

9/30/13 AM

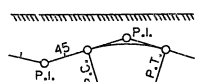
8/12/2015

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### PLAN SYMBOLS

- COUNTY LINE -----
- SECTION LINE -----
- QUARTER LINE -----
- SIXTEENTH LINE -----
- RIGHT-OF-WAY LINE -----
- EXISTING RIGHT-OF-WAY LINE -----
- PROPERTY LINE (Except Land Lines) -----
- CORPORATE OR CITY LIMITS -----

CENTER LINE ALIGNMENT



- STORM SEWER
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOODEN FENCE
- RETAINING WALL
- DRAINAGE DITCH
- BUILDING
- MONUMENT (STONE, CONCRETE, OR METAL)

### UTILITY SYMBOLS

- OVERHEAD POLE LINE
- OVERHEAD UTILITY POLE
- ANCHOR
- STREET LIGHT
- PEDESTAL (TELEPHONE OR ELECTRIC CABLE TERMINAL)
- GAS MAIN
- WATER MAIN
- FIBER OPTIC CABLE
- BURIED ELECTRIC CABLE
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- SEWER, (STORM)
- SEWER, (SANITARY)
- SEWER MANHOLE
- HANDHOLE
- CATCH BASIN
- CULVERT

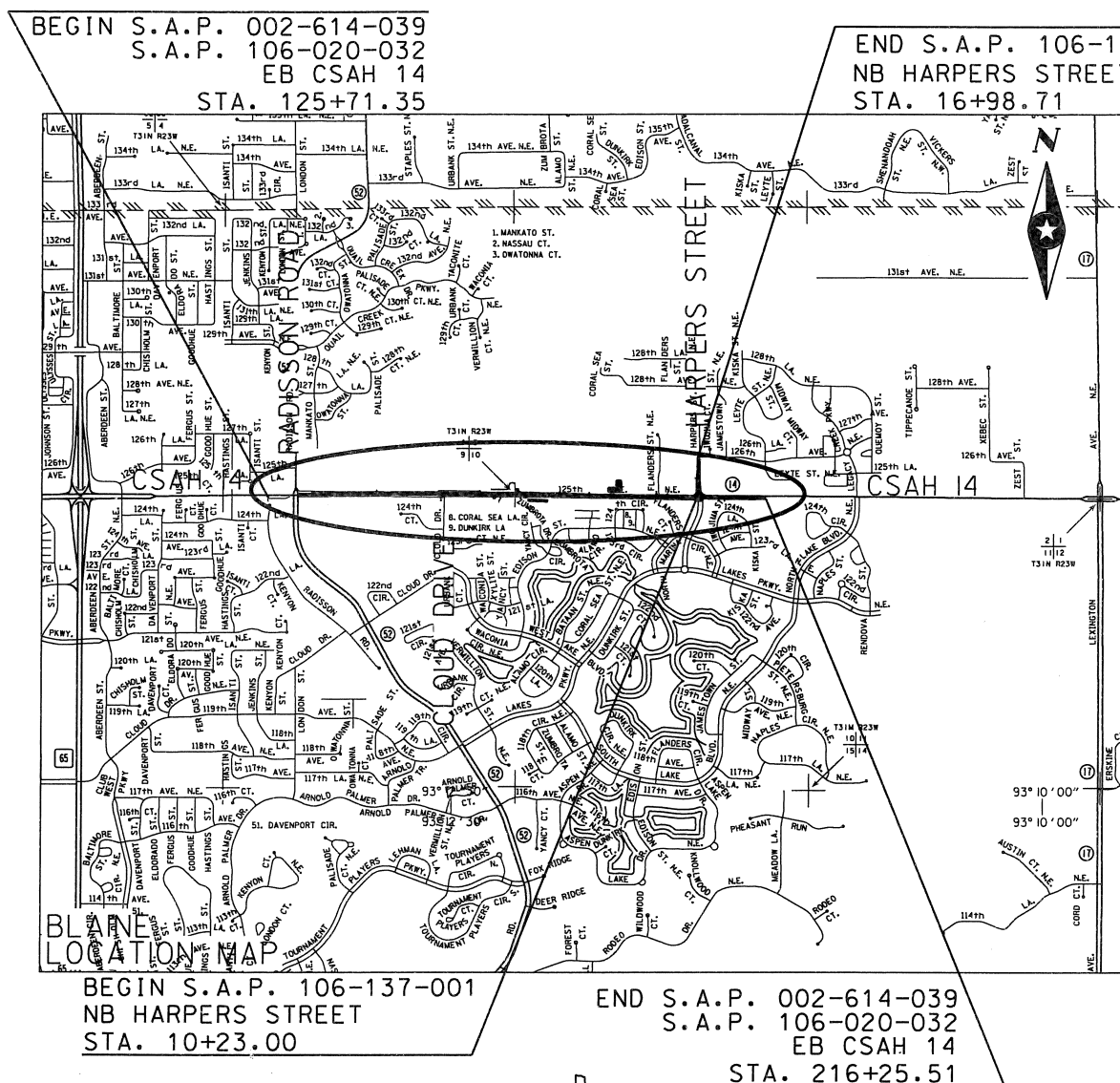
# MINNESOTA DEPARTMENT OF TRANSPORTATION

## CITY OF BLAINE ENGINEERING DEPARTMENT

### CONSTRUCTION PLAN FOR: GRADING, BITUMINOUS SURFACING, DRAINAGE, TRAFFIC SIGNALS, AND ADA IMPROVEMENTS.

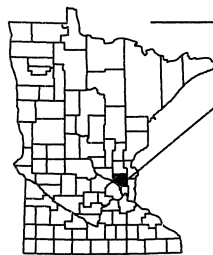
S.A.P NO. 002-614-039, 106-020-032 (CSAH 14): LOCATED ON CSAH 14 FROM RADISSON ROAD TO 1325' EAST OF HARPERS STREET.

S.A.P. NO. 106-137-001 (HARPERS STREET): LOCATED ON HARPERS ST. FROM CSAH 14 TO 126TH ST.



BEGIN S.A.P. 106-137-001 NB HARPERS STREET STA. 10+23.00

END S.A.P. 002-614-039 S.A.P. 106-020-032 EB CSAH 14 STA. 216+25.51



**PROJECT LOCATION**  
 ANOKA COUNTY  
 Mn/DOT TRANSPORTATION DISTRICT - METRO  
 SECTION 3, 4, 9, & 10  
 TOWNSHIP 31 NORTH  
 RANGE 23 WEST

**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.

GOPHER STATE ONE CALL.....1.800-252-1166

**SCALES**

ALIGNMENT LAYOUT	100'
PLAN	50'
PROFILE	50'
	HORIZ. 5'
	VERT. 10'
X-SECTION	10'
	HORIZ. 10'
	VERT. 10'

**DESIGN DESIGNATION**

<b>MAIN STREET (CSAH 14) S.A.P. 002-614-039, S.A.P. 106-020-032</b>	
BASED ON: STOPPING SIGHT DISTANCE	
HEIGHT OF EYE: 3.5 FT.	HEIGHT OF OBJECT: 2.0 FT.
GROSS LENGTH	9054.16 FT. 1.715 MILES
BRIDGE LENGTH	0 FT. 0 MILES
EXCEPTION LENGTH	0 FT. 0 MILES
FUNCTIONAL CLASSIFICATION	ARTERIAL
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
STRUCTURAL DESIGN	10 TON
R VALUE	40
ESALS	2,404,000
CONSTRUCTION YEAR ADT (2015)	8,400
20 YEAR PROJECTED ADT (2035)	17,500
HCA DT IN PM	2.9
DESIGN SPEED	55 MPH
<b>HARPERS STREET S.A.P. 106-137-001</b>	
BASED ON: STOPPING SIGHT DISTANCE	
HEIGHT OF EYE: 3.5 FT.	HEIGHT OF OBJECT: 2.0 FT.
GROSS LENGTH	675.71 FT. 0.128 MILES
BRIDGE LENGTH	0 FT. 0 MILES
EXCEPTION LENGTH	0 FT. 0 MILES
FUNCTIONAL CLASSIFICATION	COLLECTOR
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	0
STRUCTURAL DESIGN	10 TON
R VALUE	40
ESALS	589,000
CONSTRUCTION YEAR ADT (2015)	1,500
20 YEAR PROJECTED ADT (2035)	4,300
HCA DT IN PM	0.5
DESIGN SPEED	30 MPH
<b>TRAIL</b>	
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001	
DESIGN SPEED: 20 MPH	
BASED ON: STOPPING SIGHT DISTANCE	
HEIGHT OF EYE: 4.5 FT.	HEIGHT OF OBJECT: 0.0 FT.

**PLAN REVISIONS**

DATE	SHEET NO.	APPROVED BY

MINN. PROJ. NO. \_\_\_\_\_



**GOVERNING SPECIFICATIONS**

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

**INDEX**

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THIS PLAN CONTAINS 196 SHEETS

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

ENGINEERING DEPARTMENT  
 10801 TOWN SQUARE DRIVE N.E.  
 BLAINE, MN. 55449  
 PHONE: (763) 785-6172

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.

*Jason E. Owens* NAME: JASON E. OWENS  
 DATE 8/12/2015 LIC. NO. 43475

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 MMUTCD (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 8/12/2015 LIC. NO. 22457

APPROVED *Jan M. Kelly* DATE 8/13/15  
 CITY OF BLAINE CITY ENGINEER

APPROVED *R. [Signature]* DATE 8/19/15  
 ANOKA COUNTY ENGINEER

For *Julie Drael* DATE 8/20/15  
 DISTRICT STATE AID ENGINEER REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

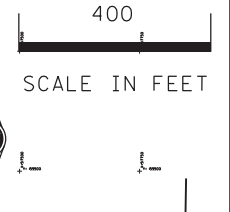
For *Julie Drael* DATE 8/20/15  
 STATE AID ENGINEER APPROVED FOR STATE AID FUNDING

STATE PROJ. NO. S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

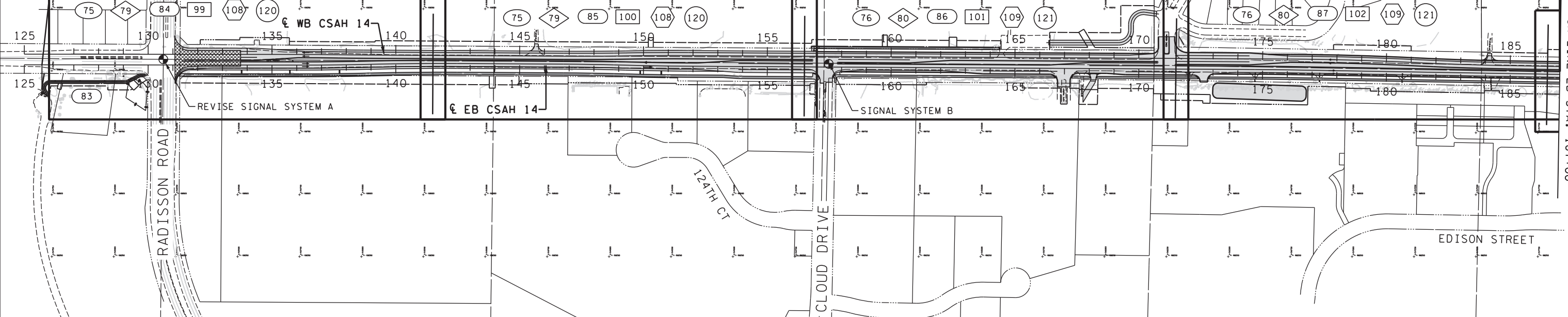
SHEET NO. 1 OF 196 SHEETS

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10/21/2015

BEGIN S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 125+71.35

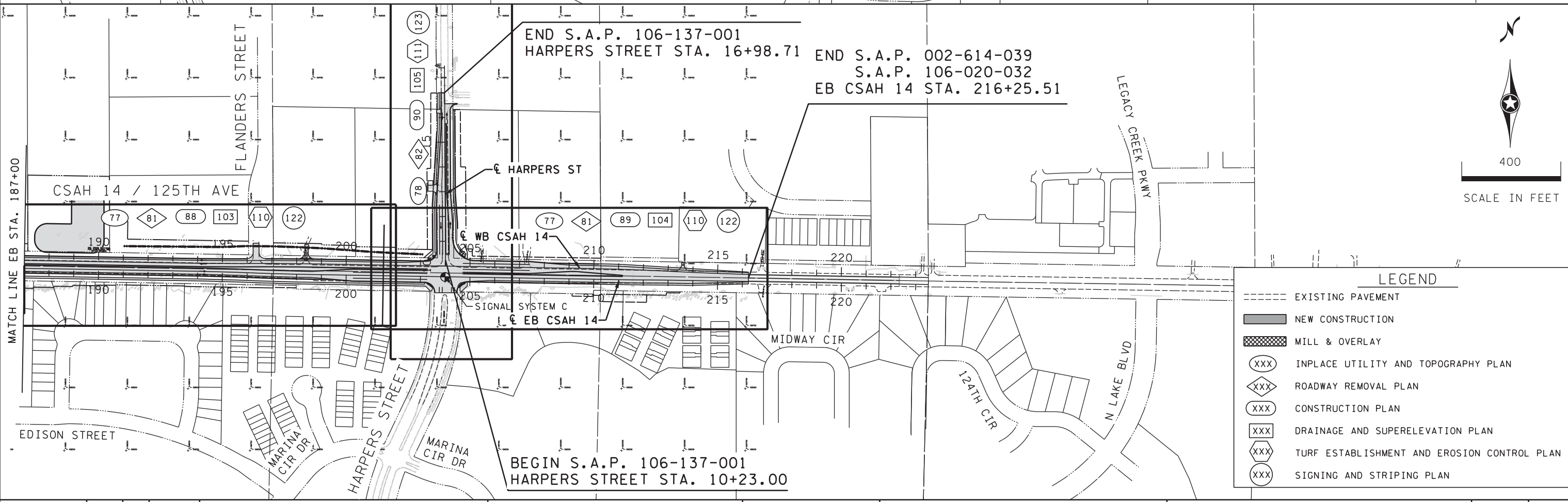
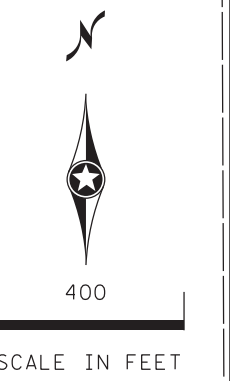


CSAH 14 / 125TH AVE



MATCH LINE EB STA. 187+00

END S.A.P. 106-137-001  
HARPERS STREET STA. 16+98.71  
END S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 216+25.51



MATCH LINE EB STA. 187+00

**LEGEND**

- EXISTING PAVEMENT
- NEW CONSTRUCTION
- MILL & OVERLAY
- INPLACE UTILITY AND TOPOGRAPHY PLAN
- ROADWAY REMOVAL PLAN
- CONSTRUCTION PLAN
- DRAINAGE AND SUPERELEVATION PLAN
- TURF ESTABLISHMENT AND EROSION CONTROL PLAN
- SIGNING AND STRIPING PLAN

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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**GENERAL LAYOUT**

FILE NO. 126669  
2  
GL 1 OF GL 1  
196

STATEMENT OF ESTIMATED QUANTITIES					STORM SEWER				
TAB	ITEM NO	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	S.A.P. 002-614-039	S.A.P. 106-137-001	S.A.P. 106-020-032	S.A.P. 002-614-039	S.A.P. 106-137-001
					C.S.A.H. 14	HARPERS STREET	CITY OF BLAINE	C.S.A.H. 14	HARPERS STREET
					ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
	2021.501	MOBILIZATION	LUMP SUM	1	0.90	0.05	0.05		
	2031.501	FIELD OFFICE TYPE D	LUMP SUM	1	0.90	0.05	0.05		
	2031.503	FIELD LABORATORY TYPE D	LUMP SUM	1	0.90	0.05	0.05		
E	2101.501	CLEARING	ACRE	2.2	0.9	0.3	1.0		
E	2101.502	CLEARING	TREE	111	80	1	30		
E	2101.506	GRUBBING	ACRE	2.2	0.9	0.3	1.0		
E	2101.507	GRUBBING	TREE	111	80	1	30		
Q	2102.502	PAVEMENT MARKING REMOVAL	LIN FT	8000	8000				
C	2104.501	REMOVE PIPE CULVERT	LIN FT	325	271	54			
C	2104.501	REMOVE CURB & GUTTER	LIN FT	1034	1034				
C	2104.501	REMOVE RETAINING WALL	LIN FT	122					
C	2104.501	REMOVE CONCRETE BLOCK WALL	LIN FT	1617	1617				
C	2104.503	REMOVE CONCRETE WALK	SQ FT	5020	5020				
C	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	51428	49781	1647			
C	2104.509	REMOVE BITUMINOUS FLUME	EACH	2		2			
R	2104.509	REMOVE MARKER	EACH	7	7				
R	2104.509	REMOVE SIGN TYPE C	EACH	43	41		2		
R	2104.509	REMOVE SIGN TYPE SPECIAL	EACH	6	5		1		
D	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	1492	1340	152			
	2105.601	DEWATERING	LUMP SUM	1	1				
A	2106.607	EXCAVATION - COMMON	CU YD	58835	49196	3772	5867		
A	2106.607	EXCAVATION - SUBGRADE	CU YD	10469	10455	14			
A	2106.607	EXCAVATION - MUCK	CU YD	143705	129548		14157		
A	2106.607	COMMON EMBANKMENT (CV)	CU YD	56676	38234	2622	15819		
A	2106.607	SELECT GRANULAR EMBANKMENT (LV)	CU YD	226328	200232		26096		
H	2211.503	AGGREGATE BASE (CV) CLASS 5	CU YD	18271	16761	1265	245		
G	2232.501	MILL BITUMINOUS SURFACE (2")	SQ YD	2084	2084				
G	2360.501	TYPE SP 9.5 WEARING COURSE MIX (2,B)	TON	968		63	905		
G	2360.501	TYPE SP 9.5 WEARING COURSE MIX (2,C)	TON	736		736			
G	2360.501	TYPE SP 9.5 WEARING COURSE MIX (4,F)	TON	15250	14991		259		
G	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (3,B)	TON	7335	7335				
L,M	2451.509	AGGREGATE BEDDING	CU YD	4029			3747		282
	2452.618	STEEL SHEET PILING (TEMPORARY)	SQ FT	32000	32000				
L,M	2501.515	12" RC PIPE APRON	EACH	4			4		
L,M	2501.515	15" RC PIPE APRON	EACH	10			10		
L,M	2501.515	18" RC PIPE APRON	EACH	8			8		
L,M	2501.515	21" RC PIPE APRON	EACH	5			5		
L,M	2501.515	24" RC PIPE APRON	EACH	4			4		
L	2501.515	27" RC PIPE APRON	EACH	2			2		
M	2501.515	30" RC PIPE SAFETY APRON	EACH	8			8		
L	2501.515	30" RC PIPE APRON	EACH	1			1		
L	2501.515	36" RC PIPE APRON	EACH	3			3		
M	2501.561	24" RC PIPE CULVERT DES 3006 CL III	LIN FT	112			112		
M	2501.561	30" RC PIPE CULVERT DES 3006 CL III	LIN FT	196			196		
M	2501.561	18" RC PIPE CULVERT DES 3006 CL IV	LIN FT	62			62		
M	2501.561	21" RC PIPE CULVERT DES 3006 CL IV	LIN FT	69			69		
M	2501.561	12" RC PIPE CULVERT DES 3006 CL V	LIN FT	16			16		
M	2501.561	15" RC PIPE CULVERT DES 3006 CL V	LIN FT	78			78		
T	2503.511	8" PVC PIPE SEWER	LIN FT	20			20		

NO. BY DATE REVISIONS

DESIGN TEAM	1	JEO	11/20/2015	REMOVED SELECT MOD. 7% ITEM, UPDATED COMMON EMBANKMENT AND SELECT GRANULAR EMBANKMENT QUANTITIES, SP 9.5 WEARING COURSE MIX (4,F) UPDATED, ADDED ITEM FOR DEWATERING
DRAWN BY:	CIF			
DESIGNER:	JEO			
CHECKED BY:	JEO	2	11/25/2015	SELECT GRANULAR AND COMMON EMB. QUANTITY UPDATED
		3	11/25/2015	TEMPORARY SHEET PILING QUANTITY CHANGE

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: *Jason E. Owens* Lic. No. 43475  
 Licensed Professional Engineer  
 Printed Name: JASON E. OWENS Date: 11/25/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

ESTIMATED QUANTITIES

FILE NO.  
126669

EQ1  
OF EQ3

3

196

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10/21/2015

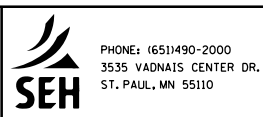
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STATEMENT OF ESTIMATED QUANTITIES					STORM SEWER				
TAB	ITEM NO	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	S.A.P. 002-614-039	S.A.P. 106-137-001	S.A.P. 106-020-032	S.A.P. 002-614-039	S.A.P. 106-137-001
					C.S.A.H. 14	HARPERS STREET	CITY OF BLAINE	C.S.A.H. 14	HARPERS STREET
					ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
L	2503.541	15" RC PIPE SEWER DES 3006 CL V	LIN FT	6224				5496	728
L	2503.541	18" RC PIPE SEWER DES 3006 CL III	LIN FT	165				165	
L	2503.541	18" RC PIPE SEWER DES 3006 CL IV	LIN FT	555				450	105
L	2503.541	21" RC PIPE SEWER DES 3006 CL III	LIN FT	155				155	
L	2503.541	21" RC PIPE SEWER DES 3006 CL IV	LIN FT	1848				1798	50
L	2503.541	21" RC PIPE SEWER DES 3006 CL V	LIN FT	247				195	52
L	2503.541	24" RC PIPE SEWER DES 3006 CL III	LIN FT	159				159	
L	2503.541	24" RC PIPE SEWER DES 3006 CL IV	LIN FT	89				89	
L	2503.541	24" RC PIPE SEWER DES 3006 CL V	LIN FT	41				41	
L	2503.541	27" RC PIPE SEWER DES 3006 CL III	LIN FT	1272				1272	
L	2503.541	27" RC PIPE SEWER DES 3006 CL IV	LIN FT	78				78	
L	2503.541	30" RC PIPE SEWER DES 3006 CL IV	LIN FT	84				84	
L	2503.541	36" RC PIPE SEWER DES 3006 CL IV	LIN FT	58				58	
T	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	1			1		
U	2504.602	CONNECT TO EXISTING WATERMAIN	EACH	2			2		
C	2504.602	RELOCATE HYDRANT	EACH	2	1	1			
C	2504.602	ADJUST GATE VALVE	EACH	2		2			
U	2504.603	8" PVC WATERMAIN	LIN FT	32			32		
L	2506.501	CONST DRAINAGE STRUCTURE DESIGN G	LIN FT	30				30	
L	2506.501	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	124				106	18
L	2506.501	CONST DRAINAGE STRUCTURE DESIGN SPEC 1	LIN FT	6				6	
L	2506.501	CONST DRAINAGE STRUCTURE DESIGN SPEC 2	LIN FT	6				6	
L	2506.501	CONST DRAINAGE STRUCTURE DESIGN SPEC 3	LIN FT	57				57	
L	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	436				390	46
L	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	75				75	
L	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020	LIN FT	6				6	
L	2506.501	CONST DRAINAGE STRUCTURE DES 84-4020	LIN FT	10				10	
N	2506.516	CASTING ASSEMBLY	EACH	159				143	16
C	2506.522	ADJUST FRAME & RING CASTING	EACH	6	4	2			
L,M	2511.501	RANDOM RIPRAP CLASS III	CU YD	224				224	
L,M	2511.511	GRANULAR FILTER	CU YD	19				19	
L,M	2511.515	GEOTEXTILE FILTER TYPE IV	SQ YD	816				816	
I	2521.501	4" CONCRETE WALK	SQ FT	66932	57998	8934			
I	2521.501	6" CONCRETE WALK	SQ FT	4622	4622				
I	2531.501	CONCRETE CURB & GUTTER DESIGN B418	LIN FT	15182	15182				
I	2531.501	CONCRETE CURB & GUTTER DESIGN B424	LIN FT	10743	10743				
I	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	2437		2437			
I	2531.507	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	41		41			
I	2531.604	8" CONCRETE VALLEY GUTTER	SQ YD	101	80	21			
I	2531.618	TRUNCATED DOMES	SQ FT	411	83		328		
F	2540.602	MAIL BOX SUPPORT	EACH	5	2	3			
L,M	2554.509	GUIDE POST TYPE B	EACH	45				45	
P	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.90	0.05	0.05		
P	2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.90	0.05	0.05		
P	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	1026	1026				
P	2563.618	CONSTRUCTION SIGN-SPECIAL	SQ FT	162	162				
R	2564.531	SIGN PANELS TYPE SPECIAL	SQ FT	34	22		12		
R	2564.531	SIGN PANELS TYPE C	SQ FT	526	447		79		
R	2564.552	HAZARD MARKER X4-2	EACH	7	6		1		
S	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM "B"	SIG SYS	1	0.33		0.67		
S	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM "C"	SIG SYS	1		1			
S	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "B"	LUMP SUM	1			1		
S	2565.601	EMERGENCY VEHICLE PREEMPTION SYSTEM "C"	LUMP SUM	1		1			
S	2565.601	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1	0.25	0.50	0.25		
S	2565.602	SIGNAL SERVICE CABINET	EACH	2		1	1		
S	2565.616	REVISE SIGNAL SYSTEM "A"	SYS	1	0.25		0.75		

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

ESTIMATED QUANTITIES

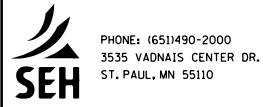
STATEMENT OF ESTIMATED QUANTITIES					STORM SEWER				
TAB	ITEM NO	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	S.A.P. 002-614-039	S.A.P. 106-137-001	S.A.P. 106-020-032	S.A.P. 002-614-039	S.A.P. 106-137-001
					C.S.A.H. 14	HARPERS STREET	CITY OF BLAINE	C.S.A.H. 14	HARPERS STREET
					ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
J	2573.502	SILT FENCE, TYPE MS	LIN FT	22680	14838	1235	6607		
J	2573.530	STORM DRAIN INLET PROTECTION	EACH	146	129	16	1		
J	2573.533	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	600	522		78		
	2573.535	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	0.34	0.33	0.33		
J	2574.508	FERTILIZER TYPE 1	POUND	2946	2234	140	572		
K	2574.508	FERTILIZER TYPE 3	POUND	4486	3167	245	1074		
K	2574.508	FERTILIZER TYPE 4	POUND	174	174				
J,K	2575.501	SEEDING	ACRE	30	23	1	6		
J	2575.502	SEED MIXTURE 21-111	POUND	1473	1117	70	286		
K	2575.502	SEED MIXTURE 25-131	POUND	292					
K	2575.502	SEED MIXTURE 25-141	POUND	673	454	41	178		
K	2575.502	SEED MIXTURE 33-261	POUND	32	32				
K	2575.502	SEED MIXTURE 35-241	POUND	23	23				
K	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	66327	62945	3382			
J,K	2575.562	HYDRAULIC MATRIX TYPE MULCH	POUND	63210	60270	2940			
J	2575.572	RAPID STABILIZATION METHOD 4	SQ YD	71300	54110	3382	13808		
	2575.601	EROSION STABILIZATION MAT CATEGORY 4	SQ YD	37				37	
P	2581.501	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	8195	8195				
Q	2582.501	PAVEMENT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH	12	10		2		
Q	2582.501	PAVEMENT MSSG (RT ARROW) PREFORMED THERMOPLASTIC	EACH	16	14		2		
P	2582.502	4" SOLID LINE WHITE - PAINT	LIN FT	48925	48925				
P	2582.502	4" SOLID LINE YELLOW - PAINT	LIN FT	17295	17295				
P	2582.502	4" DOUBLE SOLID LINE YELLOW - PAINT	LIN FT	12990	12990				
Q	2582.502	4" SOLID LINE WHITE - EPOXY	LIN FT	22600	21000		1600		
Q	2582.502	4" BROKEN LINE WHITE - EPOXY	LIN FT	3050	3050				
Q	2582.502	24" STOP LINE WHITE - EPOXY	LIN FT	485	350		135		
Q	2582.502	4" SOLID LINE YELLOW - EPOXY	LIN FT	17200	16000		1200		
Q	2582.502	24" SOLID LINE YELLOW - EPOXY	LIN FT	350	350				
Q	2582.503	CROSSWALK MARKING - PREFORMED THERMOPLASTIC	SQ FT	1540	1250		290		

BASIS OF ESTIMATED QUANTITIES		
ITEM NO.	ITEM	BASIS
2360	TYPE SP 9.5 WEARING COURSE	113 LBS/SY/INCH
2360	TYPE SP 12.5 NON WEARING COURSE	113 LBS/SY/INCH
2574	FERTILIZER TYPE 1	200 POUNDS/ACRE
2574	FERTILIZER TYPE 3	350 POUNDS/ACRE
2574	FERTILIZER TYPE 4	100-120 POUNDS/ACRE
2575	SEED MIXTURE 21-111	100 POUNDS/ACRE
2575	SEED MIXTURE 25-131	220 POUNDS/ACRE
2575	SEED MIXTURE 25-141	59 POUNDS/ACRE
2575	SEED MIXTURE 33-261	35 POUNDS/ACRE
2575	SEED MIXTURE 35-241	36.5 POUNDS/ACRE
2575	HYDRAULIC MATRIX TYPE MULCH	2100 POUNDS/ACRE

DESIGN TEAM	1	JEO	11/20/2015	SILT FENCE, TYPE MS QUANTITY CHANGE. ADDED ITEM FOR RAPID STABILIZATION METHOD 4.
DRAWN BY:	CIF			
DESIGNER:	JEO			
CHECKED BY:	JEO			
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

ESTIMATED QUANTITIES

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GENERAL, GRADING, BASE, AND SURFACE

UTILITY COMPANIES WILL RELOCATE THEIR FACILITIES IN ADVANCE OF, OR CONCURRENTLY WITH THE CONSTRUCTION OPERATIONS UNDER THIS CONTRACT. THE CONTRACTOR SHALL SCHEDULE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.

THE TOP OF THE FINAL GRADED SURFACE (GRADING GRADE) IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE SEE 2106.2.A.2

SUITABLE GRADING MATERIAL (COMMON EMBANKMENT) SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE EXCAVATION MATERIAL PER ENGINEER. EXISTING AGGREGATE AND TOPSOIL SHOULD BE SALVAGED AND REUSED IN NEW CONSTRUCTION WHERE POSSIBLE. SEE MNDOT 2106. MATERIALS DEFINED AS NON-STRUCTURAL GRADING MATERIALS MAY BE USED AS COMMON EMBANKMENT.

EMBANKMENT WIDENING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE FIRST PARAGRAPH OF MNDOT SPEC 2106. MATERIAL USED TO CONSTRUCT THE EMBANKMENT WIDENING SHOULD SUBSTANTIALLY MATCH THE INPLACE EMBANKMENT MATERIALS RELATIVE TO TEXTURAL CLASSIFICATION, DENSITY, AND MOISTURE CONTENT. PROVIDE 1:20 TAPERS WHERE APPLICABLE FOR CHANGES IN MATERIALS TYPE TO PREVENT AN ABRUPT SOIL DIFFERENTIAL. TAPERS BETWEEN PLASTIC AND GRANULAR SOILS SHOULD BE CONSTRUCTED SO THAT THE GRANULAR SOIL OVERLAYS THE PLASTIC SOIL.

MATERIALS DEFINED AS UNSUITABLE (TOPSOIL, ORGANIC MATERIAL, DEBRIS ETC.) MUST BE REMOVED FROM THE ROADBED EMBANKMENT FOUNDATION. THE UNSUITABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH MNDOT SPEC 2104 AND 2106. MATERIALS SUCH AS PEAT, MARL, MULCH, AND OTHER UNSTABLE MATERIALS NOT TO BE USED IN THE ROADBED EMBANKMENTS SHALL BECOME PROPERTY OF THE CONTRACTOR.

TOPSOIL EXCAVATION IS INCLUDED IN ITEM 2106.607 'EXCAVATION - COMMON'. EXISTING TOPSOIL DEPTH OF 1.0' IS ASSUMED ALONG CSAH 14 AND 0.5' ALONG THE WEST TRAIL. EXCAVATED TOPSOIL SHALL BE REUSED AS TOPSOIL EMBANKMENT AS DIRECTED BY THE ENGINEER. PLACING TOPSOIL EMBANKMENT IS INCLUDED IN ITEM 2106.607 'COMMON EMBANKMENT'.

UNLESS SPECIFICALLY NOTED, ANY USE OF BRACING, SHORING, SHEETING, OR OTHER MEANS AND METHODS OF CONSTRUCTION THAT ARE NECESSARY TO COMPLETE CONSTRUCTION WITHIN THE CONSTRUCTION LIMITS OR PROJECT EASEMENTS SHOWN IN THE PLANS WILL BE CONSIDERED INCIDENTAL.

THE EXISTING FILL AND NATIVE SOILS, WHICH INCLUDE SAND WITH SILT, SILTY SAND AND CLAYEY SAND, ARE CONSIDERED SUITABLE FOR REUSE IN ACCORDANCE WITH SPEC 2106.

STRIP SOD AND TOPSOIL FROM AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. FOR ESTIMATING PURPOSES, THE DEPTH OF TOPSOIL AVAILABLE IS CONSIDERED TO BE 1.0 FOOT IN ALL AREAS.

PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, GUARDRAIL, OTHER STRUCTURES, OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED OR DISPOSED OF OFF THE PROJECT LIMITS IN ACCORDANCE WITH SPEC 2104.3C3.

ALL EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH MNDOT SPEC 2106.

OBTAIN COMPACTION ON THE EMBANKMENT GRADING PORTIONS OF THE CONSTRUCTION IN ACCORDANCE WITH THE 'SPECIFIED DENSITY' AND 'PENETRATION INDEX' METHODS AS REQUIRED BY SPEC 2106.3F. OBTAIN COMPACTION OF AGGREGATE BASE IN ACCORDANCE WITH THE 'QUALITY COMPACTION METHOD' AS REQUIRED BY SPEC 2211.

NO EXTRA PAYMENT WILL BE MADE FOR STOCKPILING GRANULAR MATERIAL OR TOPSOIL.

WHERE WIDENING ADJACENT TO EXISTING PAVEMENT, EXCAVATIONS SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT. CUT VERTICALLY TO THE BOTTOM OF THE EXISTING OR PROPOSED 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 INPLACE 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 STATE.

UNLESS OTHERWISE REQUIRED, WHERE GRANULAR EMBANKMENTS OR BACKFILL JOIN NON- GRANULAR SOIL EMBANKMENTS OR BACKFILL, PROVIDE A 1(V):20(H) TRANSITION TAPER BETWEEN THE CHANGES IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. THE 1(V):20(H) TAPER SHALL BE CONSTRUCTED SO THAT THE GRANULAR BACKFILL MATERIAL OVERLAYS THE ADJACENT NON- GRANULAR SOIL BACKFILL.

WHERE MATCHING NEW SURFACING, AT CROSSROADS OR PROJECT TERMINI, TO EXISTING PAVEMENTS, CUT VERTICALLY TO THE BOTTOM OF THE EXISTING OR PROPOSED SURFACING, WHICHEVER IS DEEPER, THEN 1V:20H TO THE BOTTOM OF THE RECOMMENDED SUBGRADE TREATMENT. SAWCUT SHALL BE PROTECTED DURING CONSTRUCTION.

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.

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

USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON THE EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SQ YD BETWEEN BITUMINOUS LAYERS. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALTS. THE ASPHALT EMULSION MAY BE FURTHER DILUTED IN ACCORDANCE WITH MNDOT SPEC 2357. (TACK COAT SHALL BE INCIDENTAL).

TEMPORARY SHEET PILING IS ANTICIPATED AT THE FOLLOWING LOCATIONS: STA. 138+00 - 146+00, 180+00 - 184+00, 193+00 - 195+00.

EROSION CONTROL

SILT FENCE SHALL BE INSTALLED AS SOON AS POSSIBLE AND MAINTAINED IN GOOD CONDITION AT ALL TIMES AND REMOVED WHEN PROJECT IS COMPLETED. PAYMENT SHALL INCLUDE ALL COSTS FOR FURNISHING, MAINTENANCE, AND REMOVAL.

SEE EROSION CONTROL PLAN FOR LOCATIONS OF EROSION CONTROL DEVICES AND STANDARD EROSION CONTROL PLANS FOR DETAILS. TEMPORARY EROSION CONTROL DEVICES AND THEIR SUGGESTED LOCATIONS HAVE BEEN SHOWN IN THE PLANS ALONG WITH PAY ITEMS FOR THEIR USE. THIS DOES NOT HOWEVER RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO CONDUCT CONSTRUCTION IN A MANNER THAT WILL CONTROL EROSION. RESPONSIBILITY FOR CONTROLLING EROSION IS SET FORTH IN MNDOT SPECIFICATIONS 1717, 1803, 2101, 2105, 2573, 2575, AND AMENDED BY THE SPECIAL PROVISIONS.

TRAFFIC CONTROL

ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MNMUTCD, INCLUDING THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL".

TRAFFIC CONTROL SHALL BE PAID FOR AS A LUMP SUM ITEM. QUANTITIES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE USED FOR PAY QUANTITIES. ADDITIONAL TRAFFIC CONTROL SIGNS AND DEVICES MAY BE REQUIRED DEPENDING ON THE CONTRACTOR'S OPERATIONS AND DURATION. SEE THE SPECIAL PROVISIONS FOR COMPLETE TRAFFIC CONTROL REQUIREMENTS.

REMOVALS

"REMOVE PAVEMENT" IS PAID REGARDLESS OF DEPTH AND IS NOT INCLUDED IN THE EARTHWORK QUANTITIES.

WHEN REMOVING PAVEMENTS, FULL DEPTH SAWCUTS SHOULD BE MADE PERPENDICULAR TO THE ROADWAY CENTERLINE AND ALONG EXISTING LANE LINES.

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

Table with columns: PLATE NO., DESCRIPTION. Lists various standard plates such as 3000L REINFORCED CONCRETE PIPE (5 SHEETS), 4006L MANHOLE OR CATCH BASIN PRECAST - DESIGN G & H, 8000I STANDARD BARRICADES, etc.

TABULATION INDEX table with columns: TAB, SHEET, DESCRIPTION. Lists sheet numbers and descriptions like A 7 EARTHWORK SUMMARY, B 7 - 8 EARTHWORK TABULATIONS, etc.

DESIGN TEAM table with columns: DRAWN BY, DESIGNER, CHECKED BY, NO., BY, DATE. Lists team members like CIF, JEO and dates like 11/20/2015, 11/25/2015.

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: Jason E. Owens, Lic. No. 43475. Printed Name: JASON E. OWENS, Date: 11/24/2015.



CITY OF BLAINE, MN. CSAH 14 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

STANDARD PLATES, SOILS & CONSTRUCTION NOTES. FILE NO. 126669. 6 OF SCN1. 196

EARTHWORK SUMMARY <span style="float:right">A</span>					
ALIGNMENT / LOCATION	EXCAVATION			EMBANKMENT	
	COMMON ①	SUBGRADE	MUCK	COMMON ②	SELECT GRANULAR ③
	CUYD	CUYD	CUYD	CUYD	CUYD
③ CSAH 14	34565	10455	129548	35308	200232
④ CSAH 14 TRAIL	4723		14157	12076	26096
⑤ HARPERS ST	3772	14		2622	
④ WEST TRAIL	239			667	
③ EAST POND	7049			2629	
③ SOUTH POND	7582			297	
④ PARK ENTRANCE	905			3076	
TOTAL	58835	10469	143705	56676	226328

NOTES:

- ① TOPSOIL STRIPPING IS INCLUDED IN COMMON EXCAVATION. TOPSOIL IS ASSUMED TO BE 1.0' ALONG CSAH 14 AND 0.5' ALONG THE WEST TRAIL.
- ② TOPSOIL BORROW IS INCLUDED IN COMMON EMBANKMENT
- ③ PAID FOR UNDER S.A.P. 002-614-039
- ④ PAID FOR UNDER S.A.P. 106-020-032
- ⑤ PAID FOR UNDER S.A.P. 106-137-001
- ⑥ GRANULAR SOILS ARE SHOWN AS LOOSE VOLUMES (LV) IN THE EARTHWORK SUMMARY, BUT ARE SHOWN AS COMPACTED VOLUMES (CV) IN THE EARTHWORK TABULATIONS. AN EXPANSION FACTOR OF 1.20 WAS USED.

EARTHWORK TABULATION <span style="float:right">B</span>					
STATION	EXCAVATION			EMBANKMENT	
	COMMON	SUBGRADE	MUCK	COMMON	SELECT GRANULAR
	CU YD	CU YD	CU YD	CU YD	CU YD
HARPERS ST.					
10+50					
11+00	247	1		199	
12+00	707	4		308	
13+00	1002	4		150	
13+25	275	1		33	
14+00	580	2		85	
15+00	391	2		482	
16+00	336			889	
16+95	234			476	
Total	3772	14		2622	
WEST TRAIL					
10+07					
10+25	6			3	
10+38	4			2	
10+50	4			7	
10+63	5			11	
10+79	7			18	
11+00	12			37	
11+50	27			78	
12+00	17			26	
12+50	19			39	
13+00	22			55	
13+50	30			128	
13+75	20			120	
13+88	11			74	
14+00	10			69	
14+41	32			187	
14+47	4			16	
14+53	3			14	
14+68	6			19	
Total	239			667	
CSAH 14					
131+10					
131+20	4	3		0	3
131+64	50	39		11	57
132+00	62	39		17	68
133+00	250	112		92	242
133+73	240	80		124	288
134+00	108	56		58	166
134+56	273	170	712	183	1115
135+00	211	120	924	188	1237

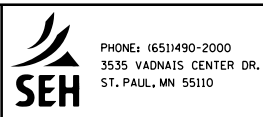
EARTHWORK TABULATION <span style="float:right">B</span>					
STATION	EXCAVATION			EMBANKMENT	
	COMMON	SUBGRADE	MUCK	COMMON	SELECT GRANULAR
	CU YD	CU YD	CU YD	CU YD	CU YD
CSAH 14					
135+40	214	113	783	176	1028
136+00	302	167	951	230	1313
137+00	367	261	523	237	1113
138+00	301	155		236	756
139+00	342	32	1553	565	2513
140+00	389		3646	966	4584
141+00	406		4940	1285	5741
142+00	399		5658	1357	6292
143+00	388		5577	1255	6081
144+00	403		5164	1275	5649
145+00	412		4968	1224	5458
145+67	273	40	2599	559	2938
147+00	546	183	3801	350	1362
148+00	455	156	3438	914	3713
149+00	521	173	3371	771	3735
150+00	578	197	2939	699	3337
151+00	585	208	2591	604	2989
152+18	638	240	3141	665	3735
153+00	399	142	2323	532	2827
153+83	381	120	1994	530	2563
154+00	73	22	338	104	480
155+00	420	116	2240	677	3055
156+00	399	99	2699	699	3510
156+78	336	101	2014	456	2550
157+00	95	39	443	165	484
157+50	232	142	790	25	774
157+87	168	97	561	26	641
158+00	50	21	196	10	236
159+00	448	193	1379	79	1657
160+00	514	199	1722	77	1795
160+75	450	175	1128	57	1130
161+00	156	66	110	18	192
162+00	612	284	222	56	682
162+40	232	117	186	16	350
163+00	314	172	258	23	507
164+00	428	296	199	34	616
164+53	179	163		15	222
165+00	138	123		17	202
166+00	266	214		49	476
167+00	429	230	299	60	859
167+71	337	97	614	85	1056
168+17	202	1	538	101	912
169+00	368		1320	259	2052

EARTHWORK TABULATION <span style="float:right">B</span>					
STATION	EXCAVATION			EMBANKMENT	
	COMMON	SUBGRADE	MUCK	COMMON	SELECT GRANULAR
	CU YD	CU YD	CU YD	CU YD	CU YD
CSAH 14					
170+00	266	21	1566	239	2290
171+00	323	152	793	66	1470
172+00	925	227	189	84	795
172+62	95	124		94	354
173+00	99	75		57	259
174+00	228	189		118	842
174+69	152	112		67	591
175+00	64	38		35	260
176+00	1422	56		102	752
177+00	311	6		107	654
178+00	240	6		171	848
179+00	267		241	348	1218
180+00	279		1482	633	2384
181+00	261		3689	674	4559
182+00	241		4478	530	5237
183+00	228		4025	479	4564
184+00	202	88	1995	266	2394
184+17	38	34		21	73
185+00	213	140	1451	238	1729
186+00	275	130	3266	388	3461
187+00	331	151	2731	352	2930
188+00	467	172	3139	1164	2370
189+00	583	181	3316	1751	1862
190+00	573	189	2258	1132	1445
191+00	477	182	1609	628	1373
192+00	386	172	1598	522	1501
193+00	322	146	2082	662	1901
194+00	298	61	3297	806	2985
195+00	545	16	2267	498	2297
196+00	747	16	203	175	827
196+34	185	15		36	266
197+00	419	28		65	527
198+00	1069	0		167	760
198+35	276	0		31	253
199+00	263	9		66	455
200+00	395	63		205	629
201+00	329	144		219	561
202+00	316	211	648	396	850
203+00	348	238	935	446	1025
203+22	89	55	140	293	730
204+00	227	240	253	125	493
204+46	105	140		0	183
205+00	117	114		18	203

DESIGN TEAM		11/20/2015	REMOVED SELECT GRANULAR MOD. 7% ITEM, UPDATED COMMON EMBANKMENT AND SELECT GRANULAR EMBANKMENT NUMBERS FOR CSAH 14 ROADWAY.
DRAWN BY: CIF	1	JEO	
DESIGNER: JEO			
CHECKED BY: JEO		11/25/2015	REVISED QUANTITIES FOR SELECT GRANULAR AND COMMON EMB.
	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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/24/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

EARTHWORK TABULATION & SUMMARY		FILE NO. 126669	7
		EW1 OF EW2	196

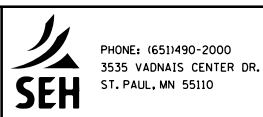
EARTHWORK TABULATION <span style="float:right">B</span>					
STATION	EXCAVATION			EMBANKMENT	
	COMMON	SUBGRADE	MUCK	COMMON	SELECT GRANULAR
	CU YD	CU YD	CU YD	CU YD	CU YD
CSAH 14					
206+00	215	166		108	411
207+00	254	92		125	459
207+41	94	13		49	197
208+00	104	3		58	342
209+00	260			148	758
210+00	366			269	920
211+00	483			389	1026
212+00	462			484	1817
213+00	324		1139	435	1749
213+60	176	21	966	213	1140
214+00	111	36	371	114	460
214+25	61	30	228	64	286
215+00	133	127	341	116	506
216+00	150	204		49	237
216+25	33	49		6	54
Total	34565	10455	129548	35308	166860
CSAH 14 TRAIL					
157+87					
158+00	27		45	45	132
159+00	164		350	328	972
160+00	115		418	321	1138
160+75	80		185	248	731
161+00	26		0	63	121
162+00	130		136	209	421
162+40	64		111	101	196
163+00	91		140	140	270
164+00	132		102	130	286
164+53	49			30	72
165+00	32			36	71
166+00	84			114	209
167+00	31			58	112
167+71	21		64	62	136
168+17	15		47	68	88
169+00	44		212	263	316
170+00	123		432	437	626
171+00	114		318	330	478
172+00	86		189	177	290
172+62	14			14	76
173+00	7			13	61
174+00	76			112	220
174+69	60			102	139
175+00	27			46	56
176+00	87			132	199
177+00	84			98	193
178+00	100			126	230
179+00	124			235	309
180+00	142			328	378
181+00	153		684	661	752
182+00	164		1171	886	988
183+00	159		1007	786	859
184+00	139		520	421	467
184+17	26			12	15
185+00	134		806	487	639
186+00	161		1476	810	1312
187+00	166		1011	529	1154
188+00	148		1014	486	1127
189+00	124		881	413	986
190+00	115		594	356	710
191+00	106		380	293	541
192+00	97		329	256	533
193+00	98		432	270	642
194+00	107		495	294	709
195+00	108		419	272	624
196+00	113		189	160	376
196+34	37			21	58
197+00	51			31	92
198+00	52			24	112
198+35	17			6	36
199+00	33			14	76

EARTHWORK TABULATION <span style="float:right">B</span>					
STATION	EXCAVATION			EMBANKMENT	
	COMMON	SUBGRADE	MUCK	COMMON	SELECT GRANULAR
	CU YD	CU YD	CU YD	CU YD	CU YD
CSAH 14 TRAIL					
200+00	59			37	123
201+00	69			59	100
202+00	68			72	79
203+00	59			53	61
203+22	11			4	52
TOTAL	4723		14157	12076	21747
EAST POND					
	7049			2629	
SOUTH POND					
	7582			297	
PARK ENTRANCE					
10+11					
10+50	37			24	
11+00	65			128	
11+50	90			290	
12+00	112			467	
12+50	122			576	
12+91	99			451	
13+24	69			268	
13+60	69			227	
13+93	61			193	
14+36	75			243	
14+78	60			156	
15+25	46			53	
Total	905			3076	

DESIGN TEAM	1	JEO	11/20/2015	REMOVED SELECT GRANULAR MOD. 7% ITEM, UPDATED COMMON EMBANKMENT AND SELECT GRANULAR EMBANKMENT NUMBERS FOR CSAH 14 ROADWAY.
DRAWN BY: CIF				
DESIGNER: JEO			11/25/2015	REVISED QUANTITIES FOR SELECT GRANULAR AND COMMON EMB.
CHECKED BY: JEO	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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/24/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**EARTHWORK TABULATION & SUMMARY**



MISCELLANEOUS REMOVALS [C]

Table with columns: STATION TO STATION, LOCATION, REMOVE PIPE CULVERTS, REMOVE CONCRETE WALK, REMOVE CURB AND GUTTER, REMOVE RETAINING WALL, REMOVE BARBED WIRE FENCE, REMOVE CONCRETE BLOCK WALL, REMOVE BITUMINOUS PAVEMENT, REMOVE BITUMINOUS FLUME, RELOCATE HYDRANT, ADJUST GATE VALVE, ADJUST FRAME & RING CASTING. Includes subtotals for EB CSAH 14, HARPERS ST., and PROJECT TOTAL.

CLEARING & GRUBBING [E]

Table with columns: STATION TO STATION, LOCATION, CLEARING ACRE, CLEARING TREE, GRUBBING ACRE, GRUBBING TREE. Includes subtotals for EB CSAH 14, HARPERS ST., PARK ENTRANCE, and PROJECT TOTAL.

PAVEMENT SAWING [D]

Table with columns: STATION TO STATION, LOCATION, DESCRIPTION, SAWING BIT PAVEMENT (FULL DEPTH) LIN FT. Includes subtotals for EB CSAH 14, HARPERS ST., and PROJECT TOTAL.

BITUMINOUS PAVEMENT [G]

Table with columns: STATION TO STATION, LOCATION, DESCRIPTION, MILL BITUMINOUS SURFACE (2") SQ YD, TYPE SP 9.5 WEARING COURSE MIX (2,B) (SPWEB230B) TON, TYPE SP 9.5 WEARING COURSE MIX (2,C) (SPWEA240C) TON, TYPE SP 9.5 WEARING COURSE MIX (4,F) (SPNWEA440F) TON, TYPE SP 12.5 NON WEARING COURSE MIX (3,B) (SPNWB330B) TON. Includes subtotals for EB CSAH 14, HARPERS ST., PARK ENTRANCE, and PROJECT TOTAL.

MAIL BOXES [F]

Table with columns: STATION TO STATION, LOCATION, MAIL BOX SUPPORT EACH. Includes subtotals for EB CSAH 14, HARPERS ST., and PROJECT TOTAL.

- ① LANDSCAPING WALL
② FOR INFORMATION ONLY. REMOVED BY OTHERS
③ PAID FOR UNDER S.A.P. 002-614-039 AND S.A.P. 106-020-032
④ PAID FOR UNER S.A.P. 106-137-001
⑤ QUANTITY INCLUDES 45 TONS FOR TEMPORARY PAVEMENT SHOWN ON SHEETS 50 AND 51. (4" OF PAVEMENT AND 6" OF AGGREGATE).

MISCELLANEOUS REMOVALS
PAVEMENT SAWING
CLEARING & GRUBBING
MAIL BOXES
BITUMINOUS PAVEMENT

DESIGN TEAM table with columns: NO., BY, DATE, REVISIONS. Includes entries for CIF, JEO, and JEO.

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: Jason E. Owens Lic. No. 43475
Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.
CSAH 14
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

QUANTITY TABULATIONS

AGGREGATE <span style="border: 1px solid black; padding: 0 2px;">H</span>			
STATION TO STATION	LOCATION	DESCRIPTION	AGGREGATE BASE (CV) CLASS 5
			CU YD
<b>① EB CSAH 14</b>			
126+07 - 131+08	RT	UNDER TRAIL	64
131+08 - 145+00	LT & RT	UNDER ROADWAY	1654
131+08 - 145+00	RT	UNDER TRAIL	204
131+08 - 145+00	LT & RT	UNDER MEDIAN, CURB & GUTTER	386
145+00 - 160+00	LT & RT	UNDER ROADWAY	2241
145+00 - 157+10	RT	UNDER TRAIL	239
145+00 - 160+00	LT & RT	UNDER MEDIAN, CURB & GUTTER	492
160+00 - 175+00	LT & RT	UNDER ROADWAY	2366
157+10 - 175+00	LT & RT	UNDER TRAIL	343
160+00 - 175+00	LT & RT	UNDER MEDIAN, CURB & GUTTER	805
175+00 - 190+00	LT & RT	UNDER ROADWAY	1888
175+00 - 190+00	RT	UNDER TRAIL	179
175+00 - 190+00	LT & RT	UNDER MEDIAN, CURB & GUTTER	802
190+00 - 205+00	LT & RT	UNDER ROADWAY	2250
190+00 - 205+00	RT	UNDER TRAIL	194
190+00 - 205+00	LT & RT	UNDER MEDIAN, CURB & GUTTER	726
205+00 - 216+24	LT & RT	UNDER ROADWAY	1632
205+00 - 216+24	LT & RT	UNDER MEDIAN, CURB & GUTTER	296
SUBTOTAL			16761
<b>② HARPERS ST.</b>			
10+20 - 16+99	LT & RT	ROAWAY & TRAIL	815
10+20 - 16+99	LT & RT	UNDER MEDIAN, CURB & GUTTER	450
SUBTOTAL			1265
<b>① PARK ENTERANCE</b>			
10+10 - 15+25	LT & RT	ROADWAY	245
SUBTOTAL			245
PROJECT TOTAL			18271

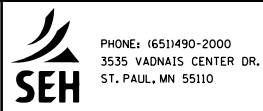
CONCRETE & ADA ITEMS <span style="border: 1px solid black; padding: 0 2px;">I</span>											
STATION TO STATION	LOCATION	INTERSECTION QUADRANT (ADA)	DESCRIPTION	4" CONCRETE WALK	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B418	CONCRETE CURB & GUTTER DESIGN B424	CONCRETE CURB & GUTTER DESIGN B618	8" CONCRETE DRIVEWAY PAVEMENT	8" CONCRETE VALLEY GUTTER	TRUNCATED DOMES
				SQ FT	SQ FT	LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	SQ FT
<b>① EB CSAH 14</b>											
131+08 - 145+00	LT & RT		CURB & GUTTER, MEDIAN	8639		2253	86				
131+36	RT	1	ONE-WAY DIRECTION PED RAMP		136						34
145+00 - 160+00	LT & RT		CURB & GUTTER, MEDIAN	9658		2782	505				
156+94	LT	1	PERPENDICULAR PED RAMP		532						20
156+94	RT	1	FAN PED RAMP		604						30
157+72	RT	1	ONE-WAY DIRECTION PED RAMP		554						25
160+00 - 175+00	LT & RT		CURB & GUTTER, MEDIAN	13172		2766	3218				
164+36	LT	1	ONE-WAY DIRECTION PED RAMP		49						20
166+60	RT	1	ONE-WAY DIRECTION PED RAMP		80						25
167+42	RT	1	ONE-WAY DIRECTION PED RAMP		62						22
167+87 - 168+47	RT		VALLEY GUTTER							25	
168+04	RT	1	ONE-WAY DIRECTION PED RAMP		29						16
168+31	RT	1	ONE-WAY DIRECTION PED RAMP		29						16
172+34	RT	1	ONE-WAY DIRECTION PED RAMP		82						25
172+85	RT	1	ONE-WAY DIRECTION PED RAMP		70						22
175+00 - 190+00	LT & RT		CURB & GUTTER, MEDIAN	12960		3000	3000				
183+82 - 184+49	LT		VALLEY GUTTER								27
190+00 - 205+00	LT & RT		CURB & GUTTER, MEDIAN	9042		3158	2890				
198+06 - 198+70	LT		VALLEY GUTTER								28
203+28	RT	1	FAN PED RAMP		644						46
203+48	LT	2	COMBINED DIRECTIONAL RAMPS		496						29
204+64	RT	1	FAN PED RAMP		780						57
204+69	LT	1	PERPENDICULAR PED RAMP		475						24
205+00 - 216+24	LT & RT		CURB & GUTTER, MEDIAN	4527		1223	1044				
SUBTOTAL				57998	4622	15182	10743			80	411
<b>② HARPERS ST.</b>											
10+20 - 16+99	LT & RT		CURB & GUTTER, MEDIAN	5544				2437			
10+20 - 16+99	RT		WALK	3390							
12+90 - 13+54	LT		VALLEY GUTTER, DRIVEWAY PAVEMENT						41	21	
SUBTOTAL				8934				2437	41	21	
PROJECT TOTAL				66932	4622	15182	10743	2437	41	101	411

① PAID FOR UNDER S.A.P. 002-614-039 AND S.A.P. 106-020-032  
 ② PAID FOR UNDER S.A.P. 106-137-001

AGGREGATE  
CONCRETE & ADA ITEMS

DESIGN TEAM	1	JEO	11/20/2015	ADDED 37 CU YDS OF AGGREGATE FOR TEMPORARY PAVEMENT
DRAWN BY: <u>CIF</u>				
DESIGNER: <u>JEO</u>				
CHECKED BY: <u>JEO</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: Jason E. Owens Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

QUANTITY TABULATIONS

FILE NO. 126669	10
TB2 OF TB8	196

TEMPORARY TURF ESTABLISHMENT AND EROSION CONTROL **J**

STATION TO STATION	LOCATION	①	STORM DRAIN INLET PROTECTION	④	④	② ④	④	③ ④	RAPID STABILIZATION METHOD 4
		SILT FENCE, TYPE MS		SEDIMENT CONTROL LOG TYPE WOOD FIBER	FERTILIZER TYPE 1 120 LB/ACRE	SEEDING	SEED MIXTURE 21-111	HYDRAULIC MATRIX TYPE MULCH 2100 LB/ACRE	SQ YD
		LIN FT	EACH	LIN FT	POUND	ACRE	POUND	POUND	
<b>⑤ EB CSAH 14</b>									
126+01 - 131+08	RT	1024			42	0.21	21	882	999
131+08 - 145+00	LT & RT	3177	9		390	1.95	195	8190	9453
145+00 - 160+00	LT & RT	2510	16		194	0.97	97	4074	4717
145+00 - 160+00	TRAIL	576			48	0.24	24	1008	1145
160+00 - 175+00	LT & RT	2282	41		324	1.62	162	6804	7856
160+00 - 175+00	TRAIL	1786			80	0.40	40	1680	1954
175+00 - 190+00	LT & RT	2998	23	122	686	3.43	343	14406	16607
175+00 - 190+00	TRAIL	1331		78	200	1.00	100	4200	4823
190+00 - 205+00	LT & RT	1665	33	400	444	2.22	222	9324	10745
190+00 - 205+00	TRAIL	1368	1		84	0.42	42	1764	2015
205+00 - 216+24	LT & RT	2206	7		196	0.98	98	4116	4733
SUBTOTAL		20923	130	600	2688	14.2	1344	56448	65047
<b>⑥ HARPERS ST.</b>									
10+20 - 16+99	LT & RT	1235	16		140	0.7	70	2940	3382
SUBTOTAL		1235	16		140	0.7	70	2940	3382
<b>⑤ PARK ENTERANCE</b>									
10+10 - 15+25	LT & RT	522			118	0.59	59	2478	2871
SUBTOTAL		522			118	0.59	59	2478	2871
PROJECT TOTAL		22680	146	600	2946	15.49	1473	61866	71300

SANITARY SEWER **T**

STATION	LOCATION	8" PVC PIPE SEWER	CONNECT TO EXISTING SANITARY SEWER
		LIN FT	EACH
<b>⑥ HARPERS ST.</b>			
10+20 - 16+99	RT & LT	20	1
PROJECT TOTAL		20	1

WATERMAIN **U**

STATION	LOCATION	CONNECT TO EXISTING WATERMAIN	8" PVC (C-900) WATERMAIN
		EACH	LIN FT
<b>⑥ HARPERS ST.</b>			
10+20 - 16+99	RT & LT	2	32
PROJECT TOTAL		2	32

NOTES:

- ① QUANTITY CALCULATED IS BASED ON AMOUNT SHOWN IN THE PLANS PLUS AN ADDITIONAL 20% TO BE USED AS DIRECTED BY THE FIELD ENGINEER.
- ② QUANTITY IS CALCULATED BASED ON 100% OF THE PERMANENT SEEDING AREA.
- ③ QUANTITY IS CALCULATED BASED ON 200% OF THE PERMANENT SEEDING AREA.
- ④ TO BE USED AS A TEMPORARY EROSION OR SEDIMENT CONTROL MEASURE THROUGHOUT THE COURSE OF THE PROJECT.
- ⑤ PAID FOR UNDER S.A.P. 002-614-039 AND S.A.P. 106-020-032
- ⑥ PAID FOR UNER S.A.P. 106-137-001

TEMPORARY TURF ESTABLISHMENT AND EROSION CONTROL  
SANITARY SEWER  
WATERMAIN

DESIGN TEAM			
DRAWN BY:	CIF	1	JEO
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

QUANTITY TABULATIONS

**PERMANENT TURF ESTABLISHMENT K**

STATION TO STATION	LOCATION	FERTILIZER TYPE 3	FERTILIZER TYPE 4	SEEDING	SEED MIXTURE 25-131	SEED MIXTURE 25-141	SEED MIXTURE 33-261	SEED MIXTURE 35-241	EROSION CONTROL BLANKETS CATEGORY 3	HYDRAULIC MATRIX TYPE MULCH 2100 LB/ACRE
		350 LB/ACRE	100 LB/ACRE	ACRE	POUND	POUND	POUND	POUND	SQ YD	POUND
① EB CSAH 14										
126+01 - 131+08	RT	74		0.21		12			999	
131+08 - 145+00	LT	294		0.84		50			4081	
131+08 - 145+00	RT	389		1.11		65			5372	
145+00 - 160+00	LT	259		0.74		44			3557	
145+00 - 160+00	LT TRAIL	49		0.14		8			678	
145+00 - 160+00	RT TRAIL	32		0.09		5			448	
147+18 - 156+03	RT	112		0.32	70				1548	
147+18 - 156+03	RT	53		0.15		9			723	
160+00 - 175+00	LT	154		0.44		26			2122	
160+00 - 175+00	LT TRAIL	56		0.16		9			776	
160+00 - 175+00	RT	137		0.39		23			1869	
160+00 - 175+00	RT TRAIL	161		0.46		27			2232	
161+79 - 166+71	RT	49		0.14	31				681	
172+77 - 176+83	RT		15	0.15			5			315
172+77 - 176+83	RT		62 ③	0.52			18		2520	
175+00 - 190+00	LT	252		0.72		42			3502	
175+00 - 190+00	RT	130		0.37		22			1812	
175+00 - 190+00	RT TRAIL	347		0.99		58			4779	
186+77 - 190+40	LT		49	0.49				18		1029
186+77 - 190+40	LT		48 ③	0.40			14		1912	
186+77 - 190+40	LT	305		0.87	191				4187	
190+00 - 205+00	LT	602		1.72		101			8336	
190+00 - 205+00	RT	84		0.24		14			1166	
190+00 - 205+00	RT TRAIL	144		0.41		24			2004	
205+00 - 216+24	LT	116		0.33		19			1581	
205+00 - 216+24	RT	231		0.66		39			3192	
SUBTOTAL		4030	174	13.06	292	597	32	23	60077	1344
② HARPERS ST.										
10+20 - 16+99	LT	112		0.32		19			1530	
10+20 - 16+99	RT	133		0.38		22			1852	
SUBTOTAL		245		0.7		41			3382	
① PARK ENTERANCE										
10+10 - 15+25	LT	60		0.17		10			800	
10+10 - 15+25	RT	151		0.43		25			2068	
SUBTOTAL		211		0.6		35			2868	
PROJECT TOTAL		4486	174	14.36	292	673	32	23	66327	1344

NOTES:

- ① PAID FOR UNDER S.A.P. 002-614-039 AND S.A.P. 106-020-032
- ② PAID FOR UNER S.A.P. 106-137-001
- ③ FERTILIZER APPLIED AT 120 LB/ACRE.

PERMANENT TURF ESTABLISHMENT

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: JEO				
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: *Jason E. Owens* Lic. No. 43475  
 Licensed Professional Engineer  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

QUANTITY TABULATIONS

FILE NO. 126669	12
TB4 OF TB8	196

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DRAINAGE [L]

Table with columns for STRUCTURE NO., STRUCTURE LOCATION, DRAINAGE STRUCTURES PAY HEIGHT, CASTING ASSEMBLY TYPE, STEPS REQ'D, TOP OF CASTING ELEV, OUTLET ELEV, INLET ELEV, PIPE SLOPE (%), RCP sizes (12" to 36" CL V), CLASS B PIPE BEDDING, APRON, APRON TYPE, GEO-TEXTILE FILTER TYPE IV, RIPRAP CLASS III, GRANULAR FILTER MATERIAL, GUIDE POSTS TYPE B, and NOTES. Includes rows 4000 through 4006 and CB-100 through CB-406.

GENERAL NOTES:

ALL CONCRETE PIPE SEWER IS DESIGN 3006 GASKET JOINT PIPE WITH CLASS B BEDDING.  
THE OUTLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS FROM STRUCTURE.  
THE INLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS TO STRUCTURE.  
THE INVERT ELEVATIONS ON THE PROFILES ARE AT THE CENTER OF THE STRUCTURE.  
PAY HEIGHT SHALL BE FROM THE TOP OF THE STRUCTURE (BOTTOM OF THE RINGS) TO THE FINAL INVERT PLUS 0.7'.

GENERAL NOTES:

THE STRUCTURE LOCATION IS AT THE CENTER OF THE STRUCTURE.  
THE CASTING LOCATION IS AT THE CENTER OF THE CASTING.

FOR CONCRETE PIPES WITH APRONS:

- THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON.  
- THE LENGTH IN THE TABULATION WILL BE ADJUSTED FOR THE TYPE OF APRON LISTED.  
- THE PROFILE LENGTH OF PIPE TO THE OUTLET INVERT END OF THE APRON INCLUDES THE APRON.

SPECIFIC NOTES:

- ① SEE MISCELLANEOUS DETAIL PLAN SHEET MD1 FOR ELEVATION LOCATIONS ON STRUCTURES AND HOW PIPE SLOPE IS CALCULATED.
- ② SEE MISCELLANEOUS DETAIL PLAN SHEET (MD3) FOR CASTING REQUIREMENTS.
- ③ CONSTRUCT STRUCTURE WITH CURB BOX.
- ④ CONSTRUCT STRUCTURE WITH CURB PLATE.

DESIGN TEAM table with columns 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.  
Certified By: Rachel Pichelmann Lic. No. 51315  
Printed Name: RACHEL E. PICHELMMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

QUANTITY TABULATIONS

Table with columns for FILE NO. (126669), 13, TB5 OF T88, and 196.

DRAINAGE





DRAINAGE [L]

Table with columns: STRUCTURE NO., STRUCTURE LOCATION, PAY HEIGHT, CASTING ASSEMBLY TYPE, STEPS REQ'D, TOP OF CASTING ELEV, OUTLET ELEV, INLET ELEV, PIPE SLOPE (%), 12" RCP CL V, 15" RCP CL V, 18" RCP CL III, 18" RCP CL IV, 21" RCP CL III, 21" RCP CL IV, 24" RCP CL V, 24" RCP CL III, 24" RCP CL IV, 27" RCP CL III, 27" RCP CL IV, 30" RCP CL IV, 36" RCP CL IV, CLASS B PIPE BEDDING, APRON, APRON TYPE, GEO-TEXTILE FILTER TYPE IV, RIPRAP CLASS III, GRANULAR FILTER MATERIAL, GUIDE POSTS TYPE B, NOTES.

CULVERTS [M]

Table with columns: STRUCTURE NO., LOCATION, STRUCTURE NO., LOCATION, FLOWS FROM INVERT, FLOWS TO INVERT, SLOPE (%), 12" RCP CULVERT DES 3006 CL V, 12" RC PIPE APRON, 15" RCP CULVERT DES 3006 CL V, 15" RC PIPE APRON, 18" RCP CULVERT DES 3006 CL IV, 18" RC PIPE APRON, 21" RCP CULVERT DES 3006 CL IV, 21" RC PIPE APRON, 24" RCP CULVERT DES 3006 CL III, 24" RC PIPE APRON, 30" RCP CULVERT DES 3006 CL III, 30" RC PIPE SAFETY APRON, CLASS B PIPE BEDDING, RANDOM RIPRAP CLASS III, GEOTEXTILE FILTER TYPE IV, GRANULAR FILTER MATERIAL, GUIDE POSTS TYPE B.

CASTING ASSEMBLY [N]

Table with columns: ASSEMBLY, R - 3250, M - 11, R - 3448, A - 7D, TOTAL.

GENERAL NOTES:

ALL CONCRETE PIPE SEWER IS DESIGN 3006 GASKET JOINT PIPE WITH CLASS B BEDDING. THE OUTLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS FROM STRUCTURE. THE INLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS TO STRUCTURE. THE INVERT ELEVATIONS ON THE PROFILES ARE AT THE CENTER OF THE STRUCTURE. PAY HEIGHT SHALL BE FROM THE TOP OF THE STRUCTURE (BOTTOM OF THE RINGS) TO THE FINAL INVERT PLUS 0.7'.

GENERAL NOTES:

THE STRUCTURE LOCATION IS AT THE CENTER OF THE STRUCTURE. THE CASTING LOCATION IS AT THE CENTER OF THE CASTING.

FOR CONCRETE PIPES WITH APRONS:

- THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON. - THE LENGTH IN THE TABULATION WILL BE ADJUSTED FOR THE TYPE OF APRON LISTED. - THE PROFILE LENGTH OF PIPE TO THE OUTLET INVERT END OF THE APRON INCLUDES THE APRON.

SPECIFIC NOTES:

- ① SEE MISCELLANEOUS DETAIL PLAN SHEET MD1 FOR ELEVATION LOCATIONS ON STRUCTURES AND HOW PIPE SLOPE IS CALCULATED. ⑤ CONNECT TO EXISTING 24" RCP.

DRAINAGE CULVERTS CASTING ASSEMBLY

Table with columns: DESIGN TEAM, 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: Rachel Pichelmann, Lic. No. 51315. Printed Name: RACHEL E. PICHELMANN, Date: 10/22/2015.



CITY OF BLAINE, MN. CSAH 14 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

QUANTITY TABULATIONS

Table with columns: FILE NO., 126669, TB8 OF TB8, 16, 196.



LEGEND	UTILITY
-F/O -BUR-	FIBER OPTIC IN COND = FIBER OPTIC LINE IN CONDUIT-UNDERGROUND
-T-BUR-	T-BUR = TELEPHONE LINE-UNDERGROUND
	TEL PED = TELEPHONE/COMMUNICATION PEDESTAL
	COM VAULT = TELEPHONE/COMMUNICATION VAULT
	COM HH = COMMUNICATION HANDHOLE
-OO-	COM = COMMUNICATION LINE-UNDERGROUND
-OHU-	OVERHEAD ELECTRIC LINE = POWER LINE-OVERHEAD
-P-BUR-	P-BUR = POWER LINE-UNDERGROUND
	P POLE = POWER POLE
	L POLE = LIGHT POLE
	P PED = POWER PEDESTAL
	ANC = POWER POLE GUY WIRE ANCHOR
-SIG-BUR-	SIG WIRE = SIGNAL POWER LINE-UNDERGROUND
	P HH = SIGNAL HANDHOLE
	P METER = SIGNAL POWER METER
	TRAFFIC SIG LIGHT = SIGNAL POLE/LIGHT POLE
-G-	GAS = GAS LINE-UNDERGROUND

UTILITY CONTACTS
THE FOLLOWING UTILITY OWNERS HAVE FACILITIES WITHIN THE LIMITS OF THIS PROJECT
ANOKA COUNTY
ZAYO GROUP
ARVIG-ZAYO
CENTER POINT ENERGY
CENTURYLINK
CITY OF BLAINE
COMCAST
CONNEXUS ENERGY

GENERAL NOTES:

- ALL UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS NOTED.
- ALL RELOCATES AND ADJUSTMENTS SUBJECT TO COUNTY AND CITY RIGHT OF WAY.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUTE, CHAPTER 216D FOR ALL UNDERGROUND UTILITY LOCATIONS.
- 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 REMARKS COLUMN IS BASED ON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.
- SOME UTILITY RELOCATIONS MAY OCCUR IN ADVANCE OF CONSTRUCTION. IF SO, THE UTILITY LOCATIONS SHOWN IN THESE PLANS MAY NOT REFLECT THE CURRENT LOCATION OF THOSE UTILITIES AT THE TIME OF CONSTRUCTION.
- UTILITY RELOCATION PLANS ARE AVAILABLE TO VIEW. CONTACT THE RESIDENT CONSTRUCTION ENGINEER TO REQUEST COPIES.

UTILITY TABULATION - POWER						
STATION TO STATION	OFFSET	ITEM IN PLACE	OWNER	REMARKS		
				ADJUST	RELOCATE	LEAVE AS IS
NOTES						
EB CSAH 14						
125+68	54R	P POLE	CONNEXUS ENERGY			X
125+68 - 128+57	54R - 32R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
125+76	33R	P POLE	CONNEXUS ENERGY			X
126+74	26R	P HH				X
126+79 - 127+96	31R - 41R	P-BUR	CONNEXUS ENERGY		X	
127+96 - 128+53	41R - 37R	P-BUR	CONNEXUS ENERGY		X	
128+53 - 129+07	37R - 36R	P-BUR	CONNEXUS ENERGY		X	
128+57	31R	P POLE	CONNEXUS ENERGY		X	
128+57 - 128+68	32R - 52R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
128+68	52R	P POLE	CONNEXUS ENERGY		X	
128+68	52R - 119R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
128+68	30R	ANC	CONNEXUS ENERGY		X	
128+71	30R	ANC	CONNEXUS ENERGY		X	
128+73	43R	P TOWER	CONNEXUS ENERGY		X	
128+75	29R	ANC	CONNEXUS ENERGY		X	
129+06	36R	P PED	CONNEXUS ENERGY		X	
129+69	84L	TRAFFIC SIG LIGHT				X
129+99	73R	TRAFFIC SIG LIGHT				X
130+08	82R	P MH				X
131+23	111L	TRAFFIC SIG LIGHT				X
131+45	39R	TRAFFIC SIG LIGHT			X	
131+79	44R	P PED			X	
131+91	44R	P PED			X	
132+53 - 136+08	71L - 57L	P-BUR	CONNEXUS ENERGY		X	
135+38 - 135+69	29R	P-BUR	CONNEXUS ENERGY		X	
135+49	35R	ANC	CONNEXUS ENERGY		X	
135+53	34R	ANC	CONNEXUS ENERGY		X	
135+56	34R	ANC	CONNEXUS ENERGY		X	
135+62	34R	ANC	CONNEXUS ENERGY		X	
135+81	34R	P POLE	CONNEXUS ENERGY		X	
135+81 - 138+88	34R - 38R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
138+88	38R	P POLE	CONNEXUS ENERGY		X	
138+88 - 141+90	38R - 39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
141+90	39R	P POLE	CONNEXUS ENERGY		X	
141+90 - 144+88	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
143+94 - 143+95	47L - 71L	P-BUR	CONNEXUS ENERGY		X	
143+94 - 143+98	47L - 14R	P-BUR	CONNEXUS ENERGY		X	
143+97 - 143+98	27R - 14R	P-BUR	CONNEXUS ENERGY		X	
143+97 - 144+03	27R - 32R	P-BUR	CONNEXUS ENERGY		X	
144+03 - 144+06	32R - 33R	P-BUR	CONNEXUS ENERGY		X	
144+06 - 144+13	33R - 32R	P-BUR	CONNEXUS ENERGY		X	
144+88	39R	P POLE	CONNEXUS ENERGY		X	
144+88 - 147+92	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
147+92	39R	P POLE	CONNEXUS ENERGY		X	
147+92 - 150+99	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
150+99	39R	P POLE	CONNEXUS ENERGY		X	
150+99 - 153+92	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
153+92	39R	P POLE	CONNEXUS ENERGY		X	
153+92 - 156+54	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
156+54	39R	P POLE	CONNEXUS ENERGY		X	
156+54 - 158+31	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
157+69	63R	L POLE				X
158+31	39R	P POLE	CONNEXUS ENERGY		X	
158+31 - 159+63	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
159+63	39R	P POLE	CONNEXUS ENERGY		X	
159+63 - 162+34	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
162+34	39R	P POLE	CONNEXUS ENERGY		X	
162+34 - 164+98	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
164+98	39R	P POLE	CONNEXUS ENERGY		X	
164+98 - 165+55	39R - 38R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
164+98 - 165+25	39R - 67L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
165+25	67L	P POLE	CONNEXUS ENERGY		X	
165+27	82L	ANC	CONNEXUS ENERGY			X
165+55	38R	P POLE	CONNEXUS ENERGY		X	
165+55 - 167+88	38R - 41R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
165+83	74L	P POLE			X	
167+88	41R	P POLE	CONNEXUS ENERGY		X	
167+88 - 169+80	41R - 43R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
169+80	43R	P POLE	CONNEXUS ENERGY		X	
169+80 - 171+76	43R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X	
169+99 - 170+59	37R - 36R	P-BUR	CONNEXUS ENERGY		X	
170+59 - 170+65	36R - 35R	P-BUR	CONNEXUS ENERGY		X	
170+65 - 170+68	35R - 23R	P-BUR	CONNEXUS ENERGY		X	

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: JEO				
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**INPLACE UTILITY TABULATIONS**

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**UTILITY TABULATION - POWER**

STATION TO STATION	OFFSET	ITEM IN PLACE	OWNER	REMARKS			NOTES
				ADJUST	RELOCATE	LEAVE AS IS	
170+67 - 170+70	16R - 63L	P-BUR	CONNEXUS ENERGY		X		
170+67 - 170+68	16R - 23R	P-BUR	CONNEXUS ENERGY		X		
170+71	78L	L POLE	CONNEXUS ENERGY		X		
171+76	43R	P POLE	CONNEXUS ENERGY		X		
171+76 - 173+85	43R - 44R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
173+85	44R	P POLE	CONNEXUS ENERGY		X		
173+85 - 176+10	44R - 43R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
176+10	43R	P POLE	CONNEXUS ENERGY		X		
176+10 - 178+38	43R - 44R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
178+38	43R	P POLE	CONNEXUS ENERGY		X		
178+38 - 181+08	44R - 42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
181+08	42R	P POLE	CONNEXUS ENERGY		X		
181+08 - 183+70	42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
183+69	49R	ANC	CONNEXUS ENERGY		X		
183+70	42R	P POLE	CONNEXUS ENERGY		X		
183+71 - 186+65	42R - 43R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
183+71 - 183+82	42R - 79L	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
183+82	79L	P POLE	CONNEXUS ENERGY		X		
183+83	64L	ANC	CONNEXUS ENERGY		X		
186+65	43R	P POLE	CONNEXUS ENERGY		X		
186+65 - 189+35	43R - 41R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
189+35	41R	P POLE	CONNEXUS ENERGY		X		
189+35 - 192+22	41R - 40R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
192+22	40R	P POLE	CONNEXUS ENERGY		X		
192+22 - 194+95	40R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
194+80	80L	ANC	CONNEXUS ENERGY		X		
194+82	69L	P POLE	CONNEXUS ENERGY		X		
194+82 - 198+18	69L - 70L	P-BUR	CONNEXUS ENERGY		X		
194+82 - 196+12	69L - 82L	P-BUR	CONNEXUS ENERGY		X		
194+82 - 194+95	69L - 40R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
194+87	49R	ANC	CONNEXUS ENERGY		X		
194+95	40R	P POLE	CONNEXUS ENERGY		X		
194+95 - 196+44	40R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
196+13	72L	L POLE	CONNEXUS ENERGY		X		
196+44	40R	P POLE	CONNEXUS ENERGY		X		
196+44 - 198+06	40R - 39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
198+02	37R	P PED	CONNEXUS ENERGY		X		
198+04 - 198+10	29R - 60L	P-BUR	CONNEXUS ENERGY		X		
198+05	41R	P PED	CONNEXUS ENERGY		X		
198+06	39R	P POLE	CONNEXUS ENERGY		X		
198+06 - 201+03	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
201+03	39R	P POLE	CONNEXUS ENERGY		X		
201+03 - 202+78	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
202+78	39R	P POLE	CONNEXUS ENERGY		X		
202+78 - 203+40	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
203+40 - 204+88	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
203+52	68R	L POLE				X	
204+27	84L	L POLE	CONNEXUS ENERGY		X		
204+36 - 204+39	85L - 74L	P-BUR	CONNEXUS ENERGY		X		
204+39 - 204+85	74L - 64L	P-BUR	CONNEXUS ENERGY		X		
204+54	68R	L POLE	CONNEXUS ENERGY			X	
204+58 - 204+76	78R	P-BUR	CONNEXUS ENERGY			X	
204+58 - 204+88	85R - 40R	P-BUR	CONNEXUS ENERGY			X	
204+76	82R	P PED	CONNEXUS ENERGY			X	
204+77	78R	P PED	CONNEXUS ENERGY			X	
204+81 - 205+05	70L - 71L	P-BUR	CONNEXUS ENERGY		X		
204+88 - 206+29	39R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
204+88	39R	P POLE	CONNEXUS ENERGY			X	
206+29 - 208+33	39R - 40R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
206+29	39R	P POLE	CONNEXUS ENERGY			X	
206+98	71L	L POLE			X		
207+90 - 208+29	38L - 36R	P-BUR	CONNEXUS ENERGY		X		
208+33 - 210+33	40R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
208+33	40R	P POLE	CONNEXUS ENERGY		X		
210+33 - 212+46	40R - 41R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
210+33	40R	P POLE	CONNEXUS ENERGY		X		
212+46 - 215+24	41R - 42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
212+46	41R	P POLE	CONNEXUS ENERGY		X		
213+49	75L	L POLE			X		
215+23	60R	ANC	CONNEXUS ENERGY			X	
215+24 - 217+46	42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
215+24	42R	P POLE	CONNEXUS ENERGY			X	
217+46 - 219+74	42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
217+46	42R	P POLE	CONNEXUS ENERGY			X	
219+74 - 221+17	42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	

**UTILITY TABULATION - POWER**

STATION TO STATION	OFFSET	ITEM IN PLACE	OWNER	REMARKS			NOTES
				ADJUST	RELOCATE	LEAVE AS IS	
219+74	42R	P POLE	CONNEXUS ENERGY			X	
221+17 - 223+50	42R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY			X	
221+17	42R	P POLE	CONNEXUS ENERGY			X	
HARPERS STREET							
10+22 - 10+30	55R - 40R	P-BUR	CONNEXUS ENERGY		X		
10+30 - 10+65	40R - 32R	P-BUR	CONNEXUS ENERGY		X		
10+41	28R	L POLE	CONNEXUS ENERGY		X		
10+61	26R	ANC	CONNEXUS ENERGY		X		
10+65 - 10+81	32R - 29R	P-BUR	CONNEXUS ENERGY		X		
10+83 - 12+24	27R - 26R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
10+83	27R	P POLE	CONNEXUS ENERGY		X		
12+24 - 16+31	26R - 27R	OVERHEAD ELECTRIC LINE	CONNEXUS ENERGY		X		
12+24	26R	P POLE	CONNEXUS ENERGY		X		
16+31	27R	P POLE	CONNEXUS ENERGY			X	

**UTILITY TABULATION - COMMUNICATION**

STATION TO STATION	OFFSET	ITEM IN PLACE	OWNER	REMARKS			NOTES
				ADJUST	RELOCATE	LEAVE AS IS	
EB CSAH 14							
125+00 - 131+44	19R - 22R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
125+76 - 128+57	38R - 36R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
125+77 - 133+00	40R	T-BUR	COMCAST COMMUNICATION	X	X		
127+82 - 129+66	71L	T-BUR	COMCAST COMMUNICATION			X	
128+38 - 143+38	30R - 41R	T-BUR	CENTURYLINK	X	X		
128+38 - 158+07	27R - 45R	T-BUR	CENTURYLINK	X	X		
128+38	27R	TEL HH				X	
128+57 - 129+93	36R - 52R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
129+66	41R - 166R	T-BUR	COMCAST COMMUNICATION	X	X		
129+66	183L - 41R	T-BUR	COMCAST COMMUNICATION	X	X		
129+93 - 131+45	52R - 44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
131+21	72R	TEL PED	CENTURYLINK	X	X		
131+44 - 133+07	22R - 21R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
131+60 - 156+78	55R - 204R	FIBER OPTIC BURIED	ACCESS COMMUNICATION	X	X		
133+00	40R	TEL PED	COMCAST COMMUNICATION	X	X		
133+00 - 135+81	40R - 39R	T-BUR	COMCAST COMMUNICATION	X	X		
133+07 - 135+30	21R - 22R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
135+30 - 137+04	22R - 26R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
135+81 - 138+88	39R - 43R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
137+04 - 139+07	26R - 18R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
138+88 - 141+90	43R - 44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
139+07 - 140+49	18R - 20R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
140+49 - 141+99	20R - 19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
141+90 - 144+90	44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
141+99 - 143+47	19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
143+37	38R	TEL MH	CENTURYLINK	X	X		
143+38	41R	TEL PED	CENTURYLINK	X	X		
143+43 - 143+79	36R - 64L	T-BUR	CENTURYLINK	X	X		
143+47 - 144+89	19R - 18R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
143+84	69L	TEL PED	CENTURYLINK	X	X		
143+84	67L	TEL MH	CENTURYLINK	X	X		
143+89 - 170+14	69L - 68L	T-BUR	CENTURYLINK	X	X		
144+89 - 146+31	18R - 21R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
144+90 - 147+92	44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
146+31 - 147+71	21R - 19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
147+71 - 148+96	19R - 20R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
147+92 - 150+99	44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
148+96 - 150+42	20R - 22R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
150+42 - 151+70	22R - 19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
150+99 - 153+92	44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
151+70 - 153+20	19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
152+21 - 158+07	54R - 45R	T-BUR	CENTURYLINK	X	X		
153+20 - 154+36	19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
153+92 - 156+54	44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
154+36 - 155+65	19R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
155+65 - 156+89	19R - 22R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
156+54 - 159+63	44R	OVERHEAD COMMUNICATION LINE	COMCAST COMMUNICATION	X	X		
156+88	42R	TEL PED	CENTURYLINK	X	X		
156+89 - 157+87	22R - 23R	FIBER OPTIC BURIED	ARVIG ZAYO	X	X		
157+67 - 158+07	206R - 45R	T-BUR	CENTURYLINK	X	X		

DESIGN TEAM							
DRAWN BY: CIF				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>Jason E. Owens</i> Lic. No. 43475 Printed Name: JASON E. OWENS Date: 10/21/2015			
DESIGNER: JEO							
CHECKED BY: JEO							
NO.	BY	DATE	REVISIONS				

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

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

	INPLACE UTILITY TABULATIONS	FILE NO. 126669	18
UT2 OF UT4			196

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10/21/2015

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UTILITY TABULATION - COMMUNICATION

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Table with 8 columns: STATION TO STATION, OFFSET, ITEM IN PLACE, OWNER, ADJUST, RELOCATE, LEAVE AS IS, NOTES. Contains utility data for communication lines.

UTILITY TABULATION - COMMUNICATION

0

Table with 8 columns: STATION TO STATION, OFFSET, ITEM IN PLACE, OWNER, ADJUST, RELOCATE, LEAVE AS IS, NOTES. Contains utility data for communication lines.

UTILITY TABULATION - GAS

0

Table with 8 columns: STATION TO STATION, OFFSET, ITEM IN PLACE, OWNER, ADJUST, RELOCATE, LEAVE AS IS, NOTES. Contains utility data for gas lines.

DESIGN TEAM table with columns: 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.



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

CITY OF BLAINE, MN. CSAH 14 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

INPLACE UTILITY TABULATIONS

FILE NO. 126669 19 OF UT4 196

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10/21/2015

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UTILITY TABULATION - WATERMAIN

0

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, OWNER, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), NOTES. Includes entries for EB CSAH 14 and various water main segments.

UTILITY TABULATION - SANITARY SEWER

0

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, OWNER, REMARKS (ADJUST, RELOCATE, LEAVE AS IS), NOTES. Includes entries for EB CSAH 14 and various sanitary sewer segments.

UTILITY TABULATION - DRAINAGE

0

Table with columns: STATION TO STATION, OFFSET, ITEM IN PLACE, OWNER, REMARKS (ADJUST, RELOCATE, LEAVE AS IS, REMOVE), NOTES. Includes entries for EB CSAH 14 and various drainage segments.

NOTES:

① WORK TO BE COMPLETED UNDER THIS CONTRACT.

DESIGN TEAM table with columns: NO., BY, DATE, REVISIONS. Includes fields for DRAWN BY, DESIGNER, and CHECKED BY.

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: Jason E. Owens, Lic. No. 43475. Printed Name: JASON E. OWENS, Date: 10/21/2015



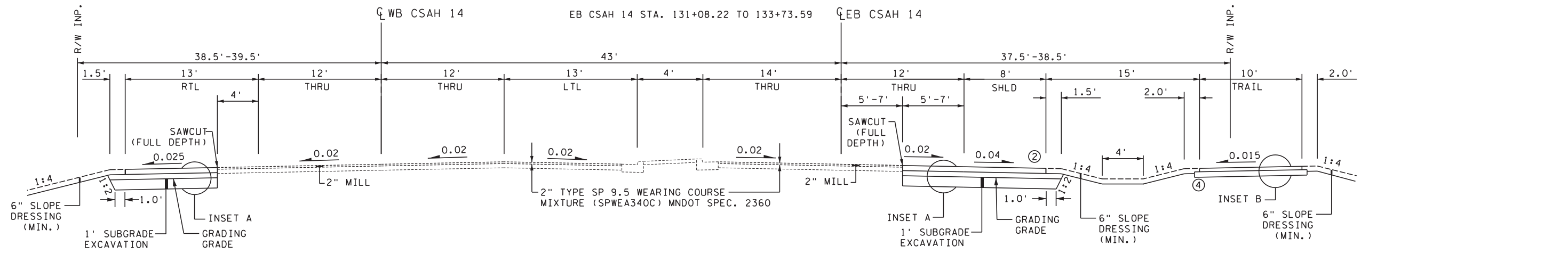
CITY OF BLAINE, MN. CSAH 14 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

INPLACE UTILITY TABULATIONS

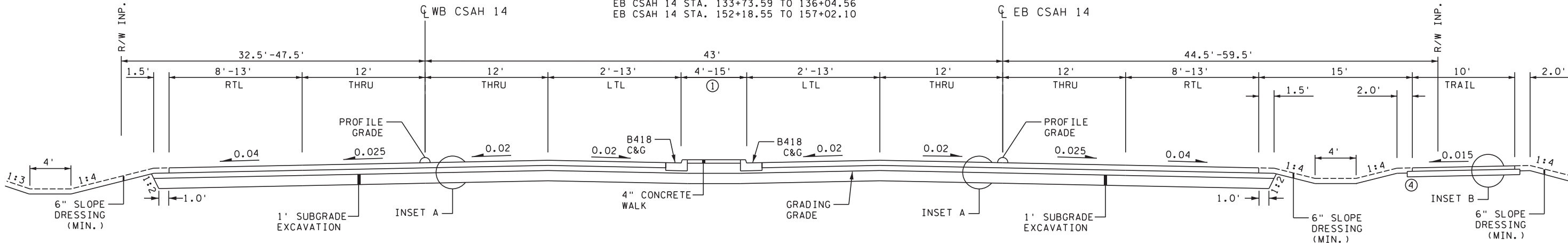
FILE NO. 126669 20 UT4 OF UT4 196

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10/21/2015  
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TS1

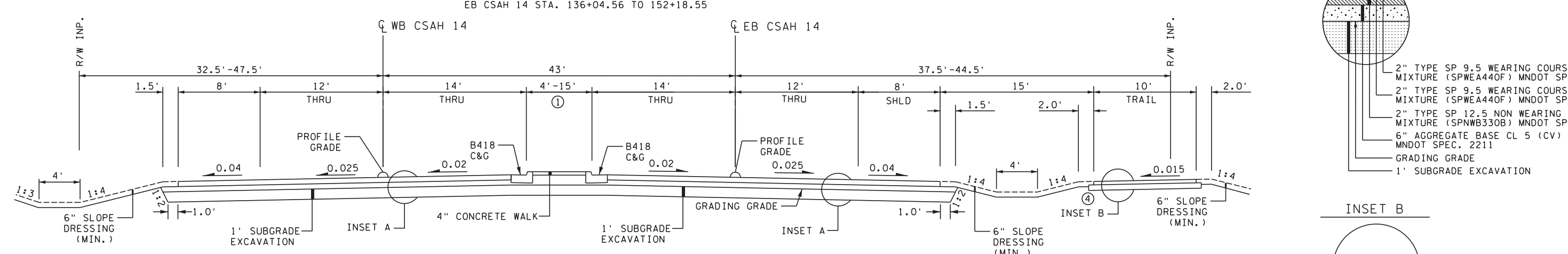
**CSAH 14**



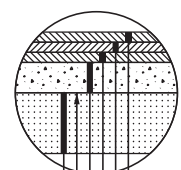
**CSAH 14**



**CSAH 14**

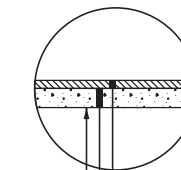


**INSET A**



- ③ 2" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA440F) MNDOT SPEC. 2360
- ③ 2" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA440F) MNDOT SPEC. 2360
- ③ 2" TYPE SP 12.5 NON WEARING COURSE MIXTURE (SPNWB330B) MNDOT SPEC. 2360
- ③ 6" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211
- ③ GRADING GRADE
- ③ 1' SUBGRADE EXCAVATION

**INSET B**



- ④ 2.0" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEB230B) MNDOT SPEC. 2360
- ④ 4" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211
- ④ GRADING GRADE

- NOTES:**
- ① SEE CONSTRUCTION PLANS AND CROSS SECTIONS FOR VARIATIONS. MINIMUM MEDIAN WIDTH IS 4.0'.
  - ② B424 CURB & GUTTER FROM STA 131+08 TO 131+68
  - ③ 2" WEARING COURSE SHALL BE USED ON MILL AND OVERLAY SECTION, STA 131+08 TO 133+74.

- NOTES:**
- ④ OFFSET THE AGGREGATE BASE UNDER THE 8' AND 10' TRAILS 0.5' FROM EACH SIDE OF THE PAVEMENT EDGE.

**GENERAL NOTE:**  
ALL CROSS SLOPES ARE IN FT./FT.

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

TYPICAL SECTIONS	
CSAH 14	21
TS1	196

FILE NO.	126669
OF TS3	

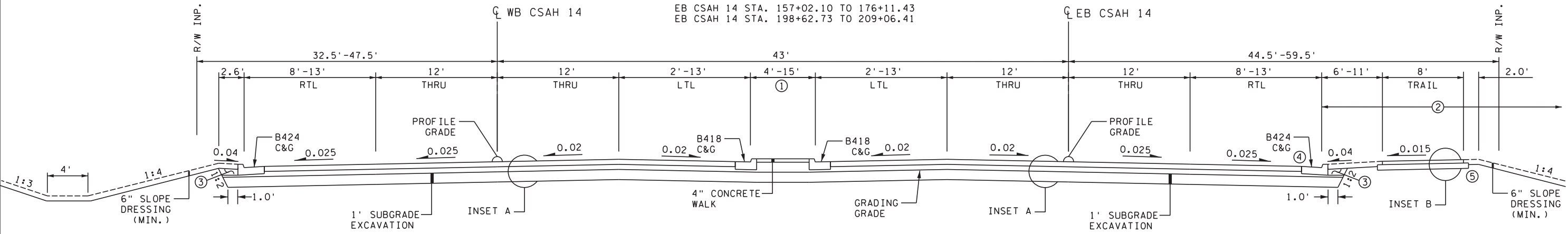
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10/21/2015

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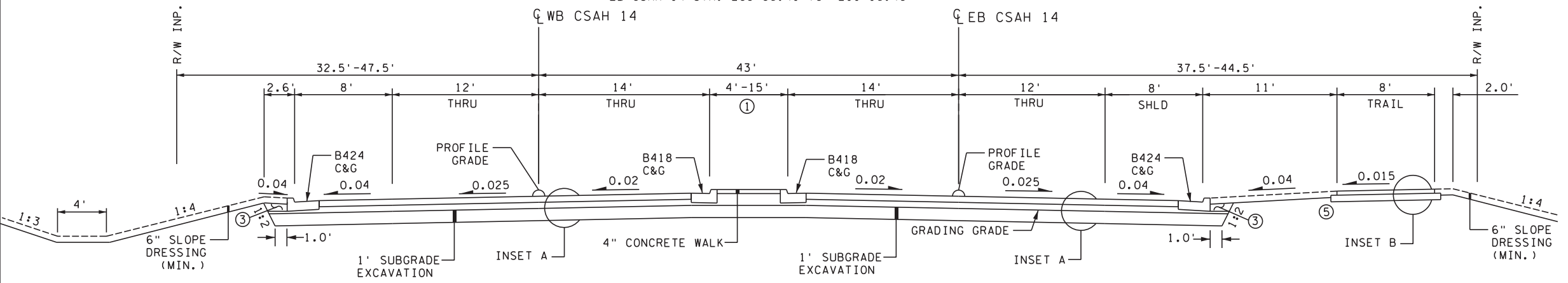
### CSAH 14

EB CSAH 14 STA. 157+02.10 TO 176+11.43  
EB CSAH 14 STA. 198+62.73 TO 209+06.41



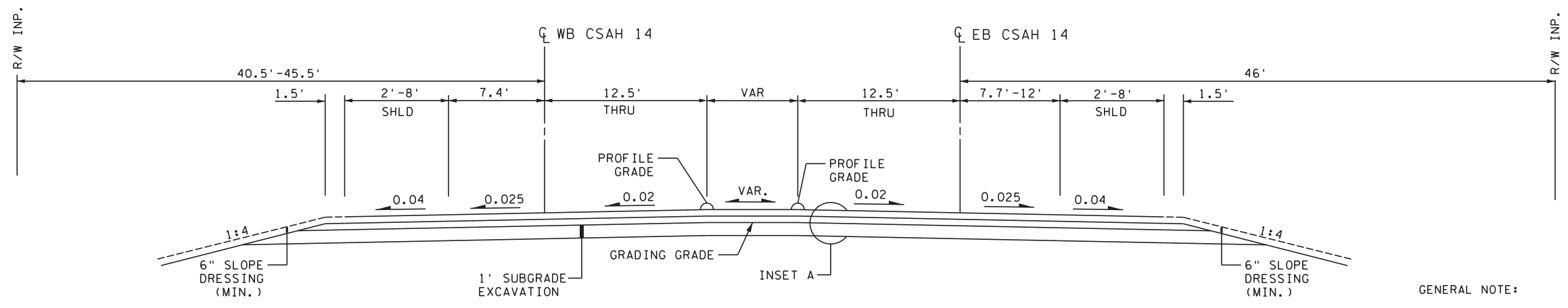
### CSAH 14

EB CSAH 14 STA. 176+11.43 TO 198+62.73  
EB CSAH 14 STA. 209+06.41 TO 211+16.40

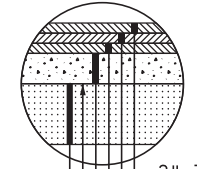


### CSAH 14

EB CSAH 14 STA. 211+16.40 TO 216+25.51

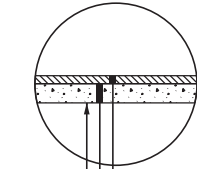


#### INSET A



- 2" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA440F) MNDOT SPEC. 2360
- 2" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA440F) MNDOT SPEC. 2360
- 2" TYPE SP 12.5 NON WEARING COURSE MIXTURE (SPNWB330B) MNDOT SPEC. 2360
- 6" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211
- GRADING GRADE
- 1' SUBGRADE EXCAVATION

#### INSET B



- 2.0" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEB230B) MNDOT SPEC. 2360
- 4" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211
- GRADING GRADE

- NOTES:
- ① SEE CONSTRUCTION PLANS AND CROSS SECTIONS FOR VARIATIONS. MINIMUM MEDIAN WIDTH IS 4.0'.
  - ② 10' TRAIL LOCATED ALONG WB CSAH 14 STA. 156+98.55 TO 164+38.83, LEFT (NORTH SIDE OF ROAD).
  - ③ BACKFILL WITH SUITABLE GRADING MATERIAL.
  - ④ BEGIN B424 CURB & GUTTER AT STA. 157+93.46
  - ⑤ OFFSET THE AGGREGATE BASE UNDER THE 8' TRAIL 0.5' FROM EACH SIDE OF THE PAVEMENT EDGE

GENERAL NOTE:  
ALL CROSS SLOPES ARE IN FT./FT.

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**TYPICAL SECTIONS**  
CSAH 14

FILE NO. 126669	<b>22</b>
TS2 OF TS3	<b>196</b>

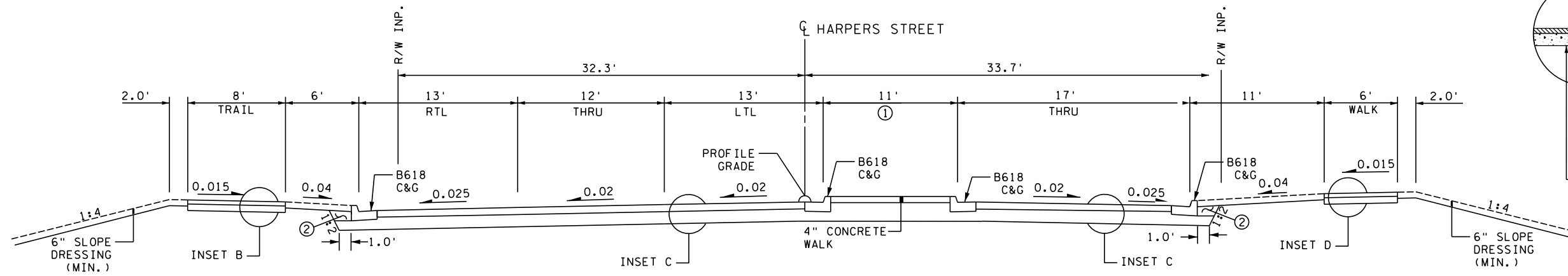
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11/19/2015

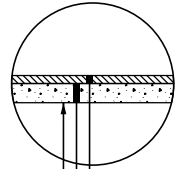
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### HARPERS STREET

HARPERS STREET STA. 10+23.00 TO 12+47.77



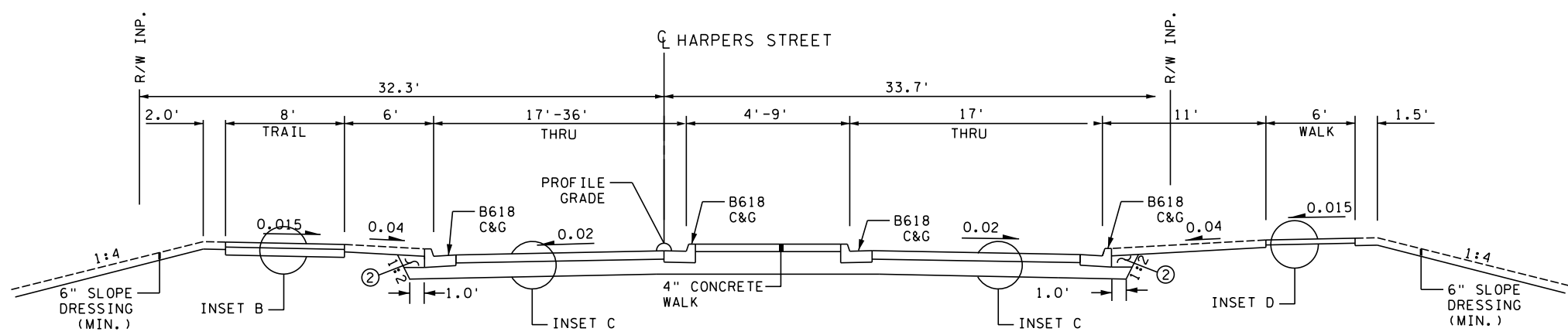
INSET B



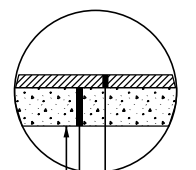
2" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEB230B) MNDOT SPEC. 2360  
 4" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211  
 GRADING GRADE

### HARPERS STREET

HARPERS STREET STA. 12+47.77 TO 16+98.71

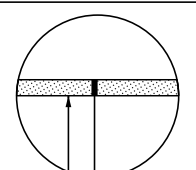


INSET C



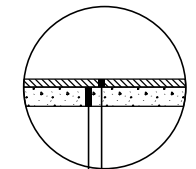
4" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA240C) MNDOT SPEC. 2360 (2 EQUAL LIFTS)  
 7" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211  
 GRADING GRADE

INSET D

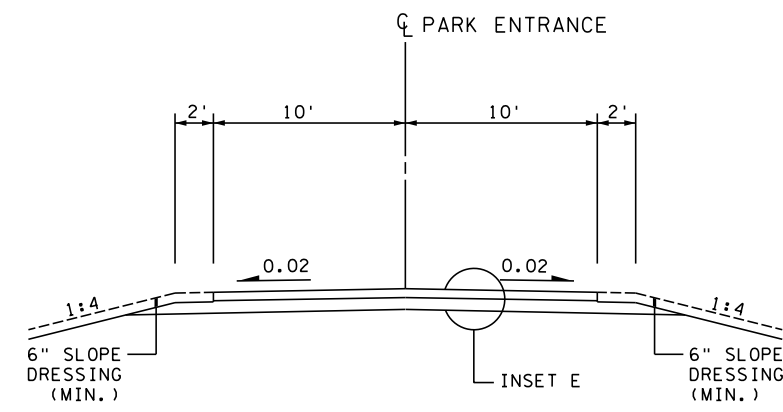
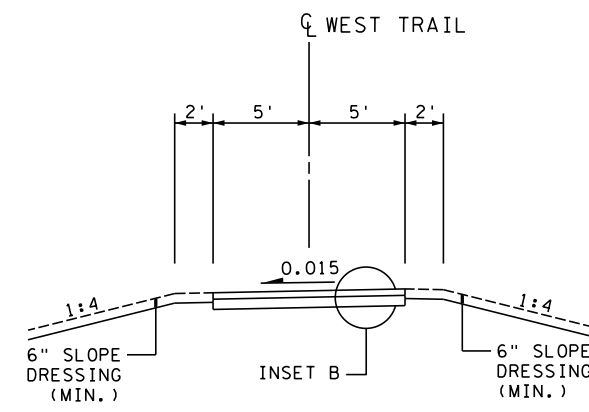


4" CONCRETE WALK  
 GRADING GRADE (TOP OF NATIVE SAND)

INSET E



3" TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA440F) MNDOT SPEC. 2360  
 4" AGGREGATE BASE CL 5 (CV) MNDOT SPEC. 2211



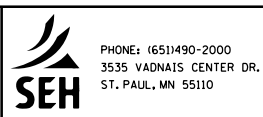
GENERAL NOTE:  
 ALL CROSS SLOPES ARE IN FT./FT.

- NOTES:
- ① SEE CONSTRUCTION PLANS AND CROSS SECTIONS FOR VARIATIONS. MINIMUM MEDIAN WIDTH IS 5.0'.
  - ② BACKFILL WITH SUITABLE GRADING MATERIAL.

DESIGN TEAM				
DRAWN BY:	CIF	1	JEO	11/15/2015
DESIGNER:	JEO			
CHECKED BY:	JEO			
NO.	BY	DATE	REVISIONS	
			INSET E - SPWEA340C CHANGED TO SPWEA440F	

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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TYPICAL SECTIONS**  
 HARPERS STREET, WEST TRAIL, PARK ENTRANCE

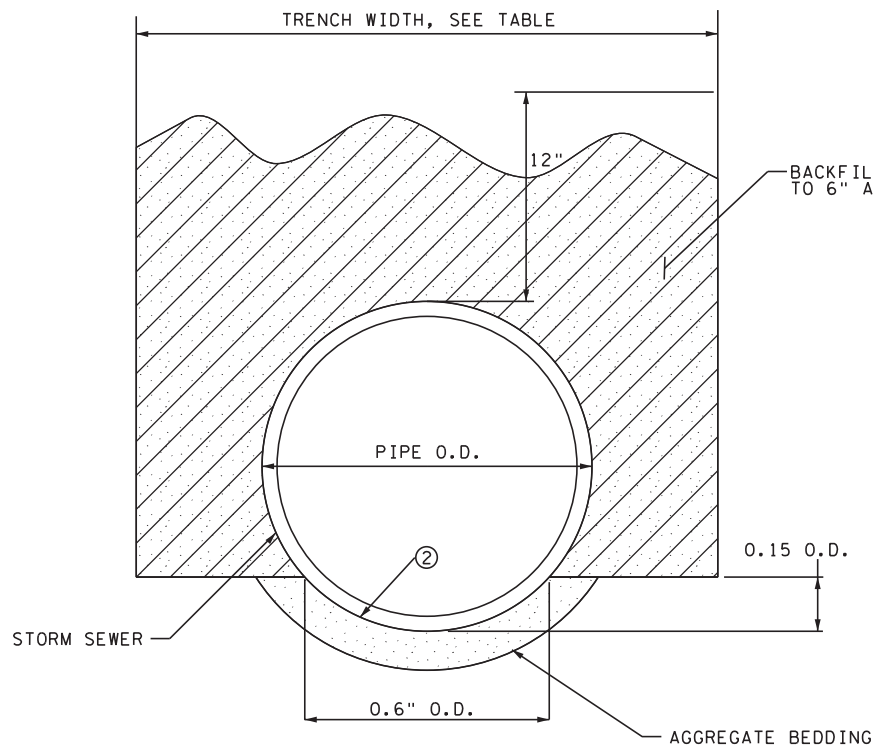
FILE NO. 23  
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 TS3  
 OF TS3 196

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10/21/2015

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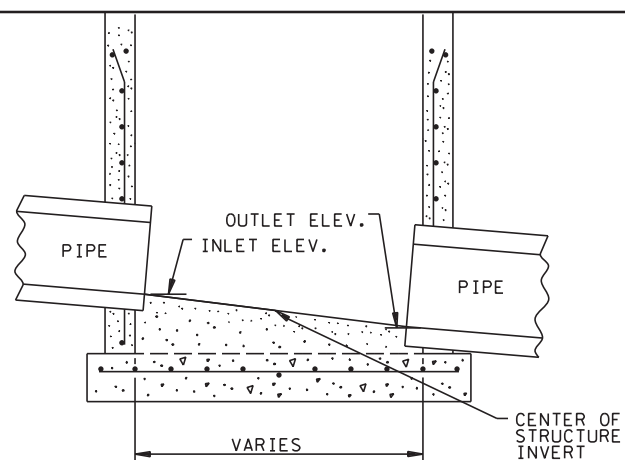
TRENCH WIDTH	
PIPE DIA.	TRENCH WIDTH
36" OR LESS	O.D. + 24"
42" TO 54"	1.5 X O.D.
60" OR OVER	O.D. / 36"



PIPE SIZE ①	CU. YD BEDDING PER LIN. FT.
12" RC	0.252
15" RC	0.290
18" RC	0.328
21" RC	0.368
24" RC	0.409
27" RC	0.450
30" RC	0.492
36" RC	0.580

**NOTE:**

- ① CP (SMOOTH) AND PE (SMOOTH) MAY USE SAME BEDDING DETAIL WHEN INDICATED.
- ② THE AGGREGATE BEDDING SHALL BE SHAPED TO MATCH THE OUTSIDE DIAMETER OF PIPE TO BE PLACED. THIS SHAPING SHALL BE DONE USING A TEMPLATE WITH THE SAME DIMENSIONS AS THE PIPE BEING PLACED.



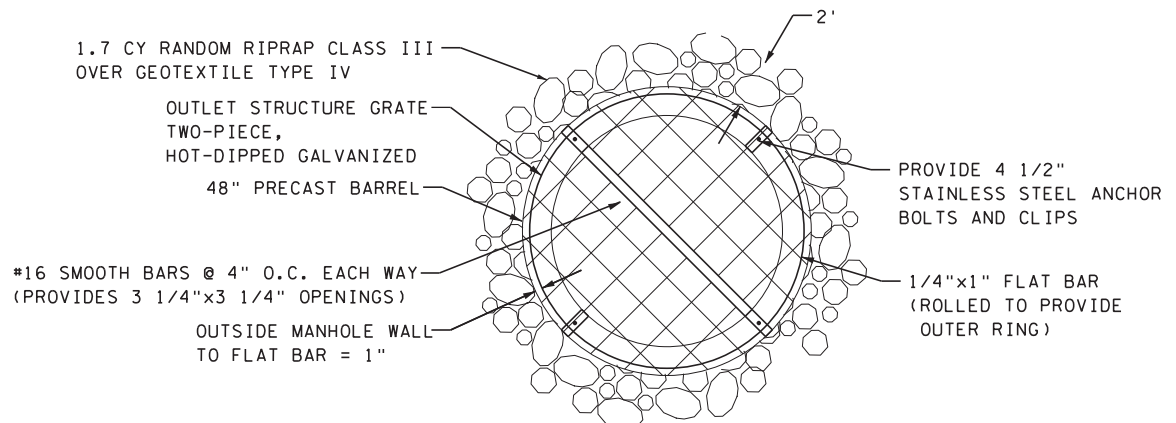
INLET ELEVATION = PIPE INVERT (AT CENTER OF STRUCTURE) + PIPE SLOPE X STRUCTURE RADIUS

OUTLET ELEVATION = PIPE INVERT (AT CENTER OF STRUCTURE) - PIPE SLOPE X STRUCTURE RADIUS

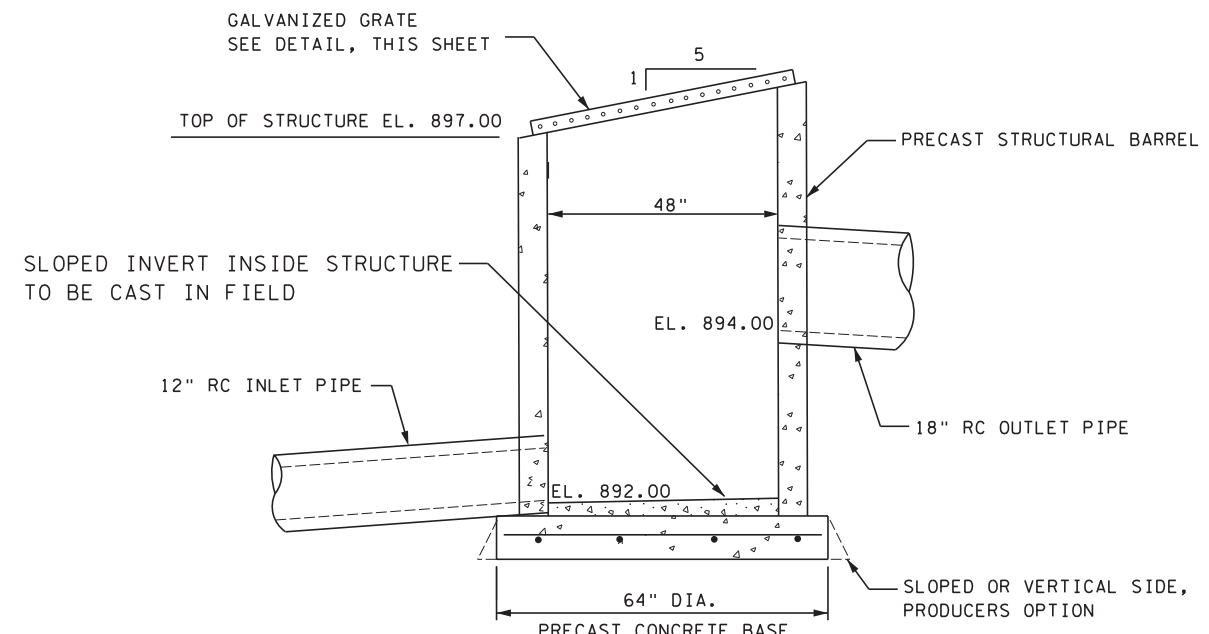
PIPE INVERTS SHOWN ON PROFILES ARE GIVEN AT THE CENTER OF THE STRUCTURE

PIPE SLOPE IS CALCULATED FROM STRUCTURE CENTER INVERTS AND LENGTHS FROM CENTER OF STRUCTURE

**INVERT EXPLANATION**



**TYPICAL SKIMMER MANHOLE GRATE AND RIPRAP DETAIL**



NOTE:  
 PRECAST BARREL AND BASE SLAB SHALL CONFORM TO MNDOT STD. PL. 4020.

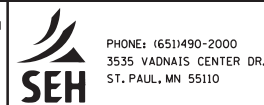
**EAST POND OUTLET CONTROL STRUCTURE 5000**

(2506) CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	REP		
CHECKED BY:	REP		
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: *Rachel Pichelmann* Lic. No. 51315  
 Licensed Professional Engineer  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**MISCELLANEOUS DETAILS**  
 PIPE TRENCH DETAIL, INVERT EXPLANATION,  
 POND OUTLET CONTROL STRUCTURE

FILE NO. 126669	24
MD1 OF MD2	196

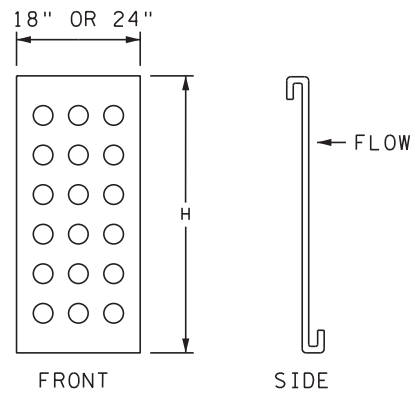


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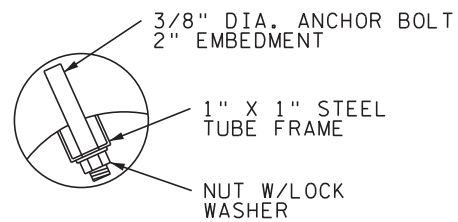
10/21/2015

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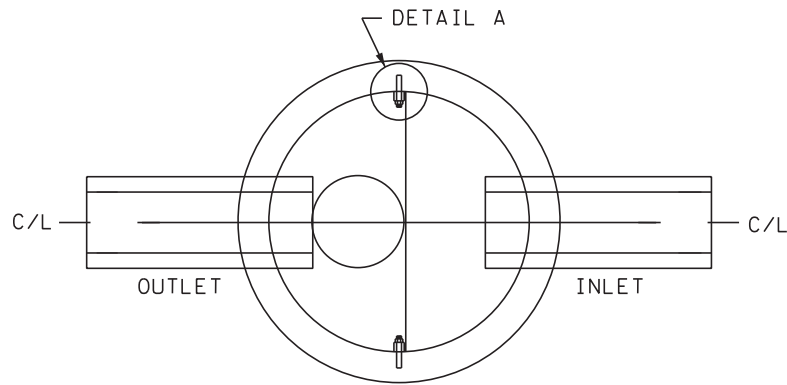
STRUCTURE ID	D (ft)	Ys (ft)	y (in)	H (in)
STM-270	5	4	12	46
STM-350	5	4	12	57
STM-370	4	4	12	46
STM-676	4	4	12	46
STM-674	6	4	12	57
STM-708	6	4	12	57



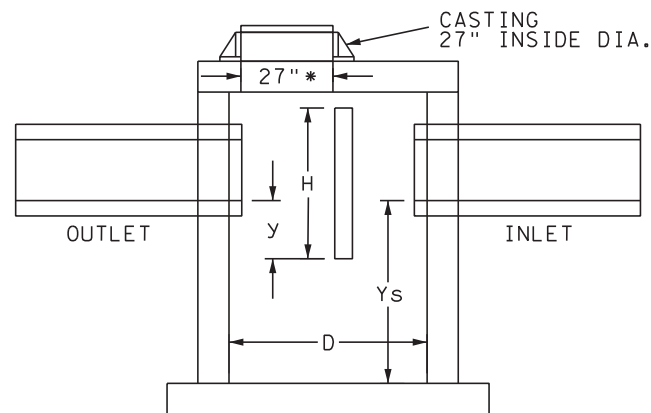
SAFL Baffle Panel



DETAIL A



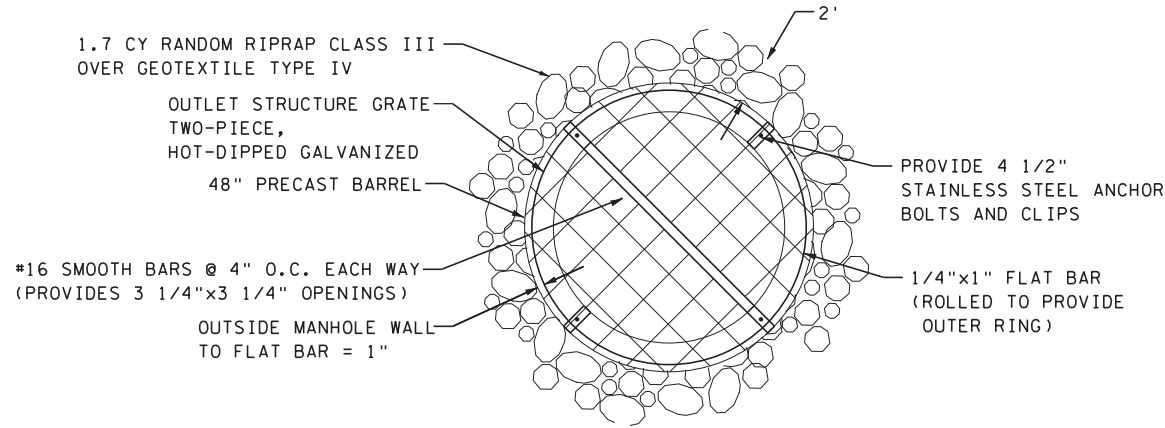
TOP VIEW OF SUMP



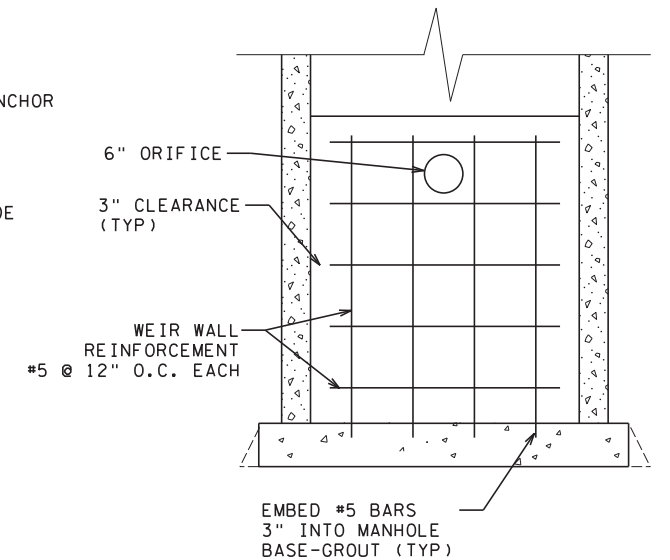
SIDE VIEW OF SUMP

SAFL Baffle Structure Detail

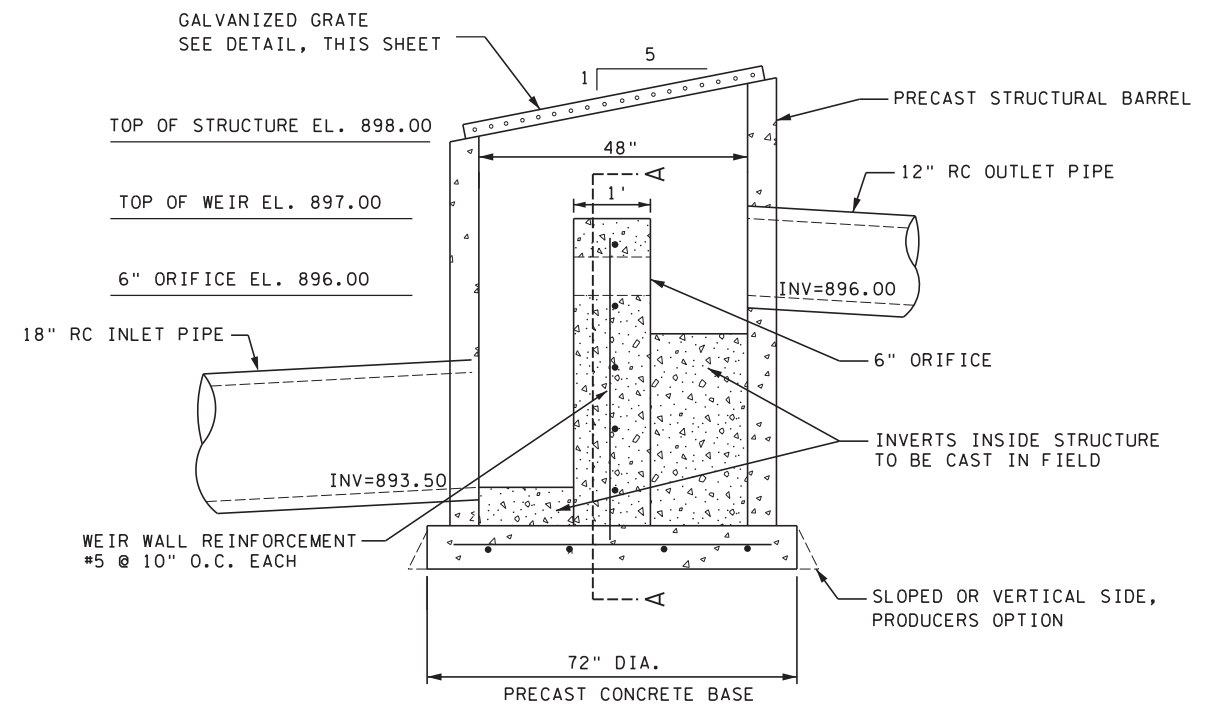
(2506) CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 3



TYPICAL SKIMMER MANHOLE GRATE AND RIPRAP DETAIL



SECTION A-A



NOTE:  
PRECAST BARREL AND BASE SLAB SHALL CONFORM TO MNDOT STD. PL. 4020.

