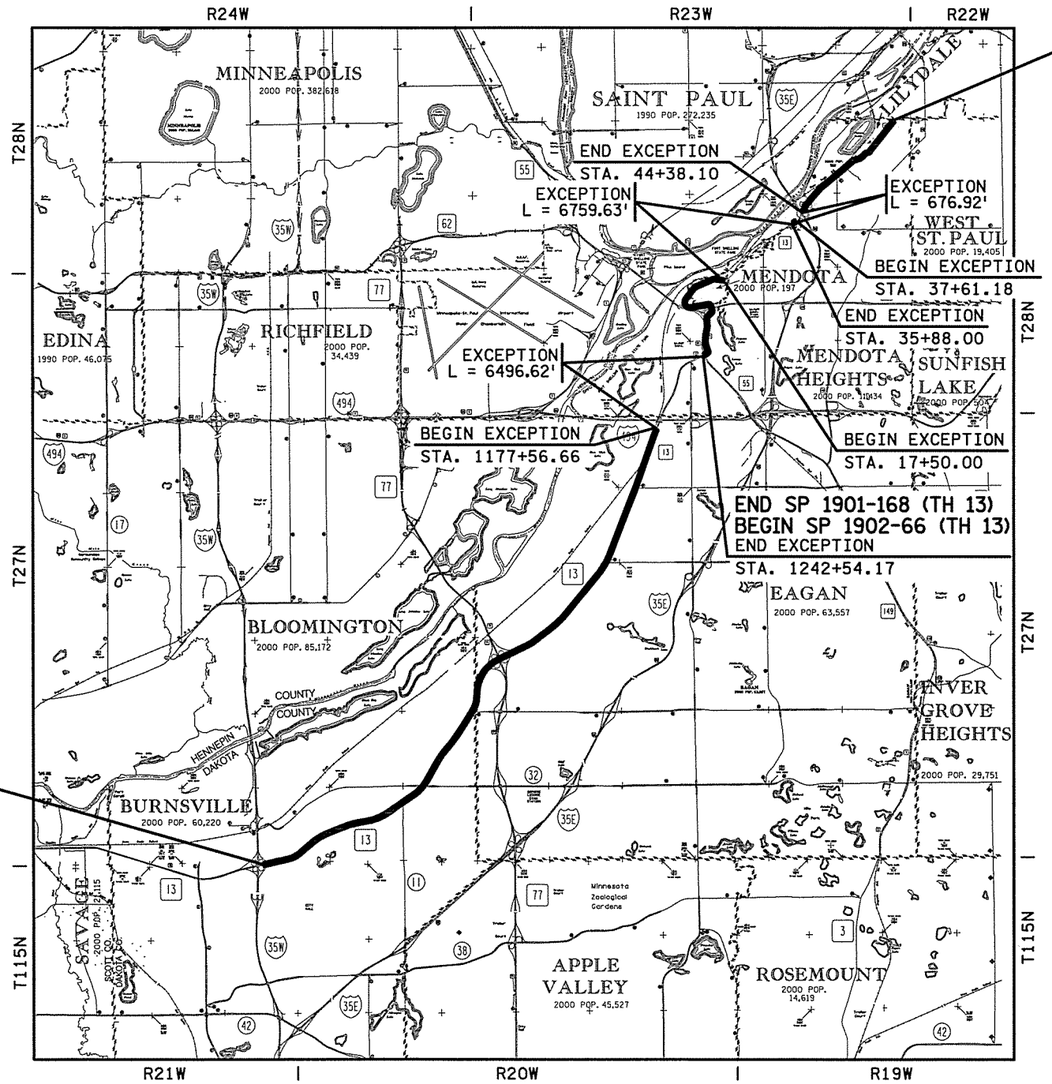
MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS MILL & OVERLAY, ADA IMPROVEMENTS, TRAFFIC SIGNALS, AND TMS

LOCATED ON TH 13 FROM TH 35W TO ANNAPOLIS STREET

STATE PROJ. NO. 1901-168			STATE PROJ. NO. 1902-66		
GROSS LENGTH	51194.21 FEET	9.696 MILES	26722.27 FEET	5.061 MILES	
BRIDGES-LENGTH	367.13 FEET	0.070 MILES	978.49 FEET	0.185 MILES	
EXCEPTIONS-LENGTH	6496.62 FEET	1.230 MILES	7436.55 FEET	1.408 MILES	
NET LENGTH	44697.59 FEET	9.696 MILES	19285.72 FEET	3.653 MILES	
REF. POINT	096+00.123 TO REF. POINT	107+00.099	107+00.099 TO REF. POINT	111+00.609	

LENGTH IS BASED ON TH 13 NB & TH 13 ALIGNMENTS



WARNING!
ELECTRICAL TRANSMISSION LINES AND NATURAL GAS AND PETROLEUM PRODUCTS PIPELINES

EQUATIONS

```
 754+25.34 BK = 99+82.70 AH
 262+12.00 BK = 916+23.88 AH
 942+28.20 BK = 942+21.61 AH
1006+60.70 BK = 1006+46.16 AH
1036+05.12 BK = A POINT 12.00' RT.
                1031+34.10 AH
1064+63.38 BK = 1064+66.10 AH
1085+44.75 BK = 1085+59.82 AH
1112+32.41 BK = 1112+34.00 AH
1153+08.50 BK = 1153+08.69 AH
1157+88.98 BK = 1157+88.39 AH
1162+00.00 BK = 1162+01.01 AH
1244+39.41 BK = A POINT 12.00' RT.
                61+19.15 AH *
* 43+02.98 BK = 43+06.34 AH *
* 36+27.49 BK = 36+50.00 AH *
* 27+54.97 BK = 49+55.73 AH *
*  7+33.97 BK = A POINT 6.89' RT.
                0+00.00 AH
  9+14.77 BK = 9+14.49 AH
 11+29.64 BK = 11+29.53 AH
 50+44.91 BK = 99+39.52 AH
118+31.67 BK = 118+33.86 AH
```

* STATIONING RUNS IN REVERSE ORDER

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	CHARGE IDENTIFIER
1901-168	

PROJECT LOCATION

COUNTY : DAKOTA

DISTRICT : METRO

SCALES

PLAN	50'
INDEX MAP	1 MILE
GENERAL LAYOUT	500'

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

DESIGN DESIGNATION

ADT (CURRENT YEAR)	=	DESIGN SPEED	MPH
ADT (FUTURE YEAR)	=	BASED ON STOPPING SIGHT DISTANCE	
DHV (DESIGN HR. VOL.)	=	HT OF EYE 3.5'	HT OF OBJECT 2.0'
D (DIRECTIONAL DISTR.)	= %	DESIGN SPEED NOT ACHIEVED AT:	
T (HEAVY COMMERCIAL)	= %	STA.	TO STA. MPH
		STA.	TO STA. MPH

FED. PROJ. NO. **STPX 1912(133)**

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX

1	TITLE SHEET
2-6	GENERAL LAYOUT
7-9	ESTIMATED QUANTITIES
10	STANDARD PLATES
11	SOILS AND CONSTRUCTION NOTES
12-16	TABULATIONS
17-45	INPLACE UTILITY TABULATIONS
46-51	TYPICAL SECTIONS
52-56C	MISCELLANEOUS DETAILS
57-71	STANDARD PLANS
72-76	ALIGNMENT TABULATIONS
77-101	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
102-126	CONSTRUCTION PLANS
127-158	INTERSECTION DETAILS
159	PROFILES
160	SUPERELEVATION PLANS
161-162	SWPPP NARRATIVE
163-187	DRAINAGE, EROSION, & TURF ESTABLISHMENT
188-190	DRAINAGE PROFILES
191-195	DRAINAGE TABULATIONS
196-198	DRAINAGE & EROSION CONTROL DETAILS
199-205	SIGNING PLANS
206-285	TRAFFIC CONTROL PLANS
286-318	PAVEMENT MARKING PLANS
319-322	TRAFFIC MANAGEMENT SYSTEM PLANS
323-373	TRAFFIC SIGNAL PLANS
374-393	CROSS SECTIONS

THIS PLAN CONTAINS 396 SHEETS

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

SIGNATURE: Timothy A. Chalupnik

PRINTED NAME: TIMOTHY A. CHALUPNIK

DATE: JANUARY 25, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

RECOMMENDED FOR APPROVAL for Bradley J. Stewart 1/26 DATE: 2012
DISTRICT TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL Chris Kuhn 1/26 DATE: 2012
DISTRICT MATERIALS ENGINEER

RECOMMENDED FOR APPROVAL Bruce A. Holst 1/26 DATE: 2012
DISTRICT WATER RESOURCES ENGINEER

RECOMMENDED FOR APPROVAL Steven Misgen 11/25/12 DATE:
DISTRICT TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL Valerie K. Quinn 3/15 DATE: 2012
TAS
STATE PRE-LETTING ENGINEER YC

OFFICE OF LAND MANAGEMENT APPROVAL 3/15 DATE: 12
DIRECTOR, LAND MANAGEMENT

APPROVED 2/16 DATE: 12
STATE DESIGN ENGINEER

FINAL 2-21-12

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE _____ LIC. NO. _____

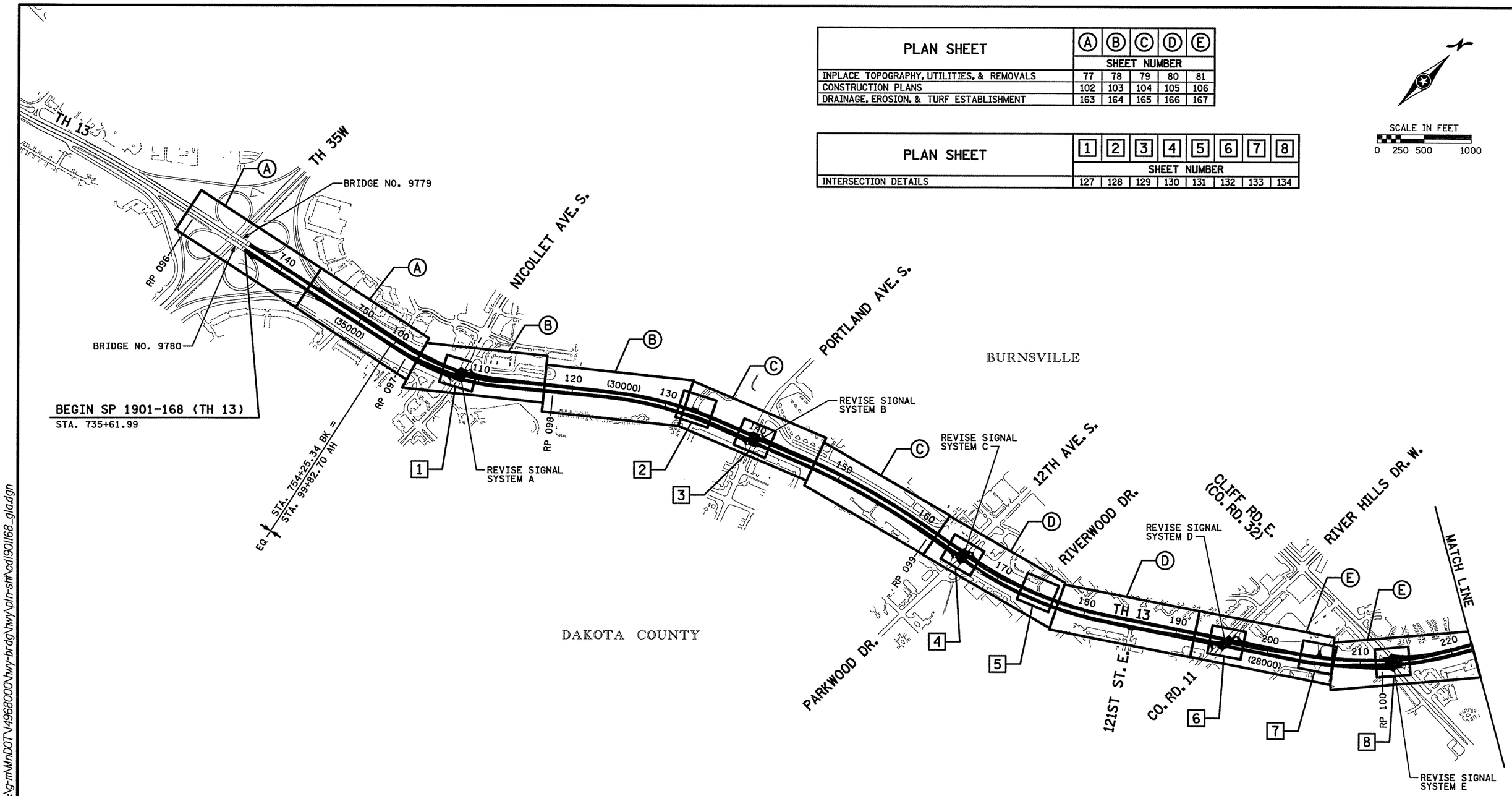
1901-168 (TH 13 = 117)
STATE PROJ. NO. 1902-66 (TH 13 = 194) SHEET NO. 1 OF 393 SHEETS

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PLAN SHEET	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
	SHEET NUMBER				
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS	77	78	79	80	81
CONSTRUCTION PLANS	102	103	104	105	106
DRAINAGE, EROSION, & TURF ESTABLISHMENT	163	164	165	166	167

PLAN SHEET	1	2	3	4	5	6	7	8
	SHEET NUMBER							
INTERSECTION DETAILS	127	128	129	130	131	132	133	134

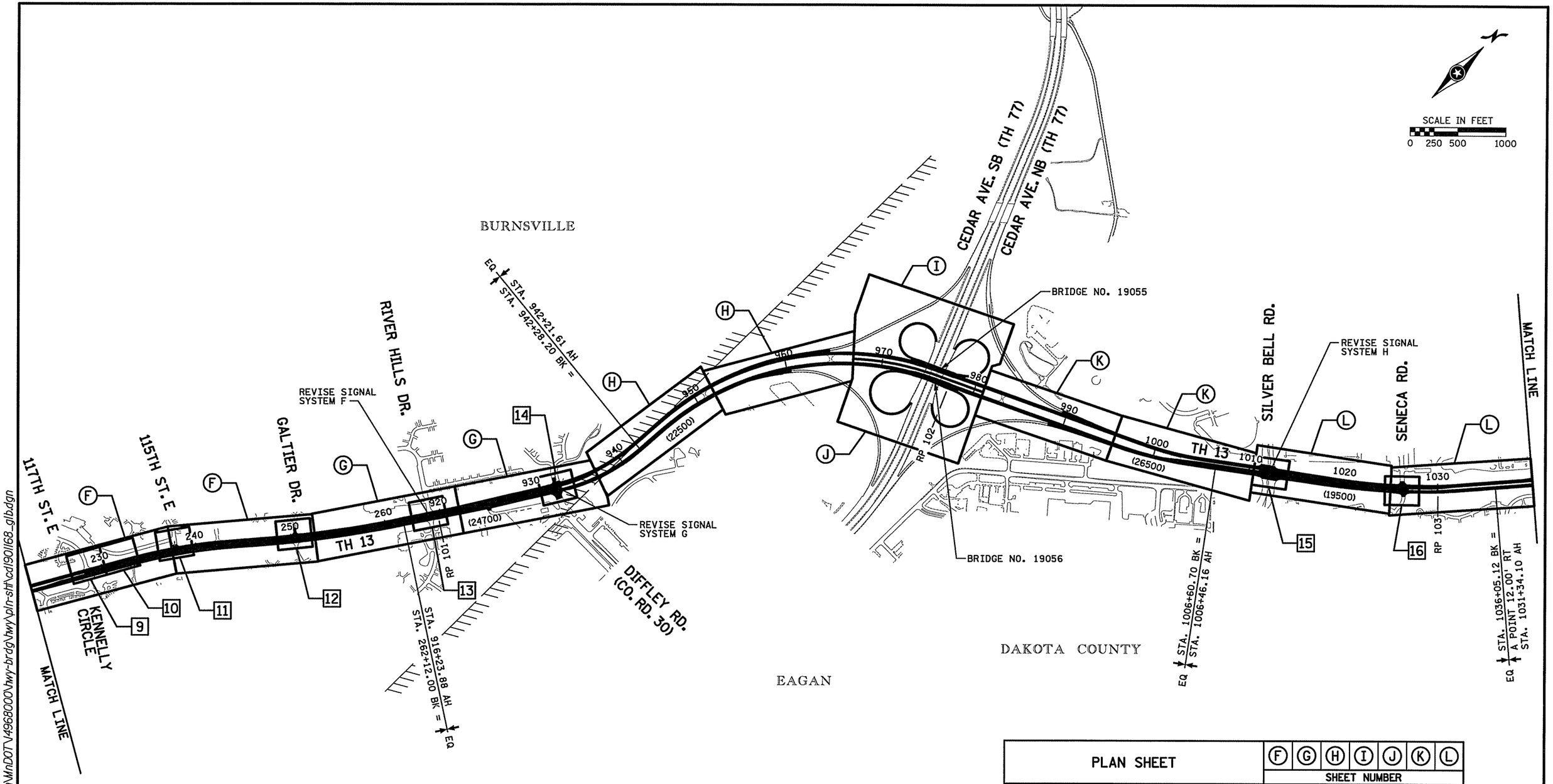
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LEGEND	
═══	INPLACE ROADWAY
▬▬▬	PROPOSED CONSTRUCTION
(XXXXX)	AVERAGE DAILY TRAFFIC

DATE: 2/13/2012 TIME: 3:59:39 PM
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DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	GENERAL LAYOUT	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 2 of 393 Sheets



PLAN SHEET	Ⓕ	Ⓖ	Ⓗ	Ⓘ	Ⓙ	Ⓚ	Ⓛ
	SHEET NUMBER						
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS	82	83	84	85	86	87	88
CONSTRUCTION PLANS	107	108	109	110	111	112	113
DRAINAGE, EROSION, & TURF ESTABLISHMENT	168	169	170	171	172	173	174

PLAN SHEET	9	10	11	12	13	14	15	16
	SHEET NUMBER							
INTERSECTION DETAILS	135	136	137	138	139	140	141	142

LEGEND

- INPLACE ROADWAY
- PROPOSED CONSTRUCTION
- (XXXXX) AVERAGE DAILY TRAFFIC

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DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

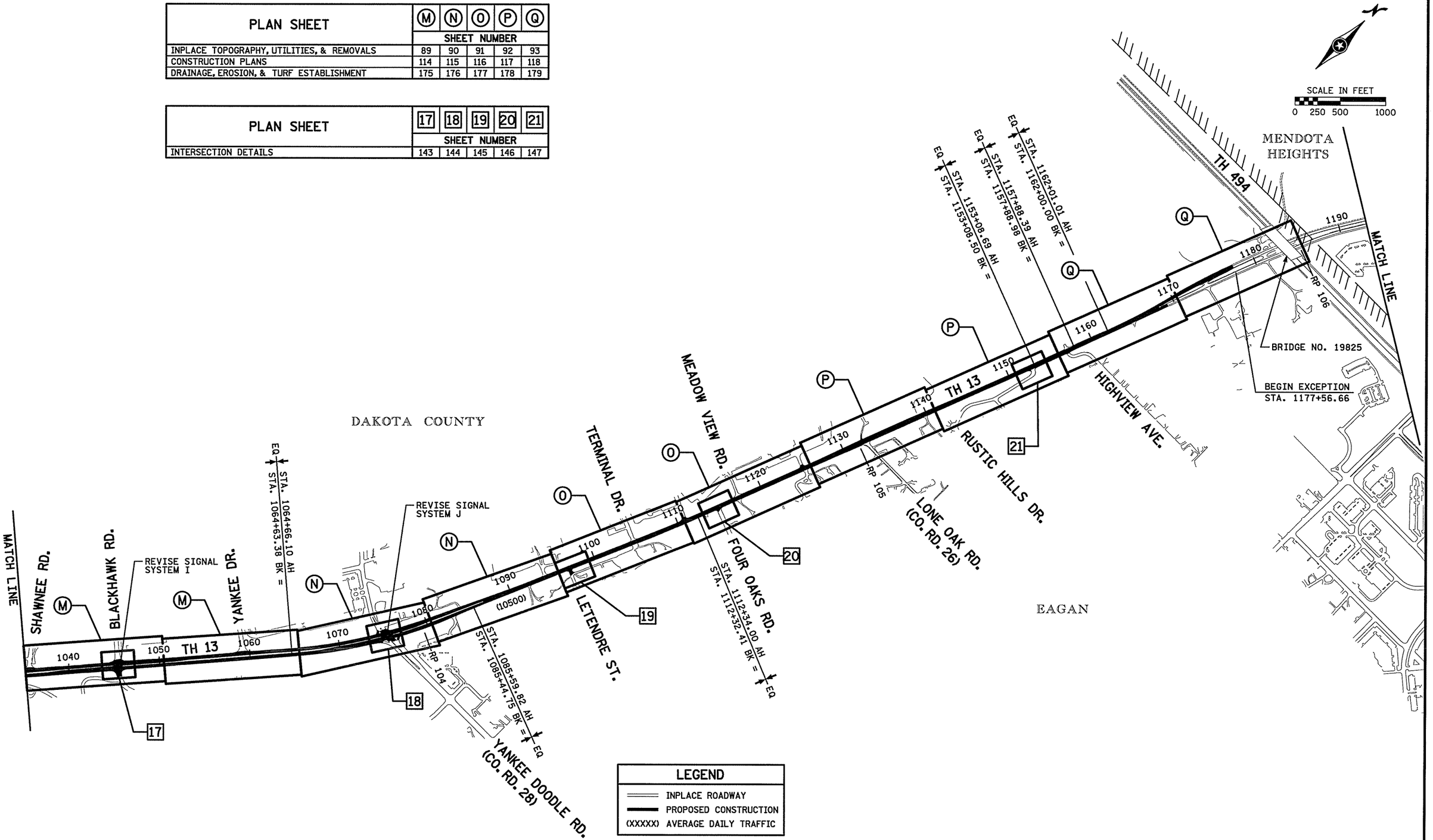
TH 13
BETTER ROADS
PRESERVATION PROJECT

GENERAL LAYOUT

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 3 of 393 Sheets

PLAN SHEET	Ⓜ	Ⓝ	Ⓞ	Ⓟ	Ⓠ
	SHEET NUMBER				
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS	89	90	91	92	93
CONSTRUCTION PLANS	114	115	116	117	118
DRAINAGE, EROSION, & TURF ESTABLISHMENT	175	176	177	178	179

PLAN SHEET	17	18	19	20	21
	SHEET NUMBER				
INTERSECTION DETAILS	143	144	145	146	147



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DRAWN BY: SFH
CHECKED BY: SJS

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DATE: FEBRUARY 13, 2012 LIC. NO. 15400

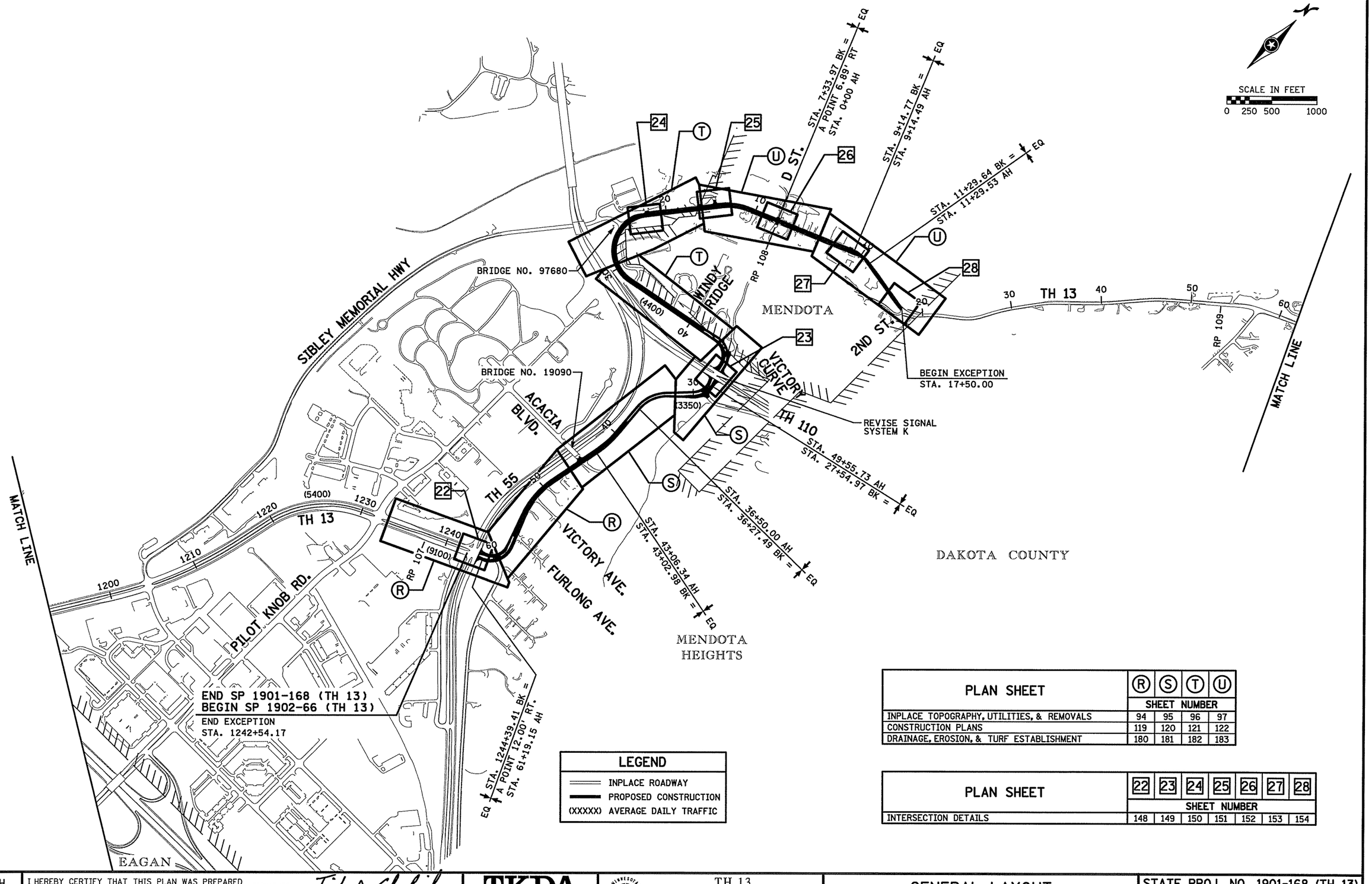
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TH 13
BETTER ROADS
PRESERVATION PROJECT

GENERAL LAYOUT

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 4 of 393 Sheets

DATE: 2/13/2012 TIME: 3:59:48 PM
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PLAN SHEET	Ⓡ	Ⓢ	Ⓣ	Ⓤ
	SHEET NUMBER			
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS	94	95	96	97
CONSTRUCTION PLANS	119	120	121	122
DRAINAGE, EROSION, & TURF ESTABLISHMENT	180	181	182	183

PLAN SHEET	22	23	24	25	26	27	28
	SHEET NUMBER						
INTERSECTION DETAILS	148	149	150	151	152	153	154

LEGEND

- INPLACE ROADWAY
- PROPOSED CONSTRUCTION
- (XXXXX) AVERAGE DAILY TRAFFIC

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

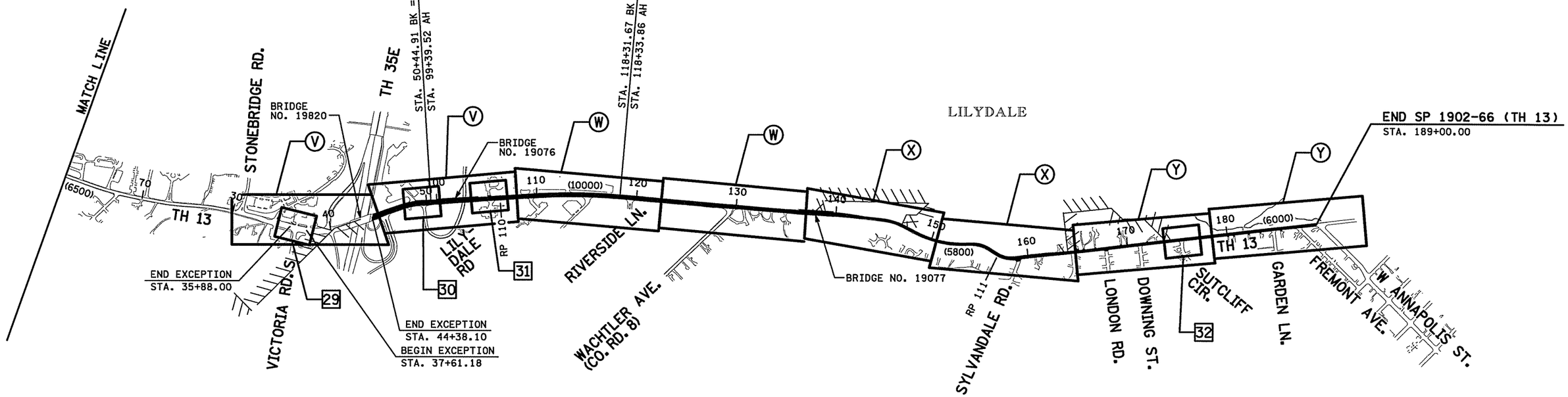
GENERAL LAYOUT

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 5 of 393 Sheets

PLAN SHEET	SHEET NUMBER			
	(V)	(W)	(X)	(Y)
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS	98	99	100	101
CONSTRUCTION PLANS	123	124	125	126
DRAINAGE, EROSION, & TURF ESTABLISHMENT	184	185	186	187

PLAN SHEET	SHEET NUMBER			
	29	30	31	32
INTERSECTION DETAILS	155	156	157	158

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LEGEND	
═══	INPLACE ROADWAY
▬▬▬	PROPOSED CONSTRUCTION
(XXXXX)	AVERAGE DAILY TRAFFIC

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CHECKED BY: SJS

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

GENERAL LAYOUT

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 6 of 393 Sheets

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	SP 1901-168 QUANTITY	SP 1902-66 QUANTITY
		2021.501	MOBILIZATION		LUMP SUM	1	1	
		2031.501	FIELD OFFICE TYPE D		EACH	1	1	
		2031.503	FIELD LABORATORY TYPE DX		EACH	1	1	
		2051.501	MAINT & RESTORATION OF HAUL ROADS		LUMP SUM	1	1	
A	12	2101.501	CLEARING		ACRE	1.1	0.6	0.5
A	12	2101.502	CLEARING		TREE	24	8	16
A	12	2101.506	GRUBBING		ACRE	1.1	0.6	0.5
A	12	2101.507	GRUBBING		TREE	24	8	16
		2102.502	PAVEMENT MARKING REMOVAL		LIN FT	4400	4400	
K	286	2102.502	PAVEMENT MARKING REMOVAL-PERMANENT		LIN FT	340	340	
N	18-28	2104.501	REMOVE PIPE CULVERTS		LIN FT	711	145	566
N	18-28	2104.501	REMOVE SEWER PIPE (STORM)		LIN FT	1402	217	1185
A	12	2104.501	REMOVE CURB AND GUTTER		LIN FT	3971	2827	1144
D	15	2104.501	REMOVE GUARD RAIL-PLATE BEAM		LIN FT	4846	2309	2537
A	12	2104.505	REMOVE CONCRETE WALK		SQ YD	1964	1630	334
A	12	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	24		24
A	12	2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	24729	5447	19282
N	18-28	2104.509	REMOVE PIPE APRON		EACH	6	4	2
N	18-28	2104.509	REMOVE CONCRETE HEADWALL		EACH	1	1	
D	15	2104.509	REMOVE ANCHORAGE ASSEMBLY-PLATE BEAM		EACH	12	10	2
D	15	2104.509	REMOVE BREAKAWAY CABLE TERMINAL		EACH	11	11	
N	18-28	2104.509	REMOVE CATCH BASIN		EACH	9	1	8
N	18-28	2104.509	REMOVE CASTING		EACH	2	1	1
		2104.509	REMOVE SIGN TYPE C	(2)	EACH	12	10	2
A	12	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	19548	6927	12621
D	15	2104.523	SALVAGE ENERGY ABSORBING TERMINAL	(3)	EACH	2		2
G	199	2104.523	SALVAGE SIGN TYPE C		EACH	4	4	
H	199	2104.523	SALVAGE SIGN TYPE D		EACH	7	7	
		2104.601	REMOVE MISCELLANEOUS STRUCTURES	(4)	LUMP SUM	1	1	
		2104.601	HAUL SALVAGED MATERIAL	(5)	LUMP SUM	1		
B	13	2104.603	REMOVE AND REPLACE BITUMINOUS PAVEMENT		LIN FT	3129	2516	613
		2105.601	DEWATERING	(1)	LUMP SUM	1	1	
L,M	191-195	2105.603	MINOR GRADING		LIN FT	1930	960	970
C	14	2106.607	EXCAVATION - COMMON (P)		CU YD	6114	3075	3039
C	14	2106.607	COMMON EMBANKMENT (CV) (P)		CU YD	6726	6447	279

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	SP 1901-168 QUANTITY	SP 1902-66 QUANTITY
B	13	2211.503	AGGREGATE BASE (CV) CLASS 6		CU YD	16580	1893	14687
		2221.501	AGGREGATE SHOULDERING CLASS 2	(6)	TON	2500	1800	700
		2231.501	BITUMINOUS PATCHING MIXTURE	(7)	TON	185	134	51
A	12	2232.501	MILL BITUMINOUS SURFACE (2.0")		SQ YD	188890	188890	
A	12	2232.501	MILL BITUMINOUS SURFACE (3.0")		SQ YD	77796		77796
A	12	2232.501	MILL BITUMINOUS SURFACE (4.0")		SQ YD	166130	166130	
A	12	2232.501	MILL BITUMINOUS SURFACE (5.0")		SQ YD	14339	14339	
B	13	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,B)		TON	22134	4265	17869
B	13	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,C)		TON	1146	1146	
B	13	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)		TON	54867	54867	
B	13	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,F)		TON	6118	6118	
M	194-195	2451.509	AGGREGATE BEDDING (CV)		CU YD	5		5
M	194-195	2501.511	15" CS PIPE CULVERT		LIN FT	369	79	290
M	194-195	2501.511	48" CS PIPE CULVERT		LIN FT	28	28	
M	194-195	2501.515	48" GS PIPE APRON		EACH	1	1	
M	194-195	2501.515	60" GS PIPE APRON		EACH	1	1	
L	191-193	2501.515	15" RC PIPE APRON		EACH	1		1
L	191-193	2501.515	36" RC PIPE APRON		EACH	1	1	
M	194-195	2501.521	17" SPAN CS PIPE-ARCH CULVERT		LIN FT	24		24
M	194-195	2501.561	24" RC PIPE CULVERT DES 3006 CL III		LIN FT	40		40
M	194-195	2501.567	35" SPAN CS SAFETY APR & GRATE DES 3128		EACH	2		2
M	194-195	2501.569	15" CS SAFETY APRON		EACH	25	5	20
M	194-195	2501.569	18" CS SAFETY APRON		EACH	2		2
M	194-195	2501.569	17" SPAN CS SAFETY APRON		EACH	2		2
M	194-195	2501.569	21" SPAN CS SAFETY APRON		EACH	2		2
L	191-193	2501.569	18" RC SAFETY APRON		EACH	2	2	
L,M	191-195	2501.569	24" RC SAFETY APRON		EACH	6	3	3

NOTES:

(1) SEE DETAIL ON SHEET NO. 196.
(2) SEE SHEETS 203 THRU 205 FOR LOCATIONS.
(3) ET-2000. DELIVER TO Mn/DOT. SEE SPECIAL PROVISIONS.
(4) WEIGH-IN-MOTION SYSTEM. SEE SHEET 84 FOR LOCATION.
(5) STATE FUNDS.
(6) TO BE USED AS DIRECTED BY THE ENGINEER.
(7) THIS ITEM SHALL MEET THE REQUIREMENTS OF THE PROPOSED BITUMINOUS WEAR COURSE, OR AS DIRECTED BY THE ENGINEER.

DATE: 2/15/2012 TIME: 6:09:43 AM
FILENAME: K:\G-M\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\90168_eqa.dgn

DRAWN BY: SJS
CHECKED BY: TAC

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 15, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

ESTIMATED QUANTITIES

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 7 of 393 Sheets

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	SP 1901-168 QUANTITY	SP 1902-66 QUANTITY
L,M	191-195	2501.602	CLEAN INLET STRUCTURE		EACH	14	4	10
M	194-195	2501.603	CLEAN PIPE CULVERT		LIN FT	229	166	63
E	15	2502.541	4" PERF TP PIPE DRAIN		LIN FT	1891		1891
L	191-193	2503.511	15" CP PIPE SEWER		LIN FT	918		918
L	191-193	2503.541	12" RC PIPE SEWER DES 3006 CL V		LIN FT	459	49	410
L	191-193	2503.541	15" RC PIPE SEWER DES 3006 CL V		LIN FT	1239	6	1233
L	191-193	2503.541	18" RC PIPE SEWER DES 3006 CL III		LIN FT	76	76	
L	191-193	2503.541	24" RC PIPE SEWER DES 3006 CL III		LIN FT	317	197	120
L	191-193	2503.541	36" RC PIPE SEWER DES 3006 CL IV		LIN FT	48	48	
L,M	191-195	2503.602	CONNECT TO EXISTING STORM SEWER		EACH	12	8	4
L	191-193	2503.603	CLEAN PIPE SEWER		LIN FT	250	82	168
L	191-193	2503.603	CLEAN AND VIDEO TAPE PIPE SEWER		LIN FT	401		401
L	191-193	2506.501	CONST DRAINAGE STRUCTURE DES C G OR H		LIN FT	89	17	72
L	191-193	2506.501	CONST DRAINAGE STRUCTURE DESIGN F		LIN FT	5		5
L	191-193	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020		LIN FT	22	22	
L	191-193	2506.501	CONST DRAINAGE STRUCTURE DES 78-4020		LIN FT	3		3
L	191-193	2506.516	CASTING ASSEMBLY		EACH	33	8	25
L,P	29-30,191-193	2506.522	ADJUST FRAME & RING CASTING		EACH	7	5	2
L	191-193	2506.602	CLEAN OUT CATCH BASIN		EACH	5	2	3
L	191-193	2506.602	CONNECT INTO EXISTING DRAINAGE STRUCTURE		EACH	15	4	11
L	191-193	2506.602	REPAIR CATCH BASINS		EACH	3		3
L,M	191-195	2511.501	RANDOM RIPRAP CLASS II		CU YD	168	157	11
L,M	191-195	2511.501	RANDOM RIPRAP CLASS III		CU YD	177	177	
L,M	191-195	2511.515	GEOTEXTILE FILTER TYPE IV		SQ YD	853	819	34
B	13	2521.618	CONCRETE WALK		SQ FT	18614	14945	3669
B	13	2531.501	CONCRETE CURB & GUTTER DESIGN B424		LIN FT	4115	195	3920
B	13	2531.501	CONCRETE CURB & GUTTER DESIGN B448		LIN FT	120	120	
B	13	2531.507	8" CONCRETE DRIVEWAY PAVEMENT		SQ YD	24		24
M	194-195	2531.511	CONCRETE FLUME		CU YD	5	5	
B	13	2531.603	CONCRETE CURB & GUTTER		LIN FT	3129	2516	613
B	13	2531.603	CONCRETE CURB DESIGN V		LIN FT	26	8	18
B	13	2531.618	TRUNCATED DOMES		SQ FT	1843	1623	220
		2533.507	PORTABLE PRECAST CONC BARRIER DES 8337		LIN FT	550	550	
		2533.508	RELOCATE PORT PRECAST CONC BAR DES 8337		LIN FT	1200	1200	
F	15	2540.602	MAIL BOX SUPPORT		EACH	14	2	12

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	SP 1901-168 QUANTITY	SP 1902-66 QUANTITY
R	319	2550.602	LOOP DETECTOR DESIGN SAWCUT		EACH	5	5	
D	15	2554.501	TRAFFIC BARRIER DESIGN SPECIAL		LIN FT	375	175	200
D	15	2554.501	TRAFFIC BARRIER DESIGN BULLNOSE		LIN FT	290	290	
D	15	2554.501	TRAFFIC BARRIER DESIGN B8338		LIN FT	4122	1795	2327
L,M	191-195	2554.509	GUIDE POST TYPE B		EACH	46	23	23
D	15	2554.521	ANCHORAGE ASSEMBLY-PLATE BEAM		EACH	10	8	2
D	15	2554.523	END TREATMENT-TANGENT TERMINAL	(13)	EACH	15	13	2
		2554.615	IMPACT ATTENUATOR	(14)	ASSEMBLY	4	4	
		2554.615	RELOCATE IMPACT ATTENUATOR	(14)	ASSEMBLY	10	10	
		2563.601	TRAFFIC CONTROL SUPERVISOR		LUMP SUM	1	1	
		2563.601	TRAFFIC CONTROL		LUMP SUM	1	1	
		2563.602	RAISED PAVEMENT MARKER TEMPORARY	(15)	EACH	350	350	
J	199	2564.531	SIGN PANELS TYPE C		SQ FT	50	50	
G	199	2564.537	INSTALL SIGN TYPE C		EACH	4	4	
H	199	2564.537	INSTALL SIGN TYPE D		EACH	7	7	
		2565.616	REVISE SIGNAL SYSTEM A	(1)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM B	(2)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM C	(3)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM D	(4)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM E	(5)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM F	(6)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM G	(7)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM H	(8)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM I	(9)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM J	(10)	SYSTEM	1	1	
		2565.616	REVISE SIGNAL SYSTEM K	(11)	SYSTEM	1		1
Q	16	2573.502	SILT FENCE, TYPE HEAVY DUTY	(12)	LIN FT	1200	800	400
Q	16	2573.502	SILT FENCE, TYPE SUPER DUTY	(12)	LIN FT	60	40	20
Q	16	2573.512	TEMPORARY DITCH CHECK TYPE 2	(12)	LIN FT	540	228	312
Q	16	2573.530	STORM DRAIN INLET PROTECTION	(12)	EACH	280	190	90
Q	16	2573.540	FILTER LOG TYPE COMPOST LOG	(12)	LIN FT	3407	3131	276
Q	16	2573.602	CULVERT PROTECTION	(12)	EACH	11	9	2

NOTES:

(1) REVISE SIGNAL SYSTEM AT TH 13 AND NICOLLET AVE. S. SEE SHEETS 328 THRU 332.
(2) REVISE SIGNAL SYSTEM AT TH 13 AND PORTLAND AVE. S. SEE SHEETS 333 THRU 336.
(3) REVISE SIGNAL SYSTEM AT TH 13 AND PARKWOOD DR./12TH AVE. S. SEE SHEETS 337 THRU 340.
(4) REVISE SIGNAL SYSTEM AT TH 13 AND CSAH 11 (W. RIVER HILLS DR.). SEE SHEETS 341 THRU 345.
(5) REVISE SIGNAL SYSTEM AT TH 13 AND CSAH 32 (CLIFF RD.). SEE SHEETS 346 THRU 350.
(6) REVISE SIGNAL SYSTEM AT TH 13 AND E. RIVER HILLS DR. SEE SHEETS 351 THRU 354.
(7) REVISE SIGNAL SYSTEM AT TH 13 AND CSAH 30 (DIFFLEY RD.). SEE SHEETS 355 THRU 358.
(8) REVISE SIGNAL SYSTEM AT TH 13 AND SILVER BELL RD. SEE SHEETS 359 THRU 363.
(9) REVISE SIGNAL SYSTEM AT TH 13 AND BLACKHAWK RD. SEE SHEETS 364 THRU 366.
(10) REVISE SIGNAL SYSTEM AT TH 13 AND CSAH 28 (YANKEE DOODLE RD.). SEE SHEETS 367 THRU 369.
(11) REVISE SIGNAL SYSTEM AT TH 13 AND TH 110. SEE SHEETS 370 THRU 373.
(12) INCLUDES ALL REQUIRED MAINTENANCE AND OR REPLACEMENT FOR THE DURATION OF THE PROJECT.
(13) SHALL BE EITHER ET-2000 OR SKT-350.
(14) TEMPORARY PLACEMENT.
(15) 70 ONE-WAY WHITE, 250 ONE-WAY YELLOW, AND 30 TWO-WAY YELLOW.

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CHECKED BY: TAC

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 15, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

ESTIMATED QUANTITIES

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 8 of 393 Sheets

INDEX OF TABULATIONS

TAB LETTER	SHEET NO.	DESCRIPTION
A	12	CLEARING, GRUBBING, REMOVALS, SAWING, & MILLING
B	13	AGGREGATE, BITUMINOUS, AND CONCRETE ITEMS
C	14	EARTHWORK SUMMARY
D	15	GUARD RAIL
E	15	SUBSURFACE DRAINAGE
F	15	MAIL BOXES
G	199	SALVAGE & INSTALL SIGN TYPE C
H	199	SALVAGE & INSTALL SIGN TYPE D
J	199	SIGN PANELS TYPE C
K	286	PAVEMENT MARKINGS
L	191-193	STORM SEWER TABULATION
M	194-195	CULVERT TABULATION
N	18-28	UTILITY TABULATION - STORM SEWER / CULVERTS
P	29-30	UTILITY TABULATION - SANITARY SEWER
Q	16	EROSION CONTROL AND TURF ESTABLISHMENT
R	319	TABULATED TMS QUANTITIES

ESTIMATED QUANTITIES

TAB LETTER	SHEET NO.	ITEM NO.	ITEM	NOTE NO.	UNIT	TOTAL ESTIMATED QUANTITY	SP 1901-168 QUANTITY	SP 1902-66 QUANTITY
Q	16	2575.501	SEEDING		ACRE	5	3	2
Q	16	2575.502	SEED MIXTURE 250		POUND	253	185	68
Q	16	2575.502	SEED MIXTURE 270		POUND	120	61	59
Q	16	2575.523	EROSION CONTROL BLANKETS CATEGORY 2	(1)	SQ YD	4338	2149	2189
Q	16	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	(1)(2)	SQ YD	17501	12792	4709
Q	16	2575.532	FERTILIZER TYPE 3		POUND	1577	1080	497
Q	16	2575.571	RAPID STABILIZATION METHOD 3		M GALLONS	13	9	4
Q	16	2575.572	RAPID STABILIZATION METHOD 4		SQ YD	10922	7471	3451
		2580.601	INTERIM PAVEMENT MARKING		LUMP SUM	1	1	
		2581.501	REMOVABLE PREFORMED PLASTIC MARKING		LIN FT	4500	4500	
		2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)		LIN FT	530	530	
K	286	2582.501	PAVT MSSG (LT ARROW) POLY PREF		EACH	63	63	
K	286	2582.501	PAVT MSSG (RT ARROW) POLY PREF		EACH	61	61	
K	286	2582.501	PAVT MSSG (LT ARROW) EPOXY		EACH	64	5	59
K	286	2582.501	PAVT MSSG (RT ARROW) EPOXY		EACH	37	15	22
		2582.502	4" SOLID LINE WHITE-PAINT		LIN FT	1230	1230	
		2582.502	4" BROKEN LINE WHITE-PAINT		LIN FT	380	380	
		2582.502	4" SOLID LINE YELLOW-PAINT		LIN FT	3380	3380	
		2582.502	4" BROKEN LINE YELLOW-PAINT		LIN FT	70	70	
		2582.502	4" DOUBLE SOLID LINE YELLOW-PAINT		LIN FT	260	260	
K	286	2582.502	4" SOLID LINE WHITE-POLY PREF		LIN FT	21129	21129	
K	286	2582.502	8" SOLID LINE WHITE-POLY PREF		LIN FT	3435	3435	
K	286	2582.502	4" BROKEN LINE WHITE-POLY PREF		LIN FT	13160	13160	
K	286	2582.502	4" DOTTED LINE WHITE-POLY PREF		LIN FT	170	170	
K	286	2582.502	8" DOTTED LINE WHITE-POLY PREF		LIN FT	345	345	
K	286	2582.502	7" BROKEN LINE WHITE-POLY PREF (GR IN)		LIN FT	170	170	
K	286	2582.502	11" DOTTED LINE WHITE-POLY PREF (GR IN)		LIN FT	170	170	
K	286	2582.502	4" SOLID LINE WHITE-EPOXY		LIN FT	126591	89936	36655
K	286	2582.502	24" SOLID LINE WHITE-EPOXY		LIN FT	24		24
K	286	2582.502	4" BROKEN LINE WHITE-EPOXY		LIN FT	350	230	120
K	286	2582.502	8" DOTTED LINE WHITE-EPOXY		LIN FT	254	254	
K	286	2582.502	4" SOLID LINE YELLOW-EPOXY		LIN FT	91523	76251	15272
K	286	2582.502	24" SOLID LINE YELLOW-EPOXY		LIN FT	657	500	157
K	286	2582.502	4" BROKEN LINE YELLOW-EPOXY		LIN FT	3233	538	2695
K	286	2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY		LIN FT	11251	4368	6883
K	286	2582.503	CROSSWALK MARKING-POLY PREFORM		SQ FT	9760	9760	
K	286	2582.503	CROSSWALK MARKING-EPOXY		SQ FT	1710	540	1170

NOTES:

(1) INCLUDES ALL REQUIRED MAINTENANCE AND OR REPLACEMENT FOR THE DURATION OF THE PROJECT.

(2) RAPID DEGRADE WOOD FIBER NATURAL NETTING TO BE USED. STRAW BLANKET NOT TO BE USED.

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CHECKED BY: TAC

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 15, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

ESTIMATED QUANTITIES

STATE PROJ. NO. 1901-168 (TH 13)

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

Mn/DOT STANDARD PLATES	
PLATE NO.	**DESCRIPTION**
3000L	REINFORCED CONCRETE PIPE
3006G	GASKET JOINT FOR R.C. PIPE
3007D	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3041D	CORRUGATED METAL PIPE (3" X 1" CORRUGATION)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3122K	METAL APRON FOR C.M. PIPE-ARCH CULVERT
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128H	METAL SAFETY APRON & GRATE
3133C	RIPRAP AT RCP OUTLETS
3134C	RIPRAP AT CMP OUTLETS
3145F	CONCRETE PIPE TIES
3148A	SAFETY SLOPE METAL END SECTION FOR CIRCULAR & ARCHED PIPES
3221C	CORRUGATED STEEL PIPE COUPLING BAND
4005L	MANHOLE OR CATCH BASIN (TYPE A & B CONE SECTIONS, PRECAST) DESIGN F
4006L	MANHOLE OR CATCH BASIN (PRECAST) DESIGNS G AND H
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN
4022A	MANHOLE OR CATCH BASIN COVER
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
4125D	CATCH BASIN FRAME CASTING (GRATE FRAME CASTING NO. 806)
4129G	CATCH BASIN FRAME CASTING (GRATE FRAME CASTING NO. 802A)
4132F	CATCH BASIN FRAME CASTING (GRATE FRAME CASTING NO. 805)
4134A	CURB BOX CASTING FOR CATCH BASIN (CURB BOX CASTING NO. 825)
4143E	STOOL GRATE AND CONCRETE FRAME (CASTING NO. 731 AND FRAME)
4152C	CATCH BASIN GRATE CASTING (GRATE CASTING NO. 814A)
4154B	CATCH BASIN GRATE CASTING (GRATE CASTING NO. 816) (1)
4160D	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B AND V CURBS) CURB BOX CASTING NOS. 823A AND 833A
4180J	MANHOLE OR CATCH BASIN STEP

Mn/DOT STANDARD PLATES	
PLATE NO.	**DESCRIPTION**
7020K	CONCRETE CURB (DESIGN B, V, S, DR, AND BR)
7035N	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7036G	PEDESTRIAN CURB RAMP PERPENDICULAR DESIGN
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB & GUTTER (DESIGN B & V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000I	STANDARD BARRICADES
8110E	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8111E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)
8112G	PEDESTAL FOUNDATION (TRAFFIC CONTROL SIGNALS)
8114A	PVC HAND HOLE/PULL BOX (NO VEHICLE LOAD)
8122F	PEDESTAL & PEDESTAL BASE (FOR TRAFFIC CONTROL SIGNALS SUPPORT)
8123G	POLE & MAST ARM
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR
8150C	INSTALLATION OF CULVERT MARKERS
8318C	GUARDRAIL ANCHORAGE PLATE FOR BRIDGES AND BCTS
8337C	TEMPORARY PORTABLE PRECAST CONCRETE BARRIER (TYPE F)
8338D	W-BEAM GUARDRAIL & END ANCHORAGES (INSTALLATION WITH STEEL POSTS)
9102D	TURF ESTABLISHMENT AREAS (AT PIPE CULVERT ENDS)
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

NOTES:

(1) USE BENT BOLT WITH 816 GRATE.

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

STANDARD PLATES

STATE PROJ. NO. 1901-168 (TH 13)

SOILS AND CONSTRUCTION NOTES:

TOP OF GRADING SUBGRADE (GRADING GRADE), IS DEFINED AS THE BOTTOM OF THE AGGREGATE BASE.

STRIP ALL INPLACE TOPSOIL AND SLOPE DRESSING IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. SLOPE DRESSING ON THIS PROJECT IS DEFINED AS THE INPLACE TOPSOIL OR OTHER SOIL PLACED DURING PRIOR CONSTRUCTION WORK TO PROVIDE A MEDIUM FOR ESTABLISHING TURF. FOR ESTIMATING PURPOSES, 4" OF TOPSOIL IS AVAILABLE ON SITE.

PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. ALL LONGITUDINAL SAWCUTS SHALL BE PLACED AT THE INSIDE EDGE OF PROPOSED LANE LINES. ALL TRANSVERSE SAWCUTS SHALL BE PERPENDICULAR TO PROPOSED LANELINES. SAWCUT EDGES SHALL BE TACK-COATED PRIOR TO PAVING (INCIDENTAL).

IN ANY CASE 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 CONNECTING NEW SURFACING ADJACENT TO ANY INPLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1(V):1(H) SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.

IN LOCATIONS OF WIDENING, THE CONTRACTOR SHALL MATCH THE EXISTING SOILS AND LAYERS IN THE UPPER 4 FEET OF THE ROADWAYS TO THE GREATEST EXTENT POSSIBLE. GRANULAR BACKFILL SHALL NOT BE PERMITTED ADJACENT TO EXISTING NON-GRANULAR (FROST SUSCEPTIBLE) SOILS IN ORDER TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. THE CONTRACTOR SHALL PROVIDE A 1:1 (V:H) TRANSVERSE TRANSITION BETWEEN THE CHANGES IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL, WHERE WIDENING ADJACENT TO NON-GRANULAR (FROST SUSCEPTIBLE) EXISTING SOILS.

AS A PRECAUTIONARY MEASURE FROM A SOILS STANDPOINT, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING 1(V):2(H) OR GREATER (FLATTER) SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.

THE BOTTOM OF ALL SUBCUTS SHALL BE SHAPED AND COMPACTED BY THE "QUALITY COMPACTION METHOD".

OBTAIN COMPACTION ON THE GRADING PORTION OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.

TEST ROLLING SHALL NOT BE REQUIRED.

ALL DISTURBED ROADWAY MATERIALS SUCH AS CONCRETE, BITUMINOUS, AND AGGREGATES MAY BE UTILIZED ACCORDING TO MN/DOT SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS. MATERIALS NOT UTILIZED ON THIS PROJECT WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH MN/DOT SPECIFICATION 2104.3C3 AND AS AGREED UPON BY THE ENGINEER.

THE CONTRACTOR MAY SUBSTITUTE, AT NO COST TO MN/DOT, THE AGGREGATE SHOULDERING CLASS 2 WITH AGGREGATE SHOULDERING CLASS 1 MODIFIED THAT MEETS ONE OF THE FOLLOWING REQUIREMENTS:

THE AGGREGATE SHOULDERING CLASS 1 MODIFIED SHALL BE MODIFIED TO CONTAIN 40%-60% (BY WEIGHT) SALVAGED BITUMINOUS OR CONCRETE AGGREGATE. THE CRUSHED CONCRETE AND/OR BITUMINOUS SHALL BE BLENDED INTO A HOMOGENEOUS COMPOSITE MIXTURE. THE GRADATION OF THE COMPOSITE MIXTURE SHALL MEET THE GRADATION REQUIREMENTS OF CLASS 1 OR CLASS 2 AGGREGATE, MNDOT SPEC. 3138.

THE AGGREGATE SHOULDERING CLASS 1 MODIFIED SHALL CONSIST OF 100 PERCENT BITUMINOUS MILLINGS FROM THE PROJECT. NO MIXING WITH VIRGIN AGGREGATE WILL BE ALLOWED UNLESS APPROVED BY MNDOT. THE ONLY GRADATION REQUIREMENTS ARE THAT 100 PERCENT MUST PASS THE 1.5-INCH SIEVE AND 95 TO 100 PERCENT MUST PASS THE 1-INCH SIEVE. IF MILLINGS NEED TO BE IMPORTED TO MEET THE ESTABLISHED GRADE-LINE AND CROSS SECTION, PRIOR TO MILLINGS BEING AVAILABLE FROM THIS PROJECT, THE IMPORTED MATERIAL SHALL ALSO BE 100 PERCENT BITUMINOUS MILLINGS AND MEET THE GRADATION REQUIREMENTS ABOVE. THE IMPORTED MILLINGS SHALL HAVE A MINIMUM BITUMEN CONTENT OF 4 PERCENT AND BE APPROVED BY MNDOT PRIOR TO USE. SEE SPECIAL PROVISIONS FOR FURTHER REQUIREMENTS.

OBTAIN COMPACTION ON 4 INCH OR GREATER AGGREGATE BASE LIFTS IN ACCORDANCE WITH THE "MODIFIED PENETRATION INDEX METHOD" REQUIREMENTS. THE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH MNDOT SPEC. 2211.3C3. THIS WOULD INCLUDE ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE. FOR LIFTS OF LESS THAN 4 INCHES OBTAIN COMPACTION IN ACCORDANCE WITH QUALITY COMPACTION METHOD (MNDOT SPEC. 2211.3C2).

THE CONTRACTOR SHALL SHAPE AND RECOMPACT ANY AGGREGATE BASE THAT IS EXPOSED AFTER MILLING THE BITUMINOUS SHOULDER PAVEMENT. THIS WORK SHALL BE PERFORMED AHEAD OF THE SHOULDER PAVING OPERATION AND BE DONE TO THE SATISFACTION OF THE ENGINEER. THIS WORK WILL BE INCIDENTAL.

THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.

AFTER MILLING THE PAVEMENT TO THE REQUIRED DEPTH AND PRIOR TO OVERLAYING, AIR BLAST ANY DETERIORATED CRACKS AND JOINTS TO REMOVE LOOSE OR DETERIORATED BITUMINOUS SURFACING. THE AIR BLASTING SHALL BE DONE WITH HIGH-PRESSURE (100+ PSI) EQUIPMENT.

DEPRESSIONS RESULTING AFTER AIR BLASTING, SWEEPING OR MILLING OPERATIONS, WHICH ARE GREATER THAN 2 INCHES IN DEPTH AND 4 INCHES IN WIDTH AND JOINTS AND CRACKS THAT ARE GREATER THAN 1-1/2 INCHES IN DEPTH AND WIDTH, SHALL BE PATCHED WITH BITUMINOUS PATCHING MIXTURE. PATCHING OF THESE AREAS SHALL BE DONE AHEAD OF THE PAVING OPERATION AND COMPACTED WITH A SMALL VIBRATORY OR PNEUMATIC ROLLER. DEPRESSIONS OF LESSER DIMENSIONS SHALL BE FILLED WITH THE WEAR COURSE MIXTURE, IN FRONT OF THE PAVER.

THE BITUMINOUS PATCHING MIXTURE SHALL MEET THE REQUIREMENTS OF THE PROPOSED BITUMINOUS WEAR COURSE, OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL PROVIDE TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT IN ACCORDANCE WITH SPECIFICATION 2357 (INCIDENTAL).

UTILITIES, INCLUDING MANHOLES AND VALVES, ARE SHOWN IN AREAS OF PLANNED EXCAVATION ONLY. AREAS OF EXCAVATION ARE DEFINED AS AREAS WHERE THE SUBGRADE MATERIAL WILL BE DISTURBED. ADDITIONAL WORK REQUIRED TO MILL AND OVERLAY AROUND MANHOLES AND VALVES, INCLUDING THOSE NOT SHOWN ON THE PLANS, SHALL BE INCIDENTAL.

TEMPORARY GRADING AND SURFACING MATERIALS REQUIRED TO FILL IN EXCAVATIONS TO MEET TEMPORARY DROP-OFF GUIDELINES AND MAINTAIN TEMPORARY PEDESTRIAN ACCESS ROUTES SHALL BE INCIDENTAL.

THE STATIONING FROM TH 55 TO D ST. RUNS IN REVERSE ORDER. REGARDLESS OF THE DIRECTION OF THE STATIONING, AS ONE IS DRIVING THE PROJECT FROM BEGINNING TO END, "LT" DESIGNATES LEFT OF CENTERLINE AND "RT" DESIGNATES RIGHT OF CENTERLINE.

WORK OUTSIDE OF THE RIGHT-OF-WAY AT DIFFLEY ROAD, BLACKHAWK ROAD, YANKEE DOODLE ROAD, D STREET, AND SUTCLIFF CIRCLE IS COVERED BY TEMPORARY ORDERS.

THE TH 13 INPLACE PAVEMENT THICKNESSES ARE SUMMARIZED IN THE TABLE BELOW:

LOCATION	MINIMUM THICKNESS	MAXIMUM THICKNESS	AVERAGE THICKNESS
TH 35W TO NICOLLET AVE.	7.75"	9.25"	8.5"
NICOLLET AVE. TO RIVER HILLS DR.	11.5"	14.5"	12.7"
RIVER HILLS DR. TO TH 77	8.2"	18.0"	14.4"
TH 77 TO SENECA RD.	16.0"	18.0"	16.8"
SENECA RD. TO YANKEE DOODLE RD.	8.0"	8.75"	8.4"
YANKEE DOODLE RD. TO TH 494	6.0"	9.0"	7.3"
TH 55 TO 2ND ST.	7.2"	12.3"	10.2"
TH 35E TO ANNAPOLIS ST.	6.0"	8.75"	7.0"

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

SOILS AND CONSTRUCTION NOTES

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 11 of 393 Sheets

CLEARING, GRUBBING, REMOVALS, SAWING, & MILLING A

TH 13 NB OR TH 13 STATION	CLEARING	CLEARING	GRUBBING	GRUBBING	REMOVE CURB AND GUTTER	REMOVE CONCRETE WALK	REMOVE CONCRETE DRIVEWAY PAVEMENT	REMOVE BITUMINOUS PAVEMENT	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	MILL BITUMINOUS SURFACE (2.0")	MILL BITUMINOUS SURFACE (3.0")	MILL BITUMINOUS SURFACE (4.0")	MILL BITUMINOUS SURFACE (5.0")
	ACRE	TREE	ACRE	TREE	LIN FT	SQ YD	SQ YD	SQ YD	LIN FT	SQ YD	SQ YD	SQ YD	SQ YD
SP 1901-168													
735+00 TO 743+50										1274		5688	
743+50 TO 103+00										3189		10374	
103+00 TO 117+00					327	170		12	271	7084		7692	
117+00 TO 132+00										3625		8032	
132+00 TO 147+00					332	238		108	387	6566		8002	
147+00 TO 162+00										3637		8028	
162+00 TO 177+00					349	200		52	490	6050		7957	
177+00 TO 192+00		1		1	40			156	70	4345		7979	
192+00 TO 207+00					367	285		10	431	7110		7982	
207+00 TO 222+25					527	314		27	583	7224		8085	
222+25 TO 237+50					77	32		60	96	5156		8166	
237+50 TO 252+50					44	23		19	54	4183		8048	
252+50 TO 922+00										4958		8188	
922+00 TO 937+00					65	115		36	198	6324		7896	
937+00 TO 952+00										5537		8041	
952+00 TO 967+00										4492		10973	
967+00 TO 981+00										5367		2834	1308
967+00 TO 981+00										5969		4147	
981+00 TO 995+50										3650		6090	5013
995+50 TO 1010+50										6506		4274	4225
1010+50 TO 1025+00					182	47		109	218	9346		1339	3793
1025+00 TO 1035+20								33		12960			
1035+20 TO 1050+50					23	10		6	28	14282			
1050+50 TO 1065+50										11570			
1065+50 TO 1080+50					479	196		43	555	13612			
1080+50 TO 1095+75								36	45	8140		996	
1095+75 TO 1110+75								225	338	3637		4000	
1110+75 TO 1126+00		2		2	15			1164	1181	876		2060	
1126+00 TO 1141+00	0.45	5	0.45	5				2496	1511	3099			
1141+00 TO 1156+00	0.15		0.15					855	471	4035		2919	
1156+00 TO 1170+50										3559		4393	
1170+50 TO 1185+00										1528		1947	
SP 1901-168 TOTALS	0.60	8	0.60	8	2827	1630		5447	6927	188890		166130	14339
SP 1902-66													
1233+00 TO 59+40					81	69		6	33		2270		
59+40 TO 46+50								2221	2180		6308		
46+50 TO 32+00								2441	2378		6084		
32+00 TO 44+00		4		4	83	54		574	641		6516		
44+00 TO 29+50		3		3				3210	2830		5803		
29+50 TO 16+00					56	18		1866	2054		6500		
16+00 TO 5+00					208	122	24	1322	1626		7397		
5+00 TO 21+00					13	9		62	17		6480		
30+00 TO 45+00					61	17		40	118		447		
45+00 TO 108+00					60	45		30	79		5267		
108+00 TO 122+50											7569		
122+50 TO 137+00	0.05		0.05								6475		
137+00 TO 150+50	0.20	6	0.20	6	582			3749					
150+50 TO 164+80	0.20	3	0.20	3				3447	94		2081		
164+80 TO 178+50	0.05		0.05					193	372		4865		
178+50 TO 189+00								121	199		3734		
SP 1902-66 TOTALS	0.50	16	0.50	16	1144	334	24	19282	12621		77796		
PROJECT TOTALS	1.10	24	1.10	24	3971	1964	24	24729	19548	188890	77796	166130	14339

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SIGNATURE: Timothy A. Chaluphir
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

TABULATIONS
CLEARING, GRUBBING, REMOVALS, SAWING, & MILLING

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 12 of 393 Sheets

AGGREGATE, BITUMINOUS, AND CONCRETE ITEMS B

TH 13 NB OR TH 13 STATION	AGGREGATE BASE (CV) CLASS 6	TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB330B)	TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB330C)	TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B)	TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440E)	TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440F)	REMOVE AND REPLACE BITUMINOUS PAVEMENT	CONCRETE ITEMS						
								CONCRETE WALK	CONCRETE CURB & GUTTER	CONCRETE CURB & GUTTER DESIGN B424	CONCRETE CURB & GUTTER DESIGN B448	CONCRETE CURB DESIGN V	8" CONCRETE DRIVEWAY PAVEMENT	TRUNCATED DOMES
	CU YD	TON	TON	TON	TON	TON	LIN FT	SQ FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ YD	SQ FT
SP 1901-168														
735+00 TO 743+50		72			1360									
743+50 TO 103+00		231			2475									
103+00 TO 117+00	1	217			2339		278	1305	278					132
117+00 TO 132+00		410			1816									
132+00 TO 147+00	10	149			2417		292	1773	292					195
147+00 TO 162+00		338			1888									
162+00 TO 177+00	49	161			2531		251	1536	251		80	8		202
177+00 TO 192+00	28	204			2173						40			
192+00 TO 207+00	1	20			2589		364	2685	364					176
207+00 TO 222+25	3	5			2634		480	2872	480					175
222+25 TO 237+50	1	2			2423		80	452	80					80
237+50 TO 252+50	1	2			2292		43	299	43					80
252+50 TO 922+00					2411			670						166
922+00 TO 937+00					2483		163	978	163					96
937+00 TO 952+00		468			2119									
952+00 TO 967+00		366			2764									
967+00 TO 981+00		35			1594									
967+00 TO 981+00		55			1582									
981+00 TO 995+50		287			2919									
995+50 TO 1010+50		331			2564									
1010+50 TO 1025+00	11	132	76		1828	412	154	561	154					104
1025+00 TO 1035+20	3	5	256			1210		118						40
1035+20 TO 1050+50			161			1454	23	49	23					24
1050+50 TO 1065+50			252			1056								
1065+50 TO 1080+50	11	4	123			1449	356	1564	356					137
1080+50 TO 1095+75	12		278	13	327	537								
1095+75 TO 1110+75	74	79			1329					163				
1110+75 TO 1126+00	457	74			1577		32	83	32					16
1126+00 TO 1141+00	1231	103		19	1709					32				
1141+00 TO 1156+00		83			1115									
1256+00 TO 1170+50		293			1103									
1170+50 TO 1185+00		107			506									
SP 1901-168 TOTALS	1893	4233	1146	32	54867	6118	2516	14945	2516	195	120	8		1623
SP 1902-66														
1233+00 TO 59+50				386			76	366	76					34
59+50 TO 46+50	2406			1477										
46+50 TO 32+00	2645			1480										
32+00 TO 44+00	601			1207			80	393	80					22
44+00 TO 29+50	3482			1578										
29+50 TO 16+00	1994	2		1446			50	167	50					
16+00 TO 5+00	1280	2		1470			232	1538	232			18	24	84
5+00 TO 21+00	4	6		1099			13	248	13					60
30+00 TO 45+00	3	5		76			79	591	79					
45+00 TO 108+00				892			83	366	83					20
108+00 TO 122+50				1283										
122+50 TO 137+00				1098										
137+00 TO 150+50	1205			1364						2122				
150+50 TO 164+80	1015			1486						1747				
164+80 TO 178+50	32			857						51				
178+50 TO 189+00	20			655										
SP 1902-66 TOTALS	14687	15		17854			613	3669	613	3920		18	24	220
PROJECT TOTALS	16580	4248	1146	17886	54867	6118	3129	18614	3129	4115	120	26	24	1843

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PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

TABULATIONS
AGGREGATE, BITUMINOUS, AND CONCRETE ITEMS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 13 of 393 Sheets

EARTHWORK TABULATION

TH 13 STATION	EXCAVATION COMMON		COMMON EMBANKMENT (CV)	
	GRADING	TOPSOIL	GRADING	TOPSOIL
	CU YD	CU YD	CU YD	CU YD
1107+50.00				
1108+00.00	1	5	3	8
1108+12.58		2	2	3
1108+50.00		7	8	10
1109+00.00		9	11	14
1109+50.00		9	11	13
1109+75.08	2	6	11	8
1110+00.00	4	10	26	13
1110+50.00	11	31	134	44
1111+00.00	11	37	240	53
1111+50.00	16	45	301	64
1112+00.00	22	58	329	83
1112+50.00	25	52	240	75
1113+00.00	34	31	82	44
1113+25.00	17	8	4	10
1113+50.00	15	8	10	9
1114+00.00	42	26	47	37
1114+25.05	25	17	33	25
1114+30.38	5	4	7	5
1114+50.00	16	11	18	14
1115+00.00	23	18	33	23
1115+50.00	16	14	40	21
1115+86.82	12	12	26	17
TABULATION 1 OF 3 TOTALS	294	382	1570	537

EARTHWORK TABULATION

TH 13 STATION	EXCAVATION COMMON		COMMON EMBANKMENT (CV)	
	GRADING	TOPSOIL	GRADING	TOPSOIL
	CU YD	CU YD	CU YD	CU YD
1125+80.00				
1126+00.00	17	1		1
1126+50.00	43	2		3
1127+00.00	42	3		4
1127+50.00	42	3		4
1128+00.00	43	18	27	25
1128+50.00	42	34	81	49
1129+00.00	45	36	104	51
1129+50.00	50	38	129	53
1130+00.00	43	40	171	55
1130+50.00	30	38	208	51
1131+00.00	26	38	250	51
1131+50.00	27	35	209	46
1132+00.00	24	27	108	33
1132+26.10	13	10	33	7
1132+50.00	12	7	19	4
1133+00.00	23	19	45	19
1133+50.00	24	21	67	21
1134+00.00	21	21	69	20
1134+50.00	19	21	76	20
1135+00.00	22	22	94	22
1135+50.00	28	23	110	24
1136+00.00	29	23	100	23
1136+50.00	27	26	170	28
1137+00.00	25	27	178	28
1137+50.00	23	21	95	20
1138+00.00	30	20	73	19
1138+50.00	47	22	61	23
1139+00.00	118	24	30	26
1139+50.00	114	24	26	27
1140+00.00	49	24	57	28
1140+50.00	36	21	66	24
1141+00.00	24	19	89	22
1141+50.00	27	20	89	24
1142+00.00	30	22	92	28
1142+14.13	39	15	82	21
1142+50.00	99	35	181	49
1143+00.00	37	12	20	15
1143+50.00	37	10	21	13
1144+00.00	36	12	36	17
1144+50.00	39	11	26	16
1145+00.00	42	10	18	16
TABULATION 2 OF 3 TOTALS	1544	855	3310	1030

EARTHWORK TABULATION

TH 13 STATION	EXCAVATION COMMON		COMMON EMBANKMENT (CV)	
	GRADING	TOPSOIL	GRADING	TOPSOIL
	CU YD	CU YD	CU YD	CU YD
140+00.00				
140+50.00	111	5		6
141+00.00	128	5		6
141+50.00	119	5		6
142+00.00	98	5		6
142+50.00	87	3		6
143+00.00	84	2		6
143+50.00	77	4		6
144+00.00	70	6	1	9
144+50.00	62	8	2	12
145+00.00	57	8	2	12
145+50.00	62	6	1	9
146+00.00	70	4		5
146+50.00	75	3		5
147+00.00	72	5		7
147+50.00	64	6		9
148+00.00	56	5	3	9
148+50.00	58	3	3	7
149+00.00	67	4		6
149+50.00	73	4		6
150+00.00	72	5		6
150+50.00	68	4		6
151+00.00	66	4		6
151+50.00	66	4		6
152+00.00	68	3		6
152+50.00	70	3		6
153+00.00	74	3		6
153+50.00	73	4		6
154+00.00	63	4		6
154+50.00	53	3		6
155+00.00	55	2	1	6
155+50.00	65	2	1	6
156+00.00	67	2	1	6
156+50.00	70	2		6
157+00.00	74	2		6
157+50.00	72	4		8
158+00.00	73	5		8
158+50.00	78	4	1	6
159+00.00	96	2	3	5
159+40.00	73		2	3
TABULATION 3 OF 3 TOTALS	2886	153	21	258

EARTHWORK SUMMARY C

TH 13 STATION	EXCAVATION COMMON		COMMON EMBANKMENT (CV)	
	GRADING	TOPSOIL	GRADING	TOPSOIL
	CU YD	CU YD	CU YD	CU YD
SP 1901-168				
TABULATION 1 OF 3 TOTALS	294	382	1570	537
TABULATION 2 OF 3 TOTALS	1544	855	3310	1030
SP 1901-168 TOTALS	1838	1237	4880	1567
SP 1902-66				
TABULATION 3 OF 3 TOTALS	2886	153	21	258
SP 1902-66 TOTALS	2886	153	21	258
PROJECT TOTALS	4724	1390	4901	1825

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TH 13
BETTER ROADS
PRESERVATION PROJECT

TABULATIONS
EARTHWORK TABULATIONS AND SUMMARY

STATE PROJ. NO. 1901-168 (TH 13)

GUARD RAIL D

TH 13 NB OR TH 13 STATION	LOCATION	REMOVE GUARD RAIL-PLATE BEAM	REMOVE BREAKAWAY CABLE TERMINAL	REMOVE ANCHORAGE ASSEMBLY-PLATE BEAM	SALVAGE ENERGY ABSORBING TERMINAL (2)	TRAFFIC BARRIER DESIGN SPECIAL	TRAFFIC BARRIER DESIGN BULLNOSE	TRAFFIC BARRIER DESIGN B8338	ANCHORAGE ASSEMBLY-PLATE BEAM	END TREATMENT-TANGENT TERMINAL
		LIN FT	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	EACH	EACH
SP 1901-168										
735+31 TO 736+30	RT	200				50	150			
749+52 TO 750+19	LT	140		2			140		2	
117+34 TO 124+35	LT	660	1	1				648	1	1
162+29 TO 163+92	LT	125	1			25		88		1
955+59 TO 956+96	RT	100	1	1				88	1	1
972+22 TO 973+37	RT	75	1			25		38		1
972+30 TO 973+44	LT	75	1			25		38		1
978+56 TO 978+68	RT	75	1			25		38		1
978+59 TO 978+67	LT	75	1			25		38		1
989+94 TO 991+93	RT	160	1	1				148	1	1
993+16 TO 994+50	LT	100	1	1				88	1	1
1107+84 TO 1112+96	RT	330	1	1				413		2
1155+63 TO 1156+88 (1)	RT	104	1	1				92	1	1
1155+83 TO 1156+91 (1)	LT	90		2				78	1	1
SP 1901-168 TOTALS		2309	11	10		175	290	1795	8	13
SP 1902-66										
49+57 TO 99+78	LT	105				25		80		
49+93 TO 99+78 (1)	RT	120				25		95		
104+25 TO 104+90	RT	30			1	25				1
104+25 TO 104+90	LT	30			1	25				1
129+62 TO 130+20	LT	21						21		
130+54 TO 130+86	LT	32						32		
131+29 TO 131+84	LT	57						57		
135+18 TO 136+12	LT	90				25		65		
135+34 TO 136+17	RT	60				25		35		
139+82 TO 141+09	RT	90				25		65		
139+85 TO 147+68 (1)	LT	760		1		25		735	1	
147+88 TO 159+65 (1)	LT	1142		1				1142	1	
SP 1902-66 TOTALS		2537		2	2	200		2327	2	2
PROJECT TOTALS		4846	11	12	2	375	290	4122	10	15

(1) SEE SHORT RADIUS GUARDRAIL DETAIL ON SHEET NO. 56C.
(2) ET-2000. DELIVER TO Mn/DOT. SEE SPECIAL PROVISIONS.

SUBSURFACE DRAINAGE E

TH 13 STATION	LOCATION	4" PERF. TP PIPE DRAIN (3)	DRAINS TO STRUCTURE NO.	SUBDRAIN INVERT ELEV. AT STRUCT.
		LIN FT		
SP 1902-66				
139+89 TO 140+10	RT	21	5030	813.30
140+10 TO 144+50	RT	440	5030	813.30
144+50 TO 148+00	RT	350	5025	839.40
148+00 TO 150+30	RT	230	5039	861.01
150+30 TO 152+50	RT	220	5033	875.68
152+50 TO 154+45	RT	195	5052	889.37
154+45 TO 157+00	RT	255	5051	899.83
157+00 TO 158+80	RT	180	5044	915.44
SP 1902-66 TOTALS		1891		

(3) SEE SUBDRAIN DETAIL ON SHEET NO. 51.

MAIL BOXES F

TH 13 NB OR TH 13 STATION	LOCATION	REMOVE MAIL BOX SUPPORT (4)		MAIL BOX SUPPORT (5)	
		EACH	NOTES	EACH	NOTES
SP 1901-168					
1091+90	RT	2	SALVAGE 2 MAIL BOXES	2	INSTALL 2 MAIL BOXES
SP 1901-168 TOTALS				2	
SP 1902-66					
55+60	RT	1	SALVAGE 1 MAIL BOX AND 1 NEWSPAPER BOX	1	INSTALL 1 MAIL BOX AND 1 NEWSPAPER BOX
52+00	RT	3	SALVAGE 2 MAIL BOXES AND 2 NEWSPAPER BOXES	2	INSTALL 2 MAIL BOXES AND 2 NEWSPAPER BOXES
47+20	RT	2	SALVAGE 1 MAIL BOX AND 1 NEWSPAPER BOX	1	INSTALL 1 MAIL BOX AND 1 NEWSPAPER BOX
130+90	RT	1	SALVAGE 1 MAIL BOX AND 1 NEWSPAPER BOX	1	INSTALL 1 MAIL BOX AND 1 NEWSPAPER BOX
133+30	RT	1	SALVAGE 1 MAIL BOX	1	INSTALL 1 MAIL BOX
160+90	RT	3	SALVAGE 2 MAIL BOXES AND 2 NEWSPAPER BOXES	2	INSTALL 2 MAIL BOXES AND 2 NEWSPAPER BOXES
165+40	LT	1	SALVAGE 2 NEWSPAPER BOXES		INSTALL 2 NEWSPAPER BOXES
166+90	LT	1	SALVAGE 1 NEWSPAPER BOX		INSTALL 1 NEWSPAPER BOX
169+60	LT	1	SALVAGE 1 MAIL BOX	1	INSTALL 1 MAIL BOX
179+90	RT	1	SALVAGE 1 MAIL BOX	1	INSTALL 1 MAIL BOX
180+50	RT	1	SALVAGE 1 NEWSPAPER BOX		INSTALL 1 NEWSPAPER BOX
184+30	RT	1	SALVAGE 1 MAIL BOX	1	INSTALL 1 MAIL BOX
185+20	RT	1	SALVAGE 1 MAIL BOX	1	INSTALL 1 MAIL BOX
SP 1902-66 TOTALS				12	
PROJECT TOTALS				14	

(4) REMOVING MAIL BOX SUPPORTS, SALVAGING MAIL BOXES, AND SALVAGING NEWSPAPER BOXES IS INCIDENTAL.
(5) INSTALLING MAIL BOXES AND NEWSPAPER BOXES IS INCIDENTAL.

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CHECKED BY: SJS

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 15, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

TABULATIONS
GUARD RAIL, SUBSURFACE DRAINAGE, & MAIL BOXES

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 15 of 393 Sheets

EROSION CONTROL AND TURF ESTABLISHMENT Q

TH 13 NB OR TH 13 STATION	SILT FENCE TYPE HEAVY DUTY (8)	SILT FENCE TYPE SUPER DUTY (8)	TEMP. DITCH CHECK TYPE 2 (BIOROLL) (1)	STORM DRAIN INLET PROTECTION (1)		FILTER LOG TYPE COMPOST LOG (1)	CULVERT PROTECTION (1)	SEEDING	SEED MIXTURE 250 (2)	SEED MIXTURE 270 (3)	EROSION CONTROL BLANKETS CATEGORY 2 (1)	EROSION CONTROL BLANKETS CATEGORY 3 (1)	FERTILIZER TYPE 3 (4)	RAPID STABIL. METHOD 3 (5)	RAPID STABIL. METHOD 4 (5)
				(6)	(7)										
	LIN FT	LIN FT	LIN FT	EACH	EACH	LIN FT	EACH	ACRE	POUND	POUND	SQ YD	SQ YD	POUND	M GALLONS	SQ YD
SP 1901-168															
735+00 TO 743+50				1											
743+50 TO 103+00															
103+00 TO 117+00					4		1	0.03		3	98		7	0.06	49
117+00 TO 132+00					10										
132+00 TO 147+00				1	12			0.08		9	355		26	0.22	177
147+00 TO 162+00					12										
162+00 TO 177+00	100			1	7		1	0.14	6	7	272	402	49	0.42	337
177+00 TO 192+00	100		12	1	11		1	0.09	6			390	28	0.24	195
192+00 TO 207+00					8			0.03		4	131		9	0.08	65
207+00 TO 222+25					4			0.04		4	151		11	0.09	75
222+25 TO 237+50					14			0.02		2	63		5	0.04	32
237+50 TO 252+50					3			0.02		2	62		4	0.04	31
252+50 TO 922+00					6		1	0.03		4	123		9	0.08	62
922+00 TO 937+00				2	5			0.03		4	137		10	0.08	68
937+00 TO 952+00				3	1										
952+00 TO 967+00				3				0.15	10			689	50	0.43	345
967+00 TO 981+00					4										
967+00 TO 981+00															
981+00 TO 995+50				2											
995+50 TO 1010+50				1	2										
1010+50 TO 1025+00				2	4			0.05		6	213		15	0.13	107
1025+00 TO 1035+20					14			0.02		2	56		4	0.03	28
1035+20 TO 1050+50					23			0.01		1	32		2	0.02	16
1050+50 TO 1065+50					8										
1065+50 TO 1080+50	100			1	13		1	0.04		5	187		14	0.12	94
1080+50 TO 1095+75	100	10	24				1	0.04		5	188		14	0.12	94
1095+75 TO 1110+75	100	10	72	1	3	341	1	0.37	24	2	70	1693	127	1.09	881
1110+75 TO 1126+00	100	10	12	1	1	777	2	0.60	41	1	11	2856	207	1.78	1434
1126+00 TO 1141+00	100	10	36			1589		1.10	77			5314	384	3.29	2657
1141+00 TO 1156+00	100		24			424		0.30	21			1418	103	0.88	709
1256+00 TO 1170+50			48					0.01				30	2	0.02	15
1170+50 TO 1185+00				1											
SP 1901-168 TOTALS	800	40	228	21	169	3131	9	3	185	61	2149	12792	1080	9	7471
SP 1902-66															
1233+00 TO 59+50			24		2			0.02		2	62		4	0.04	31
59+50 TO 46+50			12		8										
46+50 TO 32+00			48		8			0.01	1			44	3	0.03	22
32+00 TO 44+00			60	1	10	276		0.06	3	1	22	224	18	0.15	123
44+00 TO 29+50			12		1		1	0.02	1			80	6	0.05	40
29+50 TO 16+00			12		11			0.02	1	1	15	44	4	0.04	30
16+00 TO 5+00					10			0.02		2	73		5	0.05	36
5+00 TO 21+00					1			0.02		2	67		5	0.04	34
30+00 TO 45+00					2			0.03		4	138		10	0.09	69
45+00 TO 108+00			24		6		1	0.07		8	292		21	0.18	146
108+00 TO 122+50			12												
122+50 TO 137+00				5	2			0.01				27	2	0.02	14
137+00 TO 150+50	100	10			12			0.57	40			2758	199	1.71	1379
150+50 TO 164+80	100	10		2	9			0.33	22	2	51	1532	114	0.98	792
164+80 TO 178+50	100		108					0.25		29	1166		84	0.72	583
178+50 TO 189+00	100							0.07		8	303		22	0.19	152
SP 1902-66 TOTALS	400	20	312	8	82	276	2	2	68	59	2189	4709	497	4	3451
PROJECT TOTALS	1200	60	540	29	251	3407	11	5	253	120	4338	17501	1577	13	10922

(1) INCLUDES ALL REQUIRED MAINTENANCE AND OR REPLACEMENT FOR THE DURATION OF THE PROJECT.
(2) SEED MIX 250 APPLIED AT A RATE OF 70 POUNDS/ACRE.
(3) SEED MIX 270 APPLIED AT A RATE OF 120 POUNDS/ACRE.
(4) TYPE 3 FERTILIZER ANALYSIS 22-5-10, 80% W.I.N., APPLIED AT A RATE OF 350 POUNDS/ACRE.
(5) TEMPORARY QUANTITY TO BE USED AS DIRECTED BY ENGINEER.
(6) ROCK LOG/COMPOST LOG. SEE DETAIL ON SHEET NO. 62.
(7) SILT FENCE FABRIC. SEE DETAIL ON SHEET NO. 197.
(8) QUANTITY TO BE USED FOR PERIMETER PROTECTION AROUND STOCKPILES AS DIRECTED BY THE ENGINEER.

DATE: 2/13/2012 TIME: 4:00:13 PM
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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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

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TH 13
BETTER ROADS
PRESERVATION PROJECT

TABULATIONS
EROSION CONTROL AND TURF ESTABLISHMENT

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 16 of 393 Sheets

UTILITIES

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES WITHIN PLANNED EXCAVATION AREAS ON THIS PROJECT AND THEIR ABBREVIATIONS

ACCESS = ACCESS COMMUNICATIONS, INCORPORATED
ARVIG = ARVIG COMMUNICATIONS SYSTEMS
ATT = AT&T LOCAL SERVICES
CENTERPOINT = CENTERPOINT ENERGY MINNESOTA GAS
CENTURY LINK = CENTURY LINK
BURNSVILLE = CITY OF BURNSVILLE
EAGAN = CITY OF EAGAN
LILYDALE = CITY OF LILYDALE
MENDOTA = CITY OF MENDOTA
MDOTA HTS = CITY OF MENDOTA HEIGHTS
COMCAST = COMCAST CABLE COMMUNICATIONS, INCORPORATED
DAKOTA = DAKOTA ELECTRIC
ENVENTIS = ENVENTIS TELECOM
FRONTIER = FRONTIER COMMUNICATIONS OF MINNESOTA, INCORPORATED
MAGELLAN = MAGELLAN MIDSTREAM PARTNERS, LP
MCES = METROPOLITAN COUNCIL ENVIRONMENTAL SERVICES
MNDOT = MINNESOTA DEPARTMENT OF TRANSPORTATION
MER = MINNESOTA ENERGY RESOURCES CORPORATION
NNG = NORTHERN NATURAL GAS COMPANY
PAETEC = PAETEC (MCLEOD USA)
SPRINT = SPRINT COMMUNICATIONS COMPANY, LP
SPRWS = SAINT PAUL REGIONAL WATER SERVICES
TTMI = TTM OPERATING CORPORATION
WINDSTREAM = WINDSTREAM KDL, INCORPORATED
XCEL = XCEL ENERGY
XO = XO COMMUNICATIONS SERVICES, INCORPORATED

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES WITHIN THE PROJECT CORRIDOR BUT NOT WITHIN PLANNED EXCAVATION AREAS ON THIS PROJECT

BLUE CROSS BLUE SHIELD
CHARTER COMMUNICATIONS
DAKOTA COUNTY HIGHWAY DEPARTMENT
EXXON MOBIL PIPELINE
INTEGRA TELECOMMUNICATIONS
KOCH PIPELINE COMPANY, LP
MINNESOTA VALLEY TRANSIT AUTHORITY
MP NEXT LEVEL, LLC
ZAYO BANDWITH

UTILITY ABBREVIATIONS

CB = CATCH BASIN
CMP = CORRUGATED METAL PIPE
CMPA = CORRUGATED METAL PIPE ARCH
CSP = CORRUGATED STEEL PIPE
CPP = CORRUGATED PLASTIC PIPE
DIP = DUCTILE IRON PIPE
DI = DROP INLET
FES = FLARED END SECTION
FO-BUR = BURIED FIBER OPTIC CABLE
FO-OH = OVERHEAD FIBER OPTIC CABLE
GAS = GAS MAIN
GV = GATE VALVE
HYD = HYDRANT
HH = HANDHOLE
LIGHTING = BURIED LIGHTING
LP = LIGHT POLE
MH = MANHOLE
METER = POWER METER
OHU = OVER HEAD UTILITY
POLE = UTILITY POLE
PED = PEDESTAL
PERF = PERFORATED PIPE
P-BUR = BURIED POWER LINE
P-OH = OVERHEAD POWER LINE
PUSH BUTTON = PEDISTRIAN PUSH BUTTON INDICATOR
PVC = POLY VINYL CHLORIDE PIPE
RCP = REINFORCED CONCRETE PIPE
RCPA = REINFORCED CONCRETE PIPE ARCH
SAN = SANITARY SEWER
SIG-BUR = BURIED SIGNAL LINE
SIG-INT = BURIED SIGNAL INTERCONNECTION LINE
SIGN = OVERHEAD SIGN
T-BUR = BURIED TELEPHONE LINE
T-OH = OVERHEAD TELEPHONE LINE
TV-BUR = BURIED CABLE TV LINE
TV-OH = OVERHEAD TELEPHONE
WM = WATERMAIN

GENERAL NOTES:

- ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS OTHERWISE NOTED.
- ALL RELOCATES AND ADJUSTMENTS ARE SUBJECT TO MN/DOT RIGHT OF WAY APPROVAL.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE GOPHER STATE ONE CALL EXCAVATION NOTICE SYSTEM REQUIRED BY STATE 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".
- UTILITIES, INCLUDING MANHOLES AND VALVES, ARE SHOWN IN AREAS OF PLANNED EXCAVATION ONLY. AREAS OF EXCAVATION ARE DEFINED AS AREAS WHERE THE SUBGRADE MATERIAL WILL BE DISTURBED. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE EXISTING UTILITIES IF EXCAVATIONS ARE PERFORMED OUTSIDE THE PLANNED AREAS OF EXCAVATION AS SHOWN ON THE PLANS.
- ADDITIONAL WORK REQUIRED TO MILL AND OVERLAY AROUND MANHOLES AND VALVES, INCLUDING THOSE NOT SHOWN ON THE PLANS, SHALL BE INCIDENTAL.
- THE REMARKS COLUMN IS BASED UPON 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.

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
NOTES AND ABBREVIATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 17 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
106+49	50' LT	12" APRON	X							MNDOT	
106+49 TO 106+54	50' LT TO 67' RT	12" RCP	X							MNDOT	CROSSES C/L AT 106+52
106+54	67' RT	12" APRON	X							MNDOT	
106+83	108' RT	18" APRON	X							MNDOT	
106+83 TO 108+20	108' RT TO 120' RT	18" RCP	X							MNDOT	
108+20	120' RT	MH	X							MNDOT	
108+20 TO 108+56	120' RT TO 124' RT	42" RCP	X							MNDOT	
108+56	124' RT	42" APRON	X							MNDOT	
107+46	148' LT	18" APRON	X							MNDOT	
107+46 TO 109+57	148' LT TO 146' LT	18" RCP	X							MNDOT	
109+57	146' LT	DI	X							MNDOT	
109+28	29' LT	CB	X							MNDOT	
109+28 TO 109+57	29' LT TO 146' LT	12" CPP	X							MNDOT	
141+30	157' LT	15" APRON	X							MNDOT	
141+30 TO 140+53	157' LT TO 176' LT	15" RCP	X							MNDOT	
140+53	176' LT	CB	X							MNDOT	
140+53 TO 139+74	176' LT TO 161' LT	15" RCP	X							MNDOT	
139+74	161' LT	CB	X							MNDOT	
139+74 TO 139+21	161' LT TO 156' LT	15' RCP	X							MNDOT	
139+21	156' LT	MH	X							MNDOT	
142+94	171' LT	CB	X							MNDOT	
142+94 TO 141+49	171' LT TO 90' LT	18" CPP	X							MNDOT	
141+49	90' LT	CB	X							MNDOT	
142+73 TO 141+49	87' LT TO 90' LT	18" CPP	X							MNDOT	
141+49 TO 141+30	90' LT TO 91' LT	18" CPP	X							MNDOT	
141+30	91' LT	CB	X							MNDOT	
141+30 TO 141+19	91' LT TO 34' LT	18" CPP	X							MNDOT	
141+19	34' LT	CB	X							MNDOT	
141+40	34' LT	CB	X							MNDOT	
141+40 TO 141+19	34' LT TO 34' LT	12" CPP	X							MNDOT	
141+20	16' LT	CB	X							MNDOT	
141+20 TO 141+19	16' LT TO 34' LT	12" CPP	X							MNDOT	
141+19 TO 140+57	34' LT TO 33' LT	24' CPP	X							MNDOT	
140+57	33' LT	MH	X							MNDOT	
140+57 TO 140+58	33' LT TO 42' RT	24" CPP	X							MNDOT	CROSSES C/L AT 140+57
140+58	42' RT	CB							1	MNDOT	
142+10	84' RT	CB	X							MNDOT	
142+10 TO 140+85	84' RT TO 43' RT	15" CPP	X							MNDOT	
140+85	43' RT	DI	X							MNDOT	
140+85 TO 140+59	43' RT TO 42' RT	15" RCP	X							MNDOT	
139+16	108' RT	DI	X							MNDOT	
139+16 TO 139+70	108' RT TO 127' RT	12" RCP	X							MNDOT	
139+70	127' RT	CB	X							MNDOT	
139+70 TO 140+20	127' RT TO 111' RT	15" RCP	X							MNDOT	
140+20	111' RT	MH	X							MNDOT	
141+05 TO 140+47	129' RT TO 132' RT	21" RCP	X							MNDOT	
140+47	132' RT	CB	X							MNDOT	
140+47 TO 140+20	132' RT TO 111' RT	21" RCP	X							MNDOT	
140+20 TO 140+59	111' RT TO 42' RT	24" RCP	X							MNDOT	
140+59 TO 137+12	42' RT TO 42' RT	24" RCP	X							MNDOT	
137+12	42' RT	MH	X							MNDOT	
162+40 TO 164+70	80' LT TO 82' LT	3" PERF	X							MNDOT	
164+70	82' LT	CB	X							MNDOT	
164+70 TO 164+61	82' LT TO 44' LT	12" RCP	X							MNDOT	
164+61	44' LT	CB	X							MNDOT	
162+41 TO 164+61	43' LT TO 44' LT	3" PERF	X							MNDOT	
SP 1901-168 TABULATION 1 OF 11 TOTALS									1		

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 18 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
162+43 TO 164+61	27' LT TO 27' LT	3" PERF	X							MNDOT	
164+61	27' LT	CB	X							MNDOT	
164+61 TO 164+61	27' LT TO 44' LT	12" RCP	X							MNDOT	
164+61 TO 169+22	44' LT TO 34' LT	12" CPP	X							MNDOT	
169+22	34' LT	CB	X							MNDOT	
166+53 TO 169+15	31' LT TO 31' LT	3" PERF	X							MNDOT	
169+15 TO 169+22	31' LT TO 34' LT	3" PERF	X							MNDOT	
169+22 TO 171+00	34' LT TO 14' LT	12" CPP	X							MNDOT	
171+00	14' LT	CB	X							MNDOT	
166+54 TO 168+43	17' LT TO 18' LT	3" PERF	X							MNDOT	
168+43 TO 170+88	18' LT TO 16' LT	3" PERF	X							MNDOT	
170+88 TO 171+00	16' LT TO 14' LT	3" PERF	X							MNDOT	
162+45 TO 164+12	26' RT TO 28' RT	3" PERF	X							MNDOT	
166+30 TO 167+36	24' RT TO 29' RT	3" PERF	X							MNDOT	
167+36 TO 168+25	29' RT TO 28' RT	3" PERF	X							MNDOT	
166+78 TO 167+49	92' LT TO 88' LT	3" PERF	X							MNDOT	
167+49 TO 169+36	88' LT TO 87' LT	3" PERF	X							MNDOT	
174+12 to 174+78	111' LT TO 111' LT	PIPE	X							MNDOT	
174+05 TO 175+05	56' RT TO 58' RT	24" RCP	X							MNDOT	
175+05	58' RT	DI	X							MNDOT	
175+05 TO 175+00	58' RT TO 96' LT	24" CPP			154					MNDOT	CROSSES C/L AT 175+03, LENGTH INCLUDES APRON
175+00	96' LT	24" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
175+05 TO 175+18	58' RT TO 86' RT	18" CPP	X							MNDOT	
175+18	86' RT	DI								MNDOT	SEE STORM SEWER TABULATION
175+18 TO 175+19	86' RT TO 101' RT	18" RCP	X							MNDOT	
175+05 TO 176+91	58' RT TO 59' RT	27" CPP	X							MNDOT	
189+78	107' LT	24" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
189+78 TO 189+78	107' LT TO 44' LT	24" CPP			63					MNDOT	LENGTH INCLUDES APRON
189+78	44' LT	CB								MNDOT	SEE STORM SEWER TABULATION
191+50	26' LT	CB	X							MNDOT	
191+50 TO 191+50	26' LT TO 44' LT	12" CPP	X							MNDOT	
191+50	44' LT	CB	X							MNDOT	
191+50 TO 190+20	44' LT TO 44' LT	12" CPP	X							MNDOT	
190+20	44' LT	CB	X							MNDOT	
190+20	26' LT	CB	X							MNDOT	
190+20 TO 190+20	26' LT TO 44' LT	12" CPP	X							MNDOT	
190+20 TO 189+78	44' LT TO 44' LT	12" CPP	X							MNDOT	
189+78 TO 189+77	44' LT TO 24' LT	24" CPP	X							MNDOT	
189+77	24' LT	CB	X							MNDOT	
189+77 TO 189+77	24' LT TO 69' RT	24" RCP	X							MNDOT	CROSSES C/L AT 189+77
189+77	69' RT	MH	X							MNDOT	
189+77 TO 194+64	69' RT TO 74' RT	54" RCP	X							MNDOT	
194+64	74' RT	MH	X							MNDOT	
193+75 TO 194+64	208' RT 74' RT	54" RCP	X							MNDOT	
195+14	124' RT	MH	X							MNDOT	
195+14 TO 194+64	124' RT TO 74' RT	18" RCP	X							MNDOT	
196+00	56' RT	18" APRON	X							MNDOT	
196+00 TO 194+64	56' RT TO 74' RT	18" CPP	X							MNDOT	
194+64 TO195+75	74' RT TO 98' LT	72" RCP	X							MNDOT	CROSSES C/L AT 195+11
195+75	98' LT	MH	X							MNDOT	
195+43 TO 195+75	116' LT TO 98' LT	36" RCP	X							MNDOT	
198+00	16' LT	CB	X							MNDOT	
198+00 TO 198+01	16' LT TO 22' LT	12" CPP	X							MNDOT	
198+01	22' LT	CB	X							MNDOT	
198+01 TO 196+10	22' LT TO 22' LT	12" RCP	X							MNDOT	
196+10	22' LT	CB	X							MNDOT	
SP 1901-168 TABULATION 2 OF 11 TOTALS					217						

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SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 19 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
196+10	16' LT	CB	X							MNDOT	
196+10 TO 196+10	16' LT TO 22' LT	12" CPP	X							MNDOT	
196+10 TO 196+41	22' LT TO 99' LT	12" CPP	X							MNDOT	
196+41	99' LT	MH								MNDOT	SEE STORM SEWER TABULATION
197+90	114' LT	15" APRON	X							MNDOT	
197+90 TO 197+49	114' LT TO 138' LT	15" RCP	X							MNDOT	
197+49	138' LT	MH	X							MNDOT	
197+49 TO 196+41	138' LT TO 99' LT	15" CPP	X							MNDOT	
196+41 TO 195+75	99' LT TO 98' LT	15" CPP	X							MNDOT	
195+75 TO 196+67	98' LT TO 236' LT	72" RCP	X							MNDOT	
209+86 TO 211+52	82' LT TO 80' LT	3" PERF	X							MNDOT	
209+56 TO 212+59	27' LT TO 26' LT	3" PERF	X							MNDOT	
212+59	26' LT	CB	X							MNDOT	
212+59 TO 212+25	26' LT TO 39' LT	12" CPP	X							MNDOT	
212+25	39' LT	CB	X							MNDOT	
212+25 TO 211+29	39' LT TO 114' LT	15" CPP	X							MNDOT	
211+29	114' LT	15" APRON	X							MNDOT	
210+75 TO 212+75	37' RT TO 51' RT	3" PERF	X							MNDOT	
213+30	64' RT	MH	X							MNDOT	
213+30 TO 213+92	64' RT TO 55' RT	18" RCP	X							MNDOT	
213+92	55' RT	CB	X							MNDOT	
213+92 TO 213+95	55' RT TO 49' RT	18" RCP	X							MNDOT	
213+95	49' RT	CB	X							MNDOT	
213+95 TO 214+12	49' RT TO 73' RT	18" RCP	X							MNDOT	
214+12	73' RT	CB	X							MNDOT	
213+87	110' RT	CB	X							MNDOT	
213+87 TO 214+09	110' RT TO 80' RT	12" RCP	X							MNDOT	
214+09	80' RT	CB	X							MNDOT	
214+09 TO 214+12	80' RT TO 73' RT	12" RCP	X							MNDOT	
214+12 TO 214+22	73' RT TO 69' RT	30" RCP	X							MNDOT	
214+22	69' RT	MH	X							MNDOT	
214+22 TO 215+03	69' RT TO 72' RT	30" RCP	X							MNDOT	
215+03	72' RT	CB	X							MNDOT	
215+03 TO 215+50	72' RT TO 56' RT	30" RCP	X							MNDOT	
215+50	56' RT	30" APRON	X							MNDOT	
214+11 TO 215+47	103' LT - 88' LT	3" PERF	X							MNDOT	
215+47 TO 216+93	88' LT TO 78' LT	3" PERF	X							MNDOT	
214+98 TO 217+54	17' LT TO 17' LT	3" PERF	X							MNDOT	
216+05	26' LT	CB	X							MNDOT	
216+05 TO 216+06	26' LT TO 111' LT	12" CPP	X							MNDOT	
216+06	111' LT	12" APRON	X							MNDOT	
919+52 TO 918+73	34' RT TO 79' RT	18" RCP	X							MNDOT	ABANDONED
918+73	79' RT	MH	X							MNDOT	
919+60	106' LT	36" SPAN APRON	X							MNDOT	
919+60 TO 918+41	106' LT TO 108' LT	36" SPAN CMPA	X							MNDOT	
918+41	108' LT	36" SPAN CMPA	X							MNDOT	
919+78	55' RT	24" APRON	X							MNDOT	
919+78 TO 919+61	55' RT TO 39' RT	24" RCP	X							MNDOT	
919+61	39' RT	MH	X							MNDOT	
919+61 TO 919+59	39' RT TO 102' LT	24" RCP	X							MNDOT	CROSSES C/L AT 919+61
919+59	102' LT	24" APRON	X							MNDOT	
919+75	139' LT	12" APRON	X							MNDOT	
919+75 TO 919+72	139' LT TO 104' LT	12" CPP	X							MNDOT	
919+72	104' LT	12" APRON	X							MNDOT	
931+09	94' LT	DI	X							MNDOT	
931+09 TO 931+77	94' LT TO 114' LT	12" RCP	X							MNDOT	
SP 1901-168 TABULATION 3 OF 11 TOTALS											

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TH 13
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PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 20 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
931+77	114' LT	12" APRON	X							MNDOT	
931+71	71' RT	24" APRON	X							MNDOT	
931+71 TO 931+90	71' RT TO 84' RT	24" RCP	X							MNDOT	
931+90	84' RT	MH	X							MNDOT	
931+58	111' RT	MH	X							MNDOT	
931+58 TO 931+90	111' RT TO 84' RT	24" RCP	X							MNDOT	
931+90 TO 932+16	84' RT TO 80' RT	24" RCP	X							MNDOT	
932+16	80' RT	CB	X							MNDOT	
932+64 TO 932+17	287' RT TO 91' RT	30" RCP	X							MNDOT	
932+17	91' RT	CB	X							MNDOT	
932+84	82' RT	CB	X							MNDOT	
932+84 TO 932+85	82' RT TO 73' RT	12" RCP	X							MNDOT	
932+85	73' RT	CB	X							MNDOT	
932+85 TO 932+17	82' RT TO 91' RT	12" RCP	X							MNDOT	
932+17 TO 932+16	91' RT TO 80' RT	30" RCP	X							MNDOT	
932+16 TO 933+00	80' RT TO 23' LT	30" RCP	X							MNDOT	CROSSES C/L AT 932+81
933+00	23' LT	MH	X							MNDOT	
931+87	118' LT	18" APRON	X							MNDOT	
931+87 TO 932+56	118' LT TO 118' LT	18" RCP	X							MNDOT	
932+56	118' LT	CB	X							MNDOT	
932+56 TO 932+96	118' LT TO 116' LT	18" RCP	X							MNDOT	
932+96	116' LT	DI	X							MNDOT	
933+01	218' LT	CB	X							MNDOT	
933+01 TO 932+96	218' LT TO 116' LT	15" RCP	X							MNDOT	
932+96 TO 933+00	116' LT TO 23' LT	24" RCP	X							MNDOT	
933+00 TO 937+94	23' LT TO 14' LT	30" RCP	X							MNDOT	
937+94	14' LT	CB	X							MNDOT	
1010+65	127' LT	28" APRON	X							MNDOT	
1010+65 TO 1013+10	127' LT TO 125' LT	28" SPAN RCPA	X							MNDOT	
1013+10	125' LT	28" APRON	X							MNDOT	
1010+66	121' LT	28" APRON	X							MNDOT	
1010+66 TO 1013+10	121' LT TO 119' LT	28" SPAN RCPA	X							MNDOT	
1013+10	119' LT	28" APRON	X							MNDOT	
1010+93	38' LT	CB	X							MNDOT	
1010+93 TO 1010+73	38' LT TO 39' LT	15" RCP	X							MNDOT	
1010+73	39' LT	CB	X							MNDOT	
1010+73 TO 1010+73	39' LT TO 67' RT	18" RCP	X							MNDOT	CROSSES C/L AT 1010+73
1010+73	67' RT	18" APRON	X							MNDOT	
1011+15	106' RT	DI	X							MNDOT	
1011+15 TO 1013+35	106' RT TO 83' RT	48" RCP	X							MNDOT	
1013+35	83' RT	48" APRON	X							MNDOT	
1045+56	146' RT	MH	X							MNDOT	
1045+56 TO 1045+18	146' RT TO 73' RT	21" RCP	X							MNDOT	
1045+18	73' RT	MH	X							MNDOT	
1045+78	55' RT	CB	X							MNDOT	
1045+78 TO 1045+64	55' RT TO 53' RT	15" RCP	X							MNDOT	
1045+64	53' RT	MH	X							MNDOT	
1045+64 TO 1045+18	53' RT TO 73' RT	15" RCP	X							MNDOT	
1045+18 TO 1045+11	73' RT TO 70' RT	18" RCP	X							MNDOT	
1045+11	70' RT	CB	X							MNDOT	
1045+11 TO 1044+66	70' RT TO 21' LT	24" RCP	X							MNDOT	CROSSES C/L AT 1044+76
1044+66	21' LT	CB	X							MNDOT	
1044+66 TO 1042+37	21' LT TO 21' LT	24" RCP	X							MNDOT	
1042+37	21' LT	CB	X							MNDOT	
1042+37	15' LT	CB	X							MNDOT	
1046+28	33' RT	CB	X							MNDOT	
SP 1901-168 TABULATION 4 OF 11 TOTALS											

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INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 21 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
1046+28 TO 1046+02	33' RT TO 5' LT	12" DIP	X							MNDOT	CROSSES C/L AT 1046+05
1046+02	5' LT	CB	X							MNDOT	
1046+02 TO 1046+02	5' LT TO 11' LT	15" RCP	X							MNDOT	
1046+02	11' LT	CB	X							MNDOT	
1046+02 TO 1046+26	11' LT TO 65' LT	15" RCP	X							MNDOT	
1046+26	65' LT	CB	X							MNDOT	
1048+56	62' LT	CB	X							MNDOT	
1048+56 TO 1046+26	62' LT TO 65' LT	18" RCP	X							MNDOT	
1073+83	41' RT	CB	X							MNDOT	
1073+83 TO 1073+84	41' RT TO 13' LT	15" RCP	X							MNDOT	CROSSES C/L AT 1073+83
1073+84	13' LT	CB	X							MNDOT	
1074+65	13' LT	CB	X							MNDOT	
1074+65 TO 1073+84	13' LT TO 13' LT	15" RCP	X							MNDOT	
1073+84 TO 1073+84	13' LT TO 19' LT	15" RCP	X							MNDOT	
1073+84	19' LT	CB	X							MNDOT	
1073+84 TO 1073+85	19' LT TO 74' LT	15" RCP	X							MNDOT	
1073+85	74' LT	DI	X							MNDOT	
1073+85 TO 1075+71	74' LT TO 87' LT	24" RCP	X							MNDOT	
1075+71	87' LT	24" APRON				1				MNDOT	
1076+15	4' LT	CB	X							MNDOT	
1076+15 TO 1076+15	4' LT TO 10' LT	12" RCP	X							MNDOT	
1076+15	10' LT	CB	X							MNDOT	
1076+15 TO 1076+17	10' LT TO 87' LT	12" CMP	X							MNDOT	
1076+17	87' LT	12" APRON								MNDOT	SEE STORM SEWER TABULATION
1075+37	95' RT	CB	X							MNDOT	
1075+37 TO 1075+80	95' RT TO 156' RT	15" RCP	X							MNDOT	
1075+80	156' RT	CB	X							MNDOT	
1075+23	138' RT	12" APRON	X							MNDOT	
1075+23 TO 1075+80	138' RT TO 156' RT	12" RCP	X							MNDOT	
1075+85	165' RT	CB	X							MNDOT	
1075+85 TO 1075+80	165' RT TO 156' RT	12" RCP	X							MNDOT	
1075+80 TO 1076+40	156' RT TO 111' RT	15" RCP	X							MNDOT	
1076+40	111' RT	MH	X							MNDOT	
1076+40 TO 1076+58	111' RT TO 115' RT	15" RCP	X							MNDOT	
1076+58	115' RT	CB								MNDOT	SEE STORM SEWER TABULATION
1076+26	63' RT	CB								MNDOT	SEE STORM SEWER TABULATION
1076+26 TO 1076+52	63' RT TO79' RT	15" RCP	X							MNDOT	
1076+52	79' RT	CB						1		MNDOT	
1076+52 TO 1076+58	79' RT TO 115' RT	15" RCP	X							MNDOT	
1076+58 TO 1077+33	115' RT TO 134' RT	18" RCP	X							MNDOT	
1077+33	134' RT	MH	X							MNDOT	
1096+73 TO 1097+39	36' RT TO 38' RT	24" CMP	X							MNDOT	
1096+71	36' RT	24" APRON	X							MNDOT	
1097+37	38' RT	24" APRON	X							MNDOT	
1096+86 TO 1097+01	169' RT TO 98' RT	15" RCP	X							MNDOT	
1097+01	98' RT	MH	X							MNDOT	
1097+14	100' RT	CB	X							MNDOT	
1097+14 TO 1097+01	100' RT TO 98' RT	12" RCP	X							MNDOT	
1097+01 TO 1097+14	98' RT TO 44' RT	15" RCP	X							MNDOT	
1097+14	44' RT	MH	X							MNDOT	
1097+14 TO 1097+46	44' RT TO 41' RT	15" RCP	X							MNDOT	
1097+46	41' RT	15" APRON	X							MNDOT	
1104+42 TO 1105+14	36' LT TO 36' LT	15" CMP								MNDOT	SEE CULVERT TABULATION
1104+42	36' LT	15" APRON				1				MNDOT	
1105+14	36' LT	15" APRON				1				MNDOT	
1104+39	35' RT	33" APRON	X							MNDOT	
SP 1901-168 TABULATION 5 OF 11 TOTALS						3		1			

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STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 22 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
1104+39 TO 1105+39	35' RT TO 32' RT	33" CPP	X							MNDOT	
1105+39	32' RT	MH	X							MNDOT	
1105+39 TO 1108+30	32' RT TO 33' RT	33" CPP	X							MNDOT	
1108+30	33' RT	MH	X							MNDOT	
1108+30 TO 1109+25	33' RT TO 40' RT	33" CPP	X							MNDOT	
1109+25	40' RT	DI	X							MNDOT	
1109+25 TO 1109+94	40' RT TO 86' RT	33" CPP	X							MNDOT	
1109+94	86' RT	MH	X							MNDOT	
1109+94 TO 1110+18	86' RT TO 108' RT	33" RCP	X							MNDOT	
1110+18	108' RT	33" APRON	X							MNDOT	
1111+99	109' LT	DI	X							MNDOT	
1111+99 TO 1111+61	109' LT TO 129' LT	36" RCP	X							MNDOT	
1111+61	129' LT	MH	X							MNDOT	
1111+61 TO 1111+32	129' LT TO 77' RT	48" RCP	X							MNDOT	CROSSES C/L AT 1111+43
1111+32	77' RT	DI	X							MNDOT	
1111+32 TO 1112+82	77' RT TO 66' RT	24" RCP	X							MNDOT	
1112+82	66' RT	MH	X							MNDOT	
1112+82 TO 1114+56	66' RT TO 45' RT	24" RCP	X							MNDOT	
1114+56	45' RT	CB								MNDOT	SEE STORM SEWER TABULATION
1114+56 TO 1114+98	45' RT TO 48' RT	12" RCP	X							MNDOT	
1114+98	48' RT	CB	X							MNDOT	
1114+36	36' RT	36" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
1114+36 TO 1115+17	36' RT TO 37' RT	36" RCP		81						MNDOT	LENGTH INCLUDES APRON
1115+17	37' RT	36" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
1116+71	32' RT	36" APRON	X							MNDOT	
1116+71 TO 1116+70	32' RT TO 49' LT	36" RCP	X							MNDOT	CROSSES C/L AT 1116+70
1116+70	49' LT	MH	X							MNDOT	
1116+70 TO 1117+43	49' LT TO 134' LT	15" RCP	X							MNDOT	
1117+43	134' LT	MH	X							MNDOT	
1117+43 TO 1117+31	134' LT TO 300' LT	15" RCP	X							MNDOT	
1123+70 TO 1124+13	116' RT TO 67' RT	18" RCP	X							MNDOT	
1124+13	67' RT	MH	X							MNDOT	
1124+13 TO 1124+34	67' RT TO 44' RT	15" RCP	X							MNDOT	
1124+93	136' LT	24" APRON	X							MNDOT	
1124+93 TO 1125+41	136' LT TO 135' LT	24" CMP								MNDOT	SEE STORM SEWER TABULATION
1125+41	135' LT	24" APRON	X							MNDOT	
1129+56	160' LT	42" APRON	X							MNDOT	
1129+56 TO 1129+45	160' LT TO 75' RT	42" CMP	X							MNDOT	CROSSES C/L AT 1129+48
1129+45	75' RT	42" APRON	X							MNDOT	
1124+90	43' RT	18" APRON	X							MNDOT	
1124+90 TO 1125+16	43' RT TO 46' RT	18" RCP								MNDOT	SEE STORM SEWER TABULATION
1125+16	46' RT	CB								MNDOT	SEE STORM SEWER TABULATION
1125+16 TO 1125+46	46' RT TO 48' RT	18" RCP								MNDOT	SEE STORM SEWER TABULATION
1125+46	48' RT	CB								MNDOT	SEE STORM SEWER TABULATION
1125+46 TO 1125+69	48' RT TO 46' RT	18" RCP								MNDOT	SEE STORM SEWER TABULATION
1125+69	46' RT	18" APRON	X							MNDOT	
1129+47 TO 1130+27	76' RT TO 163' RT	36" RCP	X							MNDOT	
1136+62	48' LT	CONC. HEADWALL					1			MNDOT	
1136+62 TO 1136+62	48' LT TO 35' RT	48" CMP								MNDOT	CROSSES C/L AT 1136+62, SEE CULVERT TABULATION
1136+62	35' RT	48" APRON	X							MNDOT	
1138+78	38' LT	15" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
1138+78 TO 1139+35	38' LT TO 36' LT	15" CMP		64						MNDOT	LENGTH INCLUDES APRON
1139+35	36' LT	15" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
1139+53	36' RT	15" APRON	X							MNDOT	
1139+53 TO 1140+06	36' RT TO 36' RT	15" CMP								MNDOT	SEE CULVERT TABULATION
1140+06	36' RT	15" APRON	X							MNDOT	
SP 1901-168 TABULATION 6 OF 11 TOTALS				145			1				

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STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 23 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1901-168											
1142+14 TO 1142+14	45' LT TO 28' RT	36" CMP								MNDOT	CROSSES C/L AT 1142+14, SEE STORM SEWER TABULATION
1142+14	28' RT	36" APRON	X							MNDOT	
1142+14	41' RT	21" APRON	X							MNDOT	
1142+14 TO 1142+33	41' RT TO 56' RT	21" RCP	X							MNDOT	
1142+33	56' RT	21" APRON	X							MNDOT	
1151+98	52' LT	36" APRON								MNDOT	SEE CULVERT TABULATION
1151+98 TO 1151+95	52' LT TO 40' RT	36" CMP	X							MNDOT	
1151+95	40' RT	36" APRON	X							MNDOT	
1152+05	42' RT	15" APRON								MNDOT	SEE STORM SEWER TABULATION
1152+05 TO 1152+47	42' RT TO 51' RT	15" RCP	X							MNDOT	
1152+47	51' RT	CB								MNDOT	SEE STORM SEWER TABULATION
1152+47 TO 1152+90	51' RT TO 51' RT	15" RCP	X							MNDOT	
1152+90	51' RT	CB	X							MNDOT	
1152+90 TO 1152+88	51' RT TO 60' RT	12" RCP	X							MNDOT	
1152+88	60' RT	CB	X							MNDOT	
1156+61	34' LT	60" APRON				1				MNDOT	
1156+61 TO 1156+61	34' LT TO 31' RT	60" CMP								MNDOT	CROSSES C/L AT 1156+61, SEE STORM SEWER TABULATION
1156+61	31' RT	60" APRON	X							MNDOT	
1156+73 TO 1156+92	49' RT TO 48' RT	12" RCP	X							MNDOT	
1156+92	48' RT	CB	X							MNDOT	
1156+90	42' RT	CB	X							MNDOT	
1157+15	39' RT	CB	X							MNDOT	
1157+15 TO 1156+94	39' RT TO 48' RT	12" RCP	X							MNDOT	
1162+01 + 1162+02	59' LT TO 31' RT	30" CMP								MNDOT	SEE CULVERT TABULATION
1168+72	110' LT	36" APRON								MNDOT	SEE CULVERT TABULATION
1168+72 TO 1168+70	110' LT TO 34' RT	36" CMP	X							MNDOT	
1168+70	34' RT	36" APRON	X							MNDOT	
SP 1901-168 TABULATION 7 OF 11 TOTALS						1					
SP 1902-66											
1243+56 TO 1243+45	232' LT TO 145' LT	24" CMP	X							MNDOT	
1243+45	145' LT	DI	X							MNDOT	
1243+45 TO 1244+34	145'LT TO 138' LT	24" CMP	X							MNDOT	
1244+34	138' LT	24" APRON	X							MNDOT	
1244+30	25' LT	DI	X							MNDOT	
1244+30 TO 1244+32	25' LT TO 58'RT	15" RCP								MNDOT	SEE STORM SEWER TABULATION
1244+32	58' RT	15" APRON	X							MNDOT	
59+84	71' LT	12" APRON	X							MNDOT	
59+84 TO 59+44	71' RT TO 73' RT	12" RCP								MNDOT	SEE STORM SEWER TABULATION
59+44	73' RT	CB								MNDOT	SEE STORM SEWER TABULATION
59+44 TO 59+15	73' RT TO 32' RT	12" RCP	X							MNDOT	
59+15	32' RT	CB	X							MNDOT	
55+66	30' RT	CB	X							MNDOT	
55+66 TO 55+83	30' RT TO 30' RT	12" RCP	X							MNDOT	
55+83	30' RT	CB	X							MNDOT	
55+83 TO 55+81	30' RT TO 46' LT	12" RCP	X							MNDOT	CROSSES C/L AT 55+82
55+81	46' LT	MH	X							MNDOT	
55+81 TO 55+79	46' LT TO 159' LT	12" CMP	X							MNDOT	
55+79	159' LT	12" APRON								MNDOT	SEE STORM SEWER TABULATION
51+03	18' RT	CB								MNDOT	SEE STORM SEWER TABULATION
51+03 TO 51+03	18' RT TO 31' LT	PIPE	X							MNDOT	
51+03	31' LT	CB	X							MNDOT	
51+03 TO 51+20	31' LT TO 115' LT	PIPE	X							MNDOT	
42+16	37' LT	CB	X							MNDOT	
42+16 TO 41+98	37' LT TO 37' LT	12" RCP	X							MNDOT	
41+98	37' LT	CB	X							MNDOT	
SP 1902-66 TABULATION 7 OF 11 TOTALS											

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PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 24 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1902-66											
41+98 TO 42+22	37' LT TO 93' LT	12" CMP	X							MNDOT	
42+22	93' LT	12" APRON								MNDOT	SEE STORM SEWER TABULATION
39+26	19' RT	CB	X							MNDOT	
39+26 TO 39+26	19' RT TO 50' LT	12" RCP	X							MNDOT	CROSSES C/L AT 39+26
39+26	50' LT	12" APRON								MNDOT	SEE STORM SEWER TABULATION
33+45	18' RT	CB	X							MNDOT	
33+45 TO 33+26	18' RT TO 18' RT	12" RCP	X							MNDOT	
33+26	18' RT	CB	X							MNDOT	
33+26 TO 33+28	18' RT TO 17' LT	12" RCP	X							MNDOT	CROSSES C/L AT 33+27
33+28	17' LT	CB	X							MNDOT	
32+80 TO 33+28	19' LT TO 17' LT	12" RCP	X							MNDOT	
32+80	19' LT	CB	X							MNDOT	
33+28 TO 33+28	17' LT TO 56' LT	15" RCP	X							MNDOT	
33+28	56' LT	15" APRON								MNDOT	SEE STORM SEWER TABULATION
31+42	27' LT	CB	X							MNDOT	
31+42 TO 31+44	27' LT TO 62' LT	15" RCP	X							MNDOT	
31+44	62' LT	15" APRON								MNDOT	SEE STORM SEWER TABULATION
30+74	21' RT	CB	X							MNDOT	
30+74 TO 30+08	21' RT TO 25' RT	12" RCP	X							MNDOT	
30+08	25' RT	CB	X							MNDOT	
30+08 TO 29+61	25' RT TO 25' RT	12" RCP	X							MNDOT	
29+61	25' RT	CB	X							MNDOT	
30+08 TO 30+15	25' RT TO 32' LT	12" RCP	X							MNDOT	CROSSES C/L AT 30+12
30+15	32' LT	CB	X							MNDOT	
30+15 TO 30+20	32' LT TO 73' LT	15" RCP	X							MNDOT	
30+20	73' LT	15" APRON								MNDOT	SEE STORM SEWER TABULATION
28+47	73' RT	CB	X							MNDOT	
28+47 TO 28+30	73' RT TO 74' RT	12" RCP	X							MNDOT	
28+30	74' RT	12" APRON	X							MNDOT	
49+46	92' LT	24" APRON	X							MNDOT	
49+31	112' RT	24" APRON								MNDOT	SEE CULVERT TABULATION
49+31 TO 48+30	112' RT TO 111' RT	24" RCP	X							MNDOT	
48+30	111' RT	DI	X							MNDOT	
48+30 TO 48+30	111' RT TO 166' RT	4" PVC	X							MNDOT	
48+30 TO 47+21	111' RT TO 111' RT	24" RCP	X							MNDOT	
47+21	111' RT	24" APRON	X							MNDOT	
47+33	21' LT	CB	X							MNDOT	
47+33 TO 47+00	21' LT TO 21' RT	12" RCP	X							MNDOT	CROSSES C/L AT 47+17
47+01	95' RT	24" APRON	X							MNDOT	
47+01 TO 47+00	95' RT TO 21' RT	24" RCP	X							MNDOT	
47+00	21' RT	CB	X							MNDOT	
47+00 TO 47+00	21' RT TO 85' LT	24" RCP	X							MNDOT	CROSSES C/L AT 47+00
47+00	85' LT	24" APRON								MNDOT	SEE STORM SEWER TABULATION
49+46	67' RT	24" APRON	X							MNDOT	
49+46 TO 49+46	68' RT TO 92' LT	24" RCP	X							MNDOT	CROSSES C/L AT 49+45
27+21	20' RT	CB	X							MNDOT	
27+21 TO 27+00	20' RT TO 20' RT	PIPE	X							MNDOT	
27+00	20' RT	CB	X							MNDOT	
27+00 TO 27+00	34' LT TO 20' RT	PIPE	X							MNDOT	CROSSES C/L AT 27+00
27+00	34' LT	CB	X							MNDOT	
27+00 TO 26+88	34' LT TO 84' LT	18" CPP	X							MNDOT	
26+88	84' LT	18" APRON								MNDOT	SEE STORM SEWER TABULATION
22+69	19' RT	CB	X							MNDOT	
22+69 TO 22+68	19' RT TO 29' LT	PIPE	X							MNDOT	CROSSES C/L AT 22+69
22+68	29' LT	CB	X							MNDOT	
22+68 TO 22+50	29' LT TO 53' LT	PIPE	X							MNDOT	
22+50	53' LT	CB	X							MNDOT	

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 25 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1902-66											
22+50 TO 21+78	53' LT TO 61' LT	PIPE	X							MNDOT	
21+78	61' LT	CB	X							MNDOT	
14+93	33' LT	CB	X							MNDOT	
14+93 TO 14+21	33' LT TO 39' LT	PIPE	X							MNDOT	
14+21	39' LT	MH	X							MNDOT	
14+21 TO 14+76	39' LT TO 135' LT	PIPE	X							MNDOT	
14+76	135' LT	MH	X							MNDOT	
14+76 TO 15+31	135' LT TO 100' LT	PIPE	X							MNDOT	
14+90	133' LT	CB	X							MNDOT	
14+90 TO 14+76	133' LT TO 135' LT	PIPE	X							MNDOT	
14+63	124' LT	CB	X							MNDOT	
14+63 TO 14+76	124' LT TO 135' LT	PIPE	X							MNDOT	
0+00 TO 0+28	129' LT TO 29' LT	15" RCP	X							MNDOT	
0+28	29' LT	CB	X							MNDOT	
0+81 TO 0+28	94' LT TO 29' LT	4" PVC	X							MNDOT	
0+28 TO 0+28	29' LT TO 29' RT	12" RCP	X							MNDOT	CROSSES C/L AT 0+28
0+28	29' RT	CB						1		MNDOT	
0+28 TO 0+50	29' RT TO 101' RT	4" PVC	X							MNDOT	
36+37	46' LT	CB	X							MNDOT	
36+37 TO 36+79	46' LT TO 40' LT	12" RCP	X							MNDOT	
36+79	40' LT	CB	X							MNDOT	
36+79 TO 36+78	40' LT TO 22' LT	12" RCP	X							MNDOT	
36+78	22' LT	CB							1	MNDOT	
36+78 TO 36+77	22' LT TO 46' RT	24" RCP	X							MNDOT	CROSSES C/L AT 36+78
36+77	46' RT	CB	X							MNDOT	
36+78 TO 38+56	22' LT TO 29' LT	24" RCP	X							MNDOT	
38+56	29' LT	MH	X							MNDOT	
47+92	31' RT	CB	X							MNDOT	
47+92 TO 48+99	31' RT TO 28' RT	12" RCP	X							MNDOT	
48+99	28' RT	CB	X							MNDOT	
48+99 TO 49+39	28' RT TO 83' RT	15" RCP	X							MNDOT	
48+01	21' LT	CB								MNDOT	SEE STORM SEWER TABULATION
48+01 TO 48+09	21' LT TO 21' LT	12" RCP								MNDOT	SEE STORM SEWER TABULATION
48+09	21' LT	CB								MNDOT	SEE STORM SEWER TABULATION
48+09 TO 48+28	21' LT TO 40' LT	15" RCP								MNDOT	SEE STORM SEWER TABULATION
48+28	40' LT	15" APRON	X							MNDOT	
48+35 TO 48+95	44' LT TO 44' LT	15" CMP								MNDOT	SEE CULVERT TABULATION
99+44	23' LT	CB								MNDOT	SEE STORM SEWER TABULATION
99+44 TO 99+42	23' LT TO 49' LT	15" RCP	X							MNDOT	
99+42	49' LT	15" APRON	X							MNDOT	
99+44 TO 99+69	23' LT TO 26' RT	PIPE	X							MNDOT	CROSSES C/L AT 99+56
99+69	26' RT	CB	X							MNDOT	SEE STORM SEWER TABULATION
99+65 TO 99+99	46' LT TO 44' LT	15" CMP	X							MNDOT	
109+20 TO 109+73	42' LT TO 42' LT	PIPE								MNDOT	SEE CULVERT TABULATION
139+73	59' RT	FES	X							MNDOT	
139+73 TO 140+01	59' RT TO 48' RT	42" SPAN CMPA	X							MNDOT	
139+93	53' LT	15" APRON	X							MNDOT	
139+93 TO 140+01	53' LT TO 21' LT	15" CMP			18					MNDOT	REMOVE PIPE FROM CB TO R/W. BULKHEAD PIPE AT R/W
140+01	21' LT	CB						1		MNDOT	
140+01 TO 140+35	21' LT TO 22' LT	4" PVC	X							MNDOT	
140+01 TO 140+12	21' LT TO 21' RT	12" RCP			42					MNDOT	CROSSES C/L AT 140+06
140+12	21' RT	CB						1		MNDOT	
140+12 TO 140+21	21' RT TO 21' RT	12" RCP			9					MNDOT	
140+21	21' RT	CB						1		MNDOT	
140+21 TO 140+43	21' RT TO 22' RT	4" PVC	X							MNDOT	
SP 1902-66 TABULATION 9 OF 11 TOTALS					69			4	1		

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INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1902-66											
141+01	30' RT	24" APRON	X							MNDOT	
141+01 TO 143+06	30' RT TO 29' RT	24" CPP	X							MNDOT	
143+06	29' RT	MH	X							MNDOT	
143+06 TO 143+99	29' RT TO 116' RT	15" CPP	X							MNDOT	
143+99	116' RT	DI	X							MNDOT	
143+79 TO 143+82	60' LT TO 16' LT	12" CMP		18						MNDOT	REMOVE PIPE FROM CB TO R/W. BULKHEAD PIPE AT R/W
145+99 TO 146+00	16' LT TO 72' LT	12" CMP	X							MNDOT	
146+00	72' LT	MH								MNDOT	SEE STORM SEWER TABULATION
146+00 TO 145+64	72' LT TO 230' LT	15" CMP								MNDOT	SEE STORM SEWER TABULATION
145+64	230' LT	MH	X							MNDOT	
145+64 TO 143+63	230' LT TO 198' LT	15" CMP	X							MNDOT	
146+00 TO 147+00	72' LT TO 98' LT	15" CMP			115					MNDOT	
147+00	98' LT	MH								MNDOT	SEE STORM SEWER TABULATION
147+00 TO 148+00	98' LT TO 15' LT	12" CMP			130					MNDOT	LENGTH INCLUDES ELBOWS
147+00 TO 149+10	98' LT TO 194' LT	12" CMP			220					MNDOT	
149+10	194' LT	MH								MNDOT	SEE STORM SEWER TABULATION
149+10 TO 150+57	194' LT TO 211' LT	12" CMP			115					MNDOT	
150+57	211' LT	MH								MNDOT	SEE STORM SEWER TABULATION
150+57 TO 152+11	211' LT TO 219' LT	12" CMP			120					MNDOT	
152+11	219' LT	MH								MNDOT	SEE STORM SEWER TABULATION
152+11 TO 152+50	219' LT TO 15' LT	12" CMP			210					MNDOT	LENGTH INCLUDES ELBOWS
152+11 TO 154+61	219' LT TO 248' LT	12" CMP	X							MNDOT	
153+63 TO 153+82	214' LT TO 266' LT	PIPE	X							MNDOT	
147+97	20' RT	CB						1		MNDOT	
147+97 TO 148+00	20' RT TO 15' LT	12" CMP			35					MNDOT	CROSSES C/L AT 147+99
148+00	15' LT	CB						1		MNDOT	
152+50	17' RT	CB						1		MNDOT	
152+50 TO 152+50	17' RT TO 15' LT	12" RCP			32					MNDOT	CROSSES C/L AT 152+50
152+50	15' LT	CB						1		MNDOT	
154+61	248' LT	MH	X							MNDOT	
157+80	25' RT	12" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
157+80 TO 159+34	25' RT TO 25' RT	12" PVC		175						MNDOT	LENGTH INCLUDES APRONS
159+34	25' RT	12" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
159+51	32' LT	MH	X							MNDOT	
159+51 TO 159+61	32' LT TO 70' LT	12" RCP	X							MNDOT	
159+61	70' LT	12" APRON	X							MNDOT	
162+51	55' LT	30" APRON	X							MNDOT	
162+51 TO 162+83	55' LT TO 21' LT	30" RCP	X							MNDOT	
162+83	21' LT	MH	X							MNDOT	
162+83 TO 163+82	21' LT TO 18' LT	30" RCP	X							MNDOT	
163+82	18' LT	MH	X							MNDOT	
163+82 TO 163+88	18' LT TO 20' LT	24" CMP	X							MNDOT	
163+88	20' LT	MH								MNDOT	SEE STORM SEWER TABULATION
163+88 TO 163+95	20' LT TO 30' LT	12" CMP	X							MNDOT	
163+95	30' LT	12" APRON	X							MNDOT	
163+88 TO 165+19	20' LT TO 24' LT	18" CMP			139					MNDOT	
165+19	24' LT	18" APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
163+82 TO 163+86	18' LT TO 31' RT	24" RCP	X							MNDOT	CROSSES C/L AT 163+84
163+86	31' RT	DI	X							MNDOT	
163+86 TO 163+66	31' RT TO 38' RT	15" CMP	X							MNDOT	
163+66	38' RT	15" APRON	X							MNDOT	
163+86 TO 164+85	31' RT TO 21' RT	24" CMP	X							MNDOT	
164+85	21' RT	24" APRON	X							MNDOT	
165+41 TO 165+79	24' LT TO 23' LT	15" CMP		38						MNDOT	
166+68 TO 166+91	21' LT TO 20' LT	15" CMP		23						MNDOT	
167+59 TO 168+11	22' RT TO 21' RT	35" SPAN CMPA		52						MNDOT	
SP 1902-66 TABULATION 10 OF 11 TOTALS				306	1116			4			

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TH 13
BETTER ROADS
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INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 27 of 393 Sheets

UTILITY TABULATION - STORM SEWER / CULVERTS N

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	REMOVE PIPE CULVERTS	REMOVE SEWER PIPE (STORM)	REMOVE PIPE APRON	REMOVE CONCRETE HEADWALL	REMOVE CATCH BASIN	REMOVE CASTING	OWNER	REMARKS
				LIN FT	LIN FT	EACH	EACH	EACH	EACH		
SP 1902-66											
169+20 TO 169+55	21' LT TO 20' LT	15" CMP		35						MNDOT	
169+85 TO 170+14	20' LT TO 19' LT	15" CMP		29						MNDOT	
170+99 TO 171+49	22' RT TO 21' RT	35" SPAN CMPA	X							MNDOT	
171+85 TO 172+10	20' LT TO 21' RT	15" CMP		25						MNDOT	
172+08	19' RT	28" SPAN APRON	X							MNDOT	
172+08 TO 172+72	19' RT TO 22' RT	28" SPAN RCPA	X							MNDOT	
172+72	22' RT	28" SPAN RCPA	X							MNDOT	
172+71	21' LT	15" APRON				1				MNDOT	
172+71 TO 173+01	21' LT TO 20' LT	15" CMP	X							MNDOT	
173+01	20' LT	15" APRON				1				MNDOT	
173+50	47' RT	18" APRON	X							MNDOT	
173+50 TO 175+26	47' RT TO 49' RT	18" RCP	X							MNDOT	
175+26	49' RT	CB	X							MNDOT	
175+26 TO 175+39	49' RT TO 115' RT	12" RCP	X							MNDOT	
175+57 TO 175+57	52' RT TO 56' RT	12" PVC	X							MNDOT	
175+57 TO 175+94	52' RT TO 24' RT	15" RCP	X							MNDOT	
175+94	24' RT	15" APRON	X							MNDOT	
175+26 TO 175+57	49' RT TO 52' RT	12" RCP	X							MNDOT	
175+57	52' RT	CB	X							MNDOT	
175+57	56' RT	CB	X							MNDOT	
177+35 TO 177+60	23' RT TO 22' RT	15" CMP		25						MNDOT	
179+97	20' RT	22" SPAN APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
179+97 TO 180+21	20' RT TO 22' RT	22" SPAN CMPA		39						MNDOT	LENGTH INCLUDES APRON
180+21	22' RT	22" SPAN APRON								MNDOT	APRON REMOVAL INCLUDED WITH PIPE REMOVAL
180+54 TO 180+84	21' RT TO 21' RT	15" CMP		30						MNDOT	
182+03 TO 182+30	22' RT TO 22' RT	15" CMP		27						MNDOT	
183+22 TO 183+46	22' RT TO 22' RT	12" CMP		24						MNDOT	
184+42 TO 184+95	23' RT TO 25' RT	18" CMP	X							MNDOT	
184+82	46' RT	CB	X							MNDOT	
184+82 TO 184+96	46' RT TO 28' RT	15" RCP	X							MNDOT	
184+96	28' RT	15" APRON	X							MNDOT	
185+32 TO 185+58	24' RT TO 24' RT	15" CMP		26						MNDOT	
SP 1902-66 TABULATION 11 OF 11 TOTALS				260		2					

SP 1901-168 TABULATION 1 OF 11 TOTALS						1
SP 1901-168 TABULATION 2 OF 11 TOTALS		217				
SP 1901-168 TABULATION 3 OF 11 TOTALS						
SP 1901-168 TABULATION 4 OF 11 TOTALS						
SP 1901-168 TABULATION 5 OF 11 TOTALS			3		1	
SP 1901-168 TABULATION 6 OF 11 TOTALS	145			1		
SP 1901-168 TABULATION 7 OF 11 TOTALS			1			
SP 1901-168 TOTALS	145	217	4	1	1	1
SP 1902-66 TABULATION 7 OF 11 TOTALS						
SP 1902-66 TABULATION 8 OF 11 TOTALS						
SP 1902-66 TABULATION 9 OF 11 TOTALS		69			4	1
SP 1902-66 TABULATION 10 OF 11 TOTALS	306	1116			4	
SP 1902-66 TABULATION 11 OF 11 TOTALS	260		2			
SP 1902-66 TOTALS	566	1185	2		8	1
PROJECT TOTALS	711	1402	6	1	9	2

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SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
STORM SEWER / CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - SANITARY SEWER P

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST FRAME & RING CASTING EACH	OWNER	REMARKS
SP 1901-168							
139+74 TO 139+73	30' RT TO 158' LT	SAN	X			BURNSVILLE	CROSSES C/L AT 139+74
139+73	30' RT	MH	X			BURNSVILLE	
139+73 TO 139+86	30' RT TO 94' RT	SAN	X			BURNSVILLE	
193+70 TO 194+45	180' RT TO 69' RT	SAN	X			BURNSVILLE	
194+45	69' RT	MH	X			BURNSVILLE	
194+45 TO 195+72	69' RT TO 120' LT	SAN	X			BURNSVILLE	CROSSES C/L AT 194+92
195+72	120' LT	MH	X			BURNSVILLE	
194+45 TO 195+16	69' RT TO 142' RT	SAN	X			BURNSVILLE	
195+72 TO 196+00	120' RT TO 117' LT	SAN	X			BURNSVILLE	
196+00	117' LT	MH	X			MCES	
196+00 TO 197+51	117' LFT TO 336' LT	SAN	X			MCES	
196+00 TO 199+44	117' LT TO 116' LT	SAN	X			MCES	
199+44	116' LT	MH	X			MCES	
202+70	115' LT	MH	X			MCES	
202+70 TO 205+80	115' LT TO 112' LT	SAN	X			MCES	
205+80	112' LT	MH	X			MCES	
205+84	144' LT	MH	X			BURNSVILLE	
205+84 TO 205+80	144' LT TO 112' LT	SAN	X			BURNSVILLE	
205+80 TO 208+84	112' LT TO 114' LT	SAN	X			MCES	
208+84	114' LT	MH	X			MCES	
208+84 TO 212+27	114' LT TO 105' LT	SAN	X			MCES	
212+27	105' LT	MH	X			MCES	
212+27 TO 213+75	105' LT TO 67' RT	SAN	X			MCES	CROSSES C/L AT 213+19
213+75	67' RT	MH	X			MCES	
213+75 TO 241+86	67' RT TO 228' RT	SAN	X			MCES	
228+37 TO 228+42	85' RT TO 30' RT	SAN	X			BURNSVILLE	
228+42	30' RT	MH	X			BURNSVILLE	
228+42 TO 228+42	30' RT TO 150' LT	SAN	X			BURNSVILLE	CROSSES C/L AT 228+42
228+42	150' LT	MH	X			BURNSVILLE	
918+89 TO 918+91	75' RT TO 197' LT	SAN	X			BURNSVILLE	CROSSES C/L AT 918+90
1074+61 TO 1074+53	77' RT TO 35' RT	SAN	X			BURNSVILLE	
1074+53	35' RT	MH	X			BURNSVILLE	
1074+53 TO 1074+28	35' RT TO 157' LT	SAN	X			BURNSVILLE	CROSSES C/L AT 1074+48
1074+28	157' LT	MH	X			BURNSVILLE	
1096+94 TO 1097+03	150' RT TO 48' RT	SAN	X			EAGAN	
1097+03	48' RT	MH	X			EAGAN	
1097+03 TO 1100+11	48' RT TO 50' RT	SAN	X			EAGAN	
1100+11	50' RT	MH	X			EAGAN	
1100+11 TO 1104+15	50' RT TO 51' RT	SAN	X			EAGAN	
1104+15	51' RT	MH	X			EAGAN	
1104+15 TO 1108+61	51' RT TO 51' RT	SAN	X			EAGAN	
1108+61	51' RT	MH	X			EAGAN	
1108+61 TO 1111+42	51' RT TO 86' RT	SAN	X			EAGAN	
1111+42	86' RT	MH	X			EAGAN	
1111+42 TO 1114+76	86' RT TO 85' RT	SAN	X			EAGAN	
1114+76	85' RT	MH	X			EAGAN	
1111+70	122' LT	MH	X			MCES	
1111+70 TO 1111+75	122' LT TO 200' LT	SAN	X			MCES	
1111+70 TO 1116+86	122' LT TO 118' LT	SAN	X			MCES	
1116+86	118' LT	MH	X			MCES	
1116+86 TO 1121+47	118' LT TO 114' LT	SAN	X			MCES	
1121+47	114' LT	MH	X			MCES	
1121+47 TO 1130+06	114' LT TO 106'LT	SAN	X			MCES	
1130+06	106' LT	MH	X			MCES	
SP 1901-168 TABULATION 1 OF 3 TOTALS							

UTILITY TABULATION - SANITARY SEWER P

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST FRAME & RING CASTING EACH	OWNER	REMARKS
SP 1901-168							
1130+06 TO 1132+11	106' LT TO 104' LT	SAN	X			MCES	
1132+11	104' LT	MH	X			MCES	
1132+11 TO 1136+06	104' LT TO 100' LT	SAN	X			MCES	
1136+06	100' LT	MH	X			MCES	
1136+06 TO 1140+26	100' LT TO 97' LT	SAN	X			MCES	
1121+47	114' LT	MH	X			MCES	
1121+47 TO 1130+06	114' LT TO 106' LT	SAN	X			MCES	
1126+69	51' RT	MH	X			EAGAN	
1126+69 TO 1128+90	51' RT TO 55' RT	SAN	X			EAGAN	
1126+70 TO 1126+70	108' LT TO 51' RT	SAN	X			EAGAN	CROSSES C/L AT 1126+70
1140+26 TO 1140+47	97' LT TO 71' RT	SAN	X			MCES	
1140+47	71' RT	MH	X			MCES	
1140+47 TO 1142+83	71' RT TO 78' RT	SAN	X			MCES	
1142+83	78' RT	MH	X			MCES	
1142+83 TO 1144+99	78' RT TO 63' RT	SAN	X			MCES	
1144+99	63' RT	MH	X			MCES	
1144+99 TO 1150+26	63' RT TO 64' RT	SAN	X			MCES	
1150+26	64' RT	MH	X			MCES	
1150+26 TO 1153+09	64' RT TO 110' RT	SAN	X			MCES	
1153+09	110' RT	MH	X			MCES	
1153+09 TO 1157+15	110' RT TO 105' RT	SAN	X			MCES	
1157+15	105' RT	MH	X			MCES	
1157+15 TO 1159+31	105'RT TO 105' RT	SAN	X			MCES	
1159+31	105' RT	MH	X			MCES	
1159+31 TO 1164+87	105' RT 95' RT	SAN	X			MCES	
1164+87	95' RT	MH	X			MCES	
1164+87 TO 1169+04	95' RT TO 106' RT	SAN	X			MCES	
1169+04	106' RT	MH	X			MCES	
SP 1901-168 TABULATION 2 OF 3 TOTALS							
SP 1902-66							
11+42 TO 10+92	37' LT TO 5' LT	SAN	X			MENDOTA	
11+26 TO 10+92	49' LT TO 5' LT	SAN	X			MENDOTA	
10+92	5' LT	MH			1	MENDOTA	TO BE DONE BY CONTRACTOR
10+92 TO 0+15	5' LT TO 13' RT	SAN	X			MENDOTA	
0+15	13' RT	MH			1	MENDOTA	TO BE DONE BY CONTRACTOR
0+00 TO 0+15	200' RT TO 13' RT	SAN	X			MENDOTA	
0+15 TO 3+49	13' RT TO 12' RT	SAN	X			MENDOTA	
3+49	12' RT	MH	X			MENDOTA	
3+49 TO 4+63	12' RT TO 12' RT	SAN	X			MENDOTA	
133+03 TO 135+78	30' RT TO 20' RT	SAN	X			MDOTA HTS	
135+78	20' RT	MH	X			MDOTA HTS	
135+78 TO 136+11	20' RT TO 39' RT	SAN	X			MDOTA HTS	
136+11	39' RT	MH	X			MDOTA HTS	
136+11 TO 135+92	39' RT TO 207' RT	SAN	X			MDOTA HTS	
136+11 TO 136+25	39' RT TO 14' RT	SAN	X			MDOTA HTS	
136+25 TO 136+25	14' RT TO 6' RT	SAN	X			MDOTA HTS	
136+25 TO 139+46	6' RT TO 17' RT	SAN	X			MDOTA HTS	
139+46 TO 139+47	17' RT TO 24' RT	SAN	X			MDOTA HTS	
139+47 TO 140+03	24' RT TO 61' RT	SAN	X			MDOTA HTS	
140+01 TO 140+03	122' RT TO 61' RT	SAN	X			MDOTA HTS	
140+03	61' RT	MH	X			MDOTA HTS	
140+03 TO 140+07	61' RT TO 38' LT	SAN	X			MDOTA HTS	CROSSES C/L AT 140+05
158+25	275' RT	MH	X			MDOTA HTS	
SP 1902-66 TABULATION 2 OF 3 TOTALS					2		

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SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
SANITARY SEWER

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 29 of 393 Sheets

UTILITY TABULATION - SANITARY SEWER P

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	RELOCATE	ADJUST FRAME & RING CASTING EACH	OWNER	REMARKS
SP 1902-66							
158+25 TO 159+09	275' RT TO 28' RT	SAN	X			MDOTA HTS	
159+09	28' RT	MH	X			MDOTA HTS	
159+09 TO 159+95	28' RT TO 20' RT	SAN	X			MDOTA HTS	
159+95	20' RT	MH	X			MDOTA HTS	
159+95 TO 163+51	20' RT TO 18' RT	SAN	X			MDOTA HTS	
163+51	18' RT	MH	X			MDOTA HTS	
163+51 TO 164+50	18' RT TO 18' RT	SAN	X			MDOTA HTS	
164+50	18' RT	MH	X			MDOTA HTS	
164+50 TO 164+53	18' RT TO 134' RT	SAN	X			MDOTA HTS	
164+50 TO 167+85	18' RT TO 16' RT	SAN	X			MDOTA HTS	
167+85	16' RT	MH	X			MDOTA HTS	
167+85 TO 167+86	16' RT TO 129' RT	SAN	X			MDOTA HTS	
167+85 TO 171+24	16' RT TO 16' RT	SAN	X			MDOTA HTS	
171+24	16' RT	MH	X			MDOTA HTS	
171+24 TO 171+28	16' RT TO 130' RT	SAN	X			MDOTA HTS	
171+24 TO 172+29	16' RT TO 15' RT	SAN	X			MDOTA HTS	
172+29	15' RT	MH	X			MDOTA HTS	
172+29 TO 172+46	15' RT TO 19' LT	SAN	X			MDOTA HTS	CROSSES C/L AT 172+36
172+29 TO 175+02	15' RT TO 14' RT	SAN	X			MDOTA HTS	
175+02	14' RT	MH	X			MDOTA HTS	
175+02 TO 175+51	14' RT TO 180' RT	SAN	X			MDOTA HTS	
175+02 TO 177+61	14' RT TO 20' RT	SAN	X			MDOTA HTS	
177+61	20' RT	MH	X			MDOTA HTS	
177+61 TO 178+67	20' RT TO 157' RT	SAN	X			MDOTA HTS	
177+61 TO 181+20	20' RT TO 21' RT	SAN	X			MDOTA HTS	
181+20	21' RT	MH	X			MDOTA HTS	
181+20 TO 184+69	21' RT TO 22' RT	SAN	X			MDOTA HTS	
184+69	22' RT	MH	X			MDOTA HTS	
184+69 TO 184+65	22' RT TO 143' RT	SAN	X			MDOTA HTS	
184+69 TO 187+17	22' RT TO 18' RT	SAN	X			MDOTA HTS	
187+17	18' RT	MH	X			MDOTA HTS	
187+17 TO 189+88	18' RT TO 108' RT	SAN	X			MDOTA HTS	
SP 1902-66 TABULATION 3 OF 3 TOTALS							
SP 1901-168 TABULATION 1 OF 3 TOTALS							
SP 1901-168 TABULATION 2 OF 3 TOTALS							
SP 1901-168 TOTALS							
SP 1902-66 TABULATION 2 OF 3 TOTALS					2		
SP 1902-66 TABULATION 3 OF 3 TOTALS							
SP 1902-66 TOTALS					2		
PROJECT TOTALS					2		

UTILITY TABULATION - WATER MAIN

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
106+12 TO 106+23	115' LT TO 49' RT	WM	X			BURNSVILLE	CROSSES C/L AT 106+20
106+23 TO 106+84	49' RT TO 60' RT	WM	X			BURNSVILLE	
106+84 TO 107+10	60' RT TO 97' RT	WM	X			BURNSVILLE	
107+10 TO 107+07	97' RT TO 112' RT	WM	X			BURNSVILLE	
107+36 TO 107+46	99' RT TO 123' LT	WM	X			BURNSVILLE	CROSSES C/L AT 107+42
139+34	218' LT	GV	X			BURNSVILLE	
139+34 TO 139+34	218' LT TO 45' RT	WM	X			BURNSVILLE	CROSSES C/L AT 139+37
139+34	45' RT	GV	X			BURNSVILLE	
139+34 TO 139+34	45' RT TO 55' RT	WM	X			BURNSVILLE	
139+34 TO 139+37	55' RT TO 56' RT	WM	X			BURNSVILLE	
139+37	56' RT	GV	X			BURNSVILLE	
139+37 TO 139+38	56' RT TO 60' RT	WM	X			BURNSVILLE	
139+37 TO 140+82	55' RT TO 58' RT	WM	X			BURNSVILLE	
139+38	60' RT	HYD	X			BURNSVILLE	
140+55 TO 140+49	58' RT TO 185' RT	WM	X			BURNSVILLE	
140+49	185' RT	MH	X			BURNSVILLE	
165+56 TO 165+08	158' LT TO 115' RT	WM	X			BURNSVILLE	CROSSES C/L AT 165+28
193+95 TO 194+83	220' RT TO 86' RT	WM	X			BURNSVILLE	
194+83	86' RT	GV	X			BURNSVILLE	
196+30	135' LT	GV	X			BURNSVILLE	
196+30 TO 196+45	135' LT TO 121' LT	WM	X			BURNSVILLE	
196+30 TO 194+83	135' LT TO 86' RT	WM	X			BURNSVILLE	CROSSES C/L AT 195+43
196+45	121' LT	GV	X			BURNSVILLE	
196+45 TO 197+57	121' LT TO 122' LT	WM	X			BURNSVILLE	
197+90 TO 196+30	366' LT TO 135' LT	WM	X			BURNSVILLE	
210+66 TO 212+39	123' LT TO 117' LT	WM	X			BURNSVILLE	
212+39 TO 212+55	117' LT TO 119' LT	WM	X			BURNSVILLE	
212+55 TO 213+09	119' LT TO 161' LT	WM	X			BURNSVILLE	
213+09 TO 212+01	161' LT TO 276' LT	WM	X			BURNSVILLE	
212+39 TO 214+94	117' LT TO 222' RT	WM	X			BURNSVILLE	CROSSES C/L AT 213+34
212+48	118' LT	GV	X			BURNSVILLE	
918+99	73' RT	GV	X			BURNSVILLE	
918+99 TO 919+03	73' RT TO 146' LT	WM	X			BURNSVILLE	CROSSES C/L AT 919+01
919+03	146' LT	GV	X			BURNSVILLE	
919+03 TO 919+02	146' LT TO 152' LT	WM	X			BURNSVILLE	
919+02	152' LT	GV	X			BURNSVILLE	
919+02 TO 919+62	152' LT TO 147' LT	WM	X			BURNSVILLE	
919+02 TO 919+03	152' LT TO 155' LT	WM	X			BURNSVILLE	
919+03	155' LT	GV	X			BURNSVILLE	
1011+20 TO 1012+23	164' LT TO 175' LT	WM	X			EAGAN	
1012+23	175' LT	GV	X			EAGAN	
1012+37	202' LT	HYD	X			EAGAN	
1012+37 TO 1210+26	202' LT TO 201' LT	WM	X			EAGAN	
1013+01 TO 1013+23	145' LT TO 146' RT	WM	X			EAGAN	CROSSES C/L AT 1013+12
1210+26	201' LT	GV	X			EAGAN	
1210+26 TO 1012+23	201' LT TO 175' LT	WM	X			EAGAN	
1012+23 TO 1012+28	175' LT TO 173' LT	WM	X			EAGAN	
1012+28	173' LT	GV	X			EAGAN	
1012+28 TO 1012+34	173' LT TO 147' LT	WM	X			EAGAN	
1012+34 TO 1012+49	147' LT TO 144' LT	WM	X			EAGAN	
1012+49	144' LT	GV	X			EAGAN	
1012+49 TO 1013+01	144' LT TO 144' LT	WM	X			EAGAN	
1045+26 TO 1045+30	121' LT TO 62' RT	WM	X			EAGAN	CROSSES C/L AT 1045+29
1045+30	62' RT	GV	X			EAGAN	

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
SANITARY SEWER / WATER MAIN

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - WATER MAIN

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
1045+30 TO 1045+41	62' RT TO 123' RT	WM	X			EAGAN	
1073+63 TO 1076+09	49' RT TO 250' RT	WM	X			EAGAN	
1097+25 TO 1102+45	56' RT TO 57' RT	WM	X			EAGAN	
1103+93	59' RT	GV	X			EAGAN	
1102+45	58' RT	GV	X			EAGAN	
1102+45 TO 1102+44	58' RT TO 89' RT	WM	X			EAGAN	
1102+44	89' RT	HYD	X			EAGAN	
1102+44 TO 1103+93	57' RT TO 59' RT	WM	X			EAGAN	
1103+91 TO 1103+88	155' RT TO 115' RT	WM	X			EAGAN	
1103+88 TO 1103+98	115' RT TO 74' RT	WM	X			EAGAN	
1103+98	74' RT	HYD	X			EAGAN	
1103+98 TO 1103+93	74' RT TO 59' RT	WM	X			EAGAN	
1103+93 TO 1114+88	59' RT TO 91' RT	WM	X			EAGAN	
1114+88	91' RT	GV	X			EAGAN	
1114+88 TO 1114+86	91' RT TO 97' RT	WM	X			EAGAN	
1114+86	97' RT	MH	X			EAGAN	
1114+86 TO 1114+90	97' RT TO 104' RT	WM	X			EAGAN	
1114+90	104' RT	GV	X			EAGAN	
1107+22	61' RT	GV	X			EAGAN	
1107+22 TO 1107+21	61' RT TO 81' RT	WM	X			EAGAN	
1107+21	81' RT	HYD	X			EAGAN	
1126+66	64' RT	HYD	X			SPRWS	
21+86	49' LT	HYD	X			SPRWS	
22+19 TO 22+03	108' LT TO 16' RT	WM	X			SPRWS	CROSSES C/L AT 22+05
22+07	46' LT	GV	X			SPRWS	
22+11 TO 21+86	46' RT TO 49' LT	WM	X			SPRWS	
8+67 TO 7+53	25' LT TO 24' LT	WM	X			SPRWS	
7+53 TO 7+37	24' LT TO 41' LT	WM	X			SPRWS	
7+37 TO 0+54	41' LT TO 34' LT	WM	X			SPRWS	
0+54 TO 0+67	34' LT TO 23' LT	WM	X			SPRWS	
0+34	54' LT	HYD	X			SPRWS	
0+35	41' LT	GV	X			SPRWS	
0+45	34' LT	GV	X			SPRWS	
0+67 TO 2+09	23' LT TO 23' LT	WM	X			SPRWS	
0+35 TO 0+34	34' LT TO 54' LT	WM	X			SPRWS	
36+52 TO 36+49	47' LT TO 35' RT	WM	X			SPRWS	CROSSES C/L AT 36+50
48+28	66' LT	GV	X			SPRWS	
48+28 TO 48+99	66' LT TO 53' RT	WM	X			SPRWS	
48+99	53' RT	GV	X			SPRWS	
133+04 TO 135+88	18' RT TO 20' RT	WM	X			SPRWS	
135+88	20' RT	GV	X			SPRWS	
135+88 TO 135+91	20' RT TO 20' RT	WM	X			SPRWS	
135+91 TO 135+91	20' RT TO 28' RT	WM	X			SPRWS	
135+91	28' RT	HYD	X			SPRWS	
135+91 TO 136+23	20' RT TO 21' RT	WM	X			SPRWS	
136+23 TO 136+23	21'T TO 4' RT	WM	X			SPRWS	
136+23 TO 140+10	4' RT TO 4' RT	WM	X			SPRWS	
140+10 TO 140+22	4' RT TO 16' RT	WM	X			SPRWS	
140+22 TO 142+73	16' RT TO 16' RT	WM	X			SPRWS	
142+71	25' RT	HYD	X			SPRWS	
142+88	23' RT	GV	X			SPRWS	
142+73 TO 142+88	16' RT TO 23' RT	WM	X			SPRWS	
142+88 TO 143+64	23' RT TO 93' RT	WM	X			SPRWS	
142+73 TO 142+71	17' RT TO 25' RT	WM	X			SPRWS	

UTILITY TABULATION - WATER MAIN

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
158+63	76' RT	HYD	X			SPRWS	
158+63 TO 158+67	76' RT TO 73' RT	WM	X			SPRWS	
158+67	73' RT	GV	X			SPRWS	
158+67 TO 158+74	73' RT TO 78' RT	WM	X			SPRWS	
158+59 TO 158+99	113' RT TO 29' RT	WM	X			SPRWS	
158+99 TO 163+15	29' RT TO 28' RT	WM	X			SPRWS	
163+15 TO 163+15	28' RT TO 33' LT	WM	X			SPRWS	CROSSES C/L AT 163+15
163+15 TO 164+41	28' RT TO 28' RT	WM	X			SPRWS	
164+41	28' RT	GV	X			SPRWS	
164+41 TO 165+13	28' RT TO 25' RT	WM	X			SPRWS	
165+13 TO 165+13	25' RT TO 30' RT	WM	X			SPRWS	
165+13	25' RT	HYD	X			SPRWS	
165+13 TO 165+22	25' RT TO 24' RT	WM	X			SPRWS	
165+22 TO 165+18	24' RT TO 33' LT	WM	X			SPRWS	CROSSES C/L AT 165+21
165+22 TO 166+12	24' RT TO 26' RT	WM	X			SPRWS	
166+12 TO 166+09	26' RT TO 30' LT	WM	X			SPRWS	CROSSES C/L AT 166+11
166+12 TO 167+71	26' RT TO 28' RT	WM	X			SPRWS	
167+71	28' RT	GV	X			SPRWS	
167+62	34' RT	HYD	X			SPRWS	
167+71 TO 167+74	28' RT TO 33' RT	WM	X			SPRWS	
167+74 TO 167+73	33' RT TO 100' RT	WM	X			SPRWS	
167+73 TO 167+71	33' RT TO 33' RT	WM	X			SPRWS	
167+71	33' RT	HYD	X			SPRWS	
167+71 TO 167+62	33' RT TO 34' RT	WM	X			SPRWS	
167+71 TO 168+04	28' RT TO 26' RT	WM	X			SPRWS	
168+04 TO 168+04	26' RT TO 31' LT	WM	X			SPRWS	CROSSES C/L AT 168+04
168+04 TO 168+53	26' RT TO 27' RT	WM	X			SPRWS	
168+53 TO 168+53	27' RT TO 35' LT	WM	X			SPRWS	CROSSES C/L AT 168+53
168+53 TO 170+31	27' RT TO 27' RT	WM	X			SPRWS	
170+31 TO 170+26	27' RT TO 32' LT	WM	X			SPRWS	CROSSES C/L 170+29
171+25 TO 171+25	39' RT TO 102' RT	WM	X			SPRWS	
170+31 TO 171+61	27' RT TO 29' RT	WM	X			SPRWS	
171+61 TO 171+61	27' RT TO 41' RT	WM	X			SPRWS	
171+61 TO 171+03	41' RT TO 32' RT	WM	X			SPRWS	
171+03	32' RT	HYD	X			SPRWS	
171+61 TO 174+11	41' RT TO 31' RT	WM	X			SPRWS	
174+11 TO 174+11	31' RT TO 30' LT	WM	X			SPRWS	CROSSES C/L AT 174+11
174+11 TO 175+54	31' RT TO 31' RT	WM	X			SPRWS	
175+54 TO 175+55	31' RT TO 64' RT	WM	X			SPRWS	
175+55 TO 175+60	64' RT TO 104' RT	WM	X			SPRWS	
175+54	31' RT	GV	X			SPRWS	
175+55	64' RT	GV	X			SPRWS	
175+62	65' RT	HYD	X			SPRWS	
175+63 TO 175+55	65' RT TO 64' RT	WM	X			SPRWS	
175+54 TO 177+76	31' RT TO 27' RT	WM	X			SPRWS	
177+76 TO 177+76	27' RT TO 32' RT	WM	X			SPRWS	
177+76	32' RT	HYD	X			SPRWS	
177+76 TO 184+93	27' RT TO 33' RT	WM	X			SPRWS	
184+93 TO 184+93	33' RT TO 44' RT	WM	X			SPRWS	
184+93	44' RT	HYD	X			SPRWS	
184+93 TO 187+40	33' RT TO 32' RT	WM	X			SPRWS	
187+40 TO 187+54	32' RT TO 48' RT	WM	X			SPRWS	
187+54 TO 189+84	48' RT TO 85' RT	WM	X			SPRWS	
187+54 TO 187+84	48' RT TO 85' RT	WM	X			SPRWS	
187+54 TO 187+63	48' RT TO 40' RT	WM	X			SPRWS	
187+63	40' RT	HYD	X			SPRWS	

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
WATER MAIN

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 31 of 393 Sheets

UTILITY TABULATION - GAS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
163+38 TO 167+09	31' RT TO 36' RT	GAS	X			NNG	26" TRANSMISSION
163+64 TO 165+41	65' RT TO 67' RT	GAS	X			CENTERPOINT	3" PLASTIC
165+41 TO 165+41	67' RT TO 71' RT	GAS	X			CENTERPOINT	2" STEEL
165+41	71' RT	GV	X			CENTERPOINT	
164+02 TO 164+92	117' LT TO 119' LT	GAS	X			CENTERPOINT	
164+92 TO 165+31	119' LT TO 144' LT	GAS	X			CENTERPOINT	
165+31 TO 165+42	144' LT TO 188' LT	GAS	X			CENTERPOINT	
166+48 TO 166+52	175' LT TO 148' LT	GAS	X			CENTERPOINT	
166+52 TO 167+32	148' LT TO 150' LT	GAS	X			CENTERPOINT	
173+04 TO 175+82	120' RT TO 112' RT	GAS	X			NNG	26" TRANSMISSION
193+20 TO 193+65	71' RT TO 74' RT	GAS	X			CENTERPOINT	2" PLASTIC
193+65 TO 193+85	74' RT TO 104' RT	GAS	X			CENTERPOINT	2" PLASTIC
193+85 TO 193+79	104' RT TO 120' RT	GAS	X			CENTERPOINT	2" PLASTIC
193+20 TO 195+35	48' RT TO 49' RT	GAS	X			NNG	26" TRANSMISSION
195+35 TO 195+75	49' RT TO 64' RT	GAS	X			NNG	26" TRANSMISSION
193+21 TO 195+37	45' RT TO 46' RT	GAS	X			NNG	26" TRANSMISSION
195+37 TO 195+80	46' RT TO 39' RT	GAS	X			NNG	26" TRANSMISSION
195+80 TO 199+20	39' RT TO 40' RT	GAS	X			NNG	26" TRANSMISSION
195+06 TO 195+55	112' RT TO 83' RT	GAS	X			CENTERPOINT	
195+55 TO 196+97	83' RT TO 77' RT	GAS	X			CENTERPOINT	
196+97 TO 197+03	77' RT TO 169' LT	GAS	X			CENTERPOINT	CROSSES C/L AT 196+97 (3" PLASTIC)
211+70 TO 215+10	45' RT TO 52' RT	GAS	X			CENTERPOINT	
212+90 TO 213+16	193' LT TO 162' LT	GAS	X			CENTERPOINT	
213+16 TO 213+57	162' LT TO 136' LT	GAS	X			CENTERPOINT	
213+57 TO 214+51	136' LT TO 128' LT	GAS	X			CENTERPOINT	
214+51 TO 214+52	128' LT TO 22' LT	GAS	X			CENTERPOINT	
214+52 TO 214+67	22' LT TO 15' LT	GAS	X			CENTERPOINT	
214+67 TO 214+86	15' LT TO 23' RT	GAS	X			CENTERPOINT	CROSSES C/L AT 214+75
214+86 TO 215+34	23' RT TO 109' RT	GAS	X			CENTERPOINT	
227+80 TO 227+80	127' LT TO 42' RT	GAS	X			CENTERPOINT	CROSSES C/L AT 227+80
227+80 TO 227+85	42' RT TO 62' RT	GAS	X			CENTERPOINT	2" PLASTIC
251+03	171' LT	GV	X			NNG	26" TRANSMISSION
251+03 TO 250+94	171' LT TO 72' RT	GAS	X			NNG	CROSSES C/L AT 250+97 (26" TRANSMISSION)
917+88 TO 920+43	30' RT TO 31' RT	GAS	X			NNG	26" TRANSMISSION
919+17 TO 919+14	115' LT TO 46' RT	GAS	X			CENTERPOINT	CROSSES C/L AT 915+15 (3" STEEL)
919+14 TO 920+55	46' RT TO 47' RT	GAS	X			CENTERPOINT	3" STEEL
919+13 TO 920+84	49' RT TO 50' RT	GAS	X			CENTERPOINT	3" STEEL
931+28 TO 933+48	62' RT TO 73' RT	GAS	X			NNG	26" TRANSMISSION
931+62 TO 932+82	89' RT TO 88' RT	GAS	X			CENTERPOINT	3" STEEL
932+82 TO 932+99	88' RT TO 84' RT	GAS	X			CENTERPOINT	
1010+33 TO 1014+17	45' RT TO 60' RT	GAS	X			CENTERPOINT	3" PLASTIC
1025+55 to 1027+14	56' RT TO 57' RT	GAS	X			XCEL	26" STEEL TRANSMISSION
1044+35 TO 1046+08	48' RT TO 45' RT	GAS	X			XCEL	26" STEEL TRANSMISSION
1046+08	45' RT	GV	X			XCEL	26" STEEL TRANSMISSION
1073+75 TO 1074+52	41' RT TO 61' RT	GAS	X			CENTERPOINT	
1074+52 TO 1075+40	61' RT TO 114' RT	GAS	X			CENTERPOINT	
1075+40 TO 1075+82	114' RT TO 172' RT	GAS	X			CENTERPOINT	
1074+01 TO 1077+06	49' RT TO 77' RT	GAS	X			XCEL	26" STEEL TRANSMISSION
1090+76 TO 1162+01	36' RT TO 46' RT	GAS	X			XCEL	26" STEEL TRANSMISSION
1090+76 TO 1114+04	73' RT TO 63' RT	GAS	X			MER	4" STEEL
1114+04	63' RT	GV	X			MER	
1114+04 TO 1162+01	63' RT TO 64' RT	GAS	X			MER	2" STEEL
36+17 TO 36+13	49' LT TO 1' RT	GAS	X			XCEL	CROSSES C/L AT 36+13
36+13 TO 36+19	1' RT TO 48' RT	GAS	X			XCEL	

UTILITY TABULATION - GAS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
46+77 TO 46+92	36' RT TO 36' RT	GAS	X			XCEL	
46+92 TO 46+95	36' RT TO 36' RT	GAS	X			XCEL	
46+95 TO 46+96	36' RT TO 42' RT	GAS	X			XCEL	
46+95 TO 46+97	36' RT TO 27' RT	GAS	X			XCEL	
46+92 TO 46+94	36' RT TO 46' LT	GAS	X			XCEL	CROSSES C/L AT 46+93
46+94 TO 48+71	46' LT TO 67' LT	GAS	X			XCEL	
48+71 TO 48+67	67' LT TO 79' LT	GAS	X			XCEL	
48+67 TO 48+57	79' LT TO 91' LT	GAS	X			XCEL	
48+10	38' RT	MH	X			XCEL	LEFT IN PLACE, OUT OF SERVICE
48+12	39' RT	GV	X			XCEL	LEFT IN PLACE, OUT OF SERVICE
48+11	41' RT	GV	X			XCEL	LEFT IN PLACE, OUT OF SERVICE
48+89 TO 48+75	63' RT TO 85' LT	GAS	X			XCEL	CROSSES C/L AT 48+81 (20" STEEL TRANSMISSION)
48+75 TO 49+98	85' LT TO 89'T LT	GAS	X			XCEL	20" STEEL TRANSMISSION
49+28 TO 49+06	55' RT TO 56' LT	GAS	X			XCEL	CROSSES C/L AT 49+16 (20" STEEL TRANSMISSION)
49+67 TO 49+93	138' RT TO 117' RT	GAS	X			XCEL	
49+93 TO 50+10	117' RT TO 83' RT	GAS	X			XCEL	
158+77 TO 158+77	33' RT TO 27' RT	GAS	X			XCEL	
158+77 TO 159+37	27' RT TO 16' RT	GAS	X			XCEL	
159+37 TO 159+86	16' RT TO 16' RT	GAS	X			XCEL	
159+86 TO 159+90	16' RT TO 29' RT	GAS	X			XCEL	
159+86 TO 164+87	16' RT TO 13' RT	GAS	X			XCEL	
164+87 TO 164+88	44' RT TO 34' RT	GAS	X			XCEL	
164+88 TO 164+87	34' RT TO 13' RT	GAS	X			XCEL	
164+87 TO 164+79	13' RT TO 13' LT	GAS	X			XCEL	CROSSES C/L AT 164+83
164+88 TO 165+90	13' RT TO 37' RT	GAS	X			XCEL	
165+90 TO 165+93	37' RT TO 12' LT	GAS	X			XCEL	CROSSES C/L AT 165+93
165+90 TO 167+61	37' RT TO 45' RT	GAS	X			XCEL	
167+61 TO 167+63	45' RT TO 19' LT	GAS	X			XCEL	CROSSES C/L AT 167+62
167+61 TO 171+50	45' RT TO 31' RT	GAS	X			XCEL	
171+50 TO 174+46	31' RT TO 68' RT	GAS	X			XCEL	
171+50 TO 175+13	31' RT TO 35' RT	GAS	X			XCEL	
180+41 TO 185+68	25' RT TO 29' RT	GAS	X			XCEL	
185+68 TO 186+62	29' RT TO 45' RT	GAS	X			XCEL	

UTILITY TABULATION - PETROLEUM

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
1045+52 TO 1045+53	136' LT TO 97' RT	PETROLEUM	X			MAGELLAN	CROSSES C/L AT 1045+52 (8" HIGH PRESSURE)

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
GAS / PETROLEUM

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 32 of 393 Sheets

UTILITY TABULATION - POWER ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
736+04 TO 735+97	96' LT TO 32' RT	LIGHTING	X			MNDOT	CROSSES C/L AT 735+99
106+25 TO 106+55	64' RT TO 68' RT	P-BUR	X			XCEL	
106+55 TO 106+74	68' RT TO 90' RT	P-BUR	X			XCEL	
106+74 TO 106+81	90' RT TO 111' RT	P-BUR	X			XCEL	
106+27 TO 108+23	119' LT TO 107' LT	P-BUR	X			XCEL	
108+23 TO 109+86	107' LT TO 103' LT	P-BUR	X			XCEL	
116+20 TO 124+02	112' LT TO 93' LT	P-BUR	X			XCEL	
132+49 TO 133+85	131' LT TO 129' LT	P-BUR	X			XCEL	
137+87 TO 142+35	110' LT TO 100' LT	P-BUR	X			XCEL	
137+95	55' RT	POLE	X			DAKOTA	
137+95 TO 142+79	55' RT TO 44' RT	P-OH	X			DAKOTA	
140+79	46' RT	PED	X			DAKOTA	
140+80	48" RT	POLE	X			DAKOTA	
142+79	44' RT	POLE	X			DAKOTA	
162+49	70' RT	POLE	X			DAKOTA	
162+49 TO 166+68	70' RT TO 69' RT	P-OH	X			DAKOTA	
166+68 TO 166+68	69' RT TO 69' RT	P-OH	X			DAKOTA	
166+68	69' RT	POLE	X			DAKOTA	
164+02 TO 167+31	101' LT TO 102' LT	P-BUR	X			XCEL	
166+63	64' RT TO 68' RT	PED	X			DAKOTA	
166+65	68' RT	POLE	X			DAKOTA	
174+24 TO 175+66	98' LT TO 102' LT	P-BUR	X			XCEL	CONTRACTOR SHALL PROTECT INPLACE
173+99	144' LT	POLE	X			XCEL	
173+99 TO 174+87	144' LT TO 145' LT	P-OH	X			XCEL	
174+04 TO 173+95	125' LT TO 31' LT	P-BUR	X			DAKOTA	
173+95 TO 173+46	31' LT TO 67' RT	P-BUR	X			DAKOTA	CROSSES C/L AT 173+79
173+46 TO 173+94	67' RT TO 71' RT	P-BUR	X			DAKOTA	
173+94 TO 172+64	71' RT TO 159' RT	P-BUR	X			DAKOTA	
173+94 TO 173+35	159' RT TO 167' RT	P-BUR	X			DAKOTA	
173+35 TO 173+67	167' RT TO 129' RT	P-BUR	X			DAKOTA	
173+67	129' RT	POLE	X			DAKOTA	
189+08 TO 190+44	99' LT TO 100' LT	P-BUR	X			XCEL	CONTRACTOR SHALL PROTECT INPLACE
193+19	77' RT	POLE	X			DAKOTA	
193+19 TO 195+25	77' RT TO 77' RT	P-OH	X			DAKOTA	
194+65 TO 197+33	118' LT TO 122' LT	P-BUR	X			XCEL	
195+25	77' RT	POLE	X			DAKOTA	
195+25 TO 197+02	77' RT TO 77' RT	P-OH	X			DAKOTA	
197+02	77' RT	POLE	X			DAKOTA	
197+03 TO 197+26	140' LT TO 146' LT	P-OH	X			XCEL	
197+21	140' LT	POLE	X			XCEL	
197+21 TO 198+73	140' LT TO 141' LT	P-OH	X			XCEL	
197+26	146' LT	POLE	X			XCEL	
198+73	141' LT	POLE	X			XCEL	
203+00	139' LT	POLE	X			XCEL	
203+00 TO 205+21	139' LT TO 139' LT	P-OH	X			XCEL	
205+21	139' LT	POLE	X			XCEL	
205+21 TO 207+03	139' LT TO 142' LT	P-OH	X			XCEL	
207+03	142' LT	POLE	X			XCEL	
211+12	138' LT	POLE	X			XCEL	
211+12 TO 213+79	138' LT TO 131' LT	P-OH	X			XCEL	
211+15 TO 214+42	122' LT TO 117' RT	P-BUR	X			XCEL	
211+44	81' RT	POLE	X			DAKOTA	
211+44 TO 213+17	81' RT TO 72' RT	P-OH	X			DAKOTA	
213+17	72' RT	POLE	X			DAKOTA	

UTILITY TABULATION - POWER ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
213+17 TO 215+38	72' RT TO 73' RT	P-OH	X			DAKOTA	
213+79	131' LT	POLE	X			XCEL	
213+79 TO 216+06	131' LT TO 142' LT	P-OH	X			XCEL	
215+38	73' RT	POLE	X			DAKOTA	
216+06	142' LT	POLE	X			XCEL	
225+62	139' LT	POLE	X			XCEL	
225+62 TO 228+05	139' LT TO 137' LT	P-OH	X			XCEL	
228+05	137' LT	POLE	X			XCEL	
228+05 TO 228+75	137' LT TO 138' LT	P-OH	X			XCEL	
228+75	138' LT	POLE	X			XCEL	
237+60	180' LT	POLE	X			XCEL	
237+60 TO 238+35	180' LT TO 85' LT	P-OH	X			XCEL	
237+60 TO 238+73	180' LT TO 137' LT	P-OH	X			XCEL	
238+35	85' LT	LP	X			XCEL	
238+73	137' LT	POLE	X			XCEL	
238+73 TO 240+62	137' LT TO 134' LT	P-OH	X			XCEL	
240+62	134' LT	POLE	X			XCEL	
249+01	147' LT	POLE	X			XCEL	
249+01 TO 251+23	147' LT TO 151' LT	P-OH	X			XCEL	
250+28	136' LT	LP	X			XCEL	
251+23	151' LT	POLE	X			XCEL	
916+83	151' LT	POLE	X			XCEL	
916+83 TO 919+30	151' LT TO 150' LT	P-OH	X			XCEL	
919+30	151' LT	POLE	X			XCEL	
919+30 TO 921+11	149' LT	P-OH	X			XCEL	
921+11	149' LT	POLE	X			XCEL	
930+47	131' LT	POLE	X			XCEL	
917+73	67' RT	POLE	X			DAKOTA	
917+73 TO 919+98	67' RT TO 66' RT	P-OH	X			DAKOTA	
919+98	66' RT	POLE	X			DAKOTA	
917+73 TO 918+44	67' RT TO 67' RT	P-BUR	X			DAKOTA	
918+44 TO 918+49	67' RT TO 100' RT	P-BUR	X			DAKOTA	
930+47 TO 931+91	131' LT TO 151' LT	P-OH	X			XCEL	
931+91	151' LT	POLE	X			XCEL	
931+91 TO 933+00	151' LT TO 121' LT	P-OH	X			XCEL	
933+00	121' LT	POLE	X			XCEL	
933+00 TO 932+97	121' LT TO 76' RT	P-OH	X			XCEL	CROSSES C/L AT 932+98
932+97	76' RT	POLE	X			XCEL	
932+97 TO 931+18	76' RT TO 87' RT	P-OH	X			DAKOTA	
931+18	87' RT	POLE	X			DAKOTA	
956+85	37' RT	SIGN	X			MNDOT	
956+85 TO 957+47	37' RT TO 42' RT	LIGHTING	X			MNDOT	
971+46 TO 973+24	53' RT TO 40' RT	LIGHTING	X			MNDOT	
973+24 TO 973+37	40' RT TO 35' RT	LIGHTING	X			MNDOT	
973+24 TO 973+29	40' RT TO 82' RT	LIGHTING	X			MNDOT	
977+56 TO 977+65	139' LT TO 145' LT	LIGHTING	X			MNDOT	
977+65	145' LT	HH	X			MNDOT	
977+65 TO 979+10	145' LT TO 179' LT	LIGHTING	X			MNDOT	
989+32 TO 991+73	54' RT TO 43' RT	LIGHTING	X			MNDOT	
991+73	43' RT	HH	X			MNDOT	
991+73 TO 991+78	43' RT TO 60' RT	LIGHTING	X			MNDOT	
991+78 TO 991+91	60' RT TO 64' RT	LIGHTING	X			MNDOT	
991+91	64' RT	LP	X			MNDOT	
992+82 TO 993+26	146' LT TO 137' LT	LIGHTING	X			MNDOT	

SPECIFIC NOTES:

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SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
POWER

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - POWER ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
993+26	137' LT	SIGN	X			MNDOT	
1012+95 TO 1012+94	139' LT TO 136' LT	P-BUR	X			XCEL	
1012+94 TO 1013+07	136' LT TO 48' RT	P-BUR	X			XCEL	CROSSES C/L AT 1013+06
1013+07 TO 1013+07	48' RT TO 144' RT	P-BUR	X			XCEL	
1012+94 TO 1012+95	136' LT TO 139' LT	P-BUR	X			XCEL	
1012+95 TO 1013+27	139' LT TO 60' RT	P-BUR	X			XCEL	CROSSES C/L AT 1013+14
1013+27 TO 1013+14	60' RT TO 68' RT	P-BUR	X			XCEL	
1013+14 TO 1013+15	68' RT TO 146' RT	P-BUR	X			XCEL	
1025+54 TO 1027+14	36' RT TO 38' RT	P-BUR	X			XCEL	
1025+50 TO 1026+86	75' RT TO 80' RT	P-OH	X			XCEL	
1026+86	80' RT	POLE	X			XCEL	
1026+86 TO 1027+30	80' RT TO 82' RT	P-OH	X			XCEL	
1044+47 TO 1045+96	130' LT TO 127' LT	P-BUR	X			XCEL	
1091+20	84' RT	POLE	X			XCEL	
1091+20 TO 1092+69	84' RT TO 75' RT	P-OH	X			XCEL	
1092+69	75' RT	POLE	X			XCEL	
1092+69 TO 1096+22	75' RT TO 66' RT	P-OH	X			XCEL	
1096+22	66' RT	POLE	X			XCEL	
1096+22 TO 1097+73	66' RT 66' RT	P-OH	X			XCEL	
1097+73	66' RT	POLE	X			XCEL	
1097+73 TO 1099+17	66' RT TO 65' RT	P-OH	X			XCEL	
1099+17	65' RT	POLE	X			XCEL	
1099+17 TO 1104+17	65' RT TO 66' RT	P-OH	X			XCEL	
1104+17	66' RT	POLE	X			XCEL	
1104+17 TO 1105+78	66' RT TO 64' RT	P-OH	X			XCEL	
1105+78	64' RT	POLE	X			XCEL	
1105+71	45' RT	POLE	X			XCEL	
1105+78 TO 1107+58	64' RT TO 66' RT	P-OH	X			XCEL	
1107+58	66' RT	POLE	X			XCEL	
1107+58 TO 1109+27	66' RT TO 67' RT	P-OH	X			XCEL	
1109+27	67' RT	POLE	X			XCEL	
1109+27 TO 1110+41	67' RT TO 66' RT	P-OH	X			XCEL	
1110+41	66' RT	POLE	X			XCEL	
1110+41 TO 1112+13	66' RT TO 65' RT	P-OH	X			XCEL	
1112+13	65' RT	POLE	X			XCEL	
1112+13 TO 1113+38	65' RT TO 66' RT	P-OH	X			XCEL	
1113+38	66' RT	POLE	X			XCEL	
1113+38 TO 1114+50	66' RT TO 68' RT	P-OH	X			XCEL	
1114+50	68' RT	POLE	X			XCEL	
1114+50 TO 1115+16	68' RT TO 68' RT	P-OH	X			XCEL	
1115+16	68' RT	POLE	X			XCEL	
1115+16 TO 1116+30	68' RT TO 66' RT	P-OH	X			XCEL	
1116+30	66' RT	POLE	X			XCEL	
1116+30 TO 1118+10	66' RT TO 65' RT	P-OH	X			XCEL	
1118+10	65' RT	POLE	X			XCEL	
1118+10 TO 1119+85	65' RT TO 68' RT	P-OH	X			XCEL	
1119+85	68' RT	POLE	X			XCEL	
1119+85 TO 1121+59	68' RT TO 66' RT	P-OH	X			XCEL	
1121+59	66' RT	POLE	X			XCEL	
1121+59 TO 1123+28	66' RT TO 66' RT	P-OH	X			XCEL	
1123+28	66' RT	POLE	X			XCEL	
1123+28 TO 1124+76	66' RT TO 65' RT	P-OH	X			XCEL	
1124+76	65' RT	POLE	X			XCEL	
1124+76 TO 1126+28	65' RT TO 66' RT	P-OH	X			XCEL	

UTILITY TABULATION - POWER ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
1126+28	66' RT	POLE	X			XCEL	
1126+28 TO 1128+01	66' RT TO 65' RT	P-OH	X			XCEL	
1128+01	65' RT	POLE	X			XCEL	
1128+01 TO 1129+76	65' RT TO 66' RT	P-OH	X			XCEL	
1129+76	66' RT	POLE	X			XCEL	
1129+76 TO 1131+04	66' RT TO 67' RT	P-OH	X			XCEL	
1131+04	67' RT	POLE	X			XCEL	
1131+04 TO 1132+31	67' RT TO 66' RT	P-OH	X			XCEL	
1132+31	66' RT	POLE	X			XCEL	
1132+31 TO 1133+12	66' RT TO 68' RT	P-OH	X			XCEL	
1133+12	68' RT	POLE	X			XCEL	
1133+12 TO 1133+93	68' RT TO 68' RT	P-OH	X			XCEL	
1133+93	68' RT	POLE	X			XCEL	
1133+93 TO 1135+57	68' RT TO 69' RT	P-OH	X			XCEL	
1135+57	69' RT	POLE	X			XCEL	
1135+57 TO 1137+16	69' RT TO 72' RT	P-OH	X			XCEL	
1137+16	72' RT	POLE	X			XCEL	
1137+16 TO 1138+93	72' RT TO 72' RT	P-OH	X			XCEL	
1138+93	72' RT	POLE	X			XCEL	
1138+93 TO 1140+72	72' RT TO 74' RT	P-OH	X			XCEL	
1140+72	74' RT	POLE	X			XCEL	
1140+72 TO 1142+44	74' RT TO 74' RT	P-OH	X			XCEL	
1142+44	74' RT	POLE	X			XCEL	
1142+44 TO 1144+09	74' RT TO 77' RT	P-OH	X			XCEL	
1144+09	77' RT	POLE	X			XCEL	
1144+09 TO 1145+43	77' RT TO 78' RT	P-OH	X			XCEL	
1145+43	78' RT	POLE	X			XCEL	
1145+43 TO 1146+94	78' RT TO 78' RT	P-OH	X			XCEL	
1146+94	78' RT	POLE	X			XCEL	
1146+96 TO 1148+37	78' RT TO 75' RT	P-OH	X			XCEL	
1148+37	74' RT	POLE	X			XCEL	
1148+37 TO 1149+80	74' RT TO 75' RT	P-OH	X			XCEL	
1149+80	75' RT	POLE	X			XCEL	
1149+80 TO 1151+43	75' RT TO 71' RT	P-OH	X			XCEL	
1151+43	71' RT	POLE	X			XCEL	
1151+43 TO 1153+02	71' RT TO 70' RT	P-OH	X			XCEL	
1153+02	70' RT	POLE	X			XCEL	
1153+02 TO 1154+40	70' RT TO 68' RT	P-OH	X			XCEL	
1154+40	68' RT	POLE	X			XCEL	
1154+40 TO 1157+51	68' RT TO 66' RT	P-OH	X			XCEL	
1157+51	66' RT	POLE	X			XCEL	
1157+51 TO 1158+76	66' RT TO 67' RT	P-OH	X			XCEL	
1158+76	67' RT	POLE	X			XCEL	
1158+76 TO 1160+98	67' RT TO 65' RT	P-OH	X			XCEL	
1160+98	65' RT	POLE	X			XCEL	
31+61 TO 33+26	27' RT TO 36' RT	P-BUR	X			XCEL	
30+75	64' RT	POLE	X			XCEL	
30+75 TO 31+79	64' RT TO 113' RT	P-BUR	X			XCEL	
31+79 TO 31+96	113' RT TO 110' RT	P-BUR	X			XCEL	
31+96 TO 32+15	110' RT TO 127' RT	P-BUR	X			XCEL	
32+15 TO 21+14	127' RT TO 144' RT	P-BUR	X			XCEL	
32+14 TO 32+60	144' RT TO 165' RT	P-BUR	X			XCEL	
22+64	53' LT	POLE	X			XCEL	
22+64 TO 21+40	53' LT 48' LT	P-OH	X			XCEL	

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PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
POWER

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - POWER ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
22+85 TO 22+64	55' LT TO 53' LT	P-OH	X			XCEL	
15+22	45' LT	POLE	X			XCEL	
15+22 TO 13+65	45' LT TO 55' LT	P-OH	X			XCEL	
7+84	29' RT	POLE	X			XCEL	
7+84 TO 0+32	29' RT TO 35' RT	P-OH	X			XCEL	
0+32	35' RT	POLE	X			XCEL	
0+32 TO 0+31	35' RT TO 83' LT	P-OH	X			XCEL	CROSSES C/L AT 0+32
11+26	25' LT	POLE	X			XCEL	
36+33	45' LT	LP	X			XCEL	
36+75	36' LT	LP	X			XCEL	
37+53	36' LT	LP	X			XCEL	
47+87	42' LT	POLE	X			XCEL	
47+87 TO 49+31	42' LT TO 53' LT	P-OH	X			XCEL	
49+08	44' RT	LP	X			XCEL	
49+31	53' LT	POLE	X			XCEL	
49+31 TO 49+08	53' LT TO 44' RT	P-OH	X			XCEL	CROSSES C/L AT 49+19
49+31 TO 99+65	54' LT TO 56' LT	P-OH	X			XCEL	
99+65	56' LT	POLE	X			XCEL	
104+69 TO 10+46	48' RT TO 70' LT	P-OH	X			XCEL	CROSSES C/L AT 105+00
144+15	25' RT	POLE	X			XCEL	
144+15 TO 146+13	25' RT TO 18' RT	P-OH	X			XCEL	
146+13	18' RT	POLE	X			XCEL	
146+13 TO 147+51	18' RT TO 22' RT	P-OH	X			XCEL	
147+51	22' RT	POLE	X			XCEL	
147+51 TO 148+91	22' RT TO 23' RT	P-OH	X			XCEL	
148+91	23' RT	POLE	X			XCEL	
148+91 TO 150+27	23' RT TO 19' RT	P-OH	X			XCEL	
150+27 TO 152+06	19' RT TO 24' RT	P-OH	X			XCEL	
152+06 TO 153+28	24' RT TO 21' RT	P-OH	X			XCEL	
153+28 TO 153+89	21' RT TO 25' RT	P-OH	X			XCEL	
153+89 TO 154+43	25' RT TO 22' RT	P-OH	X			XCEL	
154+43 TO 154+99	22' RT TO 51' RT	P-OH	X			XCEL	
154+99 TO 156+51	51' RT TO 35' RT	P-OH	X			XCEL	
156+51 TO 157+63	35' RT TO 34' RT	P-OH	X			XCEL	
157+63 TO 158+56	34' RT TO 26' LT	P-OH	X			XCEL	CROSSES C/L AT 158+04
158+56	26' LT	POLE	X			XCEL	
158+56 TO 159+93	26' LT TO 27' LT	P-OH	X			XCEL	
159+93	27' LT	POLE	X			XCEL	
159+93 TO 161+69	27' RT TO 29' LT	P-OH	X			XCEL	
161+69	29' LT	POLE	X			XCEL	
161+69 TO 163+46	29' LT TO 22' LT	P-OH	X			XCEL	
163+46	22' LT	POLE	X			XCEL	
163+45 TO 163+77	22' LT TO 21' LT	P-OH	X			XCEL	
163+77	28' RT	POLE	X			XCEL	
163+77 TO 163+46	21' LT TO 28' RT	P-OH	X			XCEL	CROSSES C/L AT 163+59
163+46 TO 165+18	21' LT TO 22' LT	P-OH	X			XCEL	
165+18	21' LT	POLE	X			XCEL	
165+18 TO 166+32	21' LT TO 23' LT	P-OH	X			XCEL	
166+32	23' LT	POLE	X			XCEL	
166+32 TO 167+50	23' LT TO 22' LT	P-OH	X			XCEL	
167+50	22' LT	POLE	X			XCEL	
164+75 TO 164+84	43' RT TO 31' RT	P-BUR	X			XCEL	
167+84 TO 167+57	31' RT TO 37' RT	P-BUR	X			XCEL	
167+57 TO 167+61	37' RT TO 47' RT	P-BUR	X			XCEL	

UTILITY TABULATION - POWER ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
167+50 TO 168+47	22' LT TO 23' LT	P-OH	X			XCEL	
168+47	23' LT	POLE	X			XCEL	
168+47 TO 170+15	23' LT TO 24' LT	P-OH	X			XCEL	
170+15	24' LT	POLE	X			XCEL	
170+15 TO 171+65	24' LT TO 21' LT	P-OH	X			XCEL	
171+65	21' LT	POLE	X			XCEL	
171+65 TO 172+14	21' LT TO 28' RT	P-OH	X			XCEL	CROSSES C/L AT 171+86
172+14 TO 172+09	28' RT TO 21' RT	P-BUR	X			XCEL	
172+09 TO 171+55	21' RT TO 32' RT	P-BUR	X			XCEL	
171+55 TO 171+54	32' RT TO 66' RT	P-BUR	X			XCEL	
171+65 TO 173+06	21' LT TO 21' LT	P-OH	X			XCEL	
173+06	21' LT	POLE	X			XCEL	
173+06 TO 174+57	21' LT TO 20' LT	P-OH	X			XCEL	
174+57	20' LT	POLE	X			XCEL	
174+57 TO 176+02	20' LT TO 19' LT	P-OH	X			XCEL	
176+02	19' LT	POLE	X			XCEL	
176+02 TO 177+27	19' LT TO 20' LT	P-OH	X			XCEL	
177+27	20' LT	POLE	X			XCEL	
177+27 TO 177+41	20' LT TO 35' RT	P-OH	X			XCEL	CROSSES C/L AT 177+32
177+41	35' RT	POLE	X			XCEL	
177+41 TO 176+26	35' RT TO 31' RT	P-BUR	X			XCEL	
176+26 TO 175+78	31' RT TO 43' RT	P-BUR	X			XCEL	
175+78 TO 175+68	43' RT TO 64' RT	P-BUR	X			XCEL	
177+27 TO 178+88	20' LT TO 21' LT	P-OH	X			XCEL	
178+88	21' LT	POLE	X			XCEL	
178+88 TO 180+37	21' LT TO 20' LT	P-OH	X			XCEL	
180+37	20' LT	POLE	X			XCEL	
180+37 TO 181+72	20' LT TO 20' LT	P-OH	X			XCEL	
180+83	42' RT	LP	X			XCEL	
182+01	65' RT	LP	X			XCEL	
181+72	20' LT	POLE	X			XCEL	
181+72 TO 183+20	20' LT TO 20' LT	P-OH	X			XCEL	
183+20	20' LT	POLE	X			XCEL	
183+20 TO 184+73	20' LT TO 18' LT	P-OH	X			XCEL	
184+73	18' LT	POLE	X			XCEL	

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INPLACE UTILITY TABULATIONS
POWER

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
106+31 TO 108+86	50' RT TO 53' RT	FO-BUR	X			MNDOT	
106+76 TO 106+87	149' LT TO 123' RT	TV-BUR	X			COMCAST	
106+87	123' RT	VAULT	X			COMCAST	
106+77 TO 107+54	121' LT TO 119' LT	FO-BUR	X			MNDOT	
107+54	119' LT	PED	X			MNDOT	
107+54 TO 110+05	119' LT TO 112' LT	FO-BUR	X			MNDOT	
107+83 TO 108+22	187' RT TO 71' RT	T-BUR	X			CENTURY LINK	
108+22 TO 108+55	71' RT TO 42' RT	T-BUR	X			CENTURY LINK	
108+55 TO 109+10	42' RT TO 35' RT	T-BUR	X			CENTURY LINK	
109+10 TO 109+14	35' RT TO 20' RT	T-BUR	X			CENTURY LINK	
107+89	196' RT	VAULT	X			ATT	
107+89 TO 108+41	196' RT TO 58' RT	FO-BUR	X			ATT	
108+41	58' RT	VAULT	X			ATT	
108+41 TO 108+40	58' RT TO 55' RT	FO-BUR	X			ATT	
108+40	55' RT	VAULT	X			ACCESS	
108+40 TO 109+30	55' RT TO 141' LT	FO-BUR	X			ATT	
109+30 TO 109+09	141' LT TO 222' LT	FO-BUR	X			ATT	
108+13 TO 108+41	118' RT TO 58' RT	FO-BUR	X			ACCESS	
108+41 TO 109+29	58' RT TO 140' LT	FO-BUR	X			ACCESS	
109+29 TO 109+09	140' LT TO 181' LT	FO-BUR	X			ACCESS	
137+94	25' RT	MH	X			CENTURY LINK	
137+94 TO 139+61	25' RT TO 33' RT	T-BUR	X			CENTURY LINK	
139+61 TO 139+73	33' RT TO 48' RT	T-BUR	X			CENTURY LINK	
139+73 TO 139+66	48' RT TO 122' RT	T-BUR	X			CENTURY LINK	
138+45	172' RT	PED	X			CENTURY LINK	
138+05 TO 141+62	54' RT TO 45' RT	FO-BUR	X			MNDOT	
138+44 TO 138+05	156' LT TO 16' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 138+06
138+05 TO 137+94	16' RT TO 25' RT	T-BUR	X			CENTURY LINK	
137+94 TO 138+04	25' RT TO 22' RT	T-BUR	X			CENTURY LINK	
138+04 TO 141+63	22' RT TO 26' RT	T-BUR	X			CENTURY LINK	
138+61	59' RT	VAULT	X			ATT	
138+61 TO 141+48	59' RT TO 48' RT	FO-BUR	X			ATT	
162+54 TO 164+62	29' RT TO 49' RT	T-BUR	X			CENTURY LINK	
164+62	49' RT	MH	X			CENTURY LINK	
164+62 TO 164+74	49' RT TO 50' RT	T-BUR	X			CENTURY LINK	
164+74	50' RT	MH	X			CENTURY LINK	
164+74 TO 164+96	50' RT TO 54' RT	T-BUR	X			CENTURY LINK	
164+96	54' RT	MH	X			CENTURY LINK	
164+96 TO 165+01	54' RT TO 49' RT	T-BUR	X			CENTURY LINK	
165+01	49' RT	MH	X			CENTURY LINK	
165+01 TO 165+39	49' RT TO 145' LT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 165+02
165+39	145' LT	MH	X			CENTURY LINK	
165+19	173' LT	PED	X			CENTURY LINK	
165+19 TO 165+24	173' LT TO 170' LT	T-BUR	X			CENTURY LINK	
165+24 TO 165+22	170' LT TO 148' LT	T-BUR	X			CENTURY LINK	
165+22 TO 165+39	148' LT TO 145' LT	T-BUR	X			CENTURY LINK	
163+49	106' LT	VAULT	X			MNDOT	
163+49 TO 167+31	106' LT TO 115' LT	FO-BUR	X			MNDOT	
163+65 TO 164+61	61' RT TO 68' RT	T-BUR	X			ATT	
164+61	68' RT	VAULT	X			ATT	
164+61 TO 165+26	68' RT TO 75' RT	T-BUR	X			ATT	
165+26 TO 166+62	75' RT' TO 61' RT	T-BUR	X			ATT	
164+00 TO 165+39	144' LT TO 145' LT	T-BUR	X			CENTURY LINK	
165+39 TO 165+40	145' LT TO 175' LT	T-BUR	X			CENTURY LINK	

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
164+65 TO 164+74	113' RT TO 50' RT	T-BUR	X			CENTURY LINK	
164+74 TO 164+69	50' RT TO 112' RT	T-BUR	X			CENTURY LINK	
164+78 TO 164+83	119' RT TO 78' RT	T-BUR	X			CENTURY LINK	
164+83 TO 164+98	78' RT TO 54' RT	T-BUR	X			CENTURY LINK	
164+98 TO 165+02	54' RT TO 49' RT	T-BUR	X			CENTURY LINK	
165+02 TO 166+68	49' RT TO 45' RT	T-BUR	X			CENTURY LINK	
165+30	139' LT	POLE	X			COMCAST	
165+30 TO 165+36	149' LT TO 175' LT	TV-BUR	X			COMCAST	
166+12 TO 166+30	103' RT TO 64' RT	FO-BUR	X			BURNSVILLE	
166+30	64' RT	VAULT	X			BURNSVILLE	
166+30 TO 166+48	64' RT TO 25' LT	FO-BUR	X			BURNSVILLE	CROSSES C/L AT 166+43
166+48 TO 166+49	25' LT TO 111' LT	FO-BUR	X			BURNSVILLE	
166+49 TO 166+41	111' LT TO 188' LT	FO-BUR	X			BURNSVILLE	
166+41	188' LT	VAULT	X			BURNSVILLE	
166+41 TO 166+44	188' LT TO 206' LT	FO-BUR	X			BURNSVILLE	
173+99 TO 174+87	144' LT TO 145' LT	FO-OH	X			COMCAST	
174+53 TO 174+69	171' LT TO 76' LT	T-BUR	X			CENTURY LINK	
173+90 TO 174+24	106' LT TO 105' LT	FO-BUR	X			MNDOT	
174+24 TO 175+67	105' LT TO 106' LT	FO-BUR	X			MNDOT	
174+65 TO 174+75	127' LT TO 95' LT	FO-BUR	X			CENTURY LINK	
174+75 TO 174+54	95' LT TO 27' LT	FO-BUR	X			CENTURY LINK	
174+54 TO 173+41	27' LT TO 128' RT	FO-BUR	X			CENTURY LINK	CROSSES C/L AT 174+31
173+41 TO 174+60	128' RT TO 110' RT	FO-BUR	X			CENTURY LINK	
173+73 TO 173+60	57' RT TO 110' RT	FO-BUR	X			CENTURY LINK	
173+60 TO 174+19	110' RT TO 135' RT	FO-BUR	X			CENTURY LINK	
174+19 TO 174+48	135' RT TO 134' RT	FO-BUR	X			CENTURY LINK	
173+72 TO 174+84	67' RT TO 71' RT	FO-BUR	X			ATT	
174+84 TO 174+97	71' RT TO 134' RT	FO-BUR	X			ATT	
193+19 TO 194+61	68' RT TO 81' RT	T-BUR	X			ATT	
194+61	81' RT	MH	X			ATT	
194+61 TO 195+92	81' RT TO 74' RT	T-BUR	X			ATT	
193+86	143' RT	MH	X			CENTURY LINK	
193+86 TO 194+12	143' RT TO 98' RT	FO-BUR	X			CENTURY LINK	
194+12 TO 194+13	98' RT TO 63' RT	FO-BUR	X			CENTURY LINK	
194+13	63' RT	MH	X			CENTURY LINK	
194+13 TO 194+07	63' RT TO 59' RT	FO-BUR	X			CENTURY LINK	
194+07	59' RT	MH	X			CENTURY LINK	
194+07 TO 194+05	59' RT TO 20' RT	FO-BUR	X			CENTURY LINK	
194+05 TO 194+09	20' RT TO 27' LT	FO-BUR	X			CENTURY LINK	CROSSES C/L AT 194+06
194+09 TO 194+26	27' LT TO 84' LT	FO-BUR	X			CENTURY LINK	
194+26 TO 194+22	84' LT TO 103' LT	FO-BUR	X			CENTURY LINK	
194+22	103' LT	PED	X			CENTURY LINK	
194+22 TO 195+11	103' LT TO 109' LT	FO-BUR	X			CENTURY LINK	
195+11 TO 195+76	109' LT TO 169' LT	FO-BUR	X			CENTURY LINK	
194+13 TO 194+24	63' RT TO 42' LT	FO-BUR	X			CENTURY LINK	CROSSES C/L AT 194+18
194+24 TO 195+46	42' LT TO 113' LT	FO-BUR	X			CENTURY LINK	
195+46 TO 195+81	113' LT TO 165' LT	FO-BUR	X			CENTURY LINK	
194+67 TO 197+45	117' LT TO 102' LT	FO-BUR	X			MNDOT	
195+15 TO 195+28	91' RT TO 71' RT	FO-BUR	X			ARVIG	
195+28	71' RT	PED	X			ARVIG	
195+28 TO 200+29	71' RT TO 66' RT	FO-BUR	X			ARVIG	
195+28 TO 196+85	71' RT TO 177' LT	FO-BUR	X			ARVIG	CROSSES C/L AT 195+74
195+75 TO 200+27	49' RT TO 42' RT	FO-BUR	X			CENTURY LINK	
197+02 TO 197+32	148' LT TO 110'LT	T-BUR	X			CENTURY LINK	

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
COMMUNICATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 36 of 393 Sheets

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
197+32 TO 198+12	110' LT TO 103' LT	T-BUR	X			CENTURY LINK	
197+21 TO 198+73	140' LT TO 141' LT	FO-OH	X			COMCAST	
203+00 TO 207+03	139' LT TO 142' LT	FO-OH	X			COMCAST	
203+79 TO 208+51	108' LT TO 94' LT	T-BUR	X			CENTURY LINK	
213+75	129' LT	VAULT	X			COMCAST	
211+12 TO 213+79	138' LT TO 131' LT	FO-OH	X			COMCAST	
213+79 TO 216+06	131' LT TO 142' LT	FO-OH	X			COMCAST	
212+10 TO 214+99	56' RT TO 80' RT	FO-BUR	X			CENTURY LINK	
214+99 TO 215+26	80' RT TO 70' RT	FO-BUR	X			CENTURY LINK	
215+26	70' RT	MH	X			CENTURY LINK	
211+17 TO 211+22	144' LT TO 98' LT	FO-BUR	X			WINDSTREAM	
211+22	98' LT	VAULT	X			WINDSTREAM	
211+22 TO 212+70	98' LT TO 64' RT	FO-BUR	X			WINDSTREAM	CROSSES C/L AT 212+13
212+70	64' RT	VAULT	X			WINDSTREAM	
212+70 TO 213+21	64' RT TO 124' RT	FO-BUR	X			WINDSTREAM	
212+10 TO 212+69	74' RT TO 92' RT	FO-BUR	X			XO	
212+69	92' RT	PED	X			XO	
212+69 TO 213+32	92' RT TO 118' RT	FO-BUR	X			XO	
213+62	127' LT	VAULT	X			PAETEC	
213+62 TO 215+13	127' LT TO 68' RT	FO-BUR	X			PAETEC	CROSSES C/L AT 214+63
215+13	68' RT	VAULT	X			PAETEC	
225+62 TO 228+75	139' LT TO 138' LT	FO-OH	X			COMCAST	
237+60 TO 238+73	180' LT TO 137' LT	FO-OH	X			COMCAST	
238+73 TO 240+62	137' LT TO 134' LT	FO-OH	X			COMCAST	
248+69	150' LT	PED	X			COMCAST	
248+69 TO 249+00	150' LT TO 151' LT	FO-OH	X			COMCAST	
249+00	151' LT	PED	X			COMCAST	
249+00 TO 250+28	151' LT TO 136' LT	FO-OH	X			COMCAST	
250+28 TO 251+23	136' LT TO 151' LT	FO-OH	X			COMCAST	
917+73 TO 920+26	92' LT TO 94' LT	FO-BUR	X			MNDOT	
917+84 TO 919+66	58' RT TO 62' RT	FO-BUR	X			PAETEC	
917+83 TO 919+65	47' RT TO 49' RT	FO-BUR	X			ATT	
917+89 TO 919+20	65' RT TO 64' RT	TV-BUR	X			COMCAST	
917+90 TO 919+19	54' RT TO 55' RT	FO-BUR	X			CENTURY LINK	
917+96 TO 919+76	26' RT TO 27' RT	TV-BUR	X			COMCAST	
917+99 TO 920+27	20' RT TO 22' RT	FO-BUR	X			CENTURY LINK	
916+83 TO 919+30	151' LT TO 150' LT	FO-OH	X			COMCAST	
919+30 TO 921+11	150' LT TO 149' LT	FO-OH	X			COMCAST	
931+09 TO 931+99	46' RT TO 50' RT	FO-BUR	X			CENTURY LINK	
931+99 TO 933+88	46' RT TO 45' RT	FO-BUR	X			CENTURY LINK	
919+21	53' RT	VAULT	X			CENTURY LINK	
930+91 TO 934+21	123' LT TO 125' LT	FO-BUR	X			MNDOT	
930+47 TO 931+91	131' LT TO 151' LT	FO-OH	X			COMCAST	
931+91 TO 933+04	151' LT TO 120' LT	FO-OH	X			COMCAST	
933+00 TO 932+97	121' LT TO 76' RT	FO-OH	X			COMCAST	CROSSES C/L AT 932+98
932+97 TO 931+18	76' RT TO 87' RT	FO-OH	X			COMCAST	
931+69 TO 931+84	81' RT TO 95' RT	FO-BUR	X			PAETEC	
931+84	95' RT	VAULT	X			PAETEC	
932+95	81' RT	VAULT	X			COMCAST	
916+83 TO 921+11	151' LT TO 149' LT	FO-OH	X			COMCAST	
933+04	120' LT	VAULT	X			COMCAST	
1010+78 TO 1012+09	139' LT TO 148' LT	FO-BUR	X			MNDOT	
1012+09 TO 1012+47	148' LT TO 154' LT	FO-BUR	X			MNDOT	
1012+47 TO 1013+59	154' LT TO 150' LT	FO-BUR	X			MNDOT	
1013+59	150' LT	VAULT	X			MNDOT	

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
1011+16 TO 1012+62	161' LT TO 166' LT	FO-BUR	X			CENTURY LINK	
1012+62	166' LT	VAULT	X			CENTURY LINK	
1012+62 TO 1013+14	166' LT TO 146' LT	FO-BUR	X			CENTURY LINK	
1013+14 TO 1013+43	146' LT TO 110' LT	FO-BUR	X			CENTURY LINK	
1013+43 TO 1013+60	110' LT TO 63' RT	FO-BUR	X			CENTURY LINK	CROSSES C/L AT 1013+52
1012+86 TO 1013+40	161' LT TO 61' RT	TV-BUR	X			COMCAST	CROSSES C/L AT 1013+25
1013+31 TO 1013+49	109' LT TO 61' RT	FO-BUR	X			COMCAST	CROSSES C/L AT 1013+43
1013+39 TO 1013+43	149' LT TO 20' LT	FO-BUR	X			XO	
1013+43 TO 1013+77	20' LT TO 49' RT	FO-BUR	X			XO	CROSSES C/L AT 1013+53
1013+77 TO 1013+78	49' RT TO 74' RT	FO-BUR	X			XO	
1013+80 TO 1013+99	113' LT TO 78' RT	FO-BUR	X			TTMI	
1025+55 TO 1027+14	61' RT TO 64' RT	TV-BUR	X			COMCAST	
1025+50 TO 1026+86	75' RT TO 80' RT	FO-OH	X			COMCAST	
1026+86 TO 1027+30	80' RT TO 82' RT	FO-OH	X			COMCAST	
1025+53 TO 1026+56	28' RT TO 28' RT	T-BUR	X			CENTURY LINK	
1026+56	28' RT	MH	X			CENTURY LINK	
1026+56 TO 1026+72	28' RT TO 28' RT	T-BUR	X			CENTURY LINK	
1026+72	28' RT	MH	X			CENTURY LINK	
1026+72 TO 1026+90	28' RT TO 27' RT	T-BUR	X			CENTURY LINK	
1026+90	27' RT	MH	X			CENTURY LINK	
1026+90 TO 1027+21	27' RT TO 24' RT	T-BUR	X			CENTURY LINK	
1026+72 TO 1026+58	28' RT TO 126' LT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 1026+69
1043+94 TO 1046+21	51' RT TO 48' RT	TV-BUR	X			COMCAST	
1046+21	48' RT	HH	X			COMCAST	
1046+21 TO 1046+01	48' RT TO 150' LT	TV-BUR	X			COMCAST	CROSSES C/L AT 1046+16
1044+36 TO 1046+26	111' LT TO 100' LT	FO-BUR	X			MNDOT	
1044+13 TO 1045+74	34' RT TO 30' RT	T-BUR	X			CENTURY LINK	
1045+74	30' RT	MH	X			CENTURY LINK	
1045+74 TO 1045+91	30' RT TO 37' RT	T-BUR	X			CENTURY LINK	
1045+91	37' RT	MH	X			CENTURY LINK	
1045+91 TO 1047+49	37' RT TO 41' RT	T-BUR	X			CENTURY LINK	
1045+68 TO 1045+74	115' LT TO 24' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 1045+73
1045+74	24' RT	MH	X			CENTURY LINK	
1045+74 TO 1045+74	24' RT TO 30' RT	T-BUR	X			CENTURY LINK	
1045+74 TO 1045+80	30' RT TO 107' RT	T-BUR	X			CENTURY LINK	
1045+13 TO 1045+17	134' LT TO 110' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 1045+15
1045+81 TO 1045+91	147' LT TO 37' RT	FO-BUR	X			CENTURY LINK	CROSSES C/L AT 1045+89
1073+58 TO 1076+20	36' RT TO 27' RT	T-BUR	X			CENTURY LINK	
1076+20	27' RT	MH	X			CENTURY LINK	
1076+20 TO 1077+49	27' RT TO 20' RT	T-BUR	X			CENTURY LINK	
1073+71	104' LT	VAULT	X			MNDOT	
1073+71 TO 1076+41	104' LT TO 96' LT	FO-BUR	X			MNDOT	
1074+05	173' LT	VAULT	X			ENVENTIS	
1074+05 TO 1074+04	173' LT TO 53' RT	FO-BUR	X			ENVENTIS	CROSSES C/L AT 1074+04
1074+04 TO 1074+47	53' RT TO 63' RT	FO-BUR	X			ENVENTIS	
1074+47 TO 1075+26	63' RT TO 112' RT	FO-BUR	X			ENVENTIS	
1075+26 TO 1075+27	112' RT TO 150' RT	FO-BUR	X			ENVENTIS	
1075+27	150' RT	VAULT	X			ENVENTIS	
1075+27 TO 1075+55	150' RT TO 151' RT	FO-BUR	X			ENVENTIS	
1076+20 TO 1075+91	115' LT TO 112' LT	FO-BUR	X			FRONTIER	
1075+91	112' LT	VAULT	X			FRONTIER	
1075+91 TO 1075+87	112' LT TO 103' LT	FO-BUR	X			FRONTIER	
1075+87 TO 1076+68	103' LT TO 99' RT	FO-BUR	X			FRONTIER	CROSSES C/L AT 1076+28
1076+68	99' RT	HH	X			FRONTIER	
1076+68 TO 1076+80	99' RT TO 135' RT	FO-BUR	X			FRONTIER	
1075+59 TO 1076+73	193' RT TO 116' RT	FO-BUR	X			FRONTIER	
1076+24 TO 1076+71	87' LT TO 43' RT	FO-BUR	X			SPRINT	CROSSES C/L AT 1076+56

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
COMMUNICATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 37 of 393 Sheets

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
1076+71 TO 1076+70	43' RT TO 98' RT	FO-BUR	X			SPRINT	
1076+70 TO 1076+77	98' RT TO 123' RT	FO-BUR	X			SPRINT	
1076+20 TO 1079+14	115' LT TO 122' LT	FO-BUR	X			FRONTIER	
1091+20 TO 1092+69	84' RT TO 75' RT	FO-OH	X			COMCAST	
1092+69 TO 1096+22	75' RT TO 66' RT	FO-OH	X			COMCAST	
1096+22 TO 1097+73	66' RT 66' RT	FO-OH	X			COMCAST	
1097+73 TO 1099+17	66' RT TO 65' RT	FO-OH	X			COMCAST	
1099+17 TO 1104+17	65' RT TO 66' RT	FO-OH	X			COMCAST	
1104+17 TO 1105+78	66' RT TO 64' RT	FO-OH	X			COMCAST	
1105+78 TO 1107+58	64' RT TO 66' RT	FO-OH	X			COMCAST	
1107+58 TO 1109+27	66' RT TO 67' RT	FO-OH	X			COMCAST	
1109+27 TO 1110+41	67' RT TO 66' RT	FO-OH	X			COMCAST	
1110+41 TO 1112+13	66' RT TO 65' RT	FO-OH	X			COMCAST	
1112+13 TO 1113+38	65' RT TO 66' RT	FO-OH	X			COMCAST	
1113+38 TO 1114+50	66' RT TO 68' RT	FO-OH	X			COMCAST	
1114+50 TO 1115+16	68' RT TO 68' RT	FO-OH	X			COMCAST	
1115+16 TO 1116+30	68' RT TO 66' RT	FO-OH	X			COMCAST	
1116+30 TO 1118+10	66' RT TO 65' RT	FO-OH	X			COMCAST	
1118+10 TO 1119+85	65' RT TO 68' RT	FO-OH	X			COMCAST	
1119+85 TO 1121+59	68' RT TO 66' RT	FO-OH	X			COMCAST	
1121+59 TO 1123+28	66' RT TO 66' RT	FO-OH	X			COMCAST	
1123+28 TO 1124+76	66' RT TO 65' RT	FO-OH	X			COMCAST	
1124+76 TO 1126+28	65' RT TO 66' RT	FO-OH	X			COMCAST	
1126+28 TO 1128+01	66' RT TO 65' RT	FO-OH	X			COMCAST	
1128+01 TO 1129+76	65' RT TO 66' RT	FO-OH	X			COMCAST	
1129+76 TO 1131+04	66' RT TO 67' RT	FO-OH	X			COMCAST	
1131+04 TO 1132+31	67' RT TO 66' RT	FO-OH	X			COMCAST	
1132+31 TO 1133+12	66' RT TO 68' RT	FO-OH	X			COMCAST	
1133+12 TO 1133+93	68' RT TO 68' RT	FO-OH	X			COMCAST	
1133+93 TO 1135+57	68' RT TO 69' RT	FO-OH	X			COMCAST	
1135+57 TO 1137+16	69' RT TO 72' RT	FO-OH	X			COMCAST	
1137+16 TO 1138+93	72' RT TO 72' RT	FO-OH	X			COMCAST	
1138+93 TO 1140+72	72' RT TO 74' RT	FO-OH	X			COMCAST	
1140+72 TO 1142+44	74' RT TO 74' RT	FO-OH	X			COMCAST	
1142+44 TO 1144+09	74' RT TO 77' RT	FO-OH	X			COMCAST	
1144+09 TO 1145+43	77' RT TO 78' RT	FO-OH	X			COMCAST	
1145+43 TO 1146+94	78' RT TO 78' RT	FO-OH	X			COMCAST	
1146+96 TO 1148+37	78' RT TO 75' RT	FO-OH	X			COMCAST	
1148+37 TO 1149+80	74' RT TO 75' RT	FO-OH	X			COMCAST	
1149+80 TO 1151+43	75' RT TO 71' RT	FO-OH	X			COMCAST	
1151+43 TO 1153+02	71' RT TO 70' RT	FO-OH	X			COMCAST	
1153+02 TO 1154+40	70' RT TO 68' RT	FO-OH	X			COMCAST	
1154+40 TO 1157+51	68' RT TO 66' RT	FO-OH	X			COMCAST	
1157+51 TO 1158+76	66' RT TO 67' RT	FO-OH	X			COMCAST	
1158+76 TO 1160+98	67' RT TO 65' RT	FO-OH	X			COMCAST	
1090+62 TO 1133+80	75' RT TO 72' RT	FO-BUR	X			MNDOT	
1133+80	72' LT	VAULT	X			MNDOT	
1133+80 TO 1169+26	72' LT TO 101' LT	FO-BUR	X			MNDOT	CONTRACTOR SHALL PROTECT INPLACE
1090+84 TO 1096+76	77' LT TO 68' LT	FO-BUR	X			COMCAST	
1096+76	68' LT	VAULT	X			COMCAST	
1096+76 TO 1115+08	68' LT TO 65' LT	FO-BUR	X			COMCAST	
1114+48	80' LT	VAULT	X			COMCAST	
1090+86 TO 1098+07	25' RT TO 25' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1098+07	25' LT	MH	X			CENTURY LINK	
1098+07 TO 1114+30	25' RT TO 24' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1114+30	24' RT	MH			X	CENTURY LINK	ALTERNATIVE ACCESS BY OTHERS
1090+65 TO 1104+10	100' LT TO 96' LT	FO-BUR	X			FRONTIER	

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
1104+10	96' LT	HH	X			FRONTIER	
1104+10 TO 1169+26	96' LT TO 111' LT	FO-BUR	X			FRONTIER	
1104+37 TO 1104+17	100' LT TO 66' RT	TV-BUR	X			COMCAST	CROSSES C/L AT 1104+26
1105+34 TO 1105+38	58' LT TO 49' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 1105+36
1114+30 TO 1114+48	24' RT TO 60' RT	T-BUR	X			CENTURY LINK	PROTECT INPLACE DUCT
1114+48	60' RT	MH	X			CENTURY LINK	
1114+48 TO 1115+13	60' RT TO 64' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1115+13	64' RT	MH	X			CENTURY LINK	
1115+13 TO 1115+40	64' RT TO 58' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1115+40	58' RT	MH	X			CENTURY LINK	
1114+30 TO 1132+24	24' RT TO 28' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1132+24 TO 1132+99	28' RT TO 69' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1132+99	69' RT	MH	X			CENTURY LINK	
1132+99 TO 1133+02	69' RT TO 85' RT	T-BUR	X			CENTURY LINK	9-WAY DUCT
1133+85	125' LT	HH	X			FRONTIER	
1153+15	107' LT	HH	X			FRONTIER	
28+89 TO 29+08	60' RT TO 98' LT	FO-BUR	X			CENTURY LINK	CROSSES C/L AT 28+93
47+56 TO 47+44	260 LT' TO 160' RT	FO-BUR	X			MNDOT	
28+62 to 26+61	54' RT TO 82' LT	OHU	X			CENTURY LINK	CROSSES C/L AT 27+44
26+61	82' LT	POLE	X			CENTURY LINK	
26+61 TO 26+76	82' LT TO 111' RT	OHU	X			CENTURY LINK	CROSSES C/L AT 26+65
26+61 TO 25+54	82' LT TO 270' LT	OHU	X			CENTURY LINK	
22+85 TO 21+38	55' RT TO 48' RT	FO-OH	X			COMCAST	
15+22 TO 13+65	45' RT TO 55' RT	FO-OH	X			COMCAST	
7+84 TO 0+32	35' LT TO 35' RT	FO-OH	X			COMCAST	
35+54 TO 36+95	39' LT TO 25' LT	T-BUR	X			CENTURY LINK	
36+95 TO 38+53	25' LT TO 25' LT	T-BUR	X			CENTURY LINK	
36+04	50' LT	PED	X			CENTURY LINK	
36+04 TO 36+13	50' LT TO 26' LT	T-BUR	X			CENTURY LINK	
36+13 TO 36+13	26' LT TO 1' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 36+13
36+04 TO 38+52	50' LT TO 39' LT	T-BUR	X			CENTURY LINK	
48+88 TO 47+99	40' LT TO 26' LT	T-BUR	X			CENTURY LINK	
47+99 TO 48+05	26' LT TO 43' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 48+01
48+62 TO 48+84	92' LT TO 57' LT	T-BUR	X			CENTURY LINK	
48+84 TO 49+32	57' LT TO 50' LT	T-BUR	X			CENTURY LINK	
49+32	50' LT	PED	X			CENTURY LINK	
49+32 TO 49+28	50' LT TO 60' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 49+31
49+28 TO 48+93	60' RT TO 59' RT	T-BUR	X			CENTURY LINK	
48+93 TO 49+00	59' RT TO 52' LT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 48+98
47+86 TO 49+31	41' LT TO 54' LT	FO-OH	X			COMCAST	
49+31 TO 99+65	54' LT TO 56' LT	FO-OH	X			COMCAST	
47+86 TO 49+31	41' LT TO 54' LT	T-OH	X			CENTURY LINK	
49+31 TO 99+65	54' LT TO 56' LT	T-OH	X			CENTURY LINK	
104+51 TO 105+07	58' LT TO 55' LT	T-BUR	X			CENTURY LINK	
104+51 TO 104+52	58' LT TO 46' LT	TV-BUR	X			COMCAST	
104+52 TO 104+98	48' LT TO 51' LT	TV-BUR	X			COMCAST	
104+98 TO 105+09	51' LT TO 47' LT	TV-BUR	X			COMCAST	
104+69 TO 105+46	48' RT TO 70' LT	FO-OH	X			COMCAST	CROSSES C/L AT 105+00
129+77 TO 130+17	23' LT TO 26' LT	T-BUR	X			CENTURY LINK	
130+17 TO 130+37	26' LT TO 10' RT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 130+31
144+15 TO 146+13	25' RT TO 18' RT	FO-OH	X			COMCAST	
146+13 TO 147+51	18' RT TO 22' RT	FO-OH	X			COMCAST	
147+51 TO 148+91	22' RT TO 23' RT	FO-OH	X			COMCAST	
148+91 TO 150+27	23' RT TO 19' RT	FO-OH	X			COMCAST	
150+27	19' RT	POLE	X			CENTURY LINK	
150+27 TO 152+06	19' RT TO 24' RT	FO-OH	X			CENTURY LINK	
152+06	24' RT	POLE	X			CENTURY LINK	
152+06 TO 153+28	24' RT TO 21' RT	FO-OH	X			CENTURY LINK	

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SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
COMMUNICATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 38 of 393 Sheets

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
153+28	21' RT	POLE	X			CENTURY LINK	
153+28 TO 153+89	21' RT TO 25' RT	FO-OH	X			CENTURY LINK	
153+89	25' RT	POLE	X			CENTURY LINK	
153+89 TO 154+43	25' RT TO 22' RT	FO-OH	X			CENTURY LINK	
154+43	22' RT	POLE	X			CENTURY LINK	
154+43 TO 154+99	22' RT TO 51' RT	FO-OH	X			CENTURY LINK	
154+99	51' RT	POLE	X			CENTURY LINK	
154+99 TO 156+48	51' RT TO 35' RT	FO-OH	X			CENTURY LINK	
156+48	35' RT	POLE	X			CENTURY LINK	
156+51 TO 157+63	35' RT TO 34' RT	FO-OH	X			CENTURY LINK	
157+63	34' RT	POLE	X			CENTURY LINK	
150+27 TO 152+06	19' RT TO 24' RT	FO-OH	X			COMCAST	
152+06 TO 153+28	24' RT TO 21' RT	FO-OH	X			COMCAST	
153+28 TO 153+89	21' RT TO 25' RT	FO-OH	X			COMCAST	
153+89 TO 154+43	25' RT TO 22' RT	FO-OH	X			COMCAST	
154+43 TO 154+99	22' RT TO 51' RT	FO-OH	X			COMCAST	
154+99 TO 156+48	51' RT TO 35' RT	FO-OH	X			COMCAST	
156+51 TO 157+63	35' RT TO 34' RT	FO-OH	X			COMCAST	
157+63 TO 158+56	34' RT TO 26' LT	FO-OH	X			COMCAST	CROSSES C/L AT 158+04
158+56 TO 159+93	26' LT TO 27' LT	FO-OH	X			COMCAST	
159+93 TO 161+69	27' RT TO 29' LT	FO-OH	X			COMCAST	
161+69 TO 163+46	29' LT TO 22' LT	FO-OH	X			COMCAST	
163+46 TO 165+18	21' LT TO 22' LT	FO-OH	X			COMCAST	
165+18 TO 166+32	21' LT TO 23' LT	FO-OH	X			COMCAST	
166+32 TO 167+50	23' LT TO 22' LT	FO-OH	X			COMCAST	
167+50 TO 168+47	22' LT TO 23' LT	FO-OH	X			COMCAST	
168+47 TO 170+15	23' LT TO 24' LT	FO-OH	X			COMCAST	
170+15 TO 171+65	24' LT TO 21' LT	FO-OH	X			COMCAST	
171+65 TO 173+06	21' LT TO 21' LT	FO-OH	X			COMCAST	
173+06 TO 174+57	21' LT TO 20' LT	FO-OH	X			COMCAST	
174+57 TO 176+02	20' LT TO 19' LT	FO-OH	X			COMCAST	
176+02 TO 177+27	19' LT TO 20' LT	FO-OH	X			COMCAST	
177+27 TO 178+88	20' LT TO 21' LT	FO-OH	X			COMCAST	
178+88 TO 180+37	21' LT TO 26' LT	FO-OH	X			COMCAST	
180+37 TO 181+72	26' LT TO 20' LT	FO-OH	X			COMCAST	
181+72 TO 183+20	20' LT TO 20' LT	FO-OH	X			COMCAST	
183+20 TO 184+73	20' LT TO 18' LT	FO-OH	X			COMCAST	
150+27 TO 152+06	19' RT TO 24' RT	T-OH	X			CENTURY LINK	
152+06 TO 153+28	24' RT TO 21' RT	T-OH	X			CENTURY LINK	
153+28 TO 153+89	21' RT TO 25' RT	T-OH	X			CENTURY LINK	
153+89 TO 154+43	25' RT TO 22' RT	T-OH	X			CENTURY LINK	
154+43 TO 154+99	22' RT TO 51' RT	T-OH	X			CENTURY LINK	
154+99 TO 156+48	51' RT TO 35' RT	T-OH	X			CENTURY LINK	
156+51 TO 157+63	35' RT TO 34' RT	T-OH	X			CENTURY LINK	
157+63 TO 158+56	34' RT TO 26' LT	T-OH	X			CENTURY LINK	CROSSES C/L AT 158+04
158+56 TO 159+93	26' LT TO 27' LT	T-OH	X			CENTURY LINK	
159+93 TO 161+69	27' RT TO 29' LT	T-OH	X			CENTURY LINK	
161+69 TO 163+46	29' LT TO 22' LT	T-OH	X			CENTURY LINK	
163+46 TO 163+79	22' LT TO 27' RT	T-OH	X			CENTURY LINK	CROSSES C/L AT 163+60
163+46 TO 165+18	21' LT TO 22' LT	T-OH	X			CENTURY LINK	
165+18 TO 166+32	21' LT TO 23' LT	T-OH	X			CENTURY LINK	
166+32 TO 167+50	23' LT TO 22' LT	T-OH	X			CENTURY LINK	
167+50 TO 168+47	22' LT TO 23' LT	T-OH	X			CENTURY LINK	
168+47 TO 170+15	23' LT TO 24' LT	T-OH	X			CENTURY LINK	

UTILITY TABULATION - COMMUNICATIONS

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	LEAVE AS IS	ADJUST	RELOCATE	OWNER	REMARKS
170+15 TO 171+65	24' LT TO 21' LT	T-OH	X			CENTURY LINK	
171+65 TO 173+06	21' LT TO 21' LT	T-OH	X			CENTURY LINK	
173+06 TO 174+57	21' LT TO 20' LT	T-OH	X			CENTURY LINK	
174+57 TO 176+02	20' LT TO 19' LT	T-OH	X			CENTURY LINK	
176+02 TO 177+27	19' LT TO 20' LT	T-OH	X			CENTURY LINK	
177+27 TO 177+41	20' LT TO 35' RT	T-OH	X			CENTURY LINK	CROSSES C/L AT 177+32
177+27 TO 178+88	20' LT TO 21' LT	T-OH	X			CENTURY LINK	
178+88 TO 180+37	21' LT TO 26' LT	T-OH	X			CENTURY LINK	
180+37 TO 181+72	26' LT TO 20' LT	T-OH	X			CENTURY LINK	
181+72 TO 183+20	20' LT TO 20' LT	T-OH	X			CENTURY LINK	
183+20 TO 184+73	20' LT TO 18' LT	T-OH	X			CENTURY LINK	
163+79 TO 163+90	27' RT TO 16' RT	TV-BUR	X			COMCAST	
163+90 TO 167+60	16' RT TO 34' RT	TV-BUR	X			COMCAST	
167+60 TO 167+64	34' RT TO 46' RT	TV-BUR	X			COMCAST	
167+60 TO 170+98	34' RT TO 28' RT	TV-BUR	X			COMCAST	
163+79 TO 163+90	27' RT TO 18' RT	TV-BUR	X			COMCAST	
163+90 TO 167+60	18' RT TO 35' RT	TV-BUR	X			COMCAST	
167+60 TO 167+64	35' RT TO 45' RT	TV-BUR	X			COMCAST	
163+79 TO 163+83	45' RT TO 32' RT	TV-BUR	X			COMCAST	
163+83 TO 164+74	32' RT TO 31' RT	TV-BUR	X			COMCAST	
164+74 TO 164+73	31' RT TO 40' RT	TV-BUR	X			COMCAST	
164+79 TO 164+86	43' RT TO 30' RT	T-BUR	X			CENTURY LINK	
164+86 TO 167+59	30' RT TO 36' RT	T-BUR	X			CENTURY LINK	
167+59 TO 167+62	36' RT TO 45' RT	T-BUR	X			CENTURY LINK	
171+42 TO 171+65	69' RT TO 21' LT	TV-BUR	X			COMCAST	CROSSES C/L AT 174+60
174+57 TO 174+63	20' LT TO 18' LT	TV-BUR	X			COMCAST	
174+63 TO 174+57	18' LT TO 28' RT	TV-BUR	X			COMCAST	CROSSES C/L AT 174+60
174+57 TO 174+80	28' RT TO 24' RT	TV-BUR	X			COMCAST	
174+80 TO 175+16	24' RT TO 32' RT	TV-BUR	X			COMCAST	
175+16 TO 175+24	32' RT TO 46' RT	TV-BUR	X			COMCAST	
175+78 TO 178+80	63' RT TO 17' LT	T-BUR	X			CENTURY LINK	CROSSES C/L AT 175+79
175+80 TO 176+03	17' LT TO 17' LT	T-BUR	X			CENTURY LINK	

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SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: FEBRUARY 13, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
COMMUNICATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 39 of 393 Sheets

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
735+80	102' LT	HH	MNDOT	
735+80 TO 735+83	102' LT TO 44' RT	SIG-BUR	MNDOT	CROSSES C/L 735+80
735+83	44'RT	HH	MNDOT	
105+85 TO 106+98	29' RT TO 52' RT	SIG-BUR	MNDOT	
106+98 TO 107+17	52' RT TO 29' RT	SIG-BUR	MNDOT	
107+17	29' RT	HH	MNDOT	
107+67	52' RT	HH	MNDOT	
107+67 TO 107+17	52' RT TO 29' RT	SIG-BUR	MNDOT	
107+29	29' RT	SIGNAL	MNDOT	
107+29 TO 107+17	29' RT TO 29' RT	SIG-BUR	MNDOT	
107+17 TO 107+09	29' RT TO 41' LT	SIG-BUR	MNDOT	CROSSES C/L AT 107+14
107+09	41' LT	HH	MNDOT	
107+26	46' LT	SIGNAL	MNDOT	
107+26 TO 107+09	46' LT TO 41' LT	SIG-BUR	MNDOT	
107+09 TO 107+03	41' LT TO 94' LT	SIG-BUR	MNDOT	
107+03	94' LT	HH	MNDOT	
107+17 TO 107+67	29' RT TO 52' RT	SIG-BUR	MNDOT	
107+52	100' LT	SIGNAL	MNDOT	
107+52 TO 107+03	100' LT TO 94' LT	SIG-BUR	MNDOT	
107+03 TO 107+61	94' LT TO 117' LT	SIG-BUR	MNDOT	
107+61	117' LT	PED	MNDOT	
107+61 TO 107+61	117' LT TO 122' LT	SIG-BUR	MNDOT	
107+61	122' LT	PED	MNDOT	
107+20	126' LT	POLE	MNDOT	
107+20 TO 107+42	126' LT TO 121' LT	SIG-BUR	MNDOT	
107+42	121' LT	HH	MNDOT	
107+42 TO 107+61	121' LT TO 122' LT	SIG-BUR	MNDOT	
107+61	122' LT	METER	MNDOT	
107+61 TO 107+64	122' LT TO 121' LT	SIG-BUR	MNDOT	
107+64	121' LT	HH	MNDOT	
107+64 TO 107+63	121' LT TO 140' LT	SIG-BUR	MNDOT	
107+63 TO 108+25	140' LT TO 120' LT	SIG-BUR	MNDOT	
108+25	120' LT	HH	MNDOT	
108+25 TO 108+70	120' LT TO 97' LT	SIG-BUR	MNDOT	
108+70	97' LT	HH	MNDOT	
107+64 TO 107+75	121' LT TO 169' LT	SIG-INT	MNDOT	
107+75 TO 108+29	169' LT TO 125' LT	SIG-INT	MNDOT	
108+29 TO 108+68	125' LT TO 112' LT	SIG-INT	MNDOT	
108+68	112' LT	HH	MNDOT	
108+68 TO 109+17	112' LT TO 24' RT	SIG-INT	MNDOT	CROSSES C/L AT 109+10
109+17 TO 109+83	24' RT TO 23' RT	SIG-INT	MNDOT	
110+31 TO 109+11	94' LT TO 113' LT	SIG-BUR	MNDOT	
109+11	113' LT	HH	MNDOT	
109+11 TO 108+70	113' LT TO 97' LT	SIG-BUR	MNDOT	
108+69	101' LT	SIGNAL	MNDOT	
108+69 TO 108+70	101' LT TO 97' LT	SIG-BUR	MNDOT	
108+70 TO 108+67	97' LT TO 24' LT	SIG-BUR	MNDOT	
108+67	24' LT	HH	MNDOT	
108+54	23' LT	SIGNAL	MNDOT	
108+54 TO 108+67	23' LT TO 24' LT	SIG-BUR	MNDOT	
108+67 TO 108+60	24' LT TO 27' RT	SIG-BUR	MNDOT	CROSSES C/L AT 108+63
108+60	27' RT	HH	MNDOT	

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
108+36	26' RT	SIGNAL	MNDOT	
108+36 TO 108+60	26' RT TO 27' RT	SIG-BUR	MNDOT	
108+60 TO 108+22	27' RT TO 39' RT	SIG-BUR	MNDOT	
108+22 TO 108+10	39' RT TO 69' RT	SIG-BUR	MNDOT	
108+10	69' RT	HH	MNDOT	
108+10 TO 107+76	69' RT TO 187' RT	SIG-BUR	MNDOT	
107+76	187' RT	HH	MNDOT	
138+05 TO 139+26	63' RT TO 50' RT	SIG-INT	MNDOT	
139+26	50' RT	HH	MNDOT	
139+26 TO 139+48	50' RT TO 64' RT	SIG-INT	MNDOT	
139+48	64' RT	HH	MNDOT	
139+48 TO 140+67	64' RT TO 62' RT	SIG-INT	MNDOT	
140+67	62' RT	HH	MNDOT	
140+67 TO 140+85	62' RT TO 41' RT	SIG-INT	MNDOT	
140+85 TO 141+40	41' RT TO 42' RT	SIG-INT	MNDOT	
139+69 TO 139+72	198' LT TO 128' LT	SIG-BUR	MNDOT	
139+72	128' LT	HH	MNDOT	
139+72 TO 139+31	128' LT TO 88' LT	SIG-BUR	MNDOT	
139+31	88' LT	HH	MNDOT	
139+54	101' LT	SIGNAL	MNDOT	
139+54 TO 139+31	101' LT TO 88' LT	SIG-BUR	MNDOT	
139+31 TO 139+29	88' LT TO 36' LT	SIG-BUR	MNDOT	
139+29	36' LT	HH	MNDOT	
139+49	35' LT	SIGNAL	MNDOT	
139+49 TO 139+29	35' LT TO 36' LT	SIG-BUR	MNDOT	
139+29 TO 139+50	36' LT TO 28' RT	SIG-BUR	MNDOT	CROSSES C/L AT 139+41
139+50	28' RT	HH	MNDOT	
139+63	29' RT	SIGNAL	MNDOT	
139+63 TO 139+50	29' RT TO 28' RT	SIG-BUR	MNDOT	
139+50 TO 140+05	28' RT TO 52' RT	SIG-BUR	MNDOT	
140+05	52' RT	HH	MNDOT	
140+05 TO 140+67	52' RT TO 62' RT	SIG-BUR	MNDOT	
140+67 TO 140+71	62' RT TO 62' RT	SIG-BUR	MNDOT	
140+71	62' RT	PED	MNDOT	
140+71 TO 140+63	62' RT TO 58' RT	SIG-BUR	MNDOT	
140+63	58' RT	METER	MNDOT	
140+63 TO 140+79	58' RT TO 46' RT	SIG-BUR	MNDOT	
140+79	46' RT	PED	MNDOT	
140+67 TO 140+66	62' RT TO 57' RT	SIG-BUR	MNDOT	
140+66	57' RT	HH	MNDOT	
140+66 TO 140+97	57' RT TO 25' RT	SIG-BUR	MNDOT	
140+97	25' RT	HH	MNDOT	
140+72	37' RT	SIGNAL	MNDOT	
140+72 TO 140+97	37' RT TO 25' RT	SIG-BUR	MNDOT	
140+97 TO 140+89	25' RT TO 28' LT	SIG-BUR	MNDOT	CROSSES C/L AT 140+93
140+89	28' LT	HH	MNDOT	
140+78	25' LT	SIGNAL	MNDOT	
140+78 TO 140+89	25' LT TO 28' LT	SIG-BUR	MNDOT	
140+89 TO 140+70	28' LT TO 88' LT	SIG-BUR	MNDOT	
140+70	88' LT	HH	MNDOT	
140+61	88' LT	SIGNAL	MNDOT	
140+61 TO 140+70	88' LT TO 88' LT	SIG-BUR	MNDOT	

SPECIFIC NOTES:

① SEE TRAFFIC SIGNAL PLANS FOR WORK TO BE COMPLETED BY CONTRACTOR.

