

EAU

MARCH 2018
ORDER OF SHEETS

- Section No. 1 Title
- Section No. 2 Typical Sections and Details
- Section No. 3 Estimate of Quantities
- Section No. 3 Miscellaneous Quantities
- Section No. 4 Right of Way Plat
- ~~Section No. 5 Plan and Profile~~
- Section No. 6 Standard Detail Drawings
- Section No. 7 Sign Plates
- ~~Section No. 8 Structure Plans~~
- Section No. 9 Computer Earthwork Data
- Section No. 9 Cross Sections

TOTAL SHEETS = 376

PROJECT ID: 7110-05-72

COUNTY: EAU CLAIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MONDOVI - EAU CLAIRE

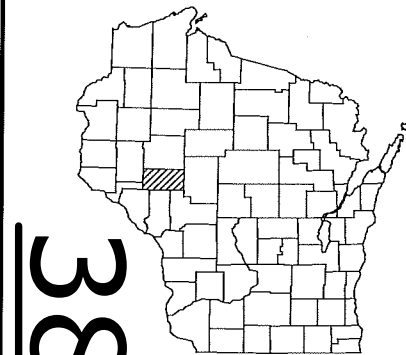
IH 94 TO USH 12

STH 37

EAU CLAIRE

STATE PROJECT NUMBER
7110-05-72

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7110-05-72	WISC 2018163	1

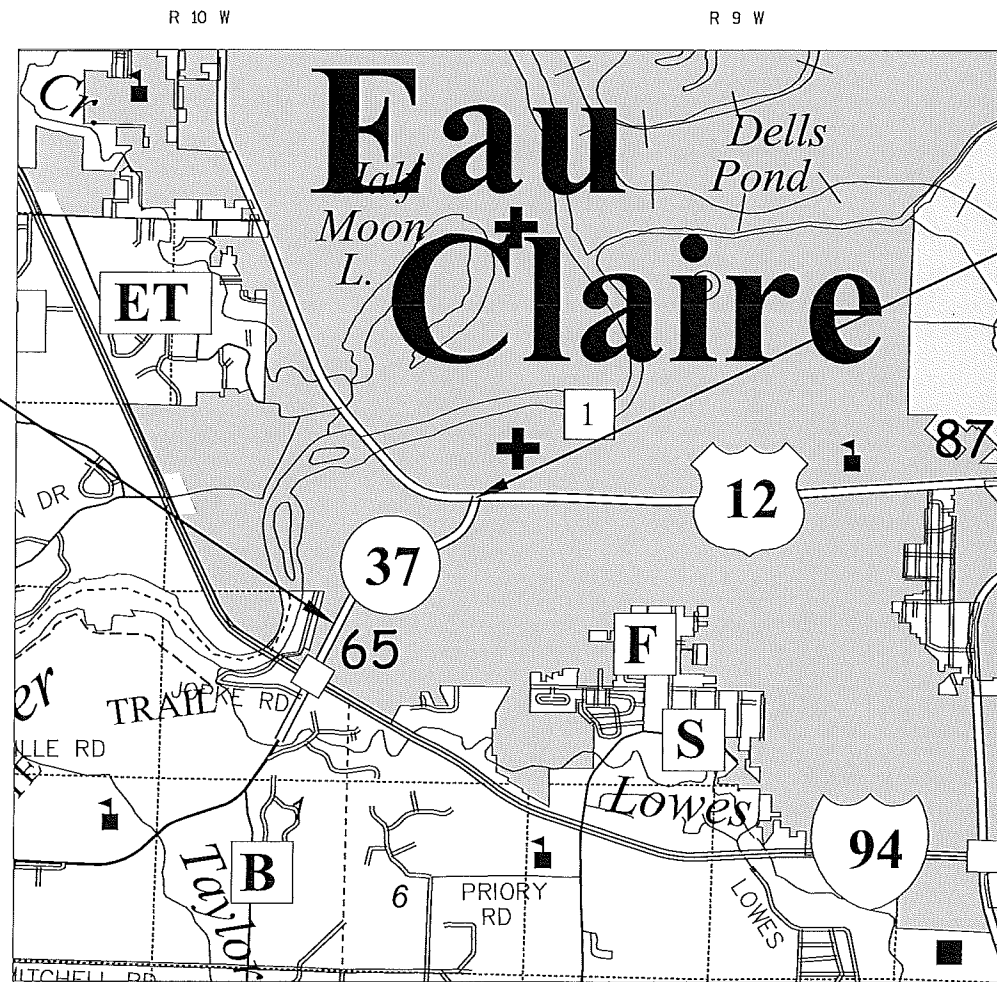


DESIGN DESIGNATION 7110-05-72

A.A.D.T. 2019 = 15000
 A.A.D.T. 2039 = 17800
 D.H.V. = 1570
 D.D. = 59.41
 T. = 10.2%
 DESIGN SPEED = 55 MPH
 ESALS = 4,220,500

BEGIN PROJECT 7110-05-72
 STATION 39+25
 X = 331083.210
 Y = 267599.083

END PROJECT 7110-05-72
 STATION 100+82



SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 1.166

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, EAU CLAIRE COUNTY, NAD83 (YEAR), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

CONVENTIONAL SYMBOLS

- PLAN
- CORPORATE LIMITS
 - PROPERTY LINE
 - LOT LINE
 - LIMITED HIGHWAY EASEMENT
 - EXISTING RIGHT OF WAY
 - PROPOSED OR NEW R/W LINE
 - SLOPE INTERCEPT
 - REFERENCE LINE
 - EXISTING CULVERT
 - PROPOSED CULVERT (Box or Pipe)
 - COMBUSTIBLE FLUIDS
 - MARSH AREA
 - WOODED OR SHRUB AREA

- PROFILE
- GRADE LINE
 - ORIGINAL GROUND
 - MARSH OR ROCK PROFILE (To be noted as such)
 - SPECIAL DITCH
 - GRADE ELEVATION
 - CULVERT (Profile View)
 - UTILITIES
 - ELECTRIC
 - FIBER OPTIC
 - GAS
 - SANITARY SEWER
 - STORM SEWER
 - TELEPHONE
 - WATER
 - UTILITY PEDESTAL
 - POWER POLE
 - TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor NW REGION
 Designer GARY W KRUG
 Project Manager DAVID I KOEPP
 Regional Examiner JENNIFER OLDENBURG
 Regional Supervisor TIMOTHY MASON

APPROVED FOR THE DEPARTMENT

DATE: 11/2/2017 [Signature]
 (Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

THE LOCATION OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE EROSION CONTROL IMPLEMENTATION PLAN. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.

RADIUS DIMENSIONS FOR CURB AND GUTTER ARE TO THE FLANGE LINE UNLESS OTHERWISE NOTED.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

WHEN THE QUANTITY OF BASE COURSE IS MEASURED BY THE TONS, THE DEPTH OR THICKNESS AS SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND UPON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.



DNR LIASON

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UTILITIES

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daniel.j.klein@xcelenergy.com

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UTILITIES

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COPY ALL CORRESPONDENCE TO:
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JMC ENGINEERS & ASSOCIATES
128 W SUNSET AVENUE
APPLETON, WI 54911
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AT&T WISCONSIN
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715-839-5565 (OFFICE)
715-410-0656 (MOBILE)
Rp4514@att.com

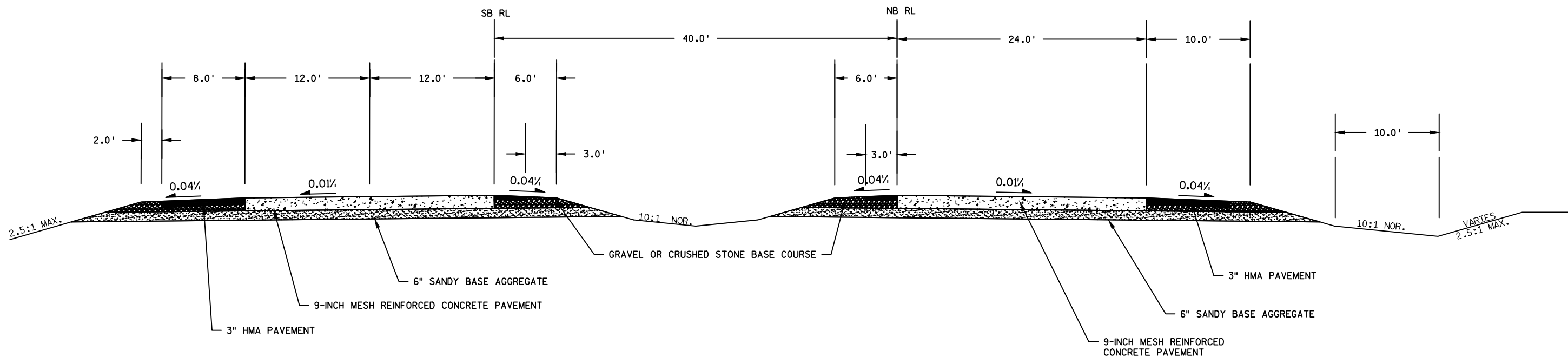
UTILITIES

WINDSTREAM
DENNIS RUESS
8531 CTH FF
WISCONSIN RAPIDS, WI 54494
812-456-1249 (OFFICE)
608-512-5587 (MOBILE)
Dennis.Ruess@windstream.com

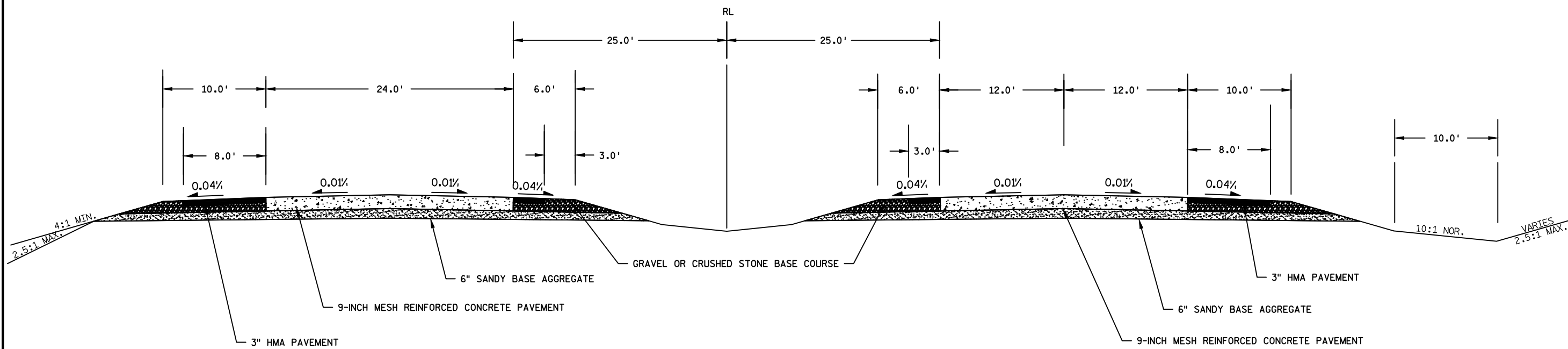
CHARTER COMMUNICATIONS (SPECTRUM)
SHANE YODER
1201 McCANN DRIVE
ALTOONA, WI 54720
715-831-8940 EXT 5113 (OFFICE)
715-370-7870 (MOBILE)
shane.yoder@charter.com

ABBREVIATIONS

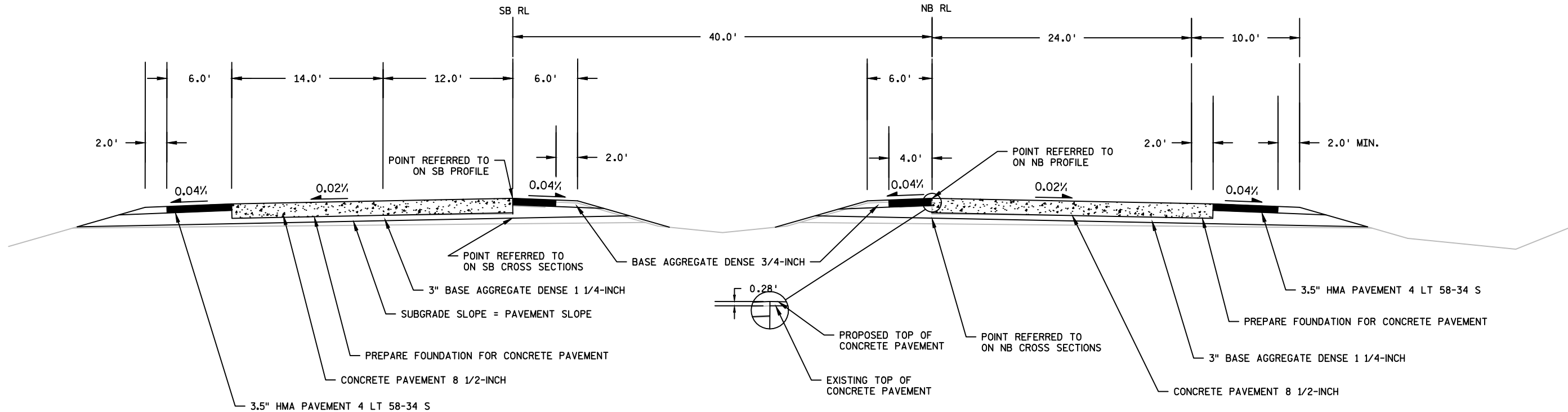
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC
B.A.D.	BASE AGGREGATE DENSE
C/L	CENTERLINE
C.P.S.	CULVERT PIPE STEEL
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE
CY	CUBIC YARD
D.D.	DAILY DIRECTIONAL SPLIT (TRAFFIC VOLUME)
D.H.V.	DAILY HOURLY TRAFFIC
E.A.T.	ENERGY ABSORBING TERMINAL
EL.	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
FE	FIELD ENTRANCE
FO	FIBER OPTIC
INV.	INVERT
LB	POUND
LF	LINEAR FEET
LT.	LEFT
MAX.	MAXIMUM
MCS	MIDWEST GUARDRAIL SYSTEM
MIN.	MINIMUM
NOR.	NORMAL
NPZ	NO PASSING ZONE
OH	OVERHEAD
P.E.	PRIVATE ENTRANCE
P.I.	POINT OF INTERSECTION
R	RADIUS
REQ'D	REQUIRED
R/L	REFERENCE LINE
RT.	RIGHT
RW	RIGHT OF WAY
S.D.D.	STANDARD DETAIL DRAWING
SE	SUPERELEVATION
STA.	STATION
SF	SQUARE FOOT
STH	STATE HIGHWAY
SY	SQUARE YARD
T.	PERCENT OF TRUCK TRAFFIC
TYP.	TYPICAL
VAR.	VARIES



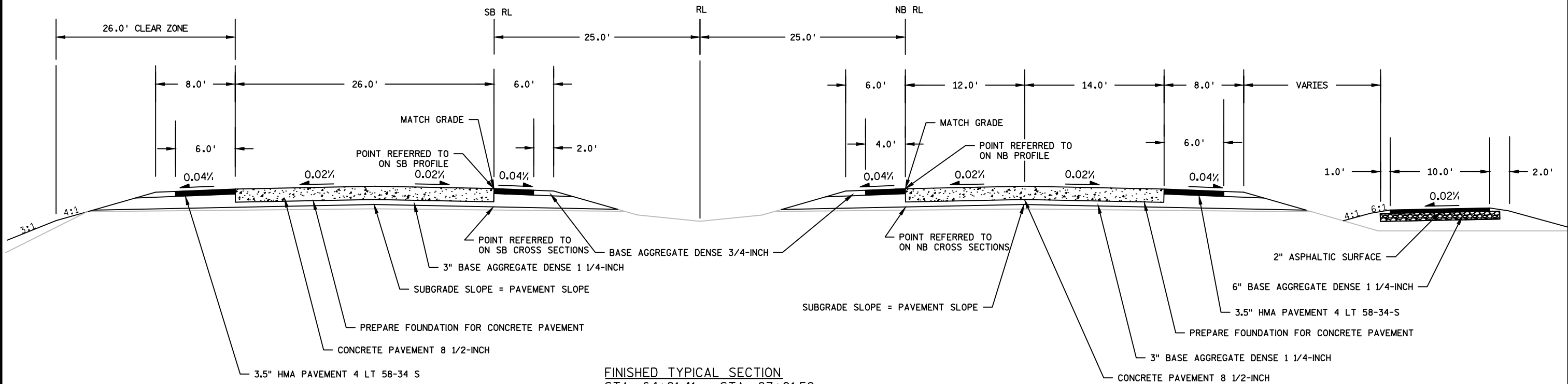
EXISTING TYPICAL SECTION
 STA. 39+25 - STA. 52+65.85



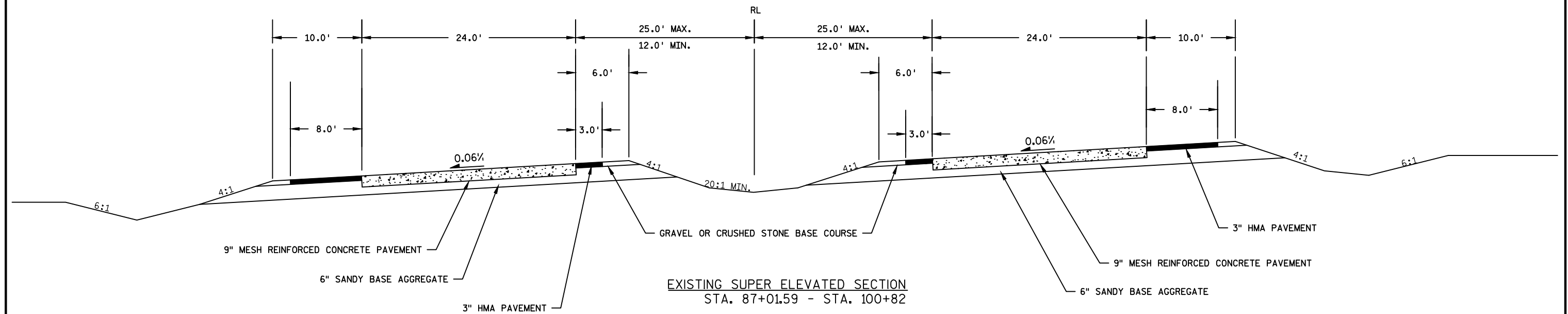
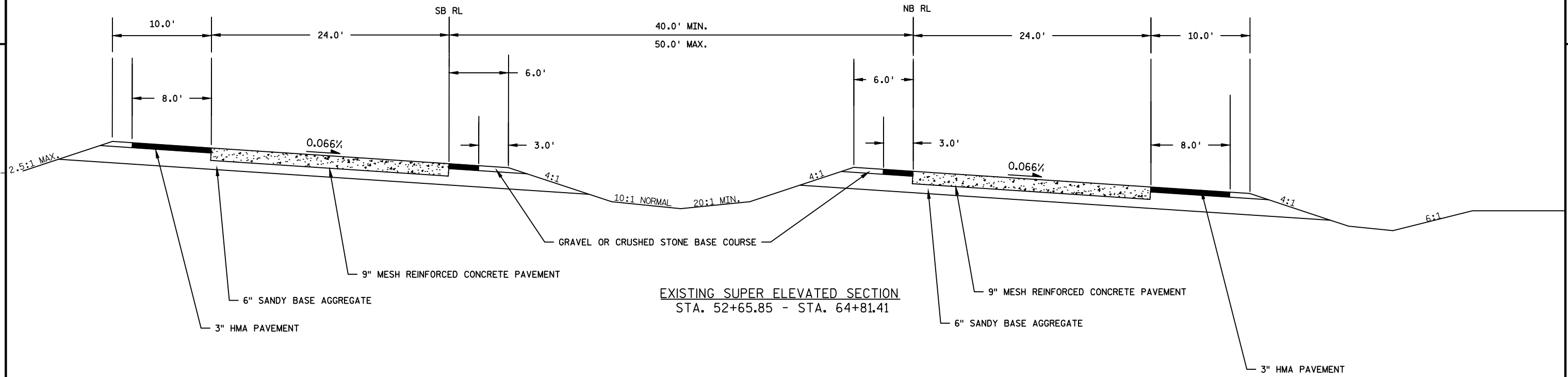
EXISTING TYPICAL SECTION
 STA. 64+81.41 - STA. 87+01.59

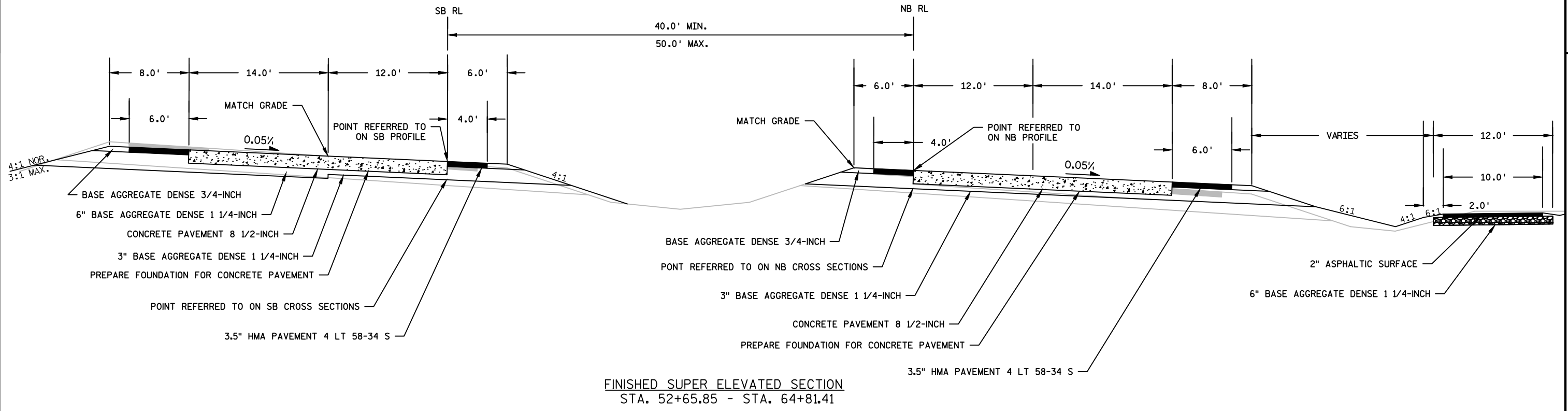


FINISHED TYPICAL SECTION
STA. 39+25 - STA. 52+65.85

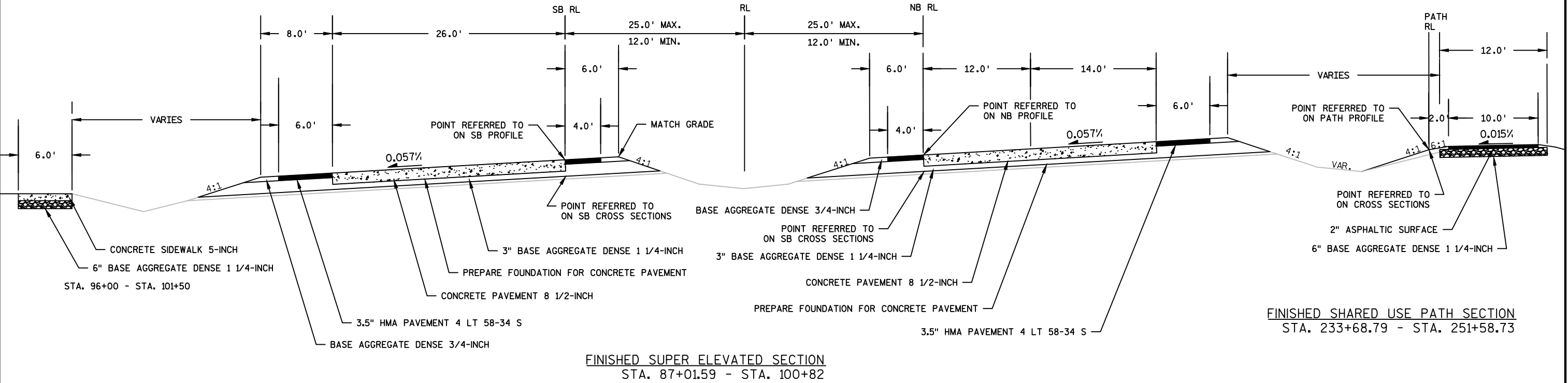


FINISHED TYPICAL SECTION
STA. 64+81.41 - STA. 87+01.59



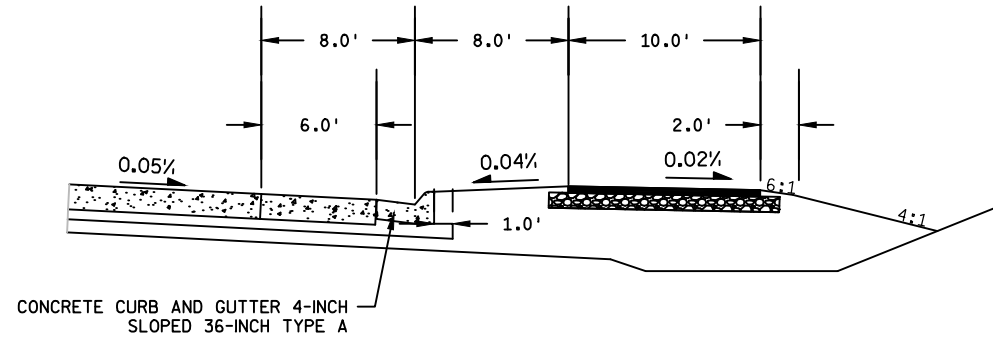


FINISHED SUPER ELEVATED SECTION
 STA. 52+65.85 - STA. 64+81.41

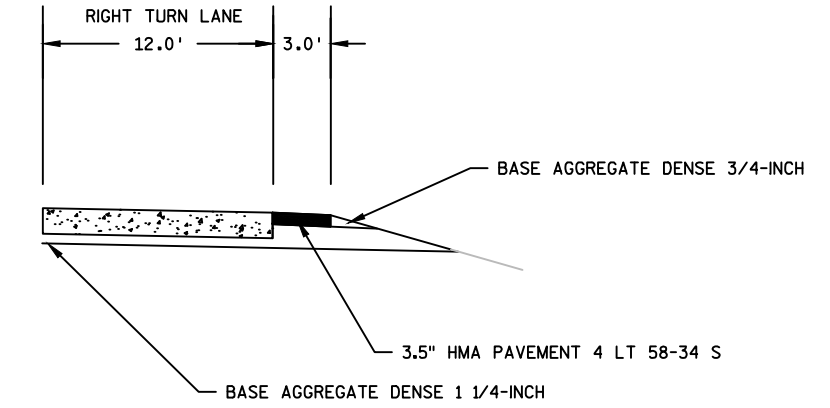


FINISHED SUPER ELEVATED SECTION
 STA. 87+01.59 - STA. 100+82

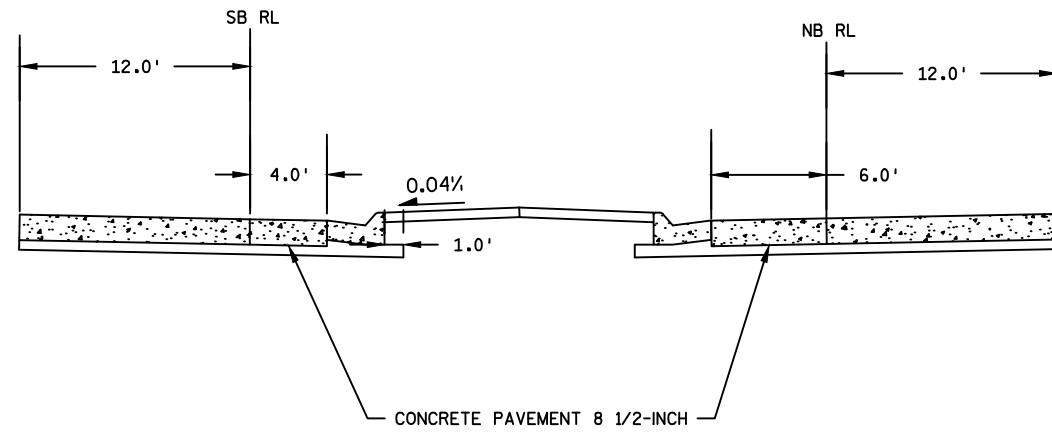
FINISHED SHARED USE PATH SECTION
 STA. 233+68.79 - STA. 251+58.73



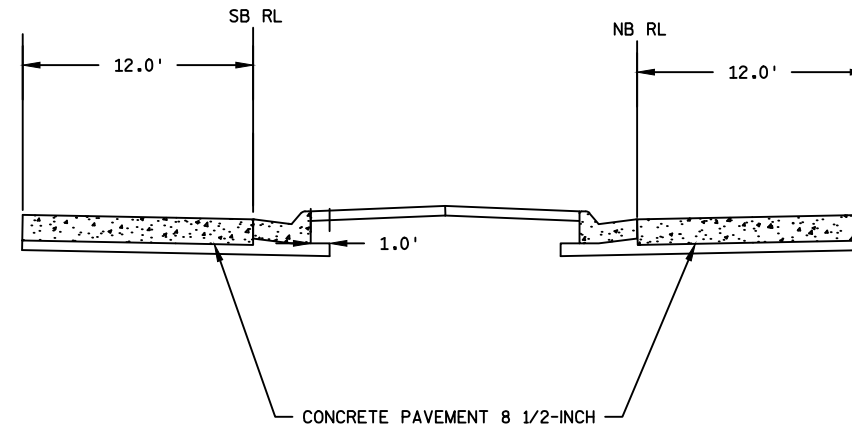
CURB AND GUTTER SECTION
 STA. 52+65.85 - STA. 58+00 NB



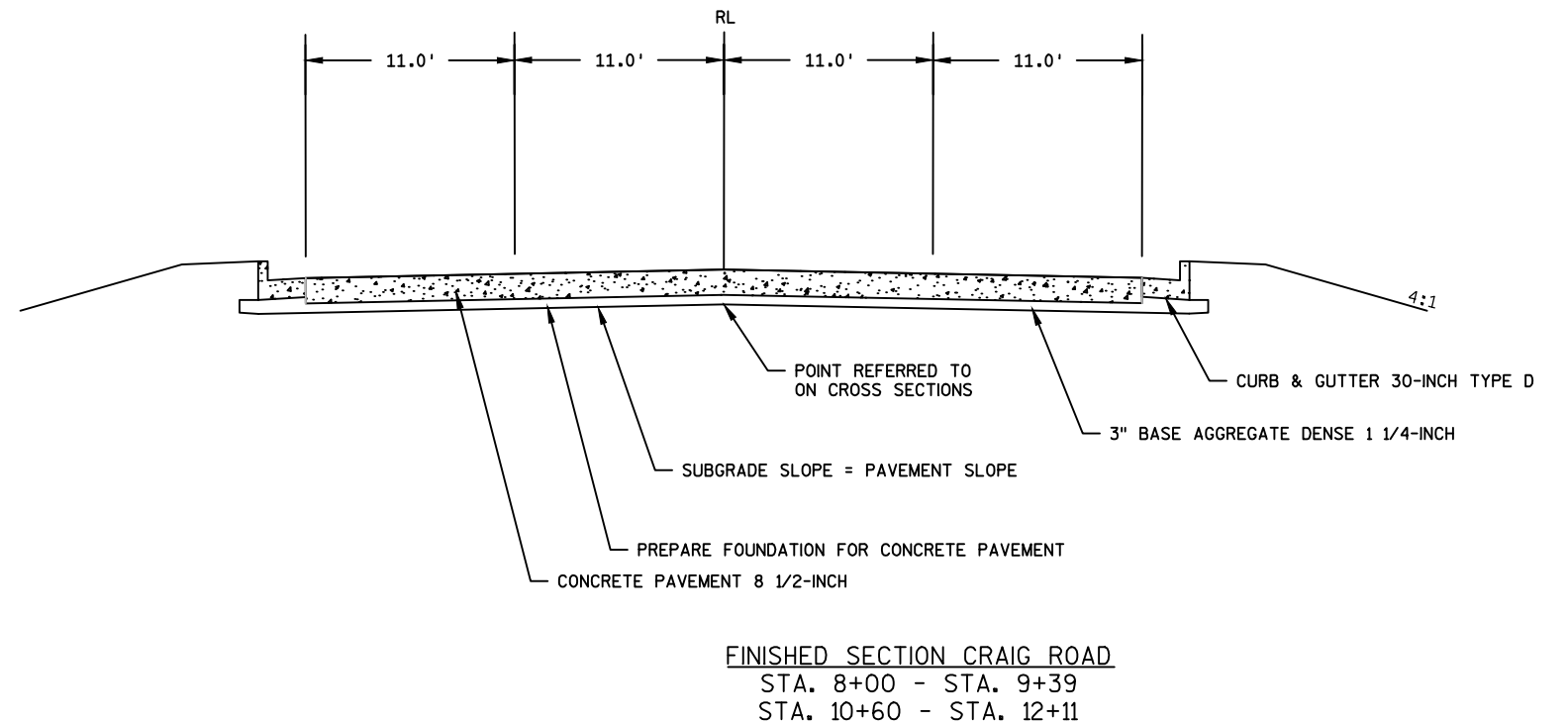
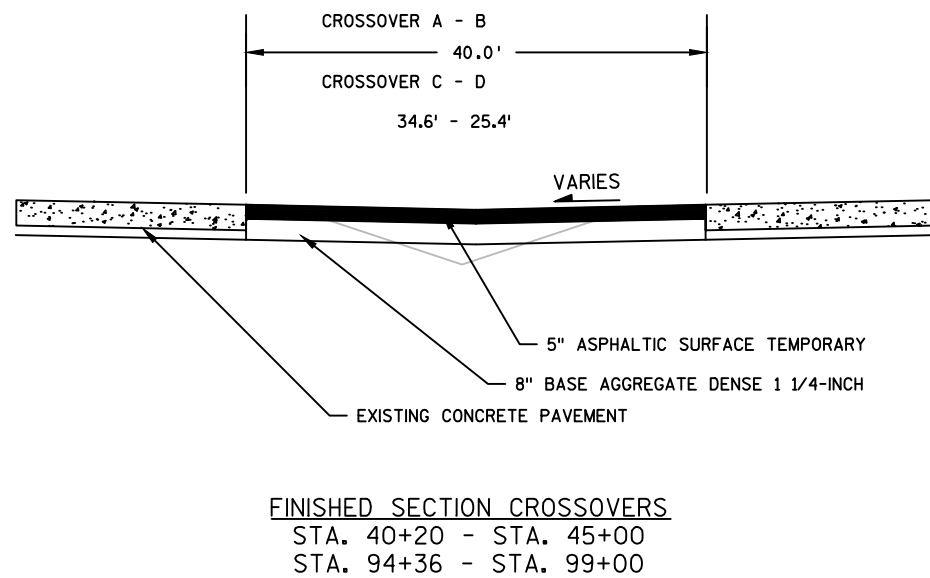
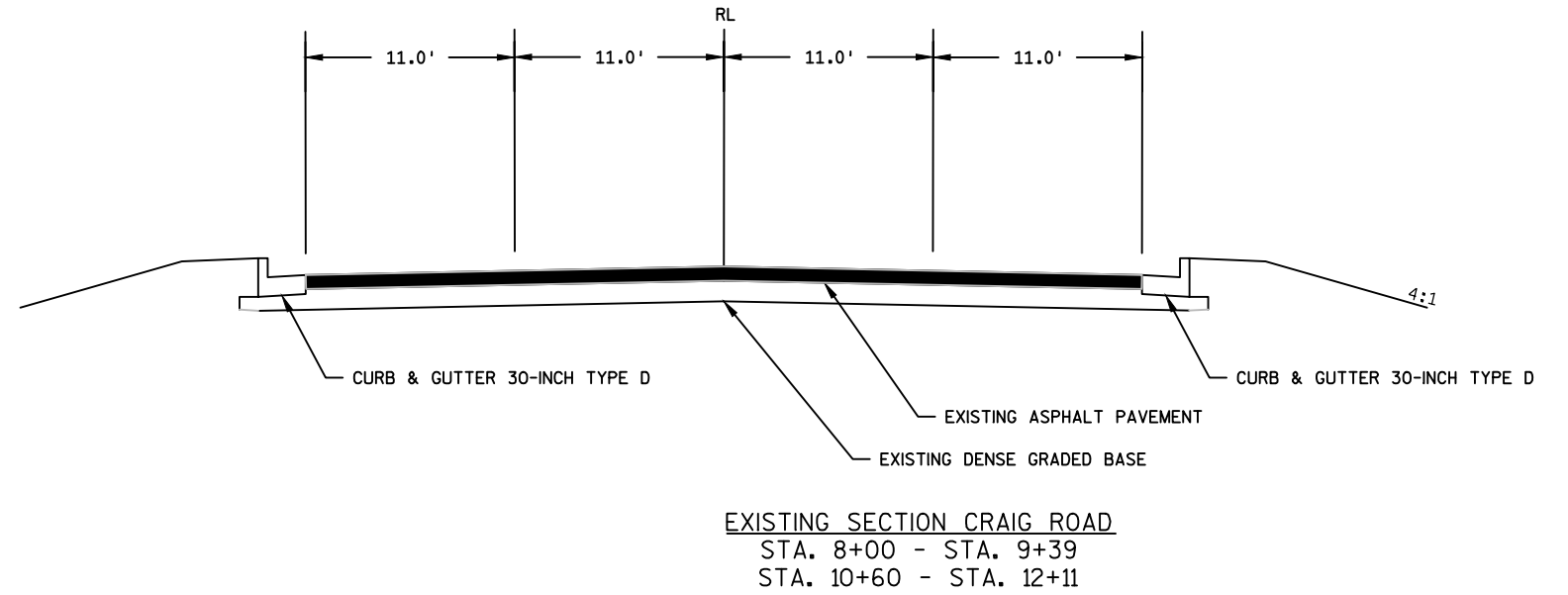
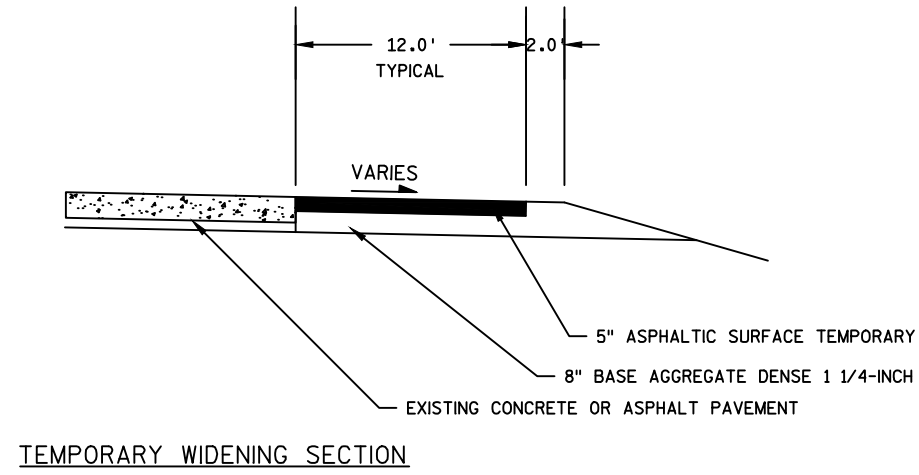
RIGHT TURN LANE SECTION

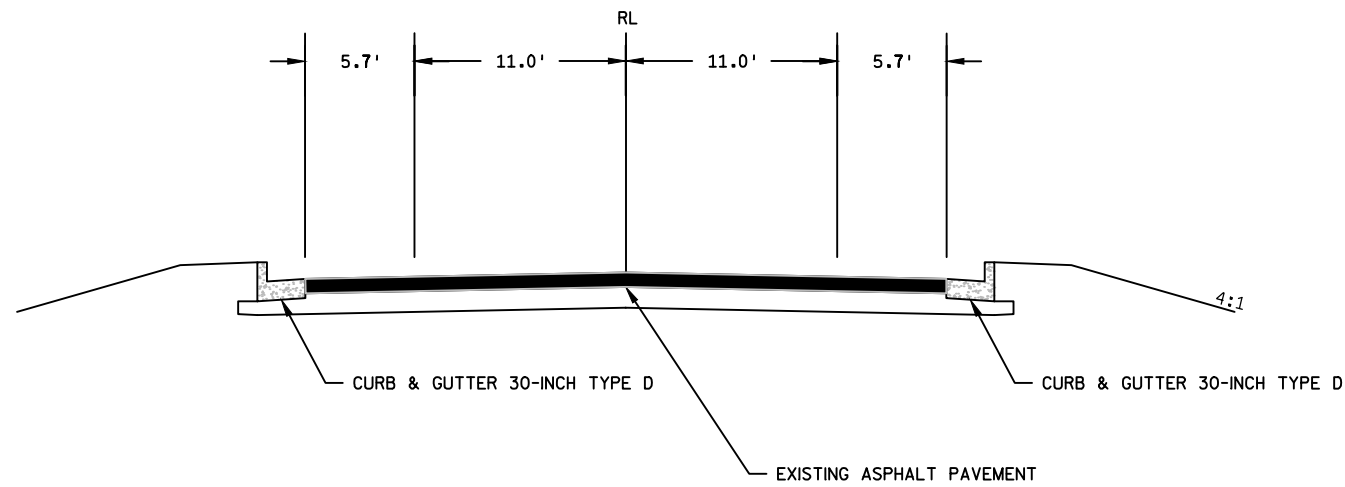


TYPICAL SECTION WITH CURB AND GUTTER MEDIAN
 STA. 82+00 - STA. 84+45 SB
 STA. 85+25 - STA. 87+65 NB

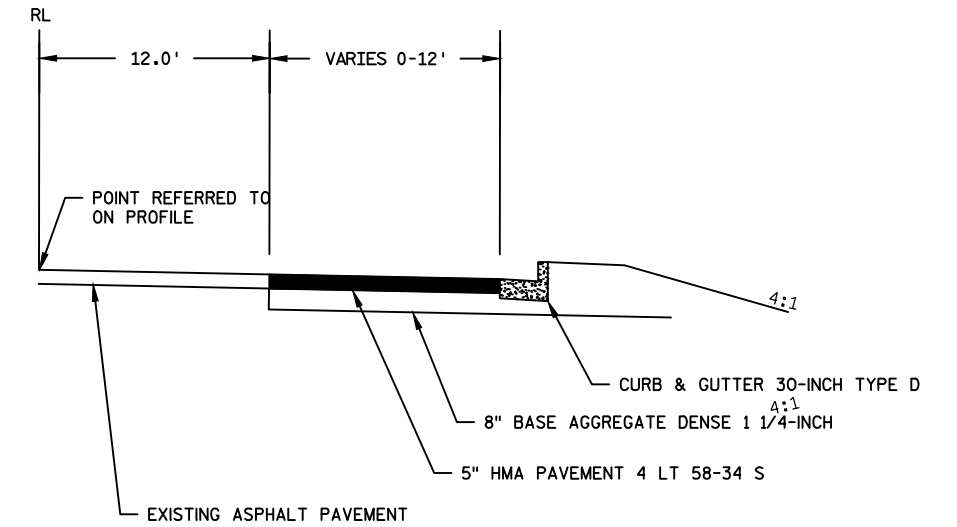


TYPICAL SECTION WITH CURB AND GUTTER MEDIAN
 STA. 48+25 - STA. 50+39 SB
 STA. 51+67 - STA. 53+27 NB
 STA. 96+00 - STA. 100+79 NB
 STA. 96+00 - STA. 101+12 SB

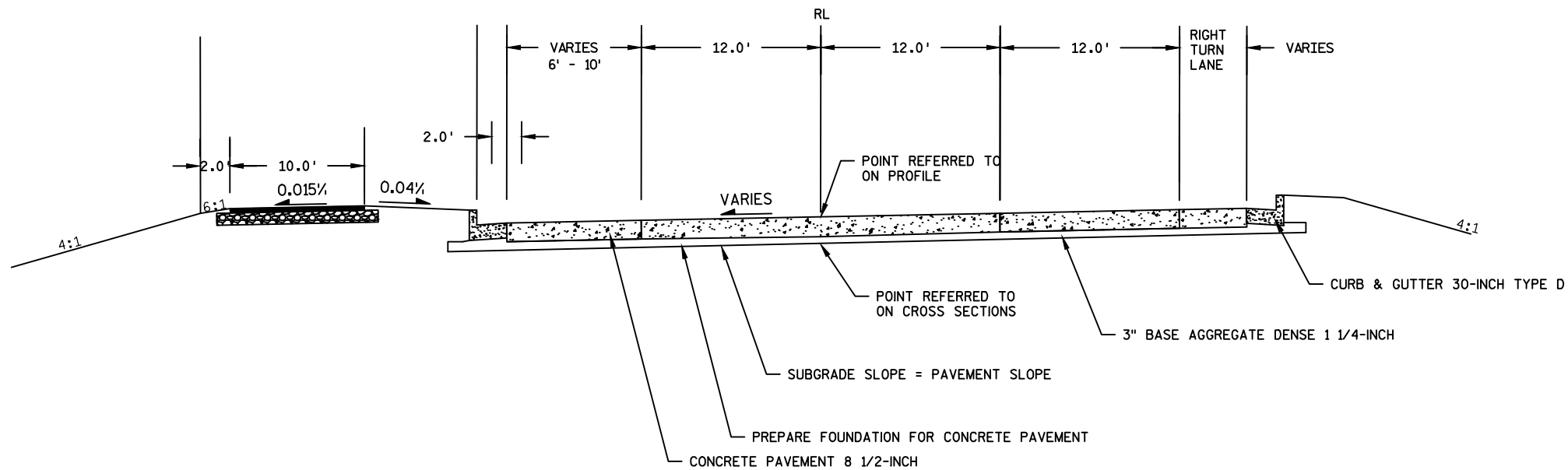




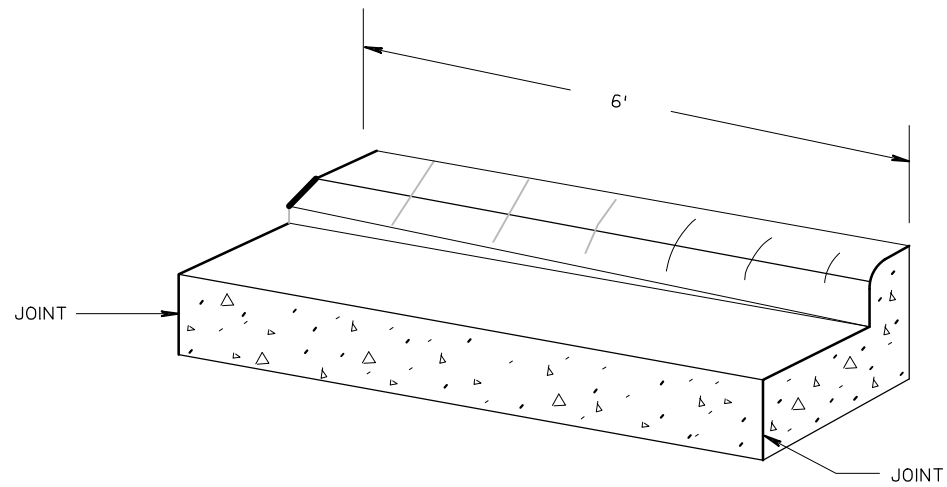
EXISTING SECTION SHORT STREET
STA. 40+55 - 44+68



FINISHED TYPICAL SECTION SHORT STREET
STA. 40+55 - STA. 42+05

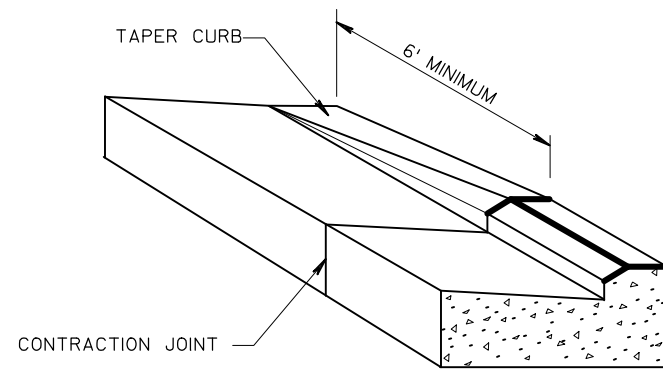


FINISHED TYPICAL SECTION SHORT STREET
STA. 42+05 - STA. 44+68

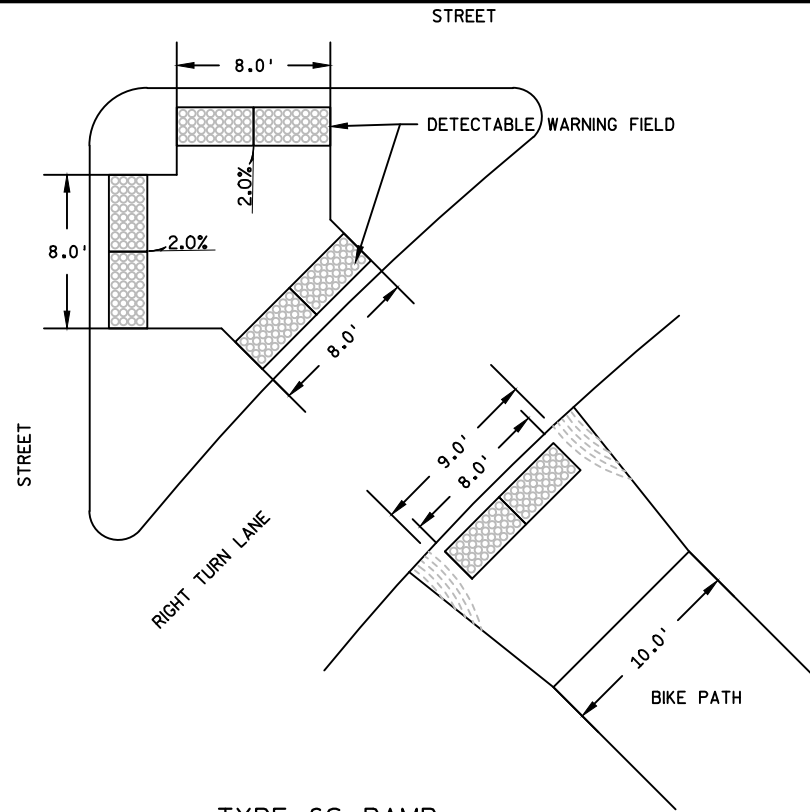


TRANSITION DETAIL

36" TYPE "A" CURB & GUTTER TO 30" TYPE "D" CURB & GUTTER
(TO BE MEASURED & PAID FOR AS 36" CONC. C&G)

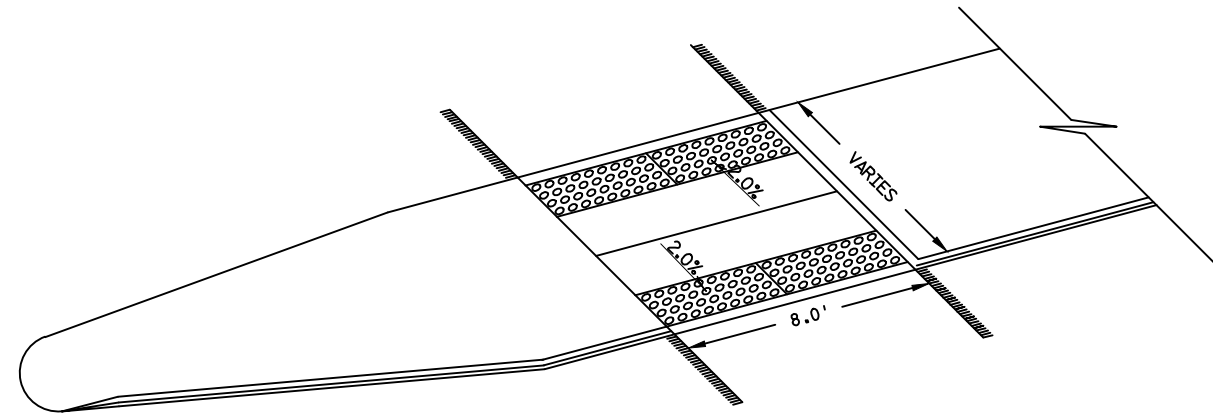


DETAIL OF CURB & GUTTER TERMINI



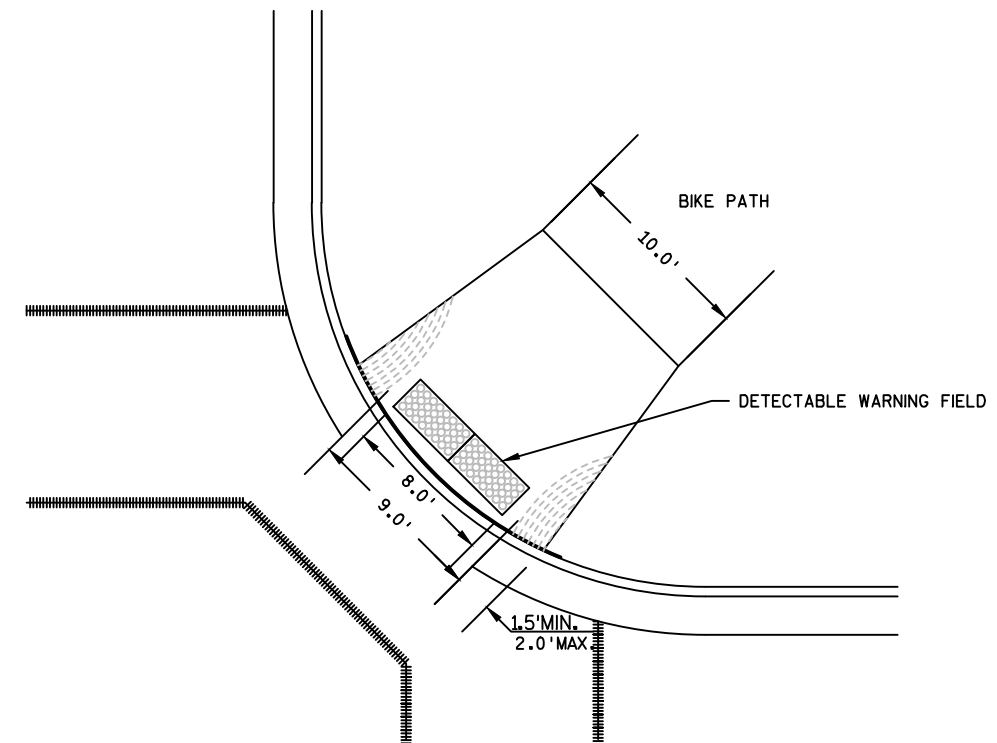
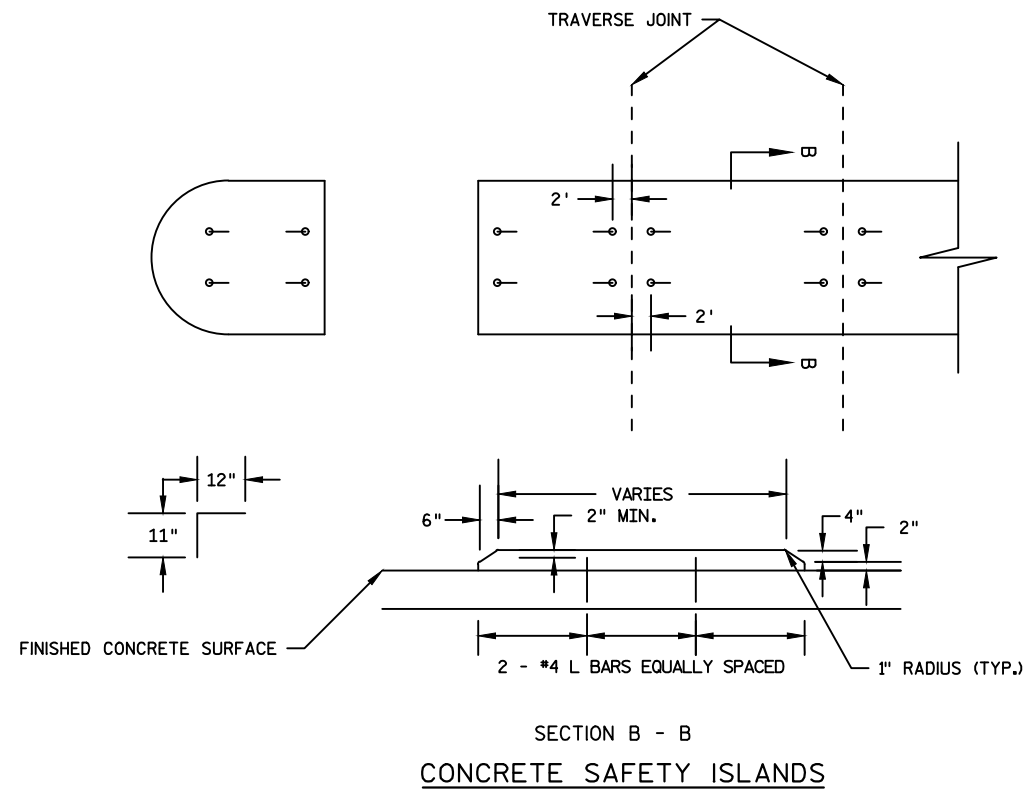
TYPE 6S RAMP

SEE S.D.D. CURB RAMPS FOR ADDITIONAL INFORMATION



TYPE 5S RAMP

SEE S.D.D. CURB RAMPS FOR ADDITIONAL INFORMATION



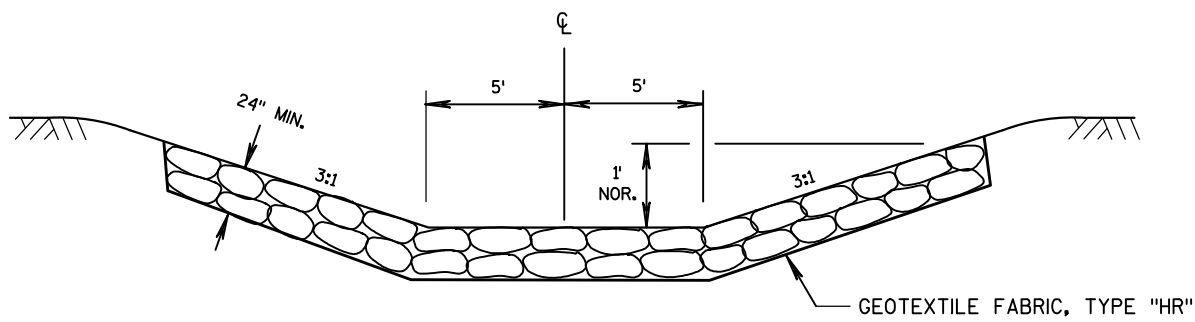
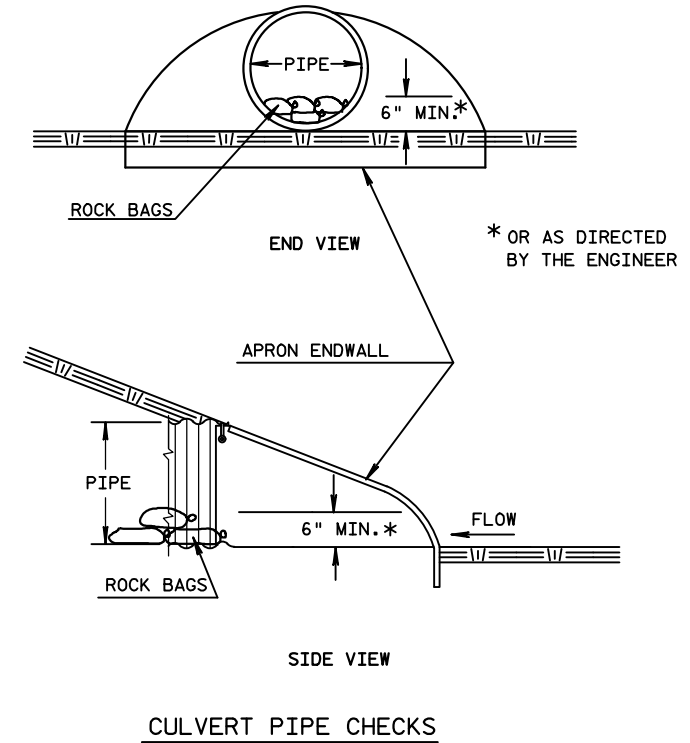
TYPE 1S RAMP

SEE S.D.D. CURB RAMPS FOR ADDITIONAL INFORMATION

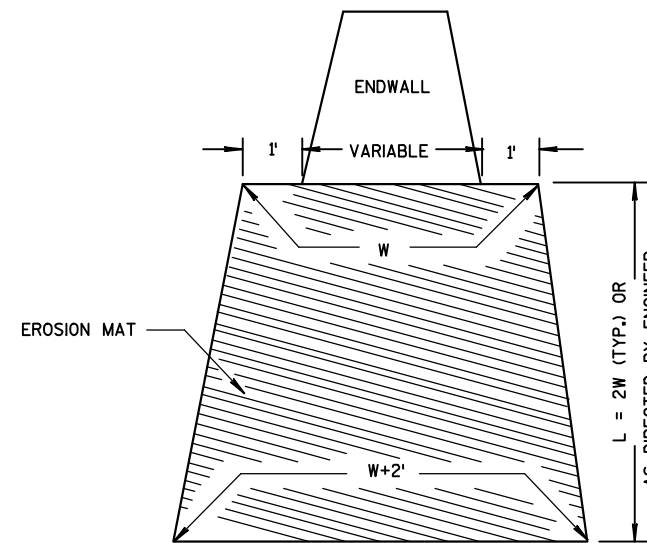
RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

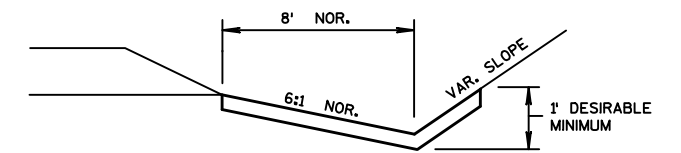
TOTAL PROJECT AREA = 45.55_____ ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 25.67_____ ACRES



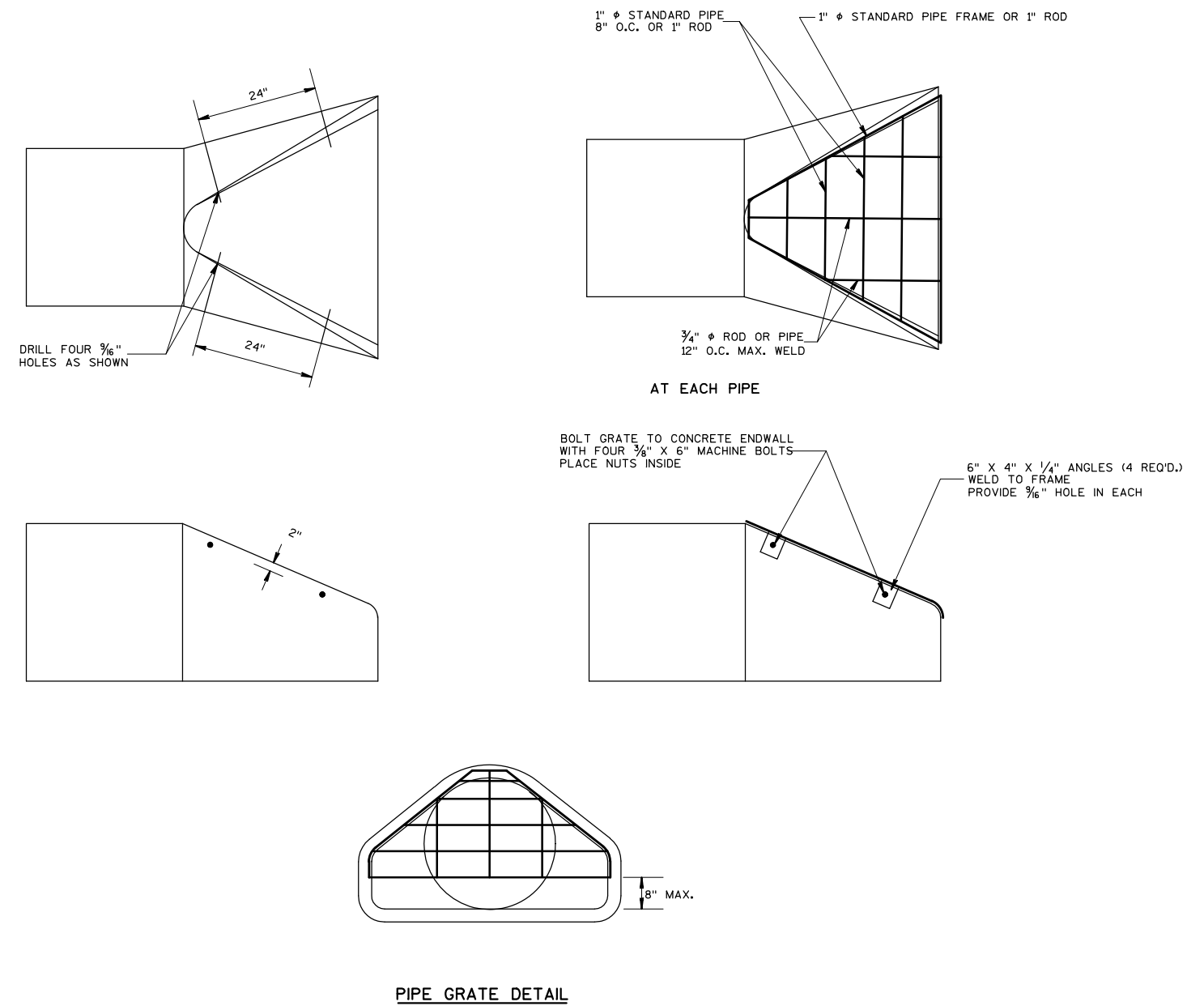
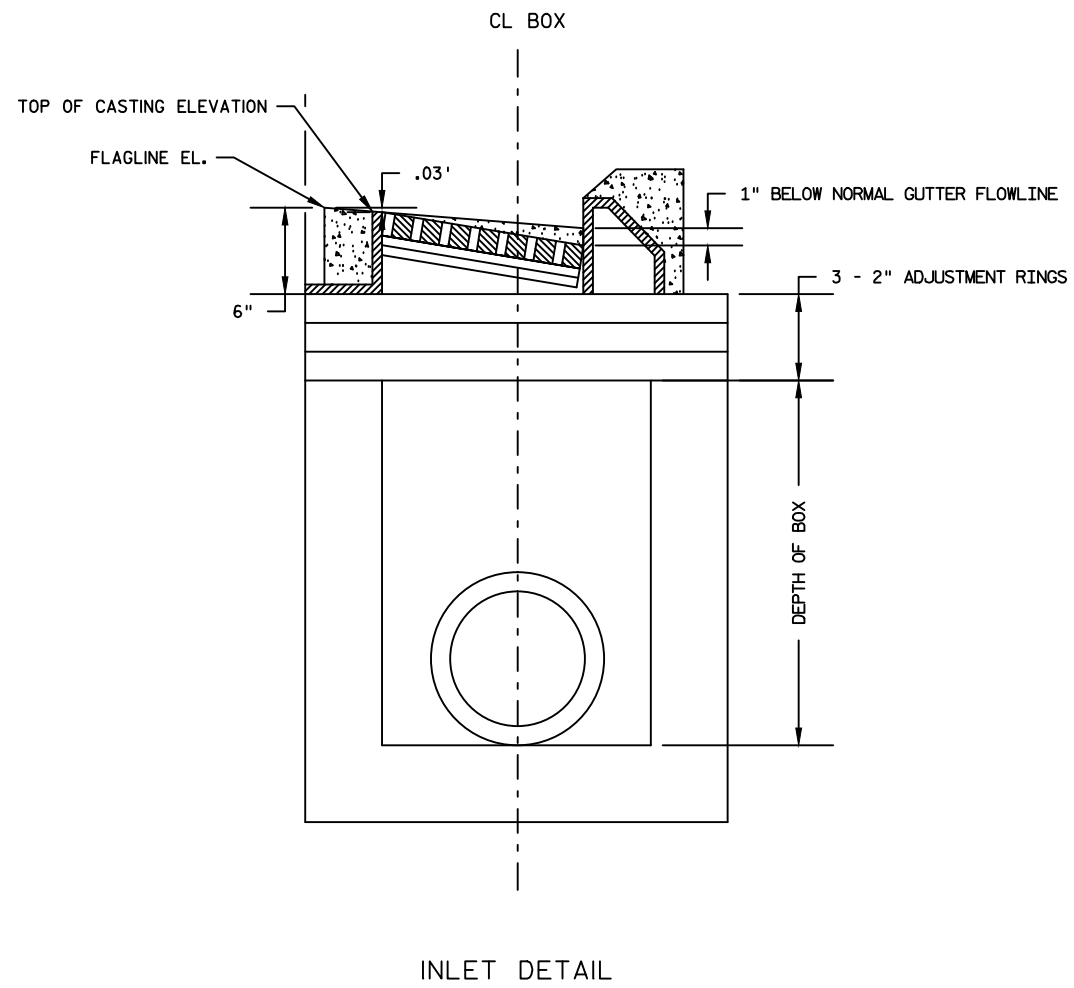
DETAIL FOR SPECIAL DITCH WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC

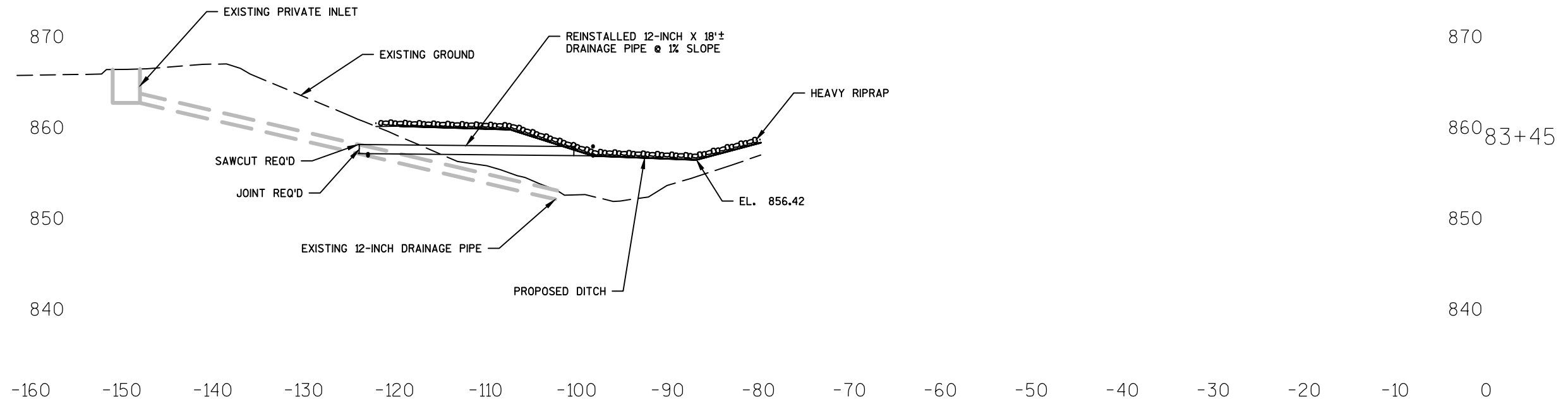


EROSION MAT TREATMENT AT CULVERTS

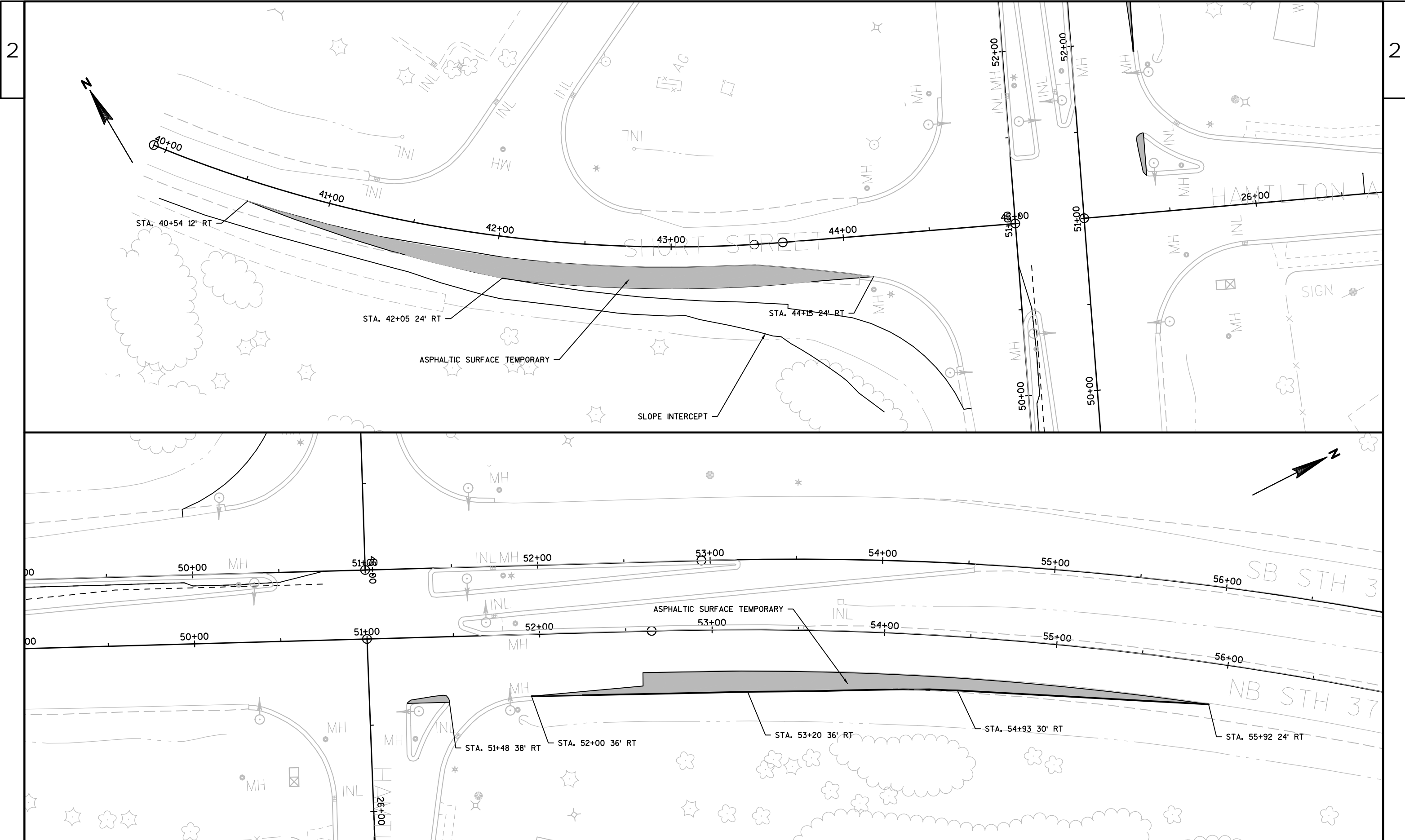


EROSION MAT DETAIL FOR DITCHES

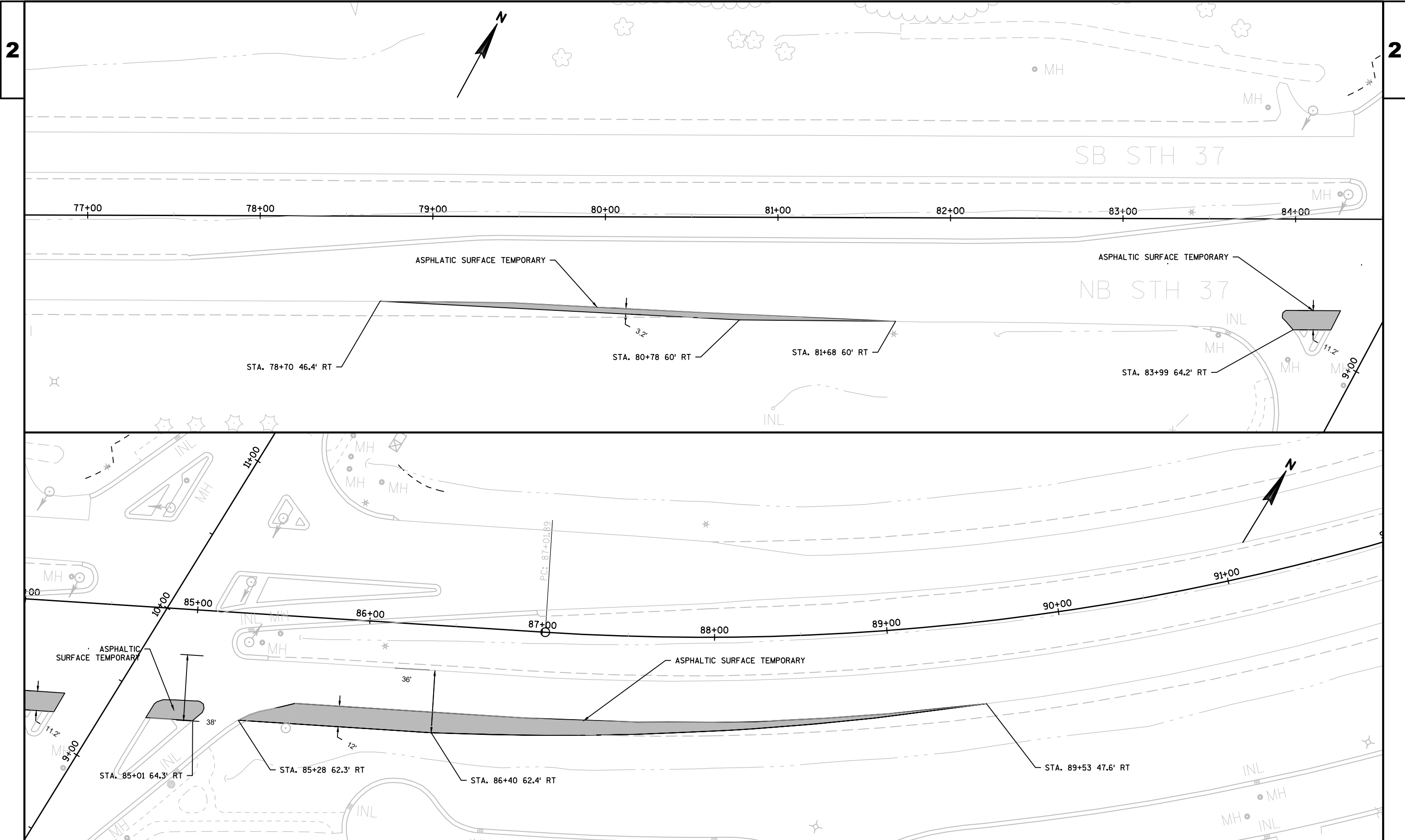




CONSTRUCTION DETAILS
 REMOVE, SALVAGE, AND REINSTALL DRAINAGE PIPE, STATION 83+71 LT



PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	TEMPORARY WIDENING DETAILS	SHEET	E
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PROJECT NO: 7110-05-72