SOUTH POND OUTLET CONTROL STRUCTURE 4000

(2506) CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 2

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	REP		
CHECKED BY:	REP		
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: *Rachel Pichelmann* Lic. No. 51315  
 Licensed Professional Engineer  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015

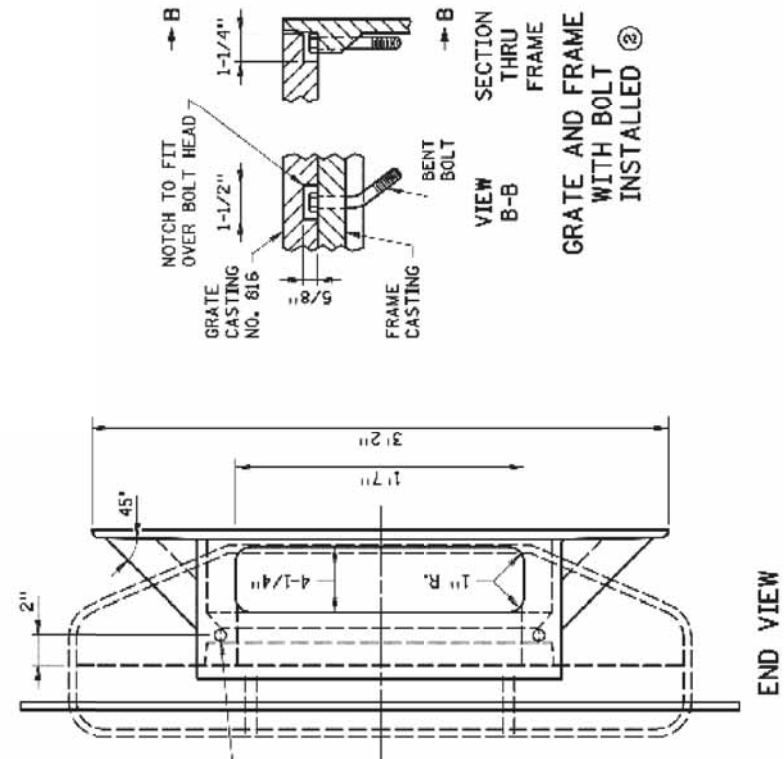


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

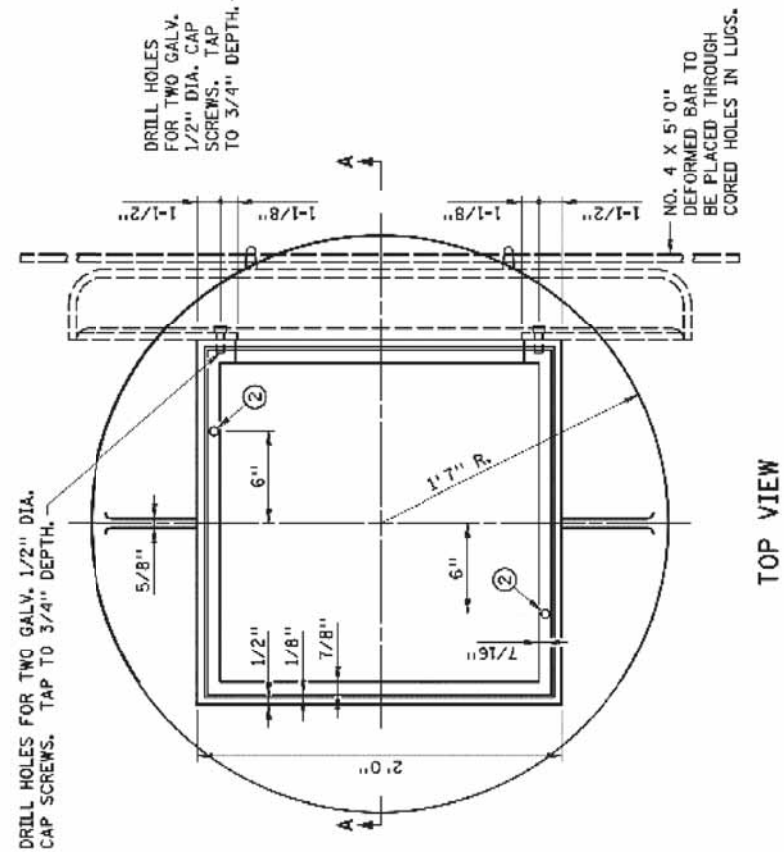
MISCELLANEOUS DETAILS  
 SAFL BAFFLE,  
 SOUTH POND OUTLET CONTROL STRUCTURE,  
 SKIMMER MANHOLE GRATE AND RIPRAP,  
 CASTING ASSEMBLY DETAIL

FILE NO.	126669	25
MD2		196
OF MD2		

### CASTING ASSEMBLY DETAIL R-3250, FOR 24" GUTTER CATCH BASINS



SECTION THRU FRAME  
VIEW B-B  
GRATE AND FRAME WITH BOLT INSTALLED ②

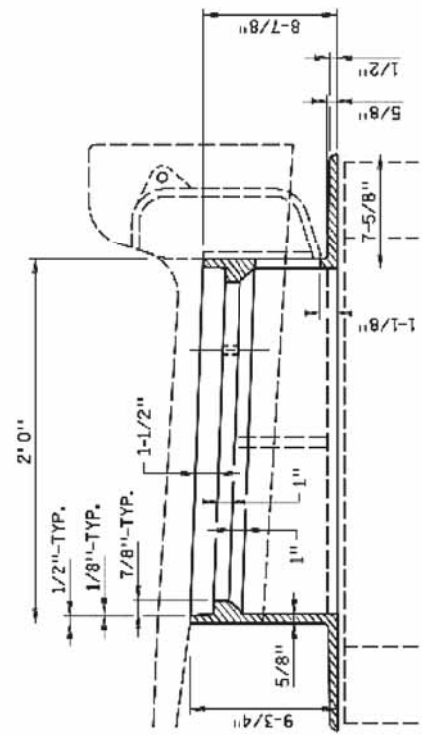


TOP VIEW

**CASTINGS USED FOR ASSEMBLY**  
 GRATE NO. 816 (MNDOT STD PLATE 4154B)  
 CURB BOX ① NO. 823A (MNDOT STD PLATE 416D) OR

**NOTES:**

- USE 1/4" FILLETS IN ALL CORNERS. SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS.
- ① APPLIES TO DESIGN B OR V CURB AND CURB AND GUTTER.
- ② AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 3/16" DIA. HOLES WHEN GRATE NO. 816 (MNDOT STD PLATE 4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2" DIA X 4" LONG GALV BOLT IN UP STREAM SIDE AND BENT UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (MNDOT STD PLATE 4154) FROM BEING PLACED IN WRONG AND NOT BEING BICYCLE SAFE

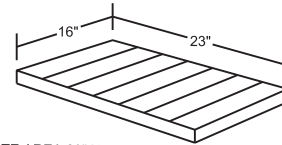


SECTION A-A

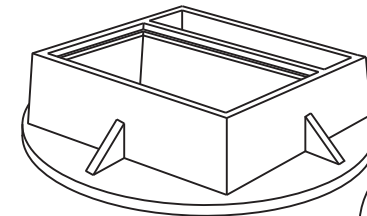
GRATE FRAME CASTING TYPE C & D

### CASTING ASSEMBLY DETAIL R-3448C, FOR 18" GUTTER CATCH BASINS

#### FOR 18" CURB. MEDIAN CATCH BASINS

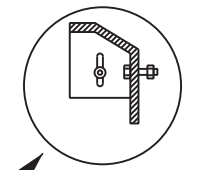


GRATE AREA 23" X 16" X 2"  
 MUST BE DIRECTIONAL AND BIKE SAFE  
 SIMILAR TO MNDOT STD PLATE 4152C  
 OR MNDOT STD PLATE 4154B

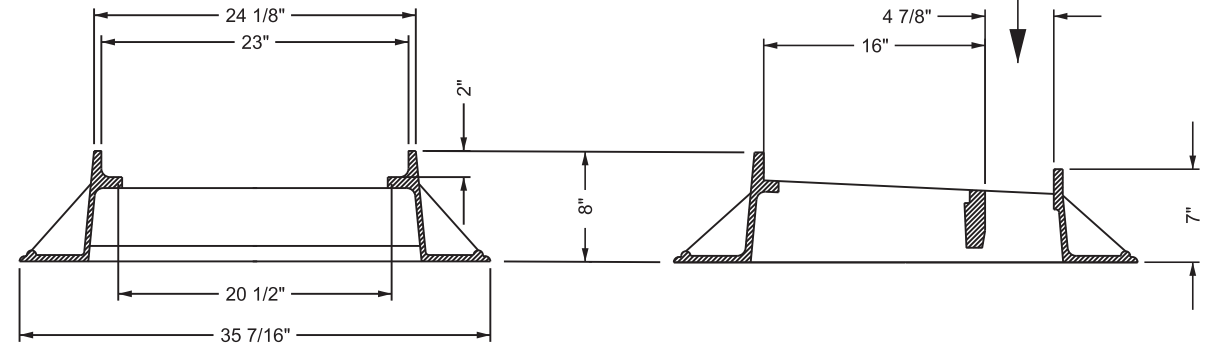
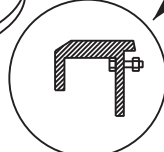


#### BOLT ON CURB BOX

LOW POINT  
 FOR CASTING TYPE A  
 USE AVAILABLE BOLT ON CURB BOX

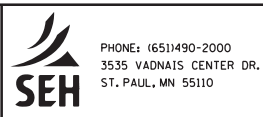


NON-LOW POINT  
 FOR CASTING TYPE B  
 USE AVAILABLE BOLT ON CURB PLATE



DESIGN TEAM					
DRAWN BY: CIF					
DESIGNER: REP					
CHECKED BY: REP					
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: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015

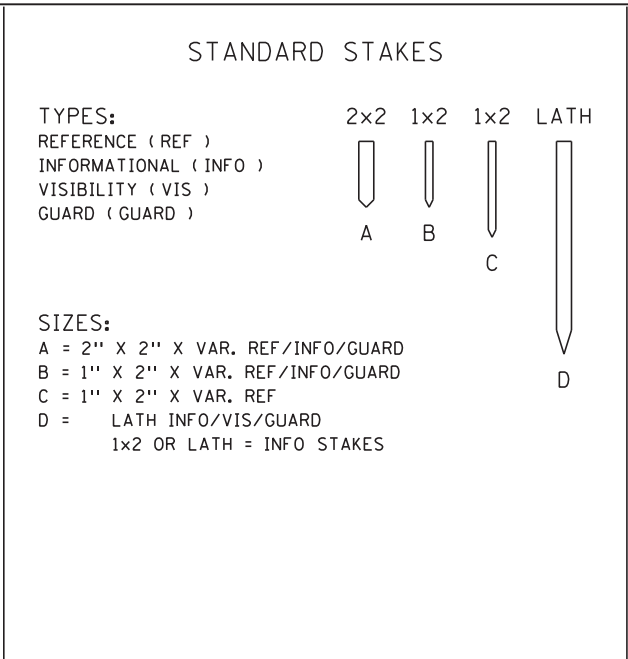
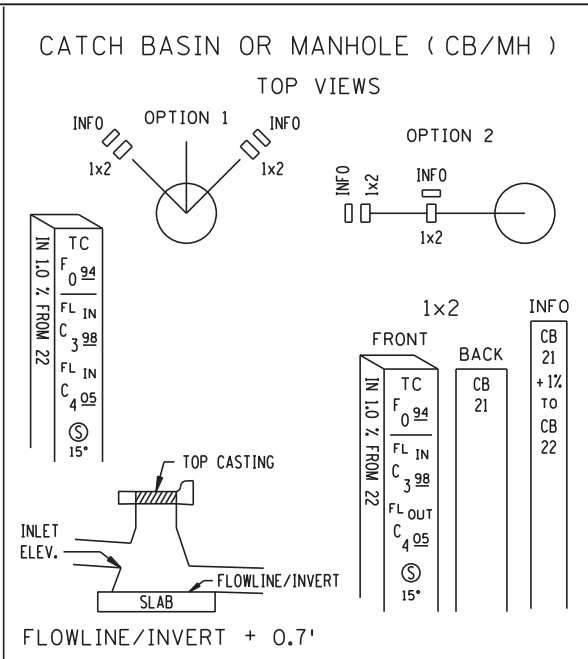
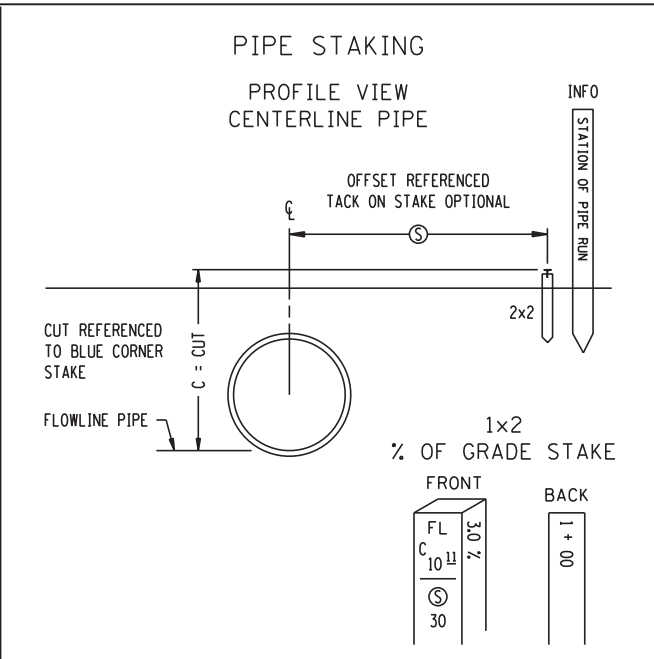
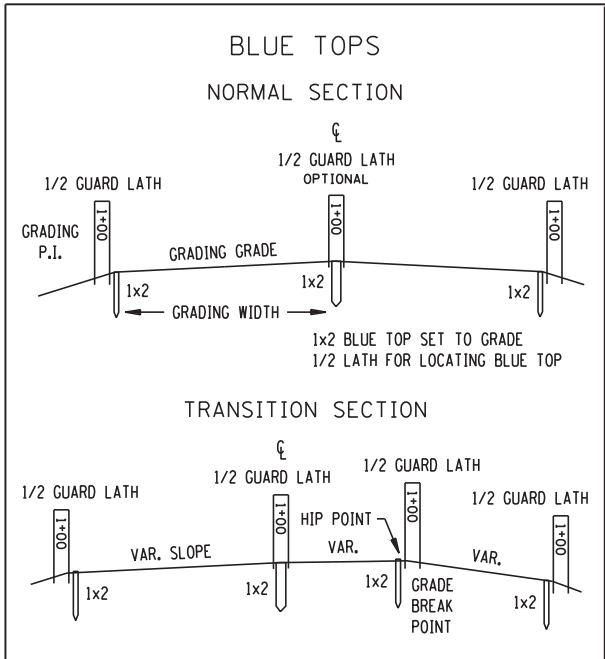


CITY OF BLAINE, MN.  
 CSAH 14  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

MISCELLANEOUS DETAILS  
 CASTING ASSEMBLY DETAILS

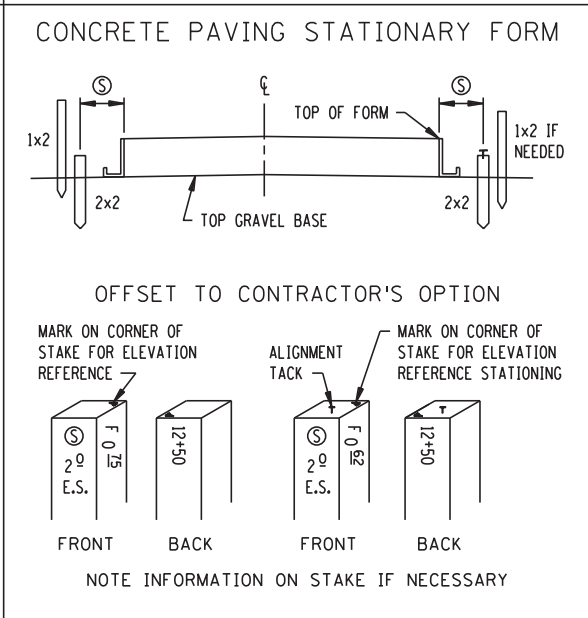
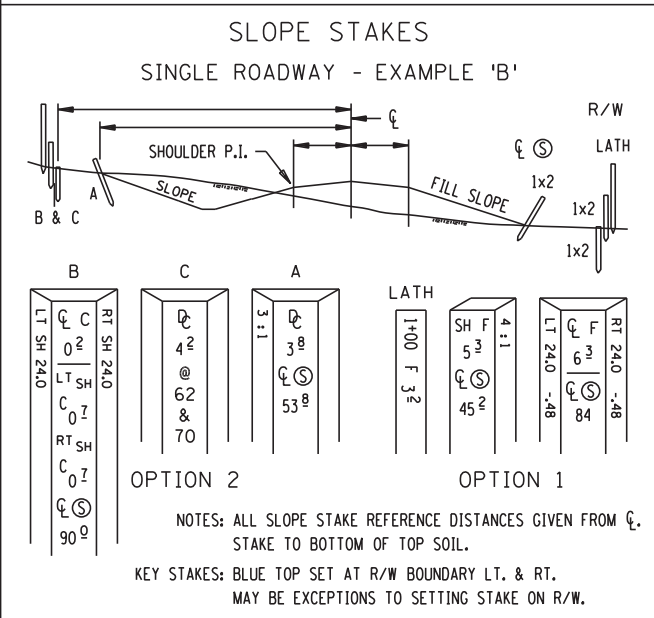
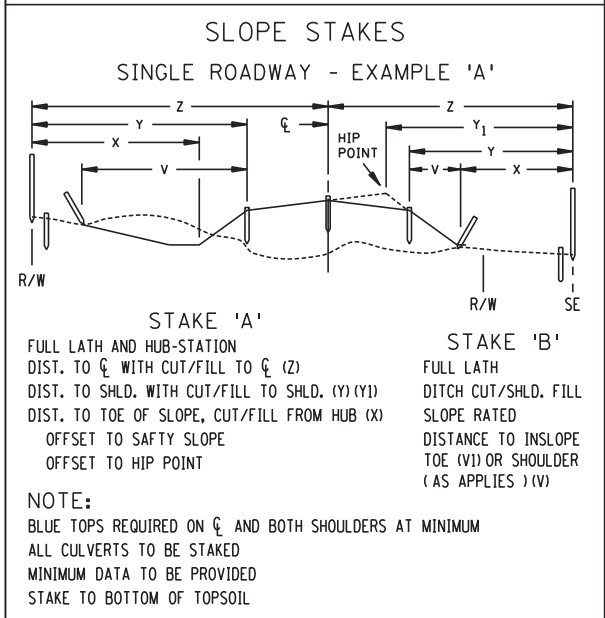
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### ABBREVIATIONS

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



### RECOMMENDED STAKING INTERVALS

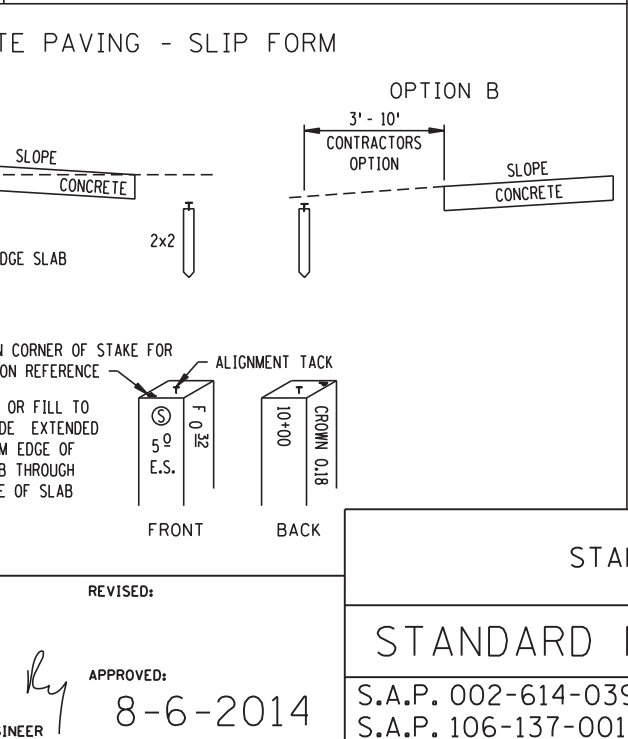
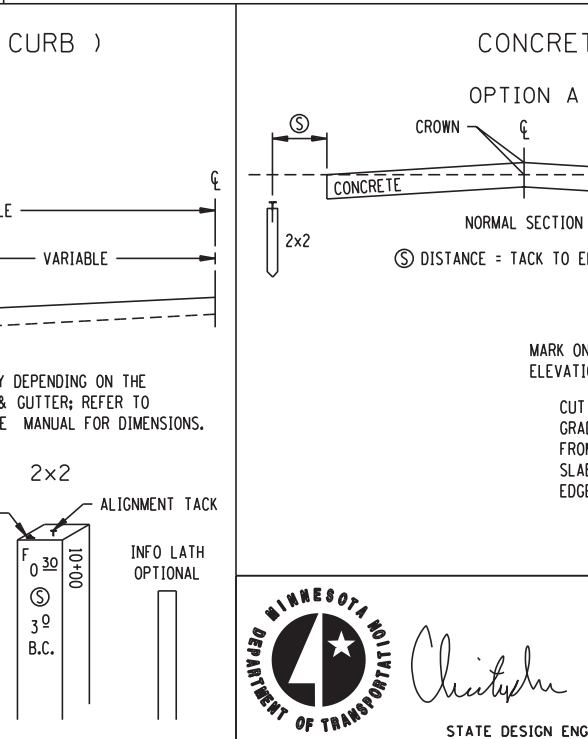
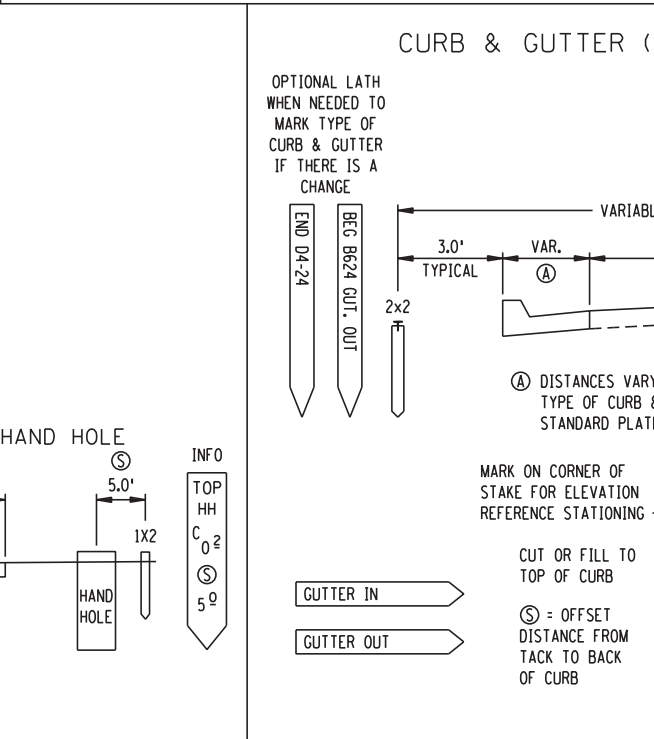
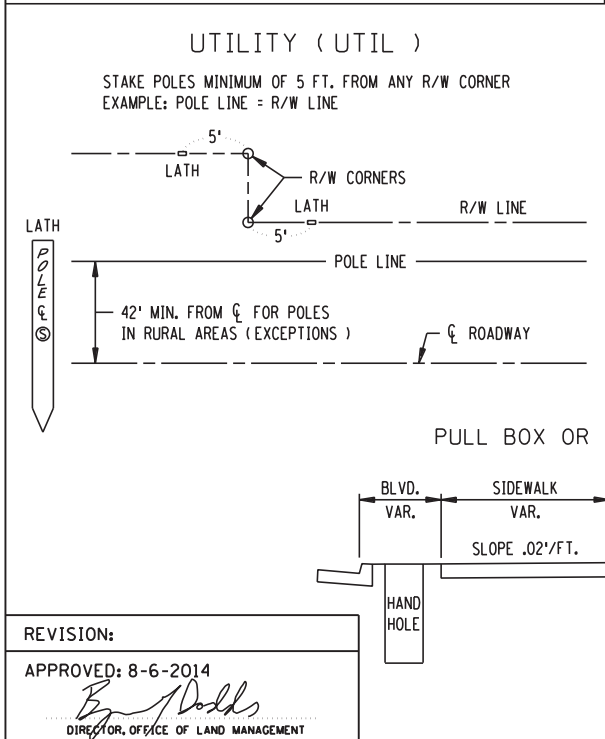
FIGURE A

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

### STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES 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



### STAKING INFORMATION SHEET

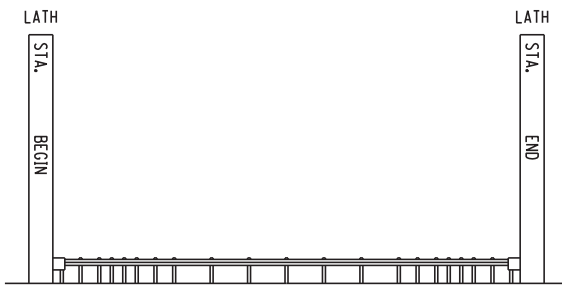
STANDARD PLAN 5-297.115 1 OF 2

S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 27 OF 196 SHEETS

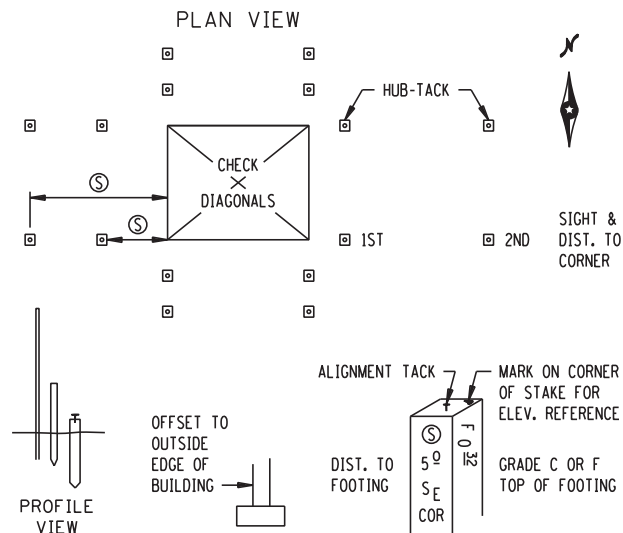
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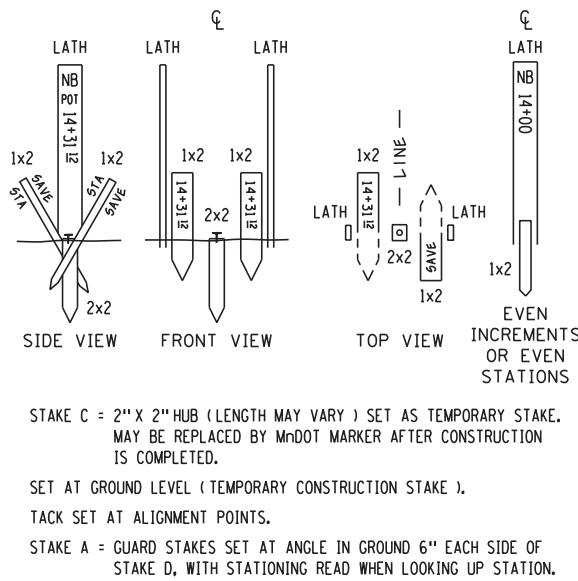
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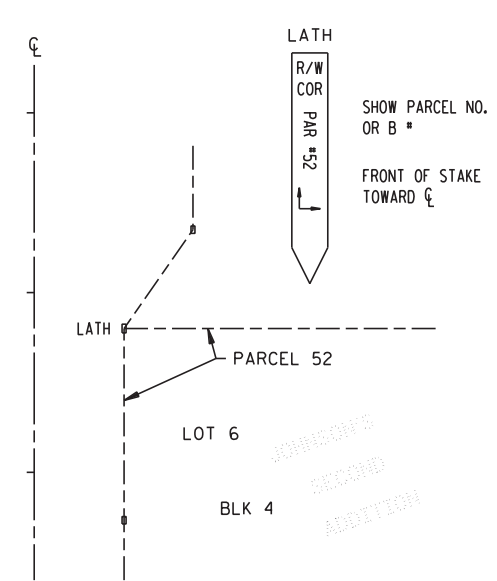
### BUILDING ( BUILD ) FOUNDATION / FOOTING



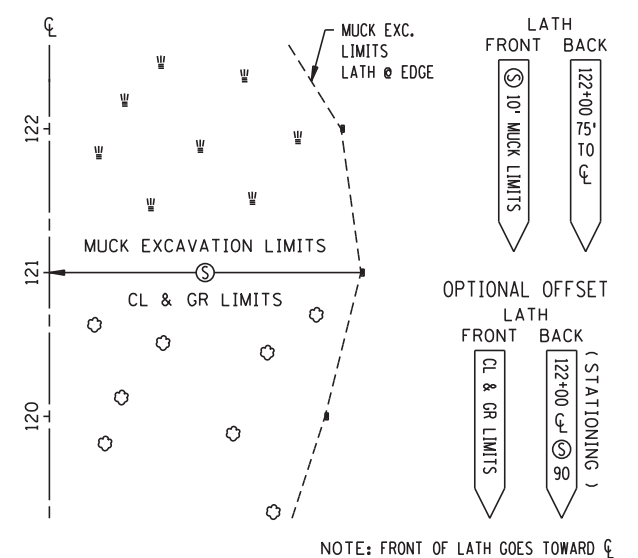
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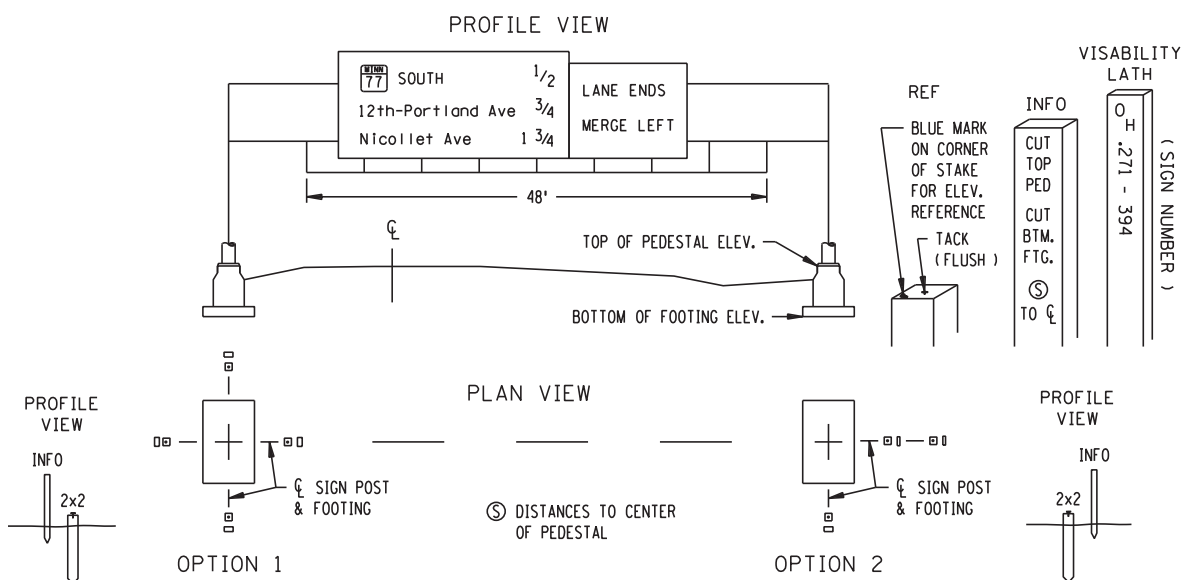
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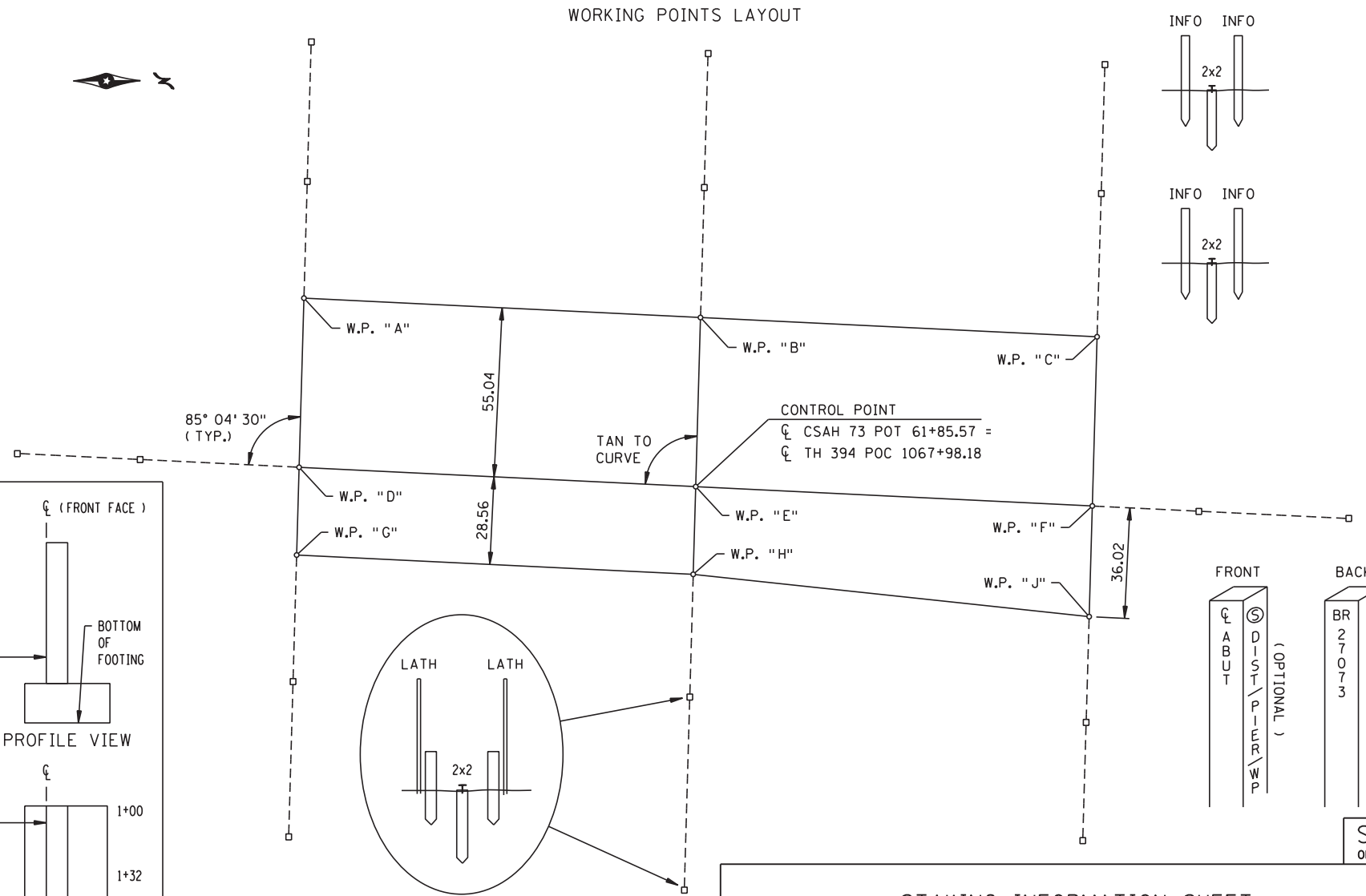
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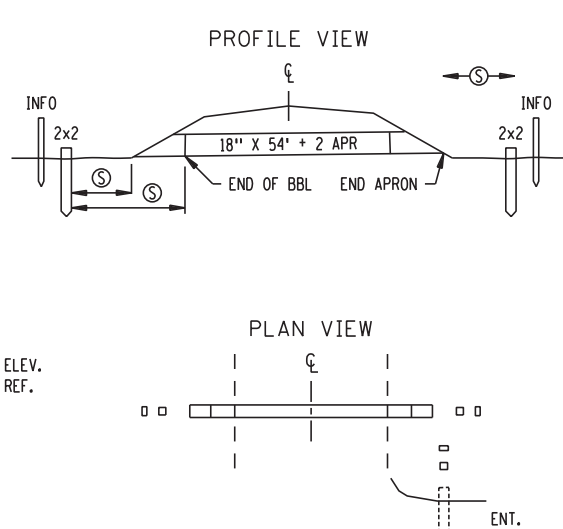
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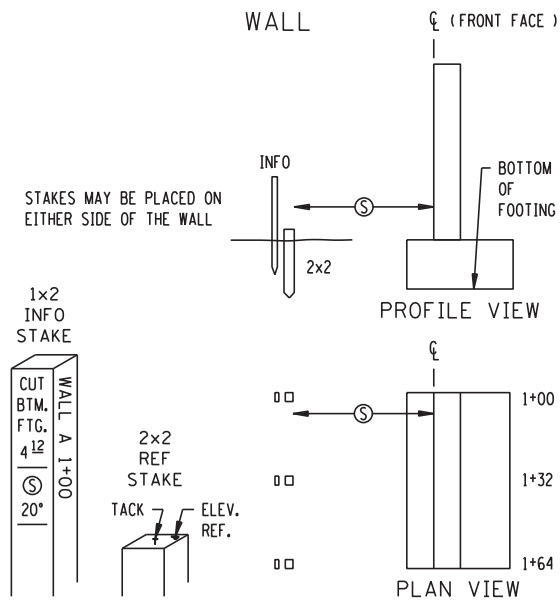
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### CULVERT



### WALL



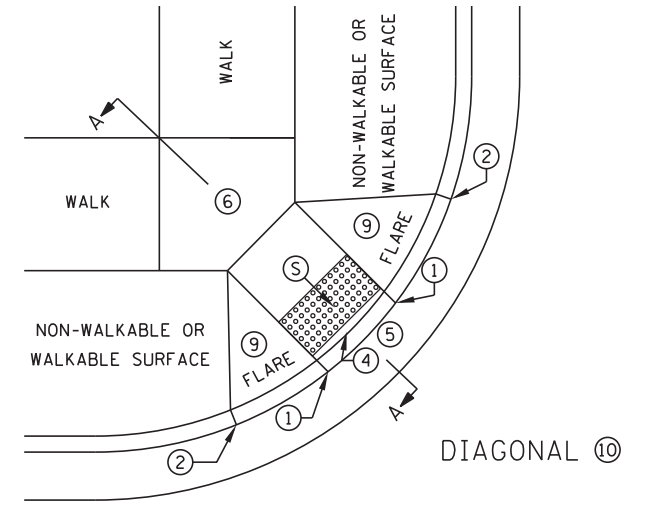
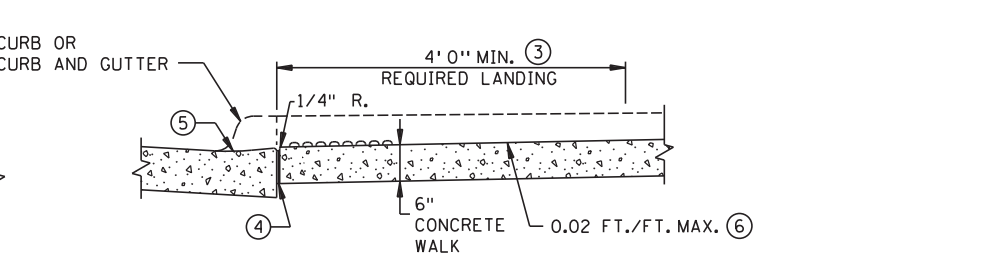
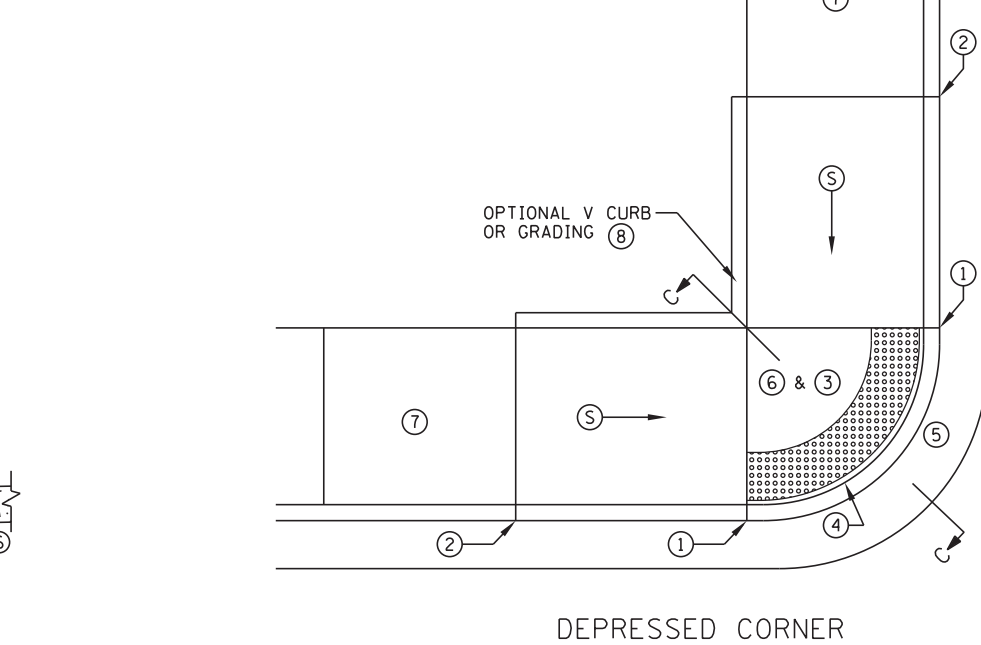
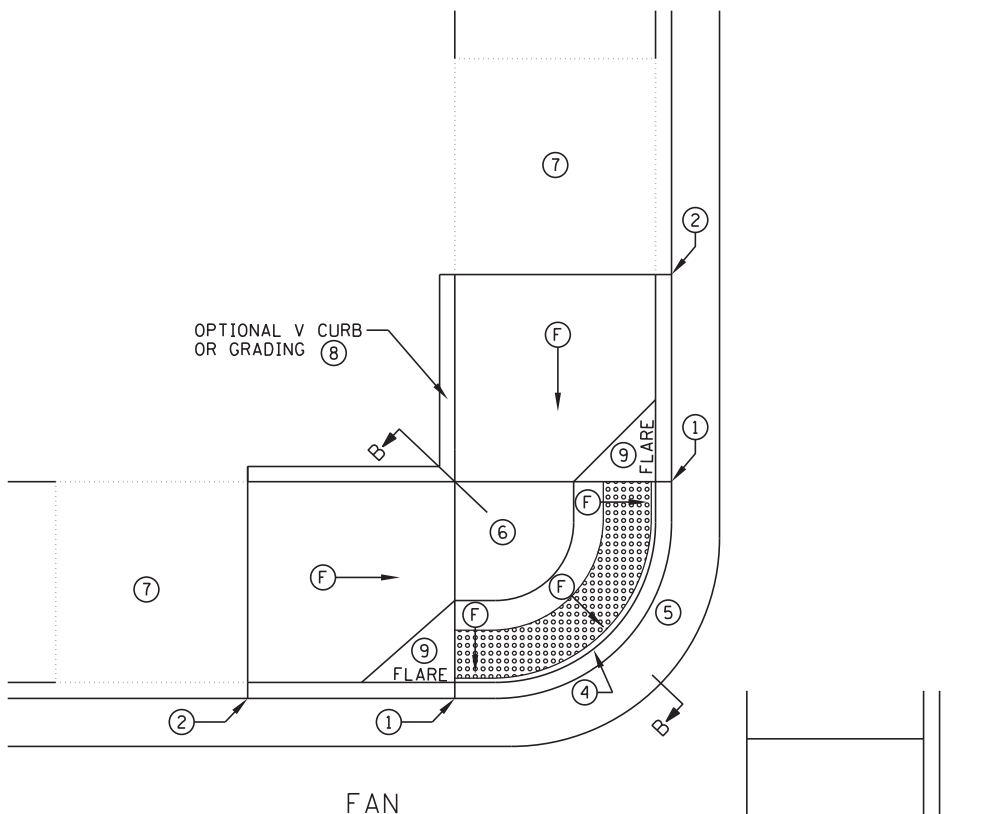
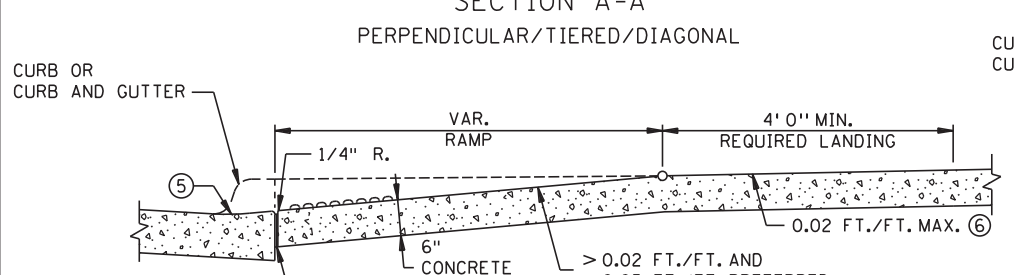
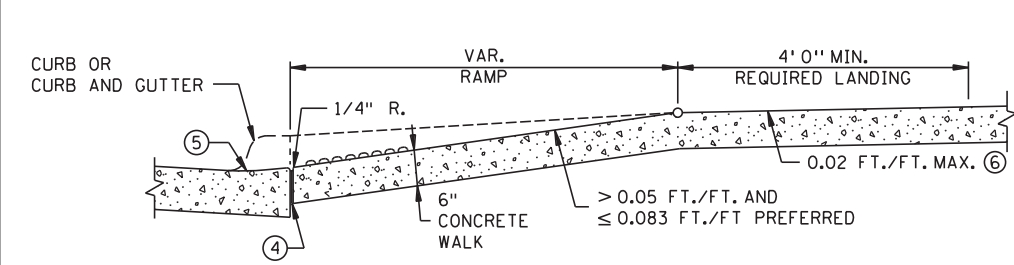
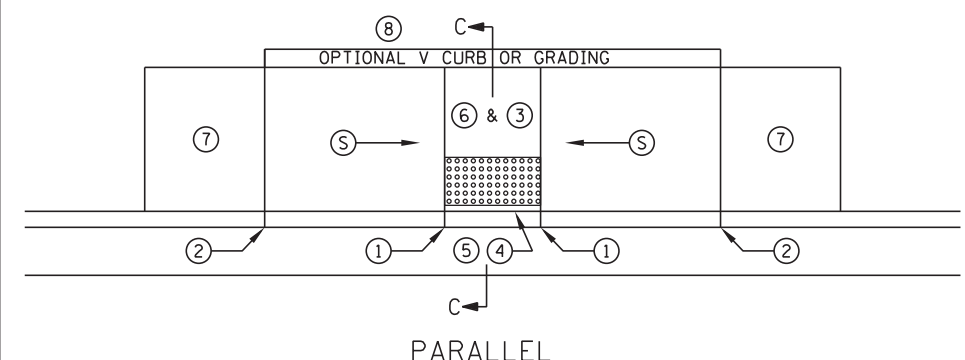
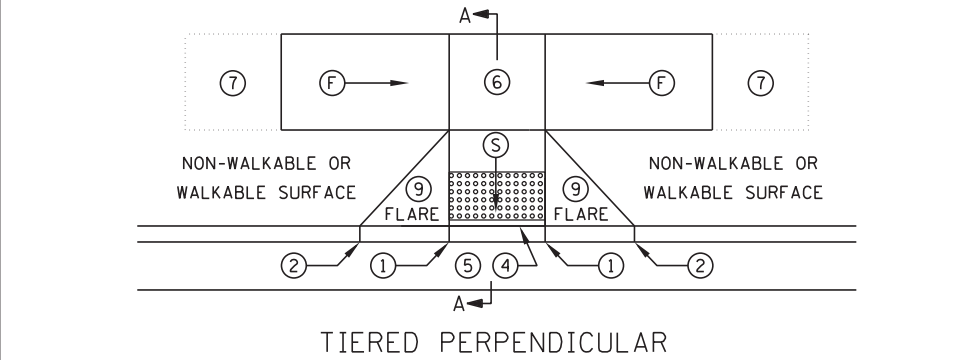
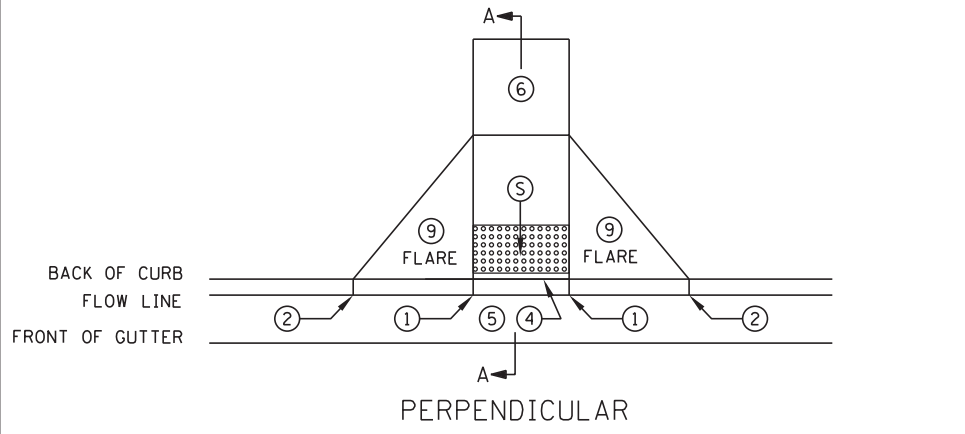
### STAKING INFORMATION SHEET

STANDARD PLAN 5-297.115 2 OF 2  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 28 OF 196 SHEETS

REVISIONS:  
APPROVED: 8-6-2014  
Christophe Ky  
STATE DESIGN ENGINEER  
8-6-2014

REVISION:  
APPROVED: 8-6-2014  
Director, Office of Land Management

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- NOTES:**
- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
  - INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
  - SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
  - CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
  - ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
  - TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
  - ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
  - TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
  - 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
  - SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- 0" CURB HEIGHT.
  - FULL CURB HEIGHT.
  - DETECTABLE WARNINGS MAY BE PART OF 4' X 4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
  - 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.
  - SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
  - 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
  - IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
  - V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. SEE SHEET 5 OF 5.
  - SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
  - DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

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

REVISION:  
 APPROVED: 8-6-2014  
  
 OPERATIONS ENGINEER

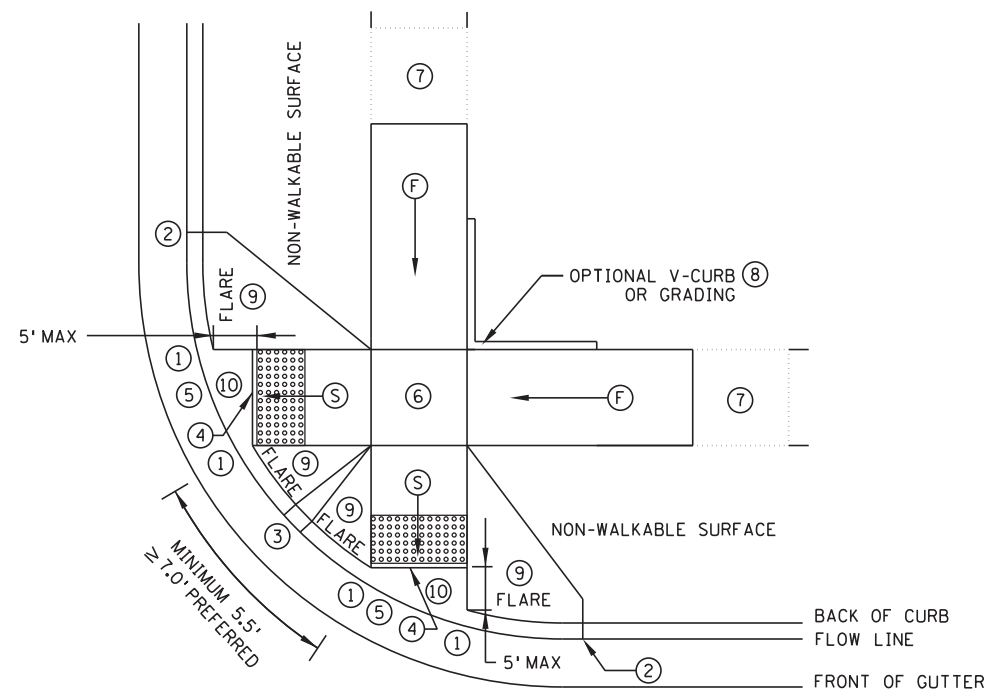
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 REVISION:  
 APPROVED: 8-6-2014  
  
 STATE DESIGN ENGINEER

SPN3 OF SPN13

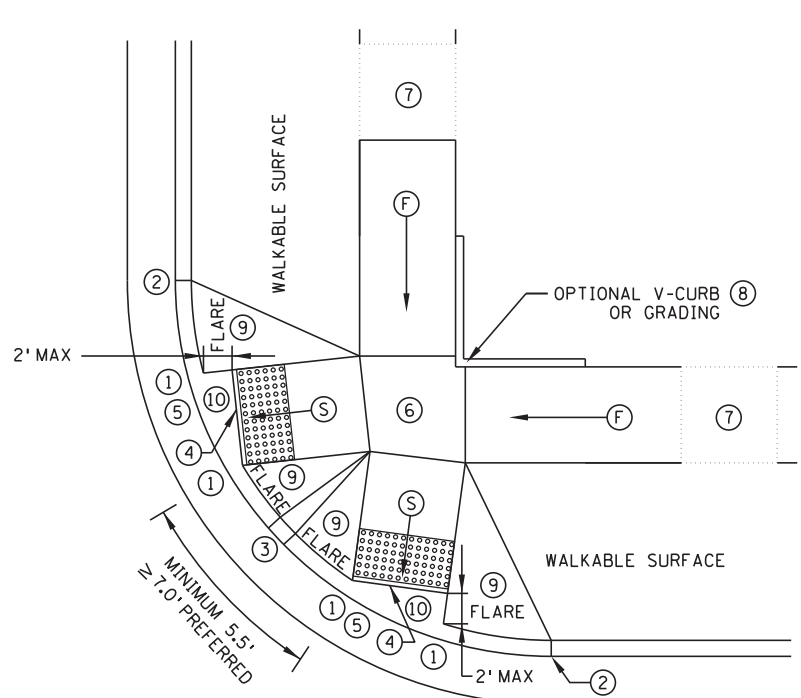
PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 1 OF 5

S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 29 OF 196 SHEETS

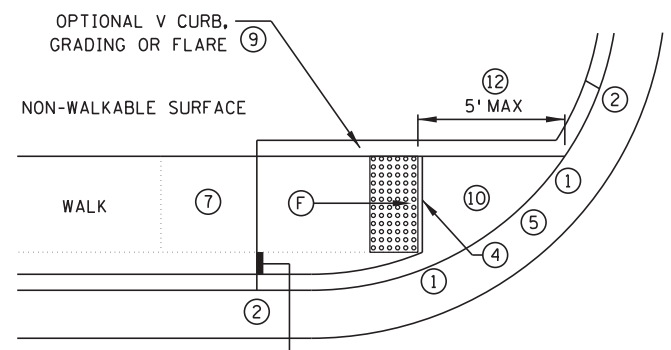


ADJACENT TO NON-WALKABLE SURFACE



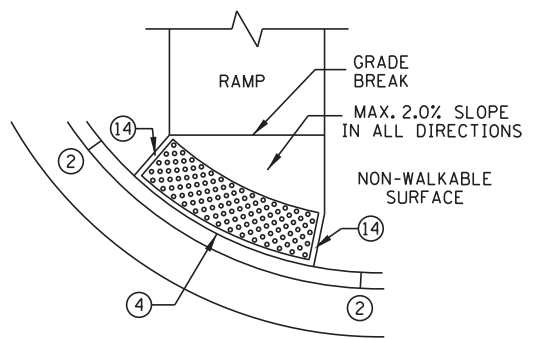
ADJACENT TO WALKABLE SURFACE

COMBINED DIRECTIONAL 15

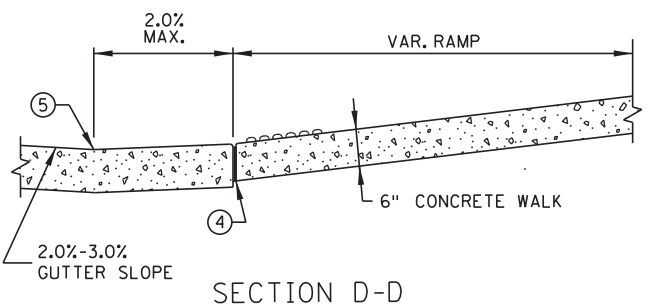
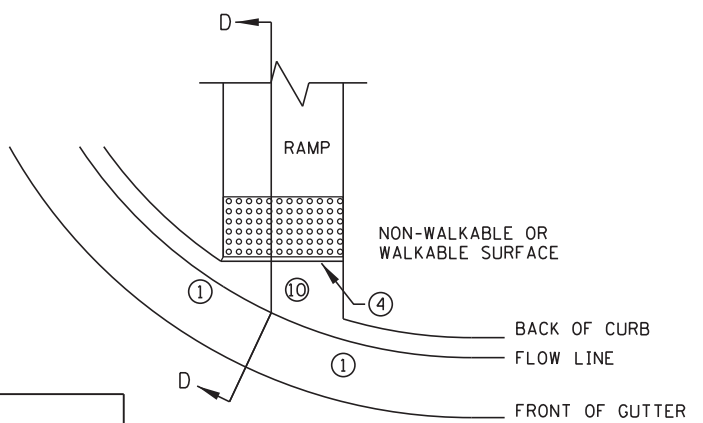
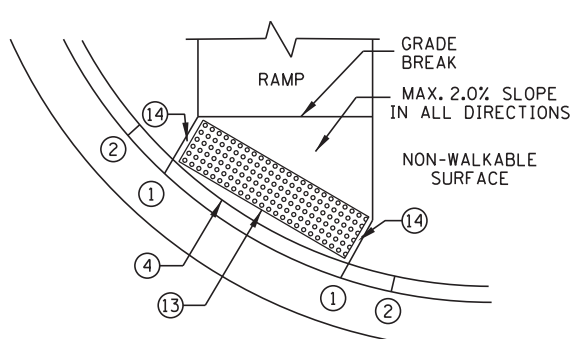


ONE-WAY DIRECTIONAL

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



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED



SECTION D-D

CURB FOR DIRECTIONAL RAMPS 11

NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 5 WHEN LANDINGS ARE CAST SEPARATELY.
- ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
- TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MINIMUM OF 24" IN THE PATH OF TRAVEL. SHARED USE PATHS SHALL HAVE DETECTABLE WARNING ACROSS THE ENTIRE WIDTH OF PATH WHEN THE PATH CROSSES A ROAD.
- SEE STANDARD PLATE 7038 AND SHEET 4 OF 5 FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- 1 0" CURB HEIGHT.
- 2 FULL CURB HEIGHT.
- 3 3" MINIMUM CURB HEIGHT, 4" PREFERRED.
- 4 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M 213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS. RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MIN. TO 6" MAX. FROM THE BACK OF CURB.
- 5 SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 3 OF 5.
- 6 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS.
- 7 IF LONGITUDINAL SLOPE IS GREATER THAN 5.0%, 4' X 4' MIN. LANDING WITH MAX 2.0% SLOPE IN ALL DIRECTIONS REQUIRED.
- 8 V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- 9 SEE SHEET 4 OF 5, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 10 MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- 11 TO BE USED FOR ALL DIRECTIONAL RAMPS.
- 12 PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- 13 RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- 14 WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- 15 FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER

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

REVISION:

APPROVED: 8-6-2014

*Michael J. Henn*  
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISOR:

APPROVED: 8-6-2014

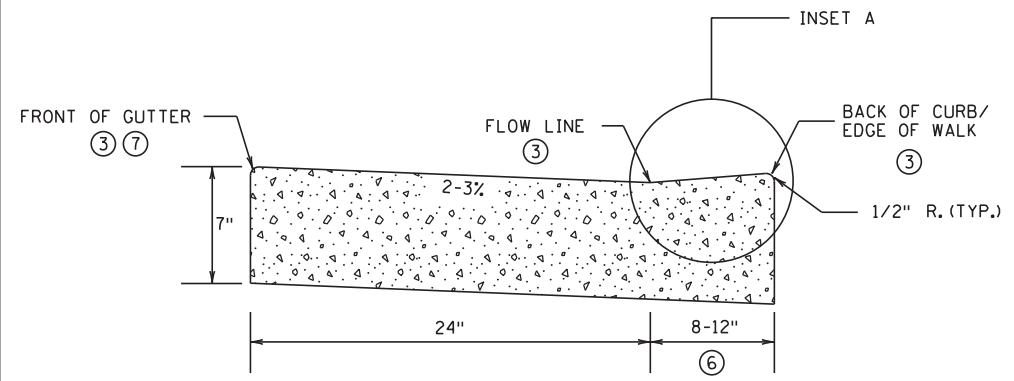
*Christopher Ry*  
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

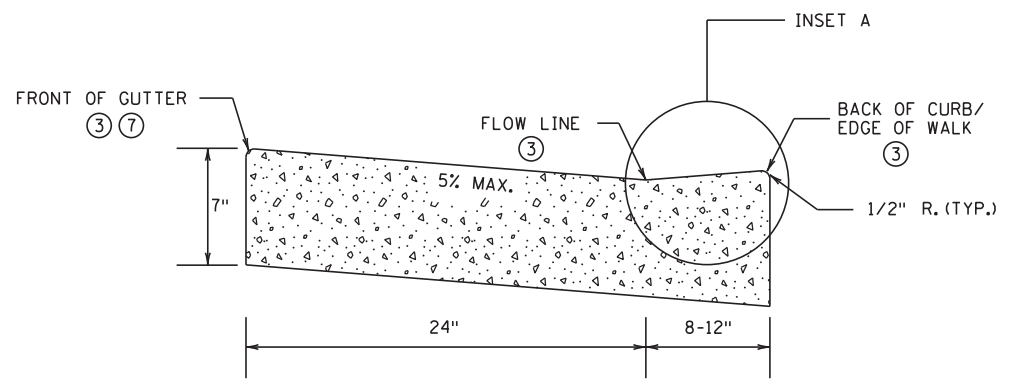
STANDARD PLAN 5-297.250 2 OF 5

S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 30 OF 196 SHEETS

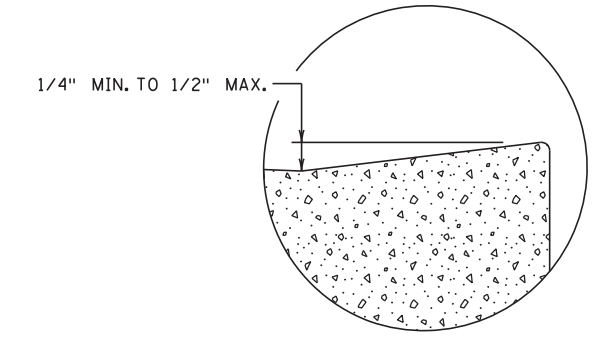
SPN4 OF SPN13



NON PERPENDICULAR ①

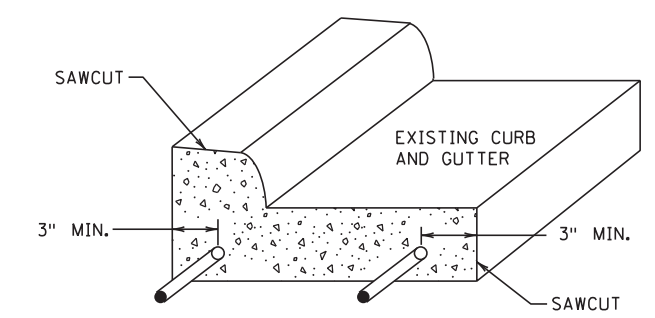
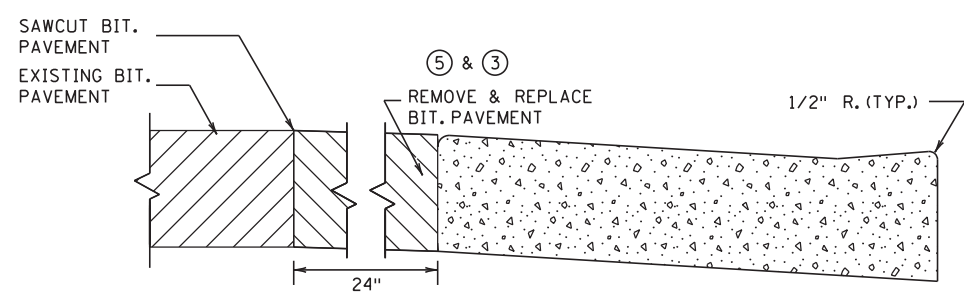
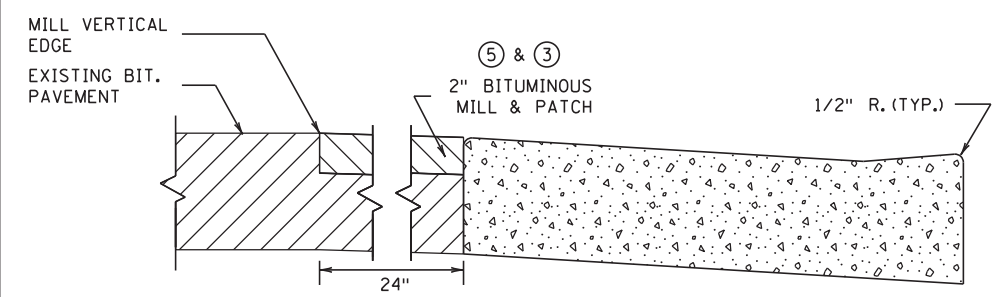


PERPENDICULAR ②

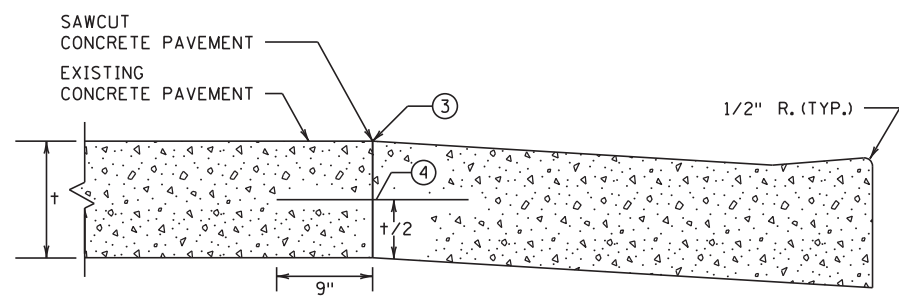
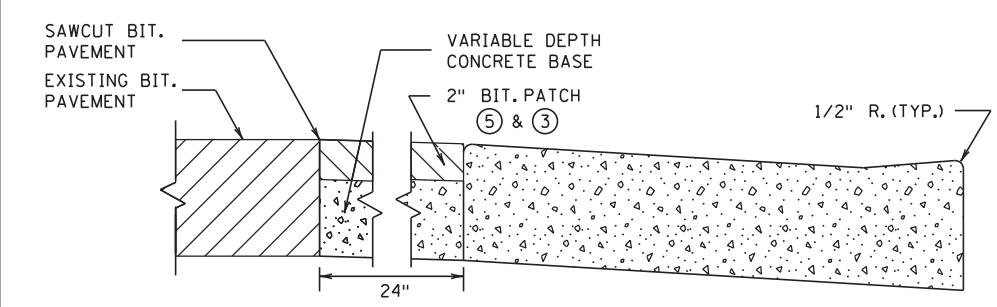


INSET A

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



CURB AND GUTTER REINFORCEMENT ⑧ FOR USE ON CURB RAMP RETROFITS



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

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

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250	3 OF 5
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001	
SHEET NO. 31 OF 196 SHEETS	

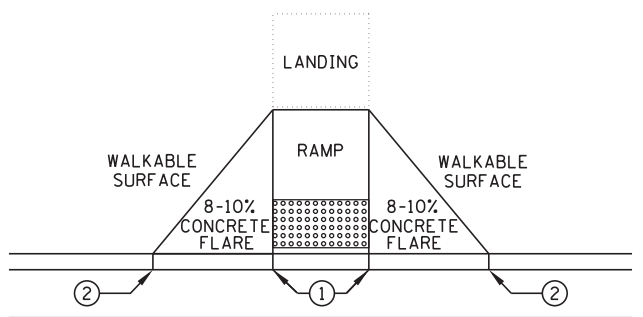
REVISION:
APPROVED: 8-6-2014
<i>[Signature]</i> OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

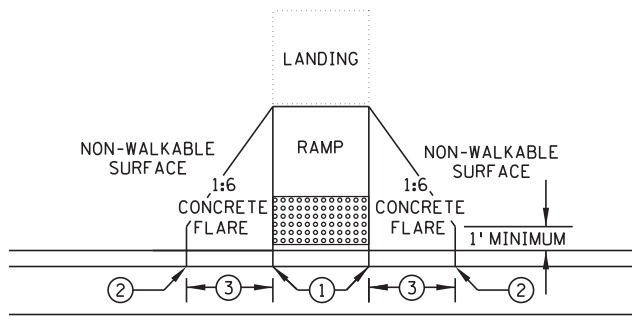
REVISOR:

APPROVED: 8-6-2014

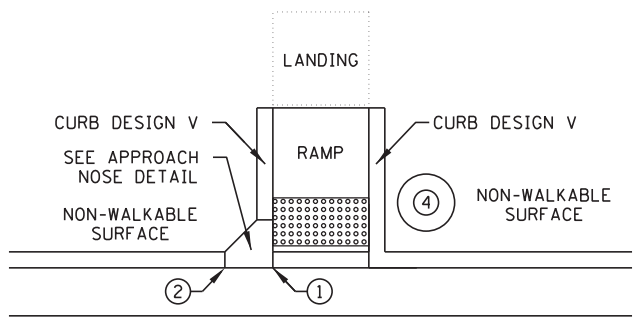
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STATE DESIGN ENGINEER



PAVED FLARES ADJACENT TO WALKABLE SURFACE

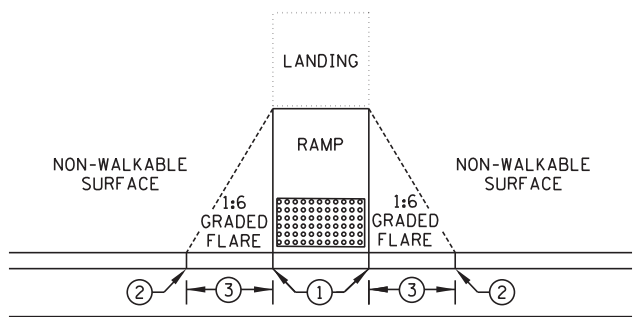


PAVED FLARES ADJACENT TO NON-WALKABLE SURFACE



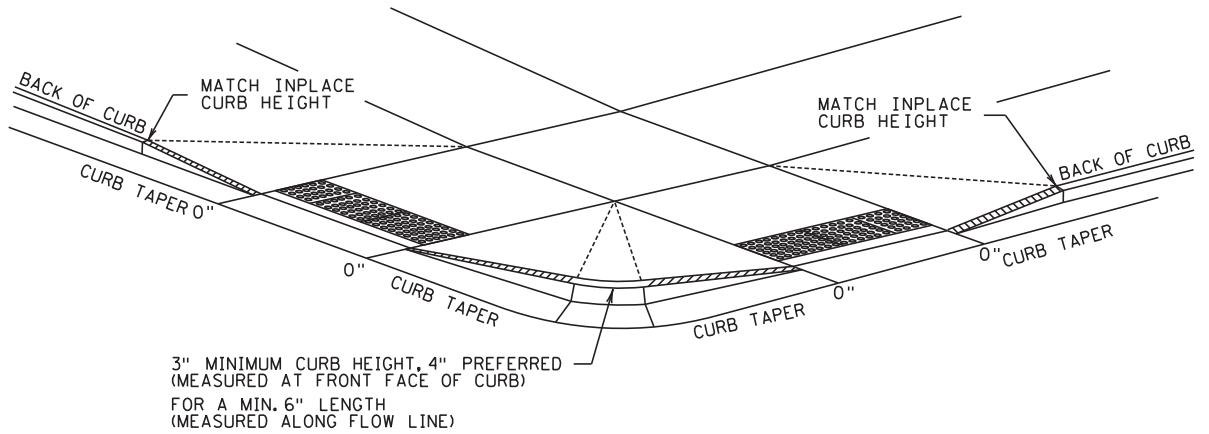
DIRECTION OF TRAFFIC

RETURNED CURB

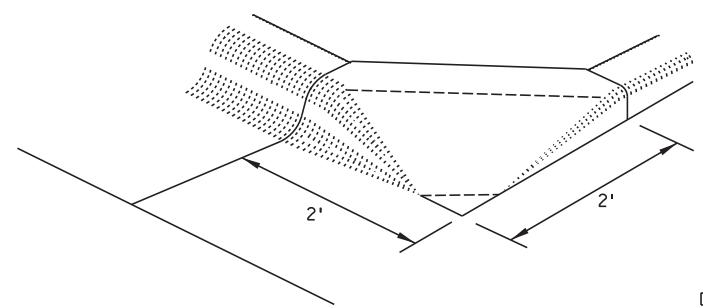


GRADED FLARES

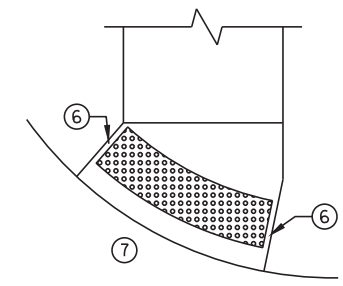
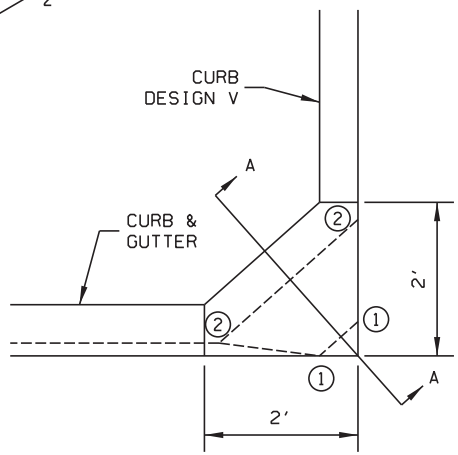
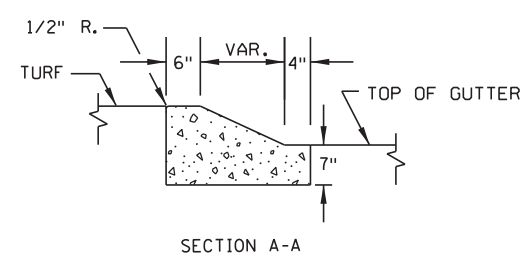
TYPICAL SIDE TREATMENT OPTIONS ⑤



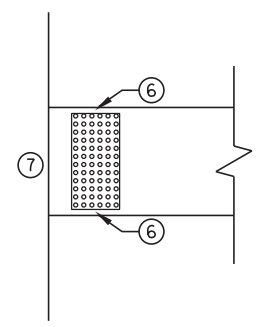
DETECTABLE EDGE WITH CURB AND GUTTER ⑧



APPROACH NOSE DETAIL FOR DOWNSTREAM SIDE OF TRAFFIC



RADIAL DETECTABLE WARNING



RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

NOTES:

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

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

REVISION:
APPROVED: 8-6-2014
<i>Michael R. ...</i> OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

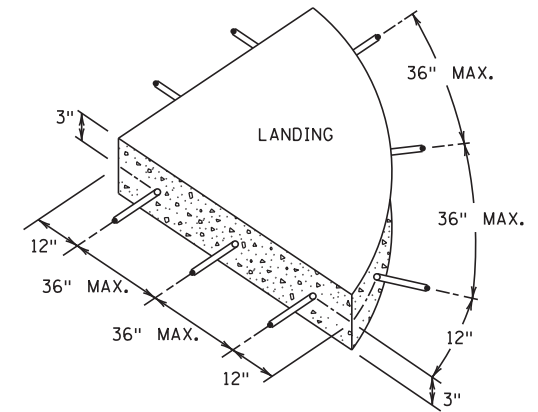
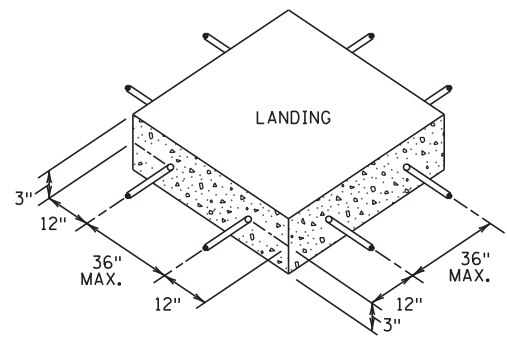
REVISOR: *Christine Ry*

APPROVED: 8-6-2014

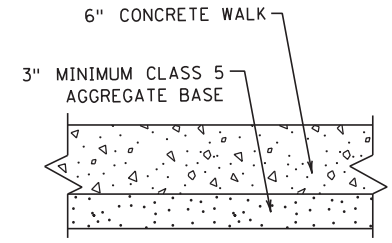
STATE DESIGN ENGINEER

SPN6 OF SPN13	
PEDESTRIAN CURB RAMP DETAILS	
STANDARD PLAN 5-297.250	4 OF 5
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001	SHEET NO. 32 OF 196 SHEETS

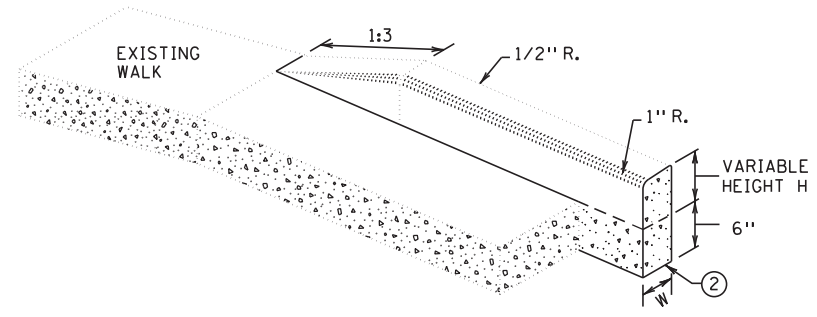




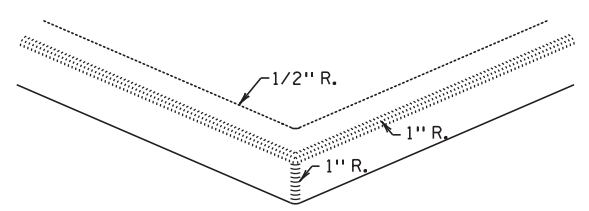
SIDEWALK REINFORCEMENT ⑥ ⑦



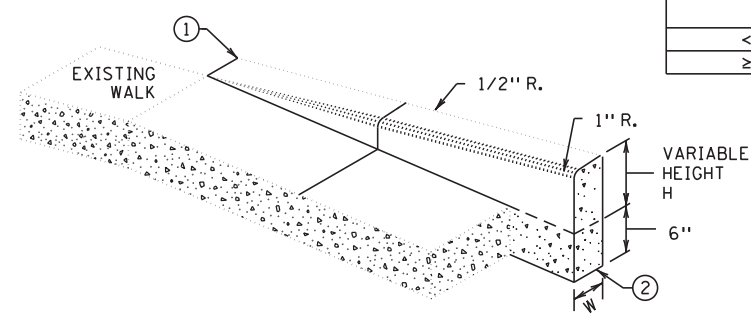
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



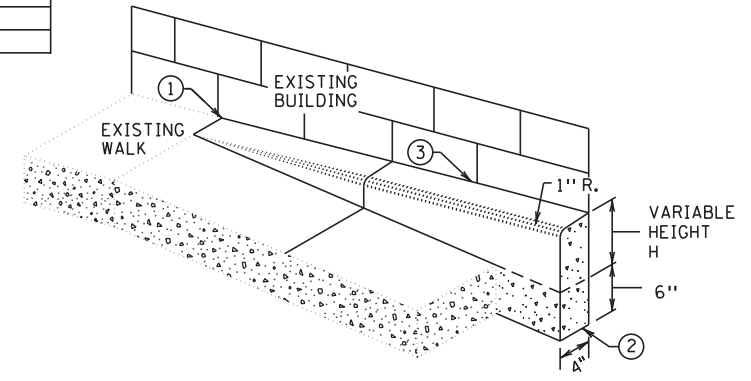
V CURB ADJACENT TO LANDSCAPE CURB WITHIN SIDEWALK LIMITS



V CURB INTERSECTION

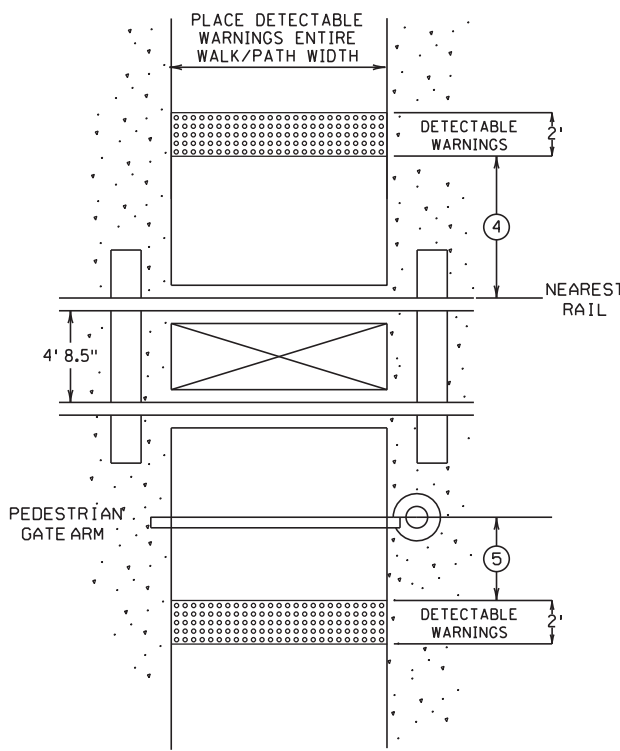


V CURB ADJACENT TO LANDSCAPE CURB OUTSIDE SIDEWALK LIMITS

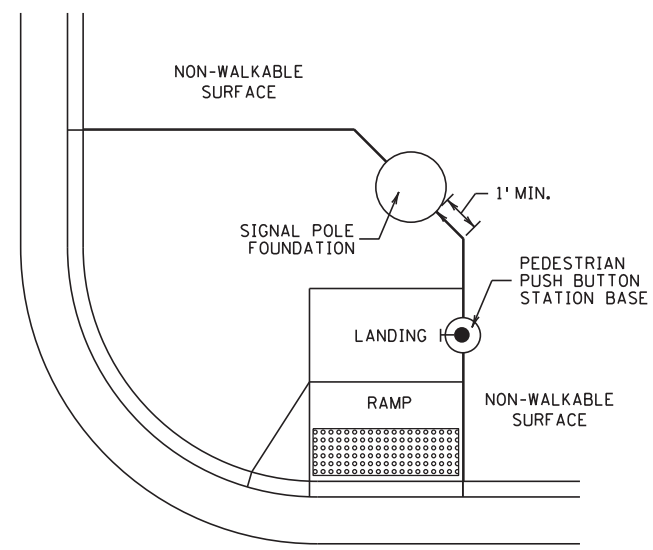


V CURB ADJACENT TO BUILDING OR BARRIER

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



RAILROAD CROSSING PLAN VIEW



CONCRETE WALK EDGES ADJACENT TO CONCRETE STRUCTURES

NOTES:

- ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.
- WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.
- V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.
- V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.
- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
- ⑤ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM.
- ⑥ WHEN PLAN SPECIFIES, DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAX. CENTER TO CENTER (EPOXY COATED).
- ⑦ TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET WHEN LANDINGS ARE CAST SEPARATELY.

REVISION:  
 APPROVED: 2-9-2015  
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 OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION  
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 STATE DESIGN ENGINEER  
 APPROVED: 2-9-2015

SPN7 OF SPN13

PEDESTRIAN CURB RAMP DETAILS

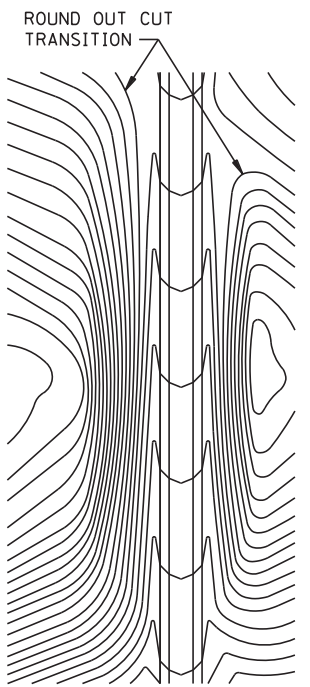
STANDARD PLAN 5-297.250 5 OF 5

S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 33 OF 196 SHEETS

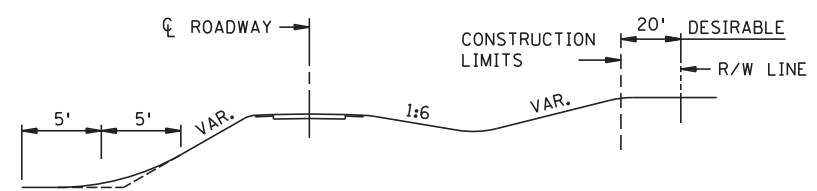
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10/21/2015

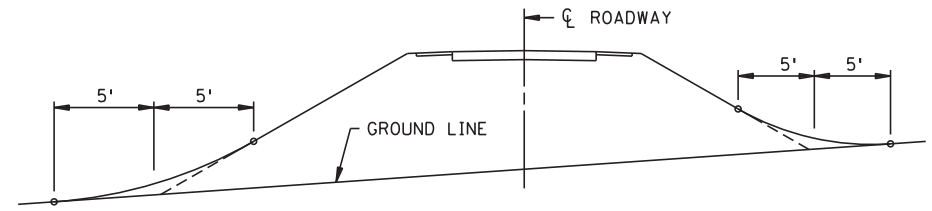
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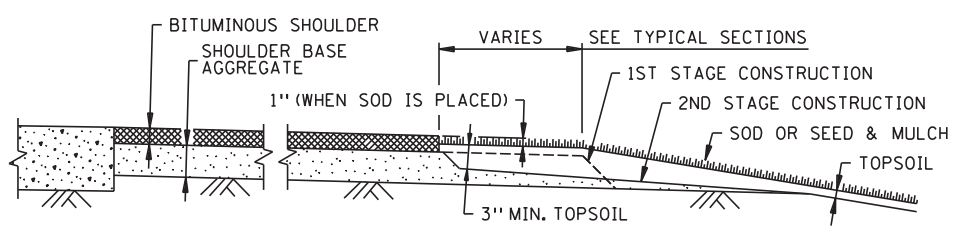
CONTOURING ROAD CUTS



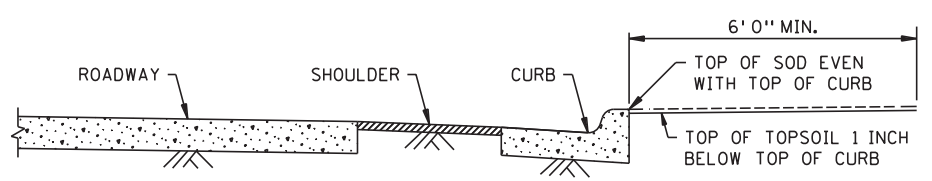
ROUNDING SHOULDERS AND BACKSLOPES



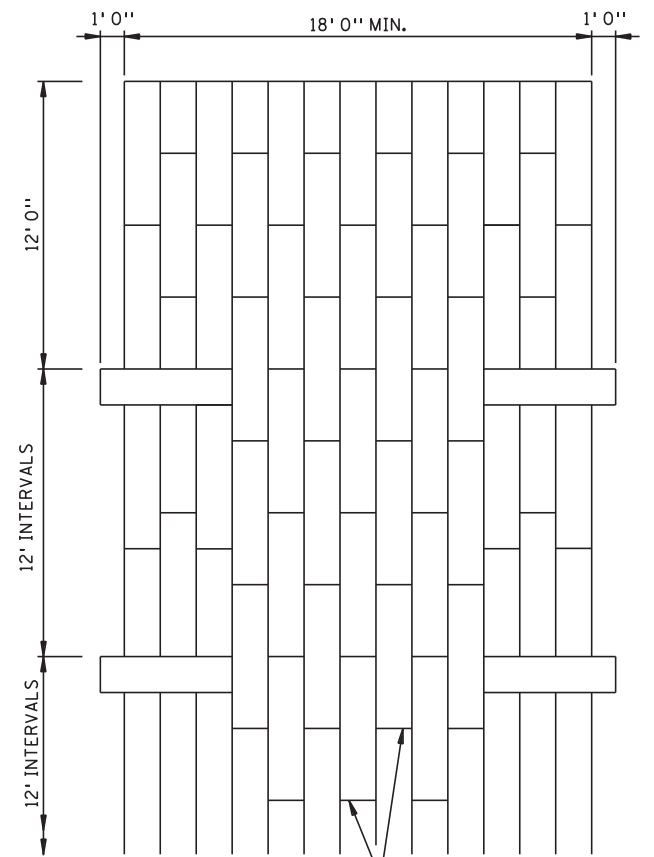
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



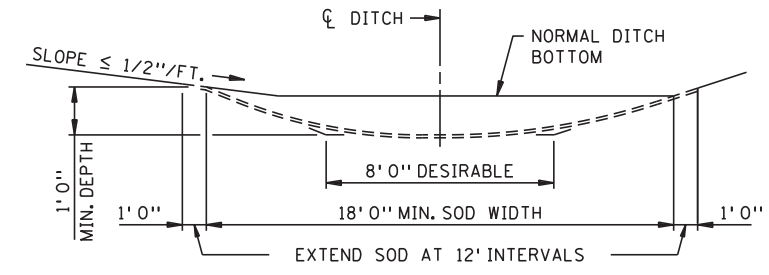
SHAPING AND TOPSOILING INSLOPES



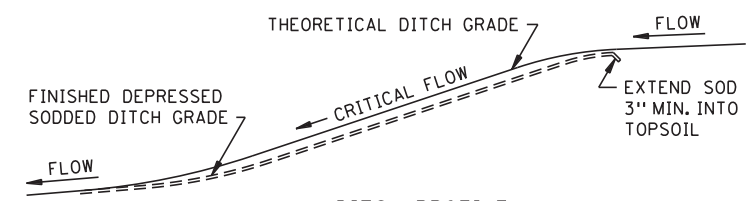
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



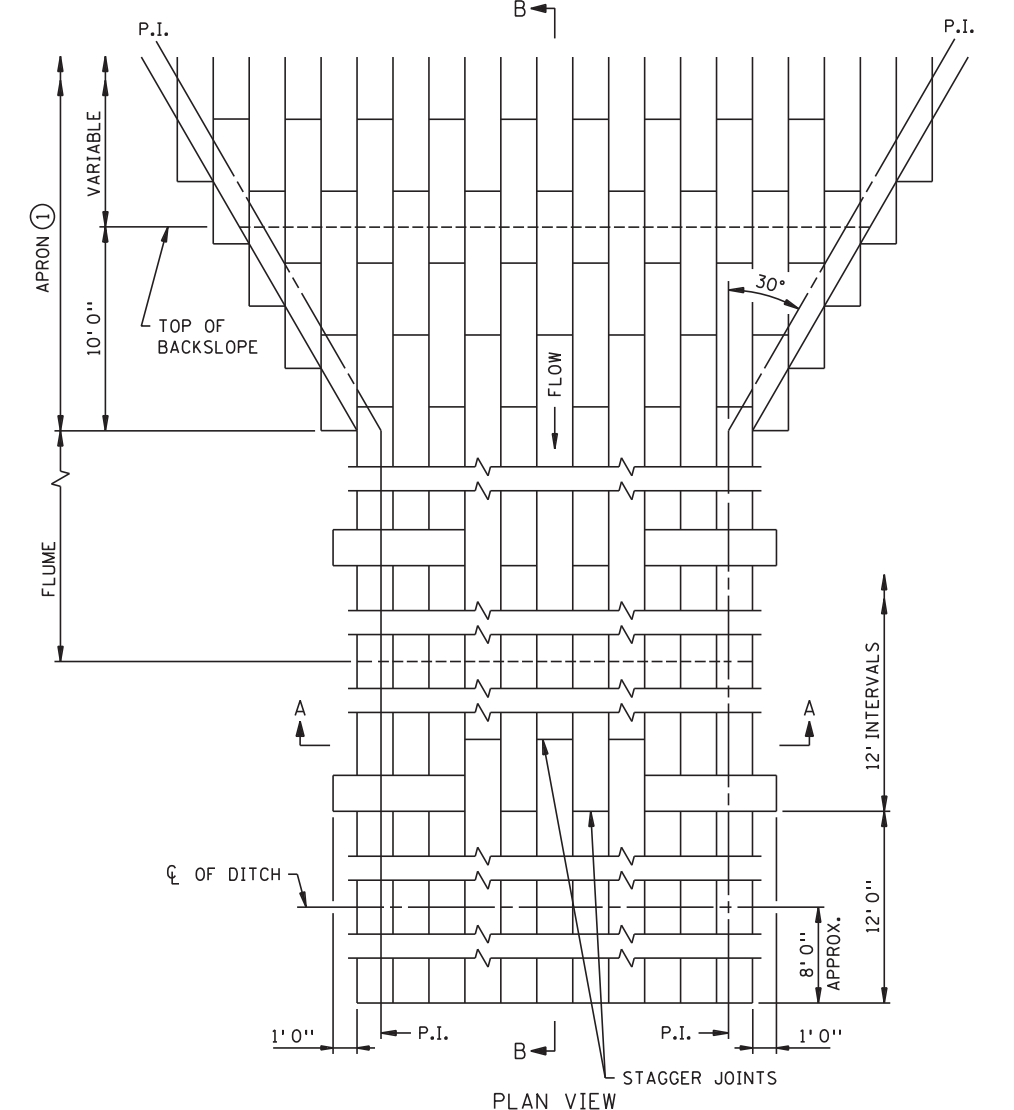
PLAN VIEW



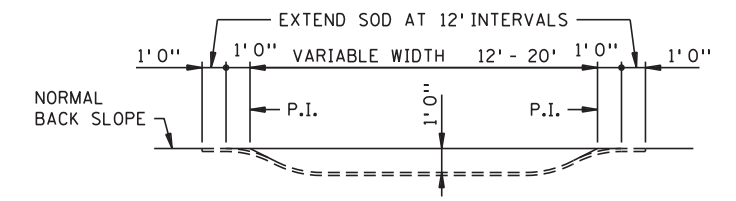
SODDED DITCH CROSS SECTION WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



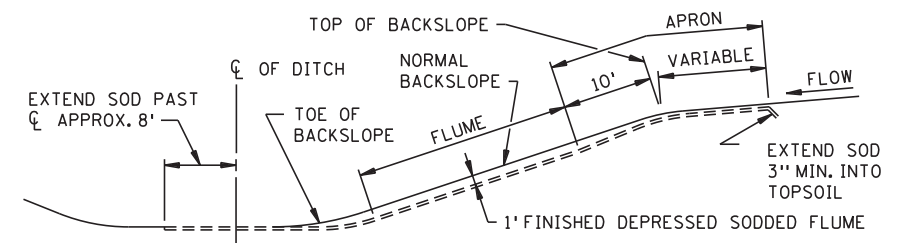
DITCH PROFILE SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



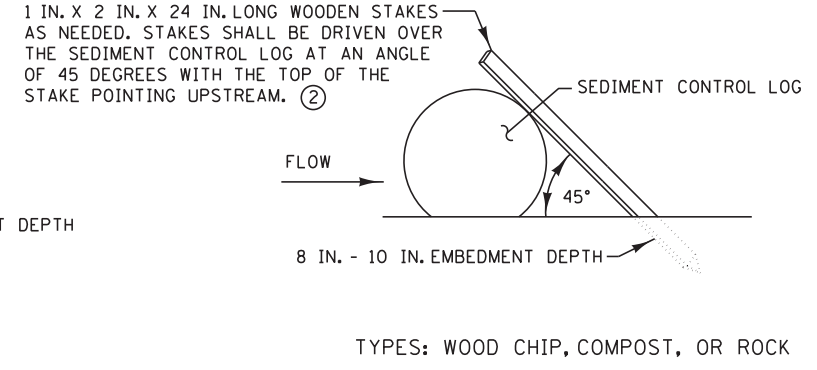
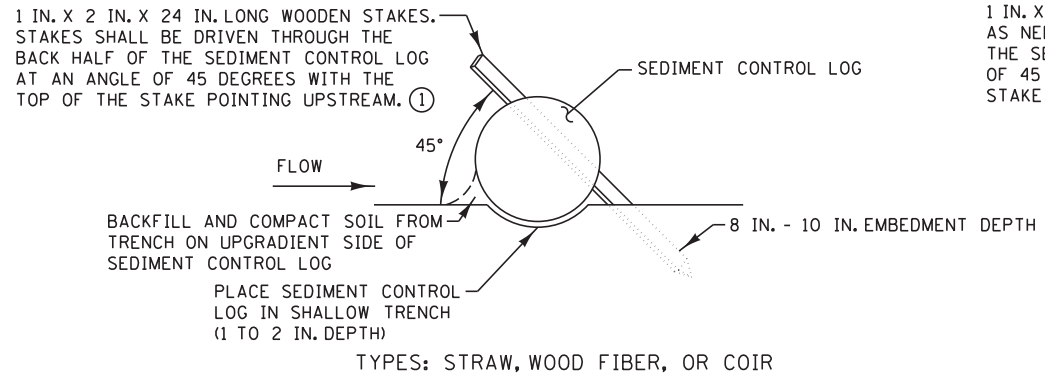
SECTION B-B SODDED FLUME DETAILS

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

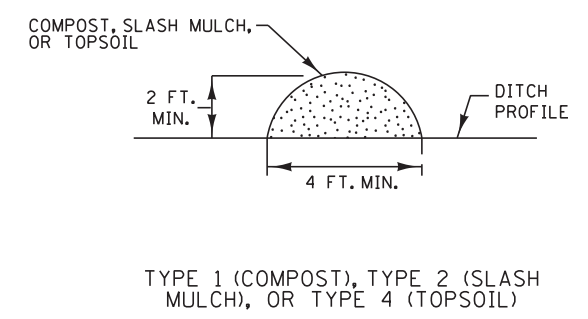
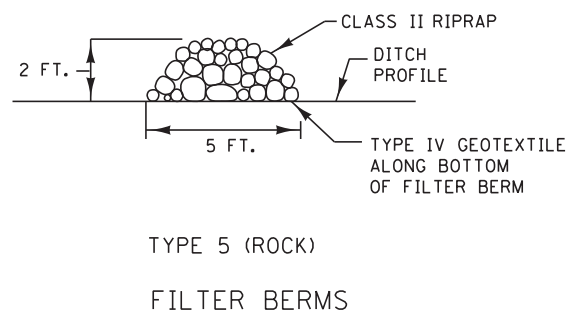
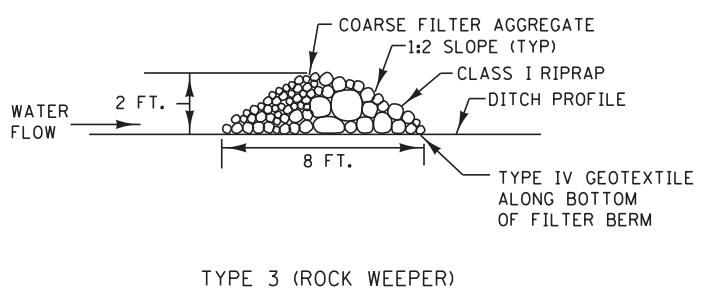
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 APPROVED: 8-6-2014  
 [Signature]  
 CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION  
 [Signature]  
 STATE DESIGN ENGINEER  
 APPROVED: 8-6-2014

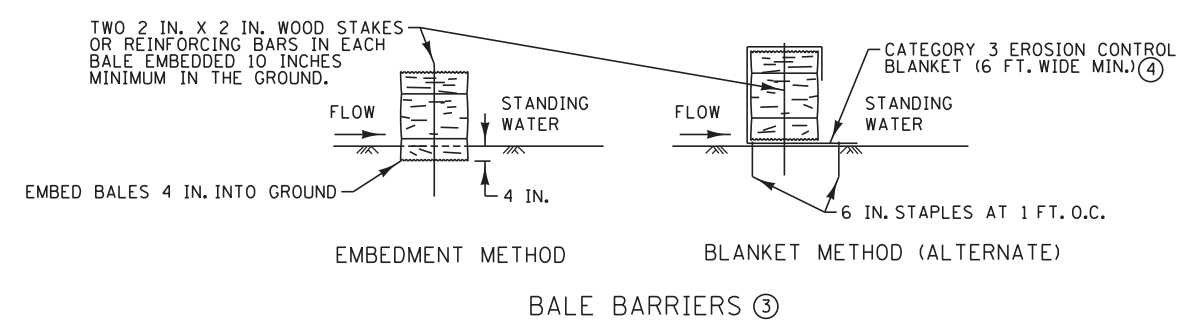
PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES		SPN8 OF SPN13
STANDARD PLAN 5-297.404		1 OF 1
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001		SHEET NO. 34 OF 196 SHEETS



SEDIMENT CONTROL LOGS



FILTER BERMS



NOTES:

- SEE SPECS. 2573, 3149, 3874, 3882, 3886, & 3897.
- ① SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1 FOOT FOR DITCH CHECKS OR 2 FEET FOR OTHER APPLICATIONS.
- ② PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.
- ③ TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6 INCH MAX. DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14 IN. X 18 IN. X 36 IN. LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.
- ④ INSTEAD OF TRENCHING, PLACE BALE ON THE BLANKET AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

SPN9 OF SPN13

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

STANDARD PLAN 5-297.405 2 OF 7

S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 35 OF 196 SHEETS

REVISION:

APPROVED: 8-6-2014

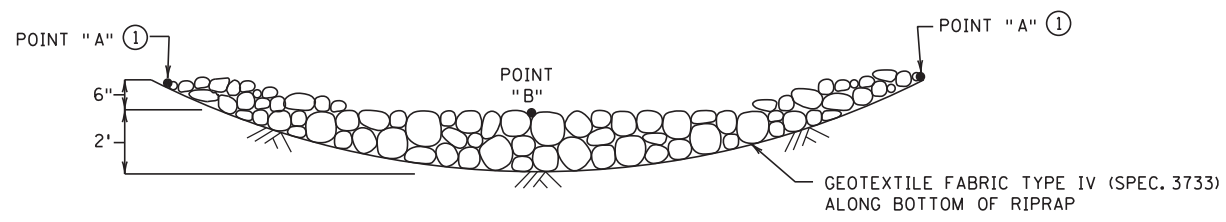
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

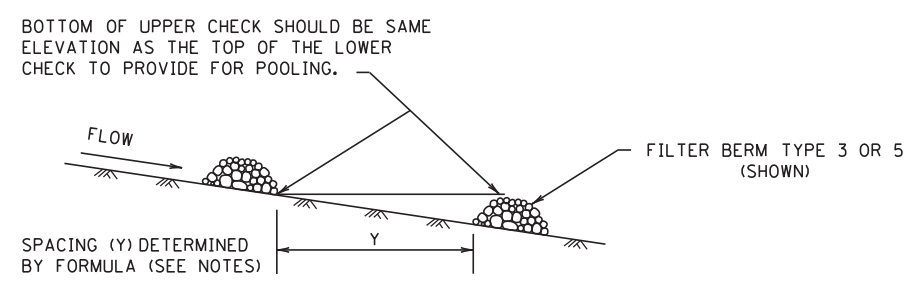
REVISOR:

*[Signature]*  
STATE DESIGN ENGINEER

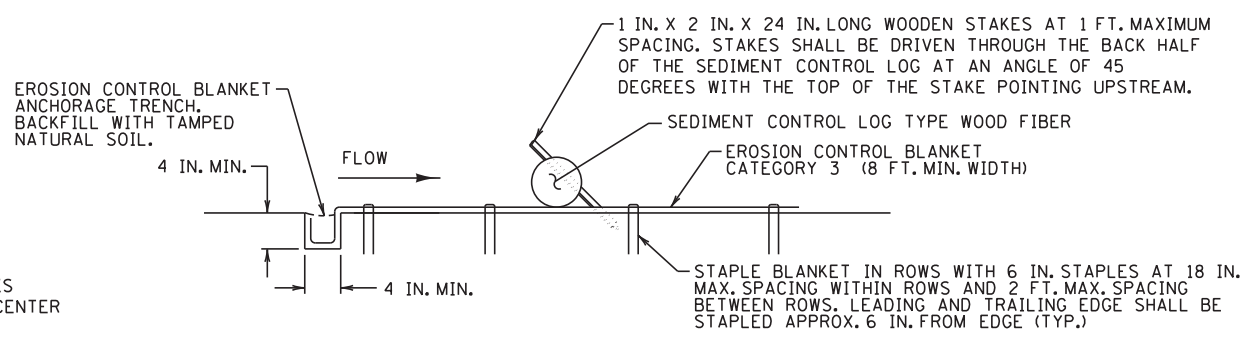
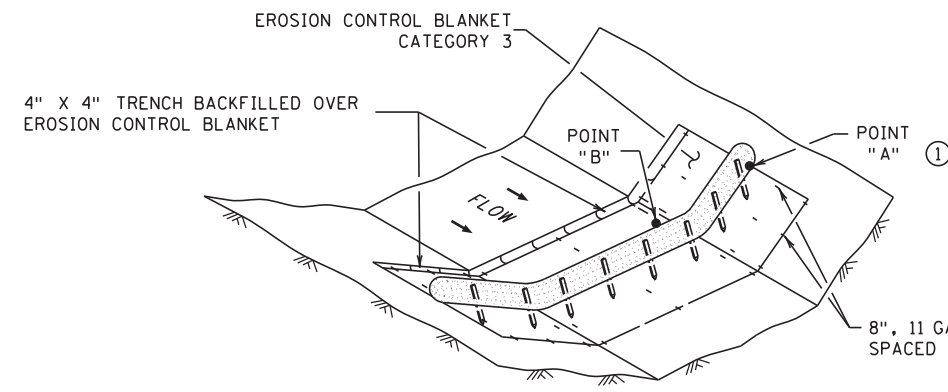
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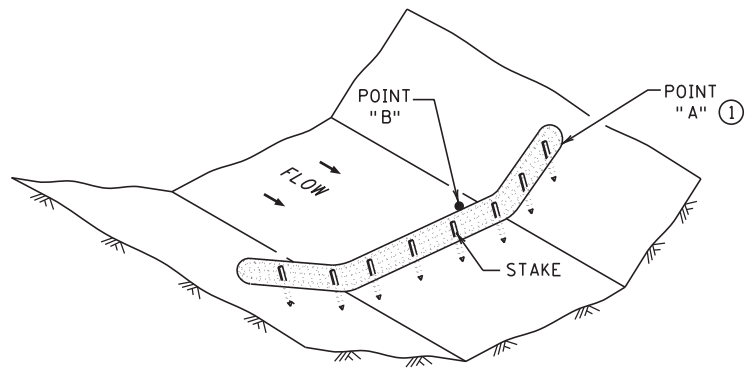
ROCK DITCH CHECKS  
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ②③  
(FOR USE ON ROUGH GRADED AREAS)



DITCH CHECK SPACING  
(FOR ALL FILTER BERM TYPES)



SEDIMENT CONTROL LOG TYPE BLANKET SYSTEM ④



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

NOTES:

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

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

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

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

① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC..

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC..

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC..

SPN10  
OF SPN13

TEMPORARY SEDIMENT CONTROL  
DITCH CHECK

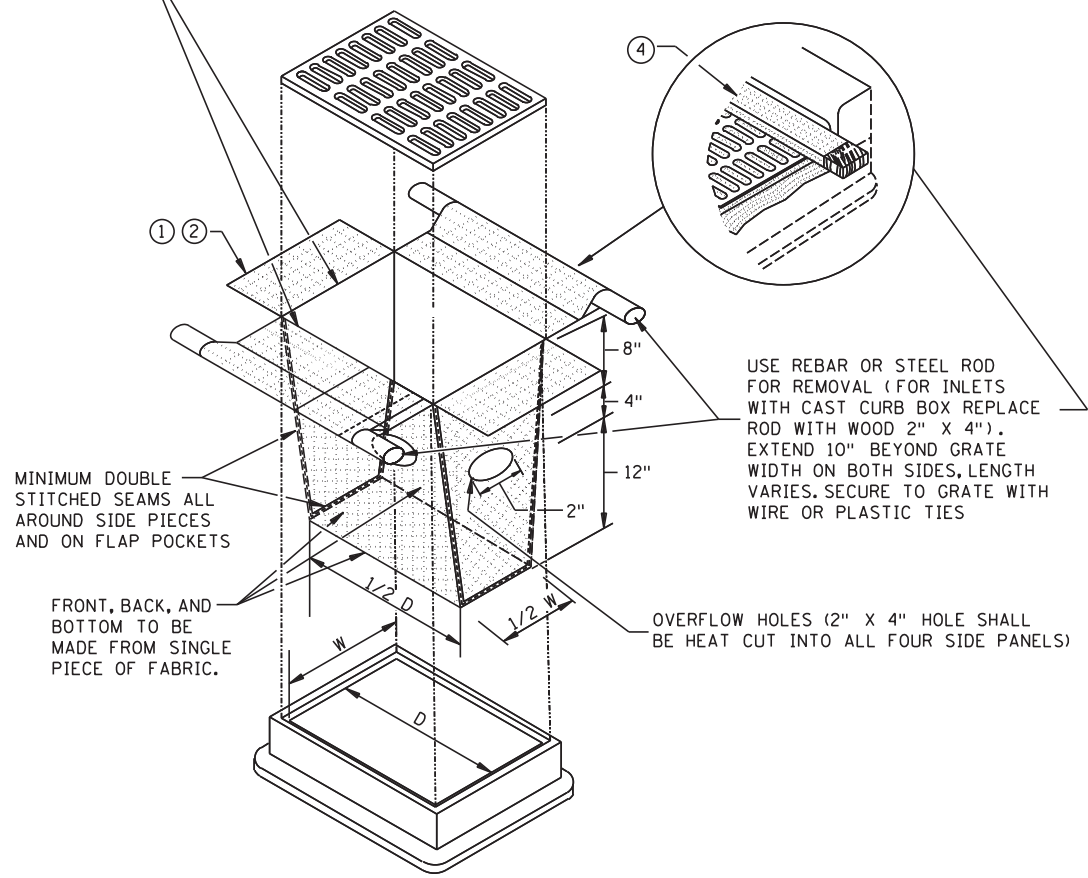
STANDARD PLAN 5-297.405 3 OF 7

S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001 SHEET NO. 36 OF 196 SHEETS

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*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

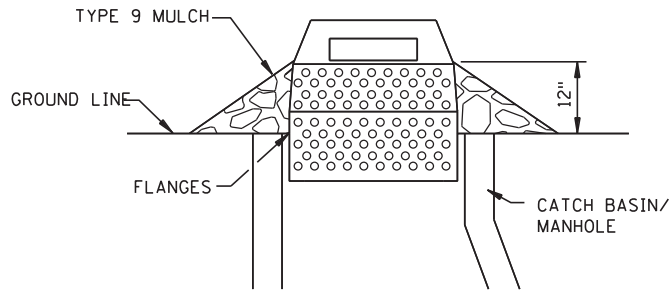
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REVISED:  
*[Signature]*  
APPROVED:  
8-6-2014  
STATE DESIGN ENGINEER

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



FILTER BAG INSERT ③

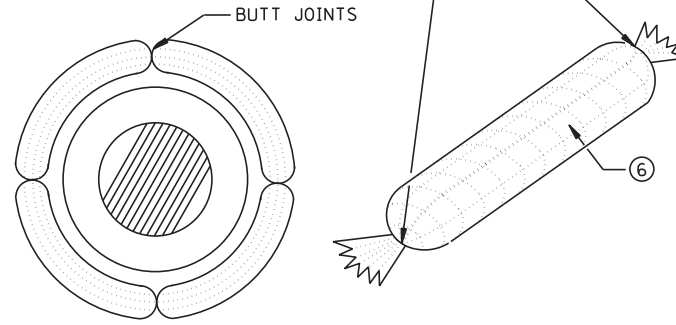
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)



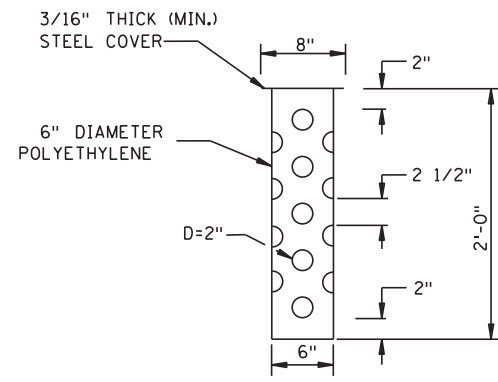
SEDIMENT CONTROL INLET HAT

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.

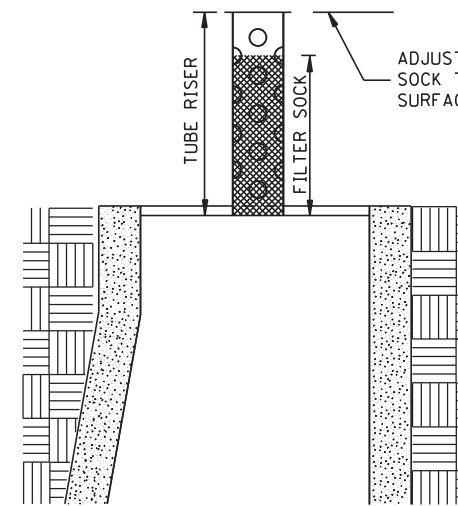
ENDS SECURELY CLOSED TO PREVENT LOSS OF OPEN GRADED AGGREGATE FILL. SECURED WITH 50 PSI. ZIP TIE.



ROCK LOG/COMPOST LOG



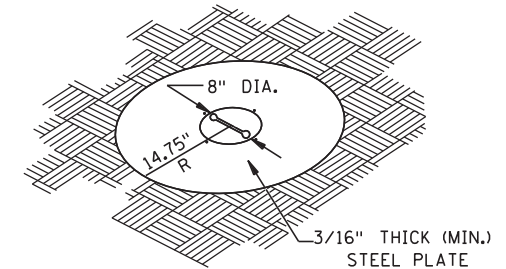
TUBE RISER



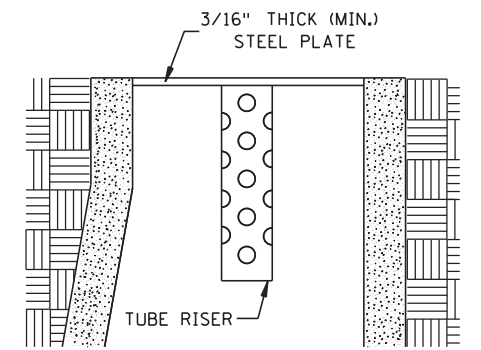
SECTION (UP POSITION)

ADJUST LEVEL OF FILTER SOCK TO BE BELOW ROAD SURFACE ELEV. ⑤

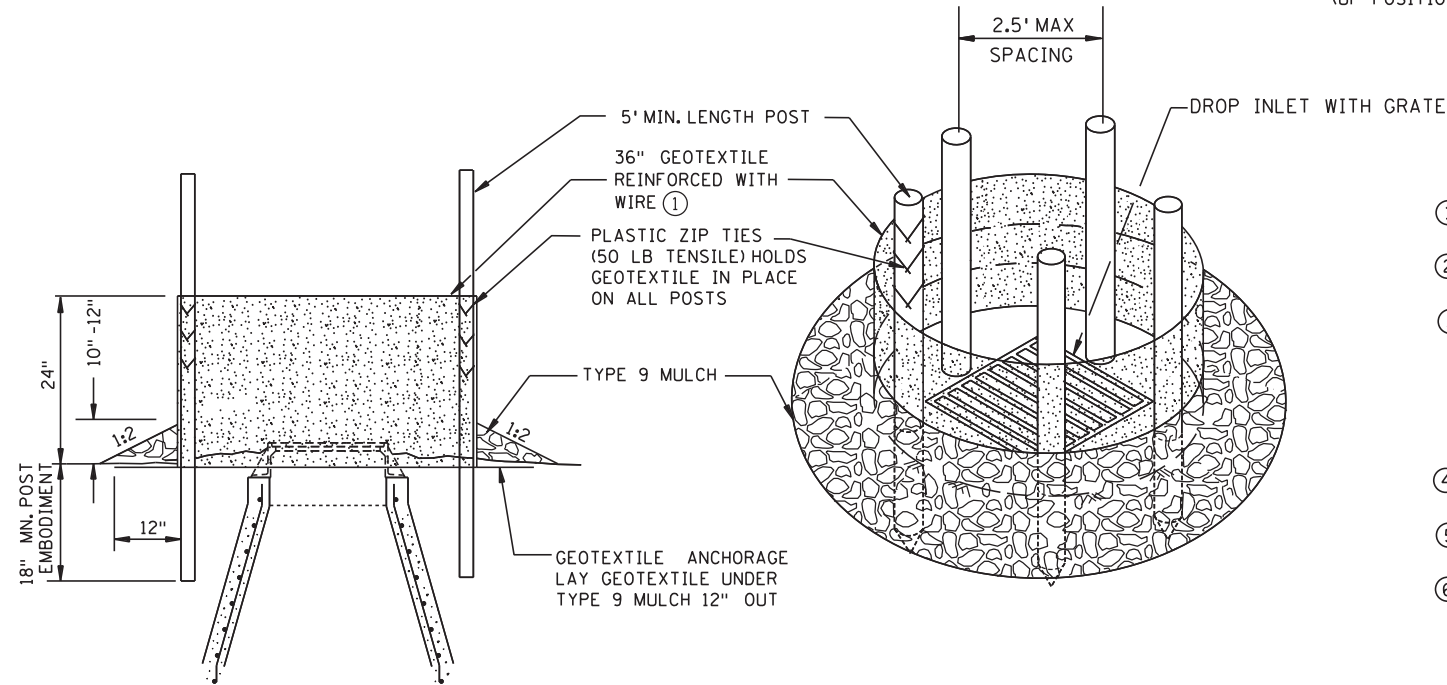
POP-UP HEAD



PERSPECTIVE VIEW



SECTION (DOWN POSITION)



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

NOTES:

SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

- 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 PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED 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 SIDE 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.

SPN11  
OF SPN13

TEMPORARY SEDIMENT CONTROL  
STORM DRAIN INLET PROTECTION

STANDARD PLAN 5-297.405

4 OF 7

S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001 SHEET NO. 37 OF 196 SHEETS

REVISION:  
APPROVED: 8-6-2014  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER



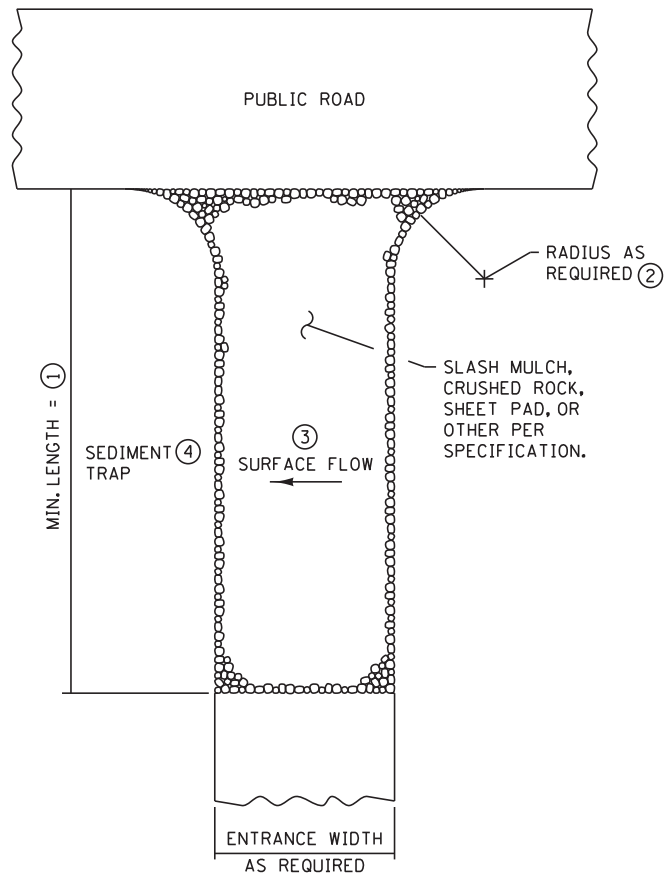
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STATE DESIGN ENGINEER

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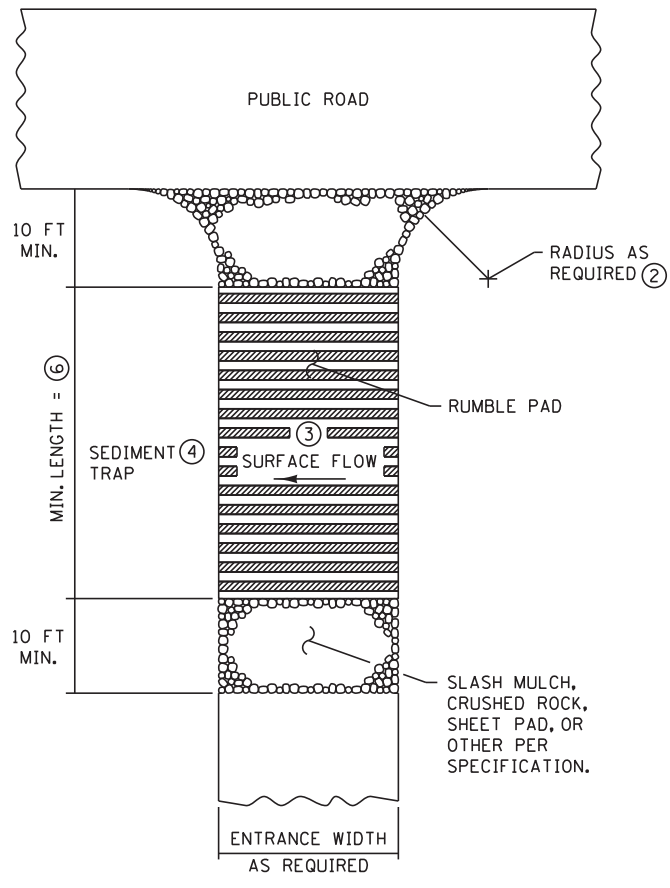
APPROVED:

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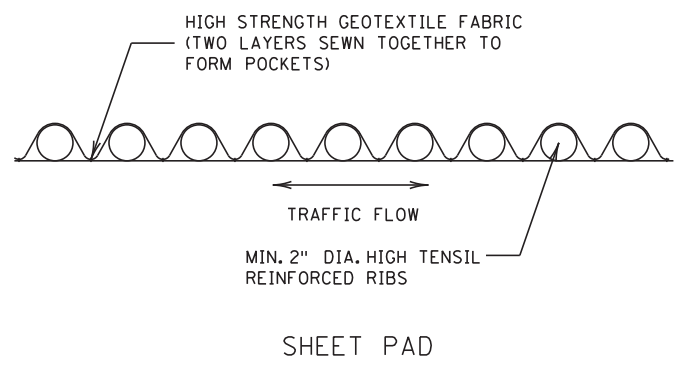
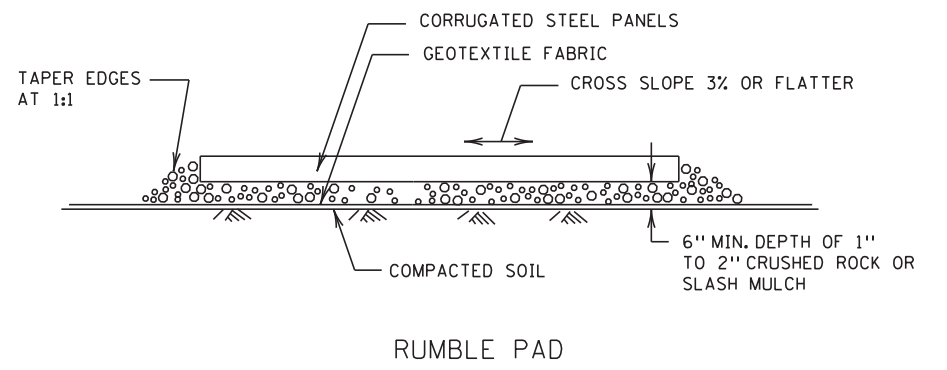
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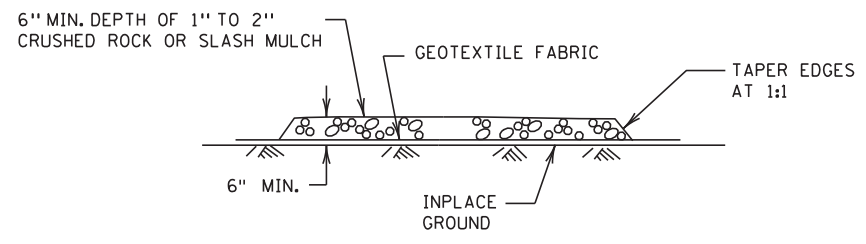
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

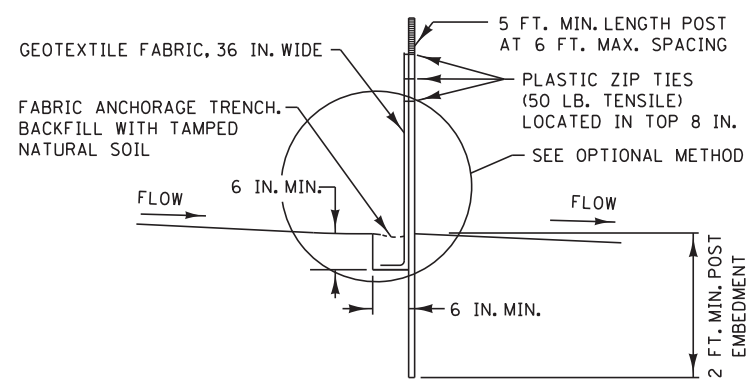
- SEE SPECS. 2573 & 3882.
- ① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
- ② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY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

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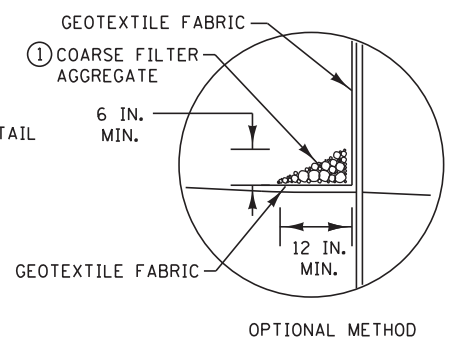
REVISION:  
APPROVED: 8-6-2014  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION  
REVISOR:  
*[Signature]*  
STATE DESIGN ENGINEER  
APPROVED:  
8-6-2014

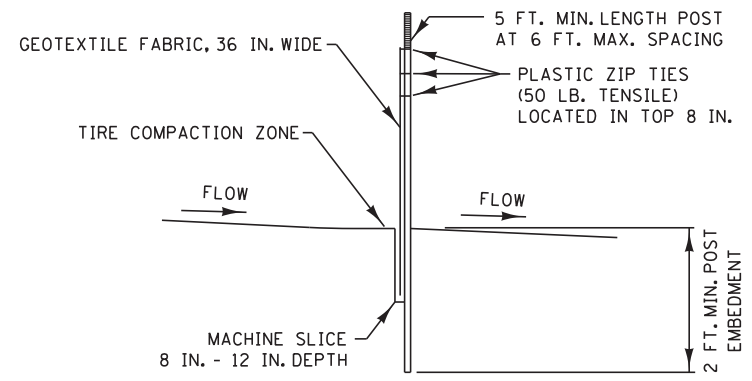
TEMPORARY SEDIMENT CONTROL CONSTRUCTION EXITS		SPN12 OF SPN13
STANDARD PLAN 5-297.405		5 OF 7
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001		SHEET NO. 38 OF 196 SHEETS



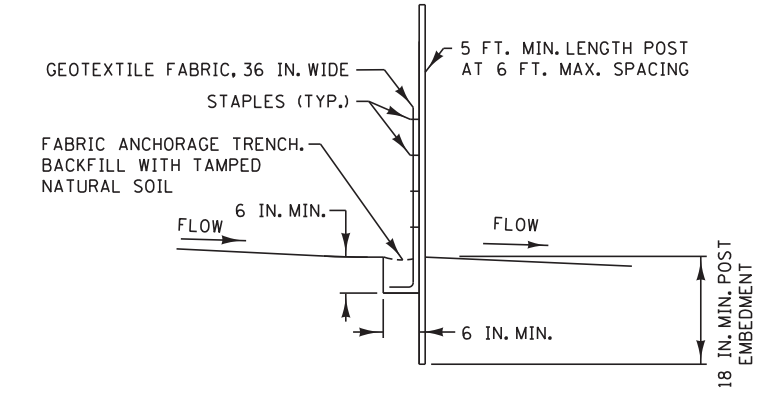
SILT FENCE TYPE HI ②  
(HAND INSTALLED)



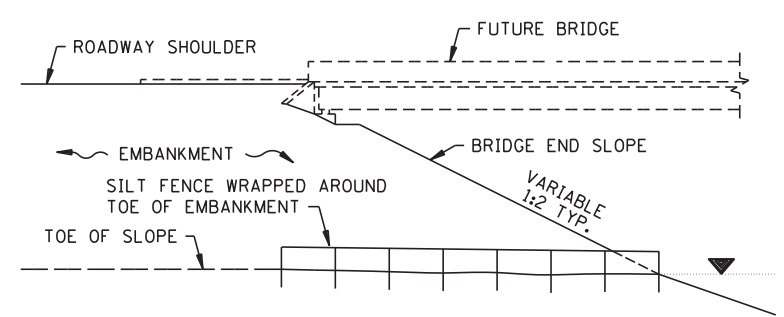
OPTIONAL METHOD



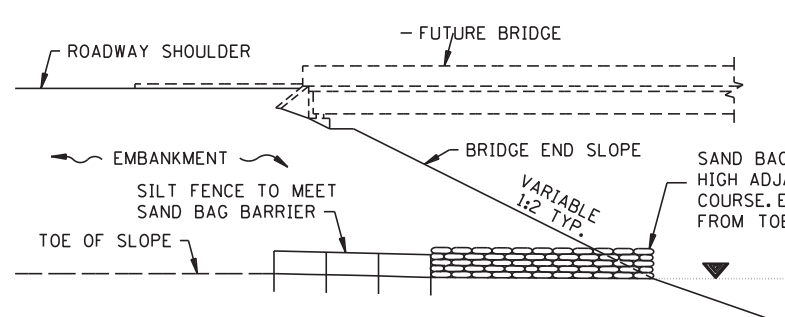
SILT FENCE TYPE MS ②  
(MACHINE SLICED)



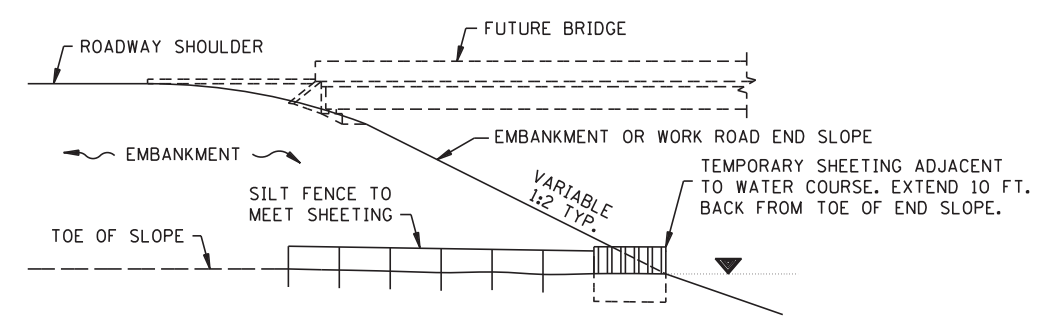
SILT FENCE TYPE PA ③  
(PREASSEMBLED)



SILT FENCE ONLY ④

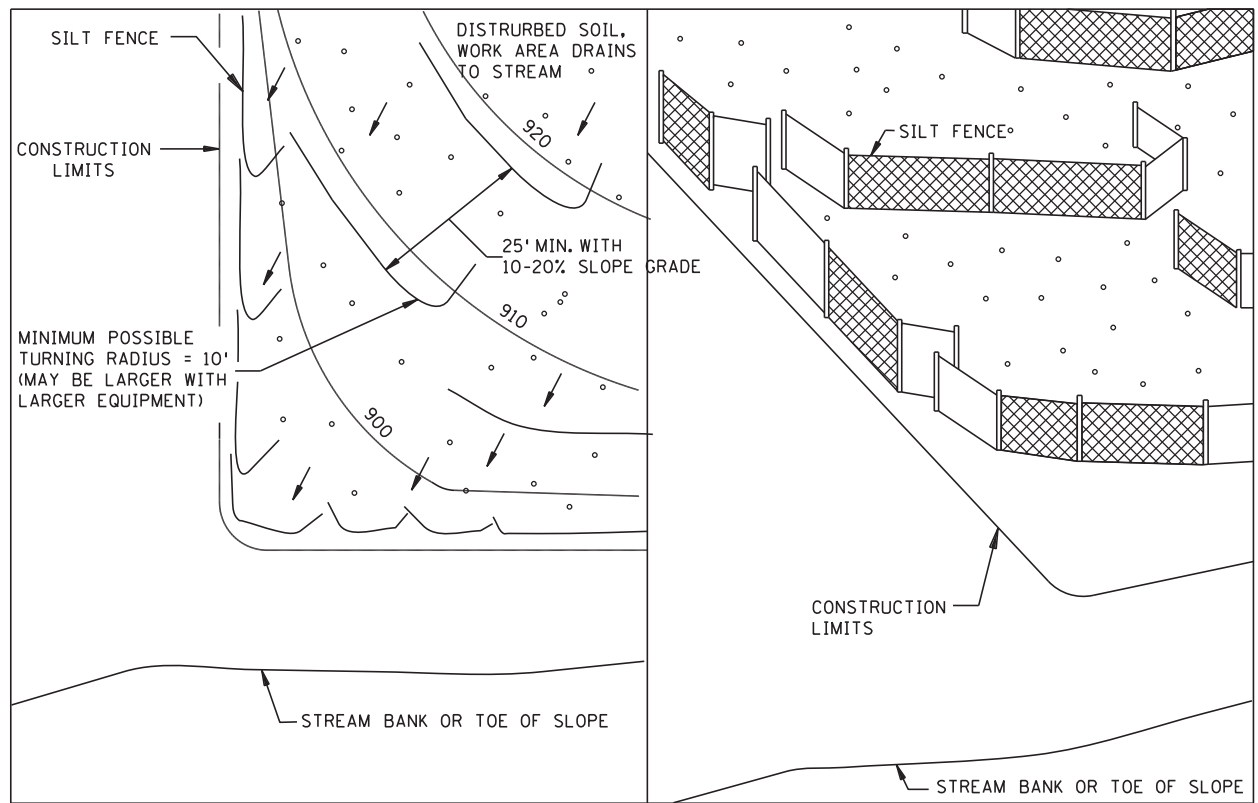


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

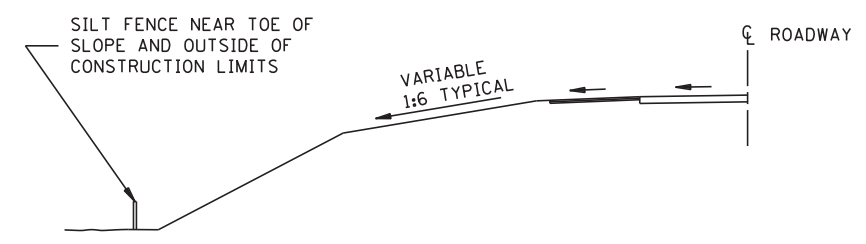
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

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

SPN13  
OF SPN13

TEMPORARY SEDIMENT CONTROL  
SILT FENCE

STANDARD PLAN 5-297.405 6 OF 7

S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001 SHEET NO. 39 OF 196 SHEETS

REVISION:  
APPROVED: 8-6-2014  
*[Signature]*  
CHIEF ENVIRONMENTAL OFFICER

REVISED:  
APPROVED: 8-6-2014  
*[Signature]*  
STATE DESIGN ENGINEER

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
5. AN ANNUAL FALL REVIEW OF ALL TRAFFIC CONTROLS WILL BE MADE TO PREPARE FOR WINTER MAINTENANCE OF THE PROJECT. THIS MAY INCLUDE ADJUSTMENTS OR EXCHANGE OF ONE TRAFFIC CONTROL DEVICE FOR ANOTHER. READJUSTMENTS MAY AGAIN BE REQUIRED IN THE SPRING.
6. IF THE CONTRACTOR DECIDES TO PERFORM THE CONSTRUCTION WORK IN A SEQUENCE OTHER THAN SHOWN IN THIS TRAFFIC CONTROL PLAN THE CONTRACTOR SHALL PROVIDE COMPLETE REVISED TRAFFIC CONTROL PLANS TO BE APPROVED BY THE ENGINEER.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
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 WARNING AND ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MN/DOT APPROVED PRODUCT LIST FOR "SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS".

BARRICADES SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MN/DOT APPROVED PRODUCT LIST FOR BARRICADE SHEETING. NOTE THAT ASTM TYPE VII SHEETING IS NOT ALLOWED ON BARRICADES AFTER JANUARY 1, 2010.

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 PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS PLACED.

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 CAN NOT BE MET.
3. TRPM'S (TEMPORARY RAISED PAVEMENT MARKERS) SHOULD BE USED TO SUPPLEMENT THE LONG TERM (MORE THAN 3 DAYS) EDGELINES ON ALL TRANSITION AREAS WHEN THE CONDITIONS ARE WITHIN THE MANUFACTURERS' SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND INSTALLATION OF TEMPORARY AND FINAL STRIPING. MN/DOT TRAFFIC PERSONNEL WILL ASSIST IN THE SPOTTING OF TRANSITION AREAS, GORES AND TAPERS.

BARRIER & DELINEATION:

1. TOP MOUNTED BARRIER DELINEATORS WILL HAVE A MINIMUM OF 24 SQ. IN. 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 SQ. IN. 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.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN AND WHICH ARE TO BE USED AS FOLLOWS:  
 G20-X1 CLOSURE NOTICE SIGNS PAIRED WITH G20-X3 WORK ENDS SIGNS TO DISPLAY THE CORRECT START DATE AND AN ESTIMATED FINISH DATE AS APPROVED BY THE PROJECT ENGINEER.  
 G20-X2 WORK ZONE ADVANCE NOTICE SIGNS WITH THE CORRECT STARTING DATE DISPLAYED BEFORE WORK BEGINS. ONCE WORK BEGINS, THE START DATE LEGEND SHALL BE COVERED BY THE SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SUGGESTED OR IF DIRECTED BY THE PROJECT ENGINEER, THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON SHALL BE DISPLAYED.  
 CONSTRUCTION INFORMATION SIGNING NOT VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS WILL BE MOVED BY THE CONTRACTOR TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR PROJECT ENGINEER.

