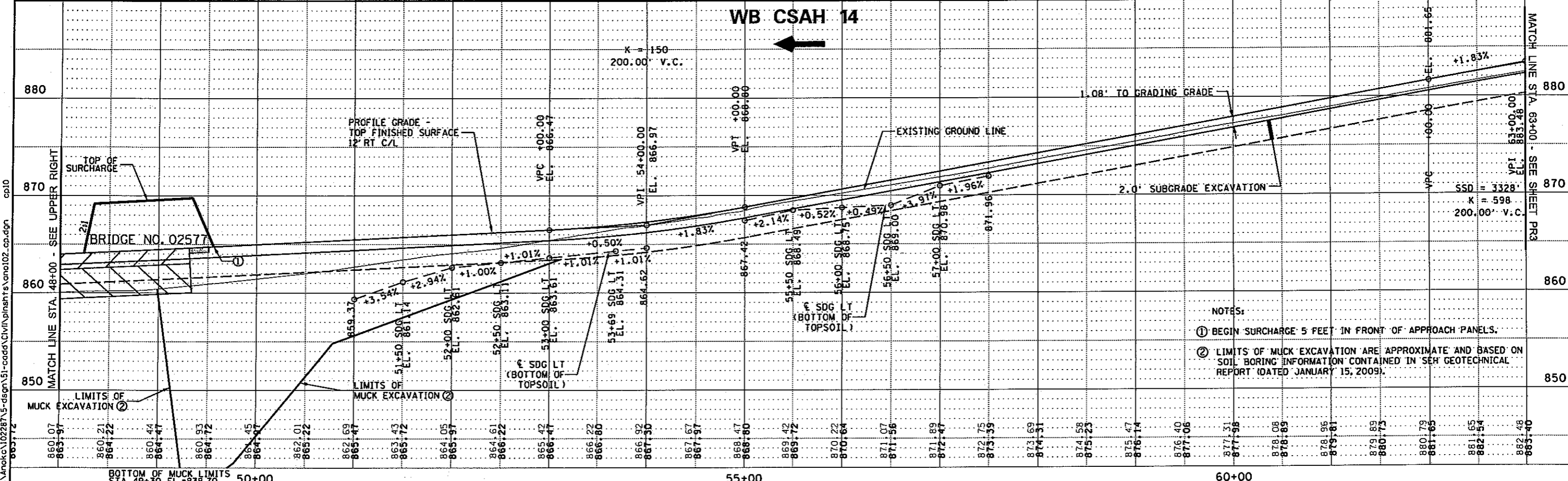
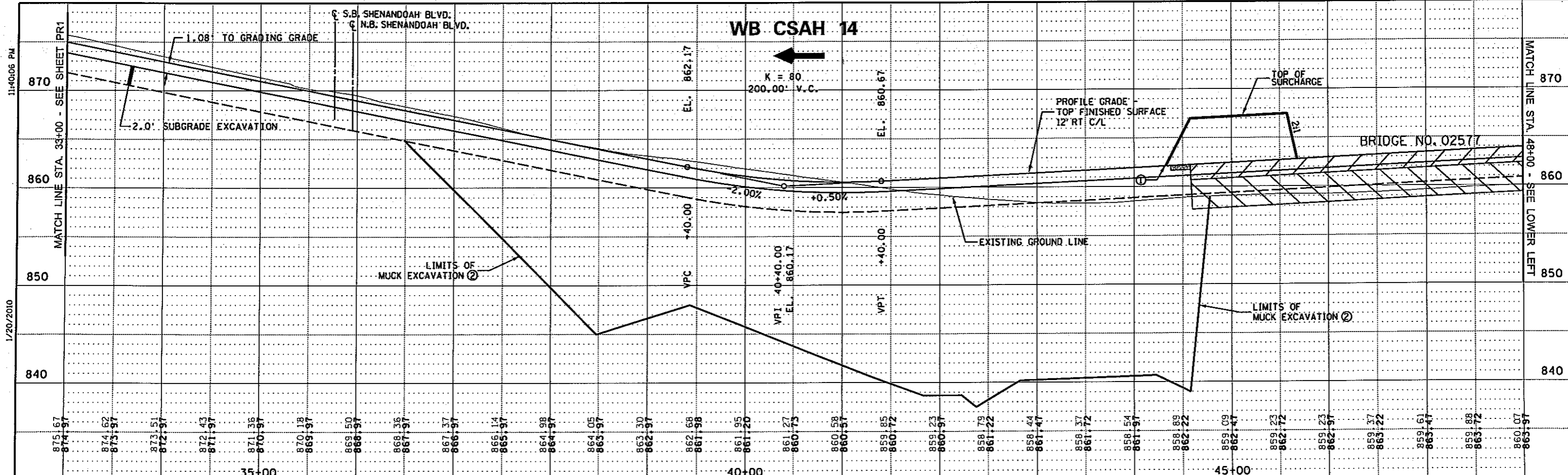
Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

PROFILES
 WB CSAH 14 STA. 12+28.19 - 33+00.00

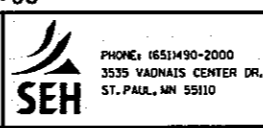
FILE NO. 102287
98
 PR1 OF PR4
194



NOTES:
 ① BEGIN SURCHARGE 5 FEET IN FRONT OF APPROACH PANELS.
 ② LIMITS OF MUCK EXCAVATION ARE APPROXIMATE AND BASED ON SOIL BORING INFORMATION CONTAINED IN SEH GEOTECHNICAL REPORT (DATED JANUARY 15, 2009).

DESIGN TEAM			
DRAWN BY: CIF			
DESIGNER: JEO			
CHECKED BY: MRD			
NO.	BY	DATE	REVISIONS

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010

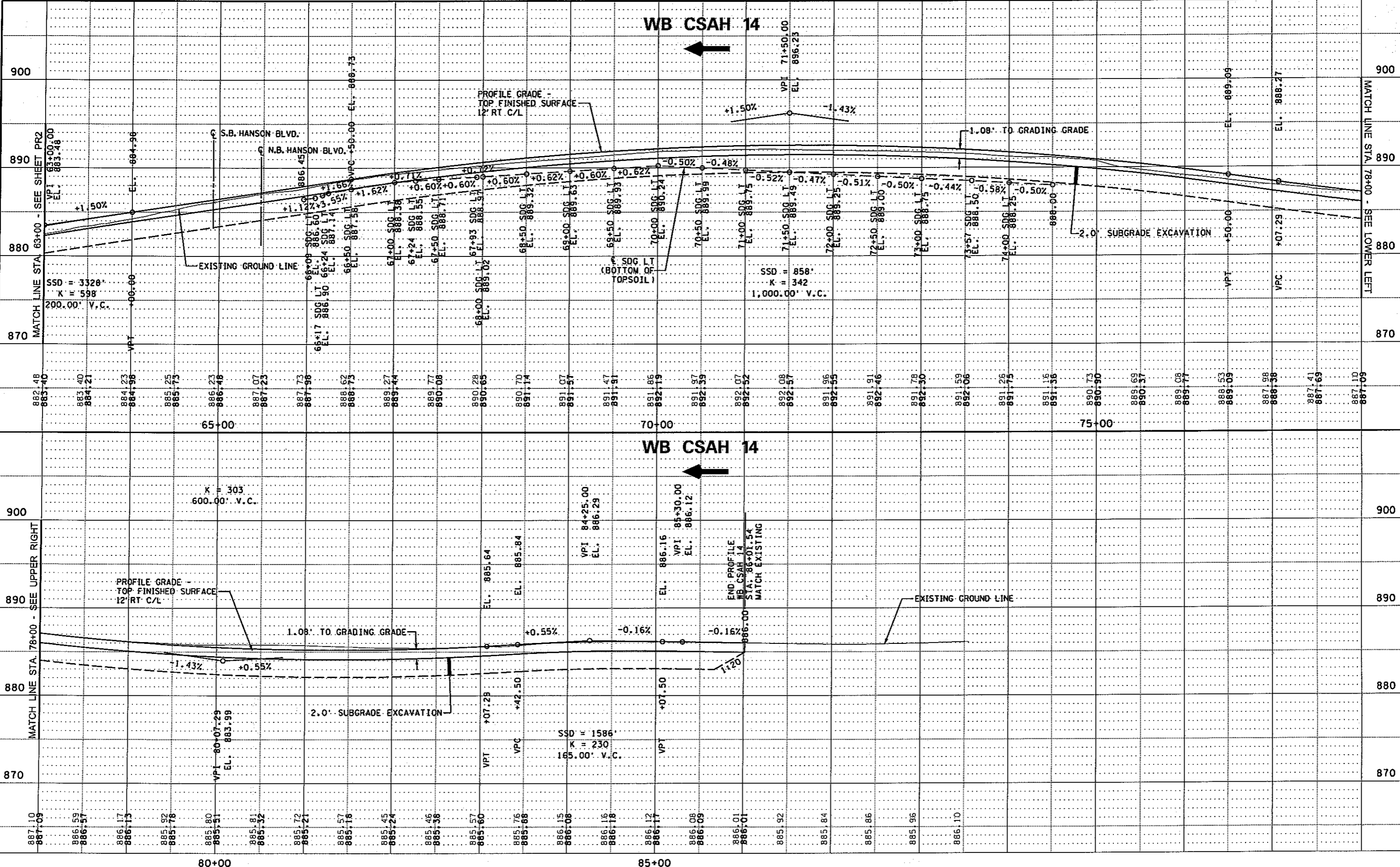


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

PROFILES
 WB CSAH 14 STA. 33+00.00 - 63+00.00

FILE NO. 102287
 PR2 OF PR4
 99
 194

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 1/20/2010
 cp11
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 06/1/09



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CIF				
DESIGNER: JFO				
CHECKED BY: MRD				

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.

Certified By: *Mark R. Diebling* Lic. No. 21098
 Printed Name: MARK R. DIEBLING Date: 1/20/2010

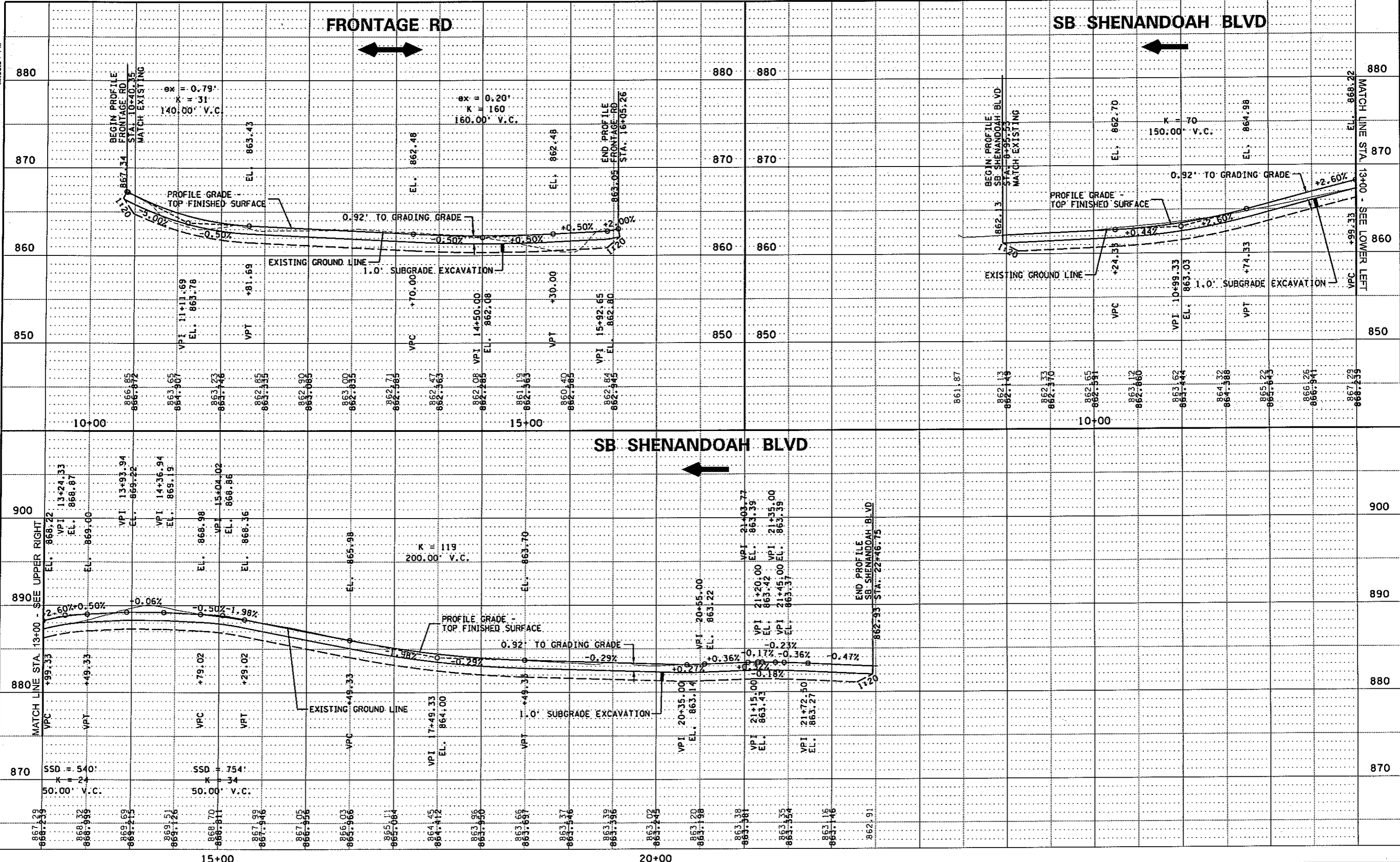
SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

PROFILES
 WB CSAH 14 STA. 63+00.00 - 86+01.54

FILE NO. 102287
 PR3 OF PR4
 100 / 194

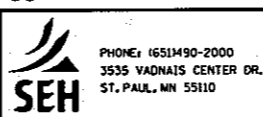
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 cp12



DESIGN TEAM			REVISIONS		
DRAWN BY:	CIF		NO.	BY	DATE
DESIGNER:	JEO				
CHECKED BY:	MRD				

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

PROFILES
 FRONTAGE RD STA. 10+40.35 - 16+05.26
 SB SHENANDOAH BLVD STA. 8+99.33 - 22+46.75

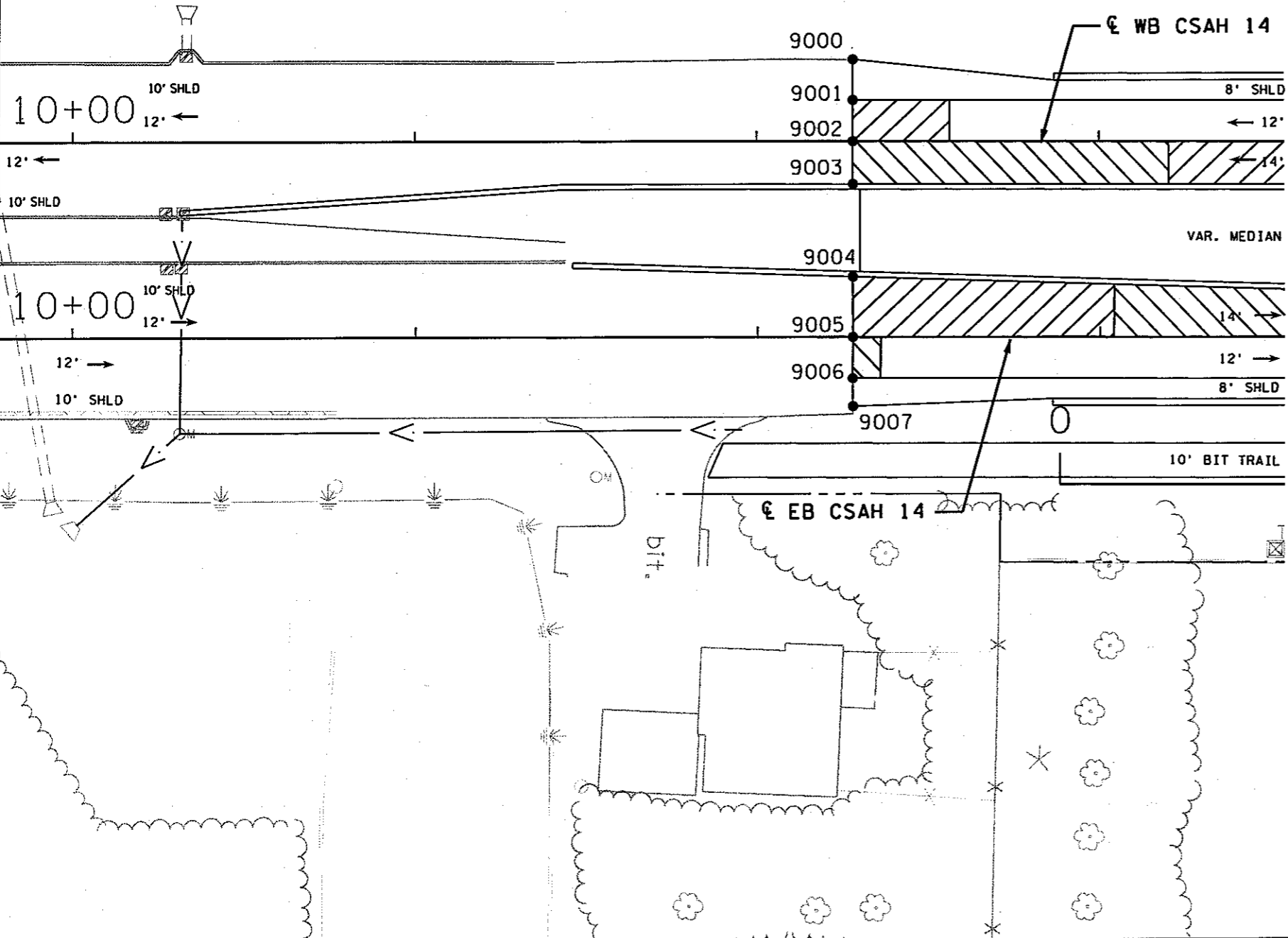
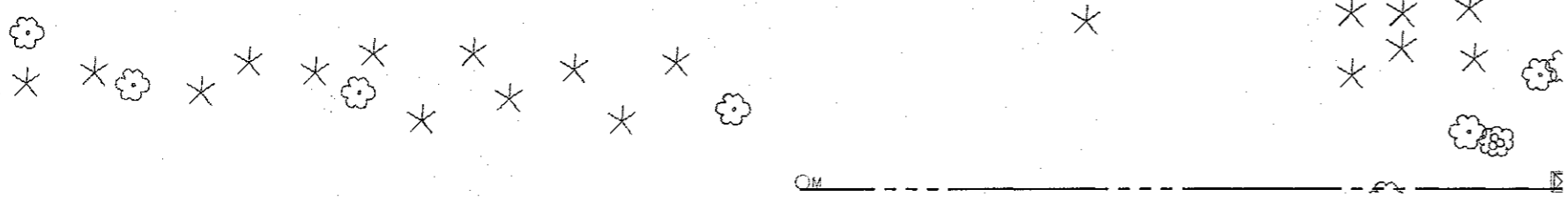
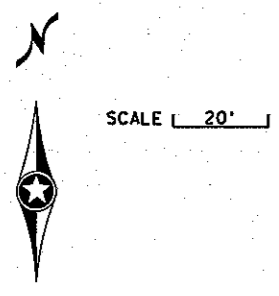
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PR4 OF PR4	
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CD1

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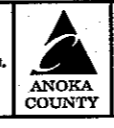


GUTTER PROFILE POINTS						
POINT	ALIGNMENT NAME	STATION	OFFSET	POINT COORDINATES		ELEVATION
				X	Y	
9000	WB CSAH 14	12+28.20	23.87	484428.59	159243.09	861.64
9001	WB CSAH 14	12+28.18	12	484428.65	159231.26	861.87
9002	WB CSAH 14	12+28.19	0	484428.63	159219.26	862.10
9003	WB CSAH 14	12+28.21	12.5	484428.60	159206.76	861.86
9004	EB CSAH 14	12+27.87	17.62	484428.54	159179.80	861.86
9005	EB CSAH 14	12+27.89	0	484428.50	159162.17	862.14
9006	EB CSAH 14	12+27.90	12	484428.47	159150.17	861.86
9007	EB CSAH 14	12+27.99	20.24	484428.53	159141.93	861.70

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEQ		
CHECKED BY:	MRO		
	NO.	BY	DATE
			REVISIONS

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Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION DETAILS
 CSAH 14 STA. 10+31.25 - 13+50.00

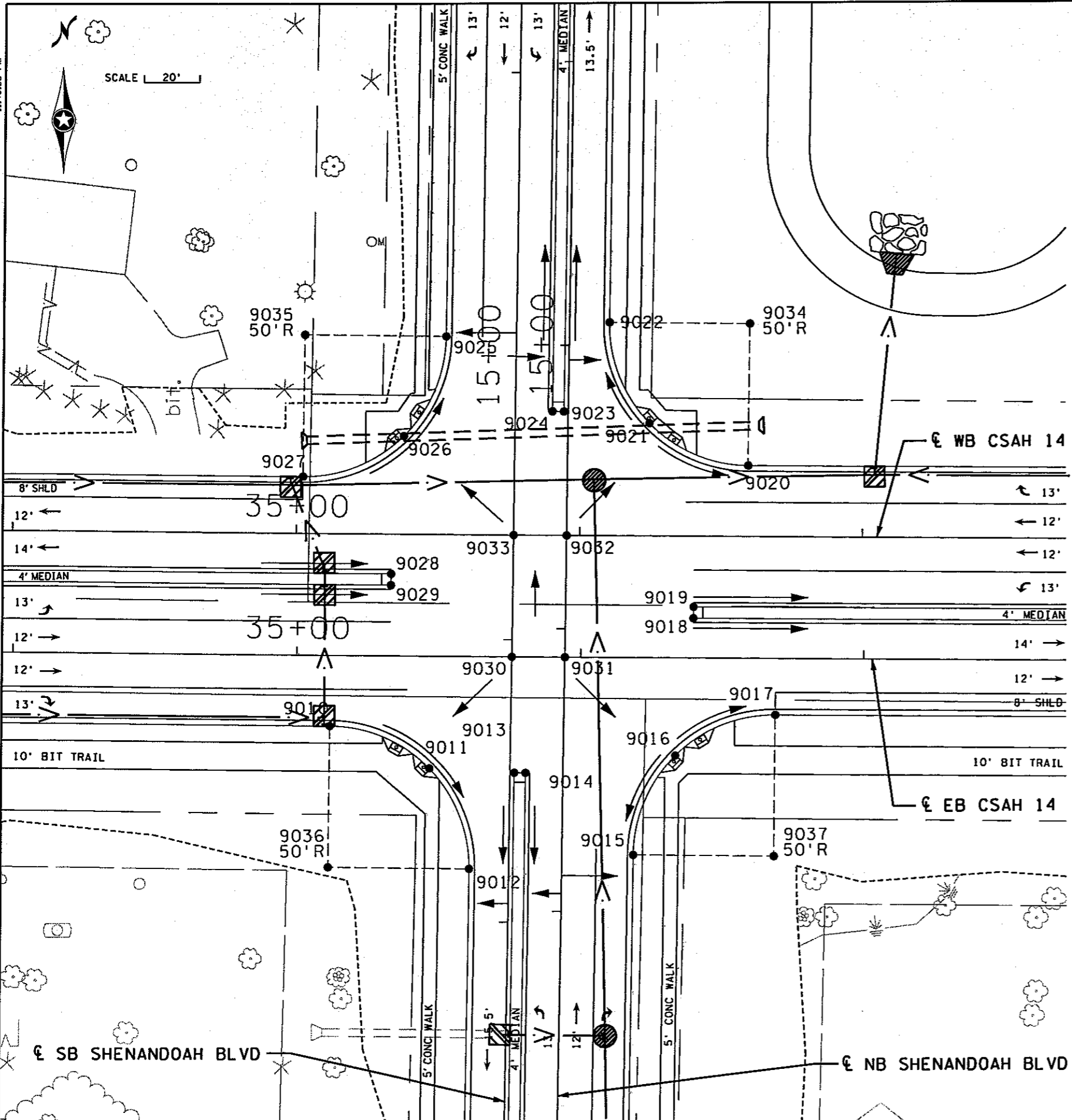
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 CD1 OF CD4
 102
 194

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CD2

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GUTTER PROFILE POINTS						
POINT	ALIGNMENT NAME	STATION	OFFSET	POINT COORDINATES		ELEVATION
				X	Y	
9010	EB CSAH 14	35+11.67	25	486711.93	159118.27	869.75
9011	EB CSAH 14	35+47.09	39.7	486747.19	159103.19	869.02
9012	SB SHENANDOAH	4+69.40	14	486761.40	159067.58	868.28
9013	SB SHENANDOAH	5+03.61	1.5	486777.37	159101.57	868.92
9014	NB SHENANDOAH	4+98.92	13	486781.37	159101.52	868.32
9015	NB SHENANDOAH	4+70.22	25	486816.97	159072.33	867.74
9016	EB CSAH 14	36+33.90	34.59	486832.65	159108.83	867.94
9017	EB CSAH 14	36+69.20	20	486869.51	159123.62	866.78
9018	EB CSAH 14	36+39.80	14	486840.45	159155.92	868.07
9019	WB CSAH 14	36+40.64	25	486840.49	159159.92	867.78
9020	WB CSAH 14	36+59.65	25	486860.02	159209.72	866.84
9021	WB CSAH 14	36+24.24	39.7	486824.77	159224.79	868.15
9022	NB SHENANDOAH	6+58.18	14	486810.55	159260.40	867.95
9023	NB SHENANDOAH	6+26.61	25	486794.62	159229.04	868.51
9024	SB SHENANDOAH	6+31.30	25	486790.62	159229.10	868.60
9025	SB SHENANDOAH	6+57.36	14	486752.98	159255.68	868.10
9026	WB CSAH 14	35+37.43	34.59	486737.91	159220.59	869.11
9027	WB CSAH 14	35+02.13	20	486702.46	159206.37	870.12
9028	WB CSAH 14	35+33.42	14	486733.39	159172.04	870.22
9029	EB CSAH 14	35+32.58	25	486733.35	159168.04	869.40
9030	EB CSAH 14	35+75.92	0	486776.43	159142.59	869.21
9031	EB CSAH 14	35+94.42	0	486794.93	159142.40	868.84
9032	WB CSAH 14	35+76.91	0	486777.02	159185.59	869.19
9033	WB CSAH 14	35+95.41	0	486795.52	159185.39	868.82

RADIUS POINTS		
POINT	POINT COORDINATES	
	X	Y
9034	486860.55	159259.72
9035	486702.99	159256.37
9036	486711.41	159068.27
9037	486868.97	159071.62

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEQ		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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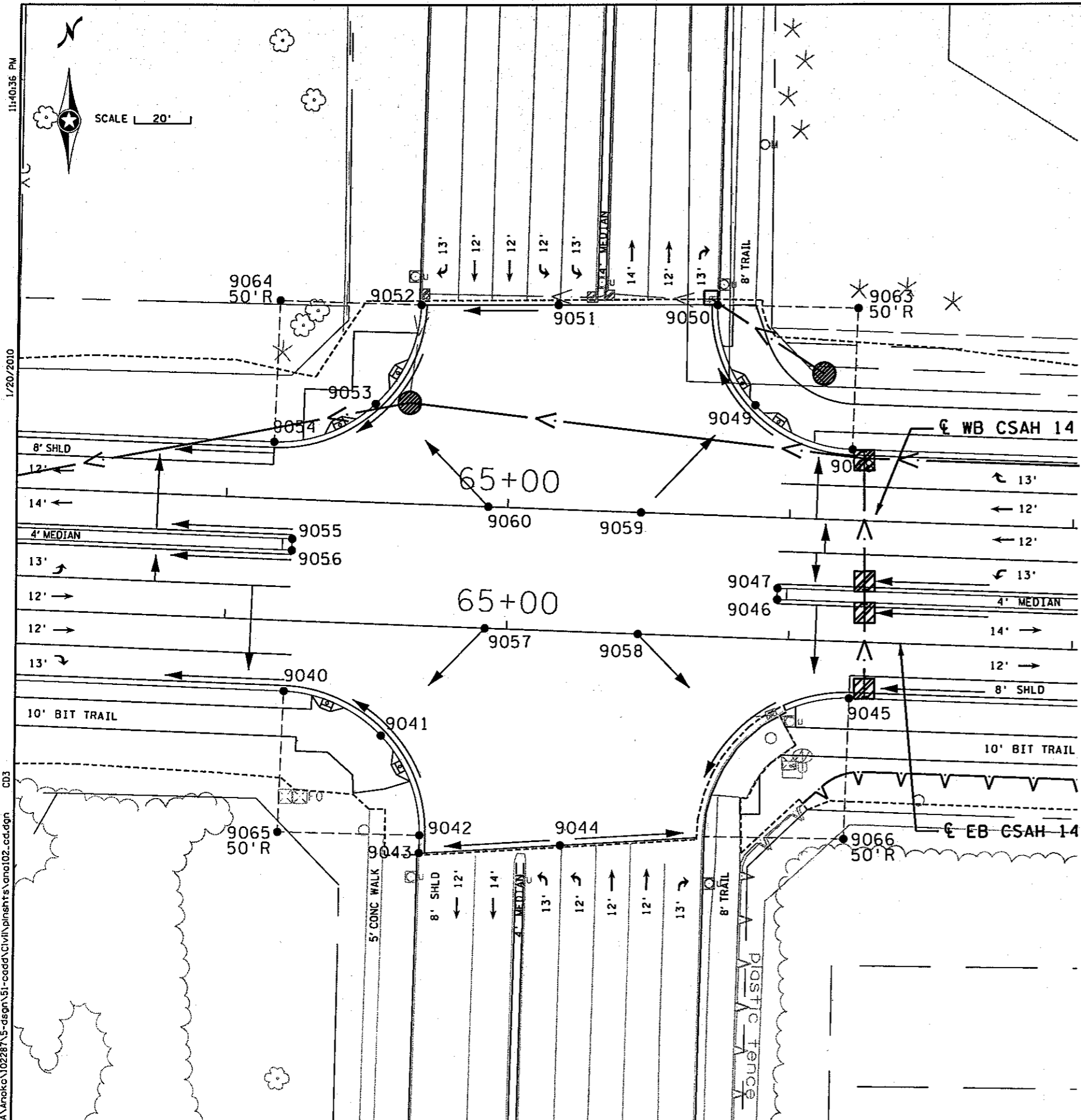
SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION DETAILS
 CSAH 14 / SHENANDOAH BLVD

FILE NO.	103
102287	
CD2	
OF CD4	194



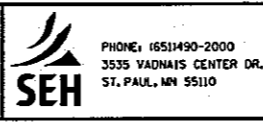
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POINT	ALIGNMENT NAME	STATION	OFFSET	POINT COORDINATES		ELEVATION
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9040	EB CSAH 14	64+22.22	25	489620.54	159078.07	884.37
9041	EB CSAH 14	64+57.31	39.38	489655.04	159062.35	884.72
9042	EB CSAH 14	64+72.21	74.24	489668.59	159026.93	885.07
9043	EB CSAH 14	64+72.31	80.49	489668.44	159020.68	885.13
9044	EB CSAH 14	65+22.30	75.97	489718.57	159023.26	885.81
9045	EB CSAH 14	66+22.27	20	489820.63	159075.31	887.49
9046	EB CSAH 14	65+95.40	14	489795.11	159110.33	887.82
9047	WB CSAH 14	65+96.62	25	489795.26	159114.32	887.61
9048	WB CSAH 14	66+21.42	25	489821.84	159163.33	887.37
9049	WB CSAH 14	65+86.18	39.39	489787.33	159179.07	886.90
9050	WB CSAH 14	65+71.28	74.27	489773.80	159214.50	886.65
9051	WB CSAH 14	65+15.02	72.18	489721.21	159214.59	886.65
9052	WB CSAH 14	64+66.17	70.39	489668.61	159214.70	886.12
9053	WB CSAH 14	64+51.67	34.78	489652.74	159179.68	885.27
9054	WB CSAH 14	64+16.17	20	489616.70	159166.29	884.41
9055	WB CSAH 14	64+24.06	14	489623.25	159132.01	885.26
9056	EB CSAH 14	64+22.88	25	489623.14	159128.01	884.99
9057	EB CSAH 14	64+92.10	0	489691.34	159100.34	886.11
9058	EB CSAH 14	65+46.50	0	489745.69	159098.23	886.93
9059	WB CSAH 14	65+47.18	0	489746.83	159141.22	886.95
9060	WB CSAH 14	64+92.85	0	489692.54	159143.33	886.13

RADIUS POINTS		
POINT	POINT COORDINATES	
	X	Y
9063	489823.78	159213.29
9064	489618.64	159216.25
9065	489618.60	159028.11
9066	489818.69	159025.35

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

CONSTRUCTION DETAILS
 CSAH 14 / HANSON BLVD

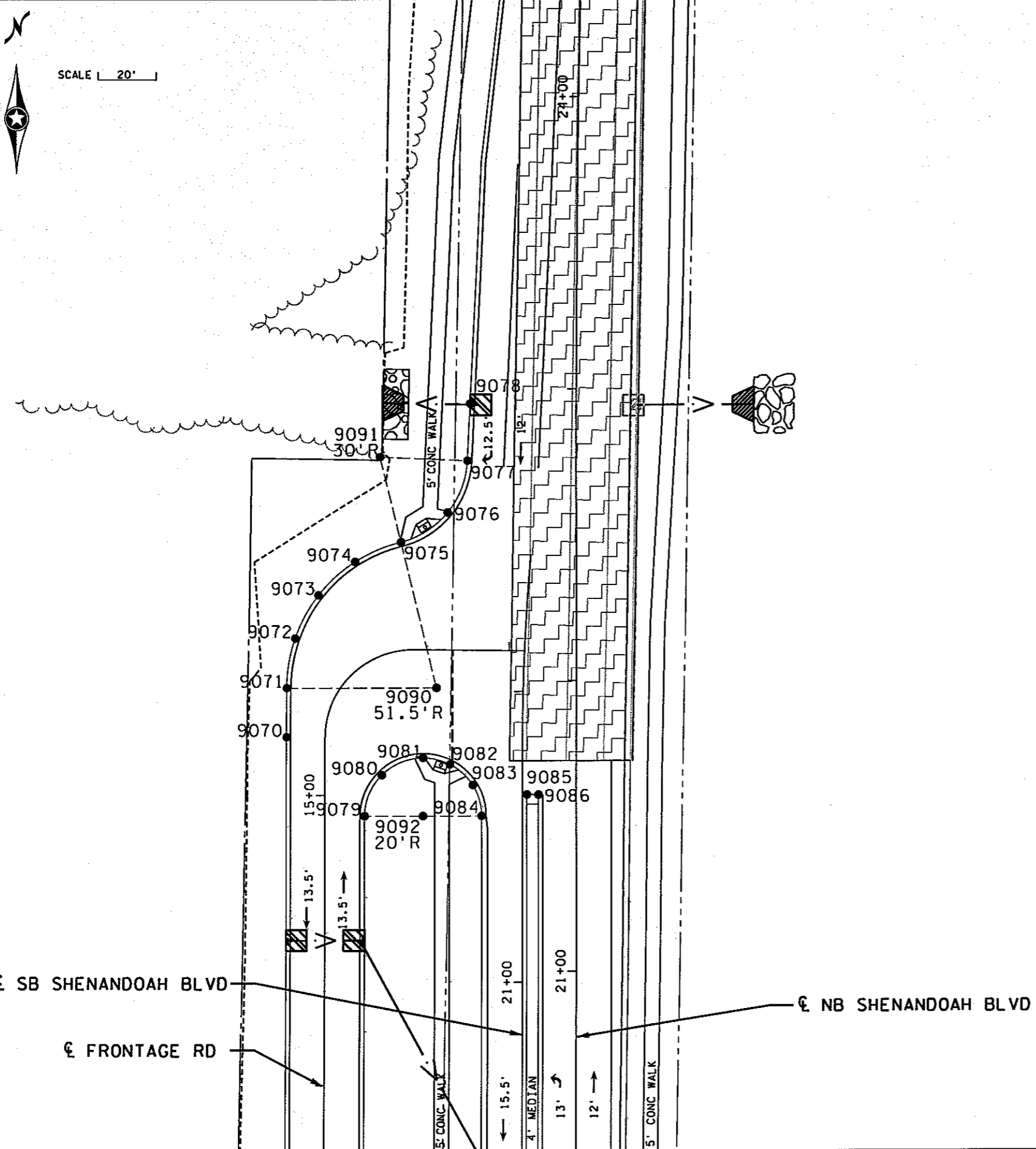
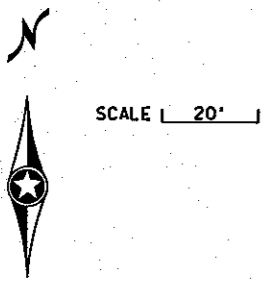
FILE NO. 104
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 CD3 OF CD4
 194

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1/20/2010

CD4

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GUTTER PROFILE POINTS						
POINT	ALIGNMENT NAME	STATION	OFFSET	POINT COORDINATES		ELEVATION
				X	Y	
9070	FRONTAGE RD	15+02.03	13.50' LT	486700.44	159933.14	862.11
9071	FRONTAGE RD	15+31.13	15.66' LT	486700.44	159950.02	862.14
9072	FRONTAGE RD	15+40.88	22.89' LT	486703.32	159967.02	862.19
9073	FRONTAGE RD	15+49.49	28.54' LT	486711.43	159981.83	862.24
9074	FRONTAGE RD	15+57.57	35.38' LT	486724.05	159993.32	862.29
9075	FRONTAGE RD	15+65.26	37.04' LT	486739.73	160000.06	862.34
9076	FRONTAGE RD	15+78.32	47.15' LT	486755.76	160010.14	862.39
9077	NB SHENANDOAH	22+75.45	37.38' LT	486762.55	160027.84	862.20
9078	NB SHENANDOAH	22+95.00	36.50' LT	486763.44	160047.39	862.01
9079	FRONTAGE RD	14+92.83	13.50' RT	486727.44	159905.94	862.01
9080	FRONTAGE RD	15+06.97	19.36' RT	486733.29	159920.08	862.32
9081	FRONTAGE RD	15+12.83	33.50' RT	486747.44	159925.94	862.63
9082	FRONTAGE RD	15+80.37	39.26' RT	486756.62	159923.71	862.81
9083	SB SHENANDOAH	21+67.93	17.04' LT	486764.40	159916.55	862.86
9084	SB SHENANDOAH	21+57.32	14.00' LT	486767.44	159905.94	862.99
9085	SB SHENANDOAH	21+64.61	1.50' RT	486782.94	159913.23	863.21
9086	NB SHENANDOAH	21+60.79	13.00' LT	486786.94	159913.18	863.32

RADIUS POINTS			
POINT	POINT COORDINATES		RADIUS
	X	Y	
9090	486751.94	159950.02	51.5
9091	486732.58	160029.19	30.0
9092	486747.44	159905.94	20.0

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *Mark R. Dierling* Lic. No. 21038
 Printed Name: MARK R. DIERLING Date: 1/20/2010

PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

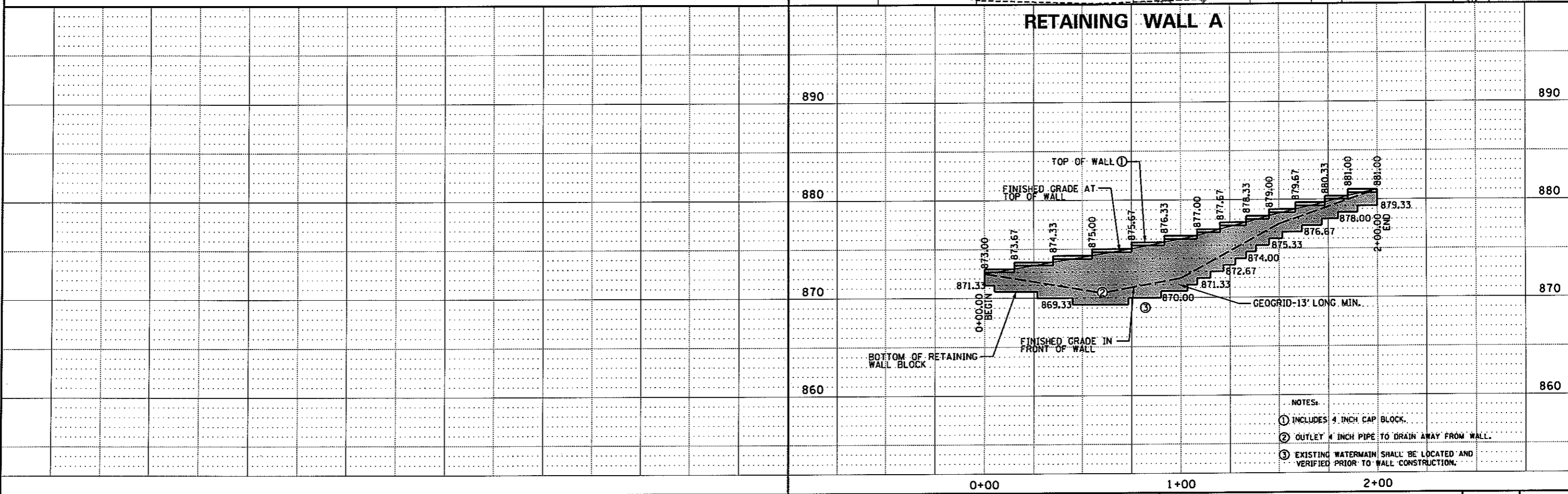
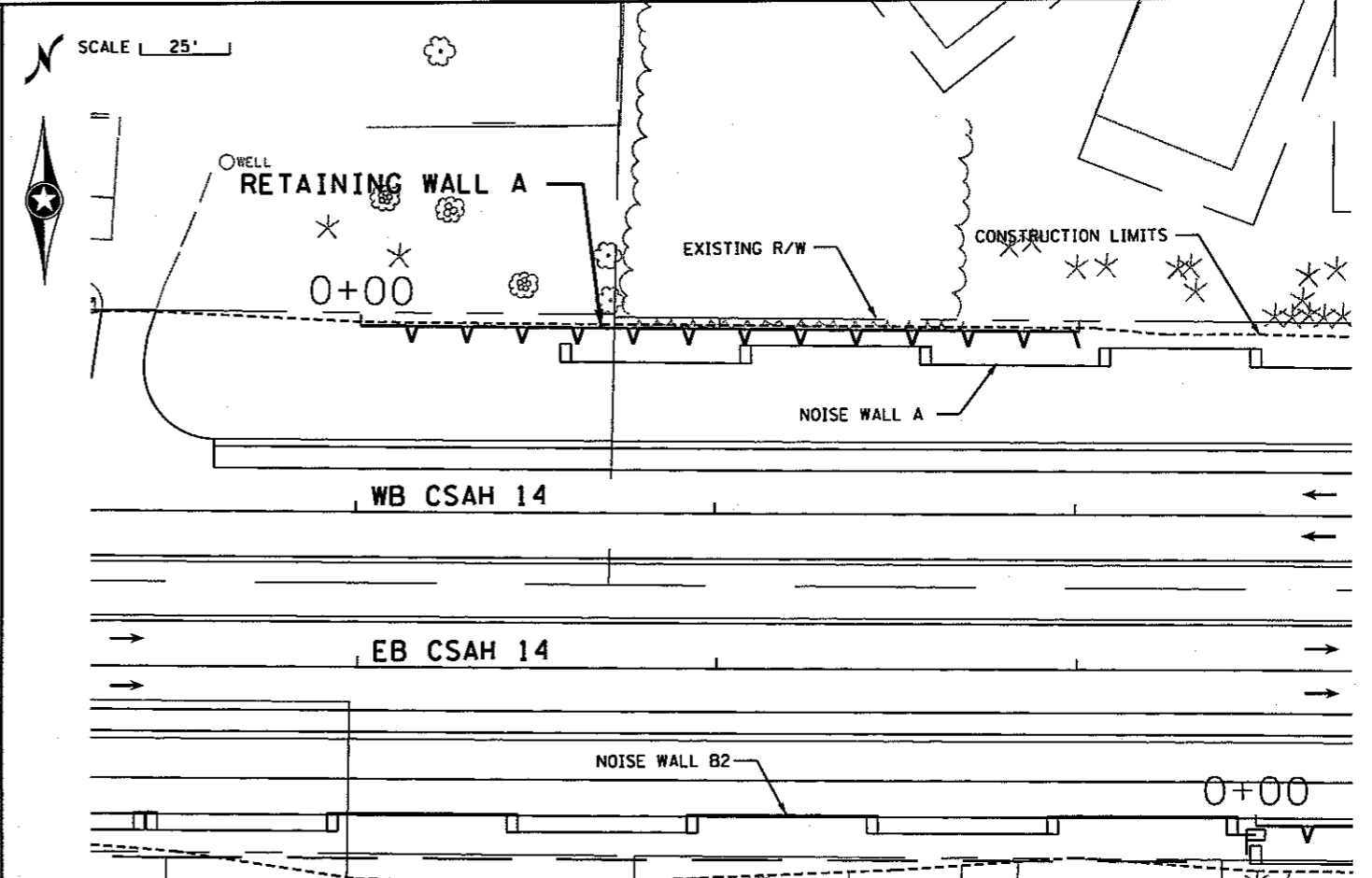
CONSTRUCTION DETAILS
 SHENANDOAH BLVD / FRONTAGE ROAD

FILE NO. 105
 102287
 CD4 OF CD4
 194

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4/7/2010

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- NOTES:
- ① INCLUDES 4 INCH CAP BLOCK.
 - ② OUTLET 4 INCH PIPE TO DRAIN AWAY FROM WALL.
 - ③ EXISTING WATERMAIN SHALL BE LOCATED AND VERIFIED PRIOR TO WALL CONSTRUCTION.

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Licensed Professional Engineer
 Printed Name: MARK R. DIERLING Date: 4/7/2010

SEH
 PHONE: 1651490-2000
 3535 MADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

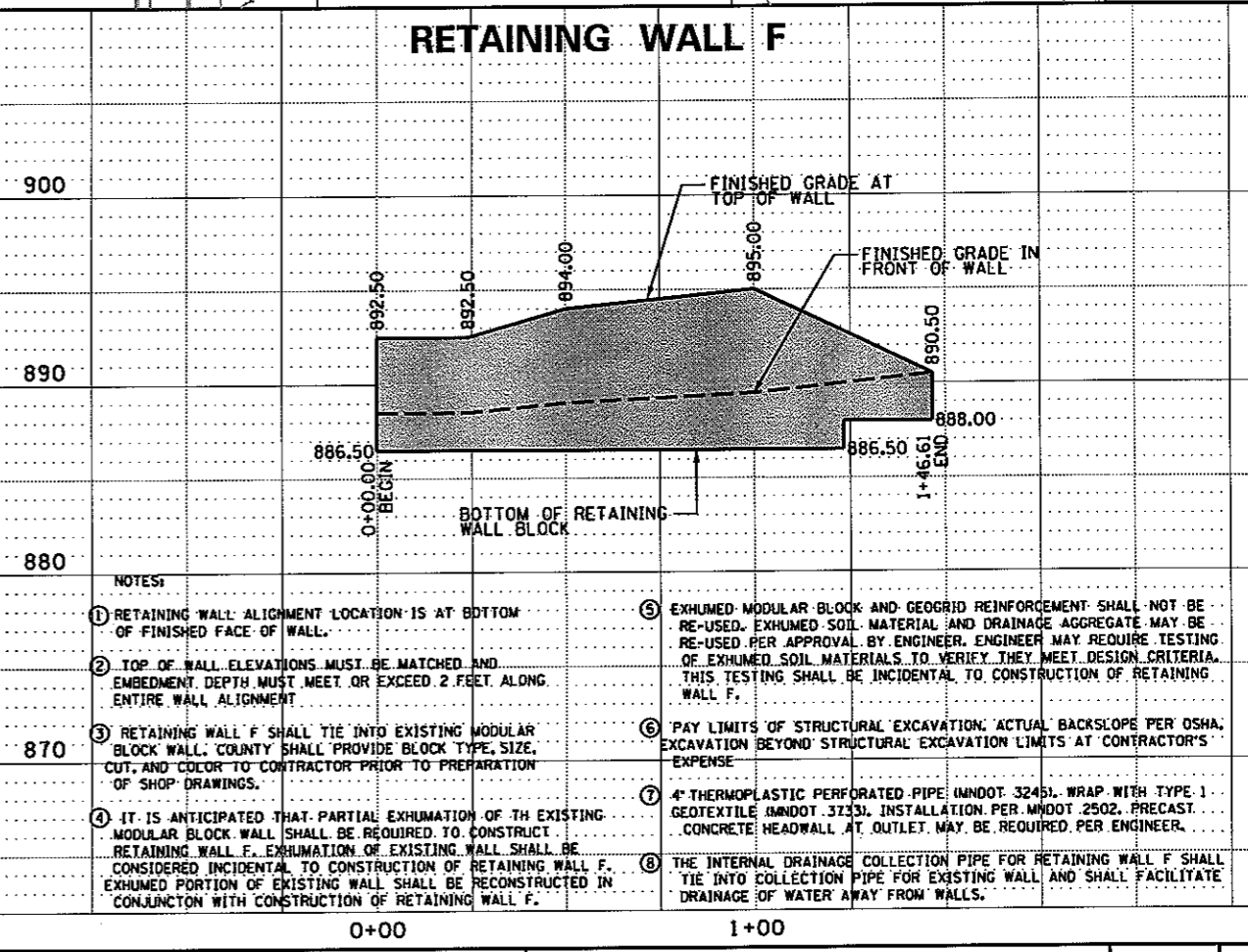
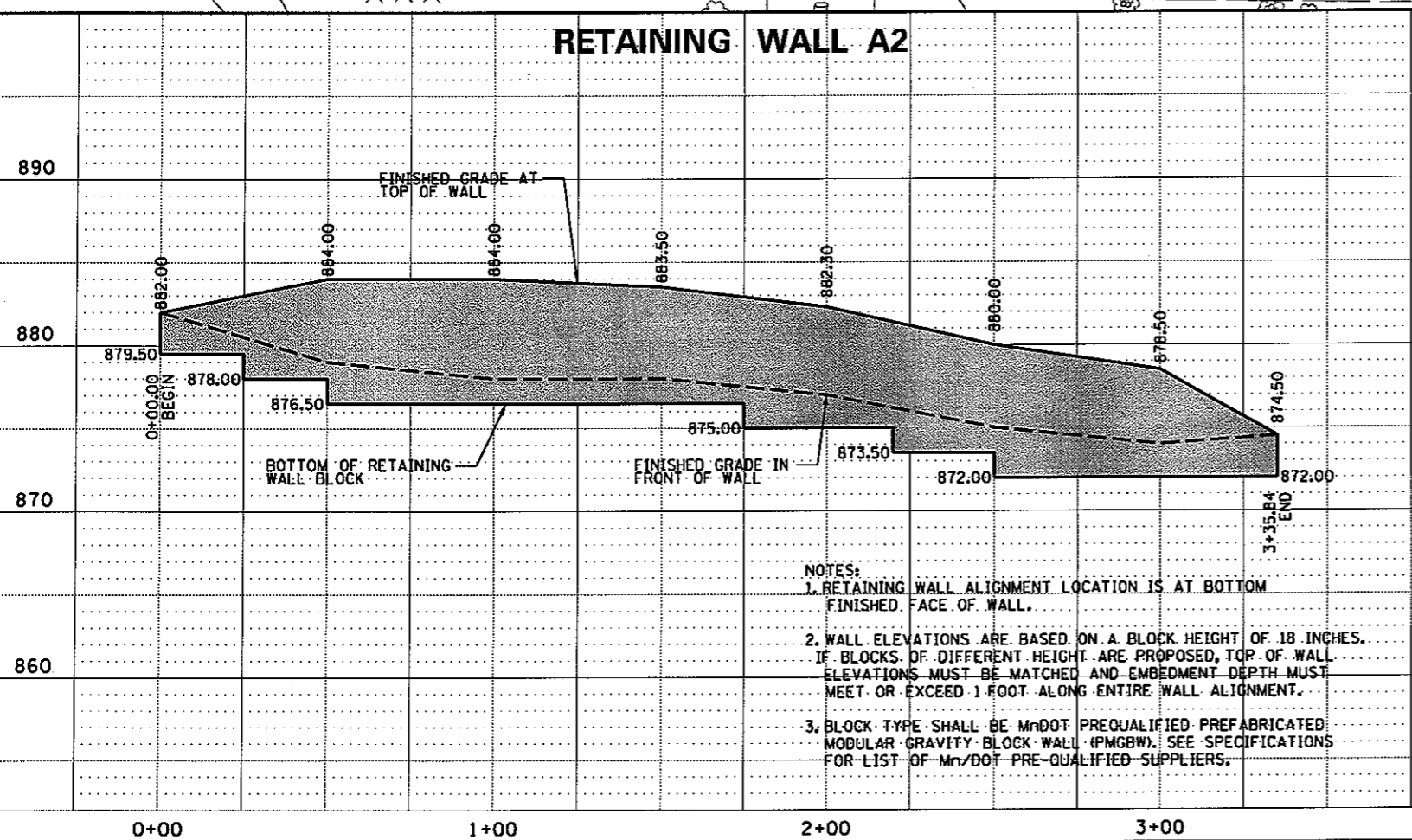
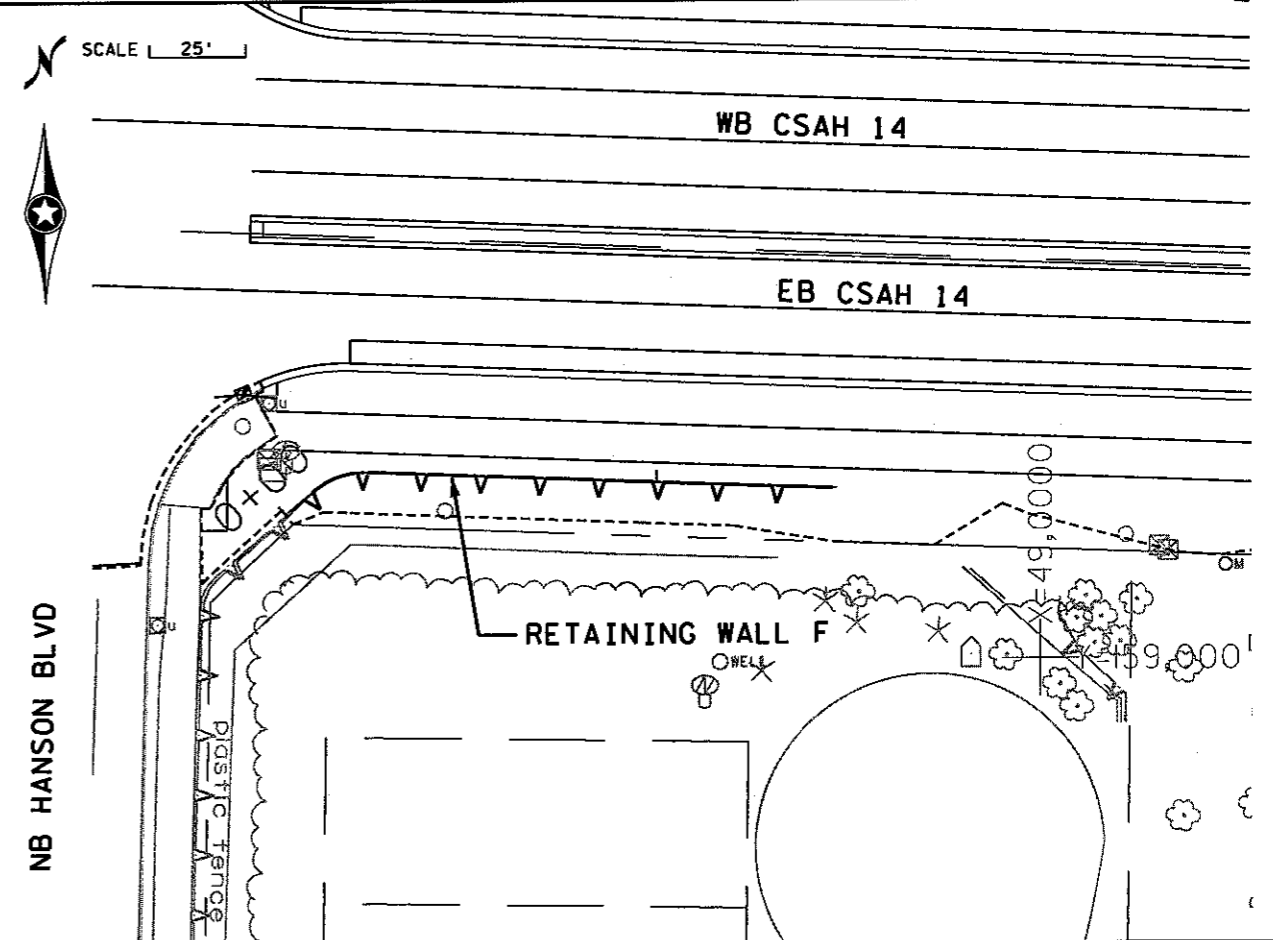
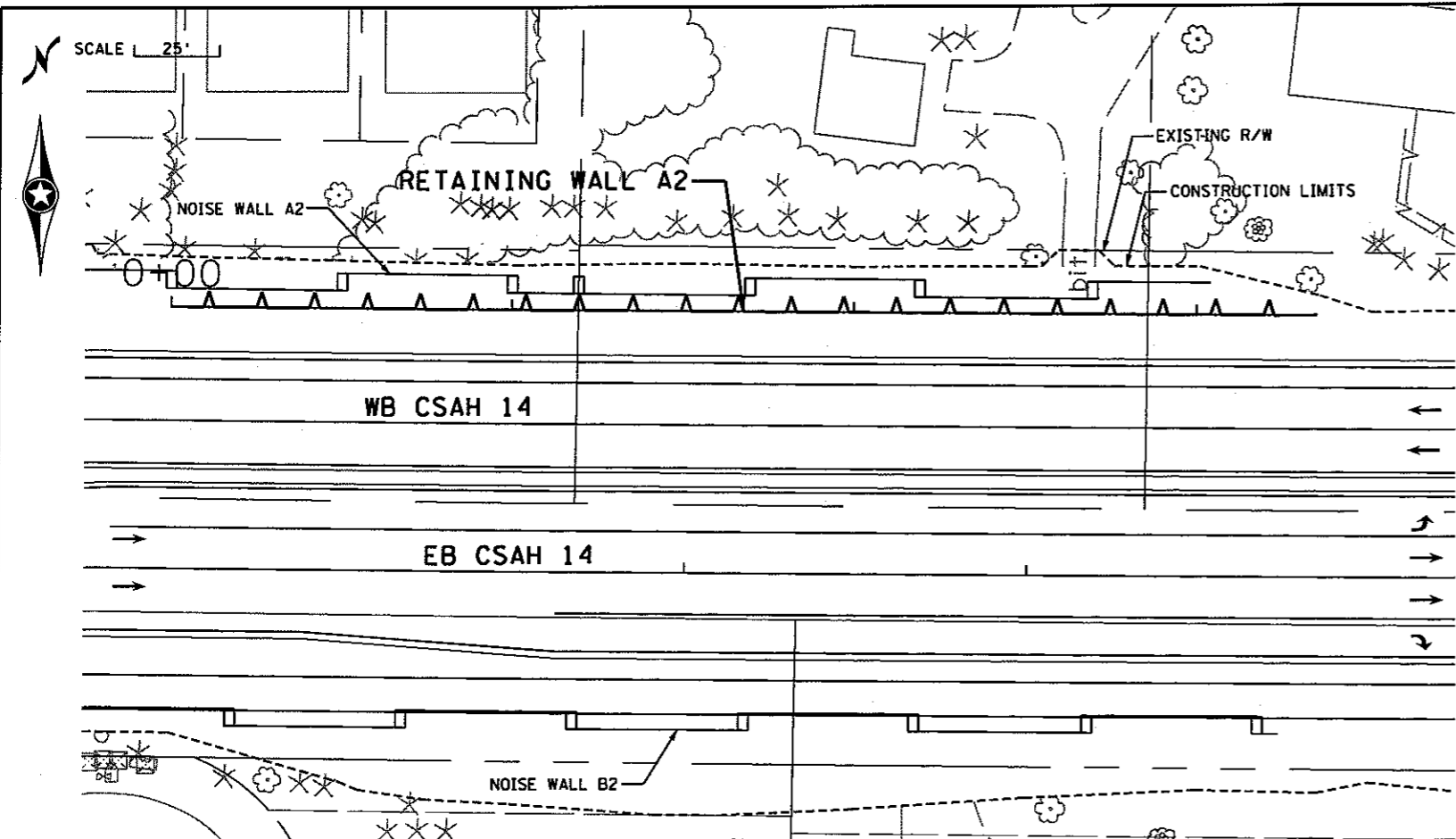
RETAINING WALL
PLAN AND PROFILE
 RETAINING WALL A

FILE NO.	106
102287	
RW1	194
OF RW3	

8/04/17 PM

4/7/2010

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NOTES:
 1. RETAINING WALL ALIGNMENT LOCATION IS AT BOTTOM FINISHED FACE OF WALL.
 2. WALL ELEVATIONS ARE BASED ON A BLOCK HEIGHT OF 18 INCHES. IF BLOCKS OF DIFFERENT HEIGHT ARE PROPOSED, TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 1 FOOT ALONG ENTIRE WALL ALIGNMENT.
 3. BLOCK TYPE SHALL BE MNDOT PREQUALIFIED PREFABRICATED MODULAR GRAVITY BLOCK WALL (PMGBW). SEE SPECIFICATIONS FOR LIST OF MNDOT PRE-QUALIFIED SUPPLIERS.

NOTES:
 1. RETAINING WALL ALIGNMENT LOCATION IS AT BOTTOM OF FINISHED FACE OF WALL.
 2. TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 2 FEET ALONG ENTIRE WALL ALIGNMENT.
 3. RETAINING WALL F SHALL TIE INTO EXISTING MODULAR BLOCK WALL. COUNTY SHALL PROVIDE BLOCK TYPE, SIZE, CUT, AND COLOR TO CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS.
 4. IT IS ANTICIPATED THAT PARTIAL EXHUMATION OF THE EXISTING MODULAR BLOCK WALL SHALL BE REQUIRED TO CONSTRUCT RETAINING WALL F. EXHUMATION OF EXISTING WALL SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF RETAINING WALL F. EXHUMED PORTION OF EXISTING WALL SHALL BE RECONSTRUCTED IN CONJUNCTION WITH CONSTRUCTION OF RETAINING WALL F.
 5. EXHUMED MODULAR BLOCK AND GEOGRID REINFORCEMENT SHALL NOT BE RE-USED. EXHUMED SOIL MATERIAL AND DRAINAGE AGGREGATE MAY BE RE-USED PER APPROVAL BY ENGINEER. ENGINEER MAY REQUIRE TESTING OF EXHUMED SOIL MATERIALS TO VERIFY THEY MEET DESIGN CRITERIA. THIS TESTING SHALL BE INCIDENTAL TO CONSTRUCTION OF RETAINING WALL F.
 6. PAY LIMITS OF STRUCTURAL EXCAVATION, ACTUAL BACKSLOPE PER OSHA, EXCAVATION BEYOND STRUCTURAL EXCAVATION LIMITS AT CONTRACTOR'S EXPENSE.
 7. 4" THERMOPLASTIC PERFORATED PIPE (MNDOT 3245), WRAP WITH TYPE 1 GEOTEXTILE (MNDOT 3733), INSTALLATION PER MNDOT 2502, PRECAST CONCRETE HEADWALL AT OUTLET MAY BE REQUIRED PER ENGINEER.
 8. THE INTERNAL DRAINAGE COLLECTION PIPE FOR RETAINING WALL F SHALL TIE INTO COLLECTION PIPE FOR EXISTING WALL AND SHALL FACILITATE DRAINAGE OF WATER AWAY FROM WALLS.

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/7/2010

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

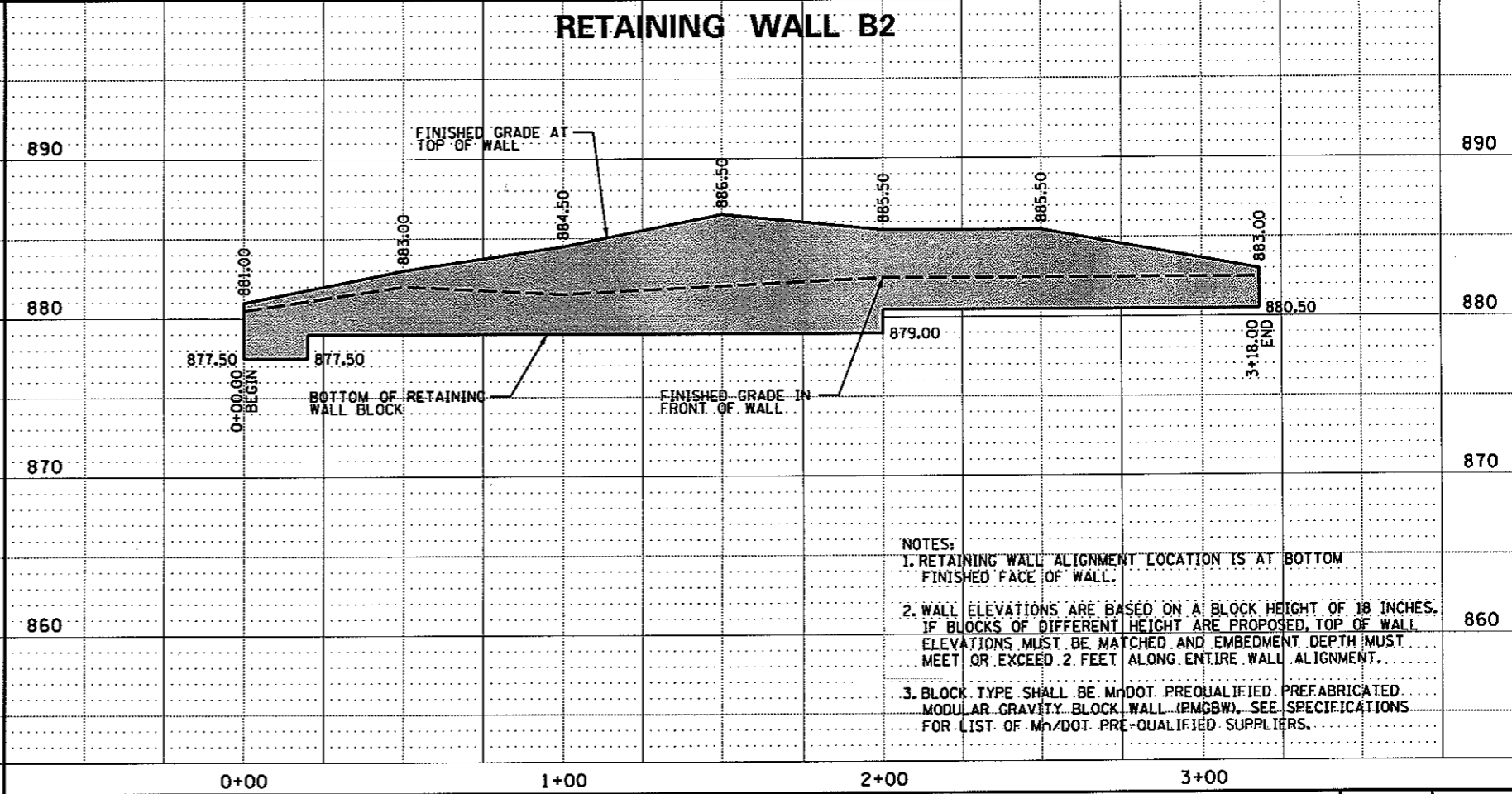
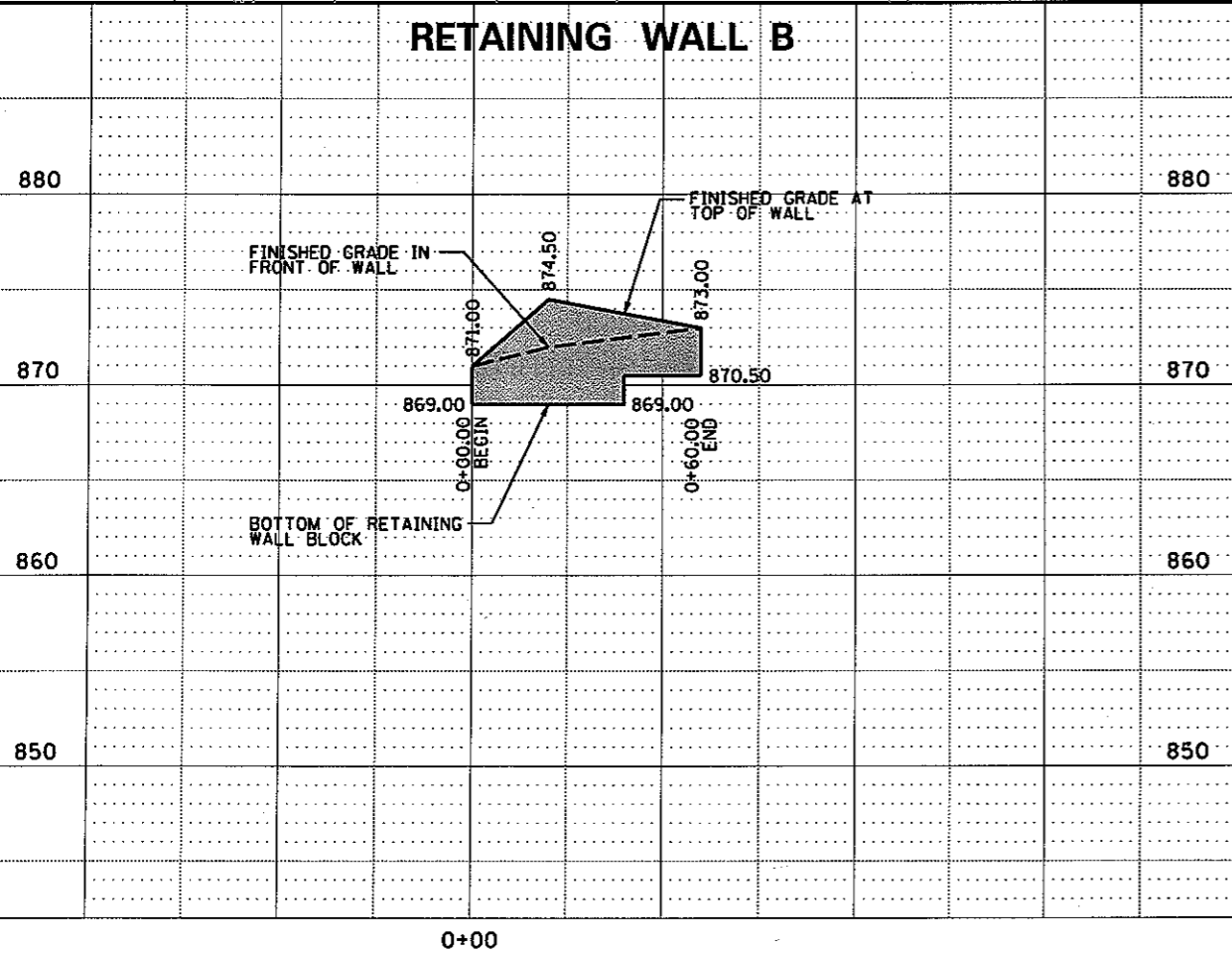
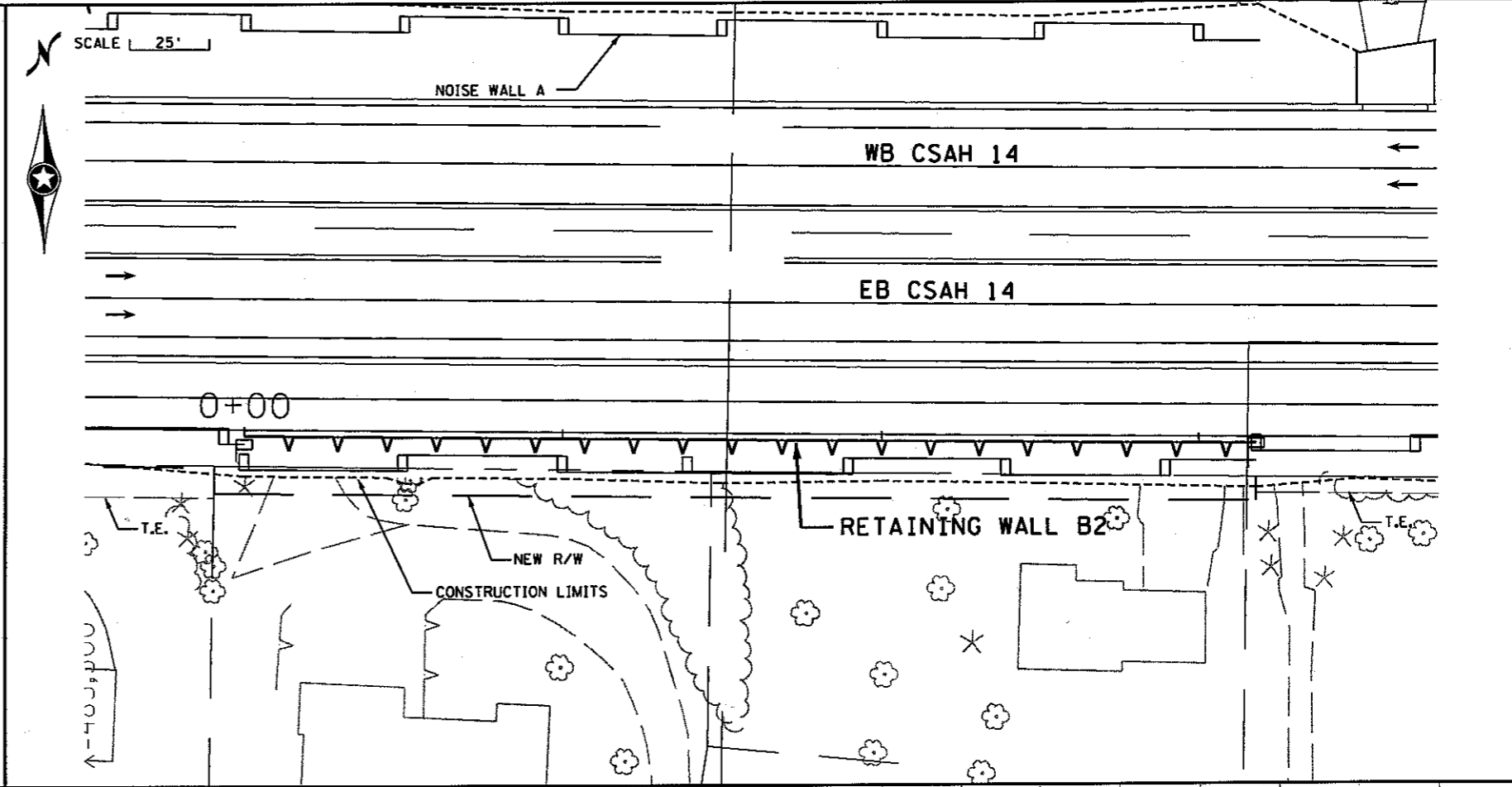
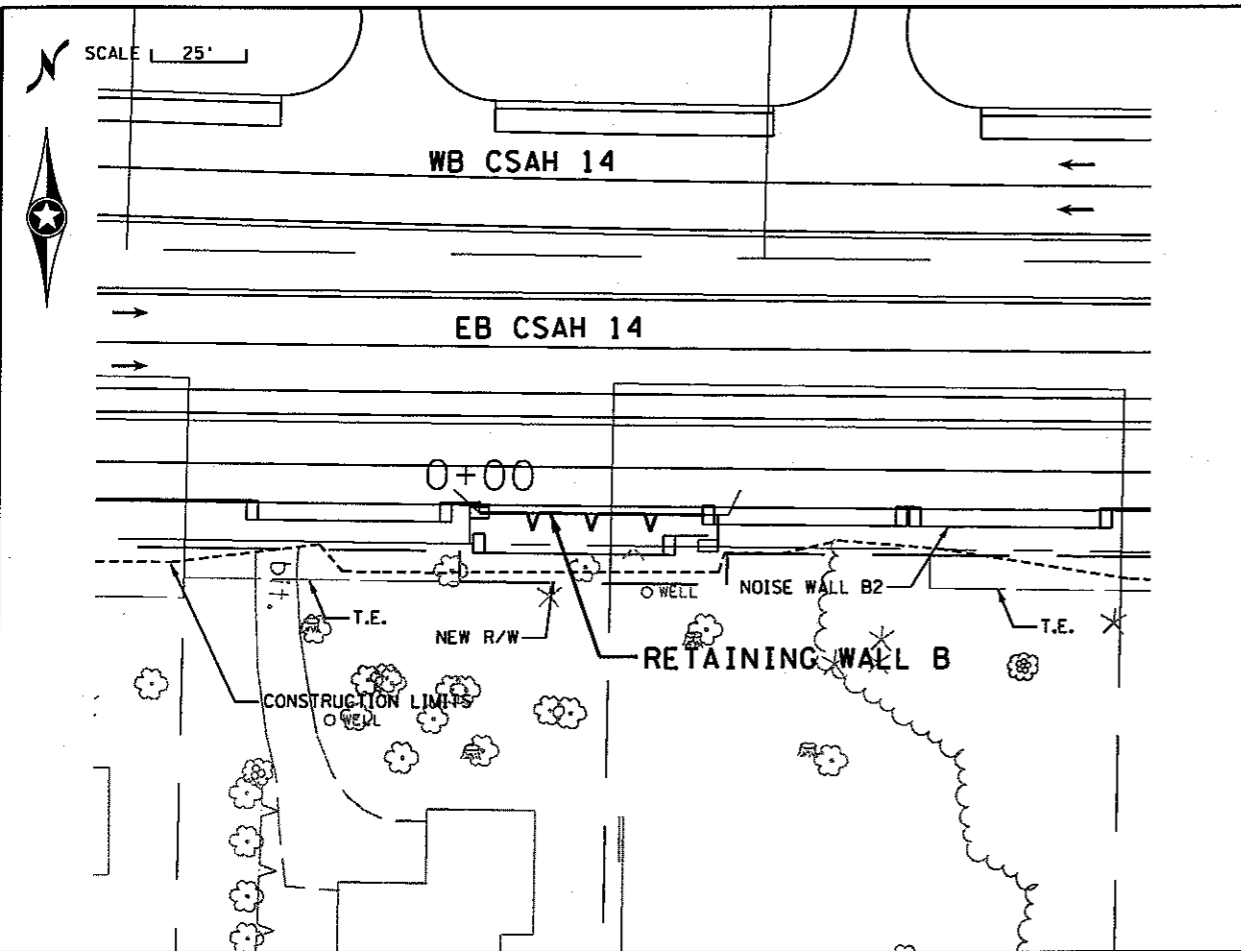
RETAINING WALL PLAN AND PROFILE
 RETAINING WALL A2 AND RETAINING WALL F

FILE NO. 102287
 107
 RW2
 OF RW3 194

8/16/12 AM

4/8/2010

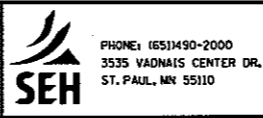
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NOTES:
 1. RETAINING WALL ALIGNMENT LOCATION IS AT BOTTOM FINISHED FACE OF WALL.
 2. WALL ELEVATIONS ARE BASED ON A BLOCK HEIGHT OF 18 INCHES. IF BLOCKS OF DIFFERENT HEIGHT ARE PROPOSED, TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 2 FEET ALONG ENTIRE WALL ALIGNMENT.
 3. BLOCK TYPE SHALL BE MNDOT PREQUALIFIED PREFABRICATED MODULAR GRAVITY BLOCK WALL (PMGBW). SEE SPECIFICATIONS FOR LIST OF MNDOT PRE-QUALIFIED SUPPLIERS.

DESIGN TEAM			
DRAWN BY:	CIE		
DESIGNER:	JEQ		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

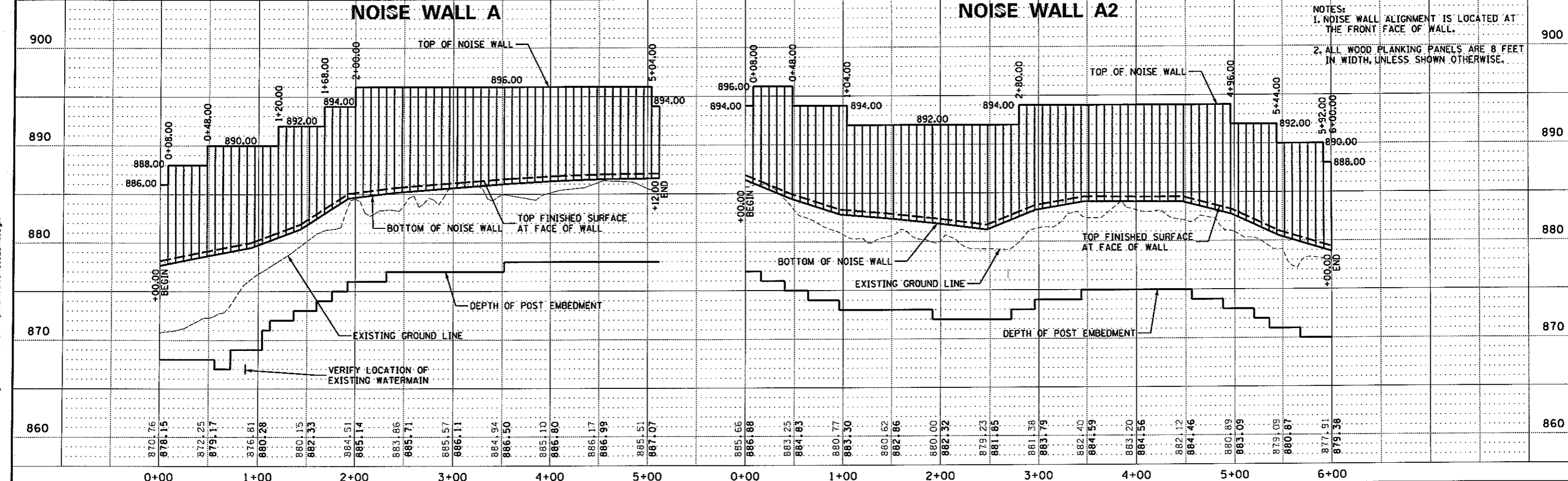
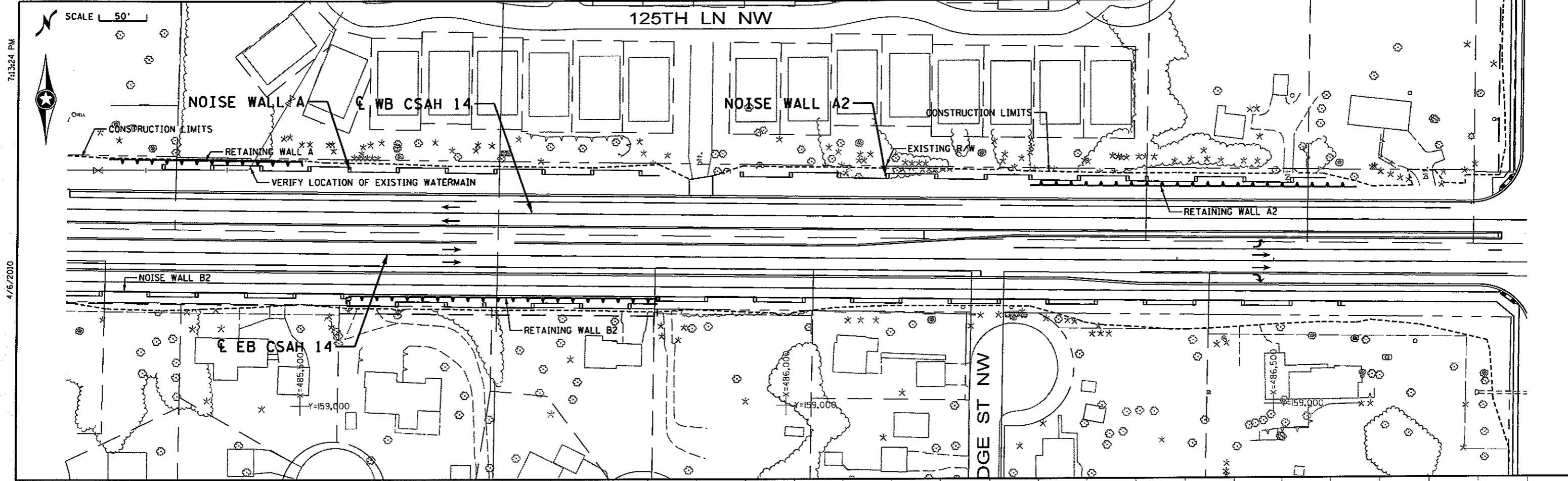
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**RETAINING WALL
 PLAN AND PROFILE**
 RETAINING WALL B AND RETAINING WALL B2

FILE NO. 102287
 RW3 OF RW3
108
194



NOTES:
 1. NOISE WALL ALIGNMENT IS LOCATED AT THE FRONT FACE OF WALL.
 2. ALL WOOD PLANKING PANELS ARE 8 FEET IN WIDTH, UNLESS SHOWN OTHERWISE.

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DESIGN TEAM		
DRAWN BY: CJF		
DESIGNER: JEQ		
CHECKED BY: MRD		
NO.	BY	DATE
REVISIONS		

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.

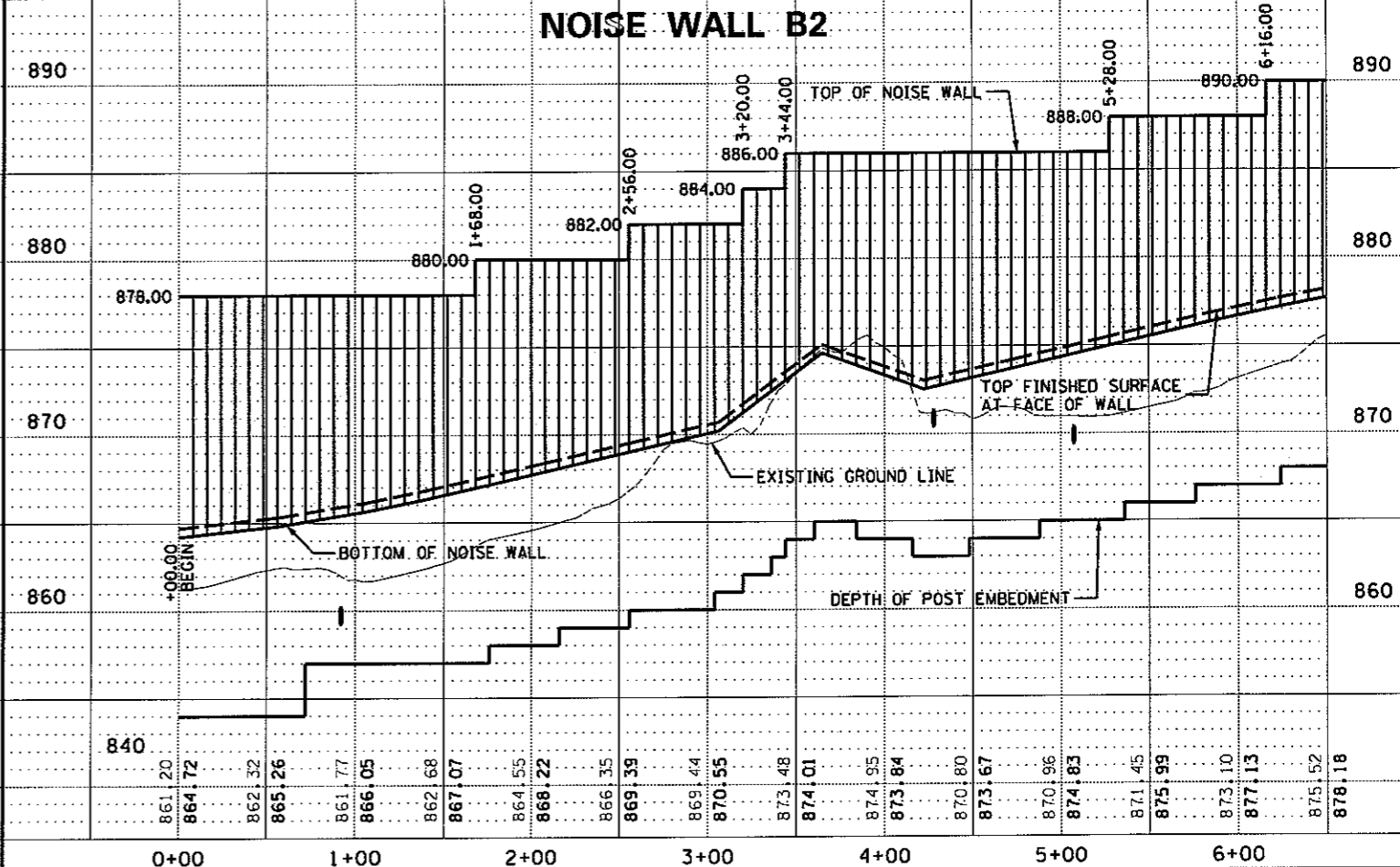
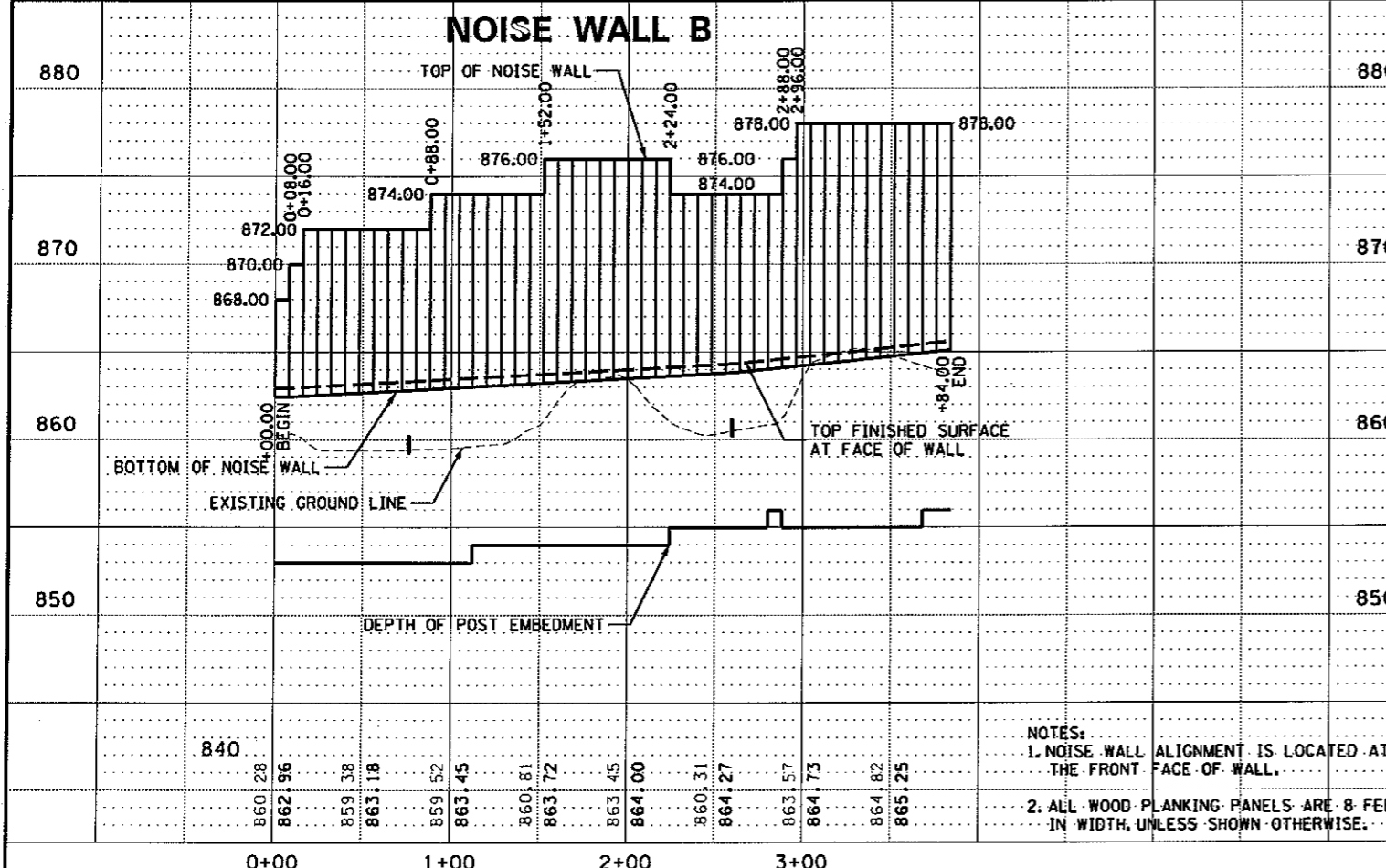
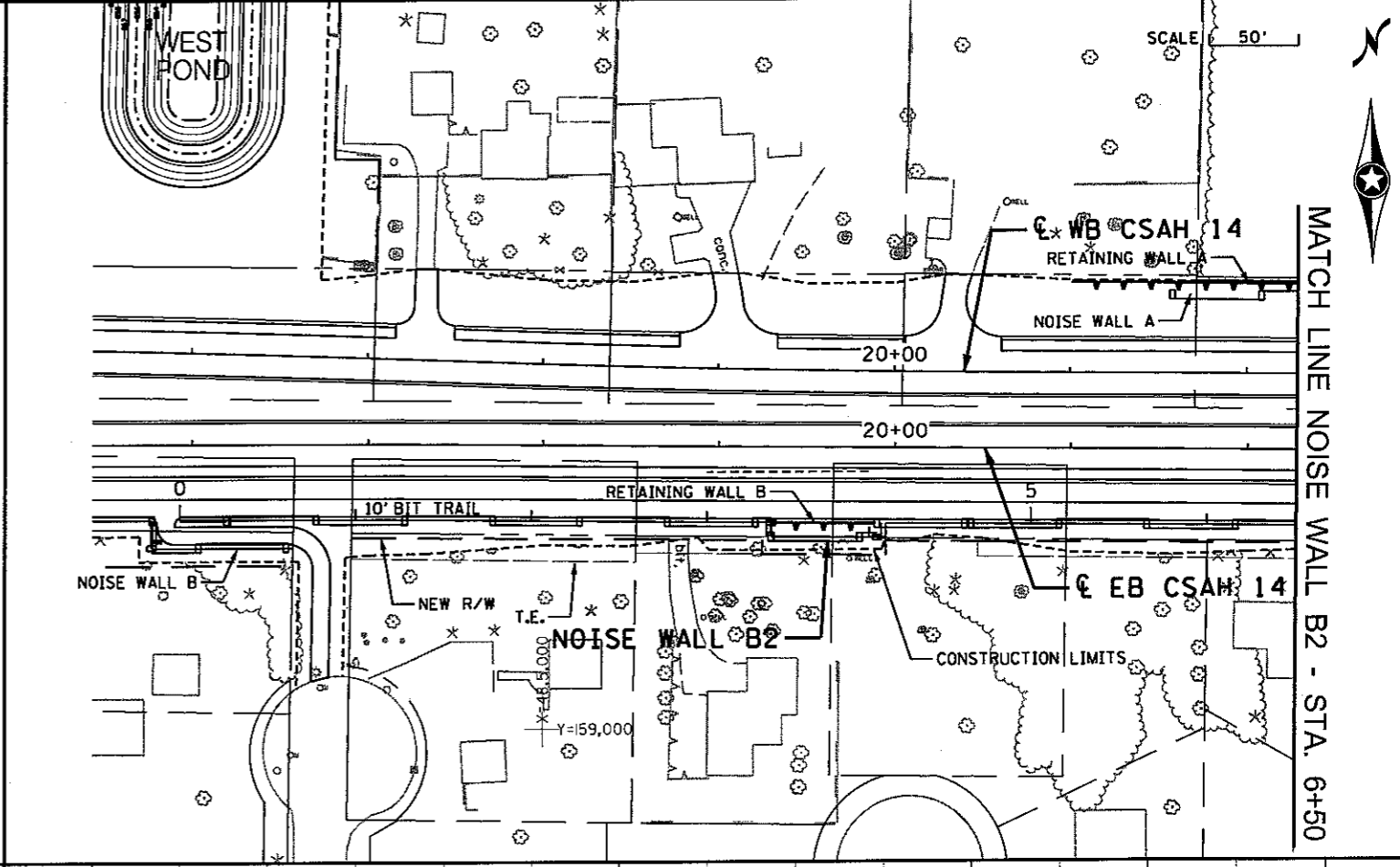
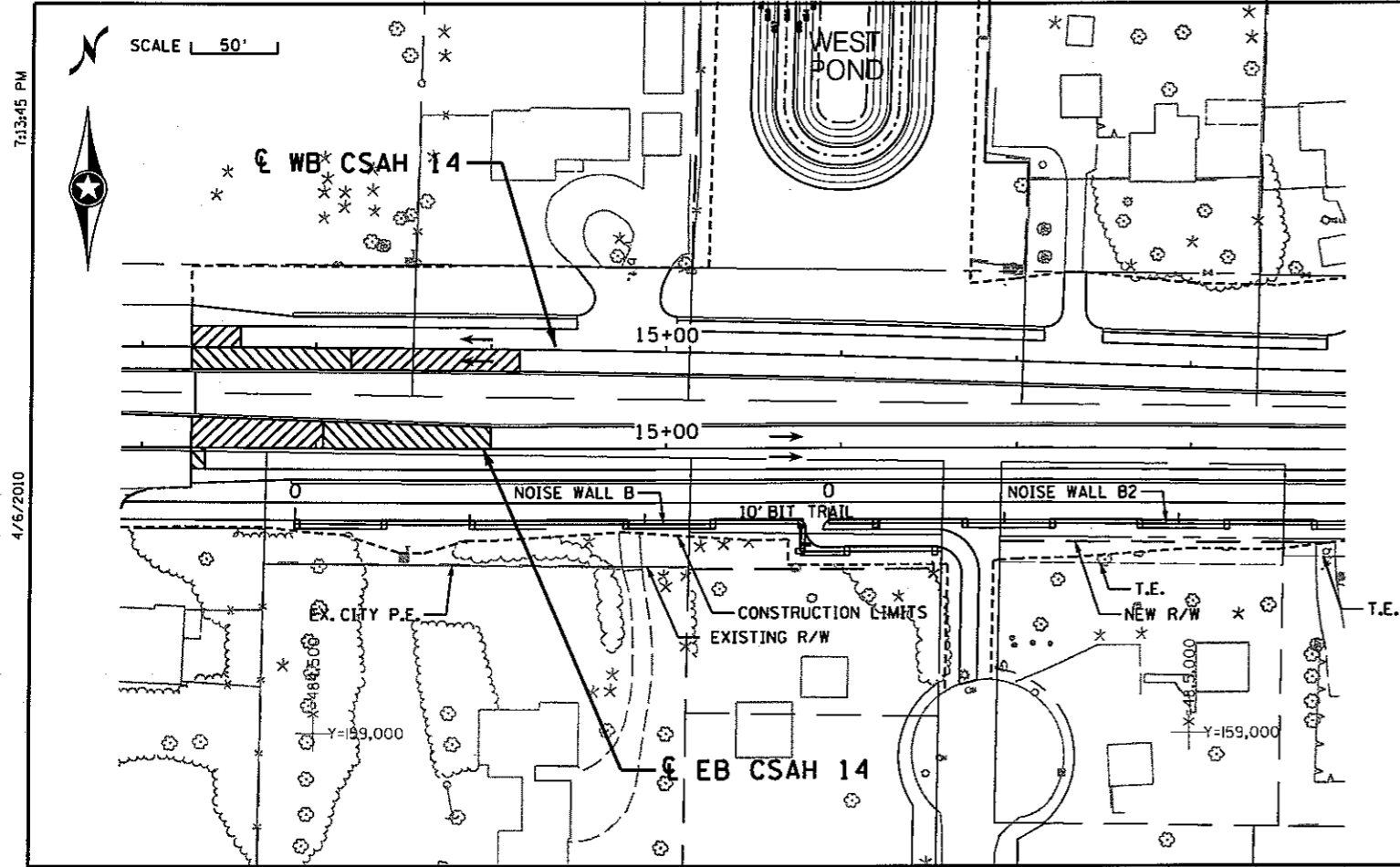
Certified By: *Mark R. Dierling* Lic. No. 21098
 Licensed Professional Engineer
 Printed Name: MARK R. DIERLING Date: 4/6/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

NOISE WALL PLAN AND PROFILE
 NOISE WALL A AND NOISE WALL A2

FILE NO. 109
 102287
 NW1
 OF NWID 194



NOTES:
 1. NOISE WALL ALIGNMENT IS LOCATED AT THE FRONT FACE OF WALL.
 2. ALL WOOD PLANKING PANELS ARE 8 FEET IN WIDTH, UNLESS SHOWN OTHERWISE.

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4/6/2010

DESIGN TEAM			
DRAWN BY:	CJE		
DESIGNER:	JEO		
CHECKED BY:	MBO		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 4/6/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY
 ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

NOISE WALL PLAN AND PROFILE
 NOISE WALL B AND NOISE WALL B2

FILE NO.	110
102287	
NW2	194
OF NW10	

7/14/09 PM

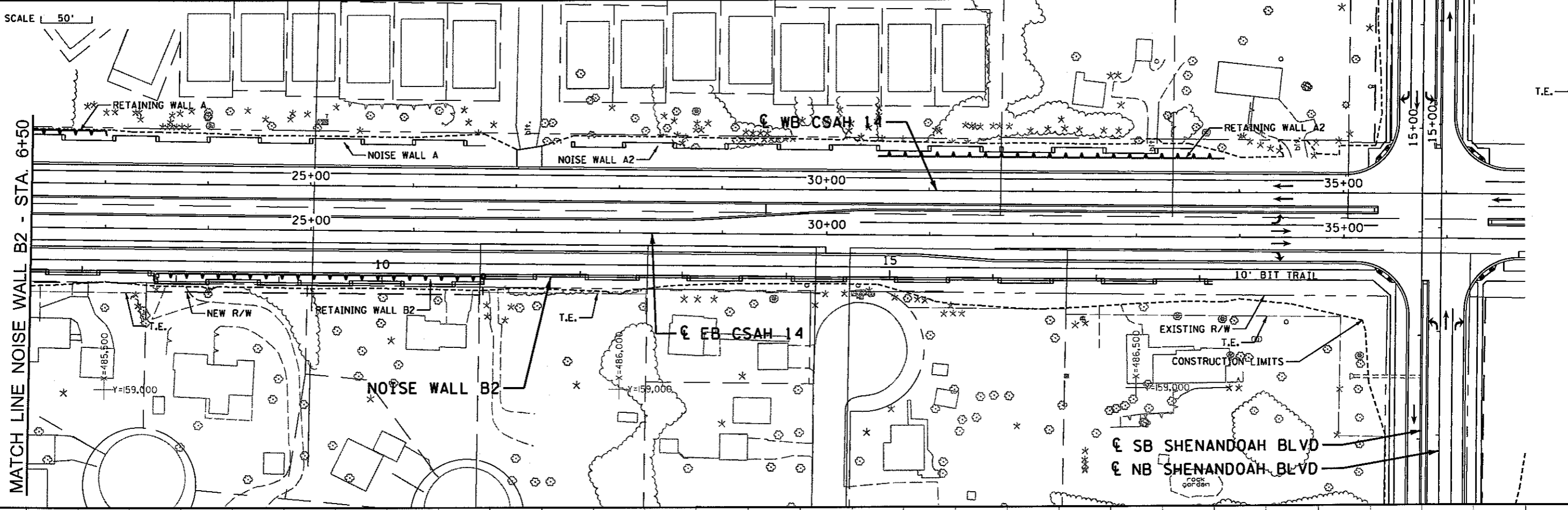
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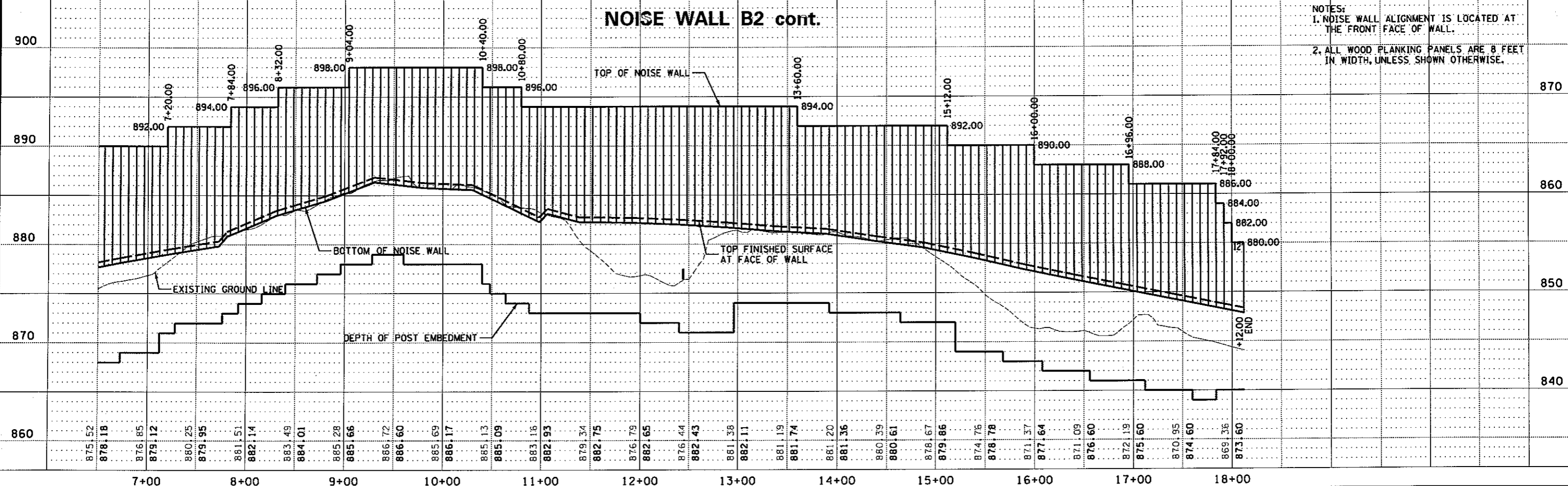
SCALE 50'

MATCH LINE NOISE WALL B2 - STA. 6+50



NOISE WALL B2 cont.

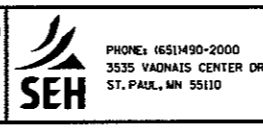
- NOTES:
 1. NOISE WALL ALIGNMENT IS LOCATED AT THE FRONT FACE OF WALL.
 2. ALL WOOD PLANKING PANELS ARE 8 FEET IN WIDTH, UNLESS SHOWN OTHERWISE.



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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.

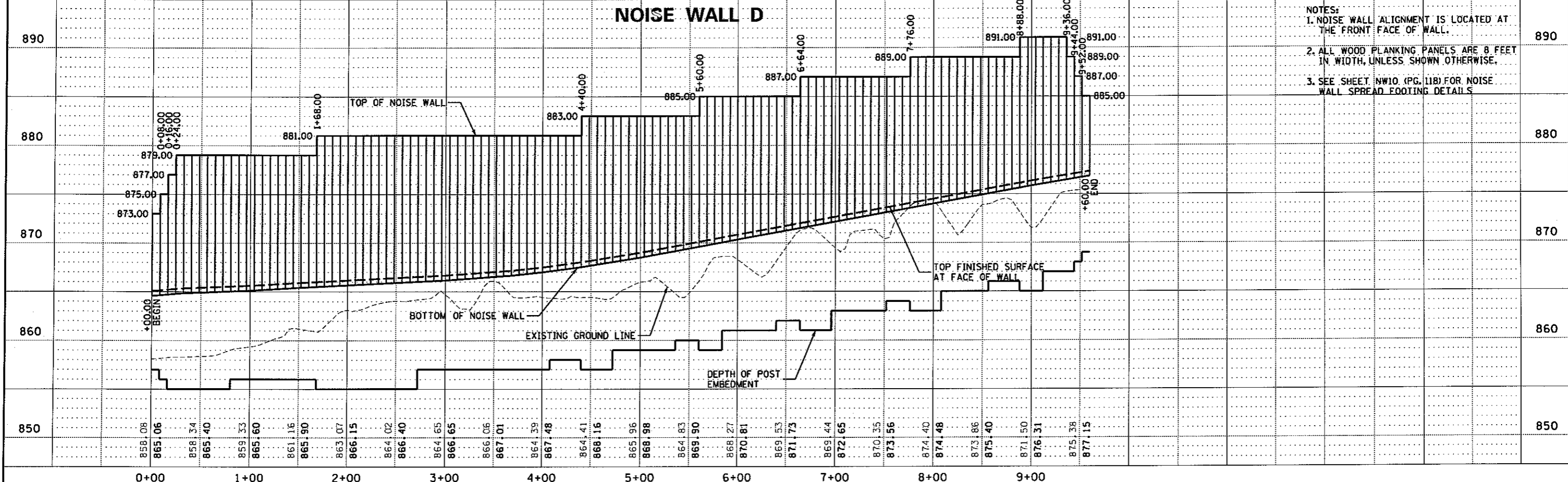
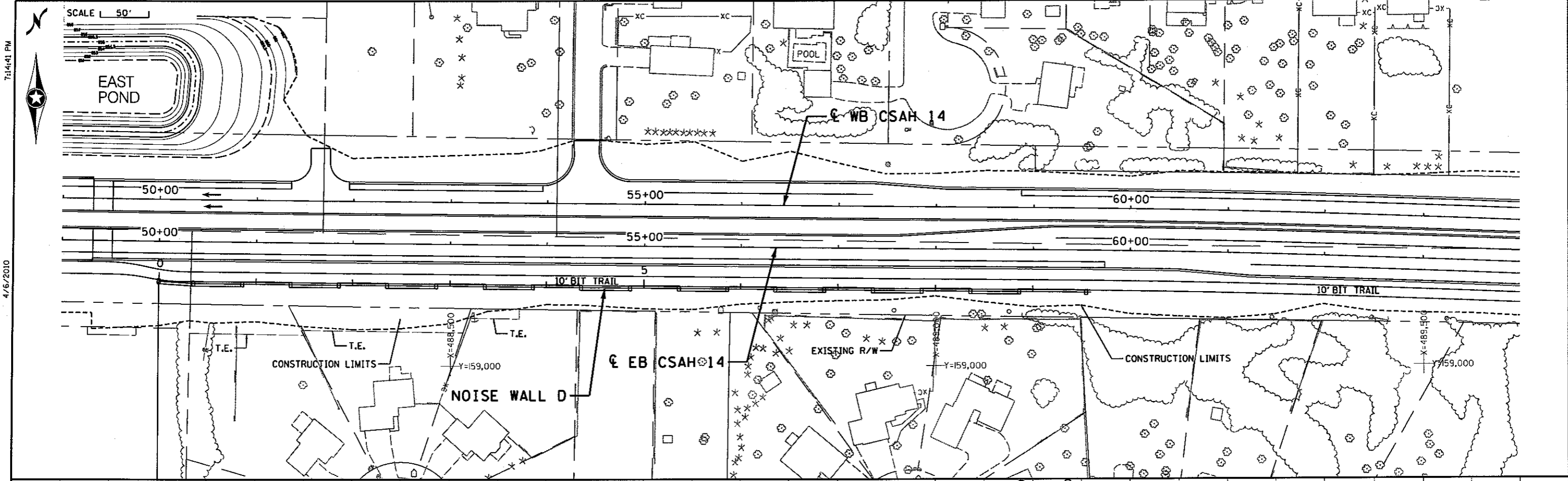
Certified By: *Mark R. Dierling* Lic. No. 21098
 Licensed Professional Engineer
 Printed Name: MARK R. DIERLING Date: 4/6/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

NOISE WALL PLAN AND PROFILE
 NOISE WALL B2 cont.

FILE NO.	102287	111
NW3 OF NW10		194

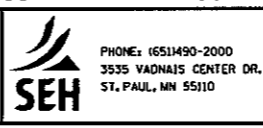


NOTES:
 1. NOISE WALL ALIGNMENT IS LOCATED AT THE FRONT FACE OF WALL.
 2. ALL WOOD PLANKING PANELS ARE 8 FEET IN WIDTH, UNLESS SHOWN OTHERWISE.
 3. SEE SHEET NW10 (PG. 118) FOR NOISE WALL SPREAD FOOTING DETAILS

DESIGN TEAM			
DRAWN BY:	CJE		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark B. Dierling* Lic. No. 21098
 Printed Name: MARK B. DIERLING Date: 4/6/2010



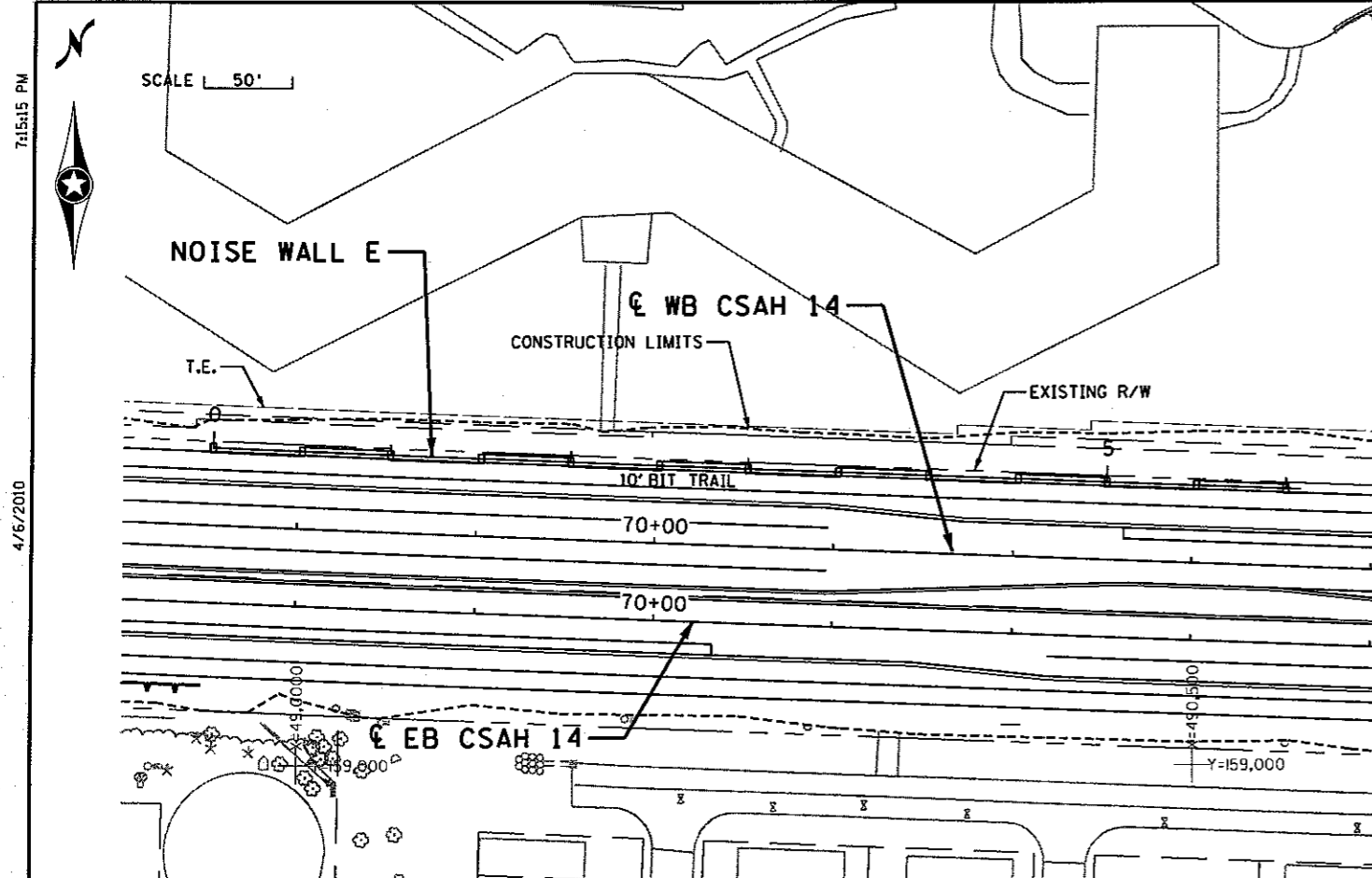
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

NOISE WALL PLAN AND PROFILE
 NOISE WALL D

FILE NO. 102287	112
NW4 OF NW10	194

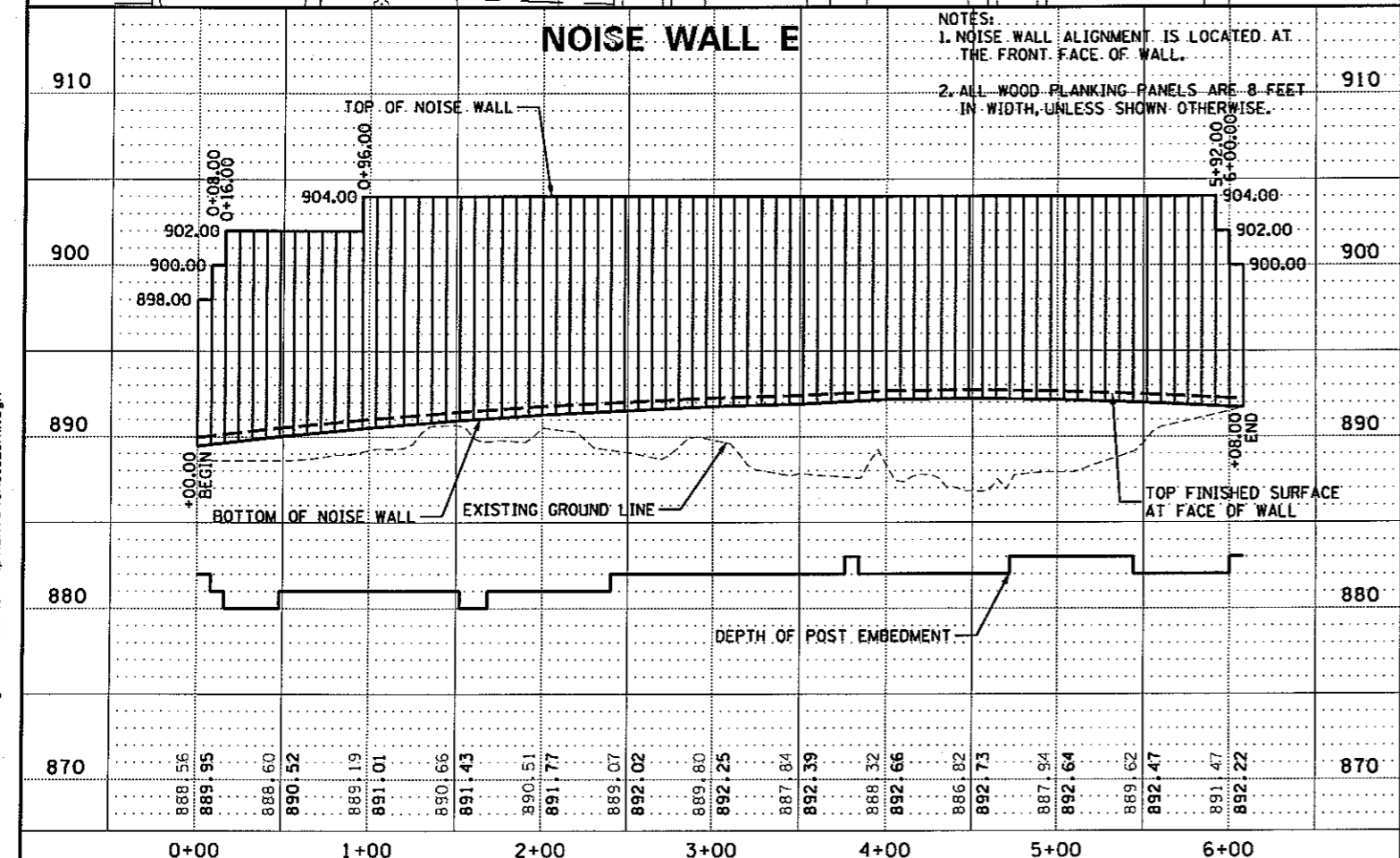
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4/6/2010



ALIGNMENT TABULATION (LOCATED AT THE FRONT FACE OF WALL)

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
NOISE WALL A										
11130	POT	0+00.000						485,358.7211	159,244.7966	
11133	POT	5+12.000						485,870.6680	159,237.4219	
NOISE WALL A2										
10650	POT	0+00.000						485,954.6020	159,236.2127	
10655	POT	2+96.000						486,250.5736	159,231.9492	
10656	POT	6+00.000						486,554.5417	159,227.7106	
NOISE WALL B										
10595	POT	0+00.000						484,488.6771	159,118.9095	
10600	POT	0+81.034						484,569.7094	159,118.3864	
10603	POT	2+89.000						484,777.6748	159,118.9470	
10604	POT	3+05.000						484,777.3975	159,102.9495	
10605	POT	3+86.000						484,858.3974	159,103.1148	
NOISE WALL B2										
10606	POT	0+00.000						484,793.6771	159,119.0078	
10610	POT	1+06.201						484,899.8776	159,119.2245	
10613	POT	3+36.500						485,130.1643	159,116.8149	
10614	POT	3+44.500						485,130.0935	159,108.8152	
10615	POT	4+09.500						485,195.0900	159,108.1351	
10616	POT	4+17.500						485,195.1737	159,116.1346	
10617	POT	7+70.500						485,548.1543	159,112.4412	
10618	POT	7+78.500						485,548.0706	159,104.4416	
10619	POT	10+99.500						485,869.0531	159,101.0830	
10620	POT	11+07.500						485,869.1368	159,109.0825	
10621	POT	18+12.500						486,574.0981	159,101.7061	
NOISE WALL D										
10670	POT	0+00.000						488,199.2000	159,086.8000	
10671	POT	0+35.886						488,235.0003	159,084.3270	
10675	POT	9+60.000						489,159.0632	159,074.5725	
NOISE WALL E										
10680	POT	0+00.000						489,952.3485	159,176.2740	
10681	POT	6+08.000						490,559.8906	159,152.6837	



DESIGN TEAM

DRAWN BY: CJF

DESIGNER: JEO

CHECKED BY: MRD

NO. BY DATE

REVISIONS

NOTES:

- NOISE WALL ALIGNMENT IS LOCATED AT THE FRONT FACE OF WALL.
- ALL WOOD FLANKING PANELS ARE 8 FEET IN WIDTH, UNLESS SHOWN OTHERWISE.