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DATE: JANUARY 26, 2012 LIC. NO. 19396

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INPLACE UTILITY TABULATIONS
TRAFFIC SIGNALS

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
140+70 TO 140+95	88' LT TO 109' LT	SIG-BUR	MNDOT	
140+95	109' LT	HH	MNDOT	
140+95 TO 142+42	109' LT TO 91' LT	SIG-BUR	MNDOT	
142+42	91' LT	HH	MNDOT	
164+10 TO 165+94	53' RT TO 54' RT	SIG-INT	MNDOT	
165+94 TO 167+18	54' RT TO 37' RT	SIG-INT	MNDOT	
165+59	288' LT	HH	MNDOT	
165+59 TO 165+29	288' LT TO 130' LT	SIG-BUR	MNDOT	
165+29	130' LT	HH	MNDOT	
165+29 TO 164+76	130' LT TO 87' LT	SIG-BUR	MNDOT	
164+76	87' LT	HH	MNDOT	
165+07	96' LT	SIGNAL	MNDOT	
165+07 TO 164+76	96' LT TO 87' LT	SIG-BUR	MNDOT	
164+76 TO 164+70	87' LT TO 35' LT	SIG-BUR	MNDOT	
164+70	35' LT	HH	MNDOT	
164+87	36' LT	SIGNAL	MNDOT	
164+87 TO 164+70	36' LT TO 35' LT	SIG-BUR	MNDOT	
164+70 TO 164+83	35' LT TO 27' RT	SIG-BUR	MNDOT	CROSSES C/L AT 164+77
164+83	27' RT	HH	MNDOT	
163+52 TO 164+57	30' RT TO 48' RT	SIG-BUR	MNDOT	
164+57	48' RT	HH	MNDOT	
164+57 TO 164+83	48' RT TO 27' RT	SIG-BUR	MNDOT	
164+90	34' RT	SIGNAL	MNDOT	
164+90 TO 164+83	34' RT TO 27' RT	SIG-BUR	MNDOT	
164+83 TO 165+30	27' RT TO 48' RT	SIG-BUR	MNDOT	
165+30	48' RT	HH	MNDOT	
165+30 TO 165+91	48' RT TO 50' RT	SIG-BUR	MNDOT	
165+91	50' RT	HH	MNDOT	
165+91 TO 166+03	50' RT TO 52' RT	SIG-BUR	MNDOT	
166+03	52' RT	PED	MNDOT	
166+63	64' RT	PED	MNDOT	
166+63 TO 166+10	64' RT TO 54' RT	SIG-BUR	MNDOT	
166+10	54' RT	HH	MNDOT	
166+10 TO 166+08	54' RT TO 50' RT	SIG-BUR	MNDOT	
166+08	50' RT	METER	MNDOT	
166+08 TO 166+08	50' RT TO 55' RT	SIG-BUR	MNDOT	
166+08	55' RT	PED	MNDOT	
166+08 TO 166+03	55' RT TO 52' RT	SIG-BUR	MNDOT	
166+03 TO 166+32	52' RT TO 25' RT	SIG-BUR	MNDOT	
166+32	25' RT	HH	MNDOT	
166+04	41' RT	SIGNAL	MNDOT	
166+04 TO 166+32	41' RT TO 25' RT	SIG-BUR	MNDOT	
166+32 TO 166+43	25' RT TO 26' LT	SIG-BUR	MNDOT	CROSSES C/L AT 166+38
166+43	26' LT	HH	MNDOT	
166+19	25' LT	SIGNAL	MNDOT	
166+19 TO 166+43	25' LT TO 26' LT	SIG-BUR	MNDOT	
166+43 TO 166+18	26' LT TO 86' LT	SIG-BUR	MNDOT	
166+18	86' LT	HH	MNDOT	
166+13	91' LT	SIGNAL	MNDOT	
166+13 TO 166+18	91' LT TO 86' LT	SIG-BUR	MNDOT	
166+18 TO 166+45	86' LT TO 105' LT	SIG-BUR	MNDOT	
166+45	105' LT	HH	MNDOT	

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
166+45 TO 167+45	105' LT TO 89' LT	SIG-BUR	MNDOT	
174+01 TO 175+36	98' LT TO 99' LT	SIG-INT	MNDOT	PROTECT INPLACE
174+44 TO 175+47	33' RT TO 32' RT	SIG-INT	MNDOT	PROTECT INPLACE
189+14 TO 190+45	91' LT TO 93' LT	SIG-INT	MNDOT	
191+94 TO 192+88	30' RT TO 32' RT	SIG-BUR	MNDOT	
192+88 TO 193+91	32' RT TO 55' RT	SIG-BUR	MNDOT	
193+91	55' RT	HH	MNDOT	
193+91 TO 194+21	55' RT TO 28' RT	SIG-BUR	MNDOT	
194+21	28' RT	HH	MNDOT	
194+44	28' RT	SIGNAL	MNDOT	
194+44 TO 194+21	28' RT TO 28' RT	SIG-BUR	MNDOT	
194+21 TO 194+48	28' RT TO 35' LT	SIG-BUR	MNDOT	CROSSES C/L AT 194+33
194+48	35' LT	HH	MNDOT	
194+72	35' LT	SIGNAL	MNDOT	
194+72 TO 194+48	35' LT TO 35' LT	SIG-BUR	MNDOT	
194+48 TO 194+83	35' LT TO 86' LT	SIG-BUR	MNDOT	
194+83	86' LT	HH	MNDOT	
195+21	96' LT	SIGNAL	MNDOT	
195+21 TO 194+83	96' LT TO 86' LT	SIG-BUR	MNDOT	
194+83 TO 195+50	86' LT TO 114' LT	SIG-BUR	MNDOT	
195+50	114' LT	HH	MNDOT	
195+50 TO 195+73	114' LT TO 144' LT	SIG-BUR	MNDOT	
195+73	144' LT	HH	MNDOT	
196+16 TO 195+73	206' LT TO 144' LT	SIG-BUR	MNDOT	
195+73 TO 196+12	144' LT TO 120' LT	SIG-BUR	MNDOT	
196+12	120' LT	HH	MNDOT	
196+12 TO 196+42	120' LT TO 107' LT	SIG-BUR	MNDOT	
196+42	107' LT	HH	MNDOT	
196+42 TO 196+79	107' LT TO 122' LT	SIG-BUR	MNDOT	
196+79	122' LT	HH	MNDOT	
196+79 TO 196+86	122' LT TO 113' LT	SIG-BUR	MNDOT	
196+86	113' LT	HH	MNDOT	
196+85	132' LT	PED	MNDOT	
196+85 TO 196+86	132' LT TO 113' LT	SIG-BUR	MNDOT	
198+91	93' LT	HH	MNDOT	
198+91 TO 196+86	93' LT TO 113' LT	SIG-BUR	MNDOT	
196+86 TO 196+39	113' LT TO 88' LT	SIG-BUR	MNDOT	
196+39	88' LT	HH	MNDOT	
196+31	92' LT	SIGNAL	MNDOT	
196+31 TO 196+39	92' LT TO 88' LT	SIG-BUR	MNDOT	
196+39 TO 196+35	88' LT TO 20' LT	SIG-BUR	MNDOT	
196+35	20' LT	HH	MNDOT	
196+13	19' LT	SIGNAL	MNDOT	
196+13 TO 196+35	19' LT TO 20' LT	SIG-BUR	MNDOT	
196+35 TO 195+85	20' LT TO 30' RT	SIG-BUR	MNDOT	CROSSES C/L AT 196+15
195+85	30' RT	HH	MNDOT	
195+85 TO 195+68	30' RT TO 26' RT	SIG-BUR	MNDOT	
195+68 TO 195+45	26' RT TO 40' RT	SIG-BUR	MNDOT	
195+45 TO 195+31	40' RT TO 56' RT	SIG-BUR	MNDOT	
195+31	56' RT	HH	MNDOT	
195+63	35' RT	SIGNAL	MNDOT	
195+63 TO 195+31	35' RT TO 56' RT	SIG-BUR	MNDOT	

SPECIFIC NOTES:

① SEE TRAFFIC SIGNAL PLANS FOR WORK TO BE COMPLETED BY CONTRACTOR.

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
TRAFFIC SIGNALS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 41 of 393 Sheets

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
194+71	65' RT	HH	MNDOT	
194+71 TO 195+31	65' RT TO 56' RT	SIG-BUR	MNDOT	
195+08	92' RT	HH	MNDOT	
195+08 TO 195+31	92' RT TO 56' RT	SIG-BUR	MNDOT	
193+85 TO 194+99	101' LT TO 107' LT	SIG-INT	MNDOT	
194+99 TO 195+80	107' LT TO 174' LT	SIG-INT	MNDOT	
195+80 TO 196+30	174' LT TO 149' LT	SIG-INT	MNDOT	
196+30 TO 196+85	149' LT TO 132' LT	SIG-INT	MNDOT	
196+85 TO 197+16	132' LT TO 90' LT	SIG-INT	MNDOT	
197+16 TO 197+38	90' LT TO 88' LT	SIG-INT	MNDOT	
204+00 TO 206+45	82' LT TO 85' LT	SIG-INT	MNDOT	
206+45 TO 207+97	85' LT TO 88' LT	SIG-INT	MNDOT	
211+08 TO 211+51	88' LT TO 98' LT	SIG-INT	MNDOT	
211+51 TO 211+64	98' LT TO 128' LT	SIG-INT	MNDOT	
211+64 TO 211+63	128' LT TO 120' LT	SIG-INT	MNDOT	
211+63 TO 211+76	120' LT TO 103' LT	SIG-INT	MNDOT	
211+76 TO 212+26	103' LT TO 102' LT	SIG-INT	MNDOT	
212+26 TO 212+94	102' LT TO 121' LT	SIG-INT	MNDOT	
212+94 TO 213+47	121' LT TO 128' LT	SIG-INT	MNDOT	
213+47 TO 213+96	128' LT TO 112' LT	SIG-INT	MNDOT	
213+96 TO 215+90	112' LT TO 93' LT	SIG-INT	MNDOT	
215+90	93' LT	HH	MNDOT	
209+89	35' RT	PED	MNDOT	
209+89 TO 213+01	35' RT TO 55' RT	SIG-BUR	MNDOT	
213+01	55' RT	HH	MNDOT	
213+91	49' RT	SIGNAL	MNDOT	
213+91 TO 214+09	49' RT TO 74' RT	SIG-BUR	MNDOT	
214+09	74' RT	HH	MNDOT	
214+09 TO 213+74	74' RT TO 98' RT	SIG-BUR	MNDOT	
213+74	98' RT	HH	MNDOT	
213+74 TO 213+01	98' RT TO 55' RT	SIG-BUR	MNDOT	
213+01 TO 213+09	55' RT TO 29' RT	SIG-BUR	MNDOT	
213+09	29' RT	HH	MNDOT	
213+23	30' RT	SIGNAL	MNDOT	
213+23 TO 213+09	30' RT TO 29' RT	SIG-BUR	MNDOT	
213+09 TO 212+44	29' RT TO 33' LT	SIG-BUR	MNDOT	CROSSES C/L AT 212+79
212+44	33' LT	HH	MNDOT	
212+58	30' LT	SIGNAL	MNDOT	
212+58 TO 212+44	30' LT TO 33' LT	SIG-BUR	MNDOT	
212+44 TO 212+14	33' LT TO 83' LT	SIG-BUR	MNDOT	
212+14	83' LT	HH	MNDOT	
212+30	83' LT	SIGNAL	MNDOT	
212+30 TO 212+14	83' LT TO 83' LT	SIG-BUR	MNDOT	
212+14 TO 211+73	83' LT TO 96' LT	SIG-BUR	MNDOT	
211+73	96' LT	HH	MNDOT	
211+12 TO 211+64	138' LT TO 128' LT	SIG-BUR	MNDOT	
211+64	128' LT	HH	MNDOT	
211+64 TO 211+62	128' LT TO 123' LT	SIG-BUR	MNDOT	
211+62	123' LT	METER	MNDOT	
211+62 TO 211+68	123' LT TO 121' LT	SIG-BUR	MNDOT	
211+68	121' LT	PED	MNDOT	
211+68 TO 211+73	121' LT TO 96' LT	SIG-BUR	MNDOT	

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
211+73 TO 211+76	96' LT TO 103' LT	SIG-BUR	MNDOT	
211+76	103' LT	HH	MNDOT	
211+63 TO 211+76	120' LT TO 103' LT	SIG-BUR	MNDOT	
211+76 TO 212+26	103' LT TO 102' LT	SIG-BUR	MNDOT	
212+26	102' LT	HH	MNDOT	
212+26 TO 212+94	102' LT TO 121' LT	SIG-BUR	MNDOT	
212+94	121' LT	HH	MNDOT	
213+10	99' LT	SIGNAL	MNDOT	
213+10 TO 212+94	99' LT TO 121' LT	SIG-BUR	MNDOT	
211+68 TO 211+73	121' LT TO 96' LT	SIG-BUR	MNDOT	
211+73 TO 211+76	96' LT TO 103' LT	SIG-BUR	MNDOT	
211+76	103' LT	HH	MNDOT	
211+63 TO 211+76	120' LT TO 103' LT	SIG-BUR	MNDOT	
211+76 TO 212+26	103' LT TO 102' LT	SIG-BUR	MNDOT	
212+26	102' LT	HH	MNDOT	
212+26 TO 212+94	102' LT TO 121' LT	SIG-BUR	MNDOT	
212+94	121' LT	HH	MNDOT	
213+10	99' LT	SIGNAL	MNDOT	
213+10 TO 212+94	99' LT TO 121' LT	SIG-BUR	MNDOT	
212+94 TO 213+47	121' LT TO 128' LT	SIG-BUR	MNDOT	
213+47	128' LT	HH	MNDOT	
213+47 TO 213+96	128' LT TO 112' LT	SIG-BUR	MNDOT	
213+96	112' LT	HH	MNDOT	
213+80	81' LT	SIGNAL	MNDOT	
213+80 TO 213+89	81' LT TO 81' LT	SIG-BUR	MNDOT	
213+89	81' LT	HH	MNDOT	
213+89 TO 213+96	81' LT TO 112' LT	SIG-BUR	MNDOT	
213+96 TO 214+66	112' LT TO 22' LT	SIG-BUR	MNDOT	
214+66	22' LT	HH	MNDOT	
214+58	25' LT	SIGNAL	MNDOT	
214+58 TO 214+66	25' LT TO 22' LT	SIG-BUR	MNDOT	
214+66 TO 214+68	22' LT TO 51' RT	SIG-BUR	MNDOT	CROSSES C/L AT 214+66
214+68	51' RT	HH	MNDOT	
214+62	30' RT	SIGNAL	MNDOT	
214+62 TO 214+68	30' RT TO 51' RT	SIG-BUR	MNDOT	
214+68 TO 215+06	51' RT TO 65' RT	SIG-BUR	MNDOT	
215+06	65' RT	HH	MNDOT	
215+06 TO 215+23	65' RT TO 111' RT	SIG-BUR	MNDOT	
227+22 TO 229+46	75' LT TO 75' LT	SIG-INT	MNDOT	
231+28 TO 232+65	73' LT TO 73' LT	SIG-INT	MNDOT	
236+70 TO 239+62	73' LT TO 74' LT	SIG-INT	MNDOT	
248+69 TO 252+29	73' LT TO 73' LT	SIG-INT	MNDOT	
917+98 TO 919+19	71' LT TO 122' LT	SIG-INT	MNDOT	
919+19 TO 919+31	122' LT TO 135' LT	SIG-INT	MNDOT	
919+31 TO 919+53	135' LT TO 83' LT	SIG-INT	MNDOT	
919+53 TO 921+45	83' LT TO 85' LT	SIG-INT	MNDOT	
921+45	85' LT	HH	MNDOT	
918+21	40' RT	HH	MNDOT	
918+42	39' RT	SIGNAL	MNDOT	
918+42 TO 918+49	39' RT TO 43' RT	SIG-BUR	MNDOT	
918+49	43' RT	SIGNAL	MNDOT	
918+49 TO 918+21	43' RT TO 40' RT	SIG-BUR	MNDOT	

SPECIFIC NOTES:

① SEE TRAFFIC SIGNAL PLANS FOR WORK TO BE COMPLETED BY CONTRACTOR.

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PRINTED NAME: RONALD S. QUANBECK
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TH 13
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PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
TRAFFIC SIGNALS

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
918+21 TO 918+22	40' RT TO 27' LT	SIG-BUR	MNDOT	CROSSES C/L A 918+22
918+22	27' LT	HH	MNDOT	
918+22 TO 918+23	27' LT TO 84' LT	SIG-BUR	MNDOT	
918+23	84' LT	HH	MNDOT	
918+23 TO 918+61	84' LT TO 95' LT	SIG-BUR	MNDOT	
918+61	95' LT	HH	MNDOT	
918+51	87' LT	SIGNAL	MNDOT	
918+51 TO 918+61	87' LT TO 95' LT	SIG-BUR	MNDOT	
918+46	83' LT	SIGNAL	MNDOT	
918+46 TO 918+61	83' LT TO 95' LT	SIG-BUR	MNDOT	
918+61 TO 918+61	125' LT TO 95' LT	SIG-BUR	MNDOT	
918+61 TO 919+14	95' LT TO 101' LT	SIG-BUR	MNDOT	
919+14 TO 919+19	101' LT TO 122' LT	SIG-BUR	MNDOT	
919+19	122' LT	HH	MNDOT	
919+30 TO 919+31	150' LT TO 147' LT	SIG-BUR	MNDOT	
919+31	147' LT	HH	MNDOT	
919+31 TO 919+33	147' LT TO 138' LT	SIG-BUR	MNDOT	
919+33	138' LT	METER	MNDOT	
919+33 TO 919+31	138' LT TO 135' LT	SIG-BUR	MNDOT	
919+31	135' LT	PED	MNDOT	
919+31 TO 919+19	135' LT TO 122' LT	SIG-BUR	MNDOT	
919+26	92' LT	SIGNAL	MNDOT	
919+26 TO 919+34	92' LT TO 85' LT	SIG-BUR	MNDOT	
919+34	85' LT	SIGNAL	MNDOT	
919+34 TO 919+19	85' LT TO 122' LT	SIG-BUR	MNDOT	
919+19 TO 919+57	122' LT TO 80' LT	SIG-BUR	MNDOT	
919+57	80' LT	HH	MNDOT	
919+57 TO 919+60	80' LT TO 17' LT	SIG-BUR	MNDOT	
919+60	17' LT	HH	MNDOT	
919+60 TO 919+59	17' LT TO 41' RT	SIG-BUR	MNDOT	CROSSES C/L AT 919+59
919+59	41' RT	HH	MNDOT	
919+18	41' RT	SIGNAL	MNDOT	
919+33	42' RT	SIGNAL	MNDOT	
919+33 TO 919+59	42' RT TO 41' RT	SIG-BUR	MNDOT	
919+59 TO 919+17	41' RT TO 53' RT	SIG-BUR	MNDOT	
919+17	53' RT	HH	MNDOT	
919+17 TO 919+17	53' RT TO 90' RT	SIG-BUR	MNDOT	
930+88 TO 931+85	30' RT TO 39' RT	SIG-BUR	MNDOT	
931+65 TO 930+63	86' LT TO 86' LT	SIG-INT	MNDOT	
931+85	39' RT	HH	MNDOT	
931+96	56' RT	SIGNAL	MNDOT	
931+96 TO 931+85	56' RT TO 39' RT	SIG-BUR	MNDOT	
931+92	44' RT	SIGNAL	MNDOT	
931+92 TO 931+85	44' RT TO 39' RT	SIG-BUR	MNDOT	
931+85 TO 931+77	39' RT TO 32' LT	SIG-BUR	MNDOT	CROSSES C/L AT 931+80
931+77	32' LT	HH	MNDOT	
931+92	31' LT	SIGNAL	MNDOT	
931+92 TO 931+77	31' LT TO 32' LT	SIG-BUR	MNDOT	
931+77 TO 931+78	32' LT TO 89' LT	SIG-BUR	MNDOT	
931+78	89' LT	HH	MNDOT	
931+96	92' LT	SIGNAL	MNDOT	
931+96 TO 931+78	92' LT TO 89' LT	SIG-BUR	MNDOT	

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
931+78 TO 932+10	89' LT TO 139' LT	SIG-BUR	MNDOT	
932+10	139' LT	PED	MNDOT	
931+91 TO 932+10	151' LT TO 141' LT	SIG-BUR	MNDOT	
932+10	141' LT	METER	MNDOT	
932+10 TO 932+10	141' LT TO 139' LT	SIG-BUR	MNDOT	
932+10 TO 932+17	139' LT TO 109' LT	SIG-BUR	MNDOT	
931+66 TO 932+10	86' LT TO 139' LT	SIG-INT	MNDOT	
932+17	109' LT	HH	MNDOT	
932+08	104' LT	SIGNAL	MNDOT	
932+08 TO 932+17	104' LT TO 109' LT	SIG-BUR	MNDOT	
932+17 TO 932+61	109' LT TO 109' LT	SIG-BUR	MNDOT	
932+61	109' LT	HH	MNDOT	
932+61 TO 933+03	109' LT TO 108' LT	SIG-BUR	MNDOT	
933+03	108' LT	HH	MNDOT	
932+99 TO 933+03	146' LT TO 108' LT	SIG-BUR	MNDOT	
933+12	101' LT	SIGNAL	MNDOT	
933+12 TO 933+03	101' LT TO 108' LT	SIG-BUR	MNDOT	
933+03 TO 933+16	108' LT TO 94' LT	SIG-BUR	MNDOT	
933+16	94' LT	HH	MNDOT	
933+83 TO 933+16	92' LT TO 94' LT	SIG-BUR	MNDOT	
933+16 TO 933+25	94' LT TO 25' LT	SIG-BUR	MNDOT	
933+25	25' LT	HH	MNDOT	
933+25 TO 933+25	25' LT TO 30' RT	SIG-BUR	MNDOT	CROSSES C/L AT 933+25
933+25	30' RT	HH	MNDOT	
933+25 TO 932+96	30' RT TO 38' RT	SIG-BUR	MNDOT	
932+96 TO 932+87	38' RT TO 58' RT	SIG-BUR	MNDOT	
932+87 TO 933+00	58' RT TO 49' RT	SIG-BUR	MNDOT	
932+87	58' RT	HH	MNDOT	
933+11	35' RT	SIGNAL	MNDOT	
933+00	49' RT	SIGNAL	MNDOT	
1009+63 TO 1011+12	38' RT TO 34' RT	SIG-BUR	MNDOT	
1011+12	34' RT	HH	MNDOT	
1011+12 TO 1011+49	34' RT TO 56' RT	SIG-BUR	MNDOT	
1011+45	63' RT	SIGNAL	MNDOT	
1011+45 TO 1011+49	63' RT TO 56' RT	SIG-BUR	MNDOT	
1011+49 TO 1012+11	56' RT TO 55' RT	SIG-BUR	MNDOT	
1012+11	55' RT	HH	MNDOT	
1012+11 TO 1013+07	55' RT TO 49' RT	SIG-BUR	MNDOT	
1013+07	49' RT	HH	MNDOT	
1013+03 TO 1013+07	112' RT TO 49' RT	SIG-BUR	MNDOT	
1013+07 TO 1013+42	49' RT TO 29' RT	SIG-BUR	MNDOT	
1013+42	29' RT	HH	MNDOT	
1013+22	50' RT	SIGNAL	MNDOT	
1013+22 TO 1013+42	50' RT TO 29' RT	SIG-BUR	MNDOT	
1013+42 TO 1013+33	29' RT TO 18' LT	SIG-BUR	MNDOT	CROSSES C/L AT 1013+36
1013+33	18' LT	HH	MNDOT	
1013+17	17' LT	SIGNAL	MNDOT	
1013+17 TO 1013+33	17' LT TO 18' LT	SIG-BUR	MNDOT	
1013+33 TO 1012+86	18' LT TO 107' LT	SIG-BUR	MNDOT	
1012+86	107' LT	HH	MNDOT	
1013+44 TO 1012+86	107' LT TO 107' LT	SIG-BUR	MNDOT	
1012+78 TO 1012+86	135' LT TO 107' LT	SIG-BUR	MNDOT	

SPECIFIC NOTES:

① SEE TRAFFIC SIGNAL PLANS FOR WORK TO BE COMPLETED BY CONTRACTOR.

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INPLACE UTILITY TABULATIONS
TRAFFIC SIGNALS

STATE PROJ. NO. 1901-168 (TH 13)

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
1012+86 TO 1012+69	107' LT TO 110' LT	SIG-BUR	MNDOT	
1012+69	110' LT	HH	MNDOT	
1012+83	108' LT	SIGNAL	MNDOT	
1012+83 TO 1012+69	108' LT TO 110' LT	SIG-BUR	MNDOT	
1012+95	139' LT	PED	MNDOT	
1012+95 TO 1012+90	139' LT TO 139' LT	SIG-BUR	MNDOT	
1012+90	139' LT	HH	MNDOT	
1012+90 TO 1012+77	139' LT TO 136' LT	SIG-BUR	MNDOT	
1012+77	136' LT	METER	MNDOT	
1012+77 TO 1012+79	136' LT TO 142' LT	SIG-BUR	MNDOT	
1012+79	142' LT	PED	MNDOT	
1012+79 TO 1012+78	142' LT TO 135' LT	SIG-BUR	MNDOT	
1012+78	135' LT	PED	MNDOT	
1012+78 TO 1012+69	135' LT TO 110' LT	SIG-BUR	MNDOT	
1012+69 TO 1011+97	110' LT TO 112' LT	SIG-BUR	MNDOT	
1011+97	112' LT	HH	MNDOT	
1012+01	116' LT	SIGNAL	MNDOT	
1012+01 TO 1011+97	116' LT TO 112' LT	SIG-BUR	MNDOT	
1011+97 TO 1011+12	112' LT TO 111' LT	SIG-BUR	MNDOT	
1011+12	111' LT	HH	MNDOT	
1010+99	98' LT	SIGNAL	MNDOT	
1010+99 TO 1011+12	98' LT TO 111' LT	SIG-BUR	MNDOT	
1011+12 TO 1011+03	111' LT TO 41' LT	SIG-BUR	MNDOT	
1011+03	41' LT	HH	MNDOT	
1043+94	38' RT	HH	MNDOT	
1043+94 TO 1044+79	38' RT TO 42' RT	SIG-BUR	MNDOT	
1044+79	42' RT	HH	MNDOT	
1044+95	63' RT	SIGNAL	MNDOT	
1044+95 TO 1044+79	63' RT TO 42' RT	SIG-BUR	MNDOT	
1044+79 TO 1044+63	42' RT TO 18' LT	SIG-BUR	MNDOT	CROSSES C/L AT 1044+67
1044+63	18' LT	HH	MNDOT	
1044+63 TO 1044+70	18' LT TO 69' LT	SIG-BUR	MNDOT	
1044+70	69' LT	HH	MNDOT	
1044+84	76' LT	SIGNAL	MNDOT	
1044+84 TO 1044+70	76' LT TO 69' LT	SIG-BUR	MNDOT	
1044+70 TO 1045+00	69' LT TO 84' LT	SIG-BUR	MNDOT	
1045+00	84' LT	HH	MNDOT	
1045+00 TO 1045+90	84' LT TO 87' LT	SIG-BUR	MNDOT	
1045+90	87' LT	HH	MNDOT	
1045+96	86' LT	SIGNAL	MNDOT	
1045+96 TO 1045+90	86' LT TO 87' LT	SIG-BUR	MNDOT	
1045+90 TO 1046+10	87' LT TO 84' LT	SIG-BUR	MNDOT	
1046+10	84' LT	PED	MNDOT	
1046+12	78' LT	METER	MNDOT	
1046+12 TO 1046+16	78' LT TO 85' LT	SIG-BUR	MNDOT	
1046+16	85' LT	PED	MNDOT	
1046+16 TO 1046+10	85' LT TO 84' LT	SIG-BUR	MNDOT	
1046+10 TO 1046+01	84' LT TO 79' LT	SIG-BUR	MNDOT	
1046+01	79' LT	HH	MNDOT	
1046+01 TO 1046+12	79' LT TO 8' LT	SIG-BUR	MNDOT	
1046+12	8' LT	HH	MNDOT	
1045+99	7' LT	SIGNAL	MNDOT	

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
1045+99 TO 1046+12	7' LT TO 8' LT	SIG-BUR	MNDOT	
1046+12 TO 1046+07	8' LT TO 40' RT	SIG-BUR	MNDOT	CROSSES C/L AT 1046+11
1046+07	40' RT	HH	MNDOT	
1045+97	51' RT	SIGNAL	MNDOT	
1045+97 TO 1046+07	51' RT TO 40' RT	SIG-BUR	MNDOT	
1046+07 TO 1045+76	40' RT TO 72' RT	SIG-BUR	MNDOT	
1045+76	72' RT	HH	MNDOT	
1074+03 TO 1074+91	47' RT TO 66' RT	SIG-BUR	MNDOT	
1074+91	66' RT	HH	MNDOT	
1075+63 TO 1074+91	132' RT TO 66' RT	SIG-BUR	MNDOT	
1074+91 TO 1075+25	66' RT TO 54' RT	SIG-BUR	MNDOT	
1075+25	54' RT	HH	MNDOT	
1076+77 TO 1076+56	144' RT TO 74' RT	SIG-BUR	MNDOT	
1076+56	74' RT	HH	MNDOT	
1076+56 TO 1076+29	74' RT TO 57' RT	SIG-BUR	MNDOT	
1076+29	57' RT	HH	MNDOT	
1076+32	40' RT	SIGNAL	MNDOT	
1076+32 TO 1076+29	40' RT TO 57' RT	SIG-BUR	MNDOT	
1076+29 TO 1075+69	57' RT TO 58' RT	SIG-BUR	MNDOT	
1075+69	58' RT	HH	MNDOT	
1075+69 TO 1075+25	58' RT TO 54' RT	SIG-BUR	MNDOT	
1075+21	45' RT	SIGNAL	MNDOT	
1075+21 TO 1075+25	45' RT TO 54' RT	SIG-BUR	MNDOT	
1075+25 TO 1074+67	54' RT TO 15' LT	SIG-BUR	MNDOT	CROSSES C/L AT 1074+80
1074+67	15' LT	HH	MNDOT	
1074+67 TO 1074+36	15' LT TO 73' LT	SIG-BUR	MNDOT	
1074+36	73' LT	HH	MNDOT	
1073+50 TO 1074+36	53' LT TO 73' LT	SIG-BUR	MNDOT	
1074+36 TO 1074+16	73' LT TO 99' LT	SIG-BUR	MNDOT	
1074+16	99' LT	PED	MNDOT	
1074+13	107' LT	POLE	MNDOT	
1074+13 TO 1074+20	107' LT TO 109' LT	SIG-BUR	MNDOT	
1074+20	109' LT	HH	MNDOT	
1074+20 TO 1074+20	109' LT TO 102' LT	SIG-BUR	MNDOT	
1074+20	102' LT	METER	MNDOT	
1074+20 TO 1074+19	102' LT TO 98' LT	SIG-BUR	MNDOT	
1074+19	98' LT	PED	MNDOT	
1074+19 TO 1074+16	98' LT TO 99' LT	SIG-BUR	MNDOT	
1074+16 TO 1074+39	99' LT TO 86' LT	SIG-BUR	MNDOT	
1074+39	86' LT	HH	MNDOT	
1074+36 TO 1074+39	73' LT TO 86' LT	SIG-BUR	MNDOT	
1074+39 TO 1074+73	86' LT TO 69' LT	SIG-BUR	MNDOT	
1074+73	69' LT	HH	MNDOT	
1074+70	64' LT	SIGNAL	MNDOT	
1074+70 TO 1074+73	64' LT TO 69' LT	SIG-BUR	MNDOT	
1074+73 TO 1075+09	69' LT TO 78' LT	SIG-BUR	MNDOT	
1075+09	78' LT	HH	MNDOT	
1075+09 TO 1075+53	78' LT TO 88' LT	SIG-BUR	MNDOT	
1075+53	88' LT	HH	MNDOT	
1075+71	74' LT	SIGNAL	MNDOT	
1075+71 TO 1075+53	74' LT TO 88' LT	SIG-BUR	MNDOT	
1075+53 TO 1075+64	88' LT TO 73' LT	SIG-BUR	MNDOT	

SPECIFIC NOTES:

① SEE TRAFFIC SIGNAL PLANS FOR WORK TO BE COMPLETED BY CONTRACTOR.

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CHECKED BY: DMK

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

SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
TRAFFIC SIGNALS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 44 of 393 Sheets

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
1075+64 TO 1075+76	73' LT TO 66' LT	SIG-BUR	MNDOT	
1075+76 TO 1076+20	66' LT TO 61' LT	SIG-BUR	MNDOT	
1076+41 TP 1076+20	61' LT TO 61' LT	SIG-BUR	MNDOT	
1076+20 TO 1076+20	61' LT TO 4' LT	SIG-BUR	MNDOT	
1076+20	4' LT	HH	MNDOT	
1076+20 TO 1076+08	4' LT TO 5' LT	SIG-BUR	MNDOT	
1076+08	5' LT	SIGNAL	MNDOT	
1242+88 TO 1242+39	250' LT TO 106' LT	SIG-BUR	MNDOT	
1242+39	106' LT	HH	MNDOT	
1242+39 TO 1242+60	106' LT TO 85' LT	SIG-BUR	MNDOT	
1242+60	85' LT	HH	MNDOT	
1242+60 TO 1242+76	85' LT TO 93' LT	SIG-BUR	MNDOT	
1242+76	93' LT	SIGNAL	MNDOT	
1242+60 TO 1242+40	85' LT TO 31' LT	SIG BUR	MNDOT	
1242+40	31' LT	HH	MNDOT	
1242+40 TO 1242+36	31' LT TO 33' RT	SIG-BUR	MNDOT	CROSSES C/L AT 1242+38
1242+36	33' RT	HH	MNDOT	
1241+82 TO 1224+36	29' RT TO 33' RT	SIG BUR	MNDOT	
1242+36 TO 1242+65	33' RT TO 61' RT	SIG BUR	MNDOT	
1242+36	61' RT	HH	MNDOT	
1242+56	42' RT	SIGNAL	MNDOT	
1242+56 TO 1242+65	42' RT TO 61' RT	SIG BUR	MNDOT	
1242+65 TO 1243+26	61' RT TO 66' RT	SIG BUR	MNDOT	
1243+26	66' RT	HH	MNDOT	
1243+18	39' RT	SIGNAL	MNDOT	
1243+18 TO 1243+26	39' RT TO 66' RT	SIG BUR	MNDOT	
1243+26 TO 1243+85	66' RT TO 72' RT	SIG BUR	MNDOT	
1243+75 TO 1243+85	160' RT TO 72' RT	SIG BUR	MNDOT	
1243+85 TO 1243+99	72' RT TO 52' RT	SIG-BUR	MNDOT	
1243+99	52' RT	PED	MNDOT	
1243+99 TO 1244+03	52' RT TO 52' RT	SIG-BUR	MNDOT	
1244+03	52' RT	METER	MNDOT	
1244+01 TO 1244+02	44' RT TO 52' RT	SIG-BUR	MNDOT	
1244+01 TO 1244+14	44' RT TO 52' RT	SIG-BUR	MNDOT	
1244+14	52' RT	POLE	MNDOT	
1243+44	95' LT	SIGNAL	MNDOT	
1243+44 TO 1243+37	95' LT TO 124' LT	SIG BUR	MNDOT	
1243+37	124' LT	HH	MNDOT	
1243+37 TO 1243+96	124' LT TO 116' LT	SIG-BUR	MNDOT	
1243+96 TO 1244+21	116' LT TO 84' LT	SIG BUR	MNDOT	
1244+21	84' LT	HH	MNDOT	
1244+21 TO 1244+09	84' LT TO 92' LT	SIG-BUR	MNDOT	
1244+09	92' LT	SIGNAL	MNDOT	
1244+21 TO 60+35	84' LT TO 60' LT	SIG BUR	MNDOT	
1244+21 TO 1244+20	84' LT TO 31' LT	SIG BUR	MNDOT	
1244+20	31' LT	HH	MNDOT	
1244+20 TO 1244+01	31' LT TO 44' RT	SIG BUR	MNDOT	CROSSES C/L AT 1244+12
1244+01	44' RT	HH	MNDOT	
1244+01 TO 1244+20	44' RT TO 26' RT	SIG BUR	MNDOT	
1244+20	26' RT	HH	MNDOT	
1244+02	34' RT	SIGNAL	MNDOT	
1243+99	52' RT	HH	MNDOT	

UTILITY TABULATION - TRAFFIC SIGNALS ①

TH 13 NB OR TH 13 STATION	LOCATION	INPLACE ITEM	OWNER	REMARKS
47+20	15' LT	HH	MNDOT	
47+20 T 47+20	15' LT TO 27' RT	SIG-BUR	MNDOT	CROSSES C/L AT 47+20
47+62	74' RT	HH	MNDOT	
47+20	27' RT	HH	MNDOT	
47+20 TO 47+62	27' RT TO 74' RT	SIG-BUR	MNDOT	
47+62 TO 47+43	74' RT TO 40' RT	SIG-BUR	MNDOT	
47+43	40' RT	PUSH BUTTON	MNDOT	
47+49	41' RT	SIGNAL	MNDOT	
47+49 TO 49+61	41' RT TO 75' RT	SIG-BUR	MNDOT	
49+62 TO 48+22	74' RT TO 75' RT	SIG-BUR	MNDOT	
48+22	75' RT	HH	MNDOT	
48+22 TO 48+30	75' RT TO 48' RT	SIG-BUR	MNDOT	
48+30	48' RT	PUSH BUTTON	MNDOT	
48+22 TO 48+84	75' RT TO 73' RT	SIG-BUR	MNDOT	
48+84	73' RT	HH	MNDOT	
48+84 TO 48+87	73' RT TO 51' RT	SIG-BUR	MNDOT	
48+87	51' RT	SIGNAL	MNDOT	
48+84 TO 49+01	73' RT TO 47' RT	SIG-BUR	MNDOT	
48+84 TO 48+99	73' RT TO 47' RT	SIG-BUR	MNDOT	
49+01	53'RT	PED	MNDOT	
48+99	47' RT	PED	MNDOT	
48+99 TO 49+01	47' RT TO 53' RT	SIG-BUR	MNDOT	
49+01 TO 49+02	53' RT TO 58' RT	SIG-BUR	MNDOT	
49+02	58' RT	METER	MNDOT	
49+02 TO 49+16	58' RT TO 44' RT	SIG-BUR	MNDOT	
49+16	44' RT	HH	MNDOT	
49+16 TO 49+20	44' RT TO 40' RT	SIG-BUR	MNDOT	
49+20	51' RT	POLE	MNDOT	
49+16 TO 49+37	44' RT TO 40' RT	SIG-BUR	MNDOT	
49+37	40' RT	HH	MNDOT	
49+37 TO 49+41	40' RT TO 40' RT	SIG-BUR	MNDOT	
49+41	40' RT	HH	MNDOT	
49+41 TO 49+37	40' RT TO 17' LT	SIG-BUR	MNDOT	CROSSES C/L AT 49+38
49+37	17' LT	HH	MNDOT	
49+37 TO 49+11	71' LT 71' LT	SIG-BUR	MNDOT	
49+11	71' RT	HH	MNDOT	
49+03	75' LT	SIGNAL	MNDOT	
49+11 TO 48+96	71' LT TO 93' LT	SIG-BUR	MNDOT	
48+96	93' LT	HH	MNDOT	
48+96 TO 48+21	93' LT TO 94' LT	SIG-BUT	MNDOT	
48+21	94' LT	HH	MNDOT	
48+21 TO 47+60	94' LT TO 97' LT	SIG-BUR	MNDOT	
47+60	97' LT	HH	MNDOT	
47+61	84' LT	SIGNAL	MNDOT	
47+60 TO 47+36	97' LT TO 68' LT	SIG-BUR	MNDOT	
47+36	68' LT	HH	MNDOT	
47+36 TO 46+69	68' LT TO 63' LT	SIG-BUR	MNDOT	
47+11 TO 48+26	23' LT TO 26' LT	SIG-BUR	MNDOT	
48+26	26' LT	HH	MnDOT	

SPECIFIC NOTES:

① SEE TRAFFIC SIGNAL PLANS FOR WORK TO BE COMPLETED BY CONTRACTOR.

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Ronald S. Quanbeck
PRINTED NAME: RONALD S. QUANBECK
DATE: JANUARY 26, 2012 LIC. NO. 19396

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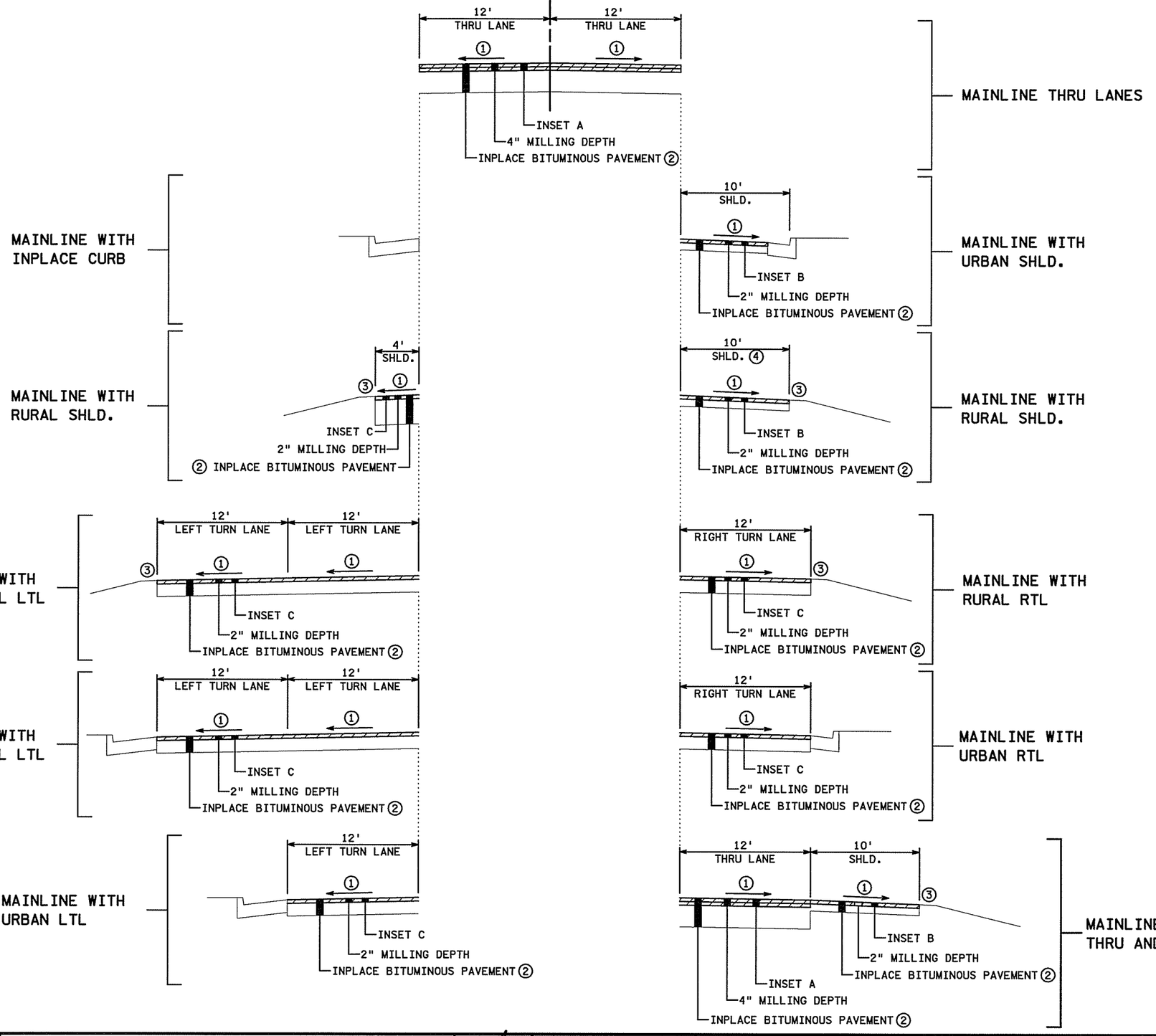
TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE UTILITY TABULATIONS
TRAFFIC SIGNALS

STATE PROJ. NO. 1901-168 (TH 13)

TH 13 NB STA. 735+62 TO STA. 973+34
TH 13 SB STA. 735+74 TO STA. 974+29

℄ TH 13 (NB OR SB)
(DIRECTION OF TRAVEL)



LEGEND:

▨ DENOTES MILLING

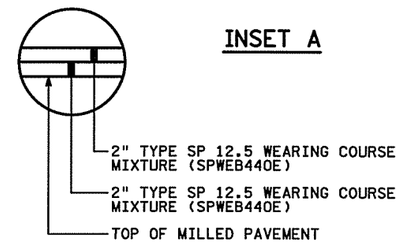
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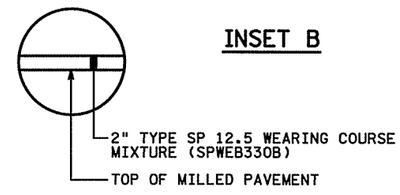
① MATCH INPLACE CROSS SLOPE. NO CROWN OR SUPERELEVATION CORRECTIONS WILL BE COMPLETED.

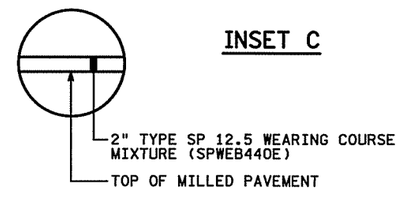
② SEE TABLE ON SHT. 11 FOR INPLACE PAVEMENT THICKNESS.

③ AGGREGATE SHOULDERING CLASS 2 AS DIRECTED BY THE ENGINEER.

④ BUS SHOULDER FROM STA. 196+00 TO STA. 937+50. USE INSET C.



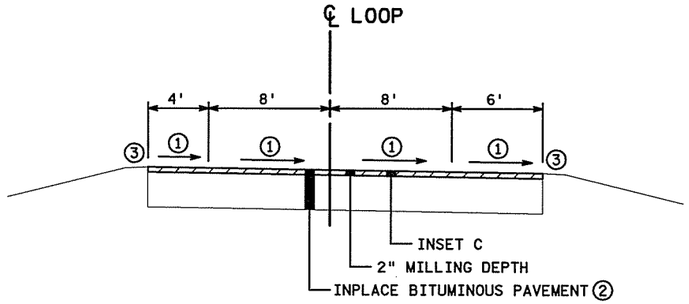




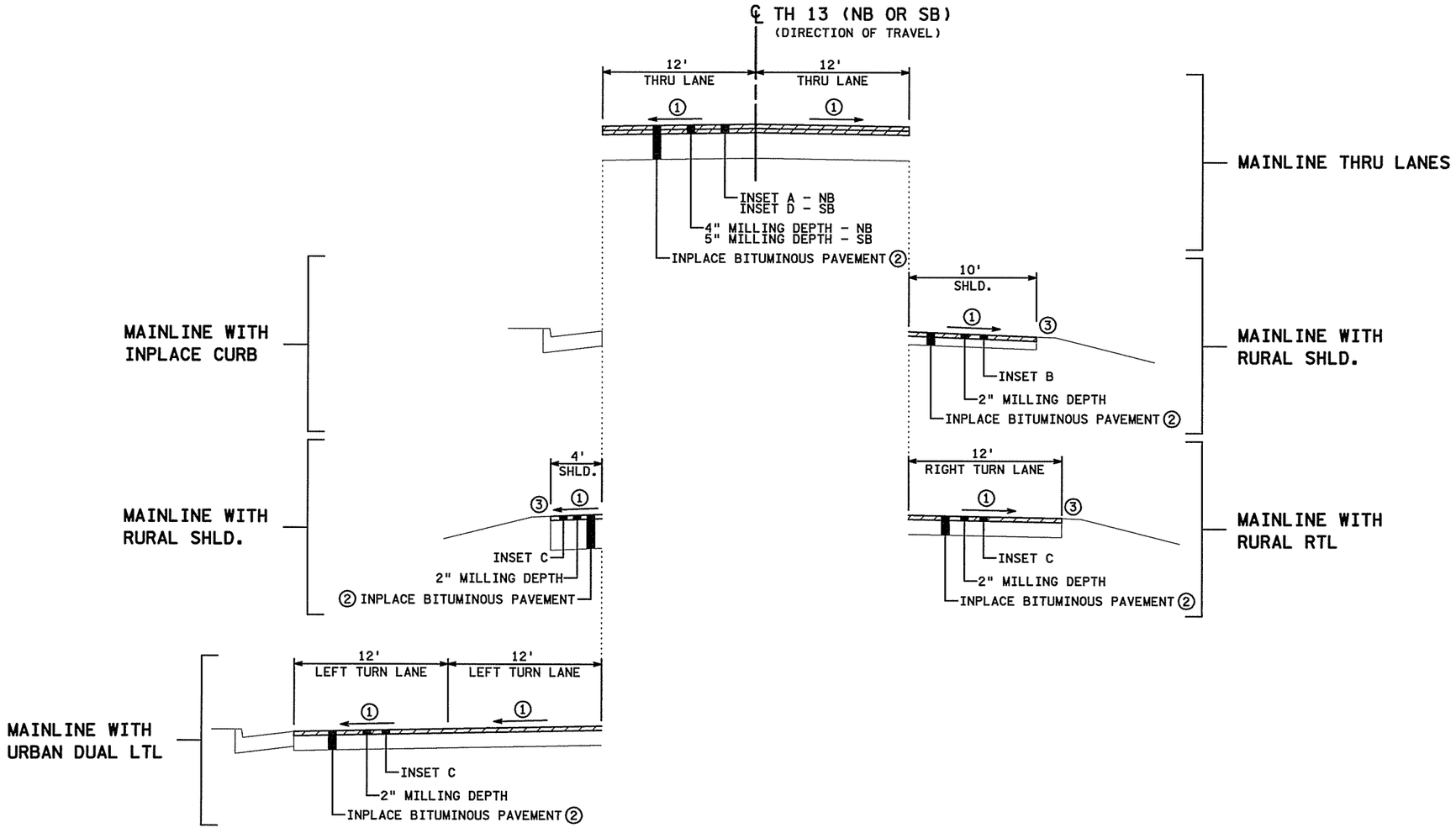
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TH 77 INTERCHANGE LOOPS



TH 13 NB STA. 977+44 TO STA. 1015+50
TH 13 SB STA. 978+64 TO STA. 1024+35



LEGEND:

▨ DENOTES MILLING

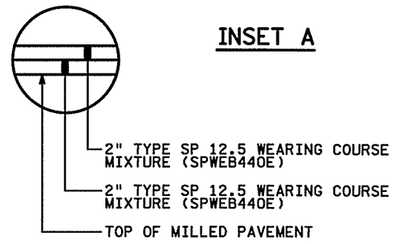
SPECIFIC NOTES:

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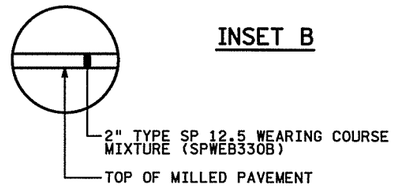
② SEE TABLE ON SHT. 11 FOR INPLACE PAVEMENT THICKNESS.

③ AGGREGATE SHOULDERING CLASS 2 AS DIRECTED BY THE ENGINEER.

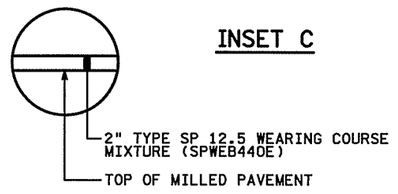
INSET A



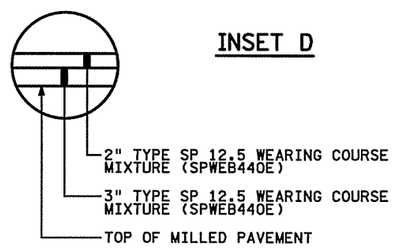
INSET B



INSET C



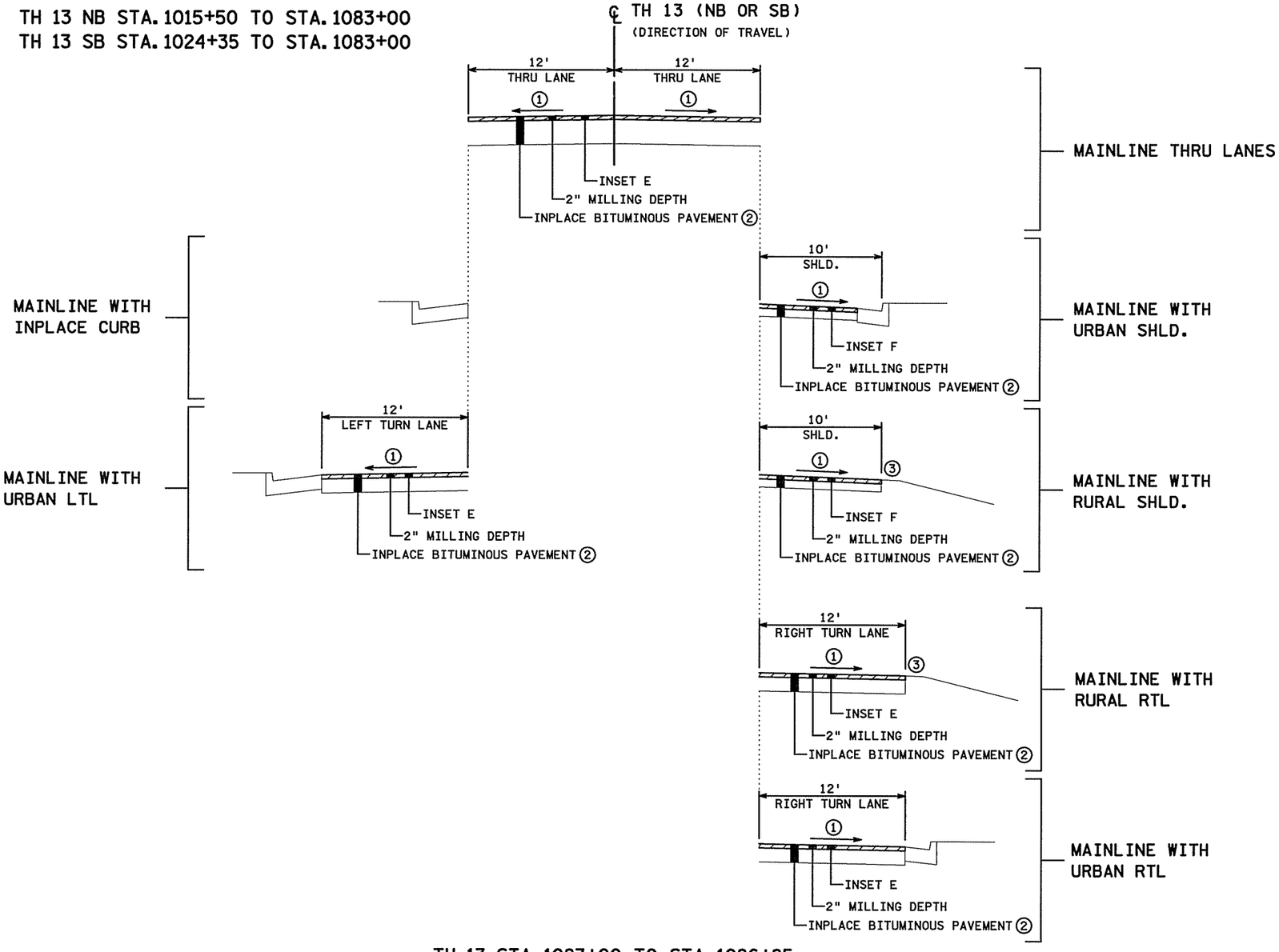
INSET D



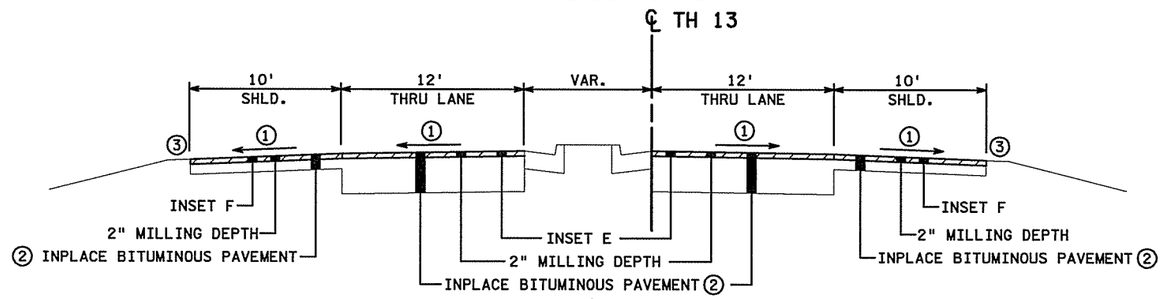
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TH 13 NB STA. 1015+50 TO STA. 1083+00
TH 13 SB STA. 1024+35 TO STA. 1083+00



TH 13 STA. 1083+00 TO STA. 1086+85



LEGEND:

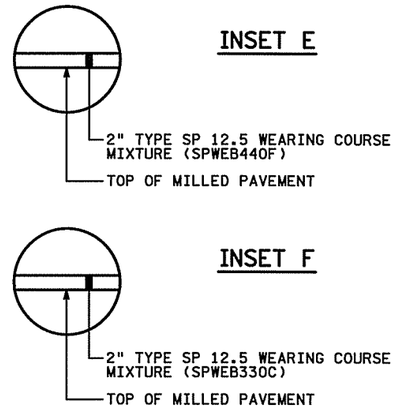
▨ DENOTES MILLING

SPECIFIC NOTES:

① MATCH INPLACE CROSS SLOPE. NO CROWN OR SUPERELEVATION CORRECTIONS WILL BE COMPLETED.

② SEE TABLE ON SHT. 11 FOR INPLACE PAVEMENT THICKNESS.

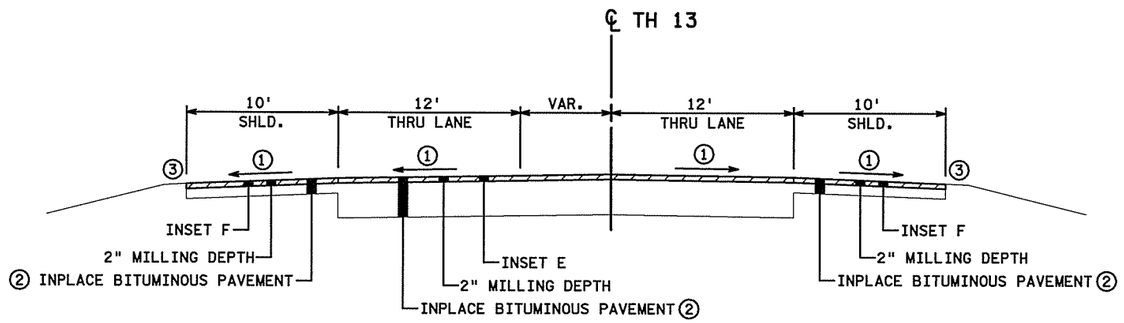
③ AGGREGATE SHOULDERING CLASS 2 AS DIRECTED BY THE ENGINEER.



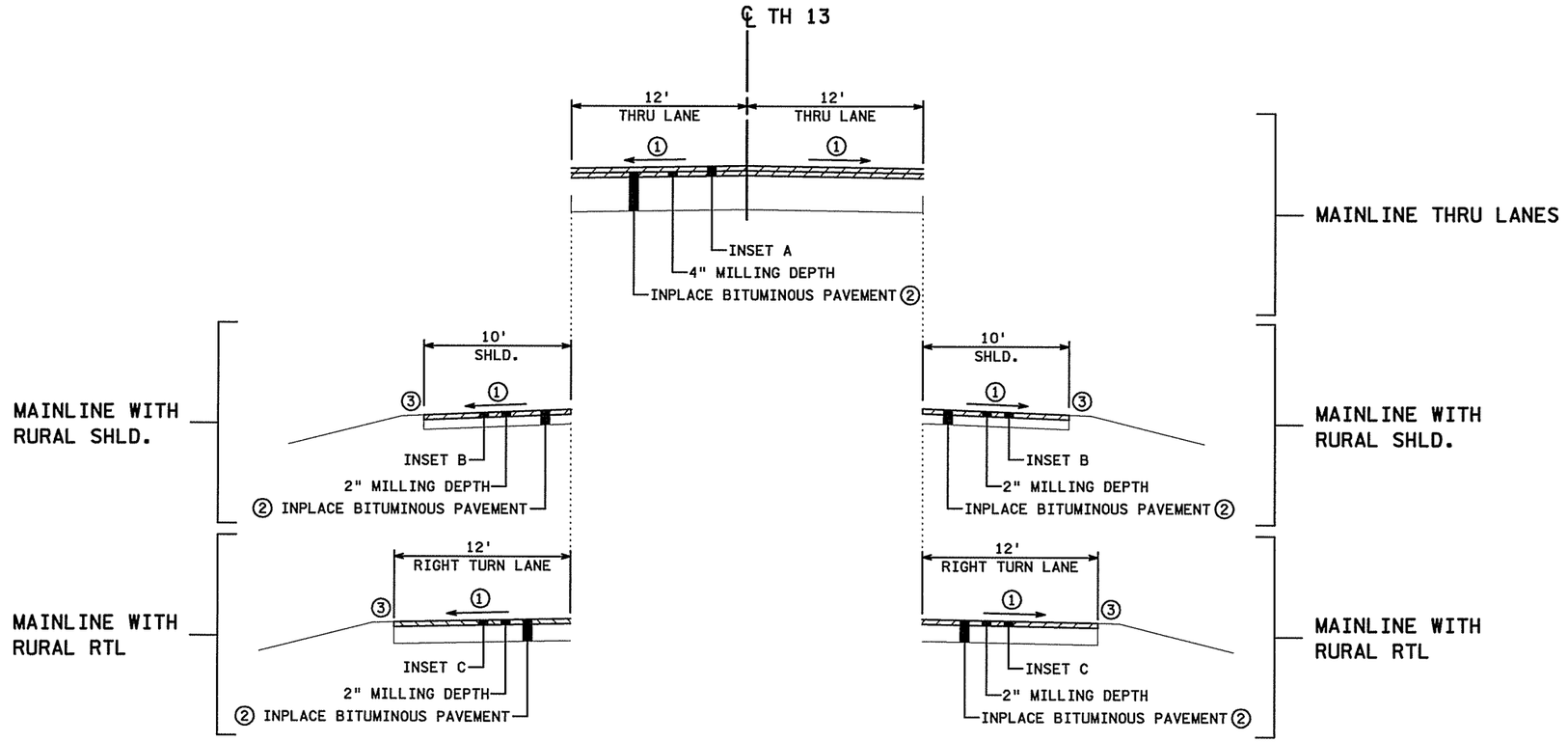
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TH 13 STA. 1086+85 TO STA. 1092+00



TH 13 STA. 1092+00 TO STA. 1109+75
TH 13 STA. 1145+05 TO TH 13 NB STA. 1169+22
& TH 13 SB STA. 1177+57



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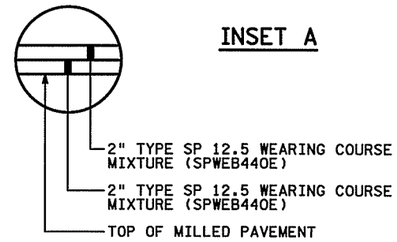
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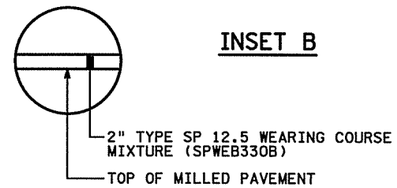
SPECIFIC NOTES:

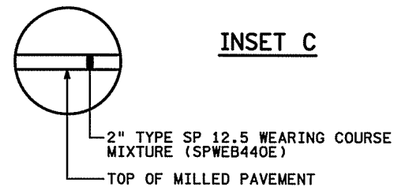
① MATCH INPLACE CROSS SLOPE. NO CROWN OR SUPERELEVATION CORRECTIONS WILL BE COMPLETED.

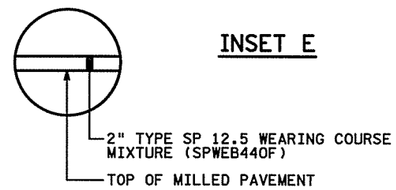
② SEE TABLE ON SHT. 11 FOR INPLACE PAVEMENT THICKNESS.

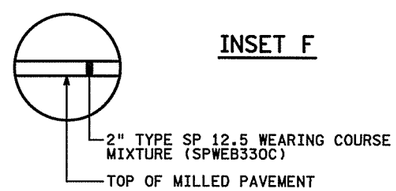
③ AGGREGATE SHOULDERING CLASS 2 AS DIRECTED BY THE ENGINEER.







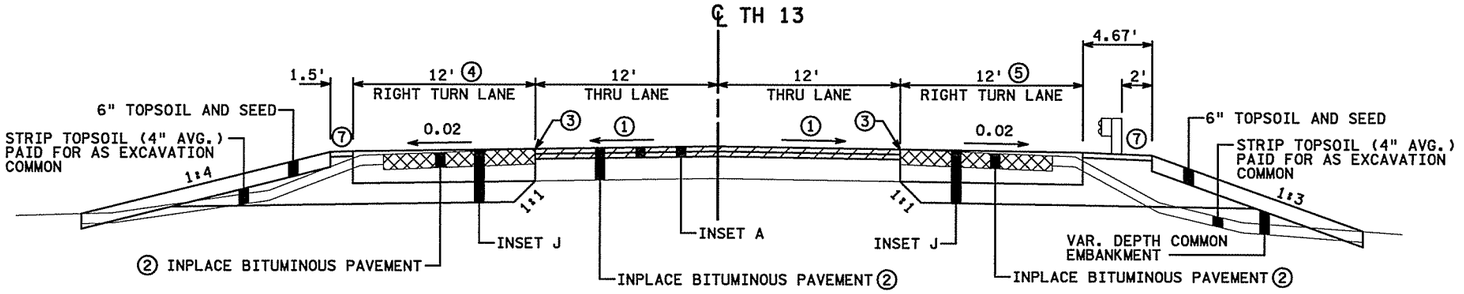




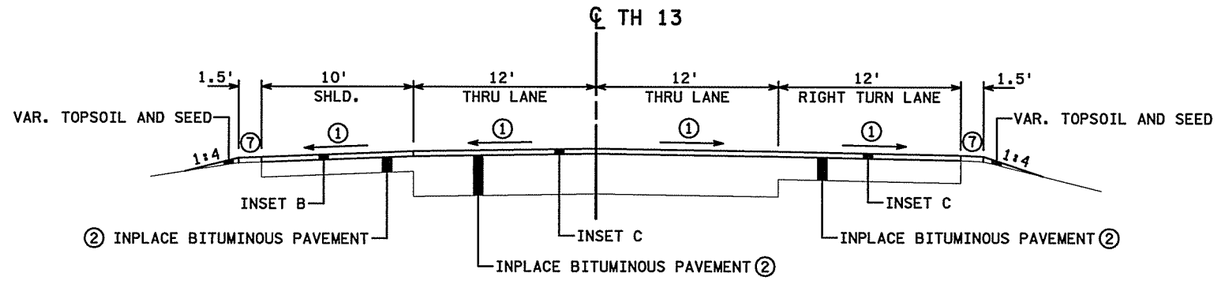
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DRAWN BY: TJV CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: JANUARY 26, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	TYPICAL SECTIONS TH 13	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 49 of 393 Sheets

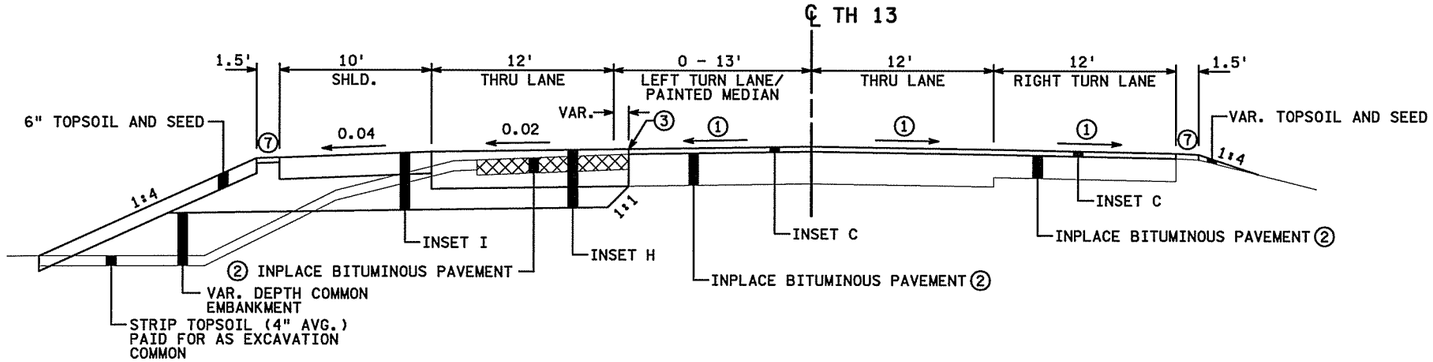
TH 13 STA. 1109+75 TO STA. 1118+49



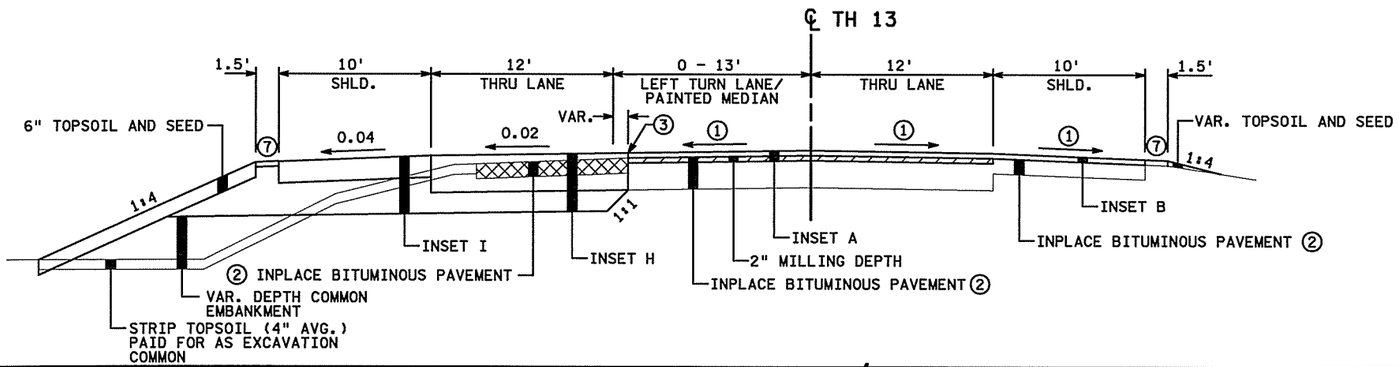
TH 13 STA. 1118+49 TO STA. 1125+80



TH 13 STA. 1125+80 TO STA. 1133+25



TH 13 STA. 1133+25 TO STA. 1145+05



LEGEND:

- DENOTES MILLING
- DENOTES REMOVE BITUMINOUS PAVEMENT

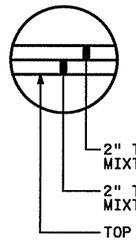
GENERAL NOTES:

- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.

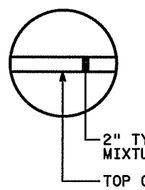
SPECIFIC NOTES:

1. MATCH INPLACE CROSS SLOPE. NO CROWN OR SUPERELEVATION CORRECTIONS WILL BE COMPLETED.
2. SEE TABLE ON SHT. 11 FOR INPLACE PAVEMENT THICKNESS.
3. SAWCUT AND REMOVE BITUMINOUS PAVEMENT.
4. STA. 1111+00 TO STA. 1115+86.9.
5. STA. 1109+75 TO STA. 1114+55.
6. STA. 1118+49 TO STA. 1133+25, TOP OF INPLACE BITUMINOUS (NO MILLING IS REQUIRED).
7. AGGREGATE SHOULDERING CLASS 2 AS DIRECTED BY THE ENGINEER.

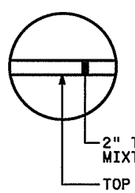
INSET A



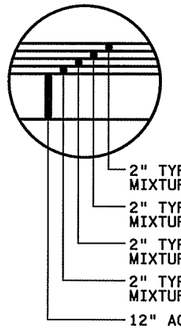
INSET B



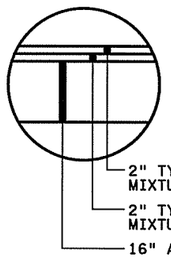
INSET C



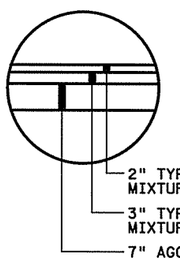
INSET H



INSET I



INSET J



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DRAWN BY: TJV
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

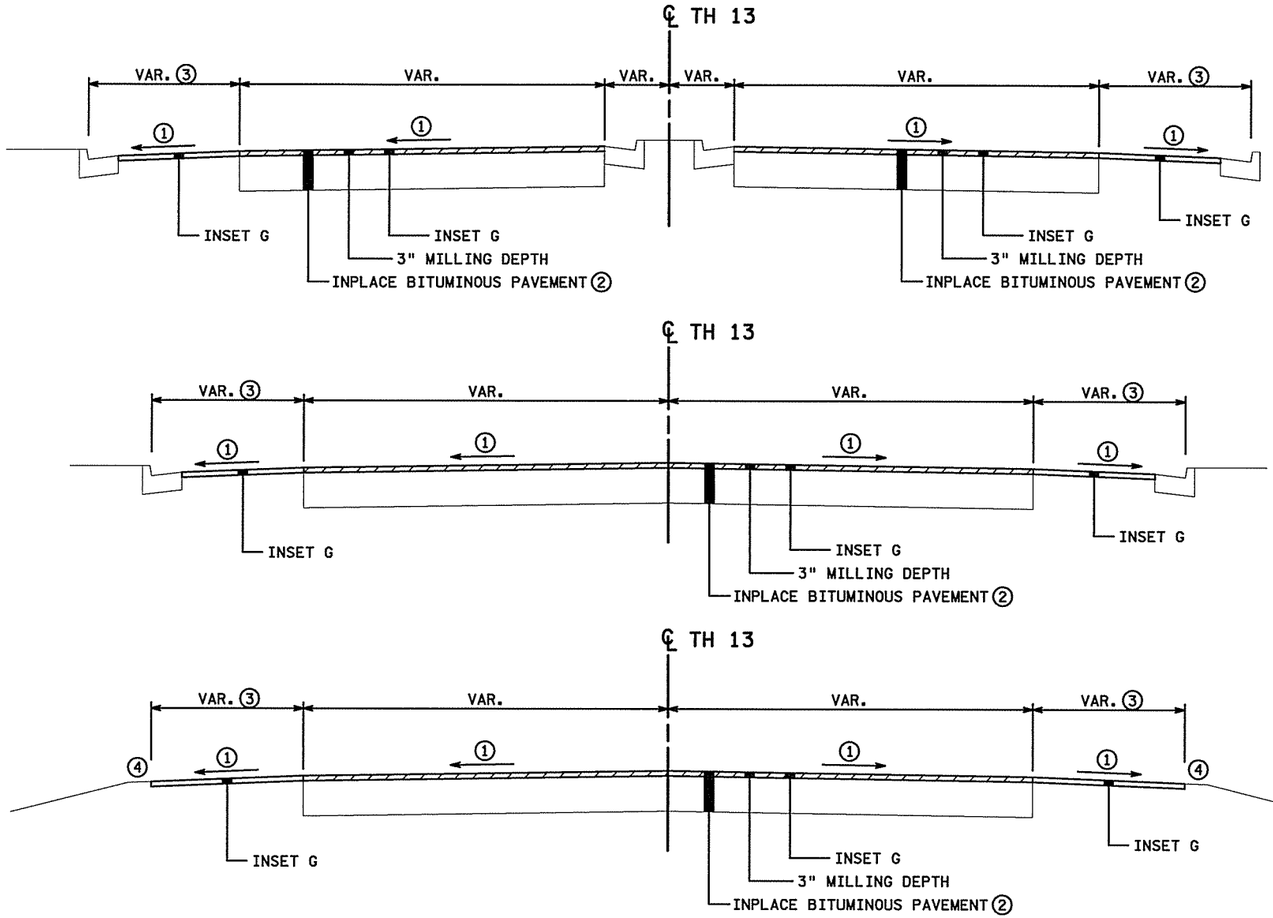
TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

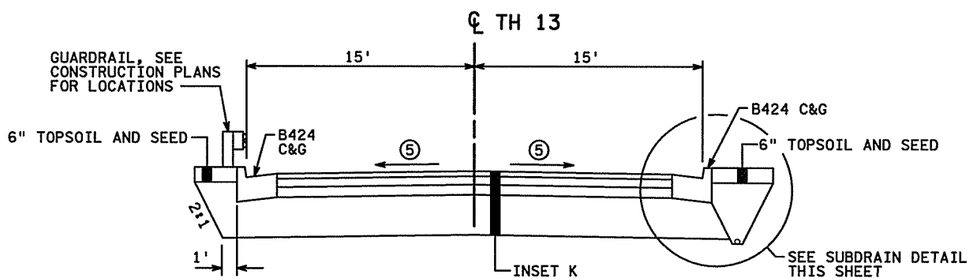
TYPICAL SECTIONS
TH 13

STATE PROJ. NO. 1901-168 (TH 13)

TH 13 NB STA. 1243+75 TO STA. 17+50
TH 13 STA. 44+38 TO STA. 136+05
TH 13 STA. 159+40 TO STA. 189+00



TH 13 STA. 139+89 TO STA. 159+40



LEGEND:

▨ DENOTES MILLING

SPECIFIC NOTES:

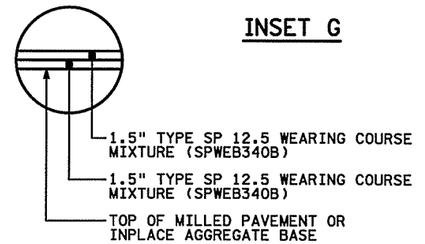
① MATCH INPLACE CROSS SLOPE. NO CROWN OR SUPERELEVATION CORRECTIONS WILL BE COMPLETED.

② SEE TABLE ON SHT. 11 FOR INPLACE PAVEMENT THICKNESS.

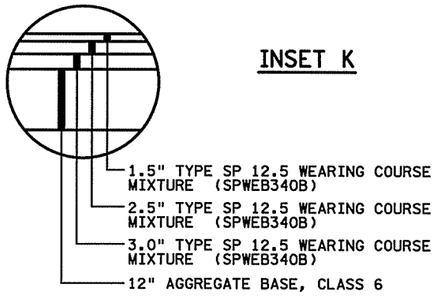
③ 3" BITUMINOUS MILL OR SHOULDER REMOVAL (1.5" BITUMINOUS, PAID FOR AS "REMOVE BITUMINOUS PAVEMENT" AND 1.5" AGGREGATE BASE, INCIDENTAL). SEE SHEET NOS. 94 THRU 97 FOR LOCATIONS.

④ AGGREGATE SHOULDERING CLASS 2 AS DIRECTED BY THE ENGINEER.

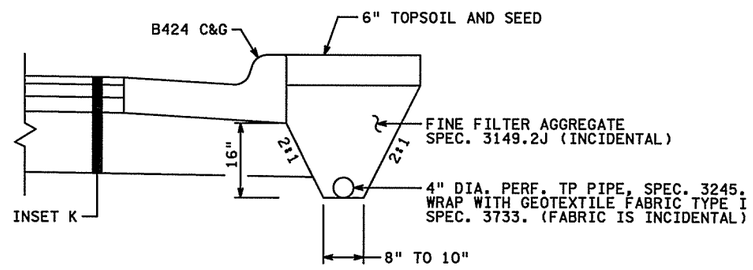
⑤ SEE SHEET NO. 160 FOR SUPERELEVATION PLANS.



INSET G



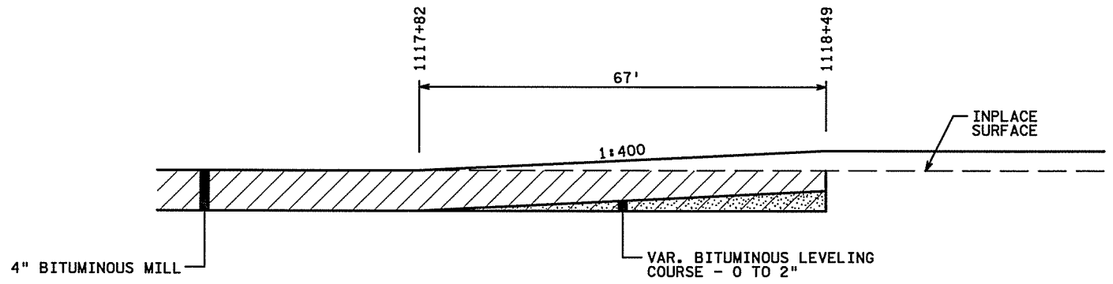
INSET K



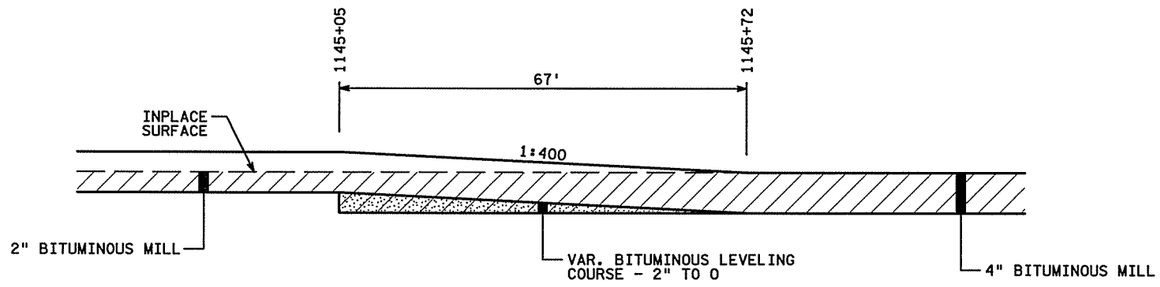
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DRAWN BY: TJV CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	TYPICAL SECTIONS TH 13	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 51 of 393 Sheets



DETAIL A



DETAIL B

PAVING TAPER DETAILS

DATE: 1/26/2012 TIME: 8:44:05 AM
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DRAWN BY: TJV
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

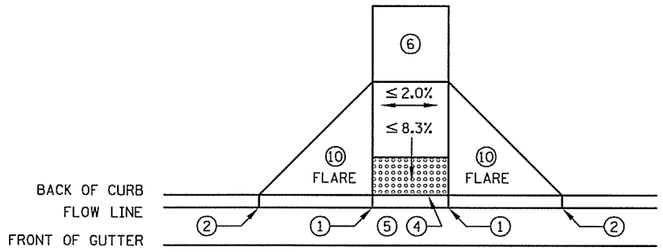
TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

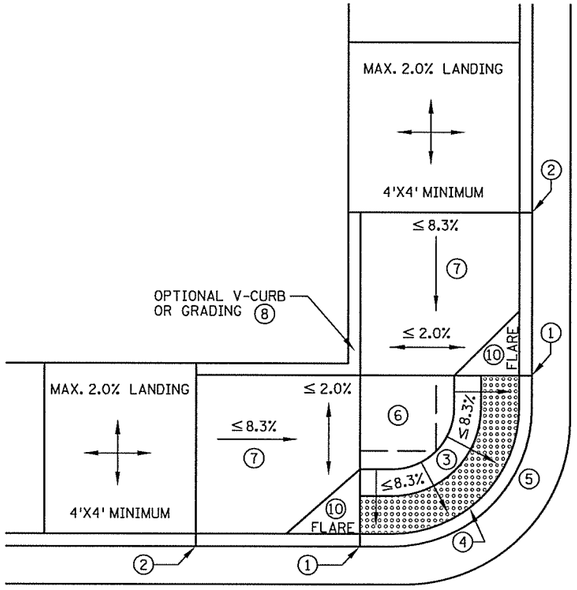
MISCELLANEOUS DETAILS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 52 of 393 Sheets

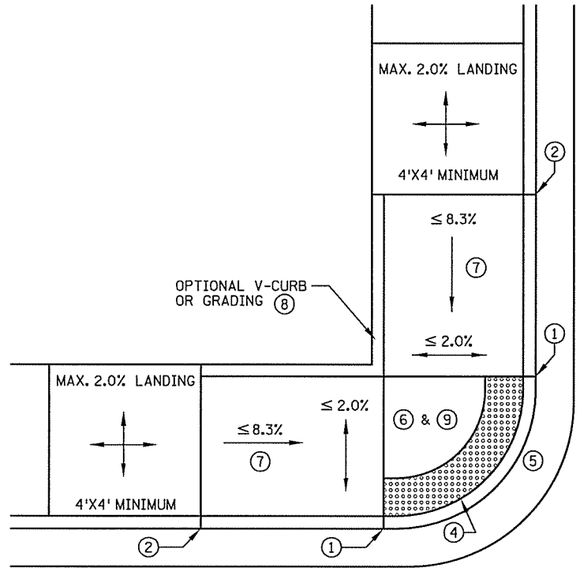
REVISED: 10/11/11
TODD GRUGEL



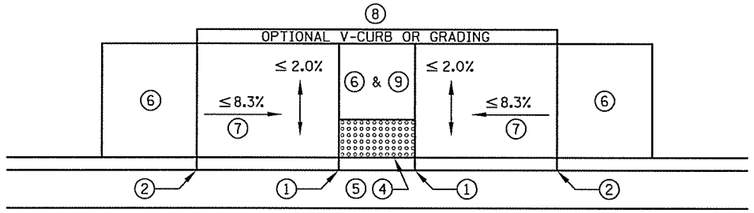
PERPENDICULAR RAMP



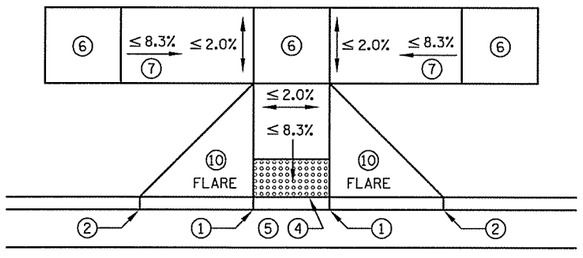
FAN RAMP



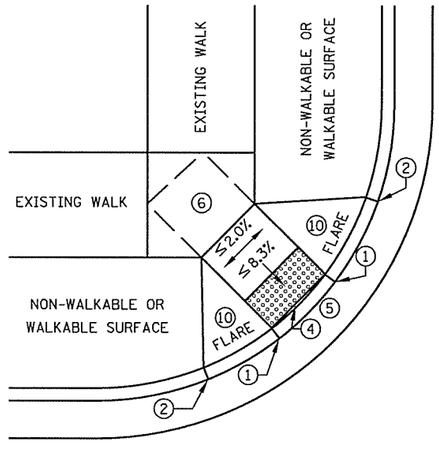
DEPRESSED CORNER RAMP



PARALLEL RAMP



TIERED PERPENDICULAR RAMP



DIAGONAL RAMP

(DIAGONAL RAMPS SHOULD ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN CONSIDERED AND DEEMED IMPRACTICAL)

NOTES:

SEE STANDARD PLATE 7038, SPECIAL PROVISIONS AND SHEET NO. 56 FOR DETAILS ON DETECTABLE WARNING.

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%.

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 EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER.

CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

USE 6" CONCRETE WALK UP TO EXISTING SIDEWALK GRADES FOR ALL RAMP AND LANDING AREAS.

CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTROL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY.

(1) 0" CURB HEIGHT.
(2) FULL CURB HEIGHT.
(3) LESS THAN 5% PREFERRED. 5-8.3% SHOULD ONLY BE USED AFTER ALL OTHER SLOPES HAVE BEEN CONSIDERED AND DEEMED IMPRACTICAL.
(4) 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS.
(5) SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 55.
(6) 4' BY 4' MIN. LANDING WITH MAX. 2% SLOPE IN ALL DIRECTIONS.
(7) IF RUNNING SLOPE IS LESS THAN 5.0% NO LANDING IS REQUIRED.
(8) V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN ROW ALLOWS.
(9) 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.
(10) SEE SHEET NO. 56, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

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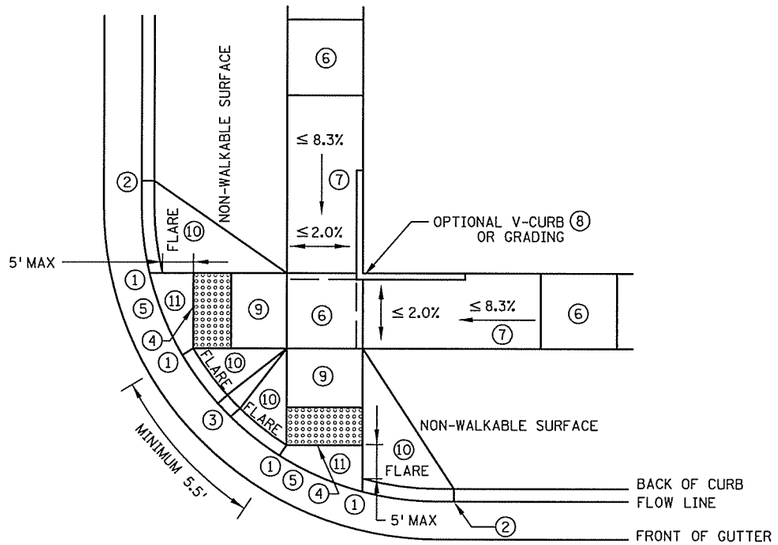
CERTIFIED BY Timothy A. Chalgjd LICENSED PROFESSIONAL ENGINEER LIC. NO. 15400

STANDARD SHEET NO. X-XXX.XXX (1 OF 5)
STANDARD APPROVED: NOT APPROVED

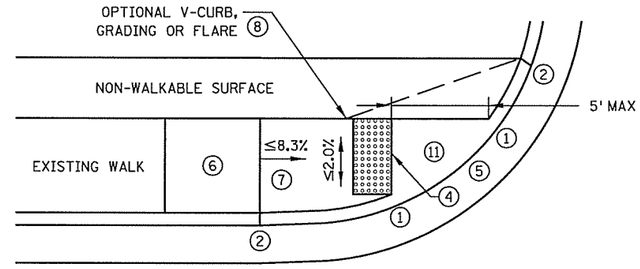
CURB RAMP CONCEPTS

STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 53 OF 393 SHEETS

REVISED: 10/11/11
TODD GRUGEL

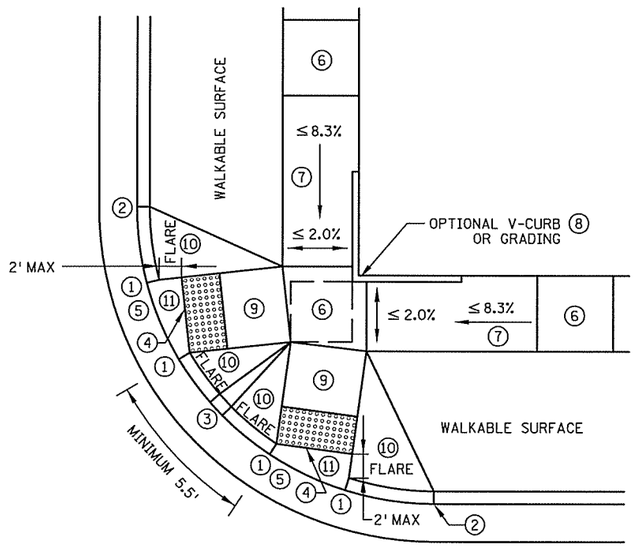


(ADJACENT TO NON-WALKABLE SURFACE)



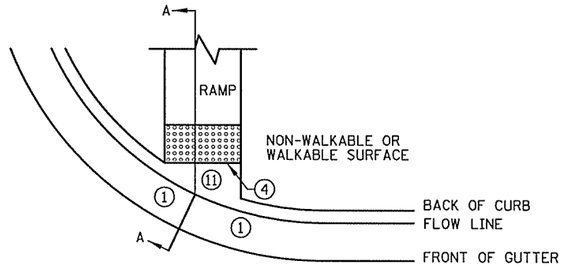
IF NON-WALKABLE BLVD. IS LESS THAN 4' CONSTRUCT CONCRETE WALK ADJACENT TO CURB TO TOP OF TRANSITION.

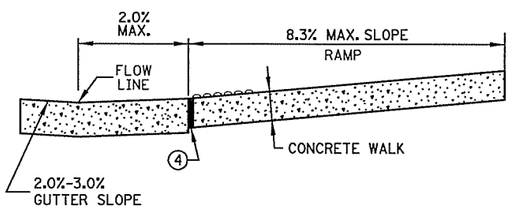
ONE WAY DIRECTIONAL RAMPS



(ADJACENT TO WALKABLE SURFACE)

COMBINED DIRECTIONAL RAMPS





SECTION A-A

DIRECTIONAL CURB

(SHALL BE USED FOR ALL DIRECTIONAL RAMPS)

NOTES:

SEE STANDARD PLATE 7038, SPECIAL PROVISIONS AND SHEET NO. 56 FOR DETAILS ON DETECTABLE WARNING.

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE CHANGES DIRECTION, AND AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5%.

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 EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS 5% OR GREATER.

CONTRACTION JOINTS SHALL BE CONSTRUCTED AT ALL GRADE BREAKS.

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

USE 6" CONCRETE WALK UP TO EXISTING SIDEWALK GRADES FOR ALL RAMP AND LANDING AREAS.

CONTRACTOR SHALL EMPLOY APPROPRIATE METHODS FOR INTERMEDIATE GRADE CONTROL TO ENSURE ALL GRADE BREAKS ARE CONSTRUCTED PROPERLY.

① 0" CURB HEIGHT.
② FULL CURB HEIGHT.
③ 3" MINIMUM CURB HEIGHT.
④ 1/2" PREFORMED JOINT FILLER MATERIAL AASHTO M213. JOINT FILLER SHALL BE PLACED FLUSH WITH THE BACK OF CURB AND ADJACENT SIDEWALK. JOINT SHALL BE FREE OF DEBRIS.
⑤ SEE PEDESTRIAN ACCESS ROUTE CURB AND GUTTER DETAIL FOR INFORMATION ON CONSTRUCTING CURB AND GUTTER AT CURB OPENINGS. SEE SHEET NO. 55.
⑥ 4' BY 4' MIN. LANDING WITH MAX. 2% SLOPE IN ALL DIRECTIONS.
⑦ IF RAMP SLOPE IS LESS THAN 5% NO LANDING IS REQUIRED.
⑧ V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN ROW ALLOWS.
⑨ RUNNING SLOPE LESS THAN OR EQUAL TO 8.3% & CROSS SLOPE LESS THAN OR EQUAL TO 2%.
⑩ SEE SHEET NO. 56, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
⑪ MAX. 2% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER (SEE DIRECTIONAL CURB DETAIL ON THIS SHEET).

CERTIFIED BY Timothy A. Cholyl LICENSED PROFESSIONAL ENGINEER LIC. NO. 15400

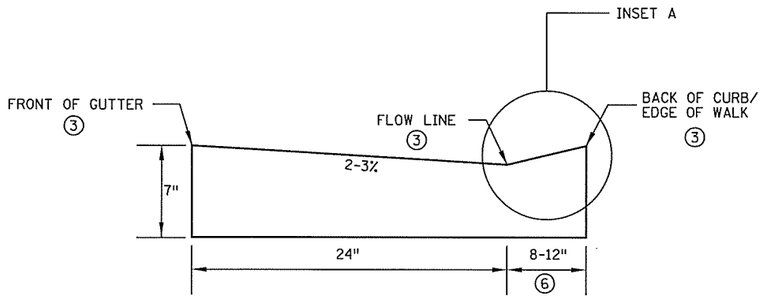
STANDARD SHEET NO. X-XXX.XXX (2 OF 5)
STANDARD APPROVED: NOT APPROVED

CURB RAMP CONCEPTS

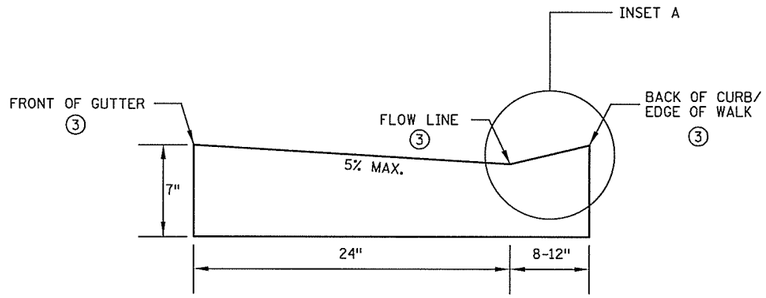
STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 54 OF 393 SHEETS

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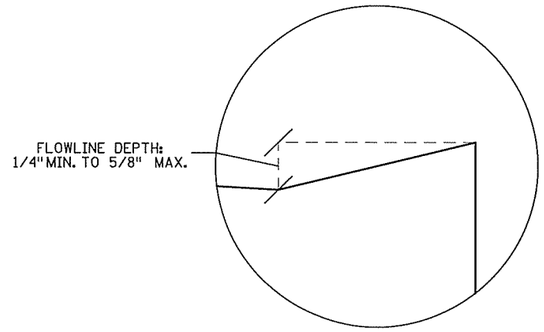
REVISED: 10/11/11
TODD GRUGEL



NOT PERPENDICULAR ①

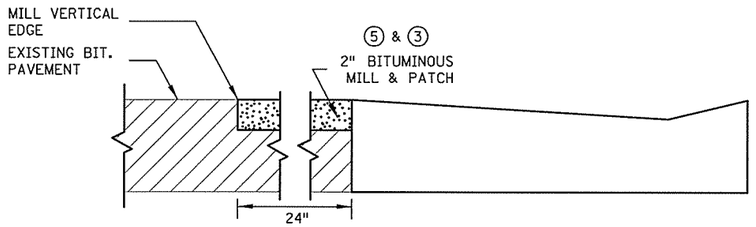


PERPENDICULAR ②

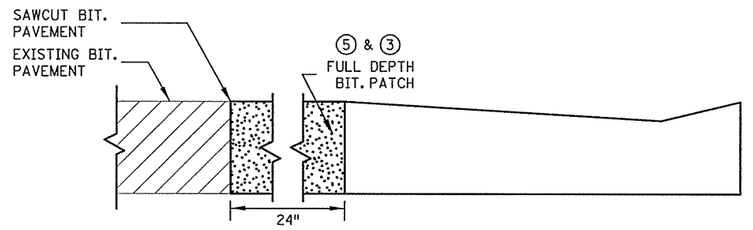


INSET A

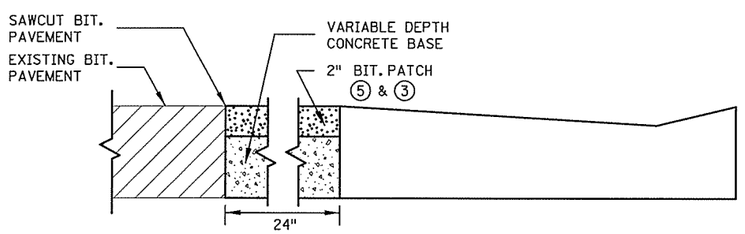
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



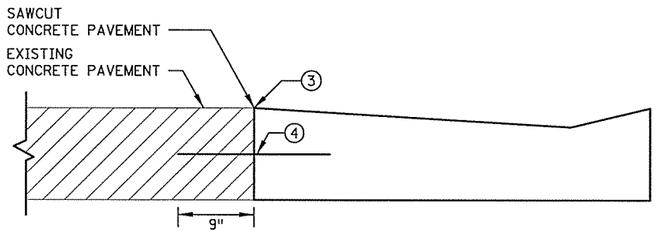
(EXISTING BIT. PAVEMENT IN GOOD CONDITION)



(EXISTING BIT. PAVEMENT IN POOR CONDITION)



(EXISTING BIT. PAVEMENT IN POOR CONDITION)



(EXISTING CONCRETE PAVEMENT)

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

(USE ON STAND ALONE CURB RAMP RETROFITS)

NOTES:

ADEQUATE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS NOT 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 PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, PARALLEL AND DIAGONAL RAMPS.

③ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

④ DRILL AND GROUT NO. 13 EPOXY COATED 18" LONG BARS AT 2' 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.

CERTIFIED BY Timothy A. Chalgjd
LICENSED PROFESSIONAL ENGINEER

LIC. NO. 15400

X-XXX.XXX (3 OF 5)
STANDARD APPROVED: NOT APPROVED

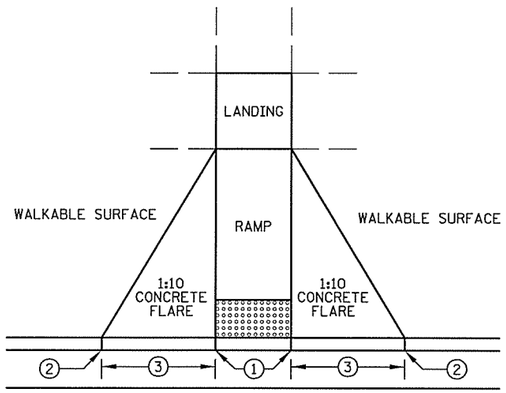
CURB RAMP CONCEPTS

STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 55 OF 393 SHEETS

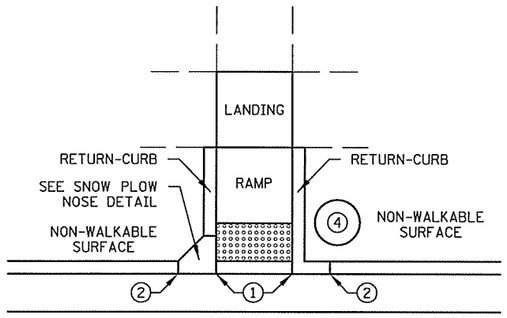
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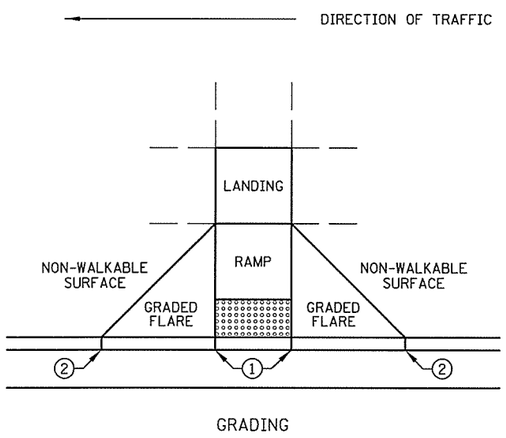
REVISED: 10/11/11
TODD GRUGEL



FLARES



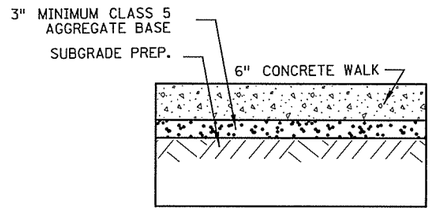
V-CURB RETURNED CURB



GRADING

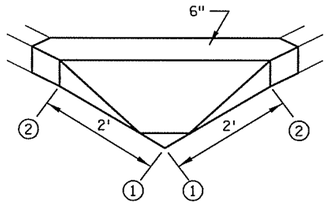
TYPICAL SIDE TREATMENT OPTIONS

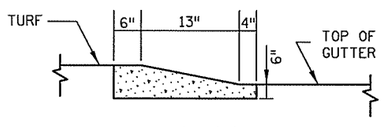
SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED ON ALL RAMPS AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.



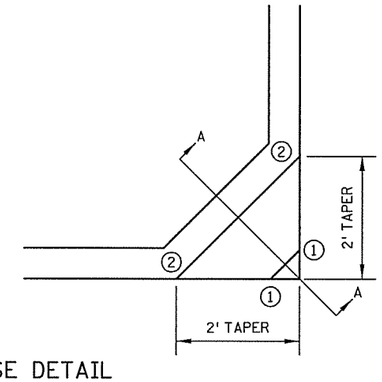
CONSTRUCT PER SPEC. 2521.3

TYPICAL SIDEWALK SECTION AT QUADRANT





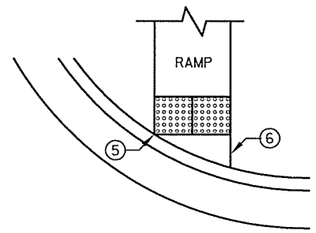
SECTION A-A
NOT TO SCALE



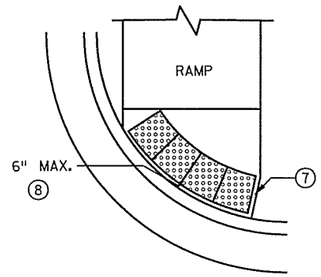
SNOW PLOW NOSE DETAIL

(SHALL BE USED ON DOWNSTREAM SIDE OF TRAFFIC)

SNOW PLOW NOSE SHALL BE PAID FOR AS 2' V-CURB AND 2' CURB AND GUTTER.



DETECTABLE WARNING SETBACK CRITERIA



RADIAL DETECTABLE WARNING AT RADIUS

DETECTABLE WARNING SHOULD BE PLACED AT AN UNIFORM OFFSET DISTANCE FROM 3" TO 6" FROM THE BACK OF CURB.

DETECTABLE WARNING PLACEMENT

NOTES:
SEE STANDARD PLATE 7038, SPECIAL PROVISIONS AND THIS SHEET FOR DETAILS ON DETECTABLE WARNING.

USE 6" CONCRETE WALK UP TO EXISTING SIDEWALK GRADES FOR ALL RAMP AND LANDING AREAS.

WHETHER A SURFACE IS WALKABLE OR NOT SHALL BE DETERMINED BY THE ENGINEER.

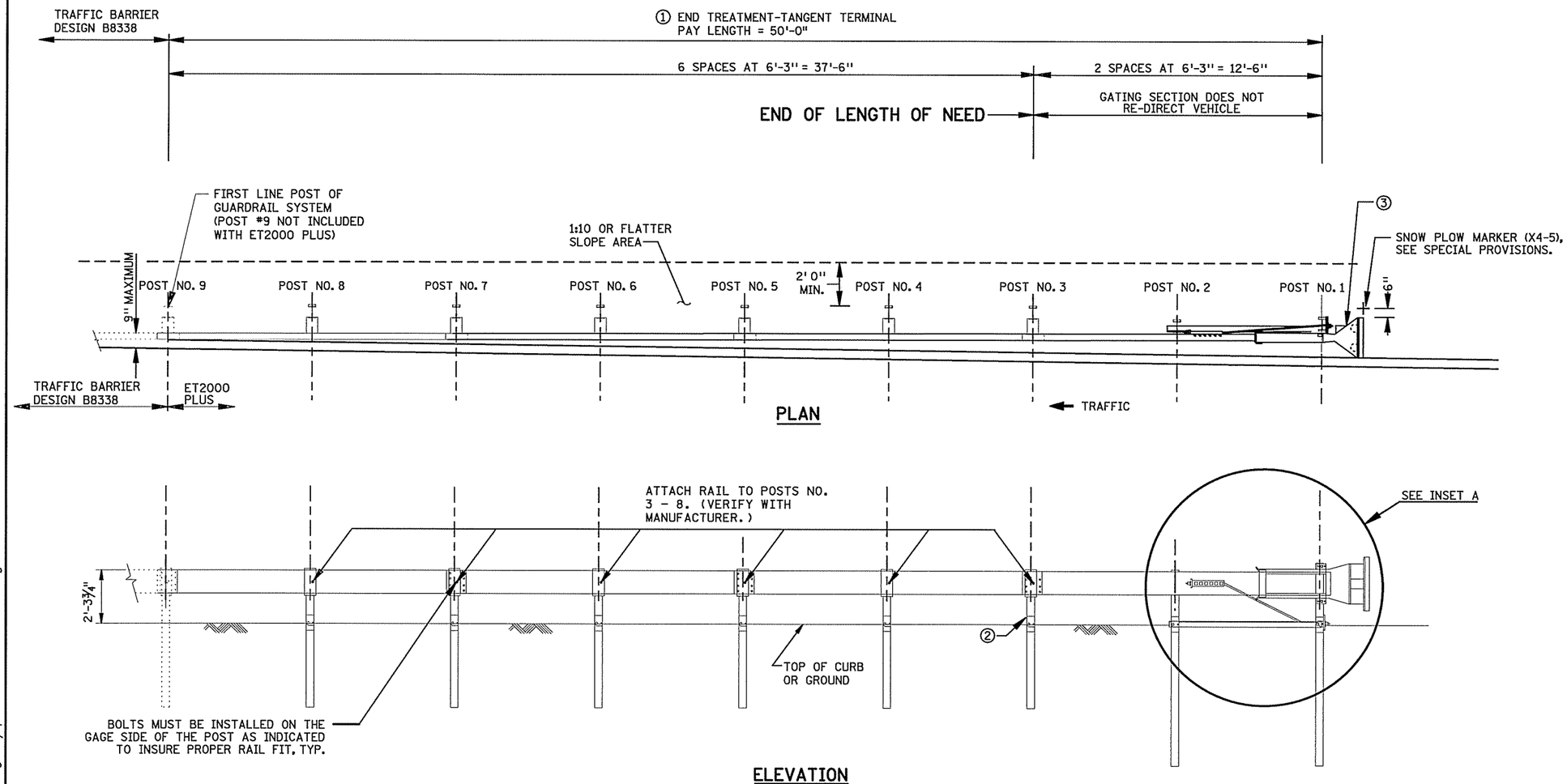
(1) 0" CURB HEIGHT.
(2) FULL CURB HEIGHT.
(3) SHALL BE 1:10 WHEN ADJACENT TO WALKABLE SURFACES & SHOULD BE 2' WHEN ADJACENT TO NON-WALKABLE SURFACES.
(4) IMMOVABLE OBJECT OR OBSTRUCTION.
(5) DETECTABLE WARNING SHALL HAVE ONE CORNER 3" FROM THE BACK OF CURB.
(6) SHALL BE 2' MAXIMUM OFFSET WHEN ADJACENT TO WALKABLE SURFACE AND 5' MAXIMUM OFFSET WHEN ADJACENT TO NON-WALKABLE SURFACE.
(7) CONCRETE EDGE SHALL BE CONSTRUCTED 3" PARALLEL TO THE DETECTABLE WARNING EDGE WHEN PLACED IN A RADIAL FASHION, WITHOUT FLARES.
(8) IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS DETECTABLE WARNING SHOULD BE PLACED 1' FROM THE EDGE OF ROADWAY TO PROVIDE CONCRETE BORDER.

CERTIFIED BY Timothy A. Chalfie LICENSED PROFESSIONAL ENGINEER LIC. NO. 15400

STANDARD SHEET NO. X-XXX.XXX (4 OF 5)
STANDARD APPROVED: NOT APPROVED

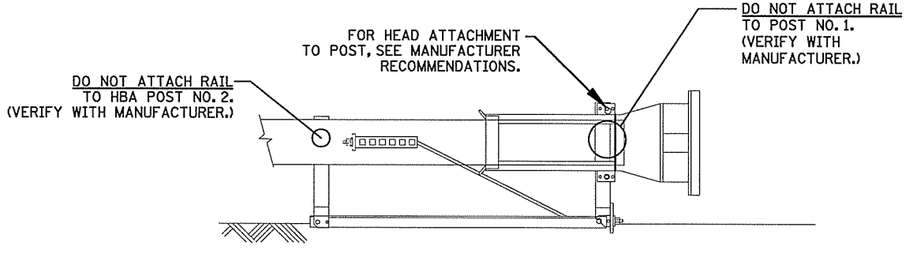
CURB RAMP CONCEPTS

STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 56 OF 393 SHEETS



PLAN

ELEVATION



INSET A

GENERAL NOTES:

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

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

THIS IS A PROPRIETARY ITEM AS PER SPEC. 1703.

NOTES:

① USE STEEL HINGED BREAKAWAY (HBA) POSTS OPTIONS ONLY ON POSTS 1-8.

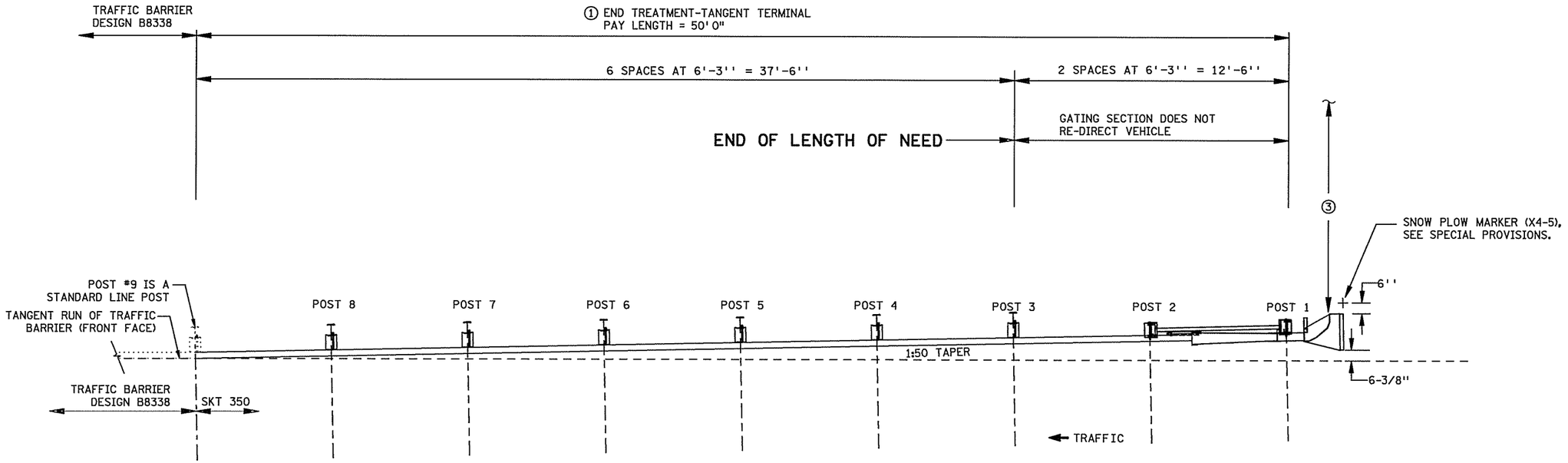
② THE NON-BREAKAWAY SECTION OF THE HBA POSTS SHALL NOT EXTEND MORE THAN 4" ABOVE THE FINISHED GROUND LINE.

③ THE RAIL IS DESIGNED TO EXIT THE TERMINAL HEAD ON THE BACK SIDE OF THE GUARDRAIL INSTALLATION.

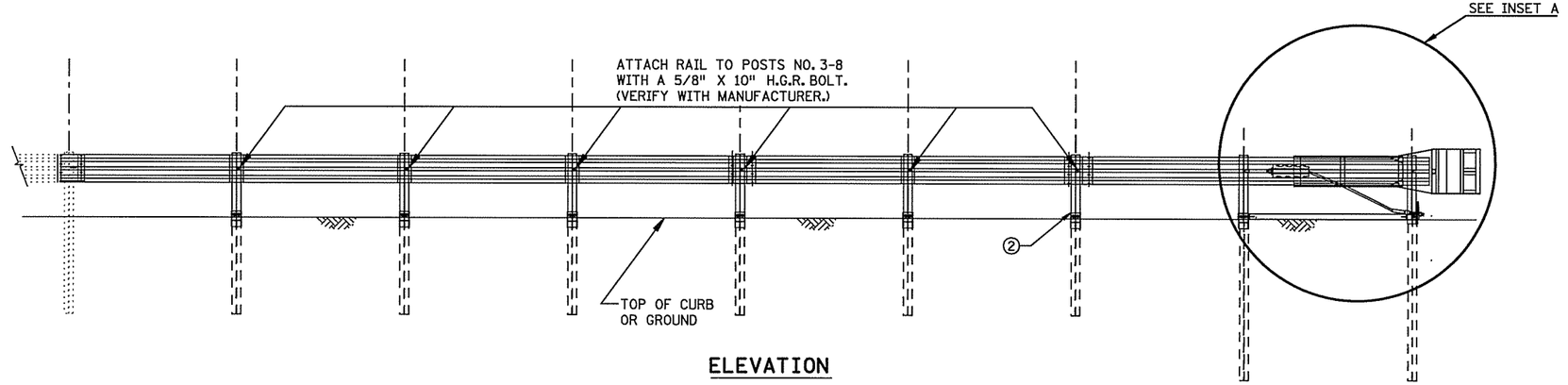
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METRO DESIGN DETAIL
REVISED DATE: 2/25/11

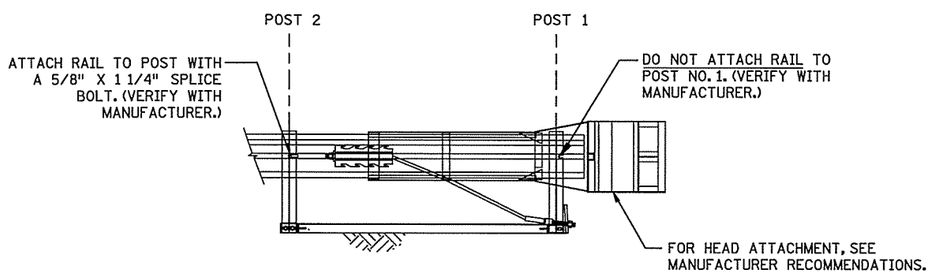
END TREATMENT – TANGENT TERMINAL
ET-2000 PLUS HBA POST OPTION



PLAN



ELEVATION



INSET A

GENERAL NOTES:

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

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

THIS IS A PROPRIETARY ITEM AS PER SPEC. 1703.

NOTES:

① USE STEEL HINGED BREAKAWAY (HBA) POSTS OPTIONS ONLY ON POSTS 1-8.

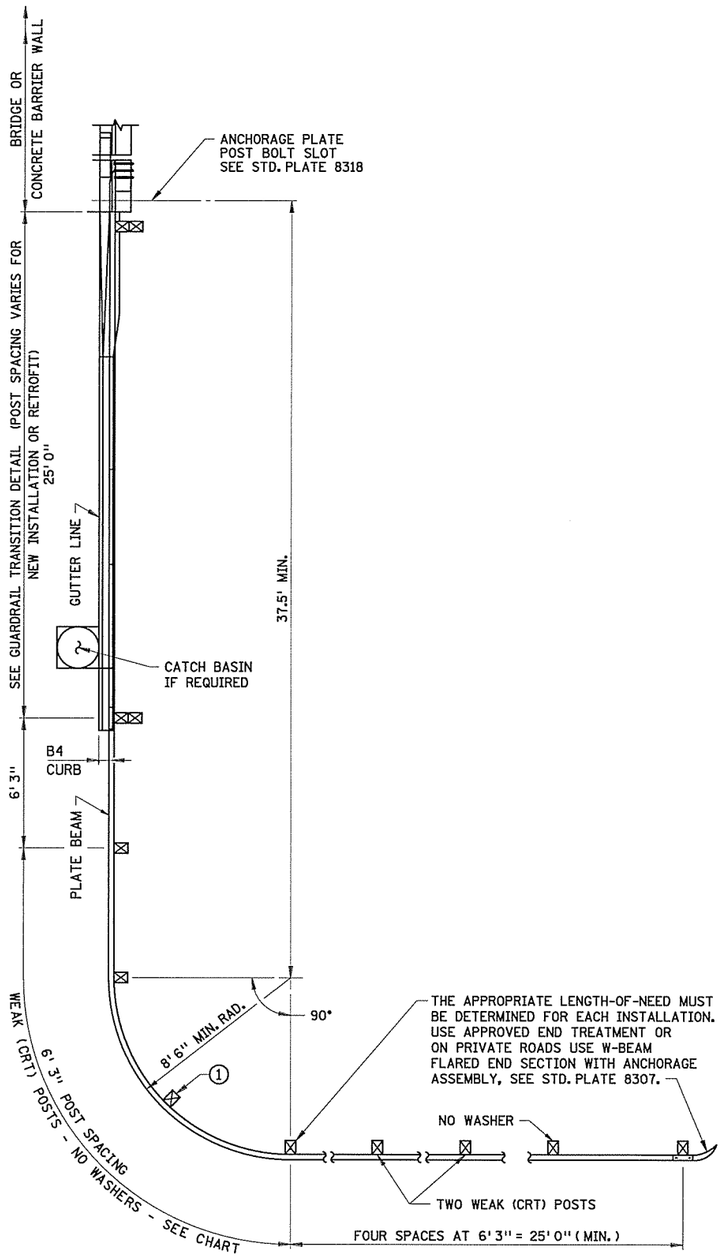
② THE NON-BREAKAWAY SECTION OF THE HBA POSTS SHALL NOT EXTEND MORE THAN 4" ABOVE THE FINISHED GROUND LINE.

③ THE TRAFFIC BARRIER IS DESIGNED TO EXIT THE TERMINAL HEAD ON THE BACK SIDE OF THE INSTALLATION. A SPECIAL SITE EVALUATION SHOULD BE CONSIDERED PRIOR TO USING THE SKT WHERE THERE IS LESS THAN 25' BETWEEN THE BACK SIDE OF THE SKT AND ANY ADJACENT DRIVING LANE.

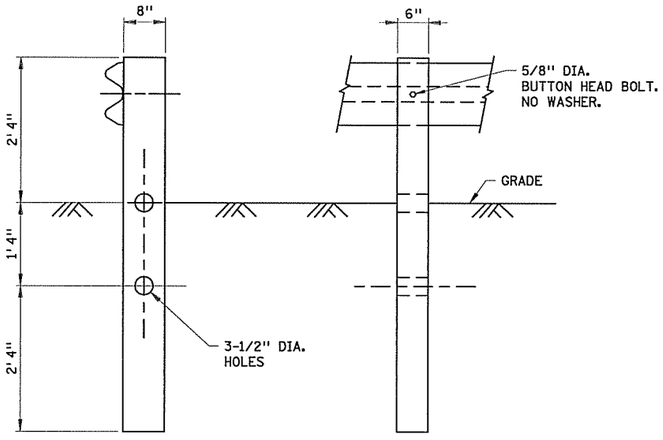
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METRO DESIGN DETAIL
REVISED DATE: 2/25/11

END TREATMENT – TANGENT TERMINAL SKT-350 HBA POST OPTION



PLAN



CONTROLLED RELEASING TERMINAL
WEAK (CRT) POST

NUMBER OF WEAK (CRT) POSTS AND GUARDRAIL RADIUS

NO. OF POSTS	APPROXIMATE RADIUS
4	8'-6" (1)
5	12'-0"
6	16'-0"
7	20'-0"
8	24'-0"
9	28'-0"

(1) NO BOLT ON CENTER POST.

GENERAL NOTES:

ALL POSTS SHALL BE STEEL.

ALL WEAK (CRT) POSTS SHALL BE BOLTED HINGED POSTS (STEEL PLUG WELDED POSTS MAY BE USED AS AN OPTION).

SEE SPEC. 2554.

NOT NCHRP 350 APPROVED

CERTIFIED BY Timothy A. Chalfant LICENSED PROFESSIONAL ENGINEER LICENSE NO. 15400 DATE FEB. 15, 2012

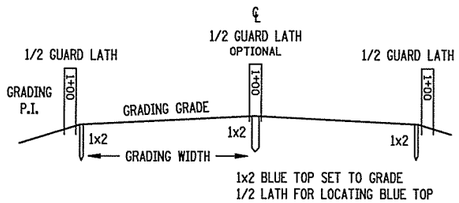
SHORT RADIUS GUARDRAIL FOR INTERSECTING ROADWAYS

STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 56C OF 393 SHEETS

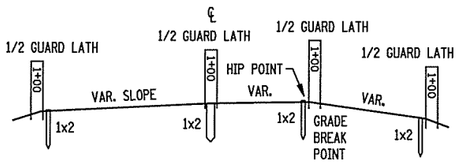
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BLUE TOPS

NORMAL SECTION

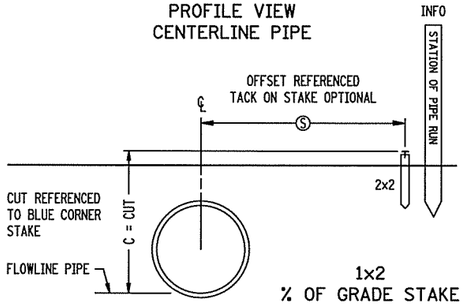


TRANSITION SECTION

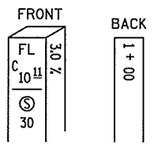


PIPE STAKING

PROFILE VIEW CENTERLINE PIPE

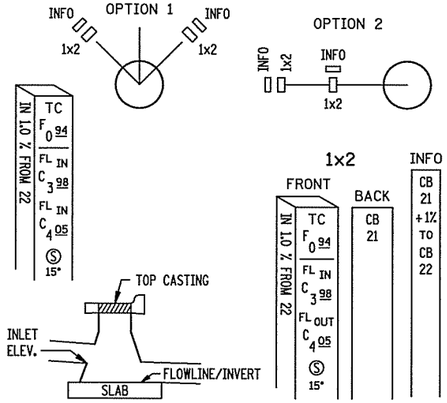


1x2 % OF GRADE STAKE



CATCH BASIN OR MANHOLE (CB/MH)

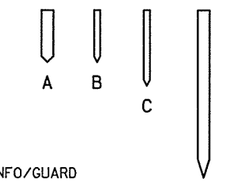
TOP VIEWS



FLOWLINE/INVERT + 0.7'

STANDARD STAKES

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



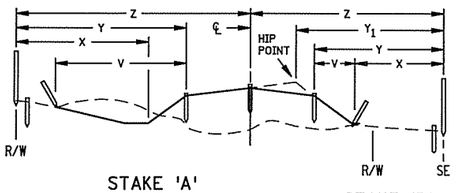
SIZES:
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

ABBREVIATIONS

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

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'A'



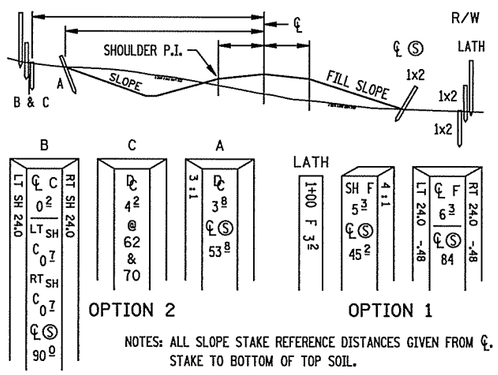
STAKE 'A'
FULL LATH AND HUB-STATION
DIST. TO ℄ WITH CUT/FILL TO ℄ (Z)
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y) (Y1)
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
OFFSET TO SAFTY SLOPE
OFFSET TO HIP POINT

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

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

SLOPE STAKES

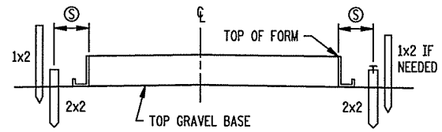
SINGLE ROADWAY - EXAMPLE 'B'



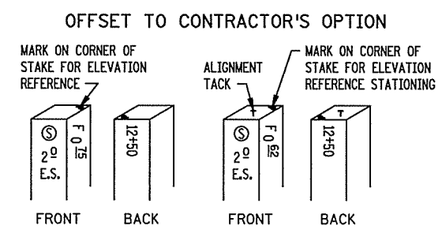
NOTES: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM ℄. STAKE TO BOTTOM OF TOP SOIL.

KEY STAKES: BLUE TOP SET AT R/W BOUNDRY LT. & RT. MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION



NOTE INFORMATION ON STAKE IF NECESSARY

RECOMMENDED STAKING INTERVALS

FIGURE A

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

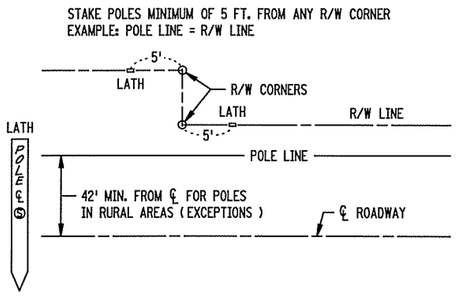
STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
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

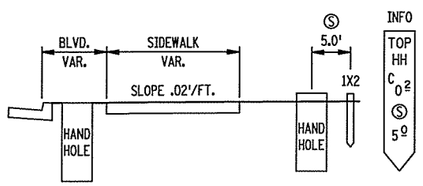
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

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

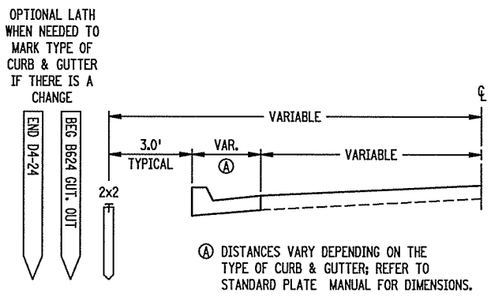


PULL BOX OR HAND HOLE

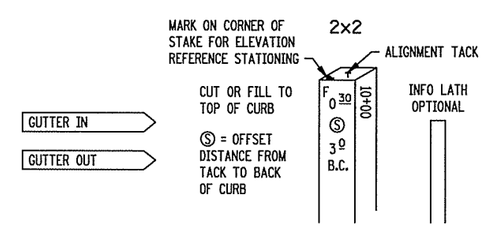


CURB & GUTTER (CURB)

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

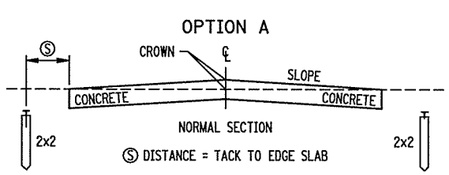


Ⓐ DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.



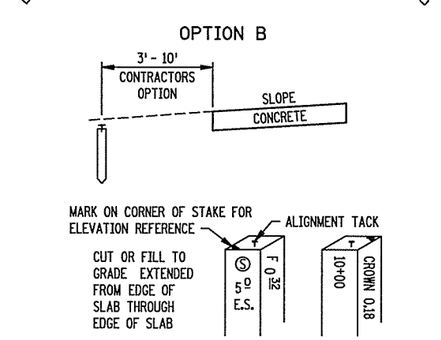
CONCRETE PAVING - SLIP FORM

OPTION A



Ⓢ DISTANCE = TACK TO EDGE SLAB

OPTION B



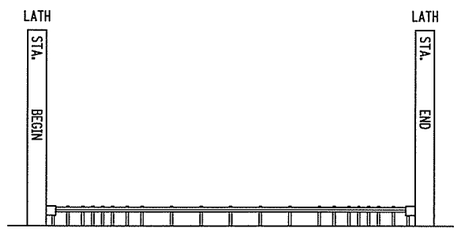
DISCLAIMER

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

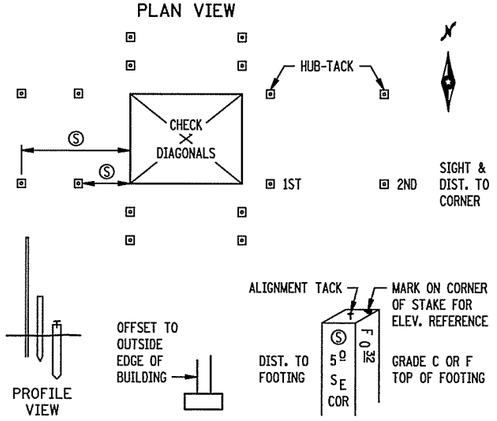
STANDARD SHEET NO. 5-297.115 (1 OF 2)	TITLE: STAKING INFORMATION SHEET
STANDARD APPROVED: DECEMBER 21, 1994	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 57 OF 393 SHEETS

DATE: 1/26/2012 TIME: 8:14:15 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cd1901168_sli5_1_spn.dgn

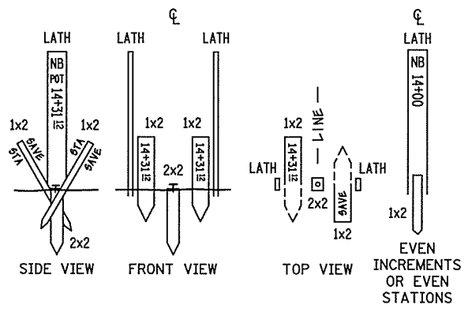
GUARDRAIL (GUARD)



BUILDING (BUILD) FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



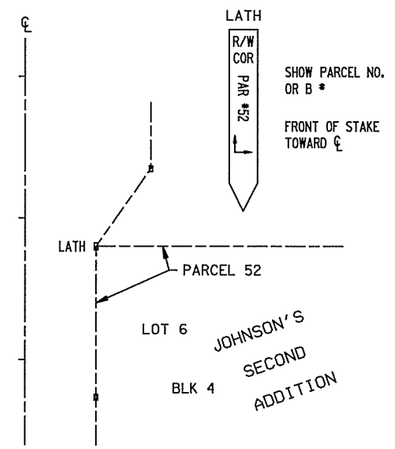
STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

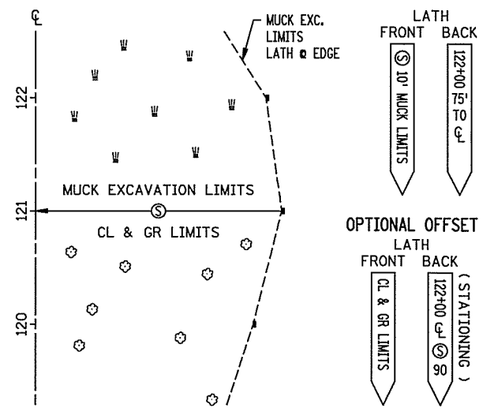
TACK SET AT ALIGNMENT POINTS.

STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

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

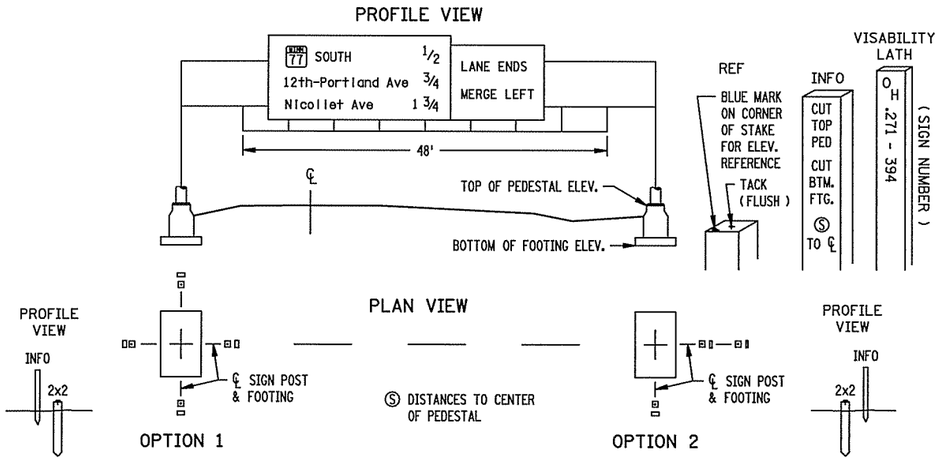


CLEAR & GRUBBING LIMITS (CLEAR) OR MUCK EXCAVATION LIMITS (MUCK)

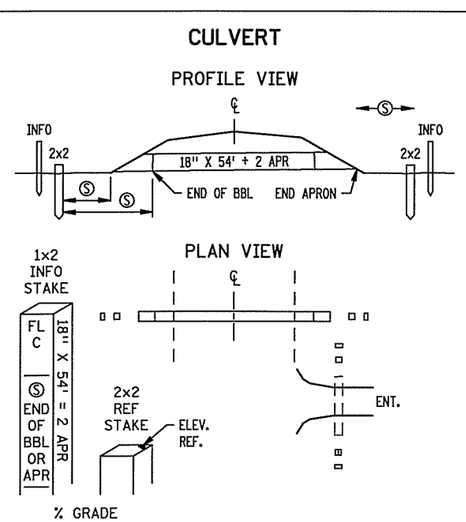


NOTE: FRONT OF LATH GOES TOWARD ℄

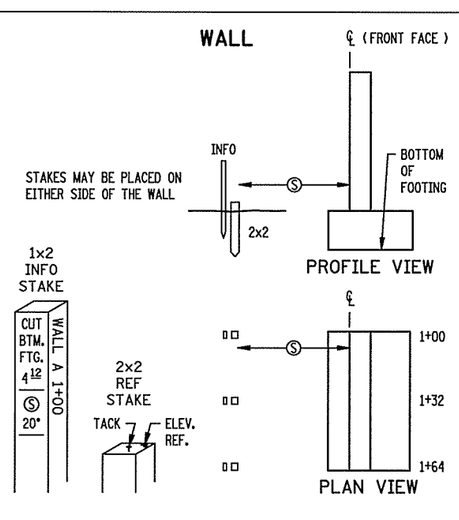
OVERHEAD SIGNS (SIGN)



CULVERT

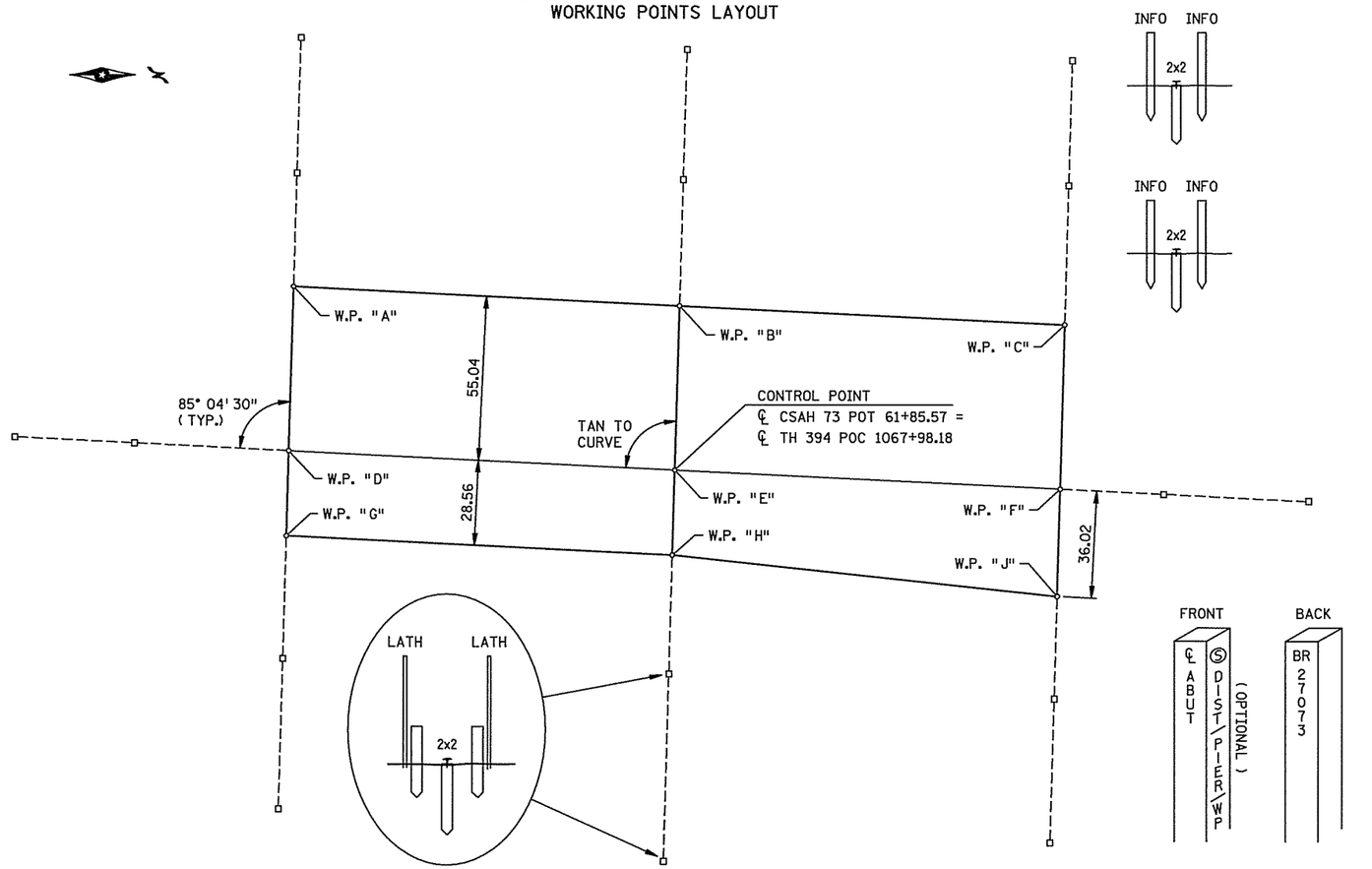


WALL



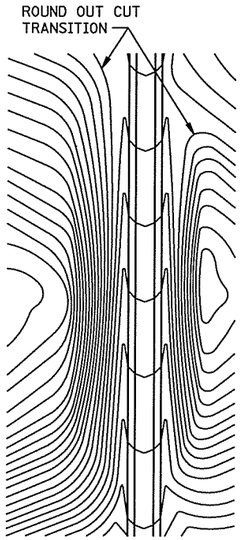
BRIDGESTAKING (BRIDGE)

WORKING POINTS LAYOUT

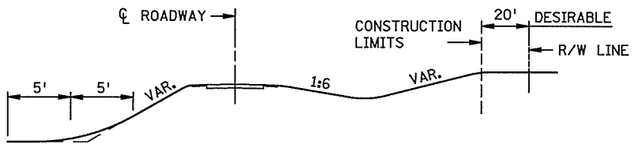


STANDARD SHEET NO. 5-297.115 (2 OF 2)	TITLE: STAKING INFORMATION SHEET
STANDARD APPROVED: DECEMBER 21, 1994	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 58 OF 393 SHEETS

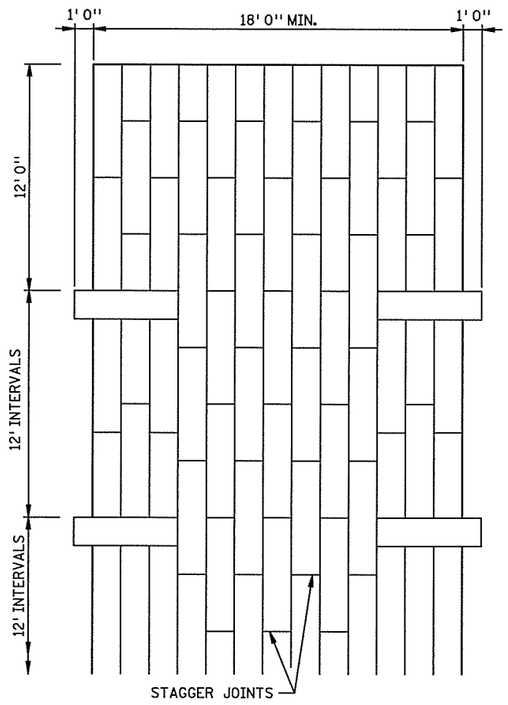
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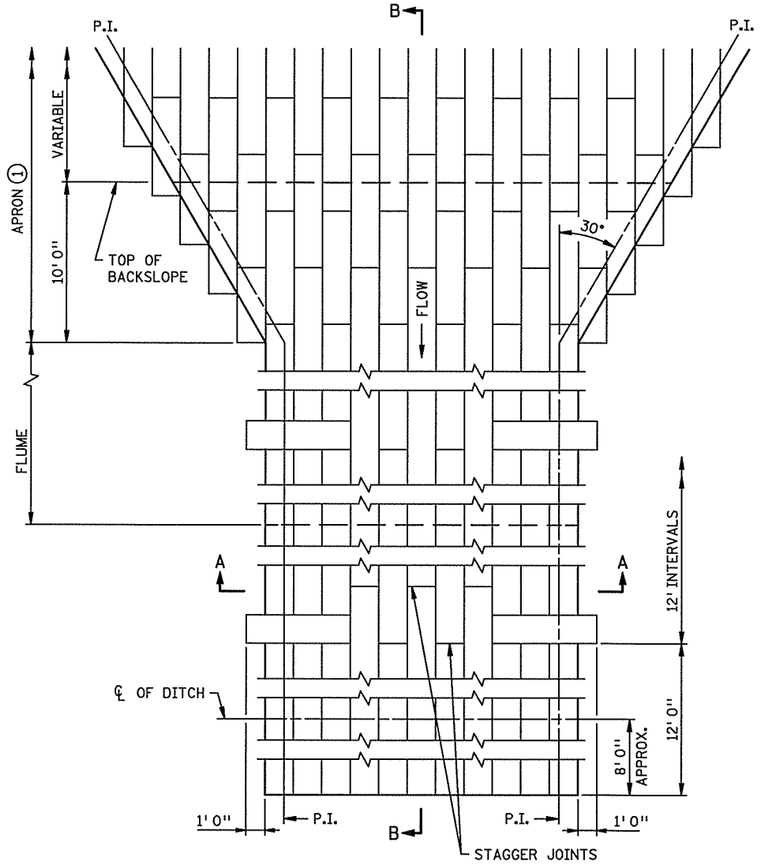
CONTOURING ROAD CUTS



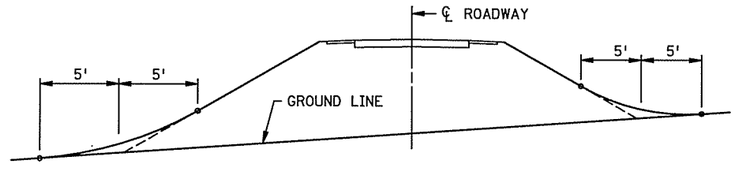
ROUNDING SHOULDERS AND BACKSLOPES



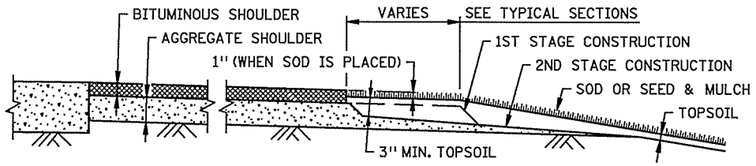
PLAN VIEW



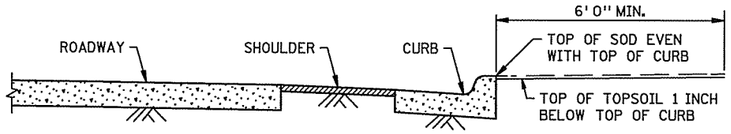
PLAN VIEW



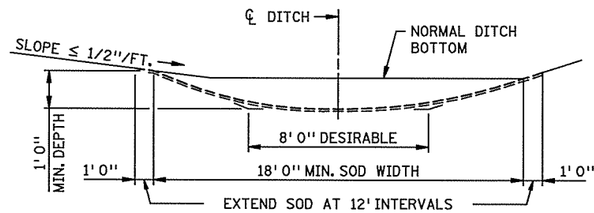
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



SHAPING AND TOPSOILING INSLOPES

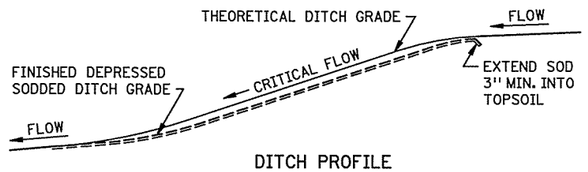


SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



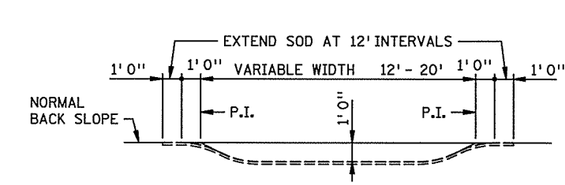
SODDED DITCH CROSS SECTION

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

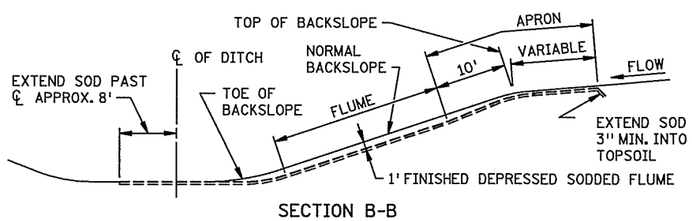


DITCH PROFILE

SODDED DITCH DETAILS



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

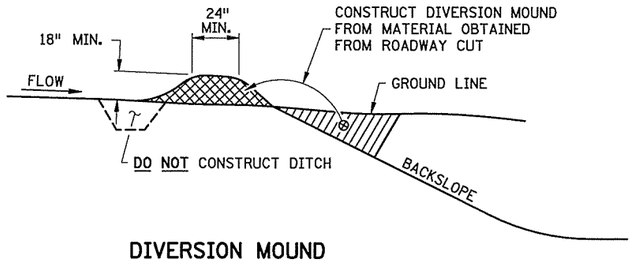
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

STANDARD SHEET NO. 5-297.404	TITLE: PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD APPROVED: NOVEMBER 20, 2002	

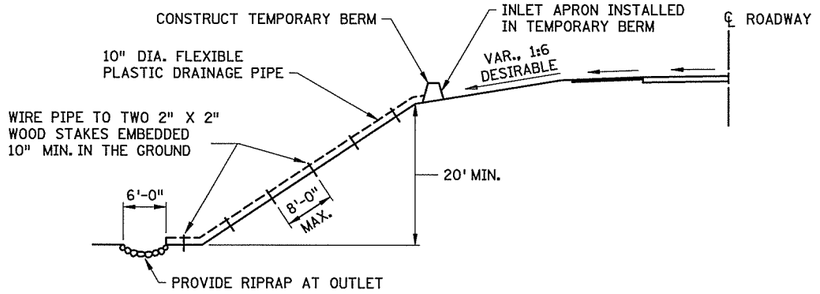
STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 59 OF 393 SHEETS

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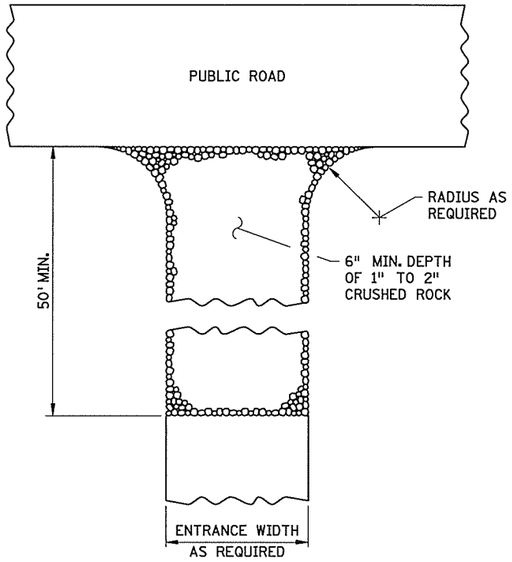
DIVERSION MOUND

DESIGN GUIDELINES:
STORM FREQUENCY: 10 YEAR - 24 HOUR
MAXIMUM DRAINAGE AREA: 5 ACRES
MAXIMUM DIVERSION: GRADE 5%

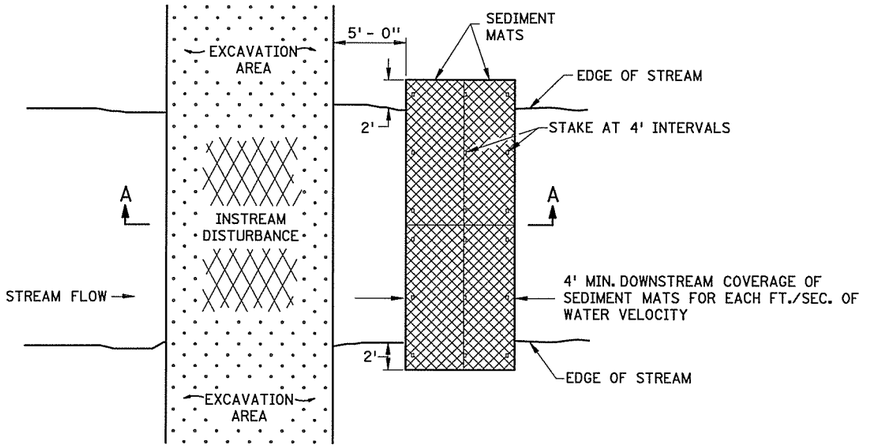


TEMPORARY DOWN DRAIN ON FILL SLOPE

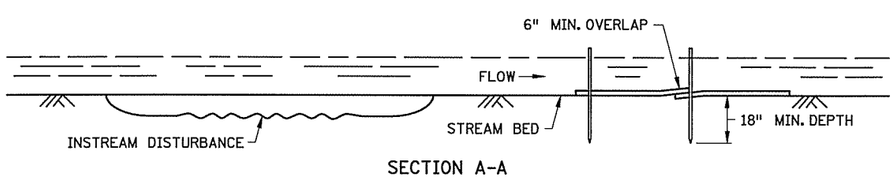
DESIGN GUIDELINES:
STORM FREQUENCY: 2 YEAR - 24 HOUR
MAXIMUM DRAINAGE AREA: 3 ACRES



ROCK CONSTRUCTION ENTRANCE ①



PLAN VIEW

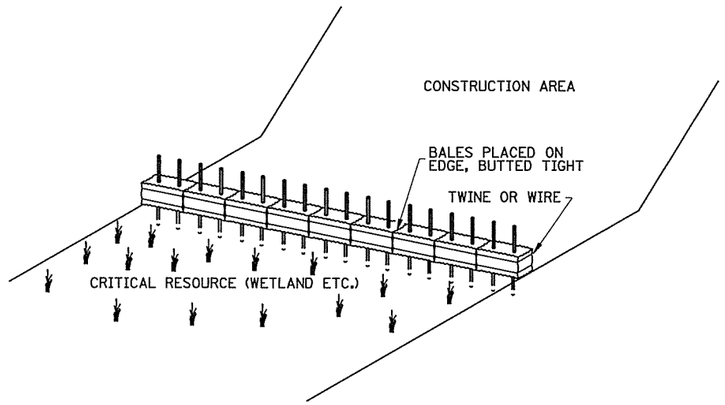


SECTION A-A

SEDIMENT MAT ⑥

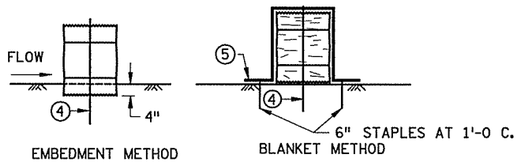
TYPICAL STREAM BED INSTALLATION

DESIGN GUIDELINES:
MAXIMUM FLOW VELOCITY: 5 FT./SEC.
MAXIMUM FLOW DEPTH: 2 FT.



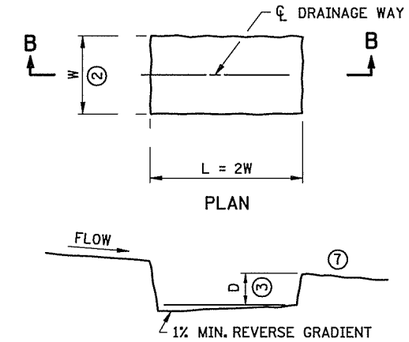
BALE BARRIERS

TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS



BALE BARRIER DETAIL

APPROX. BALE SIZE: 14" X 18" X 36" LONG



SECTION B-B

SEDIMENT TRAP DETAIL

NOTES:

SEE SPECS. 2573, 3892, & 3894.

① ROCKS AT ENTRANCE CLEAN WORKSITE MUD OFF OF TRUCK TIRES BEFORE TRUCKS ENTER MAIN ROAD. KEEPING MUD OFF THE ROAD WILL PREVENT AUTO DAMAGE AND KEEP CONSTRUCTION SEDIMENT OUT OF DRAINAGE SYSTEMS AND WETLANDS. GEOTEXTILE MAY BE PLACED UNDER THE ROCK TO KEEP ROCKS SEPARATE FROM SOIL.

② W = 10 FT. MIN., 20 FT. MAX.

③ D = 2 FT.

④ TWO 2 IN. X 2 IN. WOOD STAKES OR REINFORCING BARS IN EACH BALE EMBEDDED 10 INCHES MINIMUM IN THE GROUND.

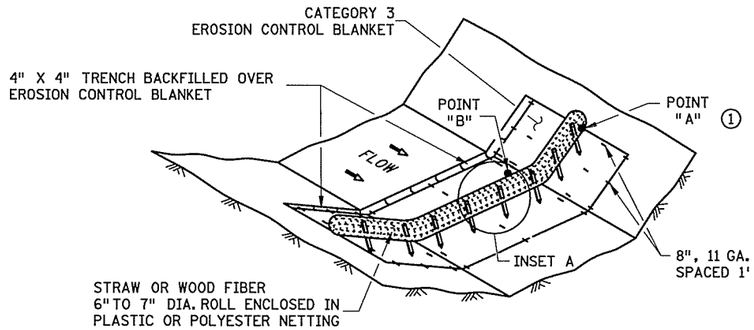
⑤ PLACE A CATEGORY 3 EROSION CONTROL BLANKET, 6 FT. WIDE MINIMUM, OVER THE BALE INSTEAD OF TRENCHING.

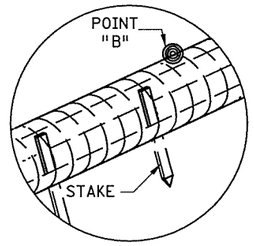
⑥ THIS DETAIL MAY NOT BE ACCEPTABLE FOR WORK ON PUBLIC WATERS, SEE GENERAL PUBLIC WATERS PERMIT (GP) 2004-0001.

⑦ LOCATION OF DOWNSTREAM TEMPORARY SEDIMENT CONTROL DEVICE.

STANDARD SHEET NO.	TITLE:
5-297.405 (2 of 4)	TEMPORARY SEDIMENT CONTROL
STANDARD APPROVED: SEPTEMBER 27, 2006	MISCELLANEOUS DETAILS

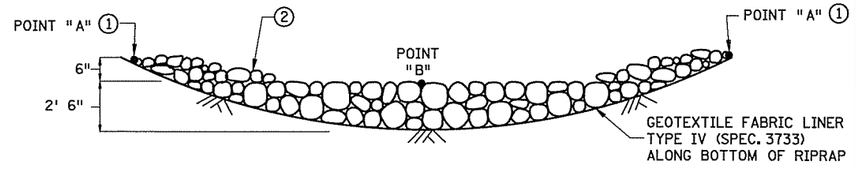
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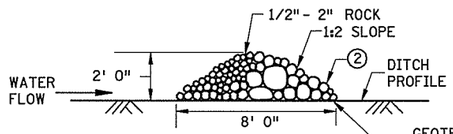


INSET A

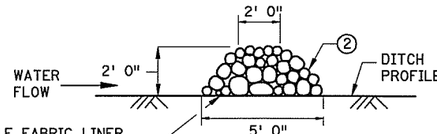
TYPE 3: BIOROLL BLANKET SYSTEM DITCH CHECK



CROSS SECTION (ROCK WEEPER AND ROCK CHECK)



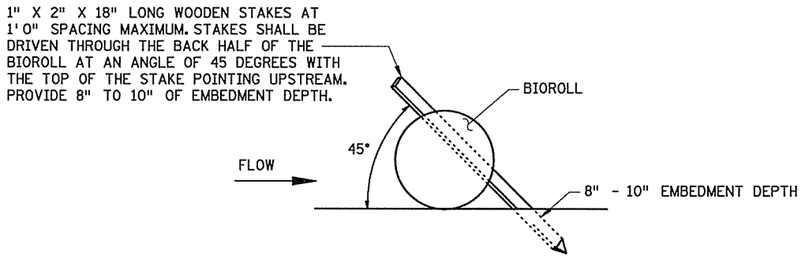
TYPE 5: ROCK WEEPER
PROFILE VIEW ③



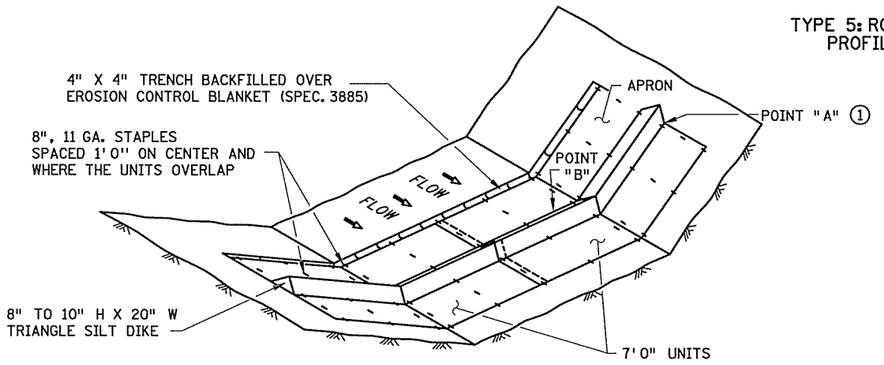
TYPE 7: ROCK CHECK
PROFILE VIEW

TYPE 5: ROCK WEEPER AND TYPE 7: ROCK CHECK DITCH CHECKS ④

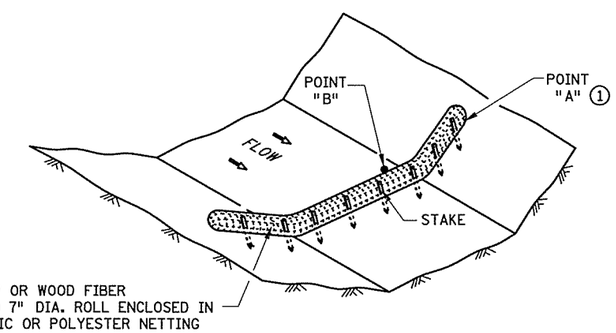
USE ON ROUGH GRADED AREAS



BIOROLL STAKING DETAIL

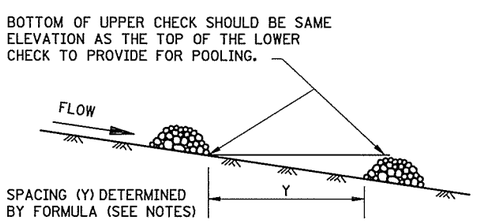


TYPE 6: GEOTEXTILE TRIANGULAR DIKE DITCH CHECK

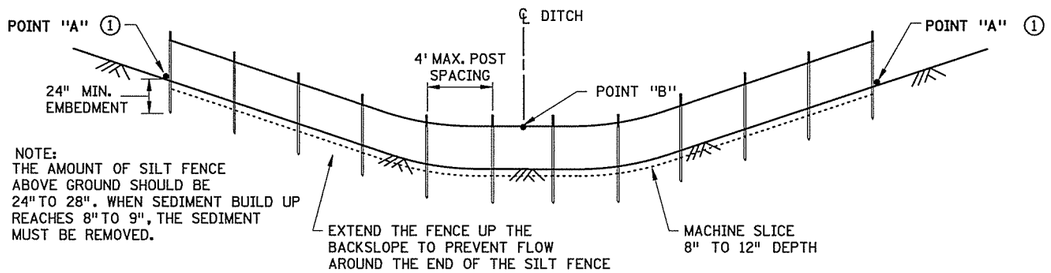


TYPE 2: BIOROLL DITCH CHECK

USE ON ROUGH GRADED AREAS



DITCH CHECK SPACING ④



TYPE 1: SLICED IN SILT FENCE DITCH CHECK

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

NOTES:

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

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.

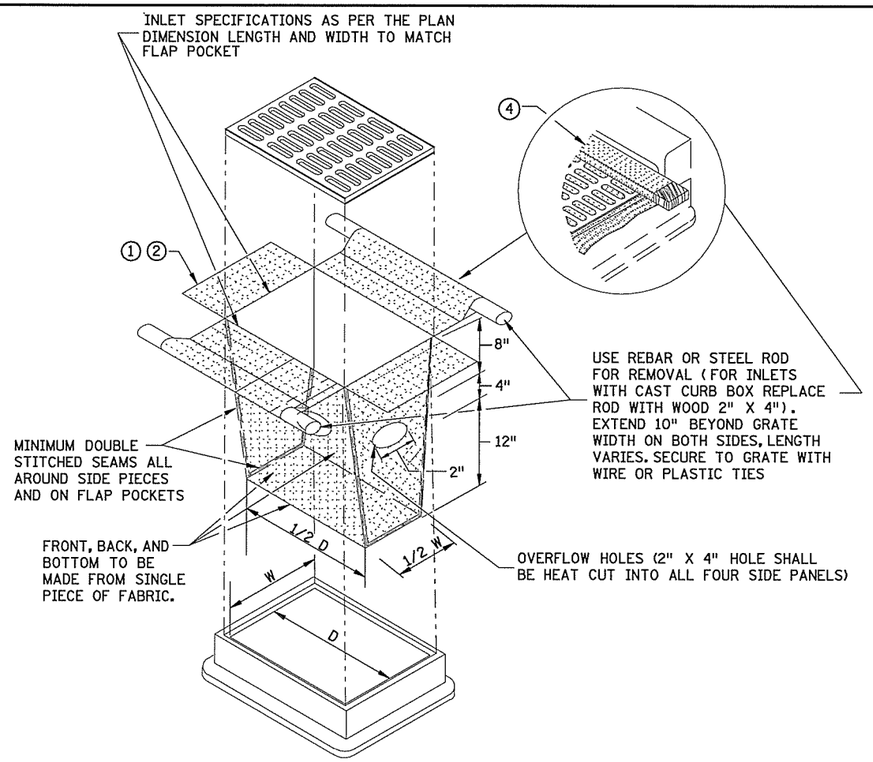
② CLASS I - IV RIPRAP (SPEC. 3601) WITH GEOTEXTILE FABRIC LINER, TYPE IV (SPEC. 3733).

③ THE ROCK WEEPER FILTERS SEDIMENT OUT OF THE WATER BETTER THAN THE OTHER DITCH CHECKS. THE ROCK WEEPER COULD BE USED AS A PERMANENT WATER FILTERING FEATURE.

④ PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE WILL NEED TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

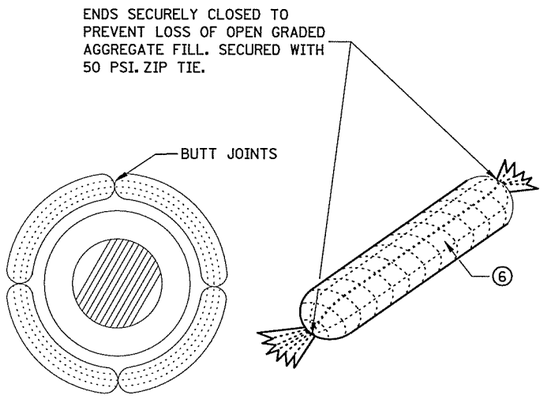
STANDARD SHEET NO. 5-297.405 (3 OF 4)	TEMPORARY SEDIMENT CONTROL
STANDARD APPROVED: SEPTEMBER 27, 2006	DITCH CHECK/BARRIER
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 61 OF 393 SHEETS

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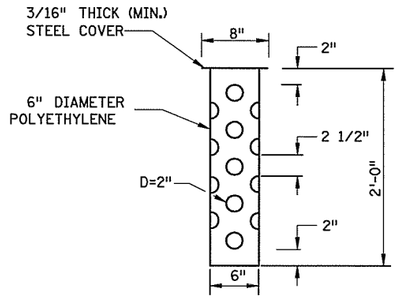


FILTER BAG INSERT ③

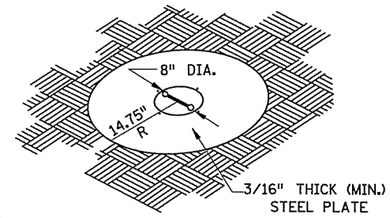
(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)



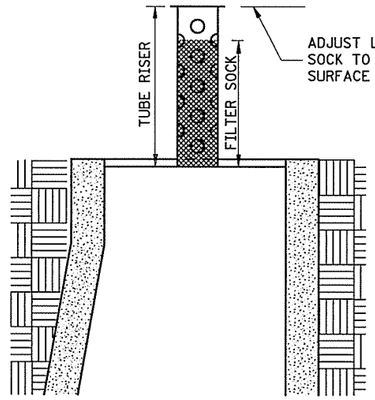
ROCK LOG/COMPOST LOG



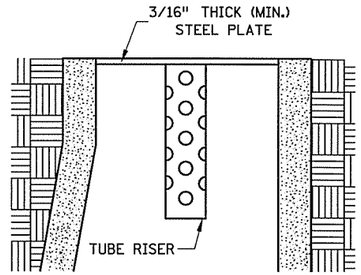
TUBE RISER



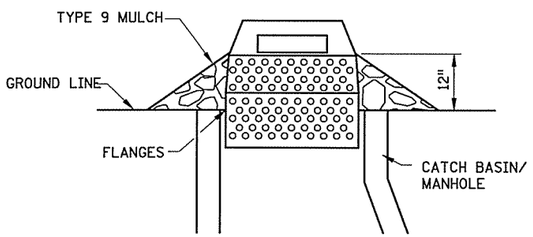
PERSPECTIVE VIEW



SECTION
(UP POSITION)

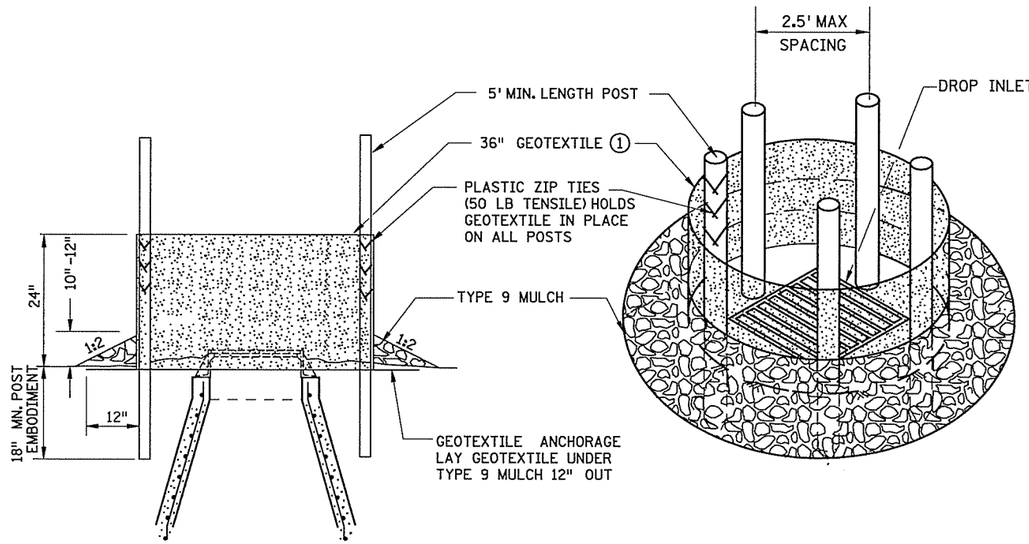


SECTION
(DOWN POSITION)



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.



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

POP-UP HEAD

NOTES:

SEE SPECS. 2573, 3137, 3886 & 3891.

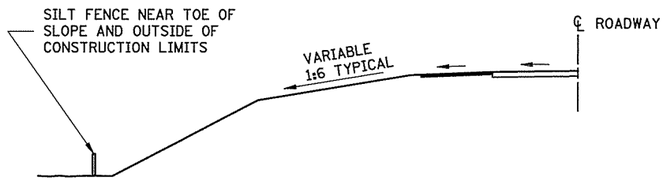
MANUFACTURED ALTERNATIVES LISTED ON Mn/DOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED.

1. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
2. FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
3. INSTALLATION NOTES:
   DO NOT INSTALL FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH 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.

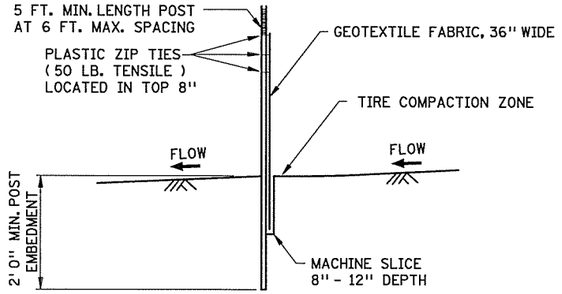
STANDARD SHEET NO.	TITLE:
5-297.405 (4 OF 4)	TEMPORARY SEDIMENT CONTROL
STANDARD APPROVED: SEPTEMBER 27, 2006	STORM DRAIN INLET PROTECTION

STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 62 OF 393 SHEETS

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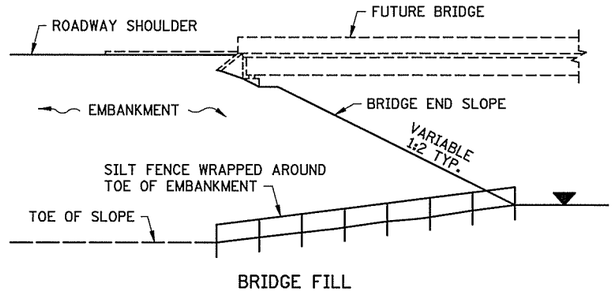


LOCATION OF SILT FENCE AT TOE OF ROADWAY EMBANKMENT



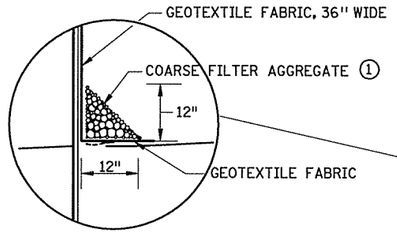
SILT FENCE, MACHINE SLICED

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.

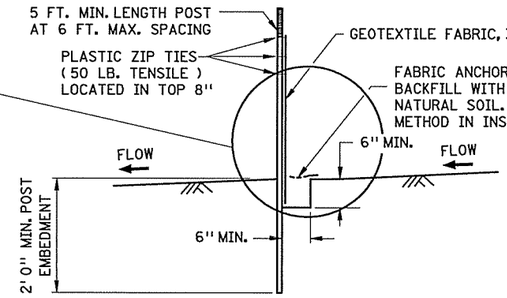


BRIDGE FILL

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

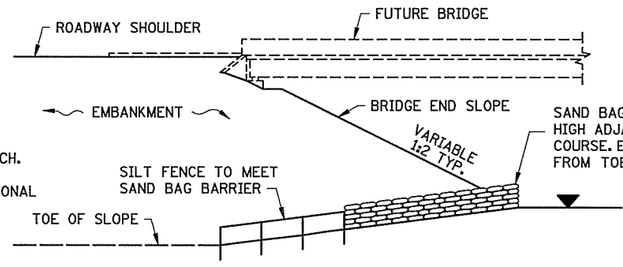


OPTIONAL METHOD
FOR SILT FENCE, HEAVY DUTY



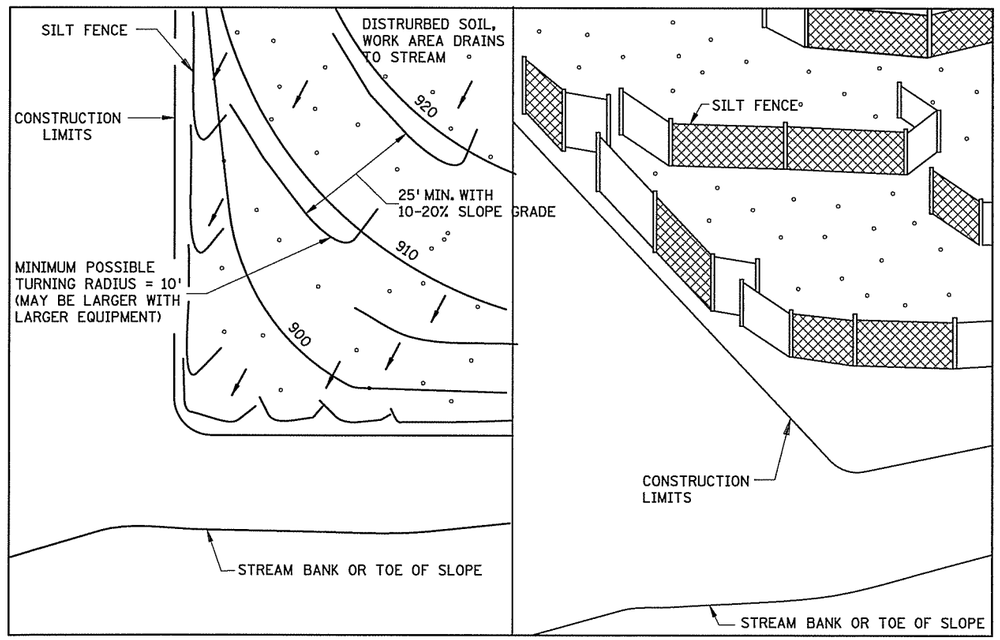
SILT FENCE, HEAVY DUTY
(HAND INSTALLED)

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



BRIDGE FILL

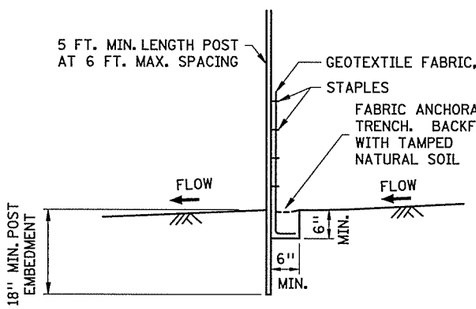
DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1 ACRE



PLAN VIEW

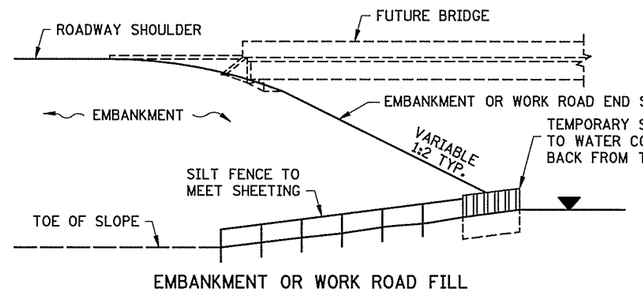
SIDE VIEW

SILT FENCE, J-HOOK INSTALLATION



SILT FENCE, PREASSEMBLED

DESIGN GUIDELINES:
TO PROTECT AREAS FROM SHEET FLOW.
MAXIMUM CONTRIBUTING AREA: 1 ACRE.



EMBANKMENT OR WORK ROAD FILL

DESIGN GUIDELINES:
WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES

SILT FENCE AT BRIDGE EMBANKMENT ADJACENT TO WATER

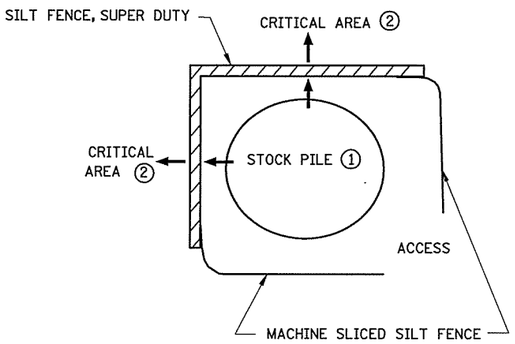
NOTES:

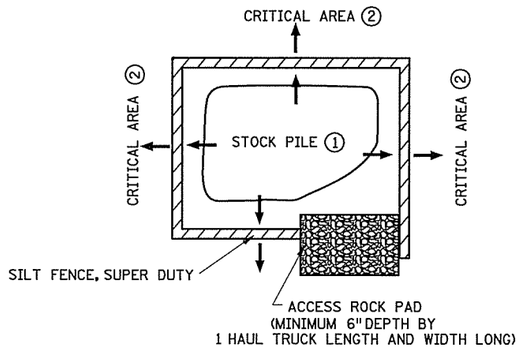
SEE SPECS. 2573, 3149 & 3886.

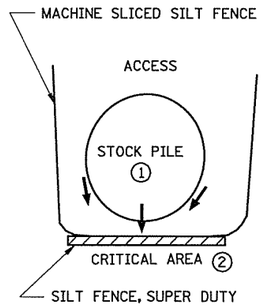
(1) COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

STANDARD SHEET NO. 5-297.408 (1 OF 2)	TITLE: TEMPORARY SEDIMENT CONTROL SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 63 OF 393 SHEETS

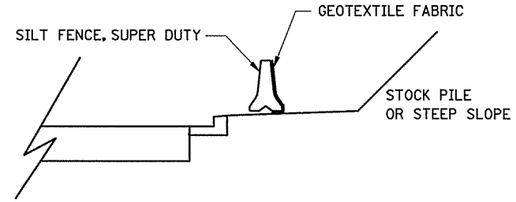
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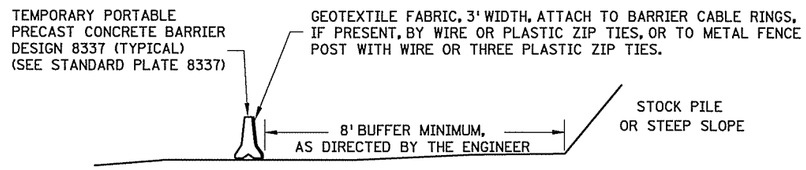




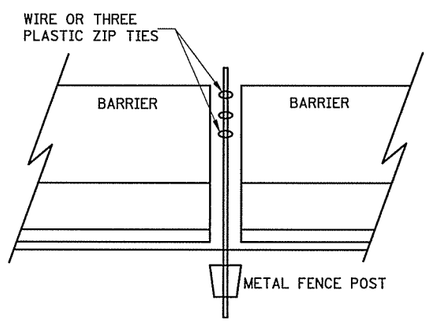
SILT FENCE, SUPER DUTY
STOCK PILE CONTAINMENT



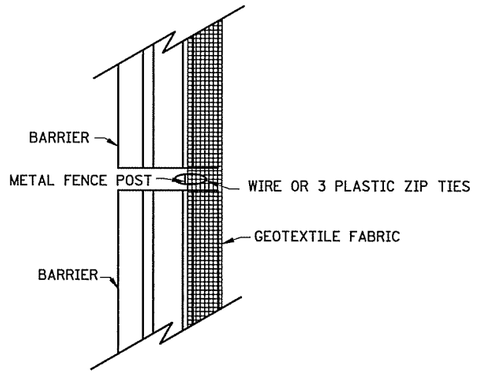
SILT FENCE, SUPER DUTY
CURB AND GUTTER PROTECTION SYSTEM



SILT FENCE, SUPER DUTY
STOCKPILE SEDIMENT CONTROL

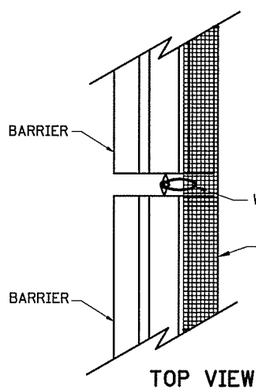


SIDE VIEW

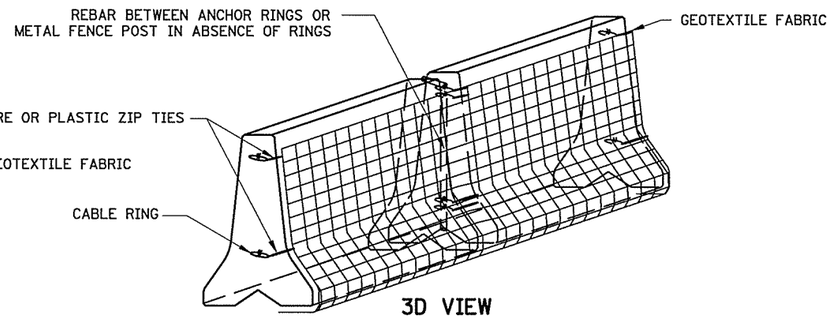


TOP VIEW

BARRIER WITHOUT CABLE RINGS

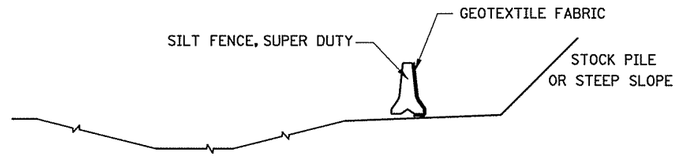


TOP VIEW



3D VIEW

BARRIER WITH CABLE RINGS
SILT FENCE, SUPER DUTY



SILT FENCE, SUPER DUTY
DITCH PROTECTION SYSTEM

NOTES:

SEE SPECS. 2533, 2573 & 3886.

PLACE SUPER DUTY SILT FENCE ALONG A CONSTANT ELEVATION.

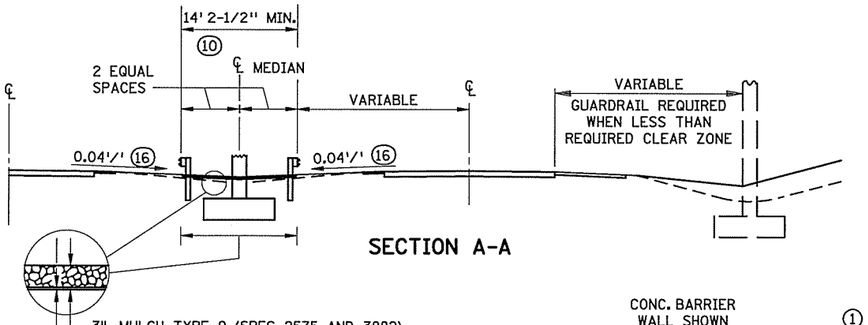
SUPER DUTY SILT FENCE CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

(1) PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, THE SUPER DUTY SILT FENCE IS TO BE USED AS SHOWN OR AS DIRECTED BY THE ENGINEER.