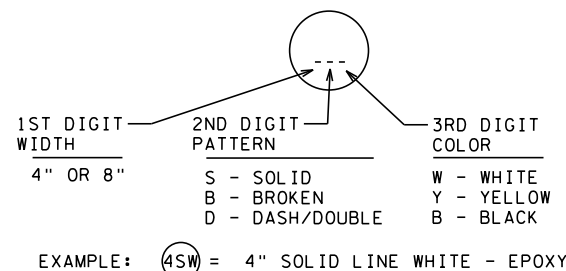
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	WORK AREA
	TEMPORARY CONSTRUCTION
	CONSTRUCT UNDER TRAFFIC
	TRAFFIC CONTROL SIGN
	TYPE III BARRICADE =
	DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TYPE A FLASHING WARNING LIGHT
	EXISTING/IN-PLACE SIGN

STRIPING KEY

	CIRCLE - EPOXY		SQUARE - POLY PREFORM
	TRIANGLE - PAINT		
	PENTAGON - REMOVEABLE PREFORMED PLASTIC MARKING		



INDEX

TRAFFIC CONTROL SHEET NO	DESCRIPTIONS
TC1	TITLE SHEET PAY ITEM TABULATION
TC2	TRAFFIC CONTROL TABULATION SHEET
TC3 - TC4	DETOUR SHEETS
TC5 - TC13	TRAFFIC CONTROL STAGE 1
TC14 - TC23	TRAFFIC CONTROL STAGE 2
TC24 - TC30	TRAFFIC CONTROL STAGE 3
TC31	TRAFFIC CONTROL DETAIL

TRAFFIC CONTROL - QUANTITIES SUMMARY (PAY ITEMS) [P]

ITEM	DESCRIPTION	UNIT	STAGE 1	STAGE 2	STAGE 3	TOTAL QUANTITY
2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	0.4	0.4	0.2	1
2563.601	TRAFFIC CONTROL	LUMP SUM	0.4	0.4	0.2	1
2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	570	306	150	1026
2563.618	CONSTRUCTION SIGN-SPECIAL	SQ FT	74.25	87.75		162
2581.501	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	2325	3525	2345	8195
2582.502	4" SOLID LINE WHITE-PAINT	LIN FT	17985	19960	10980	48925
2582.502	4" SOLID LINE YELLOW-PAINT	LIN FT	230	8985	8080	17295
2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT	LIN FT	8405	4585		12990

SPECIFIC NOTES:

(1) 4775 FT 4" SOLID LINE WHITE; 2265 FT 4" SOLID LINE YELLOW; 1155 FT 4" DOUBLE SOLID LINE YELLOW

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

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 A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

TRAFFIC CONTROL  
 TITLE SHEET

FILE NO. 40  
 126669  
 TC1 OF TC31  
 196



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TC2

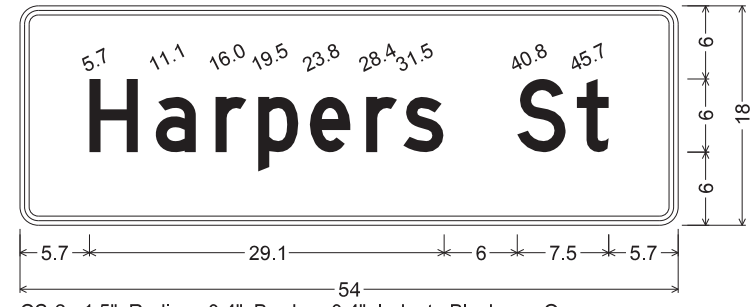
TRAFFIC CONTROL SIGNS / DEVICES ( INCIDENTAL )			
SIGN OR DEVICE	CODE NO.	COLOR	SIZE ( IN. )
	R1-1	WHITE ON RED	36 x 36
	R2-1	BLACK ON WHITE	24 x 30
	R2-6bP	BLACK ON WHITE	24 x 18
	R3-2	BLACK AND RED ON WHITE	24 x 24
	R3-30AA	BLACK ON WHITE	36 x 30
	R3-30ACD	BLACK ON WHITE	54 x 30
	R3-5R	BLACK ON WHITE	30 x 36
	R3-6L	BLACK ON WHITE	30 x 36
	R3-6R	BLACK ON WHITE	30 x 36
	R4-1	BLACK ON WHITE	24 x 30
	R4-7	BLACK ON WHITE	18 x 30
	R5-1	RED ON WHITE	36 x 36
	R5-1	BLACK ON WHITE	54 x 18
	R9-3	BLACK AND RED ON WHITE	18 x 18
	R9-9	BLACK ON ORANGE	48 x 30
	R9-9a	BLACK ON ORANGE	48 x 30
	R11-2	BLACK ON ORANGE	48 x 30

TRAFFIC CONTROL SIGNS / DEVICES ( INCIDENTAL )			
SIGN OR DEVICE	CODE NO.	COLOR	SIZE ( IN. )
	W1-4L	BLACK ON ORANGE	36 x 36
	W1-4R	BLACK ON ORANGE	36 x 36
	W1-6	BLACK ON ORANGE	48 x 24
	W3-5	BLACK ON ORANGE	36 x 36
	W4-2	BLACK ON ORANGE	36 x 36
	W6-3	BLACK ON ORANGE	36 x 36
	W12-1	BLACK ON ORANGE	36 x 36
	W13-1P	BLACK ON ORANGE	24 x 24
	W13-1P	BLACK ON ORANGE	24 x 24
	W13-1P	BLACK ON ORANGE	24 x 24
	W14-3	BLACK ON ORANGE	48 x 64 x 64
	W16-2P	BLACK ON ORANGE	30 x 24
	W20-1	BLACK ON ORANGE	36 x 36
	W20-2	BLACK ON ORANGE	36 x 36
	W20-3	BLACK ON ORANGE	36 x 36
	W20-X3L	BLACK ON ORANGE	36 x 36
	W21-X5R	BLACK ON ORANGE	36 x 36

TRAFFIC CONTROL SIGNS / DEVICES ( INCIDENTAL )			
SIGN OR DEVICE	CODE NO.	COLOR	SIZE ( IN. )
	M1-6	WHITE AND YELLOW ON BLUE	24 x 24
	M3-1	BLACK ON WHITE	24 x 12
	M3-2a	WHITE ON BLUE	24 x 12
	M3-3	BLACK ON WHITE	24 x 12
	M3-4a	WHITE ON BLUE	24 x 12
	M4-5a	WHITE ON BLUE	24 x 12
	M4-8	BLACK ON ORANGE	24 x 12
	M4-8a	BLACK ON ORANGE	24 x 18
	M4-10L	BLACK ON ORANGE	48 x 18
	M4-10R	BLACK ON ORANGE	48 x 18
	M5-1aL	WHITE ON BLUE	21 x 15
	M5-1aR	WHITE ON BLUE	21 x 15
	M6-1a	WHITE ON BLUE	21 x 15

TRAFFIC CONTROL SIGNS / DEVICES ( INCIDENTAL )			
SIGN OR DEVICE	CODE NO.	COLOR	SIZE ( IN. )
	G20-1	BLACK ON ORANGE	84 x 36
	G20-2a	BLACK ON ORANGE	84 x 36
	G20-5aP	BLACK ON ORANGE	24 x 18
	G20-X1	BLACK ON ORANGE	72 x 60
	G20-X2	BLACK ON ORANGE	132 x 108
	G20-X9R	BLACK ON ORANGE	30 x 36
	CS-2	BLACK ON ORANGE	54 x 18
	FLASHING ARROW BOARD	-	-
	TYPE "A" FLASHER	-	-
	TUBE DELIN-EATOR	WHITE ON ORANGE	-
	REFLEC-TORIZED DRUM	WHITE ON ORANGE	-
	TYPE III	WHITE ON ORANGE	8 FOOT

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.



CS-2; 1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange; [Harpers St] D;

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: MAW				
CHECKED BY: MAW				
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 A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

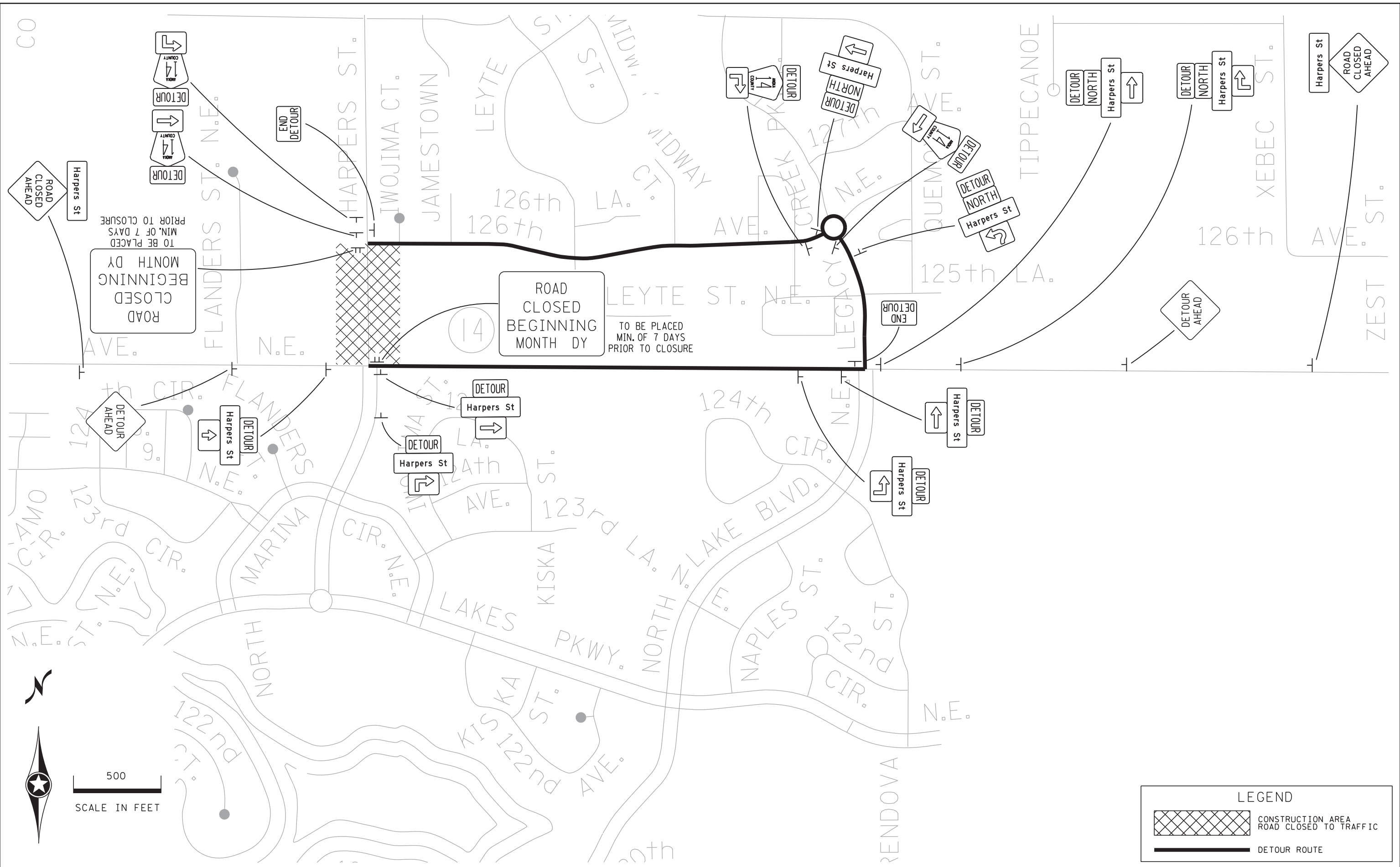
**SEH**  
 PHONE: (651)490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

TRAFFIC CONTROL  
 TABULATION

FILE NO. 126669	41
TC2 OF TC31	196

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 10/21/2015 8:41:44 AM



ROAD CLOSED  
 BEGINNING  
 MONTH DY  
 TO BE PLACED  
 MIN. OF 7 DAYS  
 PRIOR TO CLOSURE

ROAD CLOSED  
 BEGINNING  
 MONTH DY  
 TO BE PLACED  
 MIN. OF 7 DAYS  
 PRIOR TO CLOSURE

**LEGEND**

CONSTRUCTION AREA  
 ROAD CLOSED TO TRAFFIC

DETOUR ROUTE

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

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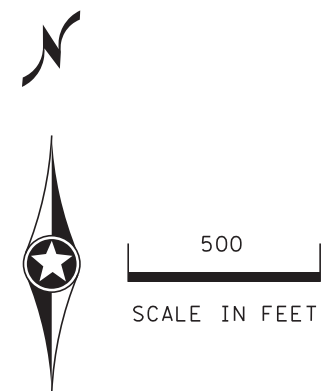
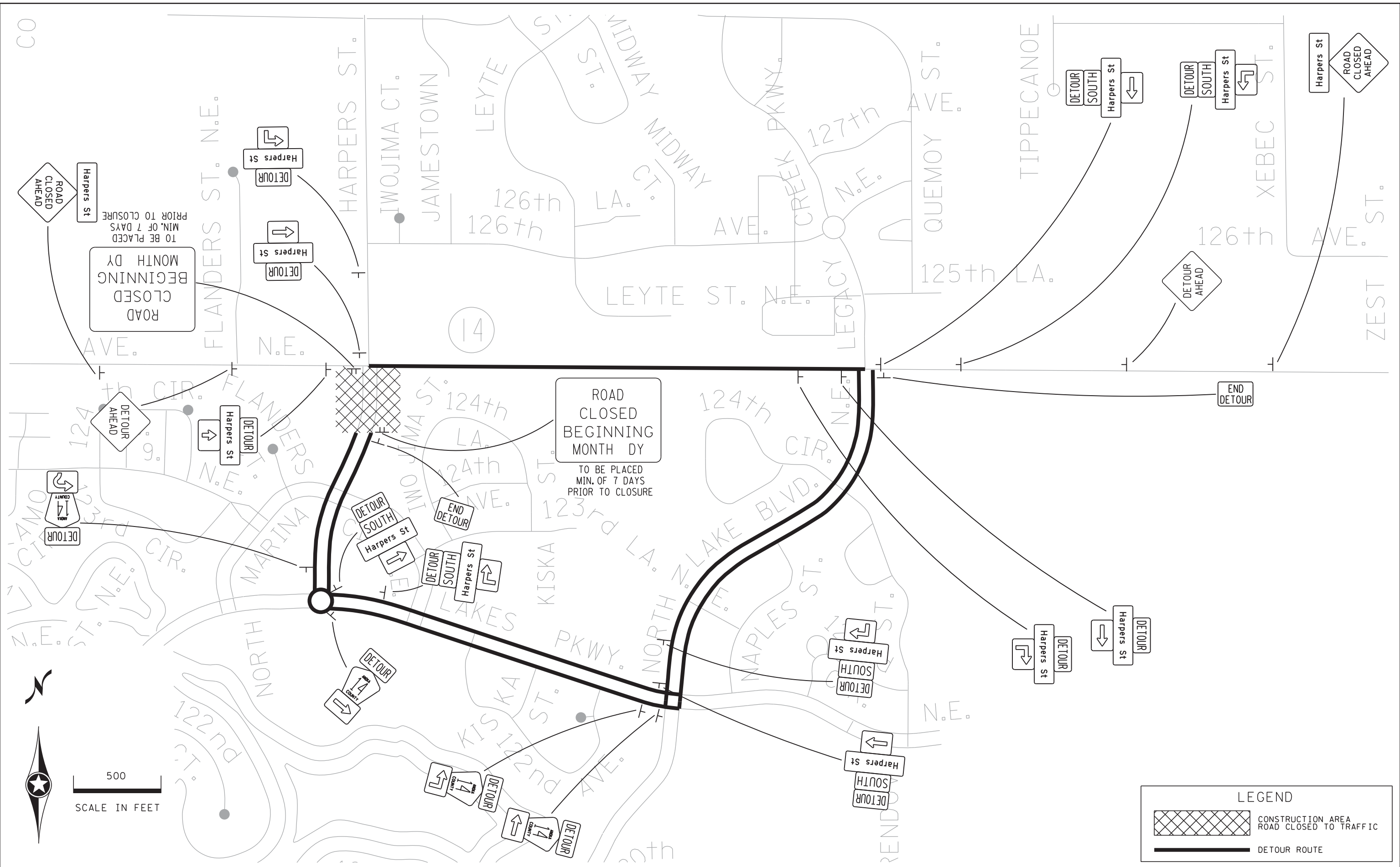
**SEH**  
 PHONE: (651)490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
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 S.A.P. 106-137-001

**DETOUR PLAN**  
 STAGE 1

FILE NO. 126669	<b>42</b>
TC3 OF TC31	<b>196</b>

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LEGEND	
	CONSTRUCTION AREA ROAD CLOSED TO TRAFFIC
	DETOUR ROUTE

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

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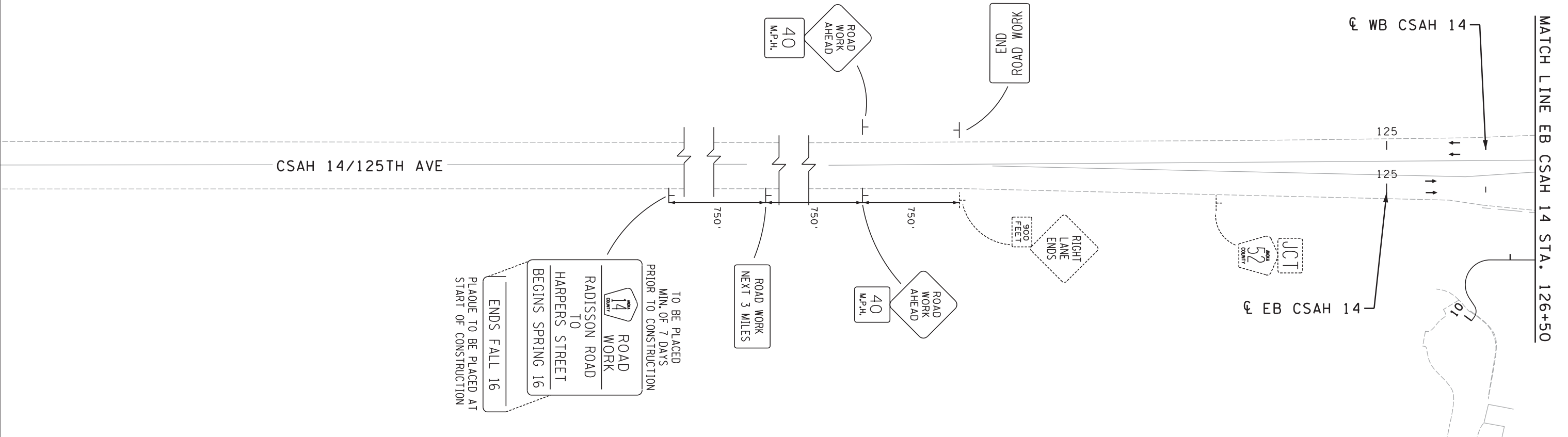
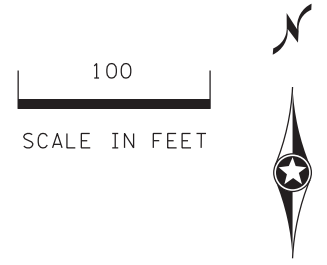
**SEH**  
 PHONE: (651)490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
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 S.A.P. 106-137-001

**DETOUR PLAN**  
 STAGE 2

FILE NO.	43
126669	
TC4	196
OF TC31	

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ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

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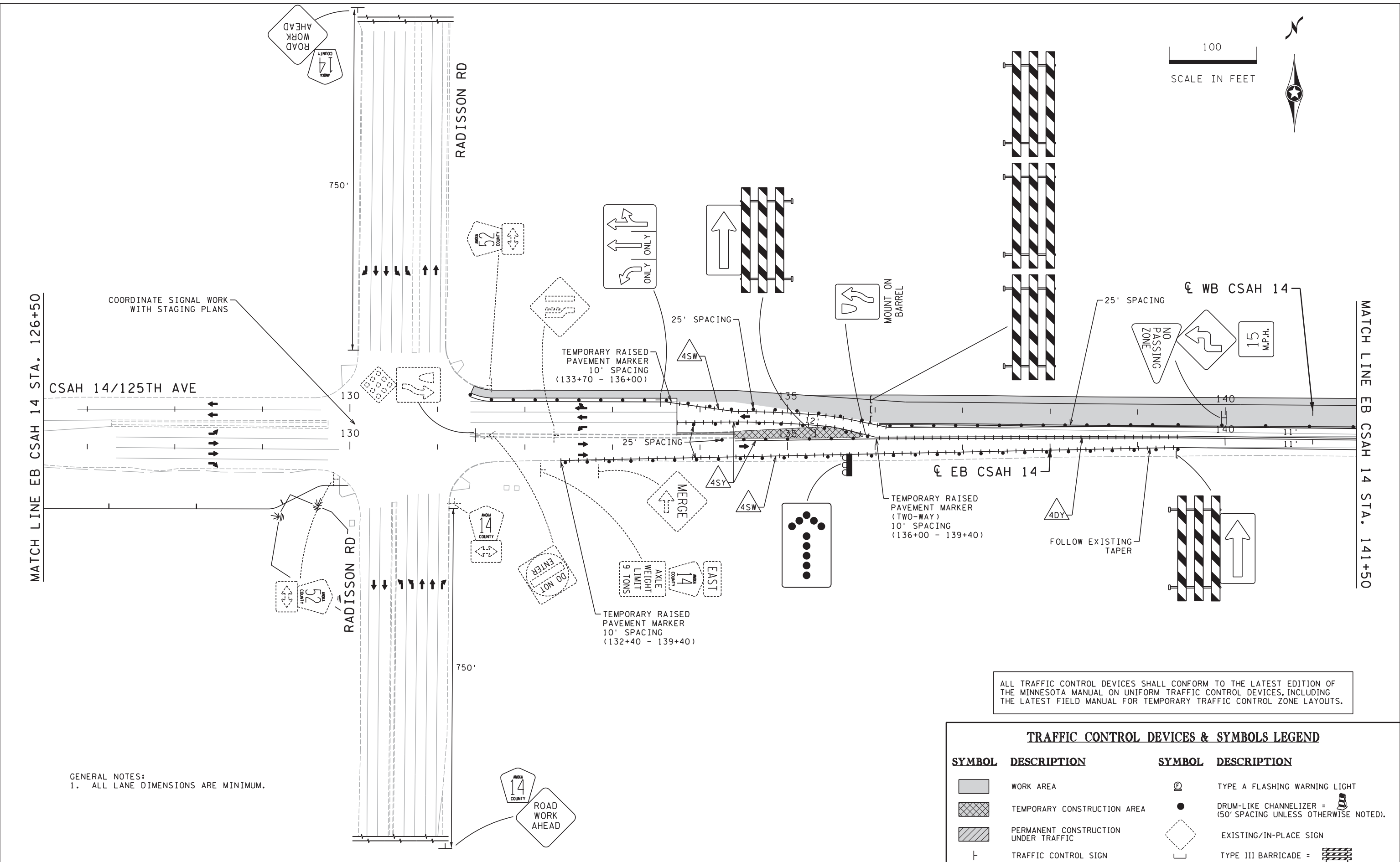
Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - EB CSAH 14 STA. 125+00 TO 126+50

FILE NO. 126669	44
TC5 OF TC31	196



COORDINATE SIGNAL WORK WITH STAGING PLANS

MATCH LINE EB CSAH 14 STA. 126+50

MATCH LINE EB CSAH 14 STA. 141+50

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

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 Printed Name: MARK A. WAGNER Date: 10/21/2015

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 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

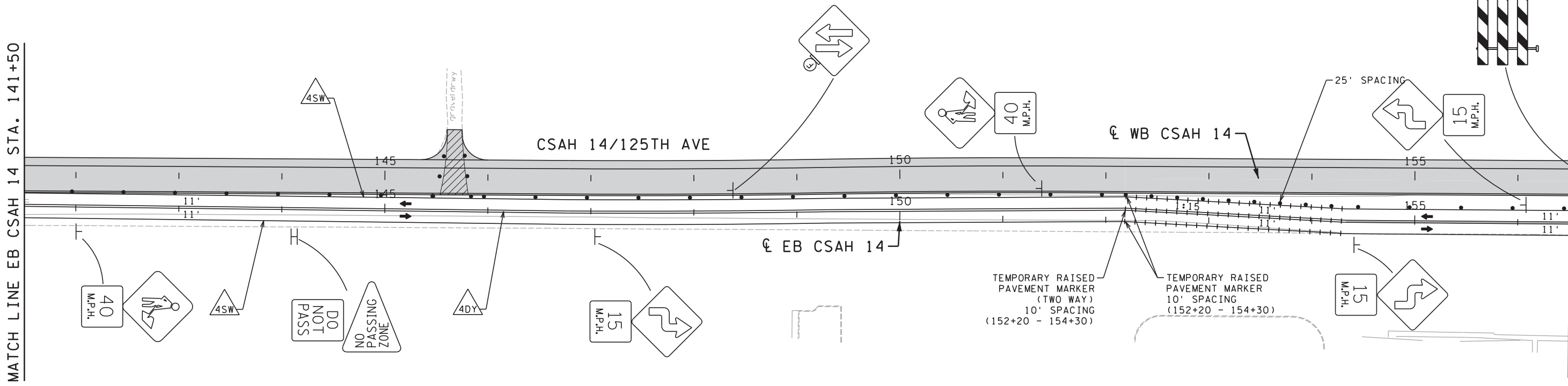
**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - EB CSAH 14 STA. 126+50 TO 141+50

FILE NO. 45  
 126669  
 TC6  
 OF TC31  
 196

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MATCH LINE EB CSAH 14 STA. 141+50

MATCH LINE EB CSAH 14 STA. 156+50



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

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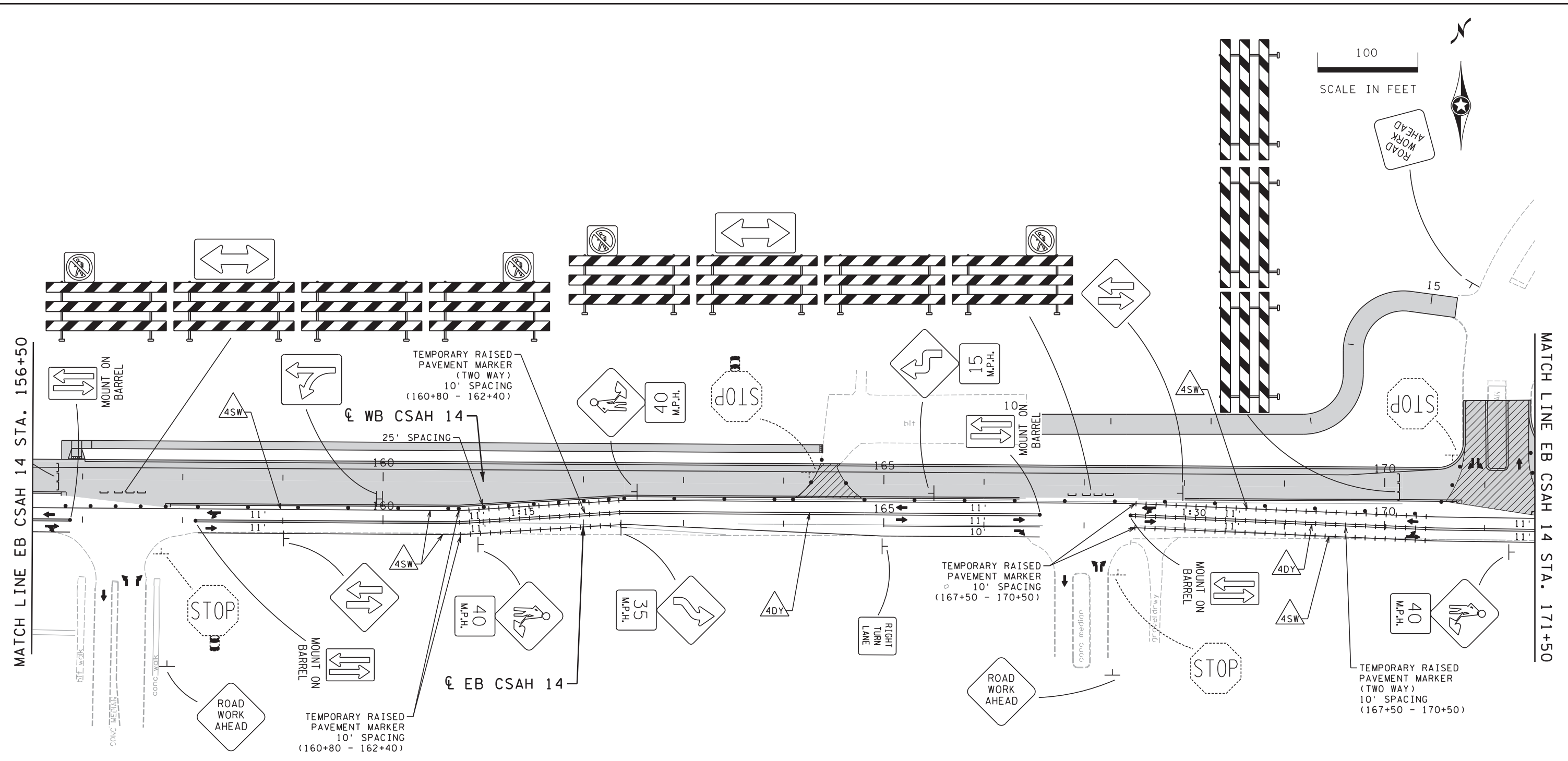


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - EB CSAH 14 STA. 141+50 TO 156+50

FILE NO. 46  
 126669  
 TC7  
 OF TC31  
 196

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GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - EB CSAH 14 STA. 156+50 TO 171+50

FILE NO. 126669  
**TC8**  
 OFTC31

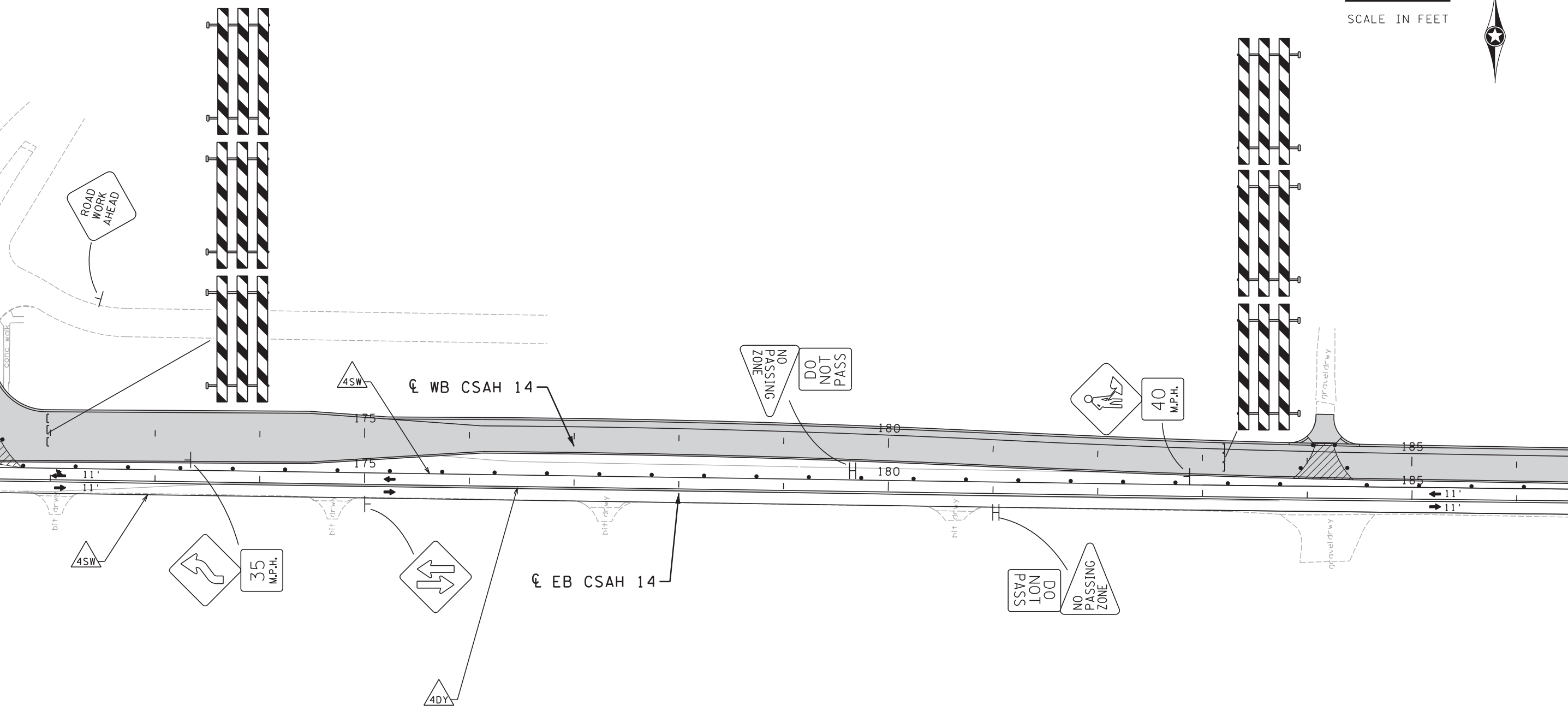
47  
196

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MATCH LINE EB CSAH 14 STA. 171+50

MATCH LINE EB CSAH 14 STA. 186+50



GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

DESIGN TEAM			
NO.	BY	DATE	REVISIONS
1	CIF		
2	MAW		
3	MAW		

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Certified By: *Mark A. Wagner* Lic. No. 51660  
Printed Name: MARK A. WAGNER Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
STAGE 1 - EB CSAH 14 STA. 171+50 TO 186+50

FILE NO. 48  
126669  
TC9  
OF TC31  
196



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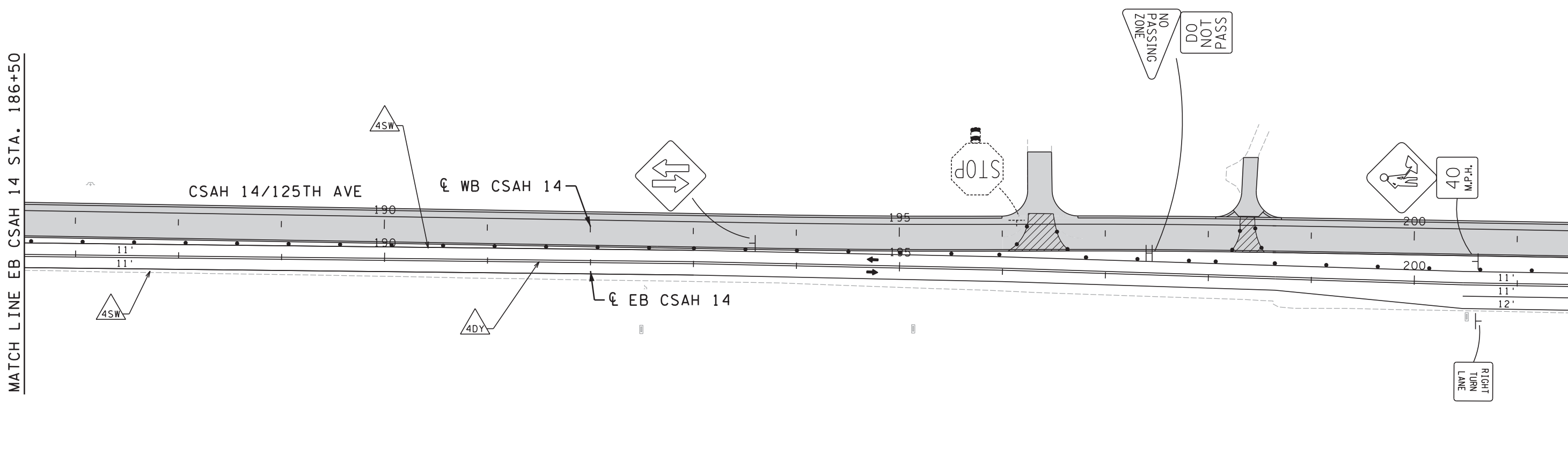
100  
SCALE IN FEET



E

MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50



GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

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

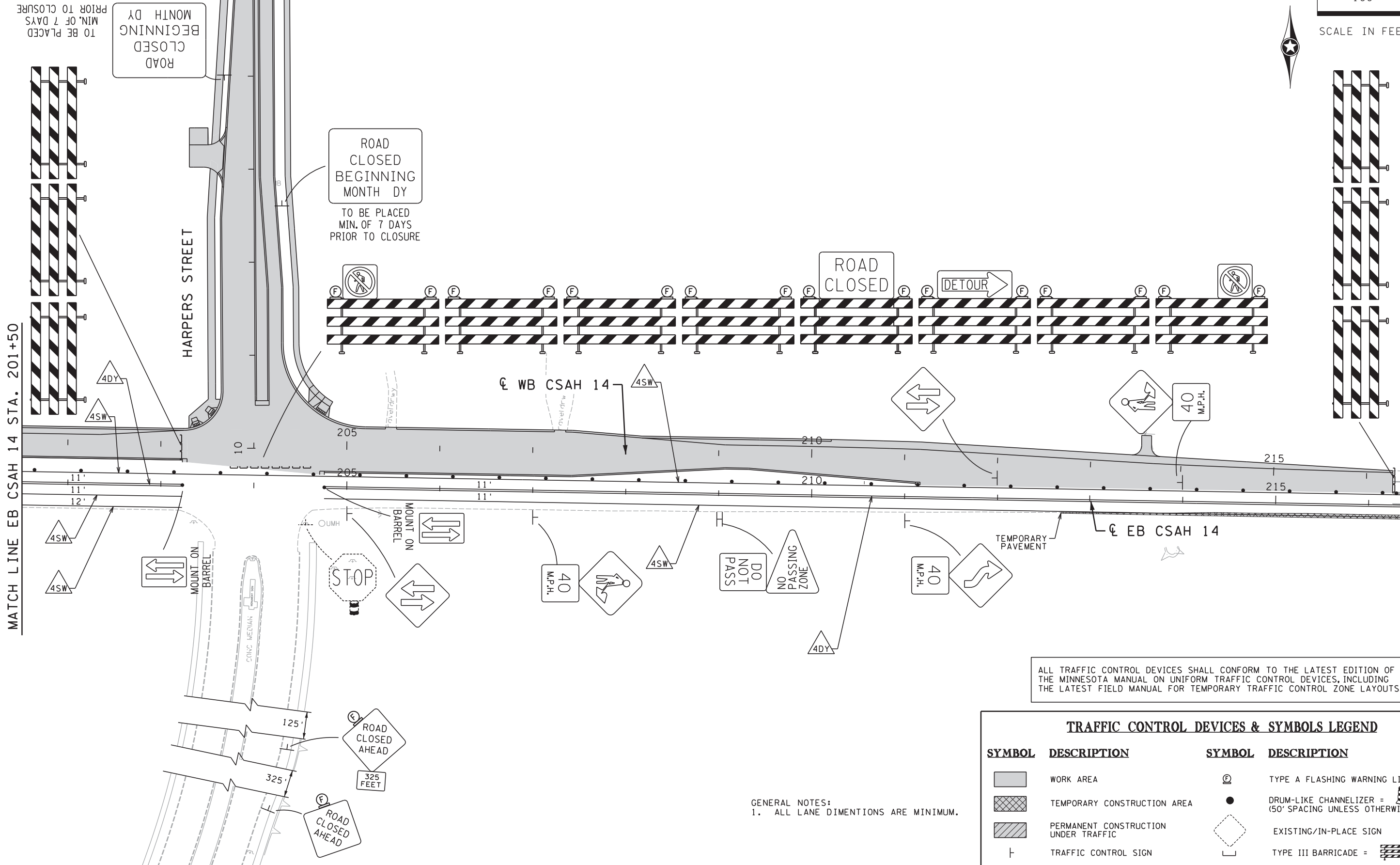
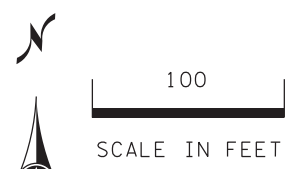
CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
STAGE 1 - EB CSAH 14 STA. 186+50 TO 201+50

FILE NO. 49  
126669  
TC10 OF TC31  
196

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 10/21/2015 8:41:49 AM  
 TC11

MATCH LINE HARPERS STREET STA. 15+00



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

GENERAL NOTES:  
 1. ALL LANE DIMENTIONS ARE MINIMUM.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

DESIGN TEAM			
NO.	BY	DATE	REVISIONS
1	CIF		
2	MAW		
3	MAW		

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
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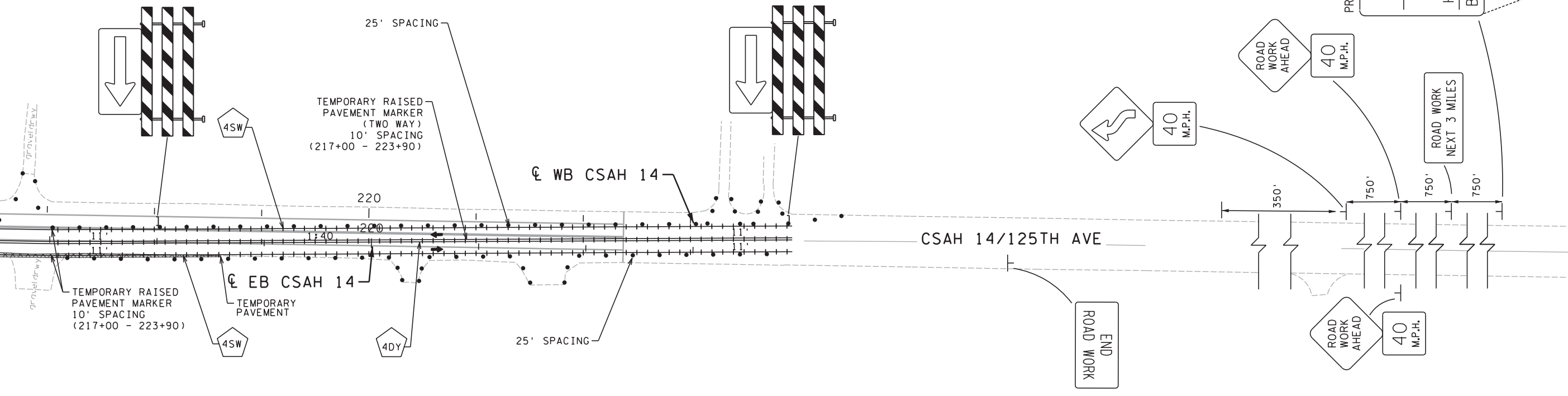
**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - EB CSAH 14 STA. 201+50 TO 216+50  
 HARPERS STREET STA. 10+00 TO 15+00

FILE NO. 126669  
**50**  
 TC11 OF TC31  
**196**

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MATCH LINE EB CSAH 14 STA. 216+50



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

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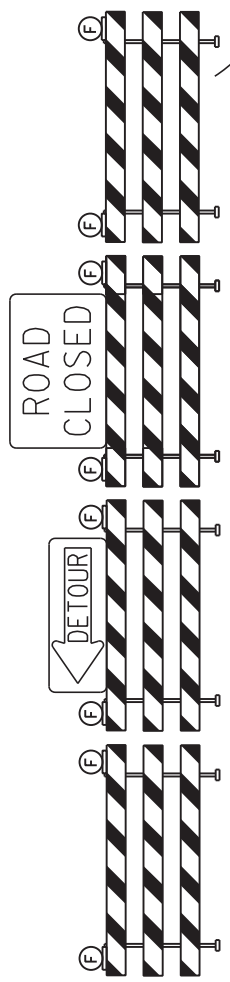
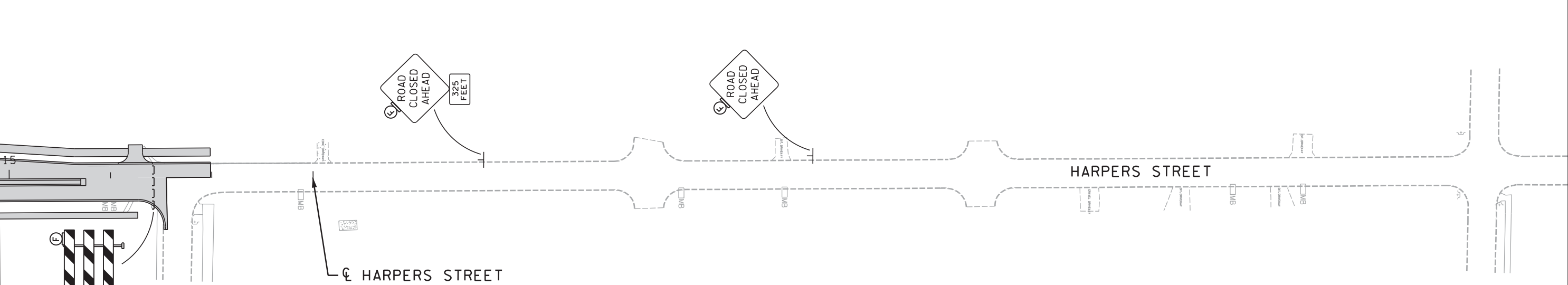
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - EB CSAH 14 STA. 216+50 TO 223+51

FILE NO.	126669	51
TC12 OF TC31		196



MATCH LINE HARPERS STREET STA. 15+00



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	TEMPORARY CONSTRUCTION AREA		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	PERMANENT CONSTRUCTION UNDER TRAFFIC		EXISTING/IN-PLACE SIGN
	TRAFFIC CONTROL SIGN		TYPE III BARRICADE =

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

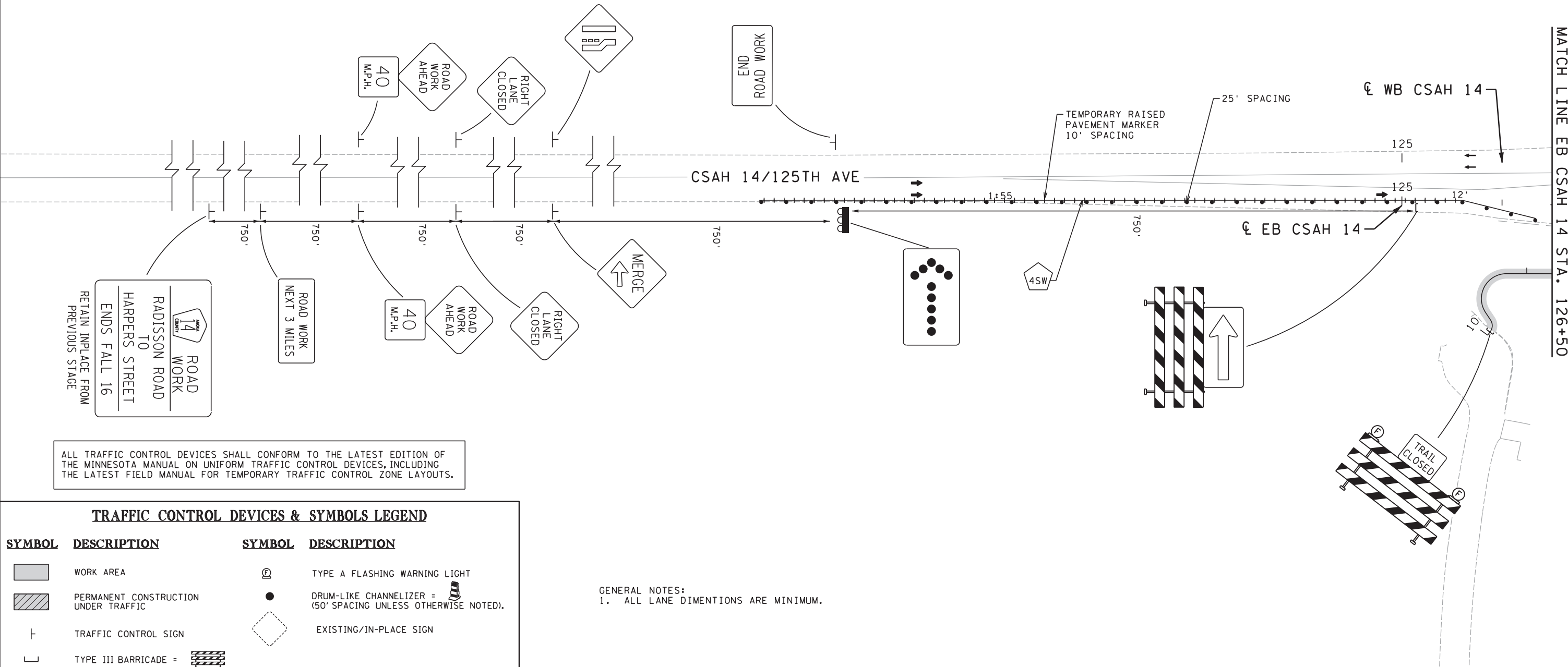
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: **MARK A. WAGNER** Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 1 - HARPERS STREET STA. 15+00 TO 18+09



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**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

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

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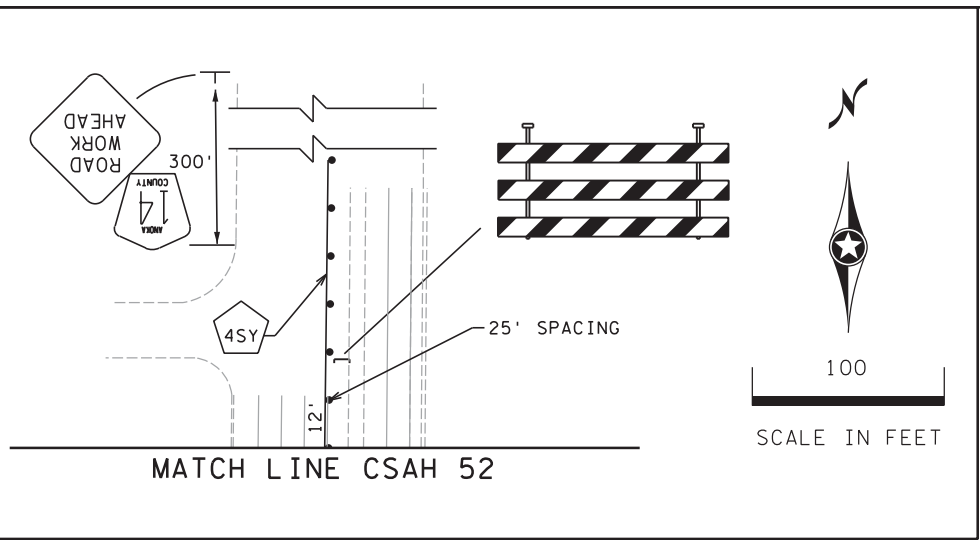
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - EB CSAH 14 STA. 125+00 TO 126+50

FILE NO.	126669	53
TC14 OF TC31		196

MATCH LINE CSAH 52

RADISSON RD



MATCH LINE CSAH 52

100  
SCALE IN FEET

MATCH LINE EB CSAH 14 STA. 126+50

MATCH LINE EB CSAH 14 STA. 141+50

COORDINATE SIGNAL WORK WITH STAGING PLANS

TEMPORARY RAISED PAVEMENT MARKER  
10' SPACING  
(133+70 - 136+00)

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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 A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015



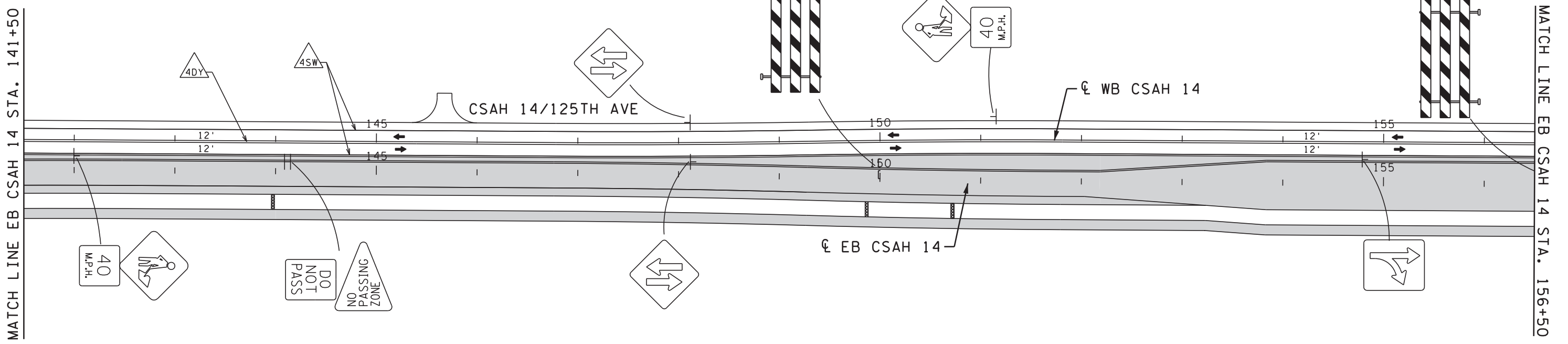
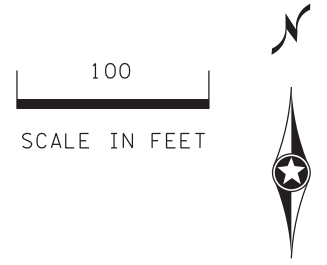
PHONE: (651)490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - EB CSAH 14 STA. 126+50 TO 141+50

FILE NO. 54  
 126669  
 TC15 OF TC31  
 196

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



GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

DESIGN TEAM				
NO.	BY	DATE	REVISIONS	

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 Printed Name: MARK A. WAGNER Date: 10/21/2015

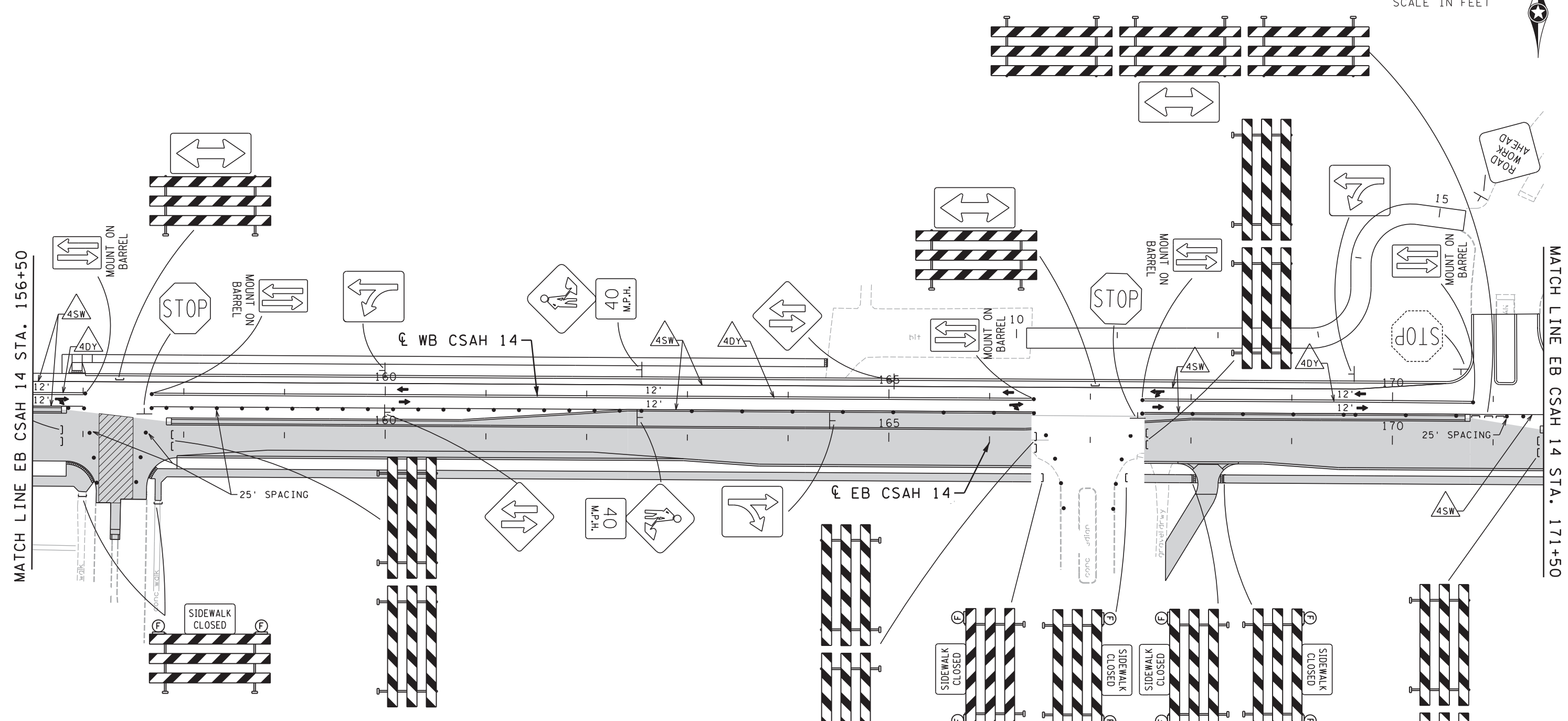


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - EB CSAH 14 STA. 141+50 TO 156+50

FILE NO. 126669	55
TC16 OF TC31	196

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**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

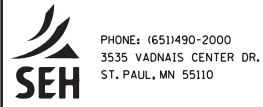
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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

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**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - EB CSAH 14 STA. 156+50 TO 171+50

FILE NO.	126669	56
TC17	OF TC31	196



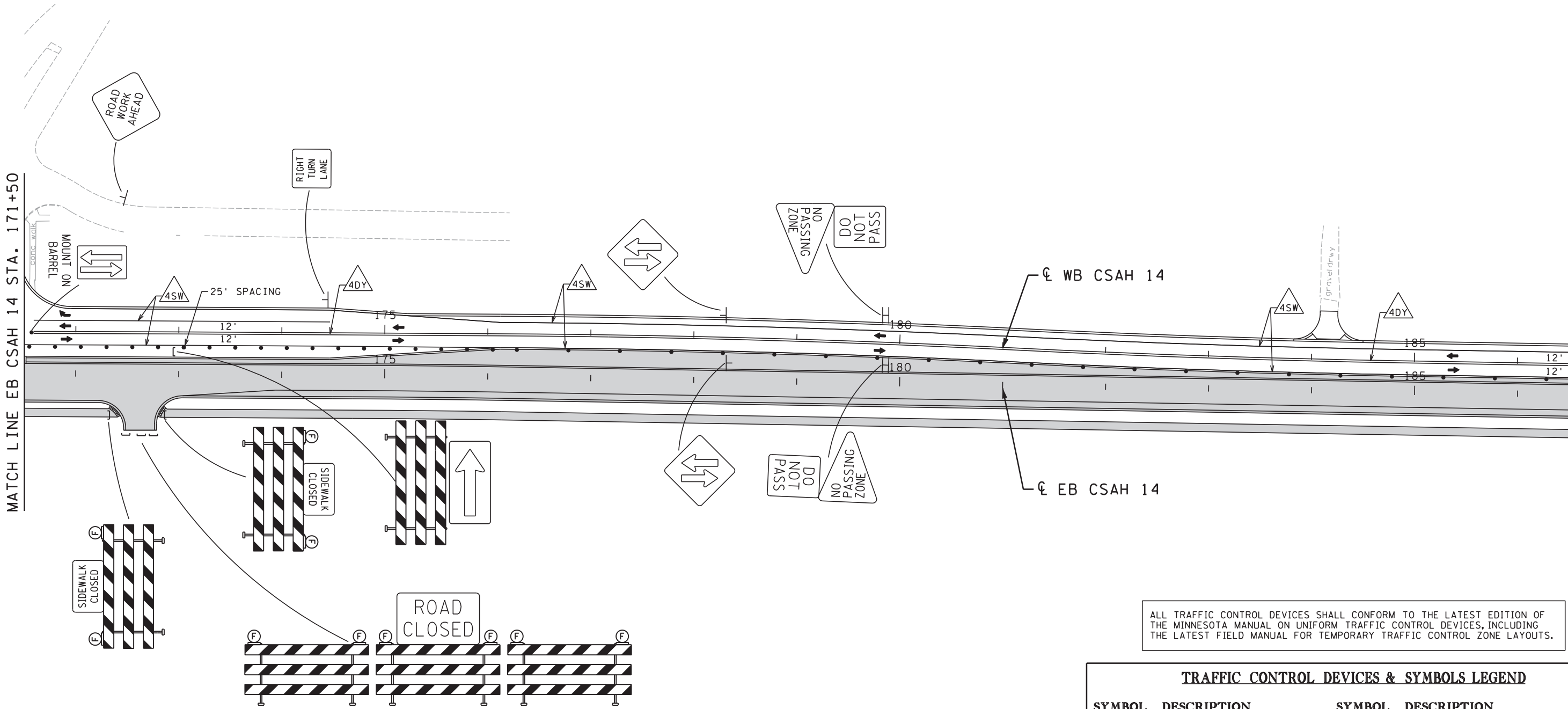
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100  
SCALE IN FEET



MATCH LINE EB CSAH 14 STA. 171+50

MATCH LINE EB CSAH 14 STA. 186+50



GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

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

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 Printed Name: MARK A. WAGNER Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - EB CSAH 14 STA. 171+50 TO 186+50

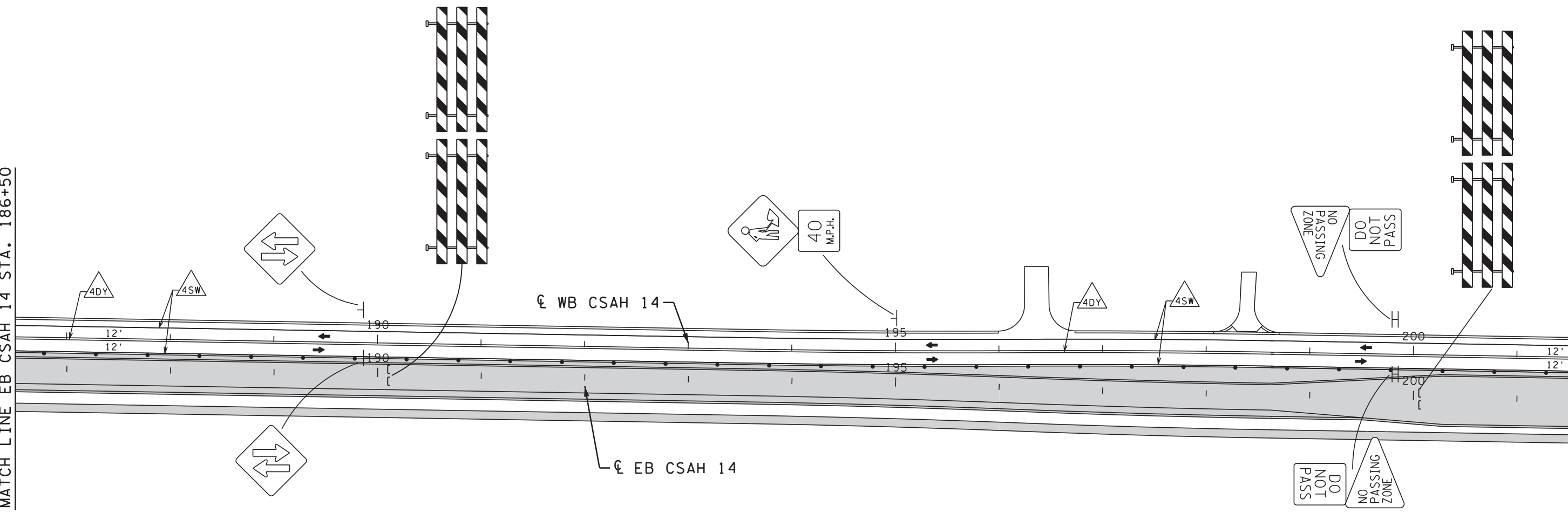
FILE NO. 126669  
**57**  
 TC18 OF TC31  
**196**

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MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50



GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

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

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 PHONE: (651)490-2000  
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 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
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**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - EB CSAH 14 STA. 186+50 TO 201+50

FILE NO.	126669	58
TC19	OF TC31	196

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MATCH LINE HARPERS STREET STA. 15+00

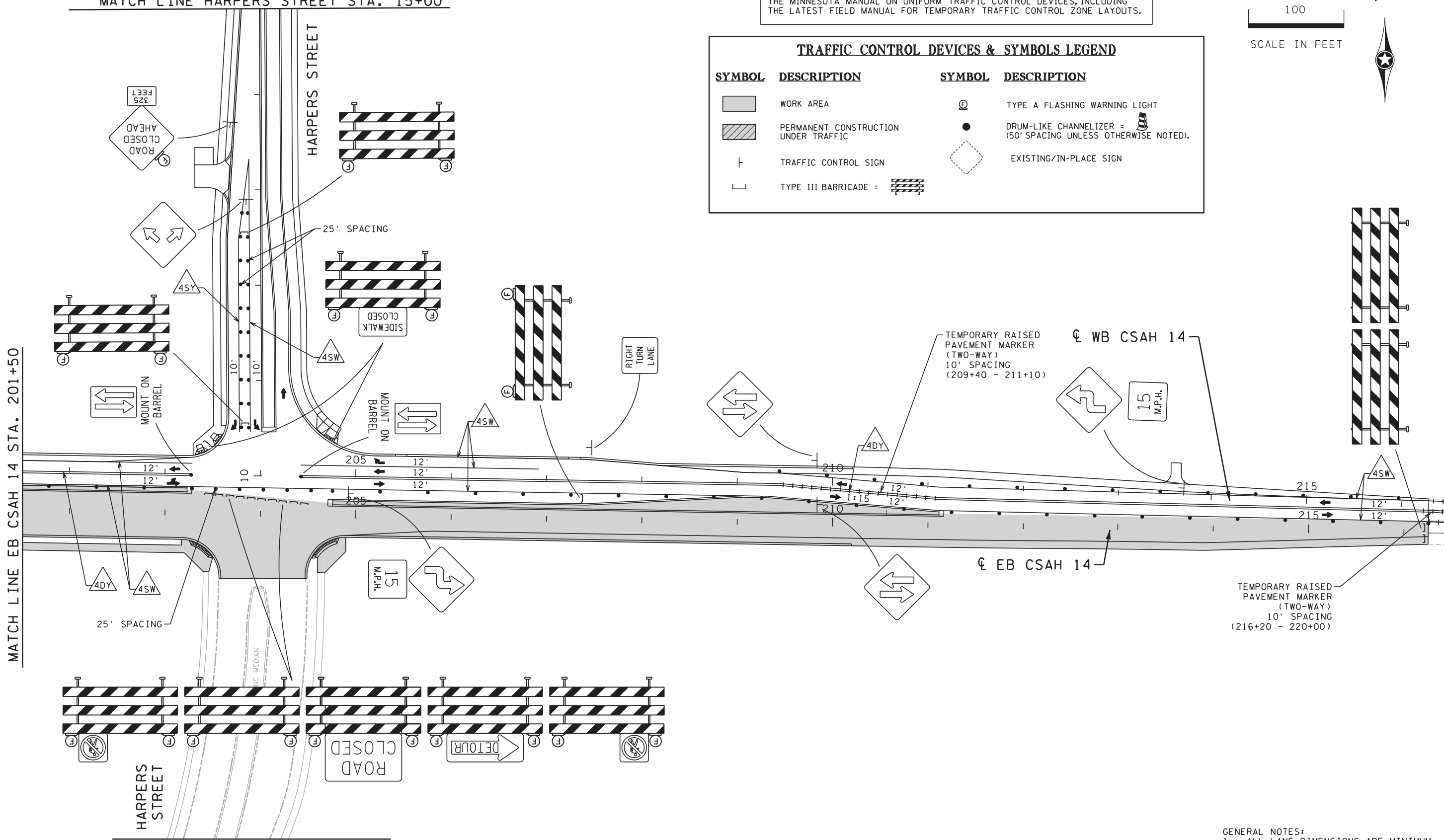
ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.



TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

MATCH LINE EB CSAH 14 STA. 201+50

MATCH LINE EB CSAH 14 STA. 216+50



MATCH LINE - SEE SHEET TC23

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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

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CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

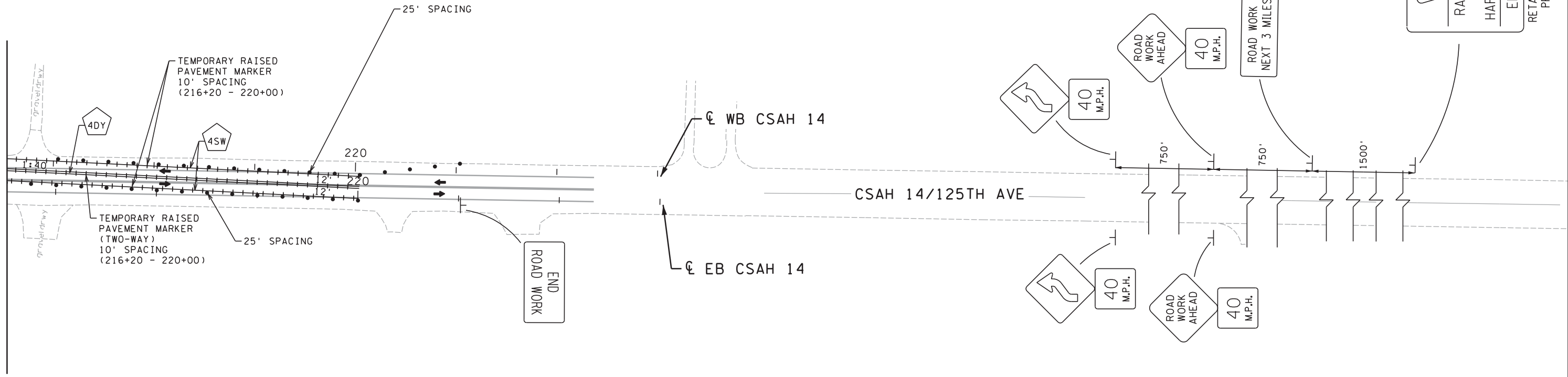
**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
STAGE 2 - EB CSAH 14 STA. 201+50 TO 216+50  
HARPERS STREET STA. 10+00 TO 15+00

FILE NO.	126669	59
TC20	OF TC31	196

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MATCH LINE EB CSAH 14 STA. 216+50



ROAD WORK  
RADISSON ROAD  
TO  
HARPERS STREET  
ENDS FALL 16  
RETAIN IN PLACE FROM  
PREVIOUS STAGE

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

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

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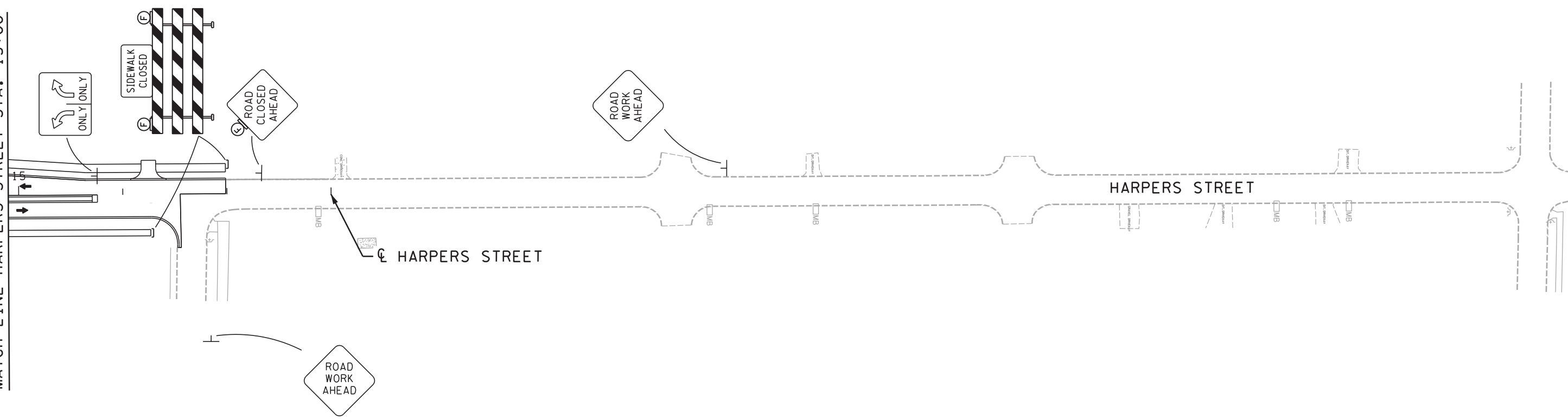
CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
STAGE 2 - EB CSAH 14 STA. 216+50 TO 223+51

FILE NO.	126669	60
TC21 OF TC31		196



MATCH LINE HARPERS STREET STA. 15+00



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

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

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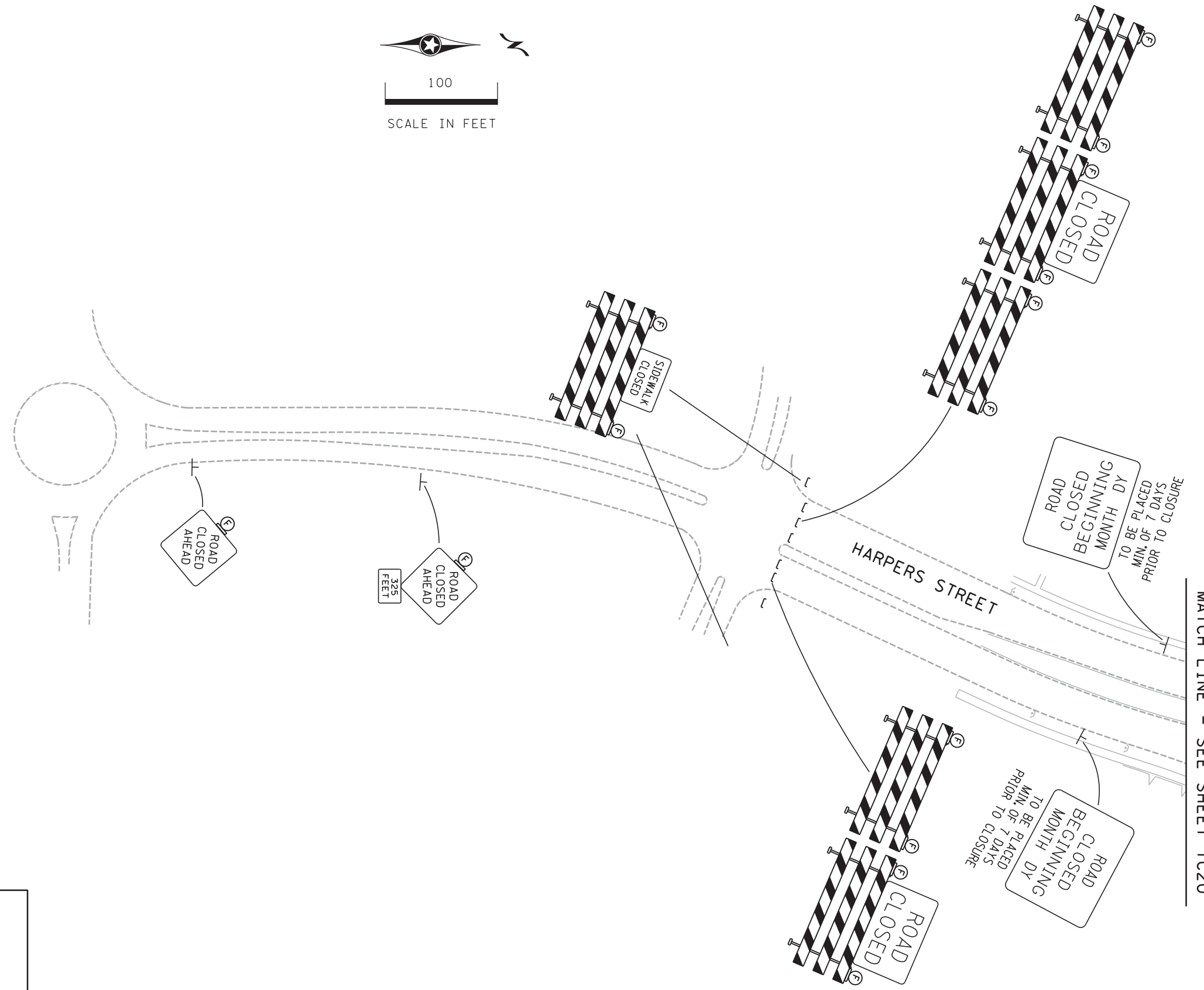
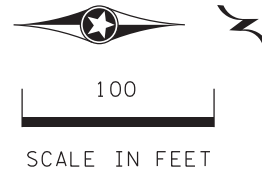
Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - HARPERS STREET STA. 15+00 TO 18+09

FILE NO. 126669	61
TC22 OF TC31	196



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

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

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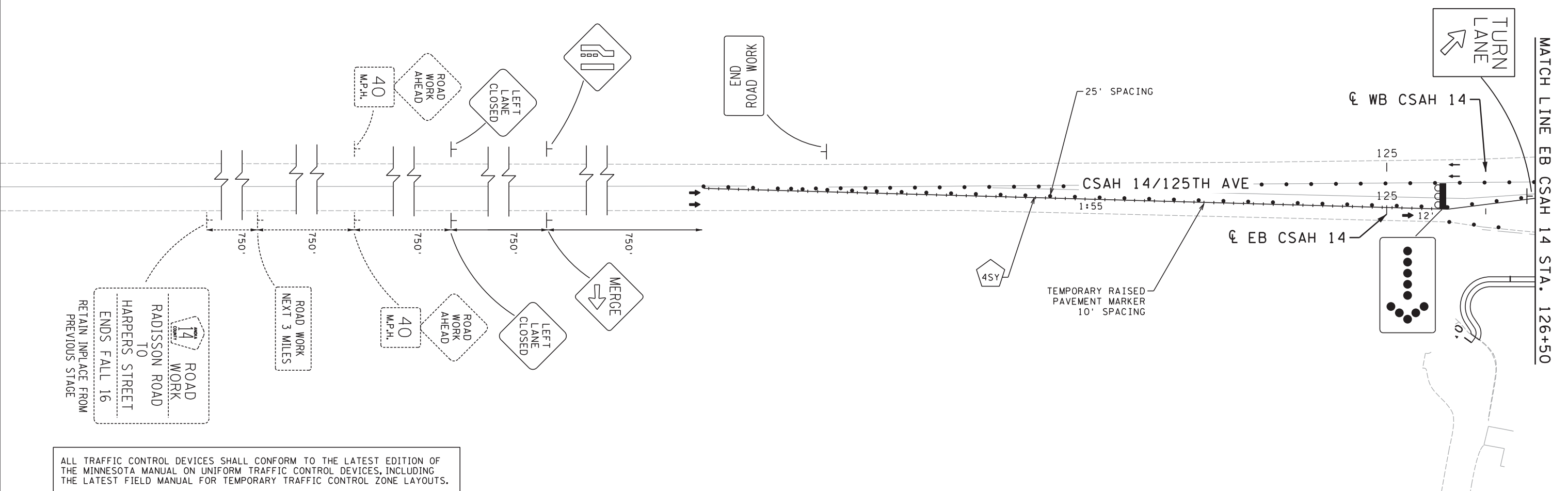
Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: **MARK A. WAGNER** Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 2 - HARPERS STREET

FILE NO.	126669	62
TC23 OF TC31		196



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

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

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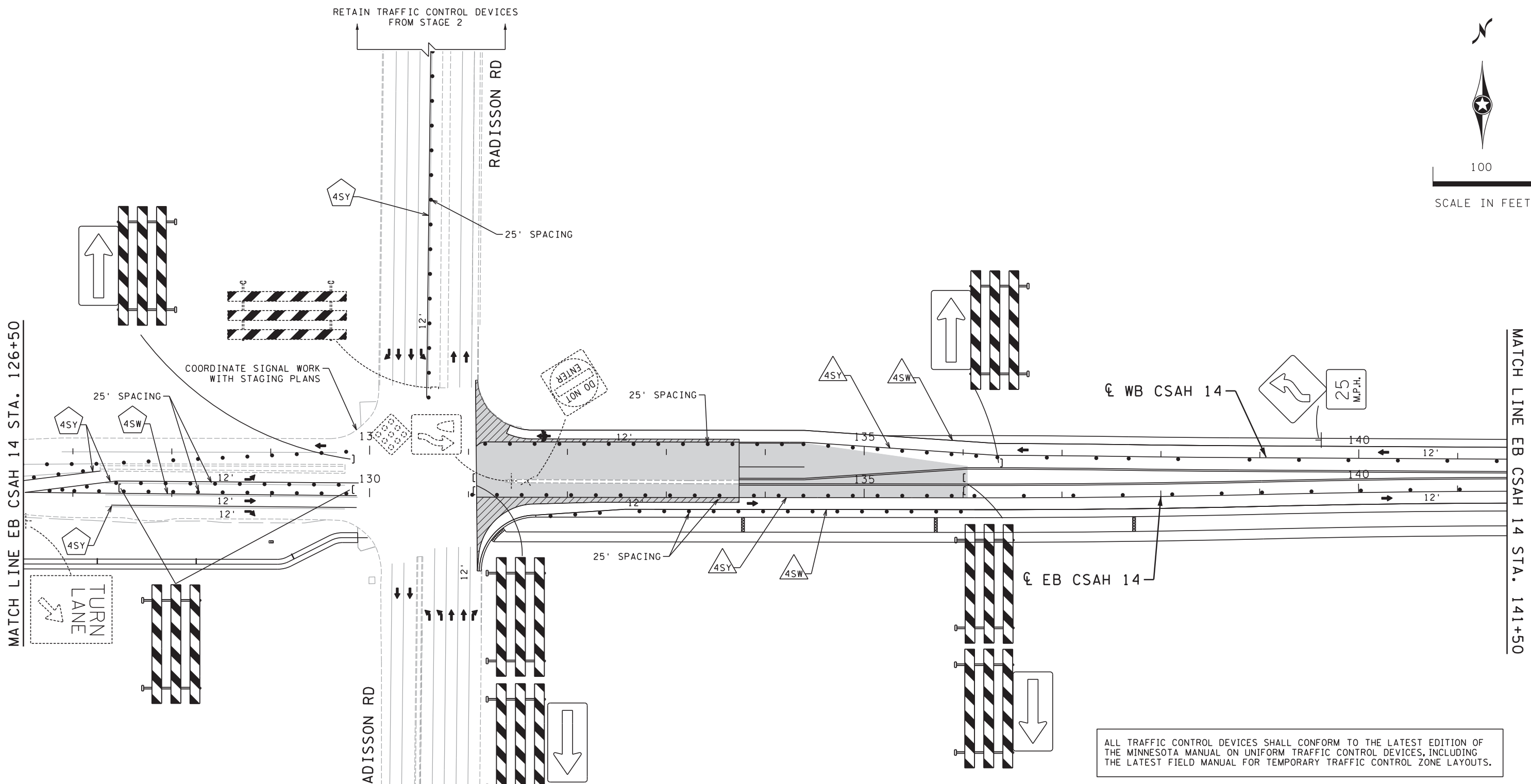
Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: **MARK A. WAGNER** Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 3 - EB CSAH 14 STA. 125+00 TO 126+50

FILE NO.	126669	63
TC24 OF TC31		196



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

GENERAL NOTES:  
1. ALL LANE DIMENTIONS ARE MINIMUM.

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

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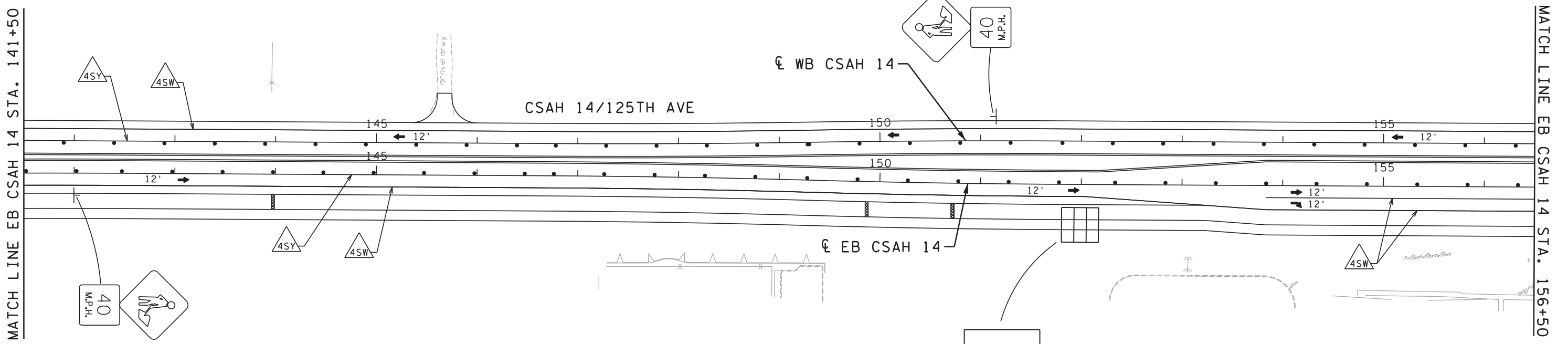


CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 3 - EB CSAH 14 STA. 126+50 TO 141+50

FILE NO.	64
126669	
TC25	196
OF TC31	





MATCH LINE EB CSAH 14 STA. 141+50

MATCH LINE EB CSAH 14 STA. 156+50

CSAH 14/125TH AVE

WB CSAH 14

EB CSAH 14

4SY

4SW

4SY

4SW

4SW

40 M.P.H.

40 M.P.H.

TRAFFIC CONTROL CHANGE

NEW SIGNAL AHEAD

INSTALL AT TIME OF SIGNAL TURN ON. RETAIN IN PLACE FOR 14 DAYS.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
[Solid Gray Box]	WORK AREA	[Flashing Light Symbol]	TYPE A FLASHING WARNING LIGHT
[Hatched Box]	PERMANENT CONSTRUCTION UNDER TRAFFIC	[Channelizer Symbol]	DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
[T-shaped Symbol]	TRAFFIC CONTROL SIGN	[Dashed Diamond]	EXISTING/IN-PLACE SIGN
[Barricade Symbol]	TYPE III BARRICADE =		

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

DESIGN TEAM				
DRAWN BY:	CIF			
DESIGNER:	MAW			
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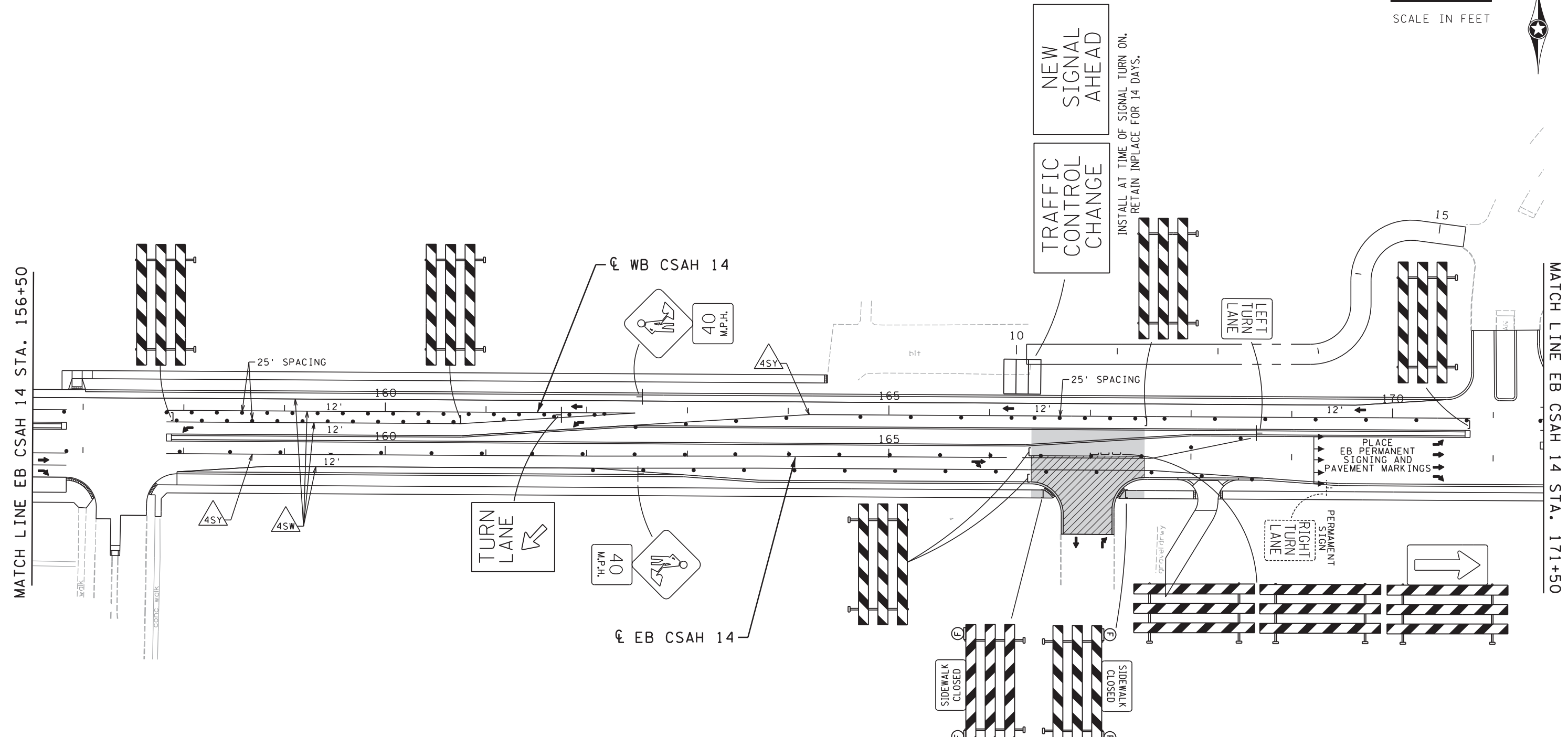


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 3 - EB CSAH 14 STA. 141+50 TO 156+50

FILE NO.	126669	65
TC26 OF TC31		196

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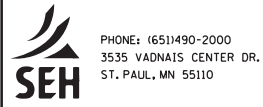
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

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GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

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

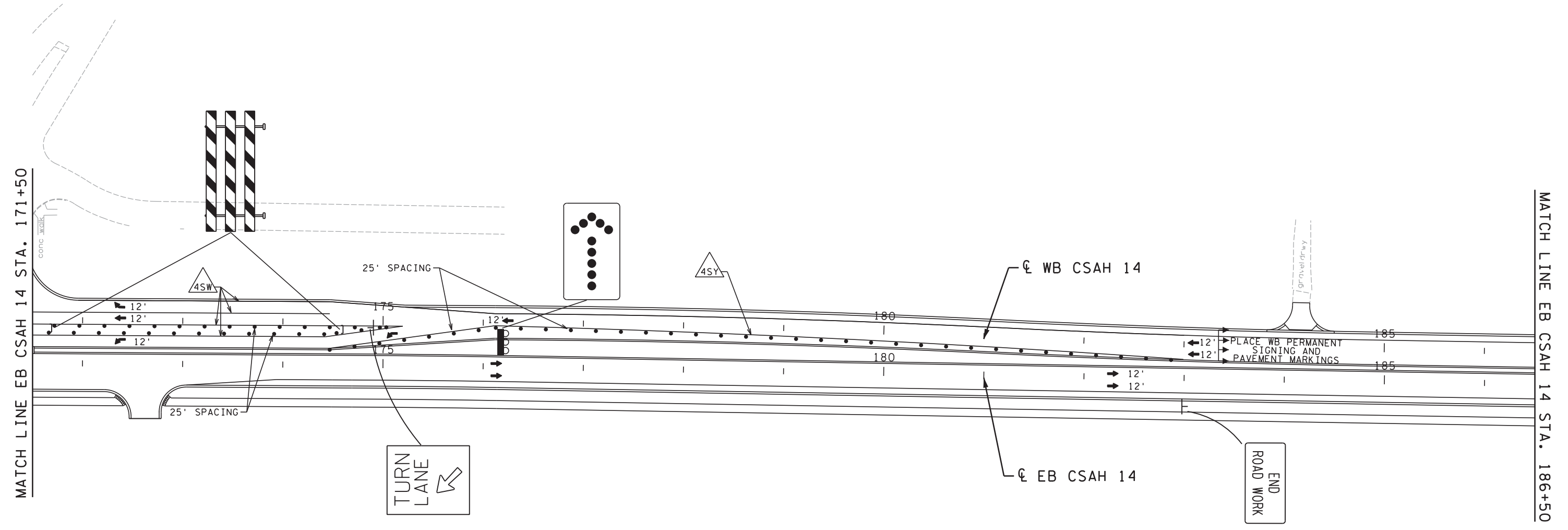
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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 3 - EB CSAH 14 STA. 156+50 TO 171+50

FILE NO.	66
126669	
TC27	196
OF TC31	



GENERAL NOTES:  
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TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

DESIGN TEAM			
NO.	BY	DATE	REVISIONS
1	CIF		
2	MAW		
3	MAW		

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 A. Wagner Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

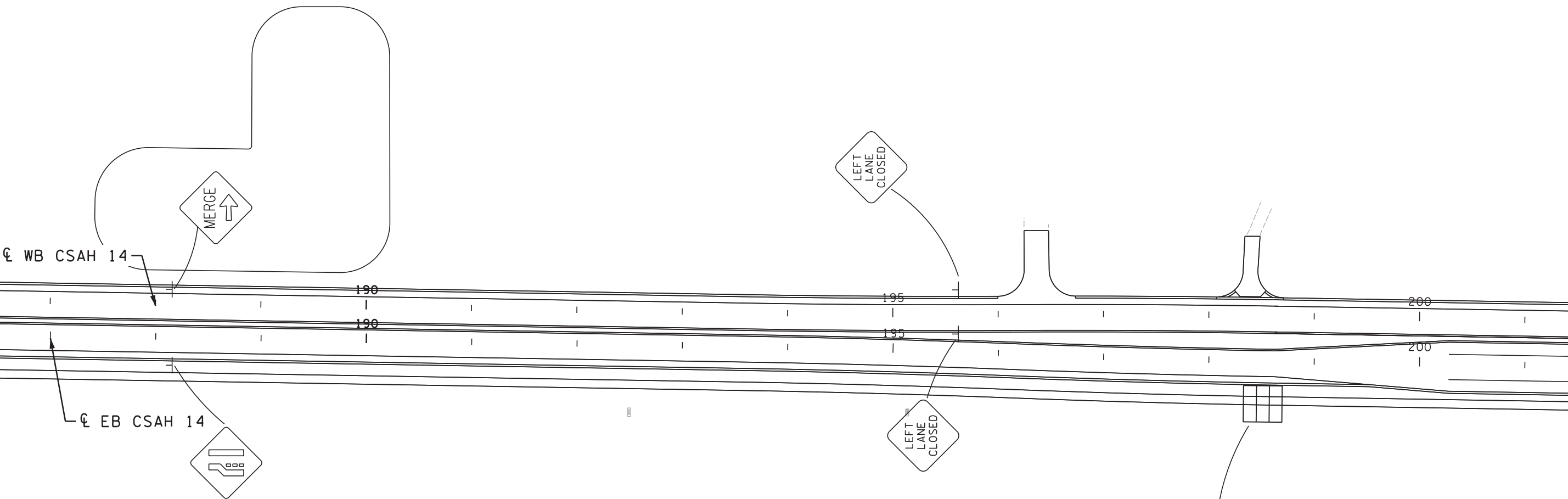
**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
 STAGE 3 - EB CSAH 14 STA. 171+50 TO 186+50

FILE NO. 126669	67
TC28 OF TC31	196



MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

GENERAL NOTES:  
1. ALL LANE DIMENSIONS ARE MINIMUM.

TRAFFIC CONTROL CHANGE  
NEW SIGNAL AHEAD  
INSTALL AT TIME OF SIGNAL TURN ON.  
RETAIN INPLACE FOR 14 DAYS.

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	MAW		
CHECKED BY:	MAW		
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 A. Wagner* Lic. No. 51660  
Printed Name: MARK A. WAGNER Date: 10/21/2015



CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN  
STAGE 3 - EB CSAH 14 STA. 186+50 TO 201+50

FILE NO.	126669	68
TC29 OF TC31		196

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MATCH LINE EB CSAH 14 STA. 201+50

INSTALL AT TIME OF SIGNAL TURN ON.  
RETAIN INPLACE FOR 14 DAYS.

NEW SIGNAL AHEAD  
TRAFFIC CONTROL CHANGE



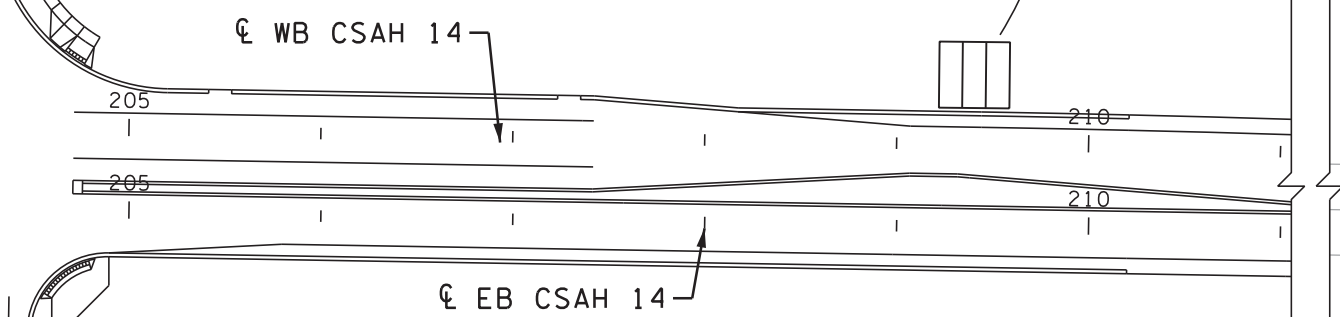
TRAFFIC CONTROL CHANGE  
NEW SIGNAL AHEAD

INSTALL AT TIME OF SIGNAL TURN ON.  
RETAIN INPLACE FOR 14 DAYS.

NEW SIGNAL AHEAD  
TRAFFIC CONTROL CHANGE

INSTALL AT TIME OF SIGNAL TURN ON.  
RETAIN INPLACE FOR 14 DAYS.

ROAD WORK  
RADISSON ROAD TO HARPERS STREET  
ENDS FALL 16  
RETAIN INPLACE FROM PREVIOUS STAGE



ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WORK AREA		TYPE A FLASHING WARNING LIGHT
	PERMANENT CONSTRUCTION UNDER TRAFFIC		DRUM-LIKE CHANNELIZER = (50' SPACING UNLESS OTHERWISE NOTED).
	TRAFFIC CONTROL SIGN		EXISTING/IN-PLACE SIGN
	TYPE III BARRICADE =		

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	MAW		
CHECKED BY:	MAW		
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 A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

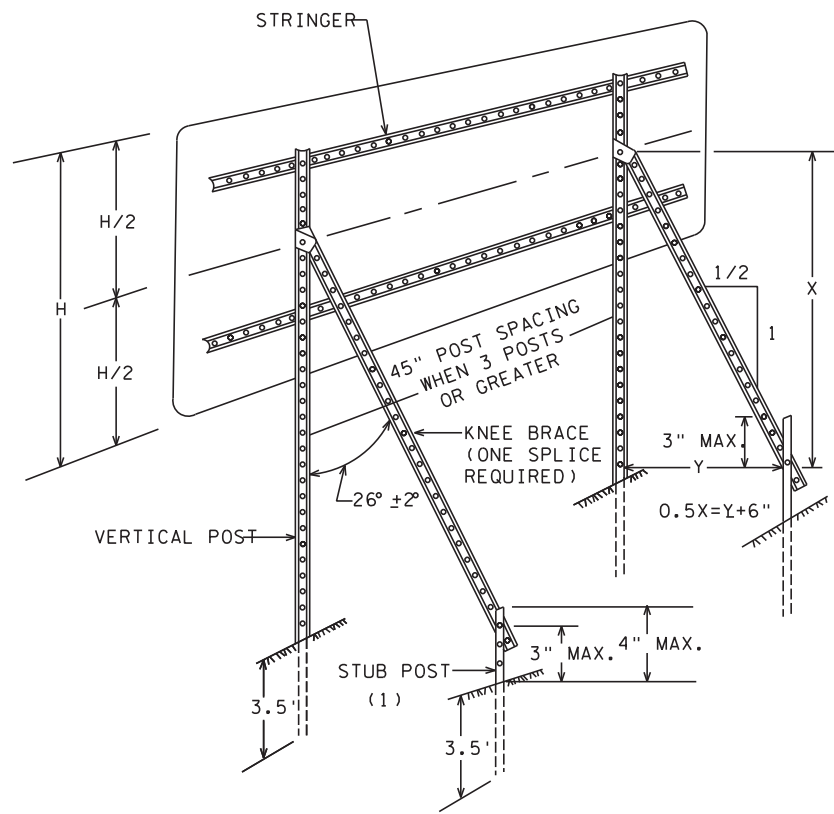
PHONE: (651)490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

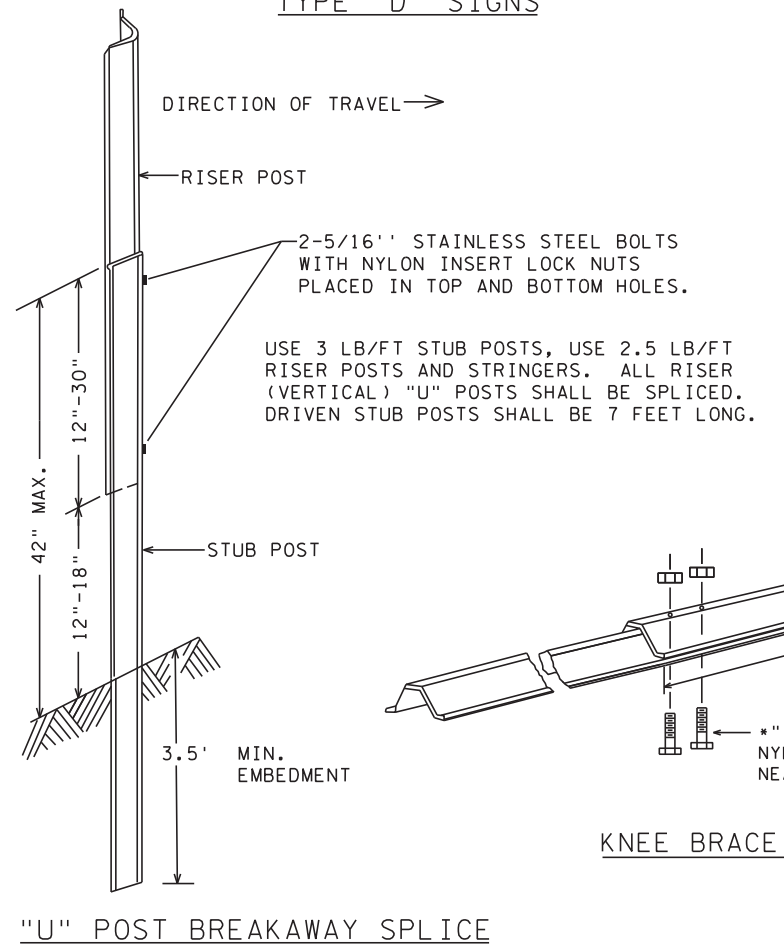
**CONSTRUCTION STAGING AND TRAFFIC CONTROL PLAN**  
STAGE 2 - EB CSAH 14 STA. 201+50 TO 216+50  
HARPERS STREET STA. 10+00 TO 15+00

FILE NO.	69
126669	
TC30	196
OF TC31	

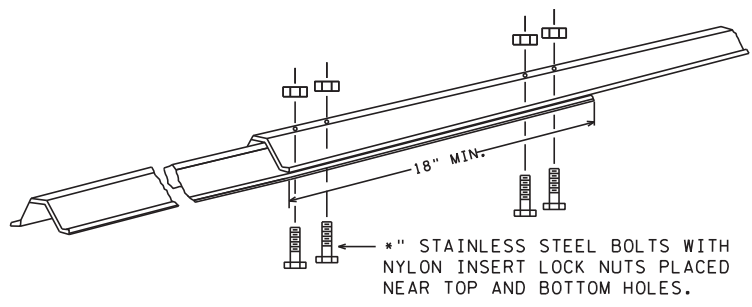
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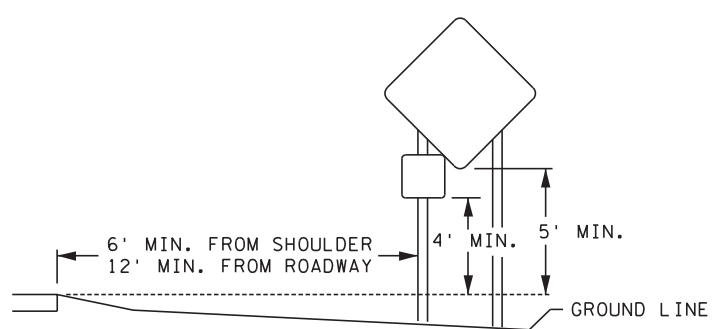
TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS



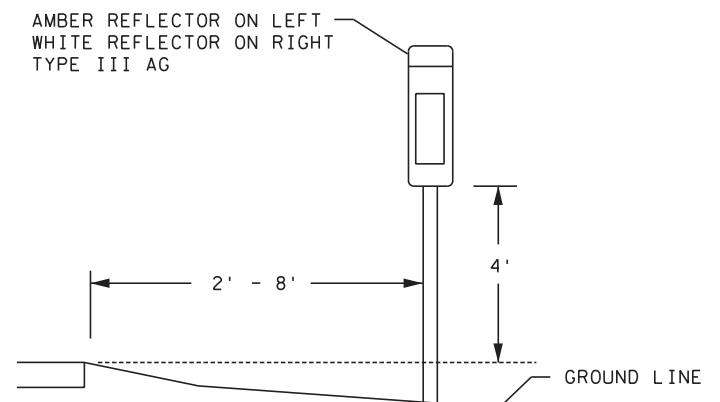
"U" POST BREAKAWAY SPLICE



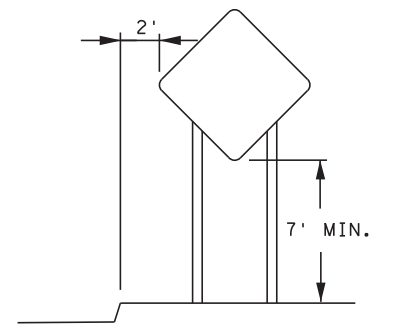
KNEE BRACE STRUCTURAL SPLICE



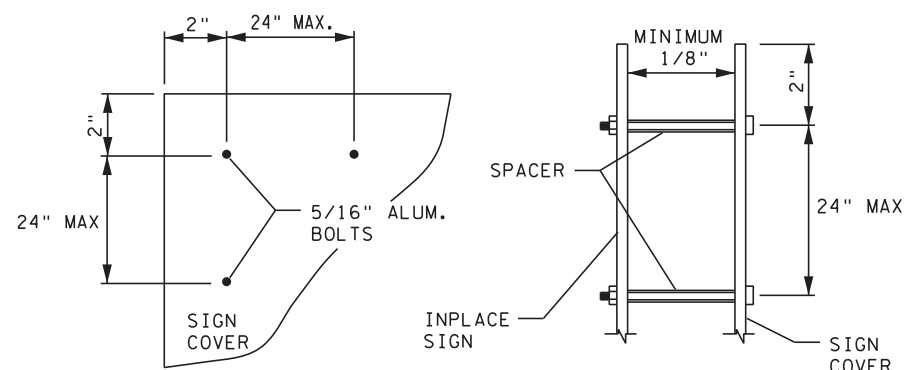
TYPICAL RURAL DESIGN



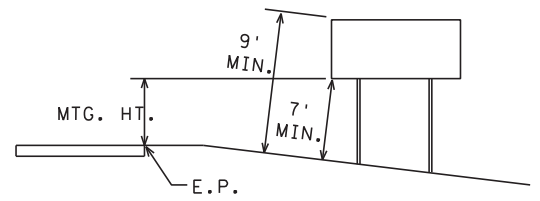
DELINEATION MOUNTING



TYPICAL URBAN DESIGN



SIGN PANEL OVERLAY



TYPICAL MOUNTING

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

TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS

SIGN DATA

SIGNS TO BE INSTALLED ON DRIVEN U-POSTS, SHALL BE INSTALLED IN ACCORDANCE WITH TABLE 1 OR TABLE 2 BELOW. IF THE TTC PLAN PLACES TTC DEVICES ADJACENT TO EXISTING STRUCTURES, THEN THEY SHOULD BE INSTALLED SLIGHTLY BEYOND THAT STRUCTURE, SO AS TO NOT COMPROMISE THAT STRUCTURE AND THE NEW DEVICE'S CRASHWORTHINESS (NO MORE THAN TWO U-POSTS WITHIN 84 INCHES, ALIGNED IN THE SAME PLANE). SIGN PANELS SHALL BE INSTALLED ON SIGN STRUCTURES TO MEET THE 5' MIN DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL, THE 7' MIN DEPICTED ON THE TYPICAL URBAN DESIGN DETAIL, OR 9' MIN AND 9' MIN DEPICTED ON THE TYPICAL MOUNTING DETAIL ON THIS SHEET.

TABLE 1

STANDARD CONSTRUCTION SIGNS IN MN/DOT STANDARD SIGNS MANUAL

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

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

TABLE 2

SPECIAL DESIGN CONSTRUCTION SIGNS

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

DESIGNER NOTE:

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

NOTES:

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

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

GUIDE SIGNS SHOWN TO BE COVERED SHALL BE COVERED WITH THE SAME COLOR AS THE SIGN BACKGROUND. THE CONTRACTOR SHALL INSTALL COVERS OR ADDITIONAL SIGNS USING A MINIMUM 1/8" PLASTIC SPACER BETWEEN THE INPLACE SIGN AND THE COVERING MATERIAL. HOLES WILL BE DRILLED IN THE COVER AND THE INPLACE SIGN AND SHALL BE INSTALLED IN ACCORDANCE TO THE SIGN PANEL DETAIL. SPACERS ARE REQUIRED. MID-PANEL SPACING SHALL BE NO GREATER THAN 24".

REVISED: 7-9-15

S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

TRAFFIC CONTROL DETAIL SHEET  
SHEET NO. 70 OF 196 SHEETS

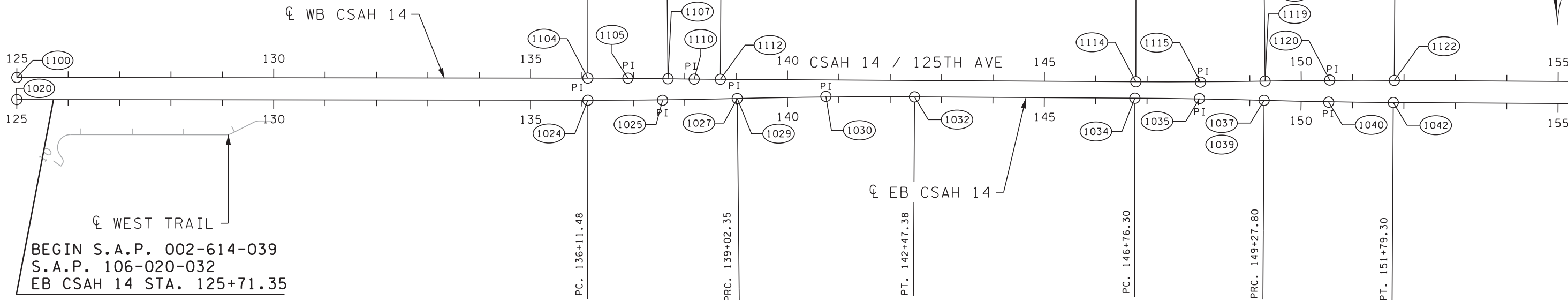
TC31 OF TC31

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HORIZONTAL CONTROL

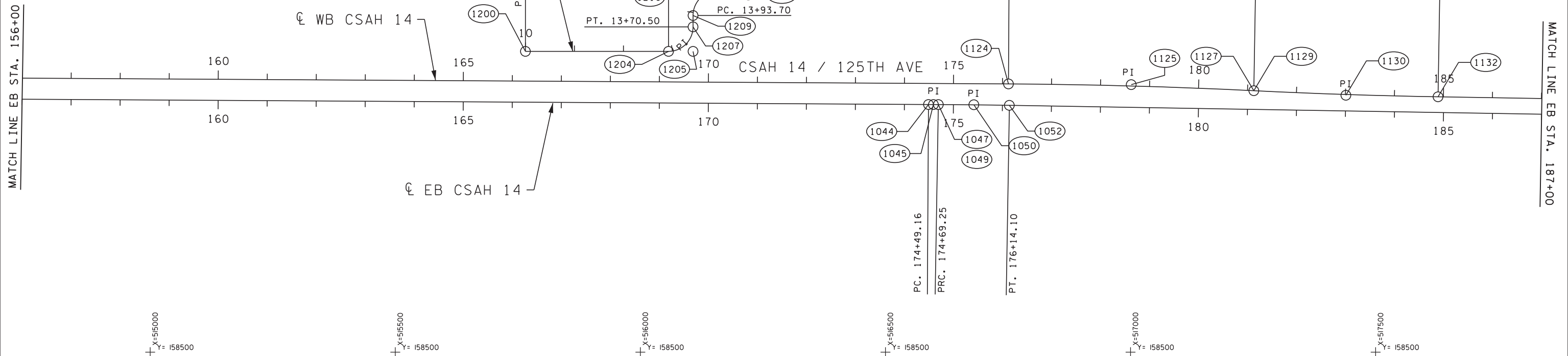
THE HORIZONTAL DATUM OF THIS MAP IS BASED ON ENGLISH ANOKA COUNTY COORDINATE SYSTEM WHICH IS RELATED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM NAD 1983, (HARN 1996) ADJUSTMENT SOUTH ZONE.



BEGIN S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 125+71.35

MATCH LINE EB STA. 156+00

☉ PARK ENTRANCE



+X=55000  
+Y= 158500

+X=55500  
+Y= 158500

+X=56000  
+Y= 158500

+X=56500  
+Y= 158500

+X=57000  
+Y= 158500

+X=57500  
+Y= 158500

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

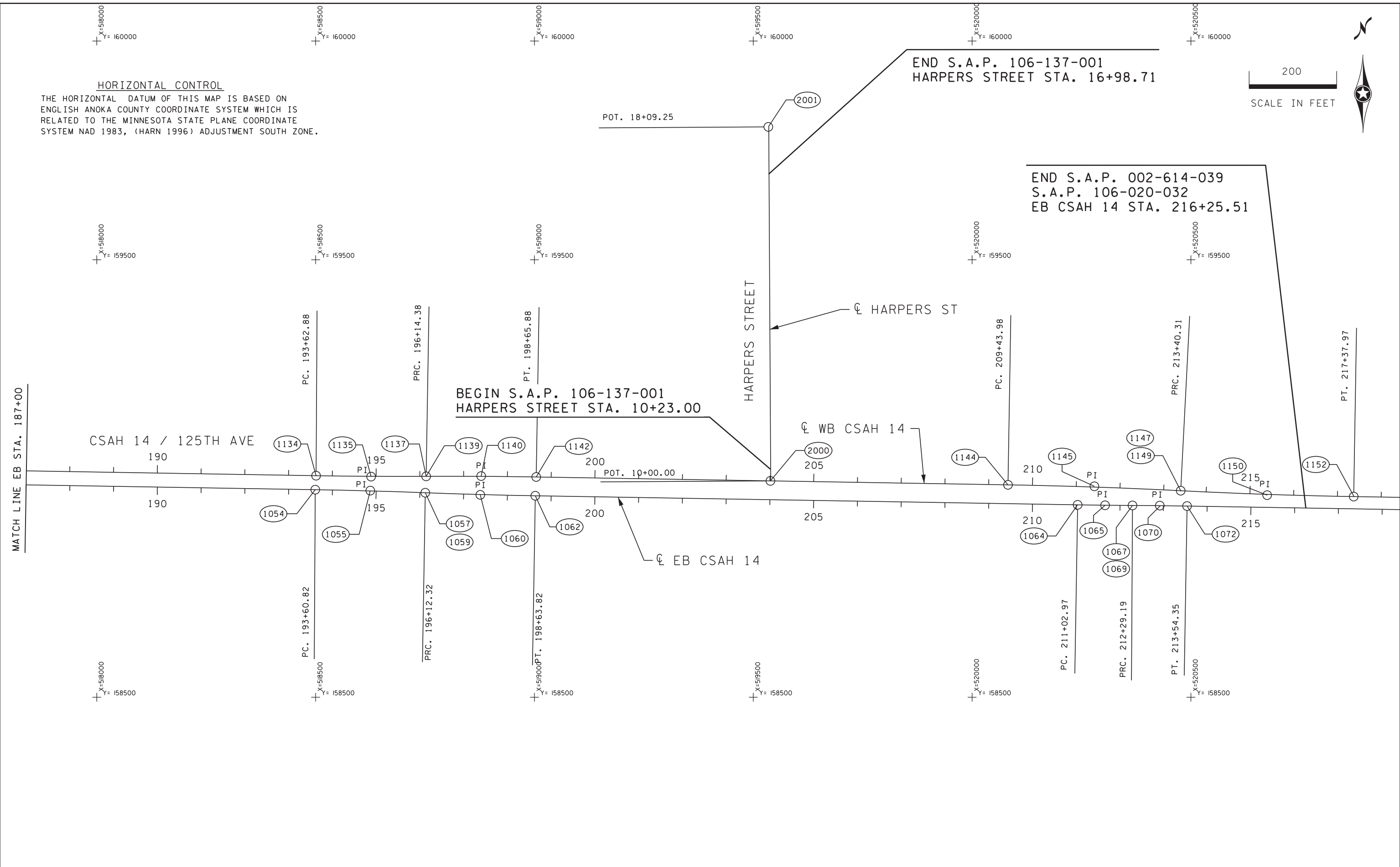
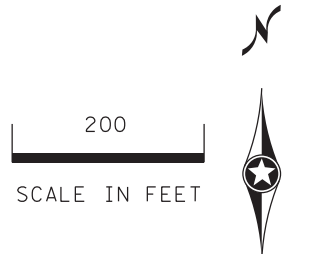
ALIGNMENT PLAN

FILE NO. 126669  
AL 1 OF AL 4  
71  
196

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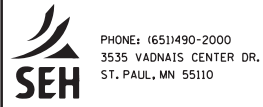
**HORIZONTAL CONTROL**  
 THE HORIZONTAL DATUM OF THIS MAP IS BASED ON ENGLISH ANOKA COUNTY COORDINATE SYSTEM WHICH IS RELATED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM NAD 1983, (HARN 1996) ADJUSTMENT SOUTH ZONE.



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Licensed Professional Engineer  
 Printed Name: JASON E. OWENS Date: 10/21/2015

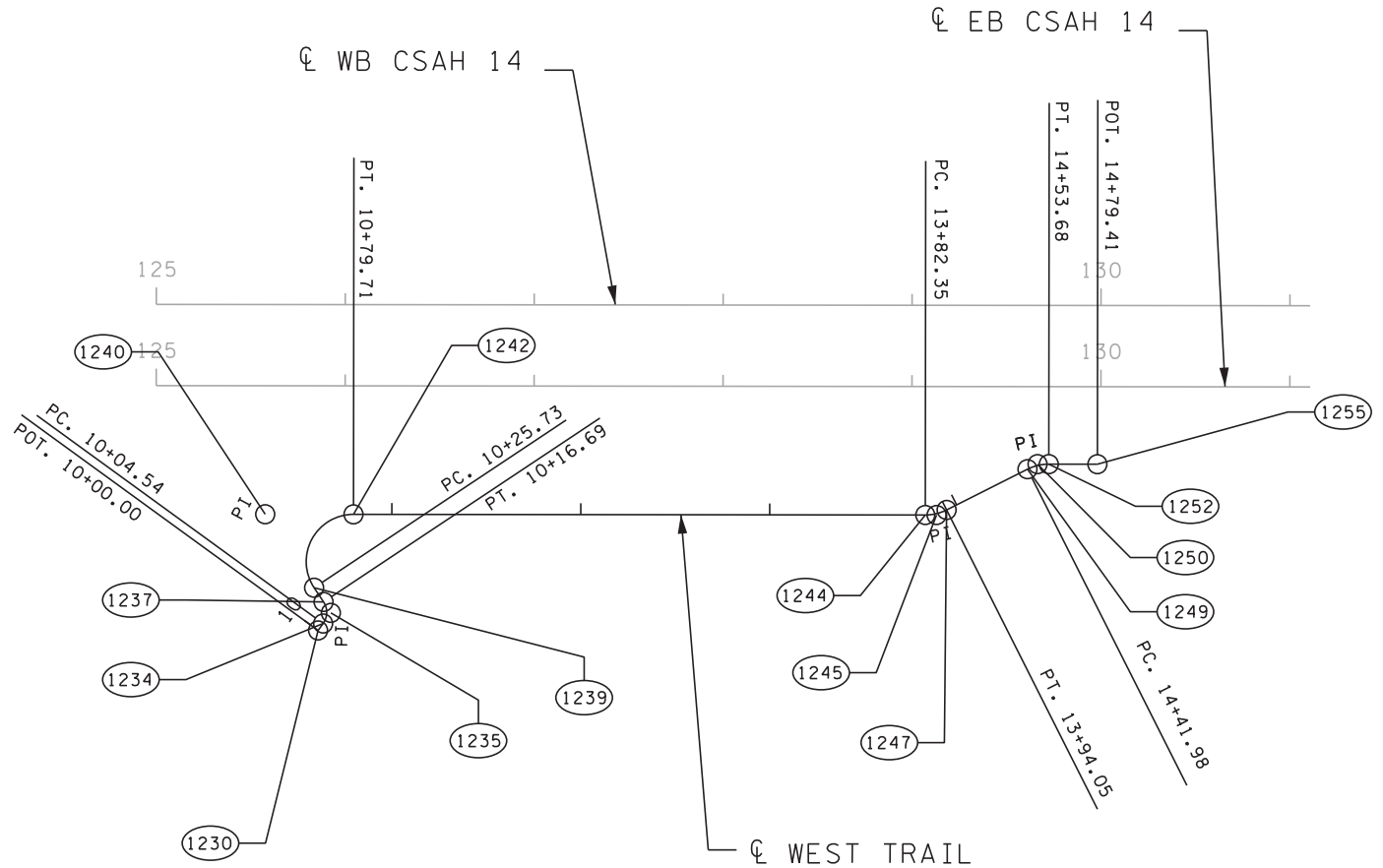


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**ALIGNMENT PLAN**

FILE NO. 126669	72
AL 2 OF AL 3	196





NOTE:  
 ① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND DOES NOT SHOW ON ALIGNMENT PLAN VIEW.

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

ALIGNMENT PLAN

FILE NO. 126669  
**73**  
 AL 3 OF AL 4  
**196**

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
EB CSAH 14 (CHAIN:EB14)										
1020	POT	125+00.000						511,638.8170	159,024.2234	
1024	PC	136+11.477						512,750.2934	159,022.9468	90° 03' 56.91"
1025	PI	137+56.922	1° 26' 57.13" LT	0° 29' 53.61"	11,500.000'	145.445'	290.874'	512,895.7380	159,022.7797	PI
1026	CC							512,763.5023	170,522.9392	
1027	PRC	139+02.351						513,041.1403	159,026.2911	88° 36' 59.78"
1029	PRC	139+02.351						513,041.1403	159,026.2911	88° 36' 59.78"
1030	PI	140+74.878	1° 43' 08.44" RT	0° 29' 53.61"	11,500.000'	172.527'	345.028'	513,213.6168	159,030.4563	PI
1031	CC							513,318.7784	147,529.6430	
1032	PT	142+47.379						513,386.1407	159,029.4457	90° 20' 08.22"
1034	PC	146+76.296						513,815.0506	159,026.9333	90° 20' 08.22"
1035	PI	148+02.051	1° 15' 10.93" RT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	513,940.8037	159,026.1967	PI
1036	CC							513,747.6883	147,527.1306	
1037	PRC	149+27.797						514,066.5107	159,022.7103	91° 35' 19.15"
1039	PRC	149+27.797						514,066.5107	159,022.7103	91° 35' 19.15"
1040	PI	150+53.552	1° 15' 10.93" LT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	514,192.2176	159,019.2239	PI
1041	CC							514,385.3330	170,518.2900	
1042	PT	151+79.297						514,317.9707	159,018.4873	90° 20' 08.22"
1044	PC	174+49.162						516,587.7971	159,005.1913	90° 20' 08.22"
1045	PI	174+59.207	0° 06' 00.33" LT	0° 29' 53.61"	11,500.000'	10.045'	20.090'	516,597.8418	159,005.1325	PI
1046	CC							516,655.1594	170,504.9940	
1047	PRC	174+69.252						516,607.8866	159,005.0912	90° 14' 07.89"
1049	PRC	174+69.252						516,607.8866	159,005.0912	90° 14' 07.89"
1050	PI	175+41.677	0° 43' 18.01" RT	0° 29' 53.61"	11,500.000'	72.425'	144.849'	516,680.3113	159,004.7935	PI
1051	CC							516,560.6139	147,505.1884	
1052	PT	176+14.101						516,752.7264	159,003.5836	90° 57' 25.90"
1054	PC	193+60.823						518,499.2051	158,974.4038	90° 57' 25.90"
1055	PI	194+86.578	1° 15' 10.93" RT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	518,624.9428	158,972.3030	PI
1056	CC							518,307.0926	147,476.0086	
1057	PRC	196+12.324						518,750.6045	158,967.4531	92° 12' 36.83"
1059	PRC	196+12.324						518,750.6045	158,967.4531	92° 12' 36.83"
1060	PI	197+38.079	1° 15' 10.93" LT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	518,876.2663	158,962.6032	PI
1061	CC							519,194.1165	170,458.8976	
1062	PT	198+63.824						519,002.0040	158,960.5024	90° 57' 25.90"
1064	PC	211+02.972						520,240.9784	158,939.8019	90° 57' 25.90"
1065	PI	211+65.860	0° 37' 35.91" LT	0° 29' 53.61"	11,500.000'	62.888'	125.775'	520,303.8578	158,938.7514	PI
1065	CC							520,433.0909	170,438.1972	
1066	PT	212+28.747						520,366.7450	158,938.3885	90° 19' 49.99"
1065	PC	212+29.194						520,366.2977	158,938.3911	90° 19' 49.99"
1070	PI	212+91.771	0° 37' 24.74" RT	0° 29' 53.61"	11,500.000'	62.577'	125.152'	520,428.8735	158,938.0301	PI
1071	CC							520,299.9519	147,438.5825	
1072	PT	213+54.346						520,491.4416	158,936.9881	90° 57' 14.73"
1075	POT	223+52.020						521,488.9766	158,920.3756	

HARPERS STREET (CHAIN:HARPERS)

2000	POT	10+00.000						519,539.2074	158,994.5330	
2001	POT	18+09.249						519,534.4482	159,803.7680	

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10/21/2015  
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ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
WB CSAH 14 (CHAIN:WB14)										
1100	POT	125+00.000						511,638.8664	159,067.2234	
1104	PC	136+11.370						512,750.2353	159,065.9469	90° 03' 56.91"
1105	PI	136+89.404	0° 46' 39.22" RT	0° 29' 53.61"	11,500.000'	78.034'	156.067'	512,828.2698	159,065.8572	PI
1106	CC							512,737.0265	147,565.9545	
1107	PRC	137+67.436						512,906.2958	159,064.7087	90° 50' 36.14"
1109	PRC	137+67.436						512,906.2958	159,064.7087	90° 50' 36.14"
1110	PI	138+18.393	0° 30' 27.91" LT	0° 29' 53.61"	11,500.000'	50.957'	101.913'	512,957.2470	159,063.9586	PI
1111	CC							513,075.5651	170,563.4628	
1112	PT	138+69.349						513,008.2028	159,063.6601	90° 20' 08.22"
1114	PC	146+78.137						513,816.9767	159,058.9226	90° 20' 08.22"
1115	PI	148+03.892	1° 15' 10.93" LT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	513,942.7298	159,058.1860	PI
1116	CC							513,884.3390	170,558.7253	
1117	PRC	149+29.637						514,068.4690	159,060.1995	89° 04' 57.29"
1119	PRC	149+29.637						514,068.4690	159,060.1995	89° 04' 57.29"
1120	PI	150+55.393	1° 15' 10.93" RT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	514,194.2081	159,062.2130	PI
1121	CC							514,252.5990	147,561.6736	
1122	PT	151+81.138						514,319.9613	159,061.4764	90° 20' 08.22"
1124	PC	176+12.188						516,750.9700	159,047.2363	90° 20' 08.22"
1125	PI	178+62.619	2° 29' 42.05" RT	0° 29' 53.61"	11,500.000'	250.430'	500.781'	517,001.3960	159,045.7693	PI
1126	CC							516,683.6078	147,547.4335	
1127	PRC	181+12.970						517,251.5208	159,033.4021	92° 49' 50.27"
1129	PRC	181+12.970						517,251.5208	159,033.4021	92° 49' 50.27"
1130	PI	183+00.998	1° 52' 24.37" LT	0° 29' 53.61"	11,500.000'	188.028'	376.023'	517,439.3194	159,024.1166	PI
1131	CC							517,819.4338	170,519.3708	
1132	PT	184+88.992						517,627.3213	159,020.9755	90° 57' 25.90"
1134	PC	193+62.880						518,501.0866	159,006.3769	90° 57' 25.90"
1135	PI	194+88.635	1° 15' 10.93" LT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	518,626.8243	159,004.2761	PI
1136	CC							518,693.1991	170,504.7721	
1137	PRC	196+14.380						518,752.5779	159,004.9254	89° 42' 14.97"
1139	PRC	196+14.380						518,752.5779	159,004.9254	89° 42' 14.97"
1140	PI	197+40.135	1° 15' 10.93" RT	0° 29' 53.61"	11,500.000'	125.755'	251.501'	518,878.3315	159,005.5747	PI
1141	CC							518,811.9568	147,505.0787	
1142	PT	198+65.881						519,004.0692	159,003.4739	90° 57' 25.90"
1144	PC	209+43.278						520,081.3161	158,985.4755	90° 57' 25.90"
1145	PI	211+41.462	1° 58' 28.57" RT	0° 29' 53.61"	11,500.000'	198.184'	396.328'	520,279.4723	158,982.1648	PI
1146	CC							519,889.2037	147,487.0803	
1147	PT	213+39.606						520,477.3966	158,972.0282	92° 55' 54.48"
1149	PC	213+41.020						520,475.9842	158,972.1006	92° 55' 54.48"
1150	PI	215+39.516	1° 58' 39.74" LT	0° 29' 53.61"	11,500.000'	198.495'	396.951'	520,674.2197	158,961.9481	PI
1151	CC							521,064.1772	170,457.0485	
1152	PT	217+37.972						520,872.6875	158,958.6429	90° 57' 14.73"
1155	POT	223+54.813	①					521,489.4428	158,948.3717	

NOTE:  
① ALIGNMENT POINT IS BEYOND PROJECT LIMITS AND DOES NOT SHOW ON ALIGNMENT PLAN VIEW.

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
WEST TRAIL (CHAIN:WEST_TRAIL)										
1230	POT	10+00.000						511,724.4826	158,894.6210	
1234	PC	10+04.535						511,727.1495	158,898.2891	36° 01' 12.08"
1235	PI	10+11.493	69° 39' 43.78" LT	572° 57' 28.06"	10.000'	6.958'	12.158'	511,731.2414	158,903.9170	PI
1236	CC							511,719.0614	158,904.1697	
1237	PT	10+16.693						511,727.3866	158,909.7098	326° 21' 28.30"
1239	PC	10+25.728						511,722.3814	158,917.2312	326° 21' 28.30"
1240	PI	10+72.458	123° 42' 28.61" RT	229° 10' 59.22"	25.000'	46.730'	53.978'	511,696.4925	158,956.1350	PI
1241	CC							511,743.1942	158,931.0813	
1242	PT	10+79.706						511,743.2229	158,956.0813	90° 03' 56.91"
1244	PC	13+82.353						512,045.8700	158,955.7337	90° 03' 56.91"
1245	PI	13+88.313	26° 48' 59.07" LT	229° 10' 59.22"	25.000'	5.960'	11.701'	512,051.8297	158,955.7268	PI
1246	CC							512,045.8987	158,980.7336	
1247	PT	13+94.054						512,057.1514	158,958.4093	63° 14' 57.84"
1249	PC	14+41.984						512,099.9517	158,979.9830	63° 14' 57.84"
1250	PI	14+47.944	26° 48' 59.07" RT	229° 10' 59.22"	25.000'	5.960'	11.701'	512,105.2735	158,982.6654	PI
1251	CC							512,111.2044	158,957.6586	
1252	PT	14+53.685						512,111.2331	158,982.6586	90° 03' 56.91"
1255	POT	14+79.409						512,136.9577	158,982.6291	
PARK ENTRANCE (CHAIN:PARK_ENT)										
1200	POT	10+00.000						515,765.5110	159,113.6184	
1204	PC	12+91.960						516,057.4709	159,113.6184	90° 00' 00.00"
1205	PI	13+41.960	90° 00' 00.00" LT	114° 35' 29.61"	50.000'	50.000'	78.540'	516,107.4709	159,113.6184	PI
1206	CC							516,057.4709	159,163.6184	
1207	PT	13+70.500						516,107.4709	159,163.6184	0° 00' 00.00"
1209	PC	13+93.700						516,107.4709	159,186.8191	0° 00' 00.00"
1210	PI	14+50.894	97° 40' 42.82" RT	114° 35' 29.61"	50.000'	57.194'	85.241'	516,107.4709	159,244.0127	PI
1211	CC							516,157.4709	159,186.8191	
1212	PT	14+78.941						516,164.1516	159,236.3708	97° 40' 42.82"
1215	POT	15+35.505						516,220.2086	159,228.8129	

DESIGN TEAM				
DRAWN BY: CIF				
DESIGNER: JEO				
CHECKED BY: JEO				
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015

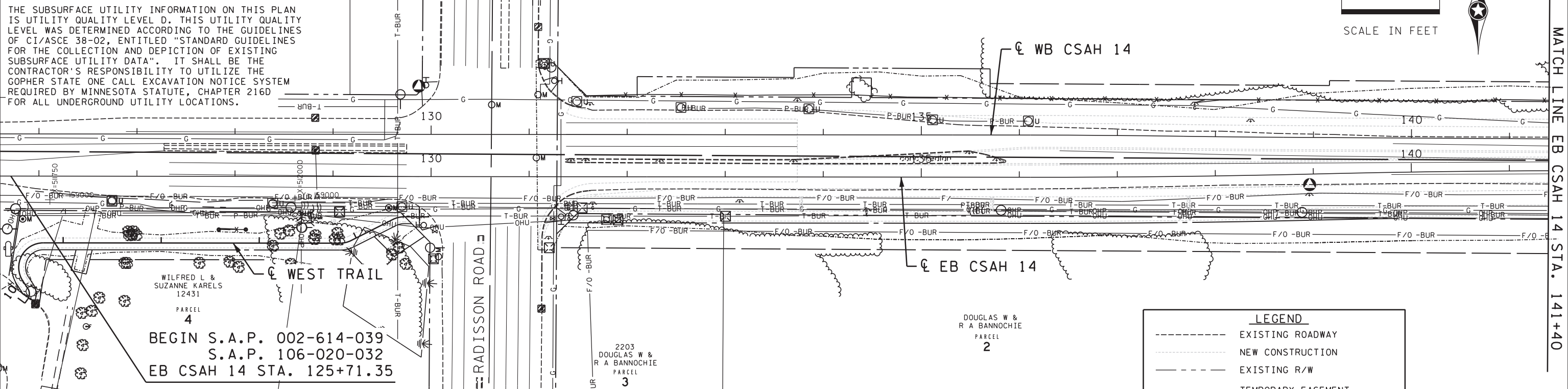


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

ALIGNMENT PLAN	FILE NO. 126669	74
	AL 4 OF AL 4	196

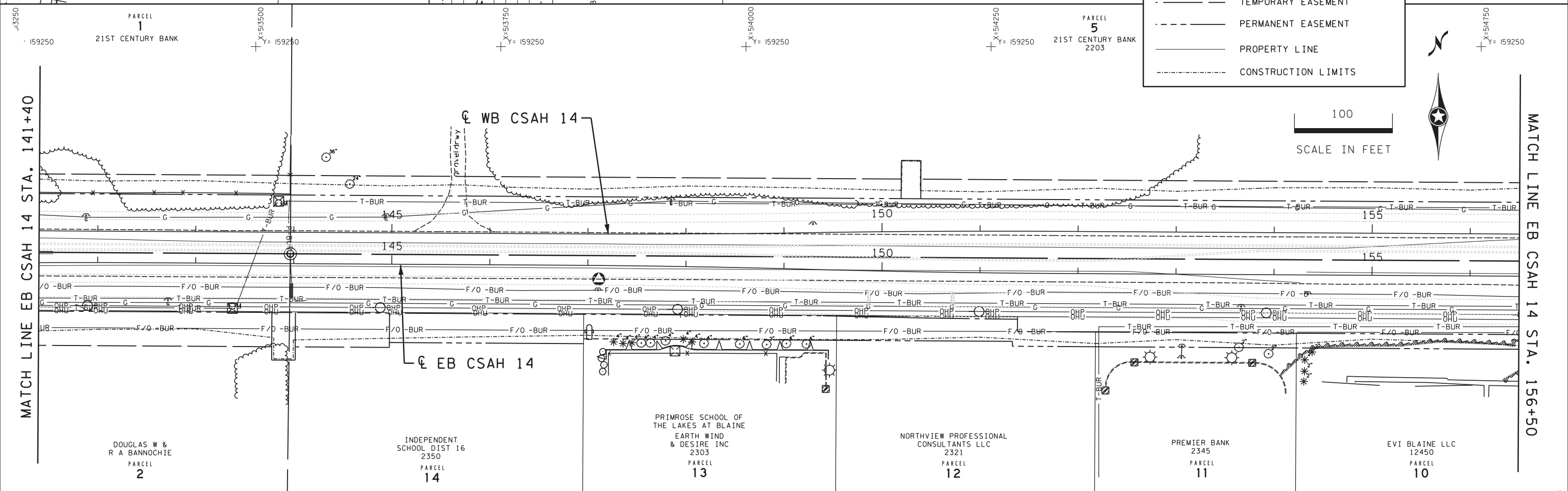
NOTES:  
 THE RIGHT OF WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY, EASEMENTS, AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP.