HWY: STH 37

COUNTY: EAU CLAIRE

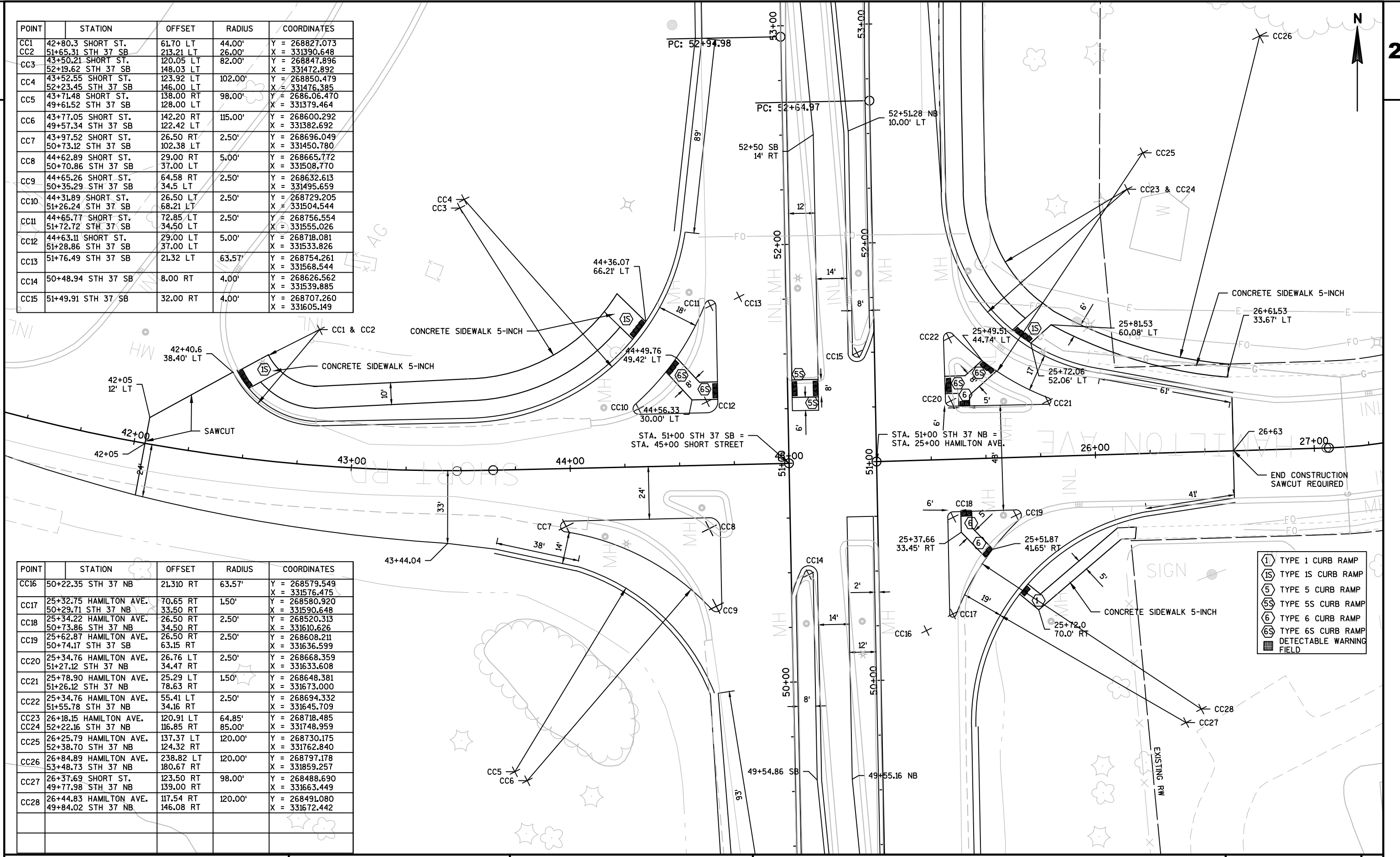
TEMPORARY WIDENING DETAILS

SHEET

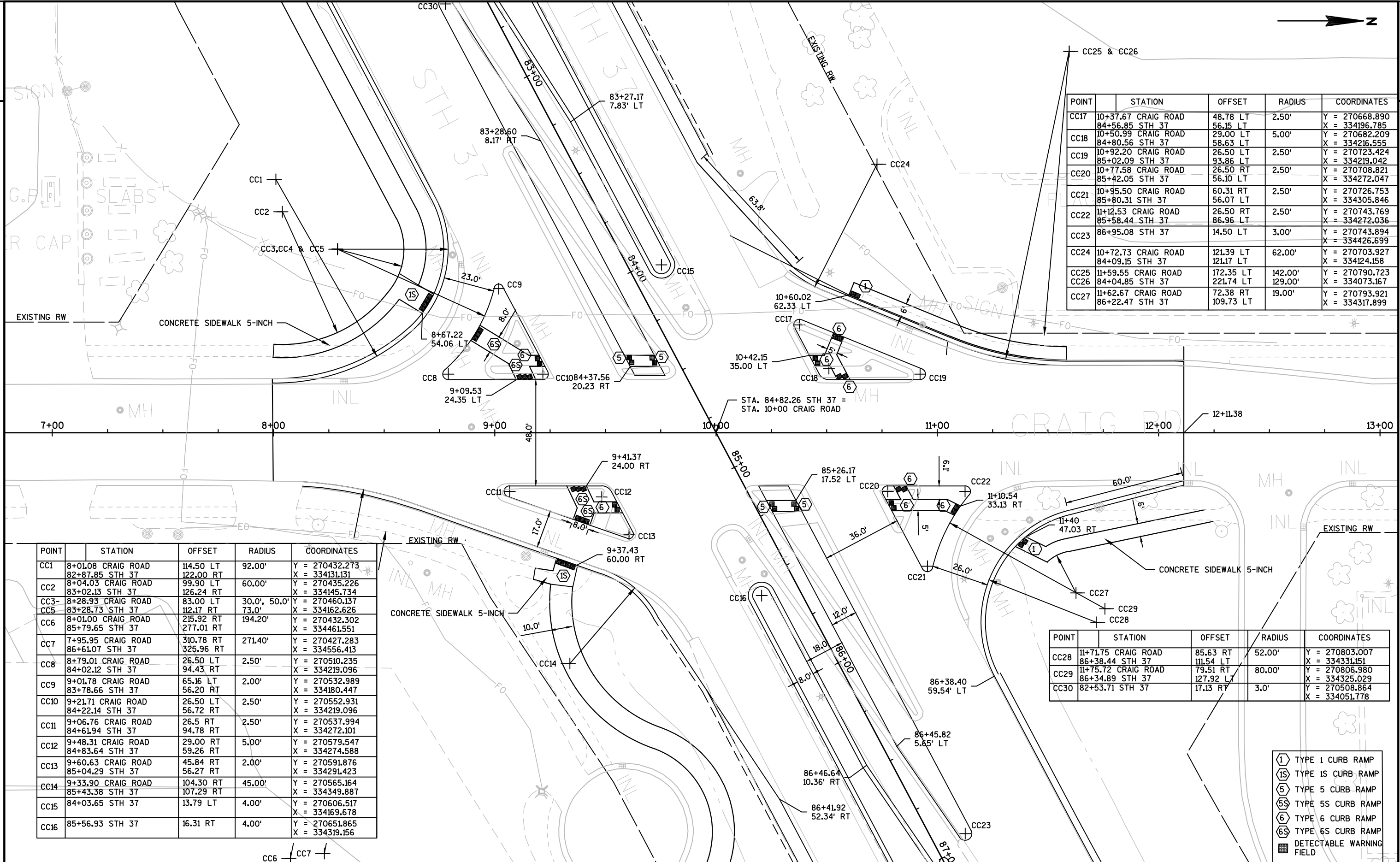
E

POINT	STATION	OFFSET	RADIUS	COORDINATES
CC1	42+80.3 SHORT ST.	61.70 LT	44.00'	Y = 268827.073
CC2	51+65.31 STH 37 SB	213.21 LT	26.00'	X = 331390.648
CC3	43+50.21 SHORT ST.	120.05 LT	82.00'	Y = 268847.896
	52+19.62 STH 37 SB	148.03 LT		X = 331472.892
CC4	43+52.55 SHORT ST.	123.92 LT	102.00'	Y = 268850.479
	52+23.45 STH 37 SB	146.00 LT		X = 331476.385
CC5	43+71.48 SHORT ST.	138.00 RT	98.00'	Y = 268606.470
	49+61.52 STH 37 SB	128.00 LT		X = 331379.464
CC6	43+77.05 SHORT ST.	142.20 RT	115.00'	Y = 268600.292
	49+57.34 STH 37 SB	122.42 LT		X = 331382.692
CC7	43+97.52 SHORT ST.	26.50 RT	2.50'	Y = 268696.049
	50+73.12 STH 37 SB	102.38 LT		X = 331450.780
CC8	44+62.89 SHORT ST.	29.00 RT	5.00'	Y = 268665.772
	50+70.86 STH 37 SB	37.00 LT		X = 331508.770
CC9	44+65.26 SHORT ST.	64.58 RT	2.50'	Y = 268632.613
	50+35.29 STH 37 SB	34.5 LT		X = 331495.659
CC10	44+31.89 SHORT ST.	26.50 LT	2.50'	Y = 268729.205
	51+26.24 STH 37 SB	68.21 LT		X = 331504.544
CC11	44+65.77 SHORT ST.	72.85 LT	2.50'	Y = 268756.554
	51+72.72 STH 37 SB	34.50 LT		X = 331555.026
CC12	44+63.11 SHORT ST.	29.00 LT	5.00'	Y = 268718.081
	51+28.86 STH 37 SB	37.00 LT		X = 331533.826
CC13	51+76.49 STH 37 SB	21.32 LT	63.57'	Y = 268754.261
				X = 331568.544
CC14	50+48.94 STH 37 SB	8.00 RT	4.00'	Y = 268626.562
				X = 331539.885
CC15	51+49.91 STH 37 SB	32.00 RT	4.00'	Y = 268707.260
				X = 331605.149

POINT	STATION	OFFSET	RADIUS	COORDINATES
CC16	50+22.35 STH 37 NB	21.310 RT	63.57'	Y = 268579.549
				X = 331576.475
CC17	25+32.75 HAMILTON AVE.	70.65 RT	1.50'	Y = 268580.920
	50+29.71 STH 37 NB	33.50 RT		X = 331590.648
CC18	25+34.22 HAMILTON AVE.	26.50 RT	2.50'	Y = 268520.313
	50+73.86 STH 37 NB	34.50 RT		X = 331610.626
CC19	25+62.87 HAMILTON AVE.	26.50 RT	2.50'	Y = 268608.211
	50+74.17 STH 37 SB	63.15 RT		X = 331636.599
CC20	25+34.76 HAMILTON AVE.	26.76 LT	2.50'	Y = 268668.359
	51+27.12 STH 37 NB	34.47 RT		X = 331633.608
CC21	25+78.90 HAMILTON AVE.	25.29 LT	1.50'	Y = 268648.381
	51+26.12 STH 37 NB	78.63 RT		X = 331673.000
CC22	25+34.76 HAMILTON AVE.	55.41 LT	2.50'	Y = 268694.332
	51+55.78 STH 37 NB	34.16 RT		X = 331645.709
CC23	26+18.15 HAMILTON AVE.	120.91 LT	64.85'	Y = 268718.485
CC24	52+22.16 STH 37 NB	116.85 RT	85.00'	X = 331748.959
CC25	26+25.79 HAMILTON AVE.	137.37 LT	120.00'	Y = 268730.175
	52+38.70 STH 37 NB	124.32 RT		X = 331762.840
CC26	26+84.89 HAMILTON AVE.	238.82 LT	120.00'	Y = 268797.178
	53+48.73 STH 37 NB	180.67 RT		X = 331859.257
CC27	26+37.69 SHORT ST.	123.50 RT	98.00'	Y = 268488.690
	49+77.98 STH 37 NB	139.00 RT		X = 331663.449
CC28	26+44.83 HAMILTON AVE.	117.54 RT	120.00'	Y = 268491.080
	49+84.02 STH 37 NB	146.08 RT		X = 331672.442



- (1) TYPE 1 CURB RAMP
- (1S) TYPE 1S CURB RAMP
- (5) TYPE 5 CURB RAMP
- (5S) TYPE 5S CURB RAMP
- (6) TYPE 6 CURB RAMP
- (6S) TYPE 6S CURB RAMP
- [Symbol] DETECTABLE WARNING FIELD

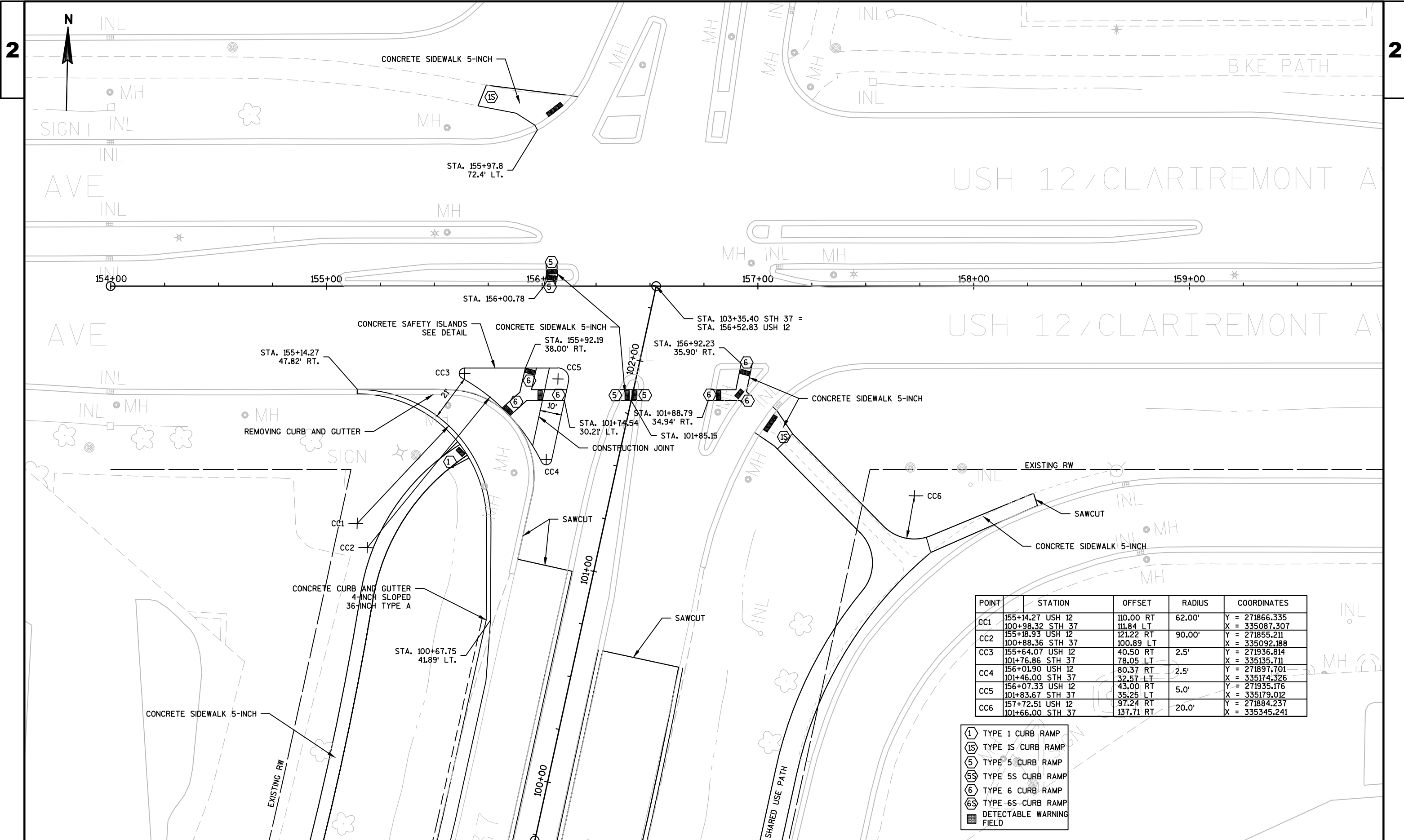


POINT	STATION	OFFSET	RADIUS	COORDINATES
CC17	10+37.67 CRAIG ROAD 84+56.85 STH 37	48.78 LT 56.15 LT	2.50'	Y = 270668.890 X = 334196.785
CC18	10+50.99 CRAIG ROAD 84+80.56 STH 37	29.00 LT 58.63 LT	5.00'	Y = 270682.209 X = 334216.555
CC19	10+92.20 CRAIG ROAD 85+02.09 STH 37	26.50 LT 93.86 LT	2.50'	Y = 270723.424 X = 334219.042
CC20	10+77.58 CRAIG ROAD 85+42.05 STH 37	26.50 RT 56.10 LT	2.50'	Y = 270708.821 X = 334272.047
CC21	10+95.50 CRAIG ROAD 85+80.31 STH 37	60.31 RT 56.07 LT	2.50'	Y = 270726.753 X = 334305.846
CC22	11+12.53 CRAIG ROAD 85+58.44 STH 37	26.50 RT 86.96 LT	2.50'	Y = 270743.769 X = 334272.036
CC23	86+95.08 STH 37	14.50 LT	3.00'	Y = 270743.894 X = 334426.699
CC24	10+72.73 CRAIG ROAD 84+09.15 STH 37	121.39 LT 121.17 LT	62.00'	Y = 270703.927 X = 334124.158
CC25	11+59.55 CRAIG ROAD	172.35 LT	142.00'	Y = 270790.723
CC26	84+04.85 STH 37	221.74 LT	129.00'	X = 334073.167
CC27	11+62.67 CRAIG ROAD 86+22.47 STH 37	72.38 RT 109.73 LT	19.00'	Y = 270793.921 X = 334317.899

POINT	STATION	OFFSET	RADIUS	COORDINATES
CC1	8+01.08 CRAIG ROAD 82+87.85 STH 37	114.50 LT 122.00 RT	92.00'	Y = 270432.273 X = 334131.131
CC2	8+04.03 CRAIG ROAD 83+02.13 STH 37	99.90 LT 126.24 RT	60.00'	Y = 270435.226 X = 334145.734
CC3- CC5	8+28.93 CRAIG ROAD 83+28.73 STH 37	83.00 LT 112.17 RT	30.0', 50.0' 73.0'	Y = 270460.137 X = 334162.626
CC6	8+01.00 CRAIG ROAD 85+79.65 STH 37	215.92 RT 277.01 RT	194.20'	Y = 270432.302 X = 334461.551
CC7	7+95.95 CRAIG ROAD 86+61.07 STH 37	310.78 RT 325.96 RT	271.40'	Y = 270427.283 X = 334556.413
CC8	8+79.01 CRAIG ROAD 84+02.12 STH 37	26.50 LT 94.43 RT	2.50'	Y = 270510.235 X = 334219.096
CC9	9+01.78 CRAIG ROAD 83+78.66 STH 37	65.16 LT 56.20 RT	2.00'	Y = 270532.989 X = 334180.447
CC10	9+21.71 CRAIG ROAD 84+22.14 STH 37	26.50 LT 56.72 RT	2.50'	Y = 270552.931 X = 334219.096
CC11	9+06.76 CRAIG ROAD 84+61.94 STH 37	26.5 RT 94.78 RT	2.50'	Y = 270537.994 X = 334272.101
CC12	9+48.31 CRAIG ROAD 84+83.64 STH 37	29.00 RT 59.26 RT	5.00'	Y = 270579.547 X = 334274.588
CC13	9+60.63 CRAIG ROAD 85+04.29 STH 37	45.84 RT 56.27 RT	2.00'	Y = 270591.876 X = 334291.423
CC14	9+33.90 CRAIG ROAD 85+43.38 STH 37	104.30 RT 107.29 RT	45.00'	Y = 270565.164 X = 334349.887
CC15	84+03.65 STH 37	13.79 LT	4.00'	Y = 270606.517 X = 334169.678
CC16	85+56.93 STH 37	16.31 RT	4.00'	Y = 270651.865 X = 334319.156

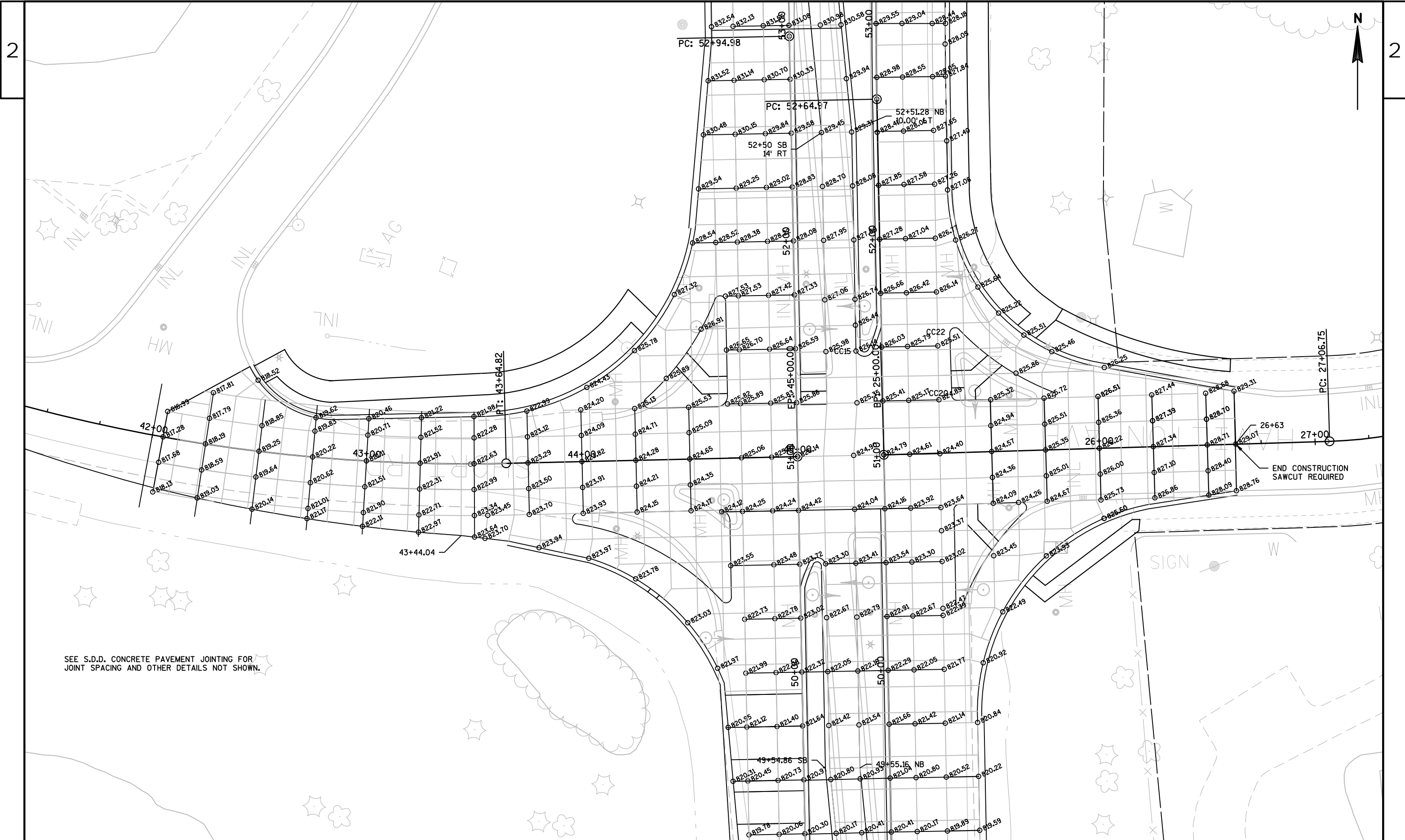
POINT	STATION	OFFSET	RADIUS	COORDINATES
CC28	11+71.75 CRAIG ROAD 86+38.44 STH 37	85.63 RT 111.54 LT	52.00'	Y = 270803.007 X = 334331.151
CC29	11+75.72 CRAIG ROAD 86+34.89 STH 37	79.51 RT 127.92 LT	80.00'	Y = 270806.980 X = 334325.029
CC30	82+53.71 STH 37	17.13 RT	3.0'	Y = 270508.864 X = 334051.778

- (1) TYPE 1 CURB RAMP
- (IS) TYPE IS CURB RAMP
- (5) TYPE 5 CURB RAMP
- (5S) TYPE 5S CURB RAMP
- (6) TYPE 6 CURB RAMP
- (6S) TYPE 6S CURB RAMP
- DETECTABLE WARNING FIELD

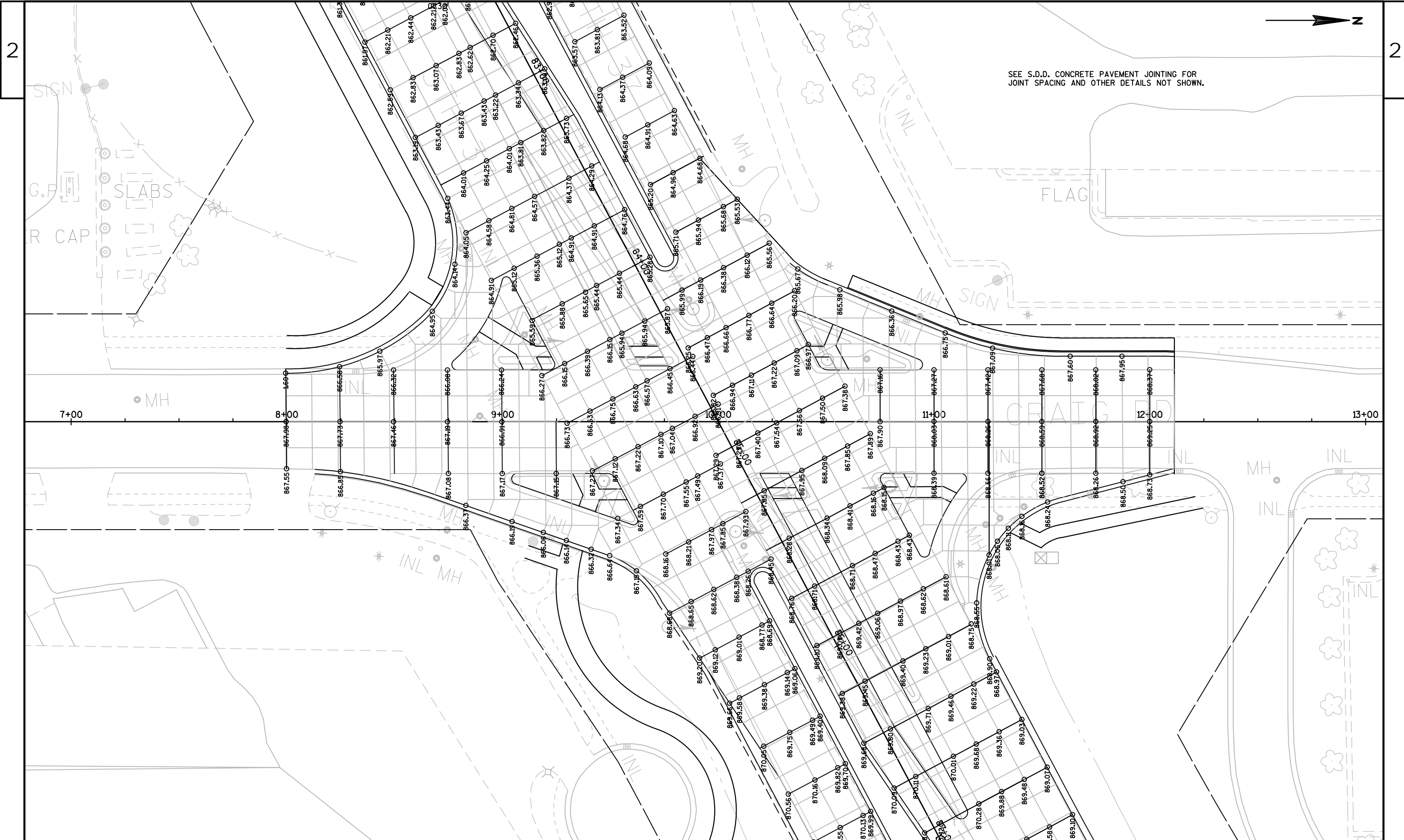


POINT	STATION	OFFSET	RADIUS	COORDINATES
CC1	155+14.27 USH 12	110.00 RT	62.00'	Y = 271866.335
	100+98.32 STH 37	111.84 LT		X = 335087.307
CC2	155+18.93 USH 12	121.22 RT	90.00'	Y = 271855.211
	100+88.36 STH 37	100.89 LT		X = 335092.188
CC3	155+64.07 USH 12	40.50 RT	2.5'	Y = 271936.814
	101+76.86 STH 37	78.05 LT		X = 335135.711
CC4	156+01.90 USH 12	80.37 RT	2.5'	Y = 271897.701
	101+46.00 STH 37	32.57 LT		X = 335174.326
CC5	156+07.33 USH 12	43.00 RT	5.0'	Y = 271935.176
	101+83.67 STH 37	35.25 LT		X = 335179.012
CC6	157+72.51 USH 12	97.24 RT	20.0'	Y = 271884.237
	101+66.00 STH 37	137.71 RT		X = 335345.241

- ① TYPE 1 CURB RAMP
- ①S TYPE 1S CURB RAMP
- ⑤ TYPE 5 CURB RAMP
- ⑤S TYPE 5S CURB RAMP
- ⑥ TYPE 6 CURB RAMP
- ⑥S TYPE 6S CURB RAMP
- DETECTABLE WARNING FIELD



SEE S.D.D. CONCRETE PAVEMENT JOINTING FOR
JOINT SPACING AND OTHER DETAILS NOT SHOWN.



PROJECT NO: 7110-05-72

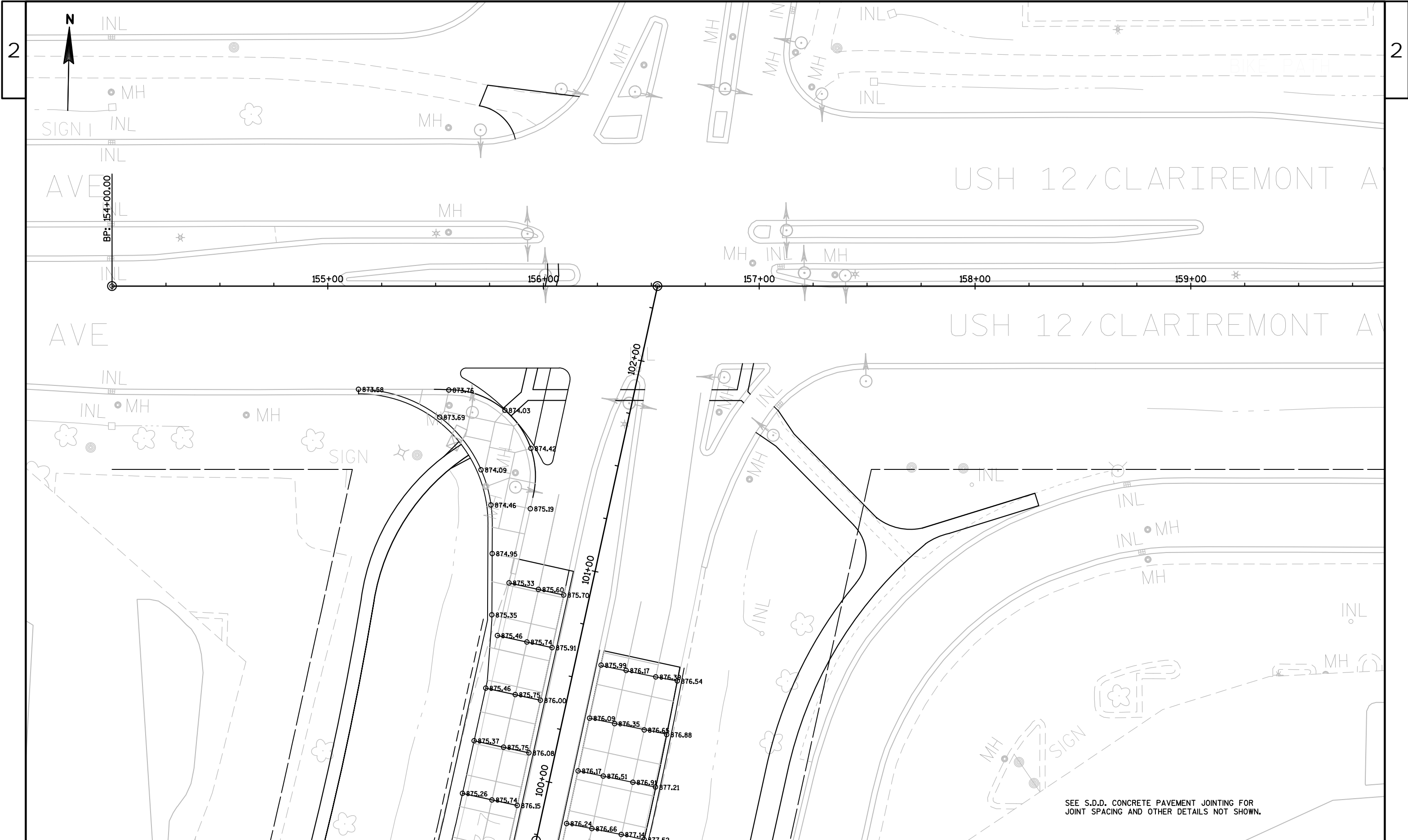
HWY: STH 37

COUNTY: EAU CLAIRE

CRAIG ROAD INTERSECTION LAYOUT

SHEET

E



PROJECT NO: 7110-05-72

HWY: STH 37

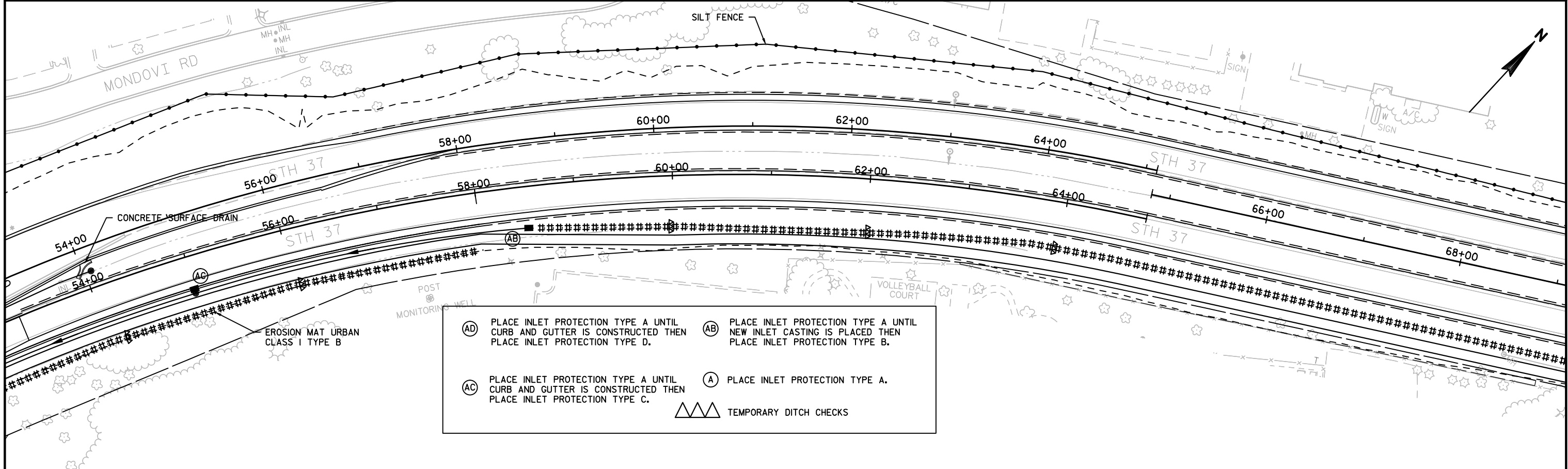
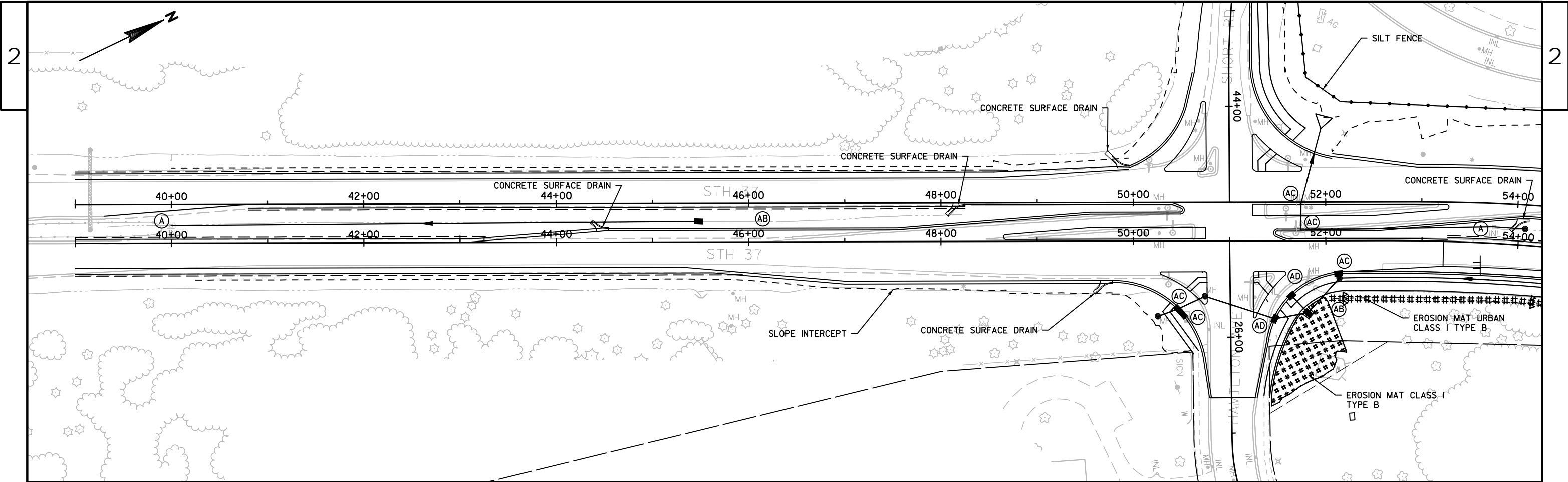
COUNTY: EAU CLAIRE

USH 12 - CLAIREMONT AVENUE INTERSECTION LAYOUT

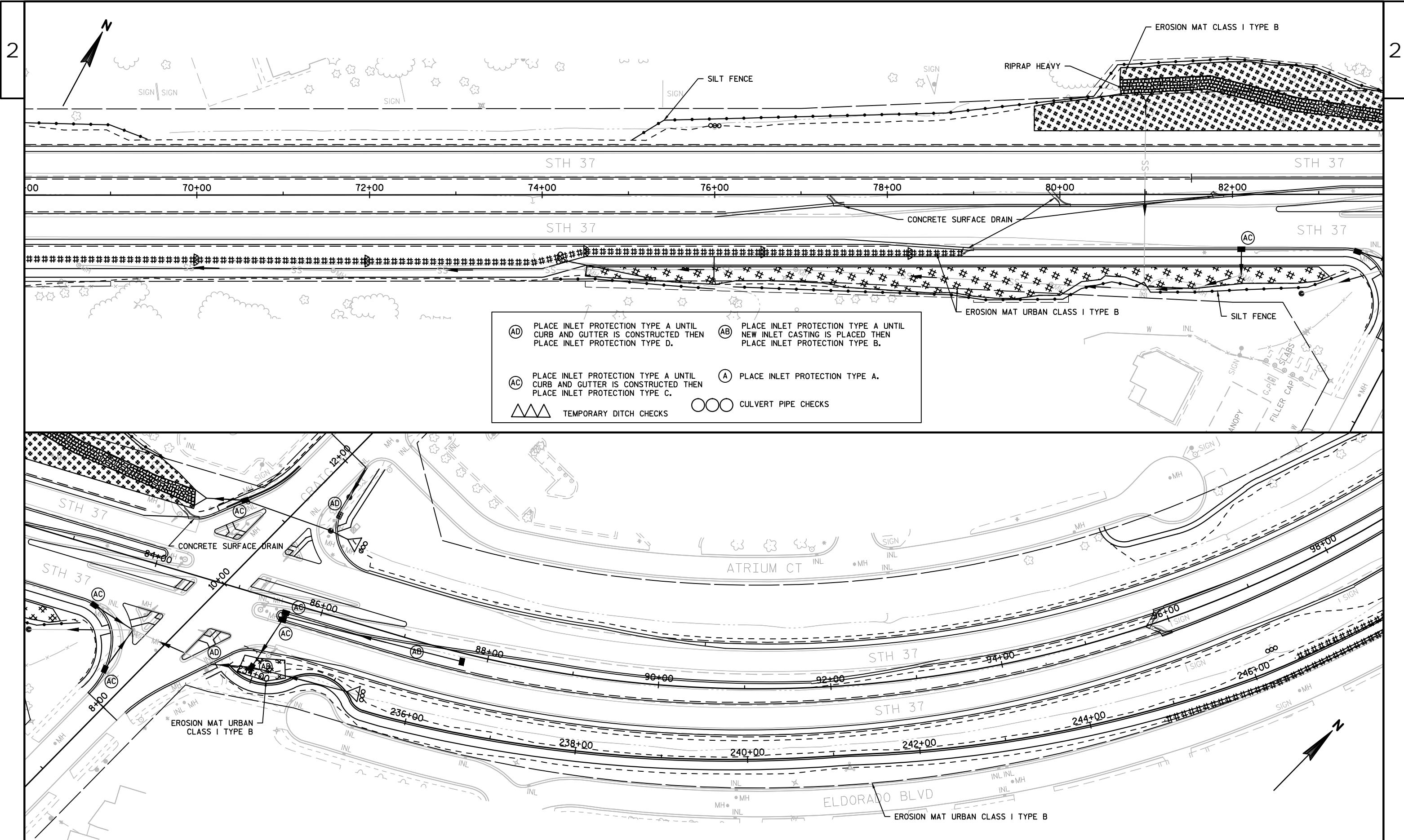
SHEET

E

SEE S.D.D. CONCRETE PAVEMENT JOINTING FOR
JOINT SPACING AND OTHER DETAILS NOT SHOWN.



(AD) PLACE INLET PROTECTION TYPE A UNTIL CURB AND GUTTER IS CONSTRUCTED THEN PLACE INLET PROTECTION TYPE D. (AB) PLACE INLET PROTECTION TYPE A UNTIL NEW INLET CASTING IS PLACED THEN PLACE INLET PROTECTION TYPE B.
 (AC) PLACE INLET PROTECTION TYPE A UNTIL CURB AND GUTTER IS CONSTRUCTED THEN PLACE INLET PROTECTION TYPE C. (A) PLACE INLET PROTECTION TYPE A.
 ▲▲▲ TEMPORARY DITCH CHECKS



PROJECT NO: 7110-05-72

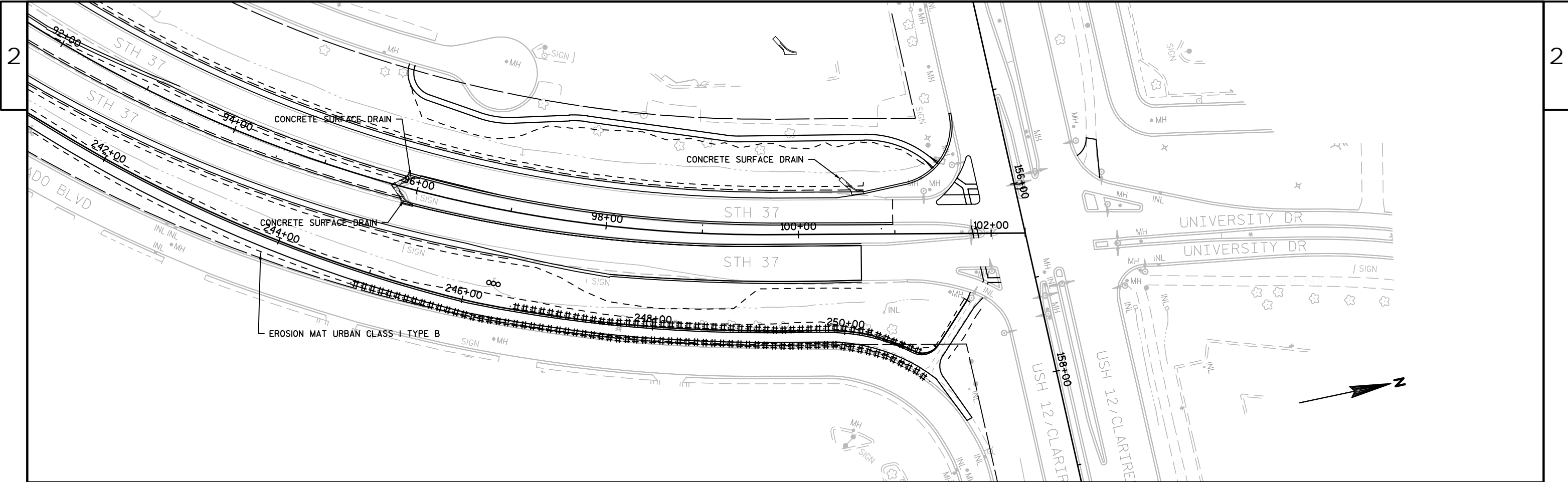
HWY: STH 37

COUNTY: EAU CLAIRE

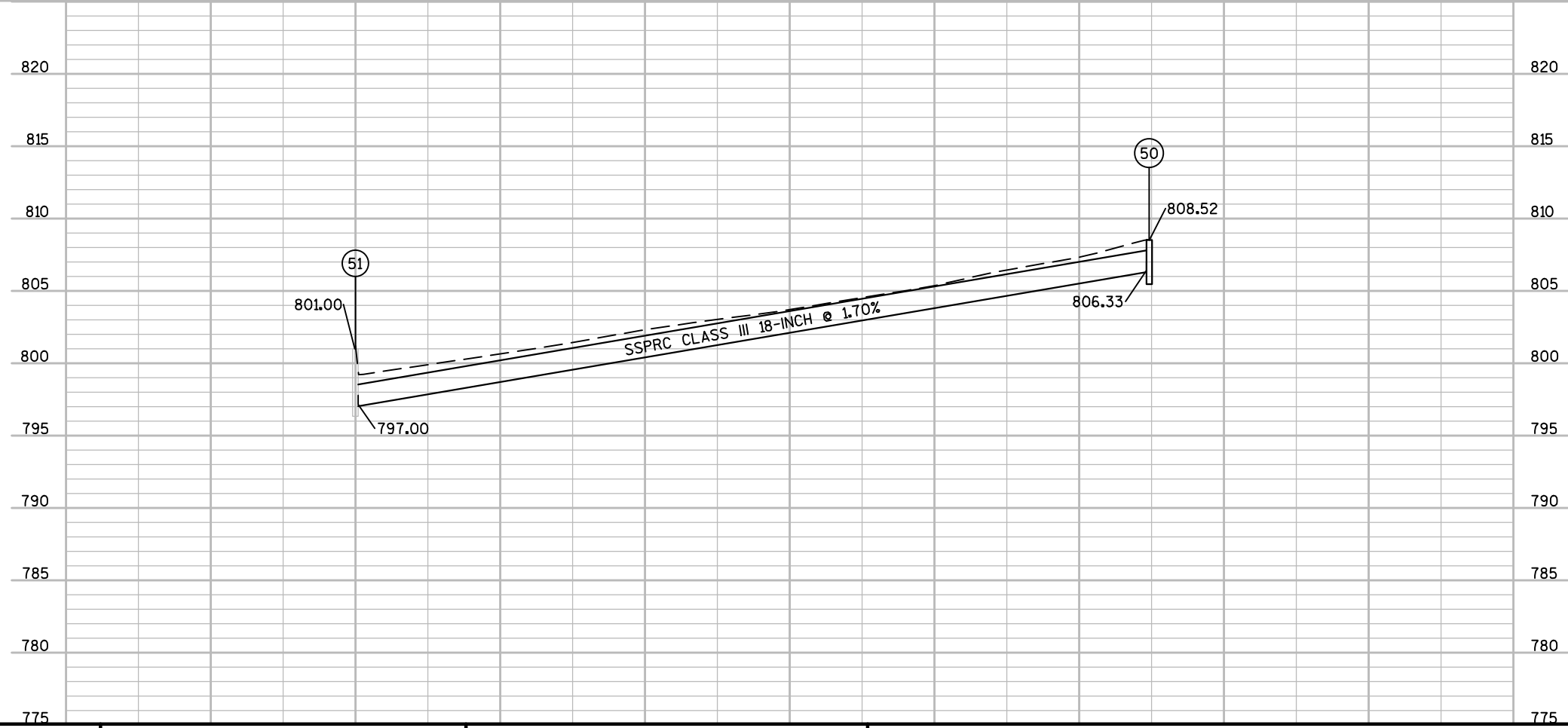
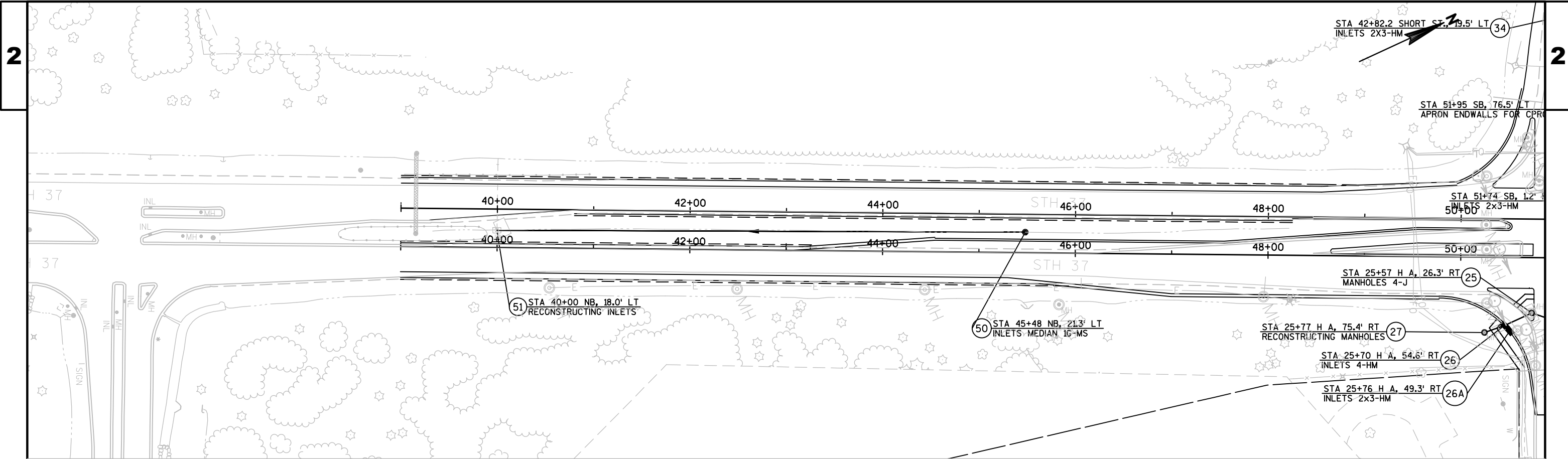
EROSION CONTROL

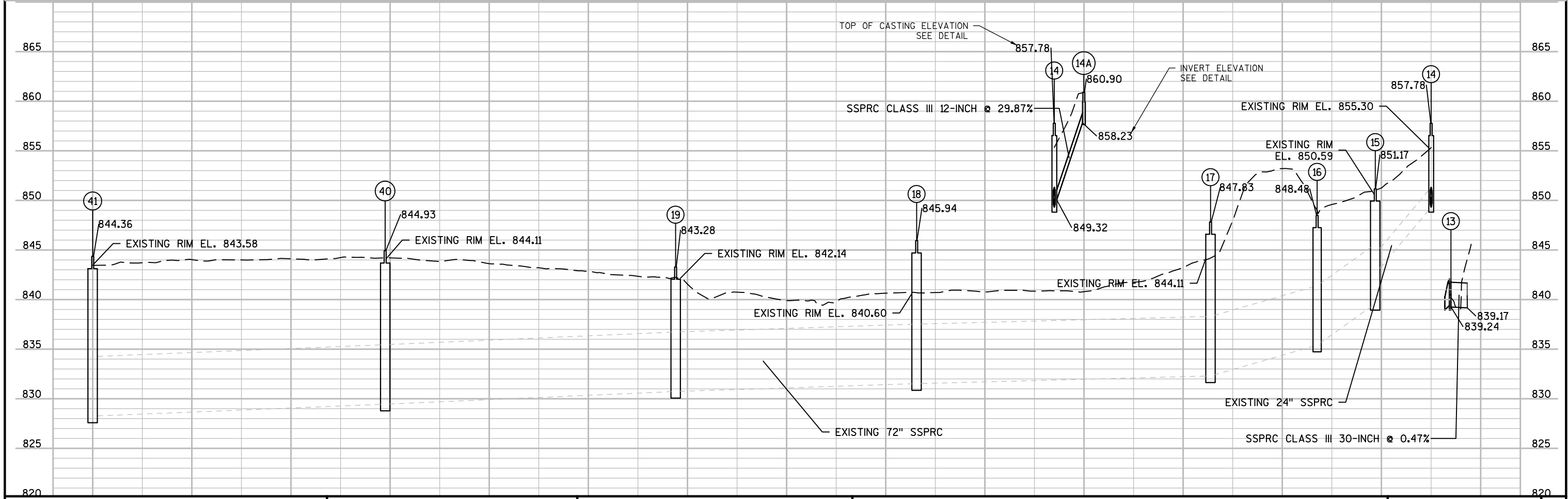
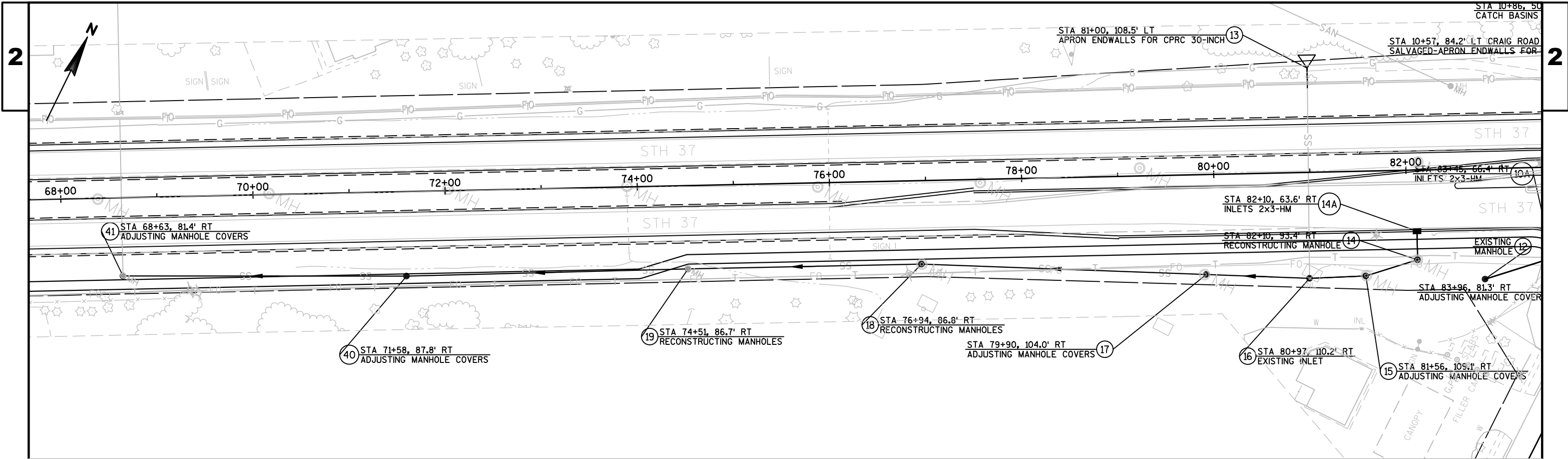
SHEET

E

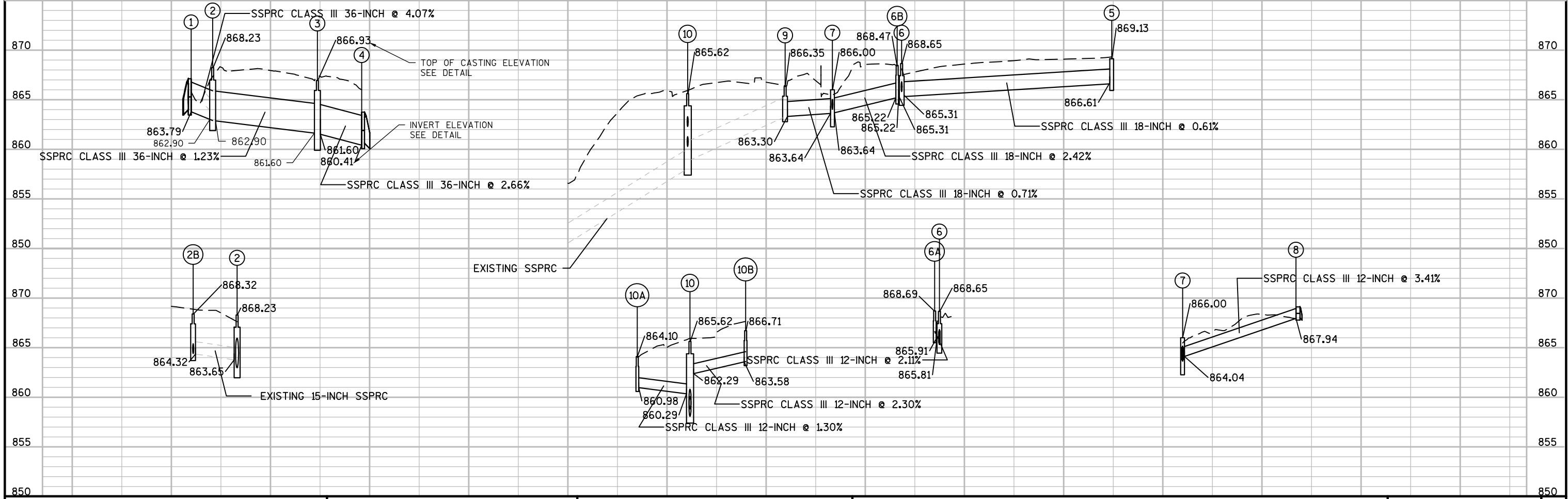
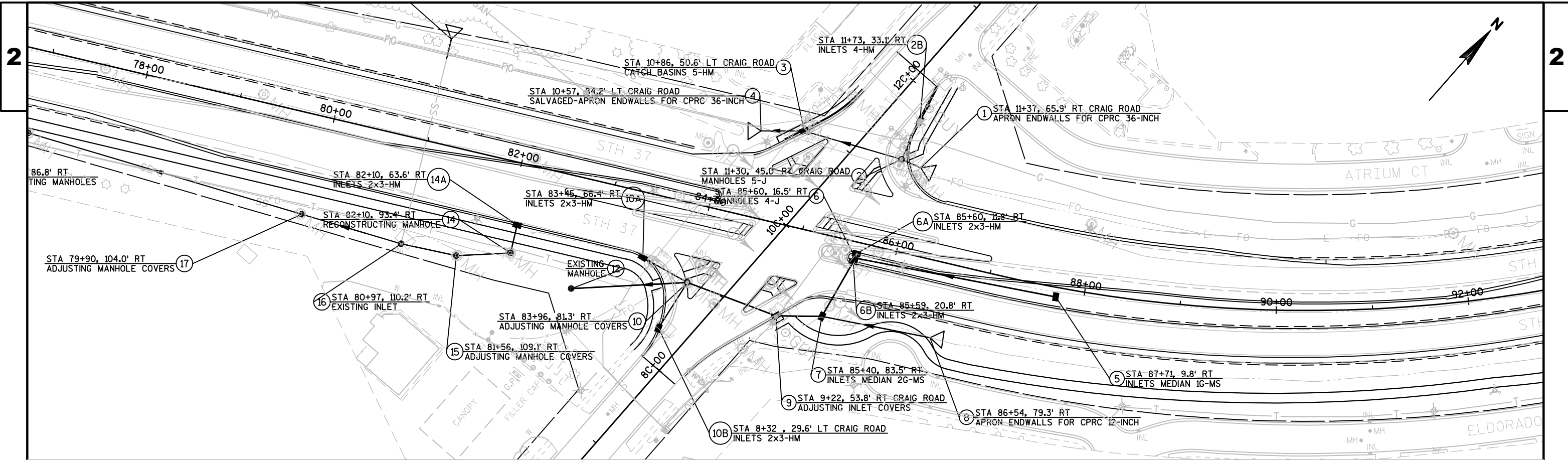


- (AD) PLACE INLET PROTECTION TYPE A UNTIL CURB AND GUTTER IS CONSTRUCTED THEN PLACE INLET PROTECTION TYPE D.
- (AB) PLACE INLET PROTECTION TYPE A UNTIL NEW INLET CASTING IS PLACED THEN PLACE INLET PROTECTION TYPE B.
- (AC) PLACE INLET PROTECTION TYPE A UNTIL CURB AND GUTTER IS CONSTRUCTED THEN PLACE INLET PROTECTION TYPE C.
- (A) PLACE INLET PROTECTION TYPE A.
- CULVERT PIPE CHECKS

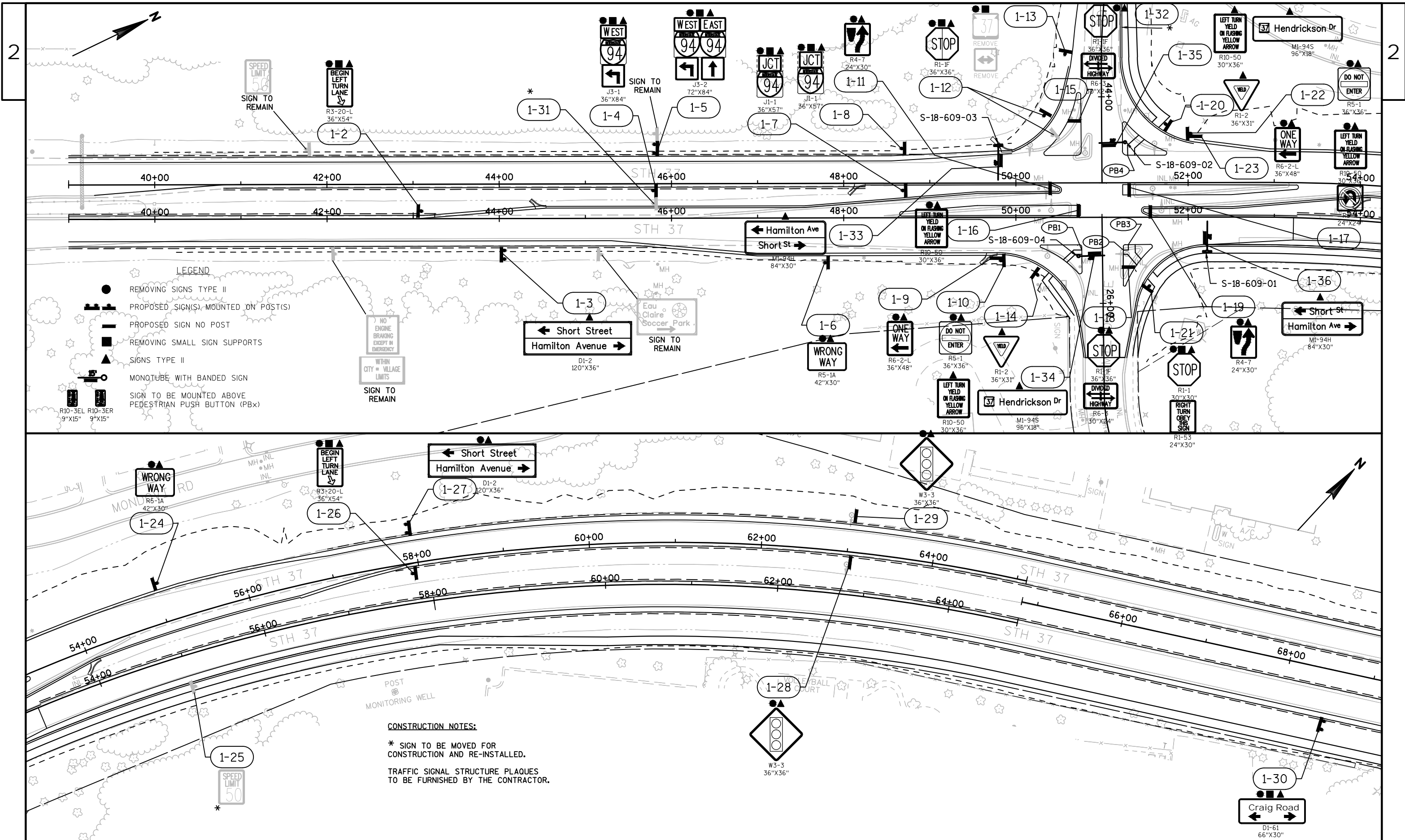


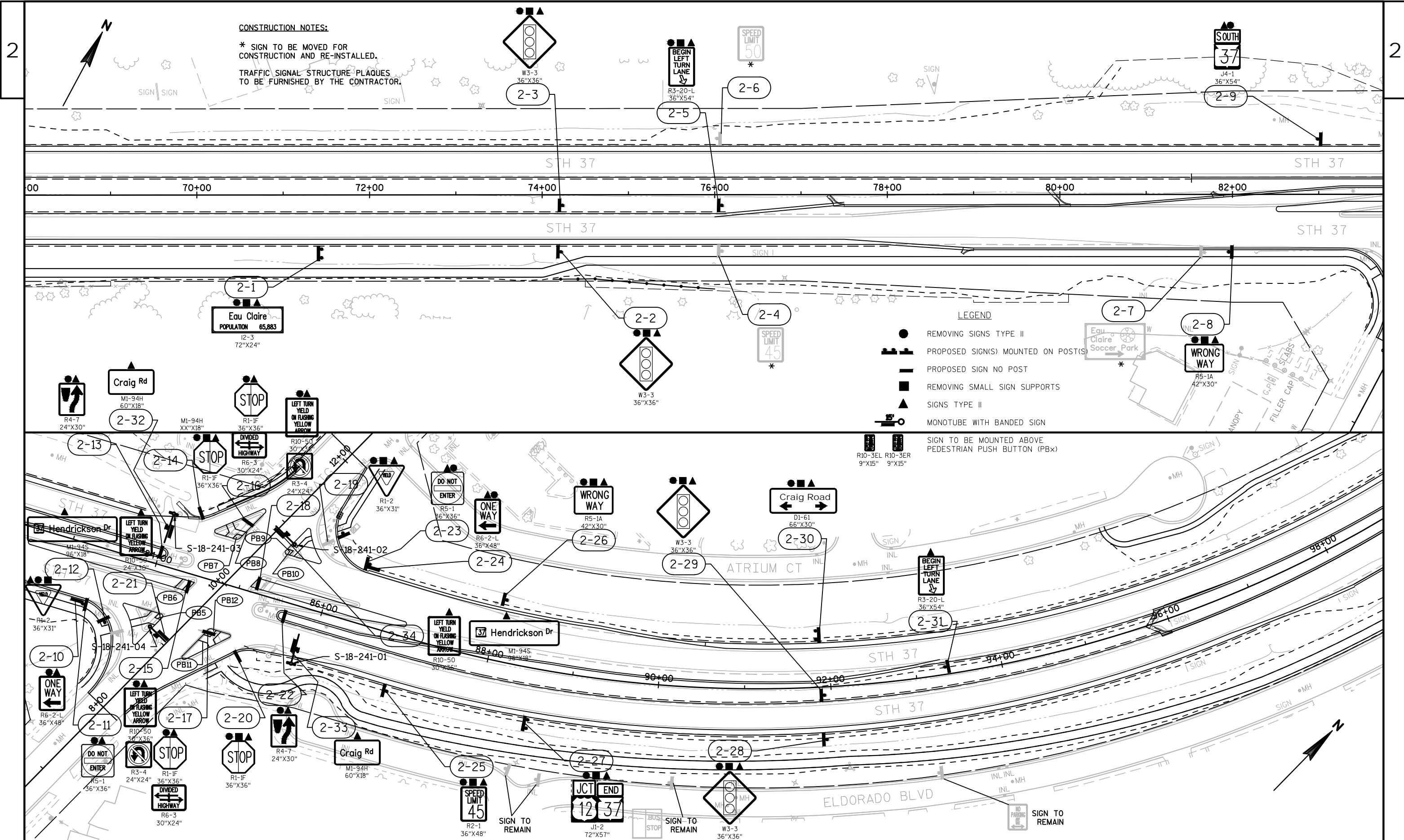


PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE STORM SEWER SHEET E



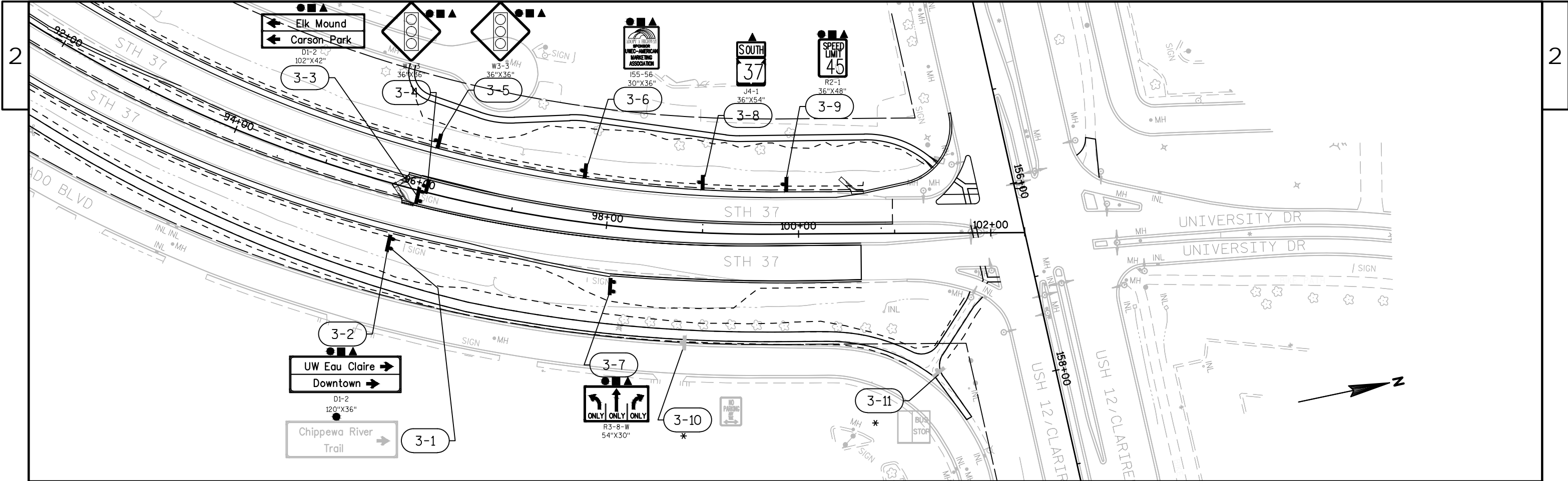
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE STORM SEWER SHEET E





CONSTRUCTION NOTES:
 * SIGN TO BE MOVED FOR CONSTRUCTION AND RE-INSTALLED.
 TRAFFIC SIGNAL STRUCTURE PLAQUES TO BE FURNISHED BY THE CONTRACTOR.

- LEGEND**
- REMOVING SIGNS TYPE II
 - PROPOSED SIGN(S) MOUNTED ON POST(S)
 - PROPOSED SIGN NO POST
 - REMOVING SMALL SIGN SUPPORTS
 - ▲ SIGNS TYPE II
 - MONOTUBE WITH BANDED SIGN
 - R10-3EL R10-3ER 9"X15" 9"X15" SIGN TO BE MOUNTED ABOVE PEDESTRIAN PUSH BUTTON (PBx)

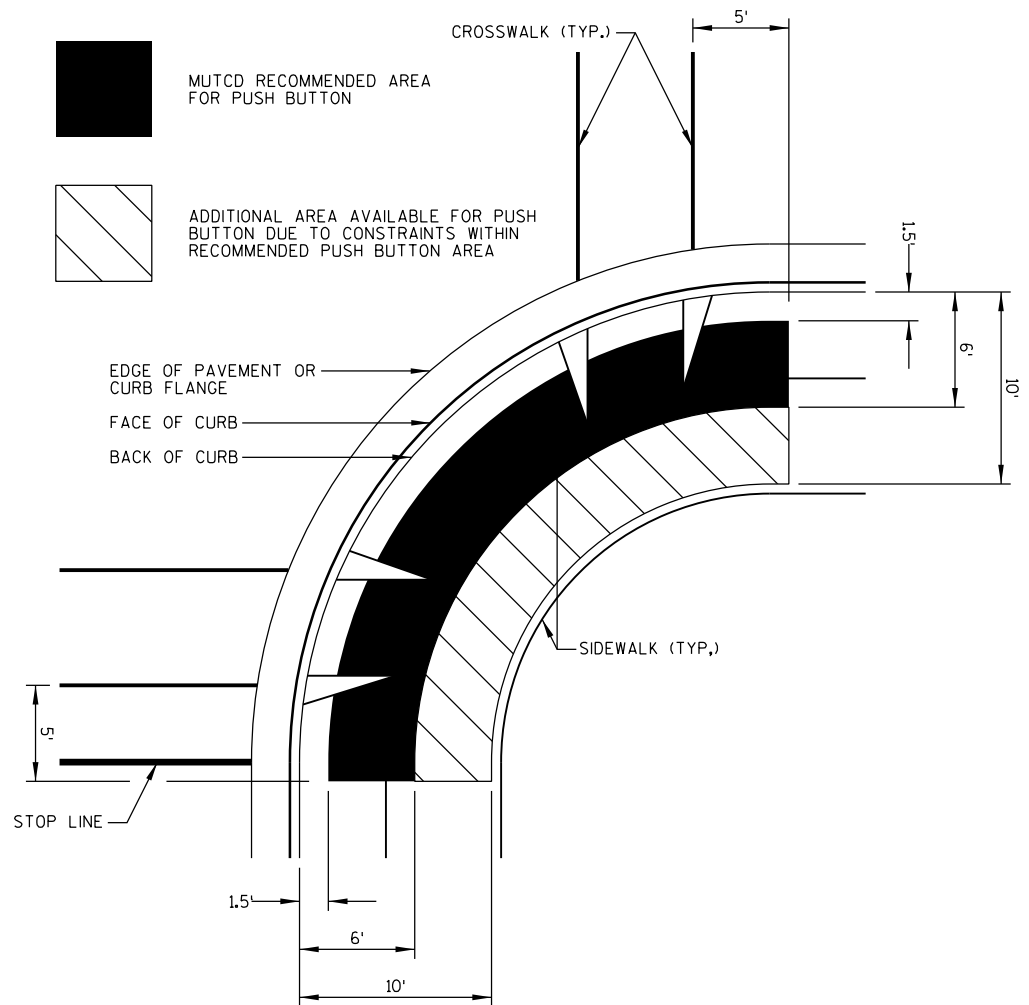


LEGEND

- REMOVING SIGNS TYPE II
- PROPOSED SIGN(S) MOUNTED ON POST(S)
- PROPOSED SIGN NO POST
- REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS TYPE II

CONSTRUCTION NOTES:

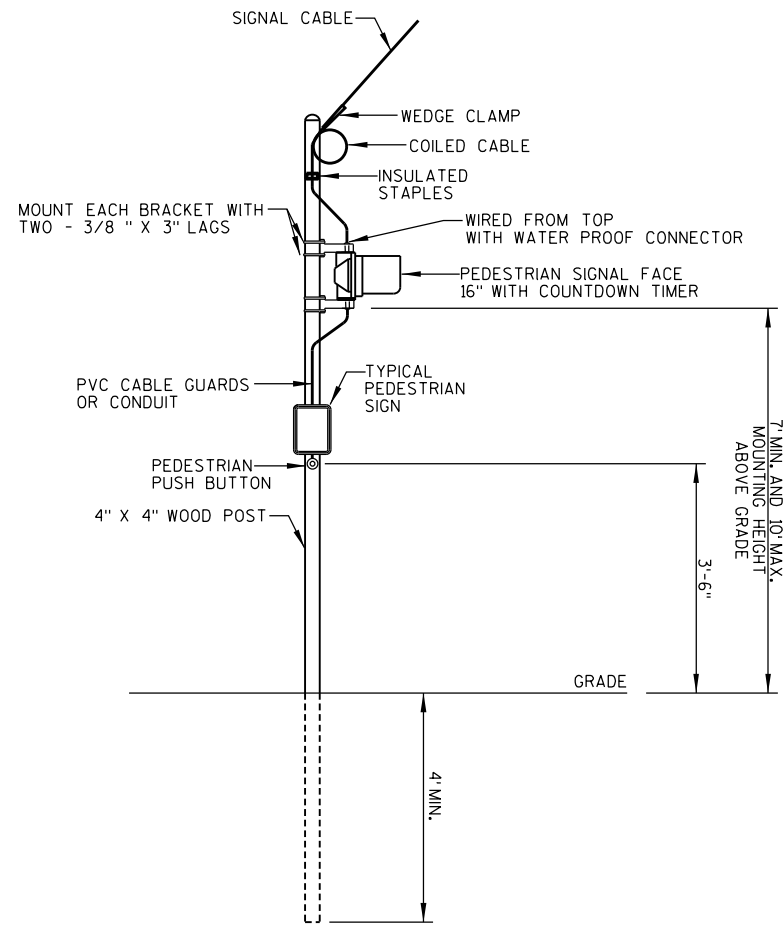
- * SIGN TO BE MOVED FOR CONSTRUCTION AND RE-INSTALLED.
- TRAFFIC SIGNAL STRUCTURE PLAQUES TO BE FURNISHED BY THE CONTRACTOR.