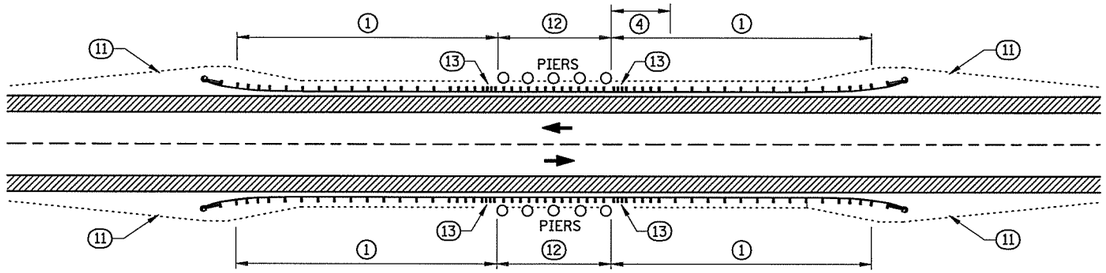
(2) CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

STANDARD SHEET NO. 5-297.408 (2 of 2)	TITLE: TEMPORARY SEDIMENT CONTROL SUPER DUTY SILT FENCE
STANDARD APPROVED: SEPTEMBER 27, 2006	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 64 OF 393 SHEETS

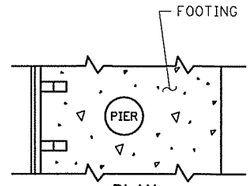
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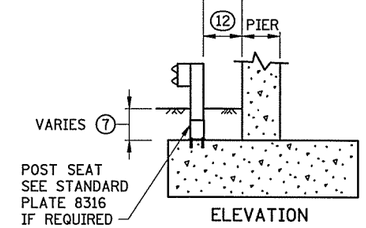
SECTION A-A



TWO-WAY UNDERPASS



PLAN

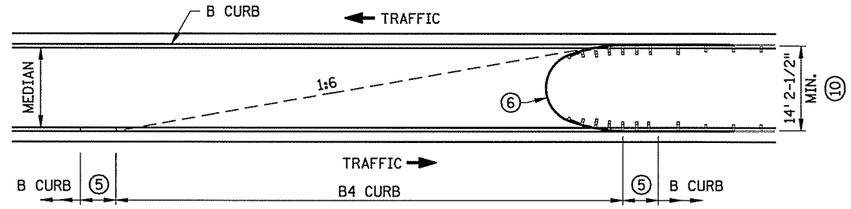


ELEVATION

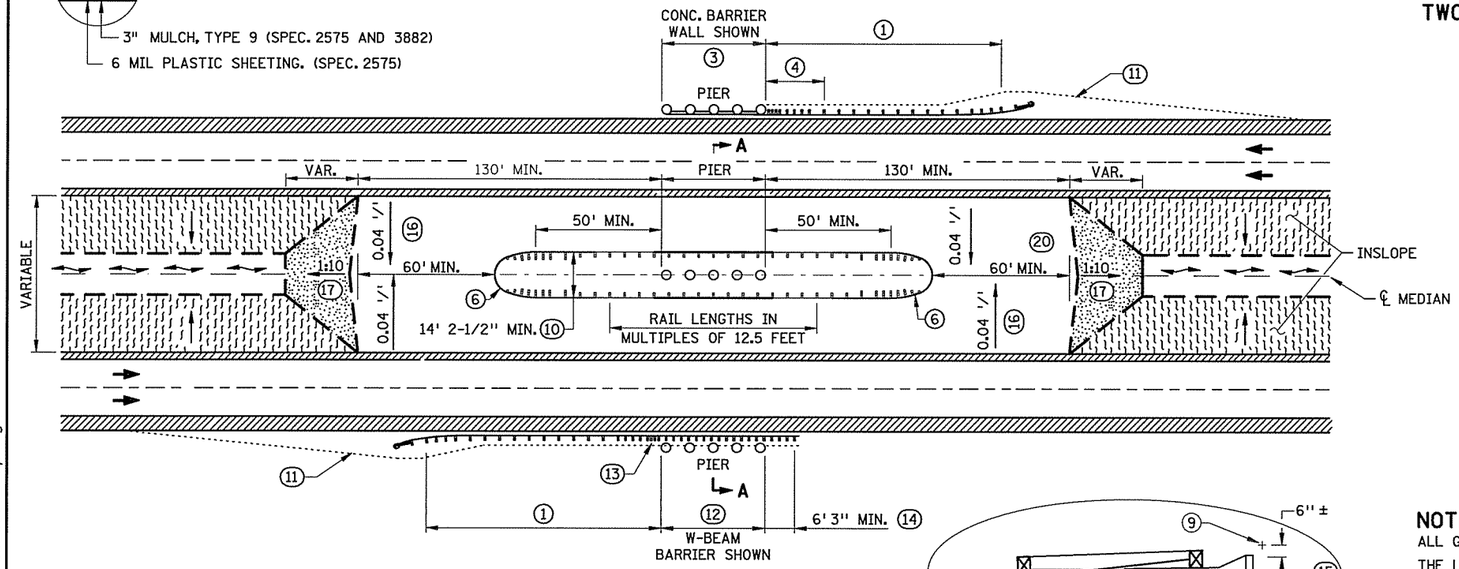
POST REQUIREMENTS AT PIERS

ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL

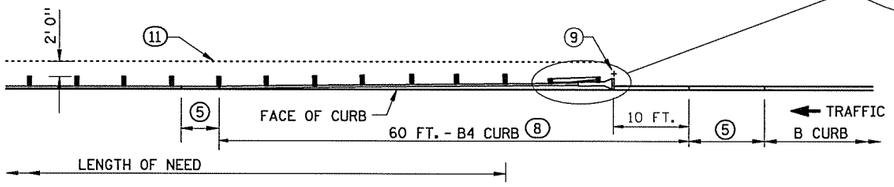
6' 3" POST SPACING	3' 0"
6' 3" POST SPACING WITH DOUBLE NESTED RAIL	2' 8"
MODIFIED 3' 1-1/2" POST SPACING	2' 3"
MODIFIED POST SPACING WITH DOUBLE NESTED RAIL	2' 0"



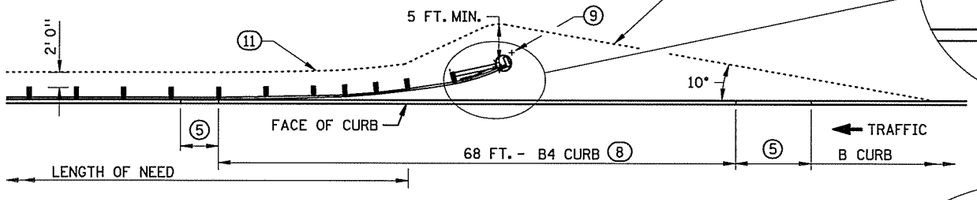
MODIFIED CURB AT RAISED MEDIAN



UNDERPASS-DEPRESSED MEDIAN (19)

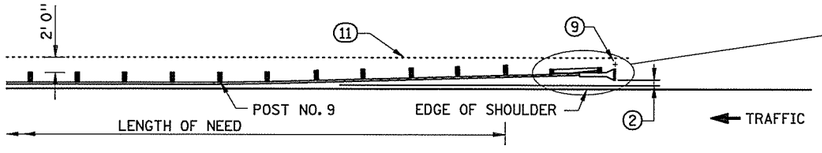


PLAN VIEW MODIFIED CURB (18)

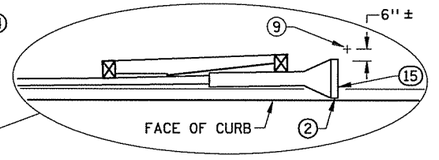


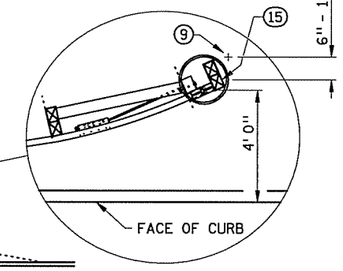
PLAN VIEW MODIFIED CURB AND SLOPE (18)

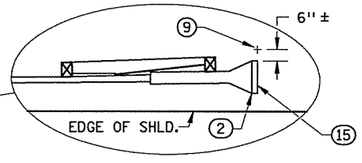
(NON-PROPRIETARY TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW NO CURB (18)







NOTES:

ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.

THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.

(1) FOR REQUIRED LENGTH OF INSTALLATION SEE ROAD DESIGN MANUAL CHAPTER 10.

(2) THE LAST 50 FT. OF TANGENT TERMINALS MAY BE FLARED AT 1:50 TAPER.

(3) CONC. BARRIER WALL BETWEEN PIER COLUMNS MAY BE USED. IF USED, SEE BARRIER WALL DETAILS.

(4) AN APPROVED TRANSITION MUST BE USED.

(5) 10 FT. CURB TRANSITION. USE IF ADJACENT CURB IS GREATER THAN 4 INCHES.

(6) THRIE BEAM BULLNOSE. SEE SHEET NOS. 69 THRU 71 FOR DETAILS.

(7) IF EMBEDMENT IS GREATER THAN 3 FT. 0 IN., OR IF EMBEDMENT IS 2 FT. 6 IN. TO 3 FT. 0 IN. AND ADJACENT POSTS ARE EMBEDDED 3 FT. 0 IN. OR MORE, POST SEAT IS NOT REQUIRED.

(8) FOR CURB 6 IN. OR HIGHER, MILL TO 3 IN. HEIGHT.

(9) SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 3401) DRIVEN INTO THE GROUND. EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

(10) MEASUREMENT IS FROM BACK OF RAIL TO BACK OF RAIL.

(11) 1:10 OR FLATTER SLOPE P.I.

(12) SEE ESTIMATED DESIGN DEFLECTION TABLE FOR DESIGN B W-BEAM GUARDRAIL.

(13) WHEN CLOSE POST SPACING OR DOUBLE NESTED RAIL IS USED, THIS POST SPACING SHOULD EXTEND A MINIMUM OF 12 FT. IN THE DIRECTION OF APPROACHING TRAFFIC.

(14) THE ANCHOR ASSEMBLY MUST BE LOCATED DOWNSTREAM OF THE HAZARD.

(15) MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING) STRIPES SLOPED DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.

(16) 0.04 FT./FT. CROSS SLOPE TYPICAL. 0.10 FT./FT. CROSS SLOPE MAXIMUM.

(17) 1:10 SLOPE OR FLATTER.

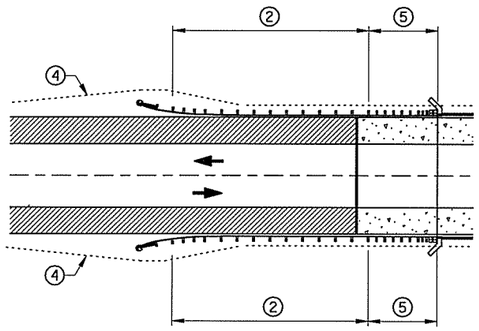
(18) USE ONLY FOR RETROFITS WITH SITE RESTRICTIONS. FOR RETROFITS WITHOUT SITE RESTRICTIONS AND NEW CONSTRUCTION, SEE SHEET 3.

(19) MEDIAN GRADING DETAIL SHOWN APPLIES TO THRIE-BEAM BULLNOSE ONLY.

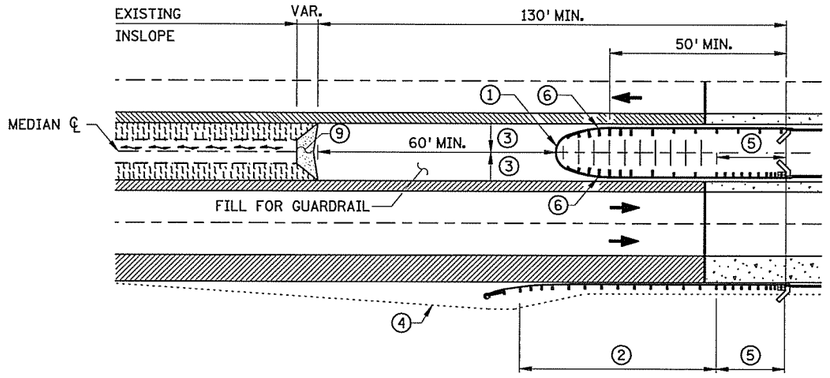
(20) DRAINAGE DETAILS SHOWN ON GRADING PLAN.

STANDARD SHEET NO. 5-297.601 (1 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 65 OF 393 SHEETS

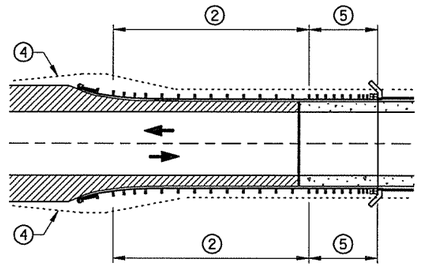
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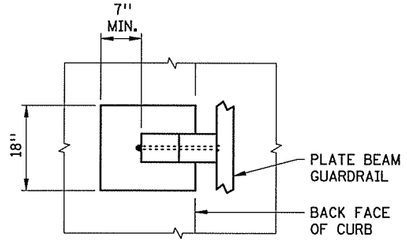
TWO - WAY BRIDGE
WITH FULL SHOULDERS



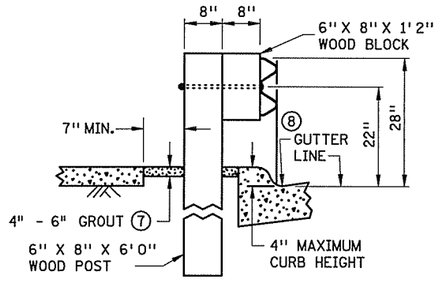
ONE - WAY BRIDGE
WITH FULL RIGHT SHOULDER
(FOR 14' 2-1/2" THRIE BEAM BULLNOSE)



TWO - WAY BRIDGE
WITHOUT FULL SHOULDERS

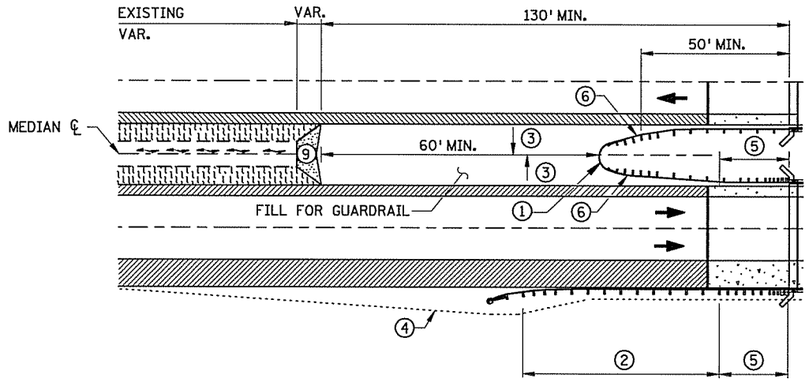


PLAN VIEW



ELEVATION

TYPICAL W-BEAM GUARDRAIL SECTION
AT POST SET IN CONCRETE



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

NOTES:

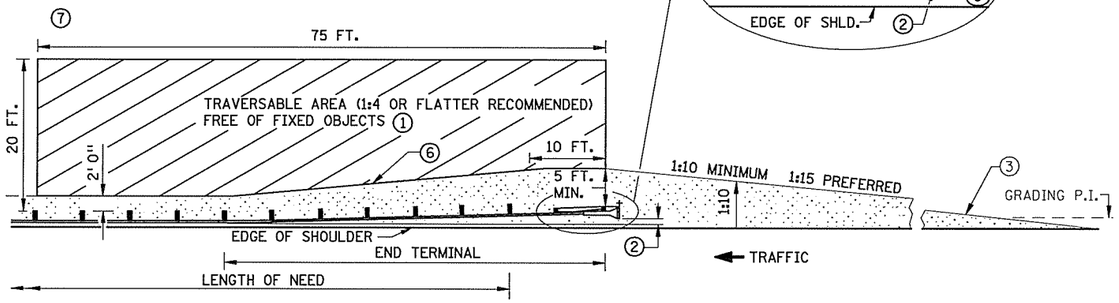
ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.

THE LATEST APPROVED VERSION OF STANDARD PLATES SHOWN OR AS INDICATED IN THE PLANS SHALL APPLY.

1. THRIE BEAM BULLNOSE, SEE SHEET NOS. 69 THRU 71 FOR DETAILS.
2. FOR THE REQUIRED LENGTH SEE ROAD DESIGN MANUAL CHAPTER 10.
3. 0.04 FT./FT. CROSS SLOPE TYPICAL, 0.10 FT./FT. CROSS SLOPE MAXIMUM.
4. 1:10 OR FLATTER SLOPE P.I.. APPROACH GRADING VARIES WITH TERMINAL TYPE.
5. PLATE BEAM GUARDRAIL ATTACHMENTS TO FIXED OBJECTS REQUIRE AN APPROVED TRANSITION SECTION.
6. FOR MEDIANS WIDER THAN THE 14 FT. 2-1/2 IN., BEFORE TAPERING THE APPROACH SIDE, TAPER THE OPPOSING SIDE AS SHOWN ON THE BULLNOSE DESIGN DETAIL. APPROACH TAPER SHOULD NOT EXCEED 1:25 IF THE BARRIER IS WITHIN THE SHY LINE OR 1:15 IF IT IS OUTSIDE.
7. GROUT MIX (BY VOLUME: 1 PART CEMENT [TYPE 1A], 14 PARTS SAND, 5 PARTS WATER).
8. PLACE FRONT FACE OF W-BEAM DIRECTLY ABOVE FRONT FACE OF CURB.
9. 1:10 SLOPE OR FLATTER.

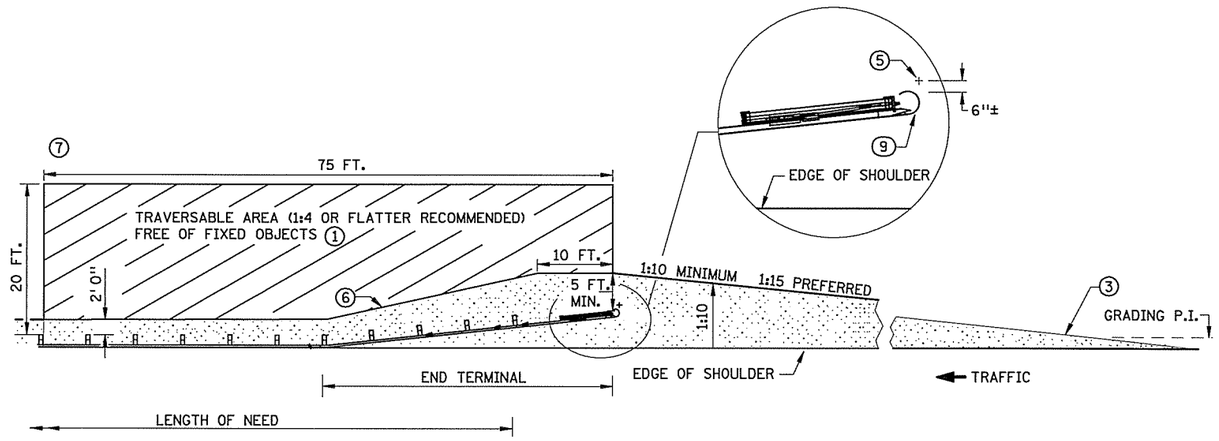
STANDARD SHEET NO.	TITLE:
5-297.601 (2 OF 3)	GUARDRAIL INSTALLATIONS AT MEDIANS AND END TREATMENTS
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 66 OF 393 SHEETS

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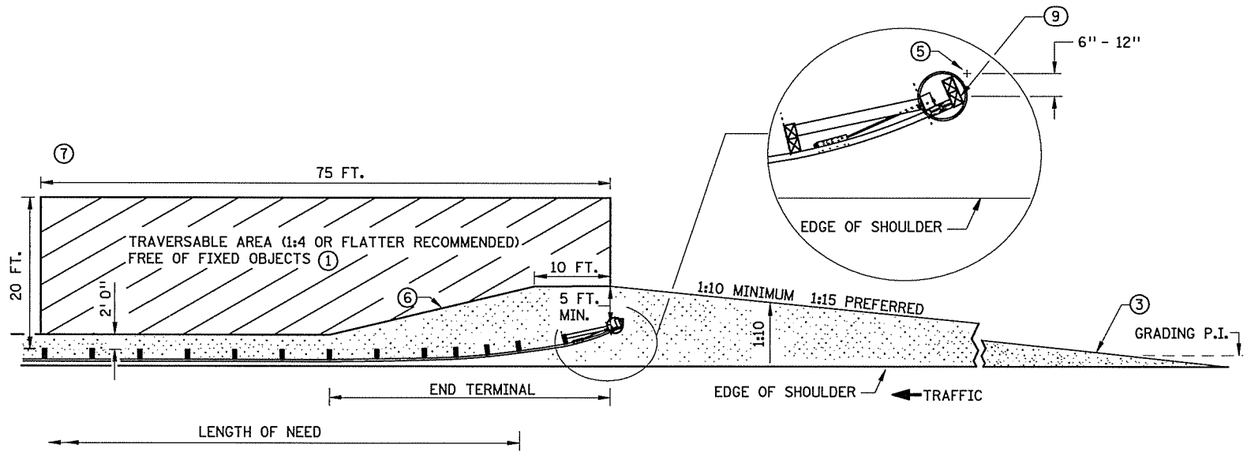
PLAN VIEW

(PROPRIETARY TANGENT TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ⑧

(PROPRIETARY FLARED TERMINAL SHOWN AS EXAMPLE)



PLAN VIEW ④ ⑧

(ELT)

NOTES:

ALL CROSS SLOPES ARE IN FOOT/FOOT UNLESS OTHERWISE NOTED.

ALL GUARDRAIL POSTS SHALL BE 6 FT. 3 IN. CENTER TO CENTER (DESIGN B), EXCEPT WHERE NOTED.

CHANGES (TO SUBJECTS COVERED BY THIS SHEET) INDICATED IN THE PLANS OR ON PLATES WITH MORE RECENT APPROVAL DATES SHALL APPLY.

GRADING AND DRAINAGE HARDWARE ARE NOT INCIDENTAL TO GUARDRAIL INSTALLATION.

① SLOPES BETWEEN 1:3 AND 1:4 PERMITTED WHEN 1:4 OR FLATTER IS NOT POSSIBLE. FOR SLOPES STEEPER THAN 1:3 THE AREA IMMEDIATELY BEHIND AND BEYOND THE END TERMINAL SHOULD, AT LEAST, BE SIMILAR IN CROSS SECTION TO THE UNSHIELDED ROADSIDE AREA UPSTREAM OF THE END TERMINAL.

② THE LAST 50 FT. OF TANGENT TERMINALS CAN BE FLARED AT 1:50 TAPER.

③ WHEN GRADING PLATFORMS ARE BUILT, THEY MUST BE SMOOTHLY TRANSITIONED TO EXISTING SIDE SLOPE SO THE ENTIRE ROADSIDE APPROACH TO THE BARRIER REMAINS TRAVERSABLE, AS WELL AS THE AREA IMMEDIATELY BEHIND IT.

④ SEE STANDARD PLATE 8329.

⑤ SNOWPLOW MARKER (X4-5) WITH A 2 LB./FT. DELINEATOR POST 8 FT. LONG (SPEC. 3401) DRIVEN INTO THE GROUND. EXTEND 3 FT. ABOVE TERMINAL. THE MARKER IS INCIDENTAL FOR WHICH NO DIRECT PAYMENT WILL BE MADE. MARK BOTH THE BEGINNING AND END OF PLATE BEAM GUARDRAIL INSTALLATION.

⑥ 1:10 OR FLATTER SLOPE P.I.

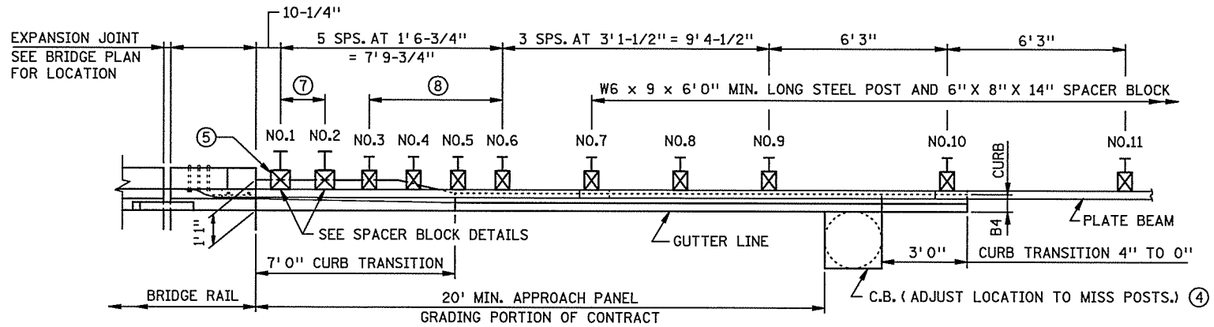
⑦ GRADUALLY BLEND SLOPE FROM TRAVERSABLE AREA TO STEEP EXISTING SLOPE (WHEN SLOPE IS STEEPER THAN 1:6).

⑧ IF THE TERRAIN BEYOND THE TERMINAL END AND IMMEDIATELY BEHIND THE BARRIER IS NOT SAFELY TRAVERSABLE, A TANGENT (ENERGY- ABSORBING) TERMINAL SHALL BE USED.

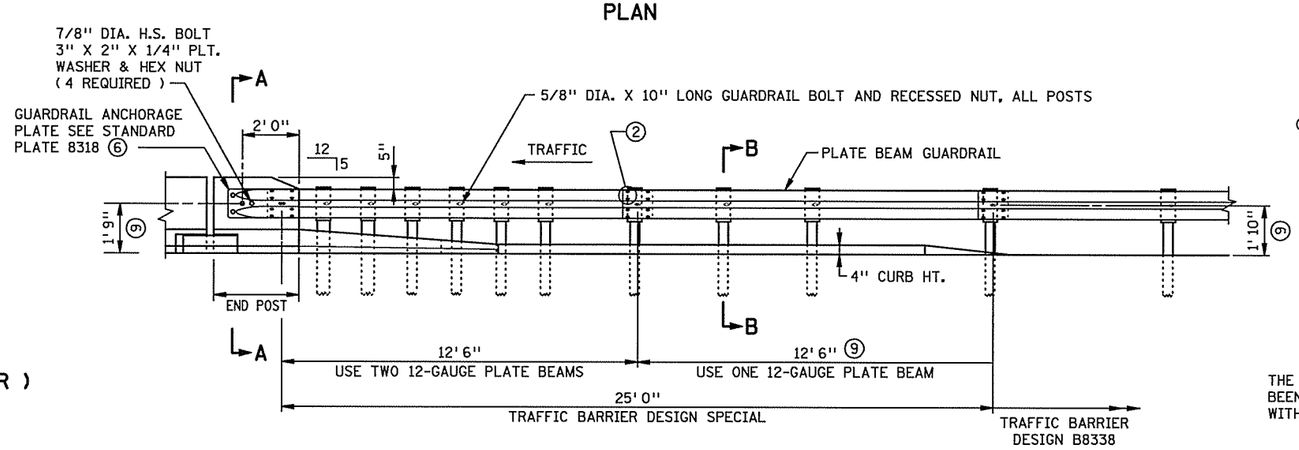
⑨ MARK THE APPROACH END OF PLATE BEAM GUARDRAIL INSTALLATIONS WITH A STRIPED OBJECT MARKER SIZED TO FIT THE END TERMINAL, HAVING ALTERNATING BLACK AND REFLECTIVE YELLOW (WIDE ANGLE PRISMATIC RETROREFLECTIVE SHEETING). STRIPES SHALL SLOPE DOWNWARD AT A 45 DEGREE ANGLE TOWARD THE SIDE ON WHICH TRAFFIC PASSES. FOR FLAT END TREATMENTS THE OBJECT MARKER SHALL FIT INSIDE THE RECESSED AREA. FOR ROUNDED END TREATMENTS THE OBJECT MARKER SHALL WRAP AROUND THE CIRCULAR END AND BE MOUNTED SO THE TOP OF THE OBJECT MARKER LINES UP WITH THE TOP OF THE END TREATMENT.

STANDARD SHEET NO. 5-297.601 (3 OF 3)	TITLE: GUARDRAIL INSTALLATIONS AT MEDIANS & END TREATMENTS
STANDARD APPROVED: MARCH 23, 2011	(FOR NEW CONSTRUCTION AND RETROFITS WITHOUT SITE RESTRICTIONS)
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 67 OF 393 SHEETS

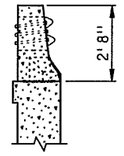
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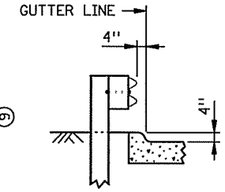
PLAN



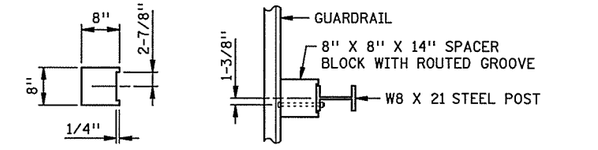
ELEVATION



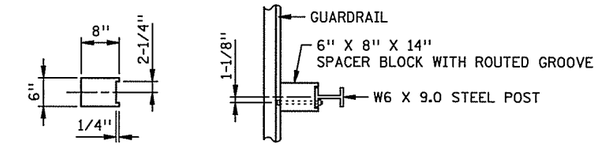
SECTION A - A
F SHAPE RAIL (F BARRIER)
(PARALLEL WINGWALL SHOWN)



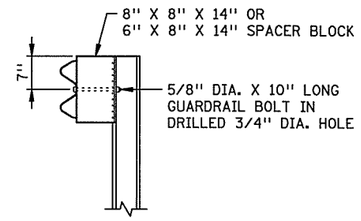
SECTION B-B
THE TRANSITION SECTION HAS
BEEN TESTED AND APPROVED
WITH THE CURB PLACED AS SHOWN



POSTS 1 AND 2

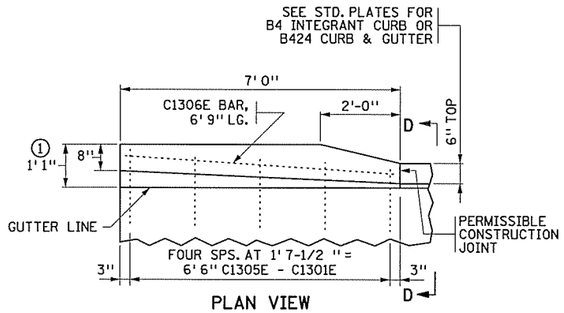


POSTS 3 - 11

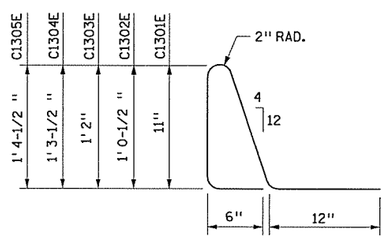


END VIEW

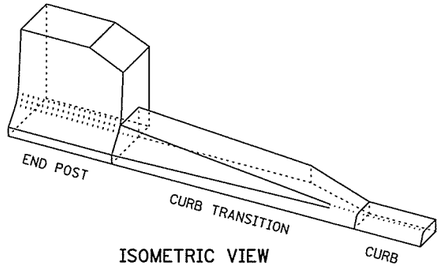
SPACER BLOCK DETAILS



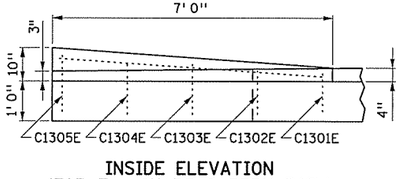
PLAN VIEW



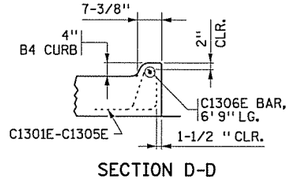
C1301E - C1305E (3)



ISOMETRIC VIEW



INSIDE ELEVATION
(FOR F - SHAPE SAFETY RAIL)



SECTION D-D

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

NOTES:

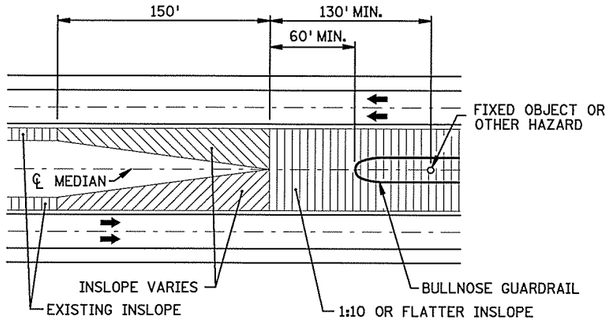
ALL REBARS ARE IN METRIC DESIGNATIONS

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

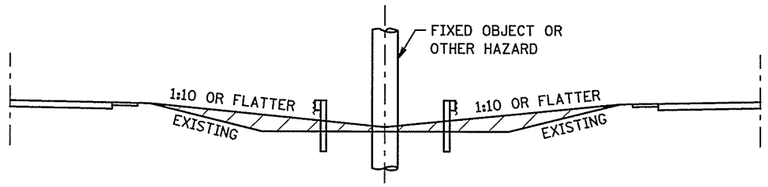
TRAFFIC BARRIER DESIGN SPECIAL

STANDARD SHEET NO. 5-297.603	TITLE: W-BEAM TRANSITION TO CONCRETE F-SHAPE SAFETY RAIL WITH APPROACH CURB (STEEL POST)
STANDARD APPROVED: MARCH 23, 2011	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 68 OF 393 SHEETS

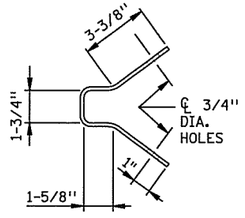
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GRADING AT BULLNOSE
(DEPRESSED MEDIAN)

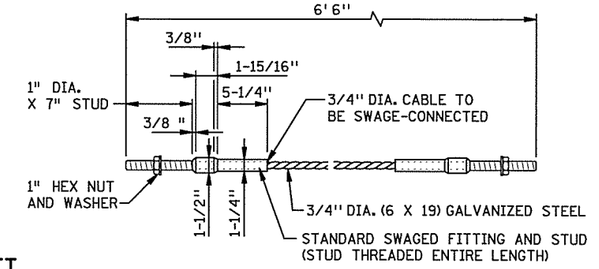


MEDIAN GRADING SECTION
(AT FIXED OBJECT)

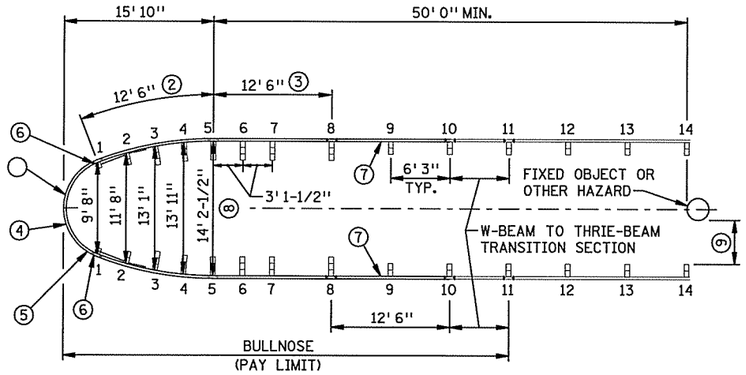


END VIEW

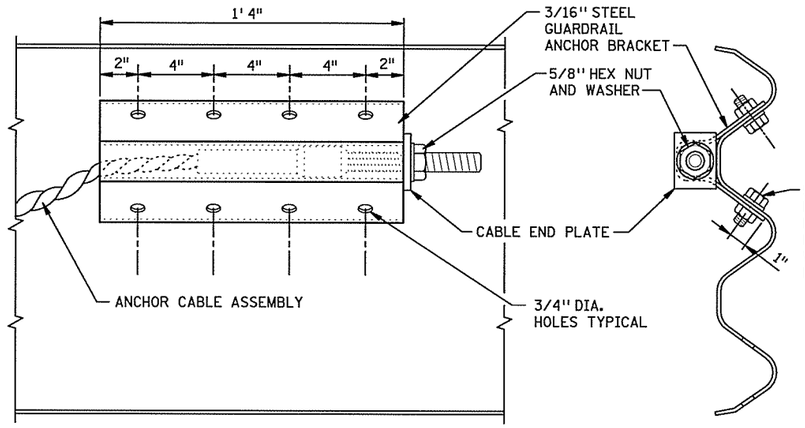
GUARDRAIL ANCHOR BRACKET



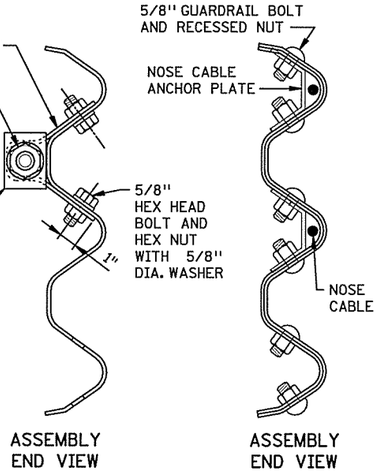
ANCHOR CABLE ASSEMBLY DETAILS



PLAN VIEW
DETAILS OF BULLNOSE



FRONT VIEW

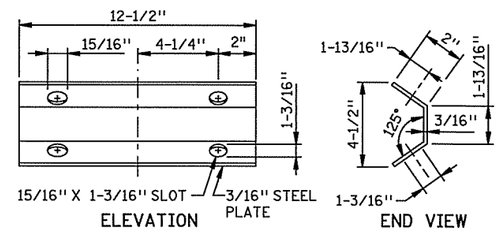


ASSEMBLY
END VIEW

ASSEMBLY
END VIEW

GUARDRAIL ANCHOR BRACKET DETAILS

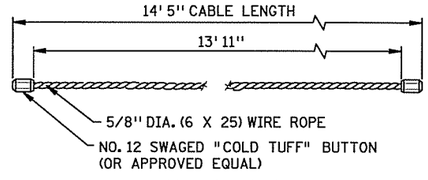
NOSE CABLE
ANCHOR PLATE
DETAILS



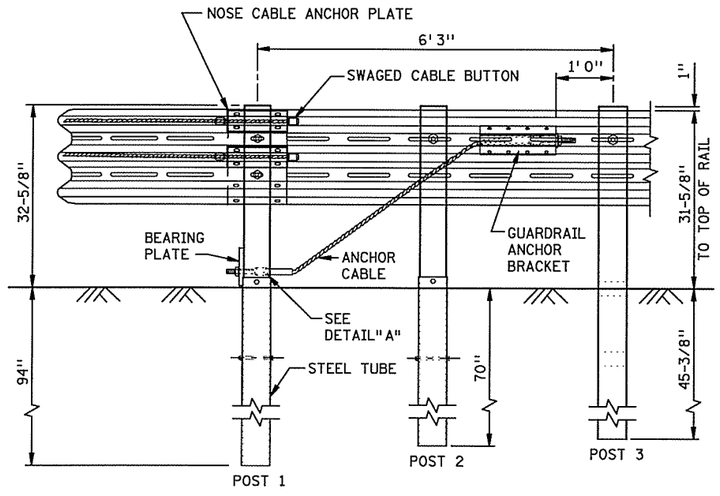
ELEVATION

END VIEW

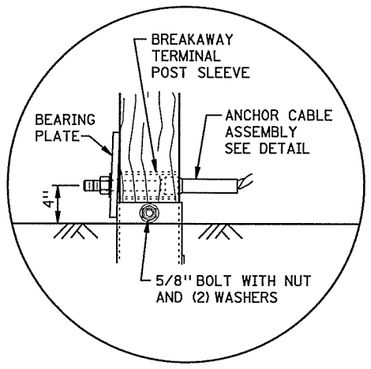
NOSE CABLE ANCHOR PLATE



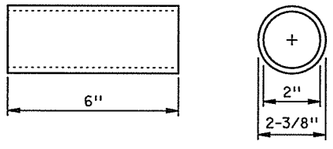
NOSE CABLE



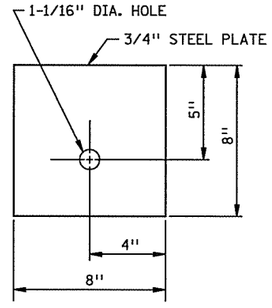
ELEVATION
BULL NOSE ASSEMBLY



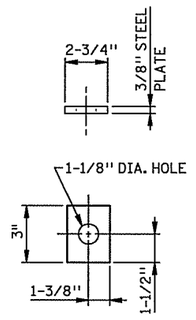
DETAIL "A"



BREAKAWAY TERMINAL POST SLEEVE



BEARING PLATE



CABLE END PLATE

NOTES:

OTHER ANCHOR CABLE ASSEMBLIES HAVING 40,000 LBS. MIN. BREAKING STRENGTH MAY BE USED.

ALTERNATE HARDWARE DESIGNS WILL BE CONSIDERED FOR APPROVAL PROVIDED THEIR CONNECTION DETAILS, FOR THE PURPOSE OF MAINTENANCE SUBSTITUTIONS, ARE COMPATIBLE WITH THE DETAILS OF THIS STANDARD AND THEIR OPERATING CHARACTERISTICS ARE SIMILAR TO THOSE OF THE HARDWARE SHOWN IN THIS STANDARD.

BOLTS AND ALL NECESSARY HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

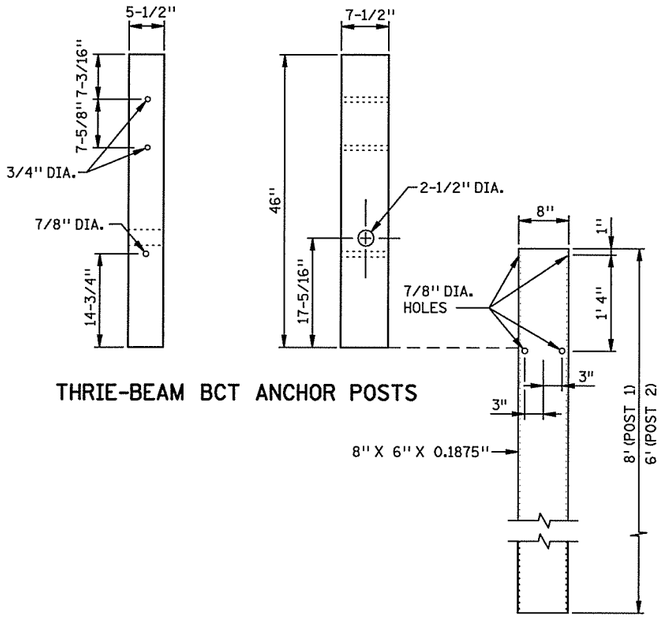
SEE "A GUIDE TO STANDARDIZED HIGHWAY BARRIER RAIL HARDWARE" FOR ADDITIONAL HARDWARE INFORMATION. THE MN/DOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SHALL GOVERN.

1. SLOTTED RAIL NO. 1, 12'6", SHOP BEND TO R=5'3"
2. SLOTTED RAIL NO. 2, 12'6", SHOP BEND TO R=34'2"
3. SLOTTED RAIL NO.3, 12'6", TANGENT
4. U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.
5. NOSE CABLE W/SWAGED END BUTTONS
6. NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).
7. THRIE-BEAM GUARDRAIL, 12'6".
8. MEASUREMENTS ARE FROM BACK OF RAIL TO BACK OF RAIL. FOR GUARDRAIL LAPPING DETAIL, SEE SHEET 2 OF 2.
9. MINIMUM DESIGN DEFLECTION FOR BARRIER USED.

REVISION DATE
7-11-02

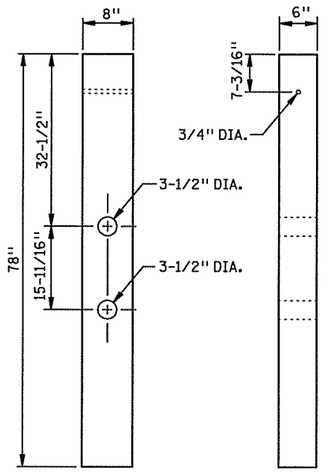
STANDARD SHEET NO. 5-297.611 (1 OF 3)	TITLE: THRIE BEAM BULLNOSE GUARDRAIL FOR MEDIANS (14'2-1/2" WIDTH)
STANDARD APPROVED: AUGUST 20, 2001	
STATE PROJ. NO. 1901-168 (TH 13)	SHEET NO. 69 OF 393 SHEETS

DATE: 1/26/2012 TIME: 8:4:38 AM
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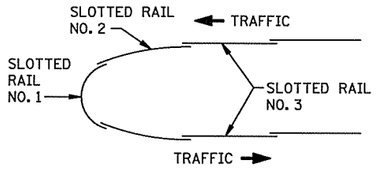


THRIE-BEAM BCT ANCHOR POSTS

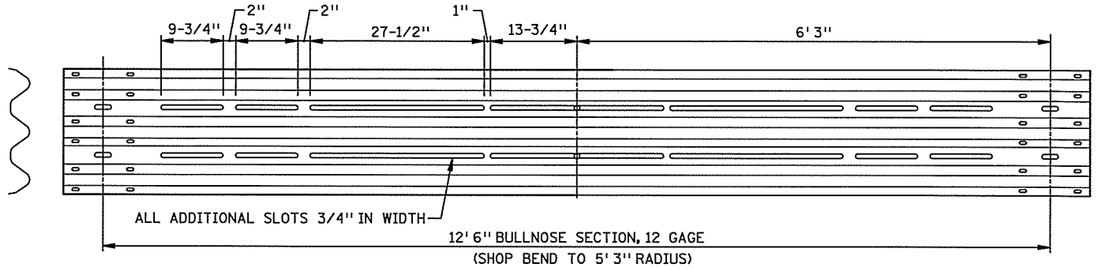
STEEL TUBE



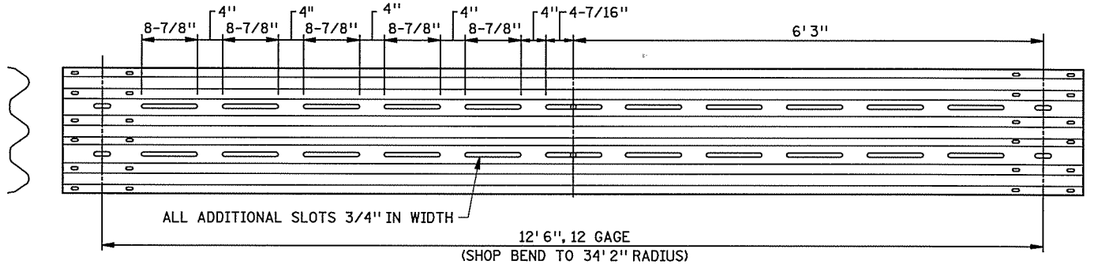
THRIE-BEAM CRT POSTS



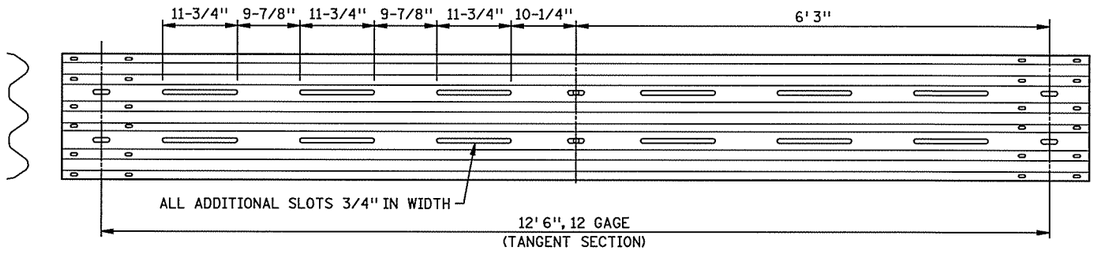
GUARDRAIL OVERLAPPING DETAIL



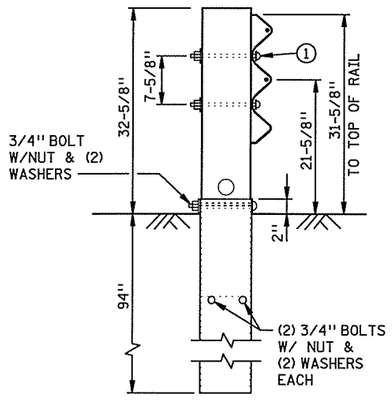
SLOTTED RAIL NO. 1



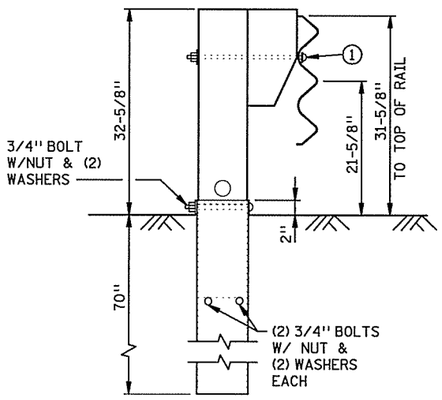
SLOTTED RAIL NO. 2



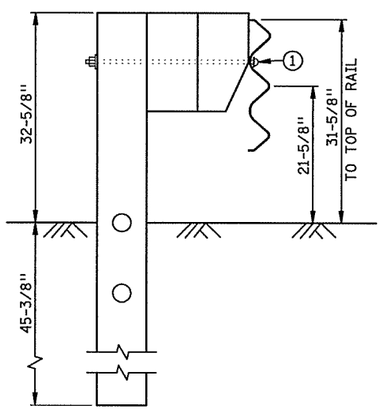
SLOTTED RAIL NO. 3



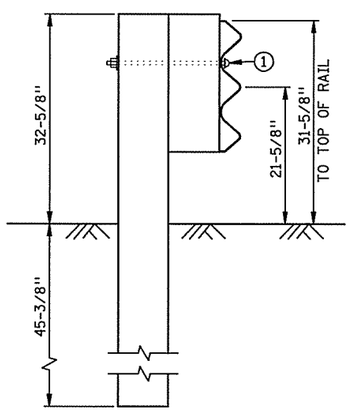
THRIE-BEAM BCT POST
(WITH 96" STEEL TUBE)
POST NO. 1



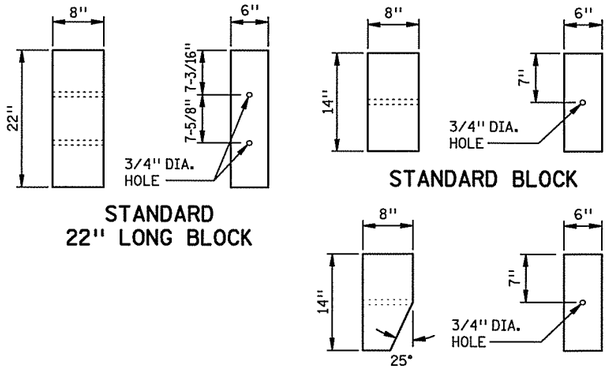
THRIE-BEAM BCT POST
(WITH 72" STEEL TUBE
AND 14" TAPERED BLOCK)
POST NO. 2



THRIE-BEAM CRT POST
(78" LONG WITH 14" BLOCK
AND 14" TAPERED BLOCK)
POST NO. 3, 4, 5, 6, 7, & 8



THRIE-BEAM POST
(6" X 8" X 78" LONG POST
WITH 6" X 8" X 22" BLOCK)
POST NO. 9 & 10



STANDARD
22" LONG BLOCK

STANDARD BLOCK

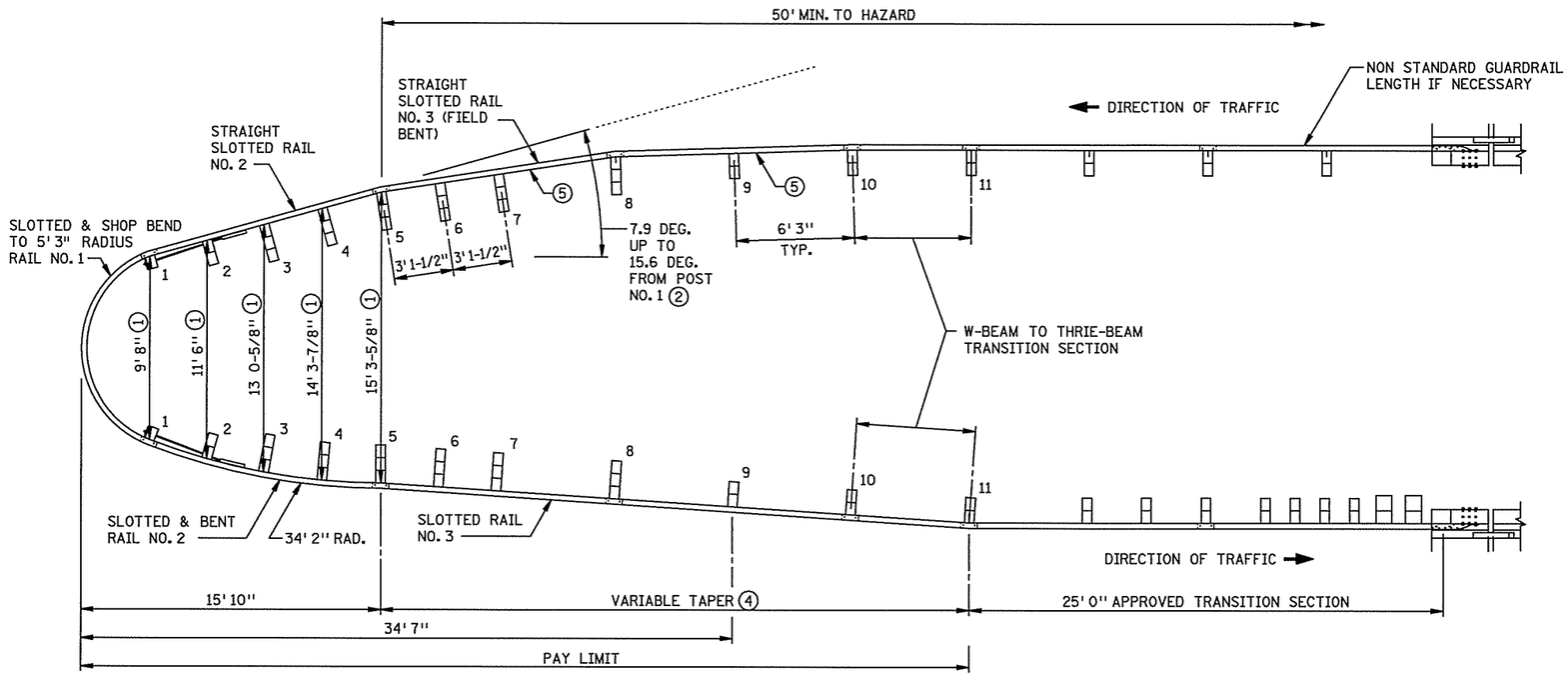
TAPERED BLOCK

NOTES:

① 5/8" DIA. BUTTON HEAD BOLT X LENGTH AS REQUIRED, SECURED WITH WASHER AND HEX NUT.

STANDARD SHEET NO. 5-297.611 (2 OF 3)	TITLE: THRIE BEAM BULLNOSE GUARDRAIL FOR MEDIANS (14' 2-1/2" WIDTH)
STANDARD APPROVED: AUGUST 20, 2001	
REVISION DATE 7-11-2002	STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 70 OF 393 SHEETS

DATE: 1/26/2012 TIME: 8:44:40 AM
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PLAN VIEW

WIDENED BULLNOSE DESIGN (3)

NOTES:

(1) POST SPACINGS ACROSS THE BARRIER ARE MEASURED AS PERPENDICULAR DISTANCE ACROSS THE BARRIER FROM THE CENTER OF POST.

(2) TAPER BEGINNING AT POST NO. 1 MUST CONTINUE TO POST NO. 5, PAST POST NO. 5, TAPER MAY END OR BE EXTENDED UP TO 15.6 DEGREES TO FIT VARIABLE MEDIAN WIDTHS.

(3) THRIE BEAM BULLNOSE, SEE SHEET NOS. 69 & 70 FOR DETAILS.

(4) FOR MEDIANS WIDER THAN 14' 2 1/2", BEFORE TAPERING THE APPROACH SIDE, TAPER THE OPPOSING SIDE AS SHOWN ON THE BULLNOSE DESIGN DETAIL. APPROACH TAPER SHOULD NOT EXCEED 1:25 IF THE BARRIER IS WITHIN THE SHY LINE OR 1:15 IF IT IS OUTSIDE.

(5) THRIE BEAM MAY BE FIELD BENT UP TO 18" IN A 12' 6" LENGTH (APPROX. 6.9 DEG.). ADJUST BENDS TO FIT BULLNOSE TO SITE. SLOTTED RAIL NO. 2 ON OPPOSING SIDE MAY BE USED STRAIGHT OR NORMAL (SHOP BEND TO 34' 2" RAD.). SLOTTED RAIL NO. 3 ON OPPOSING SIDE DOES NOT HAVE TO BE SHOP BENT (BEND IN FIELD).

STANDARD SHEET NO. 5-297.611 (3 OF 3)	TITLE: THRIE BEAM BULLNOSE GUARDRAIL FOR MEDIANS (WIDER THAN 14' 2-1/2")
STANDARD APPROVED: MAY 30, 2002	
REVISION DATE 7-11-02	STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 71 OF 393 SHEETS

DATE: 1/26/2012 TIME: 8:4:42 AM
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ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 13 NB (TH13NB)										
2000	POT	735+00.000						507,416.7256	210,553.4829	77° 59' 39.90"
2003	PI	754+25.337 EQUATION 99+82.700						509,299.9502	210,953.9665	PI
	PC	101+22.190						509,436.3893	210,982.9814	77° 59' 39.90"
2005	PI	106+81.259	27° 25' 04.62" LT	2° 29' 59.99"	2,291.833'	559.069'	1,096.719'	509,983.2300	211,099.2717	PI
	CC							508,959.6720	213,224.6858	
	PT	112+18.909						510,415.0956	211,454.3072	50° 34' 35.28"
	PC	123+43.368						511,283.7095	212,168.3925	
2010	PI	129+36.295	17° 38' 48.91" RT	1° 29' 59.98"	3,819.730'	592.927'	1,176.465'	511,741.7295	212,544.9295	PI
	CC							513,709.4208	209,217.7552	
	PT	135+19.833						512,292.3437	212,764.8988	68° 13' 24.19"
	PC	145+21.272						513,222.3175	213,136.4216	
2015	PI	152+76.212	11° 17' 14.98" RT	0° 45' 00.01"	7,639.409'	754.940'	1,504.994'	513,923.3829	213,416.4959	PI
	CC							516,056.4529	206,042.1813	
	PT	160+26.265						514,665.7075	213,553.9319	79° 30' 39.16"
	PC	166+73.354						515,301.9828	213,671.7336	
2020	PI	174+57.717	23° 12' 29.84" LT	1° 30' 00.00"	3,819.716'	784.363'	1,547.218'	516,073.2387	213,814.5259	PI
	CC							514,606.6080	217,427.6201	
	PT	182+20.572						516,725.8125	214,249.6959	56° 18' 09.33"
	PC	202+64.540						518,426.3516	215,383.7034	
2025	PI	211+60.392	26° 23' 54.34" LT	1° 30' 00.00"	3,819.720'	895.852'	1,759.896'	519,171.6819	215,880.7282	PI
	CC							516,307.1448	218,561.6314	
	PT	220+24.436						519,618.3095	216,657.3069	29° 54' 14.99"
	PC	233+27.066						520,267.7365	217,786.5052	
2030	PI	238+58.582	10° 35' 59.86" RT	0° 59' 59.99"	5,729.590'	531.516'	1,059.998'	520,532.7242	218,247.2554	PI
	CC							525,234.4920	214,930.0137	
	PT	243+87.064						520,877.9453	218,651.3985	40° 30' 14.85"
	PC	246+86.436						521,072.3879	218,879.0284	
2035	PI	253+77.983	6° 54' 25.39" LT	0° 29' 59.99"	11,459.221'	691.547'	1,381.419'	521,521.5496	219,404.8525	PI
	CC							512,359.2640	226,321.8239	
	PT	260+67.854						521,904.2165	219,980.8762	33° 35' 49.45"

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 13 NB (TH13NB) CONTINUED										
2037	PI	262+12.000 EQUATION 916+23.883						521,983.9793	220,100.9424	PI
	PC	922+89.630						522,352.3700	220,655.4764	33° 35' 49.45"
2040	PI	924+89.340	1° 59' 48.76" LT	0° 29' 59.98"	11,459.265'	199.710'	399.380'	522,462.8793	220,821.8247	PI
	CC							512,807.3806	226,996.4486	
	PT	926+89.010						522,567.5251	220,991.9228	31° 36' 00.69"
	PC	932+97.732						522,886.4888	221,510.3869	
2045	PI	937+72.392	27° 54' 51.21" LT	3° 00' 00.07"	1,909.846'	474.660'	930.468'	523,135.2053	221,914.6668	PI
	CC							521,259.8246	222,511.1249	
	PT	942+28.200 EQUATION 942+21.612						523,165.7201	222,388.3449	3° 41' 09.48"
2047	POT									
	PC	945+17.900						523,184.7679	222,684.0203	
2050	PI	962+07.330	61° 03' 27.00" RT	1° 59' 59.98"	2,864.795'	1,689.430'	3,052.881'	523,293.3777	224,369.9555	PI
	CC							526,043.6367	222,499.8487	
	PT	975+70.782						524,821.3092	225,090.7879	64° 44' 36.47"
	PC	996+23.812						526,678.0834	225,966.7583	
2055	PI	1000+04.372	11° 22' 45.24" LT	1° 29' 59.99"	3,819.723'	380.560'	758.617'	527,022.2643	226,129.1326	PI
	CC							525,048.3148	229,421.3408	
	PT	1003+82.429						527,327.6428	226,356.2226	53° 21' 51.23"
2058	PI	1006+60.696 EQUATION 1006+46.155						527,550.9372	226,522.2720	PI
	PC	1017+61.368						528,445.8339	227,187.7482	53° 21' 51.23"
2060	PI	1022+24.418	6° 56' 14.23" LT	0° 45' 00.01"	7,639.410'	463.050'	924.968'	528,817.4061	227,464.0622	PI
	CC							523,887.1994	233,317.9555	
	PT	1026+86.336						529,152.8840	227,783.2328	46° 25' 36.99"
	PC	1026+95.732						529,159.6911	227,789.7090	
2065	PI	1029+99.152	6° 04' 16.19" LT	1° 00' 05.01"	5,721.609'	303.420'	606.272'	529,379.5177	227,998.8500	PI
	CC							525,215.9064	231,934.9924	
	PT	1033+02.004						529,575.9918	228,230.0677	40° 21' 20.80"
2072	POT	1036+05.125						529,772.2724	228,461.0575	

DATE: 1/26/2012 TIME: 8:44 AM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\plr-sth\cad\901168_afadgn

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

ALIGNMENT TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA DELTA / SPIRAL CURVE DATA ANGLE (θs)	DEGREE / DEGREE	RADIUS / ST	TANGENT / LT	LENGTH / LS	COORDINATES X	COORDINATES Y	AZIMUTH
TH 13 SB (TH13SB)										
2200	POT	735+00.000						507,403.4131	210,616.0831	
	POT	754+25.337						509,286.6378	211,016.5666	77° 59' 39.90"
		EQUATION								
	TS	99+82.700								
2205B	PI	101+49.393	3° 07' 30.00" LT	2° 30' 00.00"	83.357'	166.693'	250.000'	509,449.6844	211,051.2399	PI
	SC	102+32.700						509,530.1516	211,072.9977	74° 52' 09.90"
	SC	102+32.700						509,530.1516	211,072.9977	
2205	PI	107+09.393	23° 29' 58.61" LT	2° 30' 00.00"	2,291.831'	476.693'	939.984'	509,990.3198	211,197.4241	PI
	CC							508,931.9383	213,285.3788	
	PT	111+72.684						510,362.7087	211,495.0197	51° 22' 11.29"
		EQUATION								
2207	POT	112+03.961								
	PC	124+37.983						511,326.7159	212,265.4088	
2210	PI	130+09.189	16° 51' 12.89" RT	1° 29' 09.57"	3,855.723'	571.206'	1,134.163'	511,772.9373	212,622.0078	PI
	CC							513,733.8108	209,253.3503	
	PT	135+72.146						512,303.3805	212,833.9188	68° 13' 24.19"
		EQUATION								
2211	POT	135+55.687								
	PC	145+21.272						513,200.0582	213,192.1399	
2215	PI	152+82.141	11° 17' 14.98" RT	0° 44' 38.97"	7,699.409'	760.869'	1,516.814'	513,906.6298	213,474.4139	PI
	CC							516,056.4529	206,042.1813	
	PT	160+38.085						514,654.7846	213,612.9292	79° 30' 39.16"
		EQUATION								
2216	POT	160+26.265								
	PC	166+73.354						515,291.0599	213,730.7309	
2220	PI	174+45.396	23° 12' 29.84" LT	1° 31' 26.18"	3,759.716'	772.042'	1,522.914'	516,050.2009	213,871.2803	PI
	CC							514,606.6080	217,427.6201	
	PT	181+96.268						516,692.5240	214,299.6146	56° 18' 09.33"
		EQUATION								
2221	POT	182+20.572								
	PC	202+77.458						518,403.8106	215,440.7891	
2225	PI	211+73.310	26° 23' 54.34" LT	1° 30' 00.00"	3,819.720'	895.852'	1,759.896'	519,149.1409	215,937.8139	PI
	CC							516,284.6038	218,618.7170	
	PT	220+37.354						519,595.7686	216,714.3926	29° 54' 14.99"
		EQUATION								
2226	POT	220+62.684								
	PC	233+27.066						520,226.1272	217,810.4356	
2230	PI	238+63.035	10° 35' 59.86" RT	0° 59' 30.08"	5,777.590'	535.969'	1,068.878'	520,493.3349	218,275.0458	PI
	CC							525,234.4920	214,930.0137	
	PT	243+95.944						520,841.4481	218,682.5746	40° 30' 14.85"
		EQUATION								
2231	POT	243+87.064								
	PC	247+00.170						521,044.8110	218,920.6473	
2235	PI	253+91.717	6° 54' 25.39" LT	0° 29' 59.99"	11,459.221'	691.547'	1,381.419'	521,493.9727	219,446.4714	PI
	CC							512,331.6871	226,363.4429	
	PT	260+81.588						521,876.6395	220,022.4952	33° 35' 49.45"
		EQUATION								
2236	POT	260+87.261								

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	COORDINATES Y	AZIMUTH
TH 13 SB (TH13SB) CONTINUED										
2237	PI	262+12.000						521,945.6637	220,126.3964	PI
		EQUATION								
	PI	916+23.883								
	PC	919+44.447						522,123.0474	220,393.4101	33° 35' 49.45"
2240	PI	921+44.157	1° 59' 48.76" LT	0° 29' 59.98"	11,459.265'	199.710'	399.380'	522,233.5568	220,559.7584	PI
	CC							512,578.0580	226,734.3823	
	PT	923+43.827						522,338.2026	220,729.8565	31° 36' 00.69"
		EQUATION								
2241	POT	923+45.645								
	PC	932+47.010						522,810.5077	221,497.5718	
2245	PI	937+21.670	27° 54' 51.21" LT	3° 00' 00.07"	1,909.846'	474.660'	930.468'	523,059.2242	221,901.8517	PI
	CC							521,183.8436	222,498.3098	
	PT	941+77.478						523,089.7391	222,375.5298	3° 41' 09.48"
		EQUATION								
2246	POT	942+03.937								
	PC	945+98.250						523,115.0886	222,769.0270	
2250	PI	954+76.670	34° 34' 00.02" RT	2° 01' 46.13"	2,823.174'	878.420'	1,703.227'	523,171.5604	223,645.6299	PI
	CC							525,932.4223	222,587.5311	
	PCC	963+01.477						523,715.4167	224,335.4429	38° 15' 09.49"
	PCC	963+01.477						523,715.4167	224,335.4429	
2255	PI	969+99.341	26° 29' 26.98" RT	1° 55' 57.15"	2,964.788'	697.864'	1,370.776'	524,147.4855	224,883.4677	PI
	CC							526,043.6301	222,499.8537	
	PT	976+72.253						524,778.6385	225,181.2269	64° 44' 36.47"
	PI	979+01.475						524,985.9486	225,279.0296	PI
2257		EQUATION								
	PC	978+00.000						526,873.9344	226,169.7247	64° 44' 36.47"
2265	PI	1002+68.101	11° 22' 45.24" LT	1° 29' 59.99"	3,819.723'	380.560'	758.617'	527,218.1154	226,332.0990	PI
	CC							525,244.1659	229,624.3072	
	PT	1006+46.158						527,523.4939	226,559.1890	53° 21' 51.23"
	PC	1017+61.363						528,418.3845	227,224.6607	
2270	PI	1022+90.435	7° 58' 29.75" LT	0° 45' 17.60"	7,589.948'	529.072'	1,056.436'	528,842.9361	227,540.3719	PI
	CC							523,889.2654	233,315.1774	
	PT	1028+17.799						529,219.5800	227,911.9321	45° 23' 21.47"
	PC	1032+60.835						529,534.9753	228,223.0704	
2275	PI	1034+28.665	5° 02' 00.67" LT	1° 30' 01.99"	3,818.308'	167.830'	335.444'	529,654.4527	228,340.9350	PI
	CC							526,853.4309	230,941.3044	
	PT	1035+96.279						529,763.1280	228,468.8279	40° 21' 20.80"

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

ALIGNMENT TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 73 of 393 Sheets

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 13 (TH13OLDCL)										
2400	POT	1031+34.100						529,763.1280	228,468.8279	
	POT	1064+63.384								
		EQUATION						531,918.9459	231,005.8701	40° 21' 20.80"
	PC	1064+66.100								
2405	PI	1073+26.700	17° 07' 03.41" LT	1° 00' 07.13"	5,718.255'	860.600'	1,708.379'	532,476.2119	231,661.6803	PI
	CC							527,561.4166	234,708.6228	
	PT	1081+74.479						532,815.7651	232,452.4622	23° 14' 17.39"
2407	PI	1085+44.746								
		EQUATION						532,961.8556	232,792.6907	PI
		1085+59.820								
	PC	1107+34.794						533,820.0005	234,791.2153	23° 14' 17.39"
2410	PI	1109+83.194	2° 28' 24.96" LT	0° 29' 52.74"	11,505.548'	248.400'	496.723'	533,918.0077	235,019.4633	PI
	CC							523,247.8663	239,330.7758	
	PT	1112+31.517						534,006.0727	235,251.7285	20° 45' 52.43"
2412	PI	1112+32.413								
		EQUATION						534,006.3903	235,252.5663	PI
		1112+34.000								
	POT	1153+08.495								
		EQUATION						535,450.9160	239,062.4033	20° 45' 52.43"
	PC	1153+08.692								
2415	PI	1155+48.692	0° 48' 04.39" LT	0° 10' 00.92"	34,324.600'	240.000'	479.992'	535,536.0029	239,286.8142	PI
	CC							503,355.8668	251,231.4602	
	PT	1157+88.684						535,617.9435	239,512.3928	19° 57' 48.04"
2417	PI	1157+88.976								
		EQUATION						535,618.0431	239,512.6673	PI
		1157+88.392								
2419	POT	1162+00.000								
		EQUATION						535,758.5739	239,899.5422	19° 57' 48.04"
		1162+01.008								

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 13 NB (TH13NB1)										
2419	POT	1162+01.008						535,758.5739	239,899.5422	
	PC	1176+68.210						536,259.5042	241,278.5814	19° 57' 48.04"
AE2005	PI	1179+09.235	2° 24' 35.63" RT	0° 30' 00.00"	11,459.156'	241.025'	481.979'	536,341.7948	241,505.1237	PI
	CC							547,030.0936	237,366.2089	
	PT	1181+50.189						536,433.5383	241,728.0055	22° 22' 23.67"
		EXCEPTION AREA								
AE2020	PT	1230+06.235						538,589.0679	245,978.2168	
AE2025	POT	1244+39.409						539,887.7512	246,584.3585	64° 58' 47.51"
TH 13 SB (TH13SB1)										
	PC	1163+49.500						535,810.2703	240,041.2329	19° 55' 19.75"
AE2035	PI	1166+47.442	5° 55' 14.90" LT	0° 59' 40.20"	5,761.259'	297.942'	595.354'	535,911.7921	240,321.3453	PI
	CC							530,393.7857	242,004.3418	
	PT	1169+44.854								
		EQUATION						535,983.8777	240,610.4359	14° 00' 04.84"
AE2071	POT	1169+44.358								
	PC	1170+68.210						536,013.8430	240,730.6082	
AE2040	PI	1173+68.480	5° 57' 43.20" RT	0° 59' 37.21"	5,766.077'	300.270'	599.998'	536,086.4918	241,021.9572	PI
	CC							541,608.6104	239,335.5366	
	PT	1176+68.208						536,189.0096	241,304.1844	19° 57' 48.04"
AE2045	PC	1181+38.336						536,349.4773	241,746.0781	
		EXCEPTION AREA								
AE2074	POT	1230+06.235						538,561.9999	246,036.2110	
AE2070	POT	1244+59.210						539,878.6261	246,650.7272	64° 58' 47.51"

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TH 13
BETTER ROADS
PRESERVATION PROJECT

ALIGNMENT TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)

ALIGNMENT TABULATION

TH 13 NB (MENCONNB)

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
AE2150	POT	7+33.969						539,537.4633	251,542.4836	247° 12' 02.71"
	PC	10+79.046						539,219.3475	251,408.7649	
AE2155	PI	12+27.742	29° 05' 50.02" LT	10° 00' 00.00"	572.958'	148.696'	290.972'	539,082.2696	251,351.1448	PI
	CC							539,441.3706	250,880.5733	
	PT	13+70.019						538,990.5118	251,234.1366	218° 06' 12.69"
	PC	22+24.344						538,463.3209	250,561.8704	
AE2160	PI	32+77.241	138° 51' 31.06" LT	14° 30' 00.00"	395.143'	1,052.897'	957.646'	537,813.5947	249,733.3488	PI
	CC							538,774.2580	250,318.0336	
	PT	31+81.990						538,847.9963	249,929.8315	79° 14' 41.63"
	PC	39+99.884						539,651.5232	250,082.4600	
AE2165	PI	41+06.239	2° 07' 36.64" LT	1° 00' 00.00"	5,729.578'	106.355'	212.685'	539,756.0095	250,102.3070	PI
	CC							538,582.3180	255,711.3909	
	PT	42+12.569						539,859.6872	250,126.0179	77° 07' 04.99"
	PC	43+44.387						539,988.1875	250,155.4058	
AE2170	PI	45+75.962	89° 53' 41.62" RT	24° 41' 47.17"	232.000'	231.575'	363.999'	540,213.9341	250,207.0339	PI
	CC							540,039.9103	249,929.2447	
	PT	47+08.386						540,265.9762	249,981.3823	167° 00' 46.61"
	POT	49+55.732								
		EQUATION						540,321.5625	249,740.3633	
	PC	27+54.966								
AE2180	PI	28+95.128	59° 44' 57.01" RT	23° 28' 54.90"	244.000'	140.162'	254.448'	540,353.0612	249,603.7865	PI
	CC							540,083.8042	249,685.5291	
	PT	30+09.414						540,250.9509	249,507.7715	226° 45' 43.62"
	PC	32+79.924						540,053.8795	249,322.4637	
AE2185	PI	34+78.695	51° 48' 38.06" LT	14° 00' 00.00"	409.256'	198.770'	370.076'	539,909.0720	249,186.3002	PI
	CC							540,334.2314	249,024.3145	
	PT	36+50.000								
		EQUATION						539,926.5635	248,988.3008	174° 57' 05.56"
AE2190	POT	36+27.495								
	PC	39+89.493						539,958.4186	248,627.7076	
AE2200	PI	41+48.952	16° 00' 00.25" RT	5° 02' 59.44"	1,134.605'	159.459'	316.843'	539,972.4507	248,468.8672	PI
	CC							538,828.2154	248,527.8644	
	PT	43+06.335								
		EQUATION						539,942.1567	248,312.3122	190° 57' 05.81"
AE2205	POT	43+02.985								
	PC	48+76.386						539,833.2221	247,749.3544	
AE2210	PI	51+44.349	31° 43' 42.07" LT	6° 04' 34.91"	942.929'	267.963'	522.160'	539,782.3145	247,486.2716	PI
	CC							540,758.9780	247,570.2169	
	PT	53+98.546						539,877.3683	247,235.7343	159° 13' 23.74"
	PC	57+59.937						540,005.5636	246,897.8446	
AE2215	PI	59+82.789	85° 45' 23.78" RT	23° 52' 23.84"	240.000'	222.852'	359.216'	540,084.6153	246,689.4847	PI
	CC							539,781.1713	246,812.7102	
	PT	61+19.152						539,882.6759	246,595.2324	244° 58' 47.51"

ALIGNMENT TABULATION

TH 13 SB (MENCONSB)

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
AE2105	POT	41+79.419						539,830.7661	250,104.2883	79° 14' 41.63"
	PC	43+40.177						539,988.7002	250,134.2876	
AE2110	PI	45+42.152	87° 46' 04.98" RT	27° 17' 01.22"	210.000'	201.975'	321.687'	540,187.1272	250,171.9784	PI
	CC							540,027.8886	249,927.9762	
	PT	46+61.864						540,232.5172	249,975.1698	167° 00' 46.61"
	POT	49+10.679								
		EQUATION						540,288.4336	249,732.7193	
	PC	27+54.966								
AE2120	PI	28+67.301	56° 17' 14.59" RT	27° 17' 01.72"	209.999'	112.335'	206.303'	540,313.6788	249,623.2577	PI
	CC							540,083.8061	249,685.5260	
	PT	29+61.269						540,236.6369	249,541.5038	223° 18' 01.20"
	PC	32+60.772						540,031.2311	249,323.5350	
AE2125	PI	34+55.848	48° 20' 55.64" LT	13° 11' 02.68"	434.583'	195.076'	366.721'	539,897.4436	249,181.5648	PI
	CC							540,347.5072	249,025.4881	
	PT	36+27.493						539,914.6100	248,987.2456	174° 57' 05.56"
	PC	39+89.491						539,946.4651	248,626.6521	
AE2130	PI	41+47.264	16° 00' 00.25" RT	5° 06' 13.71"	1,122.608'	157.773'	313.493'	539,960.3489	248,469.4911	PI
	CC							538,828.2119	248,527.8646	
	PT	43+02.984						539,930.3751	248,314.5915	190° 57' 05.81"
	PC	48+76.384						539,821.4405	247,751.6337	
AE2135	PI	51+36.370	30° 27' 35.91" LT	6° 00' 00.00"	954.930'	259.985'	507.666'	539,772.0485	247,496.3832	PI
	CC							540,758.9790	247,570.2162	
	PT	53+84.050						539,858.8692	247,251.3228	160° 29' 29.90"
	PC	57+69.634						539,987.6327	246,887.8745	
AE2140	PI	59+51.264	84° 29' 17.62" RT	28° 38' 52.24"	200.000'	181.630'	294.920'	540,048.2870	246,716.6713	PI
	CC							539,799.1139	246,821.0855	
	PT	60+64.554						539,883.7013	246,639.8533	244° 58' 47.51"

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ALIGNMENT TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
TH 13 (TH13)										
MW2001	POT	0+00.000						539,534.6119	251,548.7535	
	POT	9+14.772 EQUATION						540,377.9295	251,903.1868	67° 12' 13.48"
	PC	9+14.490								
MW2010	PI	10+25.000	32° 15' 14.37" RT	14° 59' 28.49"	382.195'	110.510'	215.152'	540,479.8074	251,946.0045	PI
	CC							540,526.0130	251,550.8457	
	PT	11+29.642 EQUATION						540,588.8153	251,927.8455	99° 27' 27.85"
MW2011	POT	11+29.535								
	PC	16+86.640						541,138.3478	251,836.3019	
MW2015	PI	18+31.340	53° 36' 00.75" LT	20° 00' 05.75"	286.456'	144.700'	267.980'	541,281.0809	251,812.5248	PI
	CC							541,185.4182	252,118.8642	45° 51' 27.10"
	PT	19+54.620						541,384.9191	251,913.3004	
EXCEPTION AREA										
MW2070	PT	30+11.073						545,844.7538	255,762.7252	
	PC	36+73.323						546,411.9705	256,104.5438	58° 55' 32.91"
MW2075	PI	39+15.570	32° 58' 43.89" LT	7° 00' 04.45"	818.367'	242.247'	471.043'	546,619.4550	256,229.5790	PI
	CC							545,989.5726	256,805.4745	
	PT	41+44.366						546,725.4475	256,447.4074	25° 56' 49.02"
	PC	47+23.220						546,978.7185	256,967.9126	
MW2080	PI	48+34.297	15° 26' 14.30" RT	6° 59' 28.55"	819.534'	111.077'	220.808'	547,027.3190	257,067.7930	PI
	CC							547,715.6429	256,609.3348	
	PT	49+44.029						547,100.7526	257,151.1333	41° 23' 03.32"
MW2081	PI	50+44.914 EQUATION 99+39.522						547,167.4486	257,226.8269	PI
	PC	109+81.060						547,856.0150	258,008.2850	41° 23' 03.32"
MW2085	PI	114+07.150	8° 30' 45.28" RT	1° 00' 02.73"	5,725.230'	426.090'	850.612'	548,137.7055	258,327.9772	PI
	CC							552,151.6138	254,223.3027	
	PT	118+31.672 EQUATION						548,463.6157	258,602.4499	49° 53' 48.60"
MW2086	POT	118+33.862								
	PC	133+40.761						549,616.2209	259,573.1424	
MW2090	PI	134+80.490	1° 23' 50.00" LT	0° 30' 00.00"	11,459.156'	139.729'	279.444'	549,723.0977	259,663.1512	PI
	CC							542,234.6234	268,338.0881	48° 29' 58.60"
	PT	136+20.205						549,827.7480	259,755.7392	

ALIGNMENT TABULATION

POINT NUMBER OR CURVE NAME	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
TH 13 (TH13) CONTINUED										
	PC	139+77.355						550,095.2360	259,992.3958	48° 29' 58.60"
MW2095	PI	140+61.407	3° 21' 40.00" RT	2° 00' 00.00"	2,864.789'	84.052'	168.056'	550,158.1867	260,048.0907	PI
	CC							551,993.5171	257,846.8086	
	PT	141+45.411						550,224.2945	260,099.9990	51° 51' 38.60"
	PC	144+68.431						550,478.3536	260,299.4882	
MW2100	PI	145+84.222	20° 43' 45.00" RT	9° 03' 00.00"	633.103'	115.792'	229.052'	550,569.4251	260,370.9982	PI
	CC							550,869.3420	259,801.5455	
	PT	146+97.482						550,679.9119	260,405.6441	72° 35' 23.60"
	PC	148+31.156						550,807.4613	260,445.6403	
MW2105	PI	150+81.671	28° 37' 00.00" LT	5° 50' 00.00"	982.213'	250.515'	490.571'	551,046.4997	260,520.5968	PI
	CC							550,513.5740	261,382.8561	
	PT	153+21.727						551,220.4380	260,700.8836	43° 58' 23.60"
	PC	154+02.046						551,276.2050	260,758.6861	
MW2110	PI	154+96.112	33° 23' 15.00" RT	18° 16' 00.00"	313.663'	94.066'	182.778'	551,341.5172	260,826.3822	PI
	CC							551,501.9371	260,540.9030	
	PT	155+84.824						551,433.3038	260,846.9650	77° 21' 38.60"
	PC	156+76.707						551,522.9602	260,867.0701	
MW2115	PI	157+75.548	38° 36' 00.00" LT	20° 18' 00.00"	282.245'	98.841'	190.148'	551,619.4059	260,888.6977	PI
	CC							551,461.2015	261,142.4757	
	PT	158+66.855						551,681.2871	260,965.7706	38° 45' 38.60"
MW2120	PI	159+91.214	0° 12' 52.00" RT					551,759.1446	261,062.7418	PI
										38° 58' 30.60"
MW2121	PI	163+85.603	0° 47' 32.21" RT					552,007.2088	261,369.3472	PI
										39° 46' 02.81"
MW2122	PI	165+45.279	1° 36' 15.86" LT					552,109.3495	261,492.0820	PI
										38° 09' 46.95"
MW2123	PI	171+98.496	0° 05' 53.15" RT					552,512.9727	262,005.6769	PI
										38° 15' 40.10"
MW2124	PI	177+15.064	0° 07' 30.25" RT					552,832.8557	262,411.2844	PI
										38° 23' 10.35"
MW2125	PI	184+97.430	0° 25' 56.84" RT					553,318.6732	263,024.5367	PI
MW2126	POT	189+22.647						553,585.2236	263,355.8375	38° 49' 07.19"

DATE: 1/26/2012 TIME: 8:44:52 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190l168_drte.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chaluphik
PRINTED NAME: TIMOTHY A. CHALUPHIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

ALIGNMENT TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)

DATE: 2/13/2012 TIME: 4:00:55 PM
FILENAME: K:\g-mn\MnDOT\496800O\hwy-brdg\hwy\pln-stl\cd190168_tpa.dgn

BURNSVILLE

SCALE IN FEET
0 25 50 100

TH 35W SB

TH 35W NB

BRIDGE NO. 9779

℄ TH 13 SB
(TH13SB)

735

740

735

740

BRIDGE NO. 9780

REMOVE PLATE
BEAM GUARD RAIL

BEGIN SP 1901-168 (TH 13)
STA. 735+61.99

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 743+50

INP. R/W

LEGEND

SAWCUT	MILL BITUMINOUS SURFACE (2")
REMOVE CURB AND GUTTER	MILL BITUMINOUS SURFACE (3")
REMOVE CONCRETE WALK	MILL BITUMINOUS SURFACE (4")
REMOVE BITUMINOUS PAVEMENT	MILL BITUMINOUS SURFACE (5")
CLEAR AND GRUB (ACRE)	CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

RIVER RIDGE BLVD.

INP. R/W

REMOVE PLATE
BEAM GUARD RAIL

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 743+50

745

750

100

745

750

100

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 103+00

BURNSVILLE

INP. R/W

TRAVELERS TRAIL W

DRAWN BY: SFH
CHECKED BY: SJS

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

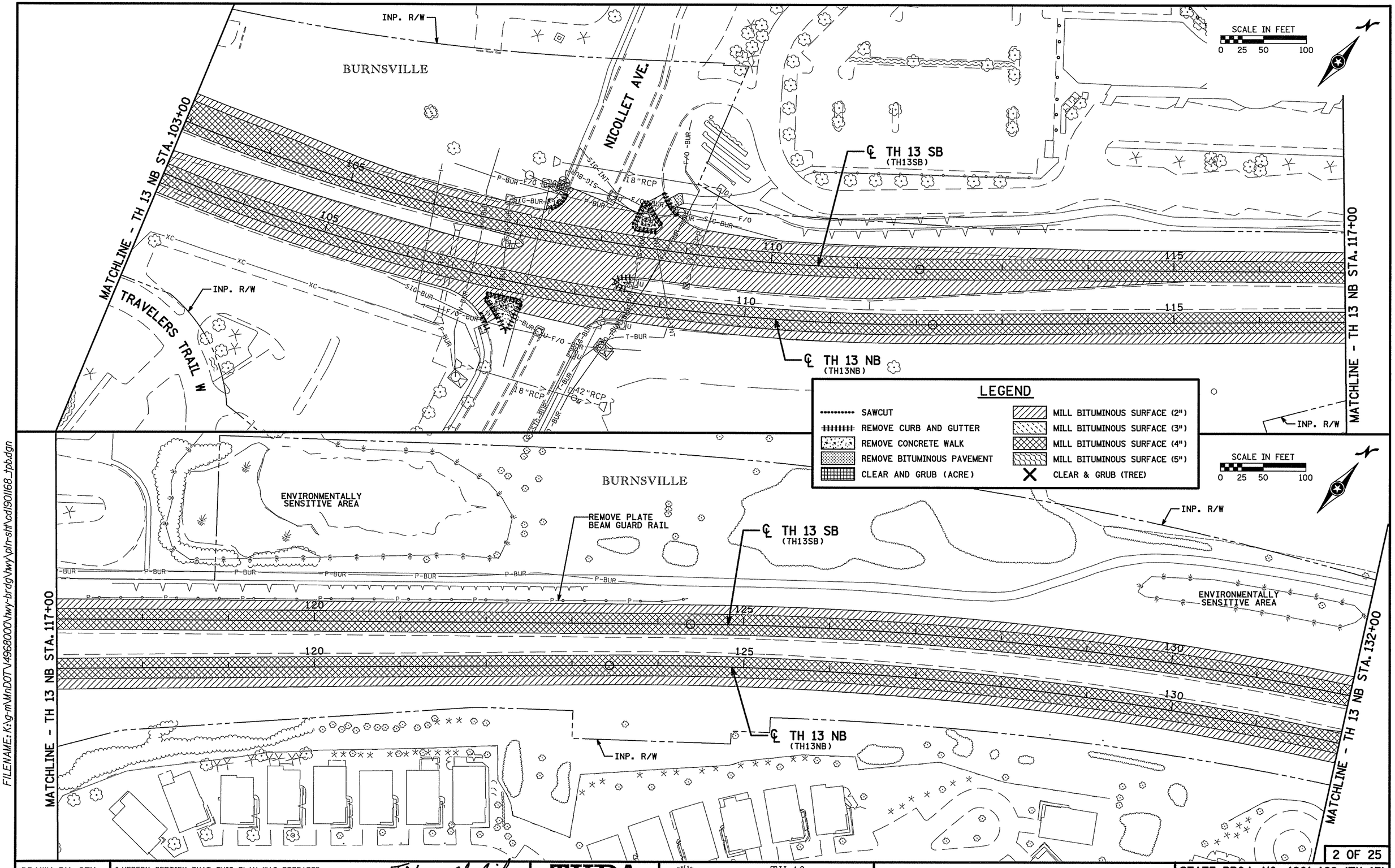
TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 735+00 TO STA. 103+00

1 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 77 of 393 Sheets



DATE: 1/26/2012 TIME: 8:5:00 AM
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DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: JANUARY 26, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 NB STA. 103+00 TO STA. 132+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 78 of 393 Sheets

DATE: 1/26/2012 TIME: 8:15:02 AM
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DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

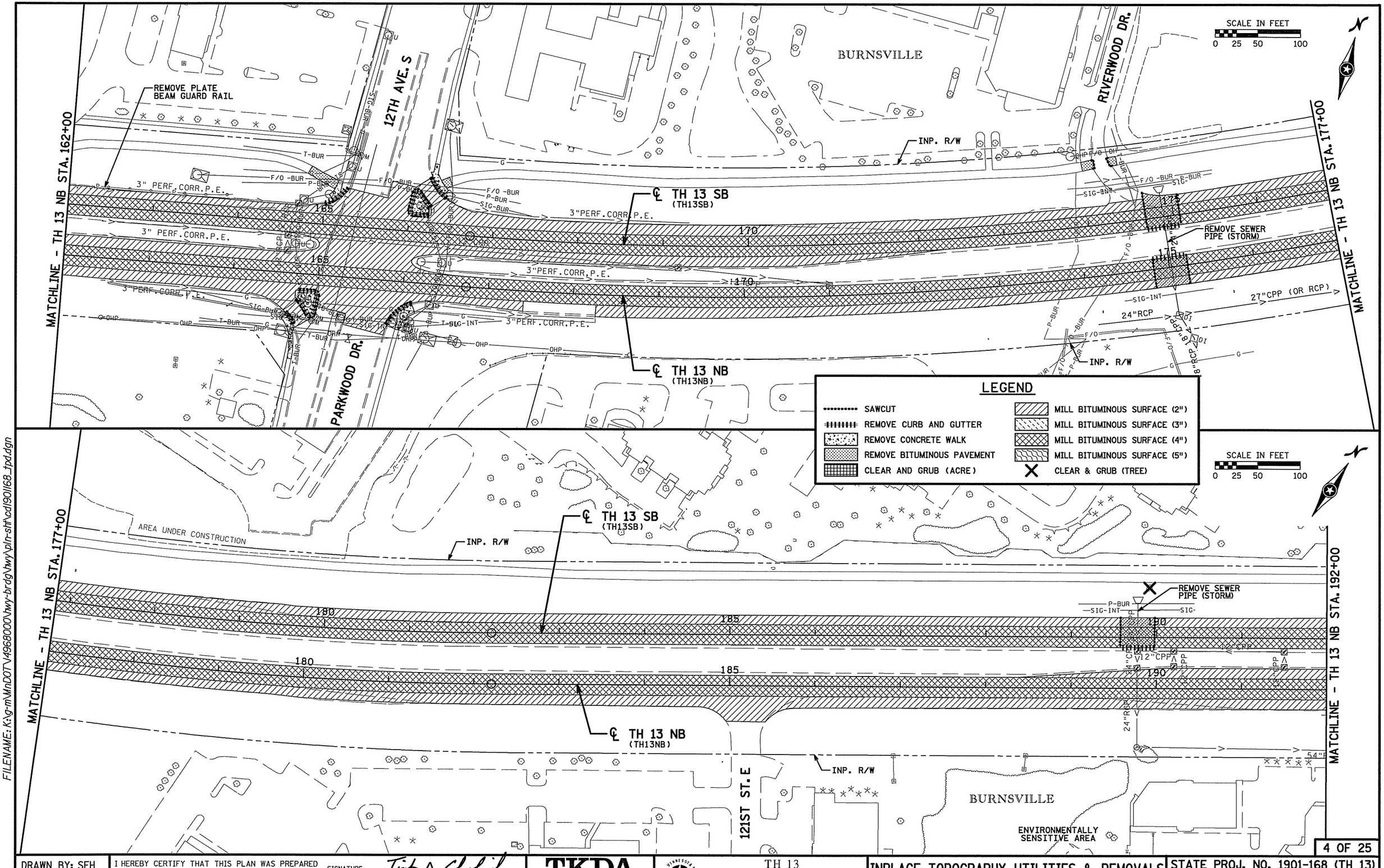
TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB 132+00 TO STA. 162+00

3 OF 25

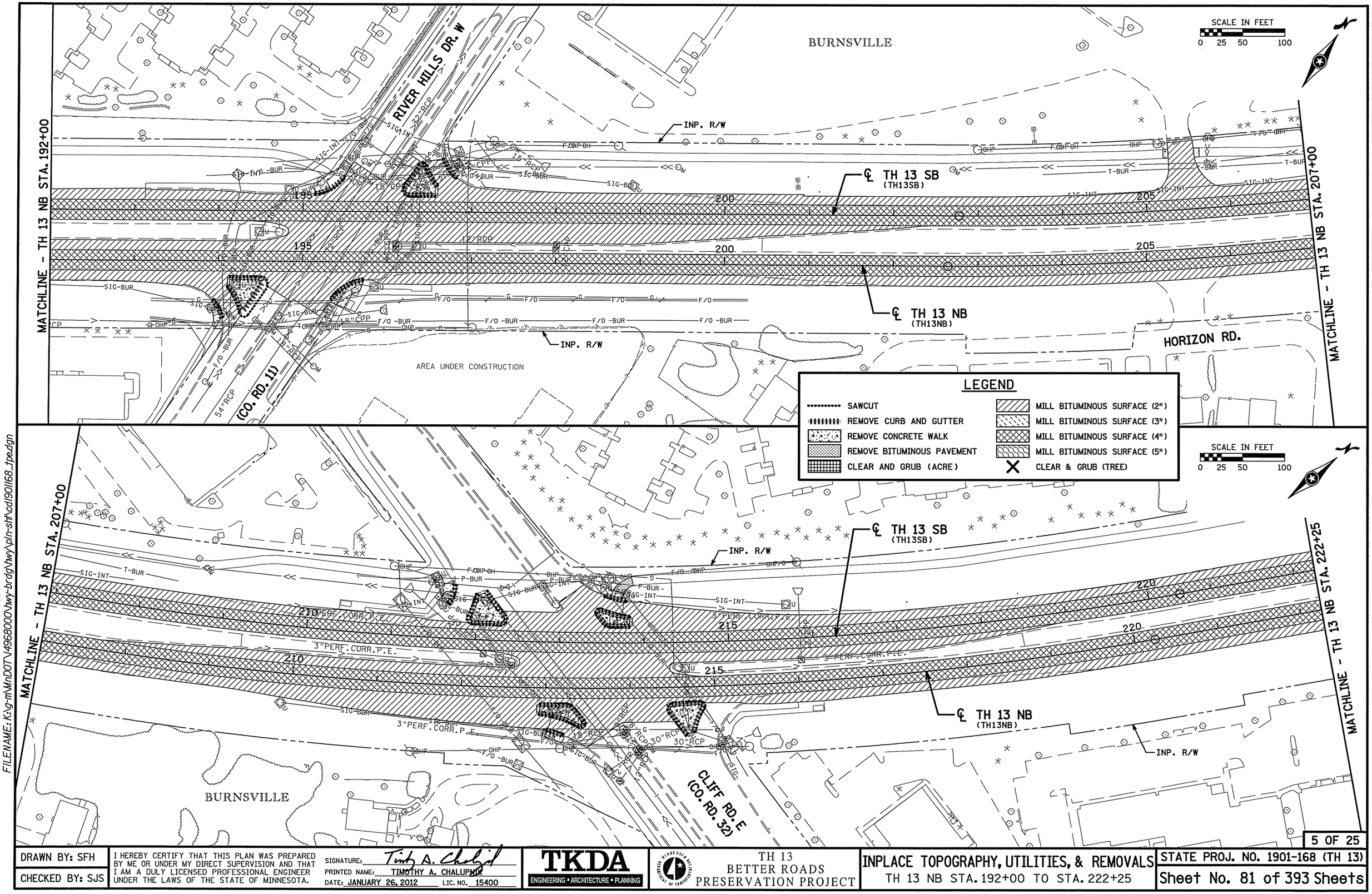
STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 79 of 393 Sheets



DATE: 1/26/2012 TIME: 8:15:05 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\odl901168_tpd.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: JANUARY 26, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 NB STA. 162+00 TO STA. 192+00	4 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 80 of 393 Sheets



DATE: 1/26/2012 TIME: 8:15:07 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\od190l168_tpe.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: JANUARY 26, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 NB STA. 192+00 TO STA. 222+25

STATE PROJ. NO. 1901-168 (TH 13)

ENVIRONMENTALLY SENSITIVE AREA

BURNSVILLE

117TH ST. E

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 222+25

MATCHLINE - TH 13 NB STA. 237+50

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

HORIZON DR.

KENNELLY CIRCLE

INP. R/W

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

115TH ST. E

INP. R/W

SCALE IN FEET
0 25 50 100

GALTIER DR.

MATCHLINE - TH 13 NB STA. 237+50

MATCHLINE - TH 13 NB STA. 252+50

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

INP. R/W

BURNSVILLE

DATE: 1/26/2012 TIME: 8:15:10 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad190l168_tpf.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 222+25 TO STA. 252+50

6 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 82 of 393 Sheets

MATCHLINE - TH 13 NB STA. 252+50

BURNSVILLE

INP. R/W

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

RIVER HILLS DR.

MATCHLINE - TH 13 NB STA. 922+00

SCALE IN FEET
0 25 50 100

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

MATCHLINE - TH 13 NB STA. 922+00

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

INP. R/W

BURNSVILLE

EAGAN

DIFFLEY RD.
(CO. RD. 30)

CANOPY

MATCHLINE - TH 13 NB STA. 937+00

DATE: 2/13/2012 TIME: 4:00:58 PM
FILENAME: K:\g-m\MnDOT\V4968000\hwy\brdg\hwy\pln-sht\cad\90168_tpg.dgn

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CHECKED BY: SJS

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PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 252+50 TO STA. 937+00

7 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 83 of 393 Sheets

SCALE IN FEET
0 25 50 100

INP. R/W

BURNSVILLE

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 937+00

MATCHLINE - TH 13 NB STA. 952+00

940 945 950

REMOVE MISCELLANEOUS STRUCTURES
(WEIGH-IN MOTION SYSTEM).
SEE SPECIAL PROVISIONS.

℄ TH 13 NB
(TH13NB)

EAGAN

INP. R/W

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 952+00

MATCHLINE - TH 13 NB STA. 967+00

955 960 965

REMOVE PLATE
BEAM GUARD RAIL

℄ TH 13 NB
(TH13NB)

REMOVE
AGGREGATE
CROSSOVER

INP. R/W

EAGAN

DATE: 2/13/2012 TIME: 4:01:01 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad1901168_tph.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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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PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 937+00 TO STA. 967+00

8 OF 25
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 84 of 393 Sheets

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

N

EAGAN

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

INP. R/W

XC

ENVIRONMENTALLY SENSITIVE AREA

℄ TH 13 SB
(TH13SB)

BRIDGE NO. 19055

REMOVE PLATE BEAM GUARD RAIL

REMOVE PLATE BEAM GUARD RAIL

975

980

MATCHLINE

970

975

980

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

DATE: 1/26/2012 TIME: 8:15:16 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-stf\cad\901168_tpl.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 967+00 TO STA. 981+00

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 85 of 393 Sheets

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

MATCHLINE

970

975

980

REMOVE PLATE BEAM GUARD RAIL

REMOVE PLATE BEAM GUARD RAIL

BRIDGE NO. 19056

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

EAGAN

INP. R/W

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

DATE: 1/26/2012 TIME: 8:15:18 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sth\cdl1901168_tpl.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 967+00 TO STA. 981+00

10 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 86 of 393 Sheets

EAGAN

INP. R/W

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

REMOVE PLATE
BEAM GUARDRAIL

MATCHLINE - TH 13 NB STA. 981+00

MATCHLINE - TH 13 NB STA. 995+50

985 990 995

985 990 995

REMOVE PLATE
BEAM GUARD RAIL

℄ TH 13 NB
(TH13NB)

INP. R/W

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

INP. R/W

EAGAN

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 995+50

MATCHLINE - TH 13 NB STA. 1010+50

1000 1005 1010

1000 1005 1010

SIG-BUR

℄ TH 13 NB
(TH13NB)

INP. R/W

DATE: 2/13/2012 TIME: 4:01:04 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plh-sth\cd190l68_tpk.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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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PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 981+00 TO STA. 1010+50

11 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 87 of 393 Sheets

DATE: 2/13/2012 TIME: 4:01:07 PM
FILENAME: K:\g-mMnD07\V4968000\hwy-brdg\hwy\plr-sht\cd190l168_tpl.dgn

SILVER BELL RD.

EAGAN

INP. R/W

℄ TH 13 SB
(TH13SB)

ENVIRONMENTALLY SENSITIVE AREA

MATCHLINE - TH 13 NB STA. 1010+50

MATCHLINE - TH 13 NB STA. 1025+00

F/O -BUR

2 - 18"X28.5"RCPA

SIG-BUR

P-BUR

1015

1020

G

18"RCP

℄ TH 13 NB
(TH13NB)

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

SCALE IN FEET
0 25 50 100

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

SENECA RD.

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

MATCHLINE - TH 13 NB STA. 1025+00

℄ TH 13 SB
(TH13SB)

℄ TH 13
(TH130LDCL)

1025

1030

1035

T-BUR

P-BUR

HHD

℄ TH 13 NB
(TH13NB)

INP. R/W

EAGAN

BURGUNDY DR.

VERMILLION CT. S

MATCHLINE - TH 13 STA. 1035+20

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 NB STA. 1010+50 TO TH 13 STA. 1035+20

12 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 88 of 393 Sheets

SHAWNEE RD.

BLACKHAWK RD.

EAGAN

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13
(TH13OLDCL)

MATCHLINE - TH 13 STA. 1035+20

MATCHLINE - TH 13 STA. 1050+50

1040 1045 1050

24"RCP 18"RCP 21"RCP

P-BUR F/O -BUR SIG-BUR T-BUR TV-BUR T-E OM

ROBIN LN

ENVIRONMENTALLY SENSITIVE AREA

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

INP. R/W

YANKEE DR.

℄ TH 13
(TH13OLDCL)

MATCHLINE - TH 13 STA. 1050+50

MATCHLINE - TH 13 STA. 1065+50

1055 1060 1065

INP. R/W

EAGAN

DATE: 2/13/2012 TIME: 4:01:10 PM
FILENAME: K:\g-mWnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\901168_1pm.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

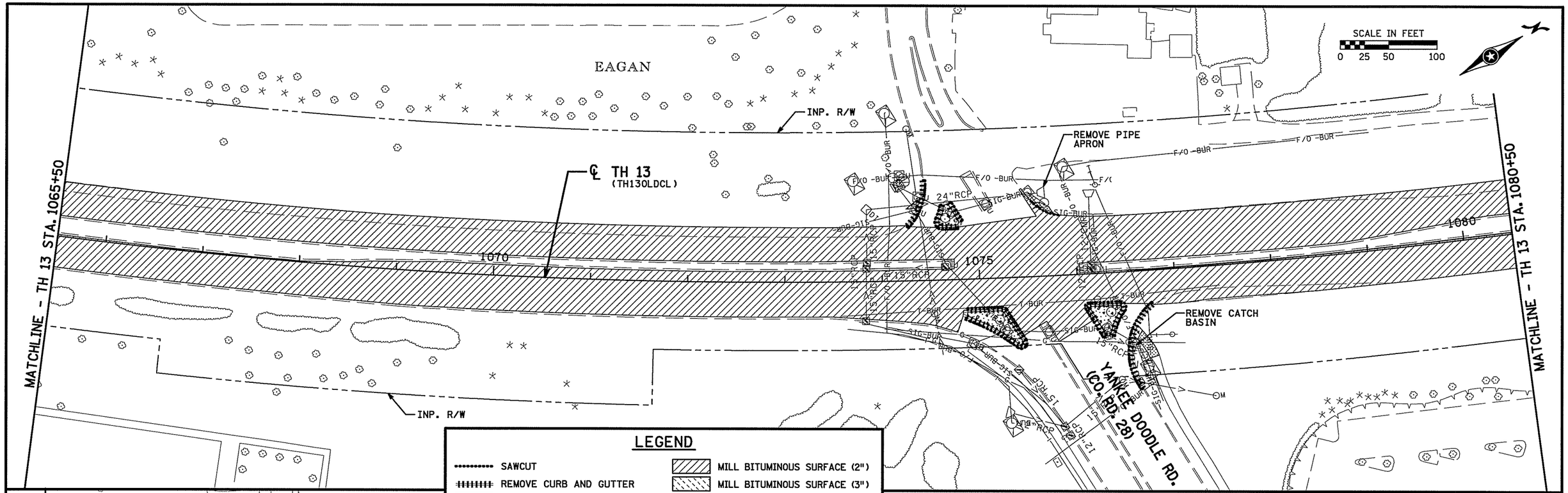
TH 13
BETTER ROADS
PRESERVATION PROJECT

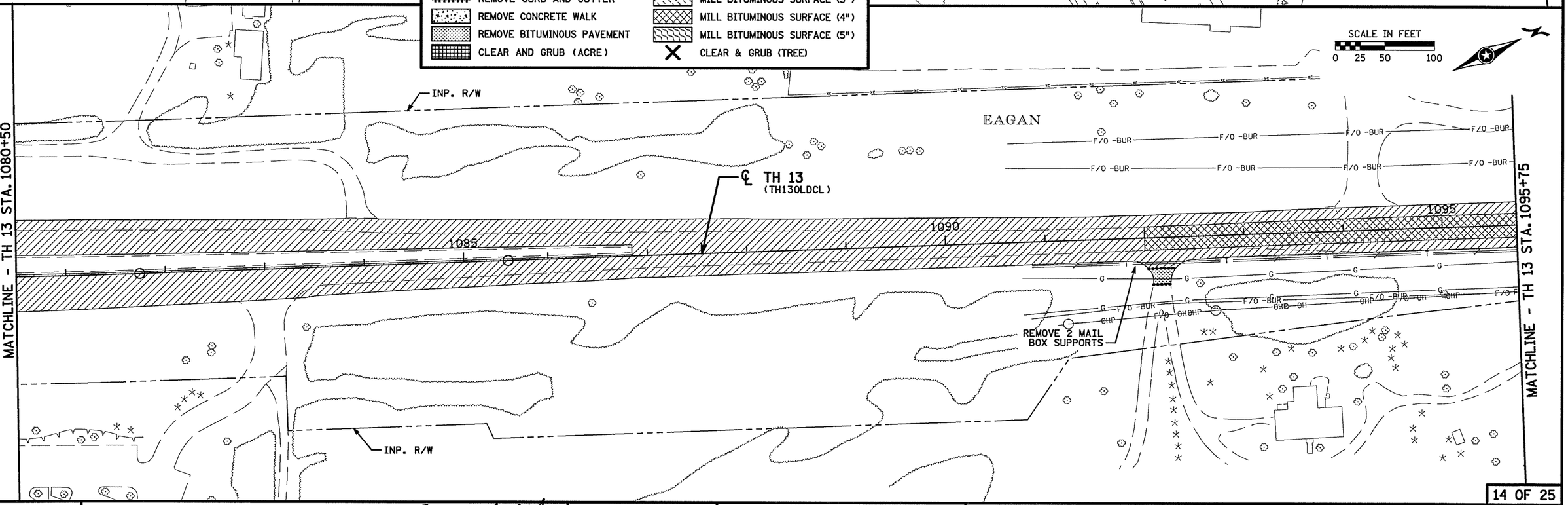
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 STA. 1035+20 TO STA. 1065+50

13 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 89 of 393 Sheets





DATE: 2/13/2012 TIME: 4:01:4 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-strt\cad\90ll68_tpn.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 STA. 1065+50 TO STA. 1095+75

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 90 of 393 Sheets

DATE: 2/13/2012 TIME: 4:01:17 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cdl901l68_tpo.dgn

MATCHLINE - TH 13 STA. 1095+75

MATCHLINE - TH 13 STA. 1110+75

SCALE IN FEET
0 25 50 100

TERMINAL DR.

INP. R/W

℄ TH 13
(TH130LDCL)

REMOVE PIPE APRON

REMOVE PIPE APRON

15"CMP

1100

1105

1110

33"CPP

33"CMP

33"CPP

INP. R/W

REMOVE PLATE BEAM GUARD RAIL

33"RCP

4"CMP

15"RCP

12"RCP

15"RCP

LETENDRE ST.

EAGAN

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

ALEXANDER RD.

MEADOW VIEW RD.

INP. R/W

36"RCP

48"RCP

24"RCP

12"RCP

18"RCP

℄ TH 13
(TH130LDCL)

1115

1120

1125

REMOVE PLATE BEAM GUARD RAIL

REMOVE PIPE CULVERT

FOUR OAKS RD.

INP. R/W

EAGAN

McCARTHY RD.

18"RCP

18"RCP

18"RCP

18"RCP

MATCHLINE - TH 13 STA. 1110+75

MATCHLINE - TH 13 STA. 1126+00

DRAWN BY: SFH
CHECKED BY: SJS

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
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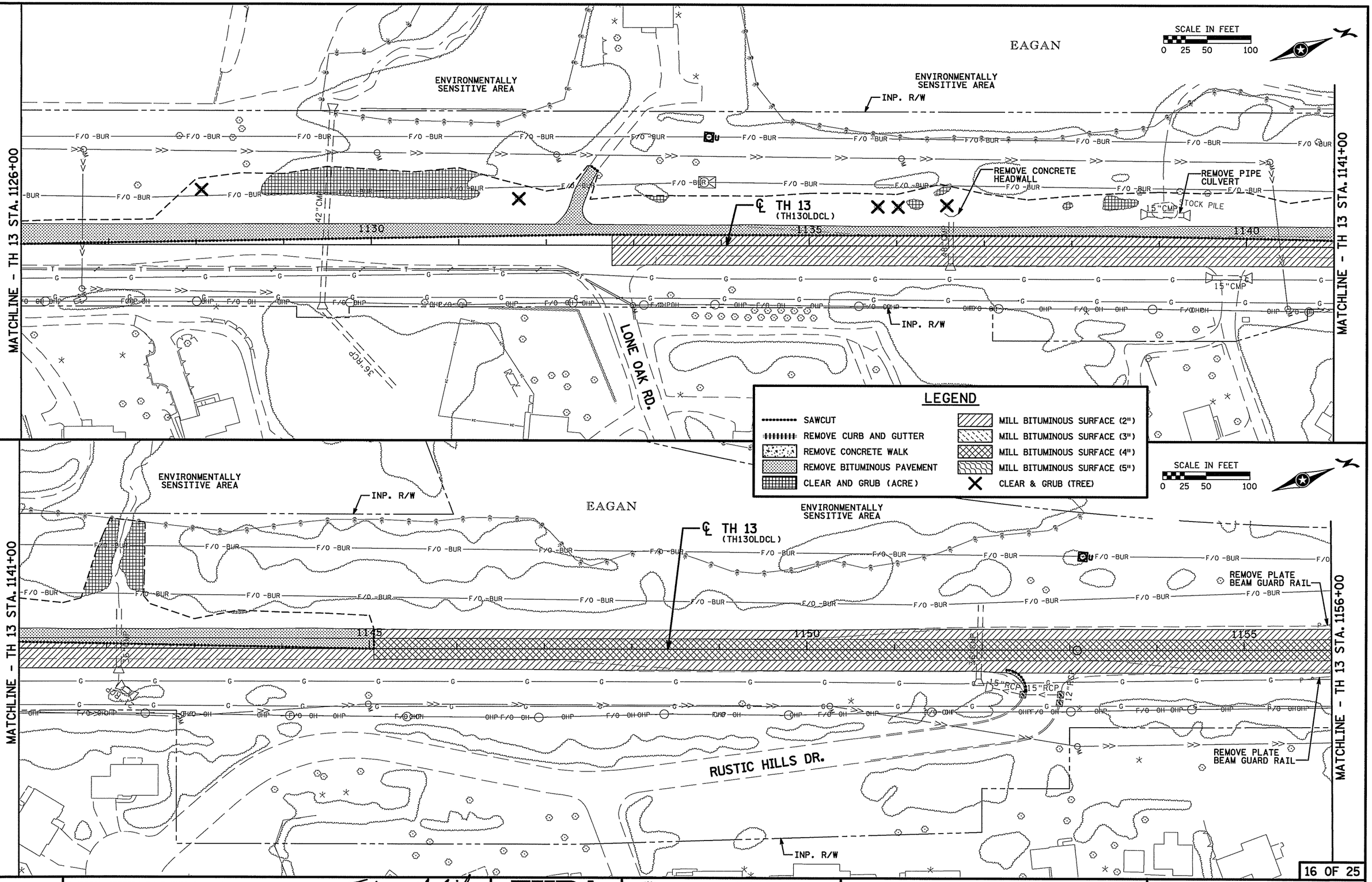
TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 STA. 1095+75 TO STA. 1126+00

15 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 91 of 393 Sheets



DATE: 2/13/2012 TIME: 4:01:21 PM
FILENAME: K:\g-mUnDOT\4968000\hwy-brdg\hwy\pln-strt\cd190l68_tpp.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 STA. 1126+00 TO STA. 1156+00	16 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 92 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 1156+00

REMOVE PLATE BEAM GUARD RAIL

REMOVE PIPE APRON

℄ TH 13
(TH13OLDCL)

INP. R/W

℄ TH 13 SB
(TH13SB1)

℄ TH 13 NB
(TH13NB1)

INP. R/W

REMOVE PLATE BEAM GUARD RAIL

HIGHVIEW AVE.

EAGAN

MATCHLINE - TH 13 NB STA. 1170+50

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 1170+50

INP. R/W

℄ TH 13 SB
(TH13SB1)

℄ TH 13 NB
(TH13NB1)

INP. R/W

BEGIN EXCEPTION
STA. 1177+56.66

EAGAN

BRIDGE NO. 19825

TH 494 EB

TH 494 WB

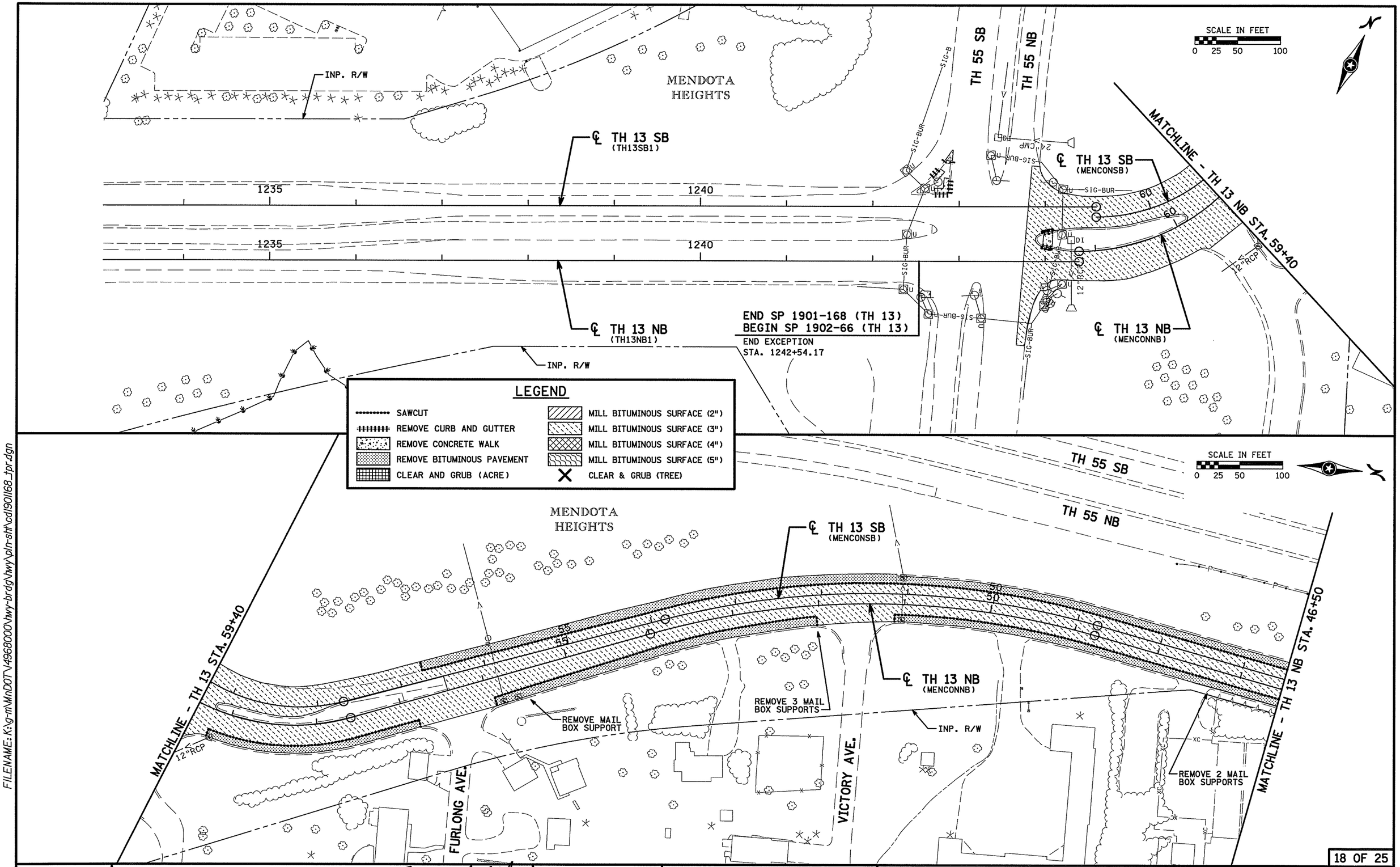
DATE: 2/13/2012 TIME: 4:01:24 PM
FILENAME: K:\g-m\MnDOT\49680000\hwy-brdg\hwy\pln-sht\cd1901168_tpq.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 1156+00 TO TH 13 NB STA. 1185+00

17 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 93 of 393 Sheets



DATE: 2/13/2012 TIME: 4:01:27 PM
FILENAME: K:\g-mn\MnDOT\4968000\hwy-br-dg\hwy\plh-sht\cd190l168_tpr.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 NB 1233+00 TO STA. 46+50	18 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 94 of 393 Sheets

TH 55 SB
TH 55 NB
ACACIA BLVD.
BRIDGE NO. 19090
MATCHLINE - TH 13 NB STA. 46+50
℄ TH 13 SB (MENCONSB)
℄ TH 13 NB (MENCONNB)
12"CMP
12"RCP
INP. R/W
ENVIRONMENTALLY SENSITIVE AREA
MENDOTA HEIGHTS
MATCHLINE - TH 13 NB STA. 32+00
SCALE IN FEET 0 25 50 100

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET 0 25 50 100

MATCHLINE - TH 13 NB STA. 32+00
MENDOTA HEIGHTS
TH 110 EB
TH 110 WB
℄ TH 13 SB (MENCONSB)
℄ TH 13 NB (MENCONNB)
INP. R/W
MATCHLINE - TH 13 NB STA. 44+00
ENVIRONMENTALLY SENSITIVE AREA
MENDOTA
VICTORY CURVE
SIG-BUR
F/O -BUR
24"RCP
12"RCP
4"PVC

DATE: 2/13/2012 TIME: 4:01:30 PM
FILENAME: K:\g-mUnDOT\4968000\hwy-brdg\hwy\plnr-shr\cad\901168_tps.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 NB STA. 46+50 TO STA. 44+00

MENDOTA HEIGHTS

TH 55 NB

TH 110 WB

SCALE IN FEET
0 25 50 100

℄ TH 13 SB (MENCONSB)

℄ TH 13 (MENCONNB)

MATCHLINE - TH 13 NB STA. 44+00

℄ TH 13 NB (MENCONNB)

WINDY RIDGE

40

35

30

P-BUR

INP. R/W

MENDOTA

MATCHLINE - TH 13 STA. 29+50

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SIBLEY MEMORIAL HWY

MENDOTA HEIGHTS

BRIDGE NO. 97680

ENVIRONMENTALLY SENSITIVE AREA

OHU

TH 55 SB

TH 55 NB

SCALE IN FEET
0 25 50 100

℄ TH 13 (MENCONNB)

INP. R/W

25

20

BIG RIVERS REGIONAL TRAIL

INP. R/W

MENDOTA

MATCHLINE - TH 13 STA. 16+00

MATCHLINE - TH 13 STA. 29+50

DATE: 1/26/2012 TIME: 8:15:44 AM
FILENAME: K:\g-mVMnDOT\V4968000\hwy-brdg\hwy\plh-sht\cad\90168_tpt.dgn

DRAWN BY: SFH

CHECKED BY: SJS

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 NB STA. 44+00 TO TH 13 STA. 16+00

20 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 96 of 393 Sheets

MENDOTA HEIGHTS

INP. R/W

MENDOTA

℄ TH 13 (MENCONNB)

D ST.

15"RCP

4"PVC

℄ TH 13 (TH13)

MATCHLINE - TH 13 STA. 16+00

MATCHLINE - TH 13 STA. 5+00

INP. R/W

BIG RIVERS REGIONAL TRAIL

REMOVE CATCH BASIN

REMOVE CONCRETE DRIVEWAY PAVEMENT

SCALE IN FEET
0 25 50 100

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

MENDOTA

℄ TH 13 (TH13)

MATCHLINE - TH 13 STA. 5+00

INP. R/W

BEGIN EXCEPTION STA. 17+50.00

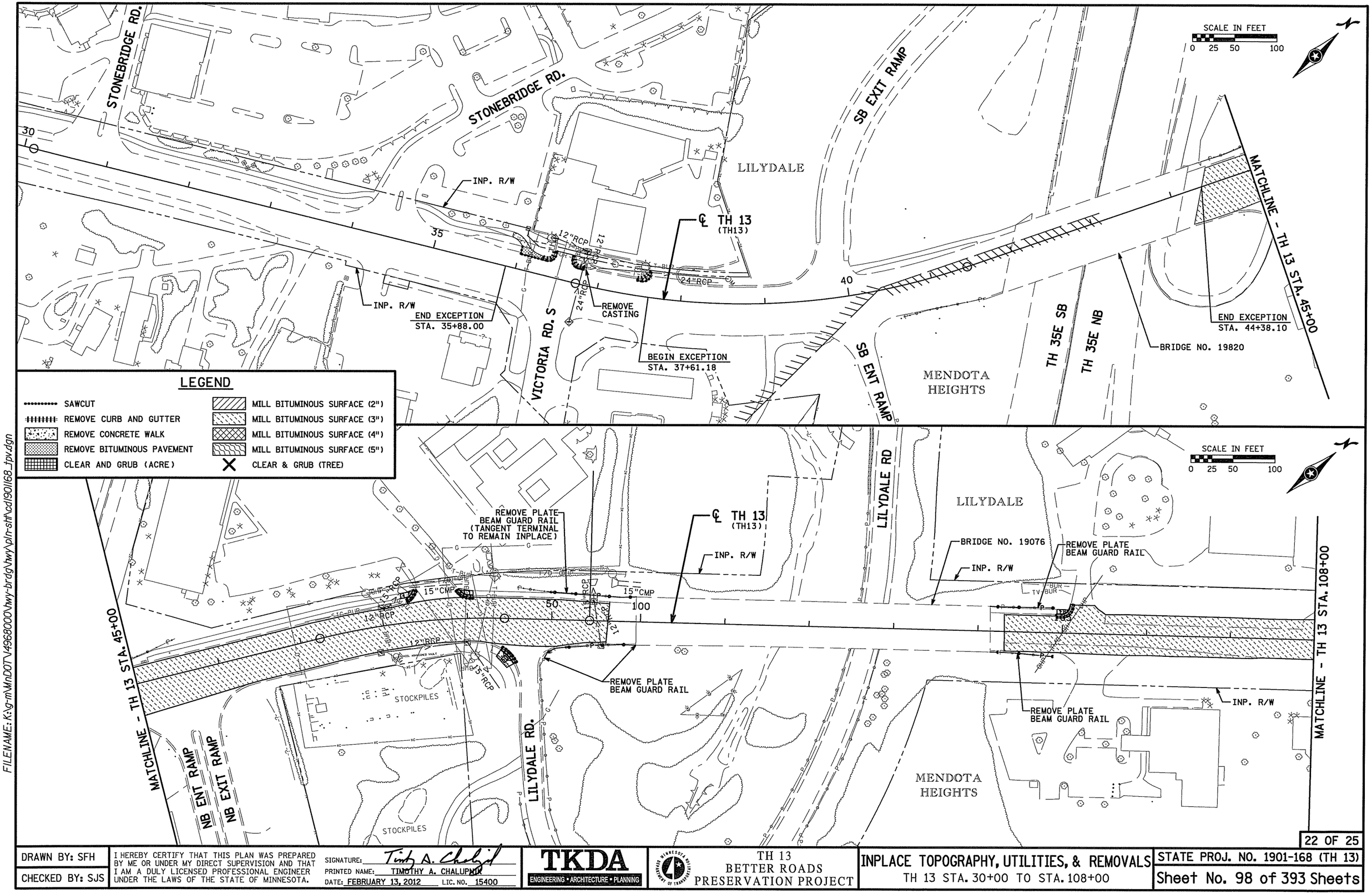
MENDOTA HEIGHTS

BIG RIVERS REGIONAL TRAIL

2ND ST.

DATE: 2/13/2012 TIME: 4:01:34 PM
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DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 STA. 16+00 TO STA. 21+00	21 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 97 of 393 Sheets



DATE: 2/14/2012 TIME: 7:49:49 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190168_tpv.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 STA. 30+00 TO STA. 108+00

22 OF 25

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 98 of 393 Sheets

LILYDALE

SCALE IN FEET
0 25 50 100

℄ TH 13
(TH13)

INP. R/W

110 115 120

MATCHLINE - TH 13 STA. 108+00

MATCHLINE - TH 13 STA. 122+50

INP. R/W

RIVERSIDE LN.

MENDOTA
HEIGHTS

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

LILYDALE

SCALE IN FEET
0 25 50 100

℄ TH 13
(TH13)

BRIDGE NO. 19077

REMOVE PLATE
BEAM GUARD RAIL

REMOVE PLATE
BEAM GUARD RAIL

REMOVE PLATE
BEAM GUARD RAIL

REMOVE PLATE
BEAM GUARD RAIL

INP. R/W

125 130 135

MATCHLINE - TH 13 STA. 122+50

MATCHLINE - TH 13 STA. 137+00

INP. R/W

REMOVE MAIL
BOX SUPPORT

REMOVE MAIL
BOX SUPPORT

REMOVE PLATE
BEAM GUARDRAIL
(TANGENT TERMINAL
TO REMAIN INPLACE)

MENDOTA
HEIGHTS

WACHTLER AVE. (CO. RD. 8)

DATE: 2/13/2012 TIME: 4:01:40 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190l168_tpw.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 108+00 TO STA. 137+00	23 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 99 of 393 Sheets

SPECIFIC NOTES (ENTIRE SHEET):

① REMOVE PIPE TO R/W. BULKHEAD REMAINING PIPE AT R/W.

SCALE IN FEET
0 25 50 100

LILYDALE

MENDOTA HEIGHTS

℄ TH 13 (TH13)

MATCHLINE - TH 13 STA. 137+00

MATCHLINE - TH 13 STA. 150+50

REMOVE PIPE SEWER (STORM) ①

REMOVE CATCH BASIN

REMOVE PIPE SEWER (STORM)

REMOVE PIPE CULVERT ①

INP. R/W

REMOVE PLATE BEAM GUARD RAIL

REMOVE PIPE SEWER (STORM)

REMOVE PLATE BEAM GUARD RAIL

REMOVE PIPE SEWER (STORM)

INP. R/W

REMOVE PLATE BEAM GUARD RAIL (TANGENT TERMINAL TO REMAIN INPLACE)

REMOVE CATCH BASINS

D.E.

BRIDGE NO. 19077

12"RCP

24"PVC

24"CPP

15"CPP

22.5°RISER (TEMP.)

145

150

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

LILYDALE

MENDOTA HEIGHTS

MATCHLINE - TH 13 STA. 150+50

MATCHLINE - TH 13 STA. 164+80

REMOVE PIPE SEWER (STORM)

REMOVE PIPE SEWER (STORM)

REMOVE CATCH BASIN

REMOVE PIPE SEWER (STORM)

REMOVE PLATE BEAM GUARD RAIL

INP. R/W

REMOVE CATCH BASIN

INP. R/W

REMOVE PLATE BEAM GUARD RAIL (TANGENT TERMINAL TO REMAIN INPLACE)

℄ TH 13 (TH13)

REMOVE PIPE SEWER (STORM)

REMOVE BITUMINOUS CURB (INCIDENTAL)

REMOVE PIPE CULVERT

REMOVE 3 MAIL BOX SUPPORTS

SYLVANDALE RD.

BROMPTON PL.

12"RCP

12"PVC

24"CMP

30"RCP

15"CMP

155

160

DATE: 2/14/2012 TIME: 8:44:04 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190l168_tpx.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS TH 13 STA. 137+00 TO STA. 164+80	24 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 100 of 393 Sheets

MATCHLINE - TH 13 STA. 164+80

MENDOTA HEIGHTS

LILYDALE

REMOVE PIPE SEWER (STORM)
REMOVE MAIL BOX SUPPORT
REMOVE PIPE CULVERT
REMOVE PIPE CULVERT
REMOVE MAIL BOX SUPPORT
REMOVE MAIL BOX SUPPORT
REMOVE PIPE CULVERT
REMOVE PIPE CULVERT
REMOVE PIPE APRON
REMOVE PIPE APRON
℄ TH 13 (TH13)
INP. R/W
REMOVE PIPE CULVERT
REMOVE PIPE CULVERT
REMOVE PIPE CULVERT
INP. R/W
REMOVE PIPE CULVERT

18"CMP 15"CMP 15"CMP 15"CMP 15"CMP 15"CMP 15"CMP 15"CMP 24"RISE (CMPA) 24"RISE (CMPA) 18"RISE (RCPA) 15"RISE (CMPA) 18"RCP 15"RCP 12"RCP 12"RCP 12"RCP

LONDON RD.

DOWNING ST.

SUTCLIFF CIR.

MATCHLINE - TH 13 STA. 178+50

SCALE IN FEET
0 25 50 100

LEGEND

- SAWCUT
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- CLEAR AND GRUB (ACRE)
- MILL BITUMINOUS SURFACE (2")
- MILL BITUMINOUS SURFACE (3")
- MILL BITUMINOUS SURFACE (4")
- MILL BITUMINOUS SURFACE (5")
- CLEAR & GRUB (TREE)

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 178+50

LILYDALE

℄ TH 13 (TH13)

END SP 1902-66 (TH 13)
STA. 189+00.00

INP. R/W

INP. R/W

REMOVE MAIL BOX SUPPORT
REMOVE PIPE CULVERT
REMOVE MAIL BOX SUPPORT
REMOVE PIPE CULVERT
REMOVE PIPE CULVERT
REMOVE MAIL BOX SUPPORT
REMOVE PIPE CULVERT
REMOVE MAIL BOX SUPPORT

18"CMP 15"CMP 15"CMP 12"CMP 18"CMP 15"RCP 24"RISE (CMPA)

GARDEN LN.

W ANNAPOLIS ST.

FREMONT AVE.

MENDOTA HEIGHTS

DATE: 2/14/2012 TIME: 8:44:09 AM
FILENAME: K:\g-mWnDOT\4968000\hwy-brdg\hwy\pln-sht\od190168_1py.dgn

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS
TH 13 STA. 164+80 TO STA. 189+00

25 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 101 of 393 Sheets

DATE: 2/13/2012 TIME: 4:01:43 PM
FILENAME: K:\g-mNnDOT\4968000\hwy-brdg\hwy\plr-sth\cd1901168_cpa.dgn

BURNSVILLE

TH 35W SB

TH 35W NB

BRIDGE NO. 9779

BRIDGE NO. 9780

BEGIN SP 1901-168 (TH 13)
STA. 735+61.99

735

740

PLATE BEAM GUARDRAIL

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 743+50

SCALE IN FEET
0 25 50 100

BITUMINOUS OVERLAY LEGEND
(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

RIVER RIDGE BLVD.

INP. R/W

PLATE BEAM GUARDRAIL

℄ TH 13 SB
(TH13SB)

745

750

100

EQ STA. 754+25.34 BK =
STA. 99+82.70 AH

℄ TH 13 NB
(TH13NB)

BURNSVILLE

INP. R/W

TRAVELERS TRAIL W

MATCHLINE - TH 13 NB STA. 743+50

MATCHLINE - TH 13 NB STA. 103+00

SCALE IN FEET
0 25 50 100

1 OF 25

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CHECKED BY: SJS

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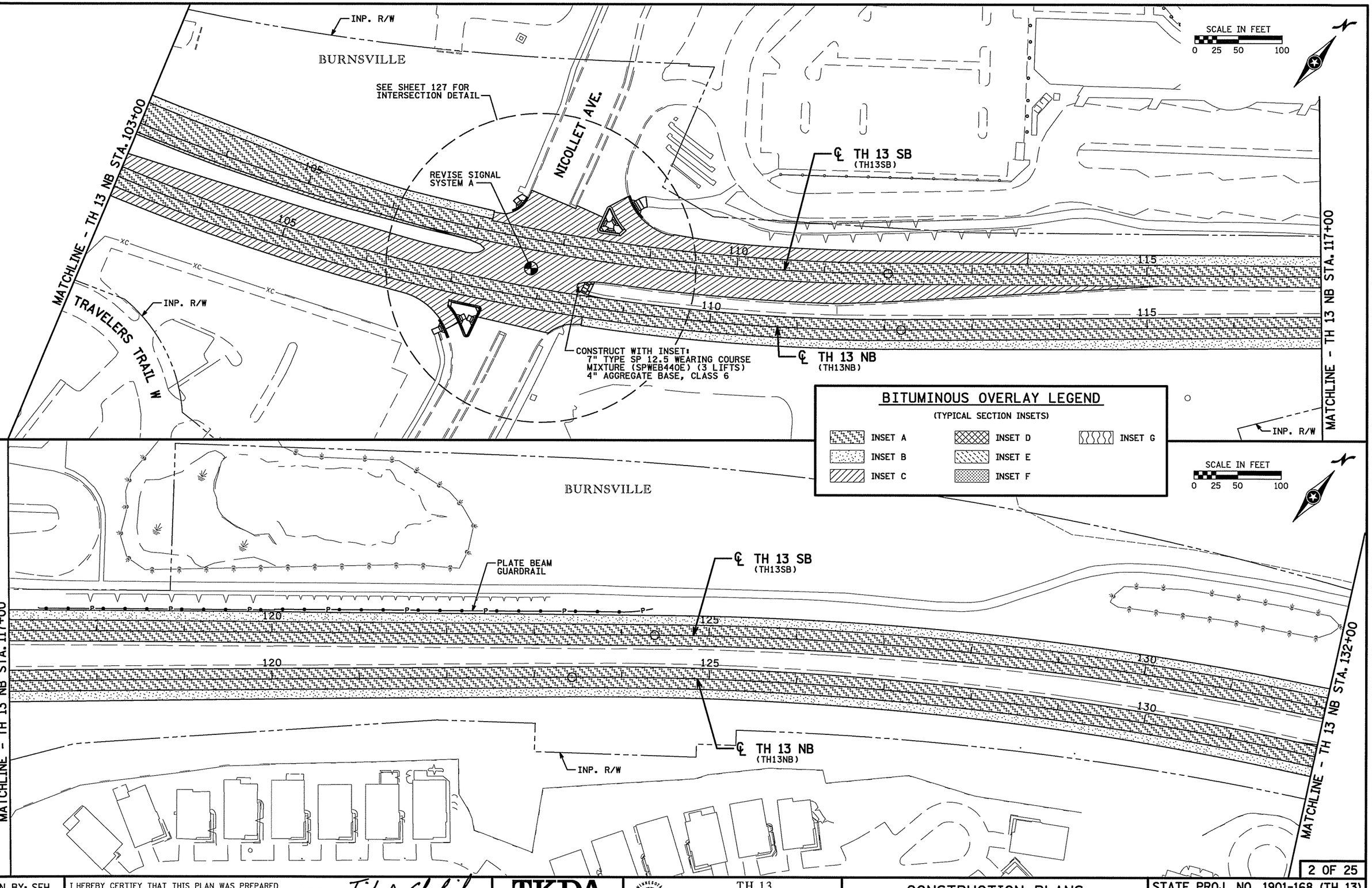
SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

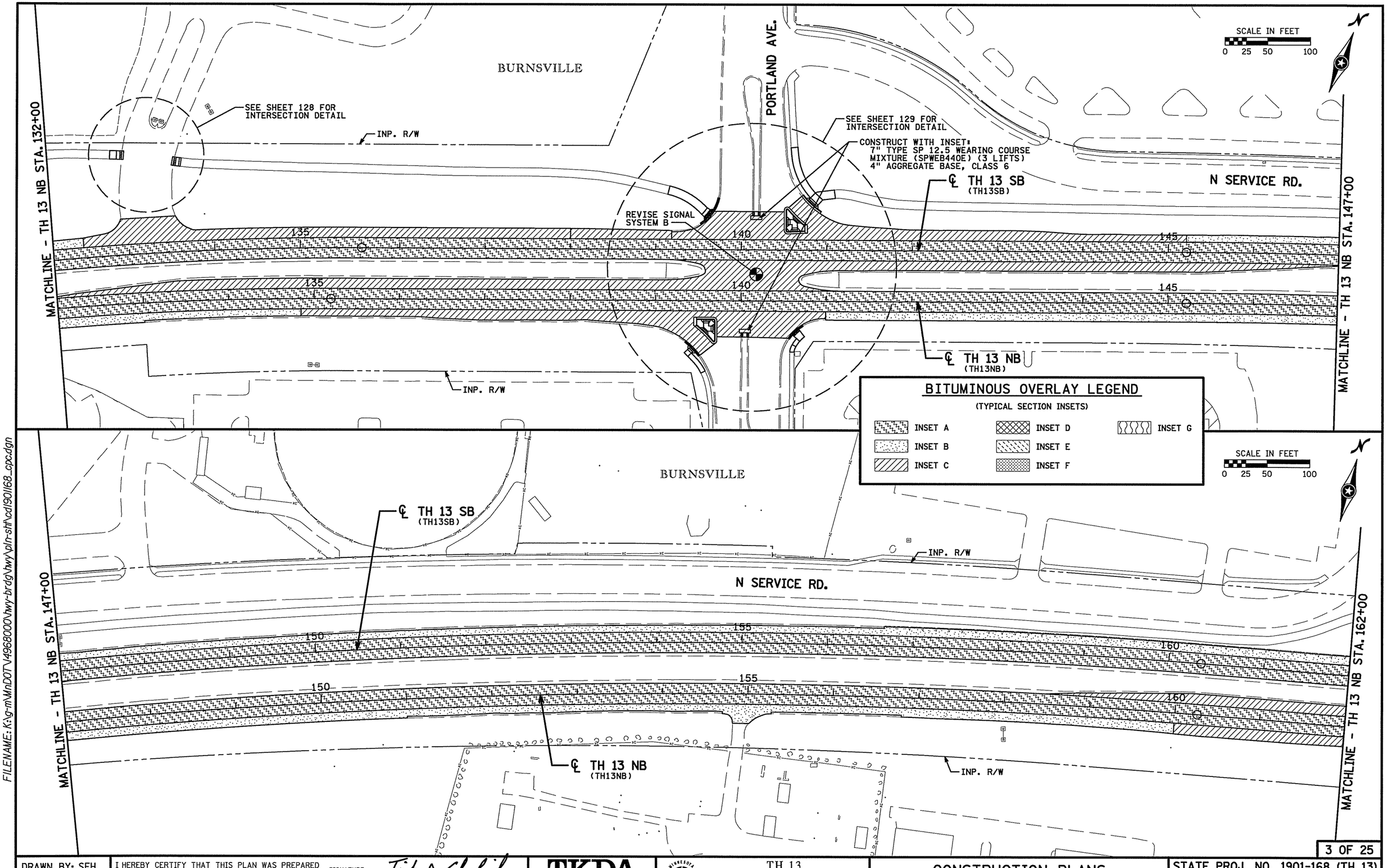
CONSTRUCTION PLANS
TH 13 NB STA. 735+00 TO STA. 103+00

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 102 of 393 Sheets



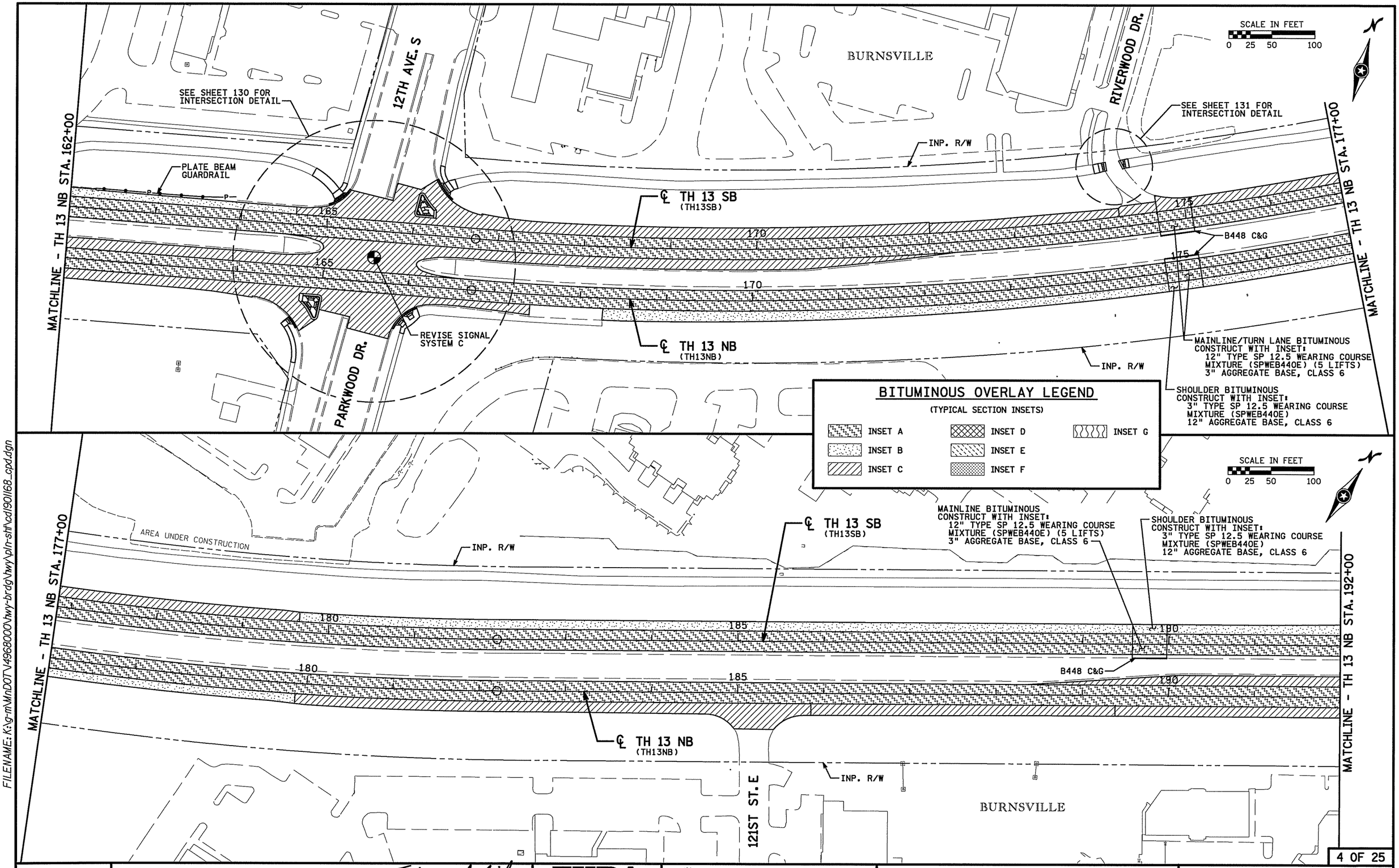
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FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sht\cd1901168_cpb.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 NB STA. 103+00 TO STA. 132+00	2 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 103 of 393 Sheets



DATE: 2/13/2012 TIME: 4:01:50 PM
FILENAME: K:\g-m\MnDOT\49680000\hwy-brdg\hwy\pln-sht\cd1901168_cpc.dgn

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DATE: 2/13/2012 TIME: 4:01:54 PM
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SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

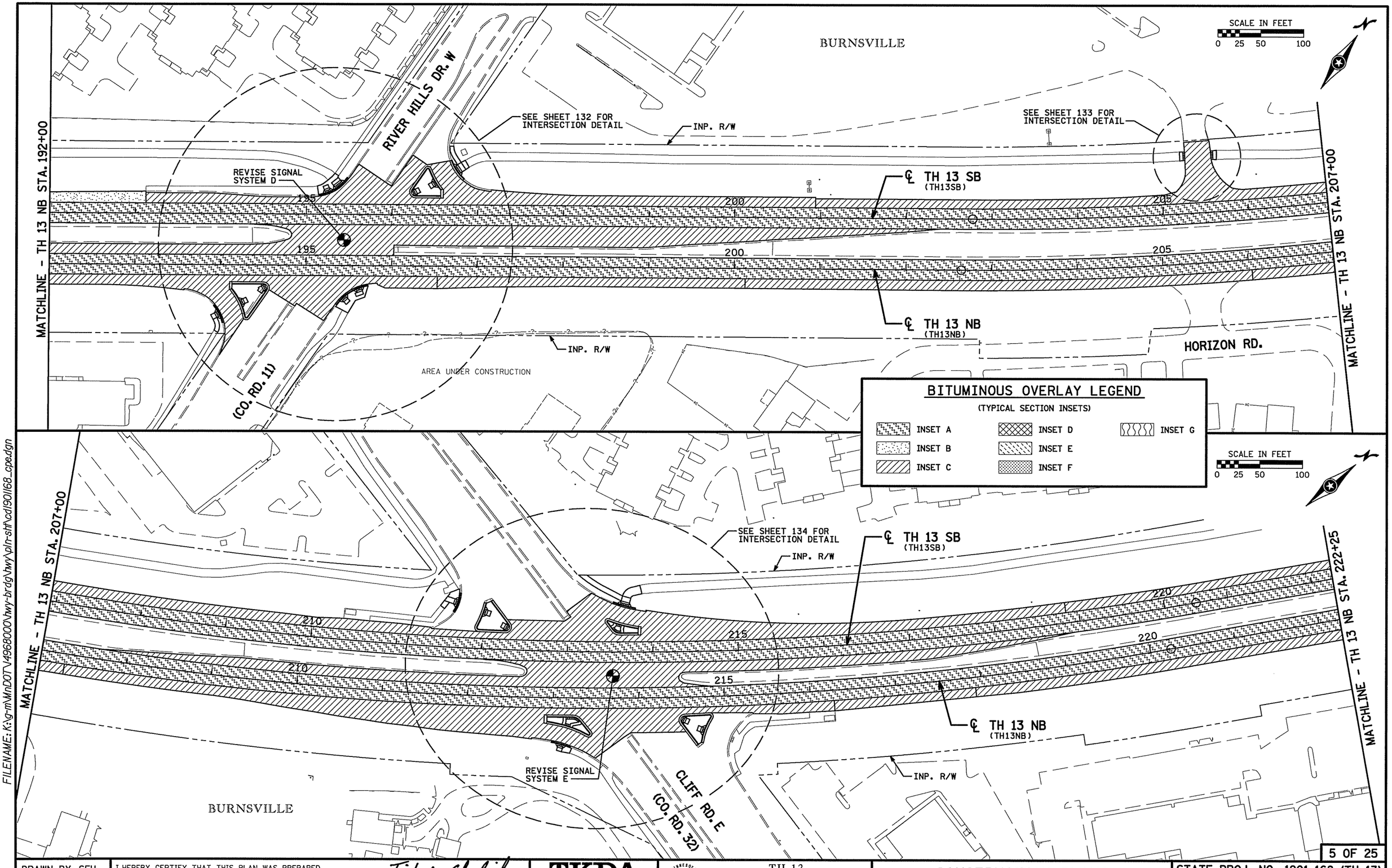
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PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 NB STA. 162+00 TO STA. 192+00

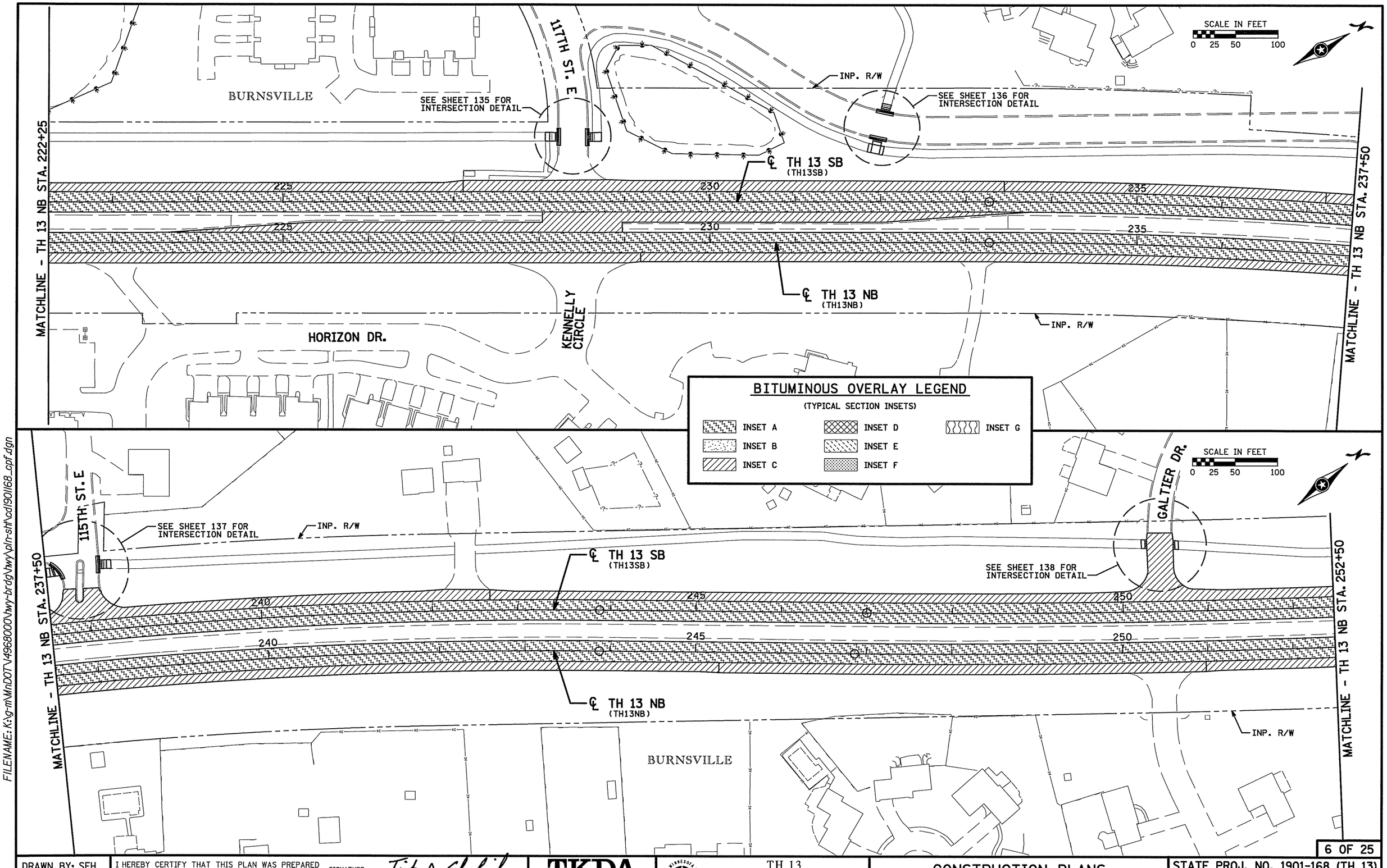
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 105 of 393 Sheets

4 OF 25



DATE: 2/13/2012 TIME: 4:01:57 PM
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DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 NB STA. 192+00 TO STA. 222+25	5 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 106 of 393 Sheets



DATE: 2/13/2012 TIME: 4:02:00 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plr-sth\cd1901168_opf.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 NB STA. 222+25 TO STA. 252+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 107 of 393 Sheets

DATE: 2/13/2012 TIME: 4:02:03 PM
FILENAME: K:\g-mVMnD0TV4968000V\hwy-brdg\hwy\plr-sht\cdl901168_cpg.dgn

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SCALE IN FEET
0 25 50 100

INP. R/W

BURNSVILLE

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 937+00

MATCHLINE - TH 13 NB STA. 952+00

940 945 950

940 945 950

EQ STA. 942+28.20 BK =
STA. 942+21.61 AH

℄ TH 13 NB
(TH13NB)

EAGAN

INP. R/W

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 952+00

955 960 965

955 960 965

PLATE BEAM GUARDRAIL

℄ TH 13 NB
(TH13NB)

INP. R/W

MATCHLINE - TH 13 NB STA. 967+00

EAGAN

DATE: 2/13/2012 TIME: 4:02:07 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cd1901168_cph.dgn

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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 NB STA. 937+00 TO STA. 967+00

8 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 109 of 393 Sheets

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

EAGAN

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

INP. R/W

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

BRIDGE NO. 19055

PLATE BEAM GUARDRAIL

PLATE BEAM GUARDRAIL

MATCHLINE

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

970

975

980

DATE: 2/13/2012 TIME: 4:02:10 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plh-sth\cd1901168_cpl.dgn

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PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 NB STA. 967+00 TO STA. 981+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 110 of 393 Sheets

9 OF 25

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

970 975 980

MATCHLINE

PLATE BEAM GUARDRAIL

970 975 980

PLATE BEAM GUARDRAIL

℄ TH 13 NB
(TH13NB)

BRIDGE NO. 19056

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

EAGAN

INP. R/W

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

DATE: 2/13/2012 TIME: 4:02:12 PM
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DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 NB STA. 967+00 TO STA. 981+00

10 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 111 of 393 Sheets

DATE: 2/13/2012 TIME: 4:02:15 PM
FILENAME: K:\g-mMnDOT\V4968000\hwy-brdg\hwy\plr-sth\cd190l168_opk.dgn

EAGAN

INP. R/W

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

PLATE BEAM GUARDRAIL

985 990 995

MATCHLINE - TH 13 NB STA. 981+00

MATCHLINE - TH 13 NB STA. 995+50

985 990 995

PLATE BEAM GUARDRAIL

℄ TH 13 NB
(TH13NB)

INP. R/W

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

EAGAN

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 995+50

MATCHLINE - TH 13 NB STA. 1010+50

1000 1005 1010

1000 1005 1010

EQ STA. 1006+60.70 BK =
STA. 1006+46.16 AH

℄ TH 13 NB
(TH13NB)

INP. R/W

11 OF 25

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SILVER BELL RD.

CONSTRUCT WITH INSET:
7" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440E) (3 LIFTS)
4" AGGREGATE BASE, CLASS 6

SEE SHEET 141 FOR INTERSECTION DETAIL

MATCHLINE - TH 13 NB STA. 1010+50

EAGAN

INP. R/W

℄ TH 13 SB
(TH13SB)

1015

1020

REVISE SIGNAL SYSTEM H

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 1025+00

SCALE IN FEET
0 25 50 100

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SENECA RD.

MATCHLINE - TH 13 NB STA. 1025+00

INP. R/W

℄ TH 13 SB
(TH13SB)

℄ TH 13
(TH13OLDCL)

1030

1035

SEE SHEET 142 FOR INTERSECTION DETAIL

℄ TH 13 NB
(TH13NB)

INP. R/W

EQ STA. 1036+05.12 BK =
A POINT 12.00' RT.
STA. 1031+34.10 AH

BURGUNDY DR.

EAGAN

VERMILLION CT. S

MATCHLINE - TH 13 STA. 1035+20

SCALE IN FEET
0 25 50 100

DATE: 2/13/2012 TIME: 4:02:18 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plr-sht\cdl901168_cpl.dgn

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SHAWNEE RD.

BLACKHAWK RD.

EAGAN

SCALE IN FEET
0 25 50 100

INP. R/W

REVISE SIGNAL SYSTEM I

SEE SHEET 143 FOR INTERSECTION DETAIL

℄ TH 13
(TH13OLDCL)

MATCHLINE - TH 13 STA. 1035+20

1040

1045

1050

MATCHLINE - TH 13 STA. 1050+50

ROBIN LN

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

YANKEE DR.

SCALE IN FEET
0 25 50 100

℄ TH 13
(TH13OLDCL)

MATCHLINE - TH 13 STA. 1050+50

1055

1060

1065

MATCHLINE - TH 13 STA. 1065+50

INP. R/W

EQ STA. 1064+63.38 BK =
STA. 1064+66.10 AH

EAGAN

DATE: 2/13/2012 TIME: 4:02:22 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plr-sltn\cd190l168_cpm.dgn

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DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 1035+20 TO STA. 1065+50

13 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 114 of 393 Sheets

DATE: 2/13/2012 TIME: 4:02:26 PM
FILENAME: K:\g-mWnDOTV4968000\hwy-brdg\hwy\pln-sht\cd190l68_cpn.dgn

EAGAN

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 1065+50

VARIABLE WIDTH BITUMINOUS
CONSTRUCT WITH INSET:
7" TYPE SP 12.5 WEARING COURSE
MIXTURE (SPWEB440F) (3 LIFTS)
4" AGGREGATE BASE, CLASS 6

SEE SHEET 144 FOR
INTERSECTION DETAIL

1070

1075

1080

℄ TH 13
(TH130LDCL)

INP. R/W

REVISE SIGNAL
SYSTEM J

YANKEE DOODLE RD.
(CO. RD. 28)

VARIABLE WIDTH BITUMINOUS
CONSTRUCT WITH INSET:
7" TYPE SP 12.5 WEARING COURSE
MIXTURE (SPWEB440F) (3 LIFTS)
4" AGGREGATE BASE, CLASS 6

MATCHLINE - TH 13 STA. 1080+50

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

INP. R/W

EAGAN

MATCHLINE - TH 13 STA. 1080+50

℄ TH 13
(TH130LDCL)

1085

1090

1095

DRIVEWAY BITUMINOUS
CONSTRUCT WITH INSET:
3" TYPE SP 12.5 WEARING COURSE
MIXTURE (SPWEB340B)
6" AGGREGATE BASE, CLASS 6

EQ STA. 1085+44.75 BK =
STA. 1085+59.82 AH

INP. R/W

MATCHLINE - TH 13 STA. 1095+75

14 OF 25

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CHECKED BY: SJS

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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 1065+50 TO STA. 1095+75

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 115 of 393 Sheets

MATCHLINE - TH 13 STA. 1095+75

LETENDRE ST.

SEE SHEET 145 FOR INTERSECTION DETAIL

EAGAN

TERMINAL DR.

℄ TH 13
(TH13OLDCL)

INP. R/W

1100 1105 1110

12' 12' 12'

P P P P

+75.0

PLATE BEAM GUARDRAIL

CONST LIMITS

INP. R/W

MATCHLINE - TH 13 STA. 1110+75

SCALE IN FEET
0 25 50 100

BITUMINOUS OVERLAY LEGEND
(TYPICAL SECTION INSETS)

INSET A	INSET D	INSET G
INSET B	INSET E	
INSET C	INSET F	

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 1110+75

ALEXANDER RD.

MEADOW VIEW RD.

INP. R/W

STA. 1112+32.41 BK = EQ
STA. 1112+34.00 AH

30' R.

CONST LIMITS

+06.9

+86.9

℄ TH 13
(TH13OLDCL)

1115 1120 1125

12' 12' 12'

1:15 1:15

+80.3

+55.0

PLATE BEAM GUARDRAIL

CONST LIMITS

SEE SHEET 146 FOR INTERSECTION DETAIL

FOUR OAKS RD.

INP. R/W

McCARTHY RD.

EAGAN

MATCHLINE - TH 13 STA. 1126+00

DATE: 2/13/2012 TIME: 4:02:29 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad1901168_cpo.dgn

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CHECKED BY: SJS

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PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 1095+75 TO STA. 1126+00

15 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 116 of 393 Sheets

DATE: 2/13/2012 TIME: 4:02:32 PM
FILENAME: K:\g-mMnDOTV4968000\hwy-brdg\hwy\pln-shf\cad190l168_cpp.dgn

SCALE IN FEET
0 25 50 100

EAGAN

INP. R/W

DRIVEWAY BITUMINOUS
CONSTRUCT WITH INSET:
3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B)
6" AGGREGATE BASE, CLASS 6

℄ TH 13
(TH130LDCL)

+69.6

+90.5

CONST. LIMITS

MATCHLINE - TH 13 STA. 1126+00

MATCHLINE - TH 13 STA. 1141+00

1:55 1130 10' 12' 13' 1135 1:15 1:55 1140

INP. R/W

LONE OAK RD.

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

INP. R/W

EAGAN

℄ TH 13
(TH130LDCL)

STA. 1153+08.50 BK = EQ
STA. 1153+08.69 AH

CONST. LIMITS

+05.3

1:55 1145 1150 1155

PLATE BEAM GUARDRAIL

SEE SHEET 147 FOR INTERSECTION DETAIL

PLATE BEAM GUARDRAIL

MATCHLINE - TH 13 STA. 1141+00

MATCHLINE - TH 13 STA. 1156+00

RUSTIC HILLS DR.

INP. R/W

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 1126+00 TO STA. 1156+00

16 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 117 of 393 Sheets

SCALE IN FEET
0 25 50 100

STA. 1157+88.98 BK = EQ
STA. 1157+88.39 AH

INP. R/W

STA. 1162+00.00 BK = EQ
STA. 1162+01.01 AH

℄ TH 13
(TH13OLDCL)

℄ TH 13 SB
(TH13SB1)

MATCHLINE - TH 13 STA. 1156+00

MATCHLINE - TH 13 NB STA. 1170+50

PLATE BEAM GUARDRAIL

PLATE BEAM GUARDRAIL

HIGHVIEW AVE.

1160 1165 1170

INP. R/W

℄ TH 13 NB
(TH13NB1)

EAGAN

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 1170+50

INP. R/W

℄ TH 13 SB
(TH13SB1)

1175 1180 1185

℄ TH 13 NB
(TH13NB1)

INP. R/W

BEGIN EXCEPTION
STA. 1177+56.66

BRIDGE NO. 19825

TH 494 EB

TH 494 WB

EAGAN

DATE: 2/13/2012 TIME: 4:02:35 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sth\cd190l168_cpq.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 1156+00 TO TH 13 NB STA. 1185+00	17 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 118 of 393 Sheets

DATE: 2/13/2012 TIME: 4:02:37 PM
FILENAME: K:\g-mMnDOTV4968000\hwy-brdg\hwy\pln-shts\cd190l168_cpr.dgn

MENDOTA HEIGHTS

INP. R/W

℄ TH 13 SB (TH13SB1)

1235 1240

1235 1240

℄ TH 13 NB (TH13NB1)

INP. R/W

SEE SHEET 148 FOR INTERSECTION DETAIL

TH 55 SB

TH 55 NB

SCALE IN FEET
0 25 50 100

℄ TH 13 SB (MENCONSB)

60 60

MATCHLINE - TH 13 NB STA. 59+40

℄ TH 13 NB (MENCONNB)

END SP 1901-168 (TH 13)
BEGIN SP 1902-66 (TH 13)

END EXCEPTION
STA. 1242+54.17

EQ STA. 1244+39.41 BK =
A POINT 12.00' RT.
STA. 61+19.15 AH

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

INSET A
INSET B
INSET C
INSET D
INSET E
INSET F
INSET G

MENDOTA HEIGHTS

TH 55 SB

TH 55 NB

SCALE IN FEET
0 25 50 100

℄ TH 13 SB (MENCONSB)

MATCHLINE - TH 13 STA. 59+40

55 55

50 50

℄ TH 13 NB (MENCONNB)

INP. R/W

FURLONG AVE.

VICTORY AVE.

MATCHLINE - TH 13 NB STA. 46+50

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 NB 1233+00 TO STA. 46+50	18 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 119 of 393 Sheets

SCALE IN FEET
0 25 50 100

ACACIA BLVD.

TH 55 SB

TH 55 NB

BRIDGE NO. 19090

℄ TH 13 SB
(MENCONSB)

℄ TH 13 NB
(MENCONNB)

INP. R/W

MATCHLINE - TH 13 NB STA. 46+50

MATCHLINE - TH 13 NB STA. 32+00

EQ STA. 43+02.98 BK =
STA. 43+06.34 AH

EQ STA. 36+27.49 BK =
STA. 36+50.00 AH

MENDOTA HEIGHTS

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 32+00

MENDOTA HEIGHTS

TH 110 EB

TH 110 WB

℄ TH 13 SB
(MENCONSB)

℄ TH 13 NB
(MENCONNB)

INP. R/W

REVISE SIGNAL SYSTEM K

MATCHLINE - TH 13 NB STA. 44+00

MENDOTA

SEE SHEET 149 FOR INTERSECTION DETAIL

VICTORY CURVE

INP. R/W

EQ STA. 27+54.97 BK =
STA. 49+55.73 AH

DATE: 2/15/2012 TIME: 6:09:32 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190168_cps.dgn

DRAWN BY: SFH

CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 15, 2012 LIC. NO. 15400

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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 NB STA. 46+50 TO STA. 44+00

19 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 120 of 393 Sheets

MENDOTA HEIGHTS

TH 55 NB

TH 110 WB

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(MENCONSB)

℄ TH 13
(MENCONNB)

INP. R/W

MATCHLINE - TH 13 NB STA. 44+00

℄ TH 13 NB
(MENCONNB)

40

35

30

8'x25' PARKING PAD WITH
1:1 TAPERS AT EACH END.
CONSTRUCT WITH INSET:
3" TYPE SP 12.5 WEARING COURSE
MIXTURE (SPWEB340B) (ONE LIFT)
6" AGGREGATE BASE, CLASS 6

25'

8'

MAINTAIN A MINIMUM
10' CLEAR DISTANCE
TO HISTORICAL MARKER

HISTORICAL MARKER

MATCHLINE - TH 13 STA. 29+50

WINDY RIDGE

MENDOTA

INP. R/W

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

STIBLEY MEMORIAL HWY

SEE SHEET 150 FOR
INTERSECTION DETAIL

SCALE IN FEET
0 25 50 100

MENDOTA HEIGHTS

BRIDGE NO. 97680

INP. R/W

25

20

BIG RIVERS REGIONAL TRAIL

INP. R/W

TH 55 SB

TH 55 NB

℄ TH 13
(MENCONNB)

MENDOTA

MATCHLINE - TH 13 STA. 16+00

MATCHLINE - TH 13 STA. 29+50

DATE: 2/13/2012 TIME: 4:02:43 PM
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20 OF 25

DRAWN BY: SFH

CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

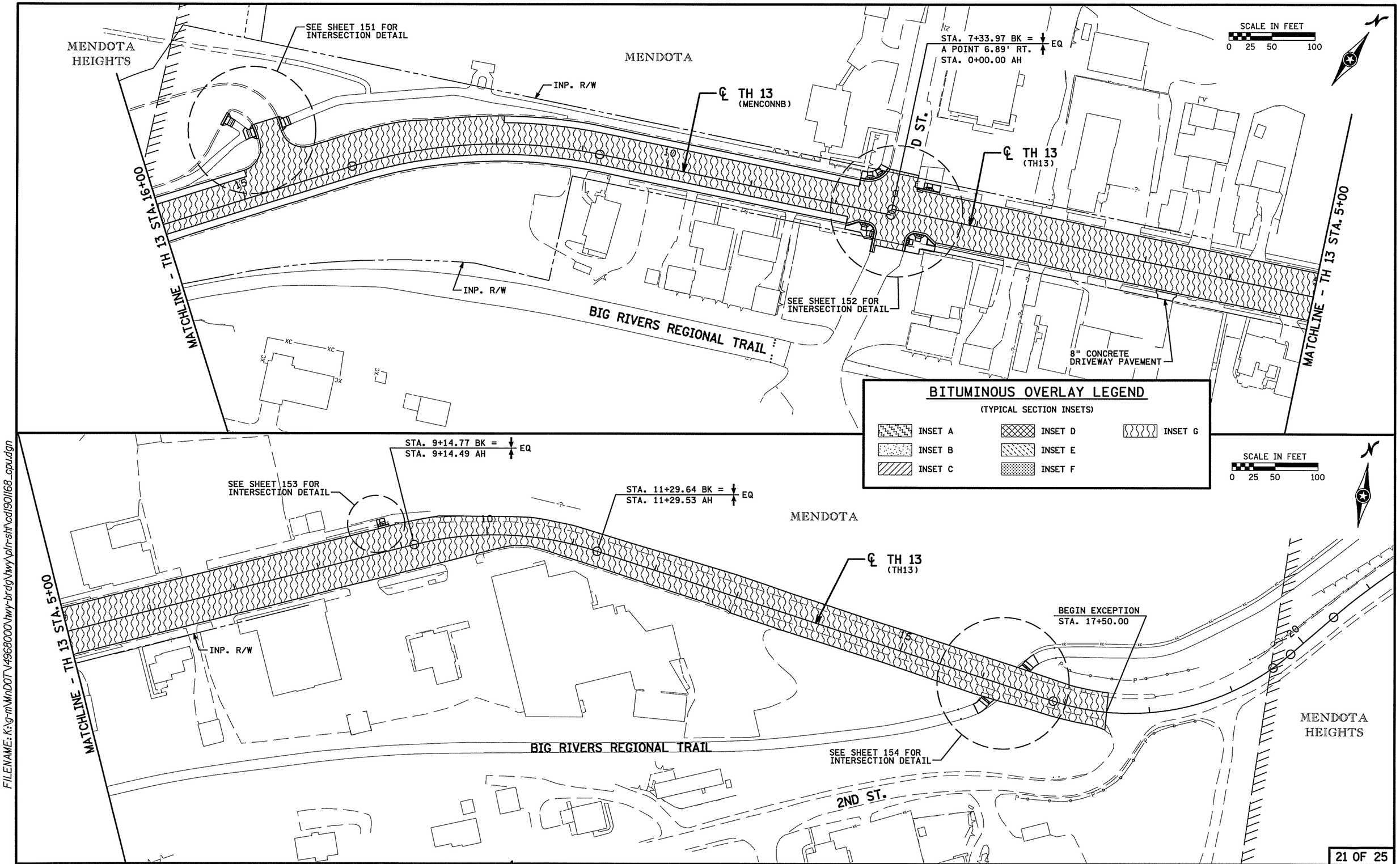
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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 NB STA. 44+00 TO TH 13 STA. 16+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 121 of 393 Sheets



DATE: 2/13/2012 TIME: 4:02:46 PM
FILENAME: K:\g-m\MnDOT\496800\hwy-brdg\hwy\pln-shts\cal1901168_cpu.dgn

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 STA. 16+00 TO STA. 21+00	21 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 122 of 393 Sheets

DATE: 2/13/2012 TIME: 4:02:49 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwyplnr-sht\cd1901168_cpv.dgn

STONEBRIDGE RD.

STONEBRIDGE RD.

SB EXIT RAMP

LILYDALE

INP. R/W

℄ TH 13
(TH13)

30

35

40

INP. R/W

END EXCEPTION
STA. 35+88.00

SEE SHEET 155 FOR
INTERSECTION DETAIL

VICTORIA RD. S

BEGIN EXCEPTION
STA. 37+61.18

SB ENT RAMP

MENDOTA
HEIGHTS

TH 35E SB

TH 35E NB

MATCHLINE - TH 13 STA. 45+00

END EXCEPTION
STA. 44+38.10

BRIDGE NO. 19820

SCALE IN FEET
0 25 50 100

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

STA. 50+44.91 BK = ℄ EQ
STA. 99+39.52 AH

PLATE BEAM
GUARDRAIL

℄ TH 13
(TH13)

INP. R/W

LILYDALE RD

LILYDALE

BRIDGE NO. 19076

INP. R/W

PLATE BEAM
GUARDRAIL

SEE SHEET 157 FOR
INTERSECTION DETAIL

50

100

MATCHLINE - TH 13 STA. 45+00

INP. R/W

STOCKPILES

PLATE BEAM
GUARDRAIL

SEE SHEET 156 FOR
INTERSECTION DETAIL

PLATE BEAM
GUARDRAIL

INP. R/W

LILYDALE RD.

NB ENT RAMP

NB EXIT RAMP

STOCKPILES

MENDOTA
HEIGHTS

MATCHLINE - TH 13 STA. 108+00

SCALE IN FEET
0 25 50 100

DRAWN BY: SFH

CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

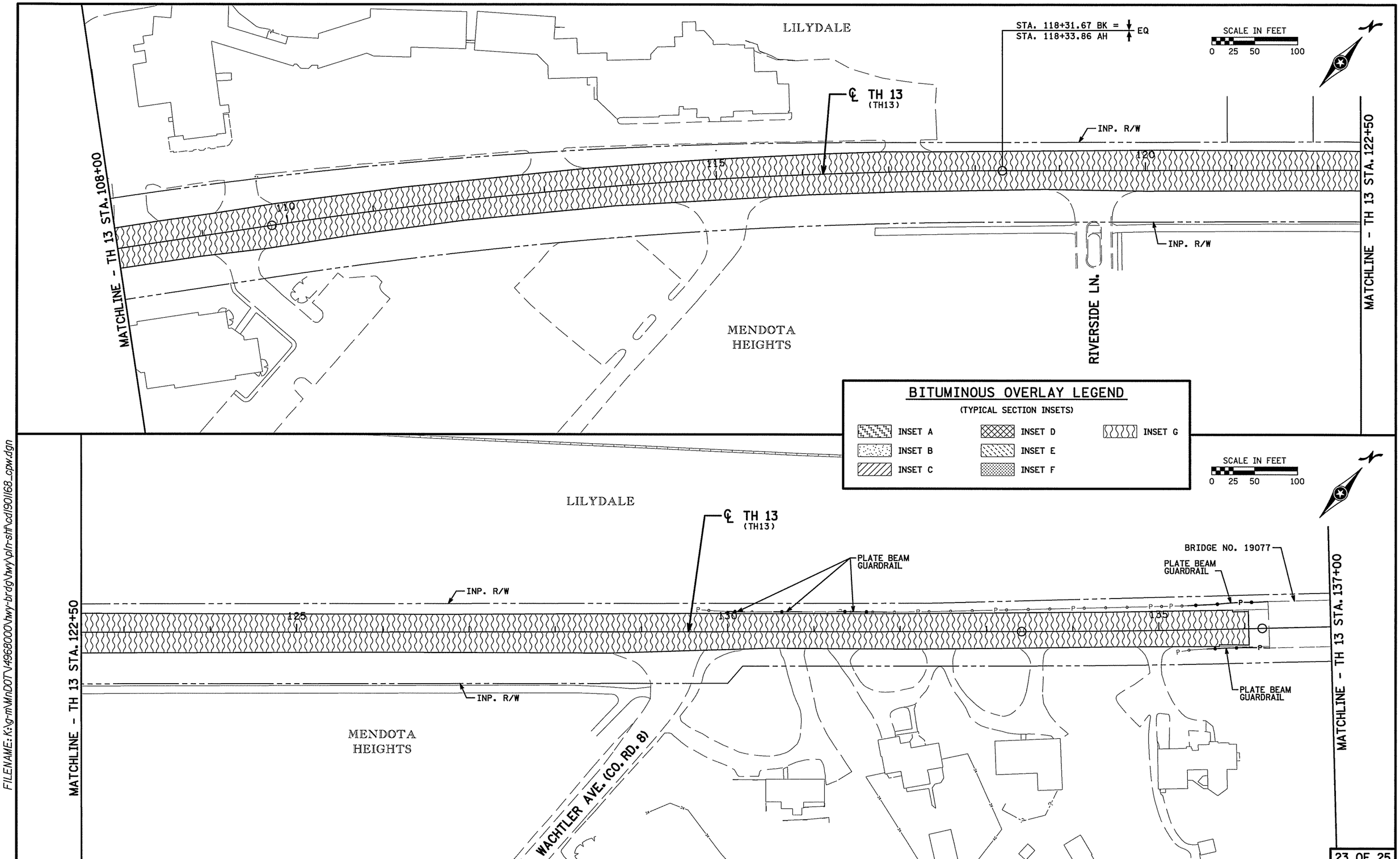
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TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 30+00 TO STA. 108+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 123 of 393 Sheets



DATE: 2/13/2012 TIME: 4:02:52 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190168_cpw.dgn

23 OF 25

DRAWN BY: SFH CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CONSTRUCTION PLANS TH 13 108+00 TO STA. 137+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 124 of 393 Sheets

LILYDALE

MENDOTA HEIGHTS

℄ TH 13
(TH13)

PLATE BEAM GUARDRAIL

BEGIN TAPER STA. 140+25

END TAPER STA. 143+05

INP. R/W

B424 C&G

MATCHLINE - TH 13 STA. 137+00

MATCHLINE - TH 13 STA. 150+50

140

145

150

22'

15'

1:40

BEGIN TAPER STA. 140+25

PLATE BEAM GUARDRAIL

D.E.

BRIDGE NO. 19077

END TAPER STA. 143+05

INP. R/W

B424 C&G

PLATE BEAM GUARDRAIL

SCALE IN FEET
0 25 50 100

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

LILYDALE

INP. R/W

PLATE BEAM GUARDRAIL

B424 C&G

℄ TH 13
(TH13)

BEGIN TAPER STA. 157+45

END TAPER STA. 158+65

MATCHLINE - TH 13 STA. 150+50

MATCHLINE - TH 13 STA. 164+80

155

160

15'

6'

12'

1:40

1:25

8.9'

20'R.

INP. R/W

B424 C&G

BEGIN TAPER STA. 157+15

END TAPER STA. 158+62

SYLVANDALE RD.

15 LF B424 C&G TO REPLACE DAMAGED CURB, LOCATION TO BE DETERMINED IN THE FIELD

BROMPTON PL.

MENDOTA HEIGHTS

SCALE IN FEET
0 25 50 100

DATE: 2/13/2012 TIME: 4:02:55 PM
FILENAME: K:\g-mNnDOT\4968000\hwy-brdg\hwy\plr-sfh\cd190l68_cpx.dgn

DRAWN BY: SFH

CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 137+00 TO STA. 164+80

STATE PROJ. NO. 1901-168 (TH 13)

DATE: 2/13/2012 TIME: 4:02:58 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sth\cd190168_copy.dgn

MATCHLINE - TH 13 STA. 164+80

MENDOTA HEIGHTS

LILYDALE

℄ TH 13 (TH13)

INP. R/W

165

170

175

INP. R/W

LONDON RD.

DOWNING ST.

SUTCLIFF CIR.

SEE SHEET 158 FOR INTERSECTION DETAIL

MENDOTA HEIGHTS

MATCHLINE - TH 13 STA. 178+50

SCALE IN FEET
0 25 50 100

BITUMINOUS OVERLAY LEGEND

(TYPICAL SECTION INSETS)

- INSET A
- INSET B
- INSET C
- INSET D
- INSET E
- INSET F
- INSET G

SCALE IN FEET
0 25 50 100

LILYDALE

MATCHLINE - TH 13 STA. 178+50

℄ TH 13 (TH13)

END SP 1902-66 (TH 13)
STA. 189+00.00

INP. R/W

180

185

INP. R/W

GARDEN LN.

FREMONT AVE.

W ANNAPOLIS ST.

MENDOTA HEIGHTS

SPECIFIC NOTES (ENTIRE SHEET):

① DRIVEWAY BITUMINOUS
CONSTRUCT WITH INSET:
3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B)
6" AGGREGATE BASE, CLASS 6

25 OF 25

DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

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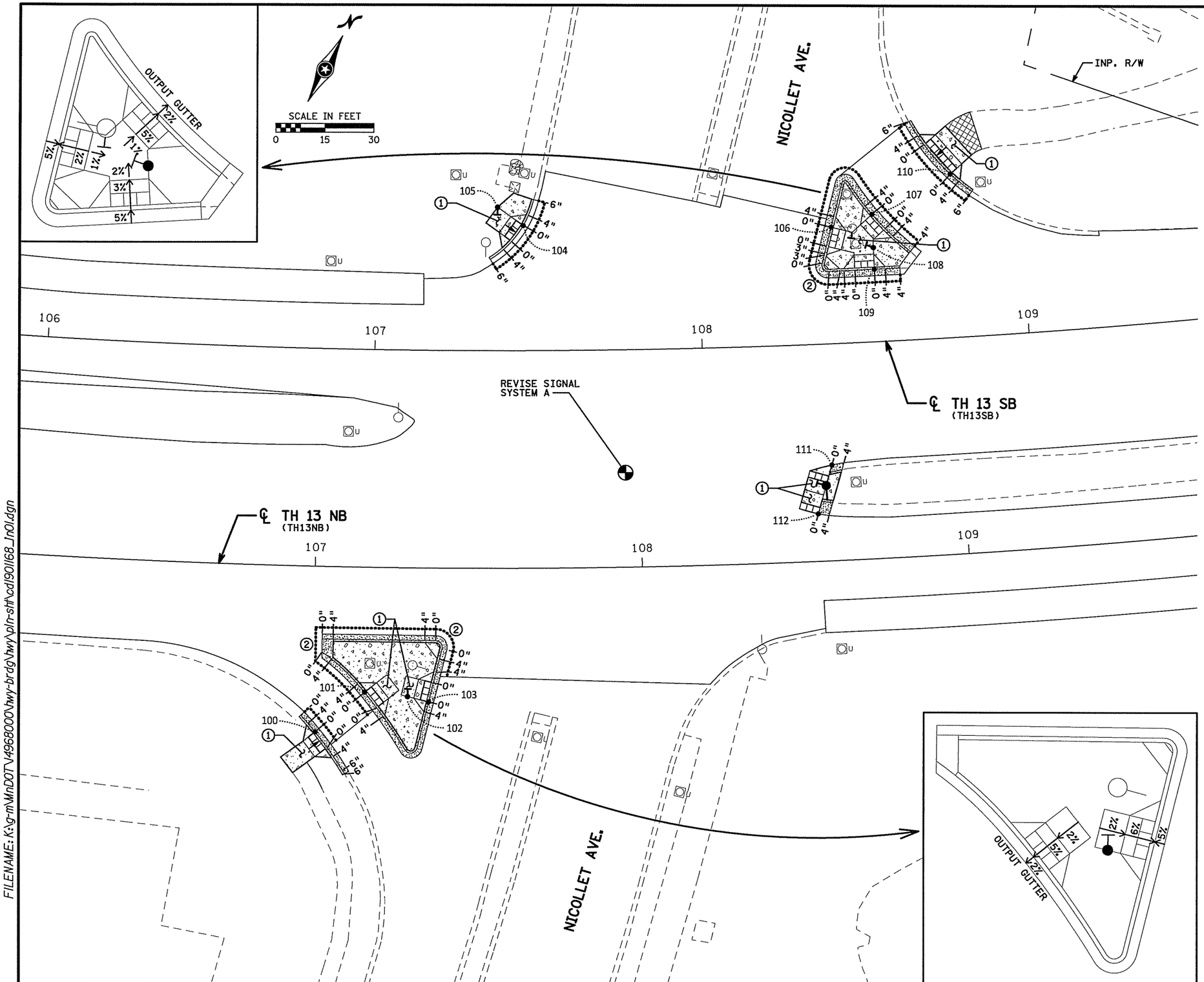
MINNESOTA DEPARTMENT OF TRANSPORTATION

TH 13
BETTER ROADS
PRESERVATION PROJECT

CONSTRUCTION PLANS
TH 13 STA. 164+80 TO STA. 189+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 126 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
100	FACE OF CURB	510004.12	211127.90	----
101	FACE OF CURB	510011.83	211145.65	858.17
102	PUSH BUTTON	510024.08	211150.64	----
103	FACE OF CURB	510030.56	211152.23	857.94
104	FACE OF CURB	509988.04	211294.74	----
105	PUSH BUTTON	509978.47	211296.10	----
106	FACE OF CURB	510071.45	211338.25	854.08
107	FACE OF CURB	510080.62	211347.58	853.88
108	PUSH BUTTON	510085.80	211338.74	----
109	FACE OF CURB	510089.21	211333.01	854.40
110	FACE OF CURB	510095.92	211369.70	----
111	EDGE OF PVMT	510105.76	211273.89	----
112	EDGE OF PVMT	510109.04	211258.74	----

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

② CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.

DATE: 2/13/2012 TIME: 4:03:01 PM
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DRAWN BY: SFH
CHECKED BY: SJS

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

SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT NICOLLET AVE.

STATE PROJ. NO. 1901-168 (TH 13)

SCALE IN FEET
0 15 30

INP. R/W

CEMETERY DRIVEWAY

120

121

1

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

132 133 134 135

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE (u)
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
120	EDGE OF PVMT	511999.61	212833.77
121	EDGE OF PVMT	512059.37	212850.15

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:08 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190168_tn02.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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

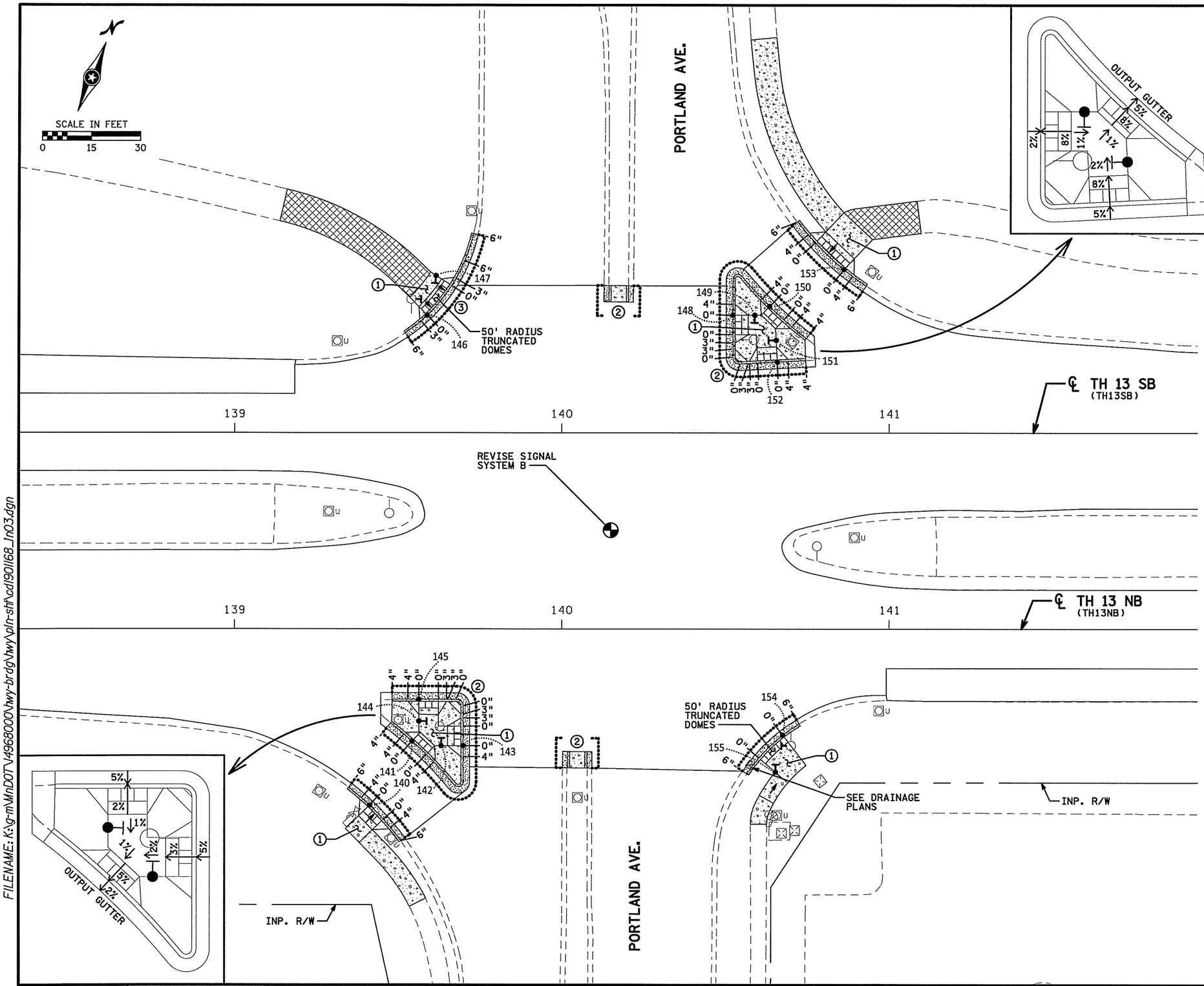
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT CEMETERY DRIVEWAY

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 128 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
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STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
140	FACE OF CURB	512703.76	212871.16	----
141	FACE OF CURB	512708.50	212894.18	887.51
142	PUSH BUTTON	512717.29	212896.19	----
143	FACE OF CURB	512723.48	212898.65	888.01
144	PUSH BUTTON	512708.15	212900.65	----
145	FACE OF CURB	512705.68	212906.85	887.63
146	FACE OF CURB	512664.37	213016.87	----
147	PUSH BUTTON	512662.37	213029.17	----
148	FACE OF CURB	512751.06	213051.61	888.73
149	PUSH BUTTON	512757.26	213054.07	----
150	FACE OF CURB	512760.46	213058.27	888.78
151	PUSH BUTTON	512766.22	213049.36	----
152	FACE OF CURB	512769.00	213043.30	890.03
153	FACE OF CURB	512777.43	213077.22	----
154	FACE OF CURB	512812.93	212937.94	----
155	PUSH BUTTON	512815.02	212926.60	----

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
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- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

(2) CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.

(3) 3' LONG PEDESTRIAN RAMP.

DRAWN BY: SFH
CHECKED BY: SJS

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SIGNATURE: Bryant J. Ficek
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DATE: FEBRUARY 13, 2012 LIC. NO. 42802

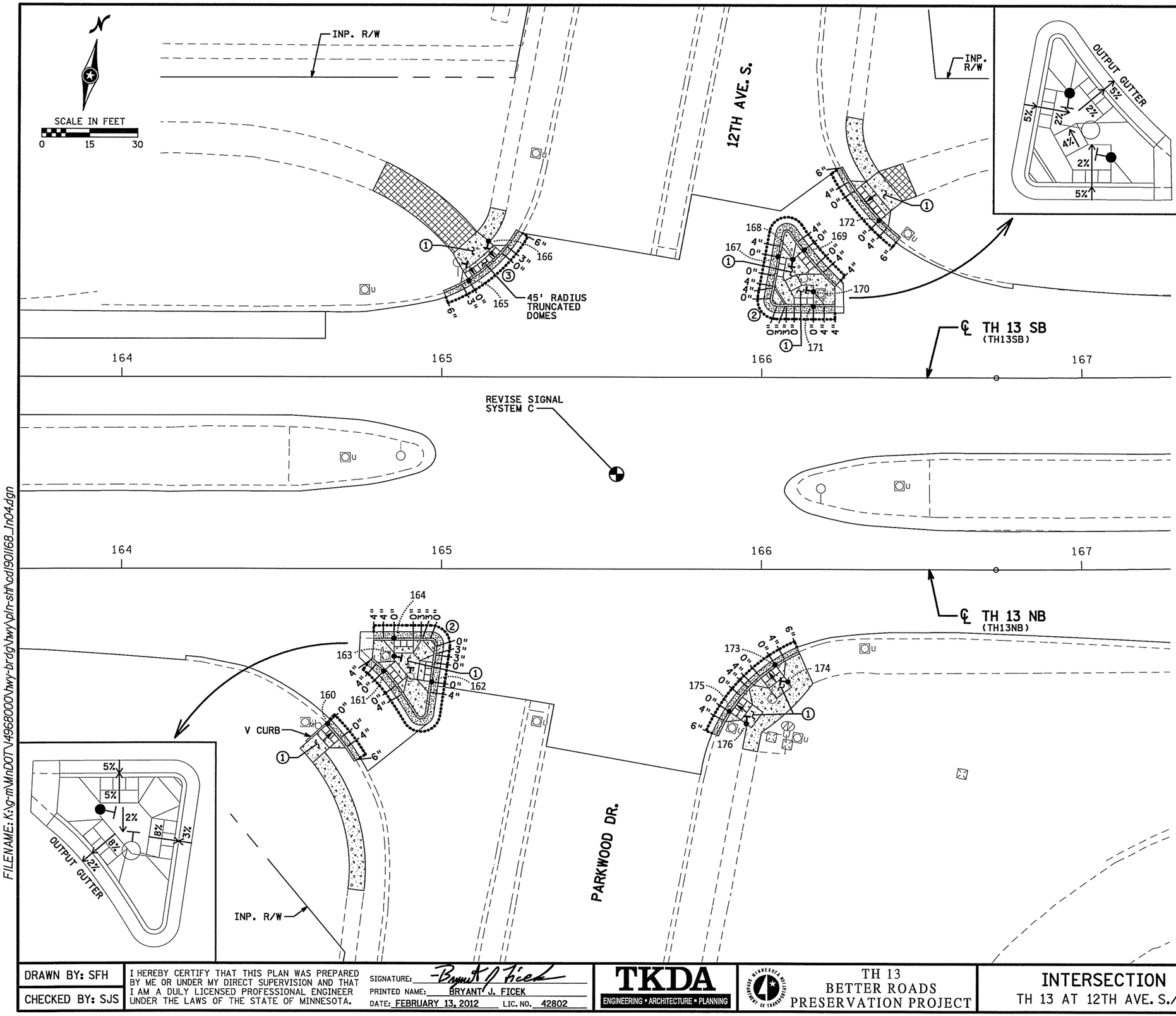
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT PORTLAND AVE.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 129 of 393 Sheets

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LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
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STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
160	FACE OF CURB	515105.41	213586.01	----
161	FACE OF CURB	515119.60	213605.38	934.39
162	FACE OF CURB	515135.05	213604.84	934.38
163	PUSH BUTTON	515121.95	213610.52	----
164	FACE OF CURB	515120.92	213616.09	934.54
165	FACE OF CURB	515123.42	213730.40	----
166	PUSH BUTTON	515127.13	213743.70	----
167	FACE OF CURB	515216.96	213755.50	933.24
168	PUSH BUTTON	515221.64	213755.54	----
169	FACE OF CURB	515224.58	213759.08	933.08
170	PUSH BUTTON	515229.88	213746.80	----
171	FACE OF CURB	515230.70	213742.20	933.51
172	FACE OF CURB	515245.85	213772.50	----
173	FACE OF CURB	515239.54	213629.85	----
174	PUSH BUTTON	515244.46	213625.35	----
175	FACE OF CURB	515228.07	213612.88	----
176	PUSH BUTTON	515234.08	213610.00	----

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

(2) CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.

(3) 3' LONG PEDESTRIAN RAMP.

DATE: 2/13/2012 TIME: 4:03:07 PM
FILENAME: K:\G-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cal9011168_In04.dgn

DRAWN BY: SFH
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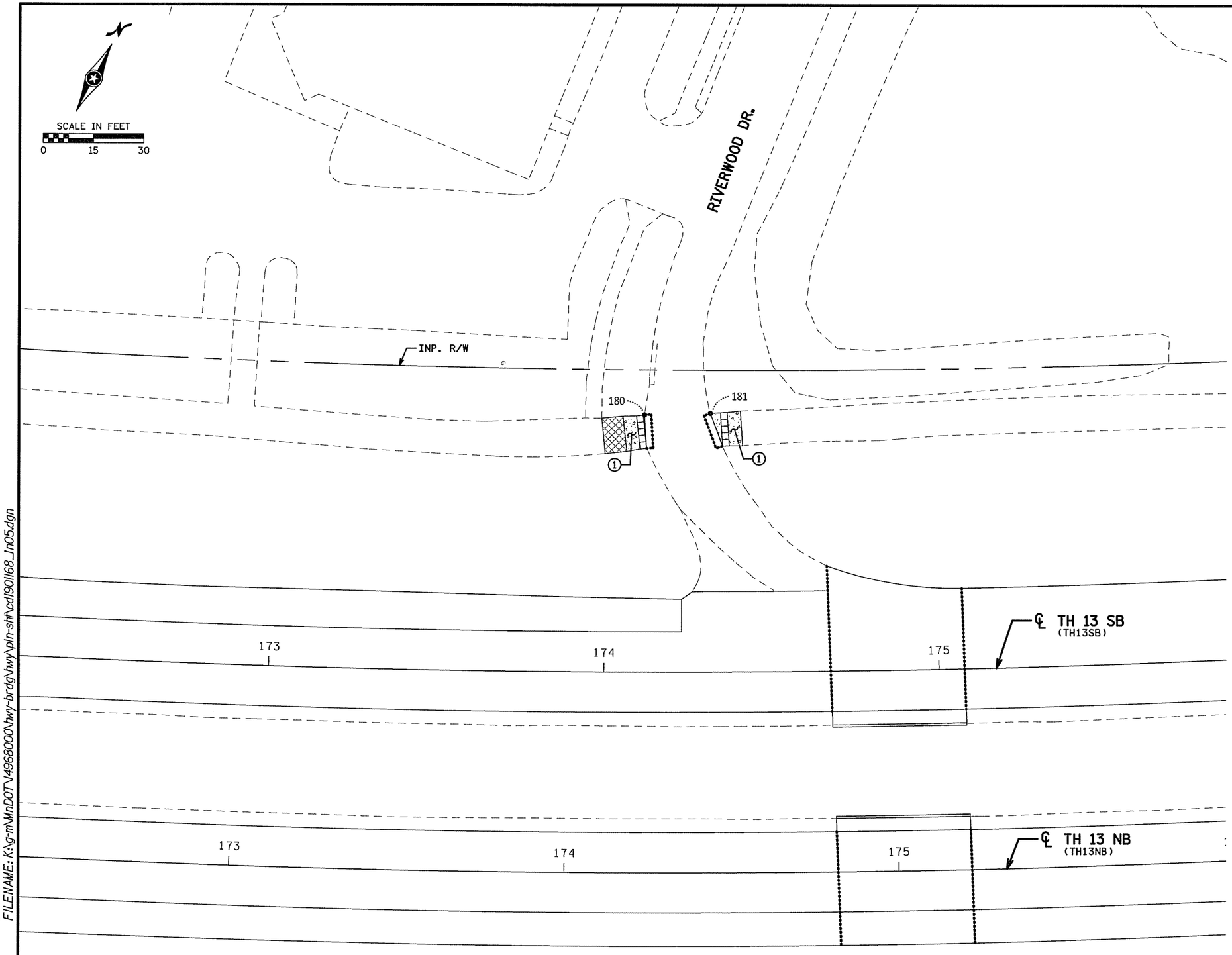
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SIGNATURE: Bryant J. Ficek
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT 12TH AVE. S./PARKWOOD DR.



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
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STAKING POINTS

POINT	POINT TYPE	X	Y
180	EDGE OF PVMT	515971.16	214006.79
181	EDGE OF PVMT	515989.11	214014.48

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

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CHECKED BY: SJS

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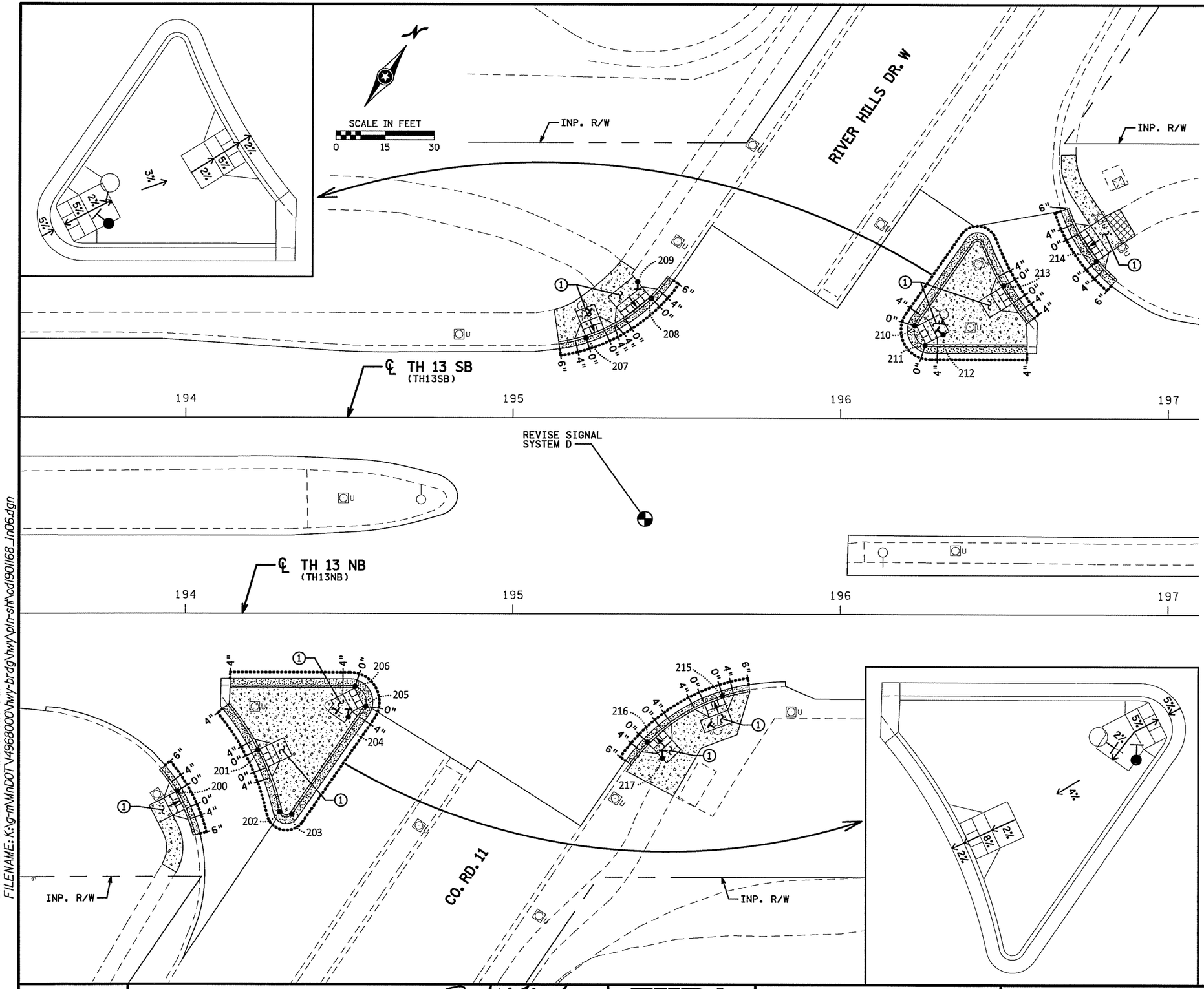
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT RIVERWOOD DR.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 131 of 393 Sheets

DATE: 1/26/2012 TIME: 8:17:15 AM
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LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
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- PEDESTRIAN PUSH BUTTON STATION
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STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
200	FACE OF CURB	517735.31	214857.55	----
201	FACE OF CURB	517748.74	214881.67	910.35
202	FACE OF CURB	517764.89	214869.62	909.99
203	FACE OF CURB	517768.29	214871.01	910.03
204	PUSH BUTTON	517766.06	214905.34	----
205	FACE OF CURB	517768.64	214911.04	911.26
206	FACE OF CURB	517762.57	214914.36	911.28
207	FACE OF CURB	517761.97	215042.19	----
208	FACE OF CURB	517771.78	215063.19	----
209	PUSH BUTTON	517765.42	215065.18	----
210	FACE OF CURB	517843.17	215101.07	912.40
211	FACE OF CURB	517849.24	215097.75	912.60
212	PUSH BUTTON	517851.93	215103.66	----
213	FACE OF CURB	517858.90	215126.35	911.90
214	FACE OF CURB	517878.18	215148.31	----
215	FACE OF CURB	517857.40	214974.35	----
216	FACE OF CURB	517846.23	214949.78	----
217	PUSH BUTTON	517852.72	214948.24	----

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 2/13/2012 TIME: 4:03:10 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\1901l68_ln06.dgn

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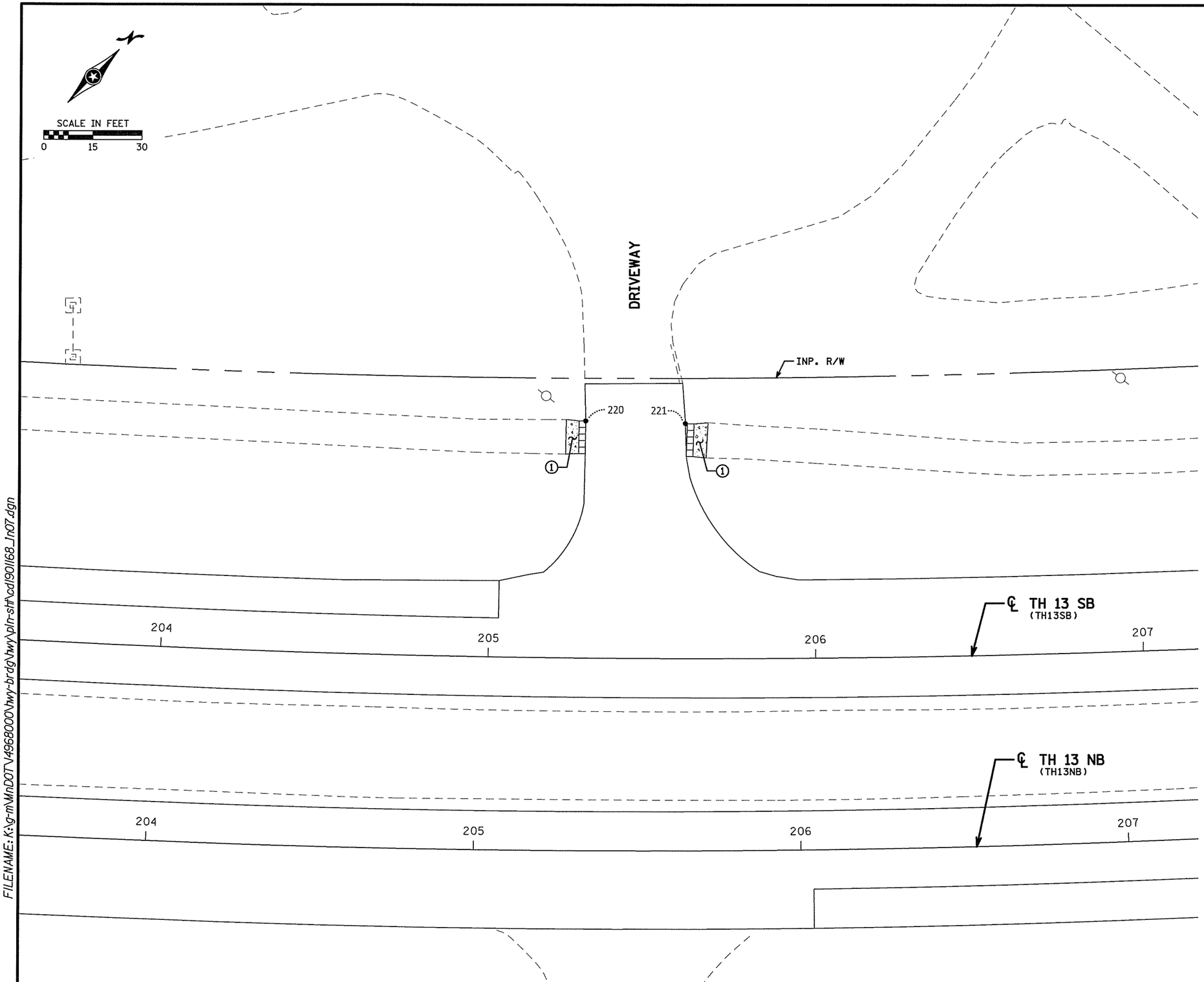
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT RIVER HILLS DR. W (CO. RD. 11)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 132 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
220	EDGE OF PVMT	518564.32	215644.76
221	EDGE OF PVMT	518588.78	215662.87

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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

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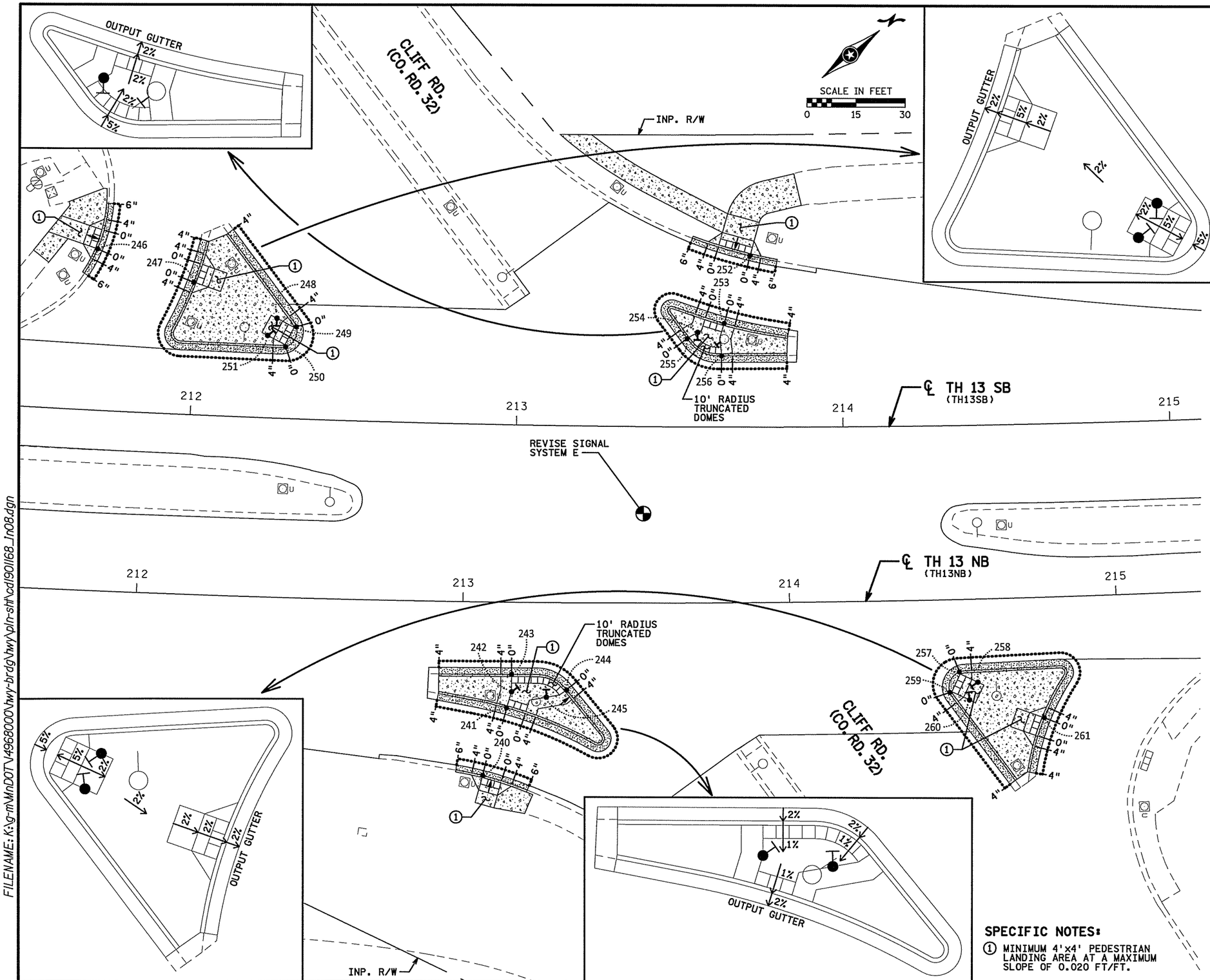
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TH 13
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PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT DRIVEWAY

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 133 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
240	FACE OF CURB	519244.66	216037.65	----
241	FACE OF CURB	519233.48	216056.58	920.94
242	PUSH BUTTON	519230.65	216060.90	----
243	FACE OF CURB	519226.59	216064.34	921.01
244	FACE OF CURB	519241.10	216074.21	921.06
245	PUSH BUTTON	519238.80	216068.04	----
246	FACE OF CURB	519045.05	216050.81	----
247	FACE OF CURB	519071.84	216066.84	917.94
248	PUSH BUTTON	519096.74	216079.25	----
249	FACE OF CURB	519102.56	216082.12	918.19
250	FACE OF CURB	519105.16	216075.71	918.38
251	PUSH BUTTON	519098.98	216073.69	----
252	FACE OF CURB	519174.92	216202.70	----
253	FACE OF CURB	519185.85	216183.38	916.66
254	PUSH BUTTON	519182.77	216175.39	----
255	FACE OF CURB	519182.18	216171.70	916.90
256	FACE OF CURB	519192.99	216176.34	916.88
257	FACE OF CURB	519313.93	216170.12	919.40
258	PUSH BUTTON	519320.00	216172.45	----
259	FACE OF CURB	519316.87	216163.85	919.57
260	PUSH BUTTON	519322.55	216167.02	----
261	FACE OF CURB	519341.34	216181.03	919.22

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 2/13/2012 TIME: 4:03:14 PM
FILENAME: K:\g-mWnDOT\4968000\hwy-brdg\hwy\pln-str\cad\90168_In08.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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

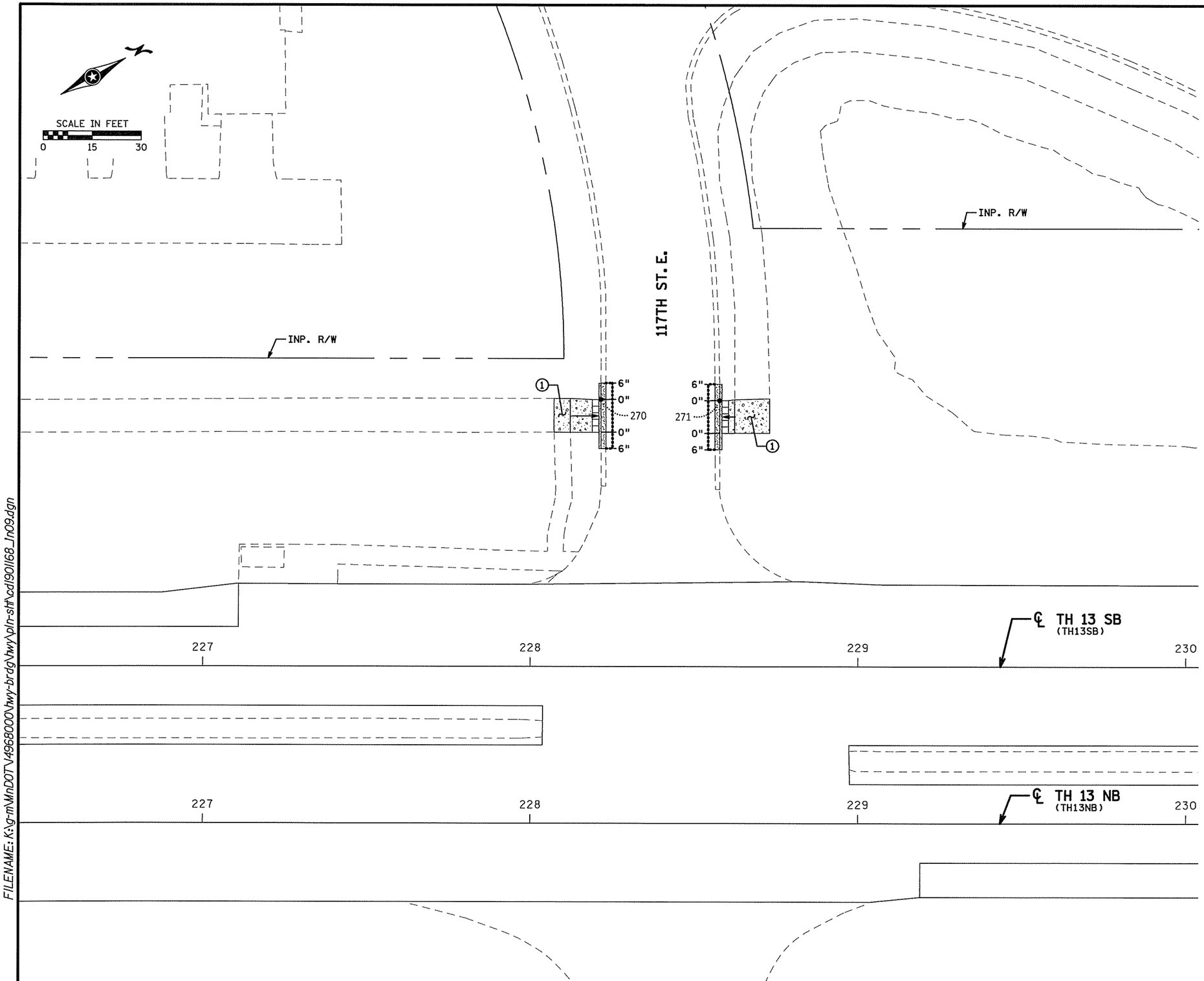
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT CLIFF RD.