THE SUBSURFACE UTILITY INFORMATION ON 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". IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUTE, CHAPTER 216D FOR ALL UNDERGROUND UTILITY LOCATIONS.



**LEGEND**

- EXISTING ROADWAY
- NEW CONSTRUCTION
- - - EXISTING R/W
- - - TEMPORARY EASEMENT
- - - PERMANENT EASEMENT
- PROPERTY LINE
- - - CONSTRUCTION LIMITS



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

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TOPOGRAPHY AND INPLACE UTILITIES PLAN**  
 EB CSAH 14 STA. 125+71 TO 156+50

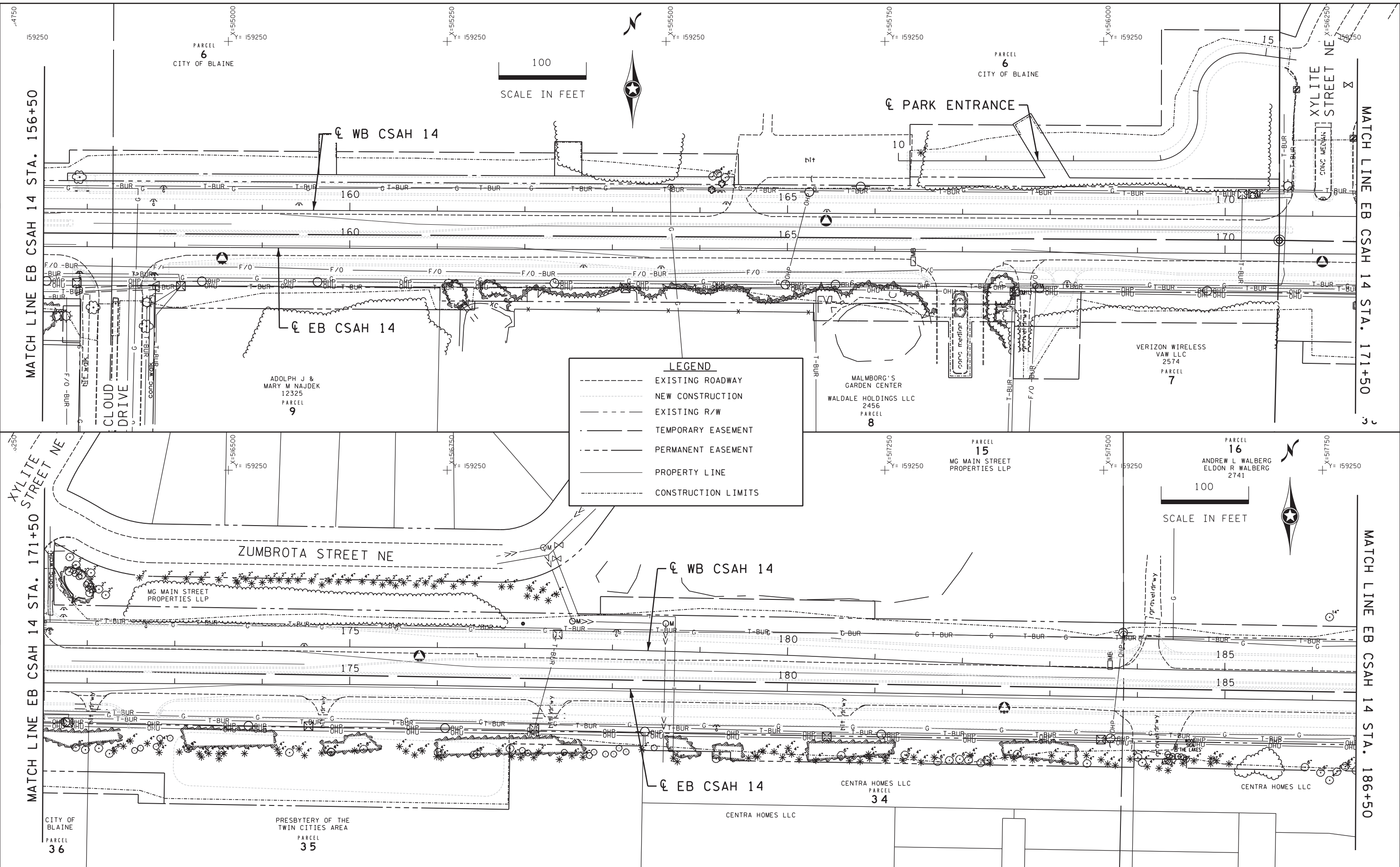
FILE NO.	75
126669	
TP1	196
OF TP4	

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 TPI

MATCH LINE EB CSAH 14 STA. 141+40

MATCH LINE EB CSAH 14 STA. 156+50

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

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Certified By: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015

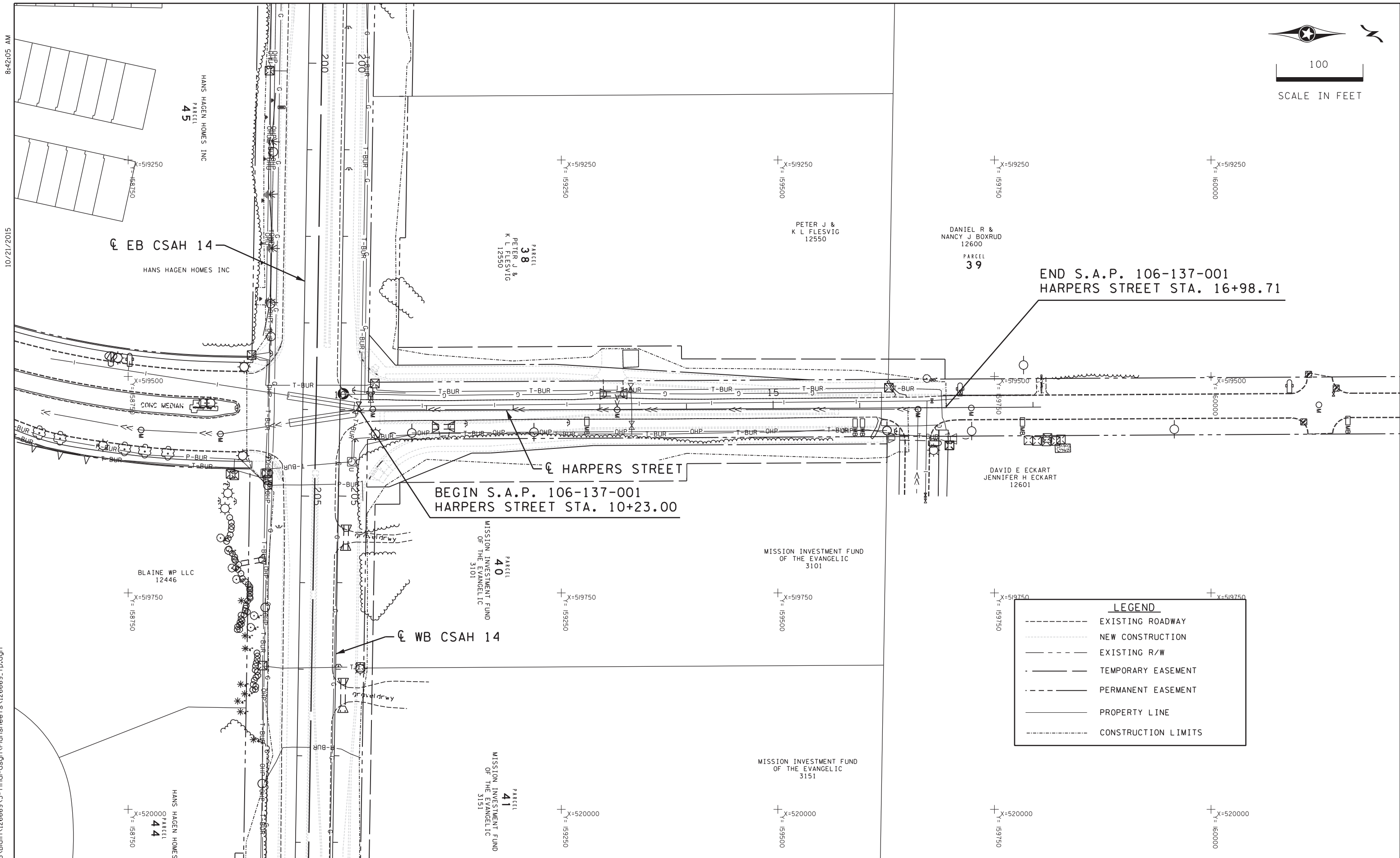
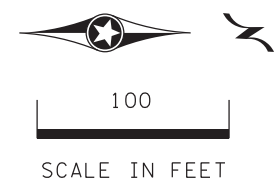


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TOPOGRAPHY AND  
 INPLACE UTILITIES PLAN**  
 EB CSAH 14 STA. 156+50 TO 186+50

FILE NO.	76
126669	
TP2	196
OF TP4	





LEGEND	
-----	EXISTING ROADWAY
-----	NEW CONSTRUCTION
-----	EXISTING R/W
-----	TEMPORARY EASEMENT
-----	PERMANENT EASEMENT
-----	PROPERTY LINE
-----	CONSTRUCTION LIMITS

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 TP4

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

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 Certified By: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



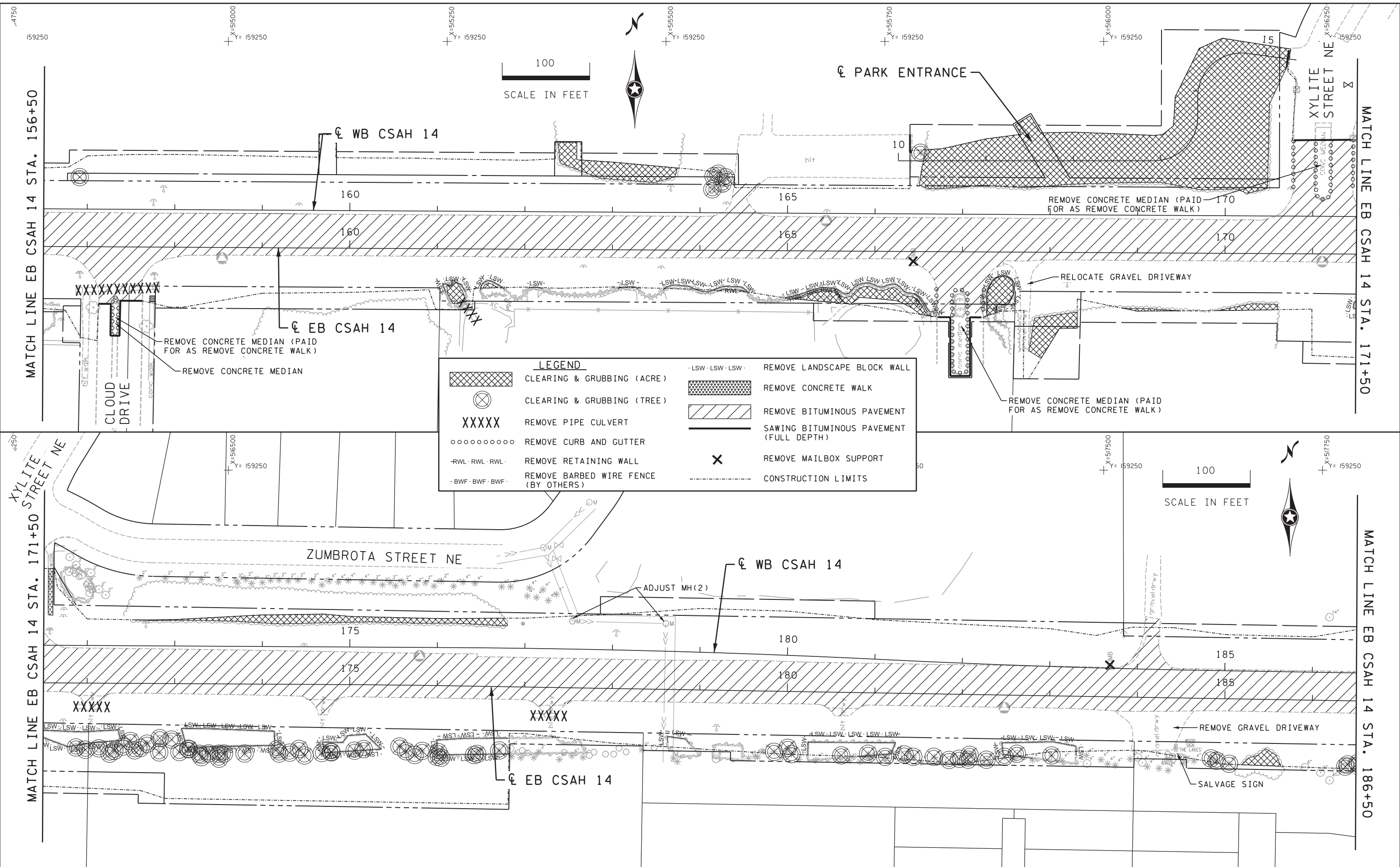
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TOPOGRAPHY AND  
 INPLACE UTILITIES PLAN**  
 HARPERS STREET STA. 10+23 TO 16+99

FILE NO.	126669	78
TP4 OF TP4		196



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RM2  
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LEGEND	
	CLEARING & GRUBBING (ACRE)
	CLEARING & GRUBBING (TREE)
XXXXXX	REMOVE PIPE CULVERT
○○○○○○○○	REMOVE CURB AND GUTTER
-RWL-RWL-RWL-	REMOVE RETAINING WALL
-BWF-BWF-BWF-	REMOVE BARBED WIRE FENCE (BY OTHERS)
-LSW-LSW-LSW-	REMOVE LANDSCAPE BLOCK WALL
	REMOVE CONCRETE WALK
	REMOVE BITUMINOUS PAVEMENT
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
X	REMOVE MAILBOX SUPPORT
- - - - -	CONSTRUCTION LIMITS

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

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Certified By: *Jason E. Owens* Lic. No. 43475  
 Licensed Professional Engineer  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

<b>REMOVAL PLAN</b>		80 196
EB CSAH 14 STA. 156+50 TO 186+50		
FILE NO.	126669	
RM2 OF RM4		



MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50

MATCH LINE EB CSAH 14 STA. 201+50



LEGEND	
	CLEARING & GRUBBING (ACRE)
	CLEARING & GRUBBING (TREE)
XXXXX	REMOVE PIPE CULVERT
○○○○○○○○	REMOVE CURB AND GUTTER
-RWL - RWL - RWL -	REMOVE RETAINING WALL
-BWF - BWF - BWF -	REMOVE BARBED WIRE FENCE (BY OTHERS)
-LSW - LSW - LSW -	REMOVE LANDSCAPE BLOCK WALL
	REMOVE CONCRETE WALK
	REMOVE BITUMINOUS PAVEMENT
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
X	REMOVE MAILBOX SUPPORT
- - - - -	CONSTRUCTION LIMITS

END S.A.P. 002-614-039  
 S.A.P. 106-020-032  
 EB CSAH 14 STA. 216+25.51

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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.

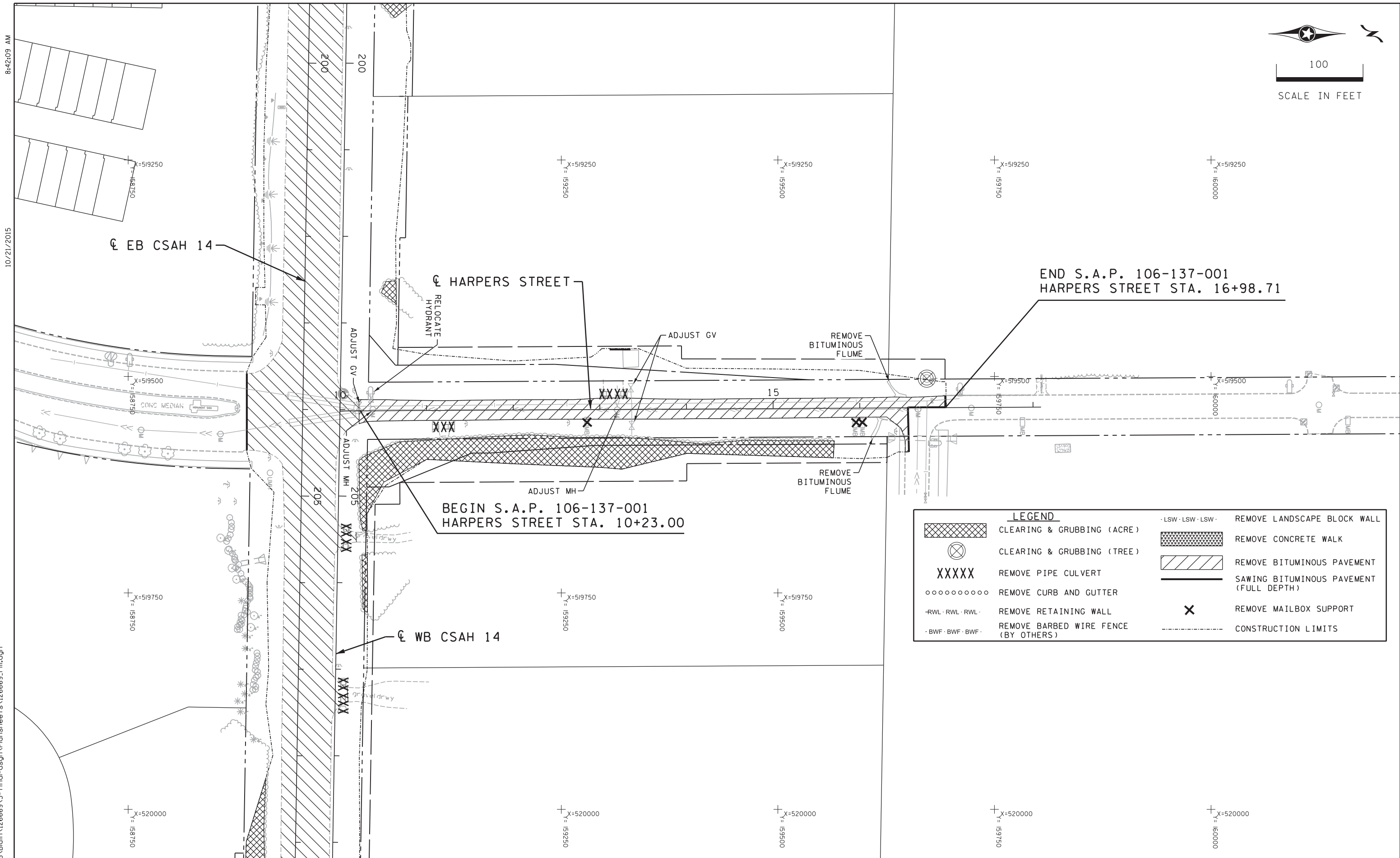
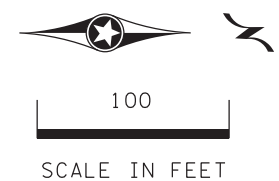
Certified By: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**REMOVAL PLAN**  
 EB CSAH 14 STA. 186+50 TO 216+25

FILE NO.	81
126669	
RM3	
OF RM4	196



LEGEND	
	CLEARING & GRUBBING (ACRE)
	CLEARING & GRUBBING (TREE)
XXXXXX	REMOVE PIPE CULVERT
○○○○○○○○	REMOVE CURB AND GUTTER
-RWL - RWL - RWL -	REMOVE RETAINING WALL
-BWF - BWF - BWF -	REMOVE BARBED WIRE FENCE (BY OTHERS)
-LSW - LSW - LSW -	REMOVE LANDSCAPE BLOCK WALL
	REMOVE CONCRETE WALK
	REMOVE BITUMINOUS PAVEMENT
	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
	REMOVE MAILBOX SUPPORT
	CONSTRUCTION LIMITS

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RM4  
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DESIGN TEAM				
DRAWN BY:	CIF			
DESIGNER:	JEO			
CHECKED BY:	JEO			
NO.	BY	DATE	REVISIONS	

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Certified By: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**REMOVAL PLAN**  
HARPERS STREET STA. 10+23 TO 16+99

FILE NO. 126669	<b>82</b>
RM4 OF RM4	<b>196</b>

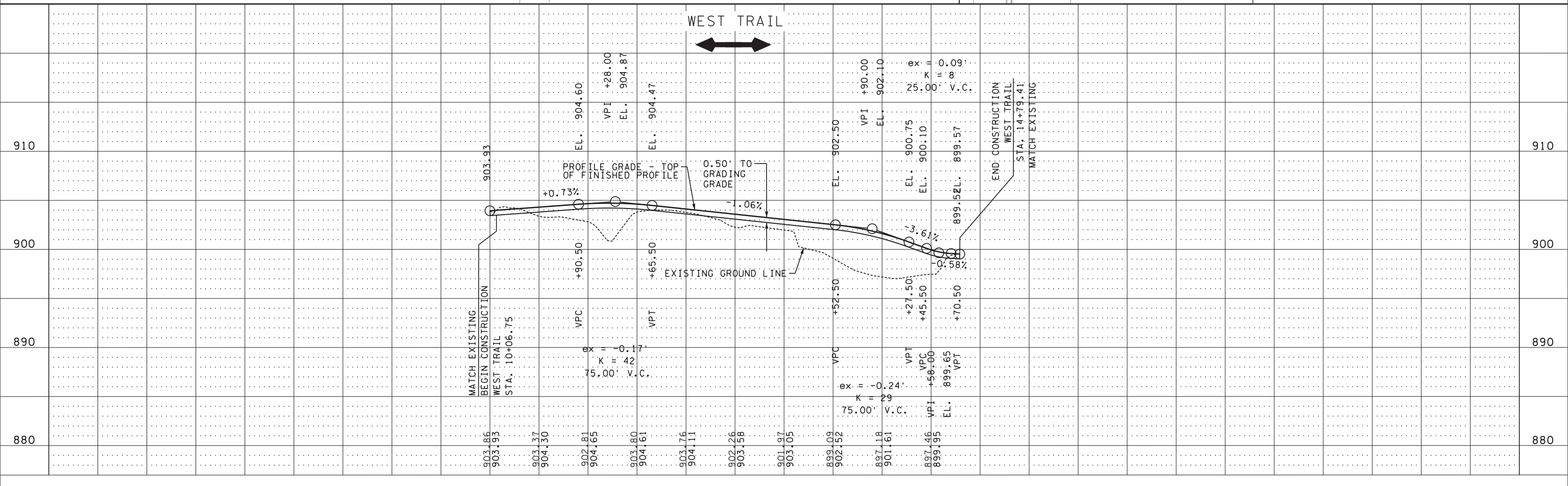
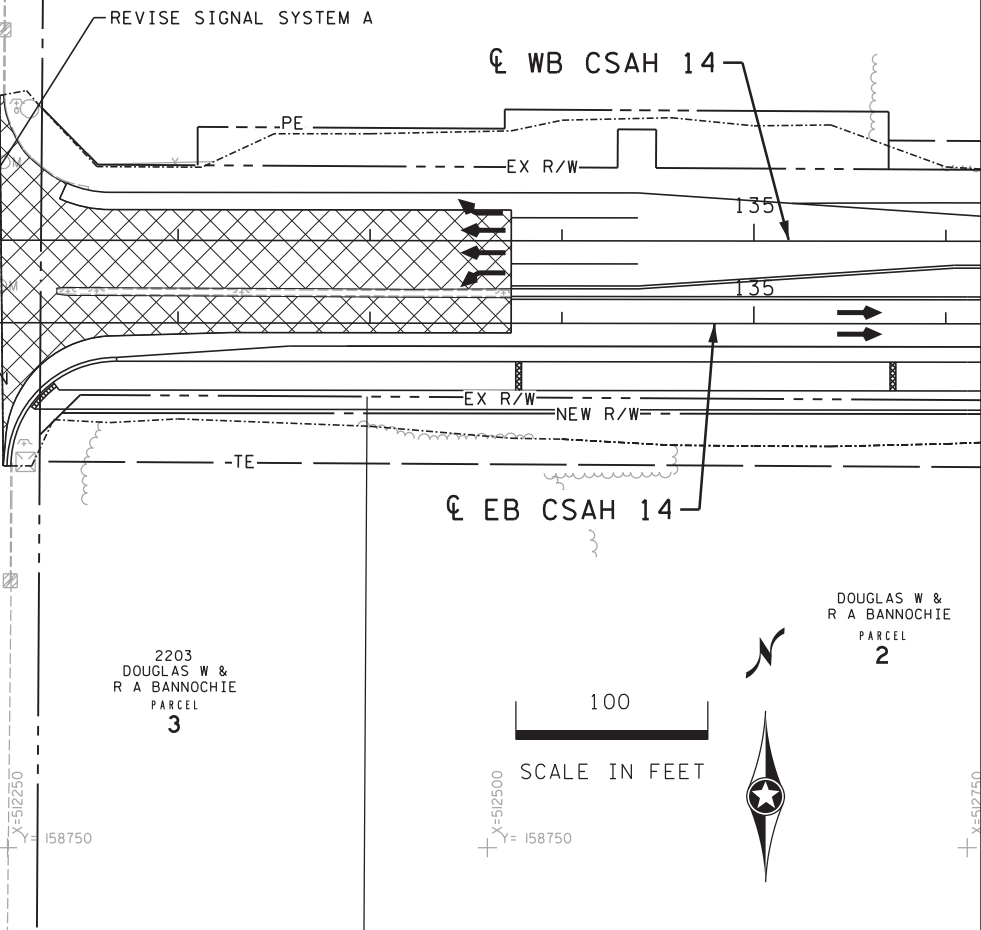
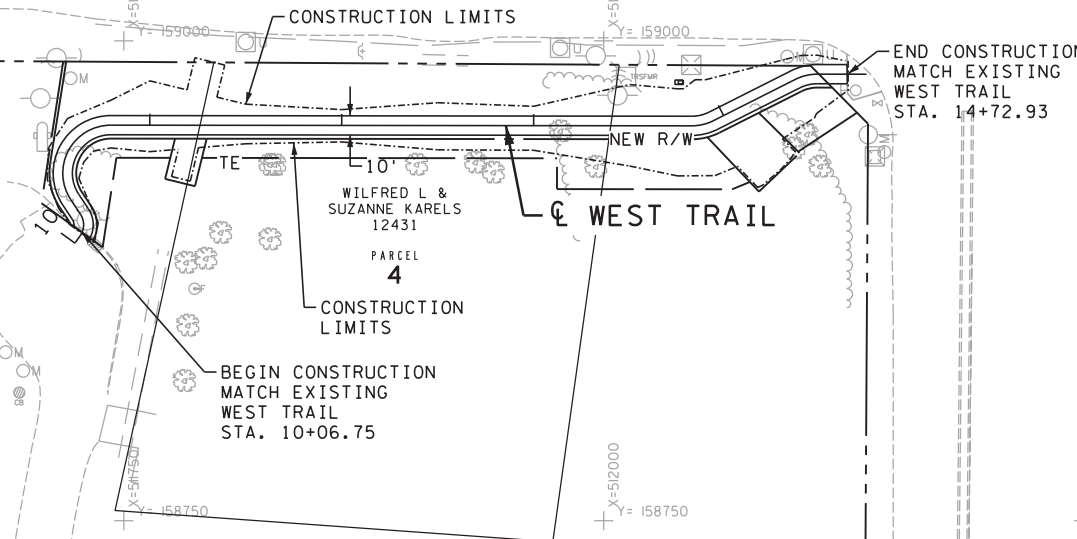
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BEGIN S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 125+71.35

LEGEND	
	EXISTING ROADWAY
	NEW CONSTRUCTION
	EXISTING RIGHT OF WAY
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	CONSTRUCTION LIMITS



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

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CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

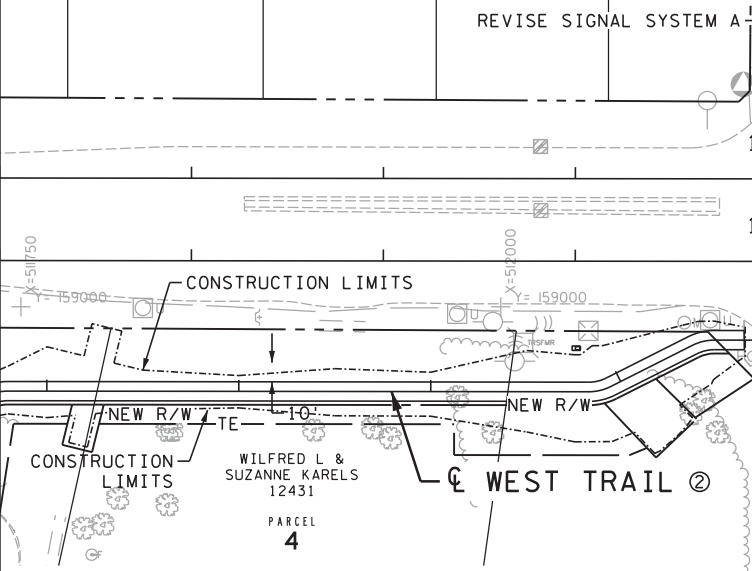
CONSTRUCTION PLAN AND PROFILE		FILE NO. 83
WEST TRAIL STA. 10+07 TO 14+73		126669
CP1		196
OF CP12		

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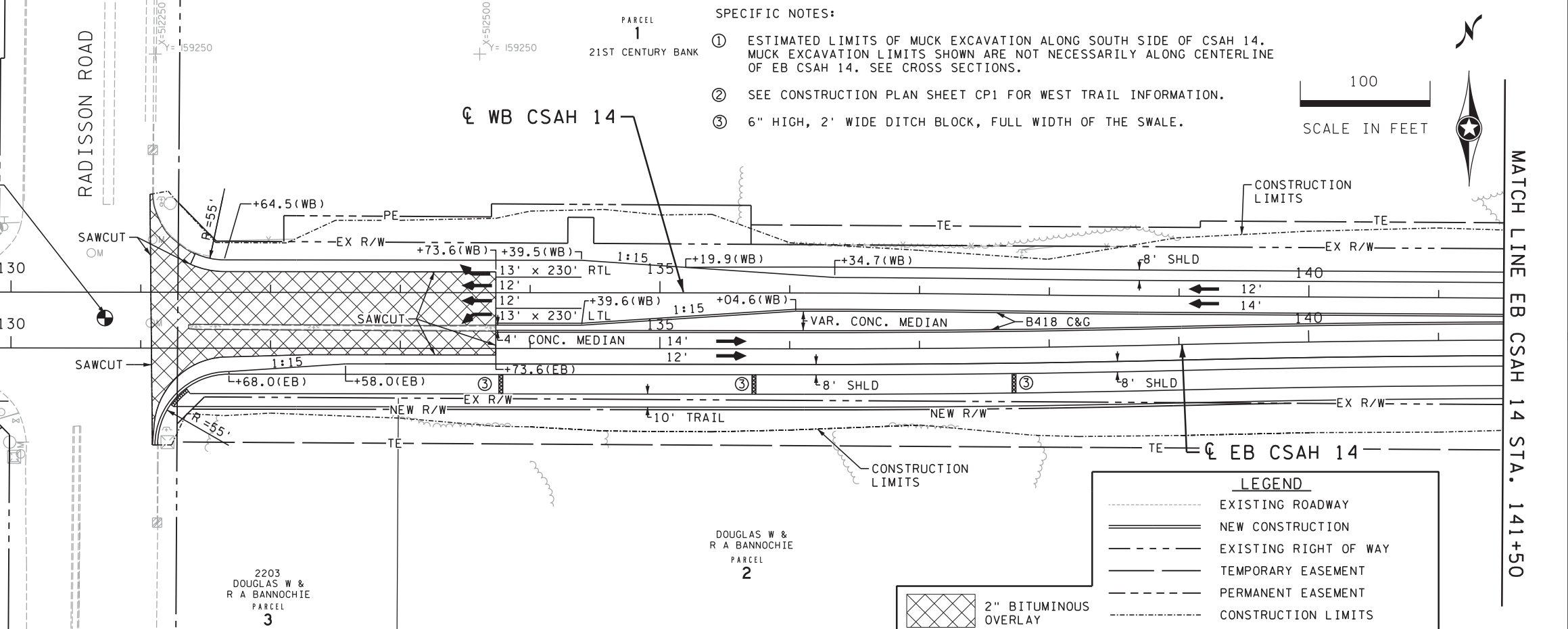
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NOTES:  
 THE RIGHT OF WAY SHOWN IN THIS PLAN GIVES A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY, EASEMENTS, AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP.



GENERAL NOTES:  
 1 STEEL SHEET PILING (TEMPORARY) TO BE PAID FOR AS MNDOT 2452, PER SQUARE FOOT. CONTRACTOR TO PROVIDE TEMPORARY STORING PLAN PER SPECIAL PROVISIONS.

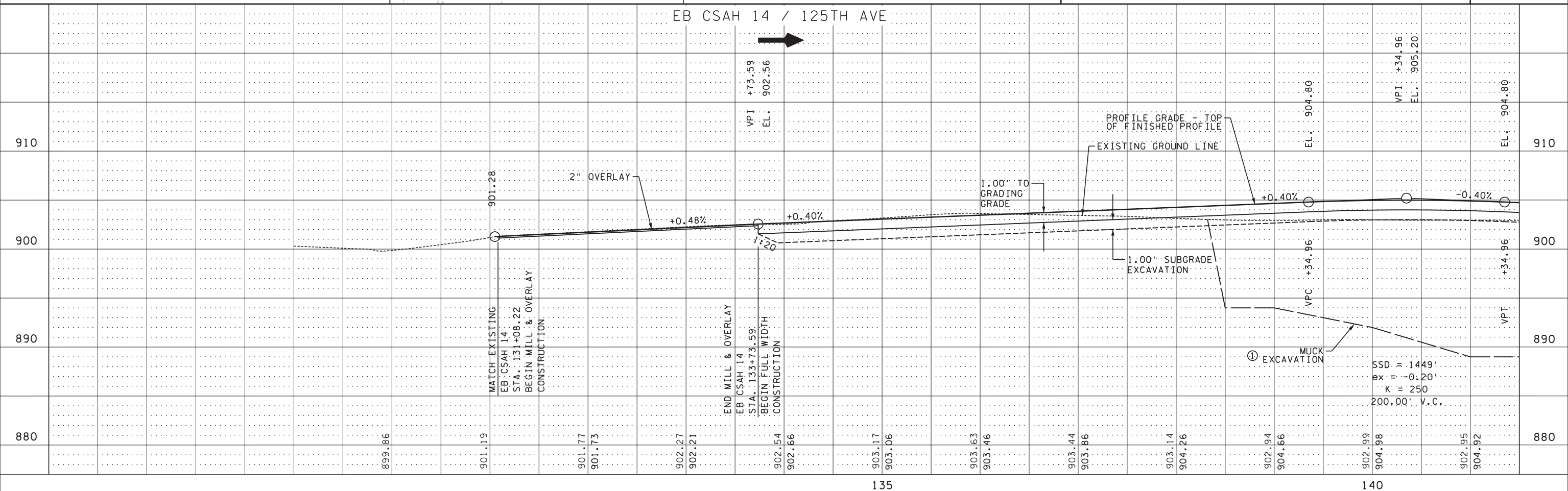


SPECIFIC NOTES:  
 ① ESTIMATED LIMITS OF MUCK EXCAVATION ALONG SOUTH SIDE OF CSAH 14. MUCK EXCAVATION LIMITS SHOWN ARE NOT NECESSARILY ALONG CENTERLINE OF EB CSAH 14. SEE CROSS SECTIONS.  
 ② SEE CONSTRUCTION PLAN SHEET CP1 FOR WEST TRAIL INFORMATION.  
 ③ 6" HIGH, 2' WIDE DITCH BLOCK, FULL WIDTH OF THE SWALE.



LEGEND

	EXISTING ROADWAY
	NEW CONSTRUCTION
	EXISTING RIGHT OF WAY
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	CONSTRUCTION LIMITS



NO.	BY	DATE	REVISIONS

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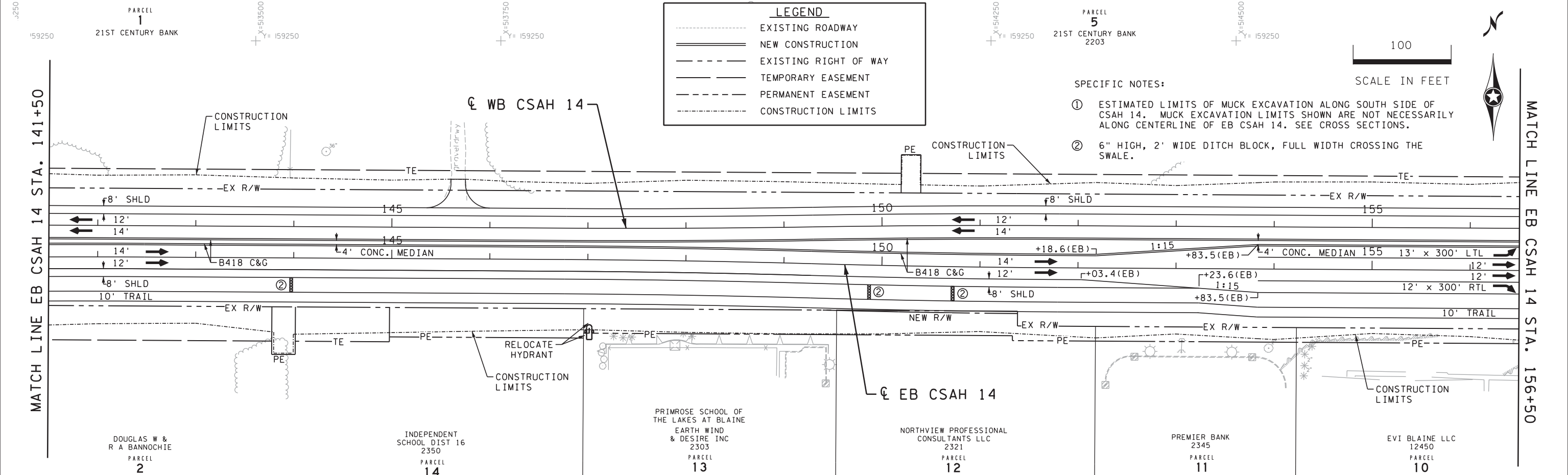


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**CONSTRUCTION PLAN AND PROFILE**  
 EB CSAH 14 STA. 131+08 TO 141+50

FILE NO. 126669	<b>84</b>
CP2 OF CP12	<b>196</b>

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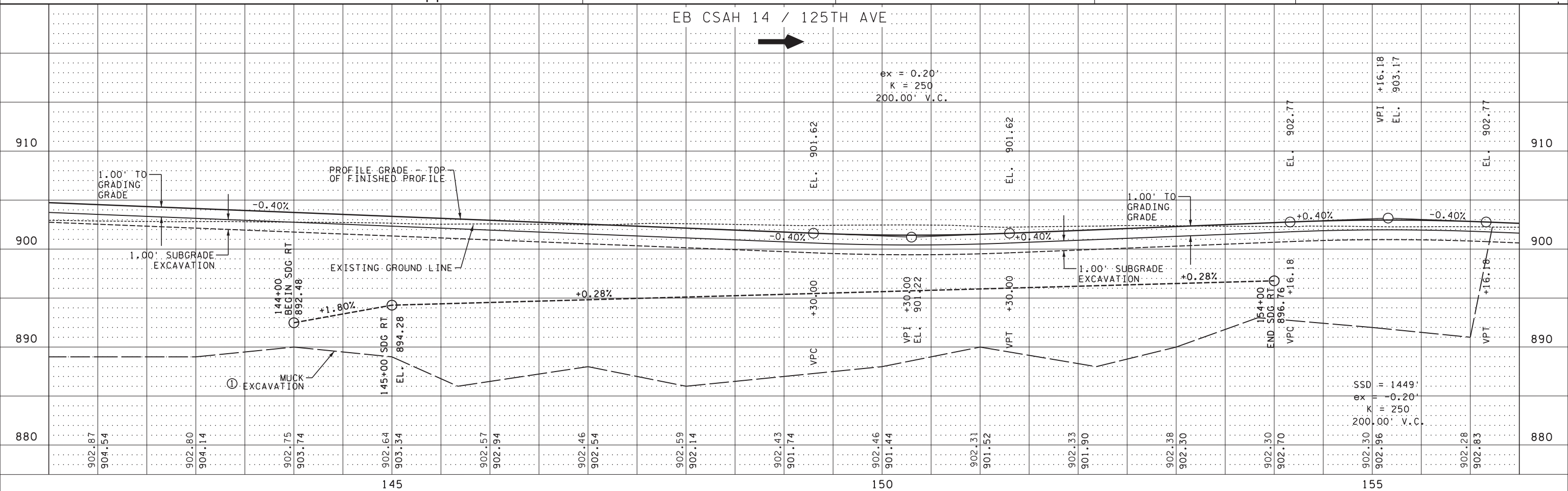


**LEGEND**

- EXISTING ROADWAY
- == NEW CONSTRUCTION
- - - EXISTING RIGHT OF WAY
- - - TEMPORARY EASEMENT
- - - PERMANENT EASEMENT
- - - CONSTRUCTION LIMITS

**SPECIFIC NOTES:**

- ① ESTIMATED LIMITS OF MUCK EXCAVATION ALONG SOUTH SIDE OF CSAH 14. MUCK EXCAVATION LIMITS SHOWN ARE NOT NECESSARILY ALONG CENTERLINE OF EB CSAH 14. SEE CROSS SECTIONS.
- ② 6" HIGH, 2' WIDE DITCH BLOCK, FULL WIDTH CROSSING THE SWALE.



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

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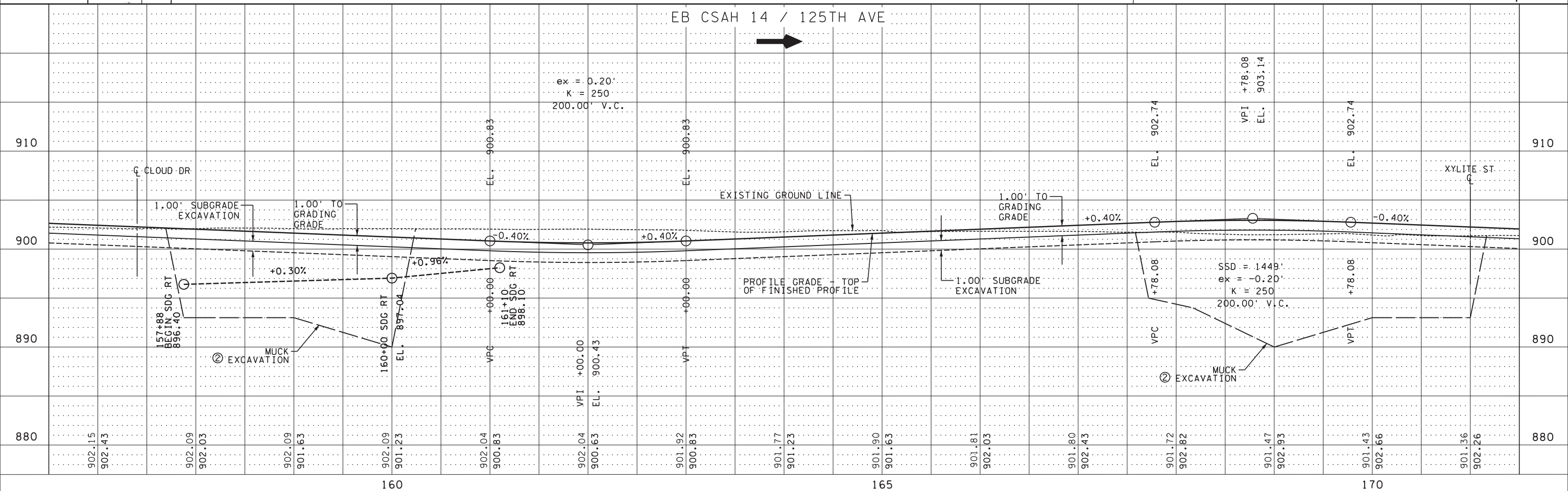
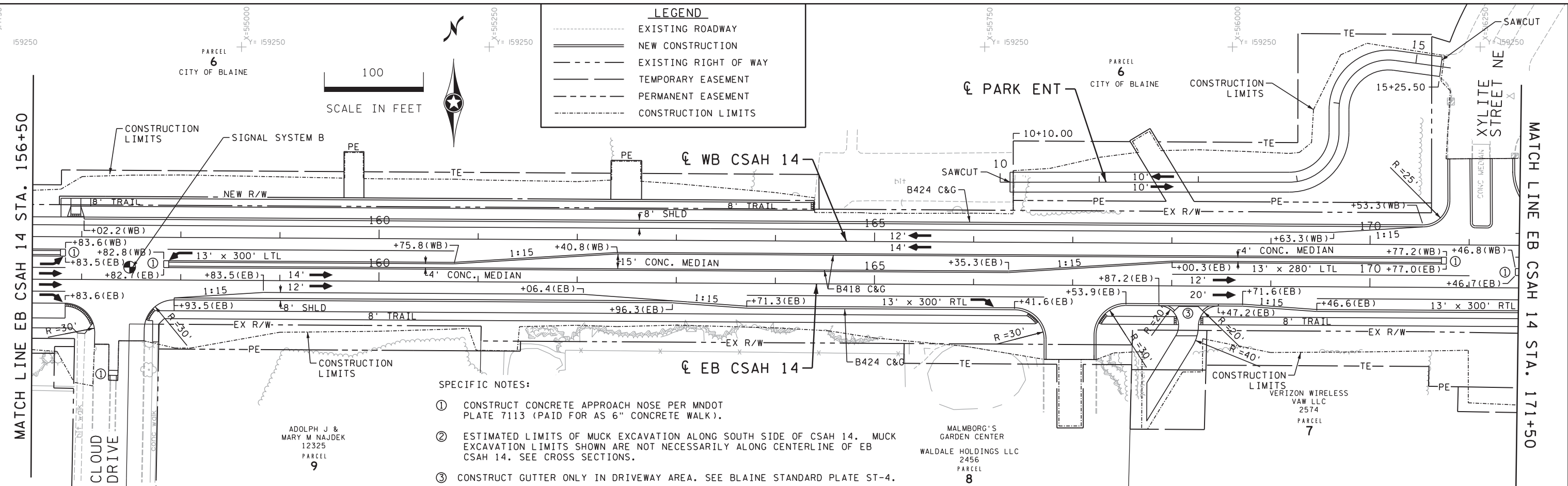


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION PLAN AND PROFILE**  
 EB CSAH 14 STA. 141+50 TO 156+50

FILE NO.	126669	85
CP3		196
OF CP12		

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 10/21/2015  
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 CP4



DESIGN TEAM			
DRAWN BY: CIF			
DESIGNER: JEO			
CHECKED BY: JEO			
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015

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

CITY OF BLAINE, MN.

**CSAH 14**

S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION PLAN AND PROFILE**

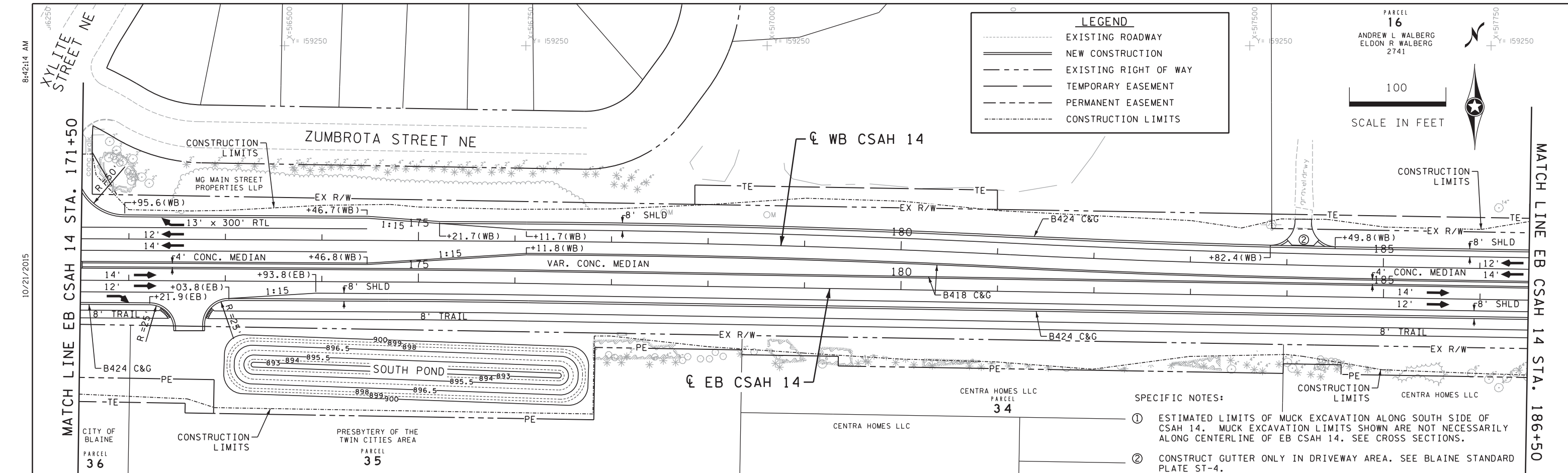
EB CSAH 14 STA. 156+50 TO 171+50

FILE NO.  
126669

CP4  
OF CP12

**86**

**196**



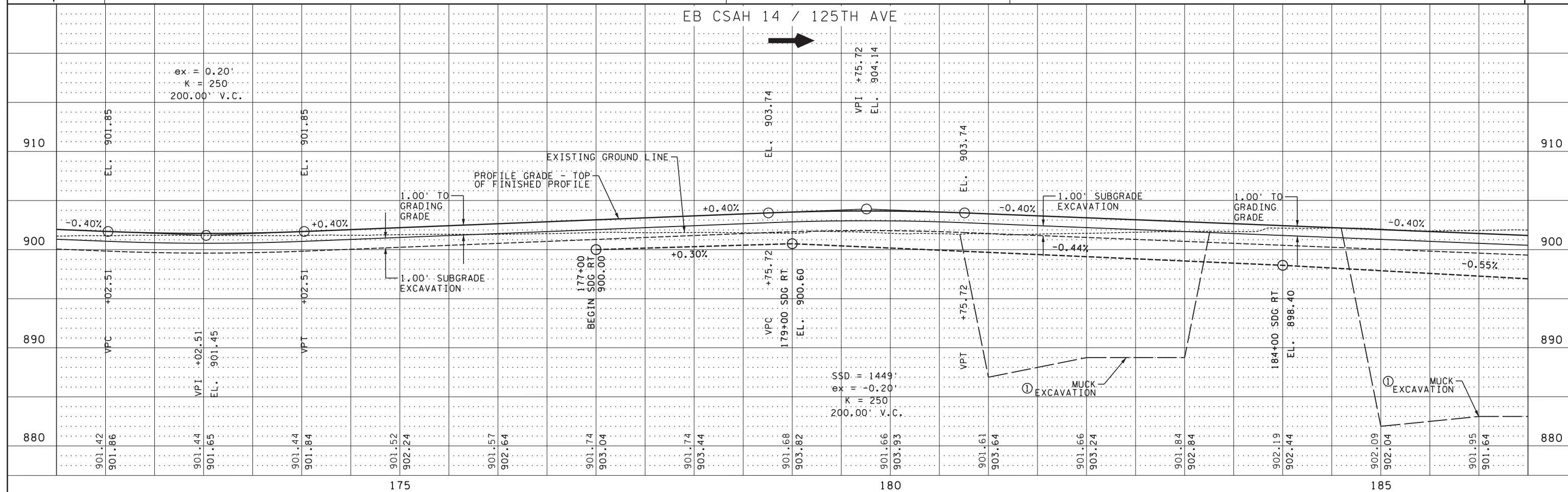
**LEGEND**

- EXISTING ROADWAY
- == NEW CONSTRUCTION
- - - EXISTING RIGHT OF WAY
- - - TEMPORARY EASEMENT
- - - PERMANENT EASEMENT
- CONSTRUCTION LIMITS

PARCEL 16  
ANDREW L WALBERG  
ELDON R WALBERG  
2741

SCALE IN FEET  
100

- SPECIFIC NOTES:**
- ① ESTIMATED LIMITS OF MUCK EXCAVATION ALONG SOUTH SIDE OF CSAH 14. MUCK EXCAVATION LIMITS SHOWN ARE NOT NECESSARILY ALONG CENTERLINE OF EB CSAH 14. SEE CROSS SECTIONS.
  - ② CONSTRUCT GUTTER ONLY IN DRIVEWAY AREA. SEE BLAINE STANDARD PLATE ST-4.



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

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Printed Name: JASON E. OWENS Date: 10/21/2015

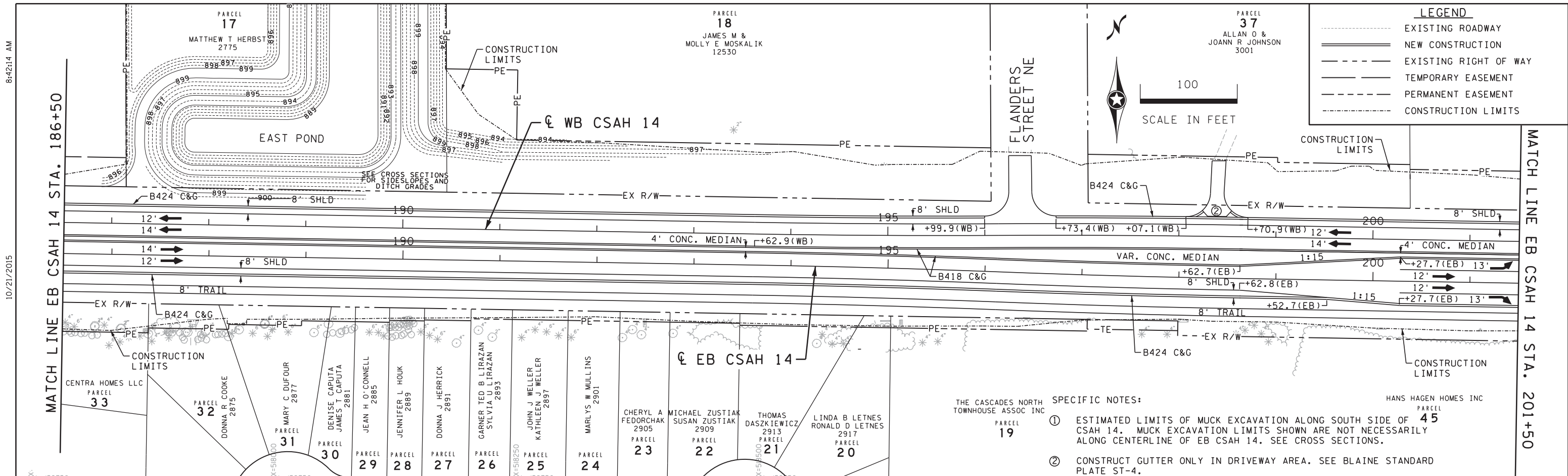
**SEH**  
PHONE: (651)490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

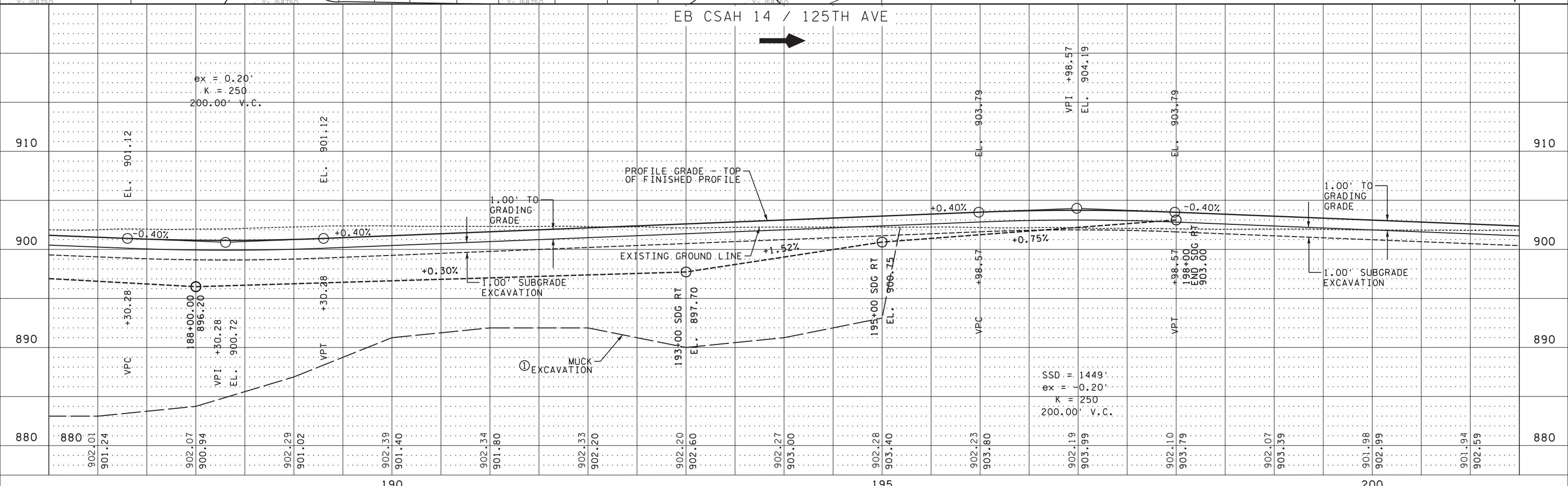
**CONSTRUCTION PLAN AND PROFILE**  
EB CSAH 14 STA. 171+50 TO 186+50

FILE NO.  
126669  
**87**  
CP5  
OF CP12  
**196**

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 10/21/2015



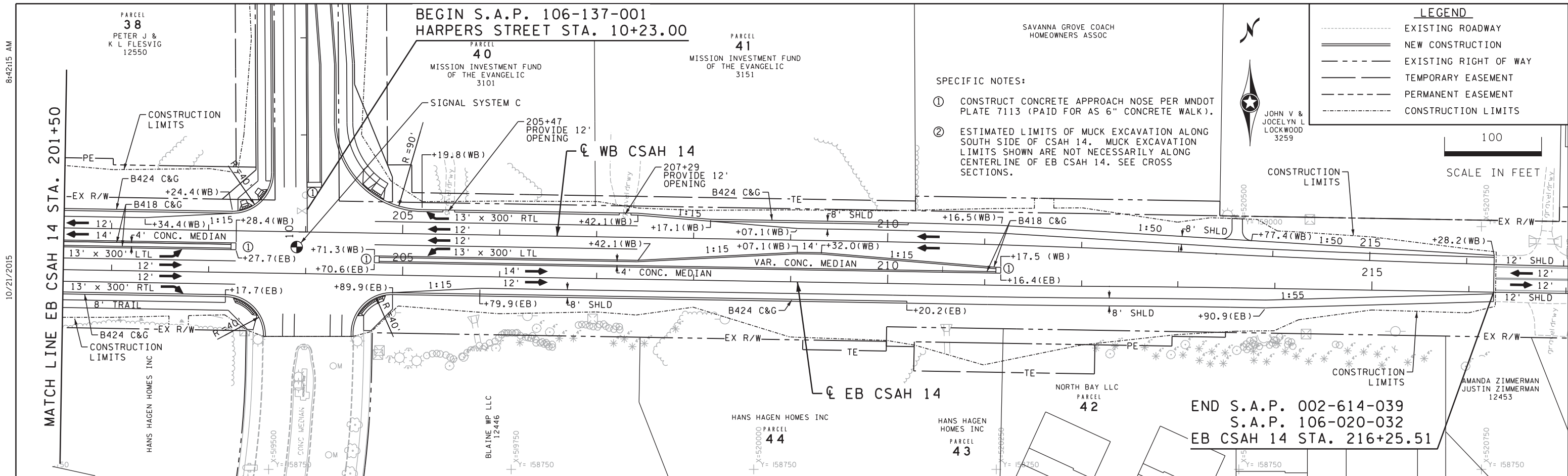
- SPECIFIC NOTES:**
- ① ESTIMATED LIMITS OF MUCK EXCAVATION ALONG SOUTH SIDE OF CSAH 14. MUCK EXCAVATION LIMITS SHOWN ARE NOT NECESSARILY ALONG CENTERLINE OF EB CSAH 14. SEE CROSS SECTIONS.
  - ② CONSTRUCT GUTTER ONLY IN DRIVEWAY AREA. SEE BLAINE STANDARD PLATE ST-4.



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. Certified By: <i>Jason E. Owens</i> Lic. No. 43475 Printed Name: JASON E. OWENS Date: 10/21/2015		CITY OF BLAINE, MN.		FILE NO. 126669	88
DRAWN BY:	CIF	CSAH 14			CONSTRUCTION PLAN AND PROFILE			
DESIGNER:	JEO	S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001				EB CSAH 14 STA. 186+50 TO 201+50		
CHECKED BY:	JEO	NO.	BY	DATE	REVISIONS		CP6	196

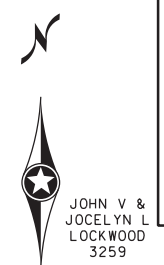
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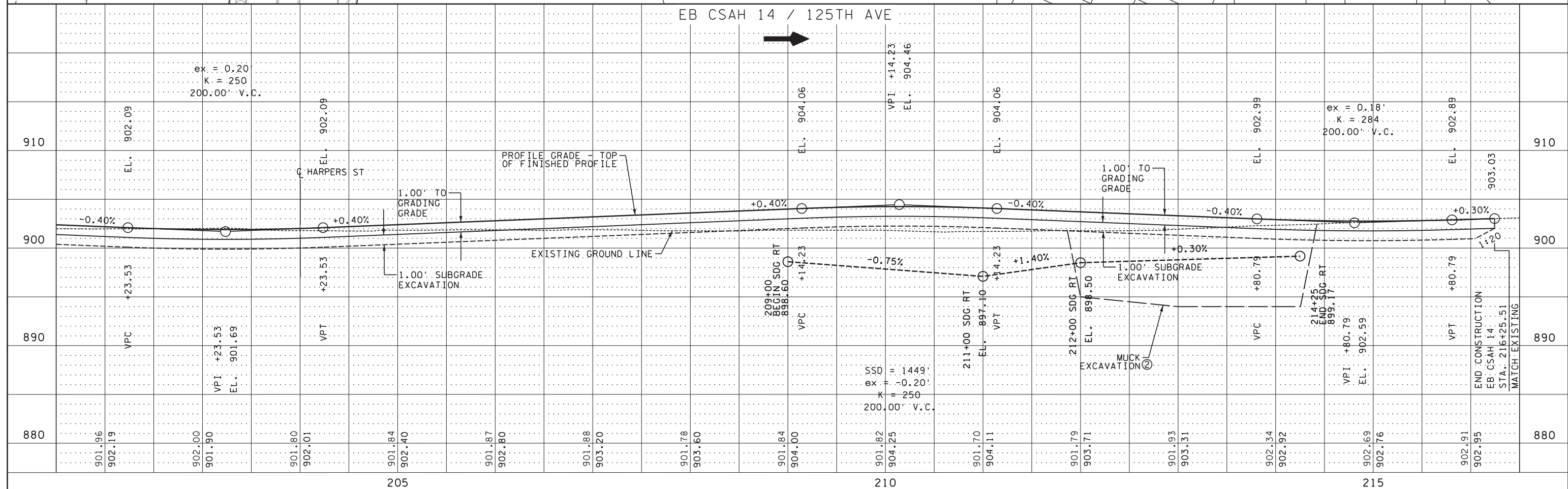


**LEGEND**

- EXISTING ROADWAY
- == NEW CONSTRUCTION
- - - EXISTING RIGHT OF WAY
- - - TEMPORARY EASEMENT
- - - PERMANENT EASEMENT
- - - CONSTRUCTION LIMITS



- SPECIFIC NOTES:**
- ① CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT PLATE 7113 (PAID FOR AS 6" CONCRETE WALK).
  - ② ESTIMATED LIMITS OF MUCK EXCAVATION ALONG SOUTH SIDE OF CSAH 14. MUCK EXCAVATION LIMITS SHOWN ARE NOT NECESSARILY ALONG CENTERLINE OF EB CSAH 14. SEE CROSS SECTIONS.



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION PLAN AND PROFILE**  
 EB CSAH 14 STA. 201+50 TO 216+25

FILE NO.	89
126669	
CP7	196
OF CP12	

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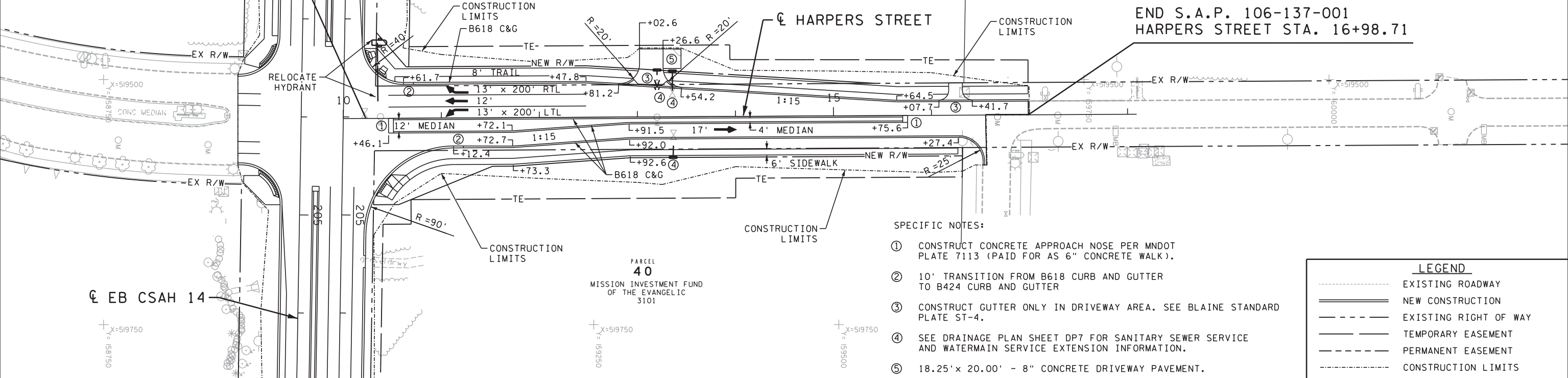
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 CP8

BEGIN S.A.P. 106-137-001  
HARPERS STREET STA. 10+23.00

PARCEL  
38  
PETER J &  
K L FLESVIG  
12550

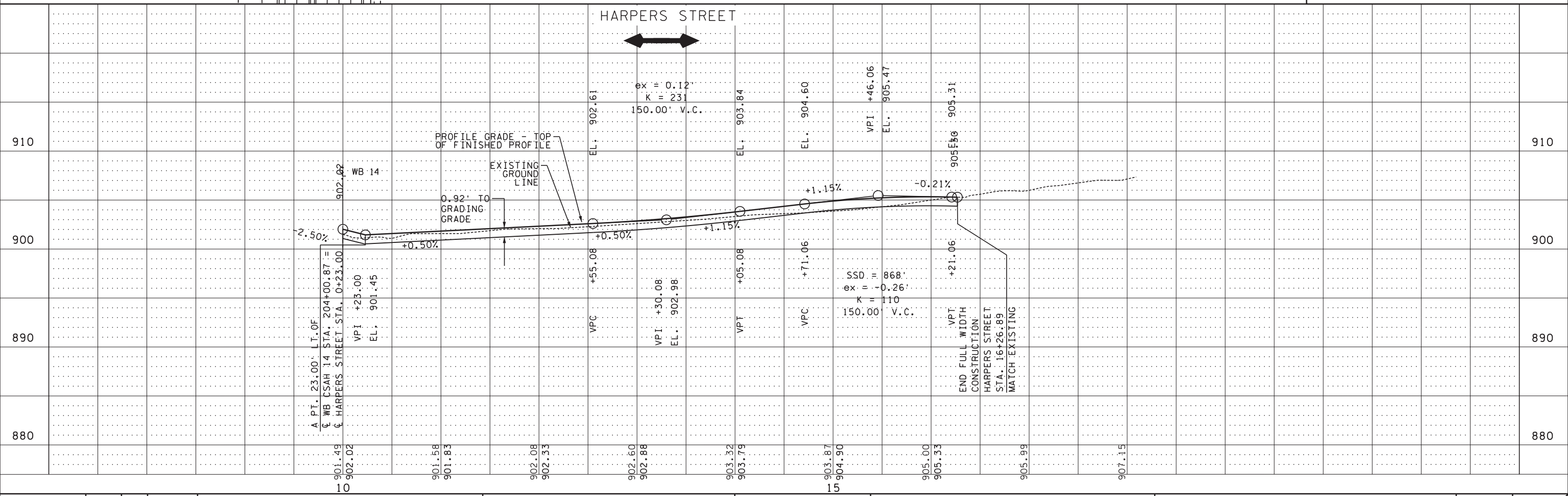


END S.A.P. 106-137-001  
HARPERS STREET STA. 16+98.71



- SPECIFIC NOTES:**
- ① CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT PLATE 7113 (PAID FOR AS 6" CONCRETE WALK).
  - ② 10' TRANSITION FROM B618 CURB AND GUTTER TO B424 CURB AND GUTTER
  - ③ CONSTRUCT GUTTER ONLY IN DRIVEWAY AREA. SEE BLAINE STANDARD PLATE ST-4.
  - ④ SEE DRAINAGE PLAN SHEET DP7 FOR SANITARY SEWER SERVICE AND WATERMAIN SERVICE EXTENSION INFORMATION.
  - ⑤ 18.25' x 20.00' - 8" CONCRETE DRIVEWAY PAVEMENT.

LEGEND	
	EXISTING ROADWAY
	NEW CONSTRUCTION
	EXISTING RIGHT OF WAY
	TEMPORARY EASEMENT
	PERMANENT EASEMENT
	CONSTRUCTION LIMITS



NO.	BY	DATE	REVISIONS

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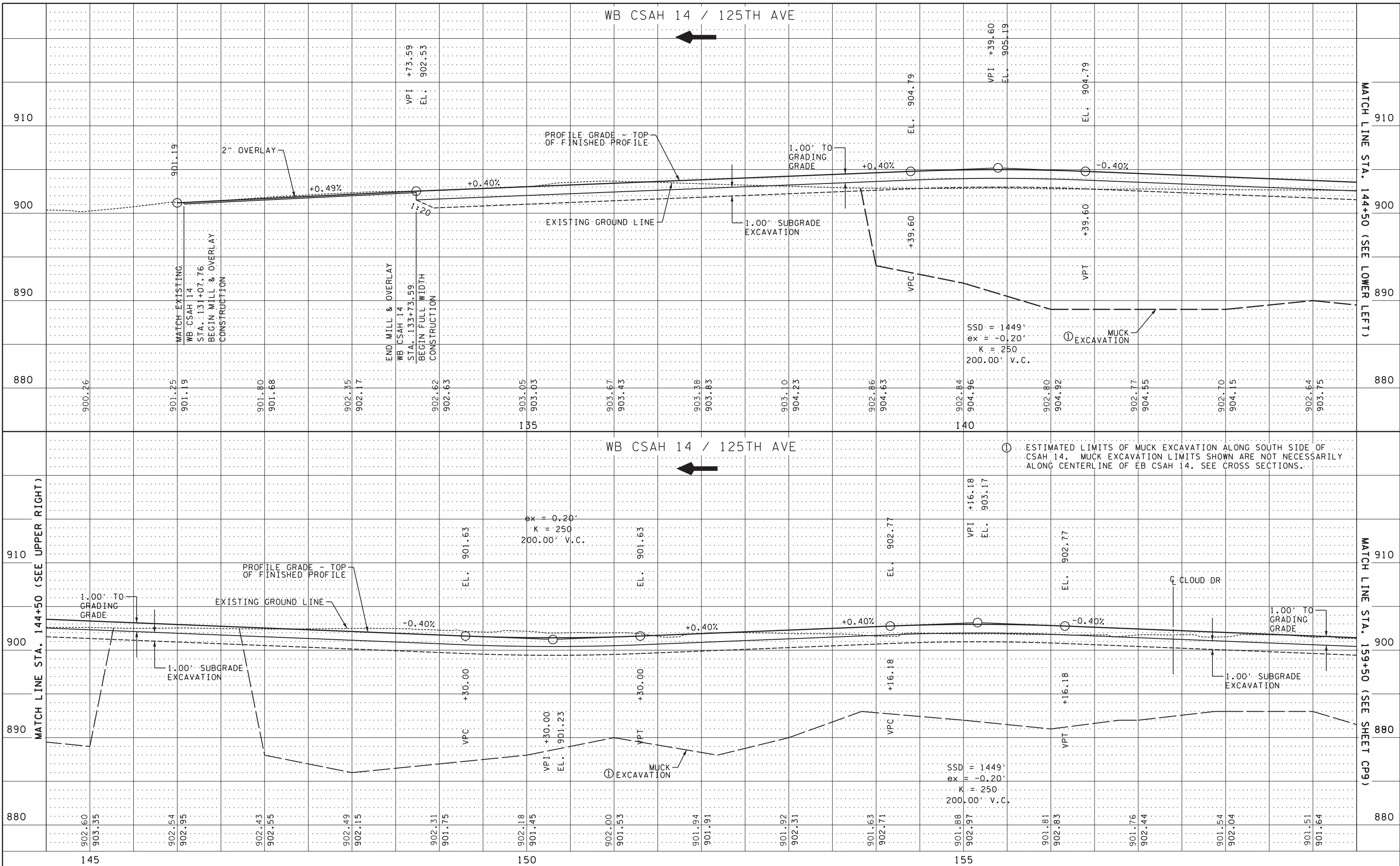
Certified By: *Jason E. Owens* Lic. No. 43475  
 Licensed Professional Engineer  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

<b>CONSTRUCTION PLAN AND PROFILE</b>		FILE NO. 90
HARPERS STREET STA. 10+23 TO 16+99		126669
CP8		196
OF CP12		

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 CP9  
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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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 Certified By: Jason E. Owens Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

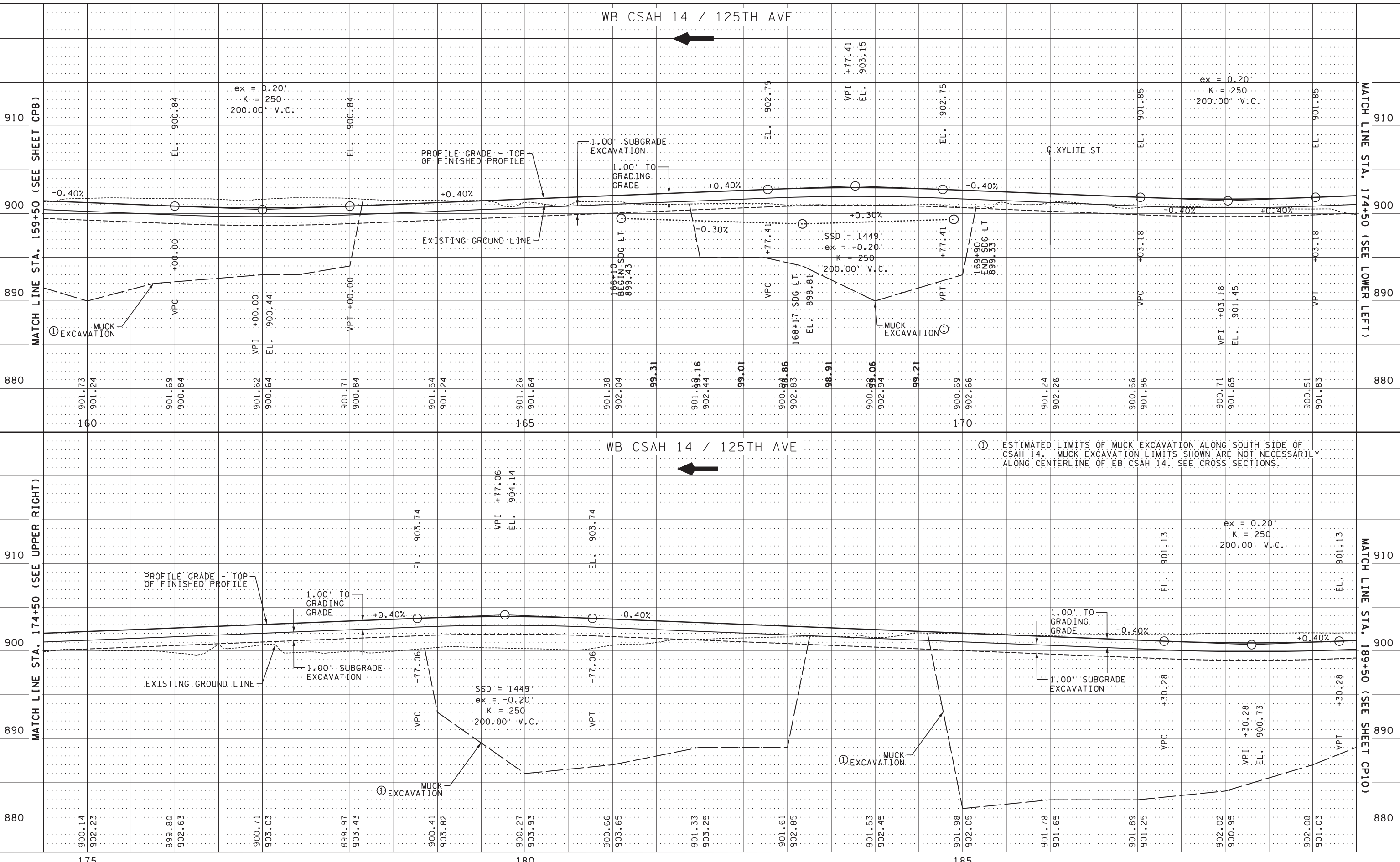
**CONSTRUCTION PROFILE**  
 WB CSAH 14 STA. 131+00 TO 159+50

FILE NO. 126669	91
CP9 OF CP12	196

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WB CSAH 14 / 125TH AVE

WB CSAH 14 / 125TH AVE



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

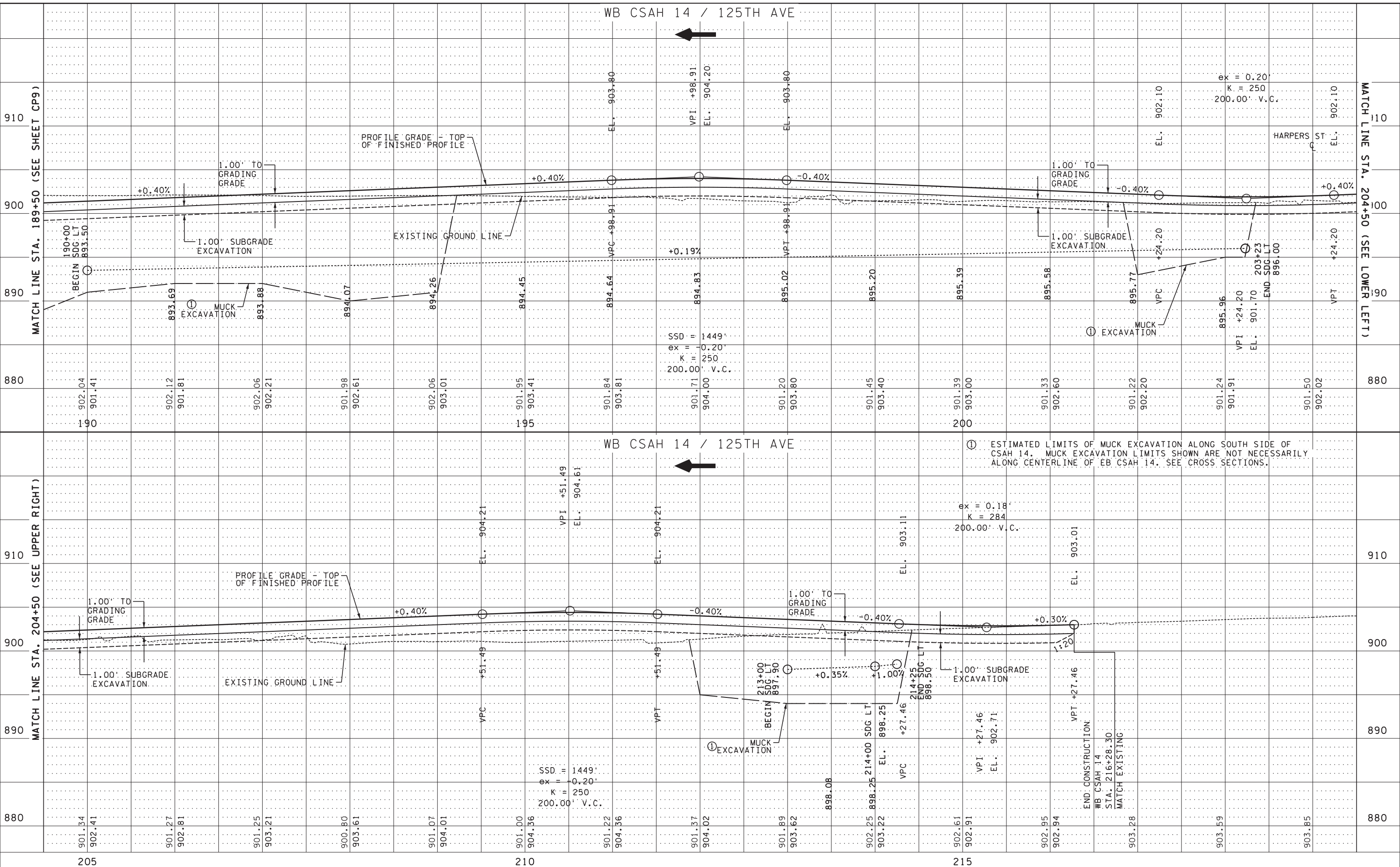
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**CONSTRUCTION PROFILE**  
 WB CSAH 14 STA. 159+50 TO 189+50

FILE NO. 126669  
**CP10**  
 OF CP12

92  
 196

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NO.	BY	DATE	REVISIONS

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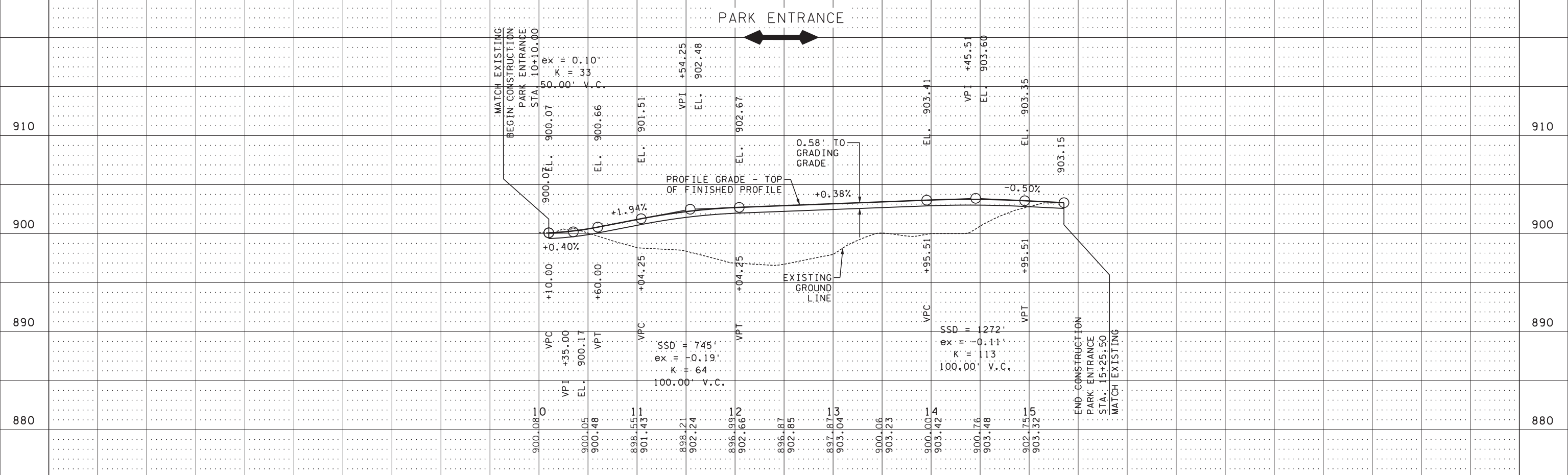
Certified By: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

DESIGN TEAM	<b>CONSTRUCTION PROFILE</b> WB CSAH 14 STA. 159+50 TO 216+27	FILE NO.	<b>93</b> CP11 OF CP12
DRAWN BY: CIF		126669	
DESIGNER: JEO		196	

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CP12  
10/21/2015  
8:42:19 AM



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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.

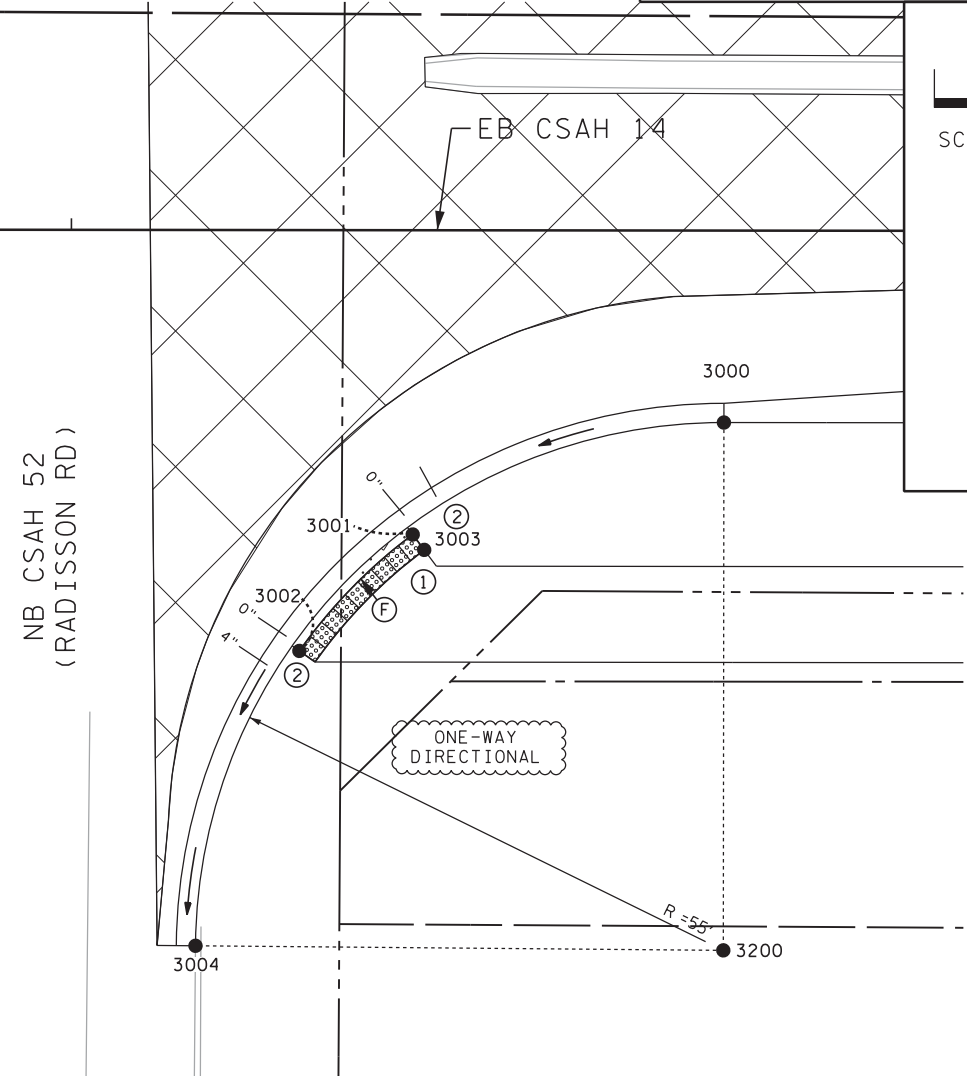
Certified By: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**CONSTRUCTION PROFILE**  
PARK ENTRANCE

NB CSAH 52  
(RADISSON RD)



GUTTER PROFILE POINTS				
POINT	POINT COORDINATES		ELEVATION	GUTTER SLOPE
	X	Y		
3000	512306.81	159003.46	901.00	-0.06
3004	512251.74	158948.93	899.68	-0.06

C&G RADIUS POINTS			
POINT	POINT COORDINATES		RADIUS
	X	Y	
3200	512306.74	158948.46	55

PEDESTRIAN RAMP POINTS			
POINT	POINT COORDINATES		ELEVATION
	X	Y	
3001	512274.23	158991.99	900.50
3002	512262.36	158979.80	900.21
3003	512275.58	158990.19	900.55

### LEGEND

CONSTRUCT 6" CONCRETE WALK

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.050 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.050 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.

TRUNCATED DOMES (SEE STANDARD PLATE 7038)

RAMP TYPES - SEE PEDESTRIAN CURB RAMP STANDARD PLAN SHEETS

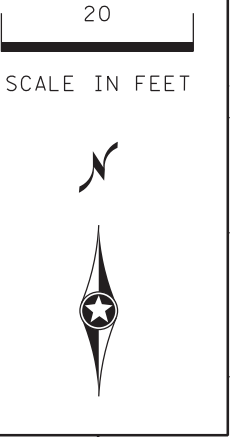
X" CURB HEIGHT AT INDICATED LOCATION

**PEDESTRIAN RAMP SPECIFIC NOTES:**

- 4' X 4' MINIMUM LANDING WITH MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS.
- 1:6 GRADED FLARE

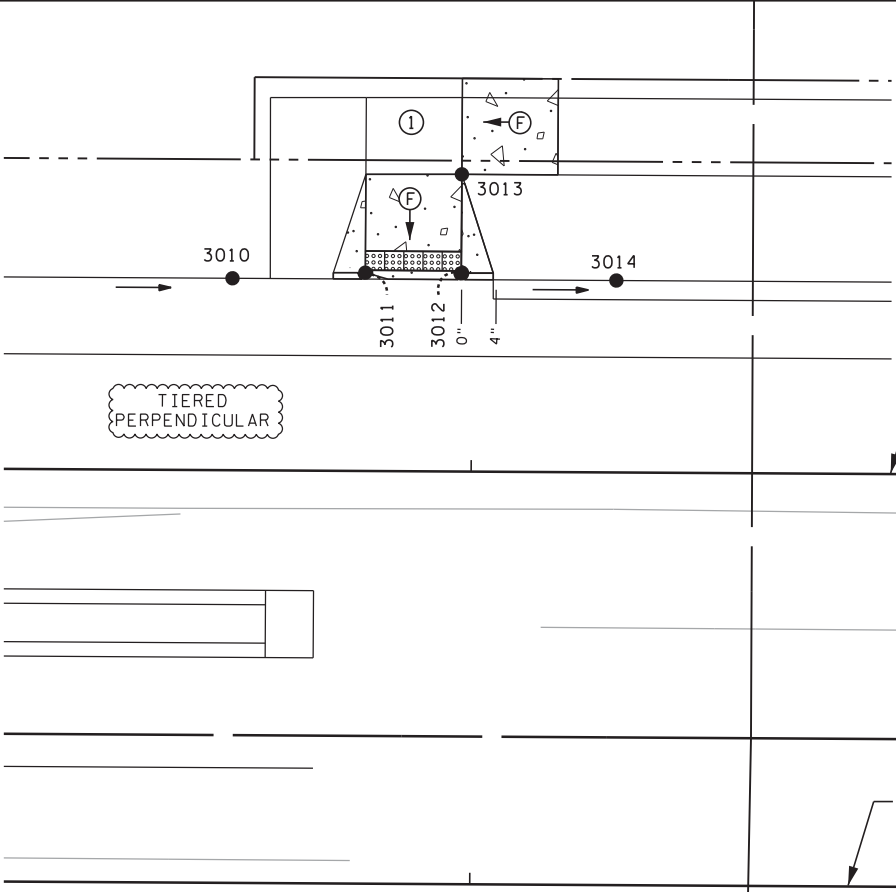
**PEDESTRIAN RAMP GENERAL NOTES:**

- SEE STANDARD PLANS 5-297.250 FOR PEDESTRIAN RAMP DETAILS.
- FLARES SHALL BE 3' LONG ADJACENT TO NON-WALKABLE SURFACES 5' LONG ADJACENT TO WALKABLE SURFACES.

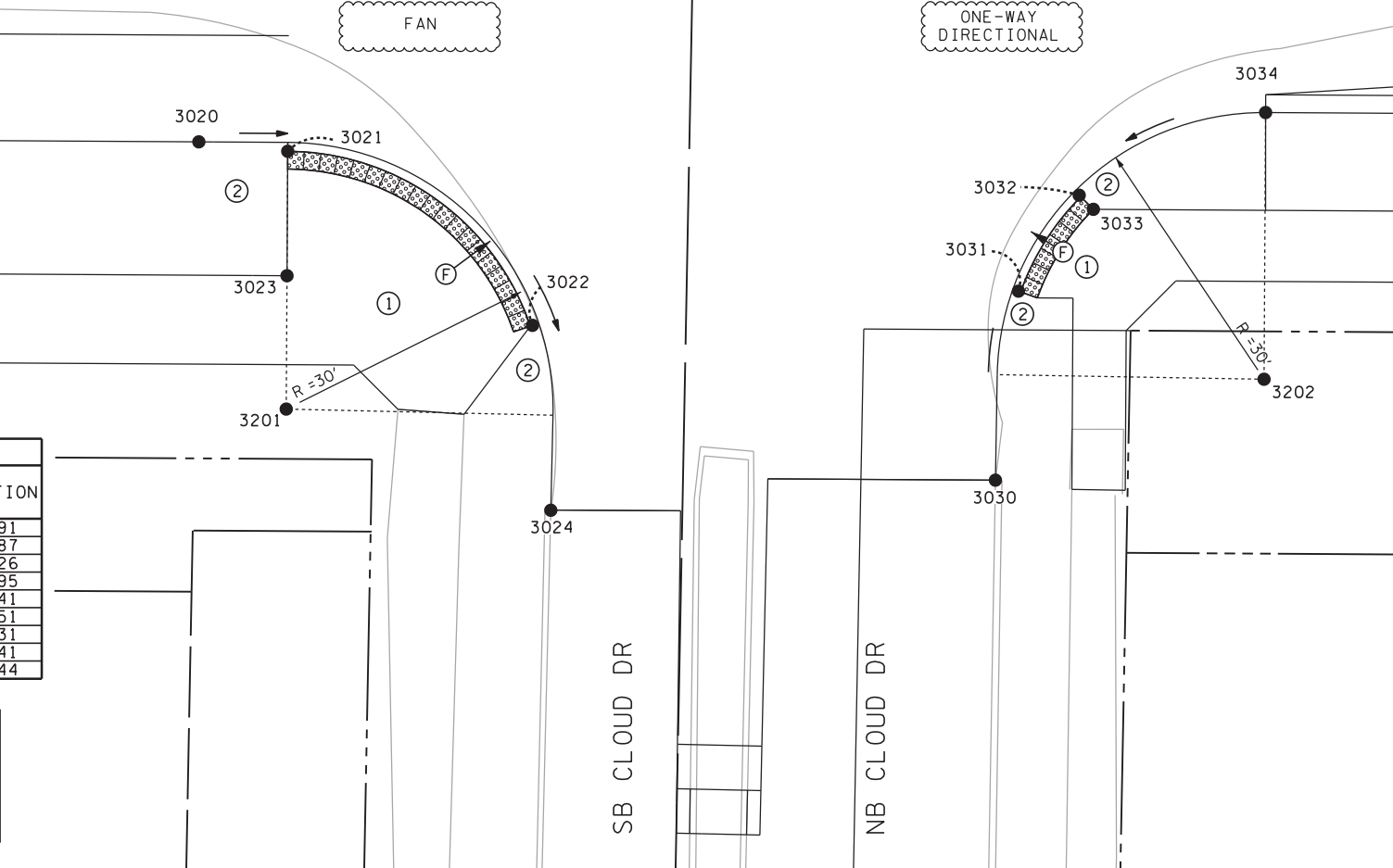


PEDESTRIAN RAMP POINTS			
POINT	POINT COORDINATES		ELEVATION
	X	Y	
3011	514827.79	159079.17	901.91
3012	514837.79	159079.11	901.87
3013	514837.85	159089.41	902.26
3021	514822.07	158990.53	901.95
3022	514849.90	158971.07	901.41
3023	514821.99	158976.53	902.51
3031	514904.23	158974.80	901.31
3032	514911.05	158985.59	901.41
3033	514910.35	158974.02	901.44

C&G RADIUS POINTS			
POINT	POINT COORDINATES		RADIUS
	X	Y	
3201	514821.93	158962.53	30
3202	514931.83	158964.89	30



GUTTER PROFILE POINTS				
POINT	POINT COORDINATES		ELEVATION	GUTTER SLOPE
	X	Y		
3010	516360.20	158956.52	902.04	-0.06
3014	514853.93	159078.35	901.72	-0.06
3020	514812.08	158991.59	901.96	
3024	514851.65	158950.17	901.30	
3030	514901.64	158953.54	901.30	
3034	514932.01	158994.89	901.44	-0.06



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

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Certified By: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

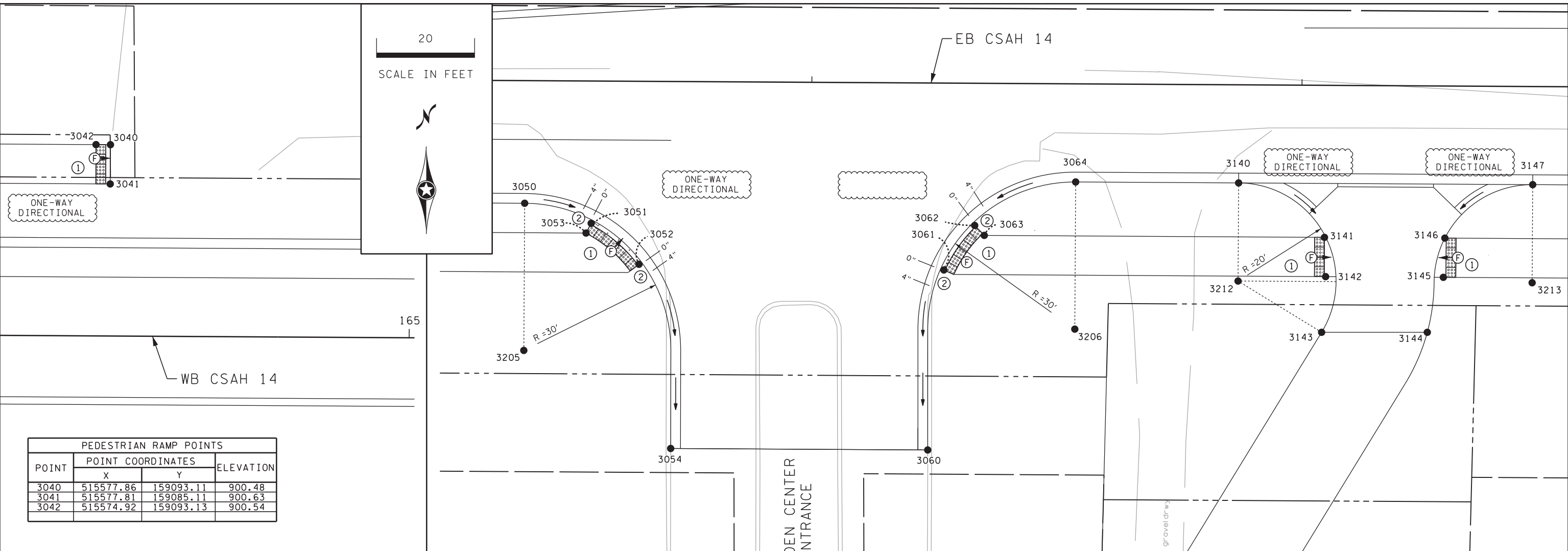
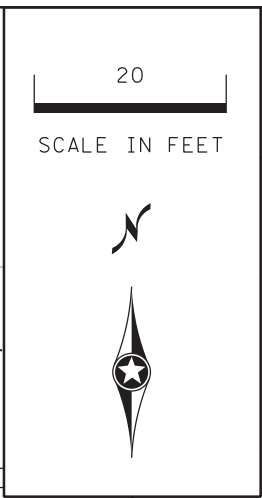
**INTERSECTION & PEDESTRIAN RAMP DETAILS**  
 CSAH 14 (MAIN ST) AT CSAH 52 (RADISSON RD) & CSAH 14 (MAIN ST) AT CLOUD DR

FILE NO. 126669	<b>95</b>
ID1 OF 104	<b>196</b>

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10/21/2015

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PEDESTRIAN RAMP POINTS			
POINT	POINT COORDINATES		ELEVATION
	X	Y	
3040	515577.86	159093.11	900.48
3041	515577.81	159085.11	900.63
3042	515574.92	159093.13	900.54

**LEGEND**

CONSTRUCT 6" CONCRETE WALK

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.050 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.050 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.

TRUNCATED DOMES (SEE STANDARD PLATE 7038)

RAMP TYPES - SEE PEDESTRIAN CURB RAMP STANDARD PLAN SHEETS

" X" CURB HEIGHT AT INDICATED LOCATION

**PEDESTRIAN RAMP SPECIFIC NOTES:**

① 4' X 4' MINIMUM LANDING WITH MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS.

② 1:6 GRADED FLARE

**PEDESTRIAN RAMP GENERAL NOTES:**

- SEE STANDARD PLANS 5-297.250 FOR PEDESTRIAN RAMP DETAILS.

- FLARES SHALL BE 3' LONG ADJACENT TO NON-WALKABLE SURFACES  
5' LONG ADJACENT TO WALKABLE SURFACES.

GUTTER PROFILE POINTS				
POINT	POINT COORDINATES		ELEVATION	GUTTER SLOPE
	X	Y		
3050	515780.06	158984.92	901.50	-0.06
3054	515809.85	158934.93	900.98	-0.06
3060	515862.28	158934.63	901.37	-0.06
3064	515892.46	158989.26	902.08	-0.06
3140	515925.71	158989.07	902.21	-0.06
3143	515942.64	158958.62	901.22	
3144	515964.20	158958.62	901.28	
3147	515985.71	158988.72	902.35	-0.06

PEDESTRIAN RAMP POINTS			
POINT	POINT COORDINATES		ELEVATION
	X	Y	
3051	515793.62	158980.84	901.45
3052	515803.38	158972.48	901.41
3053	515792.57	158978.85	901.58
3061	515865.55	158971.34	901.64
3062	515871.90	158980.36	901.85
3063	515873.82	158978.37	901.90
3141	515943.22	158977.97	902.06
3142	515943.43	158969.97	901.94
3145	515967.77	158969.82	902.00
3146	515967.78	158977.82	902.12

C&G RADIUS POINTS			
POINT	POINT COORDINATES		RADIUS
	X	Y	
3205	515779.88	158954.92	30
3206	515892.29	158959.26	30
3212	515925.59	158969.07	20
3213	515985.59	158968.72	20

DESIGN TEAM			
NO.	BY	DATE	REVISIONS

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Certified By: *Jason E. Owens* Lic. No. 43475  
 Licensed Professional Engineer  
 Printed Name: JASON E. OWENS Date: 10/21/2015



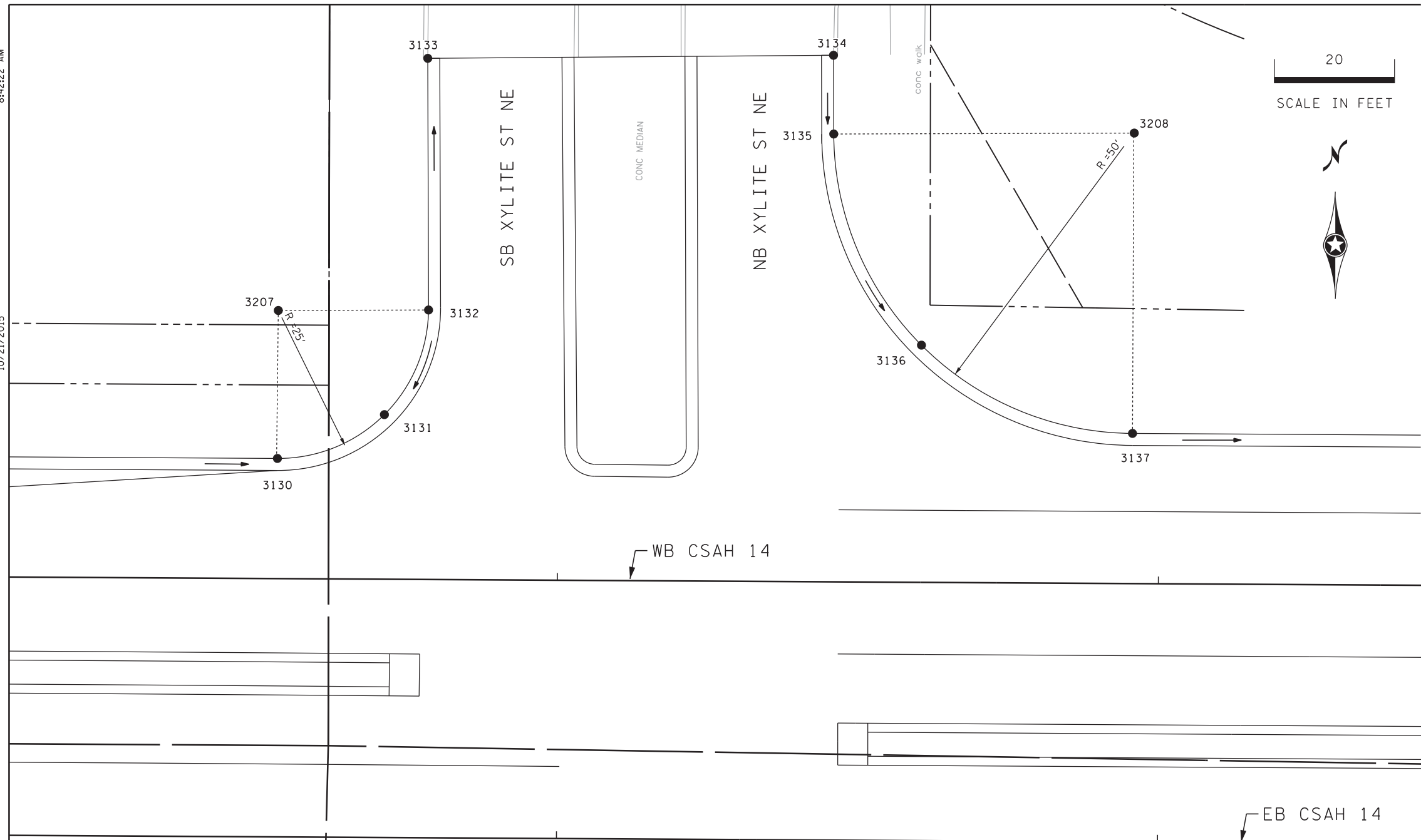
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**INTERSECTION &  
 PEDESTRIAN RAMP DETAILS**  
 CSAH 14 (125TH AVE) AT PIONEER PARK ENTRANCE  
 & CSAH 14 (125TH AVE) AT GARDEN CENTER ENTRANCE

FILE NO. 126669  
**96**  
 ID2 OF 104  
**196**



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10/21/2015



### LEGEND

CONSTRUCT 6" CONCRETE WALK

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.050 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.

INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.050 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.

TRUNCATED DOMES (SEE STANDARD PLATE 7038)

RAMP TYPES - SEE PEDESTRIAN CURB RAMP STANDARD PLAN SHEETS

"X" CURB HEIGHT AT INDICATED LOCATION

**PEDESTRIAN RAMP SPECIFIC NOTES:**

- 4' X 4' MINIMUM LANDING WITH MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS.
- 1:6 GRADED FLARE

**PEDESTRIAN RAMP GENERAL NOTES:**

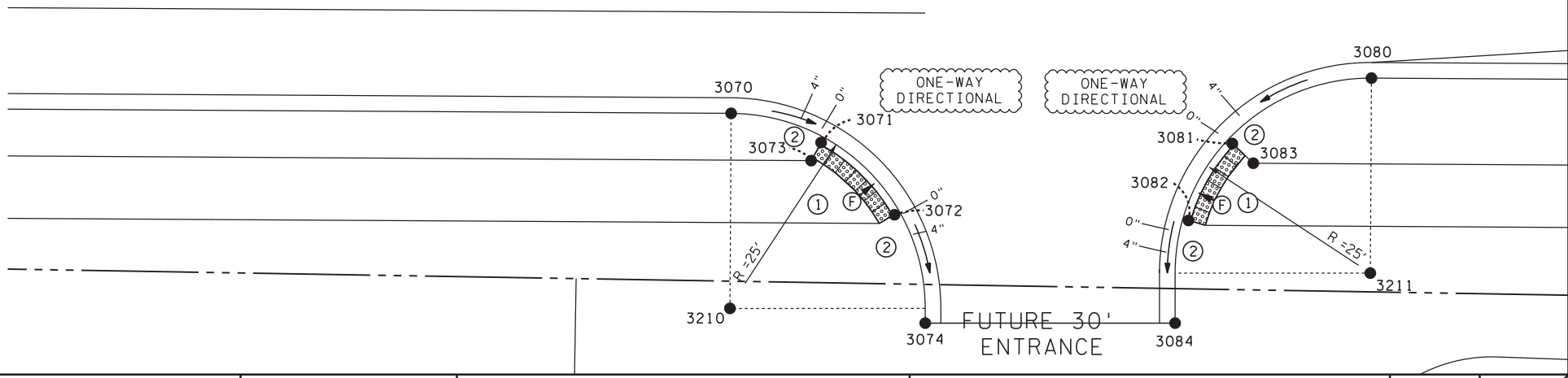
- SEE STANDARD PLANS 5-297.250 FOR PEDESTRIAN RAMP DETAILS.
- FLARES SHALL BE 3' LONG ADJACENT TO NON-WALKABLE SURFACES  
5' LONG ADJACENT TO WALKABLE SURFACES.

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id3

GUTTER PROFILE POINTS				
POINT	POINT COORDINATES		ELEVATION	GUTTER SLOPE
	X	Y		
3070	516360.35	158981.52	901.08	-0.06
3074	516385.20	158954.63	900.00	-0.06
3080	516442.35	158986.04	901.17	-0.06
3084	516417.20	158954.63	899.87	-0.06
3130	516192.22	159070.51	901.88	-0.06
3131	516210.02	159077.81	901.98	-0.06
3132	516217.37	159095.22	902.08	-0.06
3133	516217.23	159137.12	901.86	-0.06
3134	516284.74	159137.63	901.60	-0.06
3135	516284.78	159124.52	901.54	-0.06
3136	516299.38	159089.37	901.36	-0.06
3137	516334.49	159074.68	901.18	-0.06

PEDESTRIAN RAMP POINTS			
POINT	POINT COORDINATES		ELEVATION
	X	Y	
3071	516371.87	158977.78	901.04
3072	516381.27	158968.53	900.82
3073	516370.60	158975.46	901.09
3081	516424.53	158977.65	900.95
3082	516418.91	158967.79	900.75
3083	516427.21	158975.13	901.02

C&G RADIUS POINTS			
POINT	POINT COORDINATES		RADIUS
	X	Y	
3207	516192.37	159095.14	25
3208	516334.78	159124.68	50
3210	516360.20	158956.52	25
3211	516442.20	158961.04	25



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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.

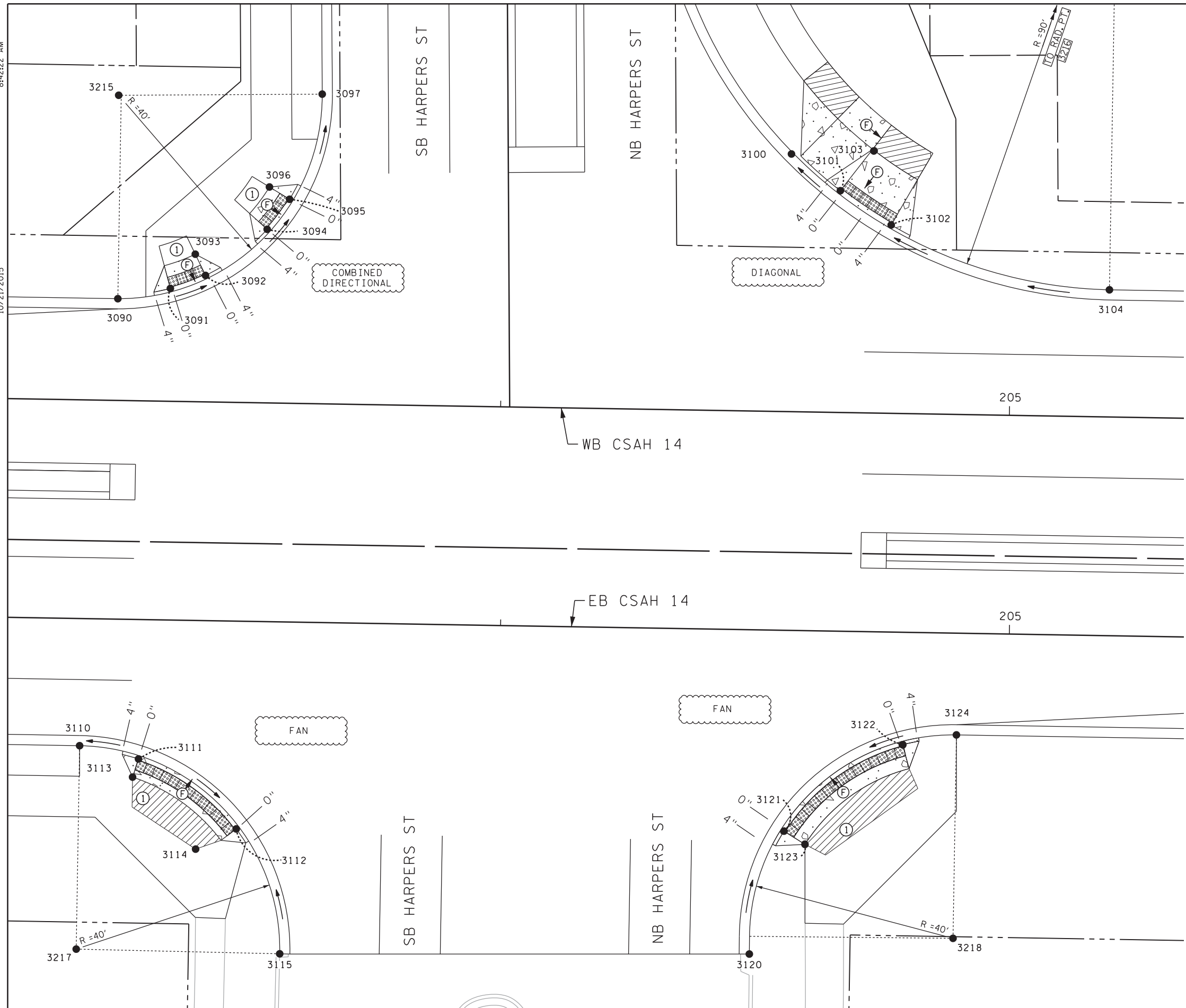
Certified By: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

<b>INTERSECTION &amp; PEDESTRIAN RAMP DETAILS</b>	FILE NO. 126669
CSAH 14 (125TH AVE) AT XYLITE ST NE & CSAH 14 (125TH AVE) AT FUTURE ENTRANCE	97
ID3 OF 104	196

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10/21/2015



### LEGEND

- CONSTRUCT 6" CONCRETE WALK
- LANDING AREA- 4'X4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.050 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.050 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN. THE PEDESTRIAN RAMP CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT.
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- RAMP TYPES - SEE PEDESTRIAN CURB RAMP STANDARD PLAN SHEETS
- X" CURB HEIGHT AT INDICATED LOCATION

**PEDESTRIAN RAMP SPECIFIC NOTES:**

- ① 4' X 4' MINIMUM LANDING WITH MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS.
- ② 1:6 GRADED FLARE

**PEDESTRIAN RAMP GENERAL NOTES:**

- SEE STANDARD PLANS 5-297.250 FOR PEDESTRIAN RAMP DETAILS.
- FLARES SHALL BE 3' LONG ADJACENT TO NON-WALKABLE SURFACES  
5' LONG ADJACENT TO WALKABLE SURFACES.