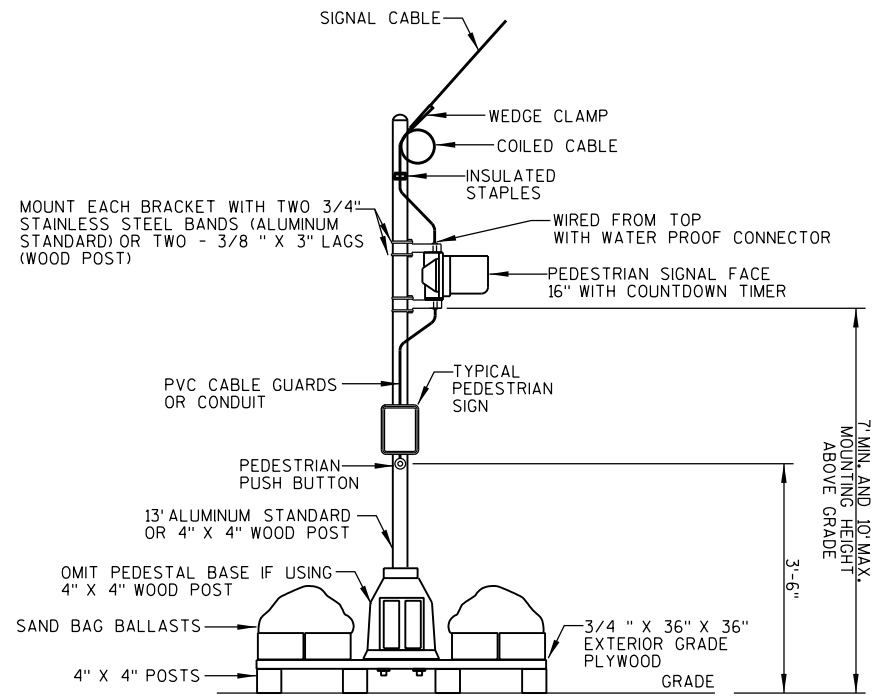
PUSH BUTTON LOCATION NOTES:

1. PUSHBUTTONS SHOULD BE CAPABLE OF EASY ACTIVATION AND CONVENIENTLY LOCATED NEAR EACH END OF CROSSWALK OR CROSSING AREA.
2. PUSHBUTTONS SHOULD BE PLACED UNOBSTRUCTED AND ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR.
3. PUSHBUTTONS SHOULD BE PLACED WHERE THERE IS AN ALL-WEATHER SURFACE, A WHEELCHAIR ACCESSIBLE ROUTE FROM THE PUSHBUTTON TO THE RAMP.
4. PUSHBUTTONS SHOULD BE PLACED BETWEEN THE EDGE OF THE CROSSWALK LINE (EXTENDED) FARTHEST FROM THE CENTER OF THE INTERSECTION AND THE SIDE OF A CURB RAMP (IF PRESENT), BUT NOT GREATER THAN 5-FEET FROM SAID CROSSWALK LINE.
5. PUSHBUTTONS SHOULD BE PLACED BETWEEN 1.5-FEET AND 6-FEET FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IF THERE ARE PHYSICAL CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5-FEET AND 6-FEET FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FARTHER THAN 10-FEET FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
6. PUSHBUTTONS SHOULD BE PLACED WITH THE FACE OF THE PUSH BUTTON PARALLEL TO THE CROSSWALK TO BE USED.
7. PUSHBUTTONS ON THE SAME CORNER OF AN INTERSECTION SHOULD BE SEPARATED BY A DISTANCE OF AT LEAST 10-FEET. WHERE THERE ARE PHYSICAL CONSTRAINTS ON A PARTICULAR CORNER THAN MAKE IT IMPRACTICAL TO PROVIDE THE 10-FOOT SEPARATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.
8. PUSHBUTTON POLES SHALL BE PLACED SO THAT ALL EQUIPMENT ATTACHED TO THE POLE (PEDESTRIAN SIGNAL HEAD, PUSHBUTTON, SIGN, ETC.) IS OUTSIDE THE MINIMUM LATERAL CLEARANCE DISTANCE OF 2-FEET FROM FACE OF CURB OR EDGE OF TRAVELED WAY.
9. PUSHBUTTONS SHOULD BE PLACED SO THE THE REACH DISTANCE FROM THE EDGE OF THE FLAT SURFACE ADJACENT TO THE PUSHBUTTON DOES NOT EXCEED THE MAXIMUM ADA REACH DISTANCE OF 2-FEET.

TEMPORARY PEDESTRIAN SIGNAL AREA



WOOD POST



SKID TYPE

TEMPORARY PEDESTRIAN SIGNAL NOTES:

1. SIGNAL DROP CABLES SHALL BE PLACED A MINIMUM OF 12-FEET ABOVE GROUND NOT SUBJECT TO VEHICULAR TRAFFIC.
2. SIGNAL DROP CABLES SHALL BE PLACED A MINIMUM OF 17-FEET ABOVE GROUND SUBJECT TO VEHICULAR TRAFFIC, INCLUDING CONSTRUCTION VEHICLES.
3. SKID TYPE TEMPORARY MAY BE USED FOR PEDESTRIAN PUSH BUTTONS AS LONG AS THE REACH DISTANCE FROM THE EDGE OF THE SKID TO THE PUSH BUTTON DOES NOT EXCEED THE MAXIMUM ADA REACH DISTANCE OF 2-FEET.
4. PUSHBUTTONS SHOULD BE PLACED AT A MOUNTING HEIGHT OF 3.5-FEET ABOVE THE WALKING SURFACE.
5. MAINTAIN ADA ACCESSIBLE ROUTE AND PEDESTRIAN ACCESSIBILITY REQUIREMENTS FOR ALL ACTIVE PEDESTRIAN SIGNAL INDICATION CROSSING AREAS.
6. MAINTAIN TEMPORARY PEDESTRIAN SIGNALS THROUGHOUT CONSTRUCTION TO ENSURE THAT THE PLACEMENT OF THE TEMPORARY PEDESTRIAN SIGNALS COMPLIES WITH ALL APPLICABLE ADA AND MUTCD SIGNAL PLACEMENT REQUIREMENTS.

TEMPORARY PEDESTRIAN SIGNAL

LEGEND

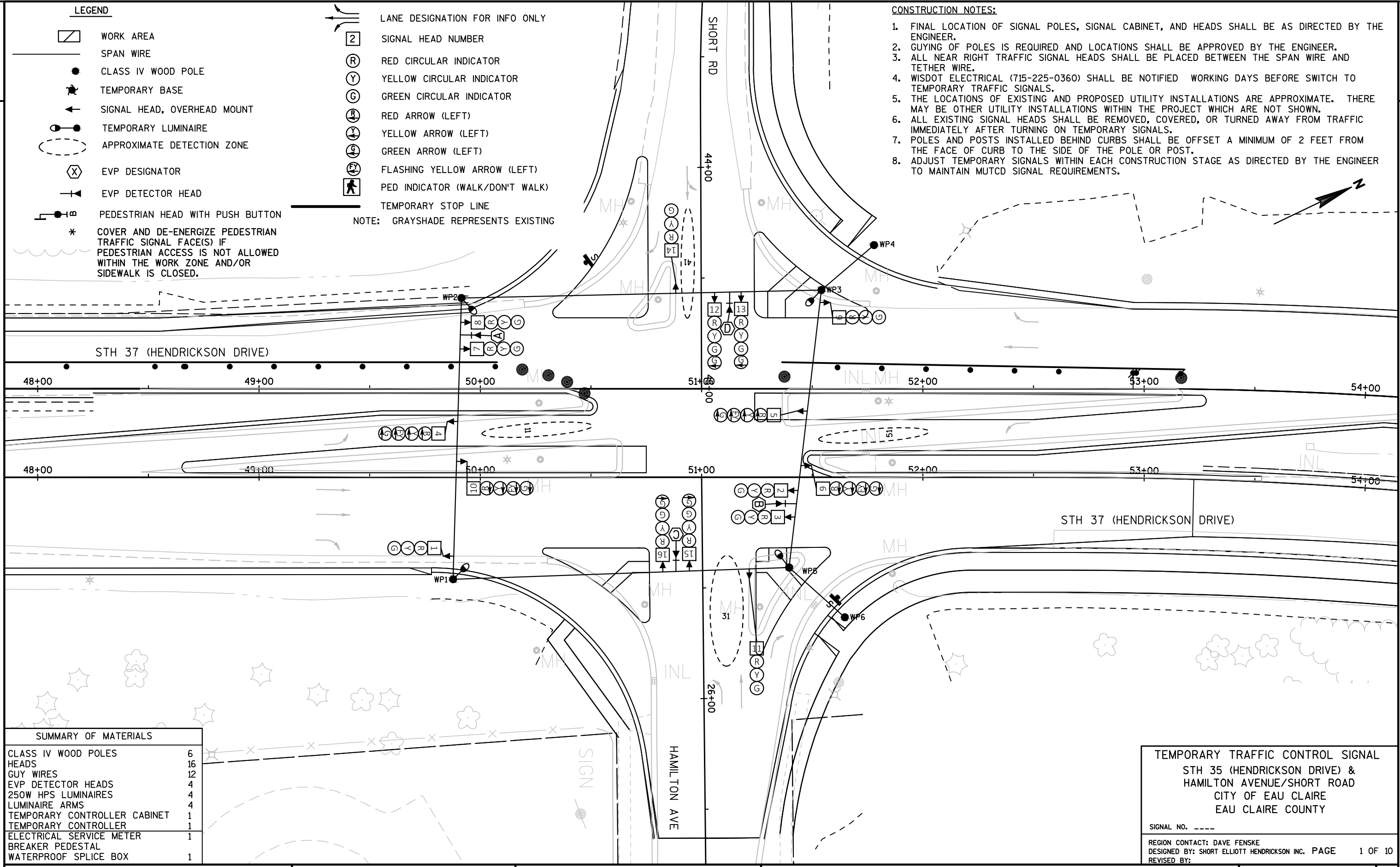
- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, OVERHEAD MOUNT
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

- LANE DESIGNATION FOR INFO ONLY
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW (LEFT)
- YELLOW ARROW (LEFT)
- GREEN ARROW (LEFT)
- FLASHING YELLOW ARROW (LEFT)
- PED INDICATOR (WALK/DON'T WALK)
- TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, AND HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. WISDOT ELECTRICAL (715-225-0360) SHALL BE NOTIFIED WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.
5. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
6. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED, OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON TEMPORARY SIGNALS.
7. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF 2 FEET FROM THE FACE OF CURB TO THE SIDE OF THE POLE OR POST.
8. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.



SUMMARY OF MATERIALS	
CLASS IV WOOD POLES	6
HEADS	16
GUY WIRES	12
EVP DETECTOR HEADS	4
250W HPS LUMINAIRES	4
LUMINAIRE ARMS	4
TEMPORARY CONTROLLER CABINET	1
TEMPORARY CONTROLLER	1
ELECTRICAL SERVICE METER	1
BREAKER PEDESTAL	1
WATERPROOF SPLICE BOX	1

TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 35 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE/SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

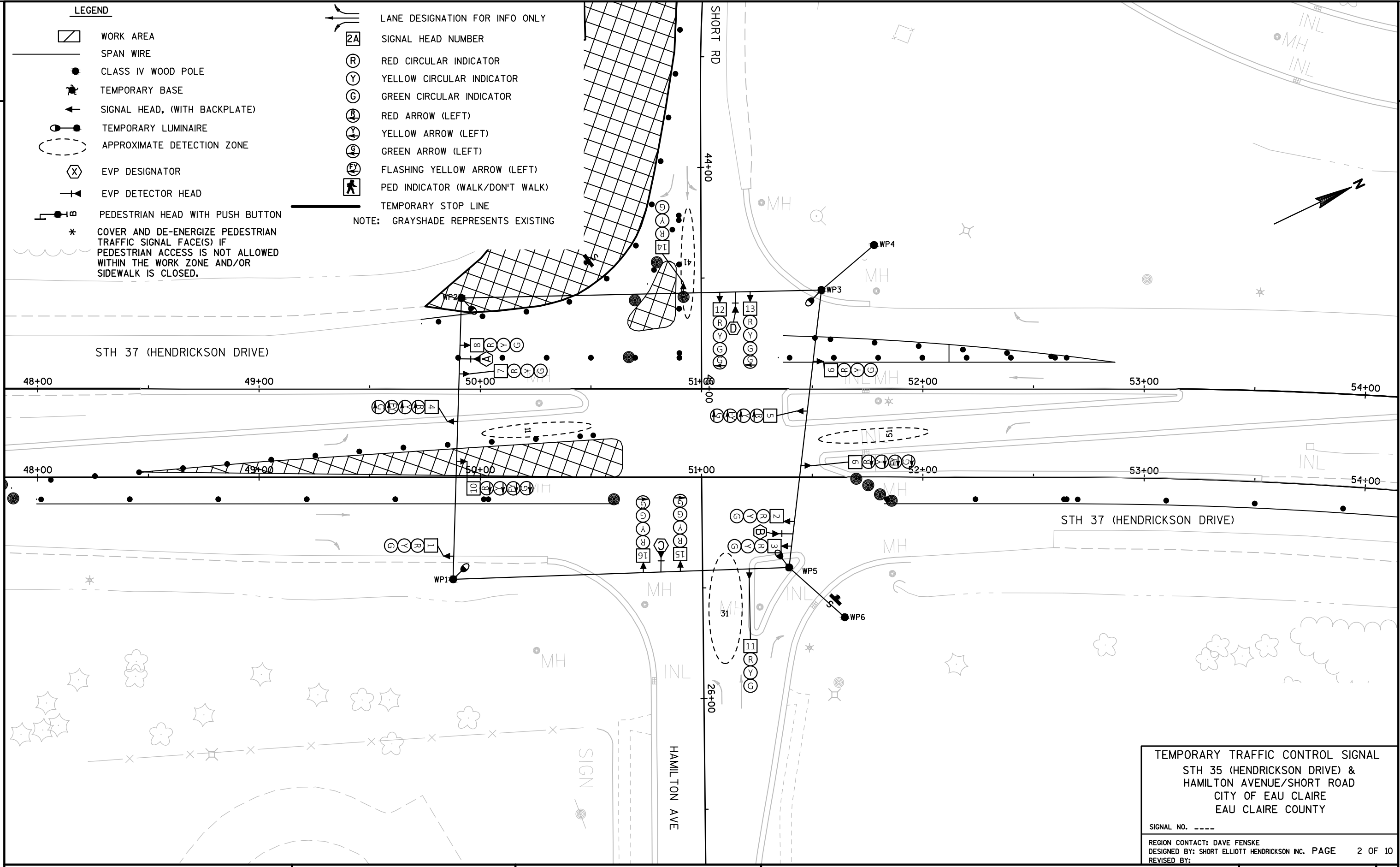
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 1 OF 10
 REVISED BY:

LEGEND

- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, (WITH BACKPLATE)
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

- LANE DESIGNATION FOR INFO ONLY
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW (LEFT)
- YELLOW ARROW (LEFT)
- GREEN ARROW (LEFT)
- FLASHING YELLOW ARROW (LEFT)
- PED INDICATOR (WALK/DON'T WALK)
- TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 35 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE/SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

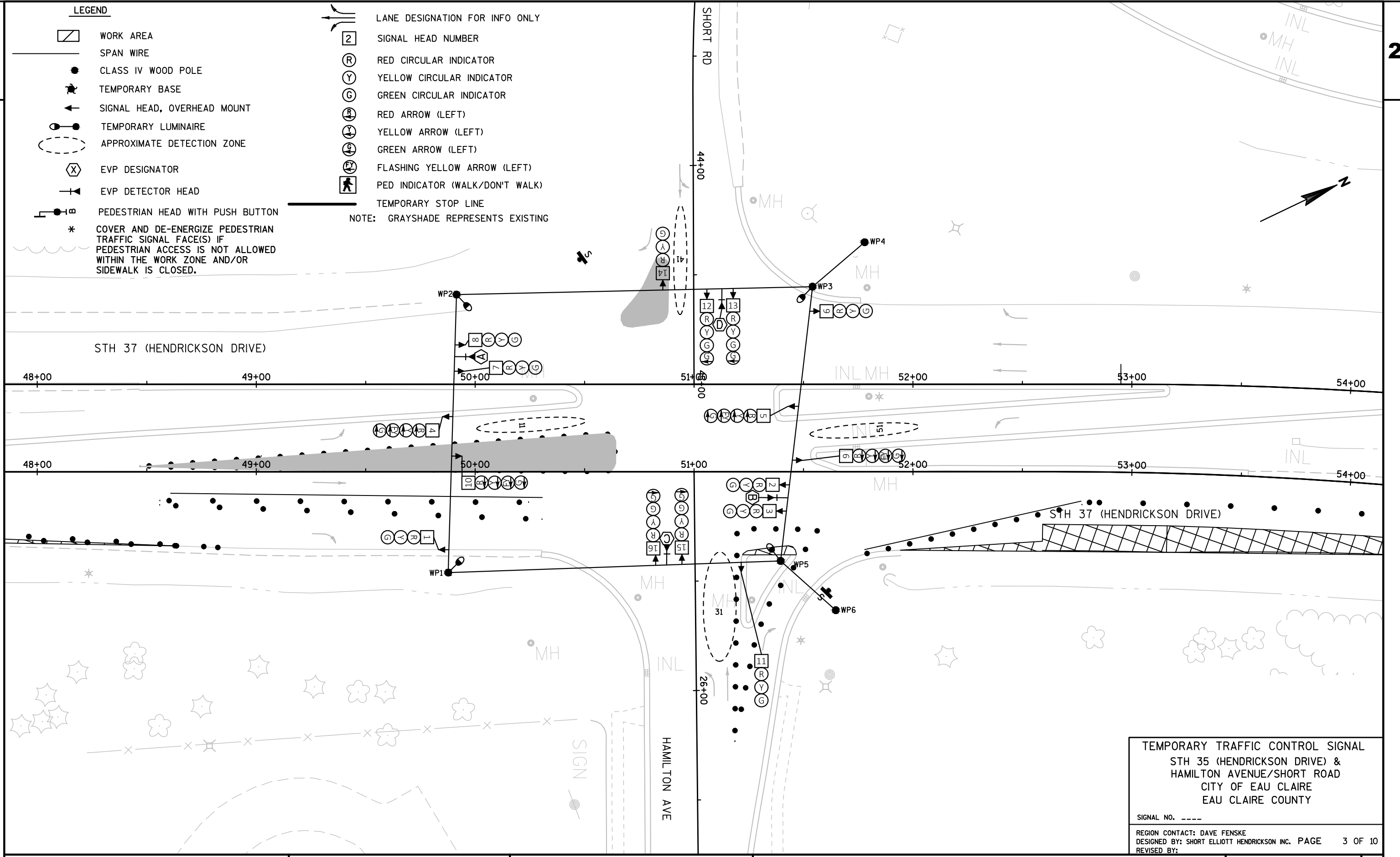
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 2 OF 10
 REVISED BY:

LEGEND

- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, OVERHEAD MOUNT
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

- LANE DESIGNATION FOR INFO ONLY
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW (LEFT)
- YELLOW ARROW (LEFT)
- GREEN ARROW (LEFT)
- FLASHING YELLOW ARROW (LEFT)
- PED INDICATOR (WALK/DON'T WALK)
- TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 35 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE/SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

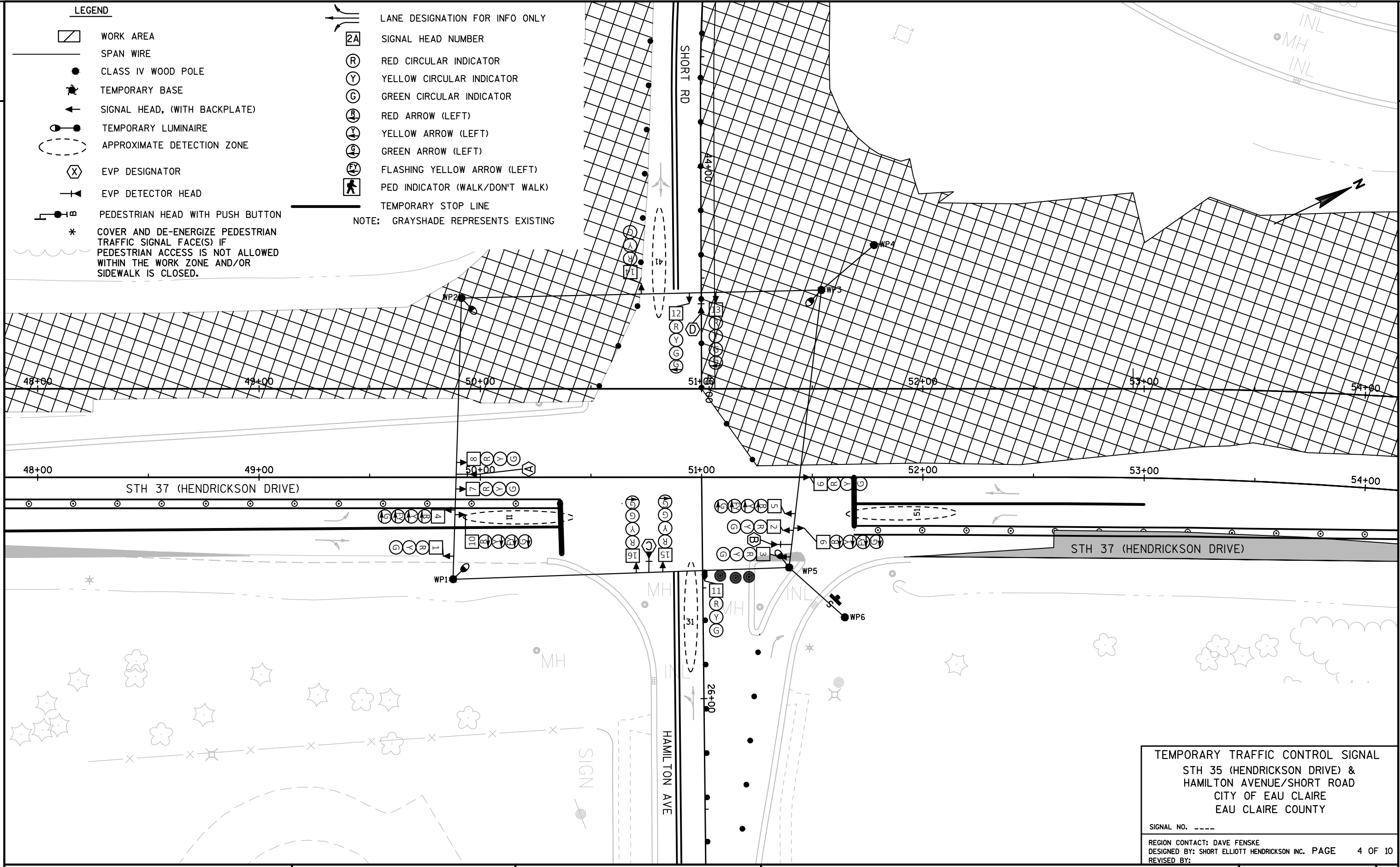
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 3 OF 10
 REVISED BY:

LEGEND

- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, (WITH BACKPLATE)
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

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- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW (LEFT)
- YELLOW ARROW (LEFT)
- GREEN ARROW (LEFT)
- FLASHING YELLOW ARROW (LEFT)
- PED INDICATOR (WALK/DON'T WALK)
- TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 35 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE/SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

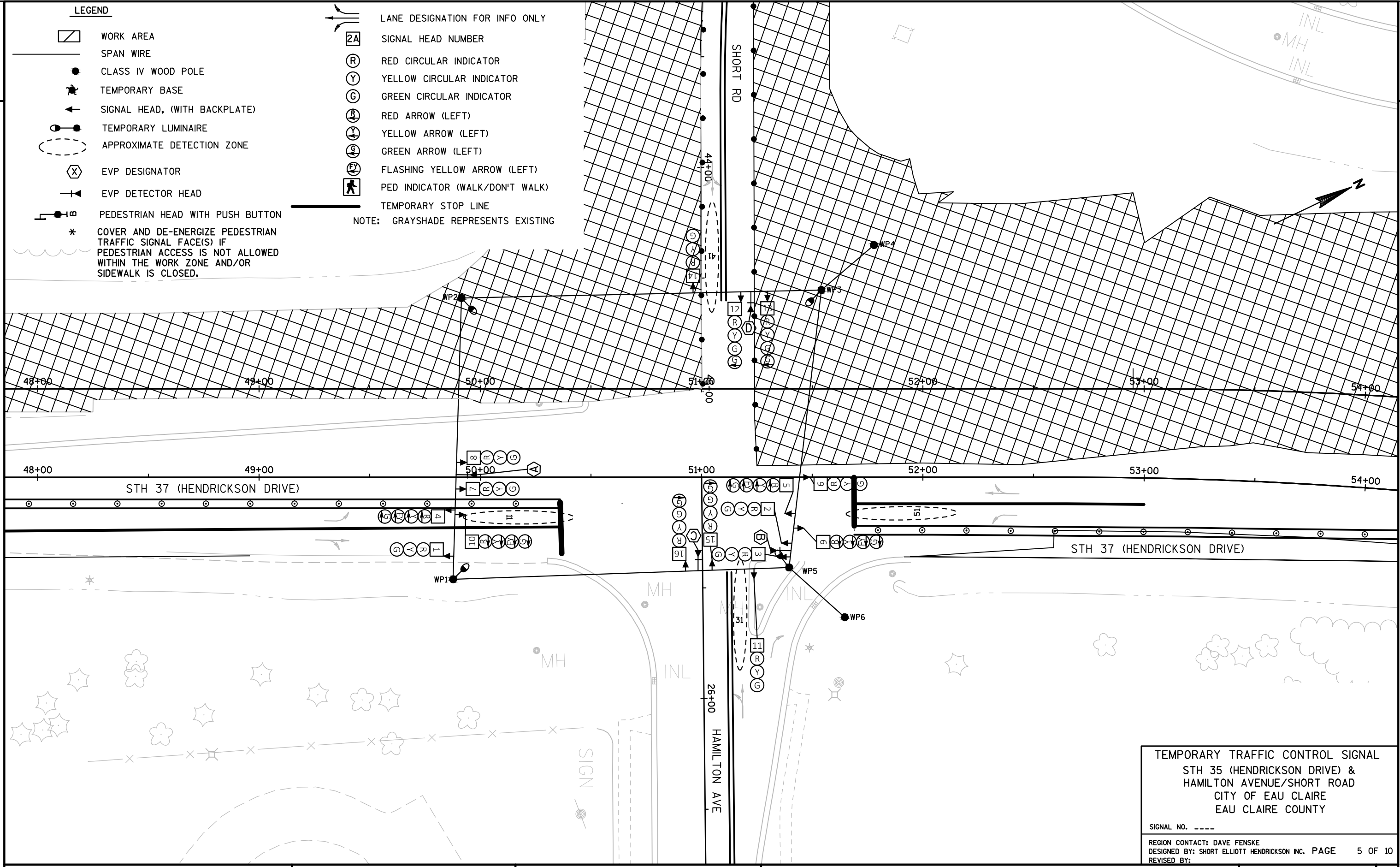
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 4 OF 10
 REVISED BY:

LEGEND

- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, (WITH BACKPLATE)
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
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NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 35 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE/SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

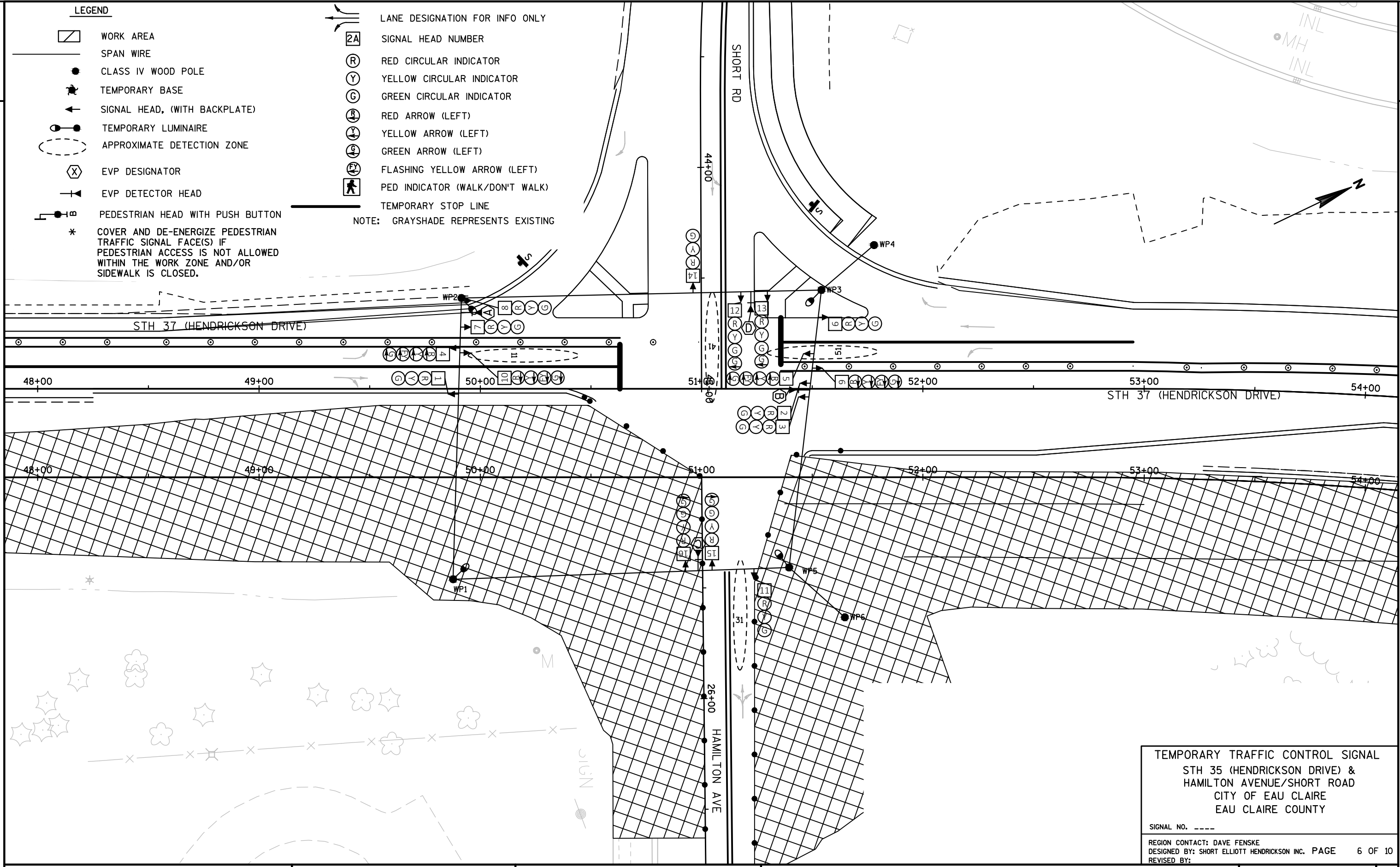
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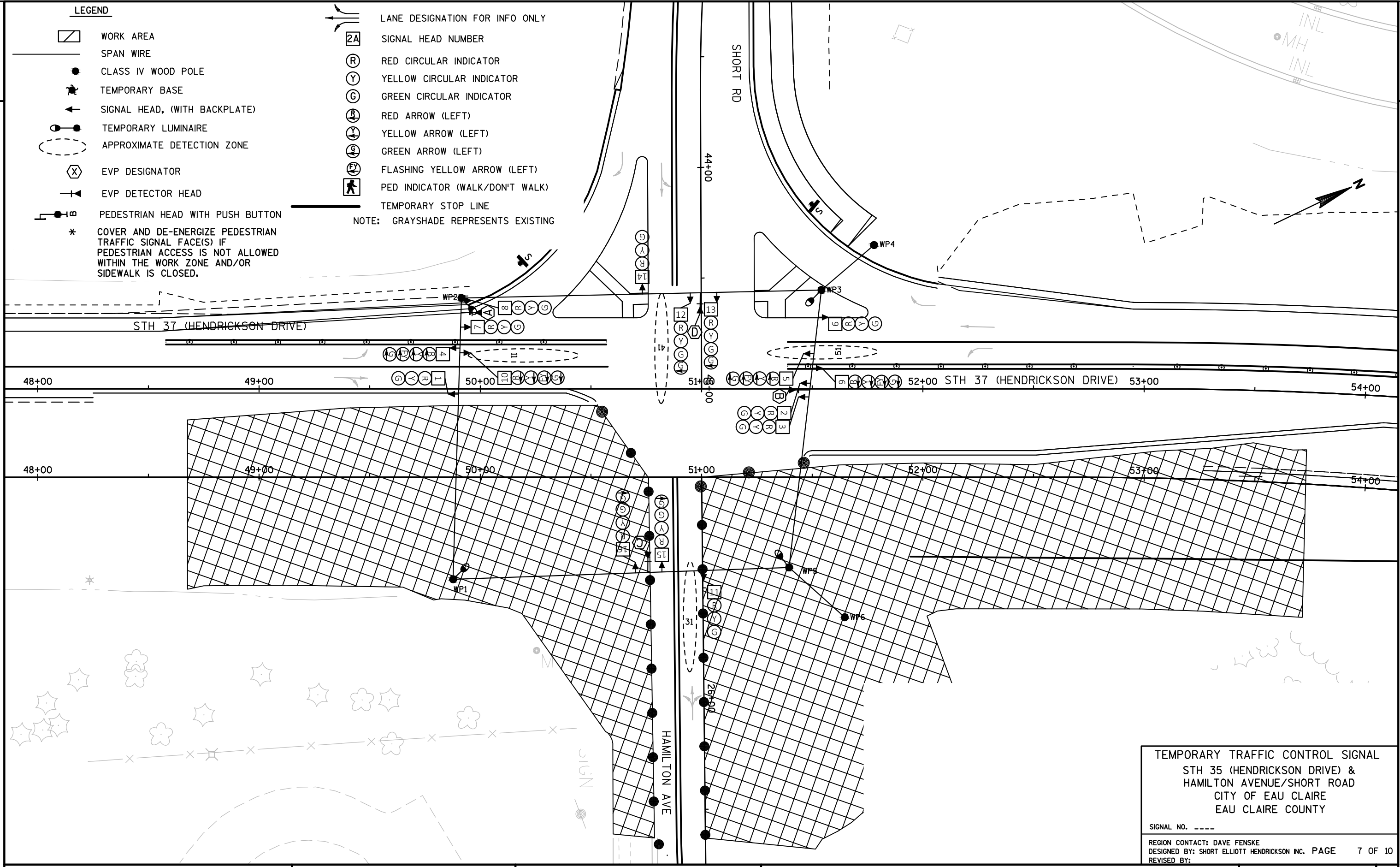
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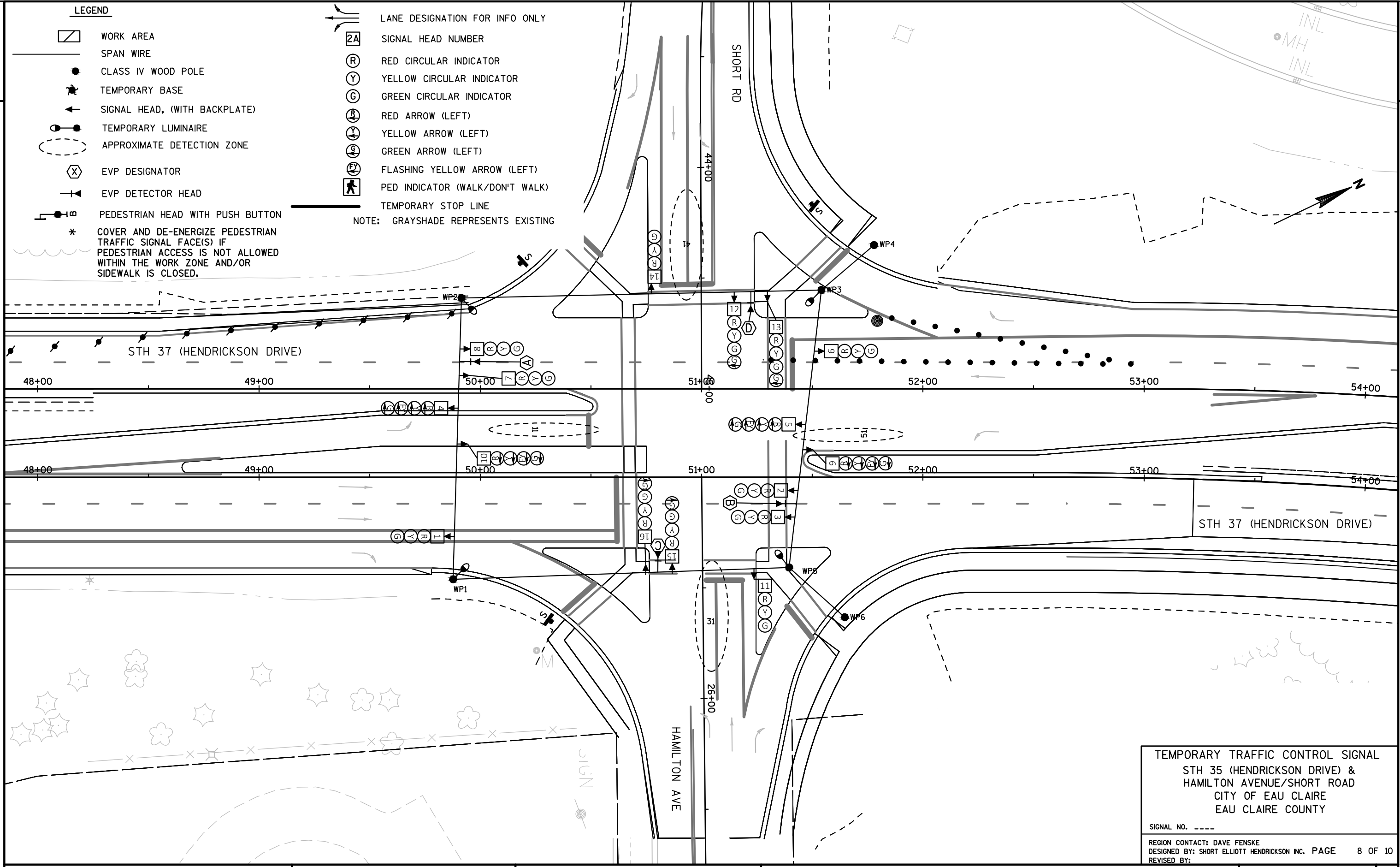
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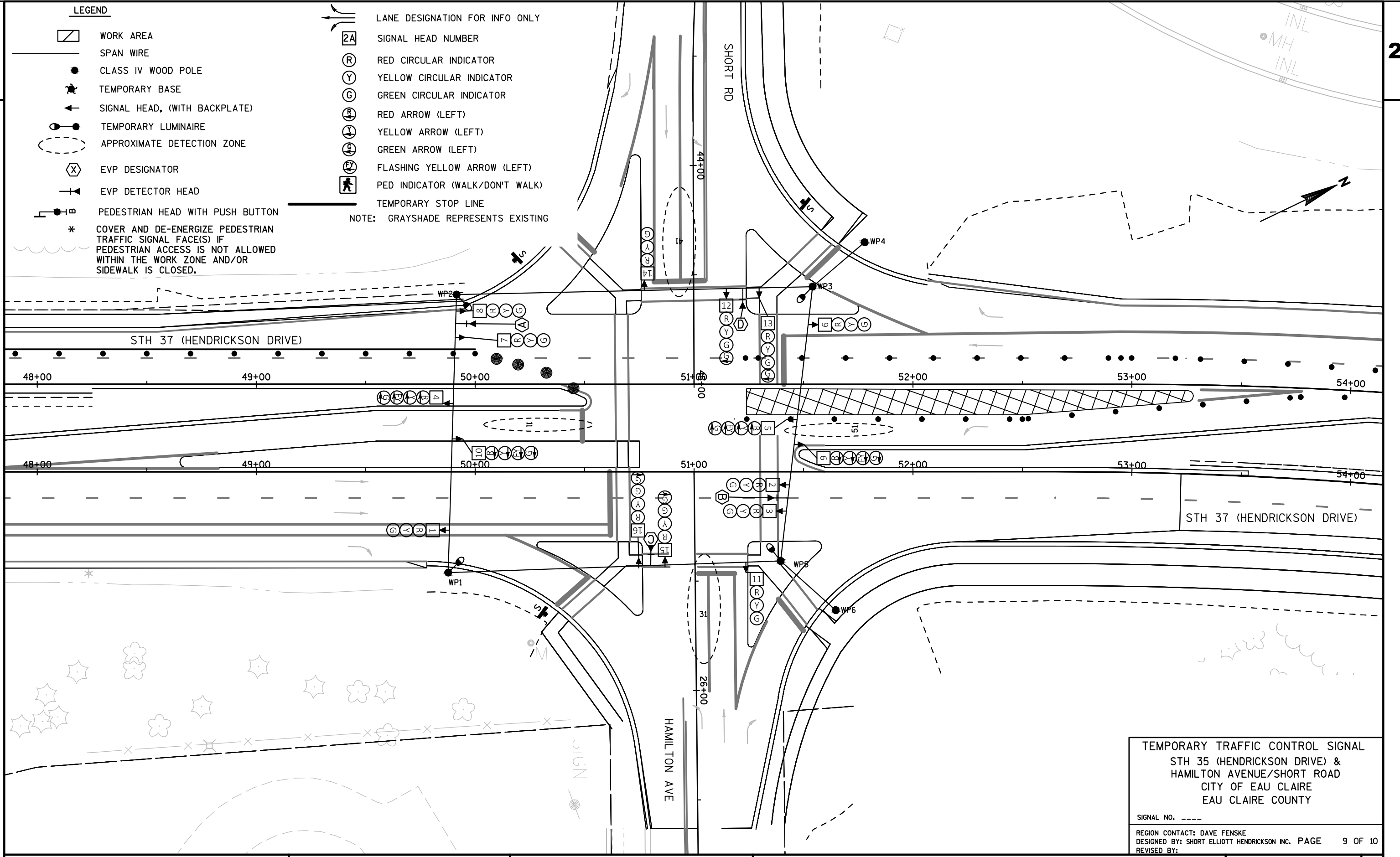
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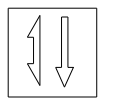
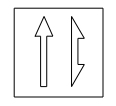
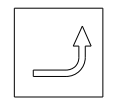


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 EAU CLAIRE COUNTY

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REGION CONTACT: DAVE FENSKE
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 REVISED BY:

SEQUENCE OF OPERATION



RING 1

HEAD NUMBERS	Ø1				Ø2			
	R/W	CLEAR TO			R/W	CLEAR TO		
		* *				* *		
Ø1	4,5	G	-	-	-	-	-	-
Ø2	6,7,8	R	R	R	G	Y	R	
Ø3	11,12,13	R	R	R	R	R	R	
Ø4	14,15,16	R	R	R	R	R	R	
Ø5	9,10	-	-	-	-	-	-	
Ø6	1,2,3	R	R	R	R	R	R	
Ø7								
Ø8								
OLE	4,5	-	Y	R	FY	Y	R	
OLF								
OLG	9,10	R	R	R	R	R	R	
OLH								
Ø2P								
Ø3P								
Ø4P								
Ø6P								

RING 1

HEAD NUMBERS	Ø3				Ø4			
	R/W	CLEAR TO			R/W	CLEAR TO		
		* *				* *		
Ø1								
Ø2								
Ø3								
Ø4								
Ø5								
Ø6								
Ø7								
Ø8								
OLE								
OLF								
OLG								
OLH								
Ø2P								
Ø3P								
Ø4P								
Ø6P								

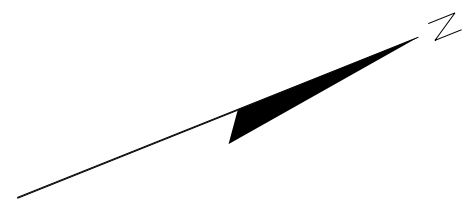
FLASH

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION			PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH
		CALLS AND EXTENDS	CALLS ONLY	EXTENDS ONLY					
11		X			1	1			
31		X			3	3			
41		X			4	4			
51		X			5	5			

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				X
4				X
5		2		X
6	X	2	MIN.	X
7				
8				



SPECIAL OVERLAPS

	PROTECTED	PERMISSIVE
OLE	1	2
OLF		
OLG	5	6
OLH		

RING 2

HEAD NUMBERS	Ø5				Ø6			
	R/W	CLEAR TO			R/W	CLEAR TO		
		* *				* *		
Ø1	4,5	-	-	-	-	-	-	-
Ø2	6,7,8	R	R	R	R	R	R	
Ø3	11,12,13	R	R	R	R	R	R	
Ø4	14,15,16	R	R	R	R	R	R	
Ø5	9,10	G	-	-	-	-	-	
Ø6	1,2,3	R	R	R	G	Y	R	
Ø7								
Ø8								
OLE	4,5	R	R	R	R	R	R	
OLF								
OLG	9,10	-	Y	R	FY	Y	R	
OLH								
Ø2P								
Ø3P								
Ø4P								
Ø6P								

RING 2

HEAD NUMBERS	Ø7				Ø8			
	R/W	CLEAR TO			R/W	CLEAR TO		
		* *				* *		
Ø1								
Ø2								
Ø3								
Ø4								
Ø5								
Ø6								
Ø7								
Ø8								
OLE								
OLF								
OLG								
OLH								
Ø2P								
Ø3P								
Ø4P								
Ø6P								

NOT USED

NOT USED

TYPE OF INTERCONNECT COMMUNICATION

NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM #:	

TYPE OF PRE-EMPT

NONE	
RAILROAD	
EMERGENCY VEHICLE	X
3M	
TOMAR	
HARDWIRE	
OTHER	
QUEUE DETECTOR	
LIFT BRIDGE	

TYPE OF LIGHTING

BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,3,4
2	5 OR 6	1,3,4
3	NONE	1,2,4,5,6
4	NONE	1,2,3,5,6
5	1 OR 2	3,4,6
6	1 OR 2	3,4,5
7		
8		

- GENERAL NOTES:
1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
 2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1AT LEFT.)
 3. WHEN OPPOSING THRU PHASES ARE TIMING CONCURRENTLY THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

STH 37 (HENDRICKSON DRIVE) & HAMILTON AVE / SHORT RD
CITY OF EAU CLAIRE
EAU CLAIRE COUNTY

SIGNAL NO,S18-0609
CONTROLLER TYPE:TEMP
DATE _____ PAGE NO. 10 OF 10

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

LEGEND

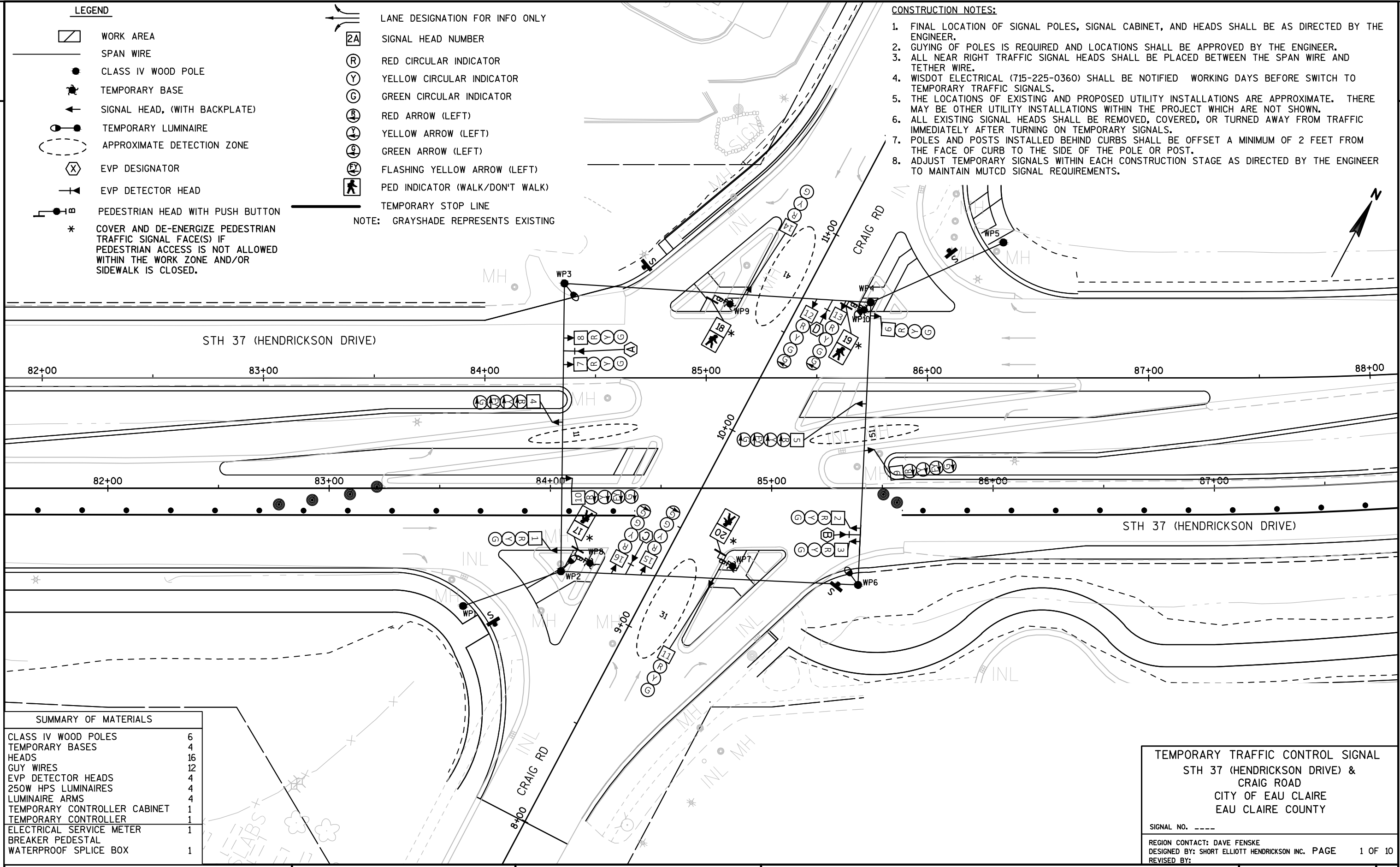
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NOTE: GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, AND HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. WISDOT ELECTRICAL (715-225-0360) SHALL BE NOTIFIED WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.
5. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
6. ALL EXISTING SIGNAL HEADS SHALL BE REMOVED, COVERED, OR TURNED AWAY FROM TRAFFIC IMMEDIATELY AFTER TURNING ON TEMPORARY SIGNALS.
7. POLES AND POSTS INSTALLED BEHIND CURBS SHALL BE OFFSET A MINIMUM OF 2 FEET FROM THE FACE OF CURB TO THE SIDE OF THE POLE OR POST.
8. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.



SUMMARY OF MATERIALS	
CLASS IV WOOD POLES	6
TEMPORARY BASES	4
HEADS	16
GUY WIRES	12
EVP DETECTOR HEADS	4
250W HPS LUMINAIRES	4
LUMINAIRE ARMS	4
TEMPORARY CONTROLLER CABINET	1
TEMPORARY CONTROLLER	1
ELECTRICAL SERVICE METER	1
BREAKER PEDESTAL	1
WATERPROOF SPLICE BOX	1

TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

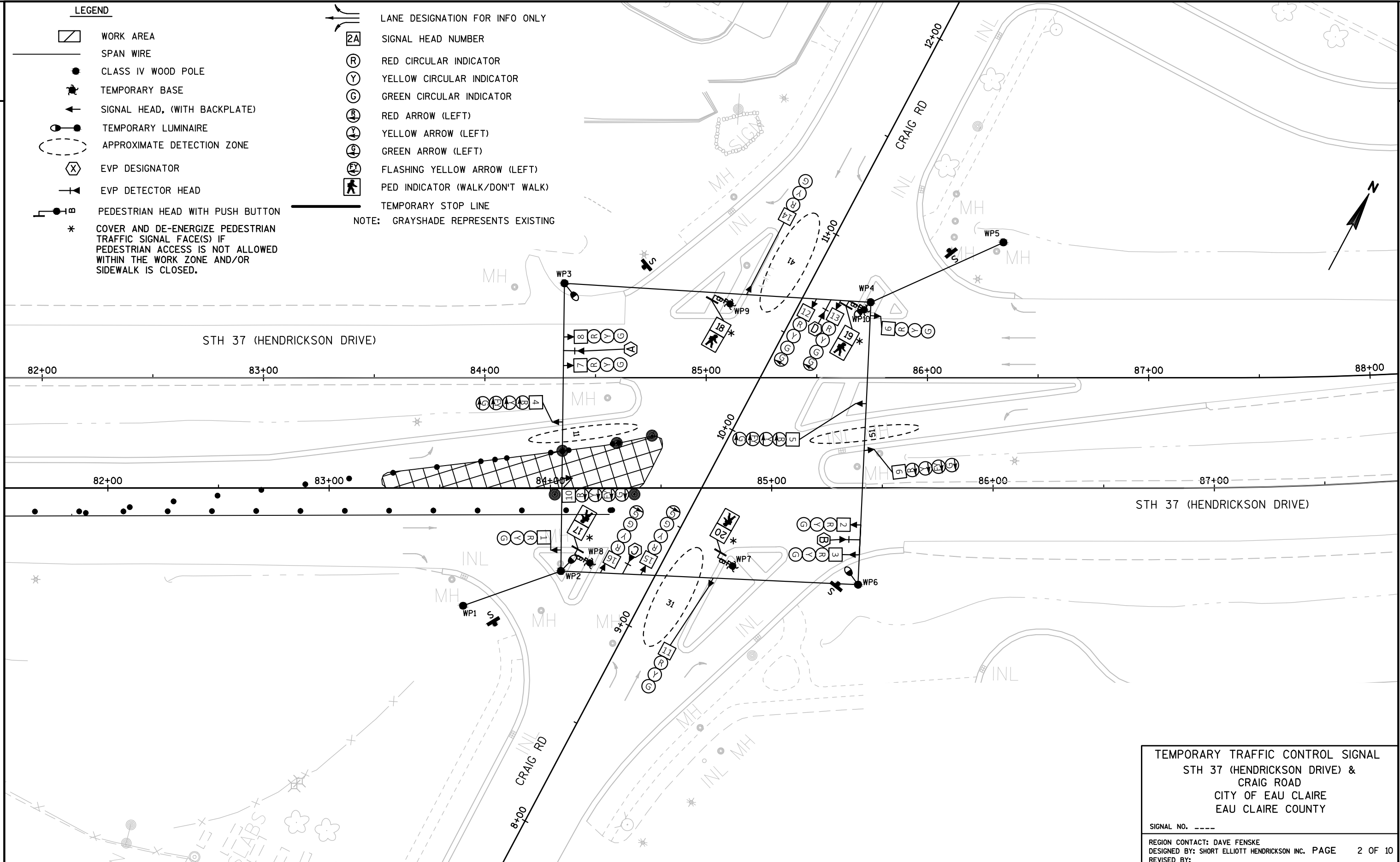
REGION CONTACT: DAVE FENSKE
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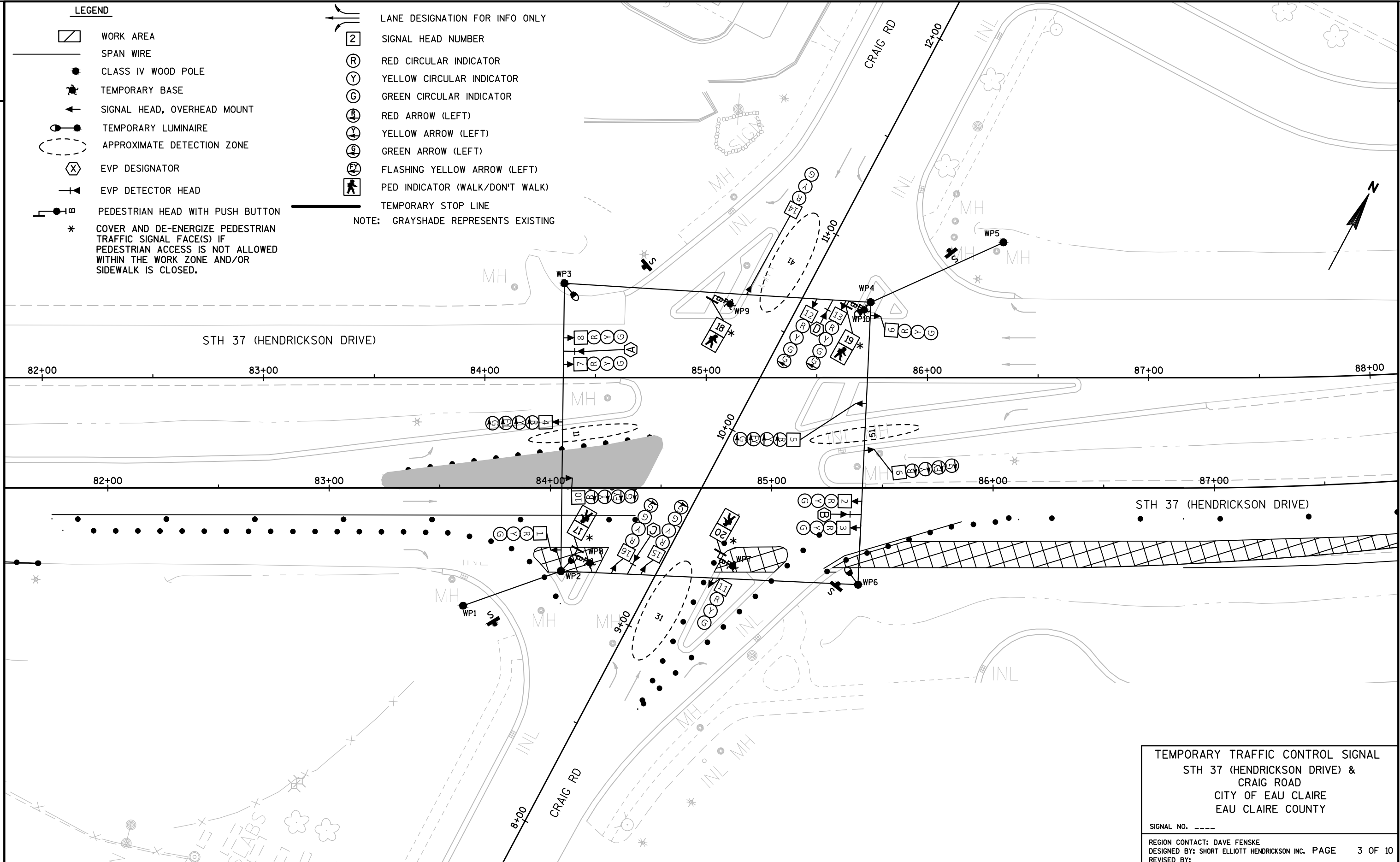
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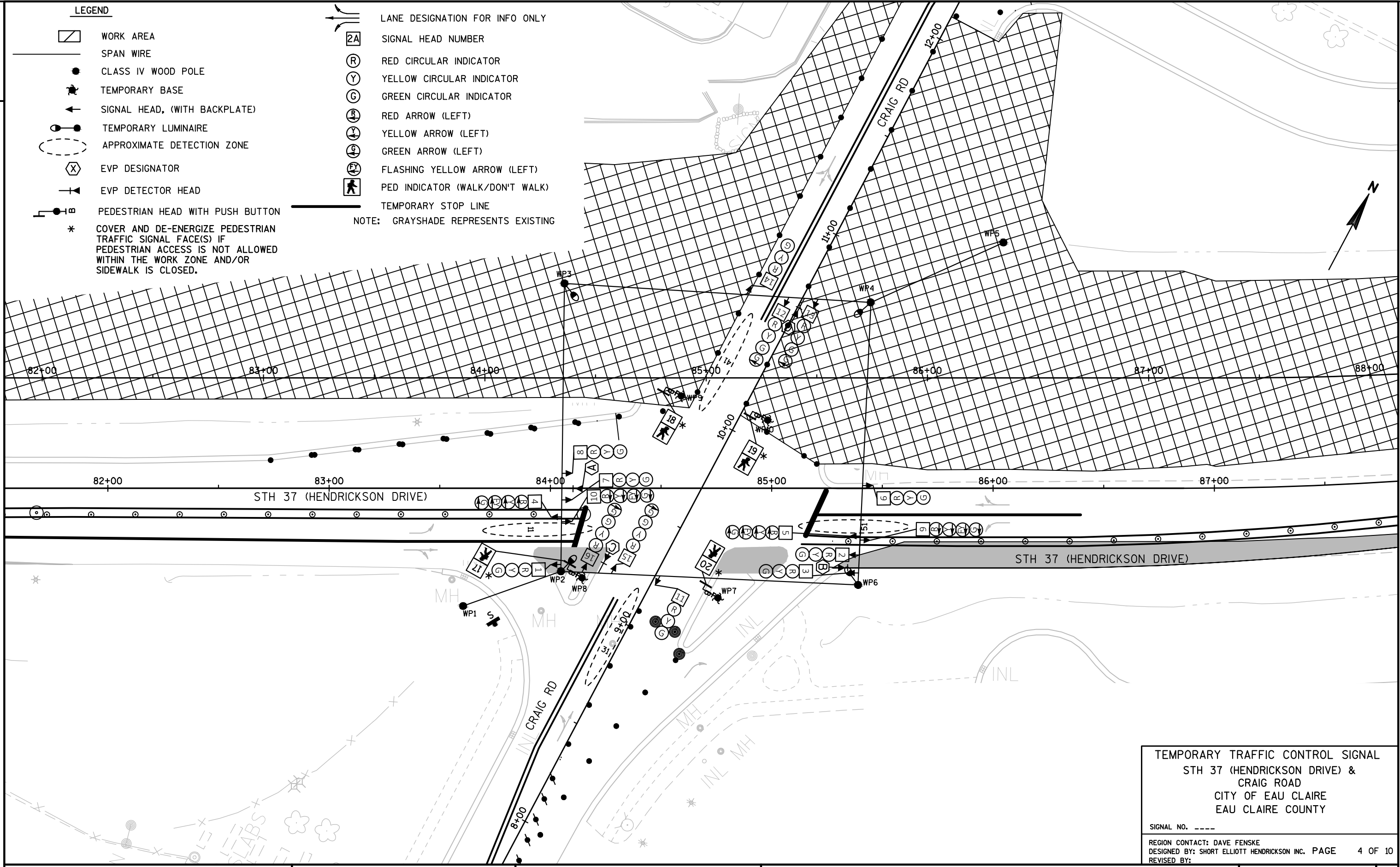
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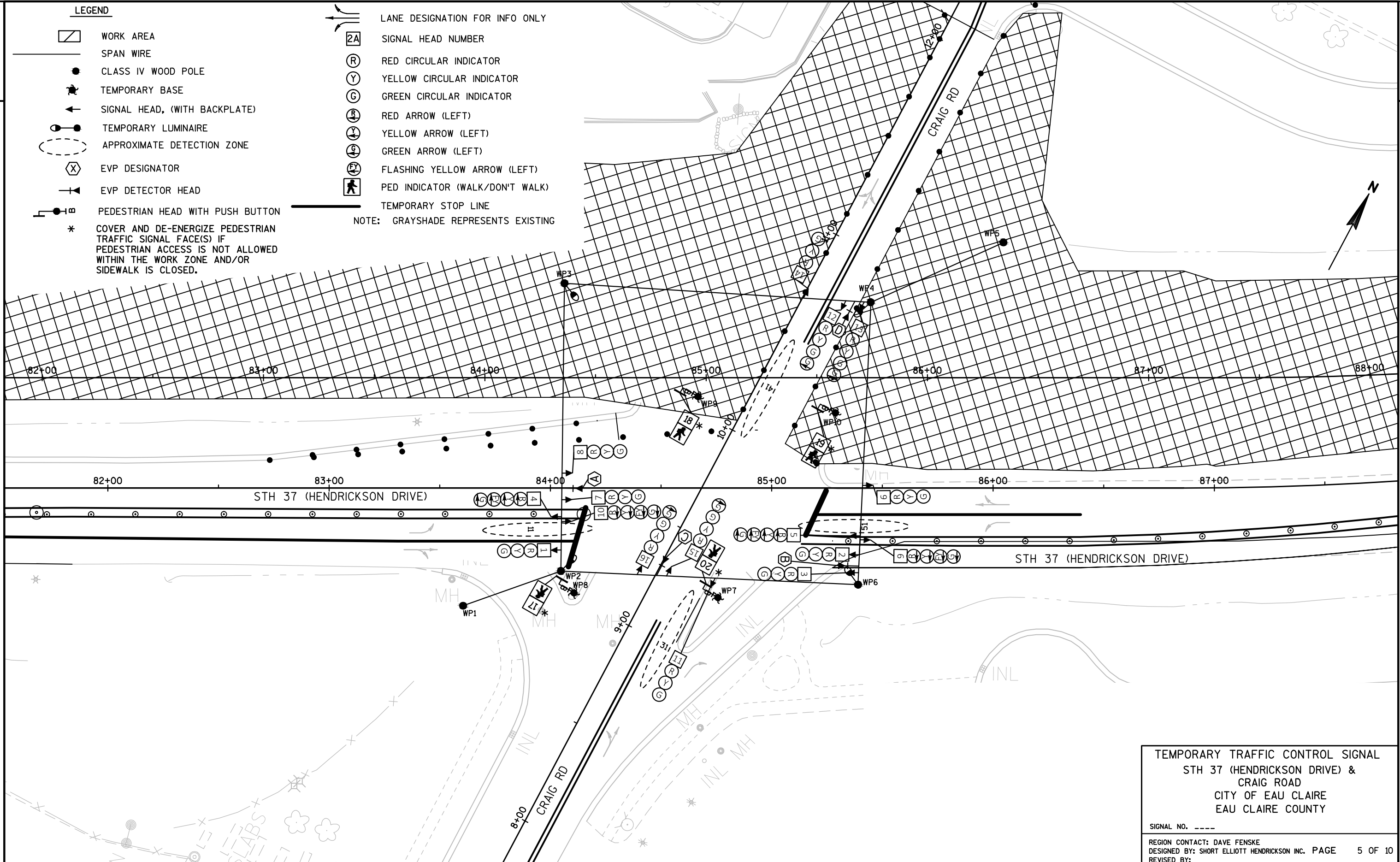
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















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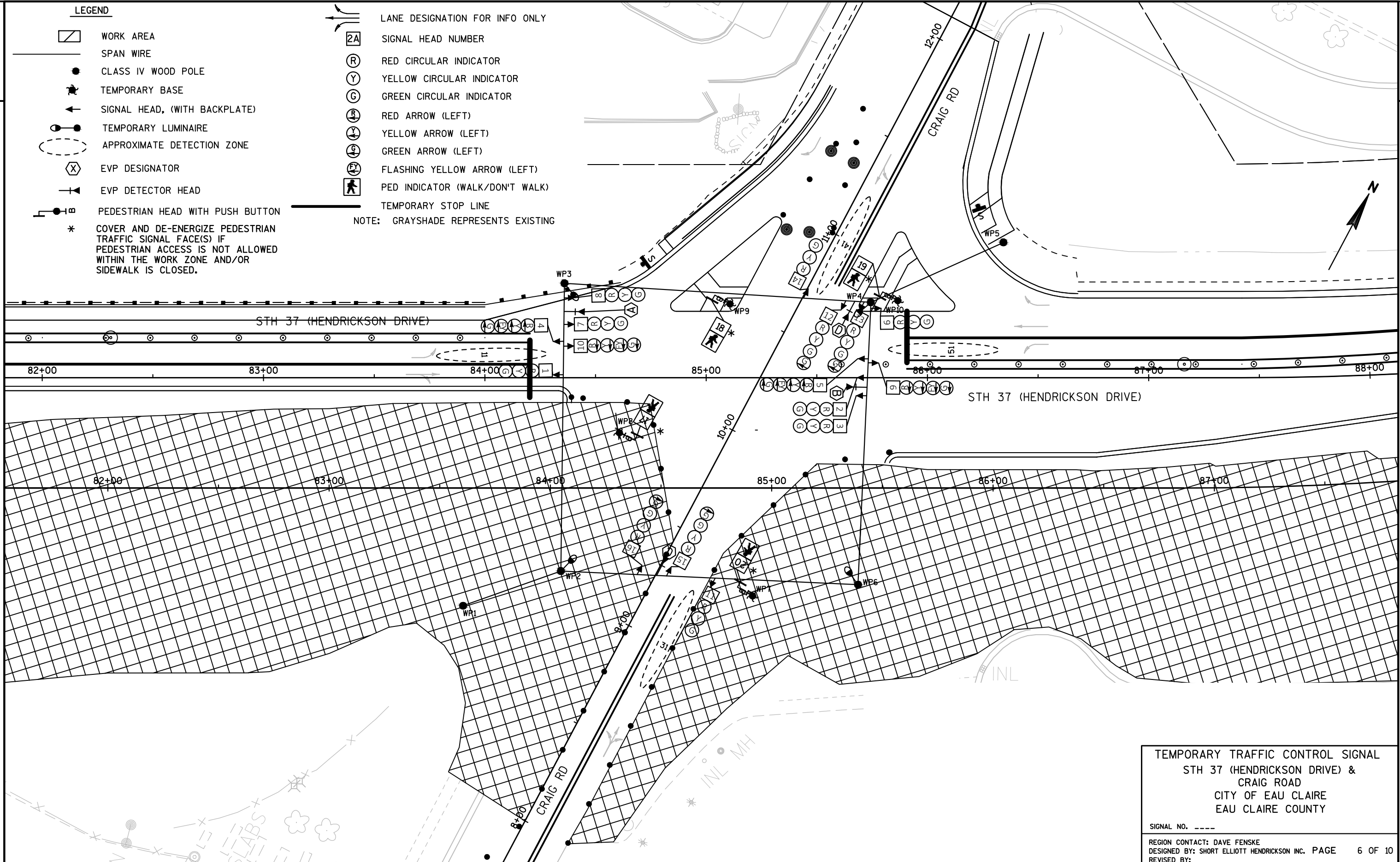
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















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 EAU CLAIRE COUNTY

SIGNAL NO. ----

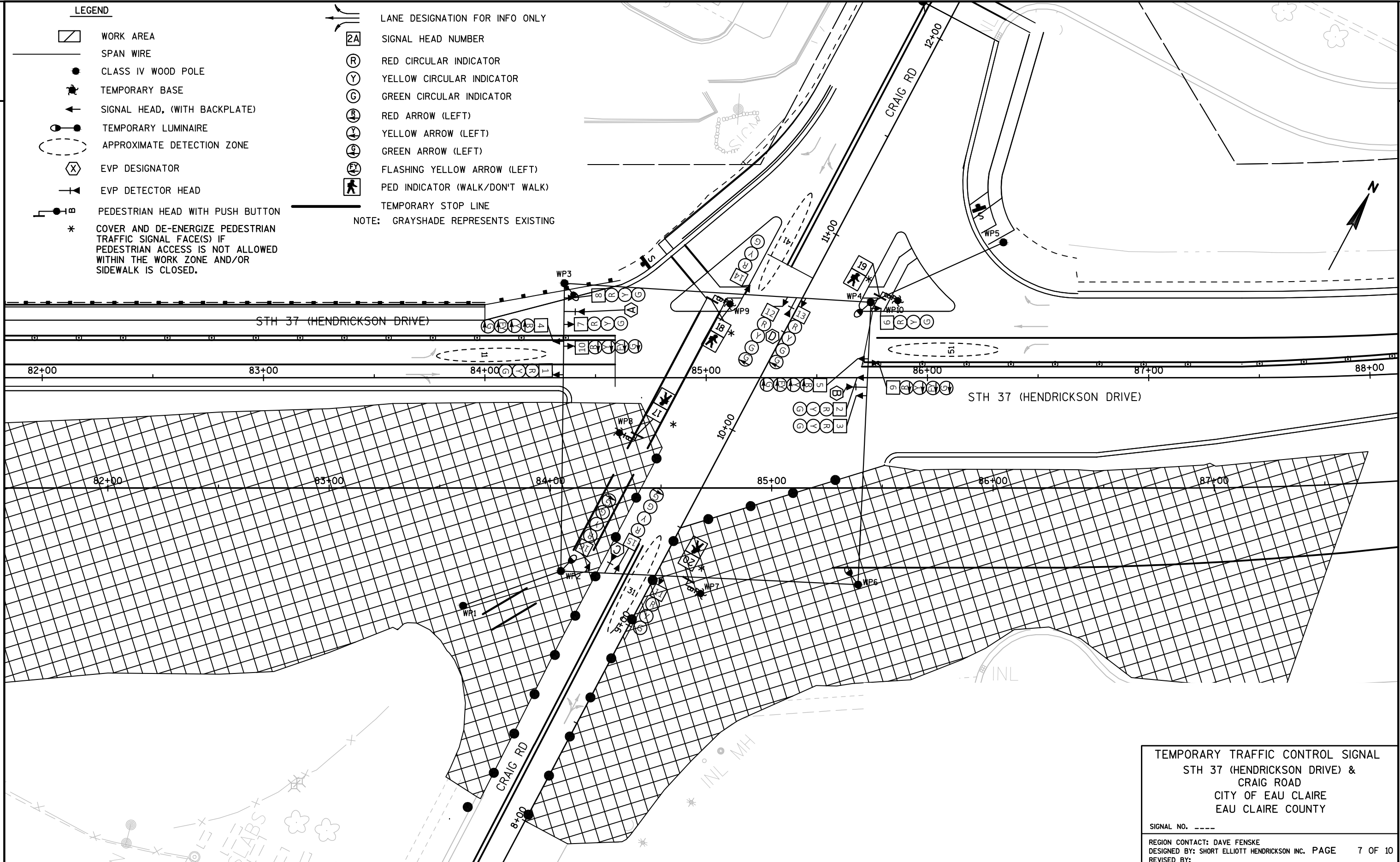
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 6 OF 10
 REVISED BY:

LEGEND

-  WORK AREA
-  SPAN WIRE
-  CLASS IV WOOD POLE
-  TEMPORARY BASE
-  SIGNAL HEAD, (WITH BACKPLATE)
-  TEMPORARY LUMINAIRE
-  APPROXIMATE DETECTION ZONE
-  EVP DESIGNATOR
-  EVP DETECTOR HEAD
-  PEDESTRIAN HEAD WITH PUSH BUTTON
-  COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

-  LANE DESIGNATION FOR INFO ONLY
-  SIGNAL HEAD NUMBER
-  RED CIRCULAR INDICATOR
-  YELLOW CIRCULAR INDICATOR
-  GREEN CIRCULAR INDICATOR
-  RED ARROW (LEFT)
-  YELLOW ARROW (LEFT)
-  GREEN ARROW (LEFT)
-  FLASHING YELLOW ARROW (LEFT)
-  PED INDICATOR (WALK/DON'T WALK)
-  TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

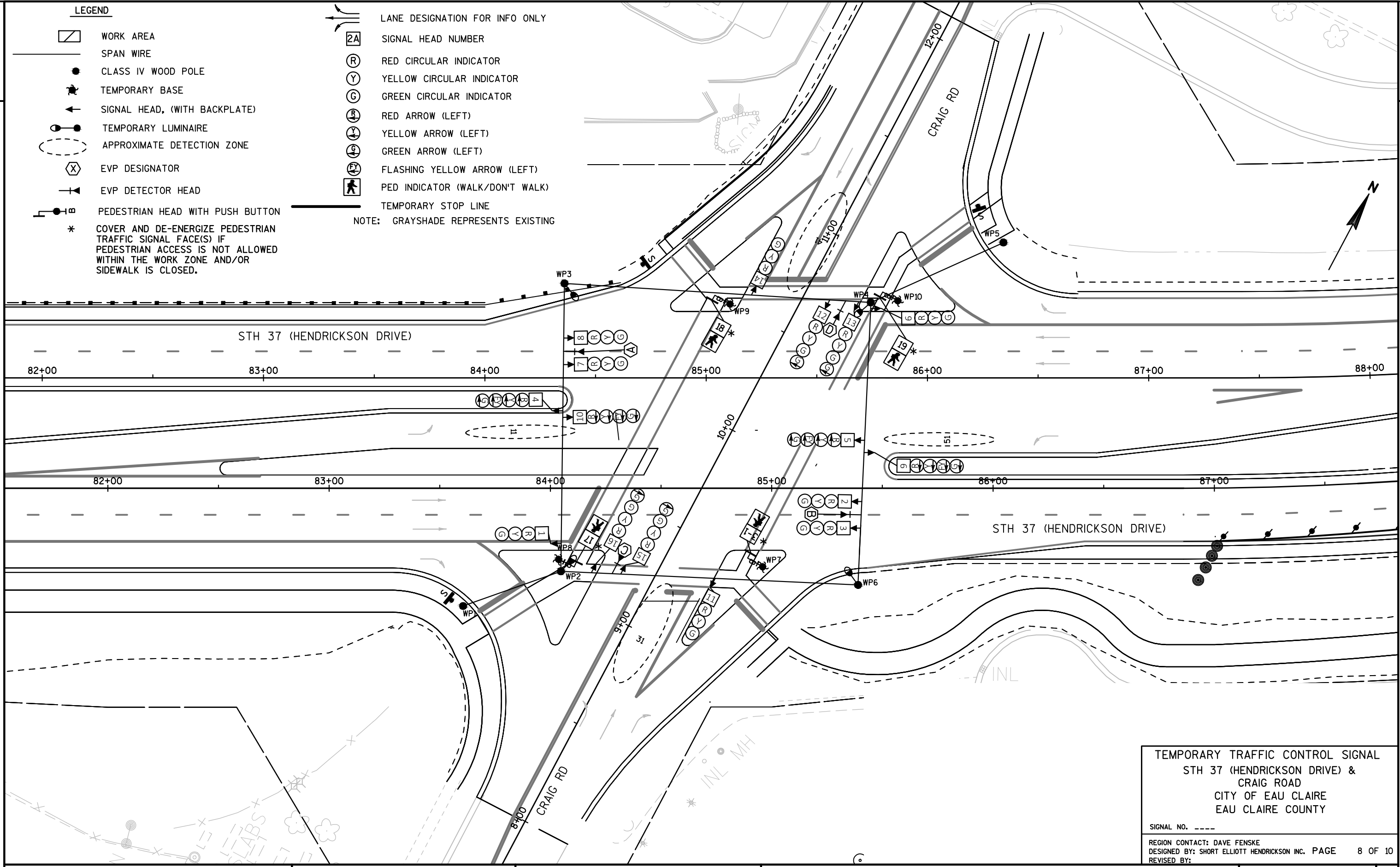
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 7 OF 10
 REVISED BY:

LEGEND

- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, (WITH BACKPLATE)
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

- LANE DESIGNATION FOR INFO ONLY
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW (LEFT)
- YELLOW ARROW (LEFT)
- GREEN ARROW (LEFT)
- FLASHING YELLOW ARROW (LEFT)
- PED INDICATOR (WALK/DON'T WALK)
- TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

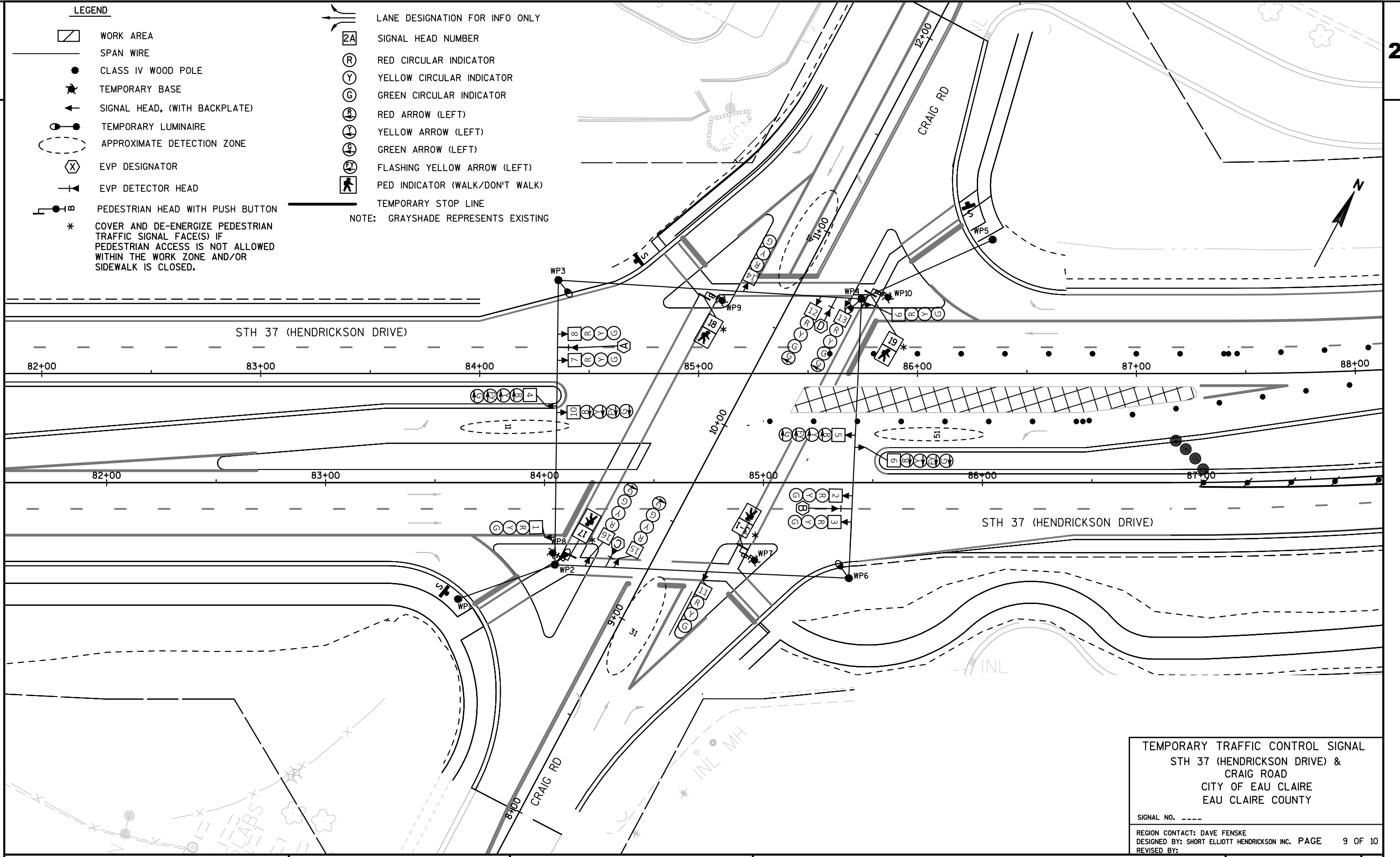
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 8 OF 10
 REVISED BY:

LEGEND

- WORK AREA
- SPAN WIRE
- CLASS IV WOOD POLE
- TEMPORARY BASE
- SIGNAL HEAD, (WITH BACKPLATE)
- TEMPORARY LUMINAIRE
- APPROXIMATE DETECTION ZONE
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- COVER AND DE-ENERGIZE PEDESTRIAN TRAFFIC SIGNAL FACE(S) IF PEDESTRIAN ACCESS IS NOT ALLOWED WITHIN THE WORK ZONE AND/OR SIDEWALK IS CLOSED.