STATE PROJ. NO. 1901-168 (TH 13)



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE (u)
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
270	FACE OF CURB	519903.42	217412.85
271	FACE OF CURB	519921.72	217444.10

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:25 AM
FILENAME: K:\g-mMnDOTV4968000\hwy-brdg\hwy\pln-stf\cd190l68_1n09.dgn

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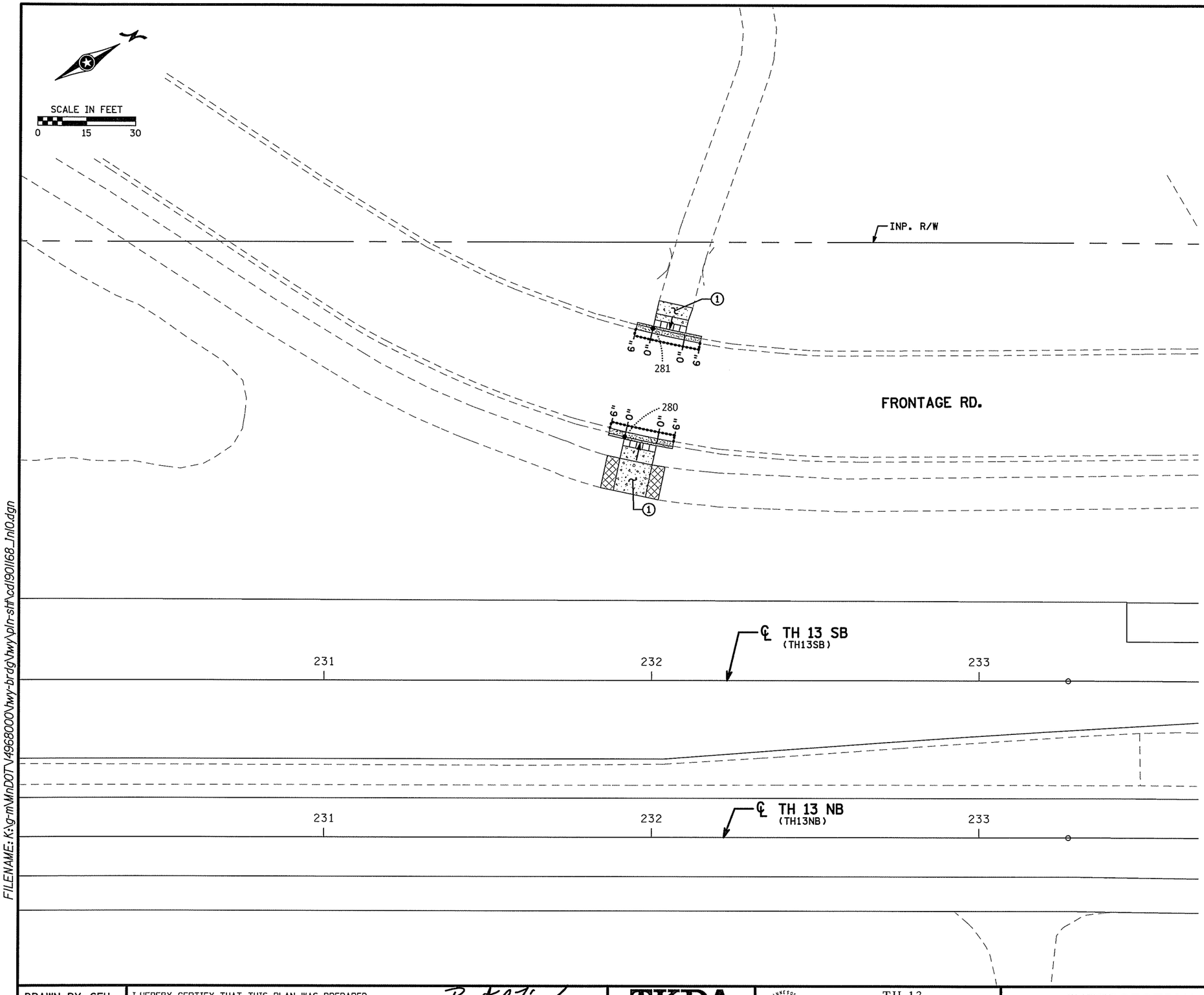
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT 117TH ST. E.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 135 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
280	FACE OF CURB	520094.11	217730.25
281	FACE OF CURB	520069.65	217754.26

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:27 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\od190168_1nl0.dgn

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SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
FRONTAGE RD. NEAR TH 13

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 136 of 393 Sheets

SCALE IN FEET
0 15 30

115TH ST. E.

INP. R/W

INP. R/W

6"
0"
300
0"
6"
2%
1

6"
0"
301
0"
6"
2%
1

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

237 238 239

237 238 239

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE (u)
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STAKING POINTS

POINT	POINT TYPE	X	Y
300	FACE OF CURB	520392.05	218223.88
301	FACE OF CURB	520420.30	218270.67

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:29 AM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\pln-sht\cd1901168_1nll.dgn

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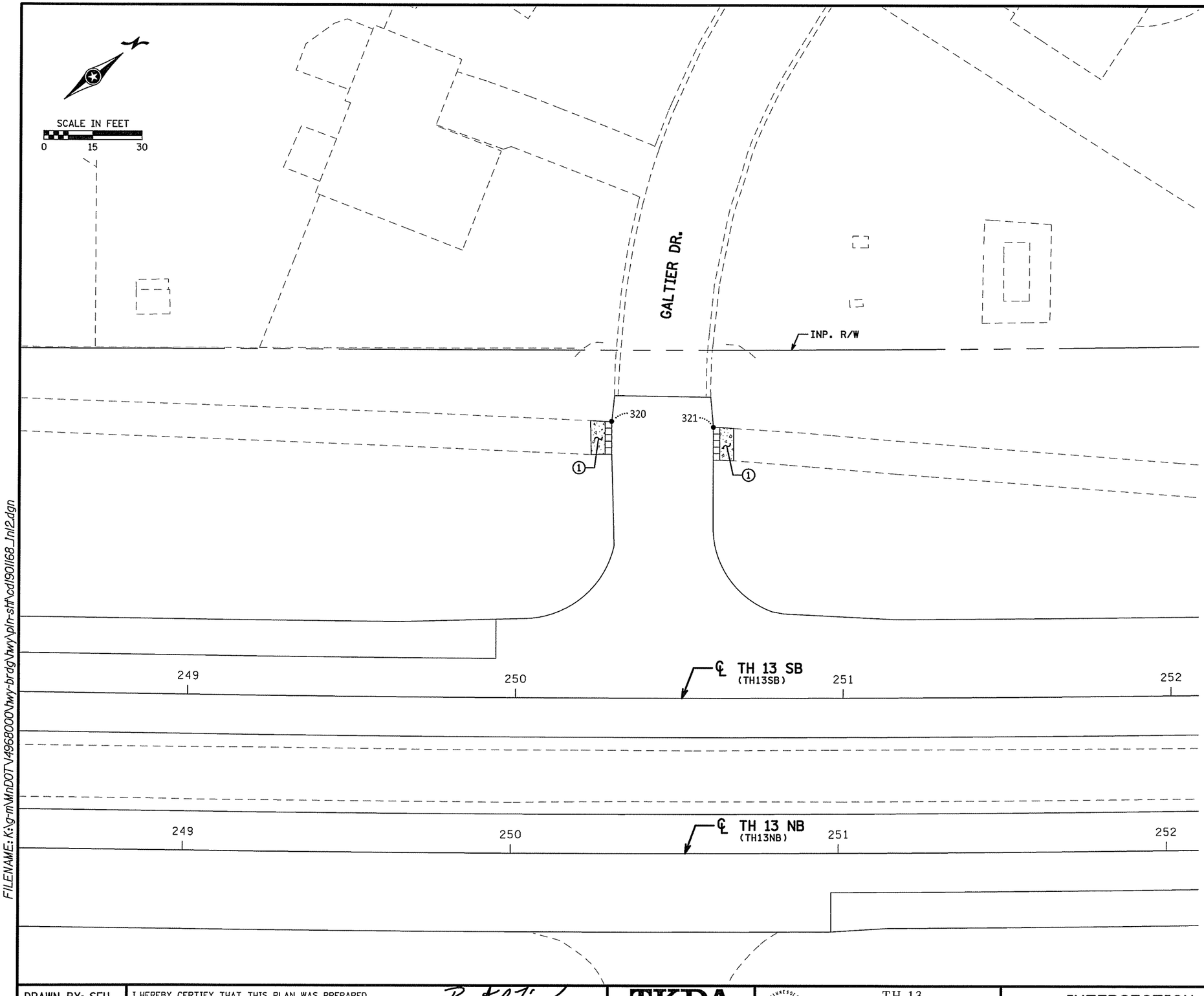
SIGNATURE: Bryant J. Ficek
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DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT 115TH ST. E.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 137 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- U — INPLACE HANDHOLE
- X" — CURB HEIGHT AT INDICATED LOCATION
- XXX — INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
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STAKING POINTS

POINT	POINT TYPE	X	Y
320	EDGE OF PVMT	521188.98	219226.85
321	EDGE OF PVMT	521209.81	219249.98

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:31 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plnr-sht\od1901168_tnl2.dgn

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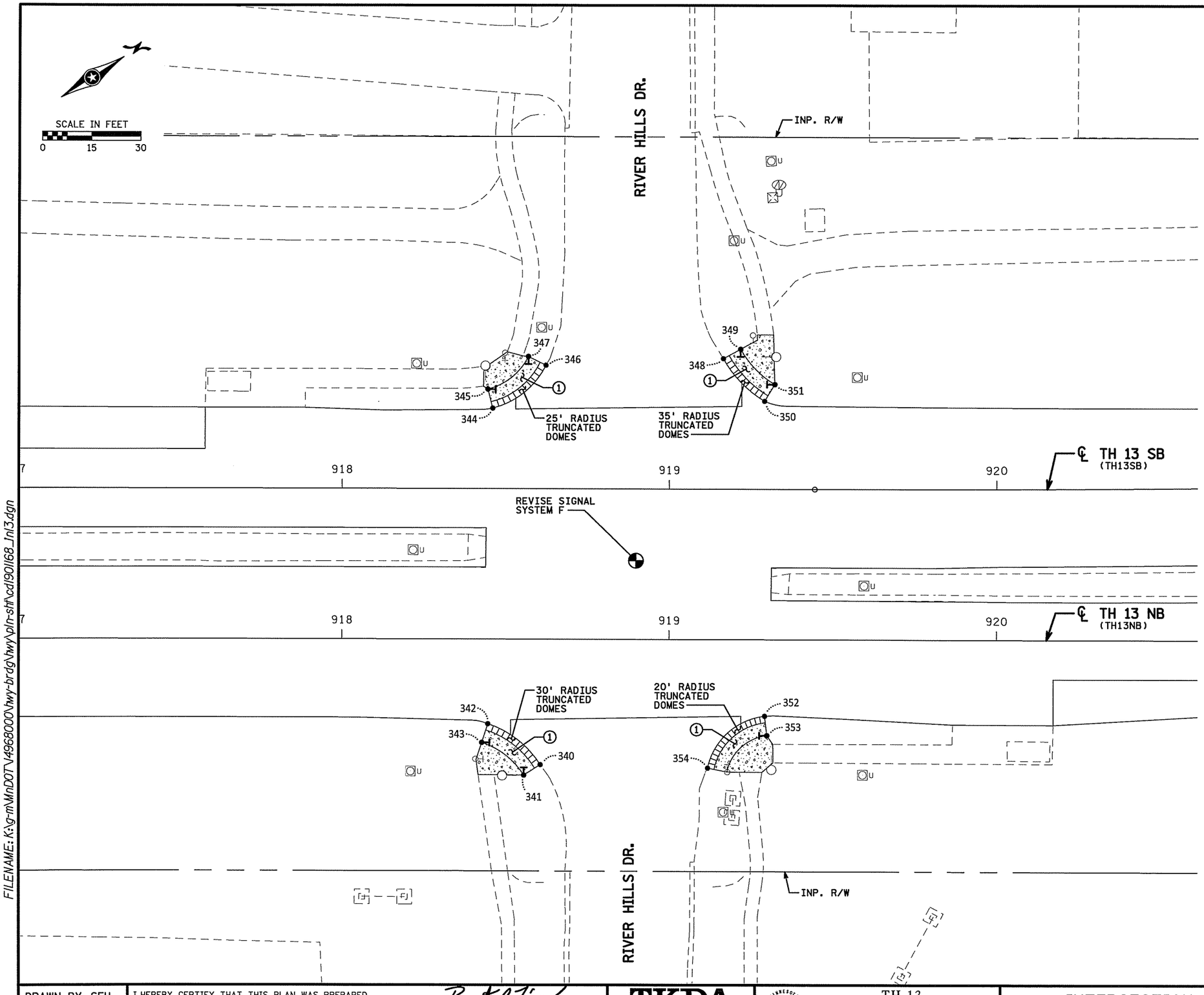
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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT GALTIER DR.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 138 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" — CURB HEIGHT AT INDICATED LOCATION
- XXX — INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
340	EDGE OF PVMT	522147.01	220276.96
341	PUSH BUTTON	522146.89	220270.96
342	EDGE OF PVMT	522127.74	220270.48
343	PUSH BUTTON	522131.47	220265.78
344	EDGE OF PVMT	522048.02	220324.99
345	PUSH BUTTON	522042.36	220326.99
346	EDGE OF PVMT	522046.06	220345.84
347	PUSH BUTTON	522040.87	220342.83
348	EDGE OF PVMT	522074.24	220392.15
349	PUSH BUTTON	522074.72	220398.14
350	EDGE OF PVMT	522092.07	220395.45
351	PUSH BUTTON	522089.49	220400.86
352	EDGE OF PVMT	522172.43	220342.32
353	PUSH BUTTON	522177.77	220339.60
354	EDGE OF PVMT	522176.09	220319.07

GENERAL NOTES:

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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 2/13/2012 TIME: 4:03:16 PM
FILENAME: K:\g-mMnDOTV4968000\hwy-brdg\hwy\plh-sfh\cdl901168_lnl3.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT RIVER HILLS DR.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 139 of 393 Sheets

SCALE IN FEET
0 15 30

INP. R/W

DIFFLEY RD.

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

REVISE SIGNAL SYSTEM G

931 932 933 934

INP. R/W

℄

DIFFLEY RD.

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
360	FACE OF CURB	522879.05	221408.23
361	PUSH BUTTON	522879.78	221401.60
362	FACE OF CURB	522860.39	221403.58
363	PUSH BUTTON	522862.84	221397.38
364	EDGE OF PVMT	522807.49	221433.62
365	EDGE OF PVMT	522794.15	221441.94
366	FACE OF CURB	522764.82	221467.98
367	PUSH BUTTON	522758.47	221470.02
368	FACE OF CURB	522765.19	221488.93
369	PUSH BUTTON	522758.80	221487.04
370	FACE OF CURB	522807.91	221558.21
371	PUSH BUTTON	522805.92	221564.58
372	FACE OF CURB	522917.65	221478.57
373	PUSH BUTTON	522923.35	221482.04

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 2/13/2012 TIME: 4:03:19 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plr-sth\cd190168_ln14.dgn

DRAWN BY: SFH
CHECKED BY: SJS

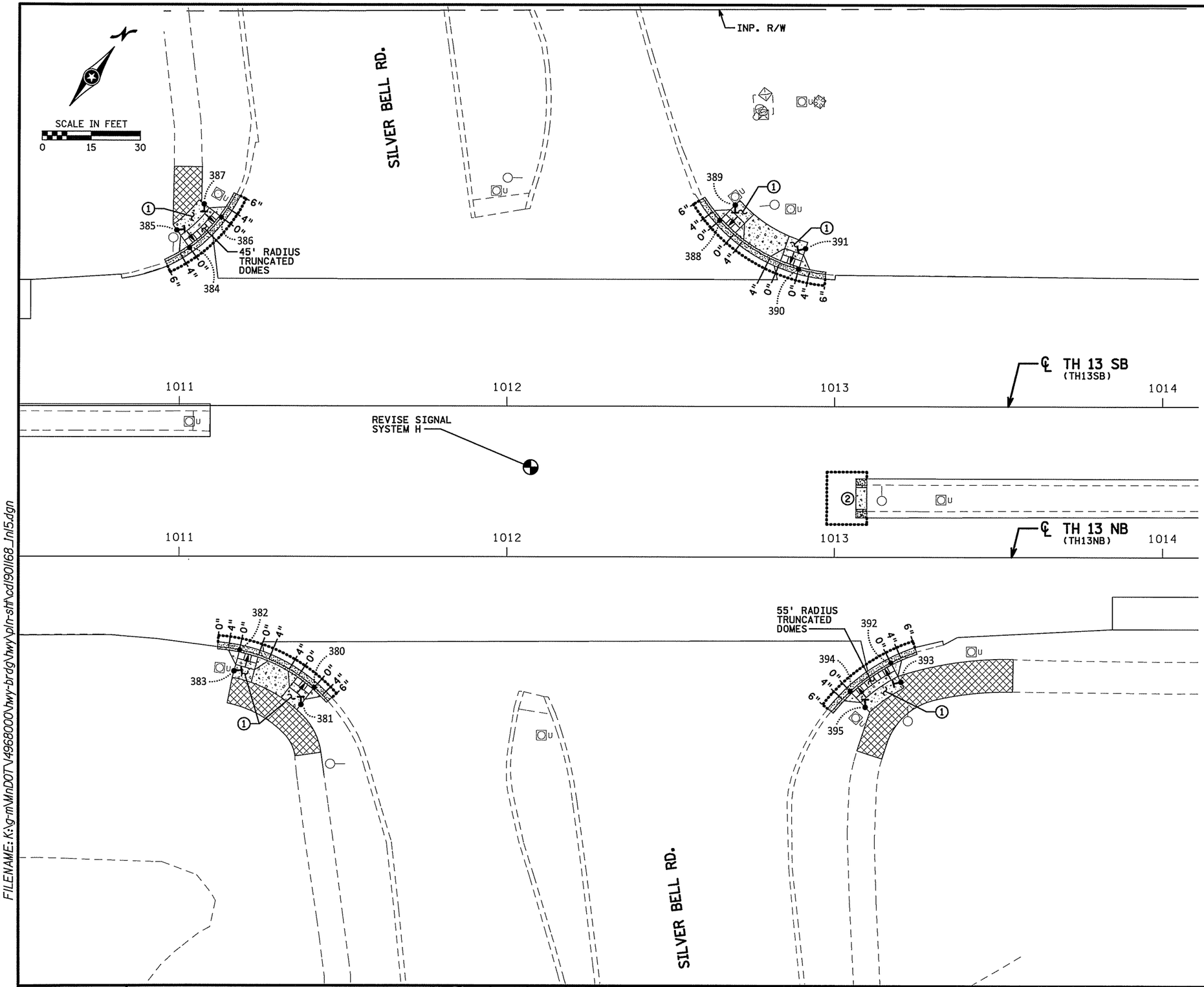
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT DIFFLEY RD.



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
380	FACE OF CURB	527972.18	226785.67
381	PUSH BUTTON	527972.04	226779.00
382	FACE OF CURB	527947.07	226781.20
383	PUSH BUTTON	527949.50	226774.98
384	FACE OF CURB	527861.22	226870.62
385	PUSH BUTTON	527854.87	226872.66
386	FACE OF CURB	527863.38	226883.93
387	PUSH BUTTON	527856.71	226884.00
388	FACE OF CURB	527985.94	226974.08
389	PUSH BUTTON	527986.89	226980.69
390	FACE OF CURB	528014.14	226976.46
391	PUSH BUTTON	528012.10	226982.83
392	FACE OF CURB	528108.70	226896.89
393	PUSH BUTTON	528114.69	226893.96
394	FACE OF CURB	528104.00	226882.50
395	PUSH BUTTON	528110.55	226881.33

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

(2) CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.

DATE: 2/13/2012 TIME: 4:03:22 PM
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CHECKED BY: SJS

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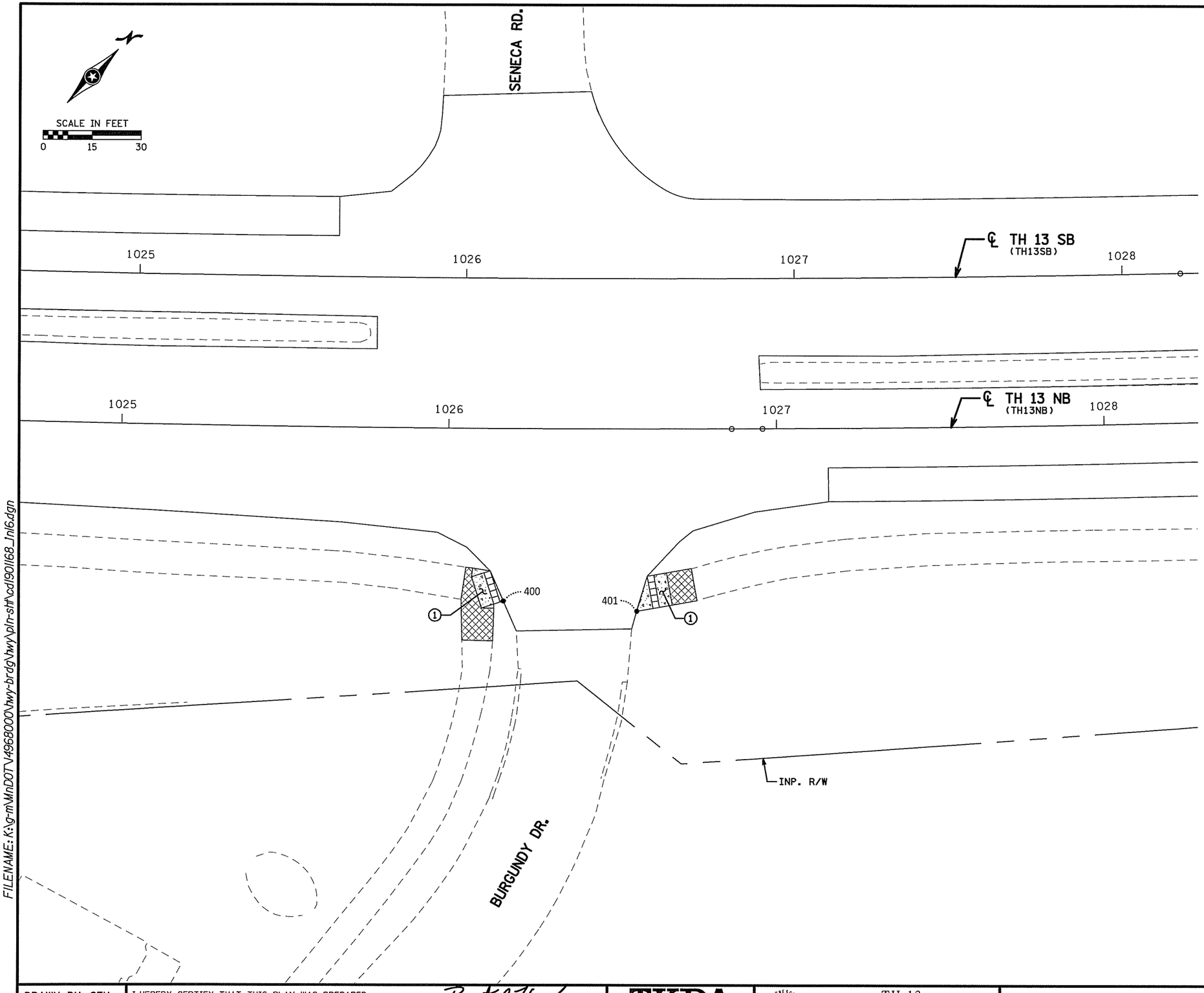
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT SILVER BELL RD.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 141 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
400	EDGE OF PVMT	529138.38	227697.10
401	EDGE OF PVMT	529170.18	227722.84

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
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- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
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- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:40 AM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\plr-sht\cd1901168_Jnl6.dgn

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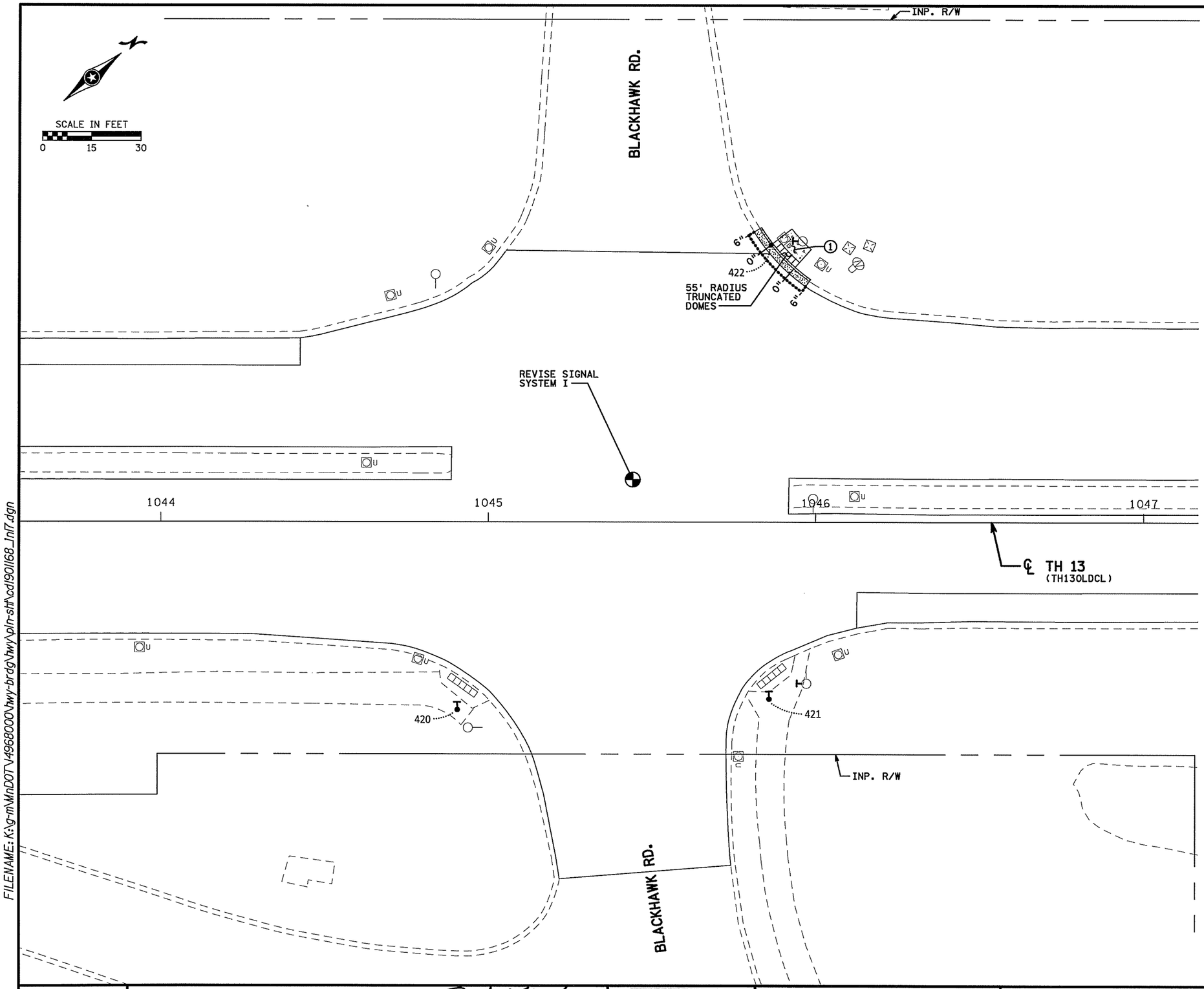
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT BURGUNDY DR.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 142 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
420	PUSH BUTTON	530685.25	229465.33
421	PUSH BUTTON	530744.35	229540.05
422	FACE OF CURB	530638.73	229630.36

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
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- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

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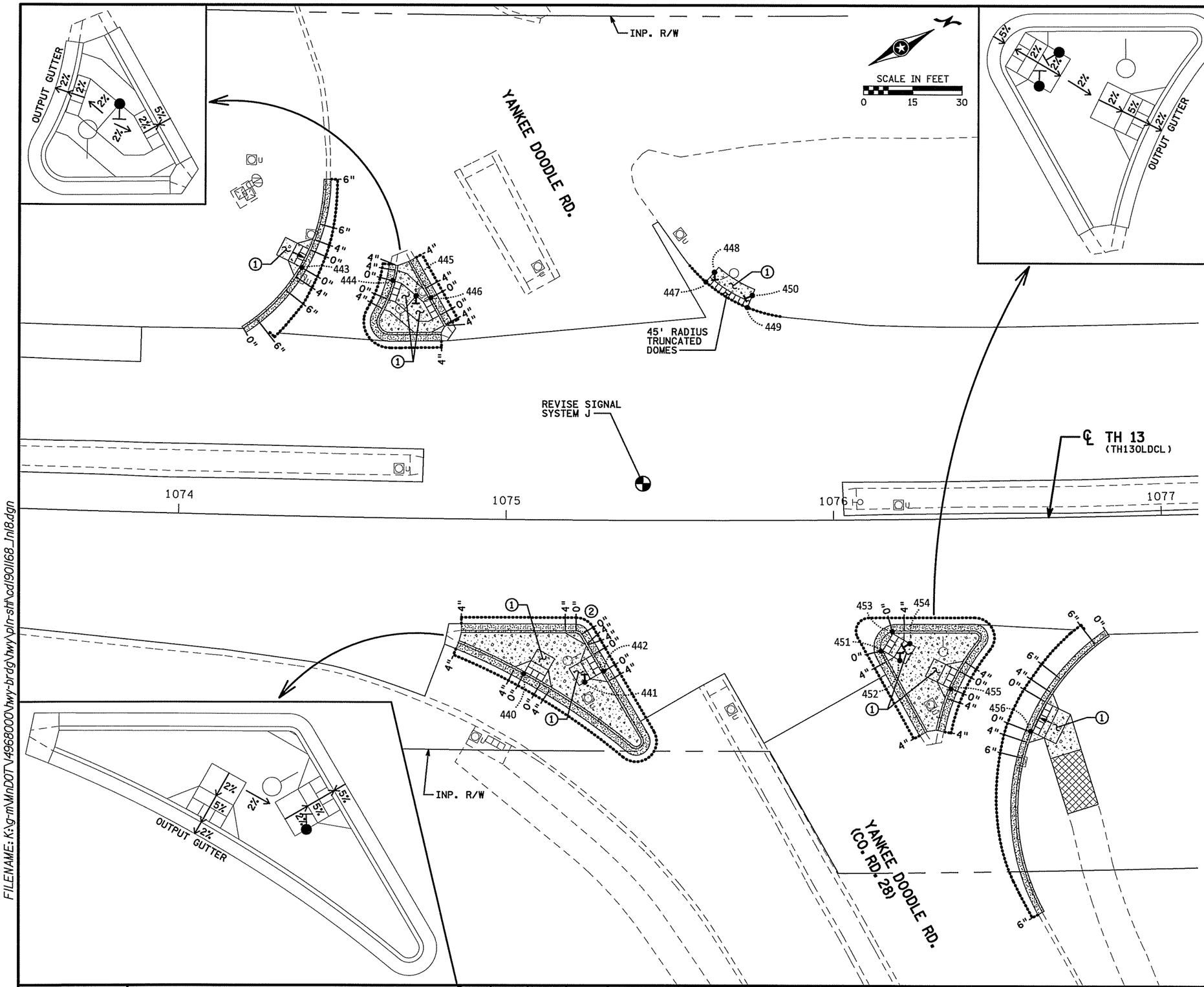
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT BLACKHAWK RD.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 143 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y	ELEV.
440	FACE OF CURB	532557.50	231831.34	806.75
441	PUSH BUTTON	532568.89	231846.32	----
442	FACE OF CURB	532568.79	231852.99	806.40
443	FACE OF CURB	532415.96	231833.28	----
444	FACE OF CURB	532433.09	231855.62	805.20
445	PUSH BUTTON	532440.65	231859.47	----
446	FACE OF CURB	532443.37	231863.12	805.30
447	EDGE OF PVMT	532480.38	231938.61	----
448	PUSH BUTTON	532479.05	231942.37	----
449	EDGE OF PVMT	532493.44	231945.85	----
450	PUSH BUTTON	532490.94	231948.97	----
451	FACE OF CURB	532604.93	231929.79	806.02
452	PUSH BUTTON	532610.30	231933.44	----
453	FACE OF CURB	532601.45	231935.77	806.14
454	PUSH BUTTON	532607.28	231938.63	----
455	FACE OF CURB	532625.51	231942.84	805.53
456	FACE OF CURB	532648.65	231957.56	----

ELEVATIONS GIVEN AT FACE OF CURB FOR PORK CHOP ISLANDS.

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

(2) CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.

DATE: 2/13/2012 TIME: 4:03:27 PM
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DRAWN BY: SFH
CHECKED BY: SJS

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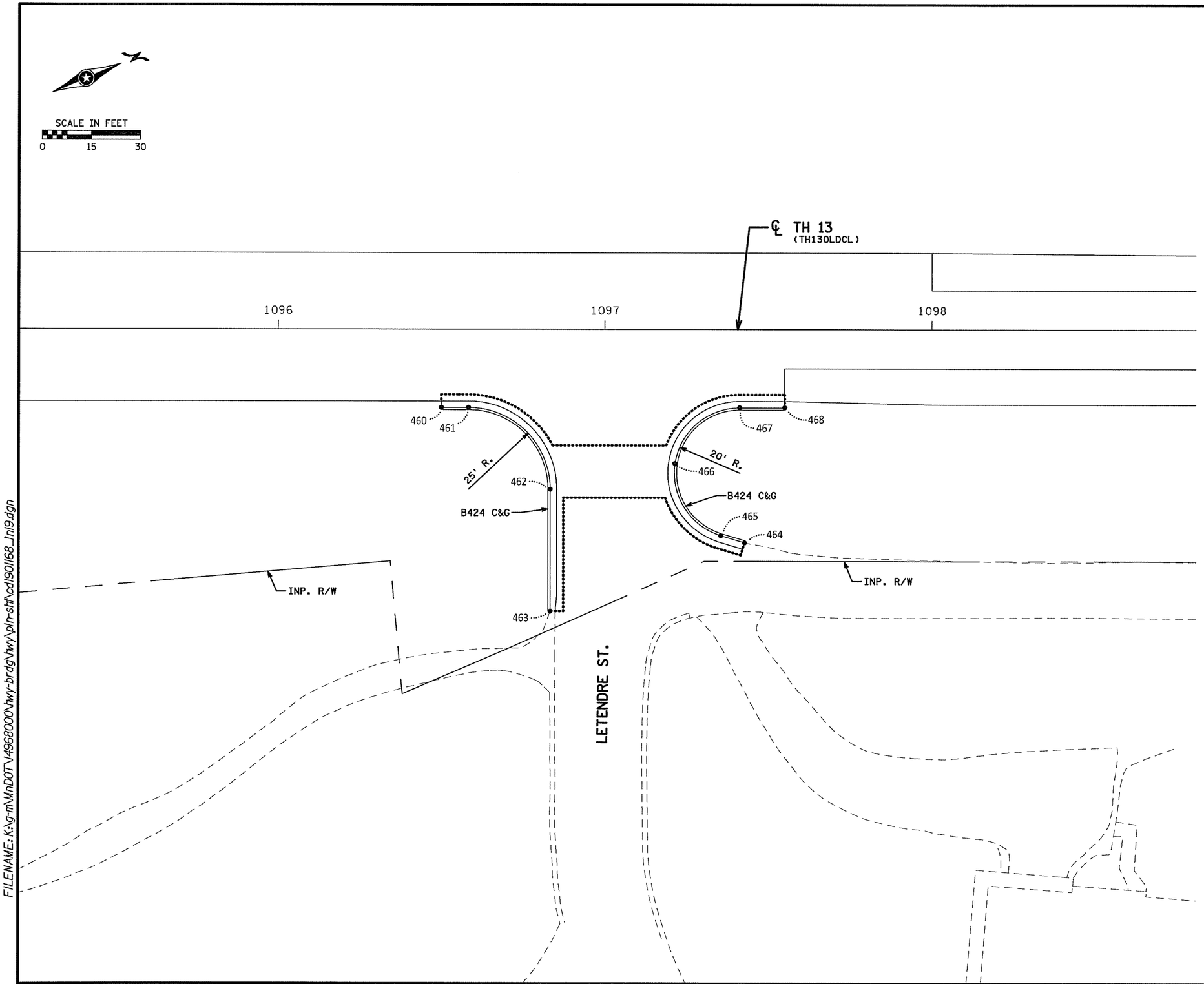
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT YANKEE DOODLE RD.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 144 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS

POINT	POINT TYPE	X	Y
460	FACE OF CURB	533414.04	233784.96
461	FACE OF CURB	533417.33	233792.62
462	FACE OF CURB	533450.17	233805.73
463	FACE OF CURB	533484.43	233791.02
464	FACE OF CURB	533488.62	233853.88
465	FACE OF CURB	533483.75	233848.07
466	FACE OF CURB	533457.94	233843.90
467	FACE OF CURB	533450.05	233868.82
468	FACE OF CURB	533455.46	233881.41

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
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DATE: 1/26/2012 TIME: 8:17:46 AM
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DRAWN BY: SFH
CHECKED BY: SJS

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PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

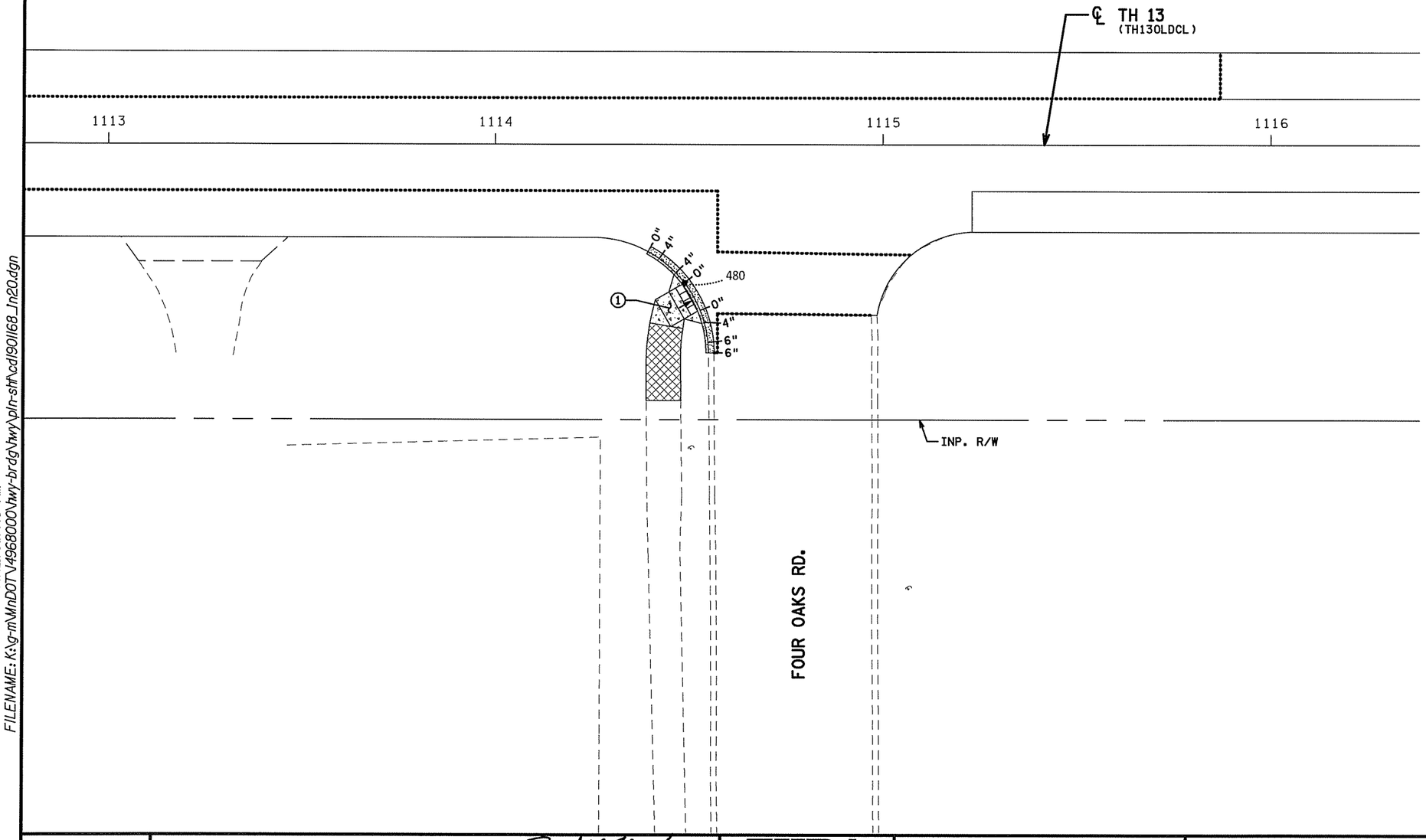
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT LETENDRE ST.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 145 of 393 Sheets

SCALE IN FEET
0 15 30



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS			
POINT	POINT TYPE	X	Y
480	FACE OF CURB	534115.97	235440.79

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:17:48 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plnr-sht\cd1901168_ln20.dgn

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Bryant J Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

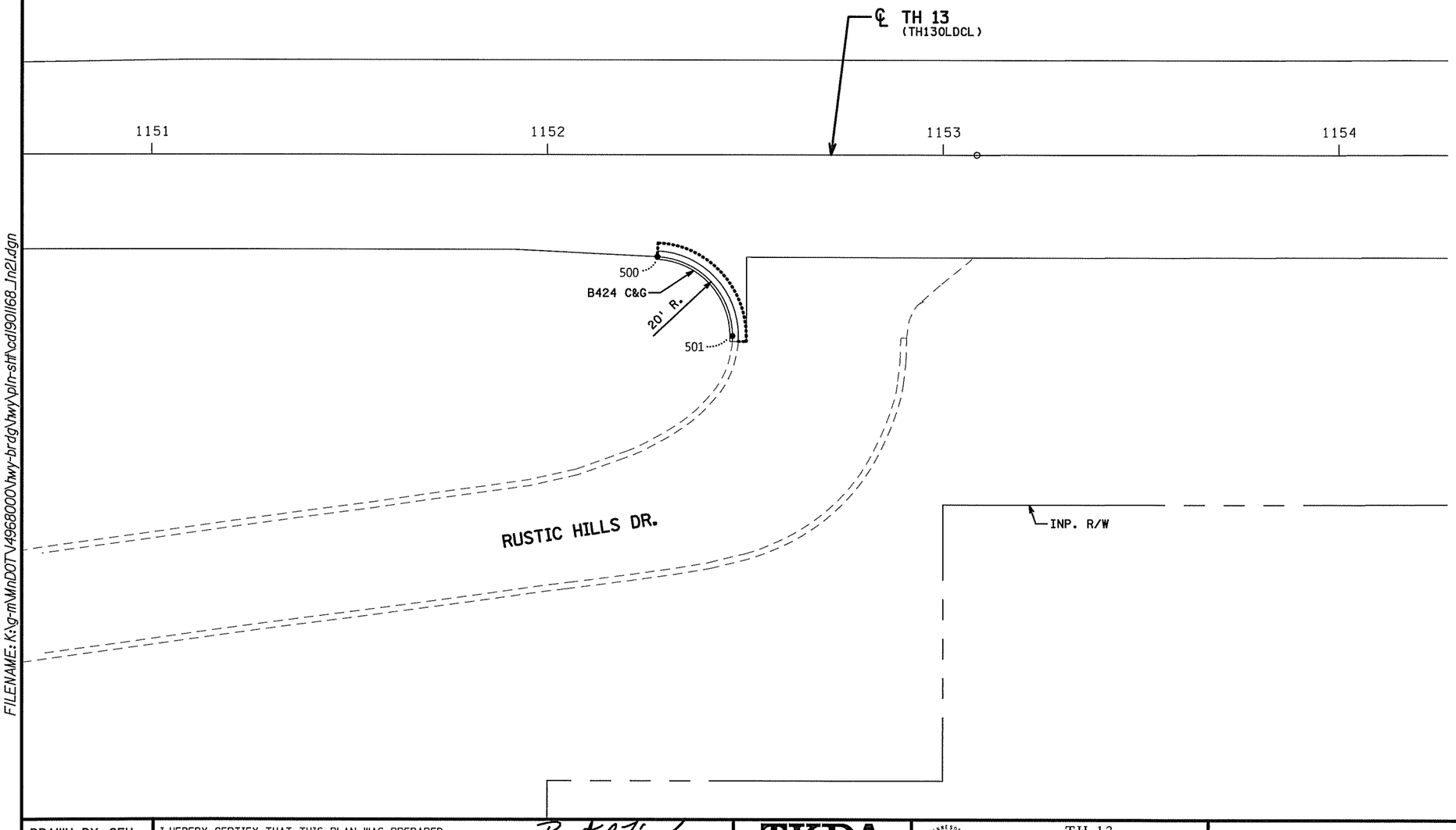
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT FOUR OAKS RD.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 146 of 393 Sheets

SCALE IN FEET
0 15 30



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
500	FACE OF CURB	535446.46	238977.77
501	FACE OF CURB	535471.91	238988.44

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
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DATE: 1/26/2012 TIME: 8:17:51 AM
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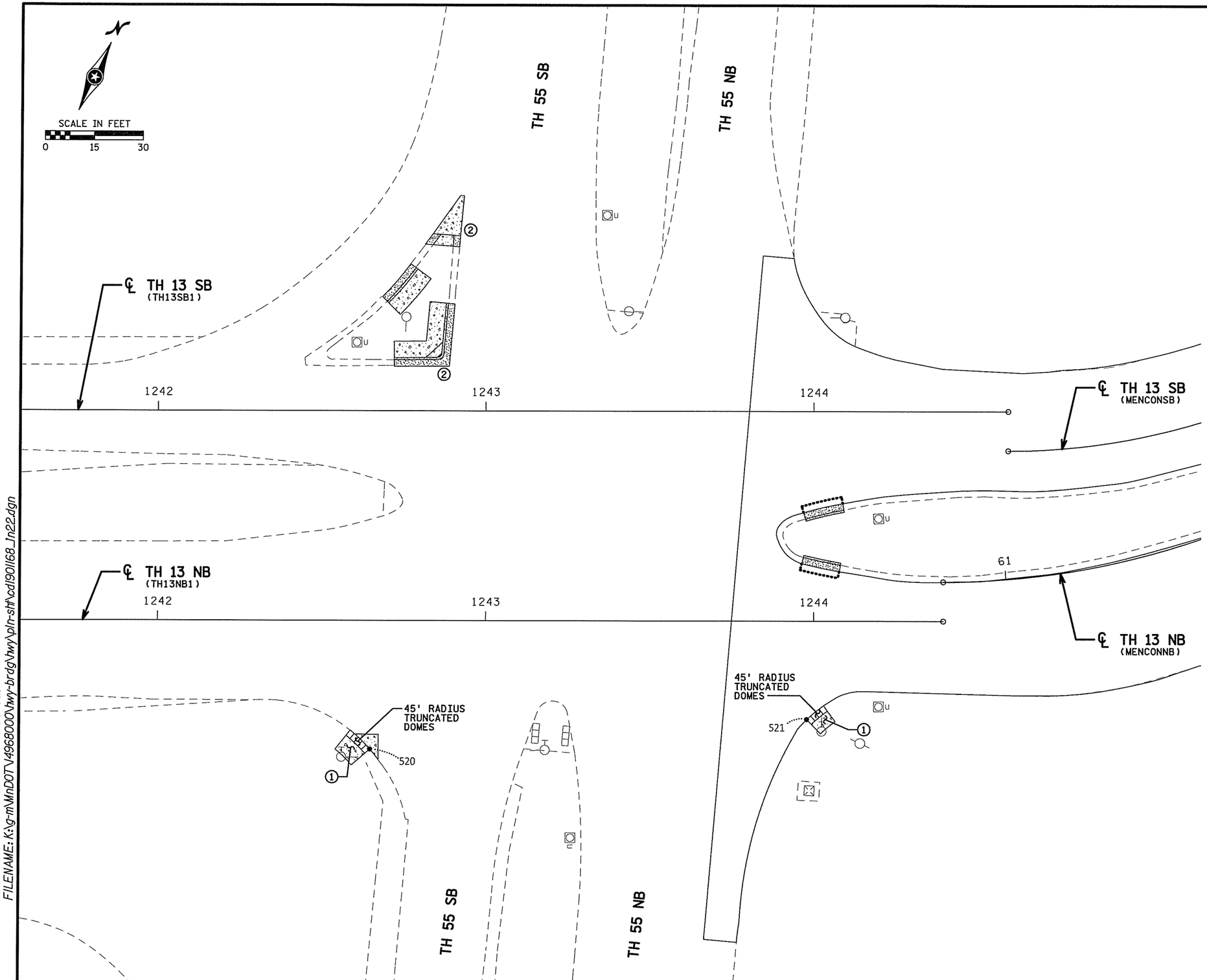
SIGNATURE: Bryant J Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT RUSTIC HILLS DR.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 147 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
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STAKING POINTS

POINT	POINT TYPE	X	Y
520	EDGE OF PVMT	539746.12	246474.90
521	EDGE OF PVMT	539862.85	246539.63

GENERAL NOTES:

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- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

(2) CONCRETE APPROACH NOSE. SEE STANDARD PLATE 7113.

DATE: 1/26/2012 TIME: 8:17:53 AM
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SIGNATURE: Bryant J. Ficek
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DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT TH 55

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 148 of 393 Sheets

SCALE IN FEET
0 15 30

TH 110 EB

TH 110 WB

28 49 48 47

℄ TH 13 SB
(MENCONSB)

REVISE SIGNAL
SYSTEM K

28 49 48 47

℄ TH 13 NB
(MENCONNB)

35' RADIUS
TRUNCATED
DOMES

6" 0" 0" 6"

540 541 542

1

TH 110 EB

TH 110 WB

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
540	FACE OF CURB	540343.45	249805.97
541	FACE OF CURB	540347.40	249816.41
542	PUSH BUTTON	540352.19	249809.75

GENERAL NOTES:

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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 2/13/2012 TIME: 4:03:30 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cd1901168_ln23.dgn

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SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT TH 110

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 149 of 393 Sheets

SCALE IN FEET
0 15 30

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
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STAKING POINTS			
POINT	POINT TYPE	X	Y
560	FACE OF CURB	538428.04	250572.65
561	FACE OF CURB	538453.98	250616.26

ST PETER'S CHURCH

INP. R/W

6" 0" 560 0" 6" 6"

6" 0" 561 0" 6"

℄ TH 13 (MENCONNB)

22 21 23 24

INP. R/W

DATE: 1/26/2012 TIME: 8:17:57 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad1901168_ln24.dgn

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
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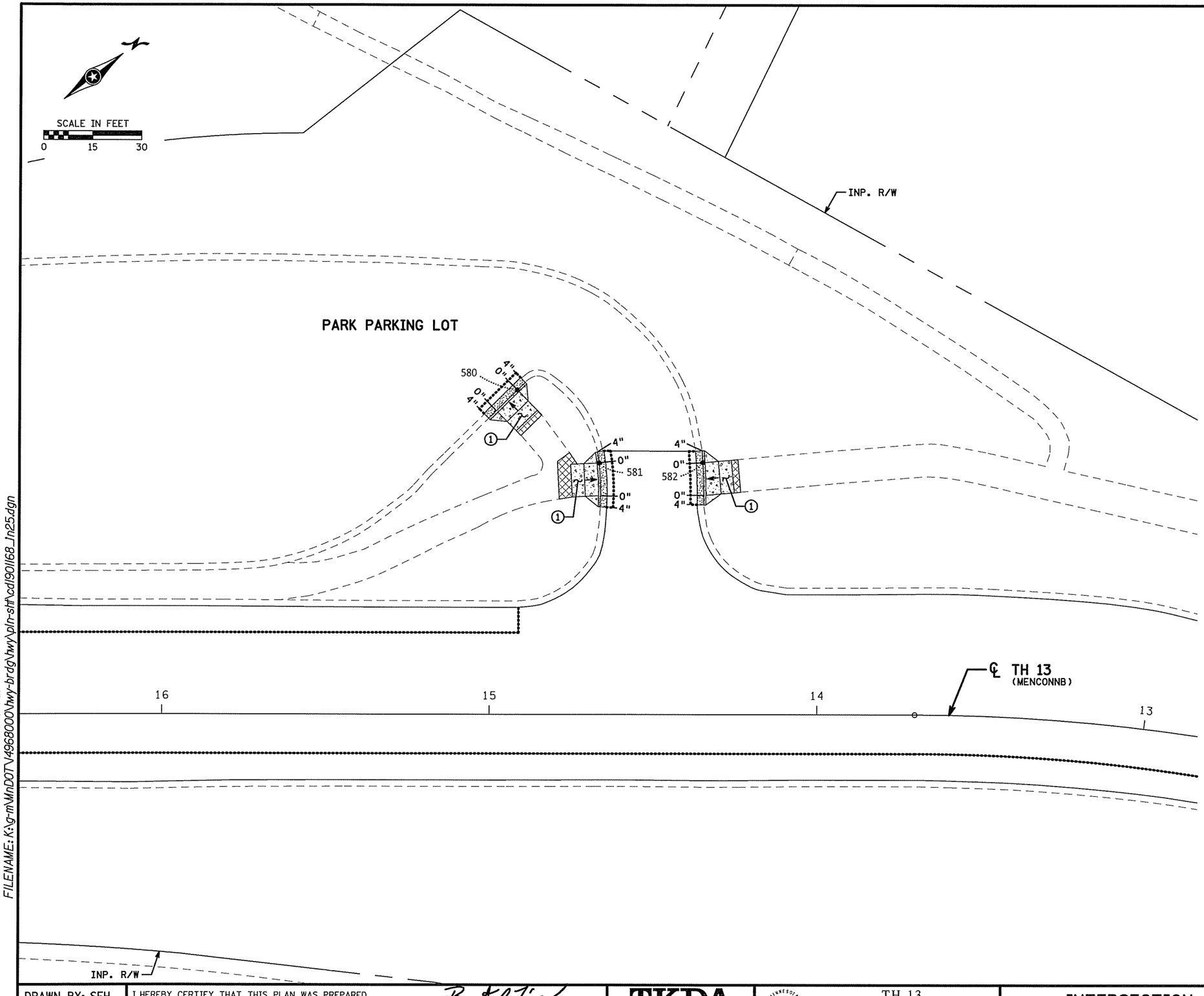
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PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT ST PETER'S CHURCH

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 150 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
580	FACE OF CURB	538837.44	251199.77
581	FACE OF CURB	538870.44	251205.70
582	FACE OF CURB	538889.92	251230.72

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

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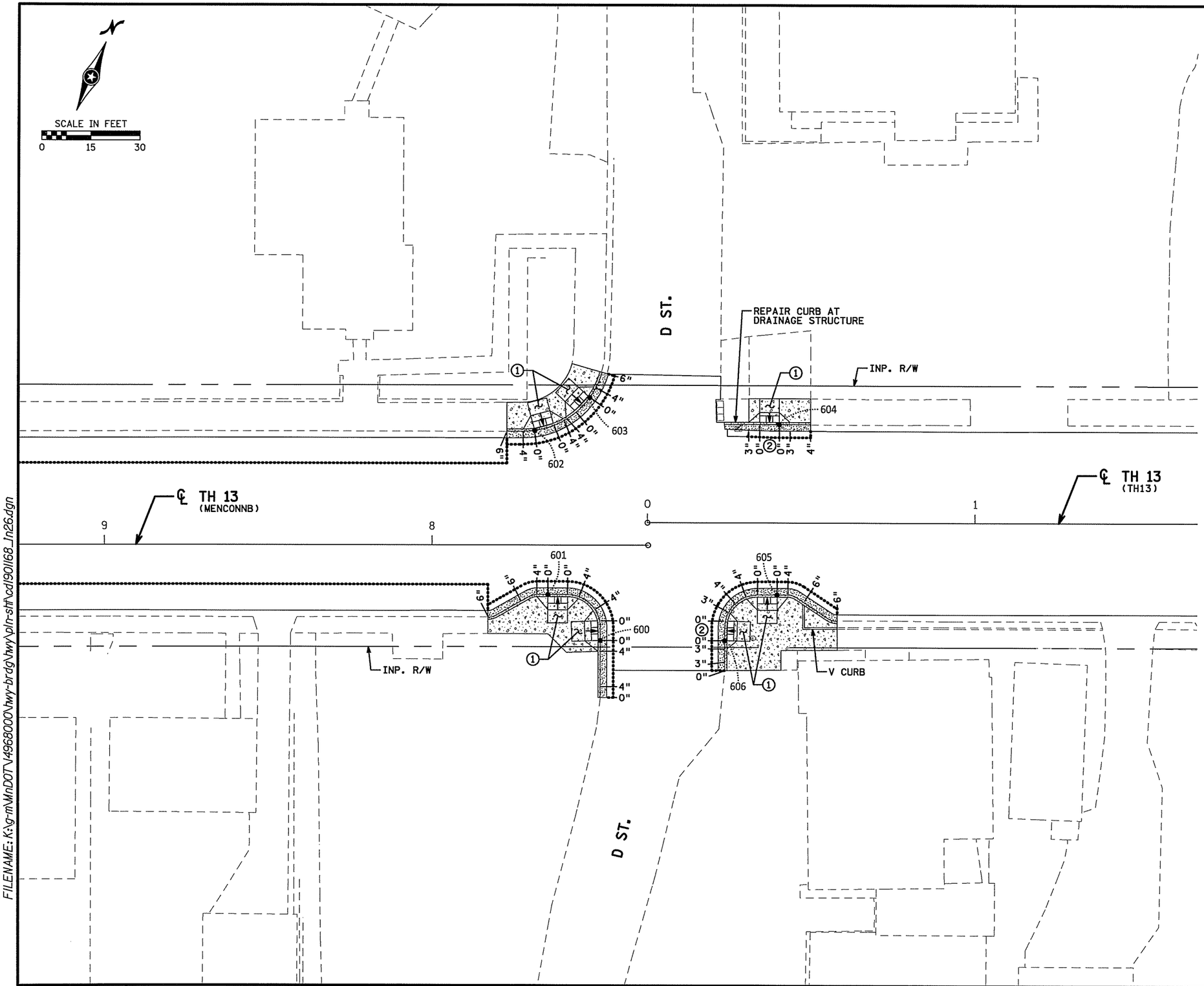
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT PARK PARKING LOT

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 151 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
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STAKING POINTS

POINT	POINT TYPE	X	Y
600	FACE OF CURB	539535.30	251509.99
601	FACE OF CURB	539515.12	251516.70
602	FACE OF CURB	539491.95	251561.29
603	FACE OF CURB	539503.48	251577.10
604	FACE OF CURB	539560.02	251592.03
605	FACE OF CURB	539579.65	251543.82
606	FACE OF CURB	539570.33	251524.71

GENERAL NOTES:

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SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

② 3' LONG PEDESTRIAN RAMP.

DATE: 2/13/2012 TIME: 4:03:32 PM
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DRAWN BY: SFH
CHECKED BY: SJS

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PRINTED NAME: BRYANT J. FICEK
DATE: FEBRUARY 13, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT D ST.

SCALE IN FEET
0 15 30

VFW

AXEL'S

USPS

INP. R/W

1

4" 0" 0" 4"
620

℄ TH 13
(TH13)

7 8 9 10

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- u INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- CONCRETE WALK
- 3" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340B) ON 6" AGGREGATE BASE CLASS 6
- INDICATES 4' LONG PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 0.020 FT/FT MINIMUM AND 0.083 FT/FT MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 0.020 FT/FT

STAKING POINTS			
POINT	POINT TYPE	X	Y
620	FACE OF CURB	540341.86	251920.52

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
- PROVIDE A SAWCUT (INCIDENTAL) AT ALL CONCRETE WALK AND BITUMINOUS TRAIL REMOVAL LIMITS.
- ALL CURB RAMPS AND LANDING AREAS SHALL BE 6" CONCRETE WALK ON 3" AGGREGATE BASE CLASS 6. ALL EXCAVATION, SUBGRADE PREPARATION, AGGREGATE BASE, COMMON BORROW, AND TOPSOIL BORROW SHALL BE INCIDENTAL.
- LANDINGS SHALL BE CONNECTED TO EXISTING SIDEWALKS MAINTAINING A 4' WIDE (MINIMUM) PEDESTRIAN ACCESS ROUTE WITH CROSS SLOPE THAT DOES NOT EXCEED 0.020 FT/FT AND A RUNNING SLOPE THAT DOES NOT EXCEED 0.050 FT/FT.
- ALL DISTURBED AREAS IN A CUT SECTION THAT ARE NOT OTHERWISE RESURFACED SHALL BE GRADED FLUSH WITH NEW SURFACING AT A 1:6 SLOPE FOR A DISTANCE OF UP TO 5 FEET FROM THE EDGE OF WALK TO MATCH SURROUNDING CONTOURS.
- IF AN INPLACE UTILITY DOES NOT ALLOW A PUSH BUTTON STATION TO BE PLACED AT THE LOCATION INDICATED IN THE PLAN, THEN THE CONTRACTOR SHALL CONSULT WITH Mn/DOT PERSONNEL TO DETERMINE A SOLUTION.

SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:18:03 AM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\plr-sht\cd190168_ln27.dgn

DRAWN BY: SFH
CHECKED BY: SJS

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

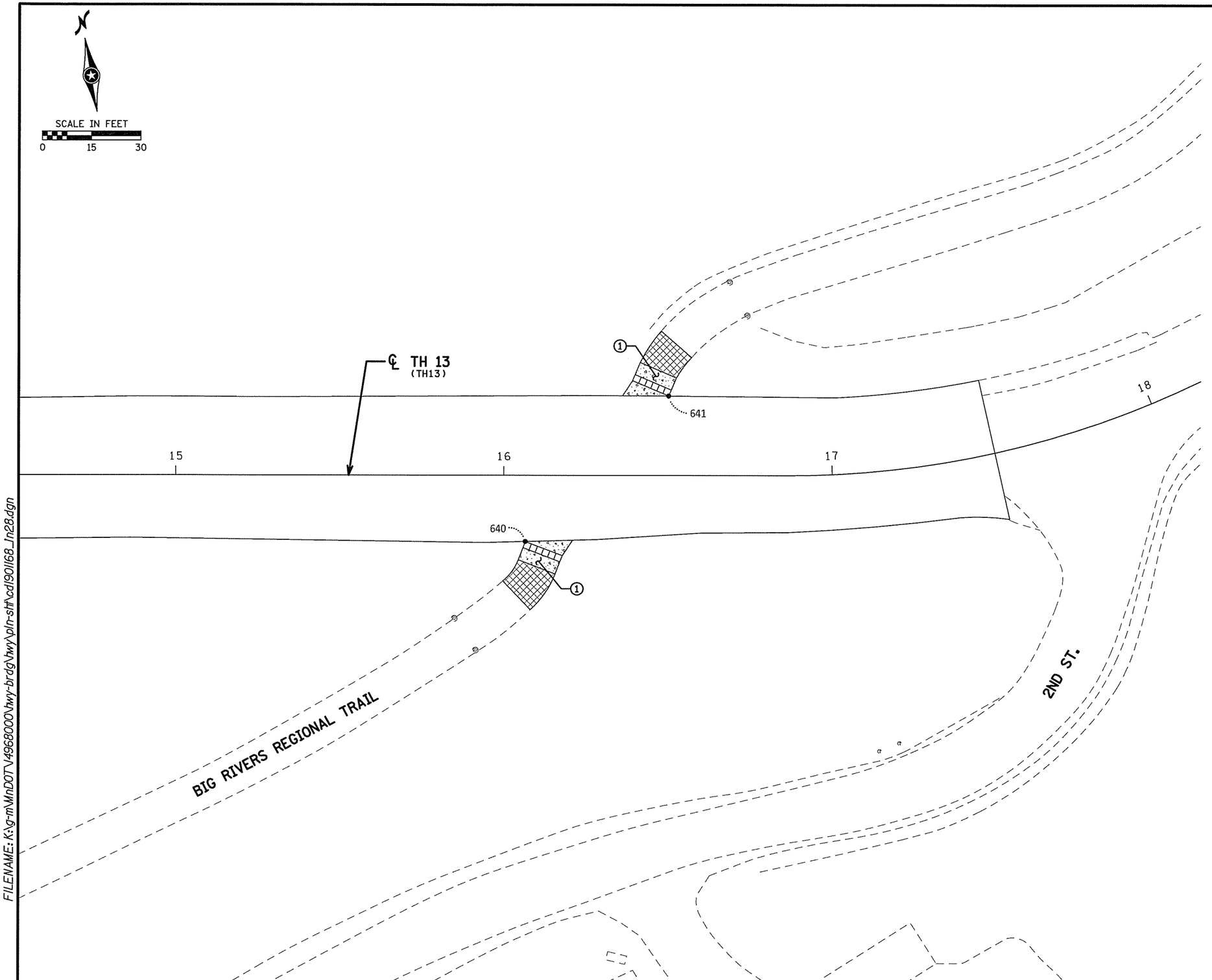
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT EASTERN EDGE OF DOWNTOWN MENDOTA

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 153 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
640	EDGE OF PVMT	541056.07	251829.58
641	EDGE OF PVMT	541106.34	251866.21

GENERAL NOTES:

- MAINTAIN A MINIMUM 4' WIDE PEDESTRIAN ACCESS ROUTE OBSTRUCTION TO OBSTRUCTION AND/OR OBSTRUCTION TO EDGE OF WALK.
- THE CROSS SLOPE OF THE PEDESTRIAN ACCESS ROUTE SHALL NOT EXCEED 0.020 FT/FT.
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SPECIFIC NOTES:

① MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:18:05 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\p\r-sth\cd\1901168_ln28.dgn

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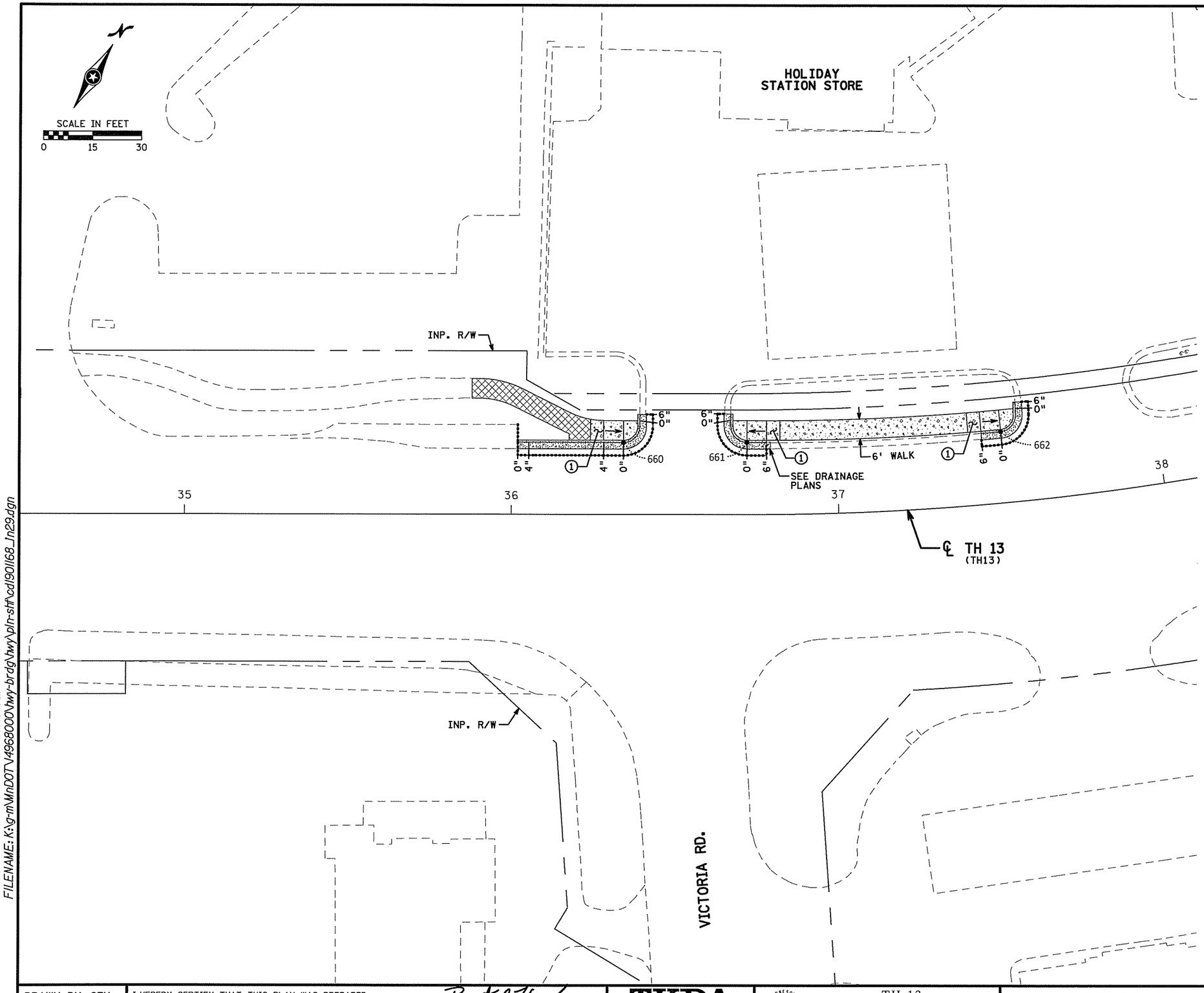
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT BIG RIVERS REGIONAL TRAIL

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 154 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
660	FACE OF CURB	546367.13	256103.15
661	FACE OF CURB	546399.44	256122.73
662	FACE OF CURB	546464.03	256165.60

GENERAL NOTES:

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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

DATE: 1/26/2012 TIME: 8:18:07 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cdl901168_ln29.dgn

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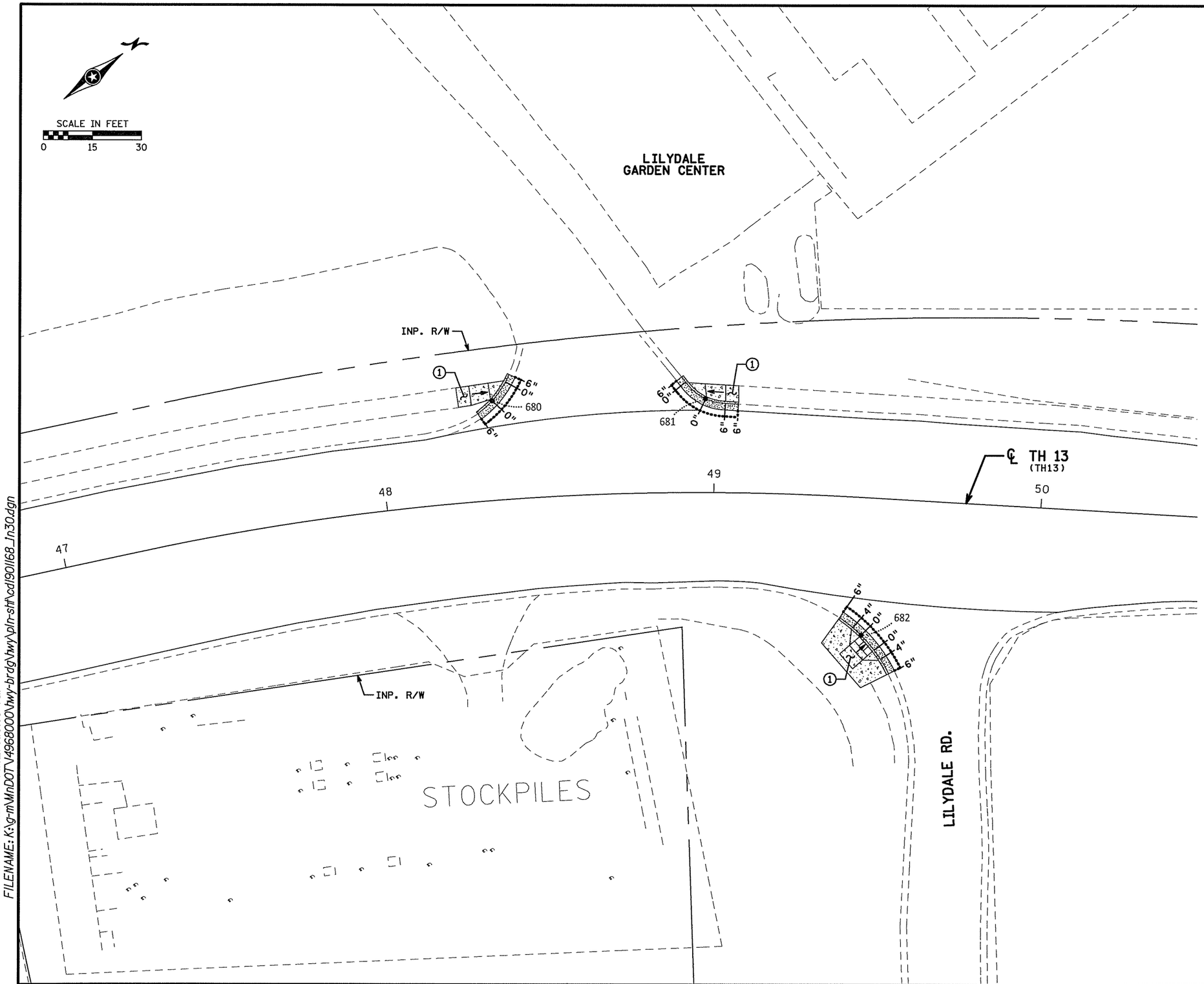
SIGNATURE: Bryant J Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT HOLIDAY STATION STORE

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 155 of 393 Sheets



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS

POINT	POINT TYPE	X	Y
680	FACE OF CURB	547008.66	257081.21
681	FACE OF CURB	547048.38	257133.03
682	FACE OF CURB	547134.62	257125.87

GENERAL NOTES:

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SPECIFIC NOTES:

(1) MINIMUM 4'x4' PEDESTRIAN LANDING AREA AT A MAXIMUM SLOPE OF 0.020 FT/FT.

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SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT LILYDALE RD.

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 156 of 393 Sheets

DATE: 1/26/2012 TIME: 8:18:09 AM
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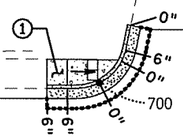
SCALE IN FEET
0 15 30

INP. R/W

BRIDGE NO. 19076

103 104 105 106

℄ TH 13
(TH13)



INP. R/W

LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
- INPLACE SIGNAL POLE
- INPLACE HANDHOLE
- X" CURB HEIGHT AT INDICATED LOCATION
- XXX INTERSECTION POINT OF CROSSWALK / PEDESTRIAN RAMP EDGE AT FACE OF CURB OR EDGE OF PAVEMENT
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STAKING POINTS			
POINT	POINT TYPE	X	Y
700	FACE OF CURB	547522.92	257665.20

GENERAL NOTES:

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SPECIFIC NOTES:

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DATE: 1/26/2012 TIME: 8:18:11 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\od190168_ln31.dgn

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SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

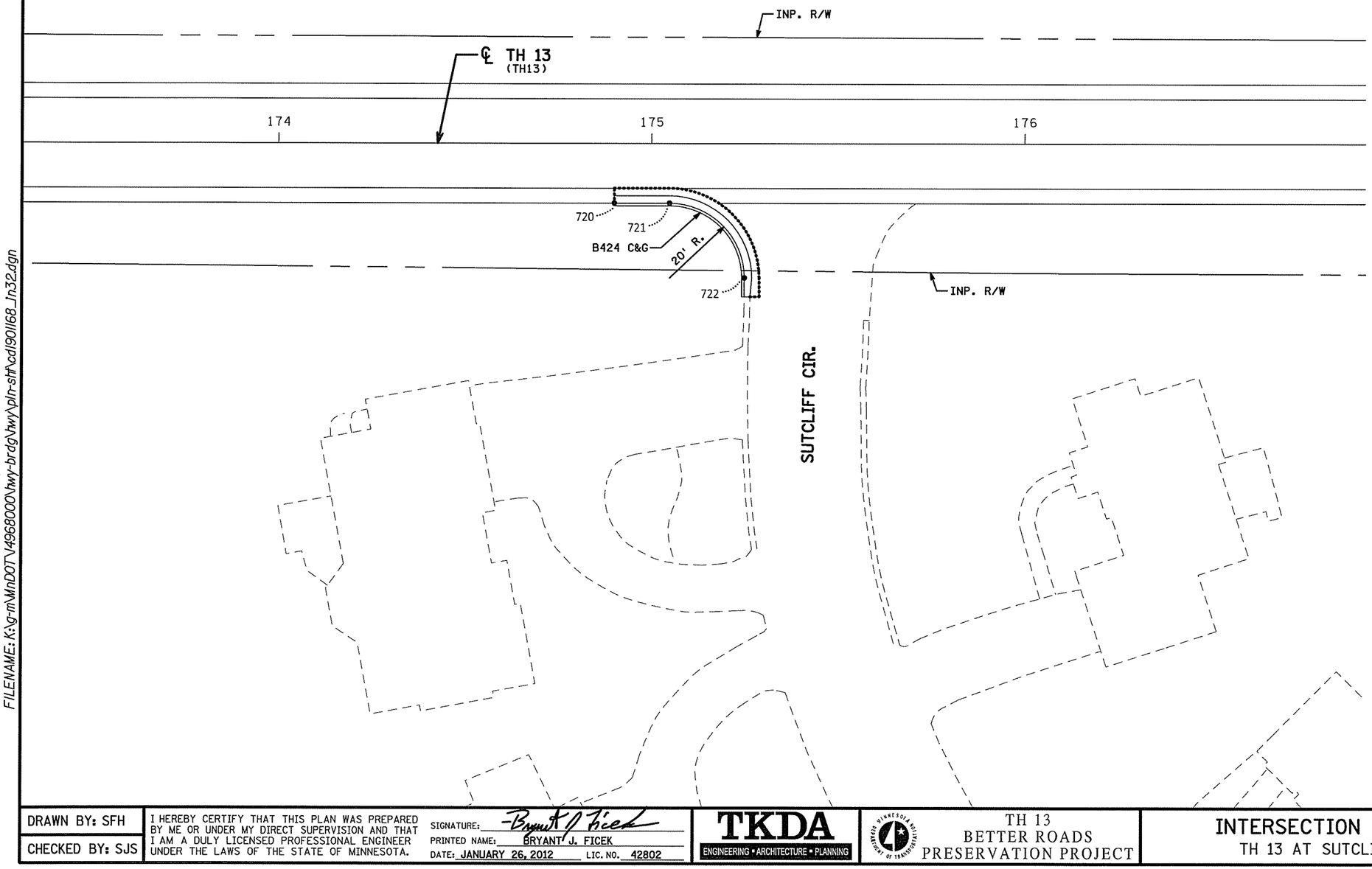
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT EAST END OF BRIDGE NO. 19076

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 157 of 393 Sheets

SCALE IN FEET
0 15 30



LEGEND

- INPLACE ROADWAY, WALK, OR TRAIL
- SAWCUT
- PEDESTRIAN CURB RAMP (SEE SHEETS 53 THRU 56 AND STANDARD PLATE 7036)
- PEDESTRIAN PUSH BUTTON STATION
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STAKING POINTS

POINT	POINT TYPE	X	Y
720	FACE OF CURB	552706.05	262224.66
721	FACE OF CURB	552715.22	262236.28
722	FACE OF CURB	552743.31	262239.60

GENERAL NOTES:

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DATE: 1/26/2012 TIME: 8:18:13 AM
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32 OF 32

DRAWN BY: SFH
CHECKED BY: SJS

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

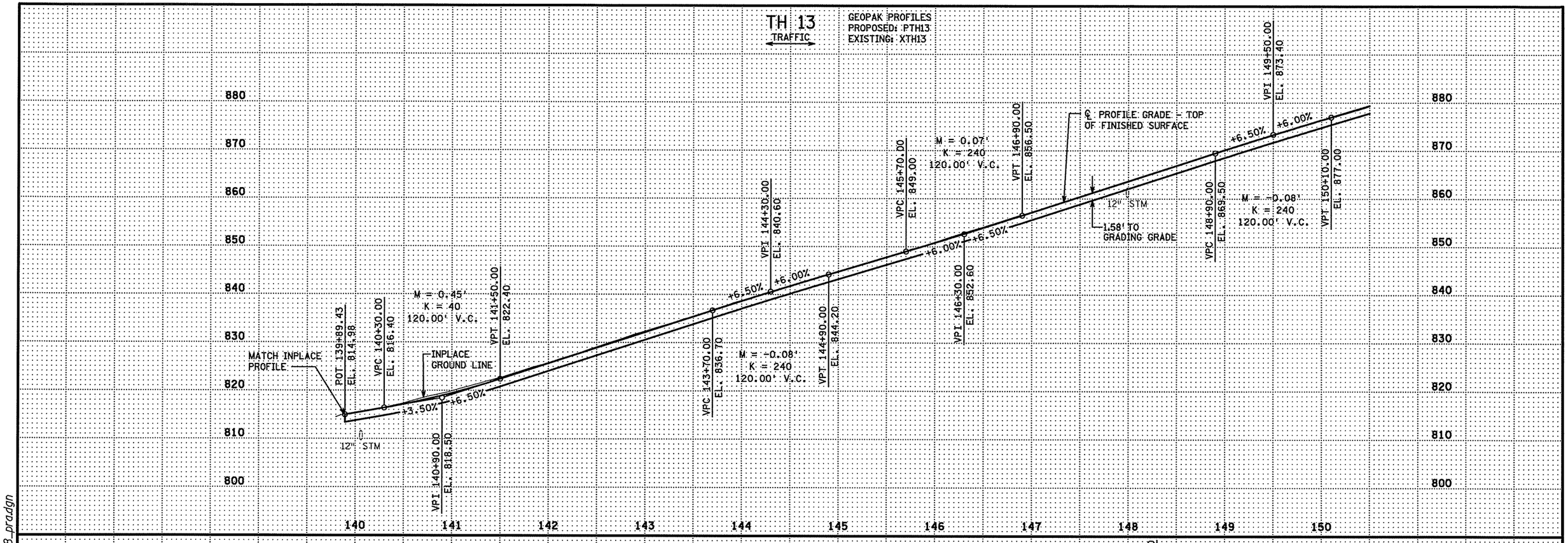
SIGNATURE: Bryant J. Ficek
PRINTED NAME: BRYANT J. FICEK
DATE: JANUARY 26, 2012 LIC. NO. 42802

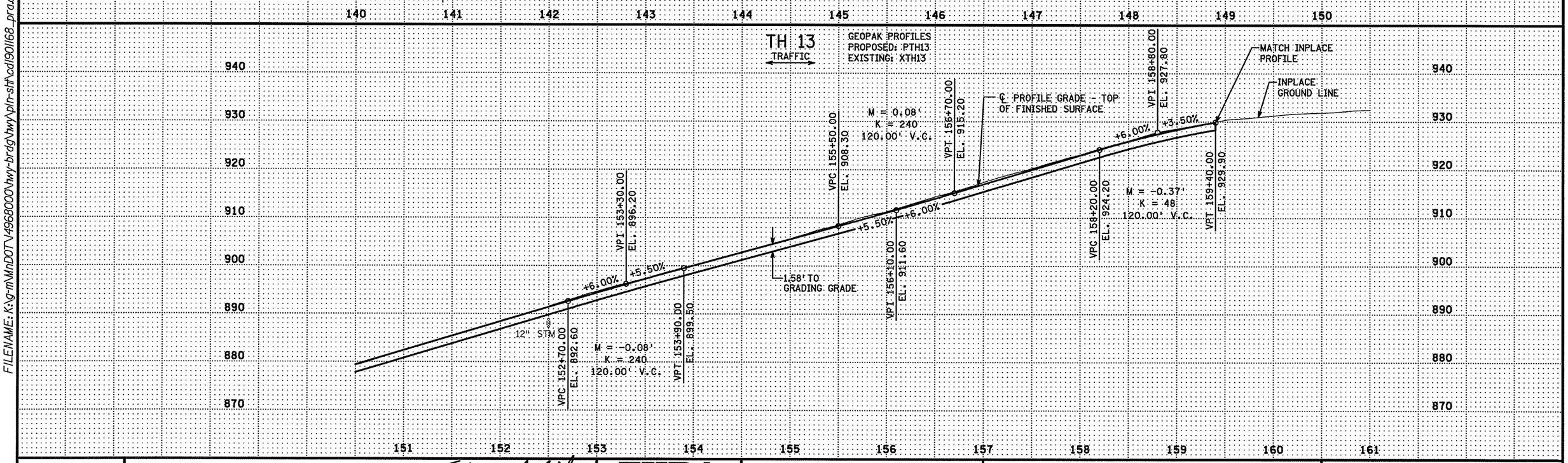
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION DETAILS
TH 13 AT SUTCLIFF CIR.

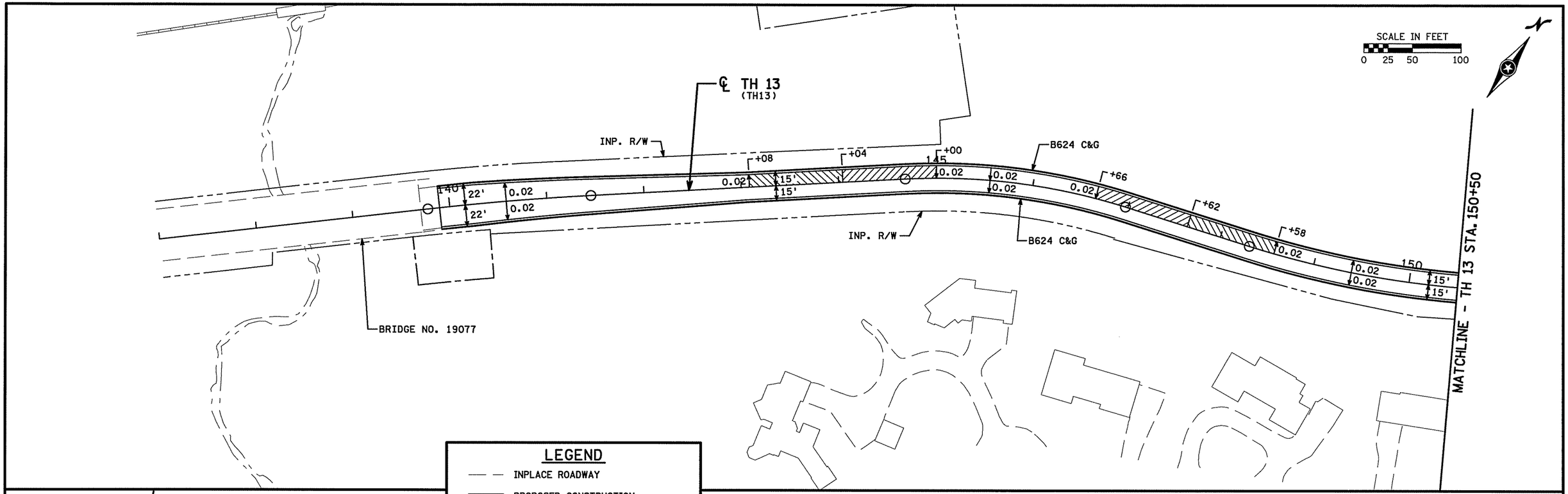
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 158 of 393 Sheets





DATE: 1/26/2012 TIME: 8:18:5 AM
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DRAWN BY: TJV CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: JANUARY 26, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	PROFILES TH 13	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 159 of 393 Sheets



LEGEND

- INPLACE ROADWAY
- PROPOSED CONSTRUCTION
- SUPERELEVATION TRANSITION

GENERAL NOTES (ENTIRE SHEET):

- ALL CROSS SLOPES ARE EXPRESSED IN FT/FT.

SYLVANDALE RD.

BROMPTON PL.

DATE: 2/13/2012 TIME: 4:03:35 PM
FILENAME: K:\g-mWnDOTV\4968000\hwy-brdg\hwy\pln-sht\cad\90168_sea.dgn

DRAWN BY: TJV CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	SUPERELEVATION PLANS TH 13 STA. 137+00 TO STA. 164+80	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 160 of 393 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (1 OF 2)

PROJECT DESCRIPTION/LOCATION

THE SP 1901-168 AND SP 1902-66 TH 13 BETTER ROADS PRESERVATION PROJECT IS LOCATED ON TH 13 FROM TH 35W TO ANNAPOLIS STREET, IN THE CITIES OF BURNSVILLE, EAGAN, MENDOTA, MENDOTA HEIGHTS, AND LILYDALE, IN DAKOTA COUNTY. THE PROJECT INCLUDES:

- GRADING
- BITUMINOUS MILL & OVERLAY
- ADA IMPROVEMENTS
- TRAFFIC SIGNALS
- TURN LANE CONSTRUCTION
- MISCELLANEOUS STORM SEWER, CULVERT, AND DRAINAGE STRUCTURE REPAIRS AND REPLACEMENTS
- MINOR DITCH GRADING
- GUARDRAIL REPLACEMENT
- TEMPORARY EROSION AND SEDIMENT CONTROL
- PERMANENT EROSION CONTROL AND TURF ESTABLISHMENT

THE APPROXIMATE CONSTRUCTION TIMELINE IS MAY 2012 TO DECEMBER 2012.

PROJECT CONTACTS AND RESPONSIBLE PARTIES

IN ACCORDANCE WITH MN/DOT SPEC. 2573.3A1, THE CONTRACTOR WILL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR IS INCIDENTAL. THE EROSION CONTROL SUPERVISOR SHALL BE AVAILABLE TO BE ON SITE WITHIN 24 HOURS AT ALL TIMES FROM INITIAL DISTURBANCE TO FINAL STABILIZATION, AS WELL AS PERFORMING THE DUTIES LISTED IN MN/DOT SPEC. 2573.

THE MN/DOT PROJECT ENGINEER AND THE CONTRACTOR'S EROSION CONTROL SUPERVISOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND FOR INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED WITH THE MPCA. MN/DOT METRO DISTRICT STAFF AND MEMBERS OF MN/DOT'S OFFICE OF ENVIRONMENTAL STEWARDSHIP ARE ALSO AVAILABLE FOR TECHNICAL ASSISTANCE.

THE CONTRACTOR'S EROSION CONTROL SUPERVISOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA.

RESPONSIBLE PARTY	CONTACT NAME	PHONE NUMBER
MN/DOT METRO PROJECT ENGINEER	SHEILA KAUPPI	(651) 234-7718
MN/DOT METRO DESIGN ENGINEER	VICTOR VASAS	(651) 234-7671
MN/DOT METRO CONSTRUCTION RESIDENT ENGINEER	DAVE HERZOG	(651) 406-4831
MN/DOT METRO WATER RESOURSE ENGINEER	SCOTT CARLSTROM	(651) 234-7525
MN/DOT OFFICE OF ENVIRONMENTAL STEWARDSHIP	BRETT TROYER	(651) 366-3629
MN/DOT METRO MAINTENANCE	MOLLY KLINE	(651) 234-7909

MPCA 24-HOUR EMERGENCY NOTIFICATION: (651)649-5451
(800)422-0798

MN/DOT METRO DISTRICT MAINTENANCE STAFF ARE RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORM WATER MANAGEMENT SYSTEM. SEE THE METRO MN/DOT MS4 SWPPP FOR INFORMATION REGARDING ONGOING MAINTENANCE. THE MS4 SWPPP CAN BE FOUND AT WWW.DOT.STATE.MN.US/METRO/WATERRESOURCES/PDF/2008SWPP.PDF.

PERMITS REQUIRED

PERMIT	AGENCY	NAME	PHONE NUMBER
NPDES STORMWATER PERMIT	MPCA	DAN SULIVAN	(651) 7572768
DEPARTMENT OF THE ARMY SECTION 404 PERMIT	U.S. ARMY CORPS ON ENGINEERS	SARAH WINGERT (DAKOTA COUNTY)	(651) 290-5258
WETLAND CONSERVATION ACT	MN/DOT	SARMA STRAUMANIS	(651) 366-3629

SPECIAL AND IMPAIRED WATERS

THE FOLLOWING SPECIAL AND IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT AND RECEIVE NONDIRECT RUNOFF FROM THE PROJECT SITE:

- BLACKDOG PRESERVE SCIENTIFIC AND NATURAL AREAS
- TROUT STREAMS
- CALCAREOUS FENS
- IMPAIRED WATERS (MISSISSIPPI AND MINNESOTA RIVERS)

THE FOLLOWING BMPS OUTLINED IN APPENDIX A OF THE NPDES PERMIT MUST BE IMPLEMENTED:

- DURING CONSTRUCTION, ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
- AN UNDISTURBED BUFFER ZONE OF NOT LESS THAN 100 FEET FROM THE SPECIAL WATERS SHALL BE MAINTAINED AT ALL TIMES.

ENVIRONMENTALLY SENSITIVE AREAS

THERE ARE MANY ENVIRONMENTALLY SENSITIVE AREAS WITHIN THE PROJECT LIMITS. MULTIPLE WETLANDS EXIST AND HAVE BEEN IDENTIFIED ON THE PLANS. THERE ARE CALCAREOUS FENS WITHIN ONE MILE OF THE PROJECT LIMITS. THIS PROJECT IS NOT LOCATED IN AN AREA THAT IS KNOWN TO BE ACTIVE KARST.

ENVIRONMENTALLY REVIEW

THERE ARE NOT STORM WATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL, OR AGENCY REVIEW.

THIS PROJECT RUNS THROUGH FOUR BURNSVILLE WELL HEAD PROTECTION AREAS.

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE LOAMY AND SANDY SOILS, GENTLY SLOPING TO VERY STEEP.

SWPPP TRAINING REQUIREMENTS

THIS SWPPP WAS PREPARED BY TKDA PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH MN/DOT AND ARE AVAILABLE UPON REQUEST. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION CONTROL SUPERVISOR THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

LAND FEATURE CHANGES *

TOTAL DISTURBED SURFACE AREA:	6.96 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA:	2.04 ACRES
TOTAL POST-CONSTRUCTION IMPERVIOUS SURFACE AREA:	2.35 ACRES
TOTAL POST-CONSTRUCTION NET CHANGE IN IMPERVIOUS SURFACE AREA:	+0.31 ACRES

*DOES NOT INCLUDE MILLED OR RECLAIMED SURFACE AREAS.

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET, AS WELL AS IN THE SPECIAL PROVISIONS, MN/DOT SPEC. BOOK (2005 EDITION), OR ON FILE WITH MN/DOT. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

DESCRIPTION	LOCATION
ESTIMATED QUANTITIES	SHEET NOS. 7 - 9
SOILS AND CONSTRUCTION NOTES, STANDARD PLATES	SHEET NOS. 10 - 11
EROSION CONTROL AND TURF ESTABLISHMENT TABULATION	SHEET NO. 16
INPLACE TOPOGRAPHY, UTILITIES AND REMOVALS	SHEET NOS. 77 - 101
CONSTRUCTION PLANS	SHEET NOS. 102 - 126
DRAINAGE, EROSION AND TURF ESTABLISHMENT	SHEET NOS. 163 - 187
DRAINAGE PROFILES AND TABULATIONS	SHEET NOS. 188 - 195
DRAINAGE AND EROSION CONTROL DETAILS	SHEET NOS. 196 - 198

INSPECTIONS AND MAINTENANCE

THE CONTRACTOR WILL PREPARE A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MN/DOT SPEC. 1717.2D.

THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT, PART IV.F. INSPECTIONS OF THE ENTIRE CONSTRUCTION SITE WILL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE EROSION CONTROL SUPERVISOR WILL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP. ALL NONFUNCTIONAL BMPS MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS AS DIRECTED BY THE EROSION CONTROL SUPERVISOR OR THE PROJECT ENGINEER. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING, AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP AND KEPT ON SITE DURING CONSTRUCTION. INSPECTION REPORTS MUST BE SUBMITTED TO THE PROJECT ENGINEER IN A FORMAT THAT MEETS THE PROJECT ENGINEER'S EXPECTATIONS. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

1. DATE AND TIME OF INSPECTIONS
2. NAME OF PERSONS CONDUCTING INSPECTIONS
3. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
4. CORRECTIVE ACTIONS TAKEN INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
5. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS
6. DOCUMENTS AND CHANGES MADE TO THE SWPPP

SITE PLANS REQUIREMENT AREAS

THE CONTRACTOR WILL PREPARE AND SUBMIT A SITE PLAN FOR THE ENGINEER'S APPROVAL AS PER MN/DOT SPEC. 1717.2E FOR CONCRETE MANAGEMENT WORK NEAR ENVIRONMENTALLY SENSITIVE AREAS, AREAS IDENTIFIED IN THE PLANS AS "SITE PLAN REQUIREMENT AREA," ANY WORK THAT WILL REQUIRE DEWATERING, THE STAGING OF INLET PROTECTION DEVICES, AND AS REQUESTED BY THE ENGINEER. ALL SITE PLANS MUST BE SUBMITTED TO THE ENGINEER IN WRITING. THE CONTRACTOR SHALL ALLOW A MINIMUM OF SEVEN DAYS FOR MN/DOT TO REVIEW AND APPROVE SITE PLAN SUBMITTALS. THE CONTRACTOR WILL NOT BE ALLOWED TO COMMENCE WORK FOR WHICH A SITE PLAN IS REQUIRED UNTIL APPROVAL HAS BEEN GRANTED BY THE ENGINEER. THE CONTRACTOR WILL NOT BE GIVEN ANY EXTRA TIME IN THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL OF A SITE PLAN.

POLLUTION PREVENTION MANAGEMENT

THE CONTRACTOR WILL IMPLEMENT THE POLLUTION PREVENTION MANAGEMENT MEASURES AS DIRECTED IN THE NPDES PERMIT, PART IV.F AS IT PERTAINS TO SOLID WASTE, HAZARDOUS MATERIALS, EXTERNAL TRUCK WASHING, BITUMINOUS PAVING MACHINE, AND CONCRETE TRUCK WASHOUT. THESE MANAGEMENT MEASURES FOR POLLUTION PREVENTION WILL BE STRICTLY ENFORCED.

THE EROSION CONTROL SUPERVISOR SHALL MAKE A SPILL RESPONSE PLAN BEFORE THE APPLICATION OF ANY CHEMICAL THAT MAY BE HARMFUL TO THE ENVIRONMENT. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM CONVEYANCE SYSTEM MUST BE REPORTED TO THE MPCA STATE DUTY OFFICER. THE CONTRACTOR MUST HAVE A SPILL KIT ON SITE AT ALL TIMES (INCIDENTAL).

SOLID WASTE SUCH AS COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS, AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CREATING AND FOLLOWING A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. THE PLAN WILL INCLUDE HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. THIS PLAN MUST BE SUBMITTED TO THE ENGINEER.

THE CONTRACTOR MUST USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DUST, PARTICLES, SAW CUT SLURRY, CONCRETE WASTES, BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER WASTE FROM LEAVING MN/DOT RIGHT-OF-WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, OR ENTERING STORM WATER CONVEYANCE SYSTEMS, INCLUDING INLETS AND CURB FLOW LINES.

CONCRETE CRUSHING, PECKING, SAWING, AND GRINDING WILL REQUIRE DUST CONTROL USING WATER MISTS (INCIDENTAL), AND ALL CONCRETE PUMPING, WASHOFF, AND WASHOUT AREAS WILL NEED TO BE DESIGNATED AND KEPT FUNCTIONAL SOMEPLACE INSIDE THE PROJECT LIMITS. LEAD PAINT CHIPS MUST NOT COME INTO CONTACT WITH SOILS UNLESS IT IS THE INTENT OF THE CONTRACTOR TO HAUL OFF ALL CONTAMINATED SOILS.

CHEMICALS SUCH AS OIL, FUEL, FERTILIZER, AND PAINT MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS. THE CONTRACTOR WILL BE REQUIRED TO UPDATE THE SWPPP FOR PORTABLE RESTROOM PLACEMENT, REFUELING METHODS (INCLUDING SPILL KITS), AND SECONDARY CONTAINMENT OF STATIONARY MACHINES WITH FLUIDS. PORTABLE RESTROOM FACILITIES WILL BE ANCHORED TO PREVENT TIPPING.

TRUCK WASHING AND CONCRETE WASHOUT SHALL TAKE PLACE IN A FIELD OR COMMERCIALLY ENGINEERED LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. LOCATION OF WASHOUT AREAS MUST BE IDENTIFIED BY SIGNAGE, MUST BE AT LEAST 200 FEET FROM ENVIRONMENTALLY SENSITIVE AREAS, AND MUST BE SHOWN ON AN ENGINEER-APPROVED SITE PLAN. IF DEEMED NECESSARY BY THE PROJECT ENGINEER, THE CONTENTS SHALL BE DISPOSED OF AT AN APPROPRIATE FACILITY OFF SITE.

BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN THE PROJECT BOUNDARY.

CONSTRUCTION PHASE POLLUTANT SOURCES ANTICIPATED AT THIS SITE ARE DISTURBED (BARE) SOIL; SEDIMENT; VEHICLE FUELS AND LUBRICANTS; CHEMICALS ASSOCIATED WITH CONSTRUCTION; BITUMINOUS GRINDINGS, CUTTINGS, AND MILLINGS; CONSTRUCTION-GENERATED LITTER AND DEBRIS; AND CONCRETE WASTE. WITHOUT ADEQUATE CONTROL, THERE IS POTENTIAL FOR EACH TYPE OF POLLUTANT TO BE TRANSPORTED BY STORM WATER.

IF SEDIMENT DEPOSITS IN A WATER OF THE STATE (AS DEFINED IN THE NPDES PERMIT), THE SEDIMENT MUST BE REMOVED WITHIN SEVEN DAYS.

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DRAWN BY: SFH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

SWPPP NARRATIVE (1 OF 2)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 161 of 393 Sheets

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE (2 OF 2)

EROSION PREVENTION PRACTICES

THE CONTRACTOR MUST PLAN FOR AND IMPLEMENT CONSTRUCTION PRACTICES THAT MINIMIZE EROSION. PHASED CONSTRUCTION SHALL BE USED TO MINIMIZE SEDIMENT TRANSPORT.

DITCHES AND EXPOSED SOILS MUST BE KEPT IN AN EVEN, ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS. ALL EXPOSED SOIL AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED NO MORE THAN SEVEN DAYS AFTER CONSTRUCTION ACTIVITY ON THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. IN MANY INSTANCES, THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING ROUGH GRADING. RAPID STABILIZATION METHOD 1, 2, 3, OR 4 WILL BE USED TO PROVIDE TEMPORARY COVER IN THESE AREAS AS APPROPRIATE.

THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAINS WATER FROM OR AROUND THE CONSTRUCTION SITE MUST BE STABILIZED WITHIN 200 FEET FROM THE PROPERTY EDGE OR POINT OF DISCHARGE INTO ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE DITCH, OR OTHER STORM WATER CONVEYANCE SYSTEM ACCORDING TO MN/DOT SPEC 1717.2A2. RAPID STABILIZATION METHOD 4 WILL BE USED TO STABILIZE THESE AREAS. STABILIZATION OF THE REMAINING PORTIONS OF THE DITCH OR SWALE MUST BE COMPLETED WITHIN SEVEN DAYS SINCE THE PROJECT IS WITHIN 1 MILE OF AND DRAINS TO A SPECIAL WATER. DISC ANCHORED MULCH AND HYDRAULIC SOIL STABILIZERS ARE NOT ALLOWED TO BE USED FOR PERMANENT DITCH STABILIZATION.

PIPE OUTLETS INTO SURFACE WATERS MUST BE STABILIZED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF BEING CONSTRUCTED.

UNDISTURBED GRASS BUFFERS ON INSLOPES SHALL REMAIN IN PLACE AS PERIMETER CONTROL.

ALL EXPOSED SOIL AREAS WILL BE STABILIZED PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.

ALL TEMPORARY TOPSOIL BERMS SHALL BE STABILIZED AS FOLLOWS:
- BETWEEN APRIL 1 AND AUGUST 31, SEED WITH MIXTURE 150.
- BETWEEN SEPTEMBER 1 AND MARCH 31, SEED WITH SEED MIXTURE 150 AND TOP WITH RAPID STABILIZATION 2.

SEDIMENT CONTROL PRACTICES

SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN-GRADIENT PERIMETERS BEFORE ANY UP-GRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED. SEE THE STANDARD PLANS FOR DETAILS. SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL DISCHARGE TO THE INLET HAVE BEEN STABILIZED. SEDIMENT REACHING SURFACE WATERS MUST BE REMOVED WITHIN SEVEN DAYS.

PERIMETER CONTROL SUCH AS SILT FENCE OR FILTER LOGS SHALL BE LOCATED ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS, WITH THE BMP J-HOOKED AT A MAXIMUM OF 100-FOOT INTERVALS, AND SHALL CONTAIN NO MORE THAN 1/4 ACRE OF DRAINAGE AREA. PERIMETER CONTROL MUST BE REPAIRED OR REPLACED WHEN IT BECOMES NONFUNCTIONAL OR THE SEDIMENT REACHES ONE-THIRD OF THE HEIGHT OF THE BMP. REPAIRS MUST BE MADE WITHIN 24 HOURS OF DISCOVERY AND ARE CONSIDERED INCIDENTAL.

DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION. TEMPORARY DITCH CHECKS WILL CONSIST OF USING ROCK DITCH CHECKS, BIOLOGS, AND ROCK WEEPERS IN FRONT OF CULVERT INLETS. IN LIEU OF REMOVING TEMPORARY DITCH CHECKS, THE ROCK MAY BE PUSHED INTO THE GROUND. FILTER LOGS WILL BE PLACED DURING PERMANENT TURF ESTABLISHMENT AT THE INTERVALS IDENTIFIED IN THE PLAN.

SEDIMENT DAMAGE FROM SOIL STOCKPILES WILL BE MINIMIZED BY PLACING A ROW OF HEAVY DUTY OR SUPER DUTY SILT FENCE A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF SLOPE. IF THERE IS NOT ADEQUATE PROJECT AREA TO PLACE THE SILT FENCE MORE THAN 5 FEET FROM THE TOE, THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE FOR APPROVAL BY THE PROJECT ENGINEER. SOIL STOCKPILES CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS OR DITCHES.

STORM SEWER INLETS WILL BE PROTECTED AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. ALL STORM SEWER INLET PROTECTION DEVICES WILL BE KEPT IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES, IT WILL BE REPLACED WITH A SUITABLE ALTERNATIVE AT NO COST TO MN/DOT.

THE CONTRACTOR WILL PLACE WOOD CHIP PADS, SLASH MULCH PADS, OR ROCK PADS AT MAJOR VEHICLE EXIT LOCATIONS TO MINIMIZE VEHICLE TRACKING OF SEDIMENT ONTO PAVED SURFACES (INCIDENTAL). PADS WILL BE SUFFICIENTLY SIZED AND MAINTAINED TO PREVENT TRACK OUT. STREET SWEEPING MUST BE USED IF SEDIMENT IS BEING TRACKED OFF THE CONSTRUCTION SITE (INCIDENTAL). TRACKED SEDIMENT MUST BE REMOVED WITHIN 24 HOURS OF DISCOVERY. PAVEMENT SHALL BE LIGHTLY WETTED PRIOR TO SWEEPING.

DEWATERING

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR THE ROADWAY CONSTRUCTION AND UTILITY WORK. A WATER APPROPRIATIONS PERMIT WILL BE REQUIRED FROM THE MNDNR FOR CONSTRUCTION DEWATERING EXCEEDING 10,000 GALLONS PER DAY. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THIS PERMIT.

TEMPORARY DEWATERING RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT-LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY SEDIMENT BASIN ON THE PROJECT SITE OR AN ACCEPTABLE ALTERNATIVE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENT BASIN PRIOR TO ENTERING RECEIVING WATERS, IT MUST BE TREATED WITH THE APPROPRIATE BMPS SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM LANDOWNERS. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS. ALL DEWATERING REQUIRES A SITE PLAN TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK, ACCORDING TO MN/DOT SPEC. 1717.2E.

FINAL STABILIZATION

THE CONTRACTOR MUST ENSURE FINAL STABILIZATION OF THE SITE. FINAL STABILIZATION SHALL INCLUDE A MINIMUM OF 70% VEGETATION ESTABLISHMENT (100% STABILIZED) ON ALL PERVIOUS AREAS.

ALL TEMPORARY EROSION CONTROL MEASURES AND BMPS MUST BE REMOVED AS PART OF THE FINAL STABILIZATION, UNLESS DIRECTED OTHERWISE BY THE OWNER OR ENGINEER.

THE PERMITEES MUST SUBMIT A NOTICE OF TERMINATION TO THE MPCA WITHIN 30 DAYS OF FINAL STABILIZATION OR OF TRANSFERRING PERMIT RESPONSIBILITY TO ANOTHER OWNER OR OPERATOR.

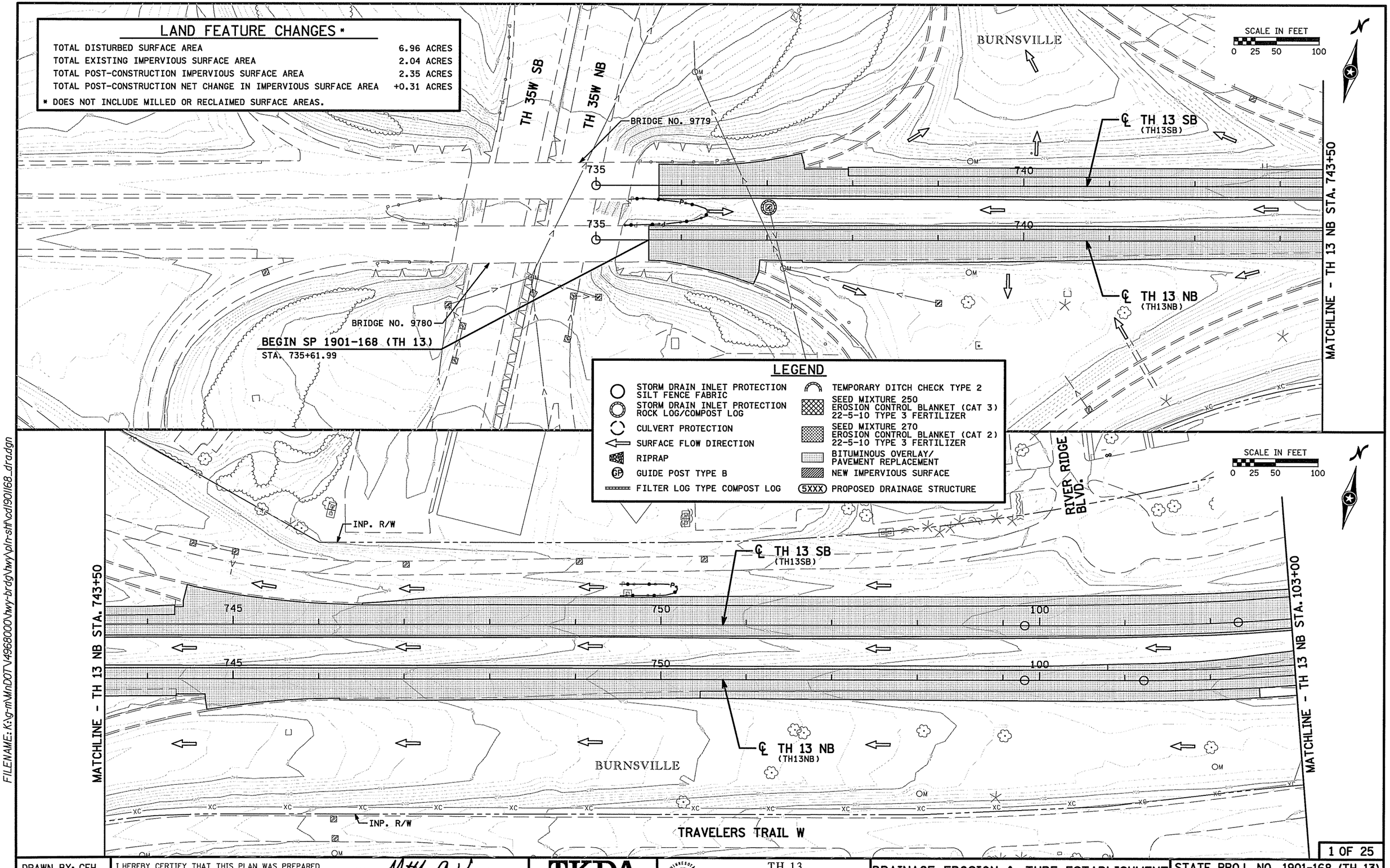
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DRAWN BY: SFH CHECKED BY: MAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Matthew A Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: JANUARY 26, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	SWPPP NARRATIVE (2 OF 2)	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 162 of 393 Sheets

LAND FEATURE CHANGES *

TOTAL DISTURBED SURFACE AREA	6.96 ACRES
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TOTAL POST-CONSTRUCTION IMPERVIOUS SURFACE AREA	2.35 ACRES
TOTAL POST-CONSTRUCTION NET CHANGE IN IMPERVIOUS SURFACE AREA	+0.31 ACRES

* DOES NOT INCLUDE MILLED OR RECLAIMED SURFACE AREAS.



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

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DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

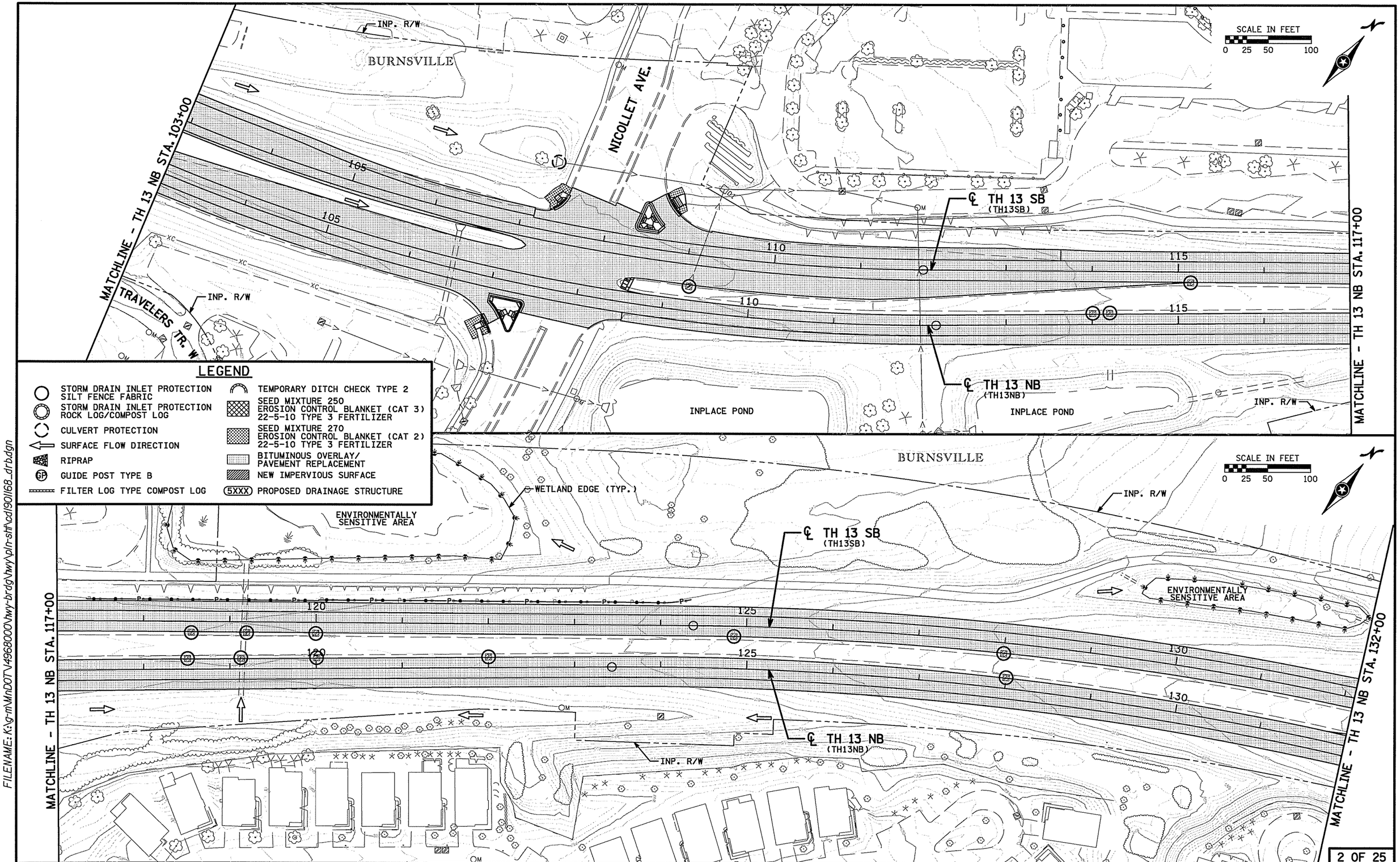
TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 735+00 TO STA. 103+00

1 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 163 of 393 Sheets



DATE: 2/13/2012 TIME: 4:07:20 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\901168_drb.dgn

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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.

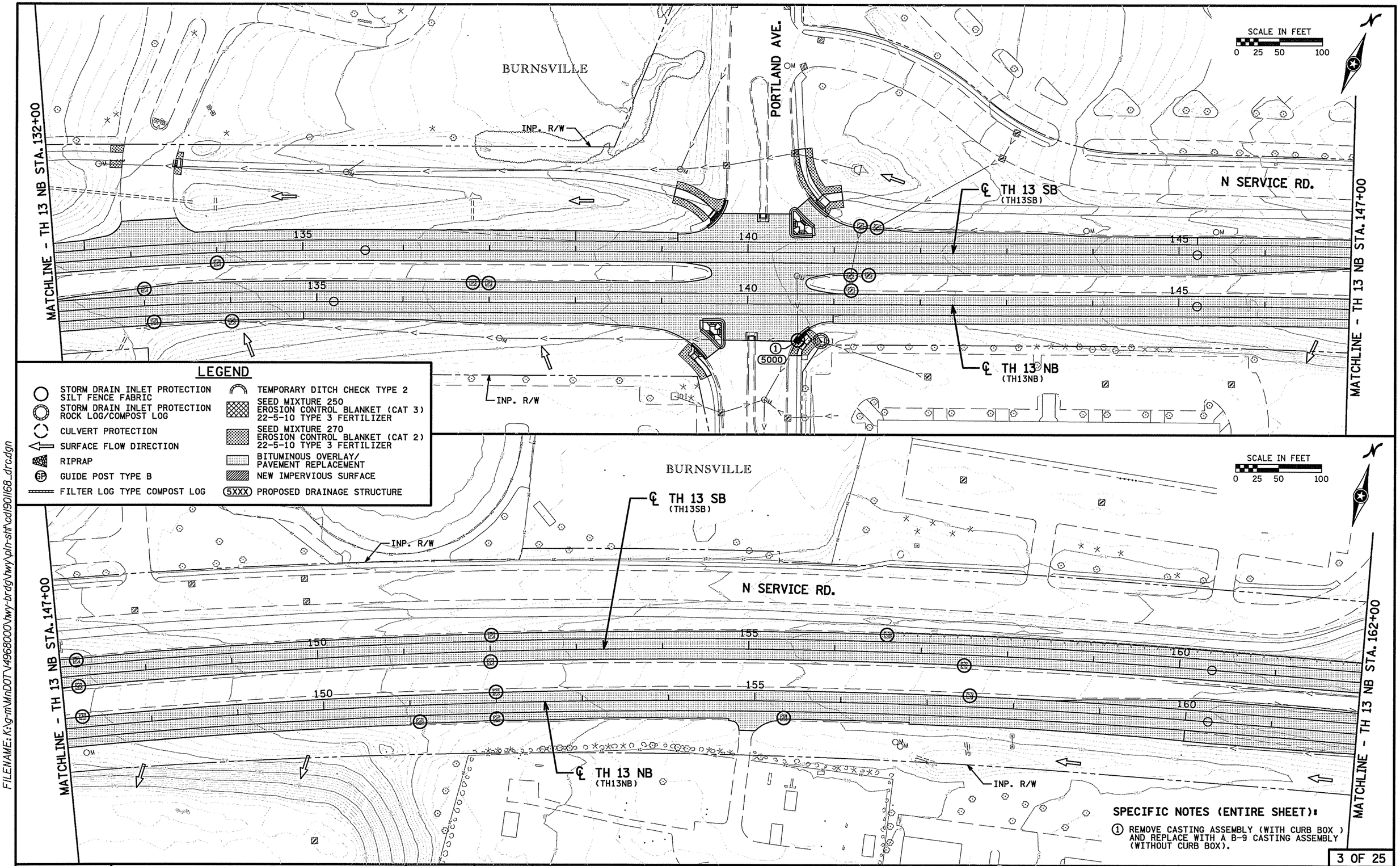
SIGNATURE: Matthew A. Wassman
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TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 103+00 TO STA. 132+00

2 OF 25
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 164 of 393 Sheets



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SPECIFIC NOTES (ENTIRE SHEET):

① REMOVE CASTING ASSEMBLY (WITH CURB BOX) AND REPLACE WITH A B-9 CASTING ASSEMBLY (WITHOUT CURB BOX).

DATE: 2/13/2012 TIME: 4:07:27 PM
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DRAWN BY: CEH
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.

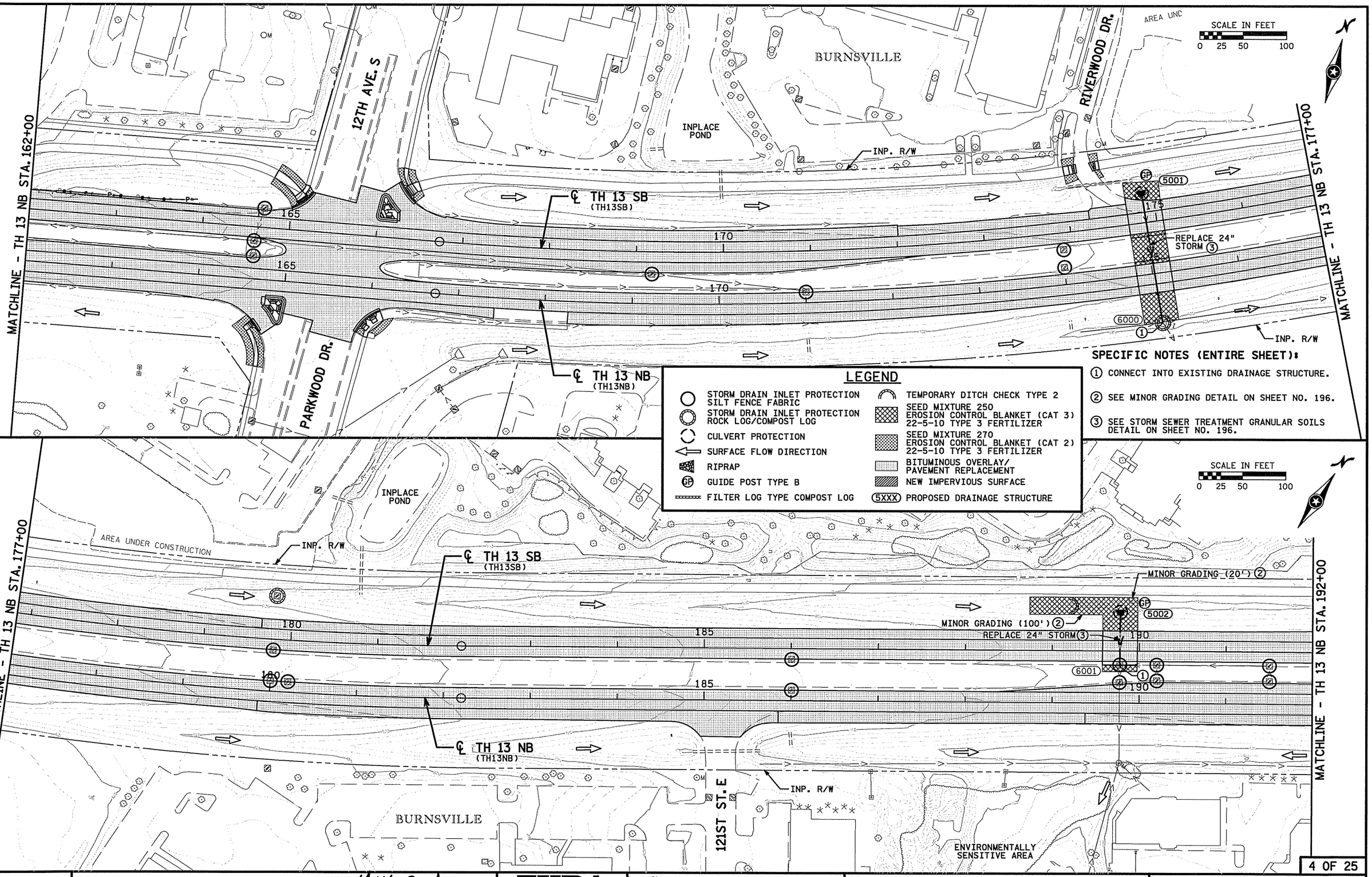
SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB 132+00 TO STA. 162+00

3 OF 25
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 165 of 393 Sheets



DATE: 2/13/2012 TIME: 4:07:34 PM
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DRAWN BY: CEH 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.	SIGNATURE: Matthew A. Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: FEBRUARY 13, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE, EROSION, & TURF ESTABLISHMENT TH 13 NB STA. 162+00 TO STA. 192+00	4 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 166 of 393 Sheets

DATE: 2/13/2012 TIME: 4:07:40 PM
FILENAME: K:\g-mWnDOT\N4968000\hwy-brdg\hwy\pln-sht\cd190168_dre.dgn

DRAWN BY: CEH 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.	SIGNATURE: Matthew A. Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: FEBRUARY 13, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	MINNESOTA DEPARTMENT OF TRANSPORTATION	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE, EROSION, & TURF ESTABLISHMENT TH 13 NB STA. 192+00 TO STA. 222+25	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 167 of 393 Sheets

ENVIRONMENTALLY SENSITIVE AREA

WETLAND EDGE (TYP.)

BURNSVILLE

117TH ST. E

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

MATCHLINE - TH 13 NB STA. 222+25

MATCHLINE - TH 13 NB STA. 237+50

225 230 235

HORIZON DR.

KENNELLY CIRCLE

INP. R/W

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

115TH ST. E

GALTIER DR.

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 237+50

MATCHLINE - TH 13 NB STA. 252+50

240 245 250

℄ TH 13 NB
(TH13NB)

INP. R/W

BURNSVILLE

DATE: 2/13/2012 TIME: 4:07:47 PM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\pln-stf\cd190168_drf.dgn

DRAWN BY: CEH

CHECKED BY: MAW

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TKDA
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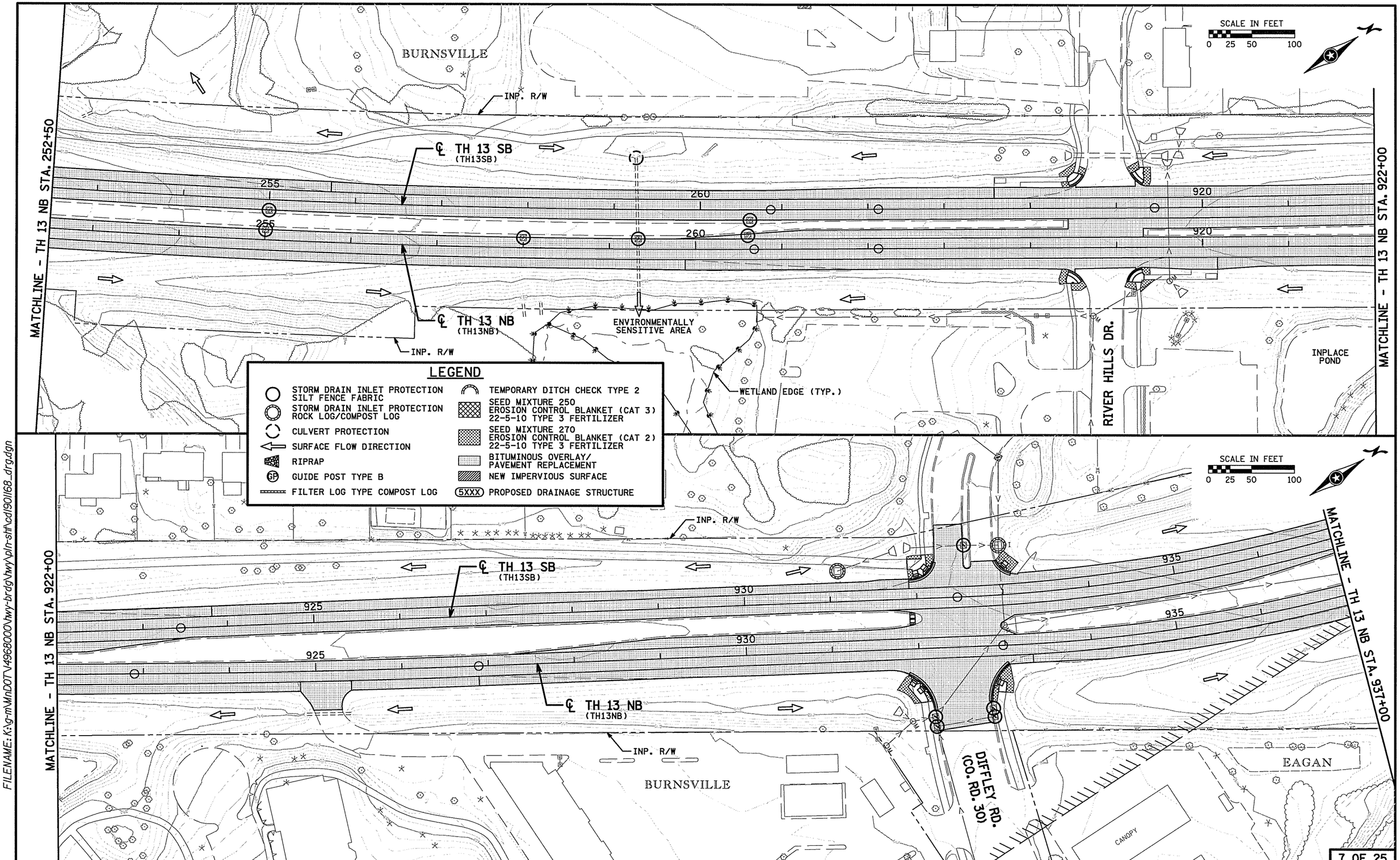
TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 222+25 TO STA. 252+50

6 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 168 of 393 Sheets



DATE: 2/13/2012 TIME: 4:07:54 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\1901168_drg.dgn

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CHECKED BY: MAW

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DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 252+50 TO STA. 937+00

7 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 169 of 393 Sheets

SCALE IN FEET
0 25 50 100

INP. R/W

BURNSVILLE

℄ TH 13 SB
(TH13SB)

CUL END

MATCHLINE - TH 13 NB STA. 937+00

MATCHLINE - TH 13 NB STA. 952+00

940 945 950

940 945 950

℄ TH 13 NB
(TH13NB)

INP. R/W

EAGAN

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- (SP) GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SCALE IN FEET
0 25 50 100

INP. R/W

℄ TH 13 SB
(TH13SB)

MATCHLINE - TH 13 NB STA. 952+00

MATCHLINE - TH 13 NB STA. 967+00

955 960 965

955 960 965

℄ TH 13 NB
(TH13NB)

INP. R/W

EAGAN

INPLACE POND

DATE: 2/13/2012 TIME: 4:08:01 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cal901168_drhdgn

DRAWN BY: CEH
CHECKED BY: MAW

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PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 937+00 TO STA. 967+00

8 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 170 of 393 Sheets

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
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- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- 5XXX PROPOSED DRAINAGE STRUCTURE

SCALE IN FEET
0 25 50 100

EAGAN

INP. R/W

CEDAR AVE SB (TH 77)

CEDAR AVE NB (TH 77)

ENVIRONMENTALLY SENSITIVE AREA

WETLAND EDGE (TYP.)

℄ TH 13 SB
(TH13SB)

BRIDGE NO. 19055

975

980

970

MATCHLINE

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

℄ TH 13 NB
(TH13NB)

DATE: 2/13/2012 TIME: 4:08:07 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plhr-sth\cd1901168_drl.dgn

9 OF 25

DRAWN BY: CEH
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.

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DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 967+00 TO STA. 981+00

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 171 of 393 Sheets

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

℄ TH 13 NB
(TH13NB)

MATCHLINE

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

970

975

980

BRIDGE NO. 19056

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

EAGAN

INP. R/W

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
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- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- 5XXX PROPOSED DRAINAGE STRUCTURE

DATE: 2/13/2012 TIME: 4:08:11 PM
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DRAWN BY: CEH
CHECKED BY: MAW

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DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 967+00 TO STA. 981+00

10 OF 25
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 172 of 393 Sheets

EAGAN

INP. R/W

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

985 990 995

MATCHLINE - TH 13 NB STA. 981+00

MATCHLINE - TH 13 NB STA. 995+50

985 990 995

℄ TH 13 NB
(TH13NB)

INP. R/W

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
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- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- 5XXX PROPOSED DRAINAGE STRUCTURE

INP. R/W

CUL END

EAGAN

SCALE IN FEET
0 25 50 100

℄ TH 13 SB
(TH13SB)

1000 1005 1010

MATCHLINE - TH 13 NB STA. 995+50

MATCHLINE - TH 13 NB STA. 1010+50

1000 1005 1010

℄ TH 13 NB
(TH13NB)

INP. R/W

DATE: 2/13/2012 TIME: 4:08:16 PM
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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.

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DATE: FEBRUARY 13, 2012 LIC. NO. 26883

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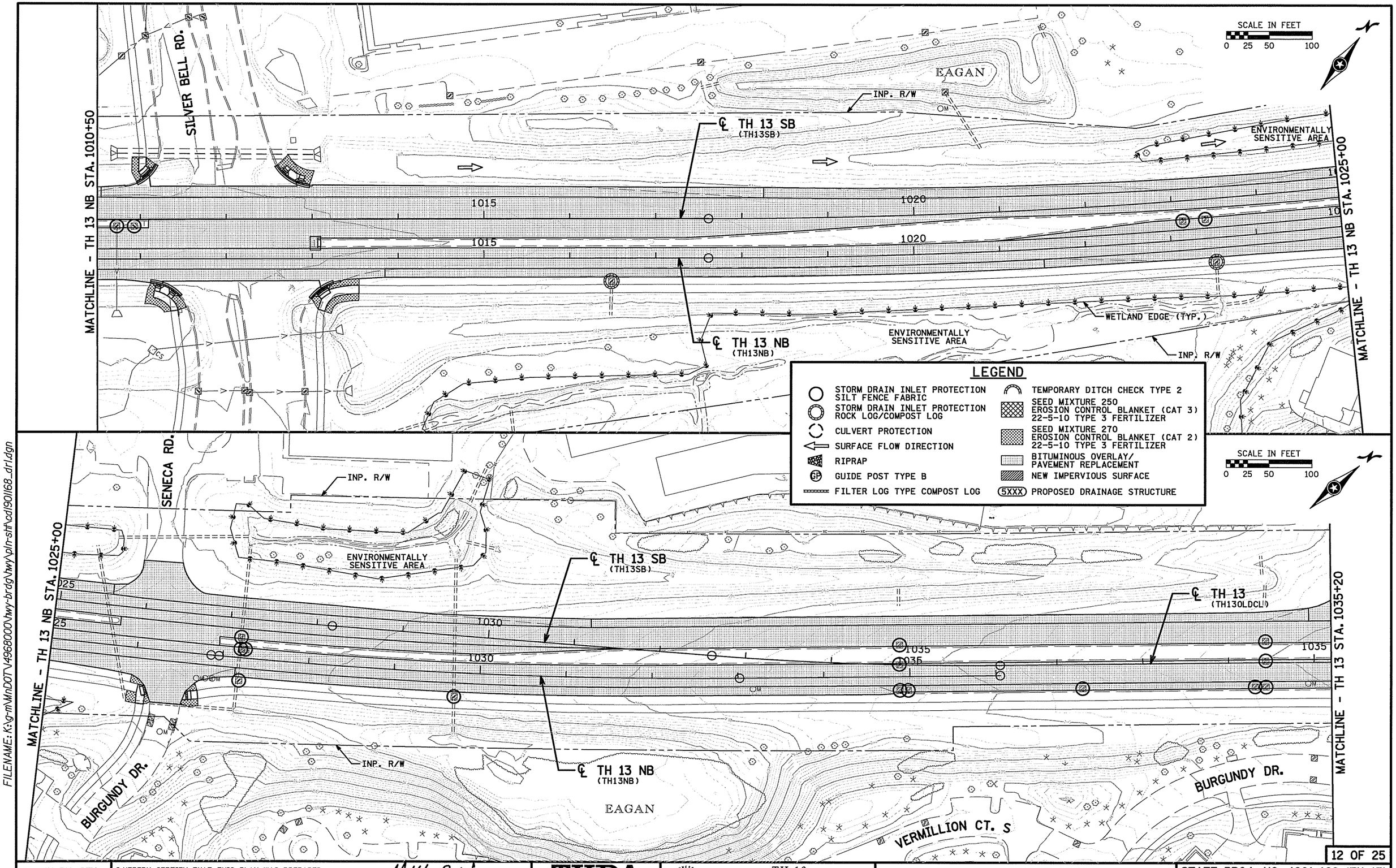
TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 981+00 TO STA. 1010+50

11 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 173 of 393 Sheets



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
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- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

DATE: 2/13/2012 TIME: 4:08:23 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\901168_drl.dgn

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CHECKED BY: MAW

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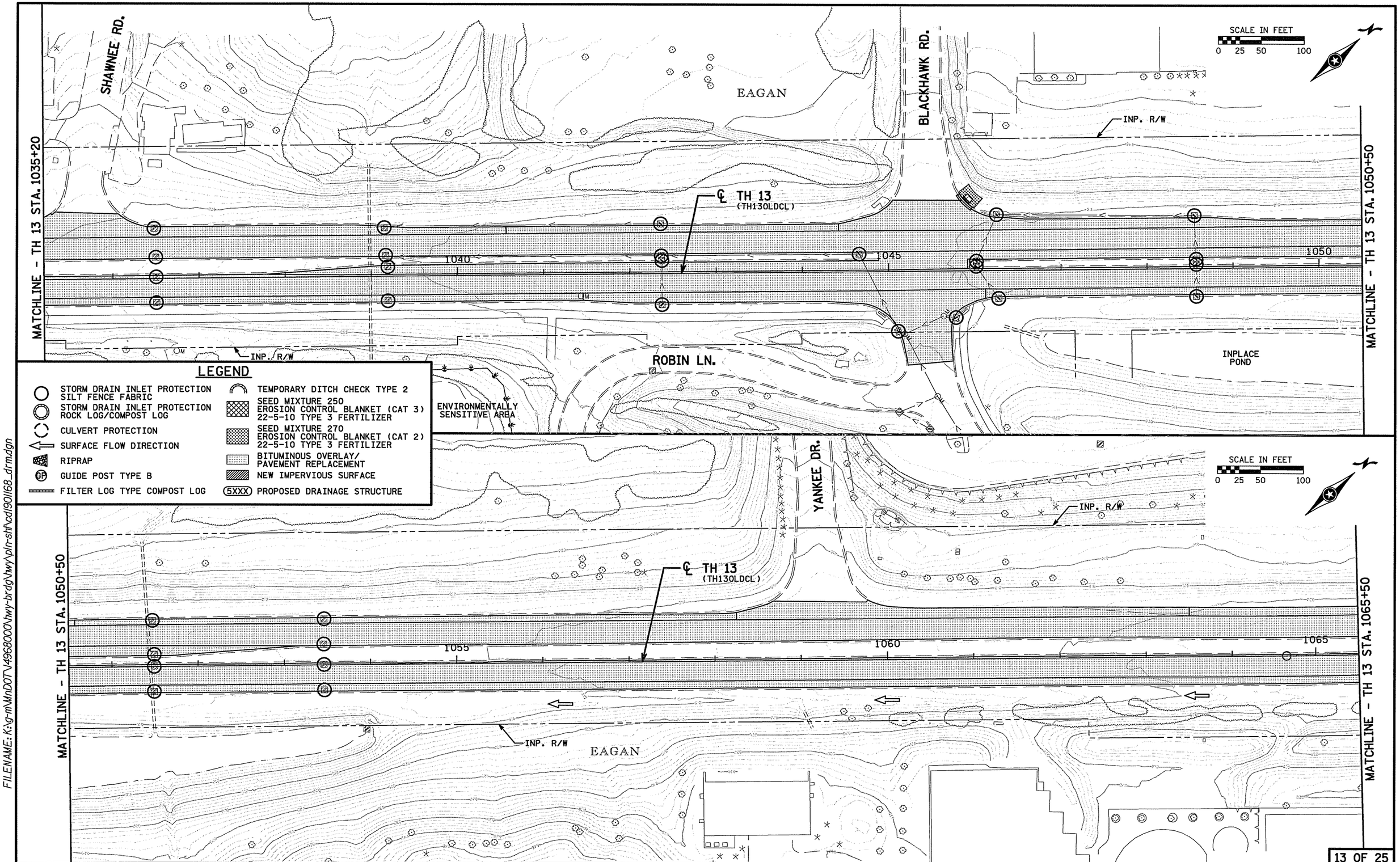
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TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 1010+50 TO TH 13 STA. 1035+20

12 OF 25
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 174 of 393 Sheets



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
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- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

DATE: 2/13/2012 TIME: 4:08:31 PM
FILENAME: K:\g-mMnDOTV4968000\hwy-brdg\hwy\pln-stf\cd190168_drm.dgn

DRAWN BY: CEH
CHECKED BY: MAW

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TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 STA. 1035+20 TO STA. 1065+50

13 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 175 of 393 Sheets

DATE: 2/13/2012 TIME: 4:08:38 PM
FILENAME: K:\g-mWnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\901168_drn.dgn

EAGAN

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 1065+50

℄ TH 13
(TH13OLDCL)

INP. R/W

EXTEND STORM SEWER (10')

MINOR GRADING (230') (1)

RIPRAP LINED CHANNEL (136 CU YD CLASS II) (4)

CLEAN APRON (3)

24" RCP

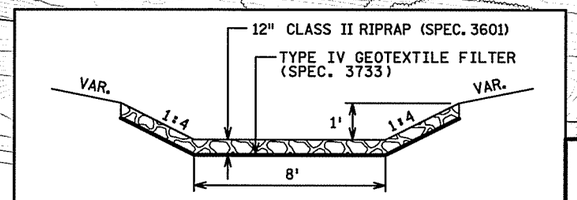
6003 5003 GP 6004

1070 1075 1080

MATCHLINE - TH 13 STA. 1080+50

6005 5004 6006

(CO. RD. 28) YANKEE DOODLE RD.



SECTION A-A
RIPRAP LINED CHANNEL

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
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- FILTER LOG TYPE COMPOST LOG
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- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SCALE IN FEET
0 25 50 100

EAGAN

INP. R/W

℄ TH 13
(TH13OLDCL)

MATCHLINE - TH 13 STA. 1080+50

1085 1090 1095

5006 5007

GP GP

RIPRAP APRON (3.5 CU YD CLASS II)

MINOR GRADING (50') (1)

15" RCP 5005 GP

INP. R/W

MATCHLINE - TH 13 STA. 1095+75

SPECIFIC NOTES (ENTIRE SHEET):

1. SEE MINOR GRADING DETAIL ON SHEET NO. 196.
2. CONNECT TO EXISTING STORM SEWER.
3. PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).
4. SEE DETAIL ON THIS SHEET.
5. ADJUST FRAME & RING CASTING.

14 OF 25

DRAWN BY: CEH
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.

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DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 STA. 1065+50 TO STA. 1095+75

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 176 of 393 Sheets

SPECIFIC NOTES (ENTIRE SHEET):

1. SEE MINOR GRADING DETAIL ON SHEET NO. 196.
2. ADJUST FRAME & RING CASTING.
3. CONNECT INTO EXISTING DRAINAGE STRUCTURE.
4. CONNECT TO EXISTING STORM SEWER.

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

DATE: 2/13/2012 TIME: 4:08:45 PM
FILENAME: K:\g-mWnDOT\V4968000\hwy-brdg\hwy\pln-str\cd190168_dro.dgn

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 STA. 1095+75 TO STA. 1126+00

15 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 177 of 393 Sheets

DATE: 2/13/2012 TIME: 4:08:51 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plr-sht\cd190168_drp.dgn

MATCHLINE - TH 13 STA. 1126+00

MATCHLINE - TH 13 STA. 1141+00

SCALE IN FEET
0 25 50 100

EAGAN

WETLAND EDGE (TYP.)

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

℄ TH 13
(TH130LDCL)

CONST. LIMITS

6021

42" CSP

RIPRAP APRON
(24.0 CU YD CLASS III)

5016

EXTEND CULVERT (28')

4

1130 1135 1140

6023

48" CSP

6022

6024 6025

15" CSP

CLEAN PIPE CULVERT (50')

MINOR GRADING (20') 1

6019

MINOR GRADING (100') 1

6020

LONE OAK RD.

18" CLASS III RIPRAP (SPEC. 3601).
TYPE IV GEOTEXTILE FILTER (SPEC. 3733).

1:2 4' 1:2
8'

SECTION A-A
RIPRAP LINED CHANNEL

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SCALE IN FEET
0 25 50 100

EAGAN

ENVIRONMENTALLY SENSITIVE AREA

INP. R/W

℄ TH 13
(TH130LDCL)

5018 GP

RIPRAP LINED CHANNEL
(83 CU YD CLASS III)

MINOR GRADING (50') 1

5017

4

CONST. LIMITS

1145 1150 1155

36" CSP

6026 GP

MINOR GRADING (20') 1

RIPRAP APRON
(12.8 CU YD CLASS III)

CLEAN APRON 5

6027

RIPRAP APRON
(2.9 CU YD CLASS II)

5019

18" RCP

2

CLEAN APRON 5

6028

3

6029

24" RCP

RUSTIC HILLS DR.

INP. R/W

SPECIFIC NOTES (ENTIRE SHEET):

1. SEE MINOR GRADING DETAIL ON SHEET NO. 196.
2. CONNECT INTO EXISTING DRAINAGE STRUCTURE.
3. ADJUST FRAME & RING CASTING.
4. CONNECT TO EXISTING STORM SEWER.
5. PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

DRAWN BY: CEH 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.	SIGNATURE: Matthew A. Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: FEBRUARY 13, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE, EROSION, & TURF ESTABLISHMENT TH 13 STA. 1126+00 TO STA. 1156+00	16 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 178 of 393 Sheets

MATCHLINE - TH 13 STA. 1156+00

MATCHLINE - TH 13 NB STA. 1170+50

SCALE IN FEET
0 25 50 100

RIPRAP APRON (2)
(28 CU YD CLASS III)

INP R/W

MINOR GRADING (20') (3)

CLEAN APRON (4)

RIPRAP APRON
(16 CU YD CLASS III)

6031

36" CSP

EAGAN

RIPRAP APRON
(13 CU YD CLASS III)

℄ TH 13
(TH13OLDCL)

6030

30" CSP

℄ TH 13
(TH13SB1)

5020

60" CSP

1160

1165

1170

1170

(5021)

℄ TH 13
(TH13NB1)

INP. R/W

CONCRETE FLUME (1)

HIGHVIEW AVE.

5'-4"
8" 2'-0" 2'-0" 8"
6"
0.02⅛ 0.02⅛
7"

SECTION A-A
CONCRETE FLUME

SPECIFIC NOTES (ENTIRE SHEET):

1. SEE CONCRETE FLUME DETAIL ON THIS SHEET.
2. SEE RIPRAP APRON DETAIL FOR 60" CSP ON SHEET NO. 197.
3. SEE MINOR GRADING DETAIL ON SHEET NO. 196.
4. PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 1170+50

INP. R/W

℄ TH 13
(TH13SB1)

1175

1180

1185

1175

1180

1185

℄ TH 13
(TH13NB1)

INP. R/W

BEGIN EXCEPTION
STA. 1177+56.66

EAGAN

TH 494 EB

TH 494 WB

BRIDGE NO. 19825

DATE: 2/13/2012 TIME: 4:08:56 PM
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DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 1156+00 TO TH 13 NB STA. 1185+00

17 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 179 of 393 Sheets

DATE: 2/13/2012 TIME: 4:09:01 PM
FILENAME: K:\g-mn\nDOT\4968000\hwy-brdg\hwy\pln-stft\cd190168_drr.dgn

SCALE IN FEET
0 25 50 100

INP. R/W
MENDOTA HEIGHTS
℄ TH 13 (TH13SB1)
1235
1240
TH 55 SB
TH 55 NB
MATCHLINE - TH 13 NB STA. 59+40
℄ TH 13 SB (MENCONSB)
60
60
6032
CLEAN PIPE SEWER (80')
12" RCP
6035
6034
RCP
12"
6033
℄ TH 13 NB (MENCONNB)
CLEAN PIPE SEWER (48')
CLEAN OUT CATCH BASIN
℄ TH 13 (TH13NB1)
END SP 1901-168 (TH 13)
BEGIN SP 1902-66 (TH 13)
END EXCEPTION
STA. 1242+54.17
INP. R/W
WETLAND EDGE (TYP.)
ENVIRONMENTALLY SENSITIVE AREA

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SCALE IN FEET
0 25 50 100

TH 55 SB
TH 55 NB
MENDOTA HEIGHTS
CLEAN APRON (2)
6036
12" CSP
℄ TH 13 SB (MENCONSB)
MATCHLINE - TH 13 STA. 59+40
55
55
50
50
6037
REPAIR CATCH BASIN (1)
℄ TH 13 NB (MENCONNB)
INP. R/W
MATCHLINE - TH 13 NB STA. 46+50
FURLONG AVE.
VICTORY AVE.

SPECIFIC NOTES (ENTIRE SHEET):

1. REGROUT ADJUSTING RINGS.
2. PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

18 OF 25

DRAWN BY: CEH
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.

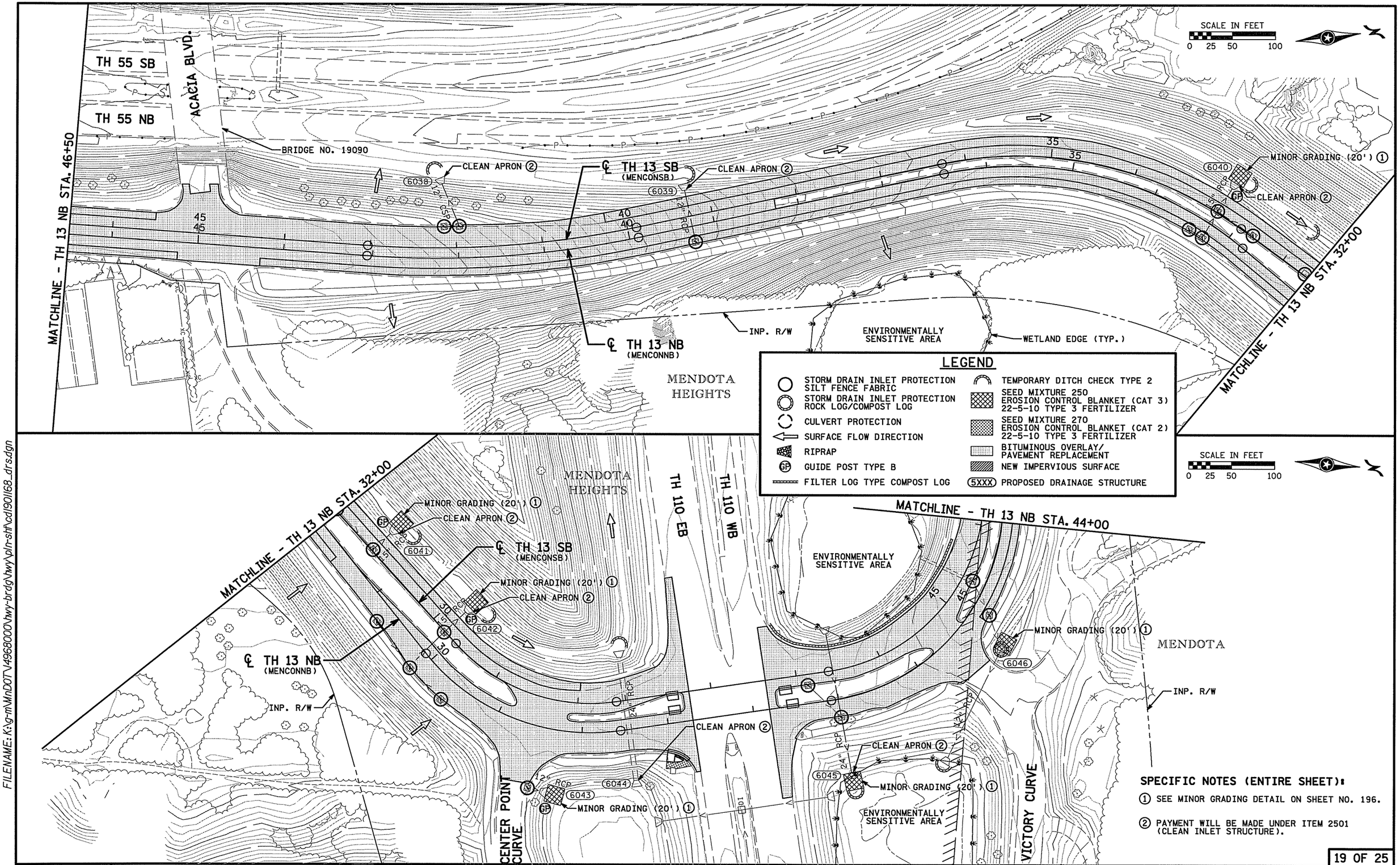
SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

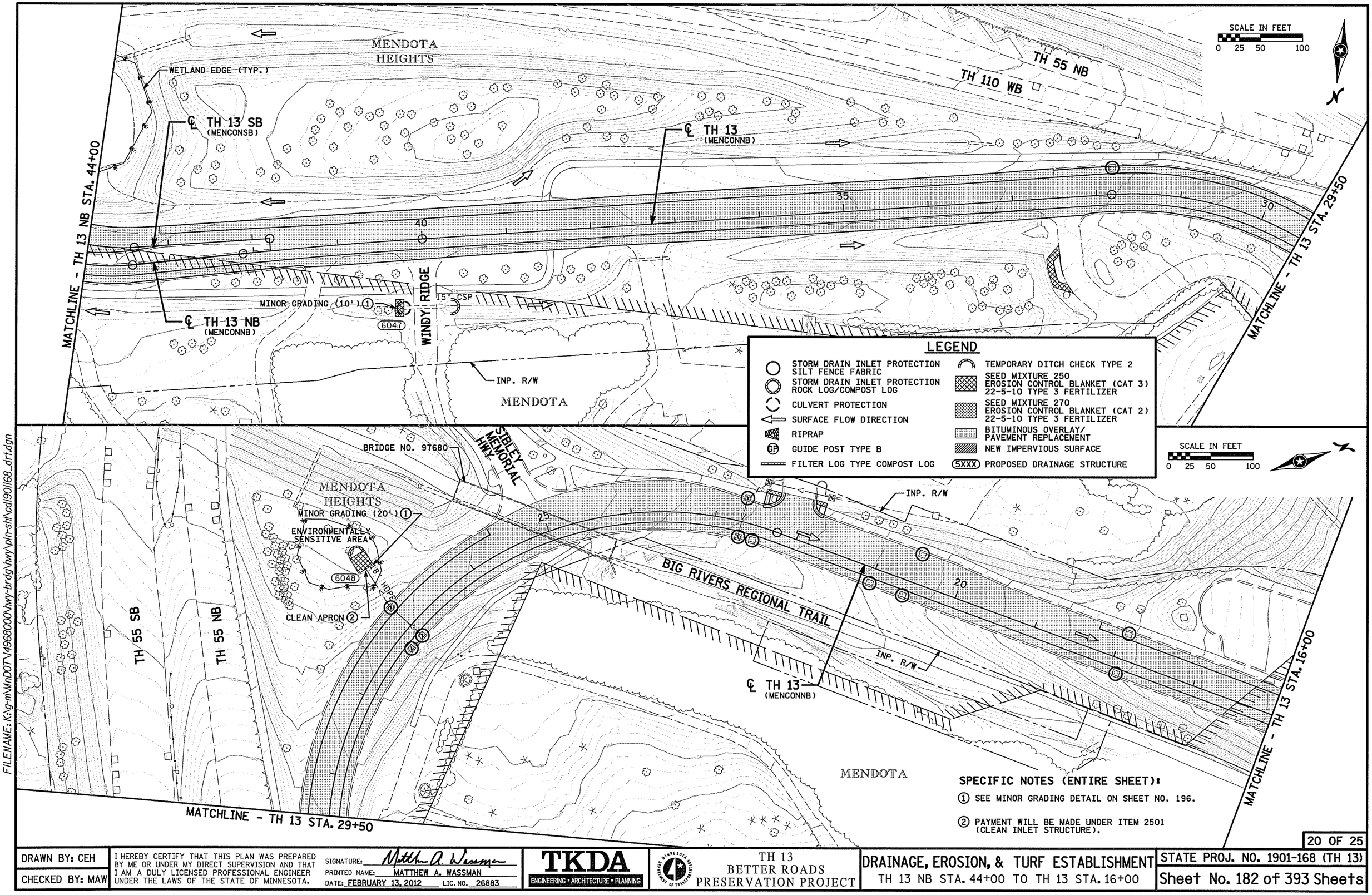
DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB 1233+00 TO STA. 46+50

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 180 of 393 Sheets



DATE: 2/13/2012 TIME: 4:09:06 PM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cd1901168_drs.dgn

DRAWN BY: CEH 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. SIGNATURE: Matthew A. Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: FEBRUARY 13, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE, EROSION, & TURF ESTABLISHMENT TH 13 NB STA. 46+50 TO STA. 44+00	19 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 181 of 393 Sheets



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SPECIFIC NOTES (ENTIRE SHEET):

① SEE MINOR GRADING DETAIL ON SHEET NO. 196.

② PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

DATE: 2/13/2012 TIME: 4:09:11 PM
FILENAME: K:\g-m\MnDOT\49680000\hwy-brdg\hwy\plr-sth\cd1901168_drt.dgn

DRAWN BY: CEH
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.

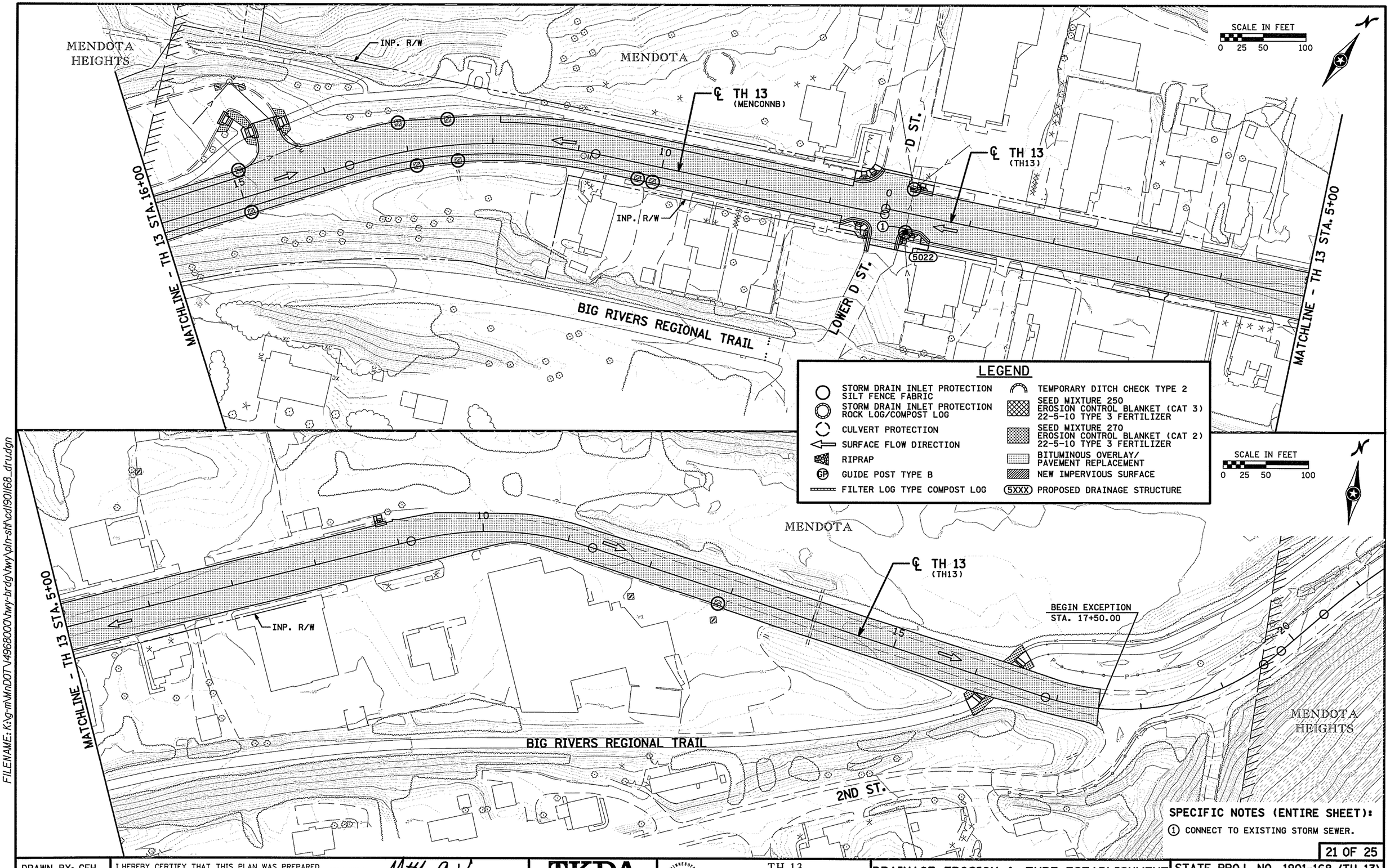
SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB STA. 44+00 TO TH 13 STA. 16+00

STATE PROJ. NO. 1901-168 (TH 13)

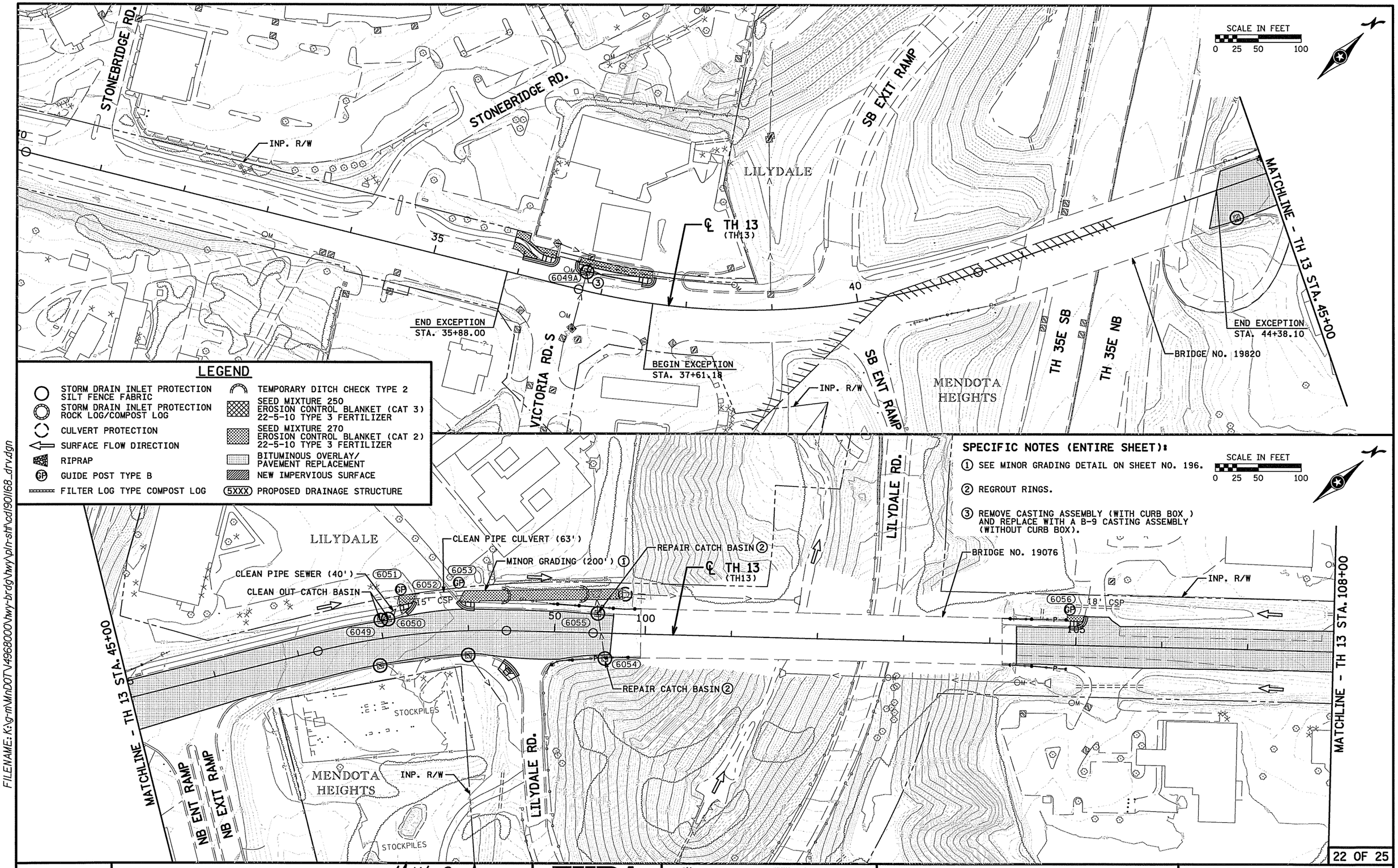


SPECIFIC NOTES (ENTIRE SHEET):

① CONNECT TO EXISTING STORM SEWER.

DATE: 2/13/2012 TIME: 4:09:16 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plr-sth\cdl90l168_drud.dgn

DRAWN BY: CEH 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.	SIGNATURE: Matthew A Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: FEBRUARY 13, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE, EROSION, & TURF ESTABLISHMENT TH 13 STA. 16+00 TO STA. 21+00	21 OF 25 STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 183 of 393 Sheets



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GP GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SPECIFIC NOTES (ENTIRE SHEET):

1. SEE MINOR GRADING DETAIL ON SHEET NO. 196.
2. REGROUT RINGS.
3. REMOVE CASTING ASSEMBLY (WITH CURB BOX) AND REPLACE WITH A B-9 CASTING ASSEMBLY (WITHOUT CURB BOX).

DATE: 2/13/2012 TIME: 4:09:21 PM
FILENAME: K:\g-mNnDOT\4968000\hwy-brdg\hwy\plr-sth\cd190l68_drv.dgn

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 STA. 30+00 TO STA. 108+00

22 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 184 of 393 Sheets

LILYDALE

SCALE IN FEET
0 25 50 100

℄ TH 13
(TH13)

INP. R/W

CLEAN APRON (2)

6057

110 115 120

MATCHLINE - TH 13 NB STA. 108+00

MATCHLINE - TH 13 NB STA. 122+50

RIVERSIDE LN.

MENDOTA HEIGHTS

INP. R/W

LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
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- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- (5XXX) PROPOSED DRAINAGE STRUCTURE

SPECIFIC NOTES (ENTIRE SHEET):

(1) REPAIR EROSION AT ENDS OF RETAINING WALL TO INPLACE R/W LINE.

(2) PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

LILYDALE

SCALE IN FEET
0 25 50 100

INP. R/W

MINOR GRADING (10') (1)

5023 5024

MINOR GRADING (10') (1)

BRIDGE NO. 19077

125 130 135

MATCHLINE - TH 13 NB STA. 122+50

MATCHLINE - TH 13 NB STA. 137+00

INP. R/W

MENDOTA HEIGHTS

℄ TH 13
(TH13)

WACHTLER AVE. (CO RD 8)

DATE: 2/13/2012 TIME: 4:09:25 PM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plh-sht\cdl901168_drw.dgn

DRAWN BY: CEH
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.

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TKDA
ENGINEERING • ARCHITECTURE • PLANNING

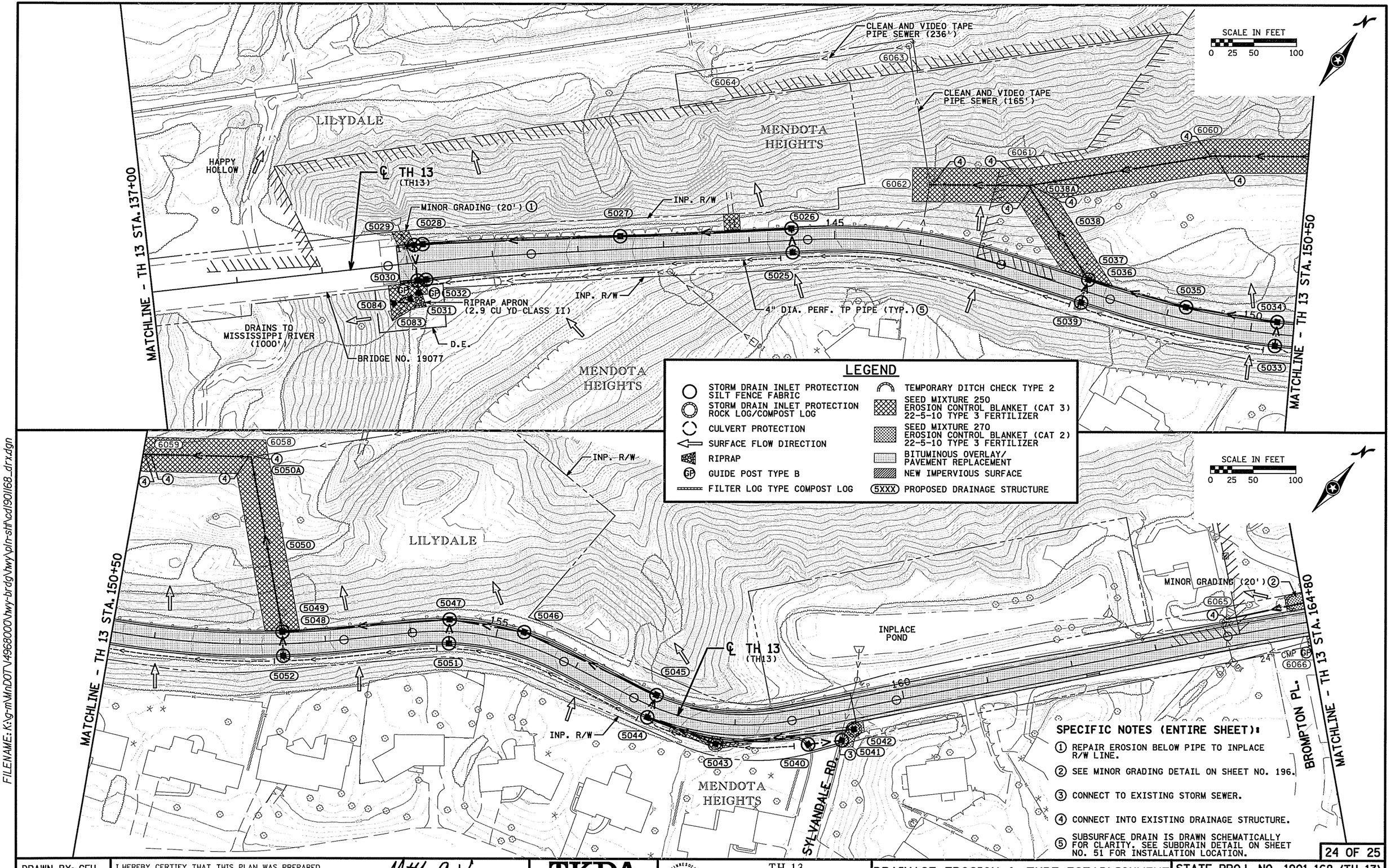
TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 NB 108+00 TO STA. 137+00

23 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 185 of 393 Sheets



DATE: 2/13/2012 TIME: 4:09:30 PM
FILENAME: K:\g-mMnD07\V4968000\hwy-brdg\hwy\plr-sth\cd1901168_drx.dgn

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

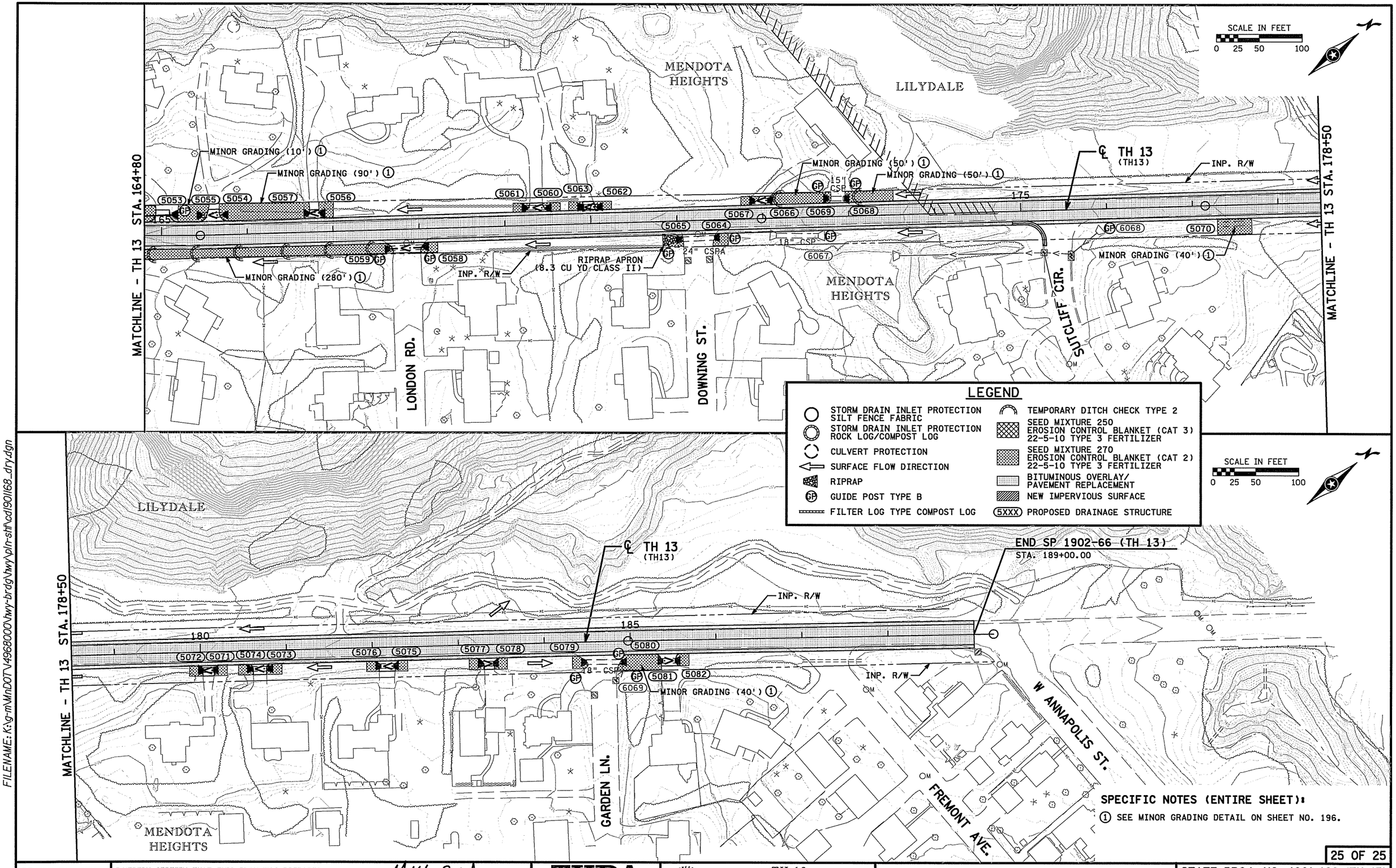
TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 STA. 137+00 TO STA. 164+80

24 OF 25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 186 of 393 Sheets



LEGEND

- STORM DRAIN INLET PROTECTION SILT FENCE FABRIC
- STORM DRAIN INLET PROTECTION ROCK LOG/COMPOST LOG
- CULVERT PROTECTION
- SURFACE FLOW DIRECTION
- RIPRAP
- GUIDE POST TYPE B
- FILTER LOG TYPE COMPOST LOG
- TEMPORARY DITCH CHECK TYPE 2
- SEED MIXTURE 250 EROSION CONTROL BLANKET (CAT 3) 22-5-10 TYPE 3 FERTILIZER
- SEED MIXTURE 270 EROSION CONTROL BLANKET (CAT 2) 22-5-10 TYPE 3 FERTILIZER
- BITUMINOUS OVERLAY/ PAVEMENT REPLACEMENT
- NEW IMPERVIOUS SURFACE
- 5XXX PROPOSED DRAINAGE STRUCTURE

SPECIFIC NOTES (ENTIRE SHEET):

1. SEE MINOR GRADING DETAIL ON SHEET NO. 196.

DATE: 2/13/2012 TIME: 4:09:35 PM
FILENAME: K:\g-mNnDOT\4968000\hwy-brdg\hwy\plr-sth\cdl90li68_dry.dgn

25 OF 25

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE, EROSION, & TURF ESTABLISHMENT
TH 13 STA. 164+80 TO STA. 189+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 187 of 393 Sheets

AP-5001
I.E. 923.72

6000
CONNECT INTO EX.
DRAINAGE STRUCTURE
I.E. 919.67

AP-5002
I.E. 902.73

6001
CONNECT INTO EX.
DRAINAGE STRUCTURE
I.E. 901.95

6003
CONNECT TO EX.
STORM SEWER
I.E. 798.83

AP-5003
I.E. 798.76

CB-5008
T.C. 816.42
I.E. 813.42

MH-6009
CONNECT INTO EX.
DRAINAGE STRUCTURE
I.E. 813.27 S
I.E. 812.24 N

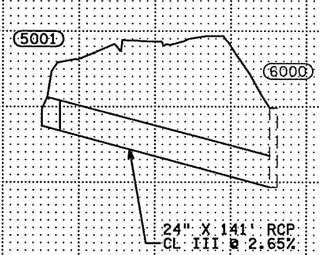
CB-5010
CONNECT TO EX.
STORM SEWER
T.C. 816.39
I.E. 813.39 E
I.E. 812.12 S
I.E. 812.12 N EX.

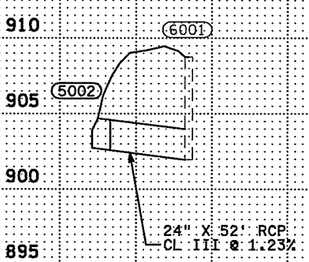
CB-5009
T.C. 817.15
I.E. 814.15

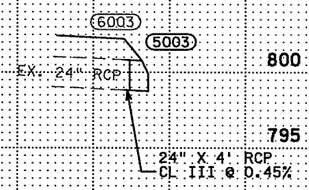
AP-5013
I.E. 781.50

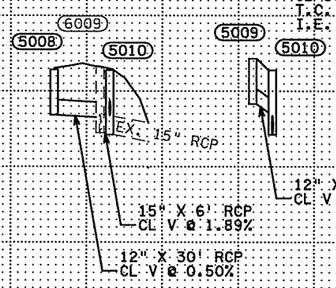
MH-5014
T.C. 783.50
I.E. 779.75 S
I.E. 779.75 N

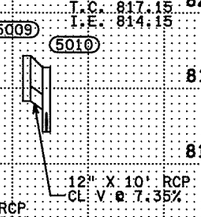
AP-5015
I.E. 779.05

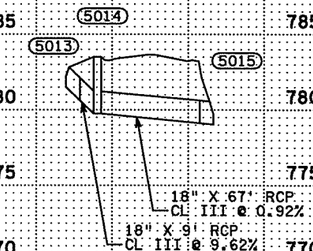




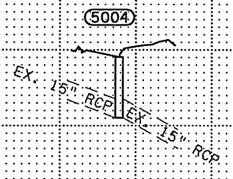








CB-5004
CONNECT TO EX.
STORM SEWER
T.C. 804.52
I.E. 800.52 W EX.
I.E. 800.52 E EX.



CB-5025
T.C. 841.35
I.E. 838.15

CB-5026
T.C. 841.73
I.E. 838.01 SE
I.E. 838.01 SW

CB-5027
T.C. 828.45
I.E. 825.50 NE
I.E. 824.50 SW

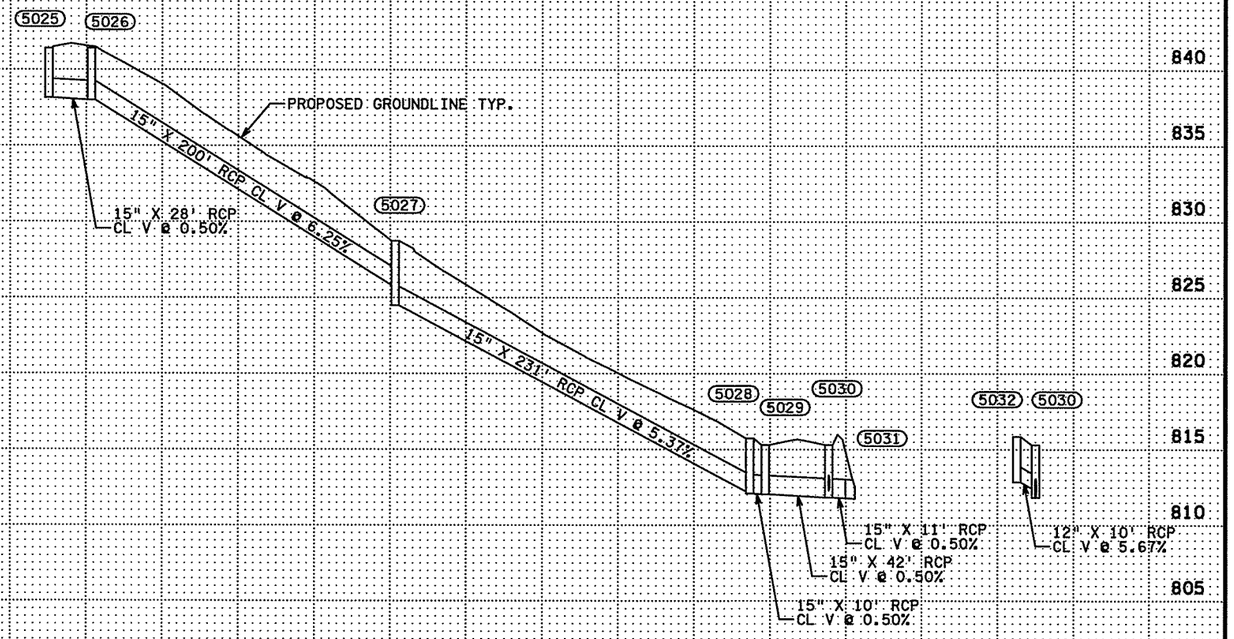
CB-5028
T.C. 815.49
I.E. 812.11 NE
I.E. 812.11 SW

CB-5029
T.C. 815.14
I.E. 812.06 NE
I.E. 812.06 SE

CB-5030
T.C. 815.14
I.E. 812.30 NE
I.E. 811.85 NW
I.E. 811.85 SE

AP-5031
I.E. 811.76

CB-5032
T.C. 815.49
I.E. 812.87



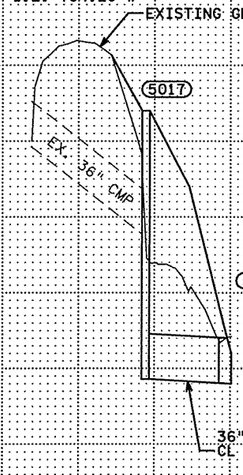
MH-5017
CONNECT TO EX.
STORM SEWER
T.C. 752.00
I.E. 743.65 E EX.
I.E. 734.28 W

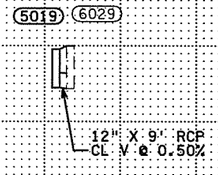
AP-5018
I.E. 734.00

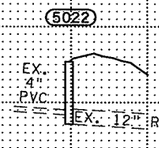
CB-5019
T.C. 749.77
I.E. 747.22

6029
CONNECT INTO EX.
DRAINAGE STRUCTURE
I.E. 747.17

CB-5022
CONNECT TO EX.
STORM SEWER
T.C. 762.68
I.E. 759.18 S EX.
I.E. 758.58 N EX.







POINTS FOUND ON THIS SHEET:

5001, 5002, 5003, 5004, 5008, 5009, 5010, 5013, 5014, 5015, 5017, 5018, 5019, 5022, 5025, 5026, 5027, 5028, 5029, 5030, 5031, 5032, 6000, 6001, 6003, 6009, 6029

DRAWN BY: CEH

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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: JANUARY 26, 2012 LIC. NO. 26883

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TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE PROFILES
TH 13

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 188 of 393 Sheets

DATE: 1/26/2012 TIME: 9:41:01 AM
FILENAME: K:\g-mMnDOT\V4968000\hwy-brdg\hwy\plh-sht\cd190168_dpa.dgn

CB-5033
T.C. 877.78
I.E. 874.68

CB-5034
T.C. 877.78
I.E. 874.54 S
I.E. 874.29 W

CB-5035
T.C. 871.01
I.E. 867.99 E
I.E. 867.99 W

CB-5036
T.C. 863.39
I.E. 860.07 E
I.E. 859.86 S
I.E. 859.00 W

6061
CONNECT INTO EX. DRAINAGE STRUCTURE
I.E. 821.40 NE
I.E. 821.40 SE
I.E. 821.40 SW

6062
CONNECT INTO EX. DRAINAGE STRUCTURE
I.E. 820.10 NE

CB-5039
T.C. 863.23
I.E. 860.00

CB-5048
T.C. 891.40
I.E. 888.22 SE
I.E. 887.97 NE
I.E. 886.60 NW

6058
CONNECT INTO EX. DRAINAGE STRUCTURE
I.E. 833.50 SE
I.E. 827.90 SW

6059
CONNECT INTO EX. DRAINAGE STRUCTURE
I.E. 826.18 NE
I.E. 826.18 SW

6060
CONNECT INTO EX. DRAINAGE STRUCTURE
I.E. 824.50 NE
I.E. 824.50 SW

6061
CONNECT INTO EX. DRAINAGE STRUCTURE
I.E. 821.40 NE
I.E. 821.40 SE
I.E. 821.40 SW

5033
5034
12" X 28' RCP
CL V @ 0.50%
5035
15" X 108' RCP
CL V @ 5.81%
5036
5037
5037
20 DEGREE ELBOW
I.E. 858.95
15" X 119' RCP
CL V @ 6.67%
15" X 10' CPP
@ 0.50%
5038
15" X 60' CPP
@ 41.58%
5038
10 DEGREE ELBOW
I.E. 834.00
5038A
6061
6062
15" X 52' CPP
@ 23.88%
5038A
15 DEGREE ELBOW
I.E. 821.44
15" X 8' CPP
@ 0.50%
15" X 116' CPP
@ 1.12%

5039
5036
12" X 28' RCP
CL V @ 0.50%

5048
5049
5049
25 DEGREE ELBOW
I.E. 886.55
15" X 10' CPP
@ 0.50%
15" X 85' CPP
@ 49.61%
5050
PROPOSED GROUNDLINE TYP.
5050A
5050
20 DEGREE ELBOW
I.E. 844.38
6058
6059
6060
6061
15" X 113' CPP
@ 10.34%
5050A
5 DEGREE ELBOW
I.E. 833.54
15" X 8' CPP
@ 0.50%
15" X 120' CPP
@ 1.43%
15" X 218' CPP @ 1.42%
15" X 118' CPP
@ 1.43%

POINTS FOUND ON THIS SHEET:

5033, 5034, 5035, 5036, 5037, 5038, 5038A, 5039, 5048, 5049, 5050, 5050A, 6058, 6059, 6060, 6061, 6062

DRAWN BY: CEH
CHECKED BY: MAW

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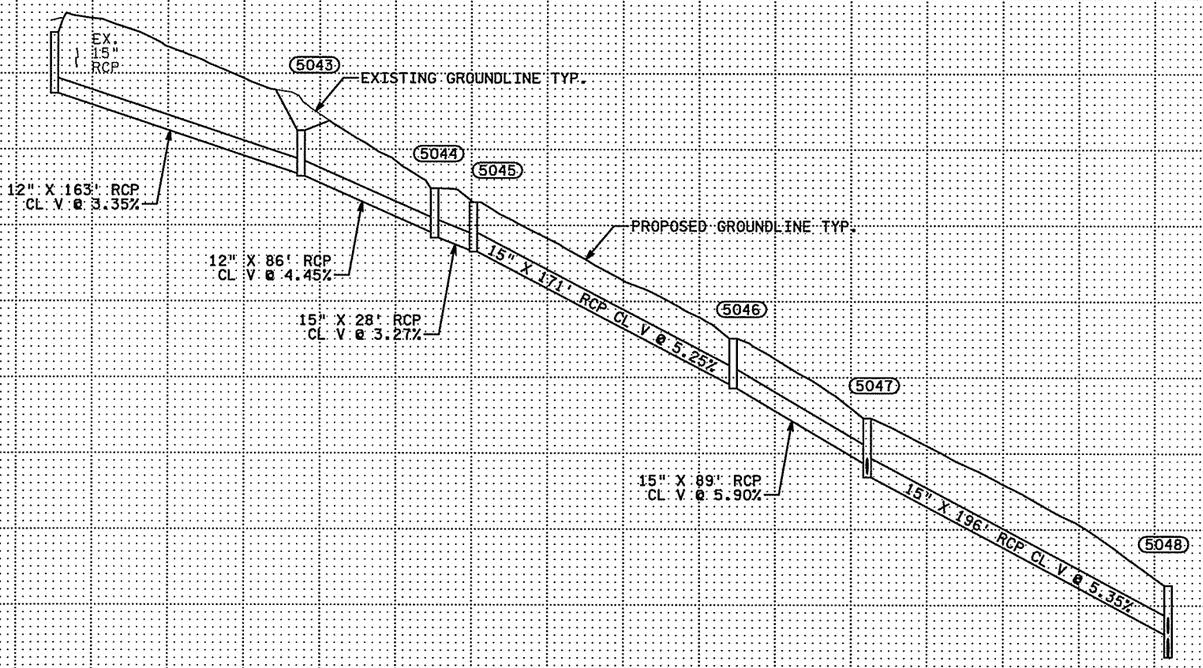
TH 13
BETTER ROADS
PRESERVATION PROJECT

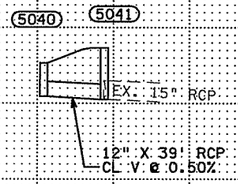
DRAINAGE PROFILES
TH 13

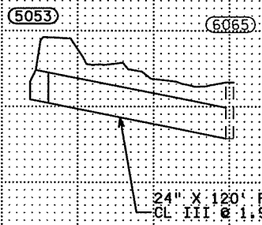
STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 189 of 393 Sheets

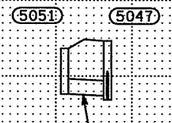
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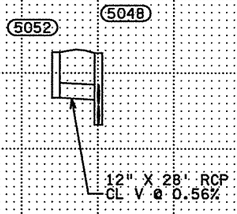
CB-5042	CB-5043	CB-5044	CB-5045	CB-5046	CB-5047	CB-5048	CB-5040	CB-5041	CB-5051	CB-5052	AP-5053	6065
T.C. 927.69	T.C. 921.25	T.C. 917.24	T.C. 916.42	T.C. 907.68	T.C. 903.06	T.C. 891.40	T.C. 927.56	CONNECT TO EX.	T.C. 901.68	T.C. 890.98	I.E. 930.49	CONNECT INTO EX.
I.E. 923.69	I.E. 918.25 NE	I.E. 914.44 E	I.E. 913.27 S	I.E. 904.29 E	I.E. 899.07 NE	I.E. 888.22 SE	I.E. 925.47	STORM SEWER	I.E. 898.83	I.E. 888.37		DRAINAGE STRUCTURE
	I.E. 918.25 W	I.E. 914.19 N	I.E. 913.27 W	I.E. 904.29 W	I.E. 898.69 SE	I.E. 887.97 NE		T.C. 928.65				I.E. 927.90
					I.E. 898.44 SW	I.E. 886.60 NW		I.E. 925.27 W				
								I.E. 925.27 N EX.				
								I.E. 925.27 S EX.				











POINTS FOUND ON THIS SHEET:

5040, 5041, 5042, 5043, 5044, 5045, 5046, 5047, 5048, 5051, 5052, 5053, 6065

DRAWN BY: CEH

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.

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PRINTED NAME: MATTHEW A. WASSMAN
DATE: JANUARY 26, 2012 LIC. NO. 26883

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TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE PROFILES
TH 13

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 190 of 393 Sheets

DATE: 1/26/2012 TIME: 9:41:07 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sth\cdl901168_dpc.dgn

STORM SEWER TABULATION L

STRUCTURE NO.		STRUCTURE LOCATION (J)						TOP OF CASTING ELEV. (J)	OUTLET INVERT ELEV. (J)	INLET INVERT DOWN-STREAM STRUCT. ELEV. (J)	SLOPE OF PIPE %	DRAINAGE STRUCTURES								PIPE SEWER (G)						APRON TYPE				RANDOM RIPRAP		GEO-TEXTILE FILTER TYPE IV	GUIDE POST TYPE B	CLEAN OUT CATCH BASIN	CLEAN APRON (K)	CLEAN PIPE SEWER	CLEAN AND VIDEO TAPE PIPE SEWER	CONN. TO EX. STORM SEWER	CONN. INTO EX. DRAIN STRU.	REPAIR CATCH BASIN	ADJUST FRAME AND RING CASTING	MINOR GRADING	NOTES
					COORDINATES								DESIGN PAY HEIGHT																											
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y					TYPE	DESIGN C, G, OR H	DESIGN F	DESIGN 72-4020	DESIGN 78-4020	CASTING ASSEMBLY (F)		STEPS REQ'D (B)	12" RCP DES 3006 CL V	15" RCP DES 3006 CL V	18" RCP DES 3006 CL III	24" RCP DES 3006 CL III	36" RCP DES 3006 CL IV	15" CP	18" RC SAFETY	24" RC SAFETY	15" RC	36" RC	CL II	CL III											
													LIN FT	LIN FT	LIN FT	LIN FT	TYPE	EACH		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	CU YD	CU YD	SQ YD	EACH	EACH	EACH	LIN FT	LIN FT	EACH	EACH	EACH	EACH	LIN FT	
SP 1901-168																																									
5000		TH13NB	140+57.40	41.20	RT	512806.83	212926.07	888.90				CB					B - 9	1																							
5001	6000	TH13SB	174+87.18	36.20	LT	516055.00	213997.37		923.72	919.67	2.65	APR											141			1								1						(C) (D) (E)
5002	6001	TH13SB	189+78.09	47.60	LT	517296.36	214759.49		902.73	901.95	1.23	APR											52			1								1					120	(C) (D) (E)
5003		TH13OLDCL	1075+80.00	87.00	LT	532477.32	231961.81		798.76			APR														1				136.0		340	1							230	
5004	6006	TH13OLDCL	1076+53.97	79.10	RT	532658.47	231946.49	804.52	800.52			CB			3.9		B - 17	1																				2				
5004		TH13OLDCL	1076+52.23	78.79	RT	532657.36	231945.09																																		(A)
5008	6009	TH13OLDCL	1096+83.75	43.60	RT	533445.37	233808.24	816.42	813.42	813.27	0.50	CB	2.9				B - 9	1		30																					
5009	5010	TH13OLDCL	1097+22.42	53.20	RT	533469.49	233839.96	817.15	814.15	813.39	7.35	CB	3.0				B - 9	1		10																					
5010		TH13OLDCL	1097+20.30	43.20	RT	533459.38	233842.00	816.39	812.12			CB	4.2				B - 9	1																				1				
5013	5014	TH13OLDCL	1114+25.00	42.00	RT	534113.38	235416.27		781.50	779.75	9.62	APR										9				1								1						(C) (D)
5014	5015	TH13OLDCL	1114+42.00	35.50	RT	534113.33	235434.47	783.50	779.75	779.05	0.92	MH	3.9				A - 7D	1				67																			(C)
5015		TH13OLDCL	1115+18.07	36.54	RT	534141.27	235505.23		779.05			APR														1				3.9		13	1							50	
5017	5018	TH13OLDCL	1142+14.22	43.60	LT	535022.20	238054.66	752.00	734.28	734.00	0.50	MH			17.7		A - 7D	1						48													1					(C) (D)
5017		TH13OLDCL	1142+14.22	45.40	LT	535020.52	238055.30																																		(A)
5018		TH13OLDCL	1142+14.50	101.80	LT	534967.88	238075.56		734.00			APR																	1		83.0	155	1							50	
5019	6029	TH13OLDCL	1152+47.06	41.40	RT	535467.86	238990.27	749.77	747.22	747.17	0.50	CB	2.6				C - 1	1		9																					
6000		TH13NB	175+03.91	56.49	RT	516117.89	213858.17		919.67																													1				
6001		TH13SB	189+77.62	16.00	RT	517331.25	214706.31		901.95																													1				
6002		TH13SB	196+40.53	39.44	LT	517852.02	215120.23	912.00																															1			
6003	5003	TH13OLDCL	1075+64.20	86.20	LT	532470.42	231947.85		798.83	798.76	0.45												4													1				(C)
6004		TH13OLDCL	1076+16.60	86.57	LT	532495.17	231993.13																																			
6005		TH13OLDCL	1076+25.20	63.50	RT	532630.79	231928.41	805.22																																1		
6006		TH13OLDCL	1076+58.43	114.62	RT	532691.86	231933.57	805.38																																1		
6009	5010	TH13OLDCL	1097+13.98	43.60	RT	533457.27	233836.02		812.24	812.12	1.89										6																1				
6010		TH13OLDCL	1104+38.75	34.66	RT	533735.04	234505.52																															1				
6013		TH13OLDCL	1114+54.50	45.40	RT	534127.01	235442.65	783.10																																1		
6016	6017	TH13OLDCL	1124+89.98	41.70	RT	534490.65	236412.19																															1		24		
6017	6018	TH13OLDCL	1125+13.88	44.50	RT	534501.72	236433.54																																1	32		
6018	6019	TH13OLDCL	1125+46.20	47.80	RT	534516.33	236462.57																																1	26		
6019		TH13OLDCL	1125+70.95	45.20	RT	534522.61	236486.66																															1			100	
6028		TH13OLDCL	1152+08.05	42.69	RT	535455.22	238953.35																								2.9		13			1					
6029		TH13OLDCL	1152+46.70	50.80	RT	535476.54	238986.60		747.17																															1		1	
SP 1901-168 STORM SEWER TABULATION TOTALS													16.6		21.6			8		49	6	76	197	48		2	3		1	142.8	83.0	521	9	2	2	82		5	4		5	550	

NOTES:

(A) COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STRUCTURE

(B) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER (INCIDENTAL). SEE MNDOT STANDARD PLATE 4180.

(C) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES ARE INCIDENTAL.

(D) LENGTH GIVEN TO END OF PIPE BARREL (DOES NOT INCLUDE APRON LENGTH)

(E) SEE SHEET NO. 196 FOR STORM SEWER TREATMENT DETAILS.

(F) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 193.

(G) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE CLASS "B" BEDDING FOR RCP-ARCH, CP AND PVC PIPE.

(J) STATIONS, OFFSETS, COORDINATES AND ELEVATIONS ARE GIVEN TO:
- END OF CONCRETE APRON.
- CENTER OF CASTING WITH ADDITIONAL COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STURCTURES.

(K) PAYMENT WILL BE MADE UNDER ITEM 2501 CLEAN INLET STRUCTURE.

DATE: 2/13/2012 TIME: 4:03:40 PM
FILENAME: K:\g-m\MnDOT\496800\hwy-brdg\hwy\pln-sht\cal90ll68_dta.dgn

DRAWN BY: CEH
CHECKED BY: MAW

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DATE: FEBRUARY 13, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE TABULATIONS
STORM SEWER

STATE PROJ. NO. 1901-168 (TH 13)

STORM SEWER TABULATION L

STRUCTURE NO.		STRUCTURE LOCATION (J)						TOP OF CASTING ELEV. (J)	OUTLET INVERT ELEV. (J)	INLET INVERT DOWN-STREAM STRUCT. ELEV. (J)	SLOPE OF PIPE %	DRAINAGE STRUCTURES							PIPE SEWER (G)						APRON TYPE				RANDOM RIPRAP		GEO-TEXTILE FILTER TYPE IV	GUIDE POST TYPE B	CLEAN OUT CATCH BASIN	CLEAN APRON (K)	CLEAN PIPE SEWER	CLEAN AND VIDEO TAPE PIPE SEWER	CONN. TO EX. STORM SEWER	CONN. INTO EX. DRAIN STRU.	REPAIR CATCH BASIN	ADJUST FRAME AND RING CASTING	MINOR GRADING	NOTES
					COORDINATES								DESIGN PAY HEIGHT				CASTING ASSEMBLY (F)		STEPS REQ'D (B)	12" RCP DES 3006 CL V	15" RCP DES 3006 CL V	18" RCP DES 3006 CL III	24" RCP DES 3006 CL III	36" RCP DES 3006 CL IV	15" CP	18" RC SAFETY	24" RC SAFETY	15" RC	36" RC	CL II	CL III										
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y					TYPE	DESIGN C, G, OR H	DESIGN F	DESIGN 72-4020	DESIGN 78-4020	TYPE	EACH																							
												LIN FT	LIN FT	LIN FT	LIN FT	TYPE	EACH		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	CU YD	CU YD	SQ YD	EACH	EACH	EACH	LIN FT	LIN FT	EACH	EACH	EACH	EACH	LIN FT	
SP 1902-66																																								
5022		TH13	0+27.97	22.60	RT	539569.15	251538.75	762.68	758.58			CB	4.0				B - 7	1																		2					
5025	5026	TH13	144+50.00	14.00	RT	550472.50	260277.09	841.35	838.15	838.01	0.50	CB	3.1				B - 5	1			28																				
5026	5027	TH13	144+50.00	14.00	LT	550455.21	260299.12	841.73	838.01	825.50	6.25	CB	3.6				B - 5	1			200																				
5027	5028	TH13	142+50.00	15.40	LT	550297.06	260176.69	828.45	824.50	812.11	5.37	CB	3.9				B - 5	1			231																				
5028	5029	TH13	140+20.00	21.00	LT	550113.70	260036.35	815.49	812.11	812.06	0.50	CB	3.3				B - 5	1			10																				
5029	5030	TH13	140+10.00	21.00	LT	550106.07	260029.77	815.14	812.06	811.85	0.50	CB	3.0				B - 5	1			42																			20	
5030	5031	TH13	140+10.00	21.00	RT	550133.54	259998.00	815.14	811.85	811.76	0.50	CB	3.2				B - 5	1			11																				(C)
5031		TH13	140+10.00	38.00	RT	550144.66	259985.14		811.76			APR																1		2.9		13	1							
5032	5030	TH13	140+20.00	21.00	RT	550141.06	260004.48	815.49	812.87	812.30	5.67	CB	2.5				B - 5	1		10																				
5033	5034	TH13	150+30.00	14.00	RT	550996.69	260511.63	877.78	874.68	874.54	0.50	CB	3.0				B - 5	1		28																				
5034	5035	TH13	150+30.00	14.00	LT	550983.11	260536.11	877.78	874.29	867.99	5.81	CB	3.4				B - 5	1			108																				
5035	5036	TH13	149+20.00	14.00	LT	550885.54	260488.94	871.01	867.99	860.07	6.67	CB	2.9				B - 5	1			119																				
5036	5037	TH13	148+00.00	14.00	LT	550773.54	260449.68	863.39	859.00	858.95	0.50	CB	4.3				B - 5	1									10													(L)
5037	5038	TH13	147+92.36	20.50	LT	550764.33	260453.55		858.95	834.00	41.58	ELBOW															60													(H) (I) (L)
5038	5038A	TH13	147+46.40	59.00	LT	550708.93	260476.59		834.00	821.44	23.88	ELBOW															52													(H) (I) (L)
5038A	6061	TH13	147+06.13	92.85	LT	550660.38	260496.83		821.44	821.40	0.50	ELBOW															8													(H) (I) (L)
5039	5036	TH13	148+00.00	14.00	RT	550781.92	260422.96	863.23	860.00	859.86	0.50	CB	3.2				B - 5	1		28																				
5040	5041	TH13	158+79.50	31.00	RT	551713.38	260956.22	927.56	925.47	925.27	0.50	CB	2.0				B - 9	1		39																				
5041		TH13	159+20.50	33.55	RT	551741.03	260986.60	928.65	925.27			CB				3.3	B - 9	1																			2				
5041		TH13	159+19.31	31.85	RT	551738.96	260986.73																																	(A)
5042	5043	TH13	159+36.00	24.00	RT	551743.29	261004.66	927.69	923.69	918.25	3.35	CB	4.0				M - 11	1		163																				(M)
5043	5044	TH13	157+80.00	24.00	RT	551630.71	260887.42	921.25	918.25	914.44	4.45	CB	3.0				M - 11	1		86																				(M)
5044	5045	TH13	157+00.00	14.00	RT	551549.63	260859.74	917.24	914.19	913.27	3.27	CB	3.0				B - 5	1			28																				
5045	5046	TH13	157+00.00	14.00	LT	551541.27	260886.46	916.42	913.27	904.29	5.25	CB	3.1				B - 5	1			171																				
5046	5047	TH13	155+30.00	14.00	LT	551375.73	260843.29	907.68	904.29	899.07	5.90	CB	3.3				B - 5	1			89																				
5047	5048	TH13	154+45.00	14.00	LT	551299.40	260798.47	903.06	898.44	887.97	5.35	CB	4.5				B - 5	1			196																				
5048	5049	TH13	152+50.00	14.00	LT	551159.46	260661.56	891.40	886.60	886.55	0.50	CB		4.7			B - 5	1	YES							10													(L)
5049	5050	TH13	152+48.50	23.90	LT	551151.77	260667.95		886.55	844.38	49.61	ELBOW														85													(H) (I) (L)
5050	5050A	TH13	152+34.42	107.90	LT	551086.43	260722.32		844.38	833.54	10.34	ELBOW														113													(H) (I) (L)
5050A	6058	TH13	152+12.79	211.15	LT	551005.81	260789.36		833.54	833.50	0.50	ELBOW														8													(H) (I) (L)
5051	5047	TH13	154+45.00	14.00	RT	551316.70	260776.46	901.68	898.83	898.69	0.50	CB	2.8				B - 5	1		28																				
5052	5048	TH13	152+50.00	14.00	RT	551178.14	260640.70	890.98	888.37	888.22	0.56	CB	2.5				B - 5	1		28																				
5053	6065	TH13	165+19.09	24.00	LT	552074.15	261487.31		930.49	927.90	1.97	APR												120				1				1							20	(D)
6032	6033	TH13NB1	1244+30.18	25.00	LT	539868.81	246603.13																																
6034	6035	MENCONNB	59+46.94	72.10	LT	540066.60	246686.43																																
6036		MENCONNB	55+79.34	159.39	RT	539792.48	247010.15																																
6037		MENCONNB	51+03.02	18.08	LT	539835.25	247524.73																																
6038		MENCONNB	42+21.19	93.09	RT	539862.72	248407.22																																
6039		MENCONNB	39+26.01	50.19	RT	539902.84	248686.53																																
6040		MENCONNB	33+28.33	56.17	RT	539977.61	249323.40																																
6041		MENCONNB	31+44.40	61.84	RT	540110.25	249460.36																																
6042		MENCONNB	30+17.22	73.87	RT	540194.66	249556.24																																
6043		MENCONNB	28+29.93	73.94	LT	540400.72	249659.94																																
6045		MENCONNB	47+00.00	86.77	LT	540347.73	250012.06																																
6046		MENCONNB	45+26.68	55.28	LT	540192.73	250172.50																																
6048		MENCONNB	26+87.55	83.90	RT	538355.53	250085.34																																
SP 1902-66 STORM SEWER TABULATION SHEET 1 TOTALS													71.6	4.7		3.3		24		410	1233		120		346		1	1		2.9		13	6	1	8	128		4		1		180	

NOTES:

(A) COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STRUCTURE
(B) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER (INCIDENTAL). SEE MNDOT STANDARD PLATE 4180.
(C) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES ARE INCIDENTAL.
(D) LENGTH GIVEN TO END OF PIPE BARREL (DOES NOT INCLUDE APRON LENGTH)
(F) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 193.
(G) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE CLASS "B" BEDDING FOR RCP-ARCH, CP AND PVC PIPE.
(H) TIE JOINTS FOR ALL BENDS AND THREE JOINTS IN EACH DIRECTION FROM BENDS. TIED JOINTS SHALL BE CONSIDERED INCIDENTAL.
(I) PIPE LENGTH INCLUDES ELBOWS. FURNISHING AND INSTALLING PIPE ELBOWS CONSIDERED INCIDENTAL. SEE DRAINAGE PROFILES.
(J) STATIONS, OFFSETS, COORDINATES AND ELEVATIONS ARE GIVEN TO:
- END OF CONCRETE APRON.
- CENTER OF CASTING WITH ADDITIONAL COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STURCTURES.
(K) PAYMENT WILL BE MADE UNDER ITEM 2501 CLEAN INLET STRUCTURE.
(L) FOR PLASTIC PIPE INSTALLATION REQUIREMENTS, SEE DETAIL ON SHEET 198. BEDDING MATERIAL INCIDENTAL.
(M) SEE CASTING ASSEMBLY M-11 STAKING DETAIL ON SHEET 198.

DATE: 2/15/2012 TIME: 6:09:25 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-br\dgn\hwy\plnr-sht\cad1901168_dtb.dgn

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 15, 2012 LIC. NO. 26883

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TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE TABULATIONS
STORM SEWER

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 192 of 393 Sheets

STORM SEWER TABULATION L

STRUCTURE NO.		STRUCTURE LOCATION (J)						TOP OF CASTING ELEV. (J)	OUTLET INVERT ELEV. (J)	INLET INVERT DOWN-STREAM STRUCT. ELEV. (J)	SLOPE OF PIPE %	DRAINAGE STRUCTURES							PIPE SEWER (G)						APRON TYPE				RANDOM RIPRAP		GEO-TEXTILE FILTER TYPE IV	GUIDE POST TYPE B	CLEAN OUT CATCH BASIN	CLEAN APRON (K)	CLEAN PIPE SEWER	CLEAN AND VIDEO TAPE PIPE SEWER	CONN. TO EX. STORM SEWER	CONN. INTO EX. DRAIN STRU.	REPAIR CATCH BASIN	ADJUST FRAME AND RING CASTING	MINOR GRADING	NOTES
					COORDINATES								DESIGN PAY HEIGHT				CASTING ASSEMBLY (F)																								
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	X	Y					TYPE	DESIGN C, G, OR H	DESIGN F	DESIGN 72-4020	DESIGN 78-4020	TYPE	EACH	STEPS REQ'D (B)	12" RCP DES 3006 CL V	15" RCP DES 3006 CL V	18" RCP DES 3006 CL III	24" RCP DES 3006 CL III	36" RCP DES 3006 CL IV	15" CP	18" RC SAFETY	24" RC SAFETY	15" RC	36" RC	CL II	CL III											
												LIN FT	LIN FT	LIN FT	LIN FT	TYPE	EACH		LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	CU YD	CU YD	SQ YD	EACH	EACH	EACH	LIN FT	LIN FT	EACH	EACH	EACH	EACH	LIN FT	
SP 1902-66																																								
6049A		TH13	36+78.28	22.21	LT	546404.63	256126.07					CB					B - 9	1																								
6049	6050	TH13	48+00.00	20.00	LT	546998.41	257045.67																										1		10						
6050	6051	TH13	48+09.00	20.00	LT	547003.24	257053.52																										1		30						
6054	6055	TH13	99+53.67	28.50	RT	547198.15	257218.63																																1		
6055		TH13	99+44.42	20.40	LT	547155.36	257244.00																																1		
6058	6059	TH13	152+10.90	219.00	LT	550999.66	260794.48		827.90	826.18	1.43													120													2			(L)
6059	6060	TH13	150+57.22	211.20	LT	550906.04	260719.16		826.18	824.50	1.43													118													2			(L)
6060	6061	TH13	149+10.43	194.00	LT	550809.29	260652.20		824.50	821.40	1.42													218													2			(L)
6061	6062	TH13	147+00.00	98.00	LT	550652.99	260499.91		821.40	820.10	1.12													116													3			(L)
6062	6063	TH13	146+00.00	72.00	LT	550557.68	260434.03		820.10																											165		1			
6063	6064	TH13	145+63.86	230.40	LT	550444.08	260553.11																													236					
6065		TH13	163+87.67	19.90	LT	551993.24	261383.67		927.90																													1			
SP 1902-66 STORM SEWER TABULATION SHEET 2 TOTALS																		1						572									2		40	401		11	2			
SP 1901-168 STORM SEWER TABULATION TOTALS												16.6		21.6			8		49	6	76	197	48		2	3		1	142.8	83.0	521	9	2	2	82		5	4		5	550	
SP 1902-66 STORM SEWER TABULATION TOTALS												71.6	4.7		3.3		25		410	1233		120		918		1	1		2.9		13	6	3	8	168	401	4	11	3		180	
PROJECT TOTALS												88.2	4.7	21.6	3.3		33		459	1239	76	317	48	918	2	4	1	1	145.7	83.0	534	15	5	10	250	401	9	15	3	5	730	

NOTES:

(B) IF STEPS REQUIRED, STRUCTURE TO INCLUDE MANHOLE STEPS 16" ON CENTER (INCIDENTAL). SEE MNDOT STANDARD PLATE 4180.

(F) FOR CASTING ASSEMBLY SUMMARY, SEE SHEET NO. 193.

(G) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE CLASS "B" BEDDING FOR RCP-ARCH, CP AND PVC PIPE.

(J) STATIONS, OFFSETS, COORDINATES AND ELEVATIONS ARE GIVEN TO:
- END OF CONCRETE APRON.
- CENTER OF CASTING WITH ADDITIONAL COORDINATES AT CENTER OF BASE FOR DESIGN 4020 STURCTURES.

(K) PAYMENT WILL BE MADE UNDER ITEM 2501 CLEAN INLET STRUCTURE.

(L) FOR PLASTIC PIPE INSTALLATION REQUIREMENTS, SEE DETAIL ON SHEET 198. BEDDING MATERIAL INCIDENTAL.

CASTING ASSEMBLY SUMMARY

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING (1)	CURB BOX	STANDARD PLATE NO.	QUANTITY	REMARKS
A - 7D	700-7			4101	2	MANHOLE
		715		4110		
			N/A	N/A		
B - 5	802A			4129	19	CATCH BASIN
		816		4154		
			823	4160		
B - 7	805			4132	1	CATCH BASIN
		814A		4152		
			N/A	N/A		
B - 9	805			4132	7	CATCH BASIN
		816		4154		
			N/A	N/A		
B - 17	806			4125	1	CATCH BASIN
		816		4154		
			825	4134		
M - 11	ROUND CONCRETE			4143	2	CATCH BASIN
		731		4143		
			N/A	N/A		
C - 1	R-3067V (2)				1	CATCH BASIN
		R-3067V (2)				
			R-3067V (2)			

NOTES:

(1) USE BENT BOLT WITH 816 GRATE.

(2) NEENAH R-3067V COMBINATION INLET FRAME, GRATE, AND CURB BOX OR EQUIVALENT.