PEDESTRIAN RAMP POINTS			
POINT	POINT COORDINATES		ELEVATION
	X	Y	
3091	519473.20	159017.83	901.26
3092	519480.11	159020.39	901.22
3093	519478.10	159024.56	901.39
3094	519492.23	159029.46	901.12
3095	519496.63	159035.36	901.08
3096	519492.68	159037.77	901.25
3101	519604.88	159037.04	900.87
3102	519614.87	159030.30	901.06
3103	519611.24	159045.19	901.23
3111	519466.94	158925.31	901.22
3112	519486.14	158911.56	900.94
3113	519465.77	158921.75	901.29
3114	519478.16	158907.59	901.11
3121	519593.81	158911.13	901.29
3122	519617.11	158928.11	901.79
3123	519597.93	158908.52	901.39



C&G RADIUS POINTS			
POINT	POINT COORDINATES		RADIUS
	X	Y	
3215	519463.05	159055.81	40
3216	519659.27	159107.54	90
3217	519454.70	158887.93	40
3218	519627.02	158890.05	40

GUTTER PROFILE POINTS				
POINT	POINT COORDINATES		ELEVATION	GUTTER SLOPE
	X	Y		
3090	519461.75	159015.83	901.33	-0.06
3097	519503.05	159056.03	900.96	-0.06
3100	519595.51	159044.52	900.68	-0.06
3104	519657.76	159017.56	902.10	-0.06
3110	519455.37	158927.92	901.20	-0.06
3115	519494.69	158887.01	901.78	-0.06
3120	519586.99	158886.96	901.59	-0.06
3124	519627.69	158930.05	901.79	-0.06

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

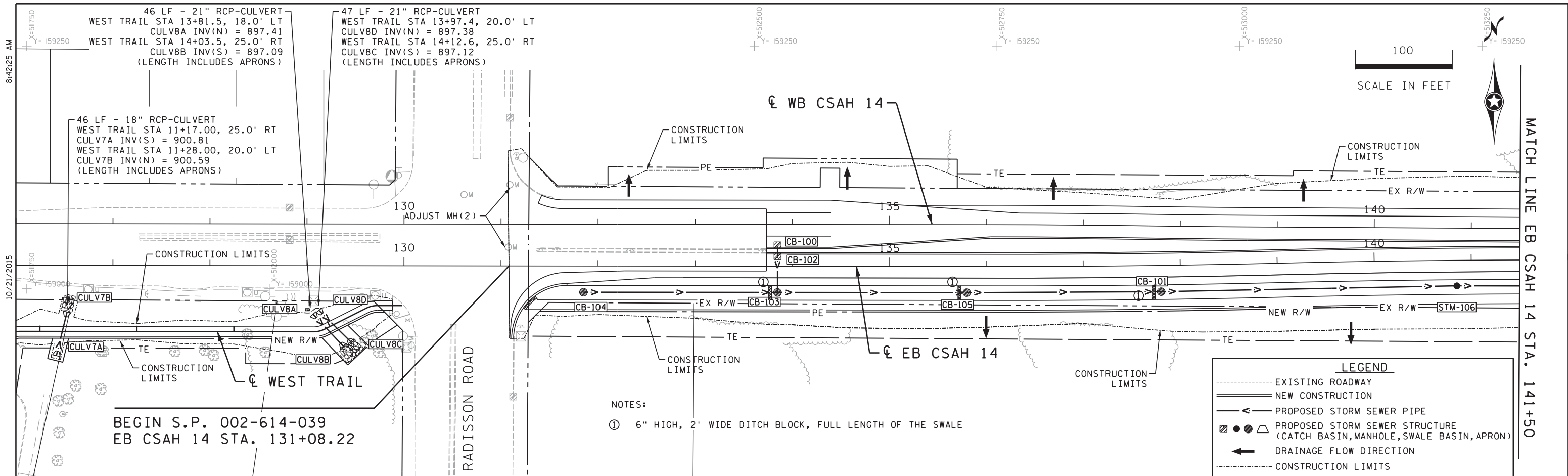
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

<b>INTERSECTION &amp;          PEDESTRIAN RAMP DETAILS</b> CSAH 14 (125TH AVE) AT HARPERS ST	FILE NO. 126669 <b>ID4</b> OF 104	<b>98</b>  <b>196</b>
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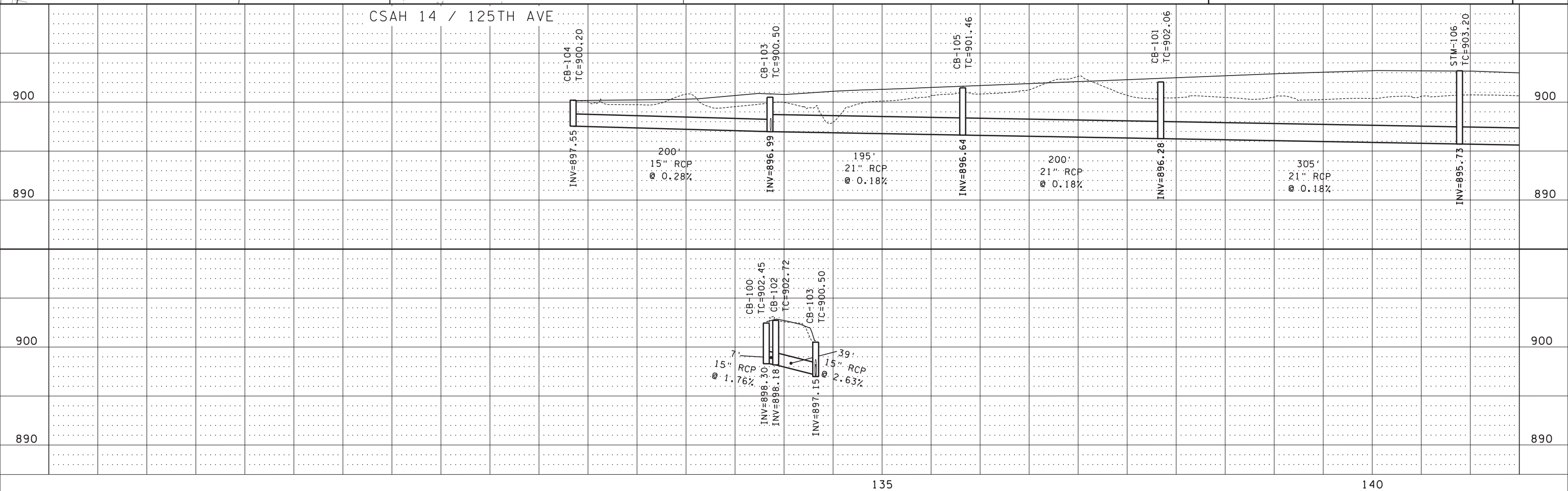


**LEGEND**

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- ○ △ PROPOSED STORM SEWER STRUCTURE (CATCH BASIN, MANHOLE, SWALE BASIN, APRON)
- ← DRAINAGE FLOW DIRECTION
- - - CONSTRUCTION LIMITS

**NOTES:**  
 ① 6" HIGH, 2' WIDE DITCH BLOCK, FULL LENGTH OF THE SWALE

BEGIN S.P. 002-614-039  
 EB CSAH 14 STA. 131+08.22



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DESIGNER:	REP		
CHECKED BY:	REP		
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: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**DRAINAGE PLAN AND PROFILE**  
 EB CSAH 14 STA. 131+08 TO 141+50

FILE NO.	99
126669	
DP1	196
OF DP7	

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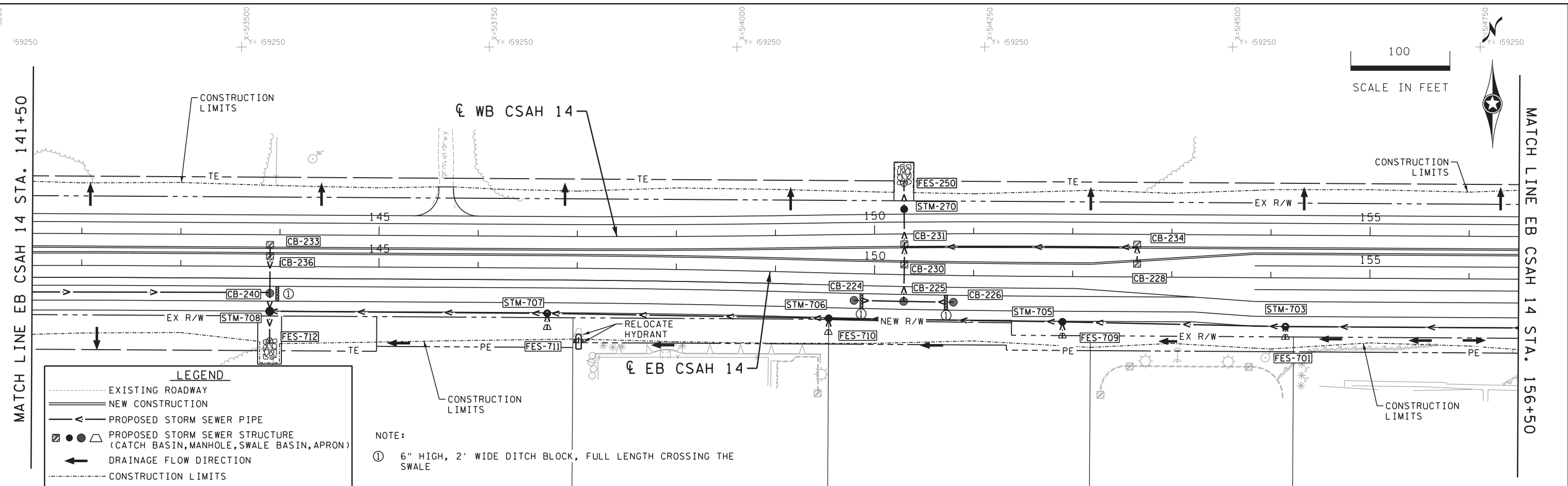
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MATCH LINE EB CSAH 14 STA. 141+50

MATCH LINE EB CSAH 14 STA. 156+50

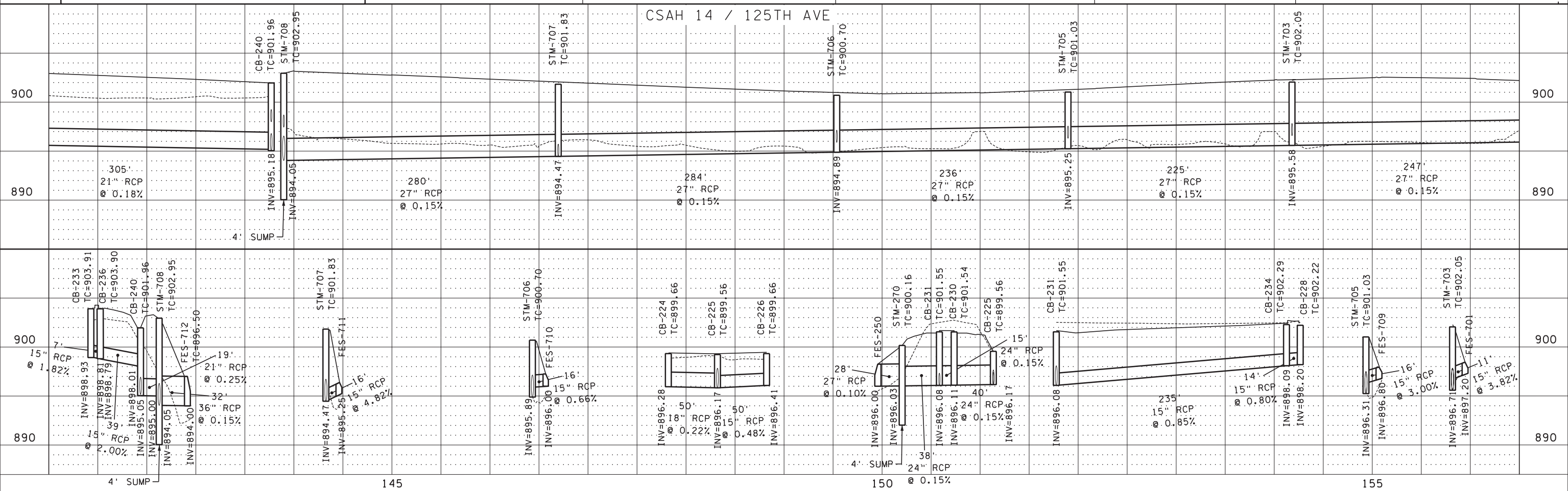


**LEGEND**

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURE (CATCH BASIN, MANHOLE, SWALE BASIN, APRON)
- DRAINAGE FLOW DIRECTION
- CONSTRUCTION LIMITS

**NOTE:**

- ① 6" HIGH, 2' WIDE DITCH BLOCK, FULL LENGTH CROSSING THE SWALE



NO.	BY	DATE	REVISIONS

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Certified By: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMMANN Date: 10/21/2015

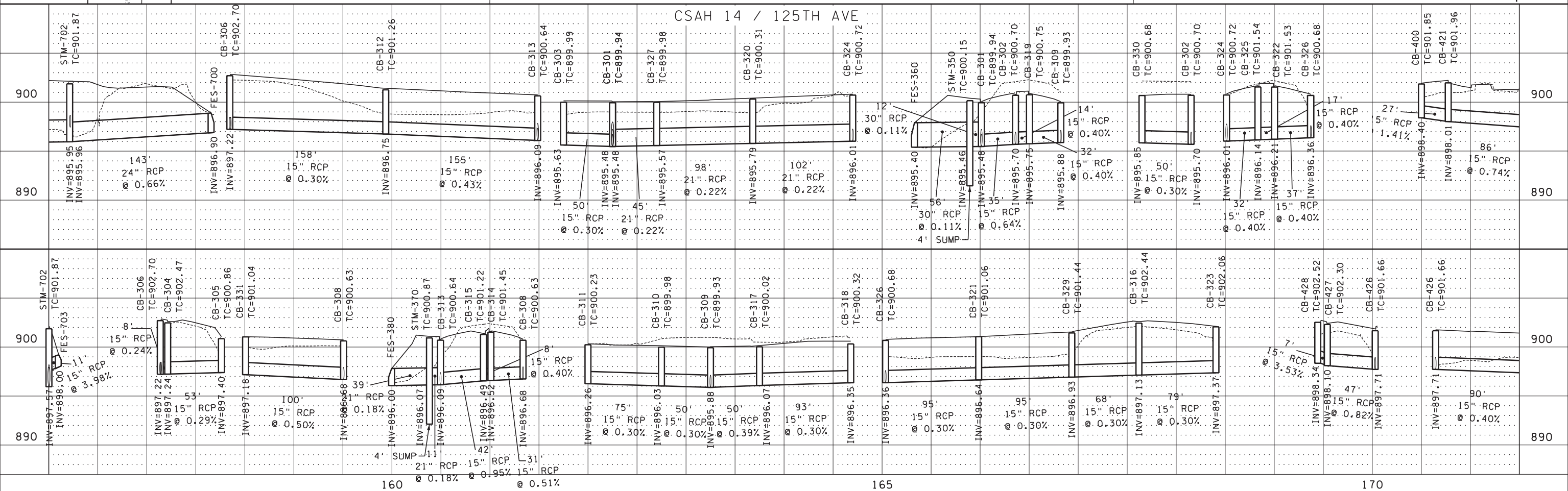
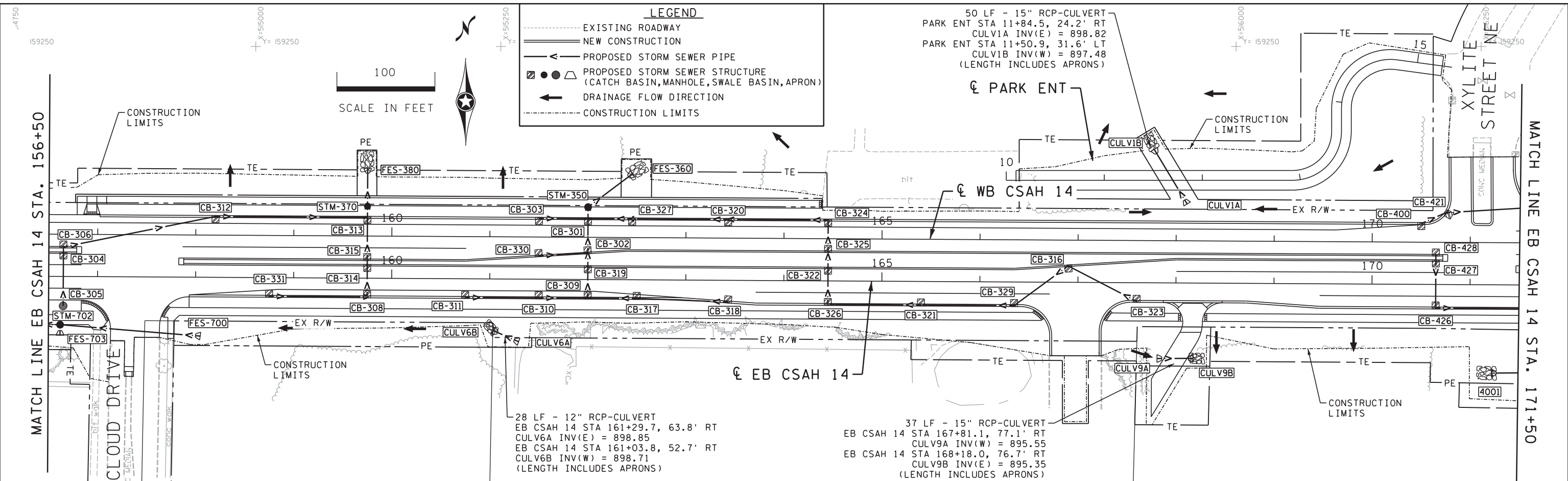


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**DRAINAGE PLAN AND PROFILE**  
 EB CSAH 14 STA. 141+50 TO 156+50

FILE NO. 126669	100
DP2 OF DP7	196

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 DP3



NO.	BY	DATE	REVISIONS

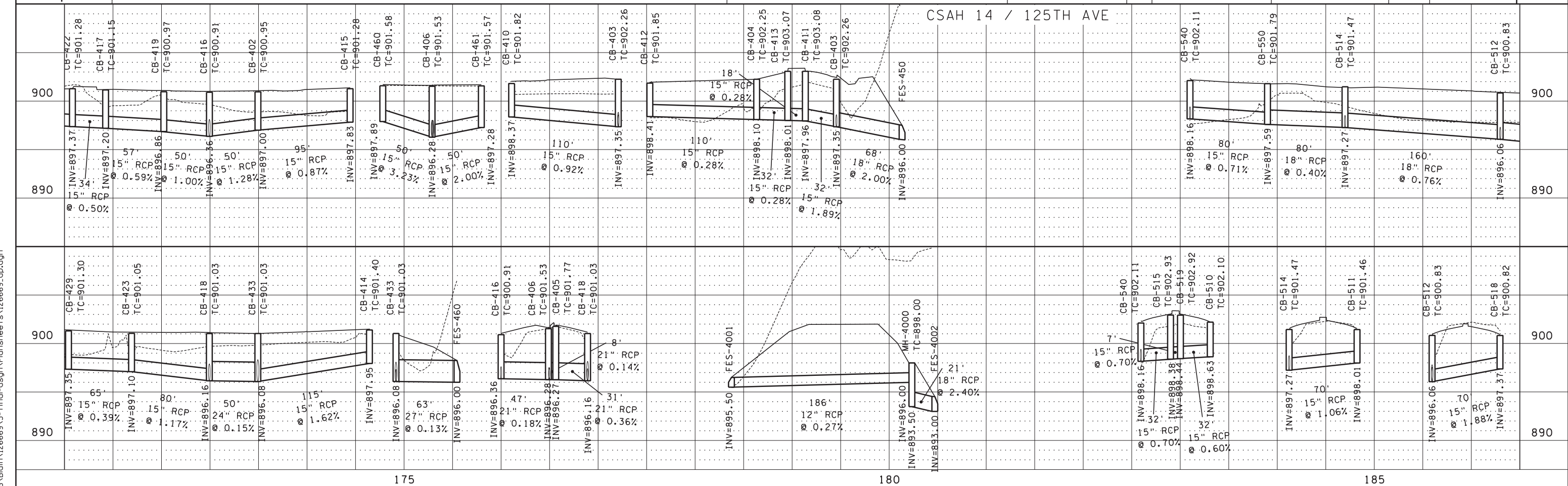
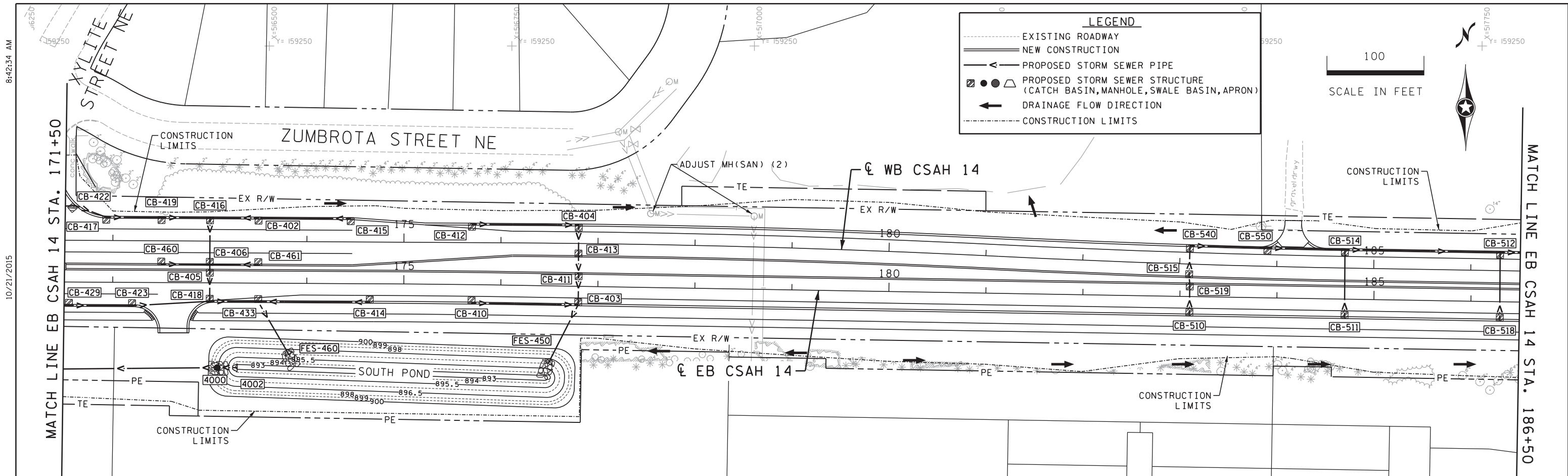
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Certified By: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**DRAINAGE PLAN AND PROFILE**  
 EB CSAH 14 STA. 156+50 TO 171+50

FILE NO. 126669	101
DP3	196
OF DP7	



DESIGN TEAM			
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DESIGNER:	REP		
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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

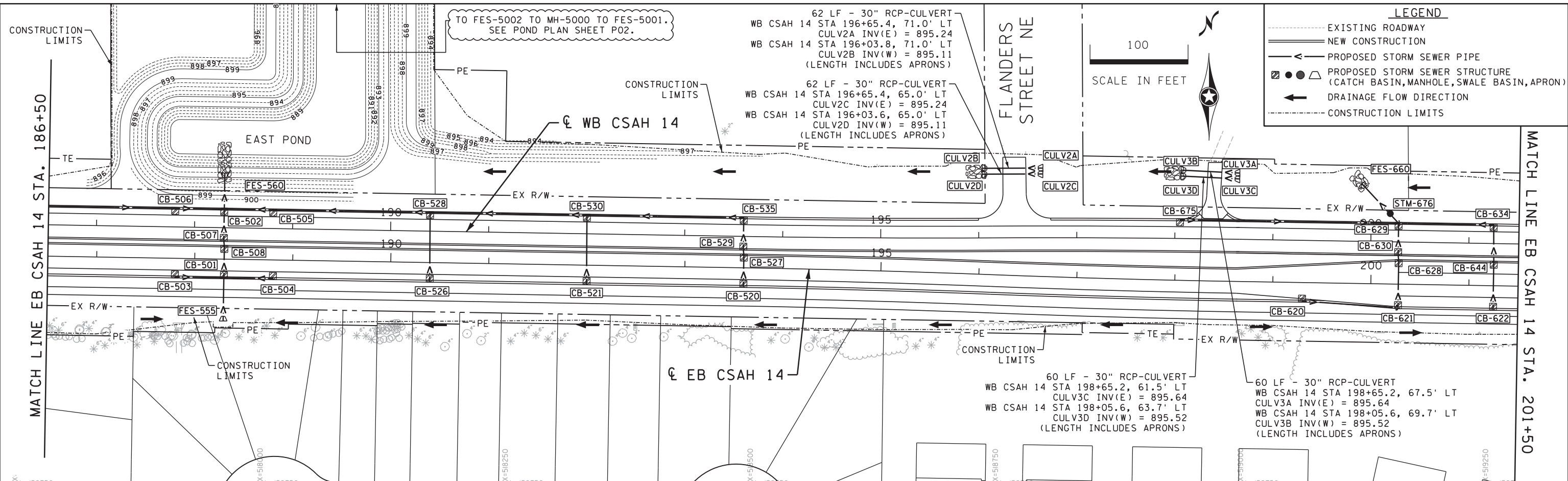
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EB CSAH 14 STA. 171+50 TO 186+50		126669	
		DP4	196
		OF DP7	

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 DP4

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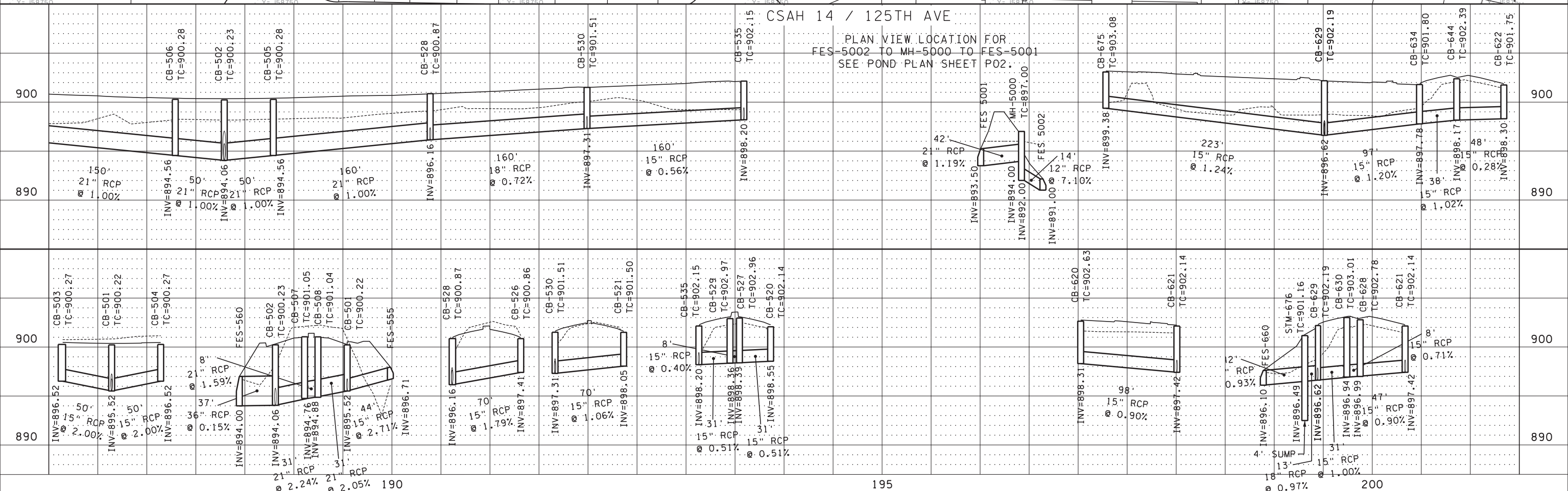
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DP5



**LEGEND**

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURE (CATCH BASIN, MANHOLE, SWALE BASIN, APRON)
- DRAINAGE FLOW DIRECTION
- CONSTRUCTION LIMITS



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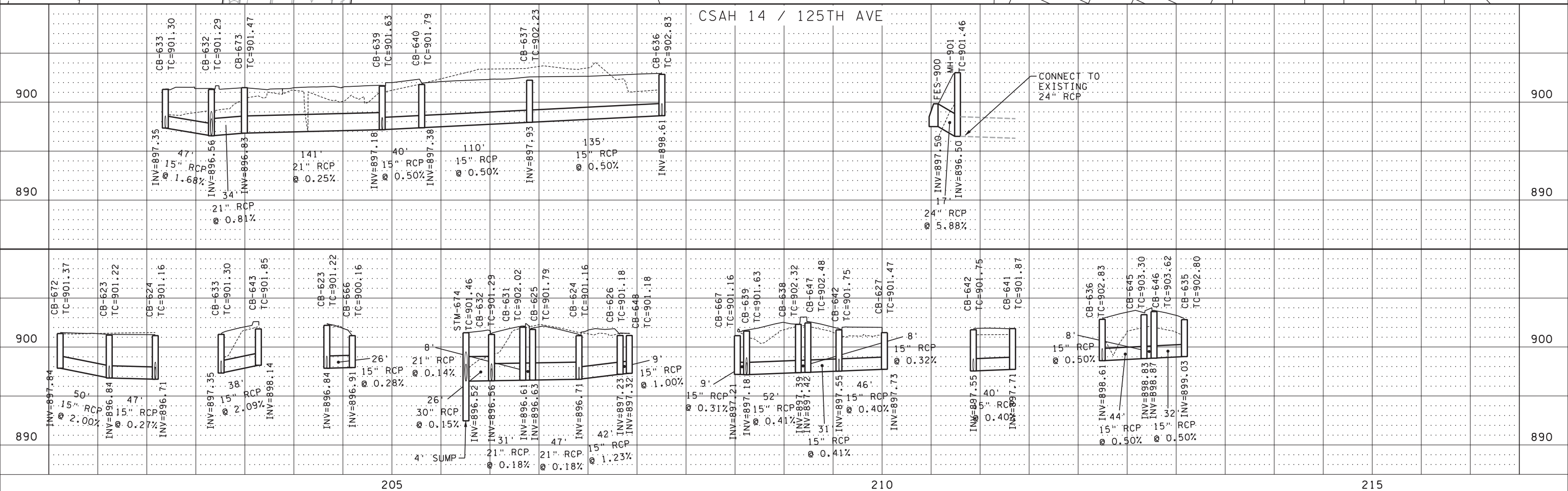
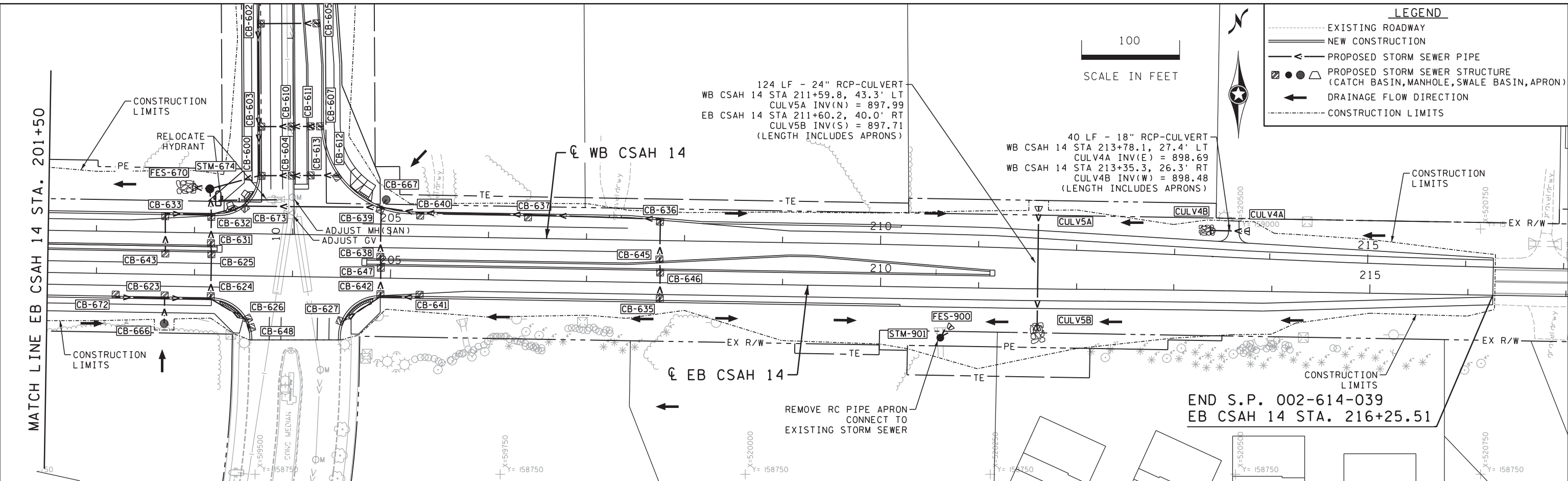
Certified By: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**DRAINAGE PLAN AND PROFILE**  
 EB CSAH 14 STA. 186+50 TO 201+50

FILE NO. 126669	103 196
DP5 OF DP7	



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DESIGNER:	REP		
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Certified By: *Rachel Pichelmann* Lic. No. 51315  
Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015

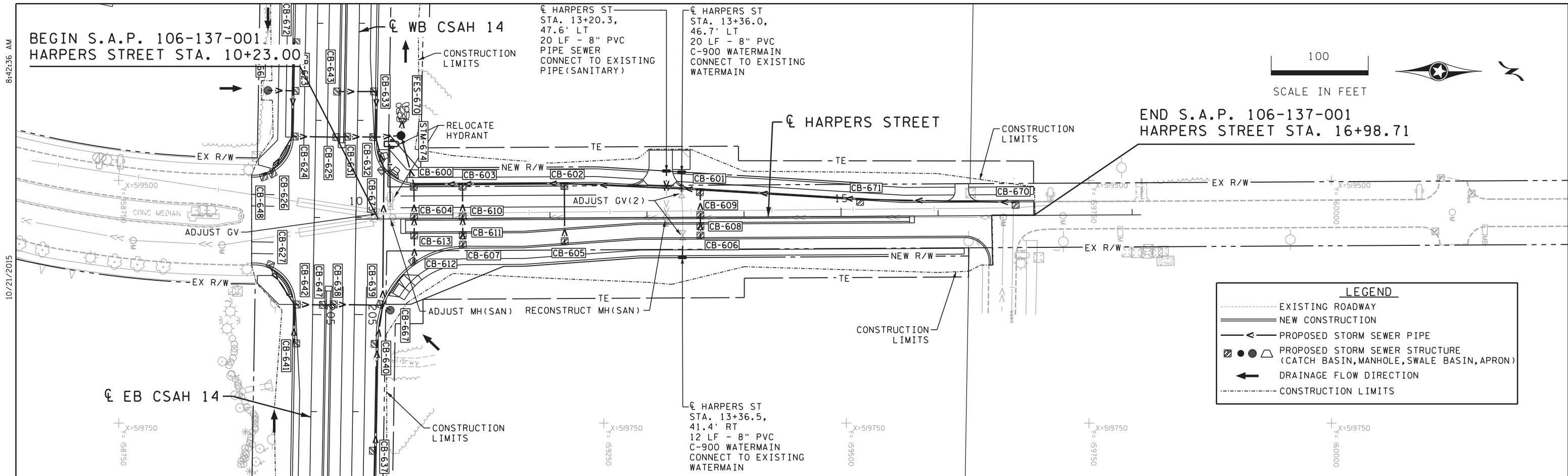


CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

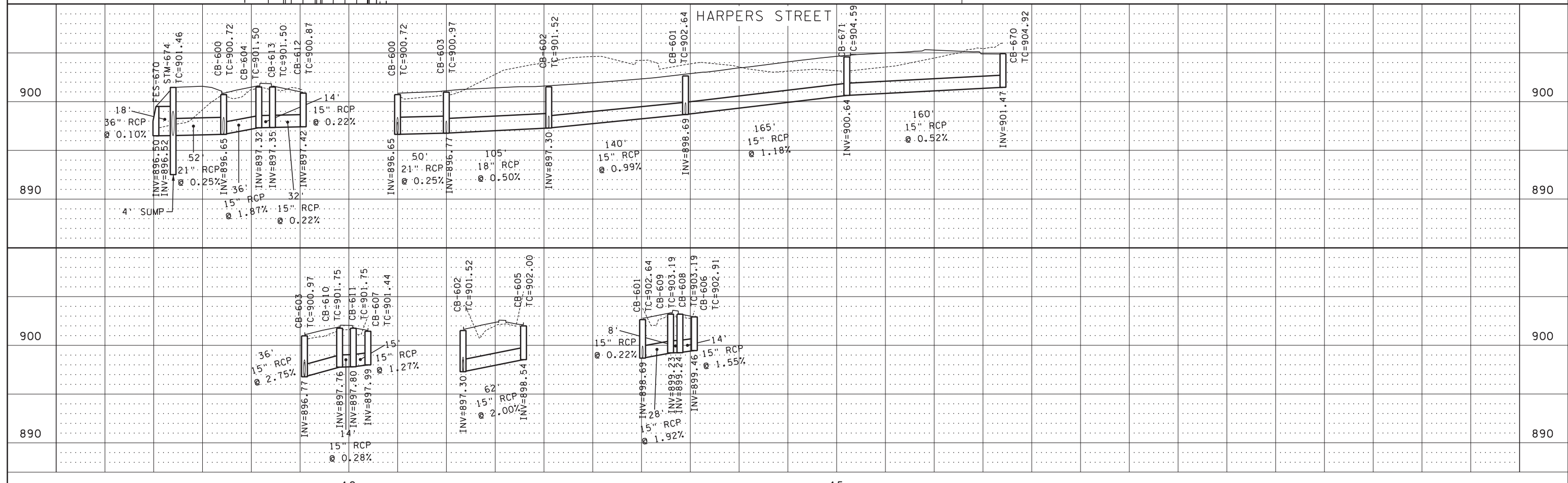
DRAINAGE PLAN AND PROFILE  
EB CSAH 14 STA. 201+50 TO 216+25

FILE NO.	104
126669	
DP6	196
OF DP7	





LEGEND	
	EXISTING ROADWAY
	NEW CONSTRUCTION
	PROPOSED STORM SEWER PIPE
	PROPOSED STORM SEWER STRUCTURE (CATCH BASIN, MANHOLE, SWALE BASIN, APRON)
	DRAINAGE FLOW DIRECTION
	CONSTRUCTION LIMITS



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

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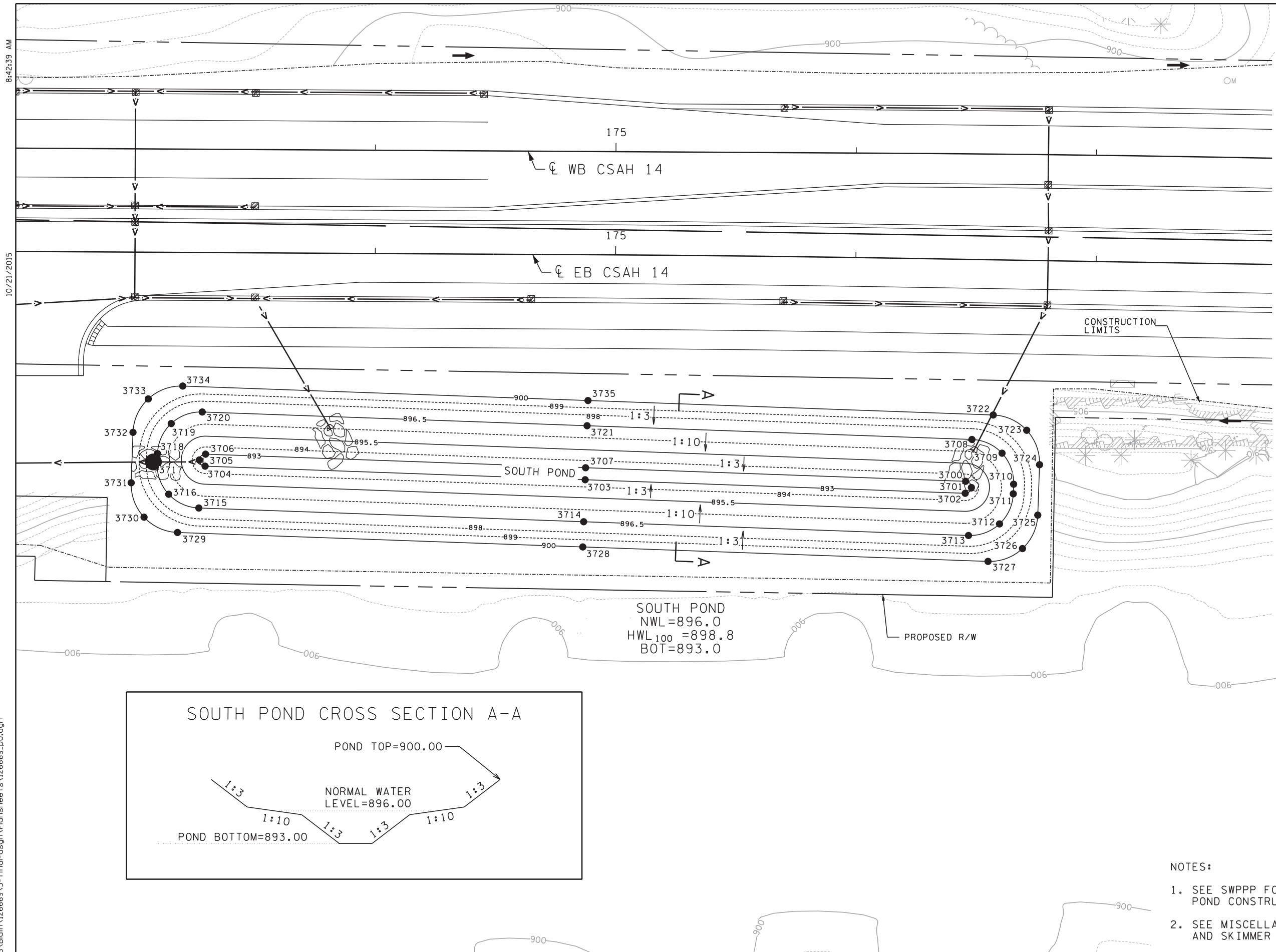
Certified By: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

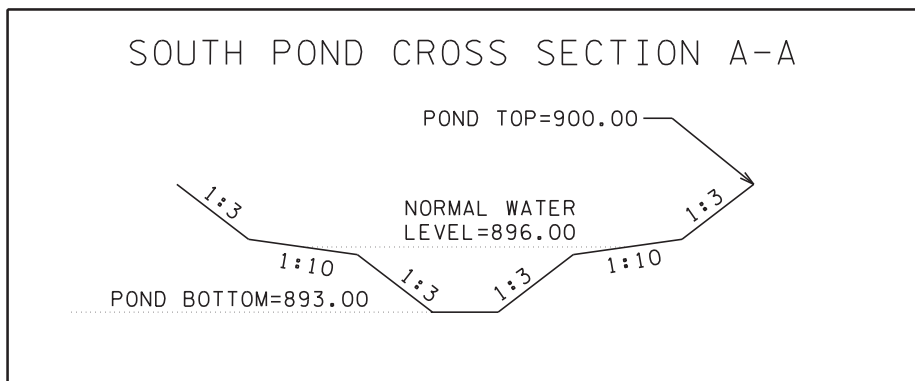
DRAINAGE PLAN AND PROFILE		FILE NO. 105
HARPERS STREET STA. 10+23 TO 16+99		126669
DP7		196
OF DP7		

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 DP7



POND CONTOUR POINTS			
POINT	X	Y	ELEV.
3700	516784.29	158910.64	893.00
3701	516786.70	158908.06	893.00
3702	516784.11	158905.65	893.00
3703	516625.96	158911.30	893.00
3704	516467.81	158916.95	893.00
3705	516465.40	158919.53	893.00
3706	516467.99	158921.94	893.00
3707	516626.14	158916.29	893.00
3708	516786.91	158928.06	896.50
3709	516799.44	158922.34	896.50
3710	516804.26	158909.43	896.50
3711	516804.12	158905.43	896.50
3712	516798.39	158892.90	896.50
3713	516785.48	158888.09	896.50
3714	516625.34	158893.81	896.50
3715	516465.19	158899.53	896.50
3716	516452.66	158905.25	896.50
3717	516447.84	158918.16	896.50
3718	516447.99	158922.16	896.50
3719	516453.71	158934.69	896.50
3720	516466.62	158939.50	896.50
3721	516626.76	158933.78	896.50
3722	516795.78	158938.25	900.00
3723	516809.71	158931.89	900.00
3724	516815.06	158917.55	900.00
3725	516814.31	158896.56	900.00
3726	516807.95	158882.64	900.00
3727	516793.60	158877.29	900.00
3728	516624.96	158883.31	900.00
3729	516456.32	158889.34	900.00
3730	516442.40	158895.70	900.00
3731	516437.05	158910.04	900.00
3732	516437.80	158931.03	900.00
3733	516444.15	158944.95	900.00
3734	516458.50	158950.30	900.00
3735	516627.14	158944.28	900.00

SOUTH POND  
 NWL=896.0  
 HWL<sub>100</sub>=898.8  
 BOT=893.0

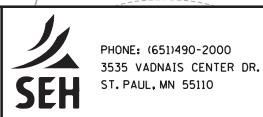


- NOTES:
- SEE SWPPP FOR CONSTRUCTION SEQUENCING FOR POND CONSTRUCTION.
  - SEE MISCELLANEOUS DETAILS FOR POND OUTLET PIPING AND SKIMMER STRUCTURE.

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DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	REP		
CHECKED BY:	REP		
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: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**POND CONTOUR PLAN**  
 SOUTH POND

FILE NO. 106  
 126669  
 P01 OF P02  
 196

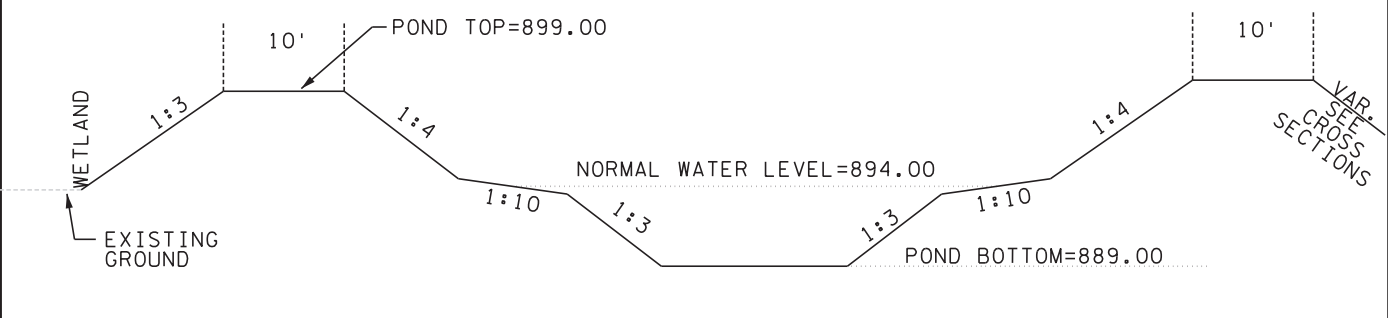
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MITIGATION CONTOUR POINTS			
POINT	X	Y	ELEV.
3960	517921.51	159189.12	895.00
3961	517860.48	159155.44	895.00
3962	517858.44	159348.40	895.00
3963	517865.55	159355.42	895.00
3964	518017.66	159353.05	895.00
3965	518169.78	159350.69	895.00
3966	518176.67	159343.71	895.00
3967	518176.89	159275.08	895.00
3968	518173.31	159274.08	895.00
3969	518078.39	159322.82	895.00
3970	518026.75	159308.32	895.00
3971	517999.52	159256.86	895.00
3972	517999.14	159195.31	895.00
3973	517992.08	159188.15	895.00
3974	518108.05	159319.81	896.00
3975	518077.93	159352.13	895.00
3976	518086.20	159345.65	895.00
3977	518086.20	159329.28	895.00
3978	518101.43	159330.11	895.00
3979	518101.51	159345.18	895.00
3980	518109.29	159351.62	895.00

### EAST POND CROSS SECTION A-A



POND CONTOUR POINTS			
POINT	X	Y	ELEV.
3800	517924.31	159125.66	899.00
3801	518021.82	159124.33	899.00
3802	518049.32	159136.52	899.00
3803	518062.44	159165.21	899.00
3804	518062.74	159218.11	899.00
3805	518062.91	159253.15	899.00
3806	518068.86	159259.29	899.00
3807	518107.12	159259.23	899.00
3808	518112.58	159253.14	899.00
3809	518112.64	159215.82	899.00
3810	518112.73	159106.90	899.00
3811	518107.52	159094.68	899.00
3812	518093.86	159088.21	899.00
3813	518010.47	159089.39	899.00
3814	517923.22	159090.69	899.00
3815	517913.73	159099.33	899.00
3816	517914.03	159117.29	899.00
3817	517922.51	159149.13	894.50
3818	518018.34	159147.75	894.50
3819	518033.81	159154.28	894.50
3820	518039.00	159166.82	894.50
3821	518039.25	159218.26	894.50
3822	518039.55	159255.81	894.50
3823	518045.14	159270.47	894.50
3824	518061.22	159281.67	894.50
3825	518108.39	159282.71	894.50
3826	518127.24	159274.10	894.50
3827	518135.77	159257.24	894.50
3828	518136.17	159192.92	894.50
3829	518136.19	159106.65	894.50
3830	518125.53	159078.87	894.50

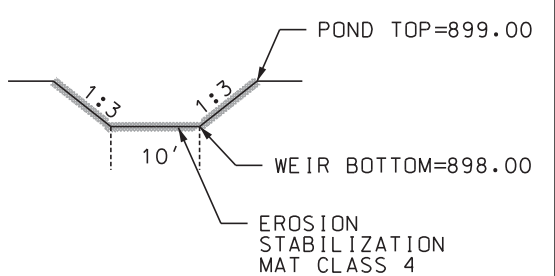
POND CONTOUR POINTS			
POINT	X	Y	ELEV.
3831	518093.31	159064.67	894.50
3832	518004.49	159065.97	894.50
3833	517922.68	159067.20	894.50
3834	517901.86	159075.23	894.50
3835	517890.32	159097.26	894.50
3836	517890.53	159118.55	894.50
3837	517902.11	159141.11	894.50
3838	517923.24	159167.16	899.00
3839	518014.68	159166.00	899.00
3840	518018.77	159168.24	899.00
3841	518021.05	159173.80	899.00
3842	518021.21	159210.64	899.00
3843	518021.69	159258.15	899.00
3844	518029.57	159279.61	899.00
3845	518048.29	159296.38	899.00
3846	518045.96	159305.26	899.00
3847	518069.25	159310.28	899.00
3848	518070.72	159301.21	899.00
3849	518109.34	159300.70	899.00
3850	518140.01	159286.79	899.00
3851	518153.90	159257.18	899.00
3852	518154.17	159196.98	899.00
3853	518154.28	159122.92	899.00
3854	518183.36	159099.04	899.00
3855	518100.28	159046.32	899.00
3856	517975.29	159048.15	899.00
3857	517920.87	159049.25	899.00
3858	517887.42	159064.00	899.00
3859	517876.10	159080.87	899.00
3860	517872.61	159120.50	899.00
3861	517889.53	159154.03	899.00

EAST POND  
 NWL=894.0  
 HWL<sub>100</sub>=897.9  
 BOT=889.0



SEE CROSS SECTIONS FOR SIDESLOPES AND DITCH GRADES

### EAST POND POND WEIR OUTLET

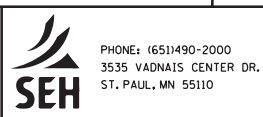


#### NOTES:

1. SEE SWPPP FOR CONSTRUCTION SEQUENCING FOR POND CONSTRUCTION.
2. SEE MISCELLANEOUS DETAILS FOR POND OUTLET PIPING AND SKIMMER STRUCTURE.

DESIGN TEAM			
NO.	BY	DATE	REVISIONS

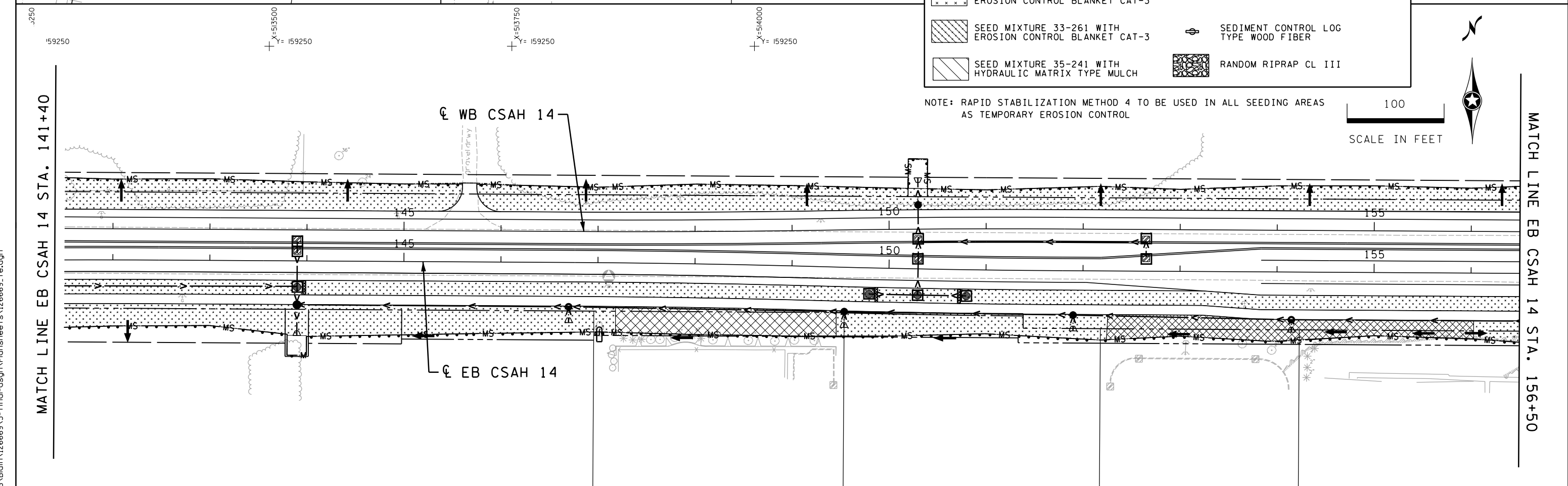
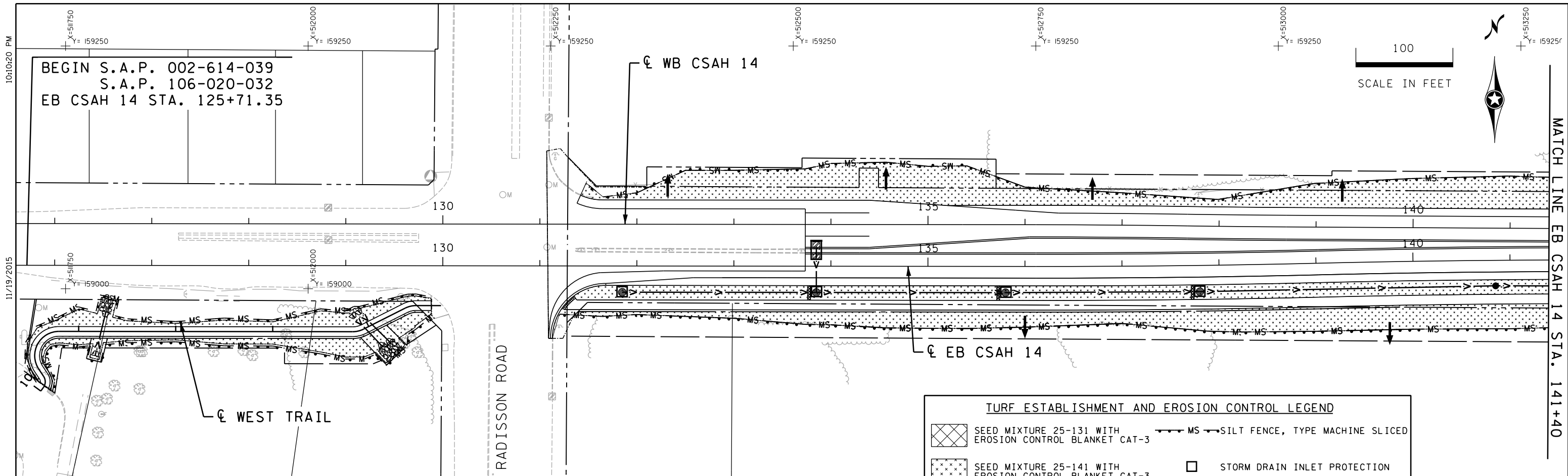
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
 Certified By: *Rachel Pichelmann* Lic. No. 51315  
 Printed Name: RACHEL E. PICHELMANN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

POND CONTOUR PLAN  
 EAST POND

FILE NO. 126669	107
P02 OF P02	196



**TURF ESTABLISHMENT AND EROSION CONTROL LEGEND**

	SEED MIXTURE 25-131 WITH EROSION CONTROL BLANKET CAT-3		MS - SILT FENCE, TYPE MACHINE SLICED
	SEED MIXTURE 25-141 WITH EROSION CONTROL BLANKET CAT-3		STORM DRAIN INLET PROTECTION
	SEED MIXTURE 33-261 WITH EROSION CONTROL BLANKET CAT-3		SEDIMENT CONTROL LOG TYPE WOOD FIBER
	SEED MIXTURE 35-241 WITH HYDRAULIC MATRIX TYPE MULCH		RANDOM RIPRAP CL III

NOTE: RAPID STABILIZATION METHOD 4 TO BE USED IN ALL SEEDING AREAS AS TEMPORARY EROSION CONTROL

DESIGN TEAM			
DRAWN BY:	CIF	1	JEO
DESIGNER:	JEO		
CHECKED BY:	JEO		

NO.	BY	DATE	REVISIONS
		11/20/2015	ADDED RAPID STABILIZATION METHOD 4 NOTE

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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/19/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TURF ESTABLISHMENT & EROSION CONTROL PLAN**  
 EB CSAH 14 STA. 125+71 TO 156+50

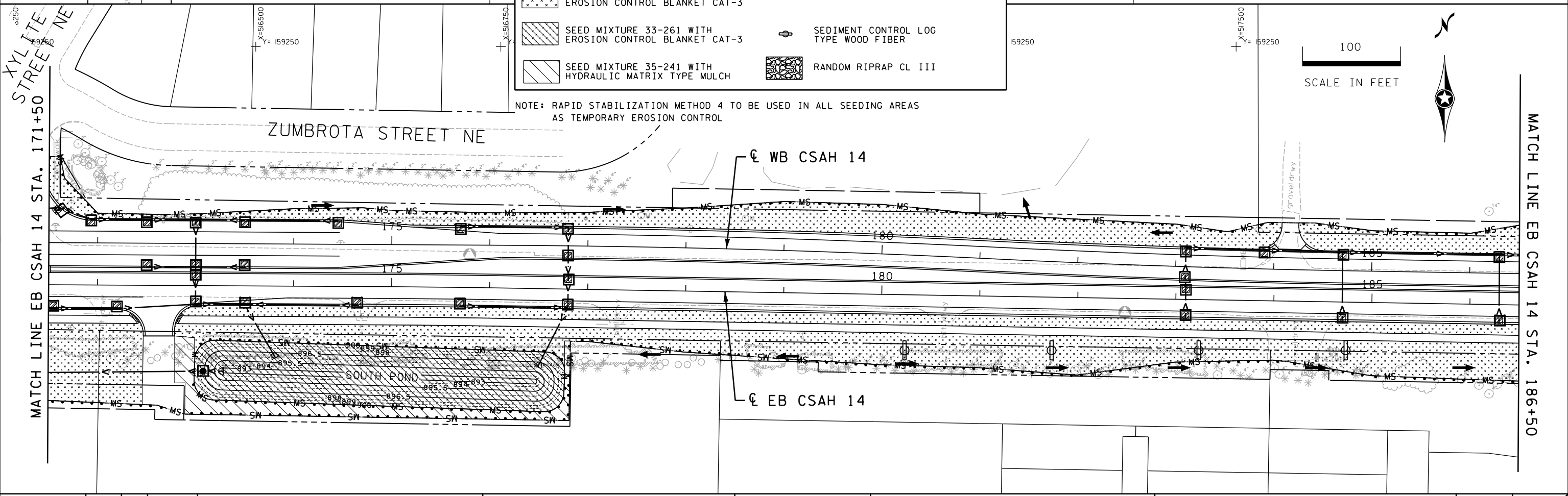
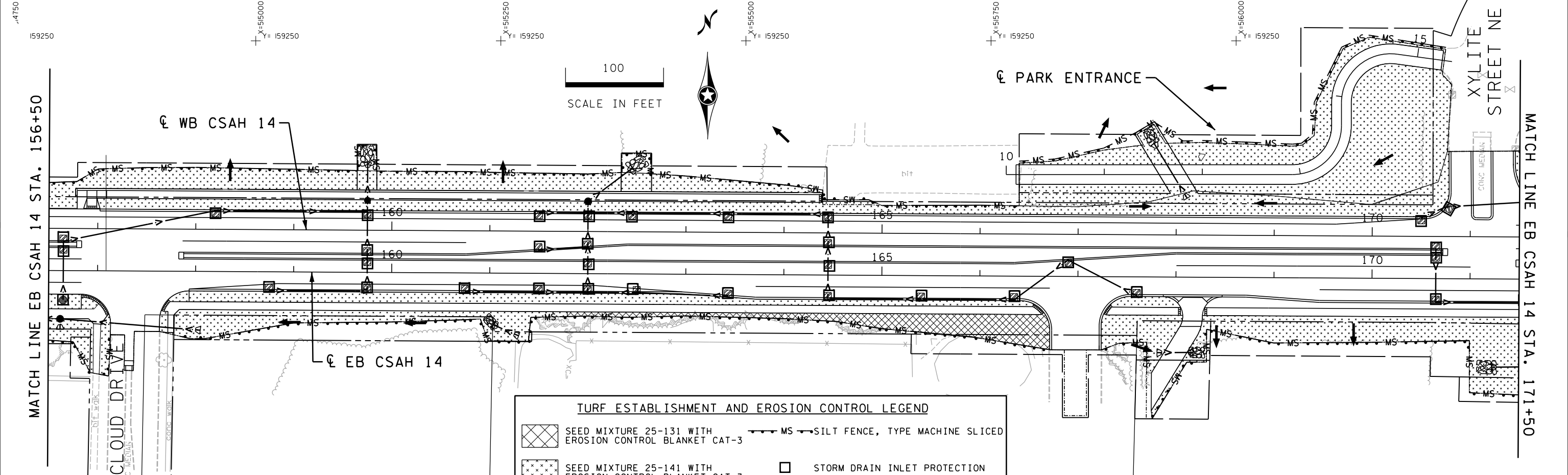
FILE NO.	108
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TE1	196
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**TURF ESTABLISHMENT AND EROSION CONTROL LEGEND**

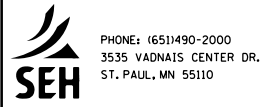
	SEED MIXTURE 25-131 WITH EROSION CONTROL BLANKET CAT-3		MS - SILT FENCE, TYPE MACHINE SLICED
	SEED MIXTURE 25-141 WITH EROSION CONTROL BLANKET CAT-3		STORM DRAIN INLET PROTECTION
	SEED MIXTURE 33-261 WITH EROSION CONTROL BLANKET CAT-3		SEDIMENT CONTROL LOG TYPE WOOD FIBER
	SEED MIXTURE 35-241 WITH HYDRAULIC MATRIX TYPE MULCH		RANDOM RIPRAP CL III

NOTE: RAPID STABILIZATION METHOD 4 TO BE USED IN ALL SEEDING AREAS AS TEMPORARY EROSION CONTROL

DESIGN TEAM			
DRAWN BY:	CIF	1	JEO
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TURF ESTABLISHMENT & EROSION CONTROL PLAN**  
 EB CSAH 14 STA. 156+50 TO 186+50

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TE2	
OF TE4	196

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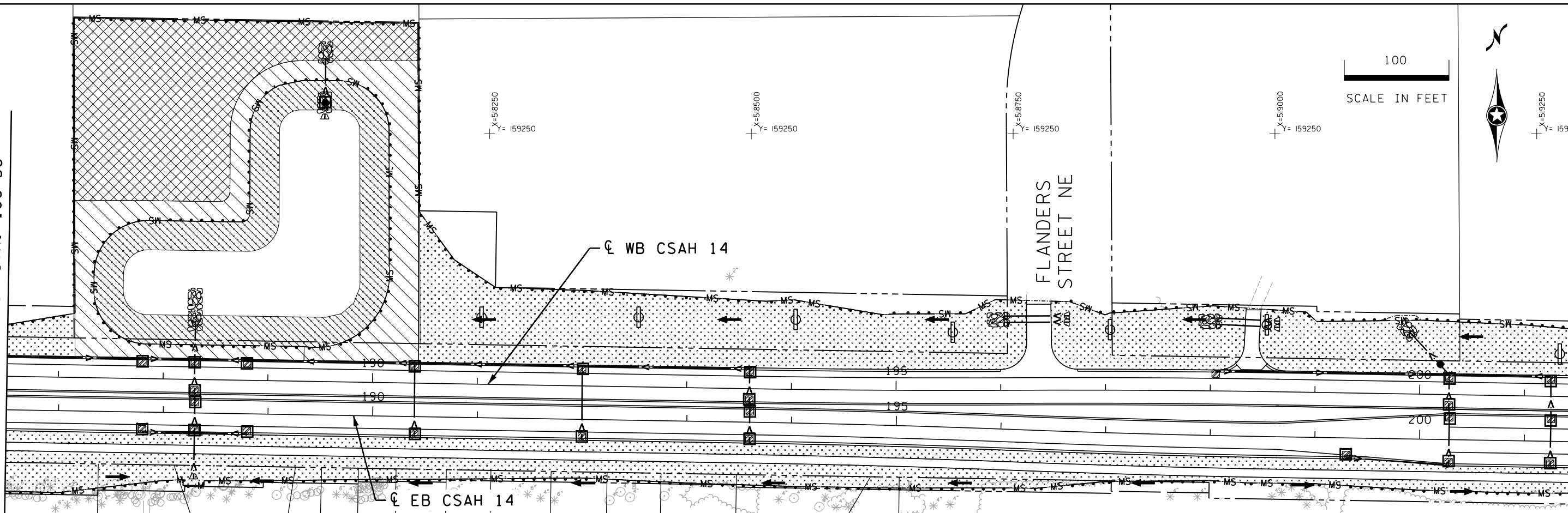
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MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50

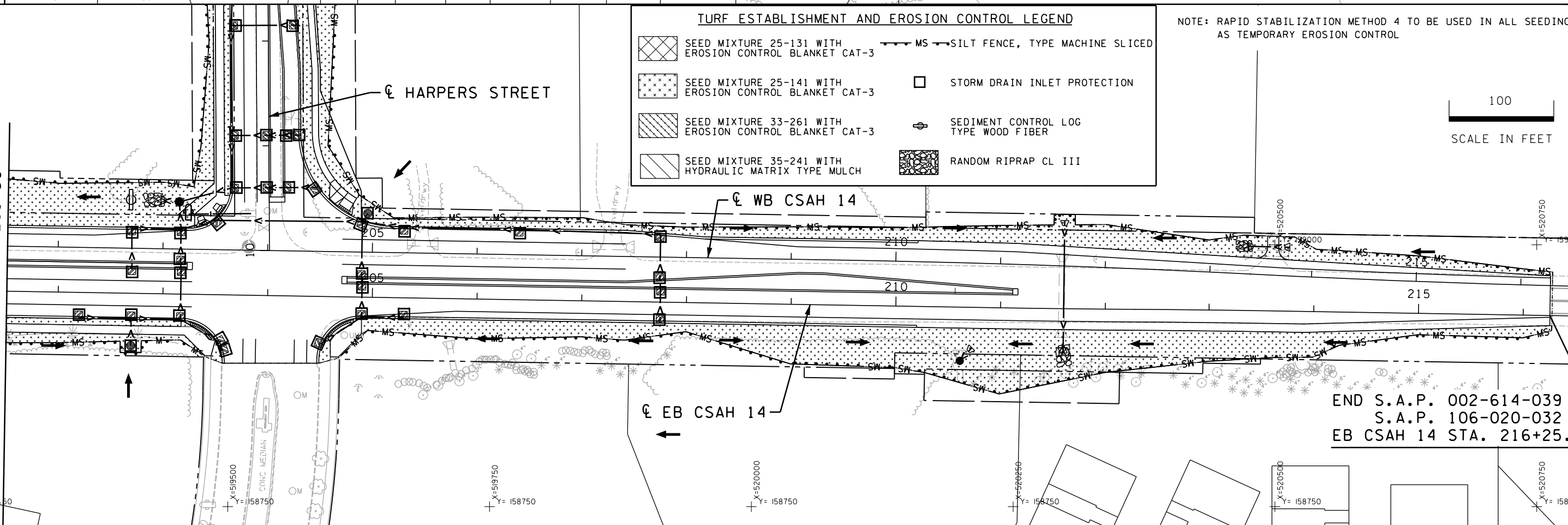
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SCALE IN FEET



**TURF ESTABLISHMENT AND EROSION CONTROL LEGEND**

	SEED MIXTURE 25-131 WITH EROSION CONTROL BLANKET CAT-3		MS - SILT FENCE, TYPE MACHINE SLICED
	SEED MIXTURE 25-141 WITH EROSION CONTROL BLANKET CAT-3		STORM DRAIN INLET PROTECTION
	SEED MIXTURE 33-261 WITH EROSION CONTROL BLANKET CAT-3		SEDIMENT CONTROL LOG TYPE WOOD FIBER
	SEED MIXTURE 35-241 WITH HYDRAULIC MATRIX TYPE MULCH		RANDOM RIPRAP CL III

NOTE: RAPID STABILIZATION METHOD 4 TO BE USED IN ALL SEEDING AREAS AS TEMPORARY EROSION CONTROL

END S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 216+25.51

DESIGN TEAM			
DRAWN BY:	CIF	1	JEO
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 11/19/2015

**SEH**

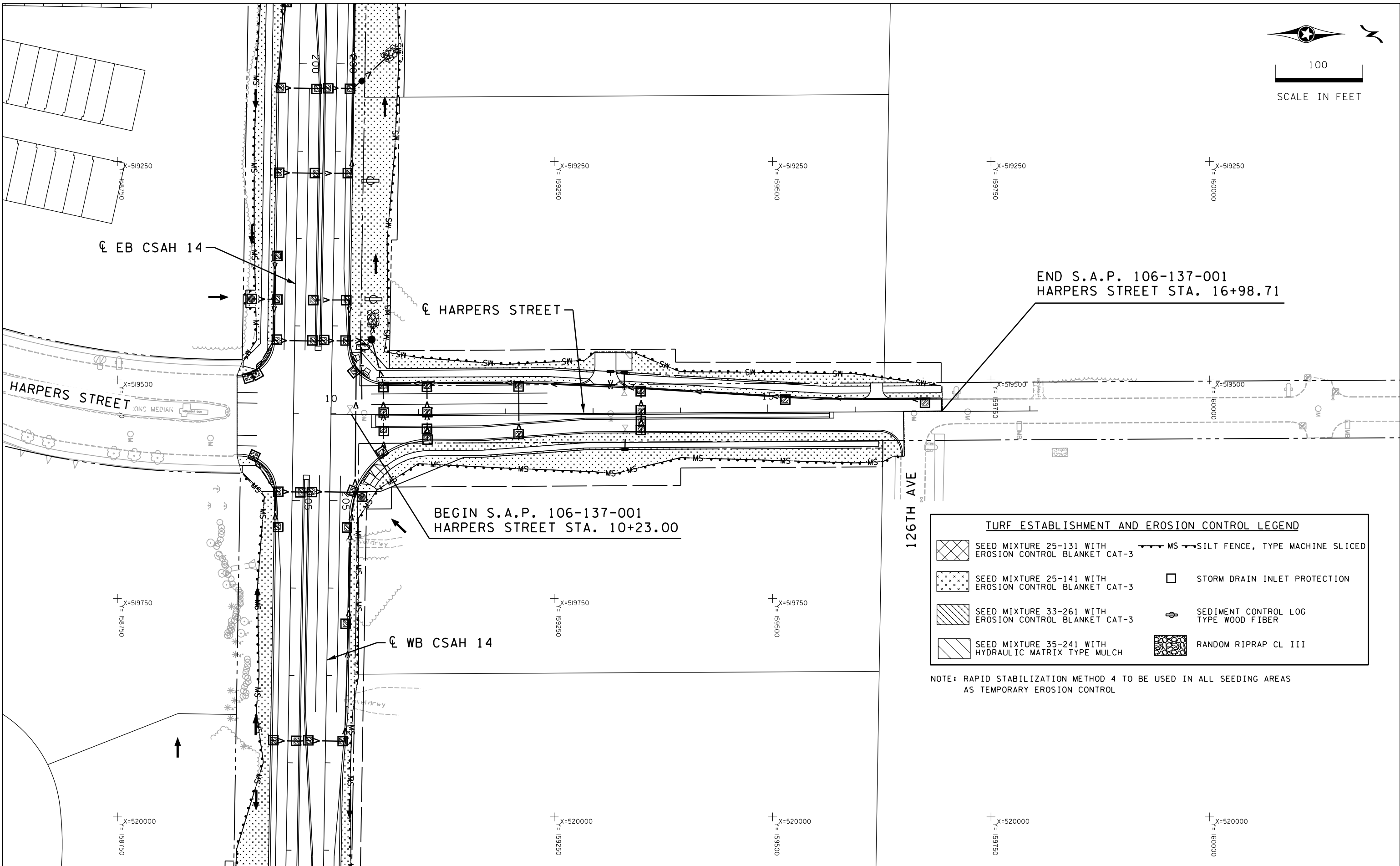
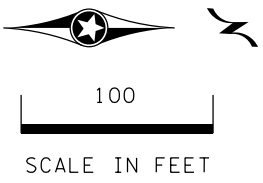
PHONE: (651)490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**TURF ESTABLISHMENT & EROSION CONTROL PLAN**  
EB CSAH 14 STA. 186+50 TO 216+25

FILE NO.	110
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TE3	196
OF TE4	

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TURF ESTABLISHMENT AND EROSION CONTROL LEGEND	
	SEED MIXTURE 25-131 WITH EROSION CONTROL BLANKET CAT-3
	SEED MIXTURE 25-141 WITH EROSION CONTROL BLANKET CAT-3
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	MS - SILT FENCE, TYPE MACHINE SLICED
	STORM DRAIN INLET PROTECTION
	SEDIMENT CONTROL LOG TYPE WOOD FIBER
	RANDOM RIPRAP CL III

NOTE: RAPID STABILIZATION METHOD 4 TO BE USED IN ALL SEEDING AREAS AS TEMPORARY EROSION CONTROL

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TE4

DESIGN TEAM			
DRAWN BY:	CIF	1	JEO
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TURF ESTABLISHMENT & EROSION CONTROL PLAN**  
 HARPERS STREET STA. 10+23 TO 16+99

FILE NO.	111
126669	
TE4	196
OF TE4	

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

**SWPPP SUMMARY/OVERVIEW:**

THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001, PART III, SUBPART A. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

**CONTACTS:**

ENGINEER: SHORT ELLIOTT HENDRICKSON INC.  
CONTACT: JASON E. OWENS, PE  
PHONE: 651.490.2153  
EMAIL: JOWENS@SEHINC.COM

**KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY**

THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPs WHO WILL OVERSEE THE IMPLEMENTATION OF THE SWPPP, INCLUDING: INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs. THE GENERAL CONTRACTOR SHALL ATTACH CONTACT INFORMATION TO THE SWPPP PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.

THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

**CONTRACTOR:**

CONTACT:  
PHONE:  
EMAIL:

**GENERAL SWPPP RESPONSIBILITIES:**

THE CONTRACTOR SHALL KEEP THE SWPPP, INCLUDING ALL AMENDMENTS AND INSPECTION AND MAINTENANCE RECORDS ON SITE DURING CONSTRUCTION.

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR. THE SWPPP AND AMENDMENTS SHALL BE KEPT ON SITE BY THE CONTRACTOR WHENEVER CONSTRUCTION ACTIVITY IS IN PROGRESS.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

**LONG TERM OPERATION AND MAINTENANCE**

THE OWNER WILL BE RESPONSIBLE OR WILL OTHERWISE IDENTIFY WHO WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM(S).

THE OWNER WILL PREPARE AND IMPLEMENT A PERMANENT STORMWATER TREATMENT SYSTEM(S) MAINTENANCE PLAN.

**TRAINING DOCUMENTATION:**

PREPARER: REBECCA NESTINGEN, PE  
EMPLOYER: SEH INC.  
TRAINING OBTAINED: UNIVERSITY OF MINNESOTA, DESIGN OF SWPPP, MAY 1-2, 2013

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

- INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
- INDIVIDUALS PERFORMING INSPECTIONS
- INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPs

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

- 1) DATES OF TRAINING
- 2) NAME OF INSTRUCTORS
- 3) CONTENT AND HOURS OF TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERIMETER CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

**PROJECT SUMMARY:**

TOTAL PROJECT AREA: 33.9 ACRES  
TOTAL DISTURBED AREA: 33.9 ACRES  
PRE-CONSTRUCTION IMPERVIOUS AREA: 15.0 ACRES  
POST-CONSTRUCTION IMPERVIOUS AREA: 24.3 ACRES  
IMPERVIOUS AREA ADDED: 9.3 ACRES

**RECEIVING WATERS WITHIN ONE MILE FROM PROJECT BOUNDARIES:**

(<http://pca-gis02.pca.state.mn.us/CSW/index.html>)  
NO SPECIAL OR IMPAIRED WATERS WITHIN ONE MILE OF PROJECT BOUNDARIES.  
RECEIVING WATERS ARE COUNTY DITCH 59, COUNTY DITCH 41, AND EXISTING WETLAND.

**SITE SOIL INFORMATION:** (<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>)

ISANTI FINE SANDY LOAM (HSG A/D)  
LINO LOAMY FINE SAND, 0 TO 4 PERCENT SLOPES (HSG A/D)  
MARKEY MUCK (HSG A/D)  
RIFLE MUCKY PEAT (HSG A/D)  
ZIMMERMAN FINE SAND, 1 TO 6 PERCENT SLOPES (HSG A)  
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

**RELATED REVIEWS & PERMITS:**

ENVIRONMENTAL, WETLAND, ENDANGERED OR THREATENED SPECIES, ARCHAEOLOGICAL, LOCAL, STATE, AND/OFF FEDERAL REVIEWS/PERMITS:

COON CREEK WATERSHED DISTRICT  
WETLAND CONSERVATION ACT/ARMY CORPS OF ENGINEERS  
INDIVIDUAL WATER QUALITY CERTIFICATION  
MINNESOTA DNR TAKINGS PERMIT FOR ENDANGERED SPECIES

**IMPLEMENTATION SEQUENCE:**

THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING SEQUENCE.  
THE ENGINEER MAY APPROVE ADJUSTMENTS TO THE SEQUENCE AS NEEDED.

1. PLACE ROCK CONSTRUCTION ENGRANCE(S)
2. PLACE PERIMETER CONTROL AND STABILIZE DOWN GRADIENT BOUNDARIES
3. COMPLETE INITIAL POND EXCAVATION.
4. TEMPORARY STABILIZATION OF POND AREAS.
5. COMPLETE ALL OTHER SITE GRADING.
6. PLACE UTILITIES, STORM SEWER, INLET PROTECTION, CURB & GUTTER, AND PAVING.
7. STABILIZE ALL AREAS UPSTREAM OF PONDS.
8. COMPLETE FINAL GRADING ON POND AREAS.
9. STABILIZE POND AREAS.
10. AFTER CONSTRUCTION IS COMPLETED AND THE SITE IS STABILIZED REMOVE ACCUMULATED SEDIMENT FROM PONDS. REMOVE BMPs AND RE-SEED ANY AREAS DISTURBED BY THEIR REMOVAL.

**THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:**

PLAN AND PROFILE PLAN SHEETS: 79-90  
EROSION AND SEDIMENT CONTROL PLAN SHEETS: 104-107  
TURF ESTABLISHMENT PLAN SHEETS: 104-107  
STORM SEWER PLAN & PROFILE PLAN SHEETS: 95-101  
GRADING PLAN SHEETS: 102-103  
DETAIL PLAN SHEETS: 23-24  
SWPPP NOTE AND DETAIL SHEETS: 108-109  
PROJECT SPECIFICATIONS: PROJECT MANUAL  
PROJECT BID FORM: PROJECT MANUAL  
SPECIAL PROVISIONS: PROJECT MANUAL

**TEMPORARY SEDIMENT BASINS:**

THE CONTRACTOR SHALL INSTALL TEMPORARY SEDIMENT BASIN(S) REQUIRED BY THE NPDES CONSTRUCTION PERMIT WHERE TEN ACRES OR MORE OF DISTURBED SOIL DRAIN TO A COMMON LOCATION.

TEMPORARY SEDIMENT BASIN OUTLETS SHALL BE CONSTRUCTED TO PREVENT SHORT-CIRCUITING AND PREVENT THE DISCHARGE OF FLOATING DEBRIS.

BASINS MUST HAVE THE ABILITY TO ALLOW COMPLETE DRAWDOWN, INCLUDE A STABILIZED EMERGENCY OVERFLOW, WITHDRAW WATER FROM THE SURFACE, AND PROVIDE ENERGY DISSIPATION AT THE OUTLET.

TEMPORARY SEDIMENT BASINS SHALL BE PROVIDED WITH ENERGY DISSIPATION AT ANY BASIN OUTLET TO PREVENT SOIL EROSION.

SEDIMENT BASINS MUST BE SITUATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONES, AND MUST BE DESIGNED TO AVOID THE DRAINING WATER FROM WETLANDS.

TEMPORARY SEDIMENT BASINS SHALL BE CONSTRUCTED AND MADE OPERATIONAL CONCURRENT OR PRIOR TO SOIL DISTURBANCE THAT IS UPGRADIENT AND CONTRIBUTES RUNOFF TO THE BASIN.

**PERMANENT STORMWATER MANAGEMENT SYSTEM**

PERMANENT STORMWATER MANAGEMENT SYSTEM IS DESIGNED TO MEET THE REQUIREMENTS OF NPDES GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY.

NEW IMPERVIOUS AREA: 9.3 ACRES  
WATER QUALITY VOLUME (WQV): 0.775 AC-FT  
WQV INFILTRATED BY EAST POND: 0.000 AC-FT  
WQV TREATED BY EAST POND: 0.373 AC-FT  
WQV INFILTRATED BY SOUTH POND: 0.000 AC-FT  
WQV TREATED BY SOUTH POND: 0.124 AC-FT  
TOTAL WQV INFILTRATED: 0.000 AC-FT  
TOTAL WQV TREATED: 0.497 AC-FT

REASON FOR NOT INFILTRATING WQV: INADEQUATE SEPARATION FROM GROUNDWATER  
REASON FOR NOT TREATING FULL WQV: LIMITING IMPACTS TO EXISTING WETLANDS  
ALTERNATIVE METHODS USED TO TREAT RUNOFF FROM AREAS NOT TREATED BY WET PONDS: SAFL BAFFLES AT EACH STORM SEWER DISCHARGE POINT, VEGETATED SWALE BETWEEN SOUTH ROAD SHOULDER AND TRAIL, UNMOWED GRASS ON NORTH ROAD EMBANKMENT SIDE SLOPE.

**EROSION PREVENTION MEASURES AND TIMING**

THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION AND RETAIN VEGETATION WHENEVER POSSIBLE.

THE CONTRACTOR SHALL DELINEATE AREAS NOT TO BE DISTURBED AND/OR TO BE PROTECTED WITH FLAGS, STAKES, SIGNS, SILT FENCE, OR OTHER MEANS NECESSARY TO PROTECT THESE AREAS BEFORE CONSTRUCTION BEGINS ON THE SITE.

THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 7 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION.

DRAINAGE PONDS, PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE POND/DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT STORMWATER CONVEYANCE CHANNELS WHEN APPROPRIATE TO ROUTE WATER AROUND UNSTABILIZED AREAS ON SITE TO REDUCE EROSION.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPs AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

THE CONTRACTOR SHALL STABILIZE TEMPORARY AND/OR PERMANENT DRAINAGE PONDS, DITCHES OR SWALES WITHIN 200 LINEAL FEET FROM PROPERTY EDGE, OR DISCHARGE POINT(S) WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER OR PROPERTY EDGE.

TEMPORARY OR PERMANENT PONDS, DITCHES OR SWALES USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALES.

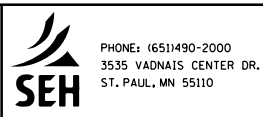
THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.

THE CONTRACTOR SHALL DIRECT DISCHARGES FROM BMPs TO VEGETATED AREAS TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE STORMWATER INFILTRATION. VELOCITY DISSIPATION DEVICES MUST BE USED TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

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SWP1-2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CIF	1	RSN	11/20/2015	TEMPORARY STABILIZATION OF PONDS HAS BEEN ADDED TO THE IMPLEMENTATION SEQUENCE. EROSION PREVENTION MEASURES AND TIMING HAS BEEN CHANGED TO INCLUDE PONDS.
DESIGNER: RSN				
CHECKED BY: RSN				

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: *Rebecca S Nestingen* Lic. No. 49246  
Printed Name: REBECCA S. NESTINGEN Date: 11/19/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**STORMWATER POLLUTION PREVENTION PLAN**

FILE NO. 112  
126669  
SWP1 OF SWP2 196



SEDIMENT CONTROL MEASURES AND TIMING:

THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

THE CONTRACTOR SHALL ENSURE THERE ARE NO UNBROKEN SLOPE LENGTH GREATER THAN 75 FEET ON SLOPES 3:1 OR STEEPER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS AND CULVERT INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAS BEEN STABILIZED. INLET AND CULVERT PROTECTION SHALL CONFORM TO THE 2014 MNDOT SPECIFICATIONS 2573.

THE CONTRACTOR SHALL ENSURE STOCK PILES ARE PROVIDED WITH AN EFFECTIVE SEDIMENT PERIMETER CONTROL AND STOCK PILES SHALL NOT BE PLACED IN ANY TYPE OF SURFACE WATER OR NATURAL BUFFER.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

EROSION PREVENTION BMP SUMMARY:

SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:

SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

DEWATERING AND BASIN DRAINING ACTIVITIES:

THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL DEWATERING AND SURFACE DRAINAGE REGULATIONS.

WATER FROM DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY AND/OR PERMANENT SEDIMENT BASIN.

IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN, IT SHALL BE TREATED WITH OTHER APPROPRIATE BMPS, TO EFFECTIVELY REMOVE SEDIMENT.

DISCHARGE THAT CONTAINS OIL OR GREASE MUST BE TREATED WITH AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE PRIOR TO DISCHARGE.

DISCHARGE POINTS SHALL BE PROTECTED FROM EROSION AND SCOUR.

DISCHARGE WATER SHALL BE DISPERSED OVER AN ACCEPTED ENERGY DISSIPATION MEASURE.

WATER FROM DEWATERING SHALL BE DISCHARGED IN A MANNER THAN DOES NOT CAUSE NUISANCE CONDITIONS, EROSION, OR INUNDATION OF WETLANDS.

BACKWASH WATER USED FOR FILTERING SHALL BE HAULED AWAY FOR DISPOSAL, RETURNED TO THE BEGINNING OF TREATMENT PROCESS, OR INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR SHALL REPLACE AND CLEAN FILTER MEDIAS USED IN DEWATERING DEVICES WHEN REQUIRED TO MAINTAIN ADEQUATE FUNCTION.

INSPECTION AND MAINTENANCE:

ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE CONTRACTOR SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

- DATE AND TIME OF INSPECTIONS;
- NAME OF PERSON(S) CONDUCTING INSPECTION;
- FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
- CORRECTIVE ACTIONS TAKEN;
- DATE AND AMOUNT OF RAINFALL EVENTS;
- POINTS OF DISCHARGE OBSERVED DURING INSPECTION AND DESCRIPTION OF THE DISCHARGE
- AMENDMENTS MADE TO THE SWPPP.

THE CONTRACTOR SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS.

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/3 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE CONTRACTOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE CONTRACTOR SHALL RE-STABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND OBTAIN ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

POLLUTION PREVENTION MANAGEMENT MEASURES:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES.

ALL POLLUTION PREVENTION MEASURES ARE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM, UNLESS OTHERWISE NOTED.

THE CONTRACTOR IS RESPONSIBLE FOR INFORMING ALL VISITORS AND/OR PERSONNEL ON-SITE OF THE POLLUTION PREVENTION MANAGEMENT MEASURES. POLLUTION PREVENTION MANAGEMENT MEASURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL HAZARDOUS MATERIALS, SOLID WASTE, AND PRODUCTS ON-SITE.

THE CONTRACTOR SHALL ENSURE BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS ARE KEPT UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS ARE COVERED TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE HAZARDOUS MATERIALS AND TOXIC WASTE IS PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.

THE CONTRACTOR SHALL ENSURE ASPHALT SUBSTANCES USED ON-SITE SHALL ARE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL ENSURE PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTION.

THE CONTRACTOR SHALL ENSURE SOLID WASTE BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH. 7035.

THE CONTRACTOR SHALL ENSURE POTABLE TOILETS ARE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R. CH. 7041.

THE CONTRACTOR SHALL MONITOR ALL VEHICLES ON-SITE FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES AND ENGINE DEGREASING ARE PROHIBITED AT THE CONSTRUCTION SITE.

THE CONTRACTOR SHALL ENSURE WASHOUT WASTE MUST NOT CONTACT THE GROUND AND SHALL BE PROPERLY DISPOSED OF IN COMPLIANCE WITH MPCA RULES.

THE CONTRACTOR SHALL INCLUDE SPILL KITS WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL ENSURE SPILLS ARE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1.800.422.0798.

FINAL STABILIZATION:

THE CONTRACTOR IS RESPONSIBLE FOR ENSURING FINAL STABILIZATION OF THE ENTIRE SITE. FINAL STABILIZATION INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

ALL SOIL DISTURBING ACTIVITIES HAVE BEEN COMPLETED.

ALL EXPOSED SOILS HAVE BEEN UNIFORMLY STABILIZED WITH AT LEAST 70% VEGETATION COVERAGE.

PERMANENT STORM WATER MANAGEMENT SYSTEM(S) ARE CONSTRUCTED AND ARE OPERATING AS DESIGNED.

ALL DRAINAGE DITCHES, PONDS, AND ALL STORM WATER CONVEYANCE SYSTEMS HAVE BEEN CLEARED OF SEDIMENT AND STABILIZED WITH PERMANENT COVER TO PRECLUDE EROSION.

ALL TEMPORARY BMPS HAVE BEEN REMOVED AND PROPERLY DISPOSED OF.

FINAL STABILIZATION SHALL BE PREFORMED IN ACCORDANCE WITH MNDOT 2014 SPECIFICATION 2575.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: _____				
DESIGNER: _____				
CHECKED BY: _____				

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: Rebecca S Nestingen Lic. No. 49246  
 Licensed Professional Engineer  
 Printed Name: REBECCA S. NESTINGEN Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**STORMWATER POLLUTION PREVENTION PLAN**

FILE NO. 126669	113
SWP2 OF SWP2	196

# PERMANENT PAVEMENT MARKING PLAN

## NOTES & GUIDELINES

### GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

### EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE. ON LOW SPEED (SPEED LIMIT 35 OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS, SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

FOR 15 MIL APPLICATIONS, GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES °F OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

### 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.




### POLY PREFORM INLAY APPLICATION:

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120° F. APPLICATION BELOW 120° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15th AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.





NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

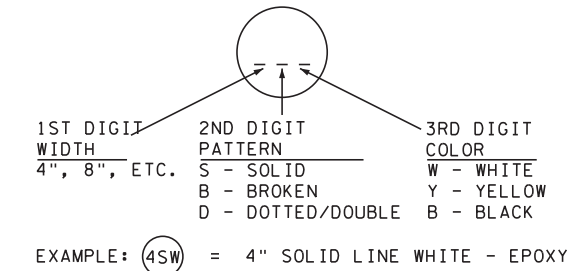
USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

## SYMBOLS & MATERIALS LEGEND

-  PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC
-  PAVEMENT MESSAGE (RIGHT ARROW) PREFORMED THERMOPLASTIC
-  PAVEMENT MESSAGE (CROSS WALK) PREFORMED THERMOPLASTIC

## STRIPING KEY

-  CIRCLE - EPOXY
-  SQUARE - POLY PREFORM
-  TRIANGLE - PAINT
-  PENTAGON - REMOVEABLE PREFORMED PLASTIC MARKING

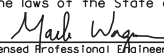


## PAVEMENT MARKING TABULATION

PAY ITEM	UNIT	Q		TOTAL QUANTITY
		CSAH 14 ANOKA COUNTY QUANTITY	HARPERS STREET (CITY OF BLAINE) QUANTITY	
PAVEMENT MARKING REMOVAL	LIN FT	8000		8000
PAVEMENT MSSG (LT ARROW) PREFORMED THERMOPLASTIC	EACH	10	2	12
PAVEMENT MSSG (RT ARROW) PREFORMED THERMOPLASTIC	EACH	14	2	16
4\"	LIN FT	21000	1600	22600
4\"	LIN FT	3050		3050
24\"	LIN FT	350	135	485
4\"	LIN FT	16000	1200	17200
24\"	LIN FT	350		350
CROSSWALK MARKING - PREFORMED THERMOPLASTIC	SQ FT	1250	290	1540

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

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:  Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
 PAVEMENT MARKING NOTES & TABULATIONS

FILE NO. 126669  
**114**  
 SS1 OF SS18  
**196**

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SIGN PANELS TYPE C <span style="float:right">R</span>														
SIGN NO.	CSAH 14 ANOKA COUNTY QUANTITY	HARPERS ST (CITY OF BLAINE) QUANTITY	TOTAL QUANTITY	POSTS			MTG. HT. (FT) (1)	PANELS				TOTAL AREA (SQ FT)	CODE NO.	PANEL LEGEND
				NO. & TYPE	KNEE BRACES QUANT.	LENGTH (FT)		SIZE (IN.)	AREA (SQ FT)	CSAH 14 AREA (SQ FT)	HARPERS ST AREA (SQ FT)			
C-1	1		1	1-U	-	13	7	24 x 24	4.00	4.00		4.00	M1-6	ANOKA COUNTY 52
								21 x 15	2.19	2.19		2.19	M6-4A	DOUBLE ARROW
C-2	1		1	1-U	-	13	7	24 x 24	4.00	4.00		4.00	M1-6	ANOKA COUNTY 14
								21 x 15	2.19	2.19		2.19	M6-4A	DOUBLE ARROW
C-3	7		7	1-U	-	14	7	30 x 36	7.50	52.50		52.50	R10-10 (MOD)	RIGHT TURN LANE
C-4	1		1	1-U	-	12	7	24 x 12	2.00	2.00		2.00	M3-2A	EAST
								24 x 24	4.00	4.00		4.00	M1-6	ANOKA COUNTY 14
C-5	4		4	1-U	-	14	7	36 x 36	9.00	9.00		9.00	W3-3	SIGNAL AHEAD SYMBOL
C-6	1		1	1-U	-	12	7	21 x 15	2.19	2.19		2.19	M2-1A	JCT
								24 x 24	4.00	4.00		4.00	M1-6	ANOKA COUNTY 52
C-7	1		1	1-U	-	13	7	24 x 30	5.00	5.00		5.00	R2-1	SPEED LIMIT 55
C-8	6		6	1-U	-	14	7	30 x 36	7.50	45.00		45.00	R10-10 (MOD)	LEFT TURN LANE
C-9	9		9	1-U	-	13	7	30 x 30	6.25	56.25		56.25	R8-3	NO PARKING SYMBOL
C-10	7	1	8	1-U	-	14	7	36 x 36	9.00	63.00	9.00	72.00	R5-1	DO NOT ENTER
C-11	9	2	11	1-U	-	13	7	24 x 30	5.00	45.00	10.00	55.00	R4-7	KEEP RIGHT SYMBOL
								18 x 18	2.25	20.25	4.50	24.75	X4-2	OBJECT MARKER
C-12	3		3	2-U	-	12	7	36 x 12	3.00	9.00		9.00	R6-1R	ONE WAY RIGHT
								30 x 30	6.25	18.75		18.75	R1-1	STOP
C-13	1		1	2-U	-	12	7	30 x 30	6.25	6.25		6.25	R1-1	STOP
C-14	2		2	2-U	-	14	7	60 x 36	15.00	30.00		30.00	I-X1	ADOPT A HIGHWAY
C-15	1		1	2-U	-	14	7	36 x 36	9.00	9.00		9.00	W20-X3L	MERGE LEFT
C-16	1	1	2	2-U	-	14	7	36 x 36	9.00	9.00	9.00	18.00	W6-3	TWO-WAY TRAFFIC SYMBOL
C-17	1	1	2	2-U	-	14	7	36 x 36	9.00	9.00	9.00	18.00	W6-1	DIVIDED HIGHWAY BEGINS SYMBOL
C-18		1	1	2-U	-	13	7	24 x 30	5.00		5.00	5.00	R2-1	SPEED LIMIT 30
								24 x 18	3.00		3.00	3.00	R5-X3	NO TRESPASSING
C-19		1	1	1-U	-	13	7	54 x 30	11.25		11.25	11.25	R3-30ACA	LANE USE CONTROL (L-T-R)
C-20	2		2	1-U	-	12	7	36 x 12	3.00	6.00		6.00	R6-1R	ONE WAY RIGHT
C-21	1		1	1-U	-	14	7	36 x 36	9.00	9.00		9.00	W9-2L	LANE ENDS MERGE LEFT
								30 x 24	5.00	5.00		5.00	W20-100P	1200 FEET
C-22	1		1	1-U	-	14	7	36 x 36	9.00	9.00		9.00	W9-2L	LANE ENDS MERGE LEFT
C-23		1	1	1-U	-	14	7	36 x 36	9.00		9.00	9.00	R3-7	RIGHT LANE MUST TURN RIGHT
C-24		1	1	1-U	-	14	7	36 x 36	9.00		9.00	9.00	R3-7	LEFT LANE MUST TURN LEFT
C-25	2		2	1-U	-	12	7	36 x 12	3.00	6.00		6.00	R6-1L	ONE WAY LEFT
TOTAL	62	9	71							447.00	79.00	526.00		

REMOVE SIGN TYPE C <span style="float:right">R</span>			
	CSAH 14 ANOKA COUNTY QUANTITY	HARPERS STREET CITY OF BLAINE QUANTITY	TOTAL QUANTITY
TOTAL	41	2	43

REMOVE SIGN TYPE SPECIAL <span style="float:right">R</span>			
	CSAH 14 ANOKA COUNTY QUANTITY	HARPERS STREET CITY OF BLAINE QUANTITY	TOTAL QUANTITY
TOTAL	5	1	6

REMOVE MARKER <span style="float:right">R</span>			
	CSAH 14 ANOKA COUNTY QUANTITY	HARPERS STREET CITY OF BLAINE QUANTITY	TOTAL QUANTITY
TOTAL	7		7

SIGN PANELS TYPE SPECIAL (4) <span style="float:right">R</span>													
SIGN NO.	CSAH 14 ANOKA COUNTY QUANTITY	HARPERS ST (CITY OF BLAINE) QUANTITY	TOTAL QUANTITY	POSTS			MTG. HT. (FT) (1)	PANELS				TOTAL AREA (SQ FT)	PANEL LEGEND
				NO. & TYPE	KNEE BRACES QUANT.	LENGTH (FT)		SIZE (IN.)	AREA (SQ FT)	CSAH 14 AREA (SQ FT)	HARPERS ST AREA (SQ FT)		
S-1	1		1	1-U	-	12	7	72 x 12	6	6		6	125th Ave NE (STREET NAME)
								48 x 12	4	4		4	Xylite St (STREET NAME)
S-2	1		1	1-U	-	12	7	72 x 12	6	6		6	125th Ave NE (STREET NAME)
								72 x 12	6	6		6	Flanders St (STREET NAME)
S-3		1	1	1-U	-	12	7	72 x 12	6		6	6	126th Ave NE (STREET NAME)
								72 x 12	6		6	6	Harpers St (STREET NAME)
TOTAL			3								22	12	34

GENERAL NOTES:

- POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
- SEE MN/DOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGNS.
- SEE SHEETS SS13 FOR STRUCTURAL DETAILS.

SPECIFIC NOTES:

- (1) MOUNTING HEIGHT IS MINIMUM. SEE SHEET SS12 FOR TYPICAL MOUNTING.
- (2) MOUNT IN CONCRETE. SEE SHEET SS14.
- (3) HAZARD MARKER (X4-2) SHALL BE FLUORESCENT YELLOW ON NON-REFLECTORIZED BLACK.
- (4) SEE SHEET SS11 FOR SNS SIGN PANELS.

DESIGN TEAM				
DRAWN BY:	CIF			
DESIGNER:	MAW			
CHECKED BY:	MAW			
	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 A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

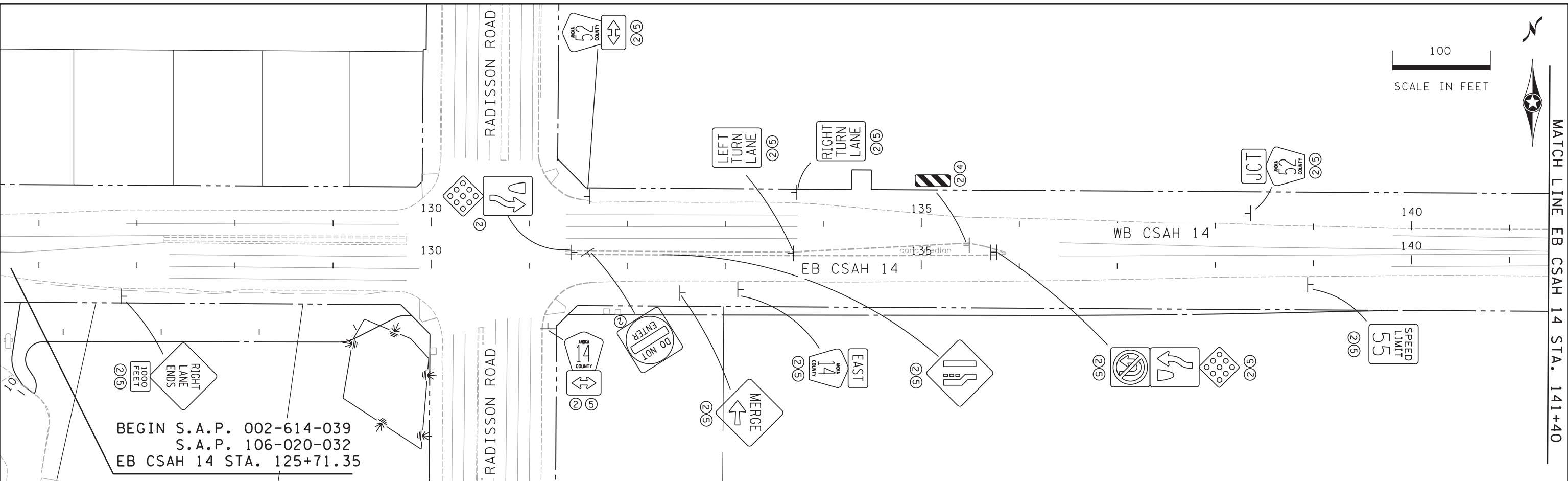
**SIGNING & STRIPING PLAN**  
 SIGN TABULATIONS

FILE NO. 115  
 126669  
 SS2  
 OF SS18 196

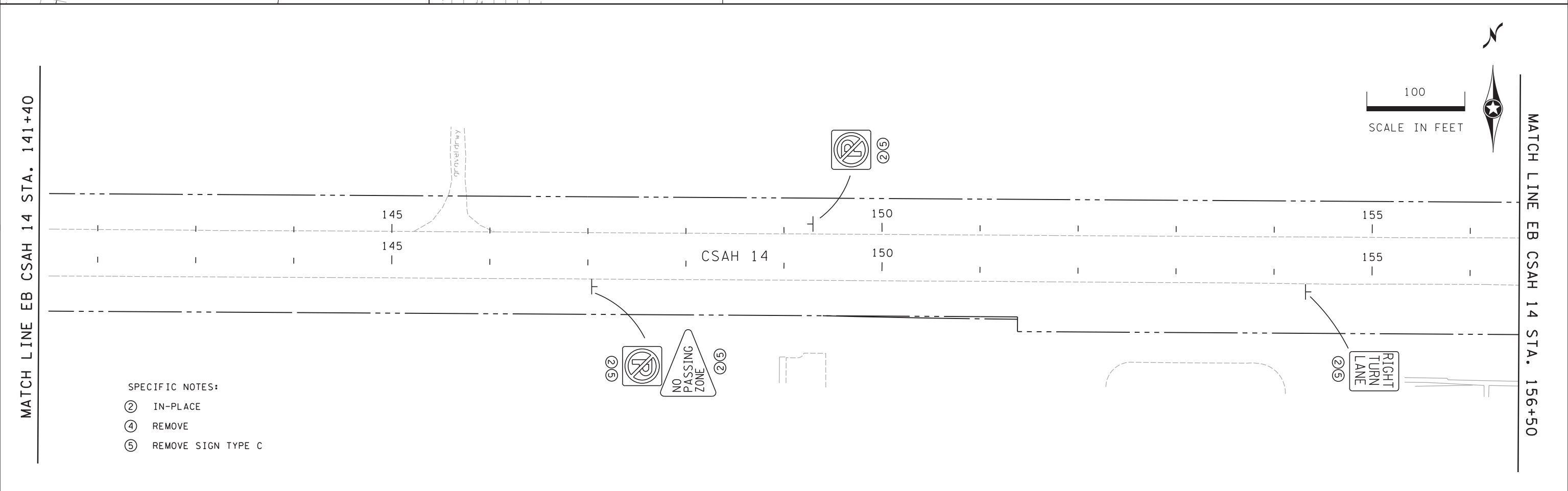
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10/21/2015

S:\AE\B\Blain\126669\5-final-dsgn\Plansheet\126669\_es.dgn



BEGIN S.A.P. 002-614-039  
 S.A.P. 106-020-032  
 EB CSAH 14 STA. 125+71.35



- SPECIFIC NOTES:
- ② IN-PLACE
  - ④ REMOVE
  - ⑤ REMOVE SIGN TYPE C

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

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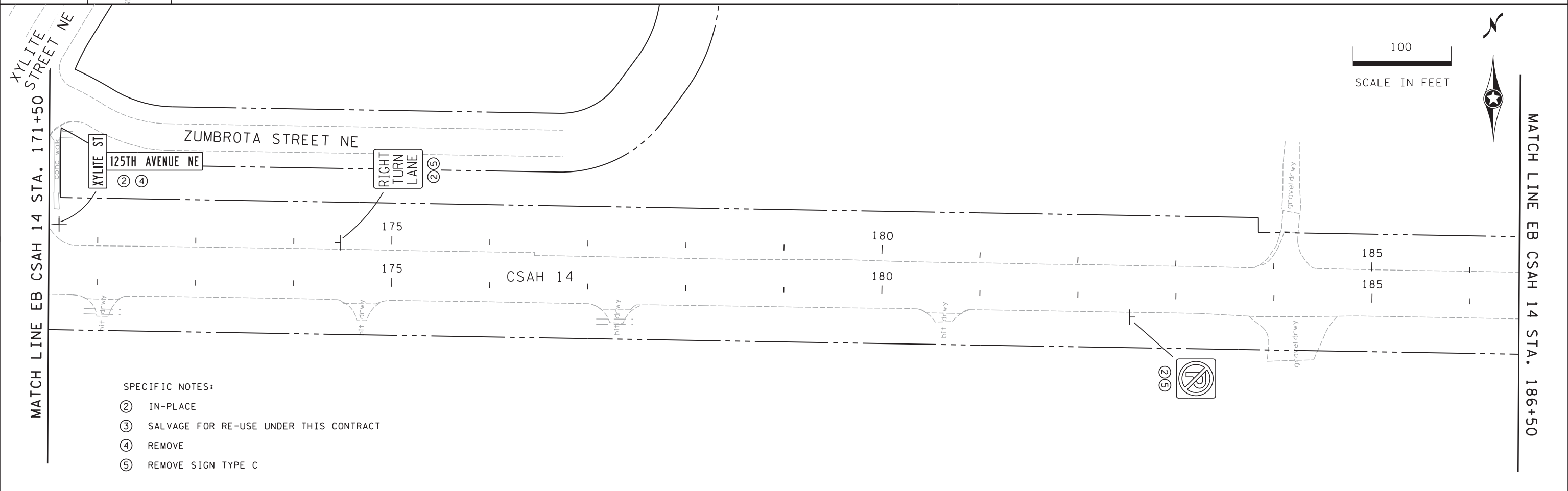
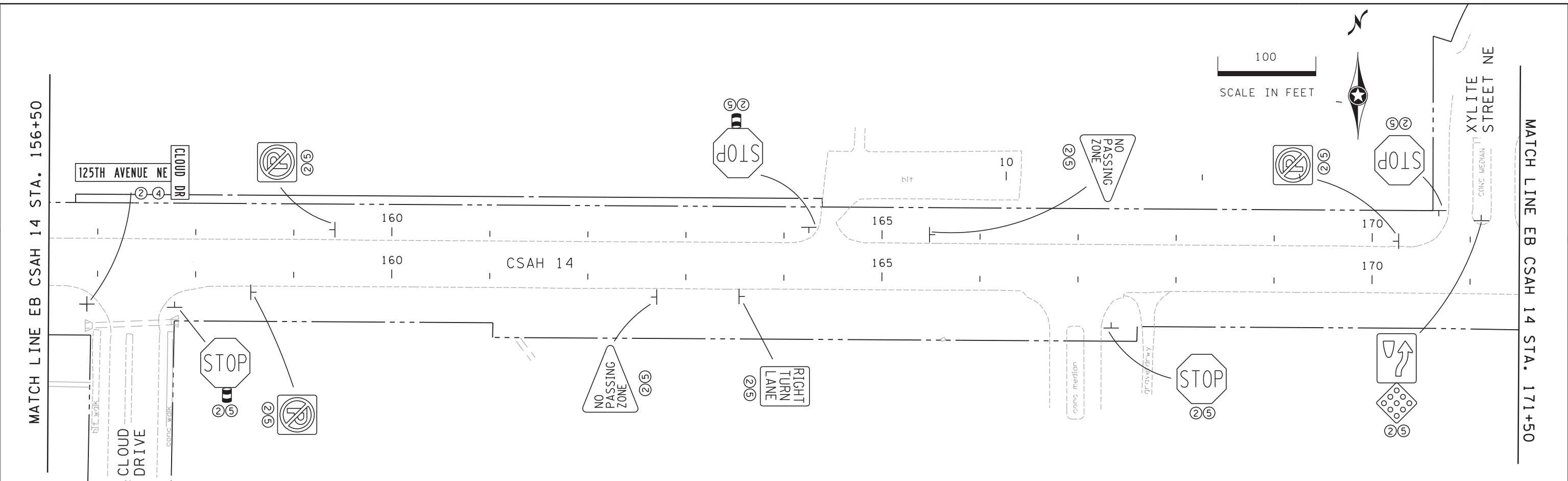


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**EXISTING SIGNING & STRIPING PLAN**  
 EB CSAH 14 STA. 125+71 TO 156+50

FILE NO.	116
126669	
SS3	196
OF SS18	

S:\AE\B\Blain\126669\5-final-dsgn\Plansheet\126669\_es.dgn SS4 10/21/2015 8:42:50 AM



- SPECIFIC NOTES:**
- ② IN-PLACE
  - ③ SALVAGE FOR RE-USE UNDER THIS CONTRACT
  - ④ REMOVE
  - ⑤ REMOVE SIGN TYPE C

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

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**EXISTING SIGNING & STRIPING PLAN**  
 EB CSAH 14 STA. 156+50 TO 186+50

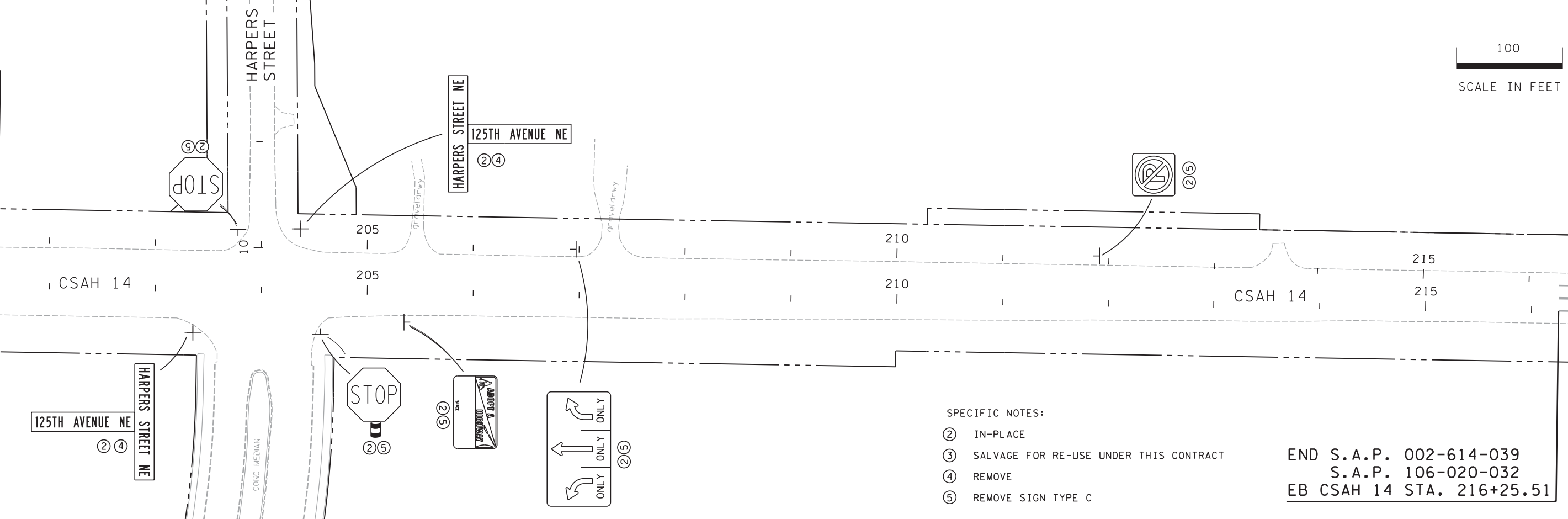
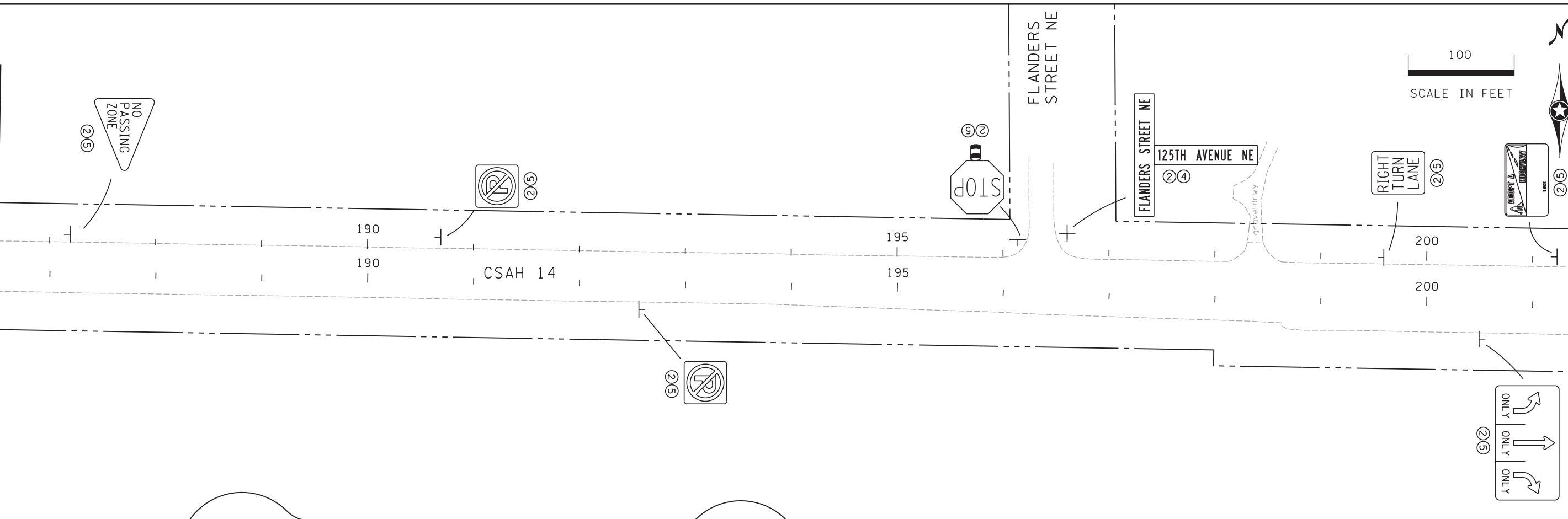
FILE NO.	117
126669	
SS4	196
OF SS18	

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MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50

MATCH LINE EB CSAH 14 STA. 201+50



SPECIFIC NOTES:

- ② IN-PLACE
- ③ SALVAGE FOR RE-USE UNDER THIS CONTRACT
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C

END S.A.P. 002-614-039  
 S.A.P. 106-020-032  
 EB CSAH 14 STA. 216+25.51

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

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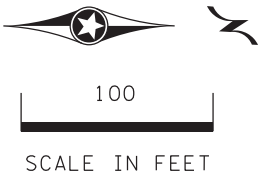


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

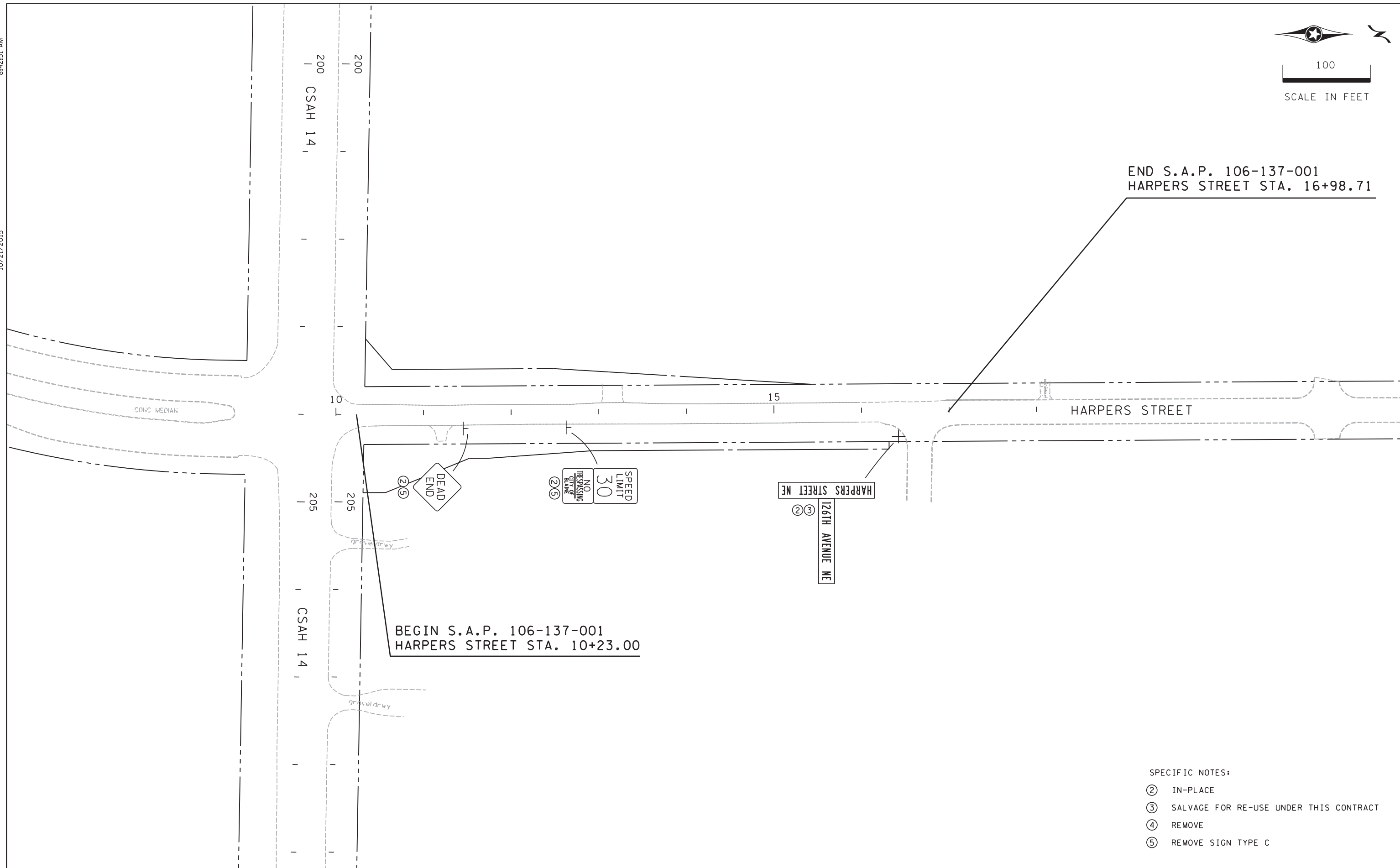
**EXISTING SIGNING & STRIPING PLAN**  
 EB CSAH 14 STA. 186+50 TO 216+25

FILE NO.	118
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SS5	196
OF SS18	

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END S.A.P. 106-137-001  
HARPERS STREET STA. 16+98.71



BEGIN S.A.P. 106-137-001  
HARPERS STREET STA. 10+23.00

SPECIFIC NOTES:

- ② IN-PLACE
- ③ SALVAGE FOR RE-USE UNDER THIS CONTRACT
- ④ REMOVE
- ⑤ REMOVE SIGN TYPE C

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

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 Printed Name: MARK A. WAGNER Date: 10/21/2015

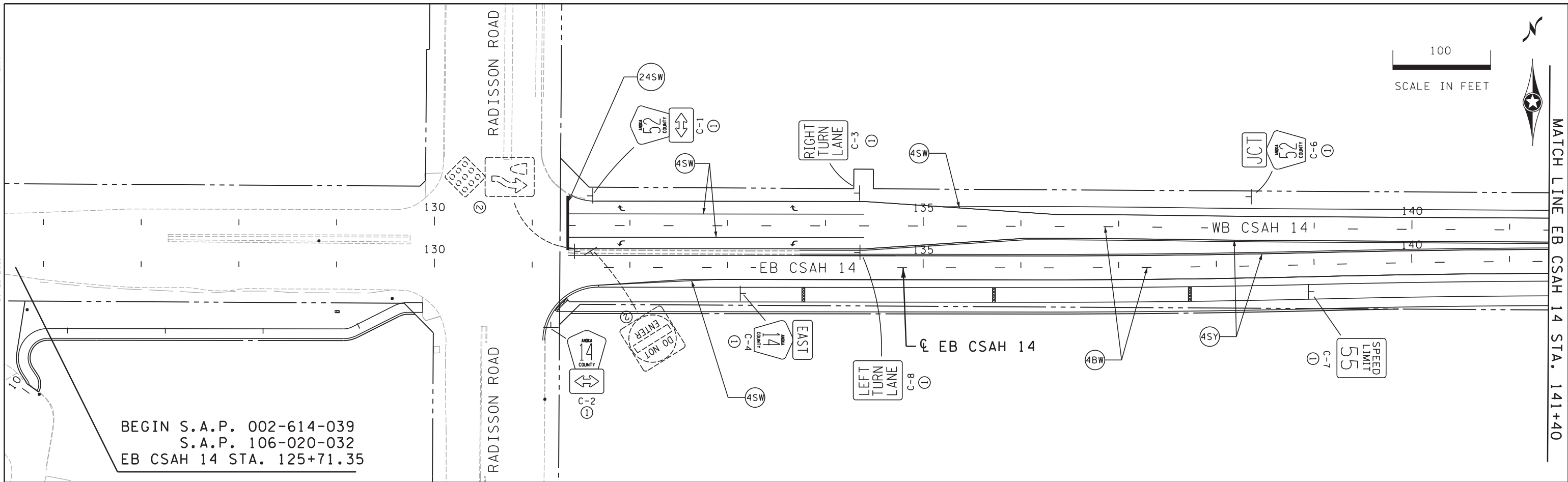


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

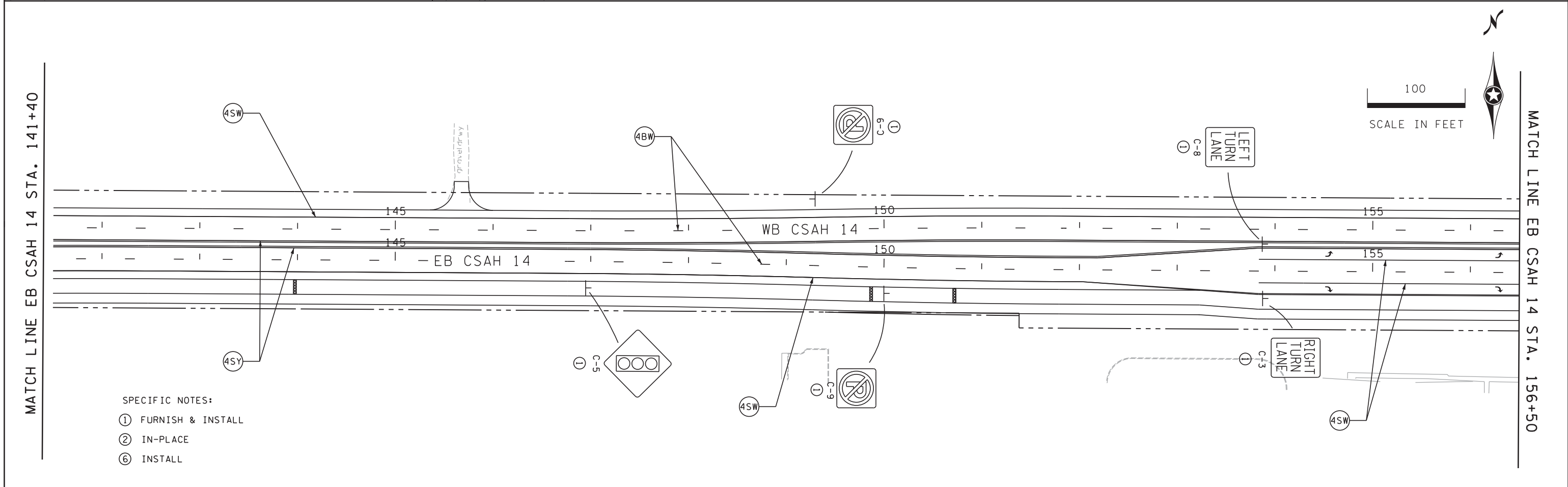
**EXISTING SIGNING & STRIPING PLAN**  
 HARPERS STREET STA. 10+23 TO 16+99

FILE NO. 126669	119
SS6 OF SS18	196

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BEGIN S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 125+71.35



- SPECIFIC NOTES:**
- ① FURNISH & INSTALL
  - ② IN-PLACE
  - ⑥ INSTALL

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

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Printed Name: MARK A. WAGNER Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
EB CSAH 14 STA. 125+71 TO 156+50

FILE NO.	120
126669	
SS7	196
OF SS18	



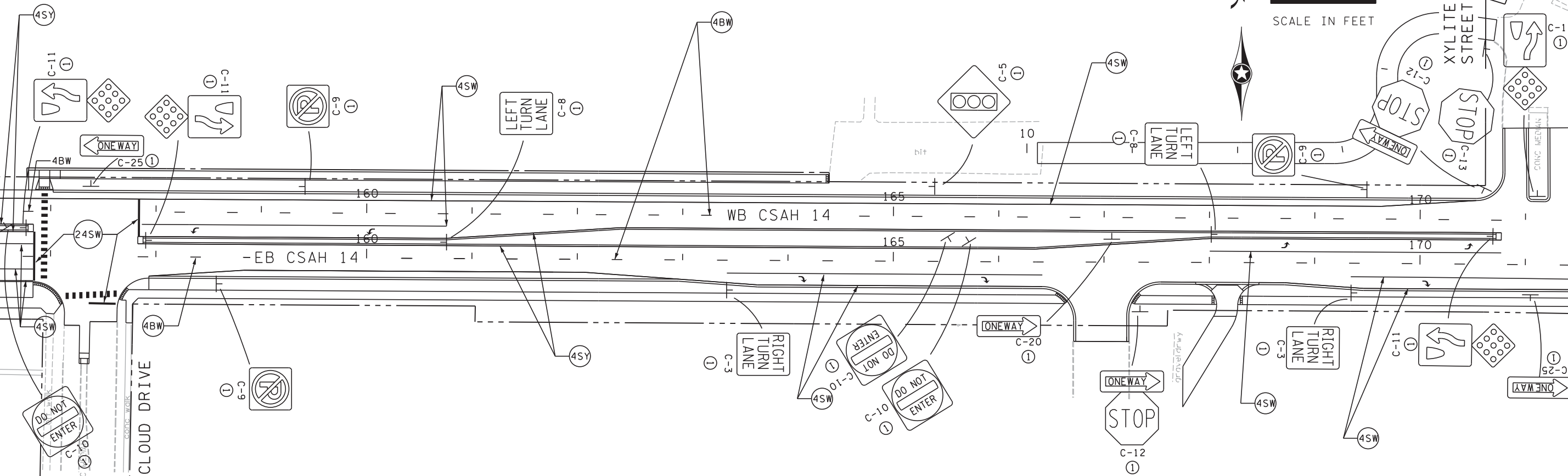
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10/21/2015

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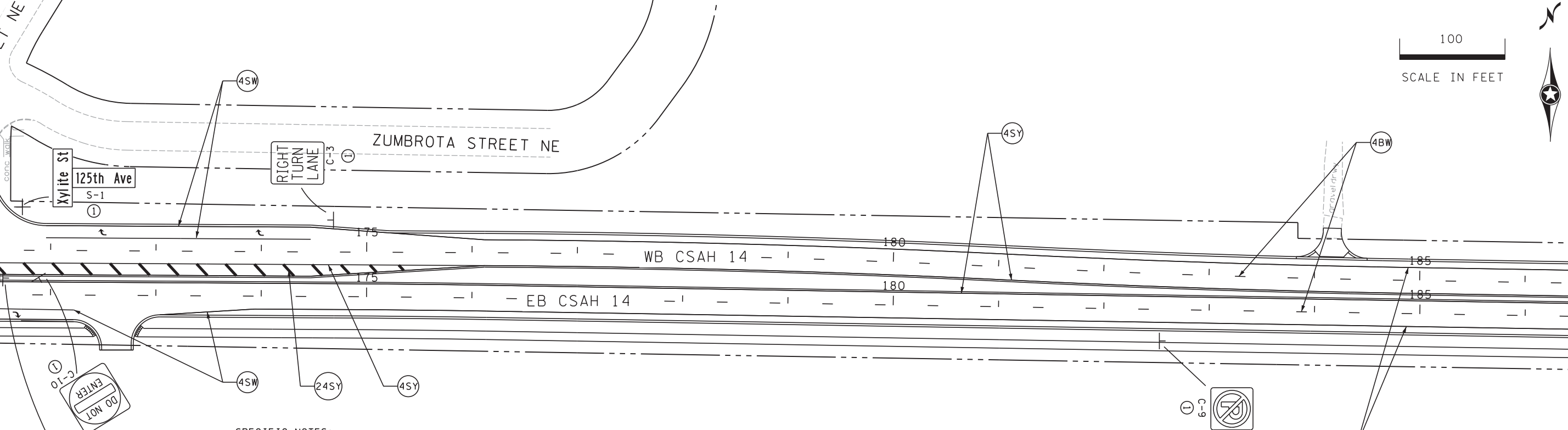
MATCH LINE EB CSAH 14 STA. 156+50

MATCH LINE EB CSAH 14 STA. 171+50



MATCH LINE EB CSAH 14 STA. 171+50

MATCH LINE EB CSAH 14 STA. 186+50



- SPECIFIC NOTES:
- ① FURNISH & INSTALL
  - ② IN-PLACE
  - ⑥ INSTALL

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

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Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: MARK A. WAGNER Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

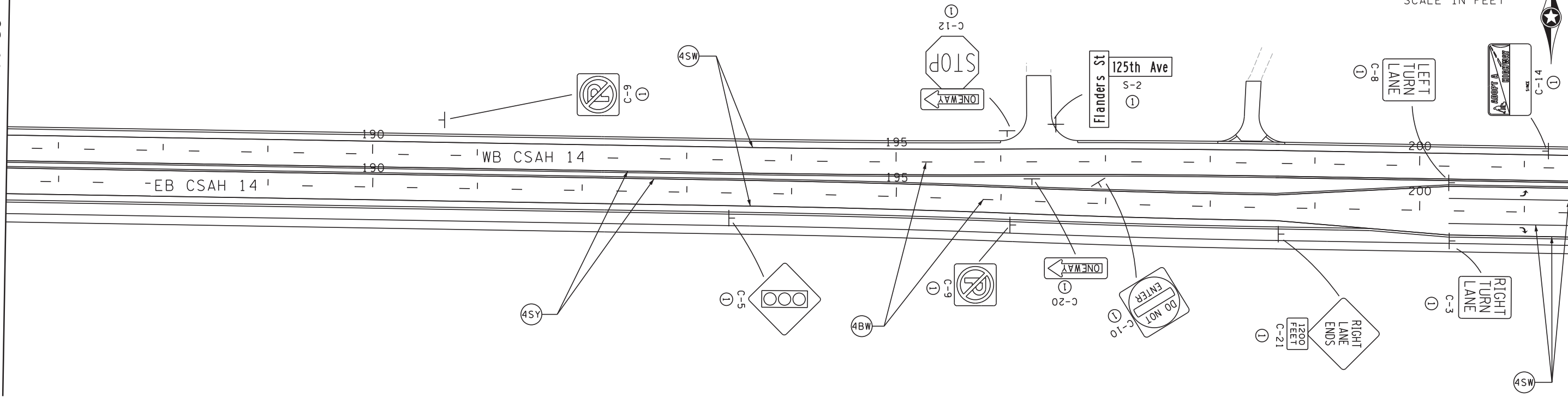
**SIGNING & STRIPING PLAN**  
 EB CSAH 14 STA. 156+50 TO 186+50

FILE NO.	121
126669	
SS8	196
OF SS18	

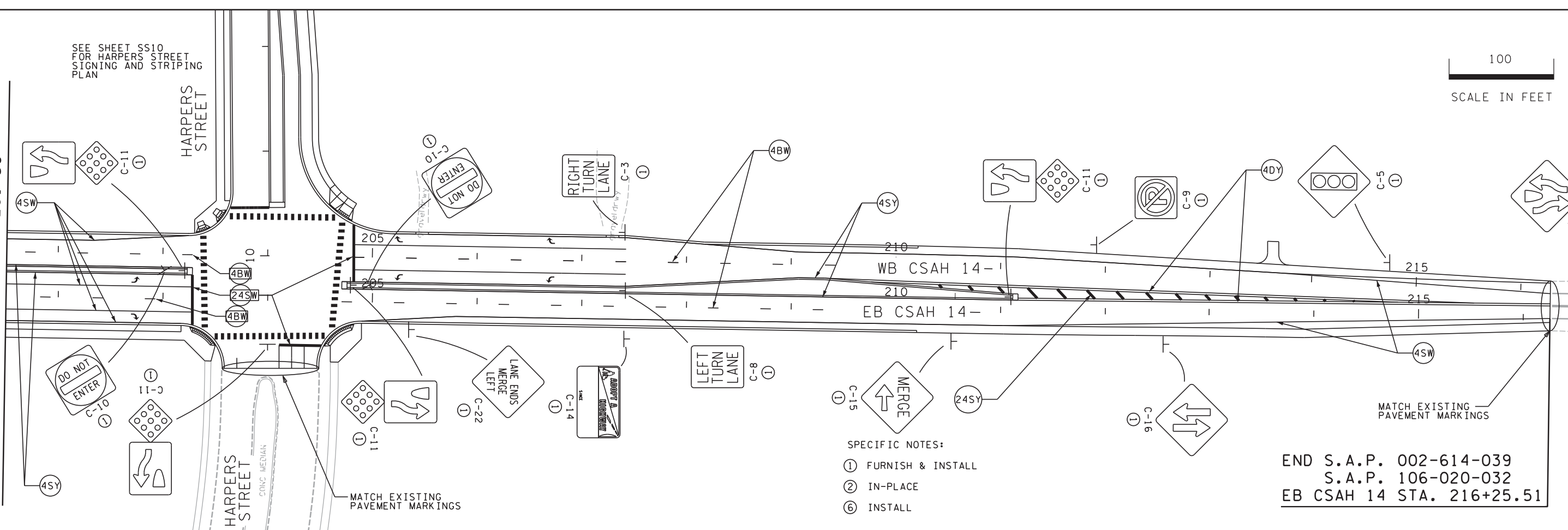
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MATCH LINE EB CSAH 14 STA. 186+50

MATCH LINE EB CSAH 14 STA. 201+50



MATCH LINE EB CSAH 14 STA. 201+50



- SPECIFIC NOTES:**
- ① FURNISH & INSTALL
  - ② IN-PLACE
  - ⑥ INSTALL

END S.A.P. 002-614-039  
 S.A.P. 106-020-032  
 EB CSAH 14 STA. 216+25.51

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

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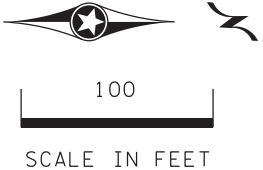


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
 EB CSAH 14 STA. 186+50 TO 216+25

FILE NO.	122
126669	
SS9	196
OF SS18	

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SEE SHEETS SS7-SS9  
FOR CSAH 14  
SIGNING AND STRIPING  
PLAN

EB CSAH 14

WB CSAH 14

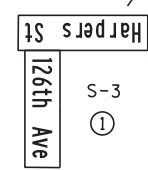
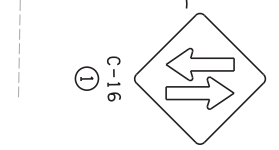
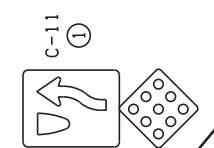
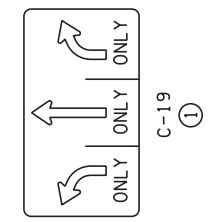
END S.A.P. 106-137-001  
HARPERS STREET STA. 16+98.71

BEGIN S.A.P. 106-137-001  
HARPERS STREET STA. 10+23.00

200  
200

24SW  
10

205  
205



4SW

4SW

4SY

- SPECIFIC NOTES:
- ① FURNISH & INSTALL
  - ② IN-PLACE
  - ③ INSTALL

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

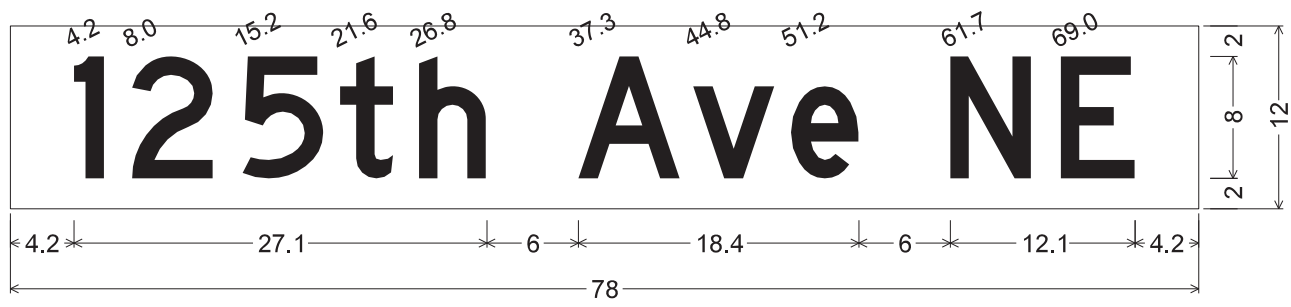
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: *Mark A. Wagner* Lic. No. 51660  
Printed Name: MARK A. WAGNER Date: 10/21/2015

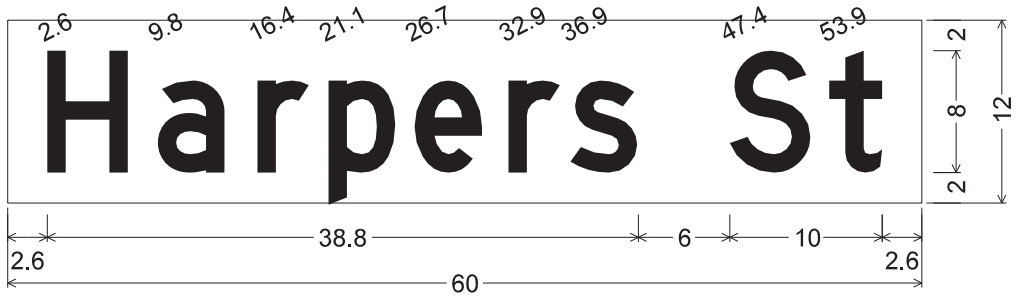
CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
HARPERS STREET STA. 10+23 TO 16+99

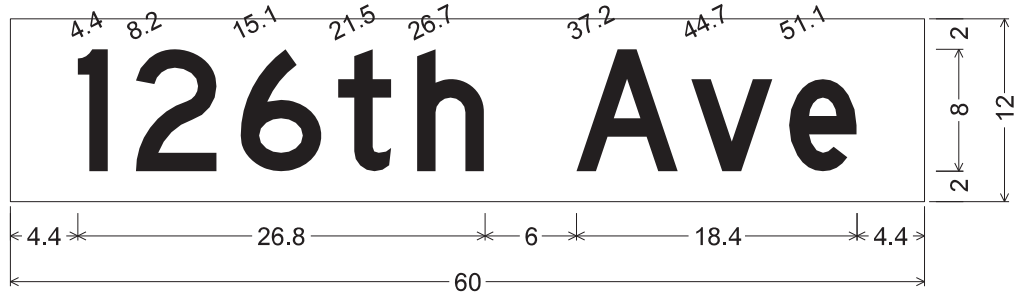
FILE NO. 126669	123
SS10 OF SS18	196



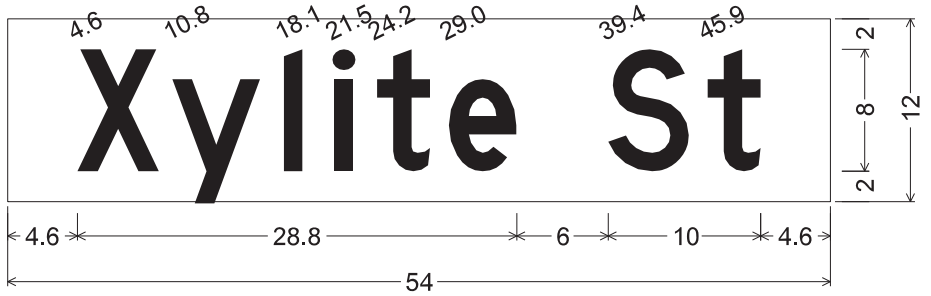
D3-1 (125th); No border, White on Green;  
[125th Ave NE] D;



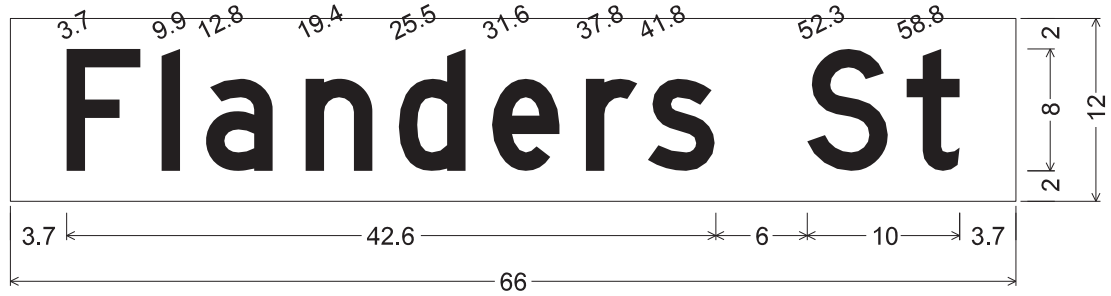
D3-1 (Harpers); No border, White on Green;  
[Harpers St] D;



D3-1 (126th); No border, White on Green;  
[126th Ave] D;



D3-1 (Xylite); No border, White on Green;  
[Xylite St] D;



D3-1 (Flanders); No border, White on Green;  
[Flanders St] D;

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

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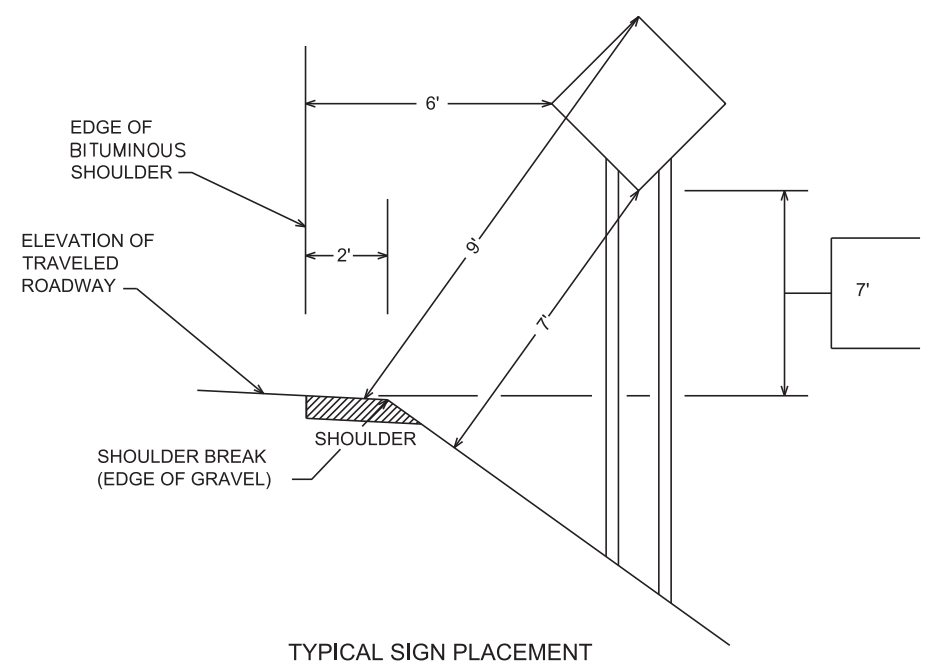


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGN PANELS**  
 STREET NAME SIGNS

FILE NO. 126669	<b>124</b>
SS11 OF SS18	<b>196</b>

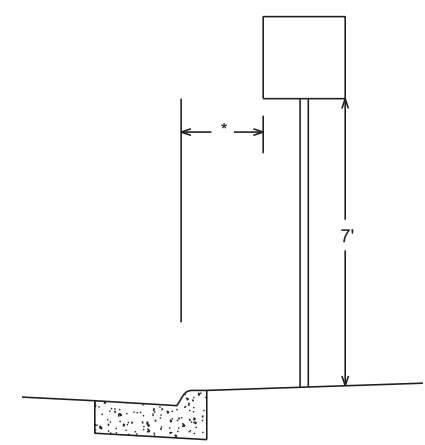
### RURAL



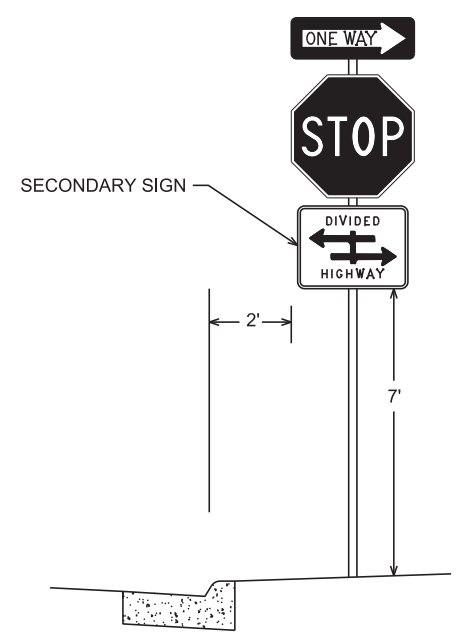
TYPICAL SIGN PLACEMENT

### 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:	CIF			
DESIGNER:	MAW			
CHECKED BY:	MAW			
NO.	BY	DATE	REVISIONS	

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 Licensed Professional Engineer  
 Printed Name: MARK A. WAGNER Date: 10/21/2015



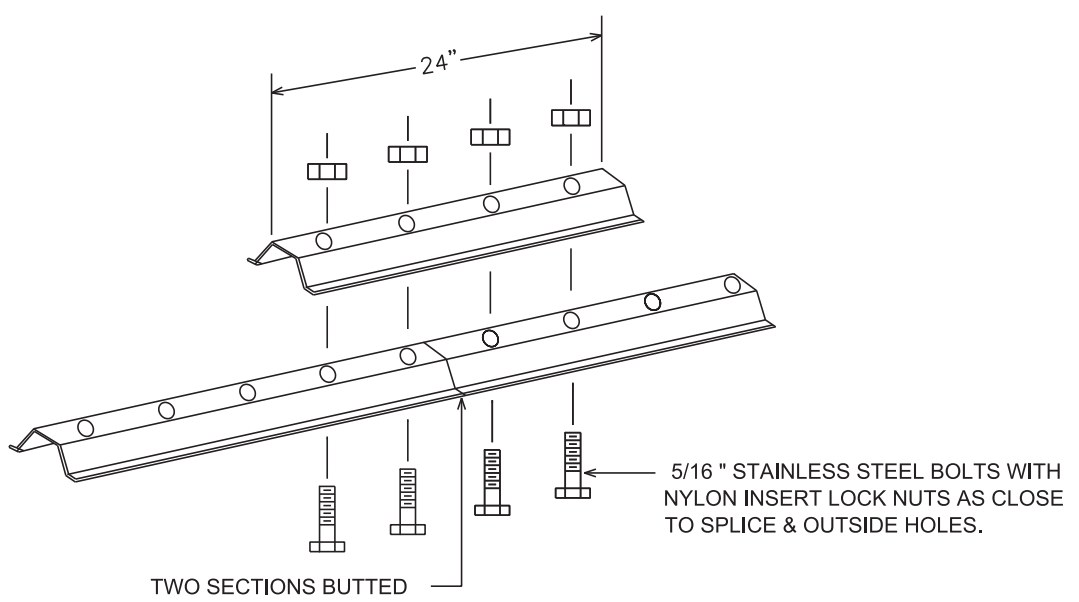
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
 SIGN PLACEMENT DETAILS

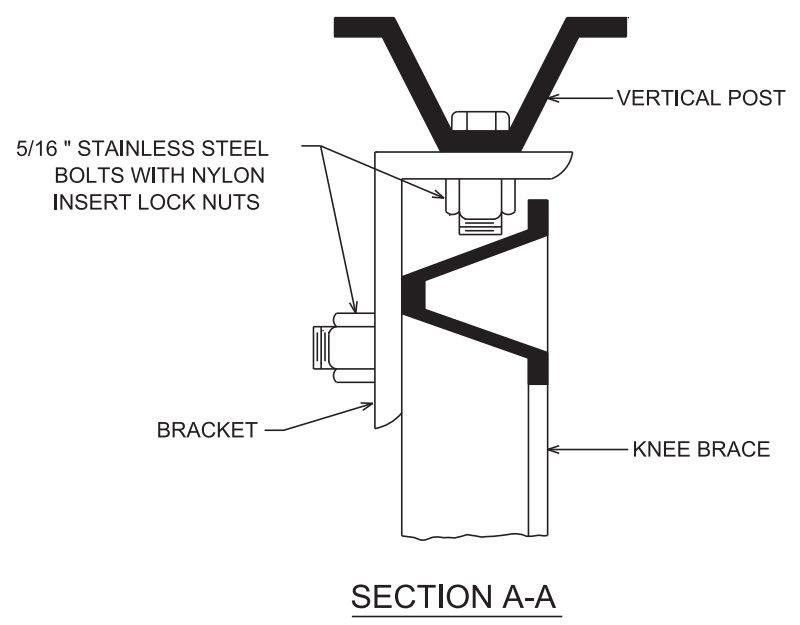
8:42:56 AM

10/21/2015

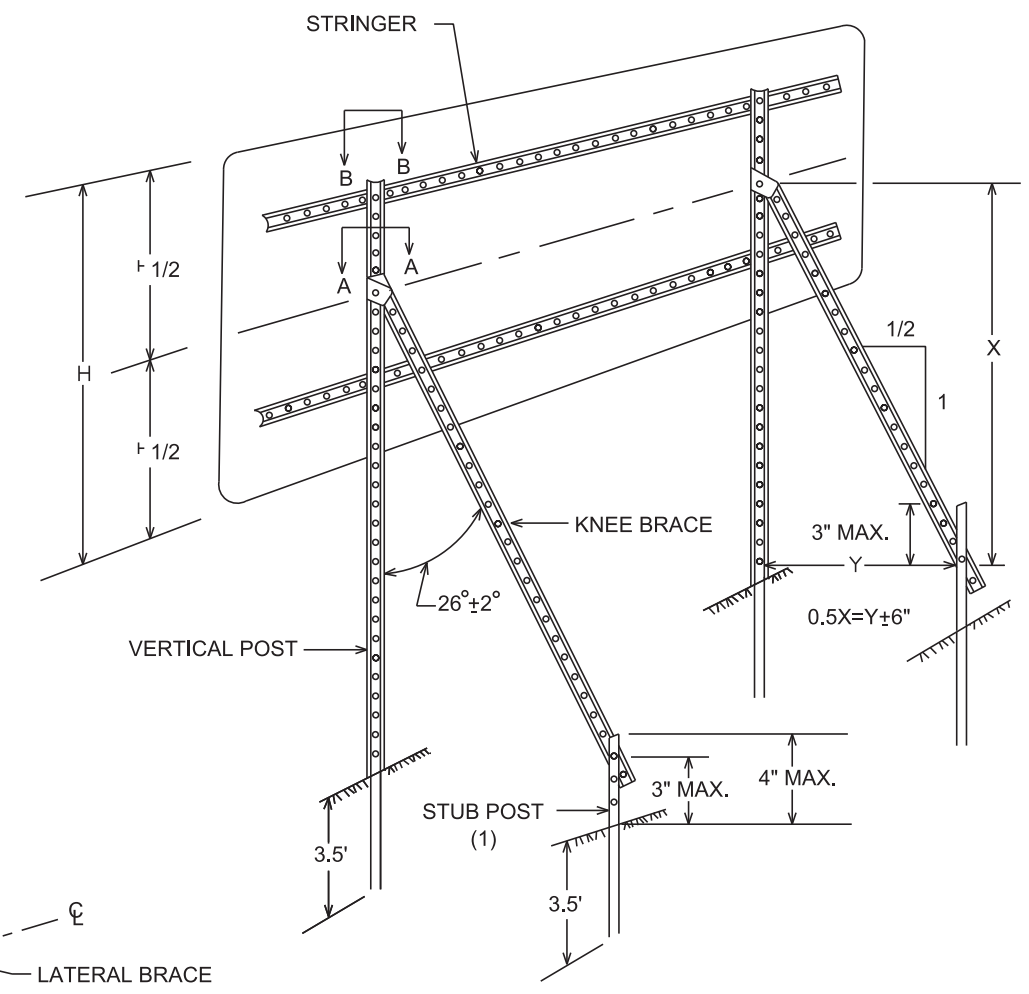
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SS13



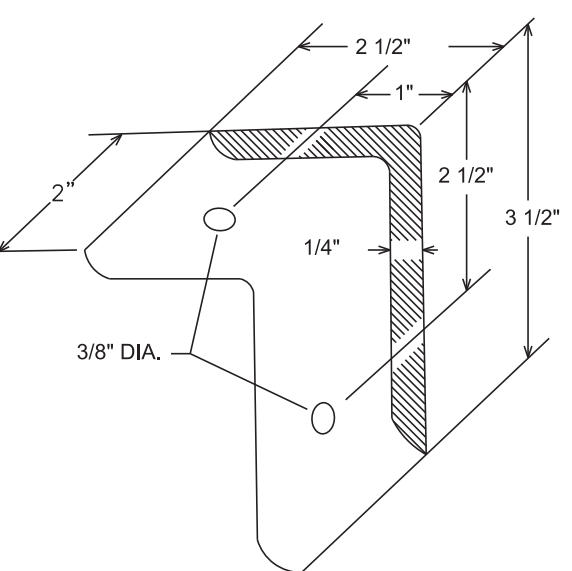
**LATERAL BRACE OR STRINGER  
SPlice DETAIL (EXPLODED VIEW)**



**SECTION A-A**

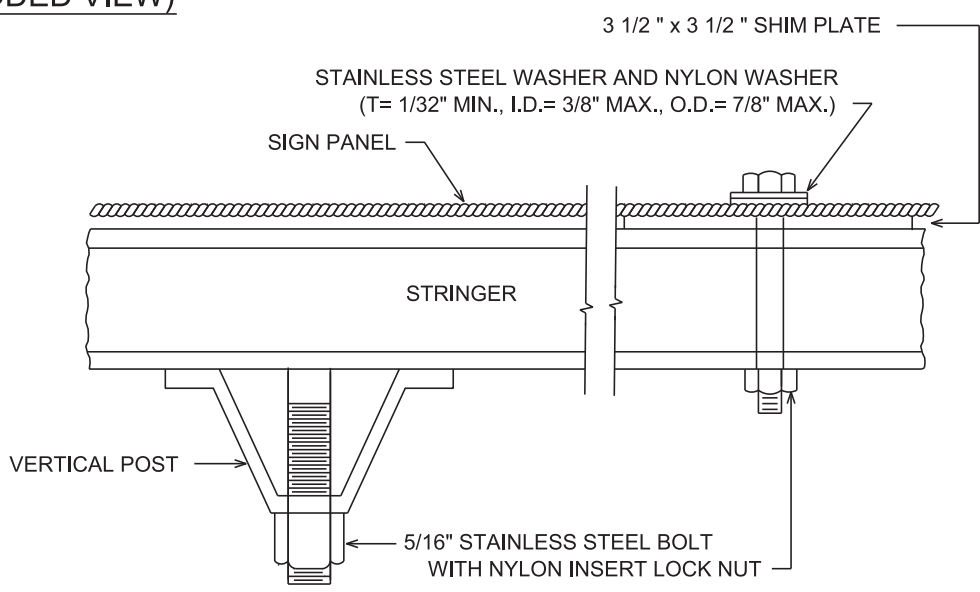


**TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS**

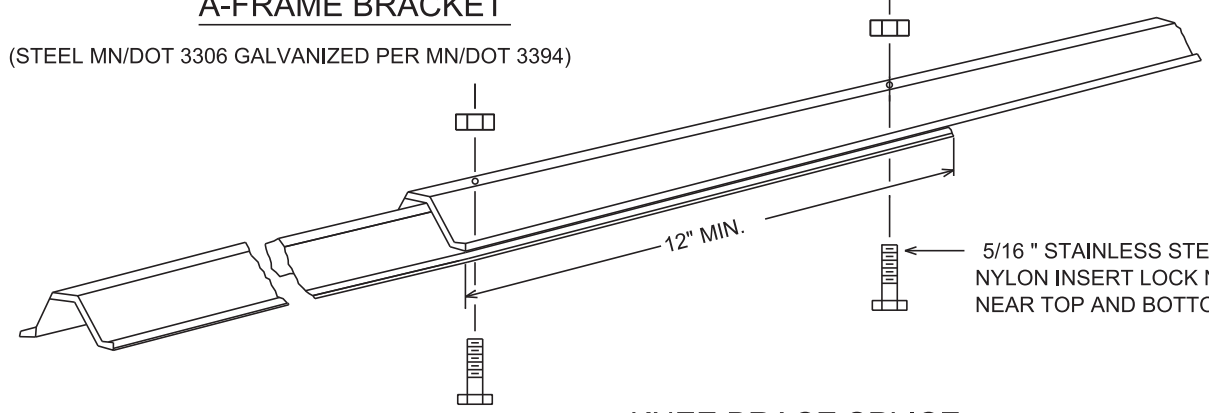


**A-FRAME BRACKET**

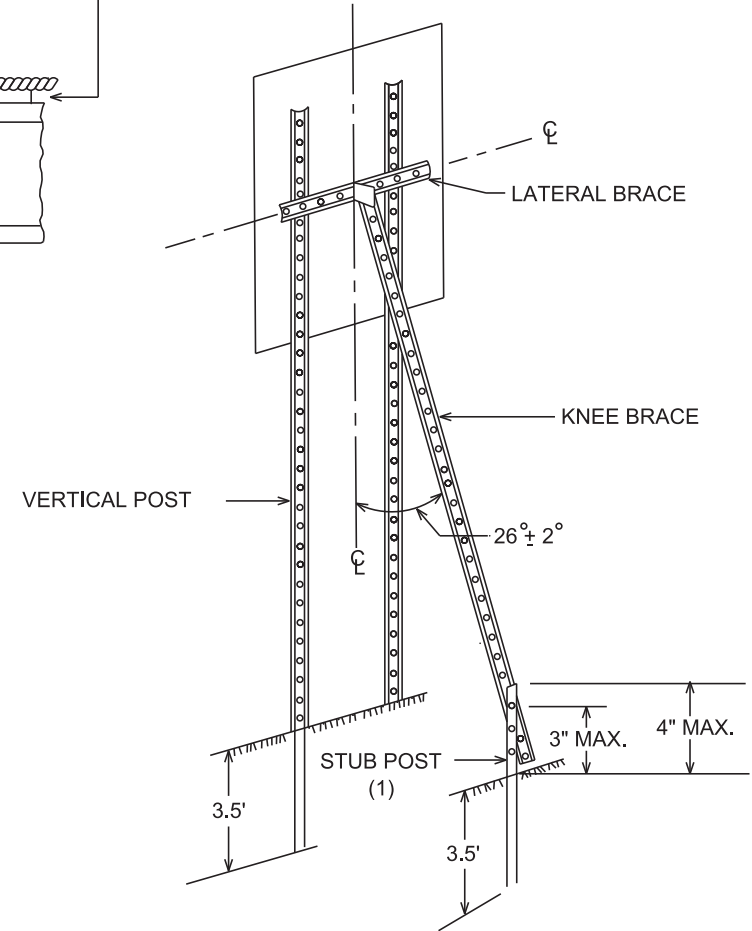
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



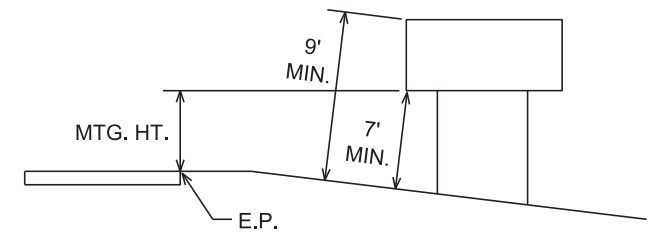
**SECTION B-B**



**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:	CIF		
DESIGNER:	MAW		
CHECKED BY:	MAW		
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.