Printed Name: MARK R. DIERLING Date: 4/6/2010

SEH

PHONE: 651/490-2000
3535 VAONAS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

NOISE WALL PLAN AND PROFILE
NOISE WALL E
NOISE WALL ALIGNMENT TABULATION

FILE NO. 102287
NW5 OF NW10
113
194

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 DefFault

NOISEWALL A									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
1	0+00.00	878.15	1:10	886		18	10.15	868.00	1
2	0+08.00	878.31	1:10	886	62.16	18	10.31	868.00	2
3	0+16.00	878.48	1:10	888	68.84	20	10.48	868.00	3
4	0+24.00	878.64	1:10	888	75.52	20	10.64	868.00	4
5	0+32.00	878.81	1:10	888	74.20	20	10.81	868.00	5
6	0+40.00	878.97	1:10	888	72.88	20	10.97	868.00	6
7	0+48.00	879.13	1:10	888	71.58	20	11.13	868.00	7
8	0+56.00	879.29	1:10	890	78.31	23	12.29	867.00	8
9	0+64.00	879.45	1:10	890	85.06	23	12.45	867.00	9
10	0+72.00	879.60	1:10	890	83.81	21	10.60	869.00	10
11	0+80.00	879.76	1:10	890	82.55	21	10.76	869.00	11
12	0+88.00	879.92	1:10	890	81.30	21	10.92	869.00	12
13	0+96.00	880.13	1:10	890	79.82	21	11.13	869.00	13
14	1+04.00	880.43	1:10	890	77.78	19	9.43	871.00	14
15	1+12.00	880.72	1:10	890	75.40	18	8.72	872.00	15
16	1+20.00	881.02	1:10	890	73.02	18	9.02	872.00	16
17	1+28.00	881.32	1:10	892	78.65	20	9.32	872.00	17
18	1+36.00	881.61	1:10	892	84.27	19	8.61	873.00	18
19	1+44.00	881.94	1:10	892	81.77	19	8.94	873.00	19
20	1+52.00	882.45	1:10	892	78.41	19	9.45	873.00	20
21	1+60.00	882.96	1:10	892	74.34	18	8.96	874.00	21
22	1+68.00	883.47	1:10	892	70.26	18	9.47	874.00	22
23	1+76.00	883.98	1:10	894	74.19	19	8.98	875.00	23
24	1+84.00	884.49	1:10	894	78.11	19	9.49	875.00	24
25	1+92.00	885.00	1:10	894	74.04	18	9.00	876.00	25
26	2+00.00	885.14	1:10	894	71.45	18	9.14	876.00	26
27	2+08.00	885.23	1:10	896	78.51	20	9.23	876.00	27
28	2+16.00	885.33	1:10	896	85.74	20	9.33	876.00	28
29	2+24.00	885.43	1:10	896	84.96	20	9.43	876.00	29
30	2+32.00	885.53	1:10	896	84.19	19	8.53	877.00	30
31	2+40.00	885.62	1:10	896	83.41	19	8.62	877.00	31
32	2+48.00	885.70	1:10	896	82.72	19	8.70	877.00	32
33	2+56.00	885.76	1:10	896	82.17	19	8.76	877.00	33
34	2+64.00	885.82	1:10	896	81.66	19	8.82	877.00	34
35	2+72.00	885.89	1:10	896	81.15	19	8.89	877.00	35
36	2+80.00	885.95	1:10	896	80.64	19	8.95	877.00	36
37	2+88.00	886.02	1:10	896	80.13	19	9.01	877.00	37
38	2+96.00	886.08	1:10	896	79.63	19	9.08	877.00	38
39	3+04.00	886.14	1:10	896	79.12	19	9.14	877.00	39
40	3+12.00	886.20	1:10	896	78.61	19	9.20	877.00	40
41	3+20.00	886.27	1:10	896	78.11	19	9.27	877.00	41
42	3+28.00	886.33	1:10	896	77.61	19	9.33	877.00	42
43	3+36.00	886.39	1:10	896	77.11	19	9.39	877.00	43
44	3+44.00	886.45	1:10	896	76.61	19	9.45	877.00	44
45	3+52.00	886.52	1:10	896	76.12	18	8.52	878.00	45
46	3+60.00	886.57	1:10	896	75.65	18	8.57	878.00	46
47	3+68.00	886.62	1:10	896	75.25	18	8.62	878.00	47
48	3+76.00	886.66	1:10	896	74.90	18	8.66	878.00	48
49	3+84.00	886.71	1:10	896	74.54	18	8.71	878.00	49
50	3+92.00	886.75	1:10	896	74.18	18	8.75	878.00	50
51	4+00.00	886.79	1:10	896	73.82	18	8.79	878.00	51
52	4+08.00	886.84	1:10	896	73.48	18	8.84	878.00	52
53	4+16.00	886.87	1:10	896	73.19	18	8.87	878.00	53
54	4+24.00	886.89	1:10	896	72.96	18	8.89	878.00	54
55	4+32.00	886.92	1:10	896	72.73	18	8.92	878.00	55
56	4+40.00	886.95	1:10	896	72.50	18	8.95	878.00	56
57	4+48.00	886.98	1:10	896	72.27	18	8.98	878.00	57
58	4+56.00	887.01	1:10	896	72.04	18	9.01	878.00	58
59	4+64.00	887.02	1:10	896	71.88	18	9.02	878.00	59
60	4+72.00	887.03	1:10	896	71.80	18	9.03	878.00	60
61	4+80.00	887.04	1:10	896	71.71	18	9.04	878.00	61
62	4+88.00	887.05	1:10	896	71.63	18	9.05	878.00	62
63	4+96.00	887.06	1:10	896	71.54	18	9.06	878.00	63
64	5+04.00	887.07	1:10	896	71.46	18	9.07	878.00	64
65	5+12.00	887.08	1:10	894	63.39	16	9.08	878.00	65

NOISEWALL A2									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
1	0+00.00	886.88	1:10	894		17	9.88	877.00	1
2	0+08.00	886.55	1:10	894	58.27	17	9.55	877.00	2
3	0+16.00	886.22	1:10	896	68.94	20	10.22	876.00	3
4	0+24.00	885.88	1:10	896	79.61	20	9.88	876.00	4
5	0+32.00	885.55	1:10	896	82.28	20	9.55	876.00	5
6	0+40.00	885.21	1:10	896	84.95	21	10.21	875.00	6
7	0+48.00	884.89	1:10	896	87.58	21	9.89	875.00	7
8	0+56.00	884.64	1:10	894	81.89	19	9.63	875.00	8
9	0+64.00	884.38	1:10	894	75.95	20	10.38	874.00	9
10	0+72.00	884.12	1:10	894	78.00	20	10.12	874.00	10
11	0+80.00	883.86	1:10	894	80.06	20	9.86	874.00	11
12	0+88.00	883.61	1:10	894	82.11	20	9.61	874.00	12
13	0+96.00	883.35	1:10	894	84.16	21	10.35	873.00	13
14	1+04.00	883.26	1:10	894	85.54	21	10.26	873.00	14
15	1+12.00	883.19	1:10	892	78.17	19	10.19	873.00	15
16	1+20.00	883.13	1:10	892	70.71	19	10.13	873.00	16
17	1+28.00	883.06	1:10	892	71.26	19	10.06	873.00	17
18	1+36.00	882.99	1:10	892	71.80	19	9.99	873.00	18
19	1+44.00	882.92	1:10	892	72.35	19	9.92	873.00	19
20	1+52.00	882.84	1:10	892	72.94	19	9.84	873.00	20
21	1+60.00	882.76	1:10	892	73.60	19	9.76	873.00	21
22	1+68.00	882.67	1:10	892	74.28	19	9.67	873.00	22
23	1+76.00	882.59	1:10	892	74.97	19	9.59	873.00	23
24	1+84.00	882.50	1:10	892	75.65	19	9.50	873.00	24
25	1+92.00	882.41	1:10	892	76.34	20	10.41	872.00	25
26	2+00.00	882.32	1:10	892	77.05	20	10.32	872.00	26
27	2+08.00	882.22	1:10	892	77.83	20	10.22	872.00	27
28	2+16.00	882.12	1:10	892	78.66	20	10.12	872.00	28
29	2+24.00	882.01	1:10	892	79.48	20	10.01	872.00	29
30	2+32.00	881.91	1:10	892	80.30	20	9.91	872.00	30
31	2+40.00	881.81	1:10	892	81.12	20	9.81	872.00	31
32	2+48.00	881.77	1:10	892	81.70	20	9.77	872.00	32
33	2+56.00	882.09	1:10	892	80.57	20	10.09	872.00	33
34	2+64.00	882.41	1:10	892	77.99	20	10.41	872.00	34
35	2+72.00	882.74	1:10	892	75.40	19	9.74	873.00	35
36	2+80.00	883.06	1:10	892	72.82	19	10.06	873.00	36
37	2+88.00	883.38	1:10	894	78.24	21	10.38	873.00	37
38	2+96.00	883.71	1:10	894	83.65	20	9.71	874.00	38
39	3+04.00	883.86	1:10	894	81.74	20	9.86	874.00	39
40	3+12.00	884.00	1:10	894	80.57	20	10.00	874.00	40
41	3+20.00	884.13	1:10	894	79.47	20	10.13	874.00	41
42	3+28.00	884.27	1:10	894	78.38	20	10.27	874.00	42
43	3+36.00	884.41	1:10	894	77.29	20	10.41	874.00	43
44	3+44.00	884.54	1:10	894	76.20	19	9.54	875.00	44
45	3+52.00	884.59	1:10	894	75.47	19	9.59	875.00	45
46	3+60.00	884.58	1:10	894	75.32	19	9.58	875.00	46
47	3+68.00	884.58	1:10	894	75.36	19	9.58	875.00	47
48	3+76.00	884.57	1:10	894	75.41	19	9.57	875.00	48
49	3+84.00	884.57	1:10	894	75.45	19	9.57	875.00	49
50	3+92.00	884.56	1:10	894	75.50	19	9.56	875.00	50
51	4+00.00	884.56	1:10	894	75.54	19	9.56	875.00	51
52	4+08.00	884.55	1:10	894	75.56	19	9.55	875.00	52
53	4+16.00	884.55	1:10	894	75.58	19	9.55	875.00	53
54	4+24.00	884.55	1:10	894	75.60	19	9.55	875.00	54
55	4+32.00	884.55	1:10	894	75.61	19	9.55	875.00	55
56	4+40.00	884.55	1:10	894	75.63	19	9.55	875.00	56
57	4+48.00	884.51	1:10	894	75.76	19	9.51	875.00	57
58	4+56.00	884.30	1:10	894	76.73	20			

NOISEWALL B2									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
					(SQ FT)	(LIN FT)	(LIN FT)		
1	0+00.00	864.72	1:50	878		24	10.72	854.00	1
2	0+08.00	864.81	1:50	878	105.90	24	10.81	854.00	2
3	0+16.00	864.89	1:50	878	105.21	24	10.89	854.00	3
4	0+24.00	864.98	1:50	878	104.53	24	10.98	854.00	4
5	0+32.00	865.06	1:50	878	103.84	24	11.06	854.00	5
6	0+40.00	865.15	1:50	878	103.15	24	11.15	854.00	6
7	0+48.00	865.23	1:50	878	102.47	24	11.23	854.00	7
8	0+56.00	865.32	1:50	878	101.78	24	11.32	854.00	8
9	0+64.00	865.45	1:50	878	100.93	24	11.45	854.00	9
10	0+72.00	865.58	1:50	878	99.89	21	8.58	857.00	10
11	0+80.00	865.71	1:50	878	98.82	21	8.71	857.00	11
12	0+88.00	865.85	1:50	878	97.75	21	8.85	857.00	12
13	0+96.00	865.98	1:50	878	96.69	21	8.98	857.00	13
14	1+04.00	866.11	1:50	878	95.62	21	9.11	857.00	14
15	1+12.00	866.27	1:50	878	94.48	21	9.27	857.00	15
16	1+20.00	866.43	1:50	878	93.21	21	9.43	857.00	16
17	1+28.00	866.59	1:50	878	91.91	21	9.59	857.00	17
18	1+36.00	866.76	1:50	878	90.60	21	9.76	857.00	18
19	1+44.00	866.93	1:50	878	89.24	21	9.93	857.00	19
20	1+52.00	867.12	1:50	878	87.80	21	10.12	857.00	20
21	1+60.00	867.30	1:50	878	86.33	21	10.30	857.00	21
22	1+68.00	867.49	1:50	880	92.85	23	10.49	857.00	22
23	1+76.00	867.67	1:50	880	99.38	22	9.67	858.00	23
24	1+84.00	867.85	1:50	880	97.91	22	9.85	858.00	24
25	1+92.00	868.04	1:50	880	96.44	22	10.04	858.00	25
26	2+00.00	868.22	1:50	880	94.97	22	10.22	858.00	26
27	2+08.00	868.41	1:50	880	93.49	22	10.41	858.00	27
28	2+16.00	868.59	1:50	880	92.01	21	9.59	859.00	28
29	2+24.00	868.78	1:50	880	90.51	21	9.78	859.00	29
30	2+32.00	868.97	1:50	880	89.01	21	9.97	859.00	30
31	2+40.00	869.15	1:50	880	87.51	21	10.15	859.00	31
32	2+48.00	869.34	1:50	880	86.02	21	10.34	859.00	32
33	2+56.00	869.53	1:50	882	92.52	22	9.53	860.00	33
34	2+64.00	869.71	1:50	882	99.03	22	9.71	860.00	34
35	2+72.00	869.90	1:50	882	97.54	22	9.90	860.00	35
36	2+80.00	870.09	1:50	882	96.06	22	10.09	860.00	36
37	2+88.00	870.27	1:50	882	94.57	22	10.27	860.00	37
38	2+96.00	870.46	1:50	882	93.09	22	10.46	860.00	38
39	3+04.00	870.64	1:50	882	91.60	21	9.64	861.00	39
40	3+12.00	871.12	1:50	882	88.95	21	10.12	861.00	40
41	3+20.00	871.73	1:50	884	92.61	22	9.73	862.00	41
42	3+28.00	872.34	1:50	884	95.74	22	10.34	862.00	42
43	3+36.00	872.94	1:50	884	90.88	21	9.94	863.00	43
44	3+44.00	873.55	1:50	886	94.01	22	9.55	864.00	44
45	3+52.00	874.16	1:50	886	97.14	22	10.16	864.00	45
46	3+60.00	874.77	1:50	886	92.28	21	9.77	865.00	46
47	3+68.00	874.98	1:50	886	88.99	21	9.98	865.00	47
48	3+76.00	874.70	1:50	886	89.28	21	9.70	865.00	48
49	3+84.00	874.41	1:50	886	91.57	22	10.41	864.00	49
50	3+92.00	874.12	1:50	886	93.87	22	10.12	864.00	50
51	4+00.00	873.84	1:50	886	96.16	22	9.84	864.00	51
52	4+08.00	873.55	1:50	886	98.46	22	9.55	864.00	52
53	4+16.00	873.26	1:50	886	100.75	23	10.26	863.00	53
54	4+24.00	873.07	1:50	886	102.69	23	10.07	863.00	54
55	4+32.00	873.25	1:50	886	102.74	23	10.25	863.00	55
56	4+40.00	873.44	1:50	886	101.25	23	10.44	863.00	56
57	4+48.00	873.62	1:50	886	99.77	22	9.62	864.00	57
58	4+56.00	873.81	1:50	886	98.28	22	9.81	864.00	58
59	4+64.00	873.99	1:50	886	96.80	22	9.99	864.00	59
60	4+72.00	874.18	1:50	886	95.31	22	10.18	864.00	60
61	4+80.00	874.36	1:50	886	93.83	22	10.36	864.00	61
62	4+88.00	874.55	1:50	886	92.34	21	9.55	865.00	62
63	4+96.00	874.74	1:50	886	90.86	21	9.74	865.00	63
64	5+04.00	874.92	1:50	886	89.37	21	9.92	865.00	64
65	5+12.00	875.11	1:50	886	87.89	21	10.11	865.00	65
66	5+20.00	875.29	1:50	886	86.40	21	10.29	865.00	66
67	5+28.00	875.48	1:50	888	92.92	23	10.48	865.00	67
68	5+36.00	875.67	1:50	888	99.42	22	9.67	866.00	68
69	5+44.00	875.85	1:50	888	97.93	22	9.85	866.00	69

NOISEWALL B2									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
					(SQ FT)	(LIN FT)	(LIN FT)		
70	5+52.00	876.04	1:50	888	96.44	22	10.04	866.00	70
71	5+60.00	876.22	1:50	888	94.95	22	10.22	866.00	71
72	5+68.00	876.41	1:50	888	93.46	22	10.41	866.00	72
73	5+76.00	876.60	1:50	888	91.96	21	9.60	867.00	73
74	5+84.00	876.78	1:50	888	90.48	21	9.78	867.00	74
75	5+92.00	876.96	1:50	888	89.04	21	9.96	867.00	75
76	6+00.00	877.13	1:50	888	87.63	21	10.13	867.00	76
77	6+08.00	877.31	1:50	888	86.22	21	10.31	867.00	77
78	6+16.00	877.49	1:50	890	92.81	23	10.49	867.00	78
79	6+24.00	877.66	1:50	890	99.41	22	9.66	868.00	79
80	6+32.00	877.82	1:50	890	98.08	22	9.82	868.00	80
81	6+40.00	877.98	1:50	890	96.80	22	9.98	868.00	81
82	6+48.00	878.14	1:50	890	95.52	22	10.14	868.00	82
83	6+56.00	878.30	1:50	890	94.24	22	10.30	868.00	83
84	6+64.00	878.46	1:50	890	92.96	22	10.46	868.00	84
85	6+72.00	878.62	1:50	890	91.68	21	9.62	869.00	85
86	6+80.00	878.76	1:50	890	90.46	21	9.76	869.00	86
87	6+88.00	878.91	1:50	890	89.32	21	9.91	869.00	87
88	6+96.00	879.05	1:50	890	88.18	21	10.05	869.00	88
89	7+04.00	879.19	1:50	890	87.04	21	10.19	869.00	89
90	7+12.00	879.33	1:50	890	85.90	19	8.33	871.00	90
91	7+20.00	879.48	1:50	892	92.76	21	8.48	871.00	91
92	7+28.00	879.61	1:50	892	99.67	20	7.61	872.00	92
93	7+36.00	879.73	1:50	892	98.64	20	7.73	872.00	93
94	7+44.00	879.86	1:50	892	97.63	20	7.86	872.00	94
95	7+52.00	879.99	1:50	892	96.61	20	7.99	872.00	95
96	7+60.00	880.11	1:50	892	95.60	20	8.11	872.00	96
97	7+68.00	880.24	1:50	892	94.59	20	8.24	872.00	97
98	7+76.00	880.37	1:50	892	92.06	19	7.75	873.00	98
99	7+84.00	881.45	1:50	894	95.21	21	8.45	873.00	99
100	7+92.00	881.79	1:50	894	99.02	20	7.79	874.00	100
101	8+00.00	882.14	1:50	894	96.29	20	8.14	874.00	101
102	8+08.00	882.48	1:50	894	93.55	20	8.48	874.00	102
103	8+16.00	882.82	1:50	894	90.81	19	7.82	875.00	103
104	8+24.00	883.16	1:50	894	88.07	19	8.16	875.00	104
105	8+32.00	883.48	1:50	896	93.41	21	8.48	875.00	105
106	8+40.00	883.72	1:50	896	99.18	20	7.72	876.00	106
107	8+48.00	883.96	1:50	896	97.30	20	7.96	876.00	107
108	8+56.00	884.19	1:50	896	95.42	20	8.19	876.00	108
109	8+64.00	884.43	1:50	896	93.54	20	8.43	876.00	109
110	8+72.00	884.66	1:50	896	91.66	19	7.66	877.00	110
111	8+80.00	884.90	1:50	896	89.77	19	7.90	877.00	111
112	8+88.00	885.20	1:50	896	87.63	19	8.20	877.00	112
113	8+96.00	885.50	1:50	896	85.20	18	7.50	878.00	113
114	9+04.00	885.81	1:50	898	90.75	20	7.81	878.00	114
115	9+12.00	886.11	1:50	898	96.31	20	8.11	878.00	115
116	9+20.00	886.42	1:50	898	93.86	20	8.42	878.00	116
117	9+28.00	886.73	1:50	898	91.42	19	7.73	879.00	117
118	9+36.00	886.76	1:50	898	90.07	19	7.76	879.00	118
119	9+44.00	886.67	1:50	898	90.29	19	7.67	879.00	119
120	9+52.00	886.58	1:50	898	91.01	19	7.58	879.00	120
121	9+60.00	886.49	1:50	898	91.73	20	8.49	878.00	121
122	9+68.00	886.40	1:50	898	92.44				

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NOISEWALL B2									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
					(SQ FT)	(LIN FT)	(LIN FT)		
208	16+56.00	876.48	1:50	888	91.53	22	10.48	866.00	208
209	16+64.00	876.32	1:50	888	92.81	22	10.32	866.00	209
210	16+72.00	876.16	1:50	888	94.09	22	10.16	866.00	210
211	16+80.00	876.00	1:50	888	95.37	22	10.00	866.00	211
212	16+88.00	875.84	1:50	888	96.65	22	9.84	866.00	212
213	16+96.00	875.68	1:50	886	89.93	20	9.68	866.00	213
214	17+04.00	875.52	1:50	886	83.21	20	9.52	866.00	214
215	17+12.00	875.36	1:50	886	84.49	21	10.36	865.00	215
216	17+20.00	875.20	1:50	886	85.77	21	10.20	865.00	216
217	17+28.00	875.04	1:50	886	87.05	21	10.04	865.00	217
218	17+36.00	874.88	1:50	886	88.33	21	9.88	865.00	218
219	17+44.00	874.72	1:50	886	89.61	21	9.72	865.00	219
220	17+52.00	874.56	1:50	886	90.89	21	9.56	865.00	220
221	17+60.00	874.40	1:50	886	92.17	22	10.40	864.00	221
222	17+68.00	874.24	1:50	886	93.45	22	10.24	864.00	222
223	17+76.00	874.08	1:50	886	94.73	22	10.08	864.00	223
224	17+84.00	873.92	1:50	884	88.01	19	8.92	865.00	224
225	17+92.00	873.76	1:50	882	73.29	17	8.76	865.00	225
226	18+00.00	873.60	1:50	880	58.57	14	7.60	866.00	226
227	18+08.00	873.44	1:50	880	51.85	15	8.44	865.00	227
228	18+16.00	873.36	1:50	880	52.80	15	8.36	865.00	228

NOISEWALL D									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
					(SQ FT)	(LIN FT)	(LIN FT)		
1	0+00.00	865.06	1:50	873		16	8.06	857.00	1
2	0+08.00	865.13	1:50	875	71.24	19	9.13	856.00	2
3	0+16.00	865.20	1:50	877	86.69	22	10.20	855.00	3
4	0+24.00	865.27	1:50	879	102.14	24	10.27	855.00	4
5	0+32.00	865.32	1:50	879	109.65	24	10.32	855.00	5
6	0+40.00	865.35	1:50	879	109.29	24	10.35	855.00	6
7	0+48.00	865.39	1:50	879	109.03	24	10.39	855.00	7
8	0+56.00	865.42	1:50	879	108.77	24	10.42	855.00	8
9	0+64.00	865.45	1:50	879	108.51	24	10.45	855.00	9
10	0+72.00	865.49	1:50	879	108.25	24	10.49	855.00	10
11	0+80.00	865.52	1:50	879	107.99	23	9.52	856.00	11
12	0+88.00	865.55	1:50	879	107.72	23	9.55	856.00	12
13	0+96.00	865.58	1:50	879	107.46	23	9.58	856.00	13
14	1+04.00	865.62	1:50	879	107.17	23	9.62	856.00	14
15	1+12.00	865.67	1:50	879	106.82	23	9.67	856.00	15
16	1+20.00	865.72	1:50	879	106.43	23	9.72	856.00	16
17	1+28.00	865.77	1:50	879	106.05	23	9.77	856.00	17
18	1+36.00	865.82	1:50	879	105.66	23	9.82	856.00	18
19	1+44.00	865.86	1:50	879	105.28	23	9.86	856.00	19
20	1+52.00	865.91	1:50	879	104.90	23	9.91	856.00	20
21	1+60.00	865.95	1:50	879	104.56	23	9.95	856.00	21
22	1+68.00	865.99	1:50	881	112.24	26	10.99	855.00	22
23	1+76.00	866.03	1:50	881	119.92	26	11.03	855.00	23
24	1+84.00	866.07	1:50	881	119.60	26	11.07	855.00	24
25	1+92.00	866.11	1:50	881	119.28	26	11.11	855.00	25
26	2+00.00	866.15	1:50	881	118.96	26	11.15	855.00	26
27	2+08.00	866.19	1:50	881	118.64	26	11.19	855.00	27
28	2+16.00	866.23	1:50	881	118.32	26	11.23	855.00	28
29	2+24.00	866.27	1:50	881	118.00	26	11.27	855.00	29
30	2+32.00	866.31	1:50	881	117.68	26	11.31	855.00	30
31	2+40.00	866.35	1:50	881	117.36	26	11.35	855.00	31
32	2+48.00	866.39	1:50	881	117.04	26	11.39	855.00	32
33	2+56.00	866.43	1:50	881	116.72	26	11.43	855.00	33
34	2+64.00	866.47	1:50	881	116.40	26	11.47	855.00	34
35	2+72.00	866.51	1:50	881	116.08	24	9.51	857.00	35
36	2+80.00	866.55	1:50	881	115.76	24	9.55	857.00	36
37	2+88.00	866.59	1:50	881	115.44	24	9.59	857.00	37
38	2+96.00	866.63	1:50	881	115.12	24	9.63	857.00	38
39	3+04.00	866.68	1:50	881	114.76	24	9.68	857.00	39

NOISEWALL D									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
					(SQ FT)	(LIN FT)	(LIN FT)		
40	3+12.00	866.74	1:50	881	114.34	24	9.74	857.00	40
41	3+20.00	866.80	1:50	881	113.87	24	9.80	857.00	41
42	3+28.00	866.85	1:50	881	113.41	24	9.85	857.00	42
43	3+36.00	866.91	1:50	881	112.94	24	9.91	857.00	43
44	3+44.00	866.97	1:50	881	112.48	24	9.97	857.00	44
45	3+52.00	867.03	1:50	881	112.01	24	10.03	857.00	45
46	3+60.00	867.09	1:50	881	111.55	24	10.09	857.00	46
47	3+68.00	867.14	1:50	881	111.08	24	10.14	857.00	47
48	3+76.00	867.23	1:50	881	110.52	24	10.23	857.00	48
49	3+84.00	867.31	1:50	881	109.85	24	10.31	857.00	49
50	3+92.00	867.40	1:50	881	109.18	24	10.40	857.00	50
51	4+00.00	867.48	1:50	881	108.50	24	10.48	857.00	51
52	4+08.00	867.58	1:50	881	107.75	23	9.58	858.00	52
53	4+16.00	867.69	1:50	881	106.92	23	9.69	858.00	53
54	4+24.00	867.79	1:50	881	106.10	23	9.79	858.00	54
55	4+32.00	867.89	1:50	881	105.27	23	9.89	858.00	55
56	4+40.00	868.00	1:50	883	112.44	26	11.00	857.00	56
57	4+48.00	868.13	1:50	883	119.49	26	11.13	857.00	57
58	4+56.00	868.26	1:50	883	118.45	26	11.26	857.00	58
59	4+64.00	868.39	1:50	883	117.40	26	11.39	857.00	59
60	4+72.00	868.52	1:50	883	116.35	24	9.52	859.00	60
61	4+80.00	868.65	1:50	883	115.30	24	9.65	859.00	61
62	4+88.00	868.78	1:50	883	114.26	24	9.78	859.00	62
63	4+96.00	868.91	1:50	883	113.21	24	9.91	859.00	63
64	5+04.00	869.05	1:50	883	112.13	24	10.05	859.00	64
65	5+12.00	869.20	1:50	883	110.99	24	10.20	859.00	65
66	5+20.00	869.35	1:50	883	109.81	24	10.35	859.00	66
67	5+28.00	869.49	1:50	883	108.63	24	10.49	859.00	67
68	5+36.00	869.64	1:50	883	107.45	23	9.64	860.00	68
69	5+44.00	869.79	1:50	883	106.28	23	9.79	860.00	69
70	5+52.00	869.94	1:50	883	105.10	23	9.94	860.00	70
71	5+60.00	870.08	1:50	885	111.93	26	11.08	859.00	71
72	5+68.00	870.23	1:50	885	118.76	26	11.23	859.00	72
73	5+76.00	870.37	1:50	885	117.60	26	11.37	859.00	73
74	5+84.00	870.52	1:50	885	116.44	24	9.52	861.00	74
75	5+92.00	870.66	1:50	885	115.27	24	9.66	861.00	75
76	6+00.00	870.81	1:50	885	114.11	24	9.81	861.00	76
77	6+08.00	870.96	1:50	885	112.93	24	9.96	861.00	77
78	6+16.00	871.10	1:50	885	111.76	24	10.10	861.00	78
79	6+24.00	871.25	1:50	885	110.58	24	10.25	861.00	79
80	6+32.00	871.40	1:50	885	109.40	24	10.40	861.00	80
81	6+40.00	871.55	1:50	885	108.22	23	9.55	862.00	81
82	6+48.00	871.69	1:50	885	107.05	23	9.69	862.00	82
83	6+56.00	871.84	1:50	885	105.87	23	9.84	862.00	83
84	6+64.00	871.99	1:50	887	112.69	26	10.99	861.00	84
85	6+72.00	872.13	1:50	887	119.51	26	11.13	861.00	85
86	6+80.00	872.28	1:50	887	118.34	26	11.28	861.00	86
87	6+88.00	872.43	1:50	887	117.16	26	11.43	861.00	87
88	6+96.00	872.58	1:50	887	115.98	24	9.58	863.00	88
89	7+04.00	872.72	1:50	887	114.81	24	9.72	863.00	89
90	7+12.00	872.87	1:50	887	113.64	24	9.87	863.00	90
91	7+20.00	873.01	1:50	887	112.47	24	10.01	863.00	91
92	7+28.00	873.16	1:50	887	111.31	24	10.16	863.00	92
93	7+36.00	873.30	1:50	887	110.14	24	10.30	863.00	93
94	7+44.00	873.45	1:50	887	108.98	24	10.45	863.00	94
95	7+52.00	873.60	1:50	887	107.81	23	9.60	864.00	95
96	7+60.00	873.74	1:50	887	106.64	23	9.74	864.00	96
97	7+68.00	873.89	1:50	887	105.46	23	9.89	864.00	97
98	7+76.00	874.04	1:50	889					

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Default

NOISEWALL E									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
						(SQ FT)	(LIN FT)		
1	0+00.00	889.95	1:10	898		16	7.95	882.00	1
2	0+08.00	890.04	1:10	900	72.03	19	9.04	881.00	2
3	0+16.00	890.14	1:10	902	87.28	22	10.14	880.00	3
4	0+24.00	890.23	1:10	902	94.53	22	10.23	880.00	4
5	0+32.00	890.32	1:10	902	93.78	22	10.32	880.00	5
6	0+40.00	890.42	1:10	902	93.03	22	10.42	880.00	6
7	0+48.00	890.50	1:10	902	92.33	21	9.50	881.00	7
8	0+56.00	890.58	1:10	902	91.69	21	9.58	881.00	8
9	0+64.00	890.66	1:10	902	91.06	21	9.66	881.00	9
10	0+72.00	890.74	1:10	902	90.43	21	9.74	881.00	10
11	0+80.00	890.81	1:10	902	89.80	21	9.81	881.00	11
12	0+88.00	890.89	1:10	902	89.18	21	9.89	881.00	12
13	0+96.00	890.97	1:10	904	96.55	23	9.97	881.00	13
14	1+04.00	891.04	1:10	904	103.94	23	10.04	881.00	14
15	1+12.00	891.11	1:10	904	103.38	23	10.11	881.00	15
16	1+20.00	891.18	1:10	904	102.85	23	10.18	881.00	16
17	1+28.00	891.24	1:10	904	102.31	23	10.24	881.00	17
18	1+36.00	891.31	1:10	904	101.77	23	10.31	881.00	18
19	1+44.00	891.38	1:10	904	101.23	23	10.38	881.00	19
20	1+52.00	891.44	1:10	904	100.71	24	11.44	880.00	20
21	1+60.00	891.50	1:10	904	100.24	24	11.50	880.00	21
22	1+68.00	891.55	1:10	904	99.80	23	10.55	881.00	22
23	1+76.00	891.61	1:10	904	99.36	23	10.61	881.00	23
24	1+84.00	891.66	1:10	904	98.93	23	10.66	881.00	24
25	1+92.00	891.72	1:10	904	98.49	23	10.72	881.00	25
26	2+00.00	891.77	1:10	904	98.06	23	10.77	881.00	26
27	2+08.00	891.81	1:10	904	97.68	23	10.81	881.00	27
28	2+16.00	891.85	1:10	904	97.36	23	10.85	881.00	28
29	2+24.00	891.89	1:10	904	97.04	23	10.89	881.00	29
30	2+32.00	891.93	1:10	904	96.72	23	10.93	881.00	30
31	2+40.00	891.97	1:10	904	96.40	22	9.97	882.00	31
32	2+48.00	892.01	1:10	904	96.08	22	10.01	882.00	32
33	2+56.00	892.05	1:10	904	95.77	22	10.05	882.00	33
34	2+64.00	892.09	1:10	904	95.47	22	10.09	882.00	34
35	2+72.00	892.12	1:10	904	95.16	22	10.12	882.00	35
36	2+80.00	892.16	1:10	904	94.86	22	10.16	882.00	36
37	2+88.00	892.20	1:10	904	94.56	22	10.20	882.00	37
38	2+96.00	892.24	1:10	904	94.26	22	10.24	882.00	38
39	3+04.00	892.27	1:10	904	93.99	22	10.27	882.00	39
40	3+12.00	892.29	1:10	904	93.79	22	10.29	882.00	40
41	3+20.00	892.31	1:10	904	93.62	22	10.31	882.00	41
42	3+28.00	892.33	1:10	904	93.44	22	10.33	882.00	42
43	3+36.00	892.35	1:10	904	93.27	22	10.35	882.00	43
44	3+44.00	892.37	1:10	904	93.10	22	10.37	882.00	44
45	3+52.00	892.40	1:10	904	92.90	22	10.40	882.00	45
46	3+60.00	892.44	1:10	904	92.62	22	10.44	882.00	46
47	3+68.00	892.49	1:10	904	92.28	22	10.49	882.00	47
48	3+76.00	892.53	1:10	904	91.93	21	9.53	883.00	48
49	3+84.00	892.57	1:10	904	91.59	22	10.57	882.00	49
50	3+92.00	892.62	1:10	904	91.24	22	10.62	882.00	50
51	4+00.00	892.66	1:10	904	90.89	22	10.66	882.00	51
52	4+08.00	892.67	1:10	904	90.68	22	10.67	882.00	52
53	4+16.00	892.68	1:10	904	90.59	22	10.68	882.00	53
54	4+24.00	892.69	1:10	904	90.50	22	10.69	882.00	54
55	4+32.00	892.70	1:10	904	90.41	22	10.70	882.00	55
56	4+40.00	892.72	1:10	904	90.32	22	10.72	882.00	56
57	4+48.00	892.73	1:10	904	90.23	22	10.73	882.00	57
58	4+56.00	892.72	1:10	904	90.21	22	10.72	882.00	58
59	4+64.00	892.70	1:10	904	90.30	22	10.70	882.00	59
60	4+72.00	892.69	1:10	904	90.42	21	9.69	883.00	60
61	4+80.00	892.68	1:10	904	90.53	21	9.68	883.00	61
62	4+88.00	892.66	1:10	904	90.65	21	9.66	883.00	62
63	4+96.00	892.65	1:10	904	90.76	21	9.65	883.00	63
64	5+04.00	892.63	1:10	904	90.90	21	9.63	883.00	64
65	5+12.00	892.60	1:10	904	91.10	21	9.60	883.00	65
66	5+20.00	892.57	1:10	904	91.31	21	9.57	883.00	66
67	5+28.00	892.54	1:10	904	91.53	21	9.54	883.00	67
68	5+36.00	892.52	1:10	904	91.75	21	9.52	883.00	68
69	5+44.00	892.49	1:10	904	91.97	22	10.49	882.00	69

NOISEWALL E									
POST NO.	WALL STATION	GROUND ELEV.	BERM SLOPE	TOP OF WALL ELEV.	PLANKING AREA	ROUNDED POST LENGTH	ACTUAL POST EMBEDMENT	BOTTOM OF EMBEDMENT ELEV.	POST NO.
						(SQ FT)	(LIN FT)		
70	5+52.00	892.46	1:10	904	92.20	22	10.46	882.00	70
71	5+60.00	892.42	1:10	904	92.47	22	10.42	882.00	71
72	5+68.00	892.38	1:10	904	92.79	22	10.38	882.00	72
73	5+76.00	892.34	1:10	904	93.10	22	10.34	882.00	73
74	5+84.00	892.30	1:10	904	93.42	22	10.30	882.00	74
75	5+92.00	892.26	1:10	904	93.73	22	10.26	882.00	75
76	6+00.00	892.22	1:10	902	86.04	19	9.22	883.00	76
77	6+08.00	892.19	1:10	900	70.36	16	8.19	884.00	77

NOISEWALL SUMMARY			
STATION TO STATION	WOOD NOISE ATTENUATOR WALL	GRANULAR BACKFILL	CONCRETE POSTS 12"x18"
	SQ FT	CU YD	LIN FT
NOISEWALL A			
0+00 - 5+12	4887	160	1211
NOISEWALL A2			
0+00 - 6+00	5834	197	1474
NOISEWALL B			
0+00 - 3+84	4149	126	993
NOISEWALL B2			
0+00 - 18+16	20878	563	4745
NOISEWALL D			
0+00 - 9+60	13268	323	2884
NOISEWALL E			
0+00 - 6+08	7097	205	1664
TOTALS	56114	1574	12971

DESIGN TEAM				
DRAWN BY: CJF				
DESIGNER: JEQ				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *Mark B. Diebling* Lic. No. 21098
 Printed Name: MARK B. DIEBLING Date: 4/6/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

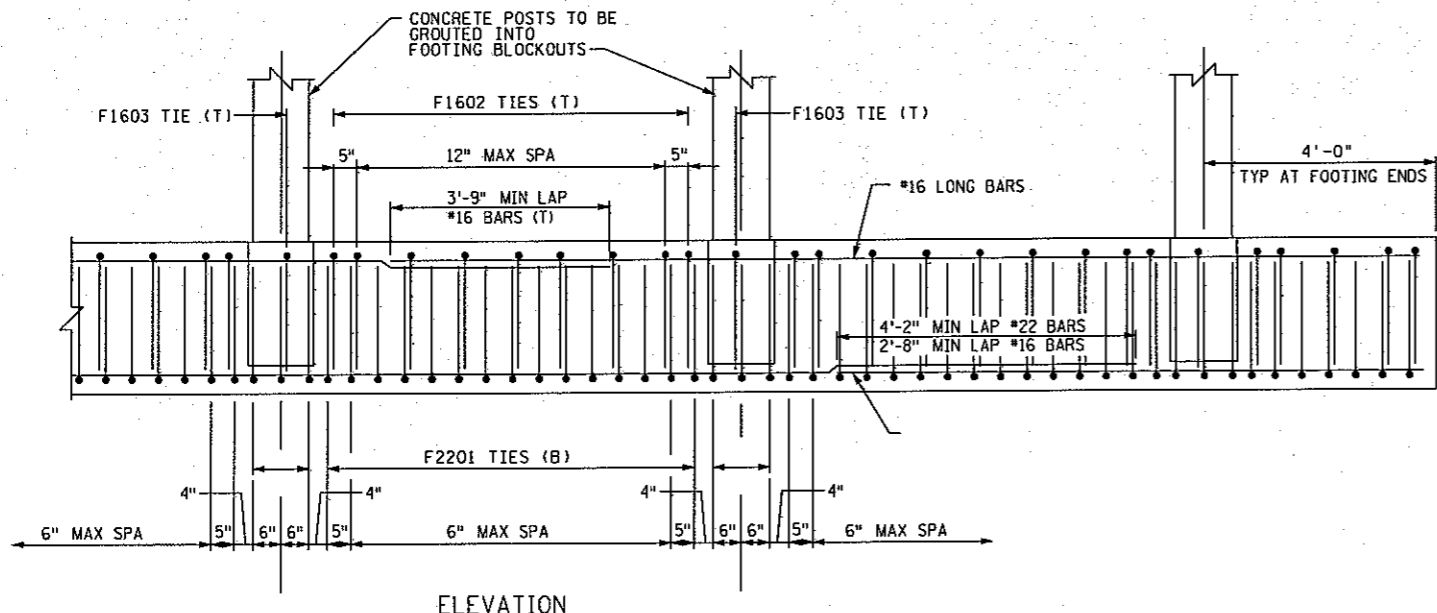
NOISE WALL TABULATIONS

FILE NO. 117
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 OF NW10 194

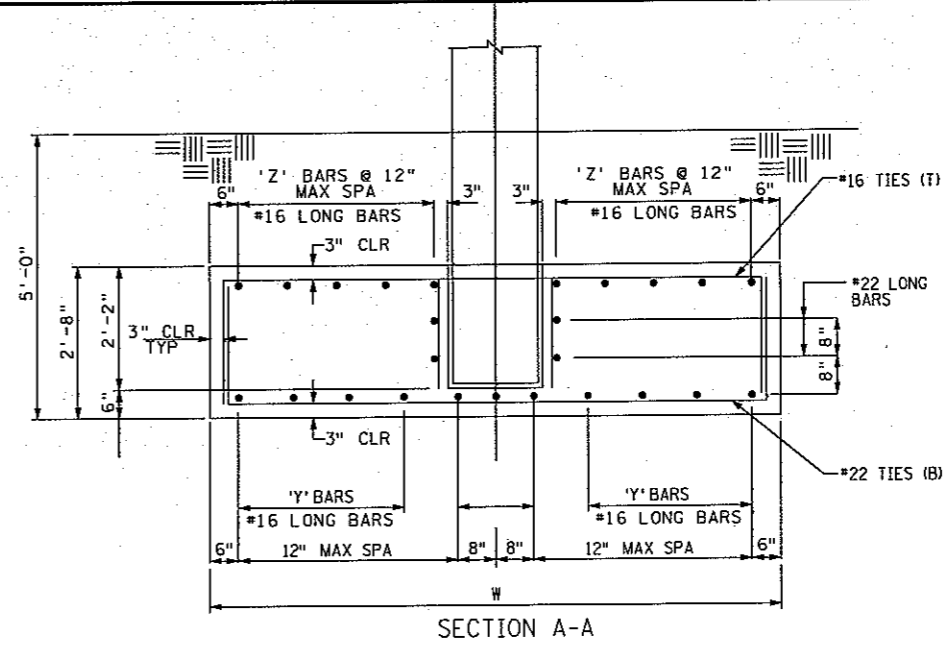
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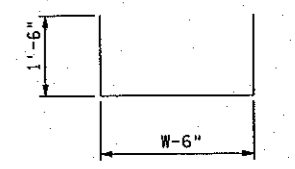
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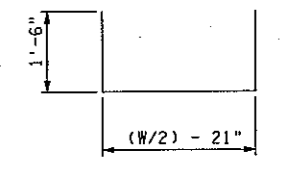
ELEVATION



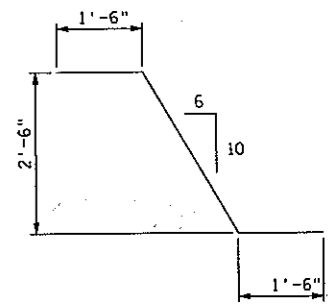
SECTION A-A



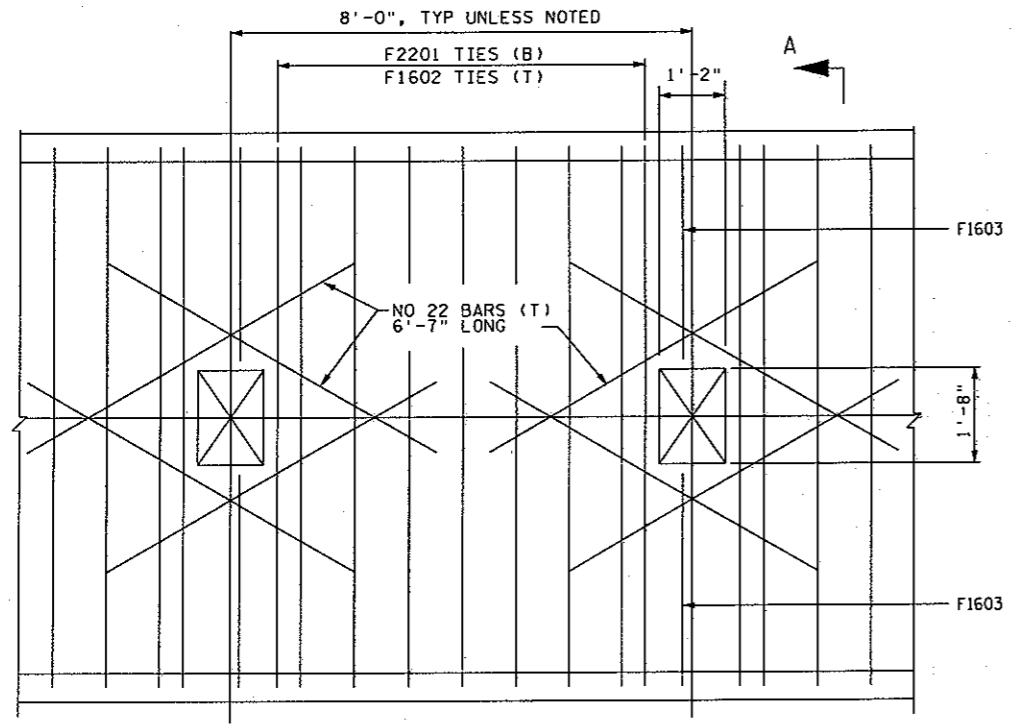
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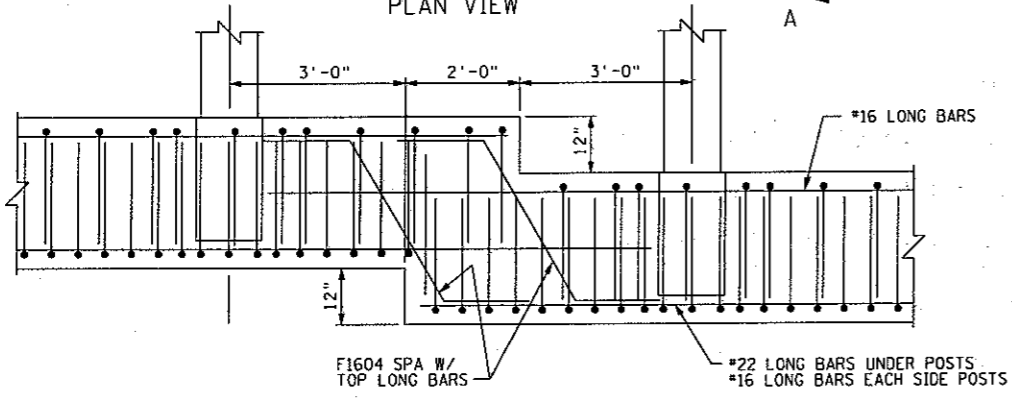
F1603



F1604



PLAN VIEW



FOOTING STEP

EXPOSED NOISE WALL HEIGHT (FT)	POST HEIGHT ABOVE FTG (FT)	W	NO OF 'Z' BARS	NO OF 'Y' BARS	WT REINF (PLF)
5.0	9.5	3'-4"	2	1	58.4
6.5	11.0	3'-4"	2	1	58.4
8.0	12.5	3'-8"	2	1	60.3
9.5	14.0	4'-0"	2	1	64.4
11.0	15.5	4'-8"	2	2	70.4
12.5	17.0	5'-4"	3	2	76.3
14.0	18.5	6'-0"	3	2	80.2
15.5	20.0	6'-8"	3	3	86.0
17.0	21.5	7'-4"	4	3	92.0
18.5	23.0	7'-8"	4	3	94.0
20.0	24.5	8'-0"	4	3	96.0
21.5	26.0	8'-8"	4	4	101.9
23.0	27.5	9'-4"	5	4	105.8
24.5	29.0	10'-0"	5	4	111.7
26.0	30.5	10'-0"	5	4	111.7

NOTE:
 BOTTOM OF FOOTING MAY BE SLOPED TO A MAXIMUM OF 10% PROVIDED THE CONCRETE POSTS REMAIN PLUMB AND THE TOPS OF THE POSTS REMAIN LEVEL AS PER PLAN & PROFILE.
 STEPS IN FOOTING SHOULD BE MADE IN INCREMENTS OF 12".

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEQ		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.
 Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010

SEH
 PHONE: (651)490-2000
 3535 MADRAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

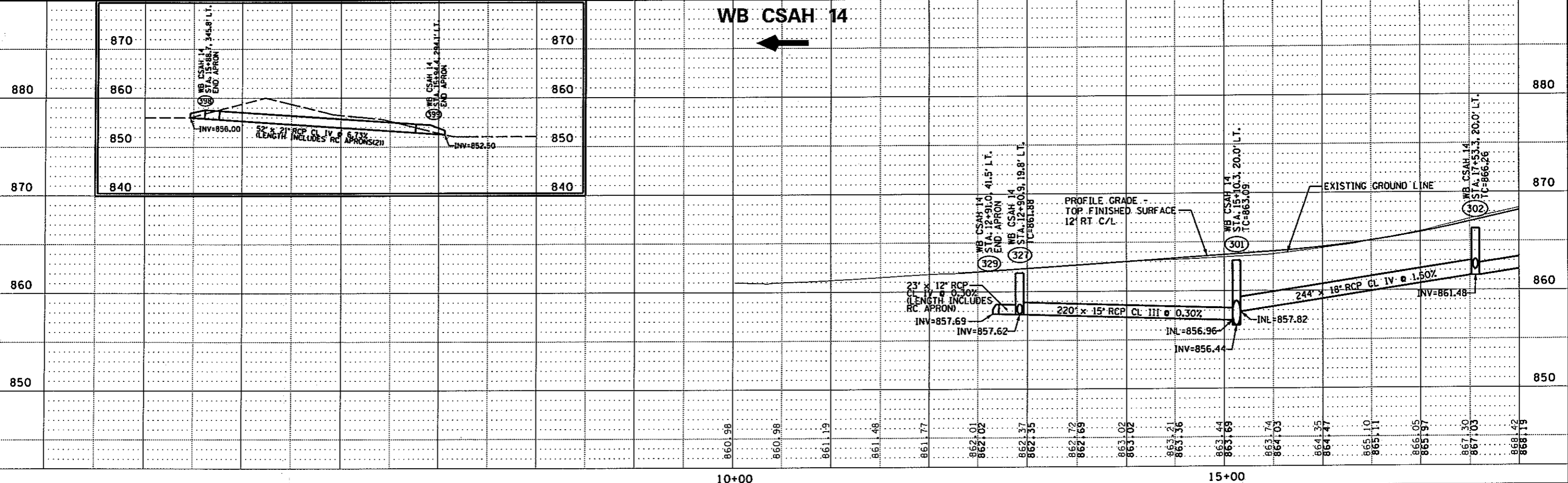
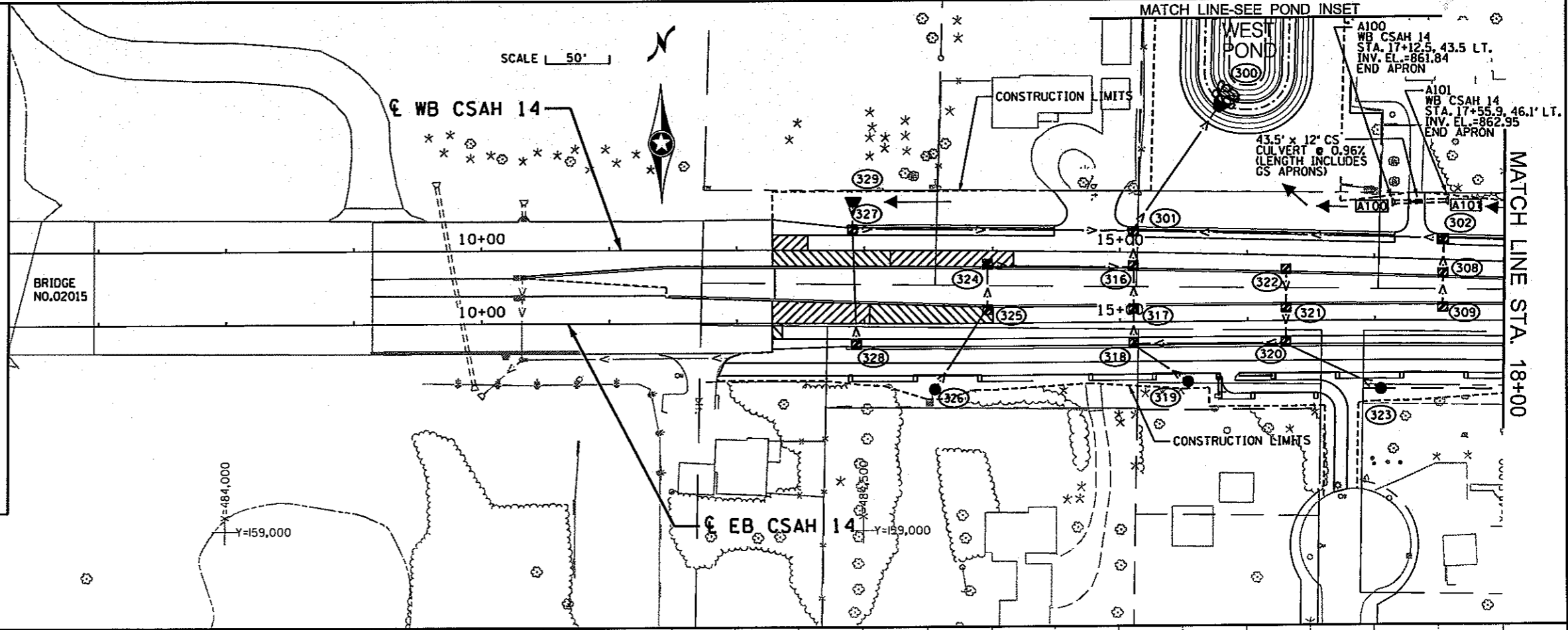
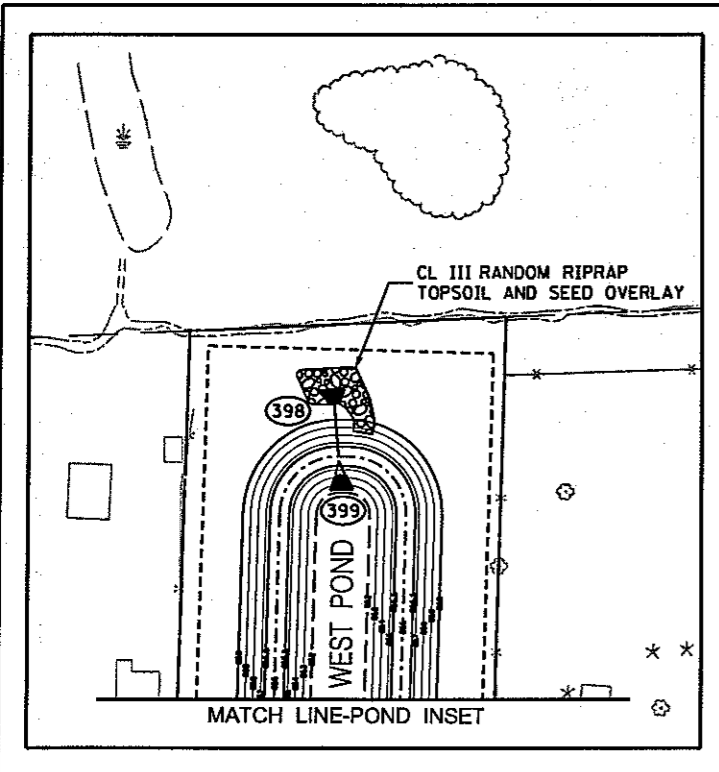
NOISE WALL DETAILS
 NOISE WALL FOOTINGS

FILE NO.	118
102287	
NW10	194
OF NW10	

10/26/50 AM

1/21/2010

S:\A\A\Anoka\102287\5-dsgn\51-cadd\Civil\planshts\anok102.dwg.dgn dpl



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010



PHONE: 651-990-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

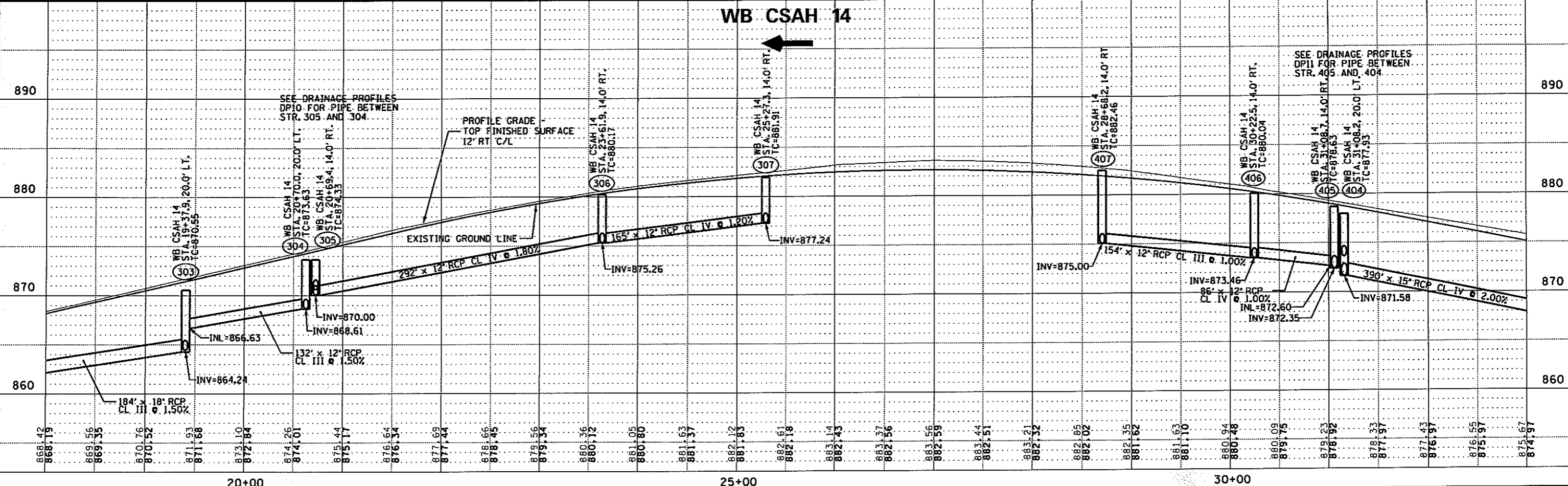
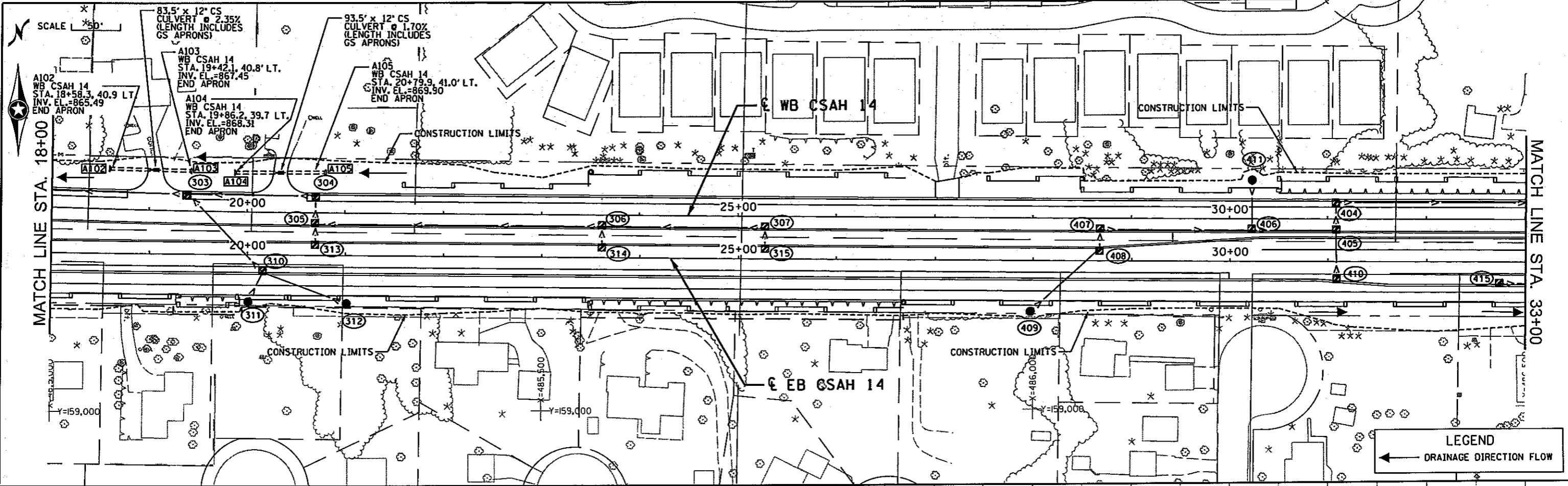
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		102287	
WB CSAH 14 STA. 10+31.25 - 18+00.00		DP1	194
		OF DP1	

10:26:55 AM

1/21/2010

dp2

S:\AE\A Anoka\102287\AS-dgn\151-cadd\Civil\plans\151\ano102-dp.dgn



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CJF				
DESIGNER: RSN				
CHECKED BY: JJW				

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.
 Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010

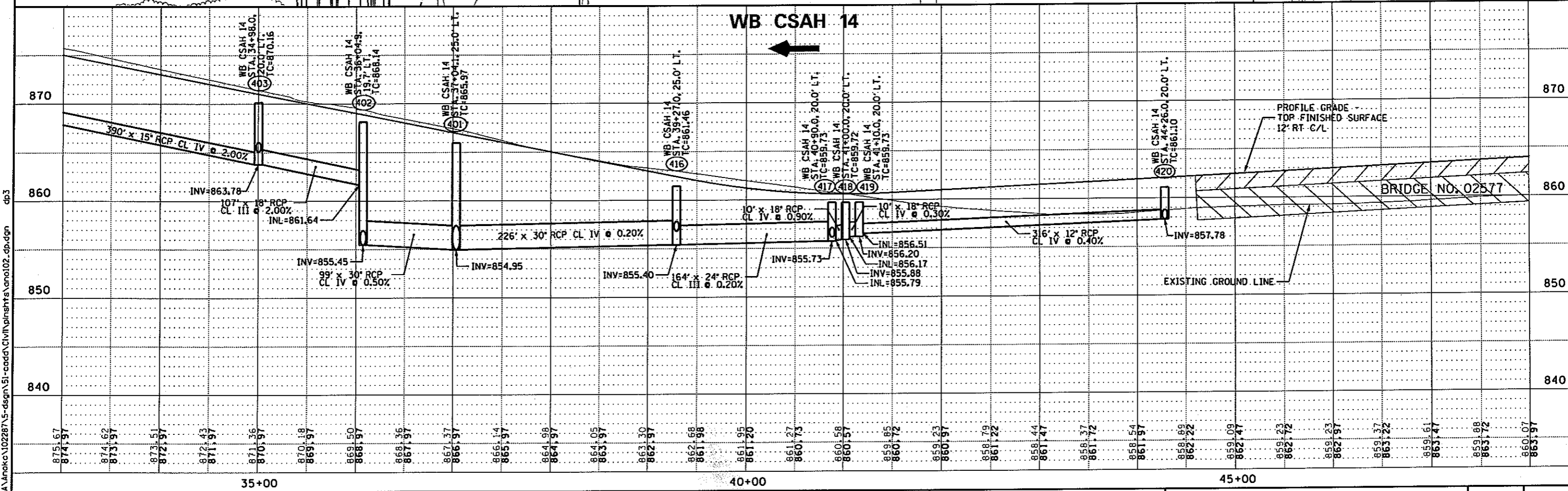
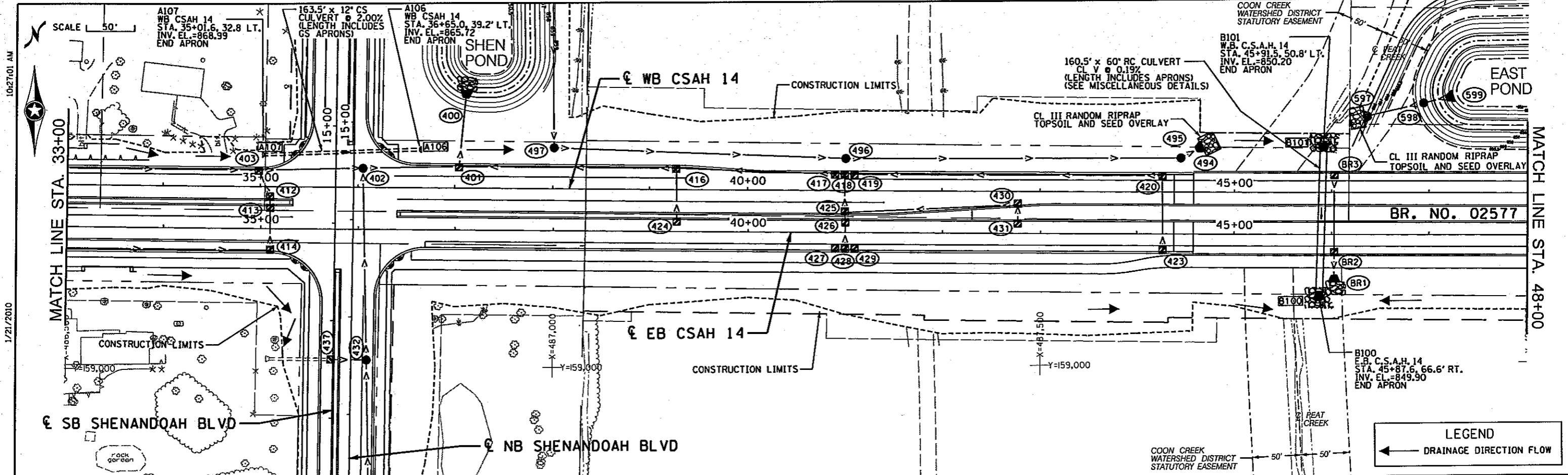
SEH
 PHONE: (651)490-2000
 3535 VAUGHN CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
 WB CSAH 14 STA. 18+00.00 - 33+00.00

FILE NO. 120
 102287
 DP2 OF 014
 194



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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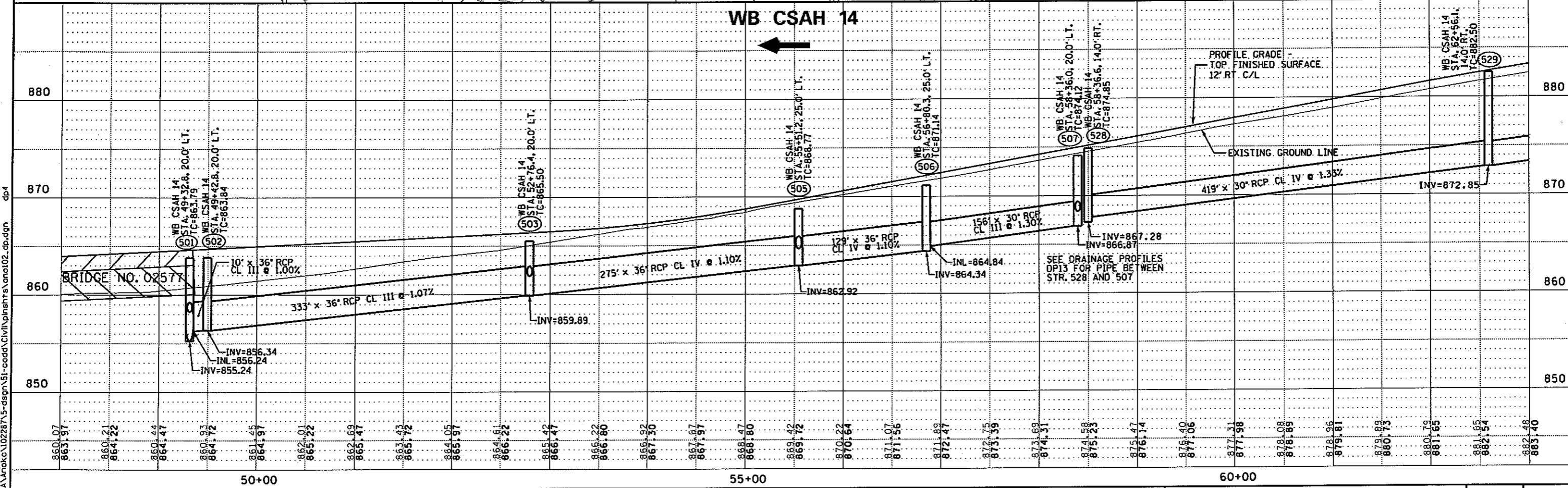
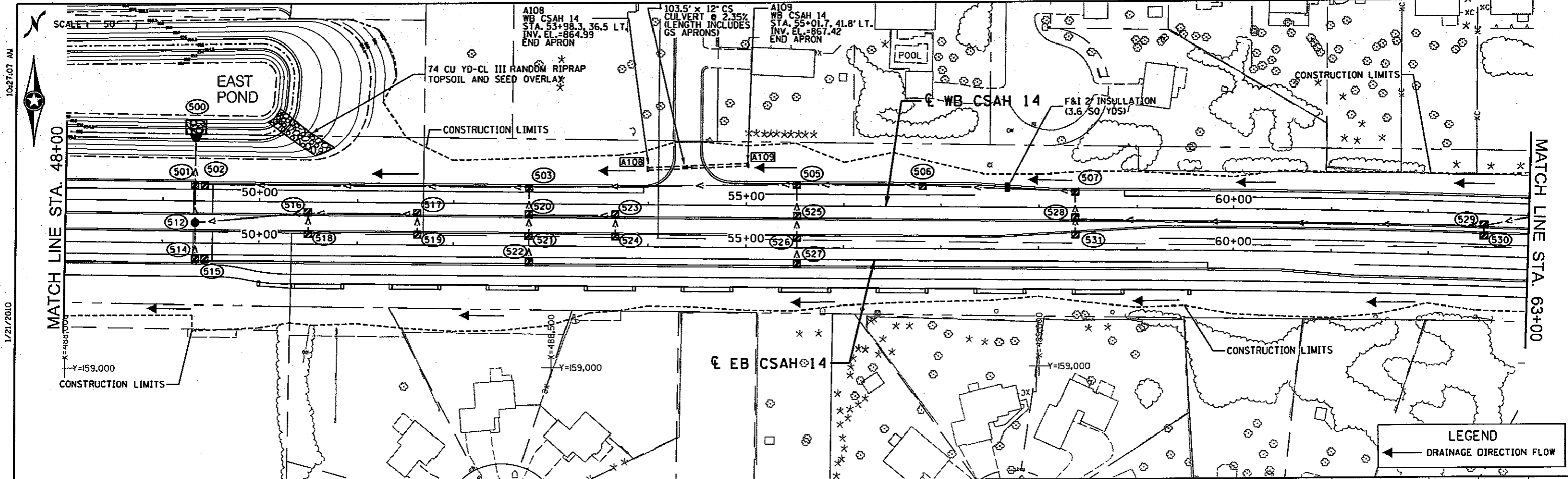
Certified By: *Jeremy J. Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
 WB CSAH 14 STA. 33+00.00 - 48+00.00

FILE NO.	121
102287	
DP3	
OF DP14	194



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JWJ		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131

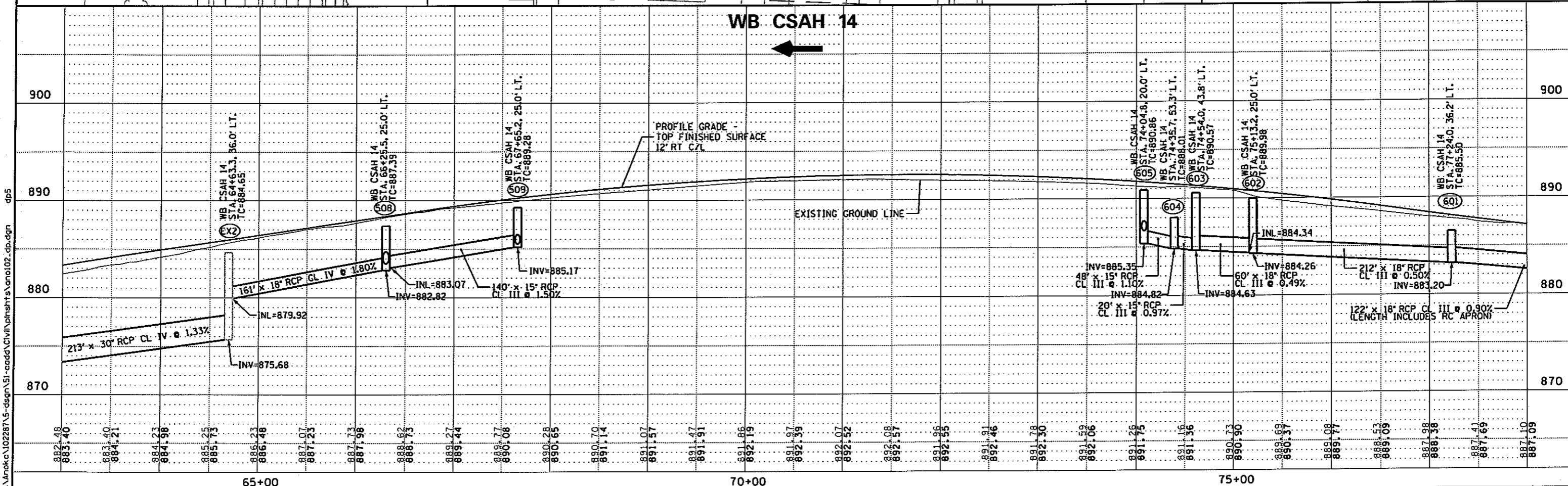
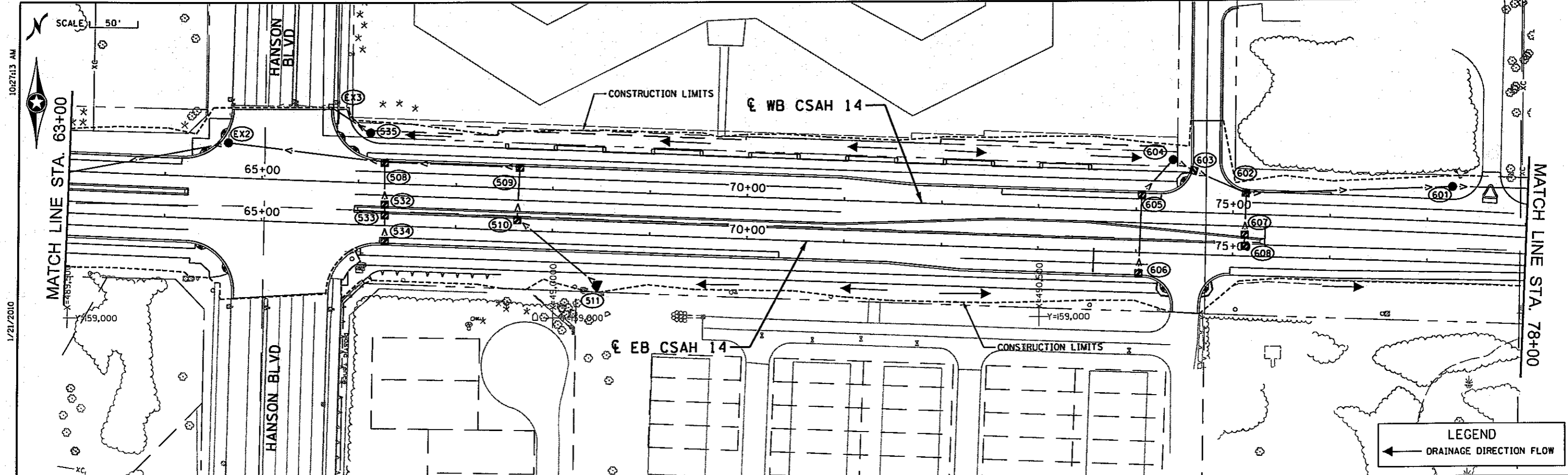
Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
WB CSAH 14 STA. 48+00.00 - 63+00.00

FILE NO. 102287	122
DP4 OF DP4	
	194



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CIF				
DESIGNER: RSN				
CHECKED BY: JWW				

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Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY L. WALGRAVE Date: 1/21/2010



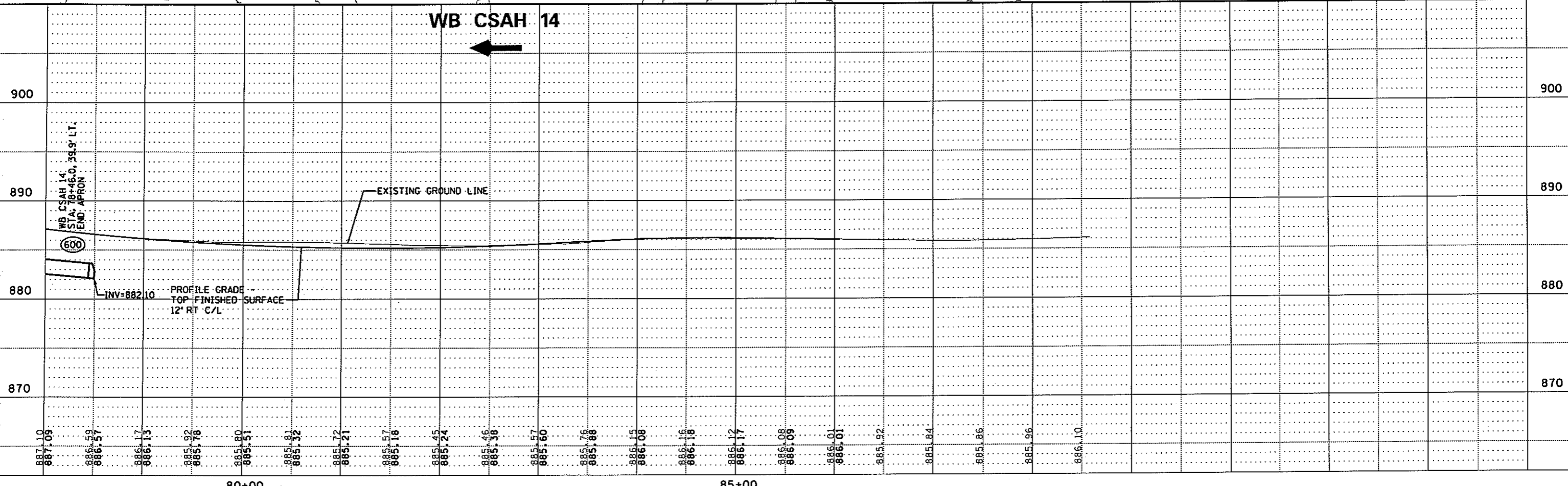
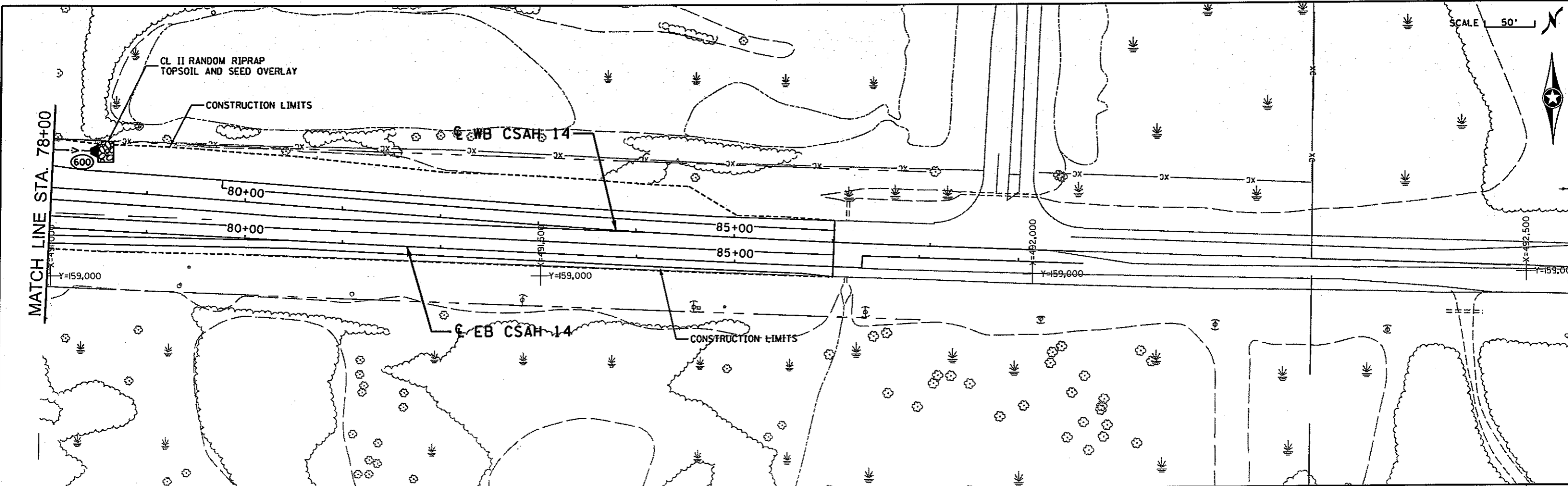
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
 WB CSAH 14 STA. 63+00.00 - 78+00.00

FILE NO. 102287
123
 DP5
 OF DP4
194

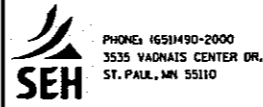
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10/27/18 AM
 1/21/2010
 S:\AE\IA\Anoka\102287\5-dsgn\51-cadd\civil\planshts\ano102.dwg.dgn
 op6



NO.	BY	DATE	REVISIONS

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.
 Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010



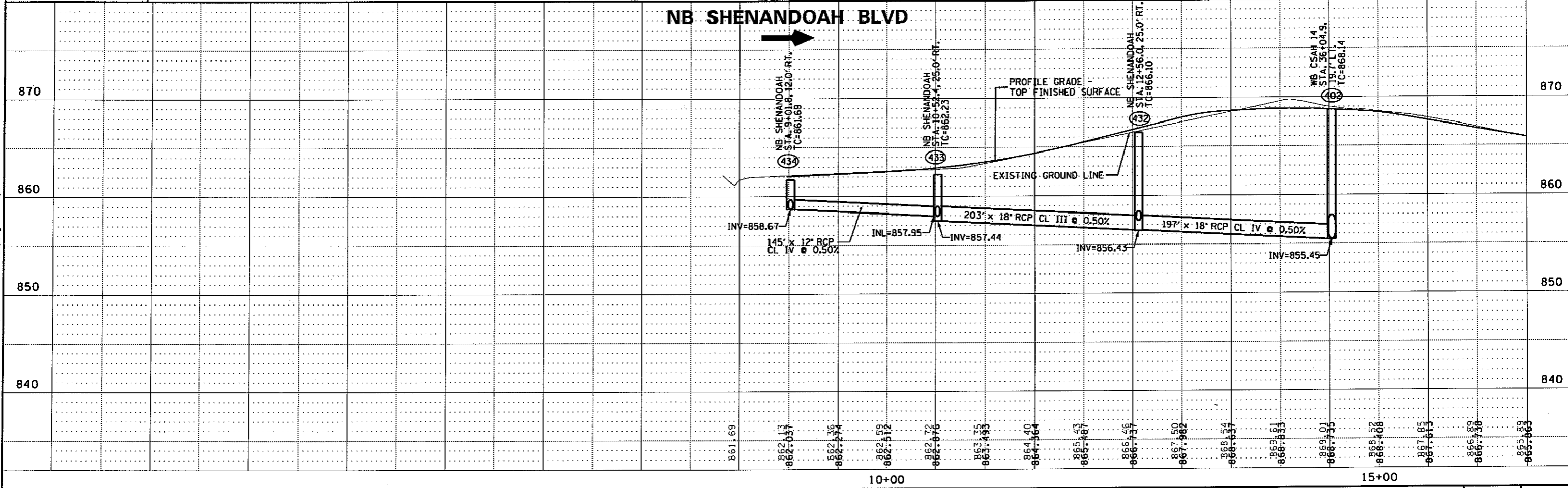
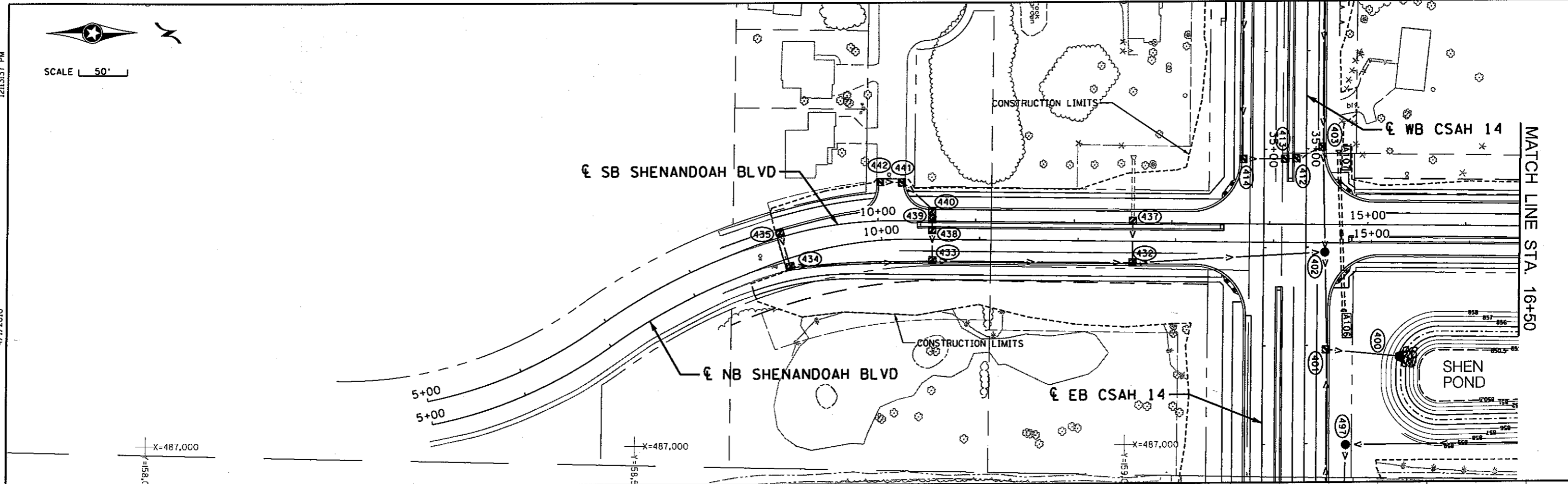
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
 WB CSAH 14 STA. 78+00.00 - 86+29.57

FILE NO.	102287	124
DP6		194
OF DPA		

12:13:37 PM

4/1/2010



dp7
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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Jeremy J. Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 4/1/2010

PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



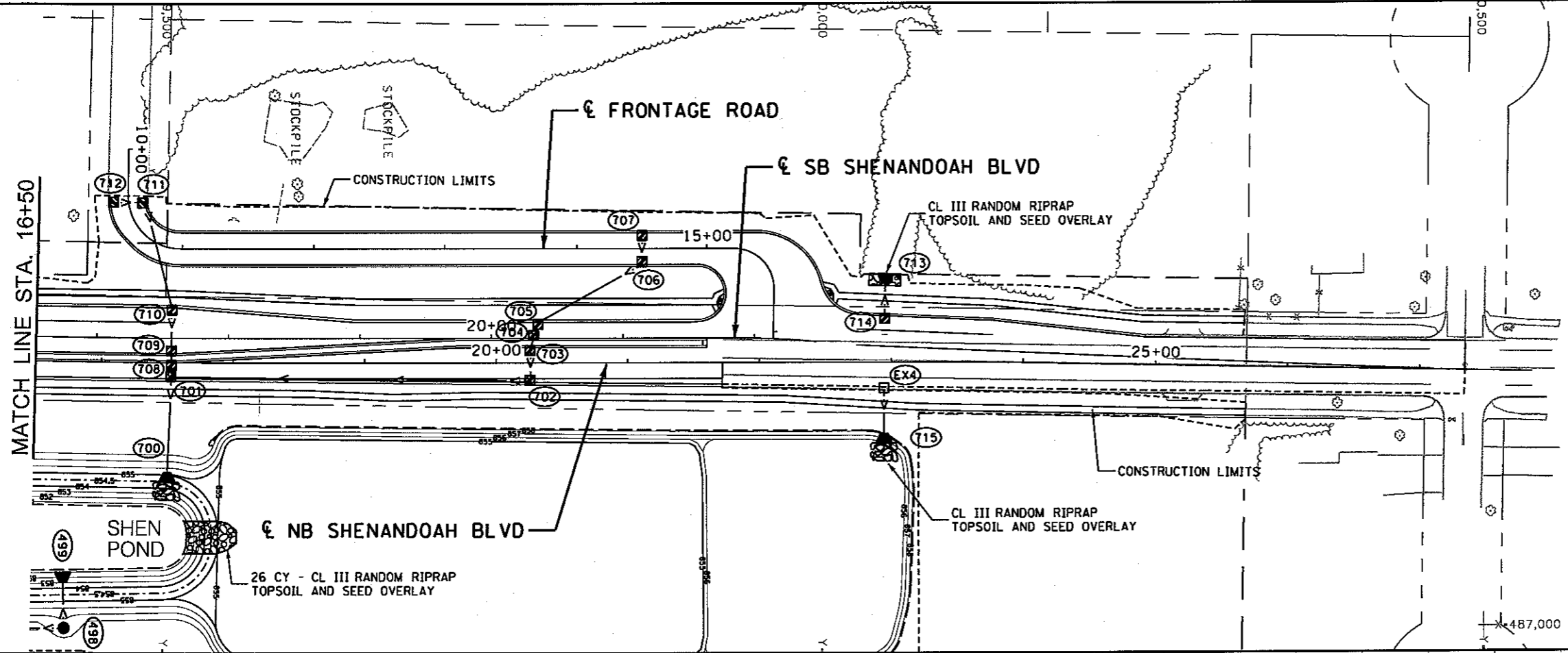
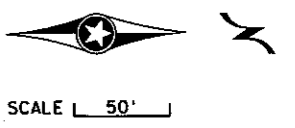
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
 NB SHENANDOAH BLVD STA. 8+57.10 - 16+50.00

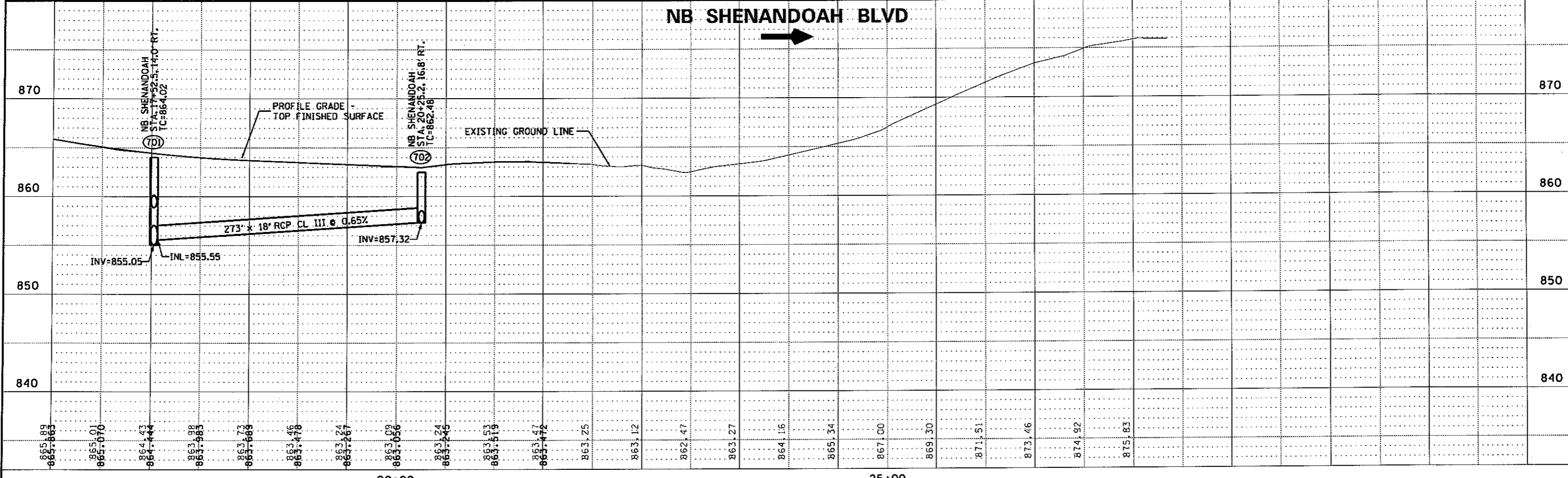
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DP7 OF DP4	194

3:09:14 PM

4/8/2010



NB SHENANDOAH BLVD



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DESIGN TEAM				REVISIONS			
DRAWN BY:	CIF	NO.	BY	DATE			
DESIGNER:	RSN						
CHECKED BY:	JJW						

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131
 Licensed Professional Engineer

Printed Name: JEREMY J. WALGRAVE Date: 4/8/2010

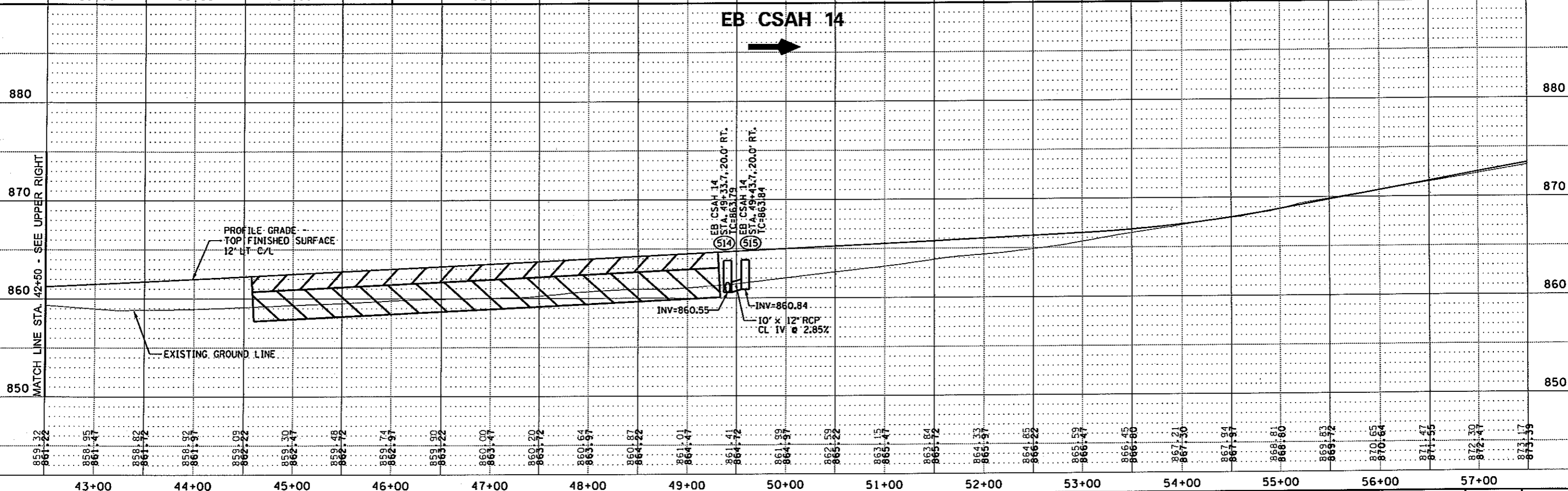
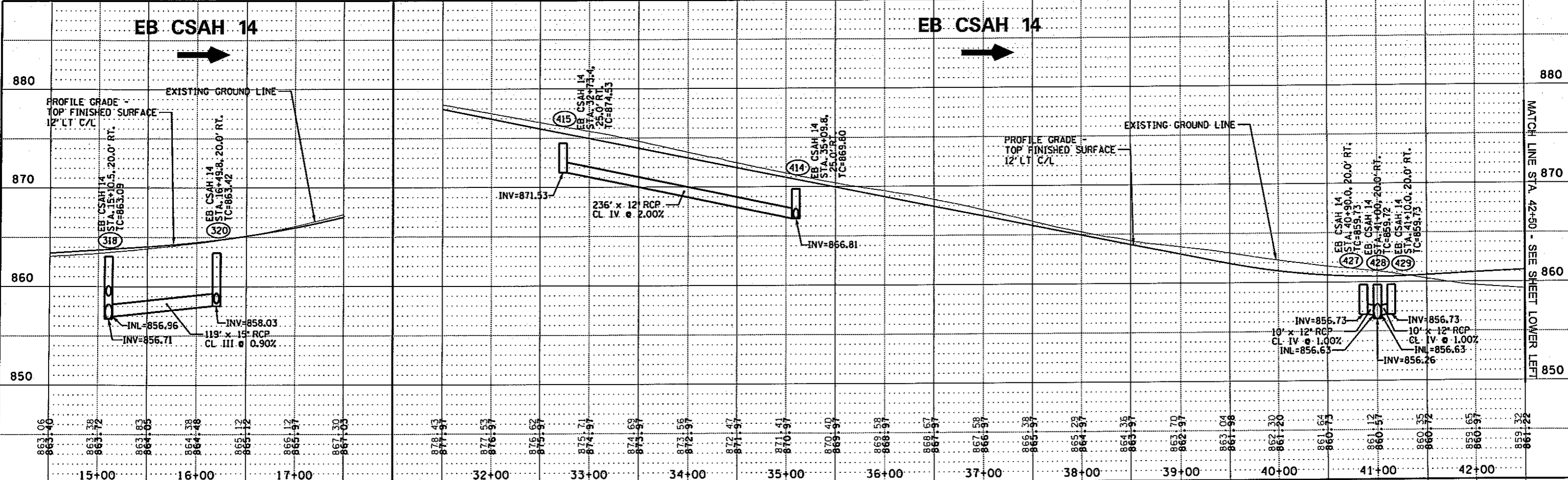


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PLAN AND PROFILE
 NB SHENANDOAH BLVD STA. 16+50.00 - 27+34.00

FILE NO.	126
102287	
DP8	
OF DP14	194

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1/21/2010
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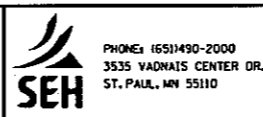


DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CIF				
DESIGNER: RSM				
CHECKED BY: JJW				

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131

Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010

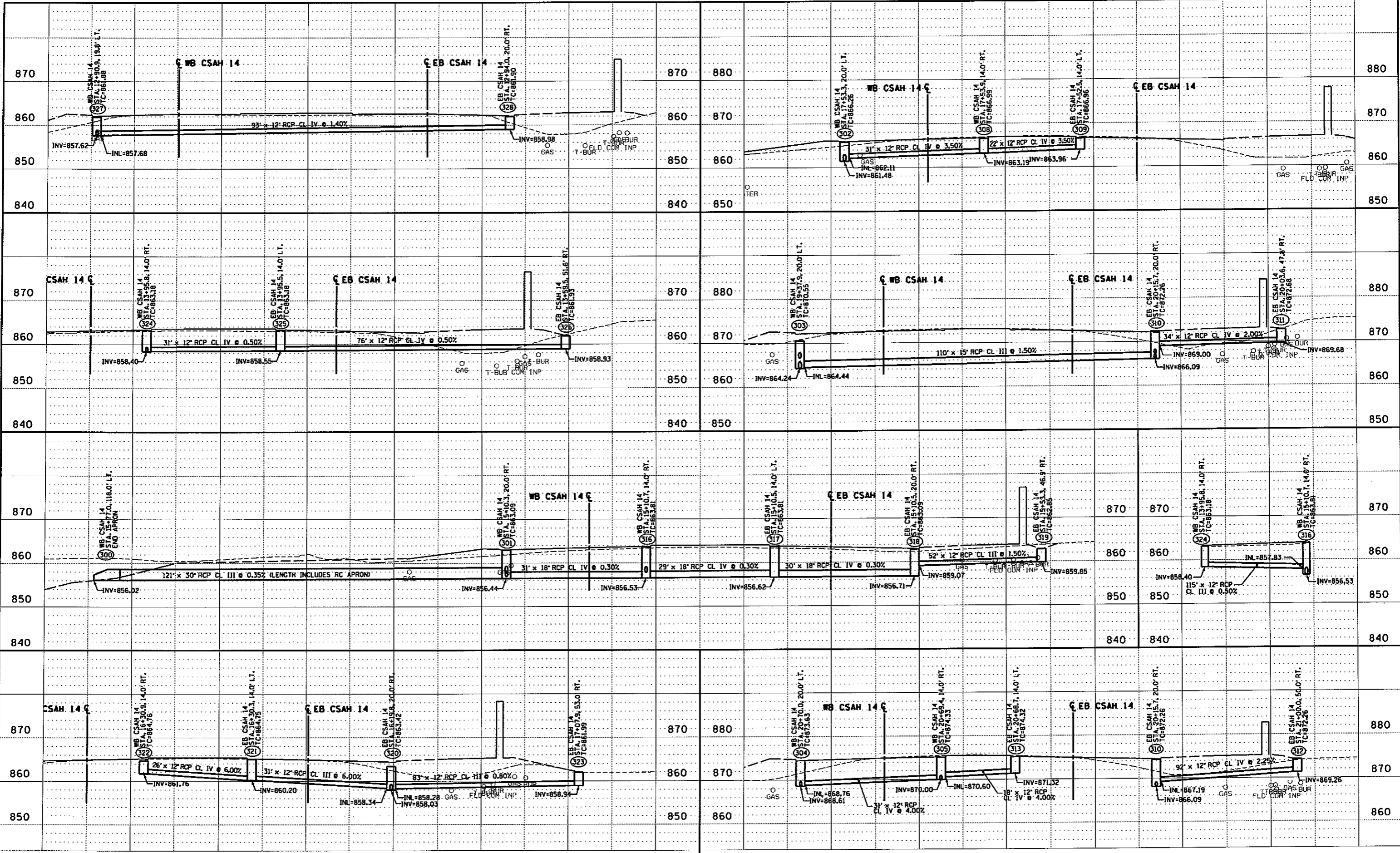


ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PROFILES
EB CSAH 14 STA. 14+50.00 - 17+50.00,
STA. 31+50.00 - 57+50.00

FILE NO. 127
102287
DP9
OF DP14
194

12/14/19 PM
4/1/2010
dp10
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DESIGN TEAM			
DRAWN BY:	CJF		
DESIGNER:	RSN		
CHECKED BY:	JWJ		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Jeremy J. Walgrave* Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 4/1/2010

SEH
 PHONE: 651/490-2000
 3535 VAONAIS CENTER DR.
 ST. PAUL, MN 55110

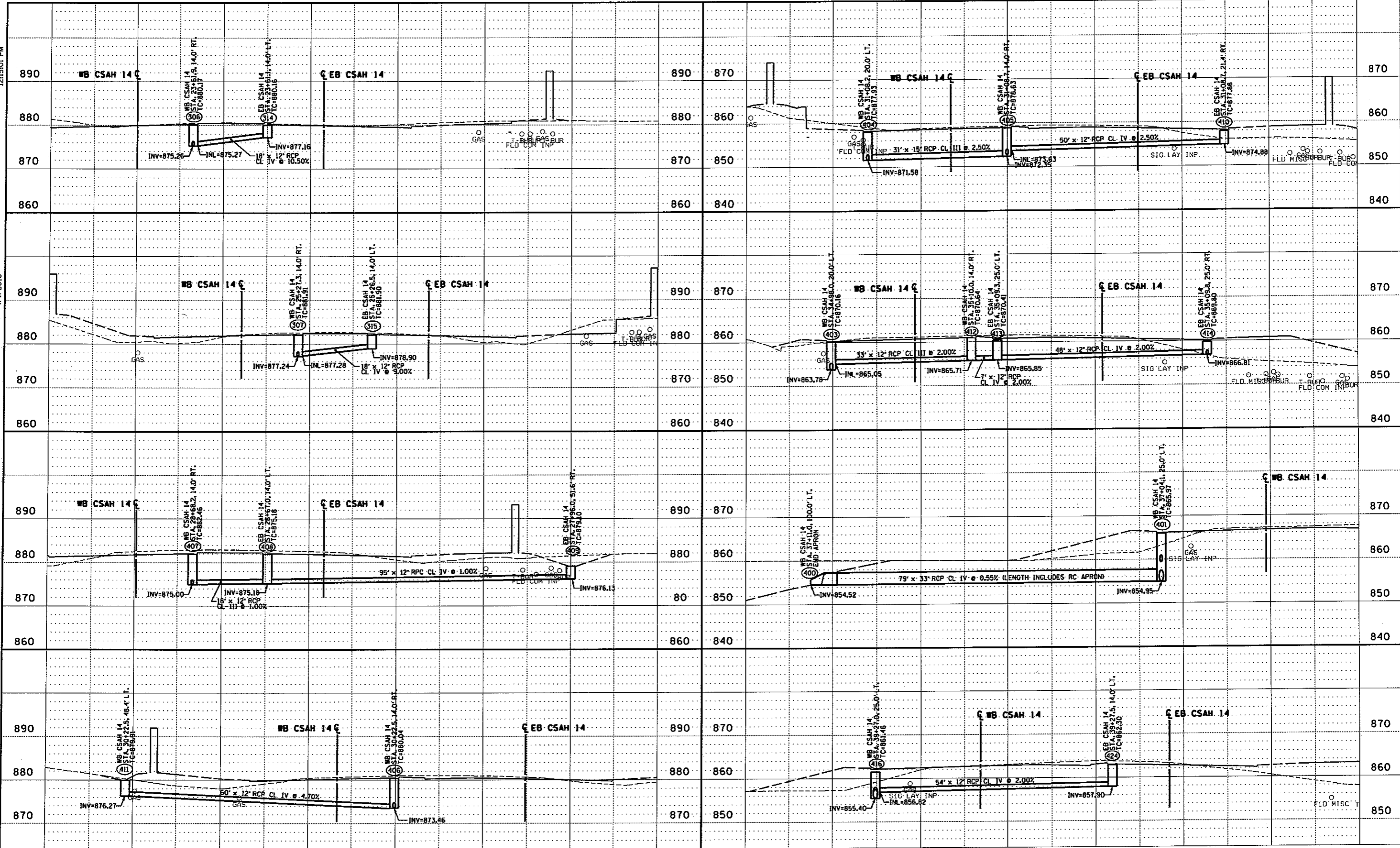


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PROFILES

FILE NO. 102287	128
DP10 OF DP14	194

12/15/01 PM
4/1/2010
dp11
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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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Certified By: *Jeremy Walgrave* Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 4/1/2010

SEH
 PHONE: (651)490-2000
 3535 VALDAIS CENTER DR.
 ST. PAUL, MN 55110

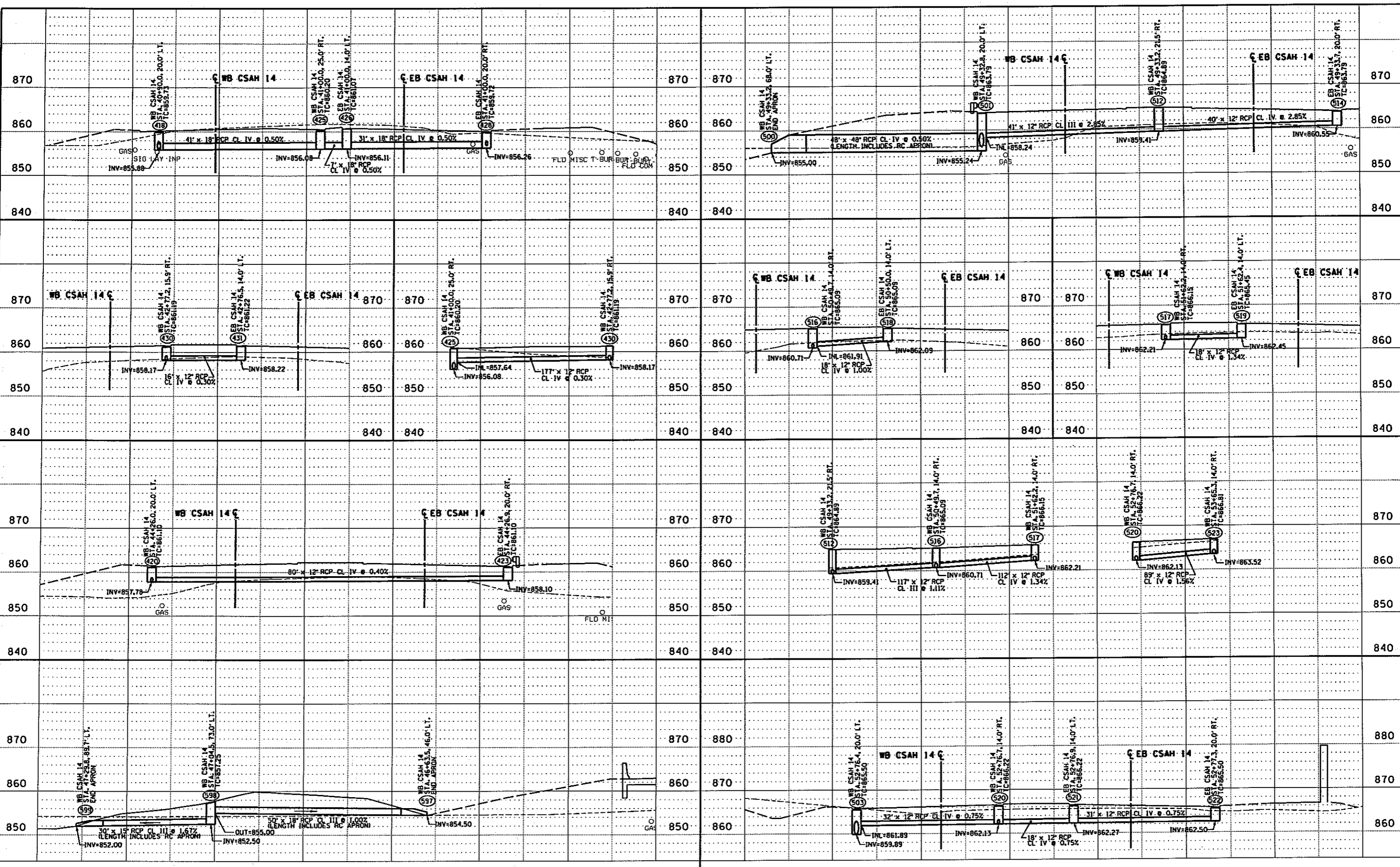


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PROFILES

FILE NO.	102287	129
DP11		
OF DPA		194

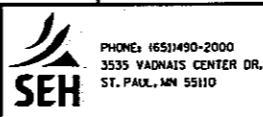
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1/21/2010
dp12
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DESIGN TEAM			REVISIONS		
DRAWN BY:	CIF		NO.	BY	DATE
DESIGNER:	RSN				
CHECKED BY:	JJW				

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Certified By: *Jeremy Walgrave* Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 1/21/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PROFILES

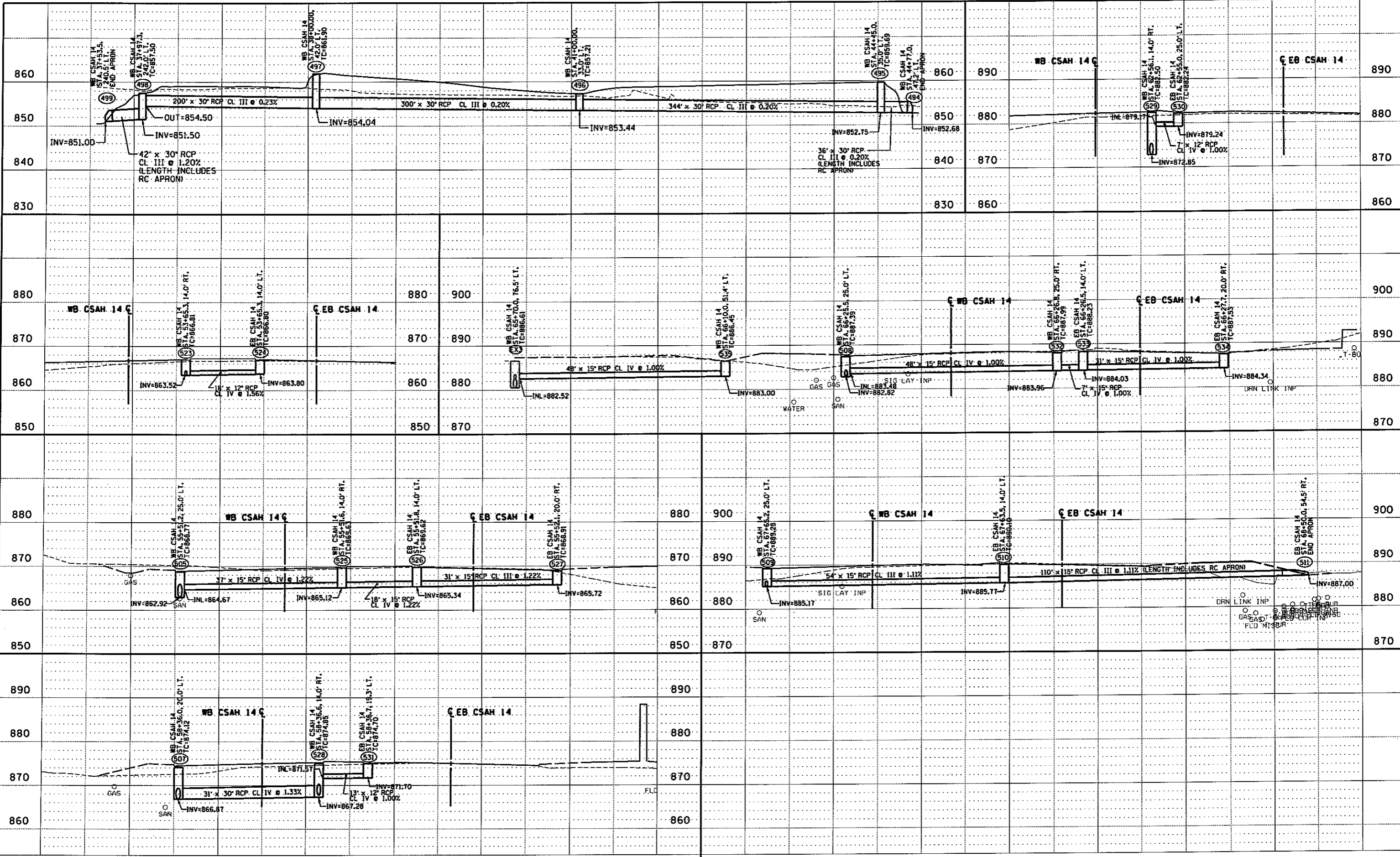
FILE NO. 130
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 DP12
 OF DP14
 194

12:20:54 PM

4/1/2010

dp13

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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 4/1/2010

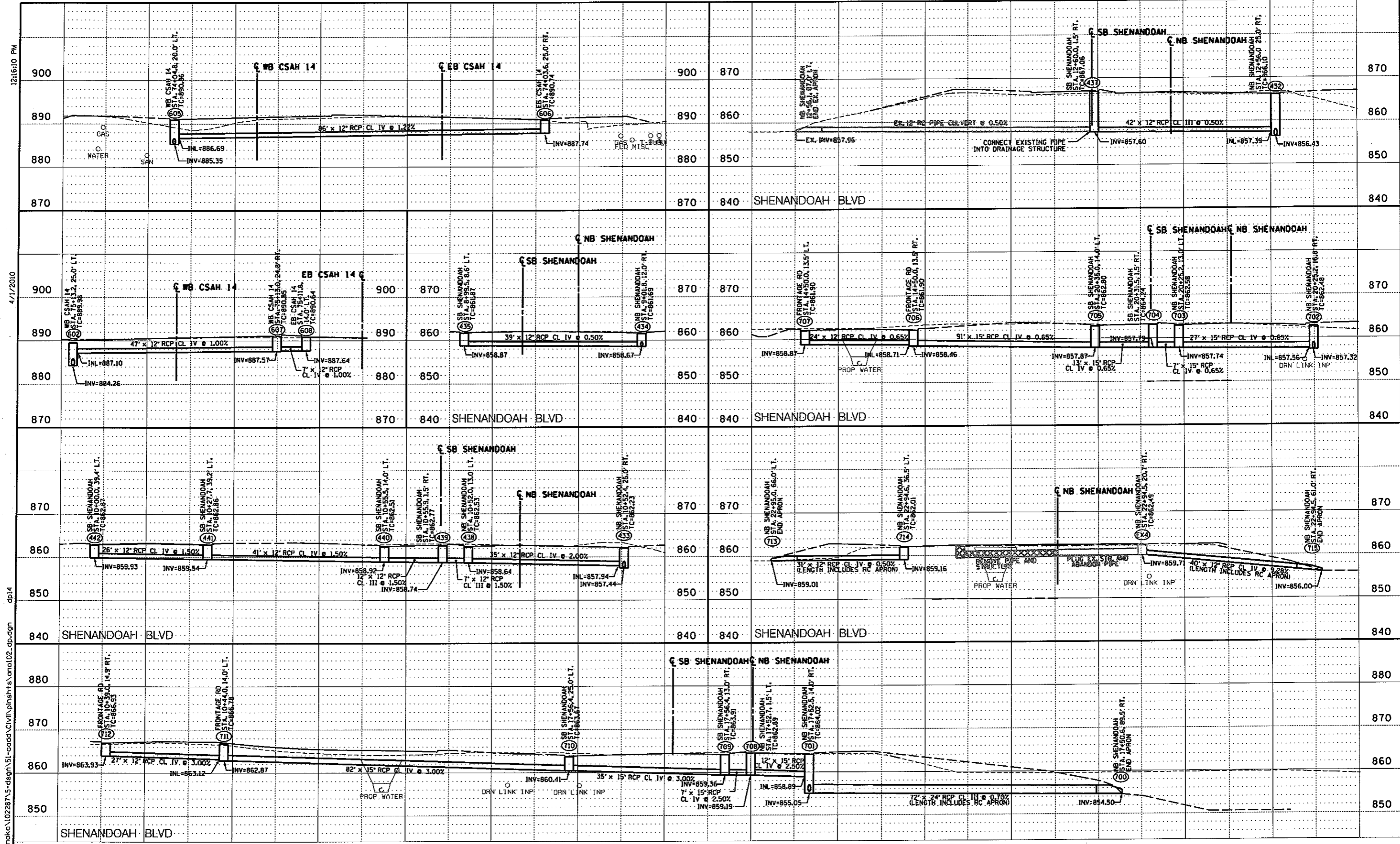
SEH
 PHONE: (651)490-2000
 3535 VAONAS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

DRAINAGE PROFILES

FILE NO. 102287	131
DP13 OF DP14	194



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JWJ		
NO.	BY	DATE	REVISIONS

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.

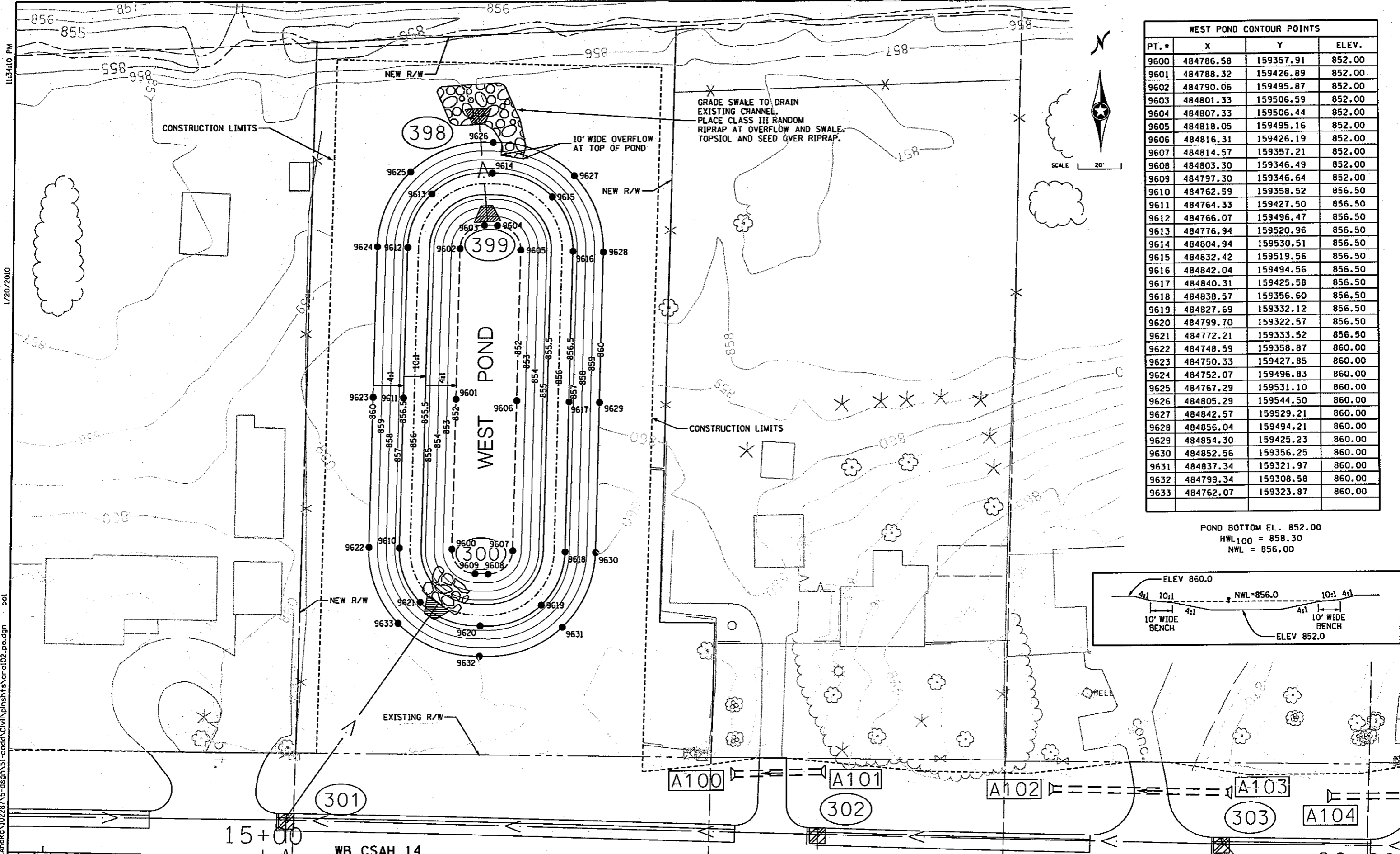
Certified By: *Jeremy Walgrave* Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 4/1/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

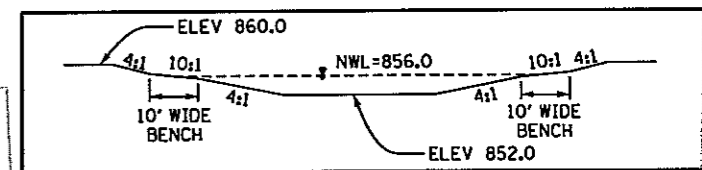
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FILE NO. 102287
 DP14 OF DPM
 132
 194



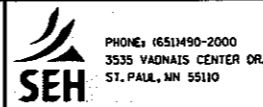
WEST POND CONTOUR POINTS			
PT. #	X	Y	ELEV.
9600	484786.58	159357.91	852.00
9601	484788.32	159426.89	852.00
9602	484790.06	159495.87	852.00
9603	484801.33	159506.59	852.00
9604	484807.33	159506.44	852.00
9605	484818.05	159495.16	852.00
9606	484816.31	159426.19	852.00
9607	484814.57	159357.21	852.00
9608	484803.30	159346.49	852.00
9609	484797.30	159346.64	852.00
9610	484762.59	159358.52	856.50
9611	484764.33	159427.50	856.50
9612	484766.07	159496.47	856.50
9613	484776.94	159520.96	856.50
9614	484804.94	159530.51	856.50
9615	484832.42	159519.56	856.50
9616	484842.04	159494.56	856.50
9617	484840.31	159425.58	856.50
9618	484838.57	159356.60	856.50
9619	484827.69	159332.12	856.50
9620	484799.70	159322.57	856.50
9621	484772.21	159333.52	856.50
9622	484748.59	159358.87	860.00
9623	484750.33	159427.85	860.00
9624	484752.07	159496.83	860.00
9625	484767.29	159531.10	860.00
9626	484805.29	159544.50	860.00
9627	484842.57	159529.21	860.00
9628	484856.04	159494.21	860.00
9629	484854.30	159425.23	860.00
9630	484852.56	159356.25	860.00
9631	484837.34	159321.97	860.00
9632	484799.34	159308.58	860.00
9633	484762.07	159323.87	860.00

POND BOTTOM EL. 852.00
 HWL₁₀₀ = 858.30
 NWL = 856.00



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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.
 Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

POND CONTOUR PLAN
 WEST POND

FILE NO. 133
 102287
 P01
 OF P03 194

3:02:10 PM

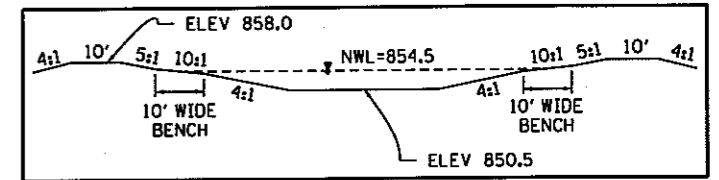
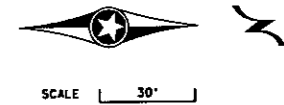
4/8/2010

SHEN POND CONTOUR POINTS			
PT. #	X	Y	ELEV.
9700	486905.63	159321.54	850.50
9701	486907.00	159409.99	850.50
9702	486908.37	159498.43	850.50
9703	486914.74	159512.20	850.50
9704	486928.92	159517.59	850.50
9705	486935.00	159517.45	850.50
9706	486948.67	159511.63	850.50
9707	486954.61	159498.00	850.50
9708	486956.32	159409.72	850.50
9709	486958.04	159321.43	850.50
9710	486952.21	159306.93	850.50
9711	486937.73	159301.05	850.50
9712	486925.32	159301.24	850.50
9713	486911.27	159307.31	850.50
9714	486881.63	159321.92	850.50
9715	486882.99	159409.59	855.00
9716	486884.34	159497.27	855.00
9717	486897.55	159528.96	855.00
9718	486929.48	159541.58	855.00
9719	486965.94	159528.30	855.00
9720	486978.62	159497.90	855.00
9721	486980.33	159409.82	855.00
9722	486982.03	159321.90	855.00
9723	486969.21	159289.99	855.00
9724	486937.36	159277.05	855.00

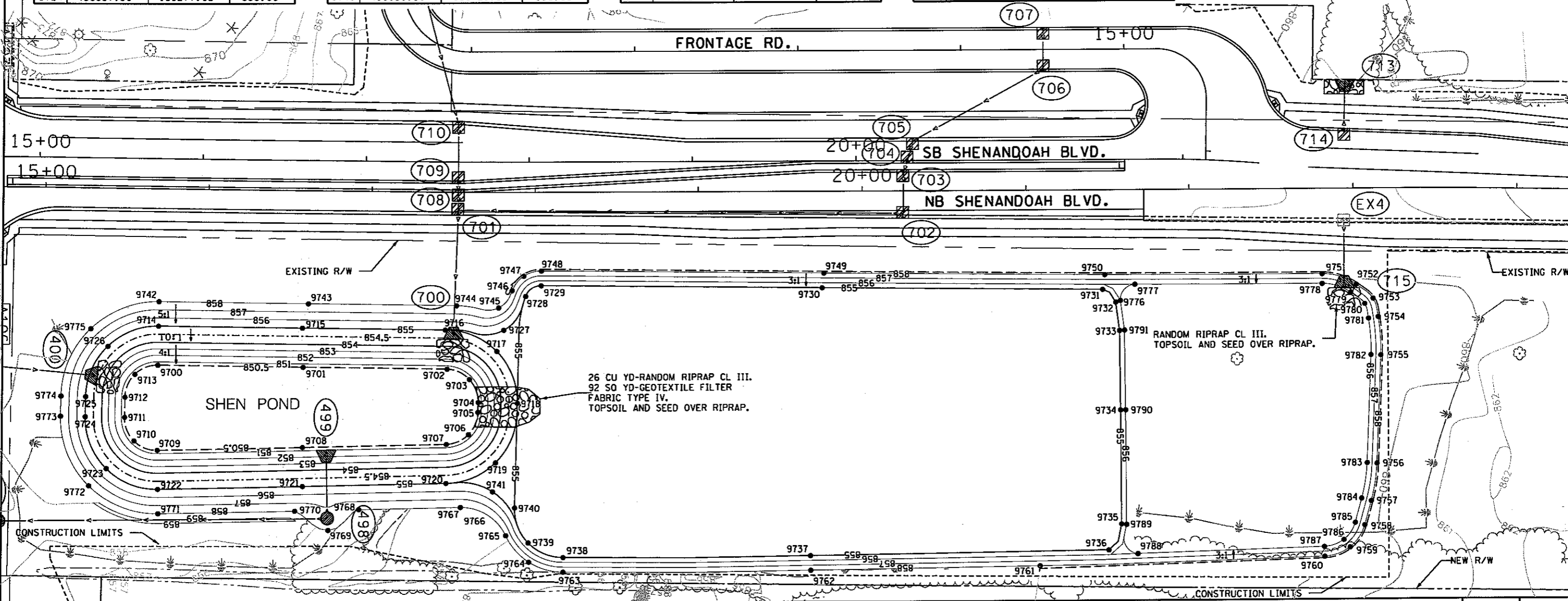
SHEN POND CONTOUR POINTS			
PT. #	X	Y	ELEV.
9725	486924.95	159277.24	855.00
9726	486894.04	159290.61	855.00
9727	486884.58	159533.23	855.00
9728	486863.85	159546.70	855.00
9729	486857.25	159556.21	855.00
9730	486859.15	159727.92	855.00
9731	486861.04	159899.62	855.00
9732	486868.92	159907.69	855.00
9733	486886.33	159909.99	855.00
9734	486935.18	159910.43	855.00
9735	487005.34	159911.01	855.00
9736	487021.30	159903.19	855.00
9737	487023.89	159720.85	855.00
9738	487024.49	159569.87	855.00
9739	487015.38	159548.53	855.00
9740	486993.79	159540.07	855.00
9741	486983.85	159526.56	855.00
9742	486866.64	159322.15	858.00
9743	486868.04	159413.20	858.00
9744	486869.45	159504.25	858.00
9745	486870.86	159530.15	858.00
9746	486860.24	159538.41	858.00
9747	486851.47	159545.48	858.00
9748	486848.25	159556.28	858.00
9749	486850.16	159728.93	858.00

SHEN POND CONTOUR POINTS			
PT. #	X	Y	ELEV.
9750	486852.10	159901.04	858.00
9751	486852.33	160033.43	858.00
9752	486858.91	160054.11	858.00
9753	486867.68	160064.38	858.00
9754	486878.93	160067.48	858.00
9755	486902.51	160068.91	858.00
9756	486968.86	160066.16	858.00
9757	486991.99	160062.62	858.00
9758	487006.86	160058.62	858.00
9759	487020.49	160049.65	858.00
9760	487026.09	160034.33	858.00
9761	487030.94	159860.76	858.00
9762	487032.89	159721.07	858.00
9763	487033.49	159569.81	858.00
9764	487027.29	159548.96	858.00
9765	487010.89	159534.68	858.00
9766	486998.02	159523.32	858.00
9767	486993.45	159506.78	858.00
9768	486994.74	159444.65	858.00
9769	487007.38	159425.67	858.00
9770	486995.54	159405.21	858.00
9771	486997.03	159322.19	858.00
9772	486979.84	159279.41	858.00
9773	486937.13	159262.05	858.00
9774	486924.72	159262.24	858.00

SHEN POND CONTOUR POINTS			
PT. #	X	Y	ELEV.
9775	486883.27	159280.17	858.00
9776	486867.97	159910.54	856.00
9777	486858.05	159919.28	856.00
9778	486858.33	160033.42	856.00
9779	486863.82	160050.65	856.00
9780	486870.86	160059.29	856.00
9781	486879.90	160061.56	856.00
9782	486902.26	160062.92	856.00
9783	486968.62	160060.16	856.00
9784	486990.43	160056.82	856.00
9785	487005.30	160052.82	856.00
9786	487015.78	160045.93	856.00
9787	487020.10	160034.14	856.00
9788	487023.72	159920.85	856.00
9789	487005.62	159914.01	856.00
9790	486935.14	159913.58	856.00
9791	486886.12	159912.99	856.00



POND BOTTOM EL. 850.50
 HWL₁₀₀ = 856.44
 NWL = 854.50

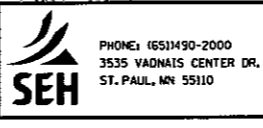


\\SAVA\Anokc\102287\5-dsgn\51-cadd\Civil\p1nhts\ono102_po.dgn

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	RSN		
CHECKED BY:	JJW		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131
 Printed Name: JEREMY J. WALGRAVE Date: 4/8/2010

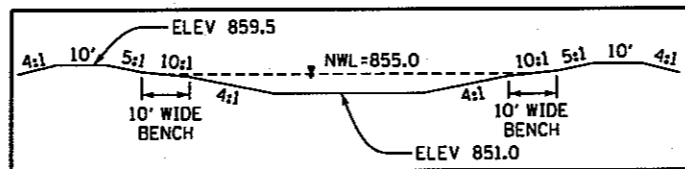


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

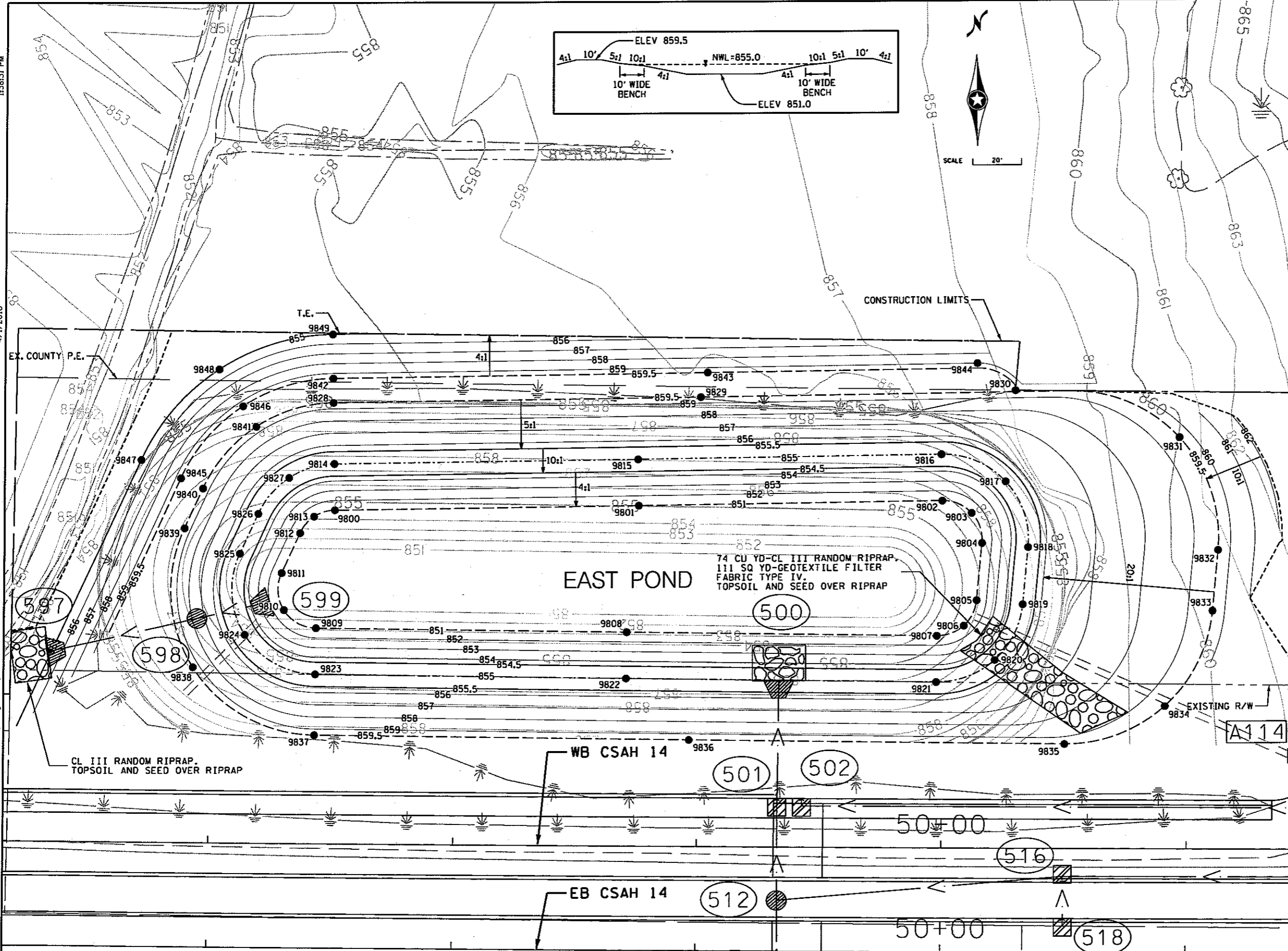
POND CONTOUR PLAN
 SHEN POND

FILE NO.	102287	134
P02		
OF P03		194

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4/1/2010
po3
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EAST POND CONTOUR POINTS			
PT #	X	Y	ELEV
9800	487951.64	159310.43	851.00
9801	488076.24	159311.94	851.00
9802	488200.83	159313.46	851.00
9803	488212.79	159308.30	851.00
9804	488216.96	159295.97	851.00
9805	488214.75	159272.49	851.00
9806	488209.50	159262.07	851.00
9807	488198.57	159257.98	851.00
9808	488071.31	159260.03	851.00
9809	487944.06	159262.07	851.00
9810	487930.78	159269.54	851.00
9811	487929.78	159284.75	851.00
9812	487937.30	159301.11	851.00
9813	487943.12	159307.85	851.00
9814	487951.41	159329.43	855.00
9815	488076.01	159330.94	855.00
9816	488200.60	159332.46	855.00
9817	488226.76	159321.18	855.00
9818	488235.87	159294.19	855.00
9819	488233.67	159270.71	855.00
9820	488222.18	159247.92	855.00
9821	488198.26	159238.99	855.00
9822	488071.01	159241.03	855.00
9823	487943.76	159243.07	855.00
9824	487914.70	159259.42	855.00
9825	487912.52	159292.69	855.00
9826	487920.04	159309.04	855.00
9827	487932.77	159323.78	855.00
9828	487951.11	159354.42	859.50
9829	488102.10	159356.26	859.50
9830	488230.98	159358.47	859.50
9831	488297.93	159338.77	859.50
9832	488313.55	159292.50	859.50
9833	488311.21	159267.54	859.50
9834	488291.51	159228.45	859.50
9835	488250.51	159213.15	859.50
9836	488096.93	159215.61	859.50
9837	487943.36	159218.08	859.50
9838	487893.55	159246.10	859.50
9839	487889.80	159303.13	859.50
9840	487897.32	159319.48	859.50
9841	487919.15	159344.74	859.50
9842	487950.99	159364.42	859.50
9843	488104.87	159366.30	859.50
9844	488215.35	159369.63	859.50
9845	487888.23	159323.66	859.50
9846	487913.71	159353.13	859.50
9847	487871.88	159331.18	855.00
9848	487903.90	159368.23	855.00
9849	487950.77	159382.42	855.00



POND BOTTOM EL. = 851.00
HWL100 = 858.22
NWL = 855.00

DESIGN TEAM			
NO.	BY	DATE	REVISIONS

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.

Certified By: *Jeremy Walgrave* Lic. No. 43131
Printed Name: JEREMY J. WALGRAVE Date: 4/1/2010

SEH
PHONE: (651)490-2000
3535 VAONAS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

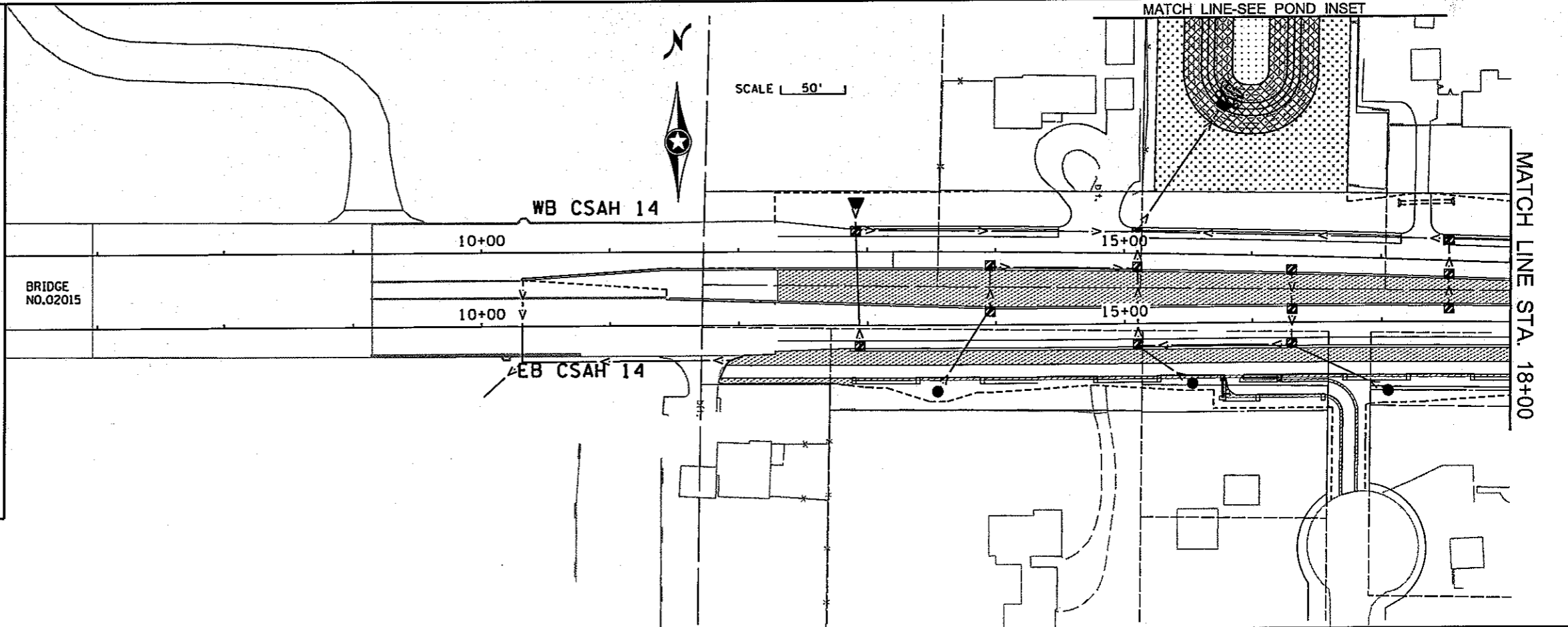
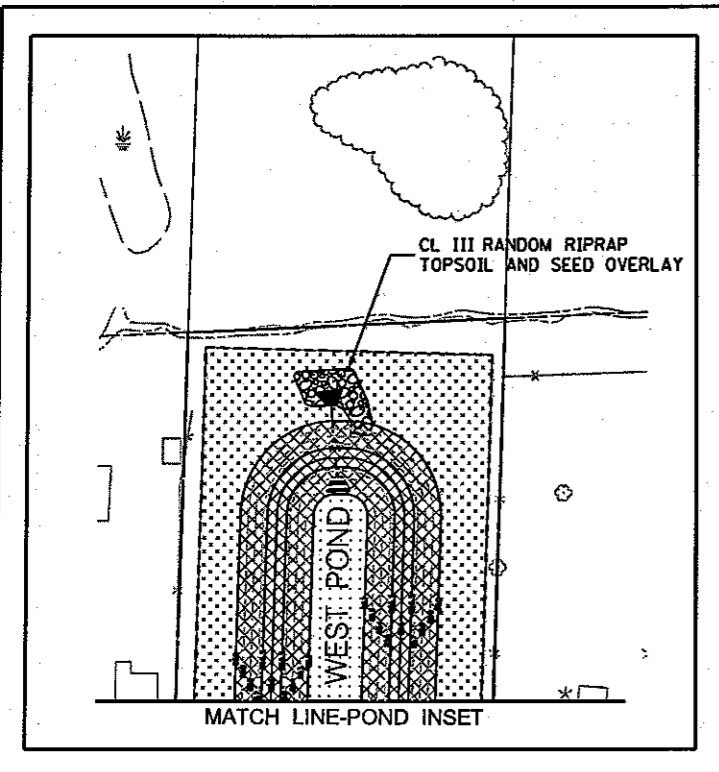
POND CONTOUR PLAN
EAST POND

FILE NO. 135
102287
P03
OF P03
194

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1/20/2010

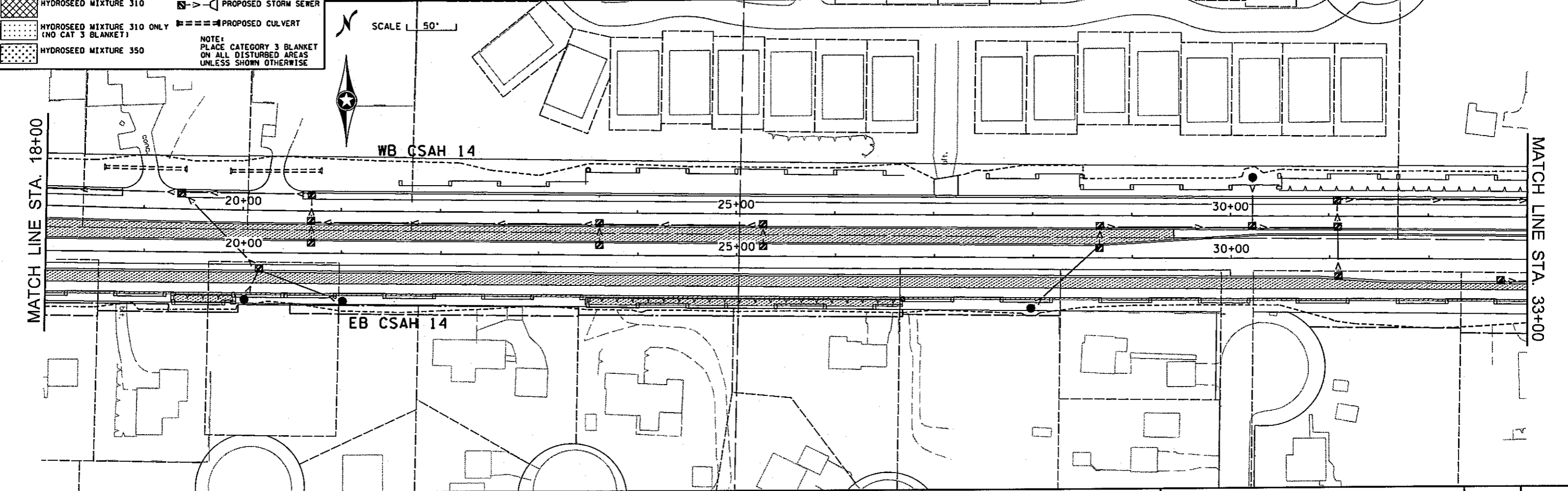
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LEGEND

- HYDROSEED ALL DISTURBED AREAS WITH SEED MIXTURE 240, UNLESS SHOWN OTHERWISE
- SODDING TYPE SALT RESISTANT
- HYDROSEED MIXTURE 310
- HYDROSEED MIXTURE 310 ONLY (NO CAT 3 BLANKET)
- HYDROSEED MIXTURE 350
- RIPRAP
- PROPOSED STORM SEWER
- PROPOSED CULVERT

NOTE: PLACE CATEGORY 3 BLANKET ON ALL DISTURBED AREAS UNLESS SHOWN OTHERWISE



DESIGN TEAM				REVISIONS			
NO.	BY	DATE	DESCRIPTION	NO.	BY	DATE	DESCRIPTION

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010

SEH

PHONE: 651-490-2000
 3535 VAONAS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

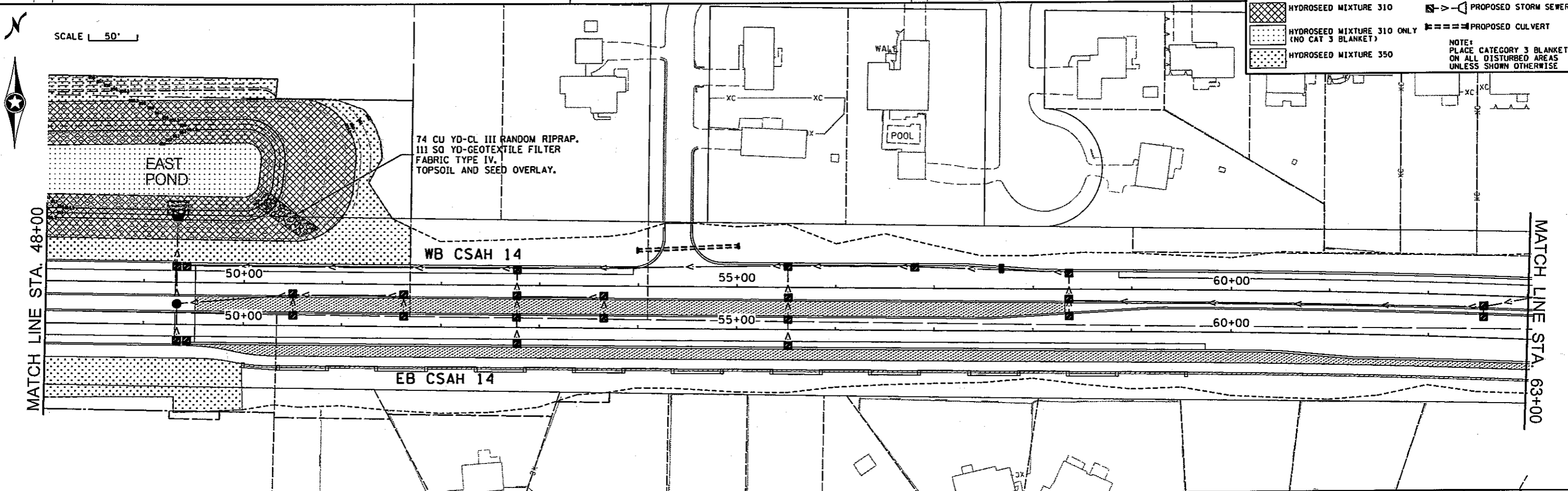
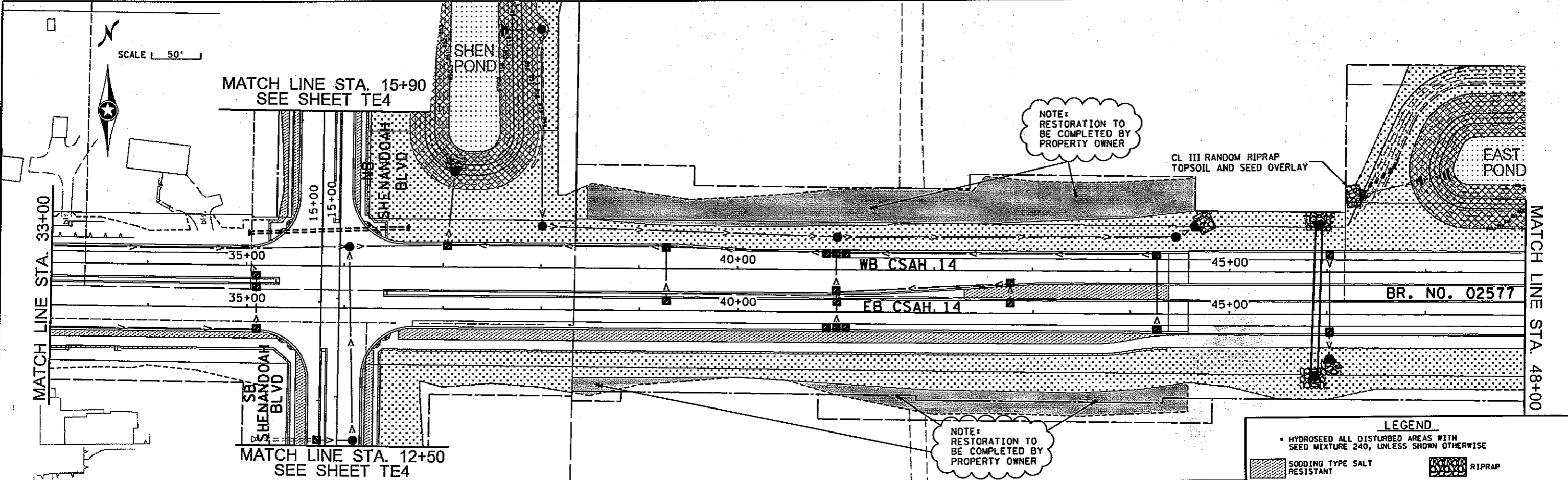
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TURF ESTABLISHMENT PLAN

EB CSAH 14 STA. 10+31.25 - 33+00.00

FILE NO. 102287
 TE1 OF TE4
 136
 194

11/3/45 PM
1/21/2010
fe2
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DESIGN TEAM				REVISIONS			
DRAWN BY:	CIF			NO.	BY	DATE	
DESIGNER:	JEO						
CHECKED BY:	MRD						

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.