DATE: 2/15/2012 TIME: 6:09:22 AM
FILENAME: K:\g-mVMnDOTV4968000\hwy-brdg\hwy\pln-sht\cd190168_dtc.dgn

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 15, 2012 LIC. NO. 26883

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE TABULATIONS
STORM SEWER

STATE PROJ. NO. 1901-168 (TH 13)

CULVERT TABULATION M

STRUCTURE NO.		STRUCTURE LOCATION			OUTLET INVERT ELEV.	INLET INVERT DOWN-STREAM STRUCT. ELEV.	SLOPE OF PIPE %	AGGREGATE BEDDING	PIPE CULVERT (A) (B) (D)				APRON TYPE								CLEAN APRON (F)	CLEAN PIPE CULVERT	CONCRETE FLUME	MINOR GRADING	CONN. TO EX. STORM SEWER	RANDOM RIPRAP		GEO-TEXTILE FILTER TYPE IV	GUIDE POST TYPE B	NOTES
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET					15" CS (C)	48" CS (C)	17" SPAN CSP-A (E)	24" RC DES 3006 CL III	15" CS SAFETY APR	18" CS SAFETY APR	48" GS	60" GS	24" RC SAFETY	17" SPAN CS SAFETY APR	21" SPAN CS SAFETY APR	35" SPAN CS SAFETY APR & GRATE DES 3128						CLASS II	CLASS III			
								CU YD	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LIN FT	CU YD	LIN FT	EACH	CU YD	CU YD	SQ YD	EACH	
SP 1901-168																														
5005		TH13OLDCL	1083+31.68	51.52 RT																									1	
5006	5007	TH13OLDCL	1091+86.00	39.00 RT	818.79	818.50	0.50		59				1											50					1	
5007		TH13OLDCL	1092+45.00	39.00 RT	818.50								1													3.5		14	1	
5011	6011	TH13OLDCL	1104+33.00	36.00 LT	798.47	798.22	2.57		10				1																1	
5012		TH13OLDCL	1105+23.64	36.00 LT	796.14								1											50		3.5		14	1	
5016		TH13OLDCL	1136+62.35	69.00 LT	751.99										1												24.0	63	1	
5020		TH13OLDCL	1156+61.15	40.20 LT												1											28.0	70		
5021		TH13OLDCL	1156+72.89	39.31 RT																			5							
6007		TH13OLDCL	1096+71.30	35.98 RT																									1	
6008		TH13OLDCL	1097+42.07	37.83 RT																				250		6.5		26	1	
6011	6012	TH13OLDCL	1104+42.65	36.02 LT																		68			1					
6012	5012	TH13OLDCL	1105+13.93	35.99 LT	796.39	796.14	2.57		10				1												1					
6014	6015	TH13OLDCL	1124+92.55	136.20 LT																		48								
6020		TH13OLDCL	1129+43.98	69.44 RT																									1	
6021		TH13OLDCL	1129+55.97	161.41 LT																									1	
6022		TH13OLDCL	1136+61.62	27.56 RT																									1	
6023	5016	TH13OLDCL	1136+62.36	36.05 LT	753.17	751.99	4.27			28															1					
6024	6025	TH13OLDCL	1139+53.44	35.61 RT																		50							1	
6025		TH13OLDCL	1140+06.41	35.65 RT																				20					1	
6026		TH13OLDCL	1142+14.21	29.86 RT																									1	
6027		TH13OLDCL	1151+99.23	51.76 LT																	1			20			12.8	34		
6030		TH13OLDCL	1162+01.01	58.99 LT																							13.0	34		
6031		TH13SB1	1168+78.17	85.95 LT																	1			20			16.0	43		
SP 1901-168 CULVERT TABULATION TOTALS									79	28			5		1	1					2	166	5	410	3	13.5	93.8	298	14	

NOTES:

(A) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES ARE INCIDENTAL.

(B) LENGTH GIVEN TO END OF PIPE BARREL (DOES NOT INCLUDE APRON LENGTH)

(C) USE POSITIVE JOINTS ON ALL CORRUGATED STEEL PIPE. USE 12" MINIMUM CSP COUPLING BAND. COUPLING BANDS ARE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3221.

(D) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE CLASS "B" BEDDING FOR RCP-ARCH, CP AND PVC PIPE.

(E) CLASS "B" BEDDING REQUIRED.

(F) PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

DATE: 2/15/2012 TIME: 6:09:20 AM
FILENAME: K:\g-m\MnDOT\496800\hwy-brdg\hwy\plr-sht\cal1901168_drd.dgn

DRAWN BY: CEH
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.

SIGNATURE: Matthew A. Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: FEBRUARY 15, 2012 LIC. NO. 26883

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TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE TABULATIONS
CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)

CULVERT TABULATION M

STRUCTURE NO.		STRUCTURE LOCATION			OUTLET INVERT ELEV.	INLET INVERT DOWN-STREAM STRUCT. ELEV.	SLOPE OF PIPE %	AGGREGATE BEDDING	PIPE CULVERT (A) (B) (D)				APRON TYPE								CLEAN APRON (F)	CLEAN PIPE CULVERT	CONCRETE FLUME	MINOR GRADING	CONN. TO EX. STORM SEWER	RANDOM RIPRAP		GEO-TEXTILE FILTER TYPE IV	GUIDE POST TYPE B	NOTES
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET					15" CS (C)	48" CS (C)	17" SPAN CSP-A (E)	24" RC DES 3006 CL III	15" CS SAFETY APR	18" CS SAFETY APR	48" GS	60" GS	24" RC SAFETY	17" SPAN CS SAFETY APR	21" SPAN CS SAFETY APR	35" SPAN CS SAFETY APR & GRATE DES 3128						CLASS II	CLASS III			
								CU YD	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LIN FT	CU YD	LIN FT	EACH	CU YD	CU YD	SQ YD	EACH	
SP 1902-66																														
5023		TH13	130+79.26	27.27 LT																				10						
5024		TH13	130+32.26	26.20 LT																				10						
5054	5055	TH13	165+78.87	23.26 LT	932.00	931.81	0.50		37				1																	
5055		TH13	165+41.01	23.51 LT	931.81								1											10						
5056	5057	TH13	166+92.00	22.00 LT	932.17	932.04	0.50		26				1																	
5057		TH13	166+66.00	22.00 LT	932.04								1											90						
5058	5059	TH13	168+10.90	21.35 RT	933.60	933.34	0.50					40					1												1	
5059		TH13	167+59.45	21.98 RT	933.34												1							280					1	
5060	5061	TH13	169+55.02	20.35 LT	934.74	934.36	1.09		35				1																	
5061		TH13	169+20.11	20.88 LT	934.36								1																	
5062	5063	TH13	170+14.32	19.41 LT	935.18	934.84	1.15		30				1																	
5063		TH13	169+84.83	19.93 LT	934.84								1																	
5064	5065	TH13	171+49.31	20.77 RT	939.05															1									1	
5065		TH13	170+99.06	21.70 RT	938.07															1							8.3		21	1	
5066	5067	TH13	172+12.00	21.00 LT	940.90	940.37	1.96		27				1																	
5067		TH13	171+85.00	21.00 LT	940.37								1																	
5068	5069	TH13	173+01.40	20.39 LT	944.63														1					50					1	
5069		TH13	172+71.05	21.34 LT	943.57														1					50					1	
5070		TH13	177+48.82	22.83 RT																				40						
5071	5072	TH13	180+20.67	21.10 RT	969.89	969.60	1.22	5			24							1												
5072		TH13	179+96.90	20.97 RT	969.60													1												
5073	5074	TH13	180+84.14	21.46 RT	970.95	970.80	0.50		31				1																	
5074		TH13	180+53.60	21.16 RT	970.80								1																	
5075	5076	TH13	182+30.39	22.09 RT	973.04	972.90	0.50		27				1																	
5076		TH13	182+03.33	21.68 RT	972.90								1																	
5077	5078	TH13	183+22.15	22.20 RT	972.65	972.53	0.50		24				1																	
5078		TH13	183+46.37	22.38 RT	972.53								1																	
5079		TH13	184+42.32	23.34 RT	917.96									1															1	
5080		TH13	184+95.45	24.59 RT	917.32									1										40					1	
5081	5082	TH13	185+31.47	23.99 RT	970.96	970.49	1.78		27				1																	
5082		TH13	185+57.94	24.10 RT	970.49								1																	
5083	5084	TH13	140+02.40	40.77 RT	811.70	811.57	0.50		26				1																1	
5084		TH13	139+76.33	45.17 RT	811.57								1																	
6044		MENCONNB	49+47.23	59.46 LT																	1									
6047		MENCONNB	40+27.08	80.51 LT																				10						
6052	6053	TH13	48+34.71	43.27 LT																		63							1	
6053		TH13	48+95.61	44.02 LT																				200					1	
6056		TH13	104+97.12	45.83 LT																									1	
6057		TH13	109+20.28	43.04 LT																	1								1	
6066		TH13	164+78.07	22.25 RT																									1	
6067		TH13	172+64.00	21.97 RT																									1	
6068		TH13	175+88.17	28.04 RT																									1	
6069		TH13	184+96.29	27.73 RT																									1	
SP 1902-66 CULVERT TABULATION TOTALS								5	290		24	40	20	2			2	2	2	2	2	63		790		8.3		21	17	

SP 1901-168 CULVERT TABULATION TOTALS						79	28			5		1	1					2	166	5	410	3	13.5	93.8	298	14	
SP 1902-66 CULVERT TABULATION TOTALS					5	290		24	40	20	2			2	2	2	2	2	63		790		8.3		21	17	
PROJECT TOTALS					5	369	28	24	40	25	2	1	1	2	2	2	2	4	229	5	1200	3	21.8	93.8	319	31	

NOTES:

(A) TIE ALL JOINTS. FURNISHING AND INSTALLING PIPE TIES ARE INCIDENTAL.

(B) LENGTH GIVEN TO END OF PIPE BARREL (DOES NOT INCLUDE APRON LENGTH)

(C) USE POSITIVE JOINTS ON ALL CORRUGATED STEEL PIPE. USE 12" MINIMUM CSP COUPLING BAND. COUPLING BANDS ARE INCIDENTAL. SEE MN/DOT STANDARD PLATE 3221.

(D) CLASS "C" BEDDING FOR RC PIPE UNLESS OTHERWISE SPECIFIED. USE CLASS "B" BEDDING FOR RCP-ARCH, CP AND PVC PIPE.

(E) CLASS "B" BEDDING REQUIRED.

(F) PAYMENT WILL BE MADE UNDER ITEM 2501 (CLEAN INLET STRUCTURE).

DRAWN BY: CEH

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.

SIGNATURE: Matthew A. Wassman

PRINTED NAME: MATTHEW A. WASSMAN

DATE: FEBRUARY 15, 2012 LIC. NO. 26883

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TH 13 BETTER ROADS PRESERVATION PROJECT

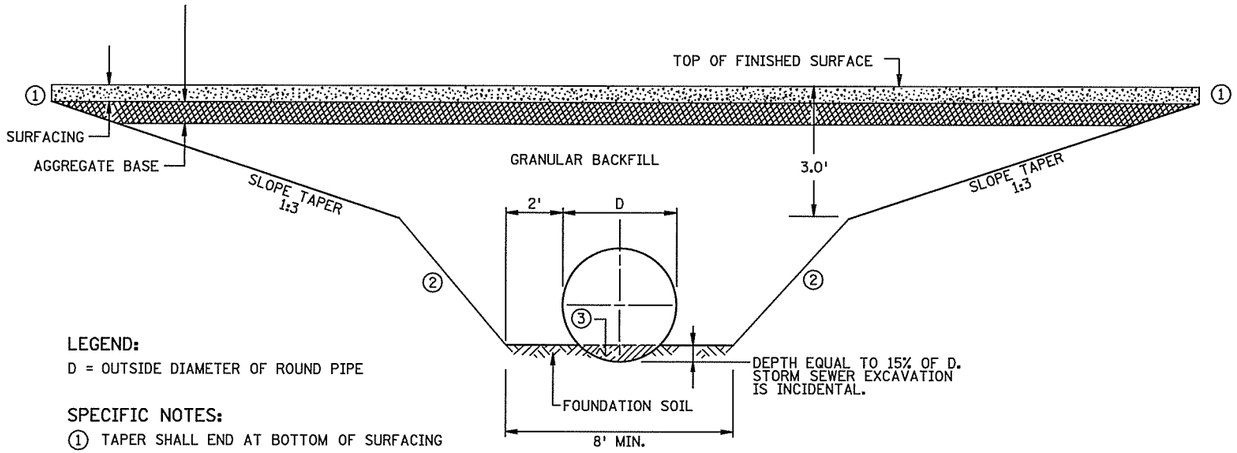
DRAINAGE TABULATIONS
CULVERTS

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 195 of 393 Sheets

DATE: 2/15/2012 TIME: 6:09:17 AM
FILENAME: K:\g-mNMnDOT\4968000\hwy-brdg\hwy\plr-sth\cd1901168_dtl.dgn

STORM SEWER TREATMENT GRANULAR SOILS



LEGEND:

D = OUTSIDE DIAMETER OF ROUND PIPE

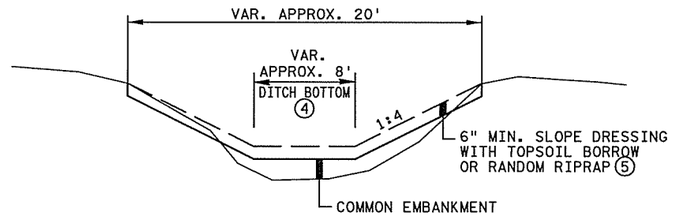
SPECIFIC NOTES:

① TAPER SHALL END AT BOTTOM OF SURFACING

② TAPER SHALL BE MIN. 1:1.5 UNLESS MODIFIED BY SOILS ENGINEER

③ FOUNDATION SOIL REMOVED AND SHAPED TO CLOSELY FIT THE BOTTOM OF THE STRUCTURE AND PROVIDE UNIFORM SUPPORT

MINOR GRADING



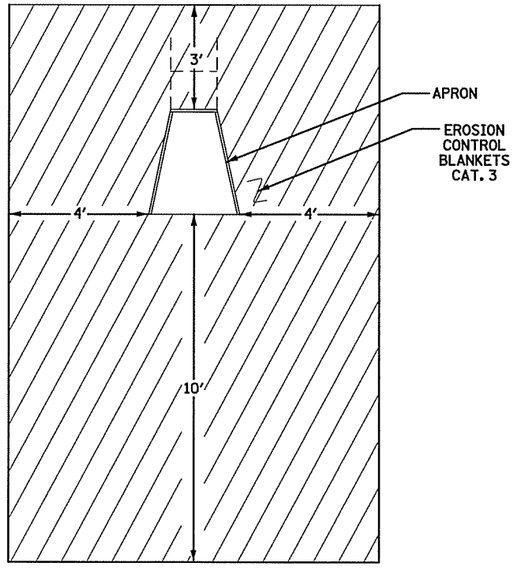
SPECIFIC NOTES:

④ MATCH INPLACE SLOPES AND DITCH BOTTOM WIDTH, AS DIRECTED BY ENGINEER.

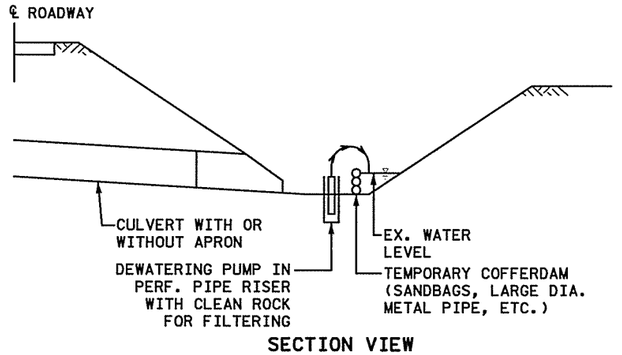
⑤ SEED, FERTILIZER, AND BLANKET SHALL BE PLACED WITHIN 24 HOURS OF GRADING.

EROSION CONTROL BLANKETS FOR APRONS

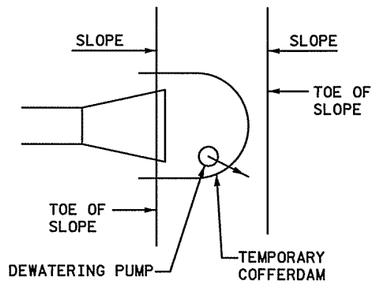
EROSION CONTROL BLANKETS AREA							
CULVERT DIAMETER	DES. 3022 CONCRETE APRON (CIRC.) 1:4 SLOPE	DES. 3022 CONCRETE APRON (CIRC.) 1:6 SLOPE	DES. 3100 CONCRETE APRON (CIRC.) STANDARD	DES. 3122 METAL APRON (ARCH) STANDARD	DES. 3123 METAL APRON (CIRC.) STANDARD	DES. 3148. METAL APRON (CIRC.) 1:4 SLOPE	DES. 3148 METAL APRON (CIRC.) 1:6 SLOPE
INCH	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD
15		22	18	18	19		
18		22	19	20	21	17	18
24		25	22	22	23	19	22
30	23		24	25	27	22	25
36	23		27	28	30	25	29
48	29		29	33	35	30	35
72	39		33	41	41		



CULVERT DEWATERING



SECTION VIEW



PLAN VIEW

DATE: 1/26/2012 TIME: 9:41:23 AM
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DRAWN BY: SFH
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.

SIGNATURE: Matthew A Wassman
PRINTED NAME: MATTHEW A. WASSMAN
DATE: JANUARY 26, 2012 LIC. NO. 26883

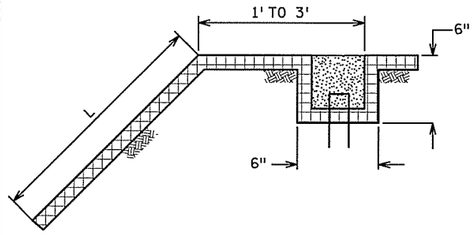
TKDA
ENGINEERING • ARCHITECTURE • PLANNING

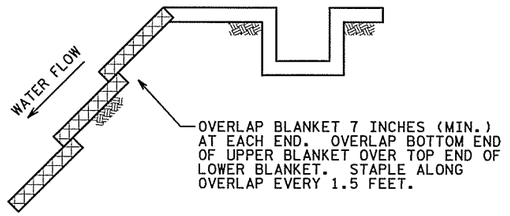
TH 13
BETTER ROADS
PRESERVATION PROJECT

DRAINAGE & EROSION CONTROL DETAILS

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 196 of 393 Sheets





CHECK SLOT REQUIREMENTS:

1. DIG 6 IN. X 6 IN. TRENCH.
2. INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.
3. STAPLE BLANKET EVERY 1 FOOT ALONG THE BOTTOM OF TRENCH.
4. BACKFILL TRENCH WITH SOIL AND COMPACT.

GENERAL BLANKET INSTALLATION REQUIREMENTS:

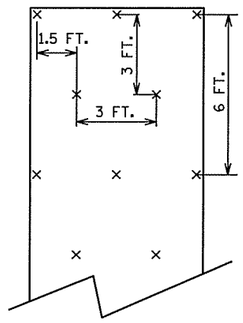
1. BLANKET SHALL BE PARALLEL TO THE DIRECTION OF WATER FLOW.
2. OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4 INCHES.
3. OVERLAP BLANKET 7 INCHES (MIN.) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5 FEET.
4. THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100 FT OR GREATER, INSERT BLANKET INTO A CHECK SLOT 1/3 FROM BOTTOM OF THE SLOPE.

NOTE:
SEE SPEC. 3885

CHECK SLOT

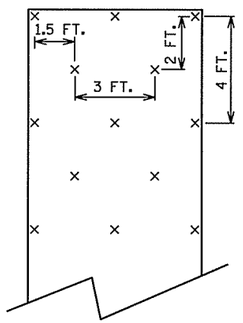
BLANKET OVERLAP

SLOPES FLATTER THAN 1:2
(1.2 STAPLES PER SQ YD)



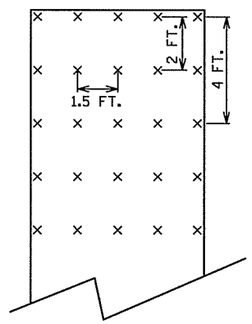
STANDARD 6 FT. BLANKET

SLOPES 1:2 TO 1:1
(1.7 STAPLES PER SQ YD)



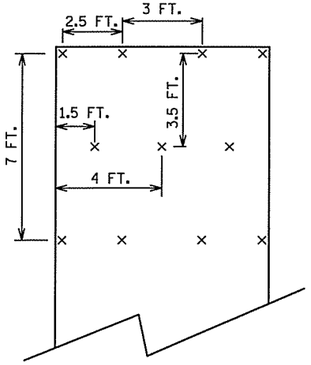
STANDARD 6 FT. BLANKET

CHANNEL AND DITCH APPLICATIONS
(3.5 STAPLES PER SQ YD)



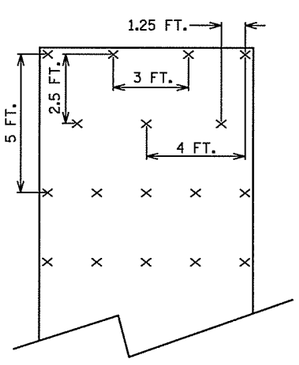
STANDARD 6 FT. BLANKET

SLOPES FLATTER THAN 1:2
(1.2 STAPLES PER SQ YD)



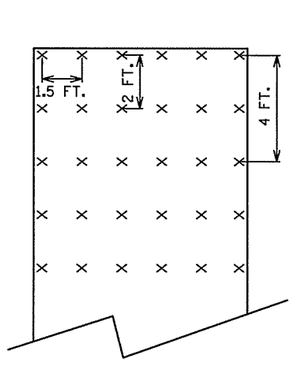
STANDARD 8 FT. BLANKET

SLOPES 1:2 TO 1:1
(1.7 STAPLES PER SQ YD)

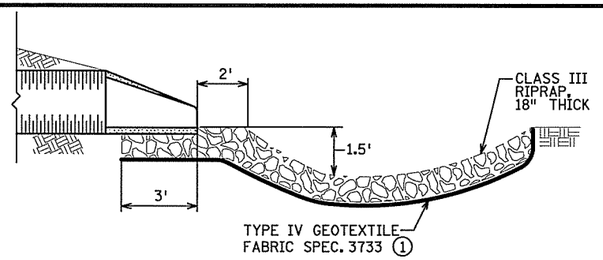


STANDARD 8 FT. BLANKET

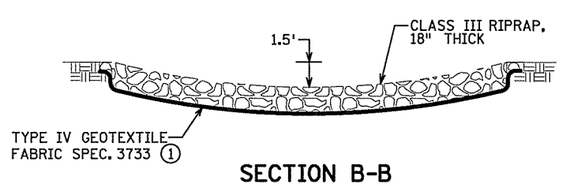
CHANNEL AND DITCH APPLICATIONS
(3.5 STAPLES PER SQ YD)



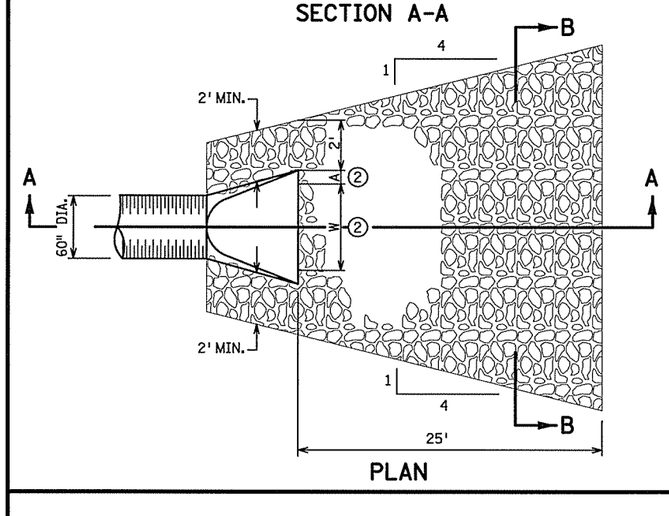
STANDARD 8 FT. BLANKET



SECTION A-A



SECTION B-B



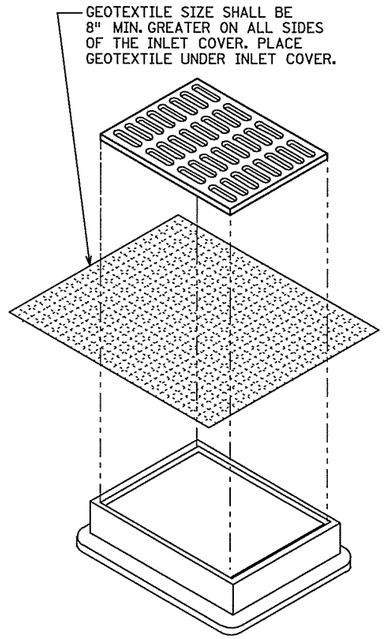
PLAN

SPECIFIC NOTES:

(1) THE FABRIC SHOULD COVER THE AREA OF THE RIPRAP AND EXTEND UNDER THE CULVERT APRON 3 FT.

(2) DIMENSIONS W AND A ARE GIVEN ON STANDARD PLATE 3123.

RIPRAP APRON DETAIL FOR 60" CSP

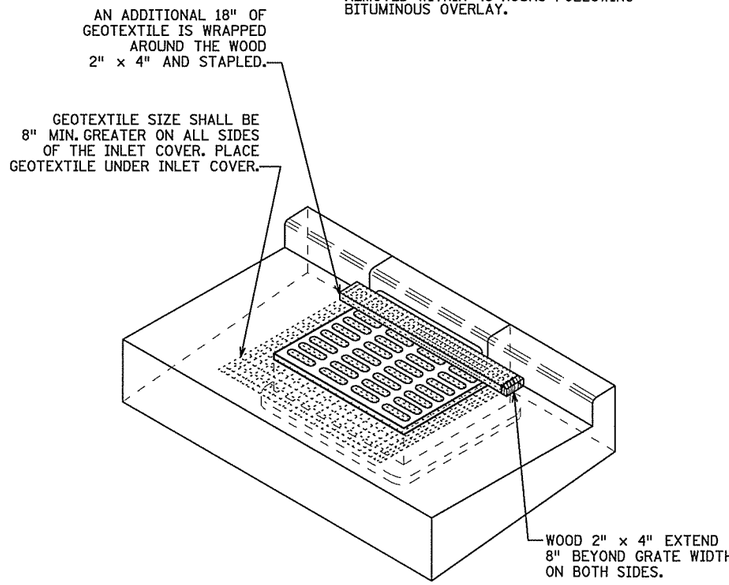


INLET PROTECTION (1)

(SILT FENCE FABRIC - WITHOUT CURB BOX)

SPECIFIC NOTES:

(1) INLET PROTECTION TO BE PLACED 24 - 48 HOURS PRIOR TO MILLING. INLET PROTECTION MUST BE REMOVED WITHIN 48 HOURS FOLLOWING BITUMINOUS OVERLAY.

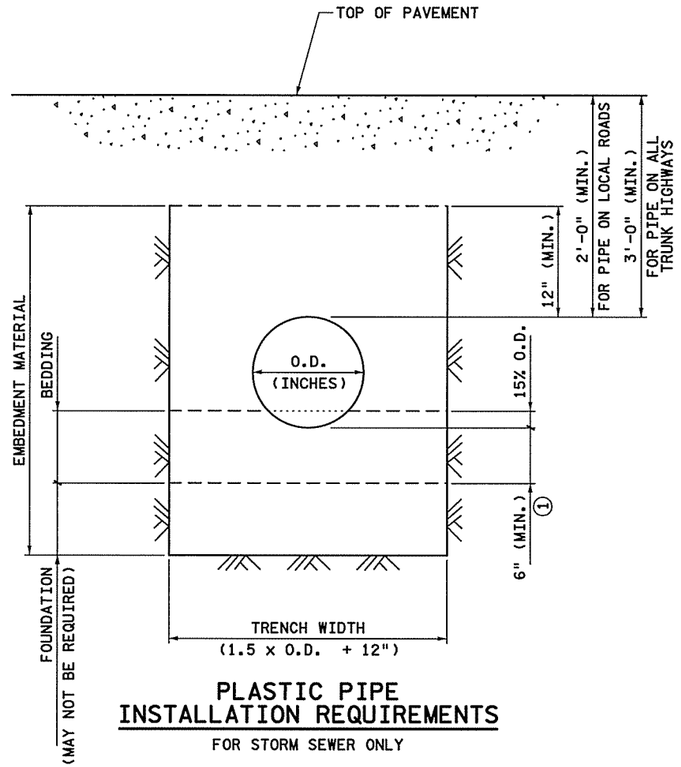


INLET PROTECTION (1)

(SILT FENCE FABRIC - WITH CURB BOX)

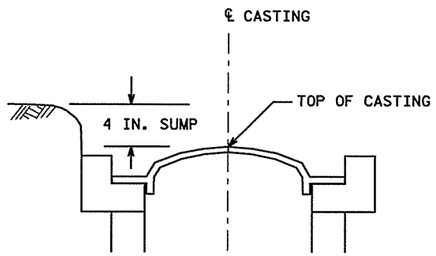
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DRAWN BY: SFH CHECKED BY: MAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Matthew A. Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: JANUARY 26, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE & EROSION CONTROL DETAILS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 197 of 393 Sheets



PLASTIC PIPE INSTALLATION REQUIREMENTS

FOR STORM SEWER ONLY



NOTES:

- SEE MN/DOT STANDARD PLATE 4143.

CASTING ASSEMBLY M-11 STAKING DETAIL

NOT TO SCALE

MAXIMUM COVER (FT.)		
NOMINAL PIPE DIAMETER	CP PIPE (AASHTO M294)	PVC PIPE (ASTM F794)
12"	20	40
15"	20	40
18"	20	40
21"	—	40
24"	15	20
30"	15	20
36"	15	20

NOTES:

MAXIMUM NOMINAL PIPE DIAMETER IS 36".

EMBEDMENT MATERIAL PER Mn/DOT SPEC. 3149.2D MODIFIED TO 100% PASSING THE 1" SIEVE.

CONSTRUCTION REQUIREMENTS PER Mn/DOT SPEC. 2451 MODIFIED SO THAT EMBEDMENT MATERIAL IS COMPACTED IN UNIFORM LAYERS 8" OR LESS IN THICKNESS, LOOSE MEASUREMENT TO 95% STANDARD PROCTOR DENSITY.

BEDDING SHALL BE CLASS B PER Mn/DOT SPEC. 2451.3.

① THE ZONE IMMEDIATELY BENEATH THE PIPE WHICH SHALL ONLY BE COMPACTED SUFFICIENTLY TO PROVIDE UNIFORM SUPPORT.

DATE: 1/26/2012 TIME: 9:41:27 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cd1901168_ddc.dgn

DRAWN BY: SFH 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.	SIGNATURE: Matthew A. Wassman PRINTED NAME: MATTHEW A. WASSMAN DATE: JANUARY 26, 2012 LIC. NO. 26883	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	DRAINAGE & EROSION CONTROL DETAILS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 198 of 393 Sheets

SALVAGE & INSTALL SIGN TYPE C G

SIGN NO	QTY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	POSTS LEN (FEET)	MTG HT (1) (FEET)	PANEL SIZE (INCH)	PANEL LEGEND
C-201	2	2-U	1	13	7	48 x 24	DOUBLE ARROW
C-202	1	1-U		14	7	21 x 15	JCT
						24 x 24	COUNTY 26
C-203	1	1-U		14	7	24 x 24	COUNTY 26
						21 x 15	RIGHT ARROW
SP 1901-168 TOTAL	4						

SALVAGE & INSTALL SIGN TYPE D H

SIGN NO	QTY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	POSTS LEN (FEET)	MTG HT (1) (FEET)	PANEL SIZE (INCH)	PANEL LEGEND
D-201	1	2-U	2	15	7	72 x 36	Four Oaks Road
D-202	1	2-U	2	15	7	72 x 36	Alexander Rd
D-203	1	2-U	2	15	7	72 x 36	Four Oaks Road
D-204	1	2-U	2	15	7	72 x 36	McCarthy Rd
D-205	1	2-U	2	15	7	72 x 36	McCarthy Rd
D-206	1	2-U	2	15	7	72 x 36	Lone Oak Rd
D-207	1	2-U	2	15	7	72 x 36	Lone Oak Rd
SP 1901-168 TOTAL	7						

SIGN PANELS TYPE C J

SIGN NO	QTY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	POSTS LEN (FEET)	MTG HT (1) (FEET)	PANEL SIZE (INCH)	PANEL AREA (SQ FT)	PANEL TOTAL AREA (SQ FT)	CODE NO	PANEL LEGEND
C-1	2	2-U		14	7	30 x 30	6.25	12.50	R4-X8a	BYPASS & TURN LANE
C-2	2	2-U		14	7	30 x 30	6.25	12.50	R3-7	RIGHT LANE MUST TURN RIGHT
C-3	1	2-U		14	7	24 x 30	5.00	5.00	R2-1	SPEED LIMIT 50
C-4	1	2-U		14	7	24 x 12	2.00	2.00	M3-3A	SOUTH
						24 x 24	4.00	4.00	M1-5a	MINNESOTA 13
C-5	1	2-U	1	14	7	36 x 30	7.50	7.50	R3-30AC	LANE USE CONTROL
C-6	1	2-U		15	7	24 x 24	4.00	4.00	M1-6	DAKOTA COUNTY 26
						21 x 15	2.19	2.19	M6-1a	LEFT ARROW
SP 1901-168 TOTAL								49.69		

NOTES:
(1) MOUNTING HEIGHT MINIMUM. SEE SHEET NO. 200 FOR TYPICAL MOUNTING.

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE SHEETS 201 AND 202 FOR STRUCTURAL DETAILS.
3. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPC C SIGN PANELS.
4. SEE STANDARD SIGNS MANUAL FOR TYPE D STRINGER AND PANEL JOINT DETAILS.

DATE: 1/26/2012 TIME: 9:26:01 AM
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DRAWN BY: TJV
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

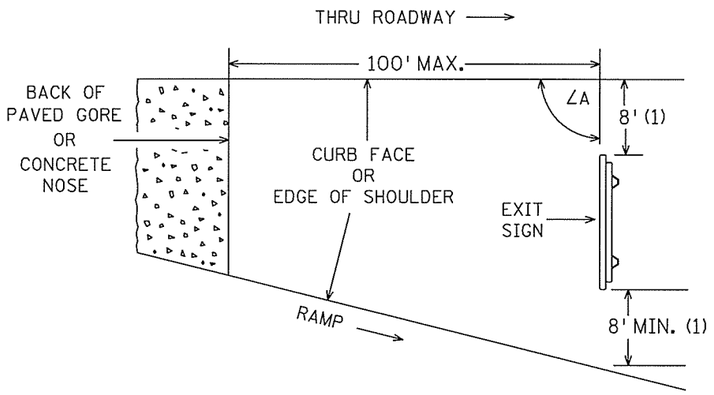
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TH 13
BETTER ROADS
PRESERVATION PROJECT

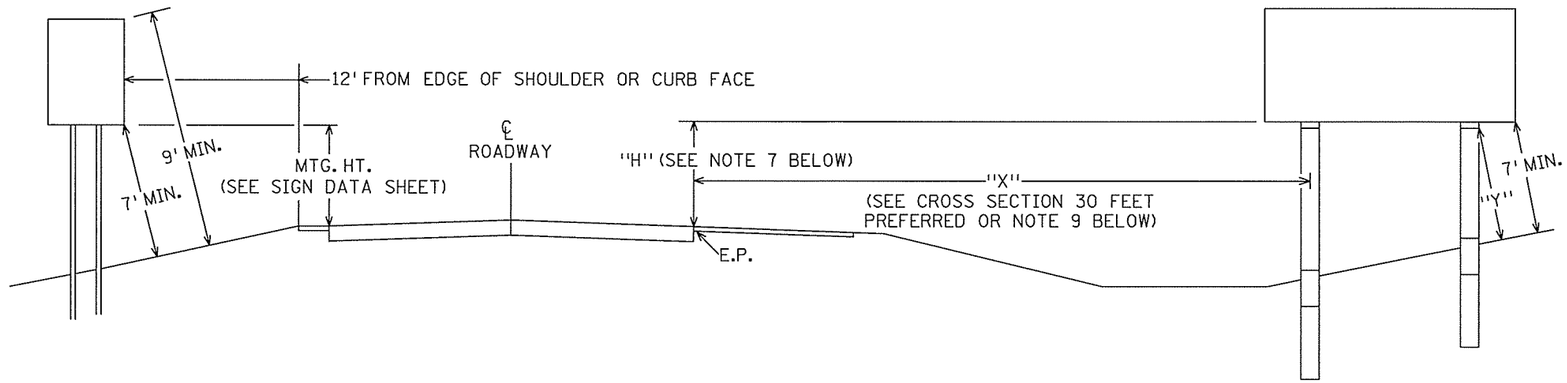
SIGNING TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)

GORE PLACEMENT

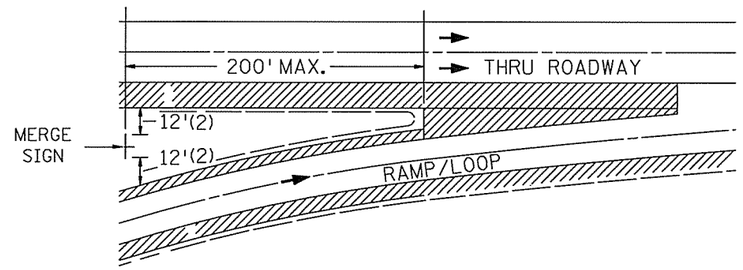


ROADSIDE PLACEMENT



ROUTE MARKER, REGULATORY & WARNING SIGNS - TYPE C
MINOR GUIDE SIGNS - TYPE D

MAJOR GUIDE SIGN - TYPE A



SPECIFIC NOTES:

(1) EXIT SIGNS
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER WHO WILL CONSULT WITH THE STATE SIGNING ENGINEER.

(2) MERGE SIGNS
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER WHO WILL CONSULT WITH THE STATE SIGNING ENGINEER.

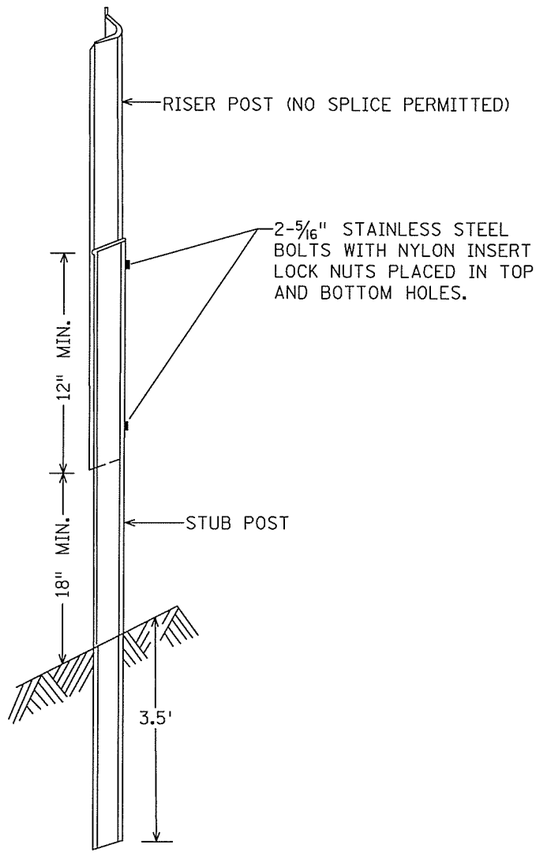
NOTES:

1. IF A SECONDARY SIGN IS MOUNTED BELOW A MAJOR SIGN, THE MAJOR SIGN SHALL BE AT LEAST 8' ABOVE THE PAVEMENT EDGE AND THE SECONDARY SIGN AT LEAST 5'.
2. ALL ROUTE MARKERS, WARNING AND REGULATORY SIGNS SHALL BE AT LEAST 7' ABOVE PAVEMENT EDGE.
3. SIGN FACES SHALL BE VERTICAL.
4. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
5. TO AVOID SPECULAR GLARE, ∠A SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF PAVEMENT AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF PAVEMENT. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
6. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
7. WHERE "X" IS LESS THAN 30', "H" SHALL, BE 7' ±6". WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
8. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
9. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 8 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

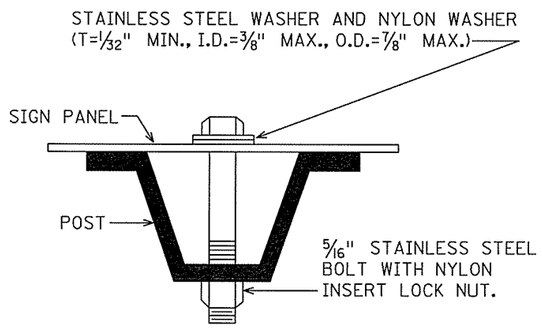
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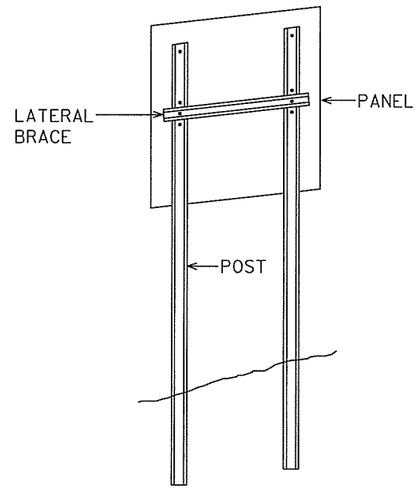
TYPE C & D POST



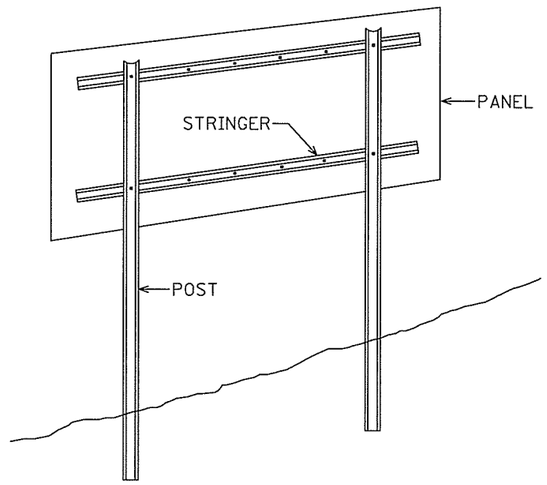
U POST SPLICE



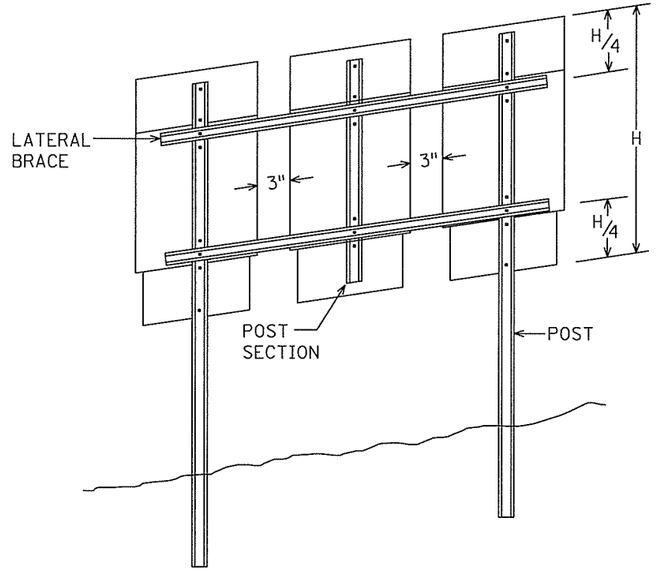
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



MODIFIED TYPE C INSTALLATION

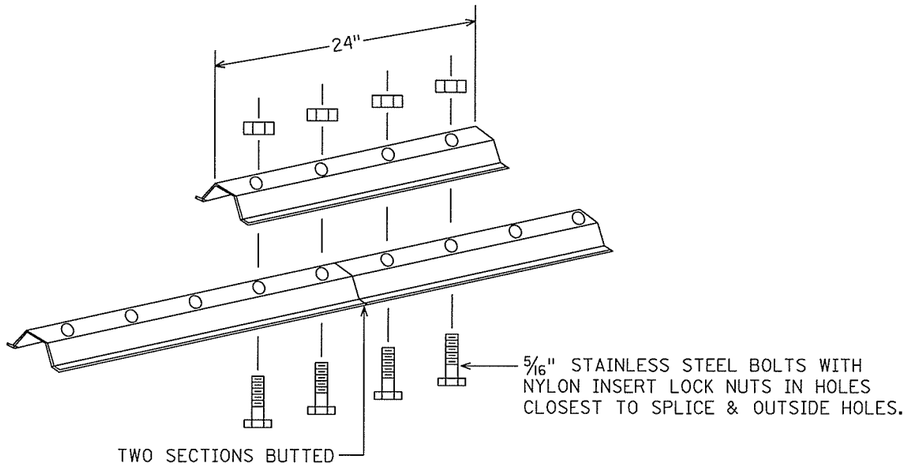
NOTES:

1. USE 3 LB/FT STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE D SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3 1/2'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DOT 3352.2A5.
11. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
13. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

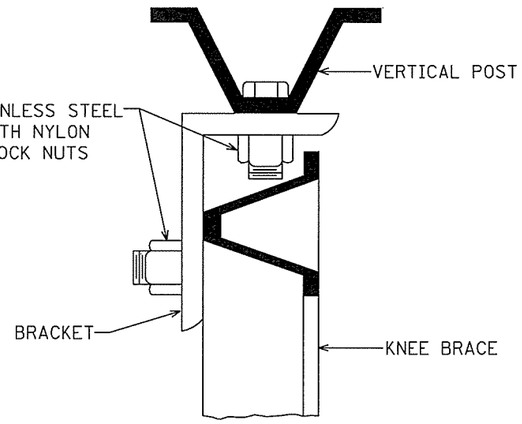
TYPE C & D SIGN
STRUCTURAL DETAILS

Sheet 1 of 3

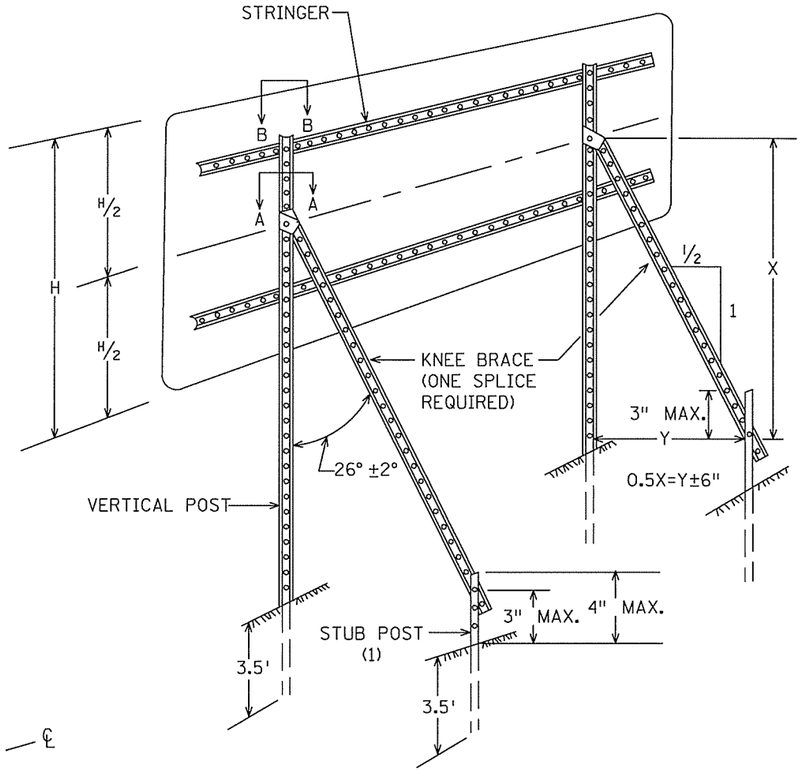
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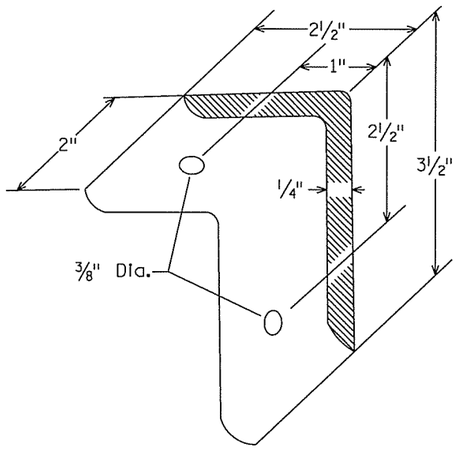
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

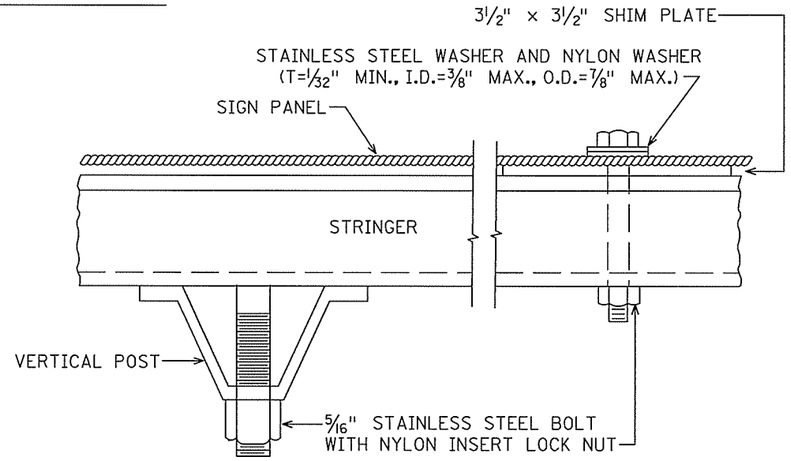


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

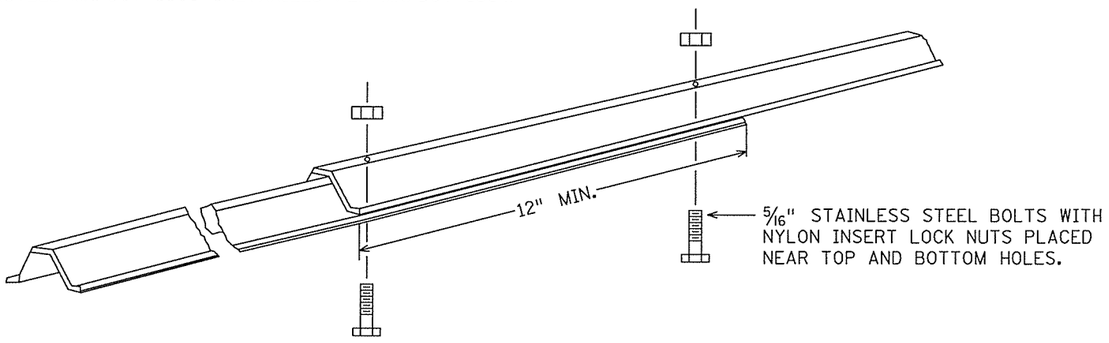


A-FRAME BRACKET

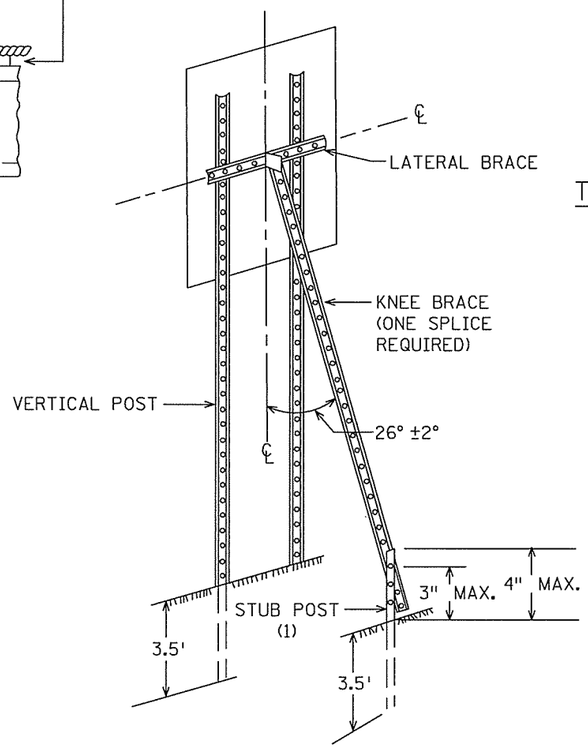
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



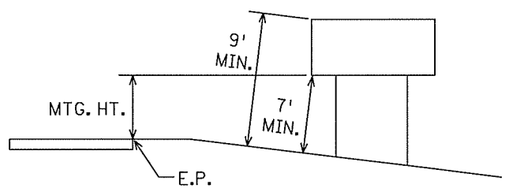
SECTION B-B



KNEE BRACE SPLICE



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



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST. ATTACH STUB POST AND KNEE BRACE BACK TO BACK.

TYPE C & D SIGN STRUCTURAL DETAILS

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REVISED: 1-7-08

SCALE IN FEET
0 25 50 100

TERMINAL DR.

Letendre St ②

STOP
TERMINAL DR
HWY 13 ②

RIGHT TURN LANE ②

℄ TH 13
(TH13OLDCL)

Terminal Dr ②

STOP ②

MATCHLINE - TH 13 STA. 1110+75

1100 1105 1110

LETENDRE ST.

NO PASSING ZONE ②

HWY 13
FOUR OAKS RD
STOP ②

Terminal Dr ②

BYPASS LANE ②⑤

BYPASS & TURN LANE C-1 ①

Alexander Rd ②

Four Oaks Road D-201 ⑥

ALEXANDER RD.

Alexander Road D-202 ②③

RIGHT LANE MUST TURN RIGHT C-2 ①

Alexander Road D-202 ⑥

C-201 ②③⑥

Four Oaks Road D-203 ②③

Four Oaks Road D-203 ⑥

SCHOOL BUS LOADING AREA ②⑤

STOP
MEADOW VIEW RD
HWY 13 ②

MEADOW VIEW RD.

SCALE IN FEET
0 25 50 100

NO PASSING ZONE ②

RIGHT TURN LANE ②

Meadow View Drive ②

LANE ENDS MERGE LEFT ②⑤

STOP ②

MATCHLINE - TH 13 STA. 1126+00

1115 1120 1125

RIGHT LANE MUST TURN RIGHT C-2 ①

D-201 ②③ Four Oaks Road

FOUR OAKS RD.

STATE HWY 13
FOUR OAKS RD
STOP ②

Meadow View Dr ②

℄ TH 13
(TH13OLDCL)

②⑤ BYPASS LANE

McCarthy Rd D-204 ⑥

D-204 ②③ McCarthy Rd

BYPASS & TURN LANE C-1 ①

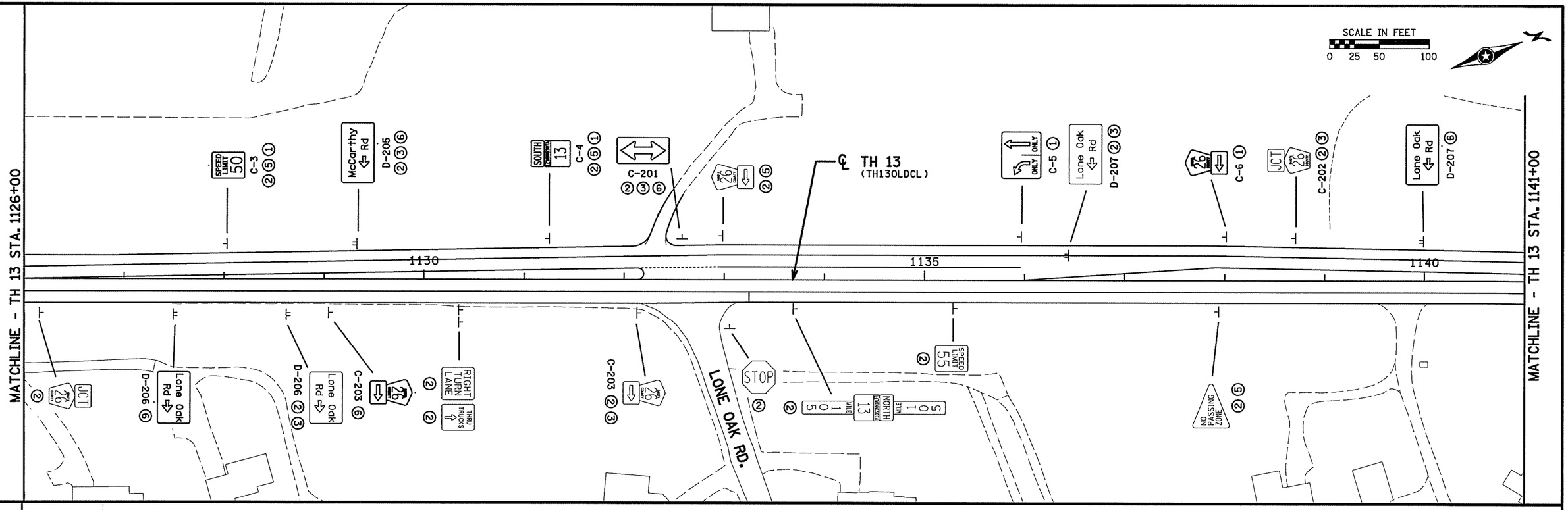
McCARTHY RD.

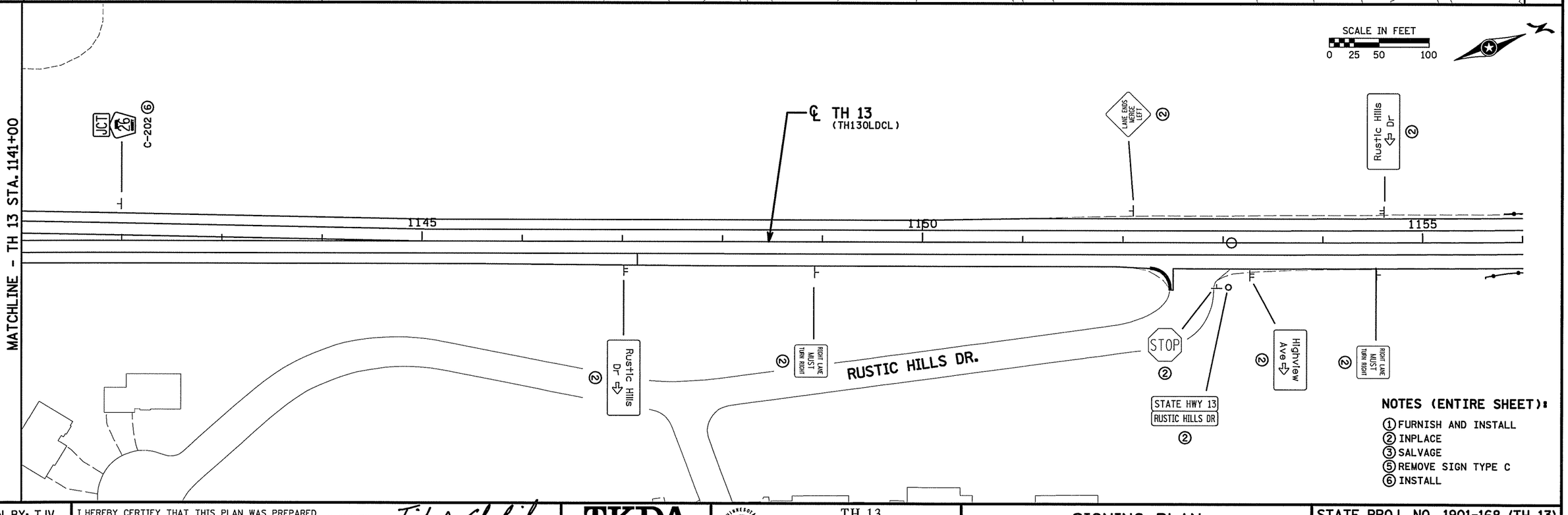
HIGHWAY 13
McCARTHY RD
STOP ②

NOTES (ENTIRE SHEET):
① FURNISH AND INSTALL
② INPLACE
③ SALVAGE
⑤ REMOVE SIGN TYPE C
⑥ INSTALL

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DRAWN BY: TJV CHECKED BY: SJS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Timothy A. Chalupnik PRINTED NAME: TIMOTHY A. CHALUPNIK DATE: FEBRUARY 13, 2012 LIC. NO. 15400	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	SIGNING PLAN TH 13 STA. 1095+75 TO STA. 1126+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 203 of 393 Sheets





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CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: FEBRUARY 13, 2012 LIC. NO. 15400

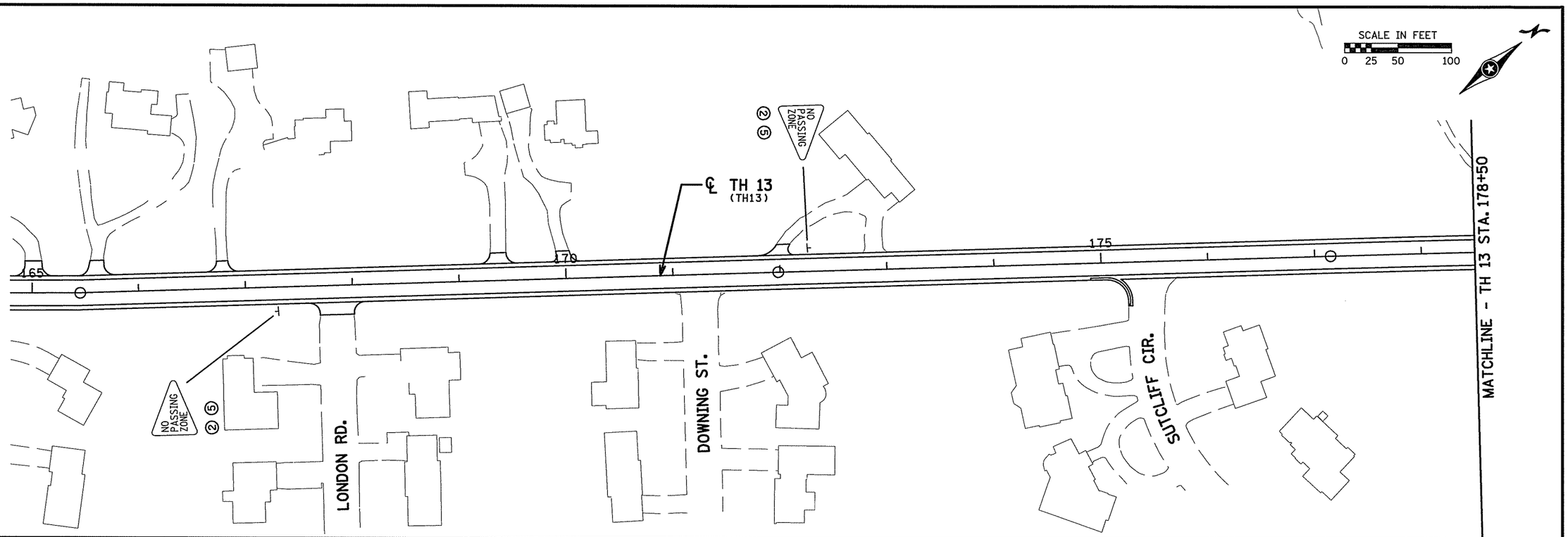
TKDA
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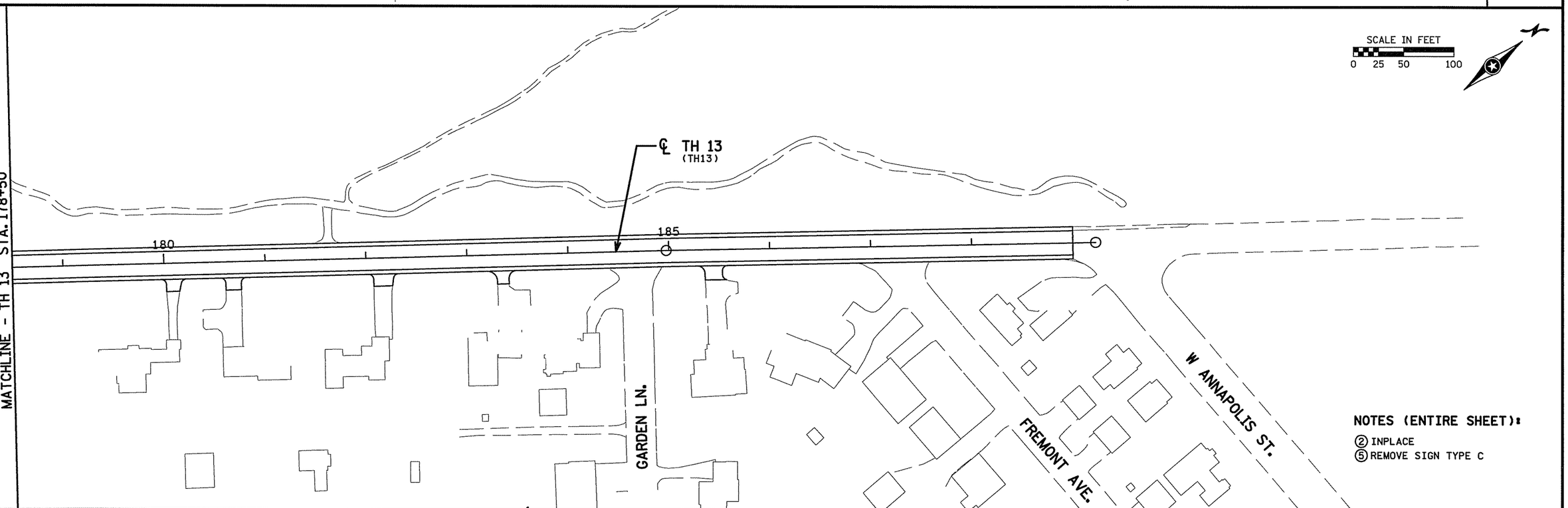
TH 13
BETTER ROADS
PRESERVATION PROJECT

SIGNING PLAN
TH 13 STA. 1126+00 TO STA. 1156+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 204 of 393 Sheets





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DRAWN BY: TJV
CHECKED BY: SJS

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

SIGNATURE: Timothy A. Chalupnik
PRINTED NAME: TIMOTHY A. CHALUPNIK
DATE: JANUARY 26, 2012 LIC. NO. 15400

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TH 13
BETTER ROADS
PRESERVATION PROJECT

SIGNING PLAN
TH 13 STA. 164+80 TO STA. 189+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 205 of 393 Sheets

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL FURNISH, PLACE AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED. IN PLACE SIGNING MUST ALSO BE MAINTAINED OR TEMPORARILY RELOCATED FOR CONSTRUCTION ACTIVITIES.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE. TYPICAL LAYOUT PLANS ARE NOT DRAWN TO SCALE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
5. SIGN PLACEMENTS SHALL NOT OBSTRUCT EXISTING SIGNS.
6. THE ITEM "TRAFFIC CONTROL" COVERS ALL DEVICES SHOWN ON THE PLAN SHEETS, TYPICAL LAYOUTS, AND OTHER SETUPS REQUIRED BY THE CONTRACTORS OPERATIONS.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTANT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE PLACED, 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 PLACEMENT 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 PLACEMENT 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 TO DISPLAY THE CORRECT START 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.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	- CLOSED TO TRAFFIC
	- ARROWBOARD
	- ARROWBOARD SUPPORT OR TRAILER
	- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	- PCMS TRAILER
	- TYPE A FLASHING WARNING LIGHTS
	- RED FLASHING WARNING LIGHTS
	- PORTABLE FLOOD LIGHT
	- CHANNELIZING DEVICE (TUBULAR DELINEATOR)
	- RETROREFLECTIVE DRUM, TYPE I OR TYPE II BARRICADE, VERTICAL PANEL
	- SIGN (SHOWN FACING LEFT)
	- TYPE III BARRICADE
	- SOLID LINE PAVEMENT MARKING WITH TEMPORARY RAISED PAVEMENT MARKERS AT 10' SPACING OR WET REFLECTIVE TAPE
	- CONCRETE MEDIAN BARRIER WITH MEDIAN BARRIER DELINEATORS AT 30' SPACING
	- IMPACT ATTENUATOR (NARROW FOOTPRINT)

LEGEND

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

EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

STRIPING KEY

- EPOXY
- PAINT
- REMOVABLE PREFORMED PLASTIC MARKING
- POLY PREFORM
- POLY PREFORM GROUND IN GR-IN

INDEX

TRAFFIC CONTROL

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276-280	SEGMENT D2 CLOSURE PLANS
281-285	TEMPORARY PED ACCESS CONTROL PLANS

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 02/10/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
TITLE SHEET

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 206 of 393 Sheets

TRAFFIC CONTROL TABULATION SHEET

"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE IN INCHES
	W1-4 (R or L)	BLACK on ORANGE	CR-SL 30x30 CR-ML 36x36
	W1-6 (R or L)	BLACK on ORANGE	CR-SL 48x24 CR-ML 48x24
	W3-1	BLACK RED, WHITE on ORANGE	O 48x48
	W4-2 (R or L)	BLACK on ORANGE	CR-ML 36x36
	W4-3 (R or L)	BLACK on ORANGE	CR-ML 36x36
	W6-1	BLACK on ORANGE	CR-ML 36x36
	W6-2	BLACK on ORANGE	CR-ML 36x36
	W6-3	BLACK on ORANGE	CR-SL 36x36 CR-ML 36x36
	W12-1	BLACK on ORANGE	CR-ML 36x36
M.P.H.	W13-1P	BLACK on ORANGE	CR-SL 18x18 CR-ML 18x18
	W16-7MP (R or L)	BLACK on ORANGE	CR-SL 24x12 CR-ML 24x12
ROAD WORK AHEAD	W20-1	BLACK on ORANGE	CR-SL 36x36 CR-ML 36x36 E 48x48 F 48x48
DETOUR AHEAD	W20-2	BLACK on ORANGE	CR-SL 36x36 CR-ML 36x36
ROAD CLOSED AHEAD	W20-3	BLACK on ORANGE	CR-SL 36x36 CR-ML 36x36
FEET	W20-100P	BLACK on ORANGE	CR-SL 30x24 CR-ML 30x24
RAMP CLOSED AHEAD	W20-X16	BLACK on ORANGE	CR-ML 36x36 F 48x48
LEFT LANE CLOSED	W21-X5L	BLACK on ORANGE	CR-ML 36x36

"W" SERIES

SIGN	SIGN NO.	COLOR	SIZE IN INCHES
TURN LANE CLOSED	W20-X18	BLACK on ORANGE	CR-SL 36x36 CR-ML 36x36 E 48x48
TRAFFIC CONTROL CHANGE AHEAD	W3-X5	BLACK on ORANGE	O 48x48

"G" SERIES

SIGN	SIGN NO.	COLOR	SIZE IN INCHES
CLOSED BEGINNING MONTH DY	G20-X1	BLACK on ORANGE	CR-SL 72x60 CR-ML 72x60
USE BOTH LANES DURING BACKUPS	G20-X10	BLACK on ORANGE	CR-ML 48x60
BUSINESS ACCESS	G20-X6 (R OR L)	BLACK on ORANGE	CR-SL 36x36 CR-ML 36x36
TURN LANE	G20-X9	BLACK on ORANGE	CR-SL 30x36 CR-ML 30x36

DEVICES

ITEM	SIGN NO.	COLOR	SIZE IN INCHES
	TYPE I	ORANGE ON WHITE	
	DLC	ORANGE	
	TYPE III	ORANGE ON WHITE	
	FLASHING ARROW BOARD		
R	RED FLASHER	RED	
F	YELLOW FLASHER	YELLOW	
	TUBULAR DELINEATOR	ORANGE	36

SIZE LEGEND

M- MINIMUM
CR-SL- CONVENTIONAL ROAD-SINGLE LANE
CR-ML- CONVENTIONAL ROAD-MULTI LANE
E- EXPRESSWAY
F- FREEWAY
O- OVERSIZE

SIZES OF SIGNS SHALL BE IN ACCORDANCE WITH THE MN MUTCD AND TRAFFIC ENGINEERING MANUAL FOR THE APPROPRIATE ROADWAY CLASSIFICATION.

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ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLAN
TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 207 of 393 Sheets

"M" SERIES

SIGN	SIGN NO.	COLOR	SIZE IN INCHES
DETOUR DETOUR	M4-10 (R or L)	BLACK on ORANGE	CR-SL 48x18 CR-ML 48x18
MINNESOTA 13	M1-5b	WHITE and GOLD on BLUE	CR-SL 24x24 CR-ML 24x24
INTERSTATE 35W	M1-1	WHITE on RED and BLUE	CR-SL 30x24 CR-ML 30x24
ALT	M4-1a	WHITE on BLUE	CR-SL 24x12 CR-ML 24x12 F 36x18
NORTH	M3-1ma	WHITE on BLUE	CR-SL 24x12 CR-ML 24x12 E 36x18 F 36x18
SOUTH	M3-3ma	WHITE on BLUE	CR-SL 24x12 CR-ML 24x12 E 36x18 F 36x18
DETOUR	M4-8	BLACK on ORANGE	CR-SL 24x12 CR-ML 24x12 E 30x15 F 30x15
TO	M4-5a	WHITE on BLUE	CR-SL 24x12 CR-ML 24x12
JCT	M2-1a	WHITE on BLUE	CR-SL 24x12 CR-ML 24x12
	M5-1a (R or L)	WHITE on BLUE	CR-SL 21x15 CR-ML 21x15 E 30x21
	M5-2a (R or L)	WHITE on BLUE	CR-ML 21x15 F 30x21
	M6-2a (R or L)	WHITE on BLUE	CR-SL 21x15 CR-ML 21x15 E 30x21
	M6-3a	WHITE on BLUE	CR-SL 21x15 CR-ML 21x15 E 30x21 F 30x21
	M6-1a (R or L)	WHITE on BLUE	CR-SL 24x12 CR-ML 24x12 E 30x21 F 30x21

"R" SERIES

SIGN	SIGN NO.	COLOR	SIZE IN INCHES
RAMP CLOSED	R11-2	BLACK on WHITE	CR-ML 48x30
ROAD CLOSED	R11-2	BLACK on WHITE	CR-SL 48x30 CR-ML 48x30
STOP	R1-1	WHITE on RED	O 48x48
	R4-7	BLACK on WHITE	M 18x24
DO NOT ENTER	R5-1	WHITE on RED	CR-SL 30x30 CR-ML 36x36
ROAD CLOSED MILES AHEAD LOCAL TRAFFIC ONLY	R11-3a	BLACK on WHITE	CR-SL 60x30 CR-ML 60x30
LEFT LANE MUST TURN LEFT / RIGHT LANE MUST TURN RIGHT / ALL TRAFFIC MUST TURN RIGHT		BLACK on WHITE	CR-SL 30x30 CR-ML 30x30
ONEWAY ONEWAY	R6-1 (R or L)	BLACK on WHITE	CR-SL 36x12 CR-ML 48x18
	R3-1 R3-2	BLACK and RED on WHITE	CR-SL 24x24 CR-ML 36x36 E 36x36
ALL WAY	R1-4	WHITE on RED	O 30x12
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK on WHITE	CR-SL 60x30 CR-ML 60x30
ONLY ONLY	R3-5 (R or L)	BLACK on WHITE	CR-SL 30x36 CR-ML 30x36
	R3-6 (R or L)	BLACK on WHITE	CR-SL 30x36 CR-ML 30x36
ONLY ONLY	R3-30AA	BLACK on WHITE	CR-SL 36x30 CR-ML 36x30
ONLY ONLY	R3-30CA	BLACK on WHITE	CR-SL 36x30 CR-ML 36x30
ONLY	R3-30DA	BLACK on WHITE	CR-SL 36x30 CR-ML 36x30
ONLY ONLY ONLY	R3-30CCA	BLACK on WHITE	CR-ML 54x30
ONLY ONLY ONLY	R3-30ABLA	BLACK on WHITE	CR-SL 54x30 CR-ML 54x30

SIZE LEGEND

M- MINIMUM
CR-SL- CONVENTIONAL ROAD-SINGLE LANE
CR-ML- CONVENTIONAL ROAD-MULTI LANE
E- EXPRESSWAY
F- FREEWAY
O- OVERSIZE

SIZES OF SIGNS SHALL BE IN ACCORDANCE WITH THE MN MUTCD AND TRAFFIC ENGINEERING MANUAL FOR THE APPROPRIATE ROADWAY CLASSIFICATION.

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ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
TABULATIONS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 208 of 393 Sheets

SEGMENT A

SEGMENT B

EXCEPTION AREA

EXCEPTION AREA

SEGMENT C

SEGMENT D

A1

A2

C1

C2

D1

D2

CEDAR AVE (TH 77)

TH 35W

TH 35E

TH 55

TH 494

TH 110

LEXINGTON AVE

WACHTLER AVE (CO RD 81)

W ANNAPOLIS ST

PILOT KNOB RD

MENDOTA HEIGHTS RD

LONE OAK RD

YANKEE DOODLE RD (CO RD 28)

BLACKHAWK RD

SILVER BELL RD

DIFFLEY RD

CLIFF RD E (CO RD 32)

RIVER HILLS DR

RIVER HILLS DR W (CO RD 11)

PARKWOOD DR

PORTLAND AVE

NICOLLET AVE

12TH AVE S

FORT SNELLING NATIONAL CEMETERY

FORT SNELLING STATE PARK

Minneapolis-St. Paul International Airport

Minnesota Valley National Wildlife Refuge

Minnesota Valley State Trail

Minnesota Valley Trail

Minnesota Valley Wildlife Area

Minnesota Valley Wildlife Refuge

Minnesota Valley Wildlife Refuge Trail

Minnesota Valley Wildlife Refuge Trail

Minnesota Valley Wildlife Refuge Trail

(S.P. 1901-168)
STAGING AND TRAFFIC CONTROL PLAN OUTLINE
SEGMENT A AND SEGMENT B

SEGMENT		SEGMENT DESCRIPTION	CONSTRUCTION OPERATION	TRAFFIC CONTROL	LAYOUT REFERENCE	DETOUR PLAN REFERENCE	ACCESS CONSIDERATIONS (3)
A	A1	TH 35W TO CLIFF ROAD	INTERSECTION IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
			STORM SEWER CROSSING PIPES	DIRECTIONAL CLOSURES	SB CLOSURE - SHEETS 250 TO 255	SHEET 223	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE CEMETARY (SB TH 13) BETWEEN NICOLLET AVE. AND PORTLAND AVE.
					NB CLOSURE - SHEETS 242 TO 249	SHEET 222	
			MILL AND OVERLAY - MAINLINE	DIRECTIONAL CLOSURES	SB CLOSURE - SHEETS 250 TO 255	SHEET 223	
					NB CLOSURE - SHEETS 242 TO 249	SHEET 222	
				HEAD TO HEAD TRAFFIC	TYPICAL INTERSECTION LAYOUTS - SHEETS 237 TO 241	SHEET 236 (ALTERNATE ROUTE)	
			MILL AND OVERLAY - SHOULDERS	DIRECTIONAL CLOSURES	SB CLOSURE - SHEETS 250 TO 255	SHEET 223	
					NB CLOSURE - SHEETS 242 TO 249	SHEET 222	
				TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
				HEAD TO HEAD TRAFFIC	TYPICAL INTERSECTION LAYOUTS - SHEETS 237 TO 241	SHEET 236 (ALTERNATE ROUTE)	
	A2	CLIFF ROAD TO YANKEE DOODLE ROAD	INTERSECTION IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
			MILL AND OVERLAY - MAINLINE	HEAD TO HEAD TRAFFIC	TYPICAL INTERSECTION LAYOUTS - SHEETS 237 TO 241	SHEET 236 (ALTERNATE ROUTE)	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE RESIDENCE (NB TH 13) BETWEEN KENNELLY CIR. AND GALTIER DR. AND THE RESIDENCE (SB TH 13) BETWEEN 115TH ST. AND GALTIER DR.
			MILL AND OVERLAY - SHOULDERS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
				HEAD TO HEAD TRAFFIC	TYPICAL INTERSECTION LAYOUTS - SHEETS 237 TO 241	SHEET 236 (ALTERNATE ROUTE)	
I35W LOOPS		NB TH 13 TO NB 35W	MILL AND OVERLAY (TOP OF LOOP)	DIRECTIONAL CLOSURE	SHEETS 242, 245, 246	SHEET 224	
		NB 35W TO SB TH 13	MILL AND OVERLAY (TOP OF LOOP)	DIRECTIONAL CLOSURE	SHEET 225	SHEET 225	
TH 77 LOOPS AND RAMPS		NB TH 77 TO SB TH 13	MILL AND OVERLAY	FULL CLOSURE	SHEET 226	SHEET 226	
		SB TH 77 TO NB TH 13	MILL AND OVERLAY	FULL CLOSURE	SHEET 227	SHEET 227	
		NB TH 13 TO NB TH 77	MILL AND OVERLAY	FULL CLOSURE	SHEET 228	SHEET 228	
		SB TH 13 TO SB TH 77	MILL AND OVERLAY	FULL CLOSURE	SHEET 229	SHEET 229	
		NORTH RAMPS/LOOPS	SB TH 13 CLOSED AT TH 77	FULL CLOSURE	SHEET 230	SHEET 230	
		SOUTH RAMPS/LOOPS	NB TH 13 CLOSED AT TH 77	FULL CLOSURE	SHEET 231	SHEET 231	
B		YANKEE DOODLE ROAD TO TH 494	INTERSECTION IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
			DRAINAGE WORK	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	
			ROADWAY WIDENING	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	
				FULL CLOSURE	SHEETS 256 TO 262	SHEET 232	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS.
			MILL AND OVERLAY - MAINLINE	FULL CLOSURE	SHEETS 256 TO 262	SHEET 232	
			MILL AND OVERLAY - SHOULDERS	FULL CLOSURE	SHEETS 256 TO 262	SHEET 232	
				TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	

GENERAL NOTES:
(1) REFER TO SPECIAL PROVISIONS FOR ALLOWABLE LANE CLOSURE TIMES AND DURATIONS
(2) IF THE CONTRACTOR PROPOSES A DIFFERENT STAGING PLAN, THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL LAYOUTS TO THE ENGINEER FOR APPROVAL
(3) ACCESS SHALL BE MAINTAINED AT ALL LOCATIONS THROUGHOUT THE PROJECT EXCEPT AS SHOWN IN THE PLANS AND SPECIAL PROVISIONS.
THE CONTRACTOR SHALL PROVIDE FLAGGERS TO DIRECT TRAFFIC WHEN NECESSARY OR AS DIRECTED BY THE ENGINEER. ALL COSTS TO PROVIDE FLAGGERS, SHALL BE INCIDENTAL.

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ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
STAGING AND TRAFFIC CONTROL OUTLINE

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 210 of 393 Sheets

(S.P. 1901-168)
STAGING AND TRAFFIC CONTROL PLAN OUTLINE
SEGMENT C AND SEGMENT D

SEGMENT		SEGMENT DESCRIPTION	CONSTRUCTION OPERATION	TRAFFIC CONTROL	LAYOUT REFERENCE	DETOUR PLAN REFERENCE	ACCESS CONSIDERATIONS (3)
C	C1	TH 55 TO SIBLEY MEMORIAL HIGHWAY (EAST OF TH 110)	INTERSECTION IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
			MILL AND OVERLAY - MAINLINE	DIRECTIONAL CLOSURES	SB CLOSURE - SHEETS 270 TO 275	SHEET 234	
					NB CLOSURE - SHEETS 263 TO 269	SHEET 233	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
				TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
			MILL AND OVERLAY - SHOULDERS	DIRECTIONAL CLOSURES	SB CLOSURE - SHEETS 270 TO 275	SHEET 234	
					NB CLOSURE - SHEETS 263 TO 269	SHEET 233	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
				TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
	C2	SIBLEY MEMORIAL HIGHWAY (EAST OF TH 110) TO MENDOTA	INTERSECTION IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	
			MILL AND OVERLAY - MAINLINE	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
			MILL AND OVERLAY - SHOULDERS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
TH 13 AT HOLIDAY STATION STORE			SURFACING IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE TWO ACCESSES TO GAS STATION
D	D1	TH 35E TO WACHTLER AVENUE	INTERSECTION AND DRAINAGE IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
			MILL AND OVERLAY - MAINLINE	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
			MILL AND OVERLAY - SHOULDERS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
	D2	WACHTLER AVENUE TO ANNAPOLIS STREET	INTERSECTION AND OFF ROAD DRAINAGE IMPROVEMENTS	TEMPORARY LANE/SHOULDER CLOSURES	FIELD MANUAL LAYOUTS	N/A	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE MULTIPLE DRIVEWAYS AND INTERSECTIONS AS IDENTIFIED ON THE PLANS
			STORM SEWER AND ROADWAY RECONSTRUCTION (STA. 139+90 TO 159+00)	FULL CLOSURE	SHEETS 276 TO 280	SHEET 235	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO MULTIPLE DRIVEWAYS AND INTERSECTIONS IN "LOCAL TRAFFIC ONLY" SEGMENT OF CLOSURE AS IDENTIFIED ON THE PLANS
			MILL AND OVERLAY	FULL CLOSURE WITH LOCAL TRAFFIC ONLY	FIELD MANUAL LAYOUTS FLAGGING HANDBOOK	SHEET 235	THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO MULTIPLE DRIVEWAYS AND INTERSECTIONS IN "LOCAL TRAFFIC ONLY" SEGMENT OF CLOSURE AS IDENTIFIED ON THE PLANS

GENERAL NOTES:

(1) REFER TO SPECIAL PROVISIONS FOR ALLOWABLE LANE CLOSURE TIMES AND DURATIONS
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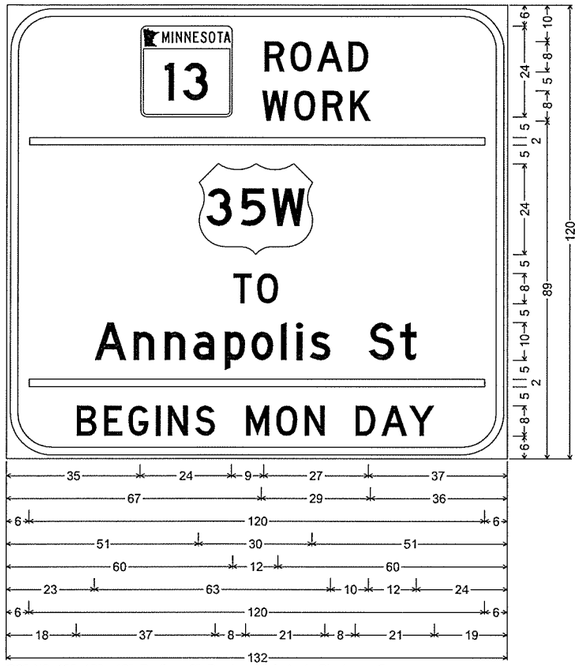
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ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

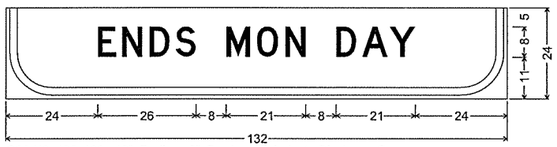
TRAFFIC CONTROL PLANS
STAGING AND TRAFFIC CONTROL OUTLINE

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 211 of 393 Sheets



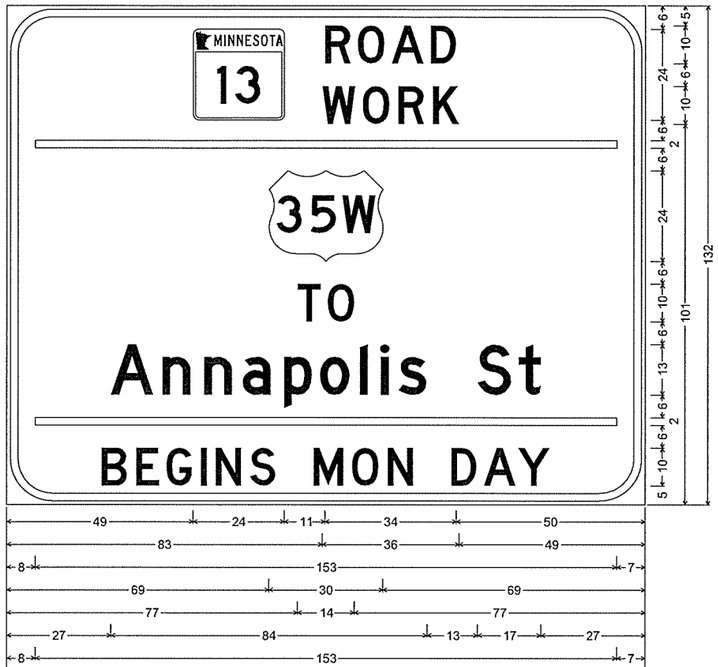
G20-X2_132x120; 12" Radius, 2" Border, 1" Indent, Black on Orange;
[ROAD] D; [WORK] D; [TO] D; [Annapolis St] D; [BEGINS] D; [MON] D;
[DAY] D;

S-1



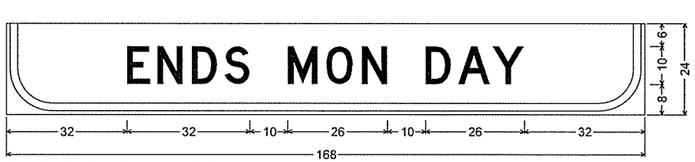
G20-X2_132x120; 12" Radius, 2" Border, 1" Indent, Black on Orange;
[ENDS] D; [MON] D; [DAY] D;

S-2



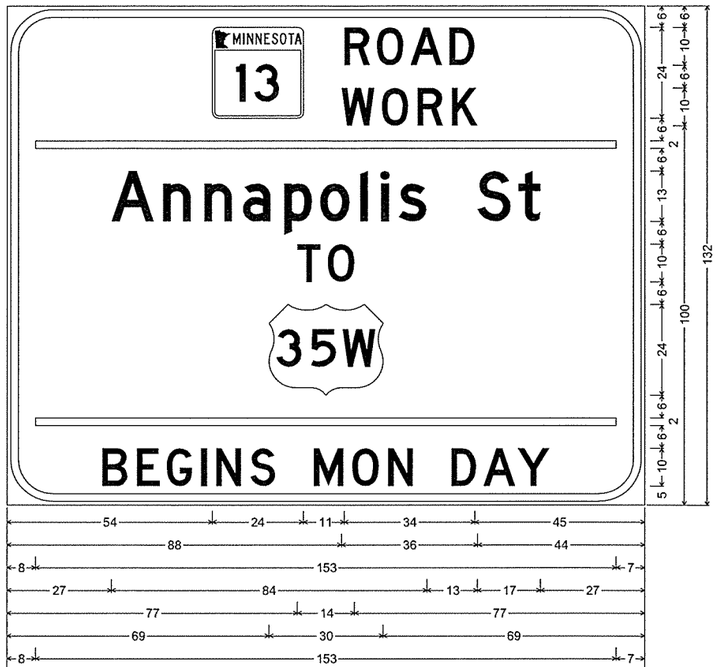
G20-X2_168x132; 12" Radius, 2" Border, 1" Indent, Black on Orange;
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S-3



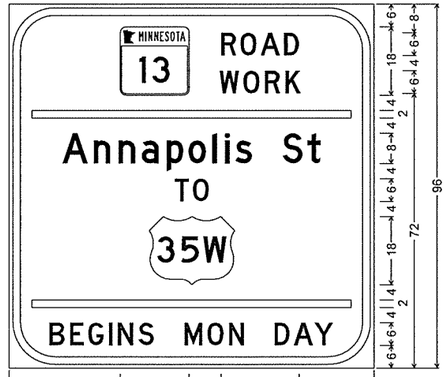
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S-4



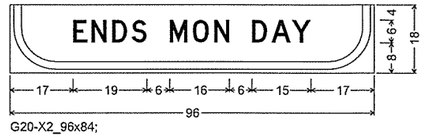
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S-5



G20-X2_96x84;
12" Radius, 2" Border, 1" Indent, Black on Orange;
[ROAD] D; [WORK] D; [Annapolis St] D; [TO] D;
[BEGINS] D; [MON] D; [DAY] D;

S-6



G20-X2_96x84;
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S-7

DATE: 1/26/2012 TIME: 7:14:54 AM
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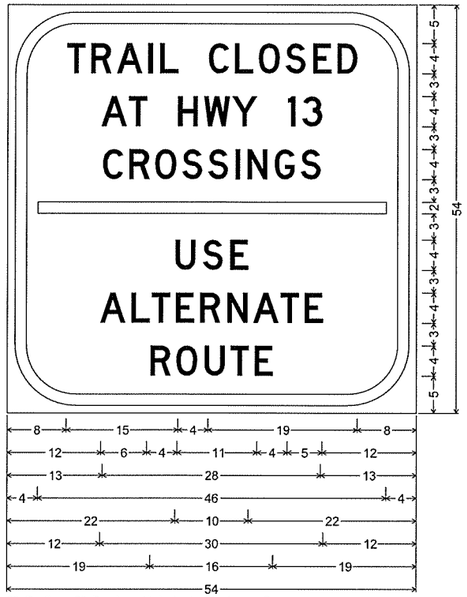
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
DETAILS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 212 of 393 Sheets

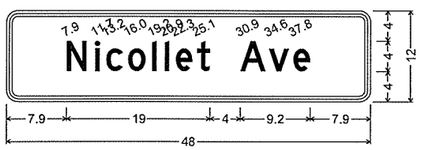


9" Radius, 2" Border, 1" Indent, Black on Orange;
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[USE] D; [ALTERNATE] D; [ROUTE] D;

S-8

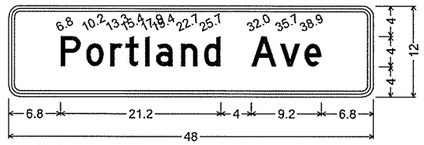
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S-9



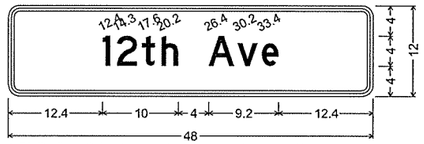
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S-10



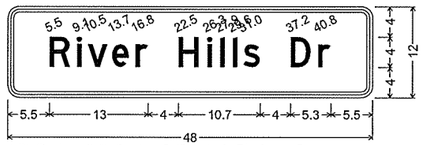
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S-11



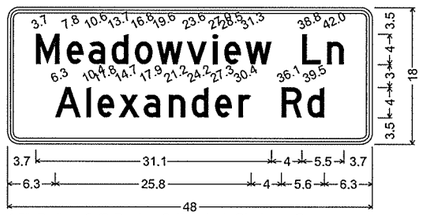
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S-12



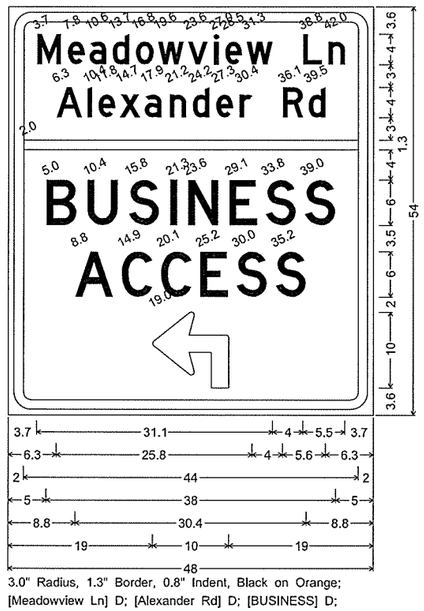
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[River Hills Dr] D;

S-13



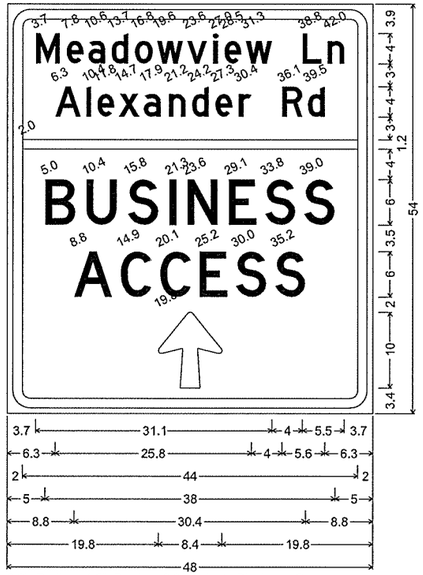
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S-14



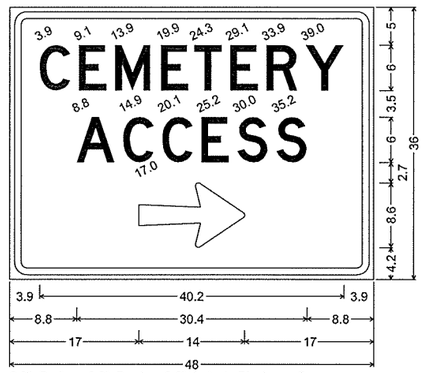
3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[Meadowview Ln] D; [Alexander Rd] D; [BUSINESS] D;
[ACCESS] D;
90 Deg Advanced Turn Arrow Custom 10.0" X 10.0";

S-15



3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[Meadowview Ln] D; [Alexander Rd] D; [BUSINESS] D;
[ACCESS] D; Arrow 3 - 10.0" 90°;

S-16



2.3" Radius, 0.9" Border, 0.6" Indent, Black on Orange;
[CEMETERY] D; [ACCESS] D; Arrow 13 - 14.0" 0°;

S-17

DATE: 1/26/2012 TIME: 7:14:55 AM
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

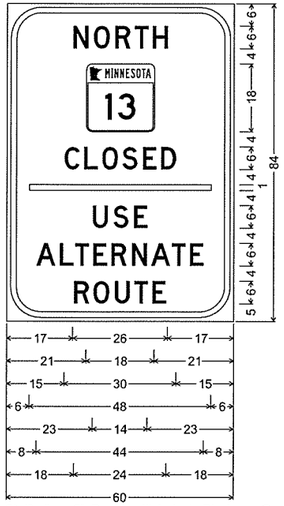
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

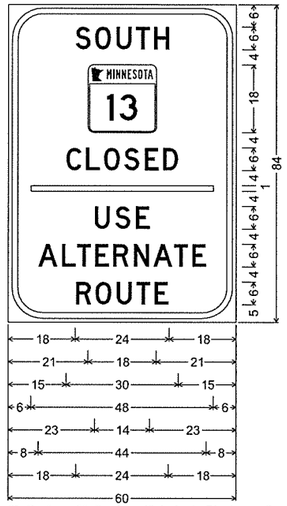
TRAFFIC CONTROL PLANS
DETAILS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 213 of 393 Sheets



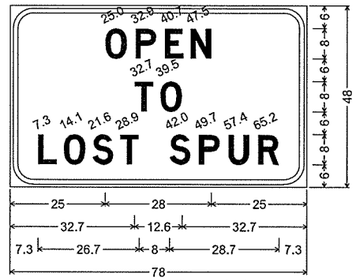
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[NORTH] D; [CLOSED] D;
[USE] D; [ALTERNATE] D;
[ROUTE] D;

S-18



9" Radius, 2" Border, 1" Indent, Black on Orange;
[SOUTH] D; [CLOSED] D;
[USE] D; [ALTERNATE] D;
[ROUTE] D;

S-19



6.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[OPEN] D Mod; [TO] D Mod;
[LOST SPUR] D Mod;

S-20

DATE: 1/26/2012 TIME: 7:14:56 AM
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NOTES:

1. IT IS DESIRABLE TO MAINTAIN FULL SHOULDER WIDTH WHENEVER POSSIBLE. IF NOT POSSIBLE, MINIMUM DESIRABLE LATERAL OFFSETS ARE BASED ON THE FOLLOWING POSTED SPEEDS:
   70 MPH - 12.0 FEET
   60 MPH - 8.0 FEET
   50 MPH - 6.5 FEET
   40 MPH - 5.0 FEET
   FOR RESTRICTED CONDITIONS, LESSER OFFSETS MAY BE USED. THE OFFSETS SHOULD BE A MINIMUM OF 2 FEET UNLESS THE CONDITIONS ARE EXTREME. LATERAL OFFSETS ARE MEASURED TO THE BOTTOM OF THE BARRIER. BARRIER OFFSET FROM EDGE OF THRU LANE SHOULD NOT EXCEED 15 FEET.

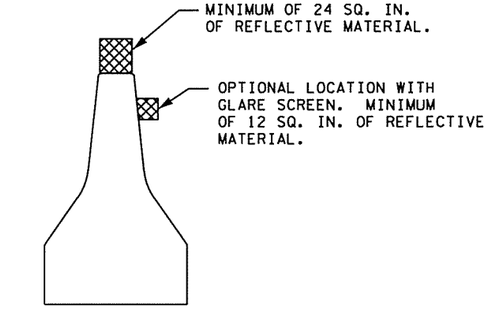
2. DESIRABLE TREATMENTS FOR EXPOSED BARRIER ENDS ARE; A CONNECTION TO EXISTING BARRIER; IMPACT ATTENUATOR; TAPER AWAY TO THE EDGE OF THE CLEAR ZONE; AND EXTENDING THROUGH A PLATE BEAM GUARDRAIL BY REMOVING A PANEL.

3. IF THE BARRIER IS TO BE EXTENDED BEYOND THE SHOULDER, ADDITIONAL FILL WILL BE NEEDED IN ORDER TO PROVIDE A FLAT (1:33) APPROACH AREA TO THE BARRIER. FILL WILL BE INCIDENTAL.

4. THE IMPACT ATTENUATOR SHOULD BE OFFSET A MINIMUM OF 2 FT. FROM THE EDGE OF THE THRU LANE.

5. FOR TWO LANE, TWO WAY TRAFFIC BOTH ENDS OF THE BARRIER SHOULD BE TREATED IN THE SAME MANNER AS DESCRIBED IN NOTE 2 ABOVE.

6. IMPACT ATTENUATORS SHALL BE DESIGNED FOR THE POSTED SPEED (PRIOR TO ANY CONSTRUCTION BEGINNING). THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING ATTENUATORS APPROPRIATE FOR THE POSTED SPEED.



DELINEATOR @ 30' SPACING

HAZARD PROTECTION - HEAD TO HEAD TRAFFIC OPERATIONS

THE CONTRACTOR SHALL PLACE PORTABLE PRECAST BARRIER IN FRONT OF AND EXTENDING OUT FROM THE END OF EXISTING CONCRETE RAIL OR PLATE BEAM GUARDRAIL AT THE LOCATIONS LISTED BELOW DURING HEAD TO HEAD TRAFFIC OPERATIONS TO PROTECT TRAFFIC FROM SLOPES AND BLUNT ENDS OF EXISTING HAZARDS. NARROW FOOTPRINT IMPACT ATTENUATORS SHALL BE PLACED AT EACH END OF THE LINE OF BARRIER.

LENGTH OF NEED FOR TEMPORARY PORTABLE PRECAST BARRIER SHALL BE AS FOLLOWS:

NORTHBOUND TRAFFIC ROUTED ONTO SOUTHBOUND TH 13

ALIGNMENT	STATION	OFFSET	HAZARD	LENGTH OF NEED (LINEAL FEET)
SB TH 13	156+66	LT	CONCRETE BARRIER END	100
SB TH 13	974+35	RT	BRIDGE RAIL END / SLOPE	280

SOUTHBOUND TRAFFIC ROUTED ONTO NORTHBOUND TH 13

ALIGNMENT	STATION	OFFSET	HAZARD	LENGTH OF NEED (LINEAL FEET)
NB TH 13	956+96	RT	OH SIGN / END GUARDRAIL	50
NB TH 13	977+37	LT	BRIDGE RAIL END / SLOPE	280

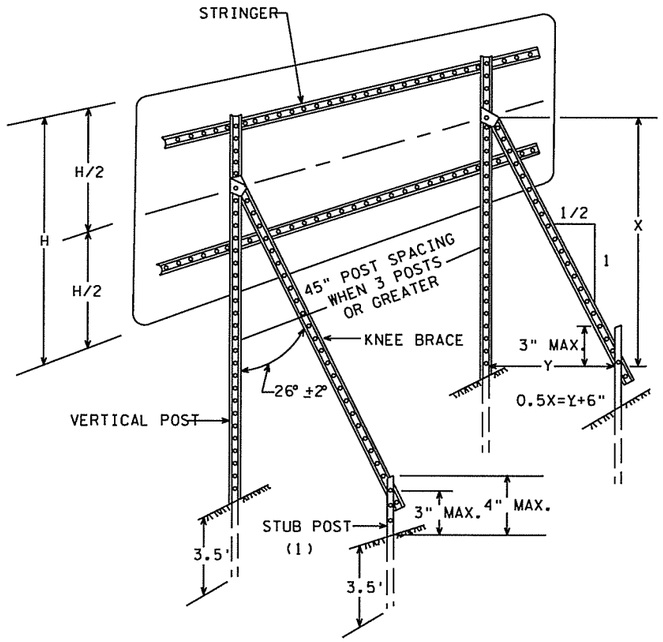
ALL LENGTHS OF NEED LISTED ABOVE ARE MEASURED OUT FROM THE END OF THE EXISTING CONCRETE RAIL OR GUARD RAIL. THE LENGTH OF THE IMPACT ATTENUATORS SHALL BE IN ADDITION TO THE LENGTH OF BARRIER REQUIRED AS LISTED ABOVE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING LENGTH OF NEED FOR PORTABLE PRECAST CONCRETE BARRIER FOR PAVEMENT WIDENING WORK OF OTHER AREAS NOT LISTED ABOVE AS NEEDED AND AS REQUIRED BY THE ENGINEER.

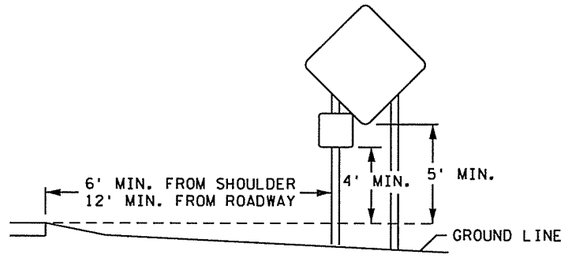
PORTABLE CONCRETE BARRIER PLACEMENT AND END TREATMENT

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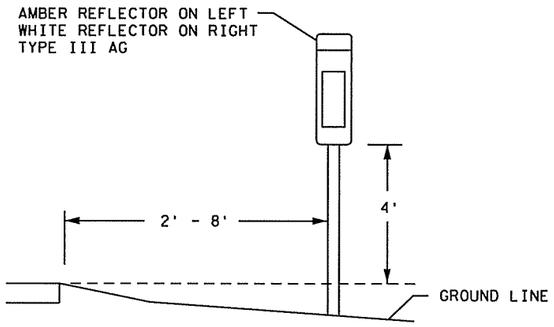
DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 02/15/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETAILS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 215 of 393 Sheets



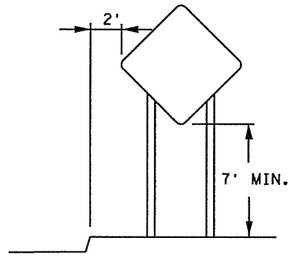
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



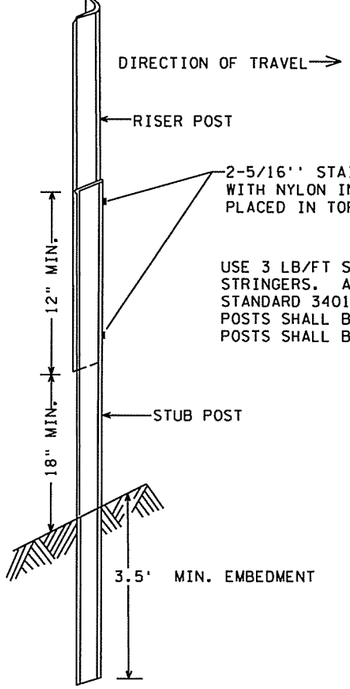
TYPICAL RURAL DESIGN



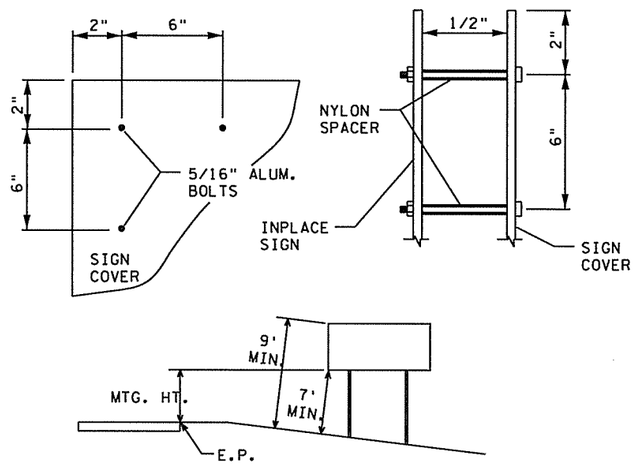
DELINEATION MOUNTING



TYPICAL URBAN DESIGN



"U" POST SPLICE



TYPICAL MOUNTING

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

SIGN DATA

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

TABLE 1

STANDARD CONSTRUCTION SIGNS IN MN/DOT STANDARD SIGNS MANUAL

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

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

TABLE 2

SPECIAL DESIGN CONSTRUCTION SIGNS

PANEL SIZE		POSTS			
LENGTH (IN.)	HEIGHT (IN.)	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
78	48	2-U	54	2	15
144	132	4-U	45	4	20

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 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 1/2" NYLON SPACER BETWEEN THE INPLACE SIGN AND THE COVERING MATERIAL. HOLES WILL BE DRILLED IN THE COVER AND THE INPLACE SIGN AND SHALL BE INSTALLED IN ACCORDANCE TO THE SIGN PANEL DETAIL. SPACERS ARE REQUIRED. MID-PANEL SPACING SHALL BE NO GREATER THAN 24".

TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS

DATE: 1/26/2012 TIME: 7:14:58 AM
FILENAME: X:\201N\101102\DESIGN\SHEETS\cd190168_tc_d10.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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SIGNATURE:
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

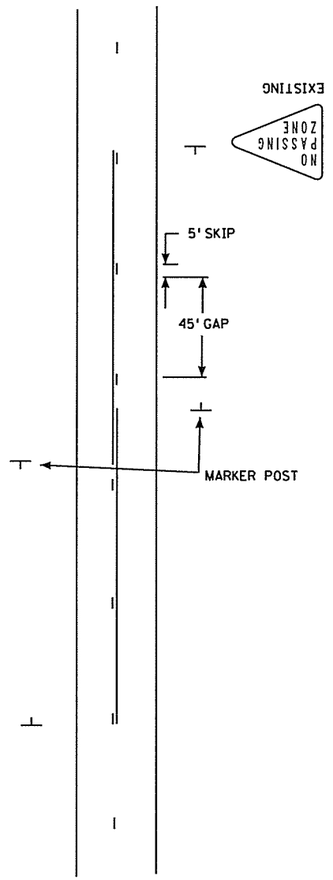
TH 13
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PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
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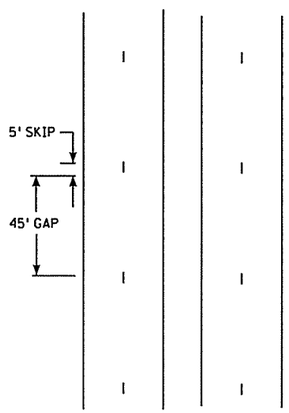
STATE PROJ. NO. 1901-168 (TH 13)
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INTERIM PAVEMENT MARKING

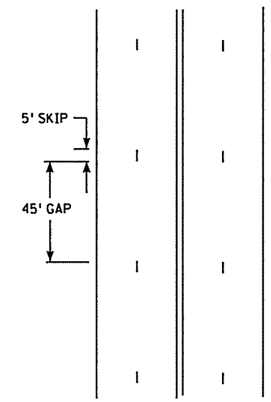
TWO LANE, TWO WAY



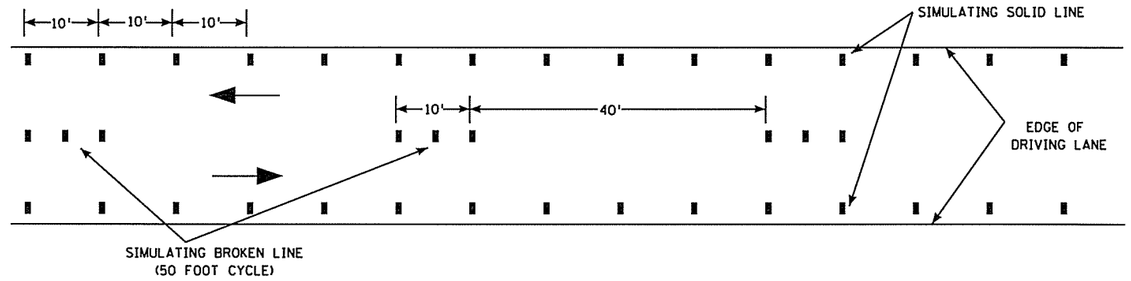
MULTI-LANE, DIVIDED



MULTI-LANE, UNDIVIDED



SIMULATING A SOLID LINE AND A BROKEN LINE (50 FOOT CYCLE) WITH TRPMS



USING TRPM'S AS INTERIM PAVEMENT MARKING

WHEN TRPM'S ARE USED TO SIMULATE A LINE THE FOLLOWING GUIDELINE APPLIES:

SKIP STRIPE - USES 3 TRPM's PER 10' SKIP STRIPE ON 5' CENTERS WITH A 40' GAP

SOLID LINE - USES TRPM'S ON 10' CENTERS ON TANGENTS, FLATTER GRADES AND CURVES UNDER 6 DEGREES. FOR CURVES OVER 6 DEGREES AND STEEP GRADES, THIS SPACING SHALL BE REDUCED TO 5' CENTERS.

GENERAL NOTES:

SEE SPECIAL PROVISIONS FOR INTERIM PAVEMENT MARKING GUIDELINES

THESE INTERIM PAVEMENT MARKING GUIDELINES APPLY TO ALL TEMPORARY TRAFFIC CONTROL ZONES OF AT LEAST 300' IN LENGTH ON TANGENT AND 50' ON CURVES OF 6 DEGREES OR GREATER.

1. FOR ALL PROJECTS GREATER THAN 1.25 MILES IN LENGTH, INTERIM SKIP STRIPE PAVEMENT MARKINGS SHALL USE THE SAME CYCLE LENGTH AS FINAL PAVEMENT MARKINGS (50') AND SHALL BE A MINIMUM OF 5' LENGTH.

2. ON PROJECTS GREATER THAN 300' IN LENGTH, BUT LESS THAN 1.25 MILES IN LENGTH, THE INTERIM MARKING SHALL MATCH THE CYCLE LENGTH AT EITHER END OF THE PROJECT. THE INTERIM STRIPE SHALL BE 5' IN LENGTH.

ALL INTERIM MARKINGS SHALL BE INSTALLED PRIOR TO REMOVING LANE CLOSURE OR OPENING THE ROADWAY TO TRAFFIC.

GENERAL NOTES (CONTINUED):

FINAL MARKINGS AND ALL OTHER PAVEMENT MARKINGS INCLUDING EDGELINES, CHANNELIZING LINES, LANE REDUCTION TRANSITIONS, GORE MARKINGS AND OTHER LONGITUDINAL MARKINGS AND THE VARIOUS NON-LONGITUDINAL MARKINGS (STOP LINES, RAIL ROAD CROSSINGS, CROSSWALKS, WORDS, SYMBOLS, ETC) SHOULD BE PLACED WITHIN 14 CALENDAR DAYS.

NOTE: WHEN FINAL MARKINGS ARE TO BE EPOXY AND PAINT IS USED FOR INTERIM SOLID LINES, A 10 MIL THICK LAYER APPLICATION OF A WATER-BASED TRAFFIC MARKING PAINT SHALL BE USED. WITH A 10 MIL LAYER OF PAINT APPLIED, BEADS SHOULD BE APPLIED AT A RATE OF 6 LBS/GAL. REMOVAL OF THE 10 MIL LAYER OF PAINT IS NOT REQUIRED PRIOR TO PLACING THE EPOXY.

DATE: 1/26/2012 TIME: 7:14:59 AM
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DRAWN BY: KAS
CHECKED BY: SAW

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

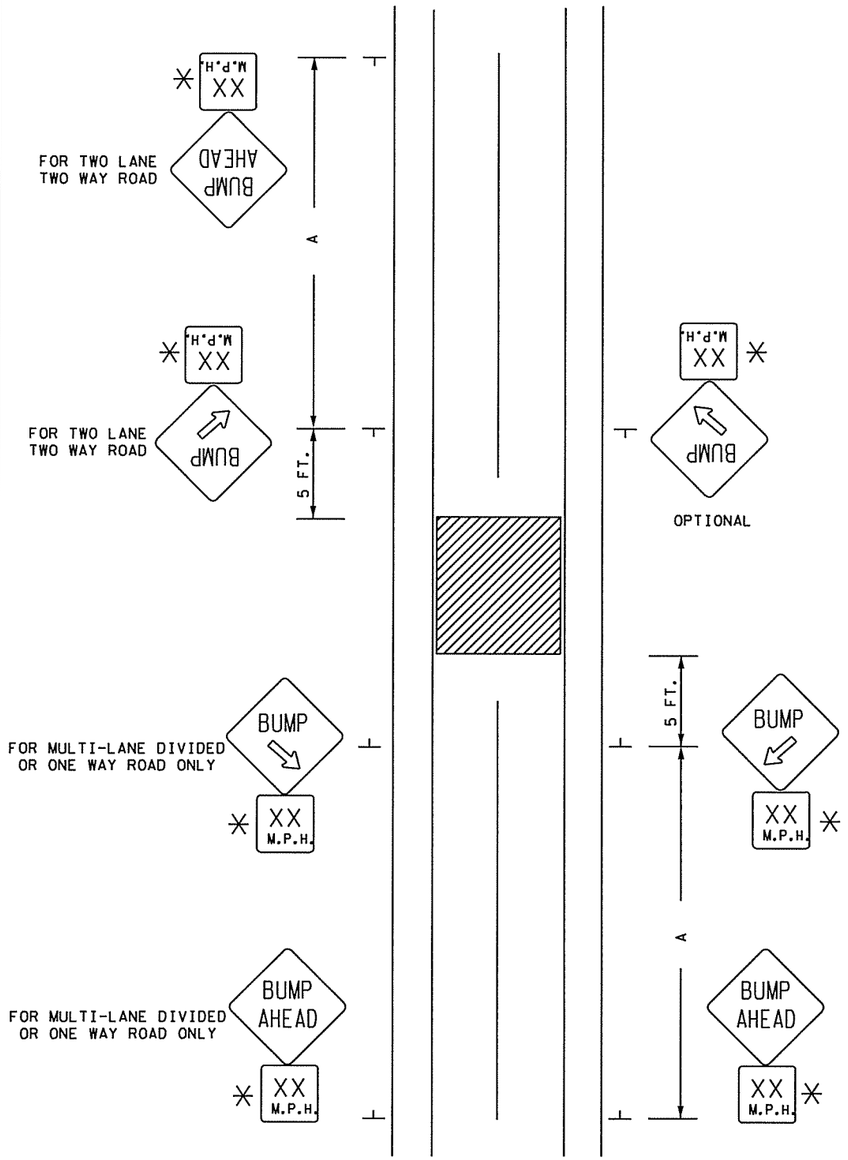
TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
DETAILS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 217 of 393 Sheets

POSTED SPEED LIMIT PRIOR TO WORK STARTING	SPACING OF ADVANCE WARNING SIGNS (A)	TAPER LENGTH (L)	SPACING OF CHANNELIZING DEVICES (G)	BUFFER SPACE (B)	DECISION SIGHT DISTANCE
(MPH)	FEET	FEET	FEET	FEET	FEET
0 - 30	250	200	25	85	550
35 - 40	325	350	25	170	700
45 - 50	600	600	50	280	900
55	750	700	50	335	1200
60 - 65	1000	800	50	485	1400
70 - 75	1200	900	50	670	1600

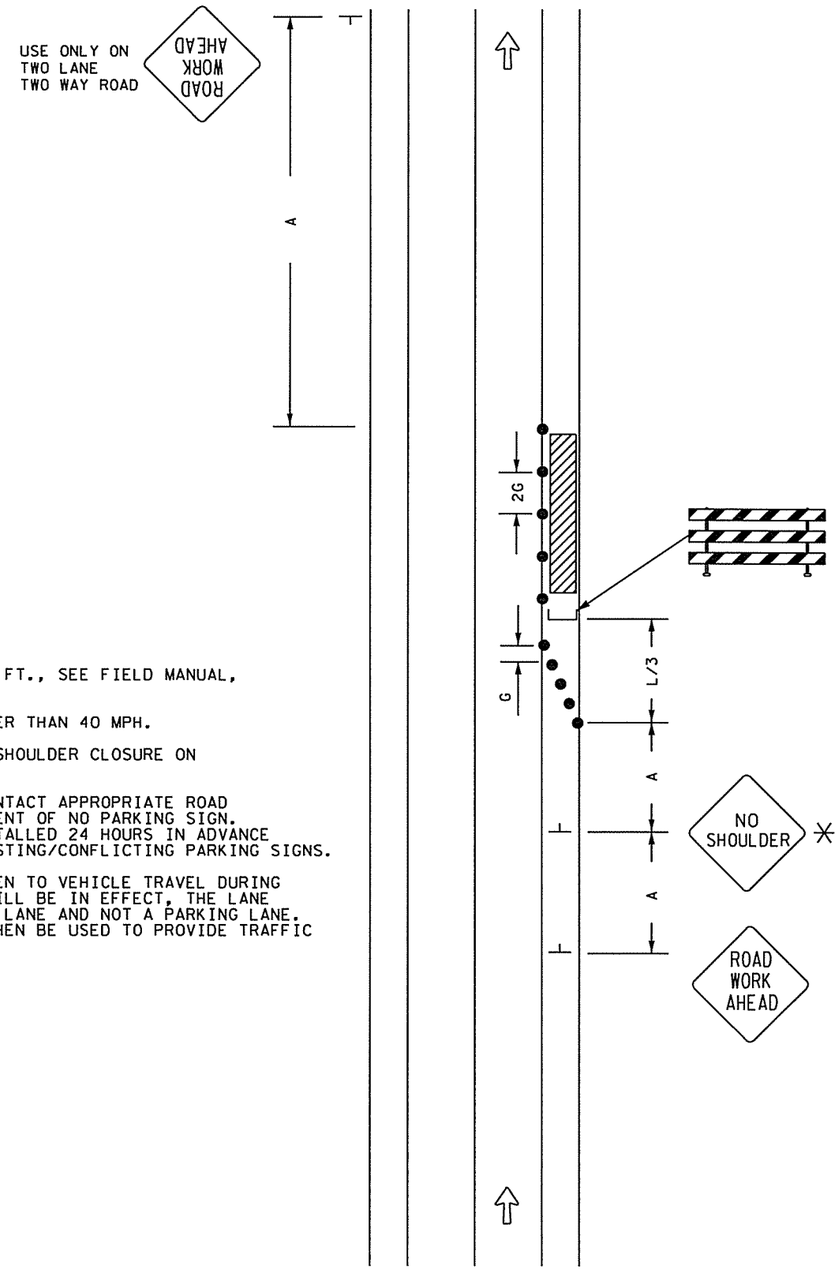
NOTE:
NOT ALL INFORMATION IN THIS BOX MAY APPLY TO THIS DETAIL.



1. ✳ - WHEN DETERMINED NECESSARY BY THE ENGINEER ADVISORY SPEED PLAQUES SHALL BE PLACED BELOW ALL WARNING SIGNS.

TYPICAL BUMP SIGNING
LONG TERM

1. FOR CLOSURES GREATER THAN 1000 FT., SEE FIELD MANUAL, LANE CLOSURE EXTENSION.
2. ✳ - REQUIRED FOR SPEEDS GREATER THAN 40 MPH.
3. MIRROR THIS LAYOUT FOR A LEFT SHOULDER CLOSURE ON A ONE WAY ROAD.
4. WHERE PARKING IS PERMITTED, CONTACT APPROPRIATE ROAD AUTHORITY TO COORDINATE PLACEMENT OF NO PARKING SIGN. NO PARKING SIGNS SHOULD BE INSTALLED 24 HOURS IN ADVANCE OF RESTRICTION. COVER ANY EXISTING/CONFLICTING PARKING SIGNS.
5. IF PARKING LANE IS NORMALLY OPEN TO VEHICLE TRAVEL DURING THE TIME OF DAY THIS CLOSURE WILL BE IN EFFECT, THE LANE SHALL BE CONSIDERED A TRAVELED LANE AND NOT A PARKING LANE. THE APPROPRIATE LAYOUT SHALL THEN BE USED TO PROVIDE TRAFFIC CONTROL FOR THE LANE CLOSURE.



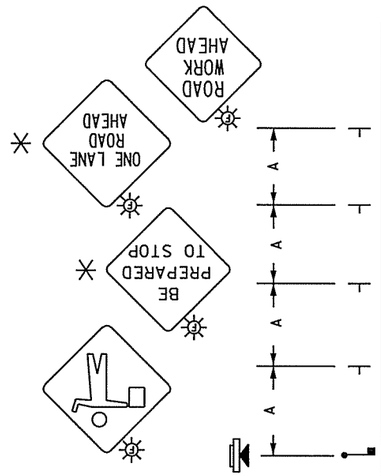
SHOULDER/PARKING LANE CLOSURE
LONG TERM

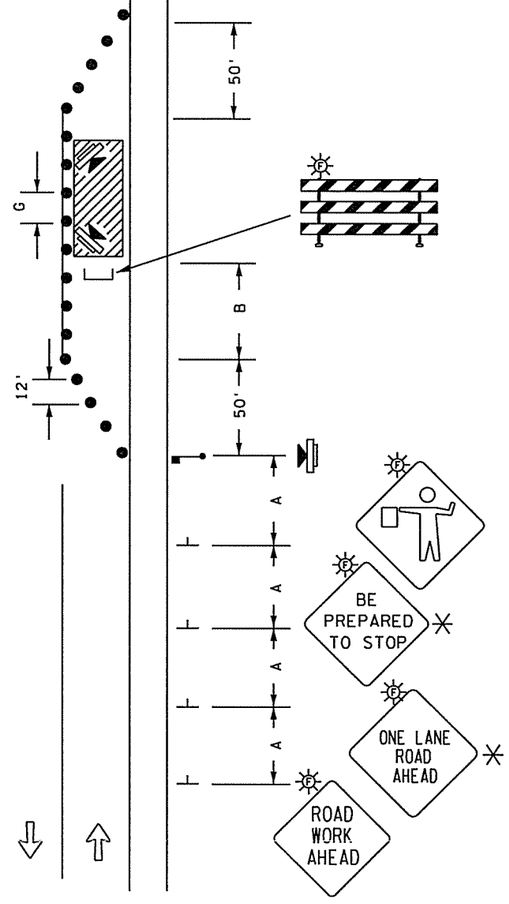
DATE:1/26/2012 TIME:7:15:00 AM
FILENAME:X:\201\N\0102\DESIGN\SHEETS\cd1901168_tc_dl2.dgn

DRAWN BY: KAS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TYPICAL LAYOUTS	STATE PROJ. NO. 1901-168 (TH 13)
CHECKED BY: SAW						Sheet No. 218 of 393 Sheets

POSTED SPEED LIMIT PRIOR TO WORK STARTING	SPACING OF ADVANCE WARNING SIGNS (A)	TAPER LENGTH (L)	SPACING OF CHANNELIZING DEVICES (G)	BUFFER SPACE (B)	DECISION SIGHT DISTANCE
(MPH)	FEET	FEET	FEET	FEET	FEET
0 - 30	250	200	25	85	550
35 - 40	325	350	25	170	700
45 - 50	600	600	50	280	900
55	750	700	50	335	1200
60 - 65	1000	800	50	485	1400
70 - 75	1200	900	50	670	1600

NOTE:
NOT ALL INFORMATION IN THIS BOX MAY APPLY TO THIS DETAIL.





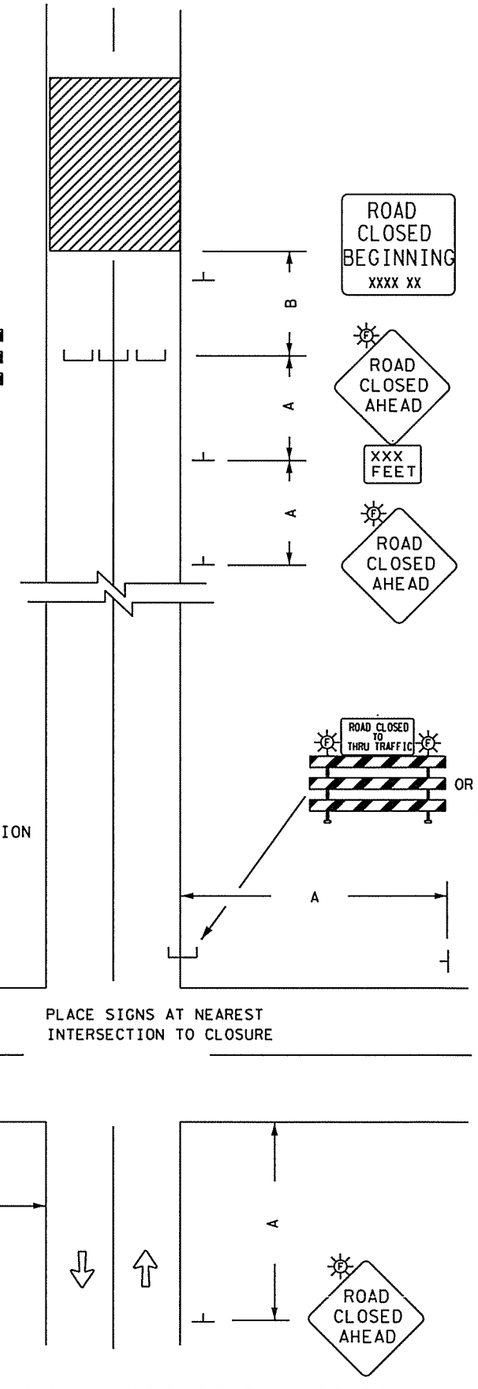
1. FOR CLOSURES GREATER THAN 1000 FT., SEE FIELD MANUAL, LANE CLOSURE EXTENSION.
2. ✳ - REQUIRED FOR SPEEDS GREATER THAN 40 MPH.
3. USE DECISION SIGHT DISTANCE TO DETERMINE THE NEEDED VISIBILITY WHEN LOCATING FLAGGER STATIONS.
4. ILLUMINATE BOTH THE FLAGGERS AND THE WORK SPACE WITH PORTABLE LIGHTS.

LANE CLOSURE, TWO FLAGGERS
TWO LANE TWO WAY ROAD
NIGHT WORK

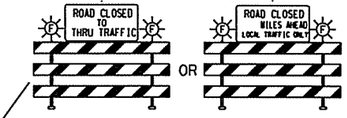
NOT TO BE USED FOR MORE THAN THREE CALENDAR DAYS

NOTE 2

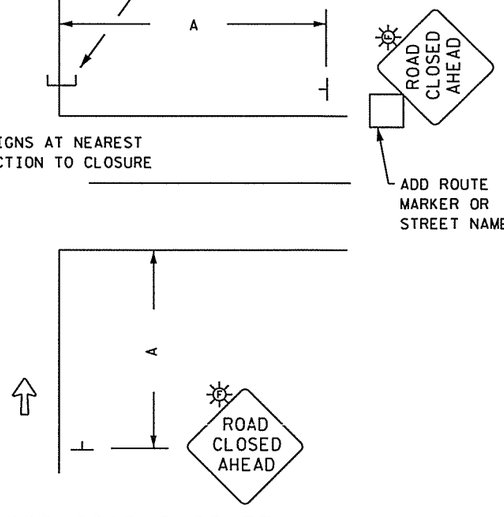




USE WHEN 2 MILES OR GREATER TO CLOSURE



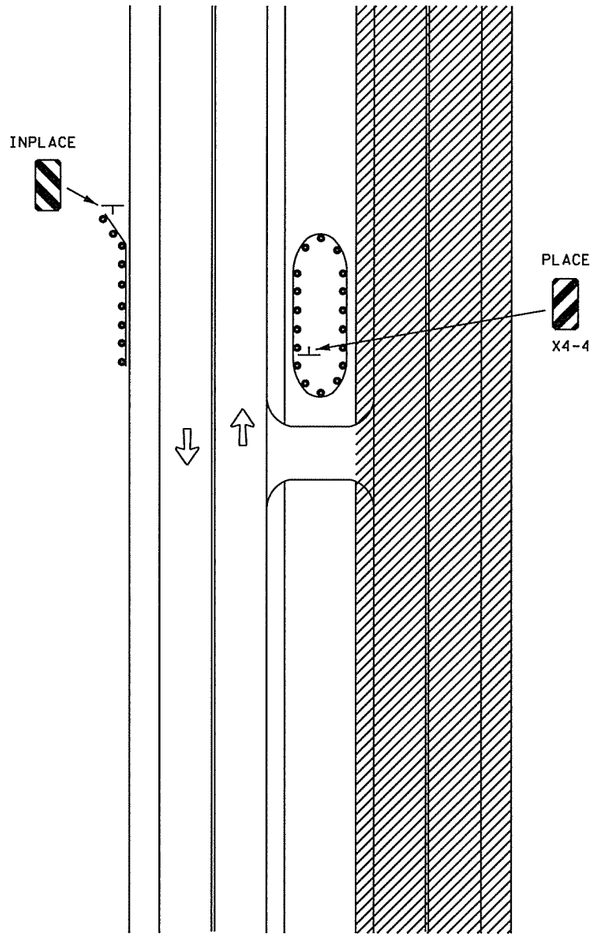
1. ALL DEVICES ARE SHOWN FOR ONE DIRECTION. DEVICES FOR THE OTHER DIRECTION SHOULD BE SIMILAR.
2. CLOSE ROAD AT LAST DRIVEWAY OR INTERSECTION WHERE THERE IS NO PUBLIC ACCESS BEYOND.



TYPICAL SIGNING FOR ROAD CLOSURE
SHORT AND LONG TERM

DATE: 1/26/2012 TIME: 7:15:01 AM
FILENAME: X:\201N\01\02\DESIGN\SHEETS\cd190168_tc_d13.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TYPICAL LAYOUTS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 219 of 393 Sheets

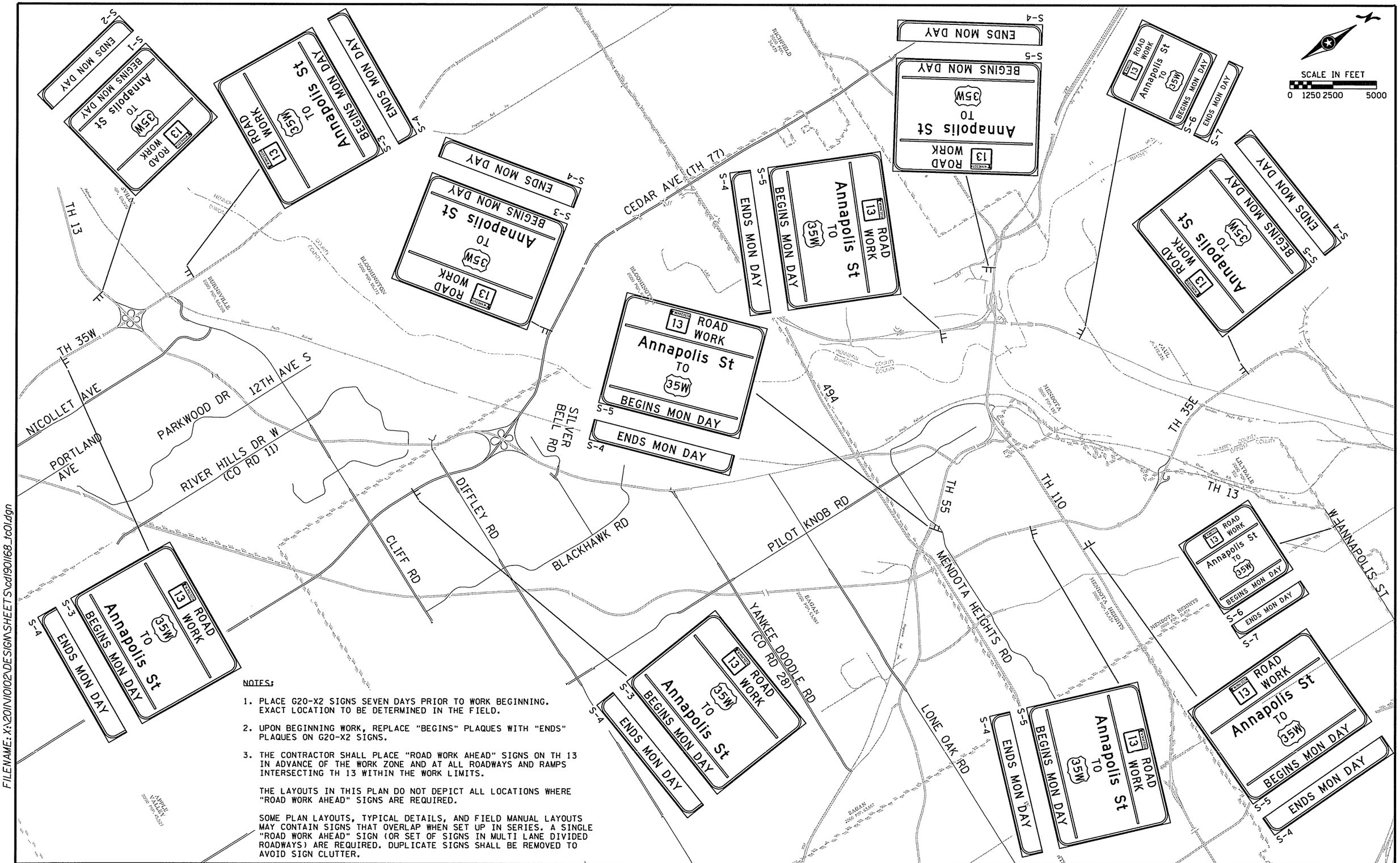


PLACE OBJECT MARKERS AT OBSTACLES IN THE
OPPOSITE DIRECTION OF NORMAL USAGE

OBJECT MARKER PLACEMENT
TWO LANE, TWO WAY OPERATION

DATE: 1/26/2012 TIME: 7:15:01 AM
FILENAME: X:\201N\0102\DESIGN\SHEETS\cdl901168_tc_dl4.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TYPICAL LAYOUTS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 220 of 393 Sheets



NOTES:

1. PLACE G20-X2 SIGNS SEVEN DAYS PRIOR TO WORK BEGINNING. EXACT LOCATION TO BE DETERMINED IN THE FIELD.
2. UPON BEGINNING WORK, REPLACE "BEGINS" PLAQUES WITH "ENDS" PLAQUES ON G20-X2 SIGNS.
3. THE CONTRACTOR SHALL PLACE "ROAD WORK AHEAD" SIGNS ON TH 13 IN ADVANCE OF THE WORK ZONE AND AT ALL ROADWAYS AND RAMPS INTERSECTING TH 13 WITHIN THE WORK LIMITS.

   THE LAYOUTS IN THIS PLAN DO NOT DEPICT ALL LOCATIONS WHERE "ROAD WORK AHEAD" SIGNS ARE REQUIRED.

   SOME PLAN LAYOUTS, TYPICAL DETAILS, AND FIELD MANUAL LAYOUTS MAY CONTAIN SIGNS THAT OVERLAP WHEN SET UP IN SERIES. A SINGLE "ROAD WORK AHEAD" SIGN (OR SET OF SIGNS IN MULTI LANE DIVIDED ROADWAYS) ARE REQUIRED. DUPLICATE SIGNS SHALL BE REMOVED TO AVOID SIGN CLUTTER.

DATE: 1/26/2012 TIME: 7:15:05 AM
FILENAME: X:\20IN\I0\02\DESIGN\SHEETS\cd190168_tc01.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

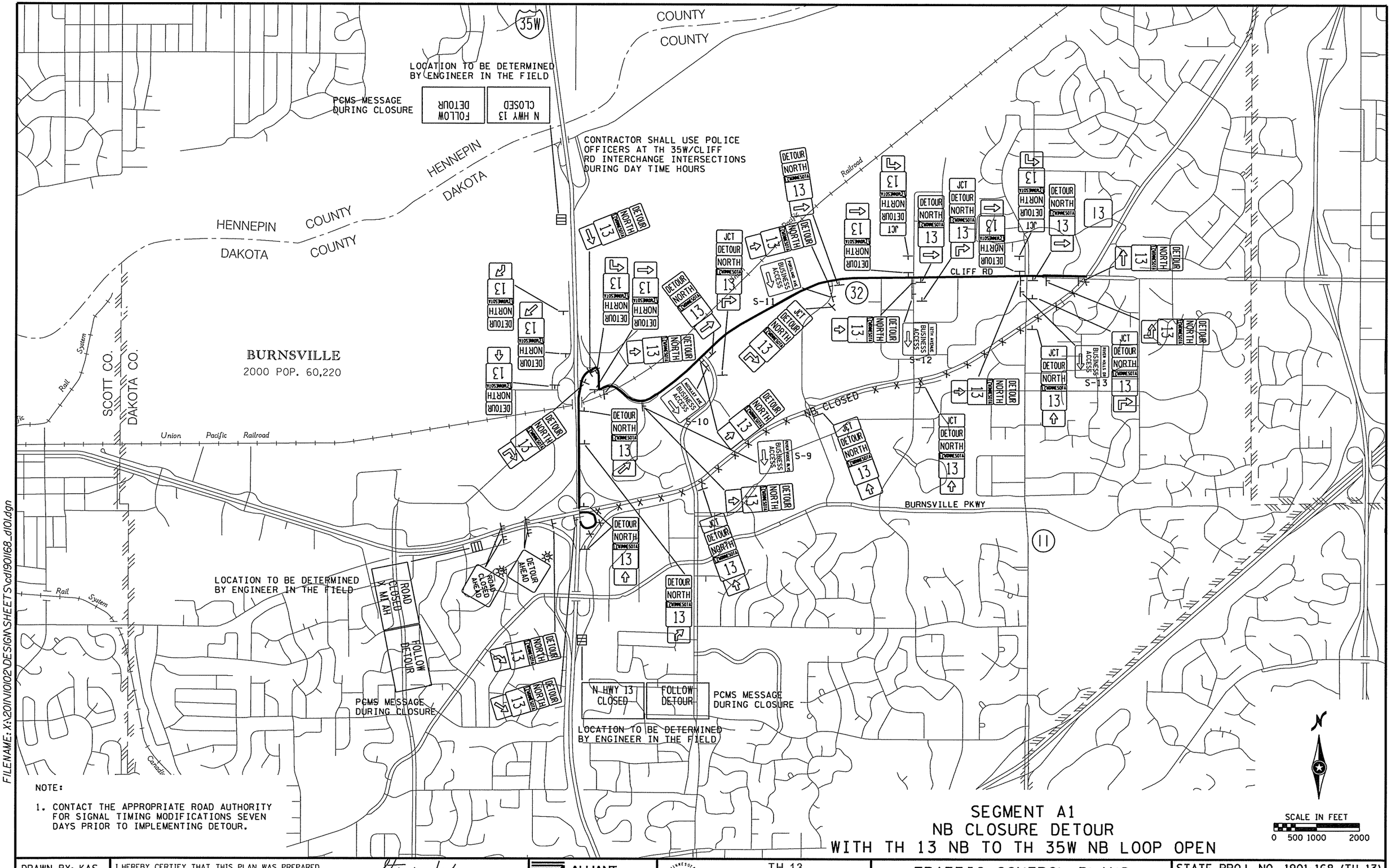
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
ADVANCE NOTIFICATION SIGN LAYOUT

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 221 of 393 Sheets



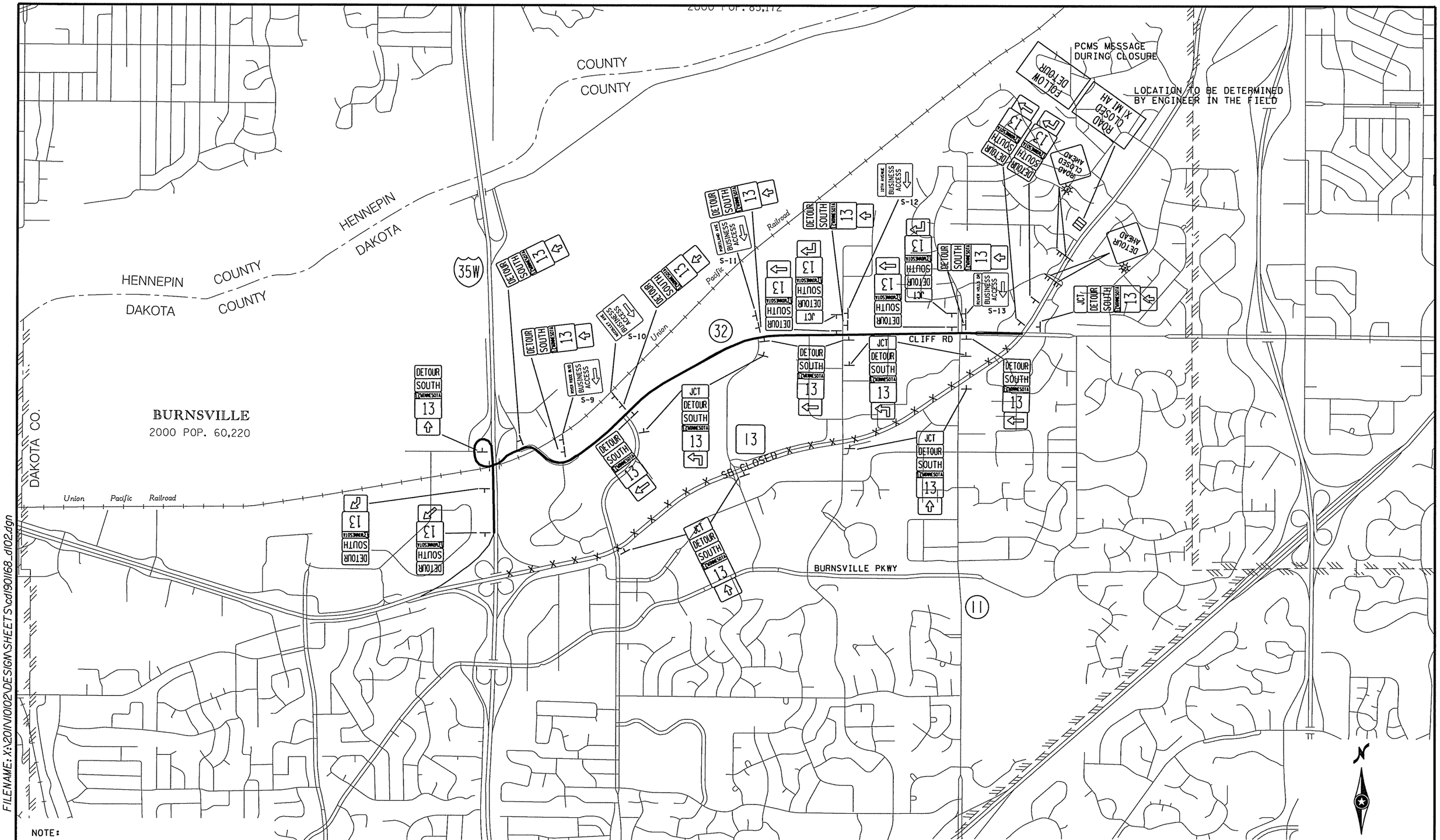
NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SEGMENT A1
NB CLOSURE DETOUR
WITH TH 13 NB TO TH 35W NB LOOP OPEN

DATE: 1/26/2012 TIME: 7:15:07 AM
FILENAME: X:\20IN\I01\02\DESIGN\SHEETS\cd190I168_d101.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 222 of 393 Sheets



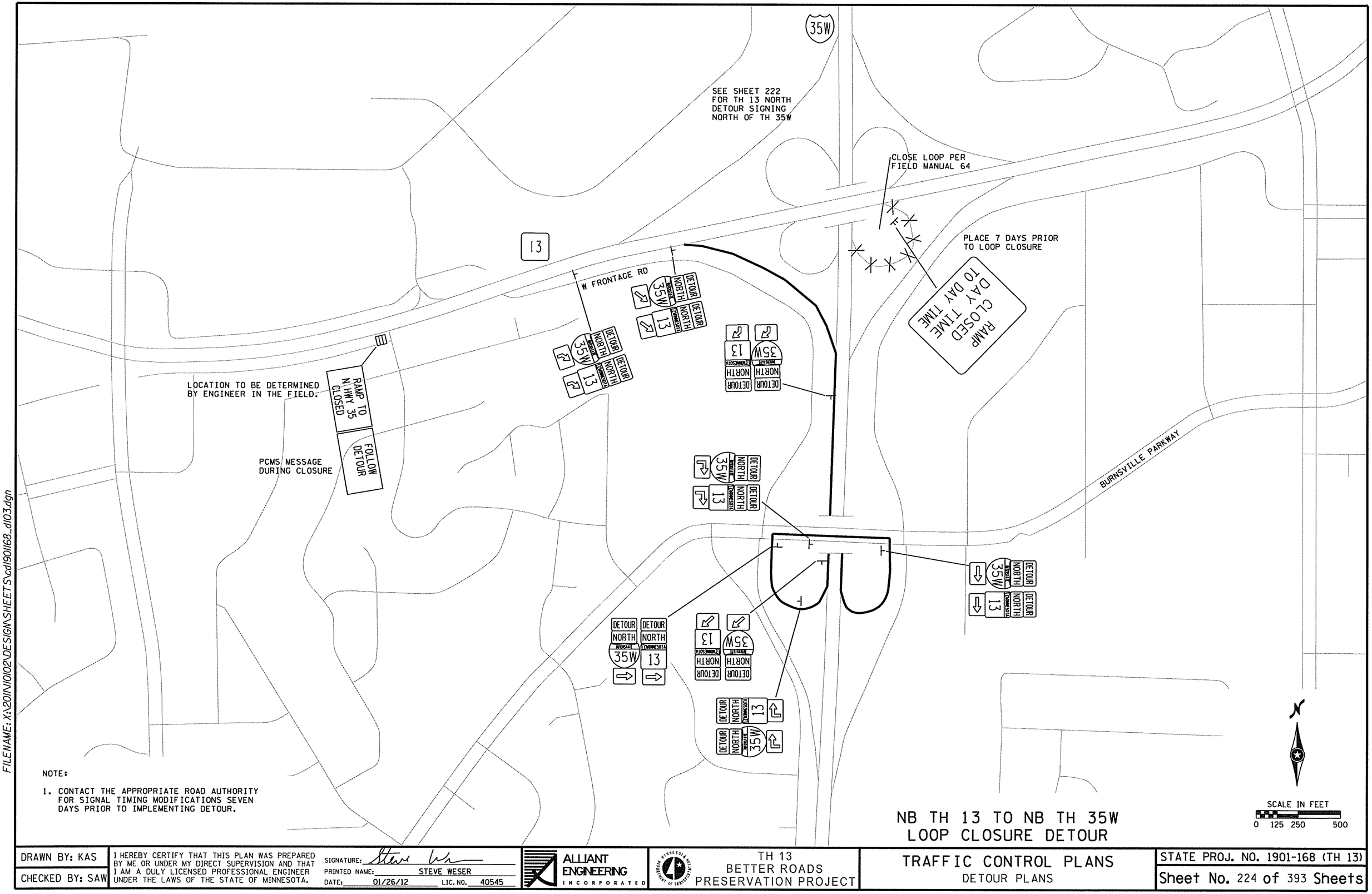
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NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SEGMENT A1
SB CLOSURE DETOUR

DRAWN BY: KAS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13)
CHECKED BY: SAW		PRINTED NAME: STEVE WESER				Sheet No. 223 of 393 Sheets
		DATE: 01/26/12 LIC. NO. 40545				



NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

NB TH 13 TO NB TH 35W LOOP CLOSURE DETOUR

DATE: 1/26/2012 TIME: 7:15:10 AM
FILENAME: X:\2011\01\02\DESIGN\SHEETS\cd190168_d103.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

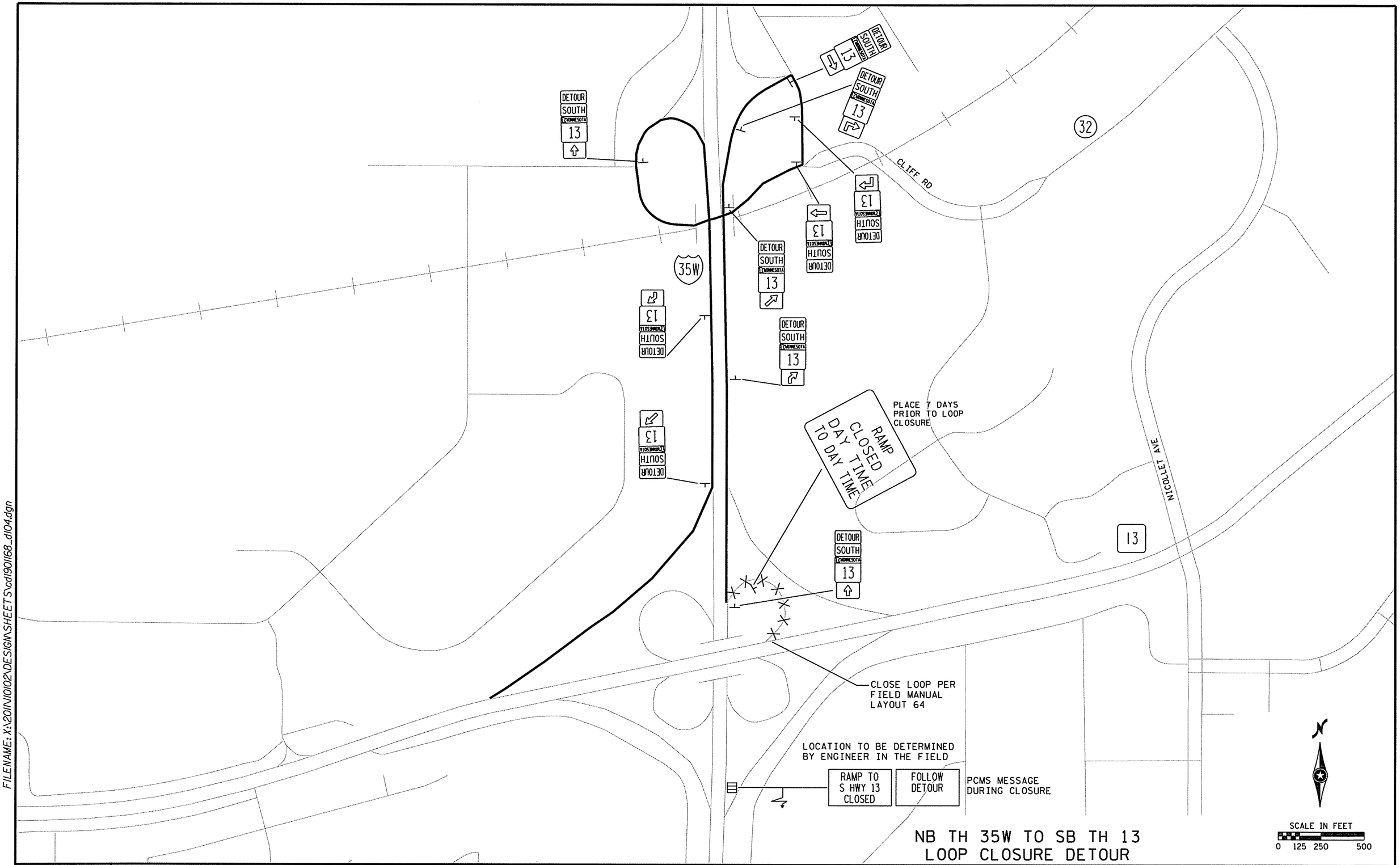
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
DETOUR PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 224 of 393 Sheets



NB TH 35W TO SB TH 13 LOOP CLOSURE DETOUR

DATE: 1/26/2012 TIME: 7:15:11 AM
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DRAWN BY: KAS
CHECKED BY: SAW

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

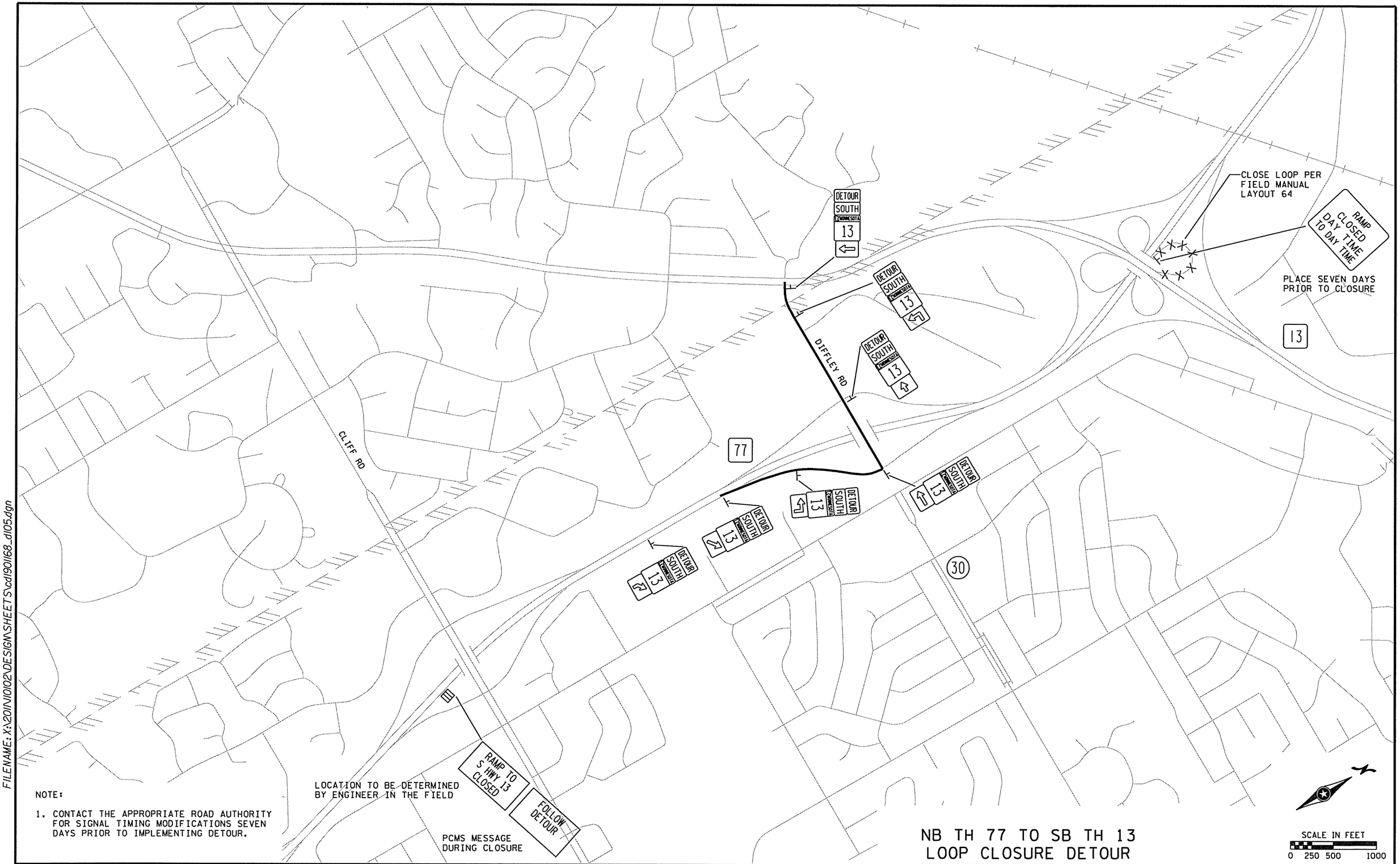
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
DETOUR PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 225 of 393 Sheets



NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

NB TH 77 TO SB TH 13 LOOP CLOSURE DETOUR

SCALE IN FEET
0 250 500 1000

DATE: 1/26/2012 TIME: 7:15:12 AM
FILENAME: X:\20IN\10\02\DESIGN\SHEETS\cdl90168_dl05.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 226 of 393 Sheets

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

FOLLOW DETOUR

RAMP TO N HWY 13 CLOSED

77

RAMP CLOSED 10 DAY TIME

PLACE SEVEN DAYS PRIOR TO CLOSURE

CLOSE LOOP PER FIELD MANUAL LAYOUT 64

DETOUR NORTH 13

DIFFLEY RD

13

30

Union

NOTE:

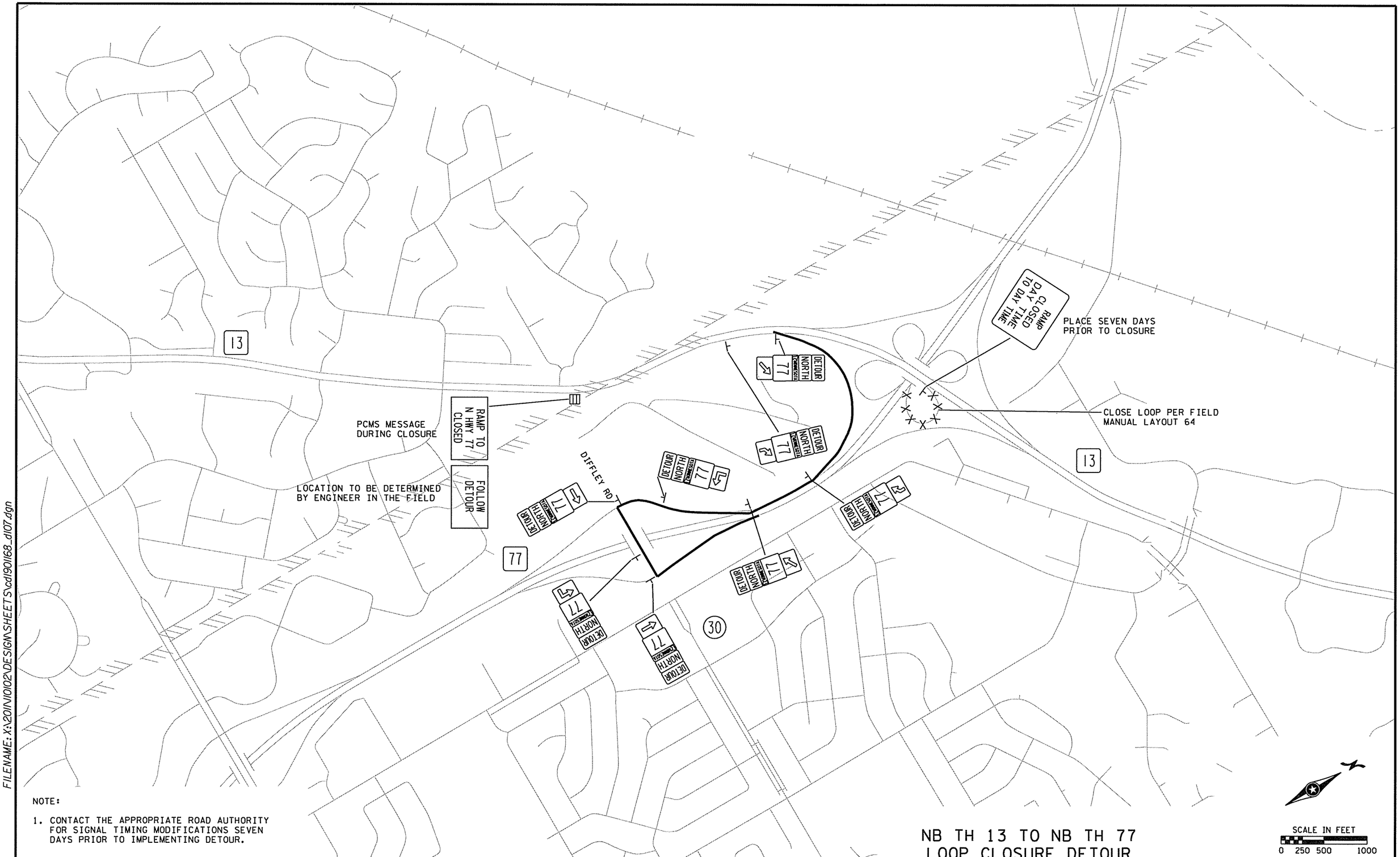
1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SB TH 77 TO NB TH 13
LOOP CLOSURE DETOUR

SCALE IN FEET
0 250 500 1000

DATE: 1/26/2012 TIME: 7:15:4 AM
FILENAME: X:\20IN\10102\DESIGN\SHEETS\cd190168_d106.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 227 of 393 Sheets



NOTE:

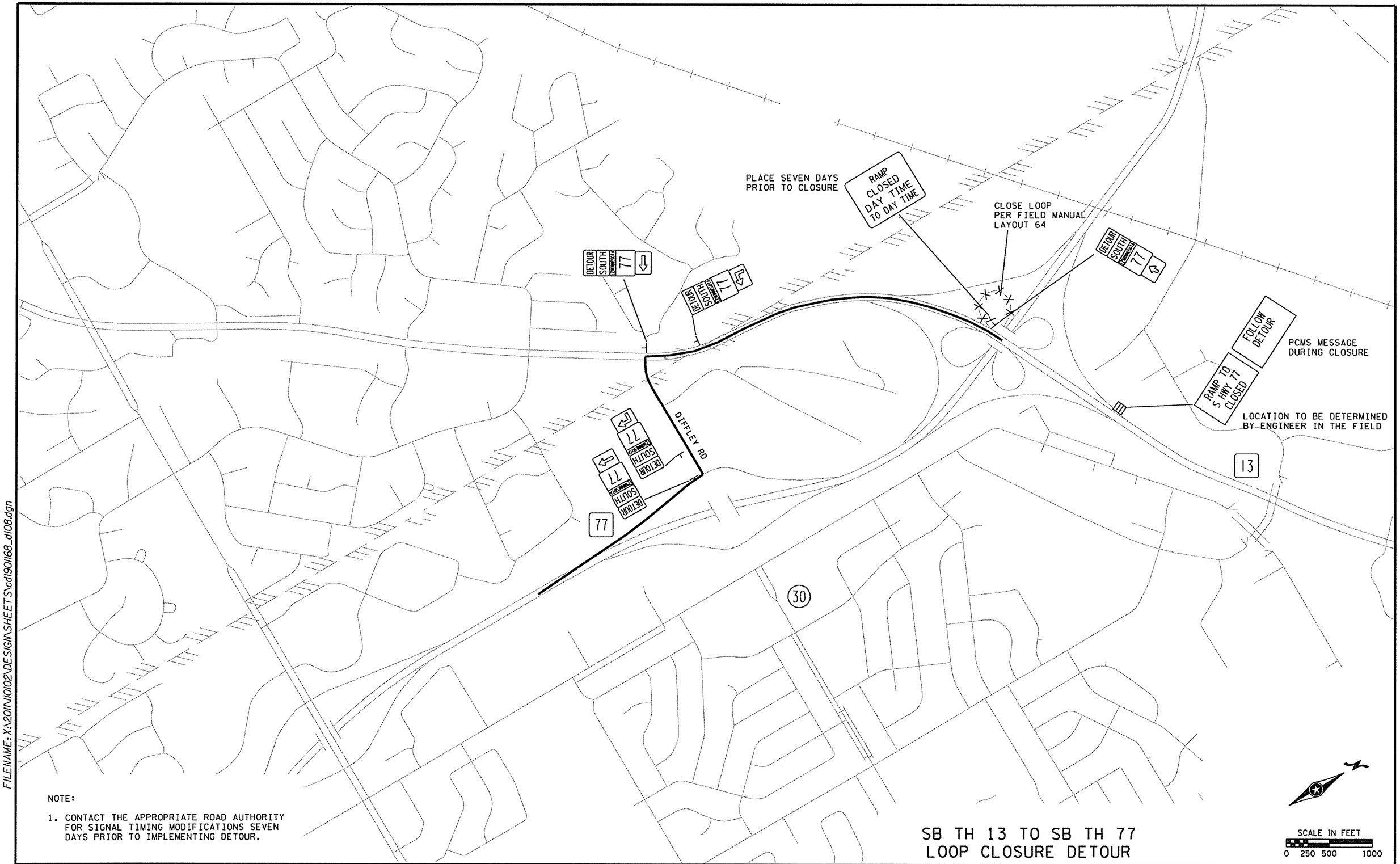
1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

NB TH 13 TO NB TH 77 LOOP CLOSURE DETOUR

SCALE IN FEET
0 250 500 1000

DATE: 1/26/2012 TIME: 7:15:15 AM
FILENAME: X:\201\IU\01\02\DESIGN\SHEETS\cd1901168_dl07.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 228 of 393 Sheets



NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SB TH 13 TO SB TH 77
LOOP CLOSURE DETOUR

SCALE IN FEET
0 250 500 1000

DATE: 1/26/2012 TIME: 7:15:16 AM
FILENAME: X:\201\V0102\DESIGN\SHEETS\cd1901168_d108.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 229 of 393 Sheets

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

RAMP TO S HWY 13 CLOSED

FOLLOW DETOUR

PLACE SIGN SEVEN DAYS PRIOR TO CLOSURE

RAMP CLOSED DAY TIME TO DAY TIME

CLOSE RAMP PER FIELD MANUAL LAYOUT 65

CLOSE LOOP PER FIELD MANUAL LAYOUT 64

LEFT LANE CLOSED

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

FOLLOW DETOUR

TO HIGHWAY 77

DETOUR SOUTH MINNESOTA 13

DETOUR NORTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 13

DETOUR NORTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR NORTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 77

DETOUR NORTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 77

DETOUR SOUTH MINNESOTA 13

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DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

DETOUR SOUTH MINNESOTA 13

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

FOLLOW DETOUR

RAMP TO N HWY 13 CLOSED

RAMP CLOSED DAY TIME TO DAY TIME

PLACE SEVEN DAYS PRIOR TO CLOSURE

CLOSE LOOP PER FIELD MANUAL LAYOUT 64

CLOSE RAMP PER FIELD MANUAL LAYOUT 65

RAMP CLOSED DAY TIME TO DAY TIME

PLACE SEVEN DAYS PRIOR TO CLOSURE

PCMS MESSAGE DURING CLOSURE

TO HIGHWAY 77

FOLLOW DETOUR

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

RAMP TO N HWY 13 CLOSED

FOLLOW DETOUR

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

LEFT LANE CLOSED

LEFT LANE CLOSED

YANKEE DOODLE RD

PILOT KNOB RD

DIFFLEY RD

EAGAN
2000 POP. 63,557

EAGAN
2000 POP. 63,557

Union Pacific Railroad

NOTE:

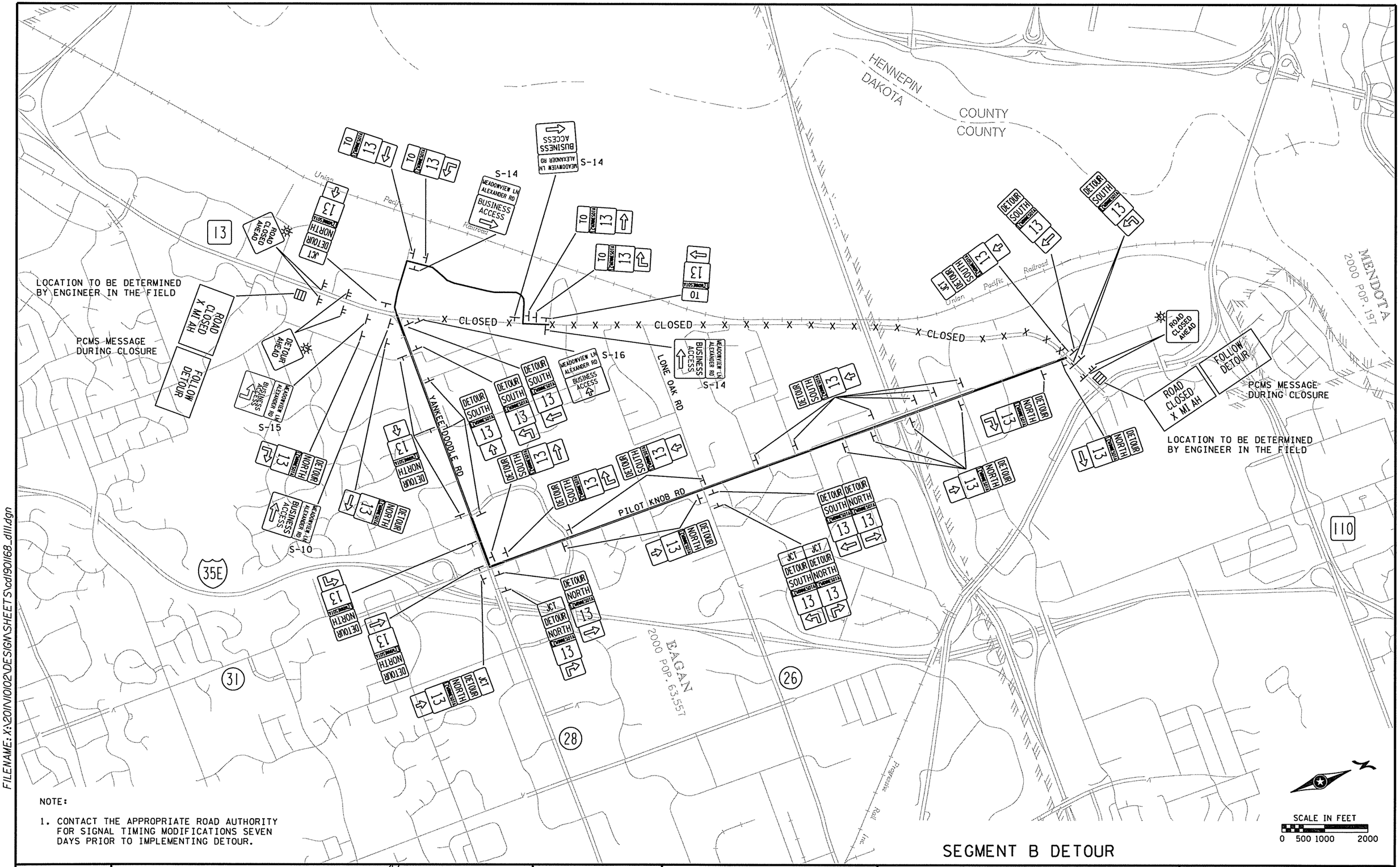
1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

NB TH 13 CLOSED AT TH 77 WITH HEAD TO HEAD TRAFFIC ON SB TH 13 RAMP/LOOP DETOURS

SCALE IN FEET
0 500 1000 2000

DATE: 2/10/2012 TIME: 2:39:5 PM
FILENAME: X:\201\NI01\02\DESIGN\SHEETS\cal901168_dl10.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 02/10/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 231 of 393 Sheets



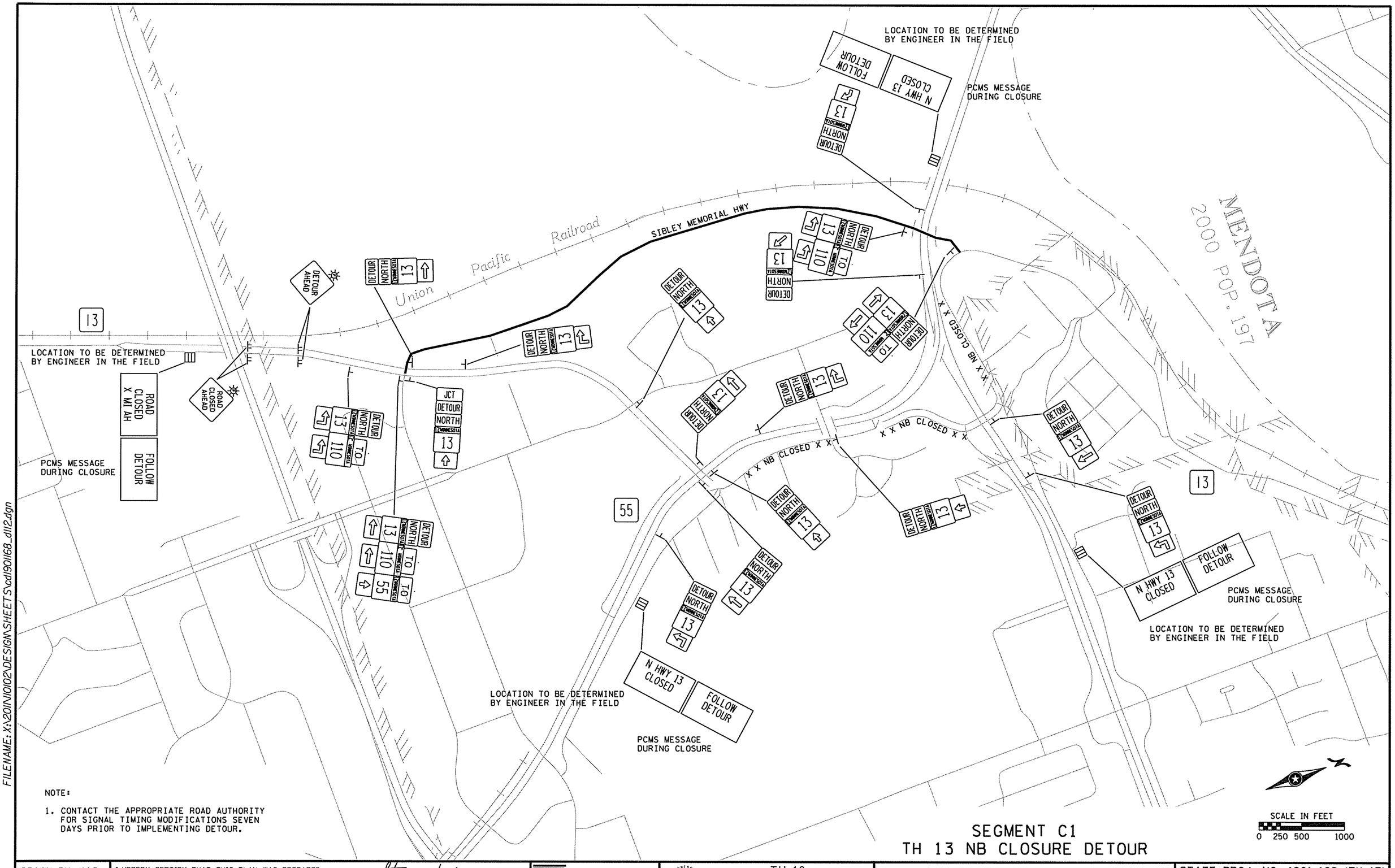
NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SEGMENT B DETOUR

DATE: 1/26/2012 TIME: 7:15:21 AM
FILENAME: X:\2011\1101102\DESIGN\SHEETS\cd190168_dlll.dgn

DRAWN BY: KAS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13)
CHECKED BY: SAW		PRINTED NAME: STEVE WESER				Sheet No. 232 of 393 Sheets
		DATE: 01/26/12 LIC. NO. 40545				



DATE: 1/26/2012 TIME: 7:15:22 AM
FILENAME: X:\201N\101102\DESIGN\SHEETS\cd190168_dll2.dgn

NOTE:

1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SCALE IN FEET
0 250 500 1000

SEGMENT C1
TH 13 NB CLOSURE DETOUR

DRAWN BY: KAS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13)
CHECKED BY: SAW					Sheet No. 233 of 393 Sheets

HENNEPIN
DAKOTA
COUNTY
COUNTY

SIBLEY MEMORIAL HWY

Union Pacific Railroad

13

DETOUR SOUTH TO 13 MINNESOTA

DETOUR SOUTH TO 13 55 MINNESOTA

DETOUR SOUTH TO 13 55 110 MINNESOTA

DETOUR SOUTH TO 10 13 55 110 MINNESOTA

DETOUR AHEAD

ROAD CLOSED AHEAD

ROAD CLOSED X MI AH

FOLLOW DETOUR

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

X X SB CLOSED X X

X X SB CLOSED X X

X X SB CLOSED X X

MAPLEWOOD
POP. 35,000 TO 49,999
POP. 197

DATE: 1/26/2012 TIME: 7:15:24 AM
FILENAME: X:\2011\01102\DESIGN\SHEETS\cd190116B_dll3.dgn

NOTE:

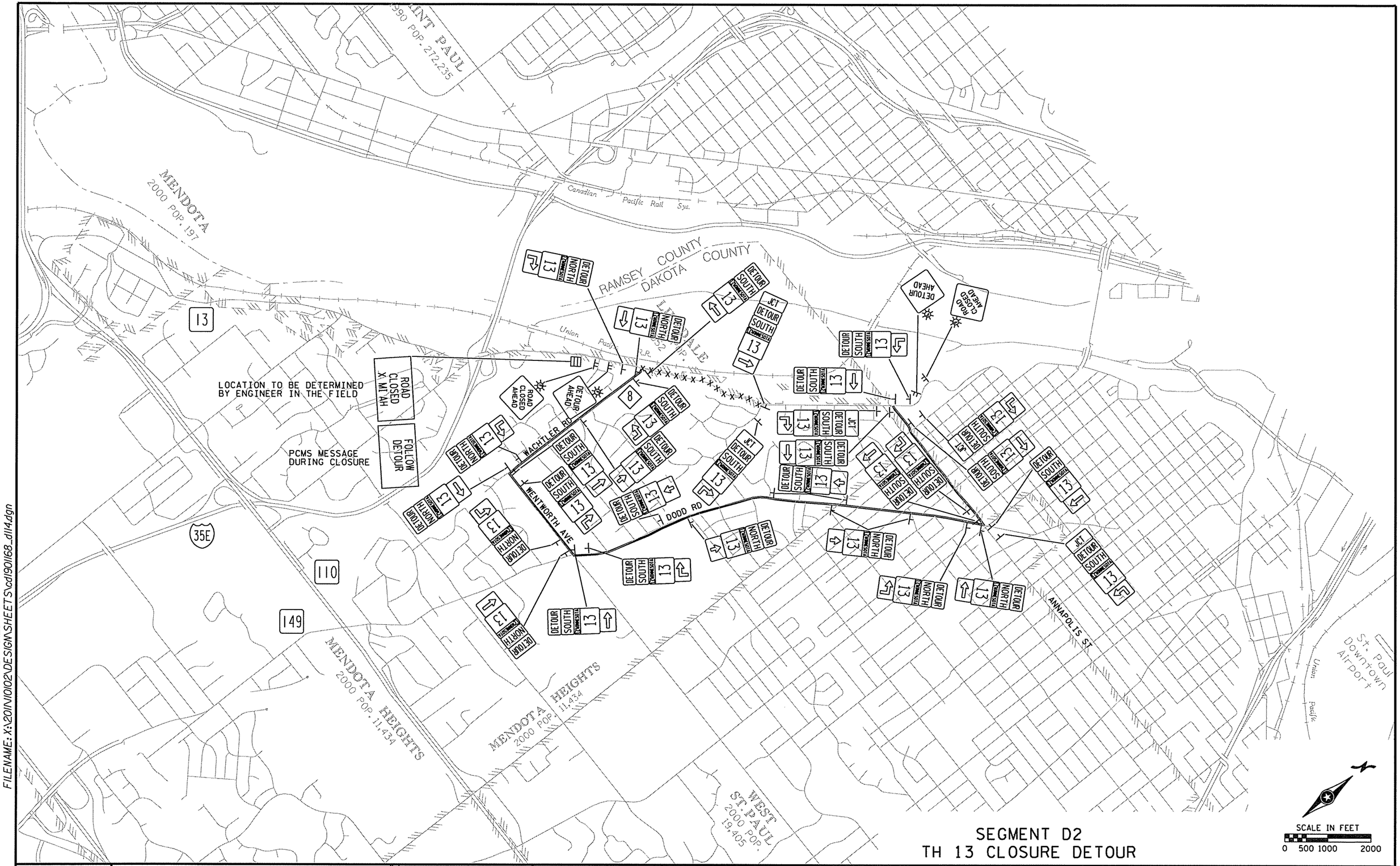
1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.

SEGMENT C1
TH 13 SB CLOSURE DETOUR

SCALE IN FEET
0 250 500 1000

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 234 of 393 Sheets

DATE: 1/26/2012 TIME: 7:15:25 AM
FILENAME: X:\2011\01\02\DESIGN\SHEETS\cd190168_dll4.dgn



SEGMENT D2
TH 13 CLOSURE DETOUR

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS DETOUR PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 235 of 393 Sheets

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING HEAD TO HEAD TRAFFIC OPERATIONS ON TH 13

SINGLE LANE AHEAD

USE ALT ROUTE

N HWY 13 SINGLE LANE

HWY 13 SINGLE LANE

NOTE:

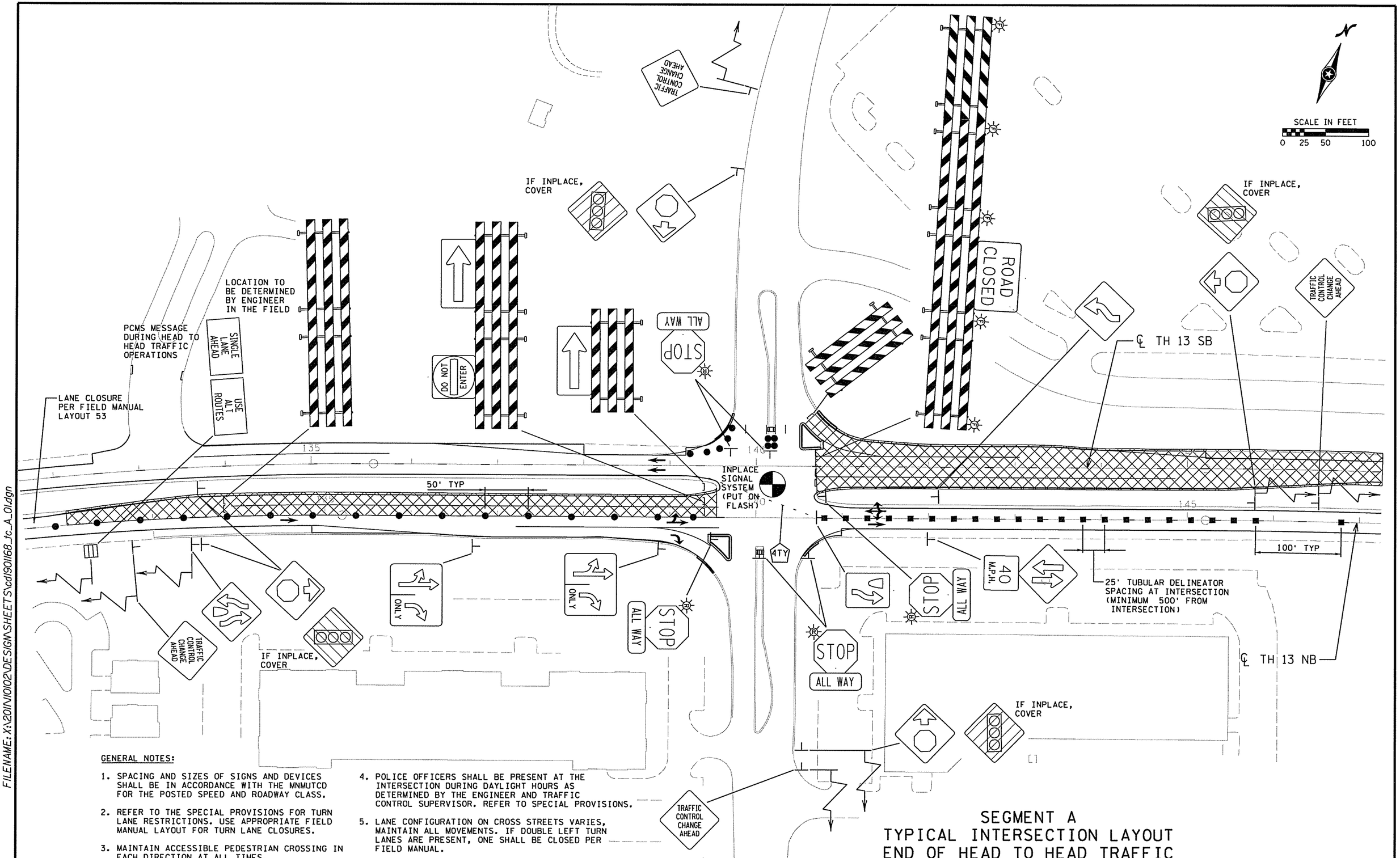
1. CONTACT THE APPROPRIATE ROAD AUTHORITY FOR SIGNAL TIMING MODIFICATIONS SEVEN DAYS PRIOR TO IMPLEMENTING DETOUR.
2. THE CONTRACTOR AND ENGINEER SHALL MODIFY THE PCMS MESSAGES TO IDENTIFY SPECIFIC LOCATIONS OF HEAD TO HEAD TRAFFIC IF APPROPRIATE.

SEGMENT A - ALTERNATE ROUTE SIGNING

SCALE IN FEET
0 1250 2500 5000

DATE: 1/26/2012 TIME: 7:15:28 AM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\sd1901168_dll6.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS ALTERNATE ROUTE PLAN	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 236 of 393 Sheets



GENERAL NOTES:

1. SPACING AND SIZES OF SIGNS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MNMUTCD FOR THE POSTED SPEED AND ROADWAY CLASS.
2. REFER TO THE SPECIAL PROVISIONS FOR TURN LANE RESTRICTIONS. USE APPROPRIATE FIELD MANUAL LAYOUT FOR TURN LANE CLOSURES.
3. MAINTAIN ACCESSIBLE PEDESTRIAN CROSSING IN EACH DIRECTION AT ALL TIMES.
4. POLICE OFFICERS SHALL BE PRESENT AT THE INTERSECTION DURING DAYLIGHT HOURS AS DETERMINED BY THE ENGINEER AND TRAFFIC CONTROL SUPERVISOR. REFER TO SPECIAL PROVISIONS.
5. LANE CONFIGURATION ON CROSS STREETS VARIES, MAINTAIN ALL MOVEMENTS. IF DOUBLE LEFT TURN LANES ARE PRESENT, ONE SHALL BE CLOSED PER FIELD MANUAL.

SEGMENT A
TYPICAL INTERSECTION LAYOUT
END OF HEAD TO HEAD TRAFFIC

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT A TYPICAL INTERSECTION LAYOUTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 237 of 393 Sheets

DATE: 1/26/2012 TIME: 7:15:34 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cd1901168_tc_A_01.dgn

SCALE IN FEET
0 25 50 100

℄ TH 13 SB

℄ TH 13 NB

ROAD CLOSED

ROAD CLOSED

IF INPLACE, COVER

TRAFFIC CONTROL CHANGE AHEAD

40 M.P.H.

STOP ALL WAY

STOP ALL WAY

ONLY

50' TYP

25' TUBULAR DELINEATORS SPACING AT INTERSECTION EXTEND PAST EXISTING LEFT TURN LANE (500' MINIMUM FROM INTERSECTION)

INPLACE SIGNAL SYSTEM (PUT ON FLASH)

100' TYP

25' TUBULAR DELINEATORS SPACING AT INTERSECTION (MINIMUM 500' FROM INTERSECTION)

IF INPLACE, COVER

TRAFFIC CONTROL CHANGE AHEAD

IF INPLACE, COVER

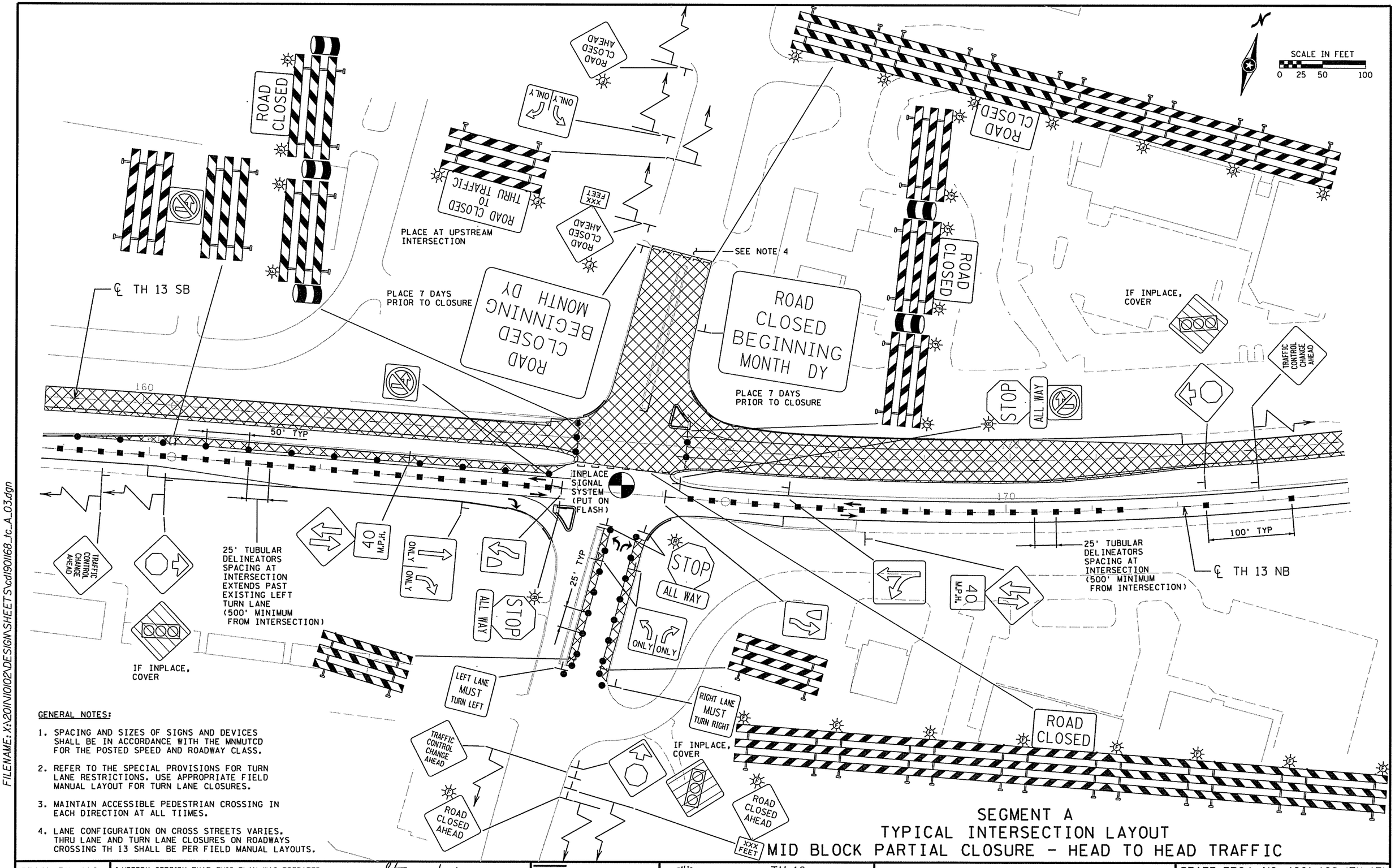
GENERAL NOTES:

1. SPACING AND SIZES OF SIGNS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MNMUTCD FOR THE POSTED SPEED AND ROADWAY CLASS.
2. REFER TO THE SPECIAL PROVISIONS FOR TURN LANE RESTRICTIONS. USE APPROPRIATE FIELD MANUAL LAYOUT FOR TURN LANE CLOSURES.
3. MAINTAIN ACCESSIBLE PEDESTRIAN CROSSING IN EACH DIRECTION AT ALL TIMES.
4. LANE CONFIGURATION ON CROSS STREETS VARIES, MAINTAIN ALL MOVEMENTS. IF DOUBLE LEFT TURN LANES ARE PRESENT, ONE SHALL BE CLOSED.

SEGMENT A
TYPICAL INTERSECTION LAYOUT
MID BLOCK HEAD TO HEAD TRAFFIC

DATE: 1/26/2012 TIME: 7:15:36 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cd190168_tc_A_02.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A TYPICAL INTERSECTION LAYOUTS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 238 of 393 Sheets



GENERAL NOTES:

1. SPACING AND SIZES OF SIGNS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MNMUTCD FOR THE POSTED SPEED AND ROADWAY CLASS.
2. REFER TO THE SPECIAL PROVISIONS FOR TURN LANE RESTRICTIONS. USE APPROPRIATE FIELD MANUAL LAYOUT FOR TURN LANE CLOSURES.
3. MAINTAIN ACCESSIBLE PEDESTRIAN CROSSING IN EACH DIRECTION AT ALL TIIMES.
4. LANE CONFIGURATION ON CROSS STREETS VARIES. THRU LANE AND TURN LANE CLOSURES ON ROADWAYS CROSSING TH 13 SHALL BE PER FIELD MANUAL LAYOUTS.

SEGMENT A
TYPICAL INTERSECTION LAYOUT
MID BLOCK PARTIAL CLOSURE - HEAD TO HEAD TRAFFIC

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT A TYPICAL INTERSECTION LAYOUTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 239 of 393 Sheets

DATE: 1/26/2012 TIME: 7:15:38 AM
FILENAME: X:\20IN\0102\DESIGN\SHEETS\cal1901168_tc_A_03.dgn

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT

SCALE IN FEET
0 25 50 100

PLACE 7 DAYS PRIOR TO CLOSURE

ROAD CLOSED BEGINNING MONTH DY

PLACE 7 DAYS PRIOR TO CLOSURE

ROAD CLOSED BEGINNING MONTH DY

℄ TH 13 SB

220 225 230

50' TYP

100' TYP

25' TUBULAR DELINEATORS SPACING AT INTERSECTION EXTEND PAST EXISTING LEFT TURN LANE (500' MINIMUM FROM INTERSECTION)

8' TUBULAR DELINEATORS SPACING AT INTERSECTION

25' TUBULAR DELINEATORS SPACING AT INTERSECTION (500' MINIMUM FROM INTERSECTION)

STOP

INPLACE

40 M.P.H.

ALL TRAFFIC MUST TURN RIGHT

100' TYP

℄ TH 13 NB

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT

ROAD CLOSED

GENERAL NOTES:

1. SPACING AND SIZES OF SIGNS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MNMUTCD FOR THE POSTED SPEED AND ROADWAY CLASS.

2. LAYOUT ON SIDE WITH TRAFFIC SHALL ALSO APPLY TO TEE INTERSECTIONS WITHOUT THE EXISTING LEFT TURN LANE CLOSURE.

SEGMENT A
TYPICAL INTERSECTION LAYOUT
MINOR INTERSECTION PARTIAL CLOSURE
WITH HEAD TO HEAD TRAFFIC

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT A TYPICAL INTERSECTION LAYOUTS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 240 of 393 Sheets

DATE: 1/26/2012 TIME: 12:20:42 PM
FILENAME: X:\201N\01\02\DESIGN\SHEETS\cd190116B_tc_A_04.dgn

GENERAL NOTES:

1. SPACING AND SIZES OF SIGNS AND DEVICES SHALL BE IN ACCORDANCE WITH THE MNMUTCD FOR THE POSTED SPEED AND ROADWAY CLASS.
2. REFER TO THE SPECIAL PROVISIONS FOR TURN LANE RESTRICTIONS. USE APPROPRIATE FIELD MANUAL LAYOUT FOR TURN LANE CLOSURES.
3. MAINTAIN ACCESSIBLE PEDESTRIAN CROSSING IN EACH DIRECTION AT ALL TIIMES.
4. THRU LANE AND TURN LANE CLOSURE ON ROADWAYS CROSSING TH 13 SHALL BE PER FIELD MANUAL LAYOUTS.
5. POLICE OFFICERS SHALL BE PRESENT AT THE INTERSECTION DURING PEAK DAYLIGHT HOURS AS DETERMINED BY THE ENGINEER AND TRAFFIC CONTROL SUPERVISOR. REFER TO SPECIAL PROVISIONS.
6. LANE CONFIGURATION ON CROSS STREETS VARIES, MAINTAIN ALL MOVEMENTS. IF DOUBLE LEFT TURN LANES ARE PRESENT, ONE SHALL BE CLOSED.

ROAD CLOSED

REFER TO SPECIAL PROVISIONS FOR DRIVEWAY ACCESS REQUIREMENTS. CLOSE TIGHT IF CLOSURES ARE ALLOWED.

℄ TH 13 SB

40 M.P.H.

(TYP)

IF INPLACE, COVER

TRAFFIC CONTROL CHANGE AHEAD

ALL WAY STOP

930

100' TYP

50' TYP

INPLACE SIGNAL SYSTEM (PUT ON FLASH)

4TY

25' TUBULAR DELINEATORS SPACING AT INTERSECTION EXTEND PAST EXISTING LEFT TURN LANE (500' MINIMUM FROM INTERSECTION)

ONLY

IF INPLACE, COVER

TRAFFIC CONTROL CHANGE AHEAD

ALL WAY STOP

935

50' TYP

25' TYP

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING HEAD TO HEAD TRAFFIC OPERATIONS

CLOSE OUTSIDE LANE PER FIELD MANUAL LAYOUT 53

USE ALT. ROUTES

SINGLE LANE AHEAD

IF INPLACE, COVER

TRAFFIC CONTROL CHANGE AHEAD

TURN LANE

℄ TH 13 NB

ALL WAY STOP

IF INPLACE, COVER

TRAFFIC CONTROL CHANGE AHEAD

SCALE IN FEET
0 25 50 100

DATE: 1/26/2012 TIME: 7:15:42 AM
FILENAME: X:\201\NI0102\DESIGN\SHEETS\cd1901168_tc_A_05.dgn

SEGMENT A
TYPICAL INTERSECTION LAYOUT
BEGINNING OF HEAD TO HEAD TRAFFIC

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A TYPICAL INTERSECTION LAYOUTS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 241 of 393 Sheets

N

SCALE IN FEET
0 25 50 100

N FRONTAGE RD

TH 13 SB

DUPONT AVENUE S.

600'

600'

S FRONTAGE RD

ROAD WORK AHEAD

USE BOTH LANES DURING BACKUPS

ROAD CLOSED X MI AH

FOLLOW DETOUR

LOCATION TO BE DETERMINED BY ENGINEER IN FIELD

PCMS MESSAGE DURING CLOSURE

ROAD CLOSED AHEAD

TAKE TURNS AT MERGE

LEFT LANE CLOSED

BEGIN MERGE

50' TYP

SEE SHEET 243 AND 245

MATCHLINE -

TH 13 NB

VALLEY DRIVE

DATE: 1/26/2012 TIME: 7:15:44 AM
FILENAME: X:\20IN\I0102\DESIGN\SHEETS\cdl901l68_tc_A1_01.dgn

SEGMENT A1
TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 242 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - SEE SHEET 242

MATCHLINE - SEE SHEET 244

TH 13 SB

TH 13 NB

50' TYP

100' TYP

W FRONTAGE RD

LEFT LANE CLOSED

1500 FEET

ROAD CLOSED AHEAD

ROAD WORK AHEAD

PLACE AT BURNSVILLE PARKWAY

NORTH 13 CLOSED USE ALTERNATE ROUTE S-18

DATE: 1/26/2012 TIME: 7:5:46 AM
FILENAME: X:\2011\01\02\DESIGN\SHEETS\cd190116B_tc_A1_02.dgn

SEGMENT A1
TH 13 NB CLOSURE
WITH NB TH 13 TO NB TH 35W LOOP OPEN

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 243 of 393 Sheets

N

SCALE IN FEET
0 25 50 100

ROAD CLOSED

(TYP)

℄ TH 13 SB

735 740

STA. 743+50

MATCHLINE - TH 13 NB

50' TYP

735 740

TH 35W SB

TH 35W NB

℄ TH 13 NB

(TYP)

CLOSE NB TH 35W TO NB TH 13 RAMP PER FIELD MANUAL LAYOUT 65

ROAD CLOSED

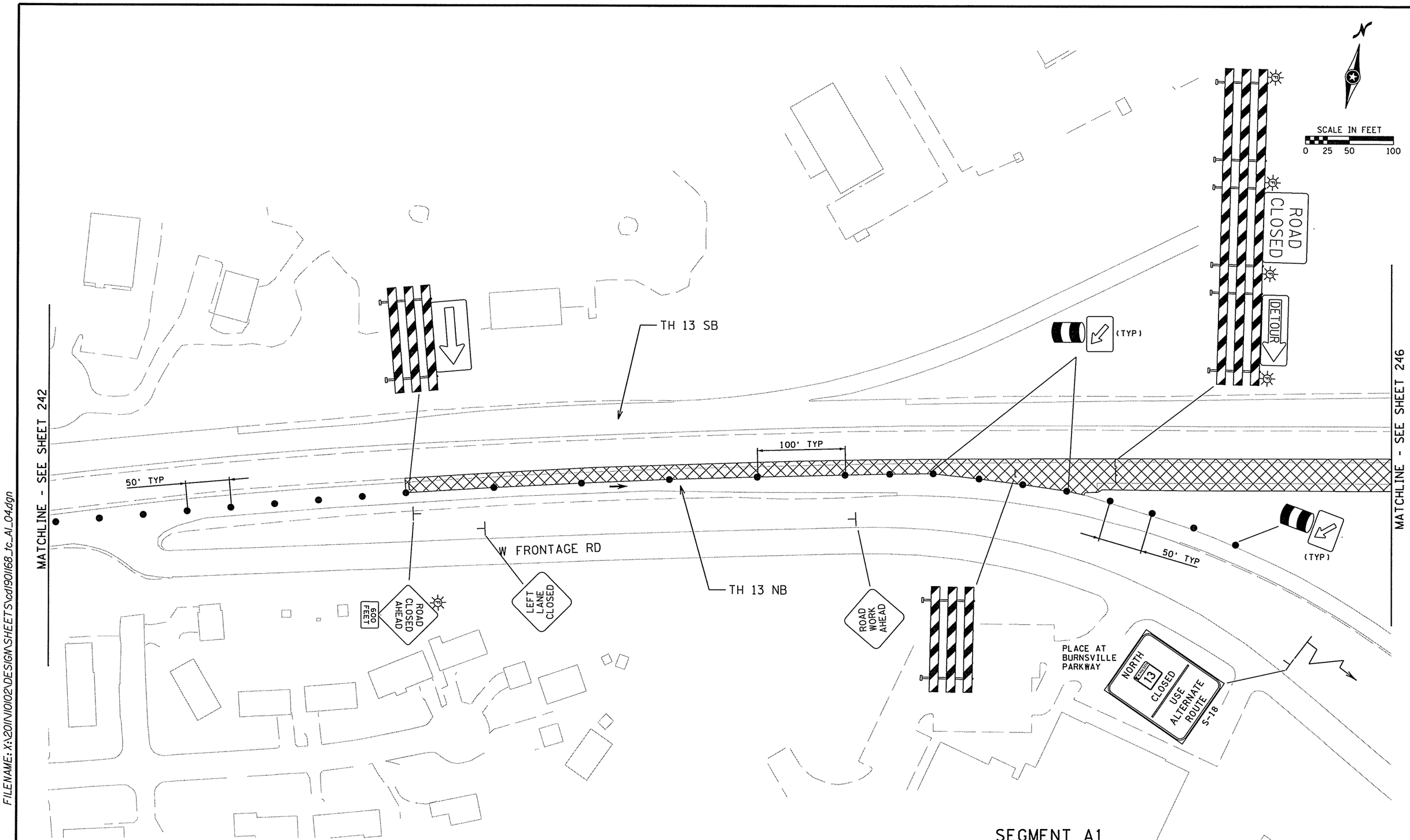
CLOSE SB TH 35W TO NB TH 13 LOOP PER FIELD MANUAL LAYOUT 64

MATCHLINE - SEE SHEET 243

SEGMENT A1
TH 13 NB CLOSURE
WITH NB TH 13 TO NB TH 35W LOOP OPEN

DATE: 1/26/2012 TIME: 7:15:48 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cd1901168_tc_A1_03.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 244 of 393 Sheets



SEGMENT A1
TH 13 NB CLOSURE
WITH NB TH 13 TO NB TH 35W LOOP CLOSED

DATE: 1/26/2012 TIME: 7:15:49 AM
FILENAME: X:\20IN\IO102\DESIGN\SHEETS\cd1901168_tc_A1_04.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT A1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 245 of 393 Sheets

N

SCALE IN FEET
0 25 50 100

ROAD CLOSED

℄ TH 13 SB

735

740

MATCHLINE - SEE SHEET 245

TH 35W SB

TH 35W NB

℄ TH 13 NB

MATCHLINE - TH 13 NB STA. 743+50

CLOSE SB TH 35W TO NB TH 13 LOOP PER FIELD MANUAL LAYOUT 64

CLOSE NB TH 35W TO NB TH 13 RAMP PER FIELD MANUAL LAYOUT 65

SEGMENT A1
TH 13 NB CLOSURE
WITH NB TH 13 TO NB TH 35W LOOP CLOSED

DATE: 1/26/2012 TIME: 7:15:51 AM
FILENAME: X:\20IN\I0102\DESIGN\SHEETS\cdl90II68_tc_A1_05.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 246 of 393 Sheets

MATCHLINE - TH 13 NB STA. 743+50

CLOSE LEFT TURN LANE ON NICOLLET AVE PER FIELD MANUAL LAYOUT 27

RIVER RIDGE BLVD

TRAVELERS TRAIL W

INPLACE SIGNAL SYSTEM

ROAD CLOSED TIME TO DAY TIME

PLACE 7 DAYS PRIOR TO CLOSURE

ROAD CLOSED

NICOLLET AVE

PROHIBIT NB RIGHT TURN ON NICOLLET AVE IF RIGHT TURN LANE ON NICOLLET AVE (TO BE CONSTRUCTED UNDER SEPARATE CONTRACT) IS COMPLETED CLOSE PER FIELD MANUAL LAYOUT 27

℄ TH 13 SB

℄ TH 13 NB

MATCHLINE - TH 13 NB STA. 732+00

ROAD CLOSED

SCALE IN FEET
0 75 150 300

DATE: 1/26/2012 TIME: 7:15:54 AM
FILENAME: X:\2011\1010102\DESIGN\SHEETS\cad1901168_tc_A1_06.dgn

SEGMENT A1
TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 247 of 393 Sheets	

SCALE IN FEET
0 75 150 300

ROAD CLOSED

PORTLAND AVE

CLOSE LEFT TURN LANE ON PORTLAND AVE PER FIELD MANUAL LAYOUT 27

℄ TH 13 SB

INPLACE SIGNAL SYSTEM

N SERVICE RD

12TH AVE S

CLOSE LEFT TURN LANE ON 12TH AVE PER FIELD MANUAL LAYOUT 27

INPLACE SIGNAL SYSTEM

RIVERWOOD DR

MATCHLINE - TH 13 NB STA.132+00

MATCHLINE - TH 13 NB STA.177+00

℄ TH 13 NB

PARKWOOD DR

CLOSE RIGHT TURN LANE ON PARKWOOD DR PER FIELD MANUAL LAYOUT 27

MAINTAIN ACCESS TO UTILITY FACILITY AT ALL TIMES TO PARKWOOD DR OR PORTLAND AVE CONTRACTOR SHALL COORDINATE ACCESS NEEDS WITH UIILITY OWNER FLAGGERS SHALL BE PRESENT AS NEEDED

SEGMENT A1
TH 13 NB CLOSURE

DATE: 1/26/2012 TIME: 7:15:56 AM
FILENAME: X:\20IN\I0102\DESIGN\SHEETS\cdI90II68_tc_AL_07.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT A1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 248 of 393 Sheets

SCALE IN FEET
0 75 150 300

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED

MATCHLINE - TH 13 NB STA.177+00

℄ TH 13 NB

121ST ST E

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT FOR CROSS STREET CLOSURE AT TH 13

INPLACE SIGNAL SYSTEM

RIVER HILLS DR W

CLOSE LEFT TURN LANE ON RIVER HILLS DR PER FIELD MANUAL LAYOUT 27

(CO RD 11)

CLOSE NB OUTSIDE THRU LANE ON CO RD 11 PER FIELD MANUAL LAYOUT 52 EXTEND CLOSURE TO TH 13 INSTALL DRUMS TO DELINEATE DRIVEWAY ACCESSES ON EAST SIDE OF CO RD 11

℄ TH 13 SB

HORIZON RD

INPLACE SIGNAL SYSTEM

CLIFF RD E (CO RD 32)

SEGMENT A1
TH 13 NB CLOSURE

DATE: 1/26/2012 TIME: 7:15:59 AM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\cdl1901168_tc_A1_08.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 249 of 393 Sheets

RIVER RIDGE BLVD

TRAVELERS TRAIL W

CLOSE RIGHT TURN LANE ON NICOLLET AVE PER FIELD MANUAL LAYOUT 27

INPLACE SIGNAL SYSTEM

CLOSE TIGHT EAST OF NB I35W TO SB TH 13 LOOP

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED

NICOLLET AVE

ONLY ONLY ONLY

ONLY

ONLY ONLY ONLY

ONLY

CLOSE LEFT TURN LANE ON NICOLLET AVE PER FIELD MANUAL LAYOUT 27. BAG NB LEFT TURN ARROW INDICATIONS ON NICOLLET AVE.

℄ TH 13 SB

℄ TH 13 NB

MATCHLINE - TH 13 NB STA. 132+00

SCALE IN FEET
0 75 150 300

NOTE:

* IF RIGHT TURN LANE ON NICOLLET AVE (TO BE CONSTRUCTED UNDER SEPARATE CONTRACT) IS COMPLETED, PLACE R3-30CCA SIGNS ON NB NICOLLET AVE. IF NOT, PLACE R3-30CD SIGNS.