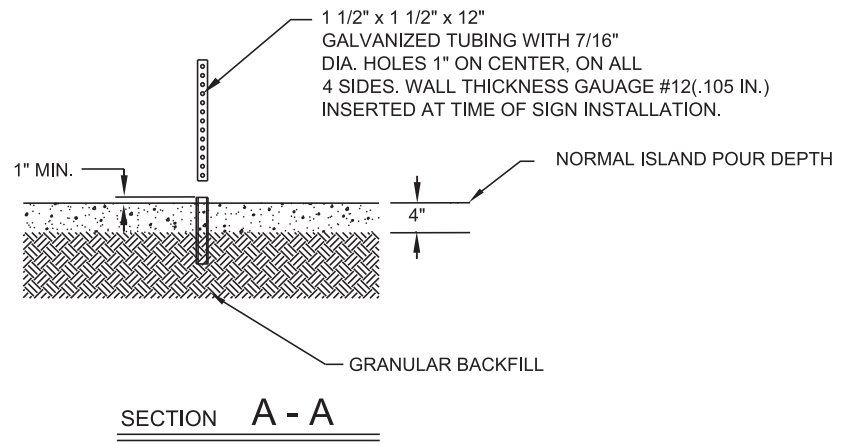
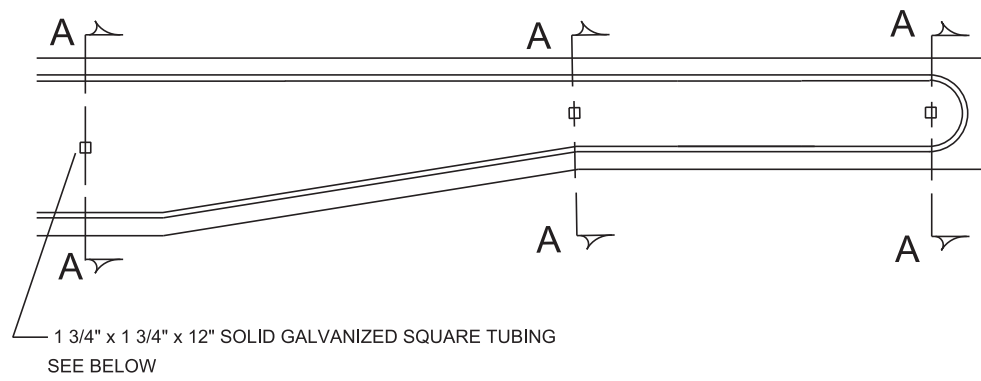
Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: **MARK A. WAGNER** Date: 10/21/2015

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

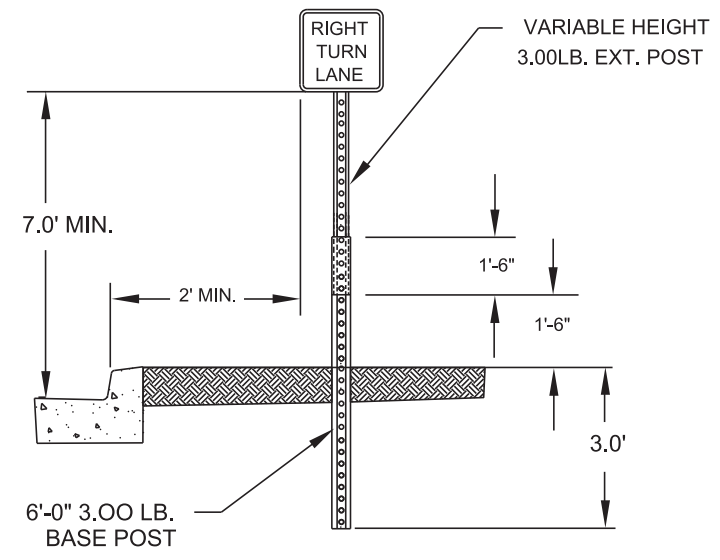
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
 TYPE C & D SIGN STRUCTURAL DETAILS

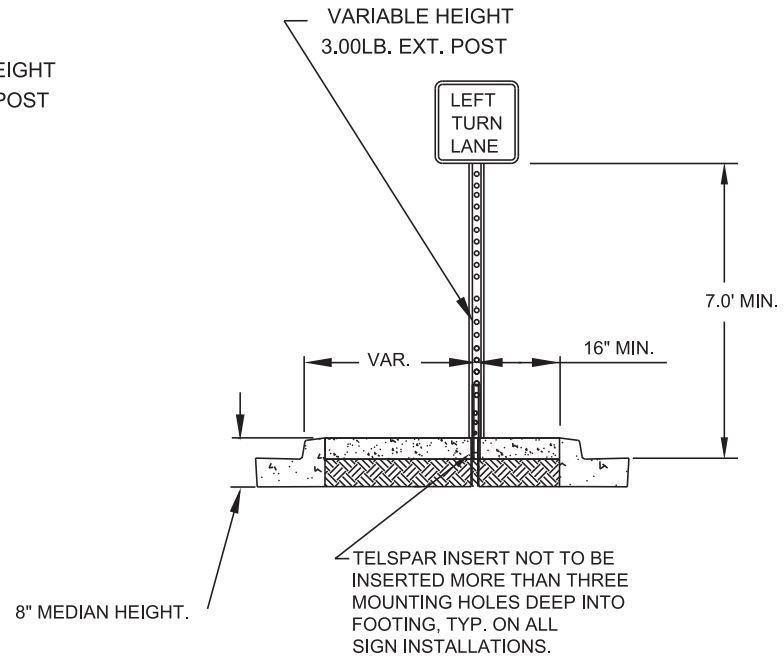
FILE NO. 126669	126
SS13 OF SS18	196



GROUND POST MOUNT SIGN INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN INSTALLATION TYPICAL



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

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Certified By: *Mark A. Wagner* Lic. No. 51660  
 Licensed Professional Engineer  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNING & STRIPING PLAN**  
 SIGN MOUNTING DETAILS

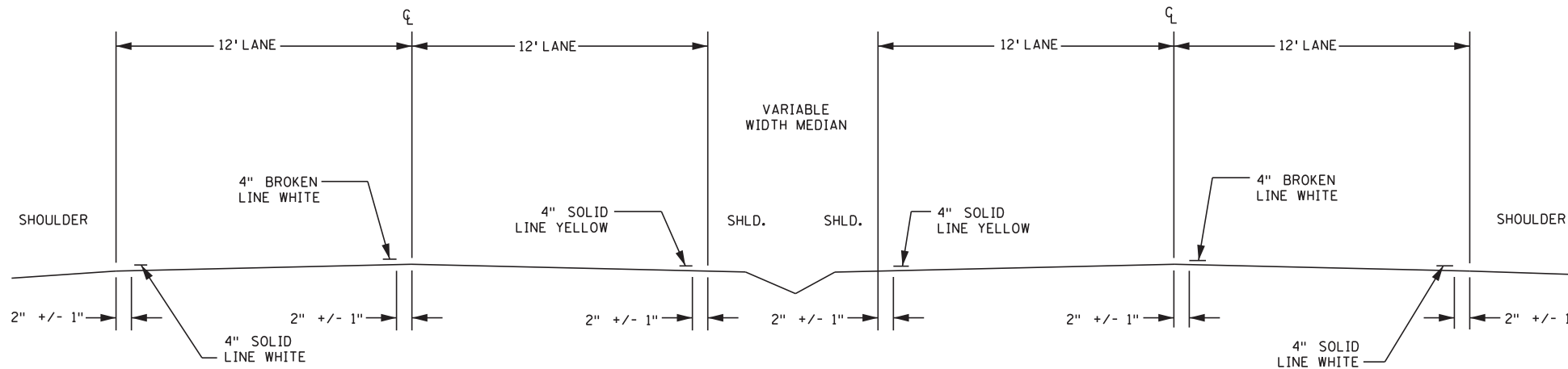
FILE NO. 126669	127
SS14 OF SS18	196

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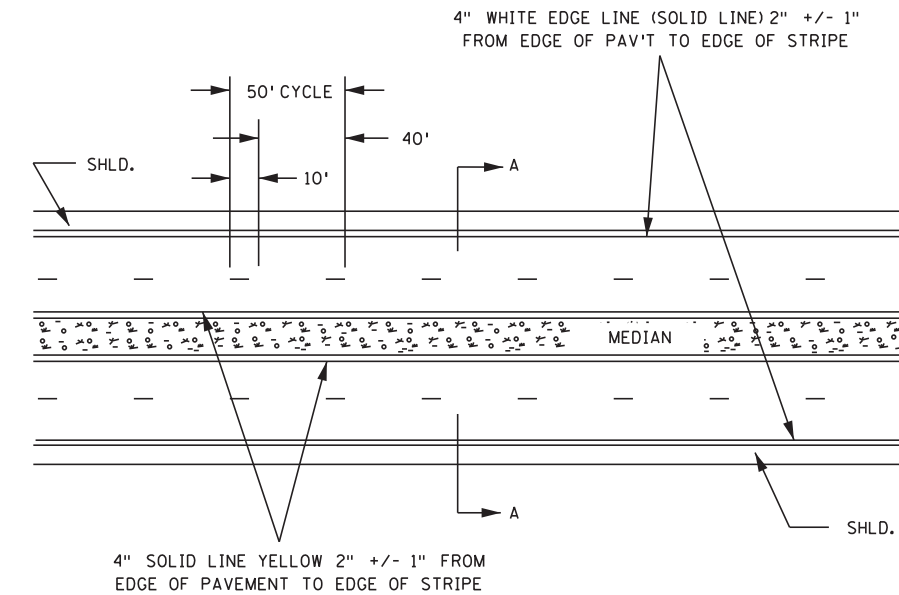
10/21/2015

(USERNAME)

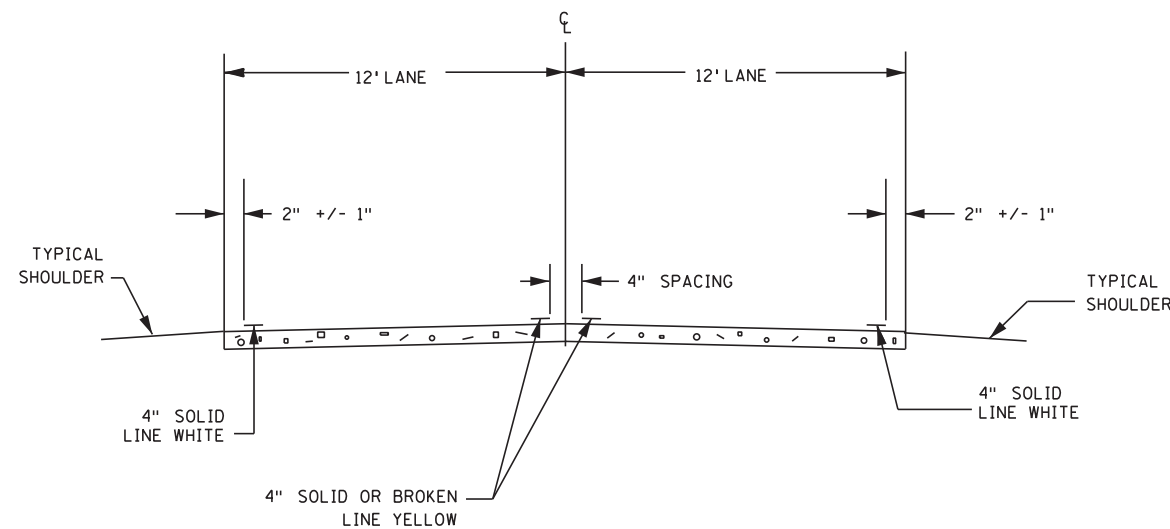
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SS15-SS18



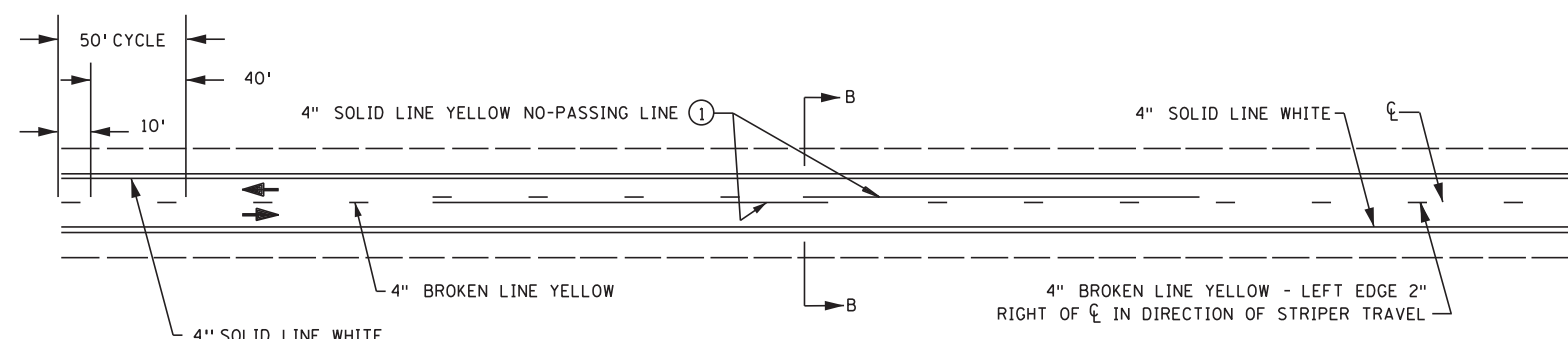
**SECTION A-A**  
FOUR LANES



**TYPICAL 4-LANE DIVIDED LANE MARKINGS**

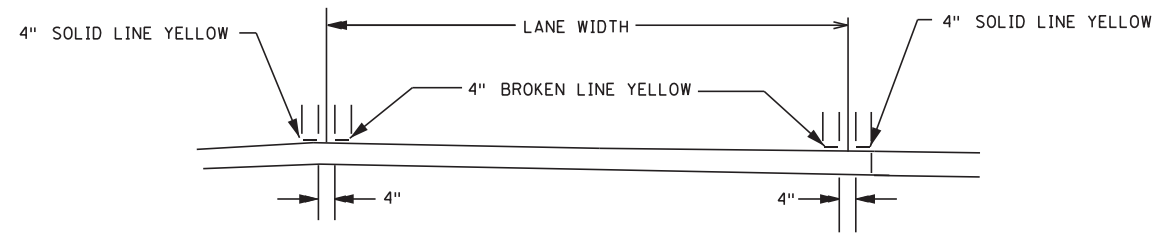


**SECTION B-B**

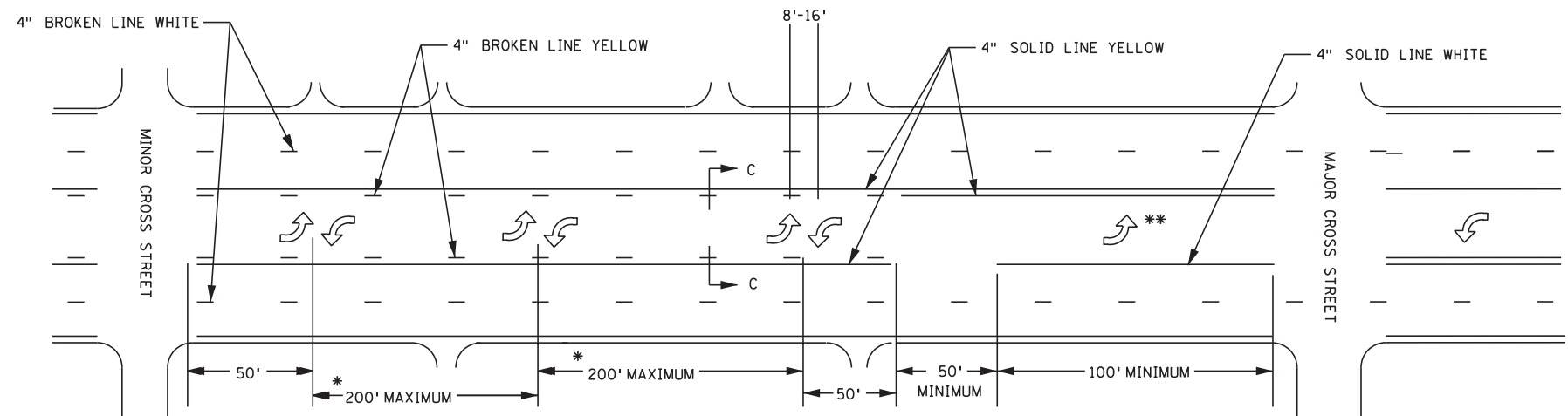


**TWO LANE-TWO WAY TRAFFIC MARKINGS**

① CONTACT TRAFFIC ENGINEER FOR NO PASSING ZONE SURVEY.



**SECTION C-C**  
TWO WAY LEFT TURN LANE



**TWO WAY LEFT TURN LANE**

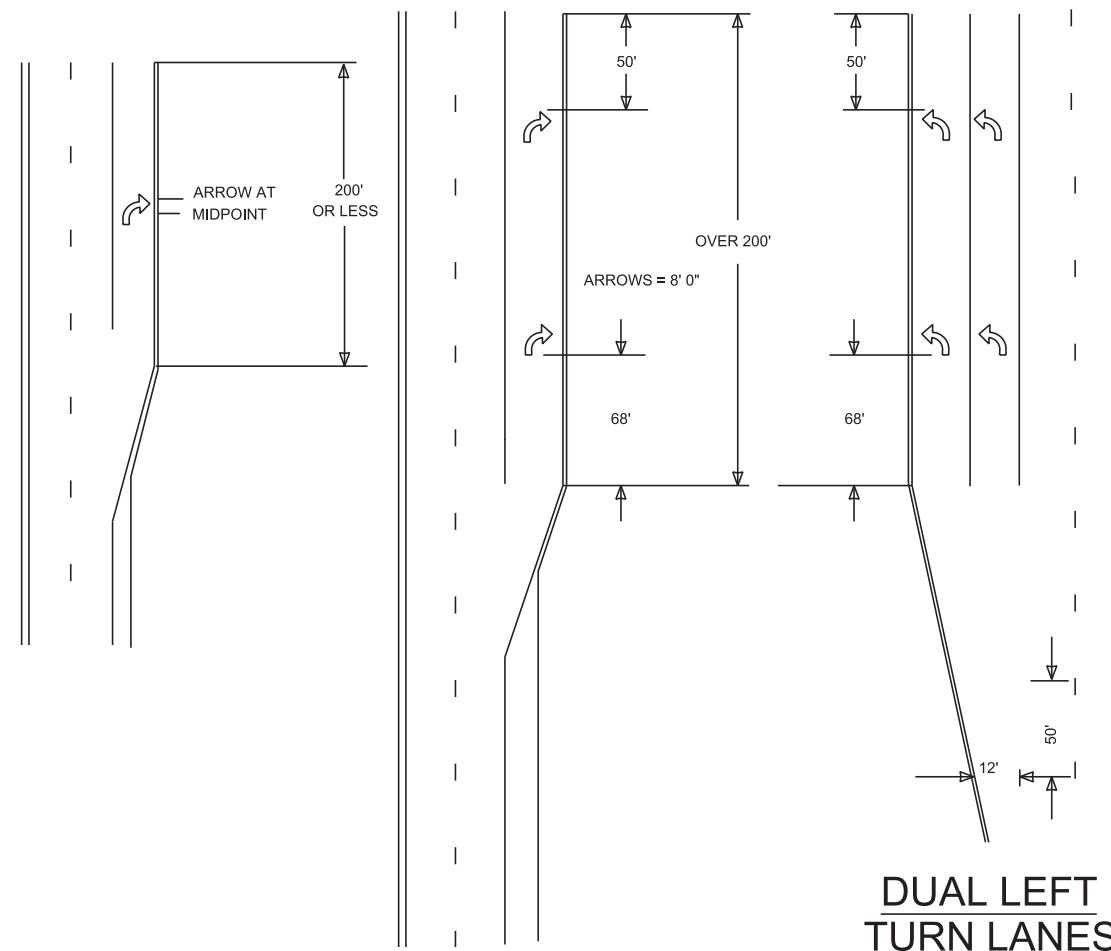
\* THESE DISTANCES SHOULD BE EQUAL. THE PAVEMENT ARROWS ARE PLACED TO SHOW THE OPERATION AND DO NOT HAVE TO LINE UP WITH ANY OF THE DRIVEWAYS.

\*\* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER AND PLACEMENT OF ARROWS.

NOTE:  
SINGLE-DIRECTION LEFT-TURN ARROWS SHALL NOT BE USED IN LANES BORDERED ON BOTH SIDES BY TWO-WAY LEFT-TURN LANE MARKINGS

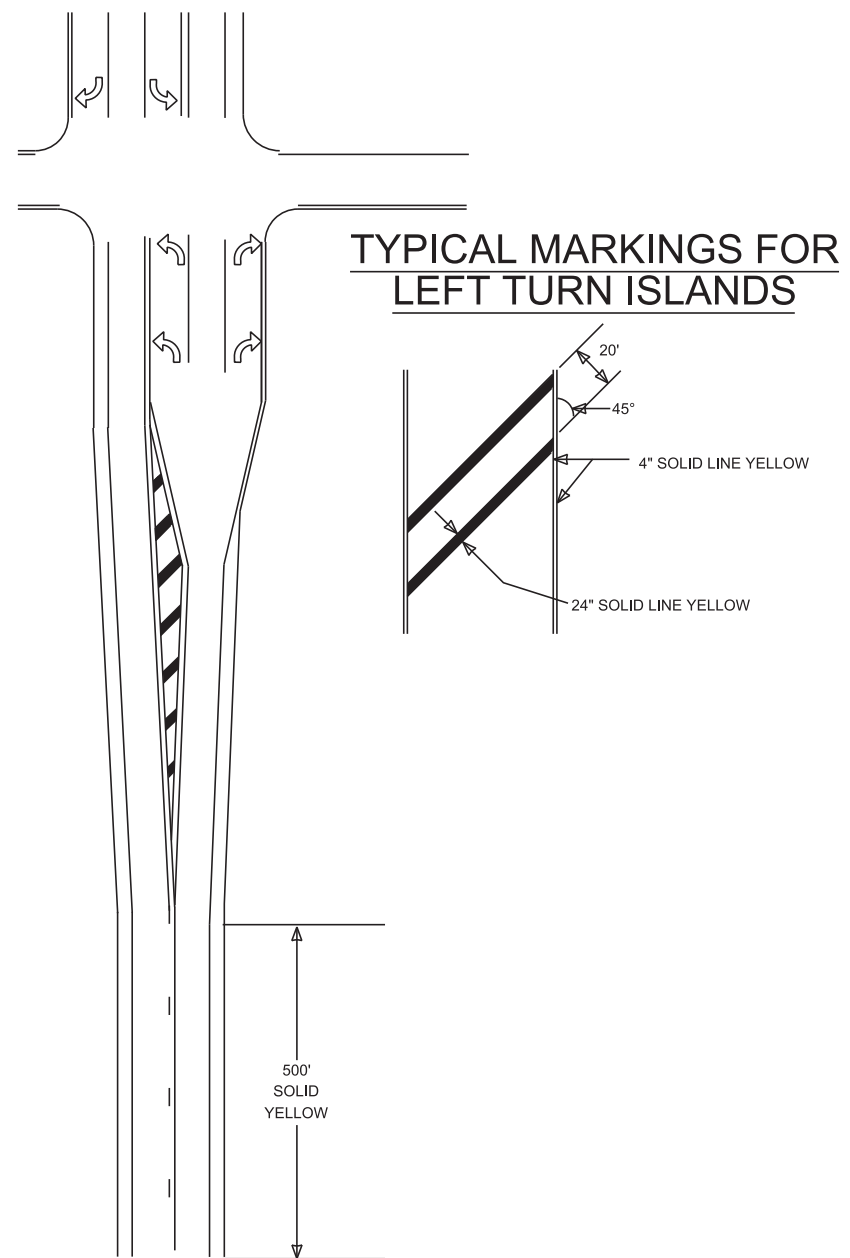


### TYPICAL MESSAGE PLACEMENT FOR TURN LANES



### DUAL LEFT TURN LANES

### TYPICAL MARKINGS FOR LEFT TURN ISLANDS



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

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Certified By: *Mark A. Wagner* Lic. No. 51660  
 Licensed Professional Engineer  
 Printed Name: MARK A. WAGNER Date: 10/21/2015

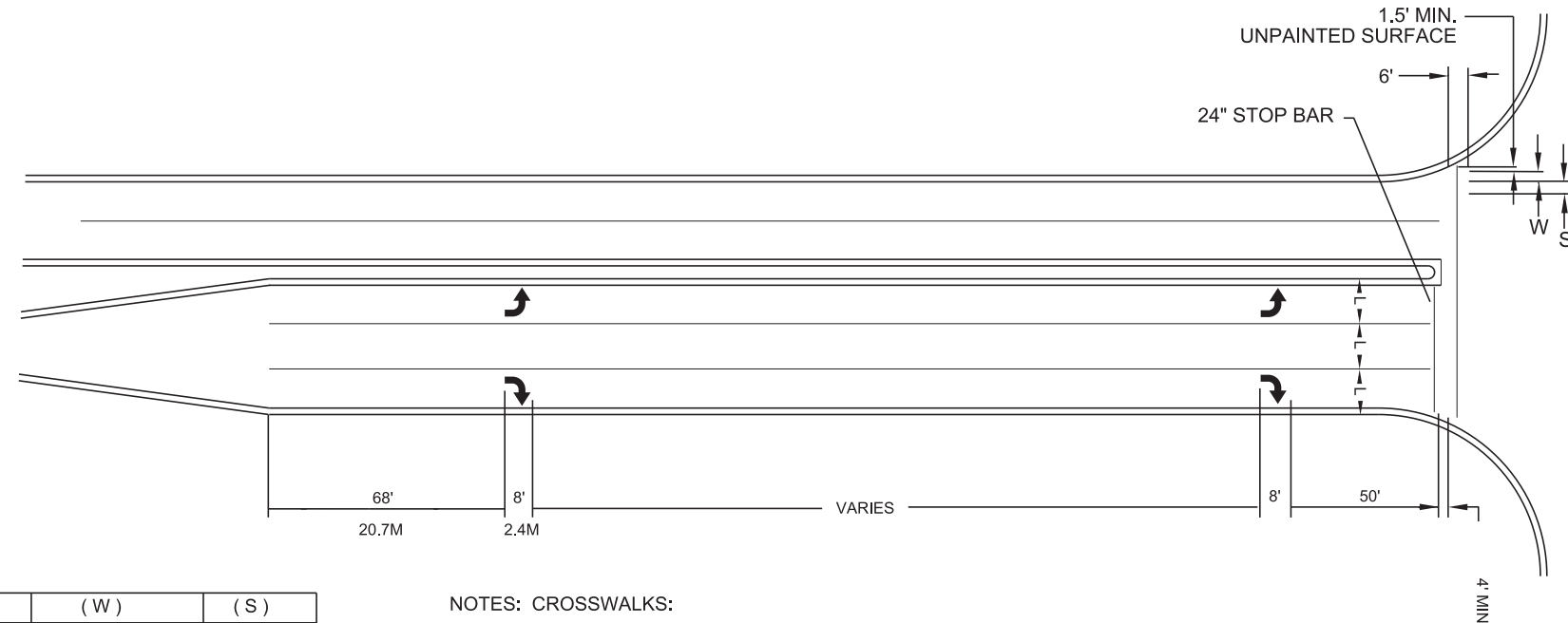
**SEH**  
 PHONE: (651)490-2000  
 3535 VADNAIS CENTER DR.  
 ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
**CSAH 14**  
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 S.A.P. 106-137-001

**SIGNING AND STRIPING PLAN**  
 STRIPING DETAILS

FILE NO. 126669	129
SS16 OF SS18	196

# 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 RAMP 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) NSIDE LANE.

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 SS15-SS18

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

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Certified By: *Mark A. Wagner* Lic. No. 51660  
 Printed Name: **MARK A. WAGNER** Date: 10/21/2015



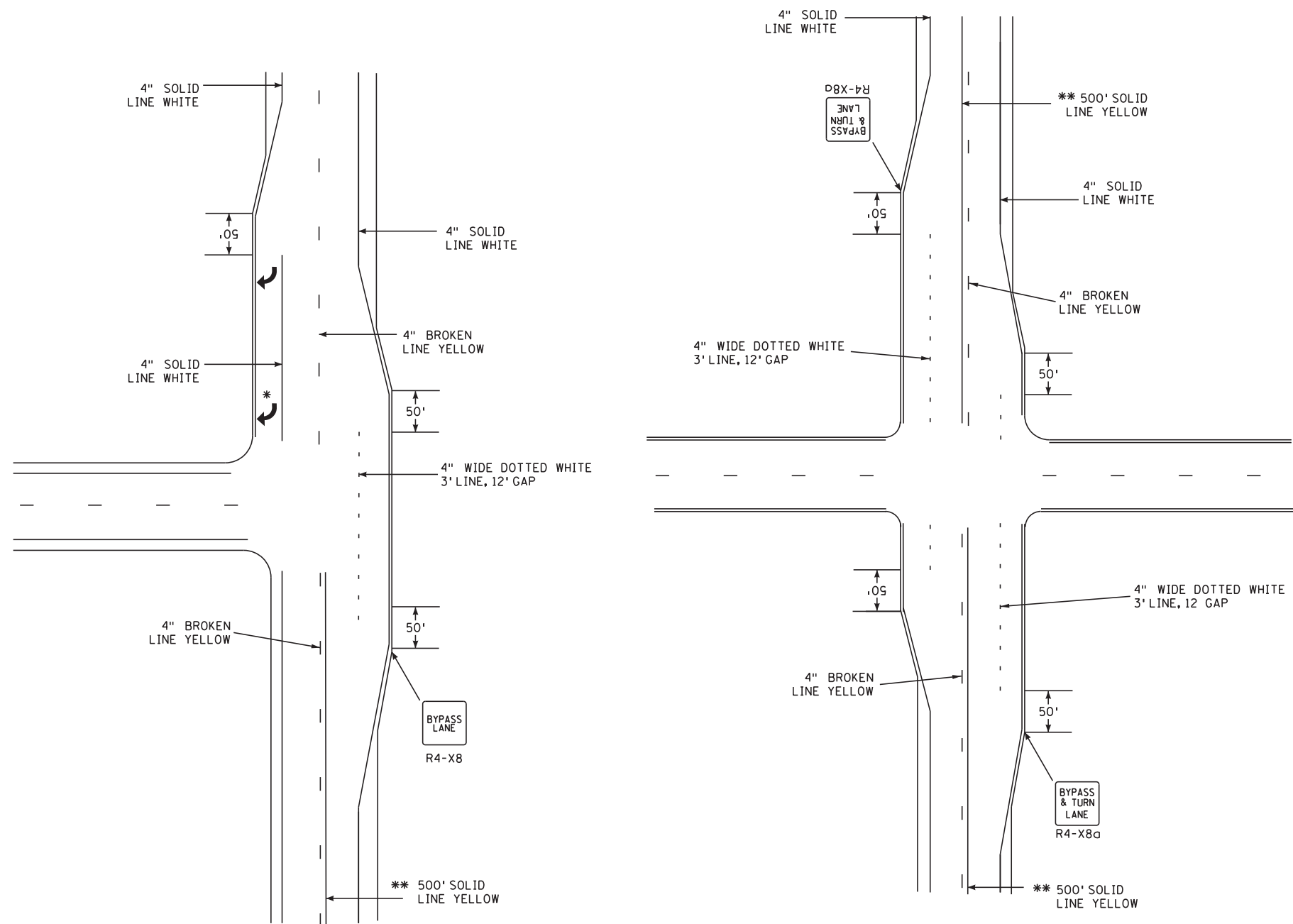
PHONE: (651)490-2000  
 3535 VADNAIS CENTER DR.  
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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNING AND STRIPING PLAN**  
 STRIPING DETAILS

FILE NO. 126669	<b>130</b>
SS17 OF SS18	<b>196</b>

**MARKINGS FOR BYPASS LANES**

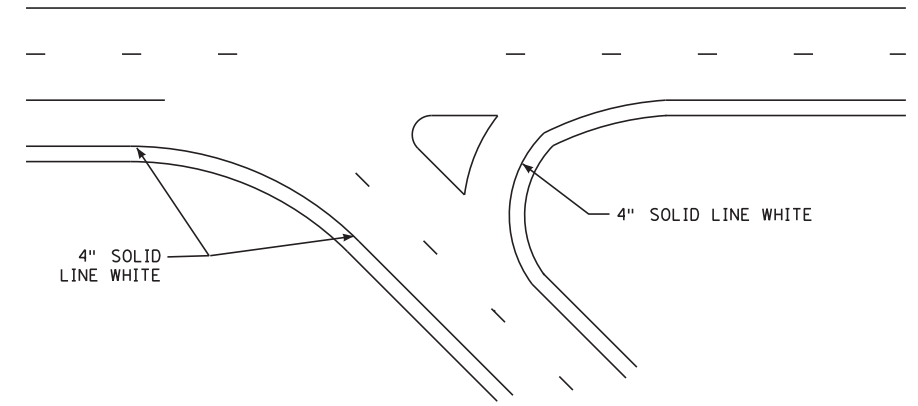


\* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.

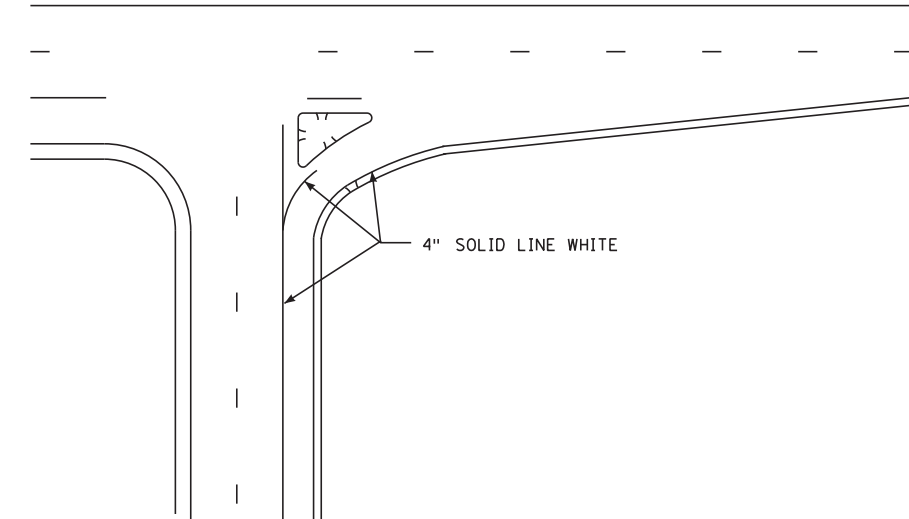
\*\* NO PASSING ZONES AT INTERSECTIONS SHALL BE STRIPED FOR 500 FEET ON BOTH SIDES OF THE INTERSECTION IF IT IS LOCATED WITHIN THE CITY LIMITS. NO PASSING ZONES AT INTERSECTIONS SHALL BE STRIPED IF LOCATED WITHIN ANY NO PASSING ZONE. NO PASSING ZONE STRIPING IS OPTIONAL AT THE DISCRETION OF THE DISTRICT TRAFFIC ENGINEER FOR RURAL INTERSECTIONS.

39 MPH SPEED LIMIT OR LESS.....	500'
40-54 MPH SPEED LIMIT.....	650'
55 MPH SPEED LIMIT.....	800'

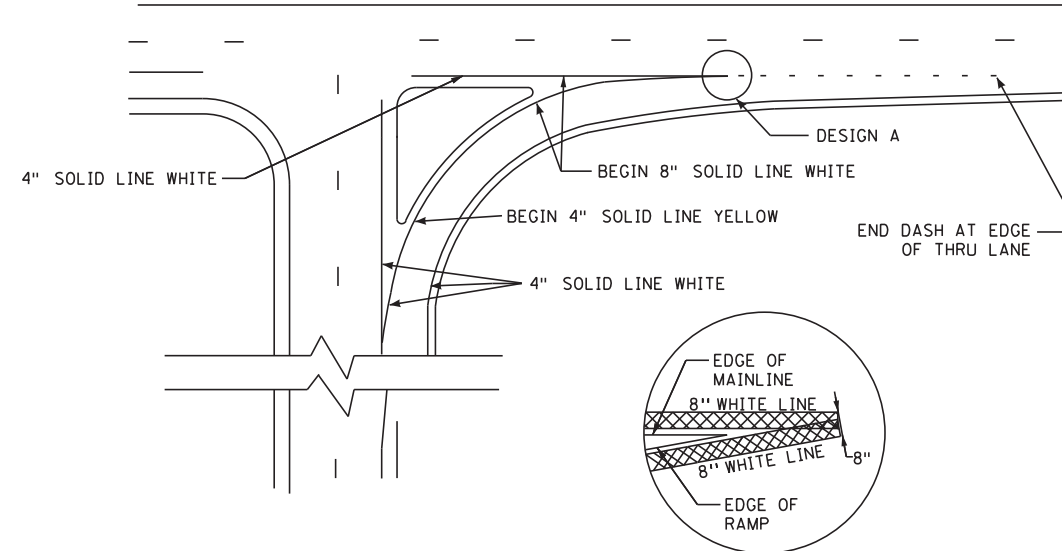
**FREE RIGHT STOP CONDITION**



**FREE RIGHT YIELD CONDITION**



**FREE RIGHT ACCELERATION LANE CONDITION**

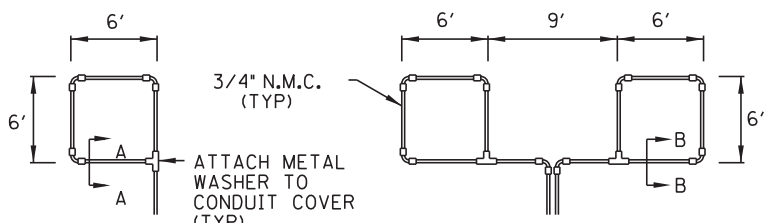


**DESIGN A**

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 (USERNAME)  
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 SS15-SS18

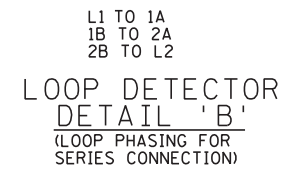
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10/21/2015

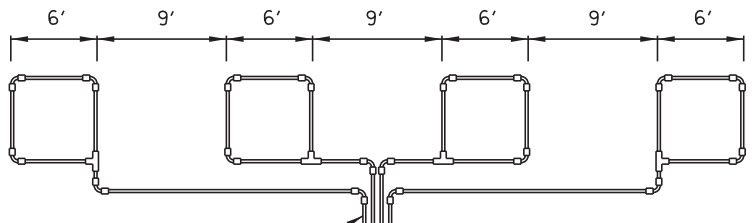


**LOOP DETECTOR  
DETAIL 'A'**  
(LOOP PHASING FOR  
SINGLE CONNECTION)

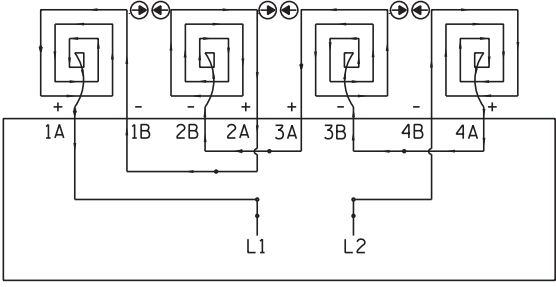
LOOP CONNECTIONS SHALL BE  
LABELED AND SPLICED IN THE  
HANDHOLE AS FOLLOWS:



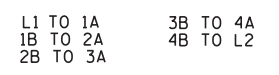
**LOOP DETECTOR  
DETAIL 'B'**  
(LOOP PHASING FOR  
SERIES CONNECTION)



LOOP RETURN CONDUITS  
MAY BE PLACED IN COMMON  
TRENCH (TYP)

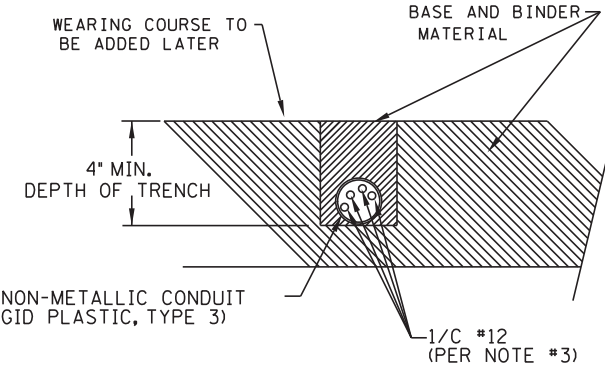


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED  
IN THE HANDHOLE AS FOLLOWS:

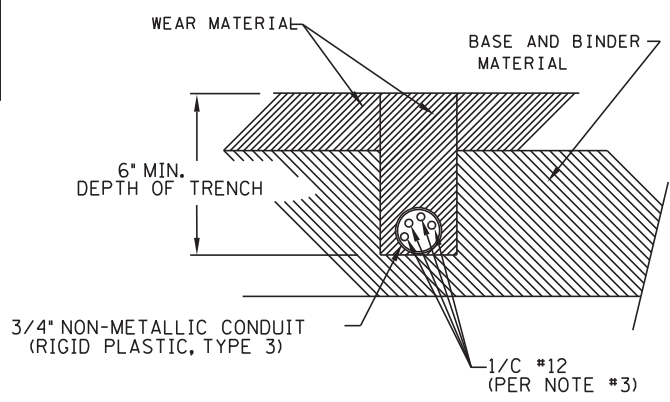


SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE.  
ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE  
(1A, 1B, ECT)

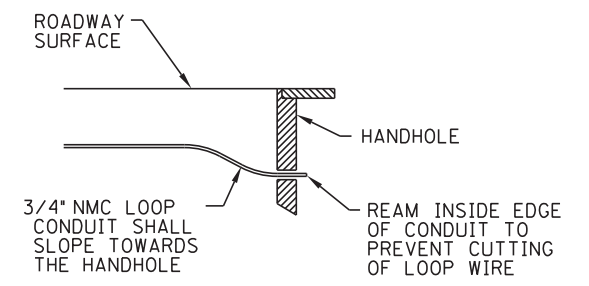
**LOOP DETECTOR  
DETAIL 'C'**  
(LOOP PHASING FOR  
SERIES CONNECTION)



**SECTION A-A**  
DETAIL FOR LOOP INSTALLATION  
IN NEW ROADWAY



**SECTION B-B**  
DETAIL FOR LOOP INSTALLATION  
IN EXISTING ROADWAY



**DRAINAGE DETAIL**

**LOOP DETECTOR WIRING**

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

**LEGEND OF SYMBOLS**

CONTROLLER AND SERVICE EQUIP. NO.'s	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(2)
LUMINAIRE NO.	(3)
CONTROLLER AND CABINET	(4)
CONTROLLER AND CABINET - IN PLACE	(5)
HANDHOLE - IN PLACE	(6)
RIGID STEEL CONDUIT (RSC)	(7)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(8)
SIGNAL FACE WITH BACKGROUND SHIELD	(9)
SIGNAL FACE W/O BACKGROUND SHIELD	(10)
SIGNAL FACE - IN PLACE	(11)
PEDESTRIAN INDICATORS	(12)
PEDESTRIAN INDICATORS - IN PLACE	(13)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(14)
PEDESTRIAN PUSH BUTTON STATION	(15)
TRAFFIC SIGNAL PEDESTAL	(16)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(17)
TRAFFIC SIGNAL POLE AND MAST ARM	(18)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(19)
STREET LIGHT POLE AND LUMINAIRE	(20)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(21)
MAST ARM AND LUMINAIRE	(22)
MAST ARM AND LUMINAIRE - INPLACE	(23)
WOOD POLE	(24)
WOOD POLE - IN PLACE	(25)
SOURCE OF POWER	(26)
RAILROAD SIGNAL - IN PLACE	(27)
RIGHT OF WAY LINE	(28)
CENTERLINE	(29)
EDGE OF ROADWAY	(30)
SHOULDERLINE	(31)
CURB LINE	(32)
STOP BAR	(33)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(34)

**ABBREVIATIONS**

3-1(EG)	SIGNAL HEAD PHASE "3" - NO "1"	P2-1(EG)	PED INDICATION PHASE "2" - NO. "1"
BR. GR.	BARE GROUND	PB	PUSH BUTTON
CH. SW.	CHECK SWITCH	PB2-1(EG)	PUSH BUTTON PHASE "2" - NO. "1"
CLR	CLEAR	PEC	PHOTOELECTRIC CELL
D2-1(EG)	DETECTOR PHASE "2" - NO. "1"	PED	PEDESTRIAN
DWK	DON'T WALK	R	RED
EQG	EQUIPMENT GROUND	R&S	REMOVE AND SALVAGE
EVP	EMERGENCY VEHICLE PRE-EMPTION	RLTA	RED LEFT TURN ARROW
F&I	FURNISH AND INSTALL	RRTA	RED RIGHT TURN ARROW
FL	FLASH/FLASHING	RSC	RIGID STEEL CONDUIT
G	GREEN	SOP	SOURCE OF POWER
GLTA	GREEN LEFT TURN ARROW	SPR	SPARE
GRN	GREEN	ST. LHT	STREET LIGHT
GR. R	GROUND ROD	STA	STATION
GRTA	GREEN RIGHT TURN ARROW	SW	SWITCH
GTHA	GREEN THRU ARROW	SWD	SWITCHED
HH	HANDHOLE	S&R	SALVAGE AND REINSTALL
HPS	HIGH PRESSURE SODIUM	TDW	TELEPHONE DROP WIRE
JB	JUNCTION BOX	WLK	WALK
LUM	LUMINAIRE	YEL	YELLOW
NEU	NEUTRAL	YLTA	YELLOW LEFT TURN ARROW
NMC	NONMETALLIC CONDUIT	YRTA	YELLOW RIGHT TURN ARROW
		YTHA	YELLOW THRU ARROW

**CONDUCTOR COLOR CODE**

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

TRAFFIC SIGNAL TABULATION			S
ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
2565	TRAFFIC CONTROL SIGNAL SYSTEM "B"	SIG. SYS.	1
2565	TRAFFIC CONTROL SIGNAL SYSTEM "C"	SIG. SYS.	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM "B"	LUMP SUM	1
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM "C"	LUMP SUM	1
2565	TRAFFIC CONTROL INTERCONNECTION	LUMP SUM	1
2565	SIGNAL SERVICE CABINET	EACH	2
2565	REVISE SIGNAL SYSTEM "A"	SYSTEM	1

TRAFFIC SIGNAL STANDARD PLATES	
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT	
PLATE NO.	DESCRIPTION
* 8000I	STANDARD BARRICADES
* 8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED) (3 SHEETS)
* 8112H	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8117G	PRECAST CONCRETE HANDHOLE WITH VEHICLE LOAD
* 8118D	SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS
* 8119C	GROUND MOUNTED CABINET FOUNDATION
* 8121H	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
* 8122F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT) (2 SHEETS)
* 8123G	POLE & MAST ARM-LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
* 8126K	POLE FOUNDATION (PA90 & PA100)
* 8129A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)

\* - STANDARD PLATES APPLICABLE TO THIS PROJECT

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DESIGN TEAM				
DRAWN BY:	BDY			
DESIGNER:	JMG			
CHECKED BY:	JEO			
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: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

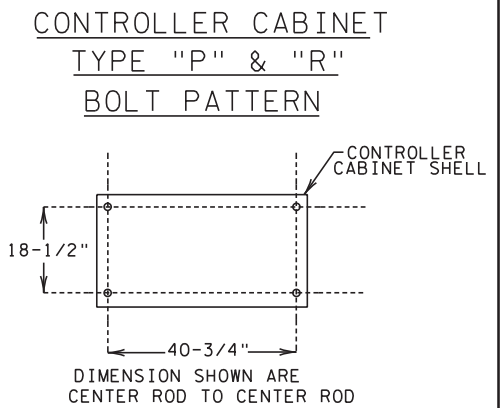
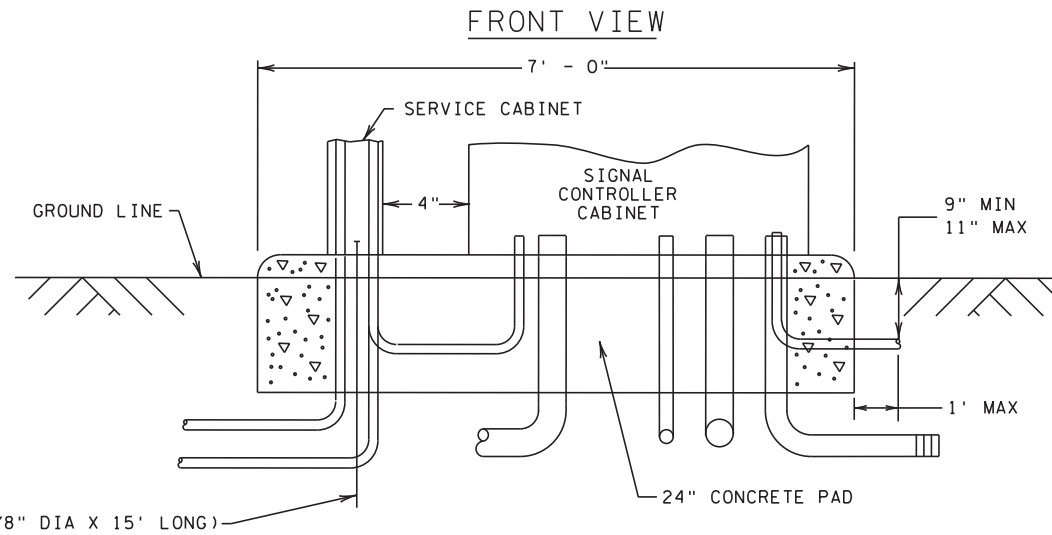
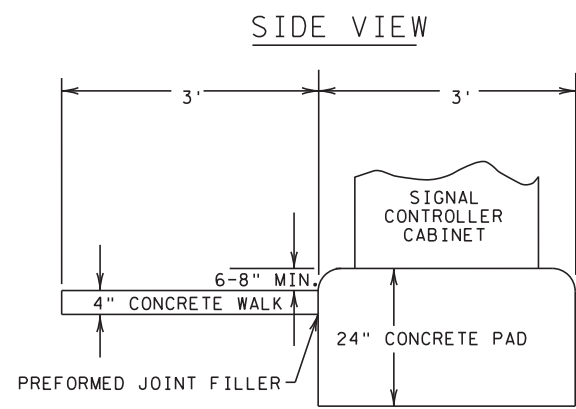
**TRAFFIC SIGNAL SYSTEMS "A-C"**  
**DETAILS AND STANDARD PLATES**  
CSAH 14 (125TH AVE NE) SIGNALS

FILE NO.	126669	132
SG1		196
OF SG25		

TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET  
SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

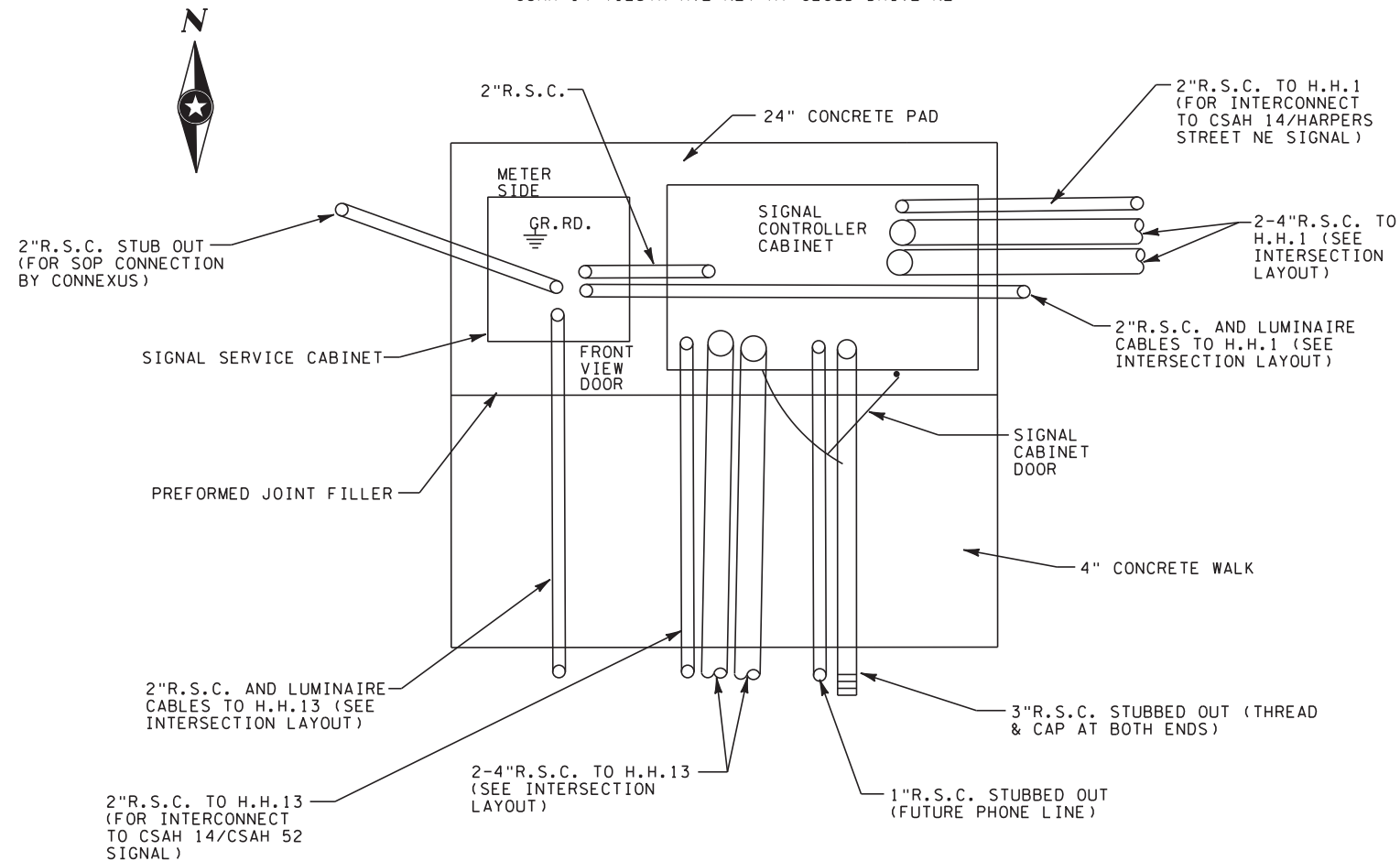
NOTES:

1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE COUNTY FURNISHED CONTROLLERS AND CABINETS (SYSTEMS "B-C") SHALL BE FURNISHED BY THE COUNTY AND INSTALLED BY THE CONTRACTOR.
2. THE UPPER PART OF EACH NEW EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE CONCRETE AND SHALL BE LOCATED INSIDE OF 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 PADS AND SIDEWALKS.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PADS SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN EACH 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 EACH EQUIPMENT PAD FOUNDATION AS SHOWN.



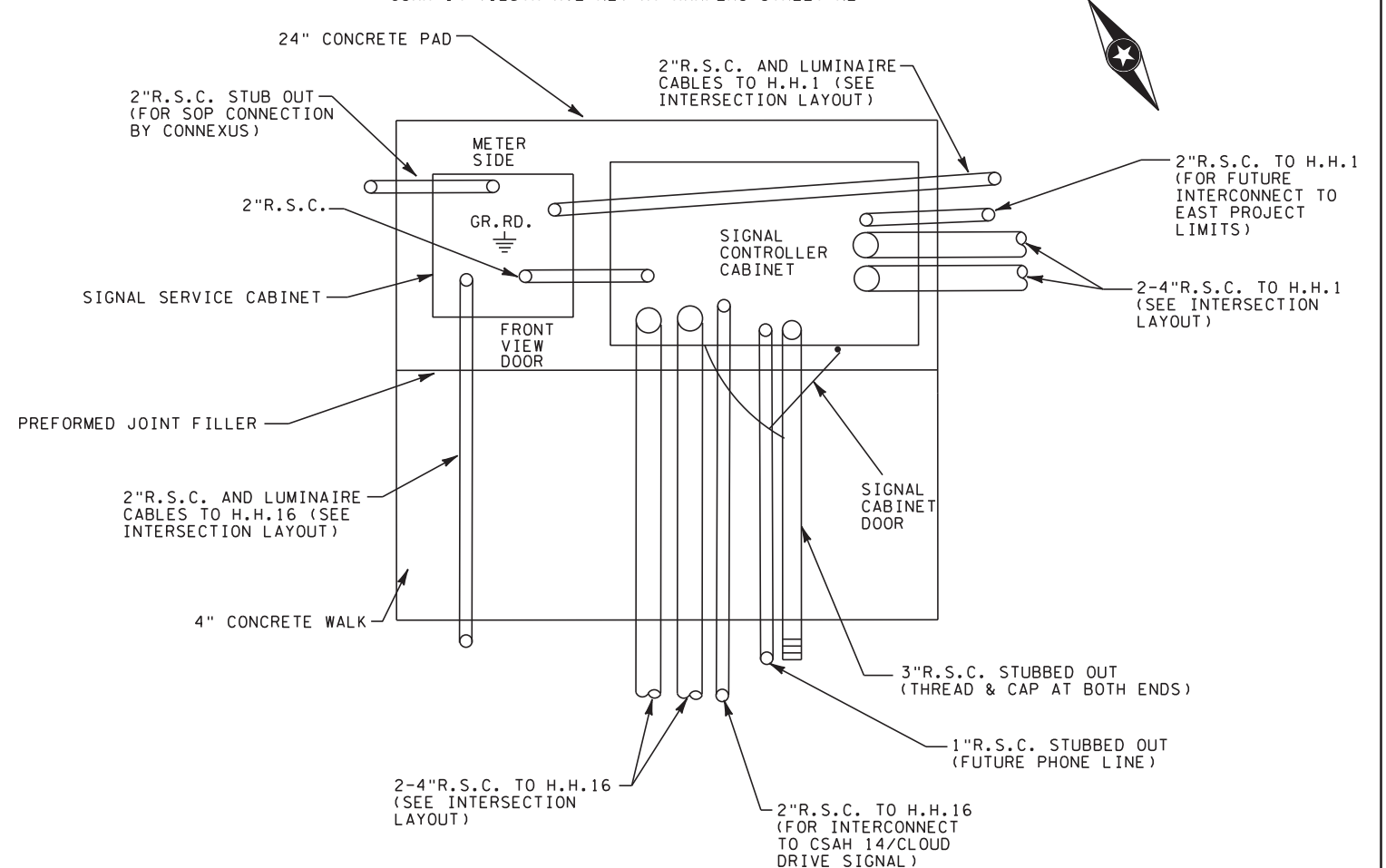
PLAN VIEW - SYSTEM "B"

CSAH 14 (125TH AVE NE) AT CLOUD DRIVE NE



PLAN VIEW - SYSTEM "C"

CSAH 14 (125TH AVE NE) AT HARPERS STREET NE



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
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: 10/21/2015

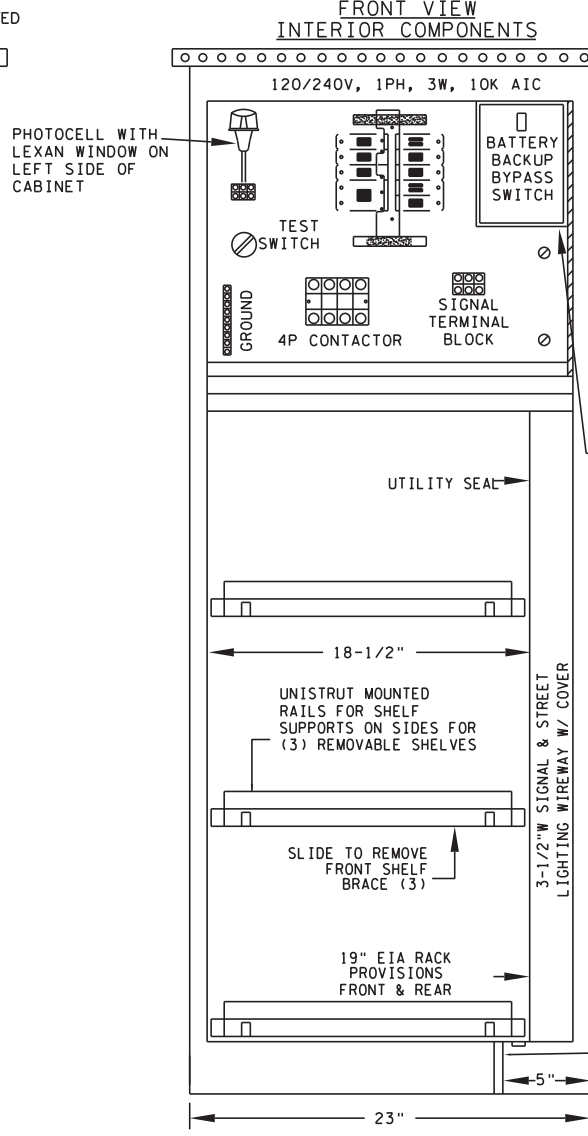
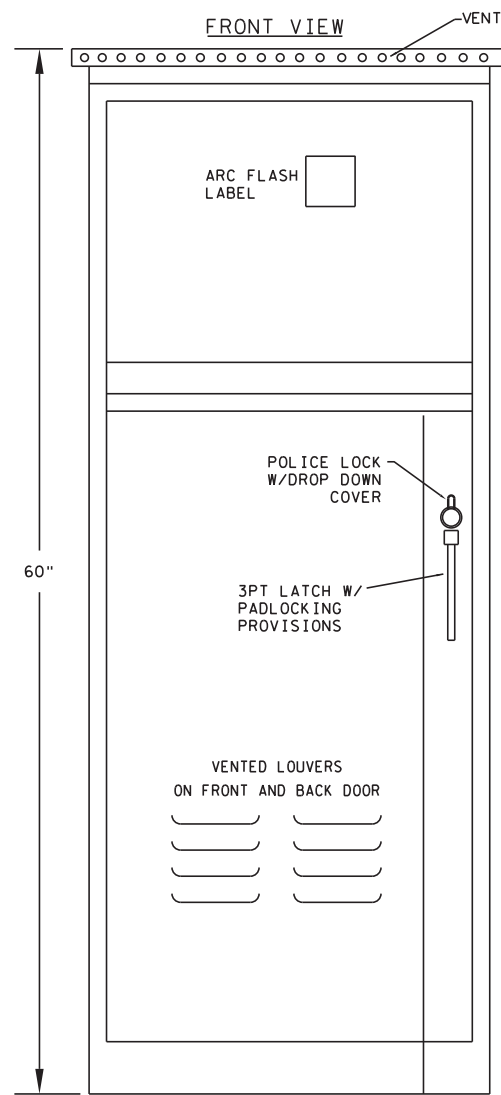
SEH  
PHONE: (651)490-2000  
3535 VADNAIS CENTER DR.  
ST. PAUL, MN 55110

CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

TRAFFIC SIGNAL SYSTEMS "B-C"  
EQUIPMENT PAD DETAILS  
CSAH 14 (125TH AVE NE) SIGNALS

FILE NO. 126669  
133  
SG2  
OF SG25  
196

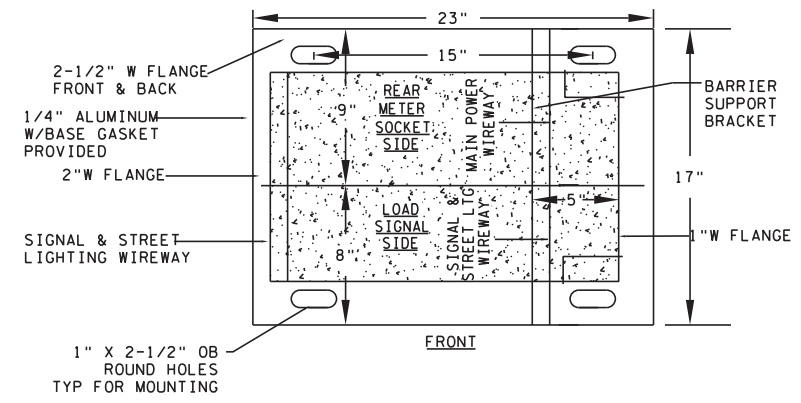
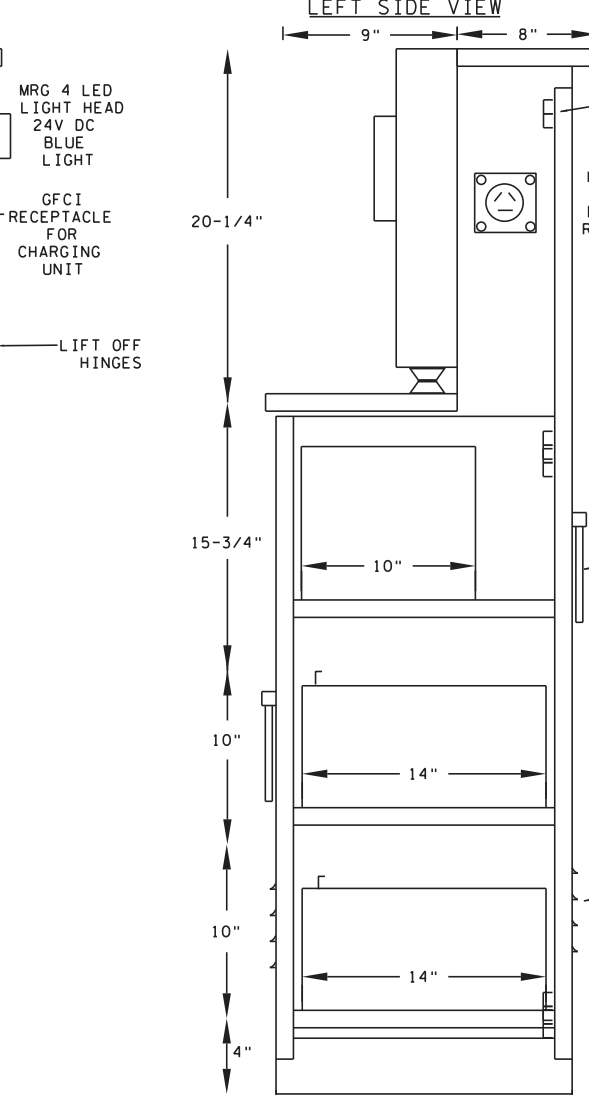
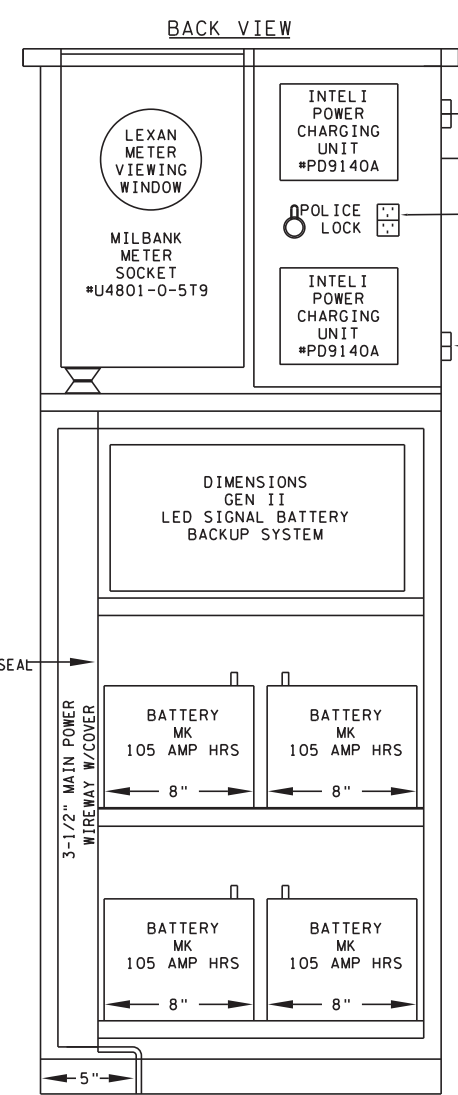
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Default



- LOAD CENTER  
CIRCUIT  
BREAKERS  
ITE "Q" TYPE  
1-100A/2P  
SERVICE  
DISCONNECT  
1-20A/1P GFCI  
RECEPTACLE  
1-15/1P  
PHOTOCELL  
4-15A/1P  
LUMINAIRES  
1-30A/1P  
SIGNAL SVC  
1 SPARE

CUTOUT PROVISIONS IN  
DEAD FRONT FOR BATTERY  
BACKUP BYPASS SWITCH

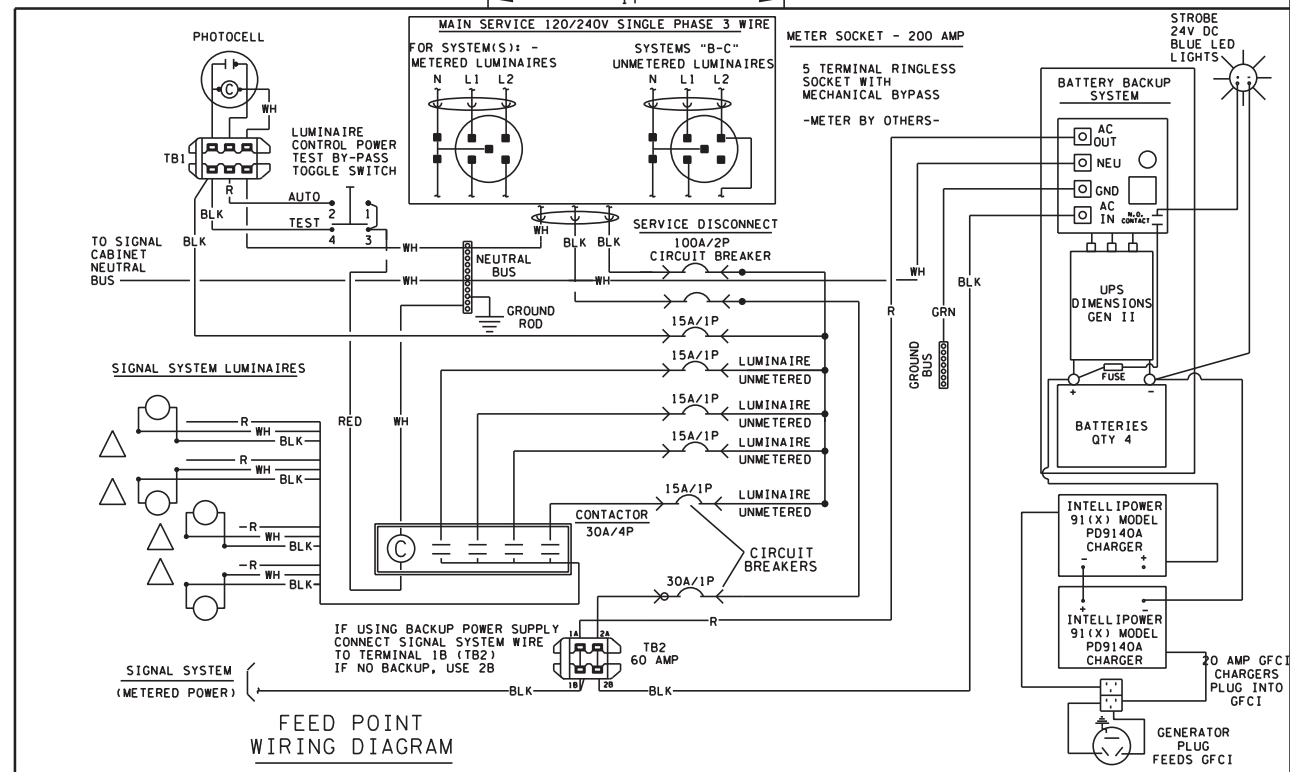
INTERIOR  
COMPONENTS  
BEHIND HINGED  
DEAD FRONT  
W/ (2)-1/4  
TURN LATCHES



CABINET CONSTRUCTION

- NEMA 3R
- 1/8" ALUMINUM 5052-H32
- ANODIZED 30 MINUTE CLEAR
- NEOPRENE GASKETED DOORS
- NON-CORRODING HARDWARE
- ETL LISTED IN ACCORDANCE W/UL508A

SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING SEPARATE PAY ITEM FOR FURNISHING & INSTALLING NEW BATTERY BACK-UP SIGNAL SERVICE CABINETS.



DESIGN TEAM				
DRAWN BY:	BDY			
DESIGNER:	JMG			
CHECKED BY:	JEO			
NO.	BY	DATE	REVISIONS	

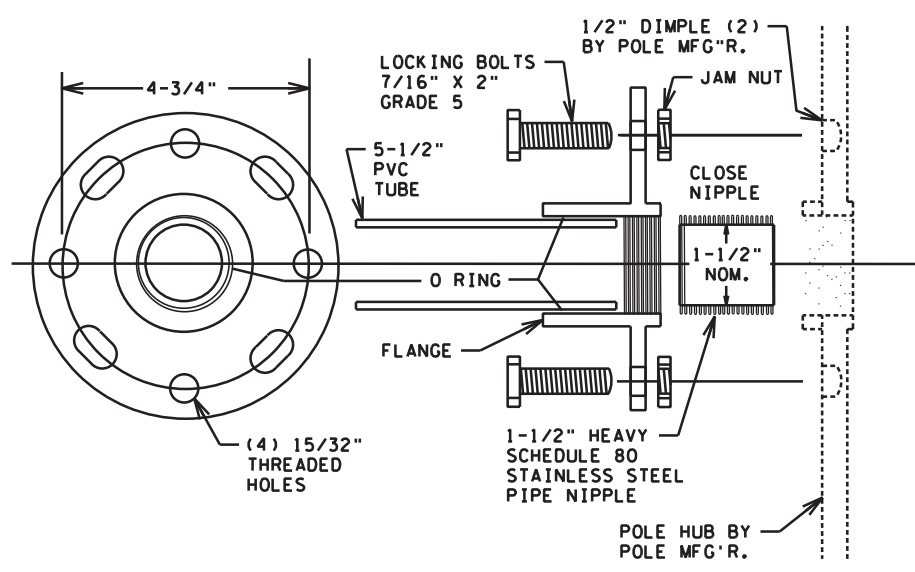
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  
Certified By: *John M. Gray* Lic. No. 22457  
Printed Name: JOHN M. GRAY, PE Date: 10/21/2015



CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

TRAFFIC SIGNAL SYSTEMS "B-C"  
SIGNAL SERVICE CABINET DETAILS  
CSAH 14 (125TH AVE NE) SIGNALS

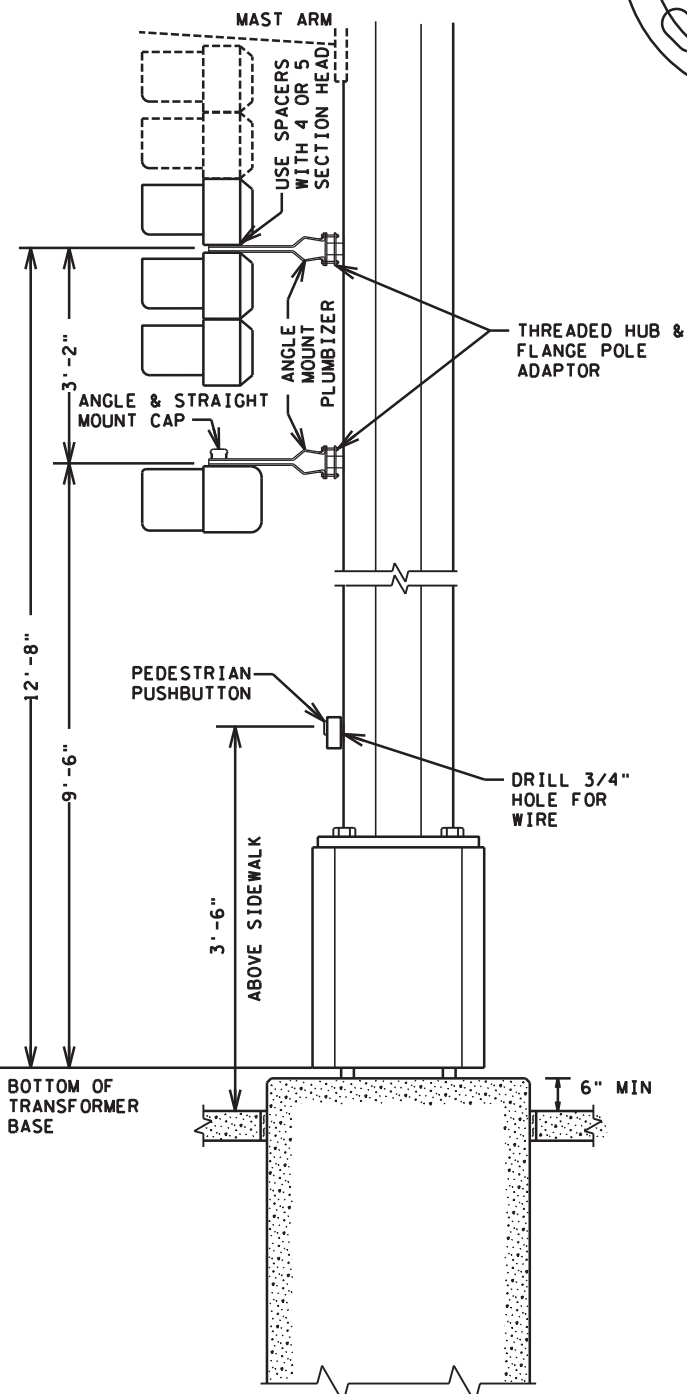
FILE NO.	126669	134
SG3		196
OF SG25		



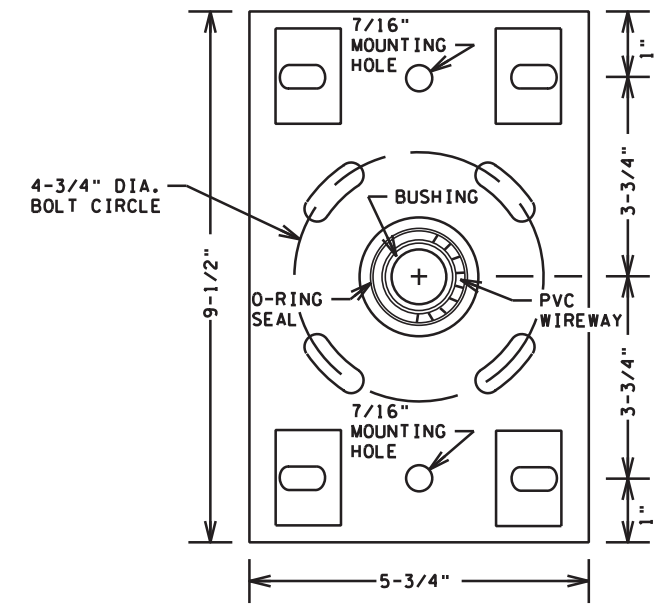
THREADED HUB AND FLANGE POLE ADAPTOR



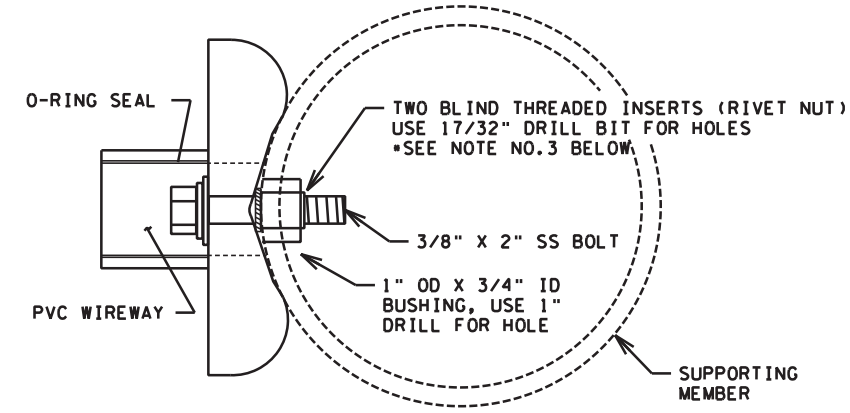
- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
  2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
  3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.



TYPICAL SIGNAL POLE MOUNTING  
NOT TO SCALE



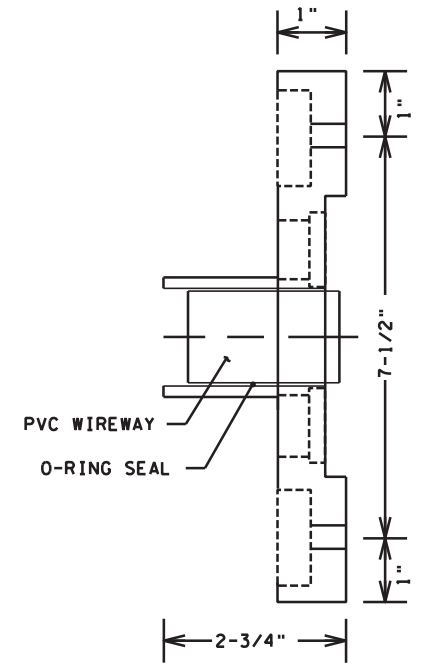
BOLT ON HUB & FLANGE



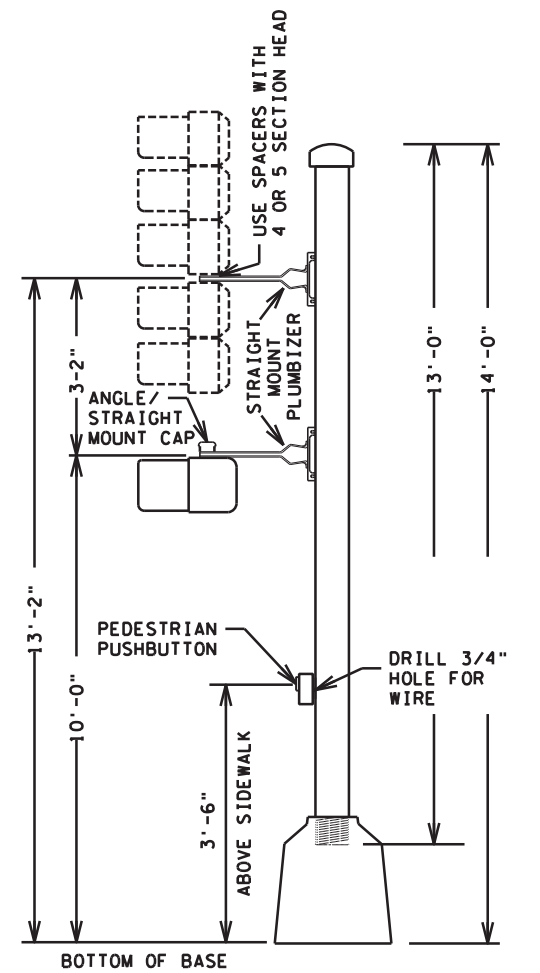
TOP VIEW



- NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
  2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
  3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
  4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



SIDE VIEW



TYPICAL PEDESTAL MOUNTING  
NOT TO SCALE

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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 Printed Name: JOHN M. GRAY, PE Date: 10/21/2015

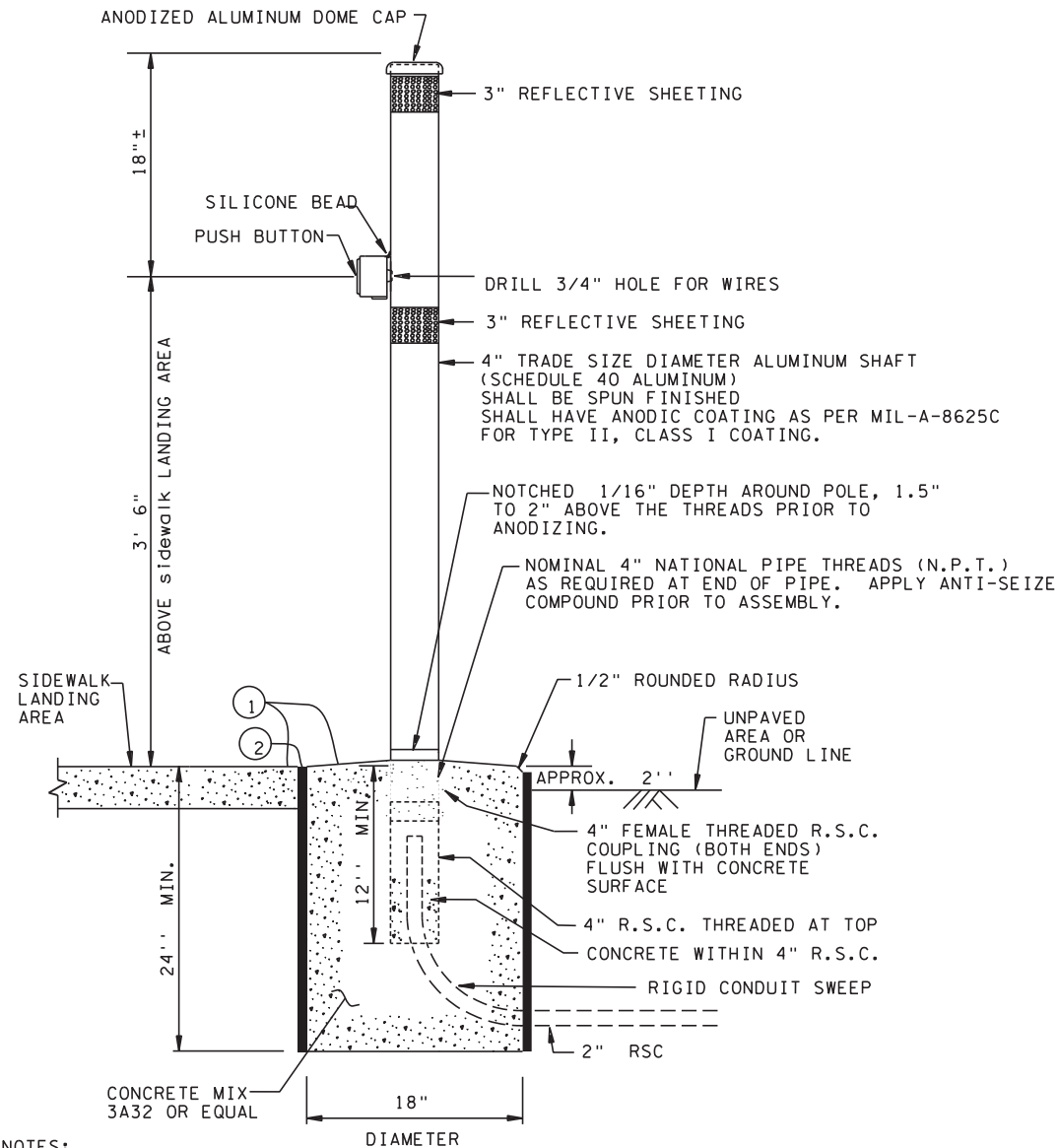


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

TRAFFIC SIGNAL SYSTEMS "B-C"  
 ONE-WAY POLE MOUNT DETAILS  
 CSAH 14 (125TH AVE NE) SIGNALS

FILE NO.	126669	135
SG4	OF SG25	196

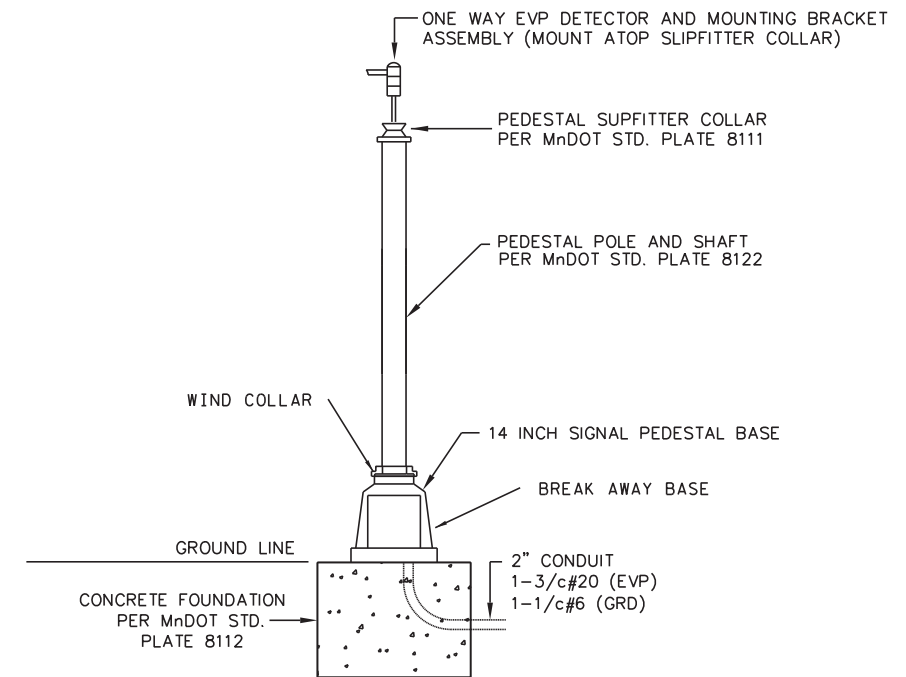
PEDESTRIAN PUSH BUTTON STATION DETAILS



NOTES:

- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
  - BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
  - BLIND THREADED INSERTS SHALL BE ZINC PLATED STEEL WITH 1/4 - 20 UNC THREADS. INSERT SHALL BE SUITABLE FOR USE ON A MOUNTING SURFACE WALL THICKNESS OF .337". APPROVED BLIND THREADED INSERTS CAN BE FOUND ON THE MN/DOT QUALIFIED PRODUCTS LIST.
  - MOUNTING BOLTS SHALL BE 1/4 - 20 STAINLESS STEEL. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.
  - APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" POST.
  - THE REFLECTIVE SHEETING SHALL BE WHITE AT INTERSECTION CORNERS AND SHALL BE YELLOW WHEN USED IN CENTER MEDIANS. SEE MN/DOT SIGNING QUALIFIED PRODUCTS LIST (QPL) FOR APPROVED TUBE DELINEATOR SHEETING.
  - ANTI-SEIZE COMPOUND MUST BE USED ON THE MOUNTING BOLTS WHEN THE PEDESTRIAN SIGN IS MOUNTED.
- ① THE CONCRETE FOUNDATION SHALL BE CAST IN PLACE AND CONSTRUCTED FLUSH WITH THE SURROUNDING SIDEWALK. THE FOUNDATION SHALL BE CONSTRUCTED CONCURRENTLY WITH, OR AFTER, THE ADJACENT SIDEWALK CONSTRUCTION.
- ② 1/4 MAXIMUM THICK FIBER FORMING TUBE MATCHING PLAN FOUNDATION DIMENSIONS SHALL BE USED AS A FORM AND BOND BREAKER.

PEDESTAL POLE MOUNTED EVP DETAIL

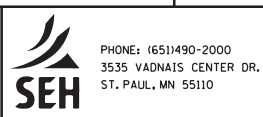


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DESIGN TEAM				
DRAWN BY: <u>BDY</u>				
DESIGNER: <u>JMG</u>				
CHECKED BY: <u>JEO</u>				
NO.	BY	DATE	REVISIONS	

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

TRAFFIC SIGNAL SYSTEMS "A-C"  
 MISCELLANEOUS DETAILS  
 CSAH 14 (125TH AVE NE) SIGNALS

FILE NO. 126669	136
SG5 OF SG25	196



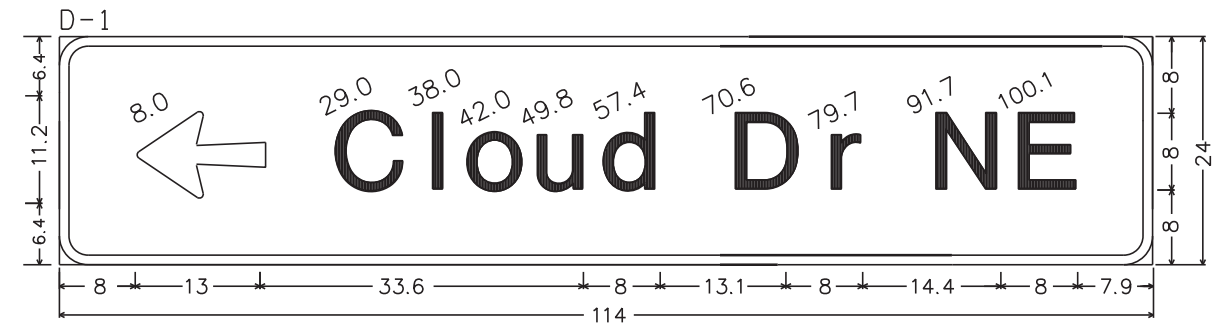
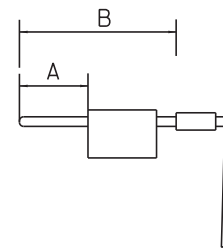
SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS - TYPE D (FURNISH AND INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	POLE NO.	A (FT)	B (FT)	SIZE (IN)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
						QUANTITY	SPACING (1)			
B	D-1	1	-	28'	114 x 24	4	---	19.00	1	Cloud Dr NE w/LT Arrow
B	D-2	2	8'	-	102 x 24	4	---	17.00	1	125th Ave NE
B	D-3	3	-	28'	114 x 24	4	---	19.00	1	Cloud Dr NE w/RT Arrow
C	D-4	1	-	16'	102 x 24	4	---	17.00	1	125th Ave NE
C	D-5	2	-	28'	102 x 24	4	---	17.00	1	Harpers St NE
C	D-6	4	-	16'	102 x 24	4	---	17.00	1	125th Ave NE
C	D-7	5	-	28'	102 x 24	4	---	17.00	1	Harpers St NE
TOTAL QUANTITIES								123.00	7	

(1) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/2007) FOR BRACKET SPACING REQUIREMENTS.

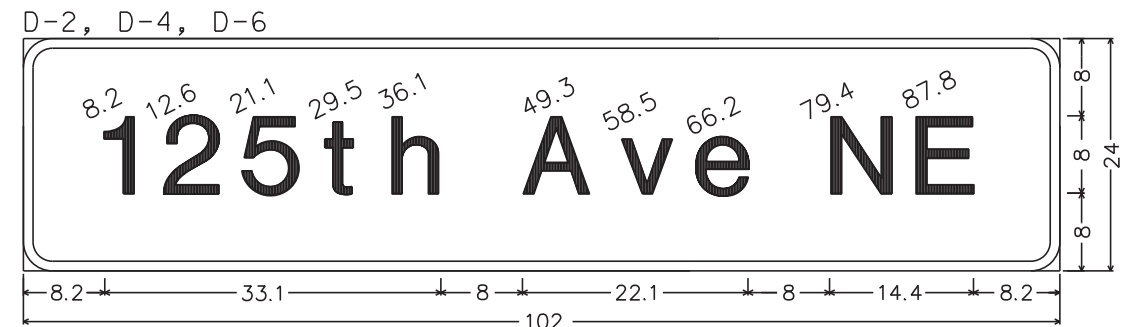
SIGNS FOR TRAFFIC SIGNAL SYSTEM										
SIGN PANELS - TYPE C (FURNISH AND INSTALL)										
SIGNAL SYSTEM	SIGN PANEL	POLE NO.	A (FT)	B (FT)	SIZE (IN)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
						QUANTITY	SPACING (1)			
B	R6-1L	1	-	-	36 x 12	①	---	3.00	1	ONE WAY (LEFT)
B	R6-1R	3	-	-	36 x 12	①	---	3.00	1	ONE WAY (RIGHT)
C	R6-1L	1,2,4,5	-	-	36 x 12	①	---	3.00	4	ONE WAY (LEFT)
C	R6-1R	1,2,4,5	-	-	36 x 12	①	---	3.00	4	ONE WAY (RIGHT)
B	R9-3	2,3	-	-	18 x 18	①	---	2.25	2	NO PEDESTRIAN CROSSING (SYMBOL)
B	R10-X12	1,3	1'	-	36 x 48	2	---	12.00	2	LEFT TURN YIELD ON FLASHING YELLOW ARROW
C	R10-X12	1,2,4,5	1'	-	36 x 48	2	---	12.00	4	LEFT TURN YIELD ON FLASHING YELLOW ARROW
TOTAL QUANTITIES								106.50	18	

GENERAL SIGNING NOTES:

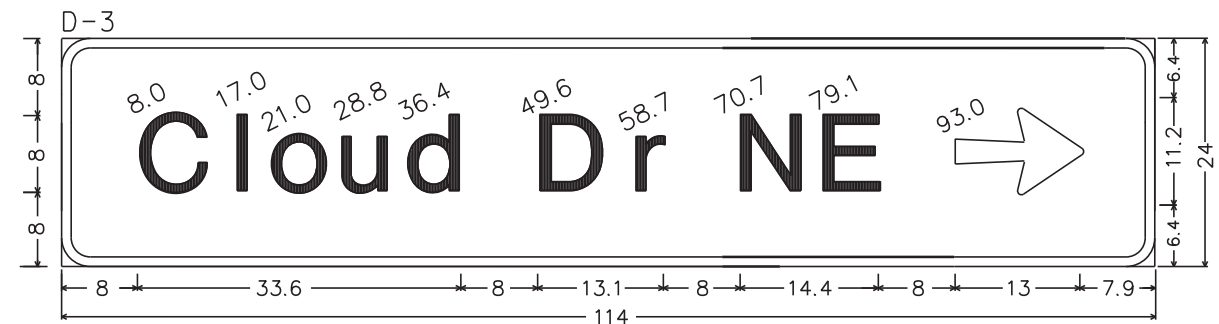
- COLOR FOR ALL TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
- CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
- FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.
- SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS AND ARROW DETAILS.
- FURNISHING AND INSTALLING TYPE C & D SIGNS SHALL BE INCLUDED UNDER THE PAY ITEMS FOR ITEM NO. 2565 (TRAFFIC SIGNAL SYSTEMS "B-C"). SEE SPECIAL PROVISIONS.
- ALL NEW TYPE C AND D SIGN PANELS SHALL BE FABRICATED USING DG3 SHEETING. SEE SPECIAL PROVISIONS.
- ① = INSTALL SIGN PANEL ON TRAFFIC SIGNAL MAST ARM POLE.



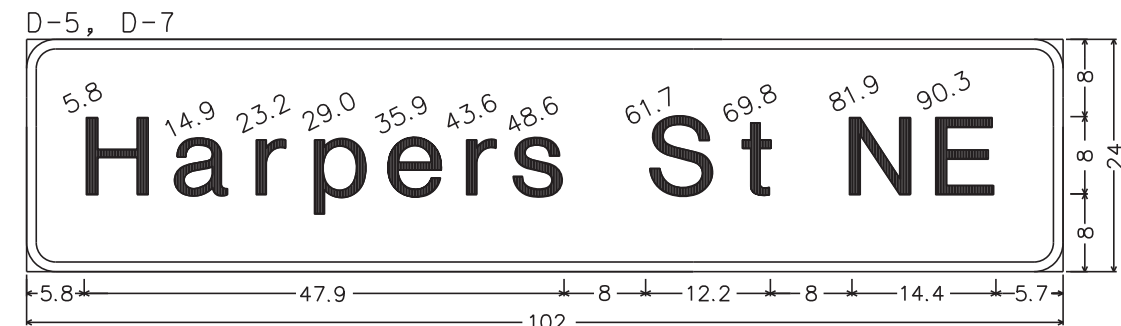
3.0" Radius, 1.0" Border, White on Green;  
Arrow 5 - 13.0" 180°, [Cloud Dr NE] E Mod;



3.0" Radius, 1.0" Border, White on Green;  
[125th Ave NE] E Mod;



3.0" Radius, 1.0" Border, White on Green;  
[Cloud Dr NE] E Mod; Arrow 5 - 13.0" 0°



3.0" Radius, 1.0" Border, White on Green;  
[Harpers St NE] E Mod;

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: BDY				
DESIGNER: JMG				
CHECKED BY: JEO				

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.  
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CITY OF BLAINE, MN.  
CSAH 14  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

TRAFFIC SIGNAL SYSTEMS "B-C"  
TRAFFIC SIGNAL SIGNING  
CSAH 14 (125TH AVE NE) SIGNALS

FILE NO. 126669 137  
SG6 OF SG25 196

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**NOTES:**

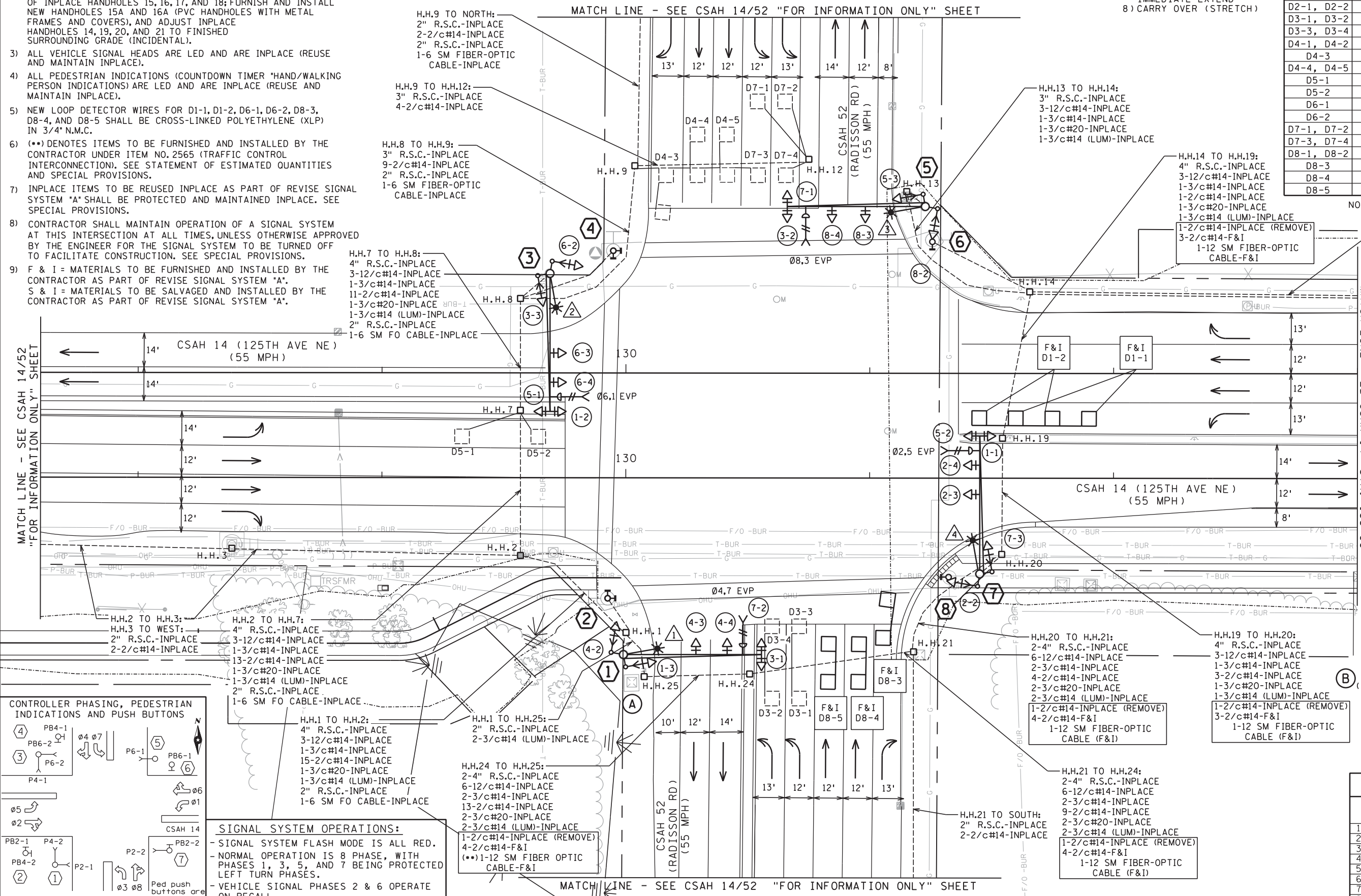
- 1) LOCATION OF NEW LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) ALL HANDHOLES ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE EXCEPT AS FOLLOWS: REMOVE AND DISPOSE OF INPLACE HANDHOLES 15, 16, 17, AND 18; FURNISH AND INSTALL NEW HANDHOLES 15A AND 16A (PVC HANDHOLES WITH METAL FRAMES AND COVERS), AND ADJUST INPLACE HANDHOLES 14, 19, 20, AND 21 TO FINISHED SURROUNDING GRADE (INCIDENTAL).
- 3) ALL VEHICLE SIGNAL HEADS ARE LED AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
- 4) ALL PEDESTRIAN INDICATIONS (COUNTDOWN TIMER "HAND/WALKING PERSON INDICATIONS) ARE LED AND ARE INPLACE (REUSE AND MAINTAIN INPLACE).
- 5) NEW LOOP DETECTOR WIRES FOR D1-1, D1-2, D6-1, D6-2, D8-3, D8-4, AND D8-5 SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C.
- 6) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 7) INPLACE ITEMS TO BE REUSED INPLACE AS PART OF REVISE SIGNAL SYSTEM "A" SHALL BE PROTECTED AND MAINTAINED INPLACE. SEE SPECIAL PROVISIONS.
- 8) CONTRACTOR SHALL MAINTAIN OPERATION OF A SIGNAL SYSTEM AT THIS INTERSECTION AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER FOR THE SIGNAL SYSTEM TO BE TURNED OFF TO FACILITATE CONSTRUCTION. SEE SPECIAL PROVISIONS.
- 9) F & I = MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS PART OF REVISE SIGNAL SYSTEM "A".  
S & I = MATERIALS TO BE SALVAGED AND INSTALLED BY THE CONTRACTOR AS PART OF REVISE SIGNAL SYSTEM "A".

**LOOP DETECTORS FUNCTIONS:**

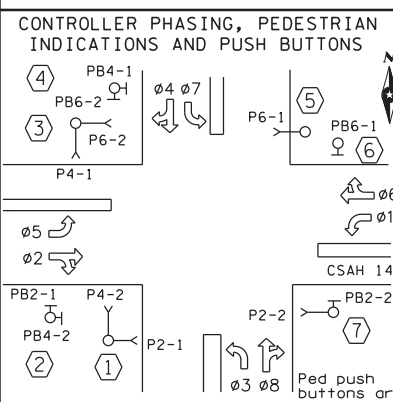
- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

PVC LOOP DETECTORS					
NUMBER	SIZE (FT)	LOCATION	FUNCTION	STATUS	
D1-1	2-6x6	20' & 50'	1	F & I	
D1-2	2-6x6	5' & 35'	1	F & I	
D2-1, D2-2	6x6	475'	1	INPLACE	
D3-1, D3-2	6x6	30'	1	INPLACE	
D3-3, D3-4	6x6	0'	1	INPLACE	
D4-1, D4-2	6x6	475'	3,8	INPLACE	
D4-3	2-6x6	-15' & 0'	7	INPLACE	
D4-4, D4-5	2-6x6	0' & 15'	1	INPLACE	
D5-1	6x6	30'	1	INPLACE	
D5-2	6x6	0'	1	INPLACE	
D6-1	6x6	475'	1	F & I	
D6-2	6x6	475'	1	F & I	
D7-1, D7-2	6x6	30'	1	INPLACE	
D7-3, D7-4	6x6	0'	1	INPLACE	
D8-1, D8-2	6x6	475'	3,8	INPLACE	
D8-3	2-6x6	-15' & 0'	7	F & I	
D8-4	2-6x6	5' & 20'	1	F & I	
D8-5	2-6x6	5' & 20'	1	F & I	

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR



H.H.14 TO EAST:  
2" R.S.C.-INPLACE (REMOVE)  
1-2/c#14-INPLACE (REMOVE)  
H.H.14 TO H.H.15A:  
2" CONDUIT-F&I  
2-2/c#14-F&I  
(\*\*) 2" CONDUIT-F&I  
(\*\*) 1-12 SM FIBER-OPTIC CABLE-F&I



**SIGNAL SYSTEM OPERATIONS:**  
- SIGNAL SYSTEM FLASH MODE IS ALL RED.  
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING PROTECTED LEFT TURN PHASES.  
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

SEE NEXT SHEET FOR EQUIPMENT PAD NOTES AND DETAILED POLE NOTES

INPLACE LED SIGNAL HEADS						
ALL SIGNAL INDICATIONS ARE 12".						
SIGNAL HEAD	R	Y	G	R	Y	G
1-1, 1-2, 1-3				←	←	←
2-2, 2-3, 2-4	o	o	o			
3-1, 3-2, 3-3				←	←	←
4-2, 4-3, 4-4	o	o	o			
5-1, 5-2, 5-3				←	←	←
6-2, 6-3, 6-4	o	o	o			
7-1, 7-2, 7-3				←	←	←
8-2, 8-3, 8-4	o	o	o			

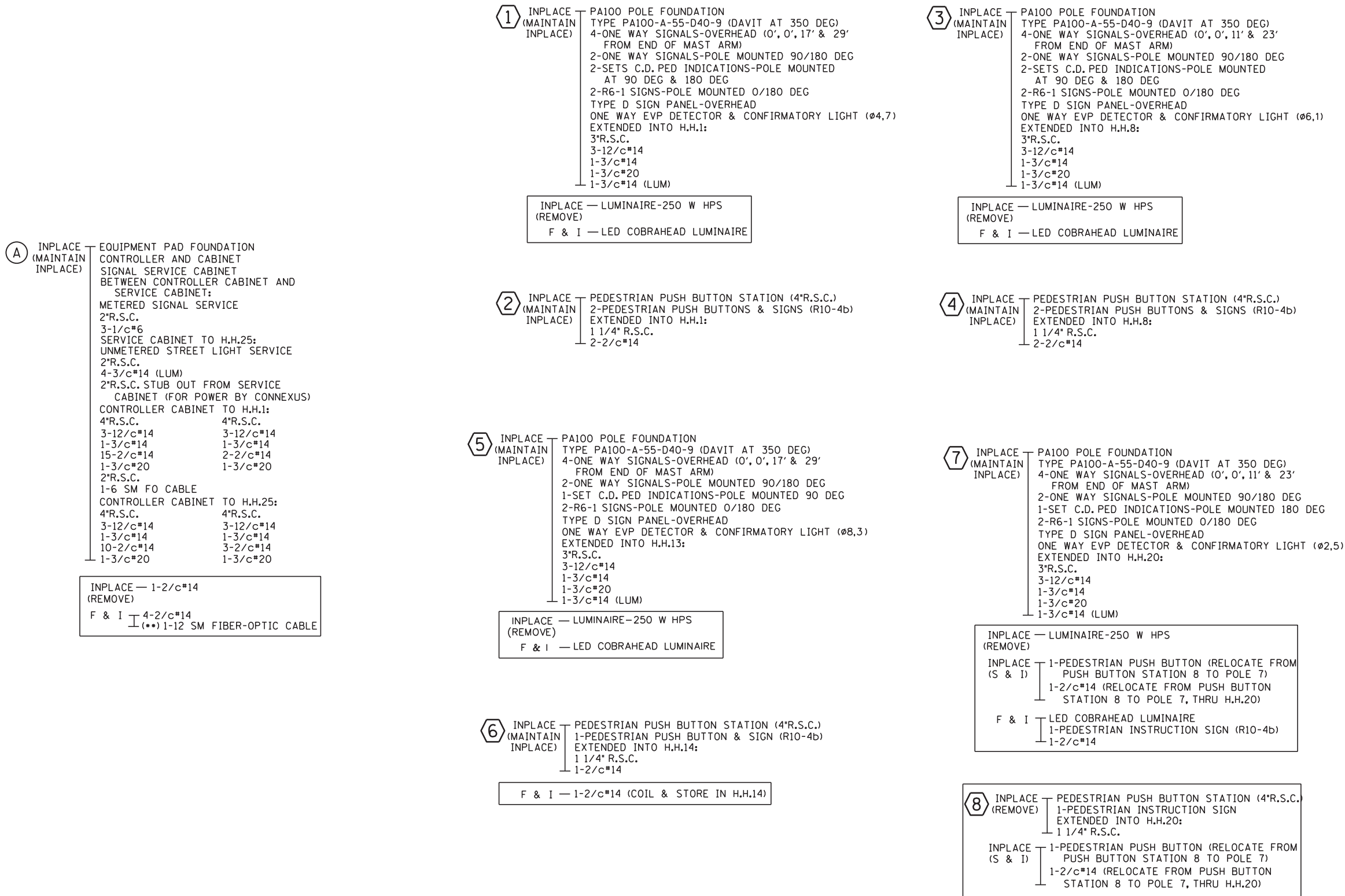
DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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Certified By: *John M. Gray, PE* Lic. No. 22457  
Printed Name: JOHN M. GRAY, PE Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**REVISE SIGNAL SYSTEM "A"**  
**INTERSECTION LAYOUT**  
CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)  
FILE NO. 126669  
**138**  
SG7 OF SG25  
**196**



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: <u>BDY</u>				
DESIGNER: <u>JMG</u>				
CHECKED BY: <u>JEO</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: John M. Gray Lic. No. 22457  
 Licensed Professional Engineer  
 Printed Name: JOHN M. GRAY, PE Date: 10/21/2015

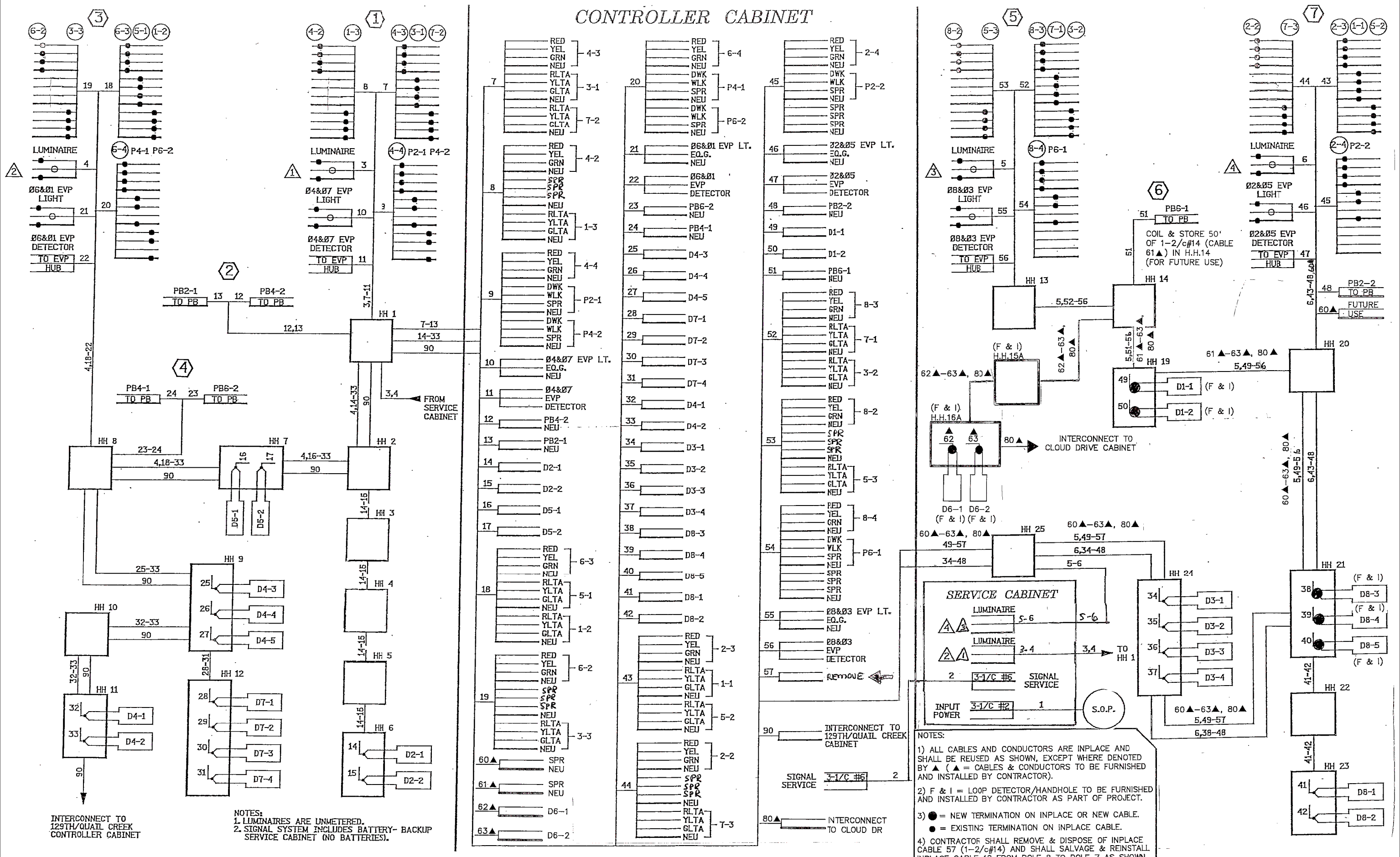


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**REVISE SIGNAL SYSTEM "A"**  
**INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)

FILE NO. 126669	<b>139</b>
SG8 OF SG25	<b>196</b>

# CONTROLLER CABINET



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**REVISE SIGNAL SYSTEM "A" FIELD WIRING DIAGRAM**  
 CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)

FILE NO.	140
126669	
SC9	
OF 5625	196

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sg10

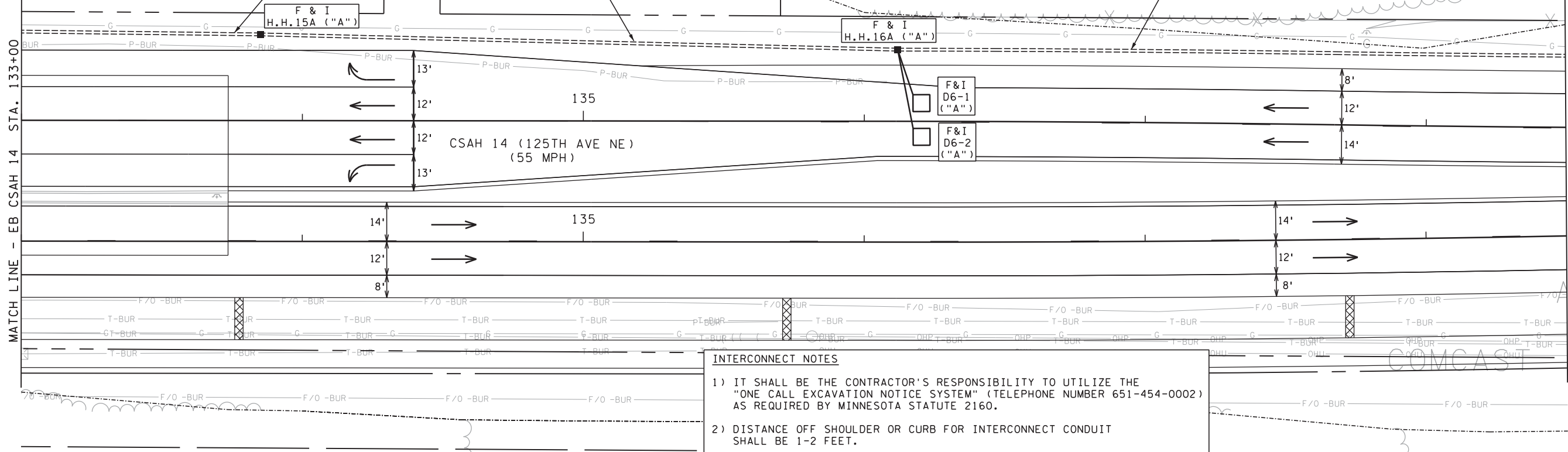
H.H.14 TO EAST:  
INPLACE CONDUIT - REMOVE ("A")  
1-2/c#14 - INPLACE - REMOVE ("A")

H.H.14 TO H.H.15A:  
H.H.15A TO H.H.16A:  
2-2/c#14 - F&I ("A")  
(\*\*) 2' CONDUIT - F&I  
(\*\*) 1-12 SM FIBER-OPTIC CABLE - F&I

H.H.16A TO H.H.50:  
(\*\*) 2' CONDUIT - F&I  
(\*\*) 1-12 SM FIBER-OPTIC CABLE - F&I  
(\*\*) 1-1/c#14 (TRACER) - F&I

40

SCALE IN FEET



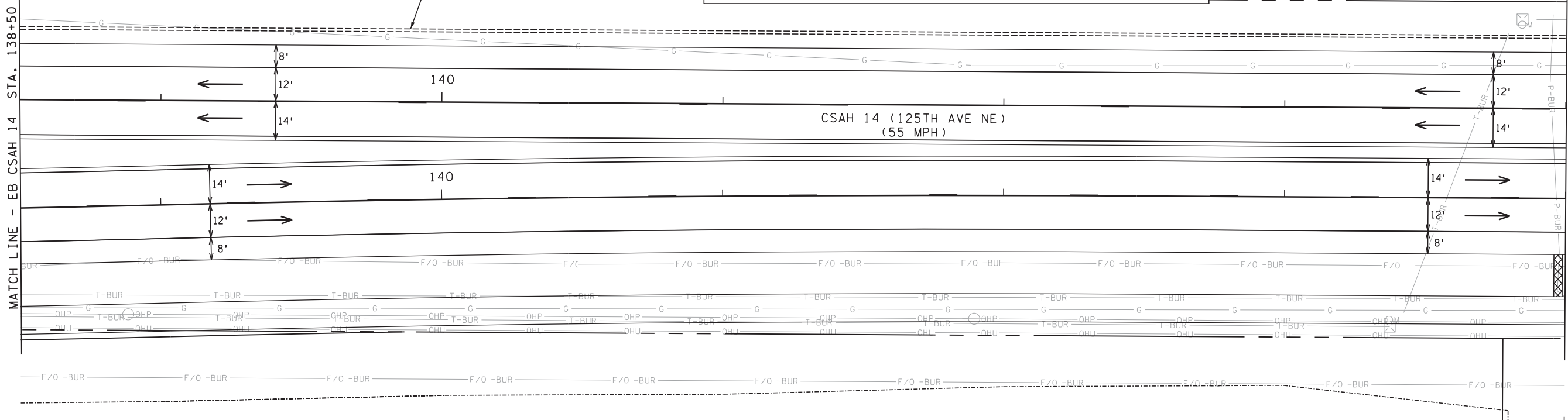
**INTERCONNECT NOTES**

- 1) IT SHALL BE THE 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) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 5) ITEMS DENOTED BY "A" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "REVISE SIGNAL SYSTEM "A"". SEE SPECIAL PROVISIONS.
- 6) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

H.H.16A TO H.H.50:  
(\*\*) 2' CONDUIT - F&I  
(\*\*) 1-12 SM FIBER-OPTIC CABLE - F&I  
(\*\*) 1-1/c#14 (TRACER) - F&I

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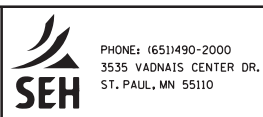
SCALE IN FEET



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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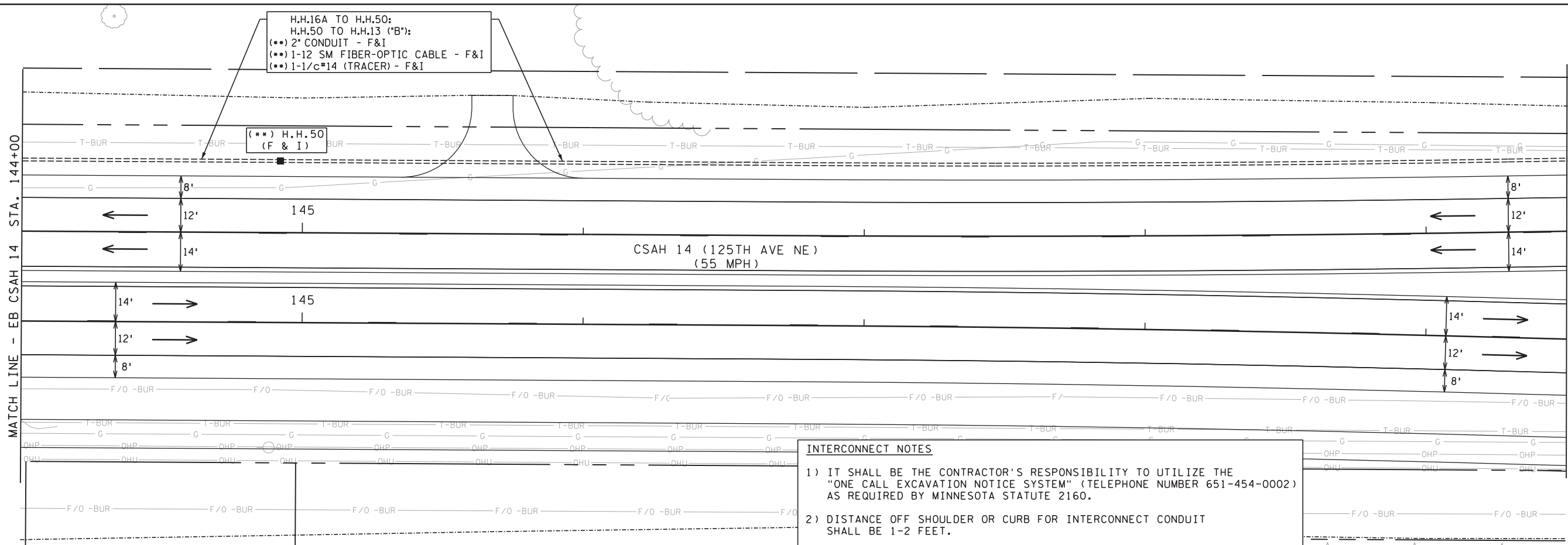


CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

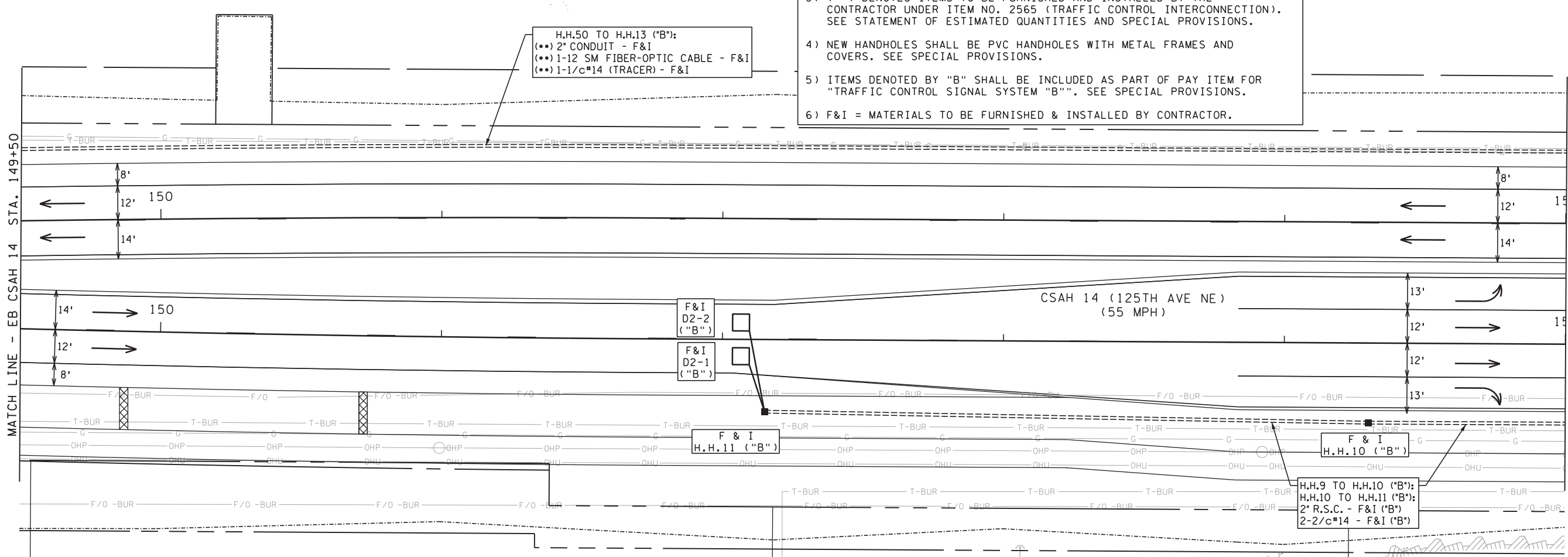
**REVISE SIGNAL SYSTEM "A" / INTERCONNECT INTERSECTION LAYOUT**  
CSAH 14 (125TH AVE NE) - CSAH 52 TO CLOUD DRIVE

FILE NO. 141  
126669  
SG10 OF SG25  
196

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sg11



40  
SCALE IN FEET



40  
SCALE IN FEET

**INTERCONNECT NOTES**

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- 2) DISTANCE OFF SHOULDER OR CURB FOR INTERCONNECT CONDUIT SHALL BE 1-2 FEET.
- 3) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 5) ITEMS DENOTED BY "B" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM "B"". SEE SPECIAL PROVISIONS.
- 6) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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Certified By: *John M. Gray* Lic. No. 22457  
Printed Name: JOHN M. GRAY, PE Date: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**SIGNAL SYSTEM "B"/INTERCONNECT INTERSECTION LAYOUT**  
CSAH 14 (125TH AVE NE) - CSAH 52 TO CLOUD DRIVE

FILE NO. 126669	142
SG11 OF SG25	196

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sg12

- NOTES:**
- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
  - 4) 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).
  - 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
  - 6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM B").
  - 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
  - 8) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
  - 9) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.