- LANE DESIGNATION FOR INFO ONLY
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW (LEFT)
- YELLOW ARROW (LEFT)
- GREEN ARROW (LEFT)
- FLASHING YELLOW ARROW (LEFT)
- PED INDICATOR (WALK/DON'T WALK)
- TEMPORARY STOP LINE

NOTE: GRAYSHADE REPRESENTS EXISTING



TEMPORARY TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. ----

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SHORT ELLIOTT HENDRICKSON INC. PAGE 9 OF 10
 REVISED BY:

SEQUENCE OF OPERATION



	HEAD NUMBERS	Ø1					Ø2				
		R/W	CLEAR TO			R/W	CLEAR TO				
			* *				* *				
Ø1	4,5	G	-	-		-	-	-			
Ø2	6,7,8	R	R	R		G	Y	R			
Ø3	11,12,13	R	R	R		R	R	R			
Ø4	14,15,16	R	R	R		R	R	R			
Ø5	9,10	-	-	-		-	-	-			
Ø6	1,2,3	R	R	R		R	R	R			
Ø7											
Ø8											
OLE	4,5	-	Y	R		FY	Y	R			
OLF											
OLG	9,10	R	R	R		R	R	R			
OLH											
Ø2P											
Ø3P	19,20	DW	DWDW			DW	DWDW				
Ø4P	17,18	DW	DWDW			DW	DWDW				
Ø6P											

RING 1

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION			PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH
		CALLS AND EXTENDS	CALLS ONLY	EXTENDS ONLY					
11		X			1	1			
31		X			3	3			
41		X			4	4			
51		X			5	5			

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3				X
4				X
5		2		X
6	X	2	MIN.	X
7				
8				

SPECIAL OVERLAPS

	PROTECTED	PERMISSIVE
OLE	1	2
OLF		
OLG	5	6
OLH		

TYPE OF INTERCONNECT COMMUNICATION

NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM #:	

TYPE OF PRE-EMPT

NONE	
RAILROAD	
EMERGENCY VEHICLE	X
3M	
TOMAR	
HARDWIRE	
OTHER	
QUEUE DETECTOR	
LIFT BRIDGE	

TYPE OF LIGHTING

BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,3,4
2	5 OR 6	1,3,4
3	NONE	1,2,4,5,6
4	NONE	1,2,3,5,6
5	1 OR 2	3,4,6
6	1 OR 2	3,4,5
7		
8		

GENERAL NOTES:

- ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
- WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1 AT LEFT.)
- WHEN OPPOSING THRU PHASES ARE TIMING CONCURRENTLY THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.



NOT USED NOT USED

	HEAD NUMBERS	Ø5					Ø6				
		R/W	CLEAR TO			R/W	CLEAR TO				
			* *				* *				
Ø1	4,5	-	-	-		-	-	-			
Ø2	6,7,8	R	R	R		R	R	R			
Ø3	11,12,13	R	R	R		R	R	R			
Ø4	14,15,16	R	R	R		R	R	R			
Ø5	9,10	G	-	-		-	-	-			
Ø6	1,2,3	R	R	R		G	Y	R			
Ø7											
Ø8											
OLE	4,5	R	R	R		R	R	R			
OLF											
OLG	9,10	-	Y	R		FY	Y	R			
OLH											
Ø2P											
Ø3P	19,20	DW	DWDW			DW	DWDW				
Ø4P	17,18	DW	DWDW			DW	DWDW				
Ø6P											

RING 2

BARRIER

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

STH 37 (HENDRICKSON DRIVE) &
CRAIG ROAD
CITY OF EAU CLAIRE
EAU CLAIRE COUNTY

SIGNAL NO.S18-0241

CONTROLLER TYPE: TEMP

DATE

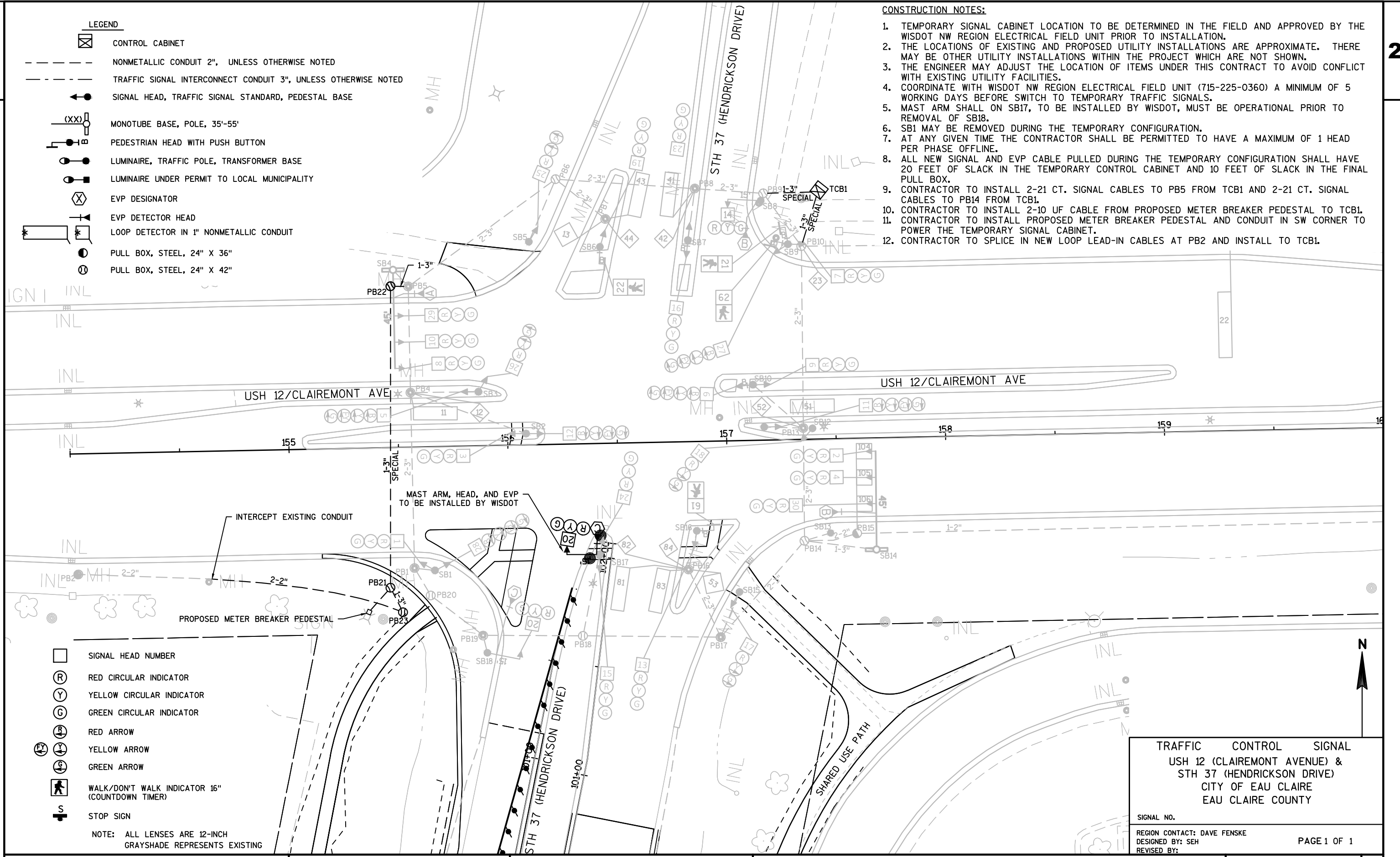
PAGE NO. 10 OF 10

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL INTERCONNECT CONDUIT 3", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 35'-55'
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, STEEL, 24" X 36"
- PULL BOX, STEEL, 24" X 42"

CONSTRUCTION NOTES:

1. TEMPORARY SIGNAL CABINET LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY THE WISDOT NW REGION ELECTRICAL FIELD UNIT PRIOR TO INSTALLATION.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATION OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. COORDINATE WITH WISDOT NW REGION ELECTRICAL FIELD UNIT (715-225-0360) A MINIMUM OF 5 WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.
5. MAST ARM SHALL ON SB17, TO BE INSTALLED BY WISDOT, MUST BE OPERATIONAL PRIOR TO REMOVAL OF SB18.
6. SB1 MAY BE REMOVED DURING THE TEMPORARY CONFIGURATION.
7. AT ANY GIVEN TIME THE CONTRACTOR SHALL BE PERMITTED TO HAVE A MAXIMUM OF 1 HEAD PER PHASE OFFLINE.
8. ALL NEW SIGNAL AND EVP CABLE PULLED DURING THE TEMPORARY CONFIGURATION SHALL HAVE 20 FEET OF SLACK IN THE TEMPORARY CONTROL CABINET AND 10 FEET OF SLACK IN THE FINAL PULL BOX.
9. CONTRACTOR TO INSTALL 2-21 CT. SIGNAL CABLES TO PB5 FROM TCB1 AND 2-21 CT. SIGNAL CABLES TO PB14 FROM TCB1.
10. CONTRACTOR TO INSTALL 2-10 UF CABLE FROM PROPOSED METER BREAKER PEDESTAL TO TCB1.
11. CONTRACTOR TO INSTALL PROPOSED METER BREAKER PEDESTAL AND CONDUIT IN SW CORNER TO POWER THE TEMPORARY SIGNAL CABINET.
12. CONTRACTOR TO SPLICE IN NEW LOOP LEAD-IN CABLES AT PB2 AND INSTALL TO TCB1.



- SIGNAL HEAD NUMBER
 - RED CIRCULAR INDICATOR
 - YELLOW CIRCULAR INDICATOR
 - GREEN CIRCULAR INDICATOR
 - RED ARROW
 - YELLOW ARROW
 - GREEN ARROW
 - WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
 - STOP SIGN
- NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

TRAFFIC CONTROL SIGNAL
 USH 12 (CLAIREMONT AVENUE) &
 STH 37 (HENDRICKSON DRIVE)
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. _____

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY: _____

PAGE 1 OF 1

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRES AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
4. EVP CABLE TO BE REMOVED BY THE CONTRACTOR.
5. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.

MATCHLINE STA 48+NB+10

MATCHLINE STA 53+NB+90

STH 37 (HENDRICKSON DRIVE)

STH 37 (HENDRICKSON DRIVE)

HAMILTON AVE

- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD

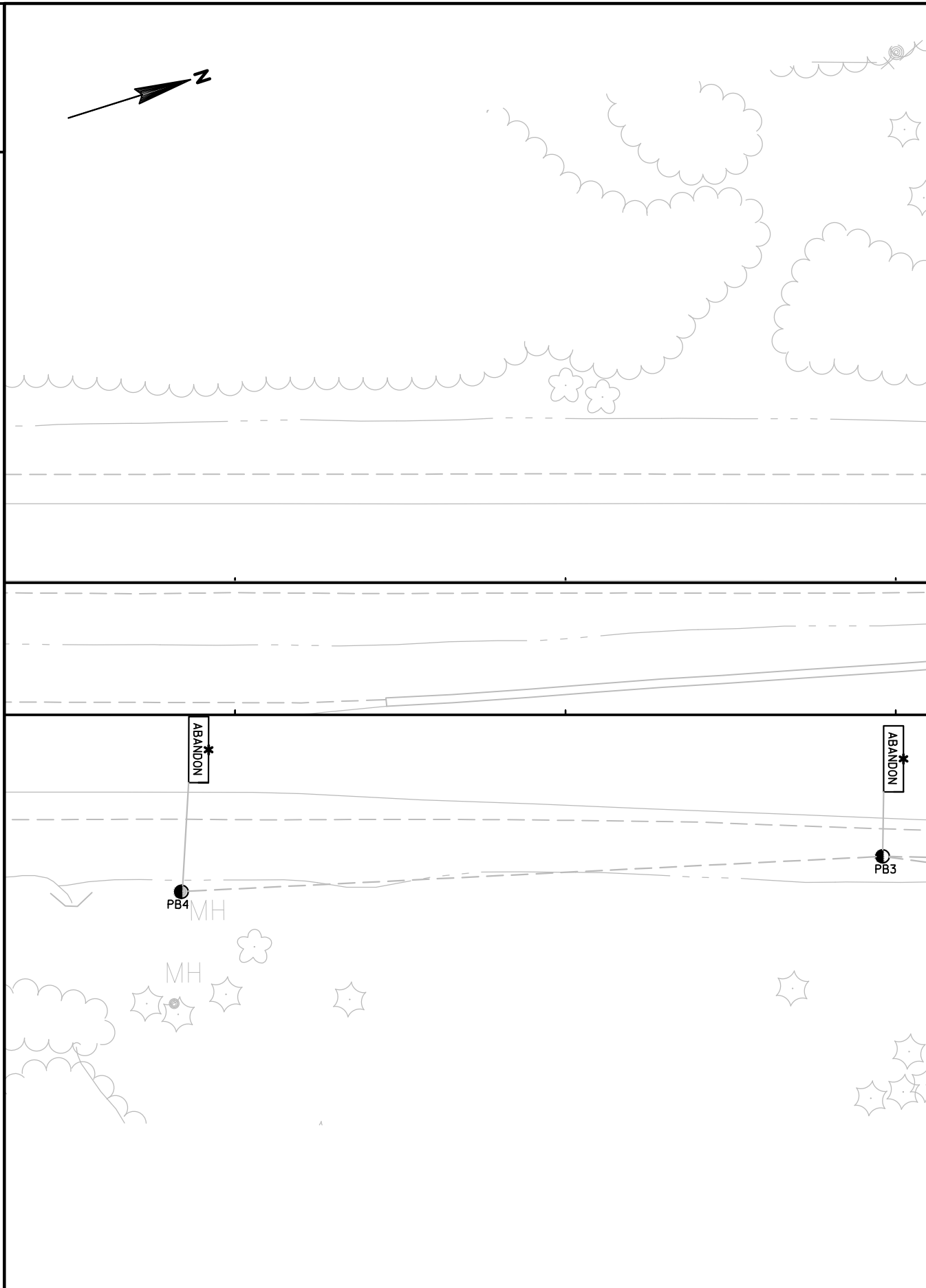
NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS ITEMS TO BE REMOVED.

TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE / SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

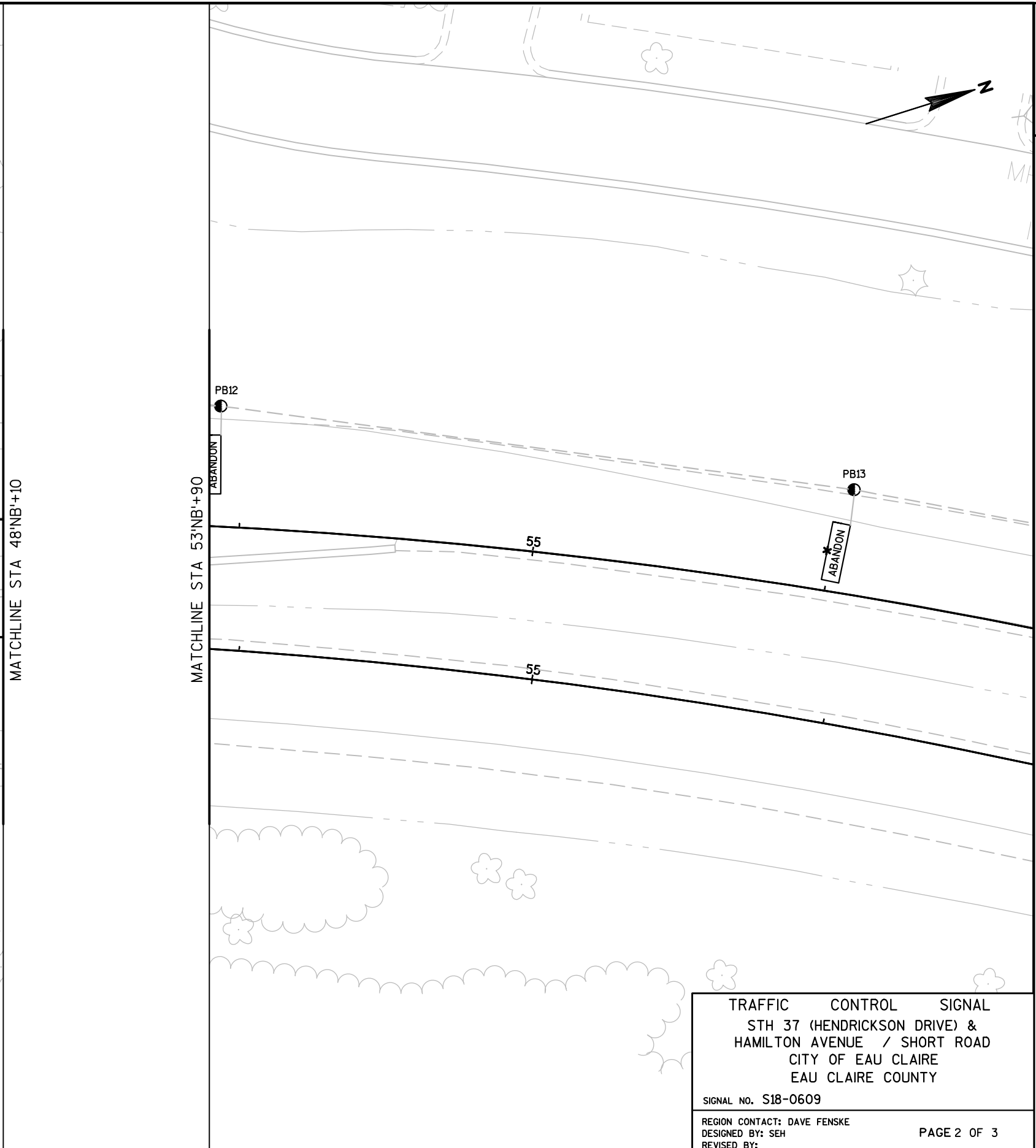
SIGNAL NO. S18-0609

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

2



2



TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE / SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. S18-0609

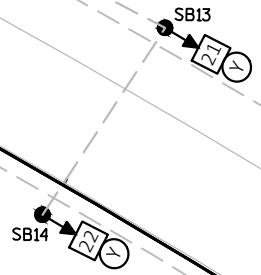
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

PAGE 2 OF 3



MATCHLINE STA 60NB+41

A/C A/C



VOLLEYBALL COURT

PP: 64+91.4
PP: 65+110.8

TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 HAMILTON AVENUE / SHORT ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. S18-0609

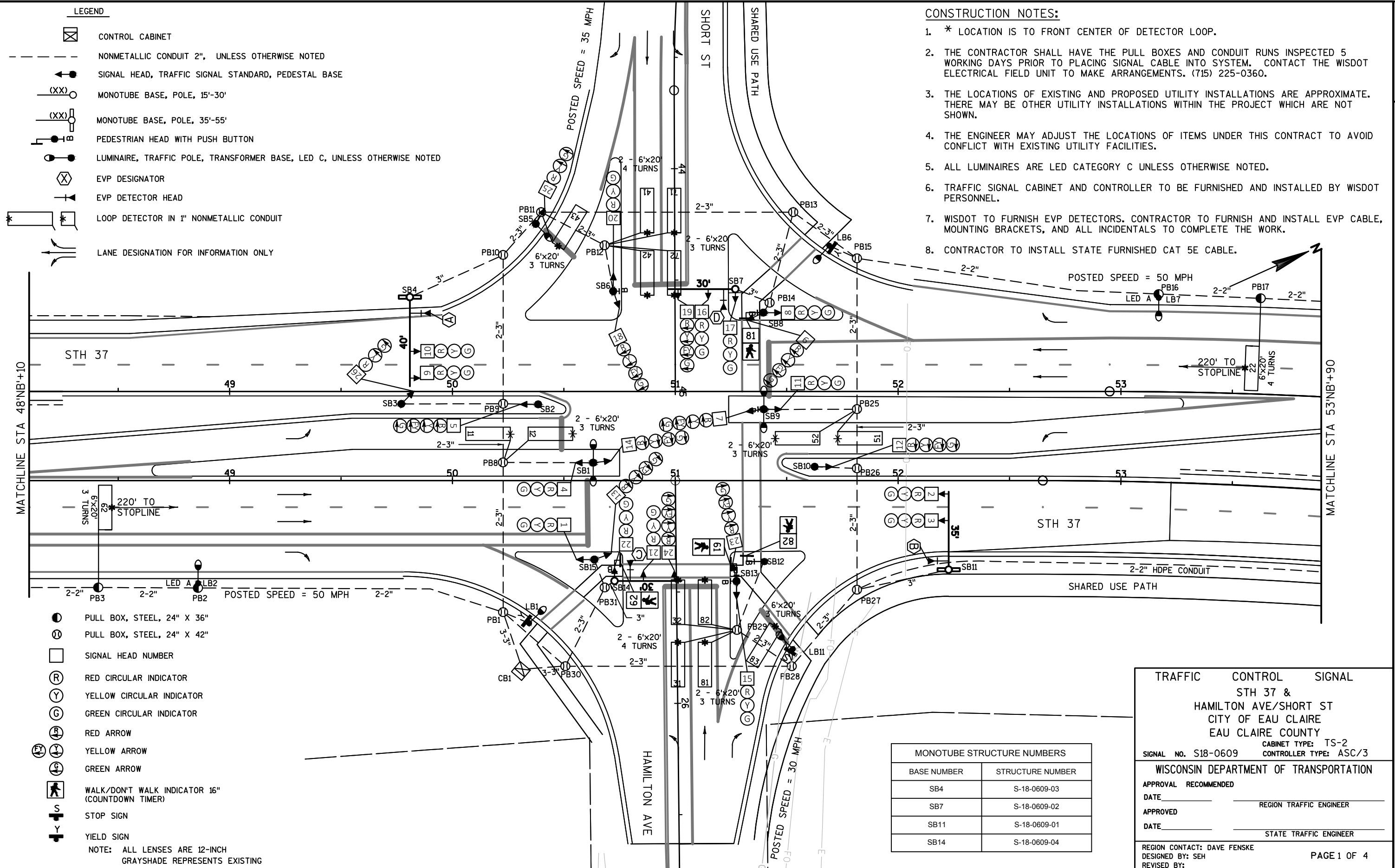
REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30'
- MONOTUBE BASE, POLE, 35'-55'
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE, LED C, UNLESS OTHERWISE NOTED
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- LANE DESIGNATION FOR INFORMATION ONLY

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (715) 225-0360.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
6. TRAFFIC SIGNAL CABINET AND CONTROLLER TO BE FURNISHED AND INSTALLED BY WISDOT PERSONNEL.
7. WISDOT TO FURNISH EVP DETECTORS. CONTRACTOR TO FURNISH AND INSTALL EVP CABLE, MOUNTING BRACKETS, AND ALL INCIDENTALS TO COMPLETE THE WORK.
8. CONTRACTOR TO INSTALL STATE FURNISHED CAT 5E CABLE.



- PULL BOX, STEEL, 24" X 36"
 - PULL BOX, STEEL, 24" X 42"
 - SIGNAL HEAD NUMBER
 - RED CIRCULAR INDICATOR
 - YELLOW CIRCULAR INDICATOR
 - GREEN CIRCULAR INDICATOR
 - RED ARROW
 - YELLOW ARROW
 - GREEN ARROW
 - WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
 - STOP SIGN
 - YIELD SIGN
- NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

MONOTUBE STRUCTURE NUMBERS	
BASE NUMBER	STRUCTURE NUMBER
SB4	S-18-0609-03
SB7	S-18-0609-02
SB11	S-18-0609-01
SB14	S-18-0609-04

TRAFFIC CONTROL SIGNAL
STH 37 &
HAMILTON AVE/SHORT ST
CITY OF EAU CLAIRE
EAU CLAIRE COUNTY

CABINET TYPE: TS-2
CONTROLLER TYPE: ASC/3

SIGNAL NO. S18-0609

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED

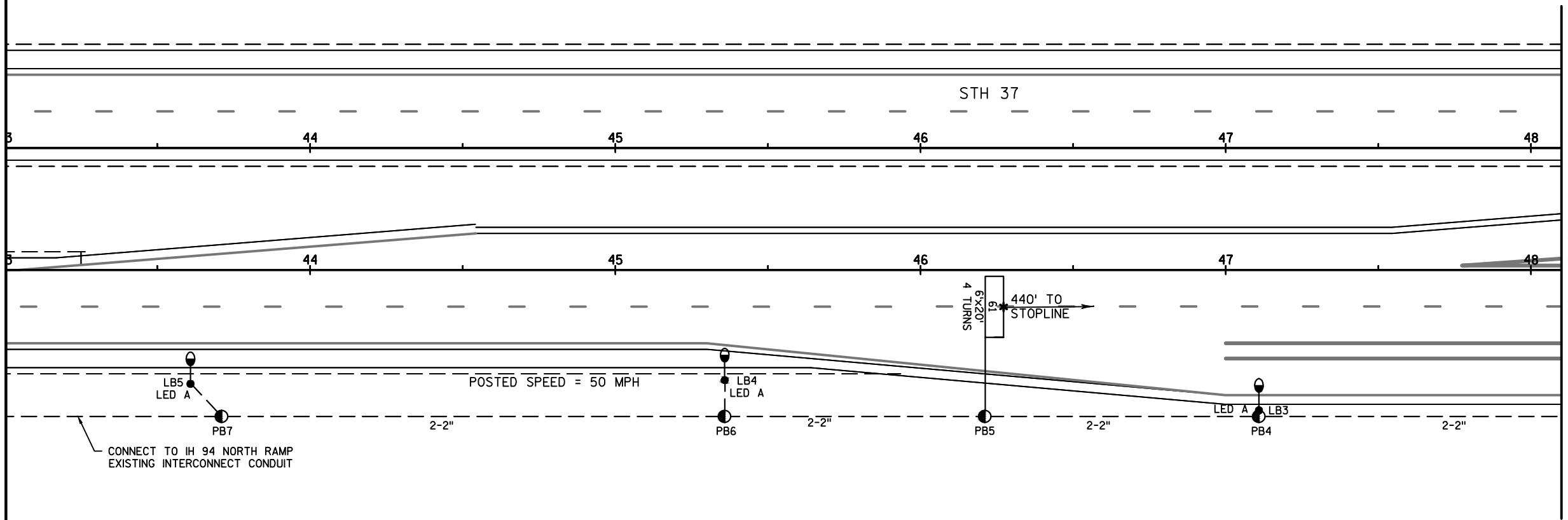
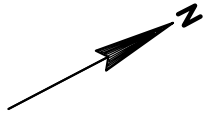
DATE _____ REGION TRAFFIC ENGINEER _____

APPROVED _____ STATE TRAFFIC ENGINEER _____

DATE _____

REGION CONTACT: DAVE FENSKO
DESIGNED BY: SEH
REVISED BY: _____

PAGE 1 OF 4



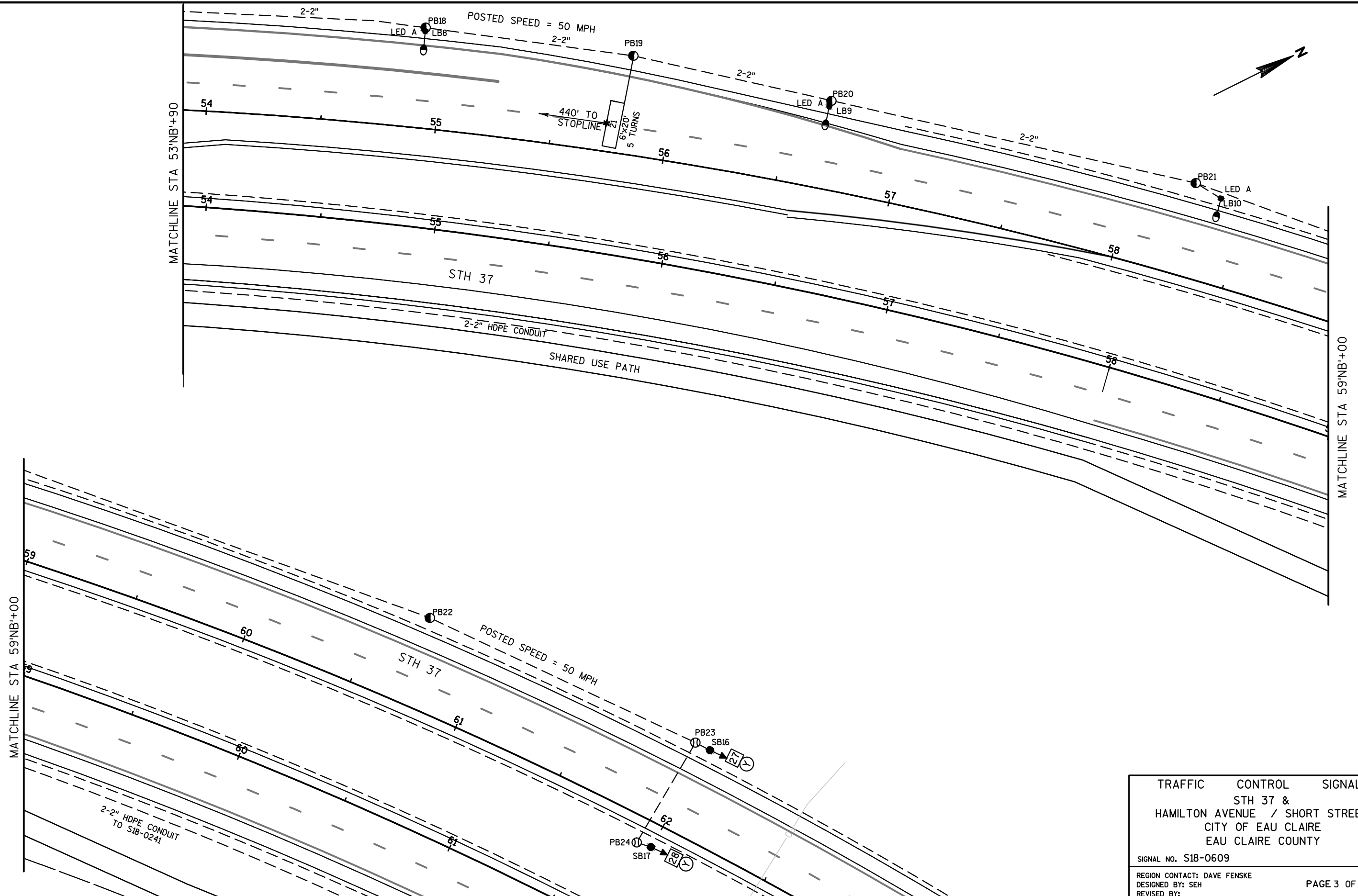
MATCHLINE STA 48'NB'+10

TRAFFIC CONTROL SIGNAL
 STH 37 &
 HAMILTON AVENUE / SHORT STREET
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. S18-0609

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

PAGE 2 OF 4



TRAFFIC CONTROL SIGNAL
 STH 37 &
 HAMILTON AVENUE / SHORT STREET
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

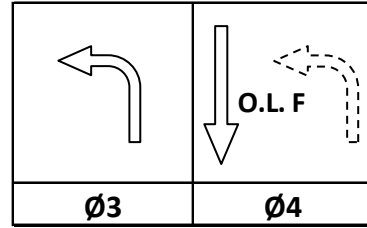
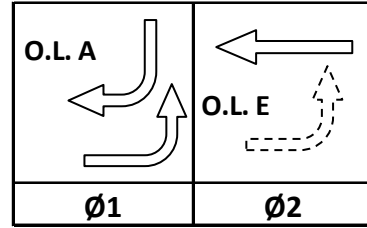
SIGNAL NO. S18-0609

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

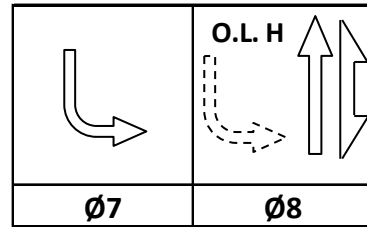
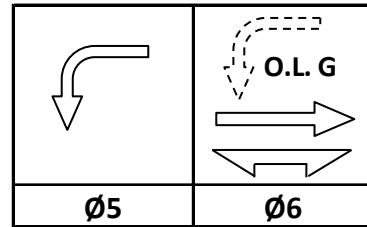
PAGE 3 OF 4

	HEAD NUMBERS	FLASH
Ø1	5,6,7	R
Ø2	8,9,10,11	R
Ø3	18,19	R
Ø4	20,21,22	R
Ø5	12,13,14	R
Ø6	1,2,3,4	R
Ø7	23,24	R
Ø8	15,16,17	R
Ø6P	61,62	
Ø8P	81,82	
OLA	25,26	R
OLE	5,6,7	-
OLF	18,19	-
OLG	12,13,14	-
OLH	23,24	-

RING 1



RING 2



BARRIER

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY. SEE CHART 1.
3. IF ANY OPPOSING THROUGH PHASES ARE TIMING CONCURRENTLY THEY SHALL TERMINATE DUE TO PERMISSIVE LEFT TURN CONFLICT.
4. USE SPARE CABINET BREAKER TO THE WIG-WAG FLASHERS ON THE SB SIGNAL AHEAD SIGNS.

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	31	41	43*	51	61	71
CALLED PHASE	1	2	3	4		5	6	7
CALL OPTION	X	X	X	X		X	X	X
DELAY TIME								
EXTENTION OPTION	X	X	X	X		X	X	X
EXTEND TIME								
USE ADDED INITIAL	X	X	X	X		X	X	X
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	22	32	42		52	62	72
CALLED PHASE	1	2	3	4		5	6	7
CALL OPTION	X	X	X	X		X	X	X
DELAY TIME								
EXTENTION OPTION	X	X	X	X		X	X	X
EXTEND TIME								
USE ADDED INITIAL	X	X	X	X		X	X	X
CROSS SWITCH PHASE								

*WIRED FOR FUTURE USE

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	81	83*						
CALLED PHASE	8							
CALL OPTION	X							
DELAY TIME								
EXTENTION OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	82							
CALLED PHASE	8							
CALL OPTION	X							
DELAY TIME								
EXTENTION OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN.	X
7		4		X
8		4		X

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,3,4,7,8
2	5 OR 6	1,3,4,7,8
3	7 OR 8	1,2,4,5,6
4	7 OR 8	1,2,3,5,6
5	1 OR 2	3,4,6,7,8
6	1 OR 2	3,4,5,7,8
7	3 OR 4	1,2,5,6,8
8	3 OR 4	1,2,5,6,7

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

EMERGENCY VEHICLE PREEMPTION SEQUENCE				
EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
PREEMPTION CHANNEL	1	2	3	4
MOVEMENT				
DIRECTION	SB	NB	EB	WB
PHASE	2+5	6+1	4+7+OLA	8+3+OLC

NOTES: FULL CLEARANCE AND MINIMUM GREEN INTERVALS SHALL ALWAYS BE PROVIDED.

STH 37 (HENDRICKSON DRIVE) & HAMILTON AVE/SHORT ST	
CITY OF EAU CLAIRE	
EAU CLAIRE COUNTY	
SIGNAL NO: S18-0609	CABINET TYPE: TS2
CONTROLLER TYPE: ASC/3 - 1000	
DATE: 01/18	PAGE NO. 4 OF 4

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"

MATCHLINE STA 82'NB'+00

MATCHLINE STA 87'NB'+50

STH 37 (HENDRICKSON DRIVE)

STH 37 (HENDRICKSON DRIVE)

- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- DON'T WALK INDICATOR 16"
WALK INDICATOR 16"
- EVP DESIGNATOR
- EVP DETECTOR HEAD

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS ITEMS TO BE REMOVED.

CONSTRUCTION NOTES:

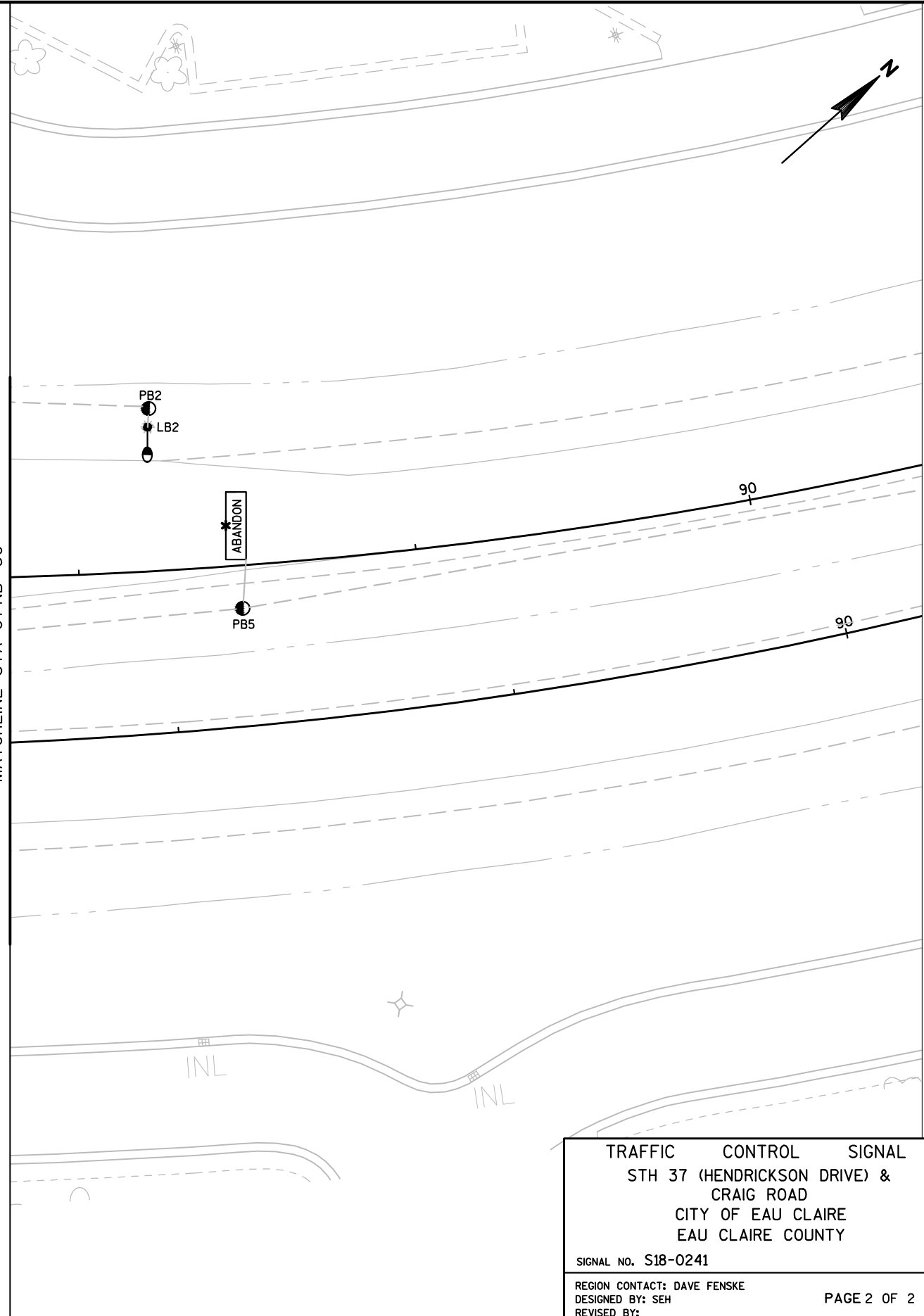
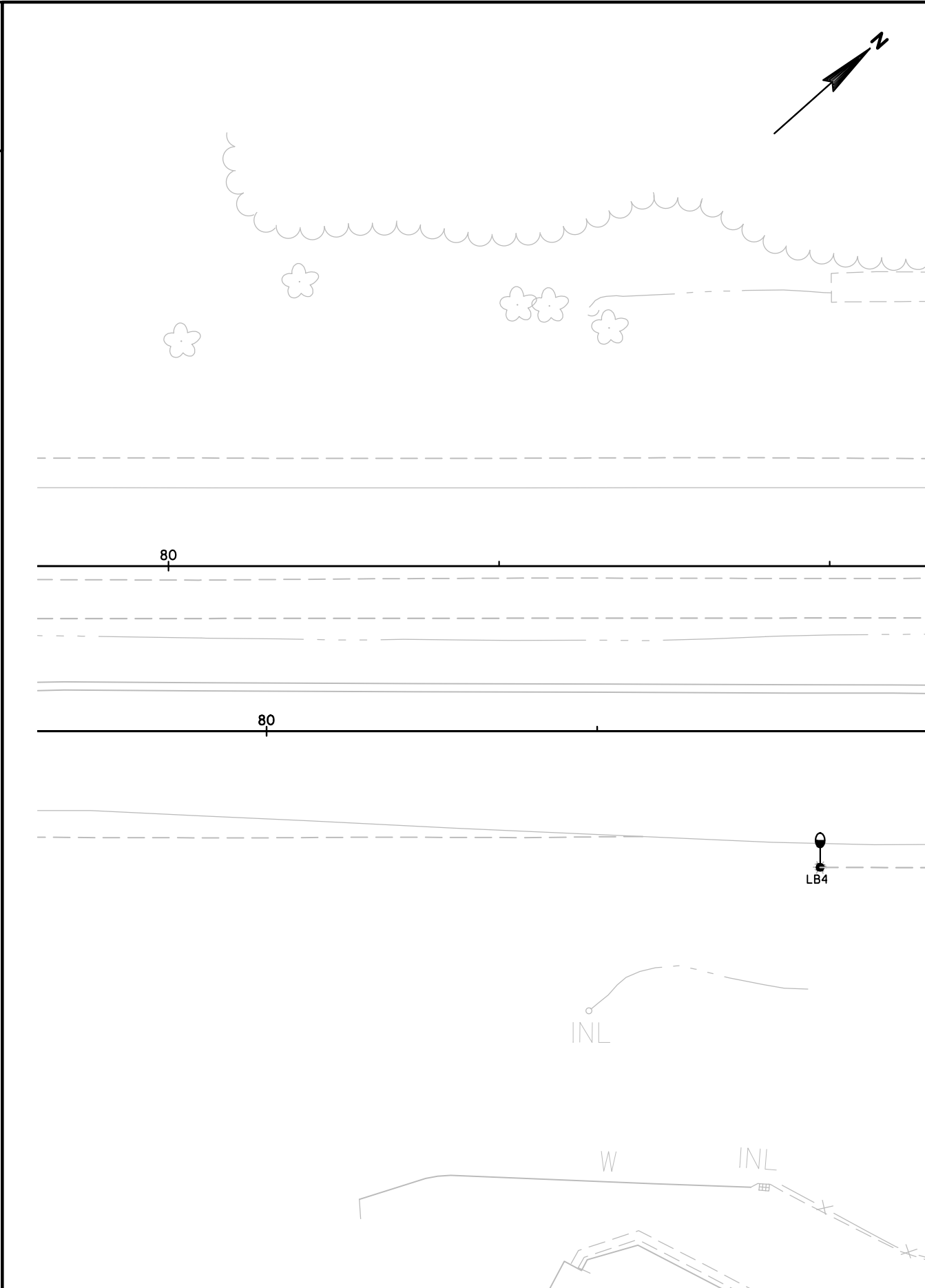
1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRES AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
4. EVP CABLE TO BE REMOVED BY THE CONTRACTOR.
5. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.

TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. S18-0241

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

PAGE 1 OF 2

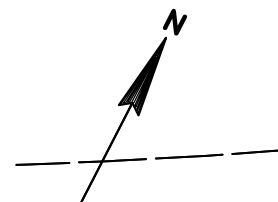


TRAFFIC CONTROL SIGNAL
 STH 37 (HENDRICKSON DRIVE) &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY
 SIGNAL NO. S18-0241
 REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:
 PAGE 2 OF 2

LEGEND

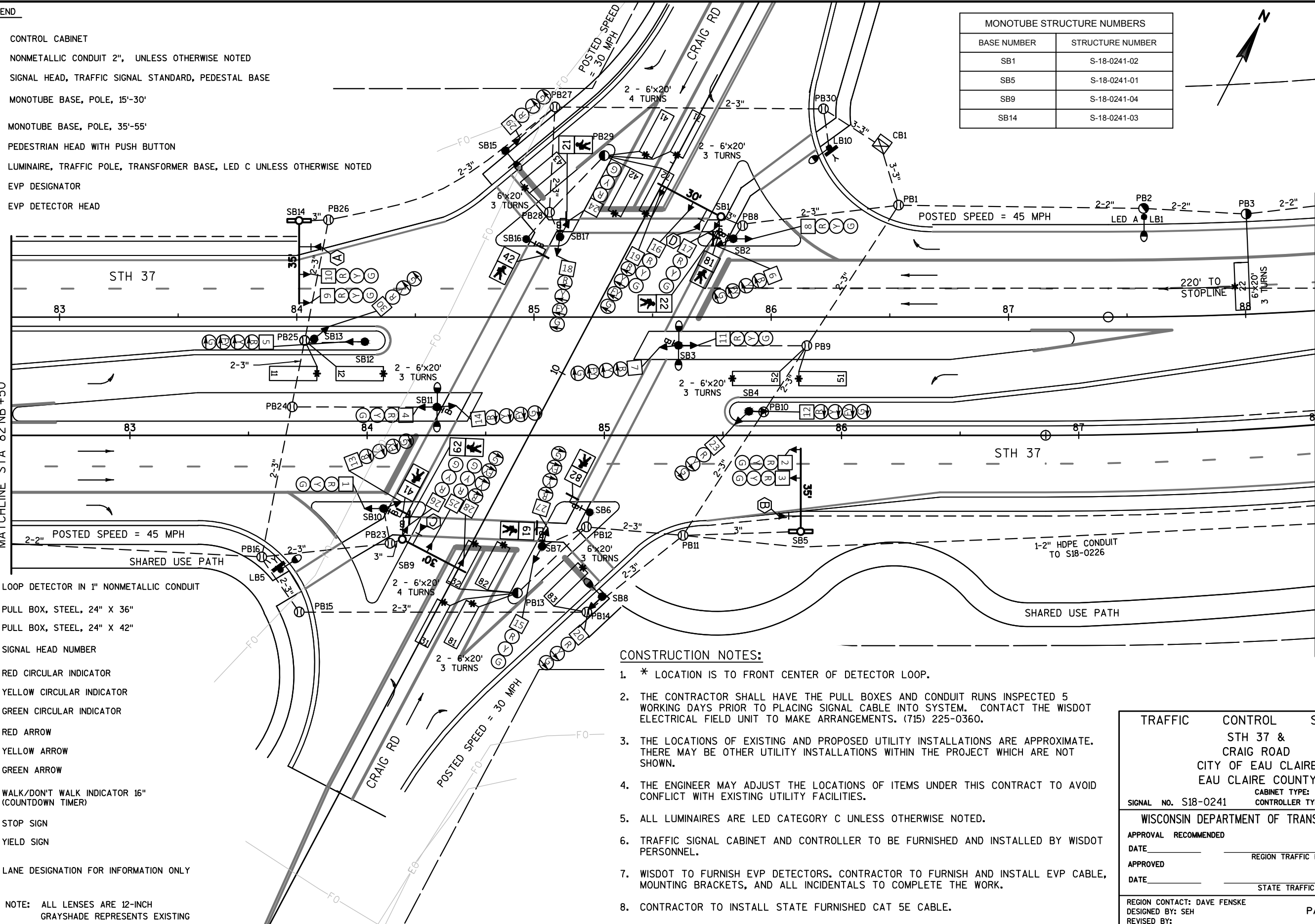
- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30'
- MONOTUBE BASE, POLE, 35'-55'
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE, LED C UNLESS OTHERWISE NOTED
- EVP DESIGNATOR
- EVP DETECTOR HEAD

MONOTUBE STRUCTURE NUMBERS	
BASE NUMBER	STRUCTURE NUMBER
SB1	S-18-0241-02
SB5	S-18-0241-01
SB9	S-18-0241-04
SB14	S-18-0241-03



MATCHLINE STA 82'NB'+50

MATCHLINE STA 88'NB'+00



- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
 - PULL BOX, STEEL, 24" X 36"
 - PULL BOX, STEEL, 24" X 42"
 - SIGNAL HEAD NUMBER
 - RED CIRCULAR INDICATOR
 - YELLOW CIRCULAR INDICATOR
 - GREEN CIRCULAR INDICATOR
 - RED ARROW
 - YELLOW ARROW
 - GREEN ARROW
 - WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
 - STOP SIGN
 - YIELD SIGN
 - LANE DESIGNATION FOR INFORMATION ONLY
- NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (715) 225-0360.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
6. TRAFFIC SIGNAL CABINET AND CONTROLLER TO BE FURNISHED AND INSTALLED BY WISDOT PERSONNEL.
7. WISDOT TO FURNISH EVP DETECTORS. CONTRACTOR TO FURNISH AND INSTALL EVP CABLE, MOUNTING BRACKETS, AND ALL INCIDENTALS TO COMPLETE THE WORK.
8. CONTRACTOR TO INSTALL STATE FURNISHED CAT 5E CABLE.

TRAFFIC CONTROL SIGNAL
STH 37 &
CRAIG ROAD
CITY OF EAU CLAIRE
EAU CLAIRE COUNTY

CABINET TYPE: TS-2
CONTROLLER TYPE: ASC/3

SIGNAL NO. S18-0241

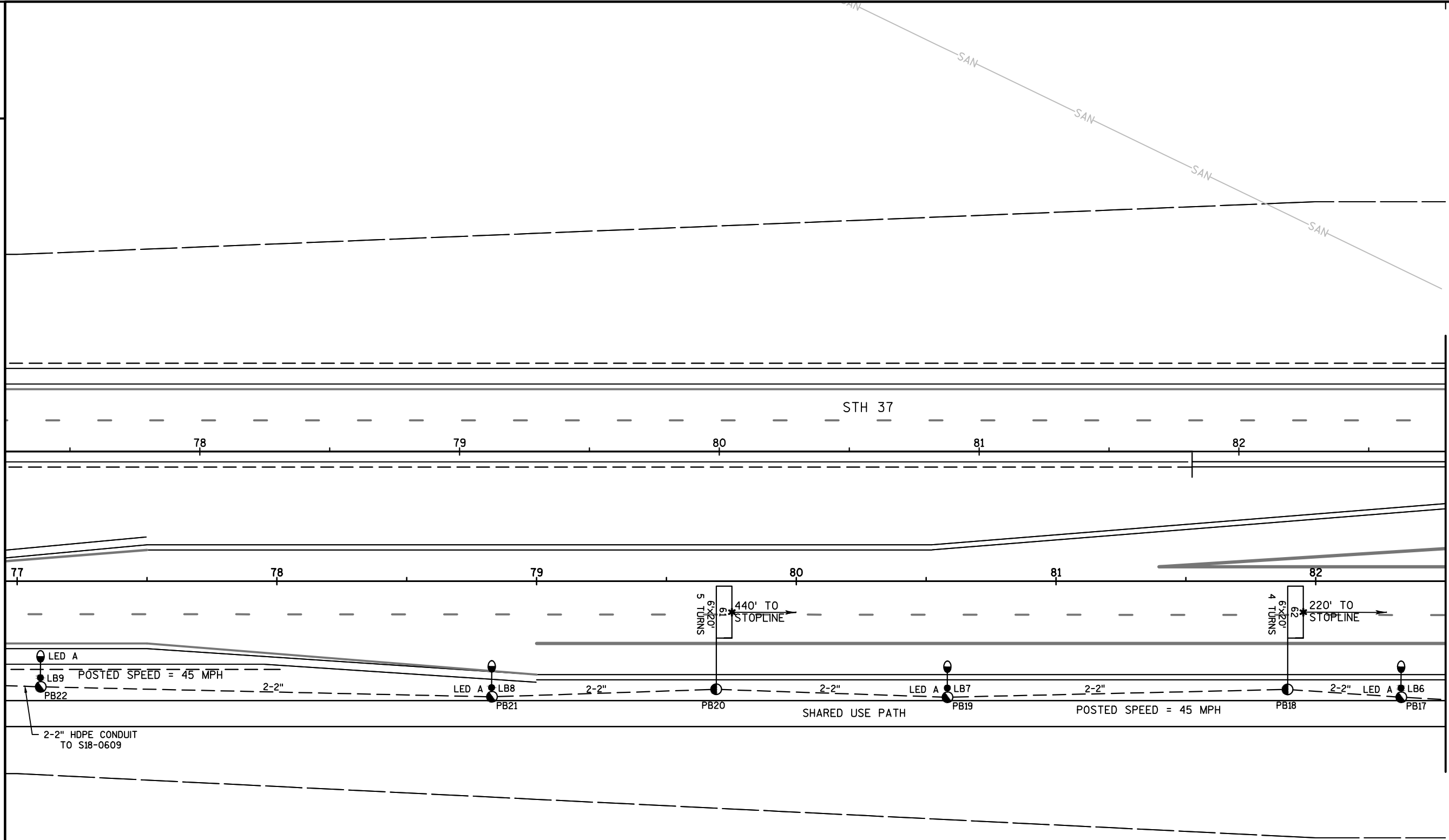
WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE _____ REGION TRAFFIC ENGINEER _____

APPROVED
DATE _____ STATE TRAFFIC ENGINEER _____

REGION CONTACT: DAVE FENSKE
DESIGNED BY: SEH
REVISED BY: _____

PAGE 1 OF 4



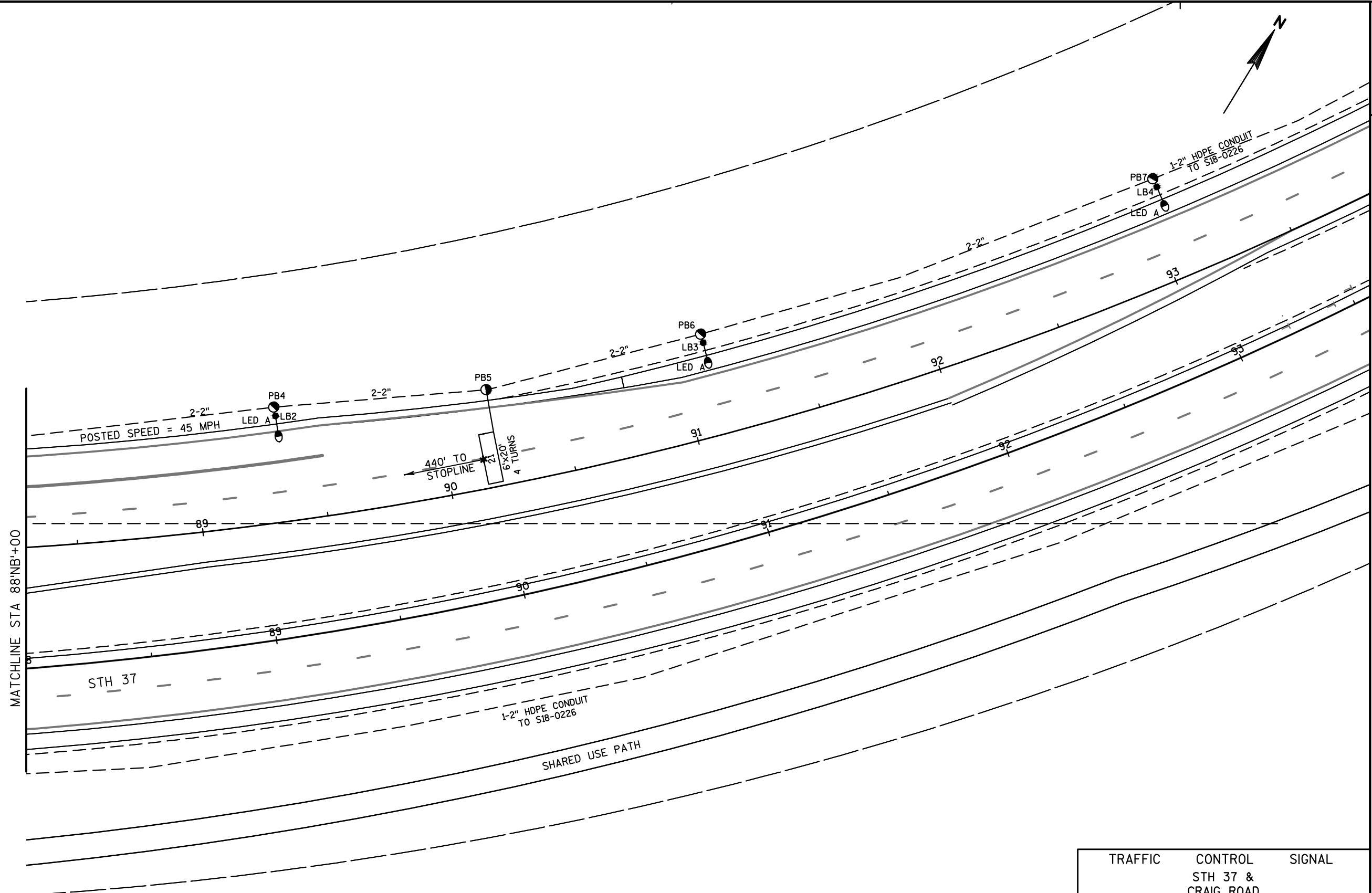
MATCHLINE STA 82+50

TRAFFIC CONTROL SIGNAL
 STH 37 &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. S18-0241

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

PAGE 2 OF 4



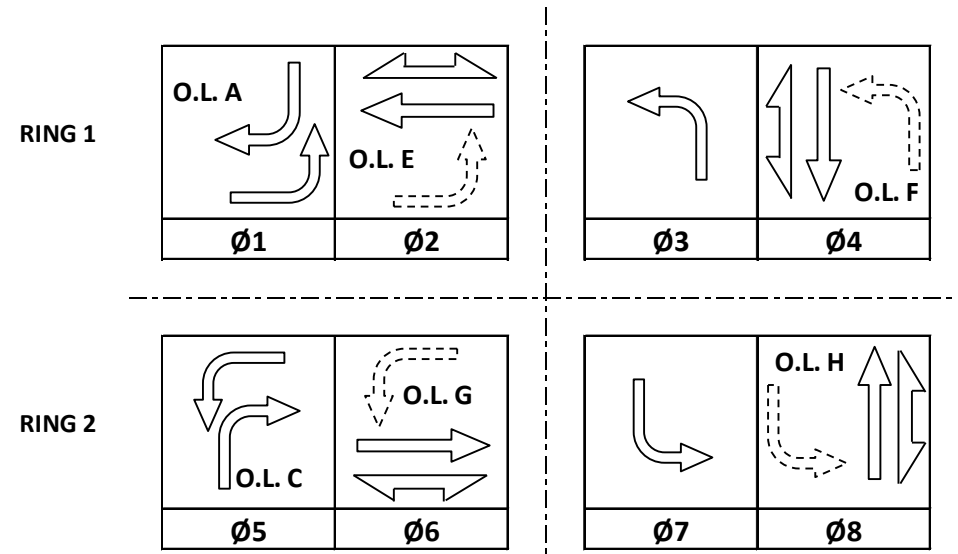
TRAFFIC CONTROL SIGNAL
 STH 37 &
 CRAIG ROAD
 CITY OF EAU CLAIRE
 EAU CLAIRE COUNTY

SIGNAL NO. S18-0241

REGION CONTACT: DAVE FENSKE
 DESIGNED BY: SEH
 REVISED BY:

PAGE 3 OF 4

	HEAD NUMBERS	FLASH
Ø1	5,6,7	R
Ø2	8,9,10,11	R
Ø3	18,19	R
Ø4	24,25,26	R
Ø5	12,13,14	R
Ø6	1,2,3,4	R
Ø7	27,28	R
Ø8	15,16,17	R
Ø2P	21,22	
Ø4P	41,42	
Ø6P	61,62	
Ø8P	81,82	
OLA	29,30	R
OLC	20,23	R
OLE	5,6,7	-
OLF	18,19	-
OLG	12,13,14	-
OLH	27,28	-



- GENERAL NOTES:**
1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
 2. WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY. SEE CHART 1.
 3. IF ANY OPPOSING THROUGH PHASES ARE TIMING CONCURRENTLY THEY SHALL TERMINATE DUE TO PERMISSIVE LEFT TURN CONFLICT.

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN.	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN.	X
7		4		X
8		4		X

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,3,4,7,8
2	5 OR 6	1,3,4,7,8
3	7 OR 8	1,2,4,5,6
4	7 OR 8	1,2,3,5,6
5	1 OR 2	3,4,6,7,8
6	1 OR 2	3,4,5,7,8
7	3 OR 4	1,2,5,6,8
8	3 OR 4	1,2,5,6,7

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	X
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	31	41	43*	52	62	72
CALLED PHASE	1	2	3	4		5	6	7
CALL OPTION	X	X	X	X		X	X	X
DELAY TIME								
EXTENSION OPTION	X	X	X	X		X	X	X
EXTEND TIME								
USE ADDED INITIAL	X	X	X	X		X	X	X
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	82							
CALLED PHASE	8							
CALL OPTION	X							
DELAY TIME								
EXTENSION OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	82							
CALLED PHASE	8							
CALL OPTION	X							
DELAY TIME								
EXTENSION OPTION	X							
EXTEND TIME								
USE ADDED INITIAL	X							
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	22	32	42	51	61	71	81
CALLED PHASE	1	2	3	4	5	6	7	8
CALL OPTION	X	X	X	X	X	X	X	X
DELAY TIME								
EXTENSION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME								
USE ADDED INITIAL	X	X	X	X	X	X	X	X
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	83*							
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENSION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	83*							
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENSION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

EMERGENCY VEHICLE PREEMPTION SEQUENCE				
EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
PREEMPTION CHANNEL	1	2	3	4
MOVEMENT				
DIRECTION	SB	NB	EB	WB
PHASE	2+5	6+1	4+7+OLA	8+3+OLC

NOTES: FULL CLEARANCE AND MINIMUM GREEN INTERVALS SHALL ALWAYS BE PROVIDED.

STH 37 (HENDRICKSON DRIVE) & CRAIG ROAD	
CITY OF EAU CLAIRE	
EAU CLAIRE COUNTY	
SIGNAL NO: S18-0241	CABINET TYPE: TS2
CONTROLLER TYPE: ASC/3 - 1000	
DATE: 01/18	PAGE NO. 4 OF 4

PROJECT ID: 7110-05-02
INTERSECTION: STH 37 & CRAIG ROAD

SIGNAL WIRE COLOR CODING
BLK - BLACK WHT - WHITE RED - RED BLU - BLUE GRN - GREEN ORG - ORANGE

Table with columns: CB TO, JUMPER, AWG 14 # OF COND., HEAD NO., PHASE, RED, YELLOW, GREEN, <RED>, <YELLOW>, <GREEN>, <FLASHING> <YELLOW>, D/WALK, WALK, PED BUTTON, OTHER. Rows include SB1 through SB17 with various phase and color coding details.

EQUIPMENT GROUNDING FROM TO table listing connections from CB1 to SB17.

PULL BOX BONDING JUMPER 10 AWG FROM TO table listing connections from PB1 to PB22.


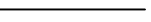






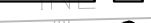


LIGHTING UF 2-12 AWG FROM TO table listing connections from CB1 to LB6.

EVP CABLE FROM TO table listing connections from CB1 to SB14, SB5, SB9, SB1.

STATE SUPPLIED CAT-5E CABLE FROM TO table listing connections from CB1 to SB3 and SB11.

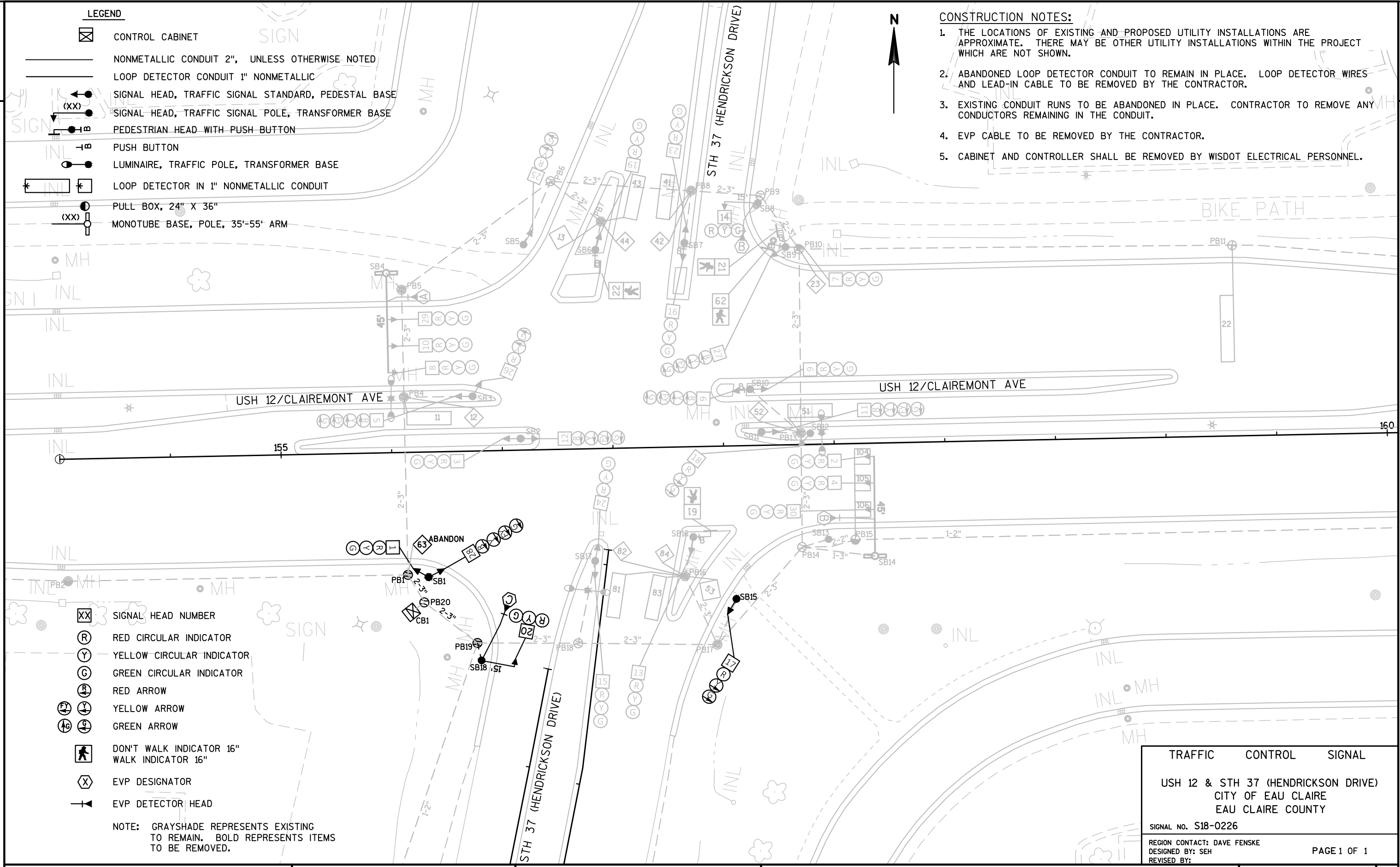
*USE THE WHITE CONDUCTOR IN THE CABLE ASSEMBLY AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
*ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
*AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRAIN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.
"OTHER" COLUMN MAY INCLUDE SAHDOW BOX SIGN
*ALL CABLES SHALL BE LABELED WITH SIGNAL BASE NUMBER AT BOTH ENDS OF CABLE.











LEGEND

-  CONTROL CABINET
-  NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
-  LOOP DETECTOR CONDUIT 1" NONMETALLIC
-  SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
-  SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
-  PEDESTRIAN HEAD WITH PUSH BUTTON
-  PUSH BUTTON
-  LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
-  LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
-  PULL BOX, 24" X 36"
-  MONOTUBE BASE, POLE, 35'-55' ARM

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRES AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
4. EVP CABLE TO BE REMOVED BY THE CONTRACTOR.
5. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.



-  SIGNAL HEAD NUMBER
-  RED CIRCULAR INDICATOR
-  YELLOW CIRCULAR INDICATOR
-  GREEN CIRCULAR INDICATOR
-  RED ARROW
-  YELLOW ARROW
-  GREEN ARROW
-  DON'T WALK INDICATOR 16"
WALK INDICATOR 16"
-  EVP DESIGNATOR
-  EVP DETECTOR HEAD

NOTE: GRAYSHADE REPRESENTS EXISTING TO REMAIN. BOLD REPRESENTS ITEMS TO BE REMOVED.