DATE: 1/26/2012 TIME: 7:16:02 AM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\cd190168_tc_A1_21.dgn

SEGMENT A1
TH 13 SB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 250 of 393 Sheets

ROAD CLOSED TO THRU TRAFFIC

ROAD CLOSED

CEMETARY ACCESS

PORTLAND AVE

ROAD CLOSED

ROAD CLOSED

CLOSE OUTSIDE THRU LANE ON 12TH AVE NORTH OF RIVERWOOD DR PER FIELD MANUAL LAYOUT 52
CONTINUE OUTSIDE LANE CLOSURE SOUTH TO TH 13 WITH TYPE III BARRICADES AND DRUMS

SCALE IN FEET
0 75 150 300

℄ TH 13 SB

N SERVICE RD

12TH AVE S

ROAD CLOSED

RIVERWOOD DR

MATCHLINE - TH 13 NB STA.132+00

MATCHLINE - TH 13 NB STA.177+00

CLOSE RIGHT TURN LANE ON PORTLAND AVE PER FIELD MANUAL LAYOUT 27

INPLACE SIGNAL SYSTEM

CLOSE LEFT TURN LANE ON PORTLAND AVE PER FIELD MANUAL LAYOUT 27

THE CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO CEMETERY AT ALL TIMES FLAGGERS SHALL BE PRESENT DURING DAY TIME HOURS OF OPERATION FOR CEMETERY TH 13 SB SHALL BE CLOSED TIGHT WITH TYPE III BARRICADES AT PORTLAND AVENUE WHEN CEMETERY IS CLOSED AND FLAGGERS ARE NOT PRESENT

℄ TH 13 NB

INPLACE SIGNAL SYSTEM

PARKWOOD DR

CLOSE LEFT TURN LANE ON PARKWOOD DR PER FIELD MANUAL LAYOUT 27

ROAD CLOSED

SEGMENT A1
TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:05 AM
FILENAME: X:\201\101102\DESIGN\SHEETS\cd190168_tc_A1_22.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

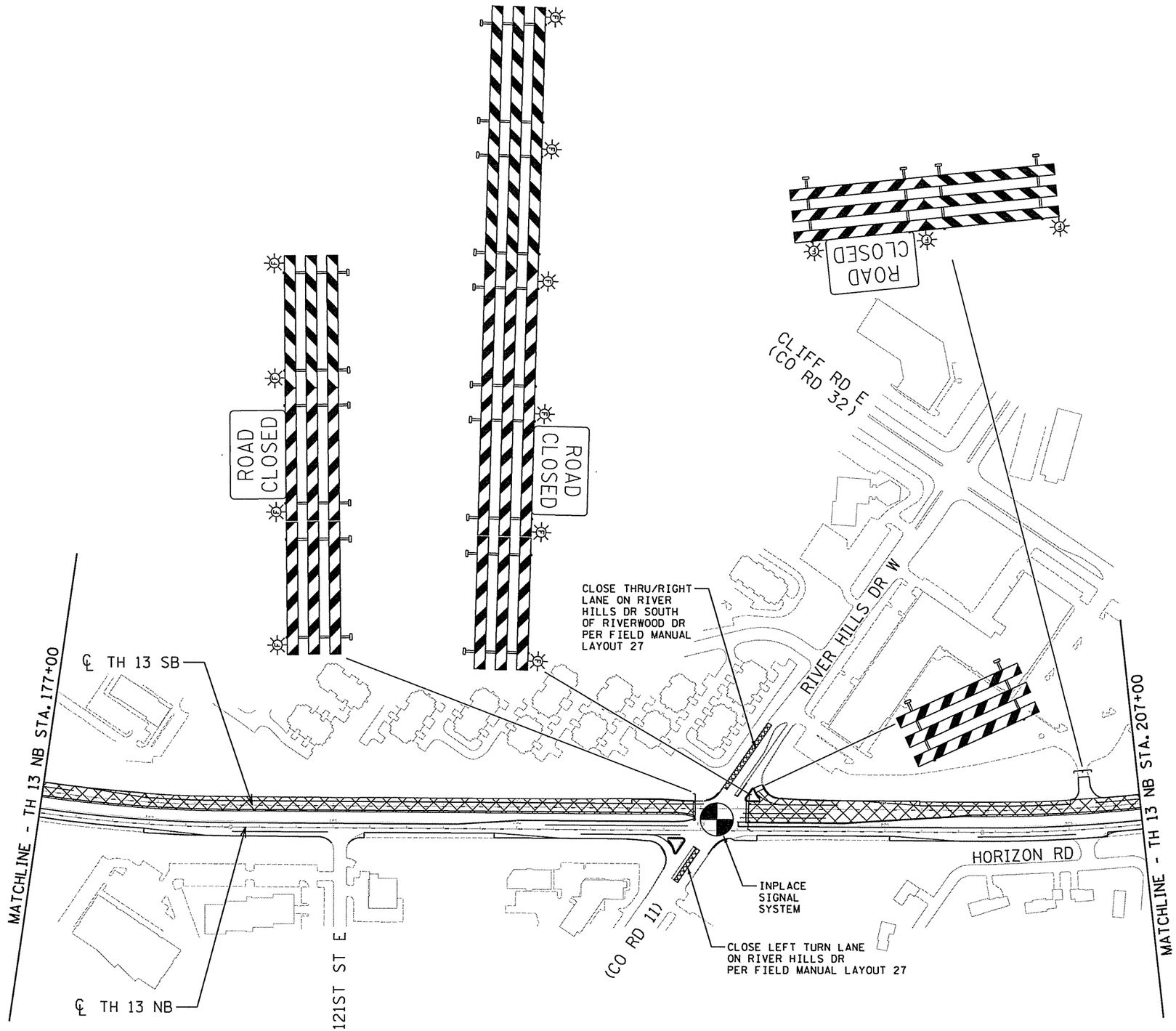
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT A1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 251 of 393 Sheets



SCALE IN FEET
0 75 150 300

SEGMENT A1
TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:10 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cdl90ll68_tc_A1_23.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 252 of 393 Sheets

SCALE IN FEET
0 25 50 100

ROAD WORK AHEAD
TURN LANE CLOSED
50' TYP
ROAD CLOSED
ROAD CLOSED DAY TIME TO DAY TIME
PLACE 7 DAYS PRIOR TO CLOSURE
MATCHLINE - TH 13 NB STA. 207+00
210
215
220
INPLACE SIGNAL SYSTEM
℄ TH 13 SB
TURN LANE
25' TYP
50' TYP
MATCHLINE - TH 13 NB STA. 222+25
℄ TH 13 NB
DETOUR
ROAD CLOSED
CLIFF RD E (CO RD 32)
50' TYP
25' TYP
TURN LANE
DROP OUTSIDE LANE EAST OF KENNELLY RD PER FIELD MANUAL LAYOUT 39

SEGMENT A1
TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:13 AM
FILENAME: X:\201N\0102\DESIGN\SHEETS\cd1901168_tc_A1_24.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 253 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 222+25

MATCHLINE - TH 13 NB STA. 237+50

ROAD CLOSED AHEAD
1200 FEET

11TH ST E

℄ TH 13 SB

EXCULPATING RD

50' TYP

225

230

235

25' TYP

℄ TH 13 NB

KENNELLY CIRCLE

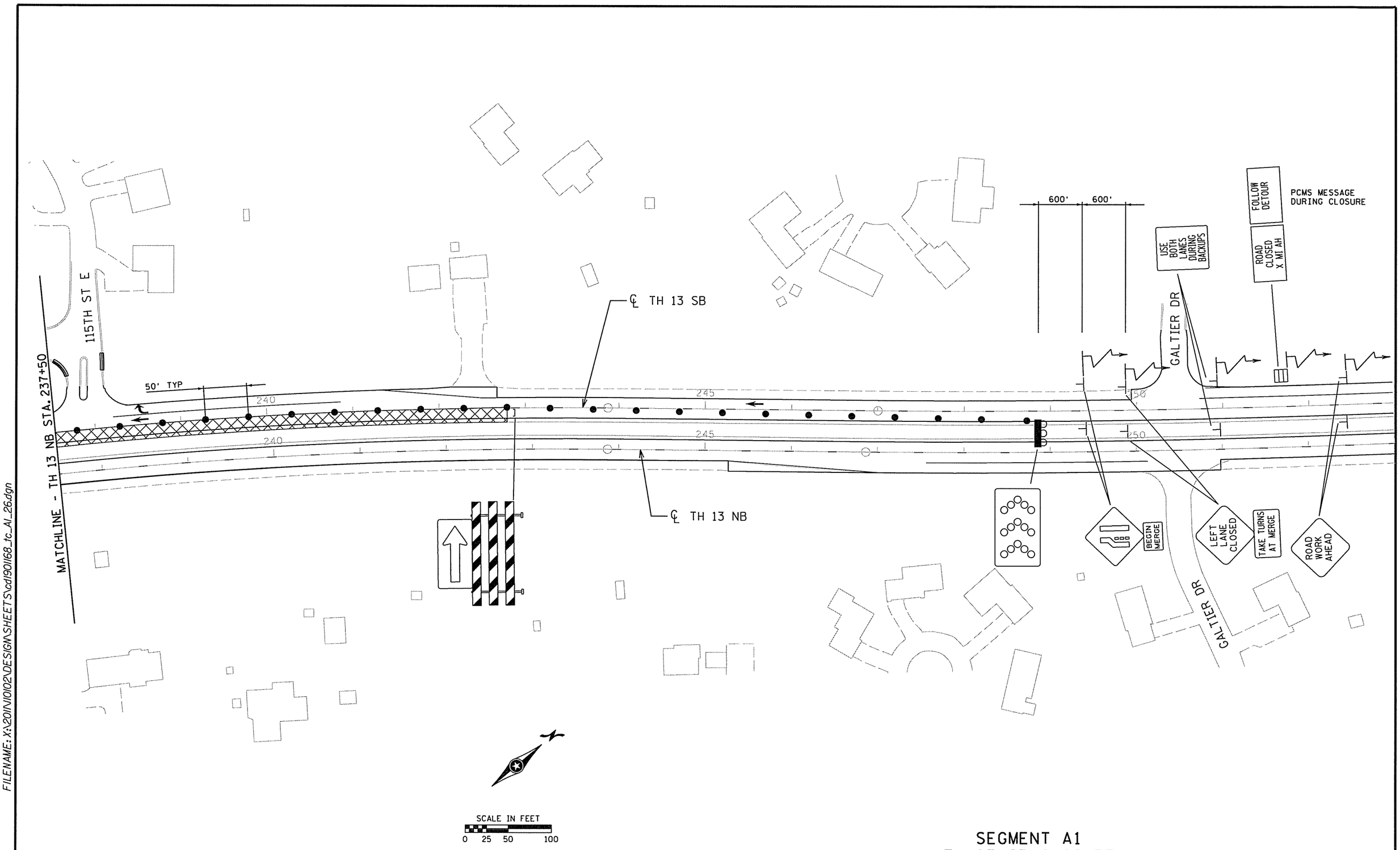
HORIZON DR

TURN LANE

DATE: 1/26/2012 TIME: 7:16:15 AM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\cd190116B_tc_A1_25.dgn

SEGMENT A1
TH 13 SB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 254 of 393 Sheets



SEGMENT A1
TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:17 AM
FILENAME: X:\20IN\101102\DESIGN\SHEETS\cd1901168_tc_A1_26.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT A1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 255 of 393 Sheets

SCALE IN FEET
0 25 50 100

SHAWNEE RD

BLACKHAWK RD

℄ TH 13

1040

1045

1050

INPLACE SIGNAL SYSTEM

ROAD WORK AHEAD

USE BOTH LANES DURING BACKUPS

ROAD CLOSED X MI AH

ROAD CLOSED AHEAD

FOLLOW DETOUR

LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

BURGUNDY DR

ROBIN LN

TAKE TURNS AT MERGE

LEFT LANE CLOSED

BEGIN MERGE

MATCHLINE - TH 13 STA. 1050+50

DATE: 1/26/2012 TIME: 7:16:18 AM
FILENAME: X:\201N\101102\DESIGN\SHEETS\cd190168_tc_B_01.dgn

SEGMENT B
TH 13 FULL CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT B CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 256 of 393 Sheets

SCALE IN FEET
0 25 50 100

YANKEE DR

℄ TH 13

MATCHLINE - TH 13 STA. 1050+50

MATCHLINE - TH 13 STA. 1065+50

1055

1060

1065

50' TYP

100' TYP

4SY
W/ TRPM'S
10'SPACING

4SY
W/ TRPM'S
10'SPACING

REMOVE OR COVER CONFLICTING MARKINGS

SEGMENT B
TH 13 FULL CLOSURE

DATE: 2/13/2012 TIME: 12:07:37 PM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\cd1901168_tc_B_02.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 02/13/12 LIC. NO. 40545

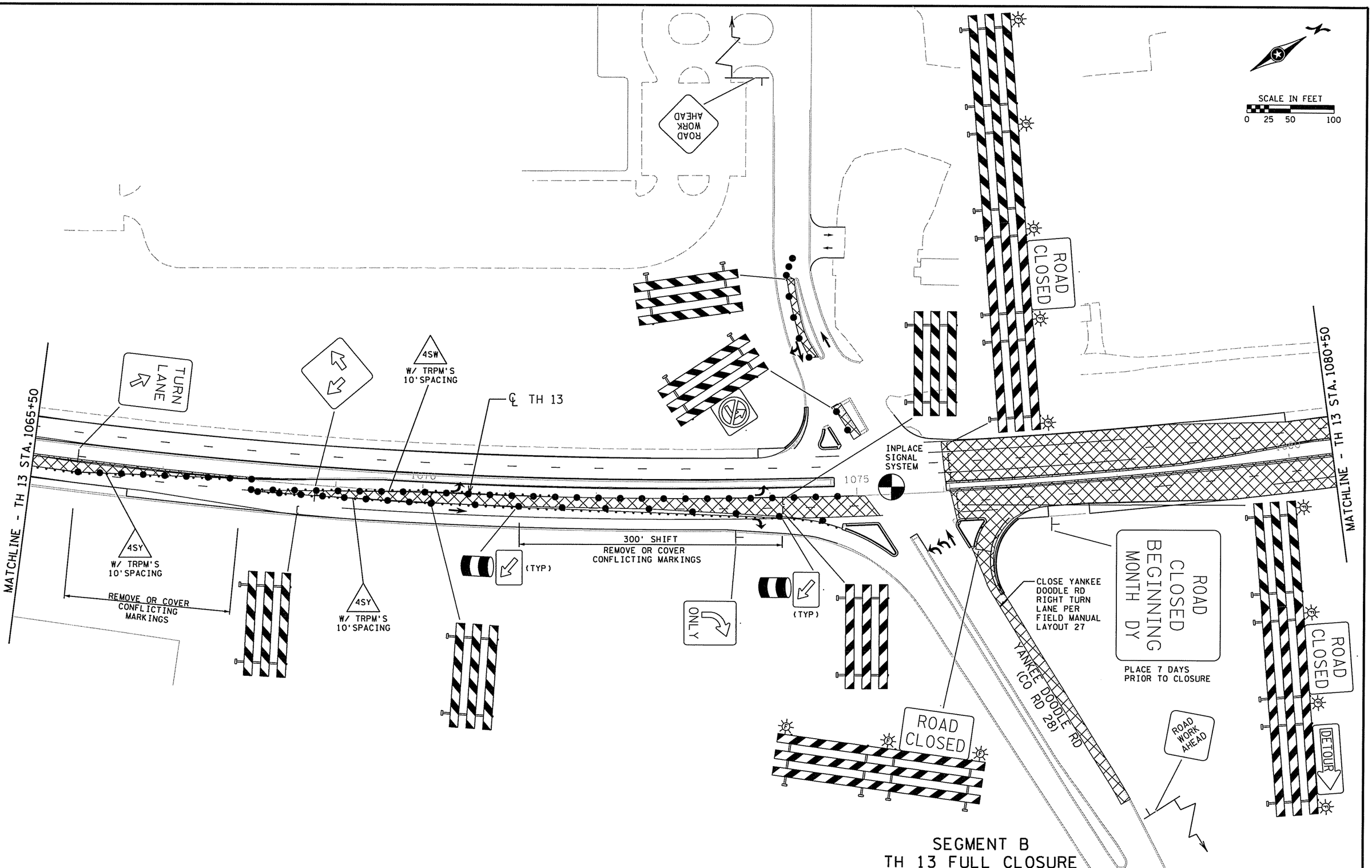
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT B CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)

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SEGMENT B
TH 13 FULL CLOSURE

DATE: 2/13/2012 TIME: 12:07:39 PM
FILENAME: X:\201N\0102\DESIGN\SHEETS\cd190168_tc_B_03.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 02/13/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT B CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 258 of 393 Sheets

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED TO THRU TRAFFIC

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED

SCALE IN FEET
0 75 150 300

MATCHLINE - TH 13 STA. 1123+00

MATCHLINE - TH 13 STA. 1169+00

℄ TH 13

MAINTAIN ACCESS TO RESIDENCES AT ALL TIMES (FLAGGERS AS NEEDED)

ALLOW SINGLE LANE ON ONE SIDE OF BARRICADES FOR ACCESS TO RESIDENCES ON EAST SIDE OF TH 13

ALLOW SINGLE LANE ON ONE SIDE OF BARRICADES FOR ACCESS TO RESIDENCES ON TH 13

ROAD CLOSED

ROAD CLOSED

ROAD CLOSED TO THRU TRAFFIC

ROAD CLOSED AHEAD

ROAD CLOSED

RUSTIC HILLS DR

MCCARTHY RD

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT IN THIS PLAN FOR TRAFFIC CONTROL

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT IN THIS PLAN FOR TRAFFIC CONTROL

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT IN THIS PLAN FOR TRAFFIC CONTROL

MAINTAIN ACCESS TO RESIDENCES AT ALL TIMES (FLAGGERS IF NECESSARY)

SEE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT IN THIS PLAN FOR TRAFFIC CONTROL

LONE OAK RD

HIGHVIEW AVE

ROAD CLOSED

ROAD CLOSED TO THRU TRAFFIC

ROAD CLOSED

ROAD CLOSED

DATE: 1/26/2012 TIME: 7:16:24 AM
FILENAME: X:\20IN\101\02\DESIGN\SHEETS\cd1901168_tc_B_05.dgn

SEGMENT B
TH 13 FULL CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT B CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 260 of 393 Sheets

PLACE A MINIMUM OF
7 DAYS PRIOR TO CLOSURE

ROAD CLOSED DAY TIME TO DAY TIME

SHIFT SB TRAFFIC INTO EXISTING LEFT TURN LANE TRAFFIC CONTROL PER FIELD MANUAL LAYOUT 59

COVER CONFLICTING MARKINGS

750' DRUMS @ 100' SPACING

700' LANE DROP TAPER TRAFFIC CONTROL PER FIELD MANUAL LAYOUT 52

COVER CONFLICTING MARKINGS

℄ TH 13

ROAD CLOSED TO THRU TRAFFIC

OPEN TO LOST SPUR S-20

MERGE

SCALE IN FEET
0 75 150 300

SIBLEY MEMORIAL HWY

MATCHLINE - TH 13 STA. 1210+00

INPLACE SIGNAL SYSTEM

RIGHT LANE CLOSED

4SW

4SW

℄ TH 13

TH 494 WB
TH 494 EB

MATCHLINE - TH 13 STA. 1169+00

ROAD CLOSED

LOST SPUR
GOLF COURSE

MENDOTA HEIGHTS RD

PILOT KNOB RD

NOTE:

DRUMS NOT SHOWN ON THIS SHEET FOR CLARITY. REFER TO FIELD MANUAL LAYOUTS FOR DRUM LOCATIONS AND SPACING

SEGMENT B
TH 13 FULL CLOSURE

DATE: 2/10/2012 TIME: 2:39:27 PM
FILENAME: X:\20IN\0102\DESIGN\SHEETS\cd1901168_tc_B_06.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 02/10/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT B CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 261 of 393 Sheets

SCALE IN FEET
0 75 150 300

SIBLEY MEMORIAL HWY

ROAD CLOSED AHEAD

MATCHLINE - TH 13 STA. 1210+00

℄ TH 13

℄ TH 13

DETOUR

ROAD CLOSED 1 MILE AHEAD LOCAL TRAFFIC ONLY

OPEN TO LOST SPUR S-20

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

FOLLOW DETOUR

ROAD CLOSED X MI AH

PCMS MESSAGE DURING CLOSURE

INPLACE SIGNAL SYSTEM

PILOT KNOB RD

PILOT KNOB RD

ROAD CLOSED AHEAD

INPLACE SIGNAL SYSTEM

TH 55 SB

TH 55 NB

LEMAY LAKE RD

SEGMENT B
TH 13 FULL CLOSURE

DATE: 1/26/2012 TIME: 7:16:30 AM
FILENAME: X:\20IN\101\02\DESIGN\SHEETS\cd190168_tc_B_07.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT B CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 262 of 393 Sheets

SCALE IN FEET
0 25 50 100

SIBLEY MEMORIAL HWY

INPLACE SIGNAL SYSTEM

BREAKLINE - CINB1

95 1200

95 1200

1205

1205

50' TYP

ROAD CLOSED AHEAD

ROAD CLOSED X MI AH

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

FOLLOW DETOUR

PCMS MESSAGE DURING CLOSURE

ROAD CLOSED 1 1/2 MILES AHEAD LOCAL TRAFFIC ONLY

ROAD CLOSED TO THRU TRAFFIC

DETOUR

MENDOTA HEIGHTS RD

DATE: 1/26/2012 TIME: 7:16:33 AM
FILENAME: X:\20IN\0102\DESIGN\SHEETS\cd1901l68_tc_C1_NB_01.dgn

SEGMENT C1
TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 263 of 393 Sheets

CLOSE TH 55 LEFT
TURN LANE PER FIELD
MANUAL LAYOUT 27

TH 55 SB

TH 55 NB

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA 59+25

FLAGGERS AT
INTERSECTION
AS NEEDED

℄ TH 13 SB

1235

1240

INPLACE
SIGNAL
SYSTEM

BREAKLINE - C1NB1

25' TYP

50' TYP

℄ TH 13 NB

ROAD
CLOSED
AHEAD

500
FEET

ROAD
CLOSED
AHEAD

ONLY
ONLY
ONLY

ONLY
ONLY
ONLY

CLOSE TH 55 RIGHT
TURN LANE PER FIELD
MANUAL LAYOUT 27

ROAD
CLOSED

LEMAY LAKE RD

ROAD
WORK
AHEAD

WATERS DR

ROAD
CLOSED
DAY TIME
TO DAY TIME

ROAD
WORK
AHEAD

PLACE 7
DAYS PRIOR
TO CLOSURE

DATE: 1/26/2012 TIME: 7:16:34 AM
FILENAME: X:\201\IU\0102\DESIGN\SHEETS\cd1901168_tc_C1_NB_02.dgn

SEGMENT C1 - TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 264 of 393 Sheets

DATE: 1/26/2012 TIME: 7:16:36 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cd1901l68_tc_C1_NB_03.dgn

SEGMENT C1
TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 265 of 393 Sheets

VALENCOUR CR

ROAD WORK AHEAD

ACACIA BLVD

TH 55 SB

TH 55 NB

FLAGGERS AT INTERSECTION AS NEEDED

DO NOT ENTER

℄ TH 13 SB

45
45

40
40

35
35

50' TYP

℄ TH 13 NB

ROAD CLOSED

MATCHLINE - TH 13 NB STA. 46+50

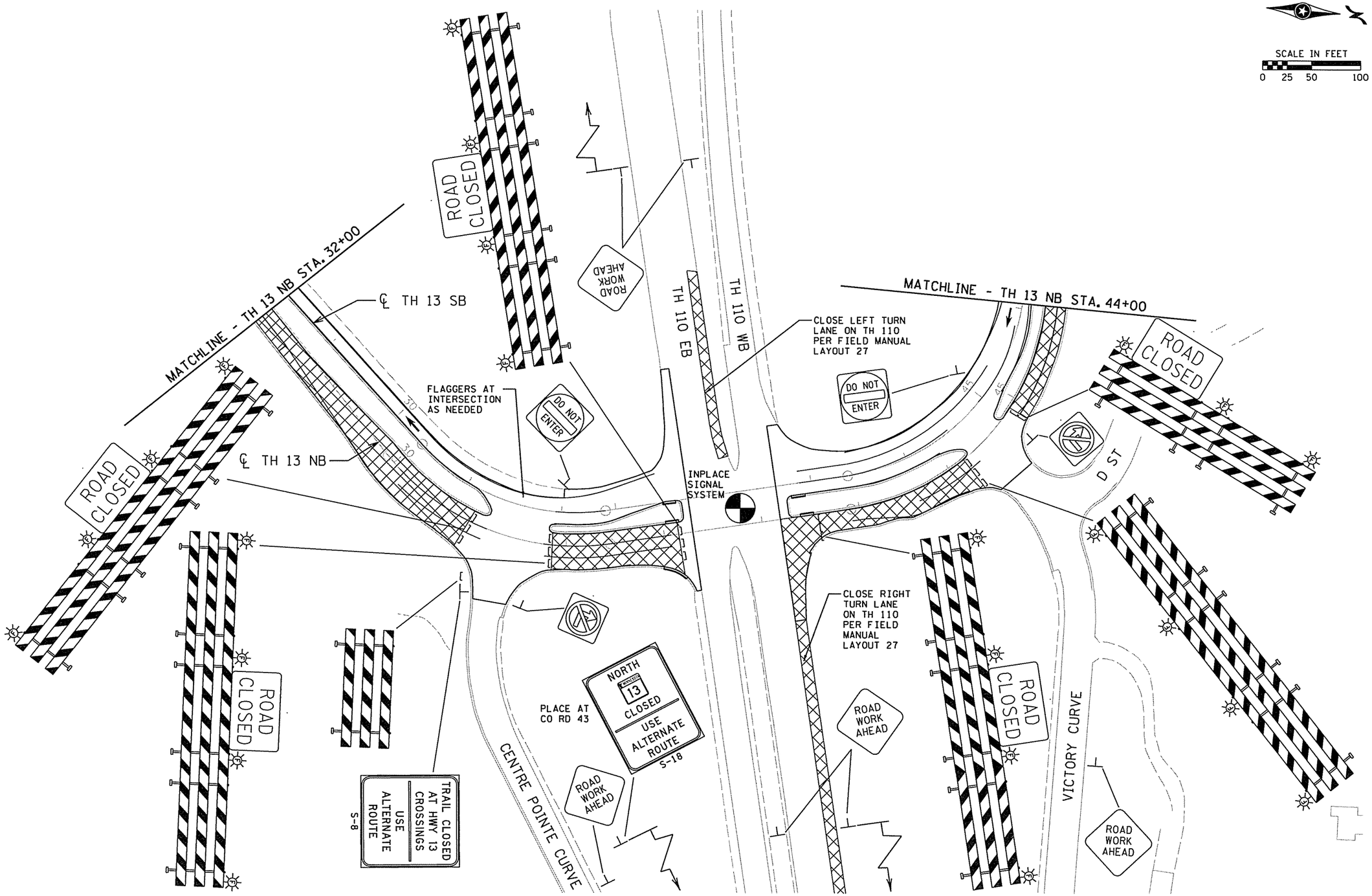
MATCHLINE - TH 13 NB STA. 32+00

SCALE IN FEET
0 25 50 100

DATE: 1/26/2012 TIME: 7:16:37 AM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\cd1901168_tc_C1_NB_04.dgn

SEGMENT C1
TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 266 of 393 Sheets



SEGMENT C1
TH 13 NB CLOSURE

DATE: 1/26/2012 TIME: 7:16:39 AM
FILENAME: X:\201\NJI0102\DESIGN\SHEETS\cd1901168_tc_C1_NB_05.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 267 of 393 Sheets

SCALE IN FEET
0 25 50 100

N

TH 110 EB

TH 55 NB

TH 110 WB

PLACE AT TRAIL CROSSING

DO NOT ENTER

℄ TH 13 SB

℄ TH 13

50' TYP

40

35

30

MATCHLINE - TH 13 NB STA. 44+00

℄ TH 13 NB

WINDY RIDGE

PLACE AT TRAIL CROSSING

MATCHLINE - TH 13 NB STA. 29+50

TRAIL CLOSED AT HWY 13 CROSSINGS

USE ALTERNATE ROUTE

ROAD WORK AHEAD

TRAIL CLOSING NOTE:

PLACE SIGN S-8 AND TYPE III BARRICADE TO CLOSE EXISTING TRAILS AT THE FOLLOWING LOCATIONS DURING SEGMENT C1 MILL AND OVERLAY WORK:

- NE CORNER PILOT KNOB ROAD AND TH 13 INTERSECTION
- SE CORNER CENTRE POINT CURVE AND TH 13 INTERSECTION
- SIBLEY MEMORIAL HIGHWAY JUST NORTH OF THE TH 55 BRIDGE OVER SIBLEY MEMORIAL HIGHWAY

DATE: 1/26/2012 TIME: 7:16:40 AM
FILENAME: X:\20IN\I01\02\DESIGN\SHEETS\cd1901168_tc_C1_NB_06.dgn

SEGMENT C1
TH 13 NB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 268 of 393 Sheets

SCALE IN FEET
0 25 50 100

S-8
TRAIL CLOSED AT HWY 13 CROSSINGS
USE ALTERNATE ROUTE

ROAD WORK AHEAD

SIBLEY MEMORIAL HWY

TH 55 SB

TH 55 NB

25

20

℄ TH 13

MATCHLINE - TH 13 NB STA. 29+50

SEGMENT C1
TH 13 NB CLOSURE

DATE: 1/26/2012 TIME: 7:16:42 AM
FILENAME: X:\2011\01102\DESIGN\SHEETS\cd190168_tc_C1_NB_07.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

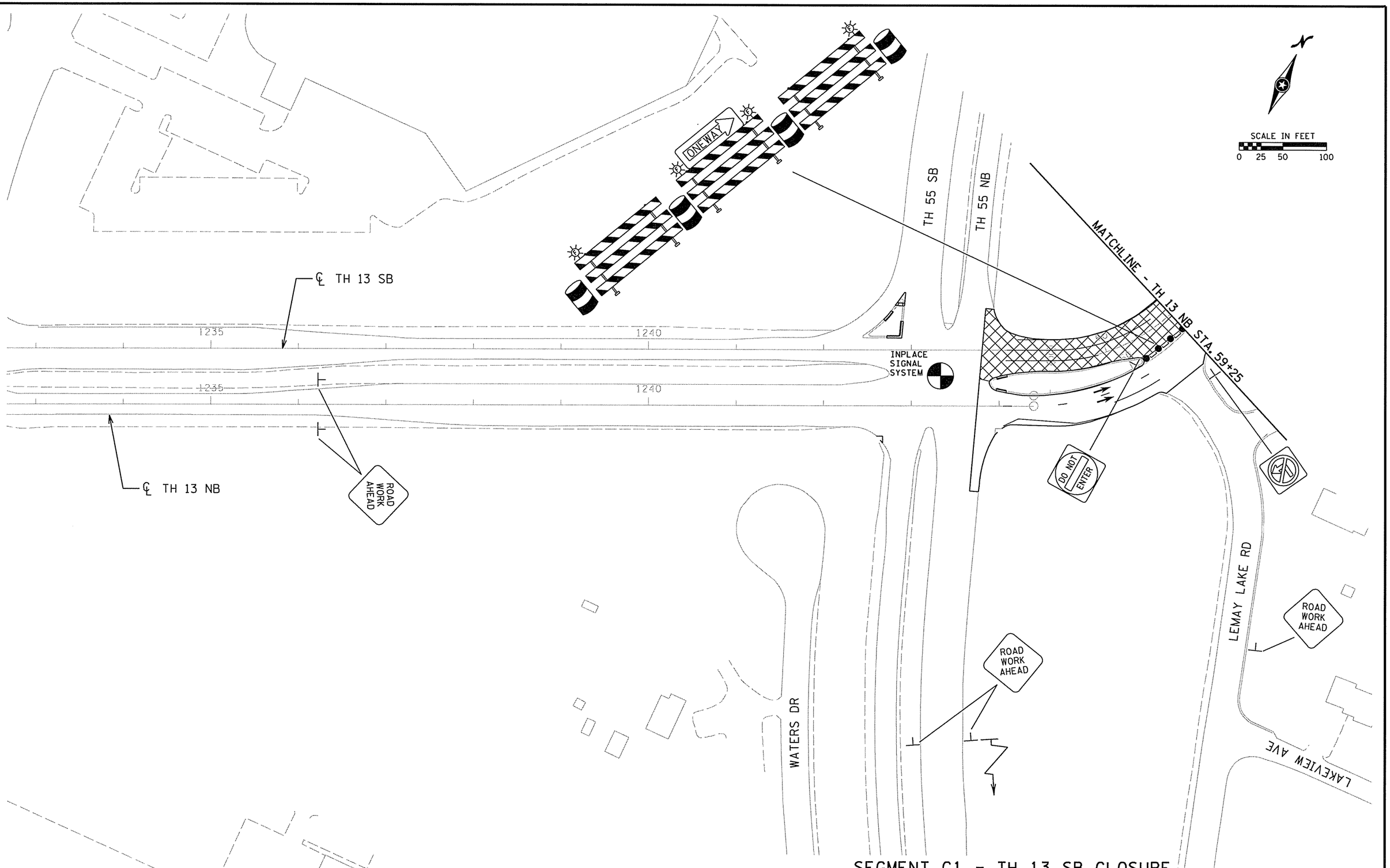
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT C1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 269 of 393 Sheets



SEGMENT C1 - TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:44 AM
FILENAME: X:\2011\101102\DESIGN\SHEETS\cd190168_tc_C1_SB_01.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT C1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 270 of 393 Sheets

SCALE IN FEET
0 25 50 100

TH 55 SB
TH 55 NB
MATCHLINE - TH 13 NB STA. 59+25
MATCHLINE - TH 13 NB STA. 46+50
℄ TH 13 SB
℄ TH 13 NB
ROAD WORK AHEAD
DO NOT ENTER
DO NOT ENTER
50' TYP
ROAD CLOSED
ROAD CLOSED
FURLONG AVE
VICTORY AVE
KENDON LN

SEGMENT C1
TH 13 SB CLOSURE

DRAWN BY: KAS
CHECKED BY: SAW

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

SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

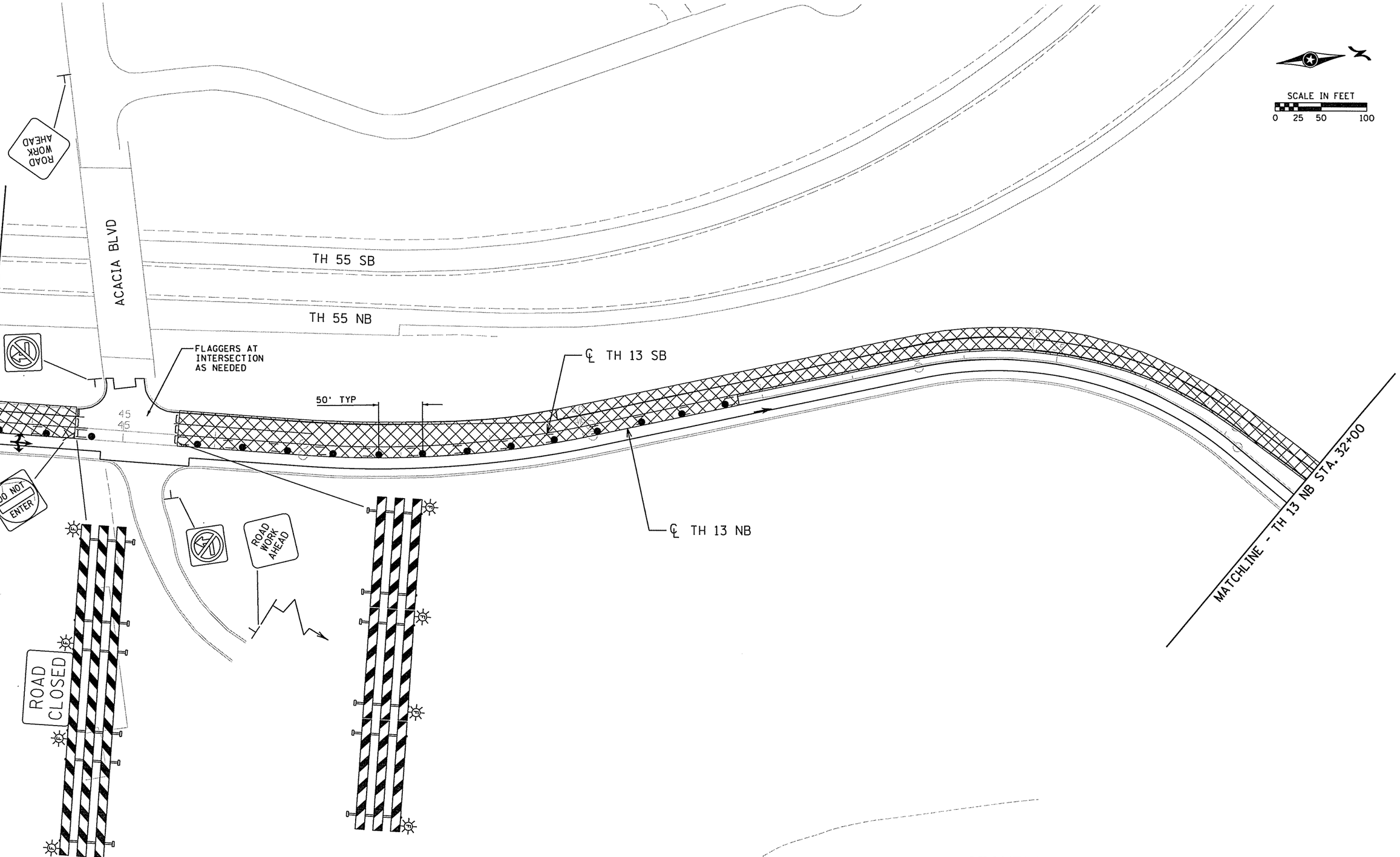
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT C1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 271 of 393 Sheets

DATE: 1/26/2012 TIME: 7:16:45 AM
FILENAME: X:\20IN\101\02\DESIGN\SHEETS\cd1901168_tc_C1_SB_02.dgn



DATE: 1/26/2012 TIME: 7:16:46 AM
FILENAME: X:\20IN\IN101102\DESIGN\SHEETS\cd190168_tc_CL_SB_03.dgn

SEGMENT C1
TH 13 SB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 272 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 32+00

℄ TH 13 NB

ROAD CLOSED

ROAD WORK AHEAD

TH 110 EB

TH 110 WB

CLOSE TH 110 RIGHT TURN LANE PER FIELD MANUAL LAYOUT 27

INPLACE SIGNAL SYSTEM

MATCHLINE - TH 13 NB STA. 44+00

℄ TH 13 SB

DO NOT ENTER

D ST

ONE WAY

DO NOT ENTER

TRAIL CLOSED AT HWY 13 CROSSINGS
USE ALTERNATE ROUTE
S-8

CLOSE TH 110 LEFT TURN LANE PER FIELD MANUAL LAYOUT 27

PLACE AT CO RD 43

SOUTH
CR 13
CLOSED
USE ALTERNATE ROUTE
S-19

ROAD WORK AHEAD

CENTRE POINTE CURVE

ROAD WORK AHEAD

ROAD CLOSED

VICTORY CURVE

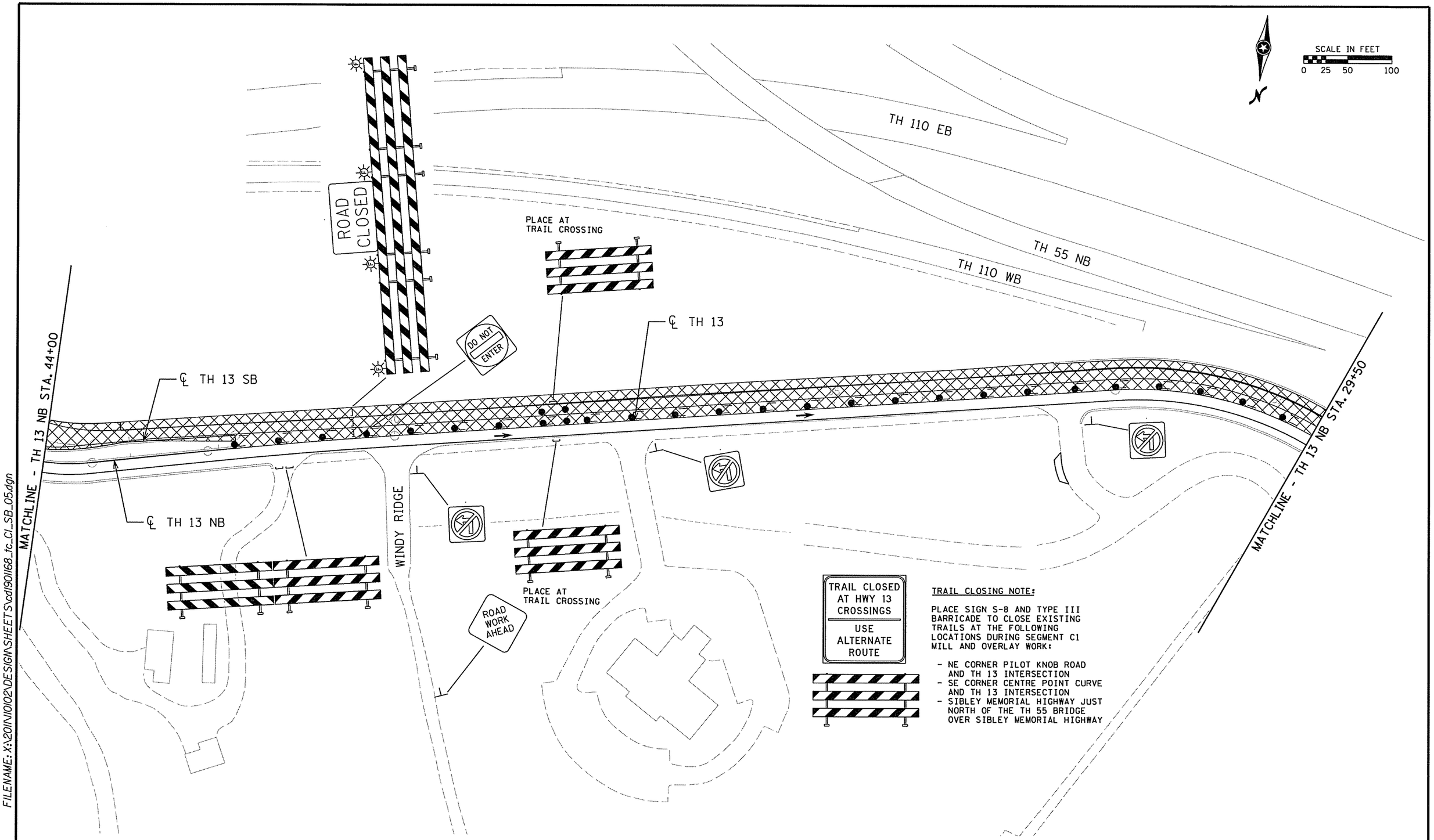
ROAD WORK AHEAD

ONE WAY

DATE: 2/10/2012 TIME: 2:39:30 PM
FILENAME: X:\201\N\0102\DESIGN\SHEETS\cd190168_tc_C1_SB_04.dgn

SEGMENT C1
TH 13 SB CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 02/10/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 273 of 393 Sheets



TRAIL CLOSING NOTE:

PLACE SIGN S-8 AND TYPE III BARRICADE TO CLOSE EXISTING TRAILS AT THE FOLLOWING LOCATIONS DURING SEGMENT C1 MILL AND OVERLAY WORK:

- NE CORNER PILOT KNOB ROAD AND TH 13 INTERSECTION
- SE CORNER CENTRE POINT CURVE AND TH 13 INTERSECTION
- SIBLEY MEMORIAL HIGHWAY JUST NORTH OF THE TH 55 BRIDGE OVER SIBLEY MEMORIAL HIGHWAY

SEGMENT C1
TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:49 AM
FILENAME: X:\201N\01\02\DESIGN\SHEETS\cd190168_tc_C1_SB_05.dgn

DRAWN BY: KAS
CHECKED BY: SAW

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

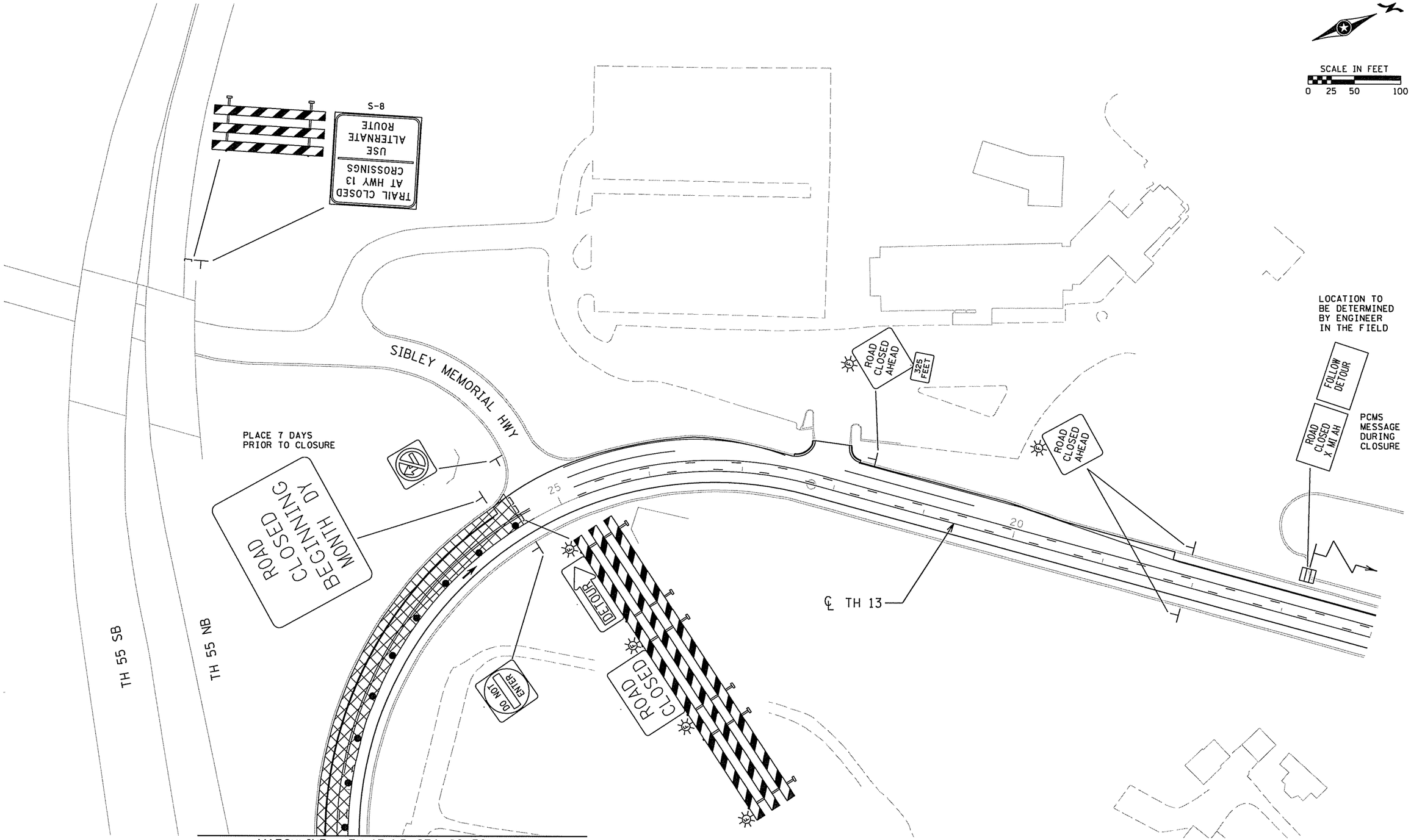
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
SEGMENT C1 DIRECTIONAL CLOSURE PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 274 of 393 Sheets



SEGMENT C1
TH 13 SB CLOSURE

DATE: 1/26/2012 TIME: 7:16:52 AM
FILENAME: X:\20IN\101\02\DESIGN\SHEETS\cd190168_tc_C1_SB_06.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT C1 DIRECTIONAL CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 275 of 393 Sheets

SCALE IN FEET
0 25 50 100

℄ TH 13

110

115

120

ROAD CLOSED AHEAD

RIVERSIDE LN

MATCHLINE - TH 13 NB STA. 122+50

ROAD CLOSED X MI AH

FOLLOW DETOUR

LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

PCMS MESSAGE DURING CLOSURE

DATE: 1/26/2012 TIME: 7:16:53 AM
FILENAME: X:\20IN\101102\DESIGN\SHEETS\cd190116B_tc_D_01.dgn

SEGMENT D2
TH 13 FULL CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT D2 CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 276 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 122+50

℄ TH 13

4DY
W/ DOUBLE ROW TRPM'S 10' SPACING

50' TYP

25' TYP

4SW
W/ TRPM'S 10' SPACING

4SY

ROAD CLOSED AHEAD
325 FEET

ROAD CLOSED 500 FEET LOCAL TRAFFIC ONLY

WACHTLER AVE (CO RD 8)

ROAD WORK AHEAD

DETOUR

ROAD CLOSED AHEAD
325 FEET

ROAD CLOSED BEGINNING MONTH DY

PLACE A MINIMUM OF 7 DAYS PRIOR TO CLOSURE

ROAD CLOSED

BREAKLINE - D2

SEGMENT D2
TH 13 FULL CLOSURE

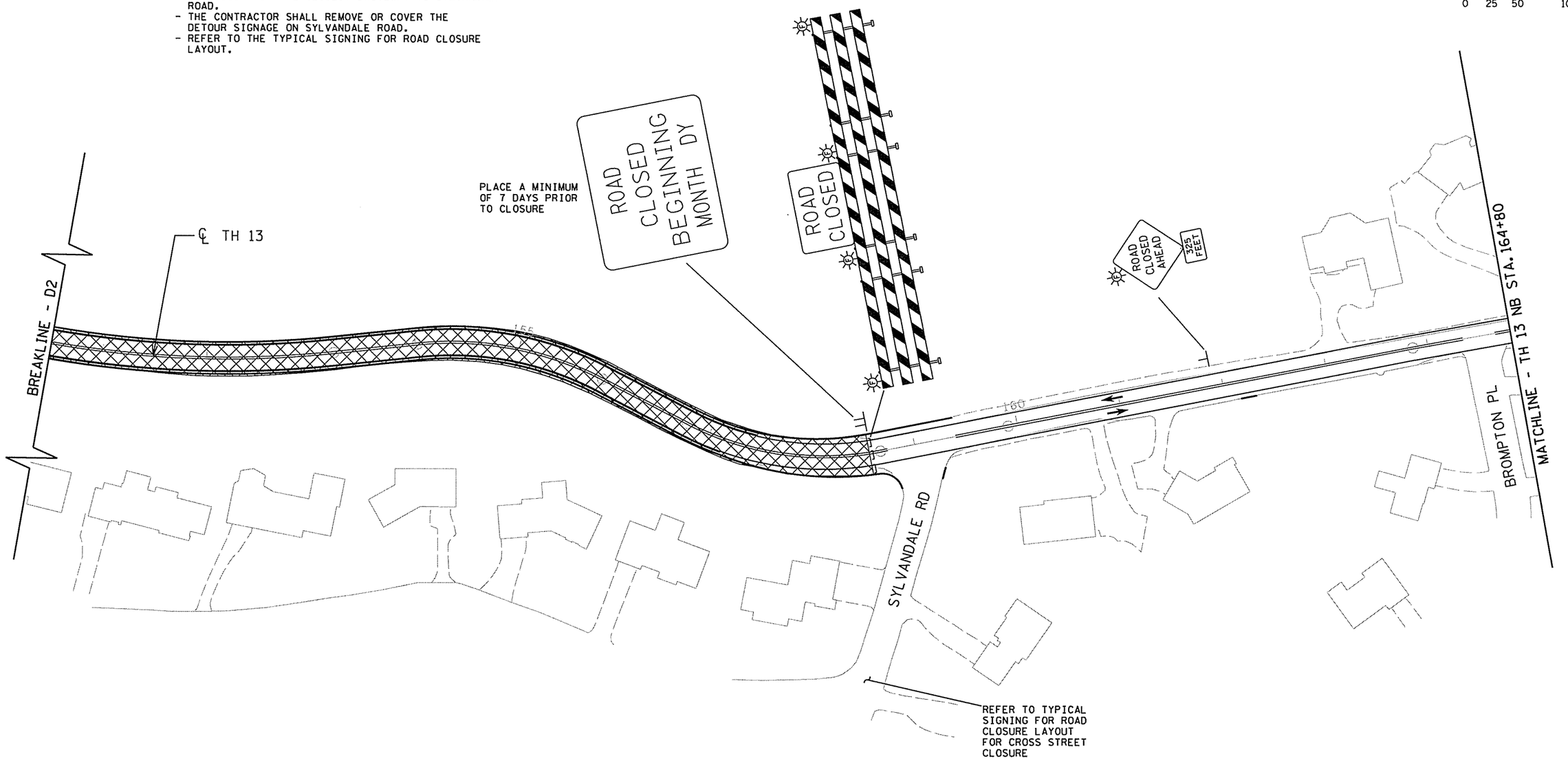
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DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 02/10/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT D2 CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 277 of 393 Sheets

SYLVANDALE ROAD INTERSECTION CONSTRUCTION

- DURING WORK TO CONSTRUCT THE SYLVANDALE ROAD/ TH 13 INTERSECTION, THE CONTRACTOR SHALL CLOSE SYLVANDALE ROAD TIGHT JUST WEST OF THE CLOSEST DRIVEWAY TO TH 13 AND SHALL CLOSE TH 13 TIGHT JUST SOUTH OF THE CLOSEST DRIVEWAY TO SYLVANDALE ROAD.
- THE CONTRACTOR SHALL REMOVE OR COVER THE DETOUR SIGNAGE ON SYLVANDALE ROAD.
- REFER TO THE TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT.

SCALE IN FEET
0 25 50 100



DATE: 1/26/2012 TIME: 7:16:56 AM
FILENAME: X:\201\N\01\02\DESIGN\SHEETS\od1901168_tc_D_03.dgn

SEGMENT D2
TH 13 FULL CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT D2 CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 278 of 393 Sheets

SCALE IN FEET
0 25 50 100

ROAD CLOSED AHEAD

ROAD CLOSED

ROAD CLOSED

℄ TH 13

165

170

175

MATCHLINE - TH 13 STA. 164+80

LONDON RD

DOWNING ST

SUTCLIFF CIR

MATCHLINE - TH 13 STA. 178+50

REFER TO TYPICAL SIGNING FOR ROAD CLOSURE LAYOUT FOR CROSS STREET CLOSURE

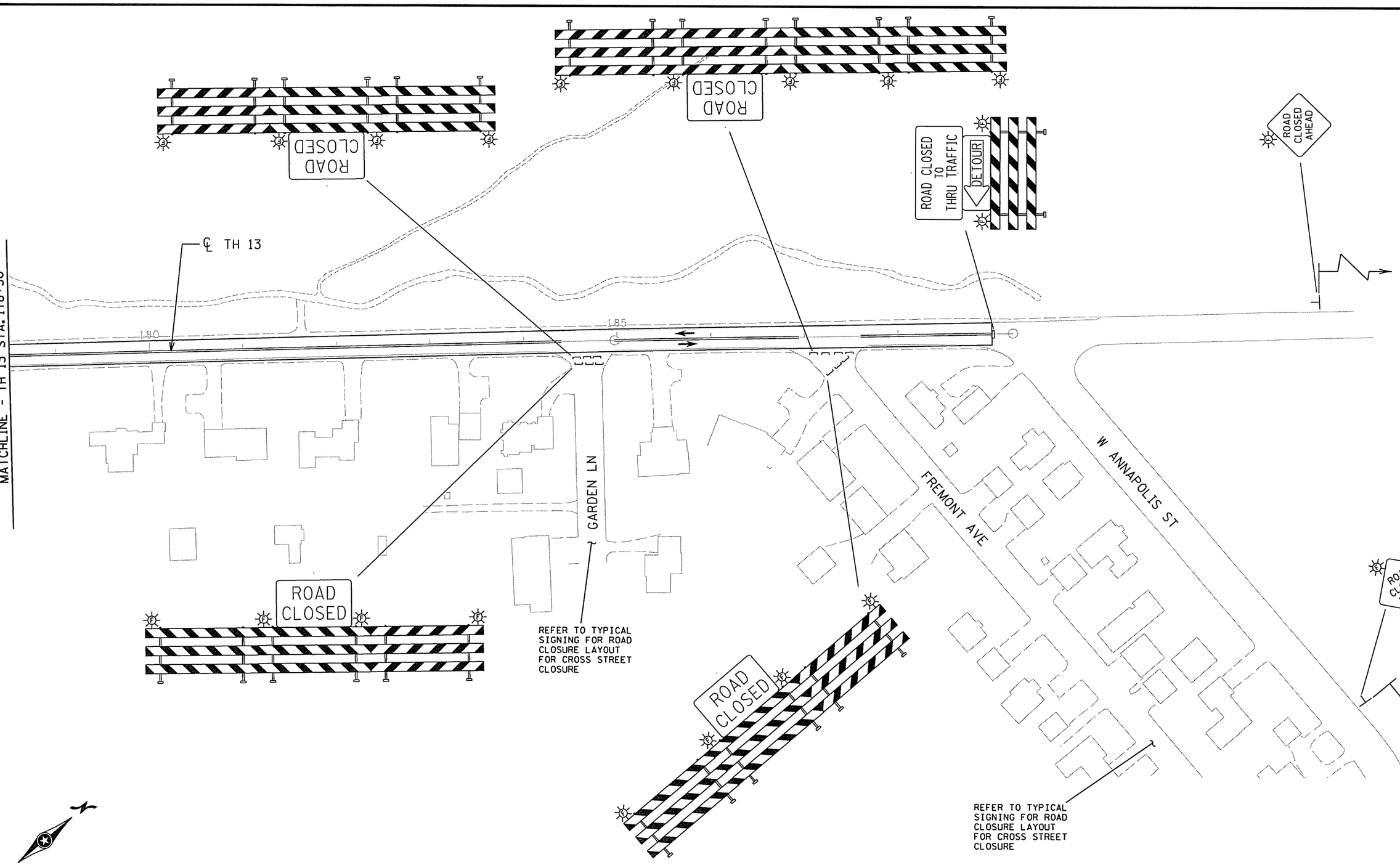
ROAD CLOSED

ROAD CLOSED

DATE: 1/26/2012 TIME: 7:16:57 AM
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SEGMENT D2
TH 13 FULL CLOSURE

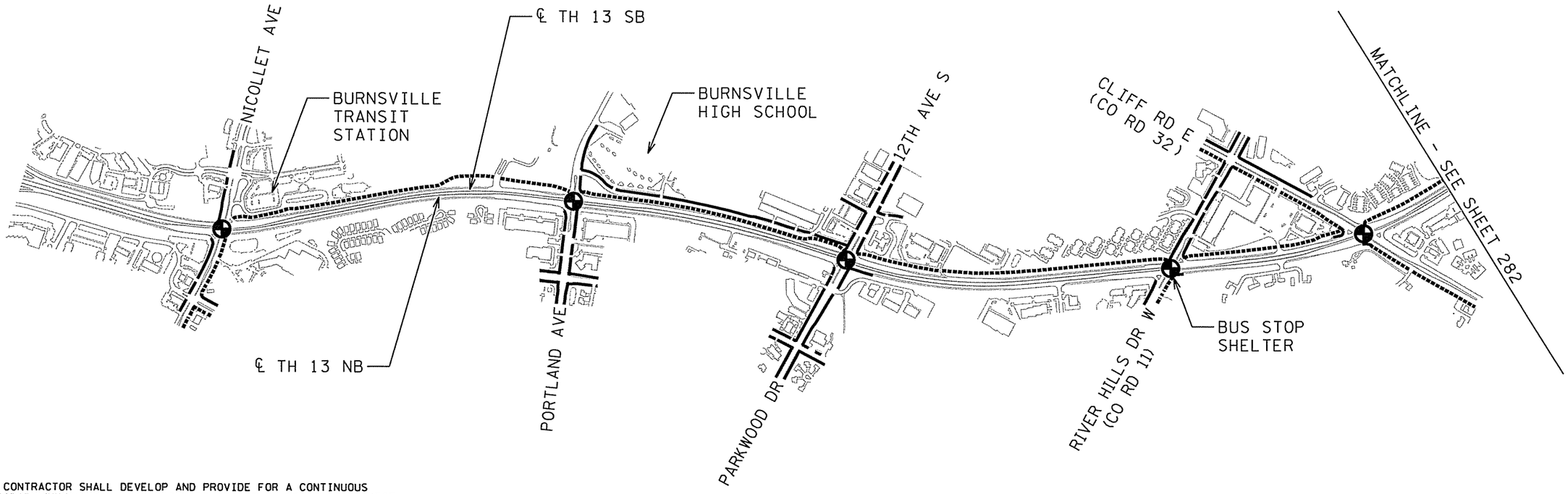
DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT D2 CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 279 of 393 Sheets



DATE: 1/26/2012 TIME: 7:16:58 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cd190168_tc_D_05.dgn

SEGMENT D2 - TH 13 FULL CLOSURE

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS SEGMENT D2 CLOSURE PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 280 of 393 Sheets



NOTES:
1. THE CONTRACTOR SHALL DEVELOP AND PROVIDE FOR A CONTINUOUS TEMPORARY PEDESTRIAN ACCESSIBLE ROUTE (TPAR) FOR THIS PROJECT.
2. THIS TEMPORARY PEDESTRIAN ACCESS CONTROL PLAN DEPICTS TRAILS AND WALKS PARALLEL TO AND CROSSING TH 13 WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL MAINTAIN EXISTING PEDESTRIAN/BICYCLE MOVEMENTS THROUGH AND AROUND THE WORK ZONE DURING CONSTRUCTION.
3. THE CONTRACTOR WILL BE ALLOWED TO CLOSE PEDESTRIAN/BICYCLE CROSSINGS AT INTERSECTIONS IF AN ALTERNATE ACCESSIBLE CROSSING IS PROVIDED OR IF A DETOUR ROUTE IS DELINEATED.
4. CLOSURES OF TRAILS AND WALKS SHALL BE IN ACCORDANCE WITH FIELD MANUAL LAYOUTS.
5. IF THE CONTRACTOR ELECTS TO DETOUR PEDESTRIAN/BICYCLE FACILITIES DURING INTERSECTION CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DETOUR PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.
6. REFER TO THE SPECIAL PROVISIONS FOR TPAR REQUIREMENTS.
7. ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION REQUIRED TO PROVIDE A TPAR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL.

LEGEND
- EXISTING SIDEWALK
- EXISTING TRAIL
- EXISTING TRAFFIC SIGNAL

DATE: 1/26/2012 TIME: 7:16:59 AM
FILENAME: X:\2011\1101102\DESIGN\SHEETS\cd190l168_tc_tr01.dgn

DRAWN BY: KAS CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TEMPORARY PED ACCESS CONTROL PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 281 of 393 Sheets

NOTES:
1. THE CONTRACTOR SHALL DEVELOP AND PROVIDE FOR A CONTINUOUS TEMPORARY PEDESTRIAN ACCESSIBLE ROUTE (TPAR) FOR THIS PROJECT.

2. THIS TEMPORARY PEDESTRIAN ACCESS CONTROL PLAN DEPICTS TRAILS AND WALKS PARALLEL TO AND CROSSING TH 13 WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL MAINTAIN EXISTING PEDESTRIAN/BICYCLE MOVEMENTS THROUGH AND AROUND THE WORK ZONE DURING CONSTRUCTION.

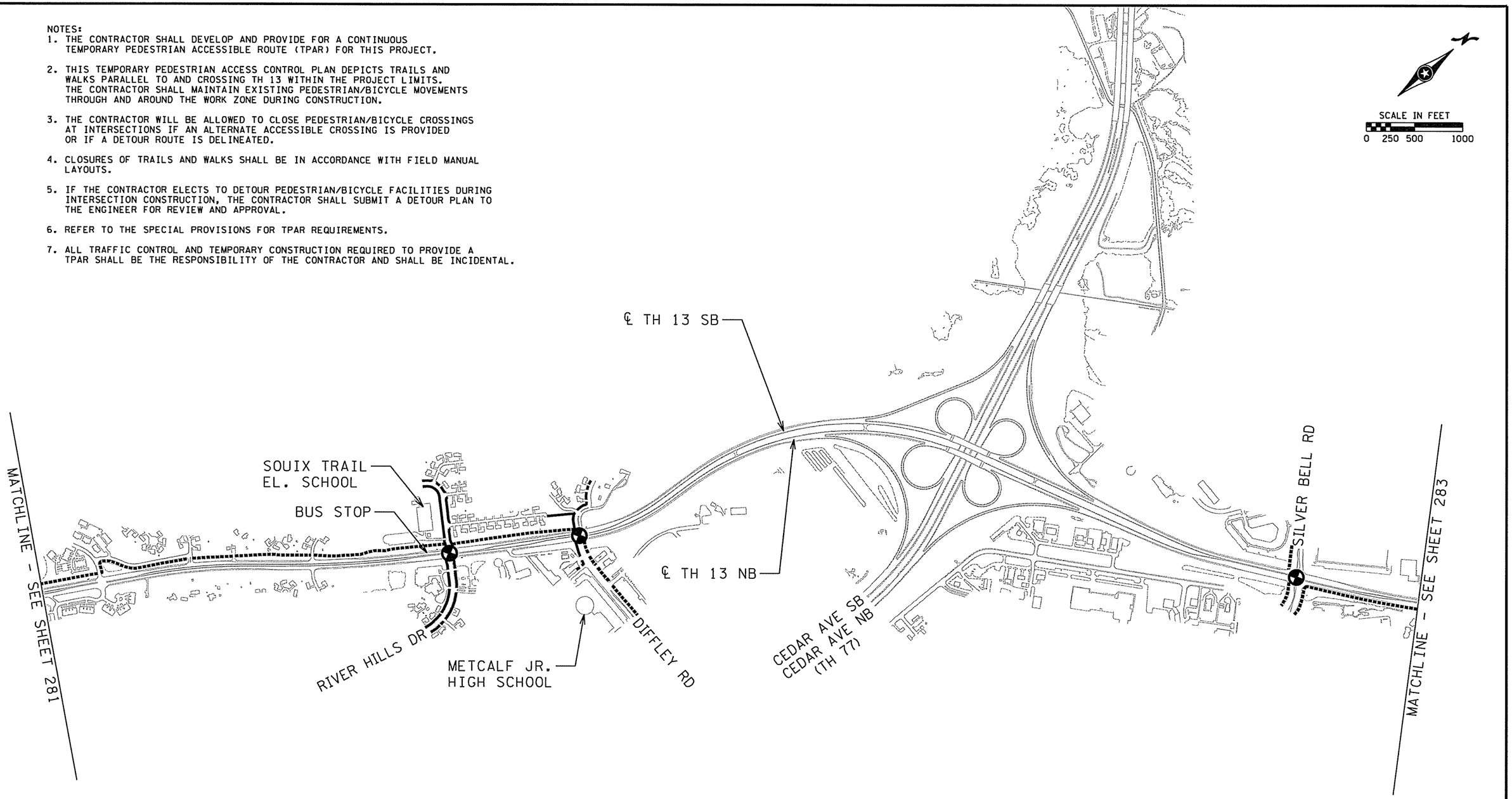
3. THE CONTRACTOR WILL BE ALLOWED TO CLOSE PEDESTRIAN/BICYCLE CROSSINGS AT INTERSECTIONS IF AN ALTERNATE ACCESSIBLE CROSSING IS PROVIDED OR IF A DETOUR ROUTE IS DELINEATED.

4. CLOSURES OF TRAILS AND WALKS SHALL BE IN ACCORDANCE WITH FIELD MANUAL LAYOUTS.

5. IF THE CONTRACTOR ELECTS TO DETOUR PEDESTRIAN/BICYCLE FACILITIES DURING INTERSECTION CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DETOUR PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

6. REFER TO THE SPECIAL PROVISIONS FOR TPAR REQUIREMENTS.

7. ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION REQUIRED TO PROVIDE A TPAR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL.



LEGEND
- EXISTING SIDEWALK
- EXISTING TRAIL
- EXISTING TRAFFIC SIGNAL

DATE: 1/26/2012 TIME: 7:17:01 AM
FILENAME: X:\20IN\0102\DESIGN\SHEETS\cdl901l68_tc_tr02.dgn

DRAWN BY: KAB CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TEMPORARY PED ACCESS CONTROL PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 282 of 393 Sheets

NOTES:
1. THE CONTRACTOR SHALL DEVELOP AND PROVIDE FOR A CONTINUOUS TEMPORARY PEDESTRIAN ACCESSIBLE ROUTE (TPAR) FOR THIS PROJECT.

2. THIS TEMPORARY PEDESTRIAN ACCESS CONTROL PLAN DEPICTS TRAILS AND WALKS PARALLEL TO AND CROSSING TH 13 WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL MAINTAIN EXISTING PEDESTRIAN/BICYCLE MOVEMENTS THROUGH AND AROUND THE WORK ZONE DURING CONSTRUCTION.

3. THE CONTRACTOR WILL BE ALLOWED TO CLOSE PEDESTRIAN/BICYCLE CROSSINGS AT INTERSECTIONS IF AN ALTERNATE ACCESSIBLE CROSSING IS PROVIDED OR IF A DETOUR ROUTE IS DELINEATED.

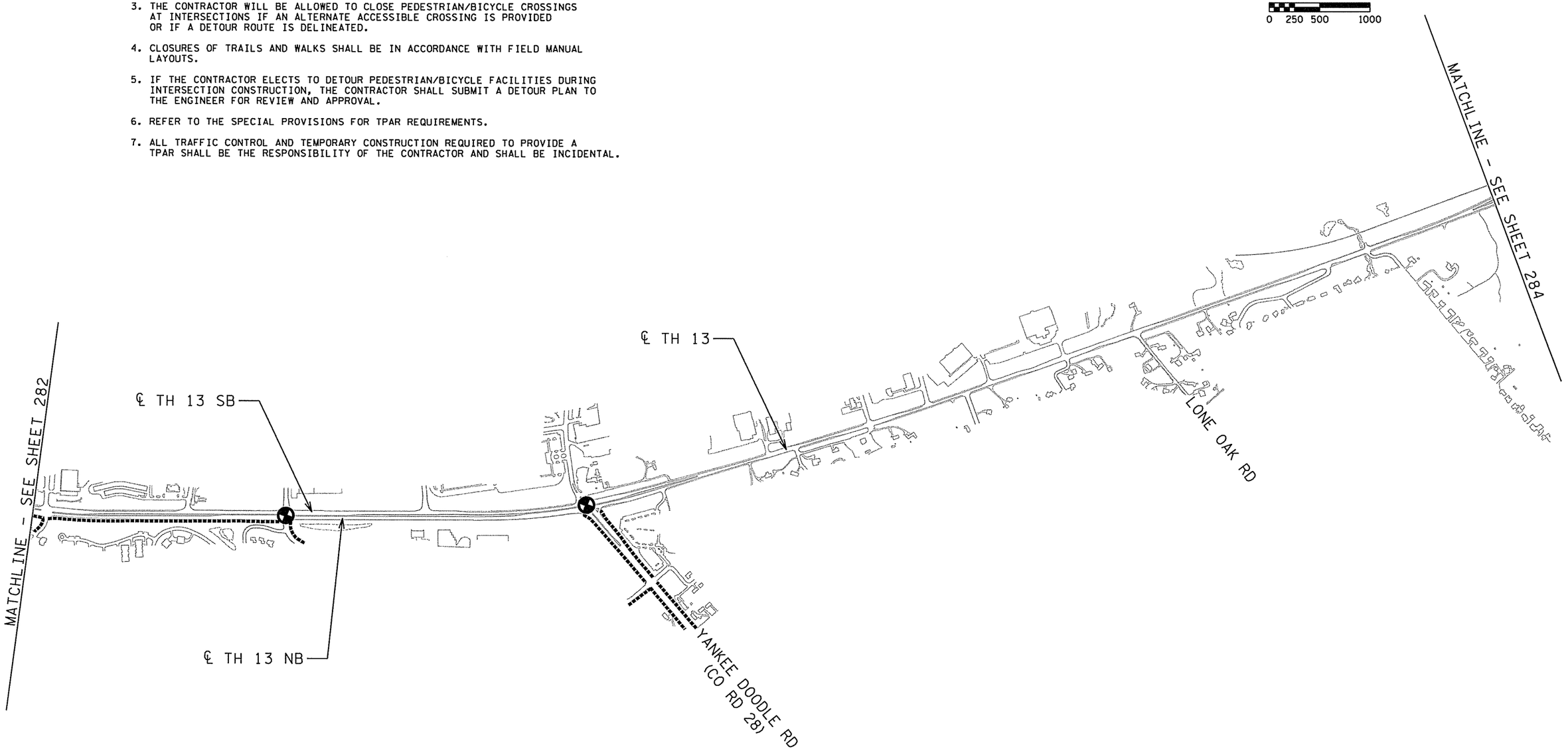
4. CLOSURES OF TRAILS AND WALKS SHALL BE IN ACCORDANCE WITH FIELD MANUAL LAYOUTS.

5. IF THE CONTRACTOR ELECTS TO DETOUR PEDESTRIAN/BICYCLE FACILITIES DURING INTERSECTION CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DETOUR PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

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7. ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION REQUIRED TO PROVIDE A TPAR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL.

SCALE IN FEET
0 250 500 1000



LEGEND
- EXISTING SIDEWALK
- EXISTING TRAIL
- EXISTING TRAFFIC SIGNAL

DATE: 1/26/2012 TIME: 7:17:03 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cadl901168_tc_tr03.dgn

DRAWN BY: KAB
CHECKED BY: SAW

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

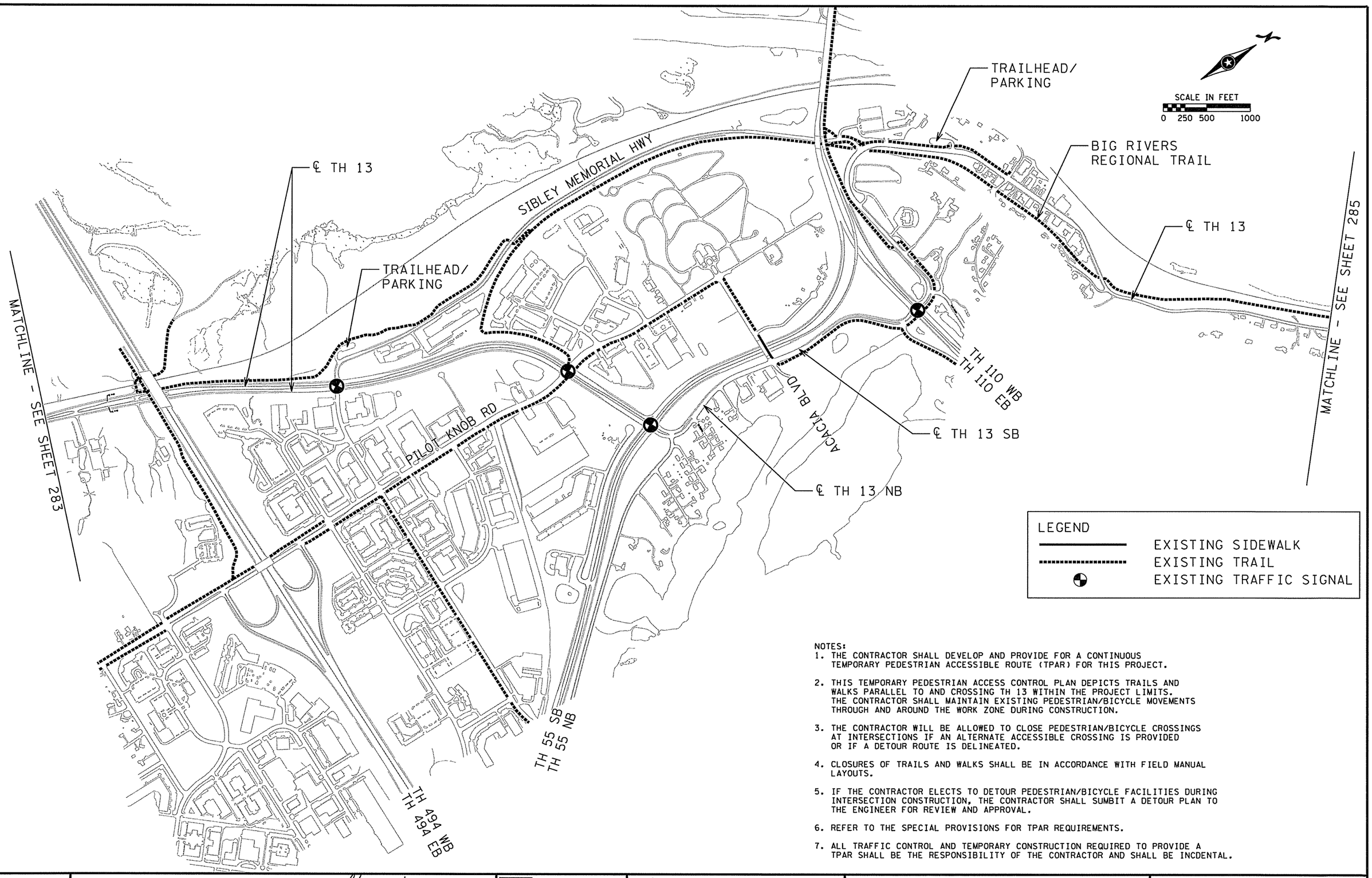
SIGNATURE: Steve Weser
PRINTED NAME: STEVE WESER
DATE: 01/26/12 LIC. NO. 40545

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

TRAFFIC CONTROL PLANS
TEMPORARY PED ACCESS CONTROL PLANS

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 283 of 393 Sheets



LEGEND

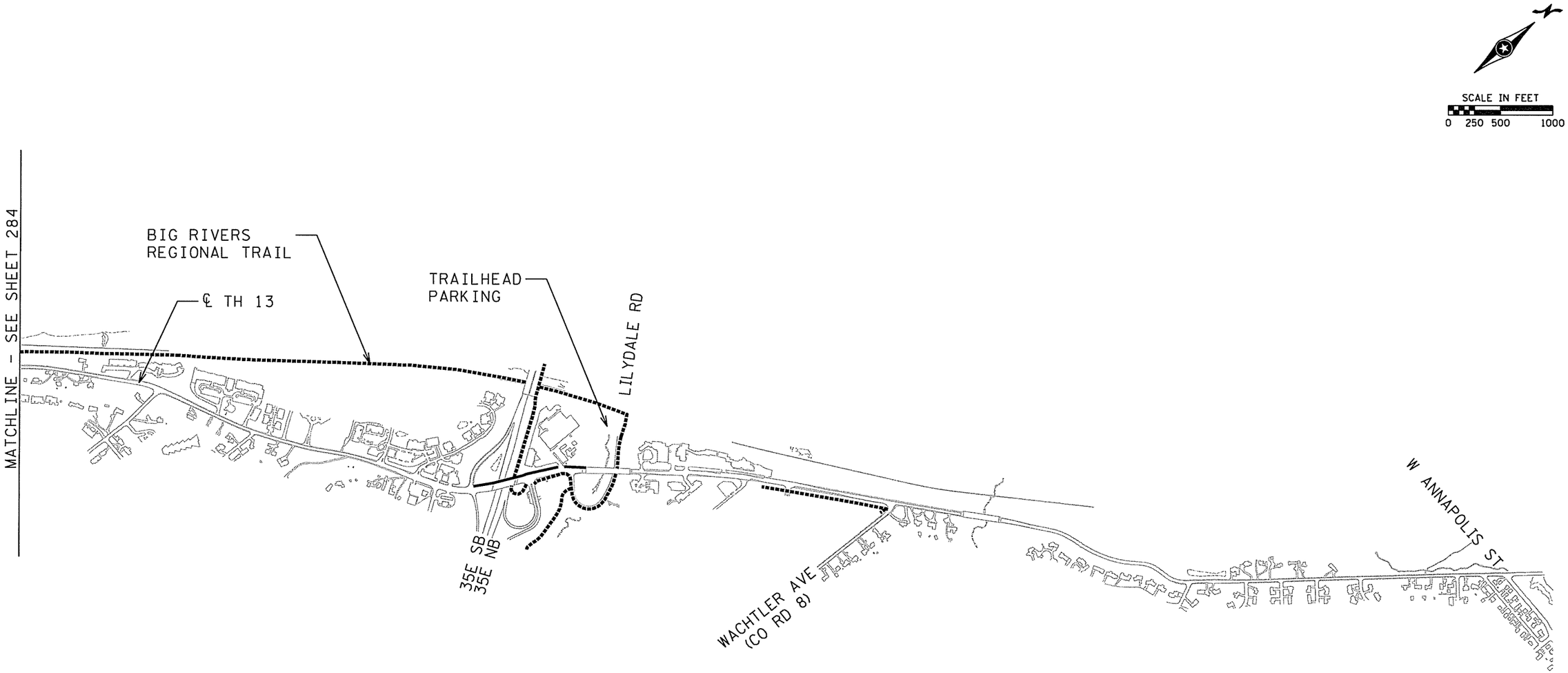
- EXISTING SIDEWALK
- EXISTING TRAIL
- EXISTING TRAFFIC SIGNAL

NOTES:

1. THE CONTRACTOR SHALL DEVELOP AND PROVIDE FOR A CONTINUOUS TEMPORARY PEDESTRIAN ACCESSIBLE ROUTE (TPAR) FOR THIS PROJECT.
2. THIS TEMPORARY PEDESTRIAN ACCESS CONTROL PLAN DEPICTS TRAILS AND WALKS PARALLEL TO AND CROSSING TH 13 WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL MAINTAIN EXISTING PEDESTRIAN/BICYCLE MOVEMENTS THROUGH AND AROUND THE WORK ZONE DURING CONSTRUCTION.
3. THE CONTRACTOR WILL BE ALLOWED TO CLOSE PEDESTRIAN/BICYCLE CROSSINGS AT INTERSECTIONS IF AN ALTERNATE ACCESSIBLE CROSSING IS PROVIDED OR IF A DETOUR ROUTE IS DELINEATED.
4. CLOSURES OF TRAILS AND WALKS SHALL BE IN ACCORDANCE WITH FIELD MANUAL LAYOUTS.
5. IF THE CONTRACTOR ELECTS TO DETOUR PEDESTRIAN/BICYCLE FACILITIES DURING INTERSECTION CONSTRUCTION, THE CONTRACTOR SHALL SUMBIT A DETOUR PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.
6. REFER TO THE SPECIAL PROVISIONS FOR TPAR REQUIREMENTS.
7. ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION REQUIRED TO PROVIDE A TPAR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCDENTAL.

DATE: 1/26/2012 TIME: 7:17:05 AM
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DRAWN BY: KAB CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TEMPORARY PED ACCESS CONTROL PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 284 of 393 Sheets



NOTES:
1. THE CONTRACTOR SHALL DEVELOP AND PROVIDE FOR A CONTINUOUS TEMPORARY PEDESTRIAN ACCESSIBLE ROUTE (TPAR) FOR THIS PROJECT.
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6. REFER TO THE SPECIAL PROVISIONS FOR TPAR REQUIREMENTS.
7. ALL TRAFFIC CONTROL AND TEMPORARY CONSTRUCTION REQUIRED TO PROVIDE A TPAR SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE INCIDENTAL.

LEGEND
- EXISTING SIDEWALK
- EXISTING TRAIL
- EXISTING TRAFFIC SIGNAL

DATE: 1/26/2012 TIME: 7:17:08 AM
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DRAWN BY: KAB CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Steve Weser PRINTED NAME: STEVE WESER DATE: 01/26/12 LIC. NO. 40545	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	TRAFFIC CONTROL PLANS TEMPORARY PED ACCESS CONTROL PLANS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 285 of 393 Sheets

PAVEMENT MARKINGS K

ROADWAY (STATION)			PAVEMENT MARKING REMOVAL PERMANENT	LT ARROW POLY	RT ARROW POLY	LT ARROW EPOXY	RT ARROW EPOXY	4" SOLID LINE WHITE POLY	8" SOLID LINE WHITE POLY	4" BROKEN LINE WHITE POLY	4" DOTTED LINE WHITE POLY	8" DOTTED LINE WHITE POLY	7" BROKEN LINE WHITE-POLY PREF (GR IN)	11" DOTTED LINE WHITE-POLY PREF (GR IN)	4" SOLID LINE WHITE EPOXY	24" SOLID LINE WHITE EPOXY	4" BROKEN LINE WHITE EPOXY	8" DOTTED LINE WHITE EPOXY	4" SOLID LINE YELLOW EPOXY	24" SOLID LINE YELLOW EPOXY	4" BROKEN LINE YELLOW EPOXY	4" DOUBLE SOLID LINE YELLOW EPOXY	CROSSWALK MARKING POLY	CROSSWALK MARKING EPOXY
			LIN FT	EACH	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ FT	SQ FT
SP 1901-168																								
TH 35W (STA. 735+00)	TO	NICOLLET AVE. (STA. 108+00)		4	2			898	818	1060		265			5166				5161				126	
NICOLLET AVE. (STA. 108+00)	TO	PORTLAND AVE. (STA. 140+00)		8	5			2014		1240					6100				6126				900	
PORTLAND AVE. (STA. 140+00)	TO	PARKWOOD DR. (STA. 165+50)		5	2			1467		970					4813				4775				1242	
PARKWOOD DR. (STA. 165+50)	TO	CO. RD. 11 (STA. 195+50)		4	8			2167		1140					5393				5519				1242	
CO. RD. 11 (STA. 195+50)	TO	CLIFF RD. (STA. 213+50)		6	8			2288		660					2950				3266				1314	
CLIFF RD. (STA. 213+50)	TO	RIVER HILLS DR. (STA. 919+00)		8	14			3327		2010	56				9009				9729				1210	
RIVER HILLS DR. (STA. 919+00)	TO	DIFFLEY RD. (STA. 932+50)		3	4			966		500					2360				2486				918	
DIFFLEY RD. (STA. 932+50)	TO	SILVER BELL RD. (STA. 1012+00)	340	8	4			2826	2617	3010		80	170	170	20435				19313				1080	
SILVER BELL RD. (STA. 1012+00)	TO	BLACKHAWK RD. (STA. 1045+50)		11	9			3048		1410	114				6693				7046				1026	
BLACKHAWK RD. (STA. 1045+50)	TO	YANKEE DOODLE (STA. 1075+50)		6	5			2128		1160					5453				5743				702	
YANKEE DOODLE (STA. 1075+50)	TO	TH 494 (STA. 1185+00)				5	15								21564		230	254	7087	500	538	4368		540
SP 1901-168 TOTALS			340	63	61	5	15	21129	3435	13160	170	345	170	170	89936		230	254	76251	500	538	4368	9760	540
SP 1902-66																								
TH 55 (STA. 1233+00)	TO	TH 110 (STA. 48+00)				17	5								7322		90		6317		688			
TH 110 (STA. 48+00)	TO	2ND ST. (STA. 21+00)				40	6								10223				7181	117	1134	2008		918
TH 35E (STA. 45+00)	TO	W. ANNAPOLIS ST. (STA. 189+00)				2	11								19110	24	30		1774	40	873	4875		252
SP 1902-66 TOTALS						59	22								36655	24	120		15272	157	2695	6883		1170
PROJECT TOTALS			340	63	61	64	37	21129	3435	13160	170	345	170	170	126591	24	350	254	91523	657	3233	11251	9760	1710

DATE: 2/13/2012 TIME: 8:00:51 AM
FILENAME: X:\2011\01102\DESIGN\SHEETS\cal190168_pm00.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 02/13/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TABULATION

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 286 of 393 Sheets

PERMANENT PAVEMENT MARKING PLANS

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.

POLY PREFORM INLAY APPLICATION:

MAT TEMPERATURE SHALL BE CHECKED USING A THERMOMETER TO MAKE SURE THE INLAY IS BEING DONE IN THE PROPER TEMPERATURE RANGE. THE TEMPERATURE SHOULD MEASURE BETWEEN 150° F (ASPHALT FIRM ENOUGH TO WALK ON) AND 120° F. APPLICATION BELOW 120° F MAY NOT GET A PROPER INLAY. INLAYS ARE NOT RECOMMENDED AFTER SEPTEMBER 15th AS THE ASPHALT COOLS TOO FAST AT THIS TIME OF THE YEAR.

NO PRIMERS ARE USED FOR INLAY APPLICATION. DO NOT INSTALL LANE LINES ON AN ASPHALT SEAM. ROLLING OF ALL THE MARKINGS SHOULD BE LENGTHWISE IN THE DIRECTION THEY WERE LAID. FOR CROSSWALKS AND STOP BARS, INITIAL TAMPING WITH THE TAMPING CART IS RECOMMENDED USING ONLY 100 LBS. OF WEIGHT.

USE COMPACTION ROLLER TO EMBED (INLAY) MARKINGS INTO PAVEMENT SURFACE. USE MINIMUM SPEED AND WATER ON ROLLER. DO NOT USE VIBRATOR. IF MARKING BUCKLES OR DISTORTS SEVERELY IN FRONT OF ROLLER, MAT TEMPERATURE OR ROLLER SPEED MAY BE TOO HIGH.

POLY PREFORM GROOVED APPLICATION:

CONCRETE PAVEMENT SURFACES AND BITUMINOUS PAVEMENT SURFACES WHERE PAVEMENT MARKINGS CANNOT BE INLAID IN THE HOT MAT, SHALL BE GROOVED FOR THE INSTALLATION OF DURABLE REFLECTORIZED PAVEMENT MARKINGS. SEE SPECIAL PROVISIONS.

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.

PERMANENT PAVEMENT MARKING PLANS INDEX

286	PAVEMENT MARKING TABULATION
287	PAVEMENT MARKING TITLE SHEET
288-293	PAVEMENT MARKING TYPICALS
294-318	PAVEMENT MARKING PLANS

SYMBOLS & MATERIALS LEGEND

CROSSWALK BLOCK WHITE
POLLY PREFORM (WEST OF YANKEE DOODLE)
EPOXY (EAST OF YANKEE DOODLE)

PAVEMENT MESSAGE (LEFT ARROW)
POLLY PREFORM (WEST OF YANKEE DOODLE)
EPOXY (EAST OF YANKEE DOODLE)

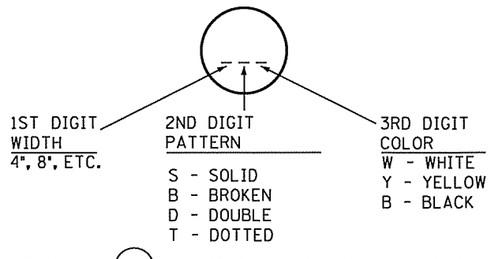
PAVEMENT MESSAGE (RIGHT ARROW)
POLLY PREFORM (WEST OF YANKEE DOODLE)
EPOXY (EAST OF YANKEE DOODLE)

STRIPING KEY

CIRCLE - EPOXY

SQUARE - POLY PREFORM

PENTAGON - POLY PREFORM (GROUND IN)



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

DATE: 1/26/2012 TIME: 8:56:52 AM
FILENAME: X:\201N1101102\DESIGN\SHEETS\cd190168_pm01.dgn

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CHECKED BY: SAW

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SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

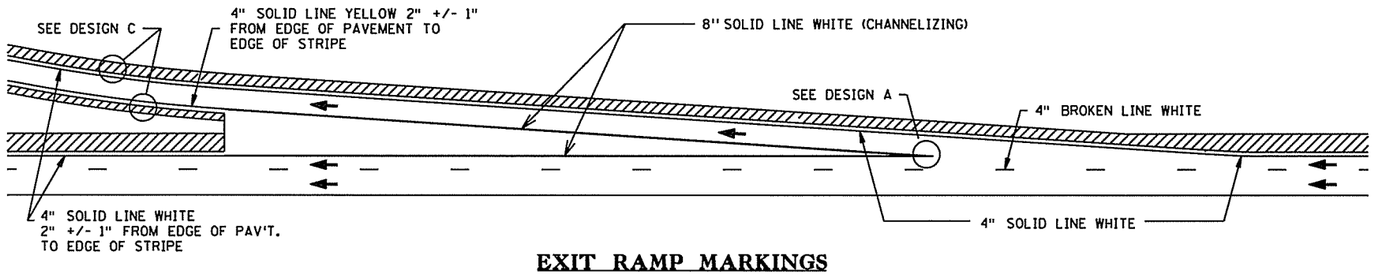
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

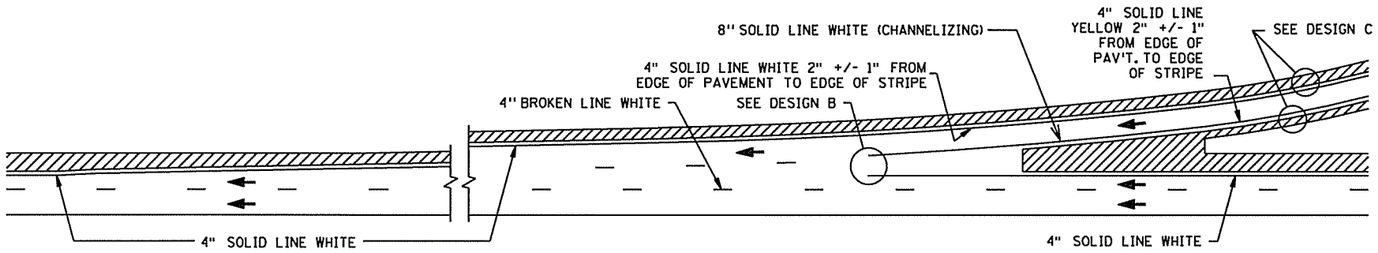
PAVEMENT MARKING PLANS
TITLE SHEET

STATE PROJ. NO. 1901-168 (TH 13)

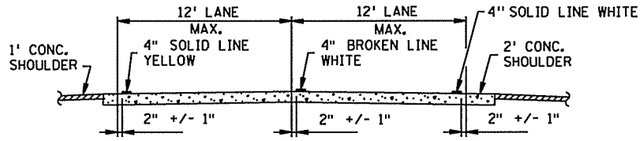
Sheet No. 287 of 393 Sheets



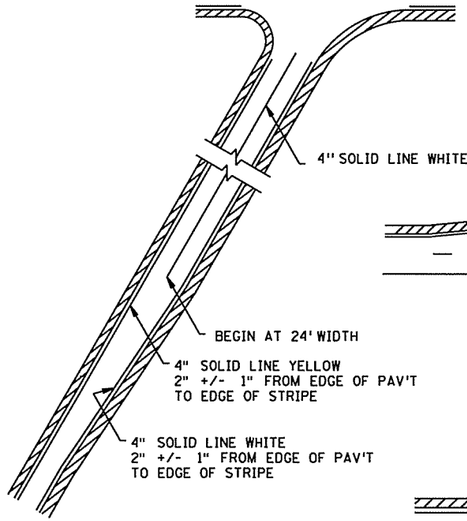
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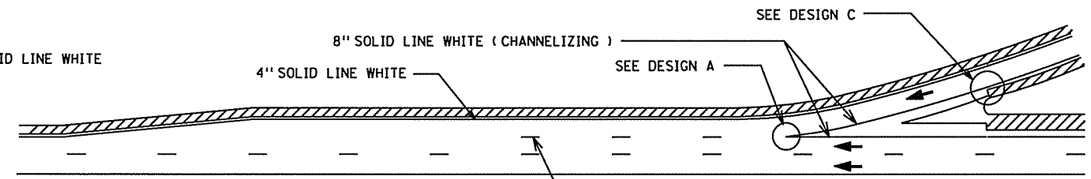
TAPERED ACCELERATION LANE



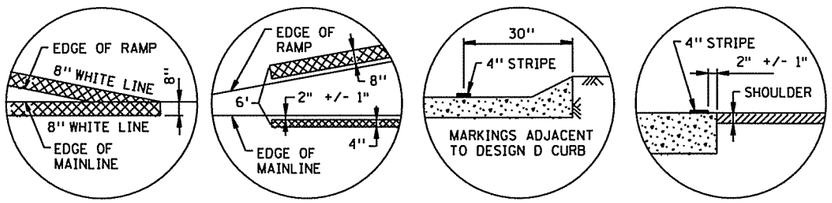
SECTION A-A
(TWO LANES)



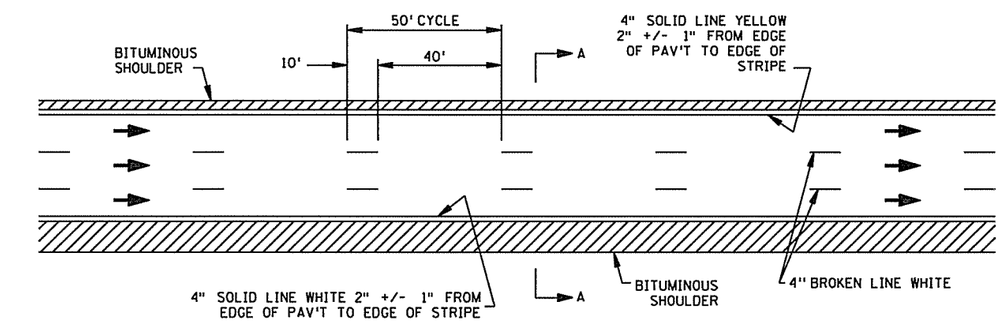
RAMP MARKINGS



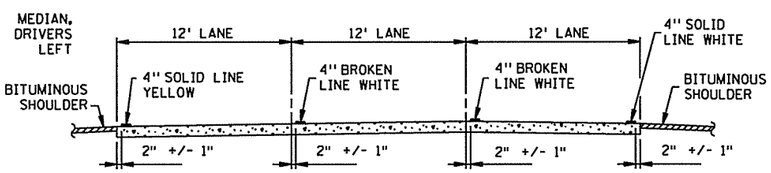
PARALLEL ACCELERATION LANE



DESIGN A | **DESIGN B** | **DESIGN C** URBAN | **DESIGN C** RURAL



THROUGH LANE MARKINGS

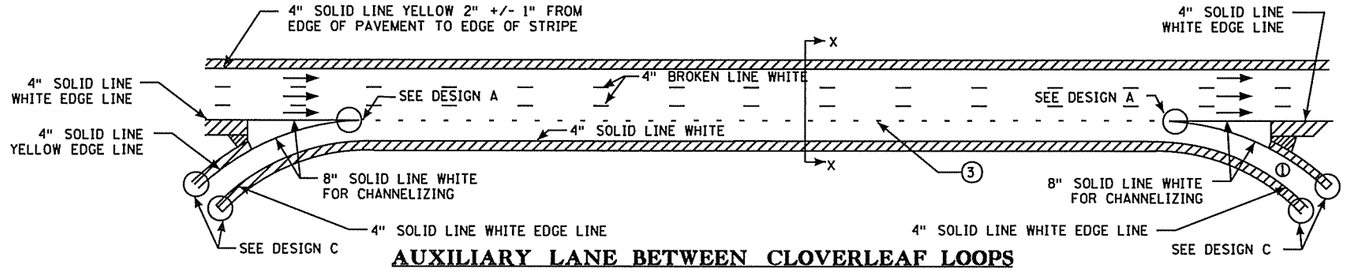


SECTION A-A
(THREE LANES)

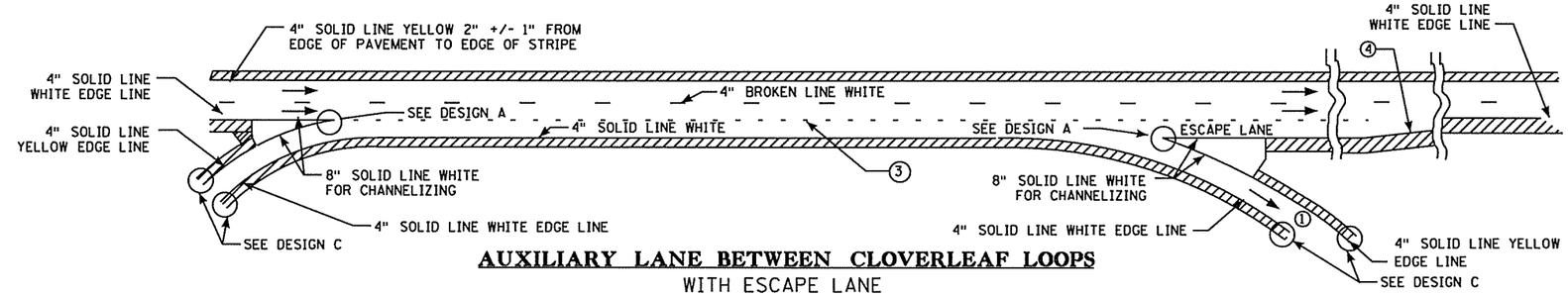
SHOULDER AREA

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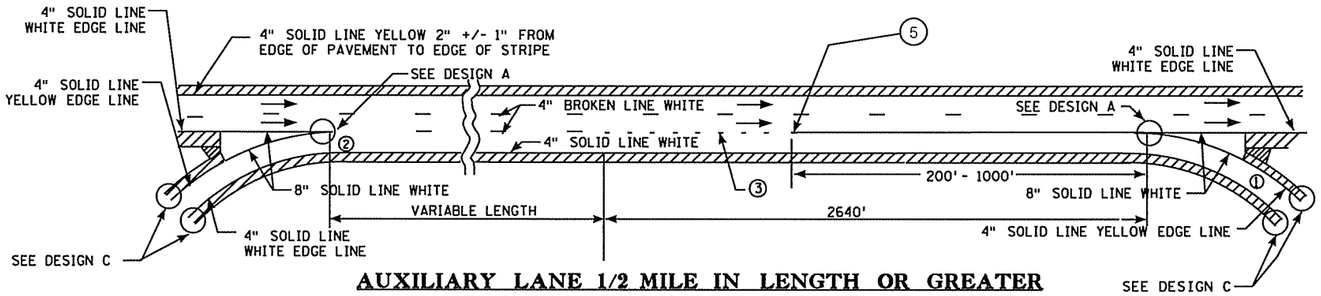
DRAWN BY: BMR CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Bryan Rislund PRINTED NAME: BRYAN RISLUND DATE: 01/26/12 LIC. NO. 45049	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	PAVEMENT MARKING PLANS PAVEMENT MARKING TYPICALS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 288 of 393 Sheets



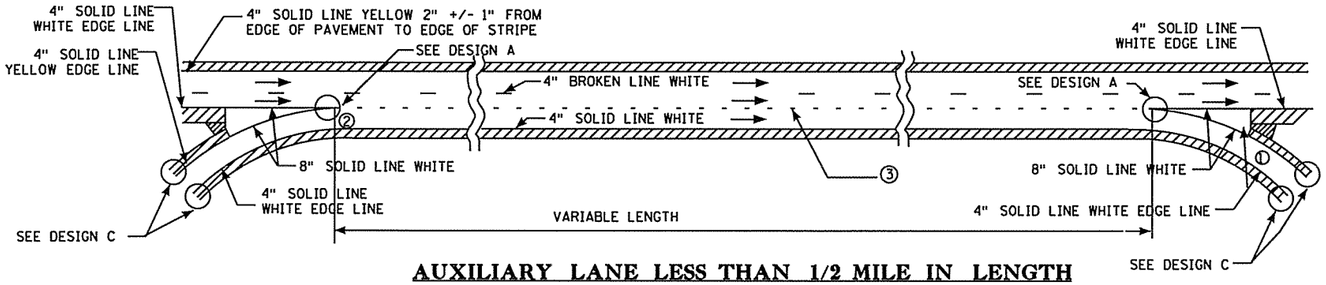
AUXILIARY LANE BETWEEN CLOVERLEAF LOOPS
WITHOUT ESCAPE LANE



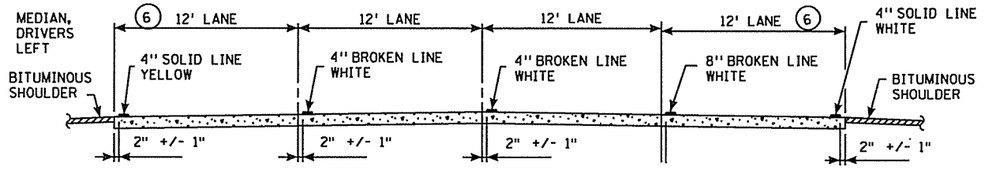
AUXILIARY LANE BETWEEN CLOVERLEAF LOOPS
WITH ESCAPE LANE



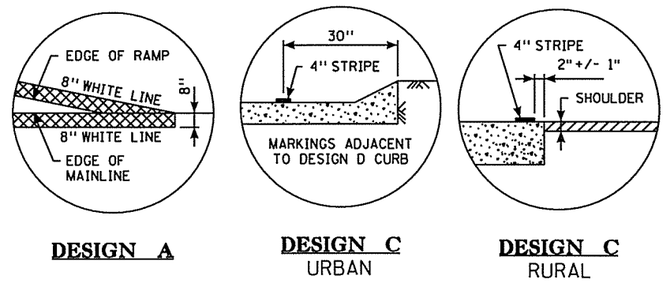
AUXILIARY LANE 1/2 MILE IN LENGTH OR GREATER
WITHOUT ESCAPE LANE



AUXILIARY LANE LESS THAN 1/2 MILE IN LENGTH
EXCEPT CLOVERLEAF WITH ESCAPE LANE



SECTION X - X

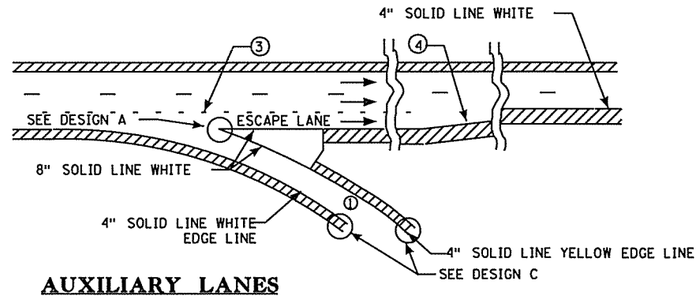


DESIGN A | **DESIGN C** URBAN | **DESIGN C** RURAL

NOTES:

1. EXTEND 8" SOLID LINE WHITE 50' MIN. BEYOND GORE AREA TO COMPENSATE FOR SHARP CURVATURE.
2. EXTEND 8" SOLID LINE WHITE FOR 200' TO 300' AT DISCRETION OF DISTRICT TRAFFIC ENGINEER. ON CURVATURE OR FOR OTHER SITUATIONS WHERE NEEDED FOR BETTER DELINEATION.
3. 8" DOTTED LINE WHITE 3' LONG WITH 12' GAPS AS DETAILED IN FIGURE 3B-10 OF THE MMUTCD.
4. EXTEND 8" SOLID LINE WHITE ENTIRE LENGTH OF THE ESCAPE LANE AND TO THE END OF THE TAPER. PICK UP THE NORMAL 4 IN. SOLID LINE WHITE BEYOND TAPER. TAPER MUST BE AT LEAST 1:50
5. EXTEND 8" SOLID LINE WHITE 200' TO 1000' FROM INTERSECTION OF GORE STRIPES, DEPENDING ON LENGTH OF LANE BEING DROPPED, AS DETERMINED BY DISTRICT TRAFFIC ENGINEER.
6. ON PAVEMENTS OVER 24' WIDE (I.E. 27') EDGE LINES WILL BE PLACED SO LANES ARE A MAXIMUM OF 12' WIDE.

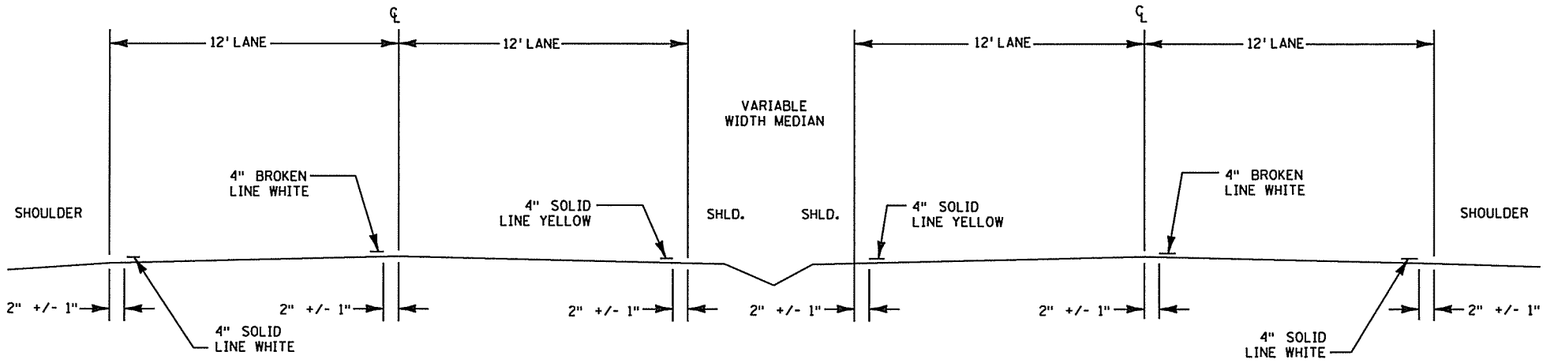
DENOTES SHOULDER AREA



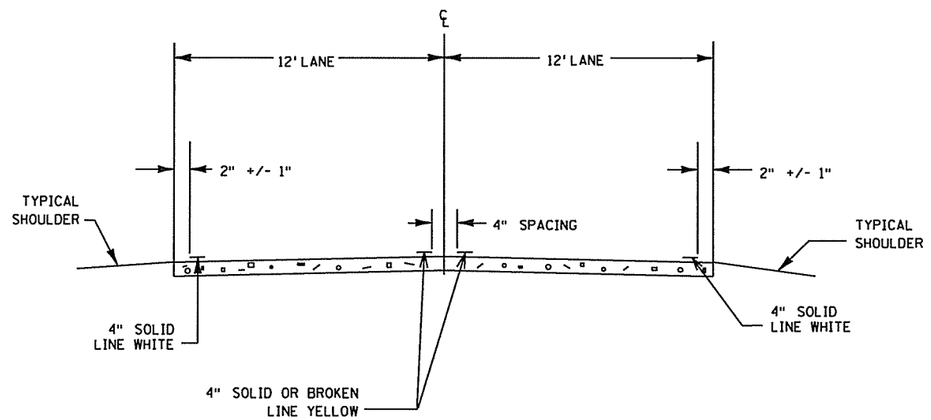
AUXILIARY LANES WITH ESCAPE LANE

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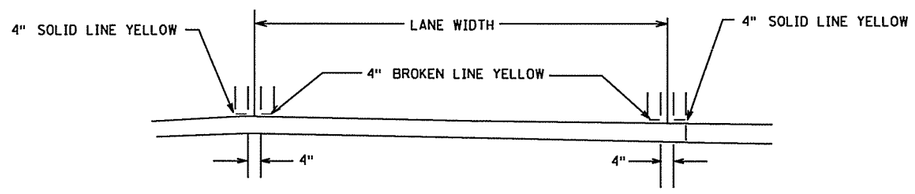
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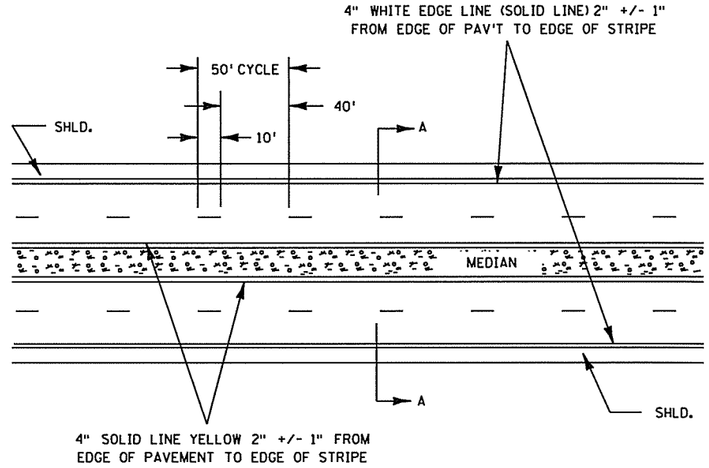
SECTION A-A
FOUR LANES



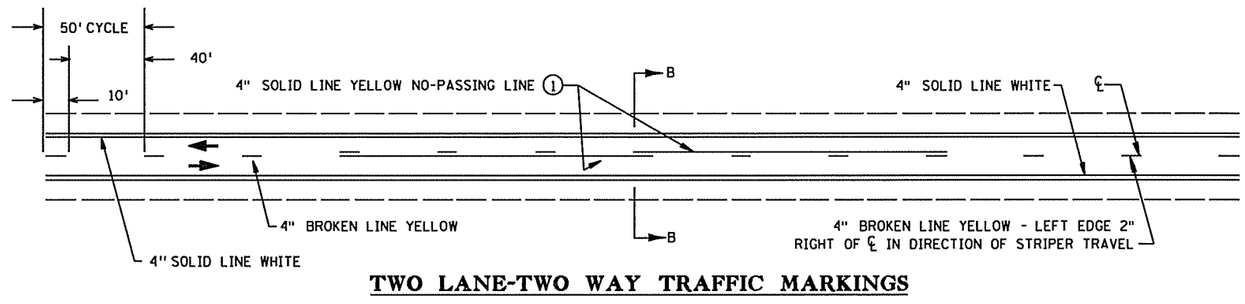
SECTION B-B



SECTION C-C
TWO WAY LEFT TURN LANE

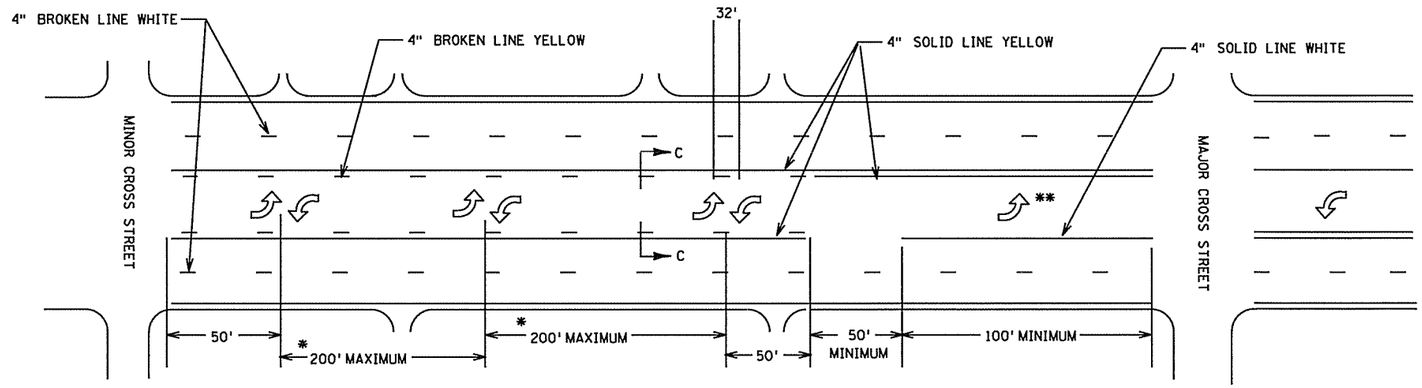


TYPICAL 4-LANE DIVIDED LANE MARKINGS



TWO LANE-TWO WAY TRAFFIC MARKINGS

(1) CONTACT TRAFFIC ENGINEER FOR NO PASSING ZONE SURVEY.



* THESE DISTANCES SHOULD BE EQUAL. THE ARROWS ARE PLACED TO SHOW THE OPERATION AND DO NOT HAVE TO LINE UP WITH ANY OF THE DRIVEWAYS.

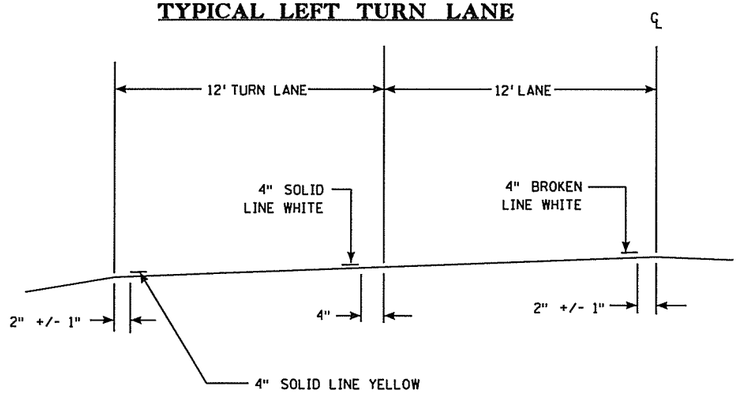
TWO WAY LEFT TURN LANE

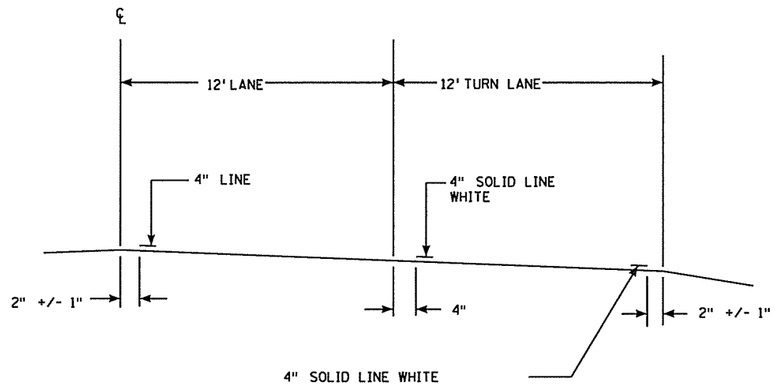
** SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER AND PLACEMENT OF ARROWS.

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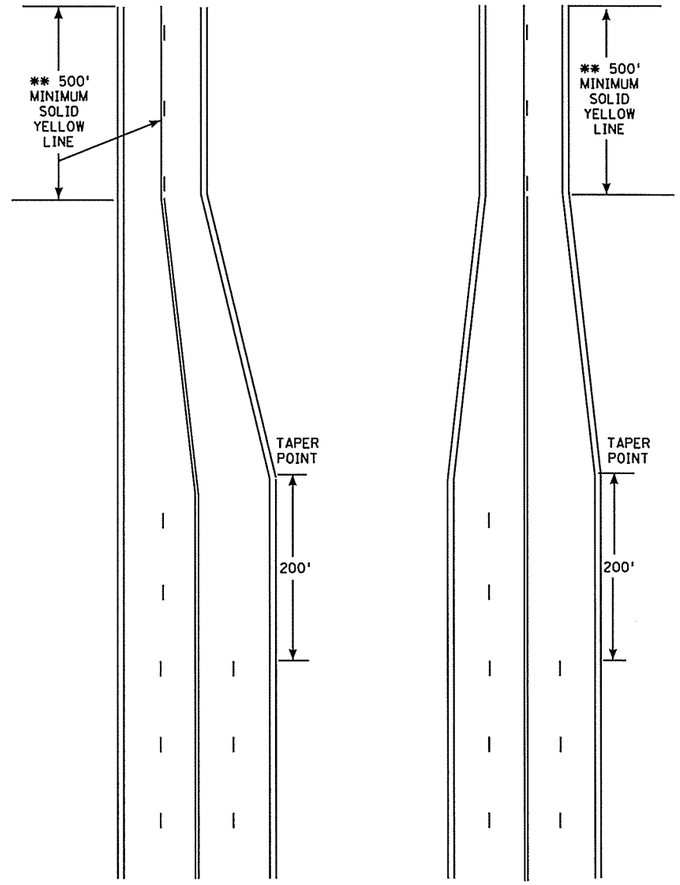
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TYPICAL LEFT TURN LANE

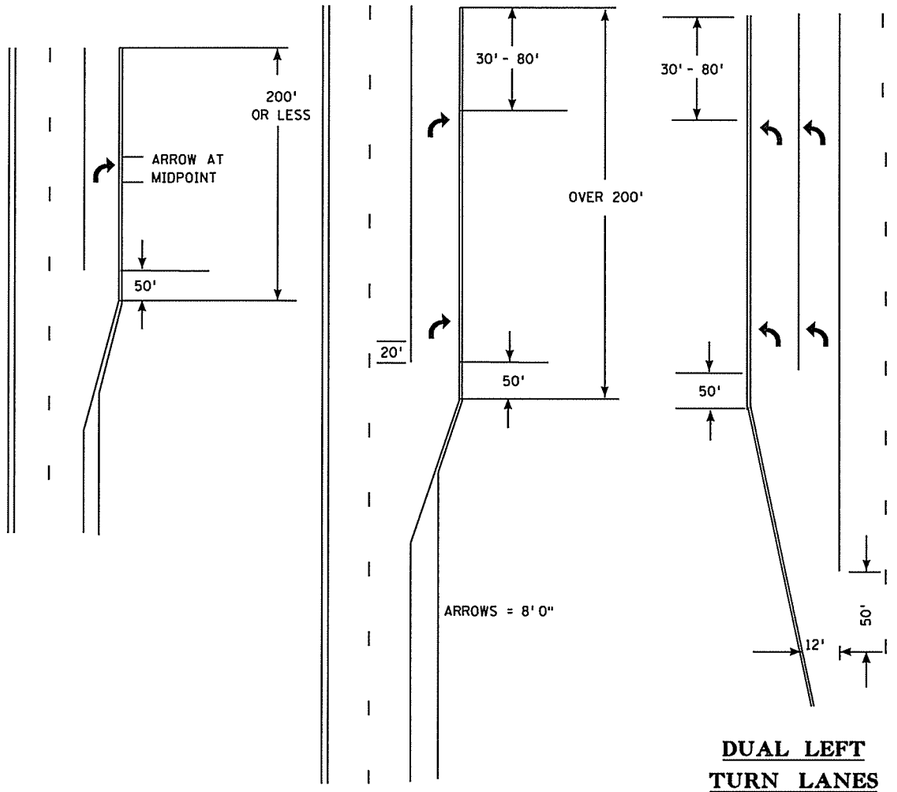


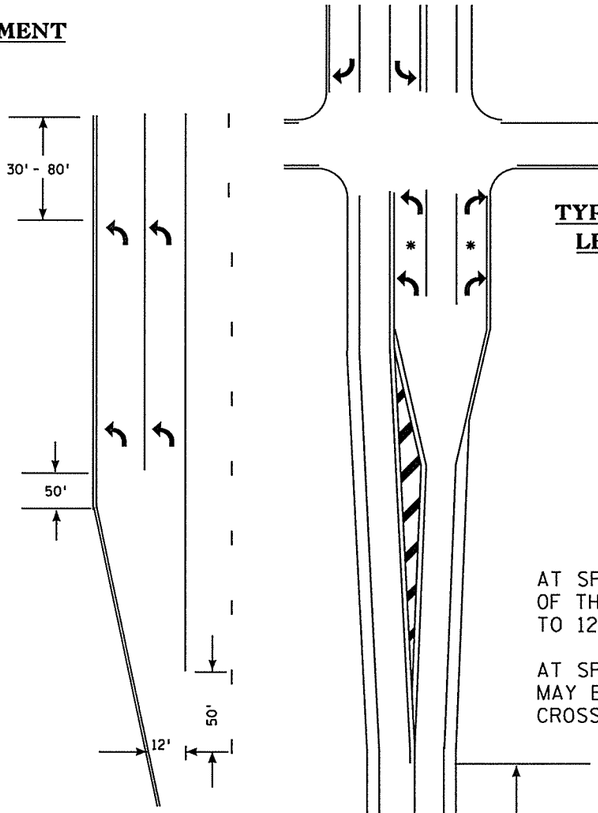


TYPICAL LANE REDUCTION TRANSITION



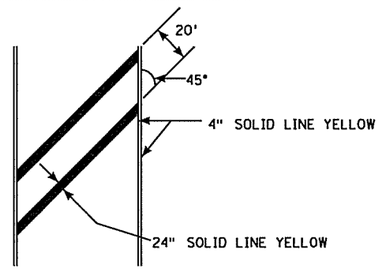
TYPICAL MESSAGE PLACEMENT FOR TURN LANES





DUAL LEFT TURN LANES

TYPICAL MARKINGS FOR LEFT TURN ISLANDS



AT SPEEDS LESS THAN 40 MPH THE WIDTH OF THE CROSSHATCH LINE MAY BE REDUCED TO 12".

AT SPEEDS 40 MPH AND OVER THE SPACING MAY BE INCREASED TO 30' BETWEEN CROSSHATCH LINES.

* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.

** IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

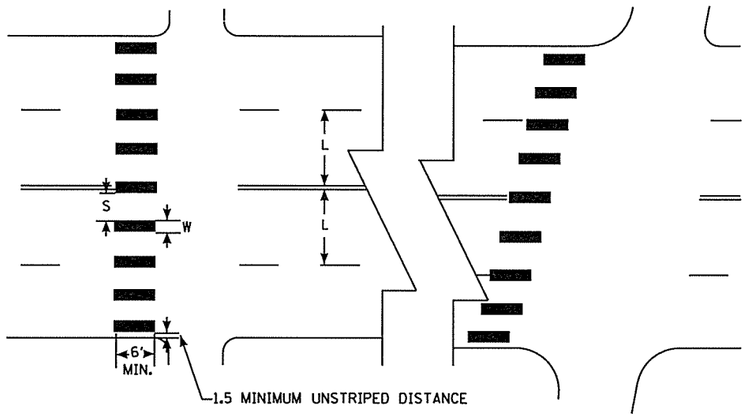
35 MPH SPEED LIMIT OR LESS.....500'
40-50 MPH SPEED LIMIT.....650'
55 MPH SPEED LIMIT.....800'

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MARKINGS FOR PEDESTRIAN CROSSWALKS

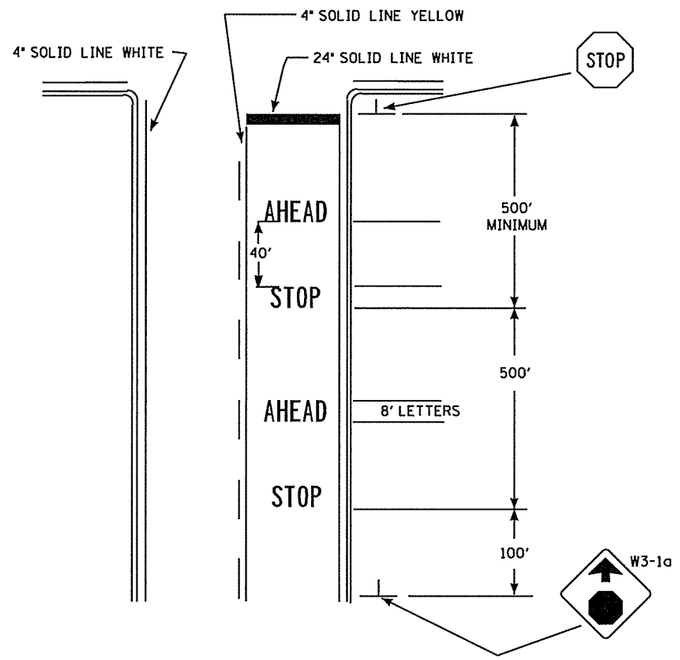
(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE
9′	2.0′	2.5′
10′	2.5′	2.5′
11′	2.5′	3.0′
12′	3.0′	3.0′
13′	3.0′	3.5′



NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.

PLACEMENT FOR "STOP AHEAD" MARKINGS AND STOP LINES



NOTES:

1. DOUBLE PAVEMENT MESSAGE AS SHOWN SHOULD BE INSTALLED WHENEVER THE STOP AHEAD SIGN IS PLACED A MINIMUM OF 1100′ IN ADVANCE OF THE STOP SIGN
2. IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

35 MPH SPEED LIMIT OR LESS	500′
40-50 MPH SPEED LIMIT	650′
55 MPH SPEED LIMIT	800′

3. WHERE STOP LINES ARE USED WITHOUT A MARKED CROSSWALK, THE STOP LINE SHOULD BE PLACED AT THE DESIRED STOPPING POINT, AND IN NO CASE NO MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING CURB LINE OR THE NEAR EDGE OF THE SHOULDER. WHERE STOP LINES AND CROSSWALK MARKINGS ARE USED TOGETHER, THE STOP LINE SHOULD BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK LINE.

   IF A STOP LINE IS USED IN CONJUNCTION WITH A STOP SIGN, IT SHOULD ORDINARILY BE PLACED IN LINE WITH THE STOP SIGN. HOWEVER, IF THE SIGN CANNOT BE LOCATED EXACTLY WHERE VEHICLES ARE EXPECTED TO STOP, THE STOP LINE SHOULD BE PLACED AT THE STOPPING POINT.

METRO DISTRICT NOTE: STOP BARS AND CROSSWALK PAVEMENT MARKINGS WILL NOT BE INSTALLED AT THE SAME LOCATION UNLESS OTHERWISE DETAILED IN THE PLAN.

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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

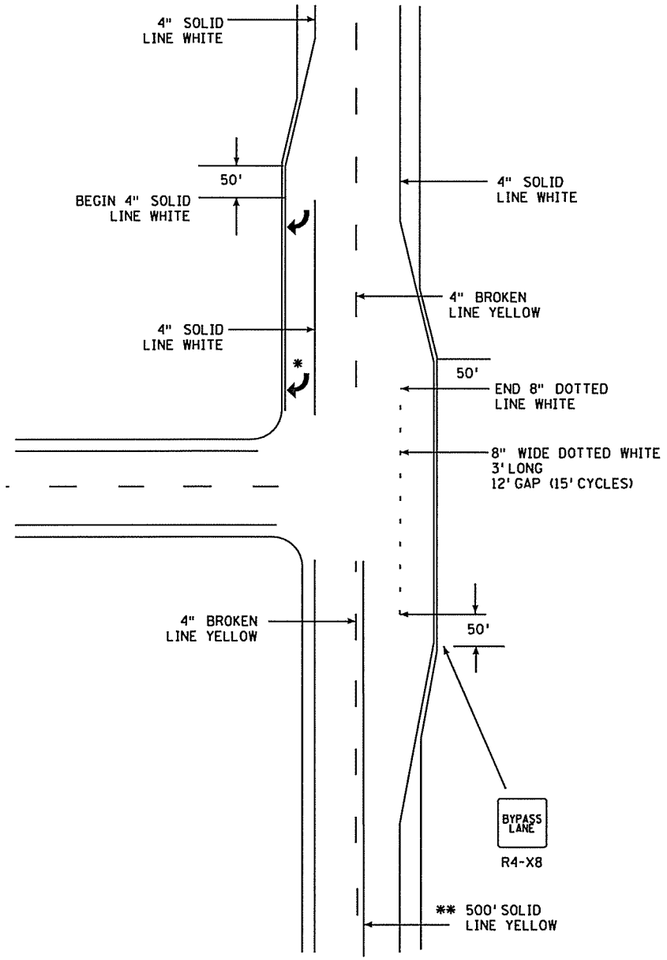
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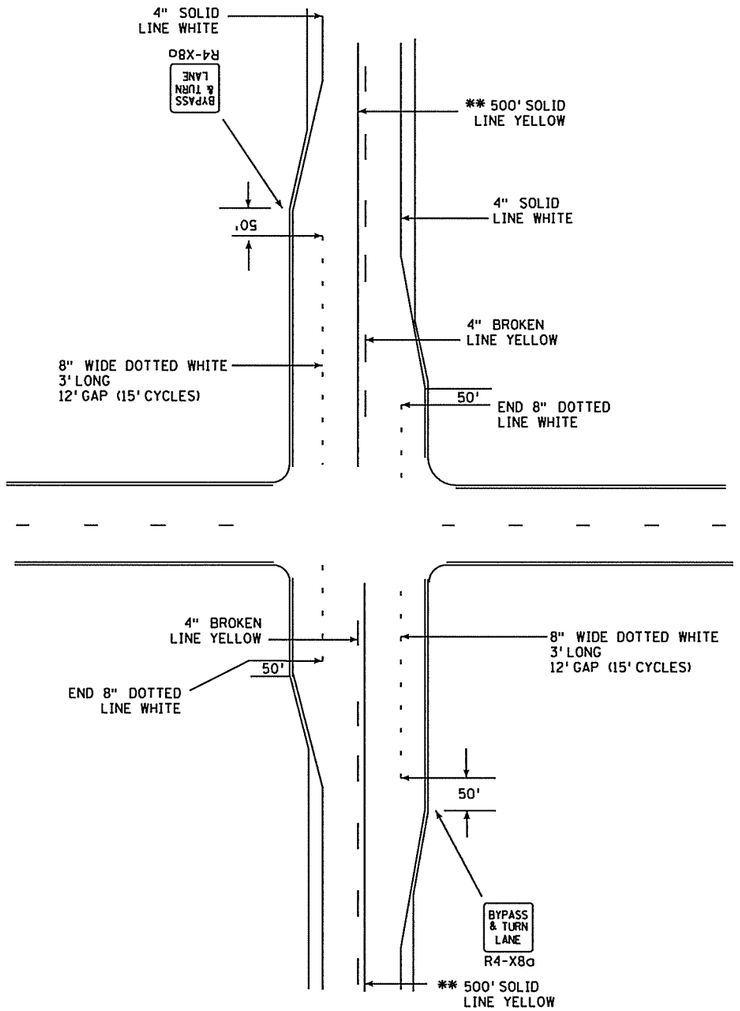
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
PAVEMENT MARKING TYPICALS

STATE PROJ. NO. 1901-168 (TH 13)
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MARKINGS FOR BYPASS LANES



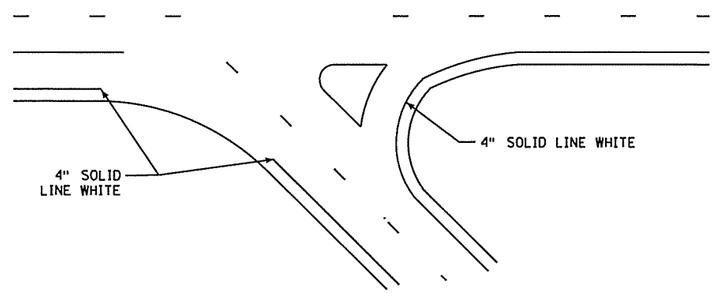


* SEE "TYPICAL MESSAGE PLACEMENT FOR TURN LANES" FOR NUMBER OF ARROWS.

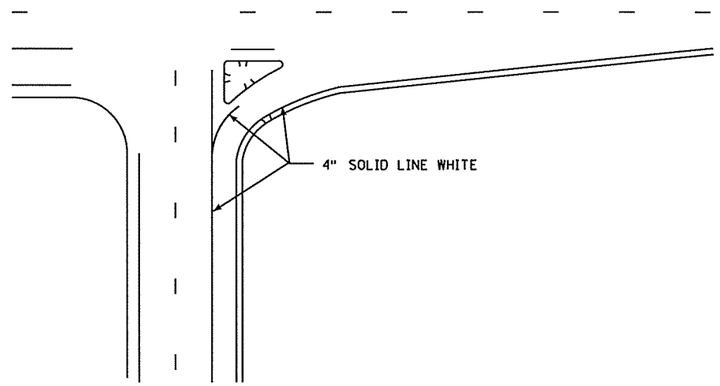
** THE 500' NO PASSING ZONE APPROACHING THE BYPASS LANE AS SHOWN IS A MN/DOT METRO DISTRICT STANDARD. IF THE DISTANCE BETWEEN THE BEGINNING OF THE SOLID LINE YELLOW IS LESS THAN THE DISTANCES IN THE CHART BELOW FROM THE END OF A PRECEDING SOLID LINE YELLOW IN THE SAME LANE, THE SOLID LINE SHALL BE EXTENDED BETWEEN THEM.

35 MPH SPEED LIMIT OR LESS	500'
40-50 MPH SPEED LIMIT	650'
55 MPH SPEED LIMIT	800'

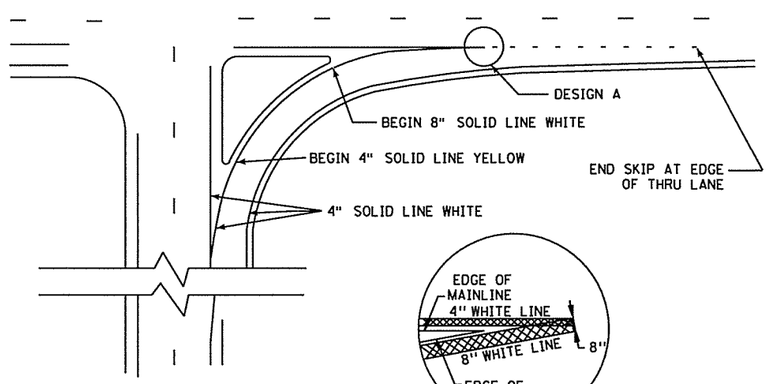
FREE RIGHT STOP CONDITION



FREE RIGHT YIELD CONDITION



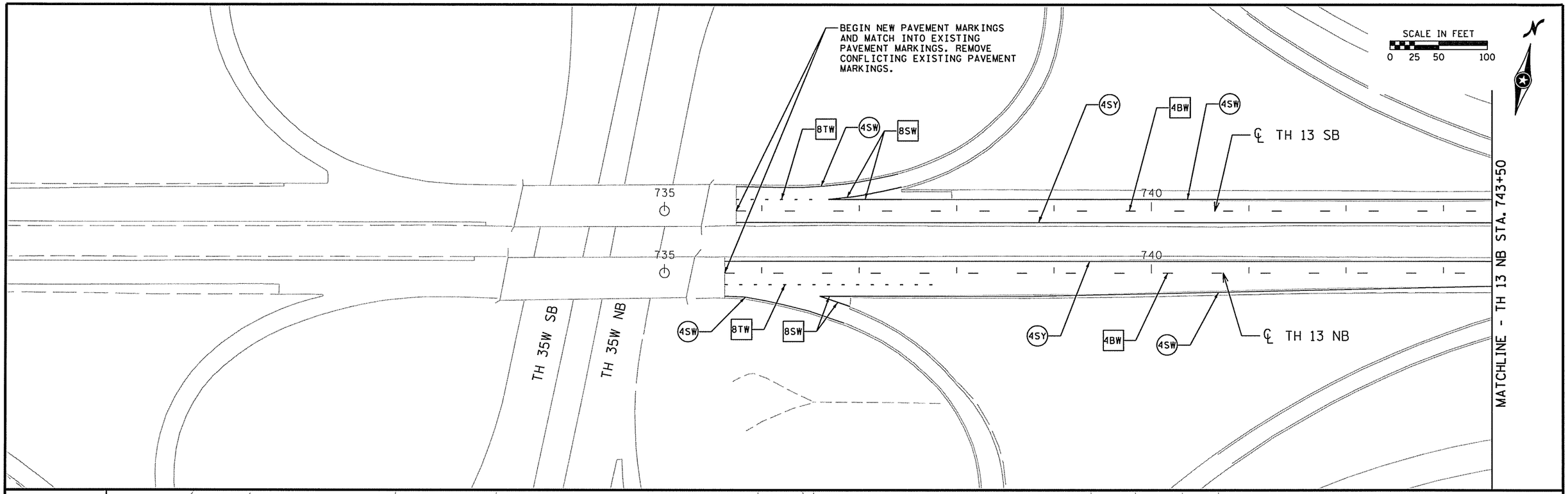
FREE RIGHT ACCELERATION LANE CONDITION

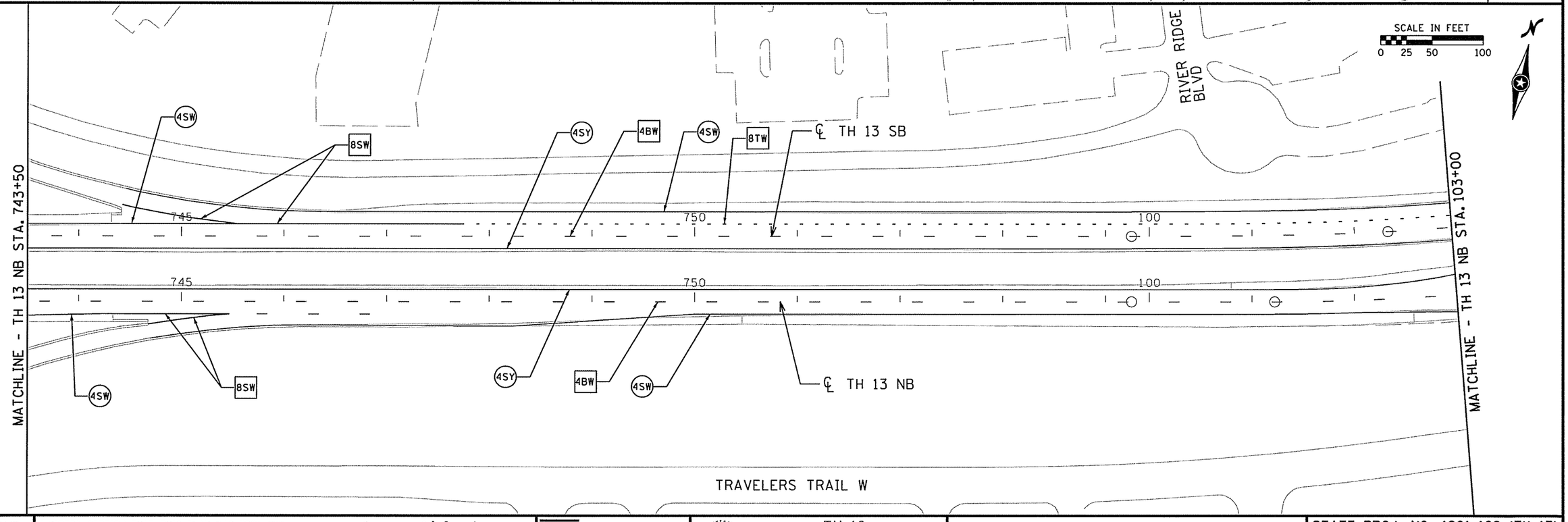


DESIGN A

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PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

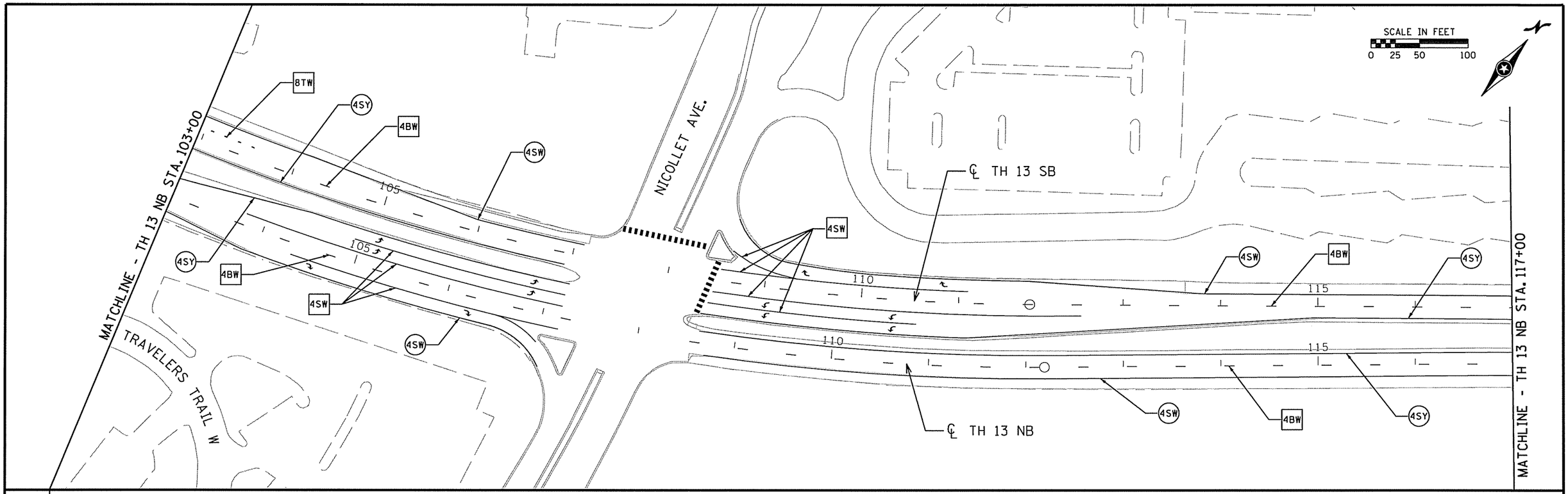
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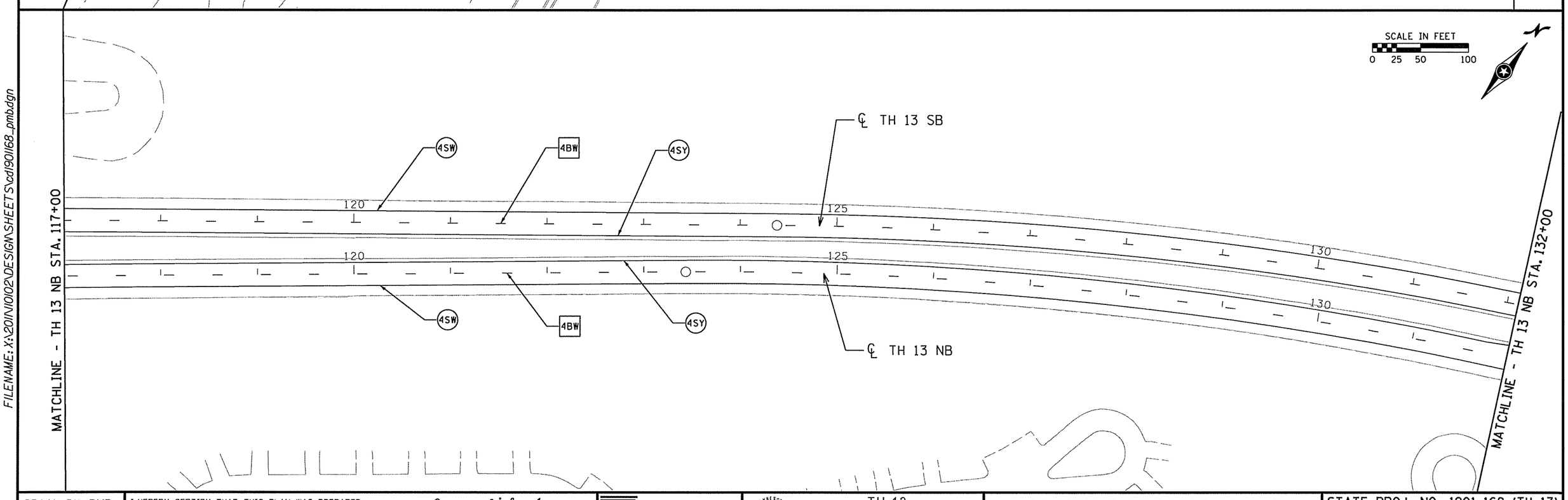
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 735+00 TO STA. 103+00

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PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

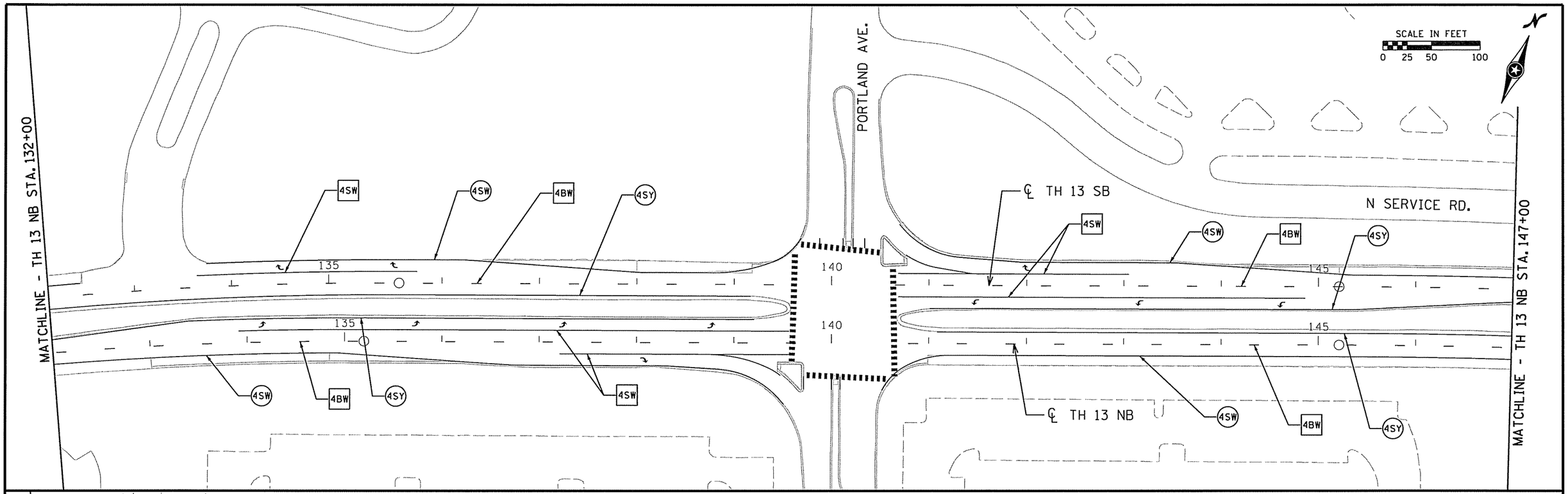
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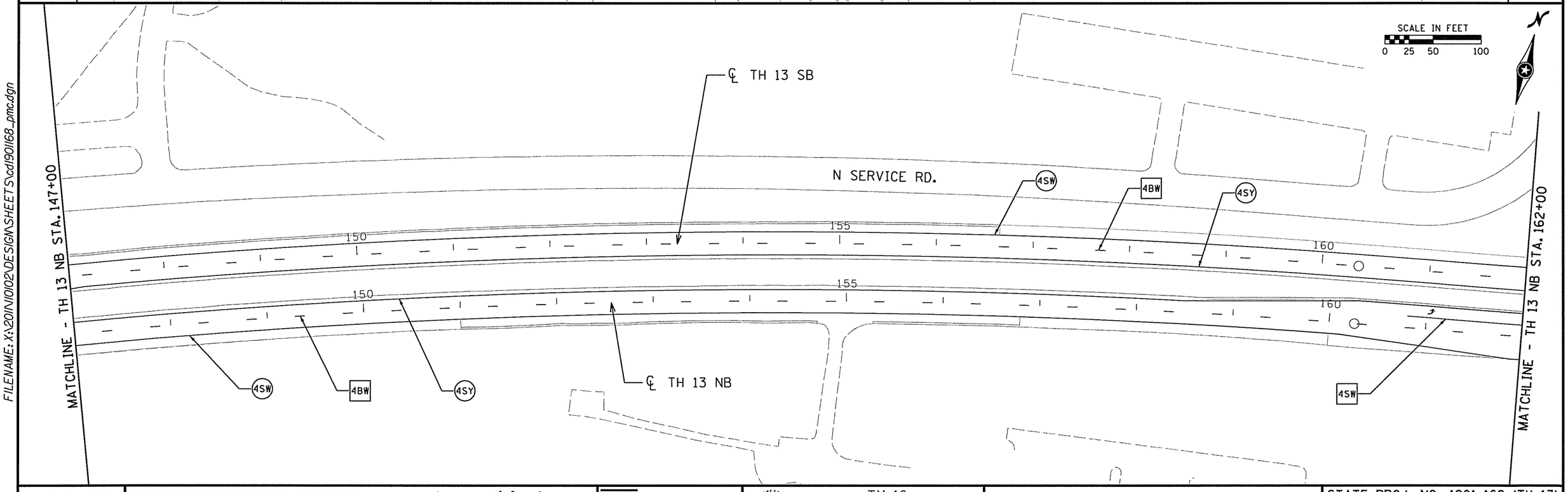
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 103+00 TO STA. 132+00

STATE PROJ. NO. 1901-168 (TH 13)

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SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
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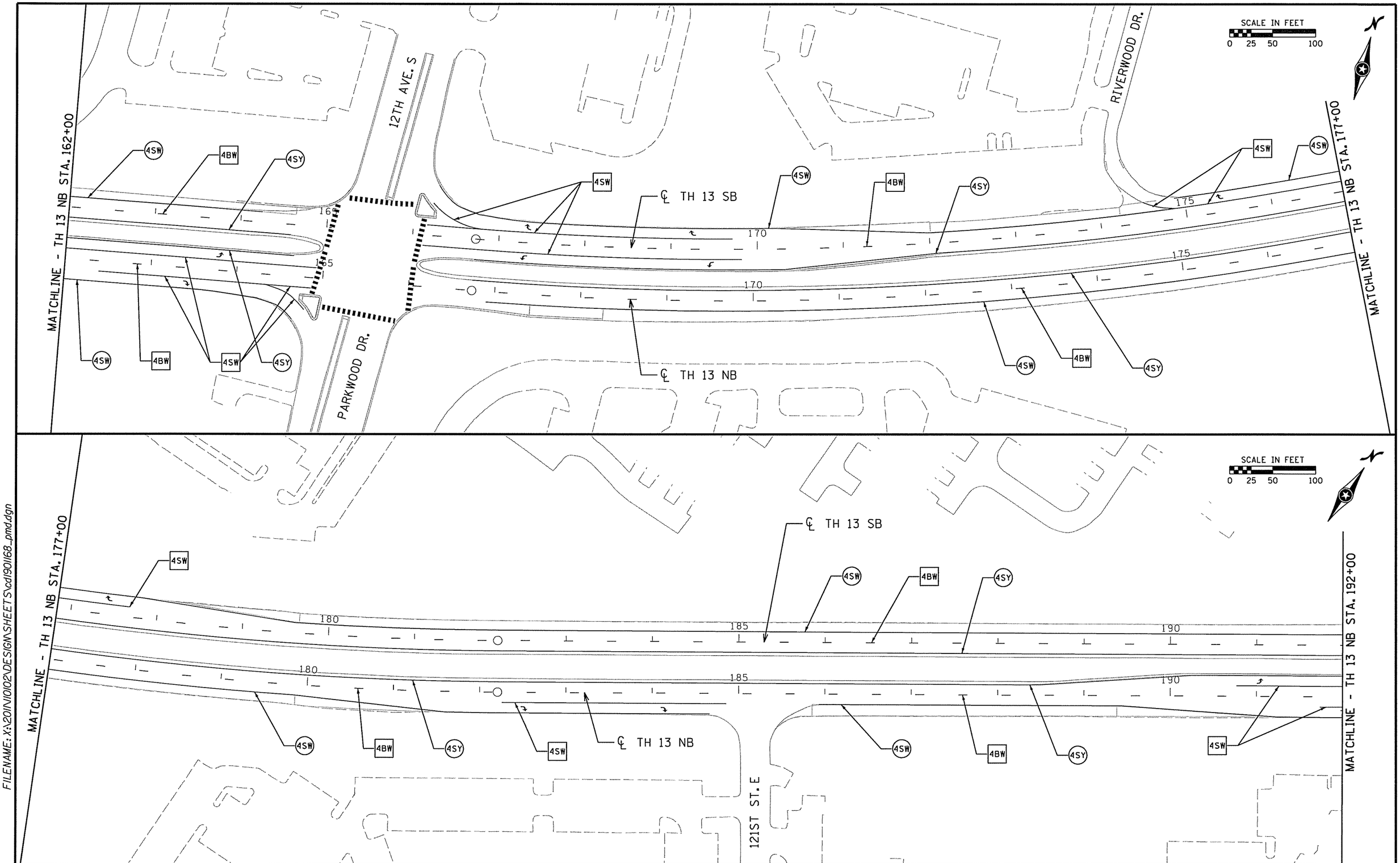
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 132+00 TO STA. 162+00

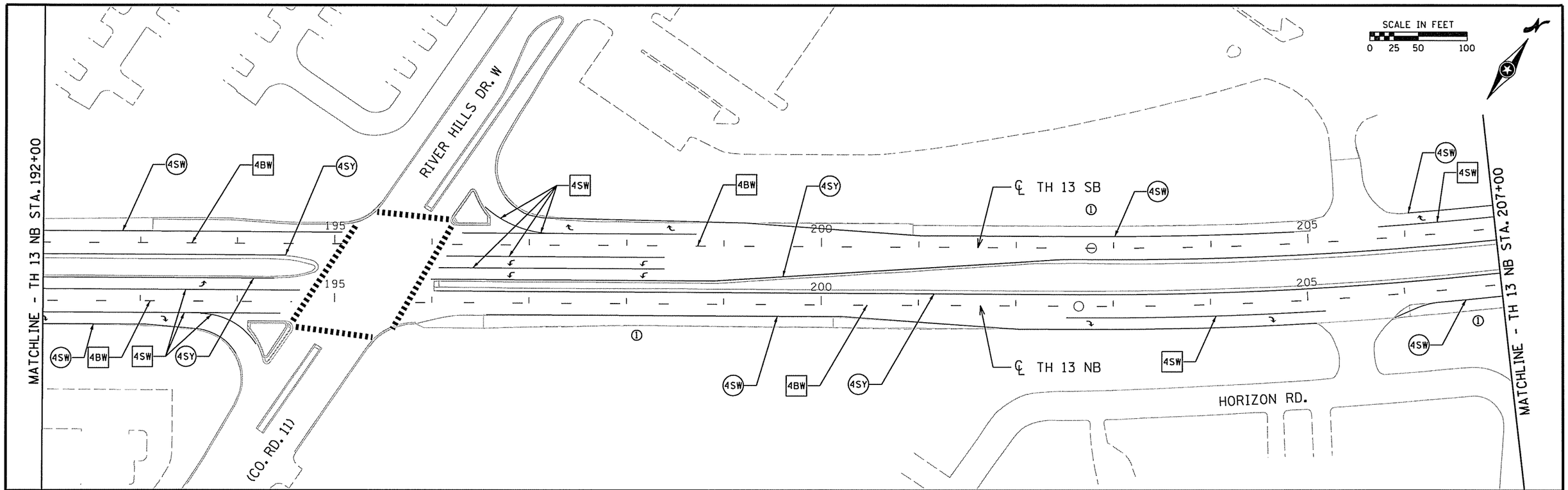
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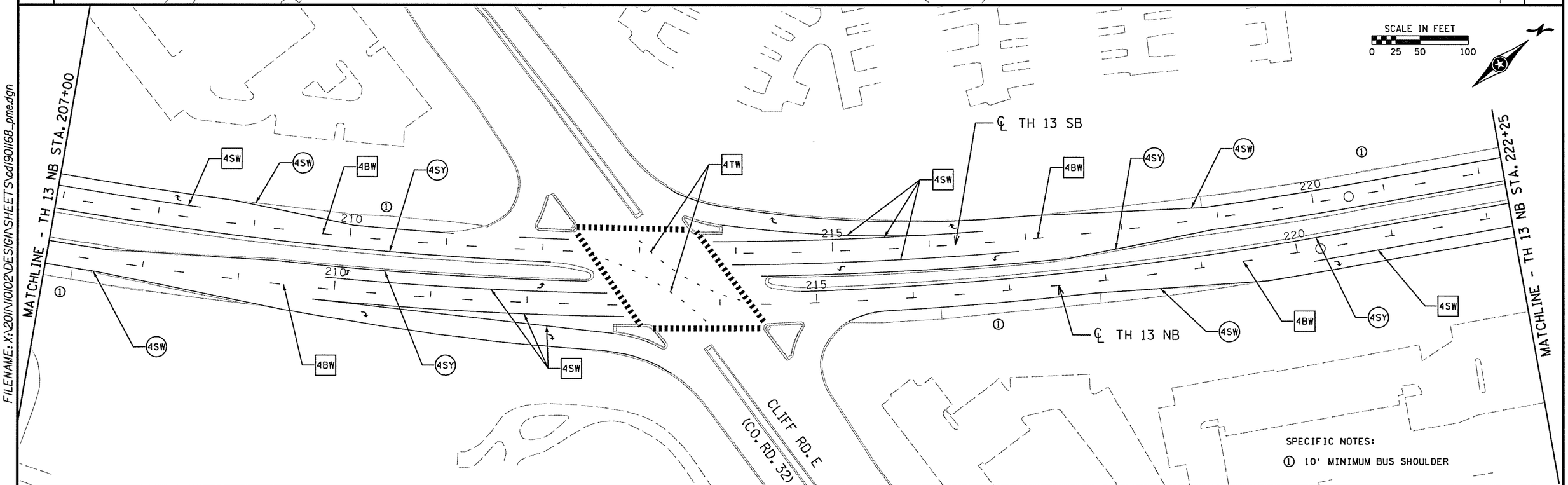
Sheet No. 296 of 393 Sheets



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DATE: 01/26/12 LIC. NO. 45049

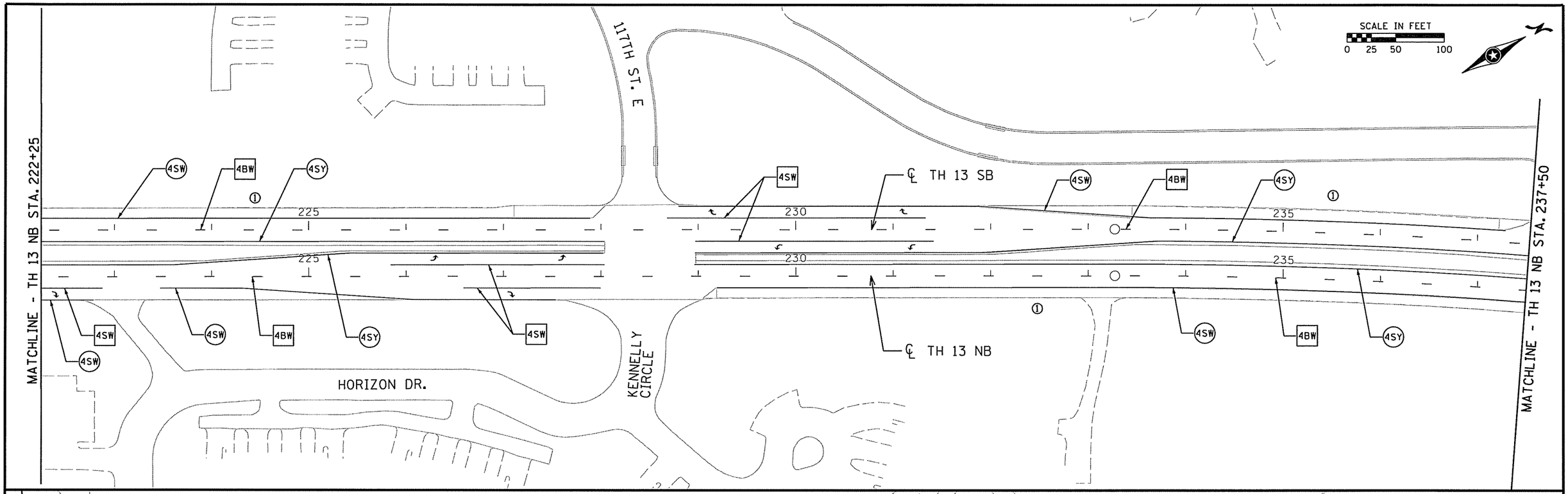
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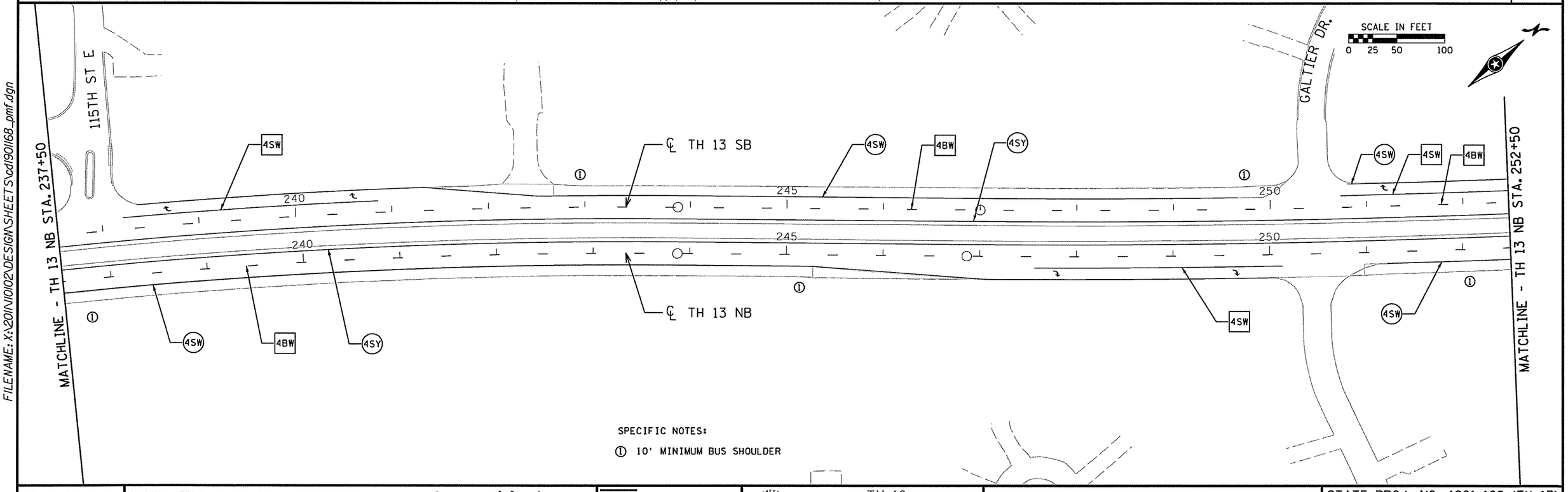
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 192+00 TO STA. 222+25

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 298 of 393 Sheets





SPECIFIC NOTES:

① 10' MINIMUM BUS SHOULDER

DATE: 1/26/2012 TIME: 8:57:05 AM
FILENAME: X:\20IN\101\02\DESIGN\SHEETS\cd190168_pmf.dgn

DRAWN BY: BMR

CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

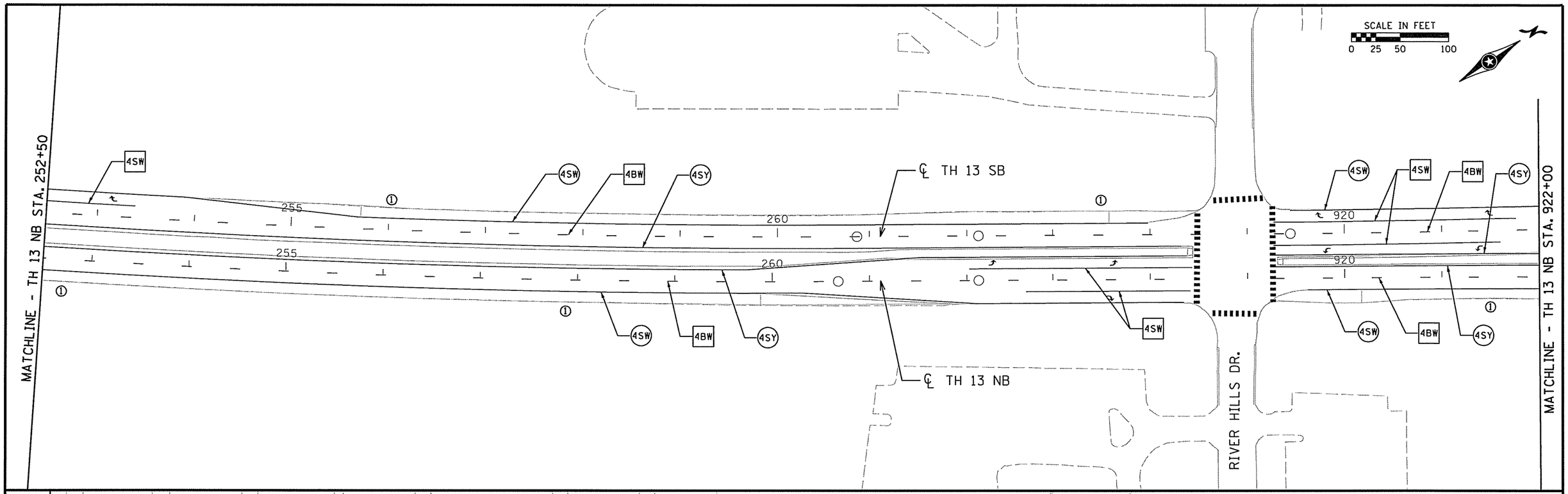
ALLIANT ENGINEERING INCORPORATED

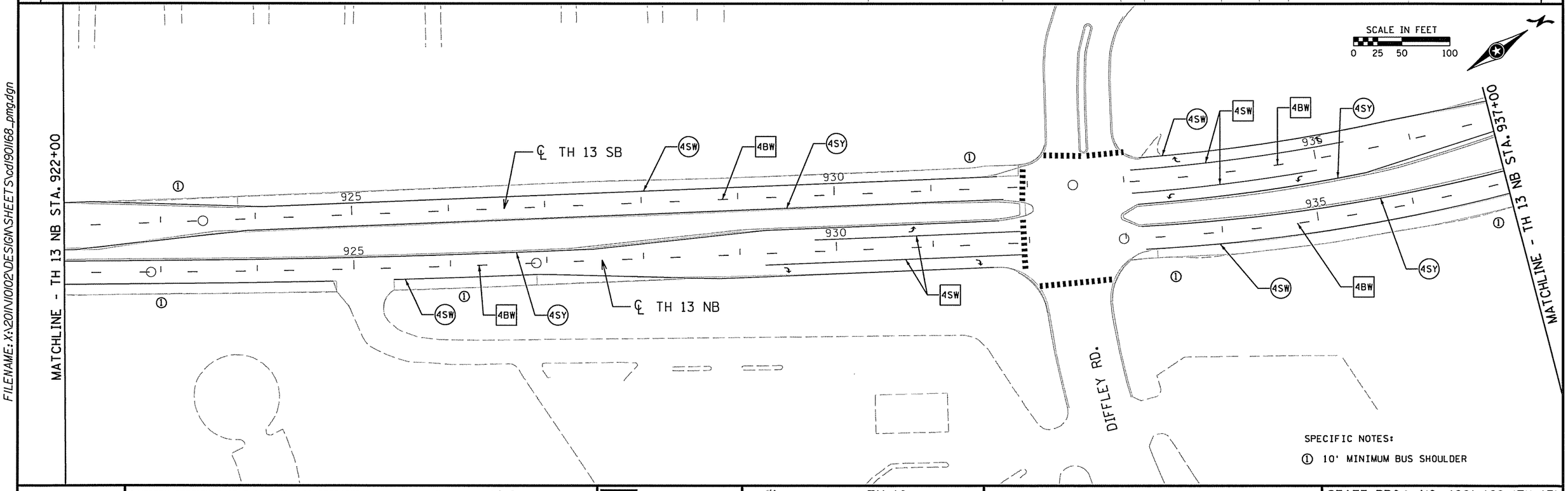
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 222+25 TO STA. 252+50

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 299 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:06 AM
FILENAME: X:\20IN\101102\DESIGN\SHEETS\cd190168_pmg.dgn

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/25/12 LIC. NO. 45049

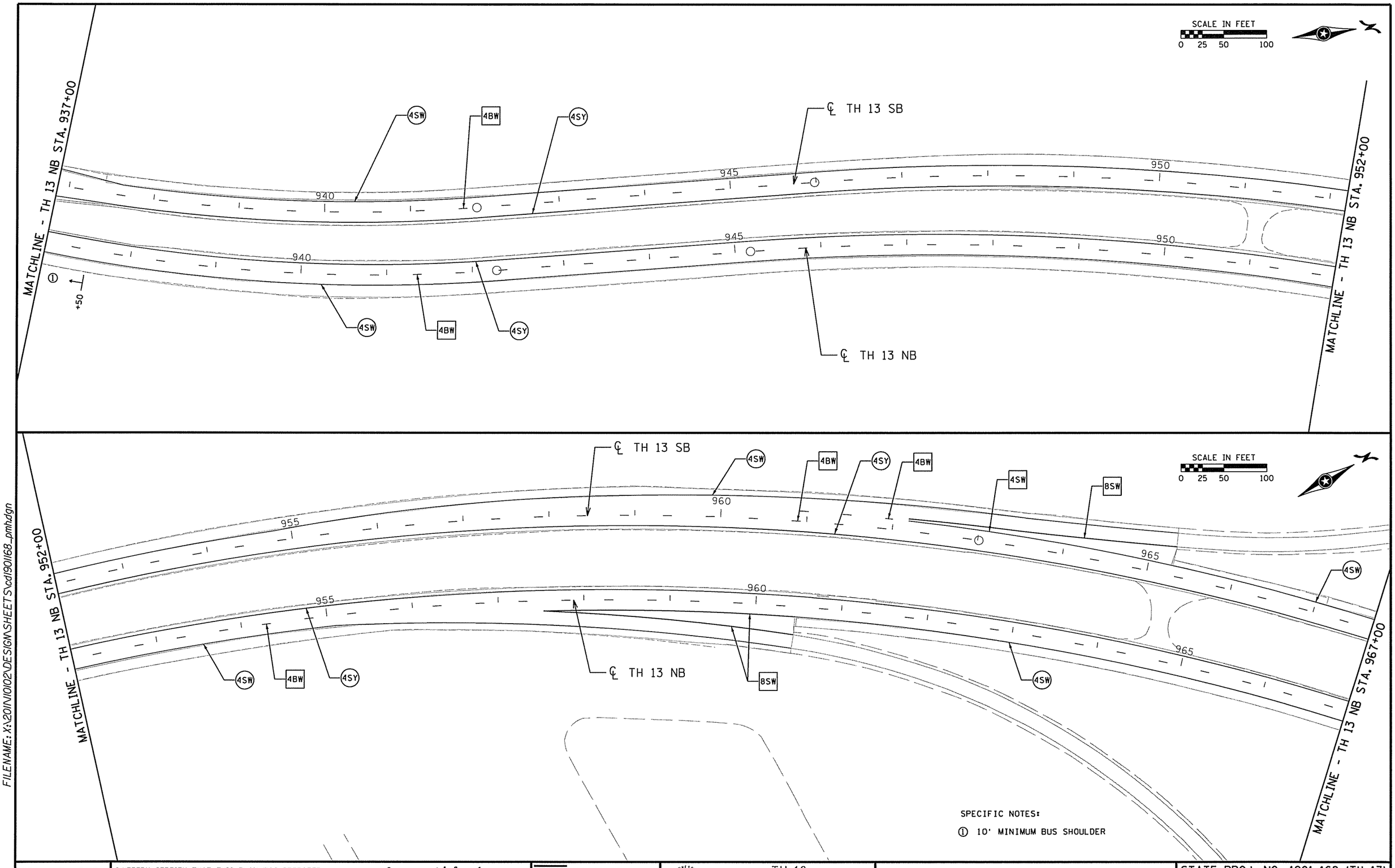
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 252+50 TO STA. 937+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 300 of 393 Sheets



SPECIFIC NOTES:

① 10' MINIMUM BUS SHOULDER

DATE: 1/26/2012 TIME: 8:57:07 AM
FILENAME: X:\20IN\10102\DESIGN\SHEETS\cd1901168_pmh.dgn

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CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 937+00 TO STA. 967+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 301 of 393 Sheets

SCALE IN FEET
0 25 50 100

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

4SY 4SW

4SY 4SW

NOTE:
REMOVE EXISTING PAVEMENT MARKINGS ON BRIDGE

℄ TH 13 SB

4SW 8TW 8SW 11TW 7BW 4SW 8SW

4SY 4SY 4SY

4SW 4BW 4SY

975 980

970

MATCHLINE

975 980

970

4BW 4SY 4SW

℄ TH 13 NB

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

DATE: 1/26/2012 TIME: 8:57:08 AM
FILENAME: X:\20IN\01\02\DESIGN\SHEETS\cd1901168_pml.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 967+00 TO STA. 981+00

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 302 of 393 Sheets

SCALE IN FEET
0 25 50 100

℄ TH 13 SB

℄ TH 13 NB

MATCHLINE

MATCHLINE - TH 13 NB STA. 967+00

MATCHLINE - TH 13 NB STA. 981+00

970

975

980

8TW

8SW

7BW

11TW

4SW

4BW

4SY

CEDAR AVE. SB (TH 77)

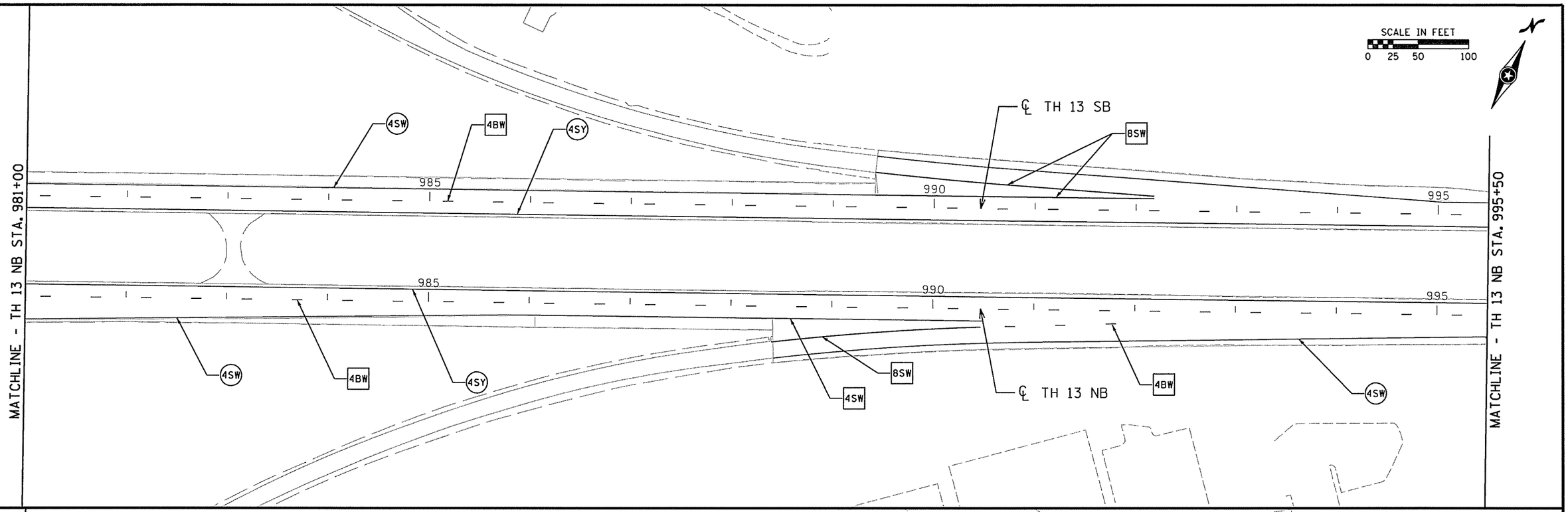
CEDAR AVE. NB (TH 77)

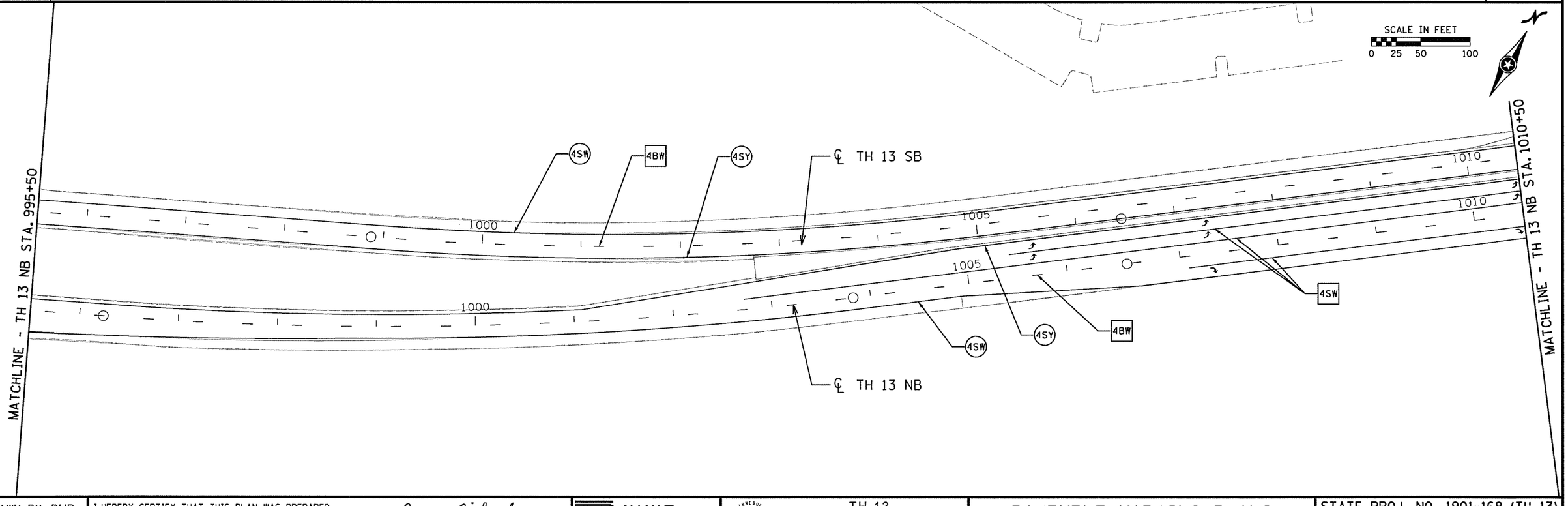
NOTE:

REMOVE EXISTING PAVEMENT MARKINGS ON BRIDGE

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DRAWN BY: BMR CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Bryan Rislund PRINTED NAME: BRYAN RISLUND DATE: 01/26/12 LIC. NO. 45049	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	PAVEMENT MARKING PLANS TH 13 NB STA. 967+00 TO STA. 981+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 303 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:10 AM
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DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 981+00 TO STA. 1010+50

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 304 of 393 Sheets

SCALE IN FEET
0 25 50 100

SILVER BELL RD.

MATCHLINE - TH 13 NB STA. 1010+50

MATCHLINE - TH 13 NB STA. 1025+00

℄ TH 13 SB

℄ TH 13 NB

1015

1020

4SW 4SY 4TW 4BW

SENECA RD.

MATCHLINE - TH 13 STA. 1025+00

MATCHLINE - TH 13 STA. 1035+20

℄ TH 13

1030

1035

BURGUNDY DR.

VERMILLION CT.S

DATE: 1/26/2012 TIME: 8:57:11 AM
FILENAME: X:\20IN\IO\02\DESIGN\SHEETS\cd190168_pml.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

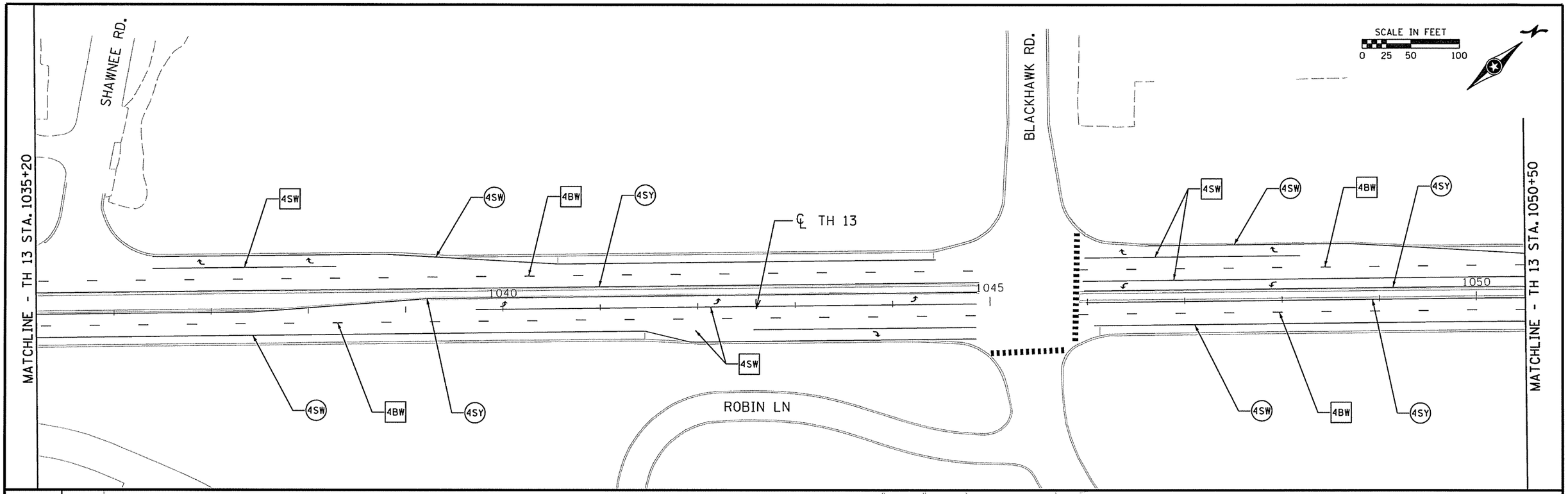
SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

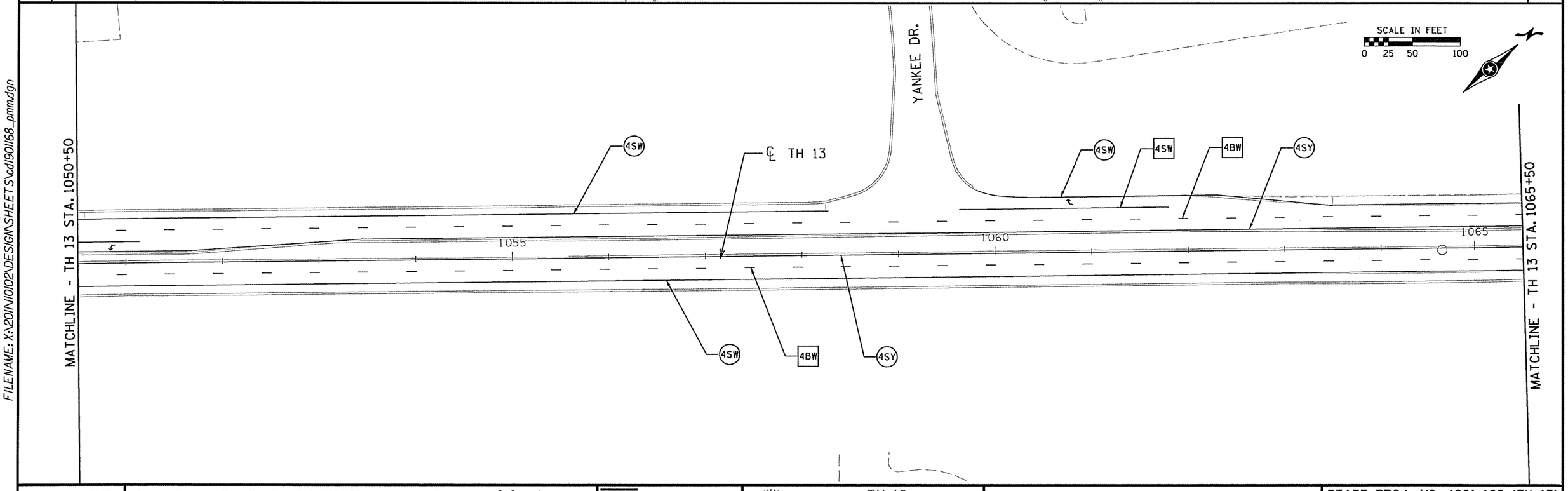
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 1010+50 TO STA. 1035+50

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 305 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:12 AM
FILENAME: X:\20IN\101\02\DESIGN\SHEETS\od190168_pmm.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

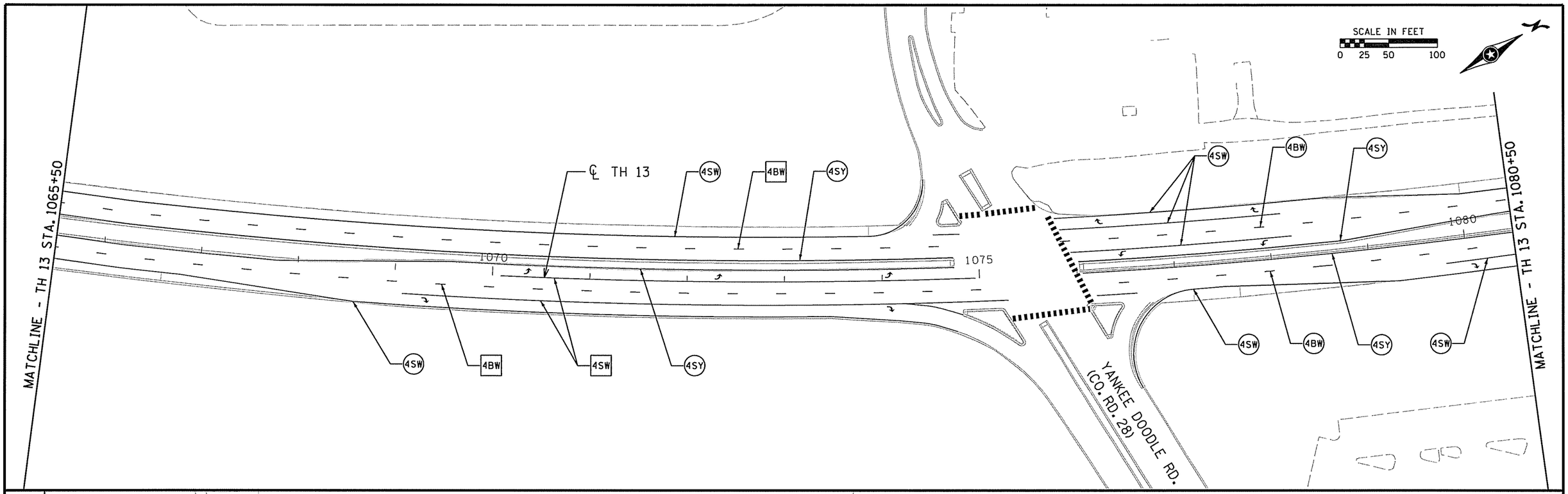
ALLIANT ENGINEERING INCORPORATED

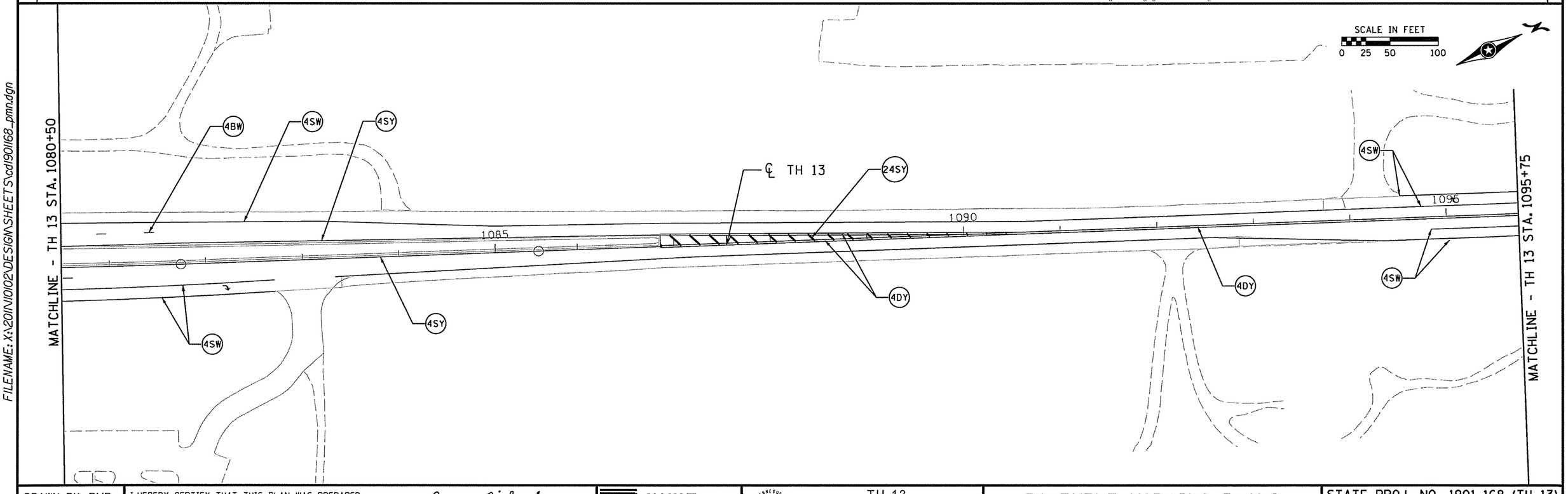
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 1035+50 TO STA. 1065+50

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 306 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:13 AM
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DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

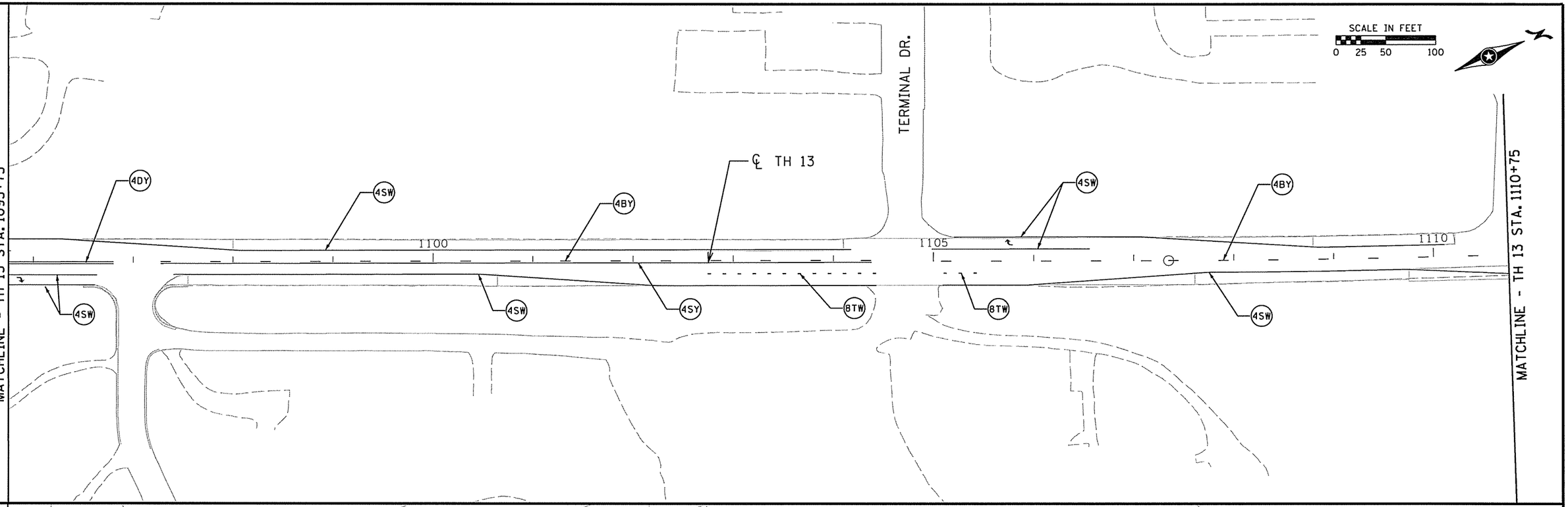
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 1065+50 TO STA. 1095+75

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 307 of 393 Sheets



DATE: 1/26/2012 TIME: 8:57:14 AM
FILENAME: X:\20IN\10102\DESIGN\SHEETS\cd1901168_pmx.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

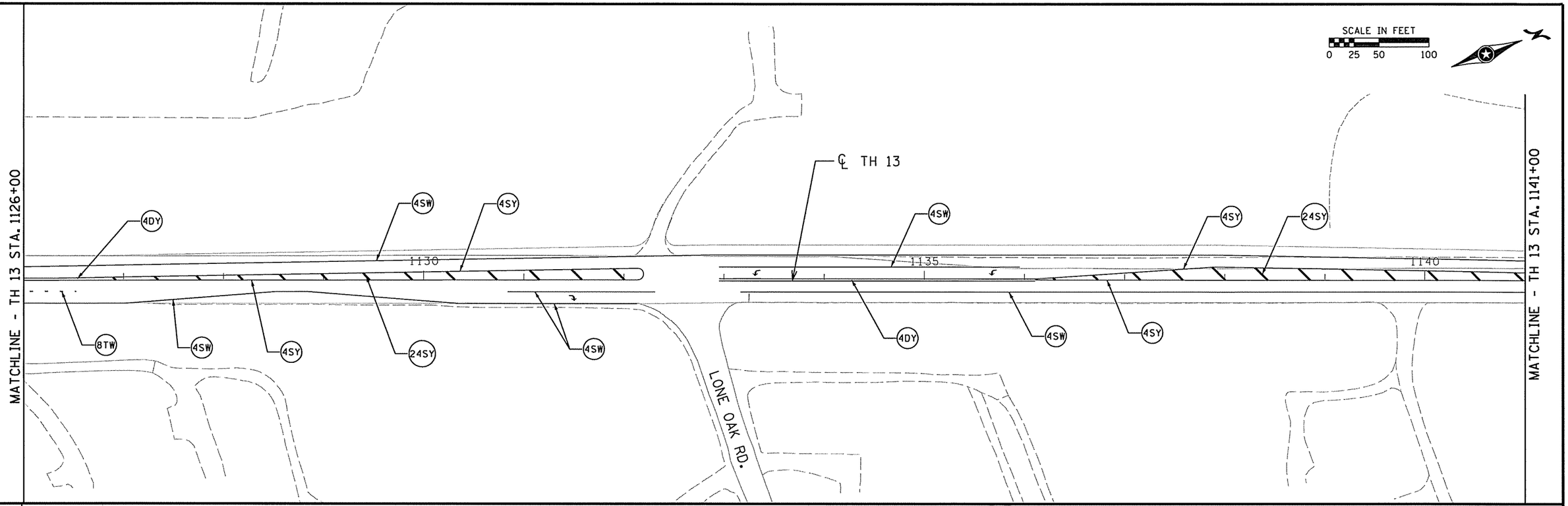
ALLIANT ENGINEERING INCORPORATED

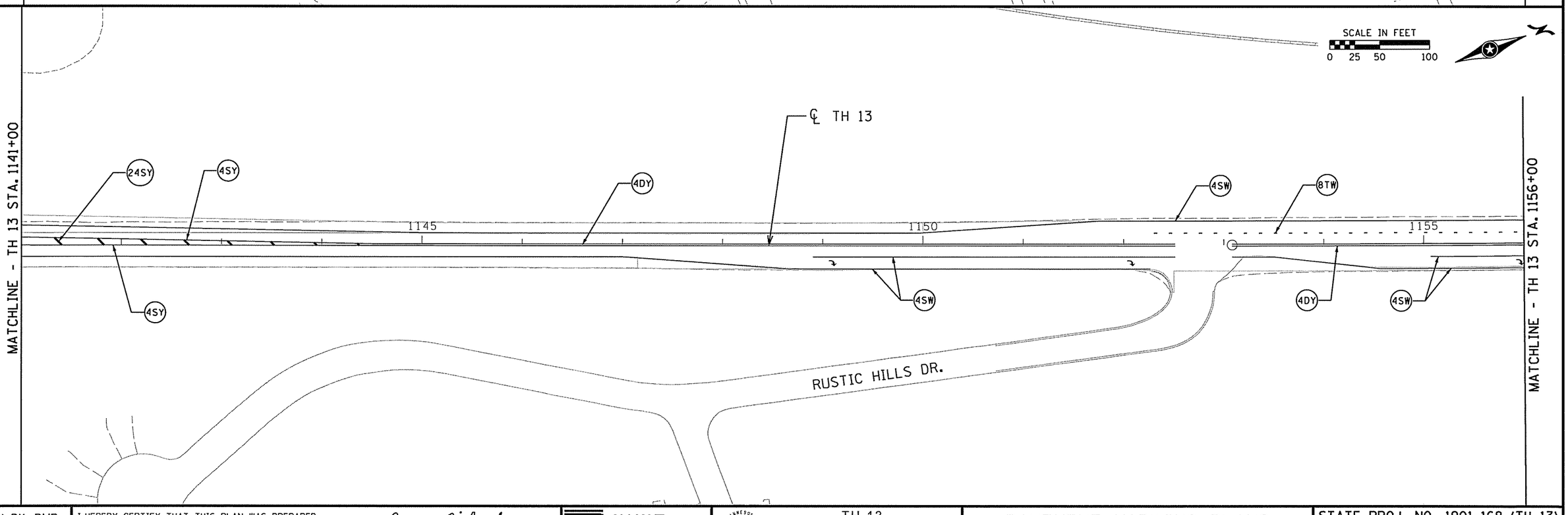
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 1095+75 TO STA. 1126+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 308 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:15 AM
FILENAME: X:\2011\01\02\DESIGN\SHEETS\cd1901168_pmp.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 1126+00 TO STA. 1156+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 309 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 1156+00

MATCHLINE - TH 13 STA. 1170+50

4DY
8TW
℄ TH 13
4SW
1160
1165
1170
4SY
HIGHVIEW AVE.

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 STA. 1170+50

MATCH INTO EXISTING PAVEMENT MARKINGS. REMOVE CONFLICTING EXISTING PAVEMENT MARKINGS.

4SY
4SW
4BW
℄ TH 13
1175
1180
1185
TH 494 EB
TH 494 WB

DATE: 1/26/2012 TIME: 8:57:16 AM
FILENAME: X:\20IN\101102\DESIGN\SHEETS\cd190168_pmq.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

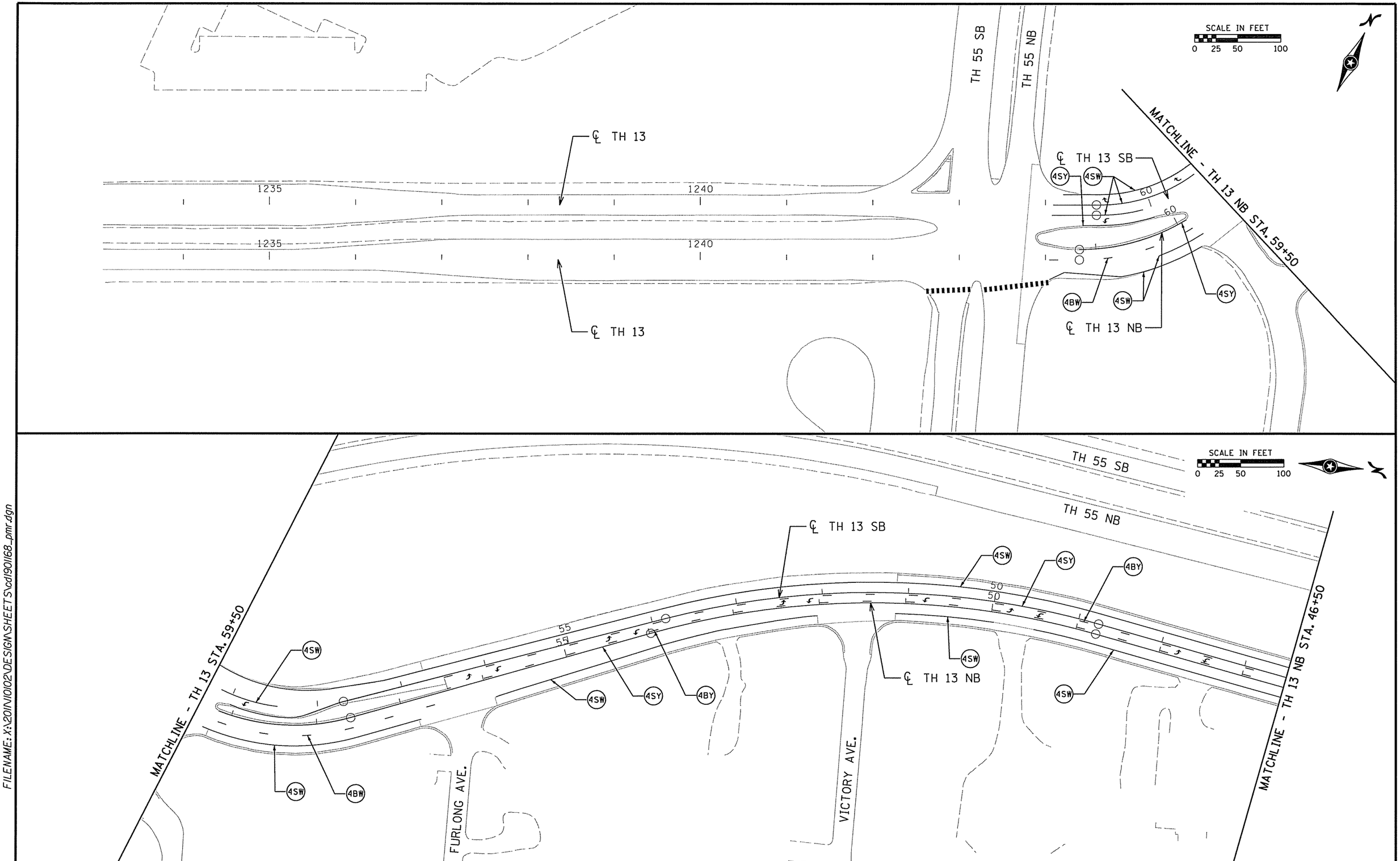
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 1256+00 TO STA. 1185+00

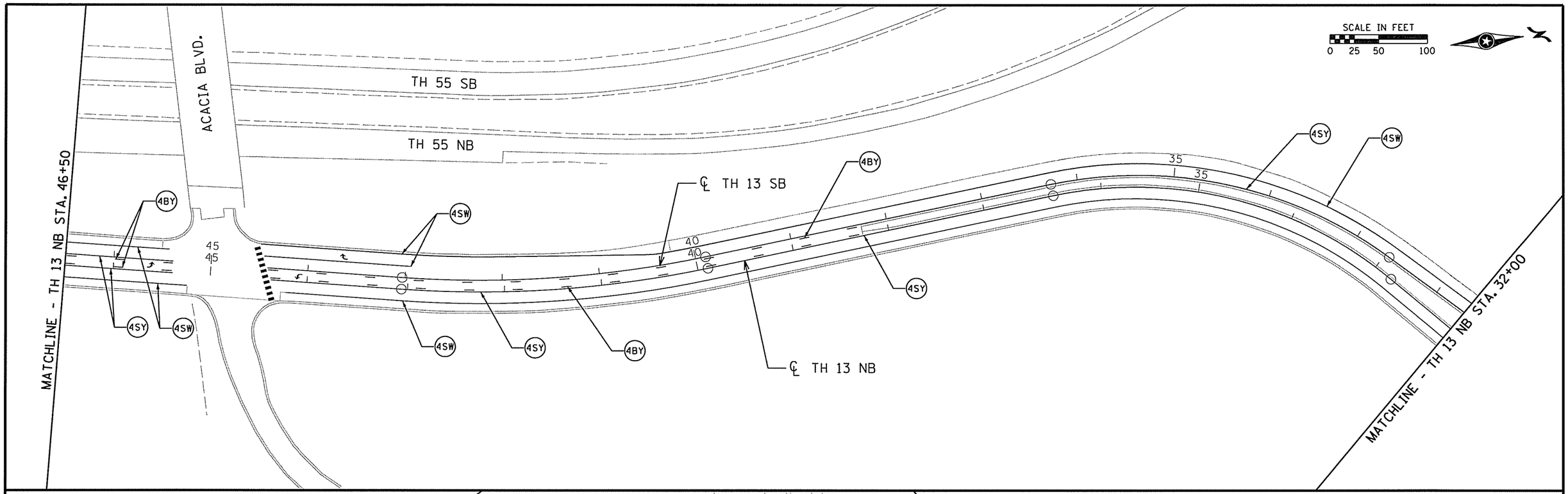
STATE PROJ. NO. 1901-168 (TH 13)

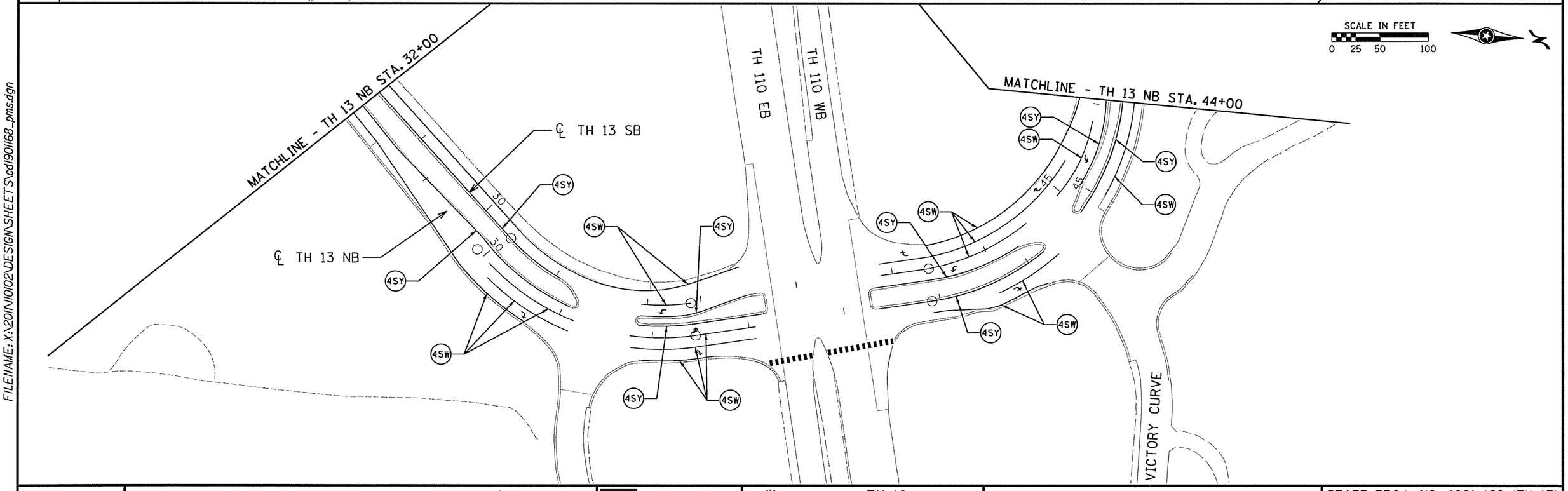
Sheet No. 310 of 393 Sheets



DATE: 1/26/2012 TIME: 8:57:17 AM
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DRAWN BY: BMR CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Bryan Rislund PRINTED NAME: BRYAN RISLUND DATE: 01/26/12 LIC. NO. 45049	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	PAVEMENT MARKING PLANS TH 13 NB STA. 1233+00 TO STA. 46+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 311 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:18 AM
FILENAME: X:\20IN\10\02\DESIGN\SHEETS\cd190168_pms.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

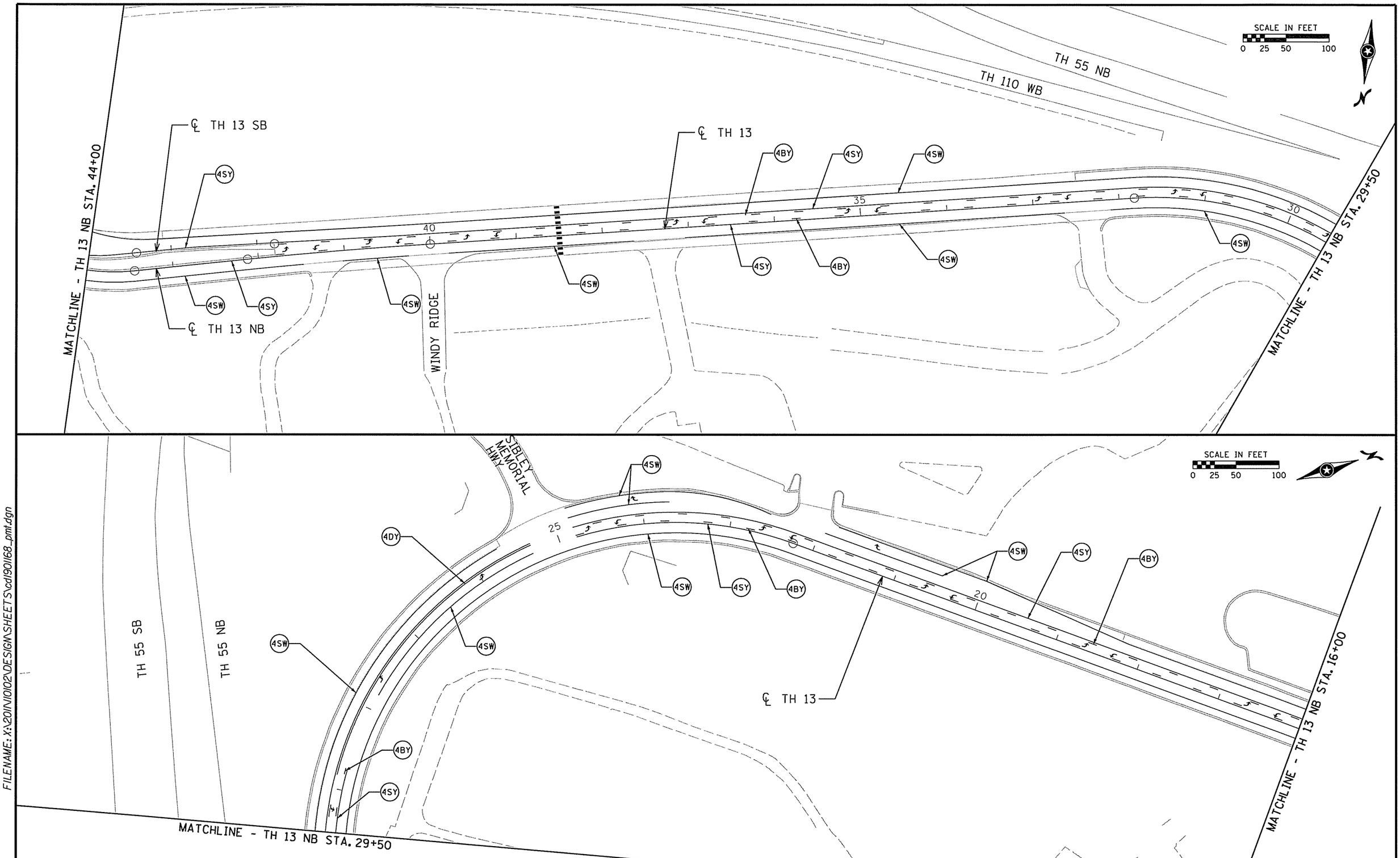
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 46+50 TO STA. 44+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 312 of 393 Sheets



DATE: 1/26/2012 TIME: 8:57:19 AM
FILENAME: X:\201\N\0102\DESIGN\SHEETS\cd1901168_pmt.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 44+00 TO STA. 16+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 313 of 393 Sheets

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 16+00

MATCHLINE - TH 13 NB STA. 5+00

℄ TH 13

D ST.

4SW 4SY 4BY 4DY 24SY

15 10 0

SCALE IN FEET
0 25 50 100

MATCHLINE - TH 13 NB STA. 5+00

10 15 20

MATCH INTO EXISTING PAVEMENT MARKINGS. REMOVE CONFLICTING EXISTING PAVEMENT MARKINGS.

BIG RIVERS REGIONAL TRAIL

2ND ST.