- 10) SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- 11) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 12) (\*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM "B"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 13) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

- 1) PA100 POLE FOUNDATION  
TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
LUMINAIRE-LED COBRAHEAD  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 270 DEG  
1-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG  
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)  
R6-1L SIGN PANEL-POLE MOUNTED 0 DEG  
R10-X12 SIGN PANEL-ADJACENT TO 1-1  
TYPE D SIGN PANEL-OVERHEAD (D-1)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (ø6,1)  
(\*) ONE WAY EVP MOUNTING BRACKET (ø6,1)  
EXTEND INTO H.H.13:  
3"R.S.C.  
3-12/c#14  
(\*) 1-3/c#14  
1-2/c#14  
(\*) 1-3/c#20  
1-3/c#14 (LUM)  
1-1/c#6 (INS.GR.)

- 2) PA90 POLE FOUNDATION  
TYPE PA90-A-30  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 0 DEG/270 DEG  
1-R9-3 SIGN PANEL-FACING POLE 3  
TYPE D SIGN PANEL-OVERHEAD (D-2)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (ø8)  
(\*) ONE WAY EVP MOUNTING BRACKET (ø8)  
EXTEND INTO H.H.2:  
3"R.S.C.  
3-12/c#14  
1-12/c#14  
1-4/c#14  
(\*) 1-3/c#20  
1-2/c#14  
1-1/c#6 (INS.GR.)

- 3) PA100 POLE FOUNDATION  
TYPE PA100-A-50-D30-9 (DAVIT AT 350 DEG)  
LUMINAIRE-LED COBRAHEAD  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG  
1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED 180 DEG  
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)  
1-R9-3 SIGN PANEL-FACING POLE 2  
R6-1R SIGN PANEL-POLE MOUNTED 180 DEG  
R10-X12 SIGN PANEL-ADJACENT TO 5-1  
TYPE D SIGN PANEL-OVERHEAD (D-3)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (ø2,5)  
(\*) ONE WAY EVP MOUNTING BRACKET (ø2,5)  
EXTEND INTO H.H.6:  
3"R.S.C.  
2-12/c#14  
1-4/c#14  
1-3/c#14 (LUM)  
(\*) 1-3/c#14  
2-2/c#14

- 4) PEDESTAL FOUNDATION  
14' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)  
1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED  
2-STRAIGHT MOUNT C.D. PED INDICATIONS-POLE MOUNTED  
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)  
EXTEND INTO H.H.9:  
3"R.S.C.  
1-12/c#14  
2-2/c#14  
1-4/c#14  
1-1/c#6 (INS.GR.)

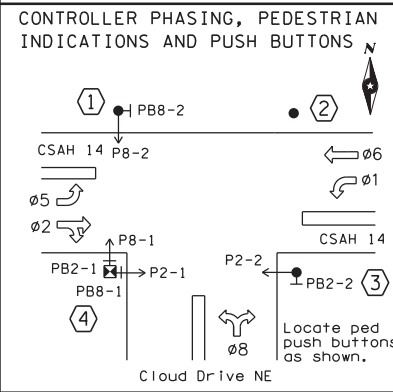
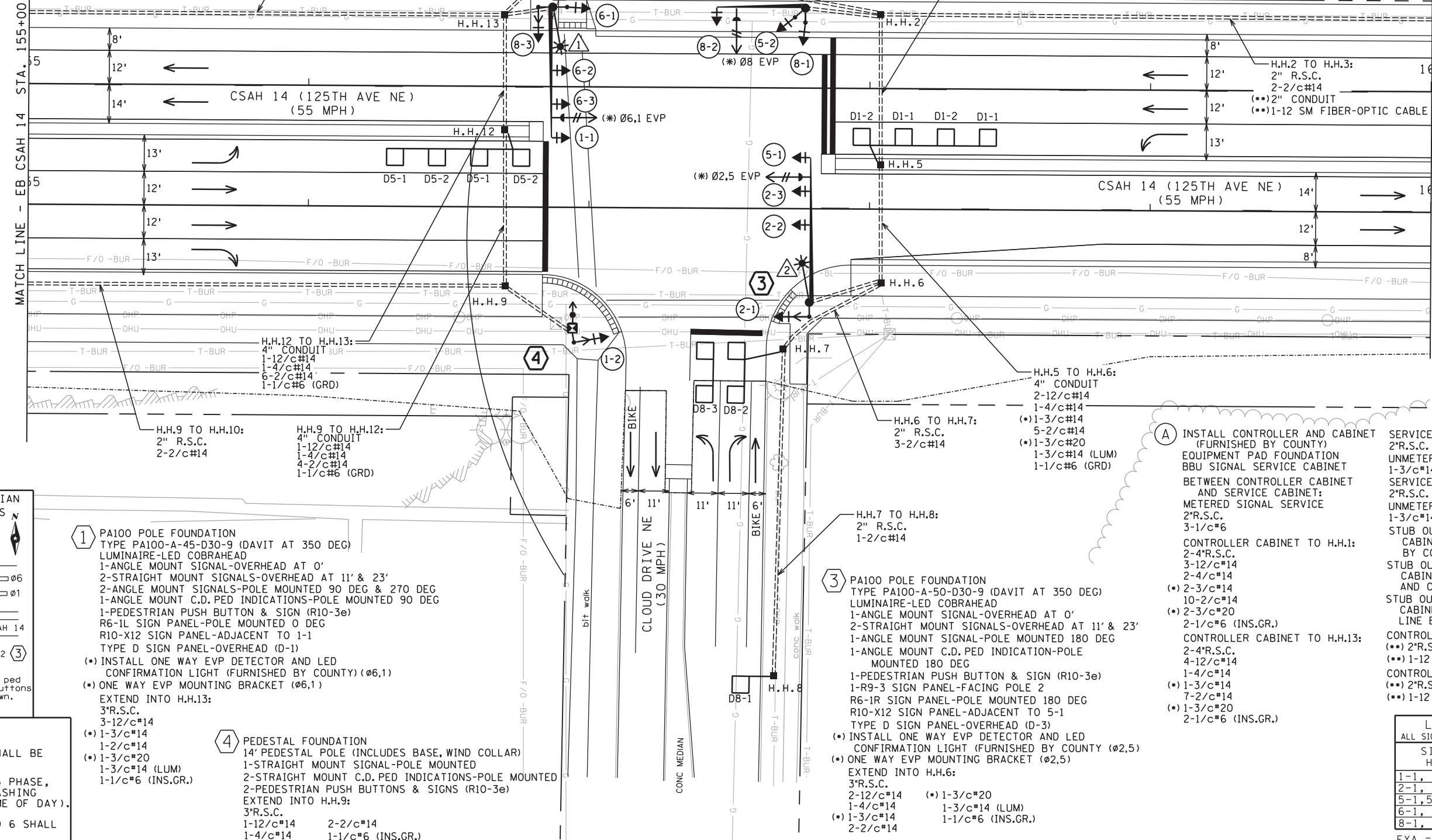
F & I PVC LOOP DETECTORS			
NUMBER	SIZE (FT)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D8-1	6x6	120'	3,8
D8-2	2-6x6	5' & 20'	7
D8-3	2-6x6	5' & 20'	7

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

LOOP DETECTORS FUNCTIONS:	
1) CALL AND EXTEND	
3) EXTEND ONLY	
7) DELAYED CALL, IMMEDIATE EXTEND	
8) CARRY OVER (STRETCH)	



(B) WOOD POLE (S.O.P.)-TO BE PROVIDED BY CONNEXUS ENERGY



**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 5 PHASE, WITH PHASES 1 & 5 BEING FLASHING YELLOW ARROWS (FLASH BY TIME OF DAY).
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

- 1) SERVICE CABINET TO H.H.1:  
2"R.S.C.  
UNMETERED STREET LIGHT SERVICE  
1-3/c#14 (LUM)  
SERVICE CABINET TO H.H.13:  
2"R.S.C.  
UNMETERED STREET LIGHT SERVICE  
1-3/c#14 (LUM)  
STUB OUT 1-2"R.S.C. FROM SERVICE CABINET (FOR POWER CABLES BY CONNEXUS ENERGY)  
STUB OUT 3"R.S.C. FROM CONTROLLER CABINET TO SOUTH (THREAD AND CAP-FOR FUTURE USE)  
STUB OUT 1"R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)  
CONTROLLER CABINET TO H.H.1:  
(\*\*) 2"R.S.C.  
(\*\*) 1-12 SM FIBER-OPTIC CABLE  
CONTROLLER CABINET TO H.H.13:  
(\*\*) 2"R.S.C.  
(\*\*) 1-12 SM FIBER-OPTIC CABLE

- 2) CONTROLLER CABINET TO H.H.1:  
2-4"R.S.C.  
3-12/c#14  
2-4/c#14  
(\*) 2-3/c#14  
(\*) 10-2/c#14  
(\*) 2-3/c#20  
2-1/c#6 (INS.GR.)  
CONTROLLER CABINET TO H.H.13:  
2-4"R.S.C.  
4-12/c#14  
(\*) 1-3/c#14  
(\*) 1-3/c#14  
(\*) 7-2/c#14  
(\*) 1-3/c#20  
2-1/c#6 (INS.GR.)

- 3) CONTROLLER CABINET TO H.H.1:  
2-4"R.S.C.  
3-12/c#14  
2-4/c#14  
(\*) 2-3/c#14  
(\*) 10-2/c#14  
(\*) 2-3/c#20  
2-1/c#6 (INS.GR.)  
CONTROLLER CABINET TO H.H.13:  
2-4"R.S.C.  
4-12/c#14  
(\*) 1-3/c#14  
(\*) 1-3/c#14  
(\*) 7-2/c#14  
(\*) 1-3/c#20  
2-1/c#6 (INS.GR.)

- 4) CONTROLLER CABINET TO H.H.1:  
2-4"R.S.C.  
3-12/c#14  
2-4/c#14  
(\*) 2-3/c#14  
(\*) 10-2/c#14  
(\*) 2-3/c#20  
2-1/c#6 (INS.GR.)  
CONTROLLER CABINET TO H.H.13:  
2-4"R.S.C.  
4-12/c#14  
(\*) 1-3/c#14  
(\*) 1-3/c#14  
(\*) 7-2/c#14  
(\*) 1-3/c#20  
2-1/c#6 (INS.GR.)

**LED SIGNAL HEADS**  
ALL SIGNAL INDICATIONS SHALL BE 12"

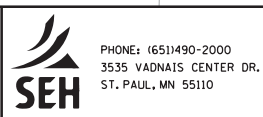
SIGNAL HEAD	R	Y	FYA	G
1-1, 1-2	◀	◀	◀	▶
2-1, 2-2, 2-3	◀	◀	◀	▶
5-1, 5-2	◀	◀	◀	▶
6-1, 6-2, 6-3	◀	◀	◀	▶
8-1, 8-2, 8-3	◀	◀	◀	▶

FYA = FLASHING YELLOW ARROW.

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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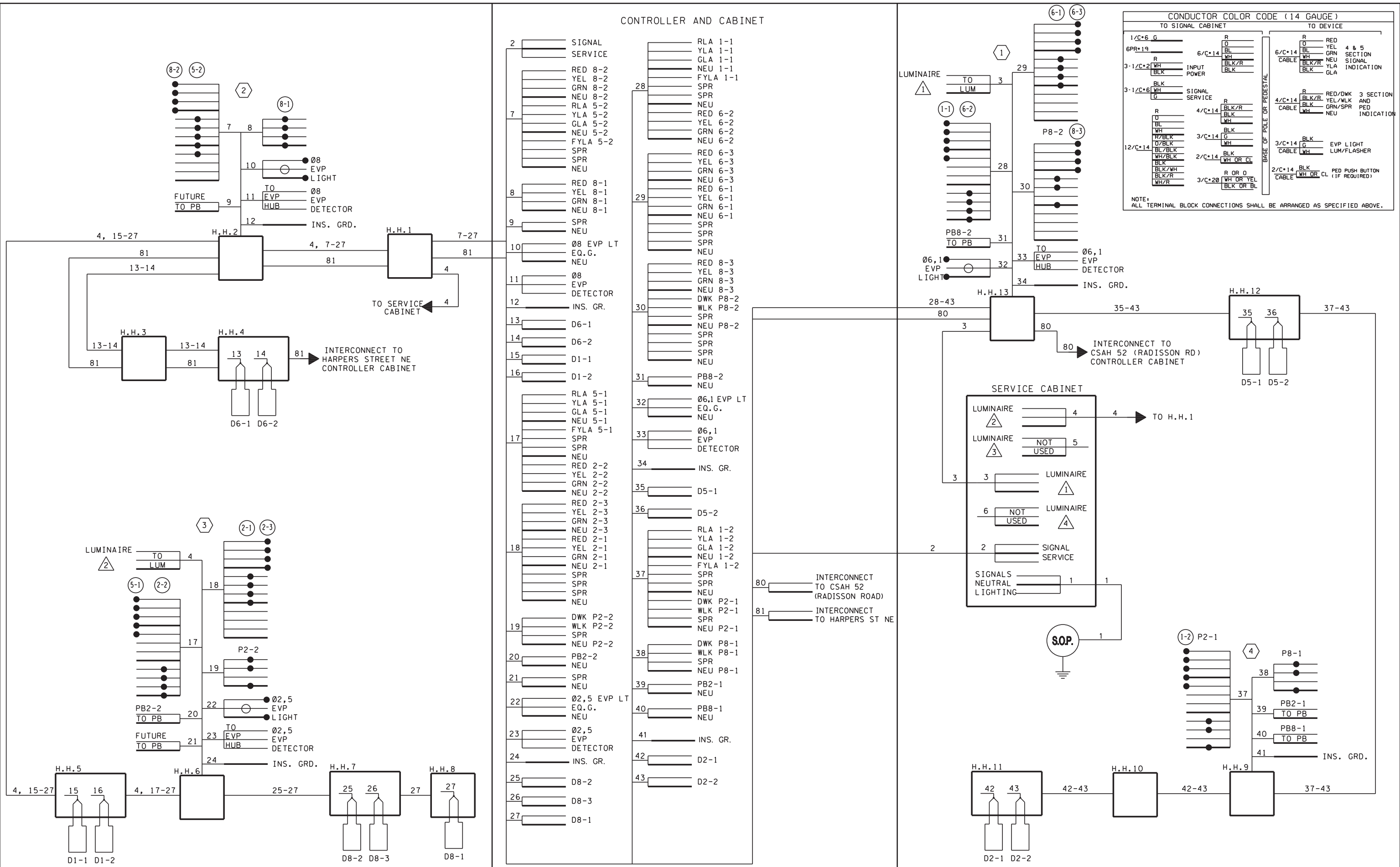
Certified By: *John M. Gray, PE* Lic. No. 22457  
Printed Name: JOHN M. GRAY, PE Date: 10/21/2015



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**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**TRAFFIC SIGNAL SYSTEM "B"**  
**INTERSECTION LAYOUT**  
CSAH 14 (125TH AVE NE) AT CLOUD DRIVE NE

FILE NO. 143  
126669  
SG12 OF SG25  
196



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
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**CSAH 14**  
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 S.A.P. 106-137-001

**TRAFFIC SIGNAL SYSTEM "B"**  
**FIELD WIRING DIAGRAM**  
 CSAH 14 (125TH AVE NE) AT CLOUD DR NE

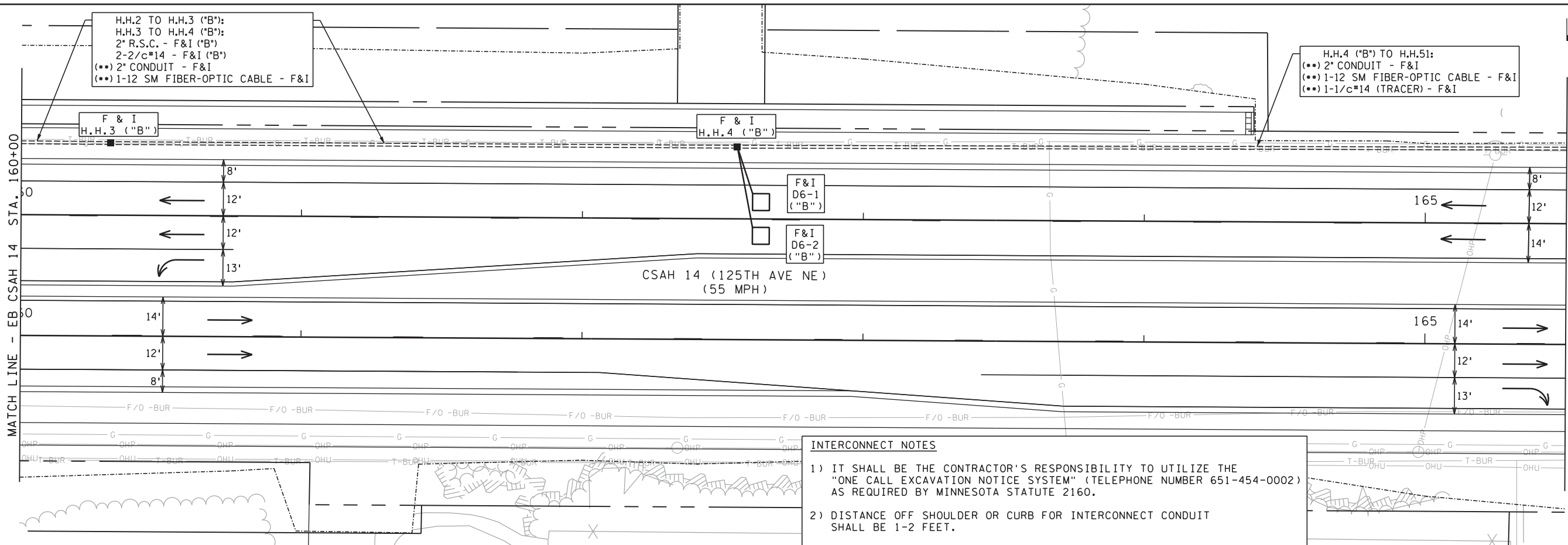
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126669	
<b>SG13</b>	196
OF SG25	



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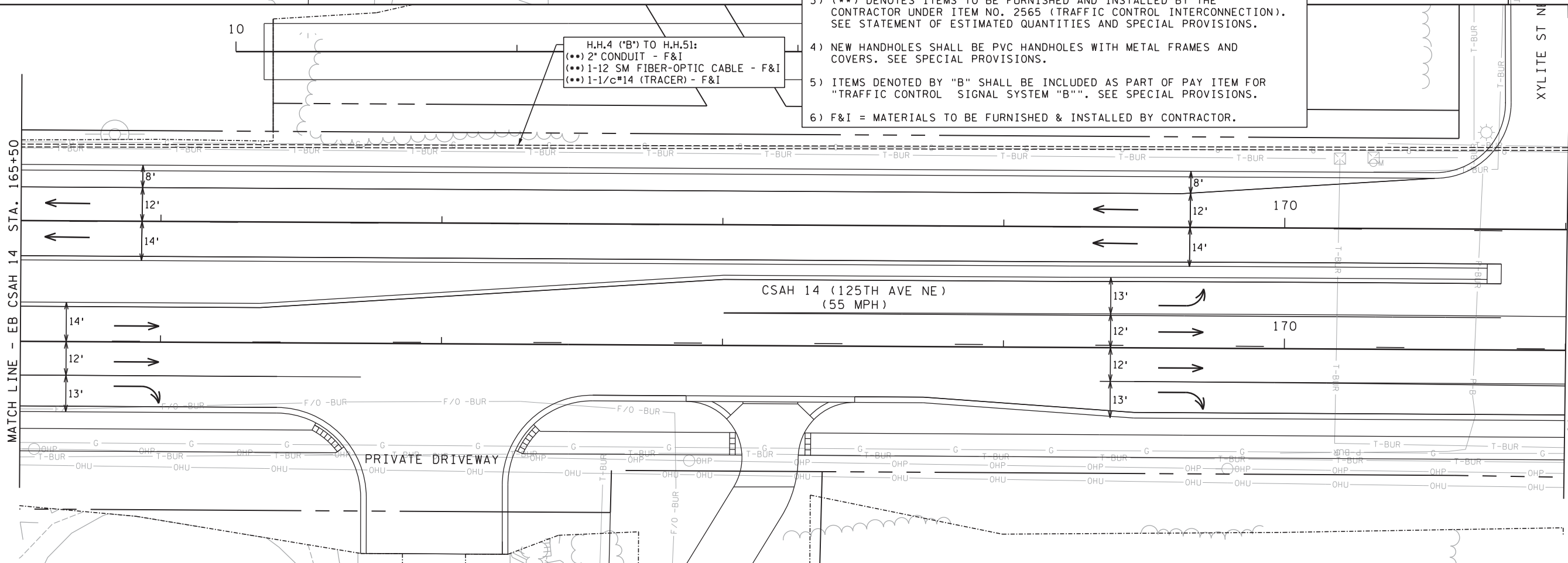
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SCALE IN FEET

MATCH LINE - EB CSAH 14 STA. 160+00  
MATCH LINE - EB CSAH 14 STA. 165+50



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SCALE IN FEET

MATCH LINE - EB CSAH 14 STA. 165+50  
MATCH LINE - EB CSAH 14 STA. 171+00



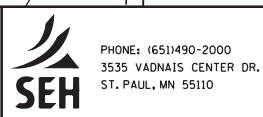
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- 5) ITEMS DENOTED BY "B" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM "B"". SEE SPECIAL PROVISIONS.
- 6) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

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DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNAL SYSTEM "B"/INTERCONNECT INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) - CLOUD DR TO HARPERS ST NE

FILE NO. 145  
 126669  
 SG14 OF SG25  
 196

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10/21/2015

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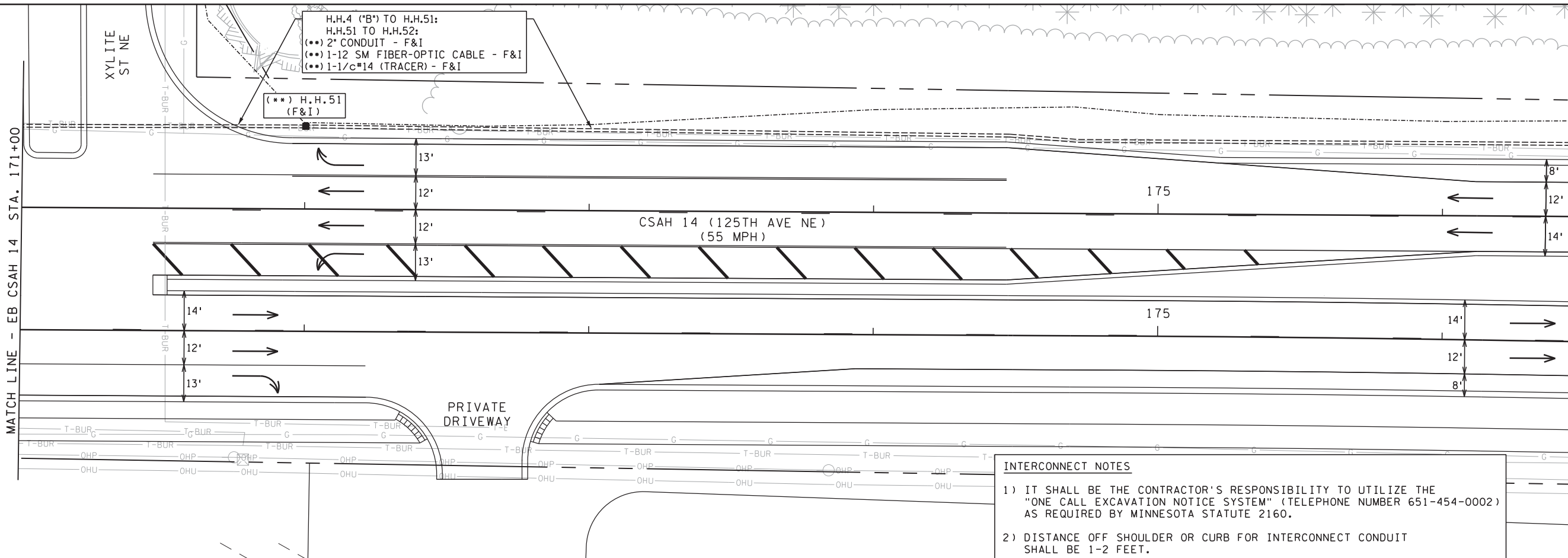
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SCALE IN FEET



MATCH LINE - EB CSAH 14 STA. 171+00

MATCH LINE - EB CSAH 14 STA. 176+50



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- 1) IT SHALL BE THE 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) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 5) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

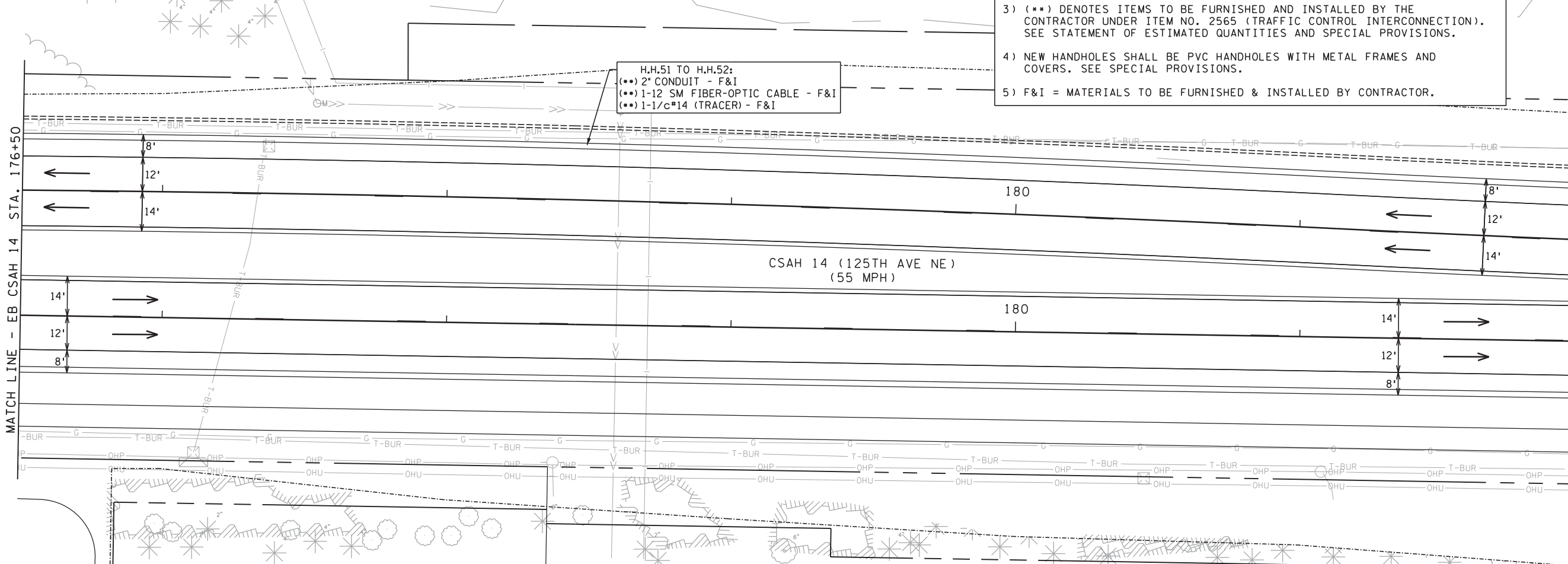
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SCALE IN FEET



MATCH LINE - EB CSAH 14 STA. 176+50

MATCH LINE - EB CSAH 14 STA. 182+00



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
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: 10/21/2015

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

CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TRAFFIC SIGNAL INTERCONNECT INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) - CLOUD DR TO HARPERS ST NE

FILE NO. 146  
 126669  
**SG15**  
 OF SG25  
 196

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10/21/2015

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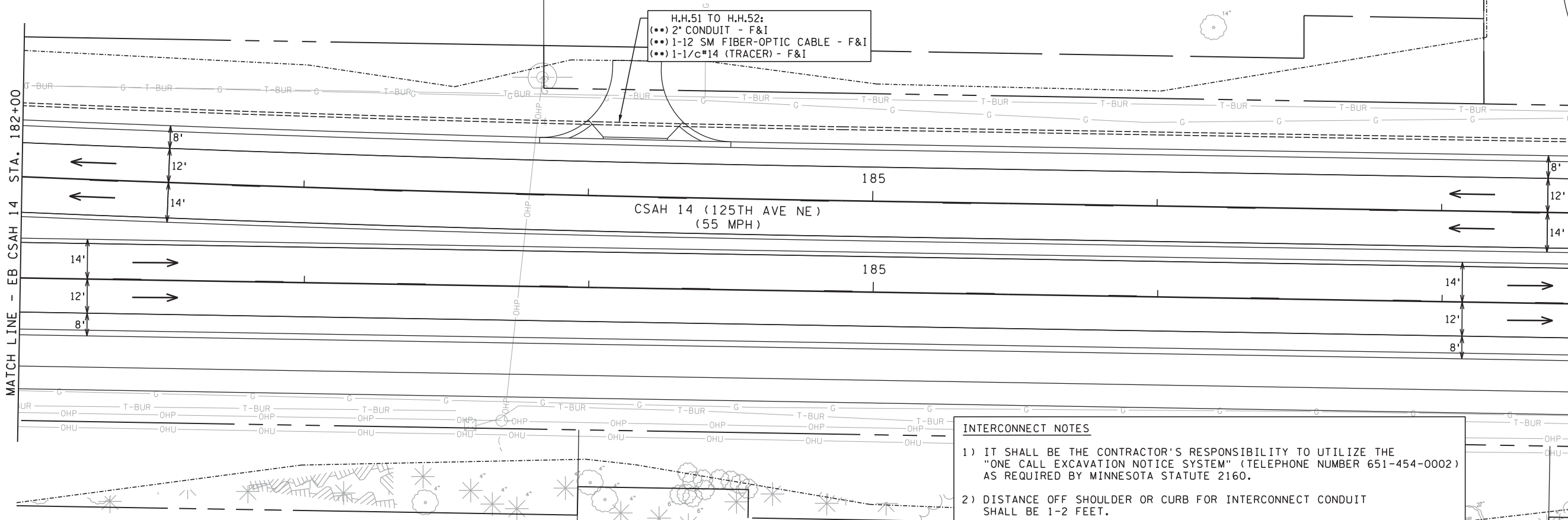
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SCALE IN FEET



MATCH LINE - EB CSAH 14 STA. 182+00

MATCH LINE - EB CSAH 14 STA. 187+50



**INTERCONNECT NOTES**

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
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- 5) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

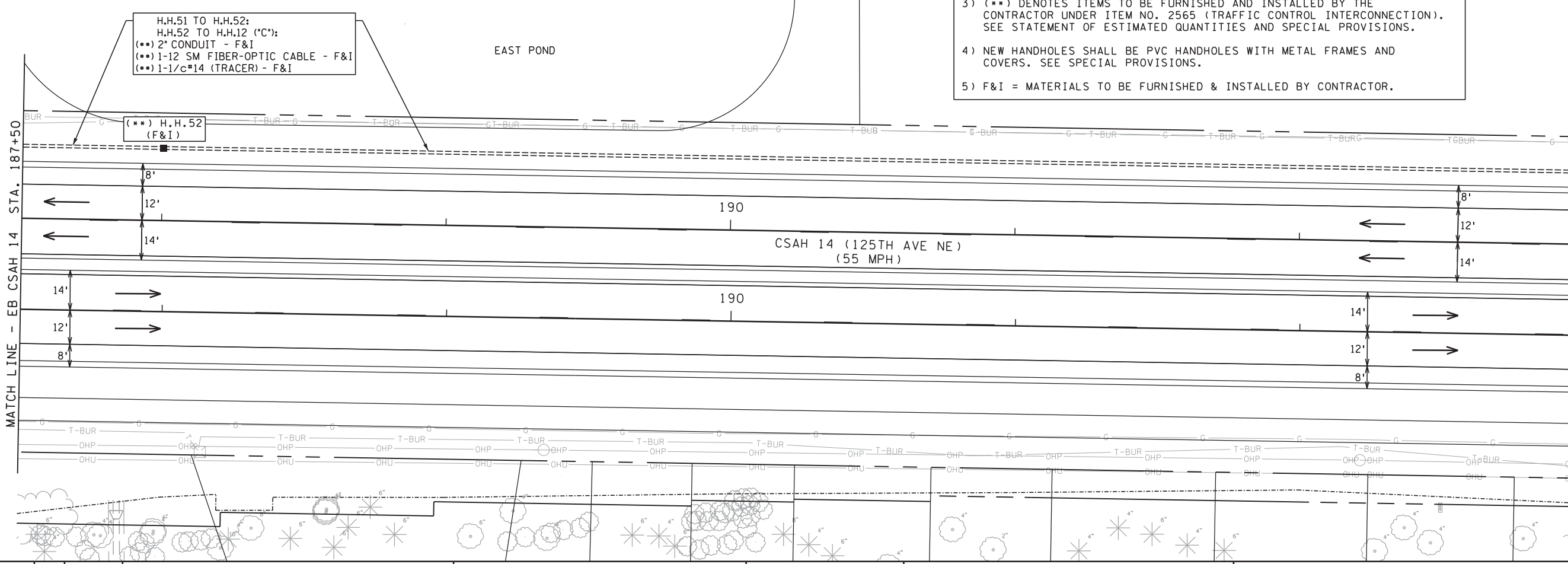
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SCALE IN FEET



MATCH LINE - EB CSAH 14 STA. 187+50

MATCH LINE - EB CSAH 14 STA. 193+00



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TRAFFIC SIGNAL INTERCONNECT INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) - CLOUD DR TO HARPERS ST NE

FILE NO. 147  
 126669  
 SG16 OF SG25  
 196

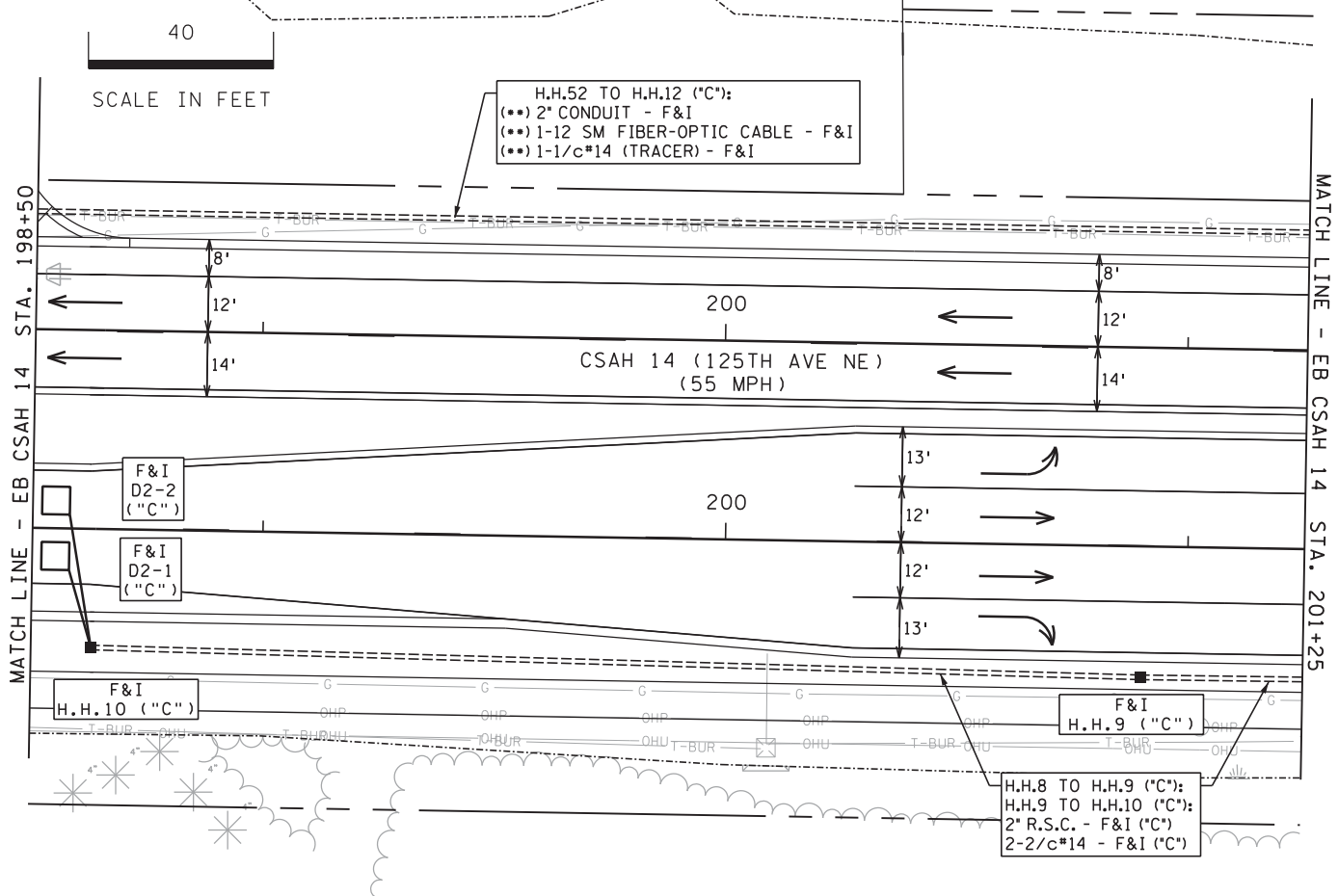
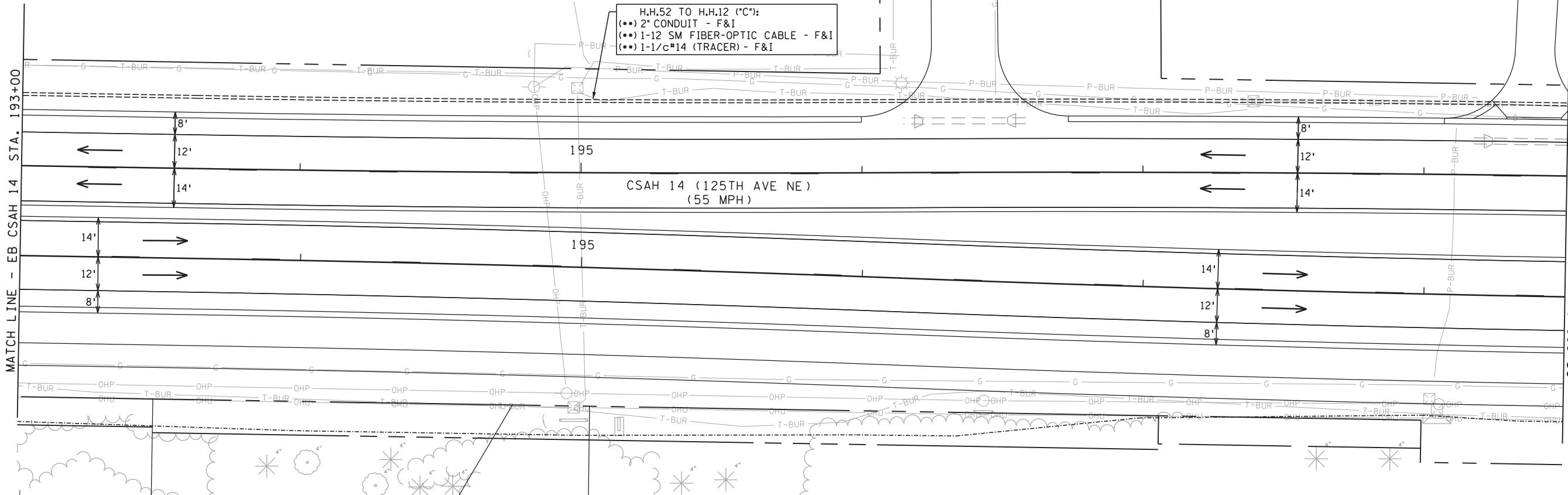
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10/21/2015

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40

SCALE IN FEET



- INTERCONNECT NOTES**
- 1) IT SHALL BE THE 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) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
  - 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
  - 5) ITEMS DENOTED BY "C" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM "C"". SEE SPECIAL PROVISIONS.
  - 6) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**SIGNAL SYSTEM "C"/INTERCONNECT INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) - CLOUD DR TO HARPERS ST NE

FILE NO. 126669  
**148**  
 SG17 OF SG25  
**196**

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10/21/2015  
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**NOTES:**

- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 4) 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).
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
- 6) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM C").
- 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION FILLED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- 8) ALL VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
- 9) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- 10) SEE DETAILS, SPECIAL PROVISIONS, AND STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- 11) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.

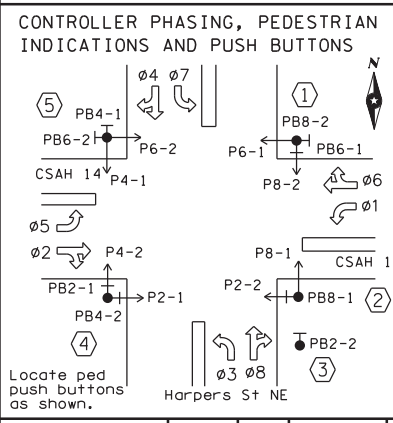
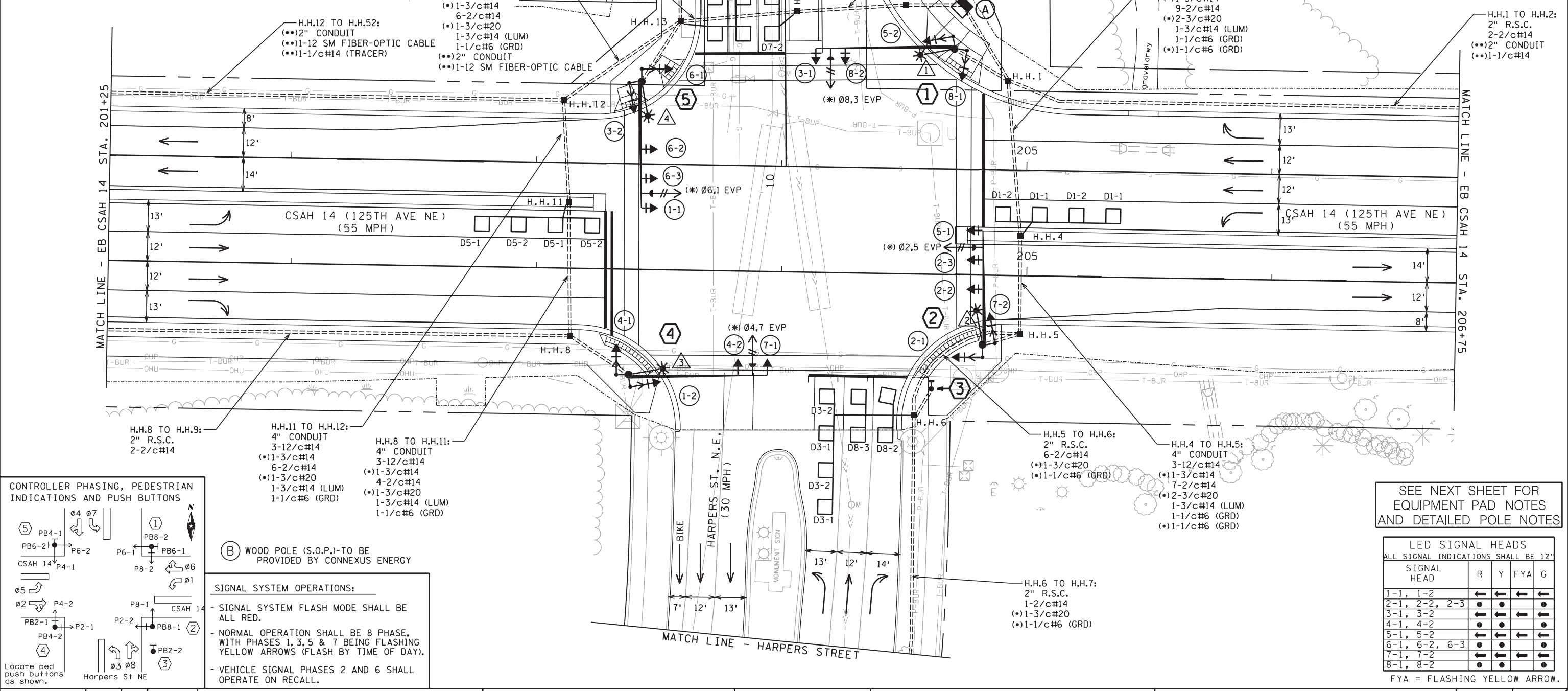
- 12) (\*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM "C"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 13) (\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.

**LOOP DETECTORS FUNCTIONS:**

- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

F & I PVC LOOP DETECTORS			
NUMBER	SIZE (FT)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D3-1	2-6x6	20' & 50'	1
D3-2	2-6x6	5' & 35'	1
D4-1	6x6	120'	3,8
D4-2	2-6x6	5' & 20'	7
D4-3	2-6x6	5' & 20'	1
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D7-1	2-6x6	20' & 50'	1
D7-2	2-6x6	5' & 35'	1
D8-1	6x6	120'	3,8
D8-2	2-6x6	5' & 20'	7
D8-3	2-6x6	5' & 20'	1

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR



**SIGNAL SYSTEM OPERATIONS:**

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5 & 7 BEING FLASHING YELLOW ARROWS (FLASH BY TIME OF DAY).
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SEE NEXT SHEET FOR EQUIPMENT PAD NOTES AND DETAILED POLE NOTES

LED SIGNAL HEADS				
ALL SIGNAL INDICATIONS SHALL BE 12"				
SIGNAL HEAD	R	Y	FYA	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	←	←	←	←

FYA = FLASHING YELLOW ARROW.

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		

NO.	BY	DATE	REVISIONS

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TRAFFIC SIGNAL SYSTEM "C"**  
**INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) AT HARPERS STREET NE

FILE NO.	126669	149
SG18	OF SG25	196

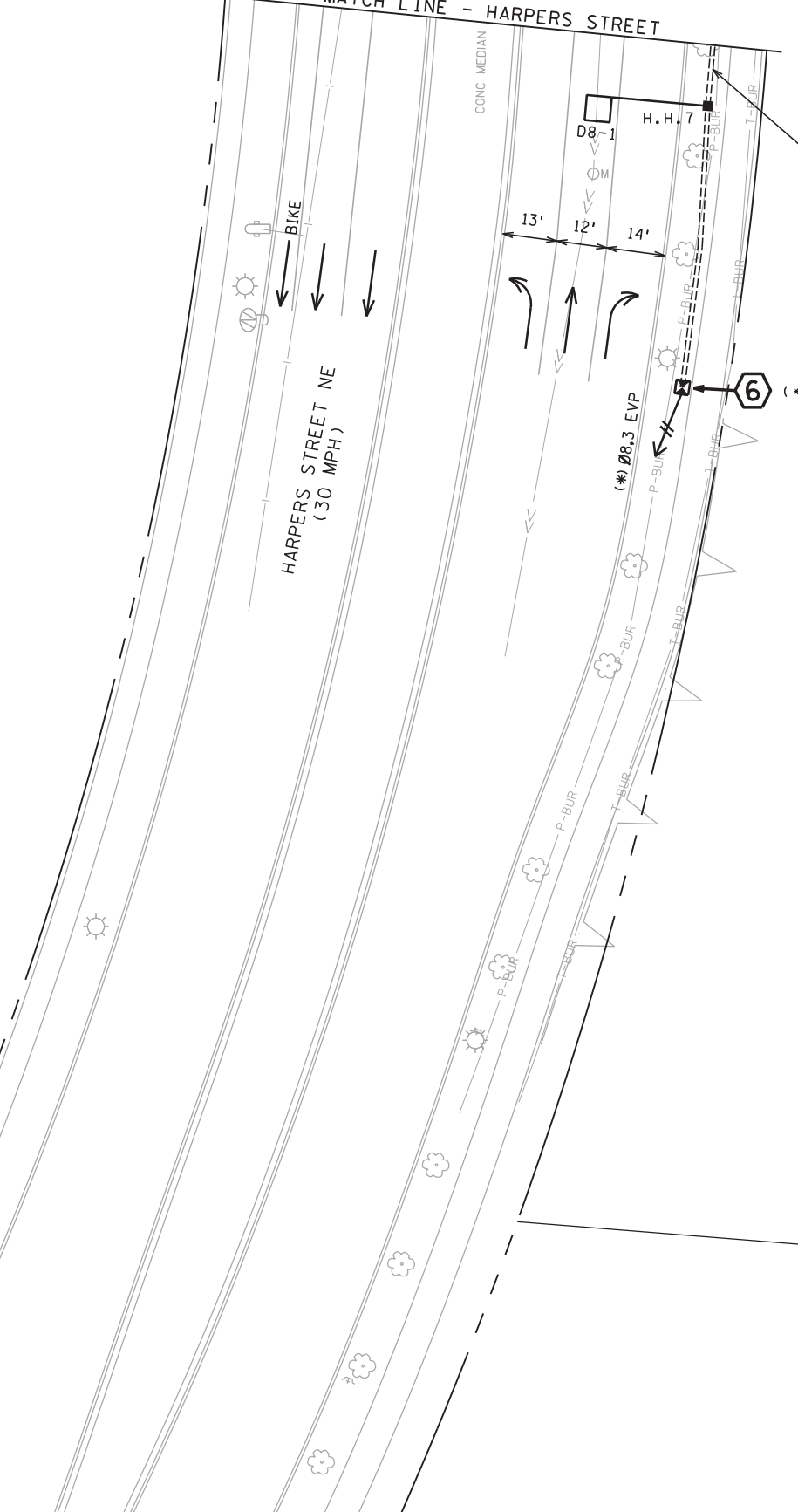
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10/21/2015

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MATCH LINE - HARPERS STREET



H.H.6 TO H.H.7:  
2" R.S.C.  
1-2/c#14  
(\*)1-3/c#20  
(\*)1-1/c#6 (GRD)

**1** PA100 POLE FOUNDATION  
TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)  
LUMINAIRE-LED COBRAHEAD  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'  
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG  
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG  
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)  
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
R10-X12 SIGN PANEL-ADJACENT TO 3-1  
TYPE D SIGN PANEL-OVERHEAD (D-4)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY)Ø8,3 )  
(\*) ONE WAY EVP MOUNTING BRACKET (Ø8,3)  
EXTEND INTO H.H.1:  
3"R.S.C.  
3-12/c#14  
(\*) 1-3/c#14  
2-2/c#14  
(\*) 1-3/c#20  
1-3/c#14 (LUM)  
1-1/c#6 (INS.GR.)

**2** PA100 POLE FOUNDATION  
TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG)  
LUMINAIRE-LED COBRAHEAD  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG  
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG  
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)  
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
R10-X12 SIGN PANEL-ADJACENT TO 5-1  
TYPE D SIGN PANEL-OVERHEAD (D-5)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY)Ø2,5 )  
(\*) ONE WAY EVP MOUNTING BRACKET (Ø2,5)  
EXTEND INTO H.H.5:  
3"R.S.C.  
3-12/c#14  
(\*) 1-3/c#14  
1-2/c#14  
(\*) 1-3/c#20  
1-3/c#14 (LUM)  
1-1/c#6 (INS.GR.)

**3** PEDESTRIAN PUSH BUTTON STATION (SEE DETAILS)  
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-3e)  
EXTEND INTO H.H.6  
2"R.S.C.  
1-2/c#14

**4** PA100 POLE FOUNDATION  
TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)  
LUMINAIRE-LED COBRAHEAD  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'  
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG  
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG  
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)  
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
R10-X12 SIGN PANEL-ADJACENT TO 7-1  
TYPE D SIGN PANEL-OVERHEAD (D-6)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY)Ø4,7 )  
(\*) ONE WAY EVP MOUNTING BRACKET (Ø4,7)  
EXTEND INTO H.H.8:  
3"R.S.C.  
3-12/c#14  
(\*) 1-3/c#14  
2-2/c#14  
(\*) 1-3/c#20  
1-3/c#14 (LUM)  
1-1/c#6 (INS.GR.)

**5** PA100 POLE FOUNDATION  
TYPE PA100-A-50-D30-9 (DAVIT AT 350 DEG)  
LUMINAIRE-LED COBRAHEAD  
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'  
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'  
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG & 180 DEG  
2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG  
2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-3e)  
2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG  
R10-X12 SIGN PANEL-ADJACENT TO 1-1  
TYPE D SIGN PANEL-OVERHEAD (D-7)  
(\*) INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY)Ø6,1 )  
(\*) ONE WAY EVP MOUNTING BRACKET (Ø6,1)  
EXTEND INTO H.H.13:  
3"R.S.C.  
3-12/c#14  
(\*) 1-3/c#14  
2-2/c#14  
(\*) 1-3/c#20  
1-3/c#14 (LUM)  
1-1/c#6 (INS.GR.)

**6** (\*) PEDESTAL FOUNDATION  
(\*) 10' PEDESTAL POLE (INCLUDES BASE, WIND COLLAR)  
(\*) INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY) ON TOP OF PEDESTAL POLE SLIPFITTER COLLAR (Ø8,3)  
(\*) SLIPFITTER COLLAR AND MOUNTING HARDWARE FOR ONE WAY EVP DETECTOR (Ø8,3)  
EXTEND INTO H.H.7:  
(\*) 2"R.S.C.  
(\*) 1-3/c#20  
(\*) 1-1/c#6 (INS.GR.)

**A** INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)  
EQUIPMENT PAD FOUNDATION  
BBU 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#14 3-12/c#14  
(\*) 1-3/c#14 (\*) 1-3/c#14  
4-2/c#14 9-2/c#14  
(\*) 1-3/c#20 (\*) 2-3/c#20  
1-1/c#6 (INS.GR.) 1-1/c#6 (INS.GR.)  
CONTROLLER CABINET TO H.H.16:  
4"R.S.C. 4"R.S.C.  
3-12/c#14 3-12/c#14  
(\*) 1-3/c#14 (\*) 1-3/c#14  
7-2/c#14 6-2/c#14  
(\*) 1-3/c#20 (\*) 1-3/c#20  
1-1/c#6 (INS.GR.) 1-1/c#6 (INS.GR.)

SERVICE CABINET TO H.H.1:  
2"R.S.C.  
UNMETERED STREET LIGHT SERVICE  
2-3/c#14 (LUM)  
SERVICE CABINET TO H.H.16:  
2"R.S.C.  
UNMETERED STREET LIGHT SERVICE  
2-3/c#14 (LUM)  
STUB OUT 1-2"R.S.C. FROM SERVICE CABINET (FOR POWER CABLES BY CONNEXUS ENERGY)  
STUB OUT 3"R.S.C. FROM CONTROLLER CABINET TO SOUTH (THREAD AND CAP-FOR FUTURE USE)  
STUB OUT 1"R.S.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)  
CONTROLLER CABINET TO H.H.1:  
(\*\*) 2"R.S.C. (FOR FUTURE INTERCONNECT BY OTHERS)  
CONTROLLER CABINET TO H.H.16:  
(\*\*) 2"R.S.C.  
(\*\*) 1-12 SM FIBER-OPTIC CABLE

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**TRAFFIC SIGNAL SYSTEM "C"  
INTERSECTION LAYOUT**  
CSAH 14 (125TH AVE NE) AT HARPERS STREET NE

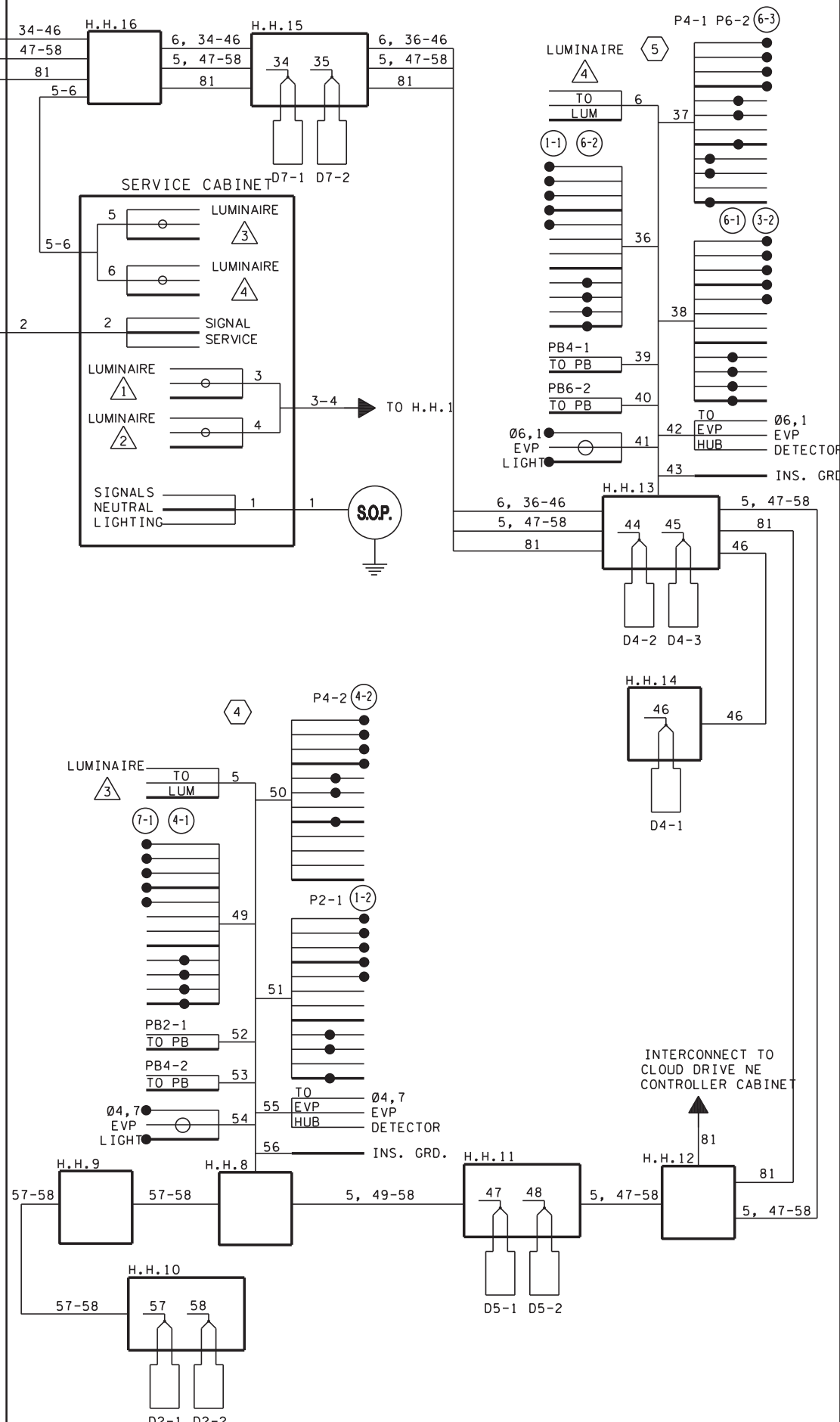
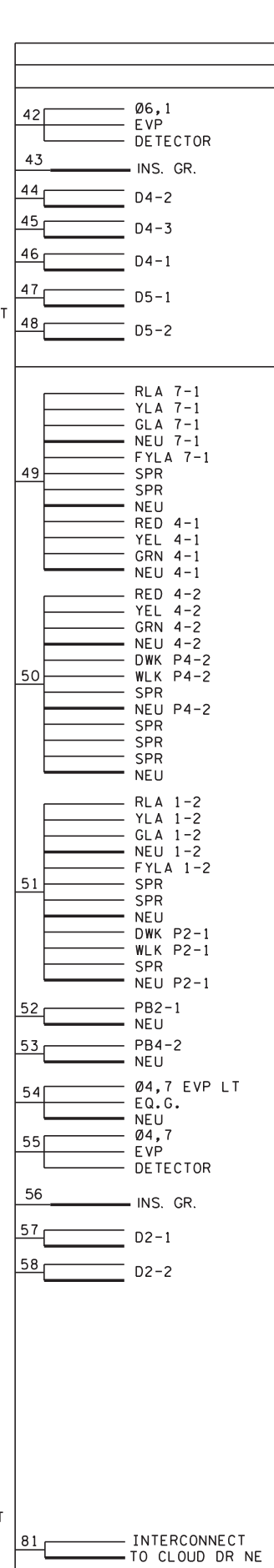
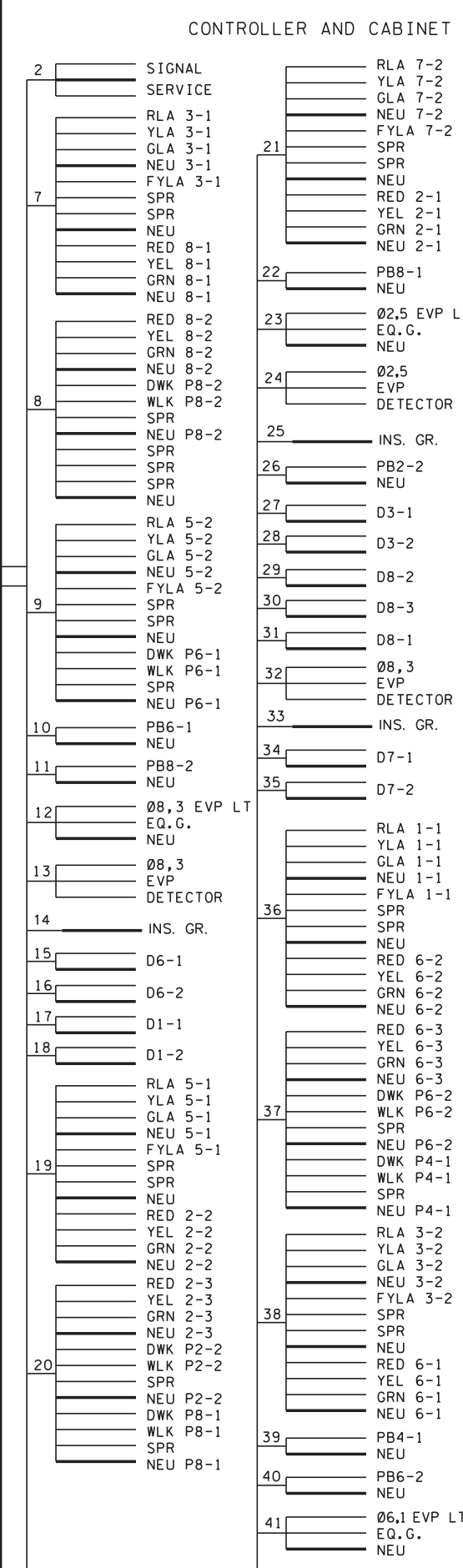
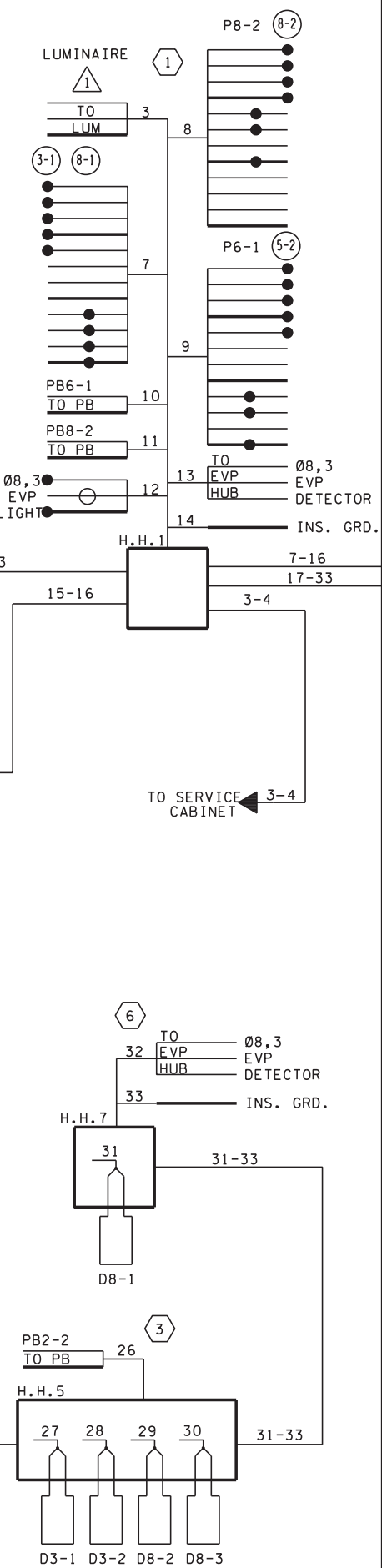
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SG19 OF SG25	<b>196</b>

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**CONDUCTOR COLOR CODE (14 GAUGE)**

TO SIGNAL CABINET		TO DEVICE	
1/C*6 G	R	6/C*14 BL	RED
6PR*19	BL	6/C*14 WH	YEL
	WH	6/C*14 BLK/R	GRN
	BLK	6/C*14 BLK	NEU
3-1/C*2 WH	BLK/R	4/C*14 BLK/R	RED/DWK
	BLK	4/C*14 BLK	YEL/WLK
		4/C*14 WH	GRN/SPR
		4/C*14 WH	NEU
3-1/C*6 G	R	3/C*14 BLK	RED/DWK
	BL	3/C*14 WH	YEL/WLK
	WH	3/C*14 BLK	GRN/SPR
	BLK	3/C*14 WH	NEU
		2/C*14 BLK	RED/DWK
		2/C*14 WH	YEL/WLK
		2/C*14 BLK	GRN/SPR
		2/C*14 WH	NEU
		2/C*14 BLK	RED/DWK
		2/C*14 WH	YEL/WLK
		2/C*14 BLK	GRN/SPR
		2/C*14 WH	NEU

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS

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CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**TRAFFIC SIGNAL SYSTEM "C"**  
**FIELD WIRING DIAGRAM**  
 CSAH 14 (125TH AVE NE) AT HARPERS ST NE

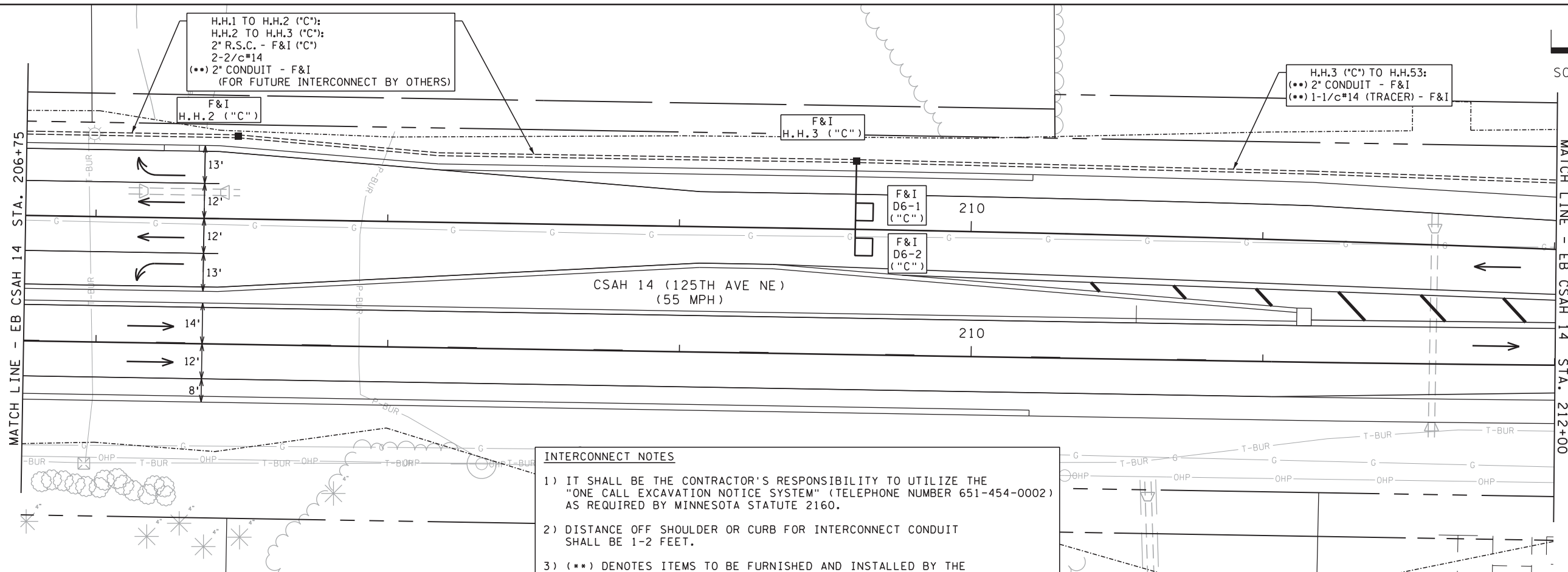
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10/21/2015

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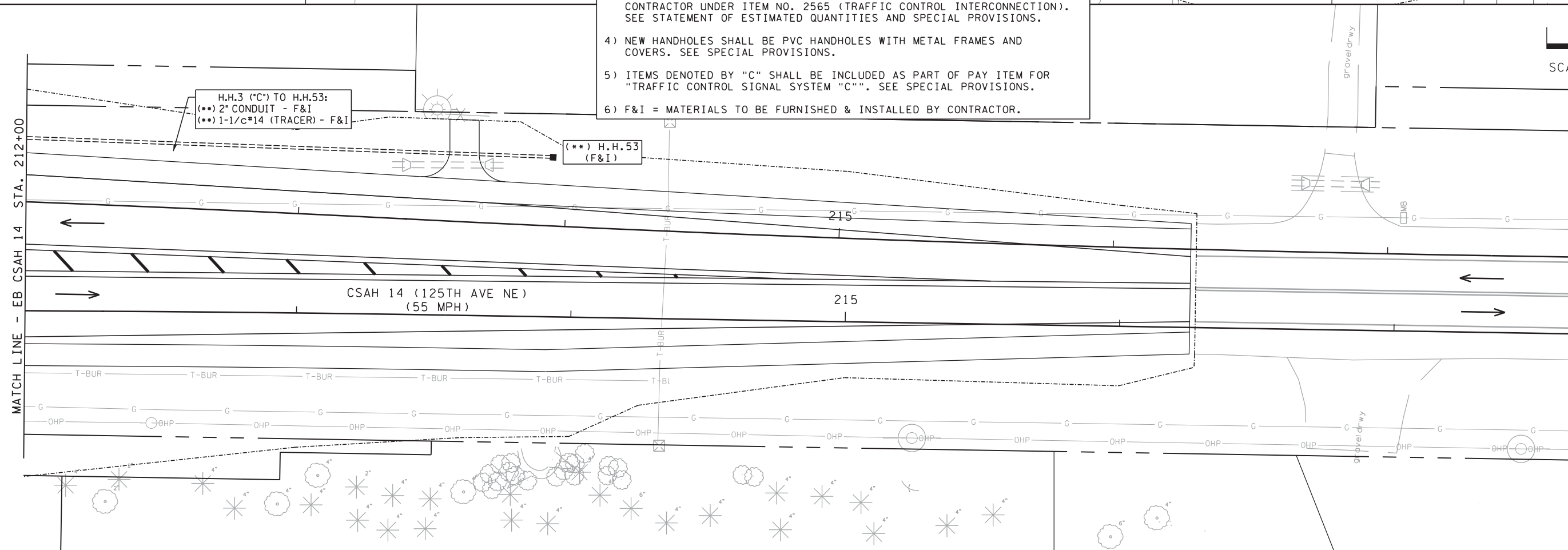
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SCALE IN FEET



**INTERCONNECT NOTES**

- 1) IT SHALL BE THE 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) (\*\*\*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECTION). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS. SEE SPECIAL PROVISIONS.
- 5) ITEMS DENOTED BY "C" SHALL BE INCLUDED AS PART OF PAY ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM "C"". SEE SPECIAL PROVISIONS.
- 6) F&I = MATERIALS TO BE FURNISHED & INSTALLED BY CONTRACTOR.

40  
SCALE IN FEET



DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
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: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**TRAFFIC SIGNAL SYSTEM "C"**  
**INTERSECTION LAYOUT**  
 CSAH 14 (125TH AVE NE) AT HARPERS ST NE

FILE NO. 126669	152
SG21 OF SG25	
196	



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10/21/2015

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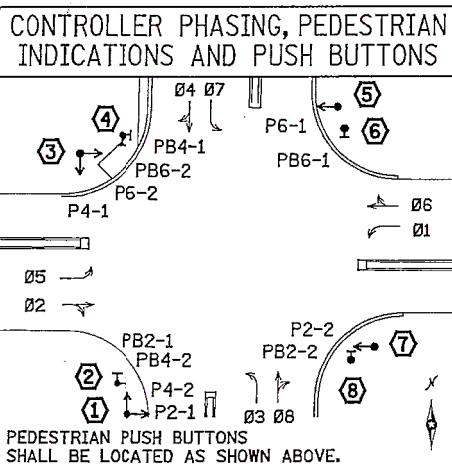
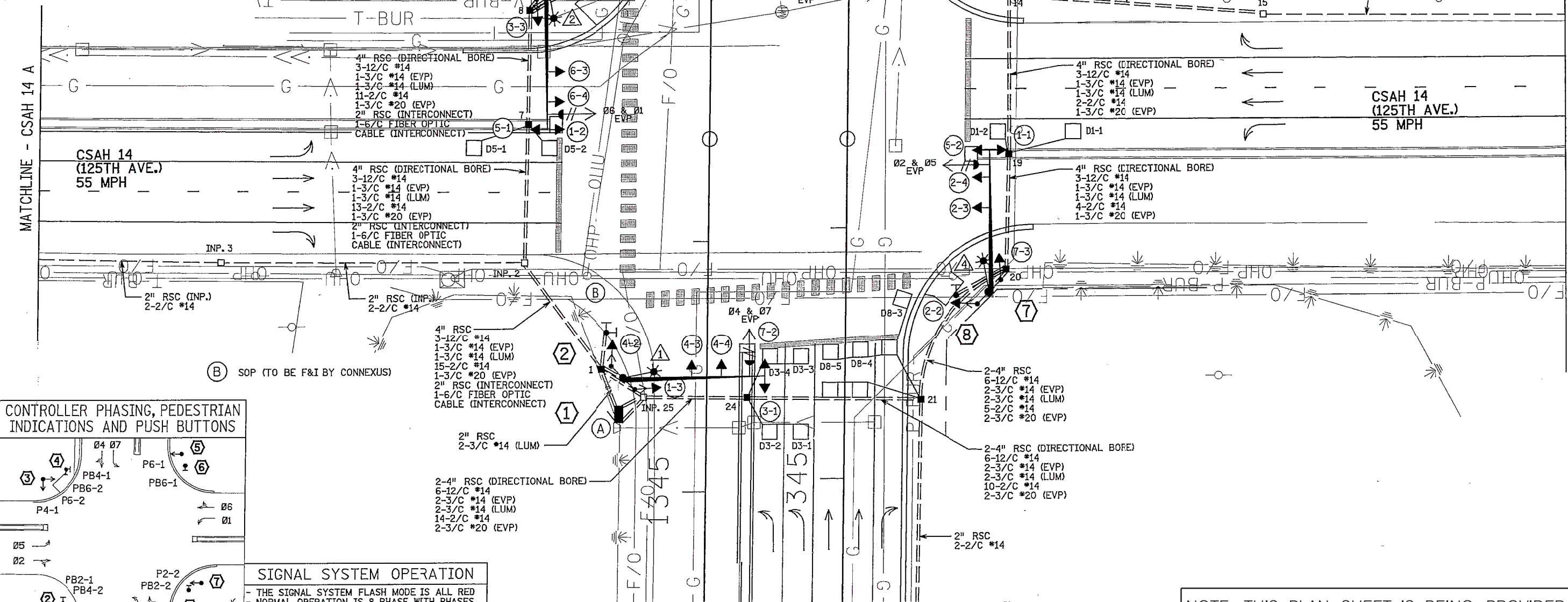
LOOP DETECTORS			
NUMBER	SIZE (FEET)	LOCATION	FUNCTION
*D1-1	6'X6'	40'	1
D1-2	6'X6'	10'	1
*D2-1,*D2-2	6'X6'	475'	1
D3-1,D3-2	6'X6'	30'	1
D3-3,D3-4	6'X6'	0'	1
D4-1,D4-2	6'X6'	475'	3,8
D4-3,D4-4	2-6'X6'	-15' & 0'	1
D4-5,D4-6	2-6'X6'	0' & 15'	1
*D5-1	6'X6'	30'	1
D5-2	6'X6'	0'	1
*D6-1	6'X6'	475'	1
D7-1,D7-2	6'X6'	30'	1
D7-3,D7-4	6'X6'	0'	1
*D8-1,*D8-2	6'X6'	475'	3,8
*D8-3,*D8-4	2-6'X6'	0' & 15'	1

\* DETECTOR TO BE INSTALLED IN EXISTING PAVEMENT.  
 - ALL LOOP DETECTORS SHALL BE NMC UNLESS NOTED OTHERWISE.  
 - LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR IN FEET.  
 - LOOP DETECTOR FUNCTIONS:  
 1 - CALL AND EXTEND.  
 3 - EXTEND ONLY.  
 8 - CARRY OVER (STRETCH).

SIGNAL INDICATIONS						
FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2,1-3				←	←	←
2-2,2-3,2-4	●	●	●			
3-1,3-2,3-3				←	←	←
4-2,4-3,4-4	●	●	●			
5-1,5-2,5-3				←	←	←
6-2,6-3,6-4	●	●	●			
7-1,7-2,7-3				←	←	←
8-2,8-3,8-4	●	●	●			

- ALL SIGNAL INDICATIONS SHALL BE 12".  
 - ALL SIGNAL INDICATIONS SHALL BE LED.  
 - ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD.

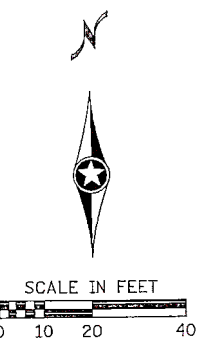
\*\* LANE DESIGNATION ARROWS SHOWN FOR INFORMATION ONLY \*\*



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED
- NORMAL OPERATION IS 8 PHASE WITH PHASES 1, 3, 5 AND 7 BEING PROTECTED LEFT TURN PHASES
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL
- RAILROAD PREEMPTION

- (A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) EQUIPMENT PAD  
 SIGNAL SERVICE CABINET (ON SAME FOUNDATION AS CONTROLLER CABINET) BETWEEN CONTROLLER AND CABINET AND SERVICE CABINET:  
 SERVICE CABINET:  
 2" R.S.C.  
 METERED SIGNAL SERVICE  
 2-1/C #6  
 1-1/C #6 INS. GRD.  
 SERVICE CABINET INTO INP. H.H. 25:  
 2" RSC  
 UNMETERED STREET LIGHT SERVICE  
 4-3/C #14 (LUM)  
 STUB OUT 2" RSC FROM SERVICE CABINET TO NORTHWEST (FOR POWER BY CONNEXUS)  
 CONTROLLER CABINET INTO H.H. 1:  
 4" RSC  
 3-12/C #14  
 1-3/C #14 (EVP)  
 15-2/C #14  
 10-2/C #14  
 1-3/C #20 (EVP)  
 4" RSC  
 3-12/C #14  
 1-3/C #14 (EVP)  
 2-2/C #14  
 1-3/C #20 (EVP)  
 2" RSC (INTERCONNECT)  
 1-6/C FIBER OPTIC CABLE (INTERCONNECT)
- CONTROLLER CABINET INTO H.H. 25:  
 4" RSC  
 3-12/C #14  
 1-3/C #14 (EVP)  
 10-2/C #14  
 1-3/C #20 (EVP)  
 4" RSC  
 3-12/C #14  
 1-3/C #14 (EVP)  
 4-2/C #14  
 1-3/C #20 (EVP)  
 3" RSC STUBBED OUT (CAPPED BOTH ENDS)  
 1" RSC STUBBED OUT (CAPPED FOR FUTURE TELEPHONE LINE)



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

DESIGN TEAM			
DRAWN BY:	BDY		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**INPLACE SIGNAL SYSTEM "A"**  
**"FOR INFORMATION ONLY"**  
 CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)

FILE NO.	153
126669	
SG22	196
OF SG25	

① PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-D40-9 (DAVIT AT 350°)  
 4-ONE WAY SIGNALS-OVERHEAD (0', 0', 17', AND 29' FROM END OF MAST ARM)  
 2-ONE WAY SIGNALS MOUNTED AT 90°, 180°  
 3" RSC INTO HH 1:  
 3-12/C #14  
 1-3/C #14 (EVP)  
 1-3/C #14 (LUM)  
 1-3/C #20 (EVP)  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4 & 7) (EVP)  
 LUMINAIRE - 250 WATT HPS  
 TYPE D SIGN PANEL-OVERHEAD (125TH AVE. NE)

② PEDESTRIAN PUSH BUTTON STATION  
 2-PED PUSH BUTTONS AND SIGNS  
 1 1/4" RSC INTO HH 1:  
 2-2/C #14

③ PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-D40-9 (DAVIT AT 350°)  
 4-ONE WAY SIGNALS-OVERHEAD (0', 0', 11', AND 23' FROM END OF MAST ARM)  
 2-ONE WAY SIGNALS MOUNTED AT 90°, 180°  
 LUMINAIRE - 250 WATT HPS  
 3" RSC INTO HH 8:  
 3-12/C #14  
 1-3/C #14 (EVP)  
 1-3/C #14 (LUM)  
 1-3/C #20 (EVP)  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 6 & 1) (EVP)  
 TYPE D SIGN PANEL-OVERHEAD (RADISSON ROAD)

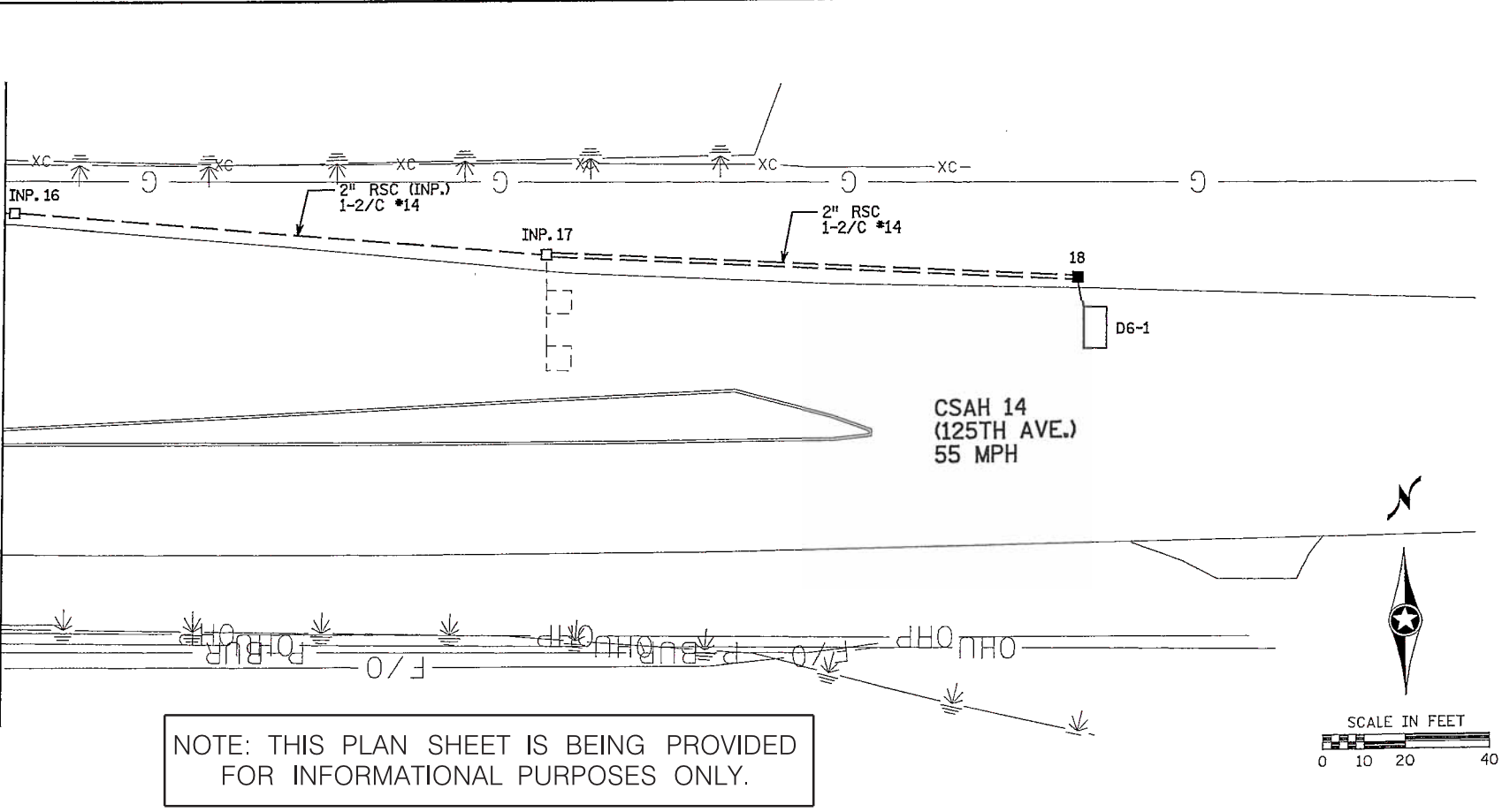
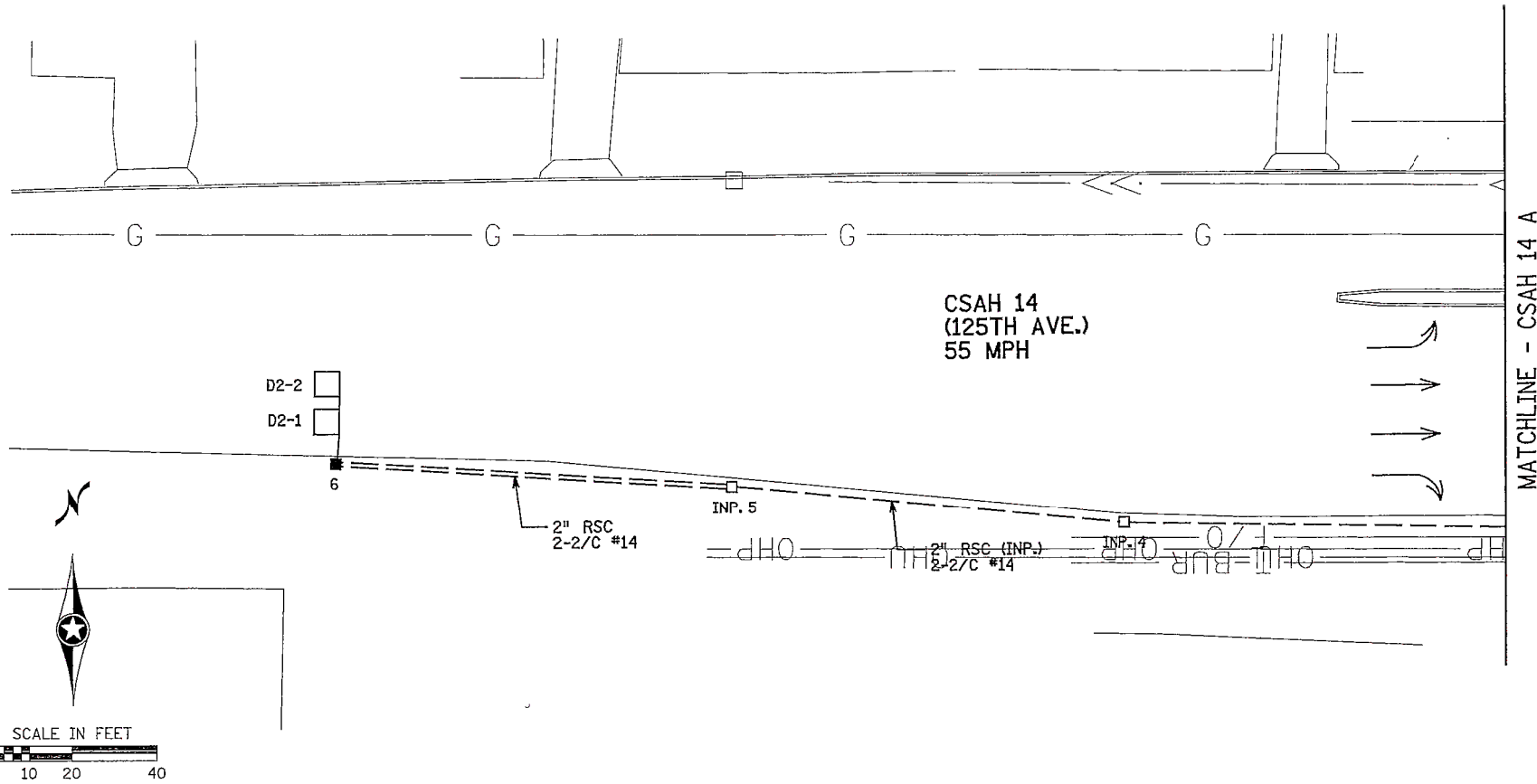
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 2-PED PUSH BUTTONS AND SIGNS  
 1 1/4" RSC INTO HH 8:  
 2-2/C #14

⑤ PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)  
 4-ONE WAY SIGNALS-OVERHEAD (0', 0', 17', AND 29' FROM END OF MAST ARM)  
 2-ONE WAY SIGNALS MOUNTED AT 90°, 180°  
 3" RSC INTO HH 13:  
 3-12/C #14  
 1-3/C #14 (EVP)  
 1-3/C #14 (LUM)  
 1-3/C #20 (EVP)  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 8 & 3) (EVP)  
 LUMINAIRE - 250 WATT HPS  
 TYPE D SIGN PANEL-OVERHEAD (125TH AVE. NE)

⑥ PEDESTRIAN PUSH BUTTON STATION  
 1-PED PUSH BUTTON AND SIGN  
 1 1/4" RSC INTO HH 14:  
 1-2/C #14

⑦ PA100 POLE FOUNDATION  
 TYPE PA100-A-55-D40-9 (DAVIT AT 350°)  
 4-ONE WAY SIGNALS-OVERHEAD (0', 0', 11', AND 23' FROM END OF MAST ARM)  
 2-ONE WAY SIGNALS MOUNTED AT 90°, 180°  
 LUMINAIRE - 250 WATT HPS  
 3" RSC INTO HH 20:  
 3-12/C #14  
 1-3/C #14 (EVP)  
 1-3/C #14 (LUM)  
 1-3/C #20 (EVP)  
 1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2 & 5) (EVP)  
 TYPE D SIGN PANEL-OVERHEAD (RADISSON ROAD)

⑧ PEDESTRIAN PUSH BUTTON STATION  
 1-PED PUSH BUTTON AND SIGN  
 1 1/4" RSC INTO HH 20:  
 1-2/C #14



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

DESIGN TEAM			
DRAWN BY:	BDJ		
DESIGNER:	JMG		
CHECKED BY:	JEO		
NO.	BY	DATE	REVISIONS



CITY OF BLAINE, MN.  
 CSAH 14  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

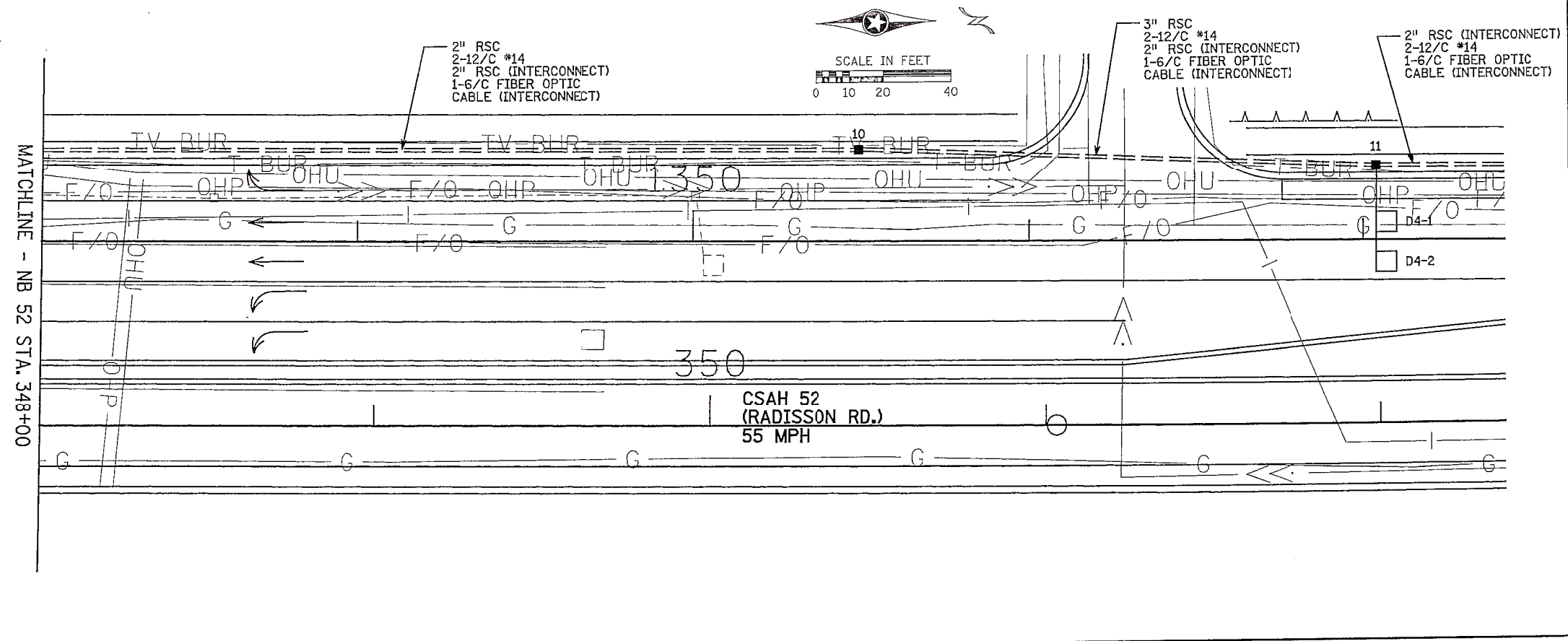
INPLACE SIGNAL SYSTEM "A"  
 "FOR INFORMATION ONLY"  
 CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)

FILE NO. 126669	154
SG23 OF SG25	196

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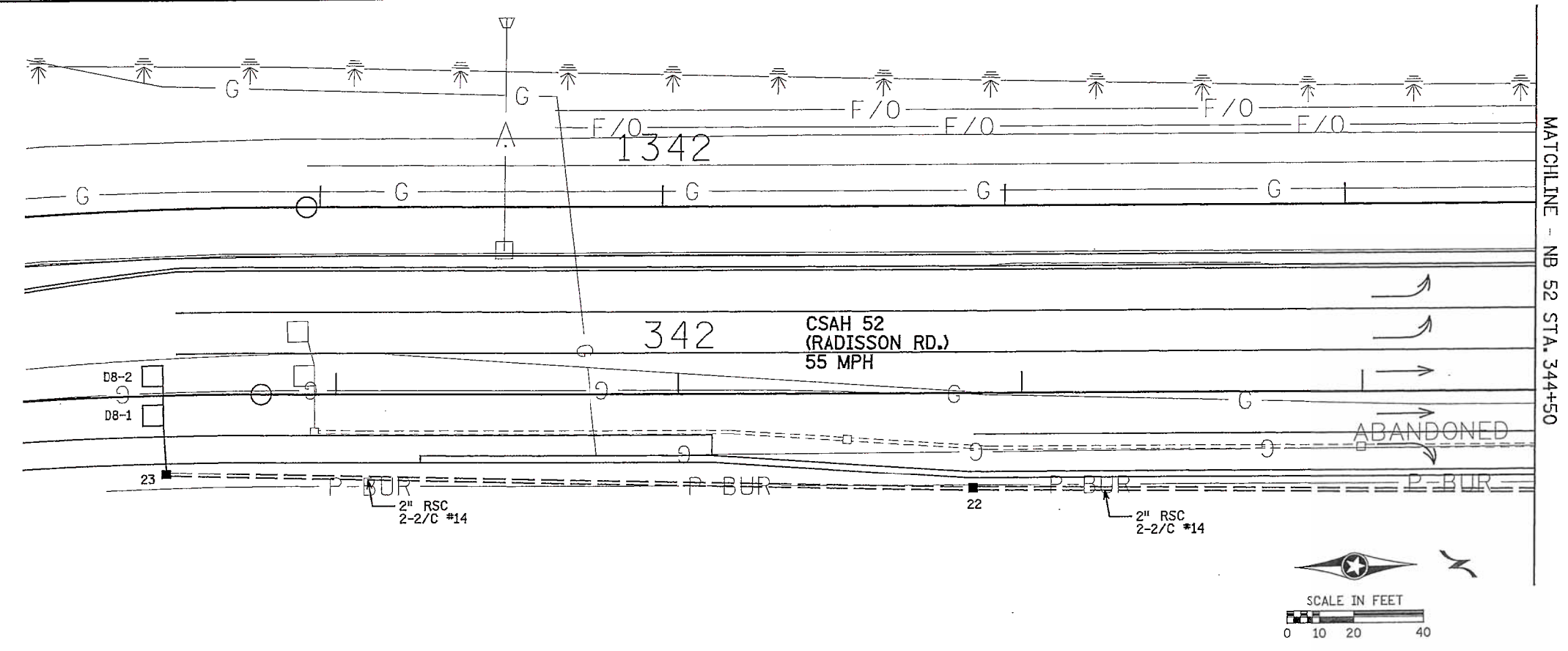
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**NOTES:**

- 1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS, COUNTDOWN PEDESTRIAN INDICATIONS, LED INDICATIONS, AND PAINTING OF SIGNAL SYSTEM.
- 2) THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- 4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F&I 6' FROM THE END OF MAST ARM.
- 5) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION.
- 6) THE CONTRACTOR SHALL LOCATE AND VERIFY INPLACE UTILITIES PRIOR TO COMMENCING WORK.
- 7) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCIDENTAL).
- 8) EACH PEDESTRIAN INDICATION SHALL BE LED, ONE SECTION "FILLED" HAND/WALKING PERSON INDICATION.
- 9) ALL MAST ARM AND POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS AND SPECIAL PROVISIONS.
- 10) LOOP DETECTOR WIRES SHALL CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" NMC. SEE SPECIAL PROVISIONS.
- 11) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
- 12) (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 13) EXISTING TRAFFIC SIGNAL TO REMAIN IN OPERATION DURING CONSTRUCTION. SEE CONSTRUCTION STAGING PLAN FOR MORE DETAILS.
- 14) UNLESS OTHERWISE NOTED, ALL SIGNAL COMPONENTS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. SEE SPECIAL PROVISIONS.
- 15) EXISTING ABOVE GROUND SIGNAL COMPONENTS NOT RE-USED IN NEW SIGNAL SHALL BE SALVAGED TO THE COUNTY. UNDERGROUND SIGNAL COMPONENTS SHALL BE PROPERLY DISPOSED OR ABANDONED IN PLACE. SEE SPECIAL PROVISIONS.
- 16) (INTERCONNECT) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

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

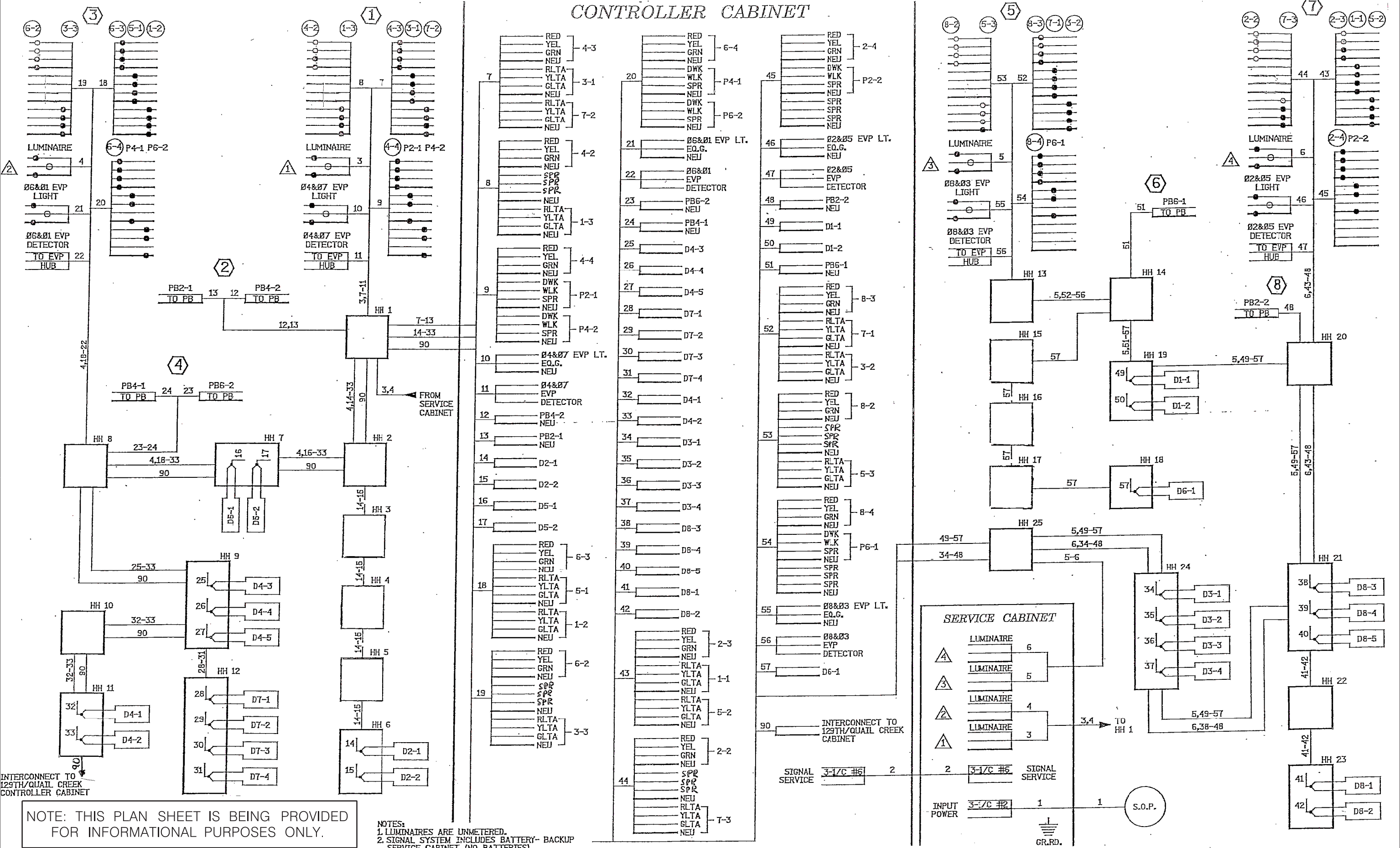


CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

**INPLACE SIGNAL SYSTEM "A"**  
**"FOR INFORMATION ONLY"**  
 CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)

FILE NO. 126669  
**155**  
 SG24  
 OF SG25  
**196**

# CONTROLLER CABINET



NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

NOTES:  
 1. LUMINAIRES ARE UNMETERED.  
 2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (NO BATTERIES).

DESIGN TEAM				
DRAWN BY:	BDY			
DESIGNER:	JMG			
CHECKED BY:	JEO			
NO.	BY	DATE	REVISIONS	



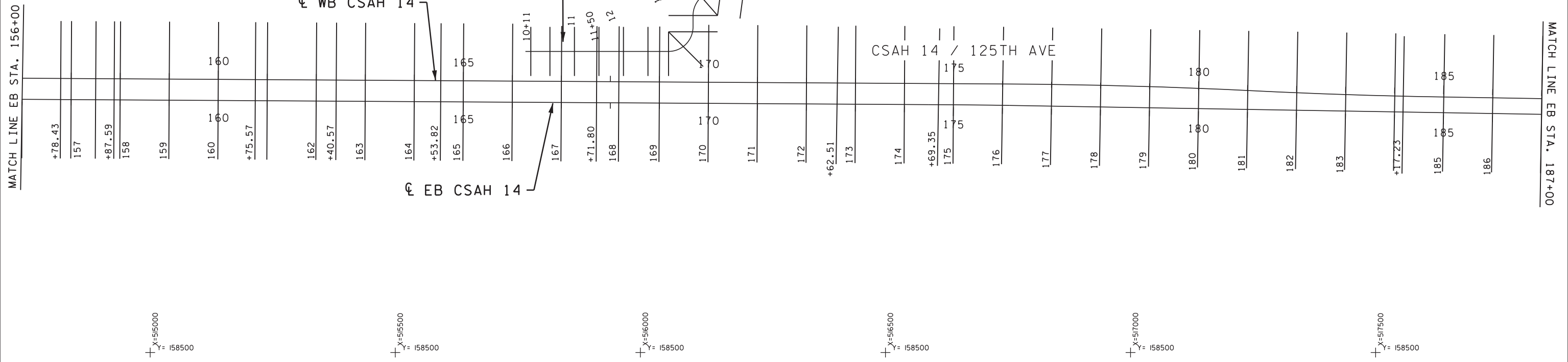
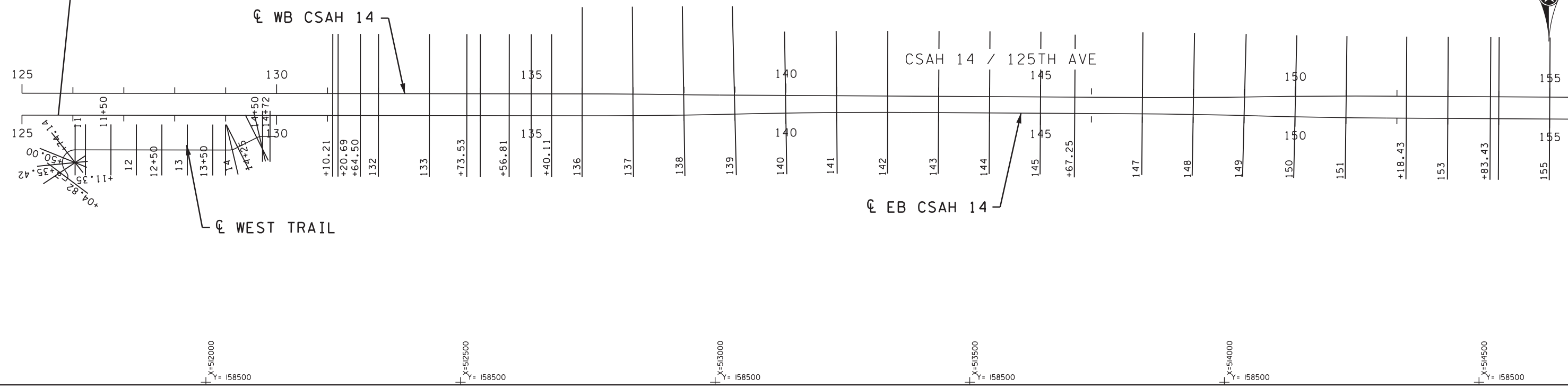
CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032, S.A.P. 106-137-001

**INPLACE SIGNAL SYSTEM "A"**  
 "FOR INFORMATION ONLY"  
 CSAH 14 (125TH AVE NE) AT CSAH 52 (RADISSON ROAD)

FILE NO. 126669  
**156**  
 SG25 OF SG25  
**196**

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BEGIN S.A.P. 002-614-039  
S.A.P. 106-020-032  
EB CSAH 14 STA. 125+71.35



DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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.