Certified By: *Mark B. Dierling* Lic. No. 21098
Printed Name: MARK B. DIERLING Date: 1/21/2010

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

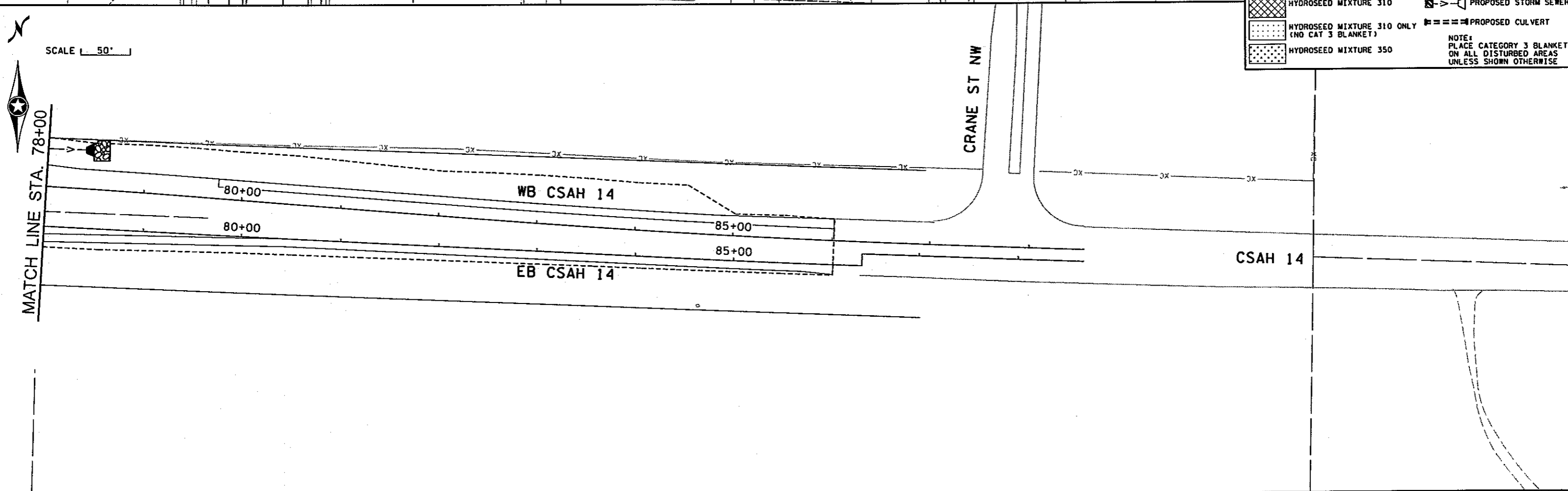
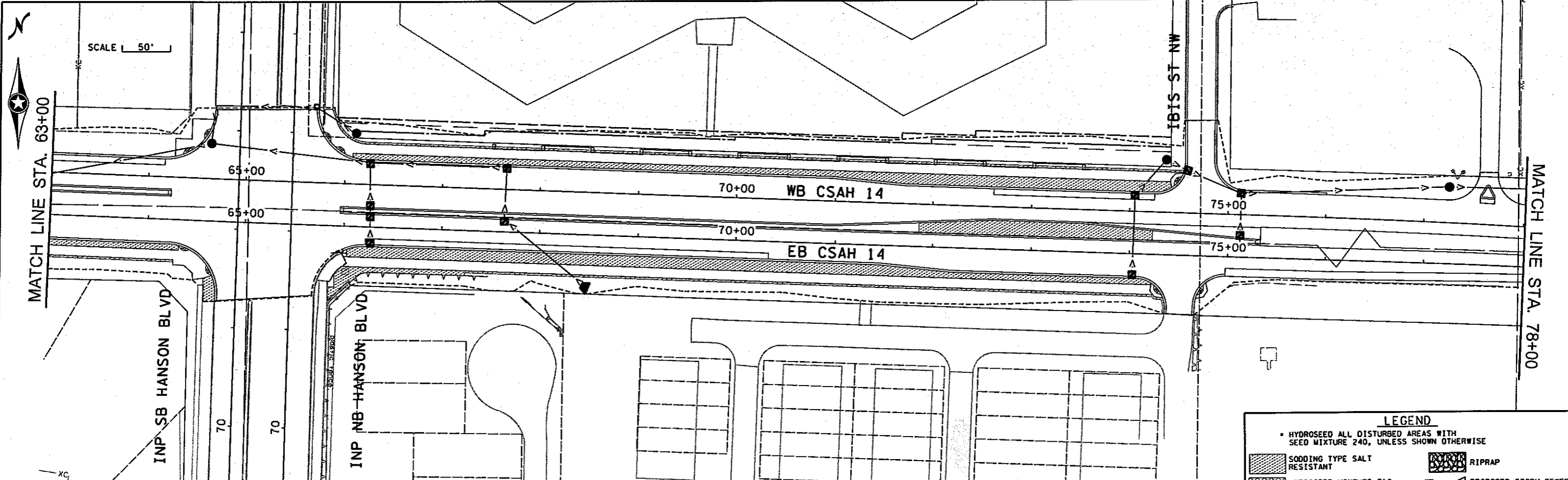
TURF ESTABLISHMENT PLAN
EB CSAH 14 STA. 33+00.00 - 63+00.00

FILE NO. 137
102287
TE2
OF TE4 194

11/3/4/9 PM

1/20/2010

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LEGEND

- HYDROSEED ALL DISTURBED AREAS WITH SEED MIXTURE 240, UNLESS SHOWN OTHERWISE
- SOODING TYPE SALT RESISTANT
- HYDROSEED MIXTURE 310
- HYDROSEED MIXTURE 310 ONLY (NO CAT 3 BLANKET)
- HYDROSEED MIXTURE 350
- RIPRAP
- PROPOSED STORM SEWER
- PROPOSED CULVERT

NOTE:
PLACE CATEGORY 3 BLANKET ON ALL DISTURBED AREAS UNLESS SHOWN OTHERWISE

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JED		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Printed Name: MARK R. DIERLING Date: 1/20/2010

SEH
 PHONE: 651/490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TURF ESTABLISHMENT PLAN
 EB CSAH 14 STA. 63+00.00 - 86+00.00

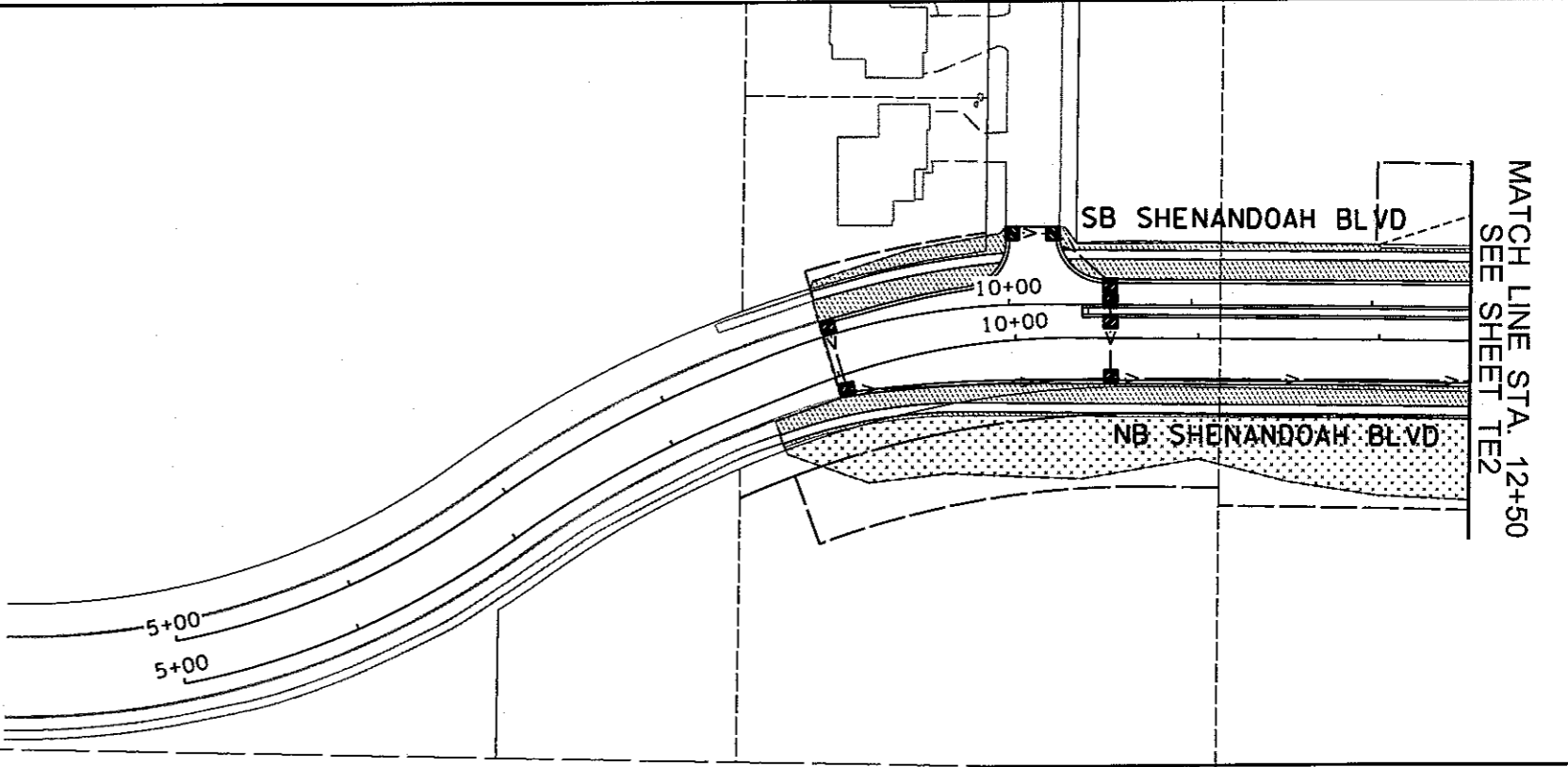
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TE3		
OF TE4		194

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4/8/2010



SCALE 50'

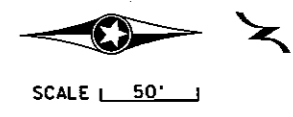


MATCH LINE STA. 12+50
SEE SHEET TE2

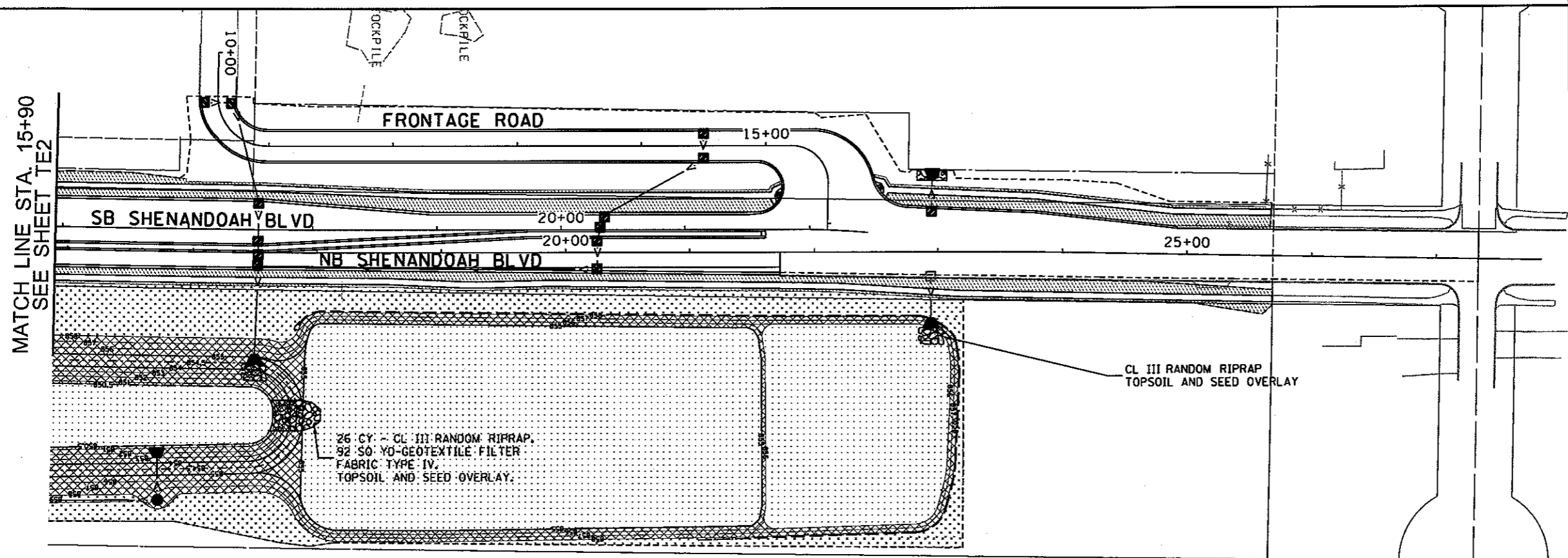
LEGEND

- HYDROSEED ALL DISTURBED AREAS WITH SEED MIXTURE 240, UNLESS SHOWN OTHERWISE
- SODDING TYPE SALT RESISTANT
- HYDROSEED MIXTURE 310
- HYDROSEED MIXTURE 310 ONLY (NO CAT 3 BLANKET)
- HYDROSEED MIXTURE 350
- RIPRAP
- PROPOSED STORM SEWER
- PROPOSED CULVERT

NOTE:
PLACE CATEGORY 3 BLANKET ON ALL DISTURBED AREAS UNLESS SHOWN OTHERWISE



SCALE 50'



MATCH LINE STA. 15+90
SEE SHEET TE2

DESIGN TEAM			
DRAWN BY:	CIE		
DESIGNER:	JEO		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Mark R. Dierling* Lic. No. 21098
 Licensed Professional Engineer
 Printed Name: MARK R. DIERLING Date: 4/8/2010

PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TURF ESTABLISHMENT PLAN
 NB SHENANDOAH BLVD STA. 8+57.10 - 27+34.00

FILE NO.	139
102287	
TE4	
OF TE4	194

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1/20/2010
SWP1
S:\AEVA\Anoka\102287\5-dsgn\51-cadd\Civil\plansht\5-anol02.swp.dgn

Stormwater Pollution Prevention Plan (SWPPP)

To comply with the General Stormwater Permit for Construction Activity

Construction Activity Information

Project Name: CSAH 14 Reconstruction

Project Location:

Address or describe area: CSAH 14 (Main St. from 1400' east of Coon Creek Blvd. to 150' west of Avocet St. NW)

City or Township: Coon Rapids State: MN Zip Code: 55433

Latitude/Longitude: 45.1975, -93.3180

All cities where construction will occur: Coon Rapids

All counties where construction will occur: Anoka County

All townships where construction will occur: 31N

Project size (number of acres to be disturbed): 37.81

Project type: Residential Commercial/Industrial Road Construction Other: _____

Cumulative impervious surface:

Existing area of impervious surface: 13.8 acres

Post construction area of impervious surface: 20.4 acres

Receiving waters:

Waterbody ID	Name of water body	Type (ditch, pond, wetland, lake, stream, river)	Special water?	Impaired Water?
	Peat Creek	Ditch	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
07010206-530	Coon Creek	Stream	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Dates of construction:

Construction start date: March 2010

Estimated completion date: November 2011

Contact Information

Owner of the Site

Business or firm name: Anoka County Highway Department

Owner name: Anoka County Highway Dept. Title: _____

Mailing address: 1440 Bunker Lake Blvd NW

City: Andover

State: MN

Zip code: 55304

E-mail address: _____

Telephone: 763.862.4200

Contact name: Curt Kobilarcsik

Title: Engineering Program Manager

Mailing address: 1440 Bunker Lake Blvd. NW

City: Andover

State: MN

Zip code: 55304

E-mail address: curt.kobilarcsik@co.anoka.mn.us

Telephone: 763.862.4223

Contractor

Business or firm name: TBD

Owner name: _____ Title: _____

Mailing address: _____

City: _____

State: _____

Zip code: _____

E-mail address: _____

Telephone: _____

Contact name: _____

Title: _____

Mailing address: _____

City: _____

State: _____

Zip code: _____

E-mail address: _____

Telephone: _____

Party responsible for long-term operation and maintenance of the permanent Stormwater Management System

Business or firm name: Anoka County

Owner name: Anoka County Highway Dept. Title: _____

Mailing address: 1440 Bunker Lake Blvd NW

City: Andover

State: MN

Zip code: 55304

E-mail address: _____

Telephone: 763.862.4200

Contact name: Curt Kobilarcsik

Title: Engineering Program Manager

Mailing address: 1440 Bunker Lake Blvd. NW

City: Andover

State: MN

Zip code: 55304

E-mail address: curt.kobilarcsik@co.anoka.mn.us

Telephone: 763.862.4223

General Construction Project Information

Describe the construction activity: The project will reconstruct Main Street and convert the rural section roadway to an urban section. Work includes grading, bituminous pavement, drainage, curb & gutter, signing, striping, traffic signal and storm water treatment

Describe soil types found at the project: Typical soils encountered on the project vary from rifle mucky peat to Sartell fine sand, Lino loamy fine sand and Isanti fine sandy loam.

General Site Information (III.A)

- Describe the location and type of all temporary and permanent erosion prevention and sediment control Best Management Practices (BMPs). Include the timing for installation and procedures used to establish additional temporary BMPs as necessary (III.A.4.a). See turf establishment and temporary erosion control plan sheets for locations of all temporary and permanent erosion control measures. Temporary and permanent erosion control measures include: bioroll ditch checks, silt fence, flotation silt curtain, inlet protection, sod, seeding, category 3 blanket and riprap-rootrap. Silt fence and floating silt curtain will be installed prior to any land disturbing activity. Contractor is required to install the appropriate erosion control measures prior to the subsequent phases of construction.
- Attach to this SWPPP a table with the anticipated quantities for the life of the project for all erosion prevention and sediment control BMPs (III.A.4.b). See Statement of Estimated Quantities (SEQ) plan sheet.
- Attach to this SWPPP a site map that includes the following features (III.A.3.b-f): See Plan Sheets
 - Existing and final grades, including dividing lines and directions of flow for all pre- and post-construction stormwater runoff drainage areas located within the project limits.
 - Locations of impervious surfaces and soil types.
 - Locations of areas not to be disturbed.
 - Location of areas of phased construction
 - All surface waters and existing wetlands within one mile from the project boundaries that will receive stormwater runoff from the site. Where surface waters receiving runoff associated with construction activity will not fit on the plan sheet, they must be identified with an arrow, indication both direction and distance to the surface water.
 - Methods to be used for final stabilization of all exposed soil areas.
- Were stormwater mitigation measures required as the result of an environmental, archaeological, or other required local, state, or federal review of the project? Yes No
If yes, describe how these measures were addressed in the SWPPP (III.A.6). _____
- Is the project located in a karst area such that additional measures would be necessary to protect drinking water supply management areas as described in Minn. R. chapters 7050 and 7060? Yes No
If yes, describe the additional measures to be used (III.A.7). _____
- Does the site discharge to a calcareous fen listed in Minn. R. 7050.0180, subp. 6.b.? Yes No
If yes, a letter of approval from the Minnesota Department of Natural Resources must be obtained prior to application for this permit (Part I B.6 and Part III.A.8).
- Does the site discharge to a water that is listed as impaired for the following pollutant(s) or stressor(s): phosphorus, turbidity, dissolved oxygen or biotic impairment? Yes No
If no, skip to Training.
Does the impaired water have an approved Total Maximum Daily Load (TMDL) with an approved Waste Load Allocation for construction activity? Yes No
If yes,
 - List the receiving water, the areas of the site discharging to it, and the pollutant(s) identified in the TMDL. _____
 - List the BMPs and any other specific construction stormwater related implementation activities identified in the TMDL.

If the site has a discharge point within one mile of the impaired water and the water flows to the impaired water but no specific BMPs for construction are identified in the TMDL, the additional BMPs in Appendix A (C.1 and C.2) must be added to the SWPPP and implemented (III.A.7). The additional BMPs only apply to those portions of the project that drain to one of the identified discharge points.

Training (III.A)

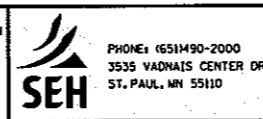
Training is required for all permitted projects after February 1, 2010. It must be provided by entities with expertise in erosion prevention, sediment control or permanent stormwater management. Training must be focused on the individual's job duties as they relate to the permit requirements (III.A.2). Attach to this SWPPP names of the personnel trained, dates of training, name of instructor(s) and entity providing the training, and content of the training course or workshop including number of hours of training. Justin Klabo, Water Resources Engineer- SEH; University of MN Erosion/Sediment Control Certification Course, August 12-13, 2009 (16hrs); Farnington, MN; Certification expires 2013.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>CIF</u>				
DESIGNER: <u>JTK</u>				
CHECKED BY: <u>JJW</u>				

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.

Certified By: Jeremy Walgrave License No. 43131

Printed Name: JEREMY J. WALGRAVE Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STORM WATER POLLUTION PREVENTION PLAN

FILE NO. 102287	140
SWP1 OFSWP2	194

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1/20/2010
SWP2
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Selection of a Permanent Stormwater Management System (III.C)

- Will the project create a new cumulative impervious surface greater than or equal to one acre? Yes No
If yes, a water quality volume of one-half inch of runoff from this area must be treated before leaving the site or entering surface waters (one inch if discharging to special or impaired waters).
- Describe which method (i.e. wet sedimentation basin, infiltration/filtration, regional ponds) will be used to treat runoff from the new impervious surfaces created by the project (III.C). Include all calculations and design information for method selected. See Part III.C of the permit for specific requirements associated with each method. Wet sedimentation ponds were designed to treat runoff prior to discharging off-site. These ponds are designed in accordance with the MPCA and Coon Creek Watershed District design guidelines. Permanent pool volumes were designed based on the right-of-way area discharging to the ponds during a 2.5" rainfall event. Total ROW area is 24.2 acres, requiring 2,554 ac-ft of permanent pool volume. The project provides 3.92 ac-ft of permanent pool volume between the three ponds. The west pond outlet is designed to limit flow to less than 5.66cfs/ac of surface area of the pond for a treatment volume of 1 inch over the impervious surface. The Shen & East ponds are designed to limit the discharge to less than 5.66cfs/ac of surface area for the pond for the treatment volume of 0.5 inches over the impervious surface. The complete calculations are available upon request.
- If it is not feasible to meet the treatment requirement for the water quality volume, describe why. This can include proximity to bedrock or road projects where the lack of right of way precludes the installation of any permanent stormwater management practices. Describe what other treatment, such as grassed swales, smaller ponds, or grit chambers, will be implemented to treat runoff prior to discharge to surface waters (III.C). _____
- If proposing an alternative method to treat runoff from the new impervious surfaces, describe how this alternative will achieve approximately 80% removal of TSS on an annual average basis (III.C.5). _____

Erosion Prevention Practices (IV.B)

- Describe construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices to minimize erosion. Delineate areas not to be disturbed (e.g. with flags, stakes, signs, silt fence, ect.) before work begins. The project will utilize silt fence and construction staking to delineate areas that are not to be disturbed during construction. The contractor shall provide vegetative areas along the construction limits to provide a buffer. Construction will be phased in accordance with the staging and traffic control plans.
- Describe temporary erosion protection of permanent cover used for exposed soil. All exposed soil areas must be stabilized as soon as possible but in no case later than 14 days after the construction activity in the portion of the site has temporarily or permanently ceased (IV.B.2). All exposed soils on the project shall be stabilized as soon as possible but in no case later than 7 days after construction activity in the portion of the site has temporarily or permanently ceased. Rapid Stabilization Method 3 shall be utilized to stabilize all exposed soils during construction. In addition, biorolls, silt fence and floating silt curtain shall also be used to provide temporary erosion and sediment control on the project.
- For drainage or diversion ditches, describe practices to stabilize the normal wetted perimeter within 200 lineal feet of the property edge or point of discharge to surface waters. The remaining portions of the temporary or permanent ditch or swale must be stabilized within 14 days after connecting to surface waters and construction in that portion of the ditch has temporarily or permanently ceased. Areas along Peat Creek and along drainage ditches that are not being used for sediment containment must be stabilized within 24 hours using MnDOT Rapid Stabilization Method 3.
- Describe other erosion prevention practices (list and describe). Other erosion and sediment control measures include the use of erosion control blanket, biorolls and riprap-rootrap. The riprap-rootrap will be placed at flared end sections to prevent erosion at outfall locations.

Sediment Control Practices (IV.C)

Describe sediment control practices used to minimize sediments from entering surface waters, including curb and gutter systems and storm drain inlets. At a minimum, these sediment control practices must include:

- Sediment controls for temporary or permanent drainage ditches and sediment basins that are designed as part of a treatment system
- Installation of check dams or other grade control practice to ensure sheet flow and prevent rills (for slope lengths greater than 75 ft with a grade of 3:1 or steeper)
- Sediment control practices on all down gradient perimeters prior to land disturbing activities
- Storm drain inlet protection for all inlets
- Silt fencing or other sediment control surrounding temporary soil stockpiles
- Minimize vehicle tracking of sediment
- Street sweeping of tracked sediment
- Temporary sedimentation basins (see Part III.B).

The existing roadway will be converted from a rural to an urban section. The roadway improvements include curb & gutter, storm sewer and treatment ponds. The treatment ponds will discharge to grassed swales prior to entering surface waters. The project will also utilize inlet protection at all storm sewer inlets to limit sediment from entering into the system. Any sediment that has accumulated along the curb & gutter is required to be removed by the Contractor by street sweeping (incidental). Stockpiles on site shall be temporary seeded and silt fence placed around the stockpile. The wet sedimentation basins shall be excavated to provide additional storage for deposited sediment through the course of construction. If this is not completed, the contractor is required to remove any sediment deposited in the basins during construction and re-grade the basins in accordance with the pond grading plans (incidental).

Dewatering and Basin Draining (IV.D)

- Will the project include dewatering or basin draining? Yes No
If yes, describe BMPs used so the discharge does not adversely affect the receiving water or downstream landowners. The Contractor shall provide a dewatering system that will not degrade the downstream receiving water. Such techniques include discharging onto a vegetative area or providing temporary settling basin locations. The contractor shall submit/utilize a technique that would meet the NPDES Permit standards for dewatering.

Additional BMPs for Special Waters and Discharges to Wetlands (Appendix A, Parts C and D)

- Special Waters. Does your project discharge to special waters? Yes No
- If proximity to bedrock or road projects where the lack of right of way precludes the installation of any of the permanent stormwater management practices, then other treatments such as grassed swales, smaller ponds, or grit chambers is required prior to discharge to surface waters. Describe what other treatment will be provided. _____
- Describe erosion and sediment controls for exposed soil areas with a continuous positive slope to a special water, and temporary sediment basins for areas that drain five or more acres disturbed at one time. _____
- Describe the undisturbed buffer zone to be used (not less than 100 linear feet from special waters). _____
- Describe how the permanent stormwater management system will ensure that the pre- and post-construction runoff rate and volume from the 1- and 2-year, 24-hour precipitation events remains the same. _____
- Describe how the permanent stormwater management system will minimize any increase in the temperature of trout stream receiving waters resulting from the 1- and 2-year, 24-hour precipitation events. _____
- Wetlands. Does your project discharge stormwater with the potential for significant adverse impacts to a wetland (e.g., conversion of a natural wetland to a stormwater pond)? Yes No
If yes, describe the wetland mitigation sequence that will be followed in accordance with Part D of Appendix A. _____

Inspections and Maintenance (IV.E)

Describe procedures to routinely inspect the construction site:

- Once every seven days during active construction
- Within 24 hours after a rainfall event greater than 0.5 inches in 24 hours and within 7 days after that.

Inspections must include stabilized areas, erosion prevention and sediment control BMPs, and infiltration areas. The project will be inspected by the Contractor at a minimum of once every 7 days during active construction and within 24 hours after a rainfall event greater than 0.5 inches. The contractor shall inspect all areas of the project including downstream receiving waters of the project to ensure the project is in compliance with the Permit. An inspection log shall be kept on site during construction.

Pollution Prevention Management Measures (IV.F)

- Describe practices to properly manage and dispose of solid waste, including trash (IV.F.1). The contractor shall dispose of solid waste in accordance with MPCA and the City of Coon Rapids disposal requirements.
- Describe practices to properly manage hazardous materials (IV.F.2). Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MPCA and the City of Coon Rapids regulations.
- Describe practices for external washing of trucks and other construction vehicles (IV.F.3). External washing of trucks or construction vehicles is not allowed on the project.
- Describe how you are going to provide a safe, leak proof, concrete washout on site (IV.F.4). All wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter ground water is considered an impermeable liner. Liquid and solid wastes must be disposed of properly and in compliance with MPCA regulations.
- Describe your spill prevention plan. Any spill locations on the project must be handled in accordance with the MPCA and City of Coon Rapids regulations.
- Describe measures to address sanitary and septic waste. Sanitary and septic waste will be handled in compliance with MPCA and City of Coon Rapids regulations.

Final Stabilization (IV.G)

Describe how you will achieve final stabilization of the site (IV.G). The project will achieve final stabilization through the use of hydroseeding, sod, and erosion control blanket. All areas throughout the project that do not receive sod are to be blanketed after hydroseeded.

Records Retention (III.D)

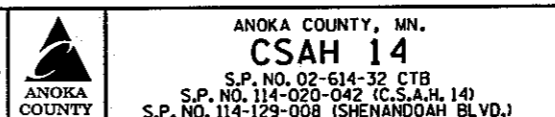
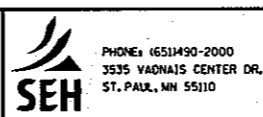
Describe your record retention procedures (must be kept at the site) (III.D). Records must include:

- Copy of SWPPP and any changes
- Training documentation
- Inspection and maintenance records
- Permanent operation and maintenance agreements
- Calculations for the design of temporary and permanent stormwater management systems.

A copy of the SWPPP and all inspections and maintenance records shall be kept on site during construction by the Contractor. The Contractor shall keep the SWPPP in either a field office or in an on site vehicle during normal working hours. The owner shall keep the SWPPP and any pertinent records on file for 3 years after submittal of the Notice of Termination.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CIF				
DESIGNER: JTK				
CHECKED BY: JJW				

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.
 Certified By: Jeremy Walgrave Lic. No. 43131
 Licensed Professional Engineer
 Printed Name: JEREMY J. WALGRAVE Date: 1/20/2010



STORM WATER POLLUTION PREVENTION PLAN

FILE NO. 102287	141
SWP2 OF SWP2	194

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. ANOKA COUNTY HIGHWAY DEPARTMENT 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.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

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.

PREFORMED THERMOPLASTIC:

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

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-POLY PREFORM

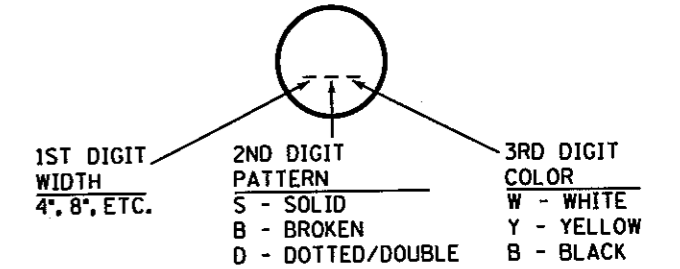
 PAVEMENT MESSAGE (LEFT ARROW)
POLY PREFORM


STRIPING KEY

 CIRCLE - EPOXY  SQUARE - POLY PREFORM

 TRIANGLE - PAINT

 PENTAGON - REMOVEABLE PREFORMED PLASTIC MARKING



EXAMPLE:  = 4" SOLID LINE WHITE - EPOXY

PERMANENT PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
<input checked="" type="checkbox"/> PAVEMENT MARKING REMOVAL	LIN FT	1,270
PAVEMENT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH	18
PAVEMENT MSSG (RT ARROW) PREFORMED THERMOPLASTIC	EACH	17
4" SOLID LINE WHITE - EPOXY	LIN FT	22,600
4" SOLID LINE YELLOW - EPOXY	LIN FT	14,000
4" BROKEN LINE WHITE - EPOXY	LIN FT	2,600
① 8" DOTTED LINE WHITE - EPOXY	LIN FT	100
4" BROKEN LINE YELLOW - EPOXY	LIN FT	12
4" DOUBLE SOLID LINE YELLOW - EPOXY	LIN FT	2,900
12" STOP LINE WHITE - PREFORMED THERMOPLASTIC	LIN FT	360
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	620
CROSSWALK MARKING - PREFORMED THERMOPLASTIC	SO FT	2286

① 3' STRIPE, 12' SKIP

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4/8/2010

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DESIGN TEAM					
DRAWN BY: <u>MIT</u>					
DESIGNER: <u>MPM</u>					
CHECKED BY: <u>MPM</u>					
	NO.	BY	DATE	REVISIONS	

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.

Certified By: Michael P. McCurdy Lic. No. 45902
Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

 PHONE: 651/490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

 ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

PAVEMENT MARKING TABULATION
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FILE NO. 102287	142
SS1 OF 552	194

SIGN PANELS TYPE C										
SIGN NO.	QUANT.	POSTS			MTG. HT. (FT) (1)	PANELS			CODE NO.	PANEL LEGEND
		NO. & TYPE	KNEE BRACES QUANT.	LENGTH (FT)		SIZE (IN.)	AREA (SQ FT)	TOTAL AREA (SQ FT)		
C-1	2	2-U	-	15	7	48 x 48	16.00	32.00	W3-3	SIGNAL AHEAD
C-2	4	1-U	-	13	7	24 x 30	5.00	20.00	R2-1	SPEED LIMIT 55
C-3	10	1-U	-	13	7	30 x 30	6.25	62.50	-	RIGHT TURN LANE
(3) C-4	6	1-U	-	13	7	30 x 30	6.25	37.50	-	LEFT TURN LANE
(3) C-5	8	1-U	-	13	7	30 x 30	6.25	50.00	R5-1	DO NOT ENTER
(3) C-6	8	1-U	-	13	7	24 x 30	5.00	40.00	R4-7	KEEP RIGHT (SYMBOL)
					4	18 x 18	2.25	18.00	X4-2	HAZARD MARKER
C-7	2	1-U	-	9	4	24 x 12	2.00	4.00	M3-4ma	WEST
						24 x 24	4.00	8.00	M1-6a	ANOKA COUNTY 14
(3) C-8	3	1-U	-	9	4	48 x 18	6.00	18.00	R6-1R	ONE WAY (RIGHT)
C-9	2	1-U	-	13	7	30 x 30	6.25	12.50	R1-1	STOP
C-10	4	1-U	-	14	7	36 x 12	3.00	12.00	R6-1R	ONE WAY (RIGHT)
						30 x 30	6.25	25.00	R1-1	STOP
C-11	1	1-U	-	15	-	24 x 24	4.00	4.00	R3-4	NO U-TURN (SYMBOL)
					7	24 x 30	5.00	5.00	R4-7	KEEP RIGHT (SYMBOL)
					4	18 x 18	2.25	2.25	X4-2	HAZARD MARKER
C-12	1	2-U	-	15	7	48 x 48	16.00	16.00	W6-2	DIVIDED HIGHWAY ENDS
C-13	1	2-U	-	15	7	48 x 48	16.00	16.00	W6-1	DIVIDED HIGHWAY BEGINS
C-14	1	2-U	-	13	7	36 x 30	7.50	7.50	R3-30AC	LANE DESIGNATION (LEFT, THRU)
C-15	1	2-U	-	15	7	48 x 48	16.00	16.00	W6-3	TWO WAY TRAFFIC
C-16	1	2-U	-	13	7	54 x 30	11.25	11.25	R3-30ACA	LANE DESIGNATION (LEFT, THRU, RIGHT)
C-17	1	1-U	-	13	7	24 x 30	5.00	5.00	R2-1	SPEED LIMIT 40
C-18	2	1-U	-	9	4	24 x 12	2.00	4.00	M3-2ma	EAST
						24 x 24	4.00	8.00	M1-6a	ANOKA COUNTY 14
C-19	1	2-U	-	17	7	48 x 48	16.00	16.00	W9-1R	RIGHT LANE ENDS
						30 x 24	5.00	5.00	W20-100p	850 FEET
C-20	1	2-U	-	15	7	48 x 48	16.00	16.00	W9-1L	LANE ENDS MERGE LEFT
C-21	2	1-U	-	14	7	21 x 15	2.19	4.38	M2-1a	JCT
						24 x 24	4.00	8.00	M1-6a	ANOKA COUNTY 78
C-22	2	1-U	-	14	7	24 x 24	4.00	8.00	M1-6a	ANOKA COUNTY 78
						21 x 15	2.19	4.38	M6-4a	DOUBLE ARROW
(3) C-23	1	2-U	-	17	7	48 x 48	16.00	16.00	W9-1R	RIGHT LANE ENDS
						30 x 24	5.00	5.00	W20-100p	850 FEET
(3) C-24	1	2-U	-	14	7	36 x 36	9.00	9.00	W9-1L	LANE ENDS MERGE LEFT
(3) C-25	2	2-U	-	13	7	36 x 30	7.50	15.00	R3-30AB	LANE DESIGNATION (LEFT, LEFT)
C-26	1	2-U	-	15	7	48 x 48	16.00	16.00	W20-X3L	MERGE LEFT
C-27	1	1-U	-	9	4	36 x 12	3.00	3.00	R6-1L	ONE WAY (LEFT)
TOTAL								560.25		

SALVAGE AND INSTALL SIGN TYPE C							
SIGN NO.	QUANT.	POSTS			MTG. HT. (FT) (1)	PANEL SIZE (IN.)	PANEL LEGEND
		NO. & TYPE	KNEE BRACES QUANT.	LENGTH (FT)			
C-100	1	1-U	-	14	7	64 x 36	ADOPT A HIGHWAY (JERRY D BECK III)
C-101	1	1-U	-	13	7	36 x 30	ADOPT A HIGHWAY (TROOP 498)
TOTAL	2						

SALVAGE SIGN TYPE C	
TYPE C	QUANTITY
TOTAL	56

GENERAL NOTES:

1. Post lengths are approximate and include embedment, but do not include additional length required for splice.
2. See Anoka County standards for punching code and detailed drawings of Type C Signs.
3. See Sheet SS14 for structural details.

SPECIFIC NOTES:

- (1) Mounting height is minimum. See Sheet SS14 for typical mounting.
- (2) Mount back to back.
- (3) Mount in concrete. See Sheet SS15.

DESIGN TEAM						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. <i>Michael P. McCurdy</i> Certified By: <i>Michael P. McCurdy</i> Lic. No. 45902 Printed Name: MICHAEL P. McCurdy Date: 4/8/2010	 PHONE: (651)490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110	 ANOKA COUNTY	ANOKA COUNTY, MN. CSAH 14 S.P. NO. 02-614-32 CTB S.P. NO. 114-020-042 (C.S.A.H. 14) S.P. NO. 114-129-008 (SHENANDOAH BLVD.)	SIGNING TABULATIONS	FILE NO. 102287 143 SS2 OF SS2 194
DRAWN BY: MTT											
DESIGNER: MPM											
CHECKED BY: MPM											
	NO.	BY	DATE	REVISIONS							

SALVAGE SIGN TYPE D					
SIGN NO.	QUANT.	POSTS		PANEL SIZE (IN.)	PANEL LEGEND
		NO. & TYPE	KNEE BRACES QUANT.		
D-200	2	2-U	2	90 x 48	Shenandoah Blvd ↔
D-201	1	2-U	2	48 x 36	Ibis St ←
D-202	1	2-U	2	48 x 36	Ibis St →
D-203	1	2-U	2	102 x 66	Hanson Blvd ↔
TOTAL	5				

MARKERS		
TYPE	QUANTITY	LOCATION
X4-2	8	BELOW KEEP RIGHT SIGN (C-6)
X4-4R	2	AT BR. NO. 02577
X4-5	4	AT BEG OF GUARDRAIL & END OF BR. NO. 02577
TOTAL	14	

(5)

SALVAGE MARKERS		
TYPE	QUANTITY	LOCATION
X4-4	1	MEDIAN - STA. 10+40
X4-2	1	AT SPLITTER ISLAND - STA. 74+90
X4-3	2	AT CULVERT - STA. 45+50
TOTAL	4	

SALVAGE TEMPORARY BARRICADES	
TYPE III	QUANTITY
TOTAL	6

SPECIFIC NOTE:

(5) Fluorescent Yellow on Black

DESIGN TEAM				
NO.	BY	DATE	REVISIONS	

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

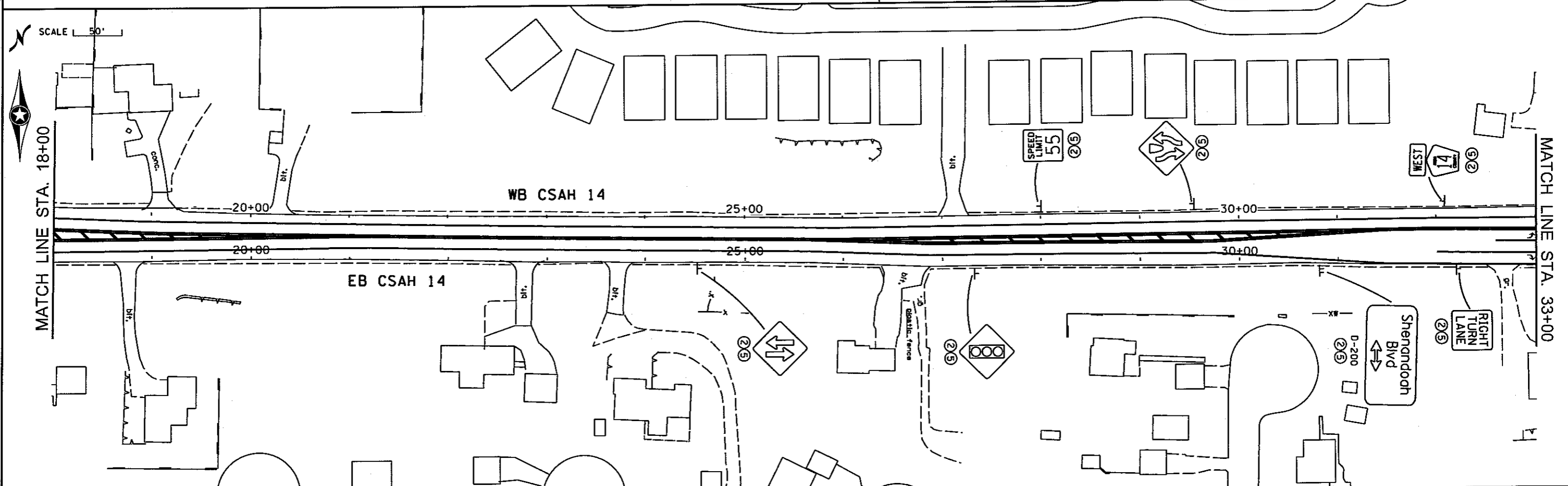
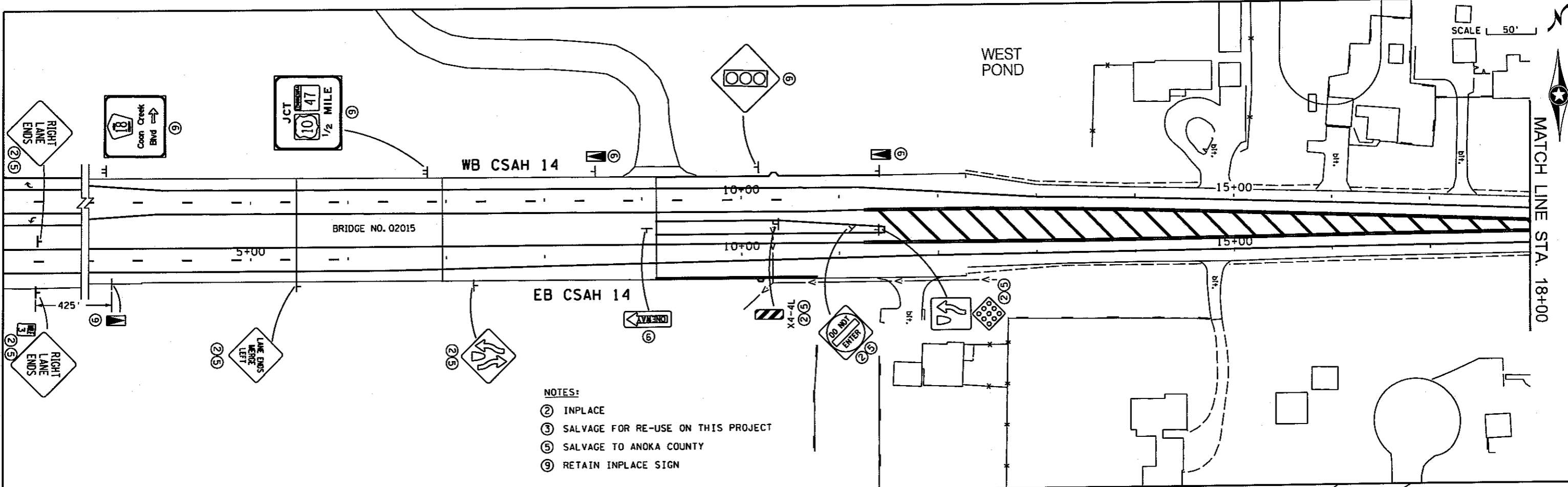
SIGNING TABULATIONS

FILE NO. 102287	144
SS3 OF SS21	194

9:58:16 AM

4/8/2010

S:\A\A\Anoka\102287\5-dsgn\51-cadd\Civil\planshts\ano102.as.dgn



NOTES:

- ② INPLACE
- ③ SALVAGE FOR RE-USE ON THIS PROJECT
- ⑤ SALVAGE TO ANOKA COUNTY
- ⑨ RETAIN INPLACE SIGN

DESIGN TEAM			
DRAWN BY:	MTI		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

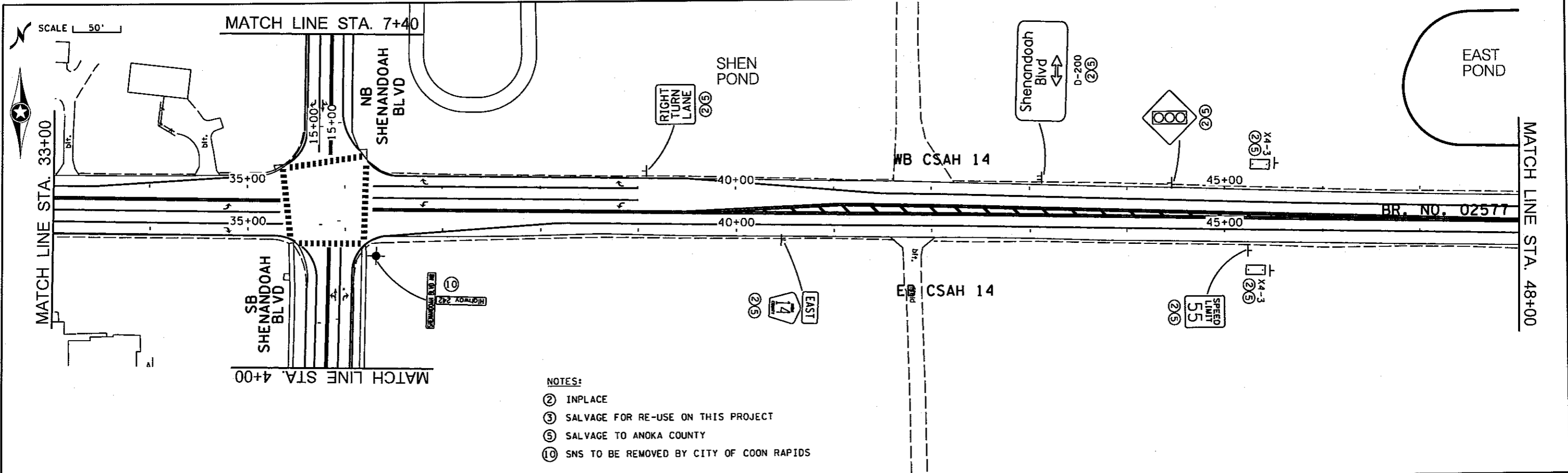
SEH
 PHONE: (651)90-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



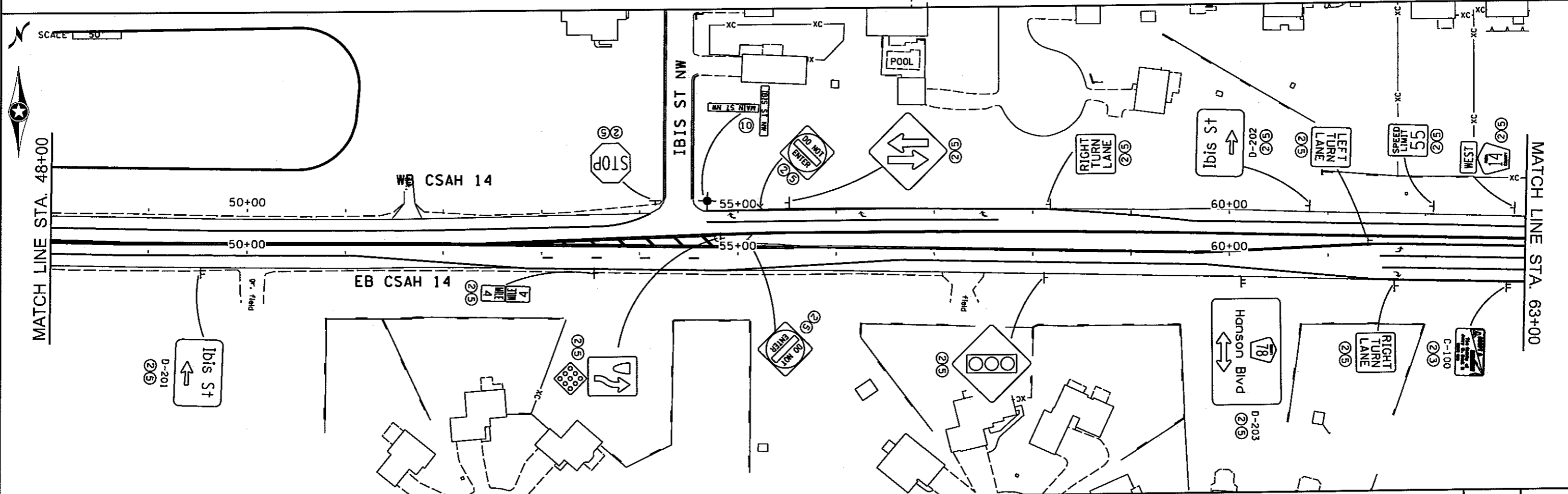
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

EXISTING SIGNING AND STRIPING PLAN
 EB CSAH 14 STA. 10+31.25 - 33+00.00

FILE NO. 102287	145
SS4 OF 5521	194



- NOTES:
- ② INPLACE
 - ③ SALVAGE FOR RE-USE ON THIS PROJECT
 - ⑤ SALVAGE TO ANOKA COUNTY
 - ⑩ SNS TO BE REMOVED BY CITY OF COON RAPIDS



DESIGN TEAM			
DRAWN BY:	MTI		
DESIGNER:	MEM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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.

Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

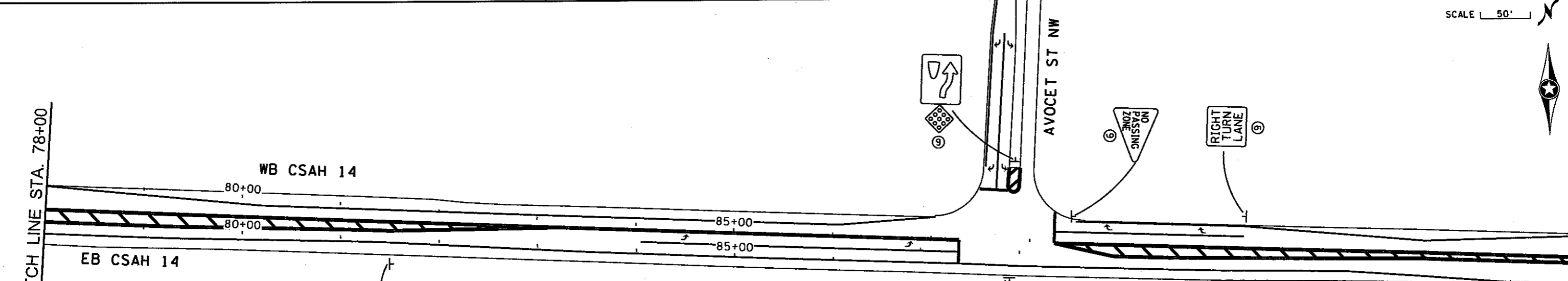
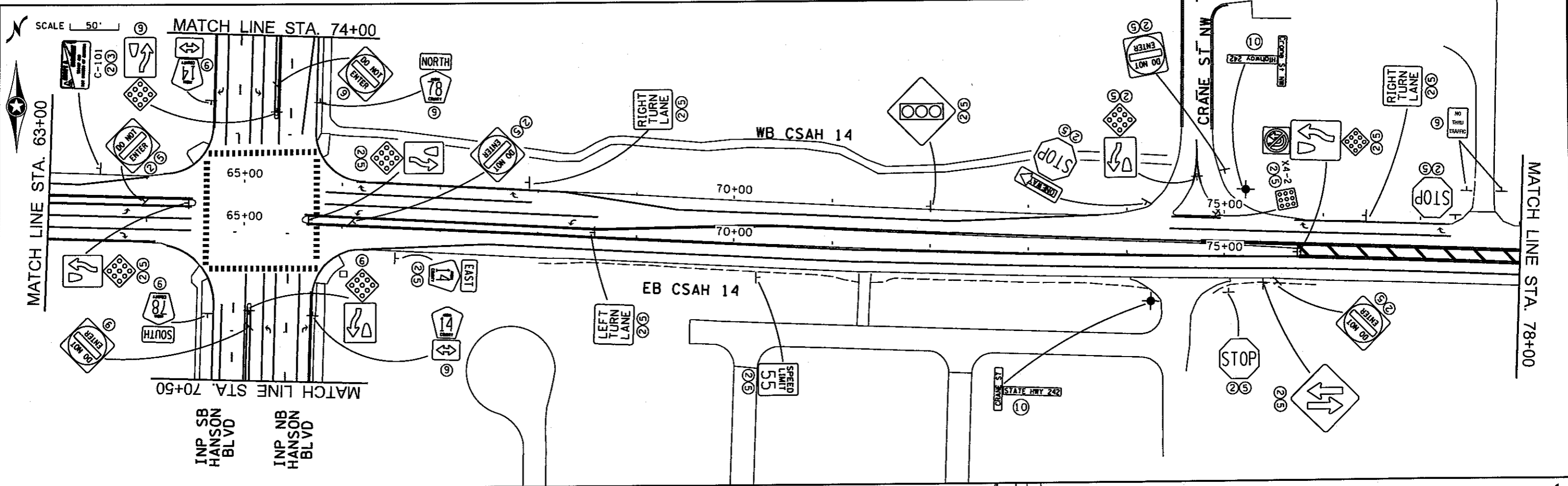
SEH
 PHONE: 651-490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

EXISTING SIGNING AND STRIPING PLAN
 EB CSAH 14 STA. 33+00.00 - 63+00.00

FILE NO.	146
102287	
SS5	
OF 5521	194

9:58:19 AM
 4/8/2010
 S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\planshts\ano102.es.dgn
 053



- NOTES:**
- ② INPLACE
 - ③ SALVAGE FOR RE-USE ON THIS PROJECT
 - ⑤ SALVAGE TO ANOKA COUNTY
 - ⑨ RETAIN INPLACE SIGN
 - ⑩ SNS TO BE REMOVED BY CITY OF COON RAPIDS

DESIGN TEAM			
DRAWN BY:	MTI		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: (651)490-2000
 3535 VADNATS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

EXISTING SIGNING AND STRIPING PLAN
 EB CSAH 14 STA. 63+00.00 - 86+29.40

FILE NO.	147
102287	
SS6	
OF 5521	194

9:58:20 AM

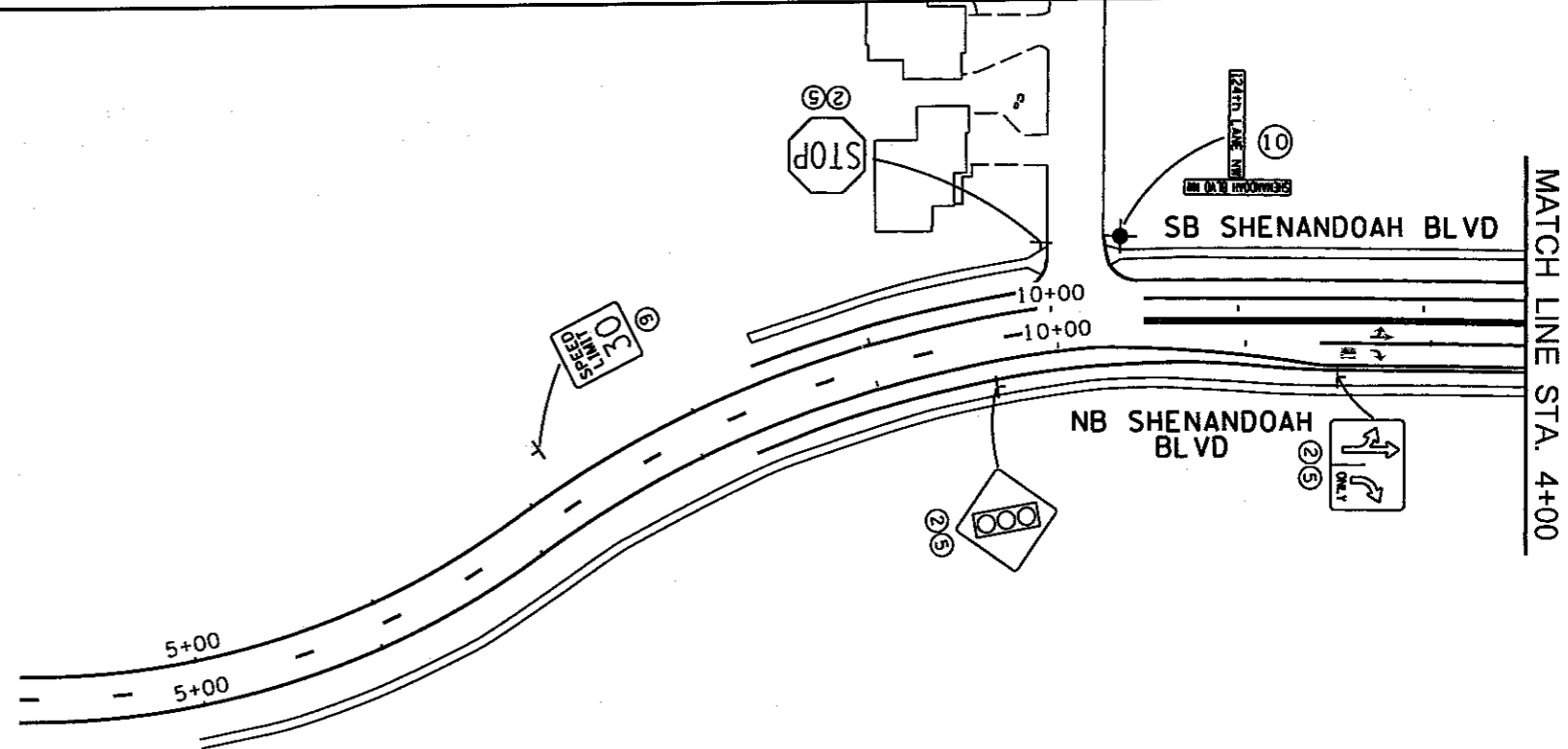
4/8/2010



SCALE 50'

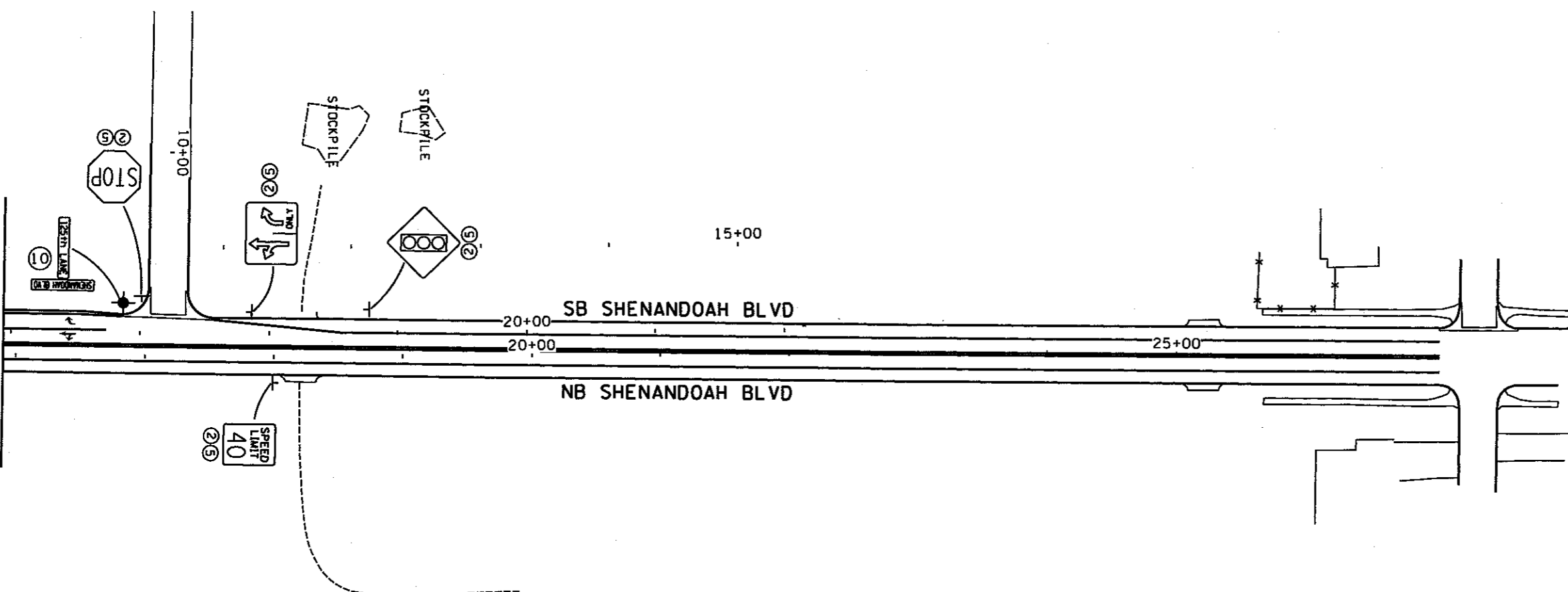
NOTES:

- ② INPLACE
- ⑤ SALVAGE TO ANOKA COUNTY
- ⑨ RETAIN INPLACE SIGN
- ⑩ SNS TO BE REMOVED BY CITY OF COON RAPIDS



SCALE 50'

MATCH LINE STA. 7+40



S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\planshts\ano102.es.dgn 894

DESIGN TEAM				REVISIONS			
DRAWN BY:	MTT			NO.	BY	DATE	
DESIGNER:	MPM						
CHECKED BY:	MPM						

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

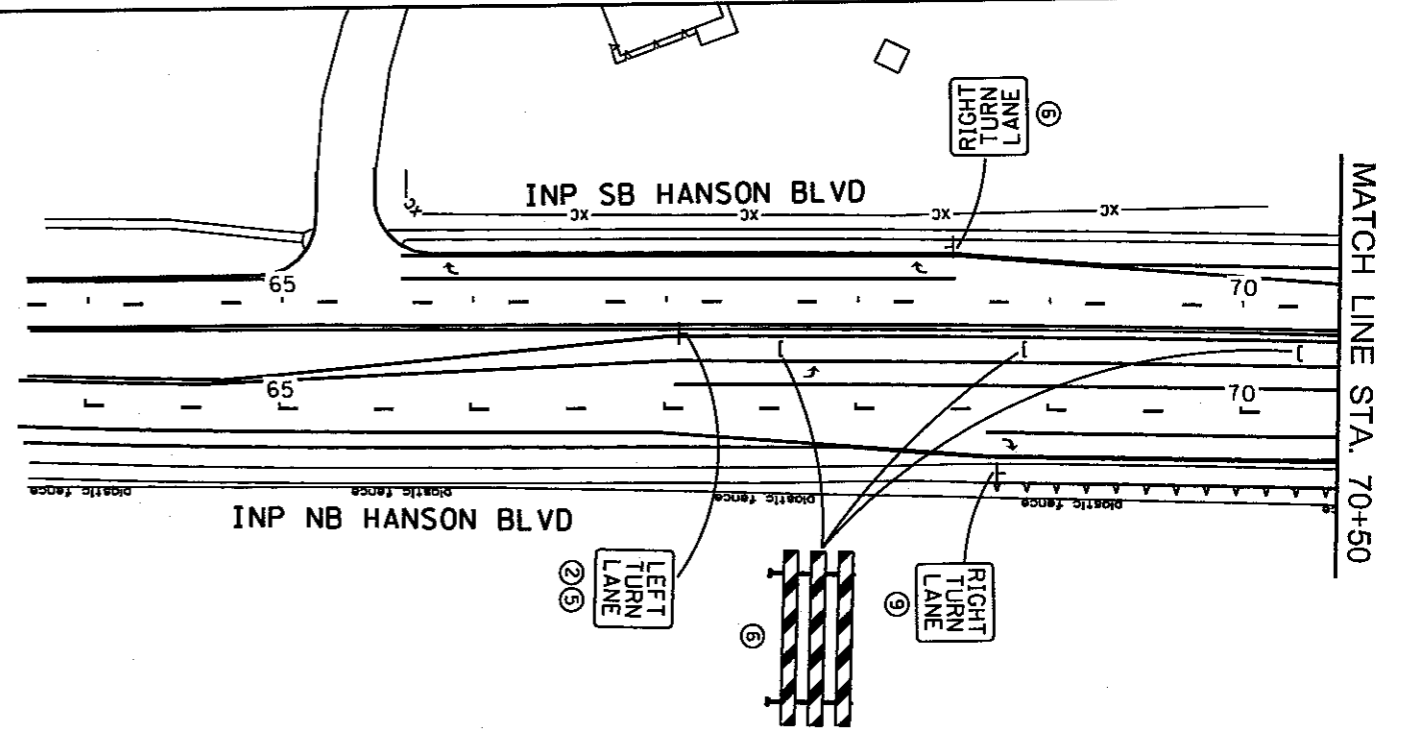


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

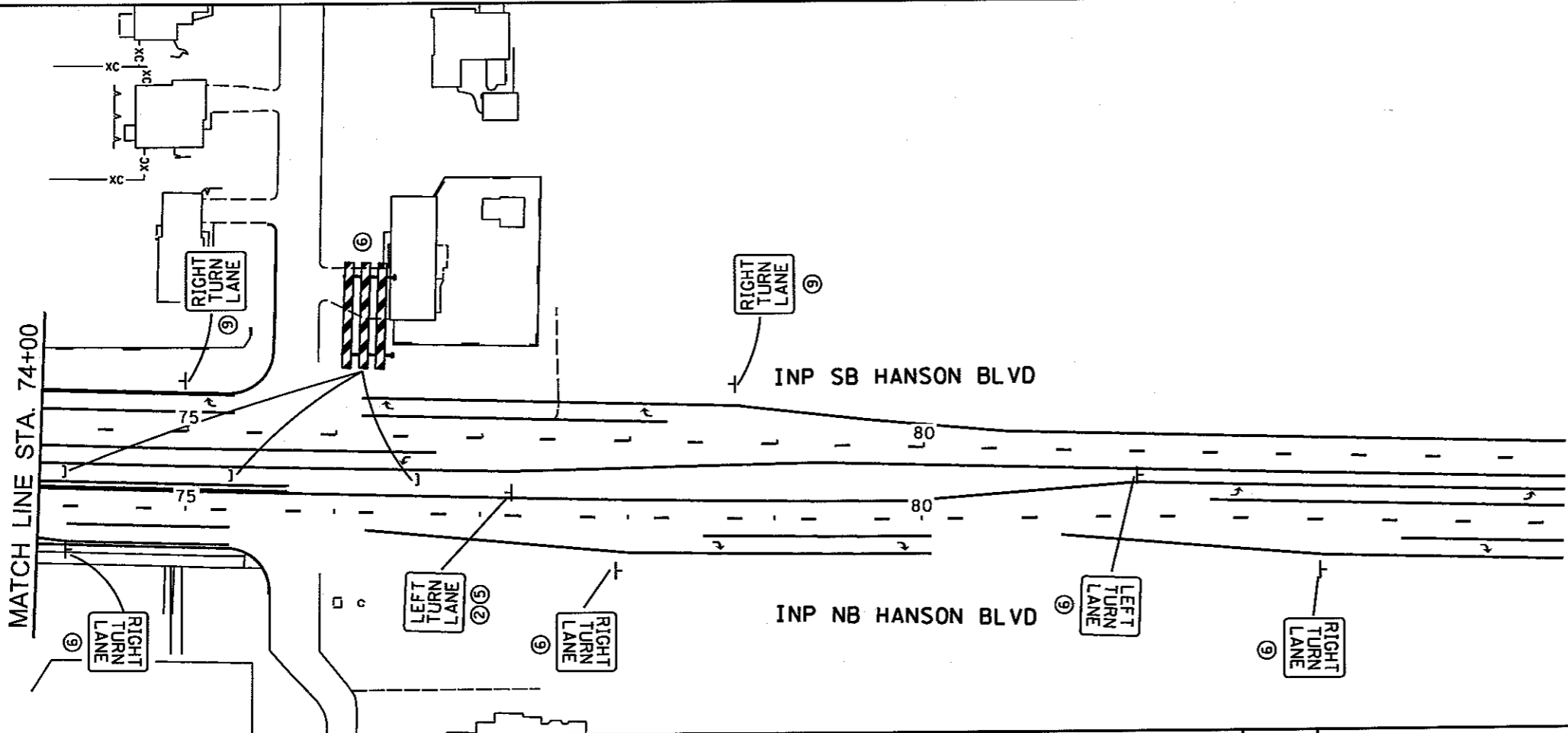
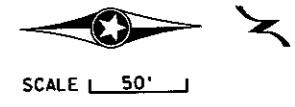
EXISTING SIGNING AND STRIPING PLAN
 NB SHENANDOAH BLVD STA. 0+08.65 - 18+38.10

FILE NO.	102287	148
SS7 OF SS21		194

9:58:21 AM
4/8/2010



- NOTES:**
- ② INPLACE
 - ⑤ SALVAGE TO ANOKA COUNTY
 - ⑥ SALVAGE BARRICADE TO ANOKA COUNTY
 - ⑨ RETAIN INPLACE SIGN



S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\pinshst\varol02.es.dgn
es5

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
	NO.	BY	DATE
			REVISIONS

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Licensed Professional Engineer
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

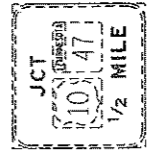
EXISTING SIGNING AND STRIPING PLAN
 NB HANSON BLVD 14 STA. 63+65 - 84+35

FILE NO.	102287	149
SS8 OF SS21		194

9:56:25 AM

4/8/2010

SCALE 1" = 50'



WB CSAH 14

WEST POND

MATCH EXISTING PAVEMENT MARKINGS

4SW

4BW

4SY

8' SHLD

10+00

10' SHLD

15+00

BRIDGE NO. 02015

5+00

10+00

10' SHLD

15+00

10' SHLD

8' SHLD

MATCH EXISTING PAVEMENT MARKINGS

4SW

EB CSAH 14

MATCH EXISTING PAVEMENT MARKINGS

4BW

NOTES:

- ① F&I
- ④ INSTALL
- ⑥ RETAIN INPLACE SIGN

MATCH LINE STA. 18+00

SCALE 1" = 50'



WB CSAH 14

8' SHLD

SPEED LIMIT 55 C-2

4SW

20+00

12'

25+00

30+00

12'

20+00

12'

25+00

30+00

11'

8' SHLD

EB CSAH 14

LEFT TURN LANE C-4

RIGHT TURN LANE C-3

MATCH LINE STA. 18+00

MATCH LINE STA. 33+00

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DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

SIGNING AND STRIPING PLAN
 E.B. C.S.A.H. 14 STA. 10+31.25 - 33+00.00

FILE NO.	150
102287	
SS9	194
OF SS21	

9:56:27 AM

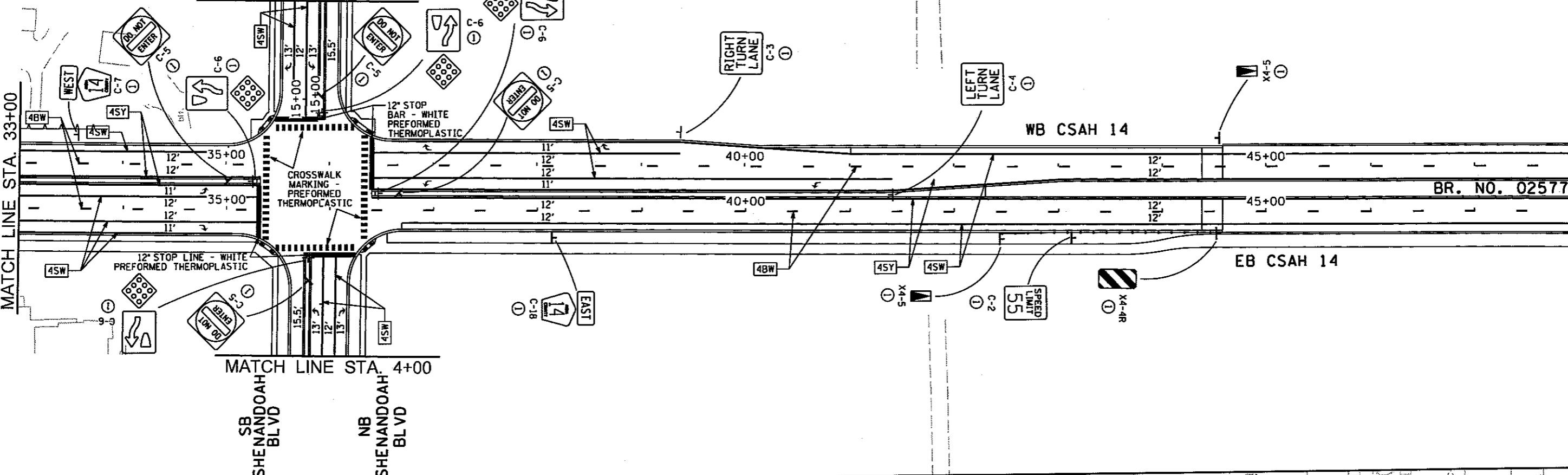
4/8/2010

SCALE 50'

MATCH LINE STA. 7+40

MATCH LINE STA. 33+00

MATCH LINE STA. 48+00

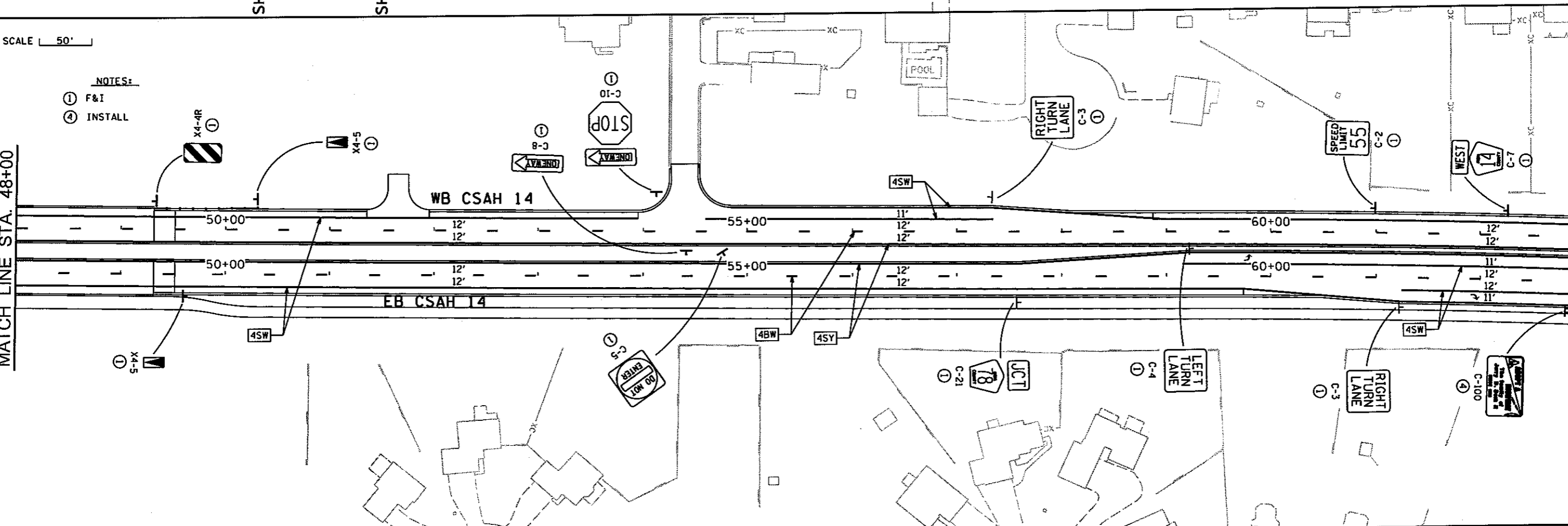


SCALE 50'

- NOTES:
- ① F&I
 - ④ INSTALL

MATCH LINE STA. 48+00

MATCH LINE STA. 63+00



S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\pinshfts\ano102.ss.dgn

DESIGN TEAM				REVISIONS			
NO.	BY	DATE	DESCRIPTION	NO.	BY	DATE	DESCRIPTION
1	MTT						
2	MPM						
3	MPM						

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

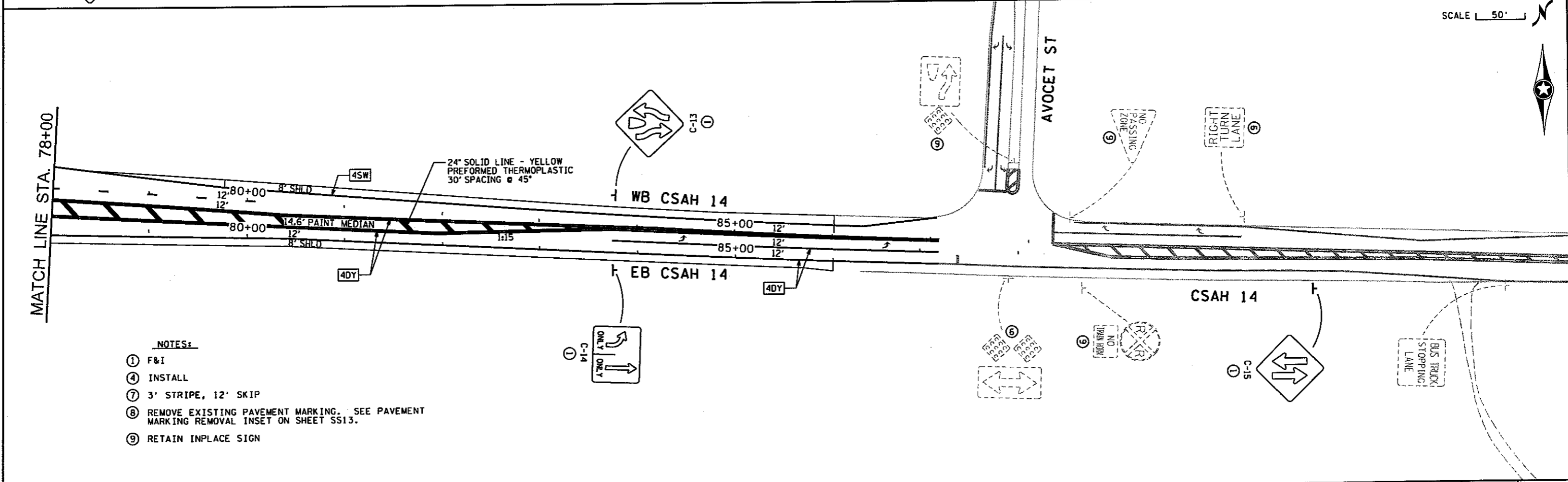
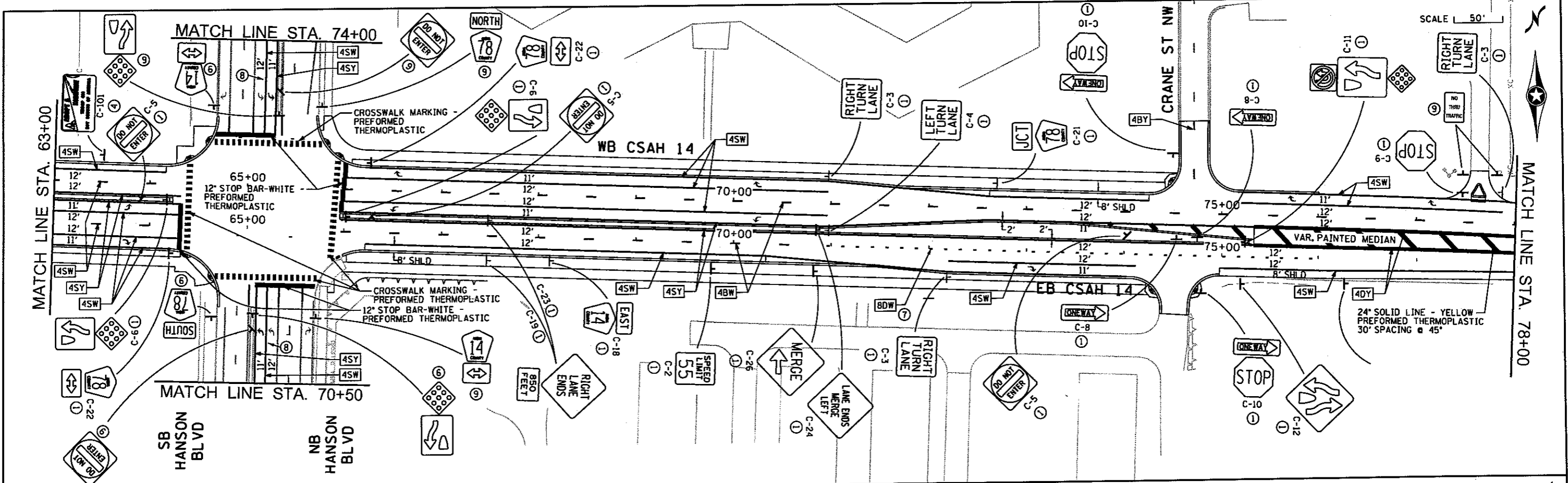
SEH
 PHONE: 651/990-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANDOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

SIGNING AND STRIPING PLAN
 E.B. C.S.A.H. 14 STA. 33+00.00 - 63+00.00

FILE NO.	151
102287	
SS10	194
OF 5521	



- NOTES:**
- ① F&I
 - ④ INSTALL
 - ⑦ 3' STRIPE, 12' SKIP
 - ⑧ REMOVE EXISTING PAVEMENT MARKING. SEE PAVEMENT MARKING REMOVAL INSET ON SHEET SS13.
 - ⑨ RETAIN INPLACE SIGN

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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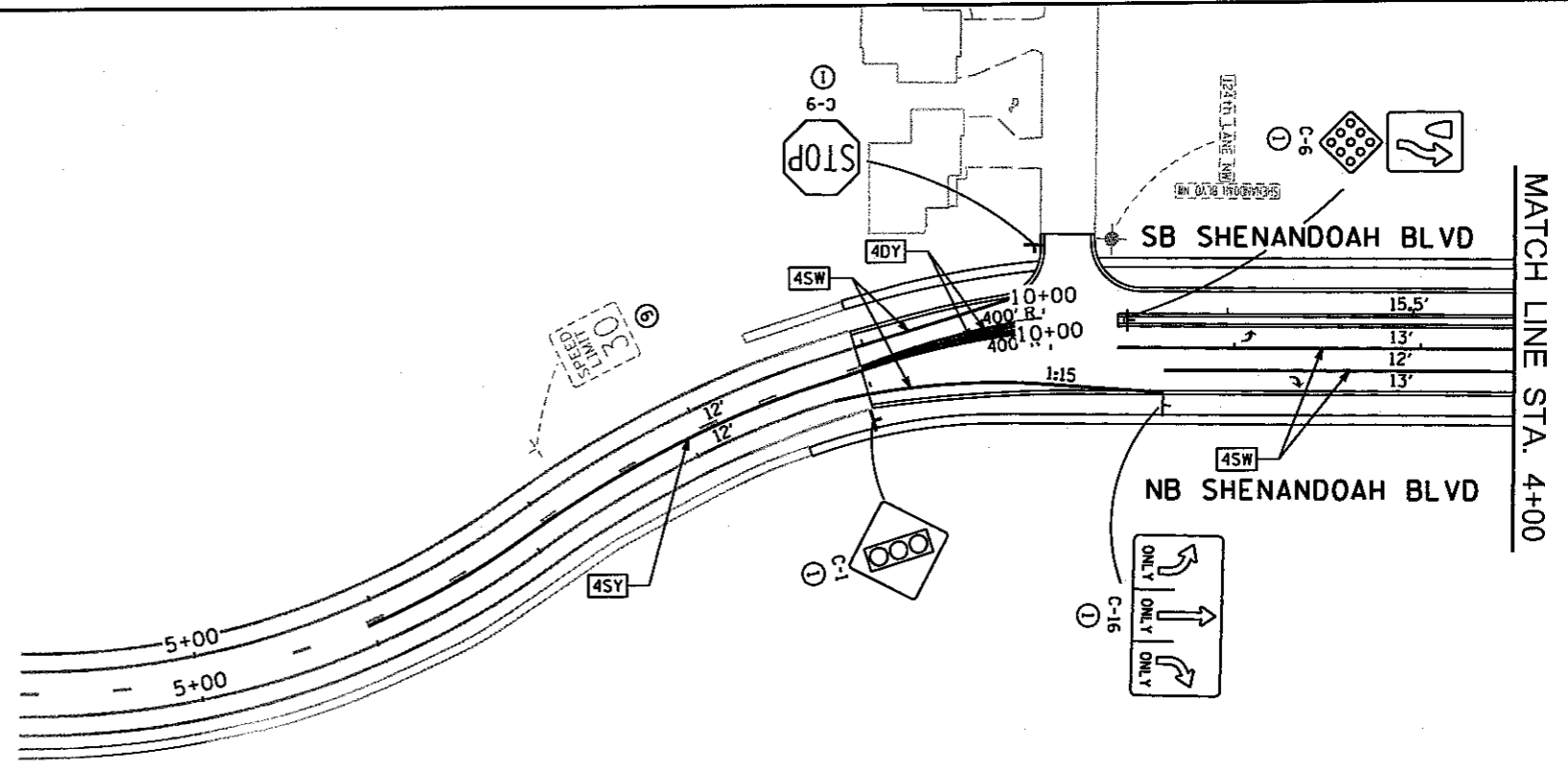


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

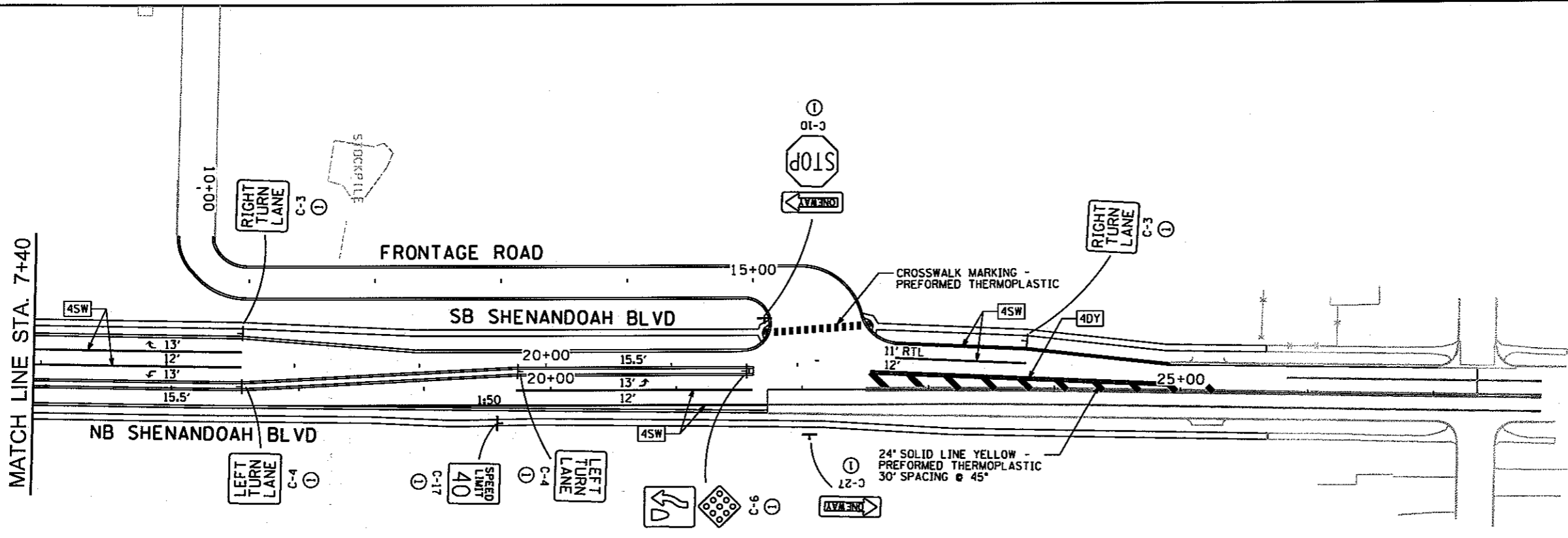
SIGNING AND STRIPING PLAN
 E.B. C.S.A.H. 14 STA. 63+00.00 - 86+29.40

FILE NO.	152
102287	
SS11	
OF 5521	194

3:38:50 PM
4/8/2010



- NOTES:**
- ① F&I
 - ④ INSTALL
 - ⑨ RETAIN INPLACE SIGN



S:\A\A\Anoka\102287\5-dsgn\51-cadd\Civil\plans\102287-ss.dgn

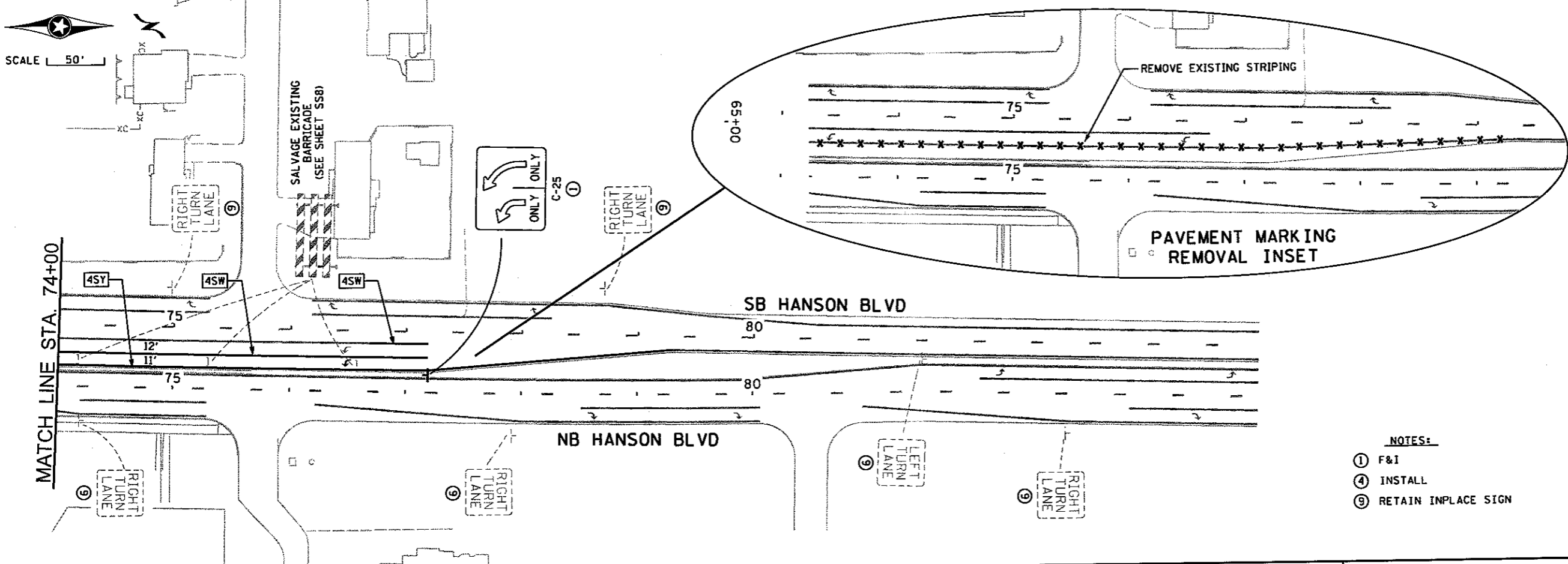
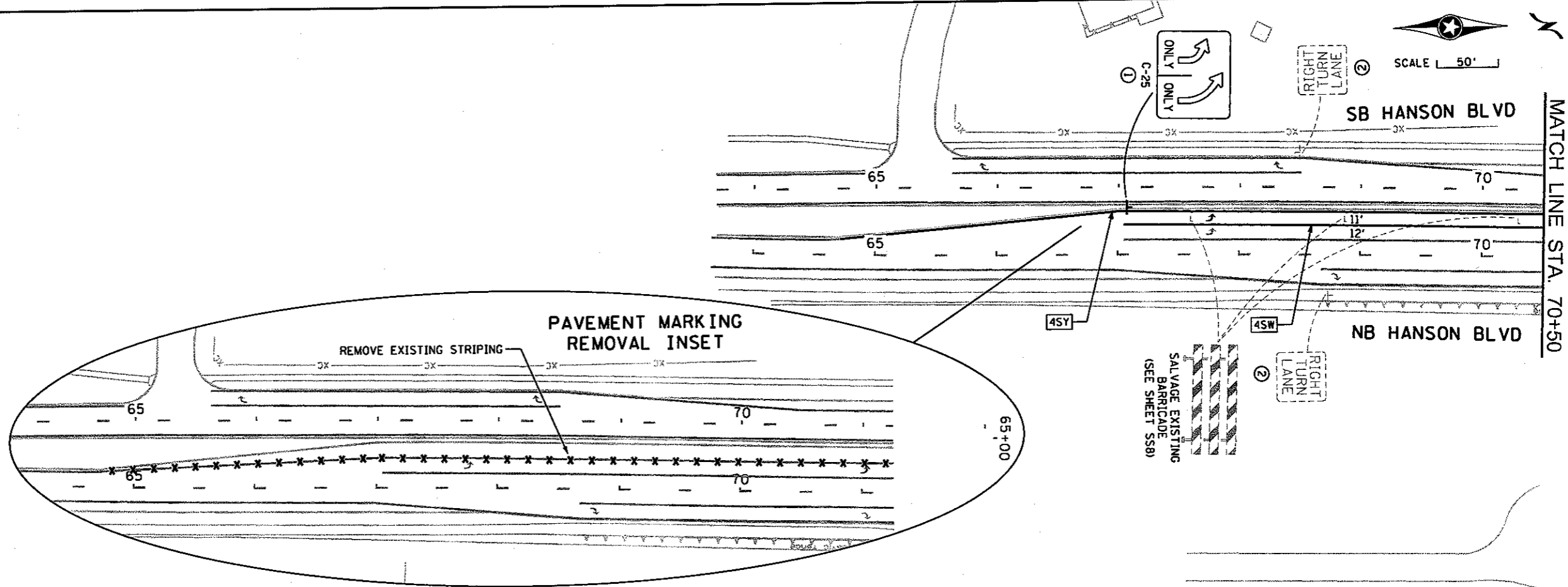
DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SIGNING AND STRIPING PLAN
 N.B. SHENANDOAH BLVD. STA. 0+08.65 - 18+38.10

FILE NO.	102287	153
SS12 OF 5521		194



- NOTES:**
- ① F&I
 - ④ INSTALL
 - ⑨ RETAIN INPLACE SIGN

S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\pinet\ss102.ssdgn

DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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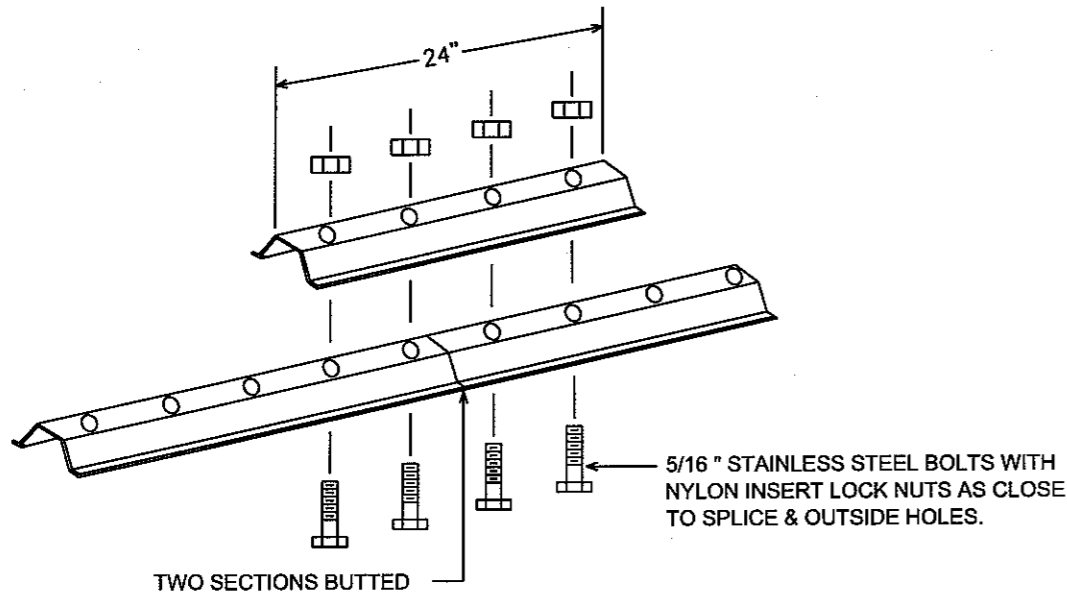
Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010



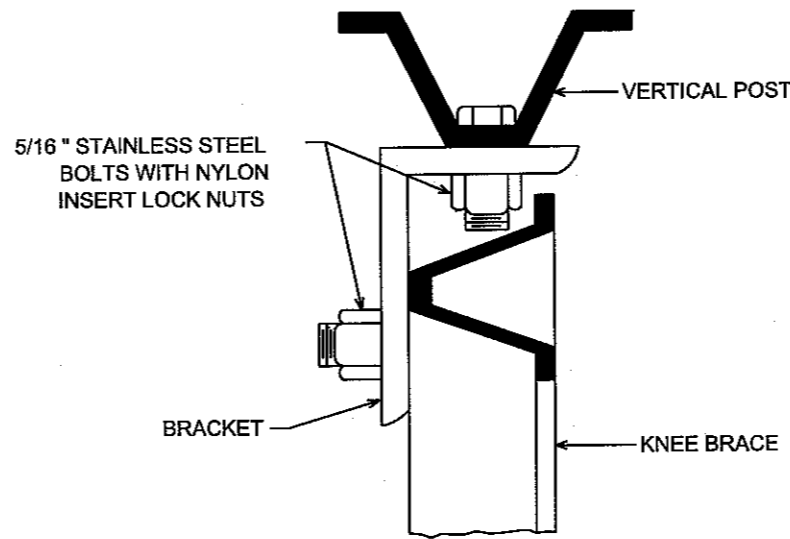
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

SIGNING AND STRIPING PLAN
 E.B. C.S.A.H. 14 STA. 63+00.00 - 86+29.40

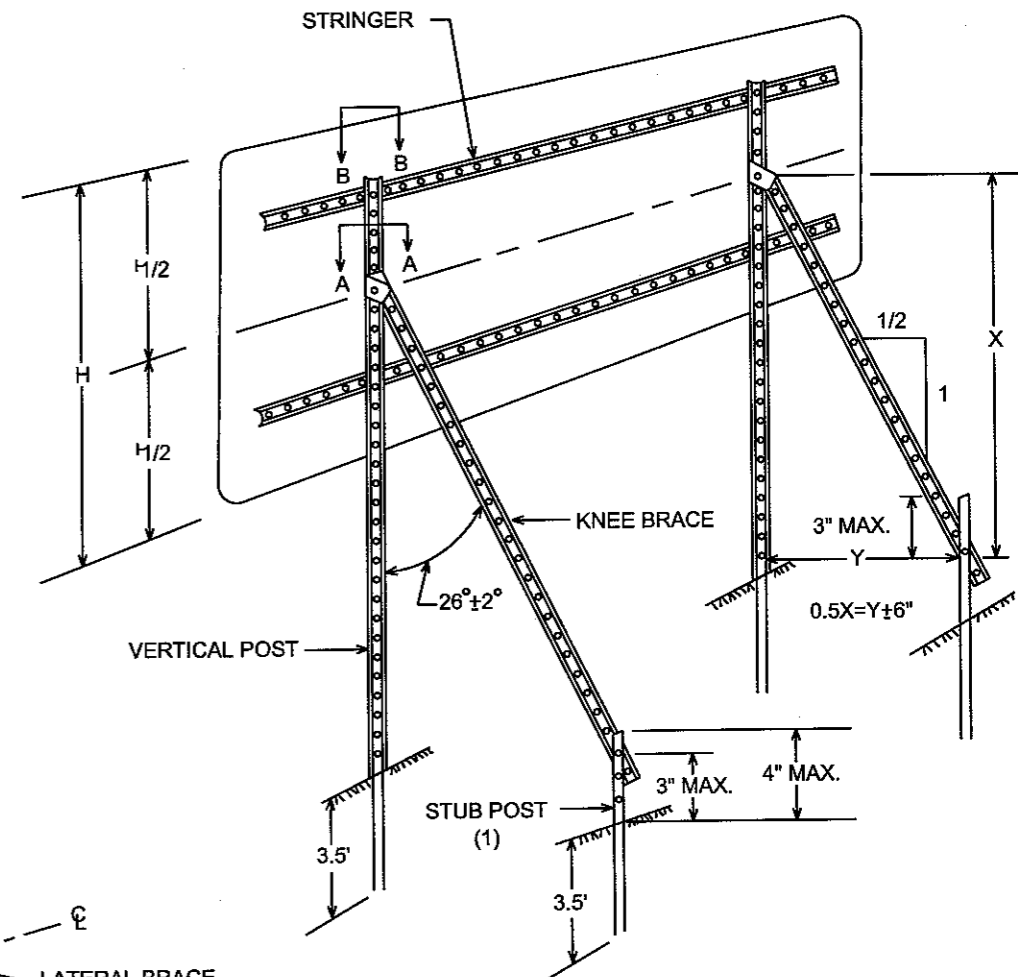
FILE NO.	154
102287	
SS13	194
OF SS21	



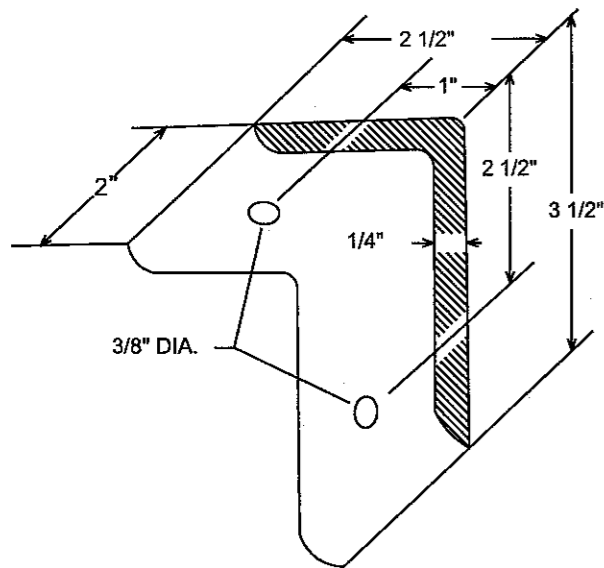
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

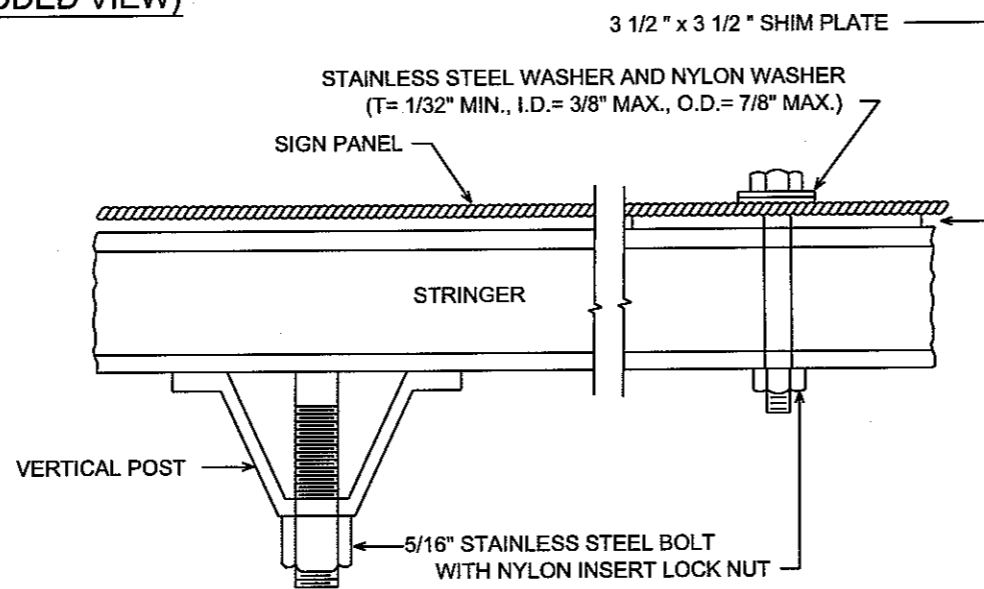


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

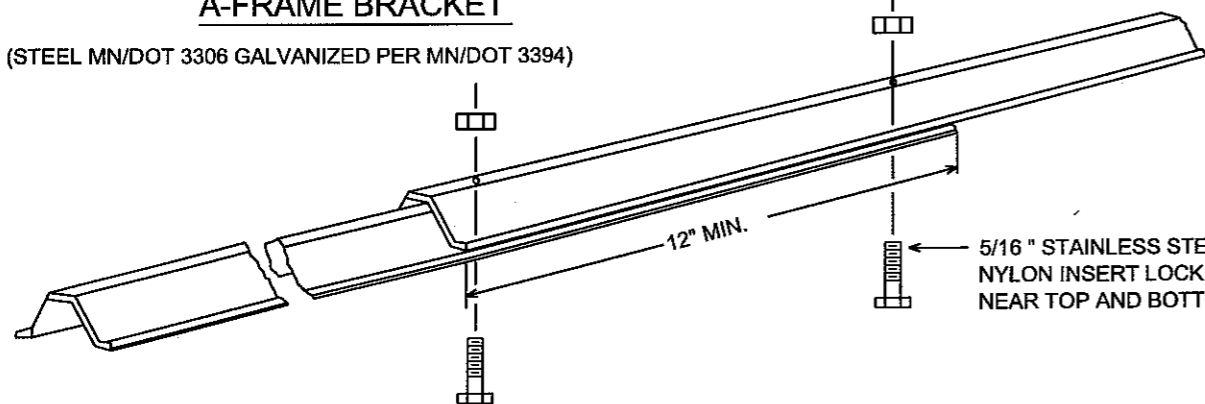


A-FRAME BRACKET

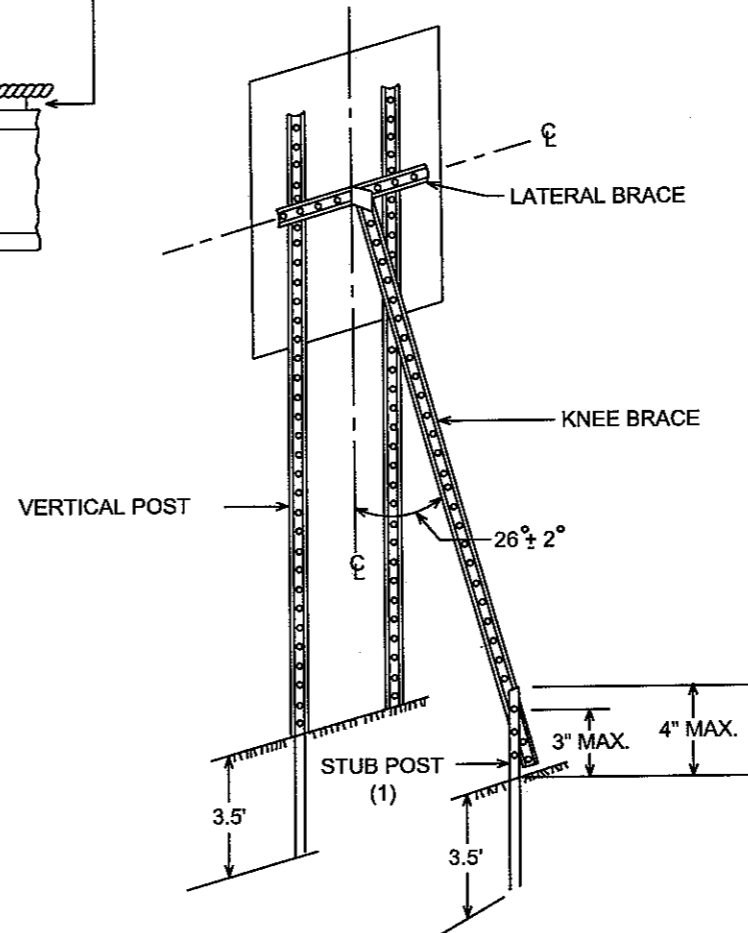
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



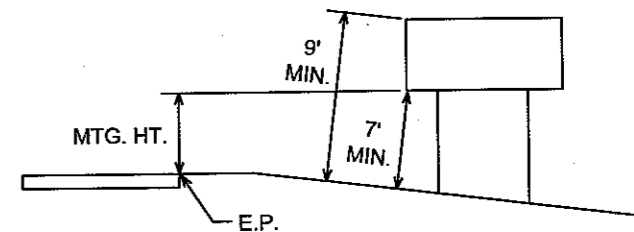
SECTION B-B



KNEE BRACE SPLICE



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



TYPICAL MOUNTING

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

DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: MPM				
CHECKED BY: MPM				
NO.	BY	DATE	REVISIONS	

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

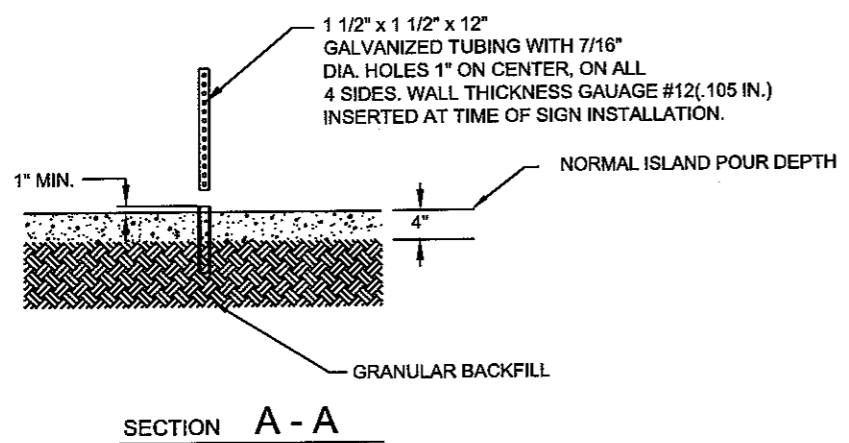
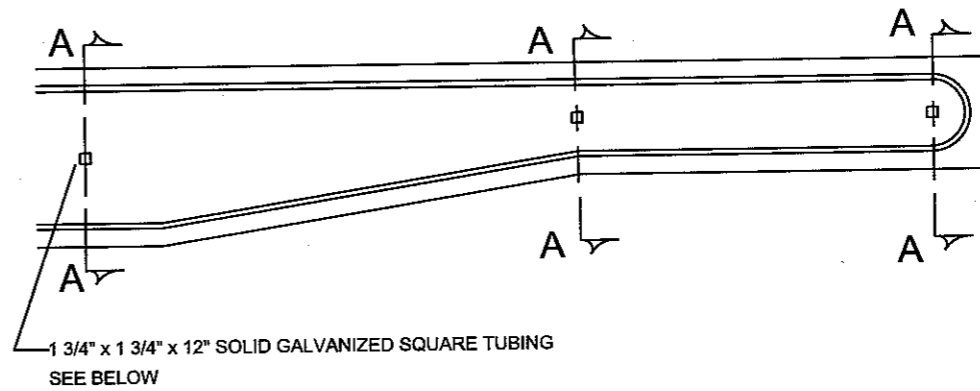
SEH PHONE: 1651490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

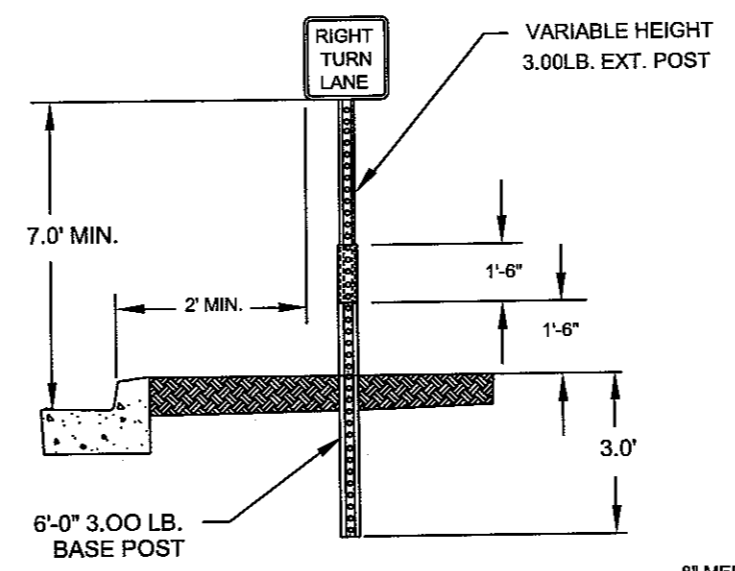
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TYPE C & D SIGN STRUCTURAL DETAILS

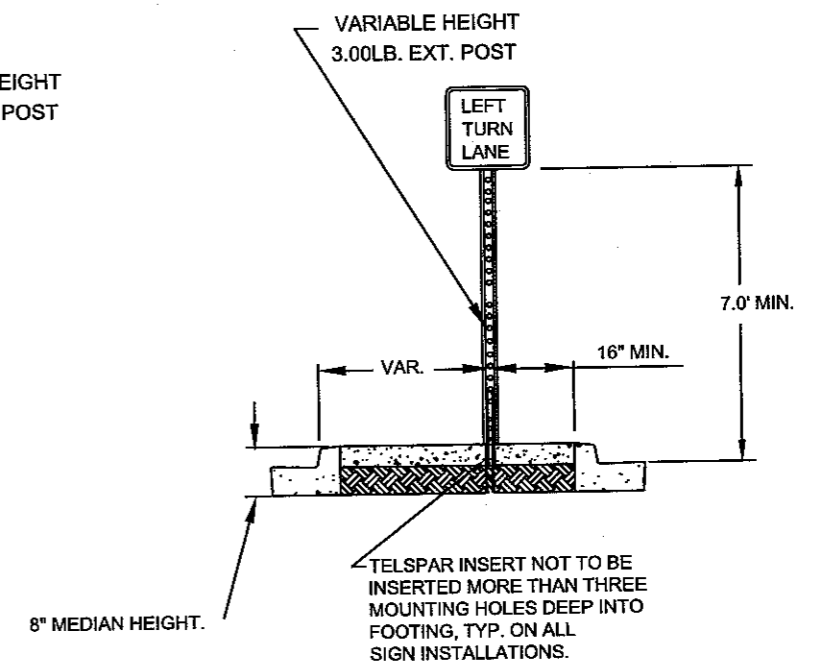
FILE NO. 102287	155
SS14 OF 5521	194



GROUND POST MOUNT SIGN INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN INSTALLATION TYPICAL



DESIGN TEAM				REVISIONS			
NO.	BY	DATE	DESCRIPTION	NO.	BY	DATE	DESCRIPTION

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Certified By: *Michael P. McClurdy* Lic. No. 45902
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010

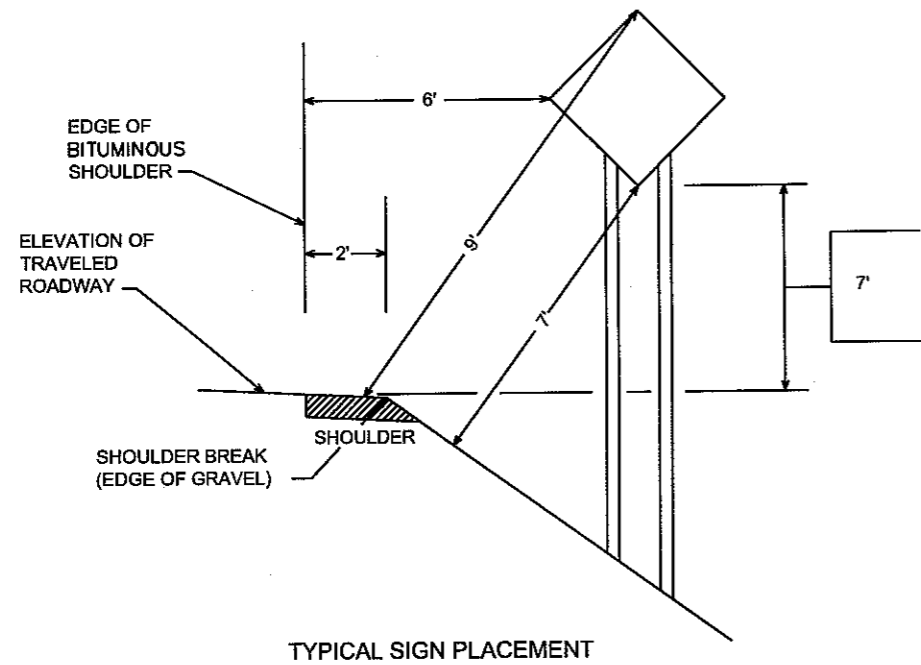
PHONE: 651490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

SIGN MOUNT DETAILS

FILE NO. 102287	156
SS15 OF 5521	194

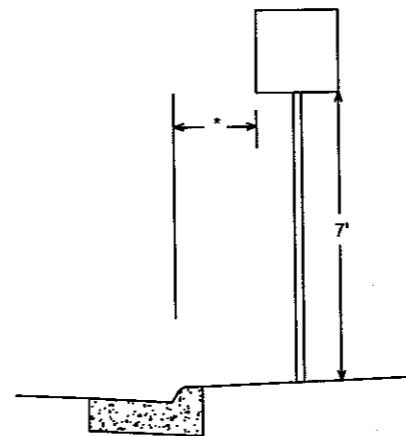
RURAL



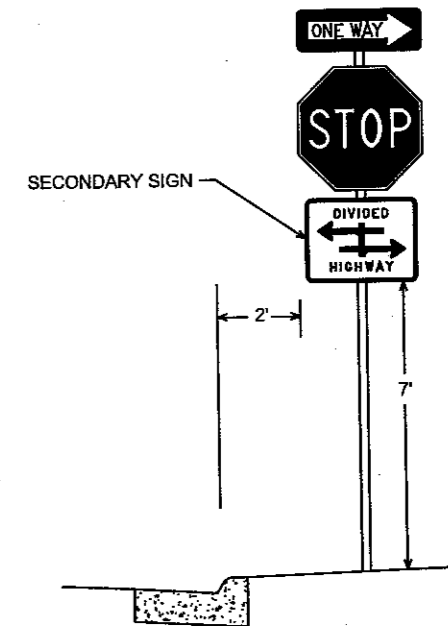
TYPICAL SIGN PLACEMENT

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

DESIGN TEAM			
DRAWN BY:	MIT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010

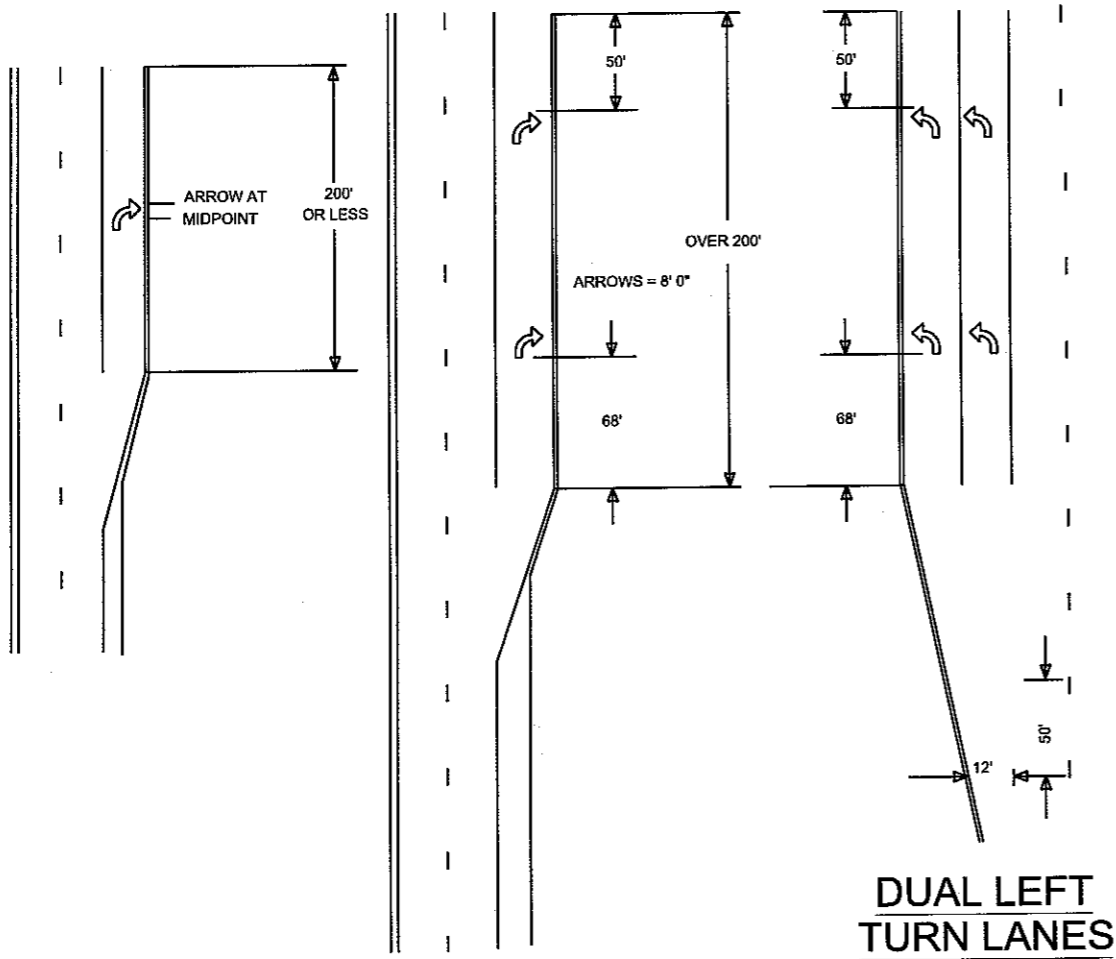


ANOKA COUNTY, MN.
CSAH 14
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 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

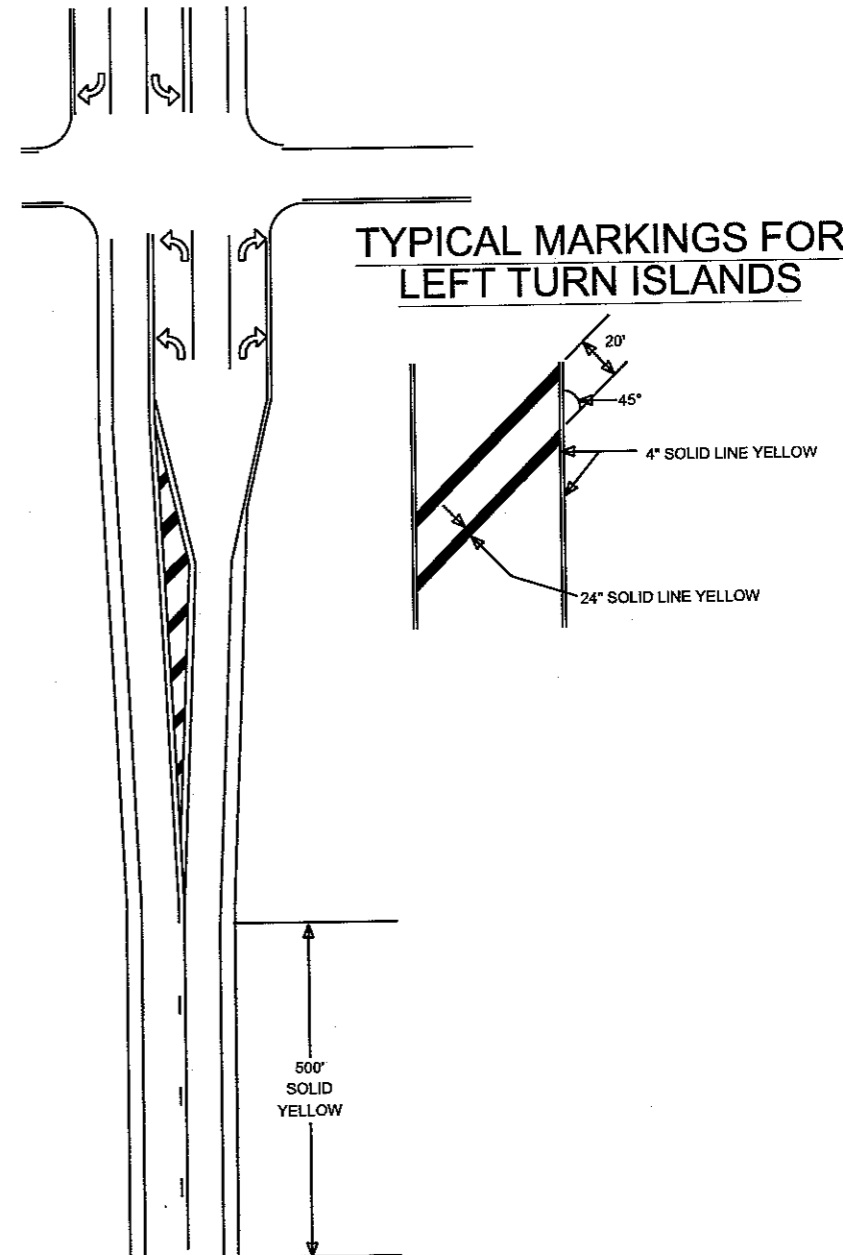
SIGN PLACEMENT

FILE NO.	102287	157
SS16 OF 5521		194

TYPICAL MESSAGE PLACEMENT FOR TURN LANES



TYPICAL MARKINGS FOR LEFT TURN ISLANDS



DESIGN TEAM			
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DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Licensed Professional Engineer
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010

SEH
 PHONE: 651-990-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

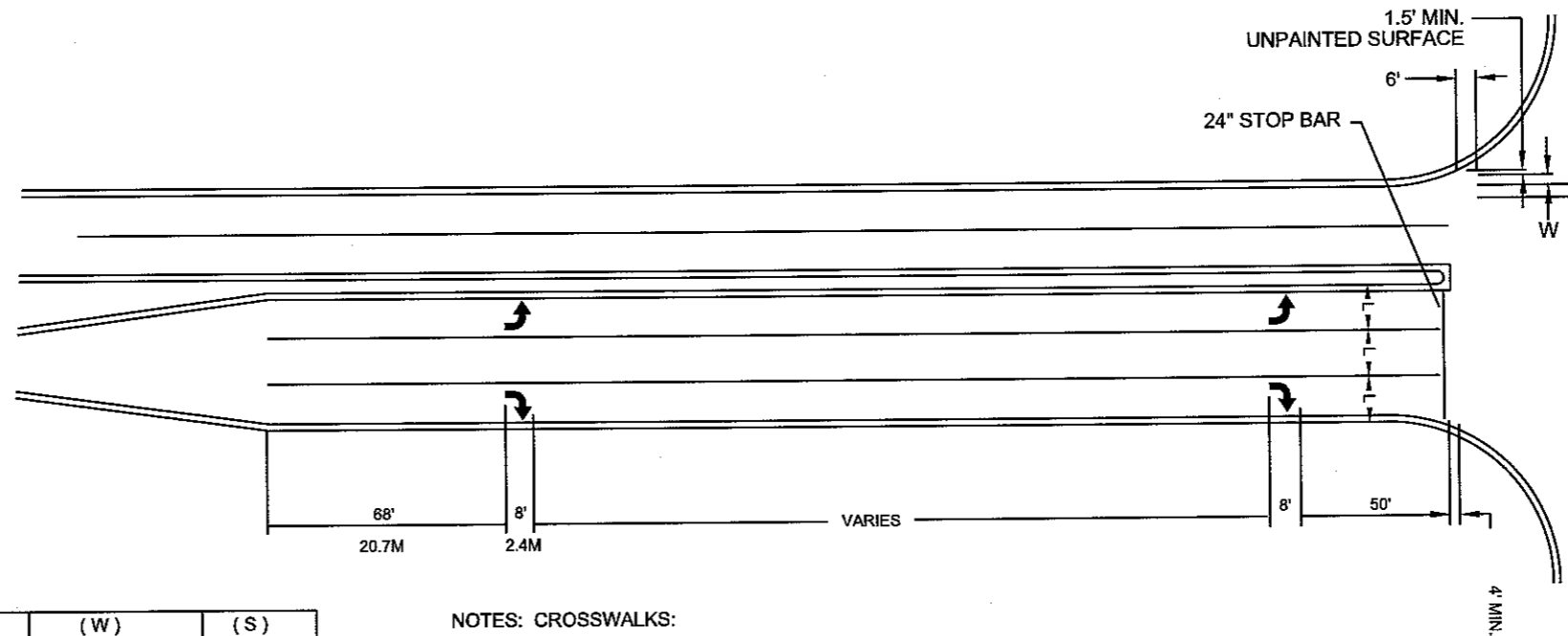


ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STRIPING DETAILS

FILE NO. 102287	158
SS17 OF 5521	194

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' (3.3mm) INSIDE LANE.

9:56:36 AM

4/8/2010

S:\AEVA\Anoka\102287\5-dsgn\51-cadd\Civil\stripings\ano102.strip det.dgn

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>MTT</u>				
DESIGNER: <u>MPM</u>				
CHECKED BY: <u>MPM</u>				

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STRIPING DETAILS

FILE NO. 102287	159
SS18 OF 5521	194

INTENTIONALLY
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DESIGN TEAM				
DRAWN BY:	MTI			
DESIGNER:	MPM			
CHECKED BY:	MPM			
	NO.	BY	DATE	REVISIONS

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 Printed Name: MICHAEL P. MCCURDY Date: 4/8/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STRIPING DETAILS

FILE NO. 102287	160
SS19 OF 5521	194

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DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	MPM		
CHECKED BY:	MPM		
NO.	BY	DATE	REVISIONS

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Certified By: *Michael P. McCurdy* Lic. No. 45902
 Printed Name: MICHAEL P. McCURDY Date: 4/8/2010



PHONE: 651/490-2000
 3535 VAONAS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STRIPING DETAILS

FILE NO. 102287	161
SS20 OF SS21	194

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DESIGN TEAM				
DRAWN BY: <u>MIT</u>				
DESIGNER: <u>MPM</u>				
CHECKED BY: <u>MPM</u>				
	NO.	BY	DATE	REVISIONS

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 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

STRIPING DETAILS

FILE NO. 102287	162
SS21 OF SS21	194

LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(2)
LUMINAIRE NO.	(3)
CONTROLLER AND CABINET	(4)
CONTROLLER AND CABINET - IN PLACE	(5)
HANDHOLE	(6)
HANDHOLE - IN PLACE	(7)
RIGID STEEL CONDUIT (RSC)	(8)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(9)
SIGNAL FACE WITH BACKGROUND SHIELD	(10)
SIGNAL FACE W/O BACKGROUND SHIELD	(11)
SIGNAL FACE - IN PLACE	(12)
PEDESTRIAN INDICATORS	(13)
PEDESTRIAN INDICATORS - IN PLACE	(14)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(15)
PEDESTRIAN PUSH BUTTON STATION	(16)
TRAFFIC SIGNAL PEDESTAL	(17)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(18)
TRAFFIC SIGNAL POLE AND MAST ARM	(19)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(20)
STREET LIGHT POLE AND LUMINAIRE	(21)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(22)
MAST ARM AND LUMINAIRE	(23)
MAST ARM AND LUMINAIRE - INPLACE	(24)
WOOD POLE	(25)
WOOD POLE - IN PLACE	(26)
SOURCE OF POWER	(27)
RAILROAD SIGNAL - IN PLACE	(28)
RIGHT OF WAY LINE	(29)
CENTERLINE	(30)
EDGE OF ROADWAY	(31)
SHOULDERLINE	(32)
CURB LINE	(33)
STOP BAR	(34)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(35)

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

TRAFFIC SIGNAL TABULATION

ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
2104	REMOVE SIGNAL SYSTEM	EACH	1
2104	HAUL SALVAGED MATERIAL	LUMP SUM	1
2565	TRAFFIC CONTROL SIGNAL SYSTEM "A"	SIG. SYS.	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM "A"	LUMP SUM	1
2565	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1
2565	NMC LOOP DETECTOR 6' X 6'	EACH	1
2565	REVISE SIGNAL SYSTEM "B"	SYSTEM	1
2565	TEMPORARY SIGNAL SYSTEM	SYSTEM	1

TRAFFIC SIGNAL STANDARD PLATES

THESE TRAFFIC SIGNAL STANDARD PLATES AS APPROVED BY FHWA SHALL APPLY:

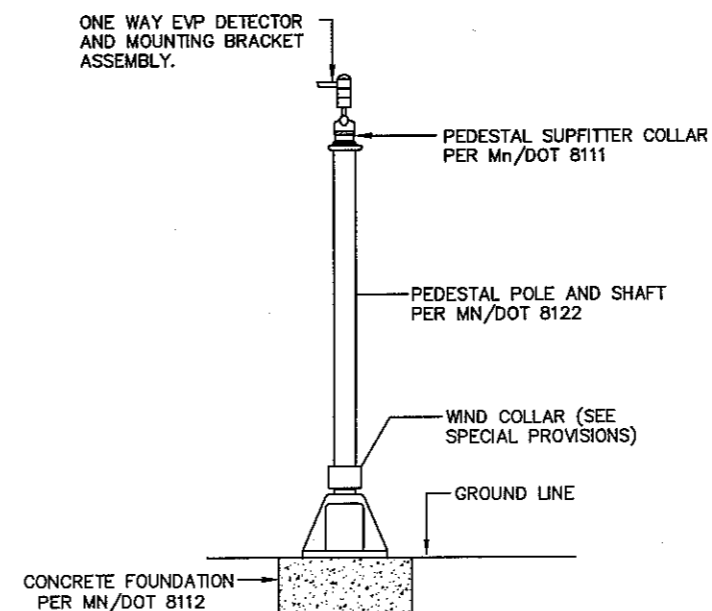
PLATE NO.	DESCRIPTION
* 8000 I	STANDARD BARRICADES
8110 E	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
* 8111 E	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
* 8112 F	PEDESTAL FOUNDATION
* 8114 A	PVC HANDHOLE/PULLBOX
* 8118 D	SERVICE EQUIPMENT AND POLE-TRAFFIC CONTROL SIGNALS
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
8120 N	PA85 POLE FOUNDATION
* 8121 F	TRANSFORMER BASE AND POLE BASE PLATE
* 8122 E	PEDESTAL AND PEDESTAL BASE
* 8123 F	POLE AND MAST ARM
* 8126 I	PA90 AND PA100 POLE FOUNDATION

* - APPLIES TO THIS PROJECT

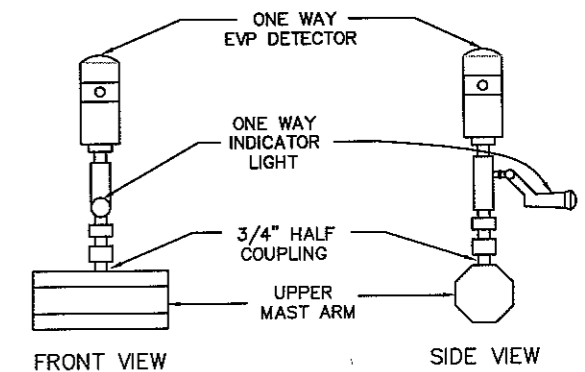
CONDUCTOR COLOR CODE

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

PEDESTAL POLE MOUNTED EVP DETECTOR DETAIL



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM



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DESIGN TEAM				
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10

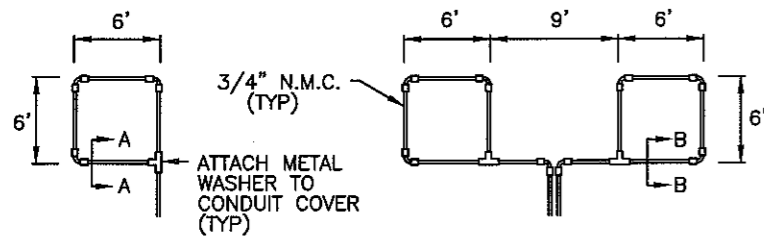
SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

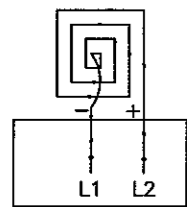
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

**TRAFFIC SIGNAL SYSTEMS
 DETAILS AND STANDARD PLATES**
 CSAH 14 (MAIN STREET) - SHENANDOAN TO AVOCET

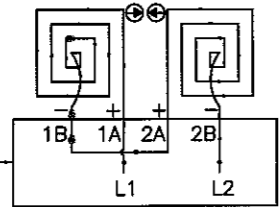
FILE NO. 163
 102287
 SG1
 OF SG32
 194



ATTACH METAL WASHER TO CONDUIT COVER (TYP)



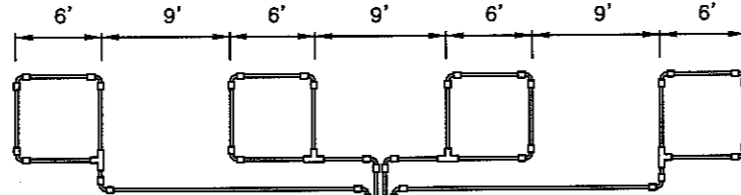
**LOOP DETECTOR
DETAIL 'A'**
(LOOP PHASING FOR
SINGLE CONNECTION)



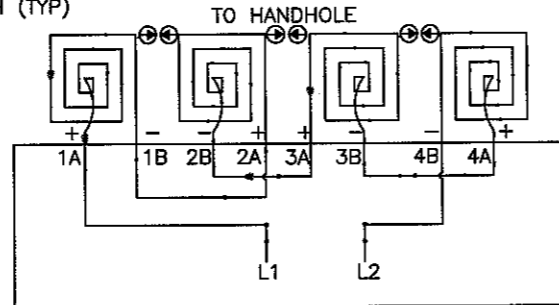
LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

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)

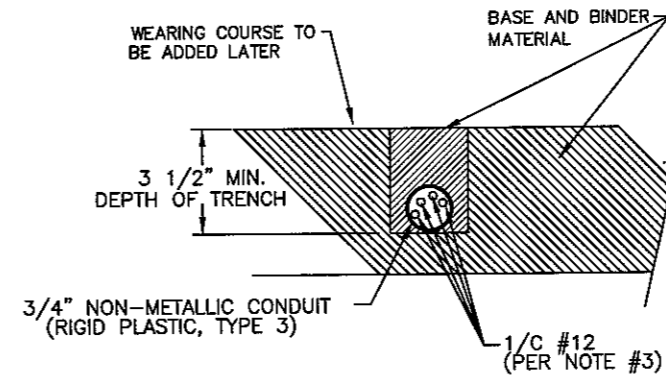


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

L1 TO 1A 3B TO 4A
1B TO 2A 4B TO L2
2B TO 3A

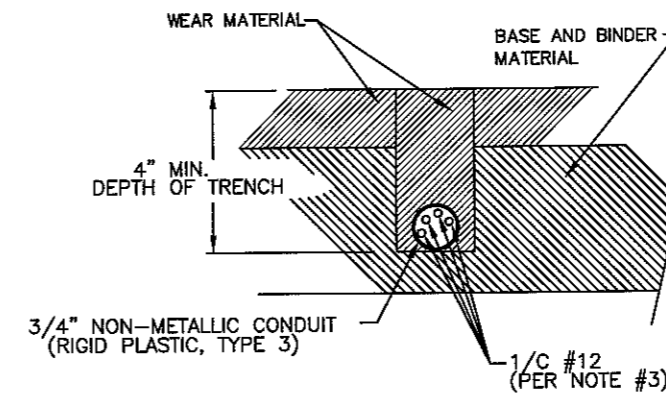
SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

**LOOP DETECTOR
DETAIL 'C'**
(LOOP PHASING FOR
SERIES CONNECTION)



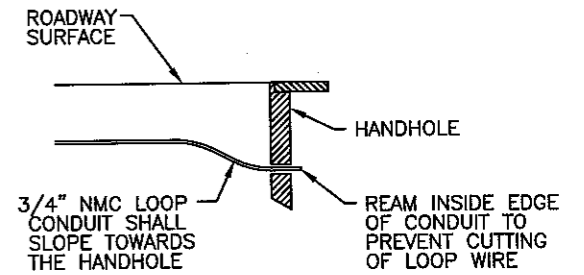
SECTION A-A

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.