DATE: 1/26/2012 TIME: 8:57:20 AM
FILENAME: X:\2011\1101102\DESIGN\SHEETS\cd190168_pmu.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

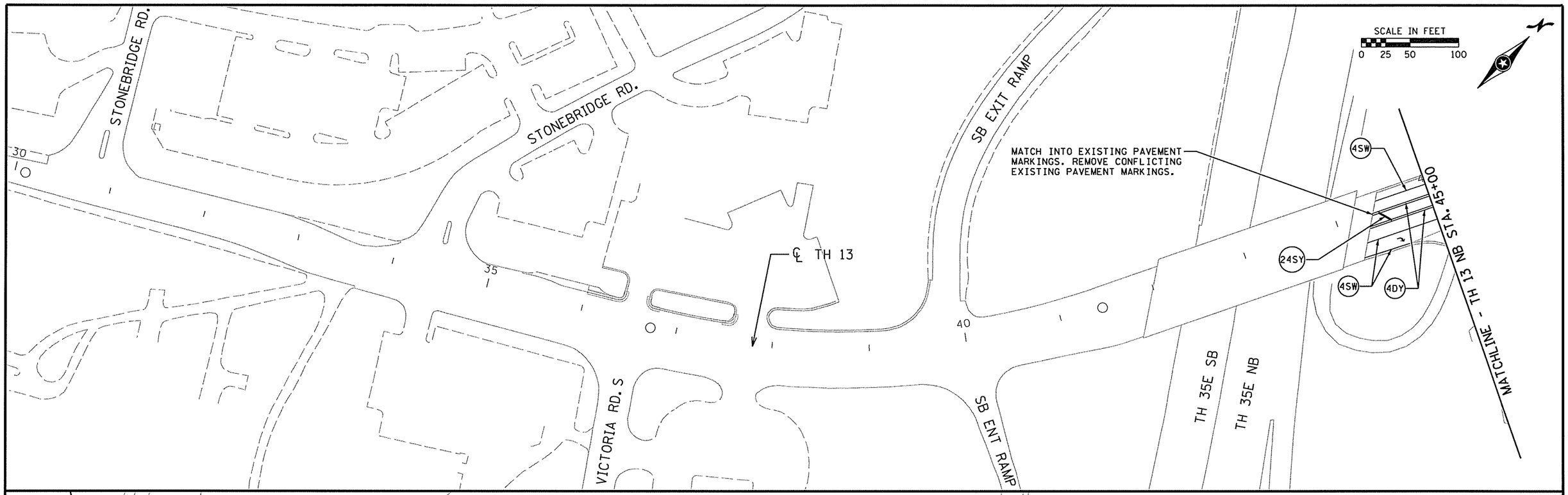
ALLIANT ENGINEERING INCORPORATED

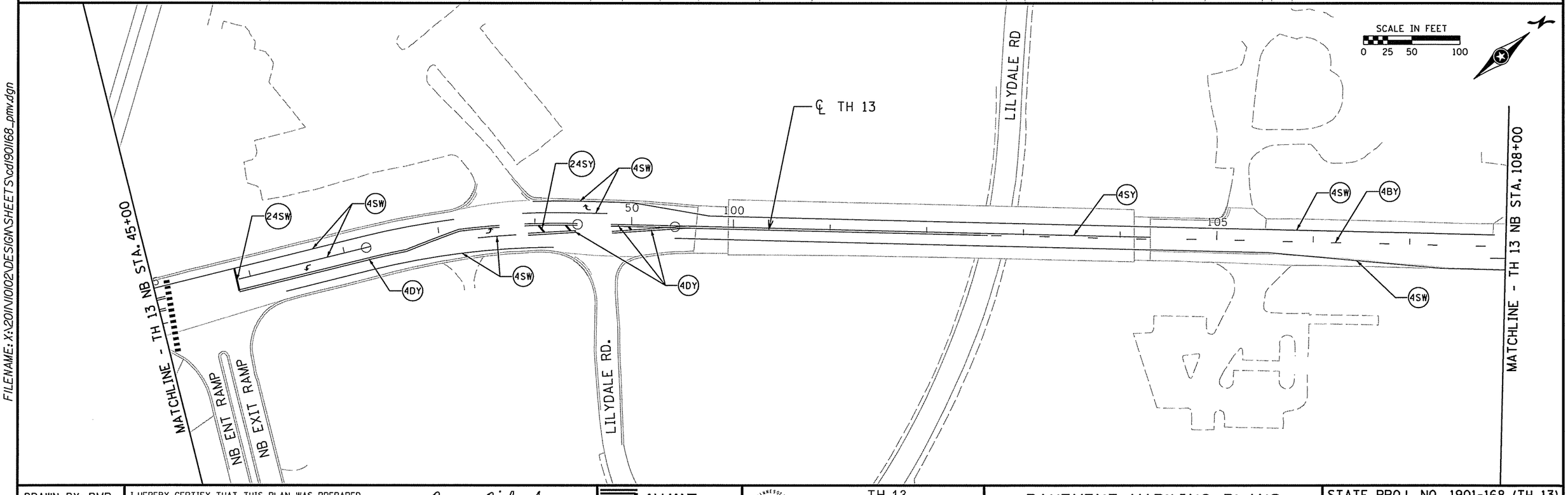
TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 16+00 TO STA. 21+00

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 314 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:21 AM
FILENAME: X:\2011\01\02\DESIGN\SHEETS\cd190168_pmv.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

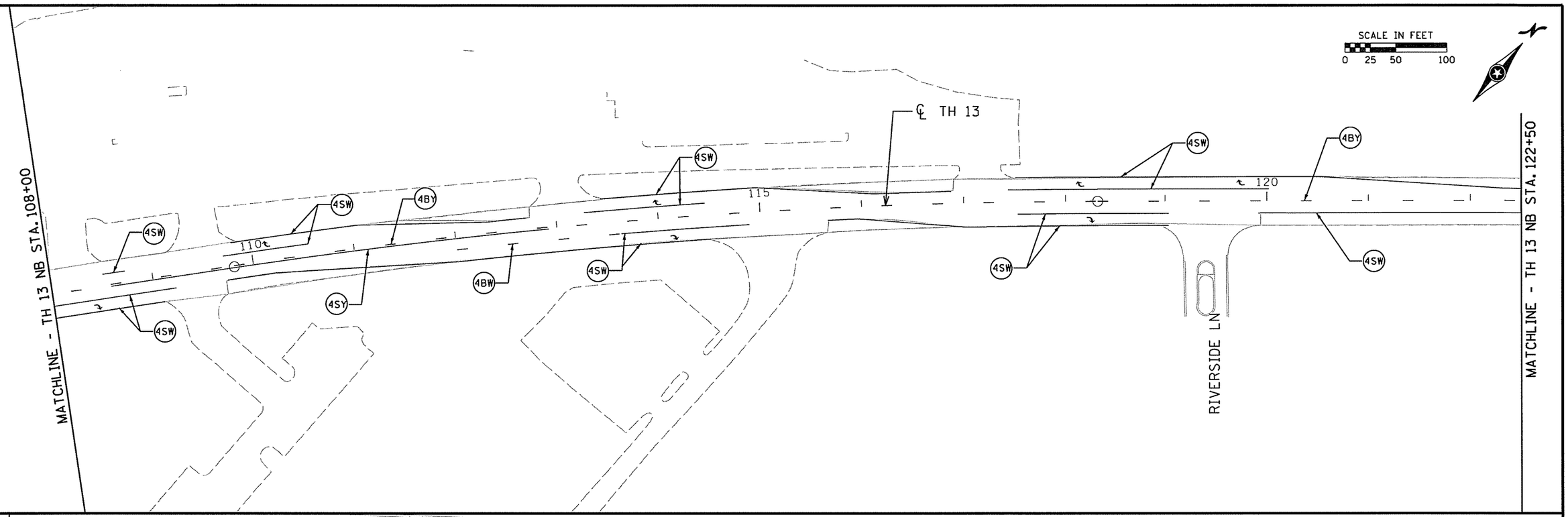
SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

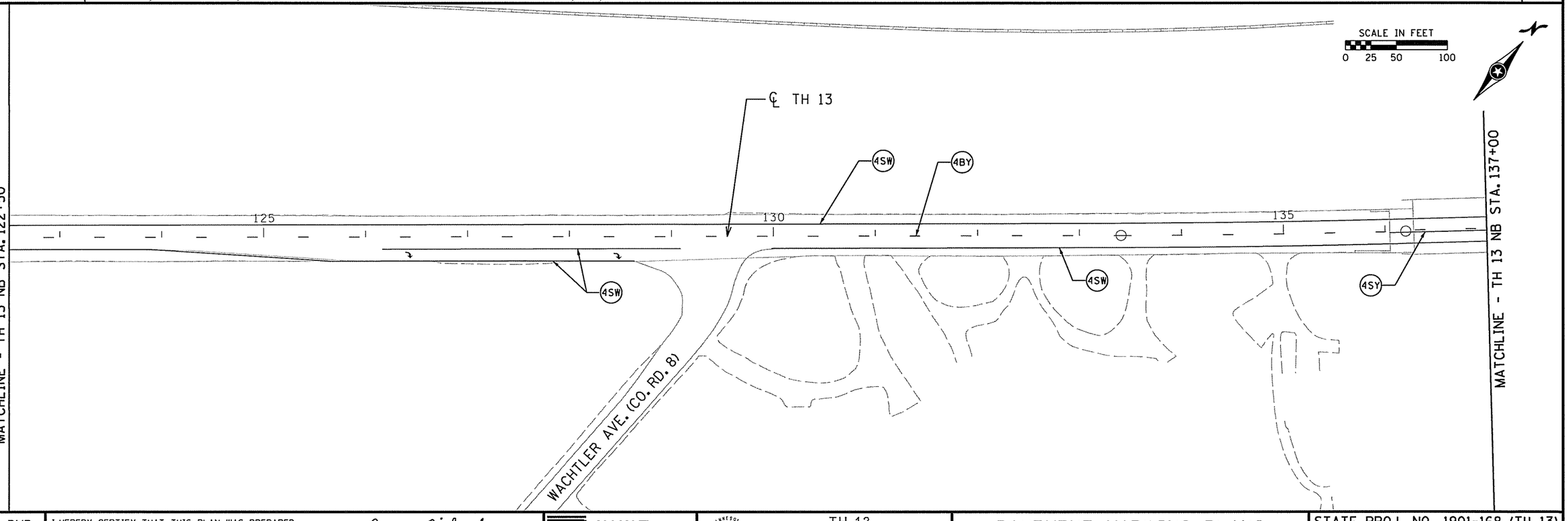
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 30+00 TO STA. 108+00

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 315 of 393 Sheets





DATE: 1/26/2012 TIME: 8:57:22 AM
FILENAME: X:\20IN\I01\02\DESIGN\SHEETS\cd1901168_pmw.dgn

DRAWN BY: BMR
CHECKED BY: SAW

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

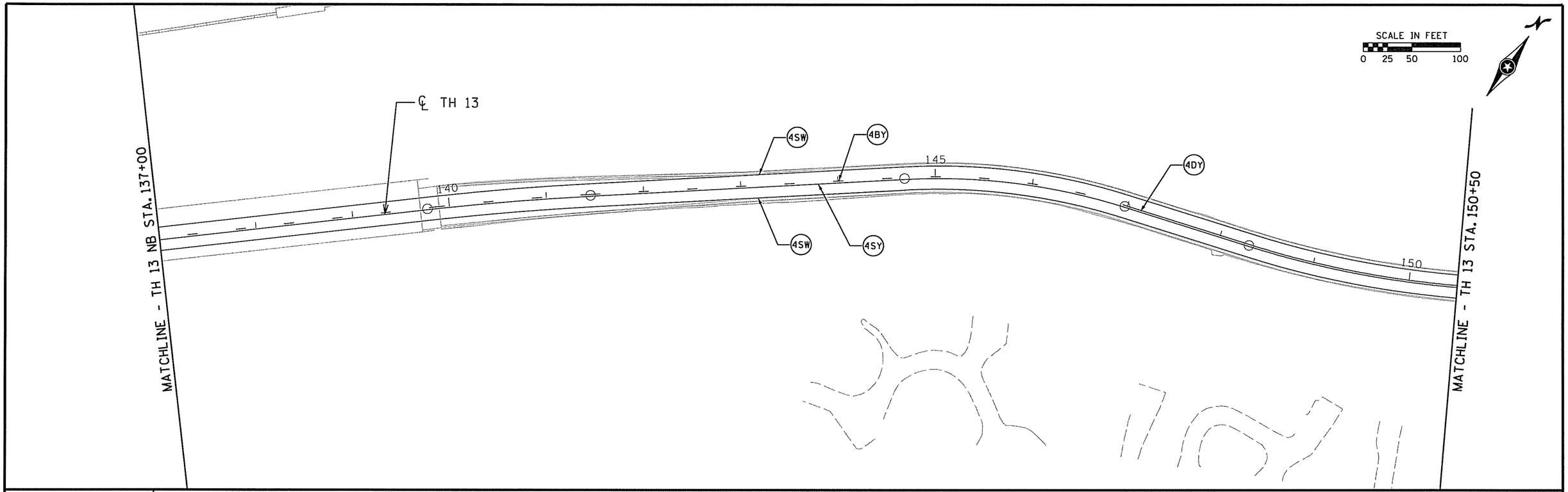
SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 01/26/12 LIC. NO. 45049

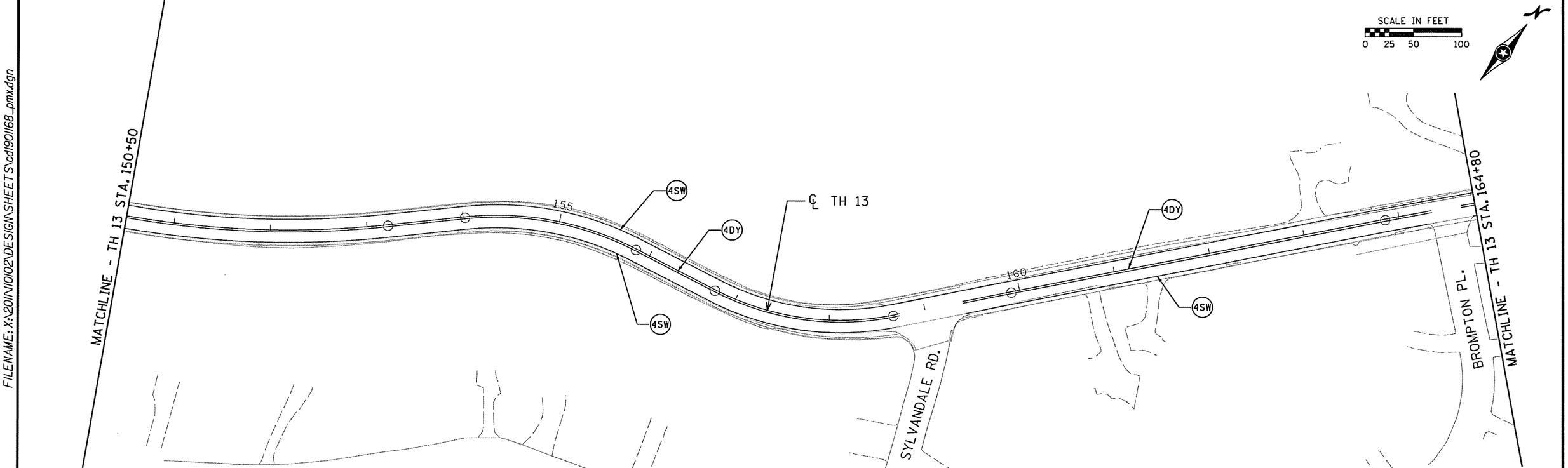
ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 108+00 TO STA. 137+00

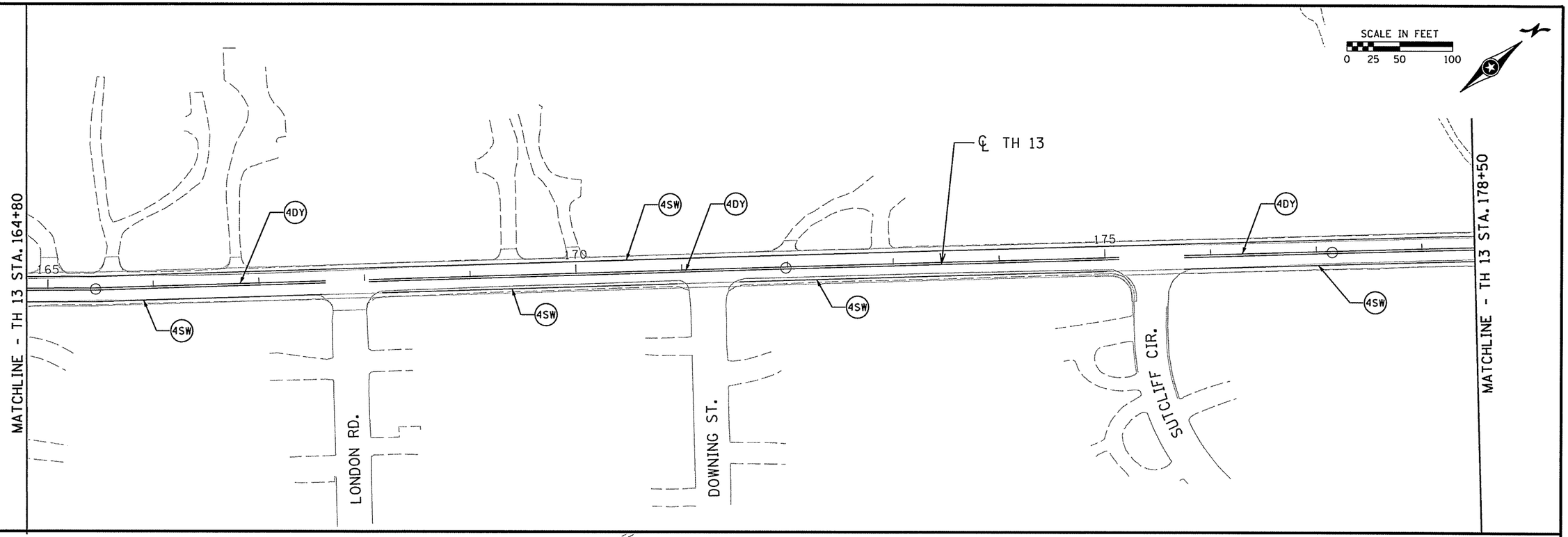
STATE PROJ. NO. 1901-168 (TH 13)

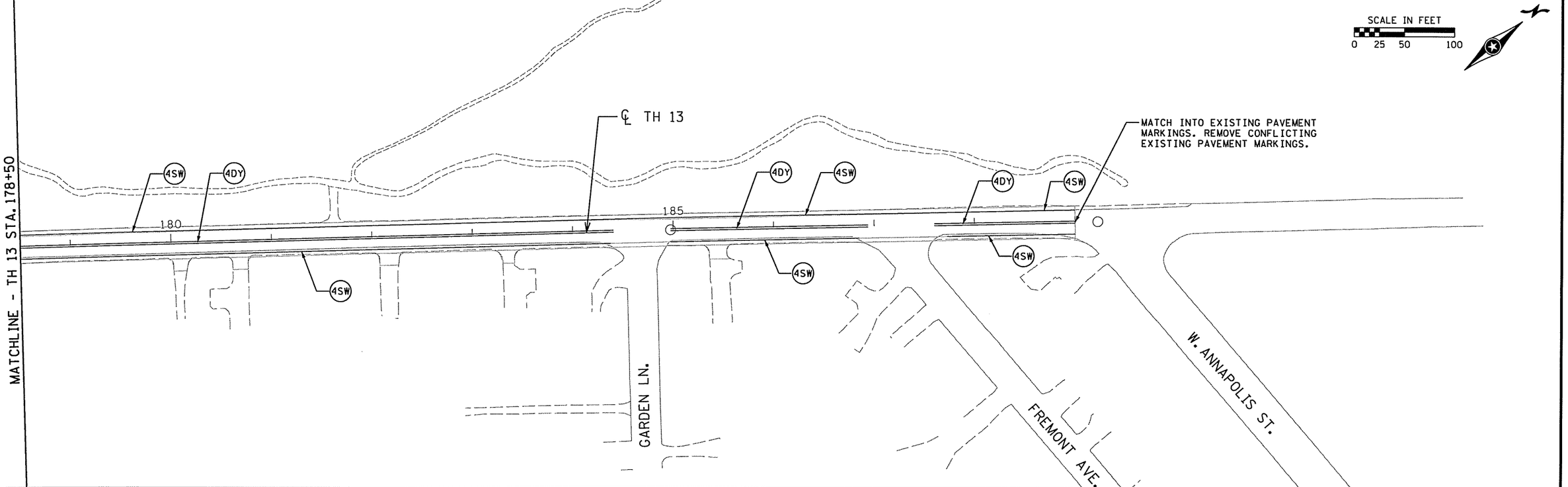




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DRAWN BY: BMR CHECKED BY: SAW	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Bryan Rislund PRINTED NAME: BRYAN RISLUND DATE: 01/26/12 LIC. NO. 45049	ALLIANT ENGINEERING INCORPORATED	TH 13 BETTER ROADS PRESERVATION PROJECT	PAVEMENT MARKING PLANS TH 13 NB STA. 137+00 TO STA. 164+80	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 317 of 393 Sheets





DATE: 2/9/2012 TIME: 10:28:23 AM
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DRAWN BY: BMR
CHECKED BY: SAW

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

SIGNATURE: Bryan Rislund
PRINTED NAME: BRYAN RISLUND
DATE: 02/09/12 LIC. NO. 45049

ALLIANT ENGINEERING INCORPORATED

TH 13
BETTER ROADS
PRESERVATION PROJECT

PAVEMENT MARKING PLANS
TH 13 NB STA. 164+80 TO STA. 189+00

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 318 of 393 Sheets

PlotTime: 2/9/2012 11:20:18 AM
PlotBy: MDROSFRWXD037 TMS
c:\projectwise\pw_working\pep11m1c\d1441771\1901168_cab_loop_misc_dtl.dgn

LEGEND OF SYMBOLS	
	CABLE TRAY
--------	CONDUIT - INPLACE
--------	CONDUIT - F&I
- • • -	CONDUIT FIBER ONLY - INPLACE
==•• ==	CONDUIT FIBER ONLY - F&I
—• •—	DIRECT BURIED COMMUNICATION CABLE - INPLACE
—• •—	DIRECT BURIED COMMUNICATION CABLE - F&I
—•—	DIRECT BURIED POWER CABLE - INPLACE
—•—	DIRECT BURIED POWER CABLE - F&I
□	LOOP DETECTOR- DESIGN (SPECIFY)
	FLASHER - INPLACE
	FLASHER - F&I
	FLASHING BEACON - F&I
	FOUNDATION INPLACE, GATE ARM - F&I
	FOUNDATION F&I, GATE ARM - F&I
	GATE ARM - INPLACE
	GUARDRAIL END TREATMENT (SPECIFY)
	GUARDRAIL (PLATE BEAM) - (SPECIFY)
H	HANDHOLE - INPLACE
H	HANDHOLE - F&I
	JUNCTION BOX OR CONDULET - INPLACE
	JUNCTION BOX OR CONDULET - F&I
	LANE ARROW
	OVERHEAD SIGN - INPLACE
	OVERHEAD SIGN - F&I
	CABINET (SPECIFY) - INPLACE
	CABINET (SPECIFY) - F&I
	PEDESTAL - INPLACE
	PEDESTAL - F&I

LEGEND OF SYMBOLS	
	RAMP CONTROL SIGNAL (DESIGN ONE-WAY) - INPLACE
	RAMP CONTROL SIGNAL (DESIGN ONE-WAY) - F&I
	RAMP CONTROL SIGNAL (DESIGN TWO-WAY) - INPLACE
	RAMP CONTROL SIGNAL (DESIGN TWO-WAY) - F&I
	RAMP CONTROL SIGNAL (DESIGN ONE-WAY)(SCREW IN BASE) - INPLACE
	RAMP CONTROL SIGNAL (DESIGN ONE-WAY)(SCREW IN BASE) - F&I
	RAMP CONTROL SIGNAL (DESIGN TWO-WAY)(SCREW IN BASE) - INPLACE
	RAMP CONTROL SIGNAL (DESIGN TWO-WAY)(SCREW IN BASE) - F&I
	SHELTER (TMS) - INPLACE
	SHELTER (TMS) - F&I
	SIGN (TYPE A OR D) - (SPECIFY)
	SIGN (TYPE C) - (SPECIFY)
	SIGN (TYPE DMS) - (SPECIFY)
	SIGNAL FACE - INPLACE
	SIGNAL FACE - F&I
S	SPLICE CABINET - (SPECIFY)
FO	SPLICE VAULT (FIBER OPTIC) - (SPECIFY)
TV	TELEVISION CAMERA (CCTV) - (SPECIFY)
	WOOD POLE - F&I
	WOOD POLE - INPLACE
	WOOD POLE F&I, SERVICE INSTALLATION - F&I
	WOOD POLE INPLACE, SERVICE INSTALLATION - F&I
	WOOD POLE INPLACE, SERVICE INSTALLATION - INPLACE
P	FIBER PATCHING SHELTER - F&I
	OUTDOOR FIBER SPLICE ENCLOSURE - F&I
PV	PULL VAULT
E	ELECTRICAL SERVICE
T	TRANSFORMER

R	TABULATED TMS QUANTITIES SP 1901-168			
ITEM NO.	ITEM	NOTES	UNIT	ESTIMATED QUANTITY
2550	LOOP DETECTOR DESIGN SAWCUT		EACH	5

I HEREBY CERTIFY THAT SHEETS 319 THROUGH 322 OF THIS PLAN WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

GEOFFREY M. PRELGO

DATE JAN 18, 2012 LIC. NO. 26530

DESIGNER Terry Haukom

TMS COMPONENTS

REV. NO.	DATE: / /
REV. NO.	DATE: / /

PlotTED: 1/26/2012 1:06:18 PM
Pep11M1c MDROSFR#XD037 TMS

CEDAR AVE. SB (TH 77)

CEDAR AVE. NB (TH 77)

3303SM

3268NX

3247NQ

3267NP

3304SX

975

970

980

TH 77

SCALE IN FEET
0 25 50 100

1 INPLACE LOOP DETECTOR
F&I LOOP DETECTOR DESIGN SAWCUT

TRAFFIC MANAGEMENT SYSTEM
TH 13 AT TH 77

REV. NO.	DATE: / /
REV. NO.	DATE: / /

CERTIFIED BY _____ LIC.NO. 26530 JAN 18 2012
LICENSED PROFESSIONAL ENGINEER

STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 320 OF 393 SHEETS

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PlotTime: 1:08:02 PM 1/26/2012
PlotBy: MDROSFRWXD037 TWS

1. SAWCUT DETECTORS IN RAMPS & LOOPS ARE VARIABLE SIZED, AND INSTALLED IN THE CENTER OF THE LANE.

2. THE LOOP DETECTOR CONDUCTOR IS 1/C NO.14 COPPER, XLPE OR XHHW INSULATED WIRE. THE WIRE IS CONTAINED IN A FLEXIBLE POLYETHYLENE TUBING.

3. USE A SEALANT MADE SPECIFICALLY TO SEAL LOOP DETECTOR SAWCUTS IN CONCRETE ROADWAYS. USE AN APPROVED SEALANT IN BITUMINOUS ROADWAYS AND CONCRETE ROADWAYS THAT ARE TO BE OVERLAYED WITH BITUMINOUS.

METHOD

4. CLEAN ALL DEBRIS FROM THE ENTIRE LOOP DETECTOR AREA.

5. MARK THE LOOP SAWCUTS ON THE ROADWAY.
NOTE: LOCATE LOOPS IN PAVEMENT TO MINIMIZE THE CROSSING OF JOINTS AND CRACKS WITHIN THE PAVEMENT.

6. SAW THE CUT TO 2 1/2" +/- 1/4" DEEP BY 1/8" WIDER THAN THE "OD" OF THE CONDUCTOR. SMOOTH THE BOTTOM AND ANGLES TO PREVENT DAMAGE TO INSULATION.

7. REAM THE CONDUIT ENDS. PLUG THE CONDUIT IN THE ROADWAY TO PREVENT THE LOOP SEALANT FROM ENTERING THE CONDUIT.

8. DRILL THE CORNERS 1/4" DEEPER THAN THE SAW SLOT AND SMOOTH THE HOLE CORNERS.

9. CLEAN AND DRY THE ENTIRE LOOP DETECTOR AREA.

10. F&I BEAD OF LOOP DETECTOR SEALANT TO WITHIN 6" OF LOOP CONDUCTORS CONDUIT. INSTALL CLEAN, DRY LOOP CONDUCTOR STAYING TO THE OUTSIDE OF THE CORNERS. DO NOT INSTALL THE CONDUCTOR TIGHT. PUSH THE CONDUCTORS TO THE BOTTOM OF THE SAWSLOT WITH A BLUNT TOOL.

11. PLACE 3/4" DIAMETER BY 2" FOAM BACKER ROD AT 2.0' INTERVALS TO HOLD THE CONDUCTOR AT THE BOTTOM OF THE SAWCUT. PLACE LOOP SEALANT.

12. F&I CONDUCTOR PER JOINT/CRACK DETAIL EACH TIME A JOINT OR PAVEMENT CRACK IS CROSSED.

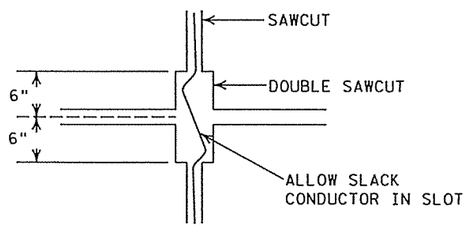
13. TWIST THE CONDUCTORS 9 TURNS PER METER IN THE CONDUIT FROM THE ROADWAY TO THE SPLICE WITHIN THE HANDHOLE.

14. SOLDER THE LOOP CONDUCTOR TO LEAD-IN LEAVING THE JOINTS STAGGERED. ROUGHEN CABLE JACKET WITH SANDPAPER. PLACE IT INTO SPLICE ENCAPSULATOR WITH A PLASTIC TUBE AND END CAPS THAT FUNCTION AS SPOUTS. USE A TWO PART INSULATING RESIN, CONFINED IN A UNIPAK, THAT TURNS BLACK WHEN MIXED AND BECOMES HARD WHEN CURED. F&I BOTH LOOP CONDUCTORS AND LEAD-IN WIRE INTO THE SAME END OF THE TUBE AND ENCAPSULATE THE SPLICE.

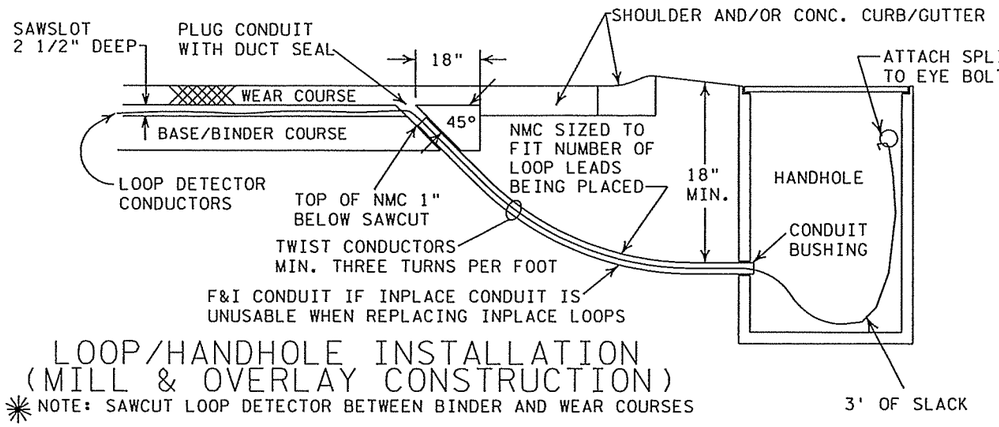
15. SAWCUTS SHALL REMAIN 2.0' FROM OTHER SAWCUTS.

16. FILL SAW SLOT UNIFORMLY ACCORDING TO THE LOOP SEALANT MANUFACTURERS RECOMMENDED DEPTH. WIPE ALL EXCESS SEALANT MATERIAL FROM THE ROADWAY SURFACE.

NOTE: ALL SAWCUT LOOP DETECTORS SHALL HAVE 4 TURNS

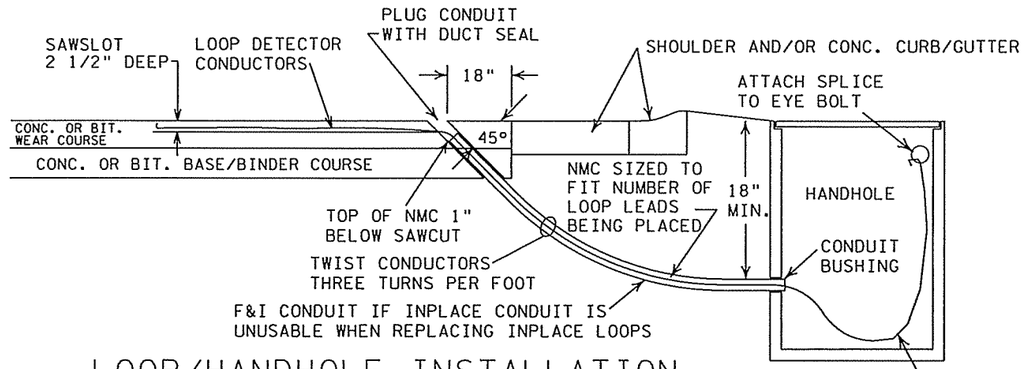


JOINT/CRACK INSTALLATION



LOOP/HANDHOLE INSTALLATION
(MILL & OVERLAY CONSTRUCTION)

✳ NOTE: SAWCUT LOOP DETECTOR BETWEEN BINDER AND WEAR COURSES



LOOP/HANDHOLE INSTALLATION
(INPLACE ROADWAYS)

✳ NOTE: SAWCUT LOOP DETECTOR INTO WEAR COURSE OR CONC. SURFACE

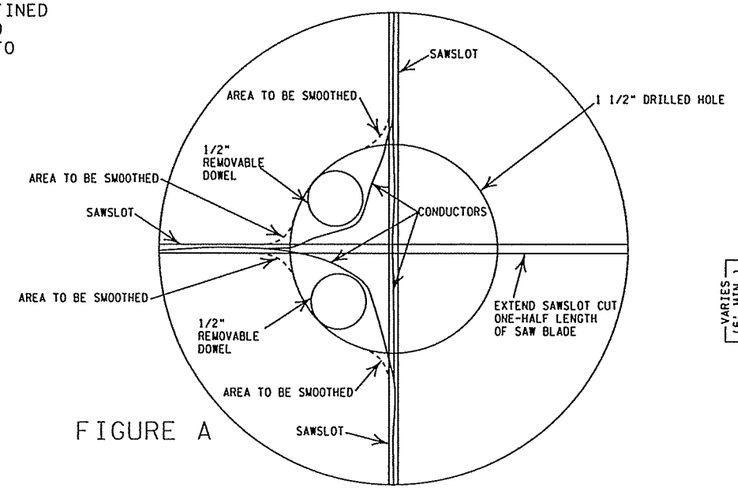
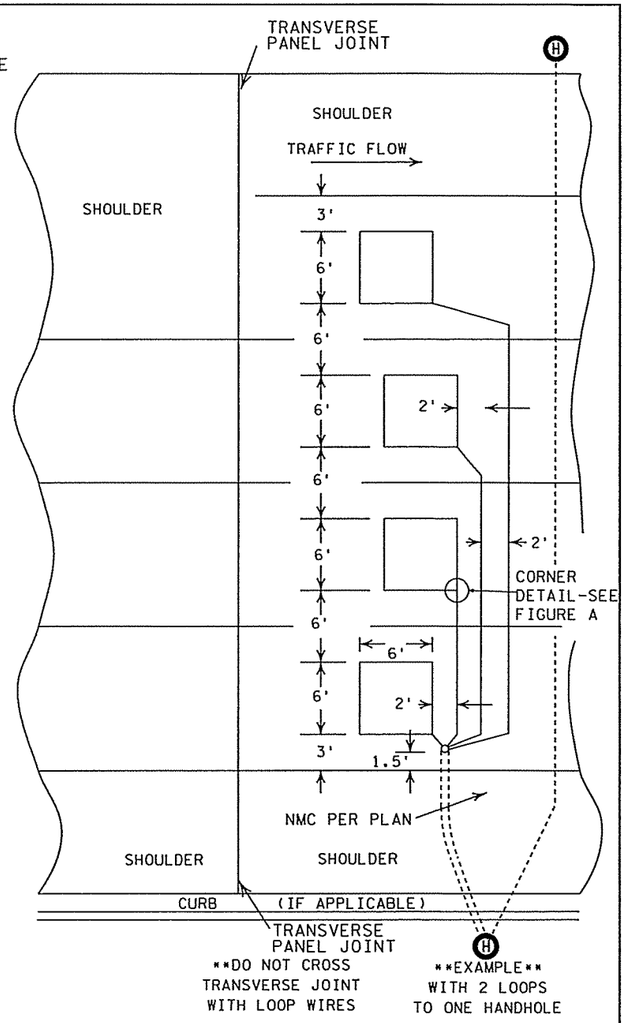


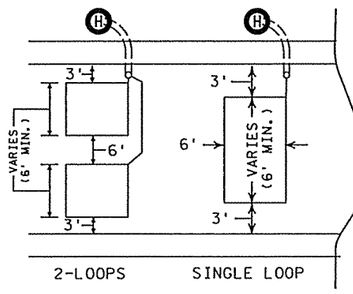
FIGURE A

DRILL SAWCUT CORNERS

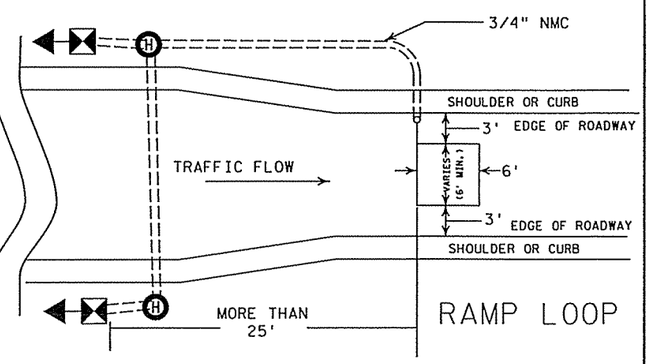


MAINLINE DETECTORS

NOTE: LOOP LEADS SHALL NOT CROSS TRANSVERSE JOINTS IN CONCRETE PAVEMENT. MOVE A LOOP TO THE NEXT PANEL AND F&I A SEPARATE CONDUIT TO THE HH IF ALL LOOPS WILL NOT FIT ONE PANEL AND MAINTAIN SEPARATIONS SHOWN



QUEUE LOOPS
(NOT TO SCALE)



RAMP LOOP

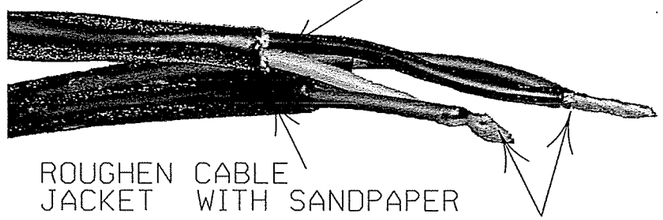
TMS SAWCUT LOOP DETECTOR TYPICAL-PART ONE

REV. NO.	DATE: / /	CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER LIC.NO. 26530 JAN 18 2012	STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 321 OF 393 SHEETS
REV. NO.	DATE: / /		

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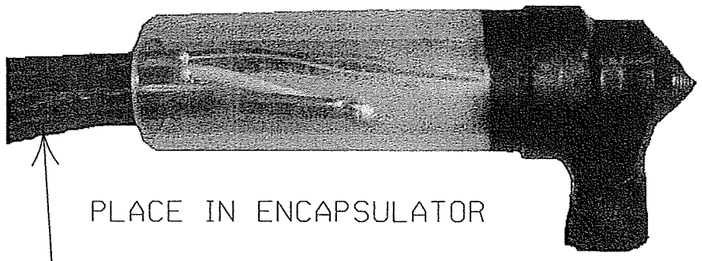
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CUT & REMOVE DRAIN WIRE



ROUGHEN CABLE JACKET WITH SANDPAPER

STAGGER SOLDERED BUTT SPLICE

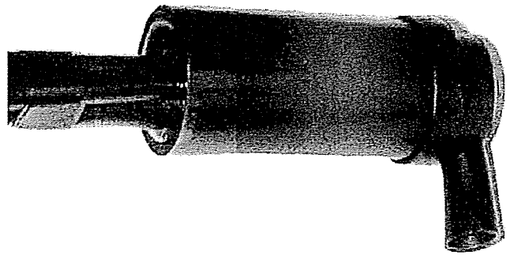


PLACE IN ENCAPSULATOR

TAPE WIRE TOGETHER BEFORE SPLICE

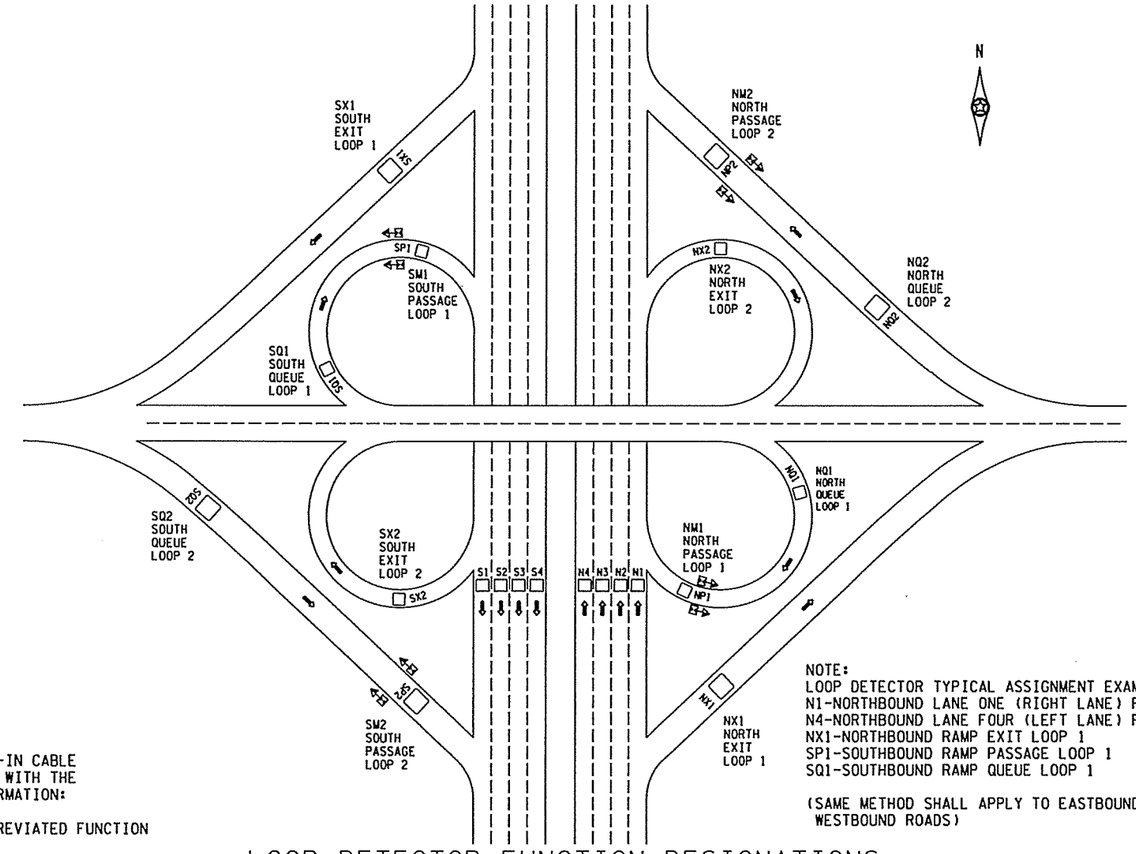
PLACE WIRE NUT IN ONE END TO BLOCK OPENING

TAPE



FILL ENCAPSULATOR COMPLETELY-ALLOW FINISHED SPLICE TO CURE SO EPOXY DOES NOT RUN OUT

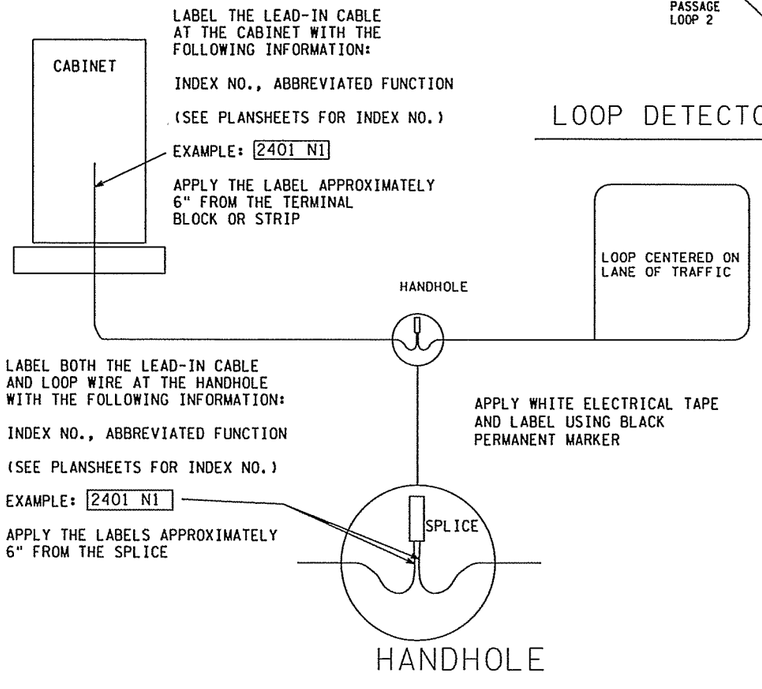
LOOP DETECTOR SPLICE FOR SAWCUT AND PREFORMED LOOPS



NOTE:
LOOP DETECTOR TYPICAL ASSIGNMENT EXAMPLES
N1-NORTHBOUND LANE ONE (RIGHT LANE) POSITION
N4-NORTHBOUND LANE FOUR (LEFT LANE) POSITION
NX1-NORTHBOUND RAMP EXIT LOOP 1
SP1-SOUTHBOUND RAMP PASSAGE LOOP 1
SQ1-SOUTHBOUND RAMP QUEUE LOOP 1

(SAME METHOD SHALL APPLY TO EASTBOUND & WESTBOUND ROADS)

LOOP DETECTOR FUNCTION DESIGNATIONS

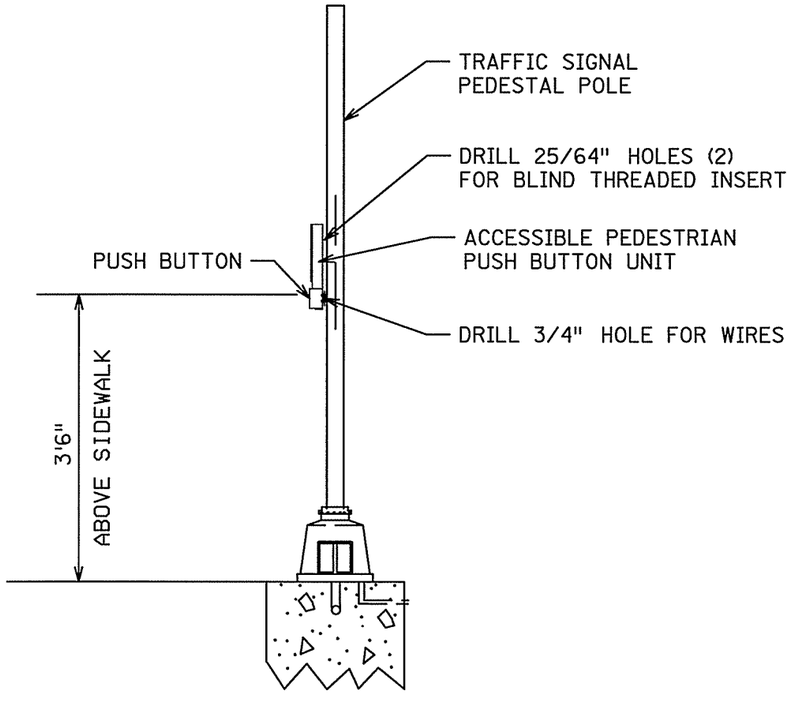


LOOP DETECTOR CABLE LABELING

TMS LOOP DETECTOR TYPICAL-PART TWO

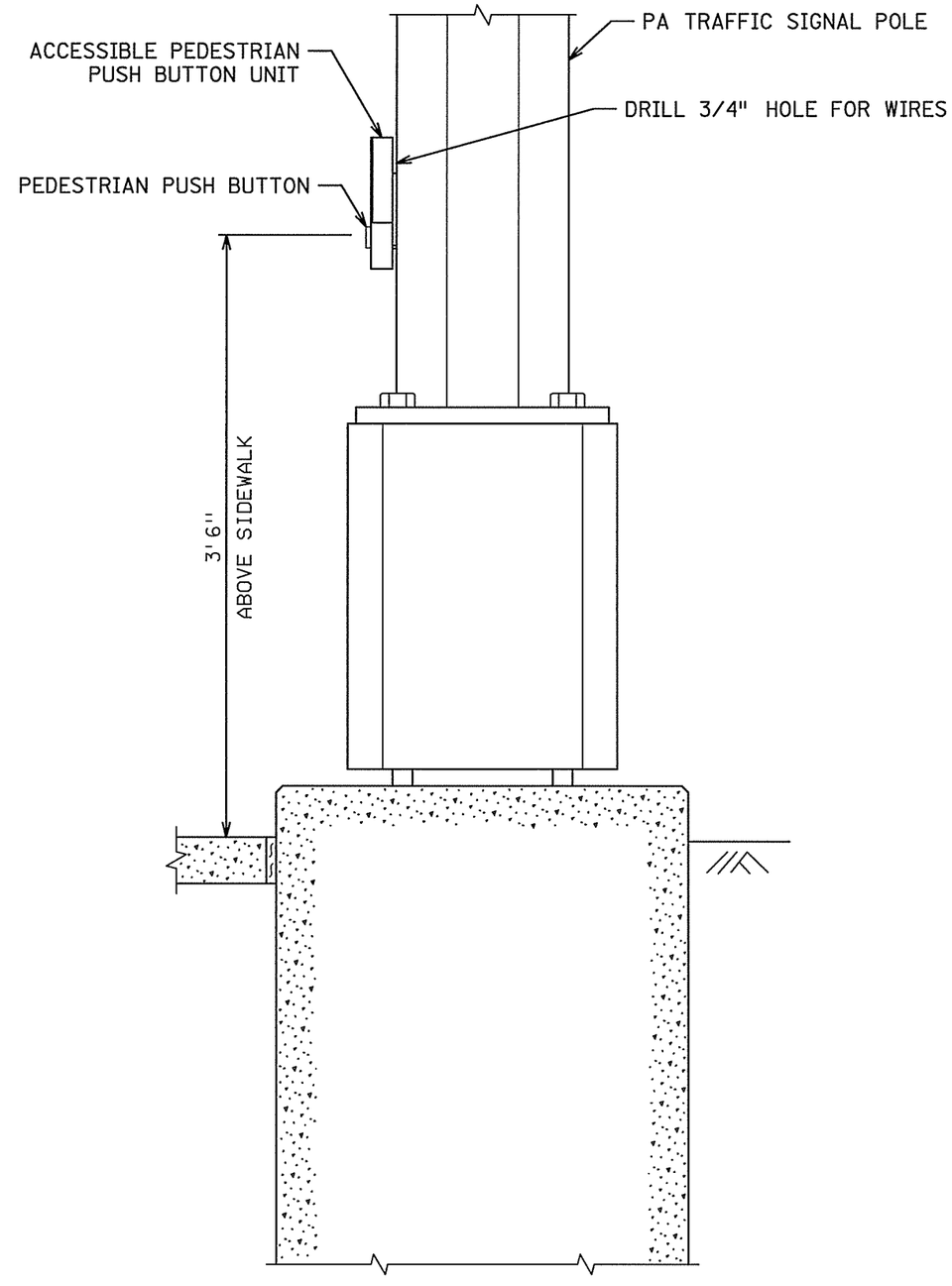
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REV. NO.	DATE: / /	CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER LIC.NO. 26530 JAN 18 2012	STATE PROJ. NO. 1901-168 (TH 13) SHEET NO. 322 OF 393 SHEETS
REV. NO.	DATE: / /		



PEDESTAL POLE WITH APS PEDESTRIAN PUSH BUTTON

NOT TO SCALE
(SYSTEMS A,B,C,D,H)



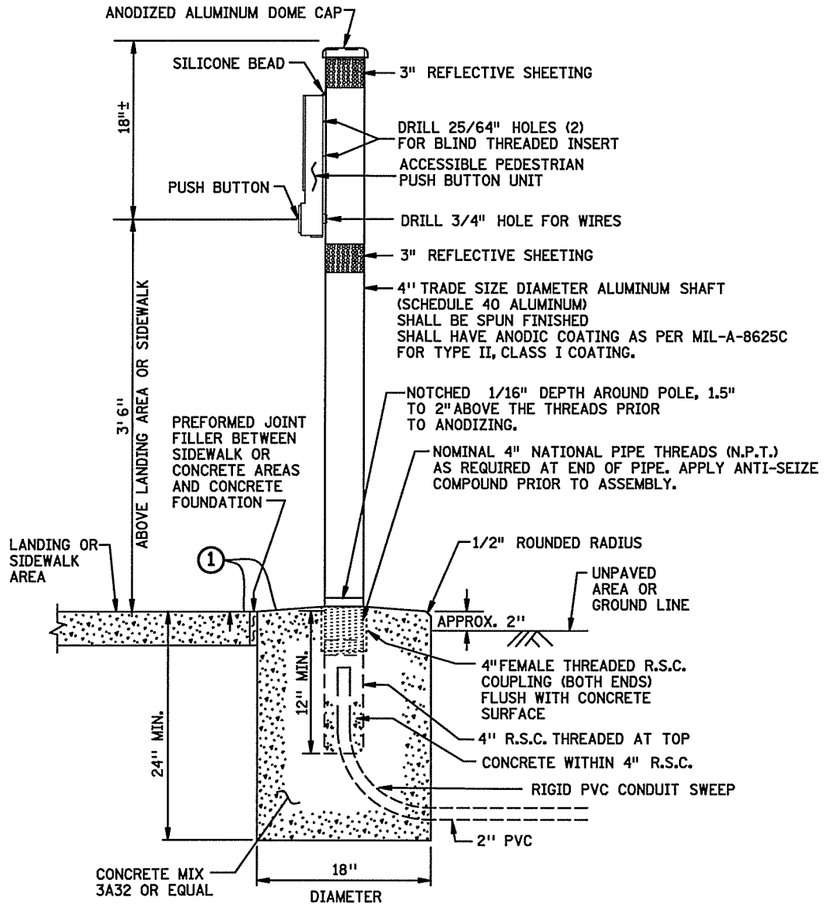
SIGNAL POLE WITH APS PEDESTRIAN PUSH BUTTON

NOT TO SCALE
(SYSTEMS A,B,C,D,E,I)

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DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: FEBRUARY 13, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	APS PUSH BUTTON PEDESTAL AND POLE TRAFFIC SIGNAL SYSTEMS	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 323 of 393 Sheets

APS PEDESTRIAN PUSH BUTTON STATION



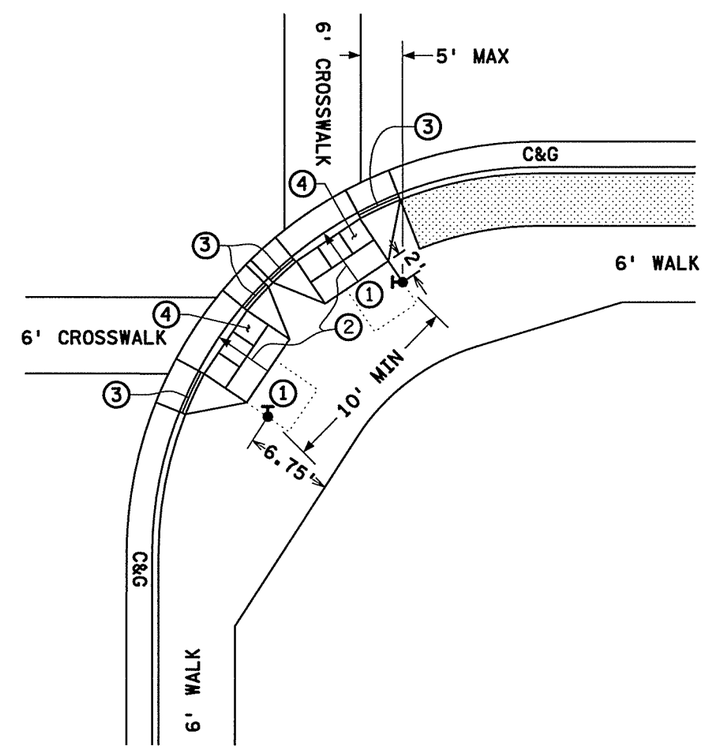
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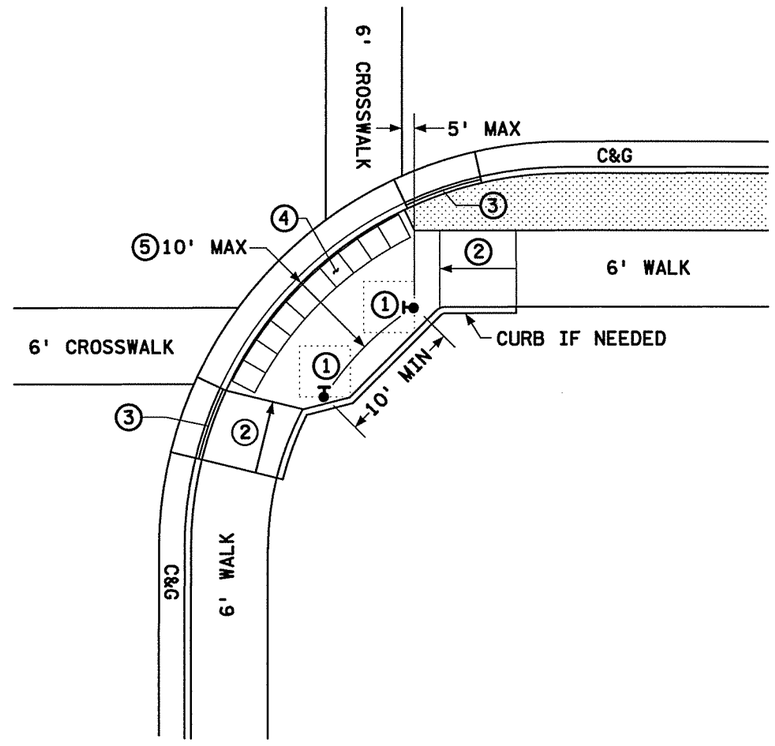
- PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN POST TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE POST.
- BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED 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 INPLACE AND CONSTRUCTED FLUSH WITH THE SURROUNDING SIDEWALK.

GUIDELINES FOR LOCATING APS PUSH BUTTONS:

- THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC DETAILS REGARDING PEDESTRIAN RAMP LAYOUT, SEE THE PEDESTRIAN CURB RAMP AND SIDEWALK DETAILS.
- BUTTONS SHALL BE WITHIN 5' OF THE OUTSIDE EDGE OF THE CROSSWALK.
- THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE CROSSWALK.
- A MIN. 4'X4' LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON.
- BUTTONS SHALL BE WITHIN 10' OF THE BACK OF CURB OR EDGE OF ROADWAY.
- BUTTONS SHALL BE AT LEAST 10' APART.





(1) 4'X4' MINIMUM LANDING AREA ADJACENT TO PUSH BUTTON. (2% SLOPE MAX.)

(2) RAMP - SLOPE (5% PREFERRED 8% MAX).

(3) CURB TAPER SECTION AT 1:10 (10%) (HEIGHT OF CURB IS TAPERED TO 0").

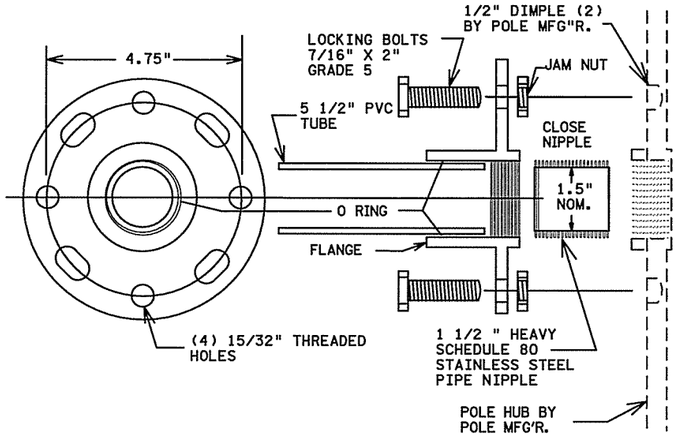
(4) DETECTABLE WARNING SURFACE (TRUNCATED DOMES) - RADIUS SECTIONS WHERE SPECIFIED.

(5) DISTANCE FROM THE BACK OF CURB TO PUSH BUTTON STATION.

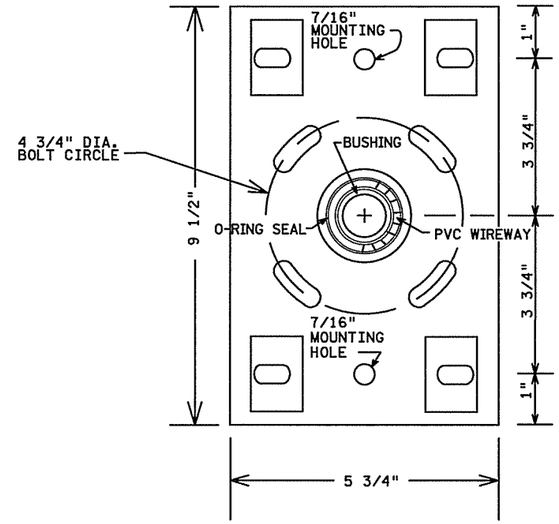
TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

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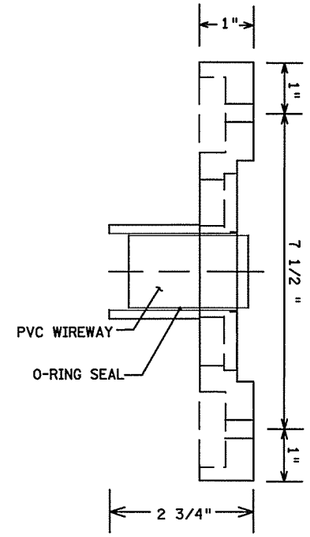
DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: FEBRUARY 13, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	PEDESTRIAN PUSH BUTTON STATION DETAILS TRAFFIC SIGNAL SYSTEMS 'A - K'	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 324 of 393 Sheets



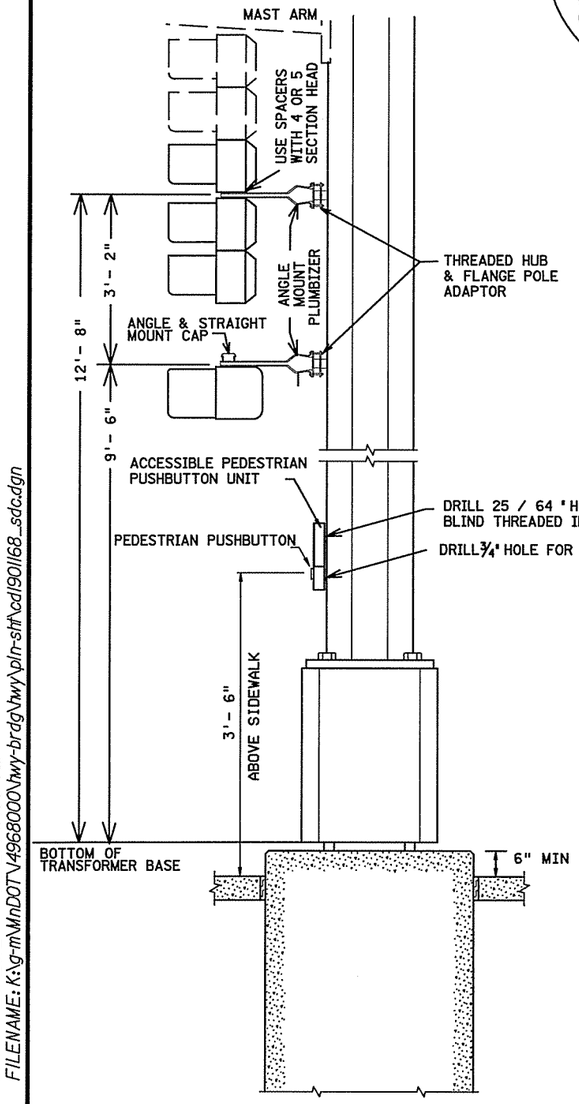
THREADED HUB AND FLANGE POLE ADAPTOR



BOLT ON HUB & FLANGE

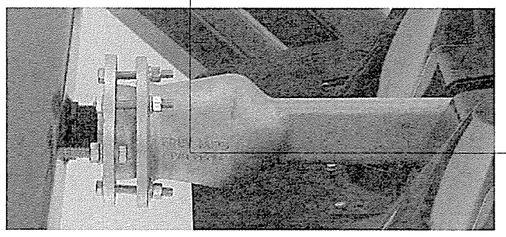


SIDE VIEW



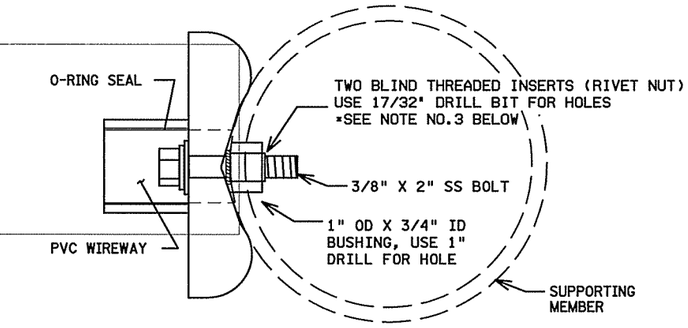
TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE

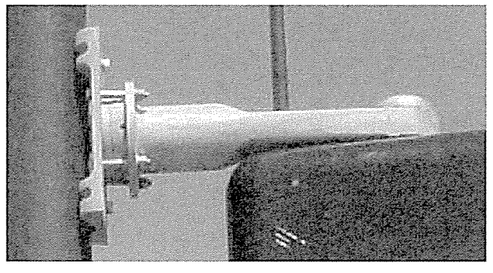


NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.

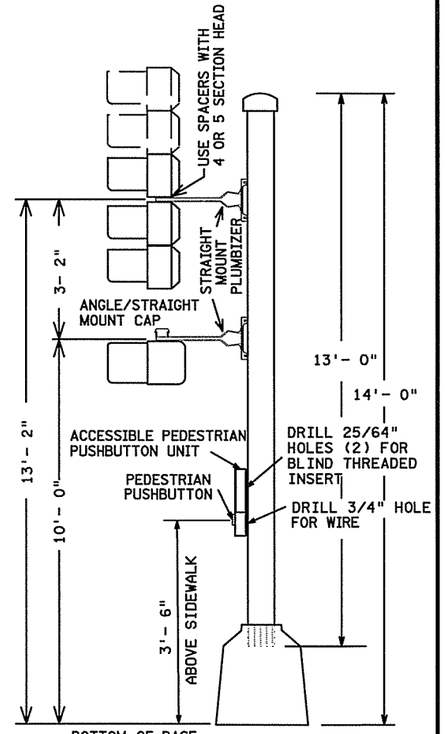


TOP VIEW



NOTE:

1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 & 5 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSTALLATION TOOL. NO OTHER METHOD OF INSTALLATION IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

DATE: 1/26/2012 TIME: 9:17:35 AM
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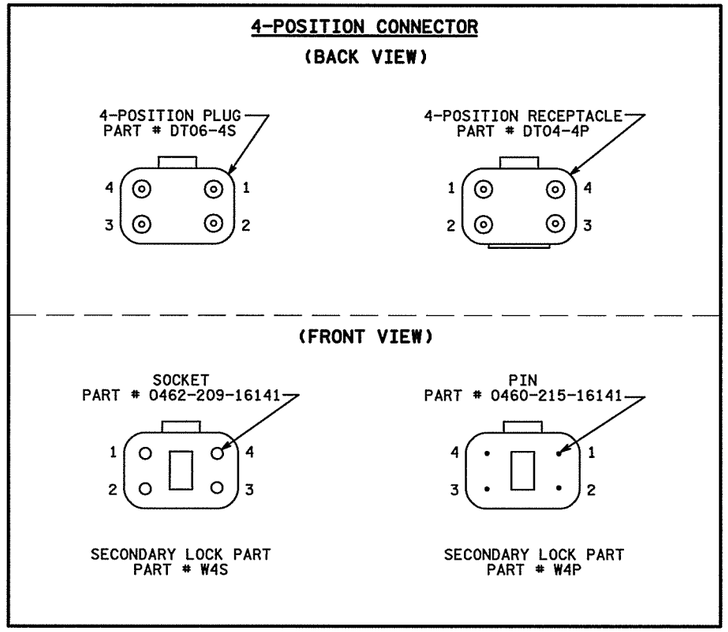
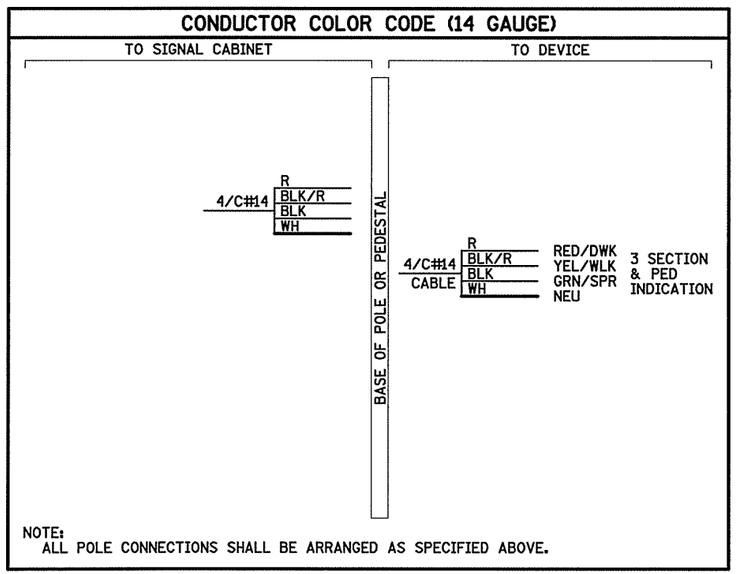


TABLE 2a	4 Position DT Connector		(DWK/WLK)
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	DWK
BLK/R	2	BLK/R	WLK
BLK	3	BLK	SPR
WH	4	WH	NEU

TABLE 2b	4 Position DT Connector (Used with 3 Conductor Cable Only)		(EVP LHT/LUM/Flasher)
Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

CONDUCTOR COLOR CODE (14 GAUGE)



NOTE:
ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

NOTES:

1. DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
2. DT06-_S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
3. THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE /JUNCTION BOX.
4. STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
5. STRIP .250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
6. CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
7. WIRES MUST BE TERMINATED AS DETAILED IN TABLES DEPENDING ON WIRE COUNT.
8. ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
9. LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

Wire Color Code Key	
R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

DATE: 1/26/2012 TIME: 9:17:37 AM
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SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

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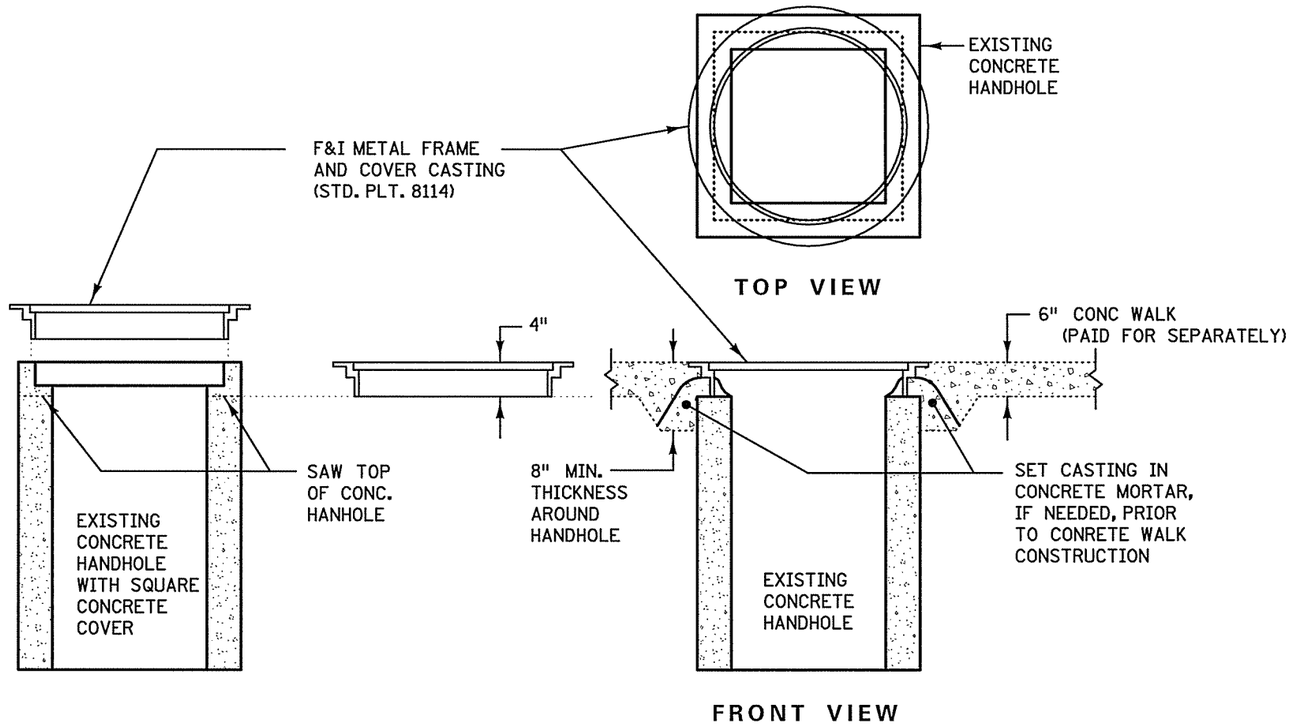
TH 13
BETTER ROADS
PRESERVATION PROJECT

POLE WIRING CONNECTOR DETAIL
TRAFFIC SIGNAL SYSTEMS A AND H (ONLY)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 326 of 393 Sheets

NOTE:

F&I ▪ ROUND METAL FRAME AND COVER (STD. PLT. 8114) ON EXISTING SQUARE CONCRETE HANDHOLE. WORK REQUIRES CUTTING THE TOP OF THE CONCRETE HANDHOLE SO THAT THE TOP OF THE METAL COVER FITS THE ELEVATION ON THE PROPOSED CONCRETE WALK. THIS WORK AND F&I ROUND METAL FRAME AND COVER (STD. PLT. 8114) IS INCLUDED IN THE PAY ITEM 2565 "REVISE SIGNAL SYSTEM."



DATE: 1/26/2012 TIME: 9:17:39 AM
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MATCHLINE - SEE SHEET 330

MATCHLINE - SEE SHEET 330

MATCHLINE - SEE SHEET 330

NICOLLET AVE (35 MPH)

TH 13 (50 MPH)

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 23:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB4-3)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 5:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB2-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 15:
2" PVC
1-2/C#14

4" RSC
5-12/C#12
5-3/C#12
10-2/C#14
2-3/C#20
2-1/C#10 (LUM)
F&I: 4-2/C#14

2" PVC
3-2/C#14
1-3/C#20

4" RSC
3-12/C#12
2-3/C#12
8-2/C#14
2-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#19 (COM CABLE)
F&I: 1-2/C#14
ABANDON: 1-3/C#12

2" RSC
1-3/C#12 (LUM)
1-3/C#14 (CAMERA POWER)

3" RSC
1-6PR#19 (ABANDONED)

ADJUST HANDHOLE

2" RSC
2-2/C#14

2' RSC
2-2/C#14

4" RSC
3-12/C#12
3-3/C#12
8-2/C#14
2-3/C#20
2-1/C#10 (LUM)
F&I: 3-2/C#14
ABANDON: 1-3/C#12

1 + 6 EVP

2 + 5 EVP

3 EVP

4 EVP

3" RSC
1-6PR#19 (ABANDON)

1½" RSC
1-FO CABLE
(36SM)

2" RSC
2-2/C#14

FO SPLICE VAULT

4" RSC
2-12/C#12
2-3/C#12
4-2/C#14
2-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#19 (COM CABLE)
F&I: 1-2/C#14
ABANDON: 1-3/C#12

3" RSC
2-2/C#14

4" RSC
2-12/C#12
2-3/C#12
4-2/C#14
2-3/C#20
2-1/C#10 (LUM)
F&I: 2-2/C#14
ABANDON: 1-3/C#12

1½" PVC
1-FO CABLE (36SM)

INTERCONNECT FROM TH 13 AT PORTLAND AVE
1-6PR#19
DIRECT BURIED
(ABANDONED)

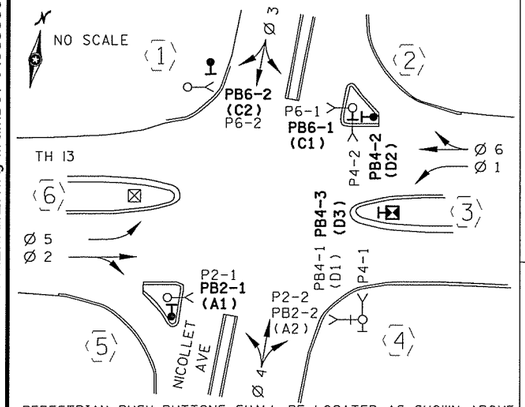
2" RSC
3-2/C#14

F/O

FO

D1-1
D1-2
D1-3
D1-4
D3-4
D3-5
D3-6
D3-7
D4-1
D4-2
D4-3
D4-4
D4-5
D4-6
D5-1
D5-2
D5-3
D5-4

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SCALE IN FEET
0 10 20 40

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES, WITH PHASES 3 AND 4 BEING SPLIT PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE STRIPING PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

SYSTEM ID: 20293 T.E. 5498
METER ADDRESS: 151 HWY 13 W

SIGNAL FACE CHART

FACE	R	Y	G	G
1-1, 1-2	←	←	←	
2-1, 2-2, 2-3	○	○	○	
3-1, 3-2	○	○	○	
3-3, 3-4	←	←	←	←
4-1, 4-2	○	○	○	
4-3	○	○	○	←
4-4, 4-5	○	○	○	←
5-1, 5-2, 5-3	←	←	←	
6-1, 6-2, 6-3	○	○	○	

-ALL SIGNAL INDICATIONS ARE 12" LED
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELD

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1, D1-2	6'x6'	40	PVC
D1-3, D1-4	6'x6'	10	PVC
F&I: D2-1, D2-2	**6'x6'**	**475**	**PVC**
D3-1, D3-2, D3-3	6'x6'	180	SAWCUT
F&I: D3-4, D3-5	**2-6'x6'**	**5 & 20**	**PVC**
F&I: D3-6, D3-7	**6'x6'**	**20**	**PVC**
D4-1, D4-2, D4-3	6'x6'	180	SAWCUT
D4-4	2-6'x6'	0 & 15	SAWCUT
D4-5, D4-6	6'x6'	20	SAWCUT
D5-1, D5-2	6'x6'	40	PVC
D5-3, D5-4	6'x6'	10	PVC
F&I: D6-1, D6-2	**6'x6'**	**475**	**PVC**

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

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PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM A
TH 13 AND NICOLLET AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 328 of 393 Sheets

DATE: 1/26/2012 TIME: 9:17:41 AM
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(A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER AND CABINET
4" RSC TO HH 21:
5-12/C#12
4-3/C#12
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
8-2/C#14
3-3/C#20
4" RSC TO HH 23:
5-12/C#12
5-3/C#12
17-2/C#14
3-3/C#20
F&I: 5-2/C#14
F&I: 1-2/C#14
ABANDON : 2-3/C#12
1 1/2" PVC TO FO SPLICE VAULT:
1-FO PIGTAIL (12SM)
3" RSC TO HH 5A:
1-6PR#19 9ABANDONED)
SERVICE CABINET TO CONTROLLER CABINET:
2" RSC
2-1/C#6
1-1/C#6 INS. GR.
SERVICE CABINET TO HH 23:
2" RSC
2-1/C#10 (LUM)
1-3/C#12 (LUM)
1-3/C#14 (CAMERA POWER)
SERVICE CABINET TO HH 22:
2" RSC
3-1/C#2
3-1/C#2

(B) S.O.P.
WOOD POLE (EXCEL ENERGY)
DISCONNECT - WOOD POLE MOUNTED
2' RSC RISER AND WEATHERHEAD
ABOVE DISCONNECT WITH:
3-1/C#12
EXTENDED BELOW DISCONNECT
INTO HH 22:
2" RSC
3-1/C#2
3-1/C#2

(1) PA100 POLE FOUNDATION
TYPE PA100-A-35-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
(0' AND 11' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 180°
TYPE 10A POLE MOUNTED AT 90°
1-C.D. PED INDICATION
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE - 200W HPS
REMOVE: 1-PED PUSH BUTTON AND SIGN (R10-4b)(PB6-2)
PLUG HOLE IN POLE (PB6-2)
R9-3a SIGN SIGN PANEL - FACING POLE 5
2-R6-1 SIGN PANELS - POLE MOUNTED
0°+180°
TYPE "D" SIGN PANEL - OVERHEAD
EXTEND INTO HH 21:
3" RSC
2-12/C#12
1-3/C#12
1-3/C#20
1-3/C#12 (LUM)
DISCONNECT AND ABANDON: 1-3/C#12

(2) PA100 POLE FOUNDATION
TYPE PA100-A-45
3-ONE WAY SIGNALS OVERHEAD
(0', 11' AND 23' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
2-C.D. PED INDICATIONS
REMOVE: 2-PED PUSH BUTTONS AND SIGNS (R10-4b) (PB4-3, PB6-1)
PLUG HOLE IN POLE (PB4-3)
F&I: 1-APS PED PUSH BUTTON (PB6-1) AND
SIGN (LT ARROW)
EXTEND INTO HH 5:
3" RSC
2-12/C#12
2-3/C#12
DISCONNECT AND ABANDON: 1-3/C#12
LEAVING POLE 2

(3) **REMOVE: PEDESTAL FOUNDATION**
SALVAGE: 10' SIGNAL PEDESTAL AND BASE (TYPE 2A)
REMOVE: 1-PED PUSHBUTTON PB4-2
PULL: 1-12/C#12, 2-3/C#12 INTO HH 10
F&I: PEDESTAL FOUNDATION
INSTALL: 10' SIGNAL PEDESTAL AND BASE (TYPE 2A)
F&I: 1-APS PUSHBUTTON (PB4-3) AND
SIGN (DBL ARROW)
INPLACE: 3" RSC INTO HH 10:
INSTALL FROM HH10: 1-12/C#12
F&I: 1-2/C#14
DISCONNECT AND ABANDON: 2-3/C#12

(4) PA100 POLE FOUNDATION
TYPE PA100-A-35-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
(0' AND 11' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
2-C.D. PED INDICATIONS
1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 2+5)
1-ONE WAY EVP DETECTOR
POLE - MOUNTED (PHASE 4)
LUMINAIRE - 200W HPS
2-PED PUSH BUTTONS AND SIGNS
(R10-4b)
2-R6-1 SIGN PANELS - POLE MOUNTED
0°+180°
EXTEND INTO HH 11:
3" RSC
2-12/C#12
2-3/C#12
2-3/C#20
1-1/C#10 (LUM)
F&I: 2-2/C#14
DISCONNECT AND ABANDON:
1-3/C#12

(5) PA100 POLE FOUNDATION
TYPE PA100-A-40
2-ONE WAY SIGNALS OVERHEAD
(0' AND 17' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 315°
TYPE 10A POLE MOUNTED AT 225°
1-VIDEO CAMERA #1312 (V1) MOUNTED ON
CAMERA EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
1-C.D. PED INDICATIONS
2-ONE WAY EVP DETECTORS AND
CONFIRMATORY LIGHTS (PHASES 3)
(PAHSE 4)
REMOVE: 1-PED PUSH BUTTON AND SIGN (R10-4b) (PB2-1)
PLUG HOLE IN POLE (PB2-1)
R9-3A SIGN PANEL FACING POLE 1
EXTEND INTO HH 15:
3" RSC
2-12/C#12
1-3/C#12
2-3/C#20
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
1-COAXIAL CABLE
DISCONNECT AND ABANDON: 1-3/C#12

(6) PEDESTAL FOUNDATION
10' SIGNAL PEDESTAL AND
BASE (TYPE 2A)
EXTEND INTO HH 20:
3" RSC
1-12/C#12

SYSTEM ID: 20293 T.E. 5498
METER ADDRESS: 151 HWY 13 W

DRAWN BY: MTH
CHECKED BY: BDP

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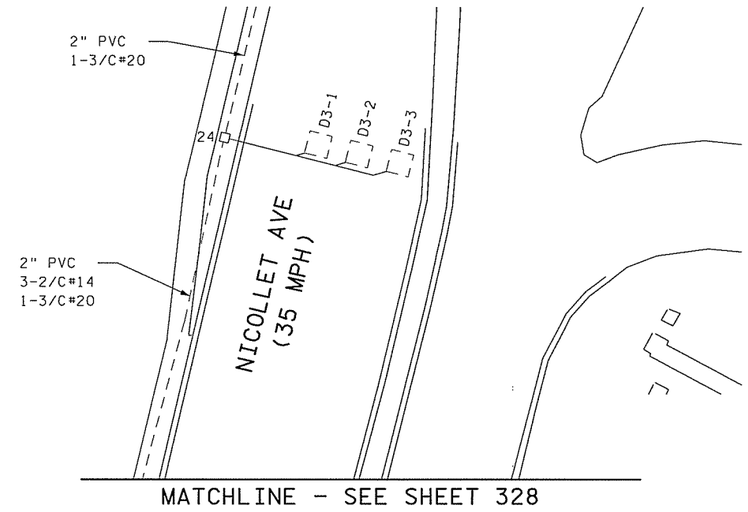
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ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

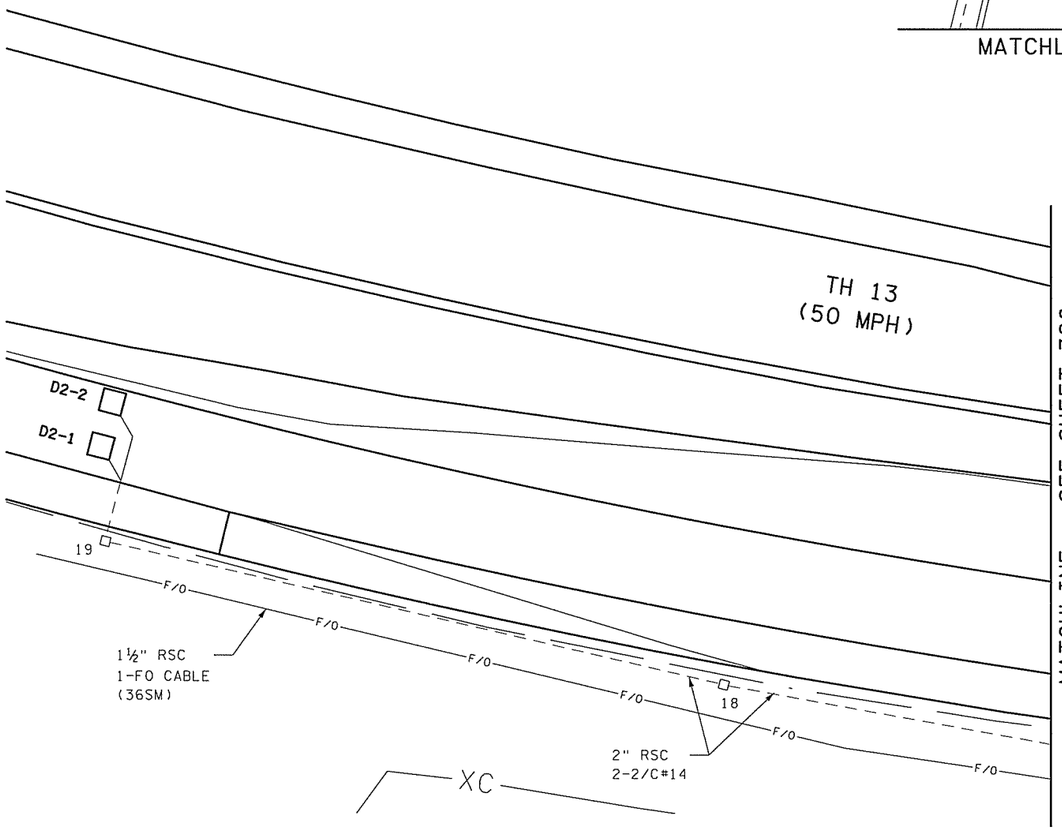
NOTES
REVISE SIGNAL SYSTEM A
TH 13 AND NICOLLET AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 329 of 393 Sheets

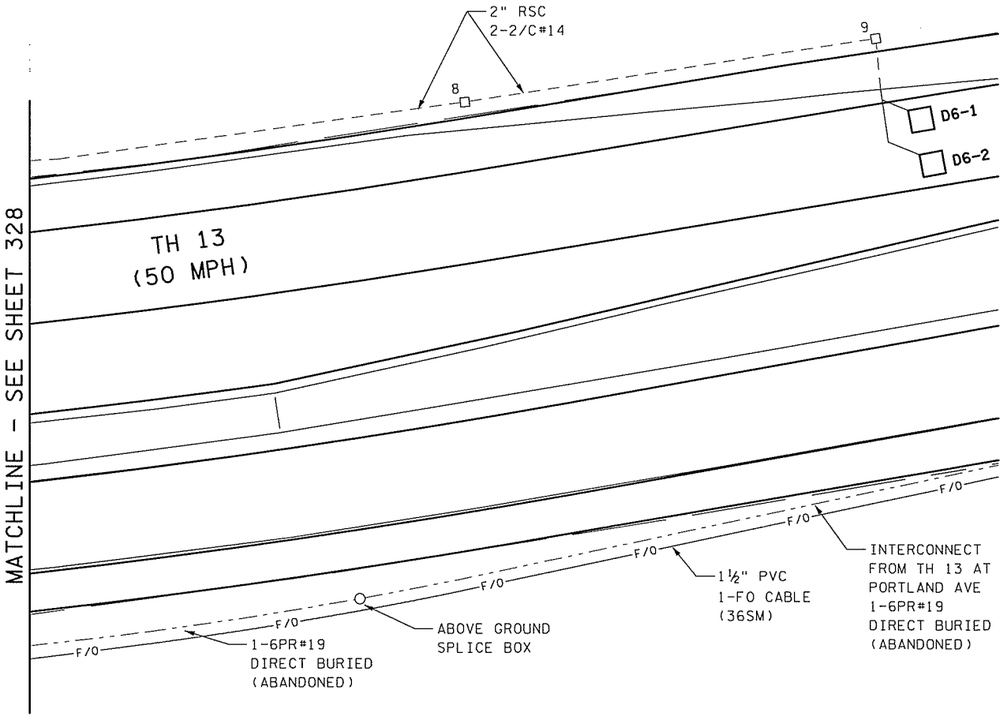
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MATCHLINE - SEE SHEET 328



MATCHLINE - SEE SHEET 328



SCALE IN FEET
0 10 20 40

SYSTEM ID: 20293 T.E. 5498
METER ADDRESS: 151 HWY 13 W

DATE: 1/26/2012 TIME: 9:17:45 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plnr-sht\cd190168_ml01b.dgn

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	MATCHLINE LAYOUTS REVISE SIGNAL SYSTEM A TH 13 AND NICOLLET AVE S	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 330 of 393 Sheets

DATE: 1/26/2012 TIME: 9:17:47 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad1901168_wd01a.dgn

CONTROLLER CABINET

1
- RED, YEL, GRN, NEU — 6-1
- RED, YEL, GRN — 6-2
- NEU, WLK, DWK, SPR, EQ.G — P6-2

2
- RED, YEL, GRN, NEU, SPR, SPR, GLTA — 4-5
- NEU, RED, YEL, GRN, EQ.G — 6-3

3
- RLTA, YLTA, GLTA, NEU — 5-1
- SPR, SPR, SPR, NEU — 1-2
- RLTA, YLTA, GLTA, EQ.G

4
- RED, YEL, GRN, NEU — 4-1
- RED, YEL, GRN, NEU — 4-3
- GLTA, WLK, DWK, EQ.G — P4-2

5
- RLTA, YLTA, GLTA, NEU — 5-3
- RED, YEL, GLTA,GRN, NEU — 4-4
- RED, YEL, GRN, EQ.G — 4-2

6
- RLTA, YLTA, GLTA, NEU — 1-1
- SPR, SPR, SPR, NEU — 5-2
- RLTA, YLTA, GLTA, EQ.G

7
- RED, YEL, GRN, NEU — 2-1
- RED, YEL, GRN, NEU — 2-2
- WLK, DWK, SPR, EQ.G — P2-2

8
- RED, YEL, GRN, NEU — 2-3
- SPR, SPR, GLTA, NEU — 3-4
- RED, YEL, GRN, EQ.G

9
- RED, YEL, GRN, NEU — 3-1
- RED, YEL, GRN, NEU — 3-2
- WLK, DWK, SPR, EQ.G — P2-1

10
- RED, YEL, GRN, NEU — 3-3
- RLTA, YLTA, GLTA, NEU — 1-3
- GLTA, SPR, SPR, EQ.G — 3-3

11
- SPR, NEU, SPR

12
- WLK, NEU, DWK — P4-1

13
- WLK, NEU, DWK — P6-1

14
- PB6-1, NEU, SPR

15
- EVP LIGHT 2+5, NEU, SPR

16
- EVP LIGHT 1+6, NEU, SPR

17
- EVP LIGHT 3, NEU, EVP LIGHT 4

18
- 2+5 EVP DETECTOR

19
- 1+6 EVP DETECTOR

20
- 3 EVP DETECTOR

21
- 4 EVP DETECTOR

22
- 3-1/C#6 INS. GR. — SIGNAL SERVICE

23
- D1-1

24
- D1-2

25
- D1-3

D1-4 — 26
D2-1 — 27
D2-2 — 28
D3-4 — 32
D3-6 — 33
D3-7 — 34
D4-1 — 35
D4-2 — 36
D4-3 — 37
D4-4 — 38
D4-5 — 39
D4-6 — 40
D5-1 — 41
D5-2 — 42
D5-3 — 43
D5-4 — 44
D6-1 — 45
D6-2 — 46

INTERCONNECT FROM T.H. 13 AT PORTLAND AVE. S. (ABANDONED) — 47

SPR, NEU, SPR — 52

4 EVP DETECTOR — 53

D3-5 — 61
D3-1 — 62
D3-2 — 63
D3-3 — 64

3 EVP DETECTOR — 65

CAMERA COAXIAL CABLE — 66
CAMERA COM CABLE — 67
FIBER OPTIC PIGTAIL — 95

PB6-2 — 100
PB4-2 — 101
PB4-3 — 102
PB2-2 — 103
PB4-1 — 104
PB2-1 — 105

95 → FO
- FIBER OPTIC INTERCONNECT TO T.H. 13 AT C.S.A.H. 31 (LYNN AVE.)
- FIBER OPTIC INTERCONNECT TO T.H. 13 AT C.S.A.H. 5 (KENWOOD TRAIL)

HH 4 AND 3 EVP DETECTOR LOCATED AT INPLACE SIGNAL SYSTEM (NICOLLET AVENUE AT MVTA PARK & RIDE)

(2) 3 EVP DETECTOR — 65 — TO EVP HUB

HH 4 — 65 — HH 25 — 65 — HH 24

F&I: APS PED PB STA
100 — PB6-2 TO PB

4-8, 12-15, 18, 23-26, 32-38, 45, 46, 53, 61-65
F&I: 100-104

HH 23 — 62-65 — 62, 63, 64 — D3-1, D3-2, D3-3

60, 68 → TO HH 21

50, 60, 68 → D3-4, D3-5, D3-6, D3-7 (32, 61, 33, 34)

HH 4 — 4-8, 12-15, 18, 23-26, 35-38, 45, 46, 50, 53
F&I: 101-104

SERVICE CABINET
- LUMINAIRE (2) — 50
- LUMINAIRE (1) — 60
- CAMERA EQ.G NEU — 68
- 50, 60, 68
- 22 → 22 — 3-1/C#6 INS. GR. — SIGNAL SERVICE
- INPUT POWER — 3-1/C#2 — 51 → 51 → HH 22 → 51 → S.O.P.
- GR.RD.

HH 5A — 47 — 47 — INTERCONNECT FROM T.H. 13 AT PORTLAND AVE. S. 1-6PR #19 DIRECT BURIED (ABANDONED)

ABANDON: 11,52
1-3, 9-10, 16, 17, 19-21, 27, 28, 39-44, 66, 67
F&I: 105
→ TO HH 21

(2) GLTA
- 4-1, 4-3 P4-2 — 4, 5 — 4-2, 4-4, 5-3, 4-4
- P6-1 — 13, 14 — PB6-1
- DISCONNECT AND ABANDON 14 FROM POLE 2 TO POLE 3

HH 5
- TO HH 6 ← 45, 46 — ABANDON 14
- TO HH 10 ← 6-8, 12, 15, 18, 23-26, 35-38, 50, 53 — F&I: 102-104
- 4-8, 12-15, 18, 23-26, 35-38, 45, 46, 50, 53 — F&I: 101-104

F&I: APS PED PB STA
101 — PB4-2 TO PB

CONDUCTOR COLOR CODING

12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	3/C#14	BLK, G, WH
		3-1/C#6 SIGNAL SERVICE	BLK, WH, G
		3-1/C#2 INPUT POWER	R, WH, BLK
3/C#12	R, WH, BLK	3/C#20	R, WH, BLK
2-1/C#10	BLK, WH	2/C#14	BLK, CLR
6PR#19		COAXIAL CABLE	
		7,5PR#24 COM CABLE	

FOR 4/C#14 SEE POLE BASE CONNECTOR DETAIL — 4/C#14: R, BLK/R, BLK, WH

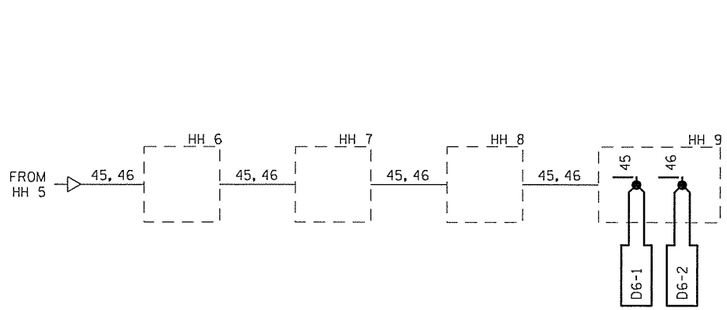
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

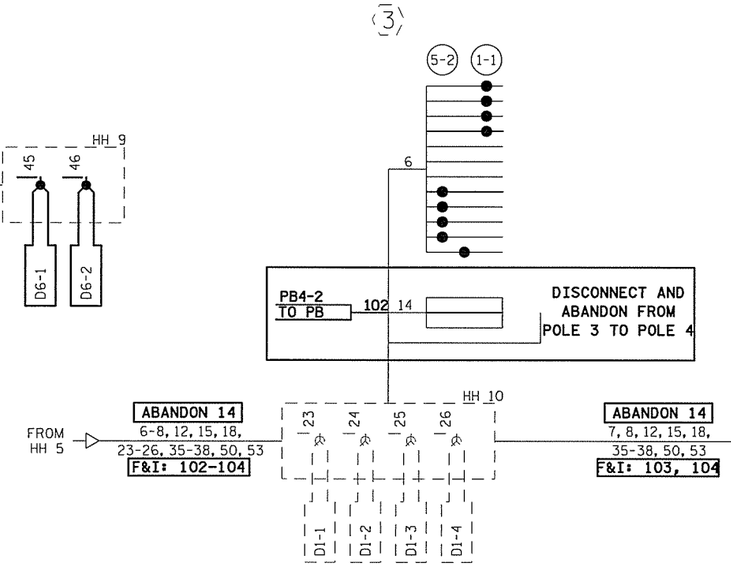
NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

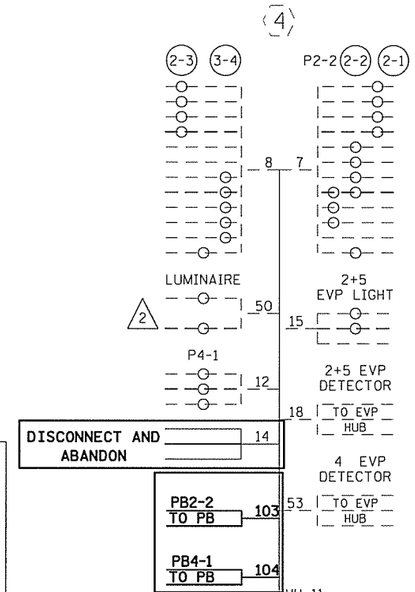
SYSTEM ID: 20293 T.E. 5498
METER ADDRESS: 151 HWY 13 W

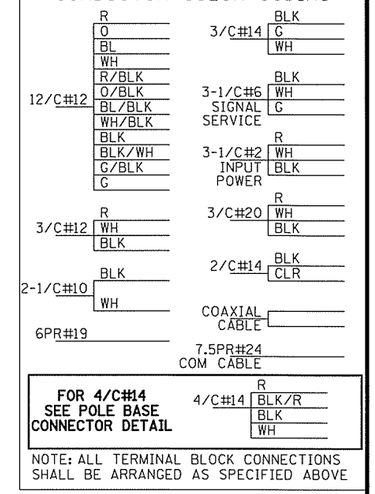
SHEET 1 OF 2

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	FIELD WIRING DIAGRAM REVISE SIGNAL SYSTEM A TH 13 AND NICOLLET AVE S	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 331 of 393 Sheets

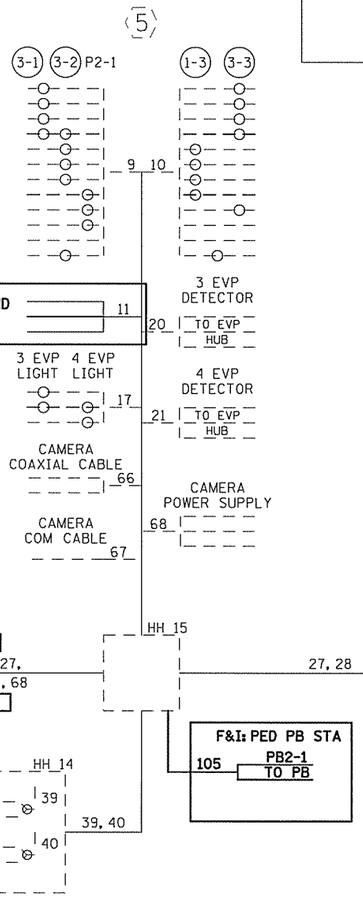


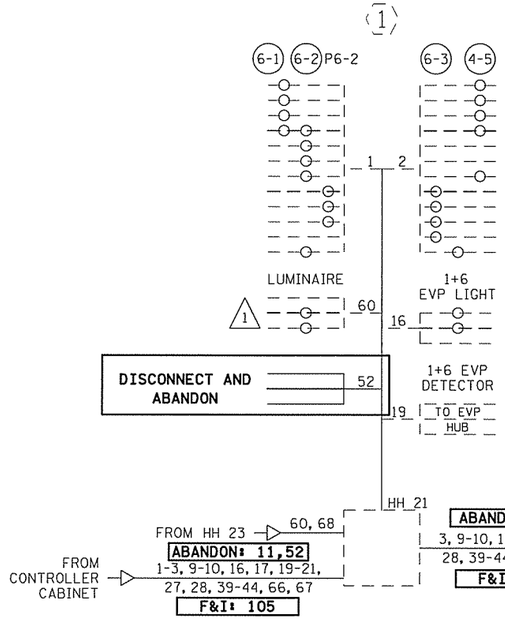


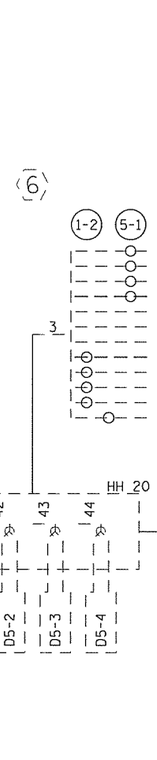


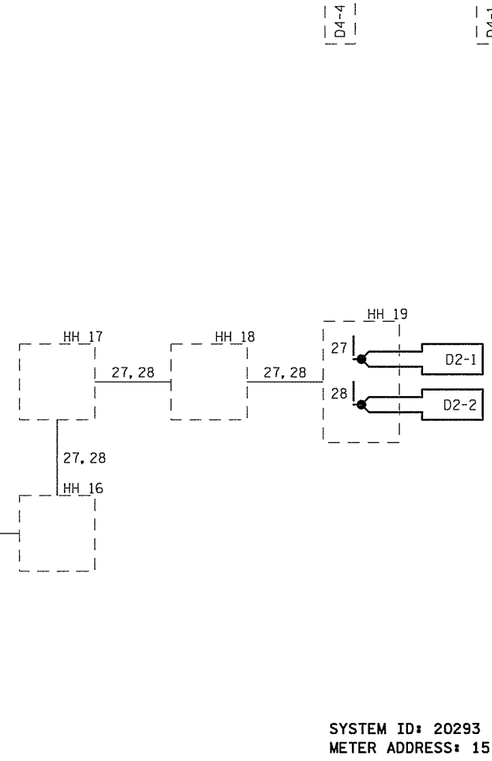


NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).









SYSTEM ID: 20293 T.E. 5498
METER ADDRESS: 151 HWY 13 W

SHEET 2 OF 2

DATE: 1/26/2012 TIME: 9:17:49 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\pln-stf\cad190168_wd01bdgn

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	MINNESOTA DEPARTMENT OF TRANSPORTATION	TH 13 BETTER ROADS PRESERVATION PROJECT	FIELD WIRING DIAGRAM REVISE SIGNAL SYSTEM A TH 13 AND NICOLLET AVE S	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 332 of 393 Sheets

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 10:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB6-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 12:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB8-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 4:
2" PVC
INSTALL FROM HH 4: 1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB2-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 4:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB4-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 12:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB2-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 1:
2" PVC
1-2/C#14

2" RSC
2-2/C#14

2" RSC
5-2/C#14
F&I: 1-2/C#14

4" RSC
2-12/C#12
2-3/C#12
5-2/C#14
1-3/C#20
2-1/C#10
F&I: 2-2/C#14
ABANDON: 1-3/C#12

4" RSC
2-12/C#12
2-3/C#12
2-2/C#14
1-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
F&I: 2-2/C#14
ABANDON: 1-3/C#12

4" RSC
2-12/C#12
1-5/C#12
2-3/C#12
10-2/C#14
1-3/C#20
2-1/C#10
F&I: 3-2/C#14
ABANDON: 1-3/C#12

4" RSC
4-12/C#12
1-5/C#12
4-3/C#12
10-2/C#14
1-3/C#20
2-1/C#10
F&I: 4-2/C#14

4" RSC
4-12/C#12
1-5/C#12
4-3/C#12
12-2/C#14
1-3/C#20
2-1/C#10
F&I: 4-2/C#14

4" RSC
2-12/C#12
1-5/C#12
2-3/C#12
4-2/C#14
1-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
F&I: 3-2/C#14
ABANDON: 1-3/C#12

3" RSC
2-2/C#14

3" RSC
1-6PR#19

2" RSC
2-2/C#14

2" RSC
3-2/C#14

2" RSC
2-2/C#14

1½" PVC
1-FO CABLE (12SM)

1½" PVC
1-FO CABLE (36SM)

1½" PVC
1-FO CABLE (36SM)

FO SPLICE VAULT

INTERCONNECT TO TH 13 AT 12TH AVE S/ PARKWOOD DR
1-12PR#19
DIRECT BURIED
(ABANDONED)

1 + 6 EVP

2 + 5 EVP

4 + 8 EVP

D8-3 D8-4 D8-5

D5-1 D5-2

D1-2 D1-1

D4-3 D4-5 D4-4 D4-2 D4-1

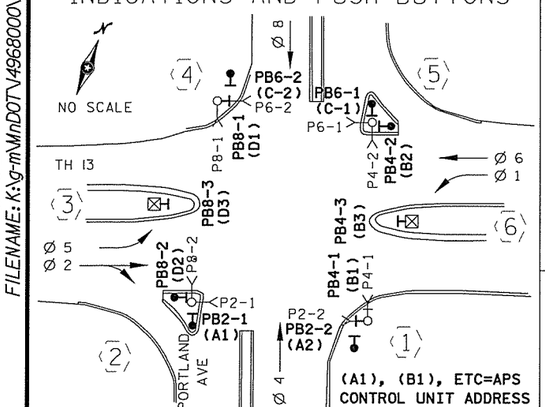
TH 13
(55 MPH)

PORTLAND AVE
(30 MPH)

MATCHLINE - SEE SHEET 334

MATCHLINE - SEE SHEET 334

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SCALE IN FEET
0 10 20 40

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
F&I: D1-1	**6'x6'**	**40**	**PVC**
F&I: D1-2	**6'x6'**	**10**	**PVC**
F&I: D2-1, D2-2	**6'x6'**	**475**	**PVC**
D4-1, D4-2	6'x6'	180	SAWCUT
F&I: D4-3	**2-6'x6'**	**0 & 15**	**PVC**
D4-4, D4-5	6'x6'	20	SAWCUT
F&I:D5-1	**6'x6'**	**40**	**PVC**
F&I: D5-2	**6'x6'**	**10**	**PVC**
F&I: D6-1, D6-2	**6'x6'**	**475**	**PVC**
D8-1, D8-2	6'x6'	150	SAWCUT
F&I: D8-3	**6'x6'**	**0 & 15**	**PVC**
D8-4, D-85		20	SAWCUT
F&I: D-1	**6'x6'**	**134+90**	**PVC**

-LOCATION: DISTANCE FROM CROSSWALK /STOP BAR IN FEET

SIGNAL FACE CHART

FACE	R	Y	G
1-1, 1-2	◁	◁	◁
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3, 4-4	○	○	○
5-1, 5-2	◁	◁	◁
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3, 8-4	○	○	○

-ALL SIGNAL INDICATIONS ARE 12"
-ALL SIGNAL INDICATIONS ARE LED
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELD

SYSTEM ID: 20294 T.E. 5499
METER ADDRESS: 601 1/2 E HWY 13

DATE: 1/26/2012 TIME: 9:17:51 AM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\plr-sht\cd1901168_sl02.dgn

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM B
TH 13 AND PORTLAND AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 333 of 393 Sheets

(A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER AND CABINET

EXTEND INTO HH 18:	ENTEND INTO HH 1:
4" RSC	4" RSC
4-12/C#12	4-12/C#12
1-5/C#12	1-5/C#12
5-3/C#12	4-3/C#12
2-3/C#20	15-2/C#14
4-2/C#14	1-3/C#20
1-COAXIAL CABLE	**F&I: 5-2/C#14**
1-7.5 PR.#24 (COM CABLE)	

F&I: 3-2/C#14
2" RSC STUB OUT
1-12PR#19 DIRECT BURIED (ABANDONED)
TO TH 13 AT 12TH AVE S
2" RSC STUB OUT
1-6PR#19 DIRECT BURIED (ABANDONED)
TO TH 13 AT NICOLLET AVE S
3" RSC STUB OUT
1 1/2" NMC TO FO SPLICE VAULT:
1-FO PIGTAIL (12SM)
SERVICE CABINET TO CONTROLLER CABINET:
2" RSC
2-1/C#6
1-1/C#6 INS. GR.
SERVICE CABINET TO HH 19:
3-1/C#2
3-1/C#2
SERVICE CABINET TO HH 18:
2" RSC
4-1/C#10
1-3/C#14 (CAMERA POWER)
BETWEEN HH 1 AND 18:
2" RSC
2-1/C#10

(B) WOOD POLE
DISCONNECT (WOOD POLE MOUNTED)
ABOVE DISCONNECT:
3-1/C#12
BELOW DISCONNECT INTO HH 19:
2" RSC
3-1/C#2
3-1/C#2

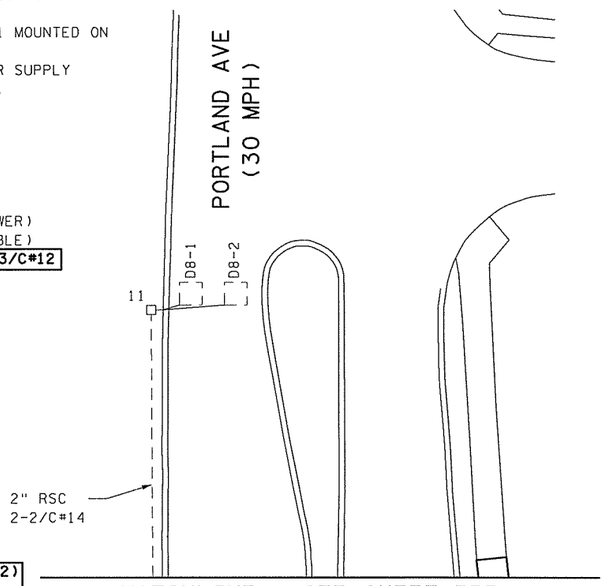
(1) P100 POLE FOUNDATION
TYPE P100-A-40-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
LUMINAIRE - 200W HPS
REMOVE: PEDESTRIAN PUSHBUTTONS AND SIGNS (PB4-1,PB2-2)
PLUG HOLE IN POLE (PB2-2)
F&I: 1-APS PUSHBUTTON (PB4-1) AND SIGN (LT ARROW)
ONE WAY EVP DETECTOR AND LIGHT
(PHASES 2 & 5)
2-CD PEDESTRIAN INDICATIONS
(P2-2), (P4-1)
EXTEND INTO HH 18:
3" RSC
2-12/C#12
3-3/C#12
1-3/C#20
2-1/C#10
DISCONNECT & ABANDON: 1-3/C#12 LEAVING POLE 1

(2) P100 POLE FOUNDATION
TYPE P100-A-35
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
REMOVE: PEDESTRIAN PUSHBUTTONS AND SIGNS (PB2-1,PB8-3)
PLUG HOLES IN POLE (PB2-1,PB8-3)
2-CD PEDESTRIAN INDICATIONS
(P2-1, P8-2)
EXTEND INTO HH 4:
3" RSC
2-12/C#12
1-3/C#12
DISCONNECT AND ABANDON: 1-3/C#12 LEAVING POLE 2
PULL: 1-3/C#12 INTO HH4

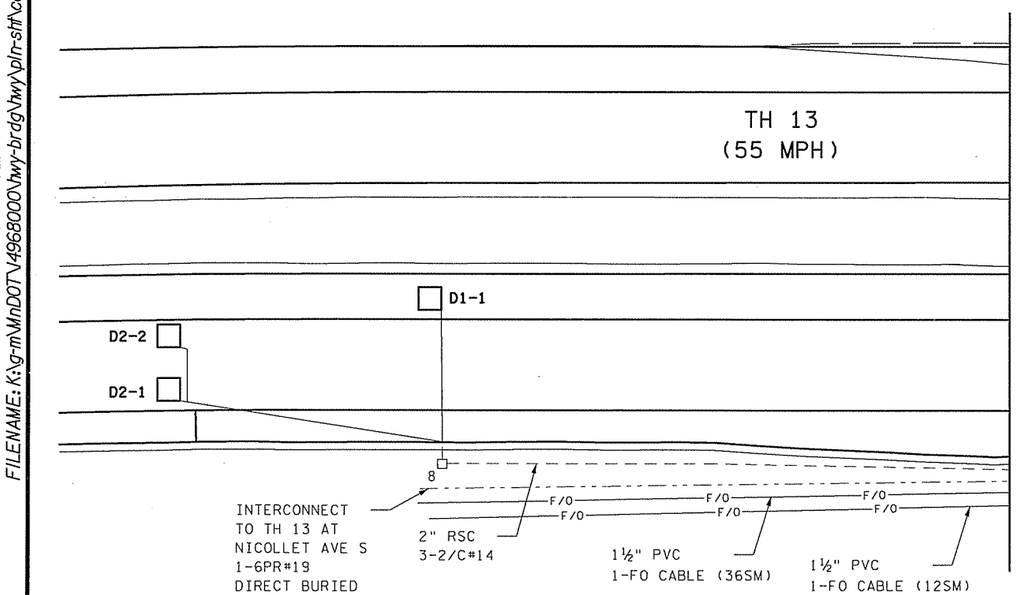
(3) PEDESTAL FOUNDATION
TYPE 1A
PEDESTAL POLE AND BASE
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-2)
F&I: 1-APS PUSHBUTTON (PB8-3) AND SIGN
EXTEND INTO HH 5:
3" RSC
1-5/C#12
F&I: 1-2/C#14
DISCONNECT AND ABANDON: 2-3/C#12

(4) P100 POLE FOUNDATION
TYPE P100-A-40-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
LUMINAIRE - 200W HPS
REMOVE: PEDESTRIAN PUSHBUTTONS AND SIGNS (PB8-1,PB6-2)
PLUG HOLEIN POLE (PB6-2)
F&I: 1-APS PUSHBUTTON (PB8-1) AND SIGN (LT ARROW)
ONE WAY EVP DETECTOR AND LIGHT
(PHASES 6 & 1)
2-CD PEDESTRIAN INDICATIONS
(P6-2, P8-1)
EXTEND INTO HH 9:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#10
F&I: 1-2/C#14
DISCONNECT AND ABANDON: 1-3/C#12

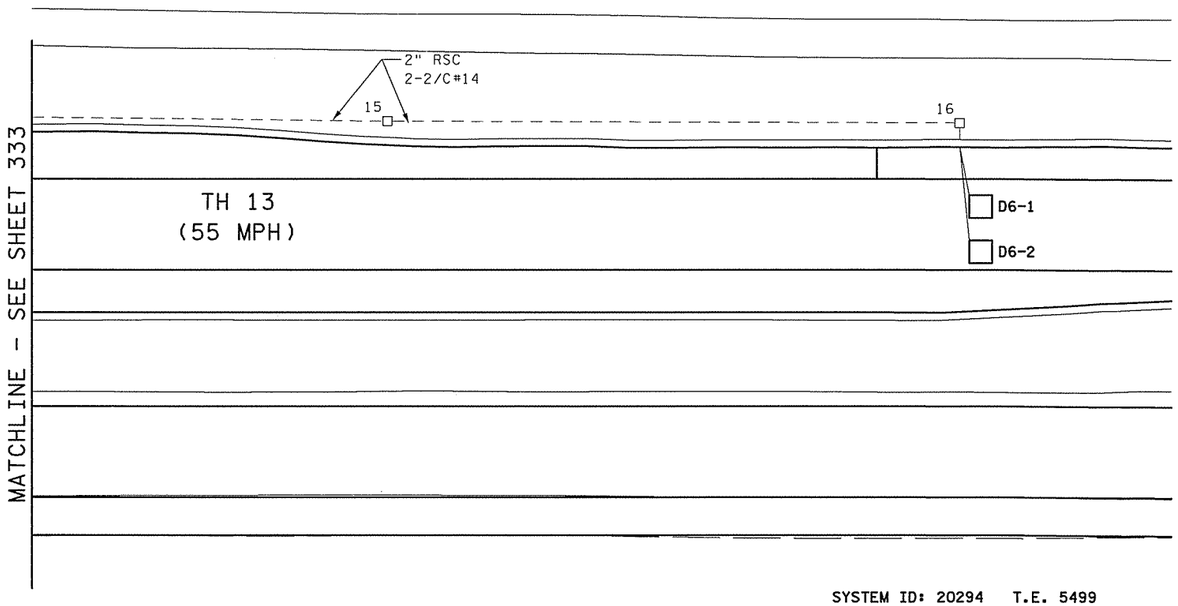
(5) A100 POLE FOUNDATION
TYPE A100-A-35
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGNS (PB6-1,PB4-2)
PLUG HOLES IN POLE (PB6-1,PB4-2)
2-CD PEDESTRIAN INDICATION
(P6-1), (P4-2)
1-VIDEO CAMERA #1311 MOUNTED ON
CAMERA EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
EXTEND INTO HH 12:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
DISCONNECT AND ABANDON: 1-3/C#12



(6) PEDESTAL FOUNDATION
TYPE 1A
PEDESTAL POLE AND BASE
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-2)
F&I: 1-APS PUSHBUTTON (PB4-2) AND SIGN
EXTEND INTO HH 17:
3" RSC
1-5/C#12
F&I: 1-2/C#14
DISCONNECT AND ABANDON: 2-3/C#12







SYSTEM ID: 20294 T.E. 5499
METER ADDRESS: 601 1/2 E HWY 13

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM B
TH 13 AND PORTLAND AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 334 of 393 Sheets

DATE: 1/26/2012 TIME: 9:17:53 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cad1901168_ml02.dgn

CONTROLLER CABINET

RED 2-1
YEL 2-1
GRN 2-1
NEU 2-1, 2-2
RED 2-2
YEL 2-2
GRN 2-2
NEU P2-2
WLK P2-2
DWK P2-2
SPR
EQ.G

RED 2-3
YEL 2-3
GRN 2-3
NEU 2-3
SPR
SPR
SPR
NEU 8-4
RED 8-4
YEL 8-4
GRN 8-4
EQ.G

RED 4-1
YEL 4-1
GRN 4-1
NEU 4-1, 4-2
RED 4-2
YEL 4-2
GRN 4-2
NEU P4-2, 4-2
WLK P4-2
DWK P4-2
SPR
EQ.G

RED 4-3
YEL 4-3
GRN 4-3
NEU 4-3
SPR
SPR
SPR
NEU 5-2
RLTA 5-2
YLTA 5-2
GLTA 5-2
EQ.G

RED 8-1
YEL 8-1
GRN 8-1
NEU 8-1, 8-2
RED 8-2
YEL 8-2
GRN 8-2
NEU P2-1
WLK P2-1
DWK P2-1
SPR
EQ.G

RED 8-3
YEL 8-3
GRN 8-3
NEU 8-3
SPR
SPR
SPR
NEU 1-2
RLTA 1-2
YLTA 1-2
GLTA 1-2
EQ.G

RED 6-1
YEL 6-1
GRN 6-1
NEU 6-1, 6-2
RED 6-2
YEL 6-2
GRN 6-2
NEU P6-2
WLK P6-2
DWK P6-2
SPR
EQ.G

PB6-2 — 67
PB8-1 — 66
PB8-3 — 65
PB2-1 — 64
PB2-2 — 63
PB4-2 — 62
PB6-1 — 61
PB4-3 — 60

D1-1 — 24
D1-2 — 25
D2-1 — 26
D2-2 — 27
D4-1 — 28
D4-2 — 29
D4-3 — 30
D4-4 — 31
D4-5 — 32
D5-1 — 33
D5-2 — 34
D6-1 — 35
D6-2 — 36
D8-1 — 37
D8-2 — 38
D8-3 — 39
D8-4 — 40
D8-5 — 41
D-1 — 42

CAMERA COAXIAL CABLE — 50
CAMERA COM CABLE — 51

4-4 RED
4-4 YEL
4-4 GRN
NEU
SPR
SPR
SPR — 8

6-3 NEU
6-3 RED
6-3 YEL
6-3 GRN
EQ.G

5-1 RLTA
5-1 YLTA
5-1 GLTA
5-1 NEU
EQ.G — 9

1-1 RLTA
1-1 YLTA
1-1 GLTA
1-1 NEU
EQ.G — 10

P4-1 WLK
P4-1 NEU
P4-1 DWK — 11

P6-1 WLK
P6-1 NEU
P6-1 DWK — 12

P8-1 WLK
P8-1 NEU
P8-1 DWK — 13

P8-2 WLK
P8-2 NEU
P8-2 DWK — 14

SPR
NEU
PB4-1 — 15

SPR
NEU
PB8-3 — 16

Ø 2 AND Ø 5 EVP LIGHTS — 17

Ø 1 AND Ø 6 EVP LIGHTS — 18

Ø 4 AND Ø 8 EVP LIGHTS — 19

Ø 2 AND Ø 5 EVP DETECTOR — 20

Ø 4 AND Ø 8 EVP DETECTOR — 21

Ø 1 AND Ø 6 EVP DETECTOR — 22

SIGNAL SERVICE — 3-1/C#6 INS. GR. — 23

INTERCONNECT TO NICOLLET AVE. S. (ABANDONED) — 47

INTERCONNECT TO 12TH AVE. S. /PARKWOOD DR. (ABANDONED) — 48

FIBER OPTIC PIGTAIL — 55

55 FO PIGTAIL TO TMS VAULT

(1)

(2-1) (2-2) P2-2 — (2-3) (8-4)

P4-1

PB4-1 — DISCONNECT AND ABANDON 15 FROM POLE 1 TO POLE 6

Ø 2 AND Ø 5 EVP LIGHT

Ø 2 AND Ø 5 EVP DETECTOR

20 TO EVP HUB

LUMINAIRE (1) — 45

HH 18

1,2,3,4,9,11,12,15,17
19,20,21,24,25,35,36
F&I: 60-62

ABANDON 15
3,4,9,12,19,21,24,
25,35,36,49,50,51
F&I: 60-62

45,49

(6)

(5-1)

DISCONNECT AND ABANDON FROM POLE 6 TO POLE 5

PB4-3 TO PB — 60

HH 17

24 — D1-1
25 — D1-2

ABANDON 15
3,4,12,19,21,
35,36,49,50,51
F&I: 61,62

(5)

(4-1) (4-2) P4-2 — (4-3) (5-2)

P6-1

CAMERA COAXIAL CABLE — 50
CAMERA COM CABLE — 51
CAMERA POWER SUPPLY — 49

Ø 4 AND Ø 8 EVP DETECTOR

20 TO EVP HUB

Ø 4 AND Ø 8 EVP LIGHT

DISCONNECT AND ABANDON — 15

HH 12

F&I: PED PB STA
PB6-1 TO PB — 61

F&I: PED PB STA
62 — PB4-2 TO PB

35,36

HH 13

35,36

HH 14

35,36

HH 15

35,36

HH 16

35 — D6-1
36 — D6-2

SERVICE CABINET

49 — CAMERA EQ.G NEU

LUMINAIRE (1) — 45

INPUT POWER — 3-1/C#2 — 43

43

HH 19

43

23 — 3-1/C#6 INS. GR. — SIGNAL SERVICE

LUMINAIRE (2) — 46

GR.RD.

S.O.P.

F&I: PED PB STA
63 — PB2-2 TO PB

(2)

(8-1) (8-2) P2-1 — (8-3) (1-2)

P8-2

DISCONNECT AND PULL TO HH 4
16 ENTERING POLE 2 FROM CABINET
DISCONNECT AND ABANDON 16
FROM POLE 2 TO POLE 3

5,6,7,8,10,13,14,16,18,22,26,27,28,29,
30,31,32,33,34,37,38,39,40,41,42
F&I: 63-67

HH 1

30 — D4-3

5,6,7,8,10,13,14,16,18,22,26,27,31,
32,33,34,37,38,39,40,41,42,46
F&I: 64-67

HH 3

31 — D4-4
32 — D4-5

5,6,7,8,10,13,14,16,18,22,26,
27,33,34,37,38,39,40,41,42,46
F&I: 64-67

HH 4

ABANDON 16
7,8,10,13,18,22,26,27,
33,34,37,38,39,40,41,42,46
F&I: 65-67

TO HH 5

47 — INTERCONNECT TO T.H. 13 AT NICOLLET AVE. S. 1-6PR #19 DIRECT BURIED (ABANDONED)

48 — INTERCONNECT TO T.H. 13 AT 12TH AVE. S./PARKWOOD DR. 1-6PR #19 DIRECT BURIED (ABANDONED)

28,29

HH 2

28 — D4-1
29 — D4-2

F&I: PED PB STA
PB2-1 TO PB — 64

16 — PB8-3

INSTALL FROM HH4

F&I: PED PB STA

CONDUCTOR COLOR CODING

3/C#14 — BLK, G, WH
3/C#20 — R OR O; WH OR YEL; BLK OR BL
2/C#14 — BLK; CLR OR WH
3-1/C#2 — R, WH, BLK — INPUT POWER
3-1/C#6 — BLK, WH, G — SIGNAL SERVICE
COAX — 12PR#19, 7.5PR#24
12/C#12 — R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G
5/C#12 — R, O, BLK, WH, G
3/C#12 — R, WH, BLK
2-1/C#10 — BLK, WH

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDED BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SYSTEM ID: 20294 T.E. 5499
METER ADDRESS: 601 1/2 E HWY 13

DATE: 1/26/2012 TIME: 9:17:55 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad1901168_wd02a.dgn

DRAWN BY: MTH
CHECKED BY: BDP

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

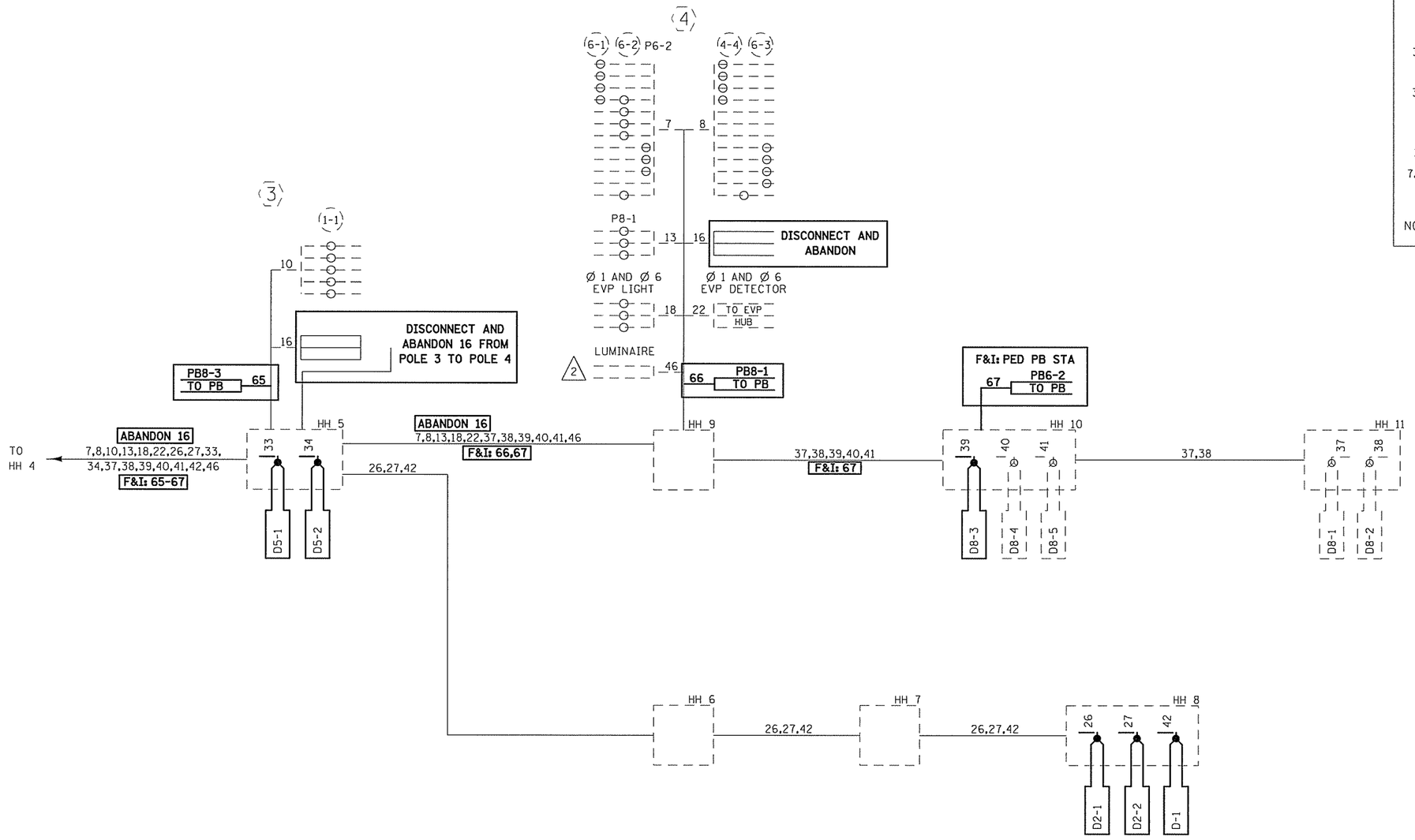
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM B
TH 13 AND PORTLAND AVE S

STATE PROJ. NO. 1901-168 (TH 13)



NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SYSTEM ID: 20294 T.E. 5499
METER ADDRESS: 601 1/2 E HWY 13

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
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DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM B
TH 13 AND PORTLAND AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 336 of 393 Sheets

DATE: 1/26/2012 TIME: 9:17:57 AM
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NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 12:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB6-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 14:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB4-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 14:
2" PVC
1-2/C#14

MATCHLINE - SEE SHEET 338

MATCHLINE - SEE SHEET 338

MATCHLINE - SEE SHEET 338

12TH AVE (35 MPH)

TH 13 (55 MPH)

PARKWOOD DR (40 MPH)

SCALE IN FEET
0 10 20 40

2" RSC 3-2/C#14
2" RSC 6-2/C#14
F&I: 1-2/C#14

ADJUST HANDHOLE

2" RSC 2-2/C#14

1½" PVC 1-FO CABLE (36SM)

3" RSC 2-2/C#14

4" RSC 2-12/C#12 2-3/C#12 2-2/C#14 1-3/C#20
F&I: 2-2/C#14
ABANDON: 1-3/C#12

1 + 6 EVP

4 + 8 EVP

4" RSC 2-12/C#12 2-3/C#12 6-2/#14 1-3/C#20 2-1/C#10
F&I: 2-2/C#14
ABANDON: 1-3/C#12

2 + 5 EVP

1 1/2" RSC 1-FO CABLE (36SM)

3" RSC 1-12PR#19

2" RSC 2-2/C#14

4" RSC 2-12/C#12 1-5/C#12 2-3/C#12 8-2/C#14 1-3/C#20 2-1/C#10
F&I: 3-2/C#14
ABANDON: 1-3/C#12

1½" PVC 1-FO CABLE (12SM)

4" RSC 4-12/C#12 1-5/C#12 4-3/C#12 10-2/C#14 1-3/C#20 2-1/C#10
F&I: 4-2/C#14

4" RSC 2-12/C#12 1-5/C#12 2-3/C#12 4-2/C#14 1-3/C#20
F&I: 3-2/C#14
ABANDON: 1-3/C#12

INTERCONNECT TO TH 13 AT CSAH 11 (W RIVER HILLS DR) 1-12PR#19 DIRECT BURIED (ABANDONED)

4" RSC 4-12/C#12 1-5/C#12 4-3/C#12 12-2/C#14 1-3/C#20 2-1/C#10
F&I: 4-2/C#14

3" RSC 1-12PR#19

3" RSC 3-2/C#14 1-3/C#20 (ARMORED CABLE)

3" RSC 3-2/C#14 1-3/C#20 (ARMORED CABLE)

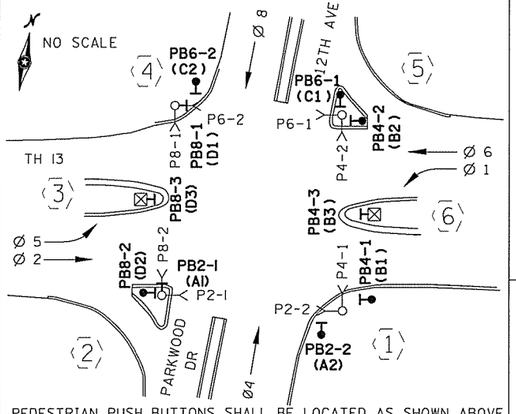
2" PVC 1-3/C#20 (ARMORED CABLE)

F&I: APS PED PUSHBUTTON STATION (PB8-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 5:
2" PVC
INSTALL FROM HH 5: 1-3/C#12

F&I: APS PED PUSHBUTTON STATION (PB2-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 1:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB4-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 20:
2" PVC
INSTALL FROM HH20: 1-3/C#12

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURNS PHASES.

SIGNAL FACE CHART

FACE	R	Y	G
1-1, 1-2	◁	◁	◁
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3, 4-4	○	○	○
5-1, 5-2	◁	◁	◁
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

-ALL SIGNAL INDICATIONS ARE 12"
-ALL SIGNAL INDICATIONS ARE LED'S
-ALL SIGNAL HEADS HAVE A BACKGROUND SHIELDS

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1	6'x6'	40'	SAWCUT
D1-2	6'x6'	10'	SAWCUT
F&I: D2-1, D2-2	**6'x6'**	**475'**	**PVC**
D4-1, D4-2, D4-3	6'x6'	265'	SAWCUT
D4-4	2-6'x6'	0', 15'	PVC
D4-5	6'x6'	20'	PVC
D4-6, D4-7	6'x6'	20'	PVC
D5-1	6'x6'	40'	PVC
D5-2	6'x6'	10'	PVC
F&I: D6-1, D6-2	**6'x6'**	**475'**	**PVC**
D8-1, D8-2, D8-3	6'x6'	180'	SAWCUT
D8-4	2-6'x6'	0', 15'	PVC
F&I: D8-5, D8-6	**6'x6'**	**20'**	**PVC**

-LOCATION: DISTANCE FROM CROSSWALK/ STOP BAR IN FEET

SYSTEM ID: 20295 T.E. 5500
METER ADDRESS: TH 13 AT PARKWOOD DR

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE:
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM C
TH 13 AND PARKWOOD DR/12TH AVE S

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 337 of 393 Sheets

DATE: 1/26/2012 TIME: 9:17:59 AM
FILENAME: K:\g-m\MnDOT\V4968000\twy-brdg\twy\pln-sht\cad1901168_sl03.dgn

(1) A100 POLE FOUNDATION
TYPE A100-A-45-D40-9 (DAVIT AT 350°)
X6-350/CAM 400 MOUNTED AT 350°
LUMINAIRE-200 WATT HPS
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
LUMINAIRE - 250 WATT HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-1)
PLUG HOLE IN POLE (PB4-1)
ONE WAY EVP DETECTOR AND LIGHT
2-CD PEDESTRIAN INDICATIONS (P2-2, P4-1)
1-VIDEO CAMERA #1310 MOUNTED ON
LUMINAIRE EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
EXTEND INTO HH 20:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#10
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
PULL: 1-3/C#12 INTO HH20
DISCONNECT & ABANDON: 1-3/C#12 LEAVING POLE 1

(2) P100 POLE FOUNDATION
TYPE P100-A-35
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-3)
PLUG HOLE IN POLE (PB8-3)
F&I: 1-APS PUSHBUTTON (PB2-1)
AND SIGN (LT ARROW)
2-CD PEDESTRIAN INDICATIONS (P2-1, P8-2)
EXTEND INTO HH 5:
3" RSC
2-12/C#12
1-3/C#12
F&I: 1-2/C#14
PULL: 1-3/C#12 INTO HH5
DISCONNECT & ABANDON: 1-3/C#12 LEAVING POLE 2

(3) PEDESTAL FOUNDATION
TYPE 1A
PEDESTAL POLE AND BASE
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-2)
F&I: 1-APS PUSHBUTTON AND SIGN (PB8-3)
EXTEND INTO HH 10:
3" RSC
1-5/C#12
F&I: 1-2/C#14
DISCONNECT & ABANDON: 2-3/C#12

(4) P100 POLE FOUNDATION
TYPE P100-A-40-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
TYPE 10A POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-1)
F&I: 1-APS PUSHBUTTON AND SIGN (LT ARROW)(PB8-1)
ONE WAY EVP DETECTOR AND LIGHT
(PHASES 2 & 5)
2-CD PEDESTRIAN INDICATIONS (P6-2, P8-1)
EXTEND INTO HH 11:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#10
F&I: 1-2/C#14
DISCONNECT & ABANDON: 1-3/C#12

(5) P100 POLE FOUNDATION
TYPE P100-A-35
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
LUMINAIRE - 200 WATT HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-3)
PLUG HOLE IN POLE (PB4-3)
TWO WAY EVP DETECTOR AND LIGHT
(PHASES 4 & 8)
2-CD PEDESTRIAN INDICATIONS (P6-1, P4-2)
EXTEND INTO HH 14:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
DISCONNECT & ABANDON: 1-3/C#12

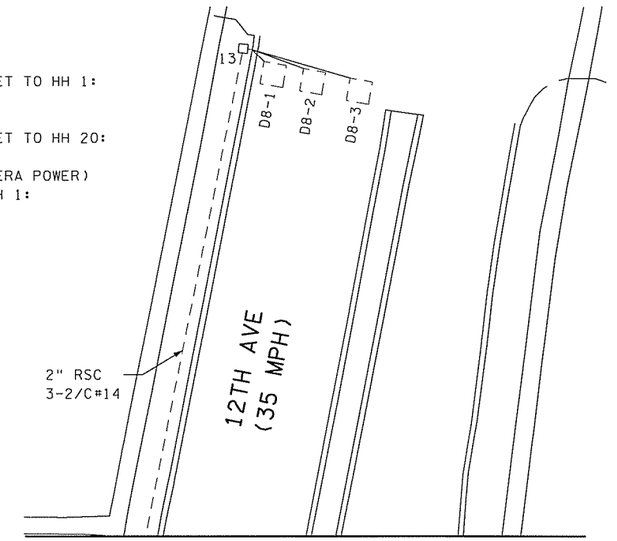
(6) PEDESTAL FOUNDATION
TYPE 1A
PEDESTAL POLE AND BASE
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-2)
F&I: 1-APS PUSHBUTTON AND SIGN (PB4-3)
EXTEND INTO HH 19:
3" RSC
1-5/C#12
F&I: 1-2/C#14
DISCONNECT & ABANDON: 2-3/C#12

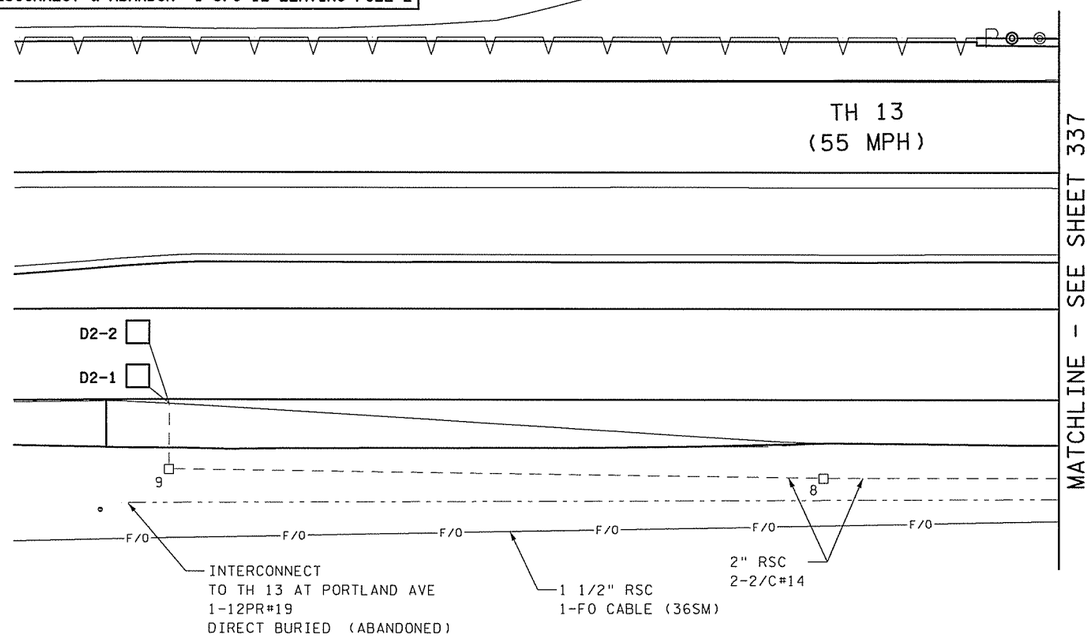
(A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER AND CABINET
EXTEND INTO HH 20:
4" RSC
4-12/C#12
1-5/C#12
5-3/C#12
2-3/C#20
4-2/C#14
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
F&I: 3-2/C#14
2" RSC STUB OUT
1-12PR#19 DIRECT BURIED
TO SYSTEM "B" (ABANDONED)

(B) WOOD POLE
DISCONNECT (WOOD POLE MOUNTED)
ABOVE DISCONNECT:
2" RISER AND WEATHERHEAD
3-1/C#2
BELOW DISCONNECT INTO HH 21:
2" RSC
3-1/C#2

2" RSC STUB OUT
1-12PR#19 DIRECT BURIED
TO SYSTEM "D" (ABANDONED)
3" RSC STUB OUT
1 1/2" PVC TO FO SPLICE VAULT:
1-FO PIGTAIL (12SM)
SERVICE CABINET TO
CONTROLLER CABINET:
2" RSC
2-1/C#6
1-1/C#6 INS. GR.
SERVICE CABINET TO HH 21:
2" RSC
3-1/C#12
3-1/C#12

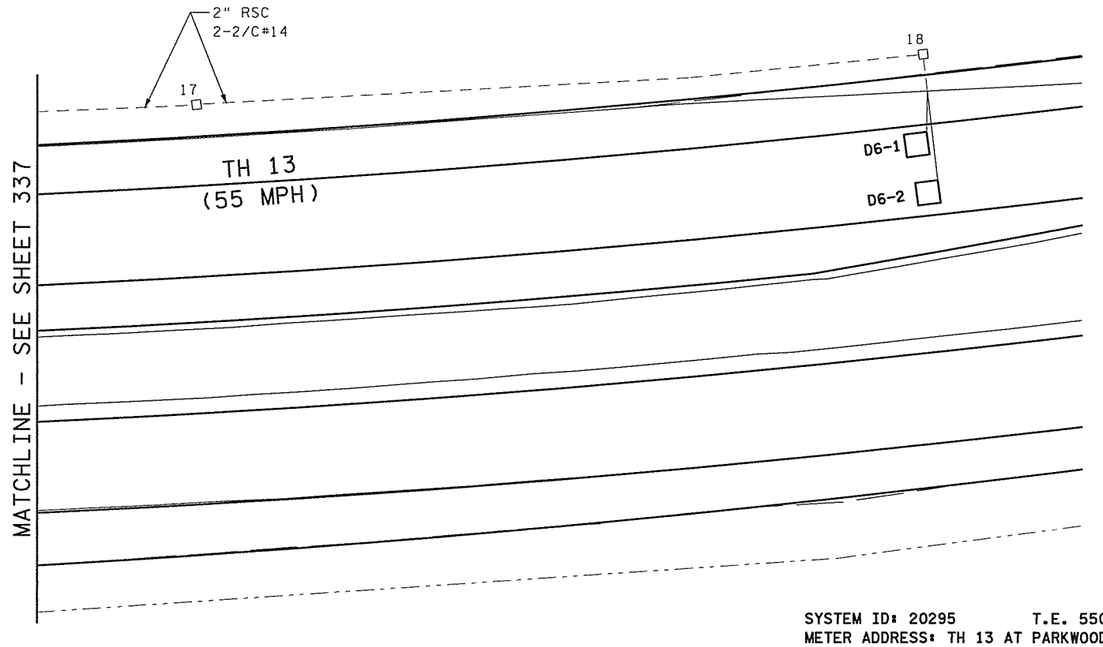
SERVICE CABINET TO HH 1:
2" RSC
2-1/C#10
SERVICE CABINET TO HH 20:
2-1/C#10
1-3/C#14 (CAMERA POWER)
EXTEND INTO HH 1:
4" RSC
4-12/C#12
1-5/C#12
4-3/C#12
2-3/C#20
17-2/C#14
F&I: 5-2/C#14







SCALE IN FEET
0 10 20 40



SYSTEM ID: 20295 T.E. 5500
METER ADDRESS: TH 13 AT PARKWOOD DR

DATE: 1/26/2012 TIME: 9:18:02 AM
FILENAME: K:\g-mMnDOT\4968000\hwy-brdg\hwy\plh-sth\cd190168_mi03.dgn

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM C
TH 13 AND PARKWOOD DR/12TH AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 338 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:04 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cdl901168_wd03a.dgn

CONTROLLER CABINET

1
- RED 8-4
- YEL 8-4
- GRN 8-4
- NEU 8-4
- SPR
- SPR
- SPR
- NEU 2-1
- RED 2-1
- YEL 2-1
- GRN 2-1
- EQ.G

2
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 2-2, 2-3
- RED 2-3
- YEL 2-3
- GRN 2-3
- NEU P4-1
- WLK P4-1
- DWK P4-1
- SPR
- EQ.G

3
- RLTA 5-2
- YLTA 5-2
- GLTA 5-2
- NEU 5-2
- RED 4-1
- YEL 4-1
- GRN 4-1
- NEU 4-1, P4-2
- WLK P4-2
- DWK P4-2
- SPR
- EQ.G

4
- RED 4-3
- YEL 4-3
- GRN 4-3
- NEU 4-3
- SPR
- SPR
- SPR
- NEU 4-2
- RED 4-2
- YEL 4-2
- GRN 4-2
- EQ.G

5
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2, 6-3
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU P6-2
- WLK P6-2
- DWK P6-2
- SPR
- EQ.G

6
- RED 4-4
- YEL 4-4
- GRN 4-4
- NEU 4-4
- SPR
- SPR
- SPR
- NEU 6-1
- RED 6-1
- YEL 6-1
- GRN 6-1
- EQ.G

7
- RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- NEU 1-1
- EQ.G

8
- RLTA 5-1
- YLTA 5-1
- GLTA 5-1
- NEU 5-1
- EQ.G

PB6-2 — 72
PB8-1 — 71
PB8-3 — 70
PB2-1 — 69
PB2-2 — 68
PB4-2 — 67
PB6-1 — 66
PB4-3 — 65

D1-1 — 24
D1-2 — 25
D2-1 — 26
D2-2 — 27
D4-1 — 28
D4-2 — 29
D4-3 — 30
D4-4 — 31
D4-5 — 32
D4-6 — 33
D4-7 — 34
D5-1 — 35
D5-2 — 36
D6-1 — 37
D6-2 — 38
D8-1 — 39
D8-2 — 40
D8-3 — 41
D8-4 — 42
D8-5 — 43
D8-6 — 44
CAMERA COAXIAL CABLE — 53
CAMERA COM CABLE — 54
Ø 4 ADVANCE EVP DETECTOR — 60

1-2 RLTA
1-2 YLTA
1-2 GLTA
1-2 NEU
SPR
SPR
SPR
8-3 NEU — 9
8-3 RED
8-3 YEL
8-3 GRN
EQ.G

8-1 RED
8-1 YEL
8-1 GRN
8-2, 8-1 NEU — 10
8-2 RED
8-2 YEL
8-2 GRN
P2-1 NEU
P2-1 WLK
P2-1 DWK
SPR
EQ.G

P8-2 WLK
P8-2 NEU — 11
P8-2 DWK

P6-1 WLK
P6-1 NEU — 12
P6-1 DWK

P8-1 WLK
P8-1 NEU — 13
P8-1 DWK

P2-2 WLK
P2-2 NEU — 14
P2-2 DWK

SPR
NEU — 15
PB4-1

SPR
NEU
PB8-3 — 16

Ø 2 AND Ø 5 EVP LIGHTS — 17
Ø 1 AND Ø 6 EVP LIGHTS — 18
Ø 4 AND Ø 8 EVP LIGHTS — 19
Ø 2 AND Ø 5 EVP DETECTOR — 20
Ø 1 AND Ø 6 EVP DETECTOR — 21
Ø 4 AND Ø 8 EVP DETECTOR — 22
SIGNAL SERVICE 3-1/C#6 INS. GR. — 23

INTERCONNECT FROM PORTLAND AVE. S. (ABANDONED) — 48
INTERCONNECT TO CSAH 11/ W RIVER HILLS DR. (ABANDONED) — 49
FIBER OPTIC PIGTAIL — 55

55 FO PIGTAIL TO TMS VAULT

(1)
8-4 2-1 2-2 2-3 P4-1
1 2
P2-2
14
20 TO EVP HUB — Ø 2 AND Ø 5 EVP DETECTOR
CAMERA COAXIAL CABLE — 53
CAMERA COM CABLE — 54
17 — Ø 2 AND Ø 5 EVP LIGHT
CAMERA POWER SUPPLY — 52
50 — LUMINAIRE (1)

DISCONNECT & PULL TO HH20 15 ENTERING POLE 1 FROM CABINET — 15
DISCONNECT & ABANDON 15 FROM POLE 1 TO POLE 6
HH 20
1-4,8,12,14,15,17,19,20,22, 24,25,37,38,53,54 F&I: 65-67
ABANDON 15 3,4,8,12,19, 22,24,25,37,38 F&I: 65-67
F&I: PED PB STA PB4-1 TO PB 15 INSTALL FROM HH20
50,52

(6)
5-1
8
PB4-3 TO PB 65
15
DISCONNECT & ABANDON 15 FROM POLE 6 TO POLE 5
DISCONNECT & ABANDON
HH 19
24 Ø D1-1
25 Ø D1-2
ABANDON 15 3,4,12,19,22,37,38 F&I: 66,67
F&I: PED PB STA PB6-1 TO PB 66

(5)
5-2 4-1 P4-2
3 4
Ø 4 AND Ø 8 EVP LIGHT
19
4-3 4-2
Ø 4 AND Ø 8 EVP DETECTOR
22 TO EVP HUB
P6-1
15 12
HH 14
F&I: PED PB STA PB4-2 67
37,38
HH 15 — 37,38 — HH 16 — 37,38 — HH 17
37,38
HH 18
37 Ø D6-1
38 Ø D6-2

SERVICE CABINET
52 CAMERA EQ.G NEU
LUMINAIRE 50 (1)
INPUT POWER 3-1/C#2 37 — 37 — HH 21 — 37 — S.O.P.
23 3-1/C#6 INS. GR. SIGNAL SERVICE
LUMINAIRE 51 (2)
GR.RD.

HH 4
33 Ø D4-6
34 Ø D4-7
5-7,9-11,13,16,18,21,26, 27,35,36,39-44,51 F&I: 69-72 — TO HH 5

Ø 4 EVP DETECTOR
TO EVP HUB — 60

HH 1
31 Ø D4-4
32 Ø D4-5
5-7,9-11,13,16,18,21,26-36,39-44,60 F&I: 68-72
5-7,9-11,13,16,18,21,26, 27,33-36,39-44,51 F&I: 69-72
28-30,60
F&I: PED PB STA PB2-2 68 TO PB

HH 2 — 28-30,60 — HH 3 — 60 — HH 22 — 60 — HH 23
28 Ø D4-1
29 Ø D4-2
30 Ø D4-3

48 INTERCONNECT FROM T.H. 13 AT PORTLAND AVE. S. 1-12PR #19 (ABANDONED)
49 INTERCONNECT TO T.H. 13 AT CSAH 11/ W RIVER HILLS DR. 1-12PR #19 (ABANDONED)

CONDUCTOR COLOR CODING

3/C#14 BLK G WH
3/C#20 R OR O — WH OR YEL BLK OR BL
2/C#14 BLK CLR OR WH
3-1/C#2 R WH BLK — INPUT POWER
3-1/C#6 BLK WH G — SIGNAL SERVICE
COAX
12PR#19
7.5PR#24

12/C#12 R O BL WH R/BLK O/BLK BL/BLK WH/BLK BLK BLK/WH G/BLK G
5/C#12 R O BLK WH G
3/C#12 R WH BLK
2-1/C#10 BLK WH

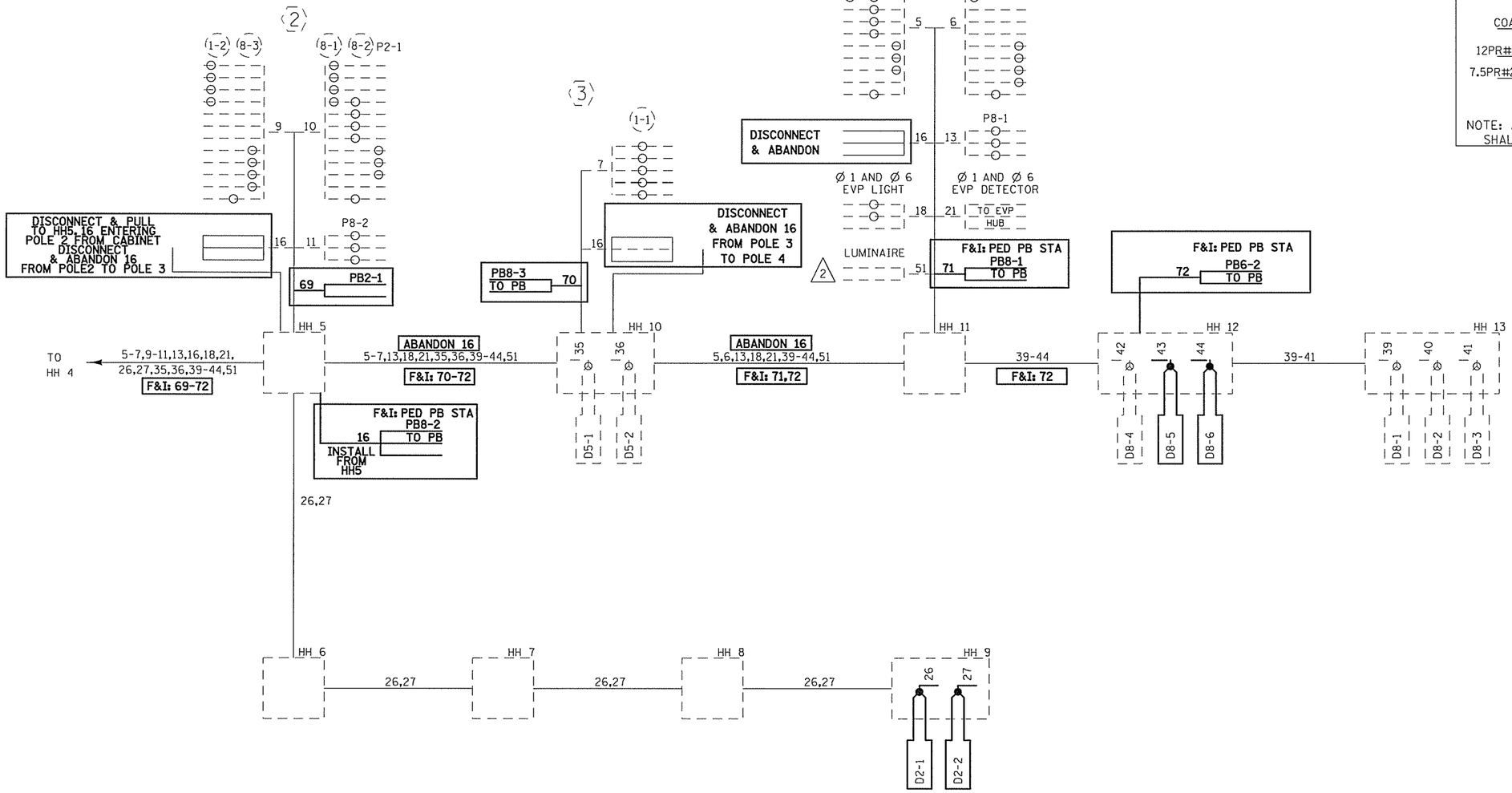
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDED BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SYSTEM ID: 20295 T.E. 5500
METER ADDRESS: TH 13 AT PARKWOOD DR

SHEET 1 OF 2

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	FIELD WIRING DIAGRAM REVISE SIGNAL SYSTEM C TH 13 AND PARKWOOD DR/12TH AVE S	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 339 of 393 Sheets



CONDUCTOR COLOR CODING

3/C#14	BLK, G, WH	
3/C#20	R OR O, WH OR YEL, BLK OR BL	
2/C#14	BLK, CLR OR WH	
3-1/C#2	R, WH, BLK	INPUT POWER
3-1/C#6	BLK, WH, G	SIGNAL SERVICE
COAX		
12PR#19		
7.5PR#24		
12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	
5/C#12	R, O, BLK, WH, G	
3/C#12	R, WH, BLK	
2-1/C#10	BLK, WH	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SYSTEM ID: 20295 T.E. 5500
METER ADDRESS: TH 13 AT PARKWOOD DR

SHEET 2 OF 2

DRAWN BY: MTH
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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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DATE: JANUARY 26, 2012 LIC. NO. 26880

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TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM C
TH 13 AND PARKWOOD DR/12TH AVE S

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 340 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:06 AM
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LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	STATUS	TYPE
D1-1, D1-2	**6'x6'**	**40**	**F&I**	**PVC**
D1-3, D1-4	**6'x6'**	**10**	**F&I**	**PVC**
D2-1, D2-2	**6'x6'**	**475**	**F&I**	**PVC**
D3-1	**4-6'x6'**	**5,20,35,50**	**F&I**	**PVC**
D4-1, D4-2	6'x6'	250	INPLACE	PVC
D4-3	2-6'x6'	0 & 15	INPLACE	PVC
D4-4	6'x6'	20	INPLACE	PVC
D5-1, D5-2	6'x6'	40 & 10	INPLACE	PVC
D6-1, D6-2	**6'x6'**	**475**	**F&I**	**PVC**
D7-1	**4-6'x6'**	**5,20,35,50**	**F&I**	**PVC**
D8-1, D8-2	6'x6'	180	INPLACE	SAWCUT
D8-3	2-6'x6'	0 & 15	INPLACE	PVC
D8-4	6'x6'	20	INPLACE	SAWCUT

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL FACE CHART

FACE	R	Y	G	Y	G
1-1, 1-2, 1-3	⇦	⇦	⇦		
2-1, 2-2	○	○	○		
4-1, 4-2	○	○	○		
4-3, 4-4	○	○	○	⇦	⇦
5-1, 5-2	⇦	⇦	⇦		
6-1, 6-2, 6-3	○	○	○		
8-1, 8-2, 8-3	○	○	○		
8-1, 8-2, 8-3	○	○	○		

-ALL SIGNAL INDICATIONS ARE 12"
-ALL SIGNAL INDICATIONS ARE LED'S
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELDS

SCALE IN FEET
0 10 20 40

W RIVER HILLS DR (30 MPH)

CSAH 11 (40 MPH)

TH 13 (55 MPH)

MATCHLINE - SEE SHEET 343

MATCHLINE - SEE SHEET 343

2" RSC 2-2/C#14

3" RSC 1-12PR#19

4" RSC 4-12/C#12 1-5/C#12 4-3/C#12 8-2/C#14 1-3/C#20 2-1/C#10 **F&I: 4-2/C#14**

4" RSC 4-12/C#12 1-5/C#12 4-3/C#12 6-2/C#14 1-3/C#20 2-1/C#10 **F&I: 4-2/C#14**

4" RSC 4-12/C#12 1-5/C#12 4-3/C#12 4-2/C#14 1-3/C#20 2-1/C#10 **F&I: 3-2/C#14**

1-12PR#19 (ABANDONED)

4" RSC 2-12/C#12 1-5/C#12 1-3/C#12 4-2/C#14 **F&I: 3-2/C#14** **ABANDON: 1-3/C#12**

1 + 6 EVP

3 + 8 EVP

2 + 5 EVP

D8-1 D8-2 D8-3 D8-4 D3-1 D5-1 D5-2 D7-1 D4-3 D4-4

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 20:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB4-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 4:
2" PVC
1-2/C#14

INTERCONNECT TO TH 13 AT CSAH 32 (CLIFF RD) 1-12PR#19 (ABANDONED)

ADJUST HANDHOLES

4" RSC 3-12/C#12 2-3/C#12 9-2/C#14 1-3/C#20 2-1/C#10 1-COAXIAL CABLE 1-3/#14 (CAMERA POWER) 1-7.5 PR#24 (COM CABLE) **F&I: 2-2/C#14** **ABANDON: 1-3/C#12**

4" RSC 5-12/C#12 5-3/C#12 9-2/C#14 2-3/C#20 2-1/C#10 1-COAXIAL CABLE 1-3/#14 (CAMERA POWER) 1-7.5 PR#24 (COM CABLE) **F&I: 3-2/C#14**

INTERCONNECT FROM TH 13 AT PARKWOOD DR/ 12TH AVE S 1-12PR#19 DIRECT BURIED (ABANDONED)

3" RSC 1-12PR#19

4" RSC 2-12/C#12 1-3/C#12 5-2/C#14 **F&I: 2-2/C#14** **ABANDON: 1-3/C#12**

ADJUST HANDHOLE

F&I: APS PED PUSHBUTTON STATION (PB2-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 13:
2" PVC
1-2/C#14

4" RSC 2-12/C#12 2-3/C#12 5-2/C#14 1-3/C#20 2-1/C#10 1-COAXIAL CABLE 1-3/#14 (CAMERA POWER) 1-7.5 PR#24 (COM CABLE) **F&I: 2-2/C#14** **ABANDON: 1-3/C#12**

3" RSC 2-12/C#12 2-3/C#12 5-2/C#14 1-3/C#20 2-1/C#10 1-COAXIAL CABLE 1-3/#14 (CAMERA POWER) 1-7.5 PR#24 (COM CABLE) **F&I: 2-2/C#14** **ABANDON: 1-3/C#12**

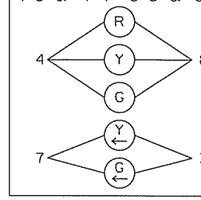
F&I: APS PED PUSHBUTTON STATION (PB2-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 7:
2" PVC
1-2/C#14

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, AND APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

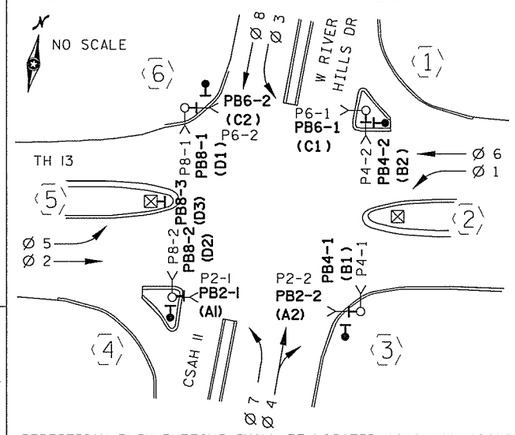
SYSTEM ID: 20296 T.E. 5501
METER ADDRESS: 11951 CO RD 11

SIGNAL HEAD PHASING

HEADS 4-3 & 4-4 — HEADS 8-3 & 8-4



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 3 AND 7 BEING A PROTECTED/PERMISSIVE LEFT TURN PHASES, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.

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DRAWN BY: MTH
CHECKED BY: BDP

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TKDA ENGINEERING • ARCHITECTURE • PLANNING

TH 13 BETTER ROADS PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM D
TH 13 AND CSAH 11 (W RIVER HILLS DR)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 341 of 393 Sheets

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET
CONTROLLER AND CABINET
R" RSC TO HH 1:
5-12/C#12
5-3/C#12
11-2/C#12
5-3/C#20
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
F&I: 3-2/C#14
3" RSC STUB OUT
1 1/2" NMC TO FO SPLICE VAULT:
1-FO PIGTAIL (12SM)
SERVICE CABINET TO CONTROLLER CABINET:
2" RSC
2-1/C#6
1-1/C#6 INS GR
SERVICE CABINET TO HH 26:
2" RSC
3-1/C#2
SERVICE CABINET TO HH 25:
2" RSC
4-1/C#10
1-3/C#14 (CAMERA POWER)
HH 1 TO HH 25:
2" RSC
2-1/C#10
1-3/C314 (CAMERA POWER)
2" RSC STUB OUT
1-12PR#19 DIRECT BURIED
2" RSC STUB OUT
1-12PR#19 DIRECT BURIED
4" RSC TO HH 25:
4-12/C#12
1-5/C#12
4-3/C#12
9-2/C#14
1-3/C#20
F&I: 4-2/C#14

(B) WOOD POLE
DISCONNECT (WOOD POLE MOUNTED)
ABOVE DISCONNECT:
3-1/C#12
BELOW DISCONNECT INTO HH 19:
2" RSC
3-1/C#2
3-1/C#2

(1) P100 POLE FOUNDATION
TYPE P100-A-35-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
2-C.D. PED INDICATIONS
TYPE 10B POLE MOUNTED AT 45°
TYPE 10B POLE MOUNTED AT 315°
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-3)
F&I: 1-APS PUSHBUTTON (PB6-1) AND SIGN (LT ARROW)
TWO WAY EVP DETECTOR AND CONFIRMATORY LIGHTS (4 + 8)
EXTEND INTO HH 4:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
DISCONNECT & ABANDON: 1-3/C#12

(2) PEDESTAL FOUNDATION
TYPE 2A
PEDESTAL POLE AND BASE
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-2)
PLUG HOLE IN POLE (PB4-2)
EXTEND INTO HH 5:
3" RSC
1-12/C#12
1-3/C#12
DISCONNECT & ABANDON: 1-3/C#12

(3) P100 POLE FOUNDATION
TYPE P100-A-35-D40-9 (DAVIT AT 350°)
X6-350/CAM 400 (MOUINTED AT 350°)
2-ONE WAY SIGNALS OVERHEAD
WITH LED ENFORCEMENT LIGHT (Ø 2)
2-C.D. PED INDICATIONS
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-1)
F&I: 1-APS PED PUSHBUTTON (PB4-1) AND SIGN (LT ARROW)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT PHASES (2 + 5)
1-VIDEO CAMERA #1309 MOUNTED ON CAMERA EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
LUMINAIRE 200 WATT H.P.S.
EXTEND INTO HH 7:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#10 (LUM)
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
F&I: 1-2/C#14

(4) P100 POLE FOUNDATION
TYPE P100-B-45
2-ONE WAY SIGNALS OVERHEAD
2-C.D. PEDESTRIAN INDICATIONS
TYPE 10B POLE MOUNTED AT 45°
TYPE 10B POLE MOUNTED AT 315°
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-3)
F&I: 1-APS PED PUSHBUTTON (PB8-2) AND SIGN (RT ARROW)
EXTEND INTO HH 13:
3" RSC
2-12/C#12
2-3/C#12
F&I: 1-2/C#14
DISCONNECT & ABANDON: 1-3/C#12

(5) PEDESTAL FOUNDATION
TYPE 1A
PEDESTAL POLE AND BASE
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-2)
F&I: 1-APS PED PUSHBUTTON (PB8-3) AND SIGN (DBL ARROW)
EXTEND INTO HH 18:
3" RSC
1-5/C#12
1-3/C#12
F&I: 1-2/C#14
DISCONNECT & ABANDON: 1-3/C#12

(6) P100 POLE FOUNDATION
TYPE P100-A-35-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
2-C.D. PED INDICATIONS
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
LUMINAIRE - 200W HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB8-1)
F&I: 1-APS PED PUSHBUTTON (PB8-1) AND SIGN (LT ARROW)
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT PHASES (2 + 5)
EXTEND INTO HH 19:
3" RSC
2-12/C#12
3-3/C#12
1-3/C#20
2-1/C#10 (LUM)
DISCONNECT & ABANDON: 1-3/C#12

DATE: 1/26/2012 TIME: 9:18:10 AM
FILENAME: K:\g-m\MnDOT\V4968000\hwy-brdg\hwy\plr-sth\cad\1901168_ml04a.dgn

SYSTEM ID: 20296 T.E. 5501
METER ADDRESS: 11951 CO RD 11

DRAWN BY: MTH
CHECKED BY: BDP

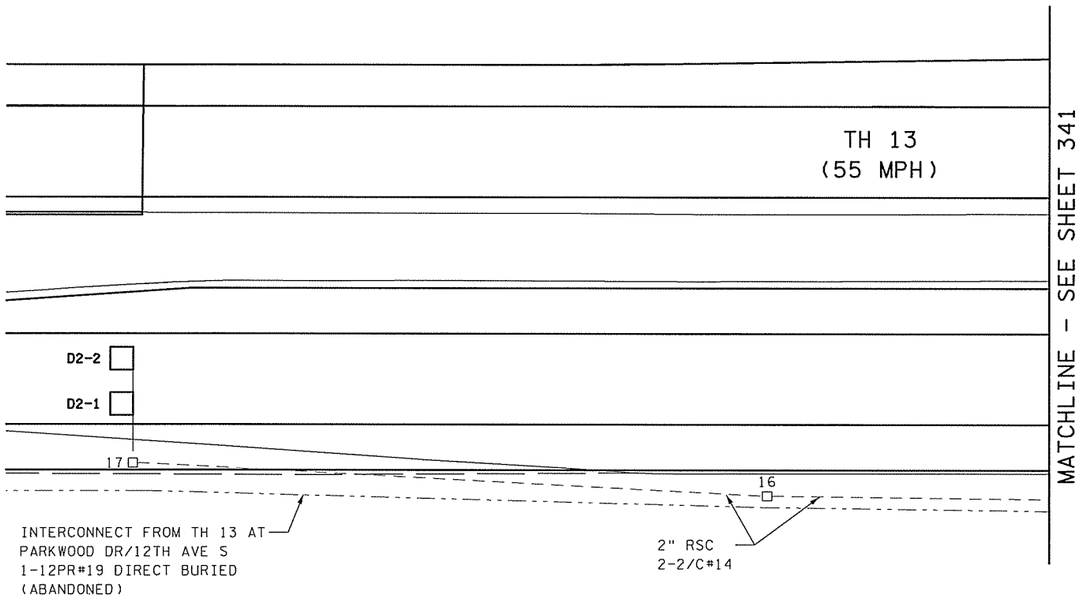
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SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

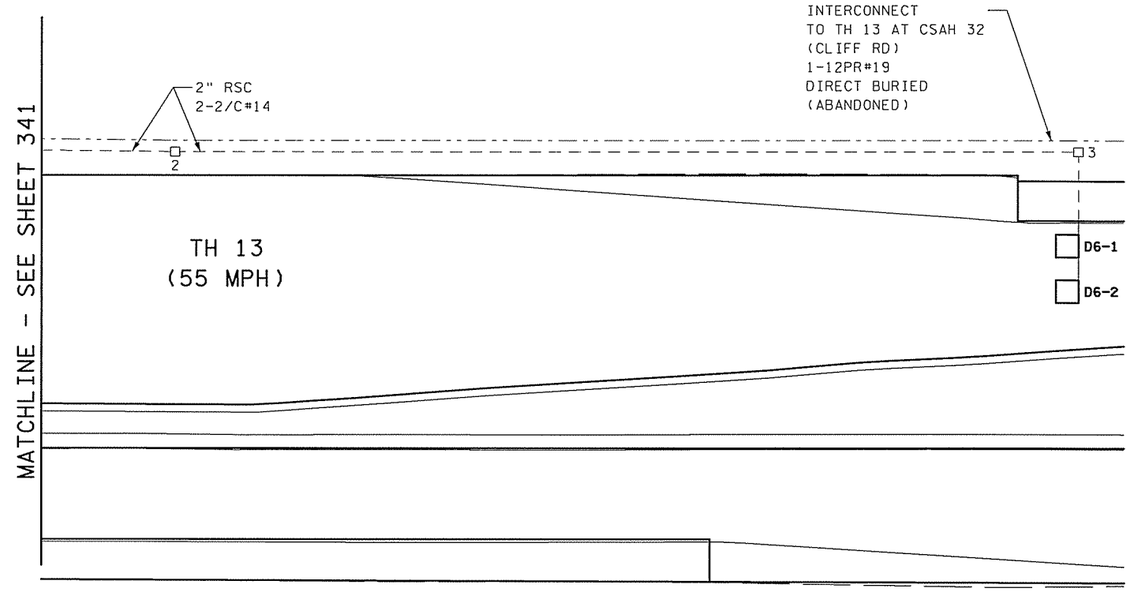
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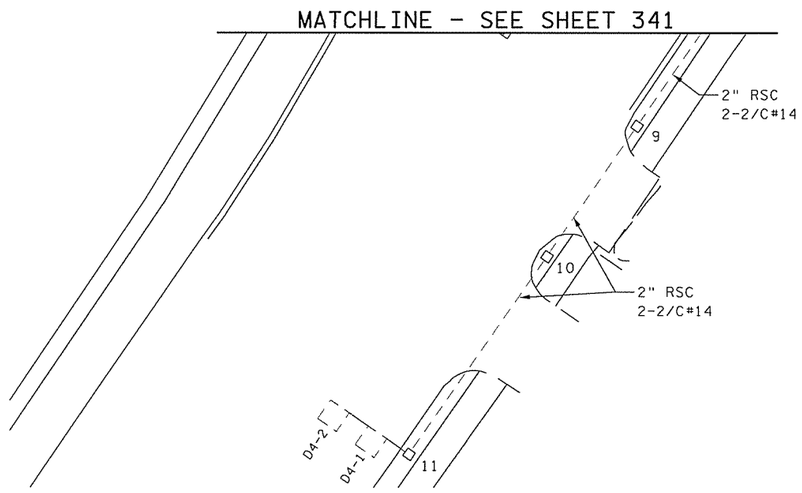
TH 13
BETTER ROADS
PRESERVATION PROJECT

NOTES
REVISE SIGNAL SYSTEM D
TH 13 AND CSAH 11 (W RIVER HILLS DR)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 342 of 393 Sheets









SCALE IN FEET
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SYSTEM ID: 20296 T.E. 5501
METER ADDRESS: 11951 CO RD 11

DATE: 1/26/2012 TIME: 9:18:12 AM
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CHECKED BY: BDP

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TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS
REVISE SIGNAL SYSTEM D
TH 13 AND CSAH 11 (W RIVER HILLS DR)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 343 of 393 Sheets

CONTROLLER CABINET

1
- RED 4-3
- YEL 4-3
- GRN 4-3
- NEU 4-3
- YLTA 4-3
- GLTA 4-3
- SPR
- NEU 4-2
- RED 4-2
- YEL 4-2
- GRN 4-2
- EQ.G

2
- RLTA 5-2
- YLTA 5-2
- GLTA 5-2
- NEU 5-2
- RED 4-1
- YEL 4-1
- GRN 4-1
- NEU 4-1, P4-2
- WLK P4-2
- DWK P4-2
- SPR
- EQ.G

3
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1, 2-2
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU P4-1
- WLK P4-1
- DWK P4-1
- SPR
- EQ.G

4
- RED 8-4
- YEL 8-4
- GRN 8-4
- NEU 8-4
- YLTA 8-4
- GLTA 8-4
- SPR
- NEU 2-3
- RED 2-3
- YEL 2-3
- GRN 2-3
- EQ.G

5
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 6-2, 6-3
- RED 6-3
- YEL 6-3
- GRN 6-3
- NEU P6-2
- WLK P6-2
- DEK P6-2
- SPR
- EQ.G

6
- RED 4-4
- YEL 4-4
- GRN 4-4
- NEU 4-4
- YLTA 4-4
- GLTA 4-4
- SPR
- NEU 6-1
- RED 6-1
- YEL 6-1
- GRN 6-1
- EQ.G

7
- RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- NEU 1-1
- RLTA 5-1
- YLTA 5-1
- GLTA 5-1
- NEU 5-1
- SPR
- SPR
- SPR
- EQ.G

PB2-1 — 66
PB8-3 — 65
PB8-2 — 64
PB6-2 — 63
PB2-2 — 62
PB4-1 — 61
PB4-2 — 60

D1-1 — 24
D1-2 — 25
D1-3 — 26
D1-4 — 27
D2-1 — 28
D2-2 — 29
D3-1 — 30
D4-1 — 31
D4-2 — 32
D4-3 — 33
D4-4 — 34
D5-1 — 35
D5-2 — 36
D6-1 — 37
D6-2 — 38
D7-1 — 39
D8-1 — 40
D8-2 — 41
D8-3 — 42
D8-4 — 43

8
- 1-2 RLTA
- 1-2 YLTA
- 1-2 GLTA
- 1-2 NEU
- EQ.G

9
- 8-3 RED
- 8-3 YEL
- 8-3 GRN
- 8-3 NEU
- 8-3 RLTA
- 8-3 YLTA
- 8-3 GLTA
- 1-3 NEU
- 1-3 RLTA
- 1-3 YLTA
- 1-3 GLTA
- EQ.G

10
- 8-1 RED
- 8-1 YEL
- 8-1 GRN
- 8-2, 8-1 NEU
- 8-2 RED
- 8-2 YEL
- 8-2 GRN
- P2-1 NEU
- P2-1 WLK
- P2-1 DWK
- SPR
- EQ.G

11
- P2-2 WLK
- P2-2 NEU
- P2-2 DWK

12
- P6-1 WLK
- P6-1 NEU
- P6-1 DWK

13
- P8-1 WLK
- P8-1 NEU
- P8-1 DWK

11
- P8-2 WLK
- P8-2 NEU
- P8-2 DWK

15
- SPR
- NEU
- PB6-1

16
- SPR
- NEU
- PB8-1

17 — Ø 1 AND Ø 6 EVP LIGHTS

18 — Ø 2 AND Ø 5 EVP LIGHTS

19 — Ø 4 AND Ø 8 EVP LIGHTS

20 — Ø 1 AND Ø 6 EVP DETECTOR

21 — Ø 2 AND Ø 5 EVP DETECTOR

22 — Ø 4 AND Ø 8 EVP DETECTOR

23 — SIGNAL SERVICE 3-1/C#6 INS. GR.

49 — INTERCONNECT TO CLIFF RD.

50 — INTERCONNECT TO PARKWOOD DR.

HH 3 — D6-1 (37), D6-2 (38) — 37,38

HH 2 — 37,38

HH 1 — 1-4,7,11,12,15,18,19,21, 22,24-27,31-34,37-39 — F&I: 60-62

44

HH 25 — 5,6,8-10,13,14,16,17,20, 28-30,35,36,40-43,45 — F&I: 63-66

HH 24 — 5,6,8-10,13,14,16,17,20, 28-30,35,36,40-43,45 — F&I: 63-66

HH 23 — 5,6,8-10,13,14,16,17,20, 28-30,35,36,40-43,45 — F&I: 63-66 — 30 — D3-1

HH 21 — 5,6,8-10,13,14,16,17,20, 28,29,35,36,40-43,45 — F&I: 63-66 — TO HH 20

40,41

HH 22 — D8-1 (40), D8-2 (41)

SERVICE CABINET
- LUMINAIRE 1 — 44
- LUMINAIRE 2 — 45
- 44,45
- 23 — 3-1/C#6 INS. GR. — SIGNAL SERVICE

HH 21 — 23 — SIGNAL SERVICE — S.O.P. — GR.RD.

23

50 → INTERCONNECT TO CLIFF RD.

HH 43 — HH 42 — HH 41 — HH 40 — HH 39 — HH 38 — 49 — INTERCONNECT FROM PARKWOOD DR.

(1)
- 4-3, 4-2, 5-2, 4-1 P4-2
- P6-1 — 1, 2, 12, 15
- PB6-1 — DISCONNECT & ABANDON 15 FROM POLE 1 TO POLE 2
- Ø 4 AND Ø 8 EVP LIGHT — 19
- Ø 4 AND Ø 8 EVP DETECTOR — 22 — TO EVP HUB

(2)
- 1-1, 5-1 — 7
- DISCONNECT & ABANDON 15 FROM POLE 2 TO POLE 3 — 15

HH 4 — ABANDON 15 — 3,4,7,11,18,19,21, 24-27,31-34,39,44 — F&I: 61,62

F&I: PED PB STA PB4-2 — 60 — TO PB

HH 5 — 24, 25, 26, 27 — D1-1, D1-2, D1-3, D1-4

ABANDON 15 — 3,4,11,18,21, 31-34,39,44 — F&I: 61,62 — TO HH 6

CONDUCTOR COLOR CODING

12/C#12: R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G
- BLK — 2-1/C#6, 2-17/C#10
- WH
- R — WH — BLK — 3/C#12
- R OR O — WH OR YEL, BLK OR BL — 3/C#20
- BLK — CLR OR WH — 2/C#14

5/C#12: R, O, BLK, WH, G

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

SYSTEM ID: 20296 T.E. 5501
METER ADDRESS: 11951 CO RD 11

SHEET 1 OF 2

DATE: 1/26/2012 TIME: 9:18:14 AM
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TKDA ENGINEERING • ARCHITECTURE • PLANNING

TH 13 BETTER ROADS PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM D
TH 13 AND CSAH 11 (W RIVER HILLS DR)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 344 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:16 AM
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CONDUCTOR COLOR CODING

12/C#12: R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G

5/C#12: R, O, BLK, WH, G

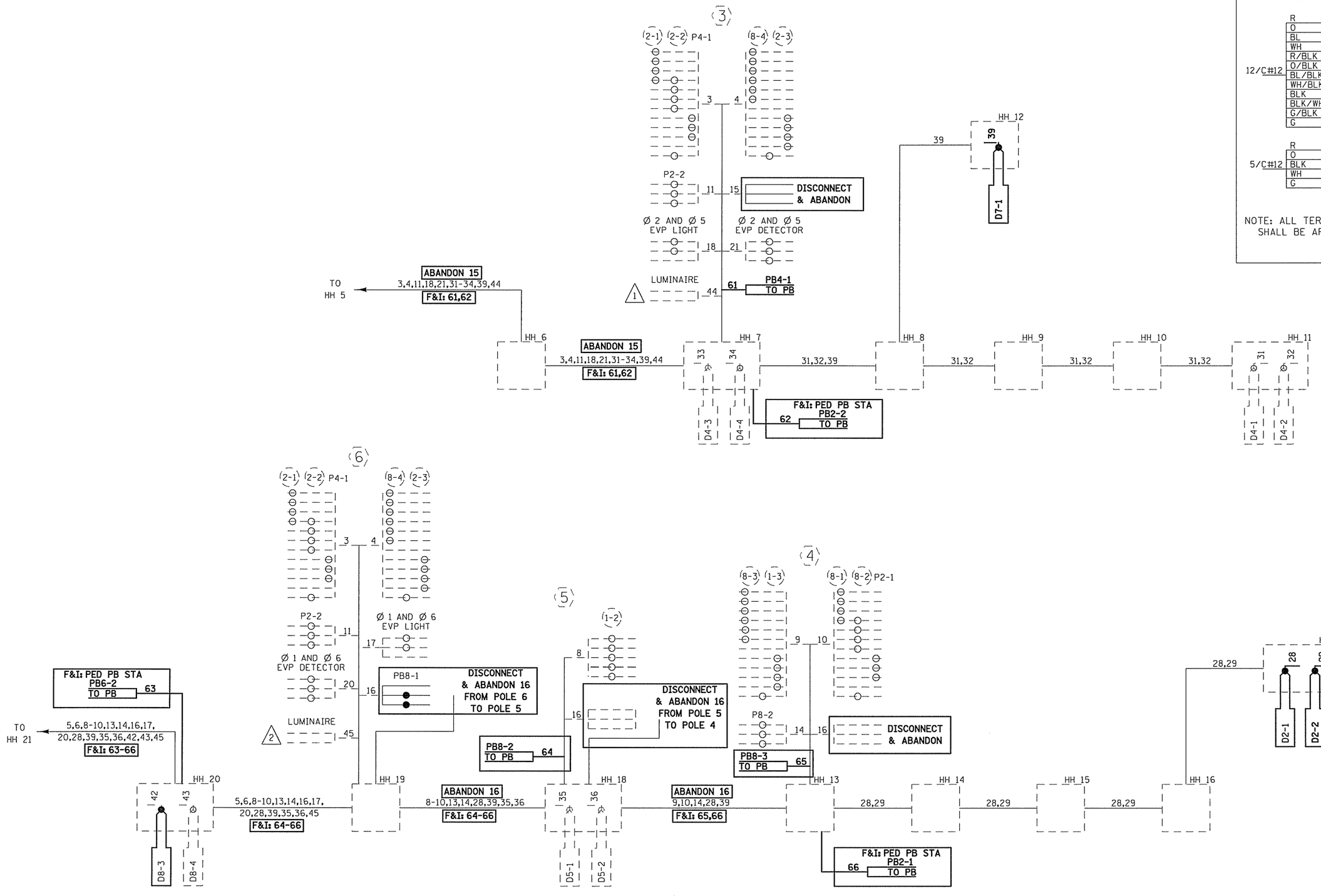
BLK, WH — 2-1/C#6, 2-1/C#10

R, WH, BLK — 3/C#12

R OR O, WH OR YEL, BLK OR BL — 3/C#20

BLK, CLR OR WH — 2/C#14

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE



SYSTEM ID: 20296 T.E. 5501
METER ADDRESS: 11951 CO RD 11

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TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM D
TH 13 AND CSAH 11 (W RIVER HILLS DR)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 345 of 393 Sheets

MATCHLINE - SEE SHEET 348

MATCHLINE - SEE SHEET 347

MATCHLINE - SEE SHEET 347

MATCHLINE - SEE SHEET 348

CSAH 32 (CLIFF RD) (45 MPH)

TH 13 (55 MPH)

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 4:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB6-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 8:
2" PVC
1-2/C#14

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

INTERCONNECT FROM TH 13 AT CSAH 11 (W RIVER HILLS DR) 1-12PR#19 (ABANDONED)
1½ PVC
1-FO PIGTAIL (12SM)

2" RSC 2-2/C#14

4" RSC 5-12/C#12 1-5/C#12 3-3/C#12 2-3/C#20 15-2/C#14 2-1/C#10 1-6PR#19(ABANDON)
F&I: 4-2/C#14

ADJUST HANDHOLES

4" RSC 5-12/C#12 1-5/C#12 3-3/C#12 2-3/C#20 8-2/C#14 2-1/C#10 1-7.5 PR#24 (COM CABLE) 1-COAXIAL CABLE
F&I: 2-2/C#14
ABANDON: 1-2/C#14

4" RSC 5-12/C#12 1-5/C#12 3-3/C#12 2-3/C#20 13-2/C#14 2-1/C#10 1-6PR#19 (ABANDONED)
F&I: 3-2/C#14

4" RSC 4-12/C#12 1-5/C#12 3-3/C#12 2-3/C#20 9-2/C#14 2-1/C#10 1-6PR#19 (ABANDONED)
F&I: 3-2/C#14

4" RSC 4-12/C#12 1-5/C#12 3-3/C#12 2-3/C#20 9-2/C#14 2-1/C#10 1-6PR#19 (ABANDONED)
F&I: 3-2/C#14

3" RSC 2-12/C#12 1-5/C#12 1-3/C#12 1-3/C#20 8-2/C#14 2-1/C#10 1-6PR#19 (ABANDONED)
F&I: 2-2/C#14
ABANDON: 1-3/C#12

1½" PVC
1-FO CABLE (36SM)

ADJUST HANDHOLE

4" RSC 2-12/C#12 2-3/C#12 1-3/C#20 1-2/C#14
F&I: 1-2/C#14
ABANDON: 1-3/C#12

4" RSC 2-12/C#12 1-5/C#12 1-3/C#12 1-3/C#20 6-2/C#14 2-1/C#10
F&I: 2-2/C#14
ABANDON: 1-3/C#12

2" RSC 2-2/C#14 1-6PR#19 (ABANDONED)

1 + 6 EVP

4" RSC 3-12/C#12 1-5/C#12 1-3/C#12 1-3/C#20 8-2/C#14 1-3/C#14 1-COAXIAL CABLE 1-7.5 PR#24 (COM CABLE)
F&I: 2-2/C#14
ABANDON: 1-3/C#12

3 + 8 EVP

4" RSC 1-12/C#12 6-2/C#14

3" RSC 1-12/C#12 4-2/C#14

4" RSC 3-12/C#12 1-3/C#12 1-3/C#20 6-2/C#14 1-3/C#14 1-COAXIAL CABLE 1-7.5 PR#24 (COM CABLE)
F&I: 2-2/C#14
ABANDON: 1-3/C#12

4" RSC 1-12/C#12 4-2/C#14

4 + 7 EVP

2 + 5 EVP

4" RSC 2-12/C#12 1-3/C#12 1-3/C#20 4-2/C#14 2-1/C#10
F&I: 2-2/C#14
ABANDON: 1-3/C#12

2" RSC 2-2/C#14

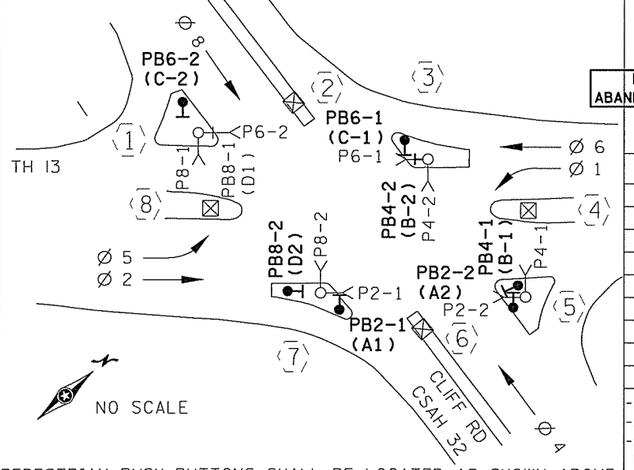
F&I:
APS PED PUSHBUTTON STATION (PB8-2)
INSTALL
1-APS PUSHBUTTON AND SIGN (RT ARROW)
(PB8-2)
F&I:
EXTEND INTO INPLACE HH 24:
2" PVC
1-2/C#14

F&I:
APS PED PUSHBUTTON STATION
INSTALL:
1-APS PUSHBUTTON AND SIGN (LT ARROW)
(PB2-1)
F&I:
EXTEND INTO INPLACE HH 24:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB4-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 14:
2" PVC
1-2/C#14

F&I:
APS PED PUSHBUTTON STATION (PB2-2)
INSTALL:
1-APS PUSHBUTTON AND SIGN (RT ARROW)
F&I: 2" PVC
EXTEND INTO INPLACE HH 14:
1-2/C#14

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL FACE CHART

FACE	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	○	○	○
3-1, 3-2, 3-3	←	←	←
4-1, 4-2	○	○	○
5-1, 5-2	←	←	←
6-1, 6-2, 6-3	○	○	○
7-1, 7-2, 7-3	←	←	←
8-1, 8-2, 8-3	○	○	○

-ALL SIGNAL INDICATIONS 12'
-ALL SIGNAL INDICATIONS ARE LED
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELD

SCALE IN FEET
0 10 20 40

SYSTEM ID: 20297 T.E. 5502
METER ADDRESS: 2230 HWY 13 EAST

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, 7 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
F&I: D1-1, D1-2	**6'x6'**	**40 & 10**	**PVC**
F&I: D2-1, D2-2	**6'x6'**	**475**	**PVC**
D3-1, D3-3	6'x6'	40 & 10	SAW
D3-2, D3-4	6'x6'	40 & 10	SAW
D4-1, D4-2	6'x6'	300	SAW
D4-3, D4-4	6'x6'	0 & 15	SAW
D5-1, D5-2	6'x6'	20	SAW
F&I: D5-1, D5-2	**6'x6'**	**40 & 10**	**PVC**
F&I: D6-1, D6-2	**6'x6'**	**475**	**PVC**
D7-1, D7-3	6'x6'	40 & 10	SAW
D7-2, D7-4	6'x6'	40 & 10	SAW
D8-1	6'x6'	300	SAW
D8-2	6'x6'	300	PVC
D8-3, D8-4	6'x6'	20	SAW

-LOCATION: DISTANCE FROM CROSSWALK /STOP BAR IN FEET

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE:
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM E
TH 13 AND CSAH 32 (CLIFF RD)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 346 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:18 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-shft\cad1901168_sl05.dgn

(A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER AND CABINET
4" RSC TO HH 1:
5-12/C#12
1-5/C#12
3-3/C#12
2-3/C#20
17-2/C#14
1-6PR#19 (ABANDONED)
F&I: 4-2/C#14

4" RSC TO HH 27:
5-12/C#12
1-5/C#12
3-3/C#12
2-3/C#20
8-2/C#14
1-7.5 PR#24 (COM CABLE)
1-COAXIAL CABLE

HH 1 TO HH 27: **F&I: 2-2/C#14**
2" RSC
2-1/C#10
2" RSC STUBBED OUT
1-12PR#19 DIRECT BURIED
(ABANDONED)
1 1/2" PVC TO FO SPLICE VAULT:
1-FO PIGTAIL (12SM)
CONTROLLER CABINET TO SERVICE CABINET:
2" RSC
2-1/C#4
2-1/C#6
1-1/C#6 INS. GR.
1-3/C#14 (CAMERA POWER)
SERVICE CABINET TO HH 27:
2" RSC
4-1/C#10
1-3/C#14 (CAMERA POWER)
TO HH 28:
2" RSC
3-1/C#2

(B) INPLACE WOOD POLE
BELOW DISCONNECT TO HH 28:
2" RSC
3-1/C#2

(1) TYPE P100-B-D40-9 (DAVIT AT 350°)
P100 POLE FOUNDATION
2-ONE WAY SIGNALS OVERHEAD AT 0' AND 11'
1-APS PEDESTRIAN PUSHBUTTON (PB8-1)
REMOVE: 1-PEDESTRIAN PUSHBUTTON AND SIGN (PB6-2)
PLUG HOLE IN POLE (PB6-2)
2-CD PEDESTRIAN INDICATIONS
LUMINAIRE 200 WATT H.P.S.
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT PHASES 1 AND 6
EXTEND INTO HH 26:
2-12/C#12
2-3/C#12
1-3/C#20
2-1/C#10 (LUM)
DISCONNECT & ABANDON: 1-3/C#12 LEAVING POLE 1

(2) TYPE 2A
PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
EXTEND INTO HH 5:
1-12/C#12

(3) TYPE P90-A-25
P90 POLE FOUNDATION
1-ONE WAY SIGNAL OVERHEAD
TYPE 10B MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT PHASES 4 AND 7
EXTEND INTO HH 18:
2-CD PEDESTRIAN INDICATIONS
REMOVE: 2-PEDESTRIAN PUSHBUTTONS AND SIGNS (PB4-2,PB6-1)
PLUG HOLE IN POLE (PB6-1)
F&I: APS PUSHBUTTON AND SIGN (RT ARROW) (PB4-2)
3" RSC
2-12/C#12
1-3/C#12
1-3/C#20
1-3/C#14
DISCONNECT & ABANDON: 1-3/C#12 LEAVING POLE 3

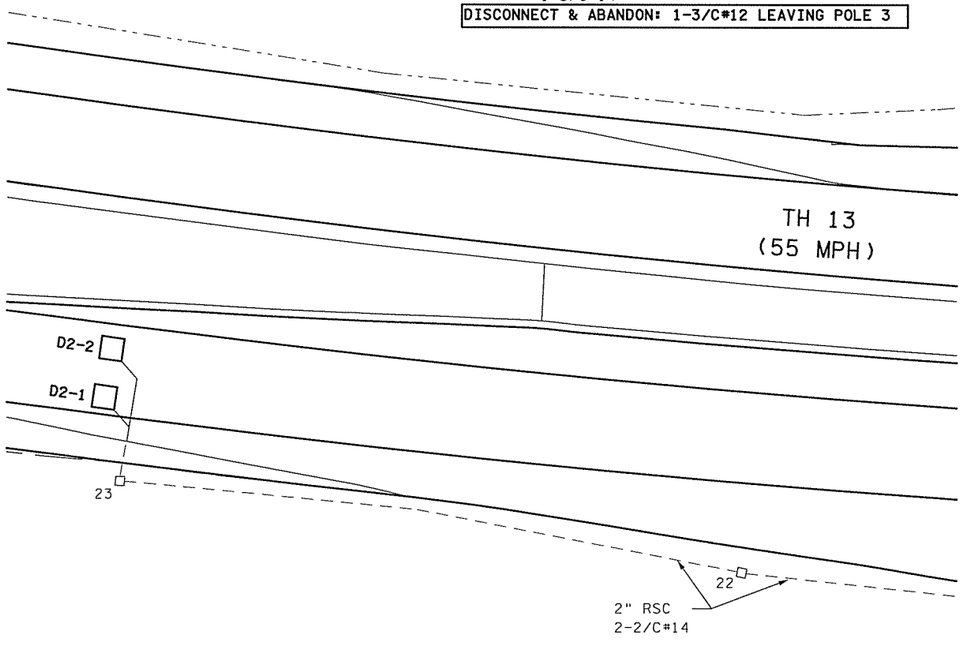
(4) TYPE 1A
PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
EXTEND INTO HH 13:
3" RSC
1-5/C#12
DISCONNECT & ABANDON: 2-3/C#12 LEAVING POLE 4

(5) TYPE P100-B-D40-9 (DAVIT AT 350°)
P100 POLE FOUNDATION
2-ONE WAY SIGNALS OVERHEAD AT 0' AND 11'
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB4-1)
PLUG HOLE IN POLE (PB4-1)
SALVAGE: 1-APS PEDETRIAN PUSHBUTTON (PB2-2)
PLUG HOLE IN POLE (PB2-2)
2-CD PEDESTRIAN INDICATIONS
LUMINAIRE 200 WATT H.P.S.
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT PHASES 1 AND 6
EXTEND INTO HH 14:
2-12/C#12
1-3/C#12
1-3/C#20
2-1/C#10 (LUM)
DISCONNECT & ABANDON: 1-3/C#12

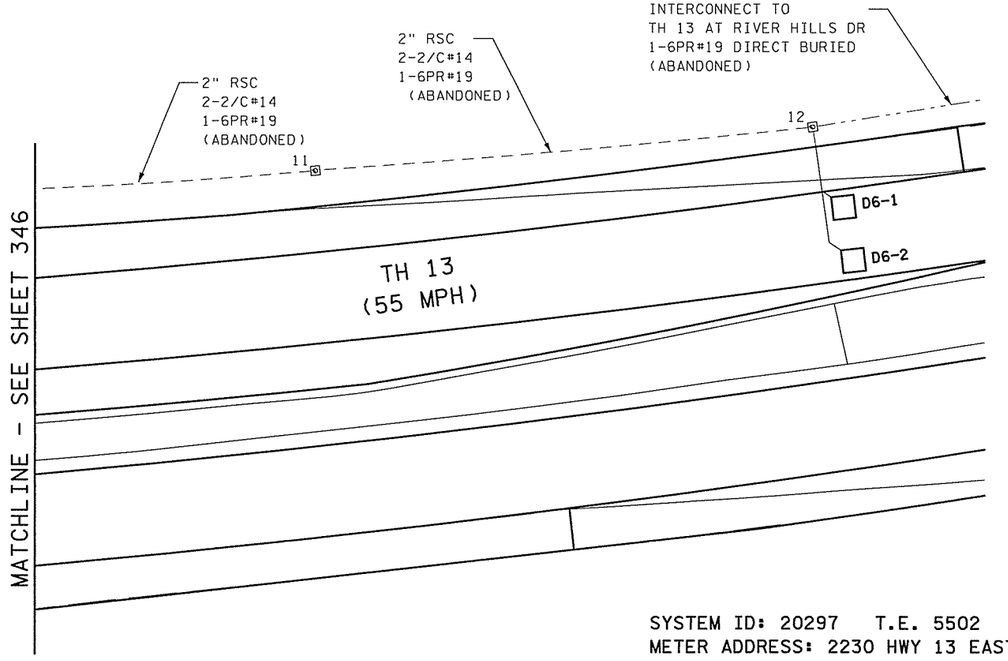
(6) TYPE 2A
PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
EXTEND INTO HH 185:
1-12/C#12

(7) TYPE P90-A-25-X-400
(CAMERA EXTENSION)
P90 POLE FOUNDATION
1-ONE WAY SIGNAL OVERHEAD
TYPE 10B MOUNTED AT 0°
TYPE 10B POLE MOUNTED AT 270°
2-CD PEDESTRIAN INDICATIONS
SALVAGE: 2-APS PEDESTRIAN PUSHBUTTONS (PB2-1,PB8-2)
PLUG HOLES IN POLES (PB2-1,PB8-2)
EXTEND INTO HH 24:
3" RSC
2-12/C#12
1-3/C#12
1-3/C#20
1-3/C#14
1-VIDEO CAMERA #1308 MOUNTED
ON CAMERA EXTENSION
1-VIDEO CAMERA POWER SUPPLY
DISCONNECT & ABANDON: 1-3/C#12

(8) TYPE 1A
PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
EXTEND INTO HH 25:
3" RSC
1-5/C#12
DISCONNECT & ABANDON: 2-3/C#12



SCALE IN FEET
0 10 20 40



SYSTEM ID: 20297 T.E. 5502
METER ADDRESS: 2230 HWY 13 EAST

DATE: 1/26/2012 TIME: 9:18:20 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cd1901168_ml05a.dgn

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CHECKED BY: BDP

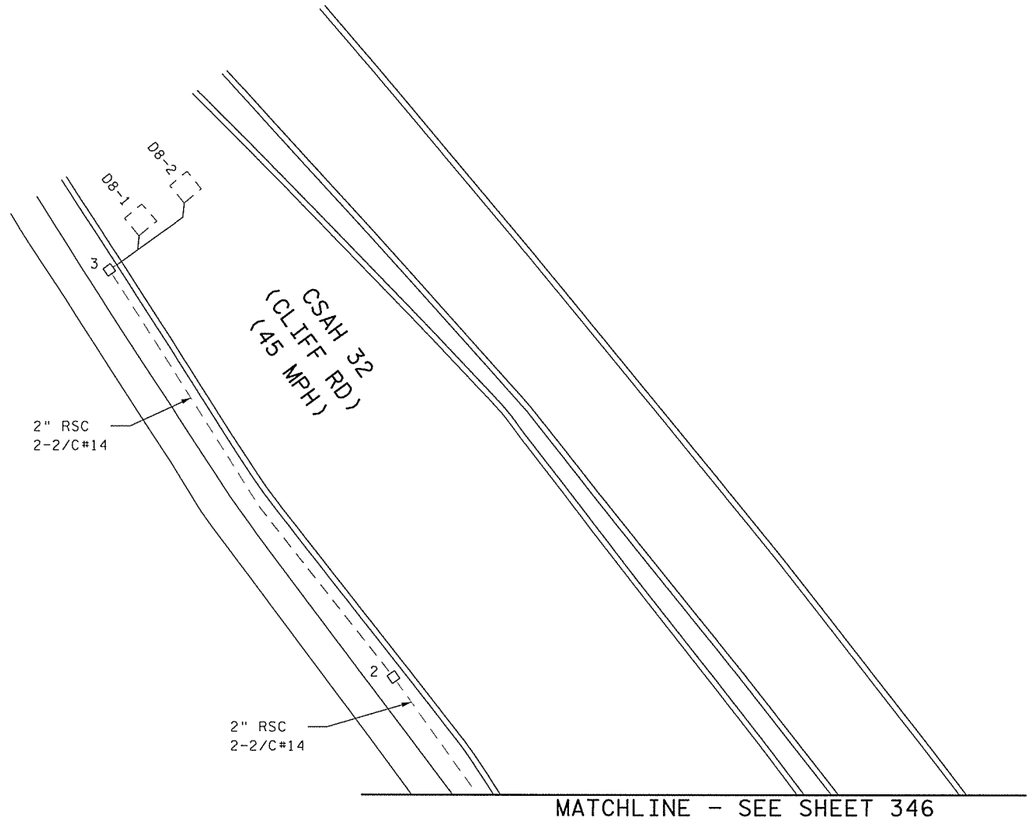
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

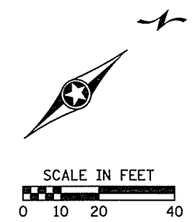
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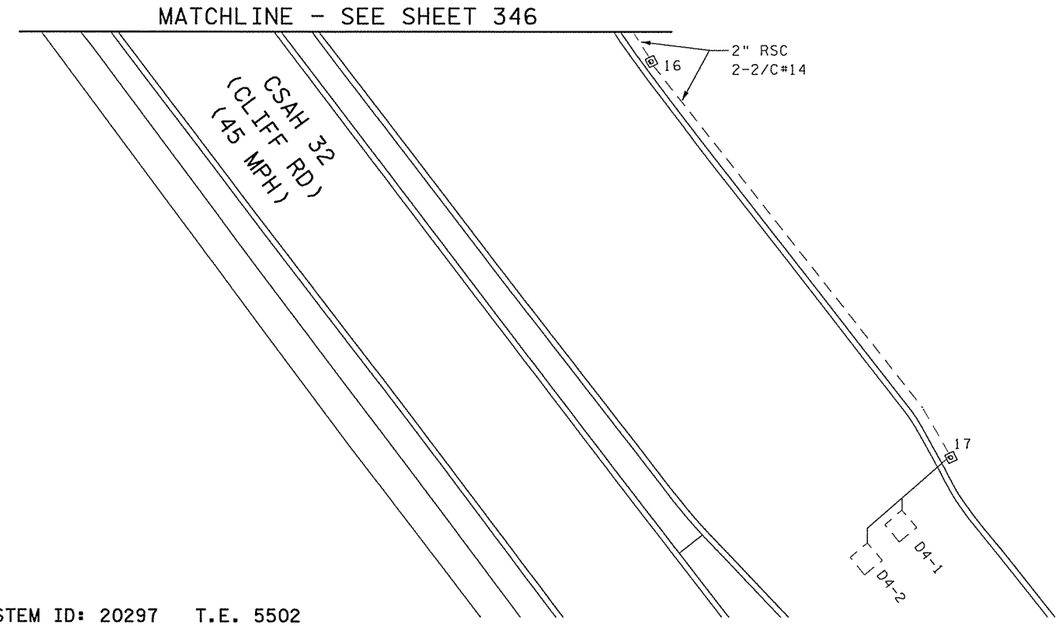
TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM E
TH 13 AND CSAH 32 (CLIFF RD)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 347 of 393 Sheets







SYSTEM ID: 20297 T.E. 5502
METER ADDRESS: 2230 HWY 13 EAST

DATE: 1/26/2012 TIME: 9:18:22 AM
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CONTROLLER CABINET

1	RED 4-1	1-2 RLTA	
	YEL 4-1	1-2 YLTA	
	GRN 4-1	1-2 GLTA	
	NEU 4-1	1-2 NEU	
	RED 4-2	SPR	
	YEL 4-2	SPR	
	GRN 4-2	SPR	
	NEU 4-2	P8-2 NEU	
	WLK P6-1	P8-2 WLK	
	DWK P6-1	P8-2 DWK	
	SPR P6-1	SPR	
	EQ.G	EQ.G	
2	RLTA 5-2	7-1 RLTA	
	YLTA 5-2	7-1 YLTA	
	GLTA 5-2	7-1 GLTA	
	SPR	7-1 NEU	
	SPR	3-2 RLTA	
	SPR	3-2 YLTA	
	NEU P4-2	3-2 GLTA	
	WLK P4-2	3-2 NEU	
	DWK P4-2	SPR	
	SPR	SPR	
	EQ.G	EQ.G	
3	RLTA 3-1	2-1 RED	
	YLTA 3-1	2-1 YEL	
	GLTA 3-1	2-1 GRN	
	NEU 3-1	2-2,2-1 NEU	
	RLTA 7-2	2-2 RED	
	YLTA 7-2	2-2 YEL	
	GLTA 7-2	2-2 GRN	
	NEU 7-2	P4-1 NEU	
	SPR	P4-1 WLK	
	SPR	P4-1 DWK	
	SPR	SPR	
	EQ.G	EQ.G	
4	RED 6-1	3-3 RLTA	
	YRL 6-1	3-3 YLTA	
	GRN 6-1	3-3 GLTA	
	NEU 6-1, 6-2	3-3 NEU	
	RED 6-2	2-3 RED	
	YEL 6-2	2-3 YEL	
	GRN 6-2	2-3 GRN	
	NEU P8-1	3-2 NEU	
	WLK P8-1	P2-2, 2-3 NEU	
	DWK P8-1	P2-2 WLK	
	SPR	P2-2 DWK	
	EQ.G	EQ.G	
5	RLTA 7-3	SPR	13
	YLTA 7-3	NEU	
	GLTA 7-3	PB8-1	
	NEU 7-3	PB4-2	14
	RED 6-3	NEU	
	YEL 6-3	SPR	
	GRN 6-3	Ø 1 AND Ø 6 EVP LIGHTS	15
	NEU 6-3, P6-2		
	WLK P6-2		
	DWK P6-2	Ø 2 AND Ø 5 EVP LIGHTS	16
	SPR		
	EQ.G		
6	RED 8-1	Ø 3 AND Ø 8 EVP LIGHTS	17
	YEL 8-1		
	GRN 8-1		
	NEU 8-1, 8-2	Ø 4 AND Ø 7 EVP LIGHTS	18
	RED 8-2		
	YEL 8-2		
	GRN 8-2	Ø 1 AND Ø 6 EVP DETECTOR	19
	NEU P2-1		
	WLK P2-1		
	DWK P2-1	Ø 2 AND Ø 5 EVP DETECTOR	20
	SPR		
	EQ.G		
7	RLTA 1-1	Ø 3 AND Ø 8 EVP DETECTOR	21
	YLTA 1-1		
	GLTA 1-1		
	NEU 1-1	Ø 4 AND Ø 7 EVP DETECTOR	22
	EQ.G		
8	RLTA 5-1		
	YLTA 5-1		
	GLTA 5-1		
	NEU 5-1		
	EQ.G		

9 / 10 / 11 / 12

PB6-2 70
PB6-1 71
PB2-2 72
PB4-1 73
PB8-2 74
PB2-1 75

SIGNAL SERVICE 3-1/C#6 INS. GR.	23
D1-1	24
D1-2	25
D2-1	26
D2-2	27
D3-1	28
D3-2	29
D3-3	30
D3-4	31
D4-1	32
D4-2	33
D4-3	34
D4-4	35
D5-1	36
D5-2	37
D6-1	38
D6-2	39
D7-1	40
D7-2	41
D7-3	42
D7-4	43
D8-1	44
D8-2	45
D8-3	46
D8-4	47
INTERCONNECT TO E. RIVER HILLS DR. (ABANDONED)	57
PB6-1	58
SPR SPR	59
CAMERA COM CABLE	60
CAMERA COAXIAL CABLE	61
FIBER OPTIC PIGTAIL	62
INTERCONNECT FROM CSAH 11 (W. RIVER HILLS DR.) (ABANDONED)	50

62 FO PIGTAIL TO TMS VAULT

50 INTERCONNECT FROM T.H. 13 AT CSAH 11 (W RIVER HILLS DR) 1-12PR #19 DIRECT BURIED (ABANDONED)

HH 1

1,2,3,8,11,12,14,16,18,20,22,24, 25,28-35,38,39,44-47,57,58 **F&I: 70-73**

11-3,8,11,12,14,16,18,20,22,24, 25,28-35,38,39,46,47,56-58 **F&I: 70-73**

HH 2 — 44,45 — 44,45 — HH 3 (44, 45 → D8-1, D8-2)

HH 4 (46 → D8-3, 47 → D8-4)

1-3,8,11,12,14,16,18,20,22, 24,25,28-35,38,39,56-58 **F&I: 71-73**

F&I: PED PB STA
70 PB6-2 TO PB

56

HH 5 (28 → D3-1, 29 → D3-2, 30 → D3-3, 31 → D3-4)

1,2,8,11,12,14,16,18,20,22, 24,25,32-35,38,39,56-58 **F&I: 71-73**

HH 6

1,2,8,11,12,14,16,18,20,22, 24,25,32-35,38,39,56-58 **F&I: 71-73** → TO HH 7

HH 27

ABANDON 59
4-7,9,10,13,15,17,19,21,26, 27,36,37,40-43,51,60,61 **F&I: 74,75**

51,55,56

HH 28

62

S.O.P.

SERVICE CABINET

LUMINAIRE 1 — 56

LUMINAIRE 2 — 55

CAMERA EQ.G NEU — 51

23 3-1/C#6 INS. GR. SIGNAL SERVICE

INPUT POWER 3-1/C#2 — 62

GR.RD.

(2)

(3-1) (7-2)

3

(1)

(6-1) (6-2) P8-1

(7-3) (6-3) P6-2

4 5

Ø 1 AND Ø 6 EVP LIGHT

Ø 1 AND Ø 6 EVP DETECTOR

15 19 TO EVP HUB

PB8-1

DISCONNECT AND ABANDON — 59 13

DISCONNECT AND ABANDON 13 FROM POLE 1 TO POLE 8

LUMINAIRE 1 — 55

HH 26

ABANDON 59
4-7,9,10,13,15,17,19,21,26,27, 36,37,40-43,51,55,60,61 **F&I: 74,75**

ABANDON 13
6,7,9,10,17,21,26,27, 36,37,40-43,51,60,61 **F&I: 74,75** → TO HH 25

CONDUCTOR COLOR CODING

3/C#14	BLK G WH	
3/C#20	R OR O WH OR YEL BLK OR BL	
2/C#14	BLK CLR OR WH	
3-1/C#2	R WH BLK	INPUT POWER
3-1/C#6	BLK WH G	SIGNAL SERVICE
COAX		
12PR#19		
7.5PR#24		

12/C#12	R O BL WH R/BLK O/BLK BL/BLK WH/BLK BLK BLK/WH G/BLK G	
5/C#12	R O BLK WH G	
3/C#12	R WH BLK	
2-1/C#10	BLK WH	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SERVICE INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SYSTEM ID: 20297 T.E. 5502
METER ADDRESS: 2230 HWY 13 EAST

SHEET 1 OF 2

DATE: 1/26/2012 TIME: 9:18:24 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cdl901168_wd05a.dgn

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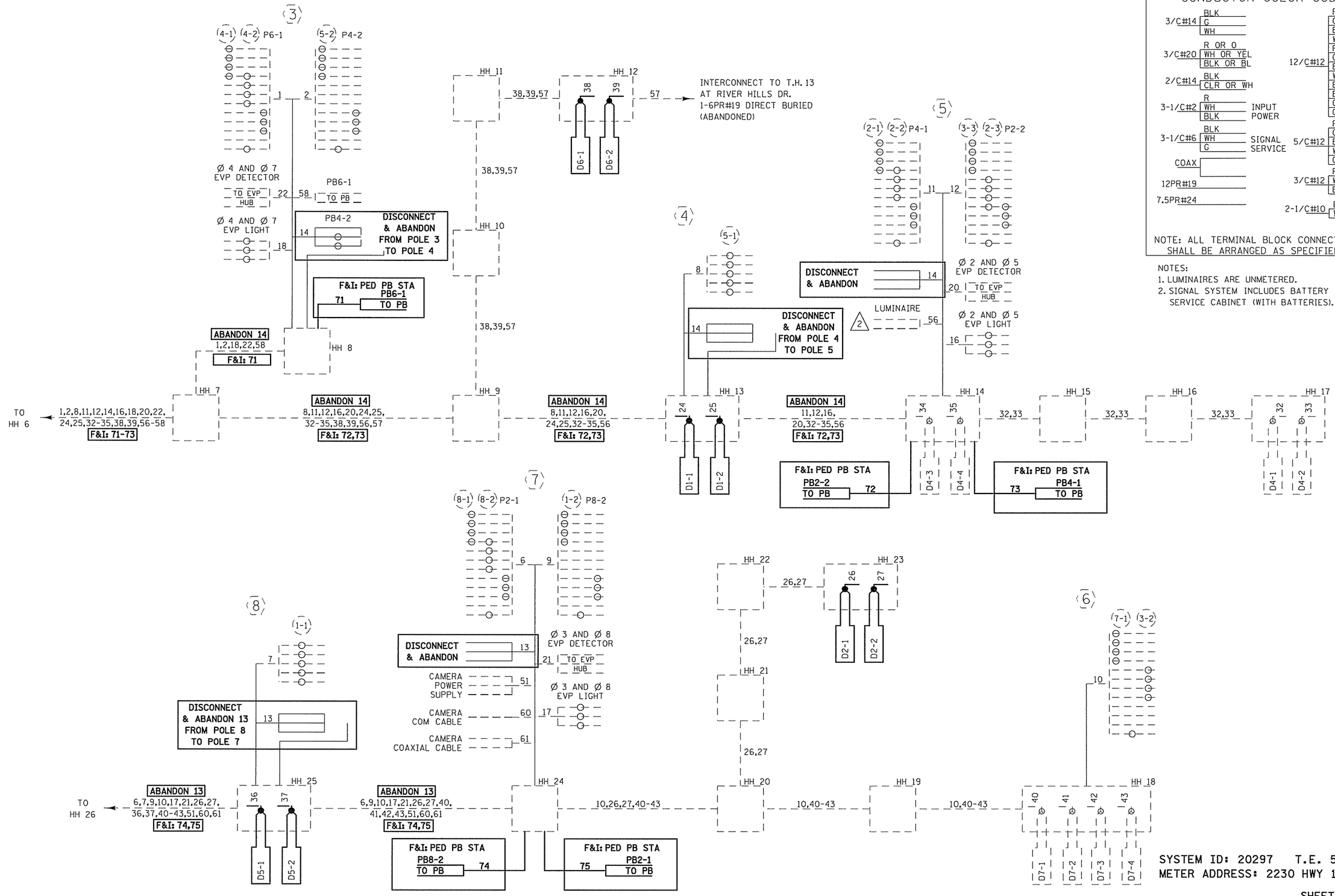
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CONDUCTOR COLOR CODING

3/C#14	BLK, G, WH	
3/C#20	R OR O, WH OR YEL, BLK OR BL	
2/C#14	BLK, CLR OR WH	
3-1/C#2	R, WH, BLK	INPUT POWER
3-1/C#6	BLK, WH, G	SIGNAL SERVICE
COAX, 12PR#19, 7.5PR#24		
12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	
5/C#12	R, O, BLK, WH, G	
3/C#12	R, WH, BLK	
2-1/C#10	BLK, WH	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).