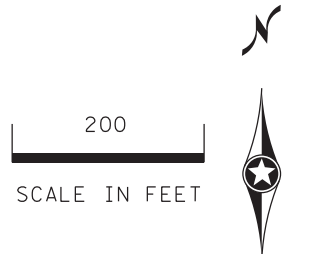
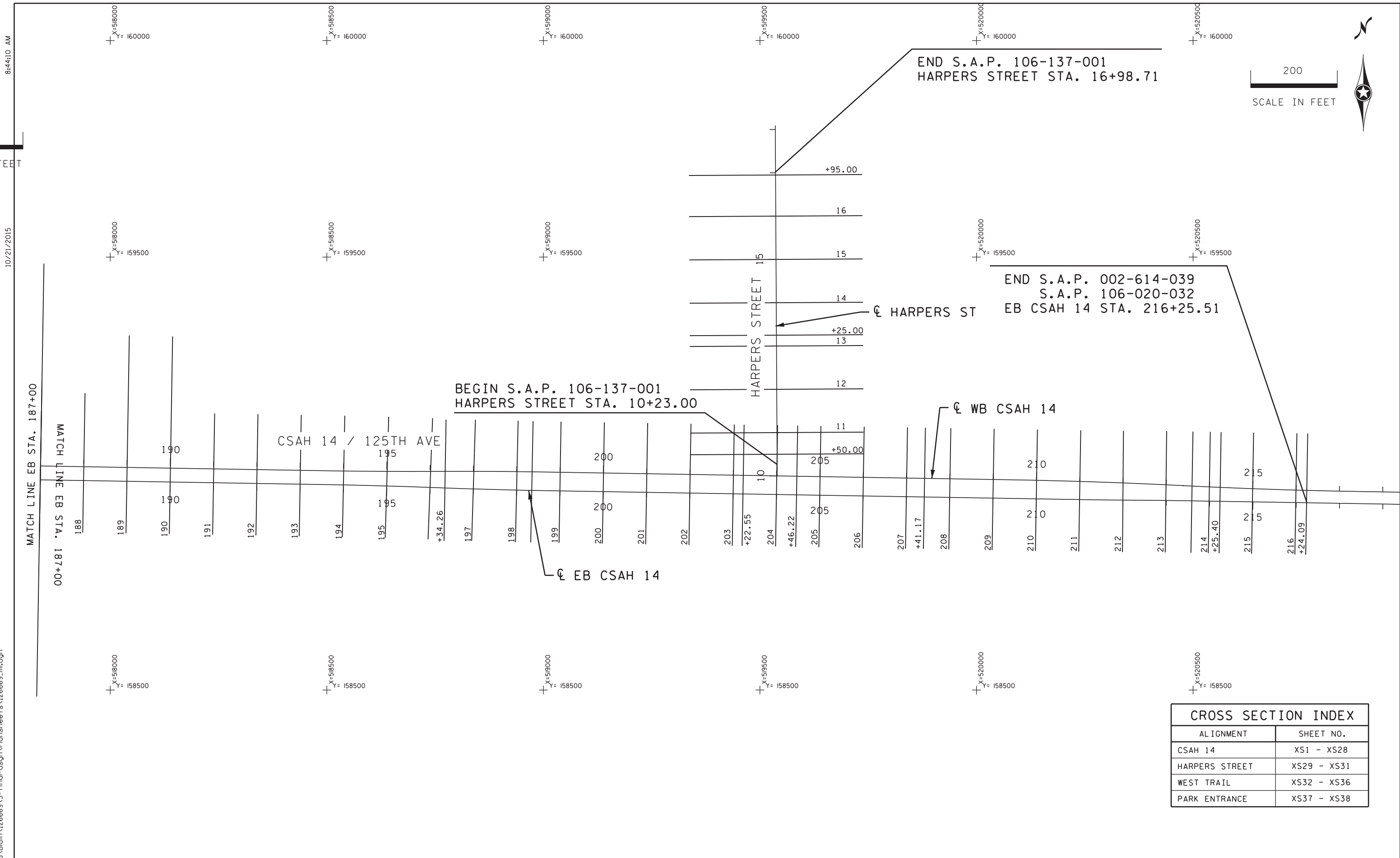
Certified By: *Jason E. Owens* Lic. No. 43475  
Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P. 106-020-032,  
S.A.P. 106-137-001

**MATCHLINE LAYOUT**  
CSAH 14 (125TH AVE) STA 131+10 TO 187+00

FILE NO.	126669	157 196
ML 1 OF ML2		



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 10/21/2015  
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CROSS SECTION INDEX	
ALIGNMENT	SHEET NO.
CSAH 14	XS1 - XS28
HARPERS STREET	XS29 - XS31
WEST TRAIL	XS32 - XS36
PARK ENTRANCE	XS37 - XS38

DESIGN TEAM			
DRAWN BY:	CIF		
DESIGNER:	JEO		
CHECKED BY:	JEO		
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: *Jason E. Owens* Lic. No. 43475  
 Printed Name: JASON E. OWENS Date: 10/21/2015



CITY OF BLAINE, MN.  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-020-032,  
 S.A.P. 106-137-001

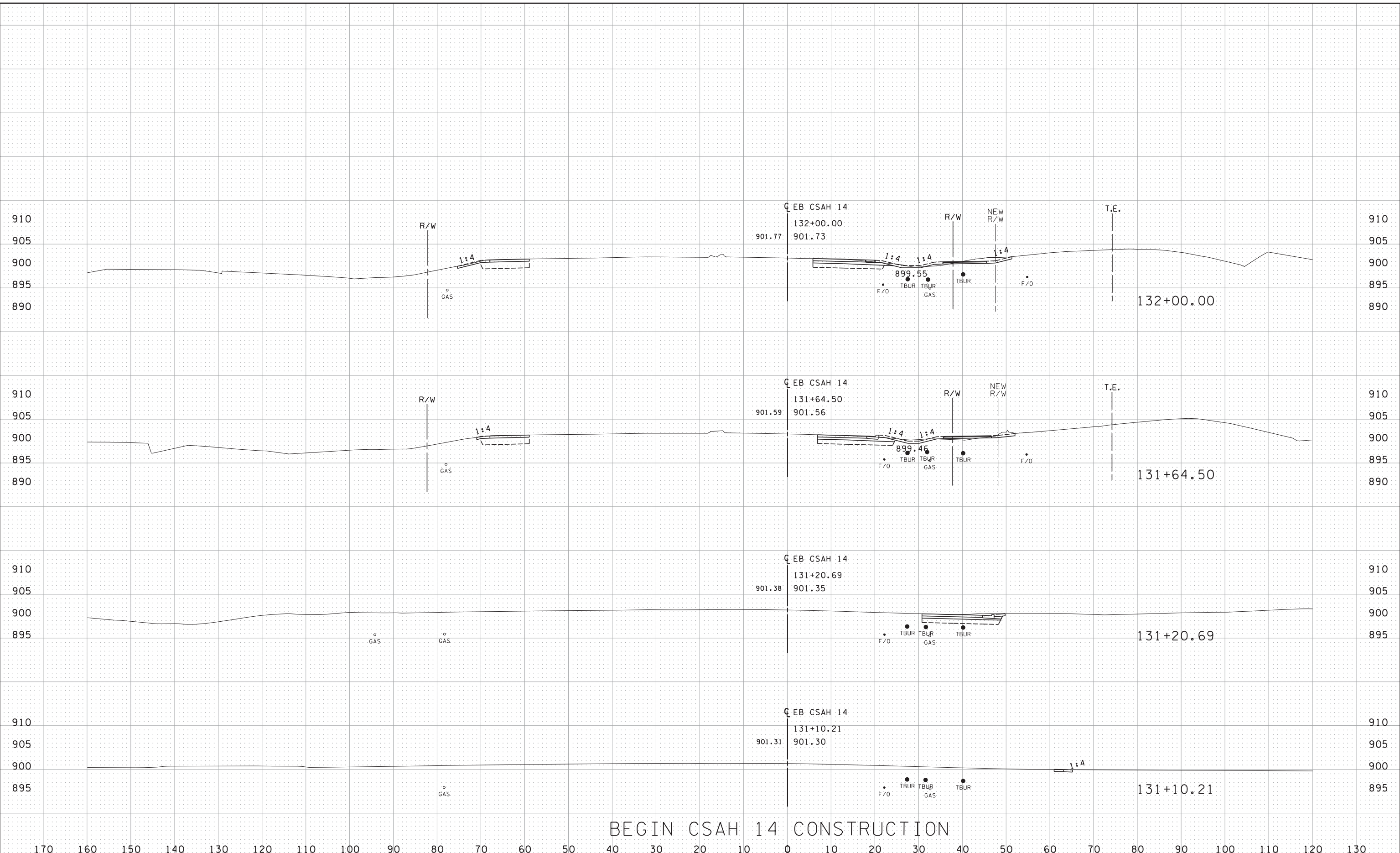
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 CSAH 14 (125TH AVE) STA 187+00 TO 216+25  
 HARPER'S STREET STA 10+50 TO 16+95

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ML 2 OF ML 2	

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BEGIN CSAH 14 CONSTRUCTION

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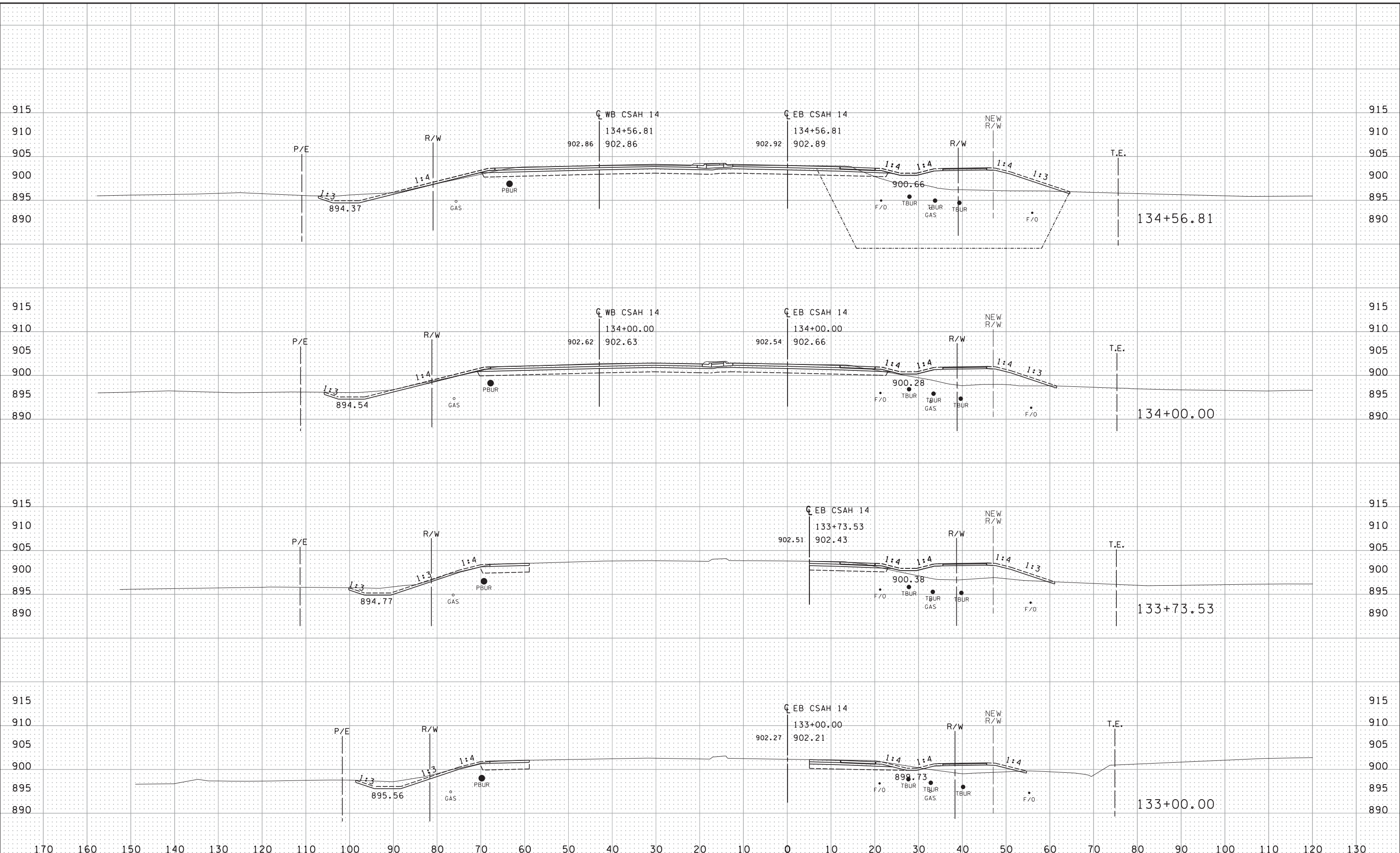
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	159
XS1 OF XS38	196

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CITY OF BLOOMINGTON  
**CSAH 14**

S. A. P. 002-61.4-032-61.4-39 106-41.37-006-020-032 106-020-032

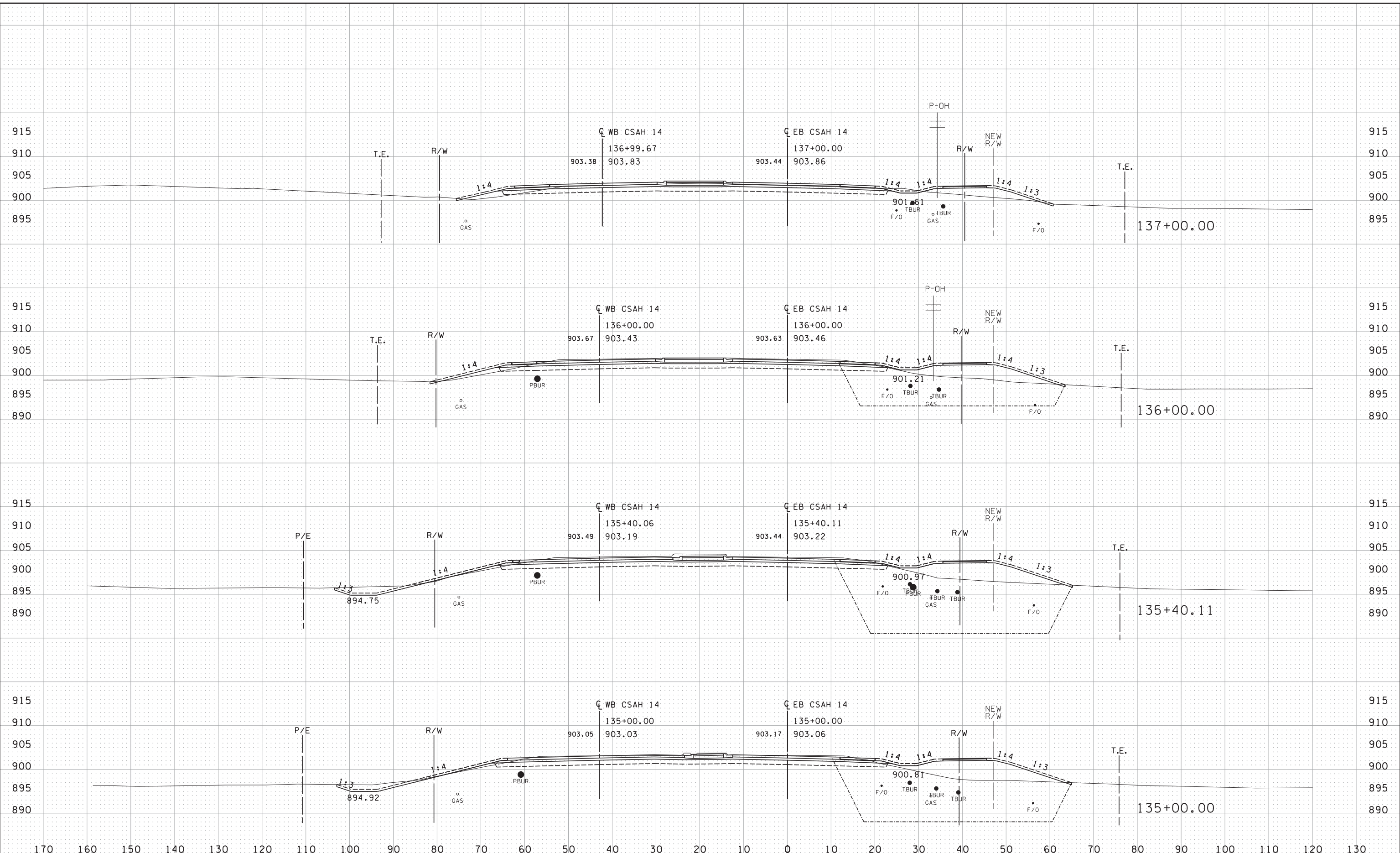
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XS2	196
OF XS38	



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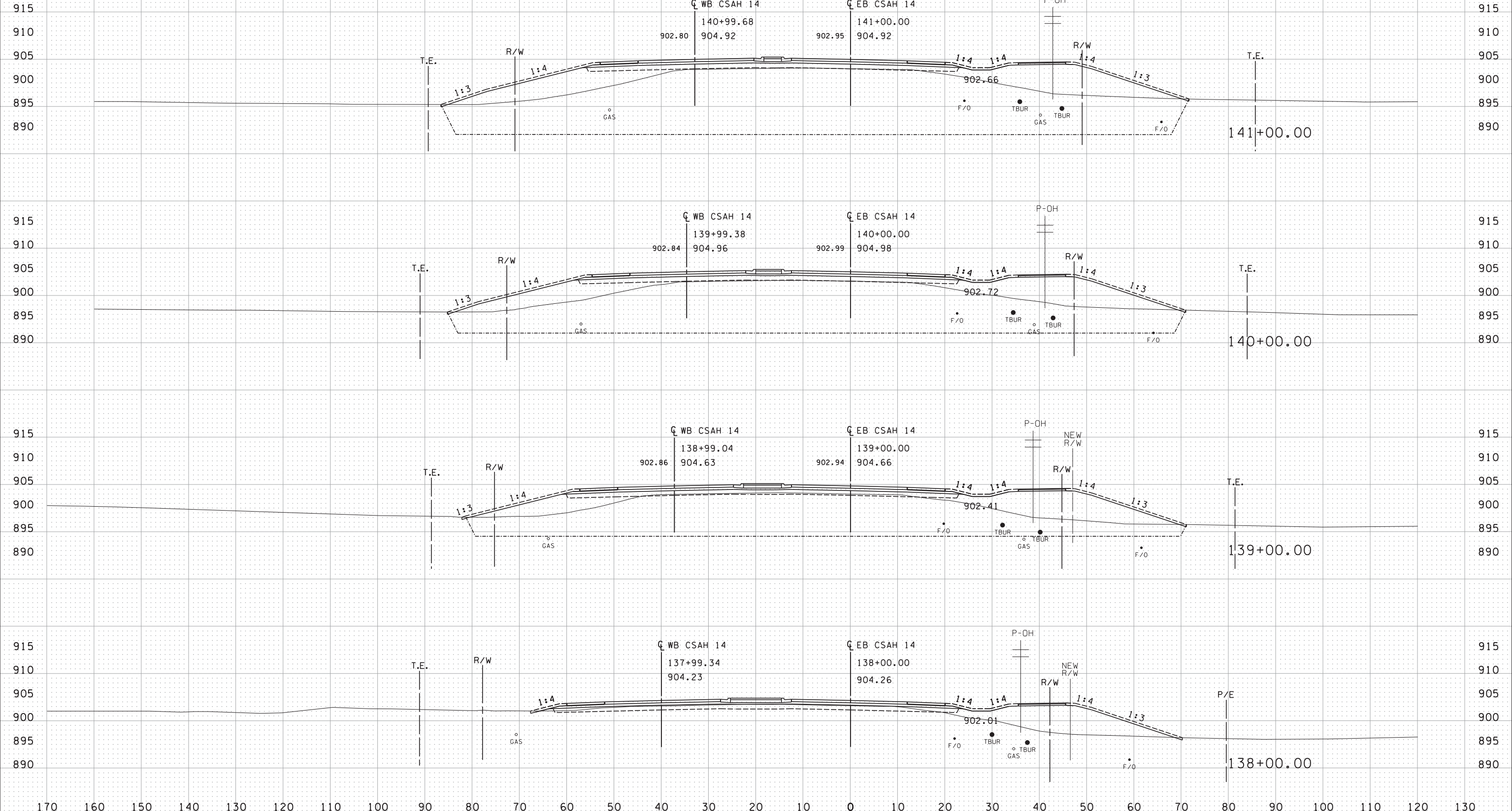

CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	161
XS3 OF XS38	196

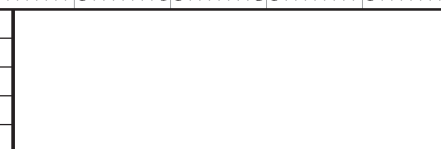
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DESIGNER:	JEO			
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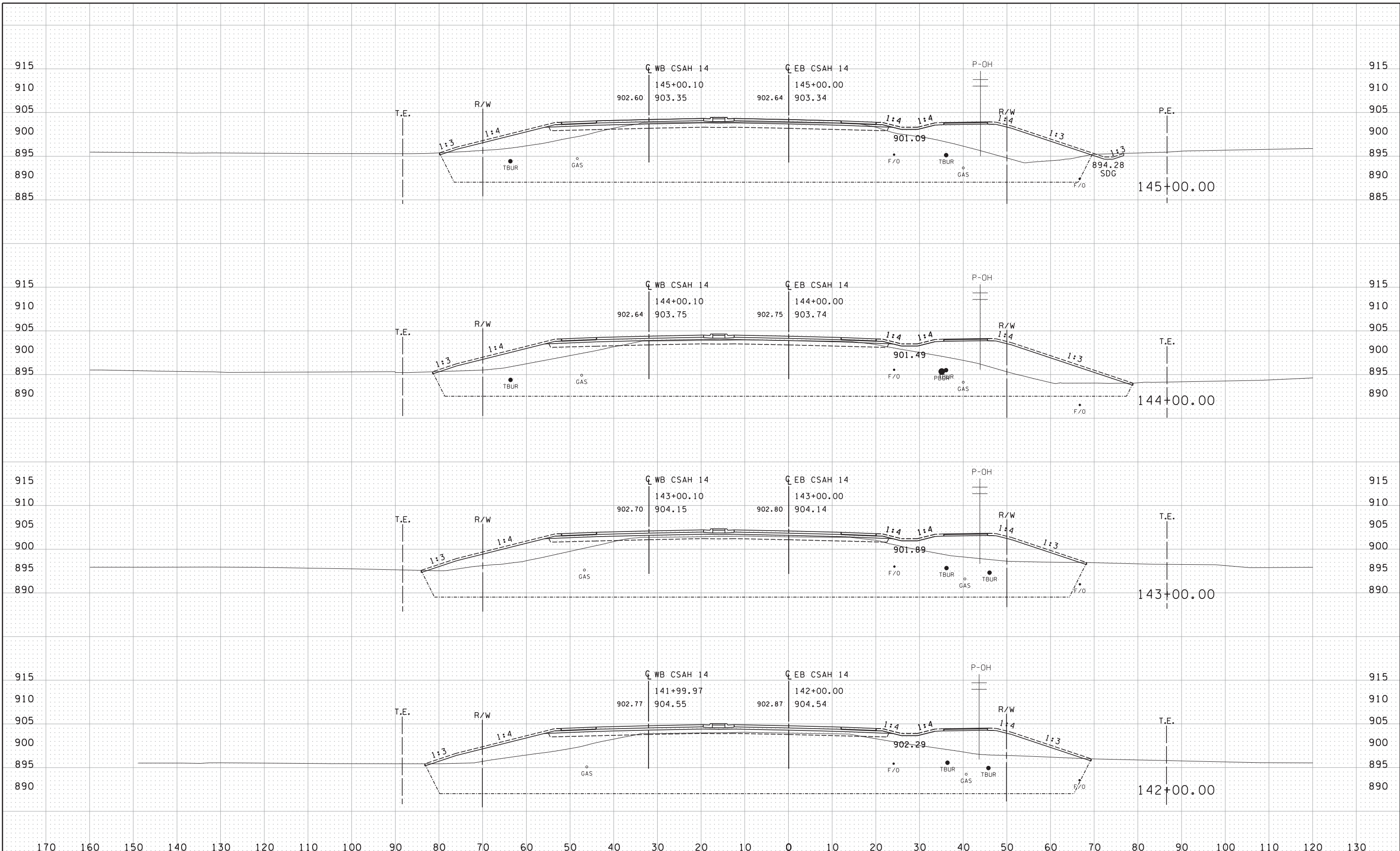
**CITY OF BLAINE, MN**  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO.	162
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OF XS38	

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DESIGNER: JEO				
CHECKED BY: JEO				
NO.	BY	DATE	REVISIONS	



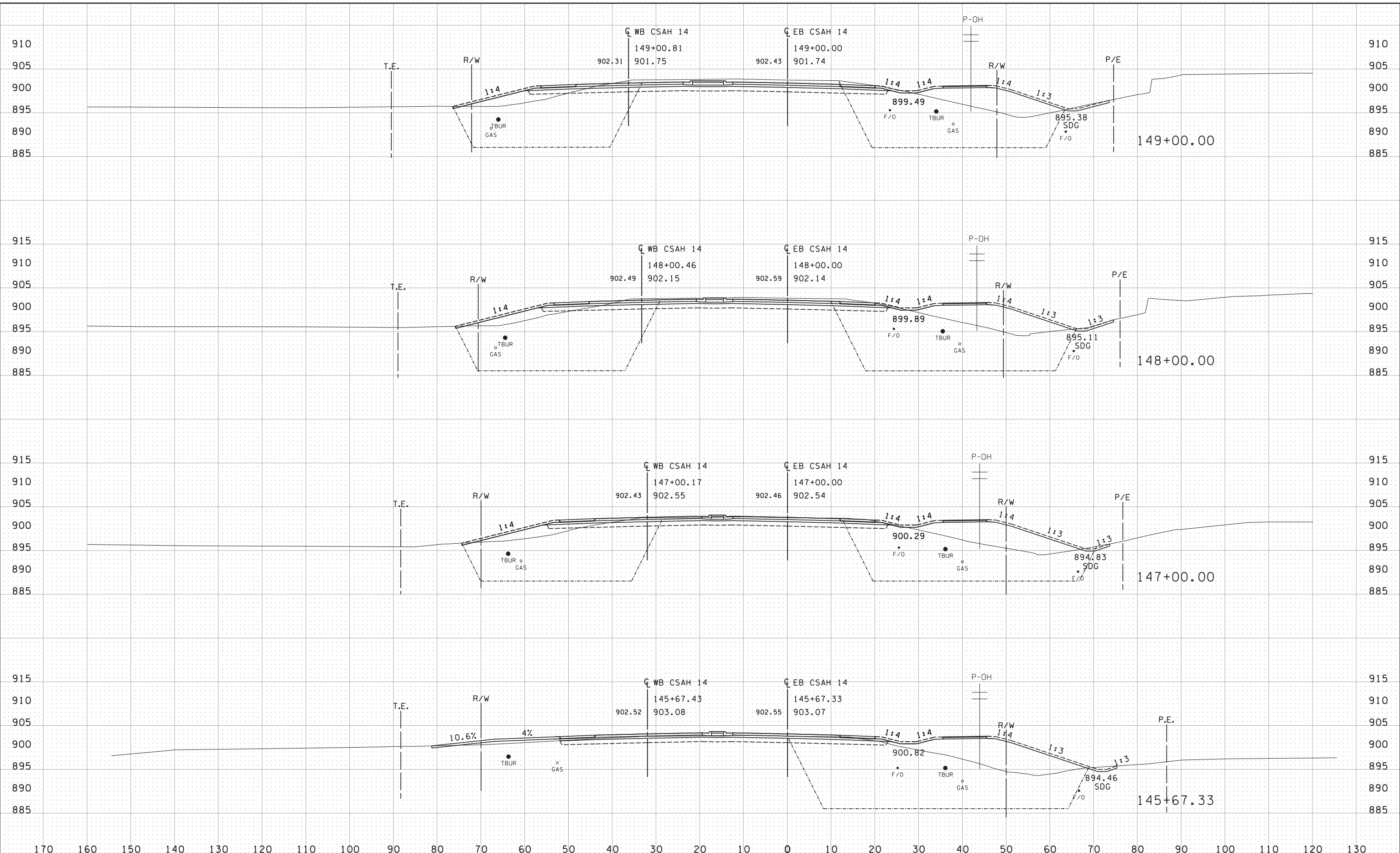
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	163
XS5 OF XS38	196

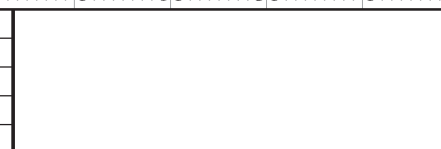
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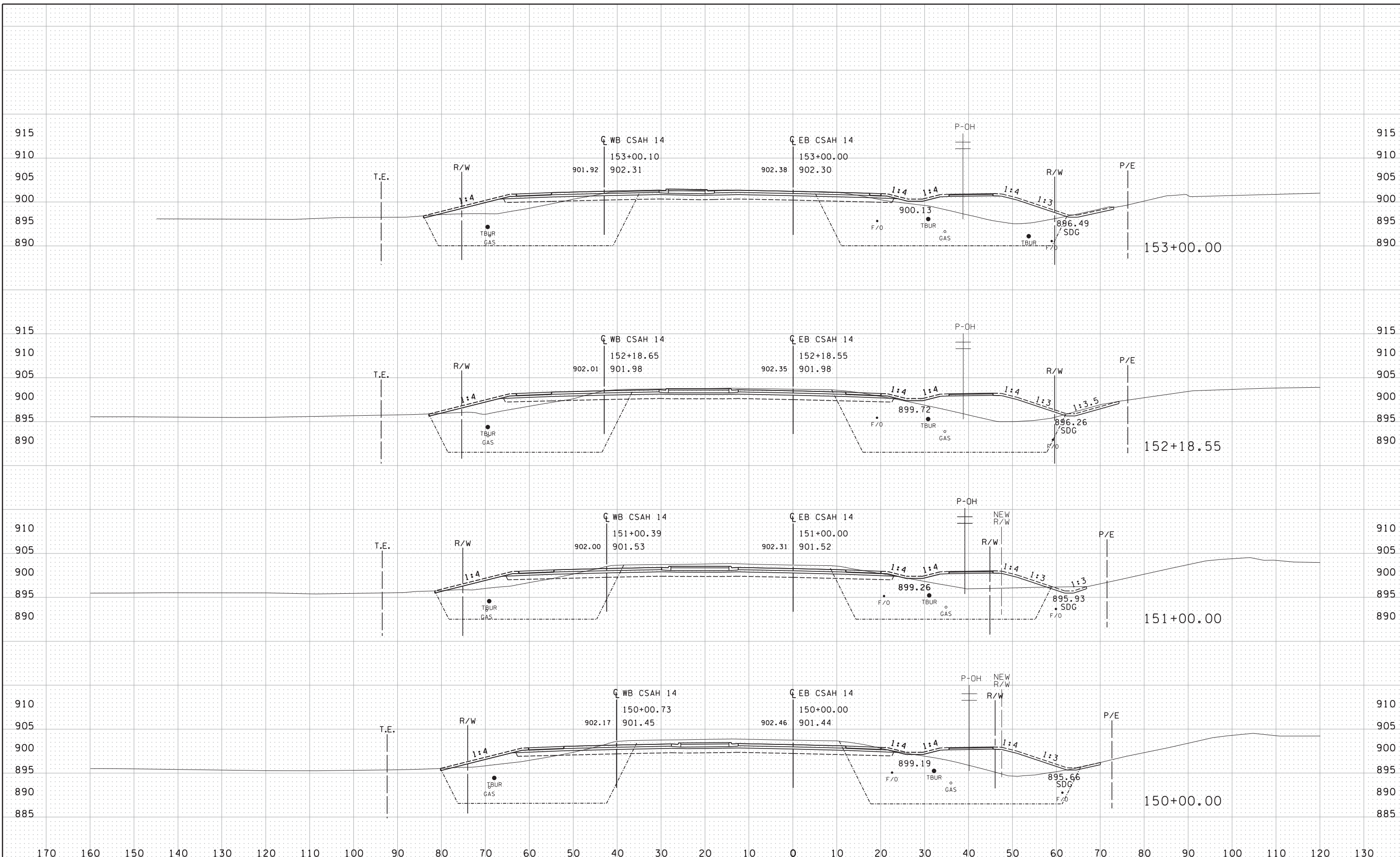
CITY OF BLAINE, MN  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	164
XS6 OF XS38	196

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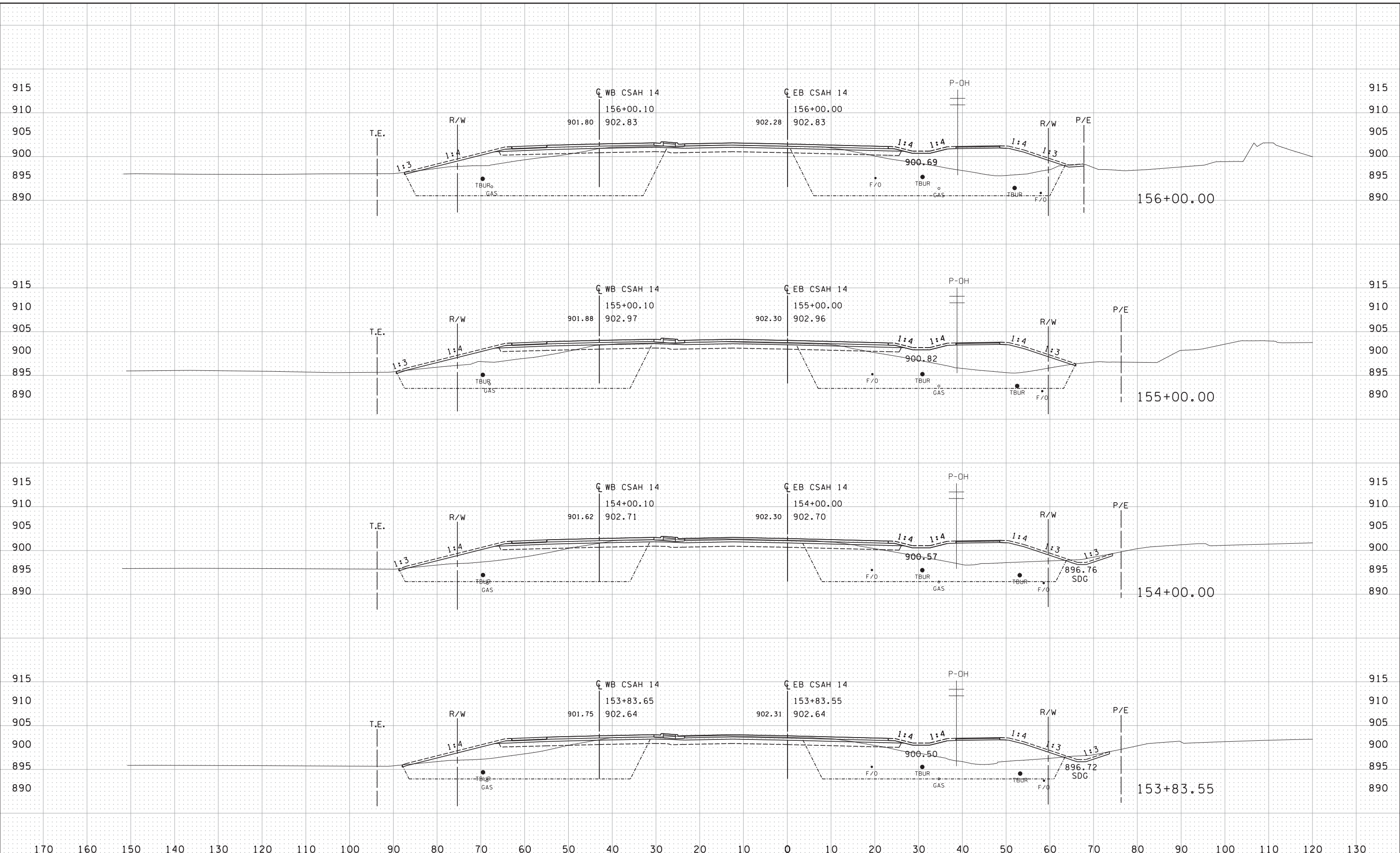
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	165
XS7 OF XS38	196

8:17:52 AM

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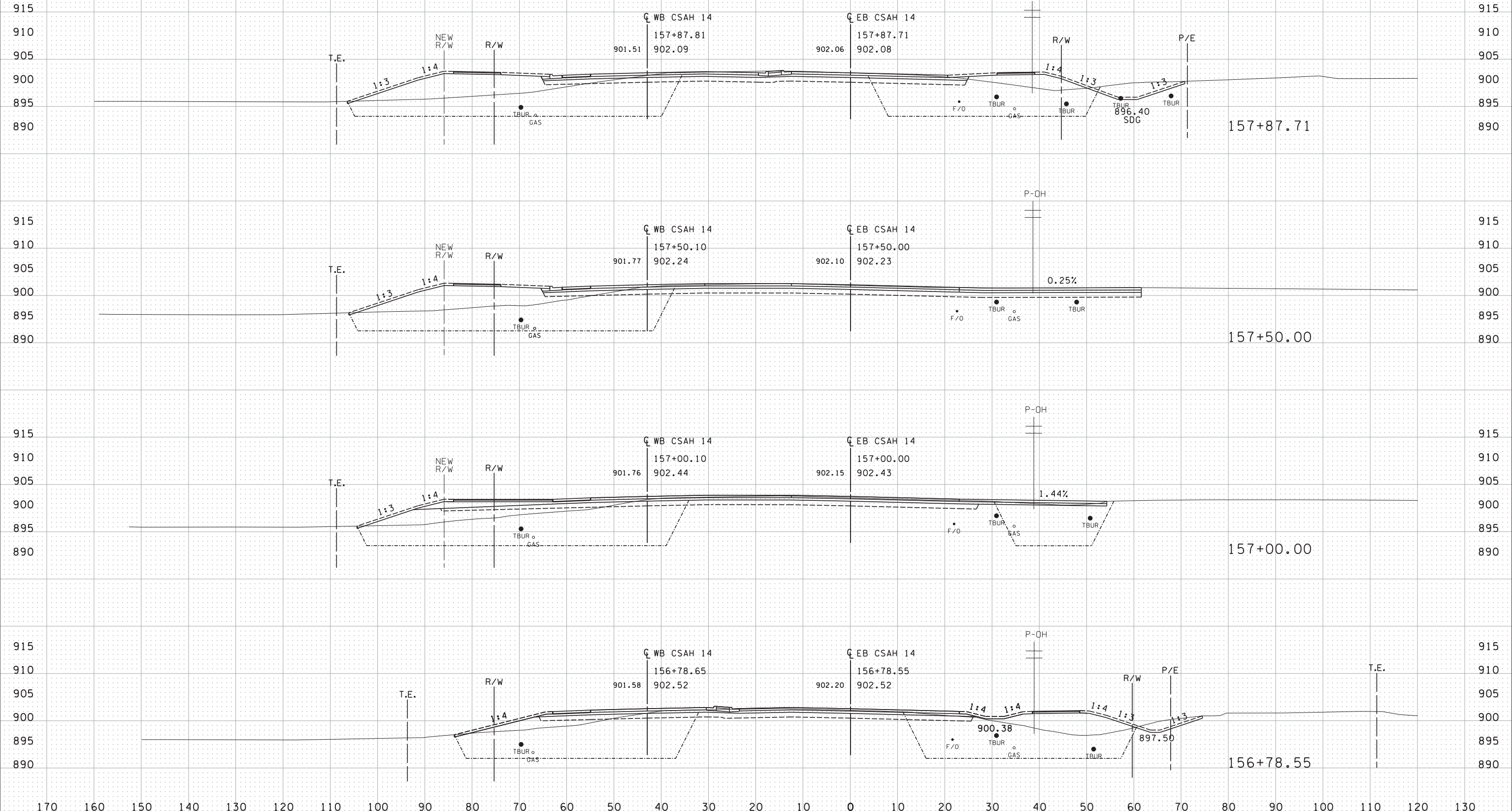
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	166
XS8 OF XS38	196

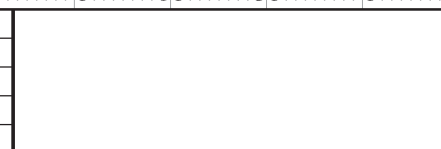
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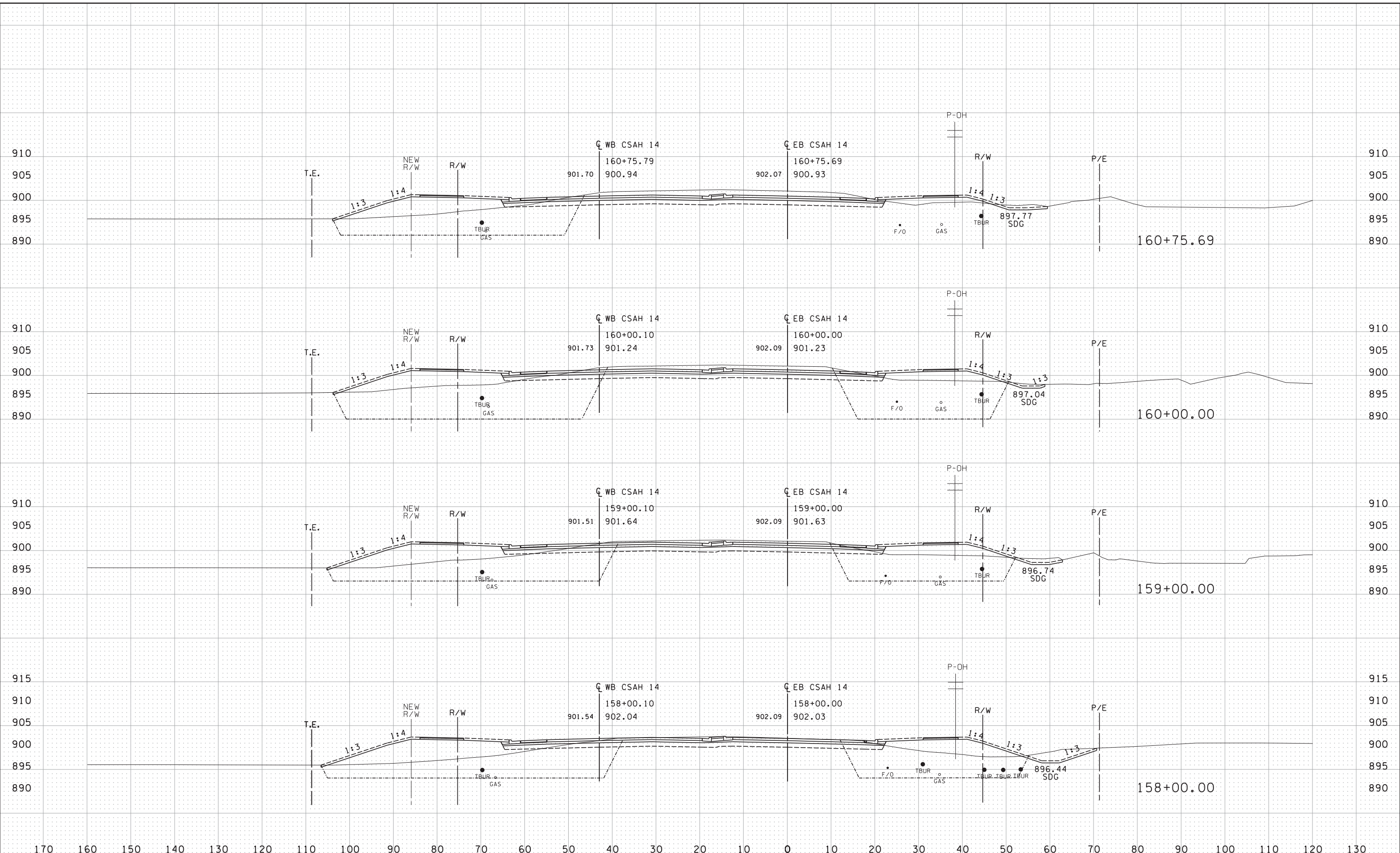
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	167
XS9 OF XS38	196

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CSAH 14

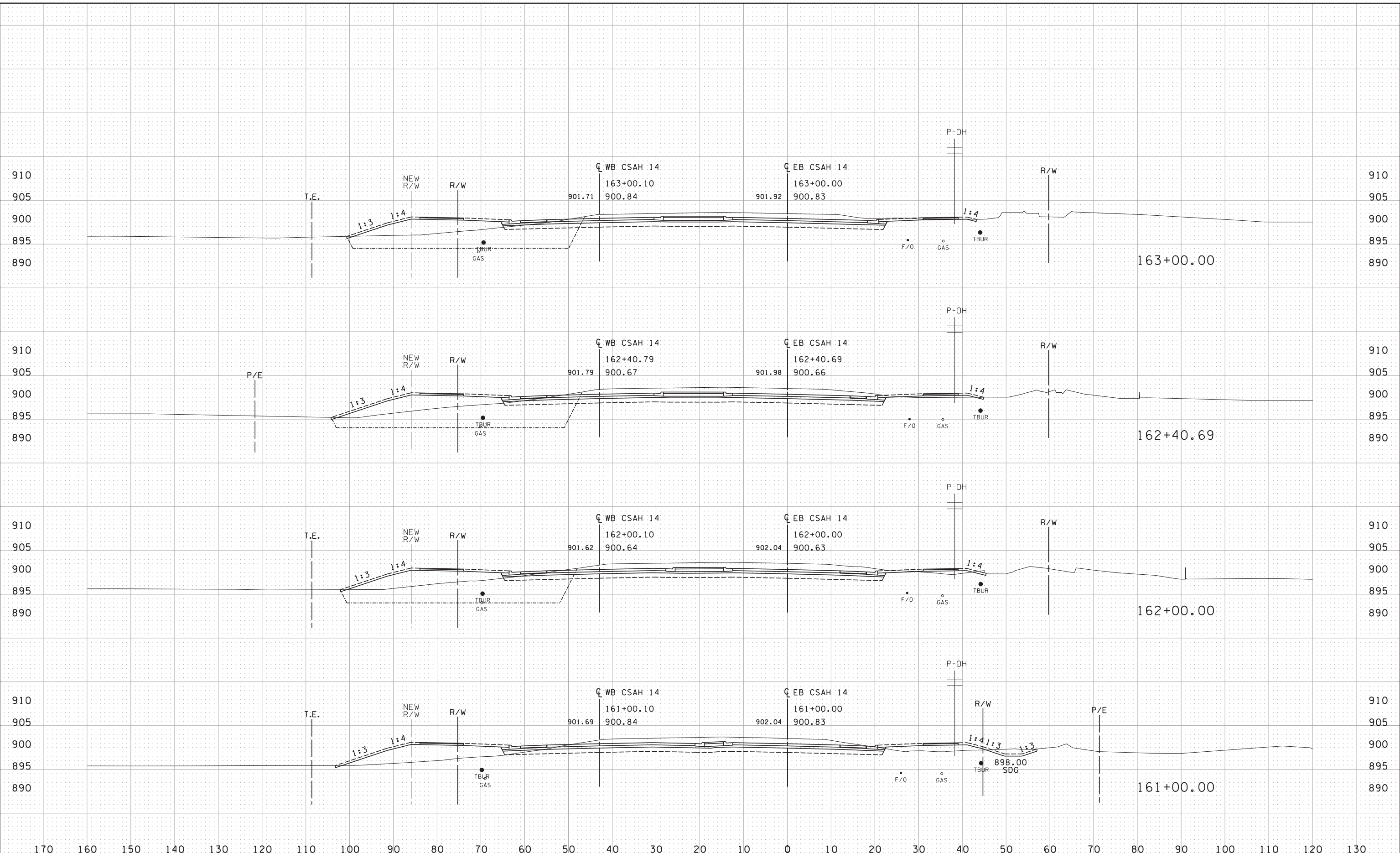
FILE NO. BLAIN26669	168
XS10 OF XS38	196



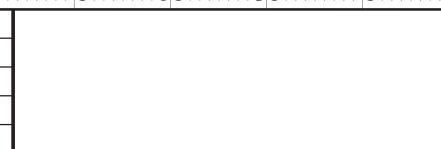
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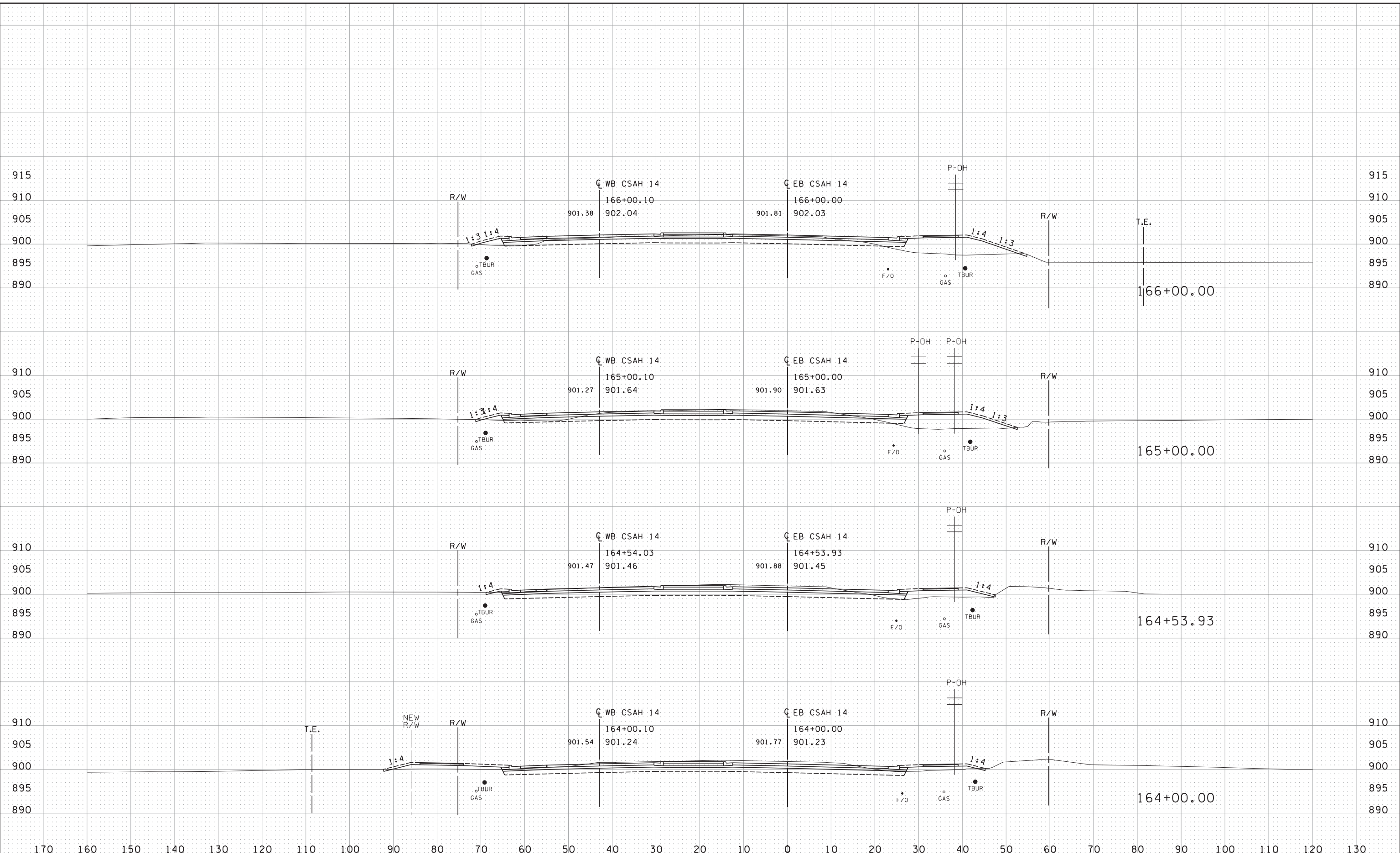


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CSAH 14

FILE NO. BLAIN26669	169
XS11 OF XS38	196



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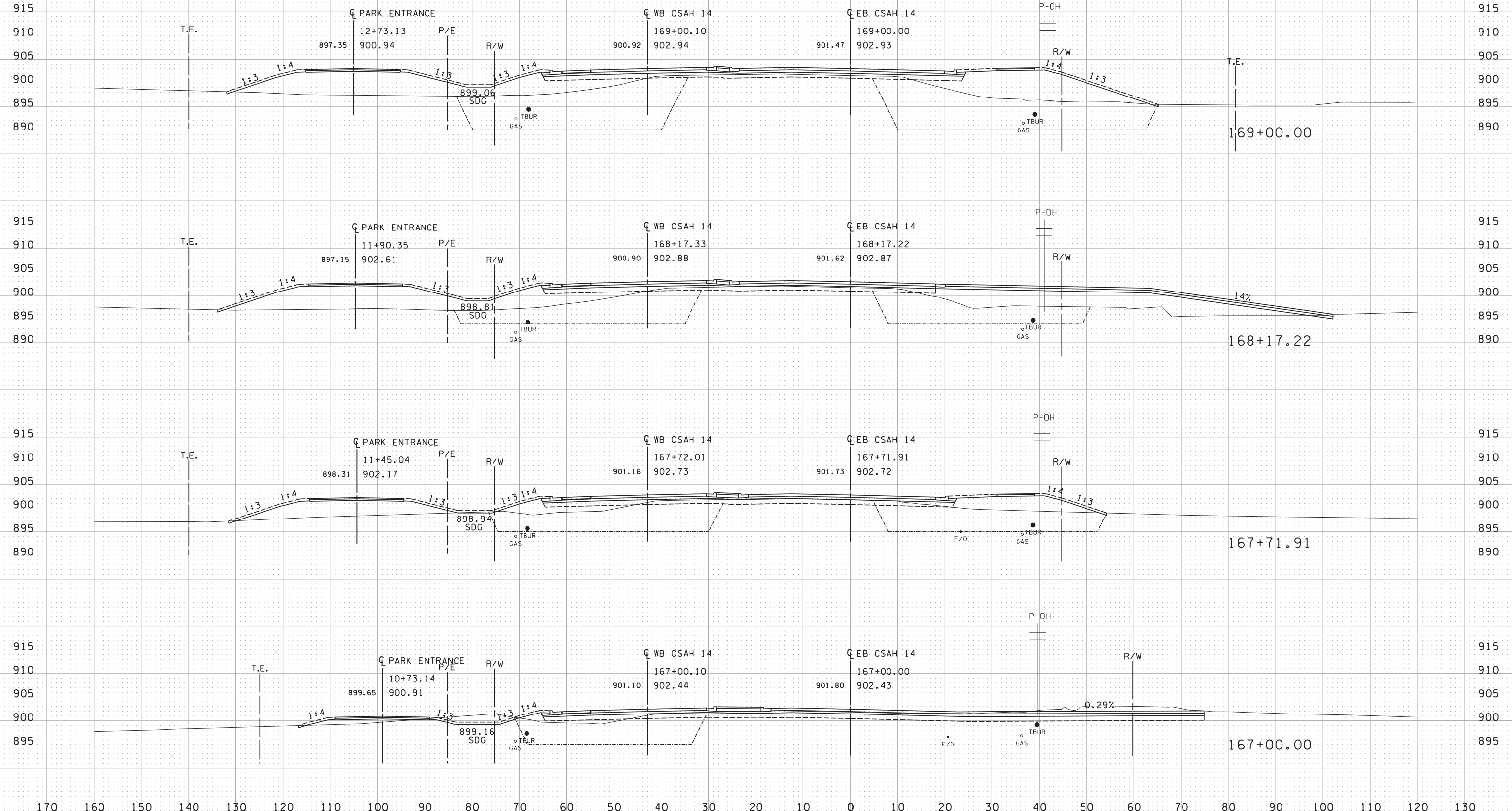
CSAH 14

FILE NO.	170
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XS12	196
OF XS38	

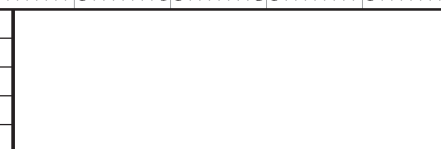
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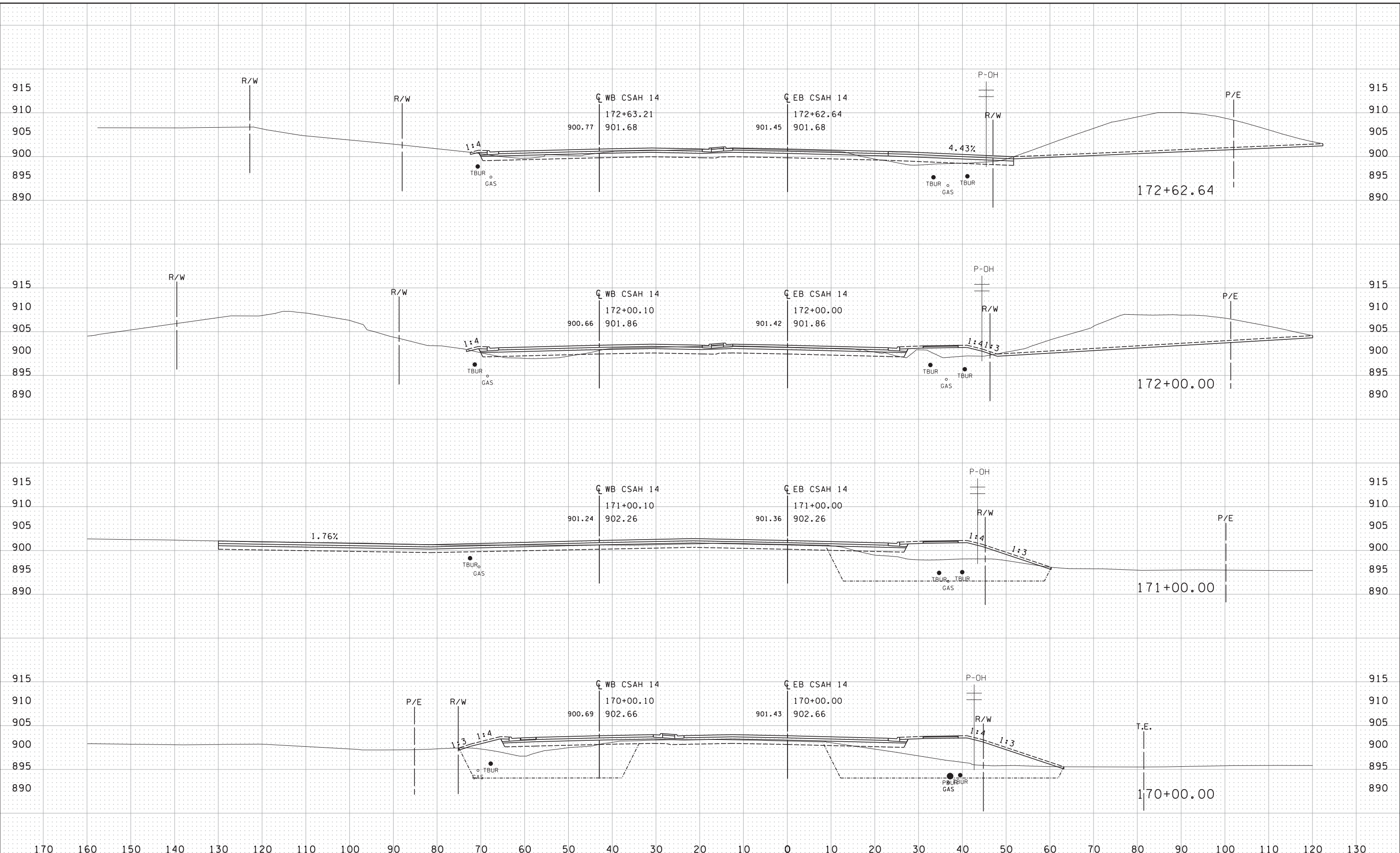
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO.	171
BLAIN26669	
XS13	196
OF XS38	

8/18/05 AM

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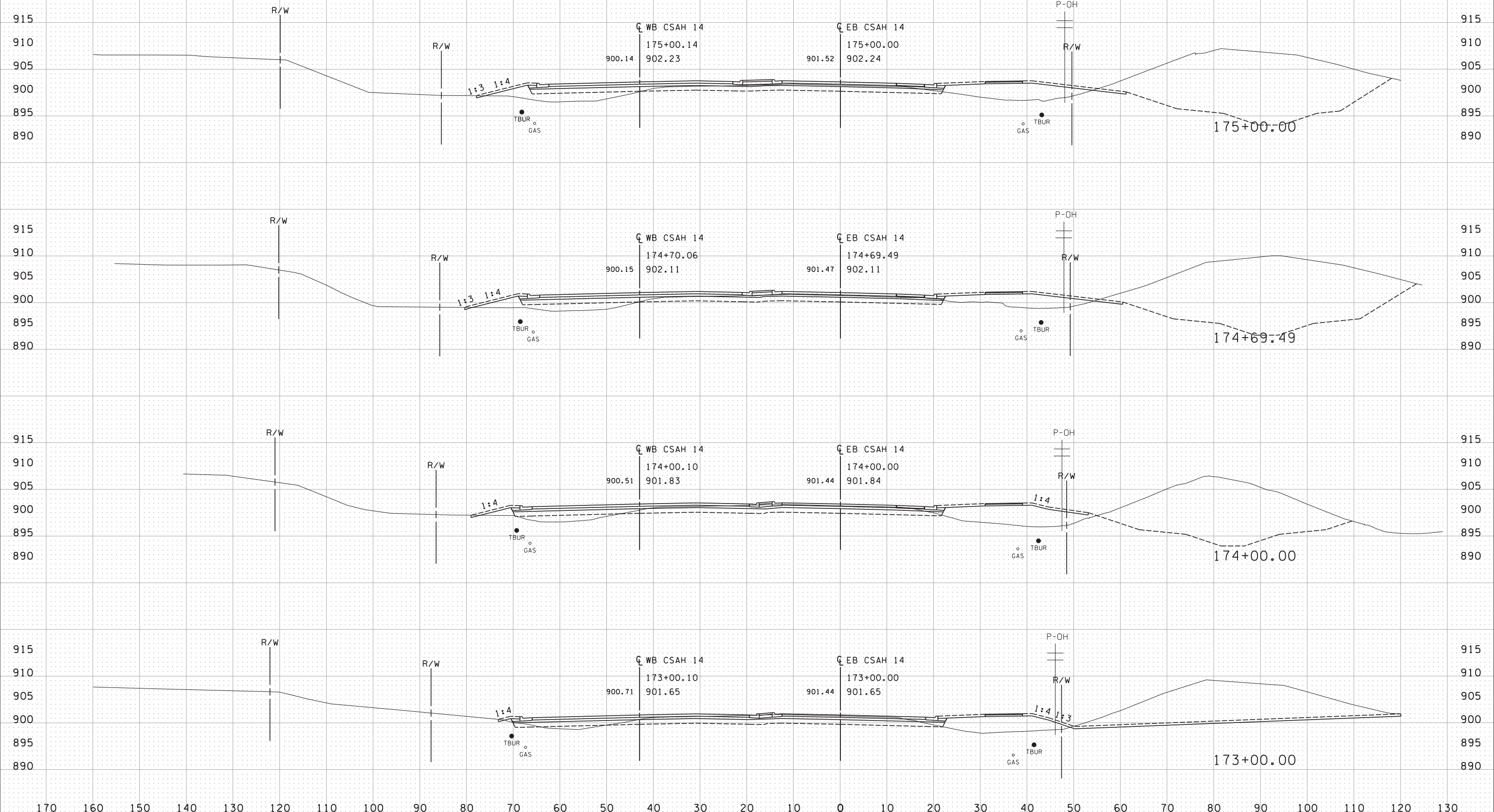
CITY OF BLAINE, MN  
**CSAH 14**  
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FILE NO.	172
BLAIN26669	
XS14	196
OF XS38	

8/18/07 AM

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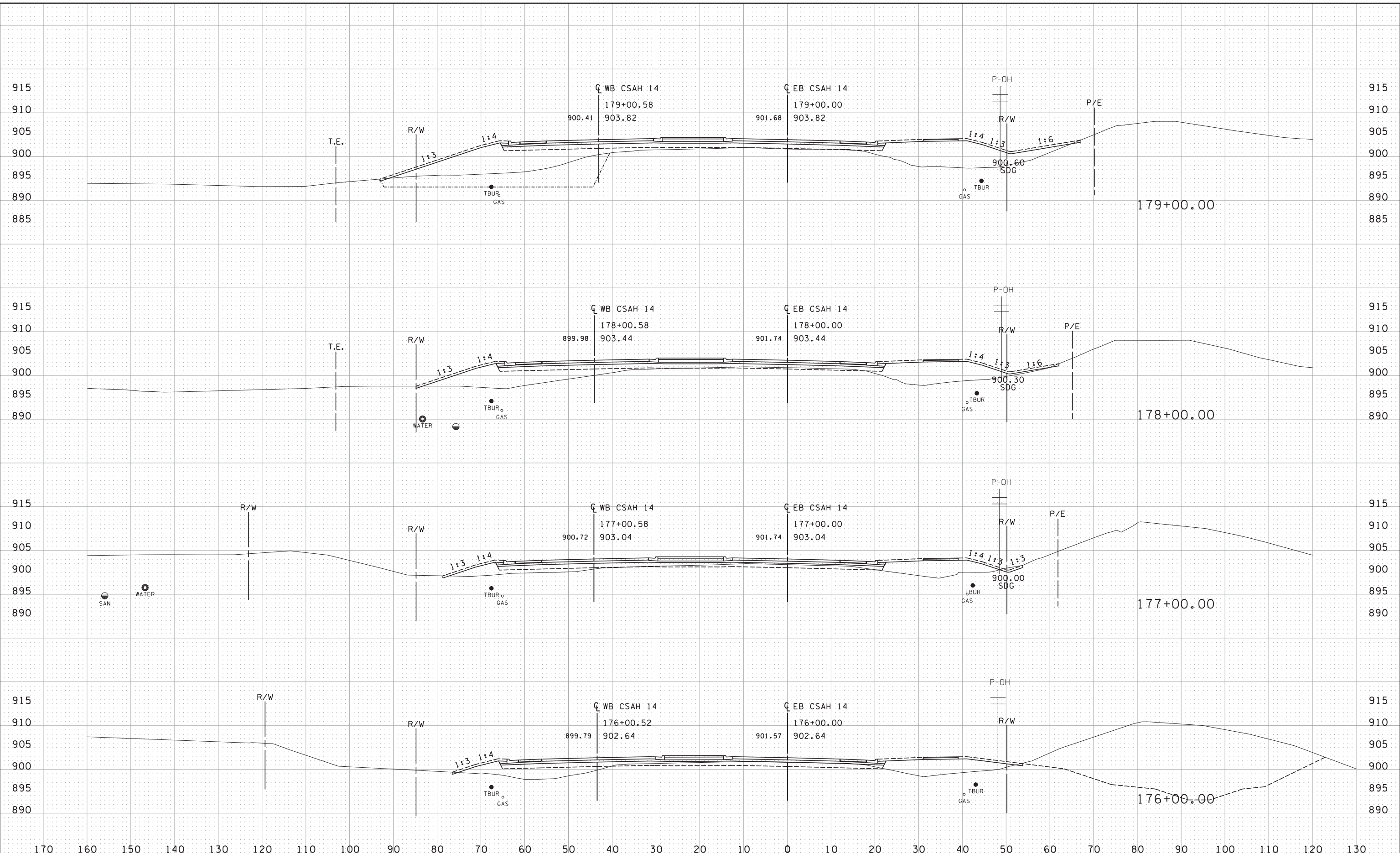
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO.	173
BLAIN26669	
XS15	196
OF XS38	

8/18/09 AM

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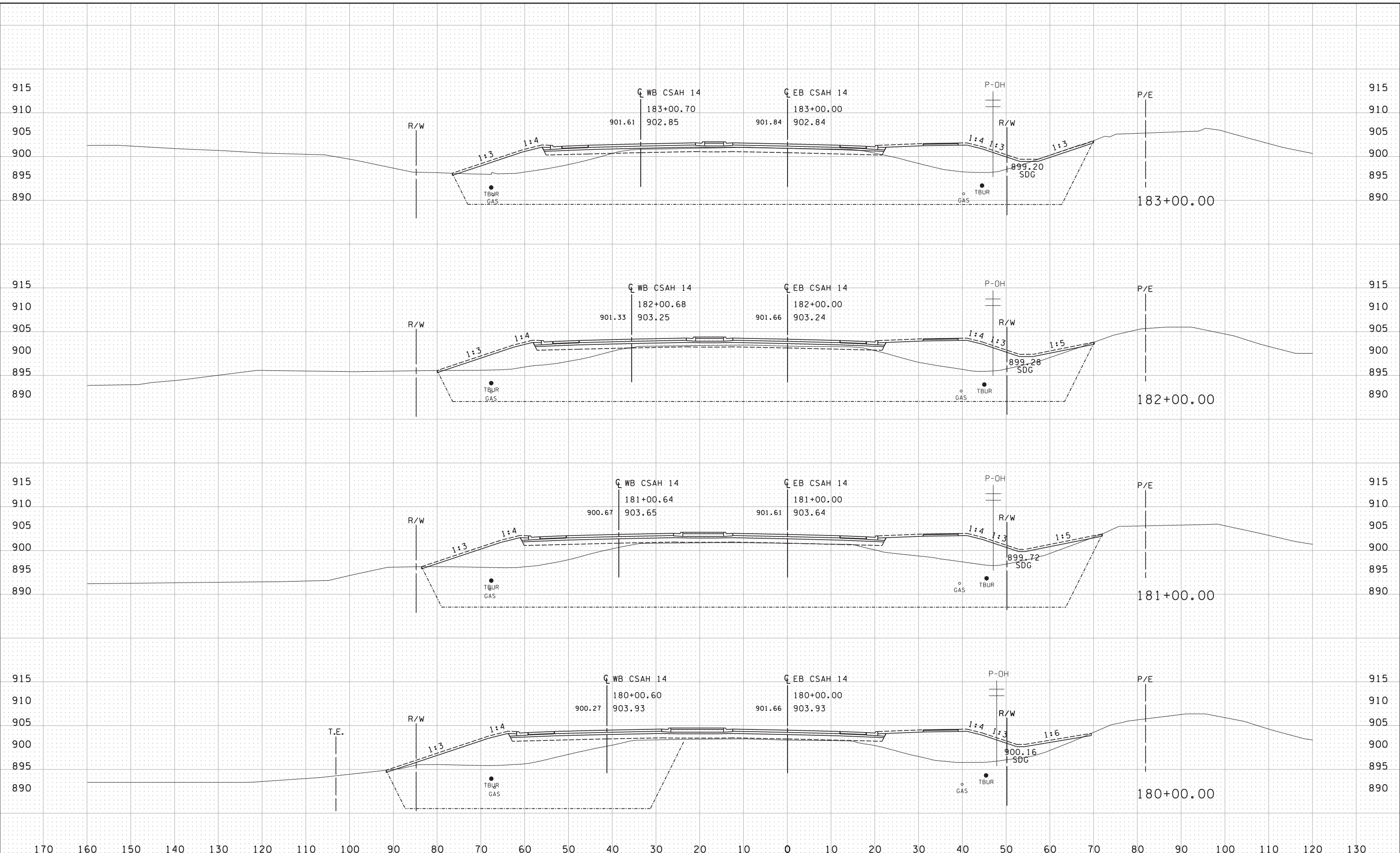
CITY OF BLAINE, MN  
**CSAH 14**  
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FILE NO.	174
BLAIN26669	
XS16	196
OF XS38	

8/18/11 AM

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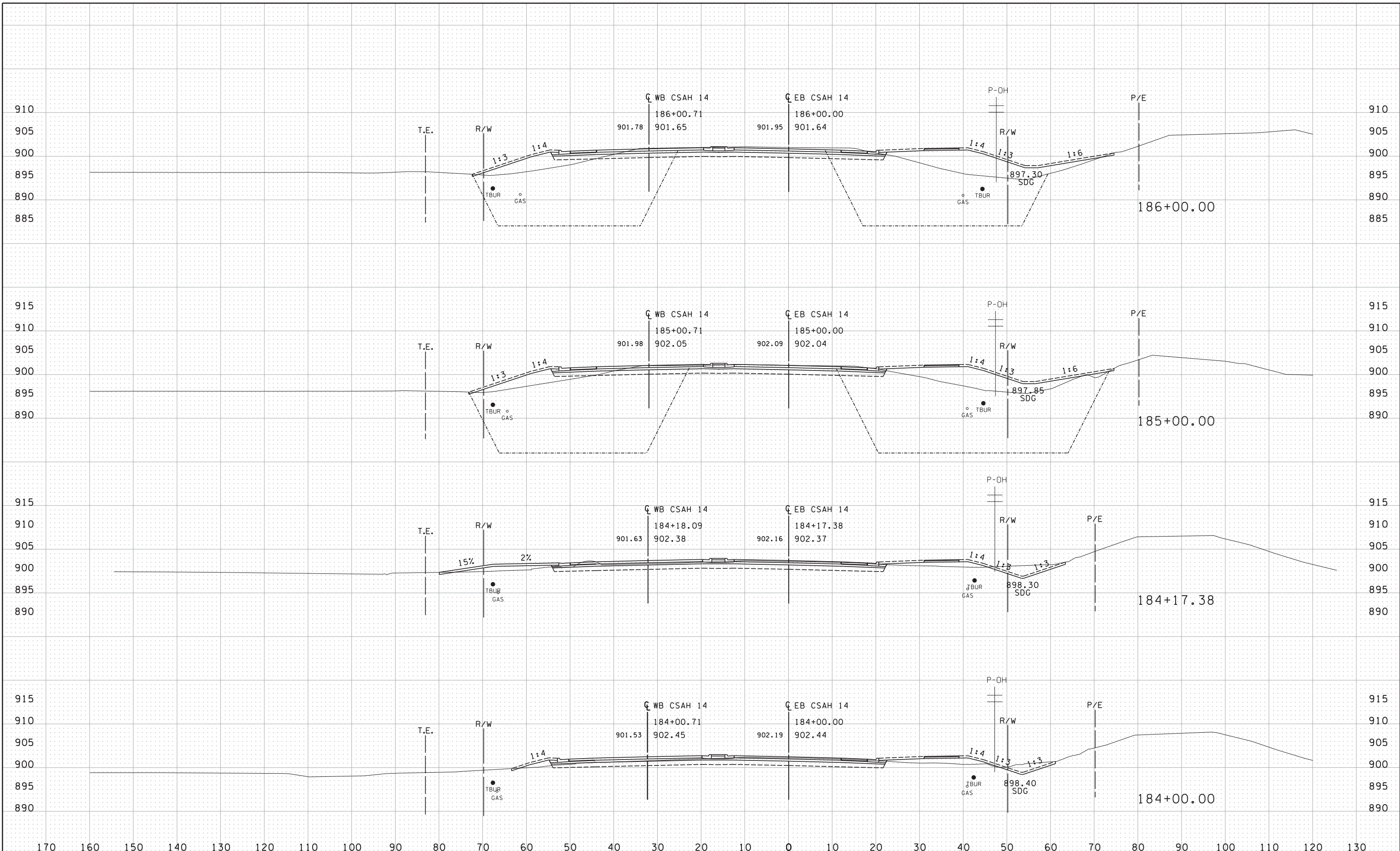
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	175
XS17 OF XS38	196

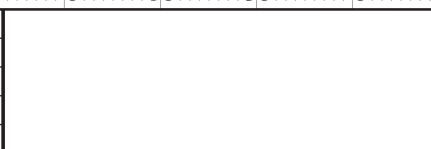
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CSAH 14

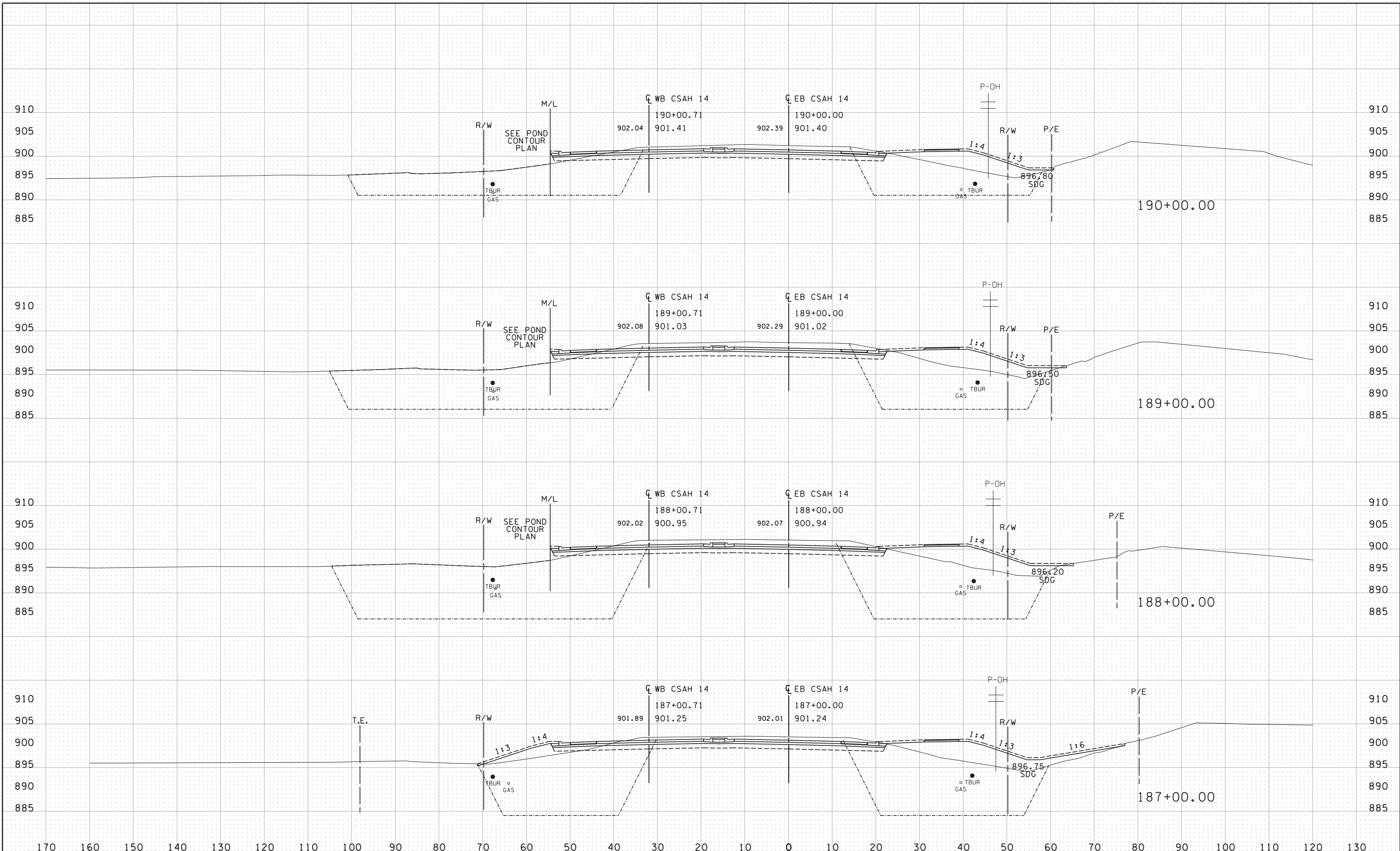
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BLAIN26669	
XS18	196
OF XS38	



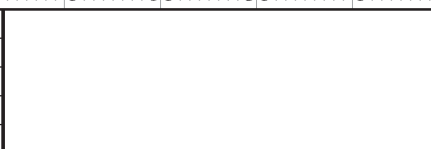
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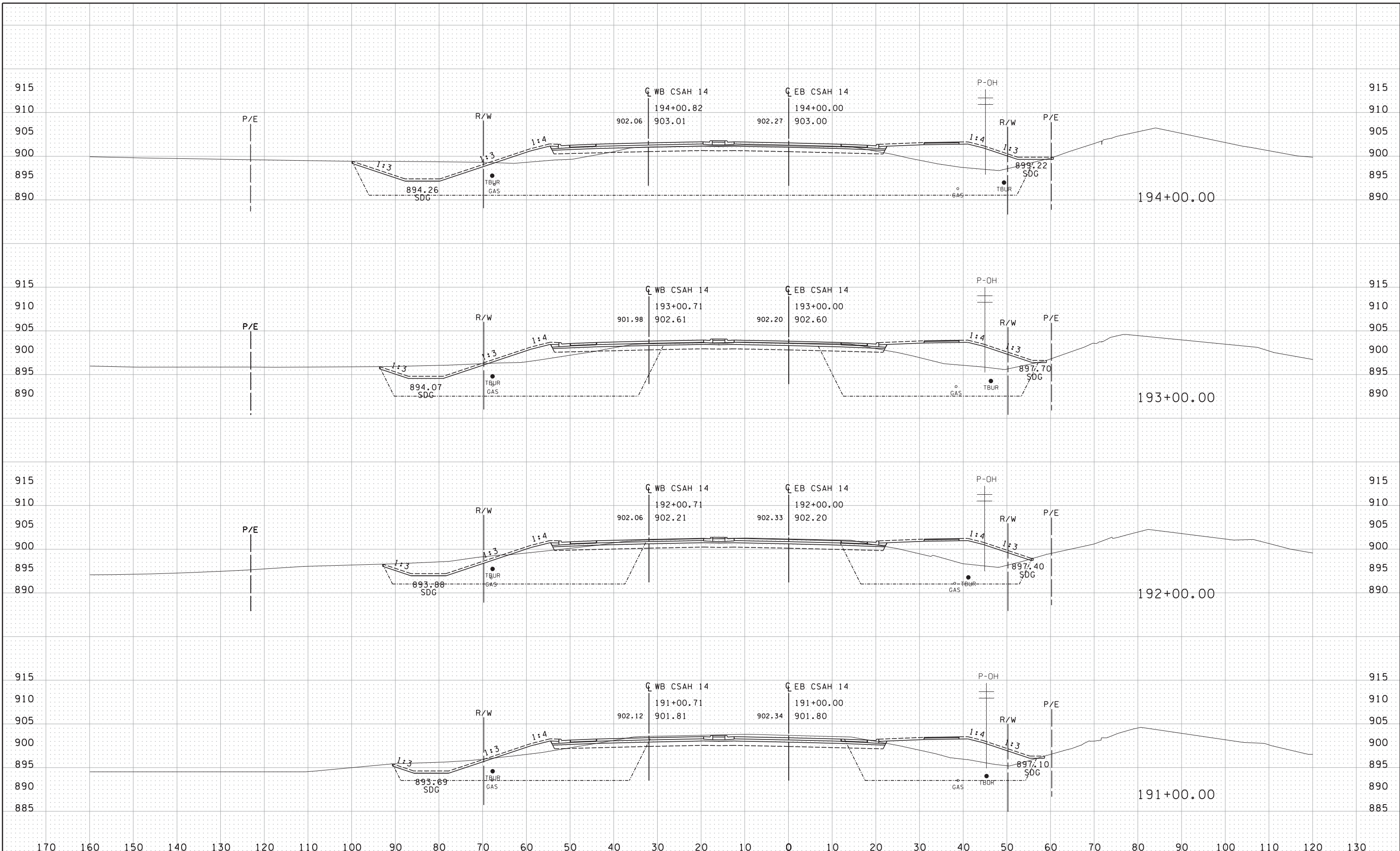
**CITY OF BLAINE, MN**  
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 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO.	177
BLAIN26669	
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OF XS38	


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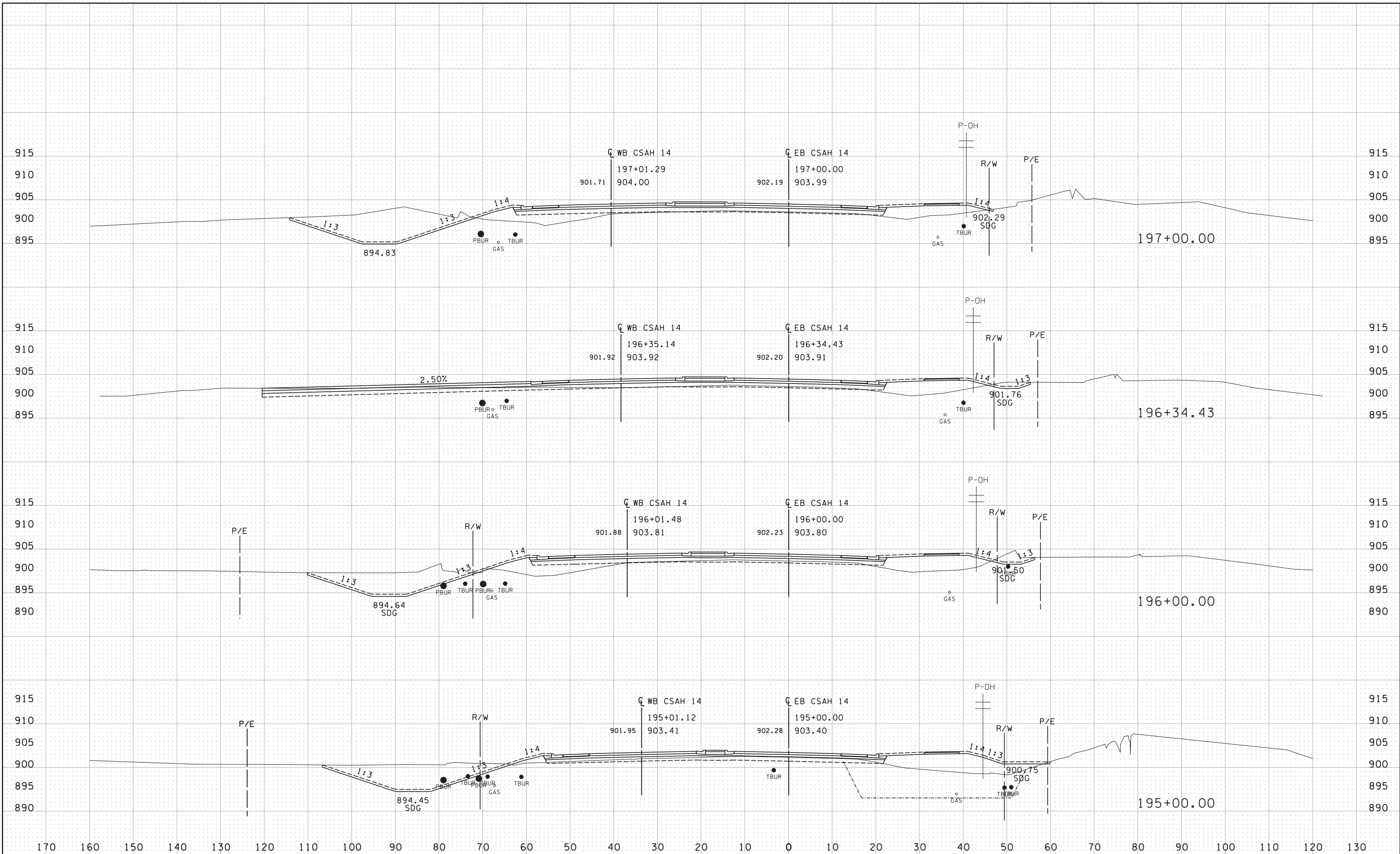
CITY OF BLAINE, MN  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	178
XS20 OF XS38	196

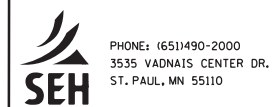
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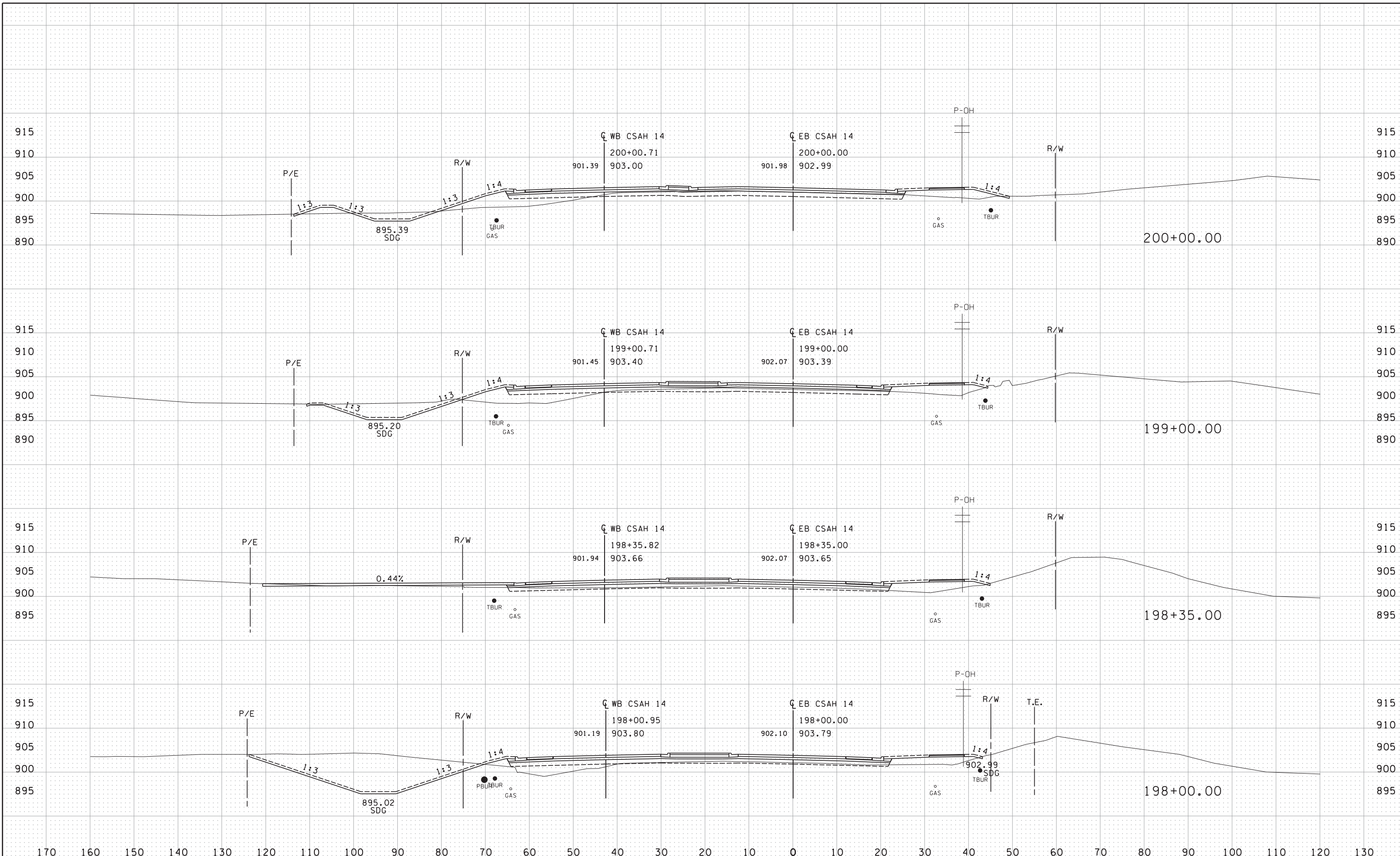
CITY OF BLAINE, MN  
**CSAH 14**  
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FILE NO. BLAIN26669	179
XS21 OF XS38	196

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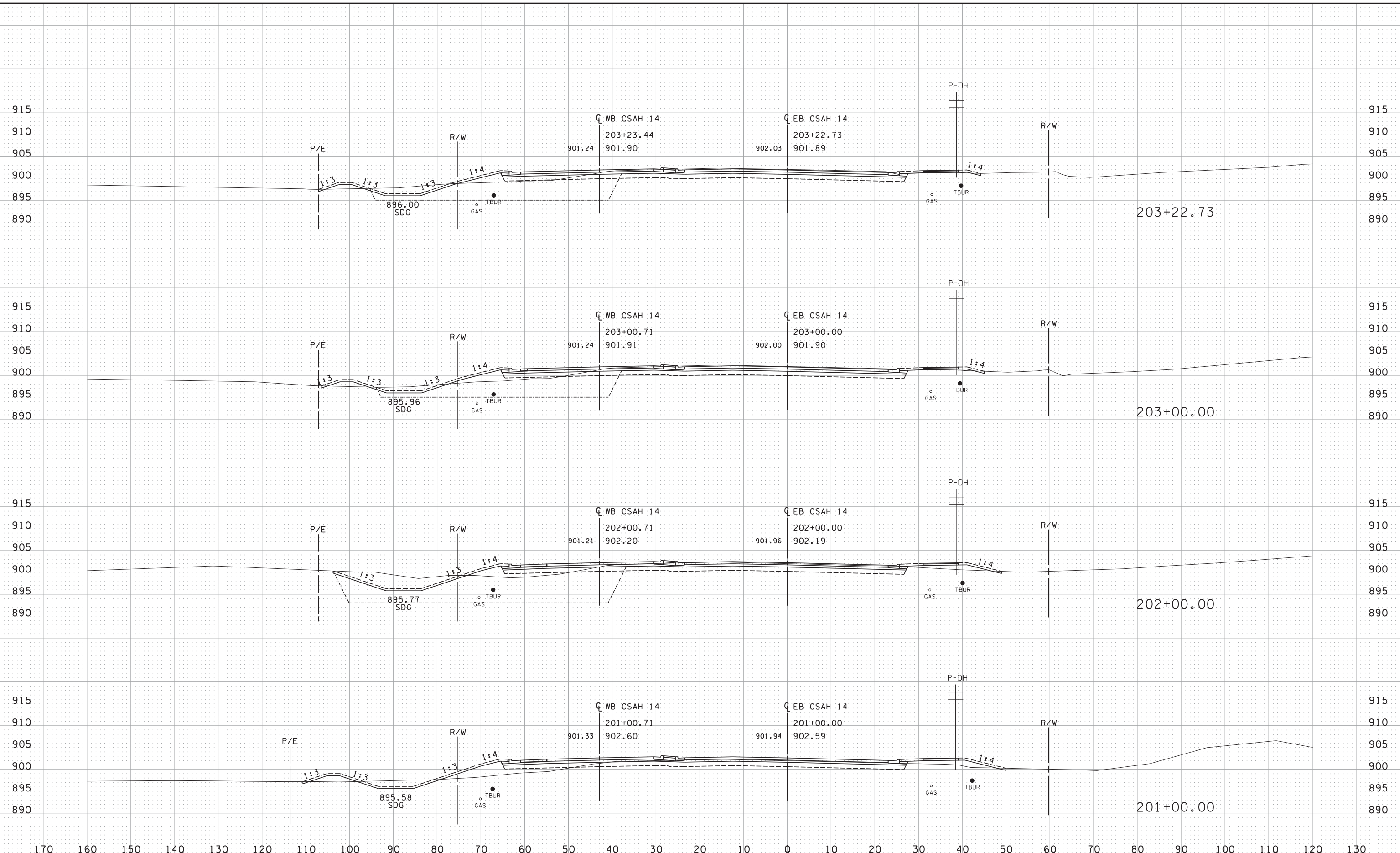
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FILE NO. BLAIN26669	180
XS22 OF XS38	196

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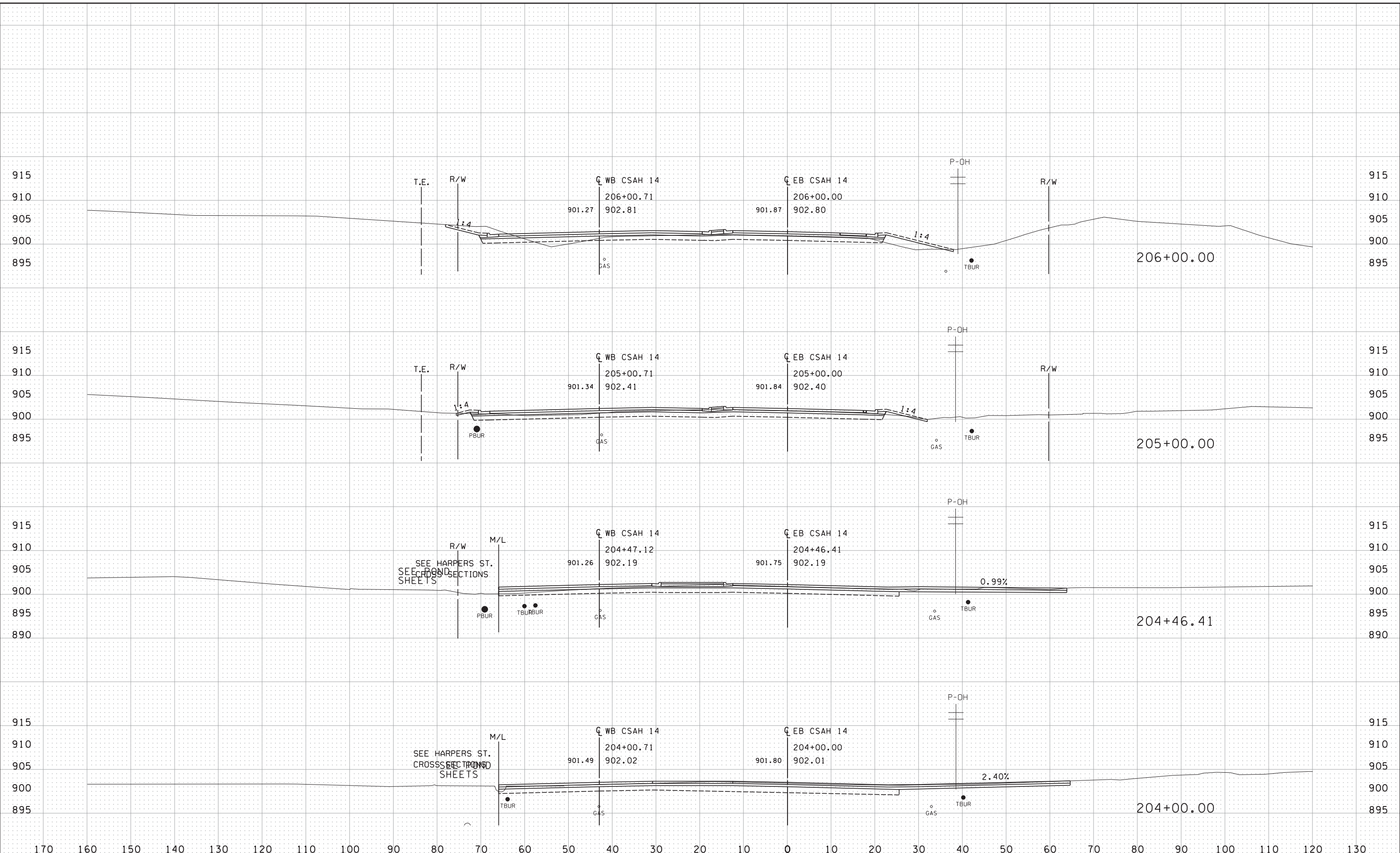
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-137-001, S.A.P. 106-020-032

FILE NO.	181
BLAIN26669	
XS23	196
OF XS38	

8/18/20 AM

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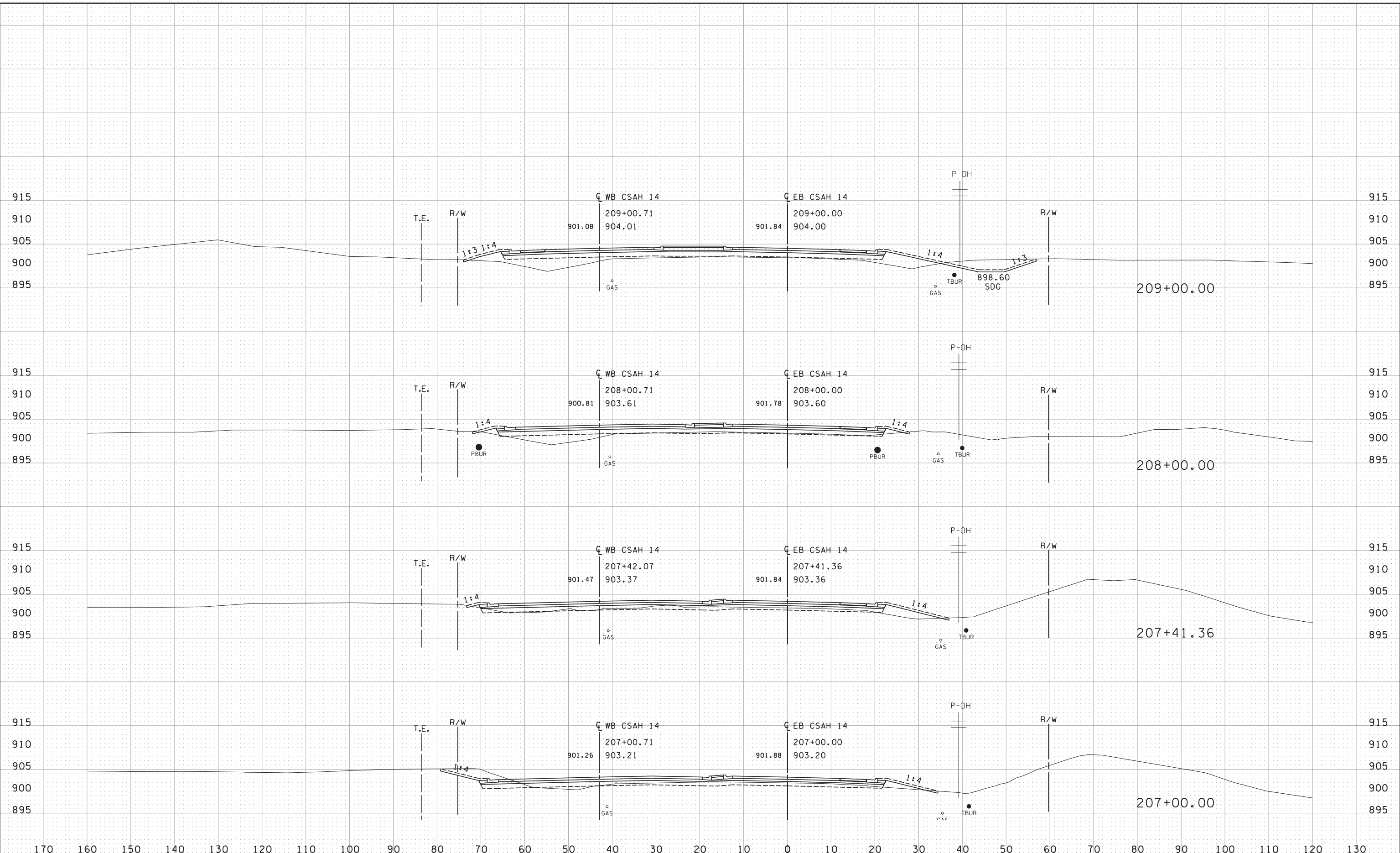
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P. 106-137-001, S.A.P. 106-020-032

FILE NO.	182
BLAIN26669	
XS24	196
OF XS38	

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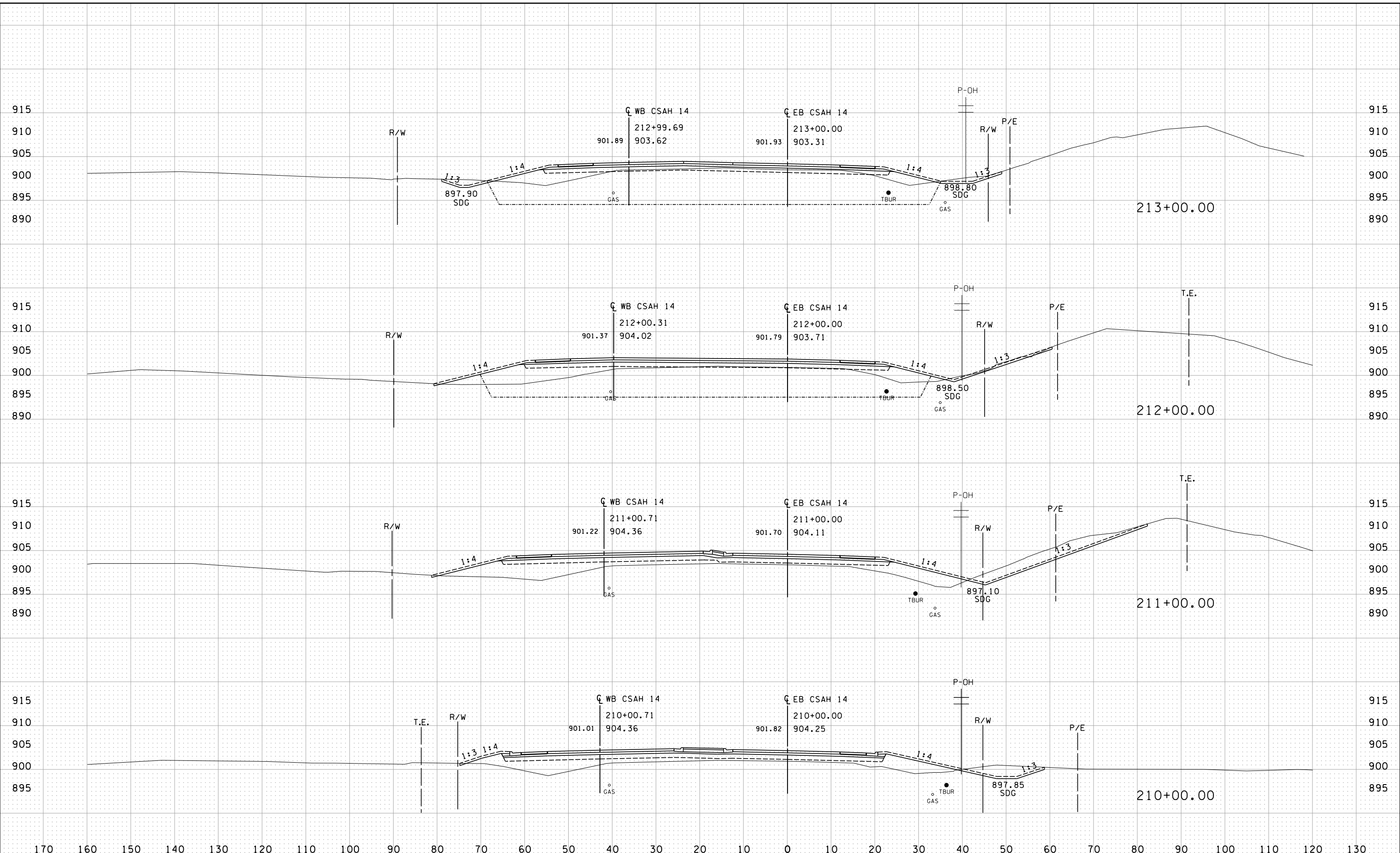
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO.	183
BLAIN26669	
XS25	196
OF XS38	

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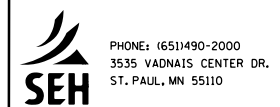
11/24/2015

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NO.	BY	DATE	REVISIONS
1	JEO	11/25/2015	ADDED MUCK EXCAVATION LINE TO XS 212+00

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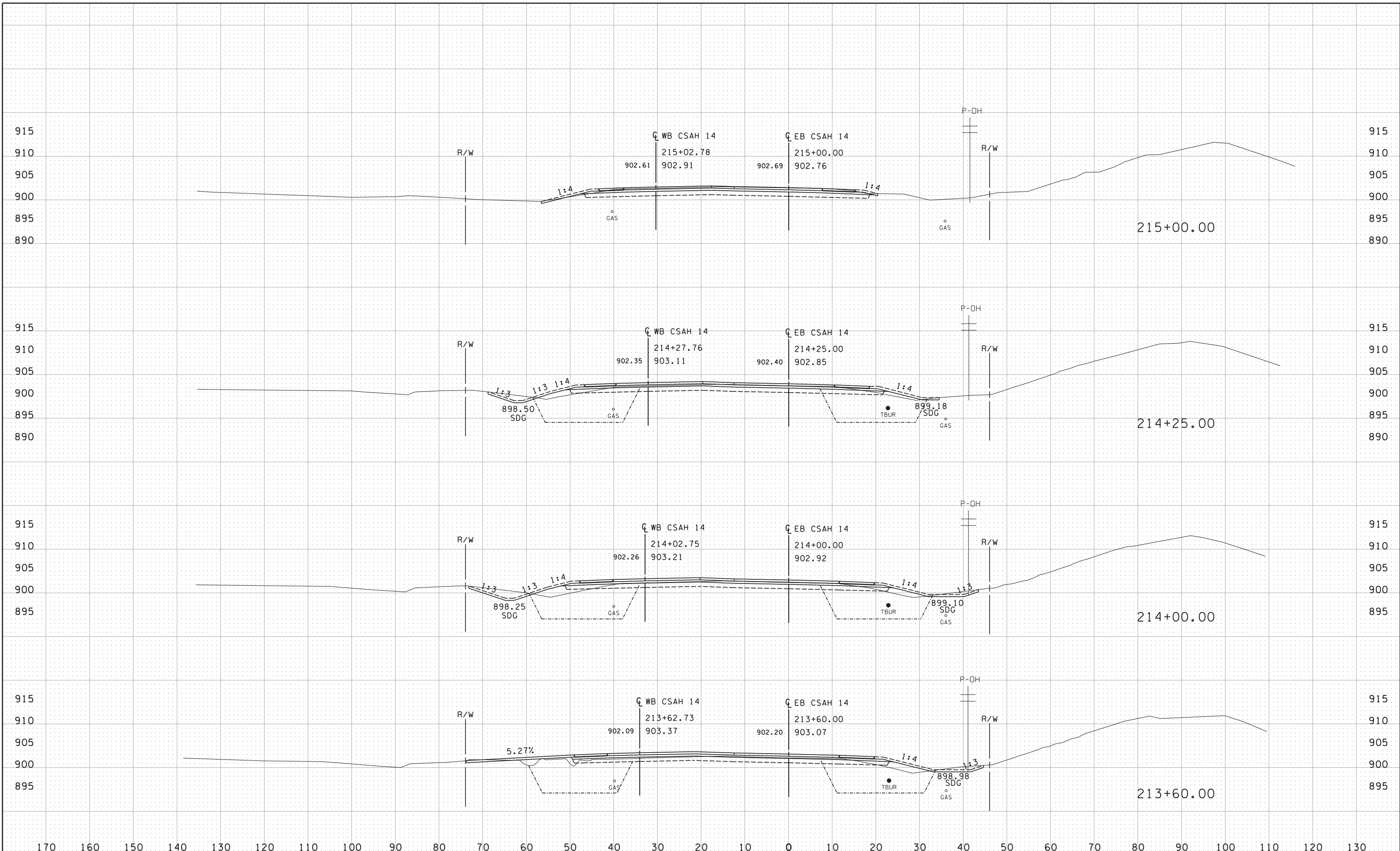
FILE NO. BLAIN26669	184
XS26 OF XS38	196



8/18/24 AM

10/21/2015

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215+02.78	215+00.00	214+27.76	214+25.00	214+02.75	214+00.00	213+62.73	213+60.00
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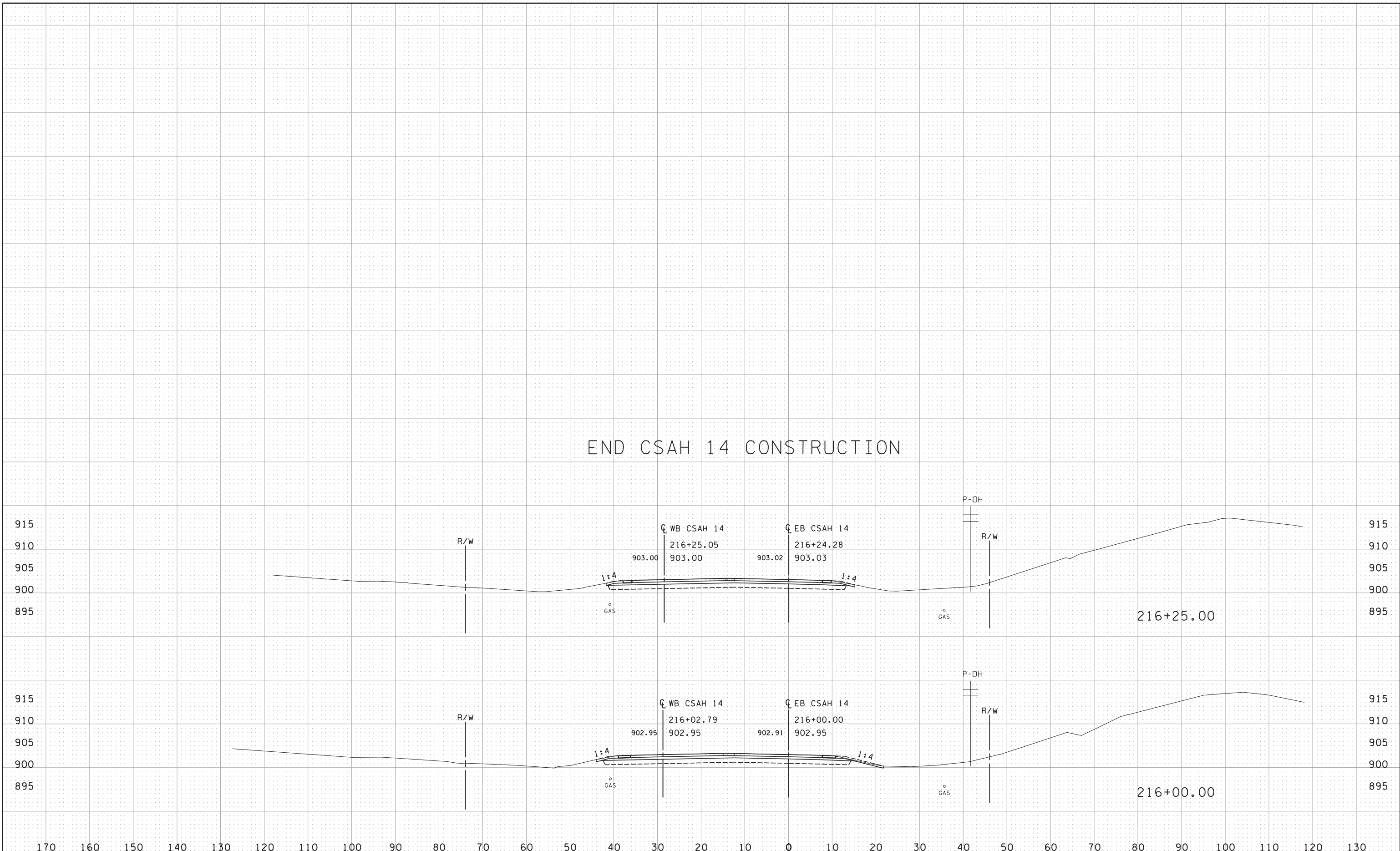
CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO. BLAIN26669	185
XS27 OF XS38	196

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### END CSAH 14 CONSTRUCTION

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 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

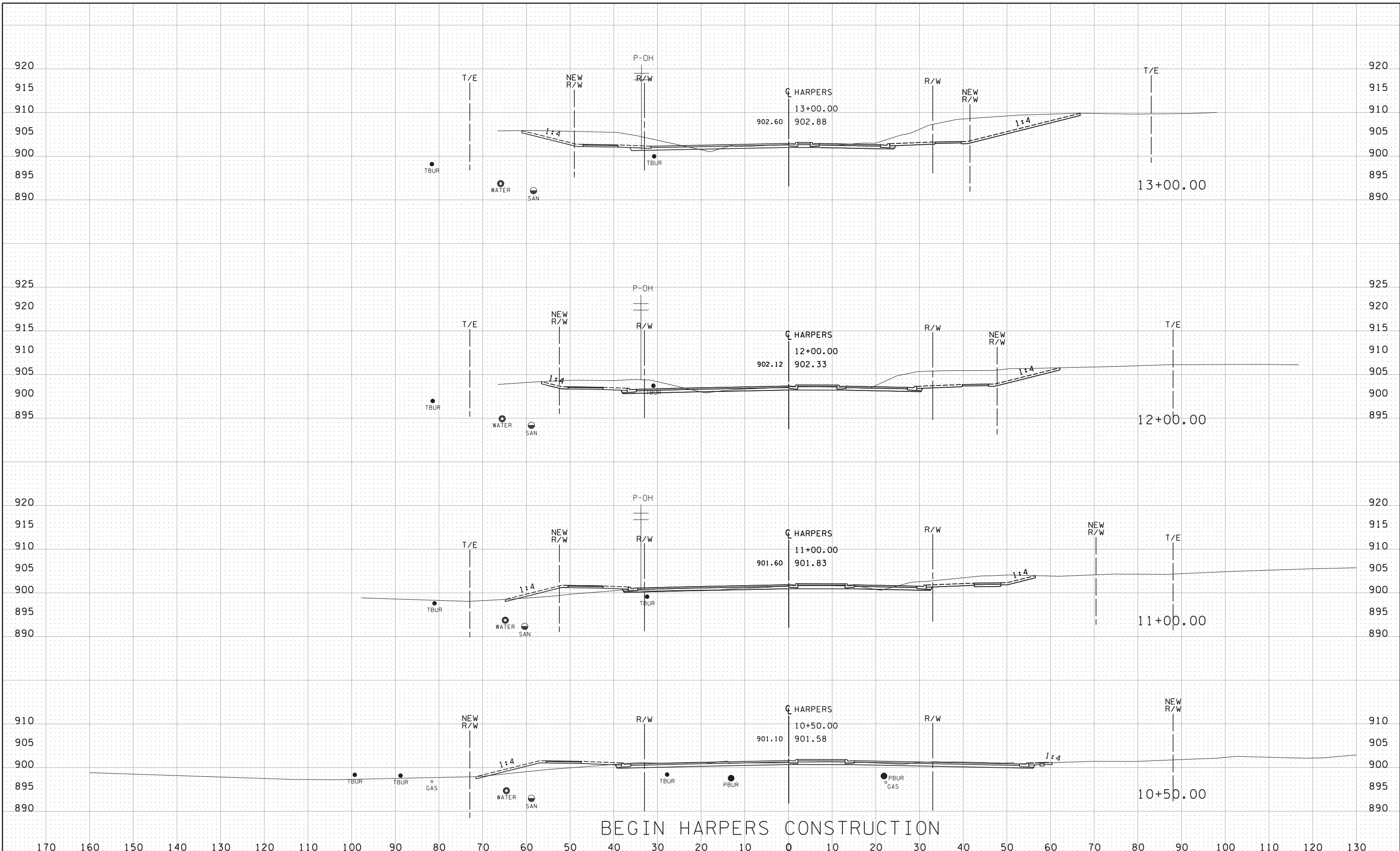
CSAH 14

FILE NO. BLAIN26669	186
XS28 OF XS38	196

8/18/27 AM

10/21/2015

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BEGIN HARPERS CONSTRUCTION

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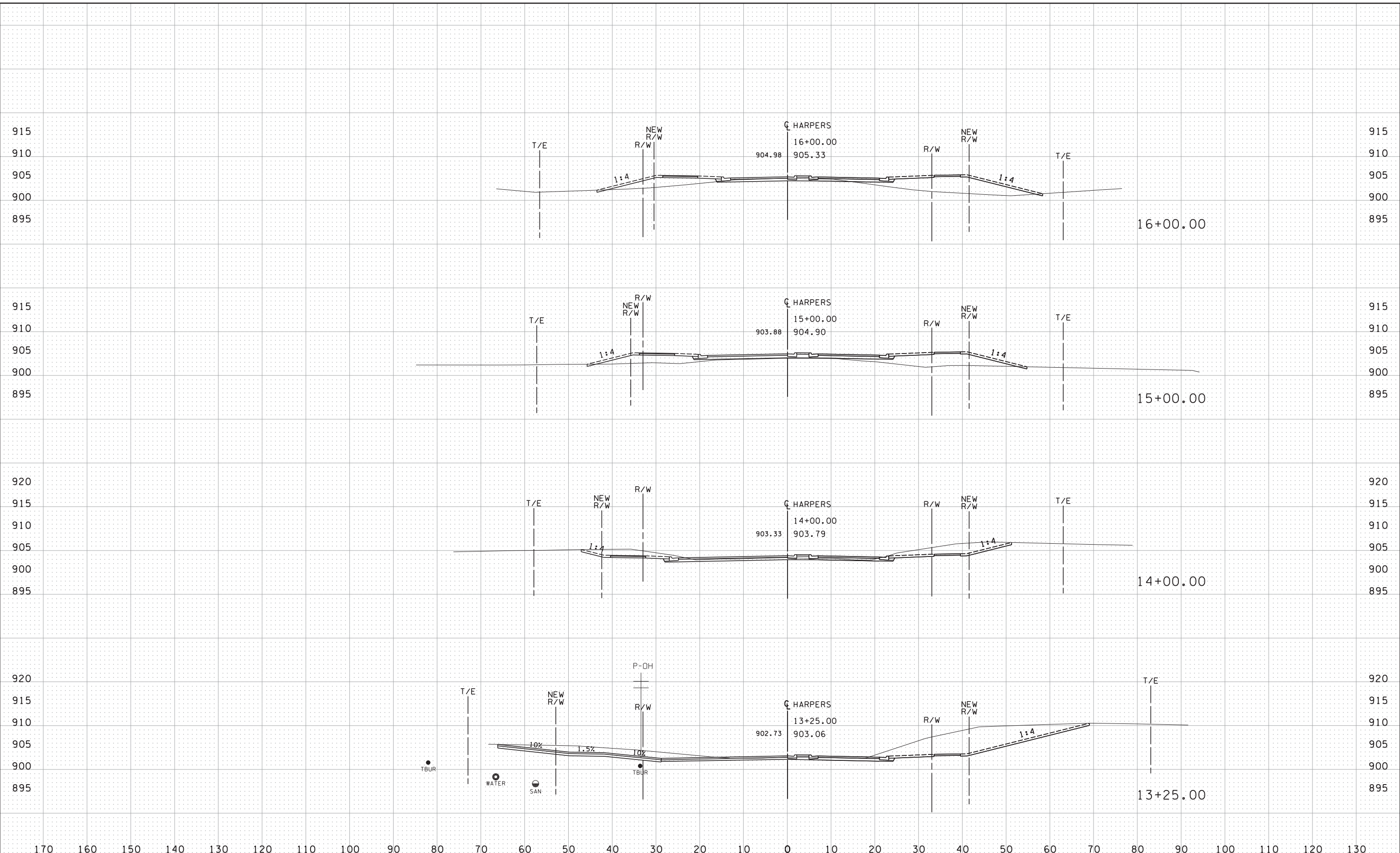
HARPERS ST.

FILE NO.	187
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XS29	196
OF XS38	

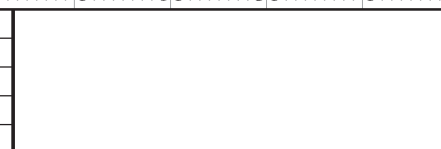
8/18/28 AM

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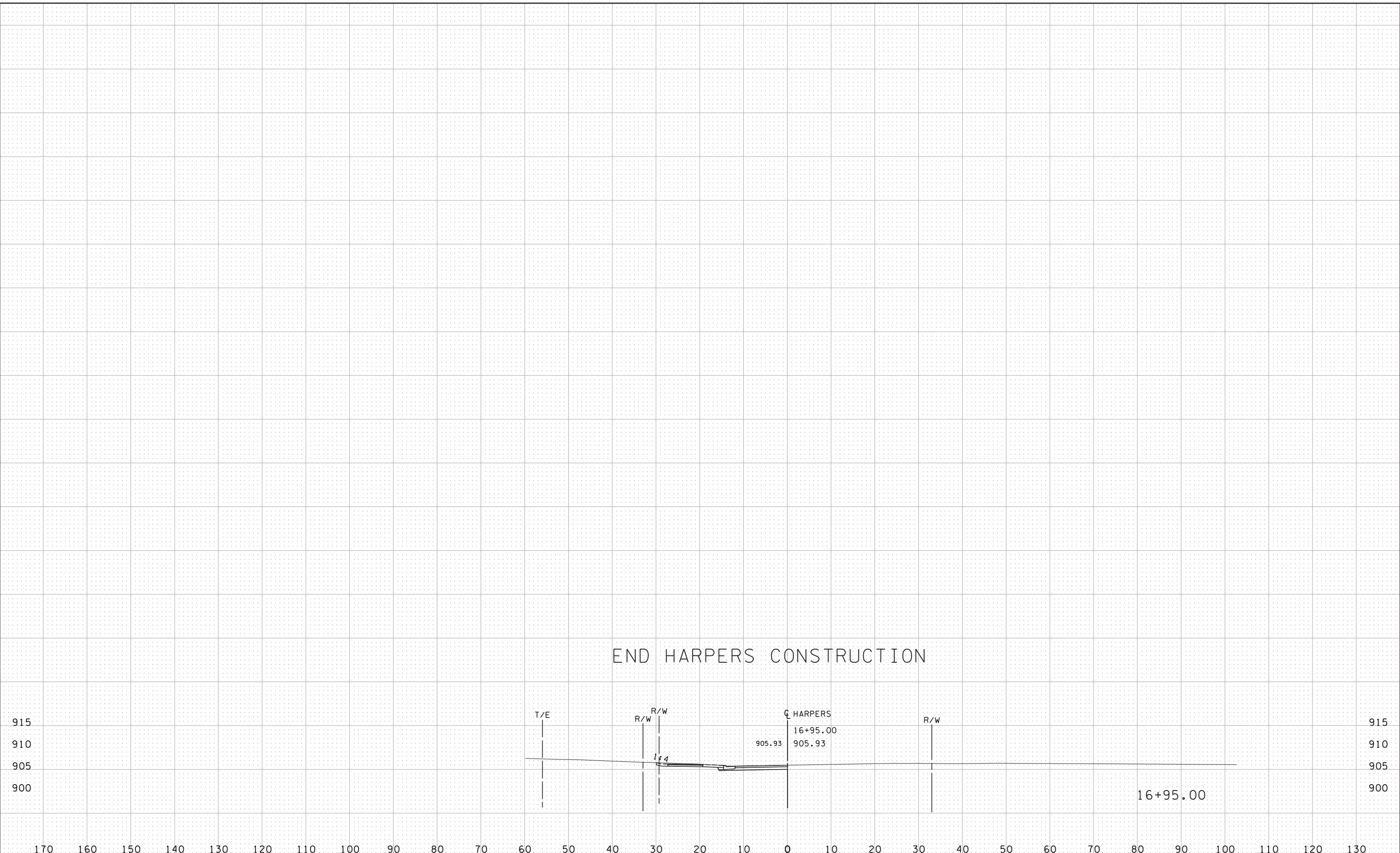
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**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

FILE NO.	188
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XS30	196
OF XS38	

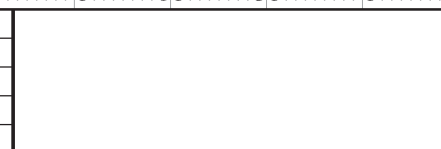
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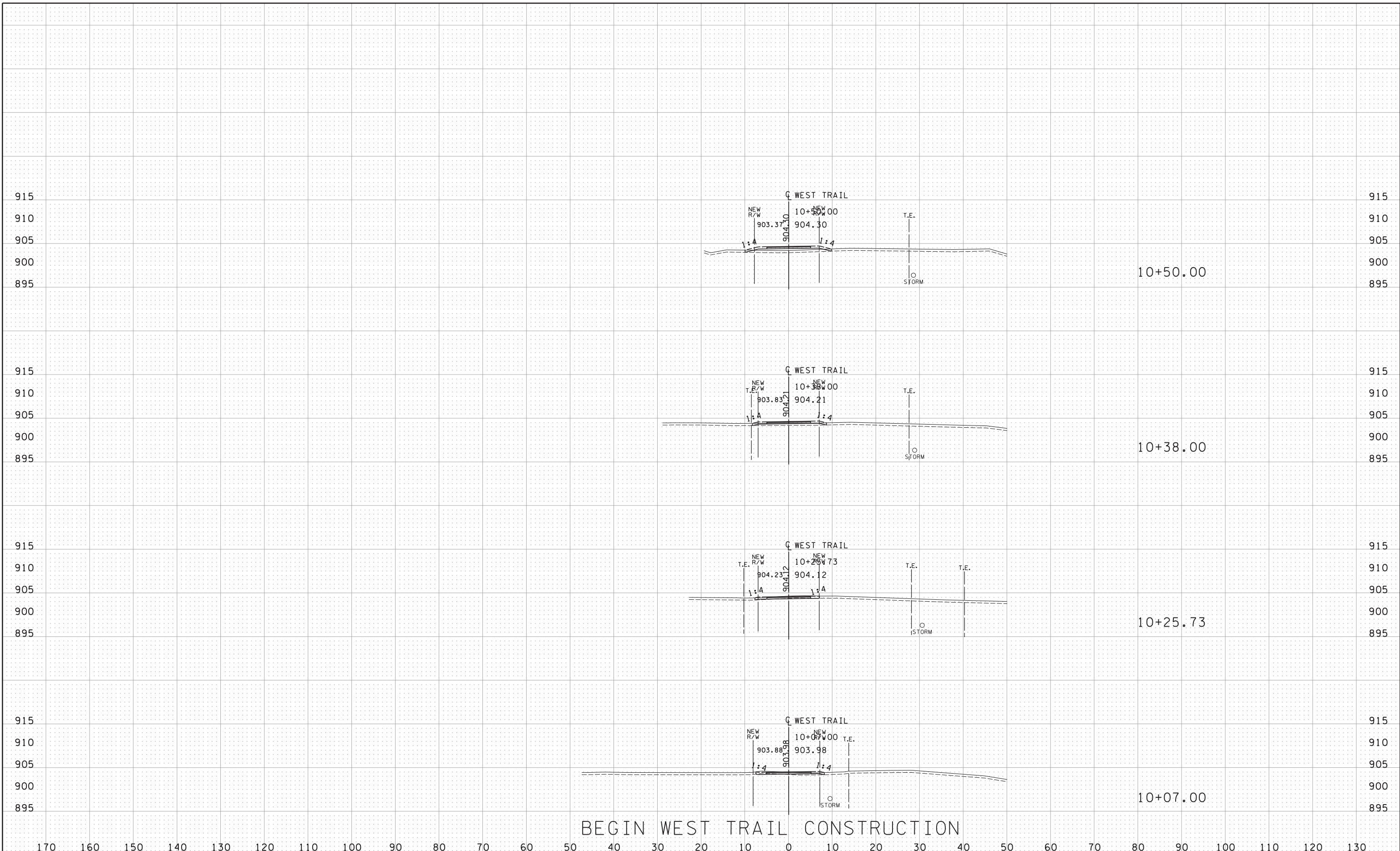
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FILE NO. BLAIN26669	189
XS31 OF XS38	196

8:18:31 AM

10/21/2015

S:\AE\B\Blain\126669\5-final-dsgn\sections\XS\_Sheets\West\_Trail.dgn



BEGIN WEST TRAIL CONSTRUCTION

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



CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

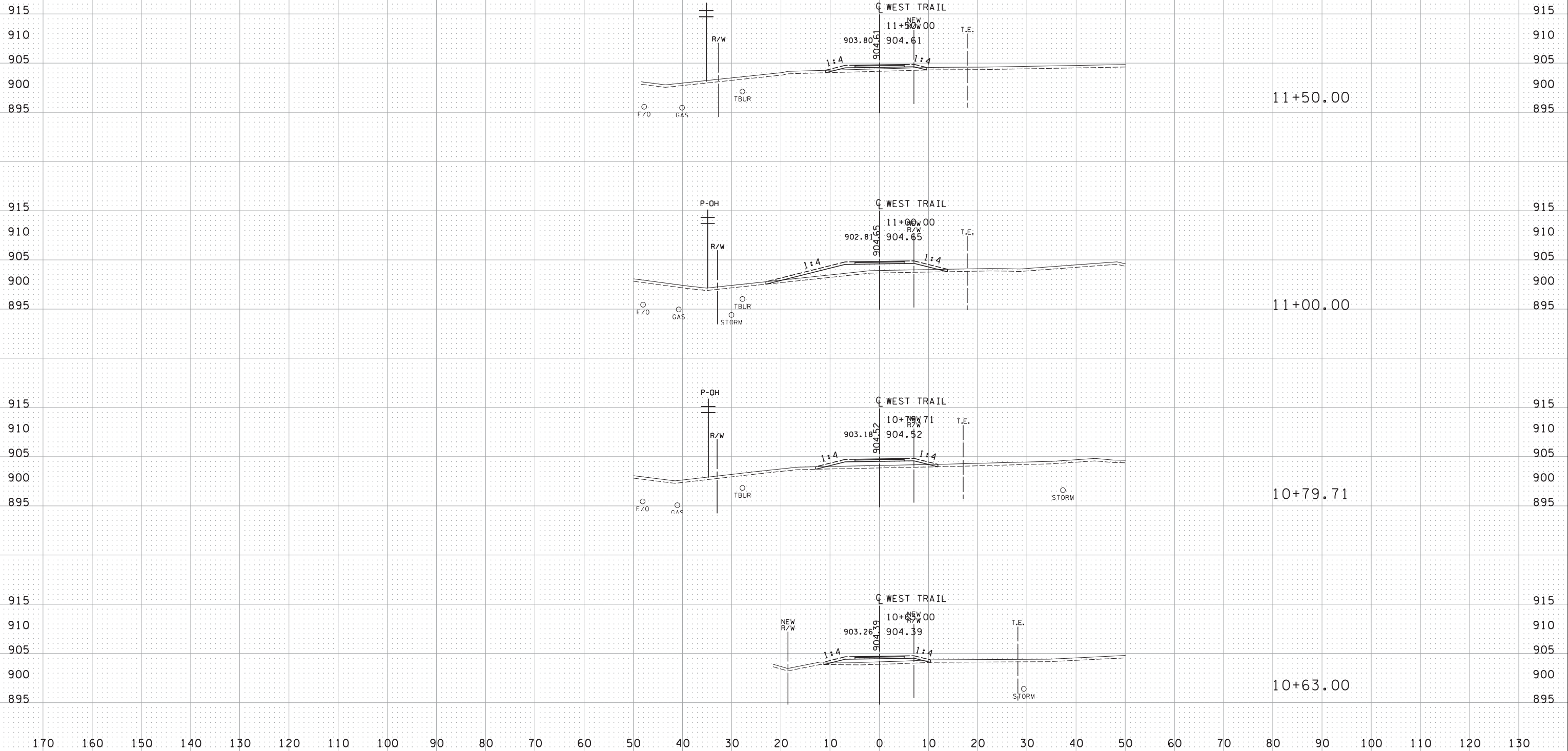
WEST TRAIL

FILE NO. BLAIN26669	190
XS32 OF XS38	196

8/18/13 2 AM

10/21/2015

S:\AE\B\Blain\126669\5-final-dsgn\sections\XS Sheets\West Trail.dgn



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



CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

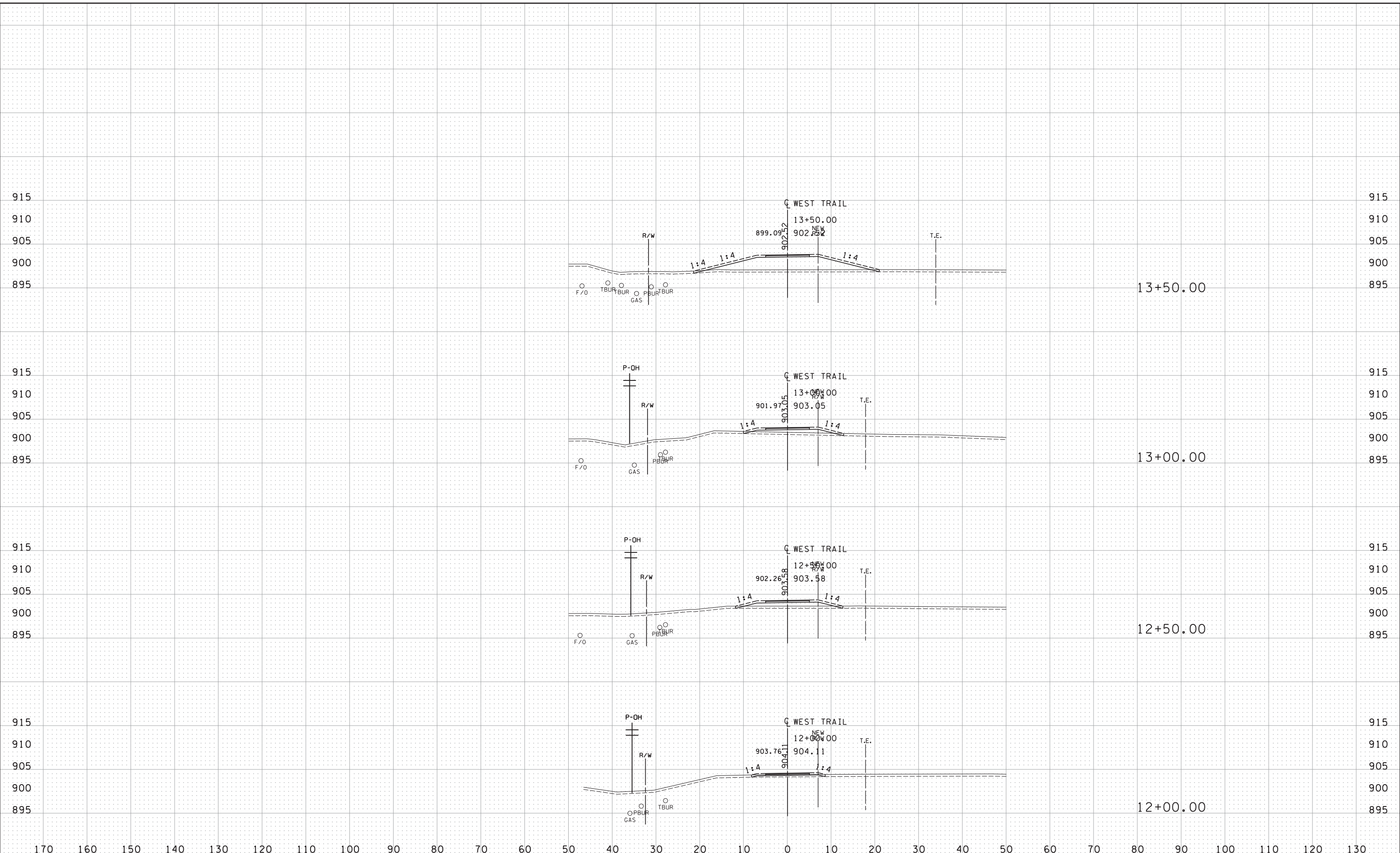
WEST TRAIL

FILE NO. BLAIN26669	191
XS33 OF XS38	196

8:18:34 AM

10/21/2015

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



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

CITY OF BLAINE, MN  
**CSAH 14**  
S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

WEST TRAIL

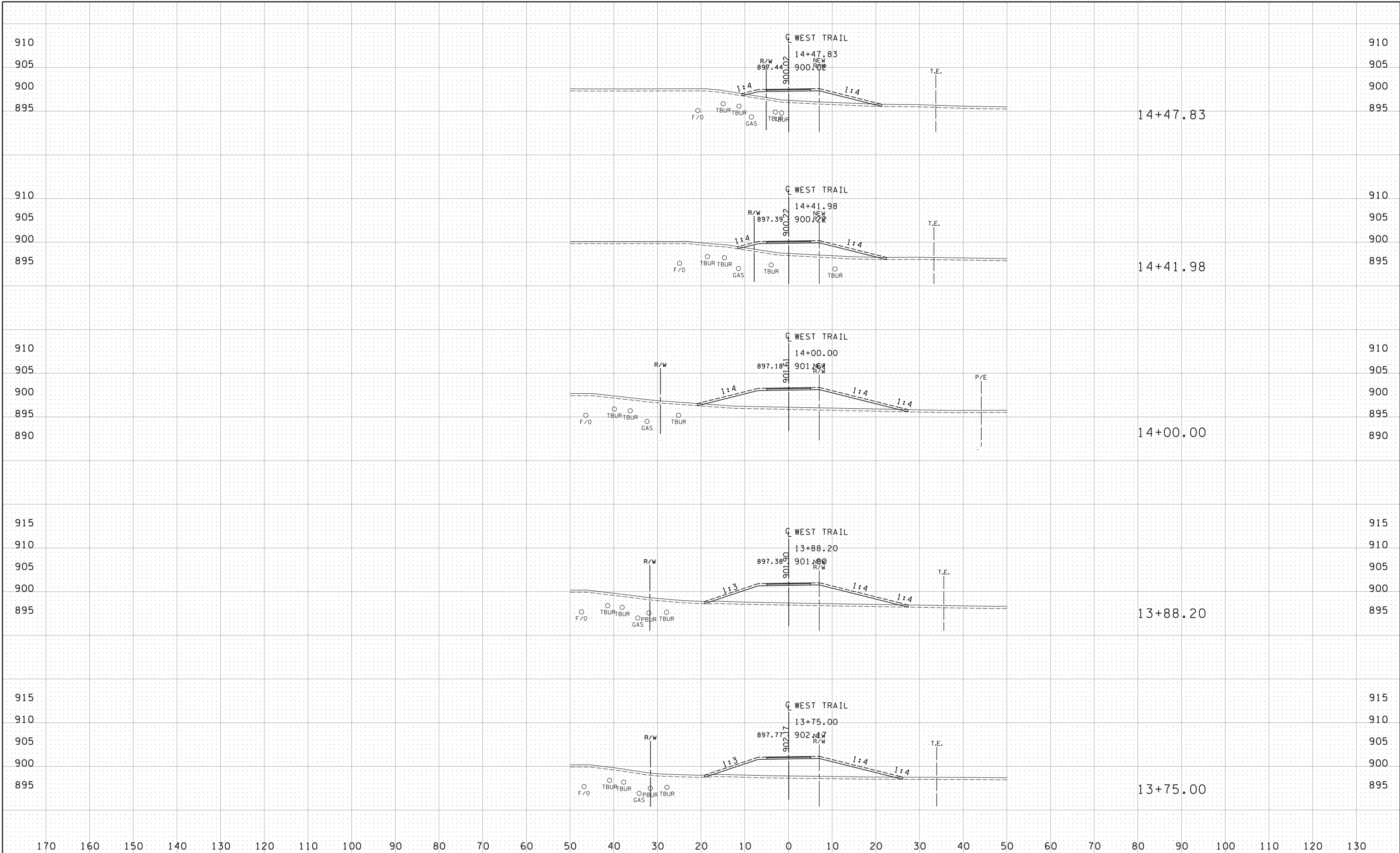
FILE NO. BLAIN26669	192
XS34 OF XS38	196



8:18:35 AM

10/21/2015

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DESIGNER:				
CHECKED BY:				
	NO.	BY	DATE	REVISIONS

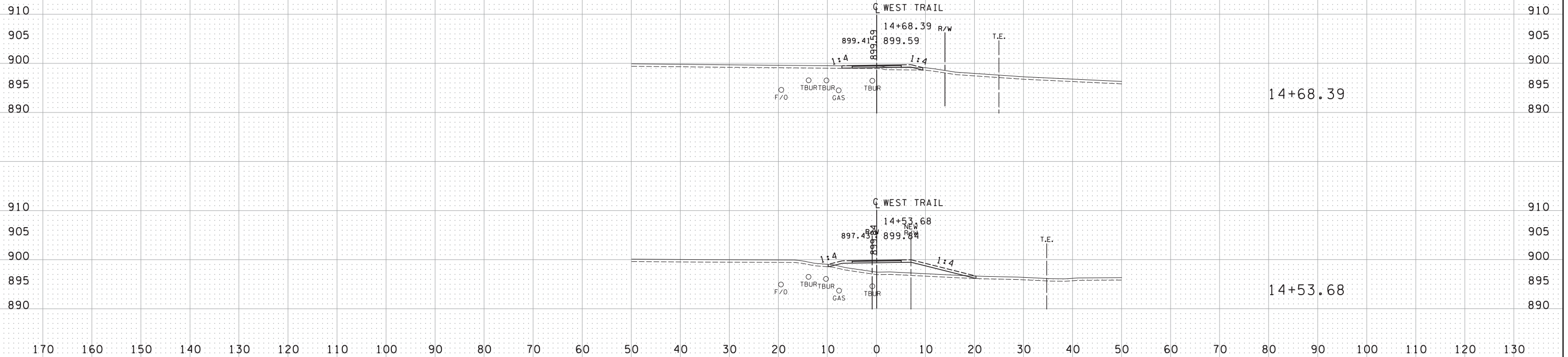


CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

WEST TRAIL

FILE NO. BLAIN26669	193
XS35 OF XS38	196

# END WEST TRAIL CONSTRUCTION



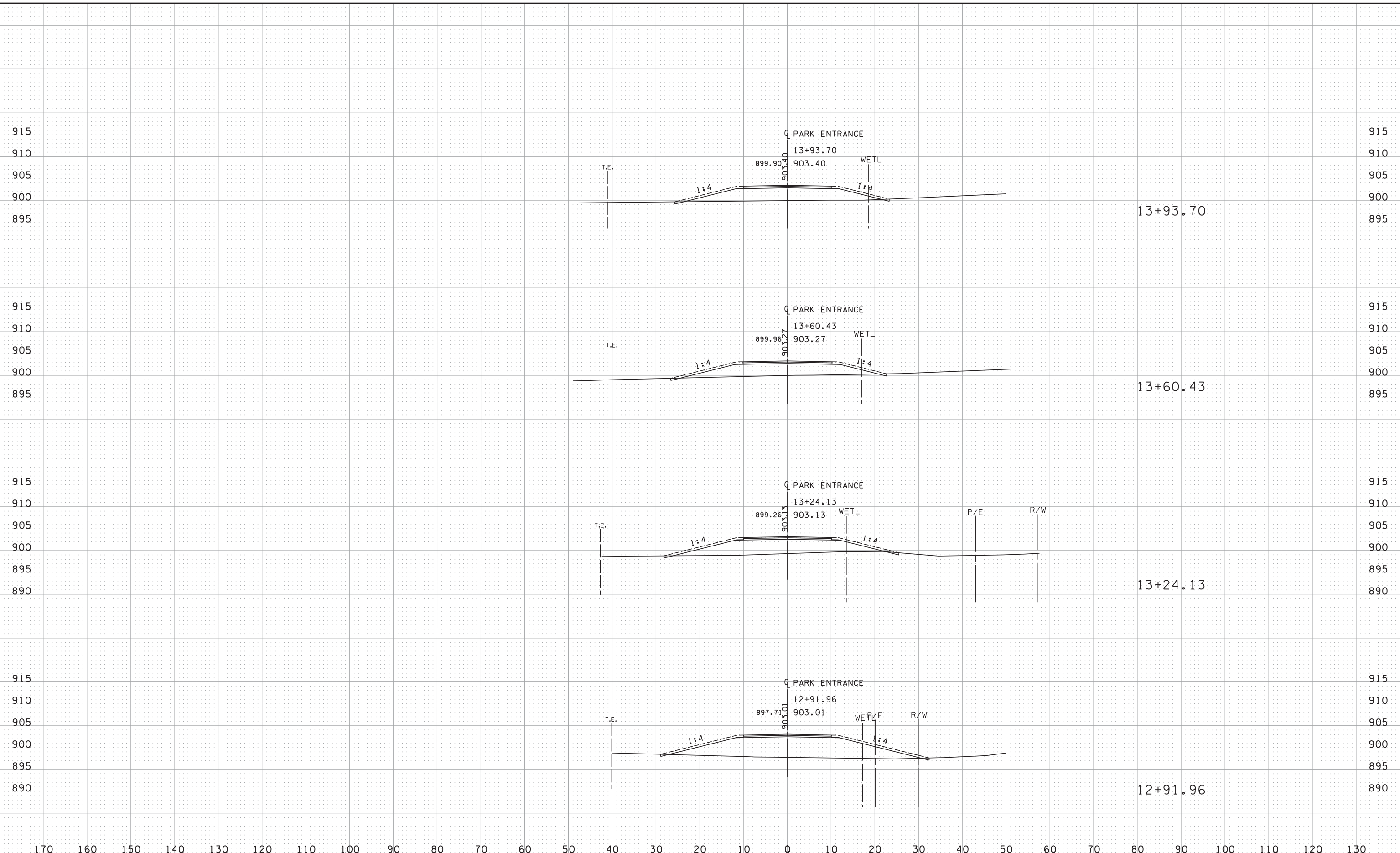
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DRAWN BY:				
DESIGNER:				
CHECKED BY:				
	NO.	BY	DATE	REVISIONS



CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

WEST TRAIL

FILE NO. BLAIN26669	194
XS36 OF XS38	196



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

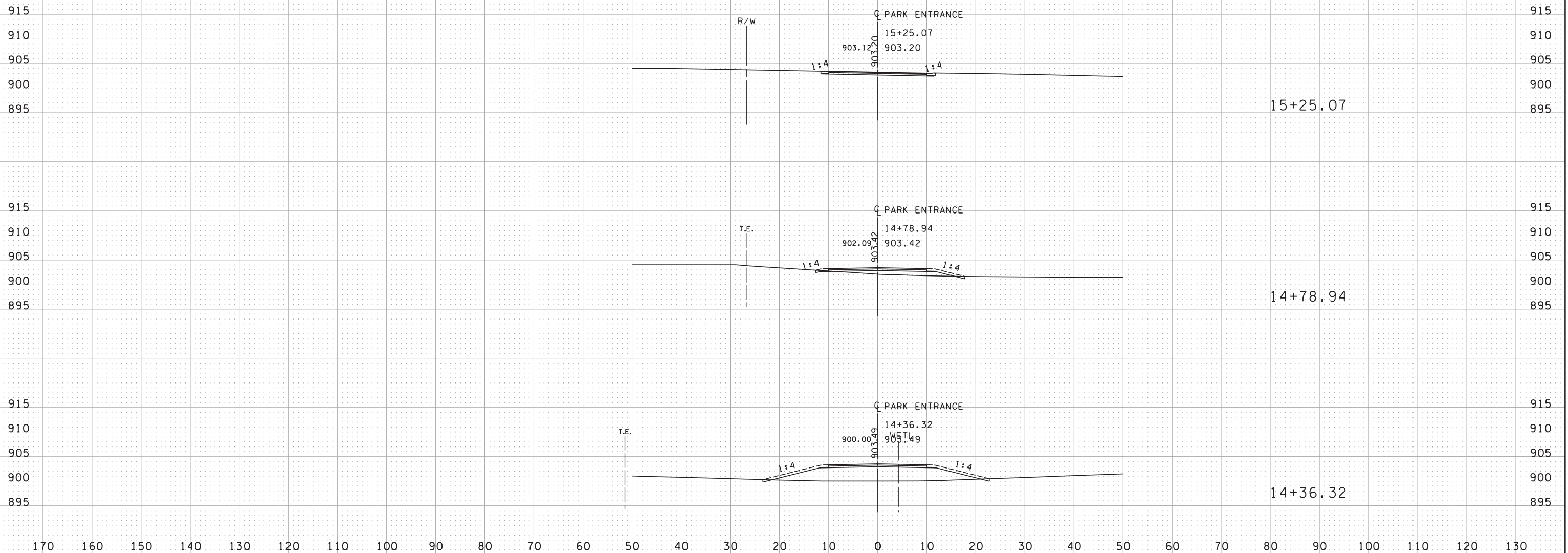


CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

PARK ENTRANCE

FILE NO. BLAIN26669	195
XS37 OF XS38	196

# END PARK ENTRANCE CONSTRUCTION



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



CITY OF BLAINE, MN  
**CSAH 14**  
 S.A.P. 002-614-039, S.A.P 106-137-001, S.A.P. 106-020-032

PARK ENTRANCE

FILE NO. BLAIN26669	196
XS38 OF XS38	196