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DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRO		
NO.	BY	DATE	REVISIONS

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 Printed Name: JOHN M. GRAY, PE Date: 01/21/10

SEH
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ANOKA COUNTY

ANOKA COUNTY, MN.
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**TRAFFIC SIGNAL SYSTEMS
 LOOP DETECTOR DETAILS**
 CSAH 14 (MAIN STREET) - SHENANDOAN TO AVOCET

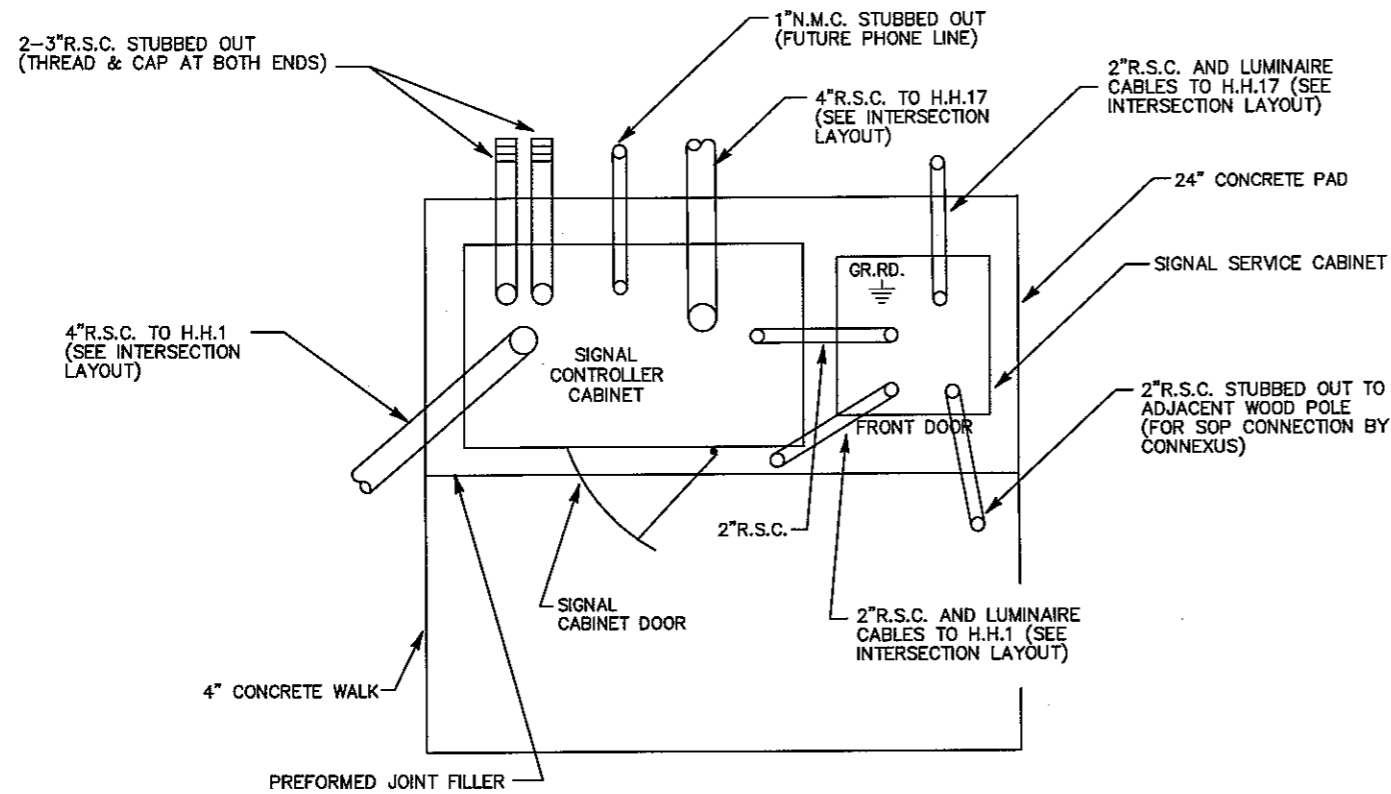
FILE NO. 102287	164
SG2 OFSG32	194

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

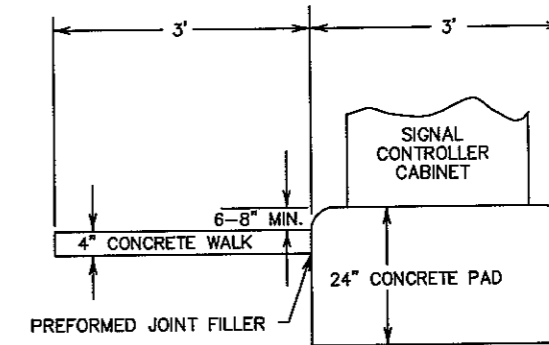
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

PLAN VIEW

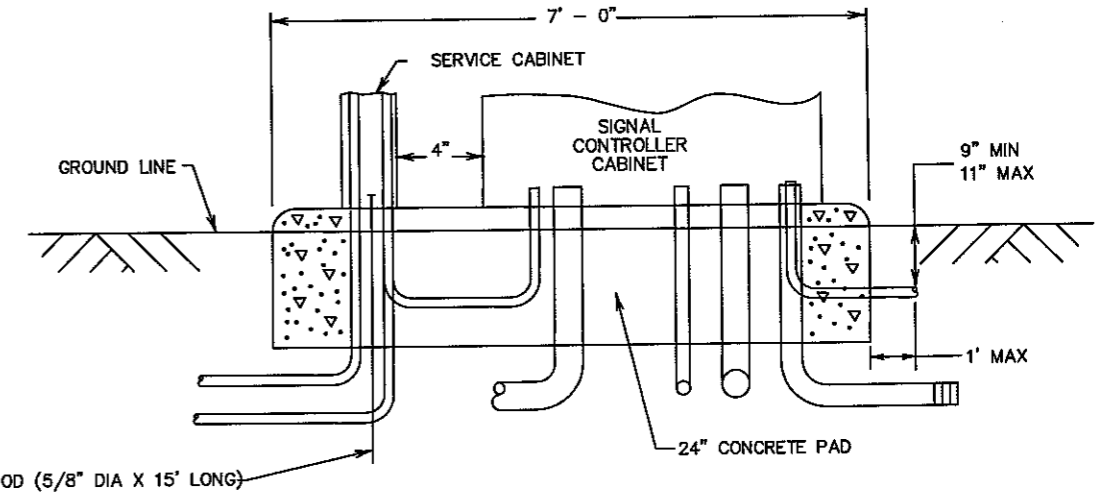
CSAH 14 AT SHENANDOAH BOULEVARD



SIDE VIEW



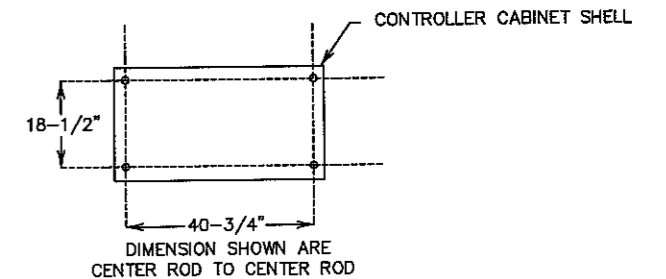
FRONT VIEW



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 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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DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



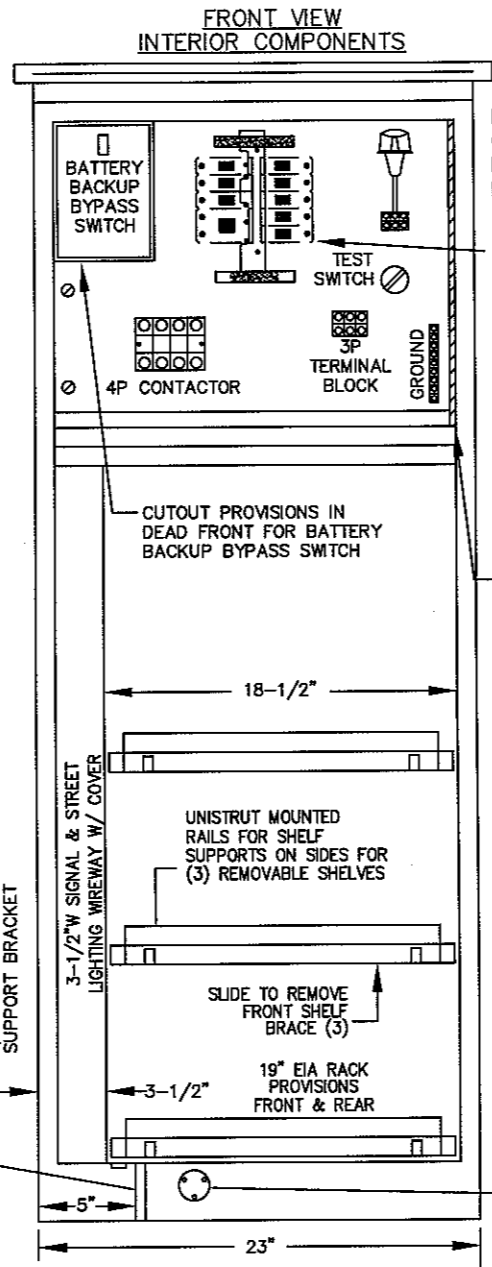
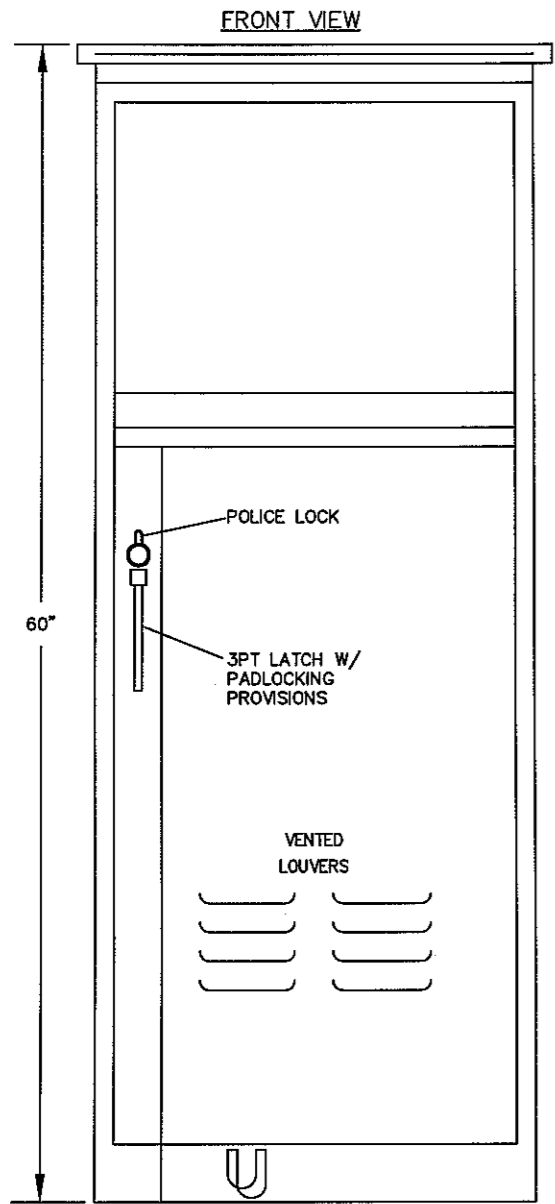
PHONE: (651)480-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-814-32
 S.A.P. NO. 114-020-042 (CSAH 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

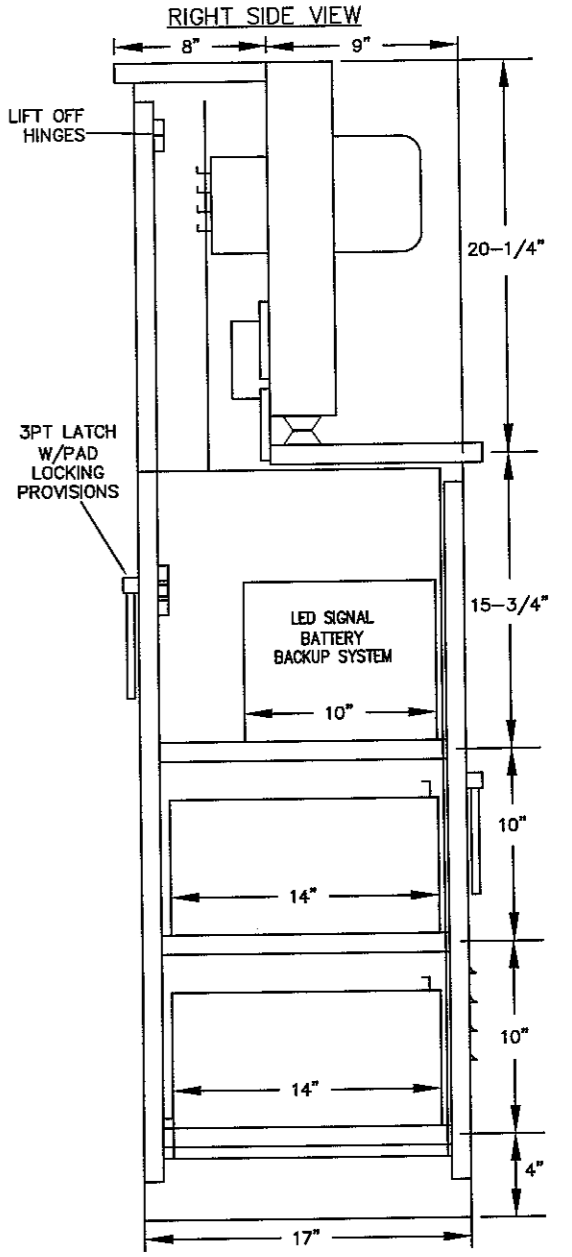
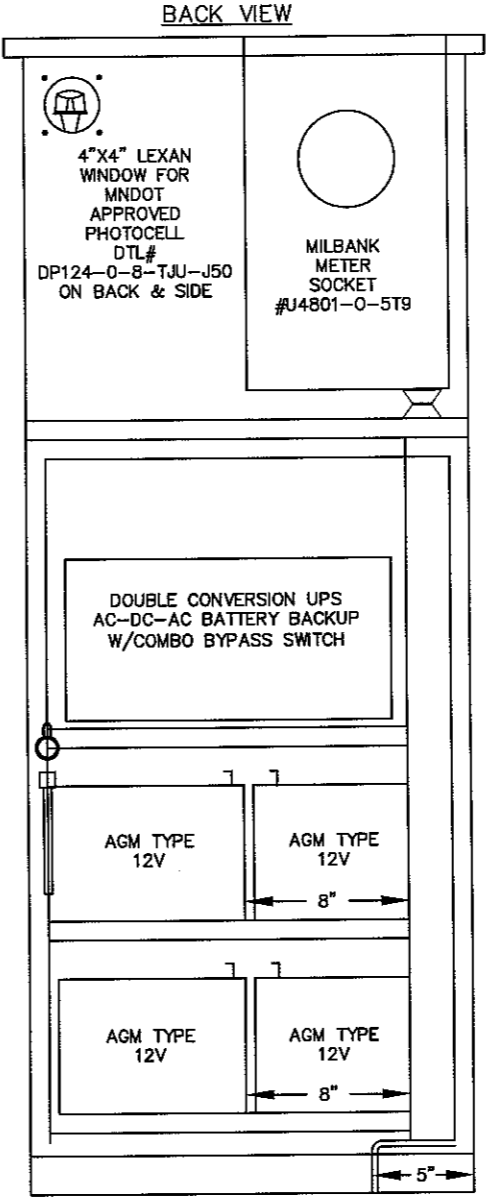
TRAFFIC SIGNAL SYSTEM "A"
EQUIPMENT PAD DETAILS
 CSAH 14 (MAIN STREET) AT SHENANDOAH BLVD

FILE NO. 102287	165 194
SG3 OF S632	

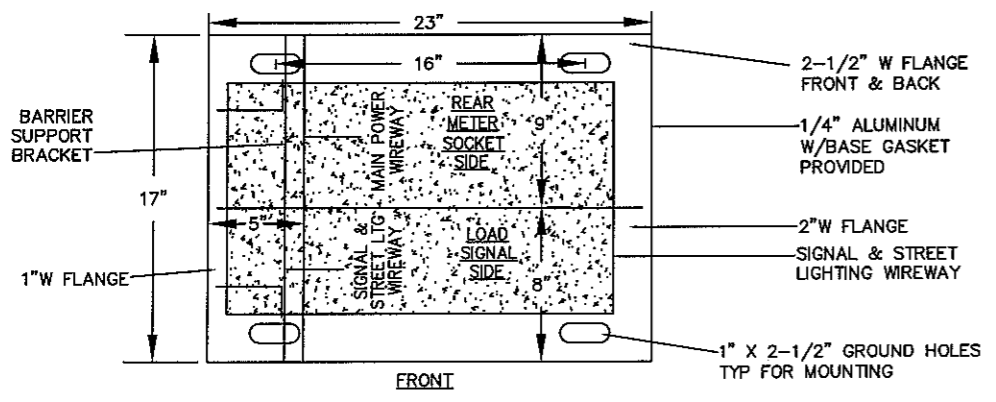


LOAD CENTER
CIRCUIT
BREAKERS
ITE "Q" TYPE
1-100A/2P
SERVICE
DISCONNECT
1-30A/1P
EMERGENCY
POWER
1-15/1P
PHOTOCELL
4-15A/1P
LUMINAIRES
1-30A/1P
SIGNAL SVC
1 SPARE

INTERIOR
COMPONENTS
BEHIND HINGED
DEAD FRONT
W/ (2)-1/4
TURN LATCHES



AHD6335 30A
EMERGENCY
RECEPTACLE
WITH DROP
DOWN COVER



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

s:\oe\anokc\common\signals\csh 14 (hanson-shen)\hanson-DETAILS.dwg

DESIGN TEAM				
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *John M. Gray* Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 01/21/10

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

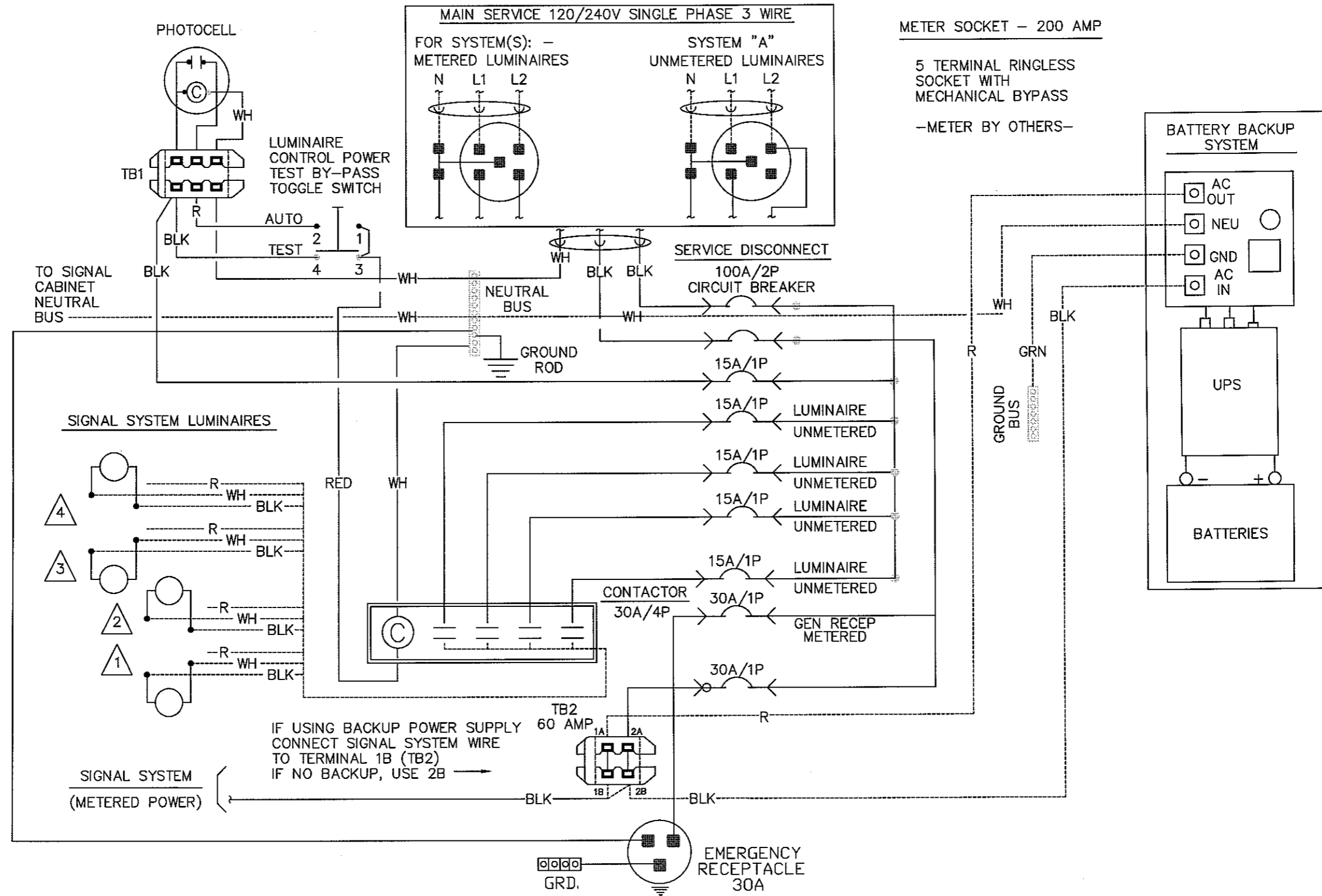
ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32
S.A.P. NO. 114-020-042 (C.S.A.H. 14)
S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

TRAFFIC SIGNAL SYSTEM "A"
BATTERY BACK-UP SERVICE CABINET DETAILS
CSAH 14 (MAIN STREET) AT SHENANDOAH BLVD

FILE NO. 102287	166
SG4 OF 632	194

FEED POINT WIRING DIAGRAM



s:\oc\anoka\common\signals\csah 14 (hanson-sheer)\hanson-sheer-DETAILS.dwg

DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

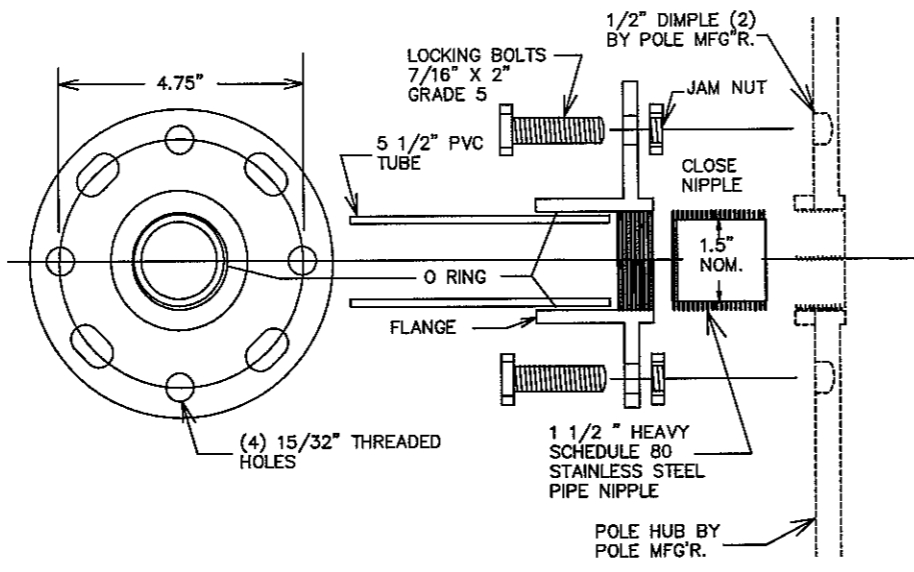
ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

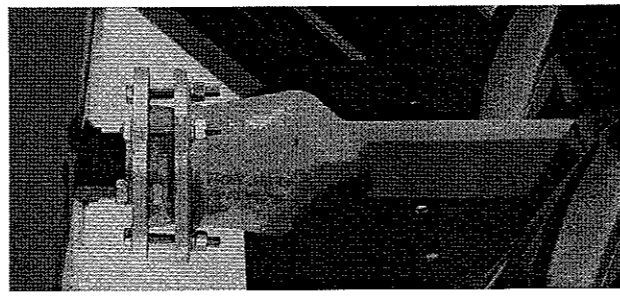
TRAFFIC SIGNAL SYSTEM "A"
BATTERY BACK-UP SERVICE CABINET DETAILS
 CSAH 14 (MAIN STREET) AT SHENANDOAH BLVD

FILE NO. 102287	167
SG5 OF 632	194

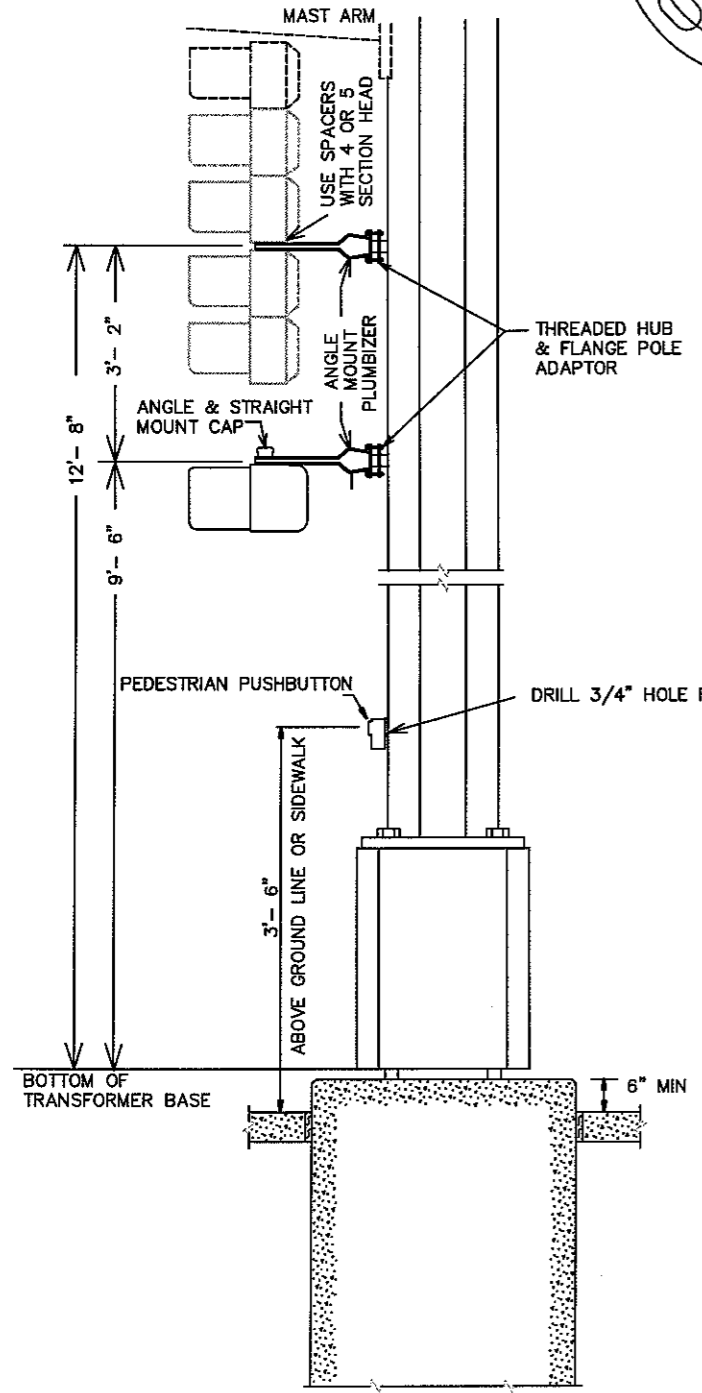
s:\proj\onok\common\signals\cash 14 (hanson-shen)\hanson-shen-DETAILS.dwg



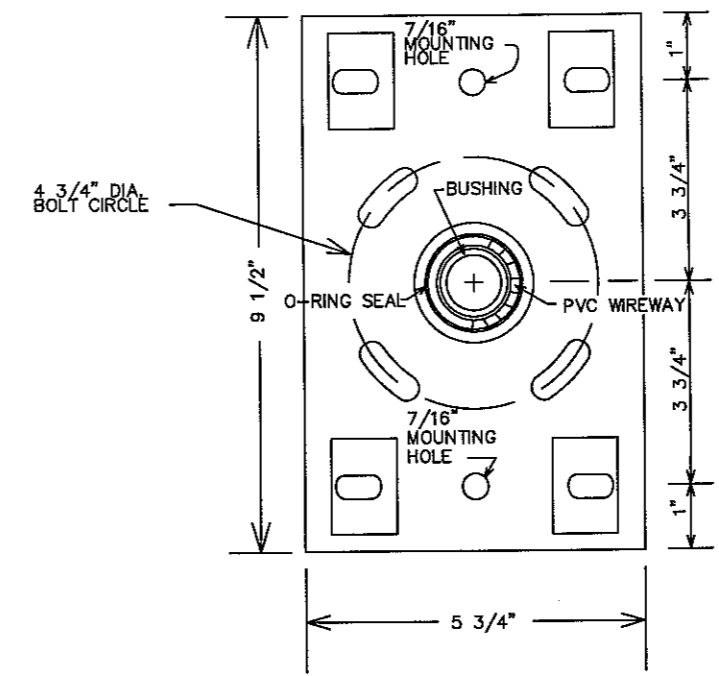
THREADED HUB AND FLANGE POLE ADAPTOR



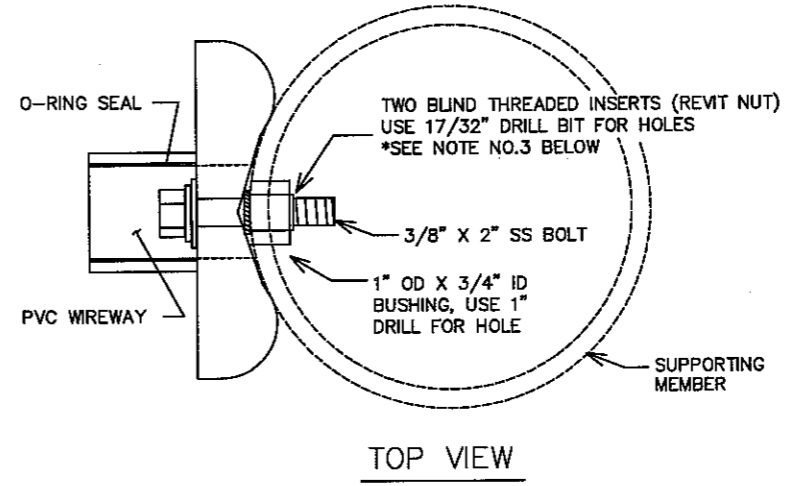
- NOTE:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
 3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



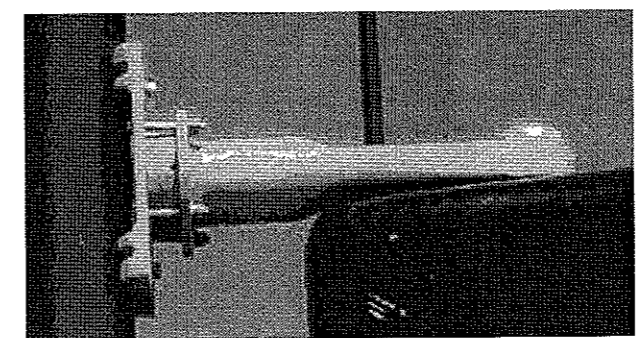
TYPICAL SIGNAL POLE MOUNTING
NOT TO SCALE



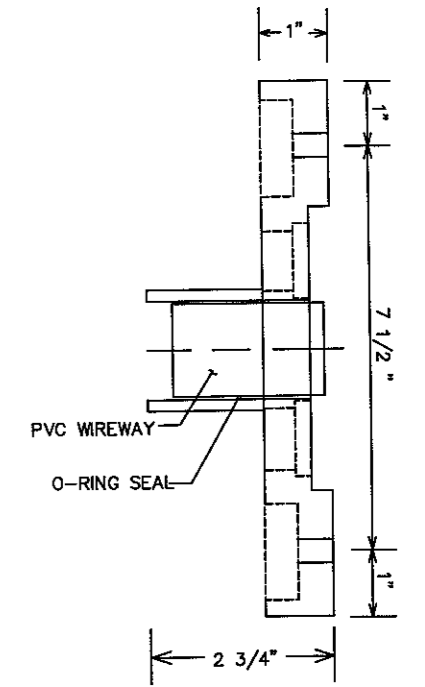
BOLT ON HUB & FLANGE



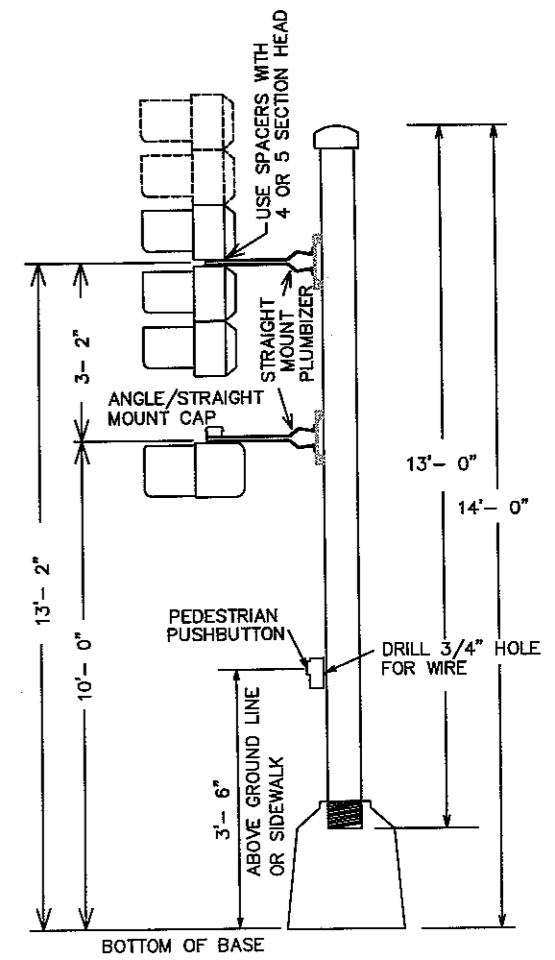
TOP VIEW



- NOTE:
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 INSTALLED 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

DESIGN TEAM				REVISIONS			
NO.	BY	DATE	DESCRIPTION	NO.	BY	DATE	DESCRIPTION
1	JMG						
2	JMG						
3	MRD						

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SEH
 PHONE: (651)490-2000
 3535 VANDALIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-814-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

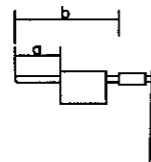
TRAFFIC SIGNAL SYSTEMS
ONE WAY POLE MOUNT DETAILS
 CSAH 14 (MAIN STREET) - SHENANDOAN TO CSAH 78

FILE NO. 102287
 SG6 OFSG32
 168
 194

MAST ARM MOUNTED SIGNS									
SIGN PANELS - TYPE D (FURNISH AND INSTALL)									
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS/STIFFENERS PER SIGN	BAND SPACING (**)	SQ. FT. PER SIGN	POLE NO.	a	b
A	D-1	114x24	1	4	-	19.00	1	25'	-
A	D-2	150x24	1	5	-	25.00	2	28'	-
A	D-3	114x24	1	4	-	19.00	3	25'	-
A	D-4	150x24	1	5	-	25.00	4	28'	-
TOTAL QUANTITIES			4			88.00			

(**)= SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE SPECIAL PROVISIONS AND STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/6/07) FOR BRACKET SPACING REQUIREMENTS.

MAST ARM MOUNTED SIGNS									
SIGN PANELS - TYPE D (SALVAGE AND INSTALL)									
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS/STIFFENERS PER SIGN	BAND SPACING (**)	SQ. FT. PER SIGN	POLE NO.	a	b
REVISE	D-5	114x24	1	4	-	-	3	28'	-

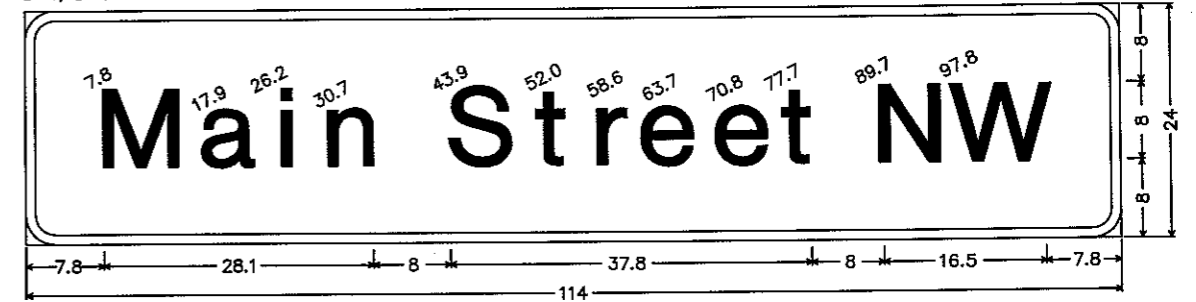


SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS - TYPE C (FURNISH & INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	SIZE (in.)	NO. REQ.	NO. POSTS/STIFFENERS PER SIGN	BAND SPACING (**)	SQ. FT. PER SIGN	TOTAL AREA (SQ.FT.)	POLE NO.	a	b
A	R6-1L	36x12	4	①	-	3.00	12.00	1,2,3,4	-	-
A	R6-1R	36x12	4	①	-	3.00	12.00	1,2,3,4	-	-
A	R10-12	36x48	2	2	-	12.00	24.00	1,3	1'	-
TOTAL QUANTITIES			10				48.00			

NOTES:

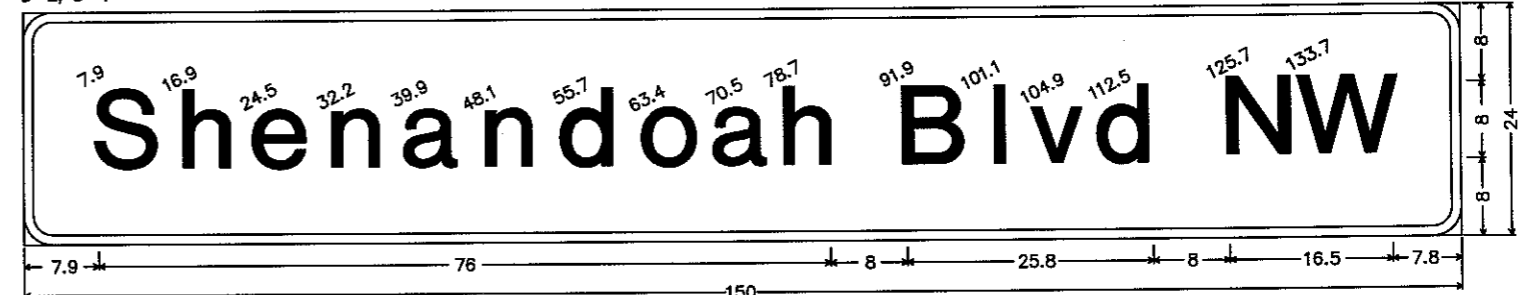
- COLOR FOR ALL TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/6/07), AND SPECIAL PROVISIONS.
- SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
- FURNISHING AND INSTALLING TYPE C AND D SIGNS SHALL BE INCLUDED IN THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM "A"). SALVAGING AND INSTALLING TYPE D SIGN SHALL BE INCLUDED IN THE PAY ITEM FOR ITEM NO. 2565 (REVISE SIGNAL SYSTEM). SEE SPECIAL PROVISIONS.
- ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING HP SHEETING. SEE SPECIAL PROVISIONS.
- ① = INSTALL SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.

D-1, D-3



3.0" Radius, 1.0" Border, White on Green;
[Main Street NW] E Mod;

D-2, D-4



3.0" Radius, 1.0" Border, White on Green;
[Shenandoah Blvd NW] E Mod;

D-5



s:\ee\anoka\common\signs\csah 14 (hanson-shen)\hanson-detailed.dwg

DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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3535 VADNANS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32
S.A.P. NO. 114-020-042 (C.S.A.H. 14)
S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

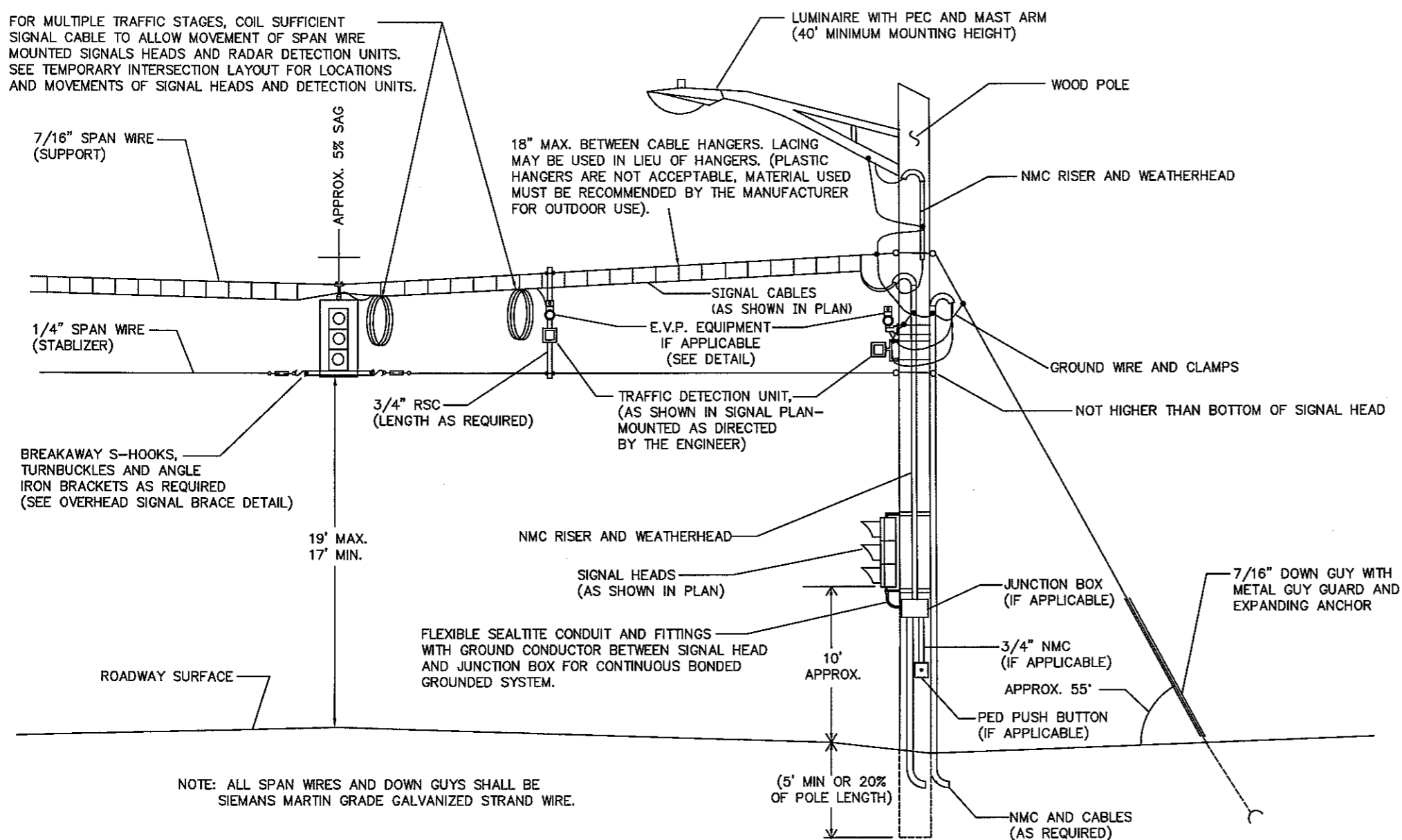
**TRAFFIC SIGNAL SYSTEMS
SIGNAL SIGNING DETAILS**
CSAH 14 (MAIN STREET) - SHENANDOAN TO CSAH 78

FILE NO. 102287	169
SG7 OF 632	194

TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

(NOT TO SCALE)

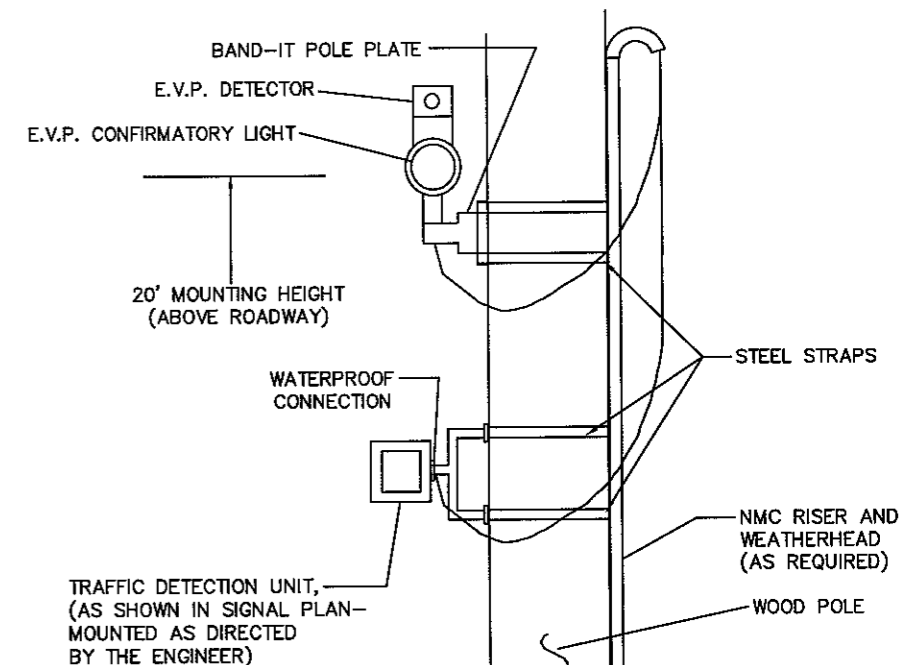
FOR MULTIPLE TRAFFIC STAGES, COIL SUFFICIENT SIGNAL CABLE TO ALLOW MOVEMENT OF SPAN WIRE MOUNTED SIGNALS HEADS AND RADAR DETECTION UNITS. SEE TEMPORARY INTERSECTION LAYOUT FOR LOCATIONS AND MOVEMENTS OF SIGNAL HEADS AND DETECTION UNITS.



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

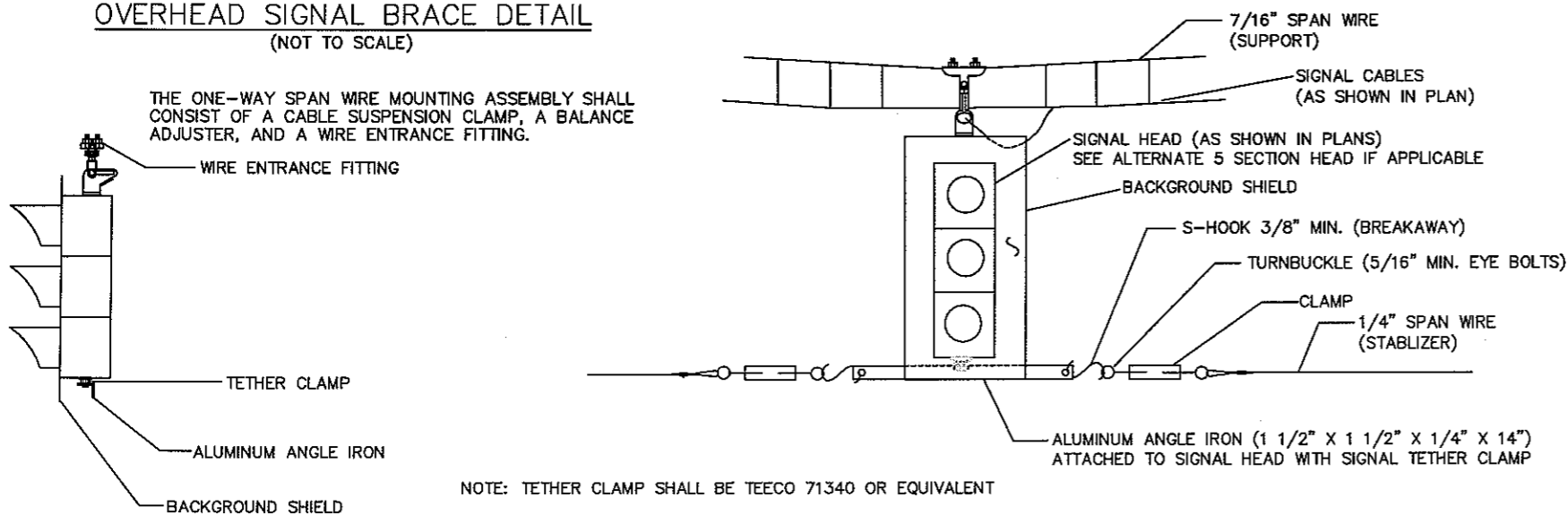
E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT

(NOT TO SCALE)



OVERHEAD SIGNAL BRACE DETAIL

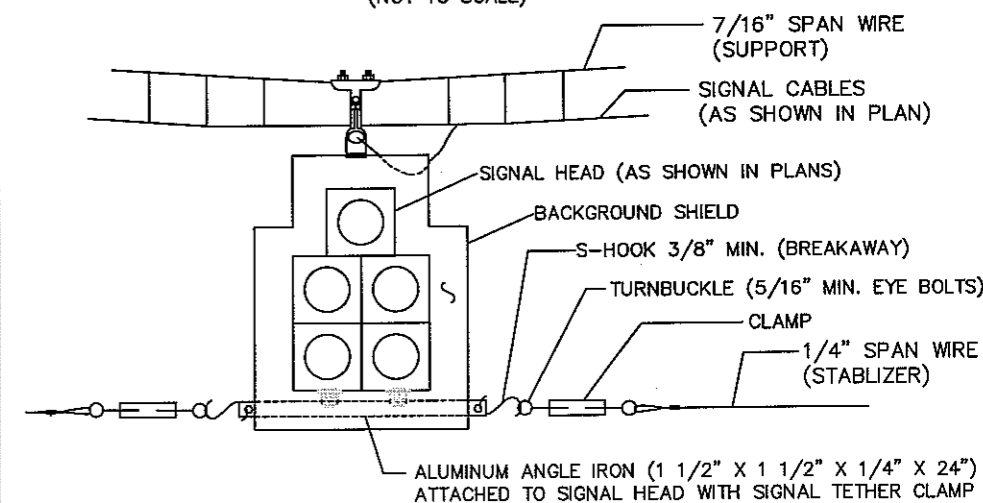
(NOT TO SCALE)



NOTE: TETHER CLAMP SHALL BE TEECO 71340 OR EQUIVALENT

ALTERNATE FOR 5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



s:\oe\p\gnokc\common\signals\csh 14 (hanson-stern)\hanson-detailed.s.dwg

DESIGN TEAM			
DRAWN BY: JMG			
DESIGNER: JMG			
CHECKED BY: MRD			
NO.	BY	DATE	REVISIONS

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 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



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 3635 VADHANS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-814-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

TEMPORARY SIGNAL SYSTEM
WOOD POLE AND SPAN WIRE DETAILS
 CSAH 14 (MAIN STREET) AT CSAH 78 (HANSON BLVD)

FILE NO.	170
102287	
SG8	
OF 932	194

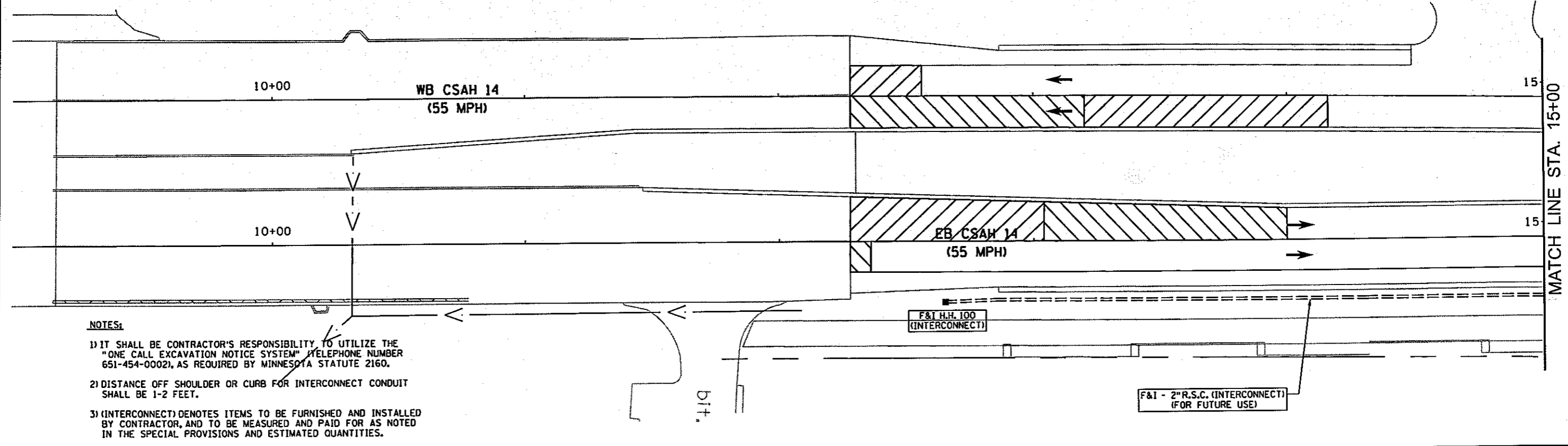
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1/20/2010

S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\plans\15-Interconnect 1

SCALE 20'

MATCH LINE STA. 15+00

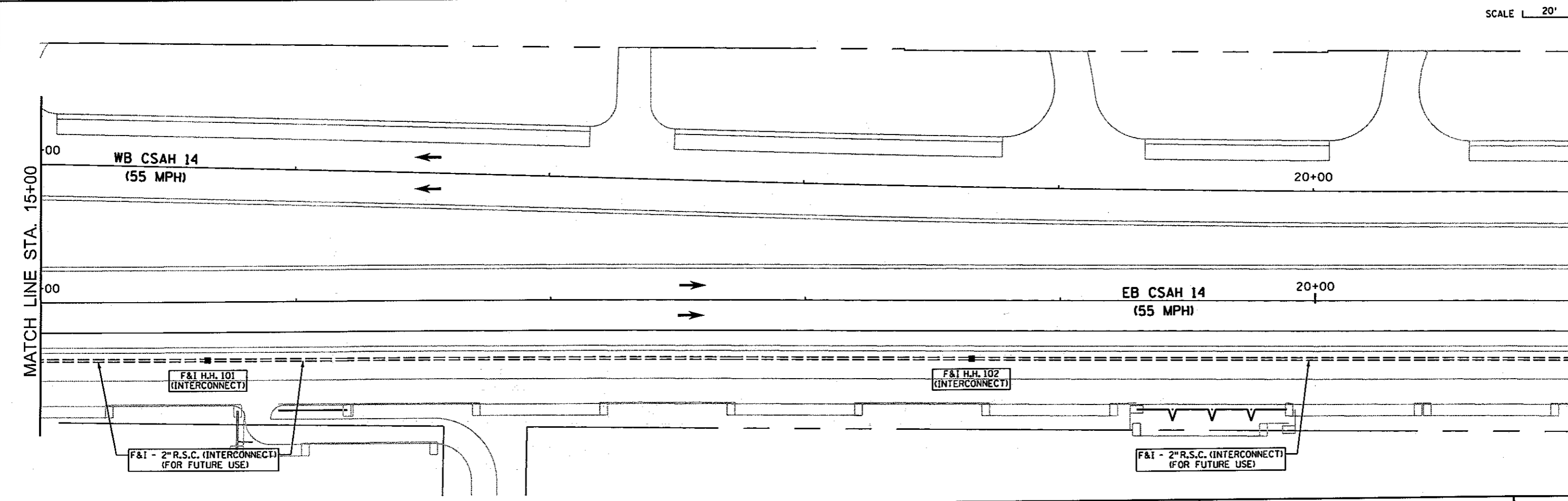


NOTES:

- 1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" TELEPHONE NUMBER 651-454-0002, AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN THE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

SCALE 20'

MATCH LINE STA. 21+00



DESIGN TEAM			
DRAWN BY:	MIT		
DESIGNER:	JMG		
CHECKED BY:	JMG		
NO.	BY	DATE	REVISIONS

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Certified By: *John M. Gray* Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC SIGNAL INTERCONNECT INTERSECTION LAYOUT
 CSAH 14 (MAIN ST)
 (STA 9+00 TO STA 21+00)

FILE NO.	171
102287	
SG9	
OF 5632	194

NOTES:

1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.

2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.

3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN THE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

SCALE 20'

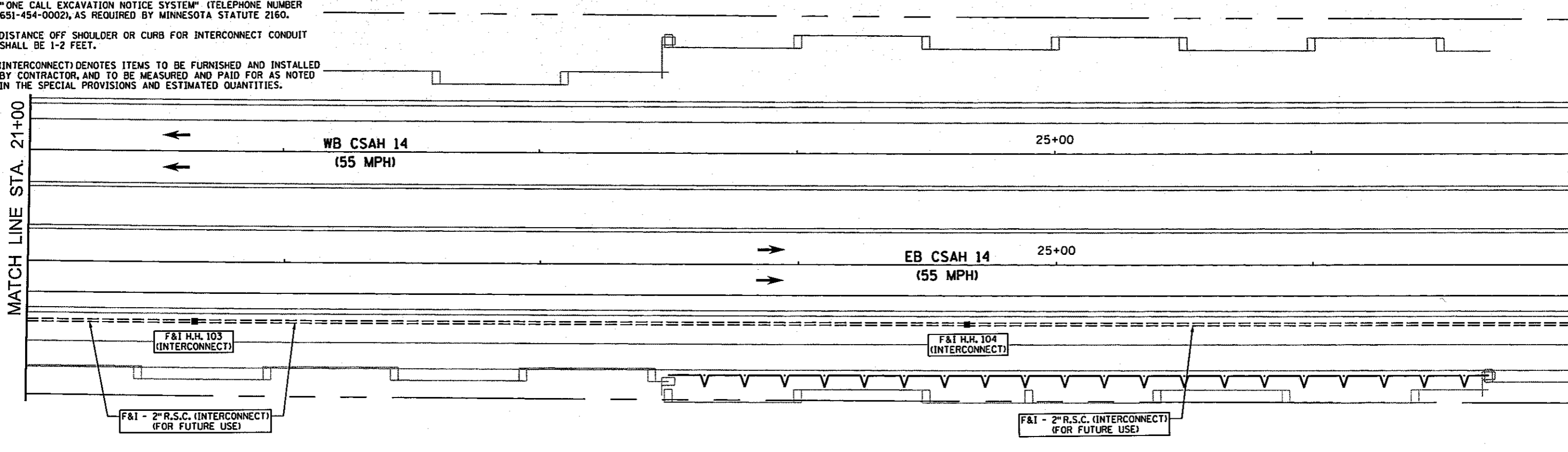
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1/20/2010

S:\AE\A\Anoka\102287\5-dsgm\51-cadd\Civil\plansh\Anoka102.s0.dgn Interconnect 2

MATCH LINE STA. 21+00

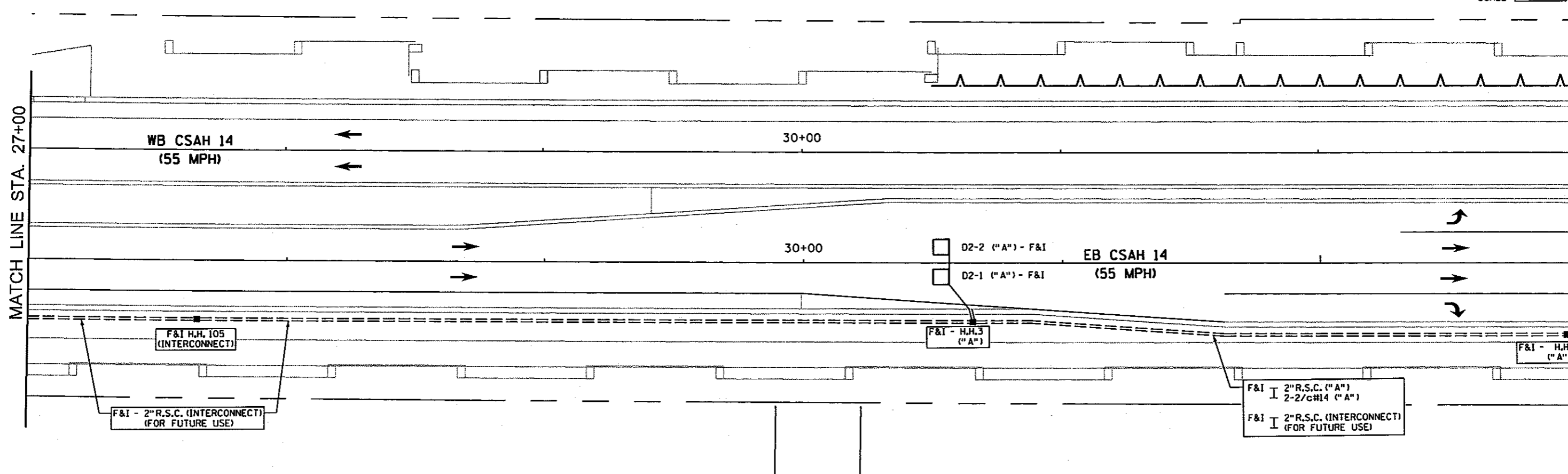
MATCH LINE STA. 27+00



SCALE 20'

MATCH LINE STA. 27+00

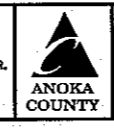
MATCH LINE STA. 33+00



DESIGN TEAM				REVISIONS			
DRAWN BY:	MTT			NO.	BY	DATE	
DESIGNER:	JMG						
CHECKED BY:	JMG						

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Certified By: *John M. Gray* Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
 CSAH 14 (MAIN ST) AT
 SHENANDOAH BLVD

FILE NO.	102287	172
SG10	OF SG32	194

1:30:26 PM
4/7/2010
S:\AE\A\Anoka\102287\5-dsgn\51-cadd\Civil\p1nhts\ano102_sq.dgn
Signal System A

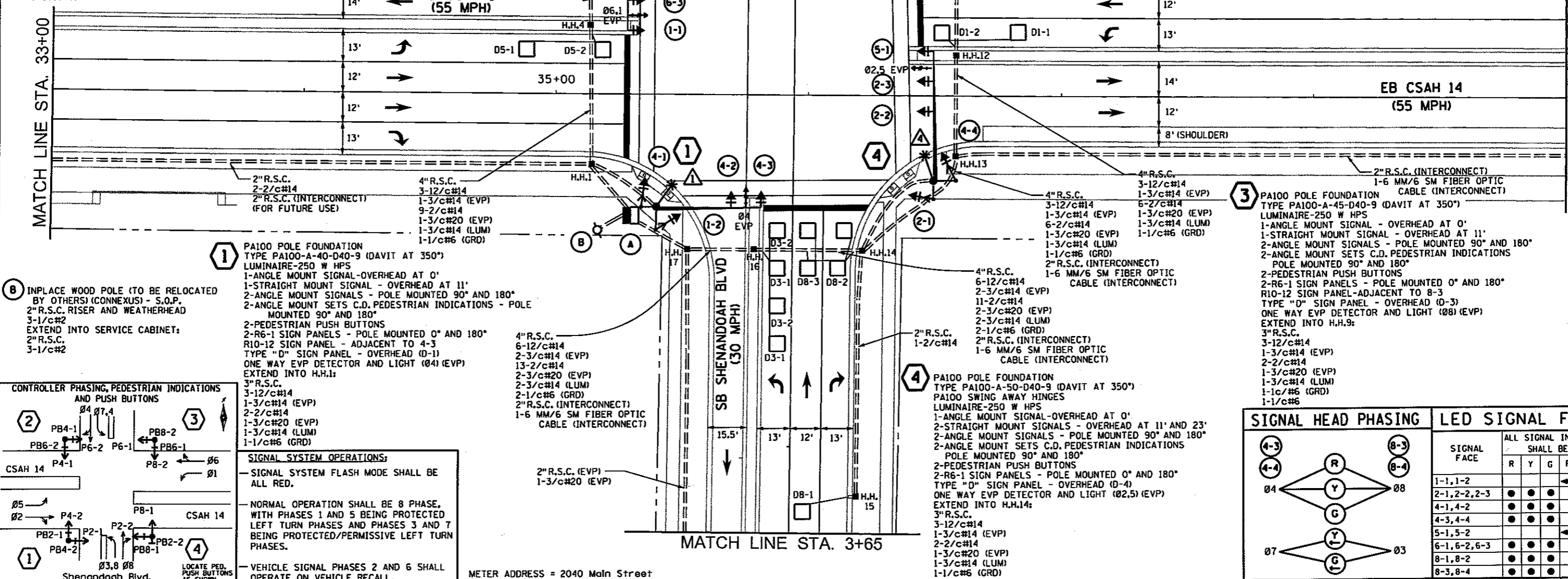
SCALE 20'

- NOTES:**
- LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
 - NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
 - EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION "FILLED" COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
 - ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - ALL MAST ARM POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS & SPECIAL PROVISIONS.
 - A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
 - ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
 - CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
 - (EVP) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - CONTRACTOR SHALL COIL AND STORE 25 FEET OF SPARE 1-2/c#14 CABLE IN HANDHOLES 1, 6, 9, AND 14 (FOR FUTURE APS SYSTEM INSTALLATION BY OTHERS) (INCIDENTAL).
 - (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NUMBER 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

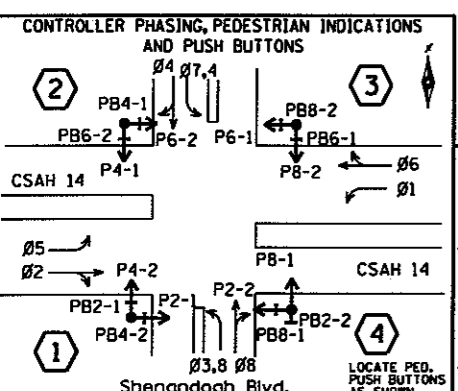
NMC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	35'	1
D1-2	6x6	5'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D3-1	2-6x6	15'x45'	1
D3-2	2-6x6	0'x30'	1
D4-1	6x6	250'	3, 8
D4-2	2-6x6	0'x15'	7
D4-3	2-6x6	0'x15'	1
D5-1	6x6	35'	1
D5-2	6x6	5'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D7-1	2-6x6	15'x45'	1
D7-2	2-6x6	0'x30'	1
D8-1	6x6	120'	3, 8
D8-2	2-6x6	0'x15'	7
D8-3	2-6x6	0'x15'	1

- LOOP DETECTOR FUNCTIONS:**
- CALL AND EXTEND
 - EXTEND ONLY
 - DELAYED CALL
 - IMMEDIATE EXTEND
 - CARRY OVER (STRETCH)

NOTE: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- (B) INPLACE WOOD POLE (TO BE RELOCATED BY OTHERS) (CONNEXUS) - S.O.P.**
- 2" R.S.C. RISER AND WEATHERHEAD
 - 3-1/c#2
 - EXTEND INTO SERVICE CABINET:
 - 2" R.S.C.
 - 3-1/c#2



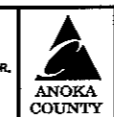
SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND PHASES 3 AND 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON VEHICLE RECALL.

METER ADDRESS = 2040 Main Street

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.

Certified By: *John M. Gray* Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 4/7/2010



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-614-32 CTB
S.P. NO. 114-020-042 (C.S.A.H. 14)
S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC SIGNAL SYSTEM "A" INTERSECTION LAYOUT
CSAH 14 (MAIN ST) AT SHENANDOAH BLVD

FILE NO. 102287
SG11 OF 5632

173
194

SIGNAL HEAD PHASING		LED SIGNAL FACES					
		SIGNAL FACE		ALL SIGNAL INDICATIONS SHALL BE 12".			
		R	Y	G	R	Y	G
04	08	●	●	●	●	●	●
04-1, 4-2	08	●	●	●	●	●	●
04-3, 4-4	08	●	●	●	●	●	●
05-1, 5-2	08	●	●	●	●	●	●
06-1, 6-2, 6-3	08	●	●	●	●	●	●
08-1, 8-2	08	●	●	●	●	●	●
08-3, 8-4	08	●	●	●	●	●	●

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1/20/2010

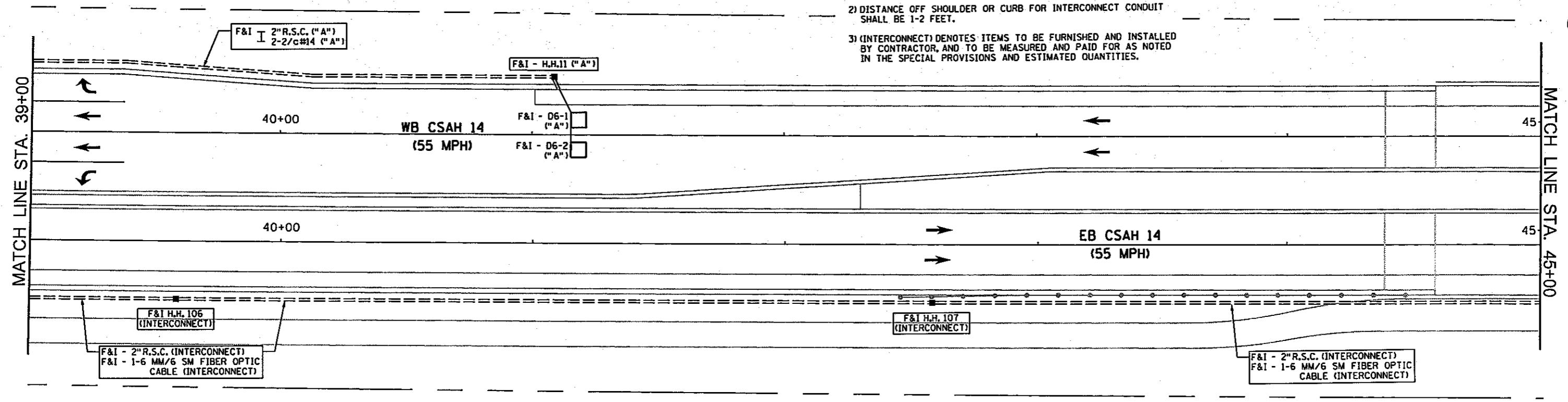
Interconnect 3

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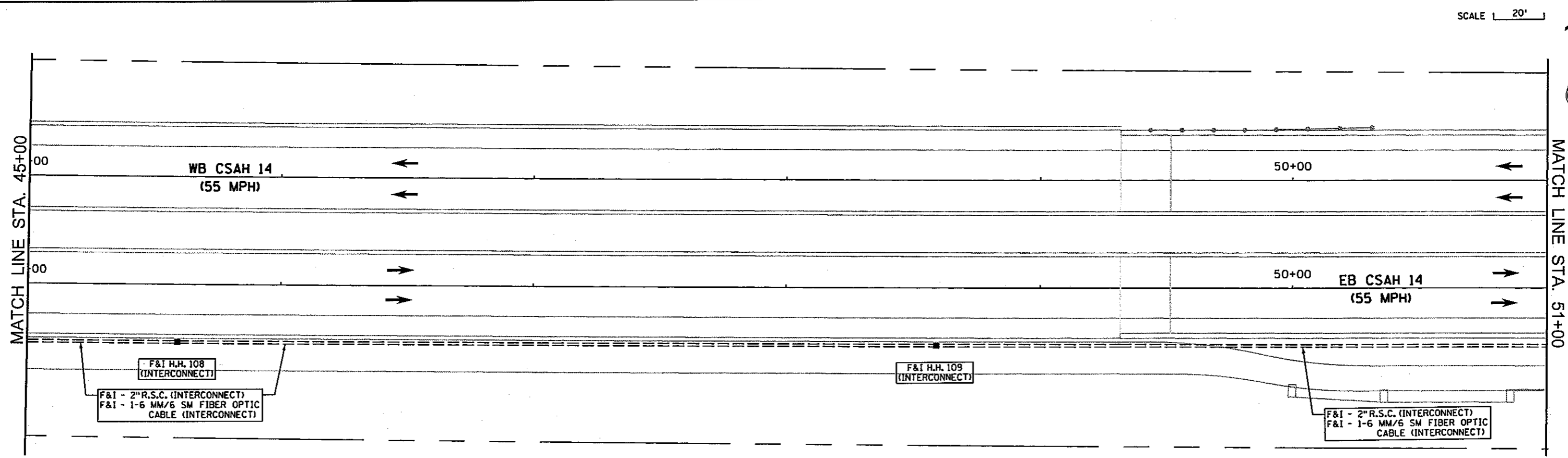
SCALE 20'

NOTES:

- 1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN THE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.



SCALE 20'



DESIGN TEAM			
DRAWN BY:	MTT		
DESIGNER:	JMG		
CHECKED BY:	JMG		
	NO.	BY	DATE
			REVISIONS

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010



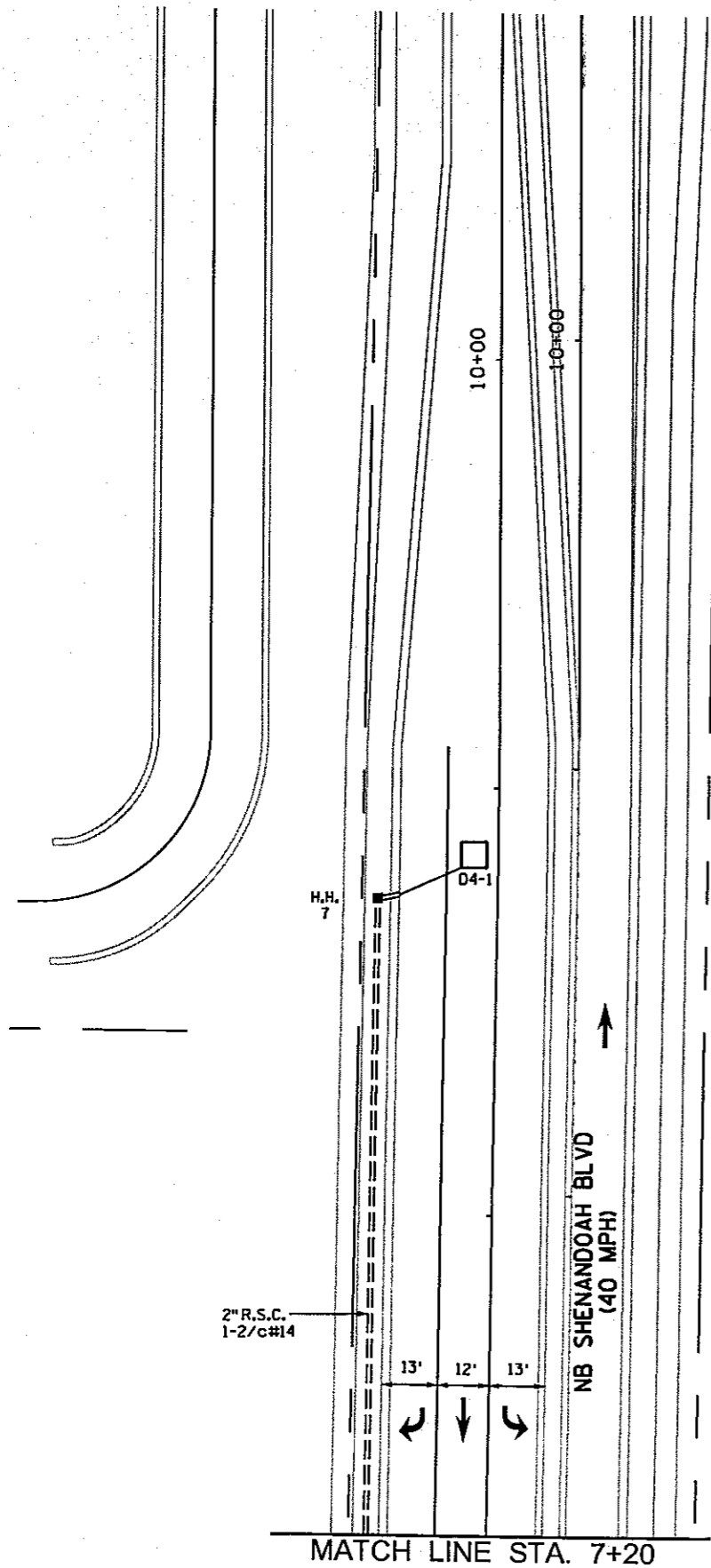
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
 CSAH 14 (MAIN ST) AT
 SHENANDOAH BLVD

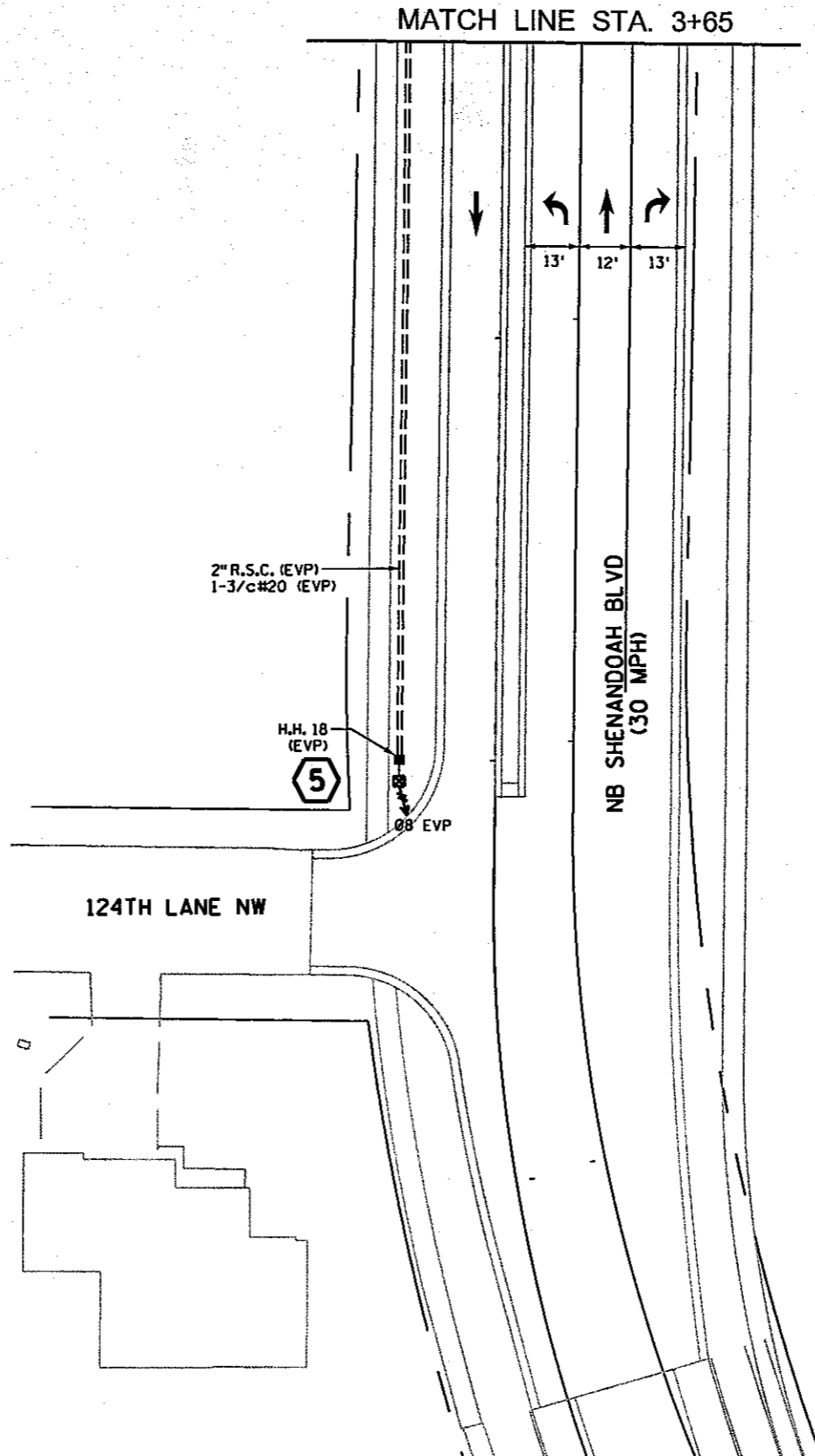
FILE NO.	174
102287	
SG12	194
OF SG32	

S:\AEVA\Anoka\102287\5-dsgn\51-cadd\Civil\plans\102_sq.dgn Signal System A Int 1/20/2010 11:33:20 PM

SCALE 20'



MATCH LINE STA. 7+20



MATCH LINE STA. 3+65

- 5 PEDESTAL FOUNDATION (EVP)
- 10' PEDESTAL POLE (INCLUDES BASE/EVP)
- ONE WAY EVP DETECTOR - MOUNT
- ON TOP OF PEDESTAL POLE (08/EVP)
- EXTEND INTO H.H. 18:
- 2" R.S.C. (EVP)
- 1-3/c#20 (EVP)

DESIGN TEAM				REVISIONS			
DRAWN BY:	MTI						
DESIGNER:	JMG						
CHECKED BY:	JMG						
NO.	BY	DATE					

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

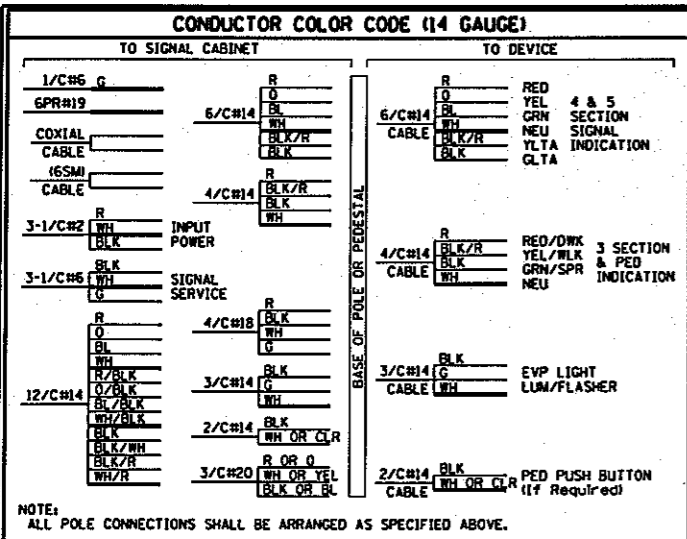
TRAFFIC SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
 CSAH 14 (MAIN ST) AT SHENANDOAH BLVD

FILE NO.	102287	175
SG13		
OF 5632		194

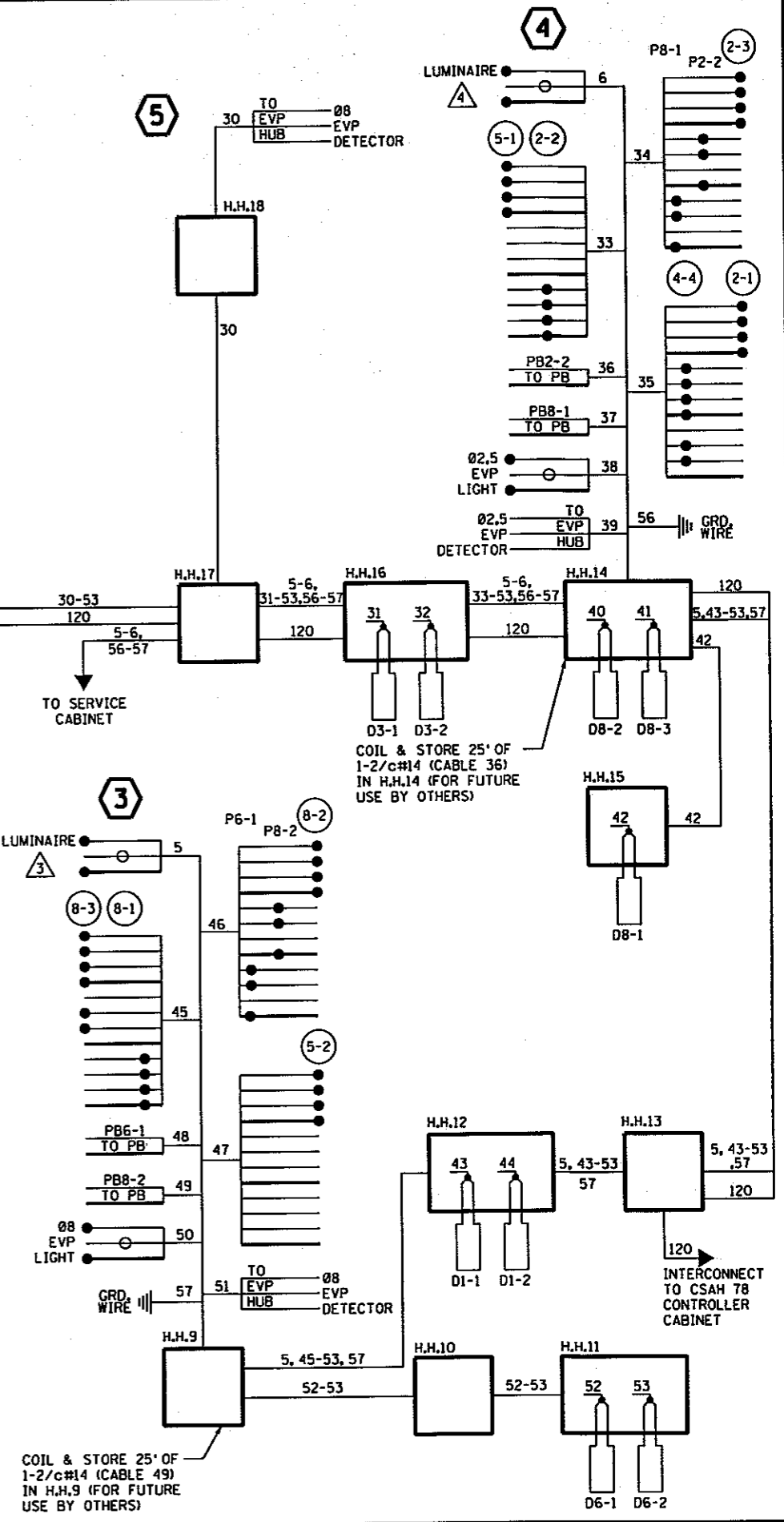
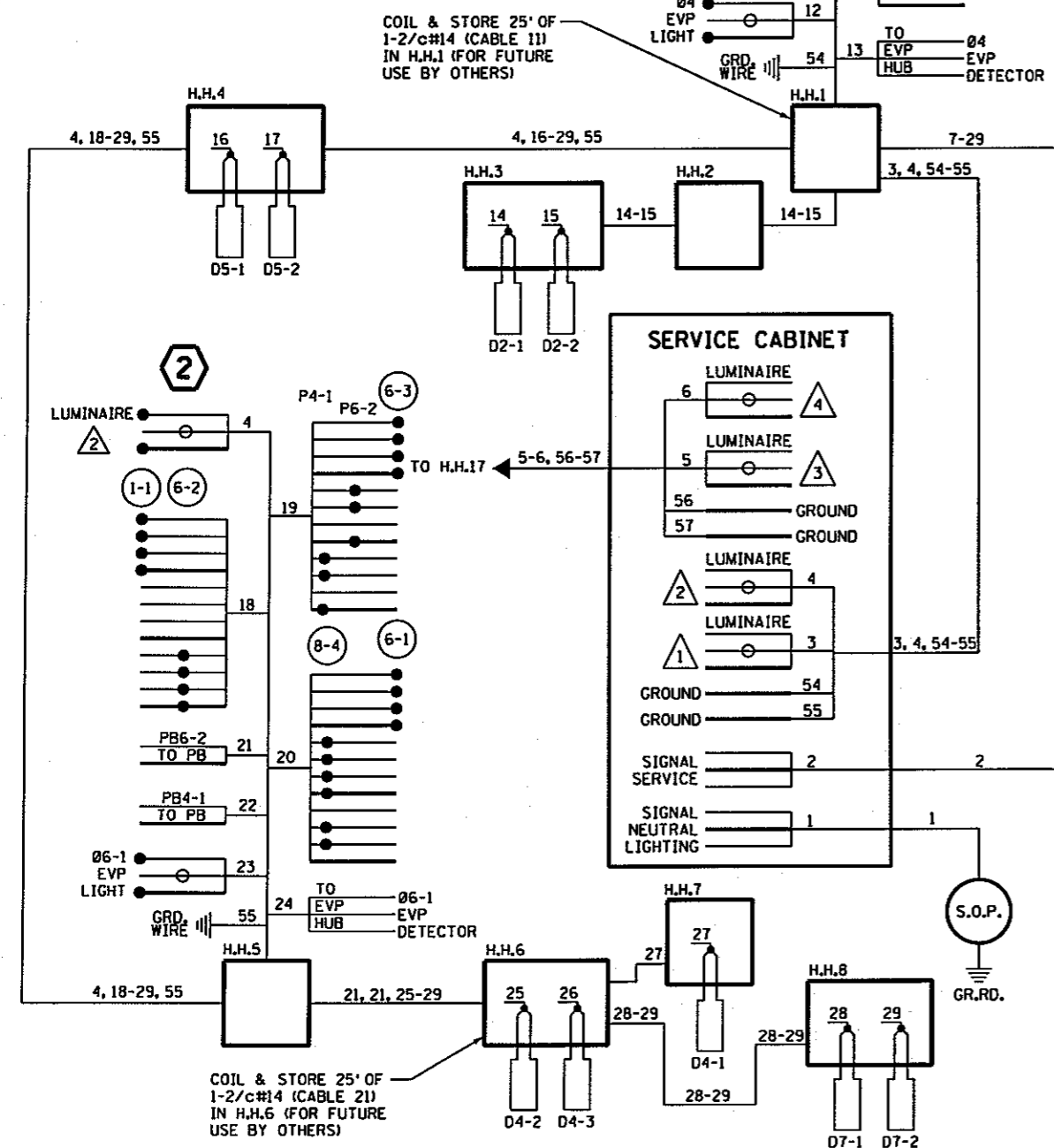
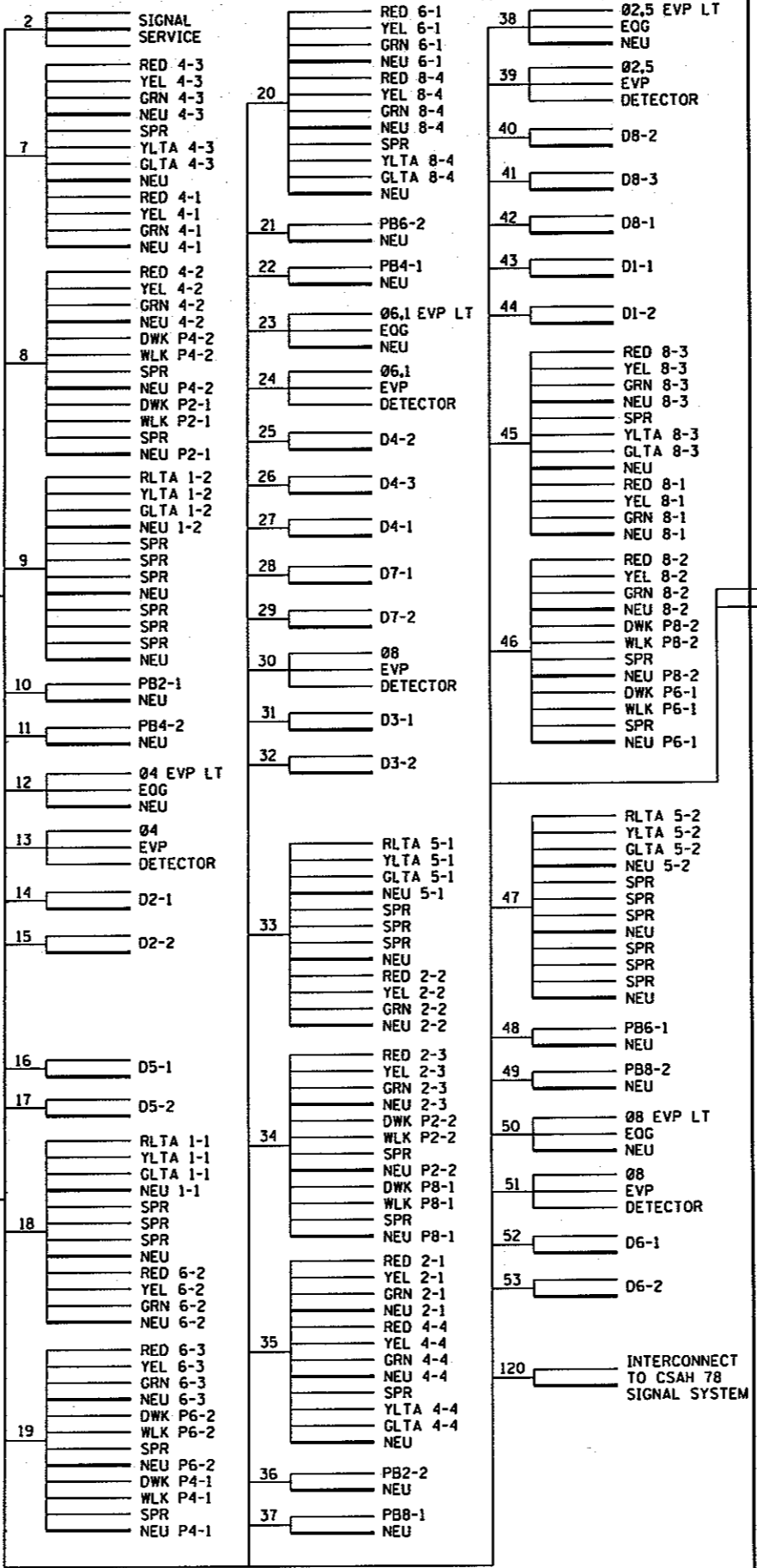
11/3/22 PM

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S:\V\A\anokc\102287\5-dsgn\51-cadd\Civil\pinhts\ano102.sg.wd.dgn Wiring Diagram A



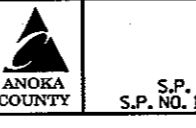
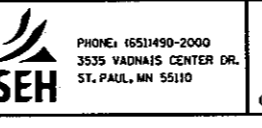
CONTROLLER AND CABINET



DESIGN TEAM				
DRAWN BY:	MTT			
DESIGNER:	JMG			
CHECKED BY:	JMG			
NO.	BY	DATE	REVISIONS	

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC SIGNAL SYSTEM "A"
FIELD WIRING DIAGRAM
 CSAH 14 (MAIN ST) AT SHENANDOAH BLVD

FILE NO.	176
102287	
SG14	
OF 5632	194

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1/20/2010

Interconnect 4

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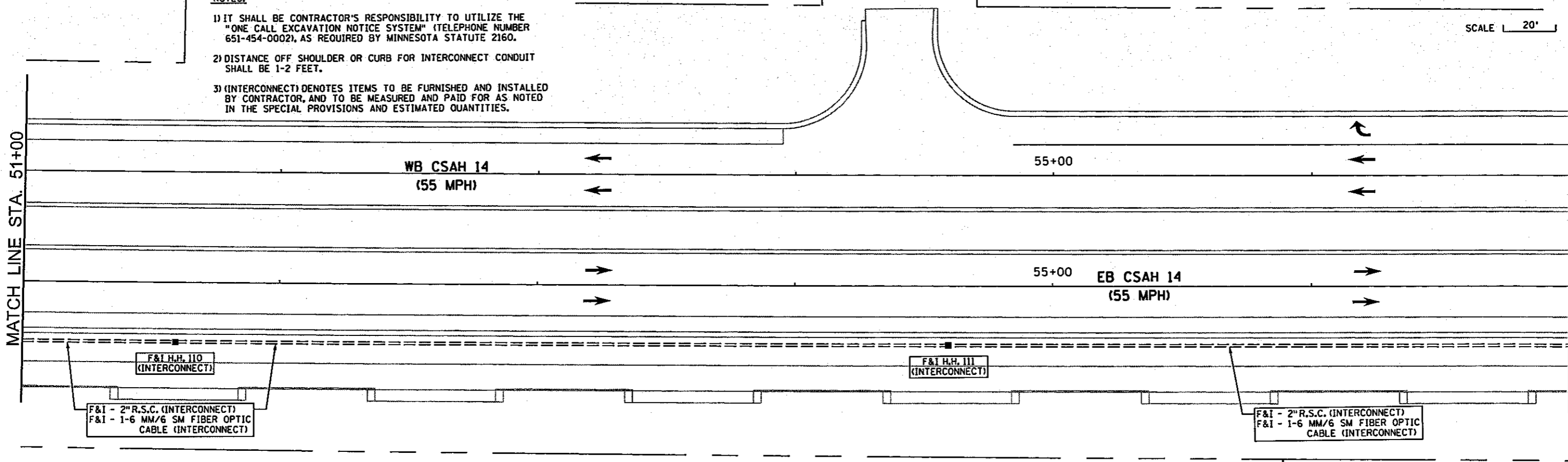
NOTES:

- 1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN THE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

SCALE 20'

MATCH LINE STA. 51+00

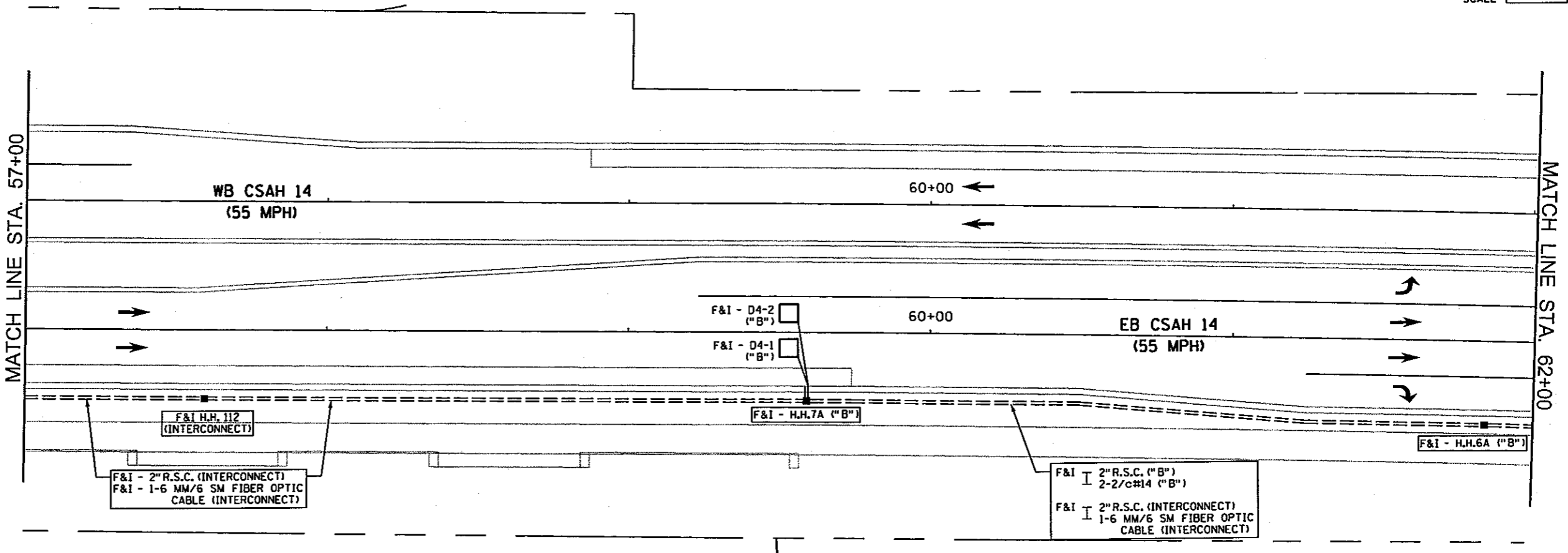
MATCH LINE STA. 57+00



SCALE 20'

MATCH LINE STA. 57+00

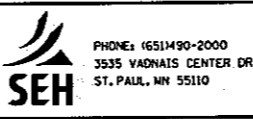
MATCH LINE STA. 62+00



DESIGN TEAM					
DRAWN BY:	MTT				
DESIGNER:	JMG				
CHECKED BY:	JMG				
	NO.	BY	DATE		REVISIONS

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010



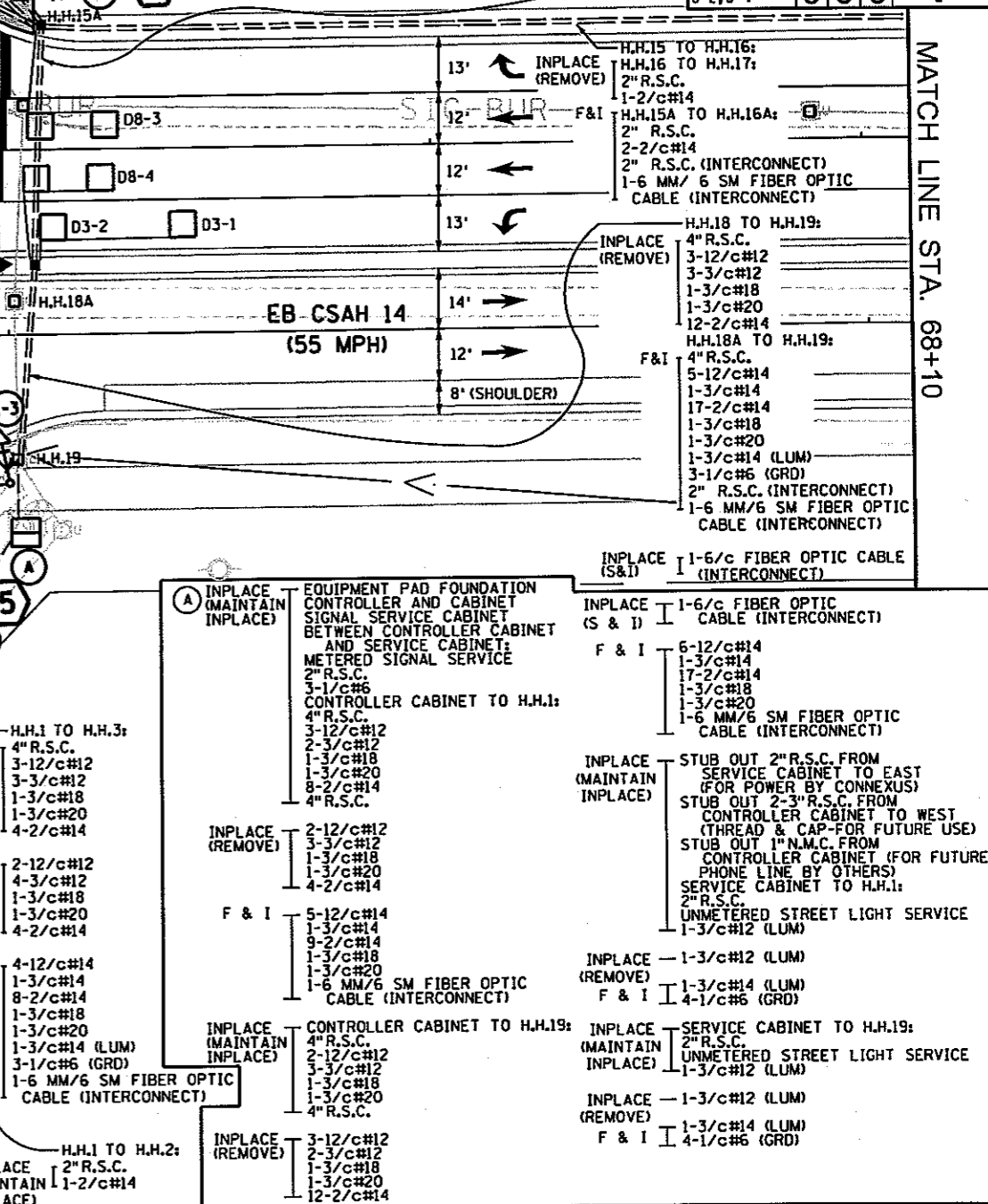
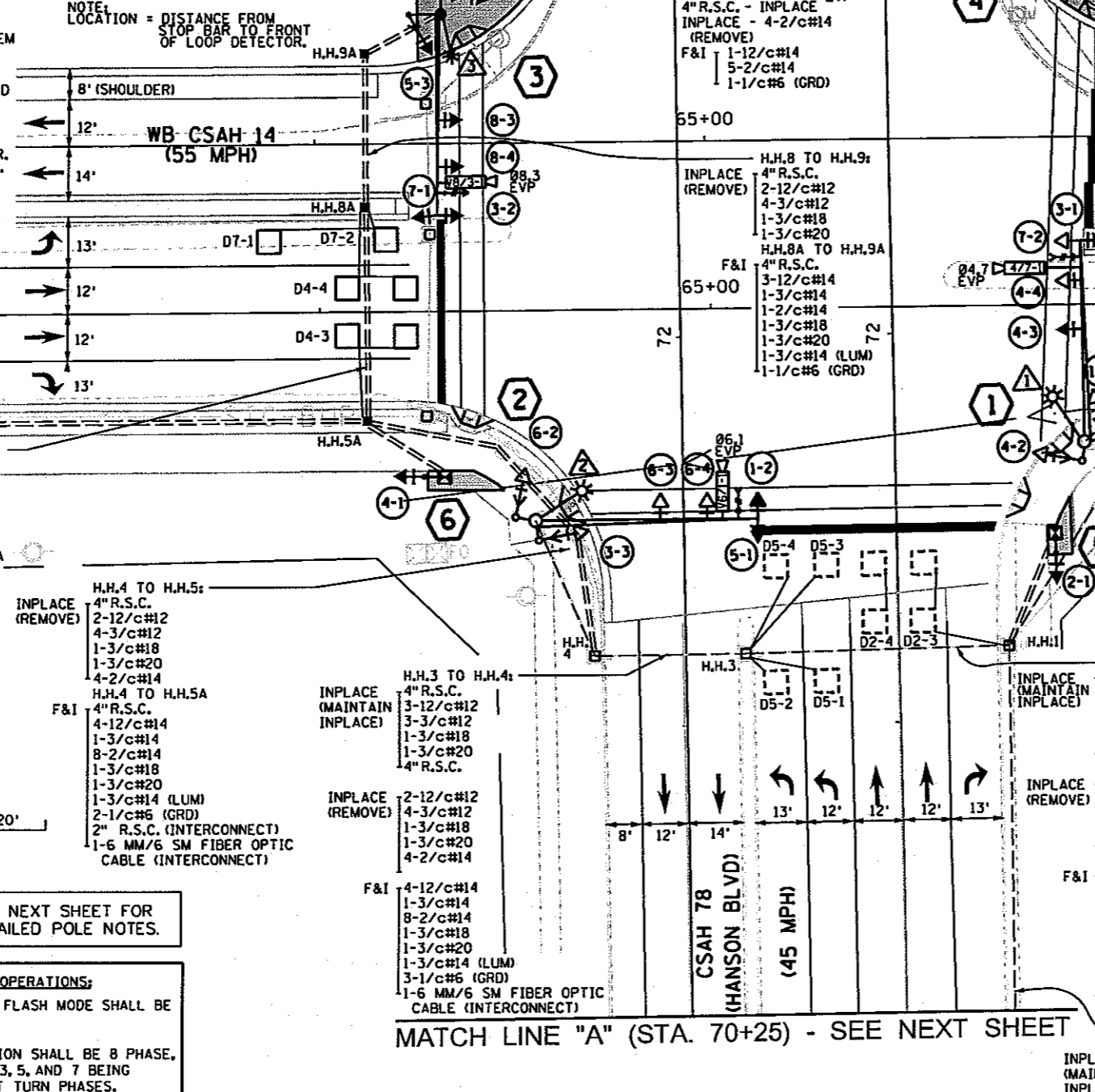
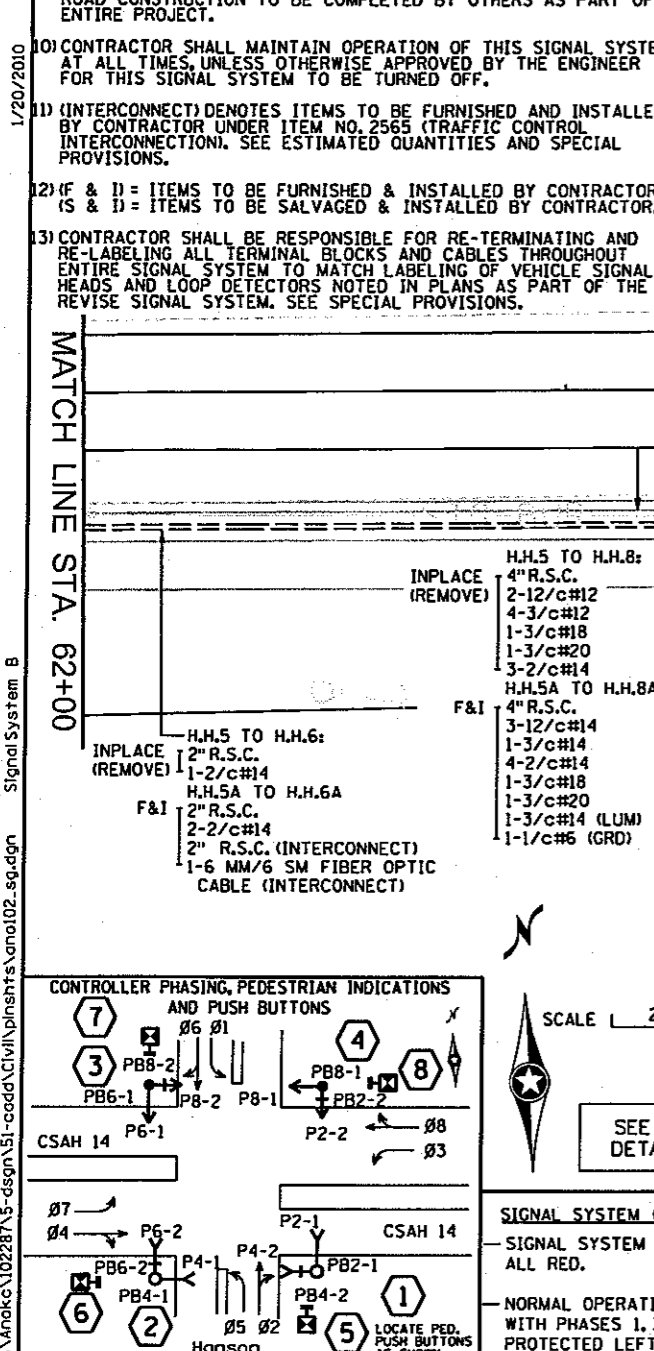
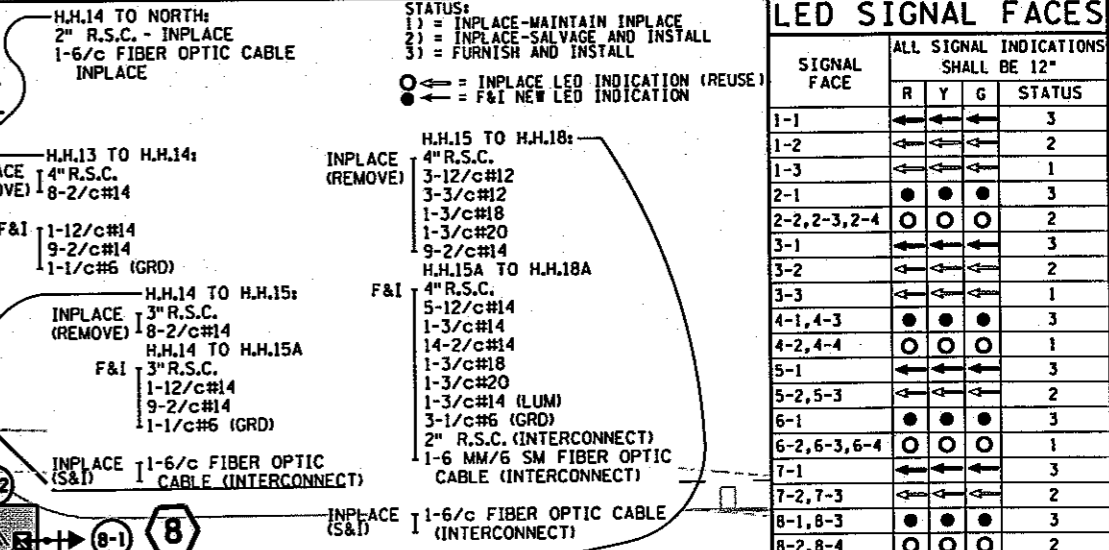
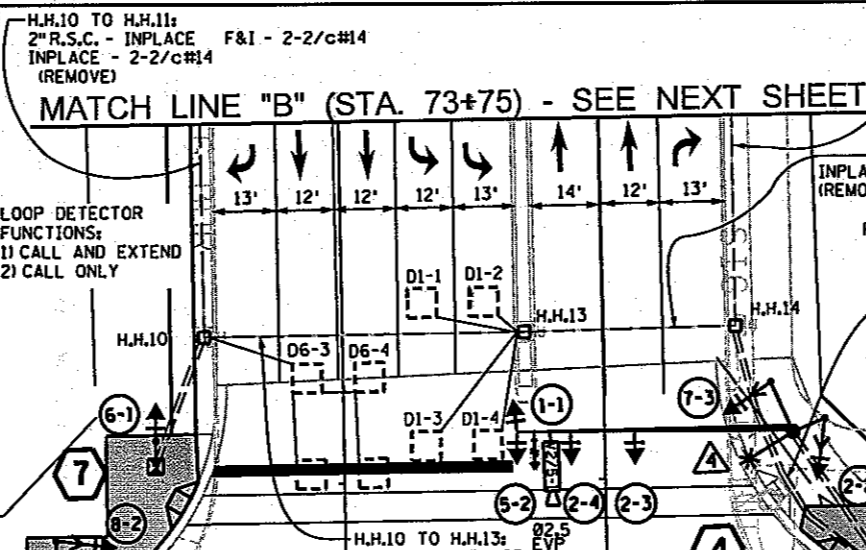
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

REVISE SIGNAL SYSTEM "B"
INTERSECTION LAYOUT
 CSAH 14 (MAIN ST) AT
 CSAH 78 (HANSON BLVD)

FILE NO.	177
102287	
SG15	194
OF 5632	

- NOTES:**
- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
 - 3) NEW HANDHOLES 5A, 6A, 7A, 8A, 9A, 15A, 16A, 17A, AND 18A SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. REMOVE AND DISPOSE OF INPLACE HANDHOLES 5, 6, 7, 8, 9, 15, 16, 17, AND 18. ADJUST HANDHOLES 1, 4, 10, 14, AND 19 TO FINISHED SURROUNDING GRADE AFTER ALL ROAD CONSTRUCTION WORK IS COMPLETED.
 - 4) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
 - 5) CONTRACTOR SHALL REMOVE INPLACE "HAND/WALKING PERSON" LENSES FROM EACH INPLACE SECTION PEDESTRIAN SIGNAL AND SHALL FURNISH AND INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
 - 6) ALL NEW VEHICLE SIGNAL INDICATIONS SHALL BE LED AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AS SHOWN BELOW.
 - 7) ALL NEW PEDESTAL POLE MOUNTED VEHICLE SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS AND SPECIAL PROVISIONS.
 - 8) ALL NEW VEHICLE SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING YELLOW POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
 - 9) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
 - 10) CONTRACTOR SHALL MAINTAIN OPERATION OF THIS SIGNAL SYSTEM AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR THIS SIGNAL SYSTEM TO BE TURNED OFF.
 - 11) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - 12) F & I = ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR. (S & I) = ITEMS TO BE SALVAGED & INSTALLED BY CONTRACTOR.
 - 13) CONTRACTOR SHALL BE RESPONSIBLE FOR RE-TERMINATING AND RE-LABELING ALL TERMINAL BLOCKS AND CABLES THROUGHOUT ENTIRE SIGNAL SYSTEM TO MATCH LABELING OF VEHICLE SIGNAL HEADS AND LOOP DETECTORS NOTED IN PLANS AS PART OF THE REVISED SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.

LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	6x6	30'		INPLACE
D1-2	6x6	30'		INPLACE
D1-3	6x6	0'		INPLACE
D1-4	6x6	0'		INPLACE
D2-1	6x6	300'		INPLACE
D2-2	6x6	300'		INPLACE
D2-3	2-6x6	5'x20'		INPLACE
D2-4	2-6x6	5'x20'		INPLACE
D3-1	6x6	40'		F & I
D3-2	6x6	10'		F & I
D4-1	6x6	475'		F & I
D4-2	6x6	475'		F & I
D4-3	2-6x6	5'x20'		F & I
D4-4	2-6x6	5'x20'		F & I
D5-1	6x6	35'		INPLACE
D5-2	6x6	35'		INPLACE
D5-3	6x6	5'		INPLACE
D5-4	6x6	5'		INPLACE
D6-1	6x6	300'		INPLACE
D6-2	6x6	300'		INPLACE
D6-3	2-6x6	0'x15'		INPLACE
D6-4	2-6x6	0'x15'		INPLACE
D7-1	6x6	40'		F & I
D7-2	6x6	10'		F & I
D8-1	6x6	475'		F & I
D8-2	6x6	475'		F & I
D8-3	2-6x6	5'x20'		F & I
D8-4	2-6x6	5'x20'		F & I

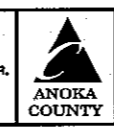
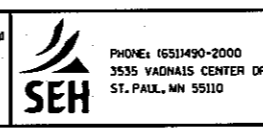


LED SIGNAL FACES				
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"			STATUS
	R	Y	G	
1-1	←	←	←	3
1-2	←	←	←	2
1-3	←	←	←	1
2-1	●	●	●	3
2-2, 2-3, 2-4	○	○	○	2
3-1	←	←	←	3
3-2	←	←	←	2
3-3	←	←	←	1
4-1, 4-3	●	●	●	3
4-2, 4-4	○	○	○	1
5-1	←	←	←	3
5-2, 5-3	←	←	←	2
6-1	●	●	●	3
6-2, 6-3, 6-4	○	○	○	1
7-1	←	←	←	3
7-2, 7-3	←	←	←	2
8-1, 8-3	●	●	●	3
8-2, 8-4	○	○	○	2

DESIGN TEAM	
DRAWN BY: MTT	
DESIGNER: JMG	
CHECKED BY: JMG	
NO.	BY DATE
REVISIONS	

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

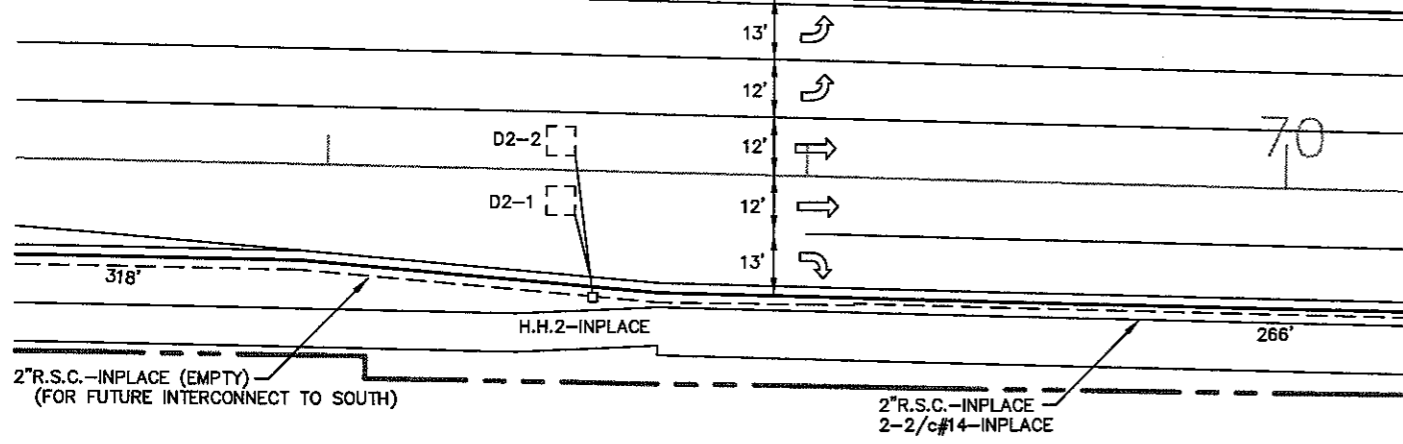
FILE NO. 102287	178
SG16	194
REVISE SIGNAL SYSTEM "B" INTERSECTION LAYOUT	
CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)	



CSAH 78 (HANSON BLVD NW)
(45 mph)

70

70



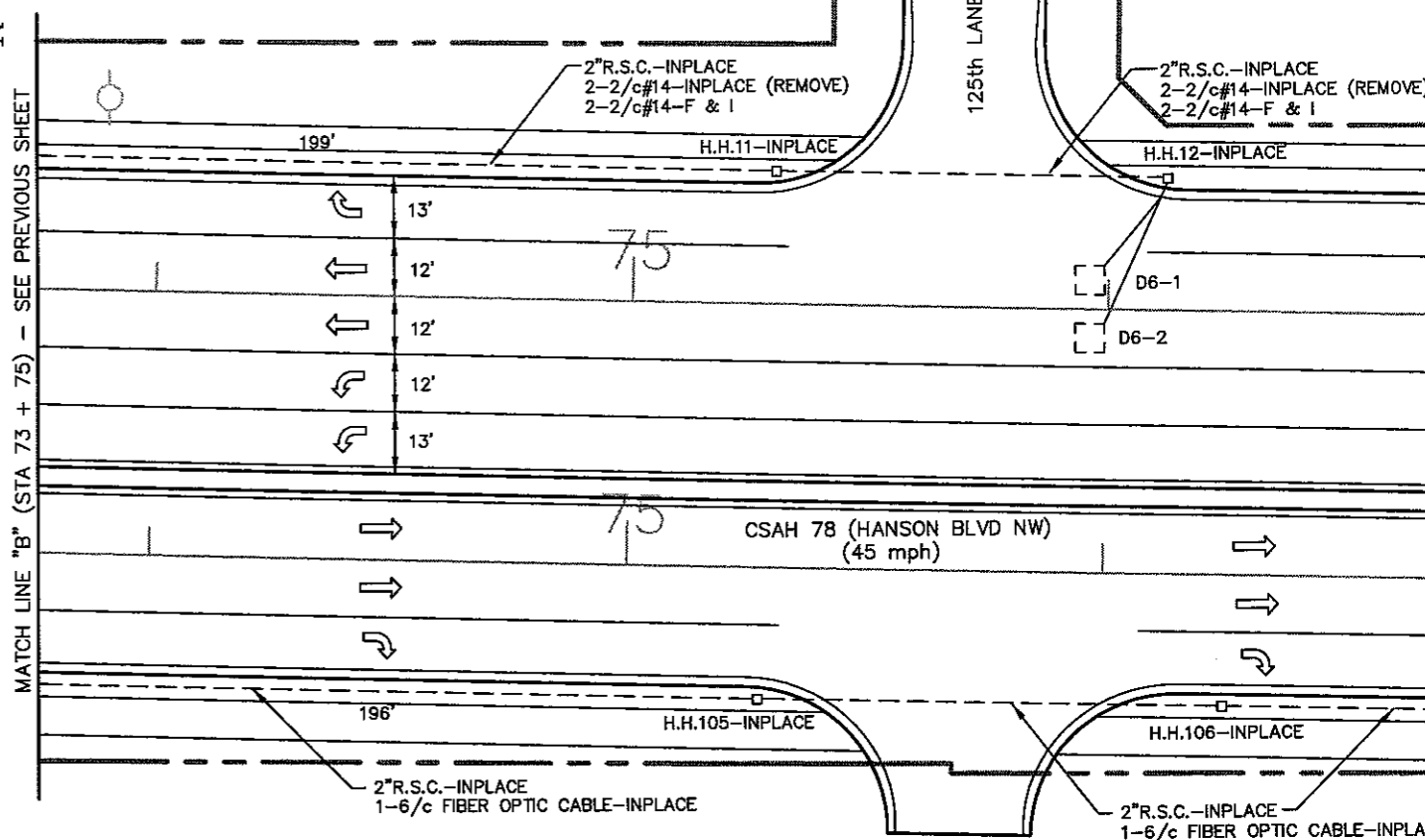
- ① INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
PA100 SWING-AWAY HINGES
LUMINAIRE-250 W HPS
1-ONE WAY SIGNAL-OVERHEAD AT 12' (4-4)
2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225° (1-3, 4-2)
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225° (P2-1, P4-2)
1-PEDESTRIAN PUSH BUTTON AT 270° (PB2-1)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#4,7)
1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED (FACING EB TRAFFIC) (V4/7-1)
EXTENDED INTO H.H.19:
3\"/>

- ② INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
PA100 SWING-AWAY HINGES
LUMINAIRE-250 W HPS
2-ONE WAY SIGNALS-OVERHEAD AT 12' & 24' (6-4, 6-3)
2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225° (3-3, 6-2)
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225° (P4-1, P6-2)
1-PEDESTRIAN PUSH BUTTON AT 270° (PB4-1)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#6,1)
1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED (FACING SB TRAFFIC) (V6/1-1)
EXTENDED INTO H.H.4:
3\"/>

- INPLACE (REMOVE) ONE WAY MOUNT-OVERHEAD AT 0'
2-"HAND/WALKING PERSON" LENSES (LEAVE HOUSING/VISOR INPLACE)
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)
- INPLACE (S & I) 1-ONE WAY SIGNAL-OVERHEAD AT 0' (7-2)
1-PED. PUSH BUTTON AT 0' (RELOCATE TO POLE 5) (PB4-2)
- F & I 2-WAY MOUNT-OVERHEAD AT 0'
1-ONE WAY SIGNAL-OVERHEAD AT 0' (3-1)
1-ONE WAY SIGNAL-OVERHEAD AT 24' (4-3)
WELDED MID-MAST ARM MOUNT AT 24'
2-C.D. PEDESTRIAN SIGNAL LENSES (FOR P2-1, P4-2)
1-PEDESTRIAN INSTRUCTION SIGN AT 270° (R10-3eL)
1-12/c#14
1-1/c#6 (GRD)

- INPLACE (REMOVE) ONE WAY MOUNT-OVERHEAD AT 0'
2-"HAND/WALKING PERSON" LENSES (LEAVE HOUSING/VISOR INPLACE)
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)
- INPLACE (S & I) 1-ONE WAY SIGNAL-OVERHEAD AT 0' (1-2)
1-PED. PUSH BUTTON AT 0' (RELOCATE TO POLE 6) (PB6-2)
- F & I 2-WAY MOUNT-OVERHEAD AT 0'
1-ONE WAY SIGNAL-OVERHEAD AT 0' (5-1)
2-C.D. PEDESTRIAN SIGNAL LENSES (FOR P4-1, P6-2)
1-PEDESTRIAN INSTRUCTION SIGN AT 270° (R10-3eL)
1-1/c#6 (GRD)

- ⑤ INPLACE (S & I) 1-PEDESTRIAN PUSH BUTTON (RELOCATED FROM ADJACENT MAST ARM POLE) (PB2-2, PB4-2, PB6-2, PB8-2)
- ⑥ INPLACE (S & I) PEDESTAL FOUNDATION
12' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
1-ONE WAY SIGNAL-POLE MOUNTED (FACING ONCOMING TRAFFIC) (2-1, 4-1, 6-1, 8-1)
1-PEDESTRIAN INSTRUCTION SIGN (R10-3eR)
EXTEND INTO H.H. 1, 5A, 10, AND 15A:
3\"/>



- ③ INPLACE (S & I) TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
PA100 SWING-AWAY HINGES
LUMINAIRE-250 W HPS
1-ONE WAY SIGNAL-OVERHEAD AT 0' (3-2)
1-ONE WAY SIGNAL-OVERHEAD AT 12' (8-4)
2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225° (5-3, 8-2)
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225° (P6-1, P8-2)
1-PED. PUSH BUTTON AT 0' (RELOCATE TO POLE 7) (PB8-2)
1-PEDESTRIAN PUSH BUTTON AT 270° (PB6-1)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-5)
ONE WAY EVP DETECTOR AND LIGHT (#8,3)
1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED (FACING WB TRAFFIC) (V8/3-1)

- INPLACE (REMOVE) PA100 POLE FOUNDATION
ONE WAY MOUNT-OVERHEAD AT 0'
2-"HAND/WALKING PERSON" LENSES (LEAVE HOUSING/VISOR INPLACE)
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)
EXTEND INTO H.H.9:
3\"/>

- F & I PA100 POLE FOUNDATION
2-WAY MOUNT-OVERHEAD AT 0'
1-ONE WAY SIGNAL-OVERHEAD AT 0' (7-1)
1-ONE WAY SIGNAL-OVERHEAD AT 24' (8-3)
WELDED MID-MAST ARM MOUNT AT 24'
2-C.D. PEDESTRIAN SIGNAL LENSES (FOR P6-1, P8-2)
1-PEDESTRIAN INSTRUCTION SIGN AT 270° (R10-3eL)
EXTEND INTO H.H.9A:
3\"/>

- ④ INPLACE (S & I) TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
PA100 SWING-AWAY HINGES
LUMINAIRE-250 W HPS
3-ONE WAY SIGNALS-OVERHEAD AT 0', 12' & 24' (5-2, 2-4, 2-3)
2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225° (7-3, 2-2)
2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225° (P8-1, P2-2)
1-PED. PUSH BUTTON AT 0' (RELOCATE TO POLE 8) (PB2-2)
1-PEDESTRIAN PUSH BUTTON AT 270° (PB8-1)
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#2,5)
1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED (FACING NB TRAFFIC) (V2/5-1)

- INPLACE (REMOVE) PA100 POLE FOUNDATION
ONE WAY MOUNT-OVERHEAD AT 0'
2-"HAND/WALKING PERSON" LENSES (LEAVE HOUSING/VISOR INPLACE)
2-PEDESTRIAN INSTRUCTION SIGNS (R10-4b)
EXTEND INTO H.H.15:
3\"/>

- F & I PA100 POLE FOUNDATION
2-WAY MOUNT-OVERHEAD AT 0'
1-ONE WAY SIGNAL-OVERHEAD AT 0' (1-1)
WELDED MID-MAST ARM MOUNTS AT 12' & 24'
CAP UNUSED MID MOUNTS AT 17' & 29'
2-C.D. PEDESTRIAN SIGNAL LENSES (FOR P8-1, P2-2)
1-PEDESTRIAN INSTRUCTION SIGN AT 270° (R10-3eL)
EXTEND INTO H.H.15A:
3\"/>

DESIGN TEAM				
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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.

Certified By: *John M. Gray* Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 01/21/10



ANOKA COUNTY, MN.
CSAH 14
S.P. NO. 02-814-32
S.A.P. NO. 114-020-042 (CSAH. 14)
S.A.P. NO. 114-129-008 (SIENANDDAH BLVD)

FILE NO. 102287	179
SG17	194
REVISE SIGNAL SYSTEM "B" INTERSECTION LAYOUT CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)	

11:33:33 PM

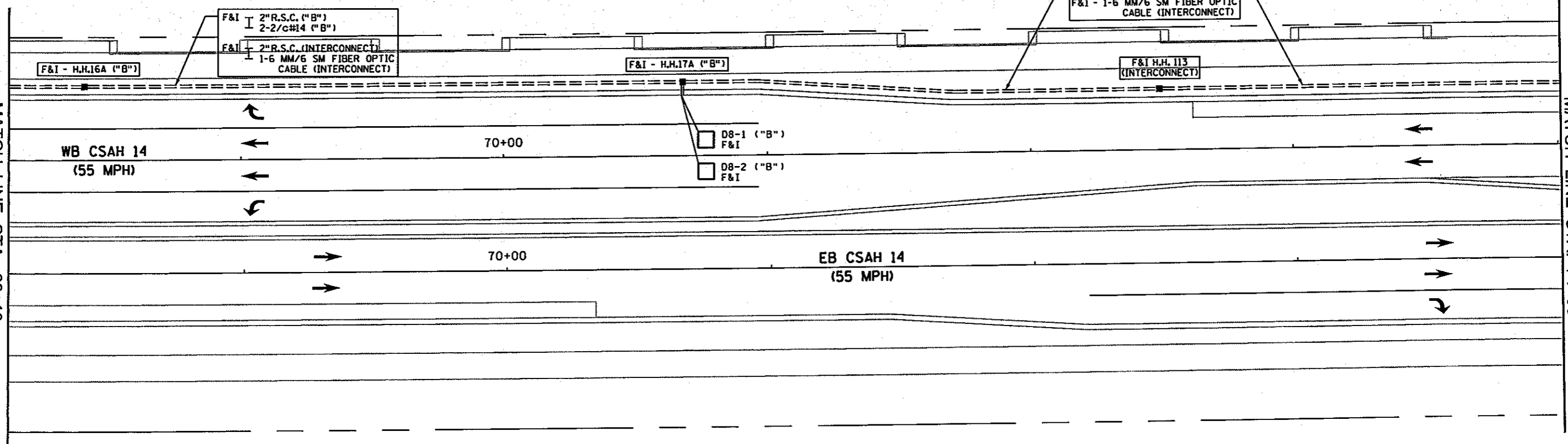
1/20/2010

S:\AEVA\Anoka\102287\5-dsgn\51-cadd\Civil\planshts\anok102.spl.dgn Interconnect 5

SCALE 20'

MATCH LINE STA. 68+10

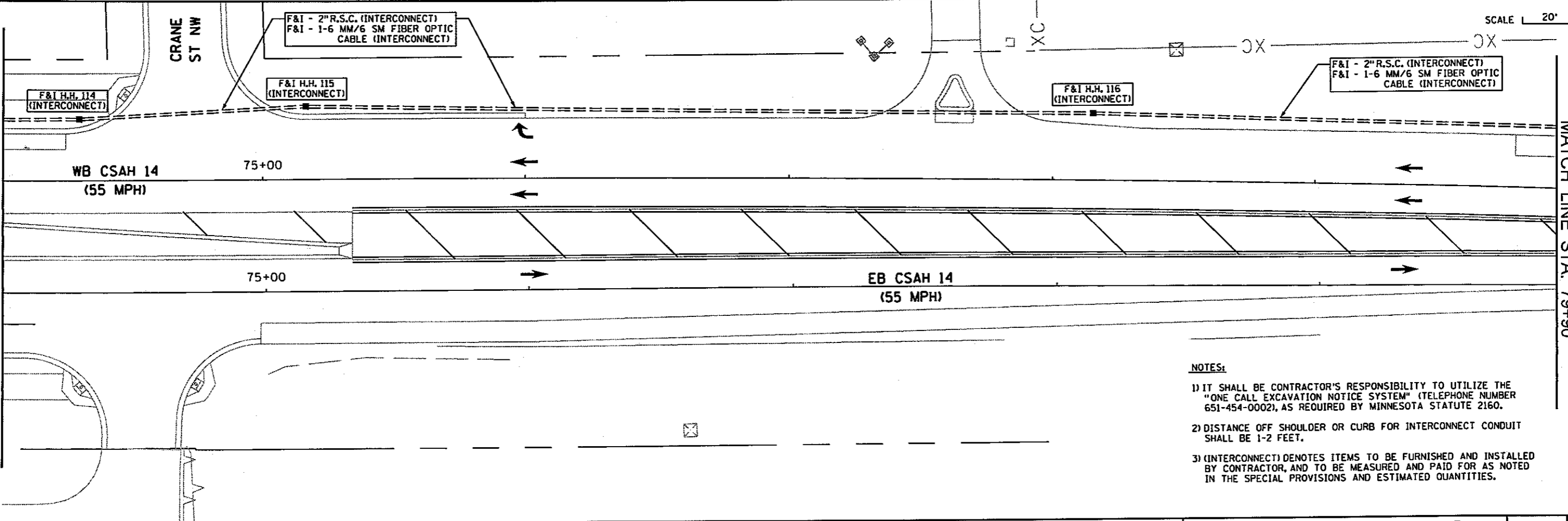
MATCH LINE STA. 74+00



SCALE 20'

MATCH LINE STA. 74+00

MATCH LINE STA. 79+90



NOTES:

- 1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN THE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

DESIGN TEAM					
DRAWN BY:	MTT				
DESIGNER:	JMG				
CHECKED BY:	JMG				
	NO.	BY	DATE		REVISIONS

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.

Certified By: *John M. Gray* Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



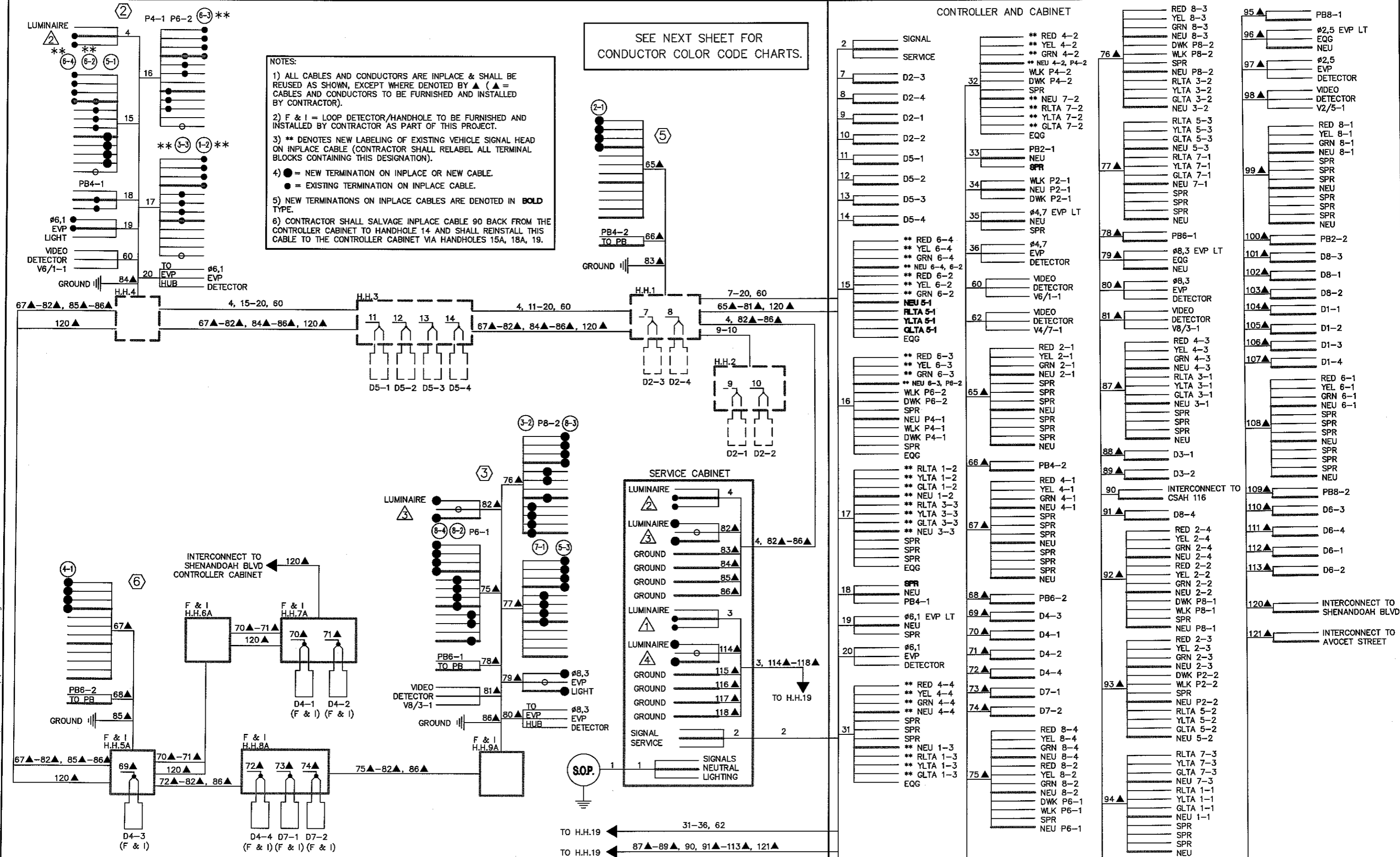
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

**REVISE SIGNAL SYSTEM "B"
 INTERSECTION LAYOUT**
 CSAH 14 (MAIN ST) AT
 CSAH 78 (HANSON BLVD)

FILE NO.	180
102287	
SG18	194
OF 5632	

SEE NEXT SHEET FOR CONDUCTOR COLOR CODE CHARTS.

- NOTES:
- 1) ALL CABLES AND CONDUCTORS ARE INPLACE & SHALL BE REUSED AS SHOWN, EXCEPT WHERE DENOTED BY ▲ (▲ = CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR).
 - 2) F & I = LOOP DETECTOR/HANDHOLE TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
 - 3) ** DENOTES NEW LABELING OF EXISTING VEHICLE SIGNAL HEAD ON INPLACE CABLE (CONTRACTOR SHALL RELABEL ALL TERMINAL BLOCKS CONTAINING THIS DESIGNATION).
 - 4) ● = NEW TERMINATION ON INPLACE OR NEW CABLE.
● = EXISTING TERMINATION ON INPLACE CABLE.
 - 5) NEW TERMINATIONS ON INPLACE CABLES ARE DENOTED IN BOLD TYPE.
 - 6) CONTRACTOR SHALL SALVAGE INPLACE CABLE 90 BACK FROM THE CONTROLLER CABINET TO HANDHOLE 14 AND SHALL REINSTALL THIS CABLE TO THE CONTROLLER CABINET VIA HANDHOLES 15A, 18A, 19.



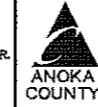
DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *J.M.G.* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



PHONE: (651)480-2000
 3535 VADNAN CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

REVISE SIGNAL SYSTEM "B"
FIELD WIRING DIAGRAM
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

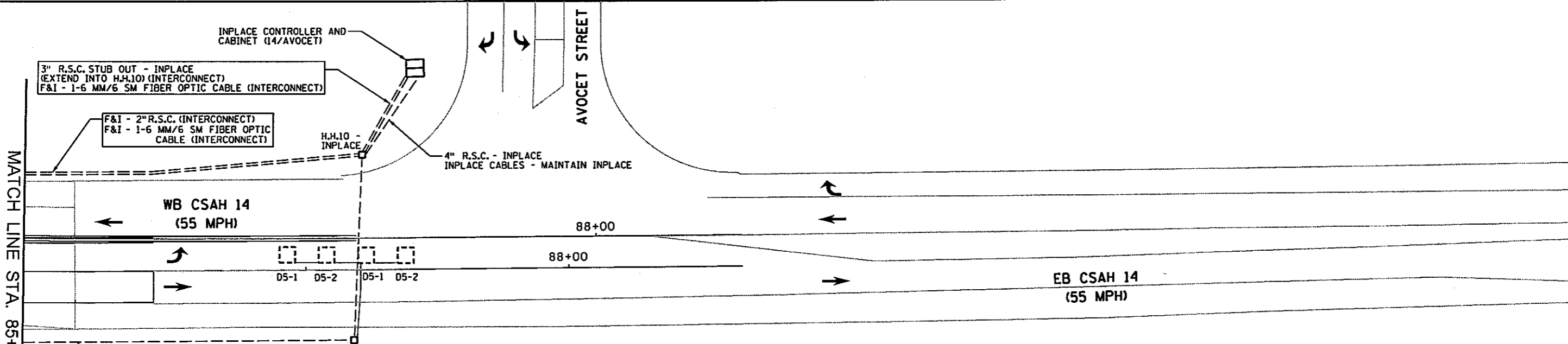
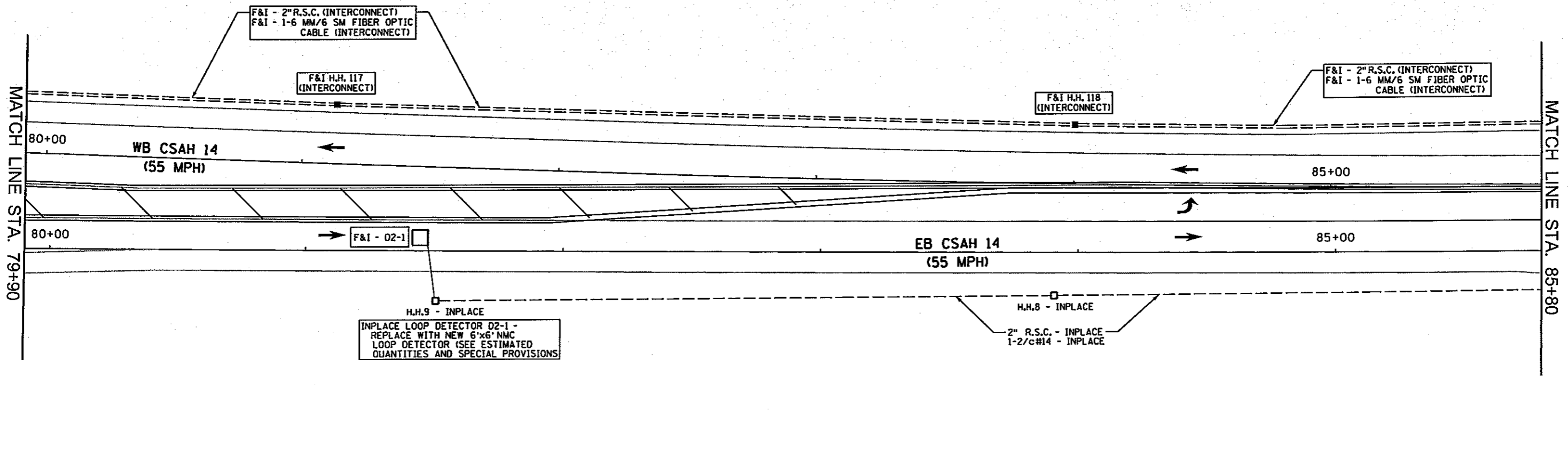
FILE NO.	181
102287	
SG19	194
0FS632	

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1/20/2010

Interconnect 6

S:\AE\A\Anoka\1022875-dsgn\51-cadd\Civil\prints\ana102.sg.dgn



NOTES:

- IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR AS NOTED IN THE SPECIAL PROVISIONS AND ESTIMATED QUANTITIES.

DESIGN TEAM					
DRAWN BY:	MTT				
DESIGNER:	JMG				
CHECKED BY:	JMG				
	NO.	BY	DATE		REVISIONS

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Certified By: *[Signature]* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 1/20/2010

SEH
 PHONE: (651)490-2000
 3535 VAONIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY

ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TRAFFIC SIGNAL INTERCONNECT INTERSECTION LAYOUT
 CSAH 14 (MAIN ST)
 (STA 68+10 TO AVOCET STREET)

FILE NO.	183
102287	
SG21	194
OF SG32	

- NOTES:
- 1) LOCATION OF FOUNDATIONS, WOOD POLES, AND NEW HANDHOLE 50 SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) NEW HANDHOLE 50 SHALL BE PVC HANDHOLE WITH METAL FRAME AND COVER. INPLACE HANDHOLES 1, 3, 4, AND 19 SHALL BE REUSED INPLACE AS PART OF TEMPORARY SIGNAL SYSTEM.
 - 3) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
 - 4) SEE DETAILS FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.
 - 5) ALL NEW VEHICLE SIGNAL INDICATIONS SHALL BE LED AND SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR AS SHOWN BELOW.
 - 6) ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR THE TEMPORARY SIGNAL SYSTEM SHALL BE APPROVED BY ENGINEER PRIOR TO INSTALLATION AT THE INTERSECTION. SEE SPECIAL PROVISIONS.
 - 7) MOVEMENT OF HEADS, EVP DETECTORS AND INDICATOR LIGHTS, AND VIDEO DETECTOR CAMERAS SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM".
 - 8) ITEMS DENOTED BY "SEE PERMANENT SIGNAL PLANS" SHALL BE MEASURED AND PAID FOR UNDER THE "REVISE SIGNAL SYSTEM" PAY ITEM.
 - 9) CONTRACTOR SHALL RELOCATE VIDEO DETECTOR CAMERAS AND EVP DETECTORS AND LIGHTS BACK ONTO THE MAST ARM OF POLES 1 AND 3 (FOR THE REVISE SIGNAL SYSTEM) AS PART OF THE "TEMPORARY SIGNAL SYSTEM" PAY ITEM.
 - 10) PROPOSED TEMPORARY SIGNAL SYSTEM PLAN SHOWN IS PROPOSED LAYOUT FOR STAGES 1 AND 2 OF THE TRAFFIC CONTROL PLAN. PLACEMENT OF ALL SIGNAL INDICATIONS AND OTHER ITEMS FOR STAGES 1 AND 2 STAGING PLANS SHALL BE IN ACCORDANCE WITH STAGING PLANS INCLUDED ELSEWHERE IN THE PLANS.
 - 11) (F & I) = ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR.
 - 12) CONTRACTOR SHALL BAG (AND MAKE IN-OPERATIONAL) ALL VEHICLE SIGNAL HEADS NOT IN USE DURING CONSTRUCTION. THIS MAY INCLUDE, BUT NOT BE LIMITED TO, VEHICLE SIGNAL HEADS FOR PHASES 4 AND 5 (IF NO ACCESS IS ALLOWED FOR VEHICLE AND CONSTRUCTION TRAFFIC TO THE WEST).
 - 13) CONTRACTOR SHALL PROTECT AND MAINTAIN ALL ITEMS OF THE EXISTING PERMANENT SIGNAL SYSTEM THAT WILL BE REUSED AS PART OF BOTH THE TEMPORARY AND REVISE SIGNAL SYSTEMS, AND SHALL REPLACE ITEMS DAMAGED DURING CONSTRUCTION WITH NEW ITEMS (AT NO EXPENSE TO THE COUNTY OR CITY).