TRAFFIC CONTROL SIGNAL
USH 12 & STH 37 (HENDRICKSON DRIVE) CITY OF EAU CLAIRE EAU CLAIRE COUNTY
SIGNAL NO. S18-0226
REGION CONTACT: DAVE FENSKE DESIGNED BY: SEH REVISED BY:
PAGE 1 OF 1

2

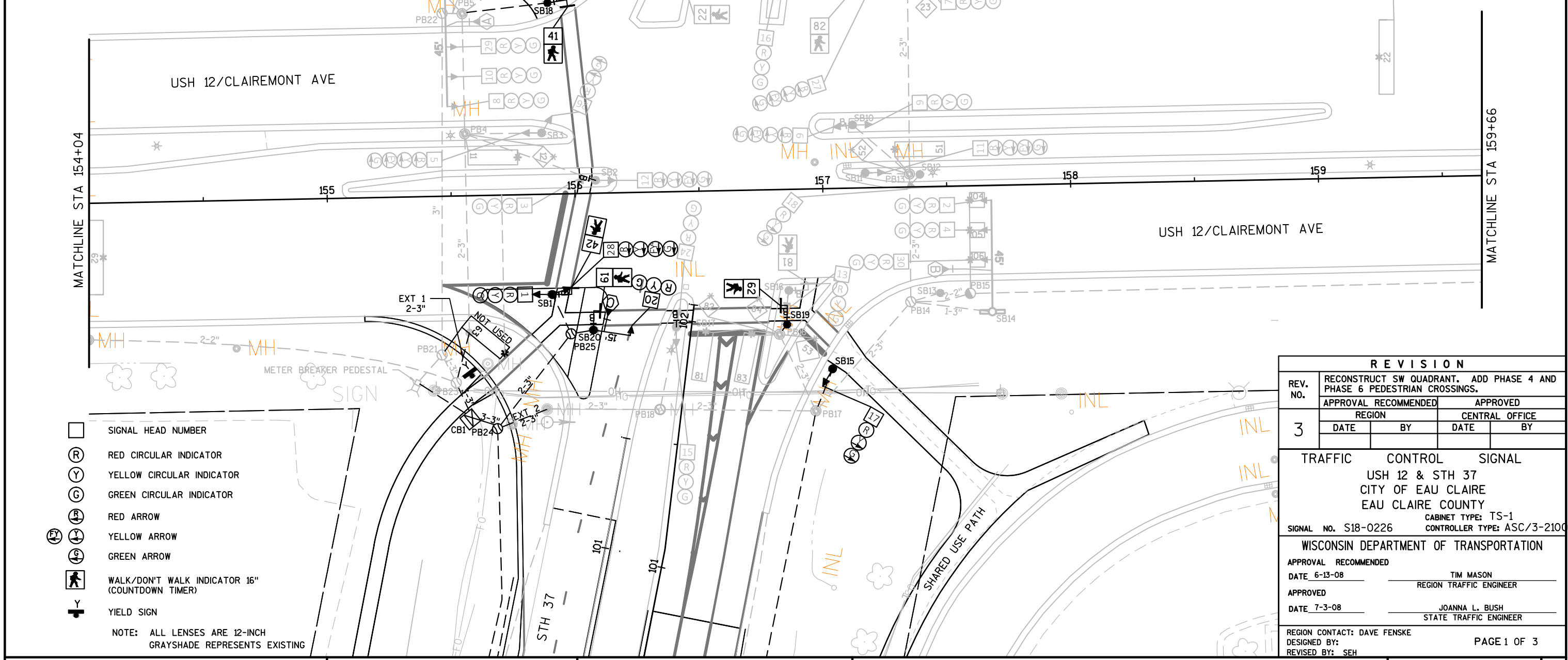
2

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- TRAFFIC SIGNAL INTERCONNECT CONDUIT 3", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 35'-55'
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, STEEL, 24" X 36"
- PULL BOX, STEEL, 24" X 42"

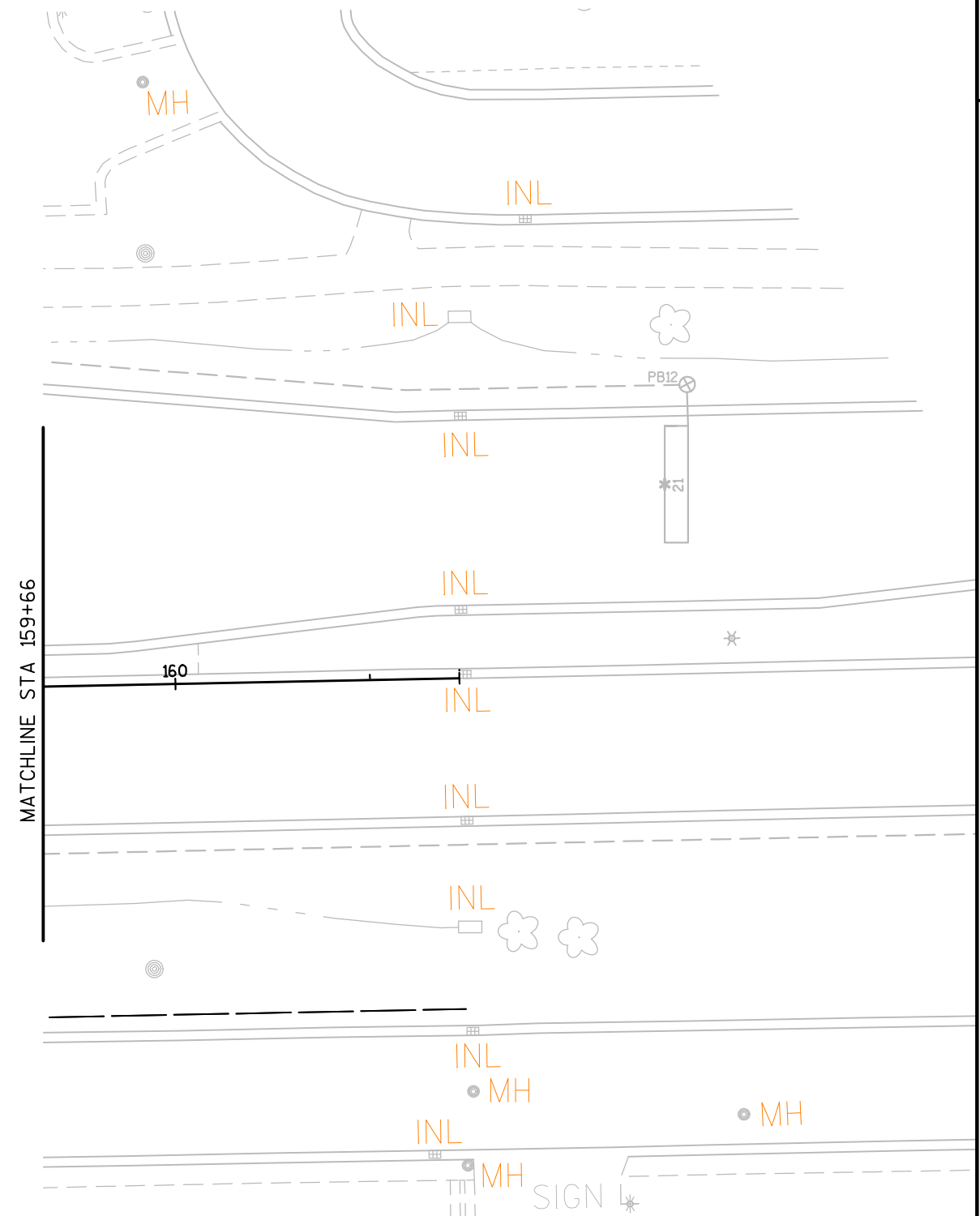
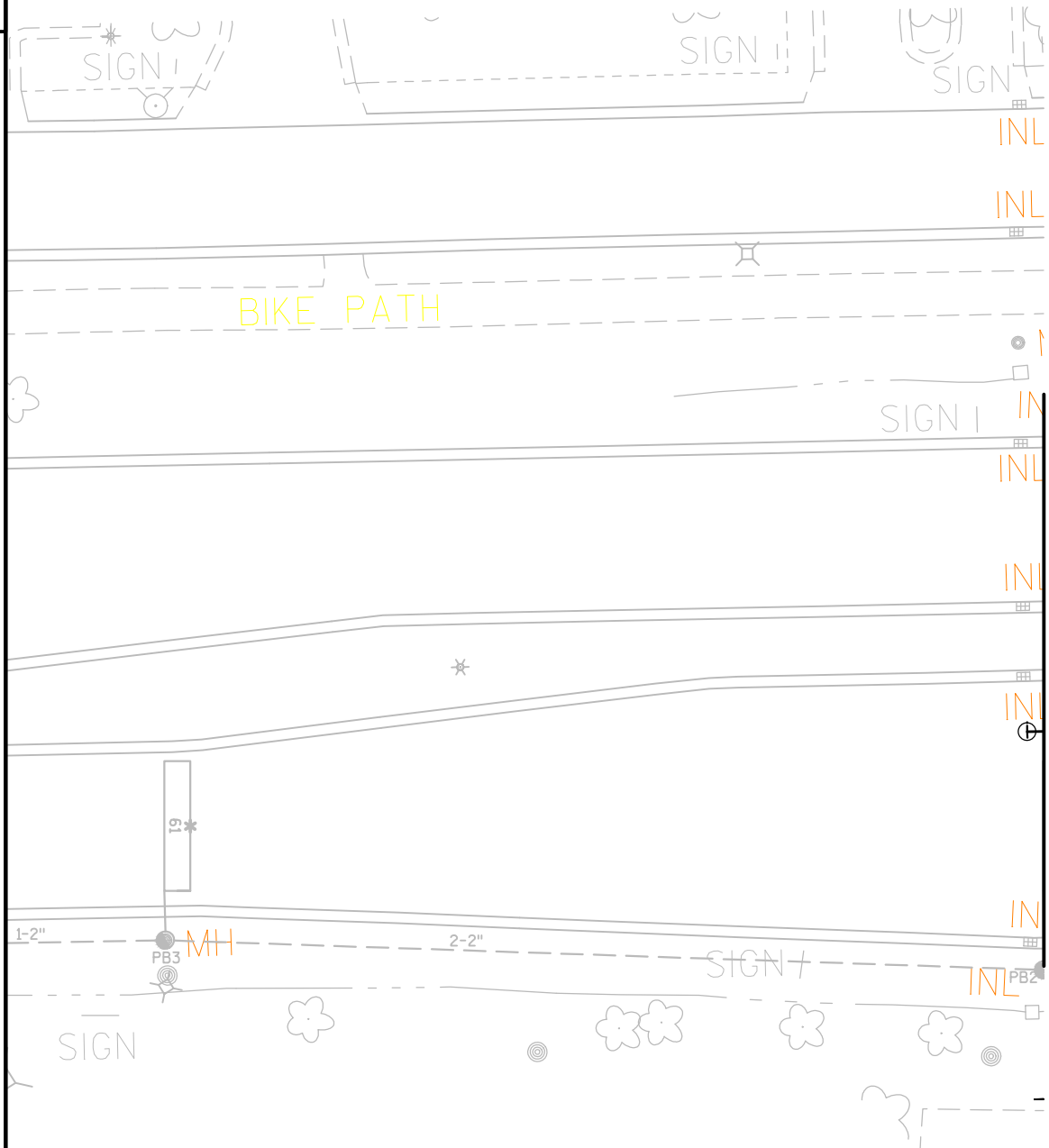
CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (715) 225-0360.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
5. TRAFFIC SIGNAL CABINET AND CONTROLLER TO BE RELOCATED BY WISDOT PERSONNEL.
6. CONTRACTOR TO PULL AND SPLICE NEW SIGNAL CABLE TO ALL SIGNAL BASES. WISDOT PERSONNEL TO MAKE FINAL CONNECTIONS AT THE TRAFFIC SIGNAL CABINET.



- SIGNAL HEAD NUMBER
 - RED CIRCULAR INDICATOR
 - YELLOW CIRCULAR INDICATOR
 - GREEN CIRCULAR INDICATOR
 - RED ARROW
 - YELLOW ARROW
 - GREEN ARROW
 - WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
 - YIELD SIGN
- NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

REVISION			
REV. NO.	RECONSTRUCT SW QUADRANT. ADD PHASE 4 AND PHASE 6 PEDESTRIAN CROSSINGS.		
3	APPROVAL RECOMMENDED	APPROVED	
	REGION	DATE	CENTRAL OFFICE
	BY	DATE	BY
TRAFFIC CONTROL SIGNAL USH 12 & STH 37 CITY OF EAU CLAIRE EAU CLAIRE COUNTY CABINET TYPE: TS-1 SIGNAL NO. S18-0226 CONTROLLER TYPE: ASC/3-2100			
WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVAL RECOMMENDED			
DATE 6-13-08	TIM MASON REGION TRAFFIC ENGINEER		
APPROVED			
DATE 7-3-08	JOANNA L. BUSH STATE TRAFFIC ENGINEER		
REGION CONTACT: DAVE FENSKE		PAGE 1 OF 3	
DESIGNED BY:		REVISED BY: SEH	



TRAFFIC CONTROL SIGNAL
USH 12 & STH 37 CITY OF EAU CLAIRE EAU CLAIRE COUNTY SIGNAL NO. S18-0226 REGION CONTACT: DAVE FENSKE DESIGNED BY: SEH REVISED BY:
PAGE 2 OF 3

SEQUENCE OF OPERATION



RING 1	HEAD NUMBERS	01				02			
		R/W	CLEAR TO			R/W	CLEAR TO		
			* *				* *		
01	5,6,27	G	Y	R	-	-	-		
02	7,8,9,10,29	R	R	R	G	Y	R		
03									
04	19,20,23,24	R	R	R	R	R	R		
05	11,12,28	R	R	R	R	R	R		
06	1,2,3,4,30	R	R	R	R	R	R		
07									
08	13,14,15,16	R	R	R	R	R	R		
OLB	25,26	G	Y	R	R	R	R		
OLD	17,18	R	R	R	R	R	R		
OLA	5,6,27	-	-	-	FY	Y	R		
OLC	11,12,28	-	-	-	-	-	-		
02P	21,22	DW	DWDW		*	DWDW			
04P	41,42	DW	DWDW		DW	DWDW			
06P	61,62	DW	DWDW		DW	DWDW			
08P	81,82	DW	DWDW		DW	DWDW			



RING 2	HEAD NUMBERS	05				06			
		R/W	CLEAR TO			R/W	CLEAR TO		
			* *				* *		
01	5,6,27	R	R	R	R	R	R		
02	7,8,9,10,29	R	R	R	R	R	R		
03									
04	19,20,23,24	R	R	R	R	R	R		
05	11,12,28	G	Y	R	-	-	-		
06	1,2,3,4,30	R	R	R	G	Y	R		
07									
08	13,14,15,16	R	R	R	R	R	R		
OLE	25,26	R	R	R	R	R	R		
OLF	17,18	G	Y	R	R	R	R		
OLG	5,6,27	-	-	-	-	-	-		
OLH	11,12,28	-	-	-	FY	Y	R		
02P	21,22	DW	DWDW		DW	DWDW			
04P	41,42	DW	DWDW		DW	DWDW			
06P	61,62	DW	DWDW		*	DWDW			
08P	81,82	DW	DWDW		DW	DWDW			

** CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

BARRIER

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION			PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	LOOP SIZE	NUMBER OF TURNS
		CALLS AND EXTENDS	CALLS ONLY	EXTENDS ONLY							
11	1	X			1	1				6X20	3
12	2	X			1	1				6X6	4
*13	3			(NOT USED)						6X6	3
21	4	X			2	2				6X30	4
22	4	X			2	2				6X30	3
*23	5			(NOT USED)						6X6	3
41	6	X			4	4				6X20	3
42	7	X			4	4				6X6	4
43	8	X			4	4				6X20	4
44	9	X			4	4				6X6	5
51	10	X			5	5				6X20	3
52	11	X			5	5				6X6	4
*53	12			(NOT USED)						8X8	3
61	13	X			6	6				6X30	4
62	13	X			6	6				6X30	3
*63	14			(NOT USED)						6X6	3
81	15	X			8	8				6X20	3
82	16	X			8	8				6X6	4
83	17	X			8	8				6X20	4
84	18	X			8	8				6X6	5
*104	19			(NOT USED)						7X7	3
*105	20			(NOT USED)						7X7	4
*106	21			(NOT USED)						7X7	3

* WIRED IN CABINET FOR FUTURE USE

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1)
3. WHEN OPPOSING THRU PHASES ARE TIMING CONCURRENTLY THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.
4. PHASE 1 CONSISTS OF THE EB LEFT MOVEMENT AND THE SB RIGHT MOVEMENT TIMING CONCURRENTLY.
5. PHASE 5 CONSISTS OF THE WB LEFT MOVEMENT AND THE NB RIGHT MOVEMENT TIMING CONCURRENTLY.
6. OL "B" TO TIME WITH PHASE 1 WHILE IN NORMAL OPERATION AND PHASE 4 WHEN THE SB (CHANNEL 3) EVP HAS BEEN ACTIVATED.
7. OL "D" TO TIME WITH PHASE 5 WHILE IN NORMAL OPERATION AND PHASE 8 WHEN THE NB (CHANNEL 4) EVP HAS BEEN ACTIVATED.

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1	5 OR 6	2,4,8
2	5 OR 6	1,4,8
3		
4	8	1,2,5,6
5	1 OR 2	4,6,8
6	1 OR 2	4,5,8
7		
8	4	1,2,5,6

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWARE	
OTHER	
QUEUE DETECTOR	
LIFT BRIDGE	

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE RECALL
1		6		X
2	X	6	MIN.	X
3				
4		8		X
5		2		X
6	X	2	MIN.	X
7				
8		4		X

SPECIAL OVERLAPS

	PROTECTED	PERMISSIVE
OLE	1	2
OLF		
OLG	5	6
OLH		

TYPE OF LIGHTING

BY OTHER AGENCY	X
IN TRAFFIC SIGNAL CABINET	
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF INTERCONNECT COMMUNICATION

NONE	
CLOSED LOOP TWISTED PAIR	
FIBER OPTIC (NETWORK)	X
INTERSECTION ONLY (CELL MODEM)*	
*LOCATION OF CELL MODEM CONTROLLER NO:	
SIGNAL SYSTEM #:	SS-18-0132

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL			
	A	B	C	D
MOVEMENT				
DIRECTION	WB	EB	SB	NB
PHASE	2+5	6+1	4+OLB	8+OLD

NOTES:

FULL CLEARANCE AND MINIMUM GREEN INTERVALS SHALL ALWAYS BE PROVIDED

USH 12 & STH 37
CITY OF EAU CLAIRE
EAU CLAIRE COUNTY

SIGNAL NO. S18-0226

CONTROLLER TYPE: ASC/3-2100

DATE 01/18

PAGE NO. 3 OF 3

PROJECT ID: 7110-05-02
 INTERSECTION: USH 12 & STH 37

SIGNAL WIRE COLOR CODING	BLK - BLACK	RED - RED	GRN - GREEN
	WHT - WHITE	BLU - BLUE	ORG - ORANGE

CB_TO	JUMPER	AWG 14 # OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR							PED BUTTON	OTHER	
					RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING> <YELLOW>			D/WALK
SB2		12	3	6	RED	ORG	GRN							
			12	5		RED/BLK	ORG/BLK	GRN/BLK	BLU/BLK					
SB3		12	BUTTON	4 PED										WHT/BLK
			5	1		RED	ORG	GRN	BLU/BLK					
SB4	12		26	14	RED/BLK									
			8	2	RED	ORG	GRN							
			10	2	RED	ORG	GRN							
SB5	7		29	2	RED	ORG	GRN							
			25	14	RED			ORG	GRN					
SB6	12		19	4	RED	ORG	GRN							
			22	2 PED						BLK	BLU			
			BUTTON	2 PED								WHT/BLK		
SB7	12		16	8	RED	ORG	GRN							
			23	4	RED/BLK	ORG/BLK	GRN/BLK							
			BUTTON	2 PED								WHT/BLK		
SB8	7		14	8	RED	ORG	GRN							
SB9	15		7	2	RED	ORG	GRN							
			21	2 PED						BLK	BLU			
			27	1				RED/BLK	ORG/BLK	GRN/BLK	BLU/BLK			
SB10	12		82	8 PED								RED/WHT	GRN/WHT	
			BUTTON	2 PED									WHT/BLK	
			BUTTON	8 PED									BLK/WHT	
			6	1				RED/BLK	ORG/BLK	GRN/BLK	BLU/BLK			
SB11	7		9	2	RED	ORG	GRN							
			BUTTON	8 PED									WHT/BLK	
SB12	7		11	5				RED	ORG	GRN	BLU/BLK			
SB14	12		18	16	RED									
			2	6	RED	ORG	GRN							
			4	6	RED	ORG	GRN							
SB15	7		30	6	RED	ORG	GRN							
			17	16	RED			ORG	GRN					
SB16	12		13	8	RED	ORG	GRN							
			81	8 PED							BLK	BLU		
			BUTTON	8 PED									WHT/BLK	
SB17	12		15	8	RED	ORG	GRN							
			24	4	RED/BLK	ORG/BLK	GRN/BLK							
SB18	7		BUTTON	6 PED										WHT/BLK
			41	4 PED							BLK	BLU		
SB19	7		BUTTON	4 PED										WHT/BLK
			62	6 PED							BLK	BLU		
SB20	7		BUTTON	6 PED										WHT/BLK
			20	4	RED	ORG	GRN							
SB21	7		61	6 PED										
			BUTTON	6 PED							BLK	BLU		
SB22	12		1	6	RED	ORG	GRN							
			28	5				RED/BLK	GRN/BLK	ORG/BLK	BLU/BLK			
			42	4 PED							BLK	BLU		
			BUTTON	4 PED									WHT/BLK	

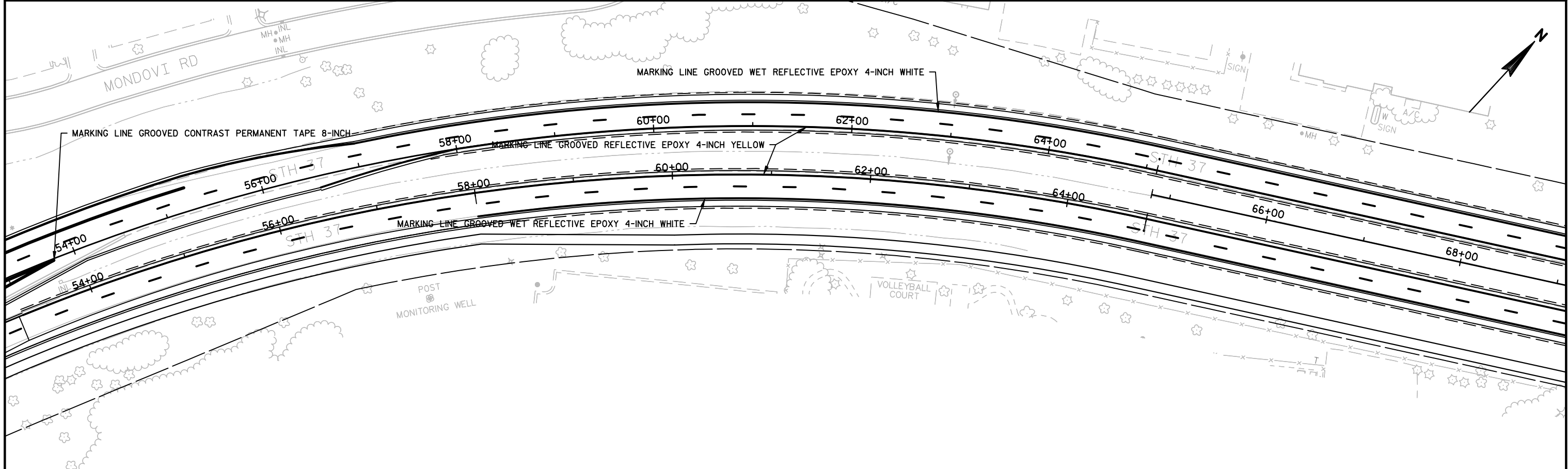
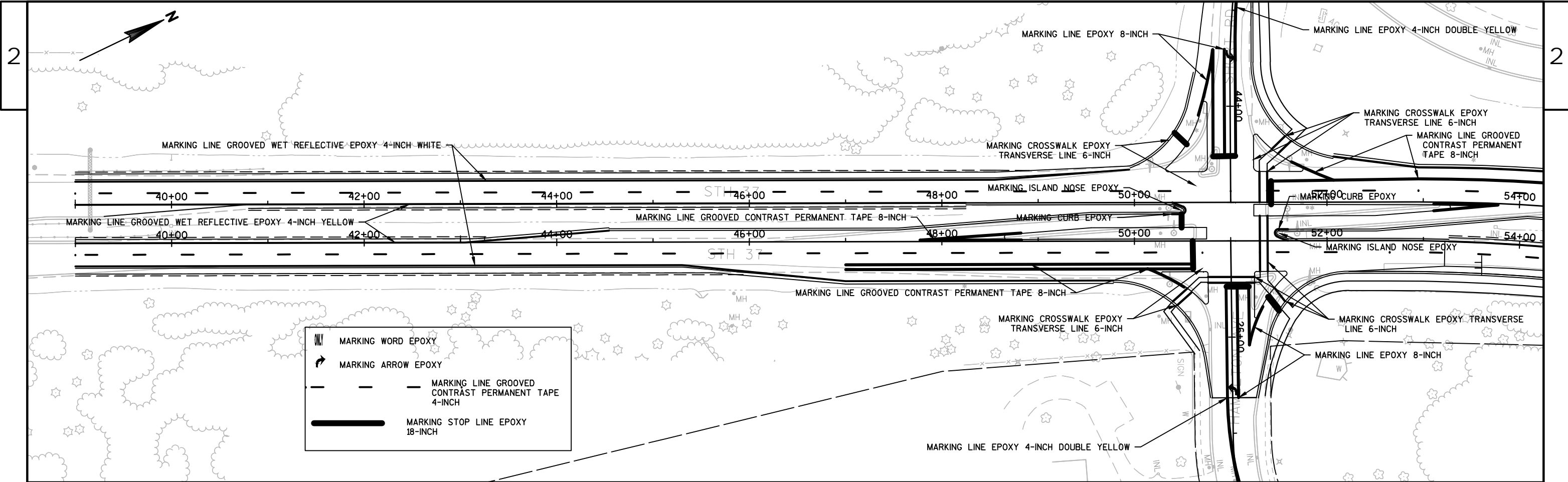
EQUIPMENT GROUNDING	
FROM	TO
CB1	SB2
SB4	SB18
SB18	SB5
SB14	SB15
SB15	SB16
SB16	SB19
SB19	SB17
SB17	SB20
SB20	SB1
SB1	CB1

PULL BOX BONDING JUMPER 10 AWG	
FROM	TO
PB21	CB1
PB23	CB1
PB24	CB1
PB25	SB20

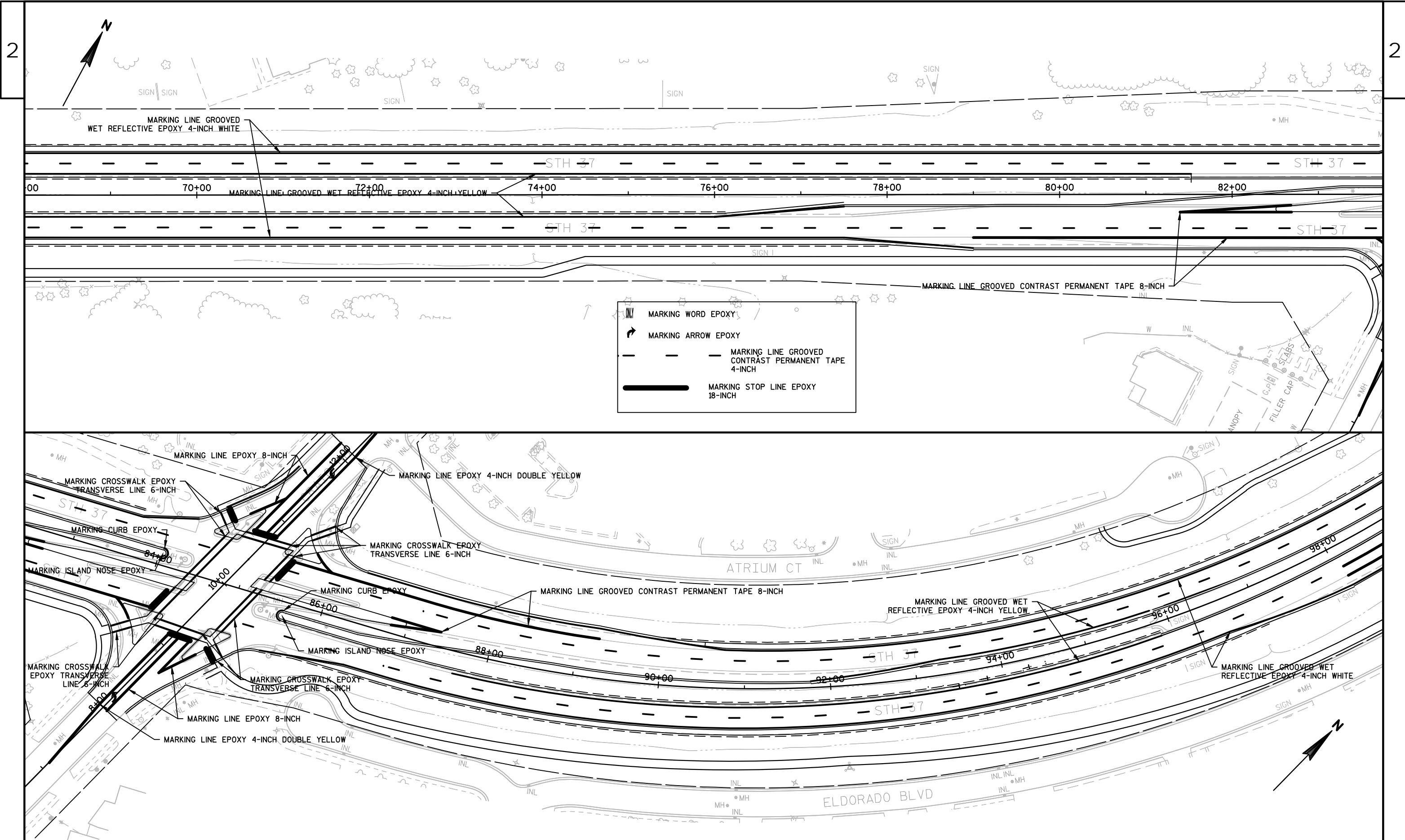
LIGHTING UF 2-12 AWG	
FROM	TO

EVP CABLE	
FROM	TO
CB1	SB4 (HEAD A)
CB1	SB14 (HEAD B)
CB1	SB20 (HEAD C)
CB1	SB8 (HEAD D)

*USE THE WHITE CONDUCTOR IN THE CABLE ASSEMBLY AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS
 *ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 12" LONGER THAN THE UNGROUNDED CONDUCTORS.
 *AT THE SIGNAL BASES, CONNECT ONE TERMINAL FROM THE PEDESTRAIN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.
 "OTHER" COLUMN MAY INCLUDE SAHDOW BOX SIGN
 *ALL CABLES SHALL BE LABELED WITH SIGNAL BASE NUMBER AT BOTH ENDS OF CABLE.



PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	PAVEMENT MARKING	SHEET	E
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PROJECT NO: 7110-05-72

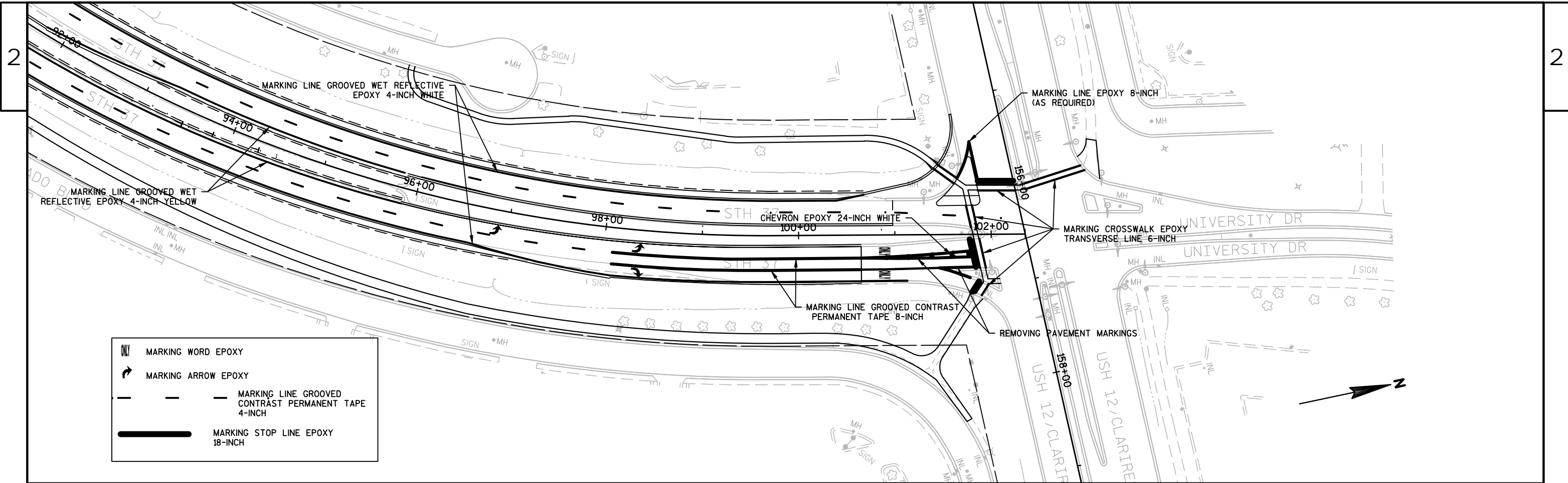
HWY: STH 37

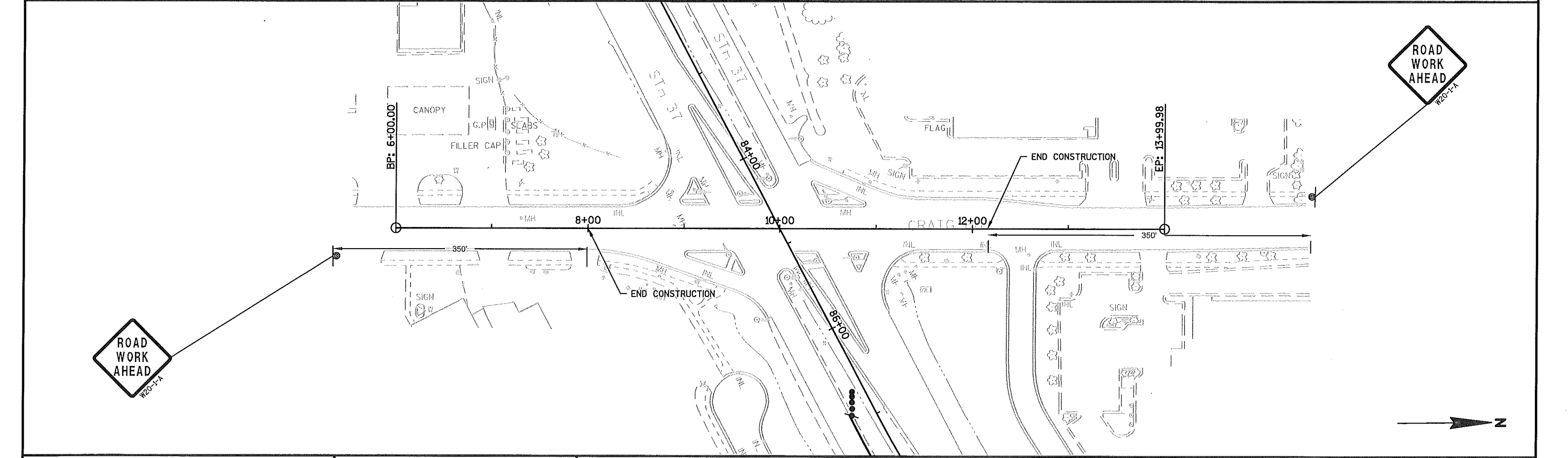
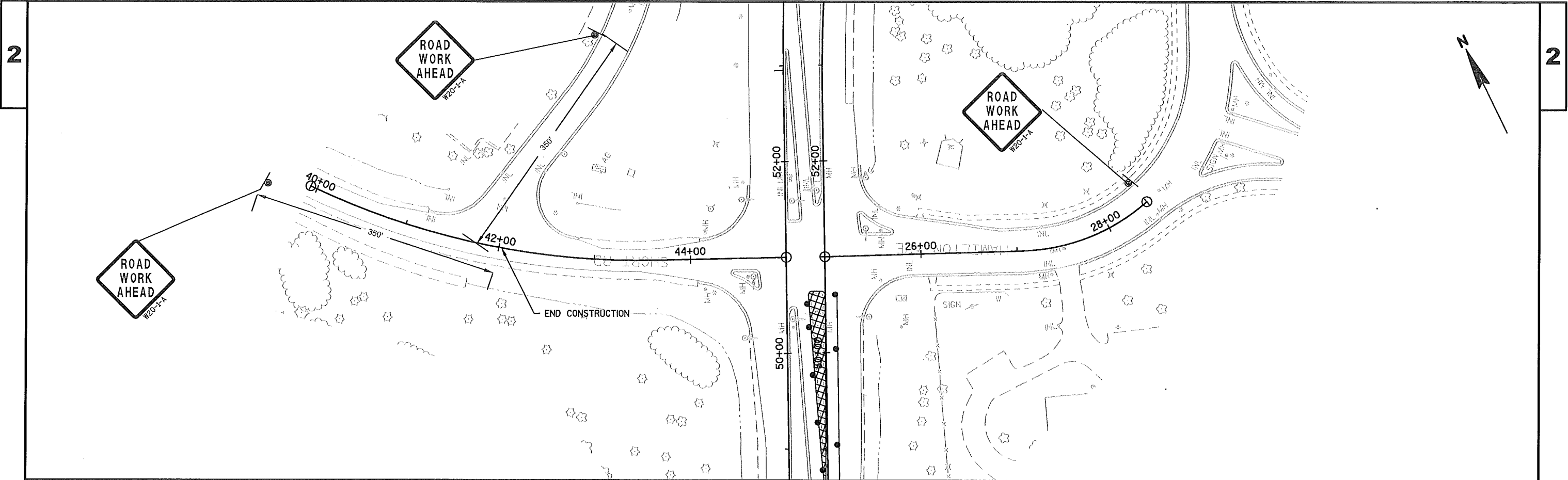
COUNTY: EAU CLAIRE

PAVEMENT MARKING

SHEET

E





PROJECT NO: 7110-05-72

HWY: STH 37

COUNTY: EAU CLAIRE

TRAFFIC CONTROL - ALL STAGES

SHEET

E

FILE NAME : N:\PDS\C3D\71100502\SHEETS\PLAN\TRAFFIC CONTROL STAGE 1.DWG
LAYOUT NAME - AW3

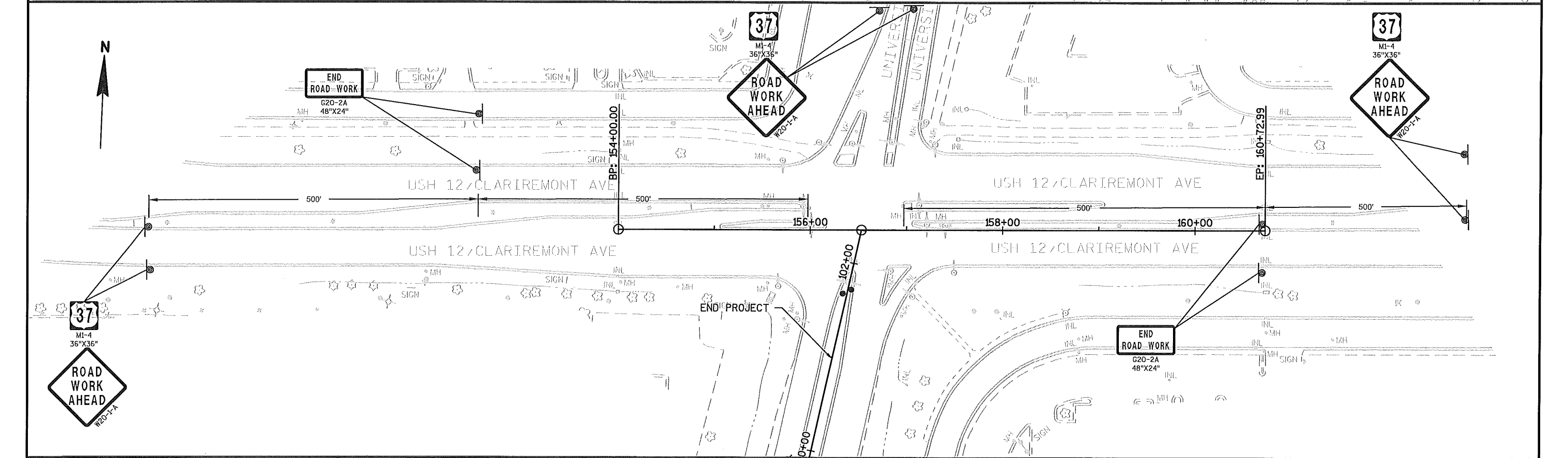
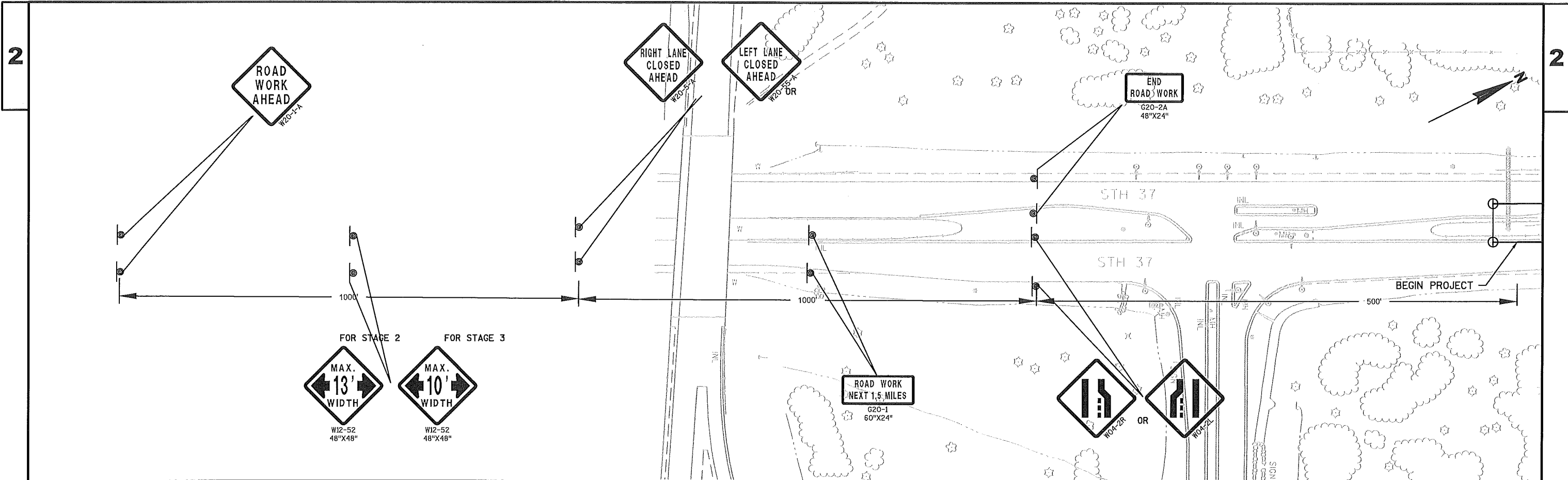
PLOT DATE : 11/3/2016 6:52 AM

PLOT BY : KRUG, GARY W

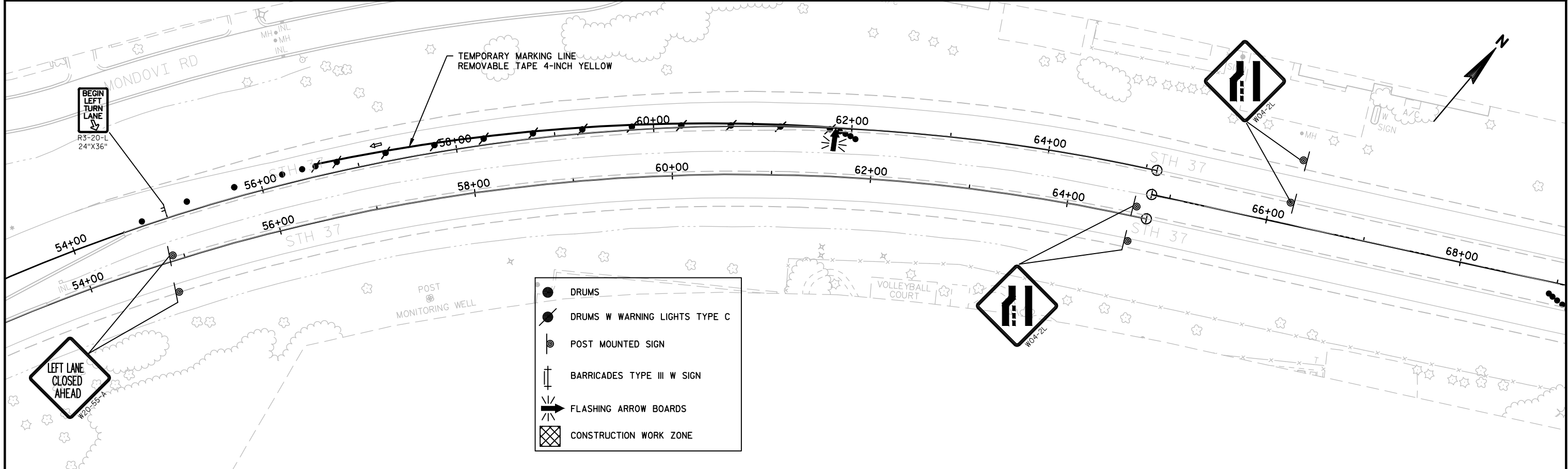
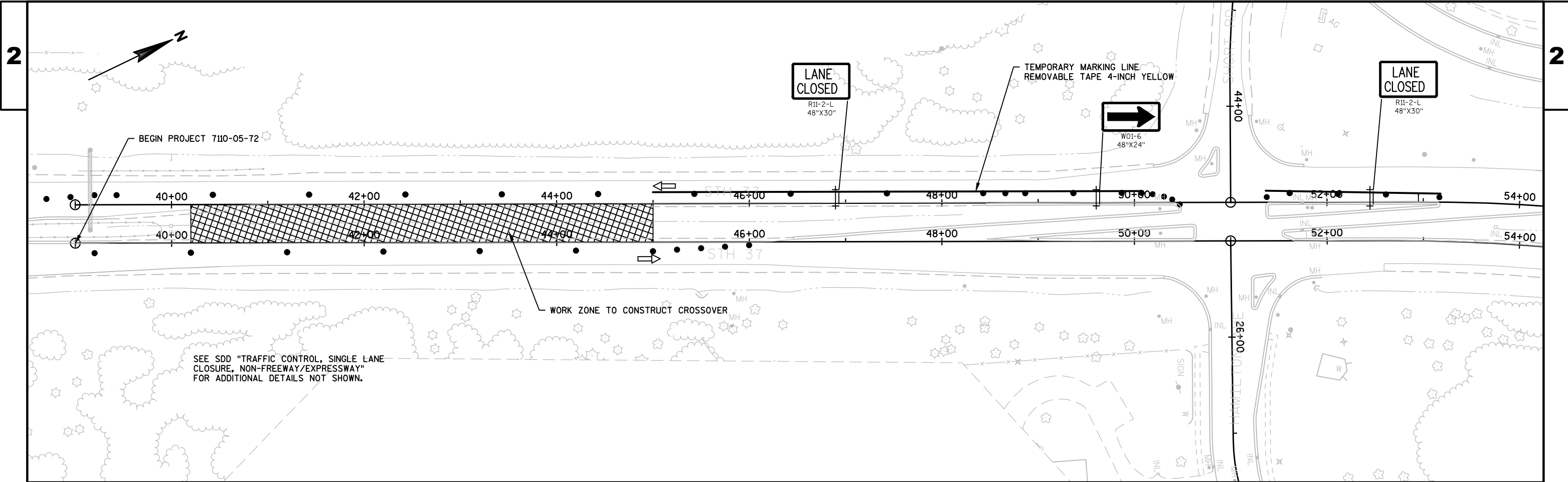
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

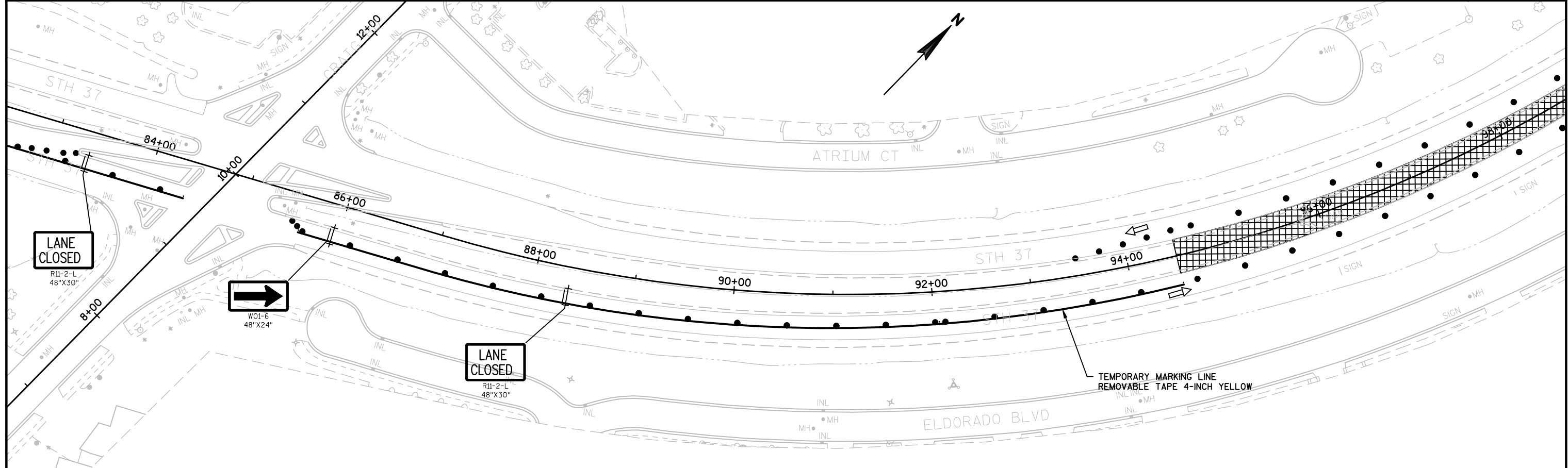
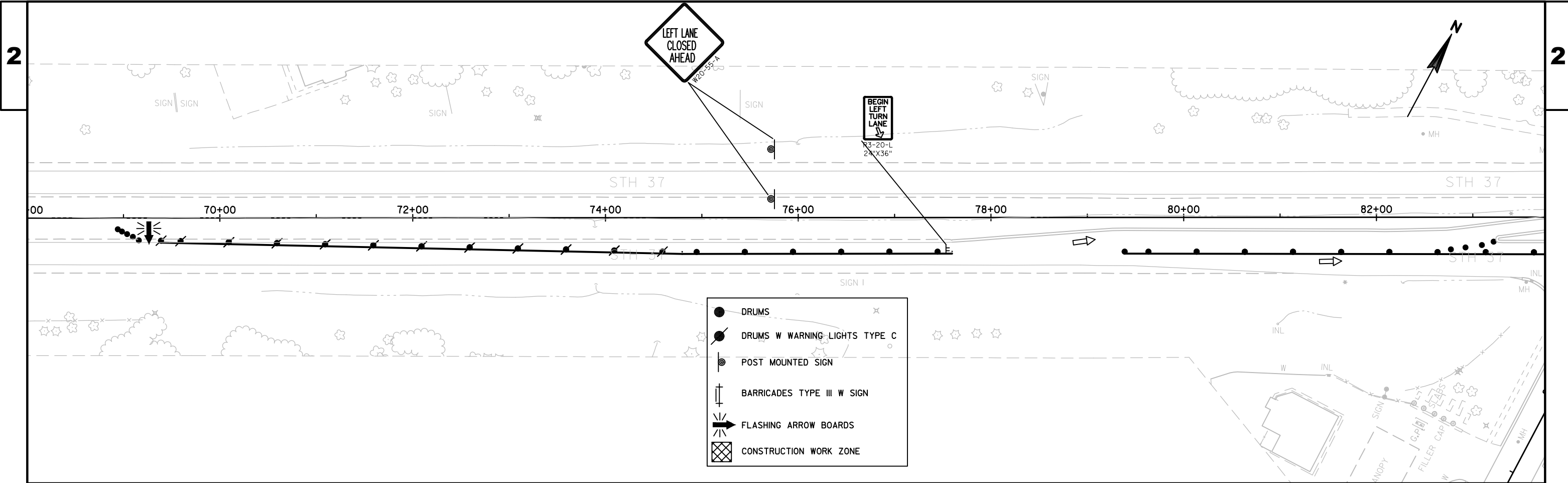
WISDOT/CADD SHEET 44



PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	TRAFFIC CONTROL - ALL STAGES	SHEET	E
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- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- ↔ FLASHING ARROW BOARDS
- ▨ CONSTRUCTION WORK ZONE



PROJECT NO: 7110-05-72

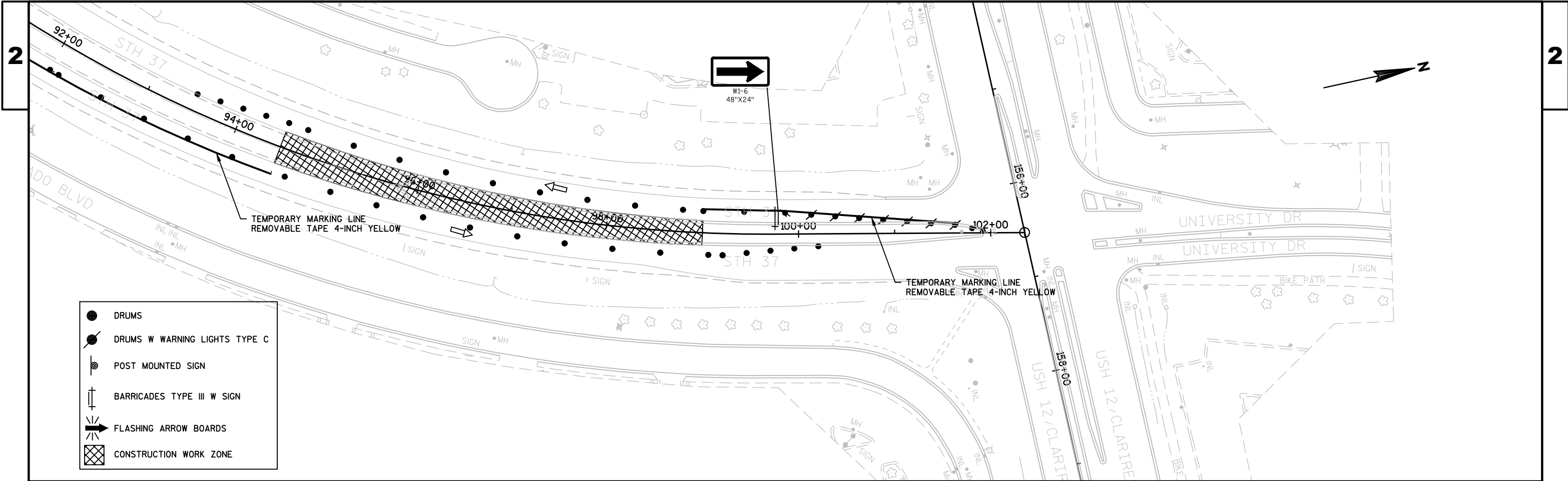
HWY: STH 37

COUNTY: EAU CLAIRE

TRAFFIC CONTROL - STAGE 1A

SHEET

E



PROJECT NO: 7110-05-72

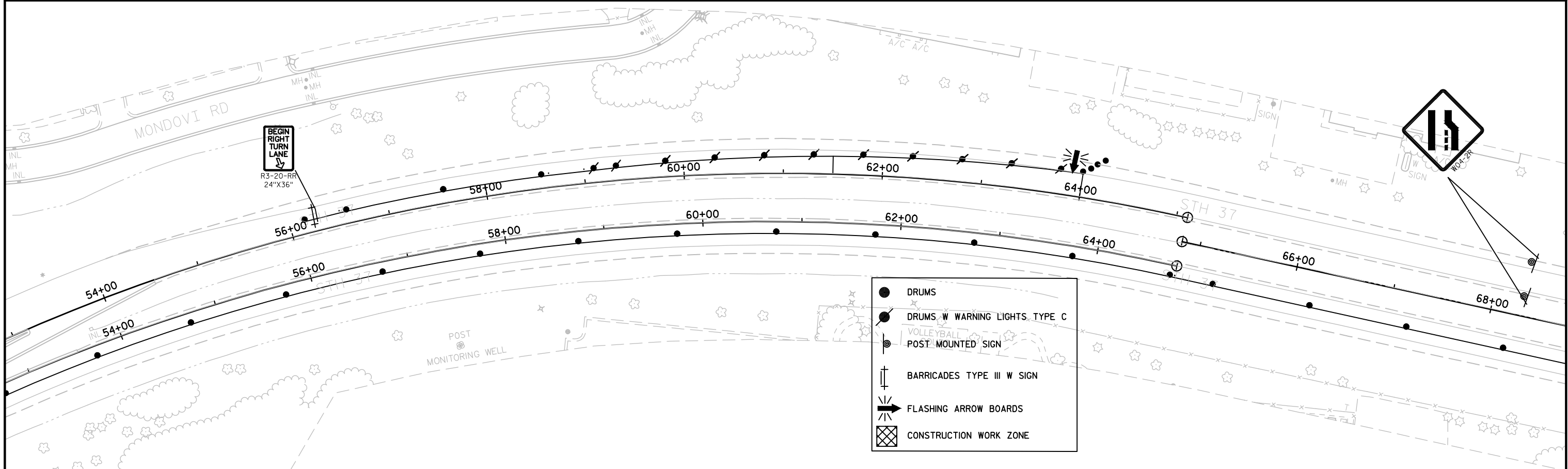
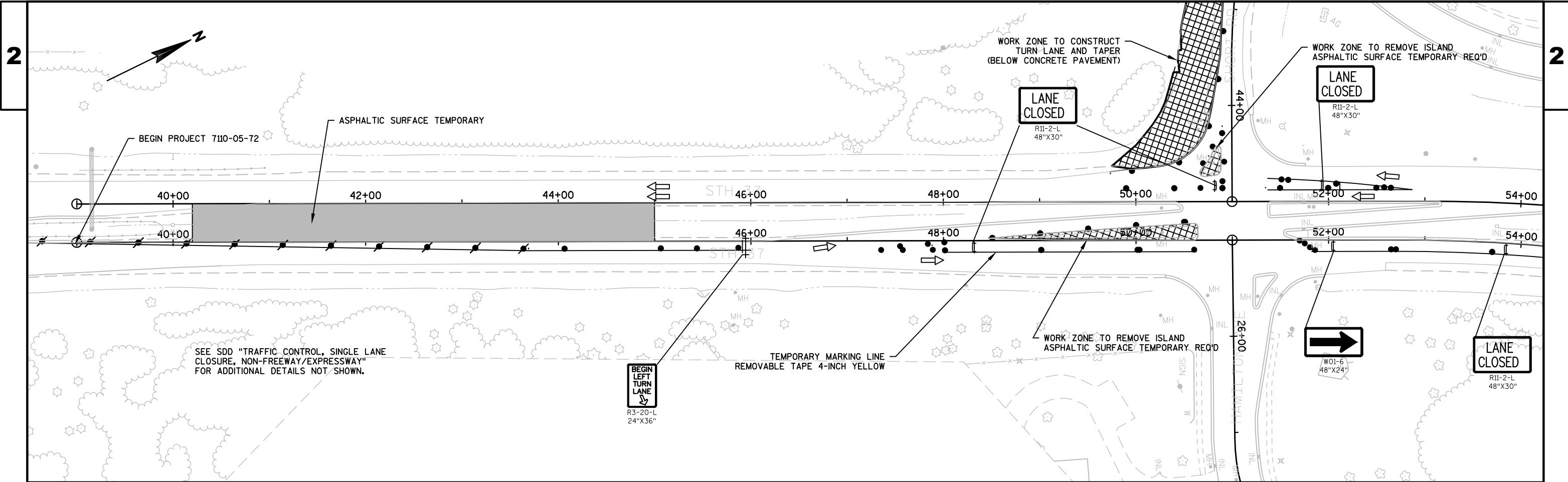
HWY: STH 37

COUNTY: EAU CLAIRE

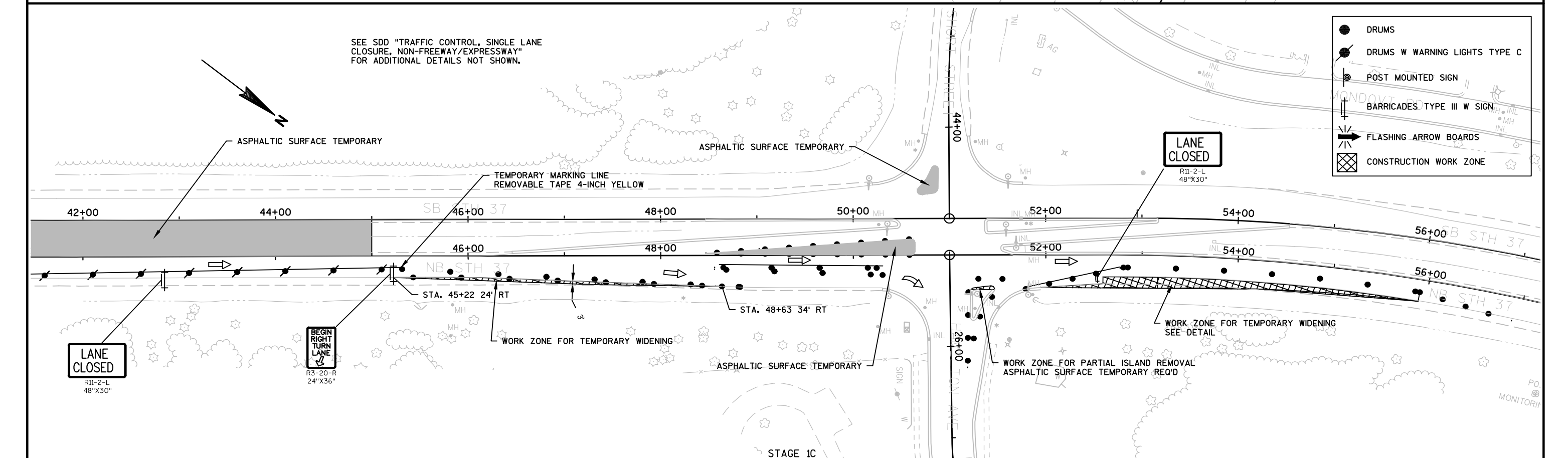
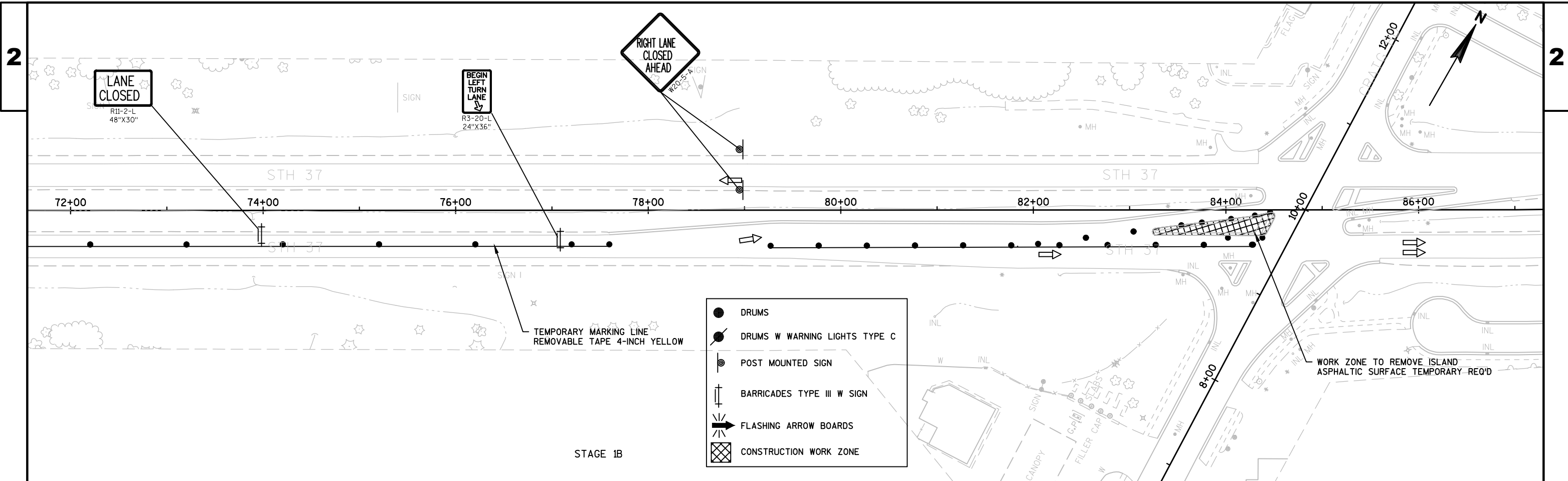
TRAFFIC CONTROL - STAGE 1A

SHEET

E



- DRUMS
- DRUMS W WARNING LIGHTS, TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- ↔ FLASHING ARROW BOARDS
- ▨ CONSTRUCTION WORK ZONE



PROJECT NO: 7110-05-72

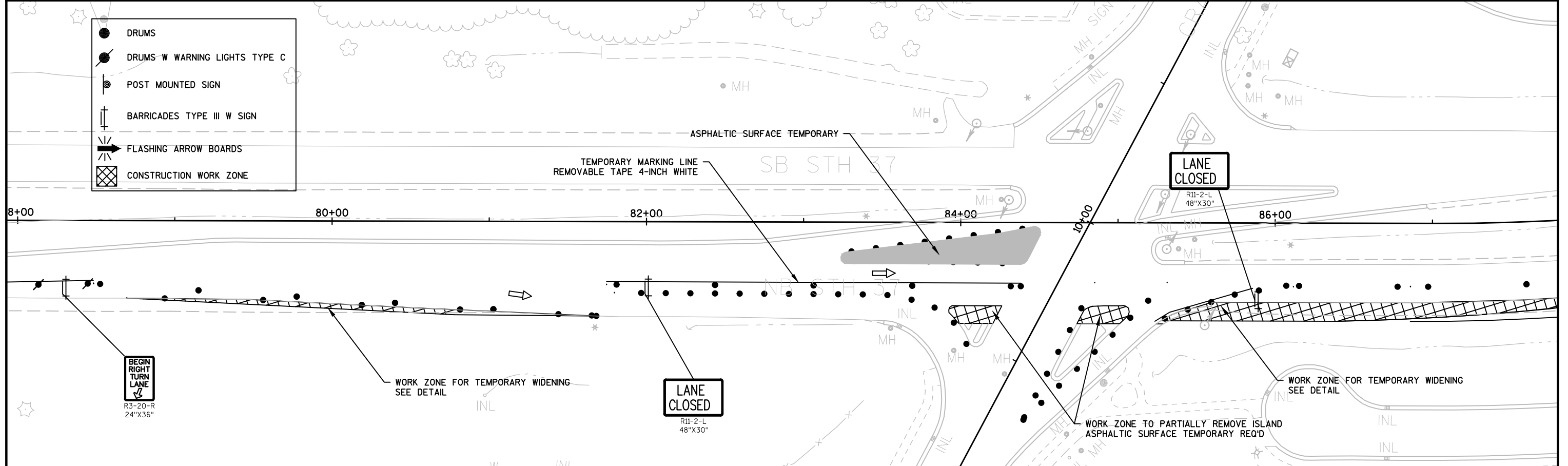
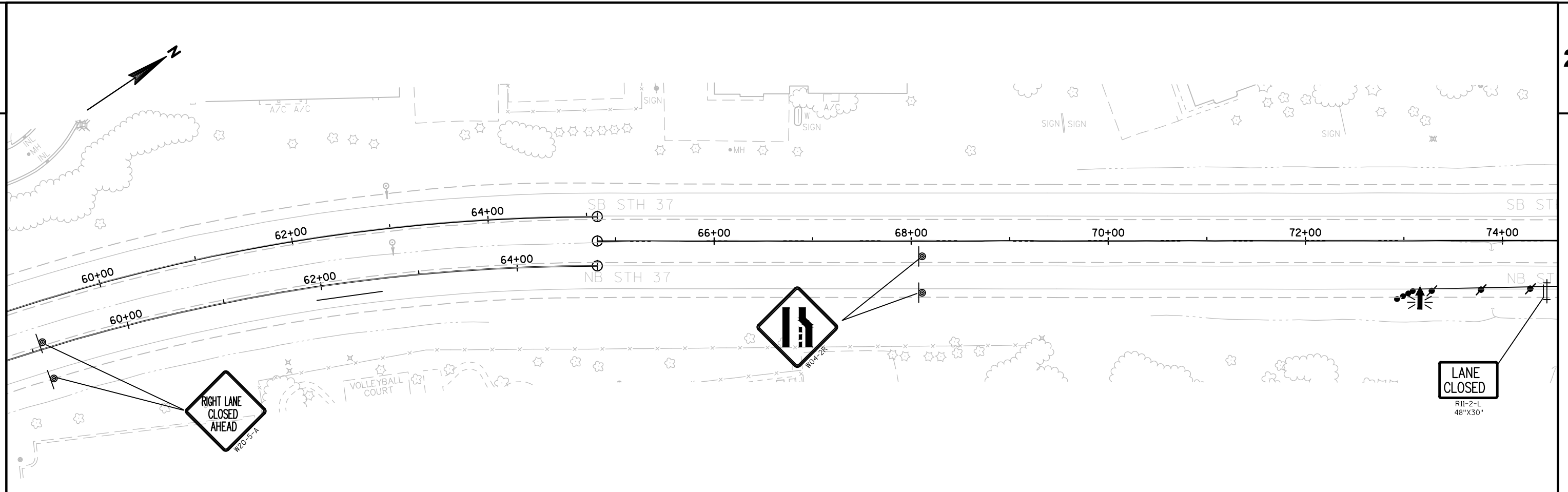
HWY: STH 37

COUNTY: EAU CLAIRE

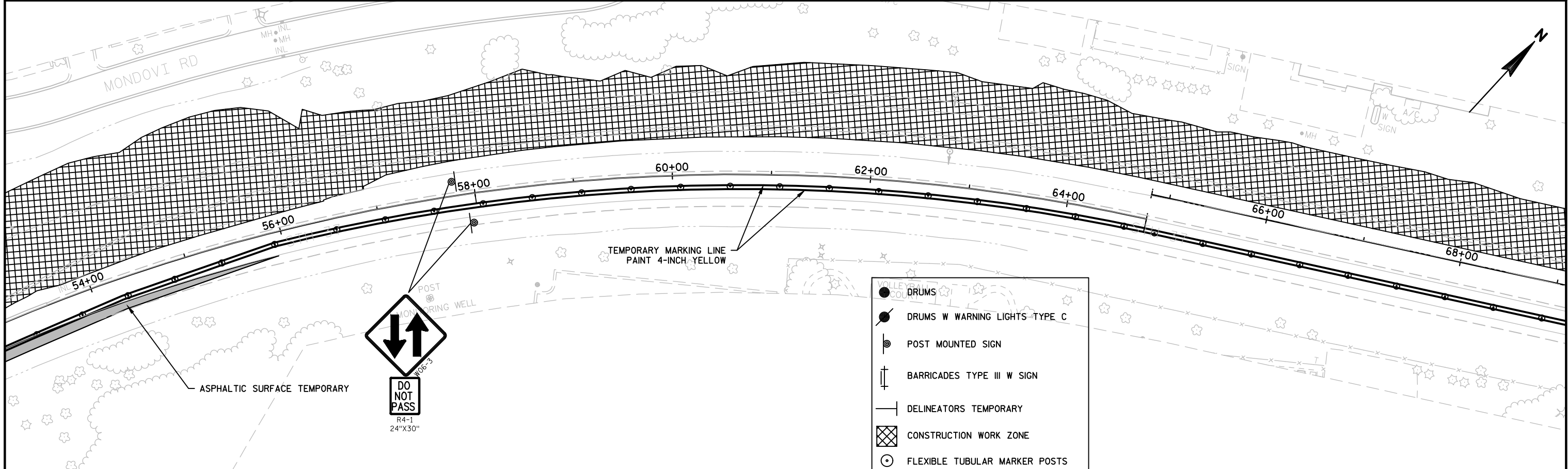
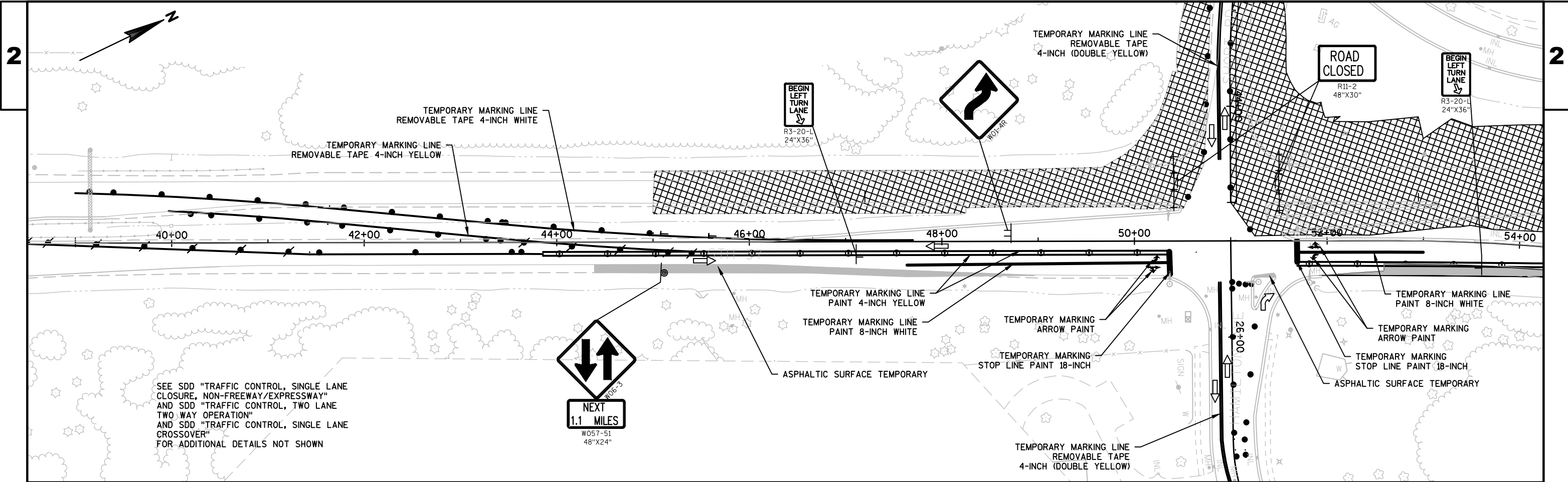
TRAFFIC CONTROL - STAGE 1B & 1C

SHEET

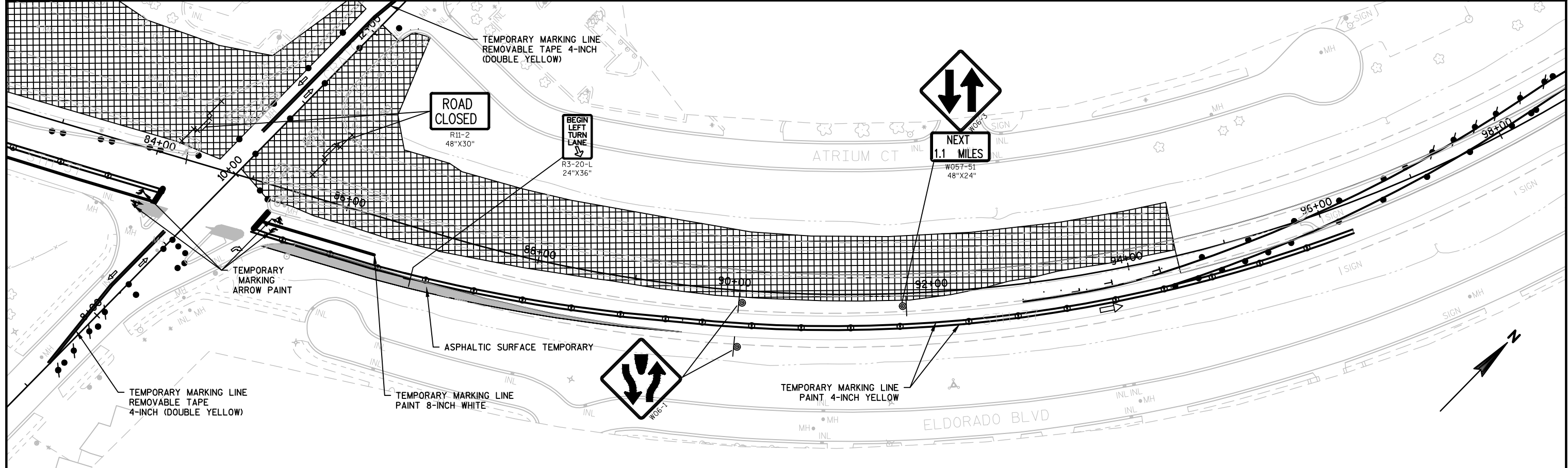
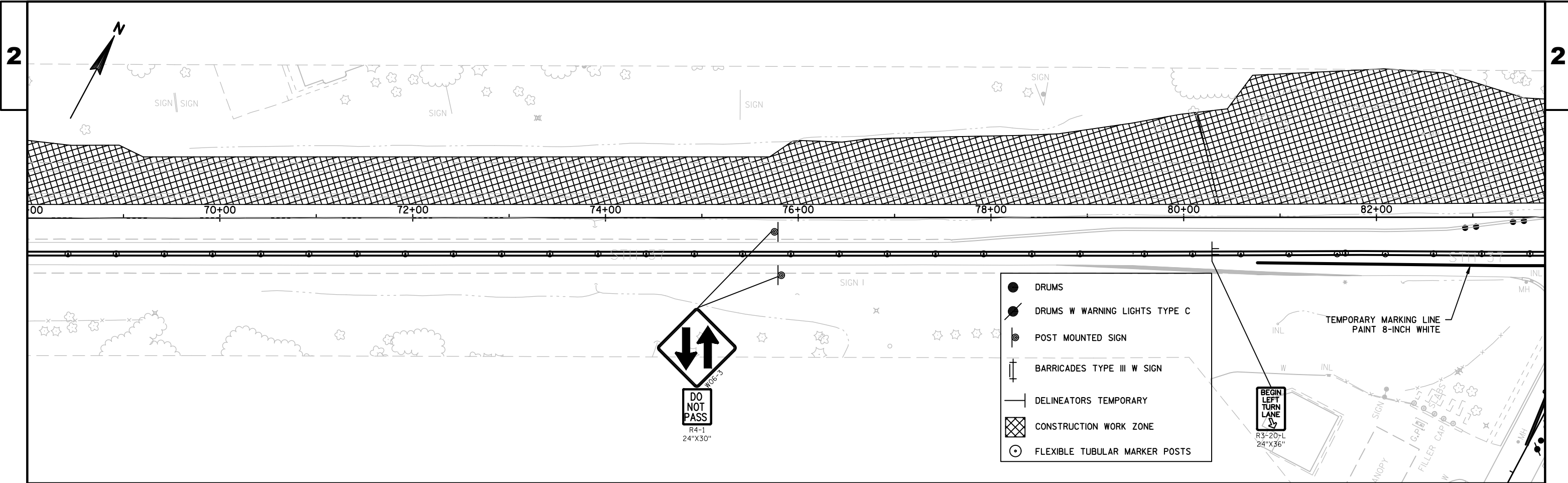
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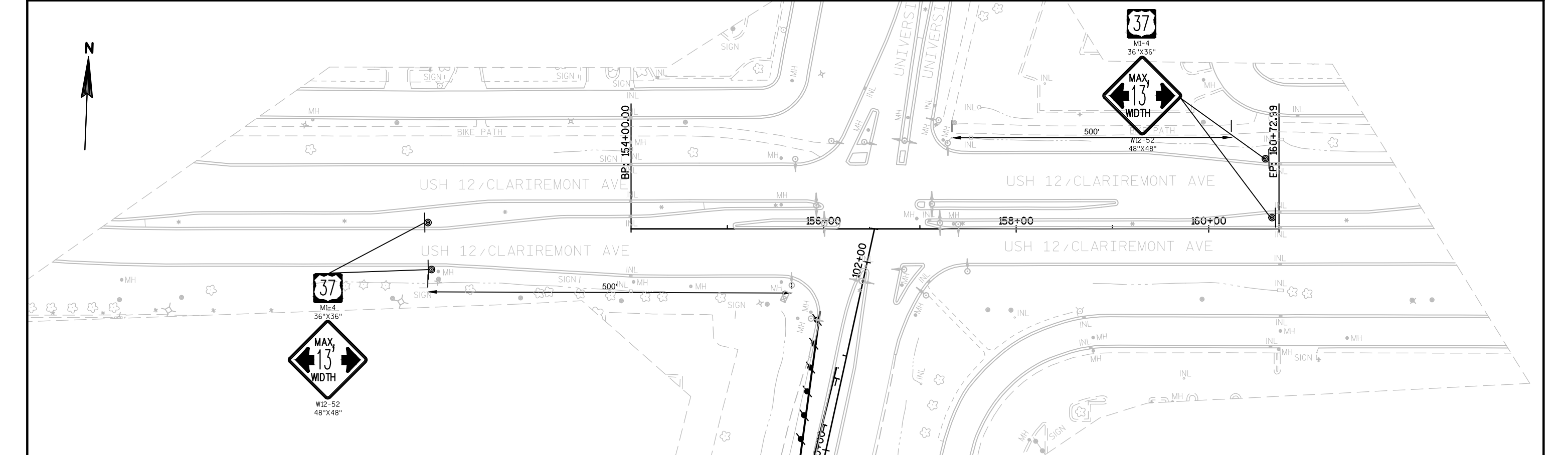
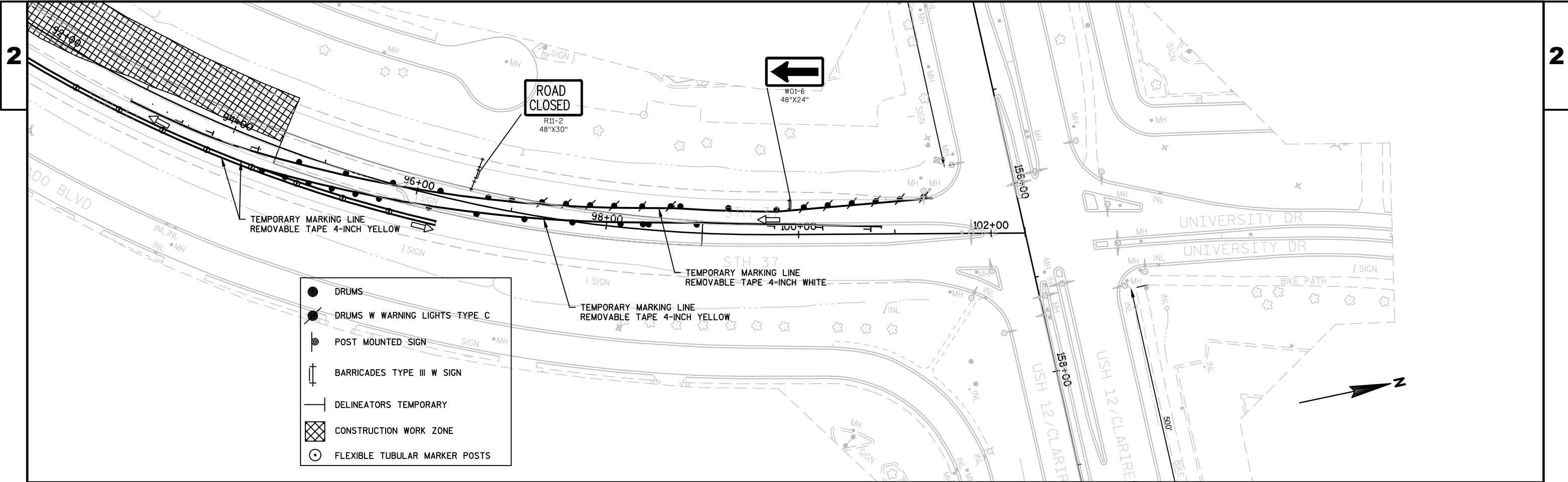


PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	TRAFFIC CONTROL - STAGE 1C	SHEET	E
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PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE TRAFFIC CONTROL - STAGE 2A SHEET E





PROJECT NO: 7110-05-72

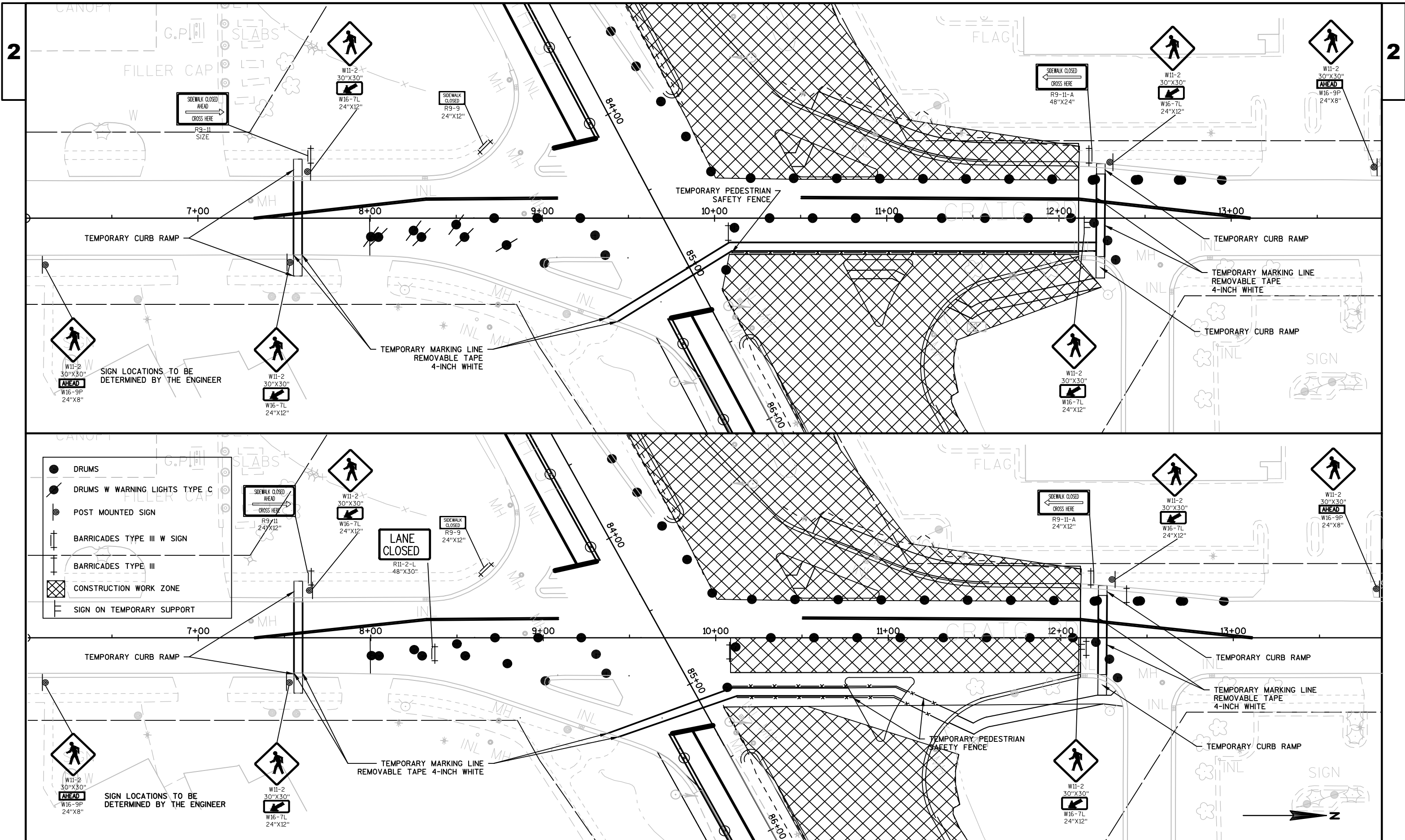
HWY: STH 37

COUNTY: EAU CLAIRE

TRAFFIC CONTROL - STAGE 2A

SHEET

E



PROJECT NO: 7110-05-72

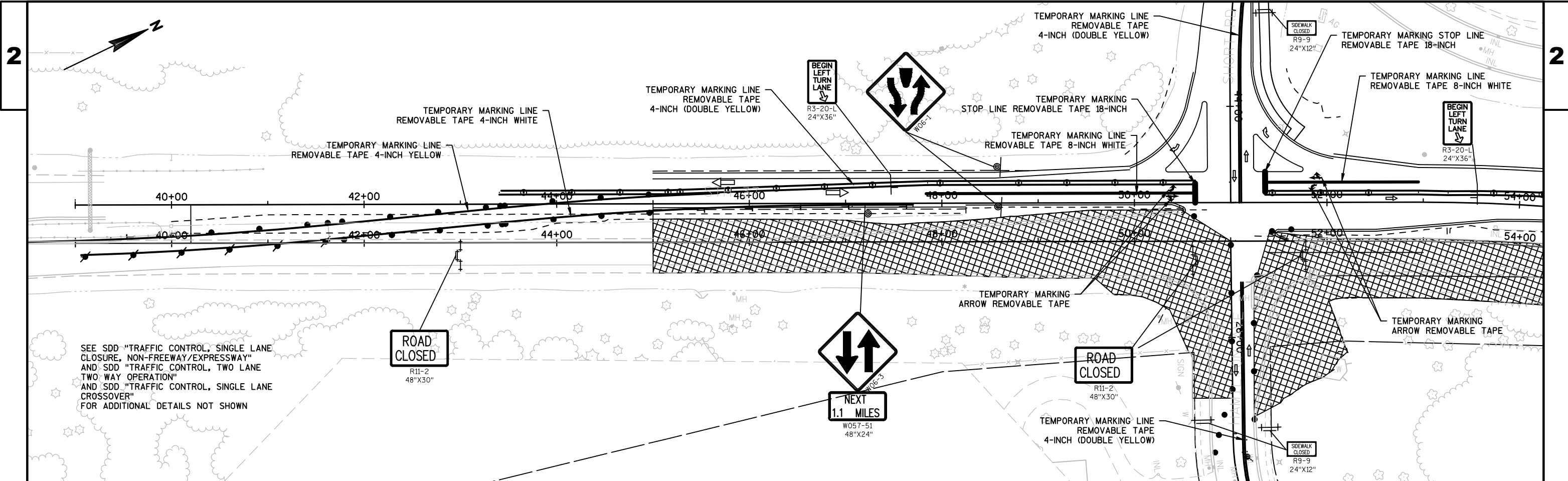
HWY: STH 37

COUNTY: EAU CLAIRE

TRAFFIC CONTROL - PEDESTRIAN PLAN STAGE 2

SHEET

E

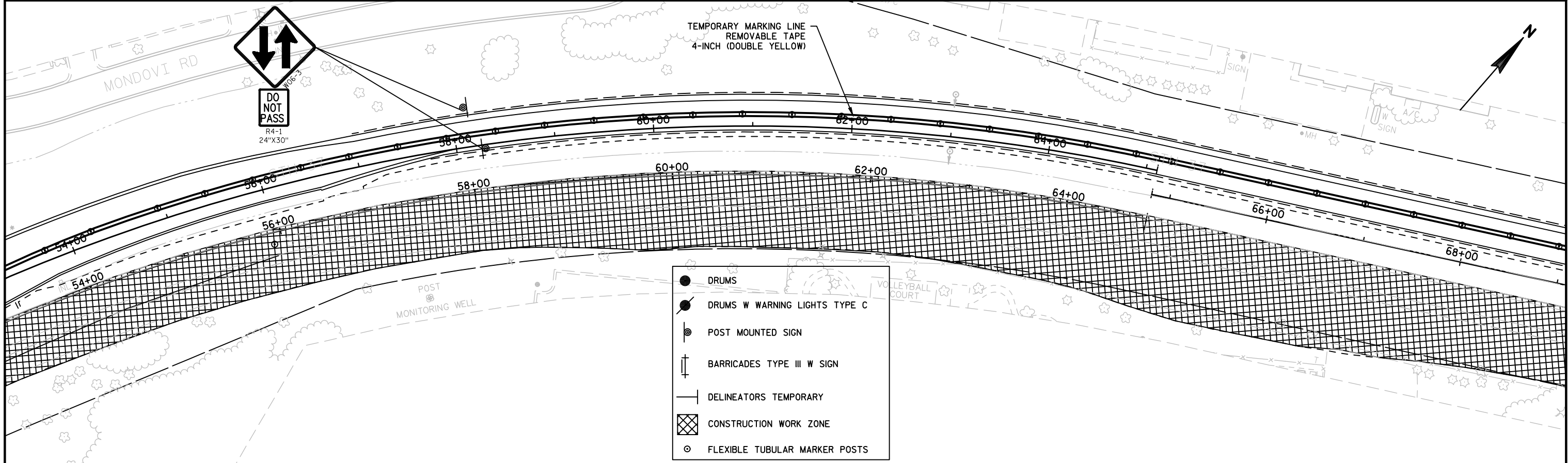


SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREWAY/EXPRESSWAY" AND SDD "TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION" AND SDD "TRAFFIC CONTROL, SINGLE LANE CROSSOVER" FOR ADDITIONAL DETAILS NOT SHOWN

ROAD CLOSED
R11-2
48"x30"

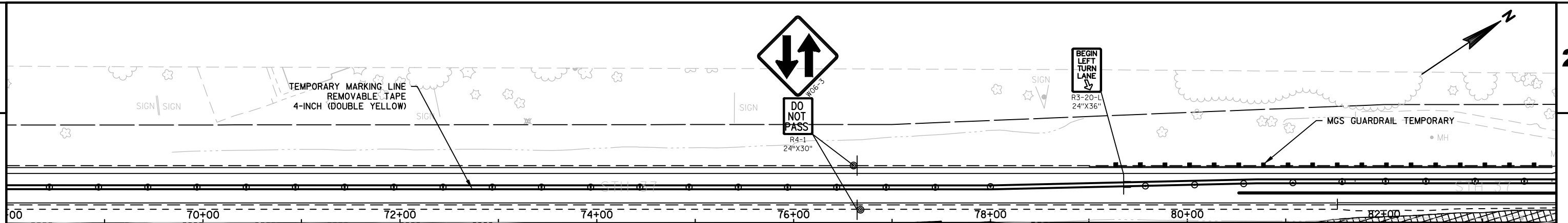
NEXT
1.1 MILES
W057-51
48"x24"

ROAD CLOSED
R11-2
48"x30"

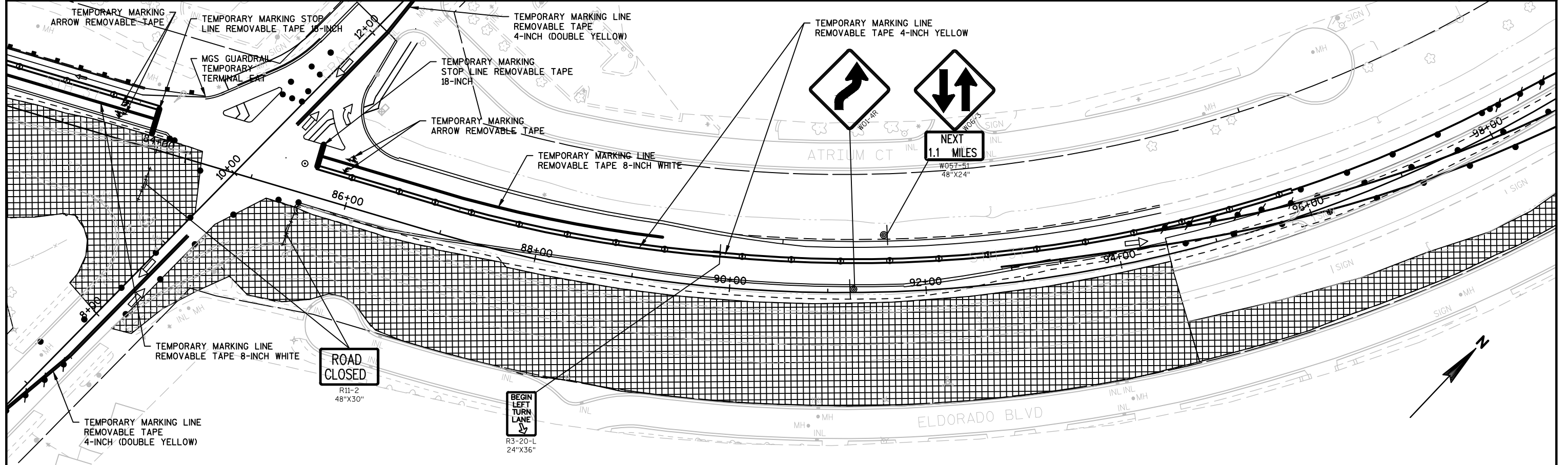
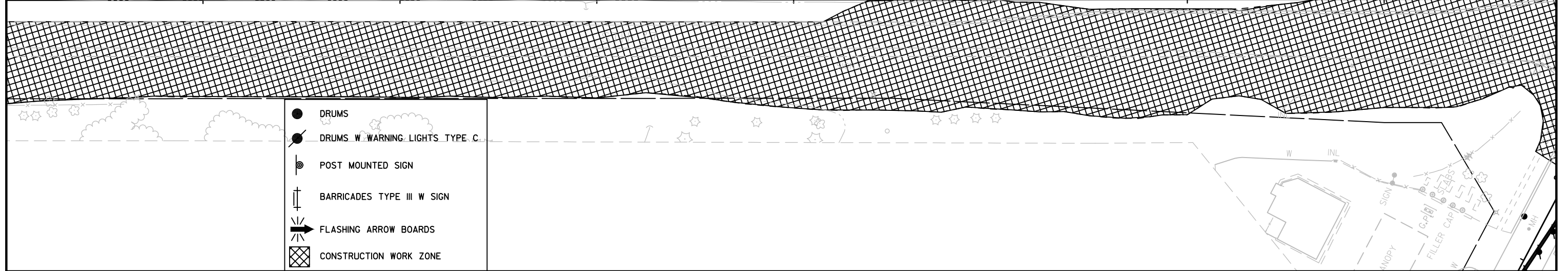


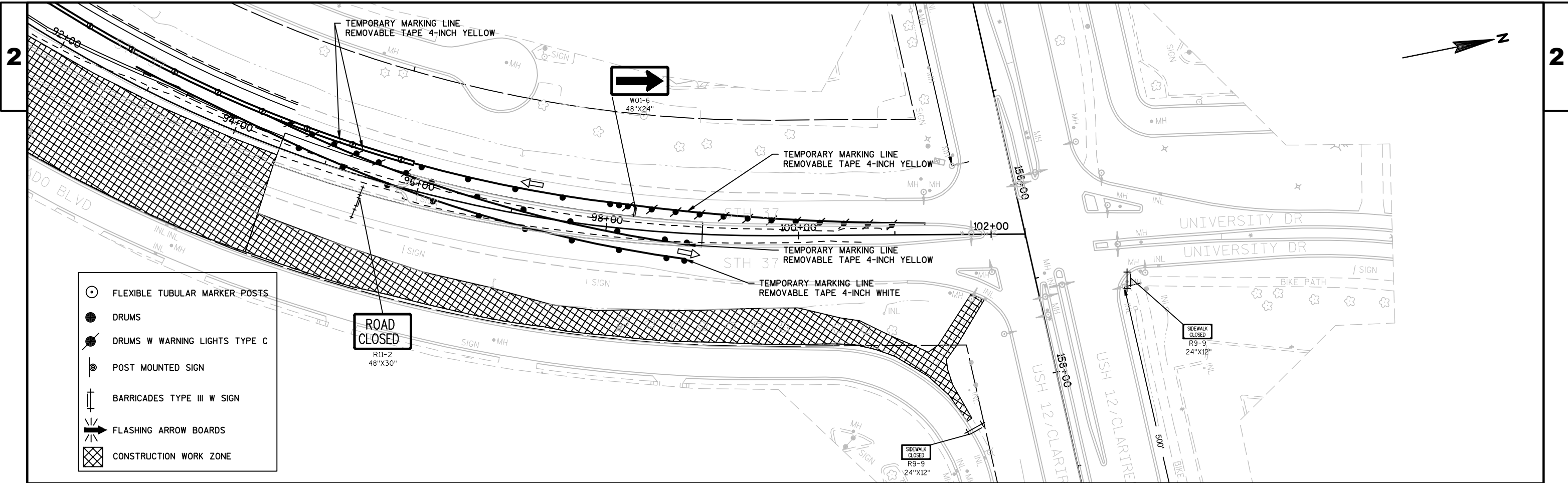
DO NOT PASS
R4-1
24"x30"








- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- DELINEATORS TEMPORARY
- ▨ CONSTRUCTION WORK ZONE
- ⊙ FLEXIBLE TUBULAR MARKER POSTS

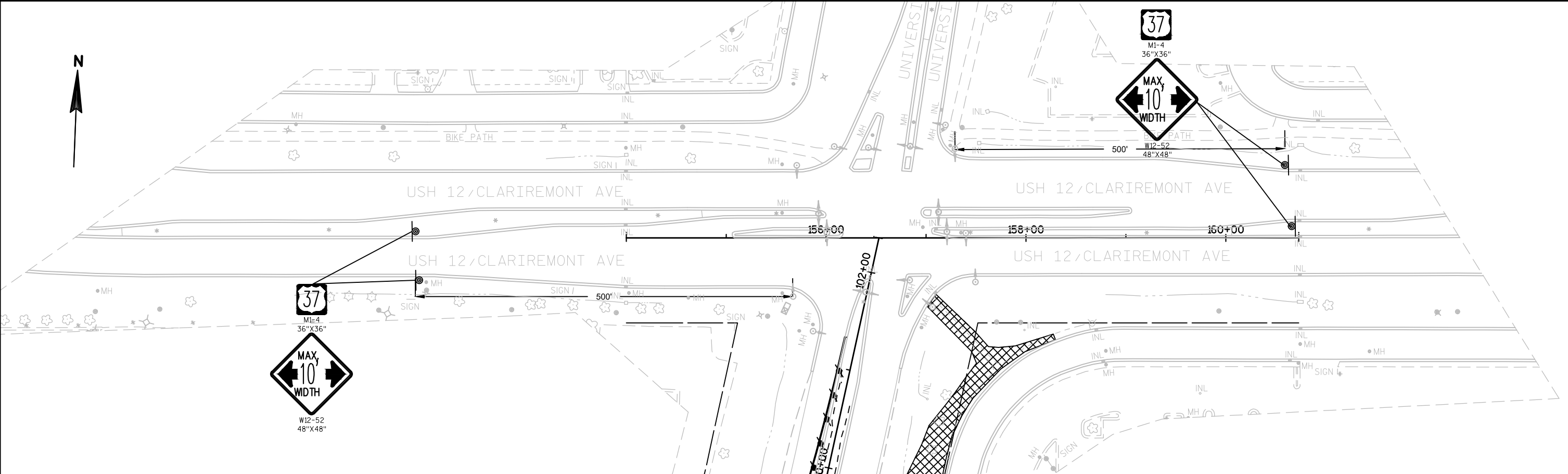


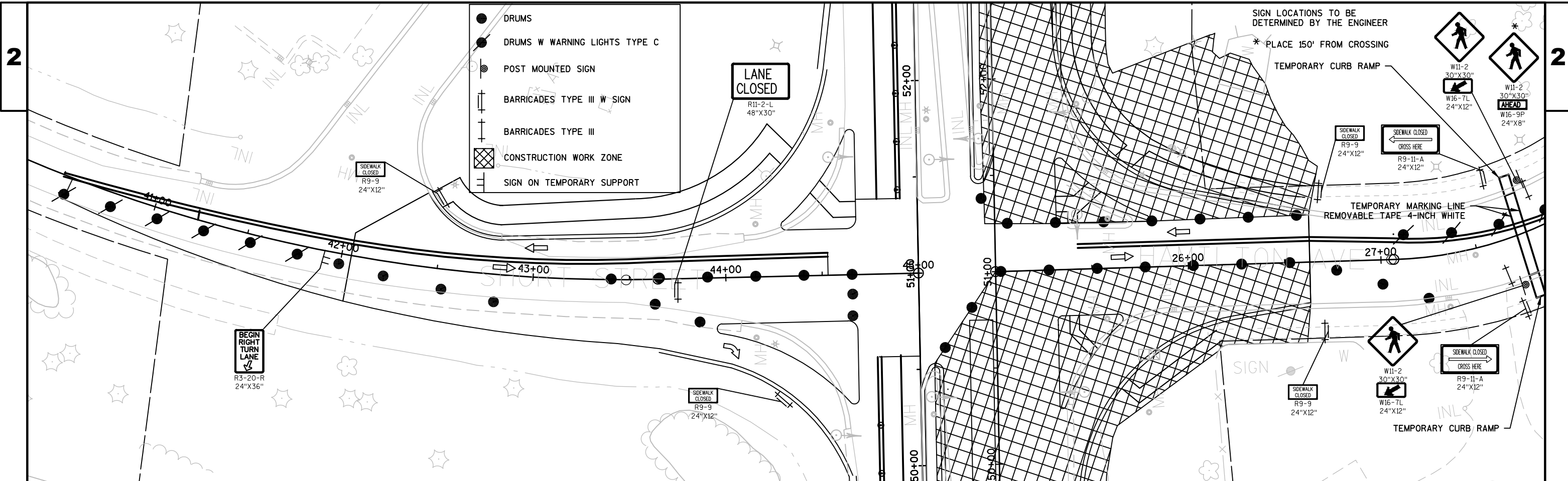
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- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- ⚡ FLASHING ARROW BOARDS
- ▨ CONSTRUCTION WORK ZONE





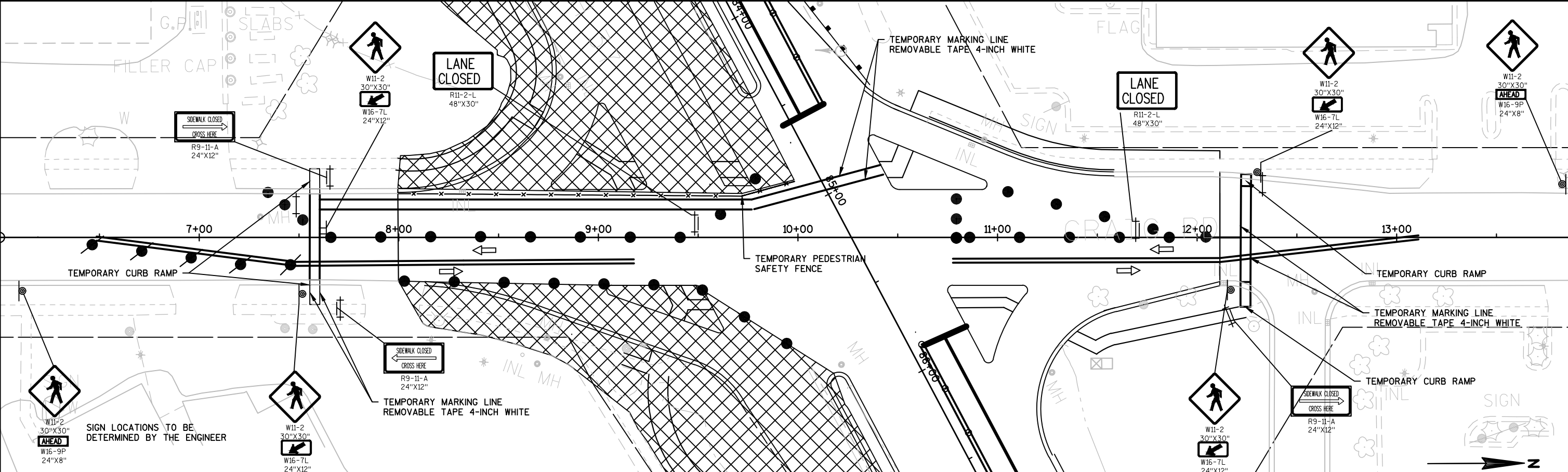
-  FLEXIBLE TUBULAR MARKER POSTS
-  DRUMS
-  DRUMS W WARNING LIGHTS TYPE C
-  POST MOUNTED SIGN
-  BARRICADES TYPE III W SIGN
-  FLASHING ARROW BOARDS
-  CONSTRUCTION WORK ZONE

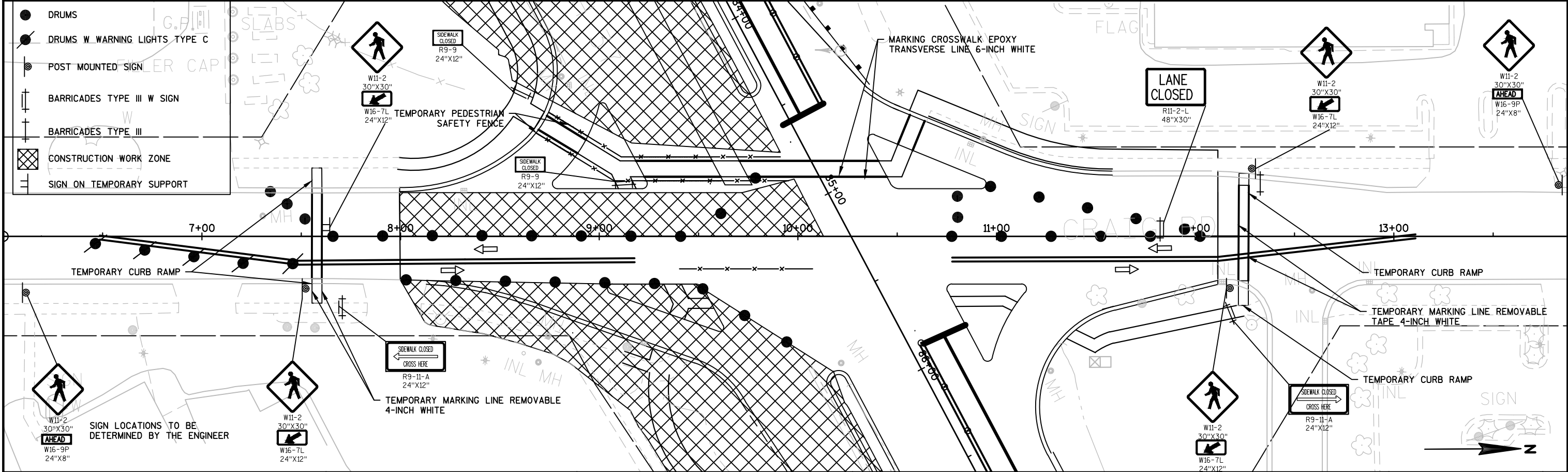
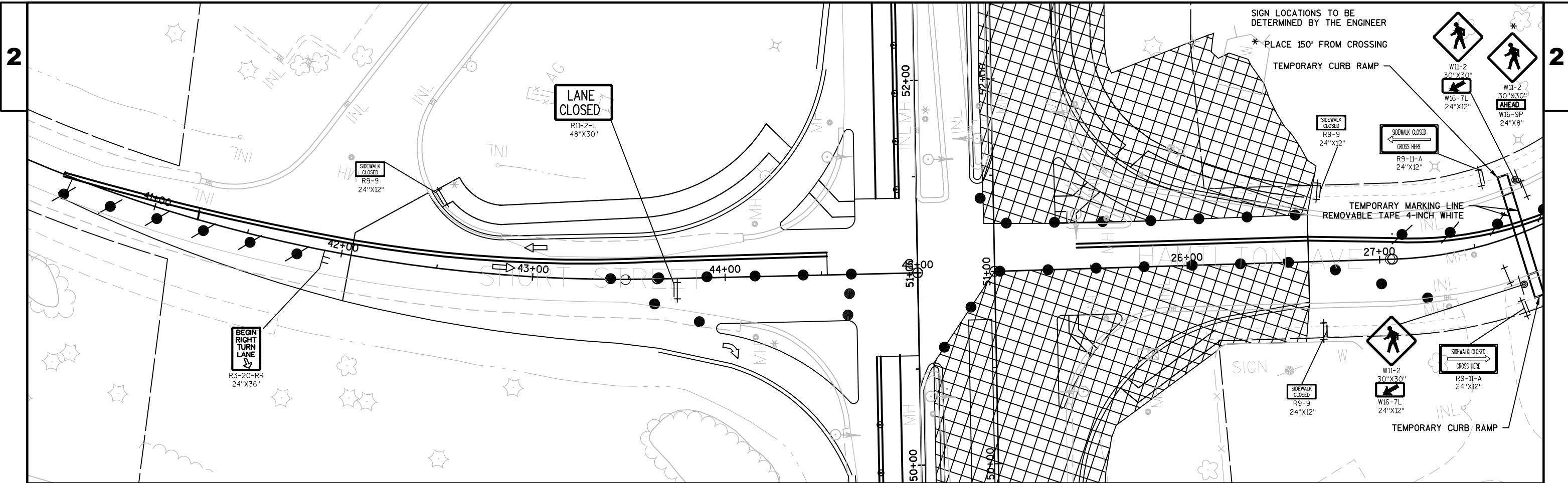




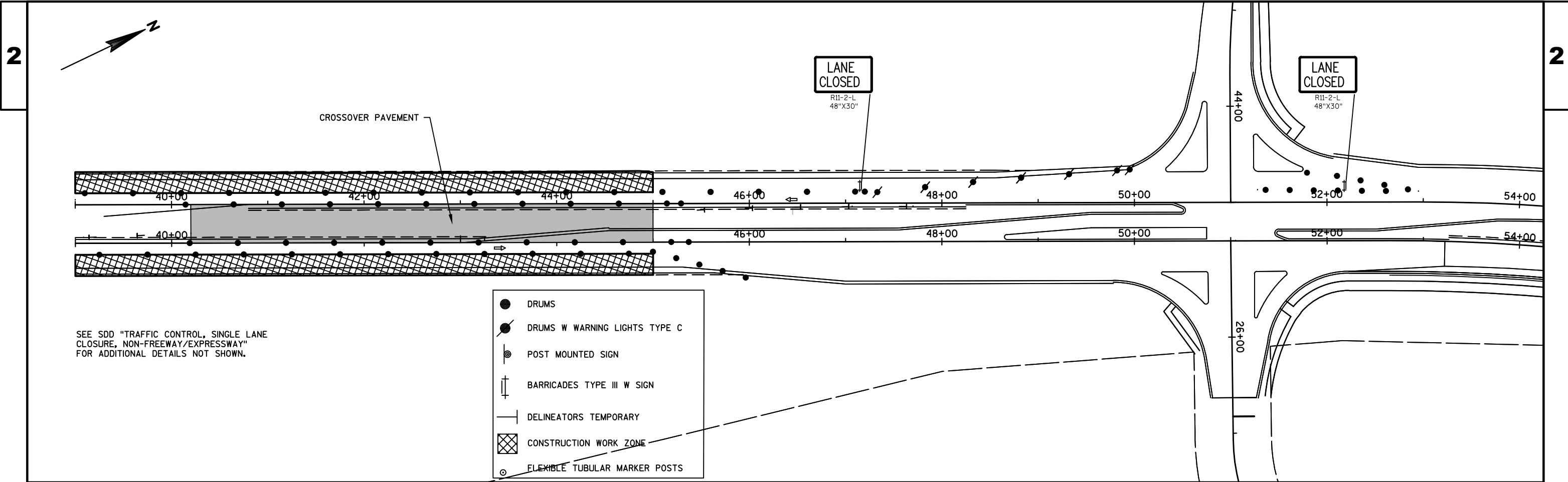
- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊎ BARRICADES TYPE III W SIGN
- ⊎ BARRICADES TYPE III
- ⊎ CONSTRUCTION WORK ZONE
- ⊎ SIGN ON TEMPORARY SUPPORT

SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER
* PLACE 150' FROM CROSSING



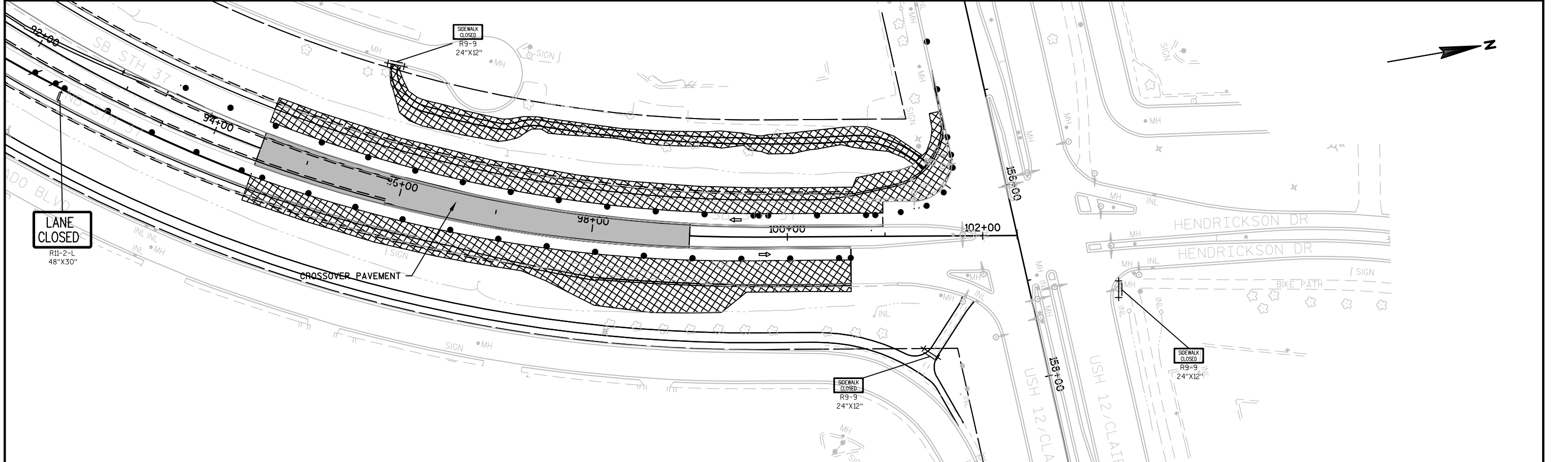


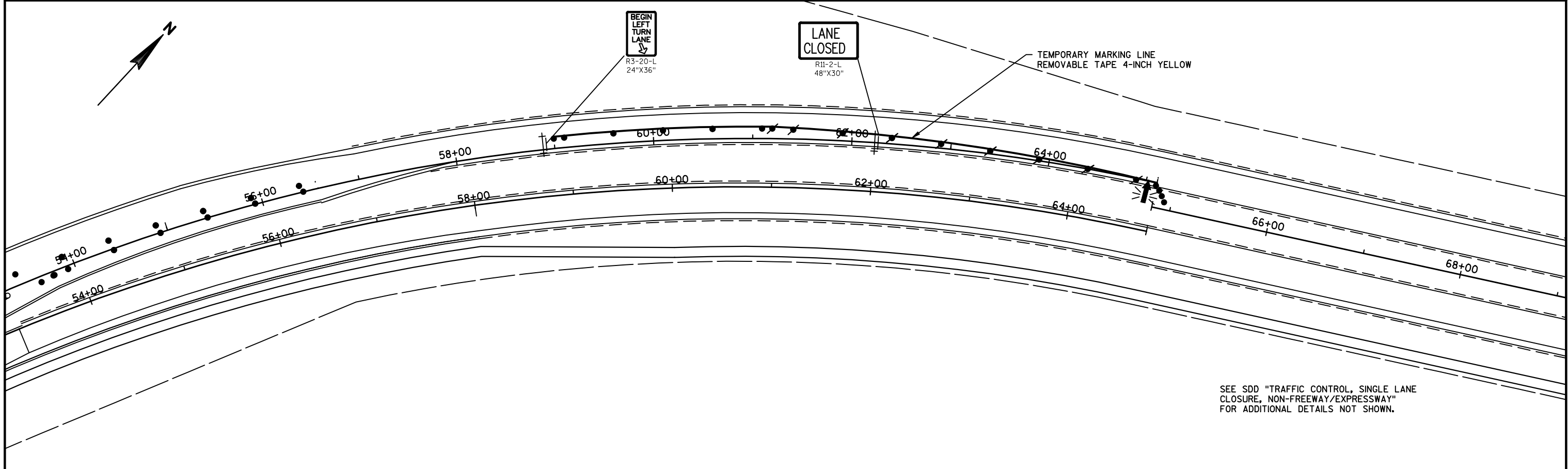
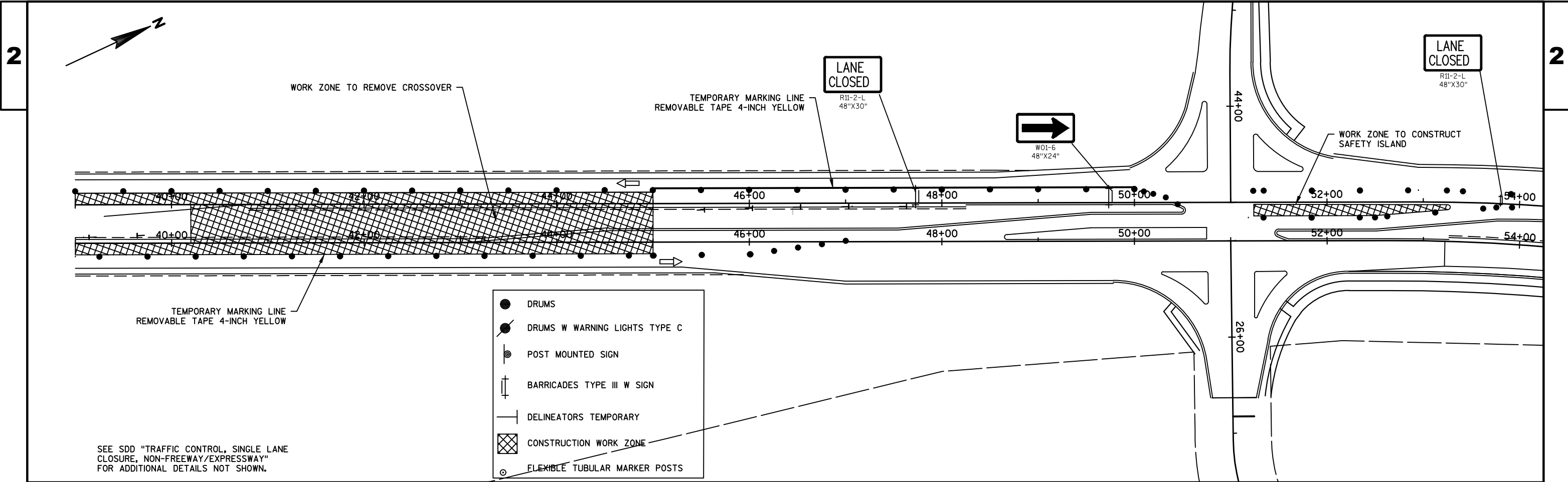
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE TRAFFIC CONTROL - PEDESTRIAN PLAN STAGE 3B SHEET E

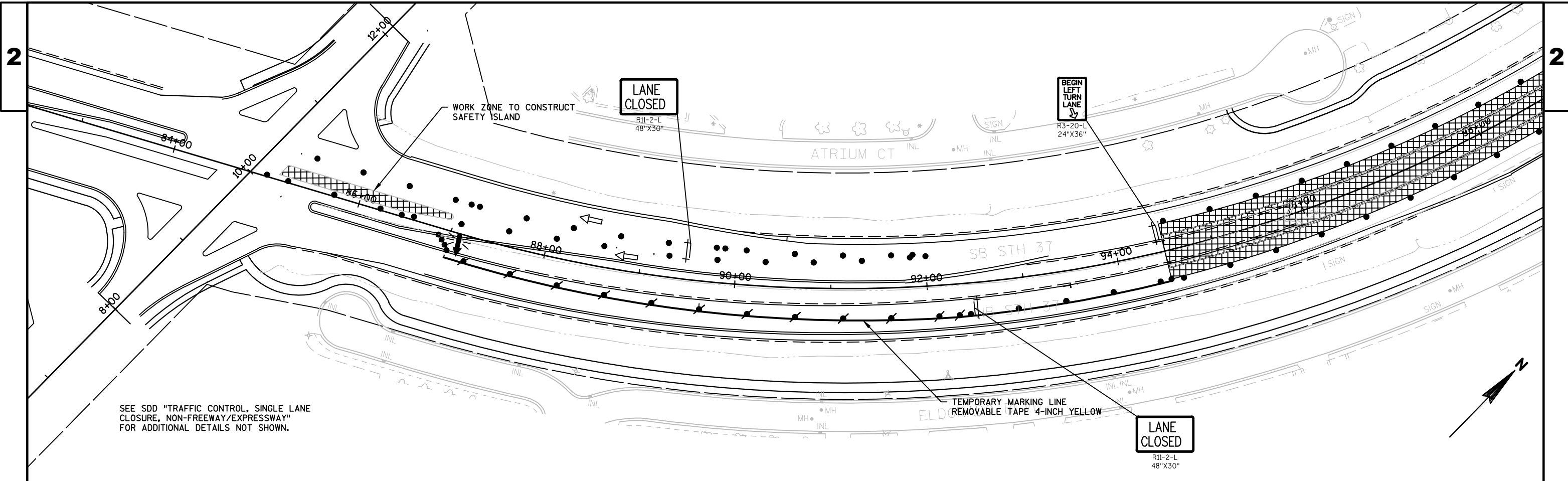


SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL DETAILS NOT SHOWN.

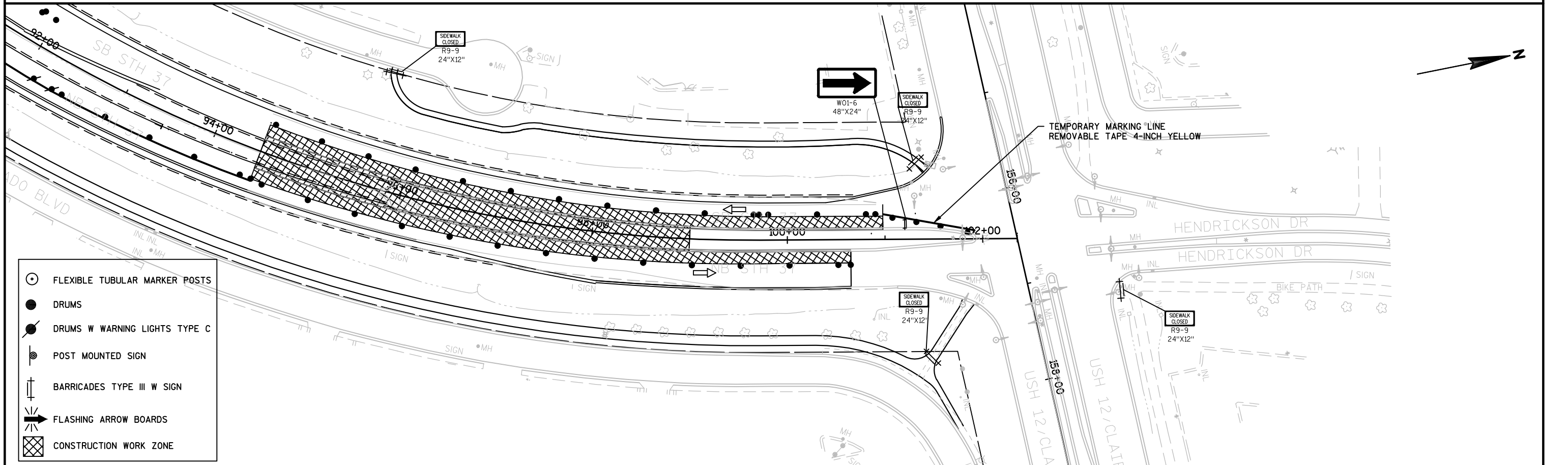
- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- DELINEATORS TEMPORARY
- ▨ CONSTRUCTION WORK ZONE
- FLEXIBLE TUBULAR MARKER POSTS





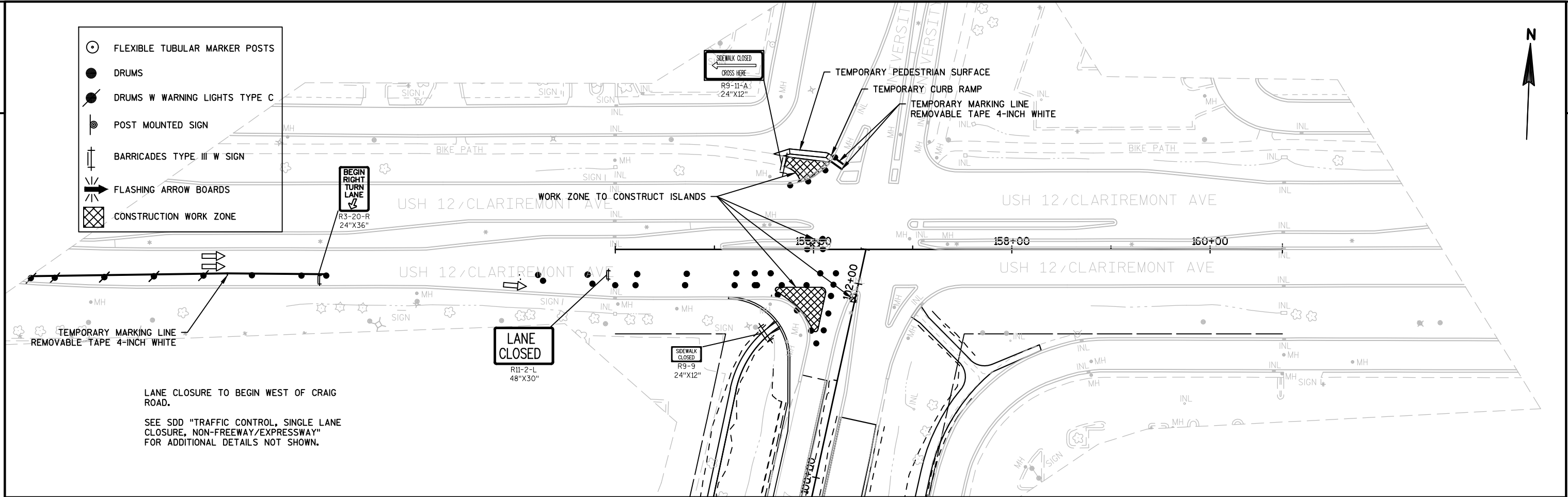


SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL DETAILS NOT SHOWN.



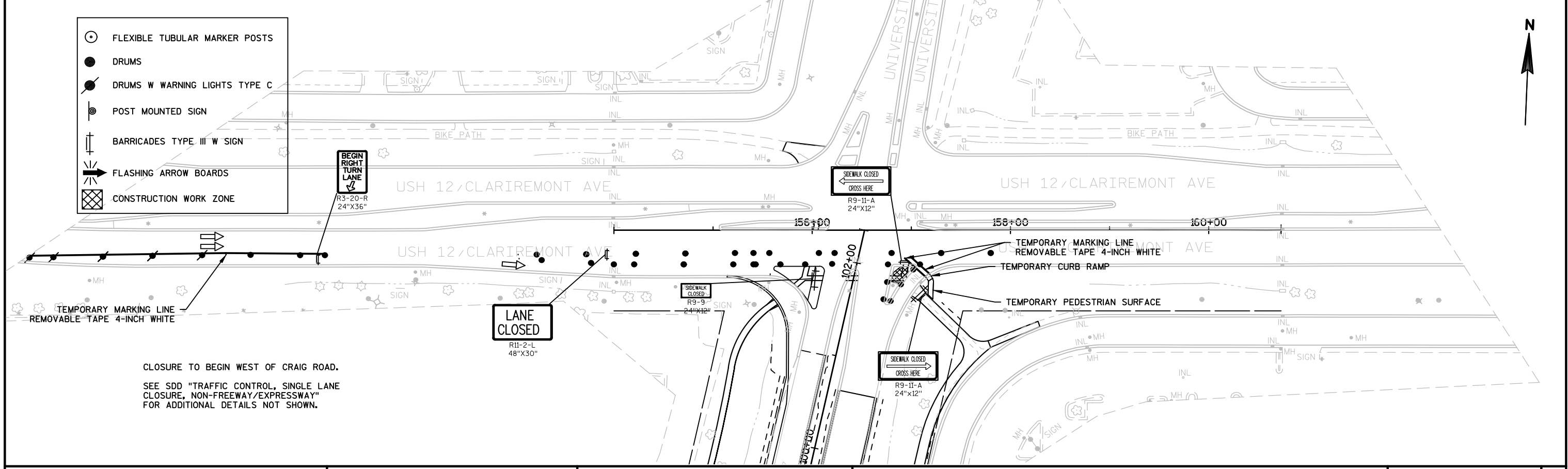
- FLEXIBLE TUBULAR MARKER POSTS
- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- FLASHING ARROW BOARDS
- ▨ CONSTRUCTION WORK ZONE

- FLEXIBLE TUBULAR MARKER POSTS
- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- FLASHING ARROW BOARDS
- ▣ CONSTRUCTION WORK ZONE

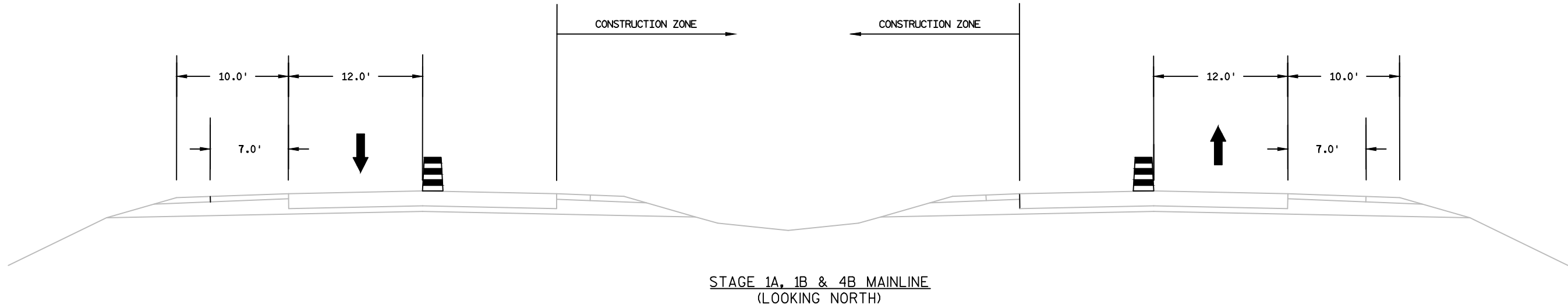


LANE CLOSURE TO BEGIN WEST OF CRAIG ROAD.
SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL DETAILS NOT SHOWN.

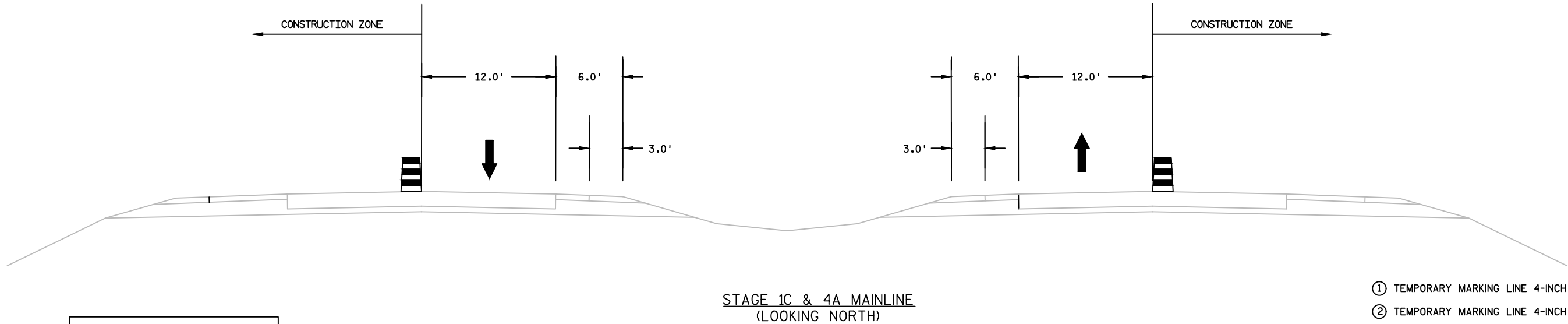
- FLEXIBLE TUBULAR MARKER POSTS
- DRUMS
- DRUMS W WARNING LIGHTS TYPE C
- ⊙ POST MOUNTED SIGN
- ⊥ BARRICADES TYPE III W SIGN
- FLASHING ARROW BOARDS
- ▣ CONSTRUCTION WORK ZONE



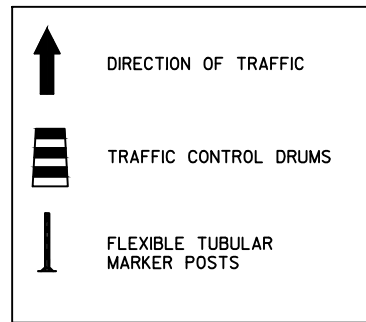
CLOSURE TO BEGIN WEST OF CRAIG ROAD.
SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY" FOR ADDITIONAL DETAILS NOT SHOWN.



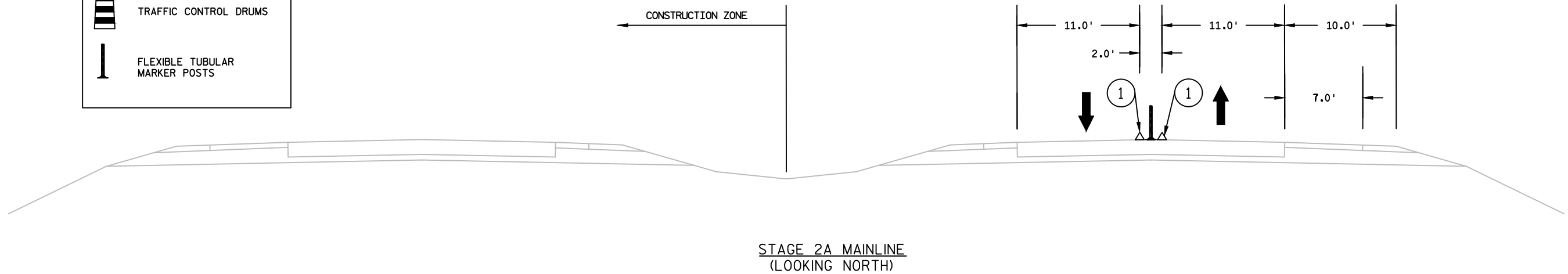
STAGE 1A, 1B & 4B MAINLINE
(LOOKING NORTH)



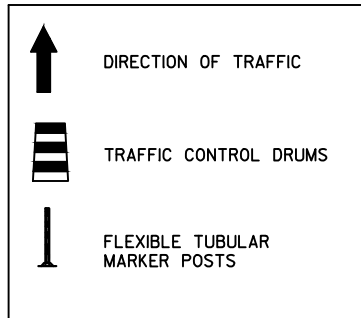
STAGE 1C & 4A MAINLINE
(LOOKING NORTH)



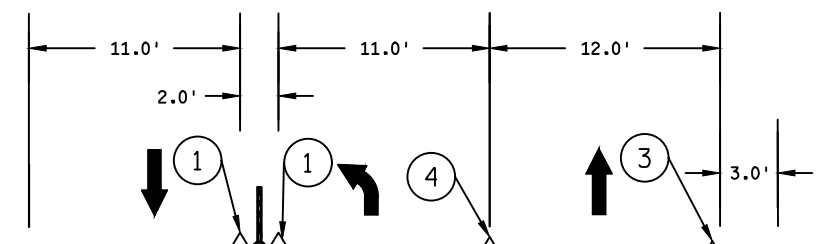
- ① TEMPORARY MARKING LINE 4-INCH YELLOW
- ② TEMPORARY MARKING LINE 4-INCH WHITE
- ③ TEMPORARY MARKING LINE 4-INCH WHITE (WHEN REQUIRED FOR WIDENINGS)
- ④ TEMPORARY MARKING LINE 8-INCH WHITE



STAGE 2A MAINLINE
(LOOKING NORTH)



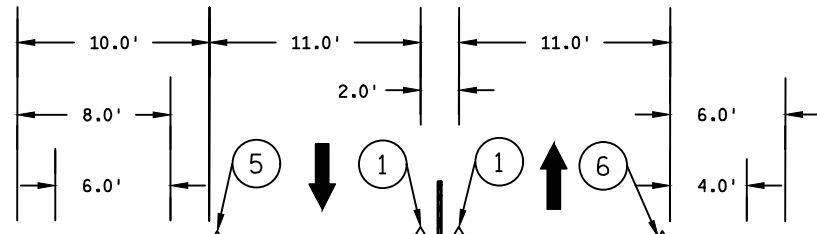
CONSTRUCTION ZONE



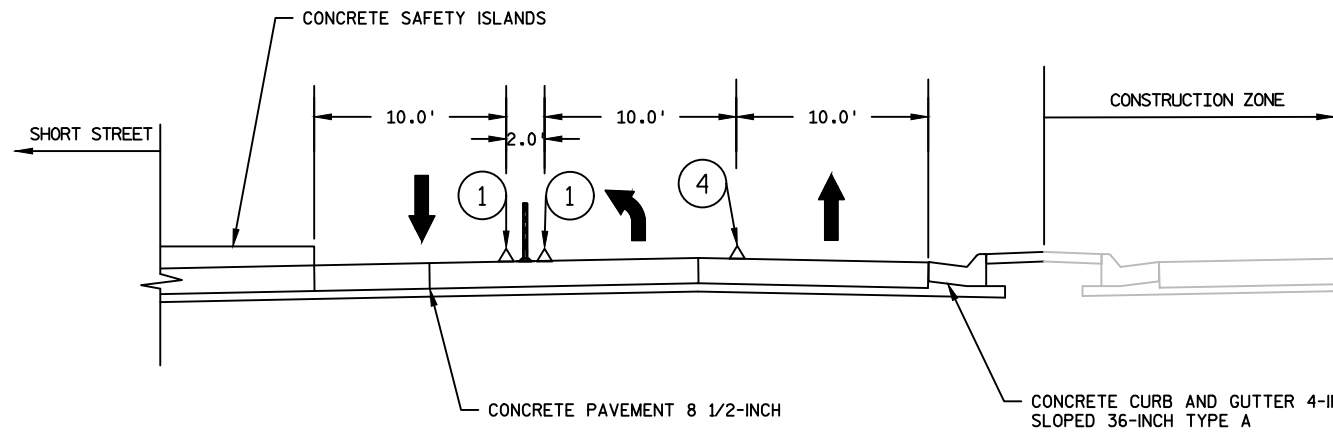
STAGE 2A AT INTERSECTIONS
(LOOKING NORTH)

- ① TEMPORARY MARKING LINE 4-INCH YELLOW
- ② TEMPORARY MARKING LINE 4-INCH WHITE
- ③ TEMPORARY MARKING LINE 4-INCH WHITE (WHEN REQUIRED FOR WIDENING)
- ④ TEMPORARY MARKING LINE 8-INCH WHITE
- ⑤ MARKING LINE GROOVED WET REF EPOXY 4-INCH WHITE
- ⑥ MARKING LINE GROOVED WET REF EPOXY 4-INCH YELLOW

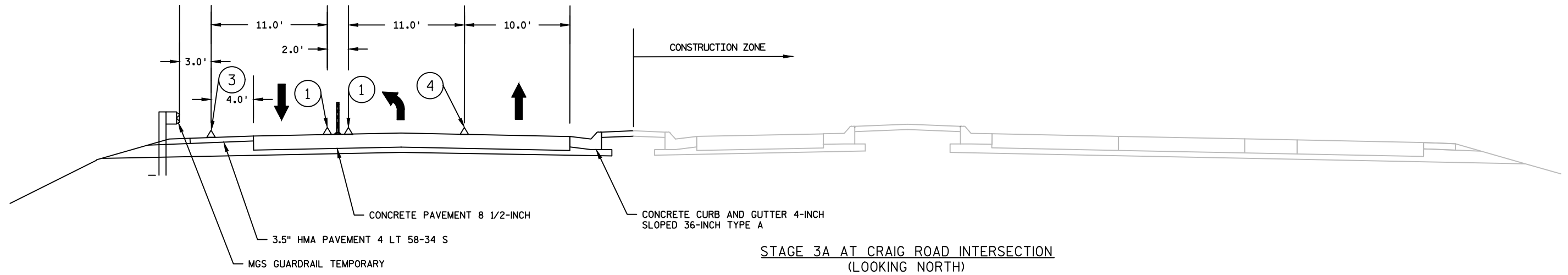
CONSTRUCTION ZONE



STAGE 3A MAINLINE
(LOOKING NORTH)

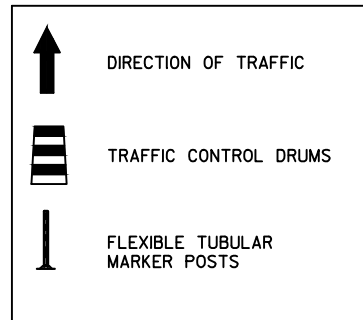


STAGE 3A AT SHORT STREET INTERSECTION
(LOOKING NORTH)



STAGE 3A AT CRAIG ROAD INTERSECTION
(LOOKING NORTH)

- ① TEMPORARY MARKING LINE 4-INCH YELLOW
- ② TEMPORARY MARKING LINE 4-INCH WHITE
- ③ TEMPORARY MARKING LINE 4-INCH WHITE (WHEN REQUIRED FOR WIDENINGS)
- ④ TEMPORARY MARKING LINE 8-INCH WHITE



SHORT STREET NORTH
 PI STA = 9+39.27
 Y = 268801.394
 X = 331346.385
 DELTA = 61°24'21"
 D = 130°13'04"
 T = 26.13'
 L = 47.16'
 R = 44.00'
 PC STA = 9+13.14
 PT STA = 9+60.30

SHORT STREET SOUTH
 PI STA = 5+96.93
 Y = 268644.780
 X = 331481.341
 DELTA = 51°34'55"
 D = 58°27'55"
 T = 47.36'
 L = 88.23'
 R = 98.00'
 PC STA = 5+49.57
 PT STA = 6+37.80

PI STA = 7+85.91
 Y = 268721.501
 X = 331510.286
 DELTA = 80°12'44"
 D = 56°10'20"
 T = 85.91'
 L = 142.80'
 R = 102.00'
 PC STA = 7+00.00
 PT STA = 8+42.80

HAMILTON AVENUE SOUTH
 PI STA = 0+93.02
 Y = 268605.914
 X = 331610.959
 DELTA = 80°32'25"
 D = 58°27'54"
 T = 83.02'
 L = 137.76'
 R = 98.00'
 PC STA = 0+10.00
 PT STA = 1+47.76

HAMILTON AVENUE NORTH
 PI STA = 2+33.11
 Y = 268690.297
 X = 331641.344
 DELTA = 80°32'07"
 D = 67°24'24"
 T = 72.00'
 L = 119.48'
 R = 85.00'
 PC STA = 1+61.11
 PT STA = 2+80.58

PI STA = 59+24.40
 Y = 269419.572
 X = 331910.862
 DELTA = 36°28'51"
 D = 3°00'00"
 T = 629.42'
 L = 1216.02'
 R = 1909.86'
 PC STA = 52+94.98
 PT STA = 65+11.00

PI STA = 58+94.62
 Y = 269375.439
 X = 331934.074
 DELTA = 36°29'35"
 D = 3°00'00"
 T = 629.65'
 L = 1216.43'
 R = 1909.86'
 PC STA = 52+64.97
 PT STA = 64+81.41

STA. 64+81.41
 X = 332478.652
 Y = 269692.396

CRAIG ROAD SOUTHEAST

PI STA = 17+04.16
 Y = 270475.189
 X = 334269.937
 DELTA = 16°32'49"
 D = 26°57'22"
 T = 30.91'
 L = 61.39'
 R = 212.55'
 PC STA = 16+73.25
 PT STA = 17+34.64

PI STA = 18+32.67
 Y = 270596.644
 X = 334313.208
 DELTA = 42°49'17"
 D = 127°19'26"
 T = 17.64'
 L = 33.63'
 R = 45.00'
 PC STA = 18+15.03
 PT STA = 18+48.66

CRAIG ROAD NORTHWEST

PI STA = 25+80.90
 Y = 270761.717
 X = 334214.413
 DELTA = 20°07'56"
 D = 36°31'56"
 T = 27.84'
 L = 55.11'
 R = 156.84'
 PC STA = 25+53.06
 PT STA = 26+08.16

PI STA = 26+78.07
 Y = 270671.199
 X = 334177.522
 DELTA = 15°52'48"
 D = 92°28'10"
 T = 8.64'
 L = 17.17'
 R = 61.96'
 PC STA = 26+69.43
 PT STA = 26+86.60

CRAIG ROAD NORTHEAST

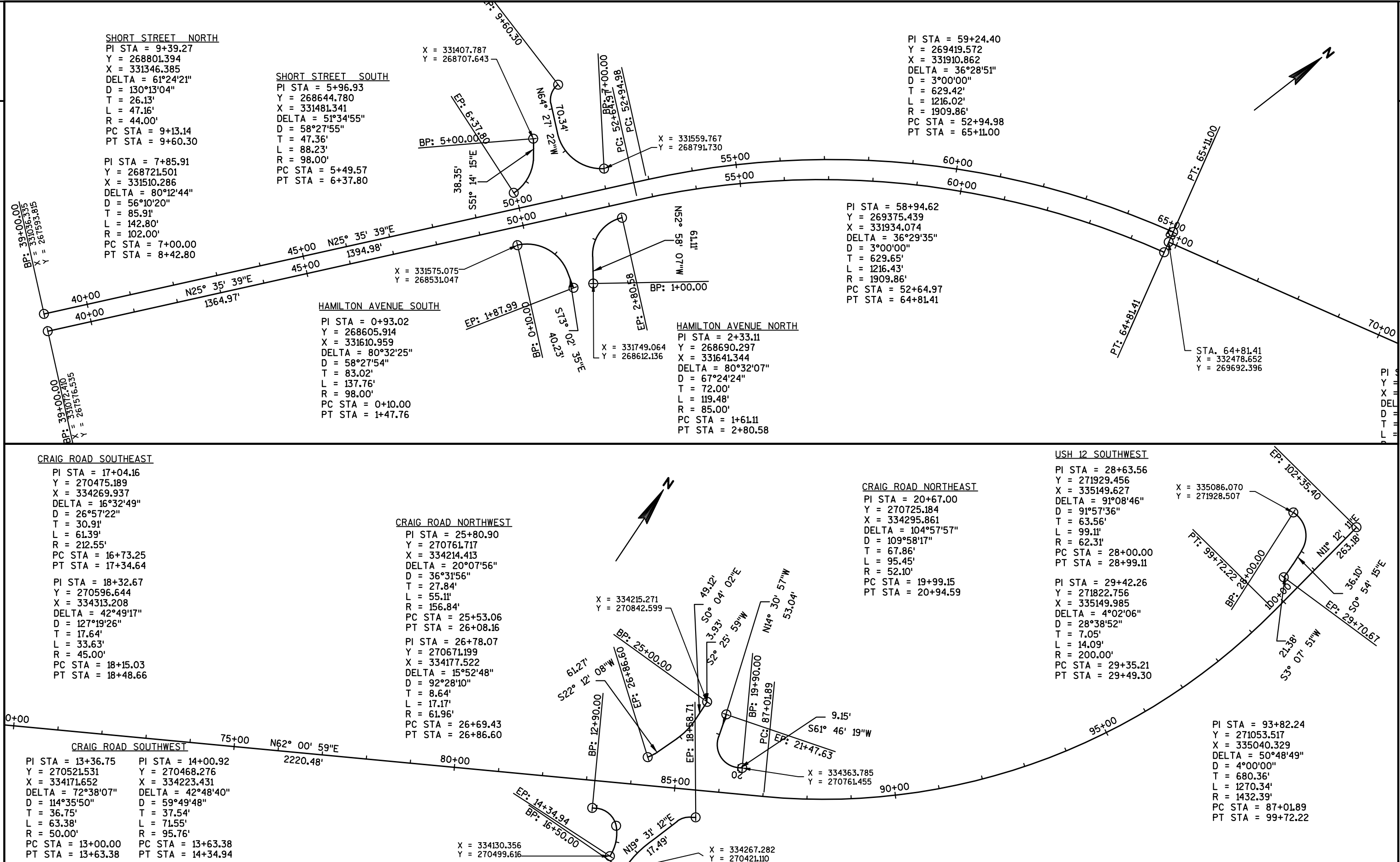
PI STA = 20+67.00
 Y = 270725.184
 X = 334295.861
 DELTA = 104°57'57"
 D = 109°58'17"
 T = 67.86'
 L = 95.45'
 R = 52.10'
 PC STA = 19+99.15
 PT STA = 20+94.59

USH 12 SOUTHWEST

PI STA = 28+63.56
 Y = 271929.456
 X = 335149.627
 DELTA = 91°08'46"
 D = 91°57'36"
 T = 63.56'
 L = 99.11'
 R = 62.31'
 PC STA = 28+00.00
 PT STA = 28+99.11

PI STA = 29+42.26
 Y = 271822.756
 X = 335149.985
 DELTA = 4°02'06"
 D = 28°38'52"
 T = 7.05'
 L = 14.09'
 R = 200.00'
 PC STA = 29+35.21
 PT STA = 29+49.30

PI STA = 93+82.24
 Y = 271053.517
 X = 335040.329
 DELTA = 50°48'49"
 D = 4°00'00"
 T = 680.36'
 L = 1270.34'
 R = 1432.39'
 PC STA = 87+01.89
 PT STA = 99+72.22



Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	5.000	5.000
0004	201.0205	Grubbing	STA	5.000	5.000
0006	204.0100	Removing Pavement	SY	38,435.000	38,435.000
0008	204.0110	Removing Asphaltic Surface	SY	4,880.000	4,880.000
0010	204.0150	Removing Curb & Gutter	LF	1,374.000	1,374.000
0012	204.0155	Removing Concrete Sidewalk	SY	600.000	600.000
0014	204.0195	Removing Concrete Bases	EACH	42.000	42.000
0016	204.0210	Removing Manholes	EACH	3.000	3.000
0018	204.0220	Removing Inlets	EACH	12.000	12.000
0020	204.0245	Removing Storm Sewer (size) 01. 24-inch	LF	158.000	158.000
0022	204.0245	Removing Storm Sewer (size) 02. 18-inch	LF	161.000	161.000
0024	204.0245	Removing Storm Sewer (size) 03. 24-inch	LF	222.000	222.000
0026	204.0245	Removing Storm Sewer (size) 04. 36-inch	LF	169.000	169.000
0028	204.9060.S	Removing (item description) 01. Apron Endwall	EACH	6.000	6.000
0030	205.0100	Excavation Common	CY	13,155.000	13,155.000
0032	208.0100	Borrow	CY	9,905.000	9,905.000
0034	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 7110-05-72	LS	1.000	1.000
0036	211.0200	Prepare Foundation for Concrete Pavement (project) 01. 7110-05-72	LS	1.000	1.000
0038	211.0500	Prepare Foundation for Base Aggregate	STA	126.000	126.000
0040	213.0100	Finishing Roadway (project) 01. 7110-05-72	EACH	1.000	1.000
0042	305.0110	Base Aggregate Dense 3/4-Inch	TON	800.000	800.000
0044	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	17,870.000	17,870.000
0046	415.0085	Concrete Pavement 8 1/2-Inch	SY	49,045.000	49,045.000
0048	415.0210	Concrete Pavement Gaps	EACH	4.000	4.000
0050	416.0610	Drilled Tie Bars	EACH	878.000	878.000
0052	416.0620	Drilled Dowel Bars	EACH	108.000	108.000
0054	416.1010	Concrete Surface Drains	CY	22.500	22.500
0056	416.1110	Concrete Shoulder Rumble Strips	LF	8,350.000	8,350.000
0058	455.0605	Tack Coat	GAL	765.000	765.000
0060	460.2000	Incentive Density HMA Pavement	DOL	1,225.000	1,225.000
0062	460.5244	HMA Pavement 4 LT 58-34 S	TON	1,915.000	1,915.000
0064	465.0105	Asphaltic Surface	TON	650.000	650.000
0066	465.0125	Asphaltic Surface Temporary	TON	1,550.000	1,550.000
0068	465.0400	Asphaltic Shoulder Rumble Strips	LF	7,800.000	7,800.000
0070	520.8700	Cleaning Culvert Pipes	EACH	3.000	3.000
0072	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	124.000	124.000
0074	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	2.000	2.000

Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0076	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000	1.000
0078	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	3.000	3.000
0080	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	1.000	1.000
0082	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	1.000	1.000
0084	524.0636	Apron Endwalls for Culvert Pipe Salvaged 36-Inch	EACH	1.000	1.000
0086	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	520.000	520.000
0088	601.0551	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type A	LF	6,570.000	6,570.000
0090	602.0410	Concrete Sidewalk 5-Inch	SF	7,640.000	7,640.000
0092	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	472.000	472.000
0094	602.1000	Concrete Loading Zone	SF	8,460.000	8,460.000
0096	602.2400	Concrete Safety Islands	SF	8,610.000	8,610.000
0098	606.0300	Riprap Heavy	CY	360.000	360.000
0100	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	331.000	331.000
0102	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	1,663.000	1,663.000
0104	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	176.000	176.000
0106	608.0330	Storm Sewer Pipe Reinforced Concrete Class III 30-Inch	LF	16.000	16.000
0108	608.0336	Storm Sewer Pipe Reinforced Concrete Class III 36-Inch	LF	172.000	172.000
0110	611.0420	Reconstructing Manholes	EACH	4.000	4.000
0112	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0114	611.0530	Manhole Covers Type J	EACH	4.000	4.000
0116	611.0627	Inlet Covers Type HM	EACH	13.000	13.000
0118	611.0642	Inlet Covers Type MS	EACH	8.000	8.000
0120	611.1005	Catch Basins 5-FT Diameter	EACH	1.000	1.000
0122	611.2003	Manholes 3-FT Diameter	EACH	1.000	1.000
0124	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0126	611.2005	Manholes 5-FT Diameter	EACH	1.000	1.000
0128	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0130	611.3230	Inlets 2x3-FT	EACH	10.000	10.000
0132	611.3901	Inlets Median 1 Grate	EACH	4.000	4.000
0134	611.3902	Inlets Median 2 Grate	EACH	2.000	2.000
0136	611.8110	Adjusting Manhole Covers	EACH	6.000	6.000
0138	611.8115	Adjusting Inlet Covers	EACH	3.000	3.000

Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0140	611.9800.S	Pipe Grates	EACH	2.000	2.000
0142	614.1000	MGS Guardrail Temporary	LF	475.000	475.000
0144	614.1200	MGS Guardrail Temporary Terminal EAT	EACH	1.000	1.000
0146	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7110-05-72	EACH	1.000	1.000
0148	619.1000	Mobilization	EACH	1.000	1.000
0150	620.0300	Concrete Median Sloped Nose	SF	188.000	188.000
0152	624.0100	Water	MGAL	300.000	300.000
0154	625.0100	Topsoil	SY	4,580.000	4,580.000
0156	625.0500	Salvaged Topsoil	SY	22,100.000	22,100.000
0158	627.0200	Mulching	SY	18,620.000	18,620.000
0160	628.1504	Silt Fence	LF	4,175.000	4,175.000
0162	628.1520	Silt Fence Maintenance	LF	4,175.000	4,175.000
0164	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0166	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0168	628.2004	Erosion Mat Class I Type B	SY	3,350.000	3,350.000
0170	628.2008	Erosion Mat Urban Class I Type B	SY	6,250.000	6,250.000
0172	628.7005	Inlet Protection Type A	EACH	25.000	25.000
0174	628.7010	Inlet Protection Type B	EACH	5.000	5.000
0176	628.7015	Inlet Protection Type C	EACH	13.000	13.000
0178	628.7020	Inlet Protection Type D	EACH	4.000	4.000
0180	628.7504	Temporary Ditch Checks	LF	108.000	108.000
0182	628.7555	Culvert Pipe Checks	EACH	30.000	30.000
0184	628.7560	Tracking Pads	EACH	2.000	2.000
0186	629.0210	Fertilizer Type B	CWT	19.000	19.000
0188	630.0171	Seeding Mixture No. 70A	LB	110.000	110.000
0190	630.0200	Seeding Temporary	LB	785.000	785.000
0192	633.1100	Delineators Temporary	EACH	12.000	12.000
0194	633.5200	Markers Culvert End	EACH	15.000	15.000
0196	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0198	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	28.000	28.000
0200	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	21.000	21.000
0202	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	4.000	4.000
0204	637.2210	Signs Type II Reflective H	SF	786.730	786.730
0206	637.2215	Signs Type II Reflective H Folding	SF	52.220	52.220
0208	637.2230	Signs Type II Reflective F	SF	72.000	72.000
0210	638.2102	Moving Signs Type II	EACH	7.000	7.000
0212	638.2602	Removing Signs Type II	EACH	60.000	60.000
0214	638.3000	Removing Small Sign Supports	EACH	36.000	36.000
0216	642.5201	Field Office Type C	EACH	1.000	1.000

Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0218	643.0300	Traffic Control Drums	DAY	24,640.000	24,640.000
0220	643.0420	Traffic Control Barricades Type III	DAY	3,270.000	3,270.000
0222	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	400.000	400.000
0224	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	400.000	400.000
0226	643.0705	Traffic Control Warning Lights Type A	DAY	6,540.000	6,540.000
0228	643.0715	Traffic Control Warning Lights Type C	DAY	6,460.000	6,460.000
0230	643.0800	Traffic Control Arrow Boards	DAY	270.000	270.000
0232	643.0900	Traffic Control Signs	DAY	13,240.000	13,240.000
0234	643.1051	Traffic Control Signs PCMS with Cellular Communications	DAY	188.000	188.000
0236	643.5000	Traffic Control	EACH	1.000	1.000
0238	644.1420.S	Temporary Pedestrian Surface Plywood	SF	340.000	340.000
0240	644.1601.S	Temporary Curb Ramp	EACH	8.000	8.000
0242	644.1616.S	Temporary Pedestrian Safety Fence	LF	910.000	910.000
0244	645.0120	Geotextile Type HR	SY	670.000	670.000
0246	646.1020	Marking Line Epoxy 4-Inch	LF	1,245.000	1,245.000
0248	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	18,180.000	18,180.000
0250	646.1555	Marking Line Grooved Contrast Permanent Tape 4-Inch	LF	3,050.000	3,050.000
0252	646.3020	Marking Line Epoxy 8-Inch	LF	1,045.000	1,045.000
0254	646.3555	Marking Line Grooved Contrast Permanent Tape 8-Inch	LF	3,740.000	3,740.000
0256	646.5020	Marking Arrow Epoxy	EACH	7.000	7.000
0258	646.5120	Marking Word Epoxy	EACH	2.000	2.000
0260	646.6120	Marking Stop Line Epoxy 18-Inch	LF	328.000	328.000
0262	646.7220	Marking Chevron Epoxy 24-Inch	LF	20.000	20.000
0264	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	1,546.000	1,546.000
0266	646.8120	Marking Curb Epoxy	LF	110.000	110.000
0268	646.8220	Marking Island Nose Epoxy	EACH	4.000	4.000
0270	646.9000	Marking Removal Line 4-Inch	LF	9,215.000	9,215.000
0272	649.0105	Temporary Marking Line Paint 4-Inch	LF	11,600.000	11,600.000
0274	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	36,191.000	36,191.000
0276	649.0205	Temporary Marking Line Paint 8-Inch	LF	860.000	860.000
0278	649.0250	Temporary Marking Line Removable Tape 8-Inch	LF	1,140.000	1,140.000
0280	649.0505	Temporary Marking Arrow Paint	EACH	8.000	8.000
0282	649.0550	Temporary Marking Arrow Removable Tape	EACH	8.000	8.000
0284	649.0805	Temporary Marking Stop Line Paint 18-Inch	LF	92.000	92.000
0286	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	92.000	92.000
0288	650.4000	Construction Staking Storm Sewer	EACH	28.000	28.000
0290	650.4500	Construction Staking Subgrade	LF	5,000.000	5,000.000
0292	650.5000	Construction Staking Base	LF	5,000.000	5,000.000
0294	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	7,090.000	7,090.000

Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0296	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0298	650.7000	Construction Staking Concrete Pavement	LF	12,350.000	12,350.000
0300	650.8500	Construction Staking Electrical Installations (project) 01. 7110-05-72	LS	1.000	1.000
0302	650.9000	Construction Staking Curb Ramps	EACH	11.000	11.000
0304	650.9910	Construction Staking Supplemental Control (project) 01. 7110-05-72	LS	1.000	1.000
0306	650.9920	Construction Staking Slope Stakes	LF	9,355.000	9,355.000
0308	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	6,354.000	6,354.000
0310	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	4,196.000	4,196.000
0312	652.0615	Conduit Special 3-Inch	LF	189.000	189.000
0314	652.0700.S	Install Conduit into Existing Item	EACH	8.000	8.000
0316	652.0800	Conduit Loop Detector	LF	3,292.000	3,292.000
0318	653.0135	Pull Boxes Steel 24x36-Inch	EACH	28.000	28.000
0320	653.0140	Pull Boxes Steel 24x42-Inch	EACH	37.000	37.000
0322	653.0900	Adjusting Pull Boxes	EACH	7.000	7.000
0324	653.0905	Removing Pull Boxes	EACH	39.000	39.000
0326	654.0101	Concrete Bases Type 1	EACH	26.000	26.000
0328	654.0102	Concrete Bases Type 2	EACH	5.000	5.000
0330	654.0105	Concrete Bases Type 5	EACH	20.000	20.000
0332	654.0110	Concrete Bases Type 10	EACH	4.000	4.000
0334	654.0113	Concrete Bases Type 13	EACH	4.000	4.000
0336	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	3.000	3.000
0338	655.0230	Cable Traffic Signal 5-14 AWG	LF	1,452.000	1,452.000
0340	655.0240	Cable Traffic Signal 7-14 AWG	LF	10,953.000	10,953.000
0342	655.0260	Cable Traffic Signal 12-14 AWG	LF	7,557.000	7,557.000
0344	655.0270	Cable Traffic Signal 15-14 AWG	LF	447.000	447.000
0346	655.0290	Cable Traffic Signal 21-14 AWG	LF	1,012.000	1,012.000
0348	655.0320	Cable Type UF 2-10 AWG Grounded	LF	6,248.000	6,248.000
0350	655.0510	Electrical Wire Traffic Signals 12 AWG	LF	8,882.000	8,882.000
0352	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	13,222.000	13,222.000
0354	655.0615	Electrical Wire Lighting 10 AWG	LF	4,077.000	4,077.000
0356	655.0700	Loop Detector Lead In Cable	LF	17,557.000	17,557.000
0358	655.0800	Loop Detector Wire	LF	10,626.000	10,626.000
0360	655.0900	Traffic Signal EVP Detector Cable	LF	5,065.000	5,065.000
0362	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. STH 37 & Hamilton Avenue	LS	1.000	1.000
0364	656.0200	Electrical Service Meter Breaker Pedestal (location) 02. STH 37 & Craig Road	LS	1.000	1.000
0366	656.0200	Electrical Service Meter Breaker Pedestal (location) 03. USH 12 & STH 37	LS	1.000	1.000

Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0368	657.0100	Pedestal Bases	EACH	23.000	23.000
0370	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	28.000	28.000
0372	657.0305	Poles Type 2	EACH	1.000	1.000
0374	657.0315	Poles Type 4	EACH	7.000	7.000
0376	657.0322	Poles Type 5-Aluminum	EACH	20.000	20.000
0378	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	3.000	3.000
0380	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	15.000	15.000
0382	657.0430	Traffic Signal Standards Aluminum 10-FT	EACH	5.000	5.000
0384	657.0585	Trombone Arms 15-FT	EACH	1.000	1.000
0386	657.0609	Luminaire Arms Single Member 4-Inch Clamp 6-FT	EACH	11.000	11.000
0388	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	5.000	5.000
0390	657.0715	Luminaire Arms Truss Type 4 1/2-Inch Clamp 15-FT	EACH	15.000	15.000
0392	657.1345	Install Poles Type 9	EACH	4.000	4.000
0394	657.1355	Install Poles Type 12	EACH	4.000	4.000
0396	657.1525	Install Monotube Arms 25-FT	EACH	1.000	1.000
0398	657.1530	Install Monotube Arms 30-FT	EACH	3.000	3.000
0400	657.1535	Install Monotube Arms 35-FT	EACH	3.000	3.000
0402	657.1540	Install Monotube Arms 40-FT	EACH	1.000	1.000
0404	658.0171	Traffic Signal Face 1S 12-Inch	EACH	2.000	2.000
0406	658.0173	Traffic Signal Face 3S 12-Inch	EACH	37.000	37.000
0408	658.0174	Traffic Signal Face 4S 12-Inch	EACH	21.000	21.000
0410	658.0416	Pedestrian Signal Face 16-Inch	EACH	16.000	16.000
0412	658.0500	Pedestrian Push Buttons	EACH	22.000	22.000
0414	658.5069	Signal Mounting Hardware (location) 01. STH 37 & Hamilton Ave / Short Street	LS	1.000	1.000
0416	658.5069	Signal Mounting Hardware (location) 02. STH 37 & Craig Road	LS	1.000	1.000
0418	658.5069	Signal Mounting Hardware (location) 03. STH 37 & USH 12	LS	1.000	1.000
0420	659.1115	Luminaires Utility LED A	EACH	15.000	15.000
0422	659.1125	Luminaires Utility LED C	EACH	16.000	16.000
0424	661.0200	Temporary Traffic Signals for Intersections (location) 01. STH 37 & Hamilton Avenue	LS	1.000	1.000
0426	661.0200	Temporary Traffic Signals for Intersections (location) 02. STH 37 & Craig Road	LS	1.000	1.000
0428	661.0300	Generators 02. STH 37 & Craig Road	DAY	4.000	4.000
0430	671.0112	Conduit HDPE 1-Duct 2-Inch	LF	5,177.000	5,177.000
0432	671.0300	Fiber Optic Cable Marker	EACH	21.000	21.000
0434	678.0006	Install Fiber Optic Cable Outdoor Plant 6-CT	LF	6,896.000	6,896.000
0436	690.0150	Sawing Asphalt	LF	248.000	248.000
0438	690.0250	Sawing Concrete	LF	4,520.000	4,520.000

Estimate Of Quantities

7110-05-72

Line	Item	Item Description	Unit	Total	Qty
0440	715.0415	Incentive Strength Concrete Pavement	DOL	14,700.000	14,700.000
0442	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	630.000	630.000
0444	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	2,000.000	2,000.000
0446	SPV.0090	Special 01. Install State Supplied Cat 5e Cable	LF	7,725.000	7,725.000
0448	SPV.0090	Special 02. Concrete Curb & Gutter Cure & Seal Treatment	LF	7,090.000	7,090.000
0450	SPV.0105	Special 01. Remove & Salvage Traffic Signals, STH 37 & Hamilton Avenue / Short Street	LS	1.000	1.000
0452	SPV.0105	Special 02. Remove & Salvage Traffic Signals, STH 37 & Craig Road	LS	1.000	1.000
0454	SPV.0105	Special 03. Remove & Salvage Traffic Signals, USH 12 & STH 37	LS	1.000	1.000
0456	SPV.0105	Special 04. Install State Furnished EVP Detector Heads, STH 37 & Hamilton Ave / Short St	LS	1.000	1.000
0458	SPV.0105	Special 05. Install State Furnished EVP Detector Heads, STH 37 & Craig Road	LS	1.000	1.000
0460	SPV.0105	Special 06. Temporary Vehicle Detection, STH 37 & Hamilton Ave / Short Street	LS	1.000	1.000
0462	SPV.0105	Special 07. Temporary Vehicle Detection, STH 37 & Craig Road	LS	1.000	1.000
0464	SPV.0105	Special 08. Temporary EVP system, STH 37 & Hamilton Avenue / Short Street	LS	1.000	1.000
0466	SPV.0105	Special 09. Temporary EVP System, STH 37 & Craig Road	LS	1.000	1.000
0468	SPV.0105	Special 10. Project Concrete Crack Mitigation & Repair Special	LS	1.000	1.000
0470	SPV.0105	Special 11. Construction Staking Concrete Pavement Joint Layout	LS	1.000	1.000
0472	SPV.0105	Special 12. Remove, Salvage & Reinstall Drainage Pipe, STA 83+71 LT	LS	1.000	1.000
0474	SPV.0165	Special 01. Concrete Loading Zone Cure & Seal Treatment	SF	8,460.000	8,460.000
0476	SPV.0165	Special 02. Concrete Sidewalk Cure & Seal Treatment	SF	7,640.000	7,640.000
0478	SPV.0165	Special 03. Concrete Median Slope Nose Cure & Seal Treatment	SF	188.000	188.000
0480	SPV.0165	Special 04. Concrete Safety Island Cure & Seal Treatment	SF	8,610.000	8,610.000
0482	SPV.0195	Special 01. Temporary Base Aggregate	TON	1,845.000	1,845.000

201-CLEARING AND GRUBBING

CATEGORY	STATION TO	STATION	LOCATION	201.0105 STA	201.0205 STA
0010	79+00	- 84+00	SB LT	5	5
TOTAL 0010				5	5

204-REMOVING STORM SEWER

CATEGORY	STATION TO	STATION	LOCATION	MANHOLES 204.0210 EACH	INLETS 204.0220 EACH	12-INCH 204.0245.01 LF	18-INCH 204.0245.02 LF	24-INCH 204.0245.03 LF	36-INCH 204.0245.04 LF	ENDWALLS 204.9060.S.01 EACH	REMARKS
0010		25+59	26' RT	1							HAMILTON AVE.
		25+92	22' RT		1						HAMILTON AVE.
		25+58	50' RT		1						HAMILTON AVE.
		51+74	NB 11 LT		1						
		51+74	SB 1' RT		1						
		51+88	NB 49' RT		1						
		25+61	32' RT		1						HAMILTON AVE. MEDIAN
		53+75	SB 24' RT		1						
		83+61	NB 40' RT		1						
		8+32	23' LT		1						CRAIG RD.
		85+32	NB 17' LT		1						
		10+87	46' LT		1						CRAIG RD.
		11+30	45' RT	1							CRAIG RD.
		11+36	24' RT		1						CRAIG RD.
		11+73	34' RT	1							CRAIG RD.
	25+92 -	25+93	HAMILTON AVE.			30					
	83+61 -	83+96	NB RT			39					CRAIG RD.
	8+32 -	8+88	CRAIG ROAD LT			58					
	85+32 -	85+38	NB LT			10					
	85+97 -	86+13	SB LT			21					
	85+38 -	85+59	NB LT				20				
		85+38	NB LT & RT				54				
		51+74	SB LT & RT				87				
	50+25 -	51+88	NB RT					166			HAMILTON AVE.
	82+10 -	82+25	NB RT					30			
	84+17 -	85+07	SB LT						63		CRAIG RD.
	84+93 -	85+20	NB RT					26			
	85+07 -	86+13	SB LT						106		CRAIG RD.
		81+74	58' SB LT							1	
		82+27	42' NB RT							1	
		85+22	70' NB RT							1	
		85+38	44' NB RT							1	
		85+60	14' NB LT							1	
		86+21	68' SB LT							1	
TOTAL 0010				3	12	158	161	222	169	6	

REMOVING PAVEMENT

				204.0100		
CATEGORY	STATION TO	STATION	LOCATION	SY	REMARKS	
0010	39+25	- 100+82	NB STH 37	16,600	MAINLINE	
	39+25	- 101+17	SB STH 37	16,700	MAINLINE	
	46+00	- 50+30	NB STH 37	390	RT TURN LANE	
	46+00	- 50+30	NB STH 37	535	LT TURN LANE	
	49+00	- 50+00	SB STH 37	70	TAPER	
	51+70	- 56+70	SB STH 37	490	RT TURN LANE	
	51+70	- 54+50	SB STH 37	560	LT TURN LANE	
	42+05	- 44+68	SHORT ST MEDIAN	400 450	SHORT/HAMILTON	
	77+60	- 84+55	NB STH 37	1,280	LT TURN LANE/ISLAND	
	85+20	- 88+00	SB STH 37	590	LT TURN LANE/ISLAND	
	99+00	- 100+82	NB STH 37	120	RT TURN LANE	
	81+70	- 84+16	SB STH 37	250	DITCH BOTTOM	
TOTAL 0010				<u>38,435</u>		

REMOVING CONCRETE SIDEWALK

				204.0155		
CATEGORY	LOCATION	SY	REMARKS			
0010	HAMILTON	13	RAMPS			
	CRAIG RD/STH 37	20	SW QUAD			
	CRAIG RD/STH 37	42	SE QUAD			
	CRAIG RD/STH 37	74	NW QUAD			
	CRAIG RD/STH 37	30	NE QUAD			
	CRAIG RD/STH 37	48	NB ISLAND			
	CRAIG RD/STH 37	80	NB ISLAND			
	CRAIG RD/STH 37	76	SB ISLAND			
	CRAIG RD/STH 37	23	SB ISLAND			
	CLAIREMONT/STH 37	170	SE QUAD			
	CLAIREMONT/STH 37	13	ISLAND			
	CLAIREMONT	11	NW QUAD			
TOTAL 0010				<u>600</u>		

REMOVING ASPHALTIC SURFACE

				204.0110		
CATEGORY	STATION TO	STATION	LOCATION	SY	REMARKS	
0010	40+00	- 45+93	CROSSOVER A-B	2,300		
	94+00	- 98+83	CROSSOVER C-D	1,600		
	40+54	- 44+15	SHORT ST.	350		
	52+00	- 56+00	NB	300		
	85+50	- 89+50	NB	330		
TOTAL 0010				<u>4,880</u>		

REMOVING CURB & GUTTER

				204.0150		
CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS	
0010	25+37	- 26+63	HAMILTON AVE.	160	SE RADIUS	
	25+37	- 26+63	HAMILTON AVE.	160	NE RADIUS	
	25+36	- 25+72	HAMILTON AVE.	100	ISLAND	
	397+60	- 398+51	CRAIG RD	100	RIGHT	
	397+60	- 83+60	CRAIG RD/STH 37	170	SW RADIUS	
	399+00	- 85+60	CRAIG RD/STH 37	145	SE RADIUS	
	84+34	- 402+00	CRAIG RD/STH 37	175	NW RADIUS	
	402+00	- 86+09	CRAIG RD/STH 37	130	NE RADIUS	
	101+80	- 101+94	NB MEDIAN	14		
	101+80	- 101+94	SB MEDIAN	14		
	101+85	- 101+95	NB	10	RT TURN LANE	
	101+88	- 102+14	ISLAND	36	3 SECTIONS	
	155+20	- 101+15	CLAIREMONT/STH 37	125		
	155+85	- 156+18	CLAIREMONT	35		
TOTAL 0010				<u>1,374</u>		

EARTHWORK SUMMARY

FILL FACTOR = 1.3

CATEGORY	STATION TO	STATION	LOCATION	EXCAVATION COMMON 205.0100 CY	(1) AVAILABLE MATERIAL CY	EXPANDED FILL CY	BORROW 208.0100 CY	WASTE CY	REMARKS
0010	39+25	- 51+00	NB ROADWAY	660	590	120	0	470	
	51+00	- 84+00	NB ROADWAY	1,780	1,540	8,390	0	0	
	84+00	- 100+82	NB ROADWAY	1,000	880	150	0	730	
	39+25	- 51+00	SB ROADWAY	990	900	0	0	900	
	51+00	- 84+00	SB ROADWAY	3,190	2,910	3,910	1,000	0	
	84+00	- 101+12	SB ROADWAY	1,290	1,160	560	0	600	
	40+00	- 45+93	CROSSOVER	425	380	110	0	270	CONSTRUCTION
	94+36	- 99+00	CROSSOVER	660	620	0	0	620	CONSTRUCTION
	40+00	- 45+93	CROSSOVER	110	110	0	0	110	REMOVE AND RESTORE
	96+00	- 99+00	CROSSOVER	0	0	520	520	0	REMOVE AND RESTORE
			ISLAND REMOVALS	190	0	0	0	190	
			WIDENINGS	240	0	0	0	240	
	40+75	- 44+68	SHORT ST.	315	180	240	60	0	
	25+32	- 26+63	HAMILTON AVE.	1,180	1,080	110	0	970	
	8+00	- 12+11	CRAIG RD.	730	730	100	0	630	
		CLAIREMONT AVE.	80	80	10	0	70		
		TOTAL 0010		12,840	11,160	14,220	1,580	5,800	
0030	51+00	- 84+00	NB ROADWAY	0	0	0	6,850		
	233+69	- 251+66	SHARED PATH	135	135	735	600		
	40+75	- 44+68	SHORT ST.	120	120	920	800		
	95+50	- 101+25	SIDEWALK	60	60	135	75		
			TOTAL 0030		315		8,325		

(1) ASPHALTIC PAVEMENT IS INCLUDED IN THE QUANTITY OF EXCAVATION COMMON BUT NOT INCLUDED IN THE QUANTITY OF AVAILABLE MATERIAL.

305-BASE AGGREGATE DENSE

PREPARE FOUNDATION FOR BASE AGGREGATE

CATEGORY	STATION TO	STATION	LOCATION	211.0500 STA	REMARKS	305.0110 TON	305.0120 TON	WATER 624.0100 MGAL	REMARKS
0010	39+25	- 100+82	NB	62		375	6,600	150	
	39+25	- 101+12	SB	62		425	7,425	150	
	25+32	- 26+63	HAMILTON AVE				340		
	40+54	- 44+68	SHORT STREET				565		
	42+05	- 44+00	SHORT ST.	2			580		
		TOTAL 0010		126		800	15,565	300	
0030	51+65	- 251+67	SHARED USE PATH				2,225		
			SHARED USE PATH				80		SHORT ST.
		TOTAL 0030				0	2305	0	

CONCRETE PAVEMENT 8 1/2-INCH

CATEGORY	STATION TO	STATION	LOCATION	415.0085 SY	REMARKS
0010	39+25	- 100+82	NB	17,787	
	39+25	- 101+15	SB	17,882	
	45+70	- 53+20	NB RT TURN	507	
	43+75	- 50+50	NB LT TURN	867	
	50+50	- 51+30	MEDIAN	201	
	25+32	- 26+63	HAMILTON AVE.	1,574	
	42+05	- 44+68	SHORT STR.	2,437	
	49+00	- 56+75	SB RT TURN	475	
	51+50	- 58+00	SB LT TURN	833	
	77+50	- 83+50	NB RT TURN	713	
	76+50	- 84+50	NB LT TURN	1,176	
	8+00	- 9+39	CRAIG RD SO	1,498	
	10+61	- 12+11	CRAIG RD NO	1,184	
	86+00	- 91+00	SB RT TURN	547	
	85+20	- 91+50	SB LT TURN	924	
	84+50	- 85+20	MEDIAN	310	
			SW RADIUS	130	USH 12
TOTAL 0010				49,045	

CONCRETE PAVEMENT GAPS

CATEGORY	LOCATION	415.0210 EACH	REMARKS
0010	NB	1	
	NB	1	
	SB	1	
	SB	1	
TOTAL 0010		4	

CONCRETE SHOULDER RUMBLE STRIPS

CATEGORY	STATION TO	STATION	LOCATION	416.1110 LF	REMARKS
0010	39+25	- 49+00	SB LT	975	
	39+25	- 45+00	NB RT	575	
	56+75	- 84+30	SB LT	2,755	
	58+00	- 77+50	NB RT	1,950	
	85+50	- 96+75	NB RT	1,125	
	91+00	- 100+70	SB LT	970	
TOTAL 0010				8,350	

DRILLED DOWEL BARS

CATEGORY	STATION	LOCATION	416.0620 EACH	REMARKS
0010	39+25	NB	24	
	39+25	SB	24	
	100+82	NB	36	
	101+12	SB	24	
TOTAL 0010			108	

CONCRETE SURFACE DRAINS

CATEGORY	STATION	LOCATION	416.1010 CY	REMARKS
0010	44+54	NB	2	
	48+25	SB	2.2	
	49+78	NB	2.2	
	54+13	SB	2.2	
	77+50	NB	2.2	
	79+00	NB	1.4	
	80+12	NB	2.4	
	84+33	SB	2.9	
	96+00	NB	2.5	
	96+00	SB	2.5	
TOTAL 0010			22.5	

TACK COAT

CATEGORY	STATION TO	STATION	LOCATION	455.0605 GAL	REMARKS
0010	39+25	- 101+12	PROJECT LT & RT	275 490	CROSSOVERS & WIDENINGS SHOULDERS
TOTAL 0010				765	

DRILLED TIE BARS

CATEGORY	STATION TO	STATION	LOCATION	416.0610 EACH	REMARKS
0010	39+25	- 45+00	USH 12 INT. NB	68 192	SW QUAD.
	39+25	- 45+00	SB	192	
	94+50	- 100+82	NB	210	
	94+50	- 100+98	SB	216	
TOTAL 0010				878	

HMA PAVEMENT 4 LT 58-34 S

CATEGORY	STATION TO	STATION	LOCATION	460.5244 TON	REMARKS
0010	39+25	- 100+80	NB RIGHT	565	
	39+25	- 96+00	NB LEFT	330	
	39+25	- 96+00	SB RIGHT	330	
	39+25	- 100+70	SB LEFT	690	
TOTAL 0010				1,915	

ASPHALTIC SURFACE

465.0105					
CATEGORY	STATION TO	STATION	LOCATION	TON	REMARKS
0030	51+50	- 101+50	SHARED USE PATH	630	
			SHARED USE PATH	20	SHORT ST.
TOTAL 0030				650	

ASPHALTIC SHOULDER RUMBLE STRIPS

465.0400					
CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	39+25	- 43+75	NB LT	450	
	39+25	- 48+25	SB RT	900	
	53+60	- 76+50	NB LT	2,290	
	58+00	- 84+20	SB RT	2,620	
	91+00	- 96+00	SB RT	500	
	85+60	- 96+00	NB LT	1,040	
TOTAL 0010				7,800	

ASPHALTIC SURFACE TEMPORARY

465.0125					
CATEGORY	STATION TO	STATION	LOCATION	TON	REMARKS
0010	40+00	- 45+93	CROSSOVER A & B	650	
	94+00	- 98+83	CROSSOVER C & D	450	
			NB	65	ISLAND REMOVAL
			SHORT ST.	15	ISLAND REMOVAL
			NB	55	ISLAND REMOVAL
	44+50	- 49+00	NB	90	TEMPORARY WIDENING
			HAMILTON AVE	5	ISLAND REMOVAL
	52+00	- 56+00	NB	85	TEMPORARY WIDENING
			NB	20	ISLAND REMOVAL
	78+50	- 81+75	NB	20	TEMPORARY WIDENING
	85+50	- 89+50	NB	95	TEMPORARY WIDENING
TOTAL 0010				1,550	

522-CULVERT PIPE REINFORCED CONCRETE

CLEANING CULVERT PIPES

520.8700				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	73+90	NB & MEDIAN	1	
	75+99	NB & SB	1	
	97+12	NB & SB	1	
TOTAL 0010			3	

CATEGORY	STATION TO	STATION	LOCATION	CLASS III 24-INCH 522.0124	APRON ENDWALLS 12-INCH 522.1012	APRON ENDWALLS 18-INCH 522.1018	APRON ENDWALLS 24-INCH 522.1024	APRON ENDWALLS 30-INCH 522.1030	APRON ENDWALLS 36-INCH 522.1036	APRON ENDWALLS SALVAGED 36-INCH 524.0636
0010	42+79		SHORT ST		1					
	51+97		SB LT			1				
	80+99		SB LT					1		
	86+42		SB LT						1	
	84+55		SB LT							1
	86+54		NB RT		1					
TOTAL 0010				0	2	1	0	1	1	1
0030	74+29	- 75+25	NB RT	98						
		75+99	NB RT	26						
		74+29	NB RT				1			
		75+25	NB RT				1			
		75+99	NB RT				1			
TOTAL 0030				124	0	0	3	0	0	0

601-CONCRETE CURB & GUTTER

CATEGORY	STATION TO	STATION	LOCATION	30-INCH TYPE D 601.0411 LF	36-INCH TYPE A 601.0551 LF	CONSTRUCTION STAKING 650.5500 LF	CURE AND SEAL TREATMENT SPV.0090.02 LF
0010	44+54	- 50+53	NB		600	600	600
	48+75	- 50+53	SB		180	180	180
			SE HAMILTON AVE		175	175	175
			SW SHORT		130	130	130
	40+54	- 43+65	SHORT ST	310		310	310
			NE HAMILTON		180	180	180
			NW SHORT		145	145	145
	42+40	- 43+54	SHORT ST	110		110	110
	51+46	- 53+53	NB		205	205	205
	51+46	- 56+58	SB		510	510	510
	52+15	- 58+00	NB		585	585	585
	77+50	- 84+10	NB		660	660	660
	79+00	- 83+29	NB		430	430	430
	81+82	- 84+39	SB		260	260	260
			SW CRAIG		130	130	130
			NW CRAIG	50	85	135	135
			SE CRAIG		175	175	175
			NE CRAIG	50	105	155	155
	85+51	- 87+65	NB		215	215	215
	85+81	- 92+00	SB		620	620	620
	96+00	- 100+82	NB		480	480	480
	96+00	- 101+12	SB		510	510	510
			SW CLAIREMONT		140	140	140
			SE CLAIREMONT		15	15	15
			NW CLAIREMONT		35	35	35
			TOTAL 0010	520	6,570	7,090	7,090

602-CONCRETE LOADING ZONE

CATEGORY	STATION TO	STATION	LOCATION	602.1000 SF	CURE AND SEAL TREATMENT SPV.0165.01 SF	REMARKS
0010	48+65	- 50+75	NB LT	2,190	2,190	
	51+24	- 53+27	SB RT	2,180	2,180	
	82+50	- 84+45	NB LT	2,090	2,090	
	85+45	- 87+28	SB RT	2,000	2,000	
			TOTAL 0010	8,460	8,460	

602-CONCRETE SAFETY ISLANDS

CATEGORY	LOCATION	602.2400 SF	CURE AND SEAL TREATMENT SPV.0165.04 SF	REMARKS
0010	HAMILTON AVE. RT	810	810	
	SHORT ST. RT	1,430	1,430	
	HAMILTON AVE. LT	810	810	
	SHORT ST. LT	1,010	1,010	
	CRAIG RD. LT	1,050	1,050	
	CRAIG RD. LT	810	810	
	CRAIG RD. RT	720	720	
	CRAIG RD. RT	830	830	
	CLAIREMONT RT	1,140	1,140	
	TOTAL 0010	8,610	8,610	

602-CONCRETE SIDEWALK

CATEGORY	STATION TO	STATION	LOCATION	602.0410 SF	CURE AND SEAL TREATMENT SPV.0165.02 SF	REMARKS
0010	25+65	- 26+18	HAMILTON AVE. RT	380	380	
	25+65	- 26+62	HAMILTON AVE. LT	690	690	
		42+47	SHORT ST.	160	160	
		44+33	SHORT ST.	170	170	
	8+00	- 8+70	CRAIG RD LT	590	590	
	10+60	- 11+58	CRAIG RD LT	620	620	
	9+18	- 9+36	CRAIG RD. RT	160	160	
	11+35	- 12+25	CRAIG RD. RT	540	540	
	155+72	- 156+16	USH 12	540	540	
		156+01	USH 12	30	30	
	156+36	- 156+44	USH 12	40	40	
	156+77	- 156+99	USH 12	180	180	
			TOTAL 0010	4,100	4,100	
0030	95+79	- 100+97	SB LT	3,110	3,110	
			PATH	430	430	AT FRONTAGE ROAD
		TOTAL 0030	3,540	3,540		

CURB RAMP DETECTABLE WARNING FIELD YELLOW

606-RIPRAP

602.0505			
CATEGORY	LOCATION	SF	REMARKS
0010	SE ISLAND	8	HAMILTON AVE. INT.
	SE ISLAND	8	HAMILTON AVE. INT.
	SE RADIUS	8	HAMILTON AVE. INT.
	NW RADIUS	16	SHORT ST. INT.
	NW ISLAND	16	SHORT ST. INT.
	NW ISLAND	16	SHORT ST. INT.
	SB MEDIAN	16	
	SB MEDIAN	16	
	NE ISLAND	16	HAMILTON AVE. INT.
	NE ISLAND	16	HAMILTON AVE. INT.
	NE ISLAND	8	HAMILTON AVE. INT.
	NE RADIUS	16	HAMILTON AVE. INT.
	SW RADIUS	16	CRAIG INT.
	SW ISLAND	8	CRAIG INT.
	SW ISLAND	16	CRAIG INT.
	SW ISLAND	16	CRAIG INT.
	SE RADIUS	16	CRAIG INT.
	SE ISLAND	16	CRAIG INT.
	SE ISLAND	16	CRAIG INT.
	SE ISLAND	8	CRAIG INT.
	NB MEDIAN	8	CRAIG INT.
	NB MEDIAN	8	CRAIG INT.
	NW RADIUS	8	CRAIG INT.
	NW ISLAND	8	CRAIG INT.
	NW ISLAND	8	CRAIG INT.
	SB MEDIAN	8	CRAIG INT.
	SB MEDIAN	8	CRAIG INT.
	NE RADIUS	8	CRAIG INT.
	NE ISLAND	8	CRAIG INT.
	NE ISLAND	8	CRAIG INT.
	SW RADIUS	8	CLAIREMONT INT.
	SW ISLAND	8	CLAIREMONT INT.
	SW ISLAND	8	CLAIREMONT INT.
	SW ISLAND	8	CLAIREMONT INT.
	EB MEDIAN	8	CLAIREMONT INT.
	EB MEDIAN	8	CLAIREMONT INT.
	SE RADIUS	16	CLAIREMONT INT.
	SE ISLAND	8	CLAIREMONT INT.
	SE ISLAND	8	CLAIREMONT INT.
	SE ISLAND	8	CLAIREMONT INT.
	WB MEDIAN	8	CLAIREMONT INT.
	WB MEDIAN	8	CLAIREMONT INT.
	NW RADIUS	16	CLAIREMONT INT.
TOTAL 0010		472	

CATEGORY	STATION TO	STATION	LOCATION	HEAVY 606.0300 CY	GEOTEXTILE TYPE HR 645.0120 SY	REMARKS
0010	81+00	- 83+50	SB LT	360	670	
TOTAL 0010				360	670	

608-STORM SEWER PIPE REINFORCED CONCRETE CLASS III

CATEGORY	STATION TO	STATION	LOCATION	12-INCH 608.0312 LF	18-INCH 608.0318 LF	24-INCH 608.0324 LF	30-INCH 608.0330 LF	36-INCH 608.0336 LF
0010	10+56	- 10+86	CRAIG RD. LT					44
	10+86	- 11+30	CRAIG RD. LT/RT					106
	11+31	- 11+37	CRAIG RD. RT					22
	40+00	- 45+48	MEDIAN		548			
		42+82	SHORT ST. LT	22				
	50+25	- 51+47	NB RT			130		
	50+46	- 50+51	NB RT	8				
	51+47	- 52+14	NB RT		84			
	51+64	- 51+81	NB RT	25				
	51+74	- 51+95	SB LT		80			
		52+14	NB RT	6				
	53+76	- 54+09	MEDIAN		32			
		55+00	NB RT	6				
		80+99	SB LT				16	
		82+10	NB RT	30				
	83+45	- 83+96	NB RT	53				
	8+32	- 8+88	CRAIG RD. LT	56				
	84+93	- 85+40	NB RT			46		
		85+60	NB LT	4				
	85+60	- 85+64	NB LT	6				
	85+60	- 87+71	MEDIAN		210			
	85+40	- 86+54	NB RT	115				
	85+40	- 85+60	NB LT & RT		74			
TOTAL 0010				331	1028	176	16	172
0030	52+14	- 58+50	NB RT		635			
TOTAL 0030				0	635	0	0	0

611-MANHOLES AND INLETS

CATEGORY	STATION	LOCATION	RECONSTRUCTING MANHOLES 611.0420 EACH	RECONSTRUCTING INLETS 611.0430 EACH	MANHOLE COVERS TYPE J 611.0530 EACH	INLET COVERS TYPE HM 611.0627 EACH	INLET COVERS TYPE MS 611.0642 EACH	CATCH BASINS 5-FT DIAMETER 611.1005 EACH	MANHOLES 3-FT DIAMETER 611.2003 EACH	MANHOLES 4-FT DIAMETER 611.2004 EACH	MANHOLES 5-FT DIAMETER 611.2005 EACH	INLETS 4-FT DIAMETER 611.3004 EACH	INLETS 2X3-FT 611.3230 EACH	INLETS MEDIAN 1 GRATE 611.3901 EACH	INLETS MEDIAN 2 GRATE 611.3902 EACH	ADJUSTING MANHOLE COVERS 611.8110 EACH	ADJUSTING INLET COVERS 611.8115 EACH	REMARKS
0010	40+00	MEDIAN		1														STRUCTURE 25
	50+74	NB RT	1															STRUCTURE 19
	74+51	NB RT	1															STRUCTURE 18
	76+94	NB RT	1															STRUCTURE 17
	79+90	NB RT														1		STRUCTURE 15
	81+56	NB RT														1		STRUCTURE 14
	82+10	NB RT	1															STRUCTURE 10
	83+96	NB RT														1		STRUCTURE 2
	11+30	CRAIG ROAD			1							1						STRUCTURE 32
	51+74	MEDIAN															1	STRUCTURE 31
	51+74	MEDIAN															1	STRUCTURE 14
	82+10	NB RT				1							1					STRUCTURE 9
	9+22	CRAIG ROAD															1	STRUCTURE 22
	52+14	NB RT			1					1								STRUCTURE 21
	55+00	NB RT			1				1									STRUCTURE 6
	85+60	MEDIAN			1					1								STRUCTURE 26
	25+70	HAMILTON AVE.				1						1						STRUCTURE 26
	25+76	HAMILTON AVE.				1							1					STRUCTURE 24
	25+81	HAMILTON AVE.				1						1						STRUCTURE 34
	42+82	SHORT ST.				1							1					STRUCTURE 22
	52+13	NB RT				1							1					STRUCTURE 21
	55+00	NB RT				1							1					STRUCTURE 10
	83+45	NB RT				1							1					STRUCTURE 10E
	8+32	CRAIG ROAD				1							1					STRUCTURE 6A
	85+60	MEDIAN				1							1					STRUCTURE 6B
	85+59	MEDIAN				1							1					STRUCTURE 3
	10+86	CRAIG ROAD				1		1										STRUCTURE 28
	11+51	CRAIG ROAD				1							1					STRUCTURE 50
	46+00	MEDIAN						1						1				STRUCTURE 23
	25+76	HAMILTON AVE.						2								1		STRUCTURE 30
	54+09	MEDIAN						1						1				STRUCTURE 20
	58+50	NB RT						1						1				STRUCTURE 7
	85+40	NB RT						2								1		STRUCTURE 5
	87+71	MEDIAN						1						1				STRUCTURE 41
	68+83	NB RT														1		STRUCTURE 40
	71+58	NB RT														1		
	26+12	HAMILTON AVE.														1		
	TOTAL 0010		4	1	4	13	8	1	1	2	1	2	10	4	2	6	3	

PIPE GRATES

MGS GUARDRAIL TEMPORARY

MGS GUARDRAIL TEMPORARY TERMINAL EAT

CATEGORY	STATION	LOCATION	611.9800.s EACH	REMARKS
0010	84+55	SB LT	1	
0010	86+42	SB LT	1	
TOTAL 0010			2	

CATEGORY	STATION TO	STATION	LOCATION	614.1000 LF	REMARKS
0010	79+00	- 83+75	SB LT	475	
TOTAL 0010				475	

CATEGORY	STATION	LOCATION	614.1200 EACH	REMARKS
0010	83+75	SB LT	1	
TOTAL 0010			1	

620-CONCRETE MEDIAN SLOPED NOSE

625-LANDSCAPING

CATEGORY	STATION TO	STATION	LOCATION	620.0300 SF	CURE AND SEAL TREATMENT SPV.0165.03 SF	REMARKS
0010	50+51		SB	70	70	
	51+48		NB	70	70	
	84+08		SB	24	24	
	85+53		NB	24	24	
TOTAL 0010				188	188	

CATEGORY	STATION TO	STATION	LOCATION	TOPSOIL 625.0100 SY	SALVAGED TOPSOIL 625.0500 SY	MULCHING 627.0200 SY	FERTILIZER TYPE B 629.0210 CWT	SEEDING MIXTURE # 70A 630.0171 LB	SEEDING TEMPORARY 630.0200 LB
0010	52+25	- 84+00	SB LT		10,500	7,080	6.6	40	285
	52+25	- 84+00	NB RT		4,750	2,200	3.0	17	130
	40+00	- 49+50	MEDIAN	1,250		1,250	0.8	5	35
	51+50	- 58+00	MEDIAN	430		430	0.3	2	10
	76+50	- 83+00	MEDIAN	400		400	0.3	1	10
	85+50	- 93+00	MEDIAN	1,000		1,000	0.6	5	30
	94+50	- 99+00	MEDIAN	1,100		1,100	0.7	5	30
	52+25	- 83+25	PATH RT		3,950	1,400	2.5	15	105
	233+75	- 251+68	PATH RT		1,300	790	0.8	5	35
	233+75	- 251+68	PATH LT		1,600	1,470	1.0	5	45
UNDISTRIBUTED				400		1,500	2.0	10	70
TOTAL 0010				4,580	22,100	18,620	19	110	785

628-EROSION MAT

CATEGORY	STATION TO	STATION	LOCATION	CLASS I TYPE B 628.2004 SY	URBAN CLASS I TYPE B 628.2008 SY	REMARKS
0010	25+60	- 26+72	HAMILTON AVE.	500		
	79+70	- 84+23	SB LT.	1,525		
	80+70	- 84+19	SB LT.	825		
	52+00	- 58+00	PATH RT.		470	
	58+50	- 79+00	NB RT.		2,060	
	74+50	- 83+12	PATH RT.		2,080	
	85+30	- 85+80	NB RT.		130	
	89+00	- 95+60	PATH RT.		510	
UNDISTRIBUTED				500	1,000	
TOTAL 0010				3,350	6,250	

628-INLET PROTECTION

CATEGORY	STATION	LOCATION	TYPE A 628.7005 EACH	TYPE B 628.7010 EACH	TYPE C 628.7015 EACH	TYPE D 628.7020 EACH	REMARKS
0010	40+00	MEDIAN	1				
	46+00	MEDIAN	1	1			
	25+70	HAMILTON AVE.	1		1		
	25+75	HAMILTON AVE.	1	1			
	25+76	HAMILTON AVE.	1		1		
	42+82	SHORT ST.	1		1		
	25+81	HAMILTON AVE.	1			1	
	25+58	HAMILTON AVE.	1			1	
	25+76	HAMILTON AVE.	1				
	51+75	SB	1		1		
	51+75	SB	1		1		
	52+13	NB	1		1		
	53+74	MEDIAN	1				
	55+00	NB	1		1		
	58+50	NB	1	1			
	82+10	NB	1		1		
	83+45	NB	1		1		
	8+32	CRAIG ROAD	1		1		
	9+22	CRAIG ROAD	1			1	
	10+86	CRAIG ROAD	1		1		
	11+51	CRAIG ROAD	1			1	
	85+40	NB	1	1			
	85+60	MEDIAN	1		1		
	85+64	MEDIAN	1		1		
	87+08	MEDIAN	1	1			
TOTAL 0010			25	5	13	4	

628-MOBILIZATIONS EROSION

CATEGORY	STATION	LOCATION	628.1905 EACH	EMERGENCY 628.1910 EACH	REMARKS
0010		PROJECT	6	4	
TOTAL 0010			6	4	

TRACKING PADS

CATEGORY	LOCATION	628.7560 EACH
0010	PROJECT	2
TOTAL 0010		2

637-PERMANENT SIGNING

CATEGORY	SIGN NUMBER	APPROXIMATE STATION	LOCATION	SIGN CODE	DESCRIPTION	SIGN SIZE	SIGNS	TYPE II	SIGNS	POSTS WOOD	POSTS WOOD	POSTS WOOD	POSTS WOOD	MOVING	REMOVING	REMOVING
							TYPE II REFLECTIVE H	REFLECTIVE H	TYPE II REFLECTIVE F	4X6-INCH X 14-FT	4X6-INCH X 16-FT	4X6-INCH X 18-FT	4X6-INCH X 20-FT	SIGNS	SIGNS	SMALL SIGN SUPPORTS
							637.2210	637.2215	637.2230	634.0614	634.0616	634.0618	634.0620	638.2102	638.2602	638.3000
							SF	SF	SF	EACH	EACH	EACH	EACH	EACH	EACH	EACH
0010	(1-2)	43+07	MEDIAN	R3-20-L	BEGIN LEFT TURN LANE	36 x 54	13.50					1			1	1
	(1-3)	44+02	NB	D1-2	TWO DESTINATIONS (ARROWS)	120 X 36	30.00					2				
	(1-4)	45+82	MEDIAN	J3-1	DIRECTIONAL ASSEMBLY (1 PANEL)	36 x 84	21.00						1		1	1
	(1-5)	45+82	SB	J3-2	DIRECTIONAL ASSEMBLY (2 PANEL)	72 x 84	42.00						2		1	2
	(1-6)	47+82	NB	R5-1A	WRONG WAY	42 x 30	8.75				1				1	
	(1-7)	48+72	MEDIAN	J1-1	JUNCTION ASSEMBLY	36 x 57	14.25					1			1	1
	(1-8)	48+72	SB	J1-1	JUNCTION ASSEMBLY	36 x 57	14.25					1			1	1
	(1-9)	49+82	NB	R6-2-L	ONE WAY LEFT ARROW	36 x 48	12.00								1	
	(1-10)	49+82	NB	R5-1	DO NOT ENTER	36 x 36	9.00					1			1	
	(1-11)	50+40	MEDIAN	R4-7	KEEP RIGHT	24 x 30	5.00								1	
	(1-12)	44+19	SHORT ST	R1-1F	STOP (FOLDING)	36 x 36		7.46			1				1	1
	(1-13)	43+49	SHORT ST												1	1
	(1-14)	25+79	HAMILTON AVE	R1-2	YIELD	36 x 31	3.88				1					
	(1-15)	44+28	SHORT ST	R1-1F	STOP (FOLDING)	36 x 36		7.46			1				1	
				R6-3	DIVIDED HIGHWAY CROSSING	30 x 24	5.00								1	
	(1-16)	50+72	MEDIAN	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50								1	
	(1-17)	51+30	MEDIAN	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50								1	
				R3-4	NO U-TURN	24 x 24	4.00									
	(1-18)	25+58	HAMILTON AVE	R1-1F	STOP (FOLDING)	36 x 36		7.46							1	
				R6-3	DIVIDED HIGHWAY CROSSING	30 x 24	5.00								1	
	(1-19)	51+56	MEDIAN	R4-7	KEEP RIGHT	24 x 30	5.00								1	
	(1-20)	44+35	SHORT ST	R1-2	YIELD	36 x 31	3.88				1					
	(1-21)	25+55	HAMILTON AVE	R1-1	STOP	36 x 36	7.46						1		1	1
				R1-53	RIGHT TURN OBEY THIS SIGN	24 x 30	5.00									
	(1-22)	52+03	SB	R5-1	DO NOT ENTER	36 x 36	9.00					1			1	
	(1-23)	52+03	SB	R6-2-L	ONE WAY LEFT ARROW	36 x 48	12.00								1	
	(1-24)	55+00	SB	R5-1A	WRONG WAY	42 x 30	8.75				1				1	
	(1-25)	55+00	NB											1		
	(1-26)	57+95	MEDIAN	R3-20-L	BEGIN LEFT TURN LANE	36 x 54	13.50					1			1	1
	(1-27)	57+95	SB	D1-2	TWO DESTINATIONS (ARROWS)	120 X 36	30.00				1		1			
	(1-28)	63+05	MEDIAN	W3-3	SIGNAL AHEAD	36 x 36			9.00						1	
	(1-29)	63+05	SB	W3-3	SIGNAL AHEAD	36 x 36			9.00						1	
	(1-30)	68+50	NB	D1-61	ADVANCED CROSSROAD NAME	66 X 30	13.75					2			1	1
	(1-31)	45+82	MEDIAN											1		
	(1-32)	42+50	SHORT ST											1		
	(1-33)	42+51	SB	M1-94H	CROSSROAD NAMES (ARROWS)	84 x 30	17.50									
	(1-34)	42+52	HAMILTON AVE	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50									
				M1-94S	CROSSROAD NAME	96 x 18	12.00									
	(1-35)	42+53	SHORT ST	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50									
				M1-94S	CROSSROAD NAME	96 x 18	12.00									
	(1-36)	42+54	NB	M1-94H	CROSSROAD NAMES (ARROWS)	84 x 30	17.50									
PAGE 1 SUBTOTALS							384.97	22.38	18.00	0.00	9.00	9.00	4.00	3.00	26.00	11.00

637-PERMANENT SIGNING CONTINUED

CATEGORY	SIGN NUMBER	APPROXIMATE STATION	LOCATION	SIGN CODE	SIGN DESCRIPTION	SIGN SIZE	SIGNS	TYPE II	SIGNS	POSTS WOOD	POSTS WOOD	POSTS WOOD	POSTS WOOD	MOVING	REMOVING	REMOVING
							TYPE II REFLECTIVE H 637.2210	REFLECTIVE H FOLDING 637.2215	TYPE II REFLECTIVE F 637.2230	4X6-INCH X 14-FT 634.0614	4X6-INCH X 16-FT 634.0616	4X6-INCH X 18-FT 634.0618	4X6-INCH X 20-FT 634.0620	SIGNS 638.2102	SIGNS TYPE II 638.2602	SMALL SIGN SUPPORTS 638.3000
0010	(2-1)	71+40	NB	I2-3	COMMUNITY POPULATION	72 X 24	12.00					2			1	2
	(2-2)	74+20	NB	W3-3	SIGNAL AHEAD	36 x 36			9.00				1		1	1
	(2-3)	74+20	MEDIAN	W3-3	SIGNAL AHEAD	36 x 36			9.00				1		1	1
	(2-4)	76+05	NB											1		
	(2-5)	76+05	MEDIAN	R3-20-L	BEGIN LEFT TURN LANE	36 x 54	13.50						1		1	1
	(2-6)	76+05	SB											1		
	(2-7)	81+65	NB											1		
	(2-8)	82+00	NB	R5-1A	WRONG WAY	42 x 30	8.75			1					1	1
	(2-9)	83+00	SB	J4-1	REASSURANCE ASSEMBLY	36 x 54	13.50					1			1	
	(2-10)	83+30	NB	R6-2-L	ONE WAY LEFT ARROW	36 x 48	12.00								1	
	(2-11)	83+30	NB	R5-1	DO NOT ENTER	36 x 36	9.00						1		1	
	(2-12)	8+57	CRAIG RD	R1-2	YIELD	36 x 31	3.88						1			
	(2-13)	84+00	MEDIAN	R4-7	KEEP RIGHT	24 x 30	5.00								1	
	(2-14)	10+40	CRAIG RD	R1-1F	STOP (FOLDING)	36 x 36		7.46				1			1	1
	(2-15)	84+43	MEDIAN	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50								1	
				R3-4	NO U-TURN	24 x 24	4.00									
	(2-16)	10+70	CRAIG RD	R1-1F	STOP (FOLDING)	36 x 36		7.46							1	
				R6-3	DIVIDED HIGHWAY CROSSING	30 x 24	5.00								1	
	(2-17)	9+47	CRAIG RD	R1-1F	STOP (FOLDING)	36 x 36		7.46							1	
				R6-3	DIVIDED HIGHWAY CROSSING	30 x 24	5.00								1	
	(2-18)	85+20	MEDIAN	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50								1	
				R3-4	NO U-TURN	24 x 24	4.00									
	(2-19)	11+18	CRAIG RD	R1-2	YIELD	36 x 31	3.88					1			1	1
	(2-20)	9+50	CRAIG RD	R1-1F	STOP (FOLDING)	36 x 36		7.46				1			1	1
	(2-21)	11+36	CRAIG RD	R10-50	LEFT TURN YIELD ON FYA	24 x 30	5.00									
				M1-94S	CROSSROAD NAME	96 x 18	12.00									
	(2-22)	85+60	MEDIAN	R4-7	KEEP RIGHT	24 x 30	5.00								1	
	(2-23)	86+36	SB	R5-1	DO NOT ENTER	36 x 36	9.00					1			1	
	(2-24)	86+36	SB	R6-2-L	ONE WAY LEFT ARROW	36 x 48	12.00								1	
	(2-25)	86+94	NB	R2-1	SPEED LIMIT	36 x 48	12.00					1			1	1
	(2-26)	88+00	SB	R5-1A	WRONG WAY	42 x 30	8.75			1					1	1
	(2-27)	88+50	NB	J1-2	JUNCTION OR END ASSEMBLY	72 x 57	28.50						2		1	1
	(2-28)	91+90	NB	W3-3	SIGNAL AHEAD	36 x 36			9.00				1		1	1
	(2-29)	91+90	MEDIAN	W3-3	SIGNAL AHEAD	36 x 36			9.00				1		1	1
	(2-30)	91+90	SB	D1-61	ADVANCED CROSSROAD NAME	66 X 30	13.75					2			1	1
	(2-31)	93+40	MEDIAN	R3-20-L	BEGIN LEFT TURN LANE	36 x 54	13.50						1			
	(2-32)	8+73	SB	M1-94H	CROSSROAD NAME	60 x 18	7.50									
	(2-33)	8+74	NB	M1-94H	CROSSROAD NAME	60 x 18	7.50									
	(2-34)	8+75	CRAIG RD	R10-50	LEFT TURN YIELD ON FYA	30 x 36	7.50									
				M1-94S	CROSSROAD NAME	96 x 18	12.00									
PAGE 2 SUBTOTALS							268.51	29.84	36.00	2.00	11.00	9.00	0.00	3.00	27.00	15.00

637-PERMANENT SIGNING CONTINUED

CATEGORY	SIGN NUMBER	APPROXIMATE STATION	LOCATION	SIGN CODE	DESCRIPTION	SIGN SIZE	SIGNS TYPE II REFLECTIVE H		TYPE II REFLECTIVE H FOLDING		SIGNS TYPE II REFLECTIVE F		POSTS WOOD	POSTS WOOD	POSTS WOOD	POSTS WOOD	MOVING SIGNS	REMOVING SIGNS	REMOVING SMALL SIGN SUPPORTS
							637.2210 SF	637.2215 SF	637.2230 SF	634.0614 EACH	634.0616 EACH	634.0618 EACH	634.0620 EACH	638.2102 EACH	638.2602 EACH	638.3000 EACH			
0010	(3-1)	95+85	NB															1	
	(3-2)	95+85	NB	D1-2	TWO DESTINATIONS (ARROWS)	120.00 120 X 36	30.00						1		1			1	2
	(3-3)	96+00	MEDIAN	D1-2	TWO DESTINATIONS (ARROWS)	102.00 102 X 42	29.75						2					1	2
	(3-4)	96+00	MEDIAN	W3-3	SIGNAL AHEAD	36.00 36 x 36	9.00		9.00			1						1	1
	(3-5)	96+00	MEDIAN	W3-3	SIGNAL AHEAD	36.00 36 x 36	9.00		9.00					1				1	1
	(3-6)	97+70	SB	I55-56	ADOPT-A-HIGHWAY	30.00 30 x 36	7.50					1						1	1
	(3-7)	98+10	NB	R3-8-W	LEFT ONLY/AHEAD/RIGHT ONLY	54.00 54 x 30	11.25					2						1	2
	(3-8)	99+00	SB	J4-1	REASSURANCE ASSEMBLY	36.00 36 x 54	13.50					1							
	(3-9)	99+90	SB	R2-1	SPEED LIMIT	36.00 36 x 48	12.00							1				1	1
	(3-10)	99+00	PATH													1			
	(3-11)	101+50	PATH																
	(PB1-12)			R10-3E	PUSH BUTTON INSTRUCTIONS	9 x 15	11.25												
PAGE 3 SUBTOTALS							133.25	0.00	18.00	0.00	8.00	3.00	0.00	1.00	7.00	10.00			
TOTAL 0010							786.73	52.22	72.00	2.00	28.00	21.00	4.00	7.00	60.00	36.00			

643-TRAFFIC CONTROL

CATEGORY	STATION TO	STATION	LOCATION	DRUMS 643.0300 DAY	BARRICADES TYPE III 643.0420 DAY	FLEXIBLE TUBULAR MARKER POSTS 643.0500 EACH	FLEXIBLE TUBULAR MARKER BASES 643.0600 EACH	WARNING LIGHTS TYPE A 643.0705 DAY	WARNING LIGHTS TYPE C 643.0715 DAY	ARROW BOARDS 643.0800 DAY	SIGNS 643.0900 DAY	SIGNS PCMS WITH CELLULAR COMMUNICATIONS 643.1051 DAY	REMARKS
0010			PROJECT	2,250	100			200	430	40	240		STAGE 1A
			PROJECT	2,250	90			180	240	20	130		STAGE 1B
			PROJECT	1,600	70			140	240	20	140		STAGE 1C
	44+00 -	96+00	NB ROADWAY	5,300	1,120	200	200	2,240	1,800	60	2,300		STAGE 2
	43+50 -	96+00	SB ROADWAY	7,200	1,560	200	200	3,120	2,520	60	3,900		STAGE 3
			PROJECT	2,540	90			180	620	30	90		STAGE 4A
			PROJECT	3,000	200			400	510	30	200		STAGE 4B
			PROJECT	500	40			80	100	10	40		STAGE 4C
			PROJECT								6,200	188	ALL STAGES
TOTAL 0010				24,640	3,270	400	400	6,540	6,460	270	13,240	188	

644-TEMPORARY PEDESTRIAN

CATEGORY	STATION TO	STATION	LOCATION	SURFACE PLYWOOD 644.1420.S SF	CURB RAMP 644.1601.S EACH	SAFETY FENCE 644.1616.S LF	REMARKS
0010		27+73	HAMILTON AVE. RT		1		STAGE 3
		27+77	HAMILTON AVE. LT		1		STAGE 3
		7+58	CRAIG RD. LT		1		STAGE 2 & 3
		7+58	CRAIG RD. RT		1		STAGE 2 & 3
	8+00 -	10+00	CRAIG RD. LT			200	STAGE 3
	8+60 -	9+90	CRAIG RD. LT			260	STAGE 3
	10+10 -	12+10	CRAIG RD. RT			200	STAGE 2
	10+10 -	11+40	CRAIG RD. RT			250	STAGE 2
		12+25	CRAIG RD. LT		1		STAGE 2 & 3
		12+25	CRAIG RD. RT		1		STAGE 2 & 3
	101+79 -	102+00	NB RT	90	1		STAGE 4B
	155+60 -	156+12	USH 12 LT	250	1		STAGE 4C
TOTAL 0010				340	8	910	

DELINEATORS TEMPORARY

CATEGORY	STATION TO	STATION	LOCATION	633.1100 EACH	REMARKS
0010	46+00 -	48+00	CROSSOVER A	3	
	46+00 -	48+00	CROSSOVER B	3	
	93+00 -	94+00	CROSSOVER C	3	
	93+00 -	94+00	CROSSOVER D	3	
TOTAL 0010				12	

TEMPORARY DITCH CHECKS

CATEGORY	STATION	LOCATION	628.7504 LF
0010	52+00	NB	8
	54+00	NB	8
	56+00	NB	8
	60+00	NB	12
	62+00	NB	12
	64+00	NB	12
	70+00	NB	12
	72+00	NB	12
	74+50	NB	8
	76+50	NB	8
	78+25	NB	8
TOTAL 0010			108

628-SILT FENCE

CATEGORY	STATION TO	STATION	LOCATION	628.1504 LF	MAINTENANCE 628.1520 LF
0010	43+00 -	44+00	SHORT ST.	100	100
	52+25 -	69+50	SB LT	1,725	1,725
	74+00 -	83+50	NB RT	950	950
	75+00 -	84+00	SB LT	900	900
	UNDISTRIBUTED			500	500
TOTAL 0010				4,175	4,175

CULVERT PIPE CHECKS

CATEGORY	STATION	LOCATION	628.7555 EACH
0010	74+20	NB	7
	80+99	SB	9
	86+18	SB	9
	97+00	NB	5
TOTAL 0010			30

MARKING LINE EPOXY 4-INCH

MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH

MARKERS CULVERT END

646.1020

646.3555

633.5200

CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	25+47	- 26+63	HAMILTON AVE.	235	DOUBLE YELLOW
	42+05	- 44+55	SHORT ST.	500	DOUBLE YELLOW
	8+00	- 9+18	CRAIG RD.	240	DOUBLE YELLOW
	10+77	- 12+11	CRAIG RD.	270	DOUBLE YELLOW
TOTAL 0010				1,245	

CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	47+00	- 50+60	NB RT	360	CHANNELIZING
	47+00	- 50+60	NB RT	360	CHANNELIZING
	47+77	- 48+82	NB LT	210	LEFT TURN GORE
	49+90	- 50+40	NB RT	60	RIGHT TURN GORE
	51+41	- 55+19	SB LT	385	CHANNELIZING
	51+63	- 52+07	SB LT	50	RIGHT TURN GORE
	53+10	- 53+75	SB RT	140	LEFT TURN GORE
	79+00	- 84+10	NB RT	510	CHANNELIZING
	81+40	- 82+69	NB LT	260	LEFT TURN GORE
	83+67	- 83+90	NB RT	30	RIGHT TURN GORE
	85+51	- 89+30	SB LT	370	CHANNELIZING
	85+77	- 86+00	SB LT	30	RIGHT TURN GORE
	86+81	- 87+41	SB RT	120	LEFT TURN GORE
	98+10	- 101+78	NB RT	370	CHANNELIZING
	98+10	- 101+78	NB RT	370	CHANNELIZING
	100+65	- 101+78	NB RT	115	CHANNELIZING
TOTAL 0010				3,740	

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	45+49	NB RT	1	
	42+78	SHORT ST.	1	
	51+95	SB LT	1	
	73+89	NB LT & RT	2	
	74+23	NB RT	1	
	75+31	NB RT	1	
	75+99	SB LT & NB RT	2	
	81+00	SB LT	1	
	84+34	SB LT	1	
	86+05	SB LT	1	
	86+54	NB RT	1	
	96+98	SB LT & NB RT	2	
TOTAL 0010			15	

MARKING LINE GROOVED WET REF EPOXY 4-INCH

646.1040

CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	39+00	- 49+78	NB RT	1,080	WHITE EDGE LINE
	39+00	- 44+55	NB LT	555	YELLOW EDGE LINE
	39+00	- 48+25	SB RT	925	YELLOW EDGE LINE
	39+00	- 49+95	SB LT	1,095	WHITE EDGE LINE
	52+07	- 84+33	SB LT	3,300	WHITE EDGE LINE
	53+27	- 77+50	NB LT	2,425	YELLOW EDGE LINE
	56+50	- 81+52	SB RT	2,525	YELLOW EDGE LINE
	58+00	- 79+00	NB RT	2,090	WHITE EDGE LINE
	85+43	- 100+82	NB RT	1,560	WHITE EDGE LINE
	86+38	- 100+85	SB LT	1,390	WHITE EDGE LINE
	87+65	- 96+00	NB LT	835	YELLOW EDGE LINE
	91+86	- 96+00	SB RT	400	YELLOW EDGE LINE
TOTAL 0010				18,180	

MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH

646.1555

CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	39+00	- 101+75	NB	1,570	CENTER LINE
	39+00	- 98+10	SB	1,480	CENTER LINE
TOTAL 0010				3,050	

MARKING LINE EPOXY 8-INCH

646.3020

CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	43+41	- 44+55	SHORT ST.	115	CHANNELIZING
	43+41	- 44+55	SHORT ST.	115	CHANNELIZING
	43+41	- 44+11	SHORT ST.	70	RIGHT TURN GORE
	25+47	- 26+63	HAMILTON AVE	115	CHANNELIZING
	25+47	- 26+08	HAMILTON AVE	60	CHANNELIZING
	25+64	- 25+90	HAMILTON AVE	40	RIGHT TURN GORE
	8+00	- 9+26	CRAIG RD.	125	CHANNELIZING
	8+73	- 9+26	CRAIG RD.	55	CHANNELIZING
	8+73	- 9+18	CRAIG RD.	60	RIGHT TURN GORE
	10+71	- 12+11	CRAIG RD.	140	CHANNELIZING
	10+80	- 11+07	CRAIG RD.	60	RIGHT TURN GORE
	155+46	- 155+89	USH 12 RT	90	RIGHT TURN GORE
TOTAL 0010				1,045	

MARKING ARROW EPOXY

646.5020

CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	43+50	SHORT ST.	1	LEFT TURN
	26+50	HAMILTON AVE.	1	LEFT TURN
	8+25	CRAIG RD.	1	LEFT TURN
	11+75	CRAIG RD.	1	LEFT TURN
	98+30	NB RT	1	RIGHT TURN
	96+85	NB RT	1	LEFT TURN
	98+30	NB RT	1	LEFT TURN
TOTAL 0010			7	

MARKING WORD EPOXY

646.5120

CATEGORY	STATION	LOCATION	EACH
0010	100+90	NB RT	1
	100+90	NB RT	1
TOTAL 0010			2

MARKING STOP LINE EPOXY 18-INCH

MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH

646.6120				
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	50+49	NB LEFT TURN	14	
	50+62	NB	24	THROUGH LANE
	44+33	SHORT ST.	17	RIGHT TURN LANE
	44+53	SHORT ST.	24	THROUGH LANE
	25+46	HAMILTON AVE.	24	THROUGH LANE
	25+66	HAMILTON AVE.	18	RIGHT TURN LANE
	51+41	SB	24	THROUGH LANE
	84+15	NB	27	THROUGH LANE
	85+45	SB	27	THROUGH LANE
	9+23	CRAIG RD.	27	THROUGH LANE
	9+30	CRAIG RD.	17	RIGHT TURN LANE
	10+64	CRAIG RD.	16	RIGHT TURN LANE
	10+71	CRAIG RD.	27	THROUGH LANE
	101+79	NB	30	THROUGH LANE
	101+75	NB	12	RIGHT TURN LANE
TOTAL 0010			328	

MARKING CURB EPOXY

646.8120				
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	50+50	MEDIAN	35	
	51+50	MEDIAN	35	
	84+10	MEDIAN	20	
	85+50	MEDIAN	20	
TOTAL 0010			110	

MARKING ISLAND NOSE EPOXY

646.8220				
CATEGORY	STATION	LOCATION	EACH	REMARKS
0010	50+49	MEDIAN	1	
	51+50	MEDIAN	1	
	84+04	MEDIAN	1	
	85+57	MEDIAN	1	
TOTAL 0010			4	

646.7420				
CATEGORY	STATION	LOCATION	LF	REMARKS
0010	51+30	SB	68	THROUGH LANE
	51+30	NB	116	THROUGH LANE
	51+50	SB	38	RIGHT TURN LANE
	25+38	HAMILTON AVE.	96	THROUGH LANE
	50+47	NB	40	RIGHT TURN LANE
	25+56	HAMILTON AVE.	36	RIGHT TURN LANE
	83+80	NB	44	RIGHT TURN LANE
	84+20	NB	76	THROUGH LANE
	85+03	NB	134	THROUGH LANE
	84+50	SB	140	THROUGH LANE
	85+35	SB	80	THROUGH LANE
	9+23	CRAIG RD.	54	THROUGH LANE
	9+33	CRAIG RD.	34	RIGHT TURN LANE
	10+53	CRAIG RD.	32	RIGHT TURN LANE
	10+67	CRAIG RD.	108	THROUGH LANE
	85+75	SB	60	RIGHT TURN LANE
	101+99	SB	46	THROUGH LANE
	101+99	NB	60	THROUGH LANE
	102+00	NB	24	RIGHT TURN LANE
	155+72	USH 12	54	RIGHT TURN LANE
	155+96	USH 12	78	THROUGH LANE
	155+99	USH 12	128	THROUGH LANE
TOTAL 0010			1,546	

MARKING REMOVAL LINE 4-INCH

646.9000					
CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	39+25	- 101+00	NB	1,550	CENTER LINE
	39+25	- 101+00	SB	1,550	CENTER LINE
	39+25	- 44+00	SB RT	475	EDGE LINE
	39+25	- 47+00	NB LT	775	EDGE LINE
	44+00	- 49+00	NB RT	500	EDGE LINE
	51+00	- 56+00	NB RT	500	EDGE LINE
	94+00	- 101+00	SB RT	700	EDGE LINE
	93+00	- 98+00	NB LT	500	EDGE LINE
	7+25	- 9+25	CRAIG RD.	400	DOUBLE YELLOW CL
	10+50	- 13+10	CRAIG RD.	520	DOUBLE YELLOW CL
	40+50	- 44+50	SHORT ST.	800	DOUBLE YELLOW CL
	25+50	- 28+50	HAMILTON AVE.	600	DOUBLE YELLOW CL
	100+65	- 101+80	NB RT	115	CHANNELIZING
	100+65	- 101+80	NB RT	115	CHANNELIZING
	100+65	- 101+80	NB RT	115	CHANNELIZING
TOTAL 0010				9,215	

649.0150					
CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	45+00	- 62+00	SB	1,090	STAGE 1A
	69+20	- 94+25	NB	2,230	STAGE 1A
	99+00	- 101+75	SB	265	STAGE 1A
	38+00	- 46+00	SB	790	STAGE 1B
	48+00	- 84+25	NB	2,830	STAGE 1B
	51+50	- 64+00	SB	1,100	STAGE 1B
	40+00	- 51+80	NB	810	STAGE 1C
	73+00	- 85+78	NB	885	STAGE 1C
	39+00	- 48+00	CROSS OVER	950	STAGE 2
	40+00	- 45+25	CROSS OVER	525	STAGE 2
	92+50	- 101+50	CROSS OVER	850	STAGE 2
	94+25	100+75	CROSS OVER	650	STAGE 2
		7+55	CRAIG RD.	86	CROSS WALK
	9+37	- 12+22	CRAIG RD.	590	CROSS WALK
		12+25	CRAIG RD.	96	CROSS WALK
	9+37	- 10+75	CRAIG RD.	288	CROSS WALK
	7+30	- 9+10	CRAIG RD.	350	DOUBLE YELLOW
	10+50	- 13+10	CRAIG RD.	520	DOUBLE YELLOW
	37+50	- 45+75	CROSS OVER	820	STAGE 3
	39+00	- 47+75	CROSS OVER	875	STAGE 3
	43+50	- 96+00	CENTER LINE	10,000	STAGE 3
	92+80	- 98+80	CROSS OVER	600	STAGE 3
	94+20	- 98+80	CROSS OVER	460	STAGE 3
	95+80	101+00	CROSS OVER	540	STAGE 3
	40+50	- 44+53	SHORT ST.	800	DOUBLE YELLOW
	25+43	- 28+48	HAMILTON AVE	610	DOUBLE YELLOW
		27+70	HAMILTON AVE	86	CROSS WALK
	6+50	- 9+20	CRAIG RD.	540	DOUBLE YELLOW
	10+80	- 13+10	CRAIG RD.	460	DOUBLE YELLOW
	7+60	- 10+40	CRAIG RD.	565	CROSS WALK
	33+60	- 39+00	NB	540	STAGE 4
	59+00	- 65+00	SB	600	STAGE 4
	87+00	- 94+50	NB	750	STAGE 4
	33+60	- 39+00	NB	540	STAGE 4
	45+00	- 50+00	SB	500	STAGE 4
	59+00	- 65+00	SB	610	STAGE 4
	87+00	- 94+50	NB	750	STAGE 4
	101+00	- 102+00	SB	100	STAGE 4
			USH 12	540	STAGE 4
TOTAL 0010				36,191	

MARKING CHEVRON EPOXY 24-INCH

646.7220				
CATEGORY	STATION TO	STATION	LOCATION	LF
0010	100+90	- 101+75	NB	20
TOTAL 0010				20

649-TEMPORARY MARKING

CATEGORY	STATION TO	STATION	LOCATION	LINE PAINT 4-INCH 649.0105 LF	LINE PAINT 8-INCH 649.0205 LF	LINE REMOVABLE TAPE 8-INCH 649.0250 LF	ARROW PAINT 649.0505 EACH	ARROW REMOVABLE TAPE 649.0550 EACH	STOP LINE PAINT 18-INCH 649.0805 LF	STOP LINE REMOVABLE TAPE 18-INCH 649.0850 LF	REMARKS
0010	44+00 -	96+25	NB	10,000							CENTER LINE
	44+50 -	48+50	NB	400							EDGE LINE
	52+00 -	56+00	NB	400							EDGE LINE
	78+00 -	82+00	NB	400							EDGE LINE
	83+50 -	87+50	NB	400							EDGE LINE
	47+64 -	50+36	NB		270						STAGE 2
	51+69 -	53+00	NB		130						STAGE 2
	80+76 -	84+15	NB		340						STAGE 2
	85+20 -	86+40	NB		120						STAGE 2
	47+84 -	50+63	SB			280					STAGE 3
	51+35 -	52+95	SB			160					STAGE 3
	80+50 -	83+90	SB			340					STAGE 3
	85+60 -	89+20	SB			360					STAGE 3
		50+20	NB				2				STAGE 2
		51+85	NB				2				STAGE 2
		83+95	NB				2				STAGE 2
		85+37	NB				2				STAGE 2
		50+38	SB					2			STAGE 3
		51+88	SB					2			STAGE 3
		83+52	SB					2			STAGE 3
		85+94	SB					2			STAGE 3
		50+36	NB						23		STAGE 2
		51+69	NB						23		STAGE 2
		84+15	NB						23		STAGE 2
		85+20	NB						23		STAGE 2
		50+63	SB							20	STAGE 3
		51+35	SB							20	STAGE 3
		83+90	SB							26	STAGE 3
		85+60	SB							26	STAGE 3
	TOTAL 0010			11,600	860	1,140	8	8	92	92	

CONSTRUCTION STAKING CONCRETE PAVEMENT

CATEGORY	STATION TO	STATION	LOCATION	LF
0010	39+25 -	100+82	NB	6,160
	39+25 -	101+12	SB	6,190
	TOTAL 0010			12,350

CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT)

CATEGORY	LOCATION	LS	REMARKS
0010	PROJECT	1	
	TOTAL 0010	1	

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT)

CATEGORY	LOCATION	LS	REMARKS
0010	PROJECT	1	
	TOTAL 0010	1	

CONSTRUCTION STAKING SUBGRADE

CATEGORY	STATION TO	STATION	LOCATION	LF
0010	51+65 -	83+60	SHARED USE PATH	3,200
	233+69 -	251+66	SHARED USE PATH	1,800
	TOTAL 0010			5,000

CONSTRUCTION STAKING BASE

CATEGORY	STATION TO	STATION	LOCATION	LF
0010	51+65 -	83+60	SHARED USE PATH	3,200
	233+69 -	251+66	SHARED USE PATH	1,800
	TOTAL 0010			5,000

CONSTRUCTION STAKING PIPE CULVERTS

CATEGORY	STATION TO	STATION	LOCATION	EACH
0010	74+29 -	75+25	NB RT	1
		75+99	NB RT	1
	TOTAL 0010			2

CONSTRUCTION STAKING SLOPE STAKES

ADJUSTING PULL BOXES

SAWING CONCRETE

CATEGORY	STATION TO	STATION	LOCATION	650.9920 LF
0010	44+00 -	50+00	NB	600
	52+00 -	69+50	NB	1,750
	75+50 -	84+00	NB	850
	52+00 -	84+00	SB	3,200
	86+50 -	88+00	SB	150
	97+00 -	100+00	NB	300
	233+70 -	251+65	PATH	1,800
	42+05 -	44+75	SHORT ST.	270
	25+26 -	26+63	HAMILTON AVE.	140
	8+00 -	9+40	CRAIG RD.	140
	10+56 -	12+11	CRAIG RD.	155
TOTAL 0010				9,355

CATEGORY	STATION	LOCATION	653.0900 EACH
0020	53+92	SB LT	1
	56+04	SB LT	1
	59+59	SB LT	1
	62+95	SB LT	1
	82+42	SB RT	1
	82+78	SB LT	1
	84+13	SB LT	1
TOTAL 0020			7

CATEGORY	STATION TO	STATION	LOCATION	690.0250 LF	REMARKS
0010	44+42 -	44+74	SHORT STREET	90	STAGE 1B
	48+47 -	50+64	NB ISLAND	450	STAGE 1B
	83+24 -	84+50	NB ISLAND	275	STAGE 1B
	84+00 -	85+30	CRAIG RD. ISLANDS	60	STAGE 1C
			SHORT STREET & SB	370	STAGE 2
			CRAIG ROAD & SB	80	STAGE 2
		45+00	SB	24	STAGE 2
		94+50	SB	24	STAGE 2
		45+00	NB	24	STAGE 3
		94+50	NB	24	STAGE 3
			HAMILTON AVE. & NB	120	STAGE 3
			CRAIG ROAD & NB	200	STAGE 3
	39+00 -	45+00	SB	625	STAGE 4A
	39+00 -	45+00	NB	625	STAGE 4A
	94+50 -	101+00	SB	665	STAGE 4A
	94+50 -	100+80	NB	648	STAGE 4A
		39+00	SB	12	STAGE 4B
		39+00	NB	12	STAGE 4B
		45+00	SB	12	STAGE 4B
		45+00	NB	12	STAGE 4B
		94+50	SB	12	STAGE 4B
		94+50	NB	12	STAGE 4B
		101+00	SB	12	STAGE 4B
		100+80	NB	12	STAGE 4B
		VARIOUS	USH 12	120	STAGE 4A & 4B
TOTAL 0010				4,520	

CONSTRUCTION STAKING CURB RAMPS

CATEGORY	STATION	LOCATION	650.9000 EACH	REMARKS
0010	42+47	36' LT	1	SHORT STREET
	44+33	62' LT	1	SHORT STREET
	25+65	60' RT	1	HAMILTON AVE.
	25+54	68' LT	1	HAMILTON AVE.
	8+69	59' LT	1	CRAIG ROAD
	9+32	59' RT	1	CRAIG ROAD
	10+63	62' LT	1	CRAIG ROAD
	11+39	50' RT	1	CRAIG ROAD
	101+40	68' LT	1	MEDIAN RL
	101+84	65' RT	1	MEDIAN RL
	156+02	78' LT	1	USH 12
TOTAL 0010			11	