SYSTEM ID: 20297 T.E. 5502
METER ADDRESS: 2230 HWY 13 EAST

SHEET 2 OF 2

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	FIELD WIRING DIAGRAM REVISE SIGNAL SYSTEM E TH 13 AND CSAH 32 (CLIFF RD)	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 350 of 393 Sheets

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (RT ARROW)
(PB6-2)
F&I:
1 1/4" PVC INTO HH 13
INSTALL FROM HH 12: 1-2/C#14

SALVAGE: APS PB STATION (PB4-1)
1-APS PUSH BUTTON
AND SIGN
REMOVE: PED PUSH BUTTON FOUNDATION
PULL: 1-2/C#14 INTO HH 13
CAP AND SEAL 1¼" CONDUIT

2" CONDUIT
1-2/C#14

1½" CONDUIT
1-FO CABLE (36SM)

RIVER HILLS DR
(30 MPH)

4" CONDUIT
5-12/C#14
2-3/C#14
11-2/C#14
2-3/C#20
1-3/C#14 (LUM)
1-1/C#6 (INS GRD)
1-CAT 5 CABLE
F&I: 1-2/C#14

F&I: PED PUSH BUTTON STATION FOUNDATION
INSTALL: APS PEDESTRIAN PUSH BUTTON STATION
1-APS PUSH BUTTON & SIGN (LT ARROW)
(PB6-1)
F&I: 1 1/4" PVC INTO HH 15
INSTALL FROM HH 15: 1-2/C#14

1½" CONDUIT
1-FO CABLE (36SM) - INPLACE

1½" CONDUIT
(EXTEND INTO CONTROLLER CABINET)
1-FO PIGTAIL (12SM) - INPLACE

1-6PR#19
DIRECT BURIED
(ABANDONED)

4" CONDUIT
2-12/C#14
1-3/C#14
5-2/C#14
1-3/C#20
1-1/C#6 (INS GRD)
1-CAT 5 CABLE
PULL: 1-2/C#14 TO HH 12
F&I: 1-2/C#14

4" CONDUIT
2-12/C#14
1-3/C#14
6-2/C#14
1-3/C#20
1-1/C#6 (INS GRD)
1-CAT 5 CABLE
F&I: 1-2/C#14

SALVAGE: APS PB STATION (PB6-1)
1-APS PUSH BUTTON
AND SIGN
REMOVE: PED PUSH BUTTON FOUNDATION
PULL: 1-2/C#14 INTO HH 15
CAP AND SEAL 1¼" CONDUIT

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (RT ARROW)
(PB8-2)
F&I:
1 1/4" PVC INTO HH 1
INSTALL FROM HH1: 1-2/C#14

1-6PR#19 DIRECT BURIED
(ABANDONED)

2" CONDUIT
2-2/C#14

F&I: PED PUSH BUTTON STATION FOUNDATION
INSTALL: APS PEDESTRIAN PUSH BUTTON STATION
1-APS PUSH BUTTON & SIGN (LT ARROW)
(PB4-1)
F&I: 1 1/4" PVC INTO HH 13
INSTALL FROM HH 13: 1-2/C#14

4" CONDUIT
3-12/C#14
1-3/C#14
7-2/C#14
1-3/C#20
1-3/C#14 (LUM)
1-1/C#6 (INS GRD)
F&I: 1-2/C#14

TH 13
(50 MPH)

MATCHLINE - SEE SHEET 353

MATCHLINE - SEE SHEET 353

F&I: PED PUSH BUTTON STATION FOUNDATION
INSTALL: APS PEDESTRIAN PUSH BUTTON STATION
1-APS PUSH BUTTON & SIGN (RT ARROW)
(PB4-2)
F&I: 1 1/4" PVC INTO HH 8
INSTALL FROM HH 8: 1-2/C#14

2" CONDUIT
2-2/C#14

4" CONDUIT
2-12/C#14
1-3/C#14
3-2/C#14
1-3/C#20
1-1/C#6 (INS GRD)
1-CAT 5 CABLE
PULL: 1-2/C#14 TO HH 12
F&I: 1-2/C#14

SALVAGE: APS PB STATION (PB4-2)
1-APS PUSH BUTTON
AND SIGN
REMOVE: PED PUSH BUTTON FOUNDATION
PULL: 1-2/C#14 INTO HH 12
CAP AND SEAL 1¼" CONDUIT

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (LT ARROW)
(PB2-1)
F&I: 1 1/4" PVC INTO HH 8
1-2/C#14

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (LT ARROW)
(PB8-1)
F&I:
1 1/4" PVC INTO HH 5
1-2/C#14

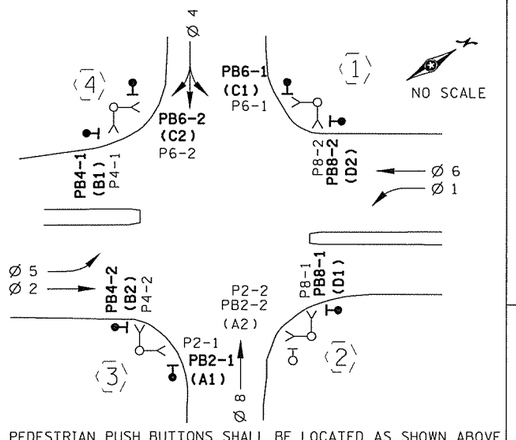
4" CONDUIT
3-12/C#14
1-3/C#14
5-2/C#14
1-3/C#20
1-3/C#14 (LUM)
1-1/C#6 (INS GRD)
F&I: 1-2/C#14

2" CONDUIT
4-2/C#14

2" CONDUIT
1-2/C#14

APS PEDESTRIAN PUSH BUTTON STATION (PB2-2)
1-APS PUSH BUTTON & SIGN (RT ARROW)
EXTEND INTO HH 6:
1 1/4" CONDUIT
1-2/C#14

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SYSTEM ID: 20298 T.E. N/A
METER ADDRESS: 2900 RIVER HILLS DR

SIGNAL FACE CHART

FACE	R	Y	G
1-1, 1-2	◁	◁	◁
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3	○	○	○
5-1, 5-2	◁	◁	◁
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

-ALL SIGNAL INDICATIONS ARE 12" LED
-ALL SIGNAL HEADS HAVE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1, D1-2	6'x6'	40 & 10	---
F&I: D2-1, D2-2	**6'x6'**	**400**	**PVC**
D4-1	6'x6'	120	---
D4-2, D4-3	2-6'x6'	5 & 20	---
D5-1, D5-2	6'x6'	40 & 10	---
F&I: D6-1, D6-2	**6'x6'**	**400**	**PVC**
D8-1	6'x6'	100	---
D8-2, D8-3	2-6'x6'	5 & 20	---

-ALL LOOP DETECTORS ARE PVC
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SHEDULE 80 PVC.

SCALE IN FEET
0 10 20 40

DATE: 1/26/2012 TIME: 9:18:28 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cad\901168_sl06.dgn

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM F
TH 13 AND E RIVER HILLS DR

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 351 of 393 Sheets

(1) PA100 POLE FOUNDATION
TYPE PA100-A-35
X-400 CAMERA EXTENSION
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 270°
2-ANGLE MOUNT C.D. PED INDICATIONS AT 90° & 270°
SALVAGE: 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB8-2) PLUG HOLE IN POLE (PB8-2)
1-TYPE D SIGN-OVERHEAD (D-5)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 8)
1-VIDEO CAMERA (*1307)
1-VIDEO CAMERA POWER SUPPLY -POLE MOUNTED AT 180°
1-5/8" X 15' GROUND ROD
1-1/C#6 INS. GR. (FROM CAMERA POWER SUPPLY)
1-7/16" BRAIDED GRD. WIRE (FROM TOP OF POLE)
3" CONDUIT TO HH 1:
2-12/C#14
1-3/C#14
1-3/C#14 (CAMERA POWER)
PULL: 1-2/C#14 TO HH 1
1-3/C#20
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
1-1/C#6 INS. GR.

(2) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 270°)
2-SWING AWAY HINGES
LUMINAIRE - 250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-POLE MOUNTED 11' AND 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS AT 90° & 180°
SALVAGE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB8-1) PLUG HOLE IN POLE (PB8-1)
1-TYPE D SIGN-OVERHEAD (D-6)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 2 + 5)
3" CONDUIT TO HH 5:
3-12/C#14
1-3/C#14
1-3/C#20
1-3/C#14 (LUM)
1-1/C#6 INS. GR.
DISCONNECT: 1-2/C#14

(3) PA90 POLE FOUNDATION
TYPE PA90-A-30
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS AT 90° & 180°
SALVAGE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1) PLUG HOLE IN POLE (PB2-1)
1-TYPE D SIGN-OVERHEAD (D-7)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 4)
1-ALDS CAMERA (FOR TEST)
3" CONDUIT TO HH 8:
2-12/C#14
1-3/C#14
1-3/C#20
1-1/C#6 INS. GR.
1-CAT 5 CABLE
PULL: 1-2/C#14 TO HH 8

(4) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 270°)
2-SWING AWAY HINGES
LUMINAIRE - 250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-POLE MOUNTED 11 AND 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS AT 90° & 180°
SALVAGE: 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB6-2) PLUG HOLE IN POLE (PB6-2)
1-TYPE D SIGN-OVERHEAD (D-8)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 1 + 6)
3" CONDUIT TO HH 13:
3-12/C#14
1-3/C#14
1-3/C#20
1-3/C#14 (LUM)
1-1/C#6 INS. GR.
DISCONNECT: 1-2/C#14

(A) EQUIPMENT PAD - SEE DETAILS
SERVICE CABINET (BBU WITH BATTERIES)
CONTROLLER & CABINET
CONTROLLER CABINET TO HH 1:
4" CONDUIT
5-12/C#14
2-3/C#14
10-2/C#14
2-3/C#20
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
F&I: 1-2/C#14
1-1/C#6 INS. GR.
STUB OUT 3" CONDUIT FROM CONTROLLER CABINET TO EAST (CAP BOTH ENDS)
STUB OUT 3/4" CONDUIT TO SOUTH (CAP BOTH ENDS - FOR TELEPHONE LINE)
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
2-1/C#6
1-1/C#6 INS. GR.
2" CONDUIT (SPARE - FOR FUTURE MONITORING CABLE)
SERVICE CABINET TO HH 1:
2" CONDUIT
14-3/C#14 (LUM)
1-3/C#14 (CAMERA POWER)
SERVICE CABINET TO HH 15:
2" CONDUIT
1-3/C#14 (LUM)
1 1/2" CONDUIT FROM CONTROLLER CABINET
1-12 SM FO PIGTAIL
3-1/C#2

CONTROLLER CABINET TO HH 15:
4" CONDUIT
5-12/C#14
2-3/C#14
12-2/C#14
2-3/C#20
1-1/C#6 INS. GR.
1-CAT 5 CABLE
F&I: 1-2/C#14

(B) SOP-WOOD POLE (BY XCEL ENERGY)
2" CONDUIT RISER, WEATHERHEAD AND CONDUIT TO HH 16:
3-1/C#2

SYSTEM ID: 20298 T.E. N/A
METER ADDRESS: 2900 RIVER HILLS DR

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

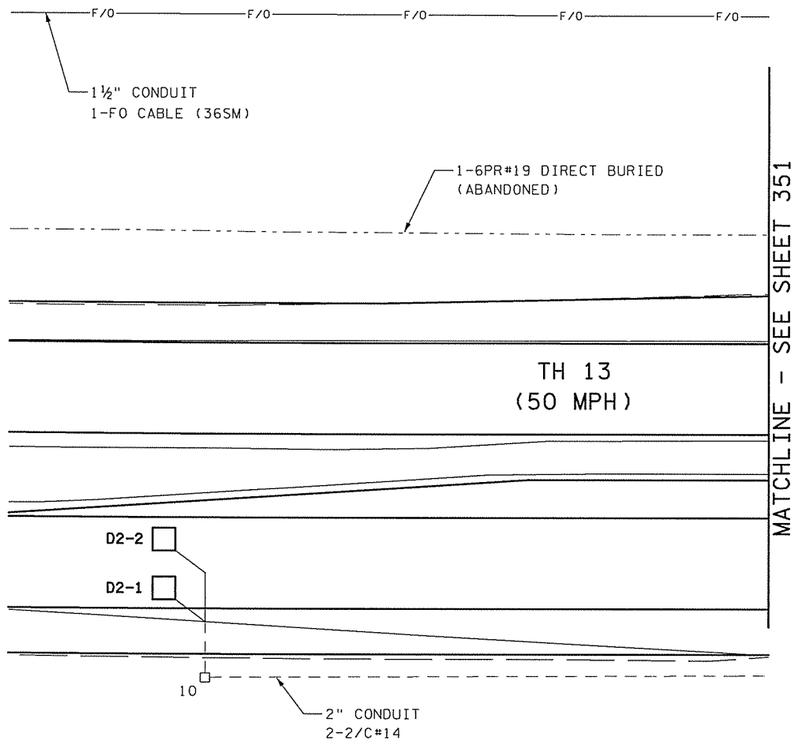
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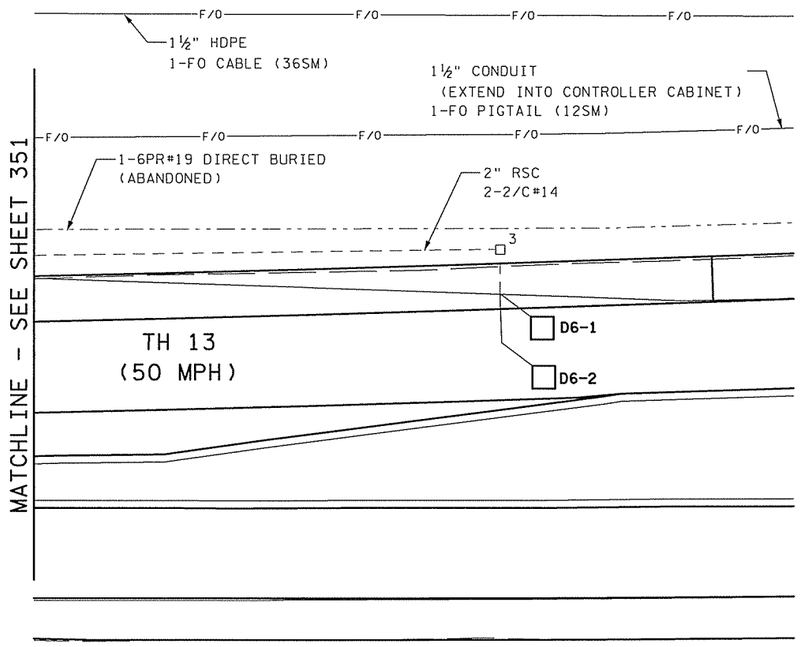
TH 13
BETTER ROADS
PRESERVATION PROJECT

NOTES
REVISE SIGNAL SYSTEM F
TH 13 AND E RIVER HILLS DR

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 352 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:30 AM
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SYSTEM ID: 20298 T.E. N/A
METER ADDRESS: 2900 RIVER HILLS DR

SCALE IN FEET
0 10 20 40

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

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TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS
REVISE SIGNAL SYSTEM F
TH 13 AND E RIVER HILLS DR

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 353 of 393 Sheets

DATE: 1/26/2012 TIME: 9:48:33 AM
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CONTROLLER CABINET

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (WITH BATTERIES).
3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.

SYSTEM ID: 20298 T.E. N/A
METER ADDRESS: 2900 RIVER HILLS DR

DATE: 1/26/2012 TIME: 9:18:35 AM
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DRAWN BY: MTH	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	FIELD WIRING DIAGRAM REVISE SIGNAL SYSTEM F TH 13 AND E RIVER HILLS DR	STATE PROJ. NO. 1901-168 (TH 13)
CHECKED BY: BDP						Sheet No. 354 of 393 Sheets

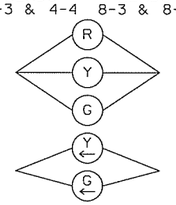
SIGNAL FACE CHART

FACE	R	Y	G	Y	G
1-1, 1-2	←	←	←		
2-1, 2-2, 2-3	○	○	○		
4-1, 4-2	○	○	○		
4-3, 4-4	○	○	○	←	←
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3	○	○	○		
8-1, 8-2	○	○	○		
8-3, 8-4	○	○	○	←	←

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS ARE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS

SIGNAL HEAD PHASING

HEADS 4-3 & 4-4 | HEADS 8-3 & 8-4



NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, IPS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SHEDULE 80 PVC.

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1, D1-2	6x6	40 & 10	---
F&I: D2-1, D2-2	**6x6**	**400**	**PVC**
D3-1, D7-1	2-6x6	20 & 50	---
D3-2, D7-2	2-6x6	5 & 35	---
D4-1	6x6	120	---
D4-2, D4-3	2-6x6	5 & 20	---
D5-1, D5-2	6x6	40 & 10	---
F&I: D6-1, D6-2	**6x6**	**400**	**PVC**
D8-1	6x6	180	---
D8-2, D8-3	2-6x6	5 & 20	---

-ALL LOOP DETECTORS ARE PVC
-LOCATION: DISTANCE FROM CROSSWALK /STOP BAR IN FEET

F&I: PED PUSH BUTTON STATION FOUNDATION
INSTALL: APS PEDESTRIAN PUSH BUTTON STATION (PB6-2)
1-APS PUSH BUTTON & SIGN (RT ARROW)
F&I: EXTEND INTO INPLACE HH 2: 1 1/4" PVC
1-2/C#14

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1)
F&I:
EXTEND INTO INPLACE HH 4: 1 1/4"
INSTALL FROM HH 4: 1-2/C#14

SALVAGE: APS PB STATION (PB6-2)
1-APS PUSH BUTTON
AND SIGN (RT ARROW)
REMODE: PED PUSH BUTTON FOUNDATION
REMOVE: 1-2/C#14
CAP AND SEAL 1¼" CONDUIT

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-1)
F&I:
EXTEND INTO INPLACE HH 17:
1 1/4" PVC
INSTALL FROM HH 17: 1-2/C#14

F&I: PED PUSH BUTTON FOUNDATION
INSTALL: APS PEDESTRIAN PUSH BUTTON STATION (PB4-2)
1-APS PUSH BUTTON & SIGN (RT ARROW)
F&I: EXTEND INTO INPLACE HH 13: 1 1/4" PVC
INSTALL FROM HH 13: 1-2/C#14

SALVAGE: APS PB STATION (PB4-3)
1-APS PUSH BUTTON
AND SIGN (RT ARROW)
REMOVE: PED PUSH BUTTON FOUNDATION
PULL: 1-2/C#14 INTO HH 13
CAP AND SEAL 1¼" CONDUIT

F&I:
APS PEDESTRIAN PUSH BUTTON STATION
INSTALL:
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1)
F&I:
EXTEND INTO INPLACE HH 13: 1 1/4" PVC
INSTALL FROM HH 13: 1-2/C#14

F&I: PED PUSH BUTTON STATION FOUNDATION
INSTALL: APS PEDESTRIAN PUSH BUTTON STATION (PB2-2)
1-APS PUSH BUTTON & SIGN (RT ARROW)
F&I: EXTEND INTO INPLACE HH 10: 1 1/4" PVC
INSTALL FROM HH 10: 1-2/C#14

SALVAGE: APS PB STATION (PB2-2)
1-APS PUSH BUTTON
AND SIGN (RT ARROW)
REMOVE: PED PUSH BUTTON FOUNDATION
PULL: 1-2/C#14 INTO HH 10
CAP AND SEAL 1¼" CONDUIT

2" CONDUIT 2-2/C#14

1½" CONDUIT 1-FO CABLE (36SM)

1½" CONDUIT 1-FO CABLE (12SM)

FO SPLICE VAULT

1-6PR#19 DIRECT BURIED (TO RIVER HILLS DR) (ABANDONED)

4" CONDUIT
2-12/C#14
1-4/C#14
1-3/C#14
1-3/C#14 (CAMERA POWER)
7-2/C#14
2-3/C#20
1-3/C#14 (LUM)
1-COAXIAL CABLE
1-7.5 PR#24 (COM CABLE)
1-1/C#6 (INS GRD)

1 + 6 EVP

4" CONDUIT
2-12/C#14
1-4/C#14
1-3/C#14
1-3/C#14 (CAMERA POWER)
4-2/C#14
2-3/C#20
1-3/C#14 (LUM)
1-COAXIAL CABLE
1-7.5 PR#24 (COM CABLE)
1-1/C#6 (INS GRD)

8 EVP

4" CONDUIT
5-12/C#14
2-3/C#14
13-2/C#14
4-3/C#20
2-3/C#14 (LUM)
1-1/C#6 (INS GRD)

2 + 5 EVP

4" CONDUIT
3-12/C#14
1-3/C#14
8-2/C#14
2-3/C#20
1-3/C#14 (LUM)
1-1/C#6 (INS GRD)

4 EVP

2" CONDUIT
1-3/C#20
1-1/C#6 (INS GRD)

4" CONDUIT
5-12/C#14
2-3/C#14
11-2/C#14
4-3/C#20
2-3/C#14 (LUM)
1-1/C#6 (INS GRD)

4" CONDUIT
3-12/C#14
1-3/C#14
10-2/C#14
2-3/C#20
1-3/C#14 (LUM)
1-1/C#6 (INS GRD)

4" CONDUIT
3-12/C#14
1-3/C#14
6-2/C#14
2-3/C#20
1-3/C#14 (LUM)
1-1/C#6 (INS GRD)

1½" CONDUIT 1-FO CABLE (36SM)

2" CONDUIT 2-2/C#14

2" CONDUIT 6-2/C#14

1+6 EVP

4 EVP

8 EVP

ADJUST HANDHOLE

CEDARBRIDGE AVE (30 MPH)

CSAH 30 (DIFFLEY RD) (35 MPH)

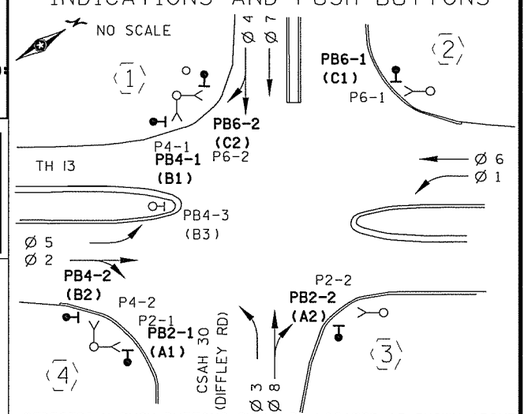
TH 13 (50 MPH)

MATCHLINE - SEE SHEET 357

MATCHLINE - SEE SHEET 357

MATCHLINE - SEE SHEET 357

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 3 AND 7 BEING A PROTECTED/PERMISSIVE LEFT TURN PHASES, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SCALE IN FEET
0 10 20 40

SYSTEM ID: 20299 T.E. N/A
METER ADDRESS: 10901 SOUTHVIEW DR

DATE: 1/26/2012 TIME: 9:18:37 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cd1901168_sl07.dgn

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM G
TH 13 & CSAH 30 (DIFFLEY RD/CEDARBRIDGE AVE)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 355 of 393 Sheets

(1) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
2-SWING AWAY HINGES
LUMINAIRE - 250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS-POLE MOUNTED 11' AND 23'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT C.D. PED INDICATIONS AT 90° & 180°
SALVAGE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-1) PLUG HOLE IN POLE
1-TYPE D SIGN-OVERHEAD (D-1)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 1 + 6)
3" CONDUIT TO HH 17:
3-12/C#14
1-3/C#14
PULL: 1-2/C#14 TO HH 17
1-3/C#20
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

(2) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 270°)
LUMINAIRE - 250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
1-ANGLE MOUNT C.D. PED INDICATIONS AT 90°
SALVAGE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1) PLUG HOLE IN POLE
1-R9-3a SIGN PANEL - FACING POLE 5
2-R6-1 SIGN PLANELS - POLE MOUNTED 0° AND 180°
R10-12 SIGN PANEL - ADJACENT TO 8-3
1-TYPE D SIGN-OVERHEAD (D-2)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 8)
3" CONDUIT TO HH 4:
2-12/C#14
1-3/C#14
PULL: 1-2/C#14 TO HH 4
1-3/C#20
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

(3) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
2-SWING AWAY HINGES
LUMINAIRE - 250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT MOUNT SIGNALS AT 11' AND 23'
1-ANGLE MOUNT C.D. PED INDICATIONS AT 180°
1-R9-3a SIGN PANEL - FACING POLE 3
2-R6-1 SIGN PANELS - POLE MOUNTED 0° AND 180°
1-TYPE D SIGN-OVERHEAD (D-3)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 2 + 5)
1-ONE WAY EVP DETECTOR - POLE MOUNTED AT 90° (PHASES 1 + 6)
3" CONDUIT TO HH 9:
3-12/C#14
1-3/C#14
2-3/C#20
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

(4) PA100 POLE FOUNDATION
TYPE PA100-A-50-X6-350/CAM 400 (DAVIT AT 270°)
LUMINAIRE - 250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNAL - OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS - POLE MOUNTED 90° AND 270°
2-ANGLE MOUNT C.D. PED INDICATIONS AT 90° & 270°
SALVAGE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1) PLUG HOLE IN POLE
R10-12 SIGN PANEL - ADJACENT TO 4-3
1-TYPE D SIGN-OVERHEAD (D-4)
1-ONE WAY EVP DETECTOR & CONFIRMATORY LIGHT-OVERHEAD (PHASE 4)
1-ONE WAY EVP DETECTOR - POLE MOUNTED AT 90° (PHASE 8)
1-VIDEO CAMERA (*1306)
1-VIDEO CAMERA POWER SUPPLY -POLE MOUNTED AT 180°
1-5/8" X 15' GROUND ROD
1" CONDUIT STUB OUT (FOR CAMERA GROUND WIRES)
1-1/C#6 INS. GR.
1-7/16" BRAIDED GRD. WIRE
3" CONDUIT TO HH 13:
2-12/C#14
1-4/C#14
1-3/C#14
1-3/C#14 (CAMERA POWER)
2-3/C#20
1-3/C#14 (LUM)
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
1-1/C#6 INS. GR.
PULL: 1-2/C#14 TO HH 13

APS PEDESTRIAN PUSH BUTTON STATION (PB4-3)
1-APS PUSH BUTTON & SIGN (DBL ARROW)
EXTEND INTO HH 16:
1 1/4" CONDUIT
1-2/C#14

(5) PEDESTAL FOUNDATION
9' SIGNAL PEDESTAL POLE AND BASE
1-TWO WAY EVP DETECTOR - MOUNT ON TOP OF POLE (PHASE 4)
2" CONDUIT TO HH 19:
1-3/C#20
1-1/C#6 INS. GR.

(A) EQUIPMENT PAD - SEE DETAILS
SERVICE CABINET (BBU WITH BATTERIES)
CONTROLLER AND CABINET
CONTROLLER CABINET TO HH 1:
2" CONDUIT
1-2/C#14
CONTROLLER CABINET TO HH 2:
4" CONDUIT
5-12/C#14
2-3/C#14
15-2/C#14
4-3/C#20
1-1/C#6 INS. GR.
F&I: 1-2/C#14
REMOVE: 1-2/C#14
STUB OUT 3" CONDUIT FROM CONTROLLER CABINET TO EAST (CAP BOTH ENDS)
STUB OUT 3/4" CONDUIT TO SOUTH (CAP BOTH ENDS - FOR TELEPHONE LINE)
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
2-1/C#6
1-1/C#6 INS. GR.
2" CONDUIT (SPARE - FOR FUTURE MONITORING CABLE)
SERVICE CABINET TO HH 18:
2" CONDUIT
3-1/C#2
SERVICE CABINET TO HH 2:
2" CONDUIT
2-3/C#14 (LUM)
SERVICE CABINET TO HH 17:
2" CONDUIT
2-3/C#14 (LUM)
1-3/C#14 (CAMERA POWER)
1 1/2" CONDUIT FROM CONTROLLER CABINET
1-12 SM FO PIGTAIL

CONTROLLER CABINET TO HH 17:
4" CONDUIT
5-12/C#14
1-4/C#14
2-3/C#14
8-2/C#14
3-3/C#20
1-COAXIAL CABLE
1-7.5 PR#24 (COM CABLE)
1-1/C#6 INS. GR.

(B) SOP-WOOD POLE (BY XCEL ENERGY)
2" CONDUIT RISER, WEATHERHEAD AND CONDUIT TO HH 18:
3-1/C#2

SYSTEM ID: 20299 T.E. N/A
METER ADDRESS: 10901 SOUTHVIEW DR

DATE: 1/26/2012 TIME: 9:18:39 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sth\cd1901168_ml07a.dgn

DRAWN BY: MTH
CHECKED BY: BDP

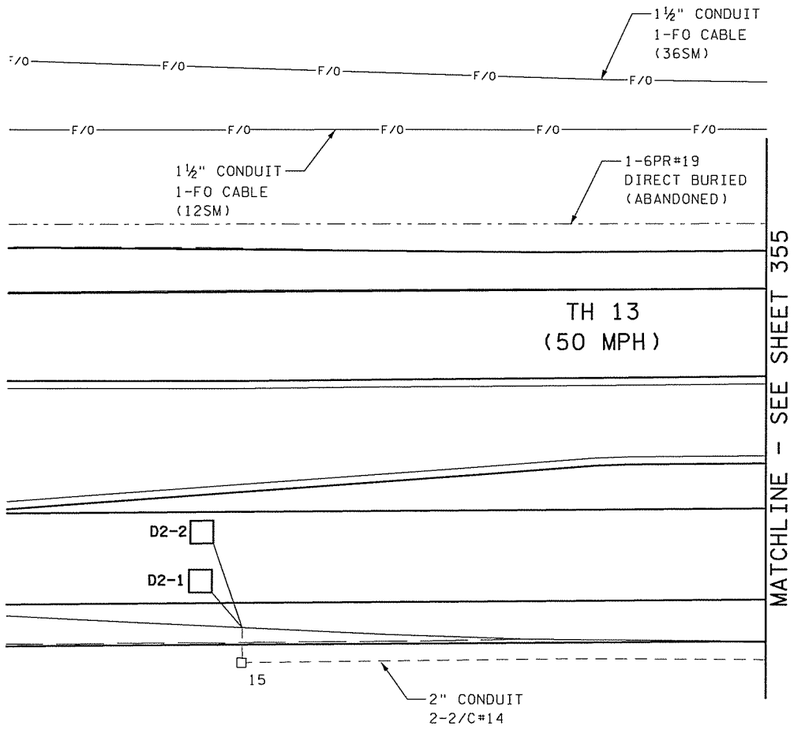
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

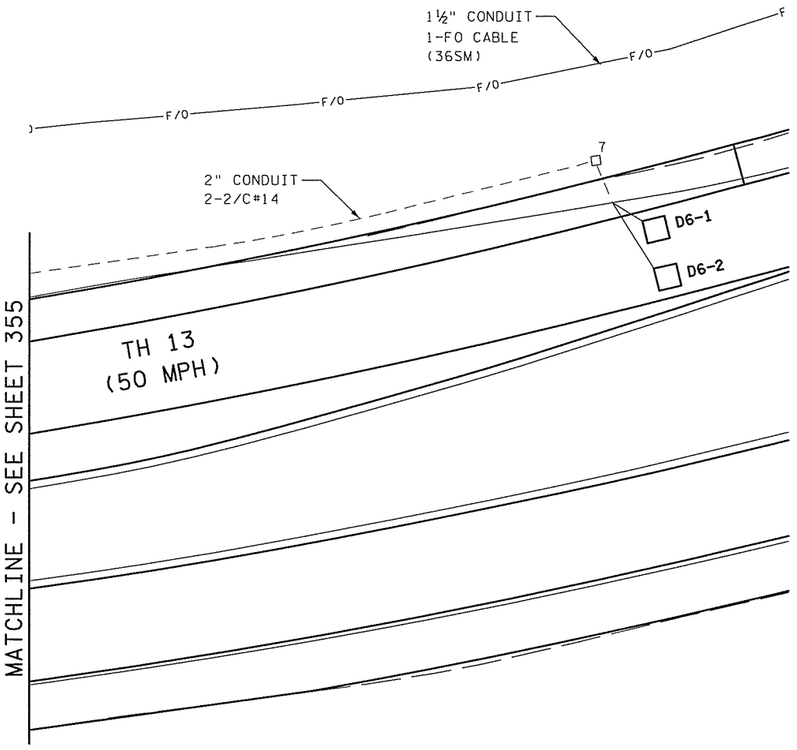
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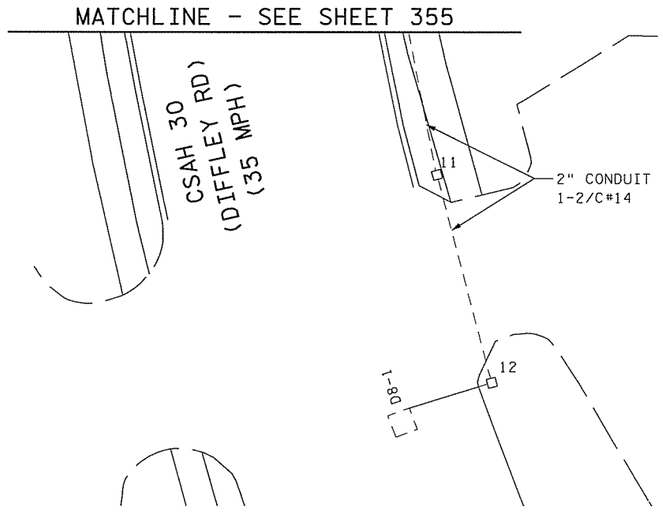
TH 13
BETTER ROADS
PRESERVATION PROJECT

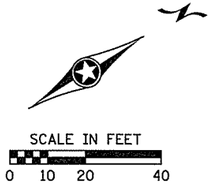
NOTES
REVISE SIGNAL SYSTEM G
TH 13 AND CSAH 30 (DIFFLEY RD/CEDARBRIDGE AVE)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 356 of 393 Sheets









SYSTEM ID: 20299 T.E. N/A
METER ADDRESS: 10901 SOUTHVIEW DR

DATE: 1/26/2012 TIME: 9:18:42 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-shf\cd190l168_ml07b.dgn

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	MATCHLINE LAYOUTS REVISE SIGNAL SYSTEM G TH 13 AND CSAH 30 (DIFFLEY RD/CEDARBRIDGE AVE)	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 357 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:46 AM
FILENAME: K:\g-m\MnDOT\V4968000\wy-brdg\hwy\plr-sht\cdl901168_wd07.dgn

CONTROLLER CABINET

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (WITH BATTERIES).
3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.

SYSTEM ID: 20299 T.E. N/A
METER ADDRESS: 10901 SOUTHVIEW DR

DRAWN BY: MTH	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. SIGNATURE: PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880
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TH 13 BETTER ROADS PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM G
TH 13 AND CSAH 30 (DIFFLEY RD/CEDARBRIDGE AVE)

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 358 of 393 Sheets

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1	2-6'x6'	40'	PVC
D1-2	2-6'x6'	10'	PVC
F&I: D2-1, D2-2	**1-6'x6'**	**475'**	**PVC**
D3-1, D3-2	1-6'x6'	40'	PVC
D3-3, D3-4	1-6'x6'	10'	PVC
D4-1	1-6'x6'	300'	PVC
D4-2	2-6'x6'	5', 20'	PVC
D4-3, D4-4	1-6'x15'	0'	PVC
D5-1	2-6'x6'	40'	PVC
D5-2	2-6'x6'	10'	PVC
F&I: D6-1, D6-2	**1-6'x6'**	**475'**	**PVC**
D7-1, D7-2	1-6'x6'	40'	PVC
D7-3, D7-4	1-6'x6'	10'	PVC
D8-1, D8-2	1-6'x6'	200'	PVC
D8-3, D8-4	2-6'x6'	5', 20'	PVC
D8-5	1-6'x6'	0'	PVC

-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE TO FRONT OF DETECTOR IN FEET

MATCHLINE - SEE SHEET 361

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 10:
2" PVC
INSTALL FROM HH 10: 1-3/C#12

2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB6-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 14:
2" PVC
INSTALL FROM HH 14: 1-3/#12

1½" PVC
1-FO CABLE
(36SM)

1-FO SPLICE VAULT

SILVER BELL RD (35 MPH)

4" RSC
3-12/C#12
3-3/C#12
1-3/C#12 (LUM)
1-3/C#20
3-2/C#14

F&I: 1-2/C#14
1-4/C#14

1½" PVC
1-FO PIGTAIL
(12SM)

2" PVC
2-3/C#12 (LUM)
1-3/C#14 (CAMERA POWER)

F&I: APS PED PUSHBUTTON STATION (PB4-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 10:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB8-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 1:
2" PVC
1-2/C#14

2" PVC
2-12/C#14
1-6PR#19
(ABANDONED

3" RSC
2-2/C#14

4" RSC
4-12/C#12
3-3/C#12
1-3/C#12 (LUM)
1-3/C#20
10-2/C#14

F&I: 1-2/C#14
1-4/C#14

3 + 8 EVP

4" RSC
6-12/C#12
3-3/C#12
13-2/C#14
2-3/C#12 (LUM)
2-3/C#20
1-6PR#19
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5P PR#24 (COM CABLE)

F&I: 3-2/C#14
2-4/C#14
ABANDON: 2-3/C#12

TH 13
(55 MPH)

1 + 6 EVP

D5-2
D5-1

D1-2
D1-1

2 + 5 EVP

3" RSC
3-12/C#12
1-2/C#12
1-3/C#12 (LUM)
6-2/C#14

F&I: 2-2/C#14
2-4/C#14
ABANDON: 1-3/C#12

4 + 7 EVP

4" RSC
5-12/C#12
3-3/C#12
11-2/C#14
2-3/C#12 (LUM)
2-3/C#20
1-6PR#19
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5P PR#24 (COM CABLE)

4" RSC
3-12/C#12
1-3/C#12
1-3/C#12 (LUM)
11-2/C#14
1-6PR#19

F&I: 3-2/C#14
2-4/C#14
ABANDON: 1-3/C#12

F&I: 3-2/C#14
2-4/C#14
ABANDON: 2-3/C#12

3 + 8 EVP

2" PVC
2-2/C#14
1-6PR#19
(TO SILVER BELL RD
AT CEDARVALE)

F&I: APS PED PUSHBUTTON STATION (PB8-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 1A:
2" PVC
INSTALL FROM HH 1A: 1-3/C#12

F&I: APS PED PUSHBUTTON STATION (PB2-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 5:
2" PVC
1-2/C#14

F&I: APS PED PUSHBUTTON STATION (PB2-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 8:
2" PVC
1-2/C#14

3" RSC
3-12/C#12
1-3/C#12
1-3/C#12 (LUM)
2-2/C#14

F&I: 2-2/C#14
2-4/C#14
ABANDON: 1-3/C#12

1¼" RSC
2-2/C#14

2" PVC
2-2/C#14

F&I: 1-2/C#14
2-4/C#14

CONNECT I/C#6 I.N.S. GR TO RSC IN HH 2

MATCHLINE - SEE SHEET 360

MATCHLINE - SEE SHEET 360

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

SIGNAL HEAD PHASING

FACE / PHASE

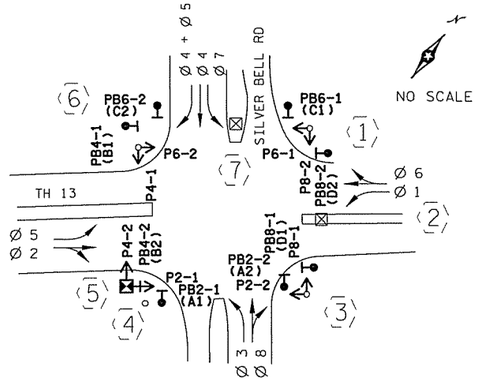
(4-1) R, Y, G → 4
(Y→), (G→) → 5

SIGNAL FACE CHART

FACE	R	Y	G	YRTA	GRTA
1-1, 1-2, 1-3	←	←	←		
2-1, 2-2, 2-3, 2-4	○	○	○		
3-1	←	←	←		
3-2	◄	◄	◄		
4-1	○	○	○	→	→
4-2, 4-3	○	○	○		
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3, 6-4	○	○	○		
7-1, 7-2	←	←	←		
8-1, 8-2, 8-3	○	○	○		

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- NORMAL OPERATION IS 8 PHASE
- FLASH MODE IS ALL RED
- Ø 1, Ø 3, Ø 5, Ø 7 SHALL BE PROTECTED LEFT TURNS
- Ø 2 AND Ø 6 SHALL BE ON VEHICLE RECALL.

SCALE IN FEET
0 10 20 40

SYSTEM ID: 20300 T.E. 5505
METER ADDRESS: 1999 SILVER BELL RD

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM H
TH 13 AND SILVER BELL RD

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 359 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:49 AM
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(A) EQUIPMENT PAD
SERVICE CABINET
CABINET AND CONTROLLER
4" RSC TO HH 1
3" RSC TO HH 1
6-12/C#12
3-3/C#12
15-2/C#14
2-3/C#20
2-6PR#19
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
F&I: 4-2/C#14
2-4/C#14
ABANDON: 2-3/C#12
2" RSC STUB OUT
3" RSC STUB OUT
FO PIGTAIL (12SM)
2" RSC TO SERVICE CABINET
2-1/C#6
1-1/C#6 INS. GR.
SERVICE CABINET TO HH 14
2" RSC
4-3/C#12 (LUM)
1-3/C#14 (CAMERA POWER)
SERVICE CABINET TO HH 4
2" RSC
3-1/C#2

4" RSC TO HH 14
6-12/C#12
6-3/C#12
10-2/C#14
2-3/C#20
F&I: 1-2/C#14
1-4/C#14
ABANDON: 1-3/C#12

(B) SOURCE OF POWER
INPLACE GROUND MOUNTED
TRANSFORMER
EXTEND 2" RSC
INTO HH 4 WITH:

(1) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
(0' AND 12' FROM END OF MAST ARM)
TYPE 10B AT 0°
TYPE 10A AT 180°
TYPE 10B AT 270°
REMOVE: 2-PEDESTRIAN INDICATIONS
F&I: 2-CD PEDESTRIAN INDICATIONS
ONE WAY EVP CONFIRMATORY LIGHT (Ø 3 + Ø 8)
ONE WAY EVP DETECTOR (Ø 4 + Ø 7)
LUMINAIRE - 250 WATT HPS
REMOVE: 2-PEDESTRIAN PUSHBUTTONS AND SIGNS (PB6-1,PB8-2)
PLUG HOLES IN POLE (PB6-1, PB8-2)
1-SIGN (D-1) TH 13
3" RSC TO HH 14:
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
1-3/C#20
PULL: 1-3/C#12 INTO HH 14
DISCONNECT AND ABANDON: 1-3/C#12

(2) PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
1-TYPE 6A
3" RSC TO HH 4:
1-12/C#12

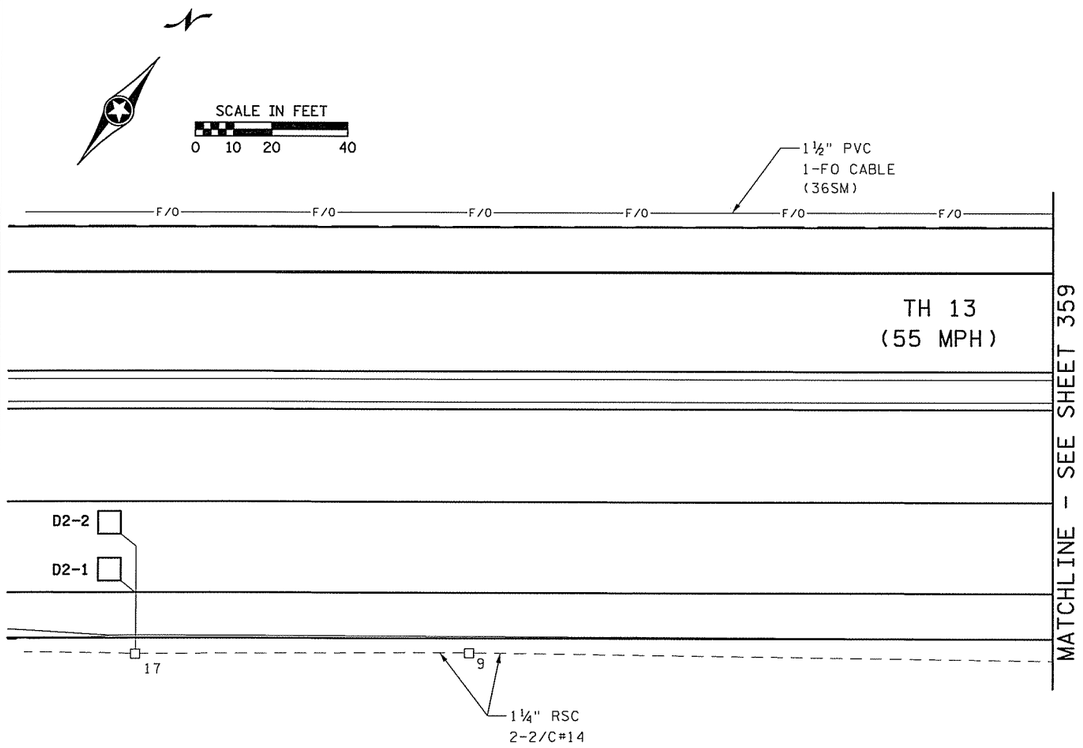
(3) PA100 POLE FOUNDATION
TYPE PA100-A-55-X6-350/CAN (AT 350°)
LUMINAIRE - 250 WATT HPS
2-ONE WAY SIGNALS OVERHEAD
(0' AND 12' FROM END OF MAST ARM)
TYPE 10B AT 0°
TYPE 10B AT 270°
REMOVE: 2-PEDESTRIAN INDICATIONS
F&I: 2-CD PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (Ø 2 + Ø 5)
ONE WAY EVP DETECTOR (Ø 3 + Ø 8)
LUMINAIRE - 250 WATT HPS
REMOVE: 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4b)(PB2-2,PB8-1) PLUG HOLES IN POLES (PB2-2, PB8-1)
1-SIGN (D-2) SILVER BELL RD
1-VIDEO CAMERA #1305 MOUNTED ON
LUMINAIRE EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
3" RSC TO HH 1A:
2-12/C#12
1-3/C#12
1-3/C#12 (LUM)
2-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR.#24 (COM CABLE)
PULL: 1-3/C#12 INTO HH 1A
DISCONNECT AND ABANDON: 1-3/C#12

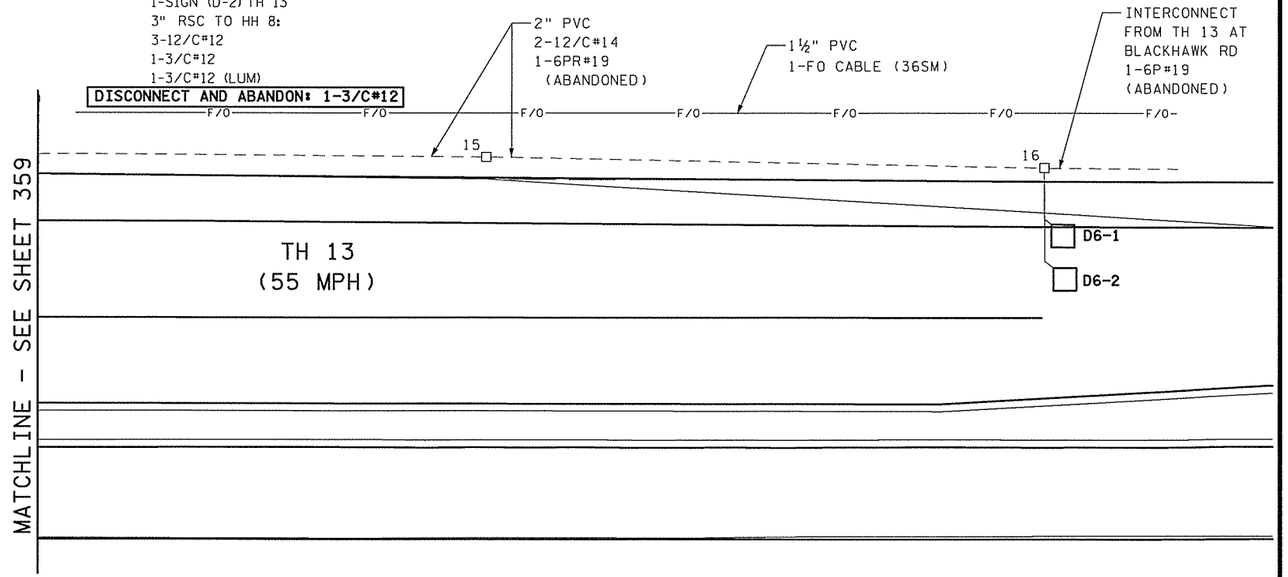
(4) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
(0' AND 18' FROM END OF MAST ARM)
TYPE 10B AT 0°
TYPE 10A AT 180°
TYPE 10A AT 270°
REMOVE: 1-PEDESTRIAN INDICATION
ONE WAY EVP CONFIRMATORY LIGHT (Ø 4 + Ø 7)
LUMINAIRE - 250 WATT HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB2-1)
PLUG HOLE IN POLE (PB2-1)
REMOVE: 1-R9-3a SIGN FACING POLE 6
1-SIGN (D-2) TH 13
3" RSC TO HH 8:
3-12/C#12
1-3/C#12
1-3/C#12 (LUM)
DISCONNECT AND ABANDON: 1-3/C#12

(5) **F&I: PEDESTAL FOUNDATION**
10' PEDESTAL POLE PLUS BASE
2-STRAIGHT MOUNT CD PEDESTRIAN INDICATIONS (P2-1)(P4-2) AT 90 AND 180 DEG.
1-APS PUSHBUTTON (PB4-2)
AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 2:
2" PVC
1-2/C#14
2-4/C#14
1-1/C#6 I.N.S. GR.

(6) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
(0', 12' AND 24' FROM END OF MAST ARM)
TYPE 20B AT 180°
REMOVE: TYPE 10A
1-PEDESTRIAN INDICATION
F&I: TYPE 10B AT 90°
2-CD PEDESTRIAN INDICATIONS
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (Ø 1 + Ø 6)
LUMINAIRE - 250 WATT HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB6-2)
PLUG HOLE IN POLE (PB6-2)
REMOVE: 1-R9-3a SIGN FACING POLE 4
1-SIGN (D-2) SLIVER BELL RD
3" RSC TO HH 10:
3-12/C#12
2-3/C#12
1-3C#12 (LUM)
1-3/C#20
F&I: 1-4/C#14
PULL: 1-3/C#12 INTO HH 10

(7) TYPE 5A
PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
3" RSC TO HH 13:
1-12/C#12





SYSTEM ID: 20300 T.E. 5505
METER ADDRESS: 1999 SILVER BELL RD

DATE: 1/26/2012 TIME: 9:18:51 AM
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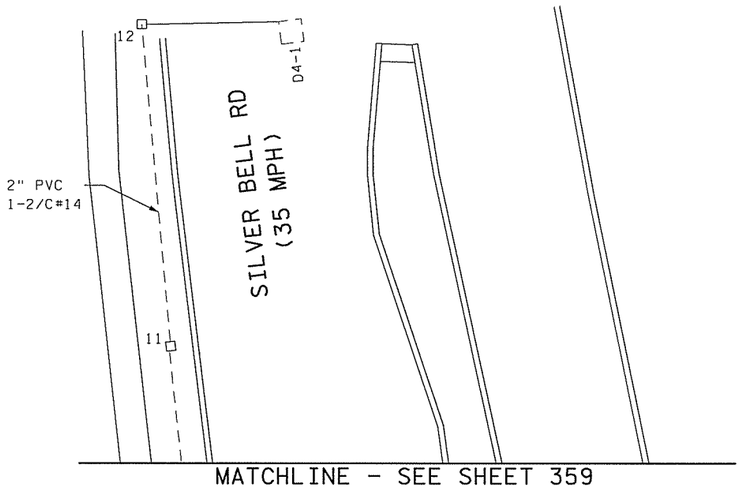
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

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PRESERVATION PROJECT

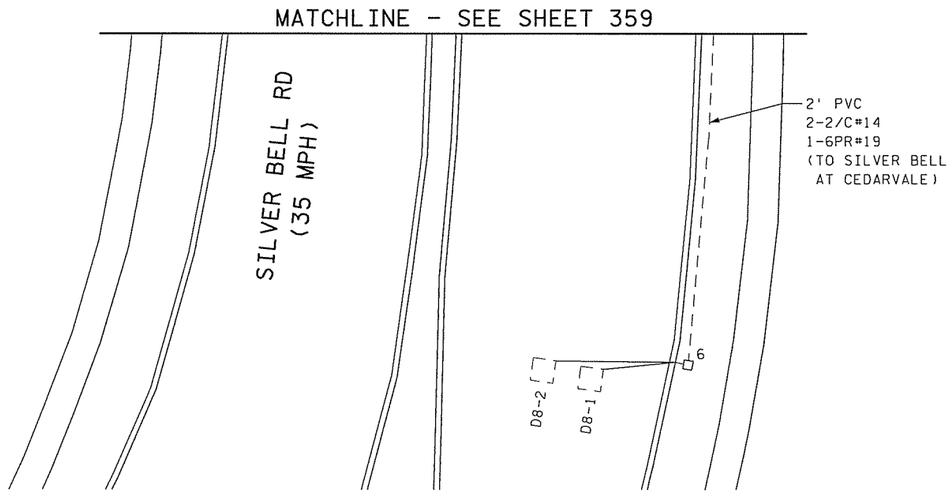
MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM H
TH 13 AND SILVER BELL RD

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 360 of 393 Sheets



MATCHLINE - SEE SHEET 359





MATCHLINE - SEE SHEET 359

SYSTEM ID: 20300 T.E. 5505
METER ADDRESS: 1999 SILVER BELL RD

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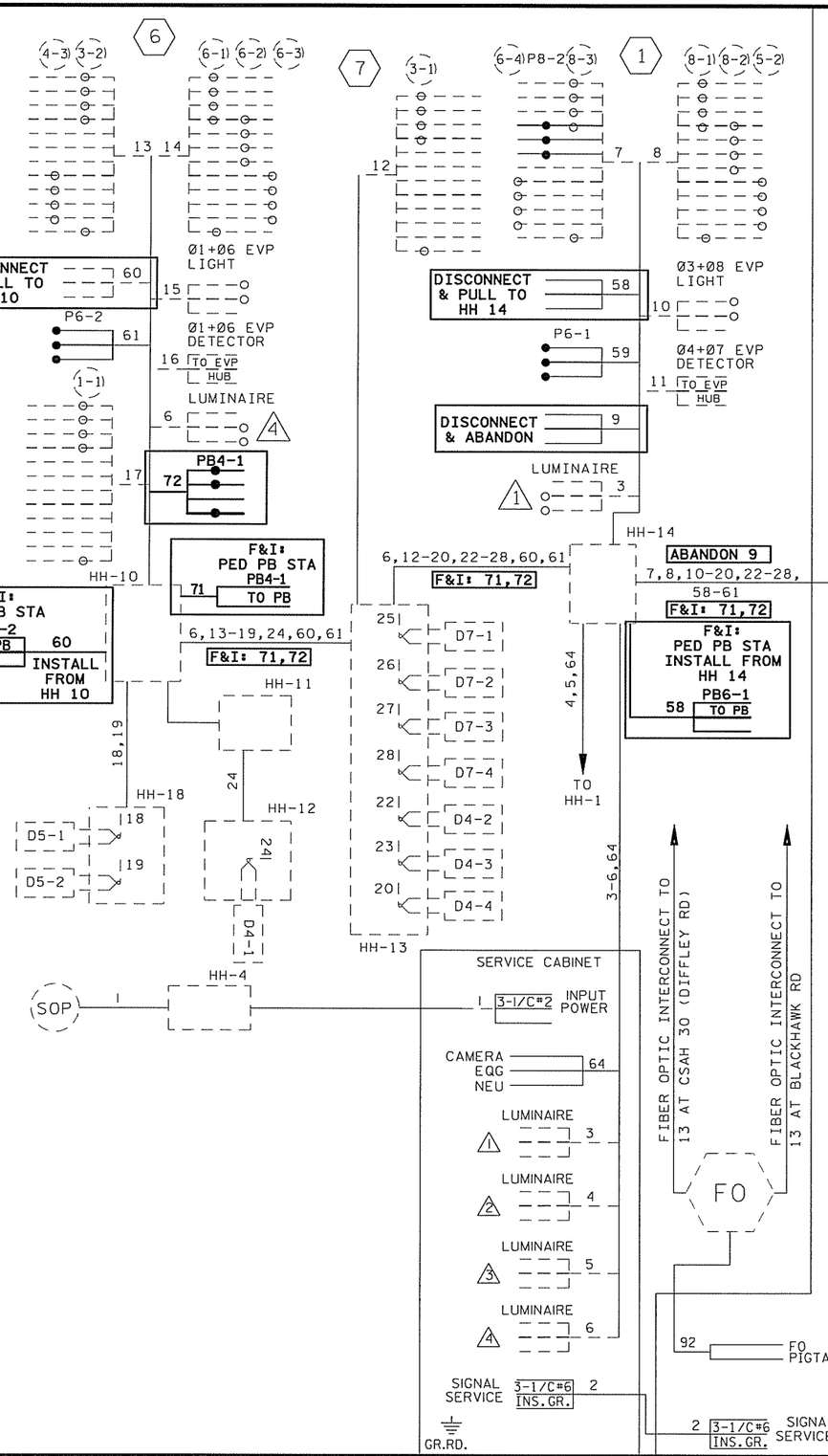
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PRESERVATION PROJECT

MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM H
TH 13 AND SILVER BELL RD

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 361 of 393 Sheets

DATE: 1/26/2012 TIME: 9:18:53 AM
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CONDUCTOR COLOR CODING

3/C#14	BLK, G, WH	
3/C#20	R OR O, WH OR YEL, BLK OR BL	
2/C#14	BLK, CLR OR WH	
3-1/C#2	R, WH, BLK	INPUT POWER
3-1/C#6	BLK, WH, G	SIGNAL SERVICE
COAX		
7.5 PR#24		
6PR#19		
12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	
4/C#18	BLK, WH, RD, G	
3/C#12	R, WH, BLK	
4/C#14	R, BLK/R, BLK, WH	

FOR 4/C#14 SEE POLE BASE CONNECTION DETAIL.

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

SYSTEM ID: 20300 T.E. 5505
METER ADDRESS: 1999 SILVER BELL RD

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SHEET 1 OF 2

DATE: 1/26/2012 TIME: 9:18:55 AM
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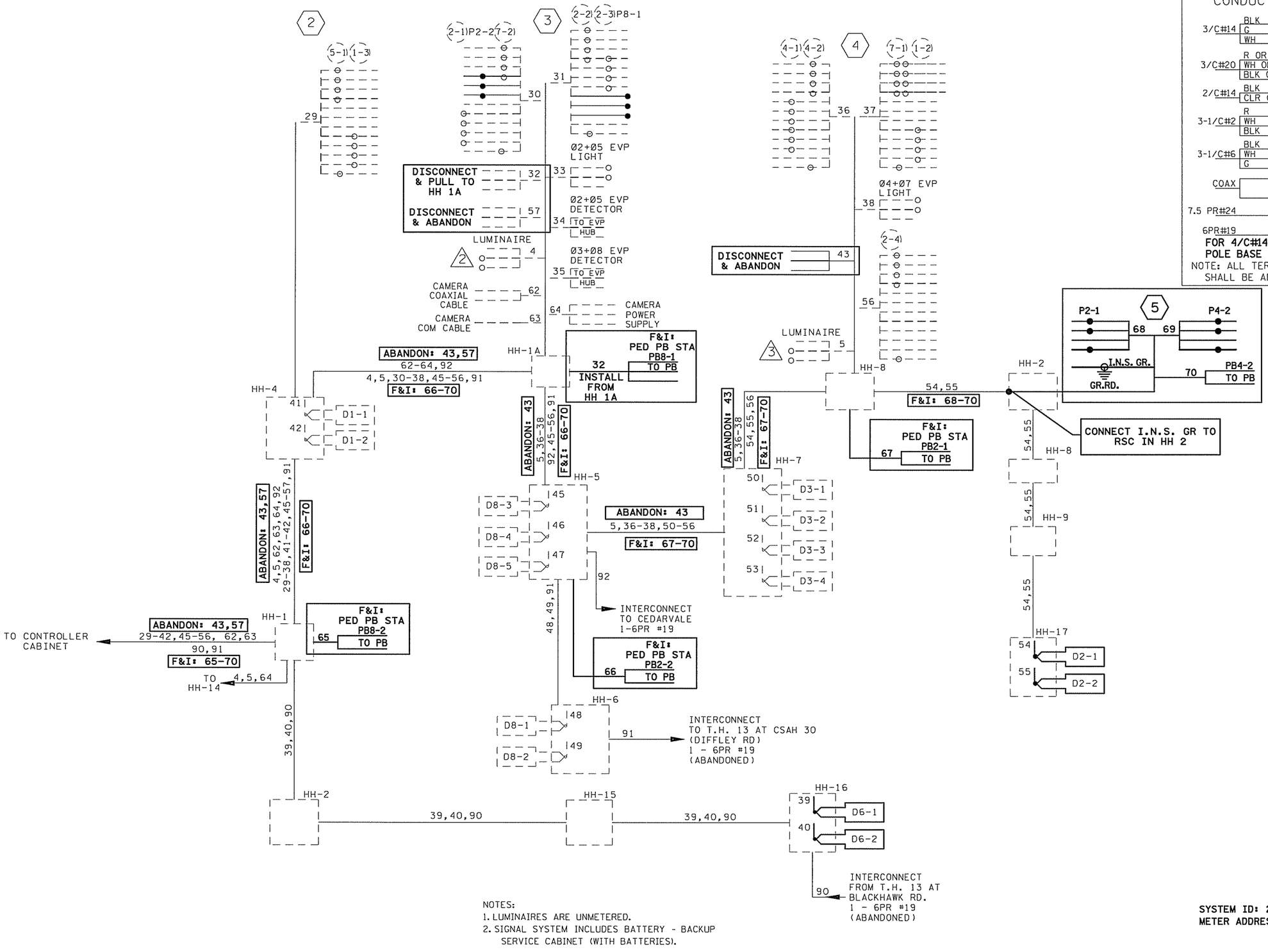
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SIGNATURE:
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

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TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM H
TH 13 AND SILVER BELL RD

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 362 of 393 Sheets



CONDUCTOR COLOR CODING

3/C#14	BLK, G, WH	
3/C#20	R OR O, WH OR YEL, BLK OR BL	
2/C#14	BLK, CLR OR WH	
3-1/C#2	R, WH, BLK	INPUT POWER
3-1/C#6	BLK, WH, G	SIGNAL SERVICE
COAX		
7.5 PR#24		
6PR#19		
12/C#12	R, O, BL, WH, R/BLK, O/BLK, BL/BLK, WH/BLK, BLK, BLK/WH, G/BLK, G	
4/C#18	BLK, WH, RD, G	
3/C#12	R, WH, BLK	
4/C#14	R, BLK/R, BLK, WH	

FOR 4/C#14 SEE POLE BASE CONNECTOR DETAIL

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (WITH BATTERIES).

SYSTEM ID: 20300 T.E. 5505
METER ADDRESS: 1999 SILVER BELL RD

DATE: 1/26/2012 TIME: 9:18:57 AM
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DATE: JANUARY 26, 2012 LIC. NO. 26880

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FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM H
TH 13 AND SILVER BELL RD

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 363 of 393 Sheets

LOOP DETECTOR CHART

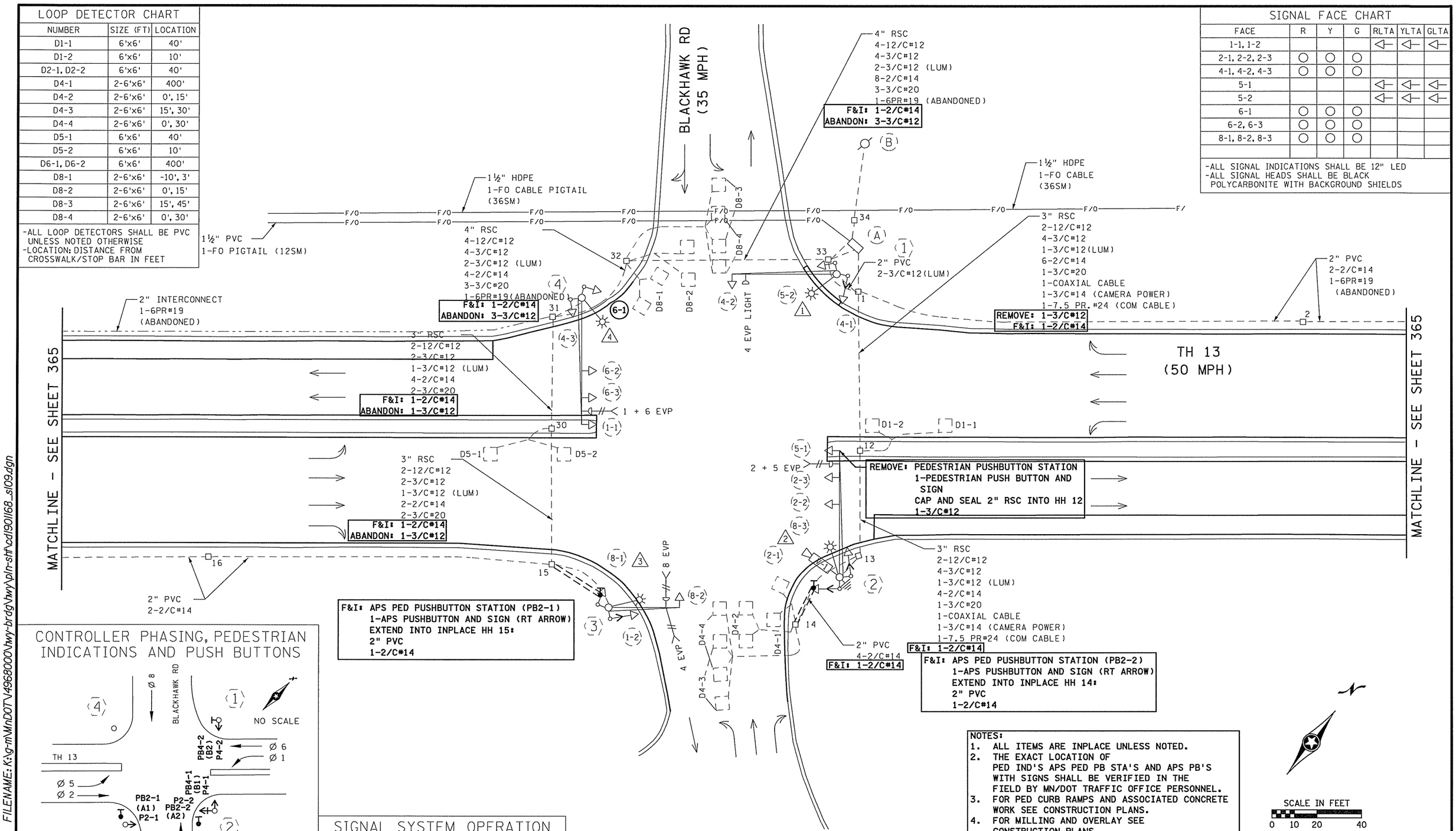
NUMBER	SIZE (FT)	LOCATION
D1-1	6'x6'	40'
D1-2	6'x6'	10'
D2-1, D2-2	6'x6'	40'
D4-1	2-6'x6'	400'
D4-2	2-6'x6'	0', 15'
D4-3	2-6'x6'	15', 30'
D4-4	2-6'x6'	0', 30'
D5-1	6'x6'	40'
D5-2	6'x6'	10'
D6-1, D6-2	6'x6'	400'
D8-1	2-6'x6'	-10', 3'
D8-2	2-6'x6'	0', 15'
D8-3	2-6'x6'	15', 45'
D8-4	2-6'x6'	0', 30'

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

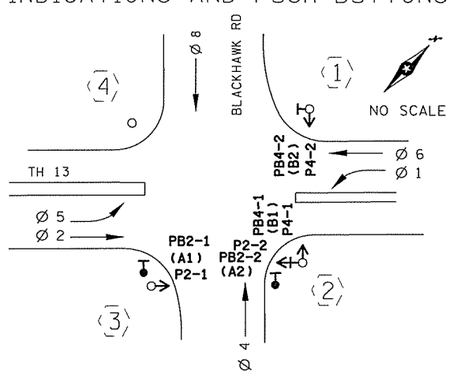
SIGNAL FACE CHART

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2				⇦	⇦	⇦
2-1, 2-2, 2-3	○	○	○			
4-1, 4-2, 4-3	○	○	○			
5-1				⇦	⇦	⇦
5-2				⇦	⇦	⇦
6-1	○	○	○			
6-2, 6-3	○	○	○			
8-1, 8-2, 8-3	○	○	○			

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- FLASH MODE SHALL BE ALL RED
- NORMAL OPERATION IS 5 PHASE
- Ø 1 AND Ø 5 SHALL PROTECTED LEFT TURNS
- Ø 2 AND Ø 6 SHALL BE ON VEHICLE RECALL

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

SCALE IN FEET
0 10 20 40

SYSTEM ID: 22270 T.E. 5506
METER ADDRESS: 3600 HWY 13

DATE: 1/26/2012 TIME: 9:18:59 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cd\901168_sl09.dgn

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DATE: JANUARY 26, 2012 LIC. NO. 26880

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TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM I
TH 13 AND BLACKHAWK RD

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 364 of 393 Sheets

(A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER & CABINET (STATE FURNISHED)
4" RSC TO HH 1:
4-12/C#12
7-3/C#12
8-2/C#14
1-3/C#20
1-6PR#19 (ABANDONED)
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
REMOVE: 1-3/C#12
F&I: 1-2/C#14
1" RSC STUB OUT
3" RSC STUB OUT
1 1/2" PVC TO FO SPLICE VAULT:
1-FO PIGTAIL (12SM)
SERVICE CABINET TO CONTROLLER CABINET:
2" RSC
2-1/C#6
1-1/C#6 INS. GR.
2" RSC INTO HH 1:
4-3/C#12 (LUM)
1-3/C#14 (CAMERA POWER)
2" RSC TO HH 34:
3-1/C#2

4" RSC TO HH 33:
4-12/C#12
4-3/C#12
8-2/C#14
3-3/C#20
1-6PR#19 (ABANDONED)
F&I: 1-2/C#14
ABANDON: 3-3/C#12

(B) SOURCE OF POWER
INPLACE NSP WOOD POLE
2" RISER AND WEATHERHEAD
WITH 3-1/C#2
3" RSC TO HH 34:
3-1/C#3

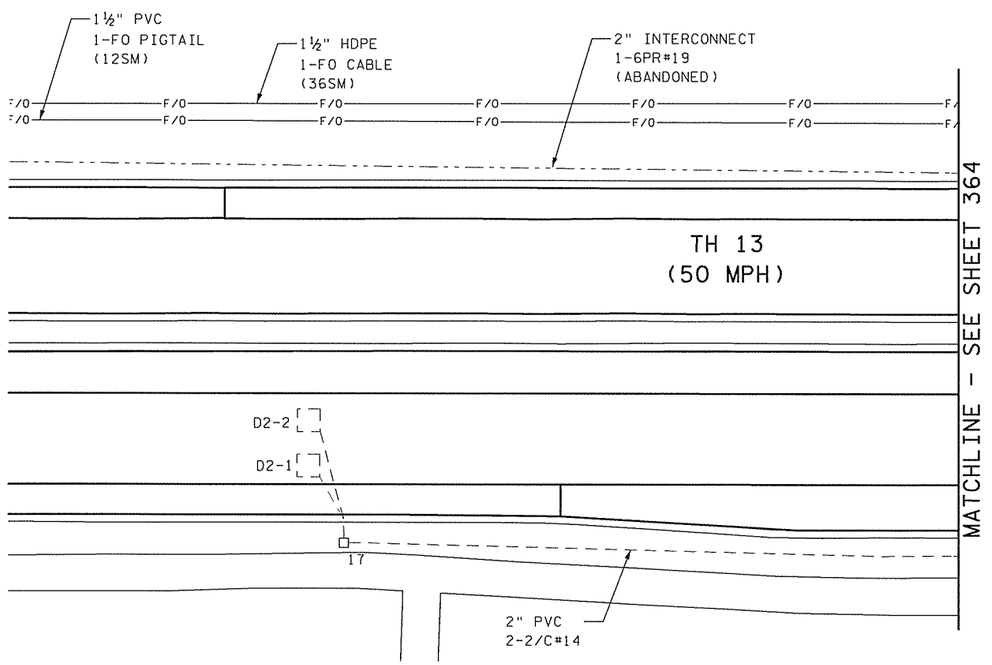
(1) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
ONE WAY EVP LIGHT
(6' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 180°
F&I: 1-CD PEDESTRIAN INDICATION (P4-2)
CONVERT: TYPE 10B POLE MOUNTED AT 90° TO 10A
REMOVE: 1-PEDESTRIAN INDICATION (P6-1)

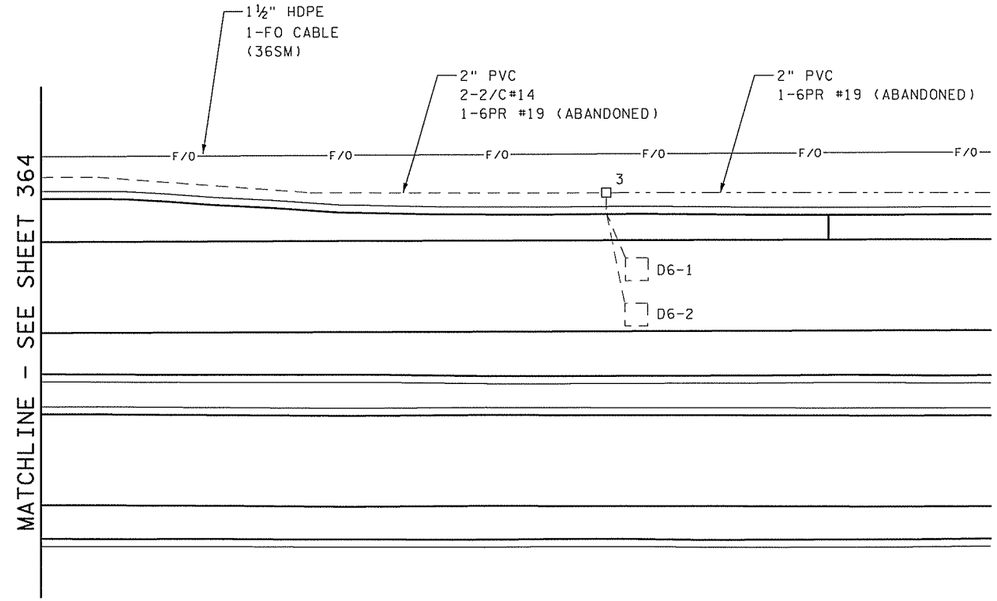
LUMINAIRE - 250 WATT HPS
REMOVE: 2-PEDESTRIAN PUSH BUTTONS AND SIGN (R10-4b)(PB4-2,PB6-1) PLUG HOLE IN POLE (PB6-1)
F&I: 1-APS PED PUSH BUTTON (PB4-2) AND SIGN (RT ARROW) 1-R9-3a SIGN FACING POLE 4
EXTEND 3" RSC INTO HH 1 WITH:
2-12/C#12
3-3/C#12
1-3/C#12 (LUM)

(2) PA101 POLE FOUNDATION
TYPE PA100-A-55-X-6350/CAM 400 AT 351°
LUMINAIRE - 250 WATT HPS
3-ONE WAY SIGNALS OVERHEAD
(0', 12' AND 24' FROM END OF MAST ARM)
ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
REMOVE: 2-PEDESTRIAN INDICATIONS
F&I: 2-CD PEDESTRIAN INDICATIONS (P2-2, P4-1)
LUMINAIRE - 250 WATT HPS
REMOVE: 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (PB2-2, PB4-1) PLUG HOLE IN POLE (PB2-2)
F&I: 1-APS PED PUSH BUTTON (PB4-1) AND SIGN (LT ARROW)
1-VIDEO CAMERA #1304 MOUNTED ON LUMINAIRE EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
EXTEND 3" RSC INTO HH 13 WITH:
2-12/C#12
4-3/C#12
1-3/c#12 (LUM)
1-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR.#24 (COM CABLE)

(3) PA100 POLE FOUNDATION
TYPE PA100-A-30-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT
ONE WAY EVP DETECTOR
(6' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 10A POLE MOUNTED AT 180°
REMOVE: 1-PEDESTRIAN INDICATION
F&I: 1-CD PEDESTRIAN INDICATION (P2-1)
LUMINAIRE - 250 WATT HPS
REMOVE: 1-PEDESTRIAN PUSH BUTTON AND SIGN (PB2-1) PLUG HOLE IN POLE (PB2-1)
1-R9-3a SIGN FACING POLE 4
EXTEND 3" RSC INTO HH 15 WITH:
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
2-3/C#20
DISCONNECT & ABANDON: 1-3/C#12

(4) PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
(0', 12' AND 24' FROM END OF MAST ARM)
ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
TYPE 10A POLE MOUNTED AT 90°
CONVERT: TYPE 10B POLE MOUNTED AT 180° TO 10A
REMOVE: 1-PEDESTRIAN INDICATION (P6-2)
LUMINAIRE - 250 WATT HPS
REMOVE: 1-PEDESTRIAN PUSH BUTTON AND SIGN (PB6-2) PLUG HOLE IN POLE (PB6-2)
1-R9-3a SIGN FACING POLE 3
F&I: 1-R9-3A SIGN FACING POLE 1
EXTEND 3" RSC INTO HH 3 WITH:
2-12/C#12
2-3/C#12
1-3C#12 (LUM)
1-3/C#20
DISCONNECT & ABANDON: 2-3/C#12





SCALE IN FEET
0 10 20 40

SYSTEM ID: 22270 T.E. 5506
METER ADDRESS: 3600 HWY 13

DRAWN BY: MTH
CHECKED BY: BDP

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SIGNATURE: Brent D. Paulsen
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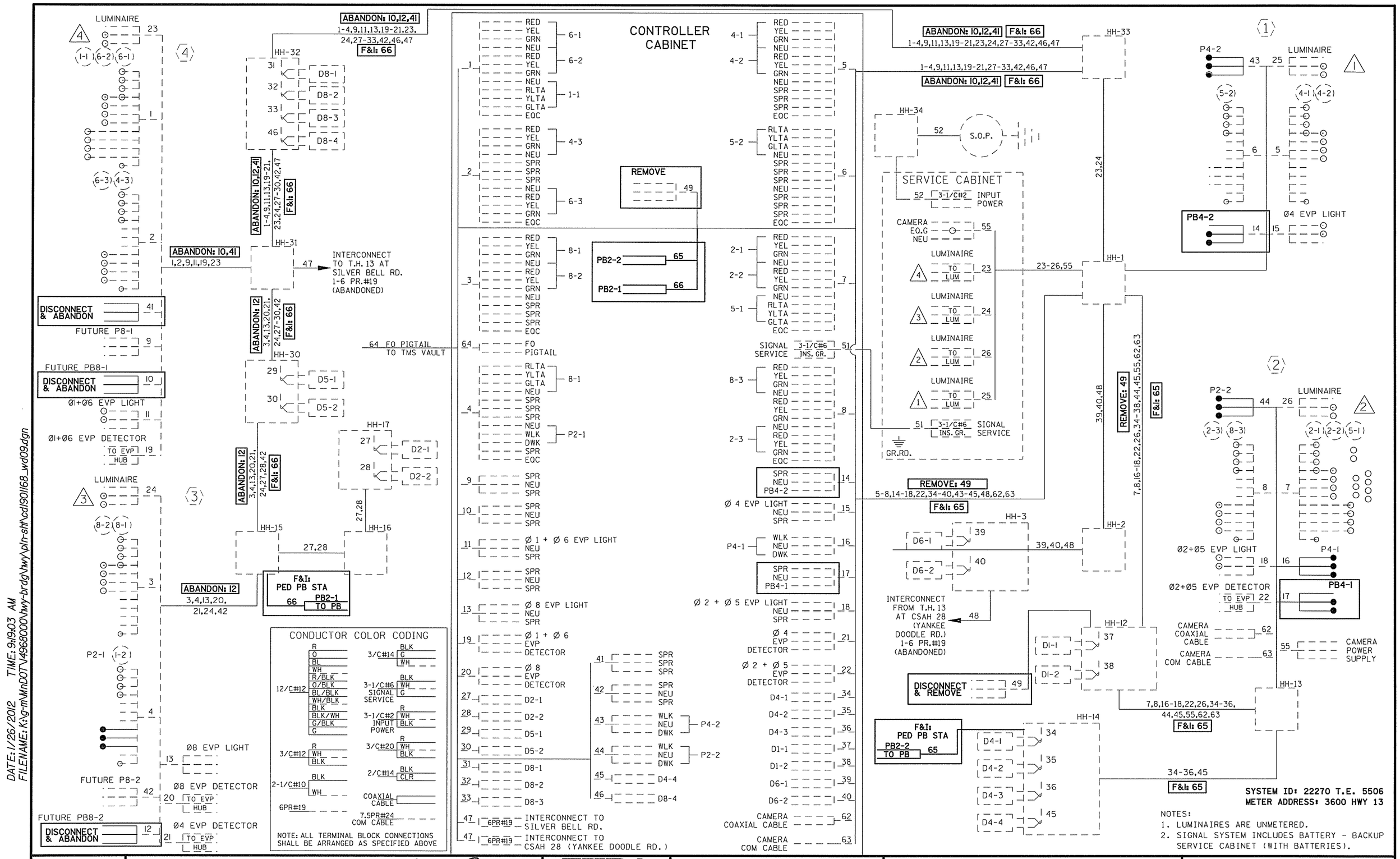
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TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM I
TH 13 AND BLACKHAWK RD

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 365 of 393 Sheets

DATE: 1/26/2012 TIME: 9:19:01 AM
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DATE: 1/26/2012 TIME: 9:9:03 AM
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TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM I
TH 13 AND BLACKHAWK RD

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 366 of 393 Sheets

F&I: APS PED PUSHBUTTON STATION (PB6-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 2:
2" PVC
1-2/C#14

F&I: 2" PVC
INSTALL FROM INPLACE HH 18 THRU
NEW HH 14 TO CABINET:
2-3/C#12
1-3/C#14 (CAMERAL POWER)

3" RSC
4-12/C#12
4-3/C#12
2-3/C#12 (LUM)
7-2/C#14
2-3/C#20
ABANDON: 1-3/C#12
F&I: 2-2/C#14

3" RSC
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
6-2/C#14
1-3/C#20
F&I: 1-2/C#14

3" RSC
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
4-2/C#14
1-3/C#20
F&I: 1-2/C#14

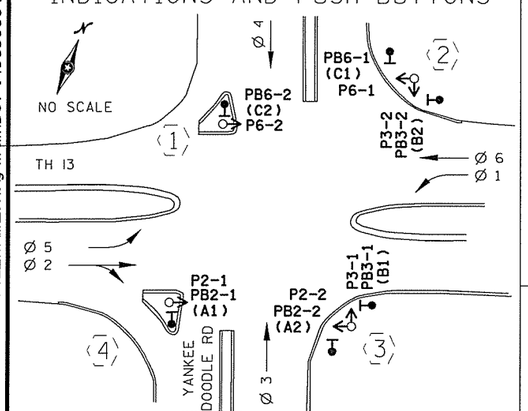
F&I: APS PED PUSHBUTTON STATION (PB6-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 4:
2" PVC
INSTALL FROM HH 4: 1-3/C#12

F&I: APS PED PUSHBUTTON STATION (PB3-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 4:
2" PVC
1-2/C#14

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

FO SPLICE VAULT
1½" HDPE
1-FO PIGTAIL
(36SM)
1½" PVC
1-FO CABLE
(12SM)
ABANDON: 2" PVC
DISCONNECT IN CABINET
PULL BACK TO INPLACE HH 18
2-3/C#12
1-3/C#14 (CAMERA POWER)
ADJUST HANDHOLE
F&I: HH 14
REMOVE HANDHOLE
3" RSC
2-2/C#14
REMOVE: 1-3/C#12
REMOVE: PUSH BUTTON FOUNDATION
PUSH BUTTON PEDESTAL
1-PEDESTRIAN PUSH BUTTON AND SIGN
1-3/C#12
CAP AND SEAL 2" RSC
2" PVC
2-2/C#14
4" RSC
F&I: 4" RSC STUB TO NEW HH 14
DISCONNECT IN CABINET
PULL BACK TO INPLACE HH 18
AND INSTALL THRU NEW HH 14:
3-12/C#12
7-3/C#12
2-3/C#12 (LUM)
10-2/C#14
1-6PR#19
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
F&I: 1-2/C#14
1 + 6 EVP
2 + 5 EVP
4 EVP
3 EVP
D1-1
D1-2
D5-1
D5-2
D4-1
D4-2
D4-3
D3-1
D3-2
D3-3
D3-4
D3-5
D3-6
TH 13 (SIBLEY MEMORIAL HWY)
(50 MPH)
(30 MPH)
CSAH 28
(YANKEE DOODLE RD)
(45 MPH)
MATCHLINE - SEE SHEET 368
MATCHLINE - SEE SHEET 368
F&I: APS PED PUSHBUTTON STATION (PB3-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTOINPLACE HH 8:
2" PVC
1-3/C#12
ADJUST HANDHOLE
REMOVE HANDHOLE
3" RSC
F&I: 3" RSC STUB TO NEW HH 9
PULL BACK TO INPLACE HH 8
AND INSTALL THRU NEW HH 9:
1-2/C#14
F&I: HH 9
2" PVC
PULL BACK TO INPLACE HH 8
AND INSTALL THRU NEW HH 9:
1-2/C#14
CUT AND REMOVE INPLACE
2" PVC STUB
F&I: 2" PVC STUB TO NEW HH 9
2" PVC
2-2/C#14
4" RSC
3-12/C#12
7-3/C#12
2-3/C#12 (LUM)
8-2/C#14
1-6PR#19
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
F&I: 1-2/C#14
3" RSC
2-2/C#14
1-6PR#19
3" RSC
2-12/C#12
3-3/C#12
1-3/C#12 (LUM)
6-2/C#14
1-3/C#20
F&I: 1-2/C#14
2" RSC
1-6PR#19
F&I: APS PED PUSHBUTTON STATION (PB2-1)
1-APS PUSHBUTTON AND SIGN (LT ARROW)
EXTEND INTO INPLACE HH 17:
2" PVC
INSTALL FROM HH 17: 1-3/C#12
F&I: APS PED PUSHBUTTON STATION (PB2-2)
1-APS PUSHBUTTON AND SIGN (RT ARROW)
EXTEND INTO INPLACE HH 8:
2" PVC
INSTALL FROM HH 8: 1-3/C#12

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SCALE IN FEET
0 10 20 40

SIGNAL SYSTEM OPERATION

- FLASH MODE SHALL BE ALL RED
- NORMAL OPERATION IS 6 PHASE
- Ø 1 AND Ø 5 SHALL PROTECTED LEFT TURNS
- Ø 2 AND Ø 6 SHALL BE ON VEHICLE RECALL
- Ø 3 & Ø 4 SHALL BE SPLIT PHASE

SYSTEM ID: 20301 T.E. 5507
METER ADDRESS: 3401 SIBLEY MEMORIAL HWY

SIGNAL FACE CHART

FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2				◁	◁	◁
2-1, 2-2, 2-3	○	○	○			
3-1	○	○	○			
3-2	○	○	○			
3-3, 3-4	○				◁	◁
4-1	○	○	○			
4-2	○	○	○			◁
4-3	○				◁	◁
5-1, 5-2				◁	◁	◁
6-1, 6-2, 6-3	○	○	○			

LOOP DETECTOR CHART

DESIGNATION	SIZE	DISTANCE TO CROSSWALK	TYPE
F&I: D1-1	**6'x6'**	**40'**	PVC
F&I: D1-2	**6'x6'**	**10'**	**PVC**
F&I: D2-1, D2-2	**6'x6'**	**400'**	**PVC**
D3-1	3-6'x6'	200'	SAW
F&I: D3-2	**2-6'x6'**	**0', 15'**	**PVC**
F&I: D3-3, D-4	**6'x6'**	**40'**	**PVC**
F&I: D3-5, D3-6	**6'x6'**	**10'**	**PVC**
D4-1	6'x6'	40'	SAW
D4-2	2-6'x6'	0', 15'	SAW
D4-3	6'x6'	10'	SAW
F&I: D5-1	**6'x6'**	**40'**	**PVC**
F&I: D5-2	**6'x6'**	**10'**	**PVC**
F&I: D6-1, D6-2	**6'x6'**	**400'**	**PVC**

DATE: 1/26/2012 TIME: 9:19:05 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\cd190l168_sl10.dgn

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM J
TH 13 AND CSAH 28 (YANKEE DOODLE RD)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 367 of 393 Sheets

(A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER & CABINET
4" RSC TO HH 14 WITH:
DISCONNECT IN CABINET,
PULL BACK TO INPLACE HH 18,
AND INSTALL THRU NEW HH 14:
3-12/C#12
7-3/C#12
10-2/C#14
2-3/C#20
2-6PR#19
1-COAXIAL CABLE
1-7.5 PR.#24 (COM CABLE)
1-3" RSC STUB OUT
1-FO PIGTAIL (12SM)
F&I: 1-2/C#14
4" RSC TO HH 1 WITH:
4-12/C#12
4-3/C#12
7-2/C#14
2-3/C#20
ABANDON: 1-3/C#12
F&I: 2-2/C#14

(B) SERVICE CABINET
EXTEND 2" RSC INTO
CONTROLLER AND CABINET WITH:
2-1/C#7
1-1/C#6 INS. GR.
EXTEND 2" RSC INTO HH 1 WITH:
2-3/C#13 (LUM)
DISCONNECT IN CABINET,
PULL BACK TO INPLACE HH 18,
AND INSTALL THRU NEW HH 14:
2-3/C#14 (LUM)
1-3/C#14 (CAMERA POWER)
EXTEND 2" RSC INTO HH 13 WITH:
3-1/C#3

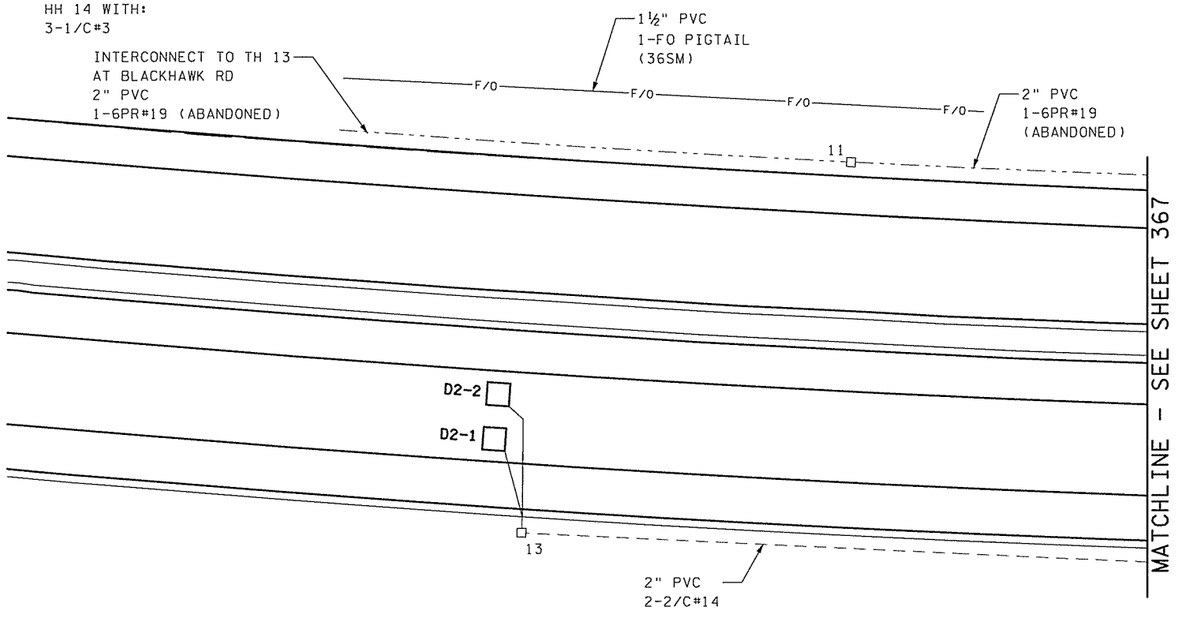
(C) SOURCE OF POWER
INPLACE NSP WOOD POLE
2" RSC RISER AND
WEATHERHEAD WITH:
3-1/C#2
EXTEND 3" RSC INTO
HH 14 WITH:
3-1/C#3

(1) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
(0', 12' AND 24' FROM END OF MAST ARM)
ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
TYPE 10A POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
REMOVE: 1-PEDESTRIAN INDICATION
F&I: 1-CD PEDESTRIAN INDICATION (P6-2)
LUMINAIRE - 250 WATT HPS
REMOVE: PEDESTRIAN PUSHBUTTON AND SIGN (PB6-2)
PLUG HOLE IN POLE (PB6-2)
1-R9-3a SIGN FACING POLE 4
EXTEND 3" RSC INTO HH 2 WITH:
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
1-3/C#20
DISCONNECT & ABANDON: 1-3/C#12

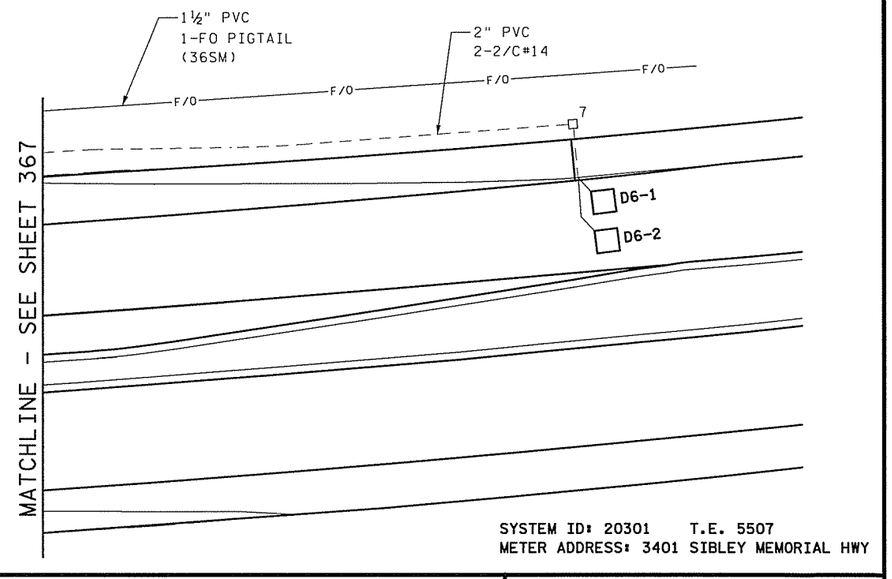
(2) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
(0', 12' AND 24' FROM END OF MAST ARM)
ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
REMOVE: 2-PEDESTRIAN INDICATIONS
F&I: 2-CD PEDESTRIAN INDICATIONS (P3-2)(P6-1)
LUMINAIRE - 250 WATT HPS
REMOVE: 2-PEDESTRIAN PUSH BUTTONS AND SIGNS (PB3-2,PB6-1)
PLUG HOLES IN POLE (PB3-2,PB6-1)
EXTEND 3" RSC INTO HH 4 WITH:
2-12/C#12
1-3/C#12
1-3/C#12 (LUM)
1-3/C#20
PULL: 1-3/C#12 INTO HH 4
DISCONNECT & REMOVE: 1-3/C#12 LEAVING POLE 2

(3) PA100 POLE FOUNDATION
TYPE PA100-A-45-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
(0', 12' AND 24' FROM END OF MAST ARM)
ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 10B POLE MOUNTED AT 180°
REMOVE: 2-PEDESTRIAN INDICATIONS
F&I: 2-CD PEDESTRIAN INDICATIONS (P2-2,P3-1)
LUMINAIRE - 250 WATT HPS
REMOVE: 2-PEDESTRIAN PUSH BUTTONS AND SIGNS(PB2-2,PB3-1)
PLUG HOLES IN POLE (PB2-2,PB3-1)
EXTEND 3" RSC INTO HH 8 WITH:
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
1-3/C#20
PULL: 1-3/C#12 INTO HH 8

(4) PA91 POLE FOUNDATION
TYPE PA90-A-30-X-350/CAM 400 AT 351°)
LUMINAIRE - 250 WATT HPS
ONE WAY SIGNAL OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 10A POLE MOUNTED AT 180°
REMOVE: 1-PEDESTRIAN INDICATION
F&I: 1-CD PEDESTRIAN INDICATION (P2-1)
LUMINAIRE - 250 WATT HPS
REMOVE: 1-PEDESTRIAN PUSH BUTTON AND SIGN (PB2-1)
PLUG HOLE IN POLE (PB2-1)
1-R9-3a SIGN FACING POLE 1
1-VIDEO CAMERA #1303 MOUNTED ON
LUMINAIRE EXTENSION
1-VIDEO CAMERA POWER SUPPLY
1-5/8" X 15' GR. RD.
EXTEND 3" RSC INTO HH 17 WITH:
1-12/C#12
3-3/C#12
1-3C#12 (LUM)
1-3/C#20
1-COAXIAL CABLE
1-3/C#14 (CAMERA POWER)
1-7.5 PR#24 (COM CABLE)
PULL: 1-3/C#12 INTO HH 17







SYSTEM ID: 20301 T.E. 5507
METER ADDRESS: 3401 SIBLEY MEMORIAL HWY

DRAWN BY: MTH
CHECKED BY: BDP

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
SIGNATURE:
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

MATCHLINE LAYOUTS AND NOTES
REVISE SIGNAL SYSTEM J
TH 13 AND CSAH 28 (YANKEE DOODLE RD)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 368 of 393 Sheets

DATE: 1/26/2012 TIME: 9:9:08 AM
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DATE: 1/26/2012 TIME: 9:19:10 AM
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CONTROLLER CABINET

RLTA, YLTA, GLTA, NEU — 5-1
RED, YEL, GRN, NEU, WLK, DWK, SPR, EQG — P2-2
RED, YEL, GRN, NEU — 2-1
RED, YEL, GRN — 2-3
NEU, RED, YLTA, GLTA, EQG — 4-3
PB2-2, NEU, SPR
WLK, NEU, DWK — P3-1
Ø2+Ø5 EVP LIGHT: NEU, SPR
Ø2+Ø5 EVP DETECTOR
D3-1
D3-2
D3-3
D3-4
D3-5
D3-6
RLTA, YLTA, GLTA, NEU — 1-2
RED, YEL, GRN, NEU, RED, YEL, GRN, EQG — 4-1, 4-2
WLK, NEU, DWK — P2-1
SPR, NEU, SPR
PB2-1, NEU, SPR
Ø4 EVP LIGHT: NEU, SPR
Ø4 EVP DETECTOR
47 — 6pr #19 — INTERCONNECT TO TH 13 AT BLACKHAWK RD. (ABANDONED)
90 — 6pr #19 — INTERCONNECT TO CSAH 28 (YANKEE DOODLE RD.) AT BLUE CROSS RD.
51 — FO PIGTAIL

1-1: RLTA, YLTA, GLTA, NEU
6-2: RED, YEL, GRN, NEU, WLK, DWK, SPR, EQG — P6-2
6-1: RED, YEL, GRN, NEU
6-3: RED, YEL, GRN
3-4: NEU, RED, YLTA, GLTA, EQG
SPR, NEU, SPR
SPR, NEU, SPR
Ø1+Ø6 EVP LIGHT: NEU, SPR
Ø1+Ø6 EVP DETECTOR
D4-2
5-2: RLTA, YLTA, GLTA, NEU
3-1: RED, YEL, GRN, NEU, WLK, DWK, SPR, EQG — P3-2
3-2: RED, YEL, GRN, NEU
3-3: RED, YLTA, GLTA
P6-1: NEU, WLK, DWK, SPR, EQG
PB6-1, NEU, SPR
Ø3 EVP LIGHT: NEU, SPR
Ø3 EVP DETECTOR
D4-1
D4-3
SIGNAL SERVICE: 3-1/C#6, INS. GR. — 2
INPUT POWER: 3-1/C#2 — 1

PB3-1 — 62
PB3-2 — 61
PB6-2 — 60
D6-1 — 21
D6-2 — 22
DI-1 — 23
DI-2 — 24
CAMERA COAXIAL CABLE — 49
CAMERA COM CABLE — 48

43 — D2-1
44 — D2-2
45 — D5-1
46 — D5-2

CONDUCTOR COLOR CODING

	R	3/C#14	BLK
	O		G
	BL		WH
	WH		
	R/BLK		BLK
	O/BLK	3-1/C#6 SIGNAL SERVICE	WH
12/C#12	BL/BLK		G
	WH/BLK		
	BLK		R
	BLK/WH	3-1/C#2 INPUT POWER	WH
	G/BLK		BLK
	G		
	R		R
3/C#12	WH	3/C#20	WH
	BLK		BLK
	BLK	2/C#14	BLK
2-1/C#10	WH		CLR
		COAXIAL CABLE	
6PR#19		7.5PR#24 COM CABLE	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

HH-8

P2-2 (2-2), (5-1) — 25
P3-1 — 27, 28
DISCONNECT & PULL TO HH 8
LUMINAIRE 3 — 5
Ø2+Ø5 EVP LIGHT — 29
Ø2+Ø5 EVP DETECTOR — 30 — TO EVP HUB
F&I: PED PB STA PB2-2 TO PB 27 — INSTALL FROM HH 8
F&I: PED PB STA PB3-1 TO PB 62
D3-2 — 32
F&I: 62
5,25-32
PULL TO HH 8 & INSTALL THRU NEW HH 9: 31

HH-9

PULL TO HH 8 & INSTALL THRU NEW HH 9: 31
D3-1 — 31
INTERCONNECT TO CSAH 28 (YANKEE DOODLE RD.) @ BLUE CROSS RD. 1-6PR #19

HH-10

HH-11

90
43,44,90

HH-12

43,44

HH-13

D2-1 — 43
D2-2 — 44

HH-14

PULL TO HH 18 & INSTALL THRU NEW HH 14: 48,49,50, 5,6,25-46 90
F&I: 62
DISCONNECT IN CABINET, PULL TO INPLACE HH 18, AND INSTALL THRU NEW HH 14: 25-49,90
F&I: 62
47
INTERCONNECT TO T.H. 13 AT BLACKHAWK RD. 1-6PR #19 (ABANDONED)
TO HH-1
PULL TO HH 18 & INSTALL THRU NEW HH 14: 5,6,50

HH-15

HH-16

33 — D3-3
34 — D3-4
35 — D3-5
36 — D3-6
F&I: 62
5,25-36

HH-17

F&I: PED PB STA PB2-1 40 TO PB — INSTALL FROM HH 17
48,49,50, 5,6,25-44 90
F&I: 62

HH-18

45 — D5-1
46 — D5-2

4

(4-2), (4-1), (1-2)
CAMERA POWER SUPPLY — 50
CAMERA COAXIAL CABLE — 49
CAMERA COM CABLE — 48
P2-1 — 38
SPARE — 39
Ø4 EVP DETECTOR — 42 — TO EVP HUB
40 — DISCONNECT & PULL TO HH 17
Ø4 EVP LIGHT — 41
LUMINAIRE 4 — 6

HH-19

23 — DI-1
24 — DI-2
5 — 16 — REMOVE

1

P6-2 (6-2), (1-1)
(6-1), (6-3), (3-4)
7, 8
DISCONNECT & ABANDON — 9
SPARE — 10
LUMINAIRE 1 — 3
Ø1+Ø6 EVP LIGHT — 11
Ø1+Ø6 EVP DETECTOR — 12 — TO EVP HUB
F&I: PED PB STA PB6-2 TO PB 60
D4-2 — 13
ABANDON: 9 — 3,4,7,8,10-24
F&I: 60,61
4,14-24
F&I: 61
ABANDON: 9 — 7,8,10-24
PULL TO HH 18 AND INSTALL THRU NEW HH 14: 5,6,50
TO HH-14

HH-1

HH-2

HH-3

D4-1 — 19
D4-3 — 20
4,14-18,21-24
F&I: 61
REMOVE 16 — 21-24

HH-4

F&I: PED PB STA PB6-1 16 TO PB — INSTALL FROM HH 4
F&I: PED PB STA PB3-2 61 TO PB

HH-5

HH-6

21,22

HH-7

21 — D6-1
22 — D6-2

SERVICE CABINET

CAMERA EQG NEU — 50
LUMINAIRE 4 — 6
LUMINAIRE 3 — 5
LUMINAIRE 2 — 4
LUMINAIRE 1 — 3
2 — 3-1/C#6 INS. GR. — SIGNAL SERVICE
INPUT POWER — 3-1/C#2 — 1
GR.RD.
3,4
DISCONNECT IN CABINET, PULL TO INPLACE HH 18, AND INSTALL THRU NEW HH14: 5,6,50
SOP

2

P3-2 (3-1), (5-2)
(3-2), (3-3), P6-1
14, 15
16 ENTERING POLE 2 FROM CABINET DISCONNECT & PULL TO HH 4 — REMOVE 16 LEAVING POLE 2 — 16
17
Ø3 EVP LIGHT
Ø3 EVP DETECTOR — 18 — TO EVP HUB
LUMINAIRE 2 — 4

SYSTEM ID: 20301 T.E. 5507
METER ADDRESS: 3401 SIBLEY MEMORIAL HWY

NOTES:
1. LUMINAIRES ARE UNMETERED.
2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (WITH BATTERIES).

3

P2-2 (2-2), (5-1)
(2-1), (2-3), (4-3)
25, 26
P3-1 — 27, 28
DISCONNECT & PULL TO HH 8
LUMINAIRE 3 — 5
Ø2+Ø5 EVP LIGHT — 29
Ø2+Ø5 EVP DETECTOR — 30 — TO EVP HUB
F&I: PED PB STA PB2-2 TO PB 27 — INSTALL FROM HH 8
F&I: PED PB STA PB3-1 TO PB 62
D3-2 — 32
F&I: 62
5,25-32
PULL TO HH 8 & INSTALL THRU NEW HH 9: 31

HH-9

PULL TO HH 8 & INSTALL THRU NEW HH 9: 31
D3-1 — 31
INTERCONNECT TO CSAH 28 (YANKEE DOODLE RD.) @ BLUE CROSS RD. 1-6PR #19

HH-10

HH-11

90
43,44,90

HH-12

43,44

HH-13

D2-1 — 43
D2-2 — 44

HH-14

PULL TO HH 18 & INSTALL THRU NEW HH 14: 48,49,50, 5,6,25-46 90
F&I: 62
DISCONNECT IN CABINET, PULL TO INPLACE HH 18, AND INSTALL THRU NEW HH 14: 25-49,90
F&I: 62
47
INTERCONNECT TO T.H. 13 AT BLACKHAWK RD. 1-6PR #19 (ABANDONED)
TO HH-1
PULL TO HH 18 & INSTALL THRU NEW HH 14: 5,6,50

HH-15

HH-16

33 — D3-3
34 — D3-4
35 — D3-5
36 — D3-6
F&I: 62
5,25-36

HH-17

F&I: PED PB STA PB2-1 40 TO PB — INSTALL FROM HH 17
48,49,50, 5,6,25-44 90
F&I: 62

HH-18

45 — D5-1
46 — D5-2

4

(4-2), (4-1), (1-2)
CAMERA POWER SUPPLY — 50
CAMERA COAXIAL CABLE — 49
CAMERA COM CABLE — 48
P2-1 — 38
SPARE — 39
Ø4 EVP DETECTOR — 42 — TO EVP HUB
40 — DISCONNECT & PULL TO HH 17
Ø4 EVP LIGHT — 41
LUMINAIRE 4 — 6

FIBER OPTIC INTERCONNECT TO 13 AT BLACKHAWK RD
FO — 51
FIBER OPTIC CABLE TO THE NORTH

DRAWN BY: MTH
CHECKED BY: BDP

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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PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM J
TH 13 AND CSAH 28 (YANKEE DOODLE RD)

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 369 of 393 Sheets

DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1, D1-2	6 X 6	10 & 40	SAWCUT
D2-1,D2-2	6 X 6	475	SAWCUT
F&I: D3-1	**2-6 X 6**	**20 & 50**	**PVC**
F&I: D3-2	**2-6 X 6**	**5 & 35**	**PVC**
F&I: D4-1	**6 X 6**	**120**	**PVC**
F&I: D4-2, D4-3	**2-6 X 6**	**5 & 25**	**PVC**
D5-1, D5-2	6 X 6	10 & 40	SAWCUT
D6-1,D6-2	6 X 6	475	SAWCUT
D7-1	6 X 6	20	PVC
D7-2	6 X 6	5	PVC
F&I: D8-1	**6 X 6**	**120**	**PVC**
F&I: D8-2, D8-3	**2-6 X 6**	**5 & 25**	**PVC**

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET.

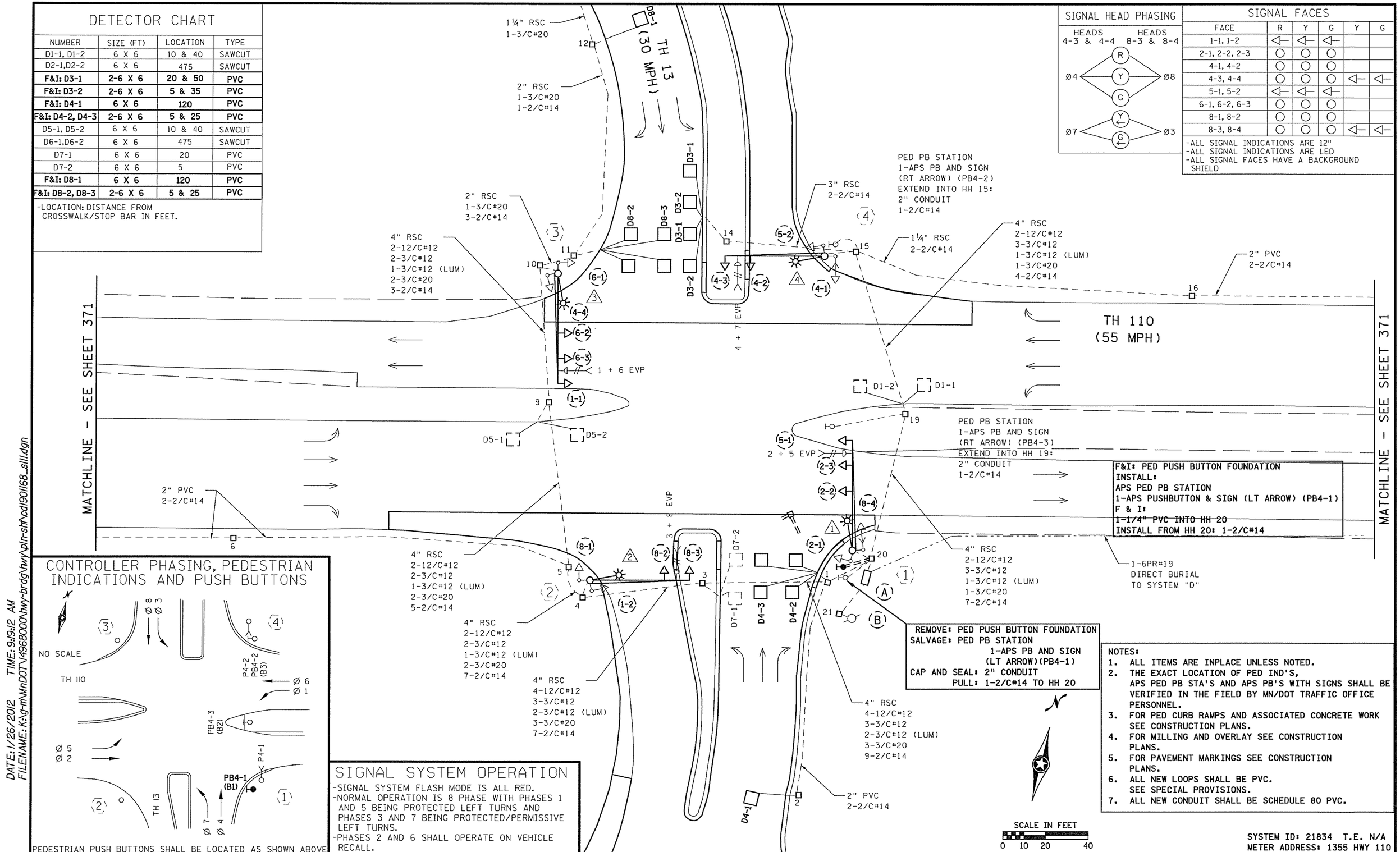
SIGNAL HEAD PHASING

HEADS 4-3 & 4-4 — HEADS 8-3 & 8-4

SIGNAL FACES

FACE	R	Y	G	Y	G
1-1, 1-2	◁	◁	◁		
2-1, 2-2, 2-3	○	○	○		
4-1, 4-2	○	○	○		
4-3, 4-4	○	○	○	◁	◁
5-1, 5-2	◁	◁	◁		
6-1, 6-2, 6-3	○	○	○		
8-1, 8-2	○	○	○		
8-3, 8-4	○	○	○	◁	◁

-ALL SIGNAL INDICATIONS ARE 12"
-ALL SIGNAL INDICATIONS ARE LED
-ALL SIGNAL FACES HAVE A BACKGROUND SHIELD



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

-SIGNAL SYSTEM FLASH MODE IS ALL RED.
-NORMAL OPERATION IS 8 PHASE WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURNS AND PHASES 3 AND 7 BEING PROTECTED/PERMISSIVE LEFT TURNS.
-PHASES 2 AND 6 SHALL OPERATE ON VEHICLE RECALL.

NOTES:
1. ALL ITEMS ARE INPLACE UNLESS NOTED.
2. THE EXACT LOCATION OF PED IND'S, APS PED PB STA'S AND APS PB'S WITH SIGNS SHALL BE VERIFIED IN THE FIELD BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. FOR PED CURB RAMPS AND ASSOCIATED CONCRETE WORK SEE CONSTRUCTION PLANS.
4. FOR MILLING AND OVERLAY SEE CONSTRUCTION PLANS.
5. FOR PAVEMENT MARKINGS SEE CONSTRUCTION PLANS.
6. ALL NEW LOOPS SHALL BE PVC. SEE SPECIAL PROVISIONS.
7. ALL NEW CONDUIT SHALL BE SCHEDULE 80 PVC.

SYSTEM ID: 21834 T.E. N/A
METER ADDRESS: 1355 HWY 110

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

INTERSECTION LAYOUT
REVISE SIGNAL SYSTEM K
TH 13 AND TH 110

STATE PROJ. NO. 1901-168 (TH 13)

Sheet No. 370 of 393 Sheets

DATE: 1/26/2012 TIME: 9:19:12 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\pln-sht\od190l168_sll1.dgn

(A) EQUIPMENT PAD
SERVICE CABINET: PAD MOUNTED
METER AND LOAD CENTER
METER TO HH 21:
2" RSC
3-1/C#2
LOAD CENTER TO HH 20:
2" RSC
4-3/C#12 (LUM)
CONTROLLER AND CABINET
LOAD CENTER TO SIGNAL CABINET
2" RSC
2-1/C#6
1-1/C#6 BR. GR.
CABINET TO HH 20:
4" RSC
4-12/C#12
6-3/C#12
2-3/C#20
8-2/C#14
CABINET TO HH 1:
4" RSC
4-12/C#12
3-3/C#12
3-3/C#20
12-2/C#14
BETWEEN HH 1 AND 20:
2" RSC
2-3/C#12 (LUM)
2" RSC STUBOUT
1-6PR#19 DIRECT BURIAL TO LEXINGTON AVE.
3" RSC STUBOUT (FUTURE USE)
THREAD AND CAP BOTH ENDS.
1" RSC STUBOUT FOR PHONE LINE
THREAD AND CAP BOTH ENDS.

(B) WOOD POLE
2" RSC RISER AND WEATHERHEAD WITH 3-1/C#2
EXTEND INTO HH 21:
2" RSC
3-1/C#2

(1) A100 POLE FOUNDATION
TYPE A100-A-50-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
TYPE 10B - POLE MOUNTED AT 90°
1-CD PED INDICATION
TYPE 10A - POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT HPS
ONE WAY EVP DETECTOR AND LIGHT (2 & 5)
EXTEND INTO HH 20:
3" RSC
2-12/C#12
5-3/C#12
1-3/C#12 (LUM)
1-3/C#20

(2) A100 POLE FOUNDATION
TYPE A100-A-45-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
TYPE 10B POLE MOUNTED AT 90°
TYPE 10A POLE MOUNTED AT 180°
LUMINAIRE - 250 WATT HPS
ONE WAY EVP DETECTOR AND LIGHT (8 & 3)
1-R10-12 SIGN ADJACENT TO HEAD 8-3
EXTEND INTO HH 4:
3" RSC
2-12/C#12
1-3/C#12
1-3/C#12 (LUM)
1-3/C#20

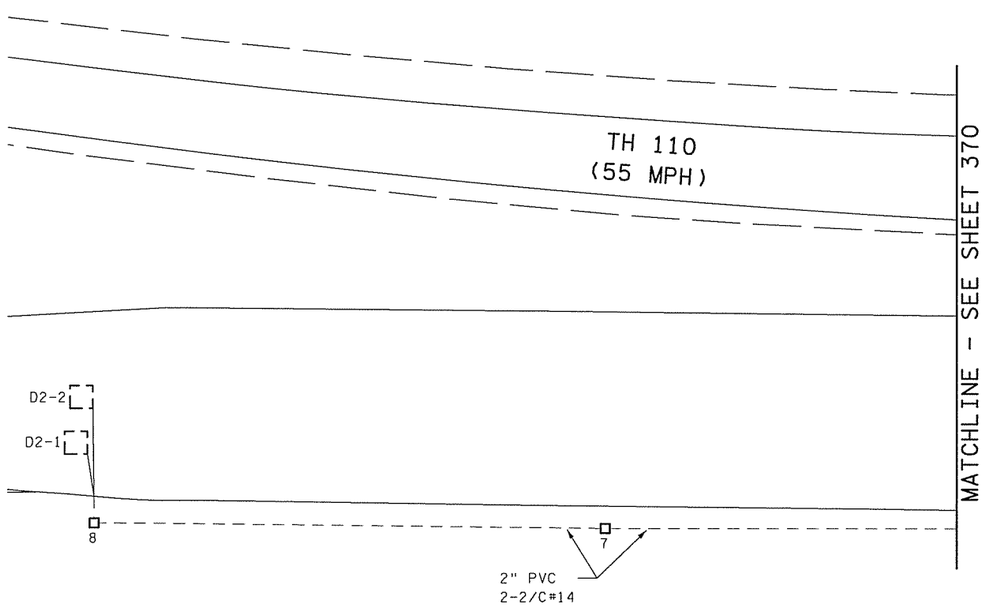
(3) A100 POLE FOUNDATION
TYPE A100-A-50-D40-9 (DAVIT AT 350°)
3-ONE WAY SIGNALS OVERHEAD
TYPE 10A - POLE MOUNTED AT 90°
TYPE 10A - POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT HPS
ONE WAY EVP DETECTOR AND LIGHT (6 & 1)
EXTEND INTO HH 10:
3" RSC
2-12/C#12
2-3/C#12
1-3/C#12 (LUM)
1-3/C#20

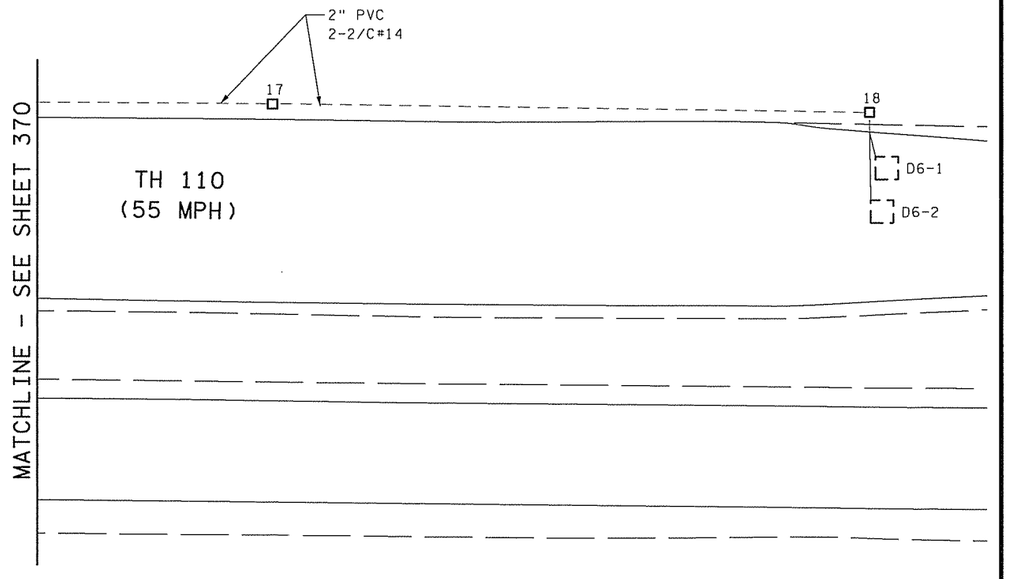
(4) A100 POLE FOUNDATION
TYPE A100-A-45-D40-9 (DAVIT AT 350°)
2-ONE WAY SIGNALS OVERHEAD
TYPE 10A - POLE MOUNTED AT 90°
TYPE 10B - POLE MOUNTED AT 180°
1-CD PED INDICATION
LUMINAIRE - 200 WATT HPS
ONE WAY EVP DETECTOR AND LIGHT (4 & 7)
1-R10-12 SIGN ADJACENT TO HEAD 4-3
EXTEND INTO HH 15:
3" RSC
2-12/C#12
3-3/C#12
1-3/C#12 (LUM)
1-3/C#20

(5) PEDESTAL FOUNDATION
PEDESTAL POLE AND BASE
ONE WAY EVP DETECTOR
EXTEND INTO HH 13C:
2" RSC
1-3/C#20

N

SCALE IN FEET
0 10 20 40





SYSTEM ID: 21834 T.E. N/A
METER ADDRESS: 1355 HWY 110

DATE: 1/26/2012 TIME: 9:19:14 AM
FILENAME: K:\g-m\MnDOT\4968000\hwy-brdg\hwy\plr-sht\cdl901168_mill.dgn

DRAWN BY: MTH CHECKED BY: BDP	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	MATCHLINE LAYOUTS AND NOTES REVISE SIGNAL SYSTEM K TH 13 AND TH 110	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 371 of 393 Sheets

CONTROLLER CABINET

1
- RED 2-1
- YEL 2-1
- GRN 2-1
- NEU 2-1, 2-2
- RED 2-2
- YEL 2-2
- GRN 2-2
- NEU 5-1
- RLTA 5-1
- YLTA 5-1
- GLTA 5-1
- EOG

2
- RED 8-4
- YEL 8-4
- GRN 8-4
- NEU 8-4
- YLTA 8-4
- GLTA 8-4
- SPR
- NEU 2-3
- RED 2-3
- YEL 2-3
- GRN 2-3
- EOG

3
- RED 8-1
- YEL 8-1
- GRN 8-1
- NEU 8-1, 8-2
- RED 8-2
- YEL 8-2
- GLTA 8-2
- NEU 1-2
- RLTA 1-2
- YLTA 1-2
- GLTA 1-2
- EOG

4
- RED 8-3
- YEL 8-3
- GRN 8-3
- NEU 8-3
- YLTA 8-3
- GLTA 8-3
- SPR
- NEU
- SPR
- SPR
- SPR
- EOG

5
- RED 6-1
- YEL 6-1
- GRN 6-1
- NEU 6-1, 6-2
- RED 6-2
- YEL 6-2
- GRN 6-2
- NEU 1-1
- RLTA 1-1
- YLTA 1-1
- GLTA 1-1
- EOG

6
- RED 4-4
- YEL 4-4
- GRN 4-4
- NEU 4-4
- YLTA 4-4
- GLTA 4-4
- SPR
- NEU 6-3
- RED 6-3
- YEL 6-3
- YEL 6-3
- EOG

7
- RED 4-1
- YEL 4-1
- GRN 4-1
- NEU 4-1, 4-2
- RED 4-2
- YEL 4-2
- GRN 4-2
- NEU 5-2
- RLTA 5-2
- YLTA 5-2
- GLTA 5-2
- EOG

8
- 4-3 RED
- 4-3 YEL
- 4-3 GRN
- 4-3 NEU
- 4-3 YLTA
- 4-3 GLTA
- SPR
- P4-2 NEU
- P4-2 WLK
- P4-2 DWK
- SPR
- EOG

9
- P4-1 SPR
- P4-1 NEU
- P4-1 SPR

10
- SPR
- NEU
- SPR

11
- WLK
- NEU
- DWK

12
- SPR
- NEU
- SPR

13
- SPR
- NEU
- PB4-3

14 — EVP LIGHT Ø 2 & Ø 5

15 — EVP LIGHT Ø 4 & Ø 7

16 — EVP LIGHT Ø 6 & Ø 1

17 — EVP LIGHT Ø 8 & Ø 3

18 — EVP DETECTOR Ø 2 & Ø 5

19 — EVP DETECTOR Ø 4 & Ø 7

20 — EVP DETECTOR Ø 6 & Ø 1

21 — EVP DETECTOR Ø 8 & Ø 3

22 — EVP DETECTOR Ø 8 & Ø 3

23 — SIGNAL SERVICE

24 — D1-1

25 — D1-2

26 — D2-1

27 — D2-2

47 — PB4-1

28 — D3-1

29 — D3-2

30 — D4-1

31 — D4-2

32 — D4-3

33 — D5-1

34 — D5-2

35 — D6-1

36 — D6-2

37 — D7-1

38 — D7-2

39 — D8-1

40 — D8-2

41 — D8-3

48 — PB4-2

60 — 1-6 PR #19 INTERCONNECT

23 → SIGNAL SERVICE

46 → INCOMING SERVICE 3-1/C #2

46 → S.O.P. → GROUND ROD

LOAD CENTER

LUMINAIRE 1 — 42
LUMINAIRE 2 — 43
LUMINAIRE 3 — 44
LUMINAIRE 4 — 45

42-45

LUMINAIRE 1

LUMINAIRE 1 — 42

Ø 2 AND Ø 5 EVP LIGHT — 14 — (2-1) (2-2) (2-2) — 1

Ø 2 AND Ø 5 EVP DETECTOR — 18 — (8-4) (2-3) — 2

P4-1 — 10 — 9

13 — 13

HH 20

1,2,7,8,9,10,12,13,14,15,18,19,24,25,28,29,35,36,47,48

7,8,12,13,15,19,24,25,28,29,35,36,45,48 → TO HH 19

47 → DISCONNECT FROM OLD PUSH BUTTON STATION & PULL TO HH 20

SALVAGE & INSTALL PED PB STA PB4-1
TO PB 47 INSTALL FROM HH 20

3,4,5,6,11,16,17,20,21,22,26,27,30,31,32,33,34,37,38,39,40,41,

43,44

HH 1 — 31, 32 — 30 — HH 2 — 30

D4-2, D4-3, D4-1

LUMINAIRE 2

LUMINAIRE 2 — 43

Ø 8 AND Ø 3 EVP LIGHT — 17 — (8-1) (8-2) (1-2) — 3

Ø 8 AND Ø 3 EVP DETECTOR — 21 — (8-3) — 4

HH 3 — 37, 38 — D7-1, D7-2

HH 4

3,4,5,6,11,16,17,20,21,22,26,27,33,34,37,38,39,40,41,43,44

3,4,5,6,11,16,17,20,21,22,26,27,33,34,39,40,41,43,44

5,6,11,16,20,22,26,27,33,34,39,40,41,44

HH 9 — 33, 34 — D5-1, D5-2

5,6,11,16,20,22,33,34,39,40,41,44

5,6,11,16,20,22,39,40,41,44 → TO HH 10

HH 5 — 26,27 — HH 6 — 26,27 — HH 7

26,27

HH 8 — 26, 27 — D2-1, D2-2

60 → 1-6 PR #19 INTERCONNECT TO LEXINGTON AVE.

CONDUCTOR COLOR CODING

	R	R	
	O	O	
	BL	BL	3/C#12
	WH	WH	
	R/BLK	G	
	O/BLK		
12/C#12	BL/BLK	R	
	WH/BLK	WH	3/C#12
	BLK	BLK	
	BLK/WH		
	G/BLK	R OR O	
	G	WH OR YEL	3/C#20
		BLK OR BL	
	BLK		
2-1/C#6		BLK	
	WH	CLEAR	2/C#14

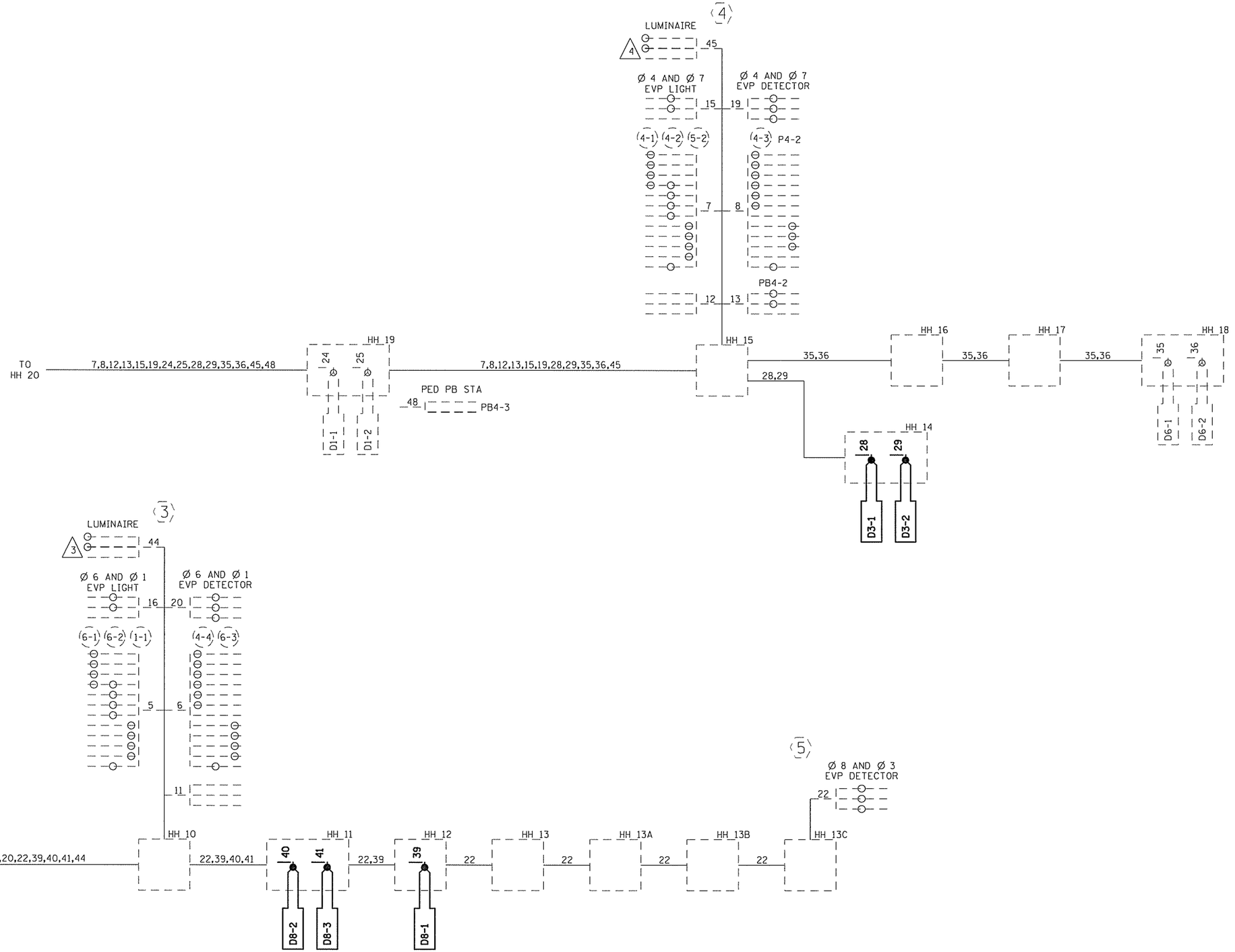
NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

SYSTEM ID: 21834 T.E. N/A
METER ADDRESS: 1355 HWY 110

SHEET 1 OF 2

DATE: 1/26/2012 TIME: 9:19:16 AM
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DRAWN BY: MTH	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	SIGNATURE: Brent D. Paulsen PRINTED NAME: BRENT D. PAULSEN DATE: JANUARY 26, 2012 LIC. NO. 26880	TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	FIELD WIRING DIAGRAM REVISE SIGNAL SYSTEM K TH 13 AND TH 110	STATE PROJ. NO. 1901-168 (TH 13)
CHECKED BY: BDP						Sheet No. 372 of 393 Sheets



DATE: 1/26/2012 TIME: 9:19:18 AM
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SYSTEM ID: 21834 T.E. N/A
METER ADDRESS: 1355 HWY 110

DRAWN BY: MTH
CHECKED BY: BDP

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

SIGNATURE: Brent D. Paulsen
PRINTED NAME: BRENT D. PAULSEN
DATE: JANUARY 26, 2012 LIC. NO. 26880

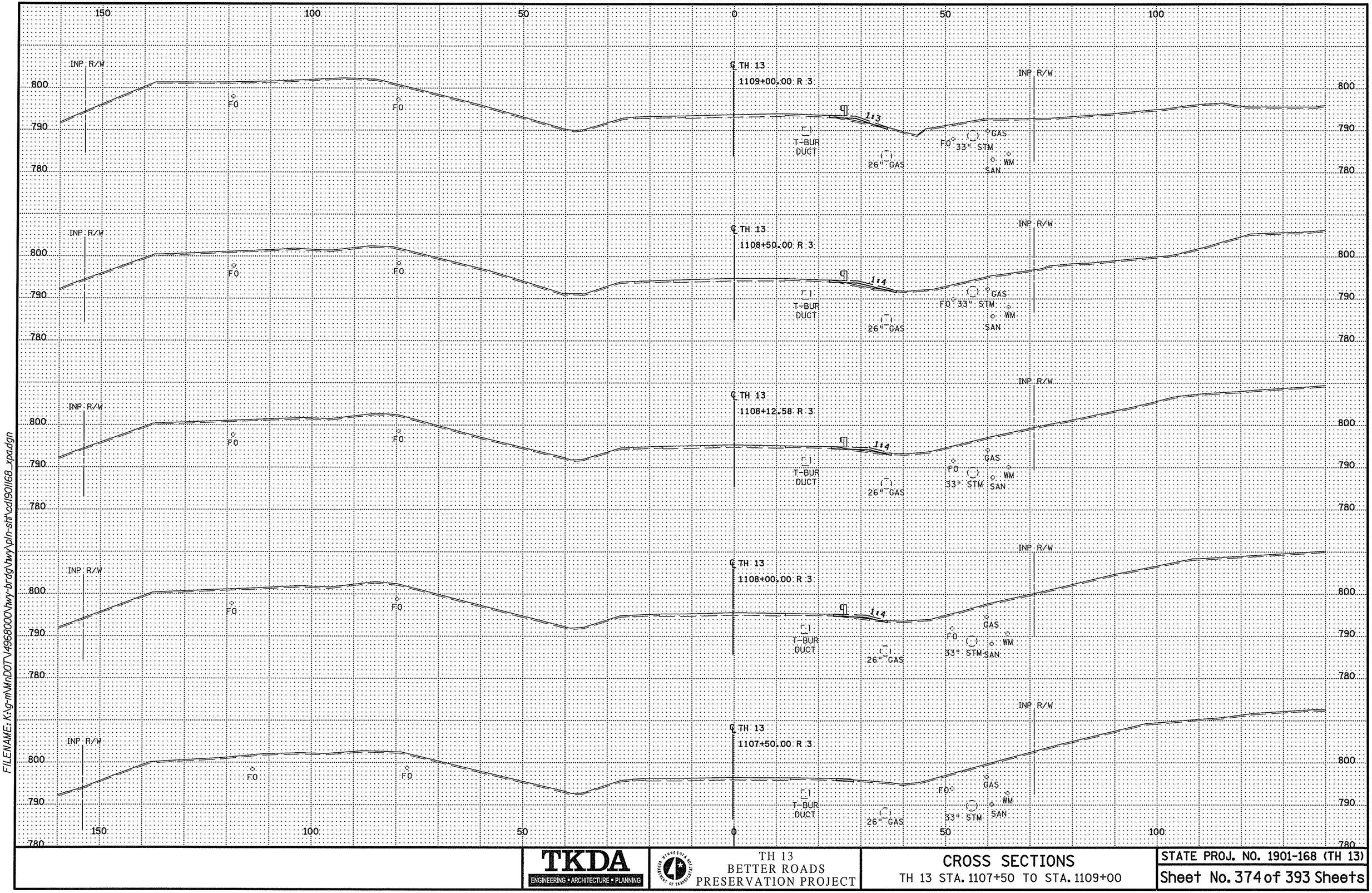
TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

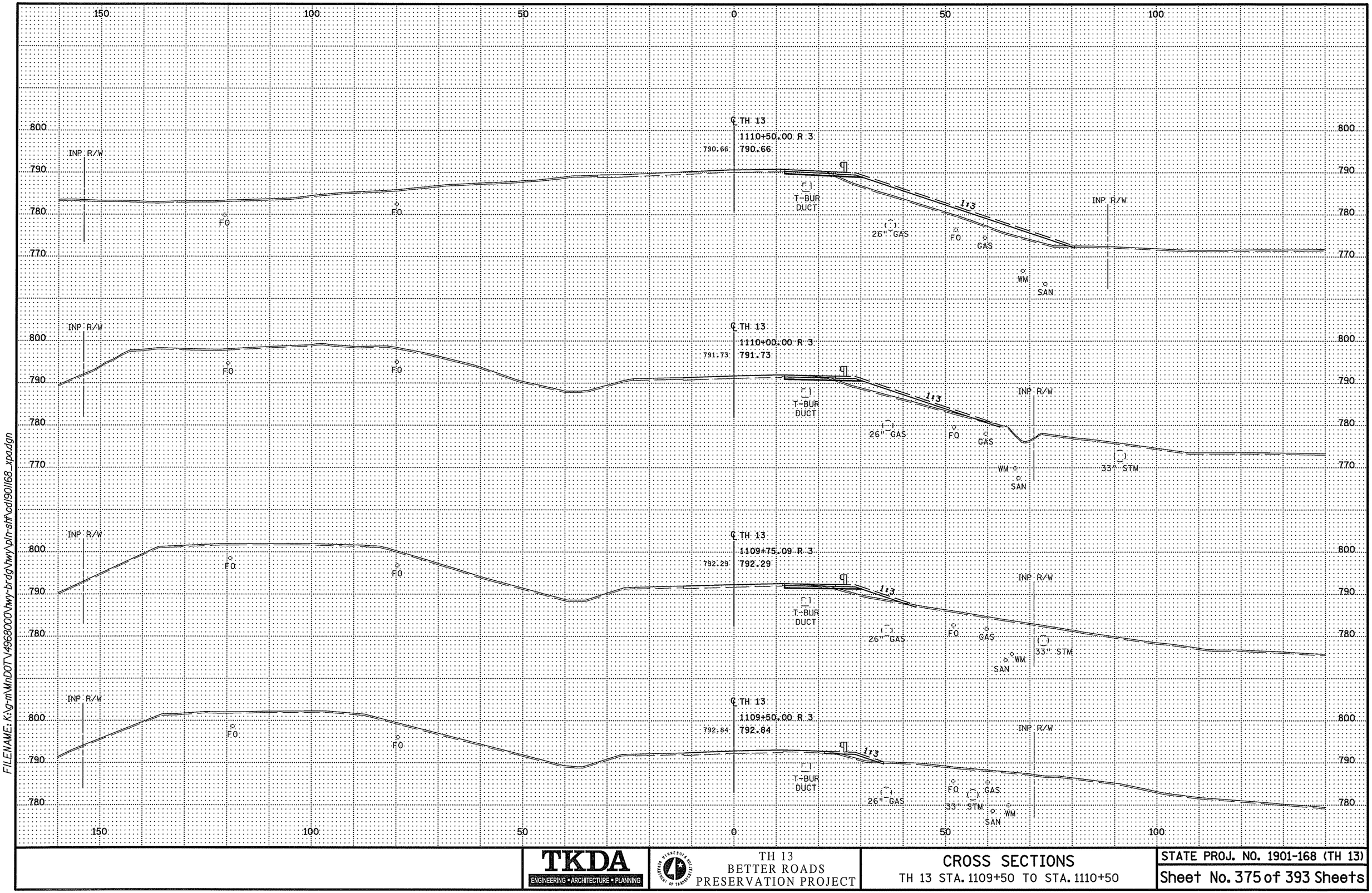
FIELD WIRING DIAGRAM
REVISE SIGNAL SYSTEM K
TH 13 AND TH 110

STATE PROJ. NO. 1901-168 (TH 13)
Sheet No. 373 of 393 Sheets

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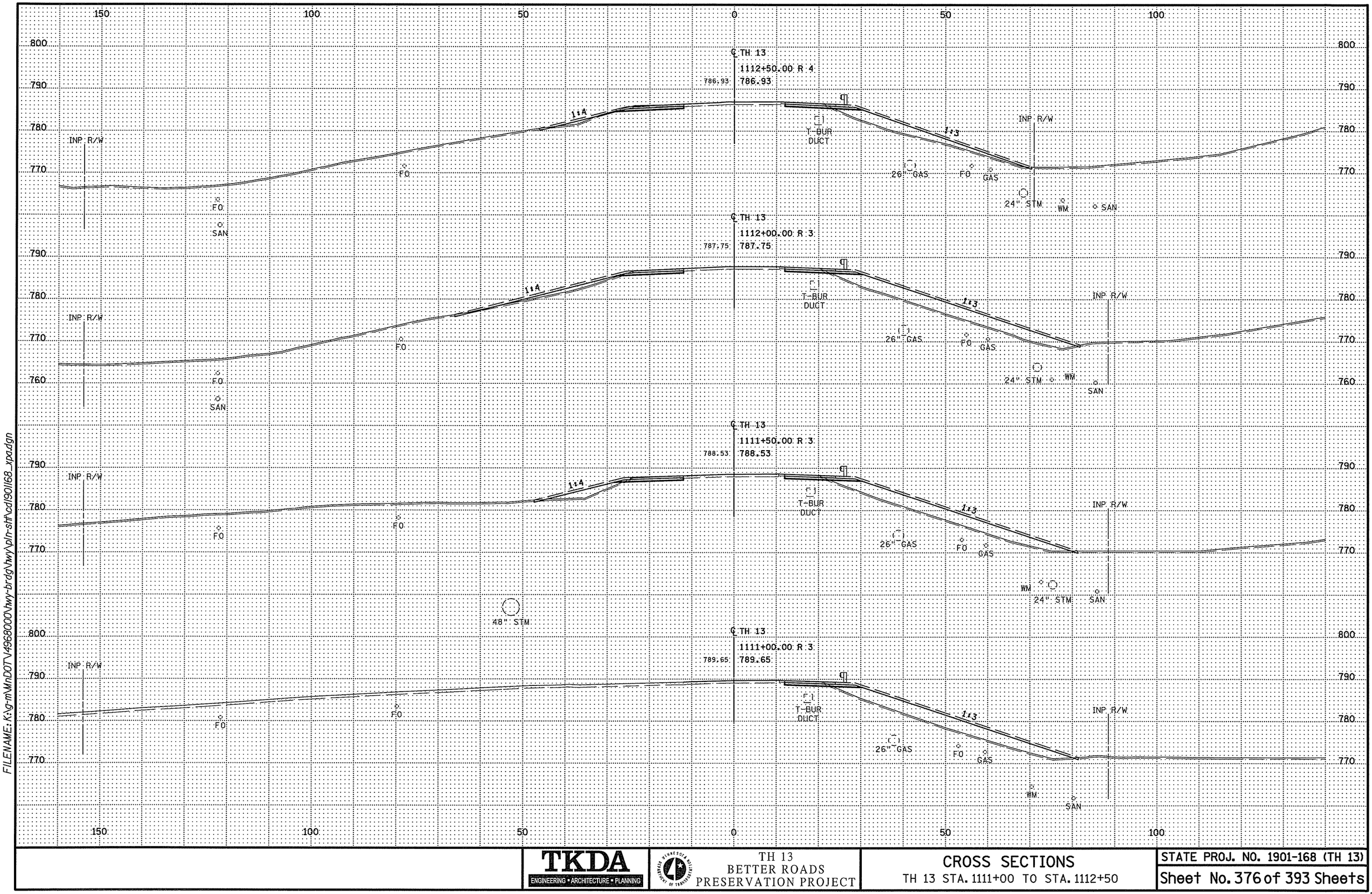


TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1107+50 TO STA. 1109+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 374 of 393 Sheets



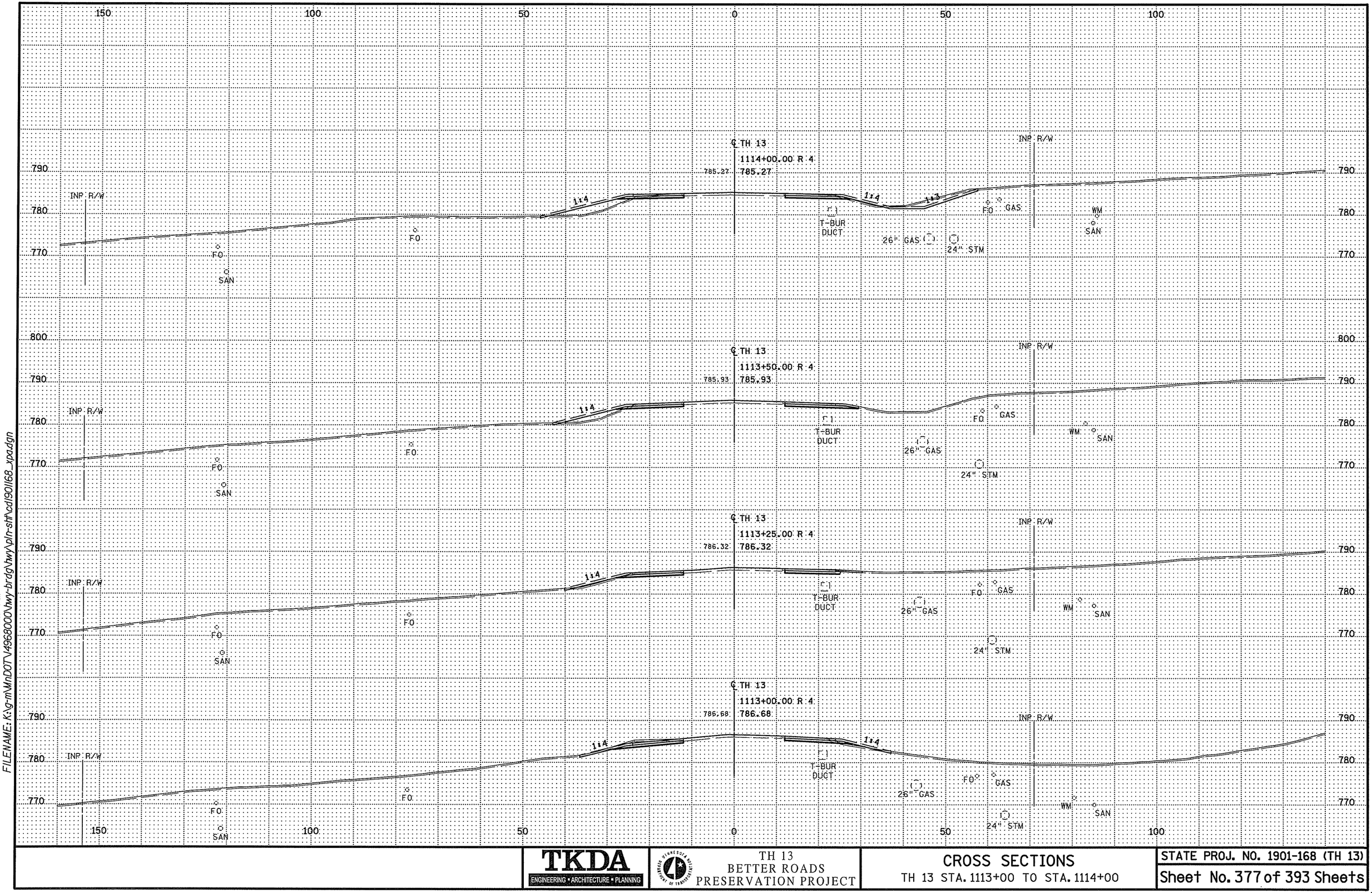
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1109+50 TO STA. 1110+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 375 of 393 Sheets



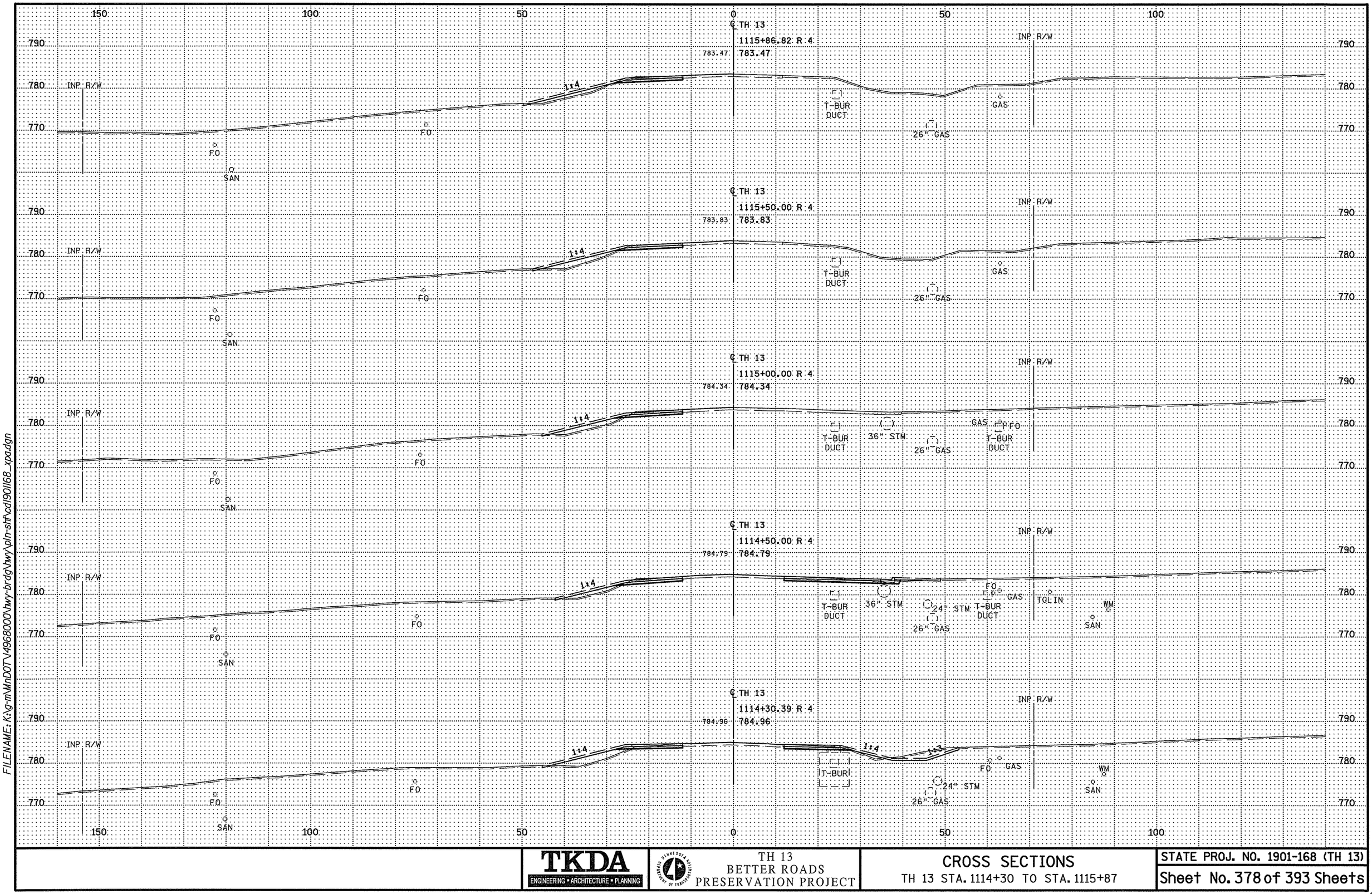
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1111+00 TO STA. 1112+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 376 of 393 Sheets



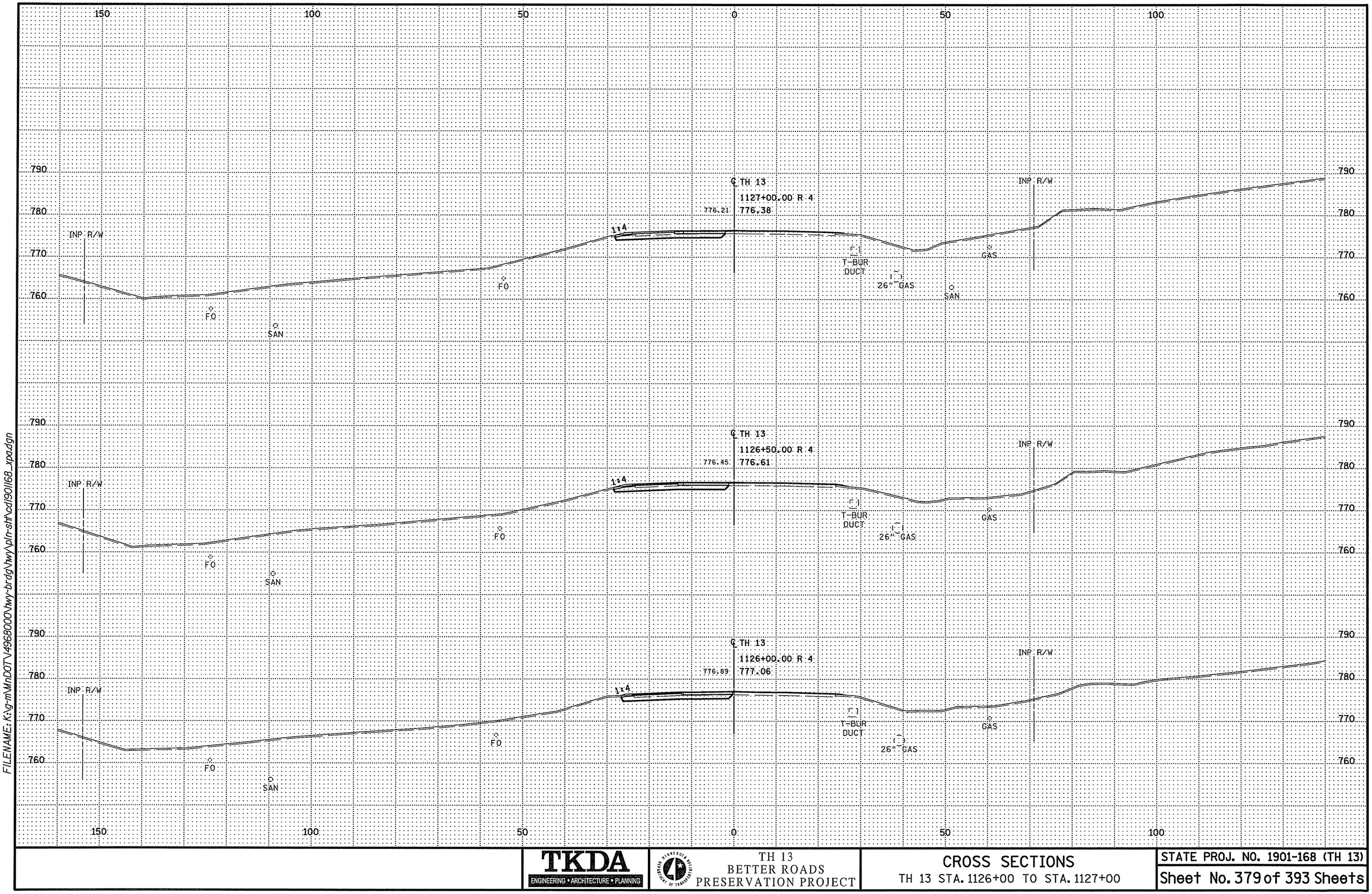
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1113+00 TO STA. 1114+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 377 of 393 Sheets



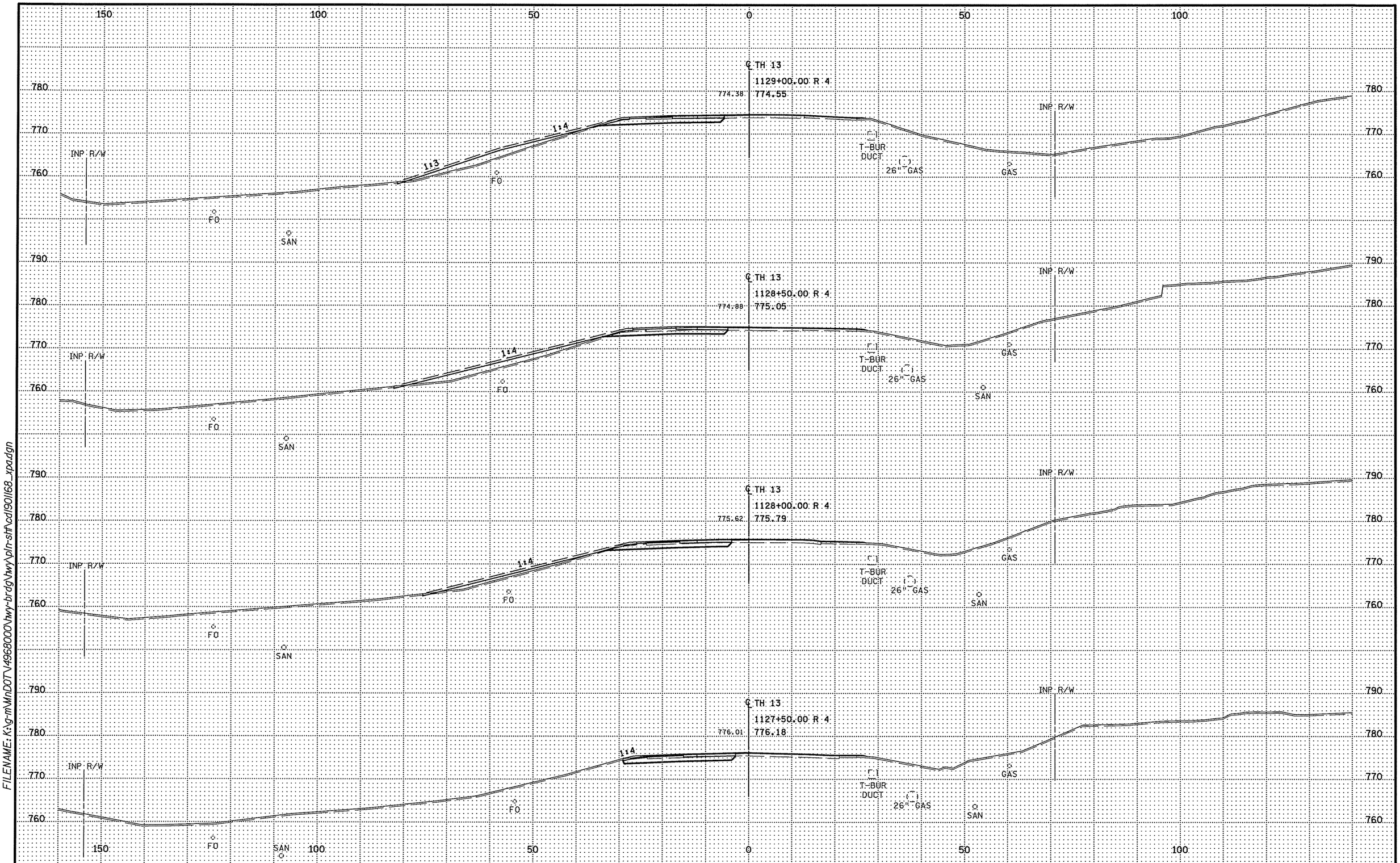
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1114+30 TO STA. 1115+87	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 378 of 393 Sheets



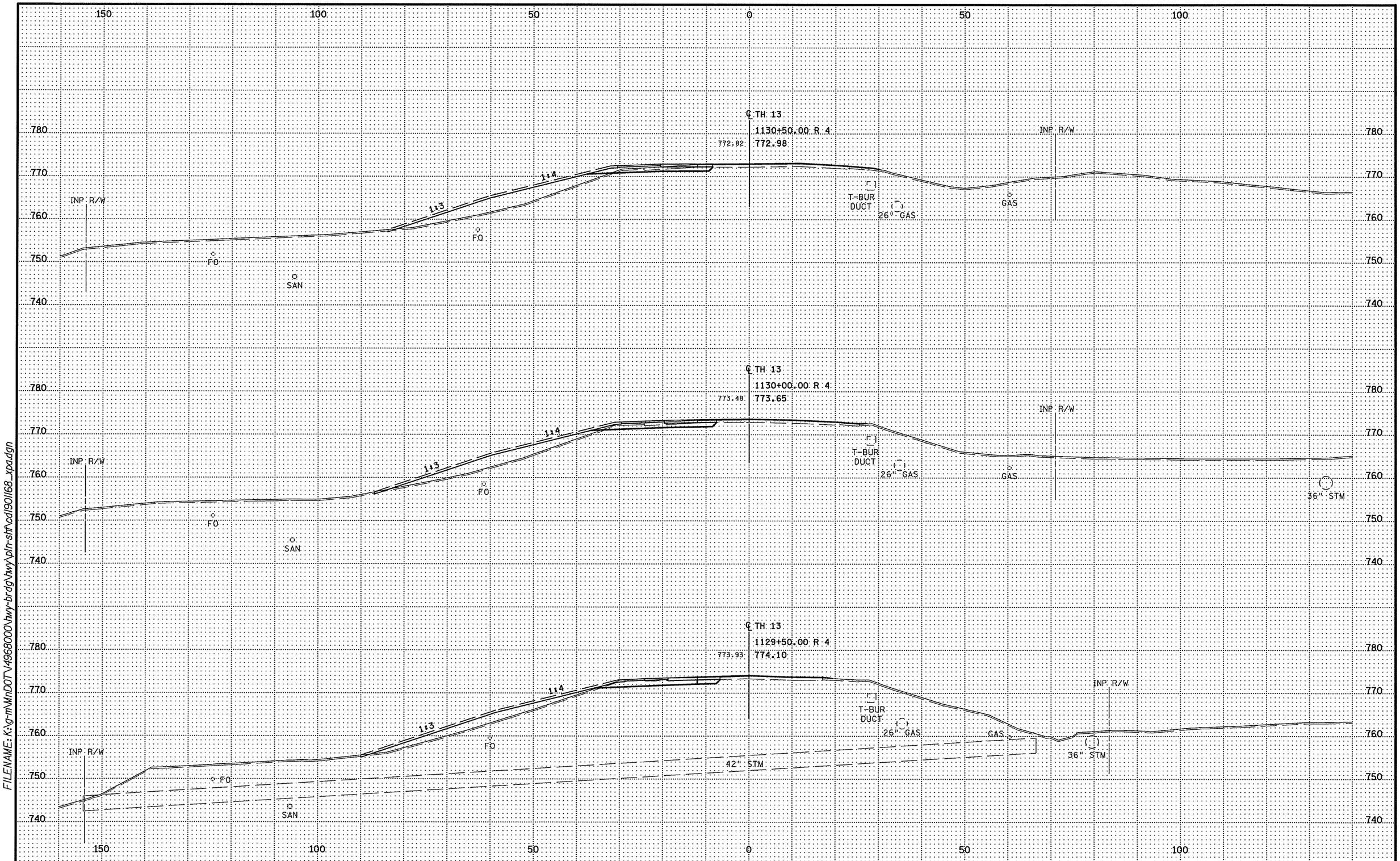
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1126+00 TO STA. 1127+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 379 of 393 Sheets



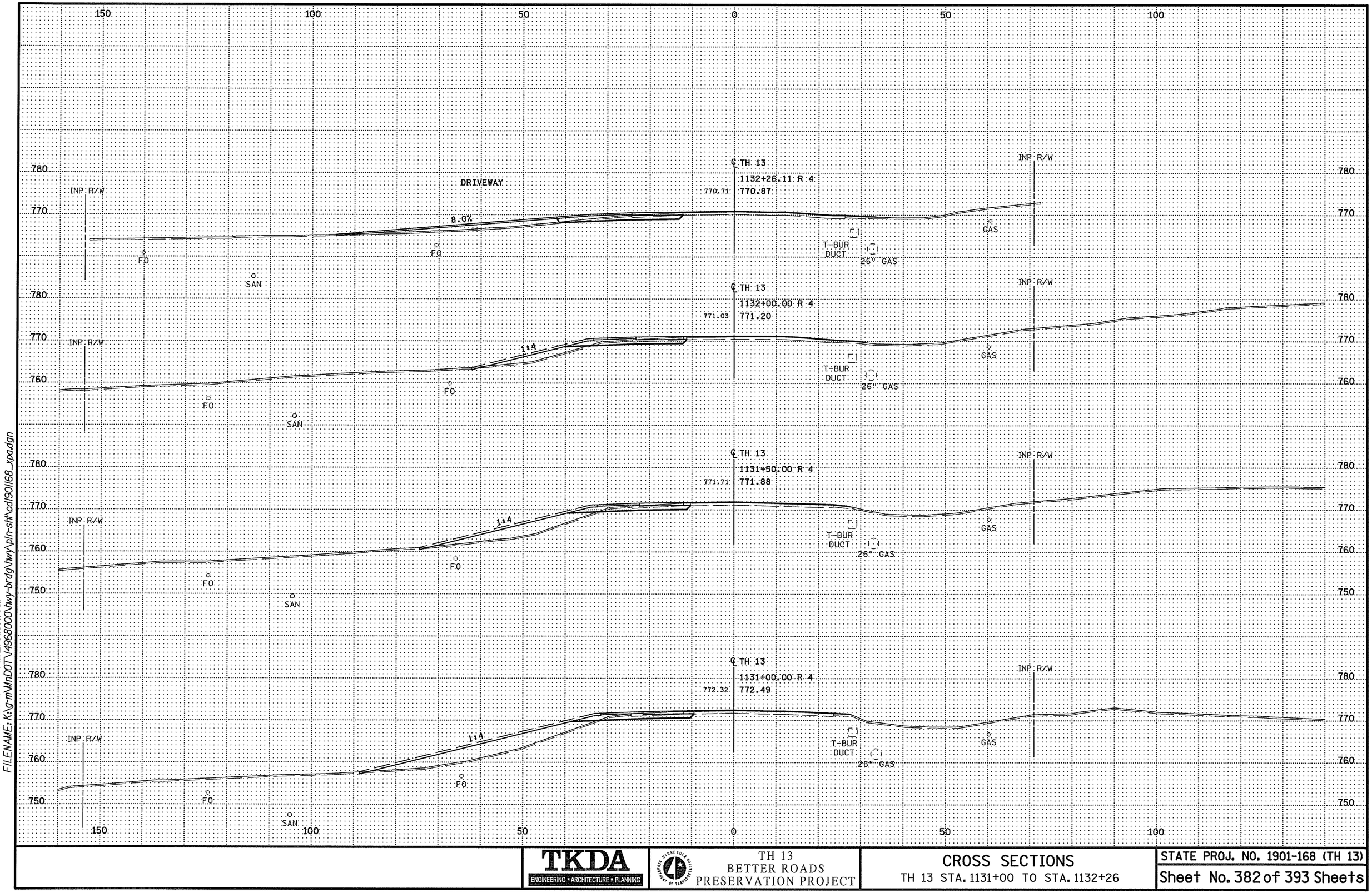
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1127+50 TO STA. 1129+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 380 of 393 Sheets



DATE: 1/26/2012 TIME: 9:19:38 AM
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1129+50 TO STA. 1130+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 381 of 393 Sheets



DATE: 1/26/2012
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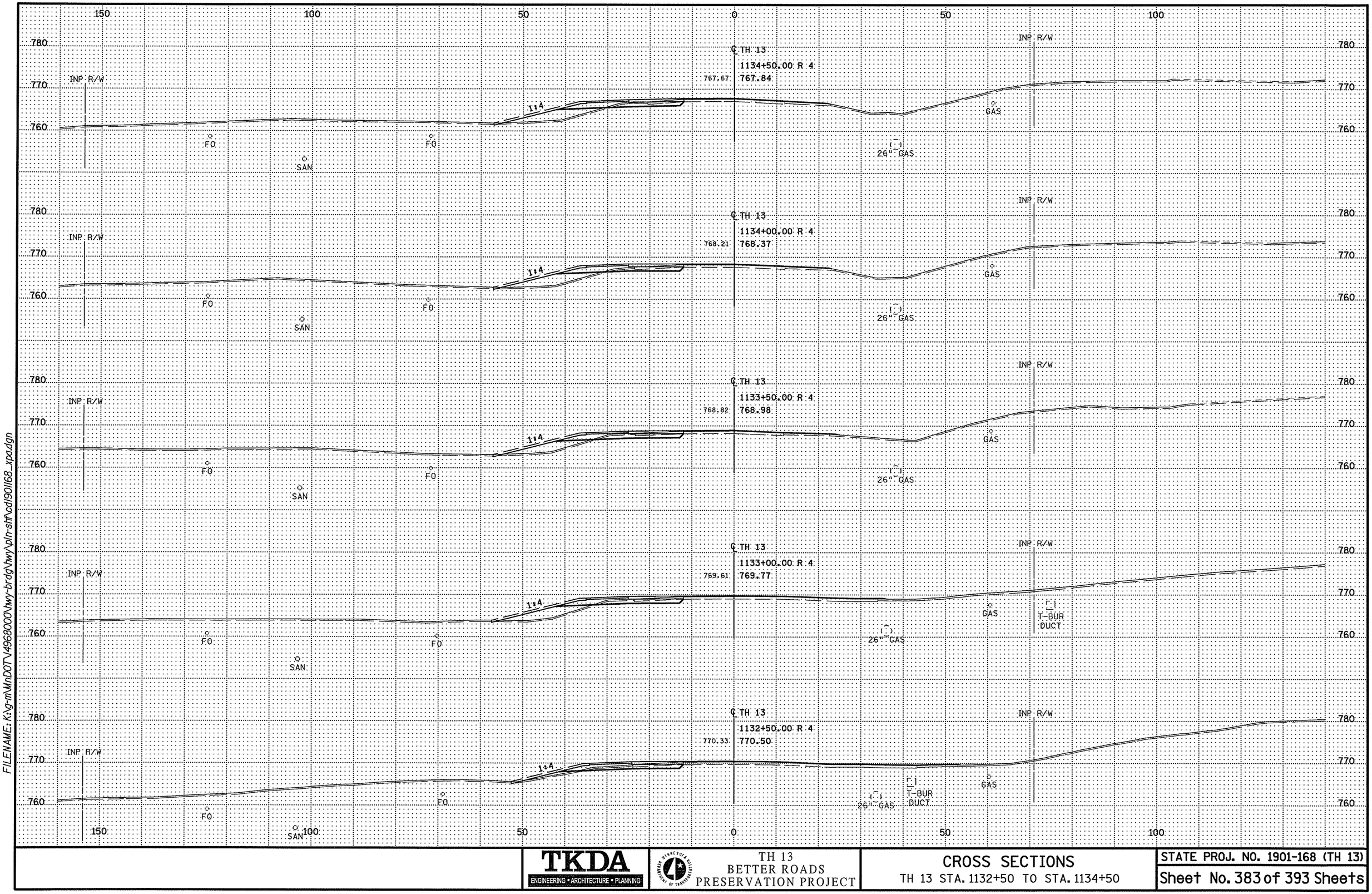
TKDA
ENGINEERING • ARCHITECTURE • PLANNING

TH 13
BETTER ROADS
PRESERVATION PROJECT

CROSS SECTIONS
TH 13 STA. 1131+00 TO STA. 1132+26

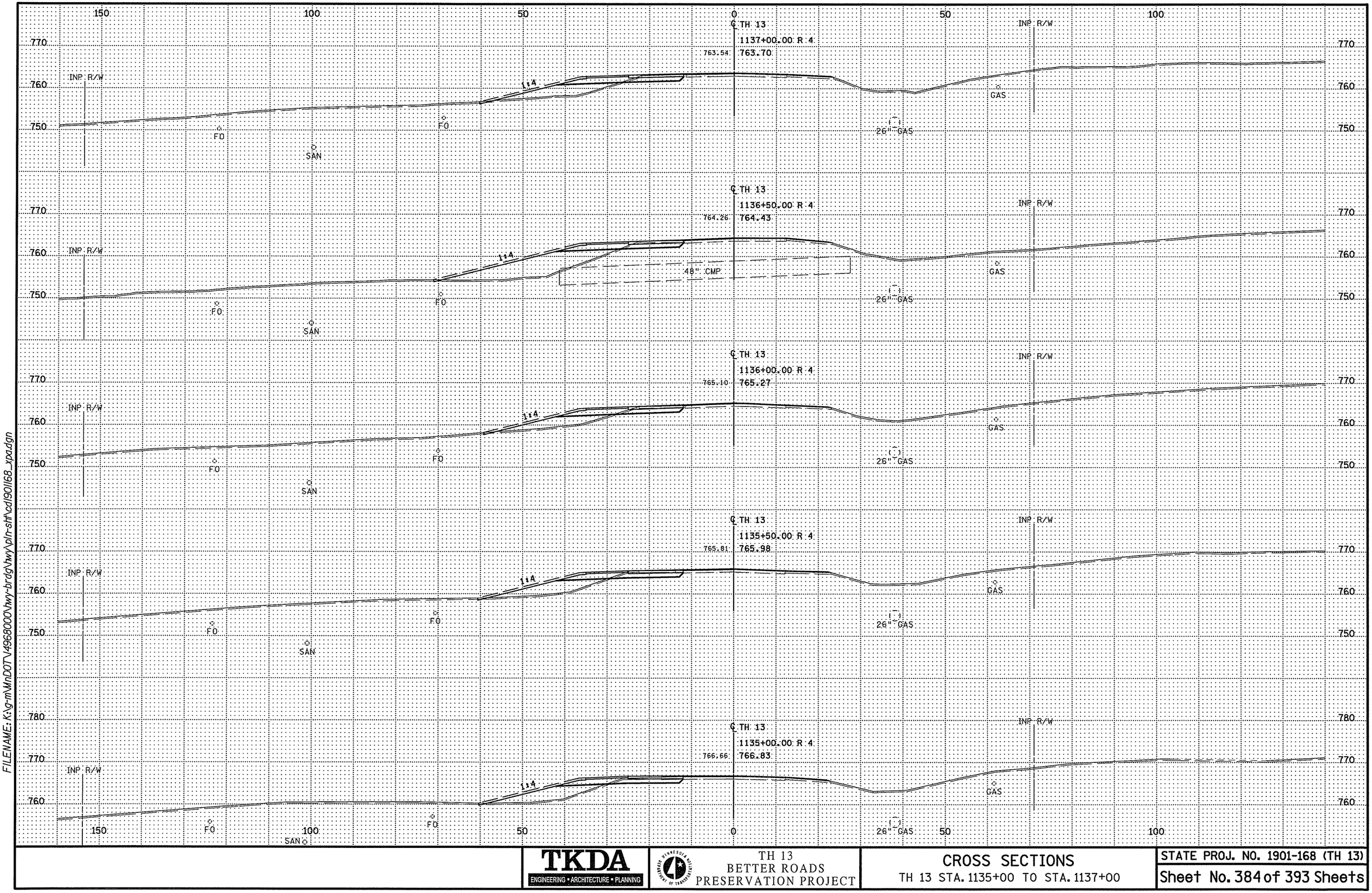
STATE PROJ. NO. 1901-168 (TH 13)

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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1132+50 TO STA. 1134+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 383 of 393 Sheets



DATE: 1/26/2012 TIME: 9:9:46 AM
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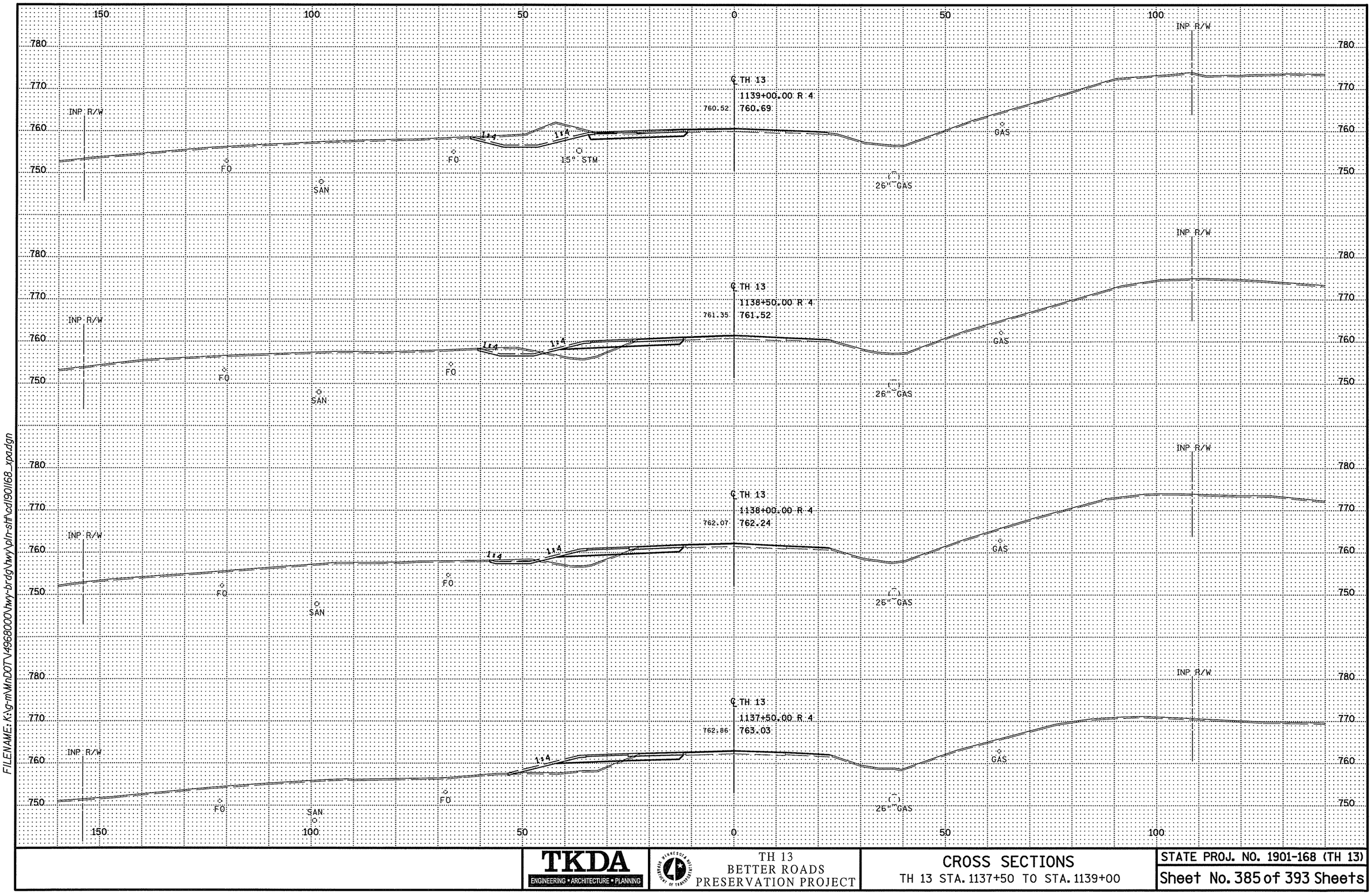
TH 13
BETTER ROADS
PRESERVATION PROJECT

CROSS SECTIONS

TH 13 STA. 1135+00 TO STA. 1137+00

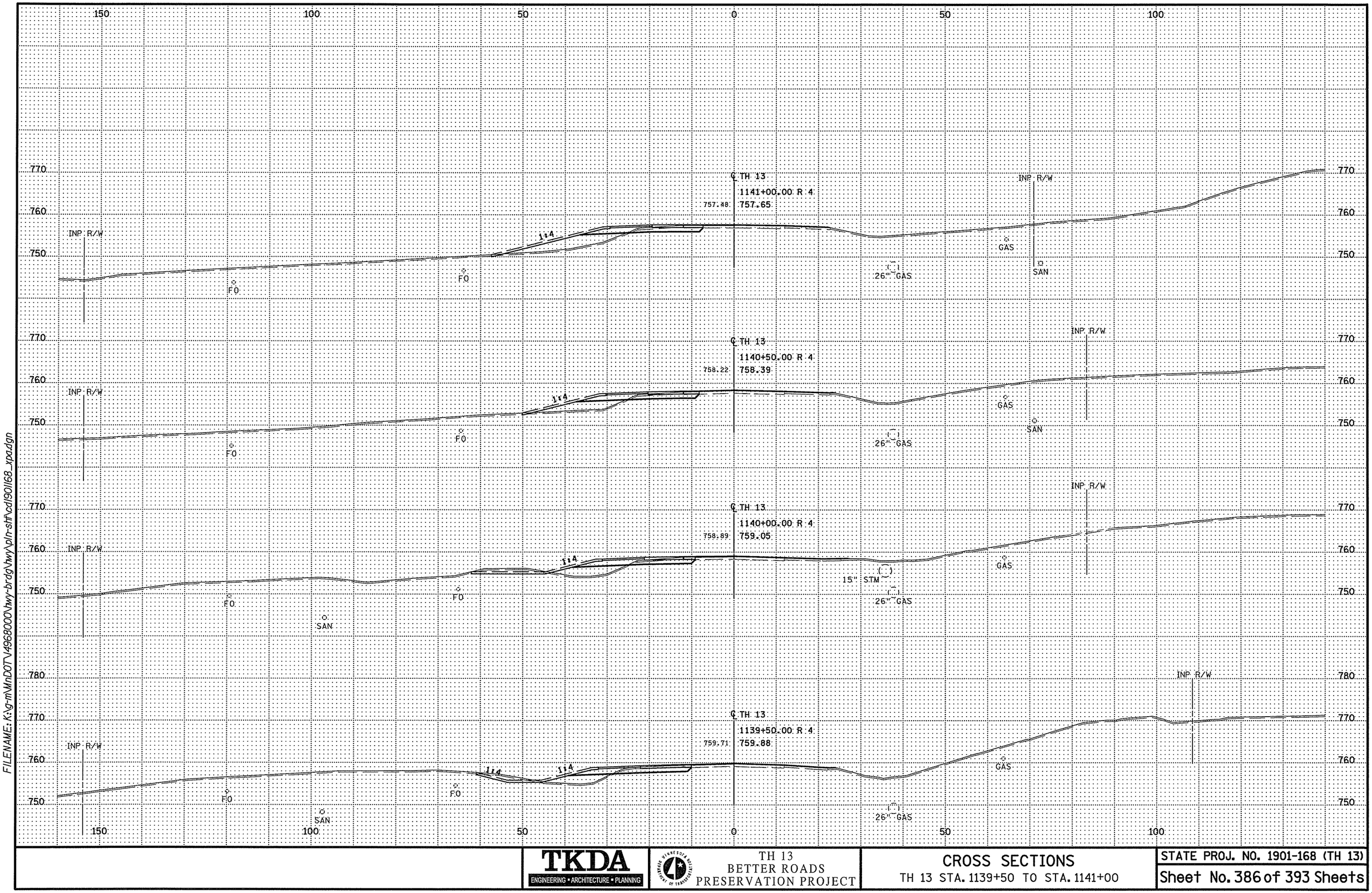
STATE PROJ. NO. 1901-168 (TH 13)

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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1137+50 TO STA. 1139+00	STATE PROJ. NO. 1901-168 (TH 13)
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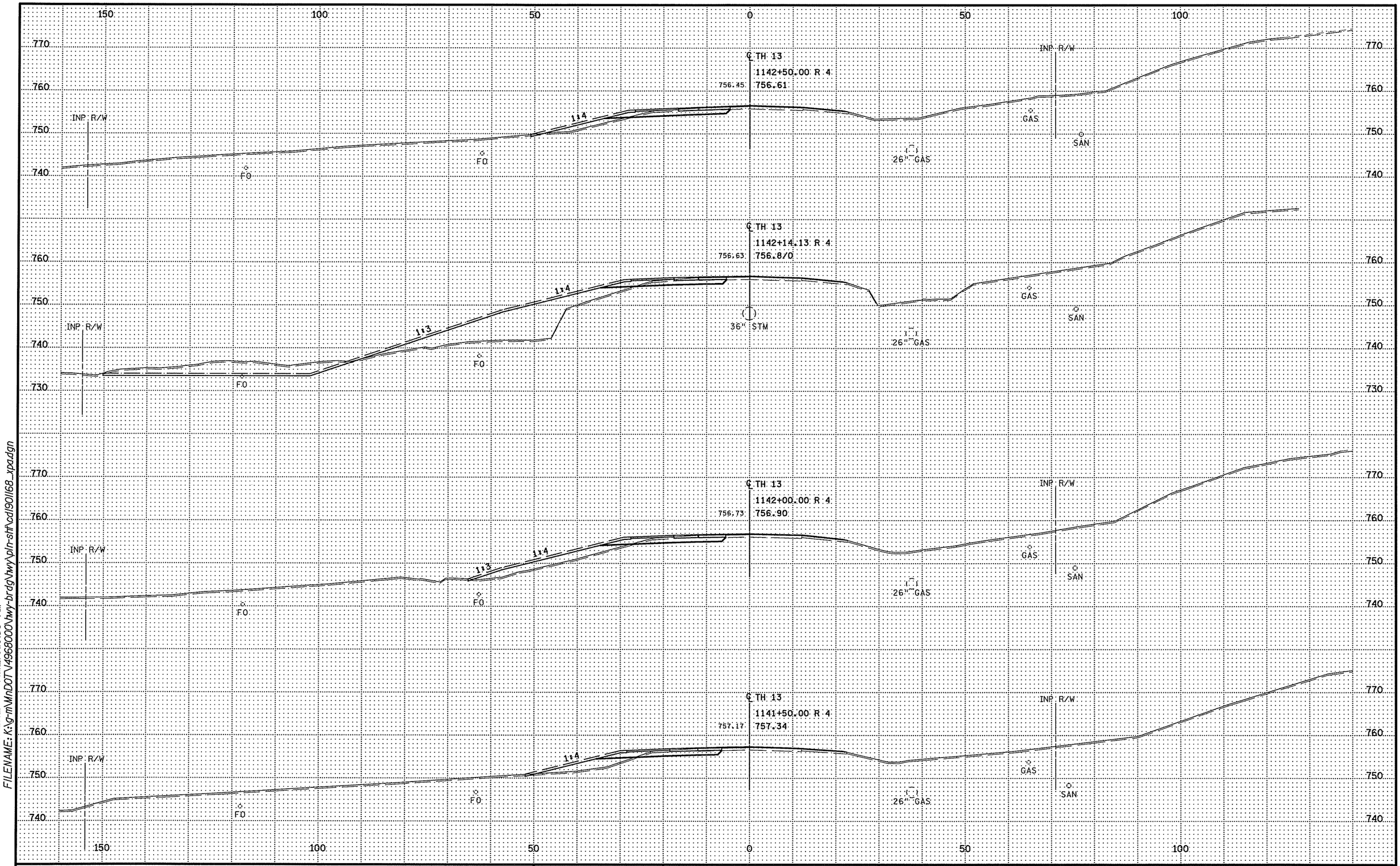
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TH 13
BETTER ROADS
PRESERVATION PROJECT

CROSS SECTIONS
TH 13 STA. 1139+50 TO STA. 1141+00

STATE PROJ. NO. 1901-168 (TH 13)

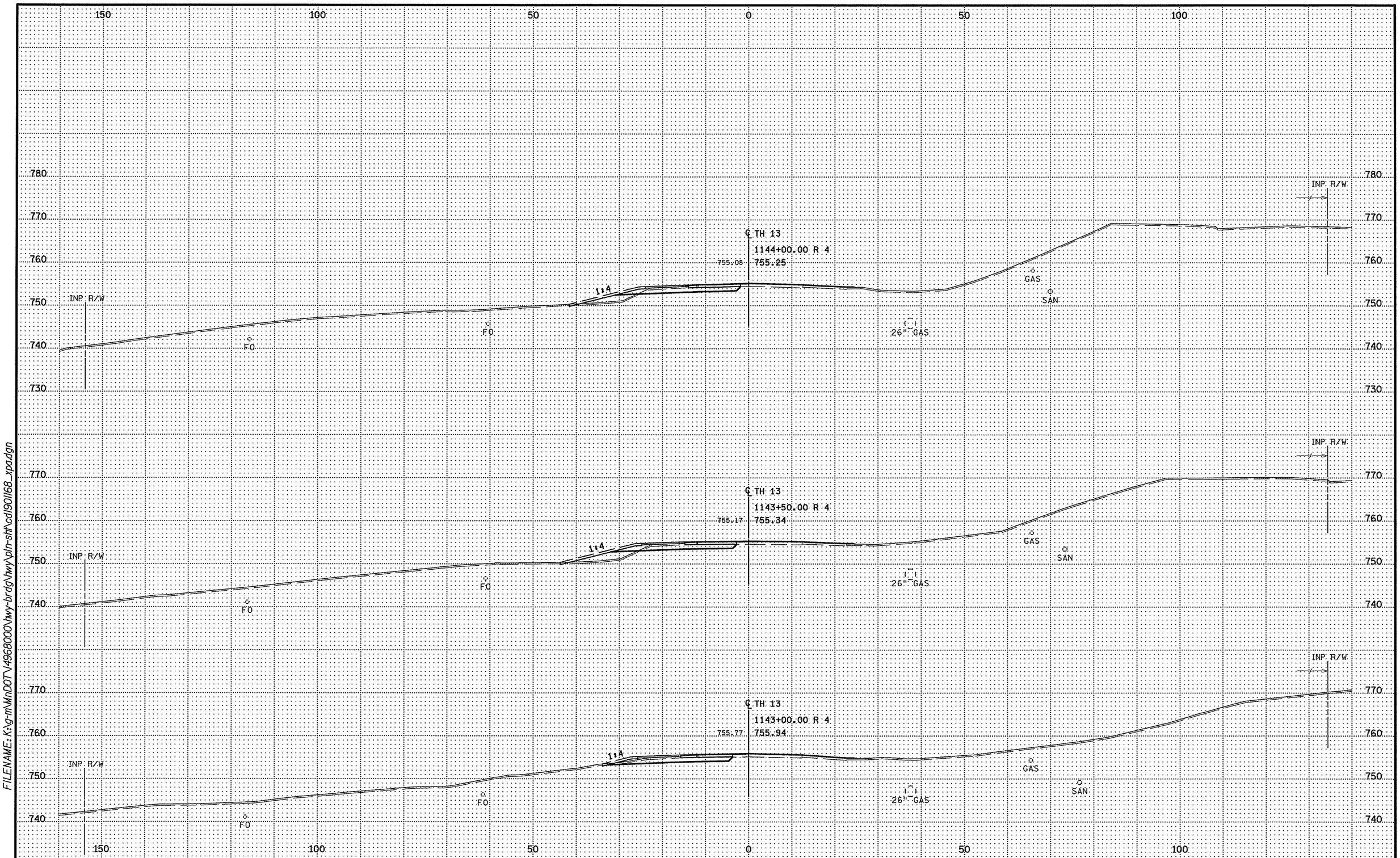
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1141+50 TO STA. 1142+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 387 of 393 Sheets

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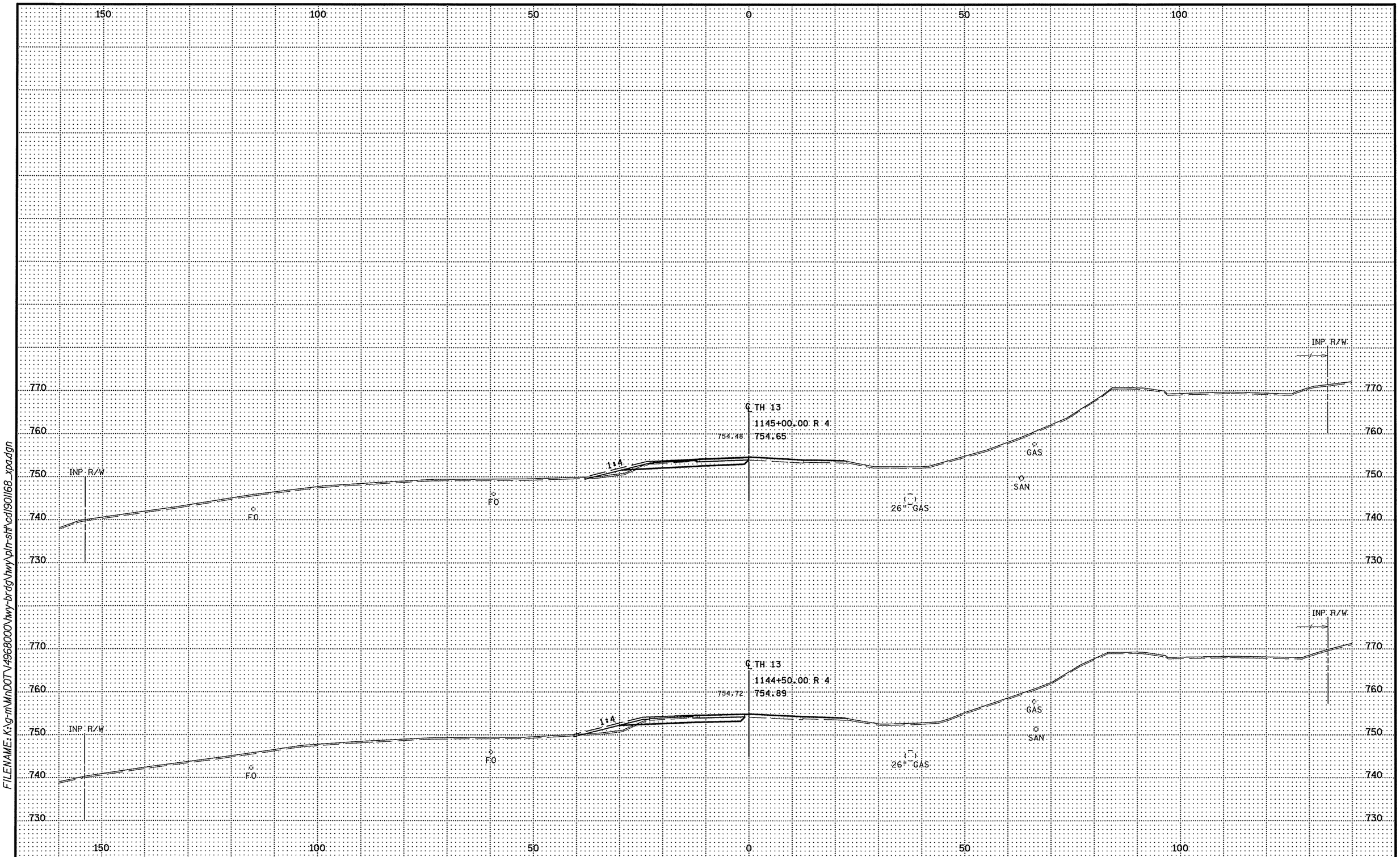


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TH 13
BETTER ROADS
PRESERVATION PROJECT

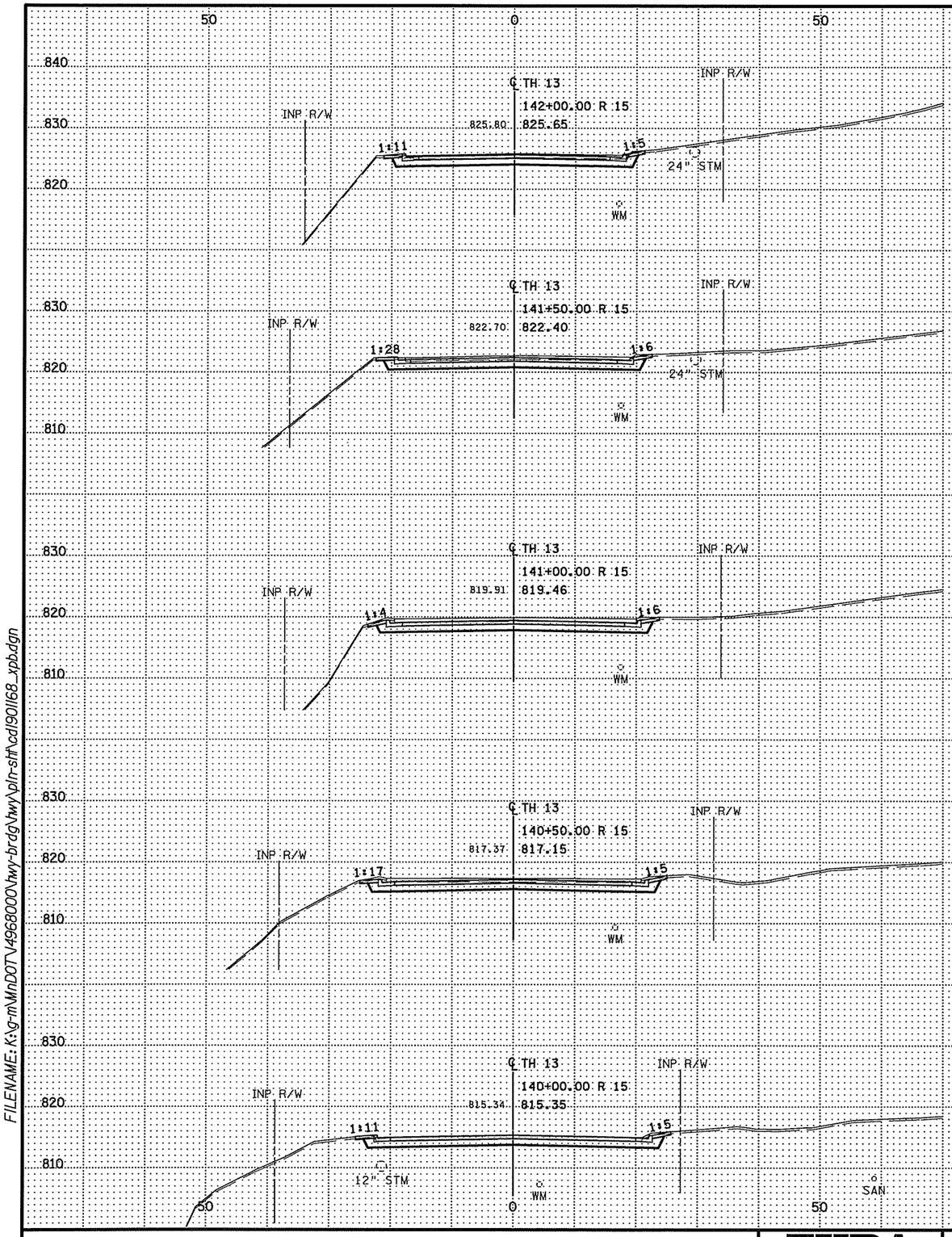
CROSS SECTIONS
TH 13 STA. 1143+00 TO STA. 1144+00

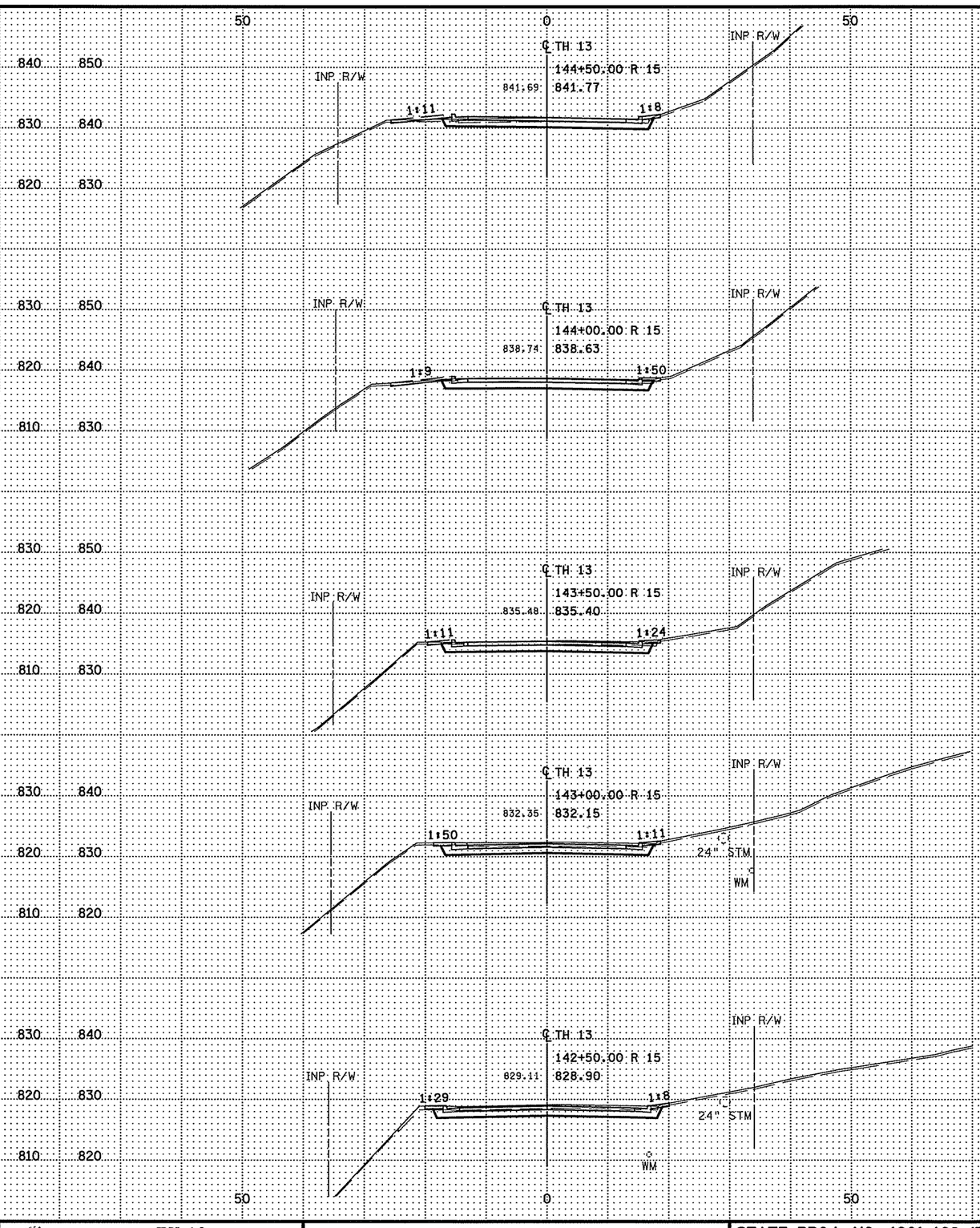
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 1144+50 TO STA. 1145+00	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 389 of 393 Sheets





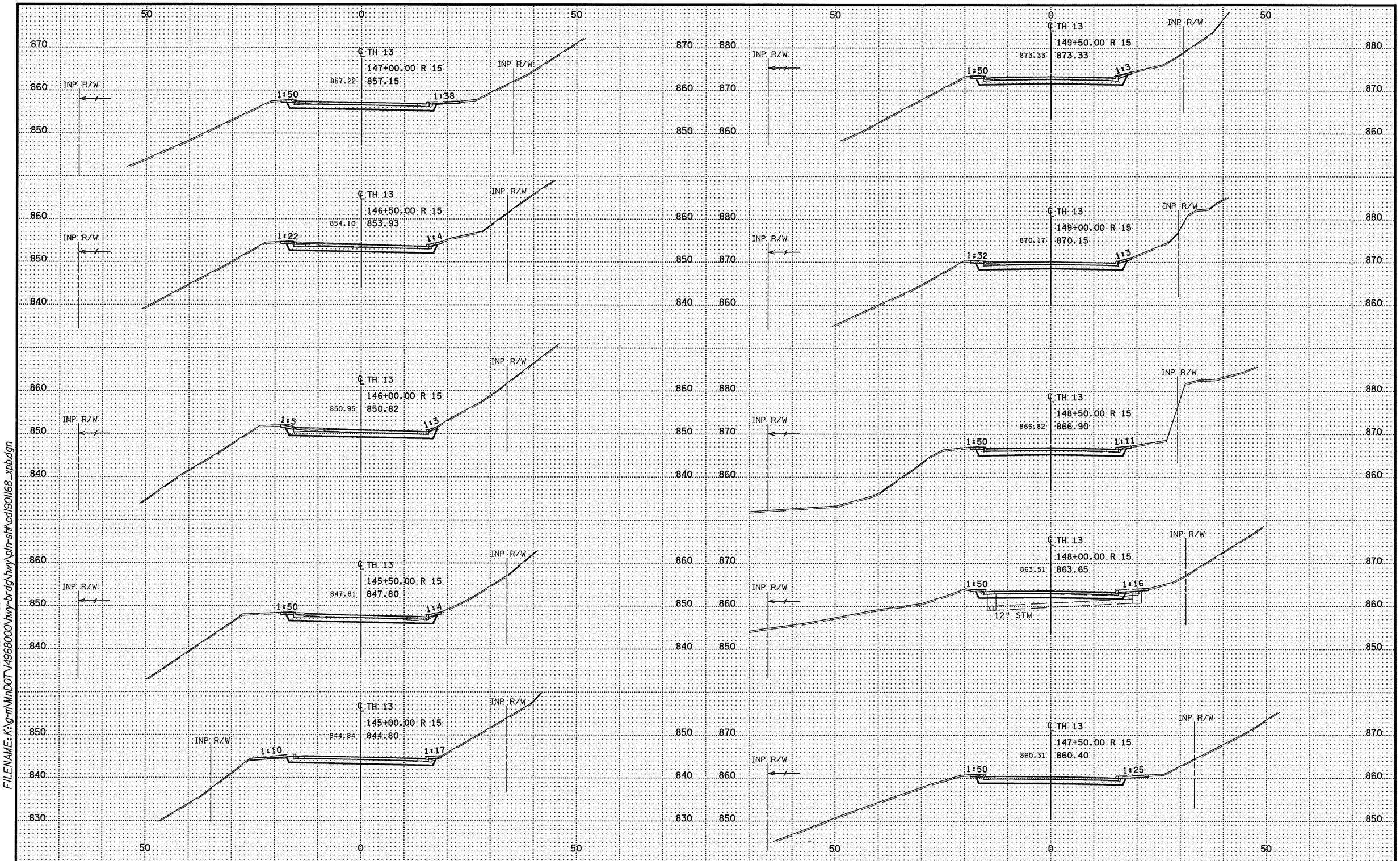
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TH 13
BETTER ROADS
PRESERVATION PROJECT

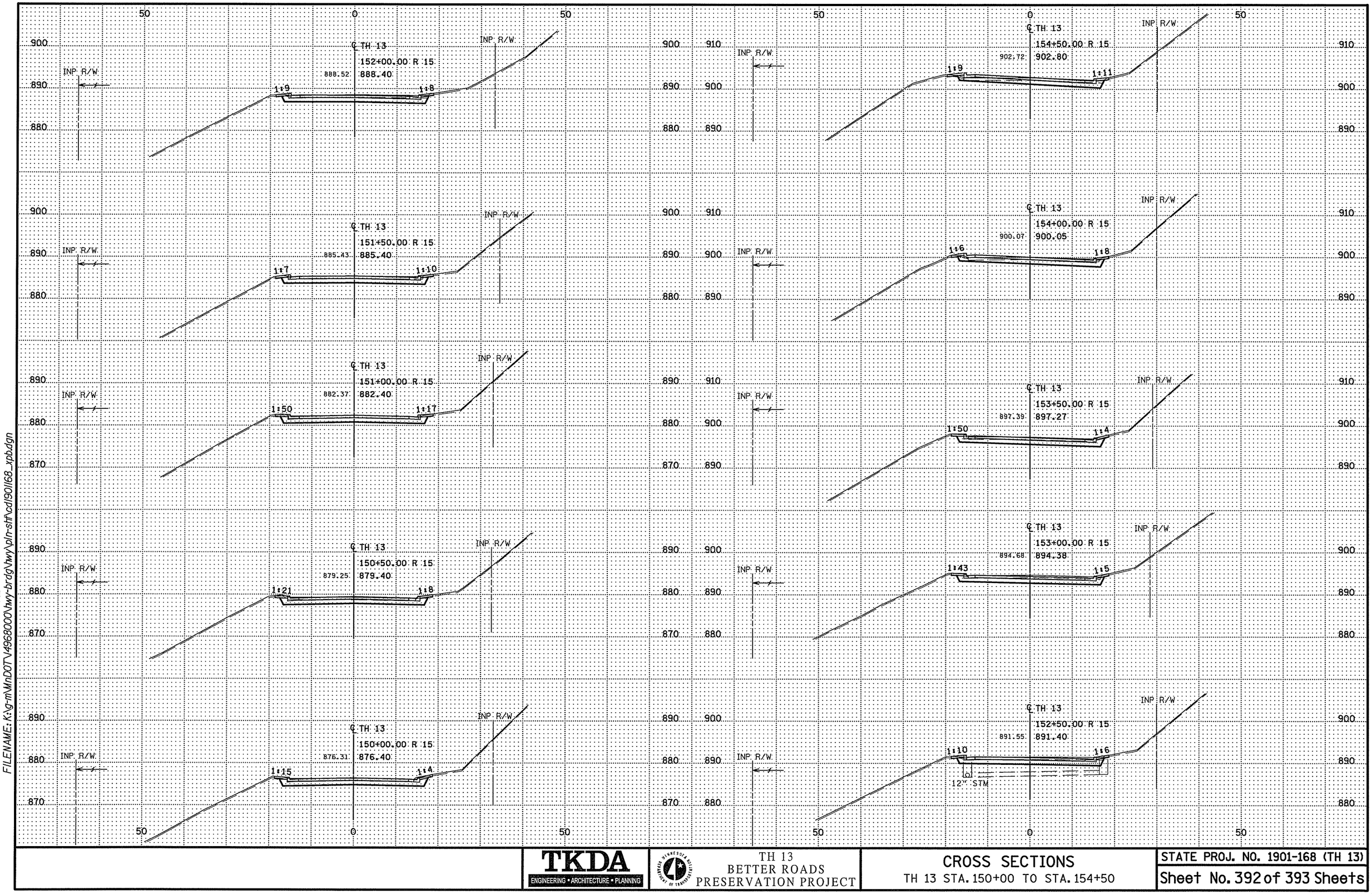
CROSS SECTIONS
TH 13 STA. 140+00 TO STA. 144+50

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DATE: 1/26/2012 TIME: 9:20:04 AM
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 145+00 TO STA. 149+50	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 391 of 393 Sheets



DATE: 1/26/2012 TIME: 9:20:05 AM
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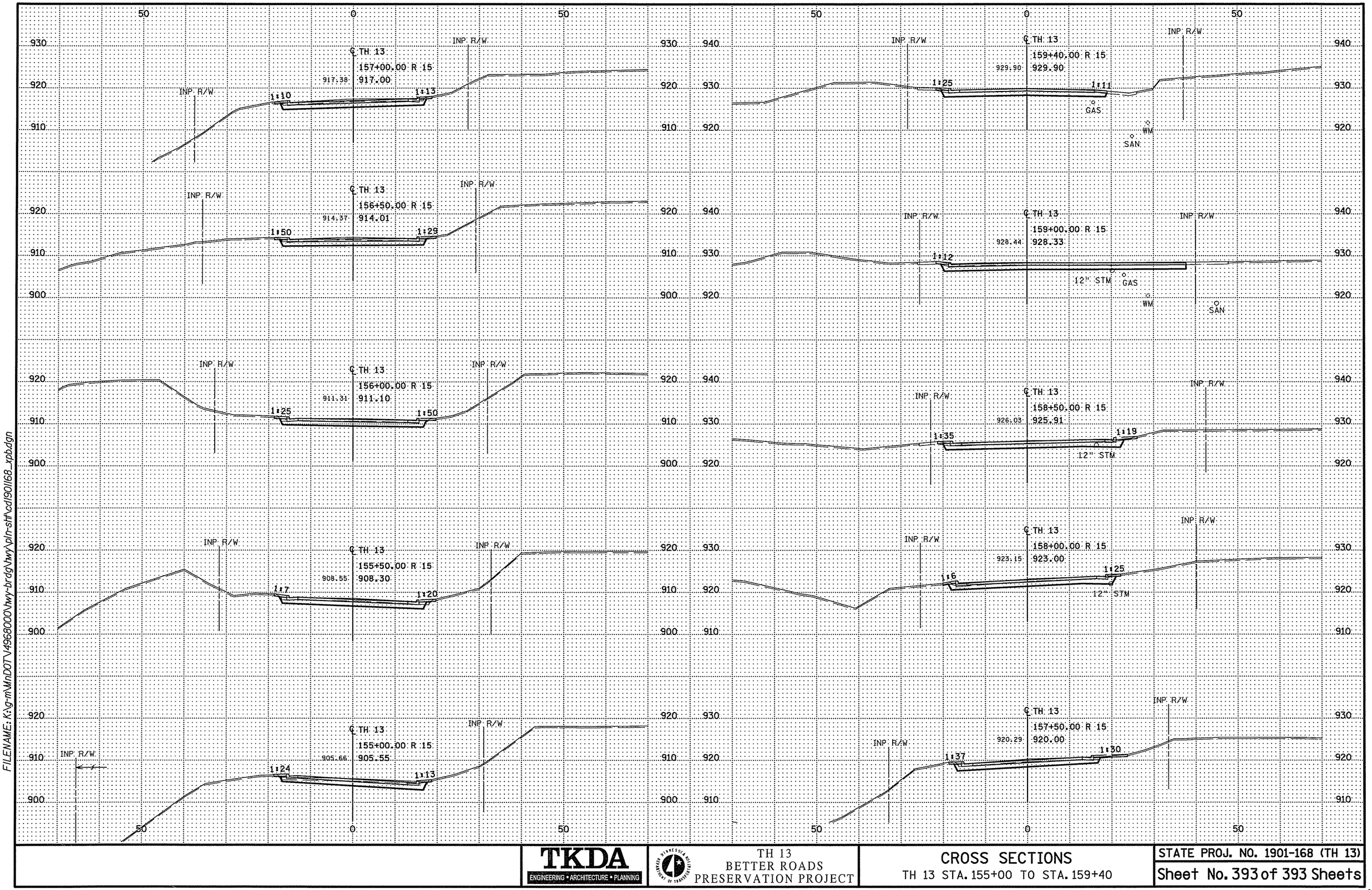
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TH 13
BETTER ROADS
PRESERVATION PROJECT

CROSS SECTIONS
TH 13 STA. 150+00 TO STA. 154+50

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DATE: 1/26/2012 TIME: 9:20:07 AM
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TKDA ENGINEERING • ARCHITECTURE • PLANNING	TH 13 BETTER ROADS PRESERVATION PROJECT	CROSS SECTIONS TH 13 STA. 155+00 TO STA. 159+40	STATE PROJ. NO. 1901-168 (TH 13) Sheet No. 393 of 393 Sheets