3 INPLACE (SALVAGE AND INSTALL) TYPE PA100-A-D40-9 MAST ARM POLE (DAVIT AT 350" (STORE 50' MAST ARM AND MAST ARM MOUNTED MATERIALS AND ELECTRICAL EQUIPMENT DURING CONSTRUCTION))
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS - POLE MOUNTED
 2-SETS PEDESTRIAN INDICATIONS - POLE MOUNTED
 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)
 ONE WAY EVP DETECTOR AND LIGHT (Ø3) - RELOCATE ONTO SPAN WIRE DURING CONSTRUCTION (F&I SPAN WIRE MOUNTING HARDWARE)
 1-VIDEO DETECTOR CAMERA - RELOCATE FROM MAST ARM ONTO LUMINAIRE EXTENSION (FACING WB TRAFFIC) (V3-1)
 F & I - PA100 POLE FOUNDATION (SEE PERMANENT SIGNAL PLANS)

4 INPLACE (SALVAGE AND INSTALL) TYPE PA100-A-55-D40-9 (DAVIT AT 350")
 PA100 SWING AWAY HINGES
 LUMINAIRE-250 W HPS
 3-ONE WAY SIGNALS - OVERHEAD AT 0', 12' AND 24' (SEE PERMANENT SIGNAL PLANS)
 2-ONE WAY SIGNALS - POLE MOUNTED
 2-SETS PEDESTRIAN INDICATIONS - POLE MOUNTED
 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)
 2-R6-1 SIGN PANELS - POLE MOUNTED
 2-TYPE "D" SIGN PANELS - OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (Ø2.5)
 1-VIDEO DETECTOR CAMERA - MAST ARM MOUNTED (FACING NB TRAFFIC) (V2/5-1)
 F & I - PA100 POLE FOUNDATION (SEE PERMANENT SIGNAL PLANS)

7 8 F & I 50' WOOD POLE - CLASS 2
 2-DOWN GUYS, GUARDS AND EXPANDING ANCHORS

POLE 3 TO POLE 7:
 1-7/16" SPAN WIRE
 1-1/4" SPAN WIRE
 2-12/c#14
 3-12/c#14
 2-2/c#14
 1-3/c#18
 1-3/c#20
 1-3/c#14 (LUM)

1-7/16" SPAN WIRE
 1-1/4" SPAN WIRE
 4-12/c#14
 2-4/c#14
 2-3/c#14
 4-2/c#14
 2-3/c#18
 2-3/c#20
 2-3/c#14 (LUM)

POLE 1 TO H.H.19:
 3" R.S.C. - INPLACE
 2-12/c#12 - INPLACE
 2-3/c#12 - INPLACE
 1-3/c#18 - INPLACE
 1-3/c#12 (LUM) - INPLACE

POLE 2 TO H.H.4:
 3" R.S.C. - INPLACE AND
 H.H.3 TO H.H.4:
 4" R.S.C. - INPLACE
 3-12/c#12 - INPLACE
 2-3/c#12 - INPLACE
 1-3/c#18 - INPLACE
 1-3/c#20 - INPLACE
 1-3/c#12 (LUM) - INPLACE

H.H.1 TO H.H.3:
 4" R.S.C. - INPLACE
 3-12/c#12 - INPLACE
 2-3/c#12 - INPLACE
 1-3/c#18 - INPLACE
 1-3/c#20 - INPLACE
 1-3/c#12 (LUM) - INPLACE

1 INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-D40-9 MAST ARM POLE (DAVIT AT 350") (STORE 50' MAST ARM AND MAST ARM MOUNTED MATERIALS AND ELECTRICAL EQUIPMENT DURING CONSTRUCTION)
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS - POLE MOUNTED
 2-SETS PEDESTRIAN INDICATIONS - POLE MOUNTED
 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)

INPLACE (SALVAGE AND INSTALL) ONE WAY EVP DETECTOR AND LIGHT (Ø4) - RELOCATE ONTO SPAN WIRE DURING CONSTRUCTION (F&I SPAN WIRE MOUNTING HARDWARE)
 1-VIDEO DETECTOR CAMERA - RELOCATE FROM MAST ARM ONTO LUMINAIRE EXTENSION (FACING EB TRAFFIC) (V4-1)

LED SIGNAL FACES

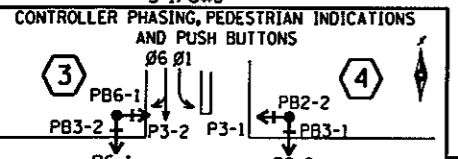
SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"				STATUS
	R	Y	G	G	
1-1,1-2	←	←	←	←	1
2-1,2-2,2-3	○	○	○	○	2
3-1	○	○	○	○	2
3-2	●	●	●	←	3
4-2	●	●	●	←	3
3-3	←	←	←	←	1
4-1	○	○	○	○	1
4-3	←	←	←	←	2
5-1,5-2	←	←	←	←	2
6-1,6-2,6-3	○	○	○	○	1

STATUS:
 1) = INPLACE, SALVAGE AND MAINTAIN INPLACE
 2) = INPLACE, SALVAGE AND INSTALL (SEE PERMANENT PLAN)
 3) = FURNISH AND INSTALL
 ○ ← = INPLACE LED INDICATION (REUSE)
 ● ← = F&I NEW LED INDICATION

SIGNAL SYSTEM OPERATIONS:
 - SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION DURING CONSTRUCTION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 AND 4 BEING SPLIT PHASES.
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

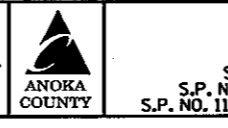
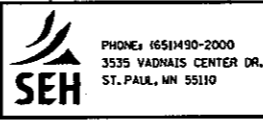
A INPLACE (MAINTAIN INPLACE) EQUIPMENT PAD FOUNDATION
 SIGNAL CONTROLLER AND CABINET
 SIGNAL SERVICE CABINET
 CONTROLLER CABINET TO H.H.1:
 2-4" R.S.C.
 3-12/c#12
 2-3/c#12
 1-3/c#18
 1-3/c#20
 CONTROLLER CABINET TO H.H.19:
 2-4" R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#18
 BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
 METERED SIGNAL SERVICE
 2" R.S.C.
 3-1/c#6

INPLACE (MAINTAIN INPLACE) STUB OUT 2" R.S.C. FROM SERVICE CABINET TO EAST (FOR POWER BY CONNEXUS)
 STUB OUT 1-3" R.S.C. FROM CONTROLLER CABINET TO WEST (THREAD & CAP-FOR FUTURE USE)
 STUB OUT 1" N.M.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)
 SERVICE CABINET TO H.H.1:
 2" R.S.C.
 UNMETERED STREET LIGHT SERVICE
 1-3/c#12 (LUM)
 SERVICE CABINET TO H.H.19:
 2" R.S.C.
 UNMETERED STREET LIGHT SERVICE
 1-3/c#12 (LUM)



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: JMG				

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 Certified By: *John M. Gray* Lic. No. 22457
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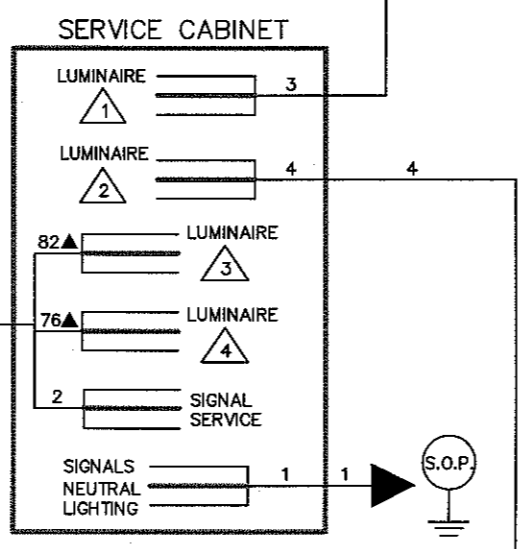
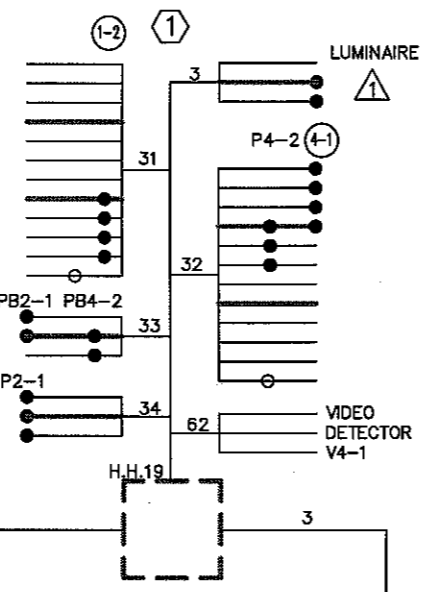
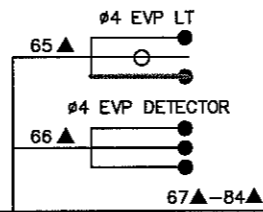
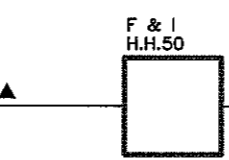
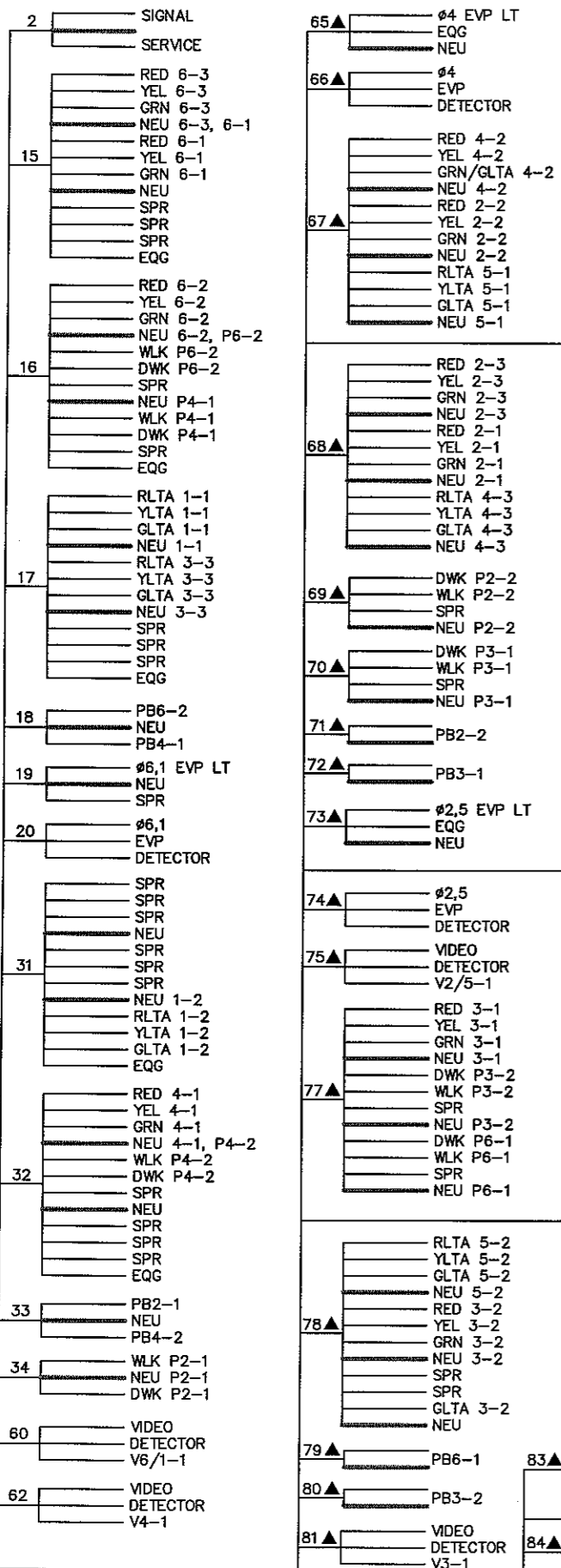
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32 CTB
 S.P. NO. 114-020-042 (C.S.A.H. 14)
 S.P. NO. 114-129-008 (SHENANDOAH BLVD.)

TEMPORARY SIGNAL SYSTEM INTERSECTION LAYOUT
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

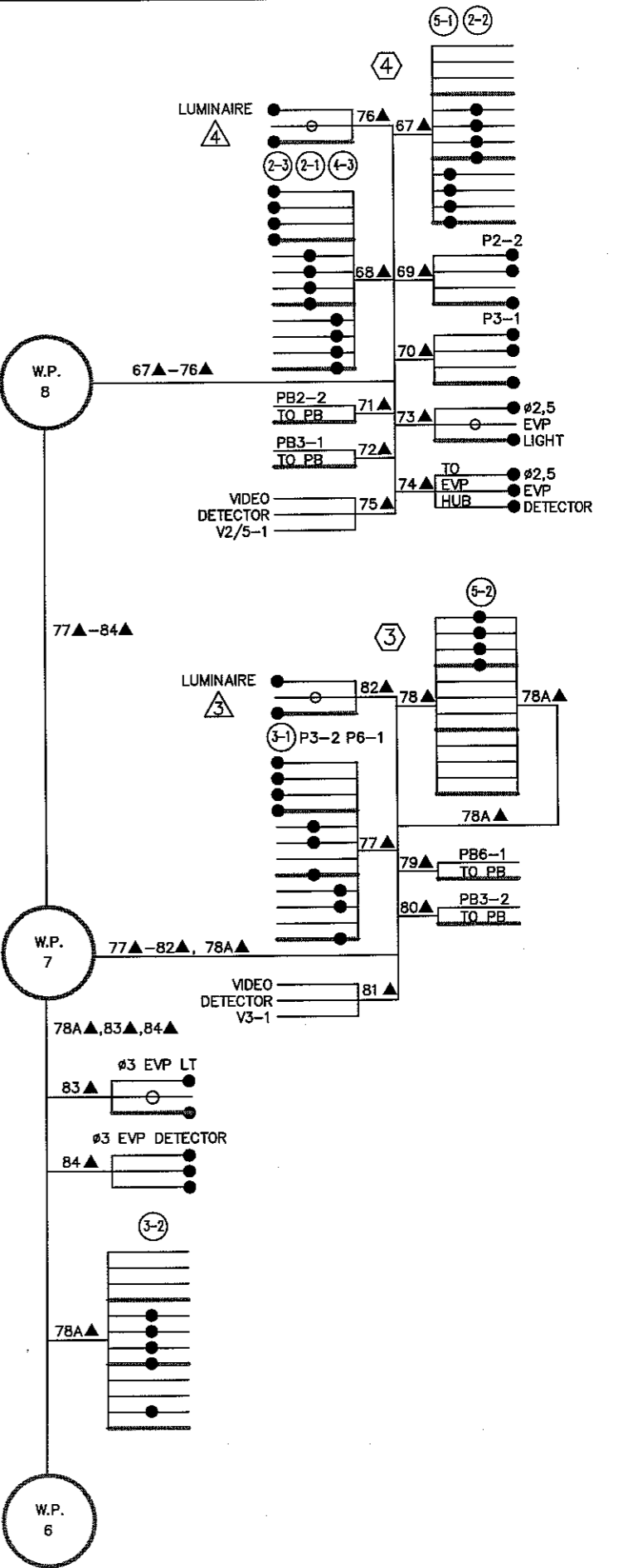
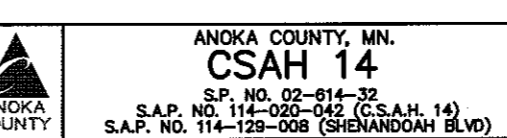
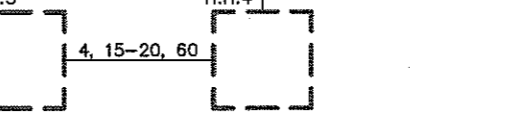
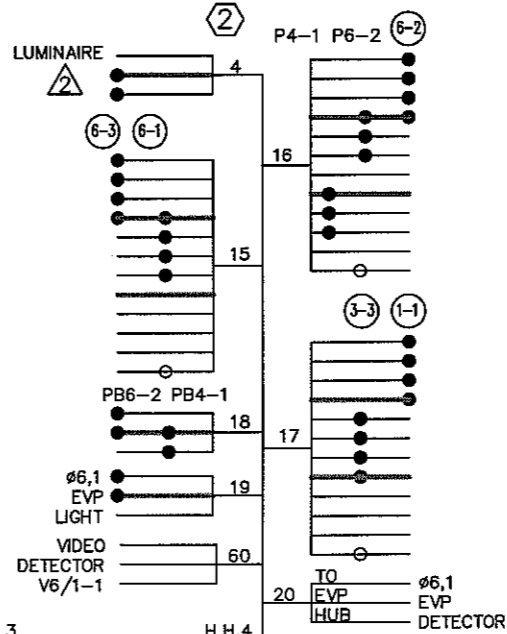
FILE NO. 102287
 184
 SG22
 OF SG32
 194

CONTROLLER CABINET

SEE SHEET SG20 FOR CONDUCTOR COLOR CODE CHARTS.



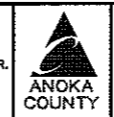
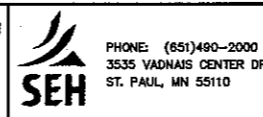
NOTES:
 1) ALL CABLES AND CONDUCTORS ARE INPLACE & SHALL BE REUSED AS SHOWN, EXCEPT WHERE DENOTED BY ▲ (▲ = CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR).
 2) F & I = HANDHOLE TO BE FURNISHED AND INSTALLED BY CONTRACTOR FOR TEMPORARY SIGNAL SYSTEM.
 3) ● = NEW TERMINATION ON INPLACE OR NEW CABLE.
 ● = EXISTING TERMINATION ON INPLACE CABLE.
 4) INPLACE CABLES AND CONDUCTORS NOT SHOWN FROM EXISTING SIGNAL SYSTEM SHALL EITHER BE COILED AND PROTECTED (FOR FUTURE USE) OR REMOVED FROM SIGNAL SYSTEM AS REQUIRED.



s:\oa\p\anoka\common\signals\csah 14 (hanson-shen)\hanson-match.dwg

DESIGN TEAM				
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
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 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

TEMPORARY SIGNAL SYSTEM
FIELD WIRING DIAGRAM
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

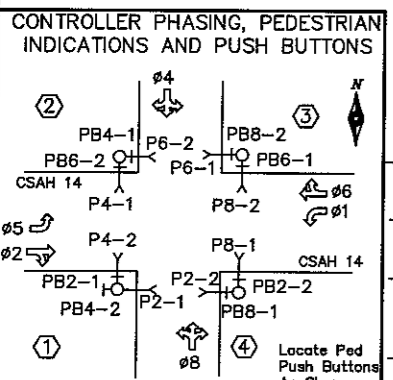
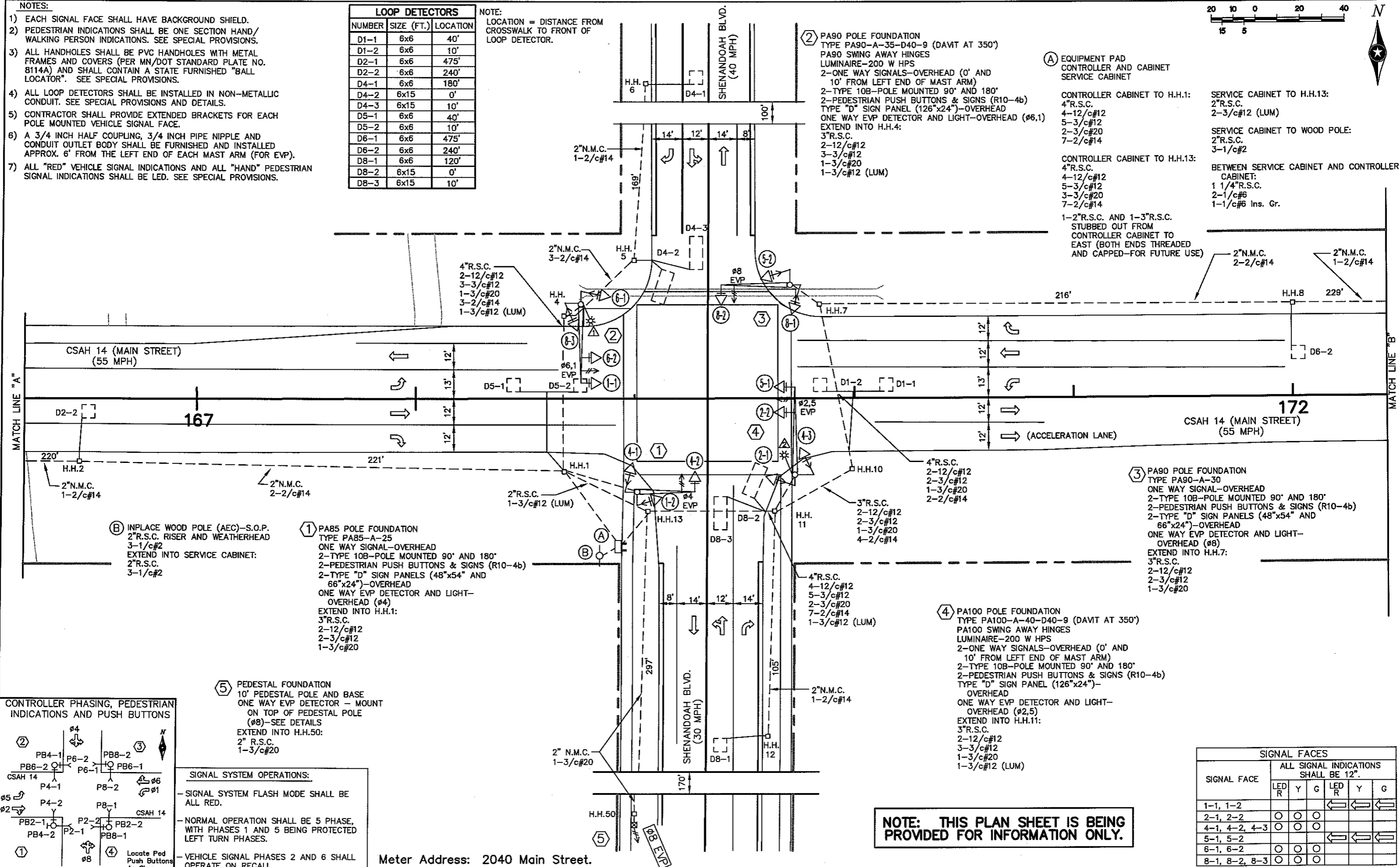
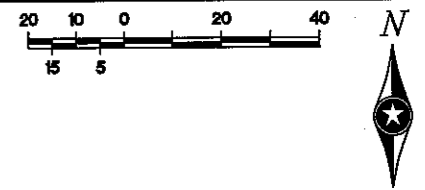
FILE NO. 185
 102287
 SG23
 OFSG32
 194

NOTES:

- 1) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
- 2) PEDESTRIAN INDICATIONS SHALL BE ONE SECTION HAND/WALKING PERSON INDICATIONS. SEE SPECIAL PROVISIONS.
- 3) ALL HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS (PER MN/DOT STANDARD PLATE NO. 8114A) AND SHALL CONTAIN A STATE FURNISHED "BALL LOCATOR". SEE SPECIAL PROVISIONS.
- 4) ALL LOOP DETECTORS SHALL BE INSTALLED IN NON-METALLIC CONDUIT. SEE SPECIAL PROVISIONS AND DETAILS.
- 5) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE SIGNAL FACE.
- 6) A 3/4 INCH HALF COUPLING, 3/4 INCH PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED APPROX. 6' FROM THE LEFT END OF EACH MAST ARM (FOR EVP).
- 7) ALL "RED" VEHICLE SIGNAL INDICATIONS AND ALL "HAND" PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.

LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D1-1	6x6	40'
D1-2	6x6	10'
D2-1	6x6	475'
D2-2	6x6	240'
D4-1	6x6	180'
D4-2	6x15	0'
D4-3	6x15	10'
D5-1	6x6	40'
D5-2	6x6	10'
D6-1	6x6	475'
D6-2	6x6	240'
D8-1	6x6	120'
D8-2	6x15	0'
D8-3	6x15	10'

NOTE: LOCATION = DISTANCE FROM CROSSWALK TO FRONT OF LOOP DETECTOR.



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 5 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

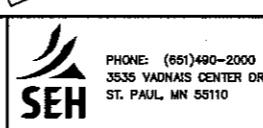
NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

SIGNAL FACE	ALL SIGNAL INDICATIONS SHALL BE 12"					
	LED R	Y	G	LED R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2	○	○	○			
4-1, 4-2, 4-3	○	○	○			
5-1, 5-2				←	←	←
6-1, 6-2	○	○	○			
8-1, 8-2, 8-3	○	○	○			

DESIGN TEAM			
DRAWN BY: JMG			
DESIGNER: JMG			
CHECKED BY: MRD			
NO.	BY	DATE	REVISIONS

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

INPLACE SIGNAL SYSTEM "FOR INFORMATION ONLY"
 CSAH 14 (MAIN ST) AT SHENANDOAH BLVD

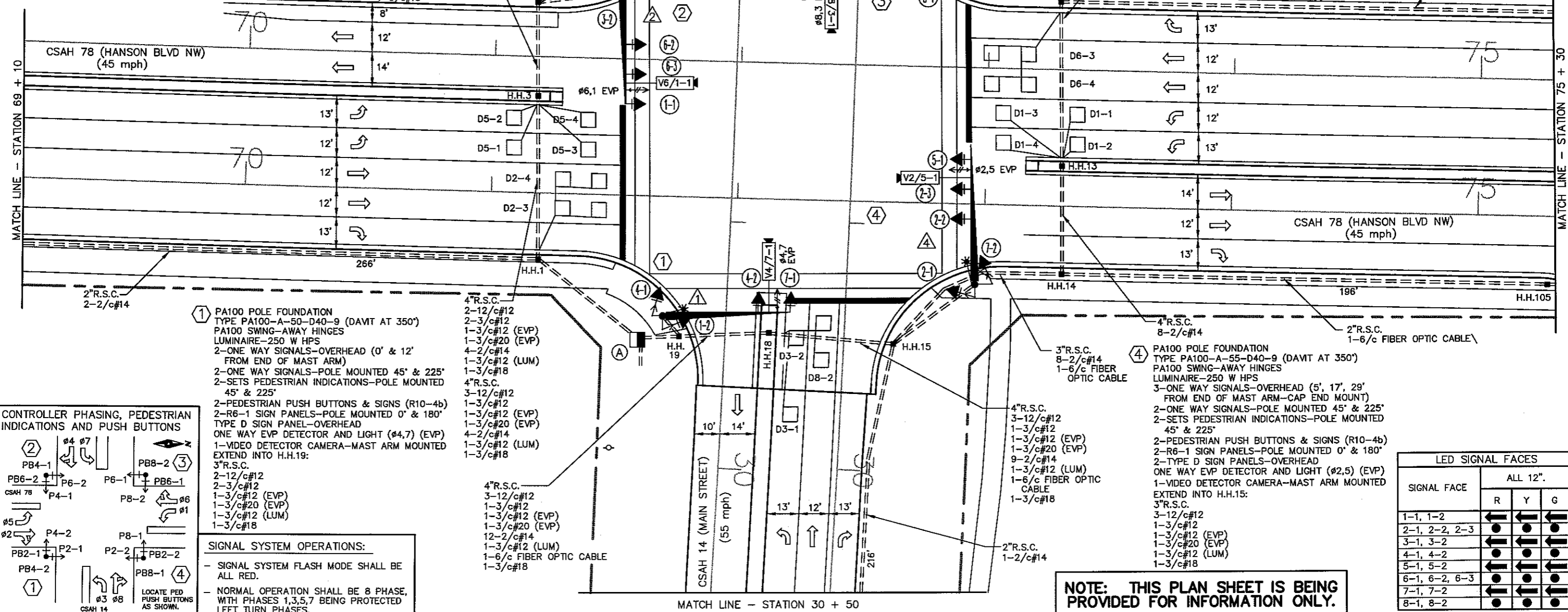
FILE NO. 102287	186
SG24 OF 632	194

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	40'	1
D1-3	6x6	10'	1
D1-4	6x6	10'	1
D2-1	6x6	300'	1
D2-2	6x6	300'	1
D2-3	2-6x6	5' & 20'	2
D2-4	2-6x6	5' & 20'	2
D3-1	6x6	40'	1
D3-2	6x6	10'	1
D4-1	6x6	475'	1
D4-2	2-6x6	5' & 20'	2
D5-1	6x6	40'	1
D5-2	6x6	40'	1
D5-3	6x6	10'	1
D5-4	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D6-3	2-6x6	5' & 20'	2
D6-4	2-6x6	5' & 20'	2
D7-1	6x6	40'	1
D7-2	6x6	10'	1
D8-1	6x6	475'	1
D8-2	2-6x6	5' & 20'	2

LOOP DETECTORS FUNCTIONS:

- CALL AND EXTEND
 - CALL ONLY
- ② PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 PA100 SWING-AWAY HINGES
 LUMINAIRE-250 W HPS
 3-ONE WAY SIGNALS-OVERHEAD (0', 12', 24' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 45' & 225'
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45' & 225'
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0' & 180'
 2-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#6,1) (EVP)
 1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED
 EXTEND INTO H.H.4:
 4"R.S.C. 2-12/c#12
 3"R.S.C. 2-3/c#12
 3-12/c#12
 1-3/c#12
 1-3/c#12 (EVP)
 1-3/c#20 (EVP)
 1-3/c#20 (EVP)
 1-3/c#12 (LUM)
 1-3/c#18

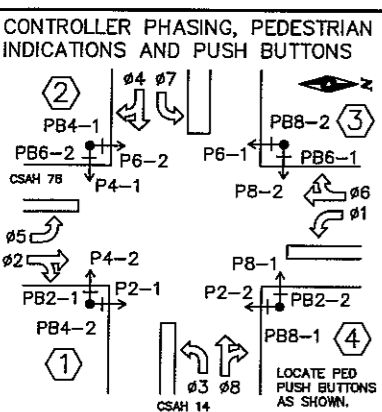
NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- ① PA100 POLE FOUNDATION
 TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
 PA100 SWING-AWAY HINGES
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 45' & 225'
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45' & 225'
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0' & 180'
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#4,7) (EVP)
 1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED
 EXTEND INTO H.H.19:
 3"R.S.C. 2-12/c#12
 2-3/c#12
 3-12/c#12
 1-3/c#12 (EVP)
 1-3/c#20 (EVP)
 1-3/c#20 (EVP)
 1-3/c#12 (LUM)
 1-3/c#18

SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1,3,5,7 BEING PROTECTED LEFT TURN PHASES.



- ③ PA100 POLE FOUNDATION
 TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
 PA100 SWING-AWAY HINGES
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 45' & 225'
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45' & 225'
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0' & 180'
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#8,3) (EVP)
 1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED
 EXTEND INTO H.H.9:
 3"R.S.C. 2-12/c#12
 2-3/c#12
 1-3/c#12 (EVP)
 1-3/c#20 (EVP)
 1-3/c#12 (LUM)
 1-3/c#18

- ④ PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
 PA100 SWING-AWAY HINGES
 LUMINAIRE-250 W HPS
 3-ONE WAY SIGNALS-OVERHEAD (5', 17', 29' FROM END OF MAST ARM-CAP END MOUNT)
 2-ONE WAY SIGNALS-POLE MOUNTED 45' & 225'
 2-SETS PEDESTRIAN INDICATIONS-POLE MOUNTED 45' & 225'
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0' & 180'
 2-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT (#2,5) (EVP)
 1-VIDEO DETECTOR CAMERA-MAST ARM MOUNTED
 EXTEND INTO H.H.15:
 3"R.S.C. 3-12/c#12
 1-3/c#12
 1-3/c#12 (EVP)
 1-3/c#20 (EVP)
 1-3/c#12 (LUM)
 1-6/c FIBER OPTIC CABLE
 1-3/c#18

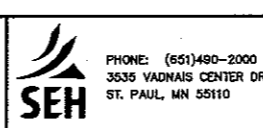
LED SIGNAL FACES				
SIGNAL FACE	ALL 12"			
	R	Y	G	
1-1, 1-2	←	←	←	
2-1, 2-2, 2-3	●	●	●	
3-1, 3-2	←	←	←	
4-1, 4-2	●	●	●	
5-1, 5-2	←	←	←	
6-1, 6-2, 6-3	●	●	●	
7-1, 7-2	←	←	←	
8-1, 8-2	●	●	●	

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

DESIGN TEAM			
DRAWN BY: JMG			
DESIGNER: JMG			
CHECKED BY: MRD			
NO.	BY	DATE	REVISIONS

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.

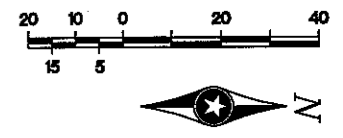
Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



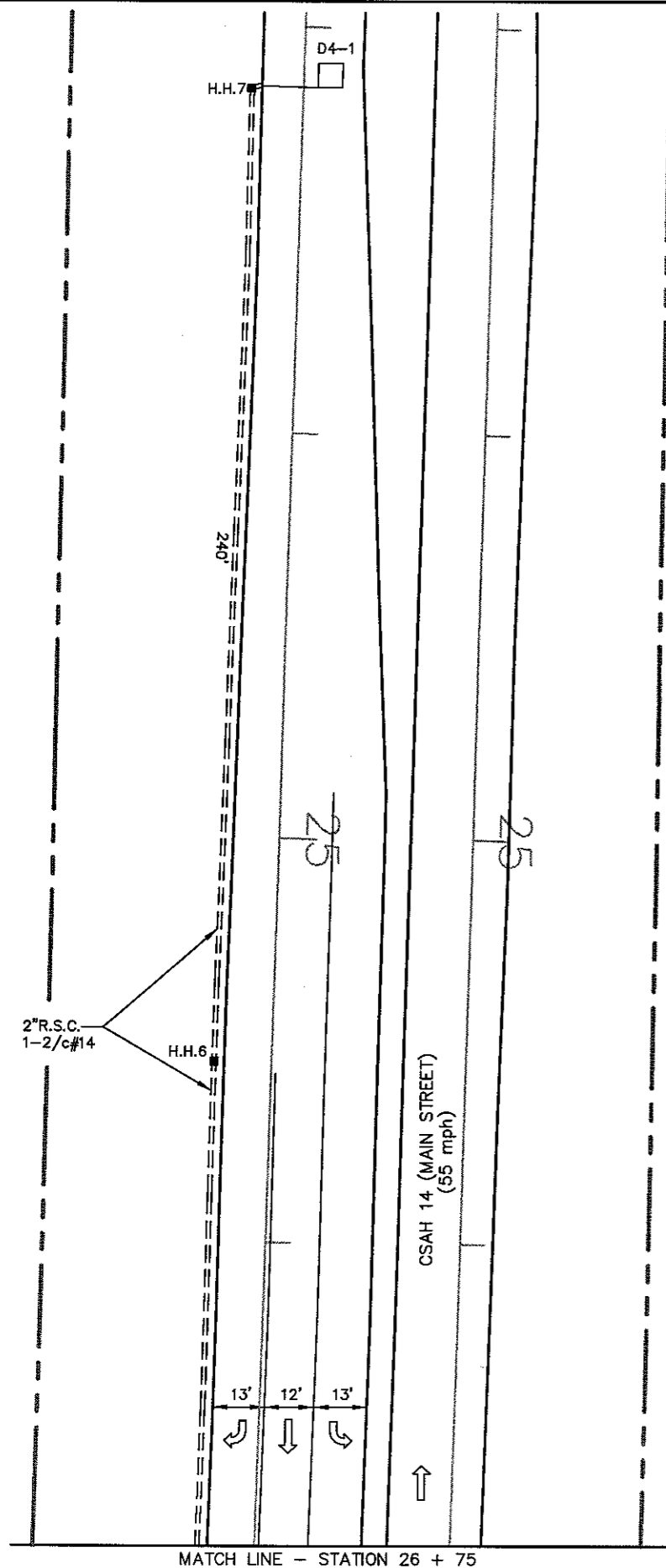
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-814-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

INPLACE SIGNAL SYSTEM "FOR INFORMATION ONLY"
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

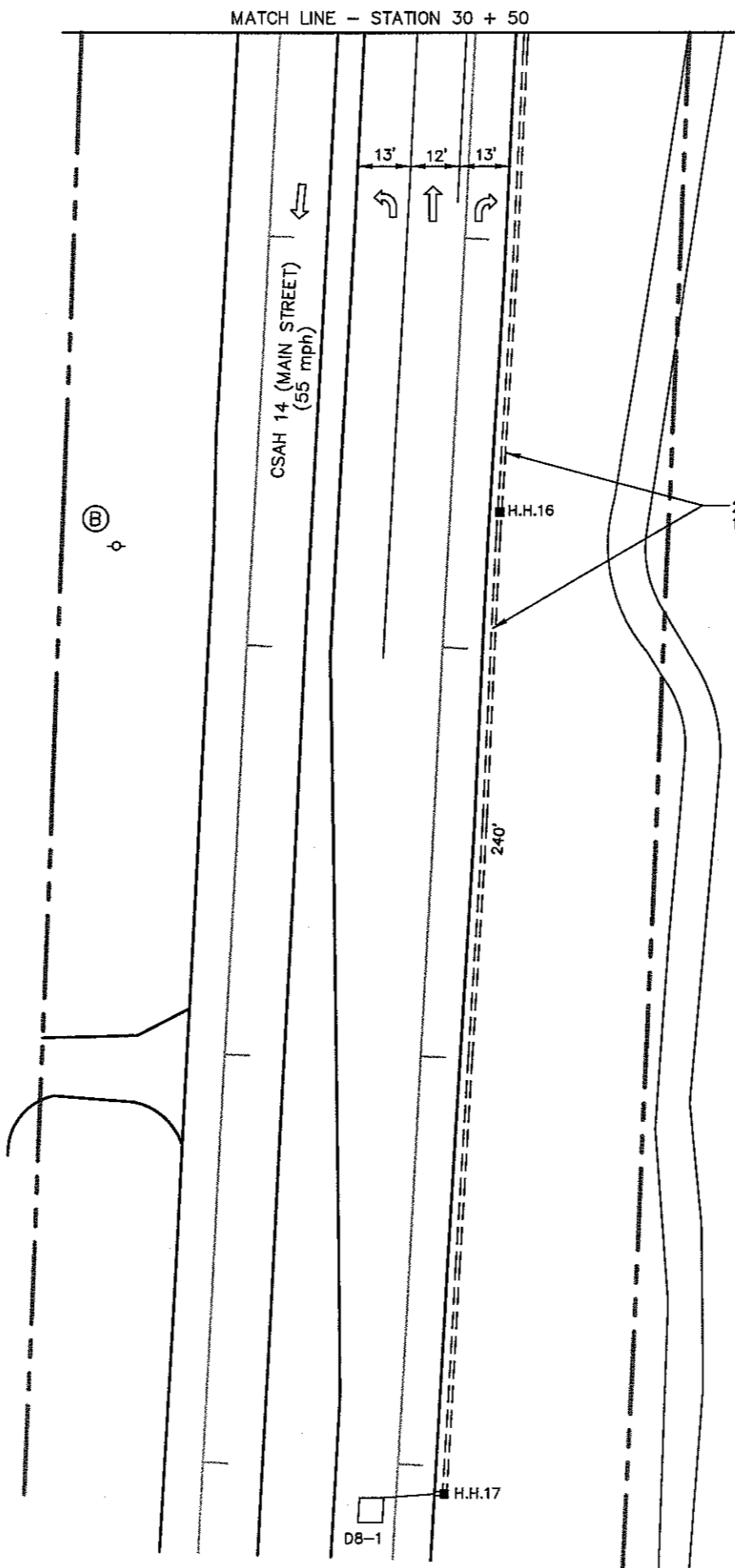
FILE NO. 102287	187
SG25 OF 5632	194



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MATCH LINE - STATION 26 + 75



MATCH LINE - STATION 30 + 50

- NOTES:**
- 1) LOCATION OF POLES, EQUIPMENT PAD FOUNDATION, LOOP, DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
 - 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - 5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
 - 6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION "FILLED" HAND/WALKING PERSON INDICATION.
 - 7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED & INSTALLED BY CONTRACTOR (INCIDENTAL TO ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
 - 9) ALL MAST ARM POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS & SPECIAL PROVISIONS.
 - 10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
 - 11) SEE SPECIAL PROVISIONS & ESTIMATED QUANTITIES REGARDING INPLACE SIGNAL SYSTEM TO BE REMOVED AND SALVAGED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565).
 - 12) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNTIL APPROVED BY ENGINEER FOR SIGNAL SYSTEM TO BE TURNED OFF.
 - 13) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.

- (A) EQUIPMENT PAD FOUNDATION
CONTROLLER AND CABINET
SIGNAL SERVICE CABINET**
- BETWEEN CONTROLLER CABINET
AND SERVICE CABINET:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
- CONTROLLER CABINET TO H.H.1:
4"R.S.C. 4"R.S.C.
3-12/c#12 2-12/c#12
1-3/c#12 2-3/c#12
1-3/c#12 (EVP) 1-3/c#12 (EVP)
1-3/c#20 (EVP) 1-3/c#20 (EVP)
8-2/c#14 4-2/c#14
1-3/c#18 1-3/c#18
- CONTROLLER CABINET TO H.H.19:
4"R.S.C. 4"R.S.C.
2-12/c#12 3-12/c#12
2-3/c#12 1-3/c#12
1-3/c#12 (EVP) 1-3/c#12 (EVP)
1-3/c#20 (EVP) 1-3/c#20 (EVP)
1-3/c#18 12-2/c#14
1-6/c FIBER OPTIC
CABLE
1-3/c#18
- SERVICE CABINET TO H.H.1:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
2-3/c#12 (LUM)
- SERVICE CABINET TO H.H.19:
2"R.S.C.
UNMETERED STREET LIGHT SERVICE
2-3/c#12 (LUM)
- STUB OUT 2"R.S.C. FROM
SERVICE CABINET TO EAST
(FOR POWER BY CONNEXUS)
- STUB OUT 2-3"R.S.C. FROM
CONTROLLER CABINET TO WEST
(THREAD & CAP-FOR FUTURE USE)
- STUB OUT 1"N.M.C. FROM
CONTROLLER CABINET (FOR FUTURE
PHONE LINE BY OTHERS)

**(B) INPLACE WOOD POLE
(S.O.P.) (CONNEXUS)**

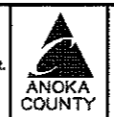
**NOTE: THIS PLAN SHEET IS BEING
PROVIDED FOR INFORMATION ONLY.**

DESIGN TEAM				
DRAWN BY:	JMG			
DESIGNER:	JMG			
CHECKED BY:	MRD			
NO.	BY	DATE	REVISIONS	

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, P.E. Date: 01/21/10

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



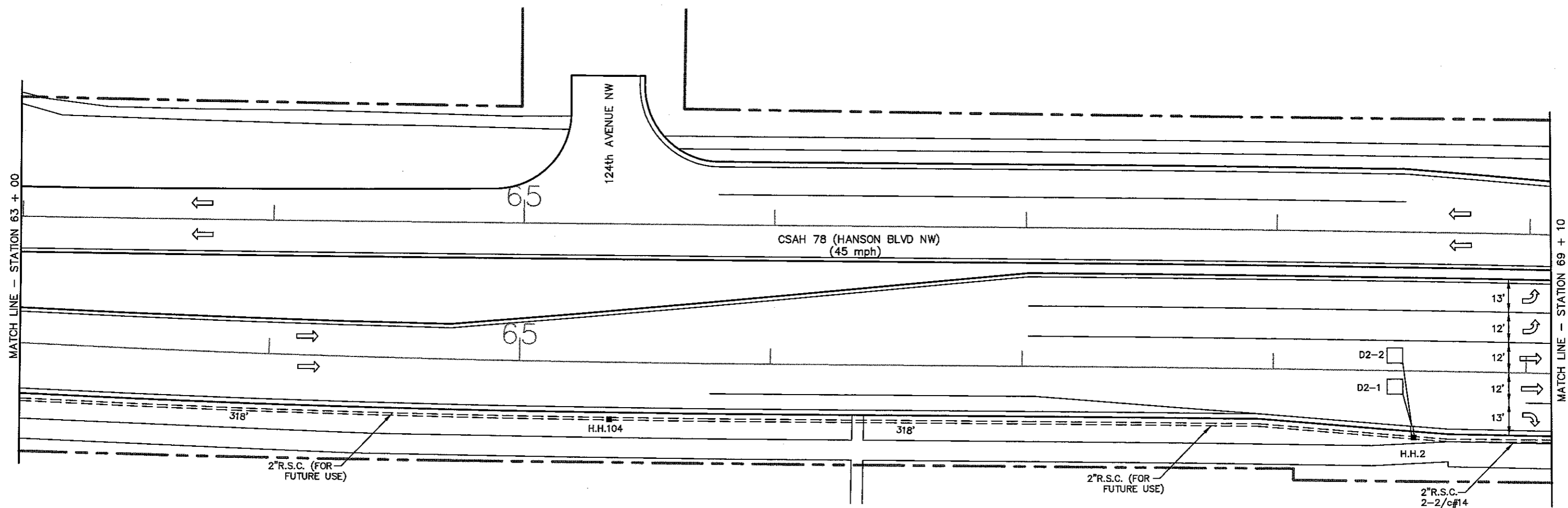
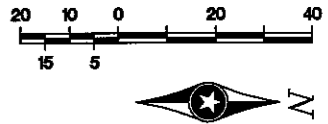
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (CSAH, 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

**INPLACE SIGNAL SYSTEM
 "FOR INFORMATION ONLY"**
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

FILE NO. 102287	188
SG26 OF 5032	194

NOTES:

- 1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

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DESIGN TEAM				
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: MRD				
	NO.	BY	DATE	REVISIONS

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Certified By: *[Signature]* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



PHONE: (651)480-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



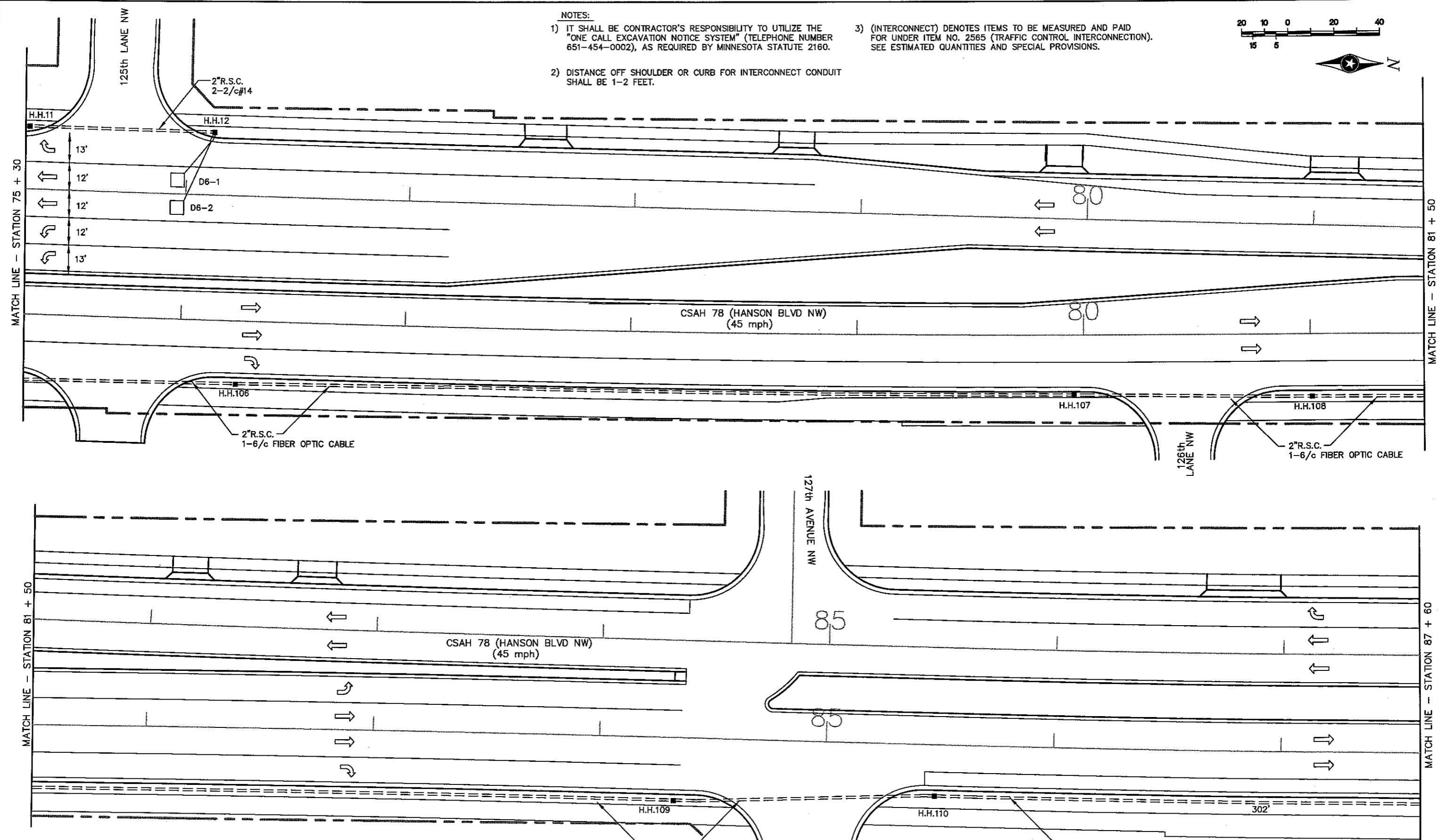
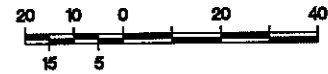
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-128-008 (SHENANDOAH BLVD)

**INPLACE SIGNAL SYSTEM
 "FOR INFORMATION ONLY"**
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

FILE NO. 102287	189
SG27 OF 5632	194

NOTES:

- 1) IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002), AS REQUIRED BY MINNESOTA STATUTE 2160.
- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

DESIGN TEAM				
DRAWN BY:	JMG			
DESIGNER:	JMG			
CHECKED BY:	MRD			
	NO.	BY	DATE	REVISIONS

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 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



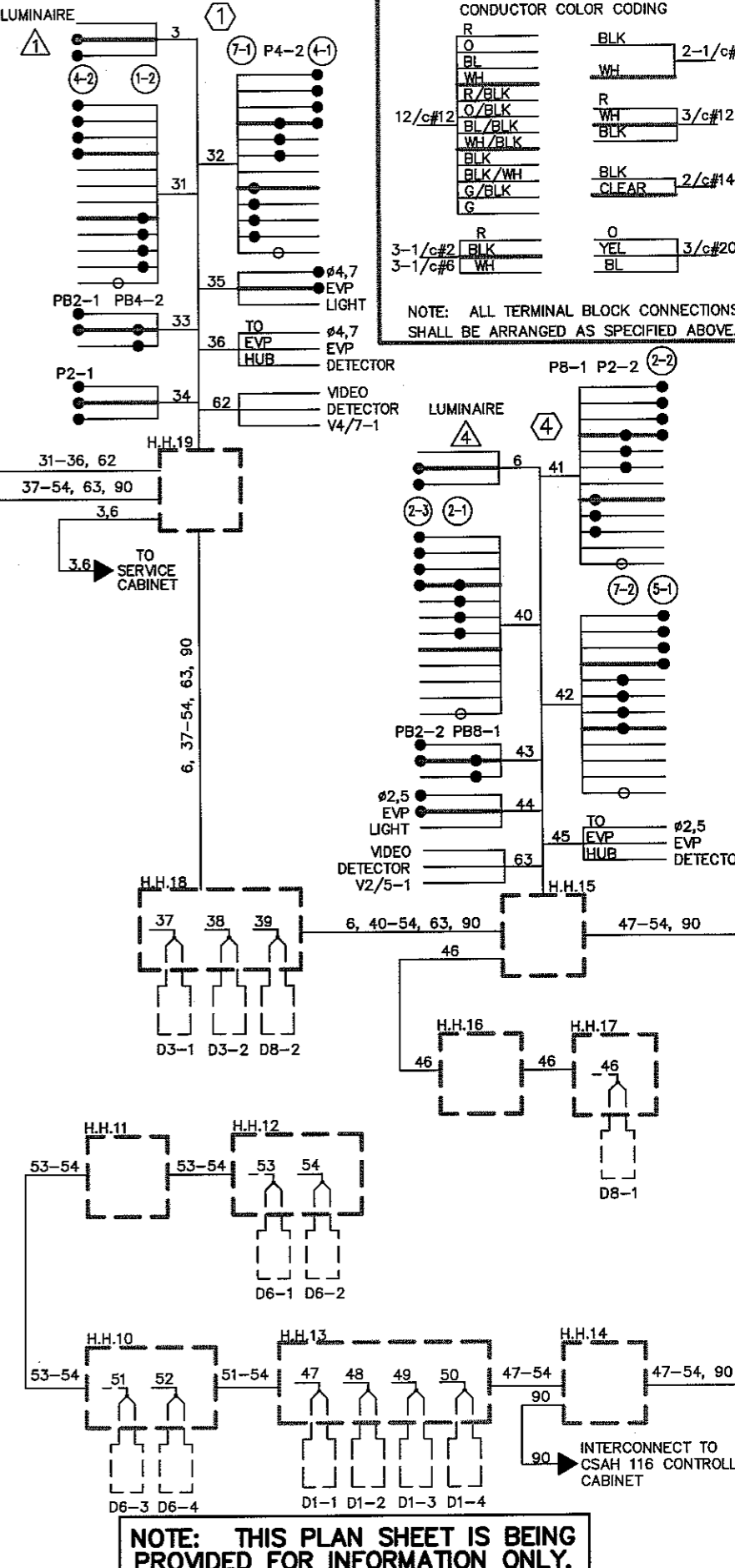
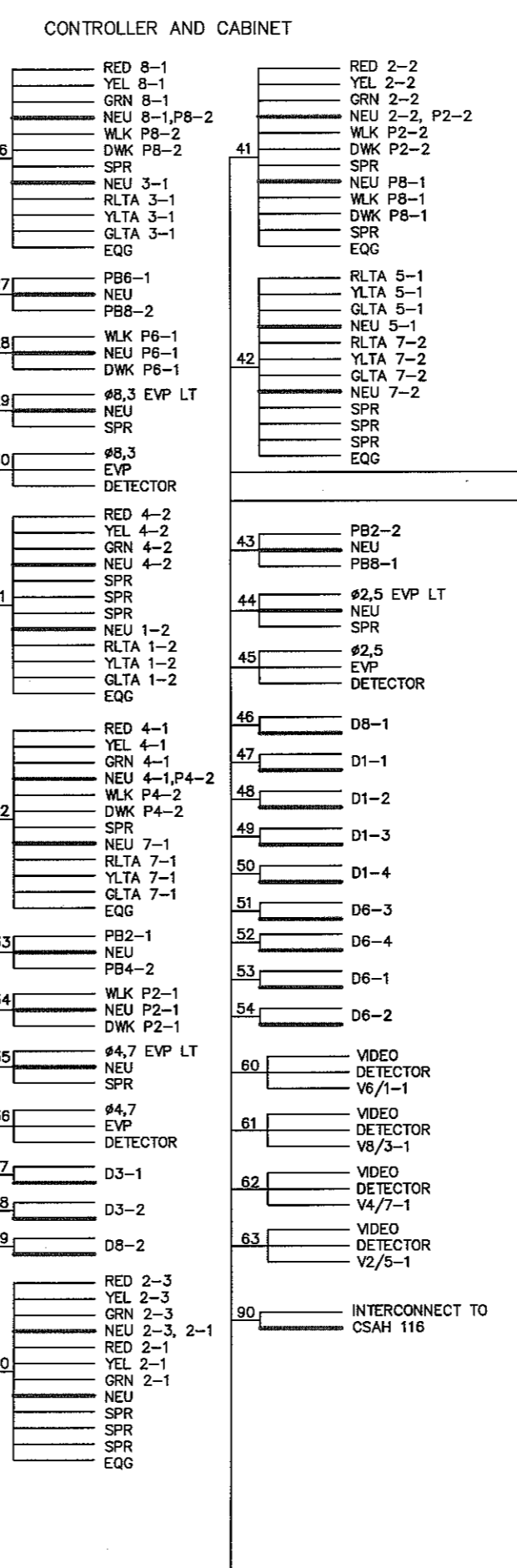
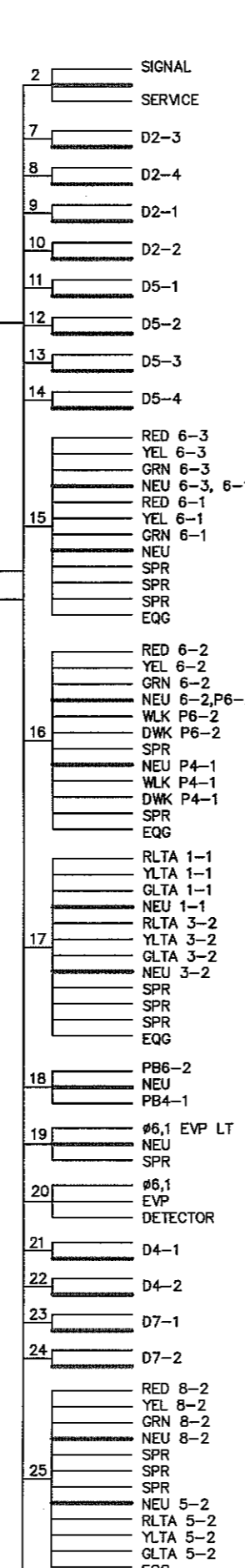
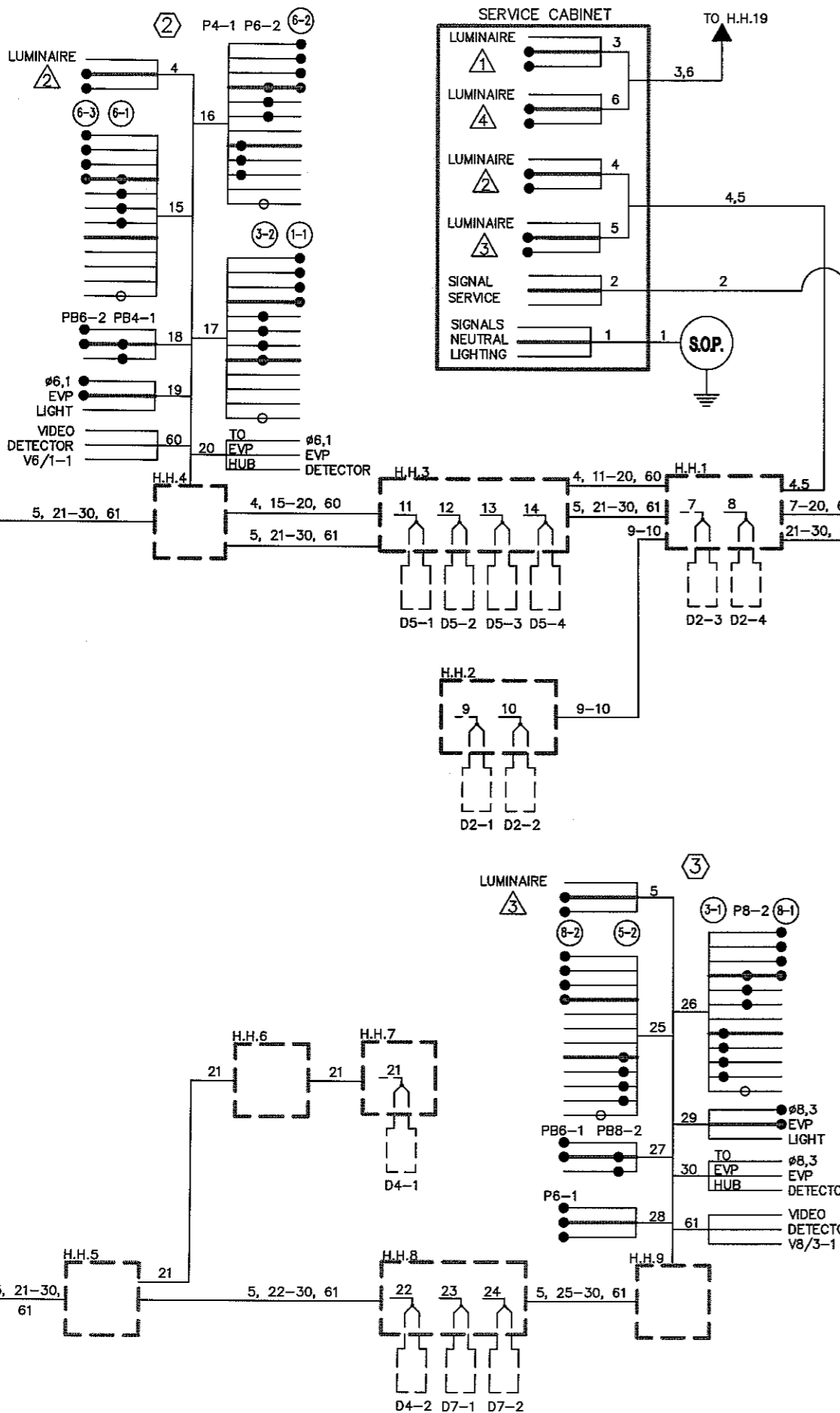
PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

**INPLACE SIGNAL SYSTEM
 "FOR INFORMATION ONLY"**
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

FILE NO.	190
102287	
SG28	194
OF 632	



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DESIGN TEAM				
DRAWN BY: JMG				
DESIGNER: JMG				
CHECKED BY: MRD				
NO.	BY	DATE	REVISIONS	

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Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10

SEH
 PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

**INPLACE SIGNAL SYSTEM
 "FOR INFORMATION ONLY"**
 CSAH 14 (MAIN ST) AT CSAH 78 (HANSON BLVD)

FILE NO. 191
 102287
 SG29 OF 632
 194

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

NOTES:

- 1) LOCATION OF POLES, EQUIPMENT PAD, LOOP DETECTORS AND, HANDHOLES SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
- 2) SEE SPECIAL PROVISIONS REGARDING COUNTY FURNISHED MATERIALS.
- 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- 5) EACH SIGNAL FACE WILL HAVE BACKGROUND SHIELD.
- 6) EACH PEDESTRIAN INDICATION WILL BE A ONE SECTION "FILLED" HAND/WALKING PERSON INDICATION.
- 7) ALL VEHICLE SIGNAL INDICATIONS, AND ALL PEDESTRIAN SIGNAL INDICATIONS WILL BE LED.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS, CONCRETE WALK, AND PEDESTRIAN CURB RAMPS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565).

NMC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	6x6	475'	1
D4-1	6x6	120'	2
D4-2	6x6	120'	2
D4-3	6x10&6x6	0' & 10'	3
D4-4	2-6x6	0' & 15'	1
D5-1	2-6x6	10' & 40'	1
D5-2	2-6x6	0' & 25'	1
D6-1	6x6	475'	1

LOOP DETECTORS FUNCTIONS:

- 1) CALL AND EXTEND
- 2) EXTEND ONLY
- 3) DELAYED CALL, IMMEDIATE EXTEND

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- (A) EQUIPMENT PAD FOUNDATION
CONTROLLER AND CABINET
SIGNAL SERVICE CABINET
- CONTROLLER CABINET TO SERVICE CABINET:
METERED SIGNAL SERVICE
2"R.S.C.
3-1/c#6
- CONTROLLER CABINET TO H.H.1:
4"R.S.C.
2-12/c#12
4-3/c#12
2-3/c#20
5-2/c#14
- CONTROLLER CABINET TO H.H.10:
4"R.S.C.
3-12/c#12
3-3/c#12
2-3/c#20
3-2/c#14
- STUB OUT 2-3"R.S.C. FROM
CONTROLLER CABINET TO SOUTH
(THREAD & CAP BOTH ENDS-
FOR FUTURE USE)
- SERVICE CABINET TO H.H.1:
2"R.S.C.
1-3/c#12 (LUM)
- SERVICE CABINET TO H.H.10:
2"R.S.C.
1-3/c#12 (LUM)
- STUB OUT 2"R.S.C. FROM
SERVICE CABINET (FOR POWER
BY CONNEXUS)

- (1) PA100 POLE FOUNDATION
TYPE PA100-A-30-D40-9 (DAVIT AT 350')
LUMINAIRE-250 W HPS
1-ONE WAY SIGNAL-OVERHEAD
MID-MAST ARM MOUNT AT 15' (CAPPED)
TYPE 10B-POLE MOUNTED 180'
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#6)
EXTEND INTO H.H.1:
3"R.S.C.
1-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- (B) GROUND MOUNTED TRANSFORMER (S.O.P.-CONNEXUS)

- (2) PEDESTAL FOUNDATION
14' PEDESTAL POLE, BASE AND WIND COLLAR
TYPE 5D
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
ONE WAY EVP DETECTOR-MOUNT ATOP POLE (#4)
EXTEND INTO H.H.3:
3"R.S.C.
1-12/c#12
2-3/c#12
1-3/c#20

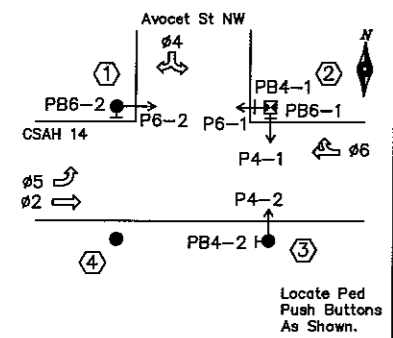
- (3) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350')
LUMINAIRE-250 W HPS
2-ONE WAY SIGNALS-OVERHEAD (0' & 11'
FROM END OF MAST ARM)
MID-MAST ARM MOUNT AT 11'
TYPE 10B-POLE MOUNTED 90'
TYPE 10A-POLE MOUNTED 270'
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4b)
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#2,5)
EXTEND INTO H.H.6:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- (4) PA90 POLE FOUNDATION
TYPE PA90-A-20
1-ONE WAY SIGNAL-OVERHEAD
MID-MAST ARM MOUNT AT 11' (CAPPED)
TYPE 10A-POLE MOUNTED 180'
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT (#4)
EXTEND INTO H.H.7:
3"R.S.C.
1-12/c#12
1-3/c#12
1-3/c#20

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 5 BEING A PROTECTED LEFT TURN PHASE.
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



LED SIGNAL FACES			
SIGNAL FACE	ALL SIGNAL FACES SHALL BE 12".		
	R	Y	G
2-1, 2-2	●	●	●
4-1, 4-2, 4-3	●	●	●
5-1, 5-2	←	←	←
6-1, 6-2	●	●	●

DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MJD		
NO.	BY	DATE	REVISIONS

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.

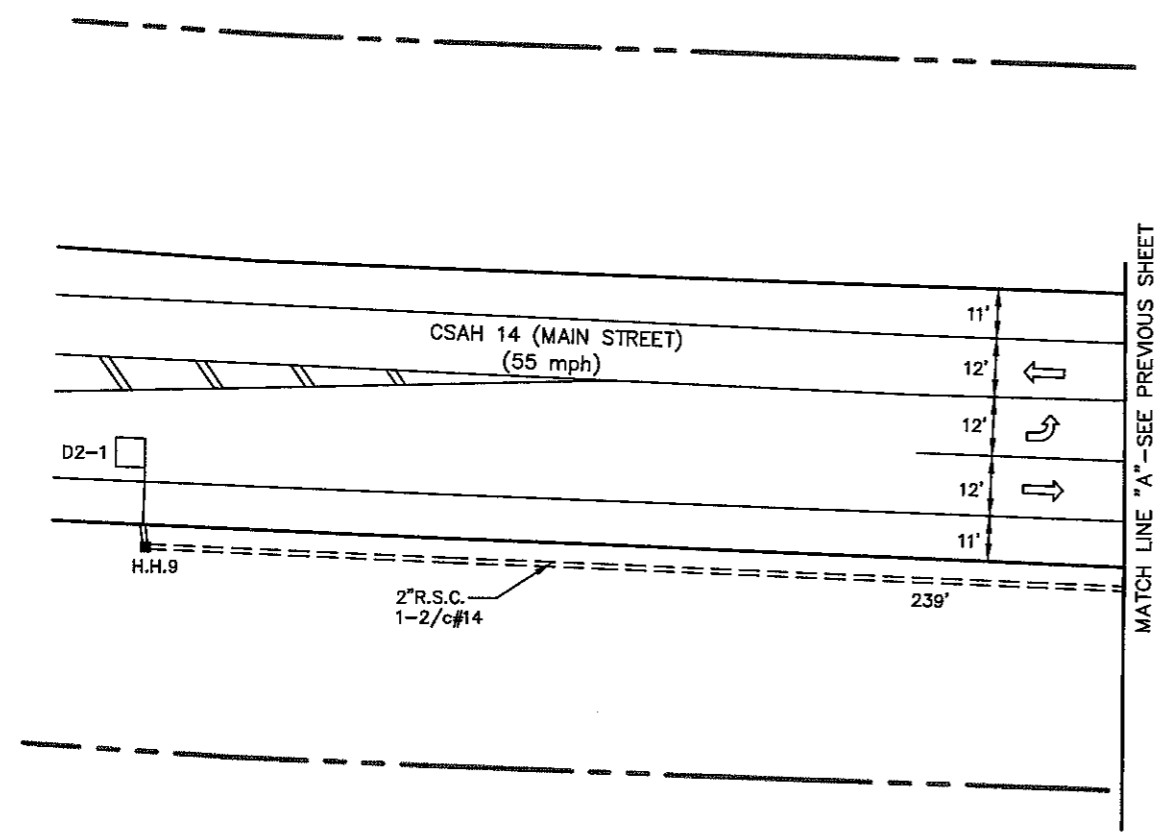
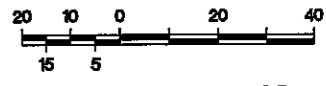
Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, P.E. Date: 01/21/10



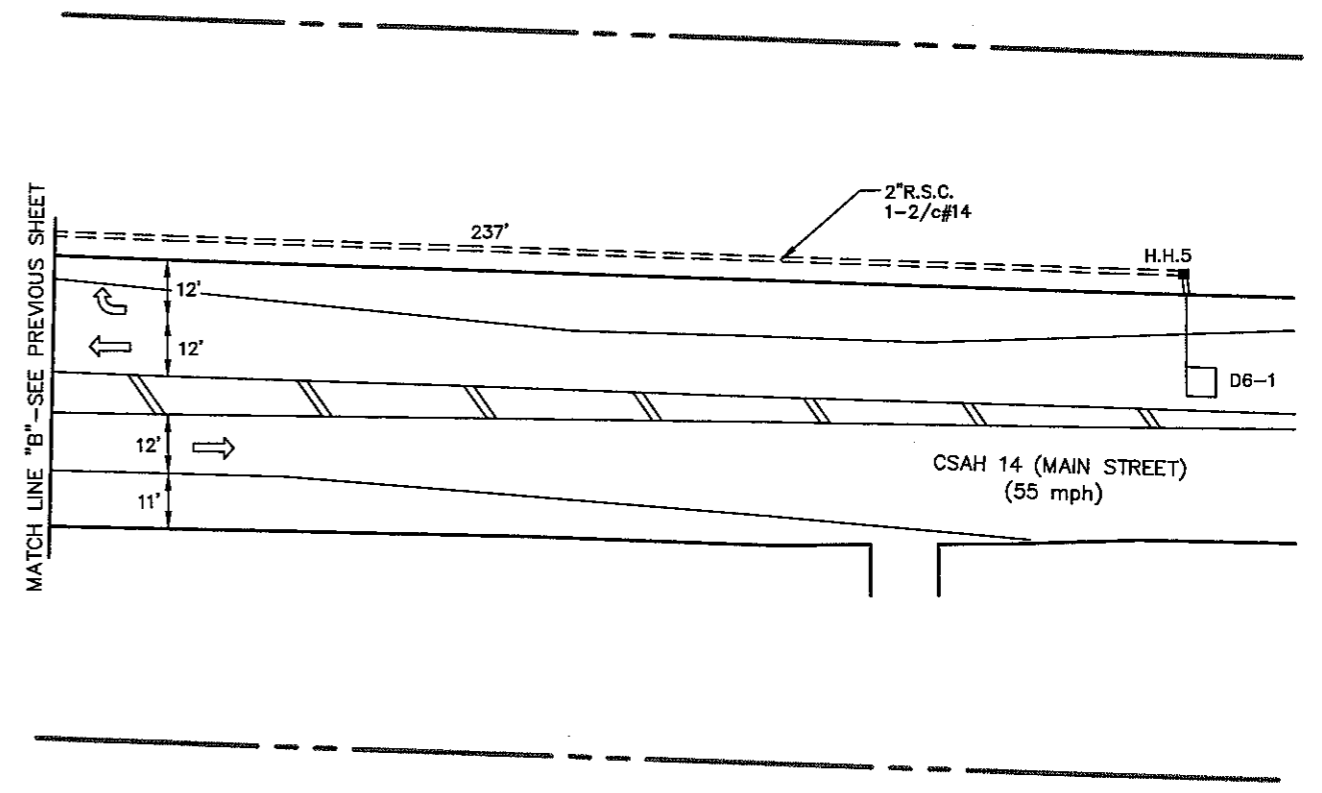
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (CSA.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

**INPLACE SIGNAL SYSTEM
 "FOR INFORMATION ONLY"**
 CSAH 14 (MAIN ST) AT AVOCET STREET

FILE NO.	192
102287	
SG30	194
OF SG32	



MATCH LINE "A" - SEE PREVIOUS SHEET



MATCH LINE "B" - SEE PREVIOUS SHEET

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

s:\oe\o\anoka\common\signals\csah 14 (hanson-sher)\hanson-flo.dwg

DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



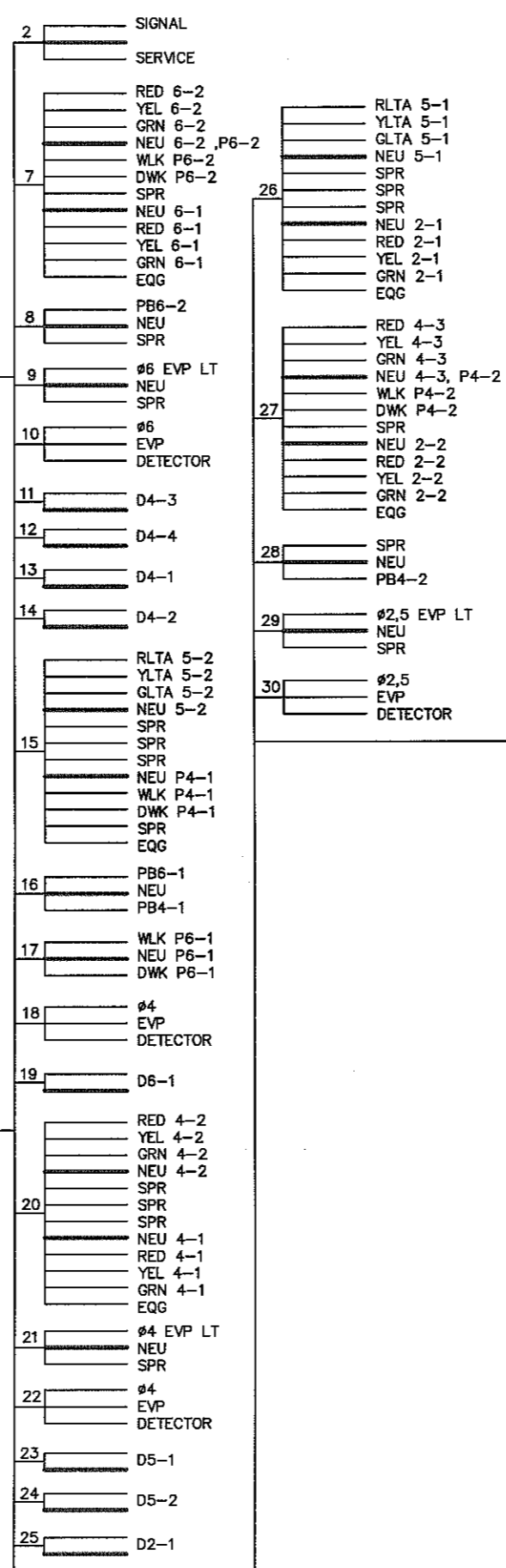
ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

**INPLACE SIGNAL SYSTEM
 "FOR INFORMATION ONLY"**
 CSAH 14 (MAIN ST) AT AVOCET STREET

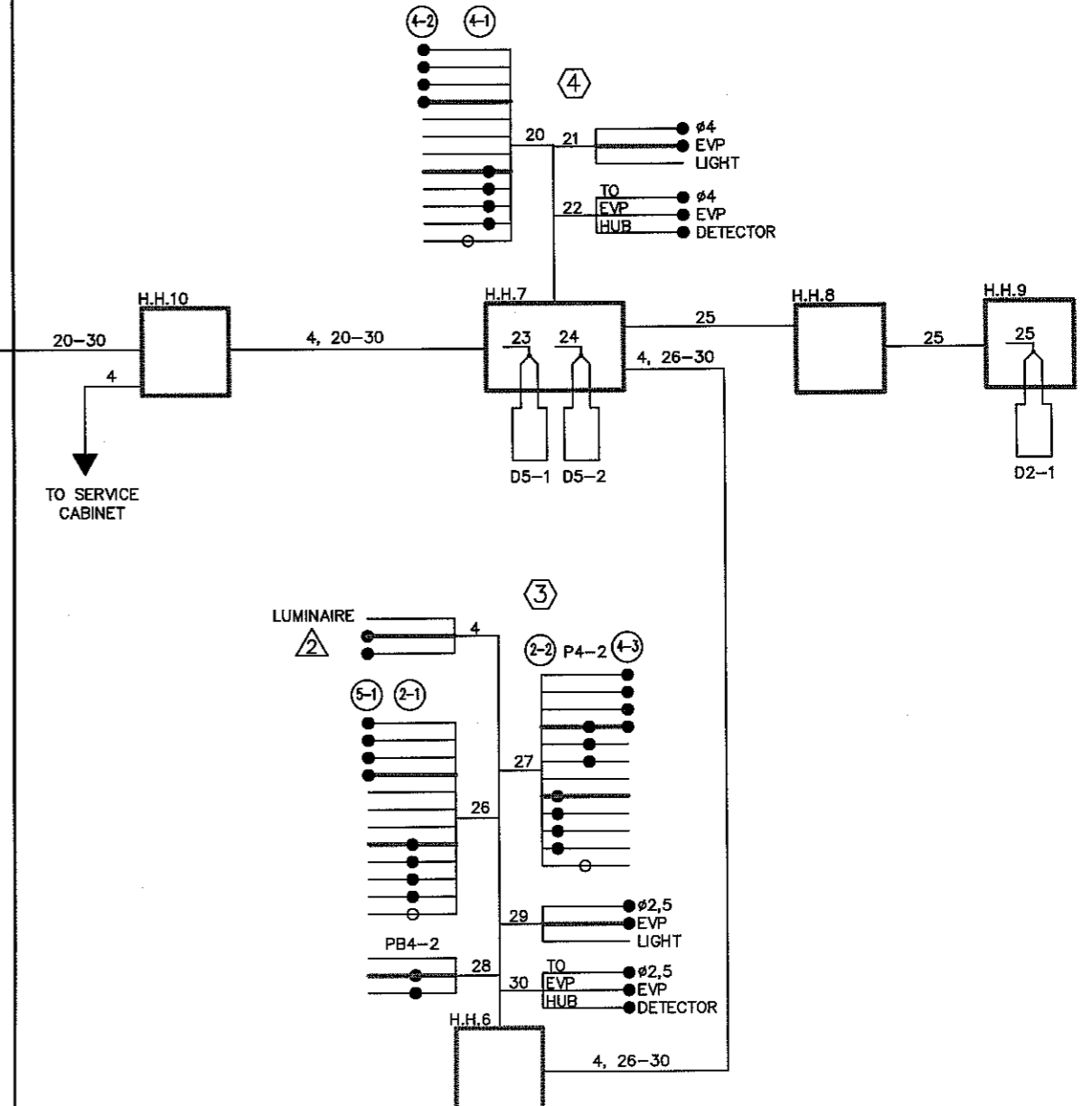
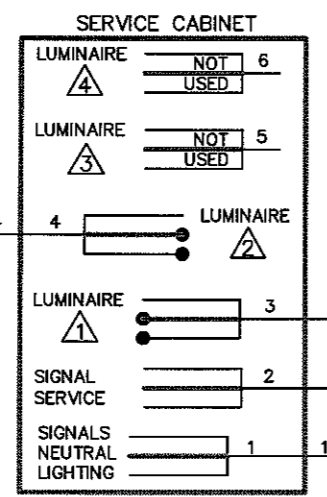
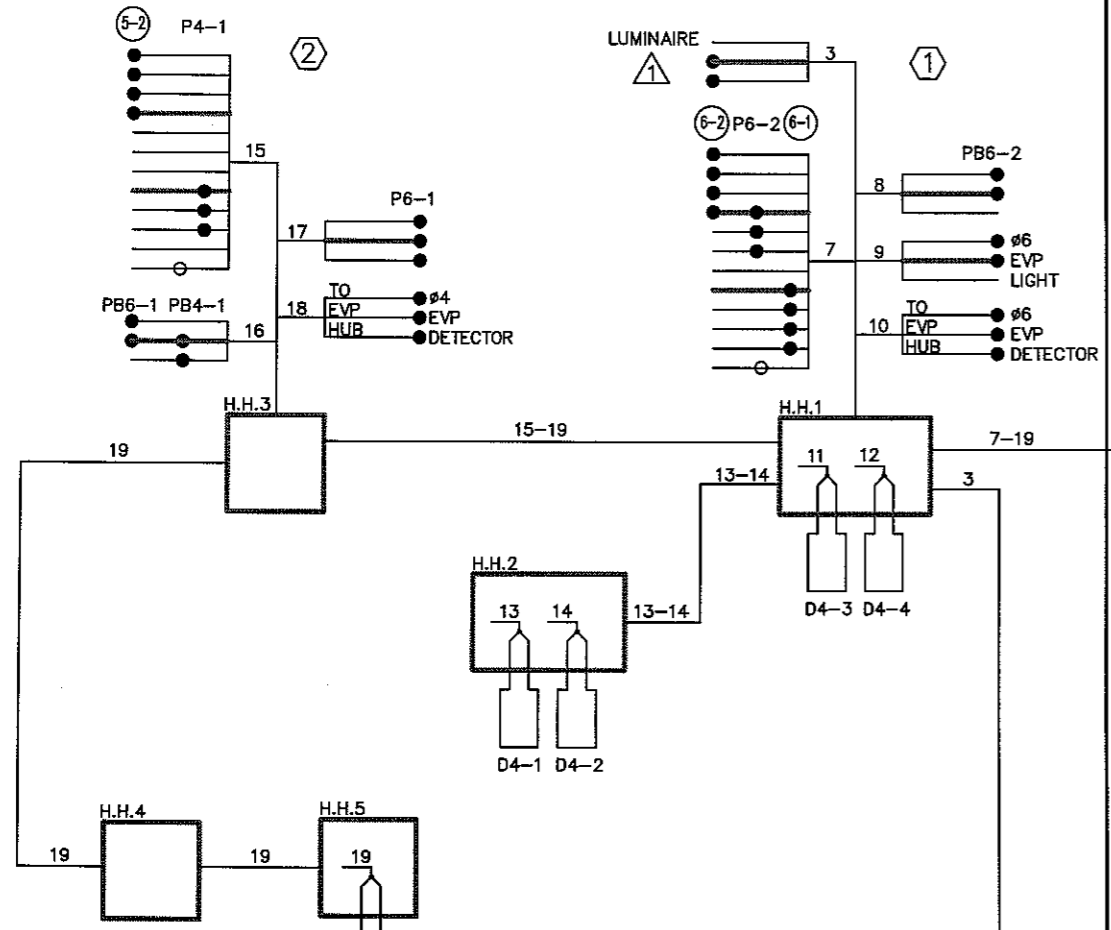
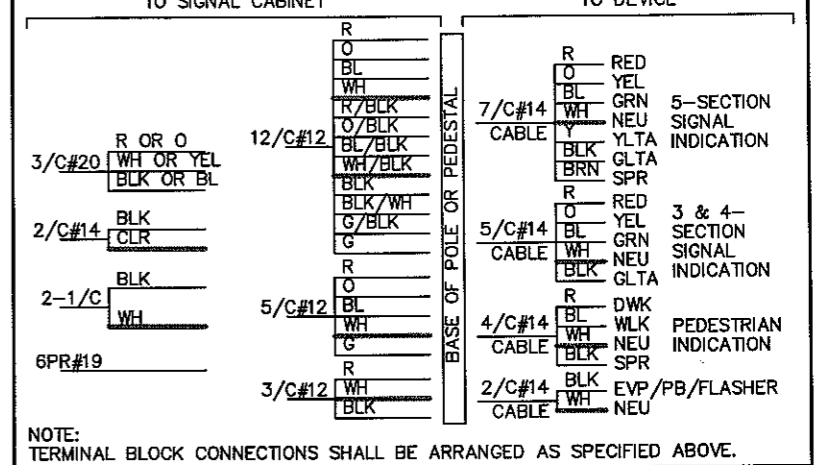
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SG31 OF SG32	194

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CONTROLLER AND CABINET



CONDUCTOR COLOR CODE



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION ONLY.

DESIGN TEAM			
DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	MRD		
NO.	BY	DATE	REVISIONS

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.

Certified By: *John M. Gray* Lic. No. 22457
 Printed Name: JOHN M. GRAY, PE Date: 01/21/10



PHONE: (651)490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110



ANOKA COUNTY, MN.
CSAH 14
 S.P. NO. 02-614-32
 S.A.P. NO. 114-020-042 (C.S.A.H. 14)
 S.A.P. NO. 114-129-008 (SHENANDOAH BLVD)

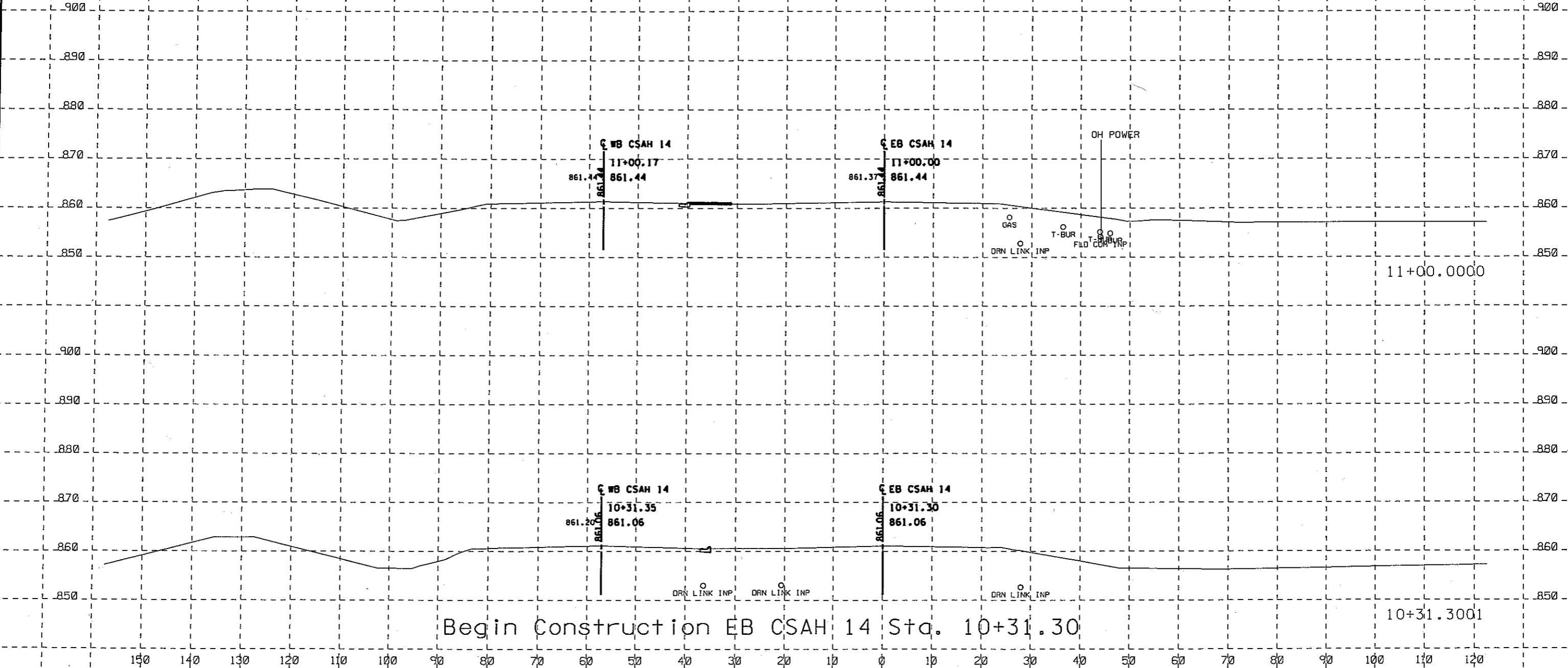
INPLACE SIGNAL SYSTEM
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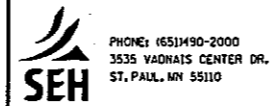
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Begin Construction EB CSAH 14 Sta. 10+31.30

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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

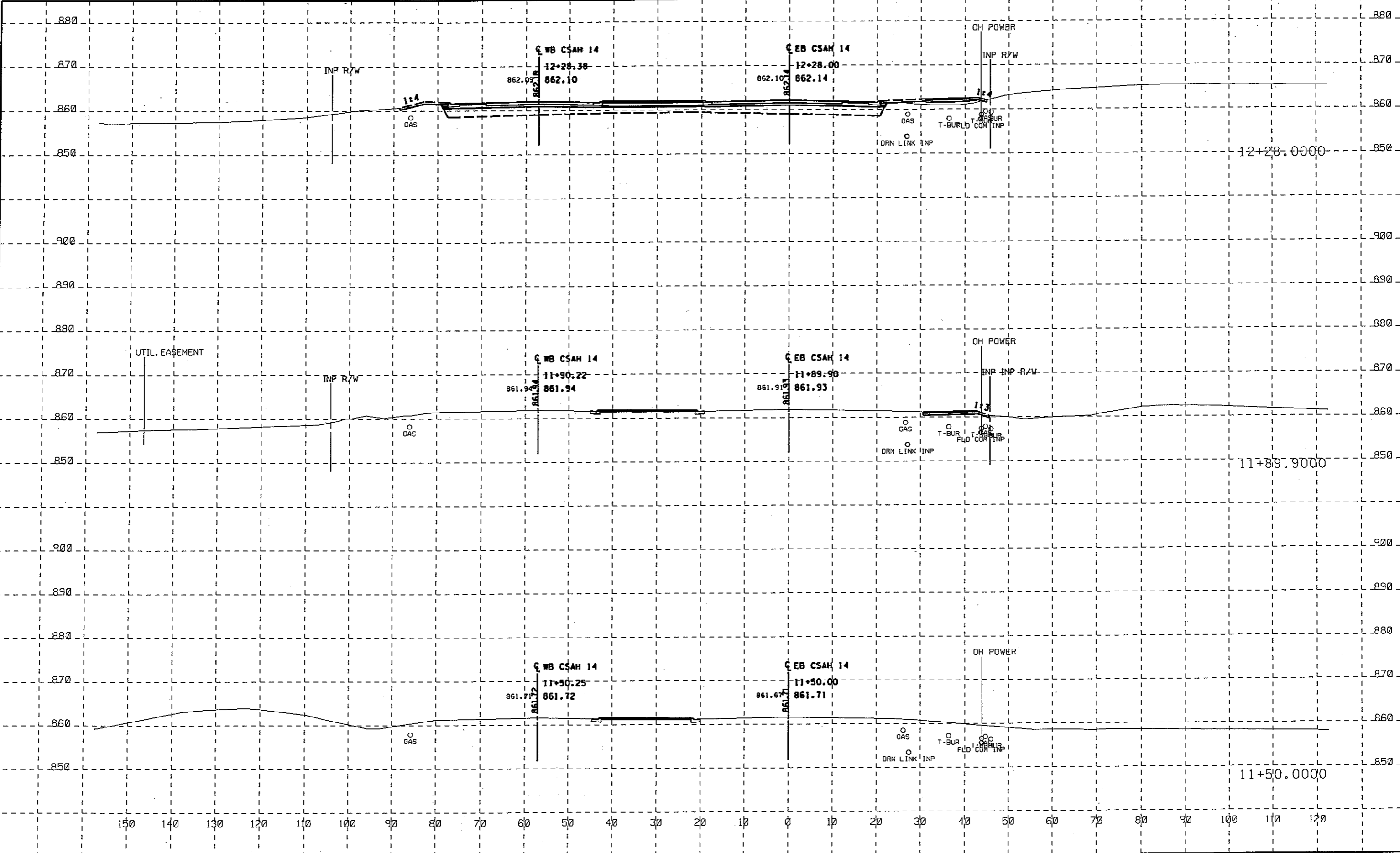
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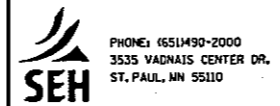
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

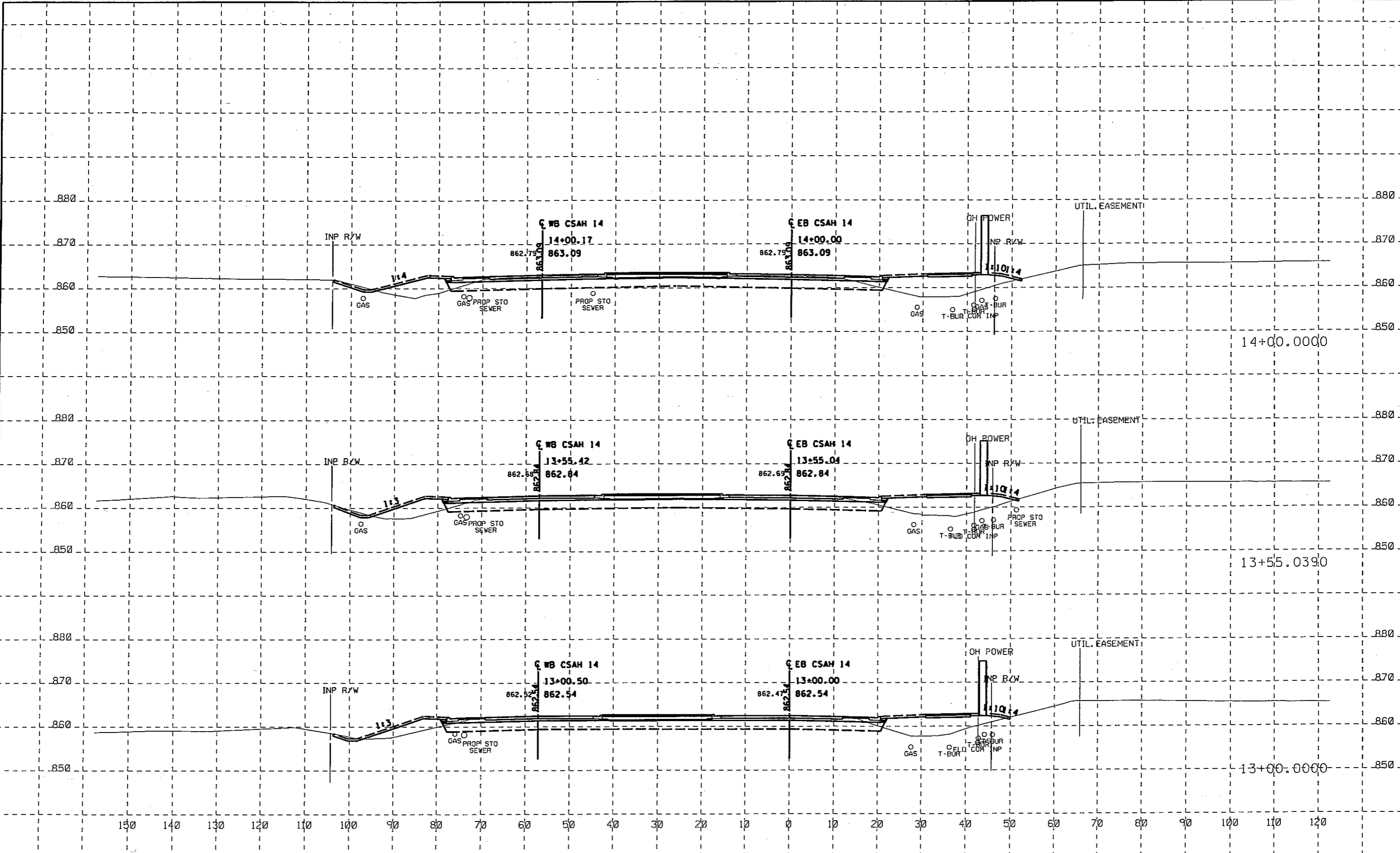
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12/17/92 AM

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SEH
 PHONE: (651)430-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

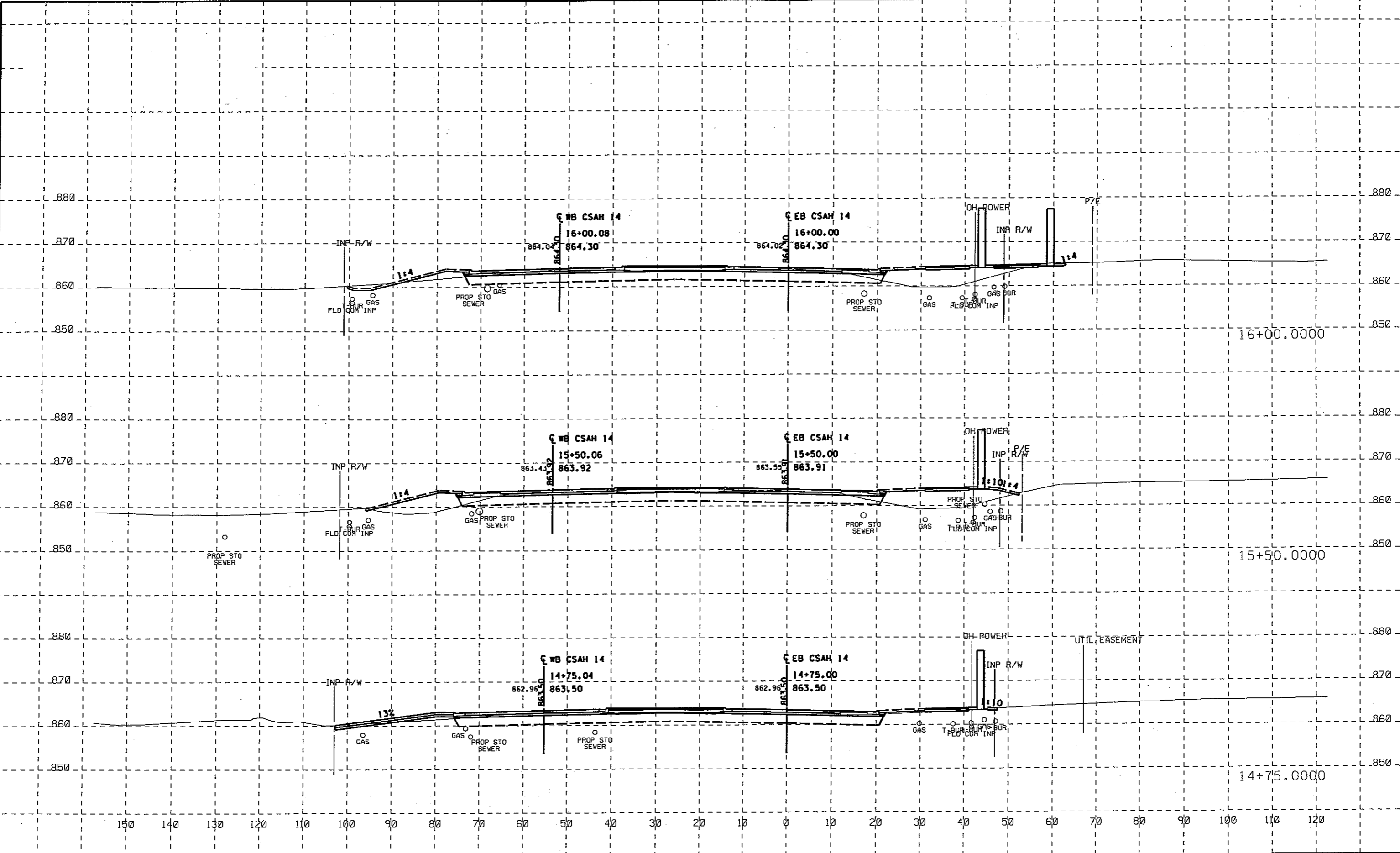
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

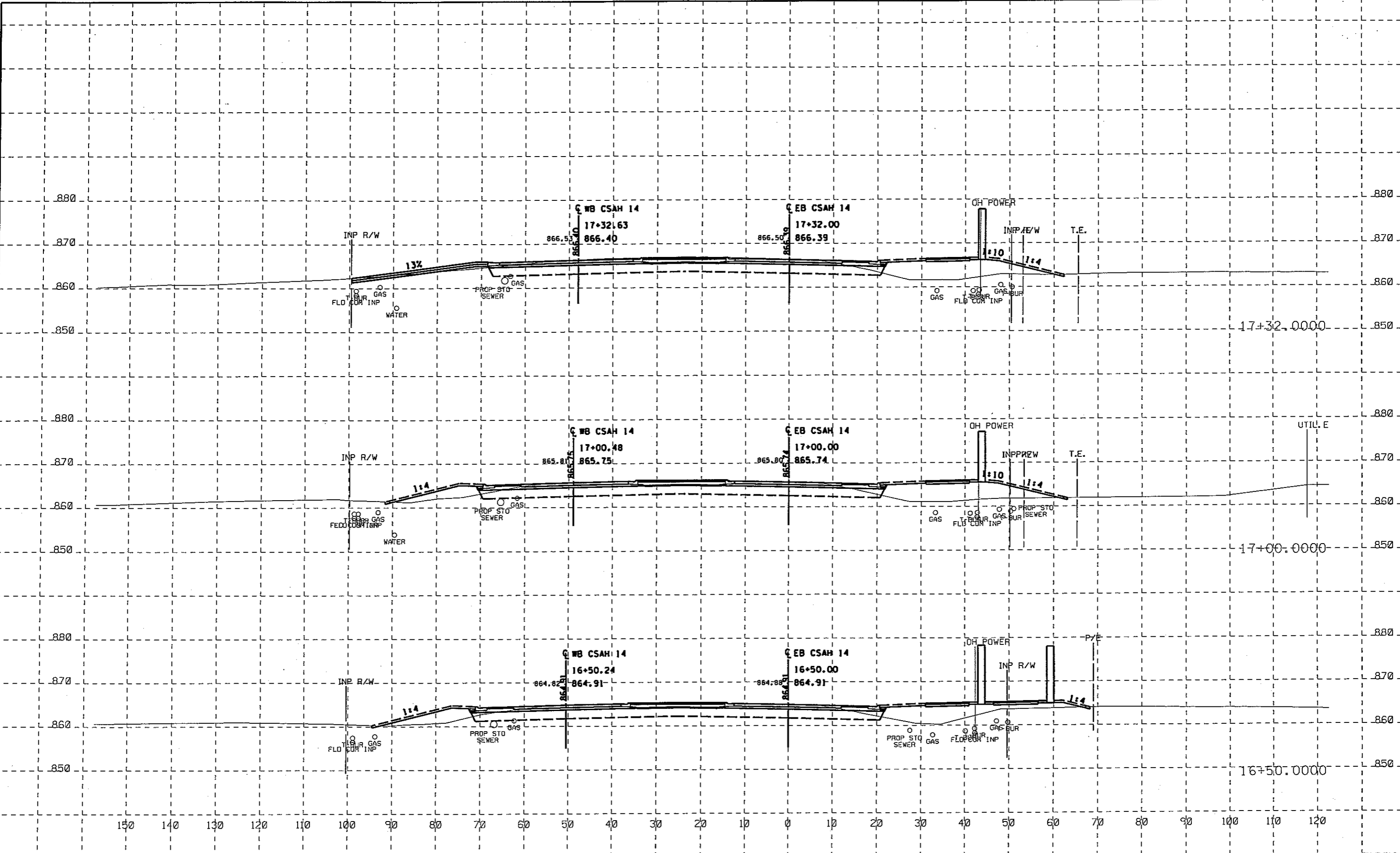
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ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

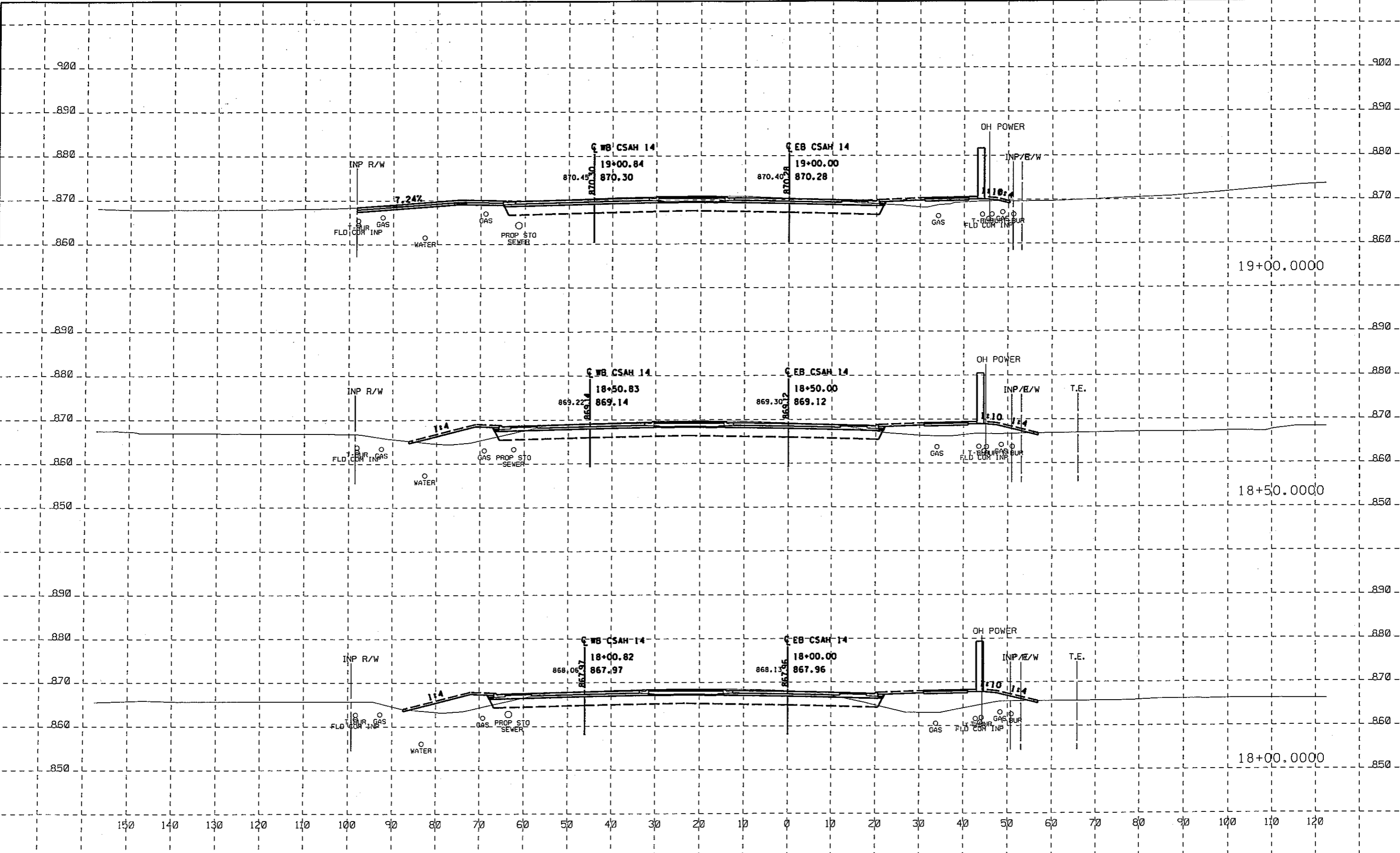
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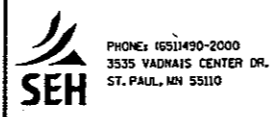
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ANOKA COUNTY
CSAH 14
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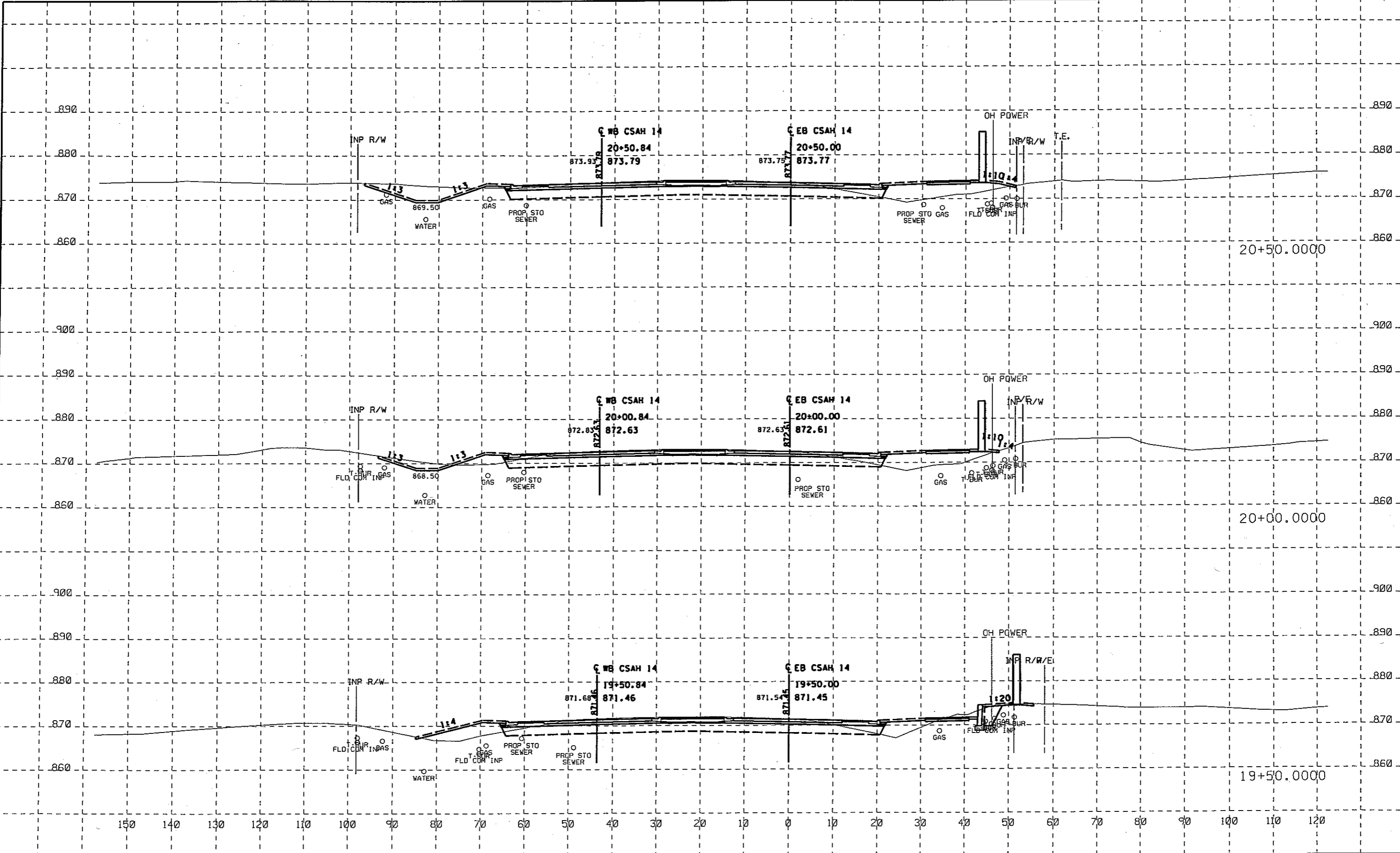
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 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

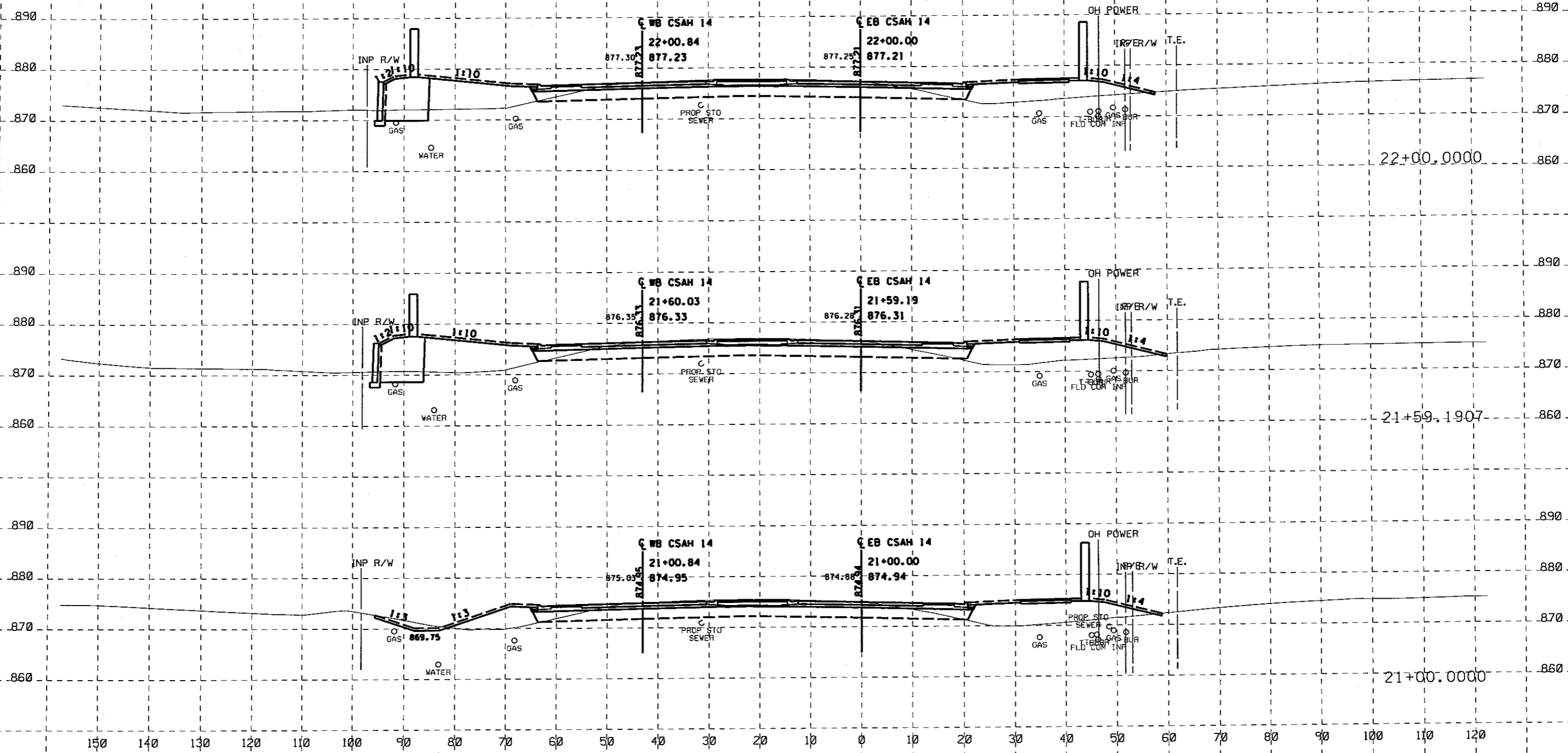
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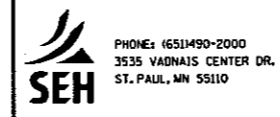
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ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

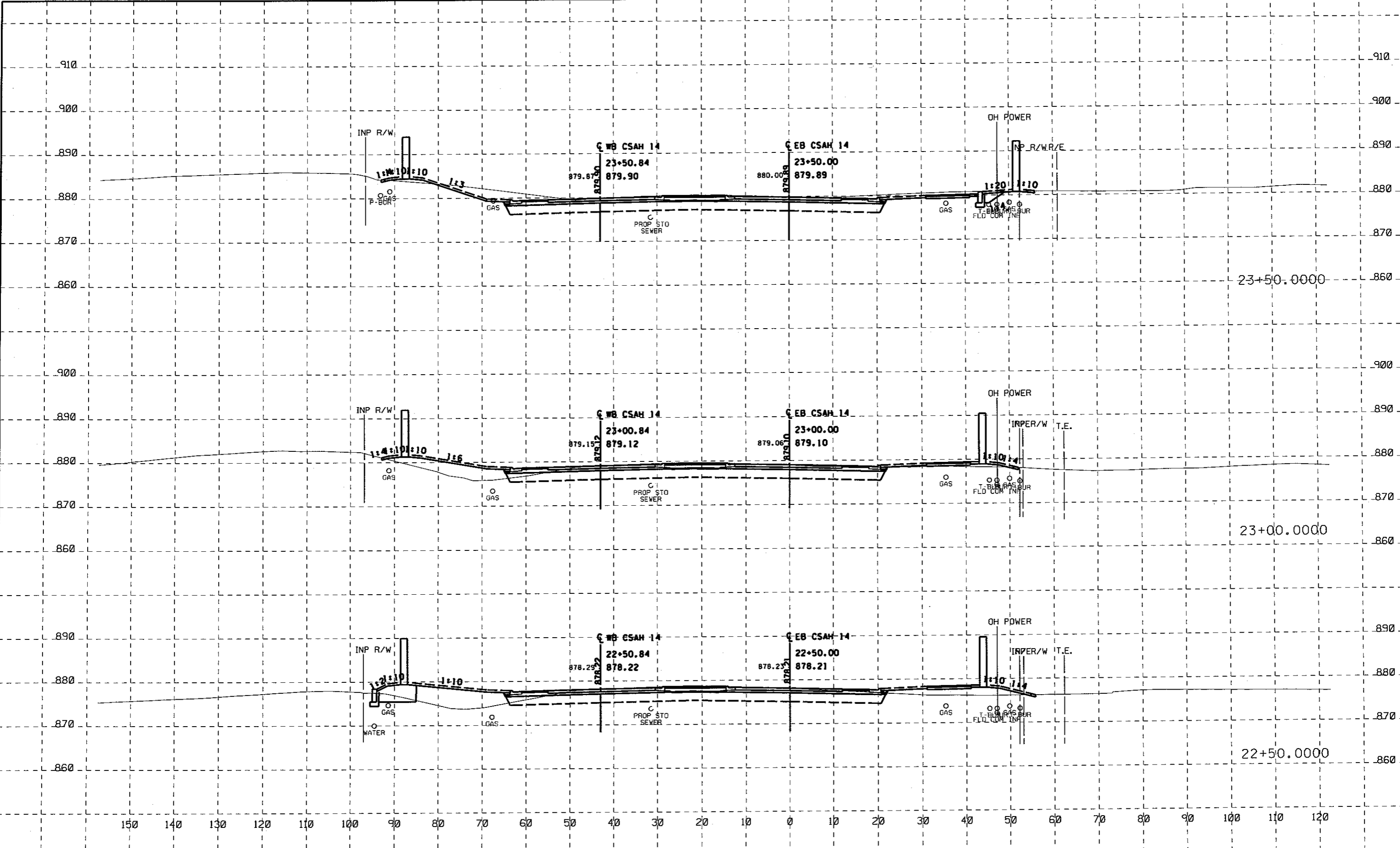
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

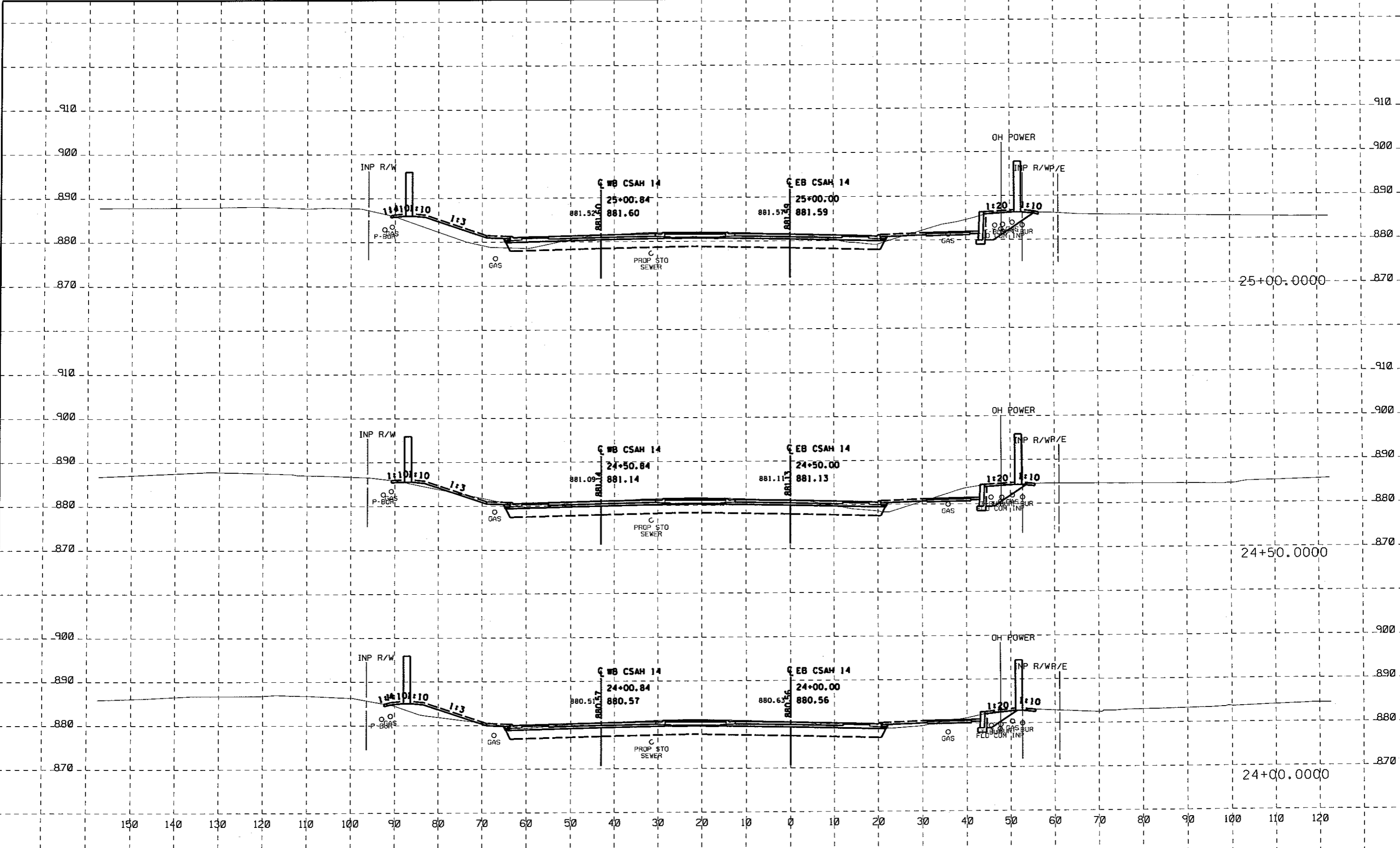
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ANOKA COUNTY
CSAH 14
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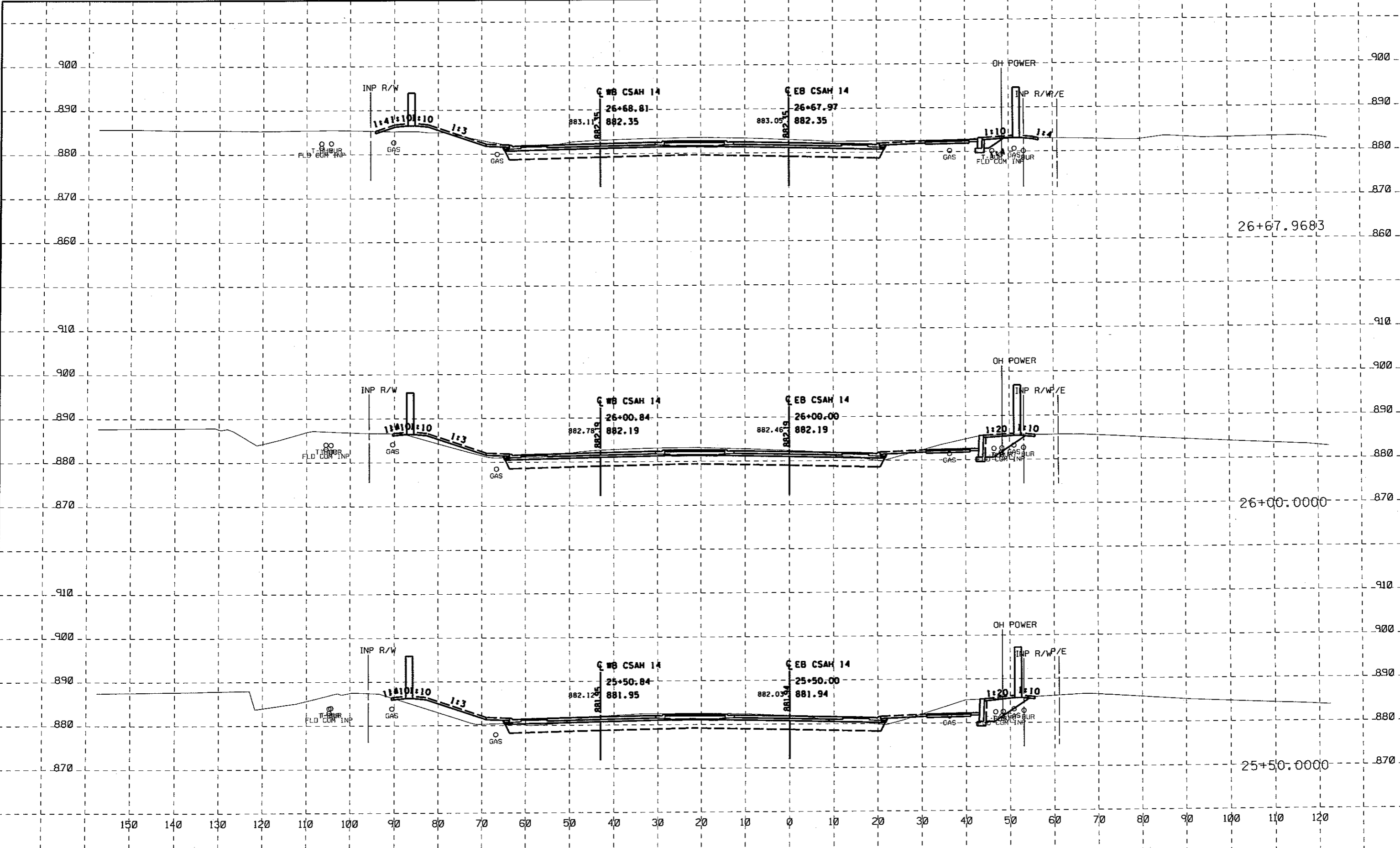
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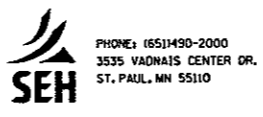
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ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

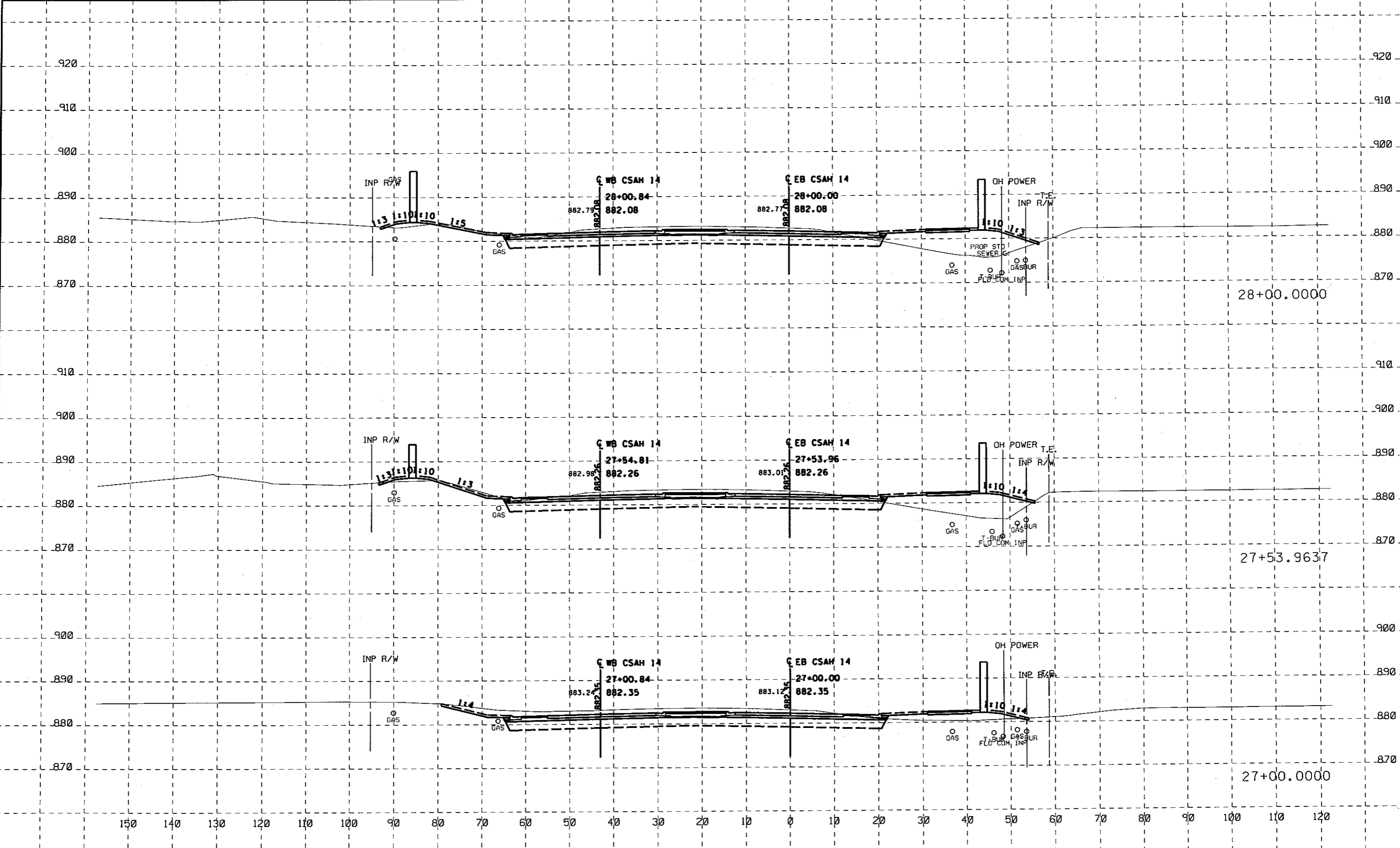
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

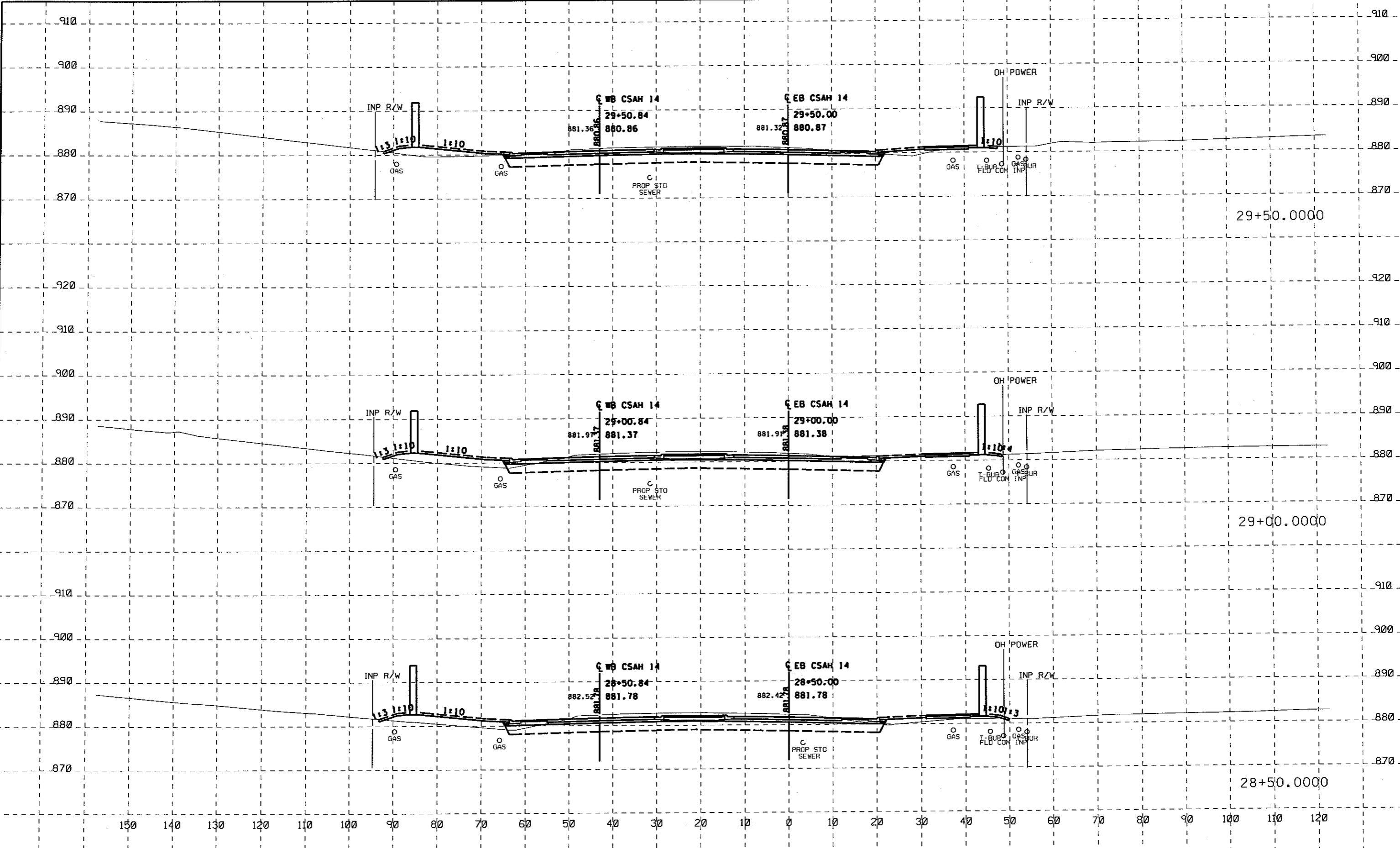
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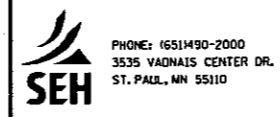
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ANOKA COUNTY
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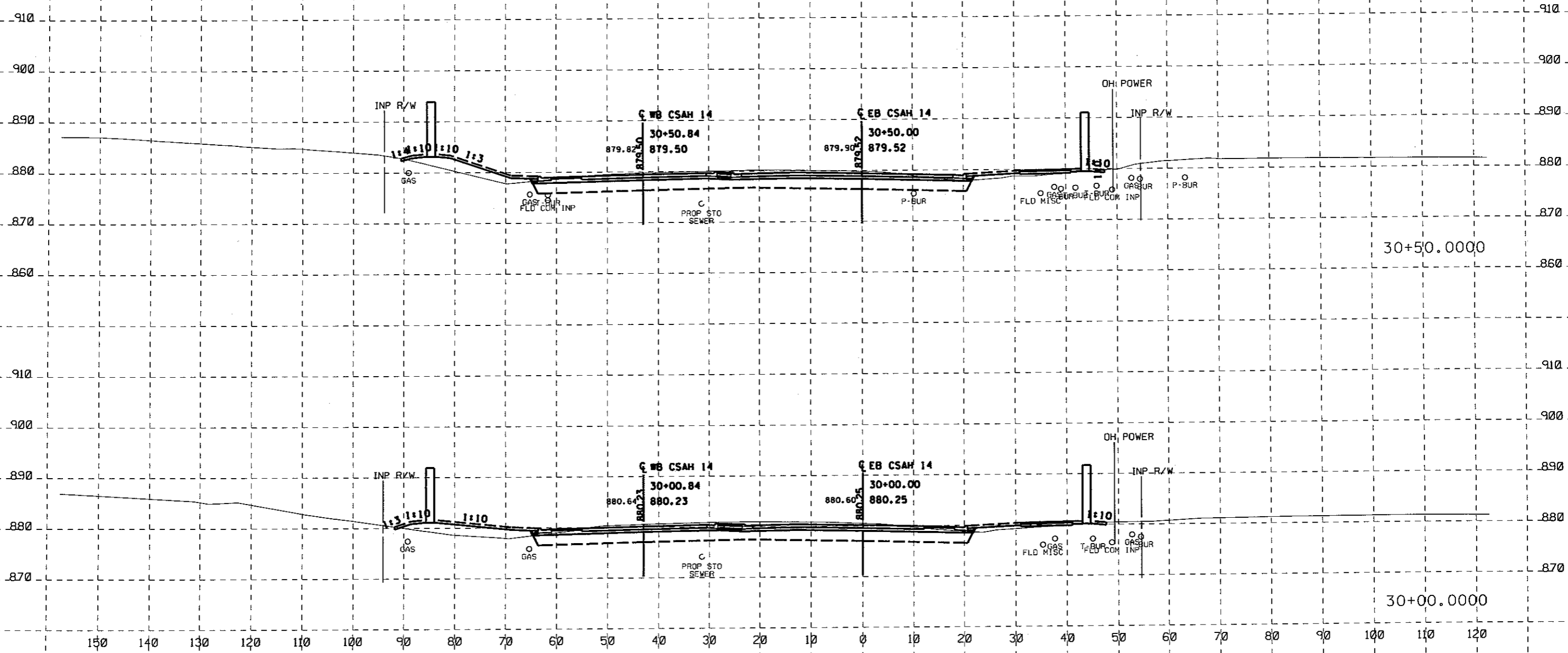
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DESIGN TEAM				
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NO.	BY	DATE	REVISIONS	



ANOKA COUNTY
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 S.P. 02-614-32

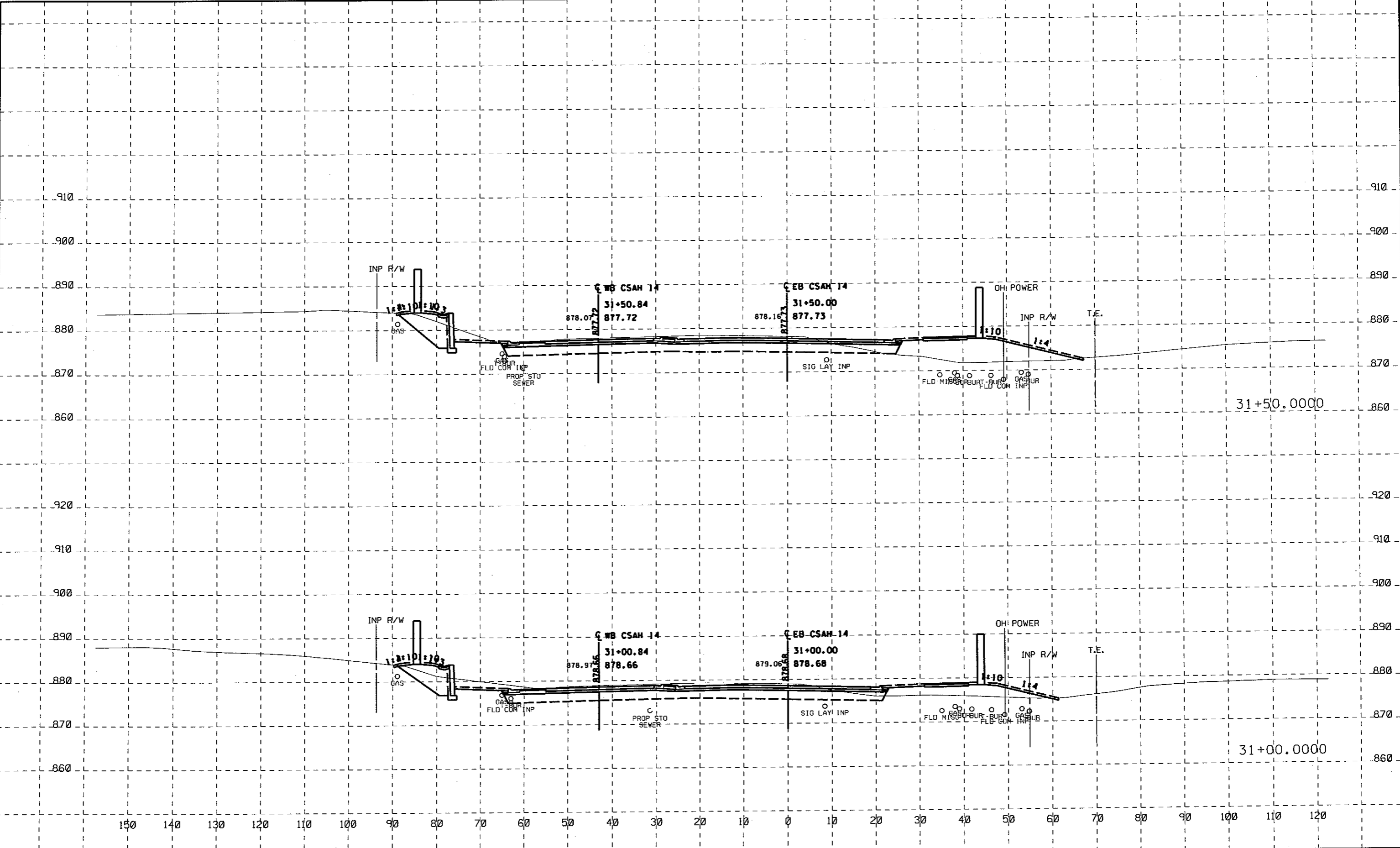
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DESIGN TEAM				
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NO.	BY	DATE	REVISIONS	



ANOKA COUNTY
CSAH 14
S.P. 02-614-32

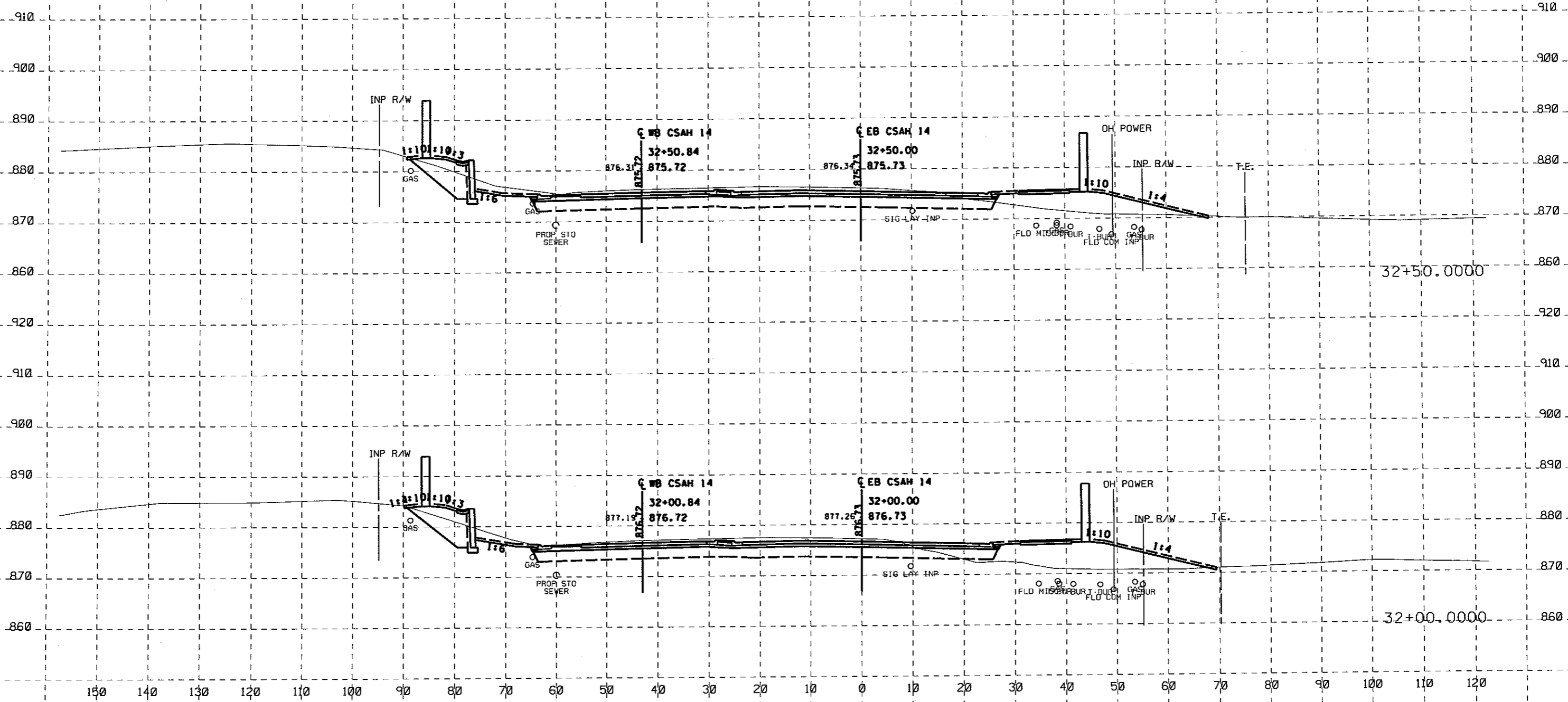
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DESIGN TEAM				
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	NO.	BY	DATE	REVISIONS



ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

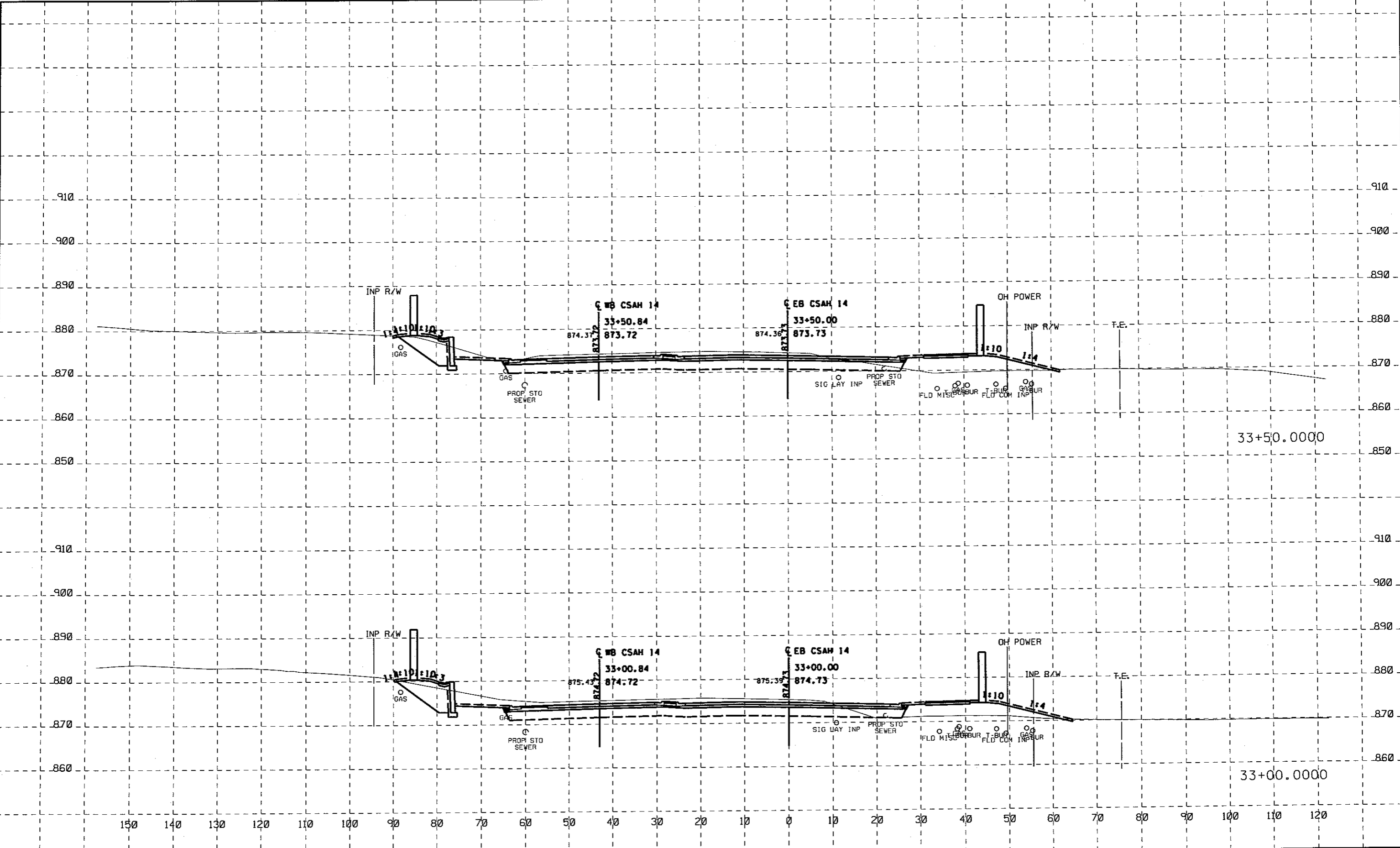
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	NO.	BY	DATE	REVISIONS



ANOKA COUNTY
CSAH 14
S.P. 02-614-32

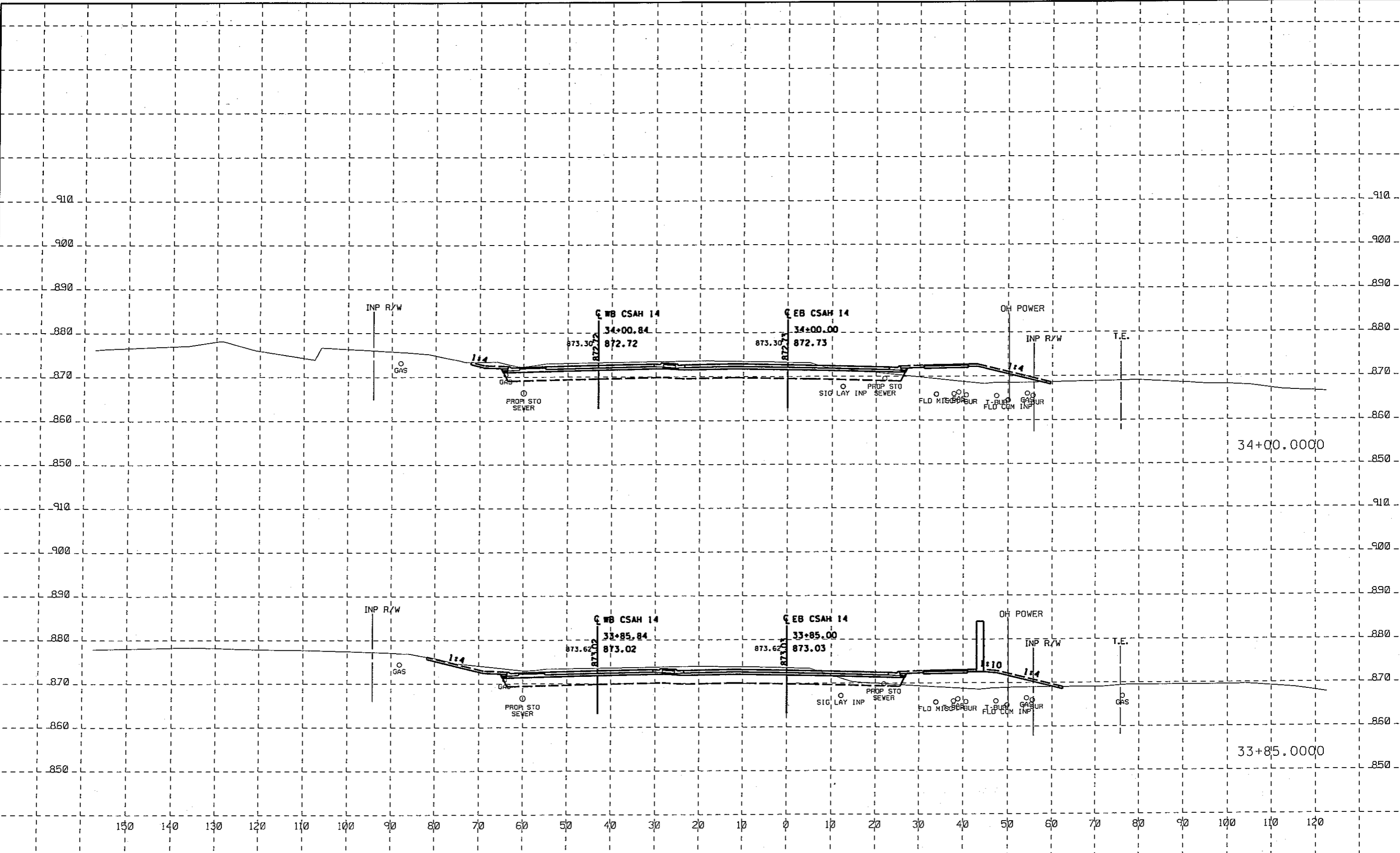
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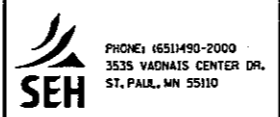
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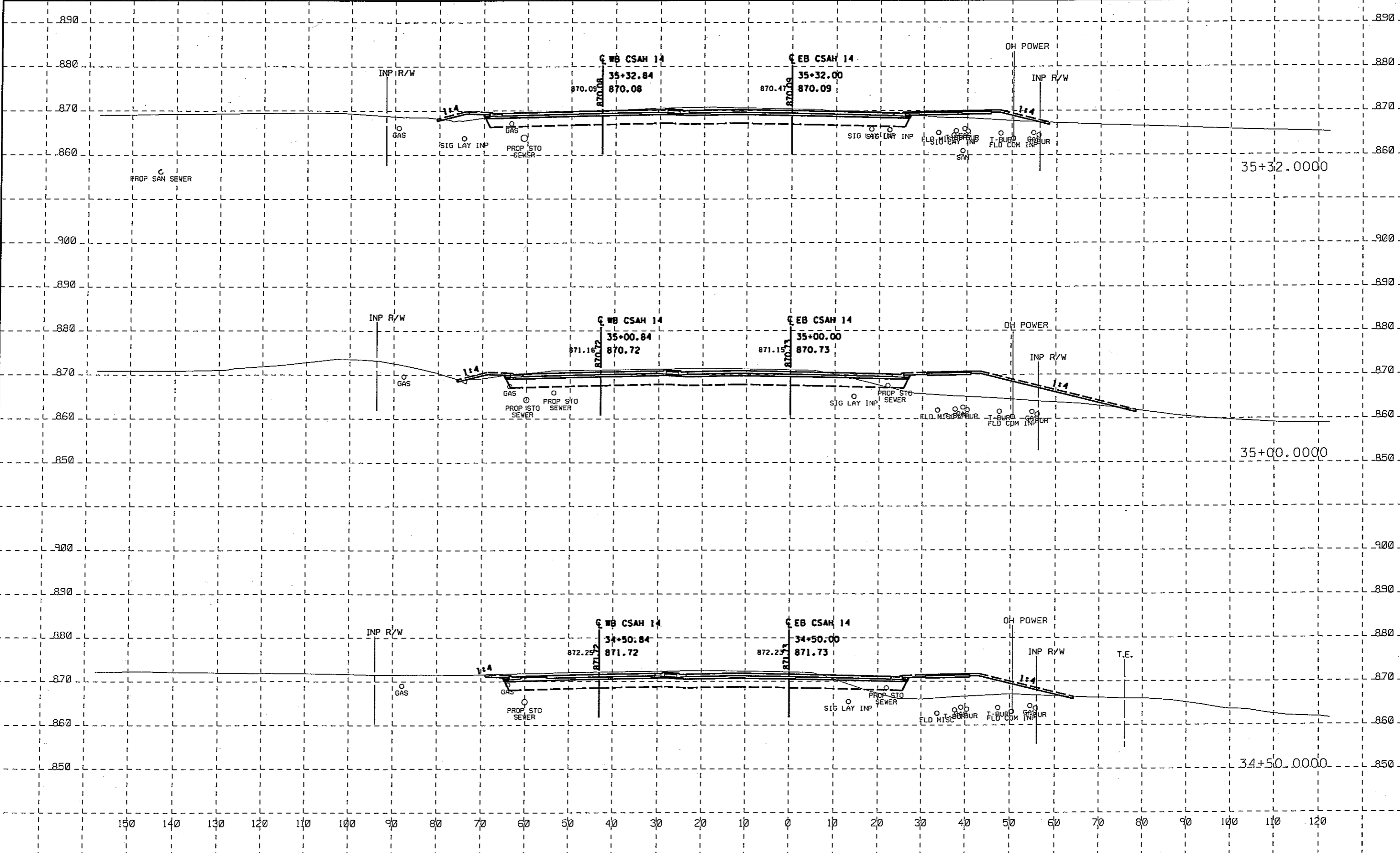


ANOKA COUNTY
CSAH 14
S.P. 02-614-32

CROSS SECTIONS

FILE NO.
ANOKC102287
XS18
OF XS76

12/18/01 AM
1/21/2010
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

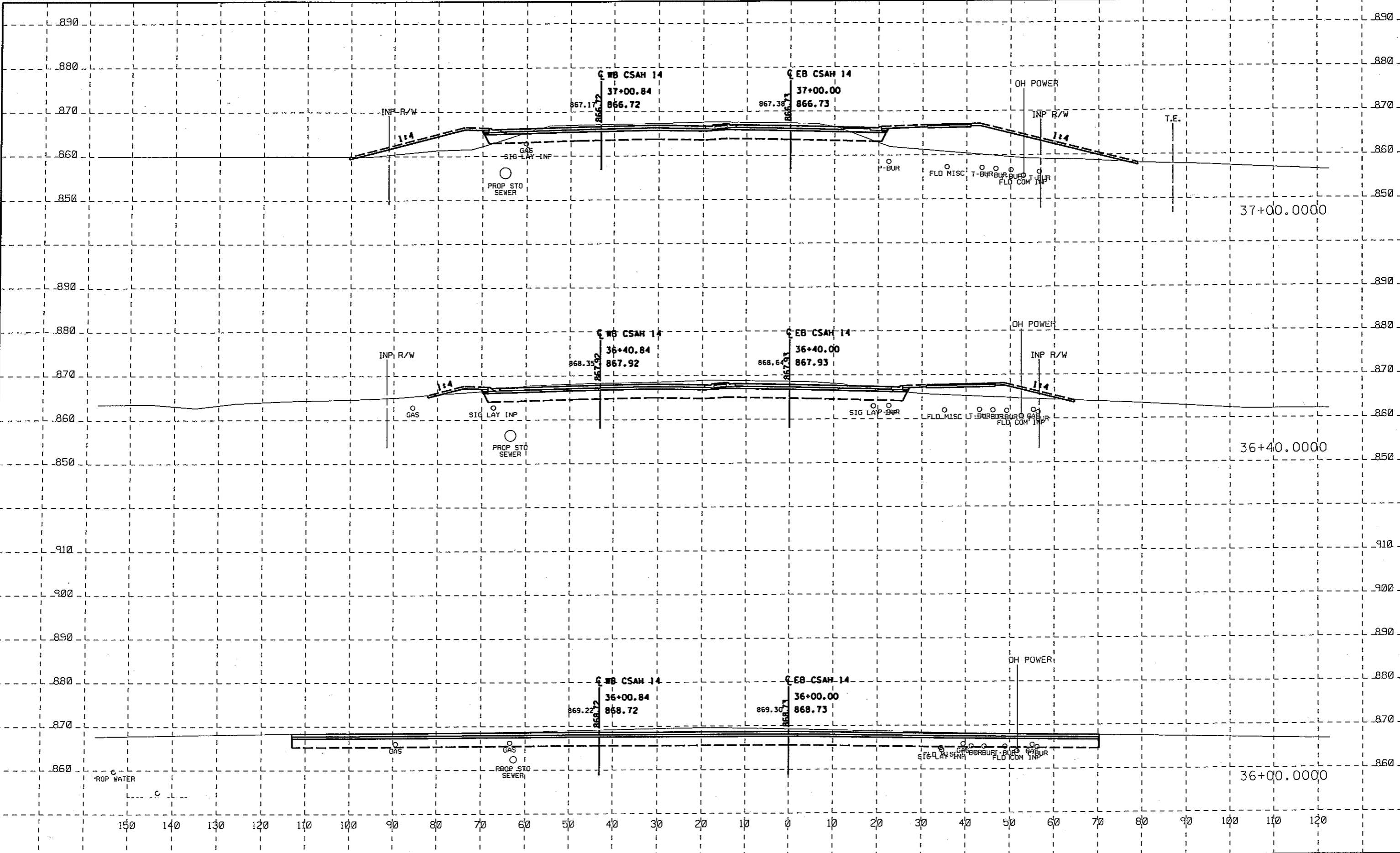
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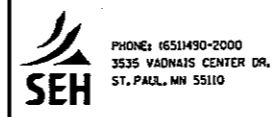
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

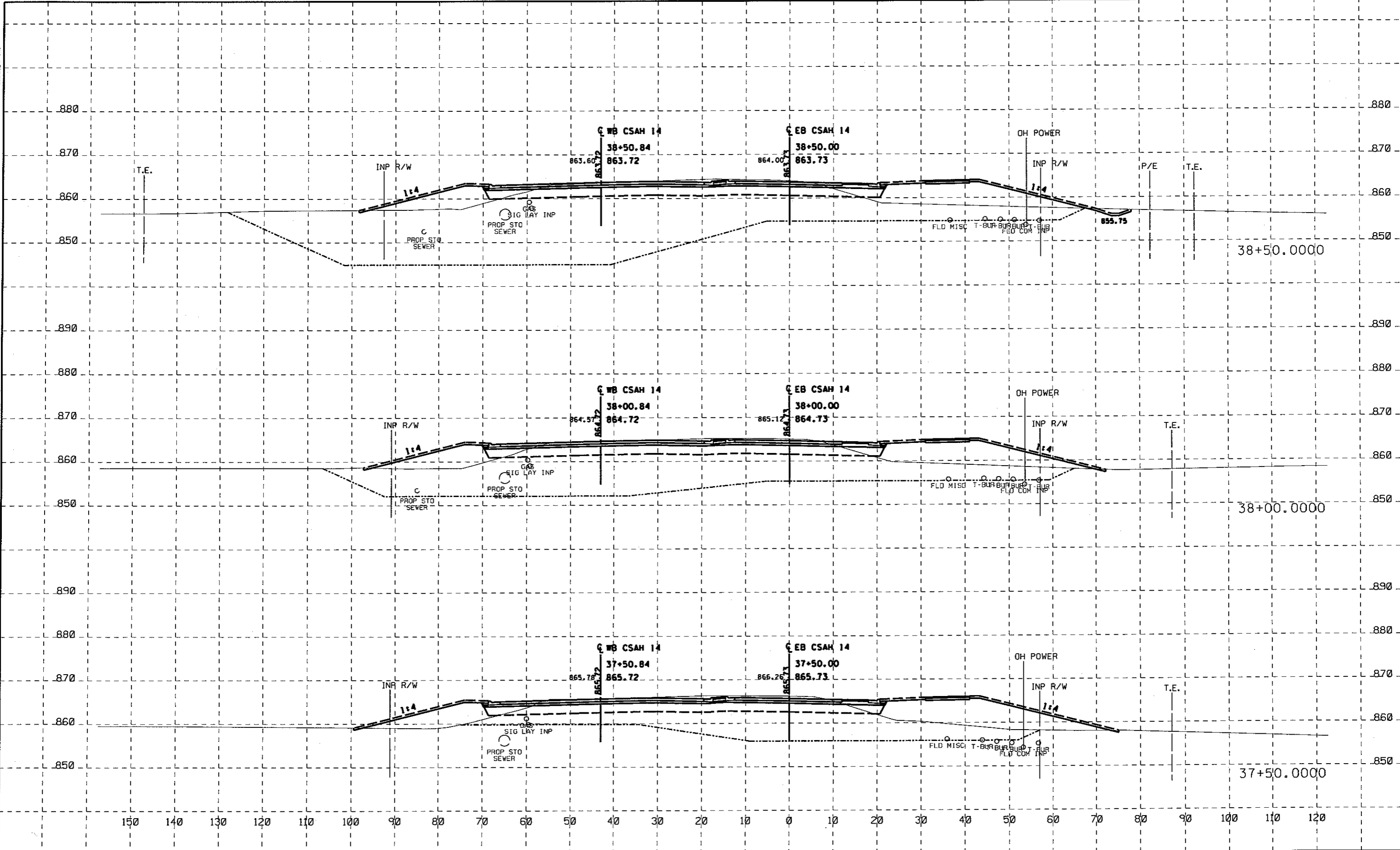
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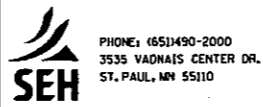
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

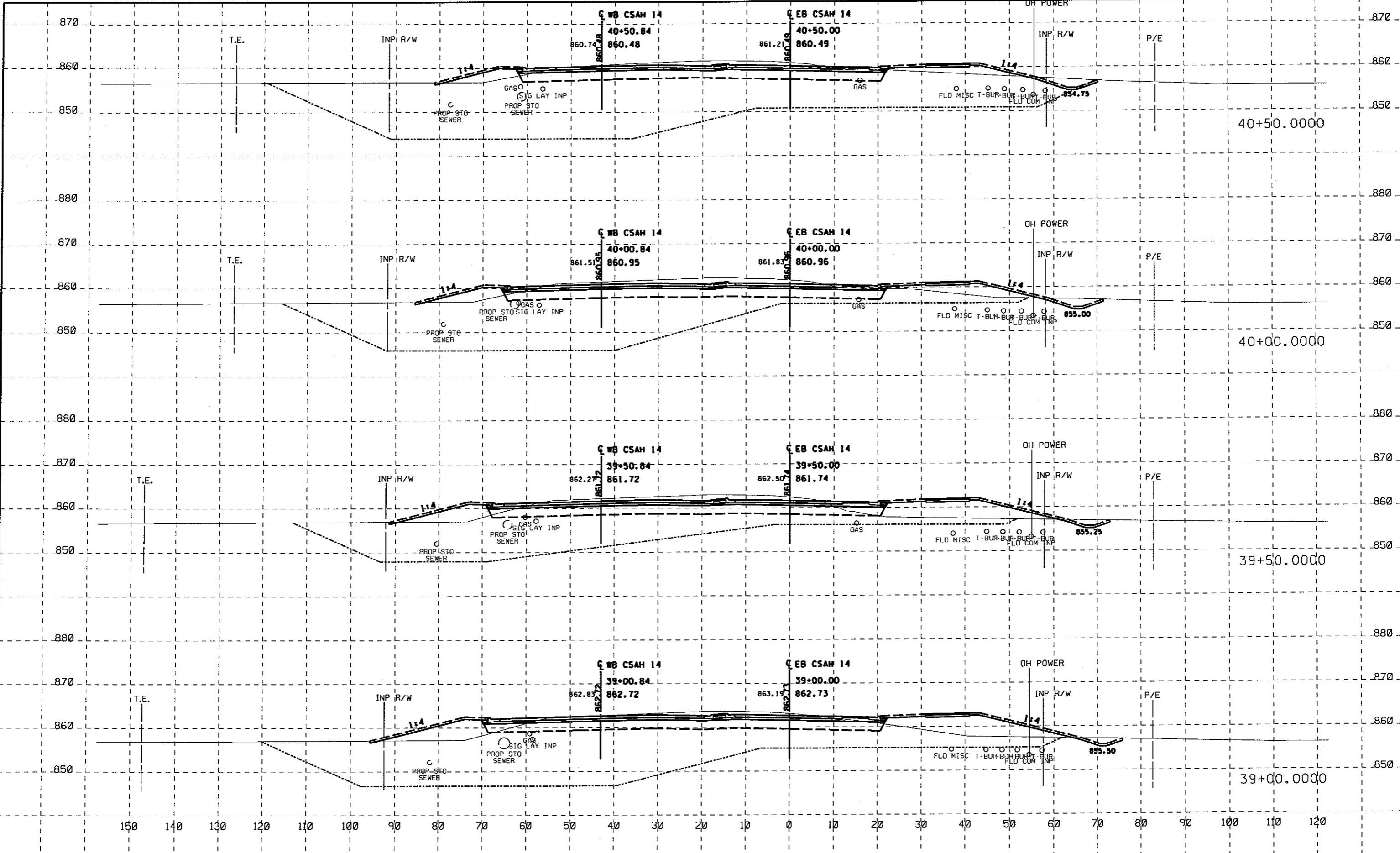
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ANOKA COUNTY
CSAH 14
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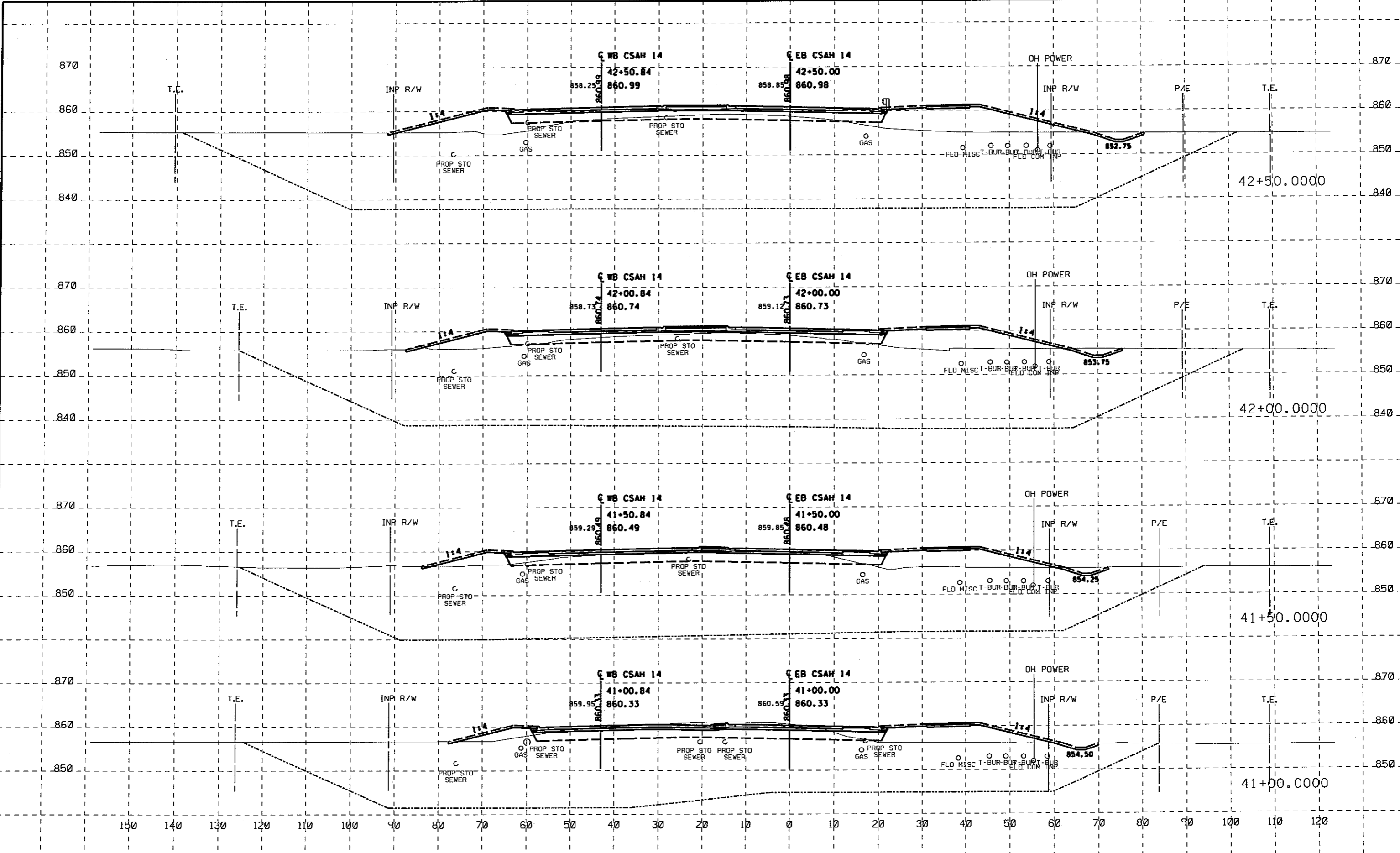
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ANOKA COUNTY
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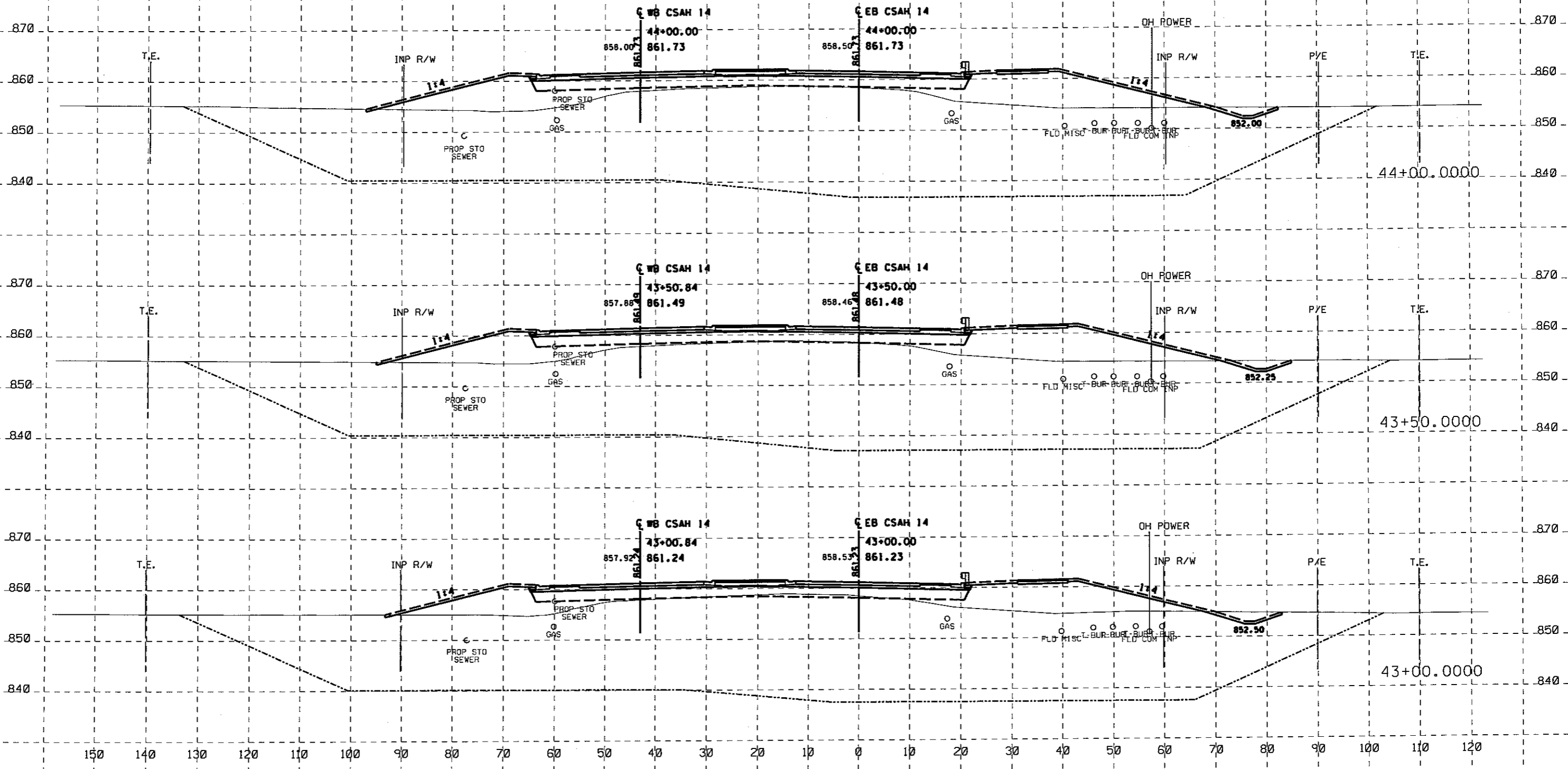
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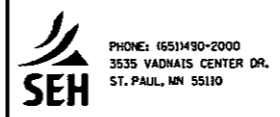
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ANOKA COUNTY
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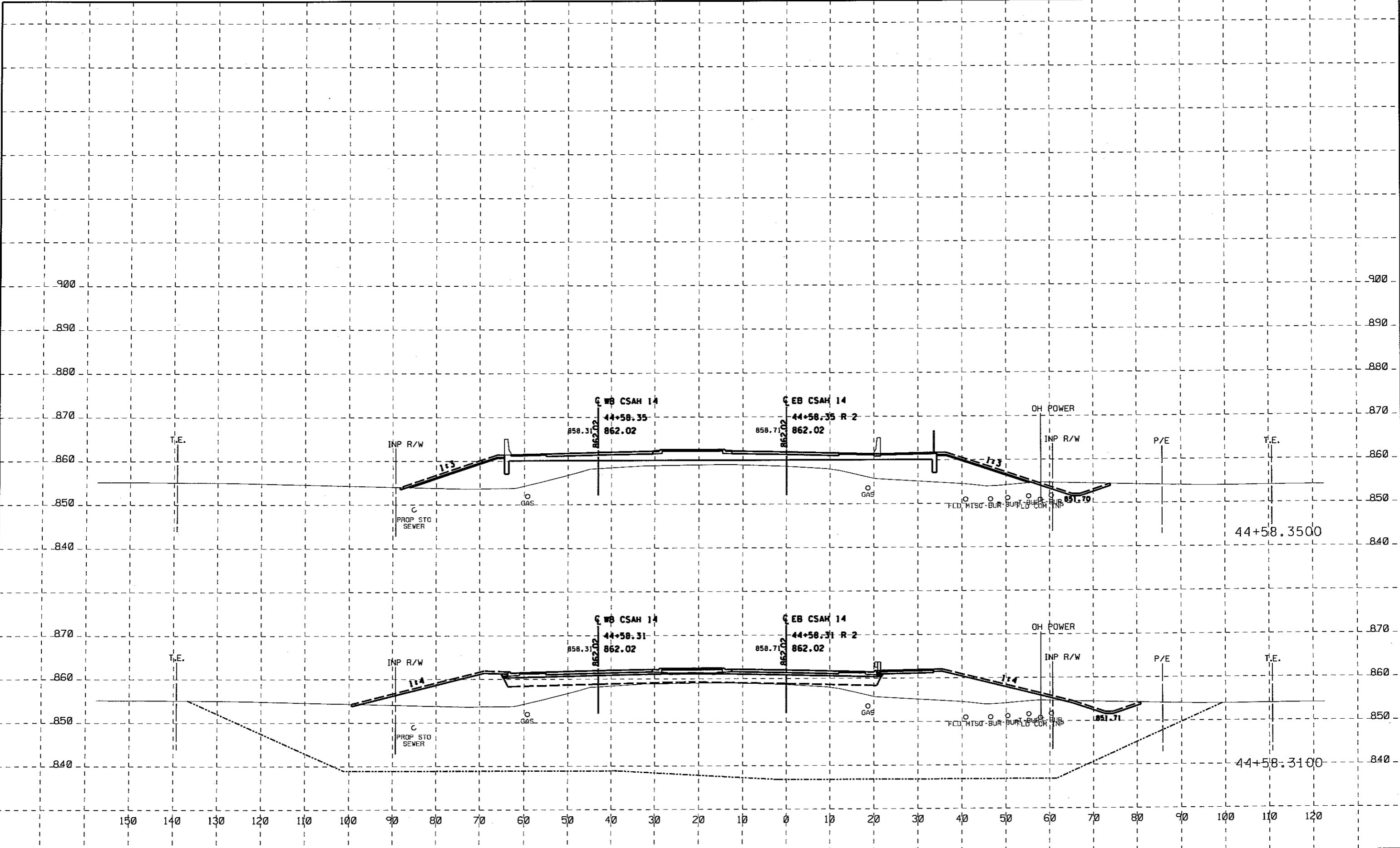
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ANOKA COUNTY
CSAH 14
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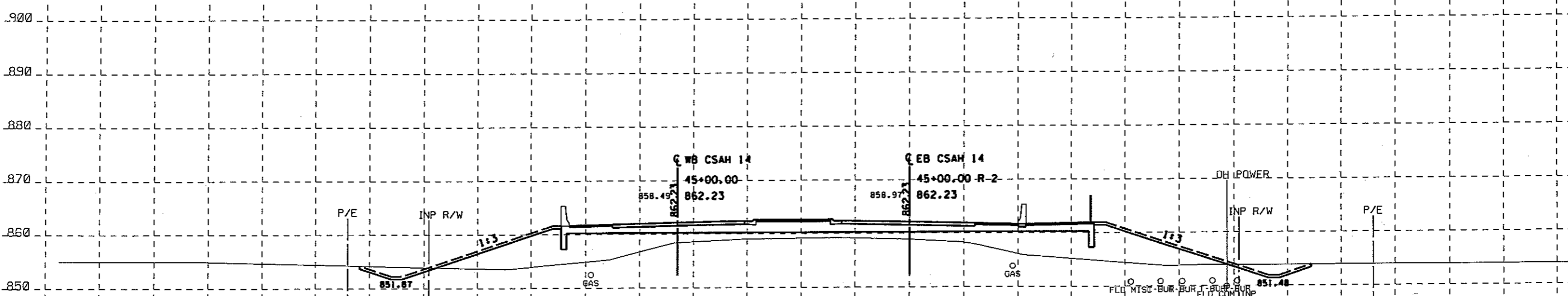
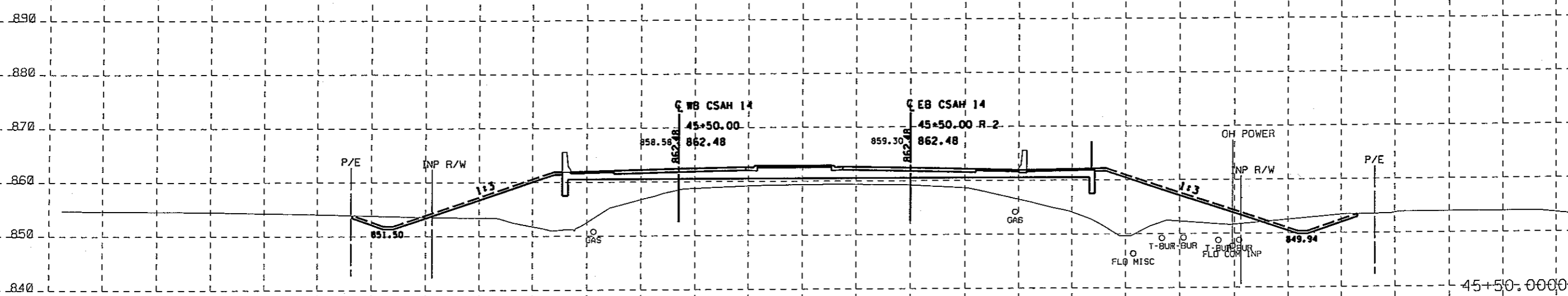
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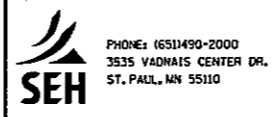
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ANOKA COUNTY
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S.P. 02-614-32

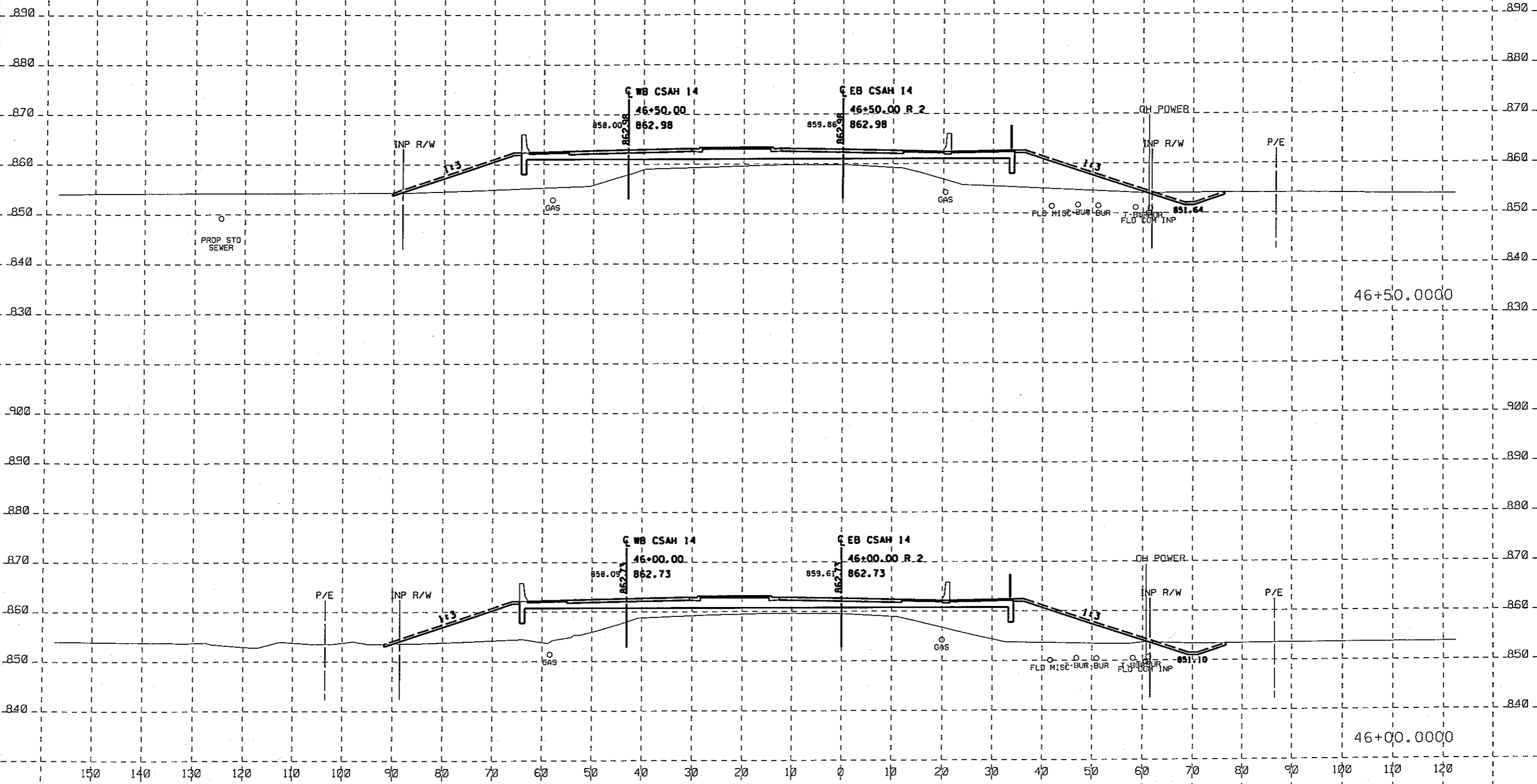
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ANOKA COUNTY
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S.P. 02-614-32

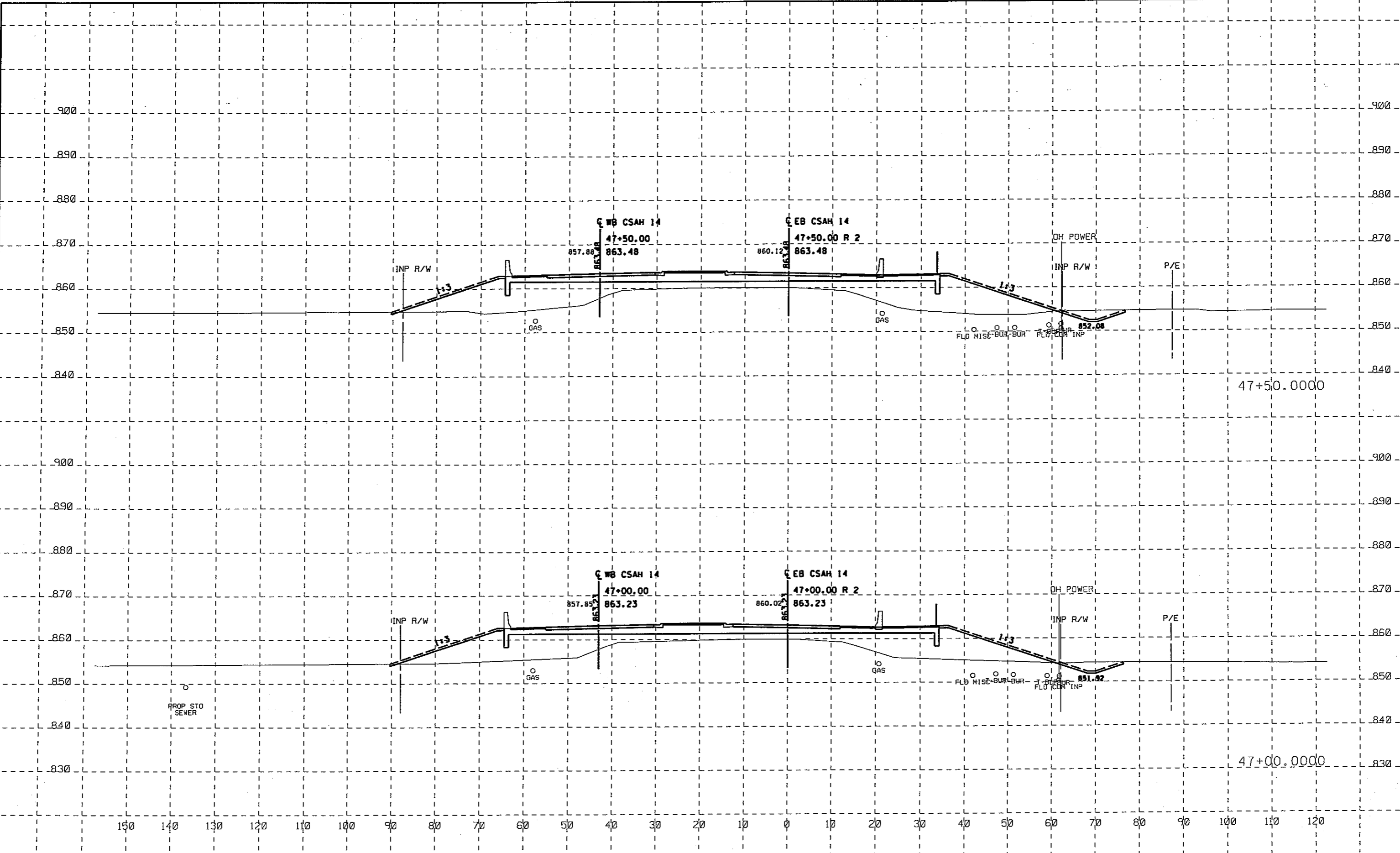
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ANOKA COUNTY
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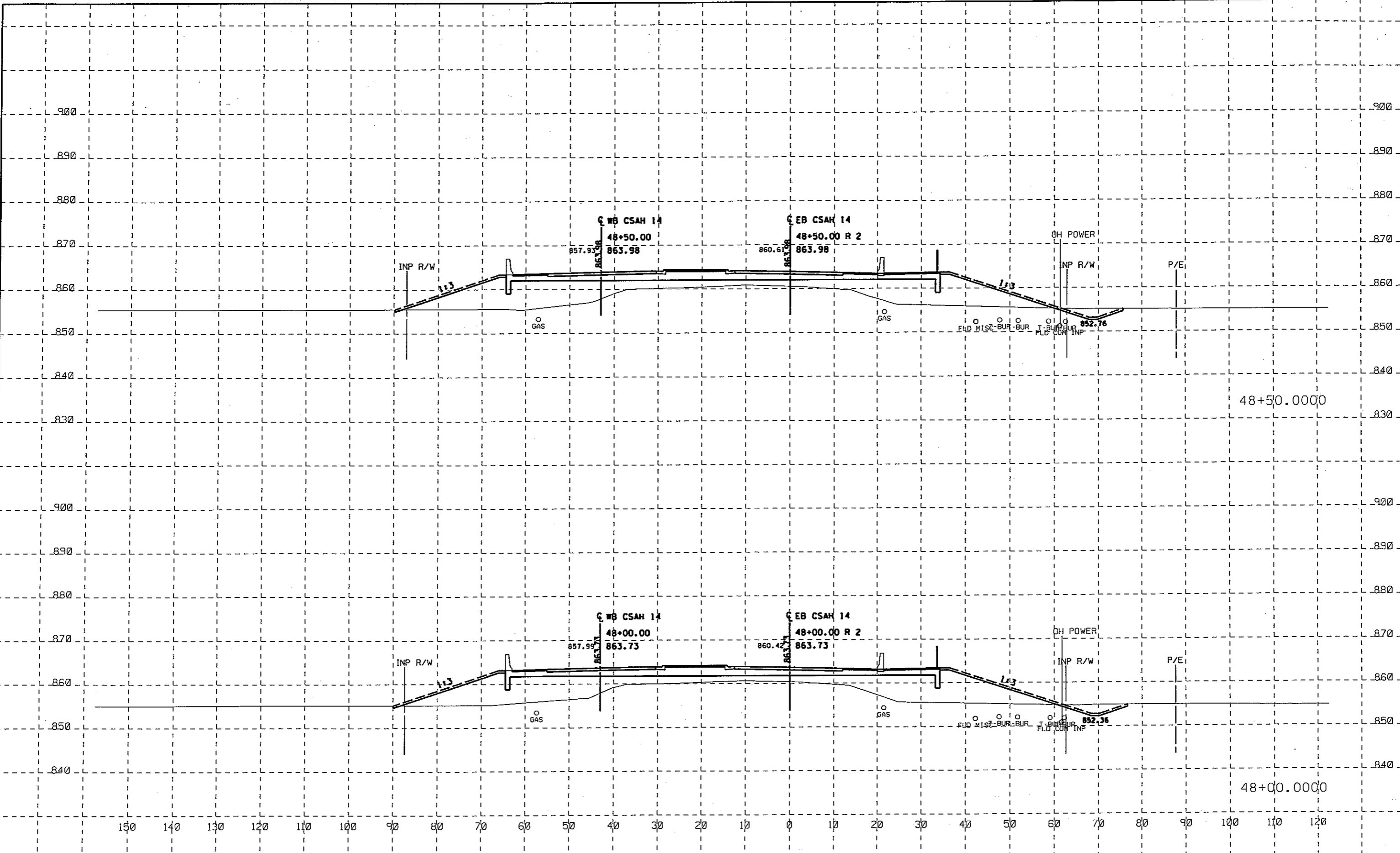
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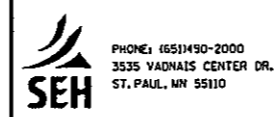
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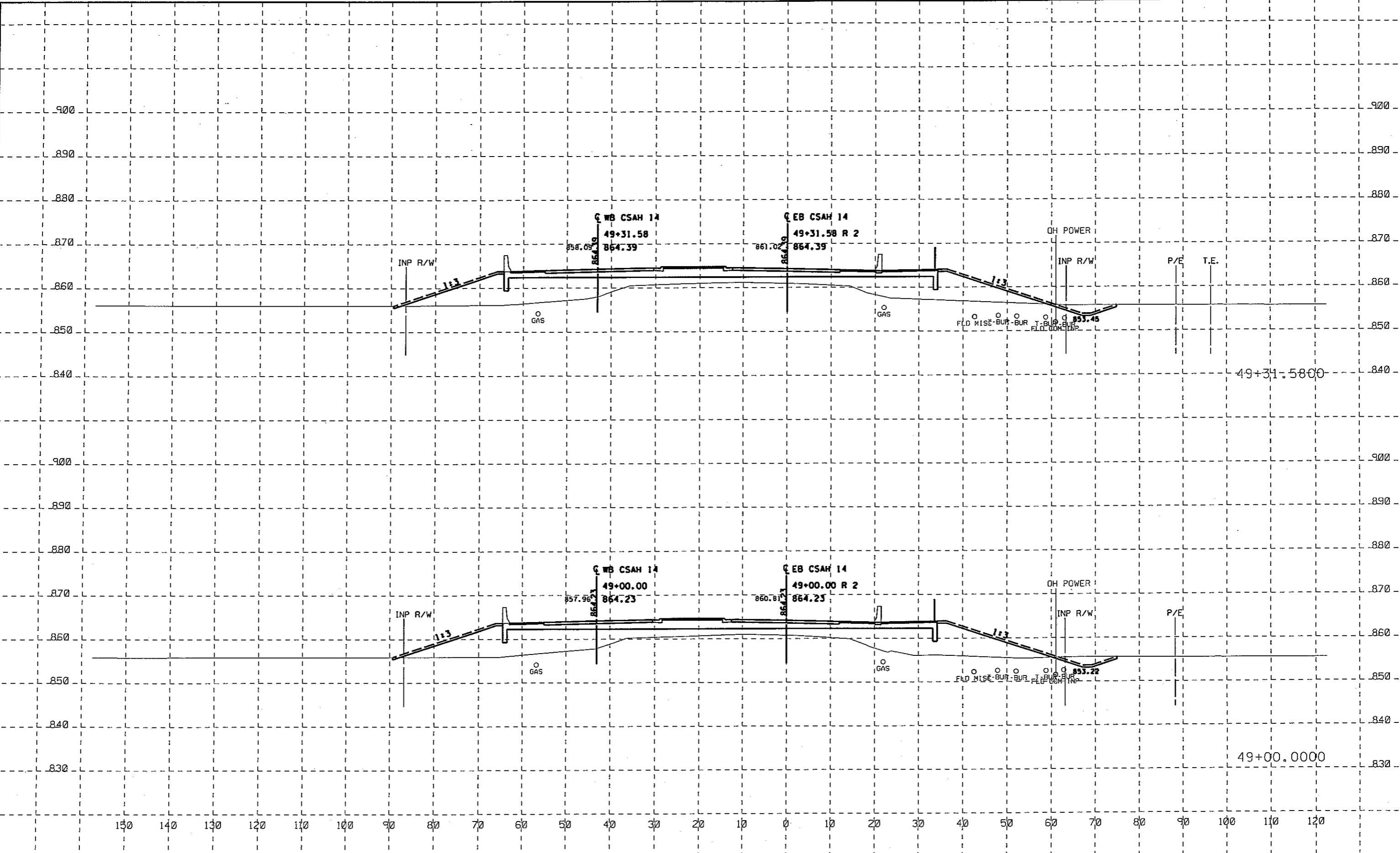
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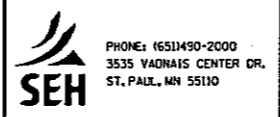
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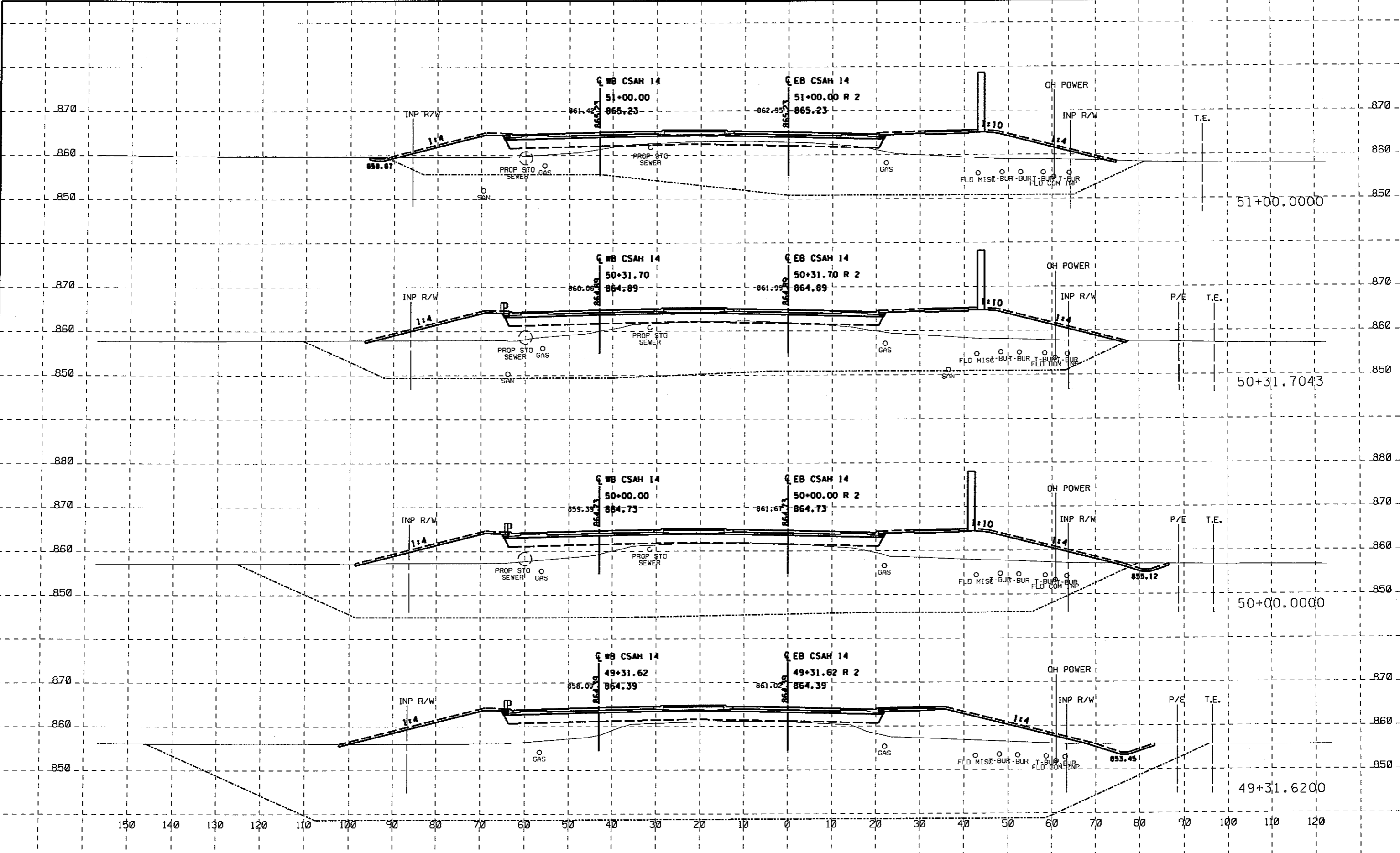


ANOKA COUNTY
CSAH 14
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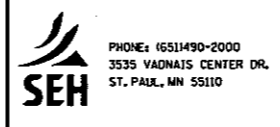
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ANOKA COUNTY
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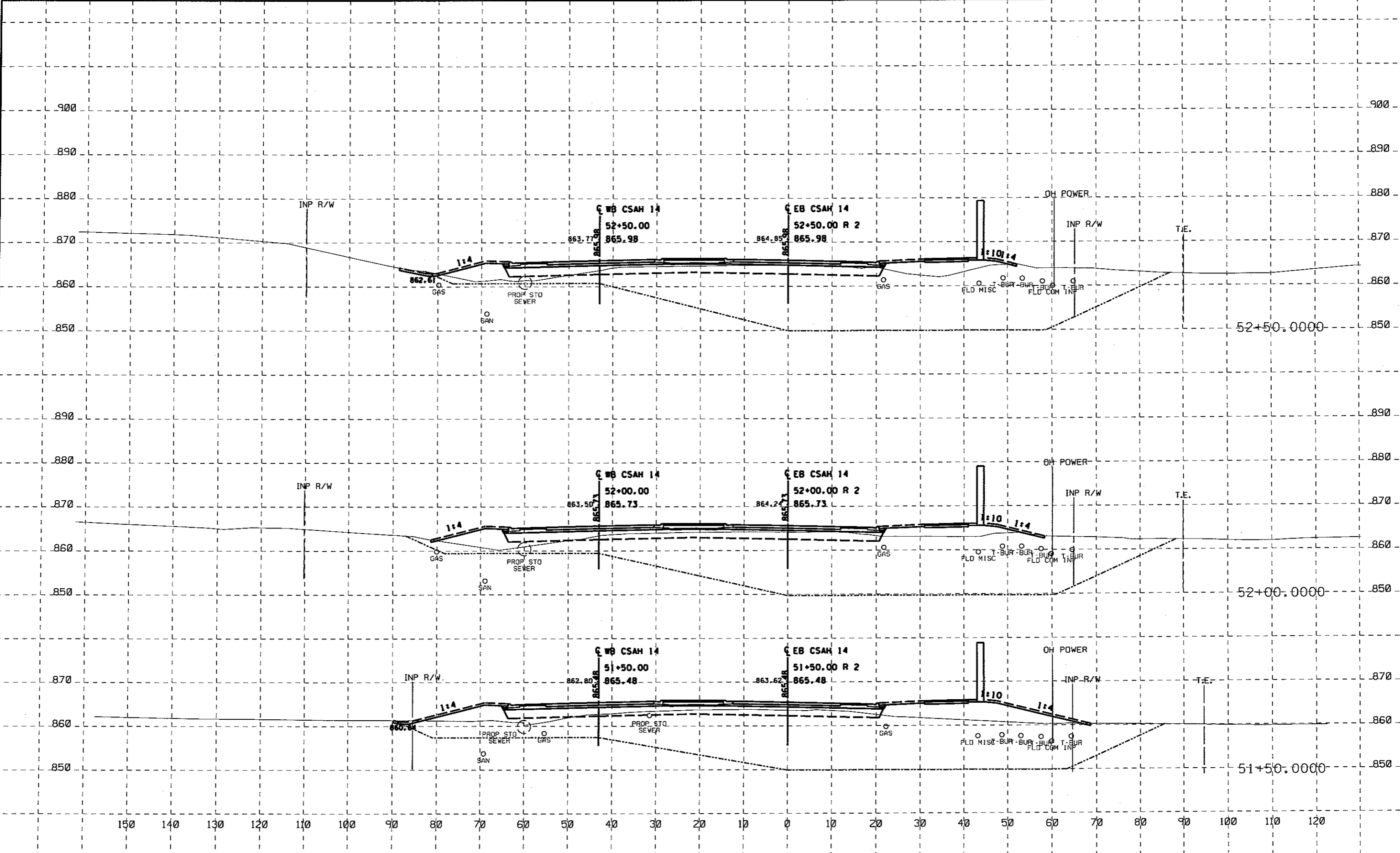
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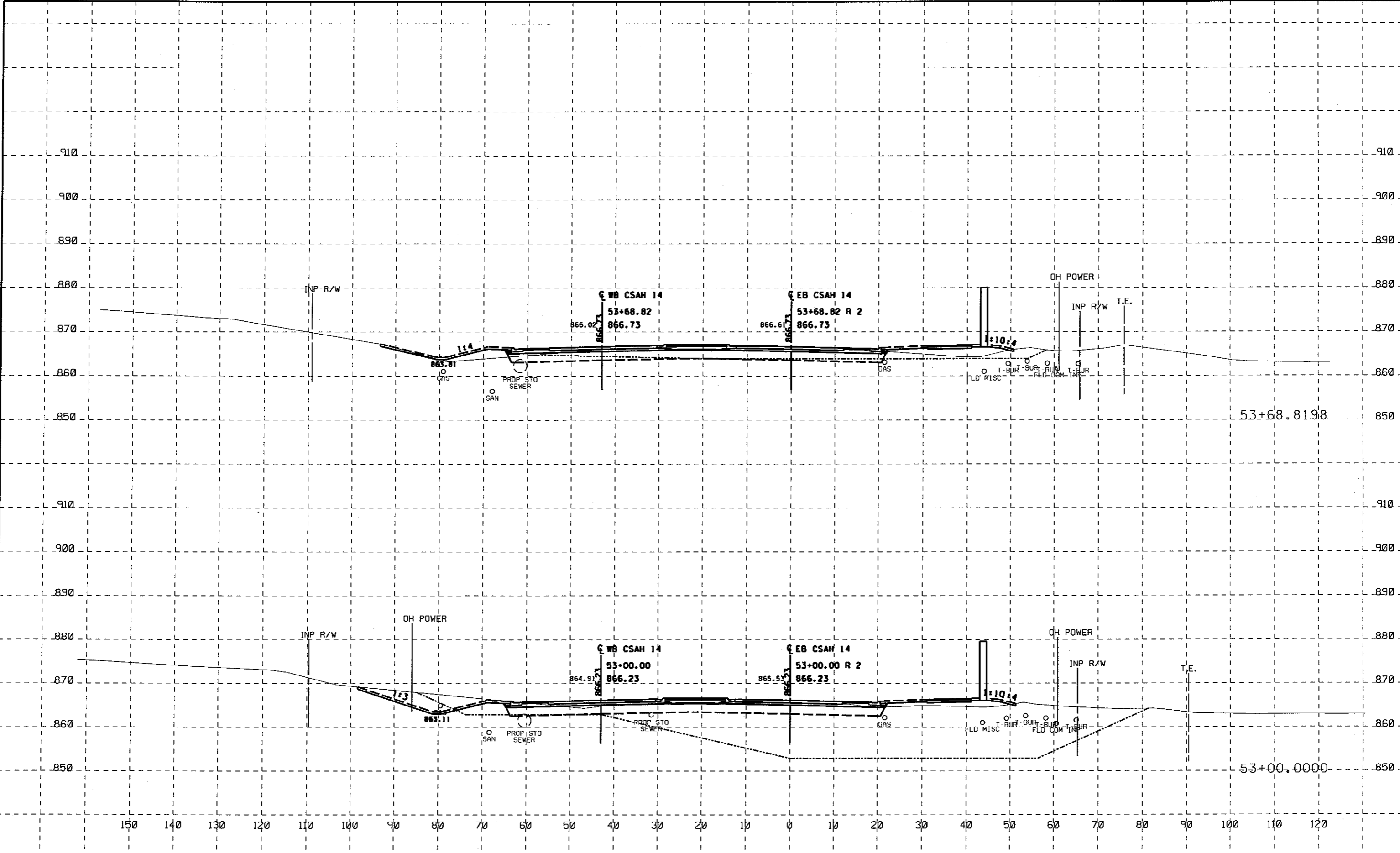
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ANOKA COUNTY
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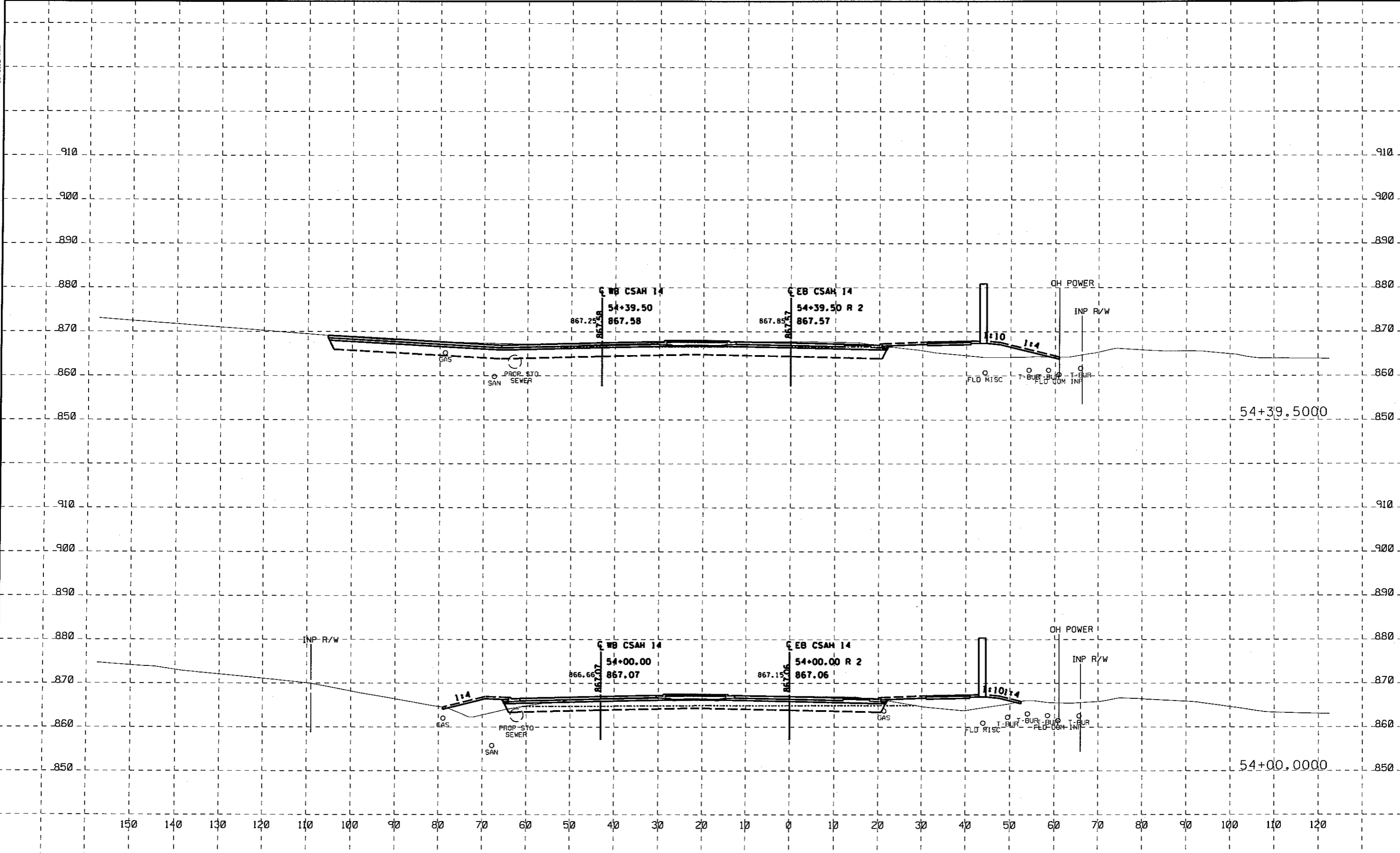
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ANOKA COUNTY
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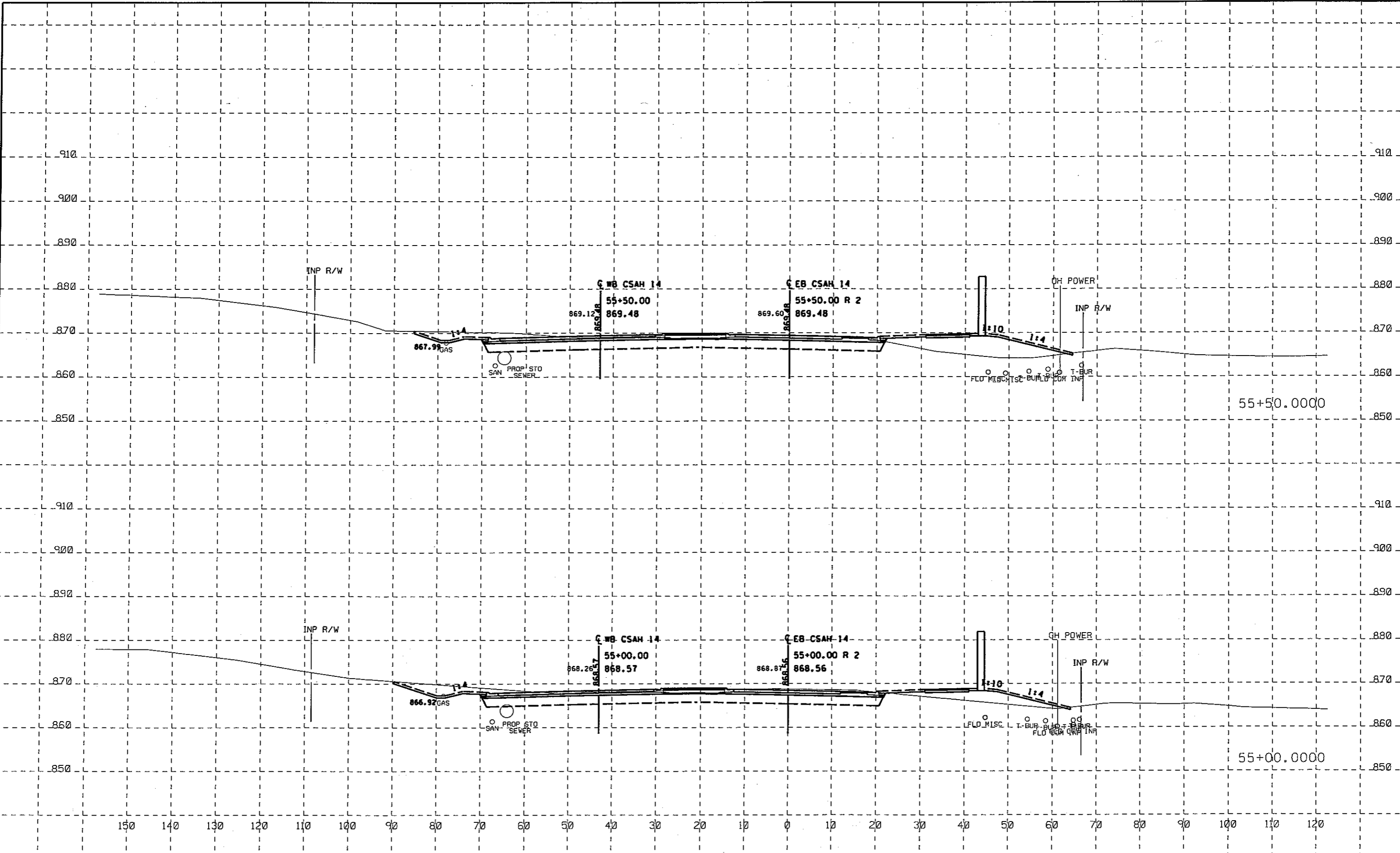
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FILE NO.
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XS34
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 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY
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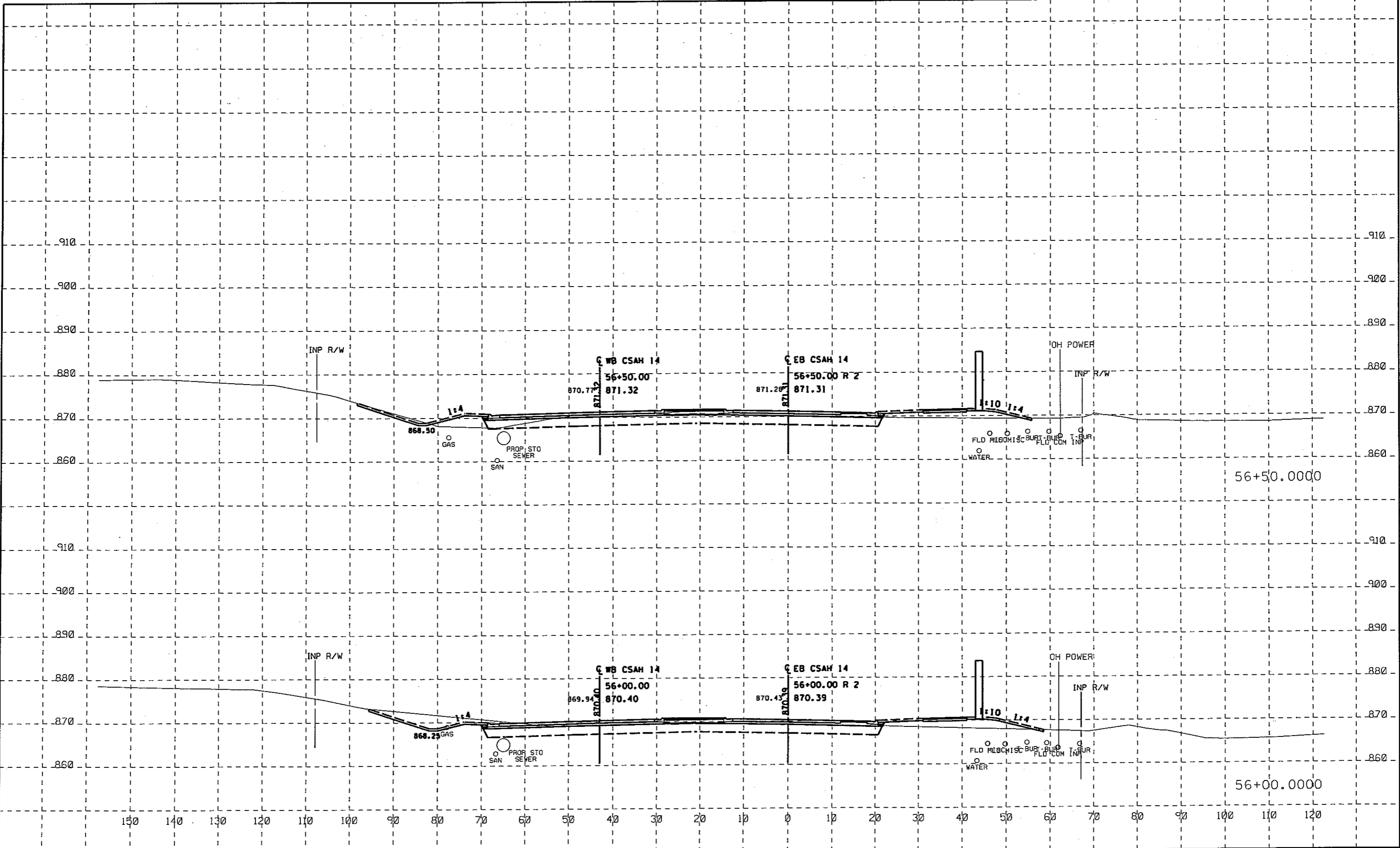
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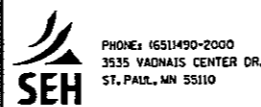
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ANOKA COUNTY
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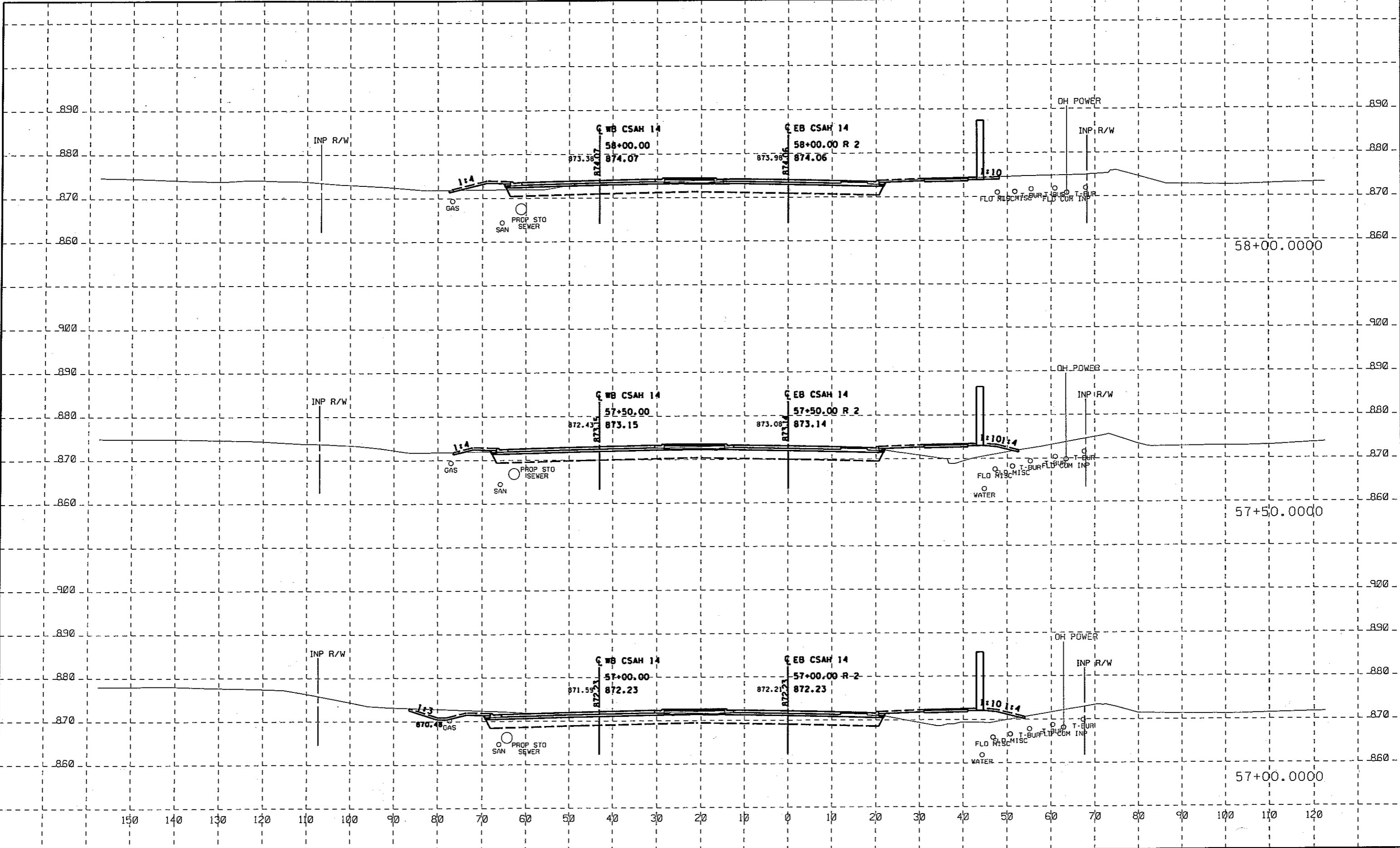
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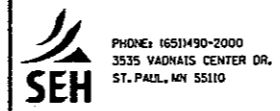
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ANOKA COUNTY
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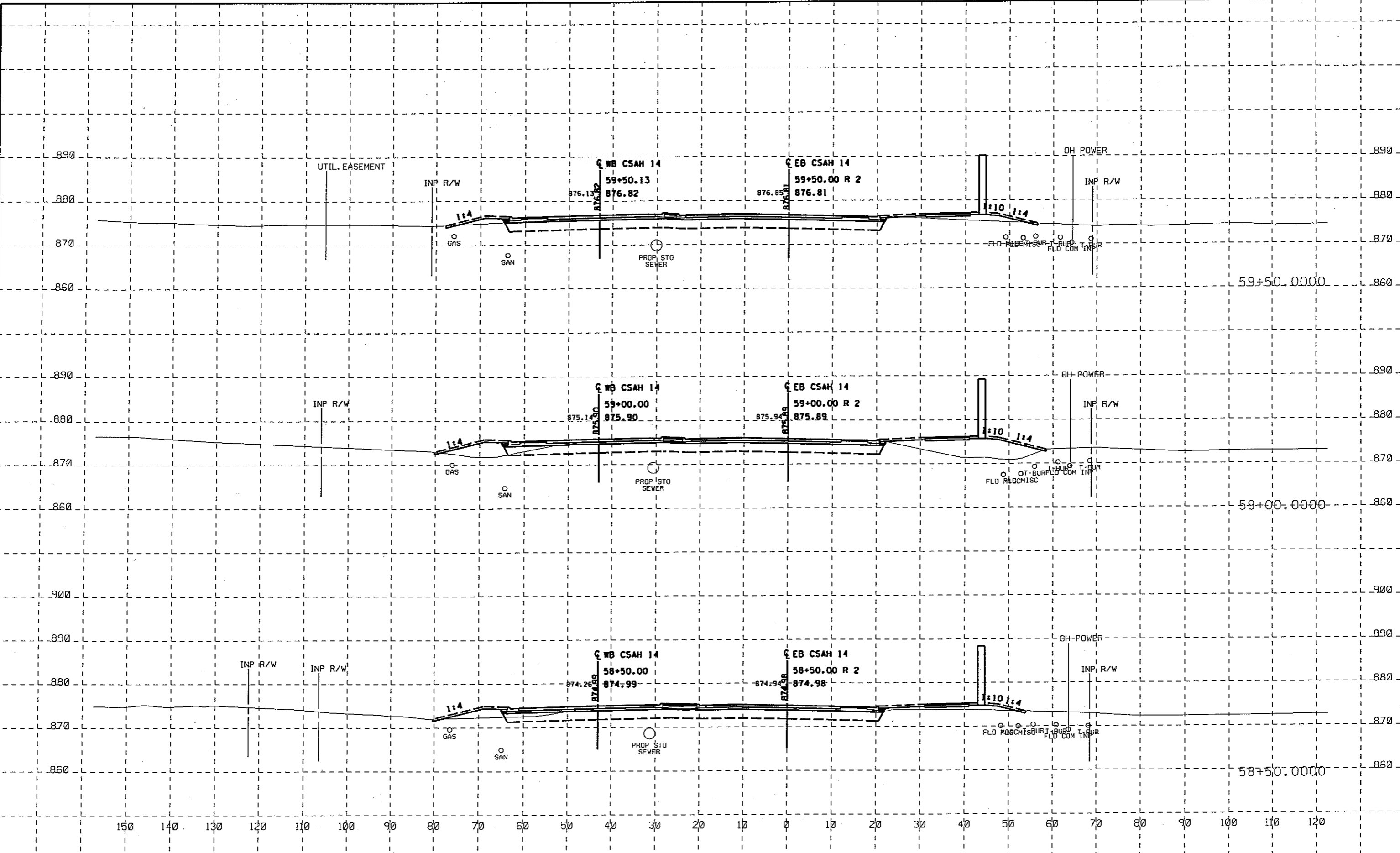
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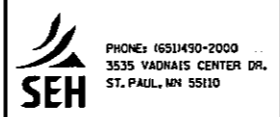
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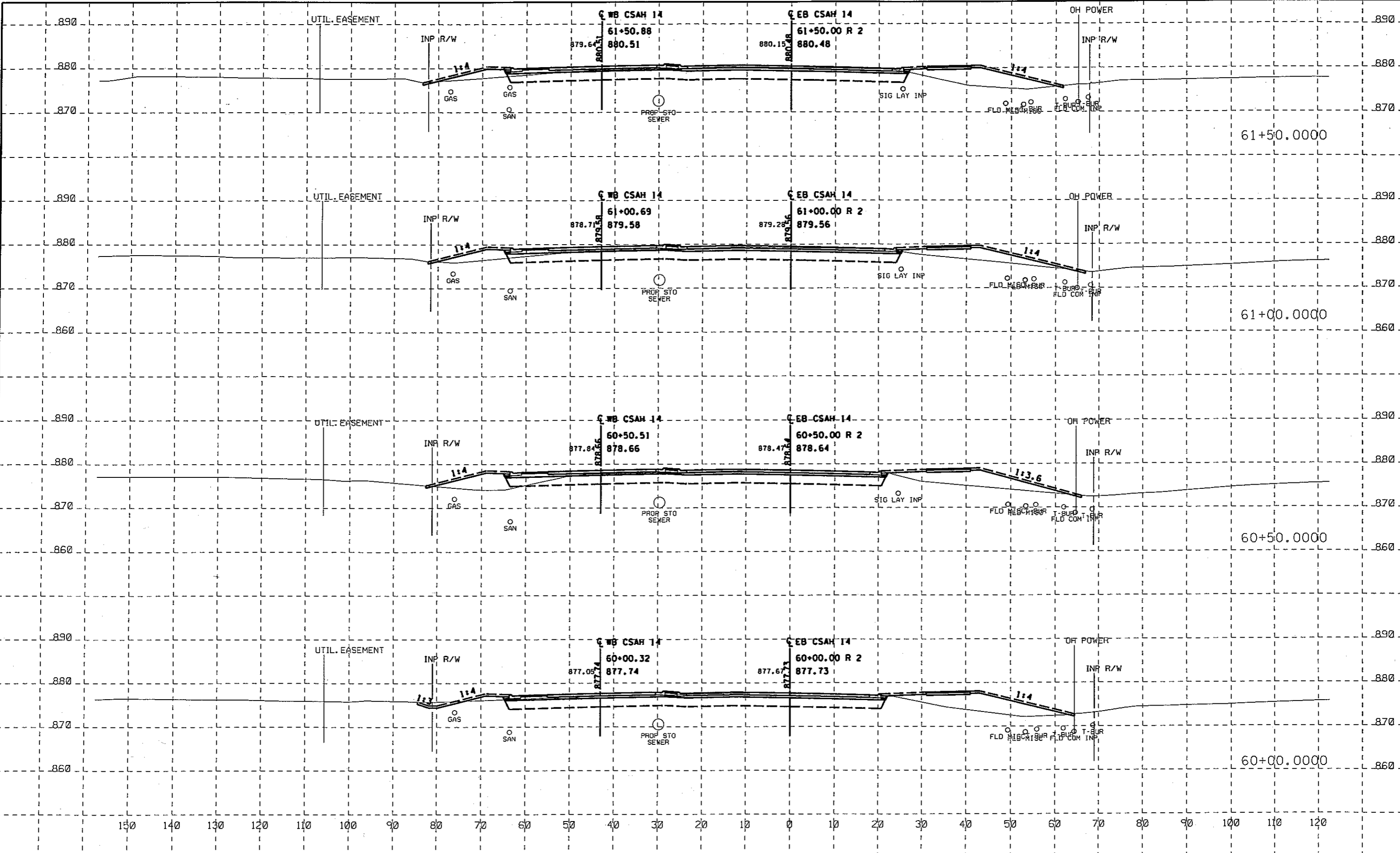


ANOKA COUNTY
CSAH 14
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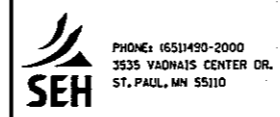
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FILE NO.
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XS38
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ANOKA COUNTY
CSAH 14
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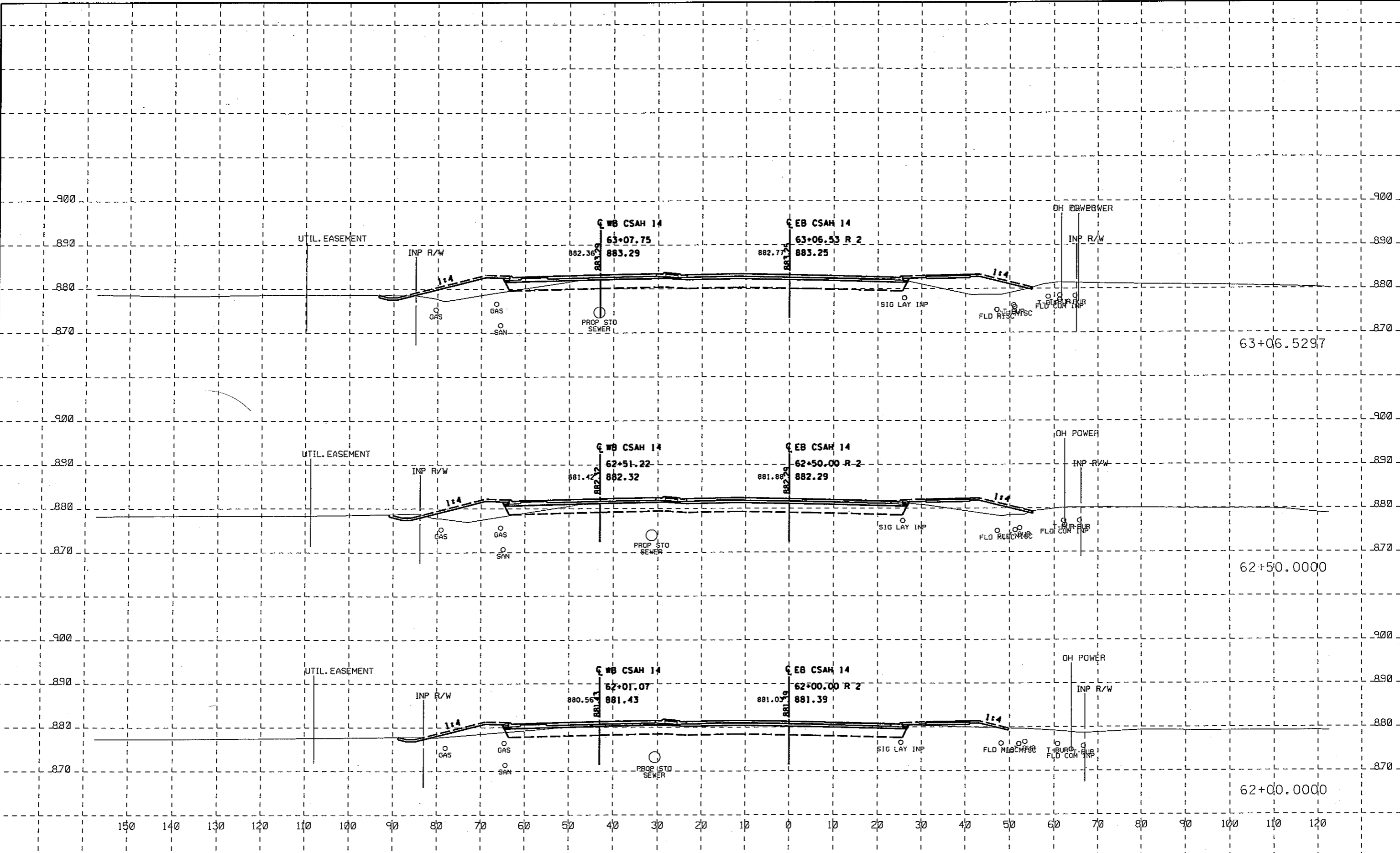
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ANOKA COUNTY
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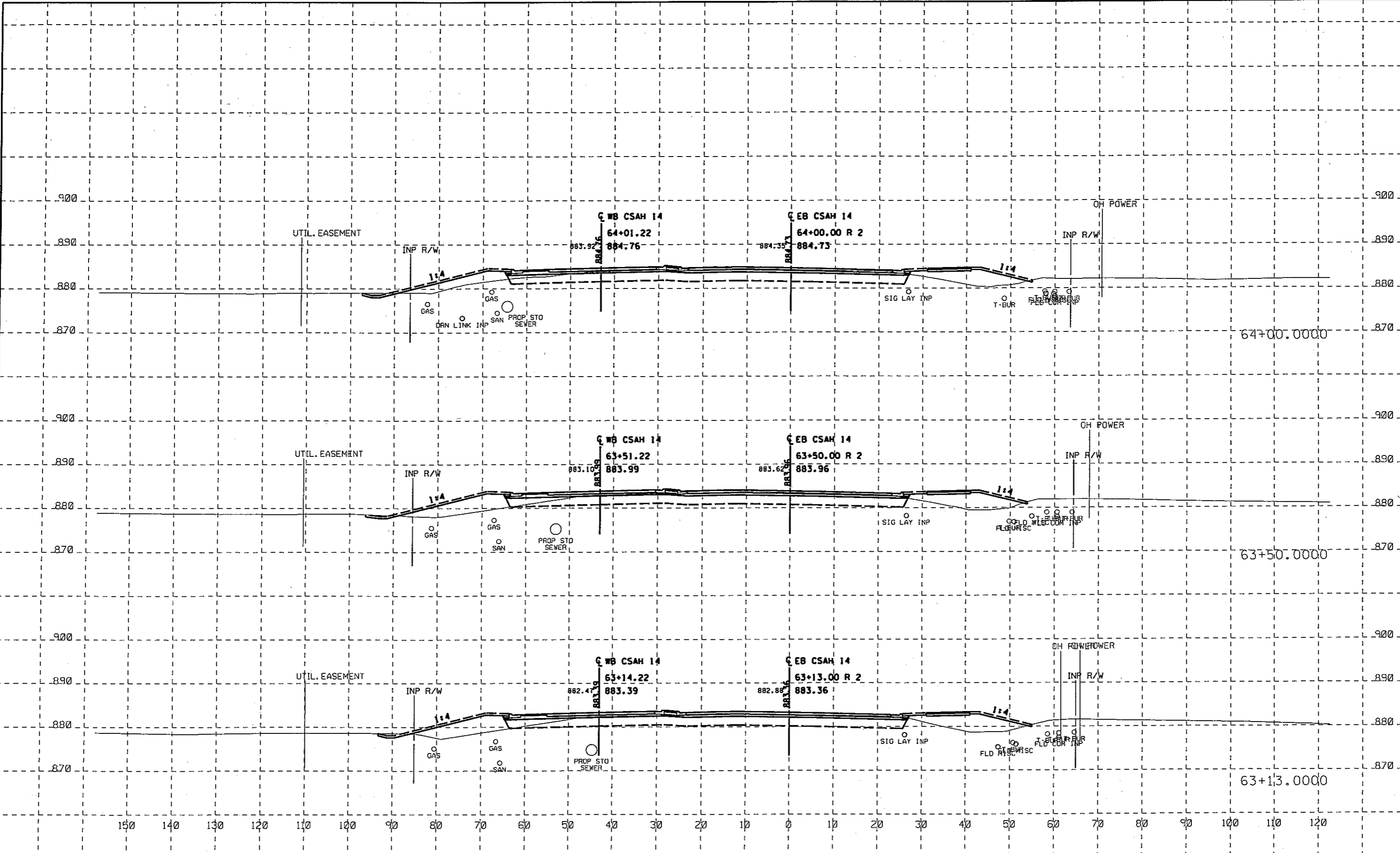
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12/18/12 AM

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ANOKA COUNTY
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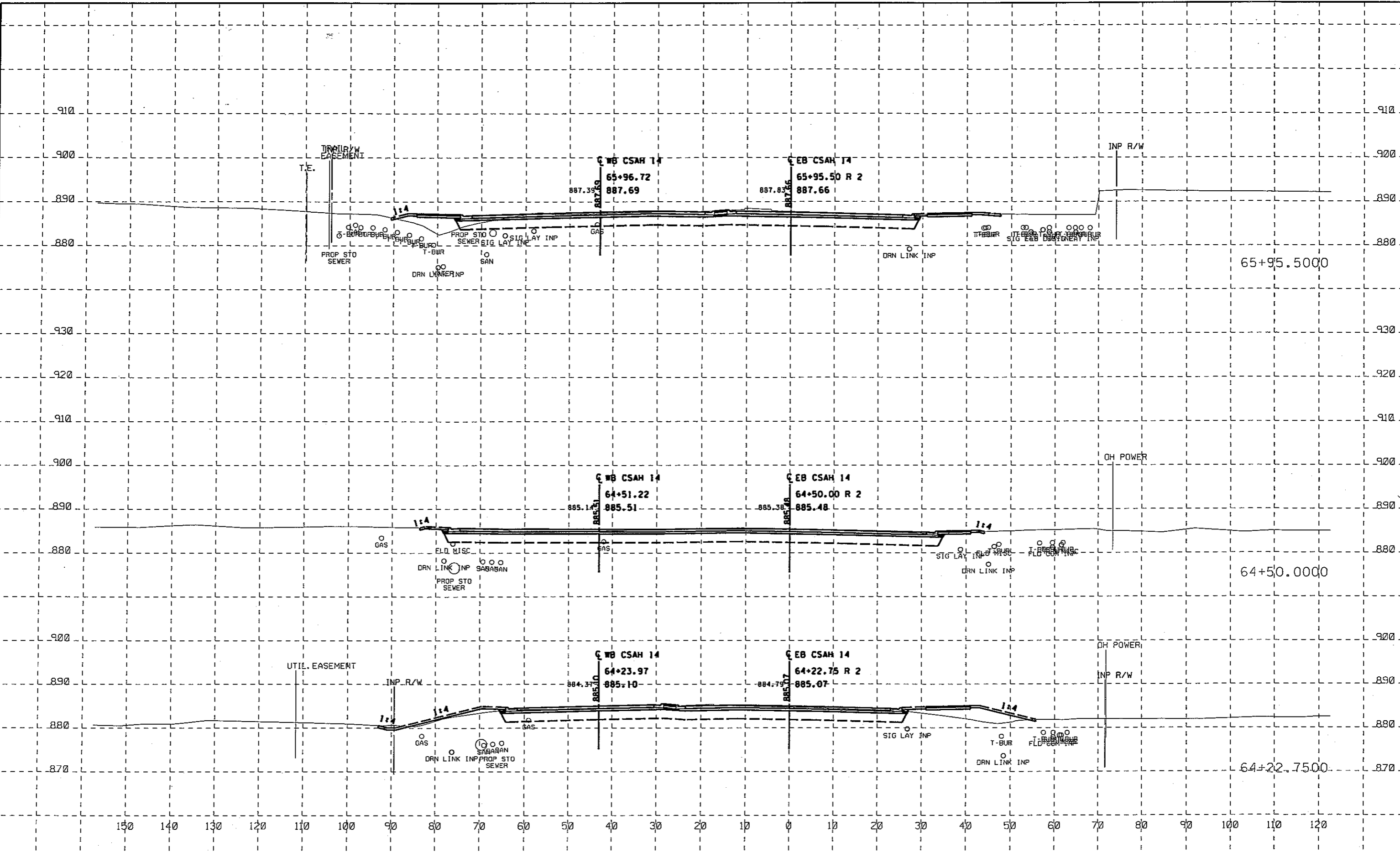
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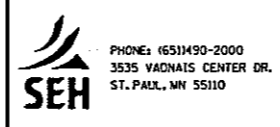
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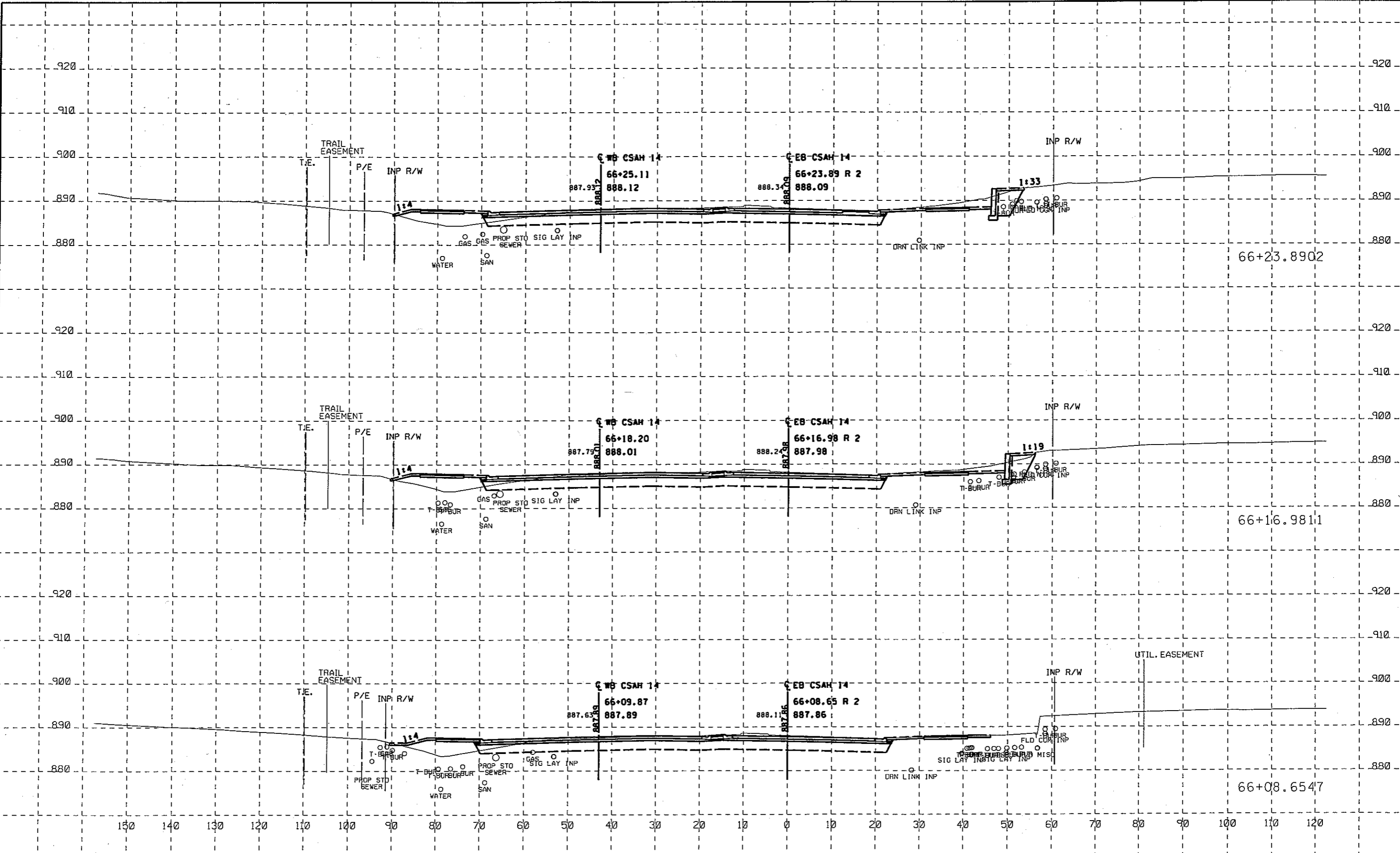


ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

CROSS SECTIONS

FILE NO.
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XS42
 OF XS76

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ANOKA COUNTY
CSAH 14
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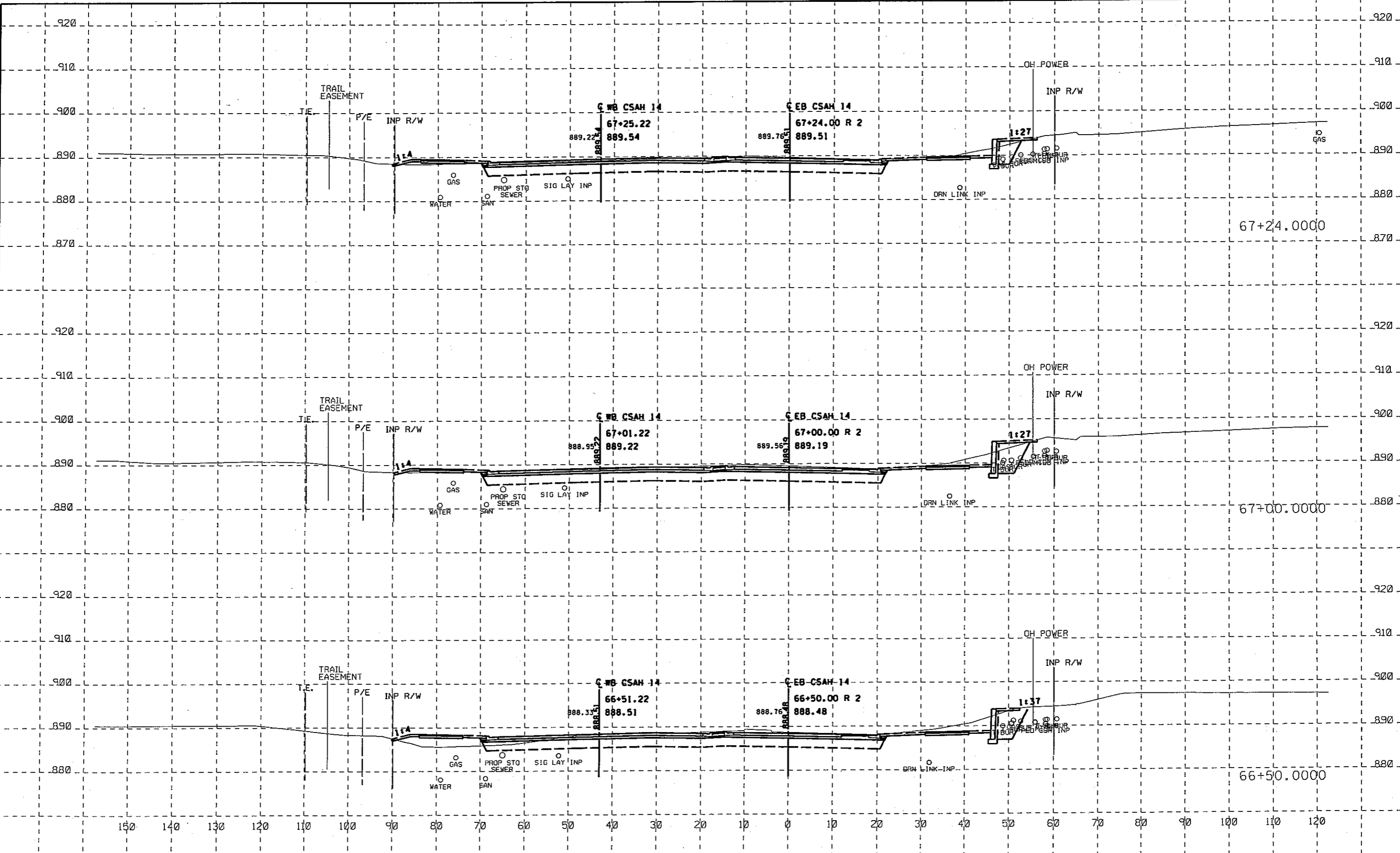
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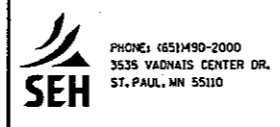
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ANOKA COUNTY
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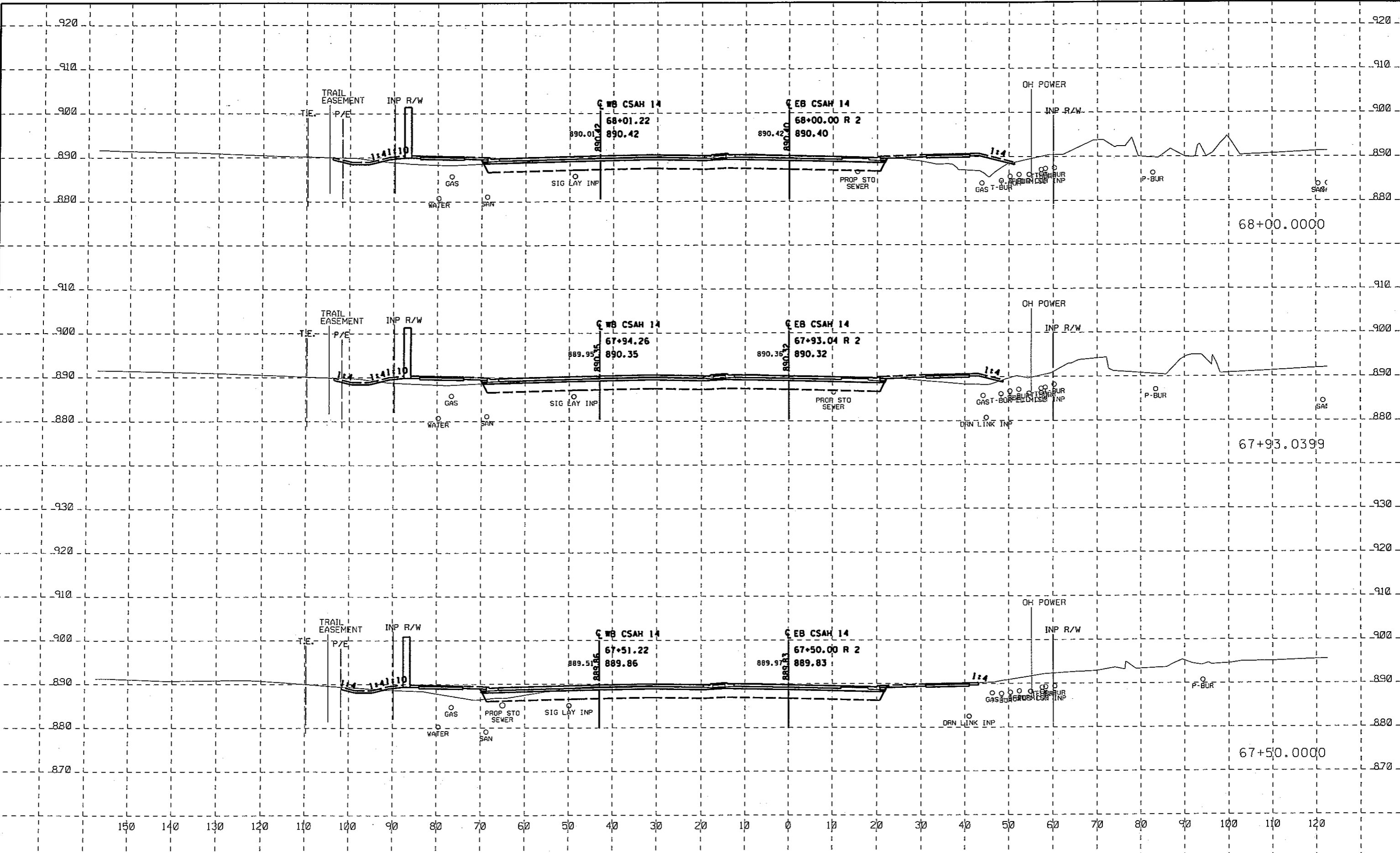
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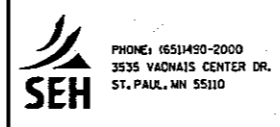
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ANOKA COUNTY
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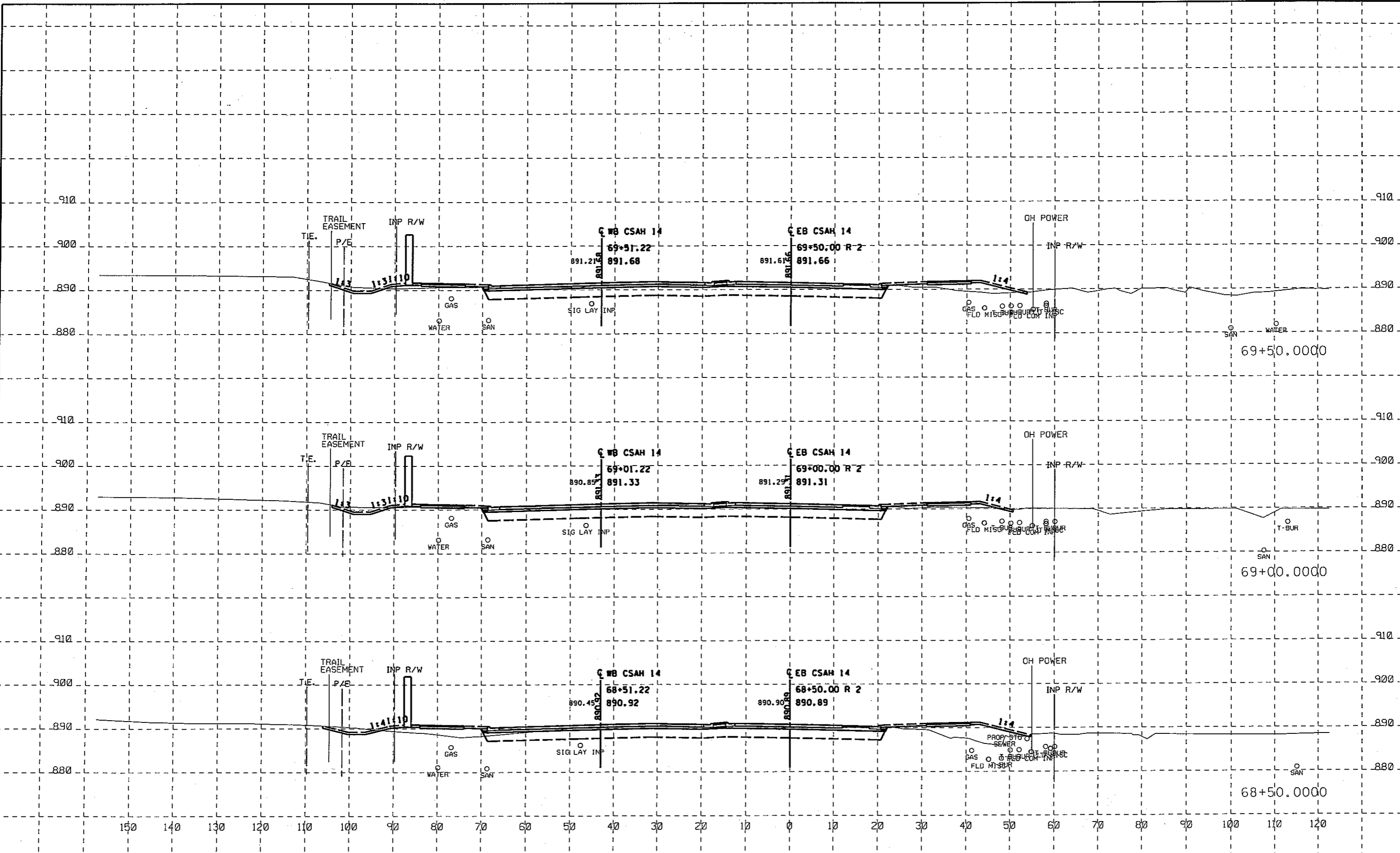
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OF XS76	

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ANOKA COUNTY
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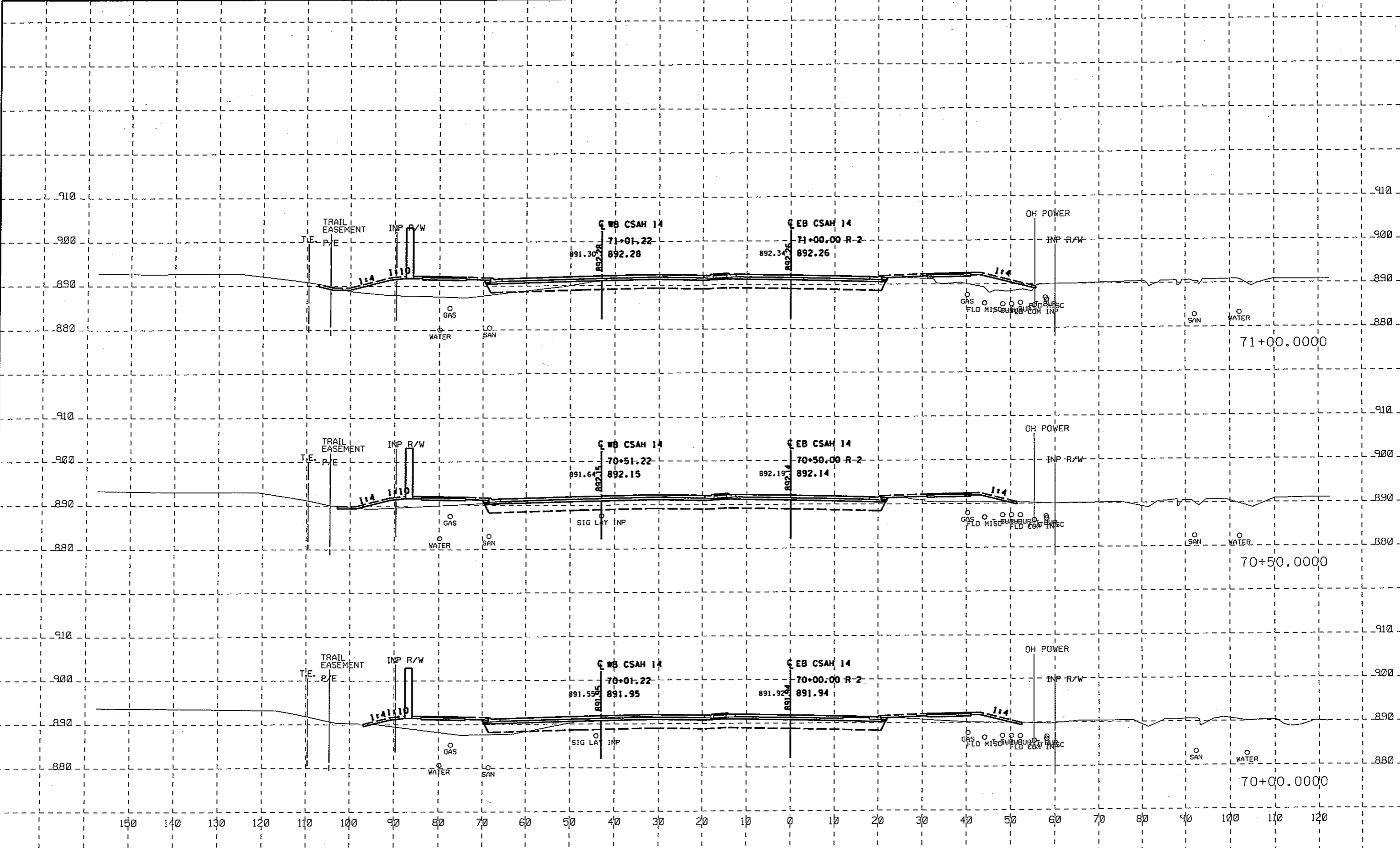
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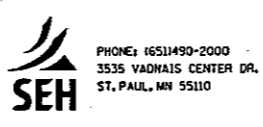
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ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

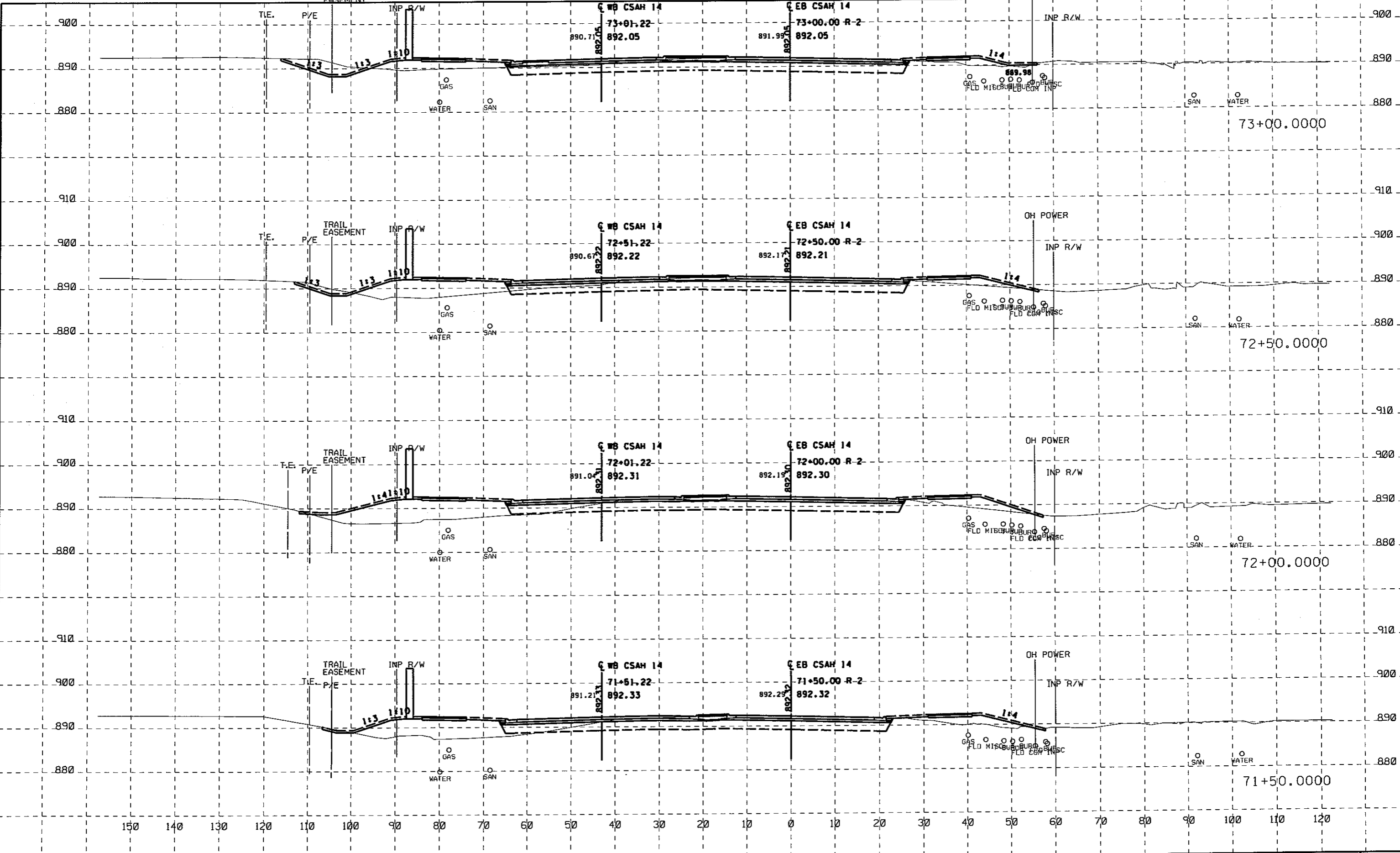
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FILE NO.
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XS47
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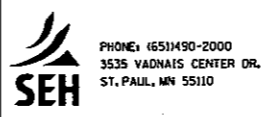
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4/1/2010

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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

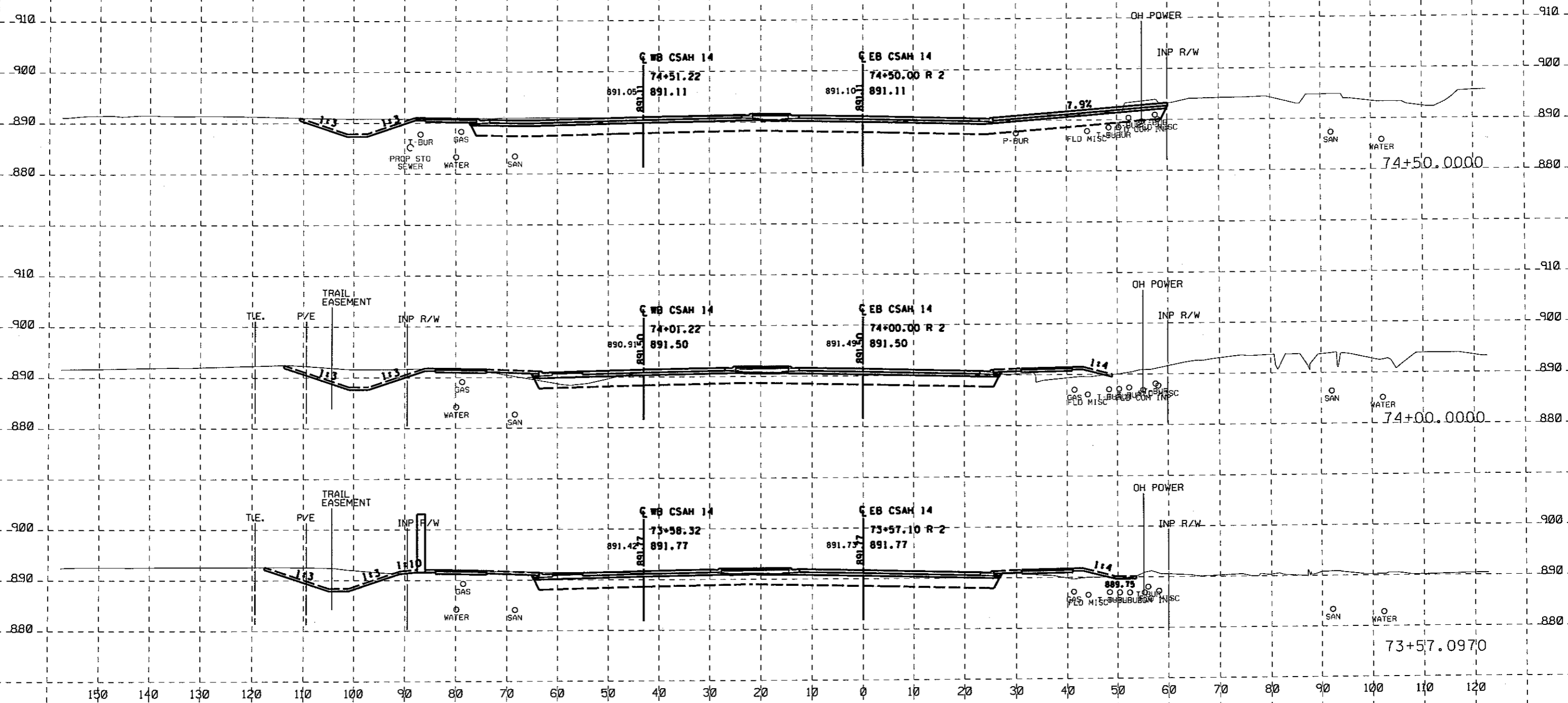
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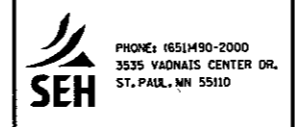
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ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

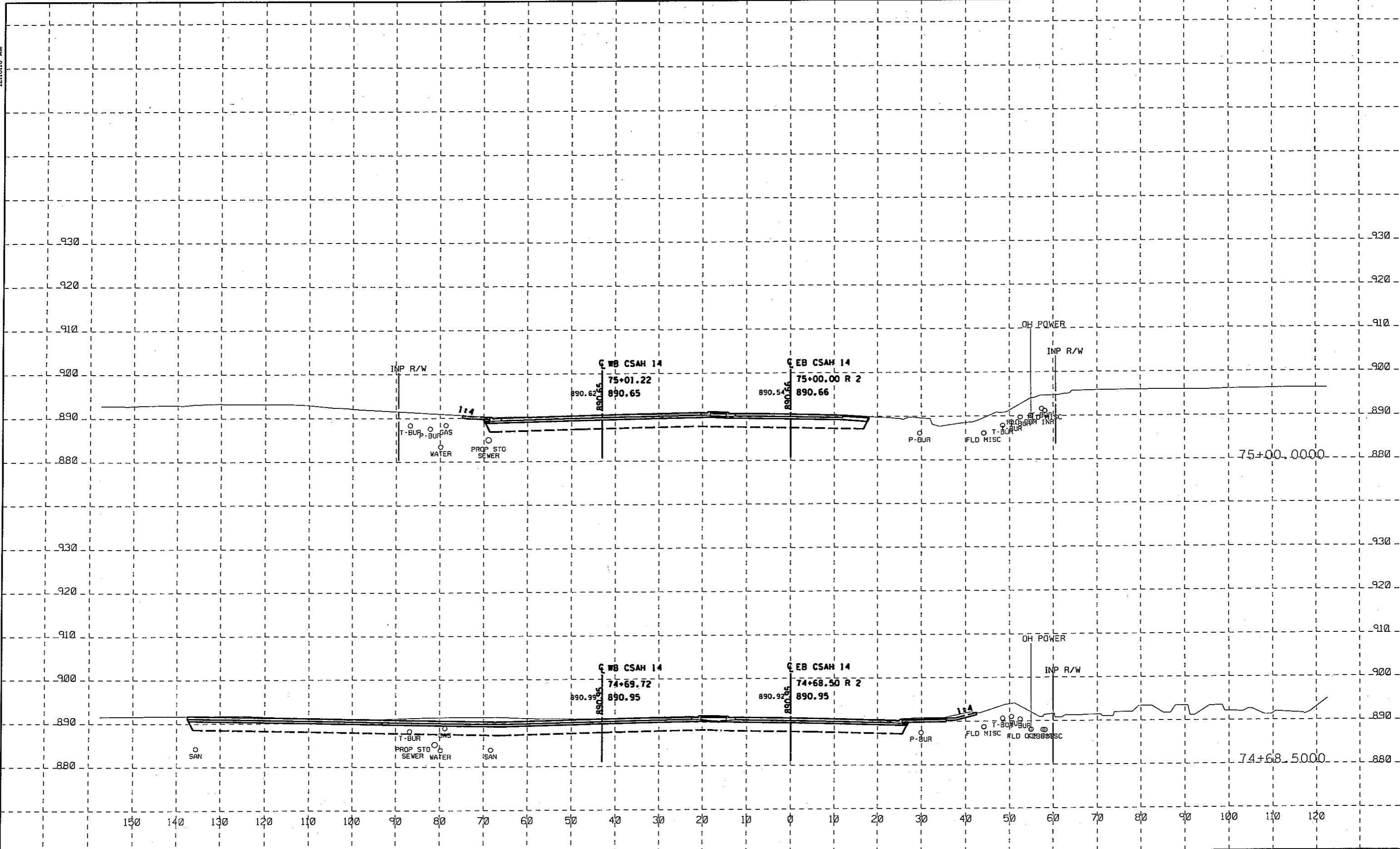
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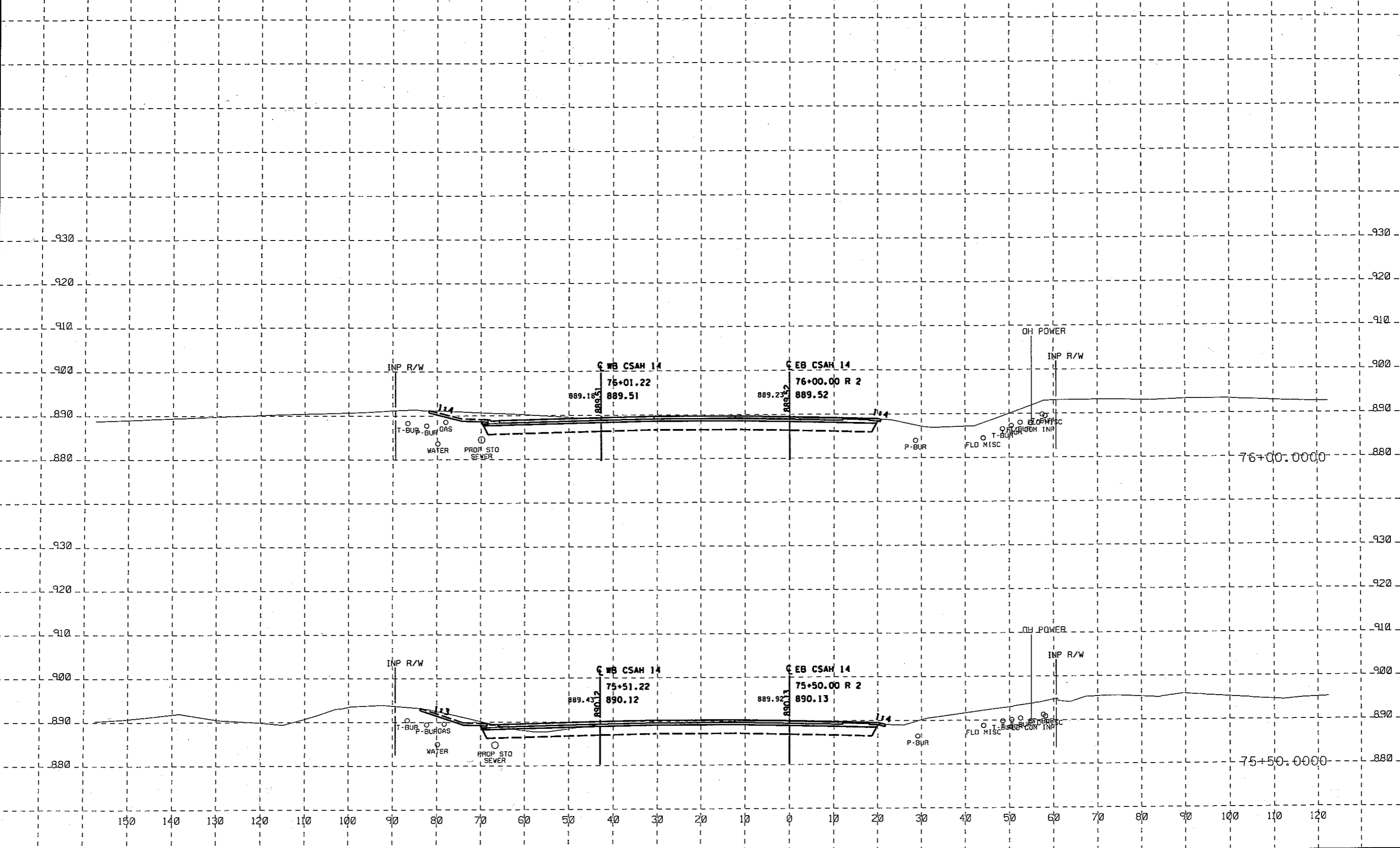
ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

CROSS SECTIONS
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 OF XS76

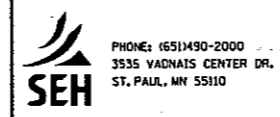
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ANOKA COUNTY
CSAH 14
S.P. 02-614-32

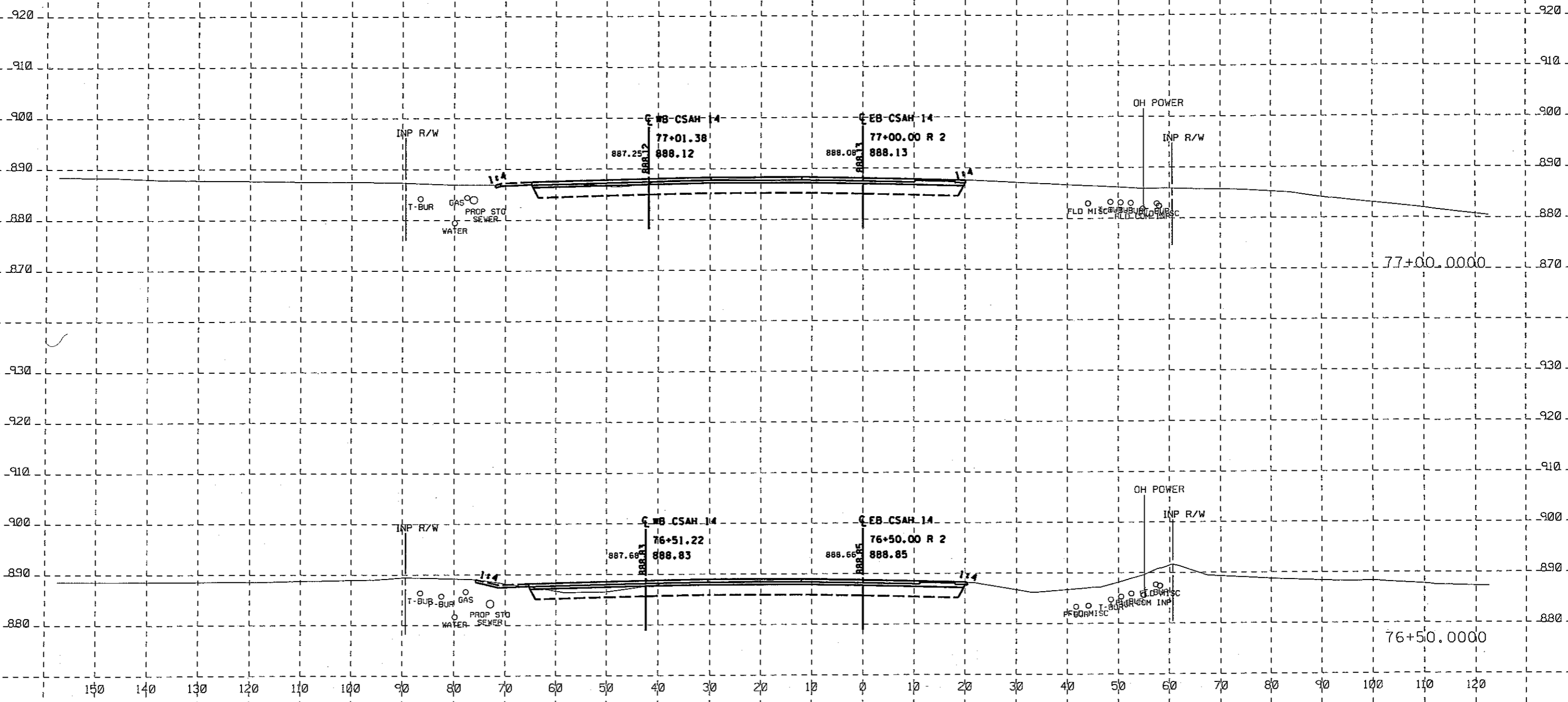
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ANOKA COUNTY
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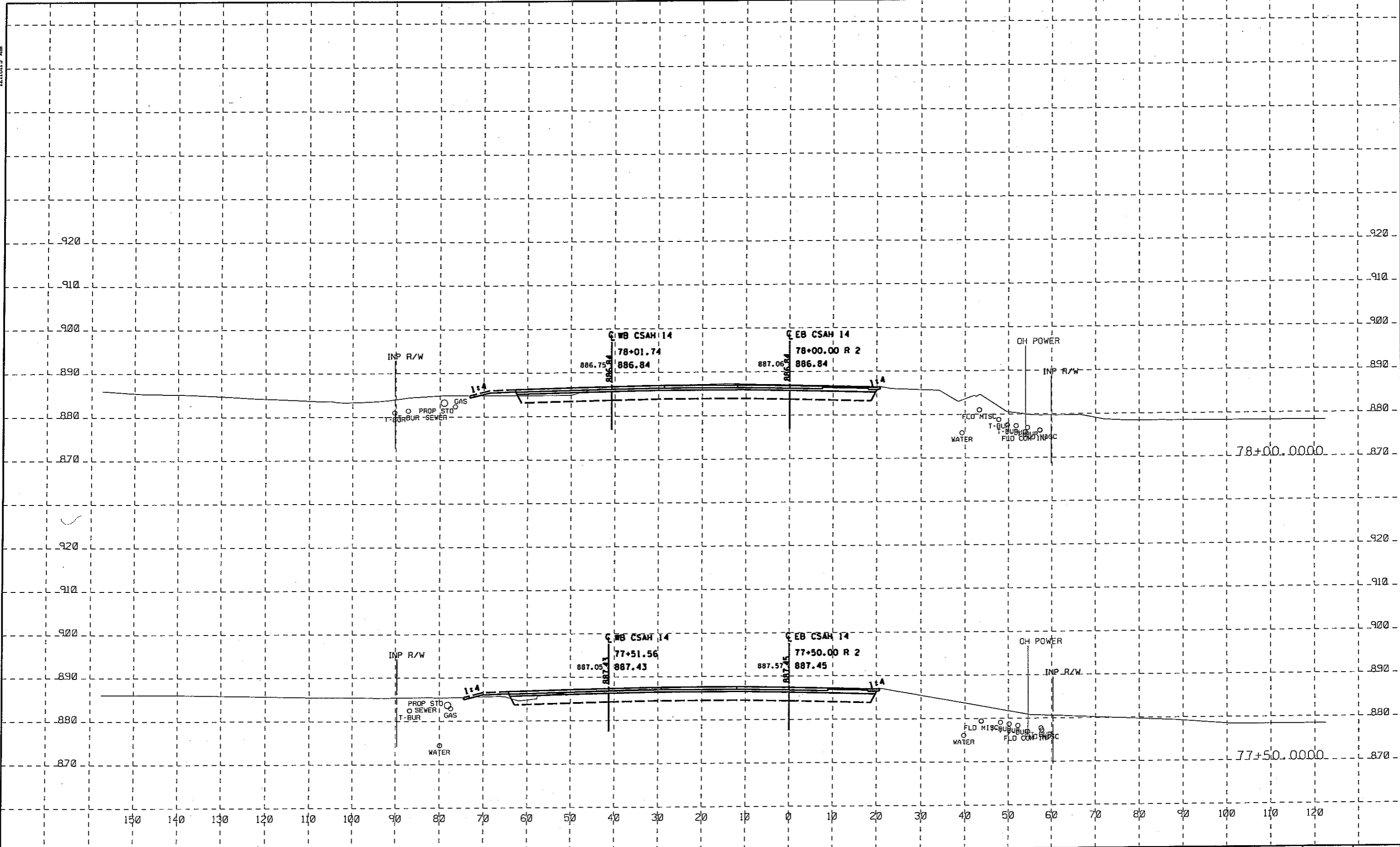
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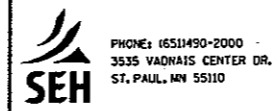
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ANOKA COUNTY
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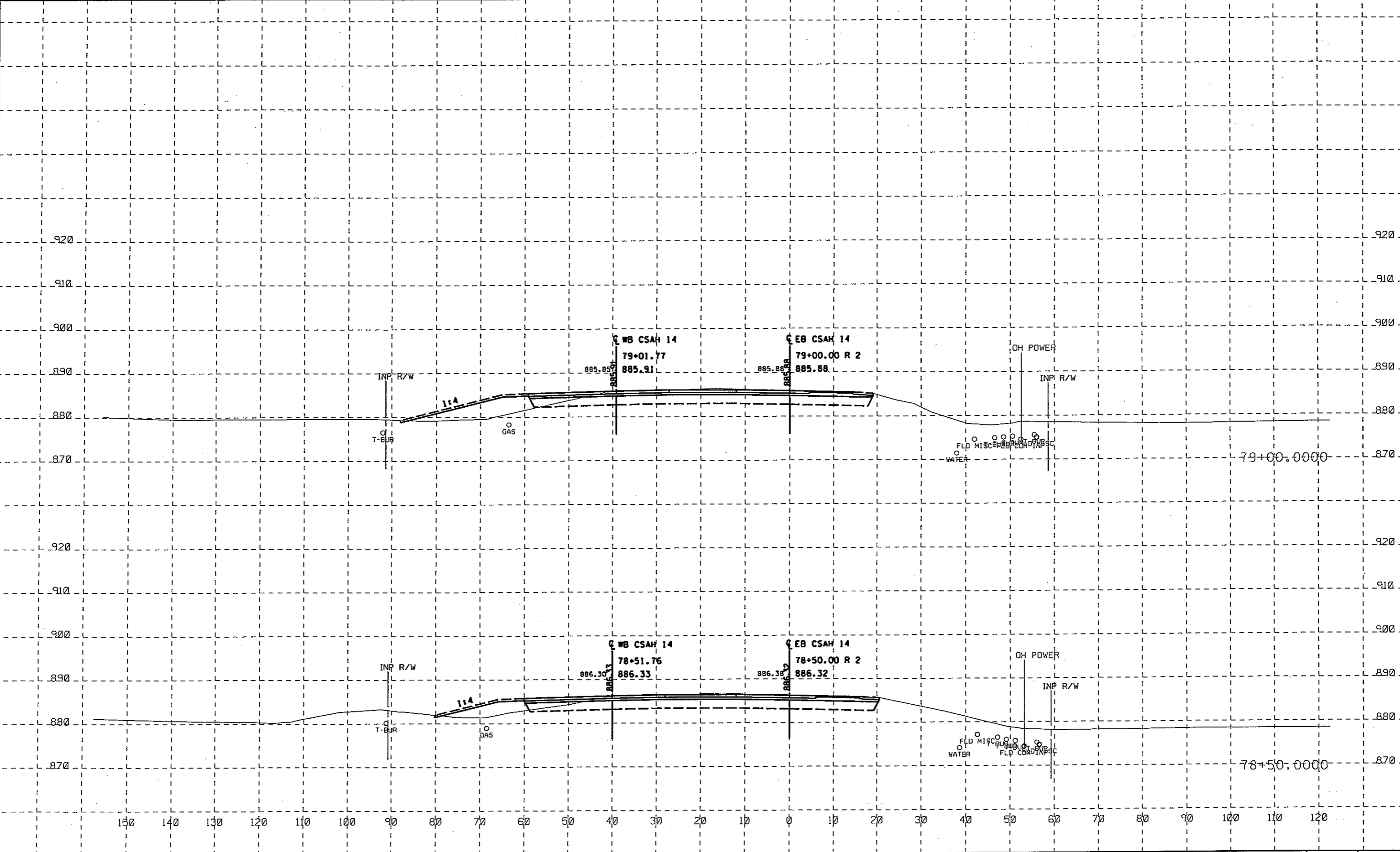
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 OF X576

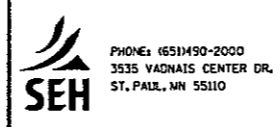
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ANOKA COUNTY
CSAH 14
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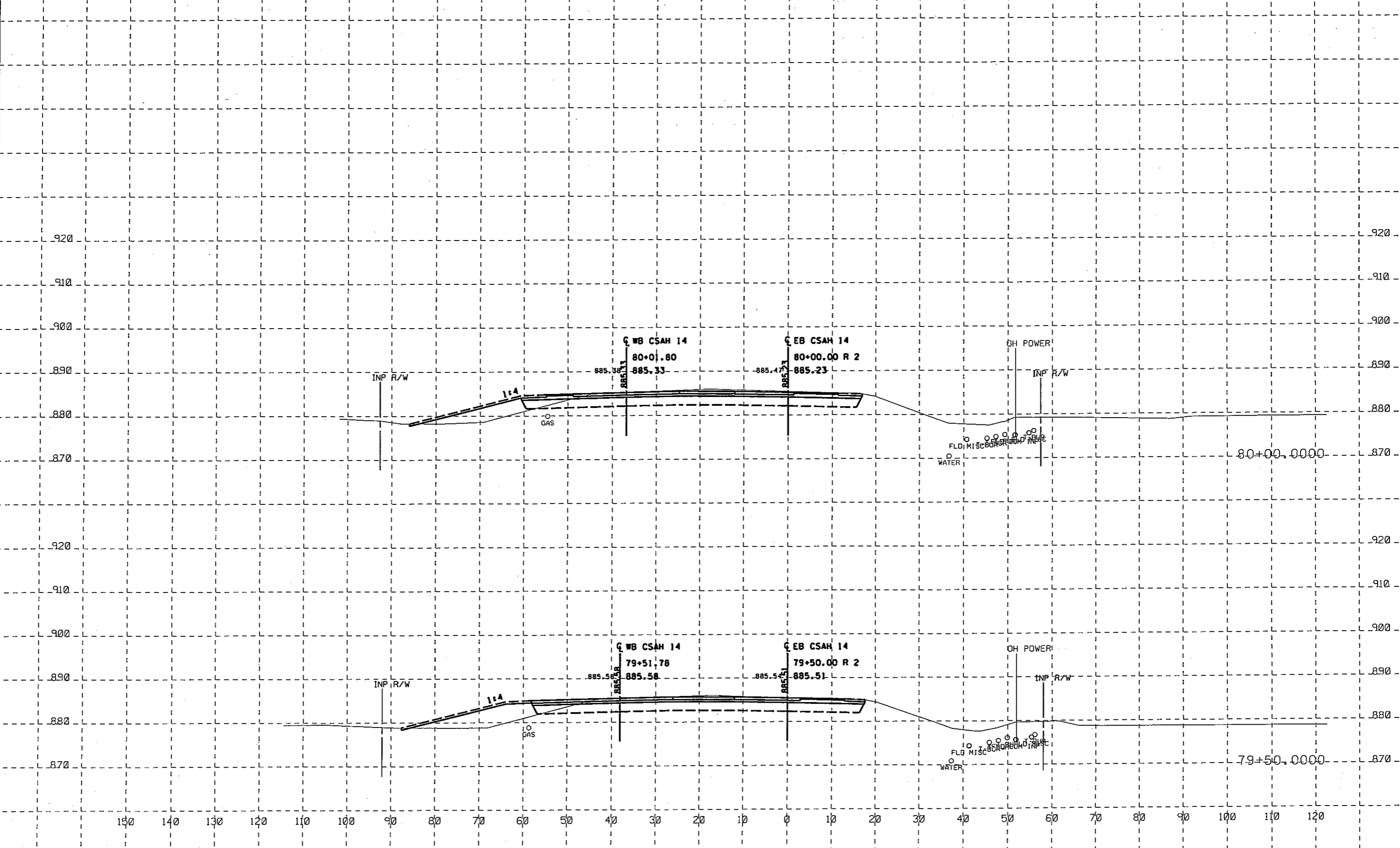
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 S.P. 02-614-32

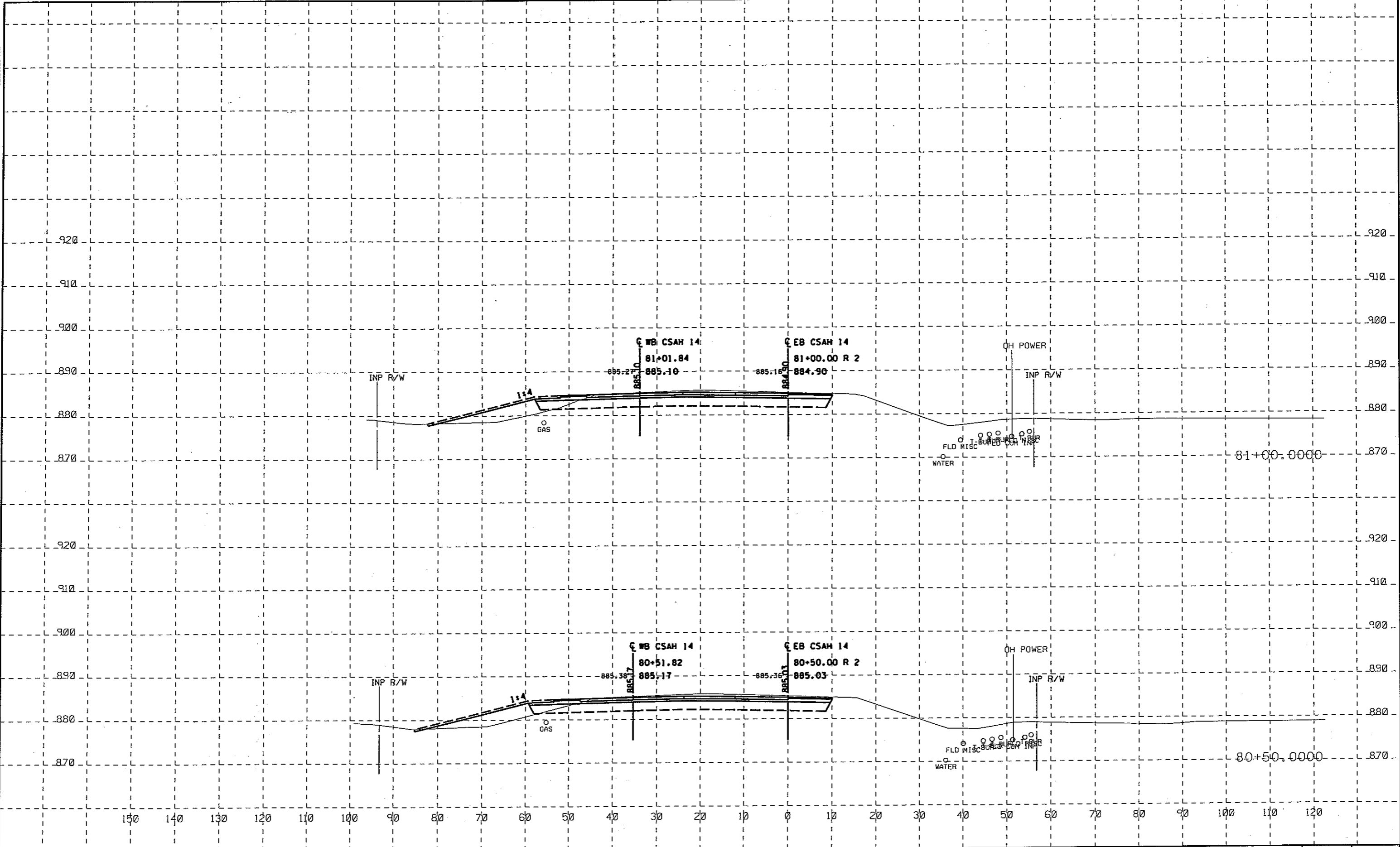
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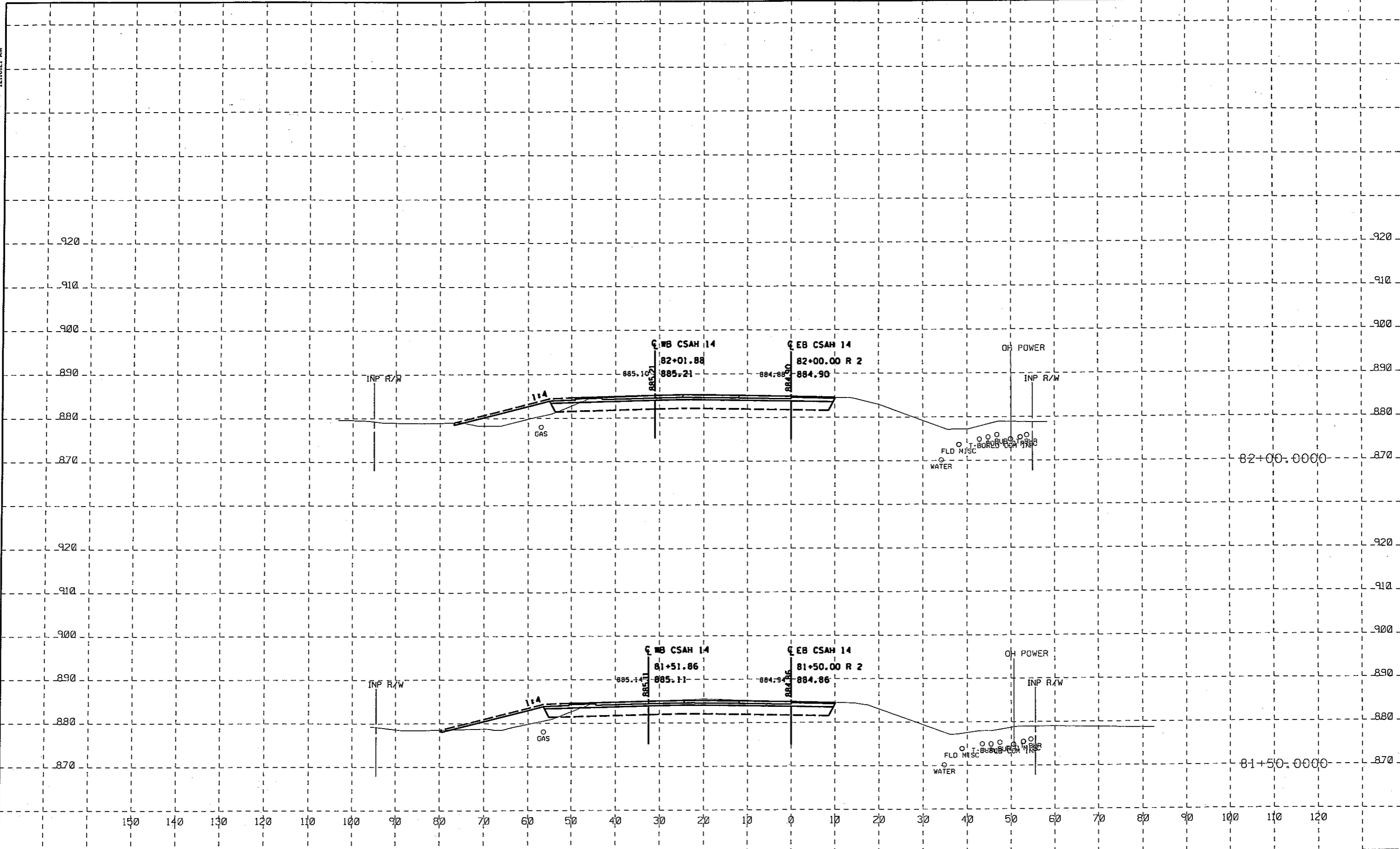
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12/18/21 AM

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S.P. 02-614-32

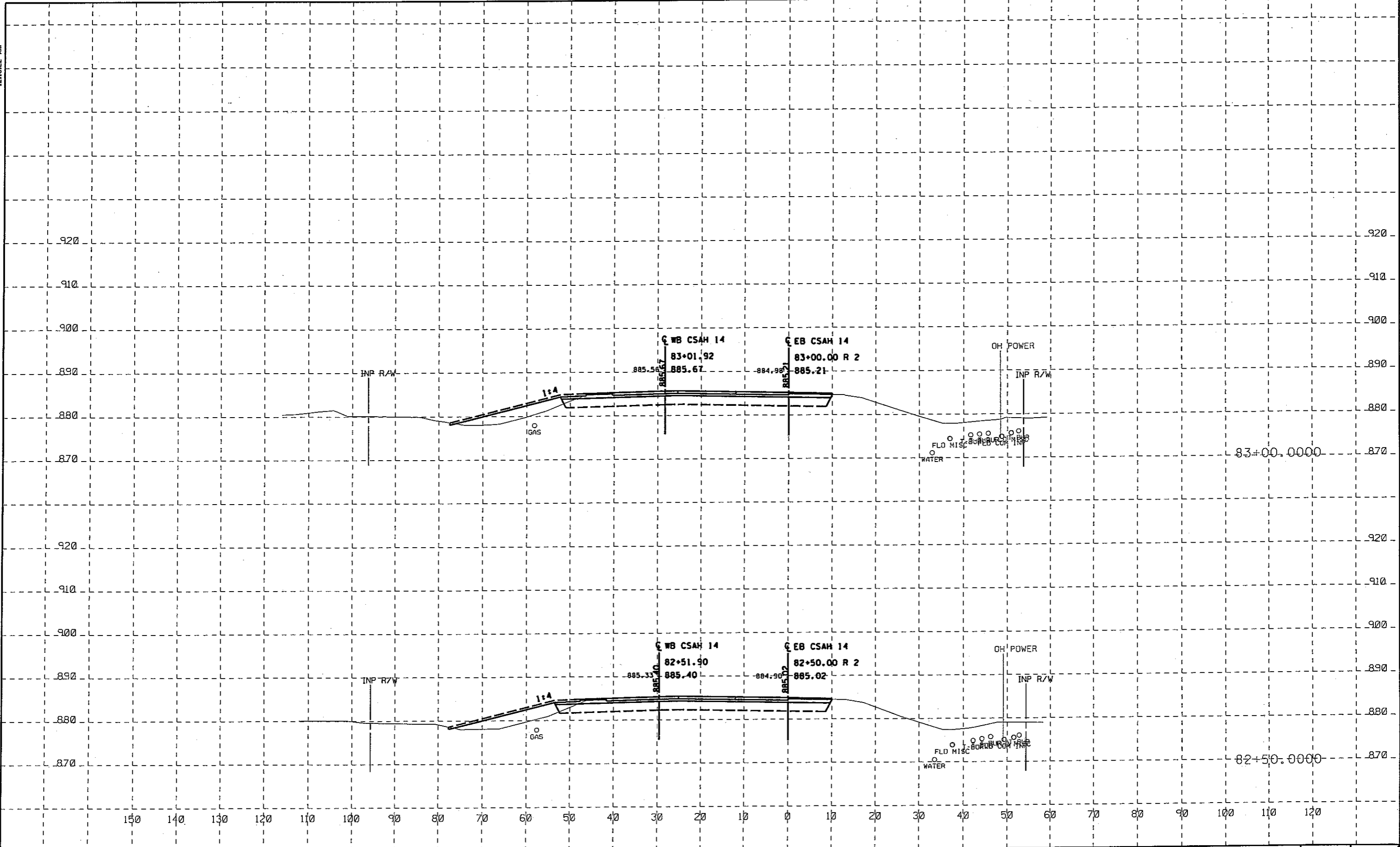
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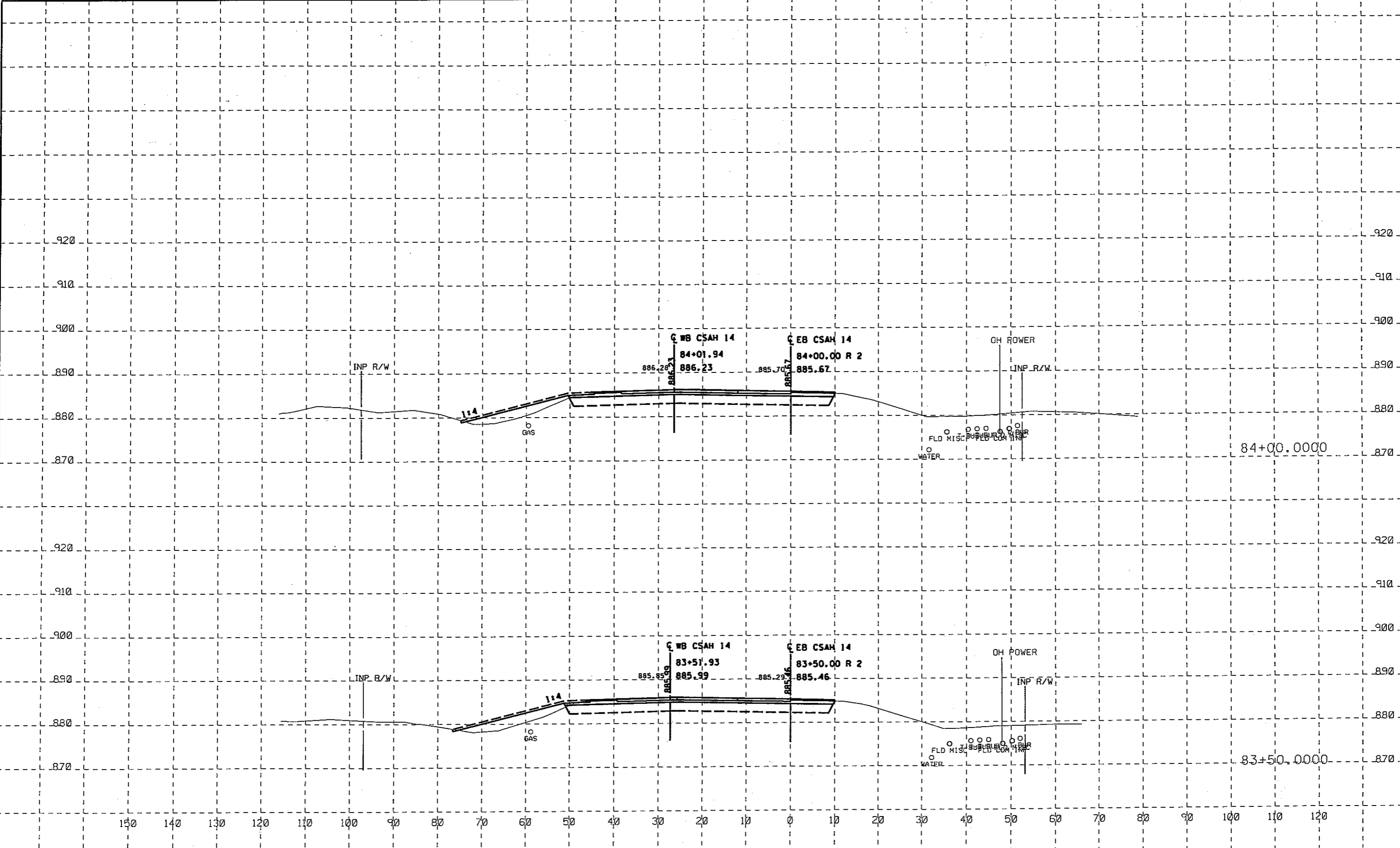
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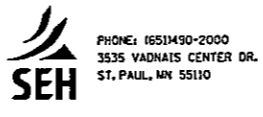
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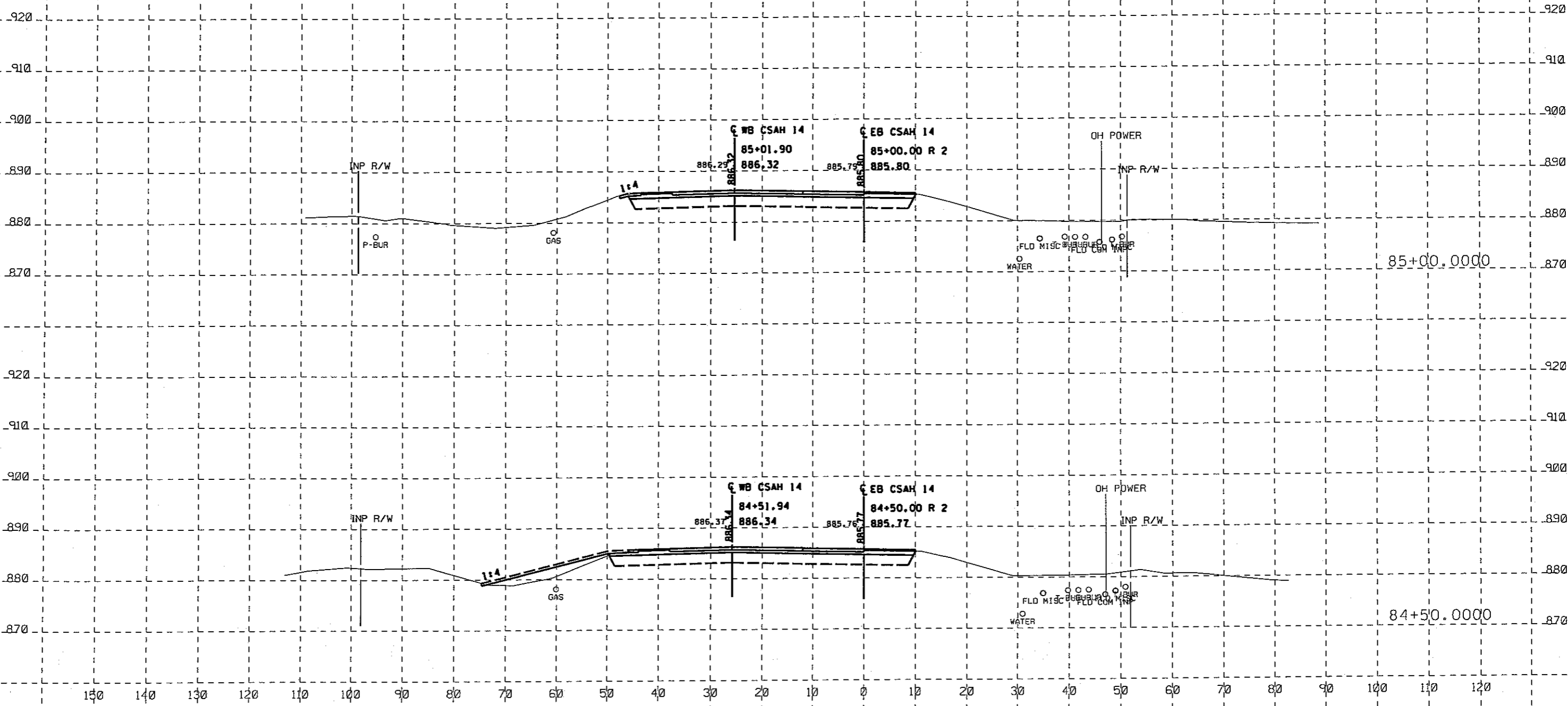
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 3535 VADRIS CENTER DR.
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CSAH 14
 S.P. 02-614-32

CROSS SECTIONS

FILE NO.
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XS60
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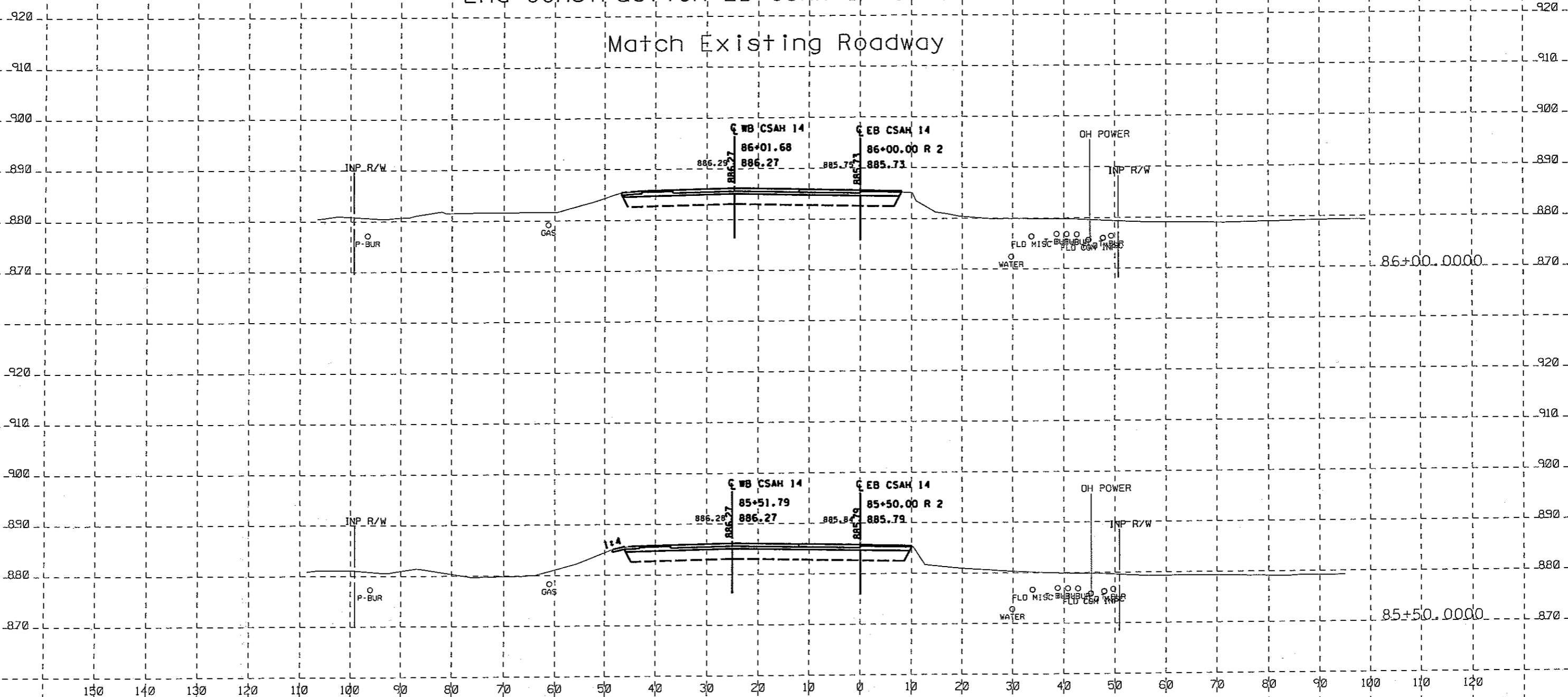
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End Construction EB CSAH 14 Sta. 86+00.00

Match Existing Roadway



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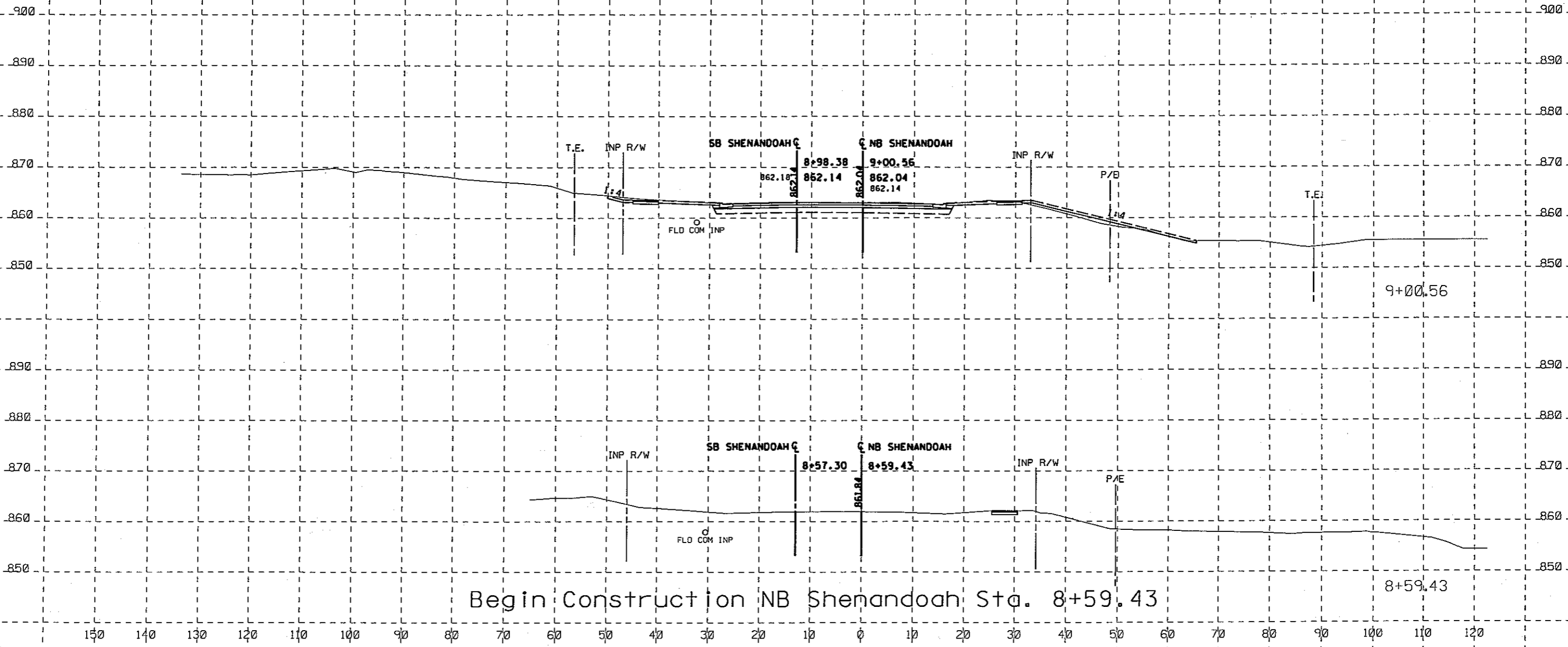


ANOKA COUNTY
CSAH 14
 S.P. 02-614-32

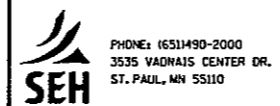
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FILE NO.
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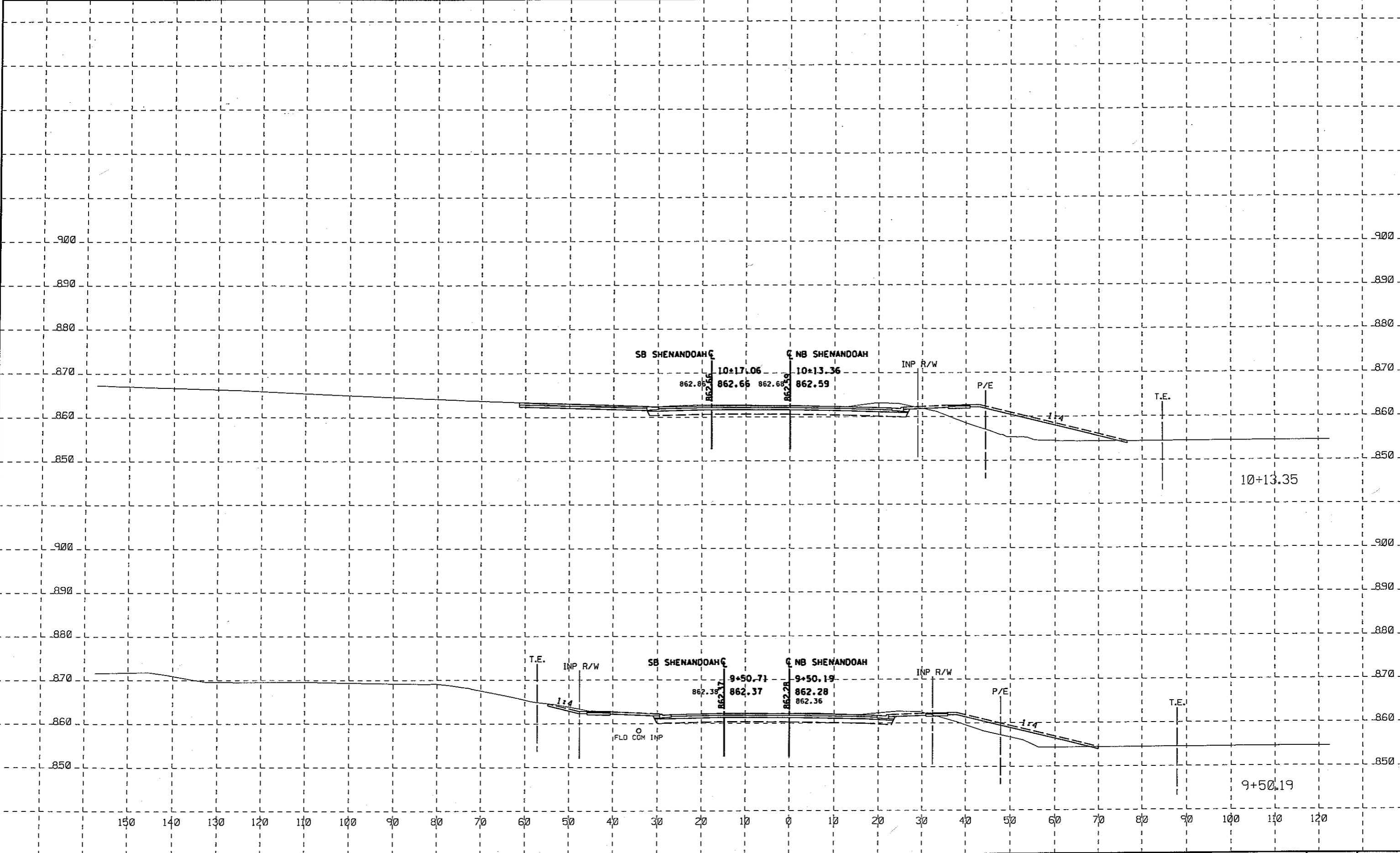


ANOKA COUNTY
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S.P. 02-614-32

CROSS SECTIONS

FILE NO.
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OF X576

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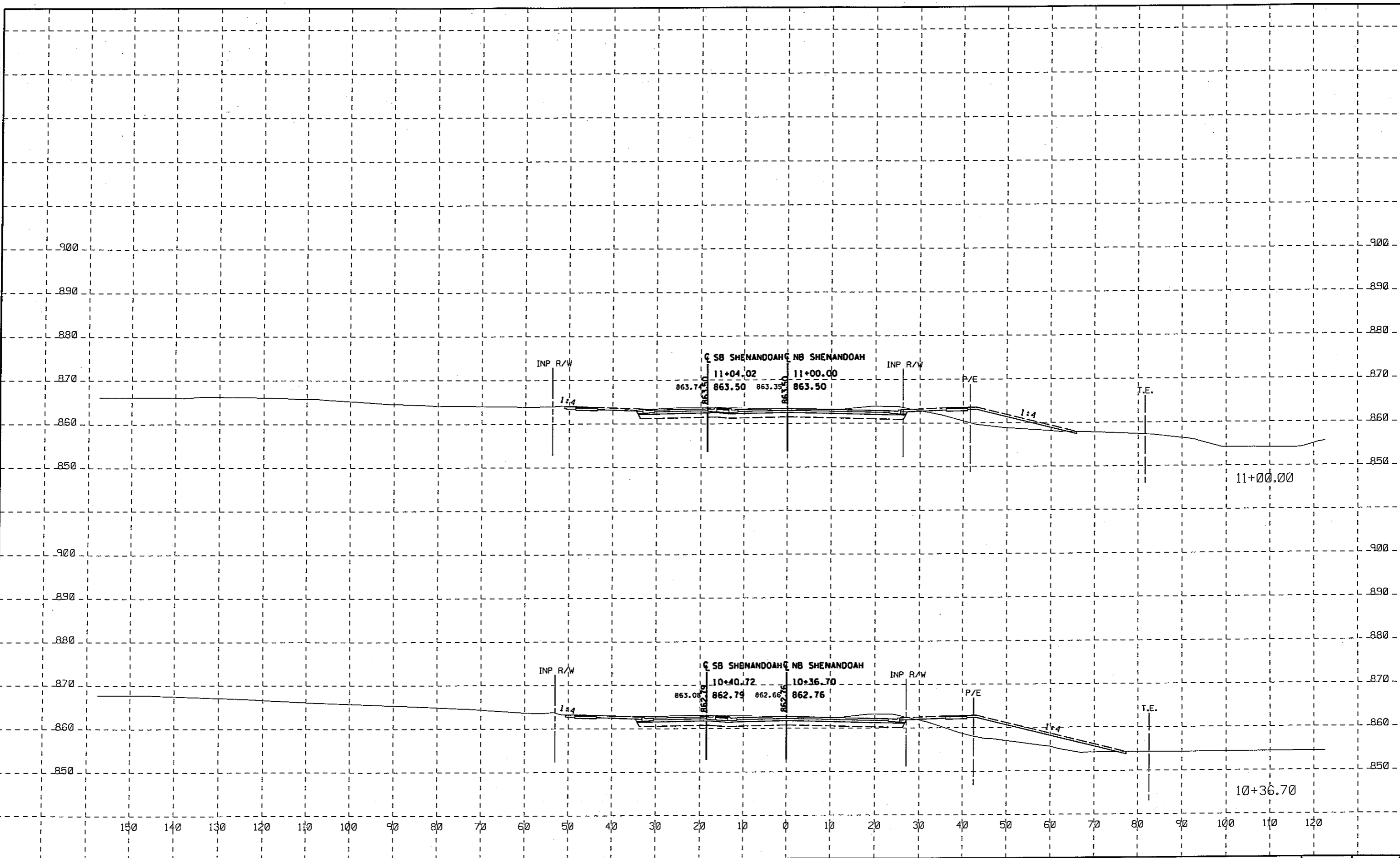
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ANOKA COUNTY
SHENANDOAH BLVD.
 S.P. 02-614-32

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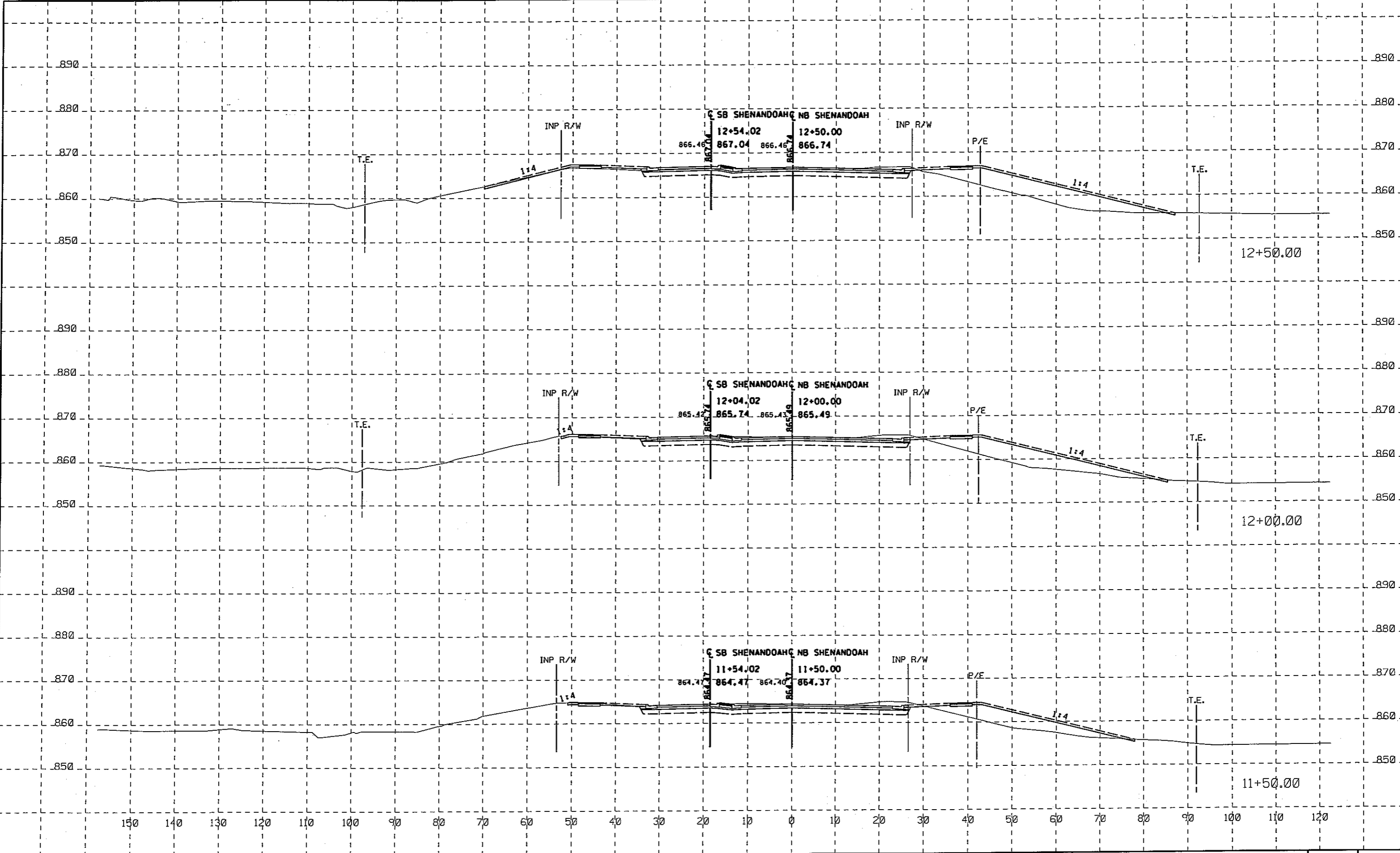


ANOKA COUNTY
SHENANDOAH BLVD.
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CROSS SECTIONS

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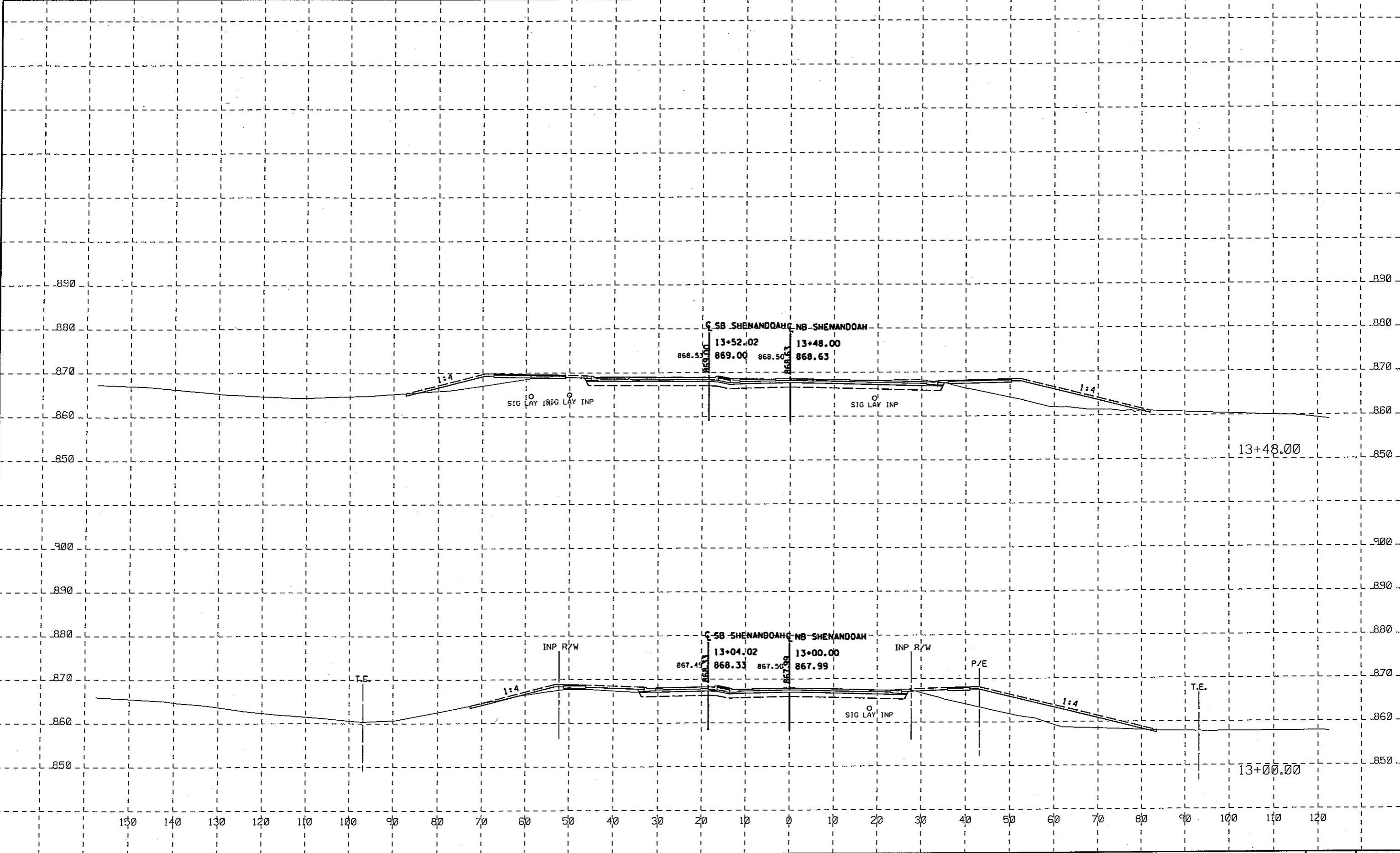
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SHENANDOAH BLVD.
 S.P. 02-614-32

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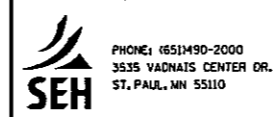
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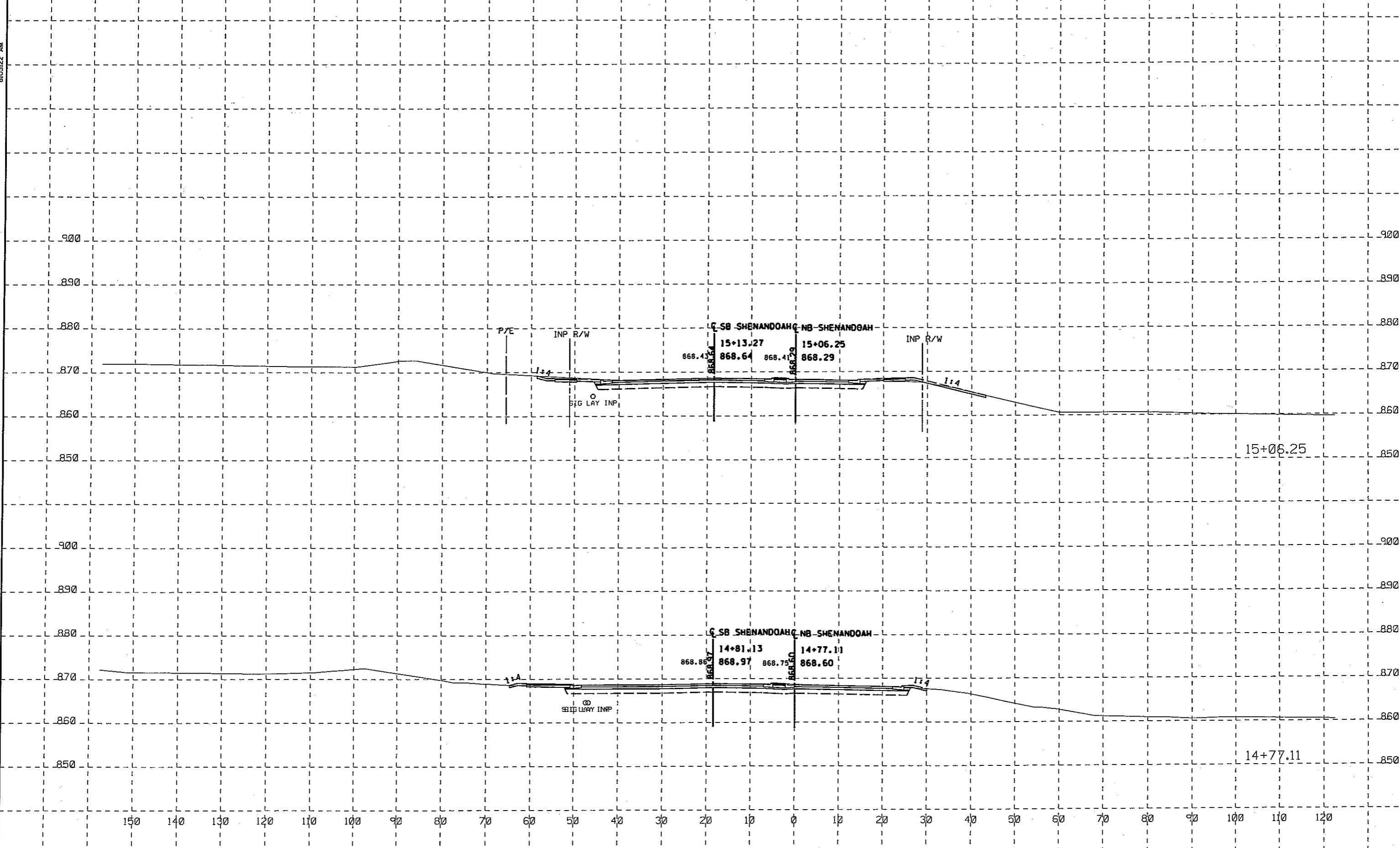
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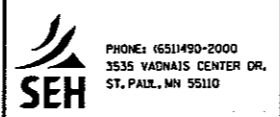
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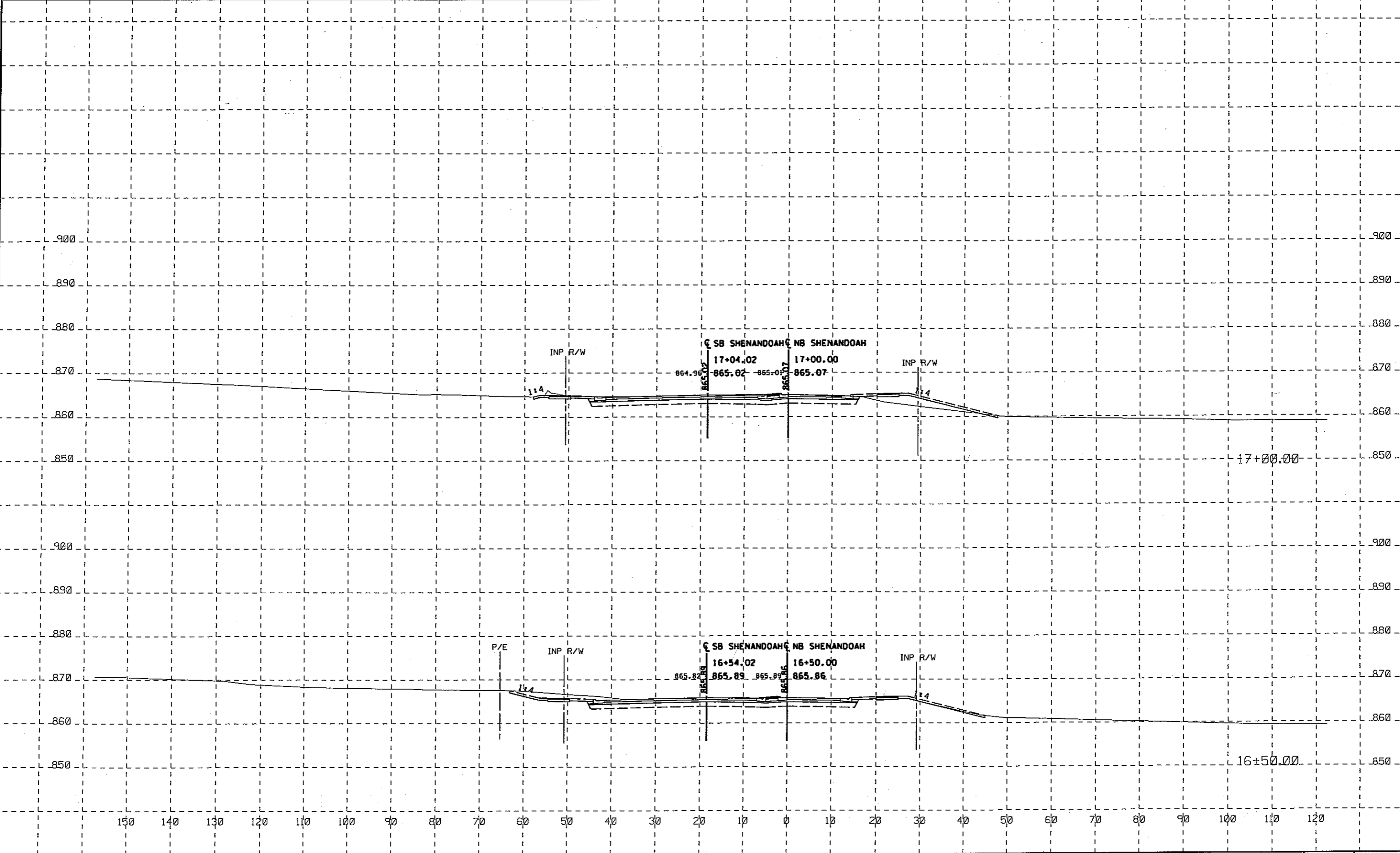
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SHENANDOAH BLVD.
S.P. 02-614-32

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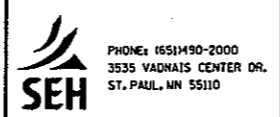
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S.P. 02-614-32

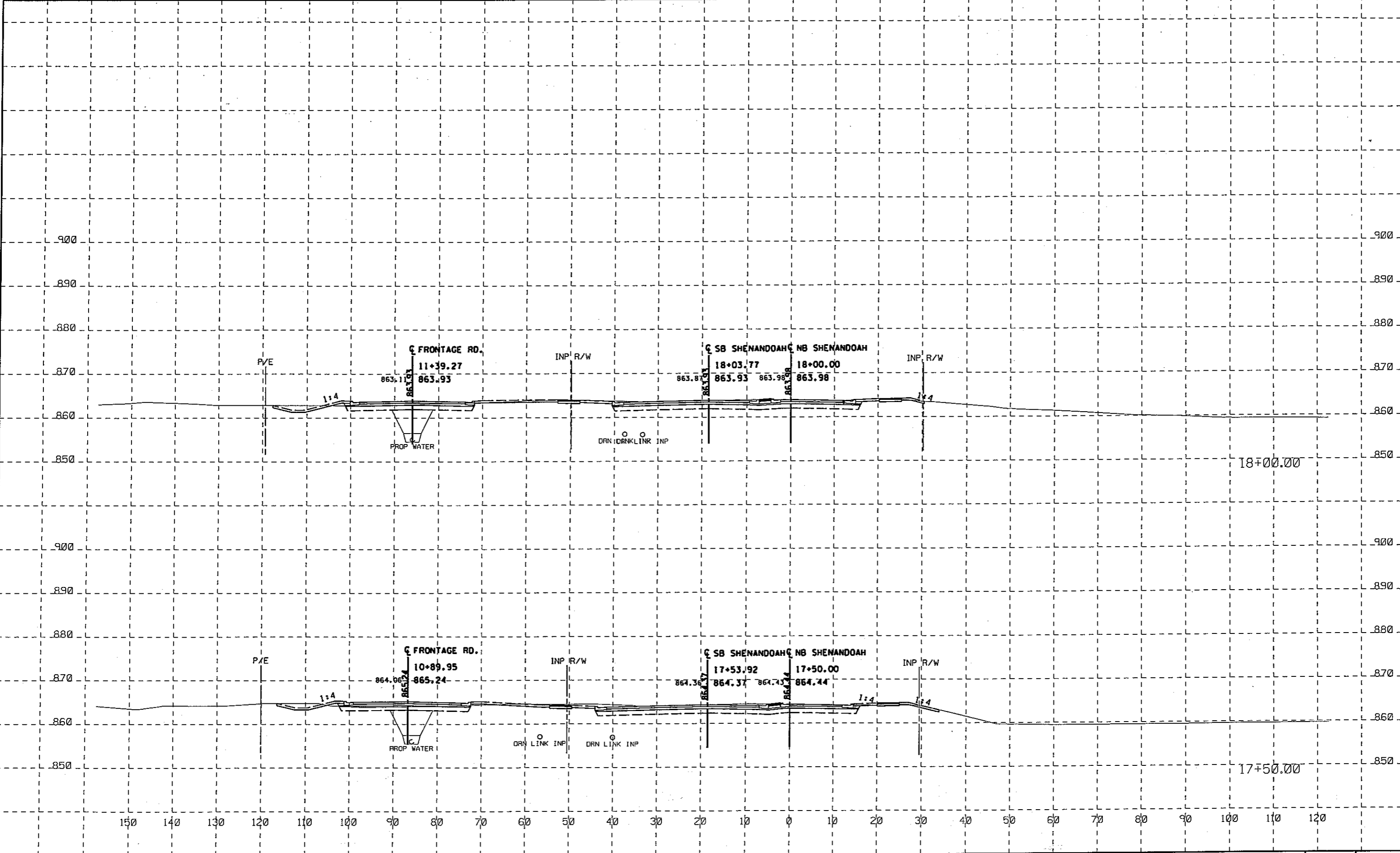
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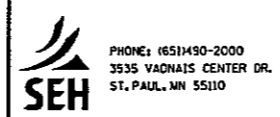
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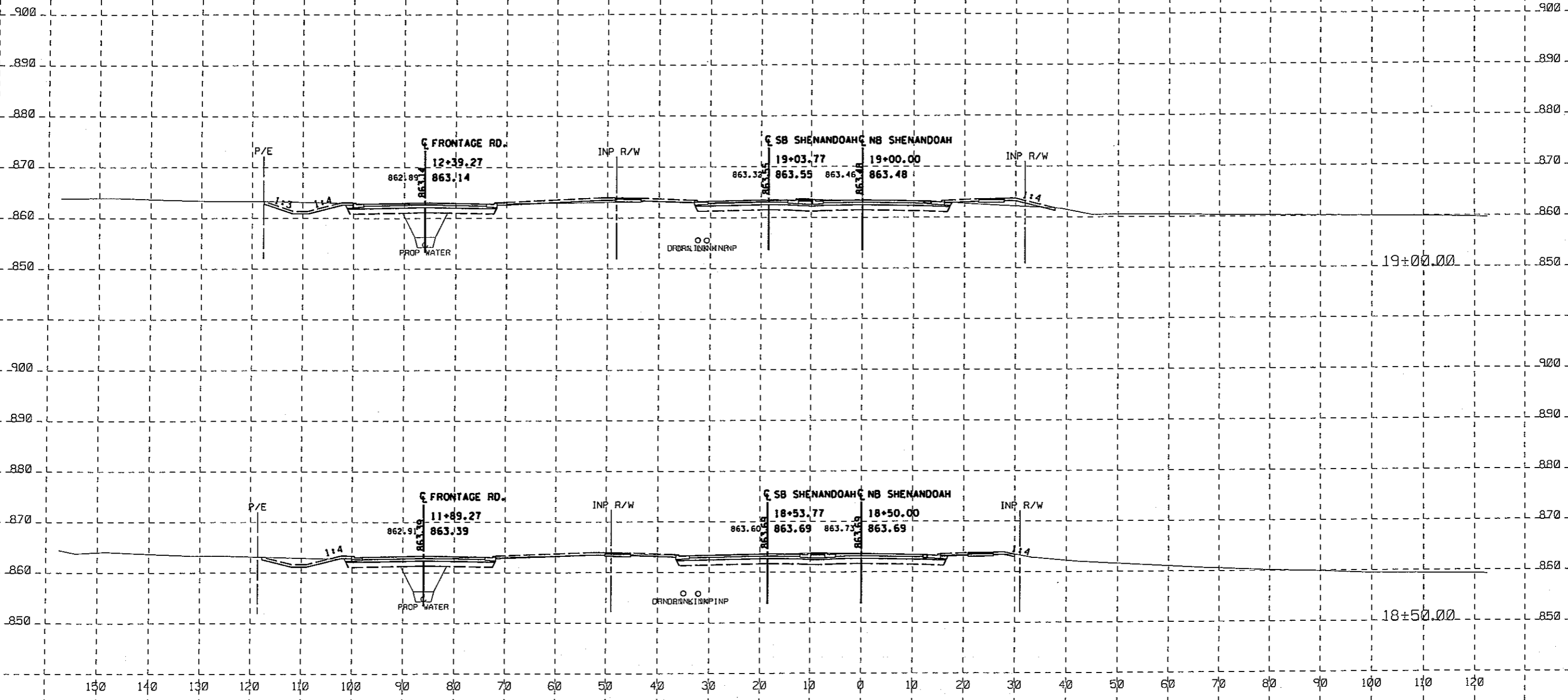


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SHENANDOAH BLVD.
 S.P. 02-614-32

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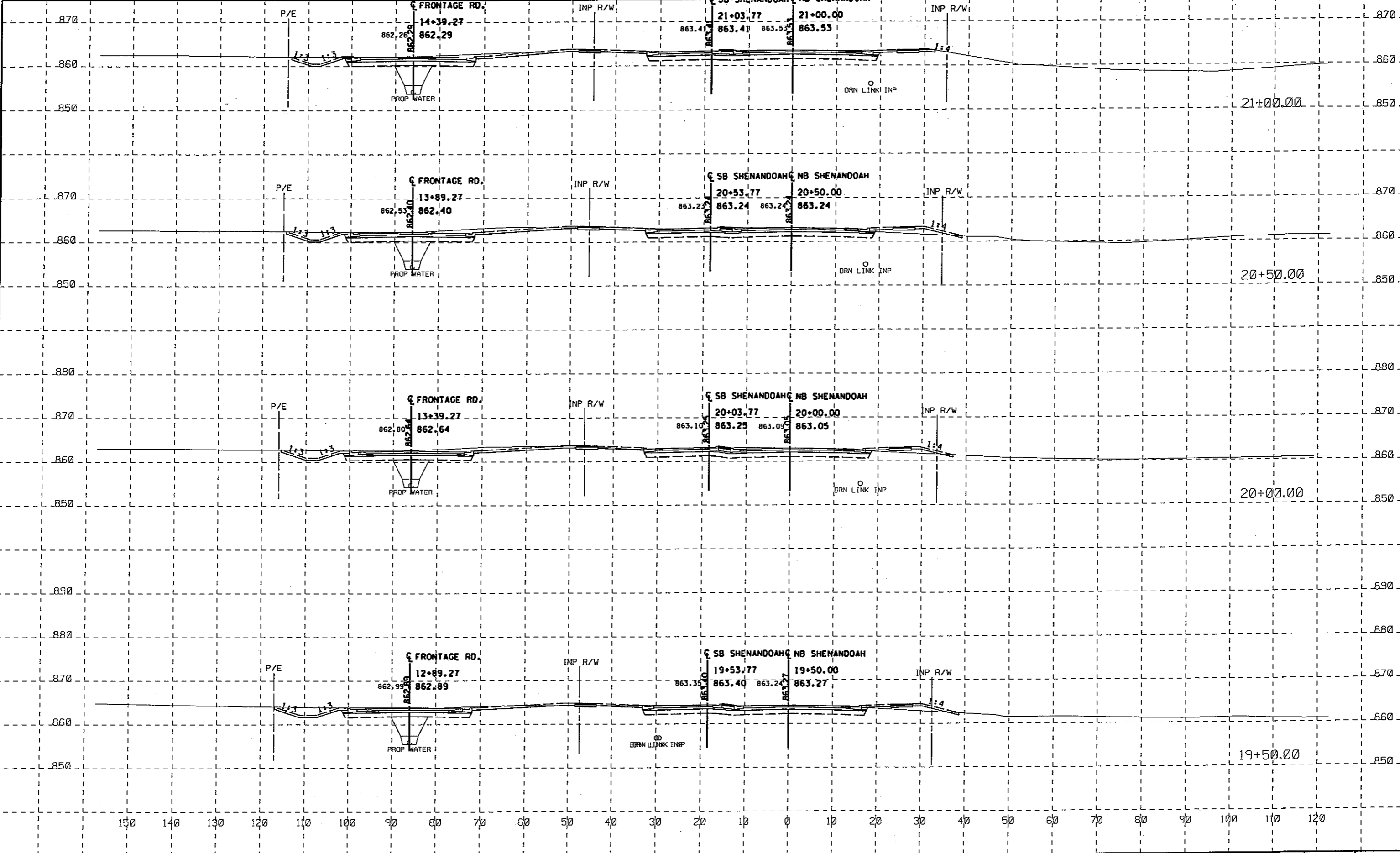


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SHENANDOAH BLVD.**
S.P. 02-614-32

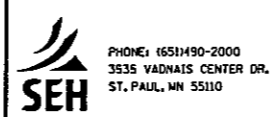
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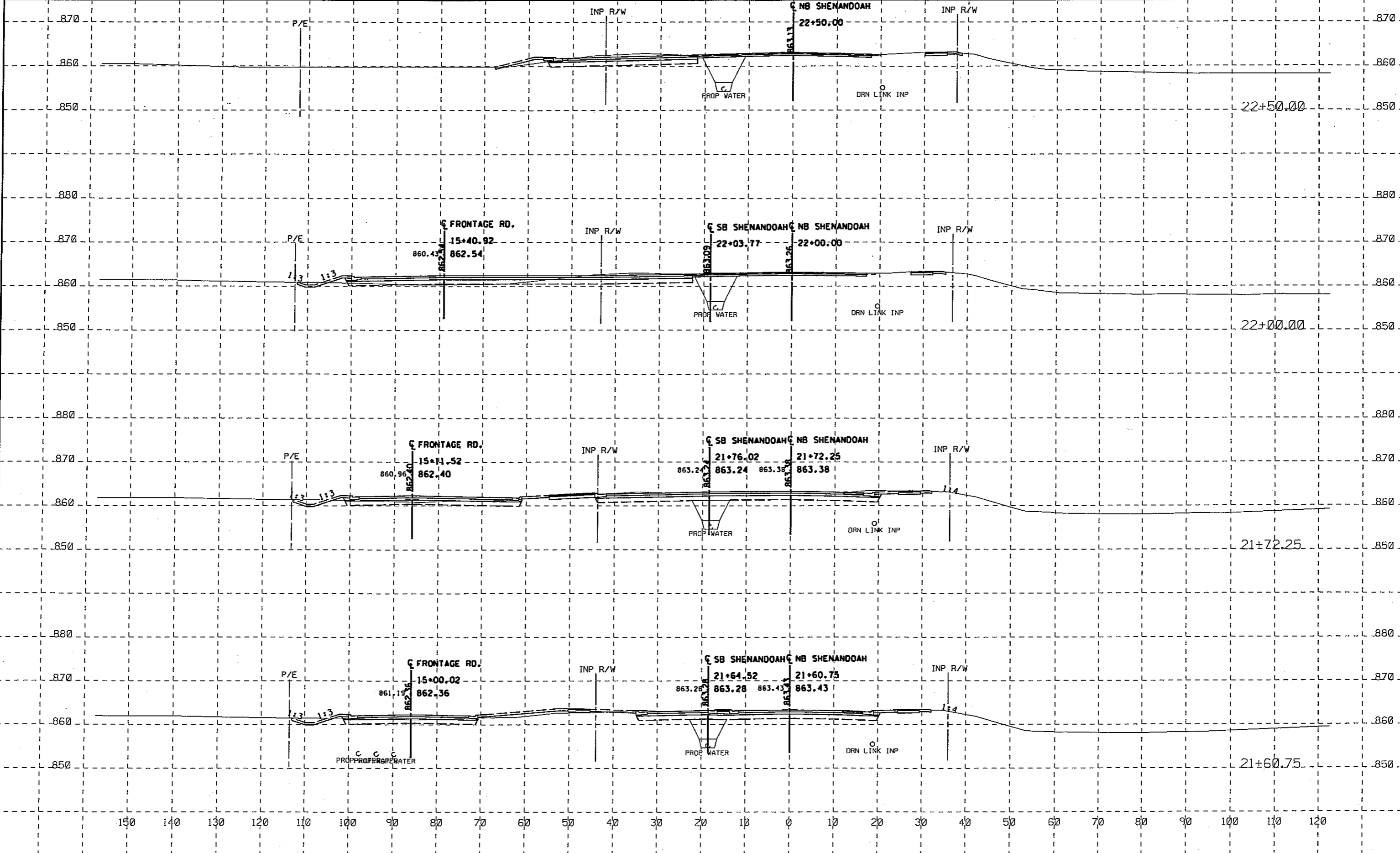
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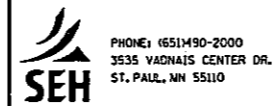
ANOKA COUNTY
 SHENANDOAH BLVD.
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FILE NO.
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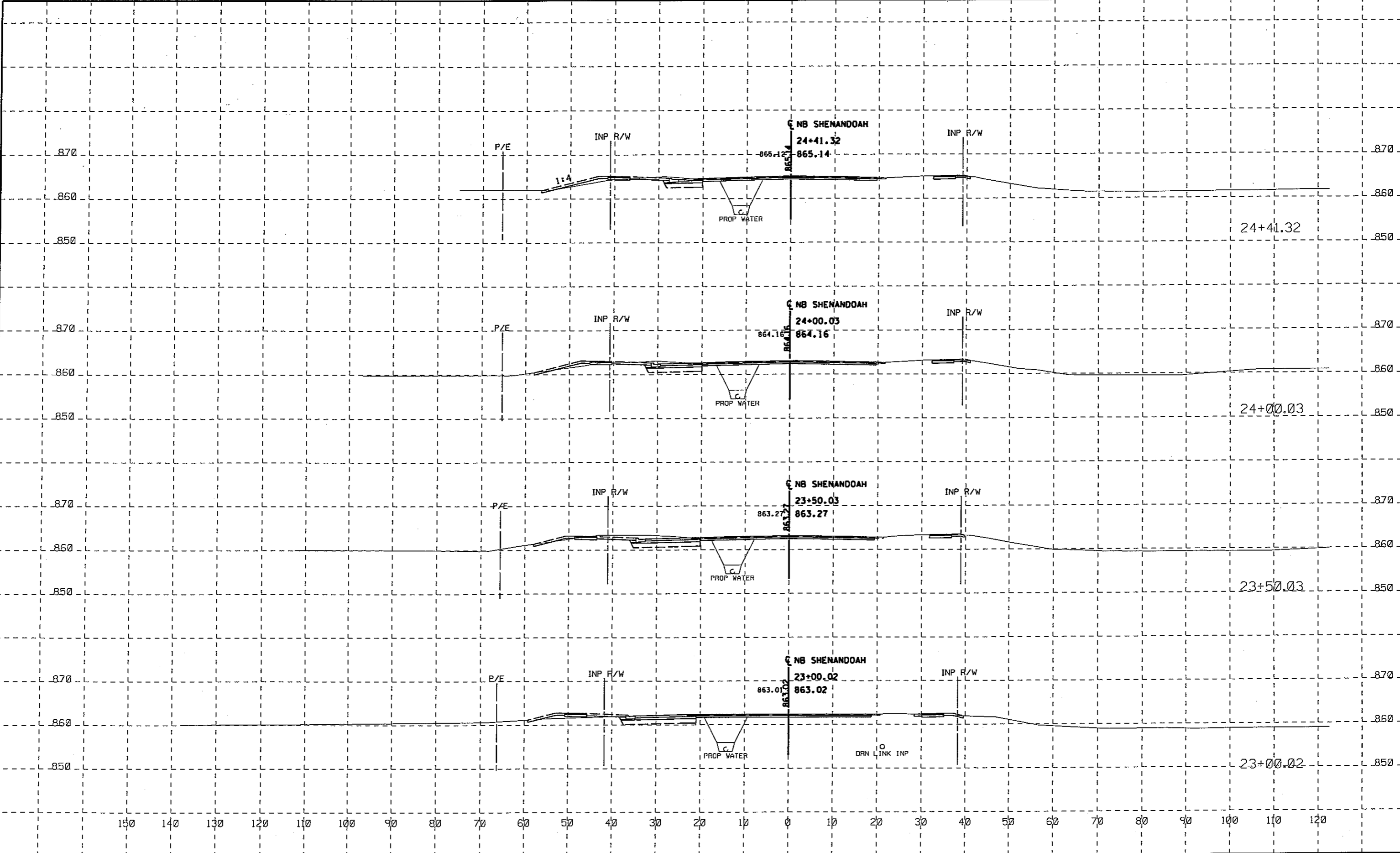


ANOKA COUNTY
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S.P. 02-614-32


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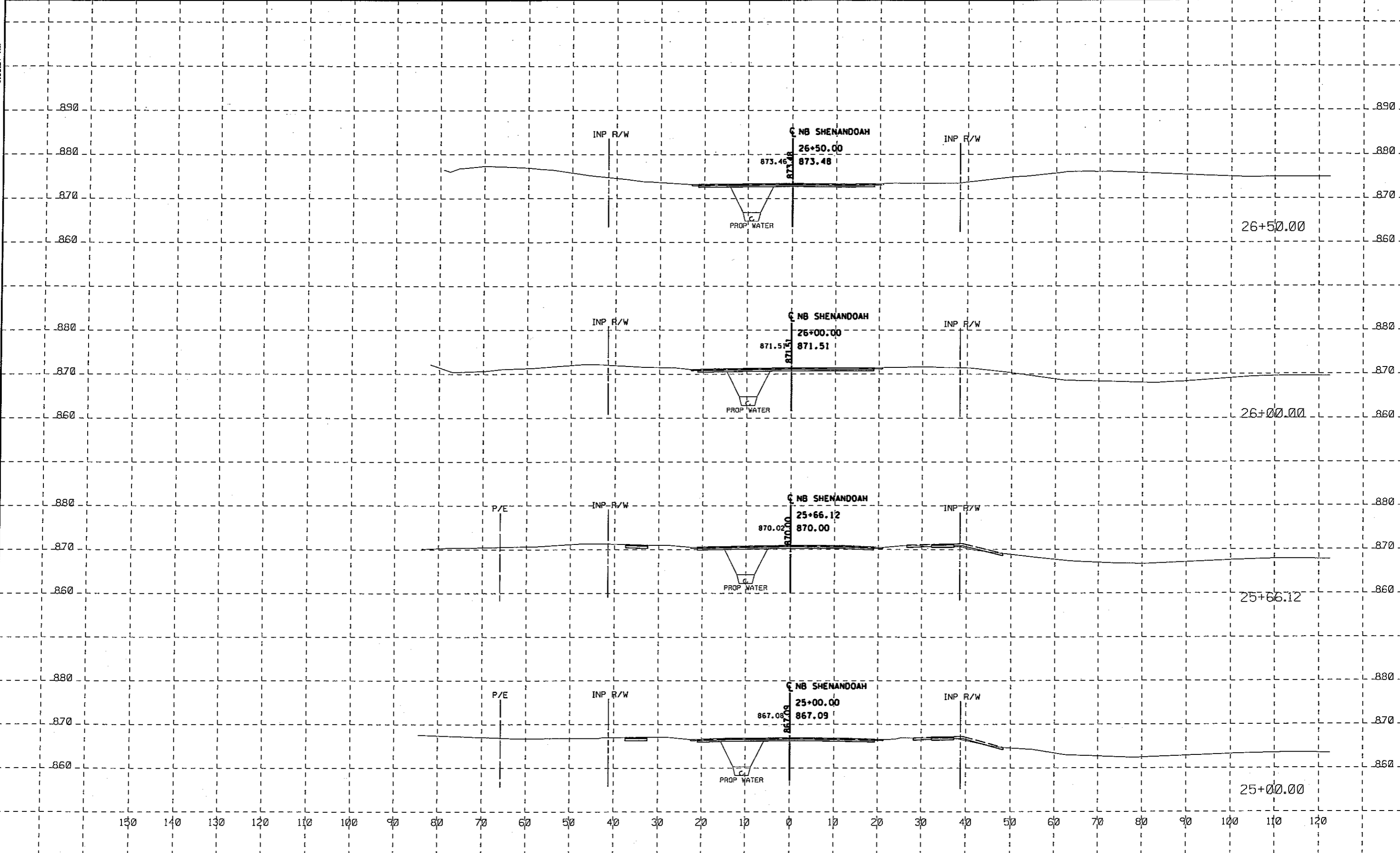


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 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

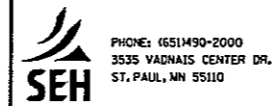
ANOKA COUNTY
SHENANDOAH BLVD.
 S.P. 02-614-32

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XS74
 OF XS76

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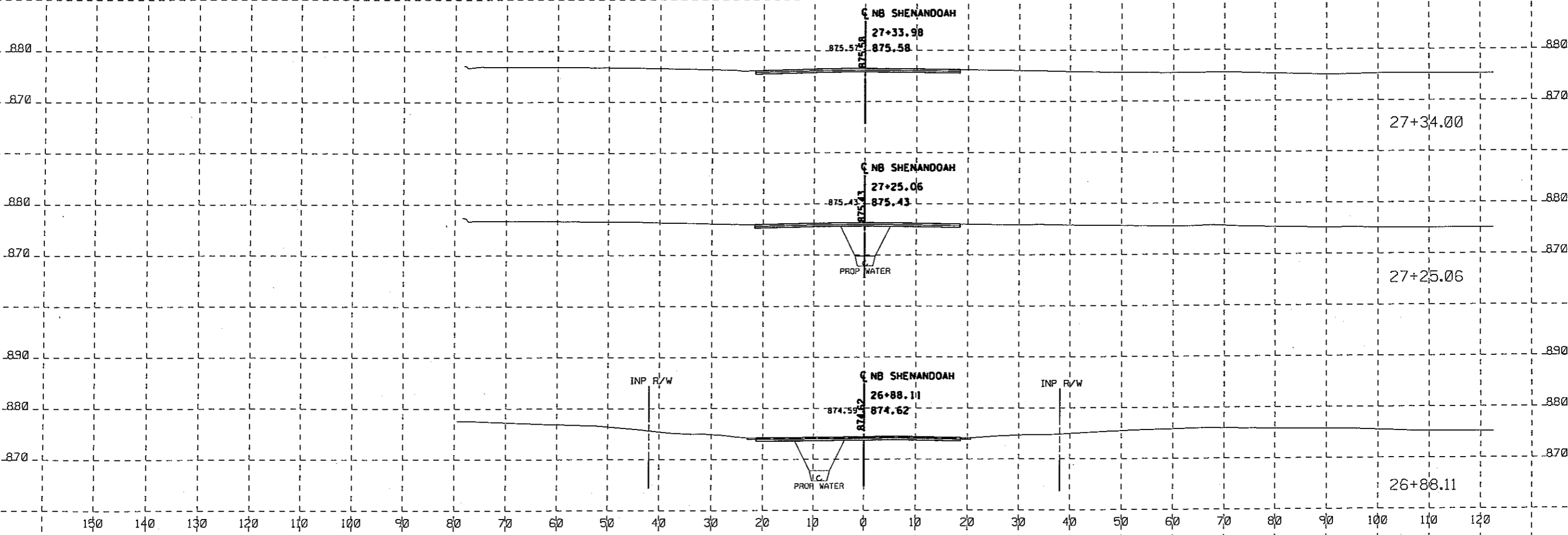
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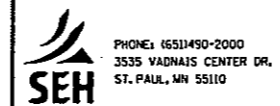
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End Construction NB Shenandoah Sta. 27+34.00



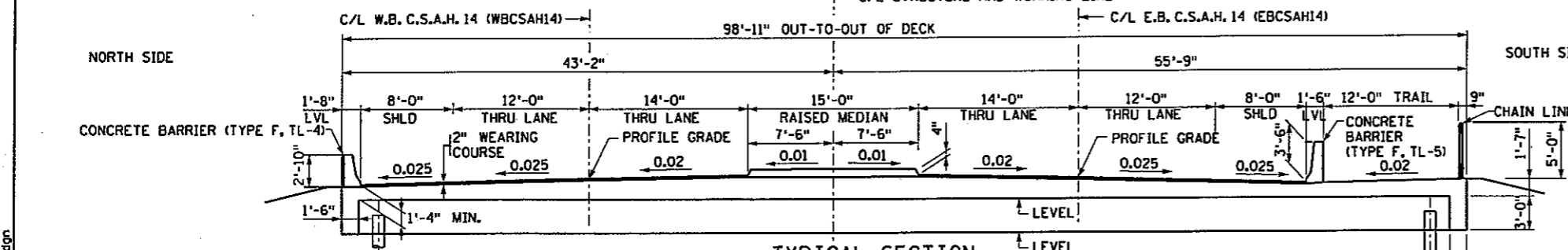
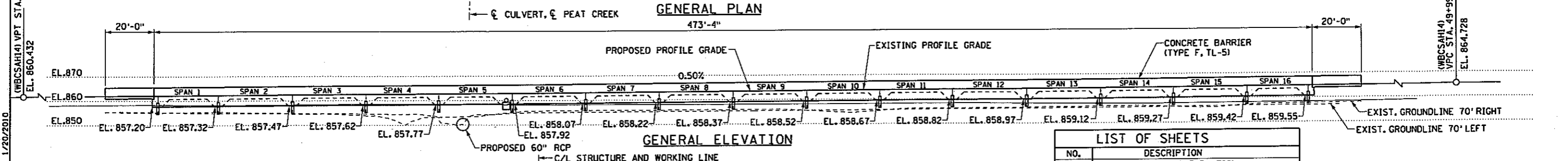
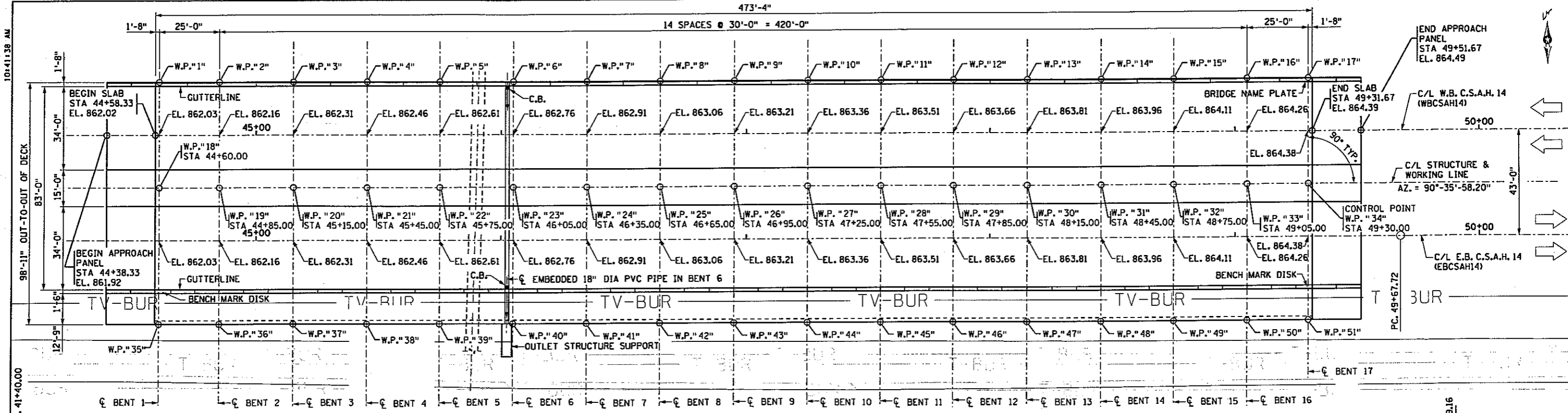
DESIGN TEAM			
DRAWN BY:			
DESIGNER:			
CHECKED BY:			
	NO.	BY	DATE
	REVISIONS		



ANOKA COUNTY
SHERANDOAH BLVD.
 S.P. 02-614-32

CROSS SECTIONS

FILE NO. ANOKC02287
XS76
OF XS76



LIST OF SHEETS	
NO.	DESCRIPTION
B1	GENERAL PLAN AND ELEVATION
B2	BRIDGE LAYOUT
B3	DECK PLAN
B4-B5	TYPICAL SECTIONS
B6	BRIDGE DRAINAGE AND OUTLET STRUCTURE
B7	BAR LIST AND SUMMARY OF QUANTITIES
B8	CONCRETE BARRIER (TYPE F, TL-4)
B9	CONCRETE BARRIER (TYPE F, TL-5)
B10-B11	WATERPROOF EXPANSION DEVICE
B12	WIRE FENCE (DESIGN W-1)
B13-B14	B-DETAILS
B15-B18	BRIDGE APPROACH PANEL/PAVEMENT JOINTS
B19	AS-BUILT BRIDGE DATA
B20	BRIDGE SURVEY
B21-B22	BRIDGE SURVEY PLAN AND PROFILE

2029 PROJECTED TRAFFIC VOLUMES	
18900	ADT (2009)
26500	ADT (2029)
780	HCA DT (2029)

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.

SIGNED: *Nathan C. Klopp* DATE 7-28-09
 LICENSED PROFESSIONAL ENGINEER
 NAME: NATHAN C. KLOPP LIC NO 43836

SUMMARY OF QUANTITIES			
ITEM NO	ITEM	UNIT	QUANTITY
2301.551	BRIDGE APPROACH PANELS	EACH	2
2401.512	BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	46821 (P)
2401.513	TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	513 (P)
2401.513	TYPE F (TL-5) RAILING CONCRETE (3Y46)	LIN. FT.	513 (P)
2401.516	RAISED MEDIAN CONCRETE (3Y46)	SQ. FT.	7700 (P)
2401.541	REINFORCEMENT BARS (EPOXY COATED)	POUND	591440 (P)
2401.601	STRUCTURE EXCAVATION	LUMP SUM	1
2401.618	BRIDGE DECK PLANING	SQ. FT.	31478 (P)
2402.591	EXPANSION JOINT DEVICES, TYPE 4	LIN. FT.	196 (P)
2404.501	CONCRETE WEARING COURSE (3U17A)	SQ. FT.	34906 (P)
2452.507	C.I.P. CONCRETE PILING DELIVERED 16"	LIN. FT.	24380
2452.508	C.I.P. CONCRETE PILING DRIVEN 16"	LIN. FT.	24380
2452.519	C.I.P. CONC. TEST PILE, 120 FT LONG, 16"	EACH	6
2452.519	C.I.P. CONC. TEST PILE, 150 FT LONG, 16"	EACH	2
2452.527	PILE REDRIVING	EACH	65
2452.602	PILE ANALYSIS	EACH	8
2502.601	DRAINAGE SYSTEM TYPE SPECIAL	LUMP SUM	1
2557.501	WIRE FENCE DESIGN W-1 VINYL COATED	LIN. FT.	513 (P)

① INCLUDES APPROACH PANELS
 ② PERTAINS TO ABUTMENTS AND PIER CAPS. SUBCUT, REPLACEMENT BACKFILL AND SURCHARGE ARE PAID FOR IN OTHER ITEMS IN ROADWAY PLANS.

CONSTRUCTION NOTES

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR NUMBER WHICH APPROXIMATES THE NOMINAL DIAMETER OF THE BAR IN MILLIMETERS (mm).

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301.

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

THE PILE LOADS SHOWN IN THE PLANS AND THE CORRESPONDING NOMINAL PILE BEARING RESISTANCE (R_n) WERE COMPUTED USING LRFD METHODOLOGY. PILE BEARING RESISTANCE DETERMINED IN THE FIELD SHALL INCORPORATE THE METHODS AND/OR FORMULAS DESCRIBED IN THE SPECIAL PROVISIONS.

B.M. ELEV. EL 878.978 (NAVD 88 DATUM)

Mn/DOT GEODETIC DATABASE STA. #581; COPPER CLAD ROD (NO SLEEVE) (DEPTH 8") 1.15 MILES E. OF JCT. CSAH 14 & THIO, 67' N. OF CSAH 14, 26' E. OF ENTRANCE AT HOUSE #2061, ACROSS FROM HOUSE #2108 IN A BUSH, 1.0' S. OF WITNESS POST

NEW 60" RCP CULVERT ON PILING. SEE GRADING PLAN

FEDERAL PROJ NO. (STATE FUNDS)

DESIGN DATA
 2007 AND CURRENT INTERIM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 LOAD AND RESISTANCE FACTOR DESIGN METHOD
 HL 93 LIVE LOAD
 DEAD LOAD INCLUDES 20 psf ALLOWANCE FOR FUTURE WEARING COURSE MODIFICATIONS
 MATERIAL DESIGN PROPERTIES:
 REINFORCED CONCRETE:
 f'_c = 4 ksi n = 8
 F_y = 60 ksi FOR REINFORCEMENT
 DECK AREA = 46821 SQ FT
 DESIGN SPEED OVER = 55 MPH
 BRIDGE OPERATING RATING RF 2.15

C.S.A.H. NO. 14 MINNESOTA
 DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02577

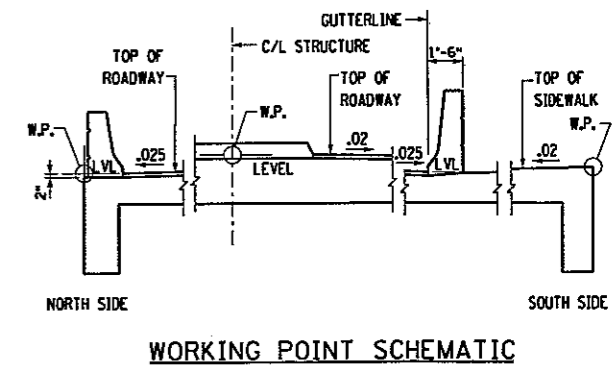
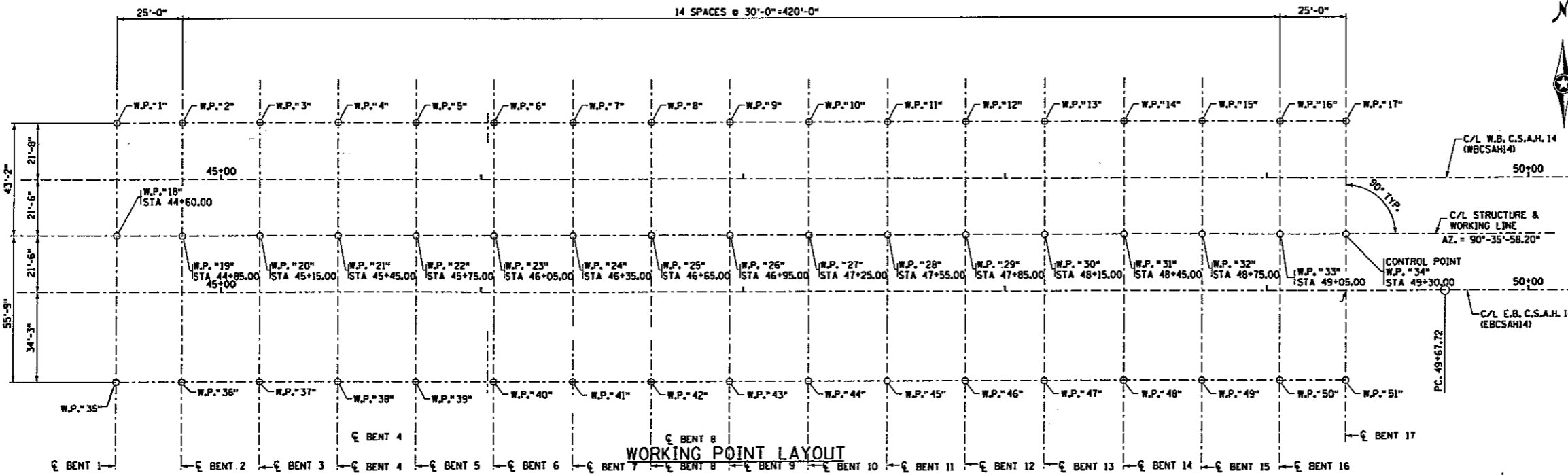
C.S.A.H. 14 SUPPORTED SLAB OVER POOR SOILS AND DRAINAGE DITCH IN COON RAPIDS 0.3 MI. WEST OF THE JUNCTION OF C.S.A.H. 14 AND HANSON BLVD. 473.33' C.I.P. CONC. SLAB SPANS (2) 34'-0" ROADWAYS, 15'-0" MEDIAN IDENTIFICATION NO. 209

GENERAL PLAN AND ELEVATION

SEC. 3-10 T 31 N R 24 W
 CITY OF COON RAPIDS ANOKA COUNTY

APPROVED: *Wanulda Wargem* STATE BRIDGE ENGINEER
 DATE: 4/6/10

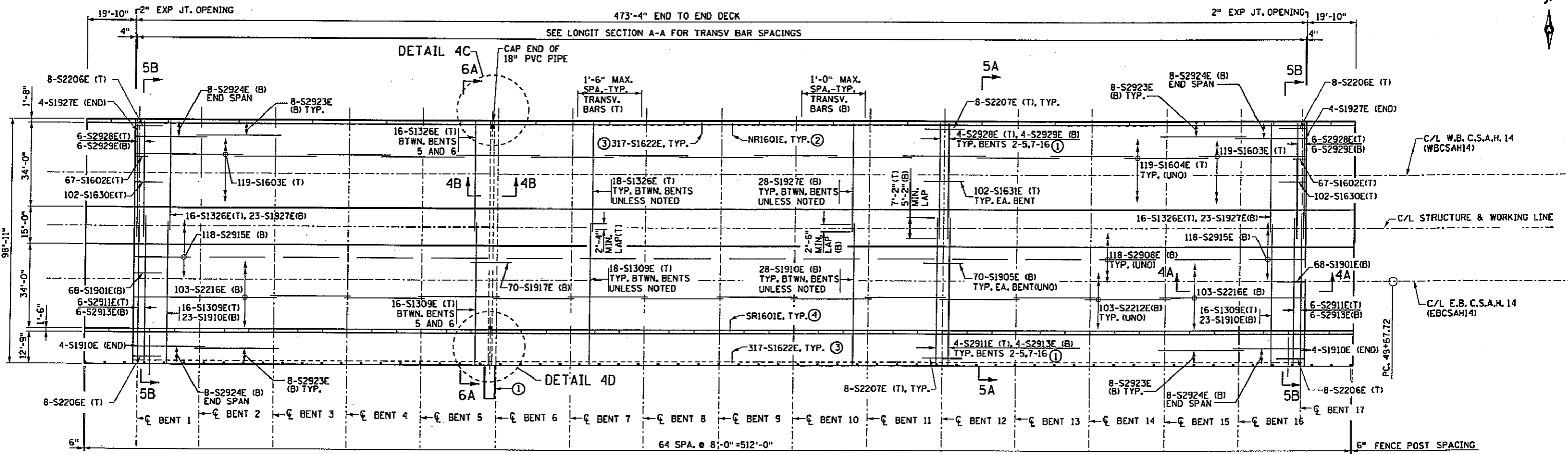
DES. JAJ	DR. MAW	02577
CHK. NCK	CHK. JAJ	



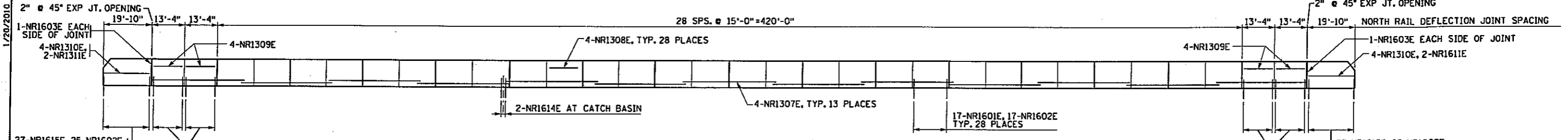
WORKING POINT SCHEMATIC

POINT	STATION	X COORDINATE	Y COORDINATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	TOP OF SLAB																			
1	44+60.00	487660.296	159198.013		25.00																43.17	49.88																102.03	113.18									861.54																										
2	44+85.00	487685.294	159197.752			30.00																43.17	52.57															102.03	103.37	115.69									861.66																									
3	45+15.00	487715.293	159197.438				30.00																43.17	52.57													113.18	103.37	103.37	115.69									861.81																									
4	45+45.00	487745.291	159197.124					30.00															43.17	52.57													115.69	103.37	103.37	115.69									861.96																									
5	45+75.00	487775.289	159196.810						30.00														43.17	52.57													115.69	103.37	103.37	115.69									862.11																									
6	46+05.00	487805.288	159196.496							30.00													43.17	52.57													115.69	103.37	103.37	115.69									862.26																									
7	46+35.00	487835.286	159196.182								30.00												43.17	52.57													115.69	103.37	103.37	115.69									862.41																									
8	46+65.00	487865.285	159195.868									30.00											43.17	52.57													115.69	103.37	103.37	115.69									862.56																									
9	46+95.00	487895.283	159195.554										30.00										43.17	52.57													115.69	103.37	103.37	115.69									862.71																									
10	47+25.00	487925.281	159195.240											30.00									43.17	52.57													115.69	103.37	103.37	115.69									862.86																									
11	47+55.00	487955.280	159194.927												30.00								43.17	52.57													115.69	103.37	103.37	115.69									863.01																									
12	47+85.00	487985.278	159194.613													30.00							43.17	52.57													115.69	103.37	103.37	115.69									863.16																									
13	48+15.00	488015.276	159194.299														30.00						43.17	52.57													115.69	103.37	103.37	115.69									863.31																									
14	48+45.00	488045.275	159193.985															30.00					43.17	52.57													115.69	103.37	103.37	115.69									863.46																									
15	48+75.00	488075.273	159193.671																30.00				43.17	52.57													115.69	103.37	103.37	115.69									863.61																									
16	49+05.00	488105.271	159193.357																			25.00															43.17	49.88											102.03	863.76																								
17	49+30.00	488130.270	159193.096																				471.98														43.17	480.30									113.18	102.03			863.89																							
18	44+60.00	487659.844	159154.849																																		55.75	61.10												448.48	863.99																							
19	44+85.00	487684.843	159154.587																					30.00													55.75	63.31													448.48	862.44																						
20	45+15.00	487714.841	159154.273																					30.00													55.75	63.31														448.48	862.59																					
21	45+45.00	487744.839	159153.959																					30.00													55.75	63.31															448.48	862.74																				
22	45+75.00	487774.838	159153.646																					30.00													55.75	63.31															448.48	862.89																				
23	46+05.00	487804.836	159153.332																					30.00													55.75	63.31																448.48	863.04																			
24	46+35.00	487834.835	159153.018																					30.00													55.75	63.31																	448.48	863.19																		
25	46+65.00	487864.833	159152.704																					30.00													55.75	63.31																	448.48	863.34																		
26	46+95.00	487894.831	159152.390																					30.00													55.75	63.31																		448.48	863.49																	
27	47+25.00	487924.830	159152.076																					30.00													55.75	63.31																		448.48	863.64																	
28	47+55.00	487954.828	159151.762																					30.00													55.75	63.31																		448.48	863.79																	
29	47+85.00	487984.826	159151.448																					30.00													55.75	63.31																		448.48	863.94																	
30	48+15.00	488014.825	159151.134																					30.00													55.75	63.31																			448.48	864.09																
31	48+45.00	488044.823	159150.821																					30.00													55.75	63.31																			448.48	864.24																
32	48+75.00	488074.821	159150.507																					30.00													55.75	63.31																			448.48	864.39																
33	49+05.00	488104.820	159150.193																					30.00													55.75	63.31																				448.48	864.54															
34	49+30.00	488129.818	159149.931																					30.00													55.75	63.31																				448.48	864.69															
35	44+60.00	487659.261	159099.102																																			25.00																							448.48	864.84												
36	44+85.00	487684.259	159098.840																																			25.00																								448.48	864.99											
37	45+15.00	487714.258	159098.526																																			25.00																											448.48	865.14								
38	45+45.00	487744.256	159098.213																																																																						448.48	865.29
39	45+75.00	487774																																																																								

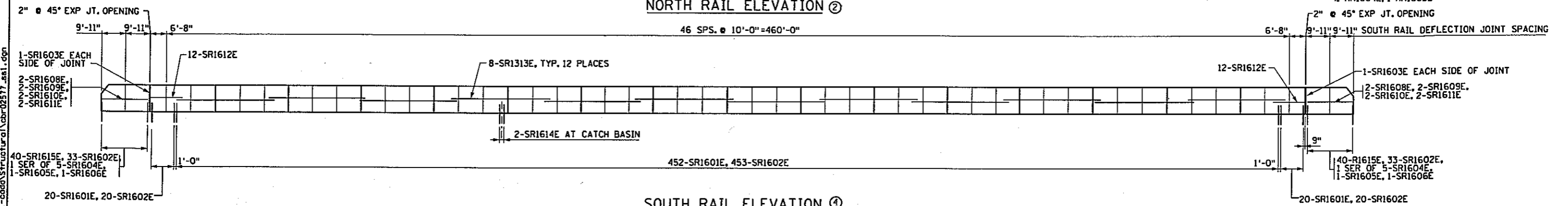
10142119 AM



DECK PLAN



NORTH RAIL ELEVATION ②

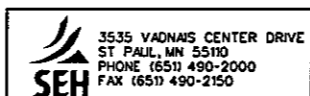


SOUTH RAIL ELEVATION ④

NOTES:

- SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
- ① SEE SHEET B6 FOR DETAILS AT SUPPORTED STORM SEWER STRUCTURE, BENT 6.
- ② SEE CONCRETE BARRIER (TYPE F, TL-4) SHEET B8 FOR ADD'L INFO.
- ③ SPACE FROM END TO END OF DECK SLAB @ 1'-6\"/>

S:\AEC\A\Klock\102287A5-dsgn\A51-cadd\Structure\01\cb02577_srl.dgn
 1/20/2010



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopp* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

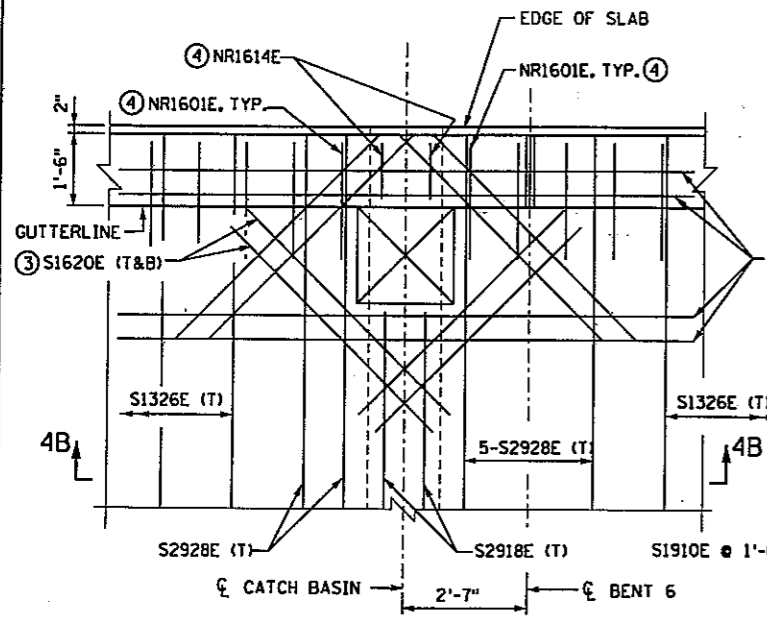
TITLE:
 DECK PLAN

SP 02-614-32		APPROVED:		BRIDGE NO 02577
DES: NCK	DR: MAW	CHK: JAJ		
SHEET NO B3 OF B22 SHEETS				

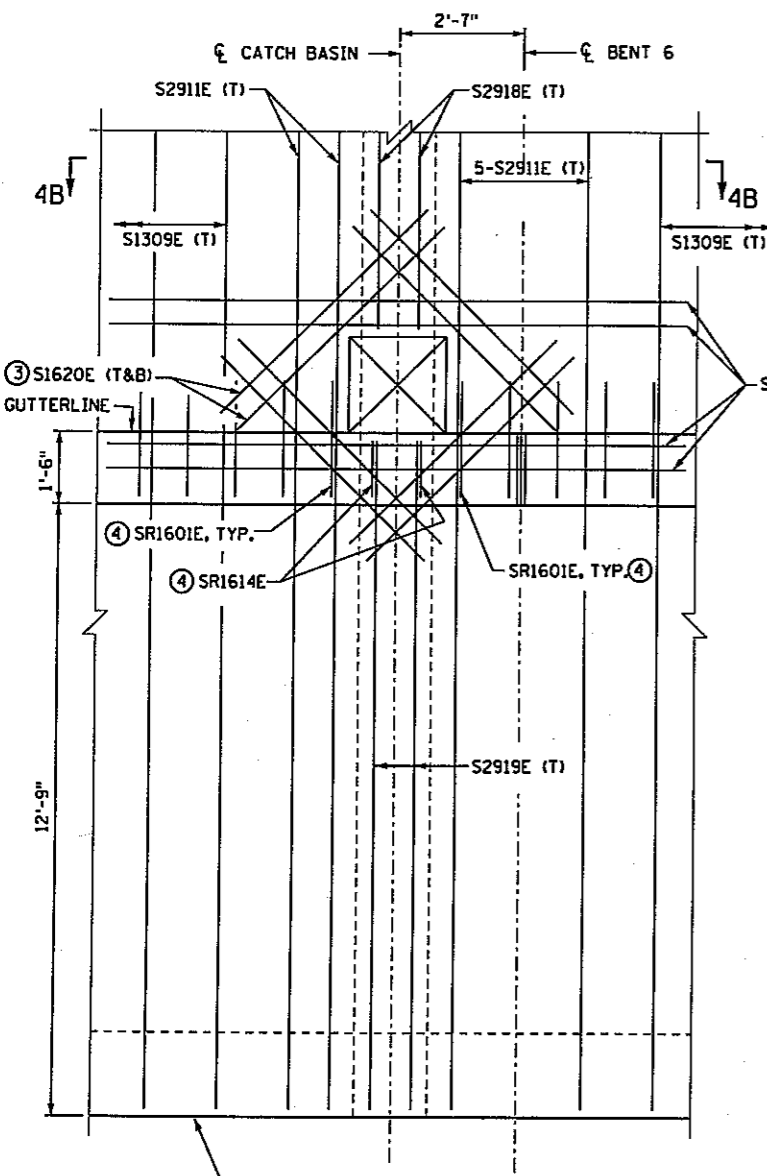
10/22/21 AM

1/20/2010

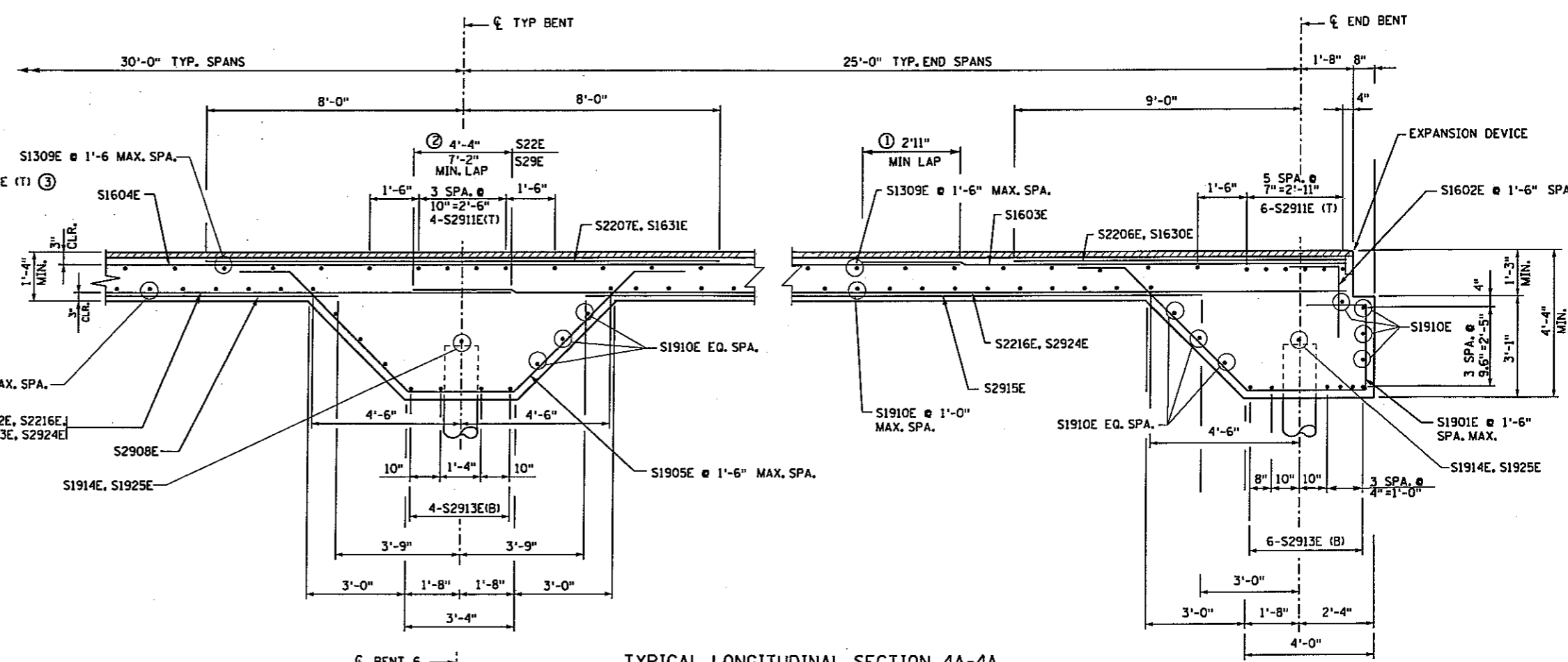
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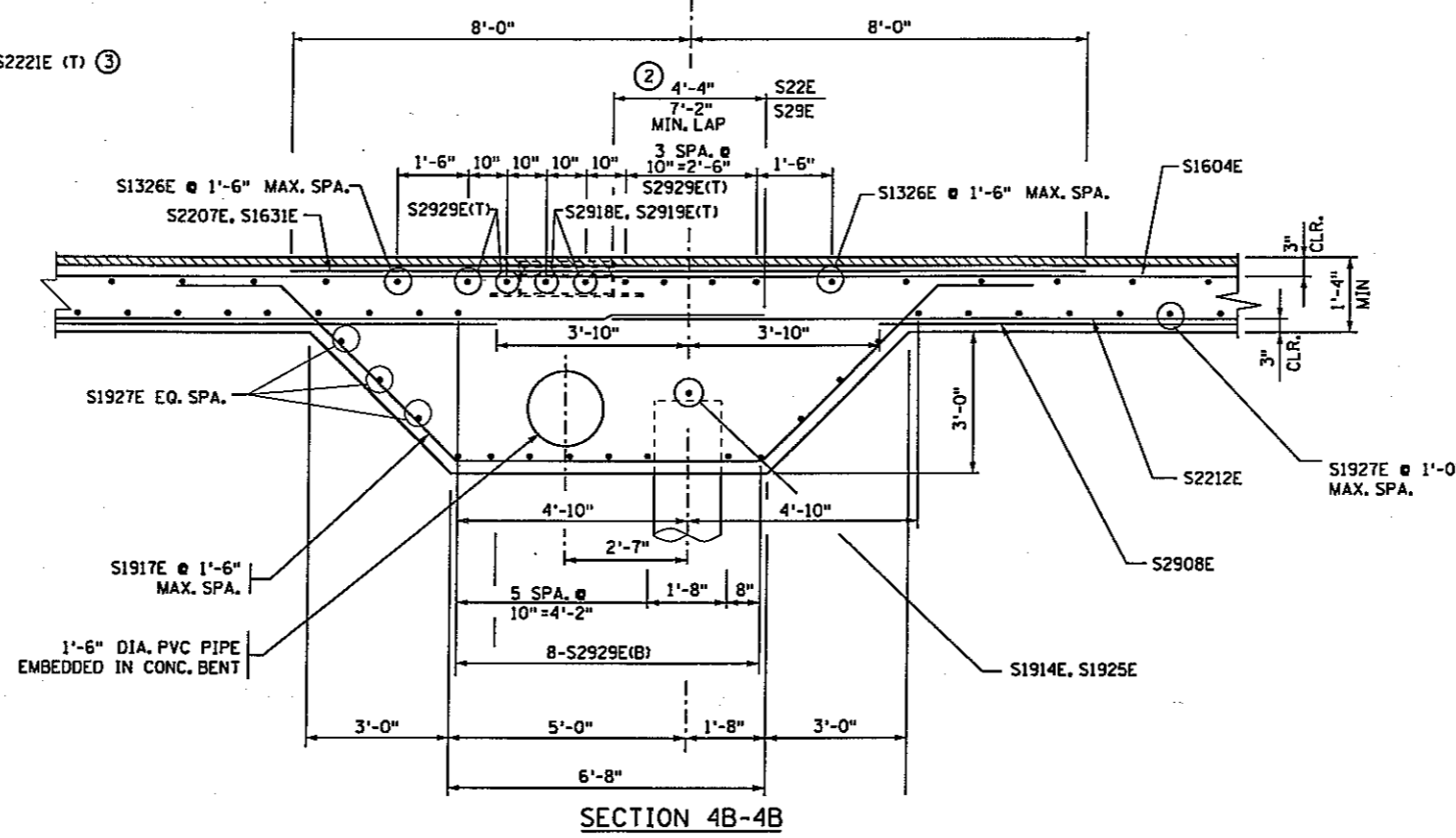
DETAIL 4C - PLAN AT NORTH CATCH BASIN
TYP AT (1) LOCATION



DETAIL 4D - PLAN AT SOUTH CATCH BASIN
TYP AT (1) LOCATION

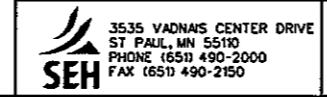


TYPICAL LONGITUDINAL SECTION 4A-4A



SECTION 4B-4B

- NOTES:**
 SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
 (T) = TOP
 (B) = BOTTOM
- ① CENTER SPLICE AT MIDSPAN.
 - ② CENTER SPLICE OVER PILES.
 - ③ CENTER ON CATCH BASIN OPENING.
 - ④ SEE CONCRETE BARRIER (TYPE F, TL-5) SHEET B8.

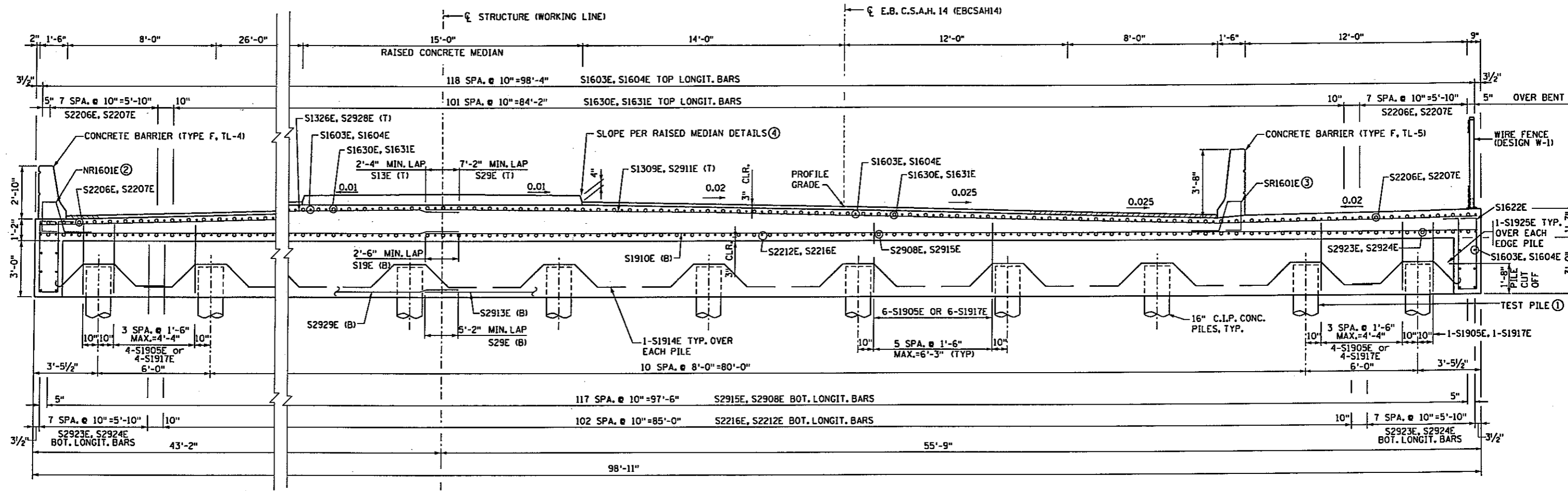


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopp* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

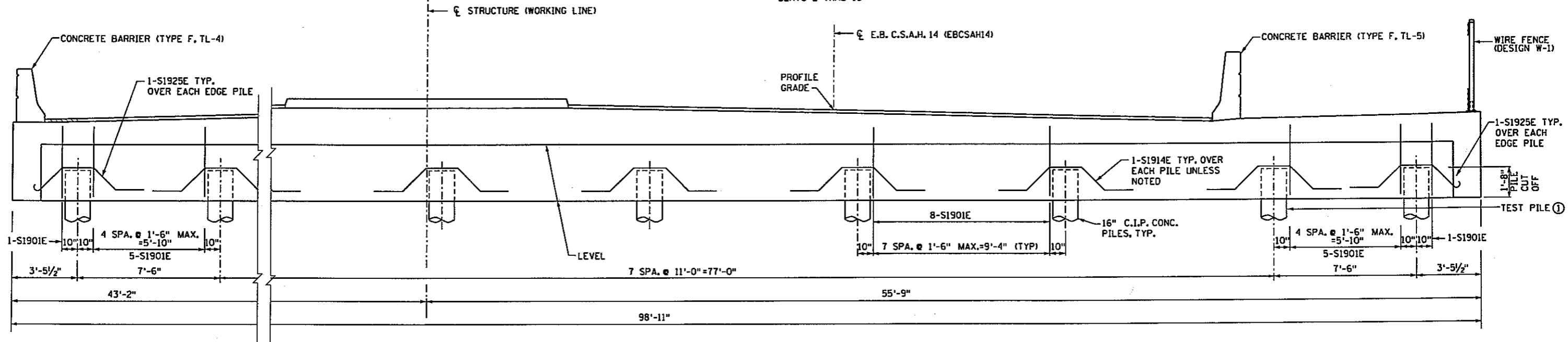
TITLE: TYPICAL SECTIONS

SP 02-614-32		APPROVED:	BRIDGE NO 02577
DES: NCK	DR: MAW		
CHK: JAJ	CHK: NCK		
SHEET NO B4 OF B22 SHEETS			

10/14/2013 AM



NORTH SIDE TYPICAL TRANSVERSE SECTION 5A-5A BENTS 2 THRU 16 SOUTH SIDE



TRANSVERSE SECTION 5B-5B BENTS 1 AND 17

- NOTES:**
 SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
- ① SEE SHEET B21 FOR TEST PILE LOCATIONS.
 - ② SEE SHEET B8 CONCRETE BARRIER (TYPE F, TL-4).
 - ③ SEE SHEET B9 CONCRETE BARRIER (TYPE F, TL-5).
 - ④ SEE SHEET B11 FOR EXP. JT. DEVICE AT RAISED MEDIAN.

1/20/2010 S:\AE\VA\proj\102287\5-dsgn\51-cadd\structure\1\cbp02577_s83.dgn

SEH 3535 VADNAIS CENTER DRIVE ST PAUL, MN 55110 PHONE (651) 490-2000 FAX (651) 490-2150

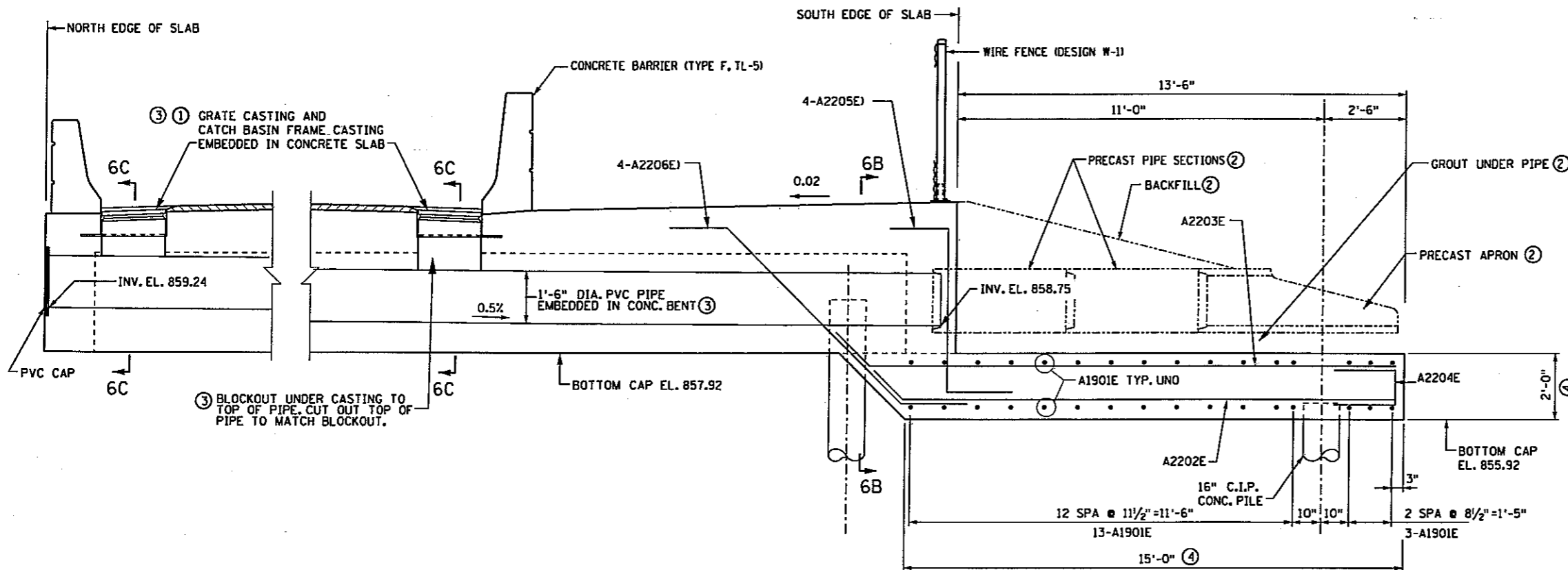
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.

Signature: *Nathan C. Klopff* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

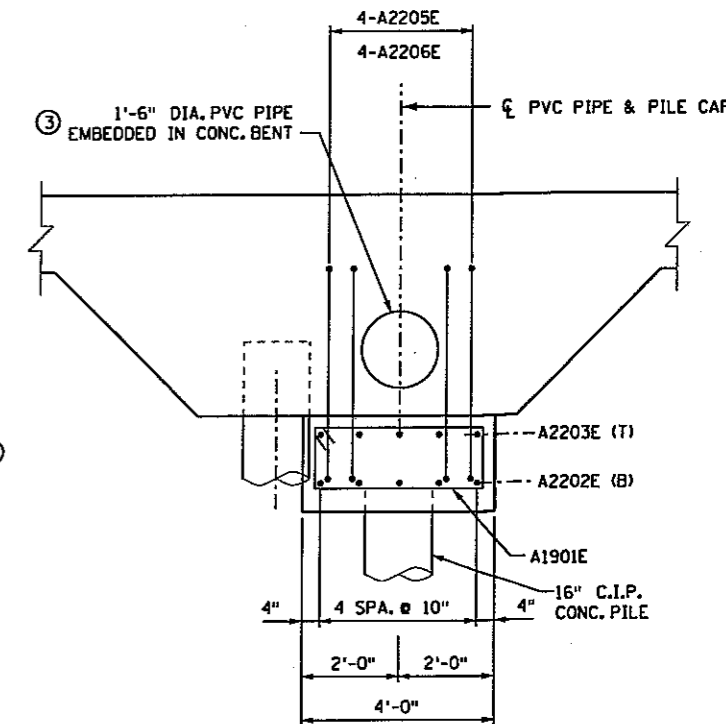
TITLE: TYPICAL SECTIONS

SP 02-614-32			BRIDGE NO
DES: NCK	DR: MAW	APPROVED:	02577
CHK: JAJ	CHK: NCK		
SHEET NO B5 OF B22 SHEETS			

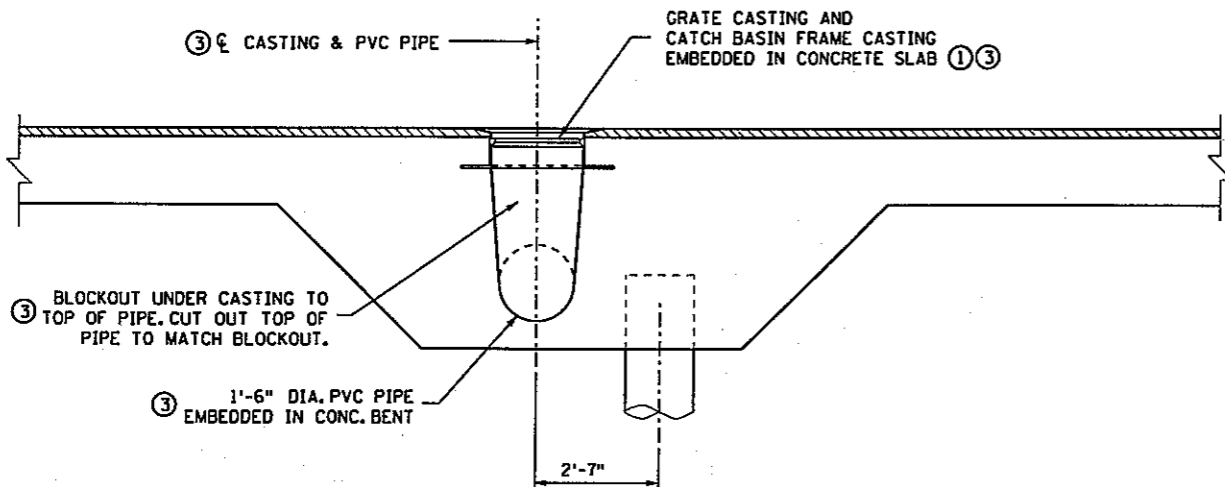
10/42/24 AM



SECTION 6A-6A



SECTION 6B-6B



SECTION 6C-6C

SUMMARY OF QUANTITIES DRAINAGE SYSTEM TYPE SPECIAL		
ITEM	UNIT	QUANTITY
① GRATE CASTING NO. 811	EACH	2
① GRATE FRAME CASTING NO. 802A	EACH	2
1'-6" DIA. PVC PIPE	LIN. FT.	99
1'-6" DIA. PVC END CAP	EACH	1

- NOTES:**
 SEE SHEET B7 FOR BAR LIST AND SUMMARY OF QUANTITIES.
 ① GRATE CASTING NO. 811 (STD. PLATE 4151B)
 GRATE FRAME CASTING NO. 802A (STD. PLATE NO. 4129G).
 ② SEE ROADWAY PLANS.
 ③ INCLUDED IN PRICE BID FOR "DRAINAGE SYSTEM TYPE SPECIAL".
 ④ INCLUDED UNDER ITEM "BRIDGE SLAB CONCRETE (3Y36)".

1/20/2010

S:\AE\A\Anokc\102287\5-dsop\51-cadd\Structure\1\cbp02577_ses4.dgn

SEH
 3535 VADNAS CENTER DRIVE
 ST. PAUL, MN 55110
 PHONE (651) 490-2000
 FAX (651) 490-2150

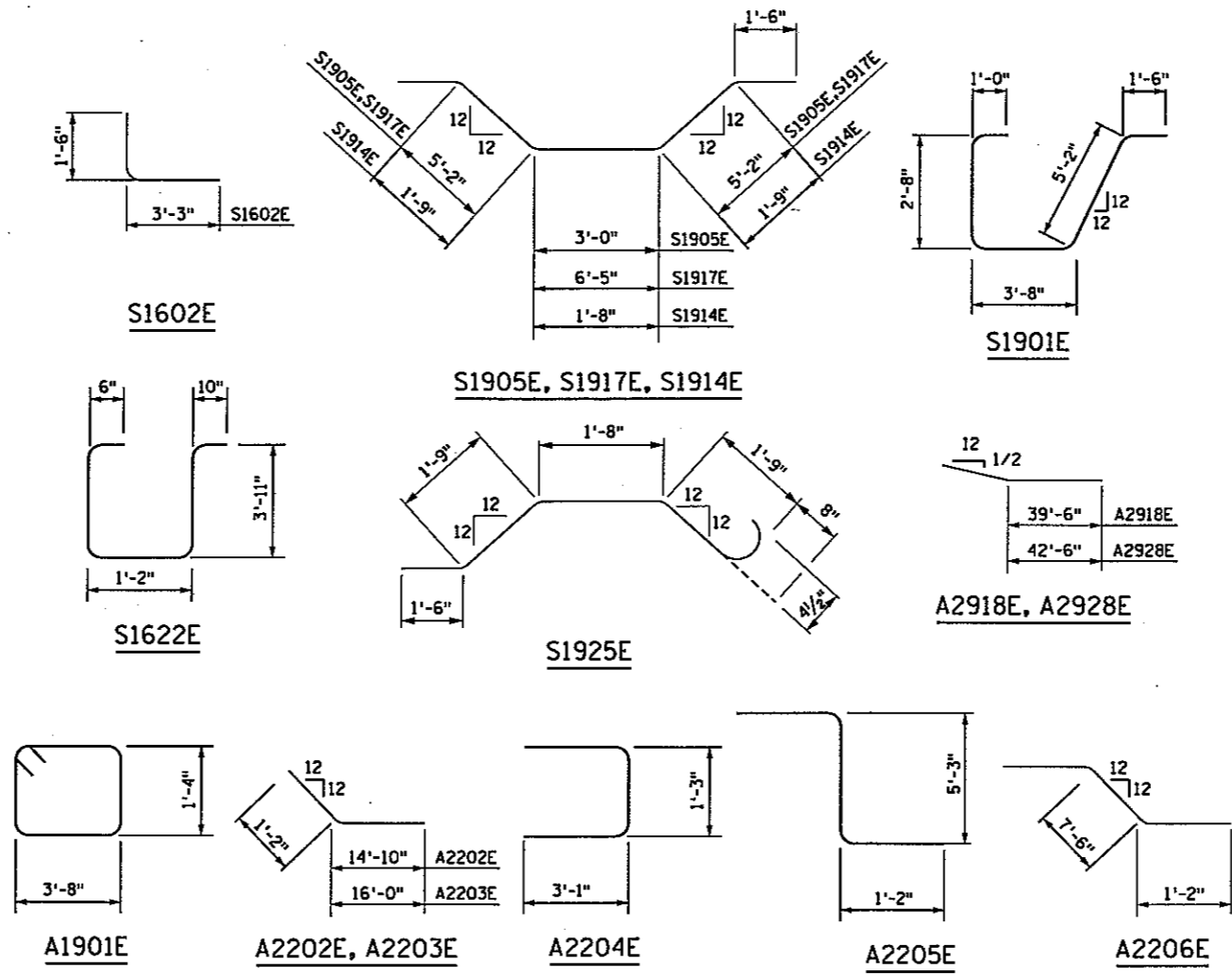
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopp* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE DRAINAGE AND OUTLET STRUCTURE

SP 02-614-32
 DES: NCK DR: MAW APPROVED:
 CHR: JAJ CHR: NCK
 SHEET NO B6 OF B22 SHEETS BRIDGE NO 02577

10/4/2016 AM
1/20/2010
S:\VA\A\Anokc\10228745-dsgn\51-cadd\Structure\al\cbr\02577.asb.dgn

BAR MARK	NO. OF BARS	LENGTH	SHAPE	LOCATION
DECK BARS				
EPOXY COATED BARS				
S1901E	136	14'-0"	BENT	SLAB ENDS
S1602E	134	4'-9"	BENT	SLAB ENDS
S1603E	262	43'-0"	STR	SLAB TOP
S1604E	1703	32'-11"	STR	SLAB TOP
S1905E	980	16'-4"	BENT	SLAB AT BENTS (B)
S2206E	32	9'-0"	STR	SLAB AT END BENTS (T)
S2207E	240	16'-0"	STR	SLAB AT BENTS (T)
S2908E	1652	22'-6"	STR	SLAB BOT BTWN BENTS
S1309E	282	56'-9"	STR	TRANSV SLAB TOP
S1910E	446	56'-10"	STR	TRANSV SLAB BOT
S2911E	75	55'-1"	STR	TRANSV SLAB TOP
S2212E	1256	32'-6"	STR	SLAB LONGIT BOT
S2913E	76	58'-2"	STR	TRANSV SLAB BOT
S1914E	181	8'-2"	BENT	PILE TOPS
S2915E	236	18'-3"	STR	SLAB ENDS BOT
S2216E	206	58'-10"	STR	SLAB LONGIT BOT
S1917E	70	20'-0"	BENT	SLAB AT BENTS 6 (B)
S2918E	4	43'-1"	BENT	CATCH BASIN
S2919E	2	13'-11"	STR	CATCH BASIN
S1620E	32	8'-0"	STR	CATCH BASIN
S2221E	8	12'-0"	STR	CATCH BASIN
S1622E	634	10'-4"	BENT	SLAB EDGE WALL
S2923E	224	37'-2"	STR	SLAB LONGIT (B)
S2924E	32	30'-1"	STR	SLAB LONGIT (B)
S1925E	34	7'-4"	BENT	PILE TOPS
S1326E	282	44'-0"	STR	TRANSV SLAB TOP
S1927E	446	45'-3"	STR	TRANSV SLAB BOT
S2928E	75	49'-8"	BENT	TRANSV SLAB TOP
S2929E	76	46'-7"	STR	TRANSV SLAB BOT
S1630E	206	9'-0"	STR	SLAB AT END BENTS (T)
S1631E	1530	16'-0"	STR	SLAB AT BENTS (T)
OUTLET STRUCTURE				
EPOXY COATED BARS				
A1901E	16	10'-9"	BENT	STIRRUP
A2202E	5	16'-0"	BENT	LONGIT. BOTTOM
A2203E	5	17'-2"	BENT	LONGIT. TOP
A2204E	5	7'-5"	BENT	CAP END
A2205E	4	7'-7"	BENT	SLAB DOWEL
A2206E	4	9'-10"	BENT	SLAB DOWEL



SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE

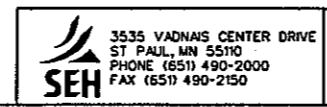
ITEM	UNIT	QUANTITY
③ BRIDGE SLAB CONCRETE (3Y36)	SQ. FT.	46821
④ TYPE F (TL-4) RAILING CONCRETE (3Y46)	LIN. FT.	513
④ TYPE F (TL-5) RAILING CONCRETE (3Y46)	LIN. FT.	513
⑤ RAISED MEDIAN CONCRETE (3Y46)	SQ. FT.	7700
⑥ REINFORCEMENT BARS (EPOXY COATED)	POUND	591440
⑧ BRIDGE DECK PLANING	SQ. FT.	31478
EXPANSION JOINT DEVICES, TYPE 4	LIN. FT.	196
⑦③ CONCRETE WEARING COURSE (3U17A)	SQ. FT.	34906
C.I.P. CONCRETE PILING DELIVERED 16"	LIN. FT.	24380
C.I.P. CONCRETE PILING DRIVEN 16"	LIN. FT.	24380
C.I.P. CONC. TEST PILE, 120 FT LONG, 16"	EACH	6
C.I.P. CONC. TEST PILE, 150 FT LONG, 16"	EACH	2
PILE REDRIVING	EACH	65
PILE ANALYSIS	EACH	8
⑩ DRAINAGE SYSTEM TYPE SPECIAL	LUMP SUM	1
WIRE FENCE (DESIGN W-1)	LIN. FT.	513
① BRIDGE NAME PLATE	EACH	1
②① BENCH MARK DISK	EACH	2

- ① INCLUDED IN PRICE BID FOR OTHER ITEMS
- ② STATE WILL FURNISH DISK. BEND PRONGS OUTWARD TO ANCHOR DISK IN CONCRETE. BOTTOM OF DISK TOP TO BE PLACED FLUSH WITH CONCRETE.
- ③ THE APPROXIMATE CONCRETE QUANTITIES ARE:
BRIDGE SLAB CONCRETE (3Y36) 4135 CU. YD.
CONCRETE OVERLAY (3U17A) 216 CU. YD.
- ④ TYPE F (TL-4) RAILING CONCRETE (3Y46) APPROX. VOLUME = 60 CU. YD.
TYPE F (TL-5) RAILING CONCRETE (3Y46) APPROX. VOLUME = 74 CU. YD.
- ⑤ RAISED MEDIAN CONCRETE (3Y46) APPROX. VOLUME = 143 CU. YD.
- ⑥ INCLUDES DECK, RAILING & OUTLET STRUCTURE REINFORCEMENT. SEE RAILING SHEET FOR RAILING BARLIST.
- ⑦ INCLUDES 2720 SF ON BRIDGE APPROACH PANELS.
- ⑧ INCLUDES 2453 SF ON BRIDGE APPROACH PANELS.
- ⑨ INCLUDES 600 SF ON BRIDGE APPROACH PANELS.
- ⑩ INCLUDES 99'-0" OF 18" DIA. PVC PIPE, (1) 18" PVC PIPE CAP, (2) GRATE CASTINGS, AND (2) CATCH BASIN FRAME CASTINGS. SEE SHEET B6 FOR CASTINGS. SEE SPECIAL PROVISIONS.

PILE QUANTITIES							COMPUTED PILE LOAD - TONS/PILE			REQUIRED NOMINAL PILE BEARING RESISTANCE Rn - TONS/PILE			
BENT NUMBER	CIP CONC. TEST PILE 120' LONG, 16"	CIP CONC. TEST PILE 150' LONG, 16"	PILES REQUIRED	ESTIMATED PILE LENGTH	TOTAL PILES REQUIRED	TOTAL PILE LENGTH	FACTORED DEAD LOAD + EARTH PRESSURE	FACTORED LIVE LOAD	FACTORED DESIGN LOAD= PILE BEARING RESISTANCE NOTE ①	MNDOT NOMINAL RESISTANCE FORMULA	PDA		
										φ dyn	Rn ②	φ dyn	Rn ②
1			10	110	10	1100	30.9	42.2	73.1	0.40	182.8	0.65	112.5
2	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
3			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
4	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
5			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
6	1		(A) 13	110	(A) 14	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
7			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
8	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
9			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
10	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
11			13	110	13	1430	69.8	50.8	120.6	0.40	301.5	0.65	185.5
12	1		12	110	13	1320	69.8	50.8	120.6	0.40	301.5	0.65	185.5
13			13	140	13	1820	69.8	50.8	120.6	0.40	301.5	0.65	185.5
14		1	12	140	13	1680	69.8	50.8	120.6	0.40	301.5	0.65	185.5
15			13	140	13	1820	69.8	50.8	120.6	0.40	301.5	0.65	185.5
16		1	12	140	13	1680	69.8	50.8	120.6	0.40	301.5	0.65	185.5
17			10	110	10	1100	30.9	42.2	73.1	0.40	182.8	0.65	112.5
	6	2			216	24380							

NOTES:
 PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
 PILES TO HAVE A NOMINAL DIAMETER OF 16".
 FOR PILE SPLICE DETAILS SEE DETAIL B201.
 (A) INCLUDES PILE AT OUTLET STRUCTURE.

NOTES:
 ① BASED ON STRENGTH I LOAD COMBINATION.
 ② Rn = FACTORED DESIGN LOAD / φ dyn.

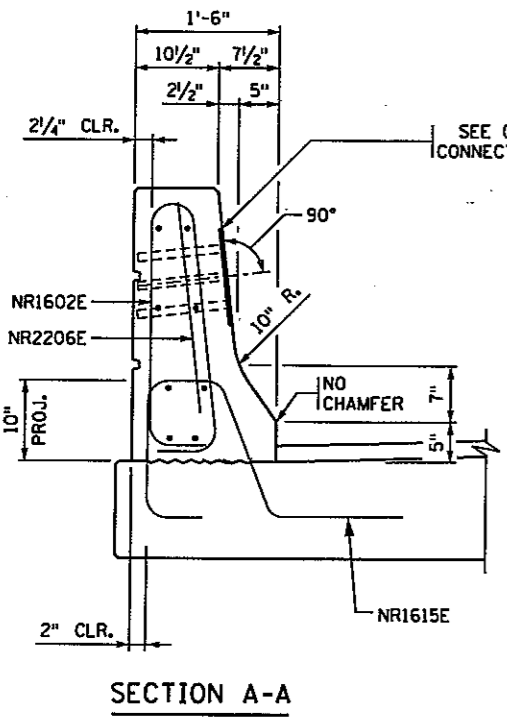


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klopff* Date: 1-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

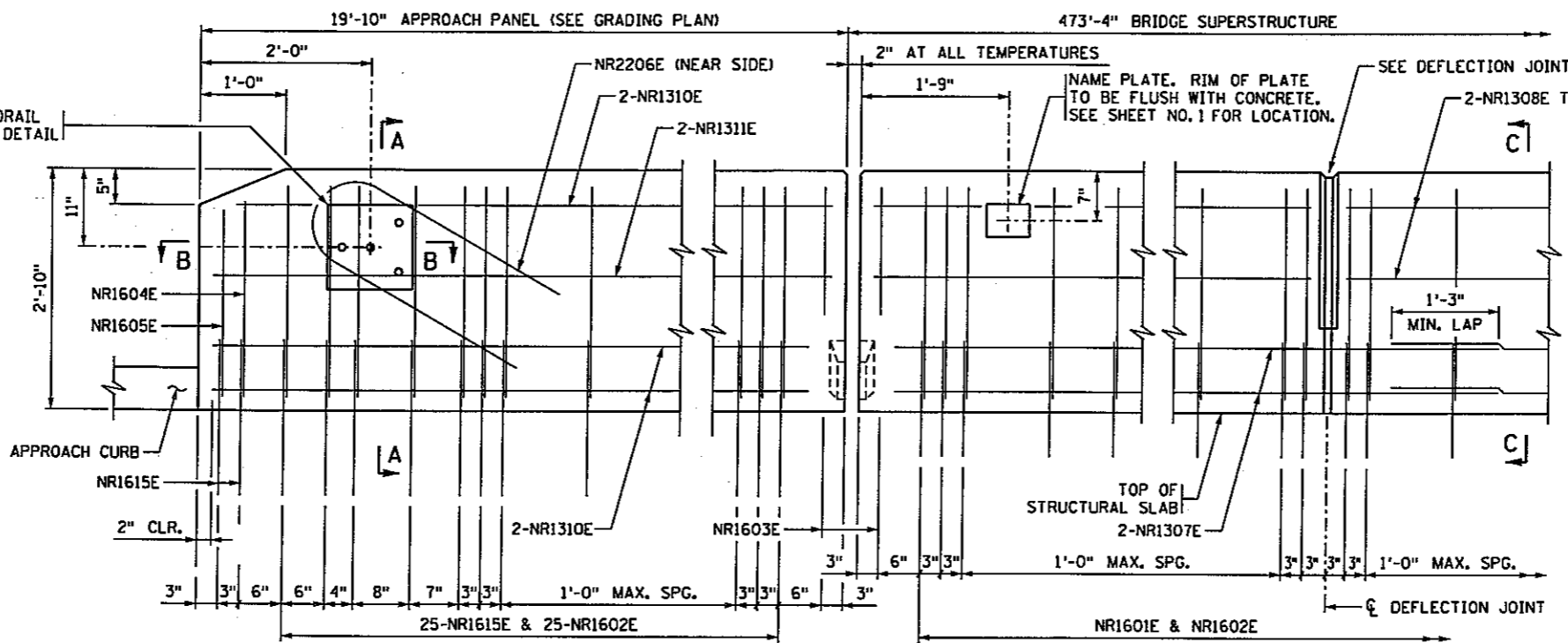
TITLE: SUPERSTRUCTURE BAR LIST AND SUMMARY OF QUANTITIES

DES: NCK	DR: MAW	APPROVED:	BRIDGE NO 02577
CHK: JAJ	CHK: NCK		
SHEET NO B7 OF B22 SHEETS			

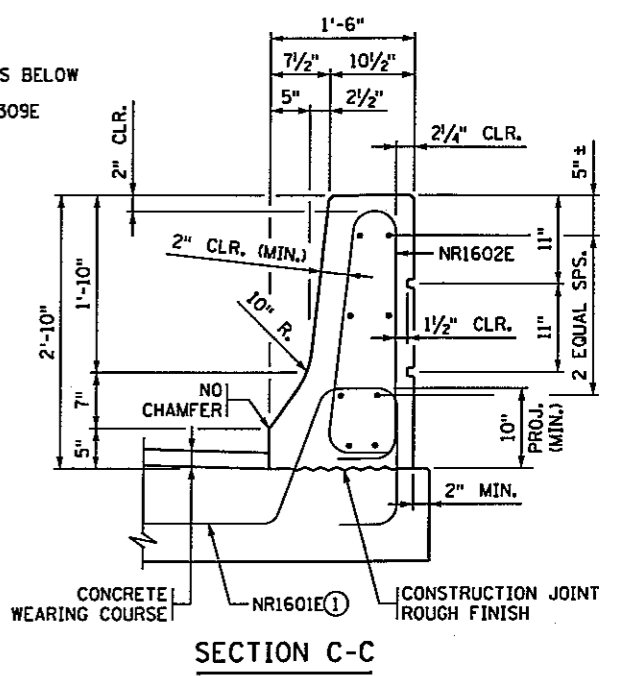
10/42/28 AM
1/20/2010
S:\E\A\Anoka\10228745-dsgn\51-cadd\Structural\cbr02577-7117e.dgn



SECTION A-A

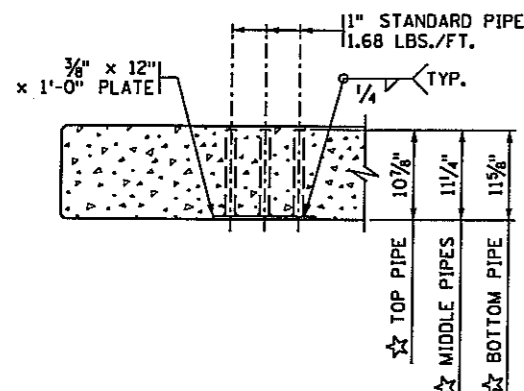


EXPANSION JOINT
(EXPANSION DEVICE NOT SHOWN)
INSIDE ELEVATION OF BARRIER
(CONCRETE WEARING COURSE NOT SHOWN)



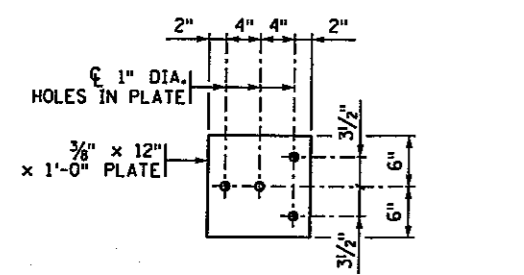
SECTION C-C

BARRIER MEETS TEST LEVEL 4 REQUIREMENTS OF NCHRP REPORT 350



SECTION B-B

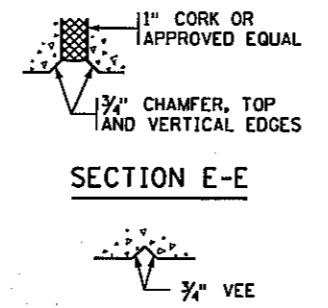
(REINFORCEMENT NOT SHOWN)
★ DIMENSIONS INCLUDE 3/8" PLATE



GUARDRAIL CONNECTION DETAIL

GALVANIZE AFTER FABRICATION PER Mn/DOT SPEC. 3394
ESTIMATED WEIGHT = 22 LBS

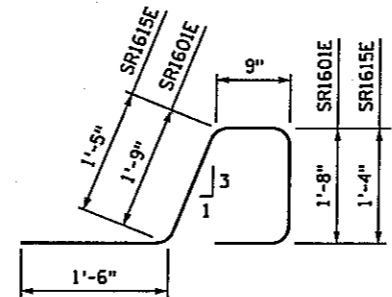
BARRIER RUSTICATION



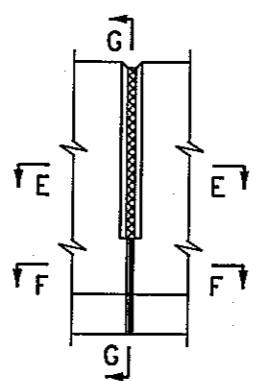
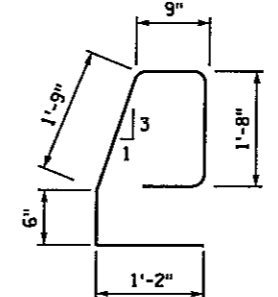
SECTION E-E

SECTION F-F

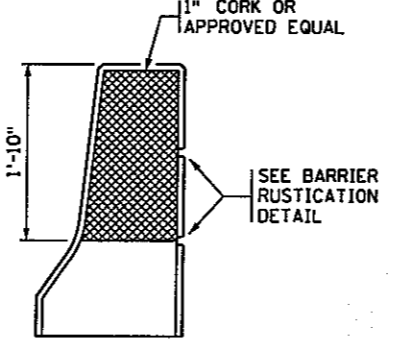
NR1601E, NR1615E



NR1614E



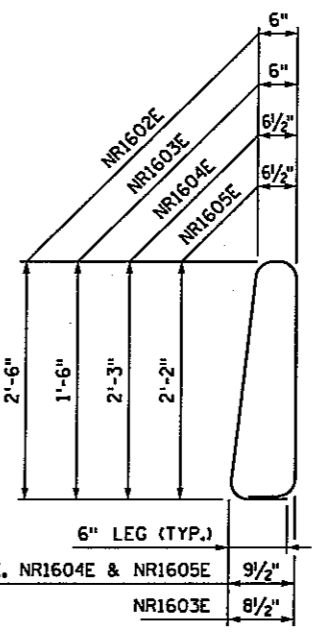
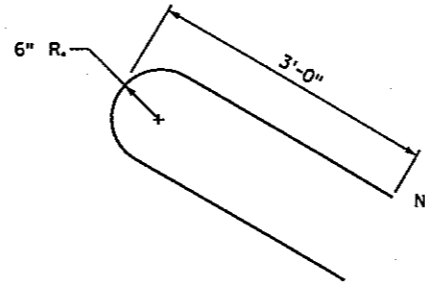
ELEVATION



SECTION G-G

DEFLECTION JOINT DETAILS

NR2206E



NR1602E, NR1603E, NR1604E & NR1605E

BILL OF REINFORCEMENT FOR NORTH BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
NR1601E	521	6'-3"		BARRIER DOWEL
NR1602E	561	6'-7"		BARRIER VERTICAL
NR1603E	4	4'-7"		BARRIER VERTICAL
NR1604E	2	6'-1"		BARRIER VERTICAL
NR1605E	2	5'-11"		BARRIER VERTICAL
NR2206E	2	6'-6"		BARRIER VERTICAL
NR1307E	52	37'-7"		BARRIER LONGIT.
NR1308E	112	14'-8"		BARRIER LONGIT.
NR1309E	16	13'-0"		BARRIER LONGIT. TOP
NR1310E	8	19'-3"		BARRIER LONGIT.
NR1311E	4	19'-6"		BARRIER LONGIT.
NR1614E	2	6'-5"		DWL AT CATCH BASIN
NR1615E	54	5'-7"		BARRIER DOWEL

GENERAL NOTES

- LENGTH OF "TYPE F (TL-4) RAILING CONCRETE (3Y46 OR 3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE BARRIER.
- CONCRETE BARRIER = 477 LBS./FT. (0.117 CU. YDS./FT.)
- FINISH ALL EDGES OF BARRIER WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.
- MAXIMUM SPACING OF CONCRETE DEFLECTION JOINTS SHALL BE 20 FT.
- SEE SUPERSTRUCTURE SHEET FOR JOINT SPACING.
- GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.
- GUARDRAIL CONNECTION, CORK, AND NAME PLATE TO BE CONSIDERED INCIDENTAL TO "TYPE F (TL-4) RAILING CONCRETE (3Y46 OR 3Y46A)".
- BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.
- ① PLACE BAR ON TOP OF BOTTOM REINFORCEMENT MAT.

REVISED: 05-26-2006
APPROVED: DECEMBER 18, 2003
Daniel C. Klepp
STATE BRIDGE ENGINEER

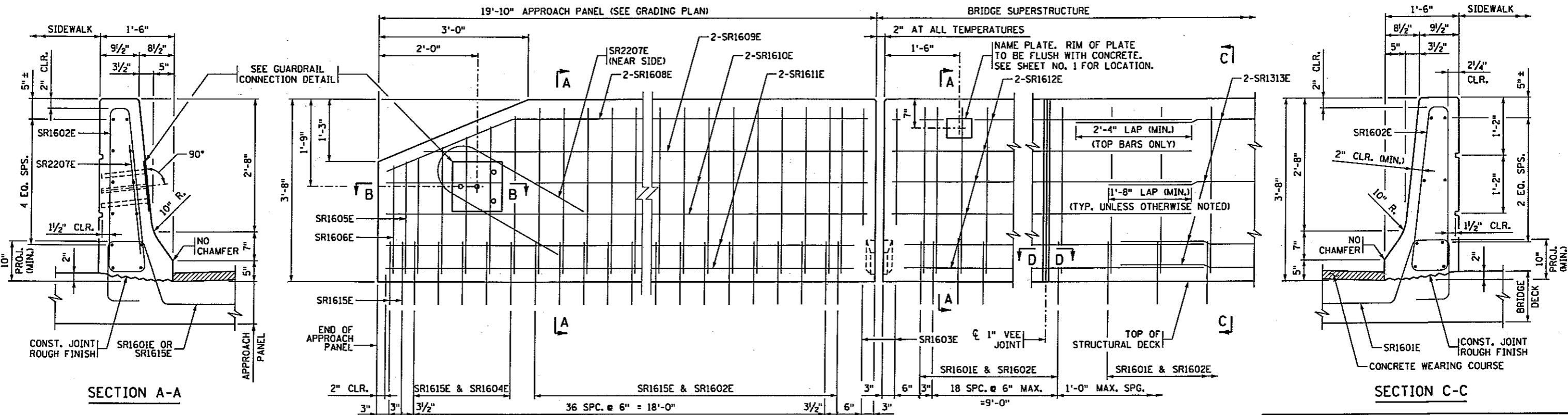
SEH
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
CONCRETE BARRIER (TYPE F, TL-4)
WITH INTEGRAL END POST
(WITH CONCRETE WEARING COURSE)

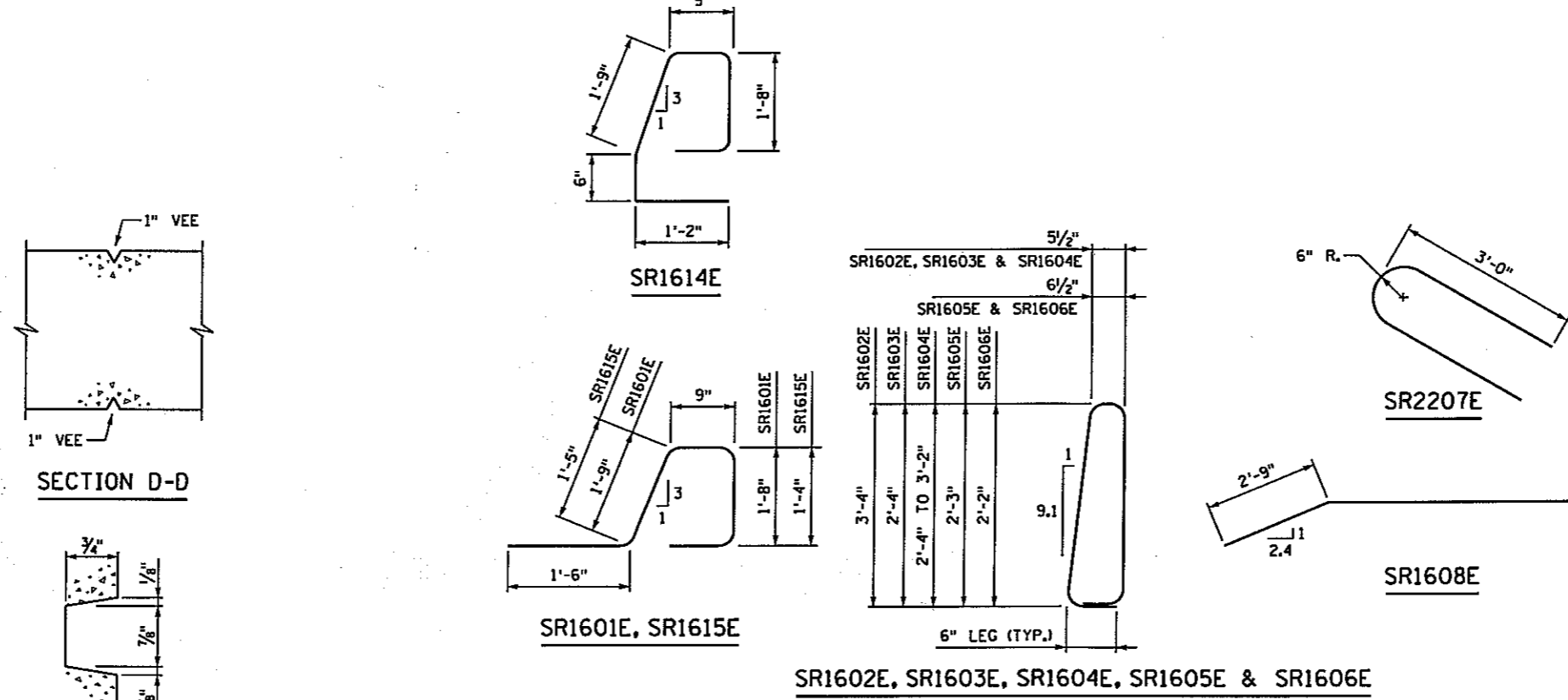
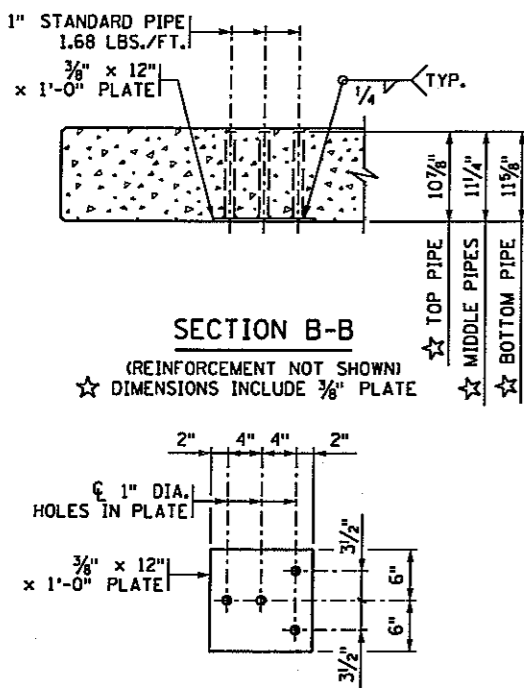
SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: NCK CHK: NCK
SHEET NO B8 OF B22 SHEETS
FIG. 5-397.117
BRIDGE NO 02577

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1/20/2010
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BARRIER MEETS TEST LEVEL 5 REQUIREMENTS OF NCHRP REPORT 350

BILL OF REINFORCEMENT FOR SOUTH BARRIER				
BAR	NO.	LENGTH	SHAPE	LOCATION
SR1601E	492	6'-3"	[Symbol]	BARRIER DOWEL
SR1602E	559	8'-2"	[Symbol]	BARRIER VERTICAL
SR1603E	4	6'-2"	[Symbol]	BARRIER VERTICAL
SR1604E	2 SERIES OF 5	6'-2" TO 7'-10"	[Symbol]	BARRIER VERTICAL
SR1605E	2	6'-1"	[Symbol]	BARRIER VERTICAL
SR1606E	2	5'-11"	[Symbol]	BARRIER VERTICAL
SR2207E	2	6'-6"	[Symbol]	BARRIER VERTICAL
SR1608E	4	19'-11"	[Symbol]	BARRIER LONGIT.
SR1609E	4	18'-11"	[Symbol]	BARRIER LONGIT.
SR1610E	8	19'-6"	[Symbol]	BARRIER LONGIT.
SR1611E	8	19'-3"	[Symbol]	BARRIER LONGIT.
SR1612E	24	13'-0"	[Symbol]	BARRIER LONGIT.
SR1313E	96	40'-0"	[Symbol]	BARRIER LONGIT.
SR1614E	2	6'-5"	[Symbol]	DWL AT CATCH BASIN
SR1615E	80	5'-7"	[Symbol]	BARRIER DOWEL



GENERAL NOTES

LENGTH OF "TYPE F (TL-5) RAILING CONCRETE (3Y46 OR 3Y46A)" FOR PAYMENT SHALL BE MEASURED BETWEEN THE OUTSIDE FACES OF THE CONCRETE BARRIER.

CONCRETE BARRIER = 582 LBS./FT. (0.144 CU. YDS./FT.)

FINISH ALL EDGES OF BARRIER WITH 1/2" VEE, EXCEPT WHERE OTHERWISE NOTED.

MAXIMUM SPACING OF 1" VEE JOINTS SHALL BE 10 FT.

GUARDRAIL CONNECTION TO BE STRUCTURAL STEEL, Mn/DOT SPEC. 3306.

GUARDRAIL CONNECTION AND NAME PLATE TO BE CONSIDERED INCIDENTAL TO "TYPE F (TL-5) RAILING CONCRETE (3Y46 OR 3Y46A)".

BARRIER QUANTITIES ARE LISTED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

REVISED: 05-26-2006
APPROVED: JULY 25, 2005
STATE BRIDGE ENGINEER

BARRIER RUSTICATION

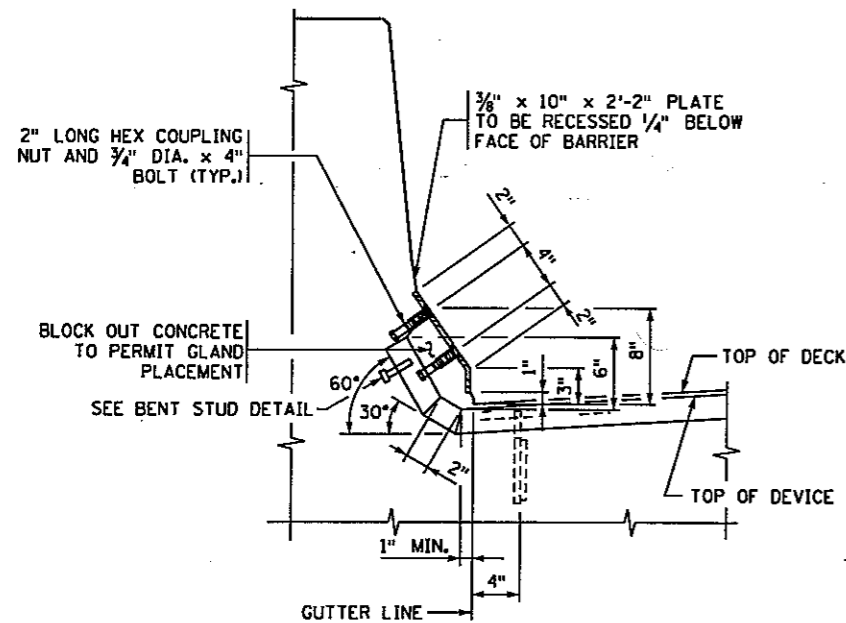
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: Nathan C. Klopff
Printed Name: NATHAN C. KLOPP
Date: 7-28-09
Reg. No.: 43836

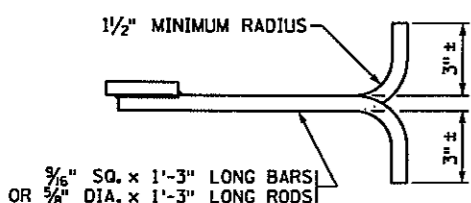
TITLE: CONCRETE BARRIER (TYPE F, TL-5) WITH BRIDGE SLAB SIDEWALK AND INTEGRAL END POST (WITH CONC. WEARING COURSE)

SP 02-614-32
DES: MAW DR: MAW
CHK: NCK CHK: NCK
APPROVED: [Signature]
FIG. 5-397.125
BRIDGE NO 02577
SHEET NO B9 OF B22 SHEETS

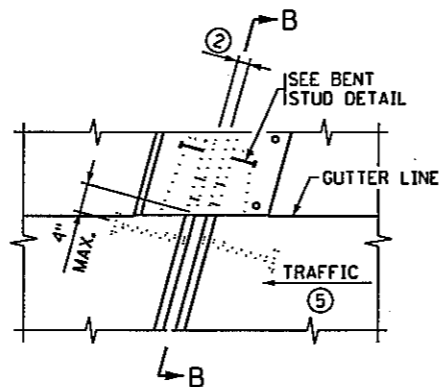
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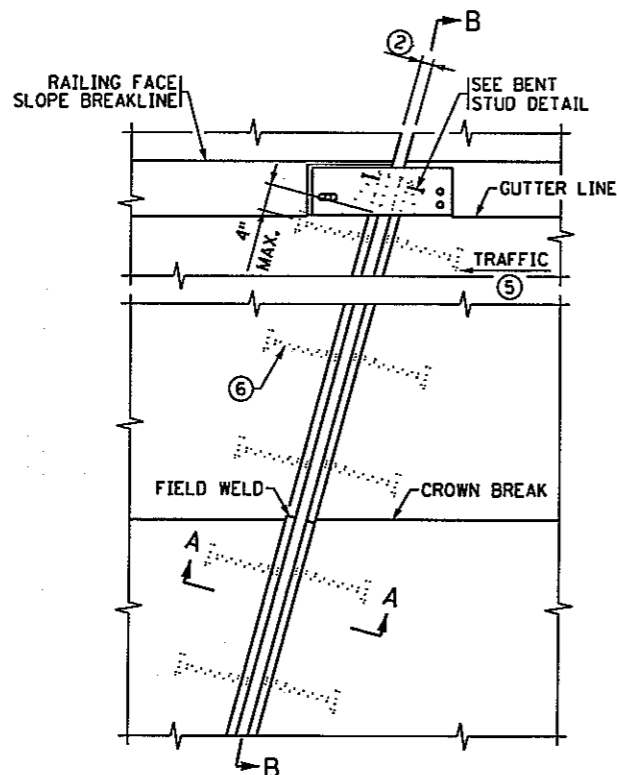
SECTION THROUGH RAILING
TYPE F RAILING



BAR-ROD DETAIL

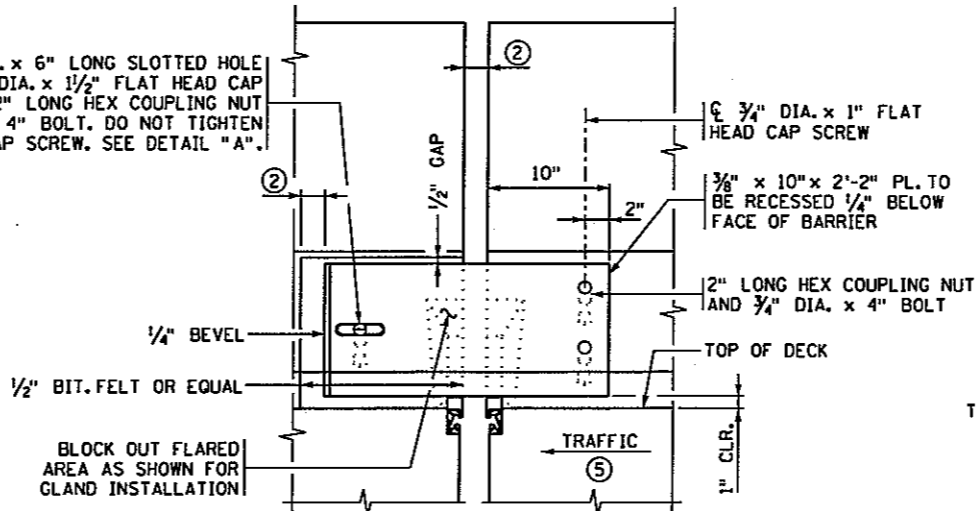


PLAN VIEW @ EXPANSION DEVICE
MEDIAN OR SIDEWALK ALTERNATE

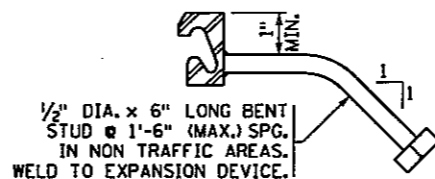


PLAN VIEW @ EXPANSION DEVICE
WITH STRAIGHT DEVICE

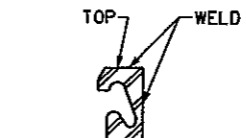
1" DIA. x 6" LONG SLOTTED HOLE FOR 3/4" DIA. x 1/2" FLAT HEAD CAP SCREW WITH 2" LONG HEX COUPLING NUT AND 3/4" DIA. x 4" BOLT. DO NOT TIGHTEN DOWN CAP SCREW. SEE DETAIL "A".



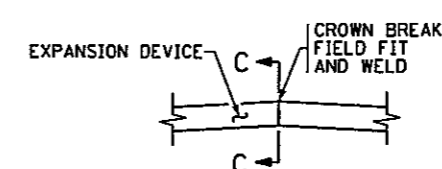
RAILING ELEVATION



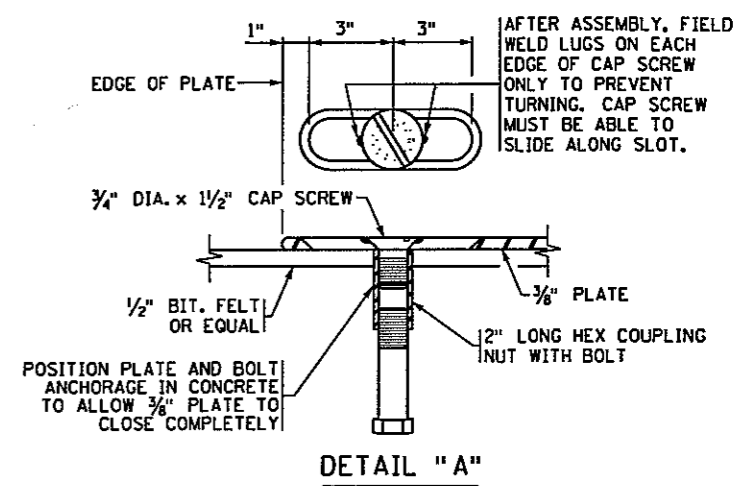
BENT STUD DETAIL



SECTION C-C



DETAIL "B"



DETAIL "A"

GENERAL NOTES
GALVANIZE STRUCTURAL STEEL AFTER FABRICATION AS PER Mn/DOT SPEC. 3394. GALVANIZE FASTENERS AS PER Mn/DOT SPEC. 3392.
JOINTS IN EXTRUSION SHALL BE LOCATED AT BREAKS IN TRANSVERSE PROFILE AND AS OTHERWISE REQUIRED. JOINTS SHALL BE CLOSE FIT AND WELDED. REPAIR AFTER WELDING AS PER Mn/DOT SPEC. 2471.3L.

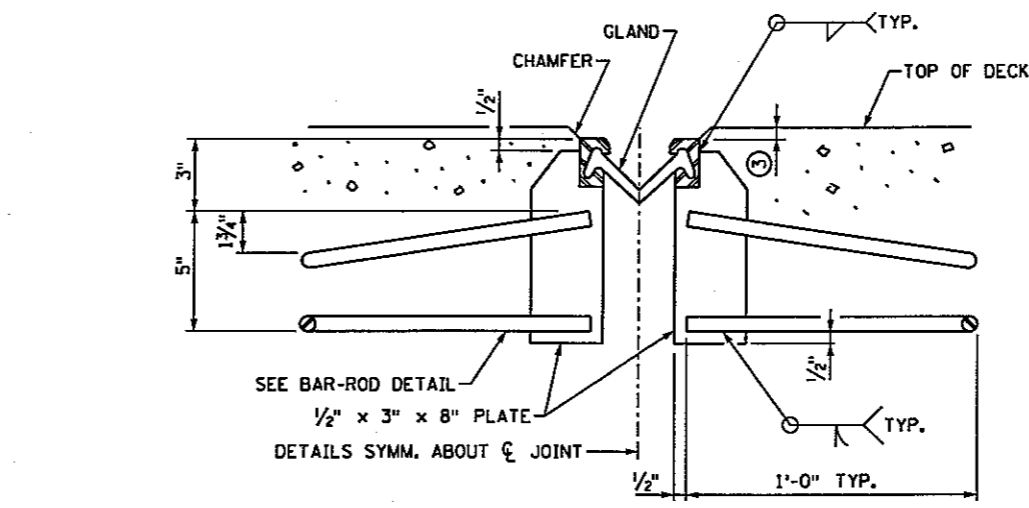
STRUCTURAL STEEL SHALL COMPLY WITH Mn/DOT SPEC. 3306 OR Mn/DOT SPEC. 3309.

EXPANSION DEVICE SHALL BE STRAIGHTENED TO A TOLERANCE OF 1/8" IN 10 FT.

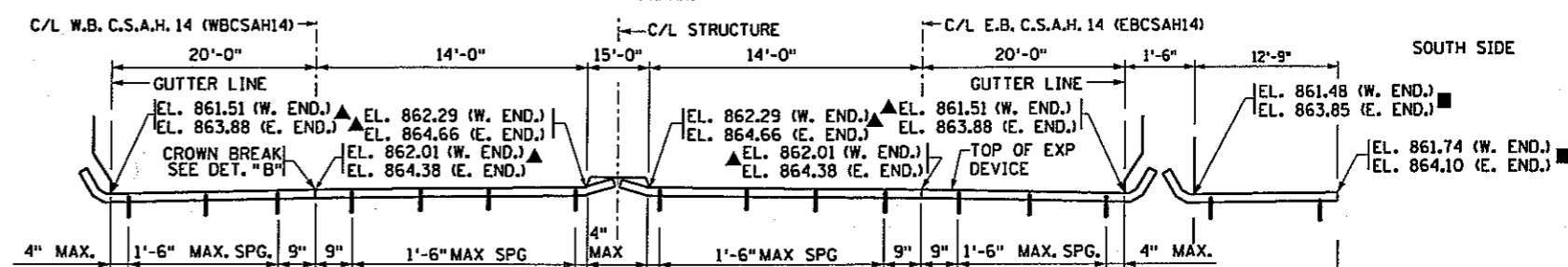
CAP SCREWS SHALL BE COUNTERSUNK 1/16" BELOW TOP OF PLATE.

LENGTH OF PAYMENT FOR DEVICE IS FROM OUT TO OUT OF EXTRUSION ALONG CENTERLINE OF JOINT.

- ① DIMENSIONS ARE ALONG CENTERLINE OF JOINT.
- ② 2" AT 45°; 1" AT 90°
- ③ 1/8" (1/4" MAX.), 1/2" (5/8" MAX.) WHEN SNOWPLOW FINGERS ARE USED. SNOWPLOW FINGERS ARE REQUIRED FOR SKEWS OVER 15° AND LESS THAN 50°.
- ④ SEE SUPERSTRUCTURE DETAILS FOR RADIUS.
- ⑤ SEE SHEET NO. 1 FOR DIRECTION OF TRAFFIC.
- ⑥ PLACE BAR-ROD NORMAL TO JOINT ON NEW BRIDGES AND JOINT REPLACEMENTS. ON JOINT REPLACEMENTS WHEN SKEW IS OVER 15° AND LESS THAN 50° BEND RODS PARALLEL TO C ROADWAY.



SECTION A-A



SECTION B-B ~ ALONG C JOINT - S ABUT

▲ ELEVATIONS SHOWN ARE 1/8" BELOW TOP OF SLAB @ C JOINT
■ ELEVATIONS SHOWN ARE 1/2" BELOW TOP OF SLAB @ C JOINT

REVISION:
APPROVED: SEPTEMBER 26, 2003
Daniel C. Klapp
STATE BRIDGE ENGINEER

3535 VADNAS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150
SEH

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klapp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
WATERPROOF EXPANSION DEVICE (WITH TYPE F BARRIER)

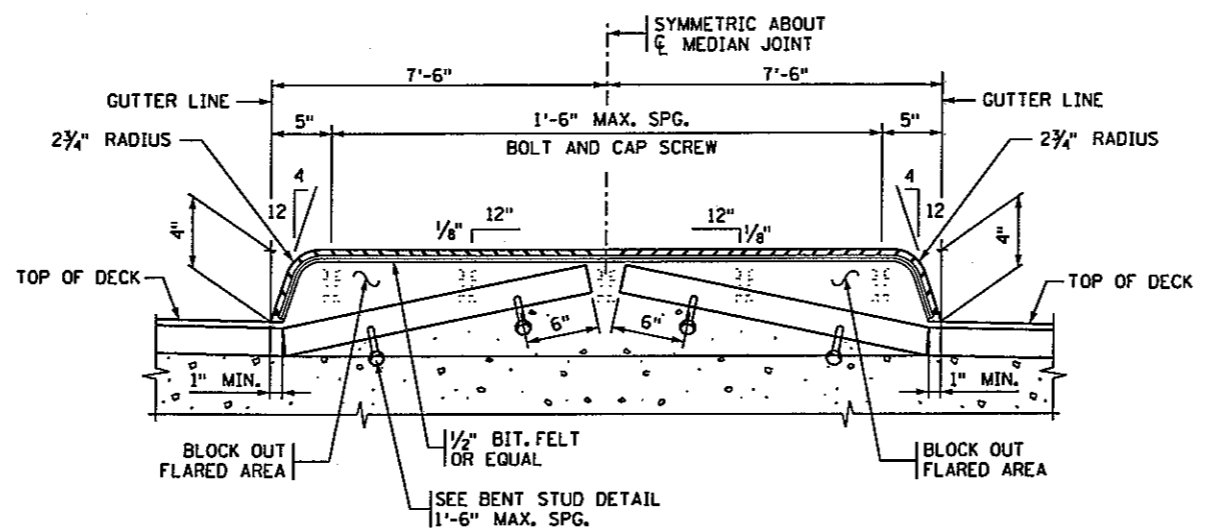
SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: NCK CHK: NCK
SHEET NO B10 OF B22 SHEETS
FIG. 5-397.627
BRIDGE NO 02577

MODIFIED

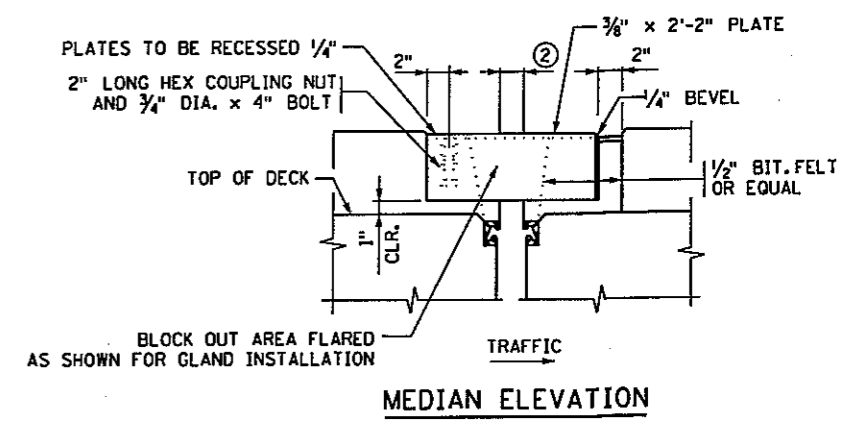
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1/20/2010

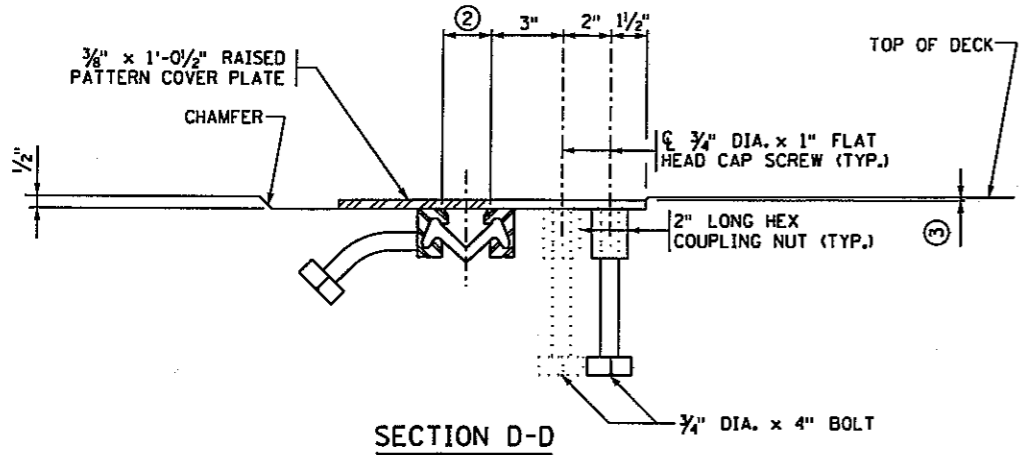
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MEDIAN SECTION

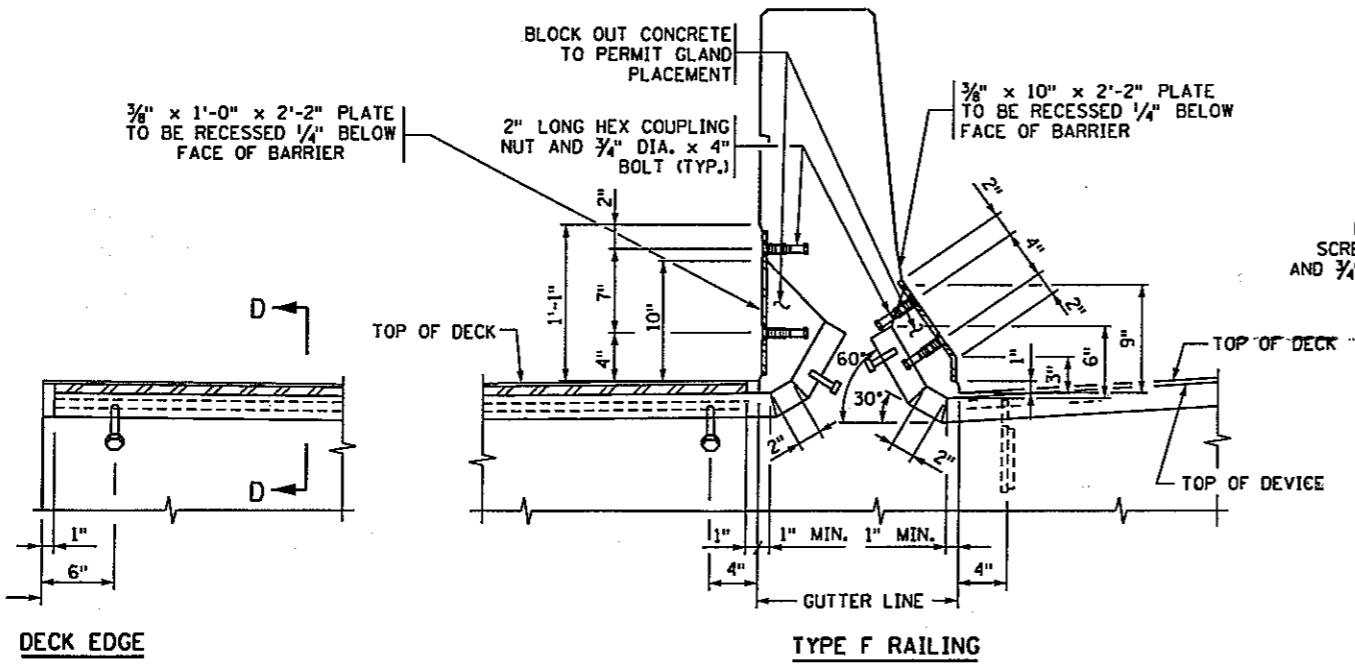


MEDIAN ELEVATION



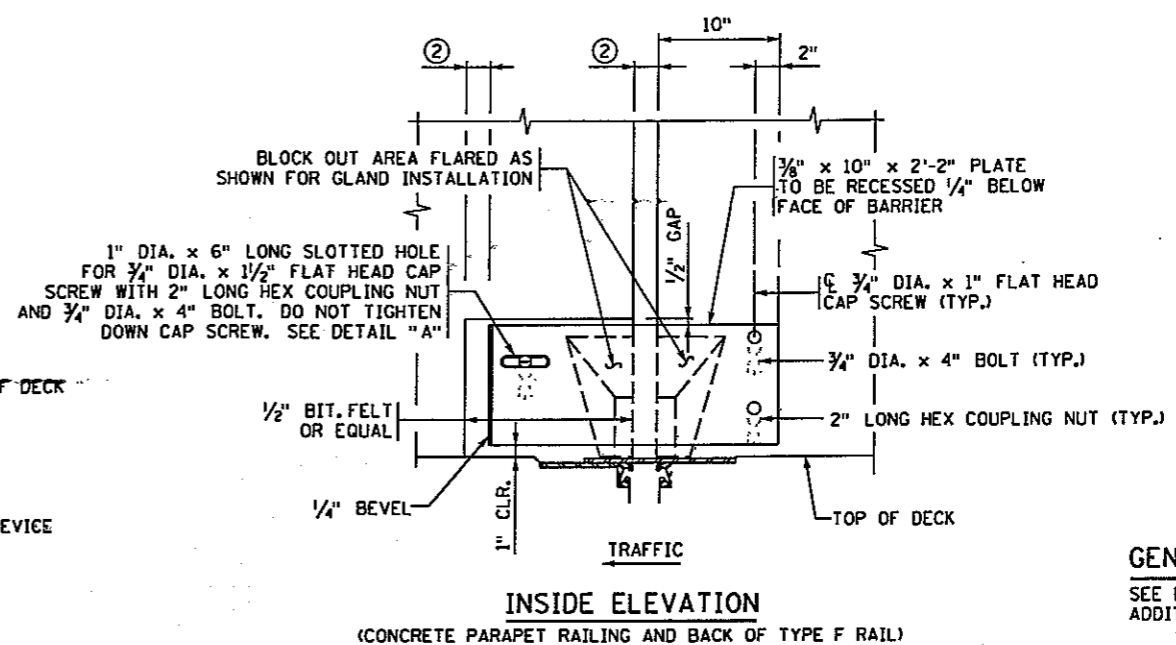
SECTION D-D

NOTE:
TRANSVERSE DECK REINFORCEMENT MAY
BE SHIFTED THE MINIMUM DISTANCE
REQUIRED FOR EXPANSION DEVICE PLACEMENT



DECK EDGE

TYPE F RAILING



INSIDE ELEVATION

(CONCRETE PARAPET RAILING AND BACK OF TYPE F RAIL)

GENERAL NOTE
SEE DETAIL 5-397.627, SHEET B10 FOR
ADDITIONAL DETAILS AND NOTES.

REVISION: 10-28-2008
APPROVED: SEPTEMBER 26, 2003
Daniel J. Hanson
STATE BRIDGE ENGINEER

SECTION THROUGH RAILINGS - INTEGRAL SIDEWALK
AT SOUTH DECK EDGE

SEH
3535 VADNAS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
WATERPROOF
EXPANSION DEVICE
(WITH RAISED MEDIAN OR SIDEWALK)

SP 02-614-32

DES: MAW DR: MAW
CHK: NCK CHK: NCK

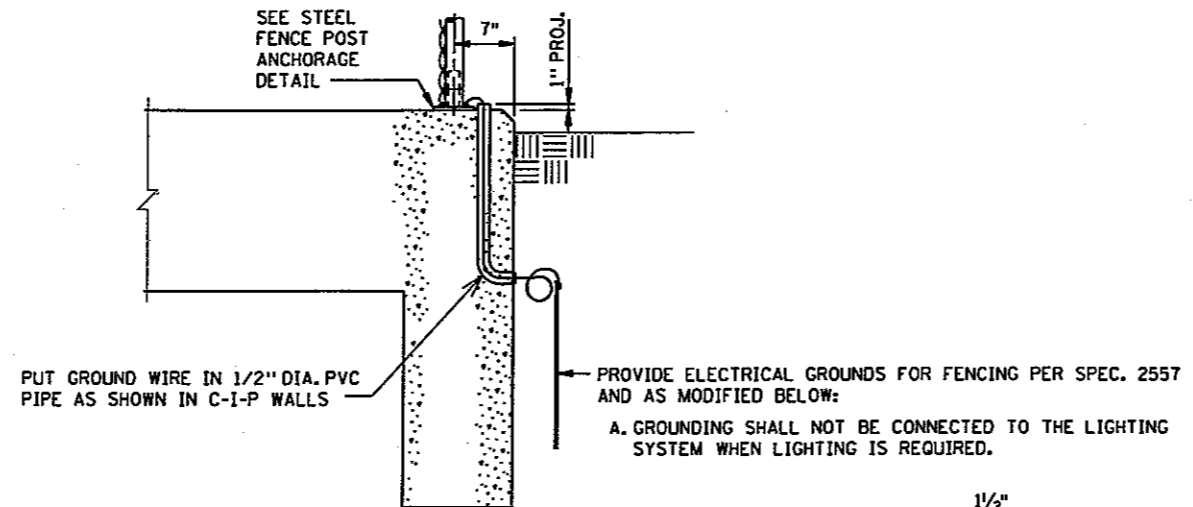
APPROVED:

FIG. 5-397.630

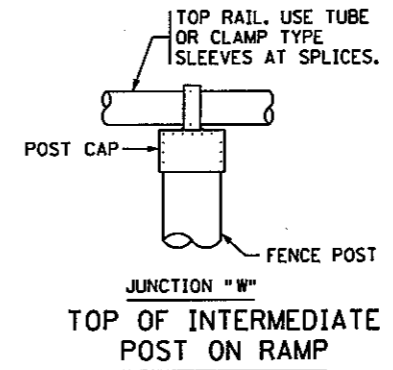
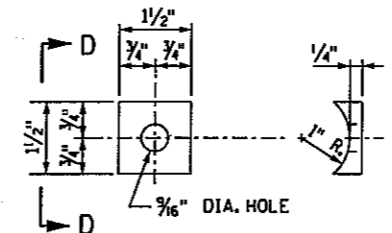
SHEET NO B11 OF B22 SHEETS

BRIDGE NO
02577

10142135 AM
1/20/2010
S:\AEV\Anokic\10228715-dsgn\51-cadd\structure\01\cbr-02577-7202e.dgn

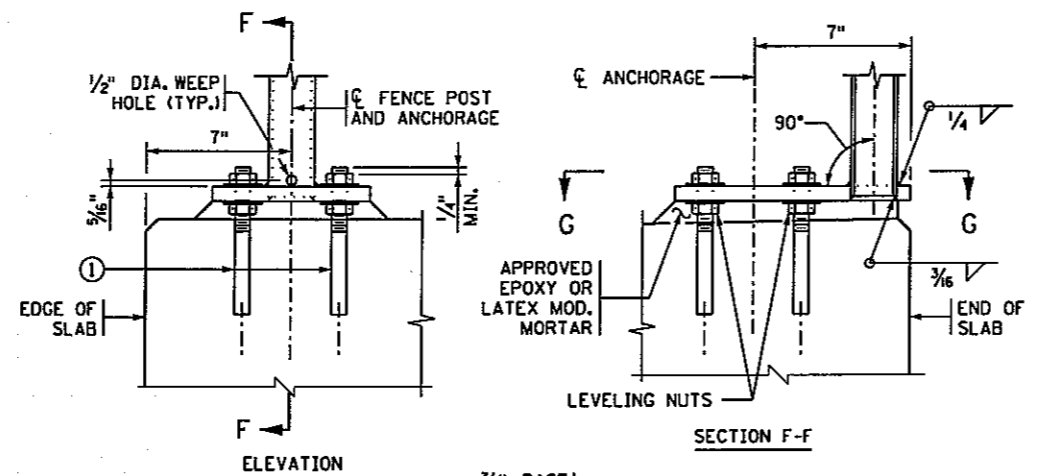
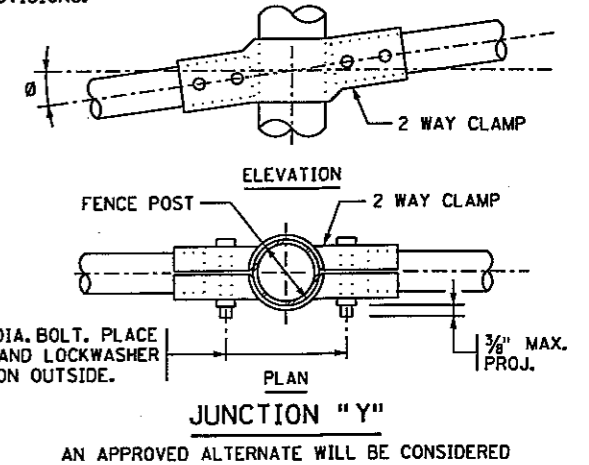
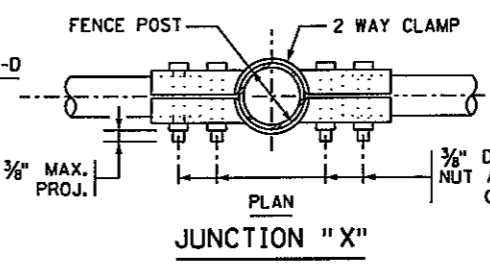


GROUNDING SECTION



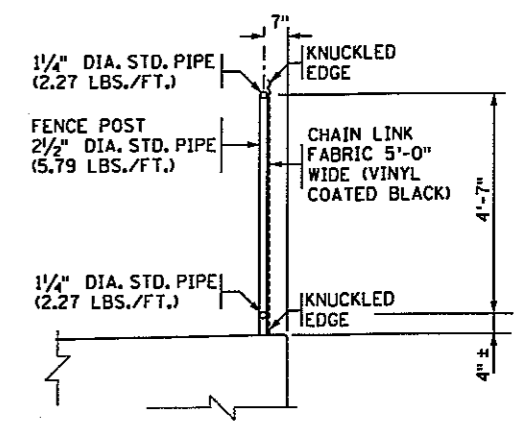
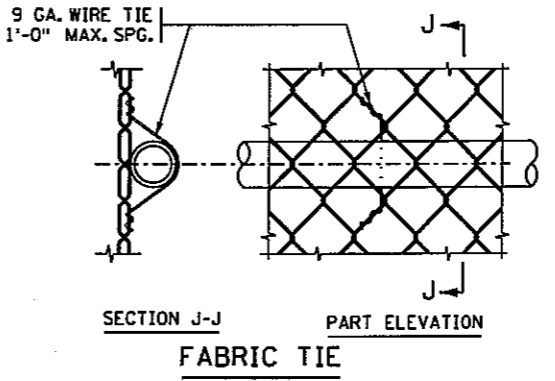
2 WAY CLAMP BENDING TABLE

GRADE OF FENCE	Ø
0° TO 2°	0"
2° TO 6°	4"
6° TO 10°	8"

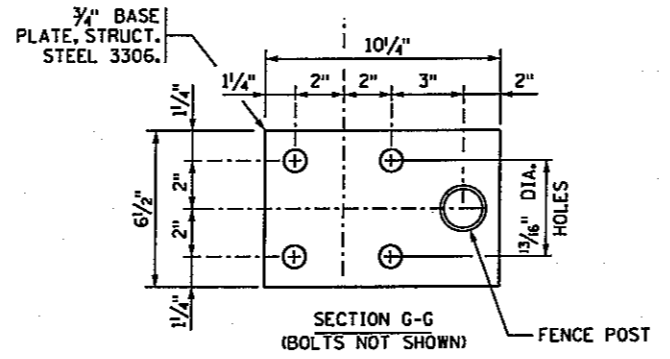


ELEVATION

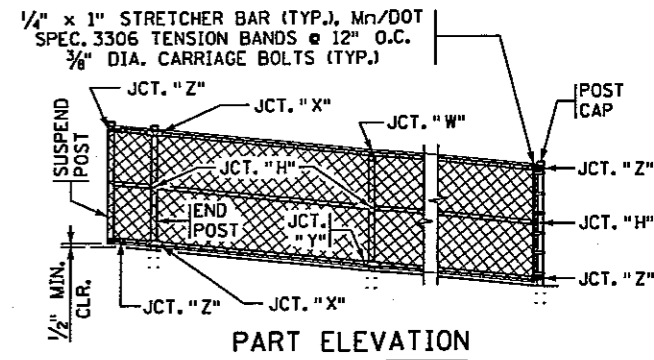
SECTION F-F



TYPICAL SECTION



BOLT ANCHORAGE FOR FENCE POSTS-TYPE 2



PART ELEVATION

REVISION: 04-23-2003
APPROVED: NOVEMBER 26, 1985
Donald J. Fleming
STATE BRIDGE ENGINEER

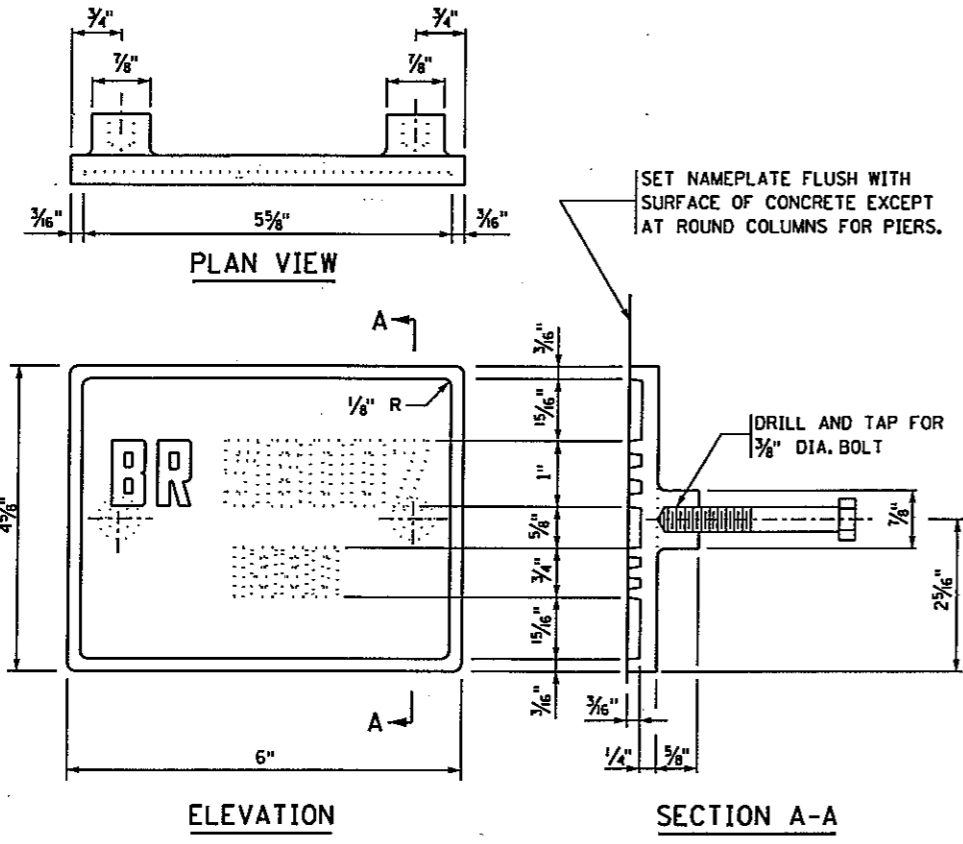
3535 YADNAS CENTER DRIVE
ST. PAUL, MN 55113
PHONE (651) 490-2000
FAX (651) 490-2150
SEH

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
5 FT. WIRE FENCE (DESIGN W-1) FOR PEDESTRIAN BRIDGES

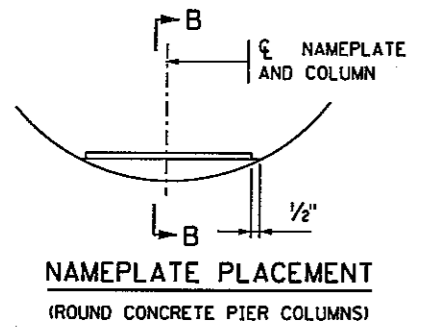
SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: NCK CHR: NCK
SHEET NO B12 OF B22 SHEETS
FIG. 5-397.202
BRIDGE NO 02577

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1/20/2010
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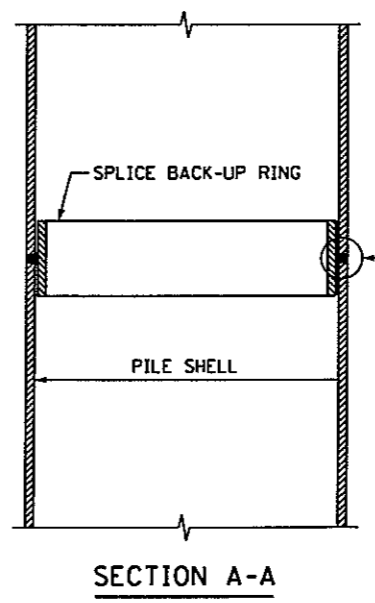
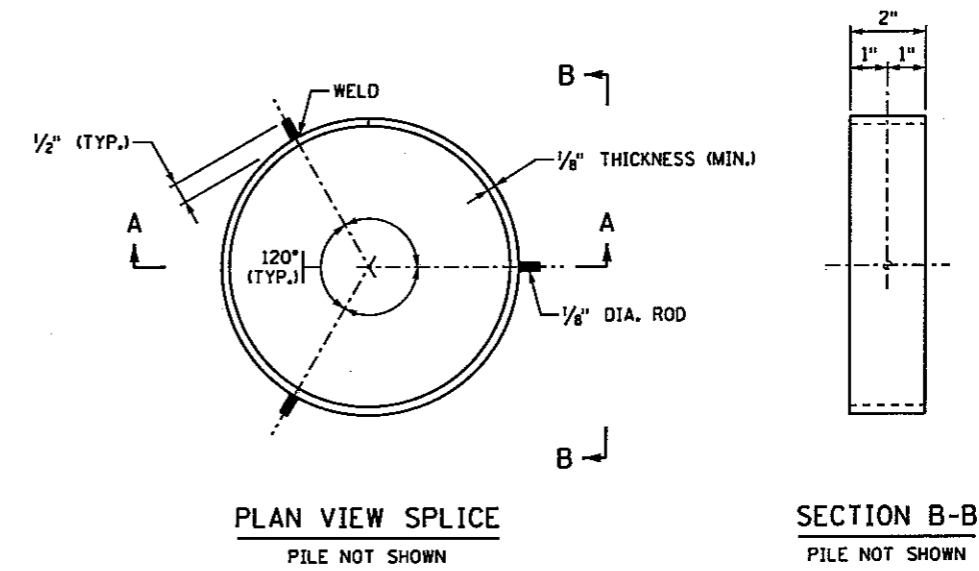


THE DASHED NUMBERS SHOWN ABOVE ARE FOR ILLUSTRATION. DATA TO BE SHOWN ON NAMEPLATE IS AS FOLLOWS:

BRIDGE 02577
YEAR 2009



NOTES:
NO SHOP DRAWING REQUIRED.
MATERIAL SHALL COMPLY WITH Mn/DOT SPEC. 3327.
LETTERS AND NUMBERS SHALL CONFORM TO THOSE SHOWN.
DRAFT ON LETTERS AND NUMBERS SHALL NOT BE MORE THAN 3" IN 12".
HORIZONTAL SPACING OF LETTERS AND NUMBERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
TOP SURFACE OF LETTERS, NUMBERS AND FRAMES SHALL BE BURNISHED.
FURNISH 2 STEEL BOLTS 3/8" DIA. x 3" LONG WITH EACH PLATE.
ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN FOR THE 1" HIGH LETTERS AND NUMBERS.



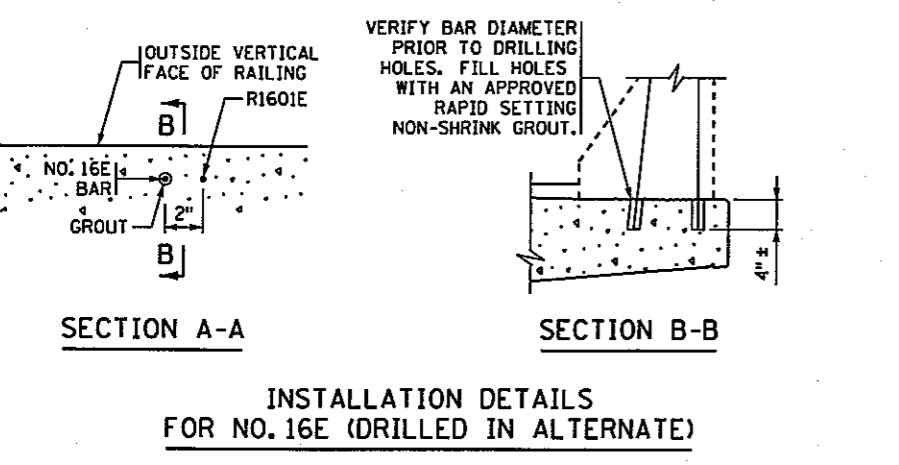
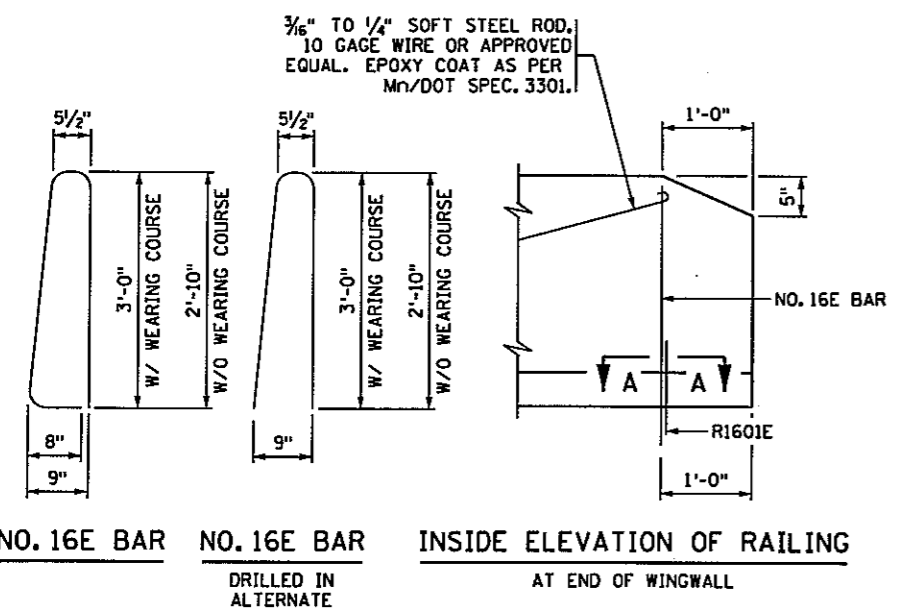
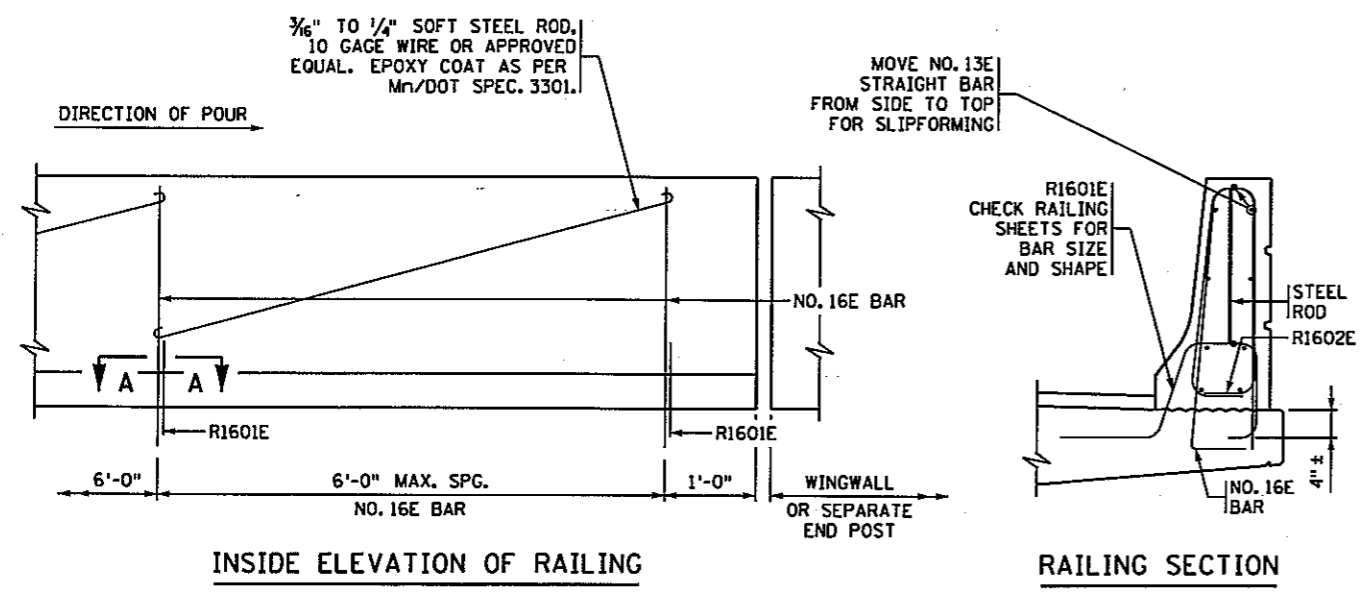
NOTES:
APPROVED COMMERCIAL PILE SPLICE BACK-UP RING MAY BE USED IN LIEU OF THE TYPE DETAILED. BACK-UP RING SHALL HAVE A TIGHT FIT.
WELDING ELECTRODES SHALL BE CELLULOSIC TYPE ELECTRODES E-6010 OR E-6011.
ELECTRODES WHICH HAVE BECOME WET, SOILED OR DAMAGED SHALL NOT BE USED.
WELDING SHALL NOT BE DONE WHEN THE AMBIENT TEMPERATURE IS LOWER THAN 0° F. OR WHEN THE PILE IS WET OR EXPOSED TO FALLING RAIN OR SNOW. WHEN THE PILE METAL TEMPERATURE IS BELOW 32° F., THE PILE METAL IN THE AREA OF THE WELD SHALL BE HEATED TO A MINIMUM TEMPERATURE OF 70° F. AND MAINTAINED AT THIS TEMPERATURE DURING WELDING.
① FOR PILE SHELL THICKNESSES GREATER THAN 1/2", USE A B-U4a WELD CONFIGURATION.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	BRIDGE NAMEPLATE (FOR NEW BRIDGES)		B101

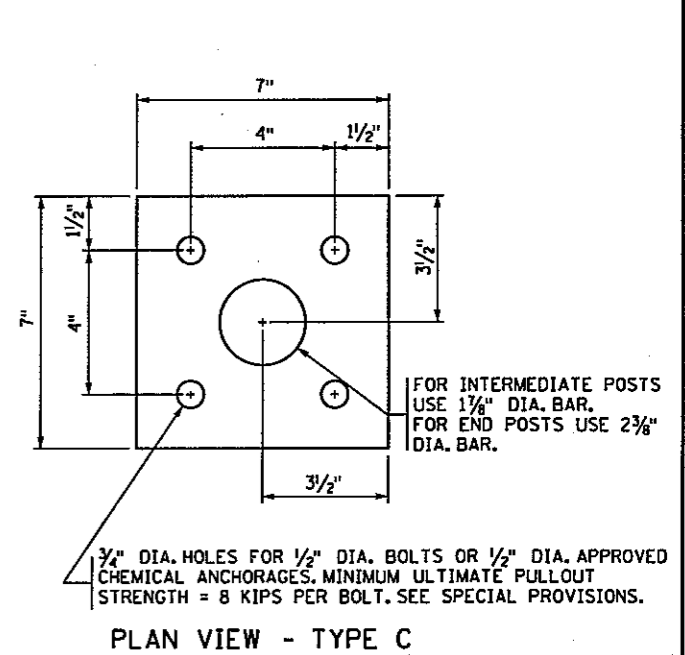
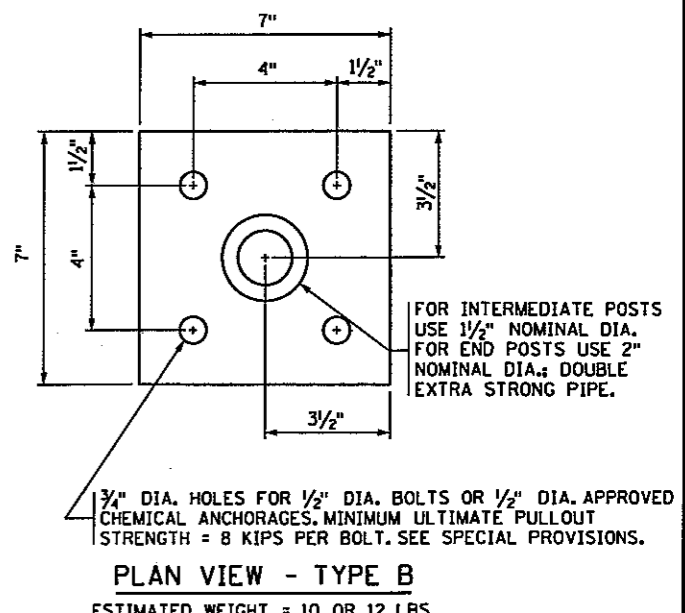
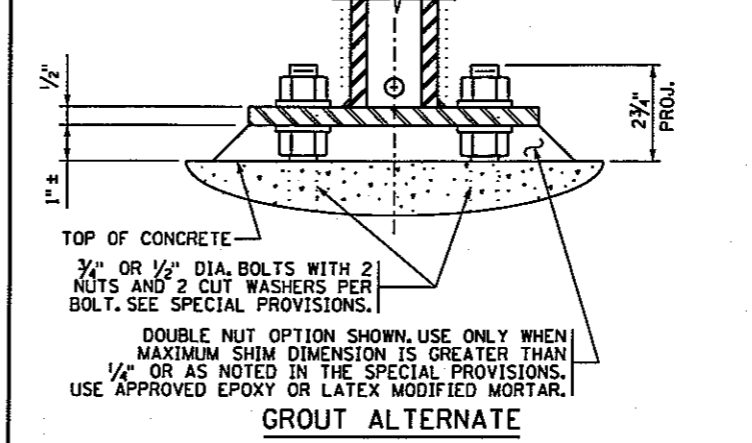
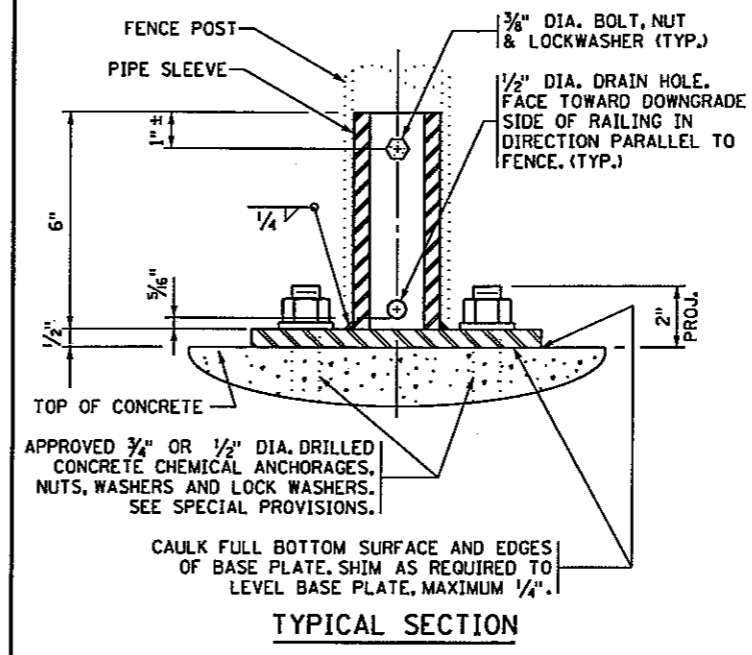
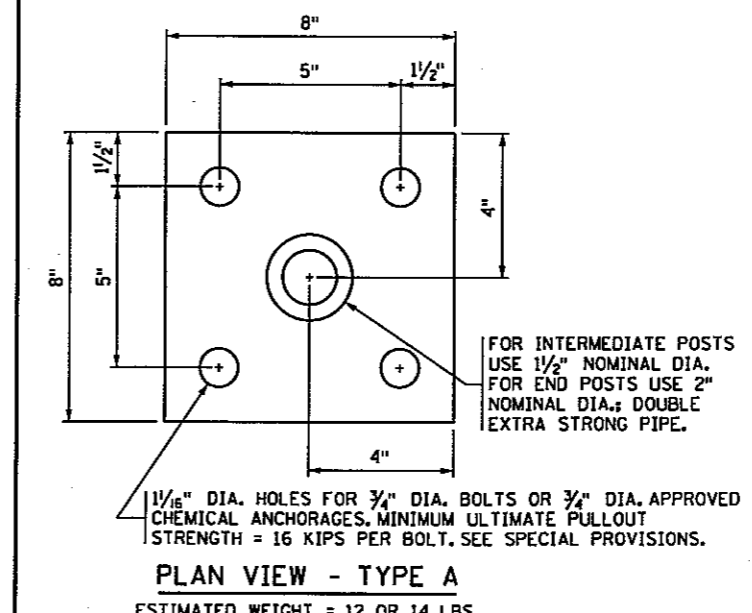
APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	PILE SPLICE (CAST-IN-PLACE CONCRETE PILES)		B201

3535 VADNAIS CENTER DRIVE ST. PAUL, MN 55110 PHONE (651) 490-2000 FAX (651) 490-2150	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota. Signature: <i>Nathan C. Klopp</i> Date: 7-28-09 Printed Name: NATHAN C. KLOPP Reg. No. 43836	TITLE: B-DETAILS	DES: MAW	DR: MAW	APPROVED:	BRIDGE NO 02577
			CHK: JAJ	CHK: JAJ		

10/4/2010 10:42:37 AM
1/20/2010
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NOTES:
 CONTRACTOR WILL TOOL V-GROOVE AT DEFLECTION JOINTS AT TIME RAIL IS CAST AND SHALL EXTEND V-GROOVE AROUND ENTIRE PERIMETER OF RAIL.
 FOR ADDITIONAL DIMENSIONS, DETAILS, REINFORCEMENT AND NOTES SEE RAILING SHEET.
 FORM RAIL FOR A MINIMUM OF 2' ON EACH SIDE OF EXPANSION DEVICES, LIGHT STANDARDS AND DECK DRAIN BOX OUTS.
 PAY QUANTITIES WILL NOT BE ADJUSTED AS A RESULT OF SELECTING THIS ALTERNATE.
 USE A SIMILAR METHOD FOR TALLER RAILINGS OR MODIFIED VERSIONS OF THIS RAILING.



NOTES:
 STRUCTURAL STEEL PER Mn/DOT SPEC. 3306
 STRUCTURAL PIPE PER Mn/DOT SPEC. 3362
 GALVANIZE THE FENCE POST ANCHORAGE AFTER FABRICATION PER Mn/DOT SPEC. 3394. GALVANIZE THE FASTENERS PER Mn/DOT SPEC. 3392.
 DOUBLE EXTRA STRONG PIPE WEIGHTS:
 1 1/2" NOMINAL DIA. = 6.41 LBS./FT.
 2" NOMINAL DIA. = 9.03 LBS./FT.

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	CONCRETE RAILING (TYPE F) (SLIPFORM ALTERNATE)		B830

APPROVED: NOVEMBER 22, 2002	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
<i>Daniel J. Morgan</i> STATE BRIDGE ENGINEER	FENCE POST ANCHORAGE		B905

3535 VADNAIS CENTER DRIVE
ST PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150
SEH

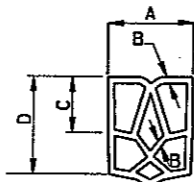
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
 Signature: *Nathan C. Klapp* Date: 7-28-09
 Printed Name: NATHAN C. KLAPP Reg. No. 43836

TITLE: B-DETAILS
 SP 02-614-32
 DES: MAW DR: MAW APPROVED:
 CHK: JAJ CHK: JAJ
 SHEET NO B14 OF B22 SHEETS
 BRIDGE NO 02577

10:42:39 AM
1/20/2010
S:\AE\AI\Anokic\102287.5-dsgn\51-cadd\Structure of Vpp\pocchp\panel 5-221_1.sprn.dgn

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE NOMINAL SEALER SIZE
A	0.69" + 0.13" - 0.05"
B	0.08" ± 0.02"
C	0.25" MIN.
D	0.63" MIN.



SPEC. REFERENCE 3721

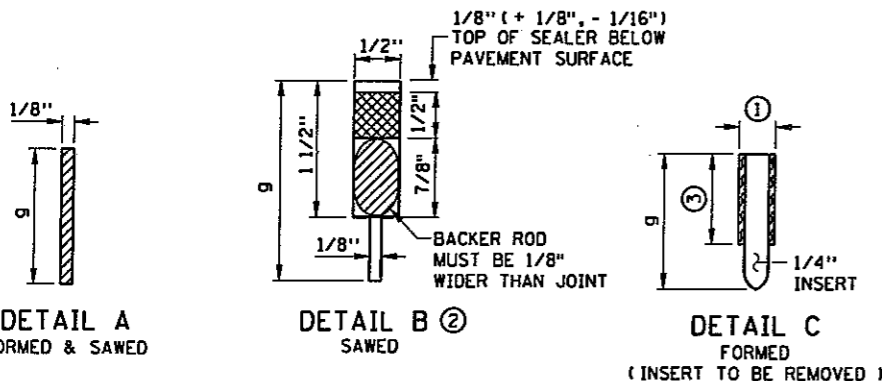
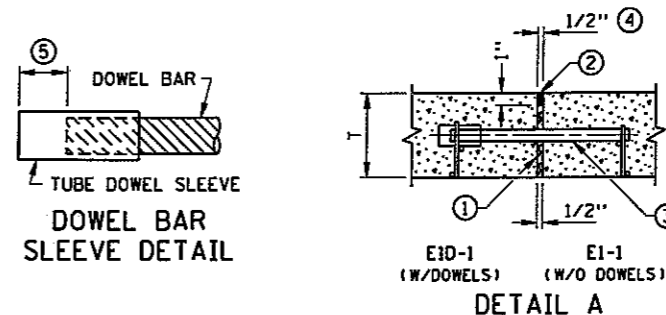
TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

CONTRACTION JOINT SEALER
PREFORMED ELASTIC TYPE

NOTES:

"A" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "C" DEPTH. IN ITS FINAL POSITION, THE TOP CORNERS OF THE PREFORMED JOINT SEALER SHALL BE PLACED NOT LESS THAN 1/8 IN. NOR MORE THAN 5/16 IN. BELOW THE PAVEMENT SURFACE.

SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET. CURRENTLY APPROVED CONFIGURATIONS ARE ON FILE IN THE MATERIALS ENGINEERING SECTION, MINNESOTA DEPARTMENT OF TRANSPORTATION.



CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2A	C2A-D	A	3725
C2B	C2B-D	B	3725
C2X	C2X-D	B OR C	3725
C3D	C3D-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	3722

DOWEL BAR DIAMETER TABLE

PAVEMENT THICKNESS T	DOWEL BAR DIAMETER
6" - 6 1/2"	1"
7" - 10"	1 1/4"
10 1/2" - 14"	1 1/2"

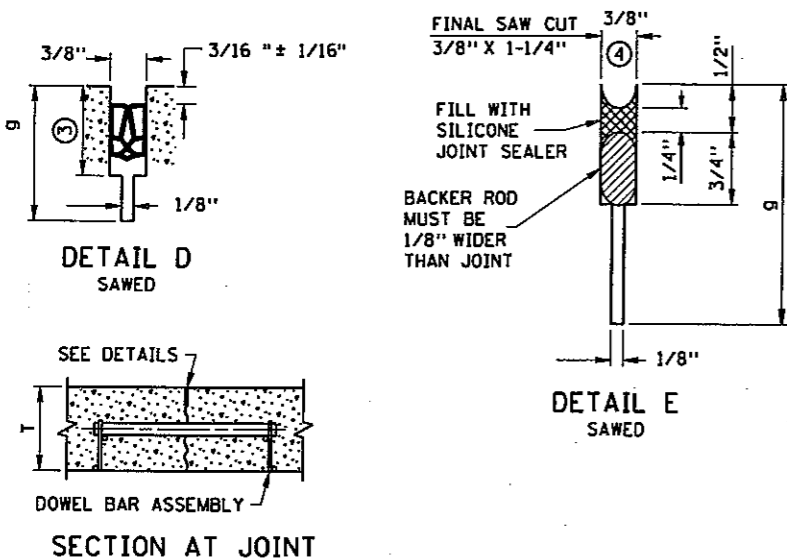
LEGEND

C = CONTRACTION JOINT
NO. = SEALANT TYPE
1 = UNSEALED
2 = 3725
3 = 3721
4 = 3722

LETTER = DETAIL
X = MORE THAN 1 DETAIL
-D = DOWEL BARS

NOTES:

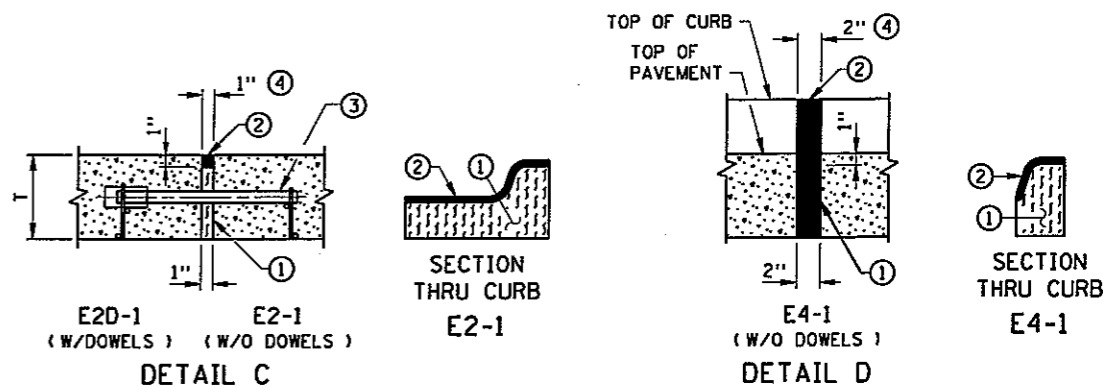
- DESIGN C3X OR C3X-D - PRIOR TO INSTALLING PREFORMED JOINT SEALER IN THE FORMED JOINT (DETAIL C), THE JOINT SHALL BE WIDENED TO A NOMINAL WIDTH OF 3/8" BY SAWING ALONG THE FULL LENGTH OF THE FORMED JOINT.
- DESIGN C2X OR C2X-D - PRIOR TO SEALING FORMED JOINT (DETAIL C) WITH HOT POUR SEALER THE JOINT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



GENERAL NOTES:

SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY.
SEE STANDARD PLATE 1150, CONSTRUCTION OF HEADER JOINTS. SEE STANDARD PLANS 5-297.217 AND 5-297.219, CONCRETE MAINLINE/RAMP PAVEMENT.
SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.
FOR UNBONDED OVERLAYS, THE JOINT DEPTH "g" SHALL BE T/3.
FOR CONCRETE PAVEMENT, THE JOINT DEPTH "g" SHALL BE T/4.

CONTRACTION JOINTS
DESIGN C



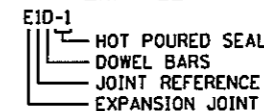
EXPANSION JOINTS

CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITH DOWELS	WITHOUT DOWELS		
E1D-1	E1-1	A	3723
E2D-1	E2-1	C	3723
	E4-1	D	3723
		E	3723
	E8S-1	(6)	3725

LEGEND

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

EXAMPLE



NOTES:

- PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.
- JOINT SEALER SPEC. 3723. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION E JOINTS FLUSH WITH SURFACE ± 1/8".
- DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.
- THE FIRST NUMBER IN THE JOINT DESIGNATION IS EQUAL TO HALF OF THE JOINT NUMBER IN 1/2" INTERVALS (I.E. E1 = 1/2", E2 = 1", E4 = 2", AND E8 = 4").
- SPACE FROM END OF DOWEL BAR TO END OF SLEEVE TO BE EQUAL TO EXPANSION JOINT WIDTH.
- SEE STANDARD PLAN 5-297.223 FOR E8S JOINT DETAIL.

EXPANSION JOINTS
DESIGN E

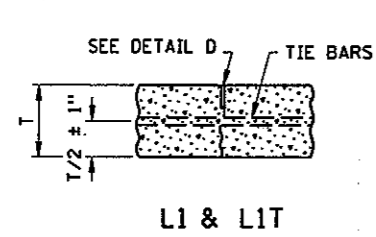
STANDARD SHEET NO.
5-297.221 (1 OF 2)
STANDARD APPROVED:
JUNE 6, 2005

TITLE:
PAVEMENT JOINTS
CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)

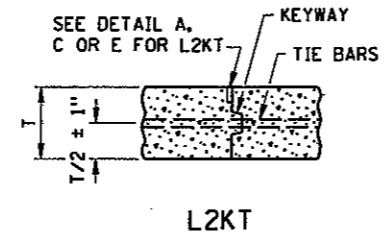
STATE PROJ. NO. SP 02-614-32

SHEET NO. B15 OF B22 SHEETS

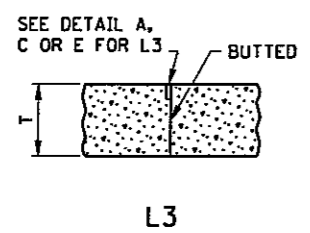
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1/20/2010
S:\V\AE\Anoke\10228715-dsgn\51-ccdd\Structural\app\acchbone\1818221_2_spn.dgn



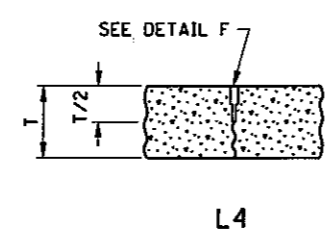
L1 & L1T



L2KT



L3

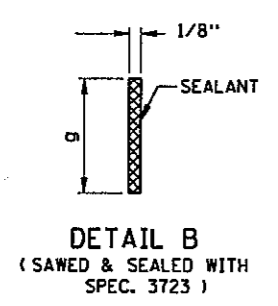


L4

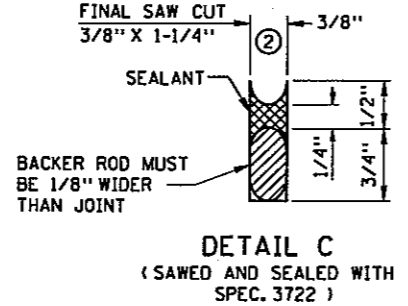
LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H	L1TH			B	3723
		L2KTH		D OR E	3723
		L2KTS		C	3722
			L3H	D OR E	3723
			L3S	C	3722
L4S				F	3722

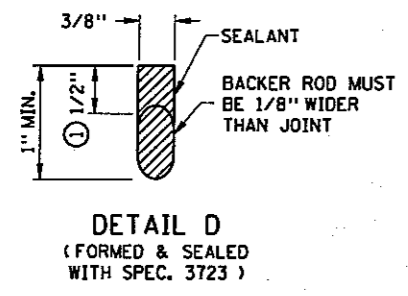
- LEGEND**
- L = LONGITUDINAL JOINT
 - NO. = JOINT REFERENCE
 - K = KEYWAY
 - T = TIE BARS
 - U = UNSEALED
 - H = HOT POUR (SEALANT)
 - S = SILICONE (SEALANT)
- JOINT REFERENCE NUMBERS**
- 1 = SAWED TO A DEPTH OF T/3
 - 2 = KEYED CONSTRUCTION JOINT
 - 3 = BUTTED CONSTRUCTION JOINT
 - 4 = SAWED TO A DEPTH OF T/2



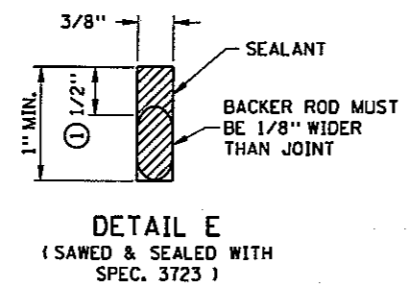
DETAIL B
(SAWED & SEALED WITH SPEC. 3723)



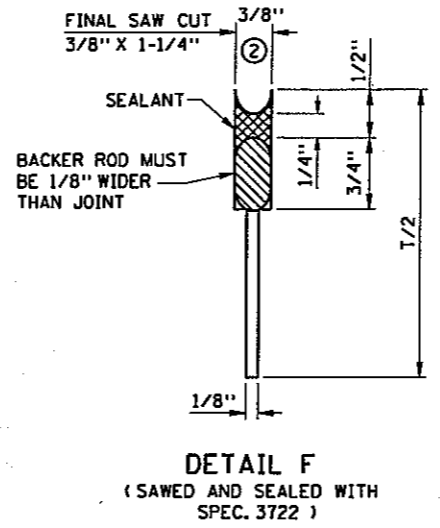
DETAIL C
(SAWED AND SEALED WITH SPEC. 3722)



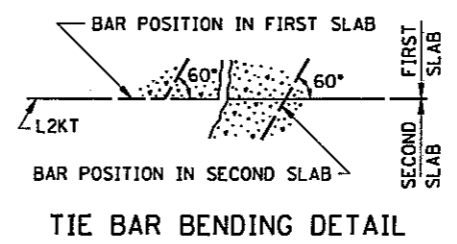
DETAIL D
(FORMED & SEALED WITH SPEC. 3723)



DETAIL E
(SAWED & SEALED WITH SPEC. 3723)



DETAIL F
(SAWED AND SEALED WITH SPEC. 3722)



TIE BAR BENDING DETAIL

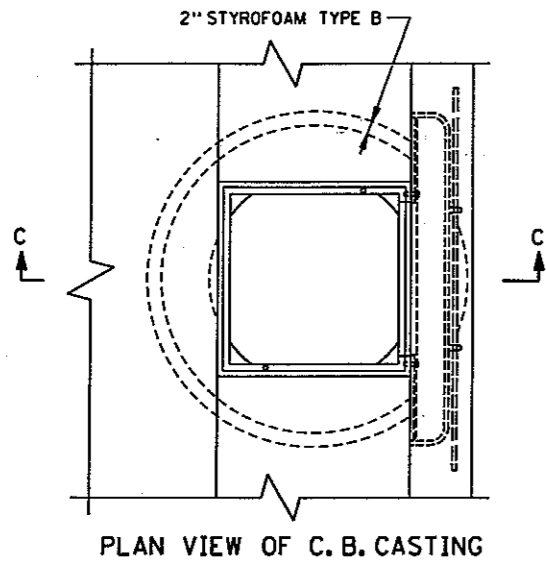
LONGITUDINAL JOINT NOTES:

- ALL REBARS ARE IN METRIC DESIGNATIONS**
- THE TIE BAR SPACING FOR ALL L2KT JOINTS SHALL BE 2' - 6" CENTER TO CENTER AND BENT 60° AS SHOWN, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.
- TIE BARS IN THE L2KT JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T JOINTS, WHEN TYING PAVEMENT TO PAVEMENT. TIE BARS IN THE L2KT JOINTS SHALL BE NO. 13 X 2' - 6", WHEN TYING CURB & GUTTER TO PAVEMENT.
- ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.
- NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED FOUR LANES, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.
- JOINT WIDTH TOLERANCE IS + 1/16 IN. TO - 1/32 IN.
- FOR CONCRETE PAVEMENT THE JOINT DEPTH "g" SHALL BE T/3 INCHES.
- SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.
- ① THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F, WITH A DIAMETER 1/8 IN. LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2 IN. BELOW THE TOP OF THE PAVEMENT.
 - ② THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A 1/2 IN. DIAMETER CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2 IN. BELOW THE SURFACE OF THE PAVEMENT. NON-SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEALANT BEAD THICKNESS OF 1/4 IN.
- GENERAL NOTES:**
- SEE STANDARD PLATE 1103, DOWEL BAR ASSEMBLY. SEE STANDARD PLATE 1141, PAVEMENT KEYWAY. SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.
- SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED & SPECIAL REINFORCEMENT REQUIRED.

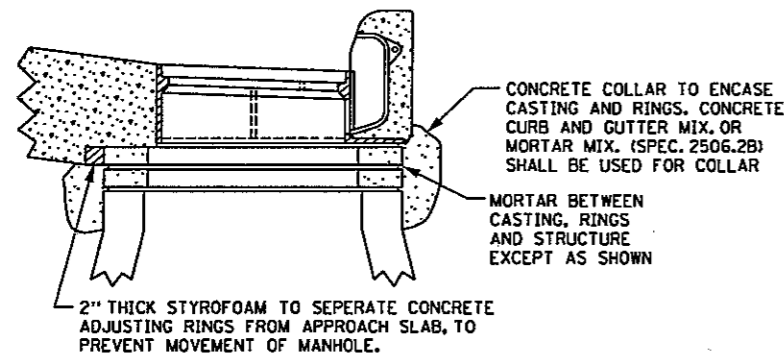
STANDARD SHEET NO. 5-297.221 (2 OF 2)	TITLE: PAVEMENT JOINTS LONGITUDINAL (DESIGN L)
STANDARD APPROVED: JUNE 6, 2005	
STATE PROJ. NO. SP 62-614-32	SHEET NO. B16 OF B22 SHEETS

**SUMMARY OF QUANTITIES FOR
(2) BRIDGE APPROACH PANELS**

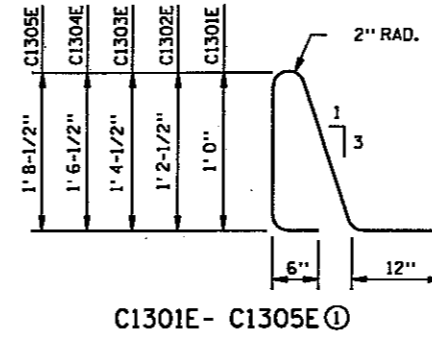
CONCRETE MIX NO. 3X42	128	CU. YD.
REINFORCEMENT BARS (EPOXY COATED)	22460	LBS.
CURB DESIGN B4 INTEGRANT		LN. FT.
CURB DESIGN B424		LN. FT.



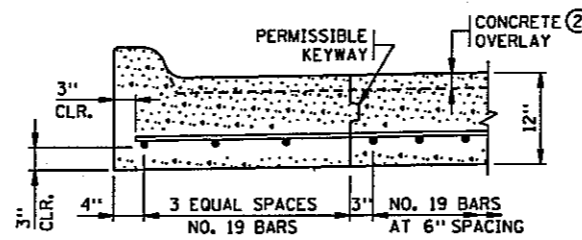
PLAN VIEW OF C. B. CASTING



SECTION C-C
(GRATE NOT SHOWN)



C1301E - C1305E ①



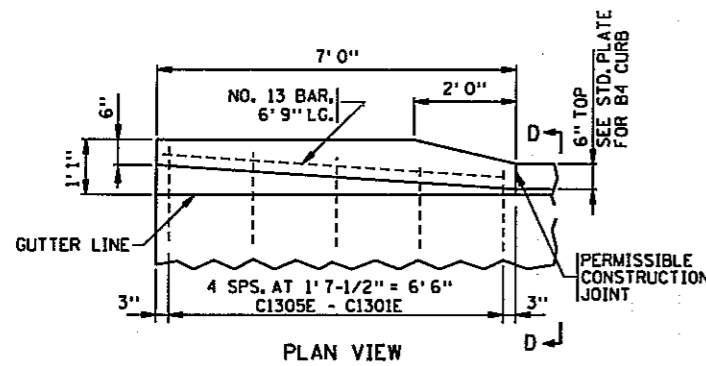
CURB DETAIL ①

(B4 INTEGRANT CURB OR B424 MODIFIED CURB AND GUTTER)

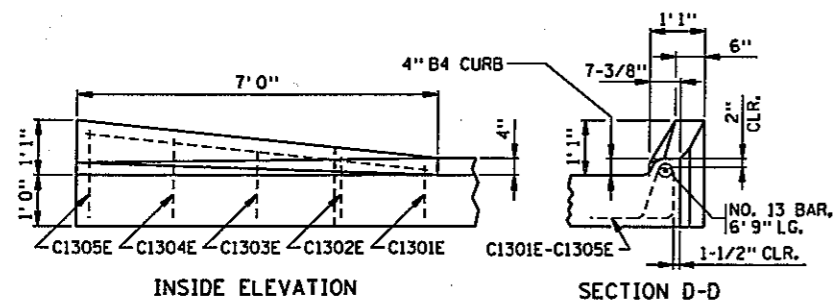
NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

- ALL REINFORCEMENT IN APPROACH PANEL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.
- APPROACH SLAB THICKNESS SHOWN INCLUDES ANY CONCRETE OVERLAY THAT MAY BE REQUIRED. SEE BRIDGE PLANS FOR REQUIREMENTS. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.
- 2" NOMINAL DIA. THERMOPLASTIC PIPE, AS PER ASTM D1785M, SCHEDULE 40. SLOPE PIPE TO DITCH. FURNISHING AND INSTALLING DRAIN SYSTEM SHALL BE INCIDENTAL, WITH NO DIRECT PAYMENT. WRAP PERFORATED PIPE WITH GEOTEXTILE AS PER SPEC. 3733. 1/8" PER 12" MINIMUM SLOPE.
- BACKFILL WITH FINE AGGREGATE, SPEC. 3149, MODIFIED TO 0-3% PASSING A NO. 200 SIEVE.



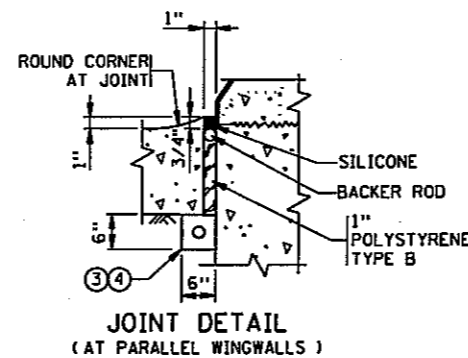
PLAN VIEW



INSIDE ELEVATION

SECTION D-D

CURB TRANSITION DETAILS ①



JOINT DETAIL
(AT PARALLEL WINGWALLS)

SEH
3535 VADNAS CENTER DRIVE
ST. PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE APPROACH PANEL
BITUMINOUS MAINLINE ROADWAY
(MISCELLANEOUS DETAILS)

SP 02-614-32

REVISION DATE
2-7-2000

MODIFIED

STANDARD SHEET NO.
5-297.224

STANDARD APPROVED:
NOVEMBER 9, 1999

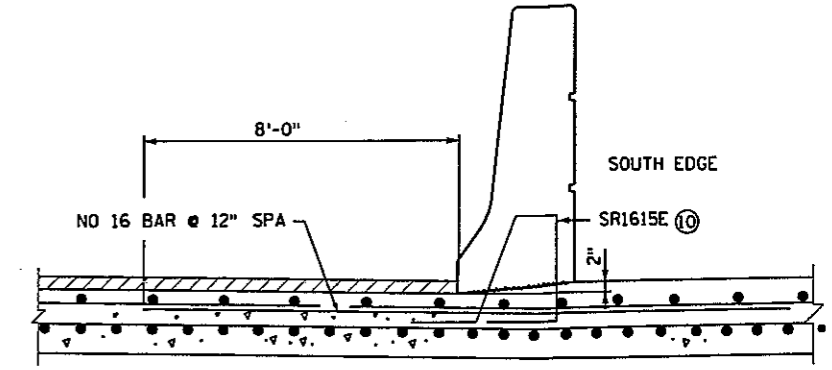
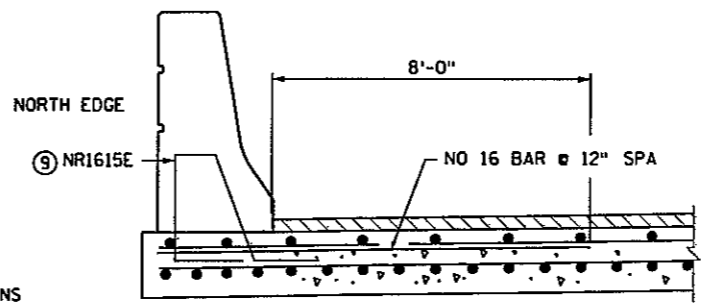
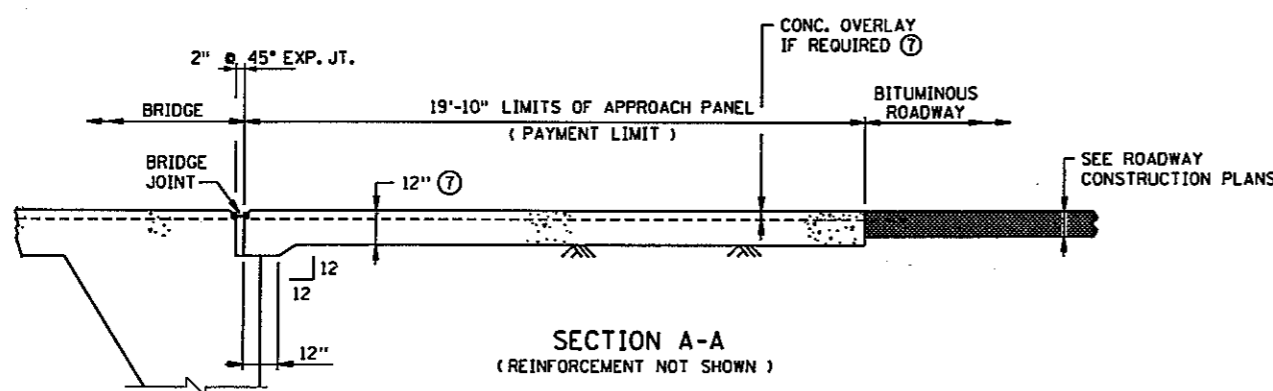
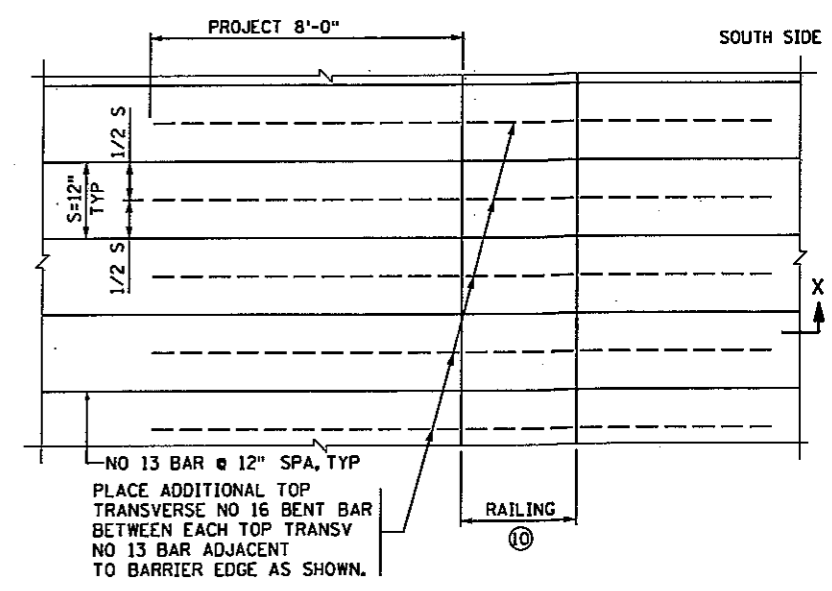
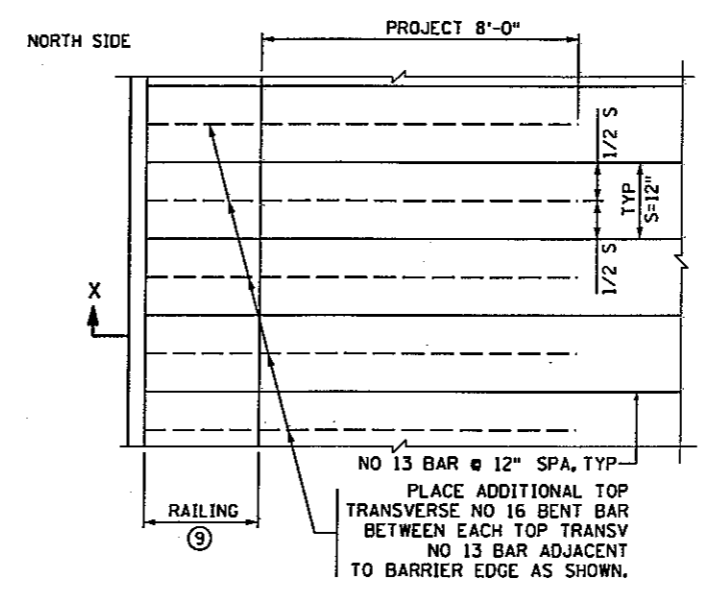
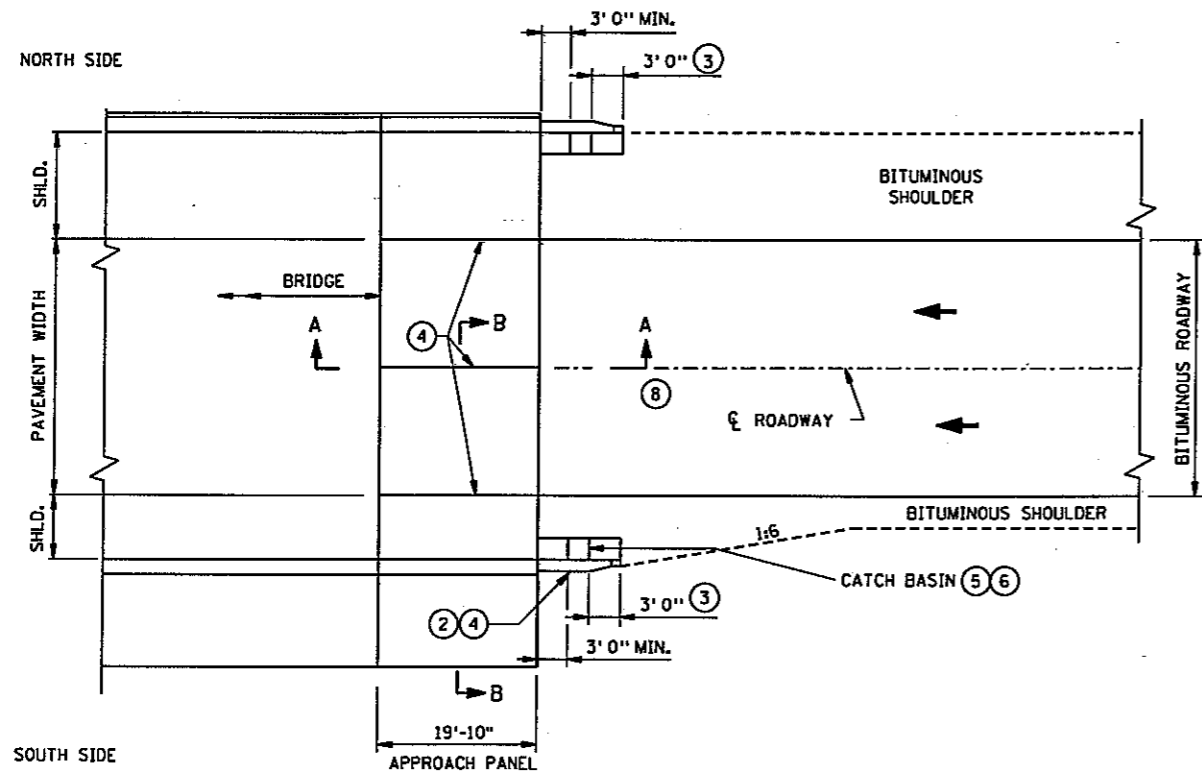
DES: MAW DR: MAW APPROVED:
CHK: NCK CHK: NCK
SHEET NO B17 OF B22 SHEETS

BRIDGE NO
02577

10:42:45 AM

1/20/2010

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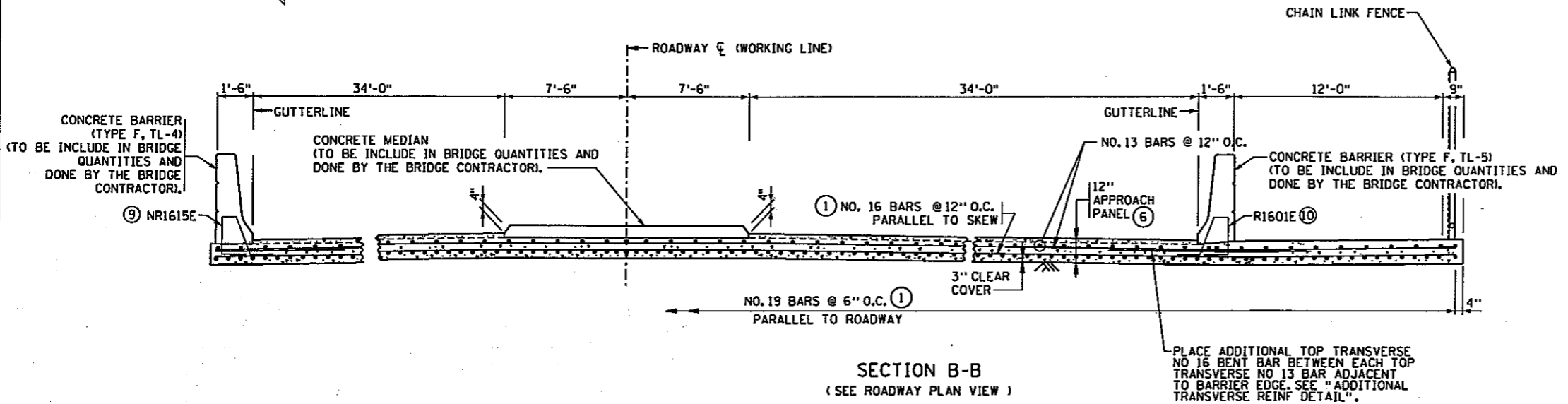


SECTION X-X

NOTES:

ALL REBARS ARE IN METRIC DESIGNATIONS

- ① ALL REINFORCEMENT IN APPROACH PANEL, SILL AND CURB SHALL BE GRADE 60 AND EPOXY COATED AS PER SPEC. 3301.
- ② TRANSITION FACE OF 4" CURB INTO PROFILE OF BRIDGE RAILING. SEE CURB TRANSITION DETAILS.
- ③ TRANSITION APPROACH PANEL CURB HEIGHT 4" TO 0" WHERE THERE IS NO ROADWAY CURB.
- ④ L2KT OR L1T LONGITUDINAL JOINT IS REQUIRED. SEE STANDARD PAVEMENT JOINT SHEET FOR DETAILS.
- ⑤ SEE PLAN SHEET B17 FOR REQUIRED MISCELLANEOUS DETAILS.
- ⑥ LOCATE BETWEEN GUARD RAIL POSTS OR AS DETERMINED BY THE DESIGNER. SEE ROAD DESIGN MANUAL CHAPTER 7 FOR CATCH BASIN INFORMATION.
- ⑦ APPROACH SLAB THICKNESS SHOWN INCLUDES ANY CONCRETE OVERLAY THAT MAY BE REQUIRED. SEE BRIDGE PLANS FOR REQUIREMENTS. CONCRETE OVERLAYS TO BE INCLUDED IN BRIDGE QUANTITIES AND DONE AT THE SAME TIME BY BRIDGE CONTRACTOR.
- ⑧ SEE PLAN SHEET IN ROADWAY PLANS FOR BRIDGE APPROACH ROADWAY INFORMATION.
- ⑨ INCLUDED IN CONCRETE BARRIER (TYPE F, TL-4) QUANTITIES. INCLUDED IN THE BRIDGE QUANTITIES.
- ⑩ INCLUDED IN CONCRETE BARRIER (TYPE F, TL-5) QUANTITIES. INCLUDED IN THE BRIDGE QUANTITIES.



MODIFIED

STANDARD SHEET NO.	5-297.229
STANDARD APPROVED:	MAY 7, 2002

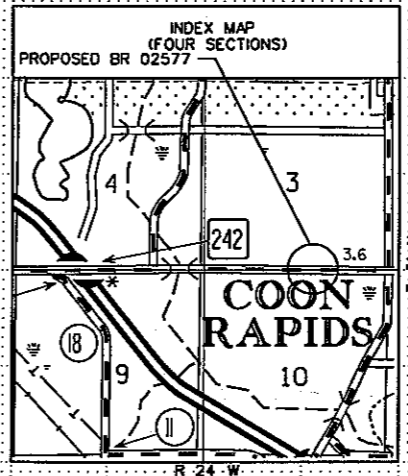
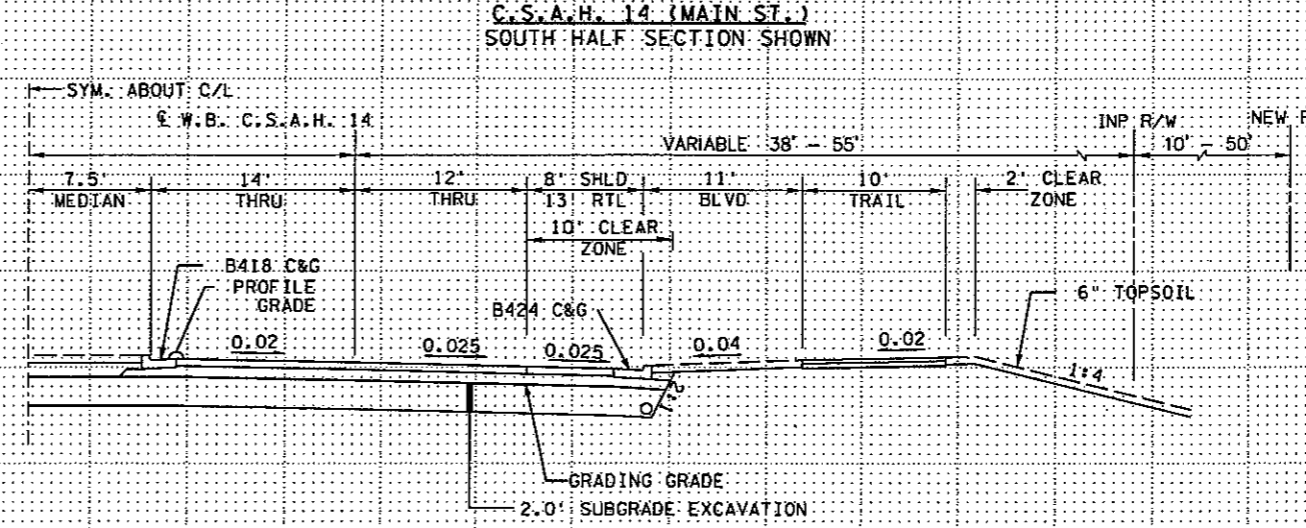
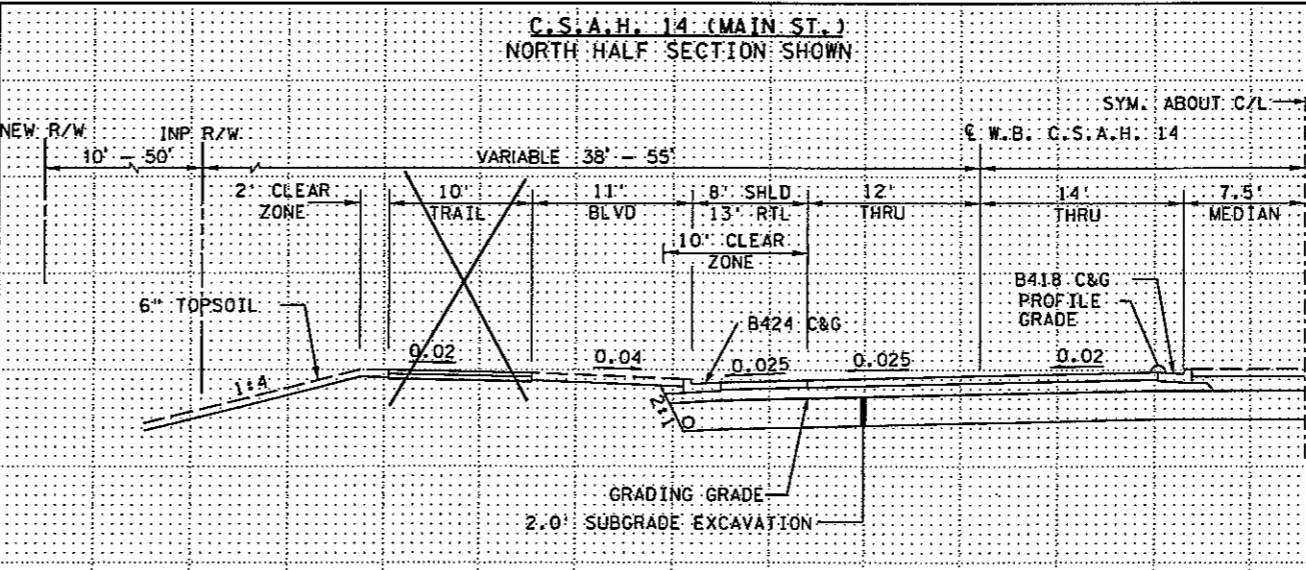
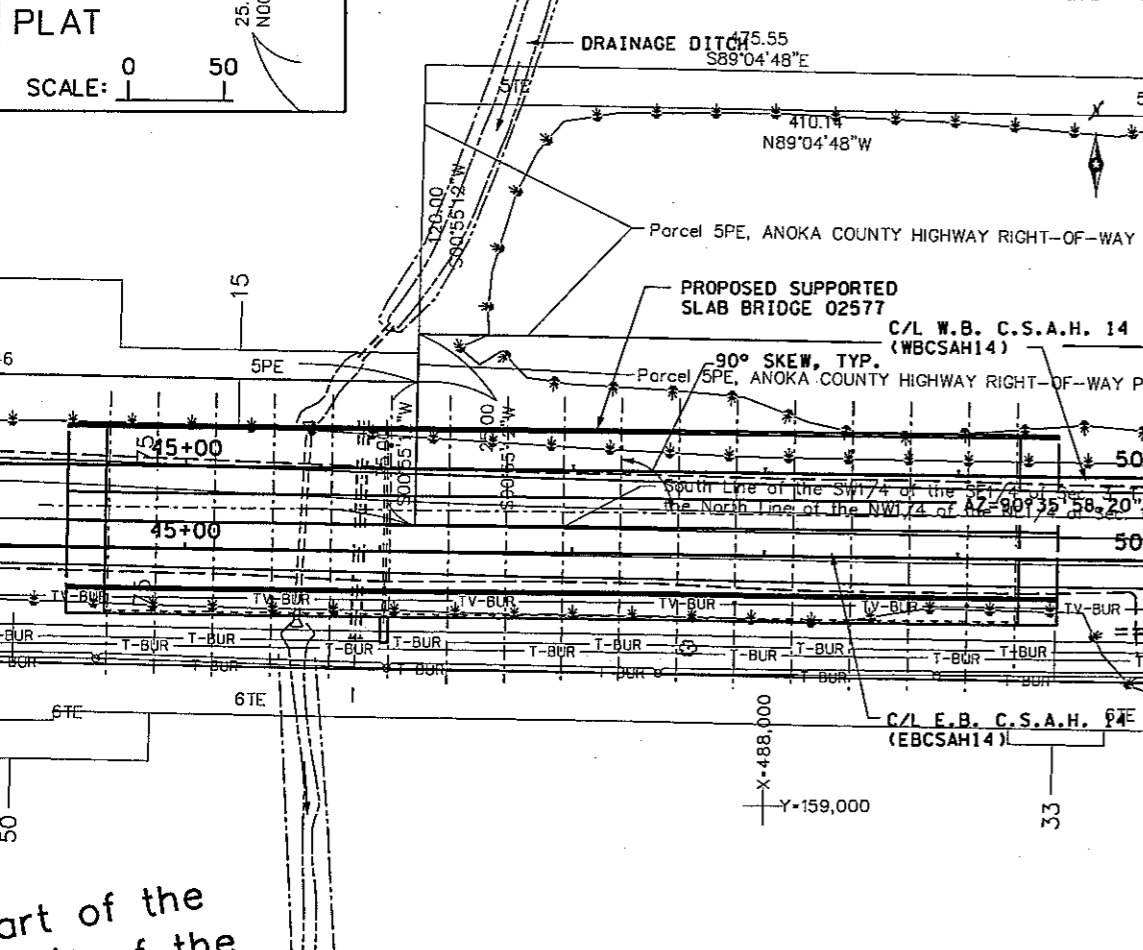
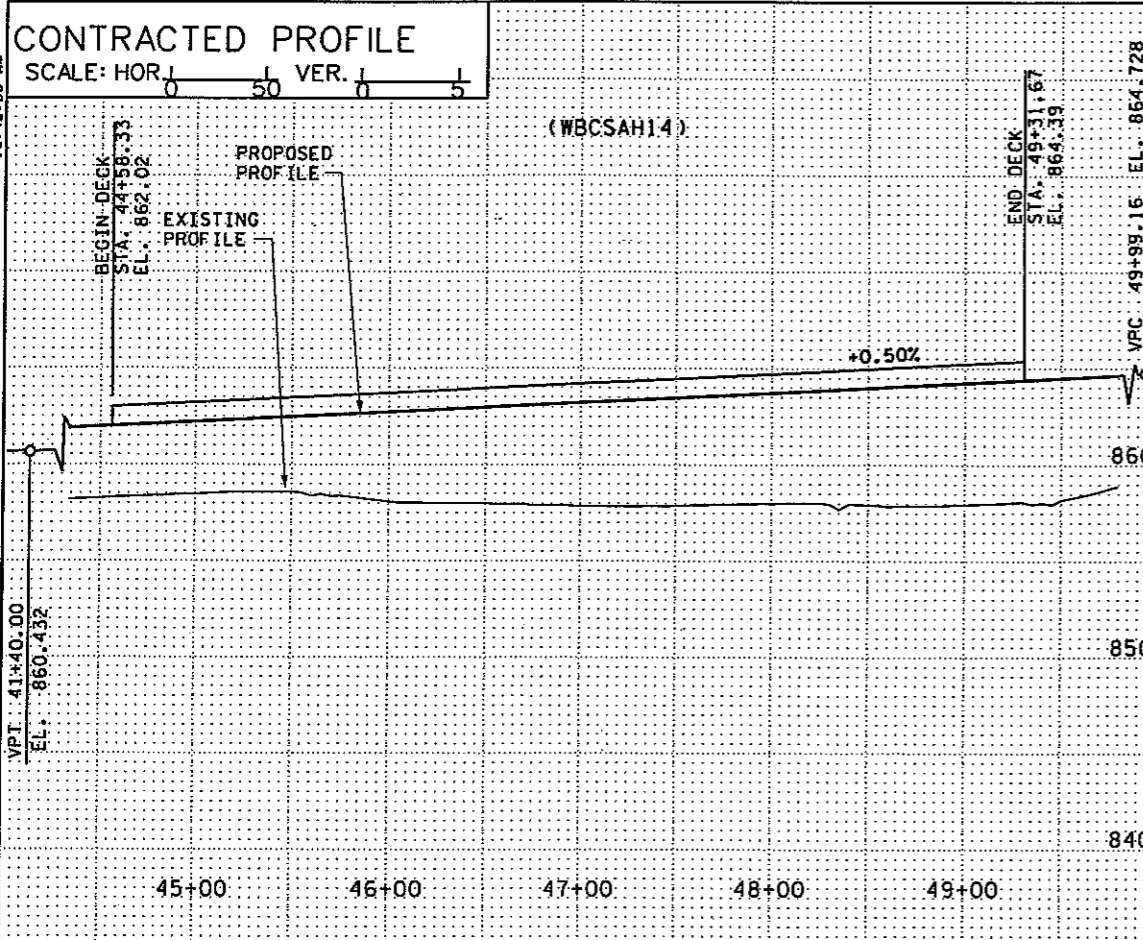
3535 VADNAS CENTER DRIVE
ST PAUL, MN 55110
PHONE (651) 490-2000
FAX (651) 490-2150

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE APPROACH PANEL BITUMINOUS MAINLINE-JOINT AT ABUTMENT SQUARE TO 10° SKEWS

DES: MAW	DR: MAW	APPROVED:
CHK: NCK	CHK: NCK	
SHEET NO B18 OF B22 SHEETS		

BRIDGE NO 02577



- LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE**
- SPECIAL FEATURES: WATERFALLS, DAMS, FLOODS, ICE, DEBRIS, SLIDING BANKS, RECREATIONAL BOATING.
 - OTHER BRIDGES OR CULVERTS OVER THE SAME STREAM (PARTICULARLY STRUCTURES WHICH CARRY HIGH WATER WITHOUT OVERFLOW OF ROADWAY): GIVEN LOCATION, TYPE, LENGTH, HEIGHT ABOVE HIGH WATER, CROSS-SECTIONAL AREA ETC.
 - APPARENT HIGHWATER ELEVATION OBTAINED FROM:
 - OTHER DATA: APPROX. VELOCITY OF WATER AT TIME OF SURVEY.

HYDRAULIC RECOMMENDATIONS DATED

STREAM		
FLOOD OF RECORD ()	UNKNOWN	CFS
MAXIMUM OBSERVED HIGHWATER ELEV. ()		CFS
DESIGN FLOOD ()	YEAR FREQUENCY	
DESIGN STAGE		
TOTAL STAGE INCREASE		FT
DESIGN MEAN VELOCITY THROUGH STRUCTURE		FPS
LOW MEMBER AT OR ABOVE ELEVATION		
MIN. WATERWAY AREA REQUIRED BELOW ELEV. AT RIGHT ANGLE TO CHANNEL		SF
BASIC FLOOD (100 YEAR FREQUENCY)		
STAGE		
TOTAL STAGE INCREASE		FT
MEAN VELOCITY THROUGH STRUCTURE		FPS
APPROX. FLOWLINE ELEV. SKEW ANGLE		DEG.
ESTIMATED PIER SCOUR ELEV. ()	YR FREQUENCY	

(DESIGN STAGE AND STAGE ARE TAILWATER ELEVATIONS AT BRIDGE.)

BRIDGE SURVEY SHEETS MADE FROM :
 ANOKA COUNTY SURVEY

BENCH MARK ELEVATION 878.978 (NAVD 88 DATUM)

NAME & LOCATION:

Mn/DOT GEODETIC DATABASE STA. #581:

COPPER CLAD ROD (NO SLEEVE) (DEPTH 8")
 1.15 MILES E. OF JCT. CSAH 14 & TH10,
 67' N. OF CSAH14, 26' E. OF ENTRANCE
 AT HOUSE #2061, ACROSS FROM HOUSE
 #2108 IN A BUSH, 1.0' S. OF WITNESS POST

BRIDGE SURVEY

PROPOSED BRIDGE LOCATED
 CSAH 14 OVER POOR SOILS
 IN COON RAPIDS

SEC 3-10 TWP 31 N R 24 W
 CITY OF COON RAPIDS ANOKA CO

BRIDGE NO 02577

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art of the
 of the

3535 VADNAIS CENTER DRIVE
 ST PAUL, MN 55110
 PHONE (651) 490-2000
 FAX (651) 490-2150

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

Signature: *Nathan C. Kloff* Date: 7-28-09
 Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE:
 BRIDGE SURVEY

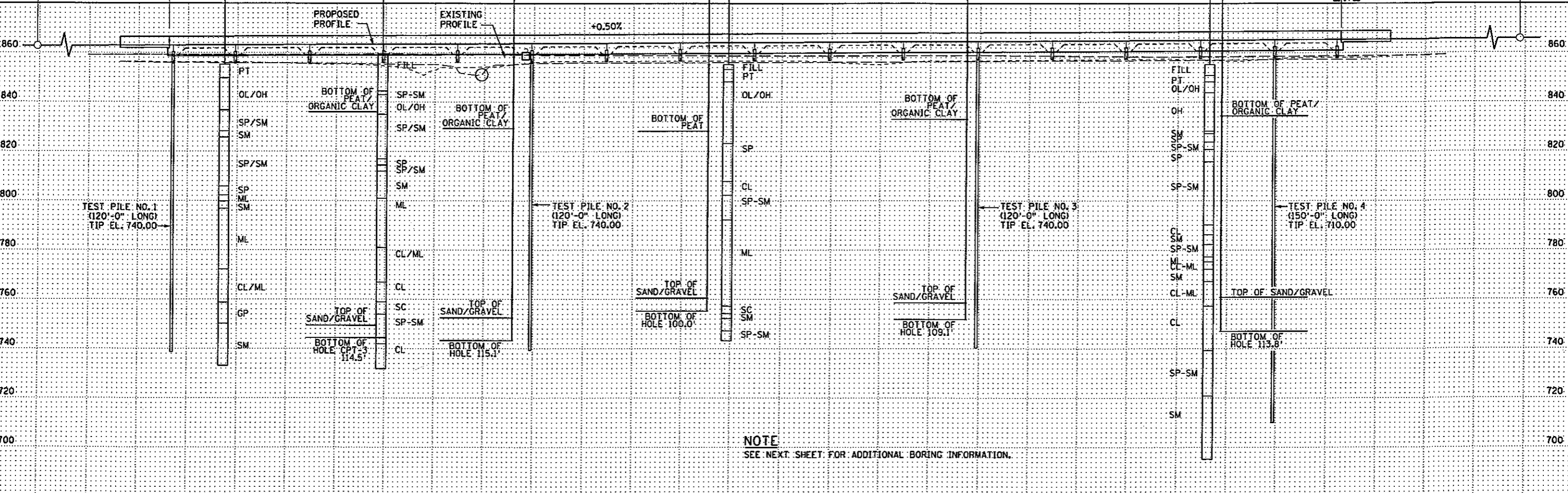
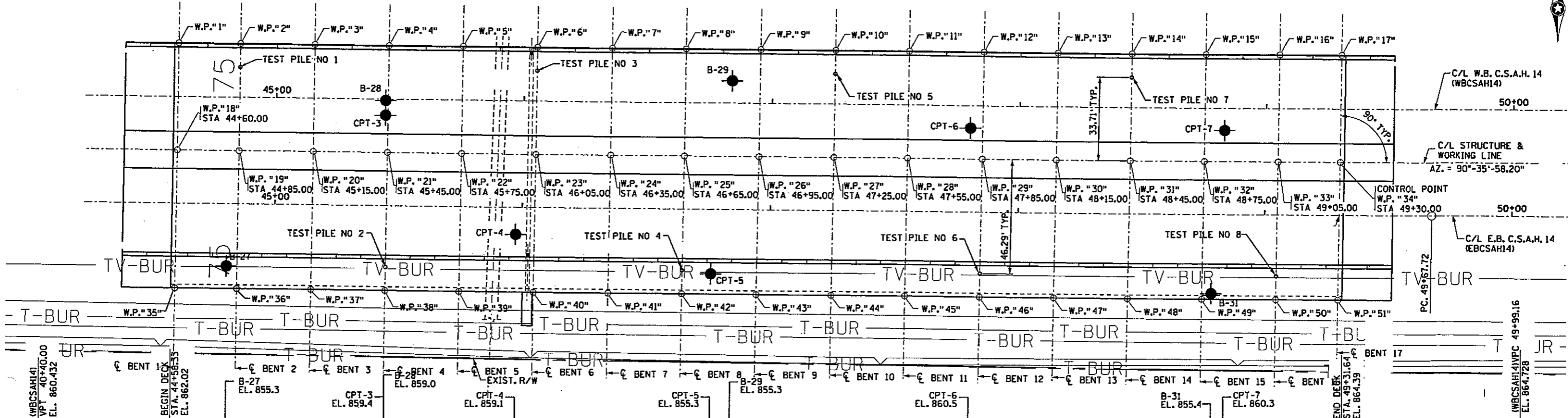
SP 02-614-32

DES: MAW	DR: MAW	APPROVED:
CHK: JAJ	CHK: JAJ	

BRIDGE NO 02577
 SHEET NO B20 OF B22 SHEETS

10142152 AU
1/20/2010
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WEST END EAST END



NOTE
SEE NEXT SHEET FOR ADDITIONAL BORING INFORMATION.

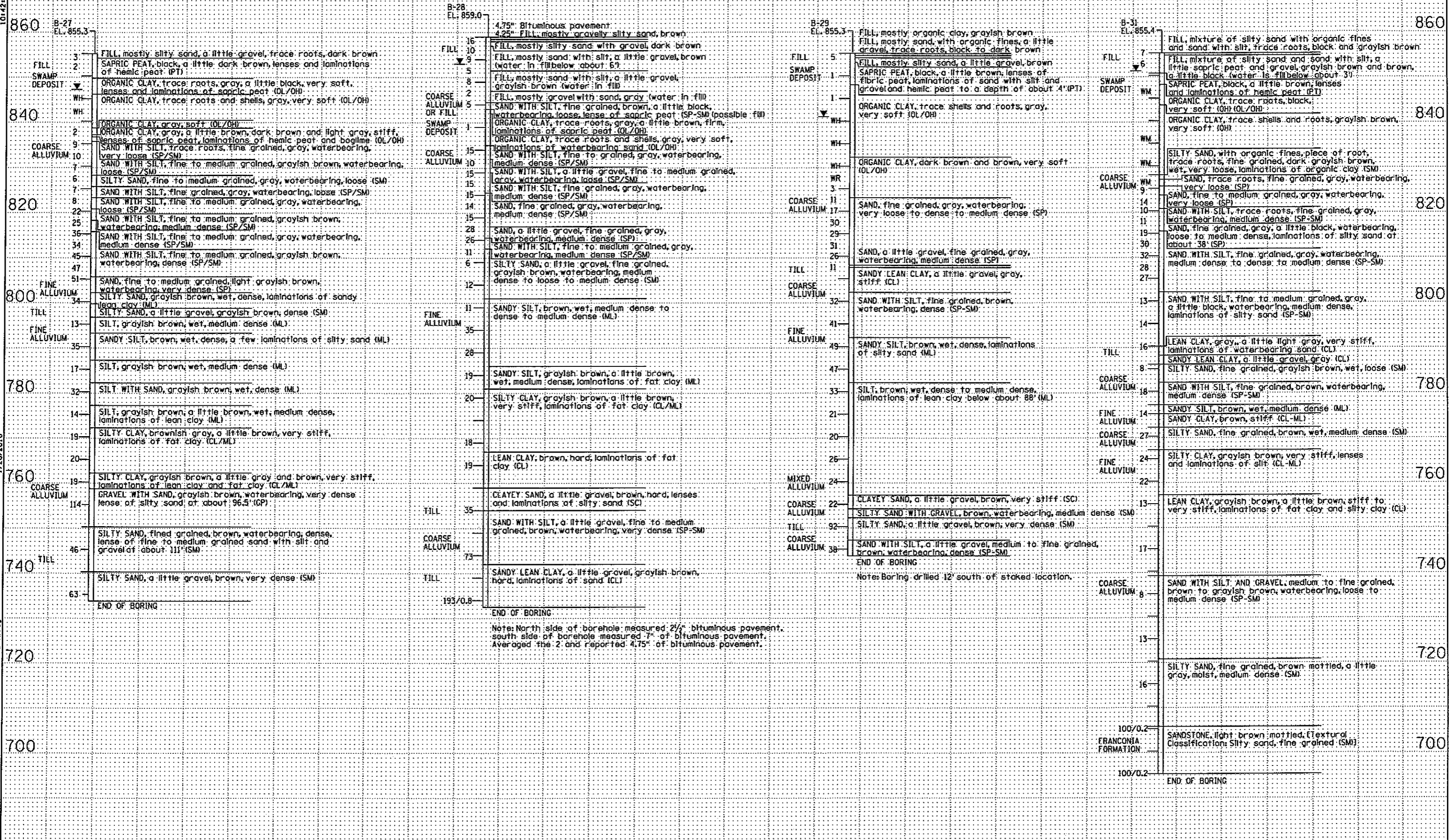
SEH
3535 VADNAIS CENTER DRIVE
ST PAUL, MN 55110
PHONE (651) 490-2000
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Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

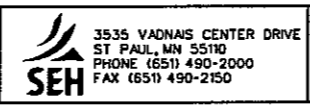
TITLE:
**BRIDGE SURVEY
PLAN AND PROFILE**

SP 02-614-32		APPROVED:	BRIDGE NO 02577
DES: MAW	DR: MAW		
CHK: JAJ	CHK: JAJ	SHEET NO B21 OF B22 SHEETS	

10/12/13 AM
1/20/2010
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Note: North side of borehole measured 2 1/4" bituminous pavement, south side of borehole measured 7" of bituminous pavement. Averaged the 2 and reported 4.75" of bituminous pavement.



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.
Signature: *Nathan C. Klopp* Date: 7-28-09
Printed Name: NATHAN C. KLOPP Reg. No. 43836

TITLE: BRIDGE SURVEY PLAN AND PROFILE

SP 02-614-32
DES: MAW DR: MAW APPROVED:
CHK: JAJ CHK: JAJ
SHEET NO B22 OF B22 SHEETS

BRIDGE NO 02577