TEMPORARY BASE AGGREGATE

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 LF	REMARKS
0010	39+25	NB	8	
	39+25	SB	14	
	26+63	HAMILTON AVE	46	
	42+05	SHORT STREET	55	
	8+00	CRAIG ROAD	44	
	12+12	CRAIG ROAD	52	
	100+82	NB	3	
	51+30	NB	16	ISLAND
	156+05	USH 12	10	
TOTAL 0010			248	

CATEGORY	STATION TO	STATION	LOCATION	SPV.0195.01 TON	REMARKS
0010	40+00 -	45+93	CROSSOVER	1,030	
	94+00 -	99+00	CROSSOVER	720	
			NB	100	ISLAND REMOVAL
			SHORT ST.	20	ISLAND REMOVAL
	40+54	44+15	SHORT ST.	195	TEMPORARY WIDENING
			NB	90	ISLAND REMOVAL
	44+50 -	49+00	NB	20	TEMPORARY WIDENING
			HAMILTON AVE	5	ISLAND REMOVAL
	52+00 -	56+00	NB	175	TEMPORARY WIDENING
			NB	30	ISLAND REMOVAL
	78+50 -	81+75	NB	15	TEMPORARY WIDENING
	85+50 -	89+50	NB	185	TEMPORARY WIDENING
TOTAL 0010				2,585	

3

CONCRETE BASE REMOVALS

EXISTING BASE NUMBER	204.0195 REMOVING CONCRETE BASES EACH
STH 37 & HAMILTON AVE / SHORT ST	
SB1	1
SB2	1
SB3	1
SB4	1
SB5	1
SB6	1
SB7	1
SB8	1
SB9	1
SB10	1
SB11	1
SB12	1
SB13	1
SB14	1
LB1	1
LB2	1
LB3	1
LB4	1
LB5	1
LB6	1
CB1	1
INTERSECTION TOTAL	
	21
STH 37 & CRAIG ROAD	
SB1	1
SB2	1
SB3	1
SB4	1
SB5	1
SB6	1
SB7	1
SB8	1
SB9	1
SB10	1
LB1	1
LB2	1
LB3	1
LB4	1
LB5	1
LB6	1
CB1	1
INTERSECTION TOTAL	
	17
USH 12 & STH 37	
SB1	1
SB15	1
SB18	1
CB1	1
INTERSECTION TOTAL	
	4
ITEM TOTALS	
	42

PULL BOXES STEEL

PULL BOX NUMBER	STATION	LOCATION	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0135 PULL BOXES STEEL 24 X 36 - INCH EACH	653.0140 PULL BOXES STEEL 24 X 42 - INCH EACH
STH 37 & HAMILTON AVE / SHORT ST					
PB1	50NB+22.7	59.1' RT	-	-	1
PB2	48NB+85.9	48.2' RT	-	1	-
PB3	48NB+41.1	48.0' RT	-	1	-
PB4	47NB+10.8	48.0' RT	-	1	-
PB5	46NB+21.1	48.0' RT	-	1	-
PB6	45NB+35.8	48.0' RT	-	1	-
PB7	43NB+71.0	48.0' RT	-	1	-
PB8	50NB+22.7	8.1' LT	-	-	1
PB9	50NB+22.7	34.5' LT	-	-	1
PB10	50NB+22.7	101.2' LT	-	-	1
PB11	50NB+39.8	120.4' LT	-	-	1
PB12	50NB+68.3	105.6' LT	-	-	1
PB13	51NB+52.9	120.5' LT	-	-	1
PB14	51NB+42.3	79.8' LT	-	-	1
PB15	51NB+81.6	99.8' LT	-	-	1
PB16	53NB+14.8	84.3' LT	-	1	-
PB17	53NB+58.6	84.2' LT	-	1	-
PB18	54NB+85.9	86.7' LT	-	1	-
PB19	55NB+73.2	87.1' LT	-	1	-
PB20	56NB+57.8	83.5' LT	-	1	-
PB21	58NB+13.4	87.6' LT	-	1	-
PB22	60NB+52.1	87.8' LT	-	1	-
PB23	61NB+74.2	88.4' LT	-	-	1
PB24	61NB+71.4	38.0' LT	-	-	1
PB25	51NB+81.6	32.0' LT	-	-	1
PB26	51NB+81.6	5.5' LT	-	-	1
PB27	51NB+81.6	49.0' RT	-	-	1
PB28	51NB+52.3	83.3' RT	-	-	1
PB29	51NB+27.7	67.1' RT	-	-	1
PB30	50NB+50.7	83.3' RT	-	-	1
PB31	50NB+68.4	48.0' RT	-	-	1
INTERSECTION TOTAL			0	13	18
STH 37 & CRAIG ROAD					
PB1	86NB+24.1	97.1' LT	-	-	1
PB2	87NB+30.2	95.1' LT	-	1	-
PB3	87NB+76.3	90.5' LT	-	1	-
PB4	89NB+13.3	91.6' LT	-	1	-
PB5	90NB+2.8	82.7' LT	-	1	-
PB6	90NB+96.0	83.0' LT	-	1	-
PB7	92NB+97.1	79.1' LT	-	1	-
PB8	85NB+58.3	88.4' LT	-	-	1
PB9	85NB+85.4	37.8' LT	-	-	1
PB10	85NB+67.2	9.7' LT	-	-	1
PB11	85NB+33.2	42.2' RT	-	-	1
PB12	84NB+92.5	38.6' RT	-	-	1
PB13	84NB+63.4	66.4' RT	-	1	-
PB14	84NB+92.7	74.5' RT	-	-	1
PB15	83NB+71.4	74.5' RT	-	-	1
PB16	83NB+55.6	51.2' RT	-	-	1
PB17	82NB+33.0	44.7' RT	-	1	-
PB18	81NB+89.2	41.8' RT	-	1	-
PB19	80NB+58.3	44.7' RT	-	1	-
PB20	79NB+69.2	41.7' RT	-	1	-
PB21	78NB+82.9	44.6' RT	-	1	-
PB22	77NB+09.2	40.7' RT	-	1	-
PB23	84NB+09.7	45.6' RT	-	-	1
PB24	83NB+68.5	12.0' LT	-	-	1
PB25	83NB+73.7	40.0' LT	-	-	1
PB26	83NB+83.8	90.9' LT	-	-	1
PB27	84NB+79.2	138.4' LT	-	-	1
PB28	84NB+76.9	94.3' LT	-	-	1
PB29	85NB+0.0	117.9' LT	-	1	-
PB30	85NB+92.4	137.6' LT	-	-	1
INTERSECTION TOTAL			0	14	16

PULL BOX NUMBER	STATION	LOCATION	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH	653.0135 PULL BOXES STEEL 24 X 36 - INCH EACH	653.0140 PULL BOXES STEEL 24 X 42 - INCH EACH
USH 12 & STH 37					
PB5		EXISTING	1	-	-
PB16		EXISTING	1	-	-
PB17		EXISTING	1	-	-
PB21		EXISTING	1	-	-
PB23		EXISTING	1	-	-
PB24	155+66.9	94.2' RT	-	-	1
PB25	155+97.3	56.6' RT	-	-	1
INTERSECTION TOTAL			5	0	2
USH 12 & STH 37 (TEMPORARY SIGNAL)					
PB5		EXISTING	1	-	-
PB9		EXISTING	1	-	-
PB10		EXISTING	1	-	-
PB21	155+45.1	64.6' RT	-	-	1
PB23	155+50.6	75.4' RT	-	-	1
PB22	155+47.9	73.7' LT	-	-	1
TEMP INTERSECTION TOTAL			3	0	3
ITEM TOTALS			8	27	39

3

CONDUIT

FROM	TO	652.0225	652.0235	652.0615	671.0112	671.0122
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	CONDUIT SPECIAL 3-INCH LF	CONDUIT HDPE 1-DUCT 2-INCH LF	CONDUIT HDPE 2-DUCT 2-INCH LF
STH 37 & HAMILTON AVE / SHORT ST						
CB1	PB1	--	81	--	--	--
PB1	PB2	278	--	--	--	--
PB1	PB8	--	134	--	--	--
PB2	PB3	90	--	--	--	--
PB3	PB4	260	--	--	--	--
PB4	PB5	180	--	--	--	--
PB5	PB6	170	--	--	--	--
PB6	PB7	330	--	--	--	--
PB8	PB9	--	52	--	--	--
PB9	PB10	--	134	--	--	--
PB10	PB11	--	52	--	--	--
PB11	PB12	--	64	--	--	--
PB11	PB13	--	226	--	--	--
PB13	PB14	--	84	--	--	--
PB13	PB15	--	70	--	--	--
PB15	PB16	274	--	--	--	--
PB15	PB25	--	136	--	--	--
PB16	PB17	92	--	--	--	--
PB17	PB18	266	--	--	--	--
PB18	PB19	182	--	--	--	--
PB19	PB20	176	--	--	--	--
PB20	PB21	326	--	--	--	--
PB21	PB22	250	--	--	--	--
PB22	PB23	128	--	--	--	--
PB23	PB24	50	--	--	--	--
PB25	PB26	--	54	--	--	--
PB26	PB27	--	108	--	--	--
PB27	PB28	--	90	--	--	--
PB28	PB29	--	58	--	--	--
PB28	PB30	--	204	--	--	--
PB30	PB31	--	78	--	--	--
PB31	PB1	37	--	--	--	--
PB31	CB1	--	57	--	--	--
PB1	LB1	13	--	--	--	--
PB2	LB2	2	--	--	--	--
PB4	LB3	2	--	--	--	--
PB6	LB4	12	--	--	--	--
PB7	LB5	15	--	--	--	--
PB8	SB1	41	--	--	--	--
PB9	SB2	16	--	--	--	--
PB9	SB3	46	--	--	--	--
PB10	SB4	--	46	--	--	--
PB11	SB5	6	--	--	--	--
PB12	SB6	21	--	--	--	--
PB14	SB7	--	17	--	--	--
PB14	SB8	5	--	--	--	--
PB15	LB6	14	--	--	--	--
PB16	LB7	2	--	--	--	--
PB18	LB8	2	--	--	--	--
PB20	LB9	2	--	--	--	--
PB21	LB10	13	--	--	--	--
PB23	SB16	7	--	--	--	--
PB24	SB17	6	--	--	--	--
PB25	SB9	42	--	--	--	--
PB26	SB10	19	--	--	--	--
PB27	SB11	--	42	--	--	--
PB28	LB11	8	--	--	--	--
PB29	SB12	33	--	--	--	--
PB29	SB13	22	--	--	--	--
PB31	SB14	--	5	--	--	--
PB31	SB15	13	--	--	--	--
INTERSECTION TOTAL		3451	1792	0	0	0

FROM	TO	652.0225	652.0235	652.0615	671.0112	671.0122
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	CONDUIT SPECIAL 3-INCH LF	CONDUIT HDPE 1-DUCT 2-INCH LF	CONDUIT HDPE 2-DUCT 2-INCH LF
STH 37 & CRAIG ROAD						
CB1	PB1	--	78	--	--	--
PB1	PB2	206	--	--	--	--
PB1	PB8	--	132	--	--	--
PB1	PB9	--	142	--	--	--
PB2	PB3	86	--	--	--	--
PB3	PB4	256	--	--	--	--
PB4	PB5	170	--	--	--	--
PB5	PB6	176	--	--	--	--
PB6	PB7	--	190	--	--	--
PB9	PB10	--	66	--	--	--
PB10	PB11	--	124	--	--	--
PB11	PB12	--	82	--	--	--
PB11	PB14	--	104	--	--	--
PB12	PB13	40	--	--	--	--
PB14	PB15	--	242	--	--	--
PB15	PB16	--	56	--	--	--
PB16	PB17	246	--	--	--	--
PB16	PB23	--	108	--	--	--
PB16	PB24	--	130	--	--	--
PB17	PB18	88	--	--	--	--
PB18	PB19	262	--	--	--	--
PB19	PB20	178	--	--	--	--
PB20	PB21	172	--	--	--	--
PB21	PB22	348	--	--	--	--
PB24	PB25	--	58	--	--	--
PB25	PB26	--	104	--	--	--
PB26	PB27	--	218	--	--	--
PB27	PB28	--	88	--	--	--
PB27	PB30	--	226	--	--	--
PB28	PB29	33	--	--	--	--
PB30	CB1	--	87	--	--	--
PB2	LB1	4	--	--	--	--
PB4	LB2	4	--	--	--	--
PB6	LB3	4	--	--	--	--
PB7	LB4	4	--	--	--	--
PB8	SB1	--	10	--	--	--
PB8	SB2	7	--	--	--	--
PB9	SB3	54	--	--	--	--
PB10	SB4	6	--	--	--	--
PB11	SB5	--	50	--	--	--
PB12	SB6	6	--	--	--	--
PB12	SB7	20	--	--	--	--
PB14	SB8	9	--	--	--	--
PB16	LB5	10	--	--	--	--
PB17	LB6	4	--	--	--	--
PB19	LB7	4	--	--	--	--
PB21	LB8	4	--	--	--	--
PB22	LB9	4	--	--	--	--
PB23	SB9	--	5	--	--	--
PB23	SB10	15	--	--	--	--
PB24	SB11	61	--	--	--	--
PB25	SB12	25	--	--	--	--
PB25	SB13	4	--	--	--	--
PB26	SB14	--	12	--	--	--
PB27	SB15	28	--	--	--	--
PB28	SB16	15	--	--	--	--
PB28	SB17	11	--	--	--	--
PB30	LB10	17	--	--	--	--
INTERSECTION TOTAL		2771	2122	0	0	0

FROM	TO	652.0225	652.0235	652.0615	671.0112	671.0122
		CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	CONDUIT SPECIAL 3-INCH LF	CONDUIT HDPE 1-DUCT 2-INCH LF	CONDUIT HDPE 2-DUCT 2-INCH LF
USH 12 & STH 37						
MP	CB1	26	--	--	--	--
CB1	PB23	--	48	--	--	--
PB23	PB21	--	13	--	--	--
PB24	PB25	--	96	--	--	--
PB24	CB1	--	33	--	--	--
EXT 1		--	42	--	--	--
EXT 2		--	42	--	--	--
PB5	SB18	35	--	--	--	--
PB17	SB15	18	--	--	--	--
PB6	SB19	5	--	--	--	--
PB25	SB1	18	--	--	--	--
PB25	SB20	9	--	--	--	--
INTERSECTION TOTAL		111	274	0	0	0
USH 12 & STH 37 (TEMPORARY SIGNAL)						
TCB1	PB9	--	--	25	--	--
PB2	PB23	200	--	--	--	--
PB5	PB22	--	8	--	--	--
PB10	TCB1	--	--	26	--	--
PB21	PB22	--	--	138	--	--
MP	PB21	15	--	--	--	--
TEMP INTERSECTION TOTAL		215	8	189	0	0
INTERCONNECT						
INTERCEPT	PB7 (S18-0609)	700	--	--	--	--
PB27 (S18-0609)	PB22 (S18-0241)	--	--	--	--	5004
PB7 (S18-0241)	PB24 (S18-0226)	--	--	--	1000	--
PB11 (S18-0241)	PB17 (S18-0226)	--	--	--	1675	--
INTERCONNECT TOTAL		700	0	0	2675	5004
ITEM TOTALS		7248	4196	189	2675	5004

LOOP DETECTOR SCHEDULE

LOOP NUMBER	HOME RUN PB	STATION	LOCATION	SIZE (FT)X(FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800	655.0700	655.0800
								CONDUIT LOOP DETECTOR LF	LOOP DETECTOR LEAD IN CABLE LF	LOOP DETECTOR WIRE LF
STH 37 & HAMILTON AVE / SHORT ST										
11	PB9	50NB+26.0	21' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	72	120	216
12	PB9	50NB+54.0	21' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	82	120	246
21	PB19	55NB+66.5	56.3' LT	6X20	5	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	94	747	470
22	PB17	53NB+53.3	52.6' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	96	523	384
31	PB29	51NB+1.2	72.6' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	100	176	400
32	PB29	51NB+1.2	44.7' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	100	176	400
41	PB12	50NB+87.4	111.2' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	86	271	344
42	PB12	50NB+87.4	83.3' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	84	271	336
43	PB11	50NB+47.4	105.3' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	82	239	246
51	PB25	51NB+72.9	19.0' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	78	273	234
52	PB25	51NB+44.9	19.0' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	90	273	270
61	PB5	46NB+27.0	12.0' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	104	456	416
62	PB3	48NB+47.0	12.0' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	104	236	312
71	PB12	50NB+99.5	111.3' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	110	271	330
72	PB12	50NB+99.5	83.2' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	108	271	324
81	PB29	51NB+13.3	72.6' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	78	176	234
82	PB29	51NB+13.3	44.6' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	76	176	228
83	PB28	51NB+44.9	65.4' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	86	147	258
INTERSECTION TOTAL								1630	4922	5648
STH 37 & CRAIG ROAD										
11	PB25	83NB+78.9	26.1' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	76	329	228
12	PB25	84NB+6.8	26.0' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	86	329	258
21	PB5	89NB+95.5	55.7' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	86	395	344
22	PB3	87NB+69.4	60.4' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	92	198	276
31	PB13	84NB+32.2	70.4' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	110	299	440
32	PB13	84NB+45.4	45.7' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	102	299	408
41	PB29	85NB+17.4	118.3' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	82	245	328
42	PB29	85NB+4.3	93.6' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	76	245	304
43	PB29	84NB+66.6	104.4' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	76	212	228
51	PB9	85NB+82.0	23.9' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	74	123	296
52	PB9	85NB+54.0	24.0' LT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	84	123	336
61	PB20	79NB+75.1	12.0' RT	6X20	5	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	92	810	460
62	PB18	81NB+95.2	12.0' RT	6X20	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	92	590	368
71	PB29	85NB+30.5	118.2' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	108	245	324
72	PB29	85NB+17.4	93.5' LT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	102	245	306
81	PB13	84NB+44.5	71.0' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	86	299	258
82	PB13	84NB+57.6	46.2' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	78	299	234
83	PB14	84NB+91.0	55.9' RT	6X20	3	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	80	270	240
INTERSECTION TOTAL								1582	5555	5636
USH 12 & STH 37										
11	PB4	EXISTING		6X20	--	CONCRETE	EXISTING	--	148	--
12	PB4	EXISTING		6X6	--	CONCRETE	EXISTING	--	148	--
13	PB7	EXISTING		6X6	--	CONCRETE	EXISTING	--	309	--
21	PB12	EXISTING		6X30	--	CONCRETE	EXISTING	--	758	--
22	PB13	EXISTING		6X30	--	CONCRETE	EXISTING	--	556	--
23	PB10	EXISTING		6X6	--	CONCRETE	EXISTING	--	360	--
41	PB8	EXISTING		6X20	--	CONCRETE	EXISTING	--	344	--
42	PB8	EXISTING		6X6	--	CONCRETE	EXISTING	--	344	--
43	PB7	EXISTING		6X20	--	CONCRETE	EXISTING	--	309	--
44	PB7	EXISTING		6X6	--	CONCRETE	EXISTING	--	309	--
51	PB13	EXISTING		6X20	--	CONCRETE	EXISTING	--	277	--
52	PB13	EXISTING		6X6	--	CONCRETE	EXISTING	--	277	--
53	PB16	EXISTING		6X6	--	CONCRETE	EXISTING	--	201	--
61	PB3	EXISTING		6X30	--	CONCRETE	EXISTING	--	400	--
62	PB2	EXISTING		6X30	--	CONCRETE	EXISTING	--	197	--
63	PB21	155+70.4	63.7' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	80	55	240
81	PB16	EXISTING		6X20	--	CONCRETE	EXISTING	--	201	--
82	PB16	EXISTING		6X6	--	CONCRETE	EXISTING	--	201	--
83	PB16	EXISTING		6X20	--	CONCRETE	EXISTING	--	201	--
84	PB16	EXISTING		6X6	--	CONCRETE	EXISTING	--	201	--
104	PB15	EXISTING		6X6	--	CONCRETE	EXISTING	--	249	--
105	PB15	EXISTING		6X6	--	CONCRETE	EXISTING	--	249	--
105	PB15	EXISTING		6X6	--	CONCRETE	EXISTING	--	249	--
INTERSECTION TOTAL								80	6543	240
USH 12 & STH 37										
11	PB2	EXISTING		6X20	--	CONCRETE	EXISTING	--	537	--
INTERSECTION TOTAL								0	537	0
ITEM TOTALS								3292	17557	11524

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CONCRETE BASES

BASE NUMBER	STATION	LOCATION	654.0101	654.0102	654.0105	654.0110	654.0113	654.0217
			CONCRETE BASES TYPE 1 EACH	CONCRETE BASES TYPE 2 EACH	CONCRETE BASES TYPE 5 EACH	CONCRETE BASES TYPE 10 EACH	CONCRETE BASES TYPE 13 EACH	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
STH 37 & HAMILTON AVE / SHORT ST								
SB1	50NB+63.2	8.0' LT	--	1	--	--	--	--
SB2	50NB+38.5	34.2' LT	1	--	--	--	--	--
SB3	49NB+77.0	34.4' LT	1	--	--	--	--	--
SB4	49NB+80.9	82.4' LT	--	--	--	--	1	--
SB5	50NB+37.4	115.2' LT	1	--	--	--	--	--
SB6	50NB+72.2	85.0' LT	1	--	--	--	--	--
SB7	51NB+27.0	86.0' LT	--	--	--	1	--	--
SB8	51NB+39.5	75.4' LT	1	--	--	--	--	--
SB9	51NB+39.7	32.0' LT	--	1	--	--	--	--
SB10	51NB+62.6	6.2' LT	1	--	--	--	--	--
SB11	52NB+22.7	40.0' RT	--	--	--	--	1	--
SB12	51NB+39.4	36.4' RT	1	--	--	--	--	--
SB13	51NB+27.5	45.2' RT	1	--	--	--	--	--
SB14	50NB+72.8	45.1' RT	--	--	--	1	--	--
SB15	50NB+63.7	34.5' RT	1	--	--	--	--	--
SB16	61NB+81.0	88.4' LT	1	--	--	--	--	--
SB17	61NB+77.7	39.1' LT	1	--	--	--	--	--
LB1	50NB+34.3	64.0' RT	--	--	1	--	--	--
LB2	48NB+85.9	46.2' RT	--	--	1	--	--	--
LB3	47NB+10.8	46.0' RT	--	--	1	--	--	--
LB4	45NB+38.0	36.0' RT	--	--	1	--	--	--
LB5	43NB+60.8	37.4' RT	--	--	1	--	--	--
LB6	51NB+69.0	105.5' LT	--	--	1	--	--	--
LB7	53NB+14.8	82.7' LT	--	--	1	--	--	--
LB8	54NB+86.1	85.3' LT	--	--	1	--	--	--
LB9	56NB+57.4	81.0' LT	--	--	1	--	--	--
LB10	58NB+25.2	84.3' LT	--	--	1	--	--	--
LB11	51NB+52.7	75.5' RT	--	--	1	--	--	--
CB1	50NB+31.3	84.7' RT	--	--	--	--	--	1
INTERSECTION TOTAL			11	2	11	2	2	1

BASE NUMBER	STATION	LOCATION	654.0101	654.0102	654.0105	654.0110	654.0113	654.0217
			CONCRETE BASES TYPE 1 EACH	CONCRETE BASES TYPE 2 EACH	CONCRETE BASES TYPE 5 EACH	CONCRETE BASES TYPE 10 EACH	CONCRETE BASES TYPE 13 EACH	CONCRETE CONTROL CABINET BASES TYPE 9 SPECIAL EACH
STH 37 & CRAIG ROAD								
SB1	85NB+49.2	92.2' LT	--	--	--	1	--	--
SB2	85NB+54.4	82.9' LT	1	--	--	--	--	--
SB3	85NB+31.4	37.8' LT	--	1	--	--	--	--
SB4	85NB+61.0	10.2' LT	1	--	--	--	--	--
SB5	85NB+82.8	40.5' RT	--	--	--	--	1	--
SB6	84NB+93.8	32.5' RT	1	--	--	--	--	--
SB7	84NB+73.8	46.8' RT	1	--	--	--	--	--
SB8	84NB+99.1	68.0' RT	1	--	--	--	--	--
SB9	84NB+14.9	43.9' RT	--	--	--	1	--	--
SB10	84NB+6.9	30.7' RT	1	--	--	--	--	--
SB11	84NB+29.6	11.8' LT	--	1	--	--	--	--
SB12	83NB+99.1	39.5' LT	1	--	--	--	--	--
SB13	83NB+77.7	40.7' LT	1	--	--	--	--	--
SB14	83NB+71.4	90.5' LT	--	--	--	--	1	--
SB15	84NB+58.3	120.0' LT	1	--	--	--	--	--
SB16	84NB+67.1	82.8' LT	1	--	--	--	--	--
SB17	84NB+81.3	83.7' LT	1	--	--	--	--	--
LB1	87NB+30.3	91.5' LT	--	--	1	--	--	--
LB2	89NB+13.5	88.0' LT	--	--	1	--	--	--
LB3	90NB+96.1	79.4' LT	--	--	1	--	--	--
LB4	92NB+97.2	74.8' LT	--	--	1	--	--	--
LB5	83NB+63.4	56.6' RT	--	--	1	--	--	--
LB6	82NB+32.8	41.2' RT	--	--	1	--	--	--
LB7	80NB+58.1	41.2' RT	--	--	1	--	--	--
LB8	78NB+82.7	41.2' RT	--	--	1	--	--	--
LB9	77NB+08.9	37.3' RT	--	--	1	--	--	--
LB10	85NB+94.7	121.2' LT	--	--	1	--	--	--
CB1	86NB+16.6	122.0' LT	--	--	--	--	--	1
INTERSECTION TOTAL			11	2	10	2	2	1
USH 12 & STH 37								
SB1	155+90.1	40.5' RT	1	--	--	--	--	--
SB15	157+02.6	72.8' RT	1	--	--	--	--	--
SB18	155+90.4	77.1' LT	1	--	--	--	--	--
SB19	156+84.5	54.3' RT	1	--	--	--	--	--
SB20	156+06.4	55.2' RT	--	1	--	--	--	--
CB1	155+56.8	89.6' RT	--	--	--	--	--	1
INTERSECTION TOTAL			4	1	0	0	0	1
ITEM TOTALS			26	5	21	4	4	3

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PULL BOX REMOVALS

EXISTING PULL BOX NUMBER	653.0905 REMOVING PULL BOXES EACH
STH 37 & HAMILTON AVE / SHORT ST	
PB1	1
PB2	1
PB3	1
PB4	1
PB5	1
PB6	1
PB7	1
PB8	1
PB9	1
PB10	1
PB11	1
PB12	1
PB13	1
PB14	1
PB15	1
PB16	1
PB17	1
PB18	1
INTERSECTION TOTAL	18
STH 37 & CRAIG ROAD	
PB1	1
PB2	1
PB3	1
PB4	1
PB5	1
PB6	1
PB7	1
PB8	1
PB9	1
PB10	1
PB11	1
PB12	1
PB13	1
PB14	1
PB15	1
PB16	1
PB17	1
PB18	1
PB19	1
INTERSECTION TOTAL	19
USH 12 & STH 37	
PB1	1
PB19	1
INTERSECTION TOTAL	2
ITEM TOTALS	39

TRAFFIC SIGNAL CABLE NO. 14 (ABOVE GROUND)

		655.0230 CABLE TRAFFIC SIGNAL 5 - 14 AWG	655.0240 CABLE TRAFFIC SIGNAL 7 - 14 AWG			655.0230 CABLE TRAFFIC SIGNAL 5 - 14 AWG	655.0240 CABLE TRAFFIC SIGNAL 7 - 14 AWG			655.0230 CABLE TRAFFIC SIGNAL 5 - 14 AWG	655.0240 CABLE TRAFFIC SIGNAL 7 - 14 AWG
FROM	TO	LF	LF	FROM	TO	LF	LF	FROM	TO	LF	LF
STH 37 & HAMILTON AVE / SHORT ST				STH 37 & CRAIG ROAD				USH 12 & STH 37			
SB1	HEAD 4	19	--	SB1	HEAD 16	41	--	SB15	HEAD 17	19	--
SB1	HEAD 14	--	22	SB1	HEAD 17	19	--	SB18	HEAD 41	15	--
SB2	HEAD 5	--	22	SB1	HEAD 19	--	57	SB19	HEAD 62	15	--
SB3	HEAD 26	19	--	SB1	HEAD 36	15	--	SB20	HEAD 20	40	--
SB4	HEAD 9	64	--	SB2	HEAD 6	--	22	SB20	HEAD 61	15	--
SB4	HEAD 10	52	--	SB2	HEAD 8	19	--	SB22	HEAD 1	19	--
SB5	HEAD 25	19	--	SB2	HEAD 29	15	--	SB22	HEAD 28	22	--
SB6	HEAD 18	--	22	SB3	HEAD 7	--	22	SB22	HEAD 42	15	--
SB6	HEAD 20	19	--	SB3	HEAD 11	19	--	INTERSECTION TOTAL		160	0
SB7	HEAD 16	40	--	SB4	HEAD 12	--	22	ITEM TOTALS		1452	577
SB7	HEAD 17	19	--	SB4	HEAD 21	19	--				
SB7	HEAD 19	--	56	SB5	HEAD 2	63	--				
SB8	HEAD 6	--	22	SB5	HEAD 3	51	--				
SB8	HEAD 8	19	--	SB6	HEAD 30	15	--				
SB8	HEAD 31	15	--	SB7	HEAD 15	19	--				
SB9	HEAD 7	--	22	SB7	HEAD 25	--	22				
SB9	HEAD 11	19	--	SB7	HEAD 31	15	--				
SB10	HEAD 12	--	22	SB8	HEAD 20	19	--				
SB11	HEAD 2	62	--	SB9	HEAD 23	40	--				
SB11	HEAD 3	50	--	SB9	HEAD 24	19	--				
SB12	HEAD 32	15	--	SB9	HEAD 26	--	55				
SB13	HEAD 15	19	--	SB9	HEAD 32	15	--				
SB13	HEAD 23	--	22	SB10	HEAD 1	19	--				
SB13	HEAD 33	15	--	SB10	HEAD 13	--	22				
SB14	HEAD 21	41	--	SB10	HEAD 33	15	--				
SB14	HEAD 22	19	--	SB11	HEAD 4	19	--				
SB14	HEAD 24	--	57	SB11	HEAD 14	--	22				
SB14	HEAD 34	15	--	SB12	HEAD 5	--	22				
SB15	HEAD 1	19	--	SB13	HEAD 28	19	--				
SB15	HEAD 13	--	22	SB14	HEAD 9	63	--				
SB16	HEAD 27	19	--	SB14	HEAD 10	51	--				
SB16	HEAD 28	19	--	SB15	HEAD 27	19	--				
SB17	HEAD 29	19	--	SB16	HEAD 34	15	--				
SB17	HEAD 30	19	--	SB17	HEAD 18	--	22				
INTERSECTION TOTAL		635	289	SB17	HEAD 22	19	--				
				SB17	HEAD 35	15	--				
				INTERSECTION TOTAL		657	288				

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TRAFFIC SIGNAL CABLE NO. 14 (BELOW GROUND)

		655.0240	655.0260	655.0270	655.0290			655.0240	655.0260	655.0270	655.0290
		CABLE	CABLE	CABLE	CABLE			CABLE	CABLE	CABLE	CABLE
		TRAFFIC SIGNAL	TRAFFIC SIGNAL	TRAFFIC SIGNAL	TRAFFIC SIGNAL			TRAFFIC SIGNAL	TRAFFIC SIGNAL	TRAFFIC SIGNAL	TRAFFIC SIGNAL
		7 - 14 AWG	12 - 14 AWG	15 - 14 AWG	21 - 14 AWG			7 - 14 AWG	12 - 14 AWG	15 - 14 AWG	21 - 14 AWG
FROM	TO	LF	LF	LF	LF	FROM	TO	LF	LF	LF	LF
STH 37 & HAMILTON AVE / SHORT ST						USH 12 & STH 37					
CB1	SB1	--	178	--	--	CB1	SB1	--	120	--	--
CB1	SB2	195	--	--	--	CB1	SB2	--	216	--	--
CB1	SB3	225	--	--	--	CB1	SB3	--	191	--	--
SB3	SB4	308	--	--	--	CB1	SB4	235	--	--	--
CB1	SB5	310	--	--	--	CB1	SB5	355	--	--	--
CB1	SB6	--	373	--	--	CB1	SB6	--	382	--	--
CB1	SB7	--	508	--	--	CB1	SB7	--	428	--	--
CB1	SB8	--	496	--	--	CB1	SB8	455	--	--	--
CB1	SB9	--	380	--	--	CB1	SB9	--	--	447	--
CB1	SB10	314	--	--	--	CB1	SB10	--	372	--	--
CB1	SB11	267	--	--	--	CB1	SB11	360	--	--	--
CB1	SB12	242	--	--	--	CB1	SB12	346	--	--	--
CB1	SB13	--	231	--	--	CB1	SB14	307	--	--	--
CB1	SB14	--	106	--	--	CB1	SB15	218	--	--	--
CB1	SB15	--	114	--	--	CB1	SB16	--	268	--	--
CB1	SB16	1544	--	--	--	CB1	SB17	--	155	--	--
CB1	SB17	1609	--	--	--	CB1	SB18	260	--	--	--
INTERSECTION TOTAL		5014	2386	0	0	CB1	SB19	255	--	--	--
						CB1	SB20	--	111	--	--
STH 37 & CRAIG ROAD						INTERSECTION TOTAL					
CB1	SB1	--	145	--	--			2791	2243	447	0
CB1	SB2	--	142	--	--	USH 12 & STH 37 (TEMPORARY SIGNAL)					
CB1	SB3	--	194	--	--	TCB1	PB5**	--	--	--	574
CB1	SB4	--	195	--	--	TCB1	PB14**	--	--	--	438
CB1	SB5	317	--	--	--	INTERSECTION TOTAL					
CB1	SB6	330	--	--	--			0	0	0	1012
CB1	SB7	--	344	--	--	ITEM TOTALS					
CB1	SB8	344	--	--	--			10376	7557	447	1012
CB1	SB9	--	579	--	--						
CB1	SB10	--	589	--	--						
CB1	SB11	--	484	--	--						
CB1	SB12	403	--	--	--						
CB1	SB13	382	--	--	--						
CB1	SB14	322	--	--	--						
CB1	SB15	213	--	--	--						
CB1	SB16	260	--	--	--						
CB1	SB17	--	256	--	--						
INTERSECTION TOTAL		2571	2928	0	0						

*SB1 TO BE INSTALLED AND ACTIVE PRIOR TO REMOVING SB18
 **RUN TWO (2) 21-14 AWG FROM TCB1 TO EACH PULL BOX

LIGHTING WIRE

FROM	TO	655.0320 CABLE TYPE UF 2 - 10 AWG GROUNDED LF	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG LF
STH 37 & HAMILTON AVE / SHORT ST			
CB1	LB1	67	--
LB1	LUMIN	--	117
LB1	LB2	194	--
LB2	LUMIN	--	144
LB1	SB1	161	--
SB1	LUMIN	--	288
LB2	LB3	235	--
LB3	LUMIN	--	144
LB3	LB4	245	--
LB4	LUMIN	--	144
LB4	LB5	234	--
LB5	LUMIN	--	144
SB1	SB5	238	--
SB5	LUMIN	--	117
CB1	LB11	172	--
LB11	LUMIN	--	117
LB11	SB9	261	--
SB9	LUMIN	--	288
SB9	LB6	177	--
LB6	LUMIN	--	117
LB6	LB7	193	--
LB7	LUMIN	--	144
LB7	LB8	223	--
LB8	LUMIN	--	144
LB8	LB9	239	--
LB9	LUMIN	--	144
LB9	LB10	207	--
LB10	LUMIN	--	144
INTERSECTION TOTAL		2846	2196
STH 37 & CRAIG ROAD			
CB1	LB1	176	--
LB1	LUMIN	--	144
LB1	LB2	235	--
LB2	LUMIN	--	144
LB1	SB3	288	--
SB3	LUMIN	--	288
LB2	LB3	237	--
LB3	LUMIN	--	144
LB3	LB4	238	--
LB4	LUMIN	--	144
SB3	SB8	282	--
SB8	LUMIN	--	117
CB1	LB10	73	--
LB10	LUMIN	--	117
LB10	SB15	198	--
SB15	LUMIN	--	117
SB15	SB11	351	--
SB11	LUMIN	--	117
SB11	LB5	176	--
LB5	LUMIN	--	117
LB5	LB6	177	--
LB6	LUMIN	--	144
LB6	LB7	239	--
LB7	LUMIN	--	144
LB7	LB8	239	--
LB8	LUMIN	--	144
LB8	LB9	222	--
LB9	LUMIN	--	144
INTERSECTION TOTAL		3131	2025
USH 12 & STH 37 (TEMPORARY SIGNAL) SERVICE			
TCB1		509	--
INTERSECTION TOTAL		509	0
ITEM TOTALS		6486	4221

ELECTRIC WIRE TRAFFIC SIGNALS, NO. 10

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
STH 37 & HAMILTON AVE / SHORT ST		
CB1	SB1	178
SB1	SB2	123
SB2	SB3	86
SB3	SB4	199
SB4	SB5	118
SB5	SB6	99
SB6	SB7	297
SB7	SB8	46
SB8	SB9	264
SB9	SB10	128
SB10	SB11	155
SB11	SB12	205
SB12	SB13	79
SB13	SB14	269
SB14	SB15	42
SB15	CB1	114
CB1	SB16	1544
SB16	SB17	103
SB17	CB1	1609
INTERSECTION TOTAL		7740
STH 37 & CRAIG ROAD		
PB1	CB1	50
PB8	SB1	61
PB9	SB2	36
PB10	SB4	66
PB11	SB5	26
PB12	SB6	41
PB13	SB8	83
PB14	SB8	25
PB15	SB9	146
PB16	PB17	78
PB17	PB18	165
PB18	PB19	123
PB19	PB20	120
PB20	PB21	195
PB21	PB22	282
PB22	PB23	160
PB23	SB16	27
PB24	SB17	26
PB25	SB9	75
PB26	SB10	39
PB27	SB11	62
PB28	SB13	87
PB29	SB13	42
PB30	CB1	42
PB31	SB14	25
INTERSECTION TOTAL		3446

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
STH 37 & CRAIG ROAD		
CB1	SB1	145
SB1	SB2	41
SB2	SB3	254
SB3	SB4	133
SB4	SB5	158
SB5	SB6	137
SB6	SB7	50
SB7	SB8	178
SB8	SB9	289
SB9	SB10	44
SB10	SB11	251
SB11	SB12	155
SB12	SB13	53
SB13	SB14	108
SB14	SB15	189
SB15	SB16	127
SB16	SB17	50
SB17	CB1	256
INTERSECTION TOTAL		3446
USH 12 & STH 37		
CB1	SB2	216
SB4	SB18	69
SB18	SB5	189
SB14	SB15	149
SB15	SB16	110
SB16	SB19	47
SB19	SB17	192
SB17	SB20	214
SB20	SB1	51
SB1	CB1	123
INTERSECTION TOTAL		1530
USH 12 & STH 37 (TEMPORARY SIGNAL)		
PB21	CB1	68
PB23	CB1	39
PB24	CB1	34
PB25	SB20	29
INTERSECTION TOTAL		506
ITEM TOTALS		13222

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF
STH 37 & HAMILTON AVE / SHORT ST		
CB1	SB4 (HEAD A)	373
CB1	SB11 (HEAD B)	327
CB1	SB14 (HEAD C)	161
CB1	SB7 (HEAD D)	563
INTERSECTION TOTAL		1424
STH 37 & CRAIG ROAD		
CB1	SB14 (HEAD A)	382
CB1	SB5 (HEAD B)	377
CB1	SB9 (HEAD C)	629
CB1	SB1 (HEAD D)	200
INTERSECTION TOTAL		1588
USH 12 & STH 37		
CB1	SB4 (HEAD A)	305
CB1	SB14 (HEAD B)	377
CB1	SB20 (HEAD C)	151
CB1	SB8 (HEAD D)	495
INTERSECTION TOTAL		1328
USH 12 & STH 37 (TEMPORARY SIGNAL)		
TCB1	PB5	287
TCB1	PB14	219
TCB1	PB14	219
INTERSECTION TOTAL		725
ITEM TOTALS		5065

ELECTRICAL SERVICE METER BREAKER PEDESTAL

LOCATION	656.0200.01	656.0200.02	656.0200.03
	ELECTRICAL SERVICE METER BREAKER PEDESTAL LS	ELECTRICAL SERVICE METER BREAKER PEDESTAL LS	ELECTRICAL SERVICE METER BREAKER PEDESTAL LS
STH 37 & HAMILTON AVE / SHORT ST	1	-	-
STH 37 & CRAIG ROAD	-	1	-
USH 12 & STH 37	-	-	1
ITEM TOTALS	1	1	1

SIGNAL MOUNTING HARDWARE

LOCATION	658.5069.01	658.5069.02	658.5069.03
	SIGNAL MOUNTING HARDWARE LS	SIGNAL MOUNTING HARDWARE LS	SIGNAL MOUNTING HARDWARE LS
STH 37 & HAMILTON AVE / SHORT ST	1	-	-
STH 37 & CRAIG ROAD	-	1	-
USH 12 & STH 37	-	-	1
ITEM TOTALS*	1	1	1

*ORNAMENTAL MOUNTING HARDWARE NEEDED ON SIGNAL STANDARDS

TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS

LOCATION	661.0200.01	661.0200.02	661.0300
	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	GENERATORS DAY
STH 37 & HAMILTON AVE / SHORT ST	1	-	2
STH 37 & CRAIG ROAD	-	1	2
ITEM TOTALS	1	1	4

INSTALL FIBER OPTIC CABLE

FROM	TO	655.0510 ELECTRICAL WIRE TRAFFIC SIGNALS 12 AWG LF	*673.0200 TRACER WIRE MARKER POSTS EACH	678.0006 INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 6-CT LF
INTERCONNECT				
CB1 (S18-1036)	CB1 (S18-0609)	1600	4	1750
CB1 (S18-0609)	CB1 (S18-0241)	3966	8	4222
CB1 (S18-0241)	CB1 (S18-0226)	1609	4	1753
PB11 (S18-0241)	PB17 (S18-0226)	1707	5	-
ITEM TOTALS		8882	21	7725

*FINAL LOCATIONS TO BE DETERMINED IN THE FIELD

CAST BASES, POLES, MONOTUBE ARMS, LUMINAIRES

SIGNAL BASE NUMBER	657.0100	657.0255	657.0305	657.0315	657.0322	657.0430	657.0420	657.0425	657.0585	657.0614	657.0615	657.0714	657.0715	657.1345	657.1355
	PEDESTAL BASES EACH	TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE EACH	POLES TYPE 2 EACH	POLES TYPE 4 EACH	POLES TYPE 5 ALUMINUM EACH	TRAFFIC SIGNAL STANDARDS ALUMINUM 10 - FT EACH	TRAFFIC SIGNAL STANDARDS ALUMINUM 13 - FT EACH	TRAFFIC SIGNAL STANDARDS ALUMINUM 15 - FT EACH	TROMBONE ARMS 15-FT EACH	LUMINAIRE ARMS 4-INCH CLAMP 8-FOOT EACH	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 8-FOOT EACH	LUMINAIRE ARMS TRUSS TYPE 4-INCH CLAMP 15-FOOT EACH	LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 15-FOOT EACH	INSTALL POLES TYPE 9 EACH	INSTALL POLES TYPE 12 EACH
USH 12 & STH 37															
SB1	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB15	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
SB17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB18	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
SB19	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
SB20	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-
INTERSECTION TOTAL	4	1	1	0	0	2	1	1	1	0	0	0	0	0	0
ITEM TOTALS	23	29	1	7	21	5	3	15	1	10	5	1	16	4	4

CAST BASES, POLES, MONOTUBE ARMS, LUMINAIRES

SIGNAL BASE NUMBER	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE EACH	657.0305 POLES TYPE 2 EACH	657.0315 POLES TYPE 4 EACH	657.0322 POLES TYPE 5 ALUMINUM EACH	657.0430 TRAFFIC SIGNAL STANDARDS ALUMINUM 10 - FT EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13 - FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15 - FT EACH	657.0585 TROMBONE ARMS 15-FT EACH	657.0614 LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 8-FOOT EACH	657.0615 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 8-FOOT EACH	657.0714 LUMINAIRE ARMS TRUSS TYPE 4-INCH CLAMP 15-FOOT EACH	657.0715 LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 15-FOOT EACH	657.1345 INSTALL POLES TYPE 9 EACH	657.1355 INSTALL POLES TYPE 12 EACH
STH 37 & HAMILTON AVE / SHORT ST															
SB1	-	1	-	1	-	-	-	-	-	2	-	-	-	-	-
SB2	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB3	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
SB4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
SB5	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-
SB6	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB7	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
SB8	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB9	-	1	-	1	-	-	-	-	-	2	-	-	-	-	-
SB10	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
SB12	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
SB13	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB14	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
SB15	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB16	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB17	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
LB1	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-
LB2	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB3	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB4	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB5	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB6	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-
LB7	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB8	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB9	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB10	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB11	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-
INTERSECTION TOTAL	10	14	0	3	11	1	1	8	0	5	3	0	8	2	2
STH 37 & CRAIG ROAD															
SB1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
SB2	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB3	-	1	-	1	-	-	-	-	-	2	-	-	-	-	-
SB4	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
SB6	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
SB7	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB8	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-
SB9	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
SB10	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB11	-	1	-	1	-	-	-	-	-	2	-	-	-	-	-
SB12	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
SB13	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-
SB14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
SB15	-	1	-	1	-	-	-	-	-	-	-	1	-	-	-
SB16	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
SB17	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
LB1	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB2	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB3	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB4	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB5	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-
LB6	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB7	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB8	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB9	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-
LB10	-	1	-	-	1	-	-	-	-	-	1	-	-	-	-
INTERSECTION TOTAL	9	14	0	4	10	2	1	6	0	5	2	1	8	2	2

3

3

CAST BASES, POLES, MONOTUBE ARMS, LUMINAIRES

SIGNAL BASE NUMBER	657.1525 INSTALL MONOTUBE ARMS 25-FT EACH	657.1530 INSTALL MONOTUBE ARMS 30-FT EACH	657.1535 INSTALL MONOTUBE ARMS 35-FT EACH	657.1540 INSTALL MONOTUBE ARMS 40-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	659.1115 LUMINAIRES UTILITY LED A EACH	659.1125 LUMINAIRES UTILITY LED C EACH
STH 37 & HAMILTON AVE / SHORT ST							
SB1	--	--	--	--	1	--	2
SB2	--	--	--	--	--	--	--
SB3	--	--	--	--	--	--	--
SB4	--	--	--	1	--	--	--
SB5	--	--	--	--	--	--	1
SB6	--	--	--	--	--	--	--
SB7	--	1	--	--	--	--	--
SB8	--	--	--	--	1	--	--
SB9	--	--	--	--	1	--	2
SB10	--	--	--	--	--	--	--
SB11	--	--	1	--	--	--	--
SB12	--	--	--	--	1	--	--
SB13	--	--	--	--	1	--	--
SB14	--	1	--	--	1	--	--
SB15	--	--	--	--	--	--	--
SB16	--	--	--	--	--	--	--
SB17	--	--	--	--	--	--	--
LB1	--	--	--	--	--	--	1
LB2	--	--	--	--	--	1	--
LB3	--	--	--	--	--	1	--
LB4	--	--	--	--	--	1	--
LB5	--	--	--	--	--	1	--
LB6	--	--	--	--	--	--	1
LB7	--	--	--	--	--	1	--
LB8	--	--	--	--	--	1	--
LB9	--	--	--	--	--	1	--
LB10	--	--	--	--	--	1	--
LB11	--	--	--	--	--	--	1
INTERSECTION TOTAL	0	2	1	1	6	8	8

STH 37 & CRAIG ROAD							
SB1	--	1	--	--	1	--	--
SB2	--	--	--	--	1	--	--
SB3	--	--	--	--	1	--	2
SB4	--	--	--	--	--	--	--
SB5	--	--	1	--	--	--	--
SB6	--	--	--	--	1	--	--
SB7	--	--	--	--	1	--	--
SB8	--	--	--	--	--	--	1
SB9	1	--	--	--	1	--	--
SB10	--	--	--	--	1	--	--
SB11	--	--	--	--	1	--	2
SB12	--	--	--	--	--	--	--
SB13	--	--	--	--	--	--	--
SB14	--	--	1	--	--	--	--
SB15	--	--	--	--	--	--	1
SB16	--	--	--	--	1	--	--
SB17	--	--	--	--	1	--	--
LB1	--	--	--	--	--	1	--
LB2	--	--	--	--	--	1	--
LB3	--	--	--	--	--	1	--
LB4	--	--	--	--	--	1	--
LB5	--	--	--	--	--	--	1
LB6	--	--	--	--	--	1	--
LB7	--	--	--	--	--	1	--
LB8	--	--	--	--	--	1	--
LB9	--	--	--	--	--	1	--
LB10	--	--	--	--	--	--	1
INTERSECTION TOTAL	1	1	2	0	10	8	8

SIGNAL BASE NUMBER	657.1525 INSTALL MONOTUBE ARMS 25-FT EACH	657.1530 INSTALL MONOTUBE ARMS 30-FT EACH	657.1535 INSTALL MONOTUBE ARMS 35-FT EACH	657.1540 INSTALL MONOTUBE ARMS 40-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	659.1115 LUMINAIRES UTILITY LED A EACH	659.1125 LUMINAIRES UTILITY LED C EACH
USH 12 & STH 37							
SB1	--	--	--	--	1	--	--
SB2	--	--	--	--	1	--	--
SB15	--	--	--	--	--	--	--
SB17	--	--	--	--	1	--	--
SB18	--	--	--	--	1	--	--
SB19	--	--	--	--	1	--	--
SB20	--	--	--	--	1	--	--
INTERSECTION TOTAL	0	0	0	0	6	0	0
ITEM TOTALS	1	3	3	1	22	16	16

3

3

TRAFFIC SIGNAL AND PEDESTRIAN FACES, PUSH BUTTONS, AND BACKPLATES

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0171	658.0173	658.0174	658.0416
		TRAFFIC SIGNAL FACE 1S-12 INCH EACH	TRAFFIC SIGNAL FACE 3S-12 INCH EACH	TRAFFIC SIGNAL FACE 4S-12 INCH EACH	PEDESTRIAN SIGNAL FACE 16-INCH EACH
STH 37 & HAMILTON AVE / SHORT ST					
1	15	-	1	-	-
2	11	-	1	-	-
3	11	-	1	-	-
4	1	-	1	-	-
5	2	-	-	1	-
6	8	-	-	1	-
7	9	-	-	1	-
8	8	-	1	-	-
9	4	-	1	-	-
10	4	-	1	-	-
11	9	-	1	-	-
12	10	-	-	1	-
13	15	-	-	1	-
14	1	-	-	1	-
15	13	-	1	-	-
16	7	-	1	-	-
17	7	-	1	-	-
18	6	-	-	1	-
19	7	-	-	1	-
20	6	-	1	-	-
21	14	-	1	-	-
22	14	-	1	-	-
23	13	-	-	1	-
24	14	-	-	1	-
25	5	-	1	-	-
26	3	-	1	-	-
27	16	1	-	-	-
28	17	1	-	-	-
61	13	-	-	-	1
62	14	-	-	-	1
81	8	-	-	-	1
82	12	-	-	-	1
INTERSECTION TOTAL		2	16	10	4

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0171	658.0173	658.0174	658.0416
		TRAFFIC SIGNAL FACE 1S-12 INCH EACH	TRAFFIC SIGNAL FACE 3S-12 INCH EACH	TRAFFIC SIGNAL FACE 4S-12 INCH EACH	PEDESTRIAN SIGNAL FACE 16-INCH EACH
STH 37 & CRAIG ROAD					
1	10	-	1	-	-
2	5	-	1	-	-
3	5	-	1	-	-
4	11	-	1	-	-
5	12	-	-	1	-
6	2	-	-	1	-
7	3	-	-	1	-
8	2	-	1	-	-
9	14	-	1	-	-
10	14	-	1	-	-
11	3	-	1	-	-
12	4	-	-	1	-
13	10	-	-	1	-
14	11	-	-	1	-
15	7	-	1	-	-
16	1	-	1	-	-
17	1	-	1	-	-
18	17	-	-	1	-
19	1	-	-	1	-
20	8	-	1	-	-
23	4	-	1	-	-
24	17	-	1	-	-
25	9	-	1	-	-
26	9	-	1	-	-
27	7	-	-	1	-
28	9	-	-	1	-
29	15	-	1	-	-
30	13	-	1	-	-
21	17	-	-	-	1
22	1	-	-	-	1
41	10	-	-	-	1
42	16	-	-	-	1
61	7	-	-	-	1
62	9	-	-	-	1
81	2	-	-	-	1
82	6	-	-	-	1
INTERSECTION TOTAL		0	18	10	8

USH 12 & STH 37					
SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0171	658.0173	658.0174	658.0416
		TRAFFIC SIGNAL FACE 1S-12 INCH EACH	TRAFFIC SIGNAL FACE 3S-12 INCH EACH	TRAFFIC SIGNAL FACE 4S-12 INCH EACH	PEDESTRIAN SIGNAL FACE 16-INCH EACH
1	SB1	-	1	-	-
17	SB15	-	1	-	-
20	SB20	-	1	-	-
28	SB1	-	-	1	-
41	SB18	-	-	-	1
42	SB1	-	-	-	1
61	SB20	-	-	-	1
62	SB19	-	-	-	1
INTERSECTION TOTAL		0	3	1	4
ITEM TOTALS		0	23	27	22

3

CAT 5E CABLE

FROM	TO	SPV.0090.01 INSTALL STATE SUPPLIED CAT-5E CABLE LF
STH 37 & HAMILTON AVE / SHORT ST		
CB1	SB1 (LUMINAIRE ARM)	214
CB1	SB9 (LUMINAIRE ARM)	429
INTERSECTION TOTAL		643
STH 37 & CRAIG ROAD		
CB1	SB3 (LUMINAIRE ARM)	231
CB1	SB11 (LUMINAIRE ARM)	450
INTERSECTION TOTAL		681
ITEM TOTALS		1324

REMOVE AND SALVAGE TRAFFIC SIGNALS

LOCATION	SPV.0105.01 REMOVE AND SALVAGE TRAFFIC SIGNALS LS	SPV.0105.02 REMOVE AND SALVAGE TRAFFIC SIGNALS LS	SPV.0105.03 REMOVE AND SALVAGE TRAFFIC SIGNALS LS
STH 37 & HAMILTON AVE / SHORT ST	1	-	-
STH 37 & CRAIG ROAD	-	1	-
USH 12 & STH 37	-	-	1
ITEM TOTALS	1	1	1

3

TEMPORARY EVP SYSTEM

	SPV.0105.08 TEMPORARY EVP SYSTEM LS	SPV.0105.09 TEMPORARY EVP SYSTEM LS
STH 37 & HAMILTON AVE / SHORT ST	1	-
STH 37 & CRAIG ROAD	-	1
ITEM TOTALS	1	1

INSTALL STATE FURNISHED EVP DETECTOR HEADS

	SPV.0105.04 INSTALL STATE FURNISHED EVP DETECTOR HEADS LS	SPV.0105.05 INSTALL STATE FURNISHED EVP DETECTOR HEADS LS
STH 37 & HAMILTON AVE / SHORT ST	1	-
STH 37 & CRAIG ROAD	-	1
ITEM TOTALS	1	1

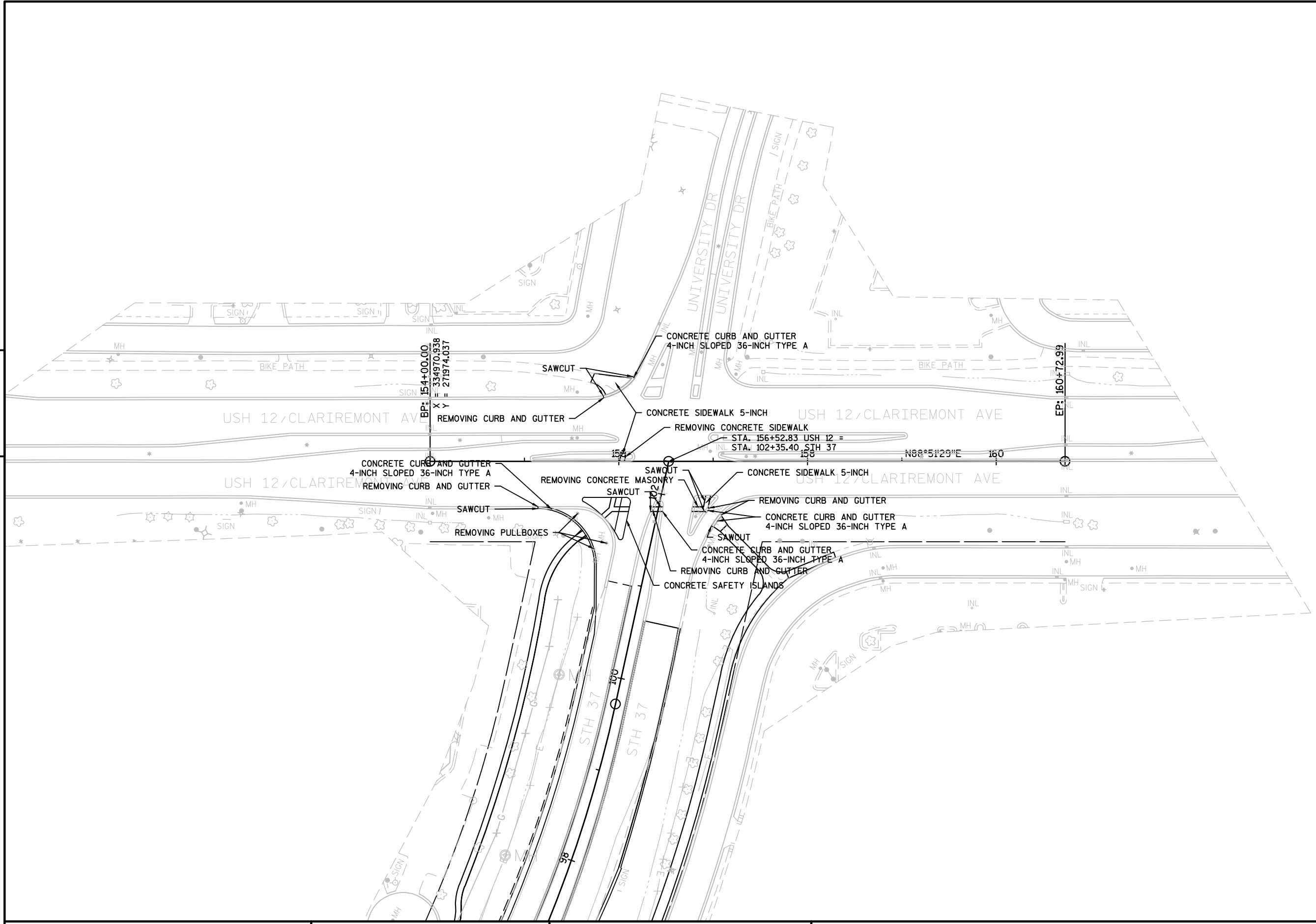
TEMPORARY VEHICLE DETECTION

	SPV.0105.06 TEMPORARY VEHICLE DETECTION LS	SPV.0105.07 TEMPORARY VEHICLE DETECTION LS
STH 37 & HAMILTON AVE / SHORT ST	1	-
STH 37 & CRAIG ROAD	-	1
ITEM TOTALS	1	1

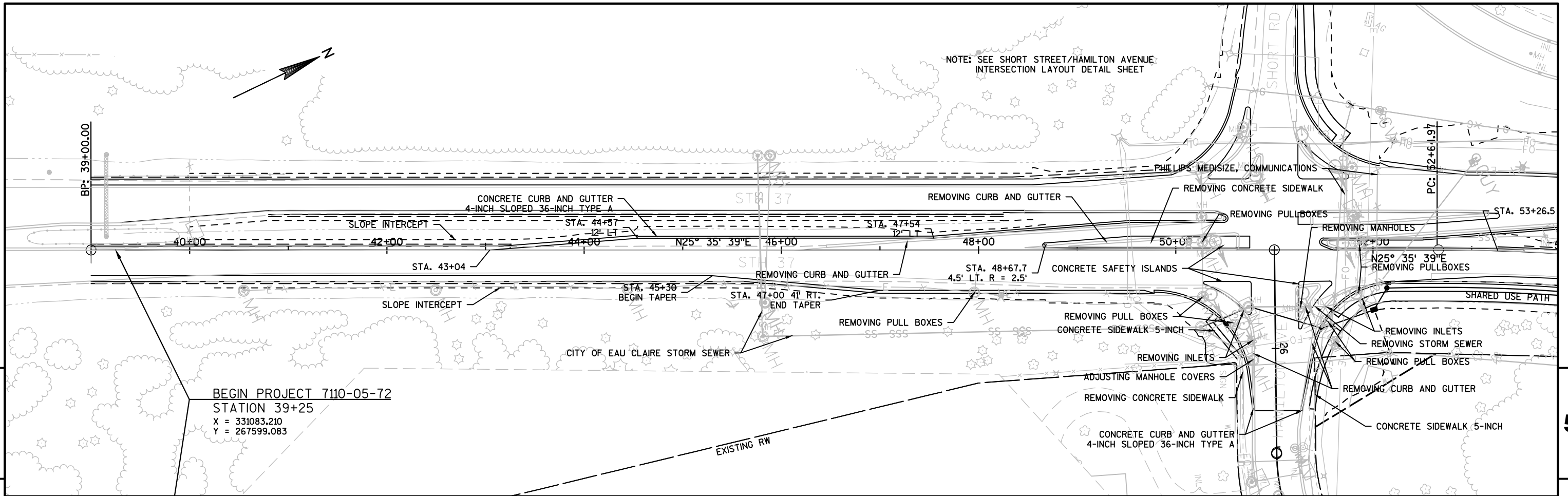


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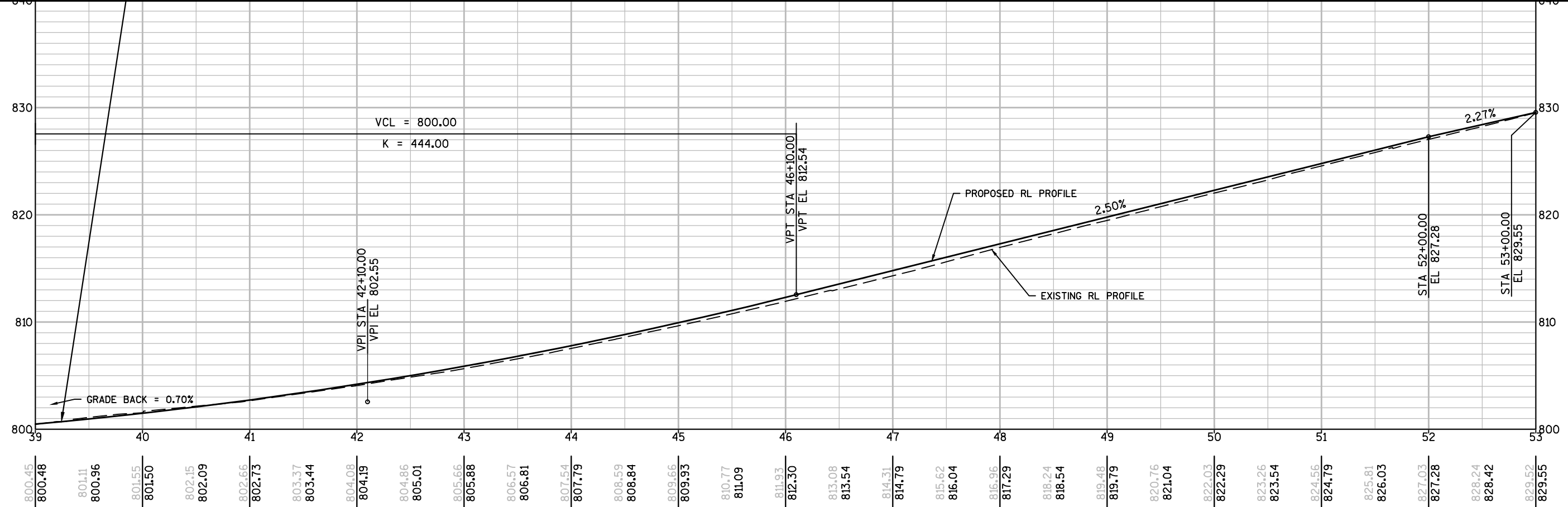
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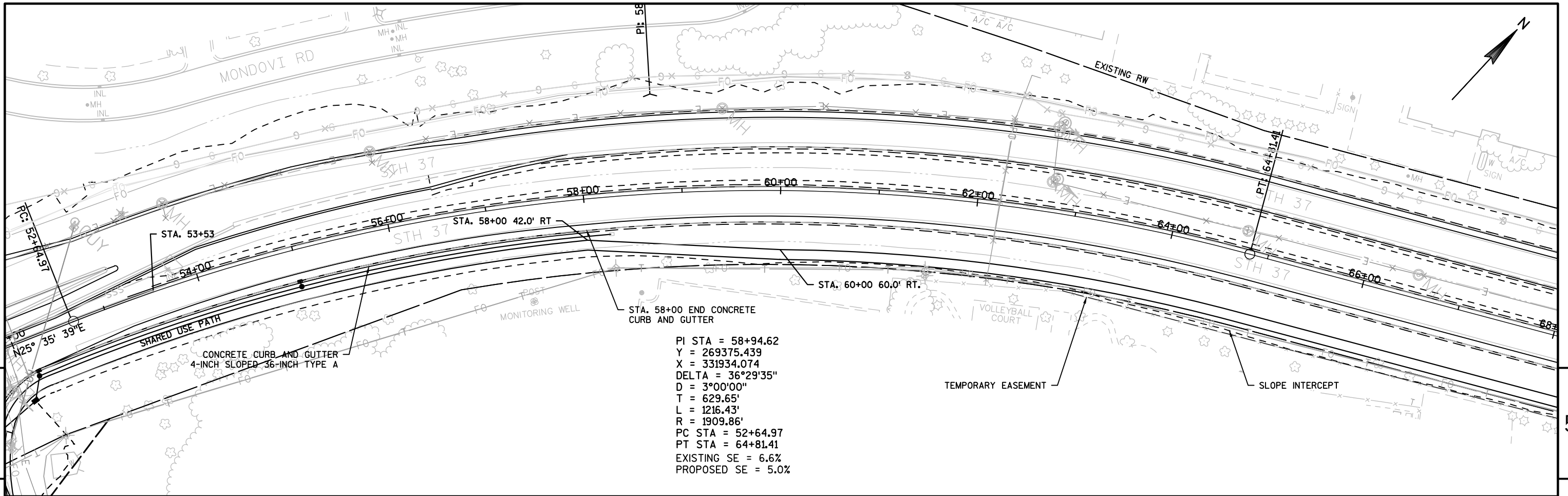
PROJECT NO: 7110-05-72	HWY: US 12	COUNTY: EAU CLAIRE	PLAN: CLAIREMONT AVENUE	SHEET	E
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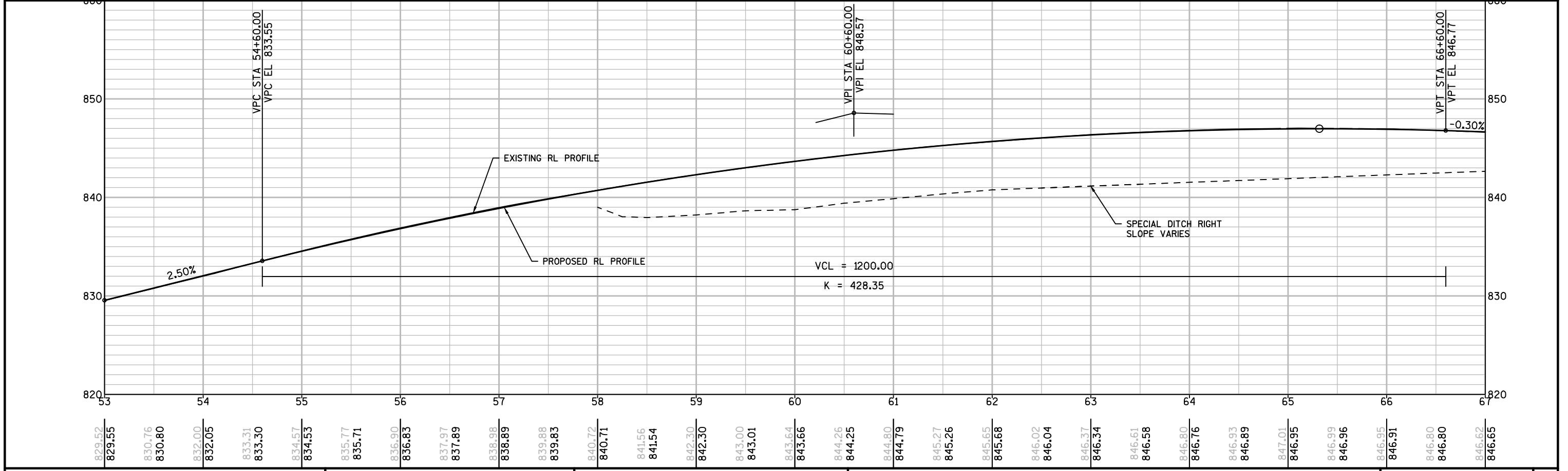
BEGIN PROJECT 7110-05-72
 STATION 39+25
 X = 331083.210
 Y = 267599.083



PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	PLAN AND PROFILE: NB STH 37	SHEET	E
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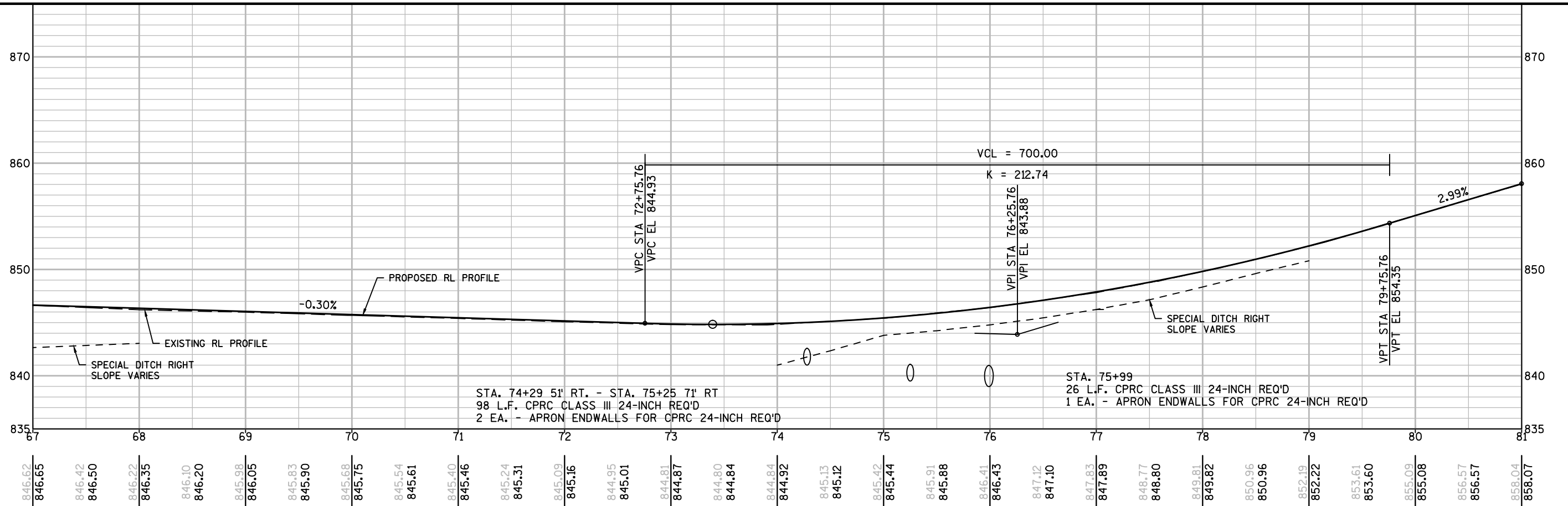
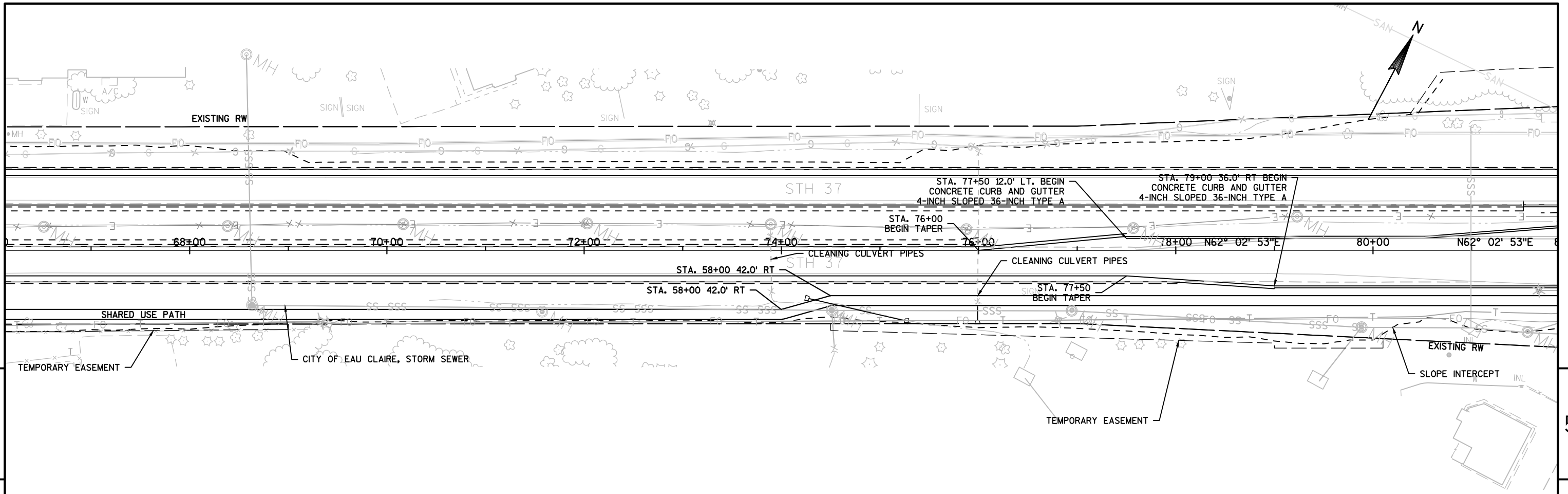


PI STA = 58+94.62
 Y = 269375.439
 X = 331934.074
 DELTA = 36°29'35"
 D = 3°00'00"
 T = 629.65'
 L = 1216.43'
 R = 1909.86'
 PC STA = 52+64.97
 PT STA = 64+81.41
 EXISTING SE = 6.6%
 PROPOSED SE = 5.0%

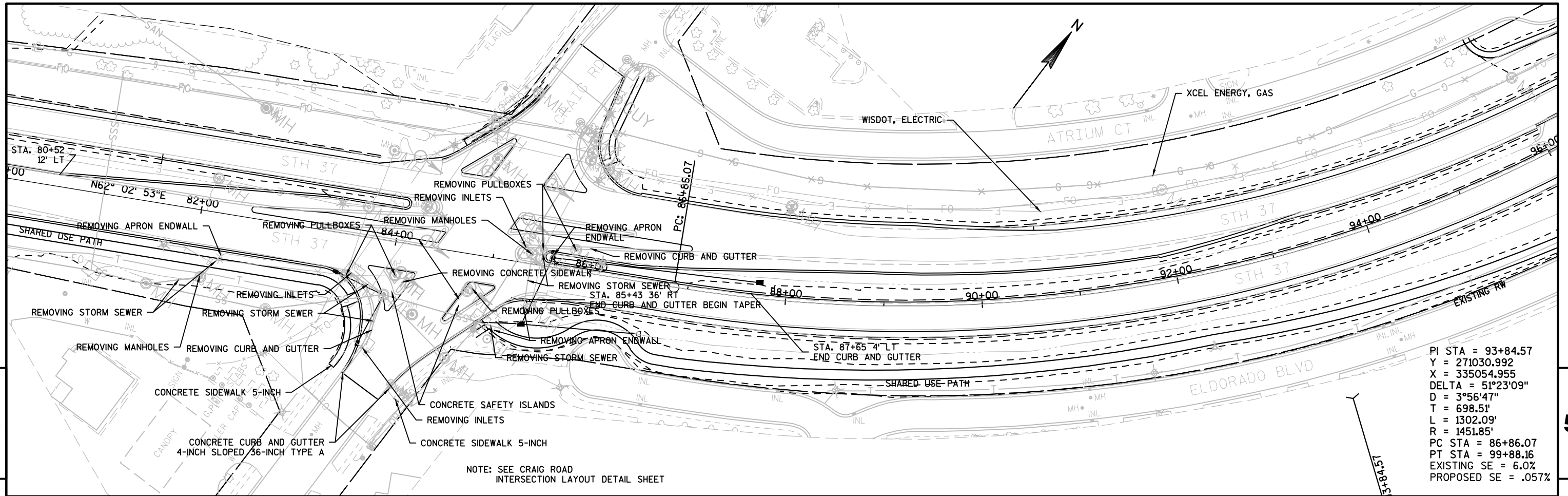


829.52	829.55	830.76	830.80	832.00	832.05	833.31	833.30	834.57	834.53	835.77	835.71	836.90	836.83	837.97	837.89	838.98	838.89	839.88	839.83	840.72	840.71	841.56	841.54	842.30	842.30	843.00	843.01	843.64	843.66	844.26	844.25	844.80	844.79	845.27	845.26	845.65	845.68	846.02	846.04	846.37	846.34	846.61	846.58	846.80	846.76	846.93	846.89	847.01	846.95	846.99	846.96	846.95	846.91	846.80	846.80	846.62	846.65
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PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: NB STH 37 SHEET E

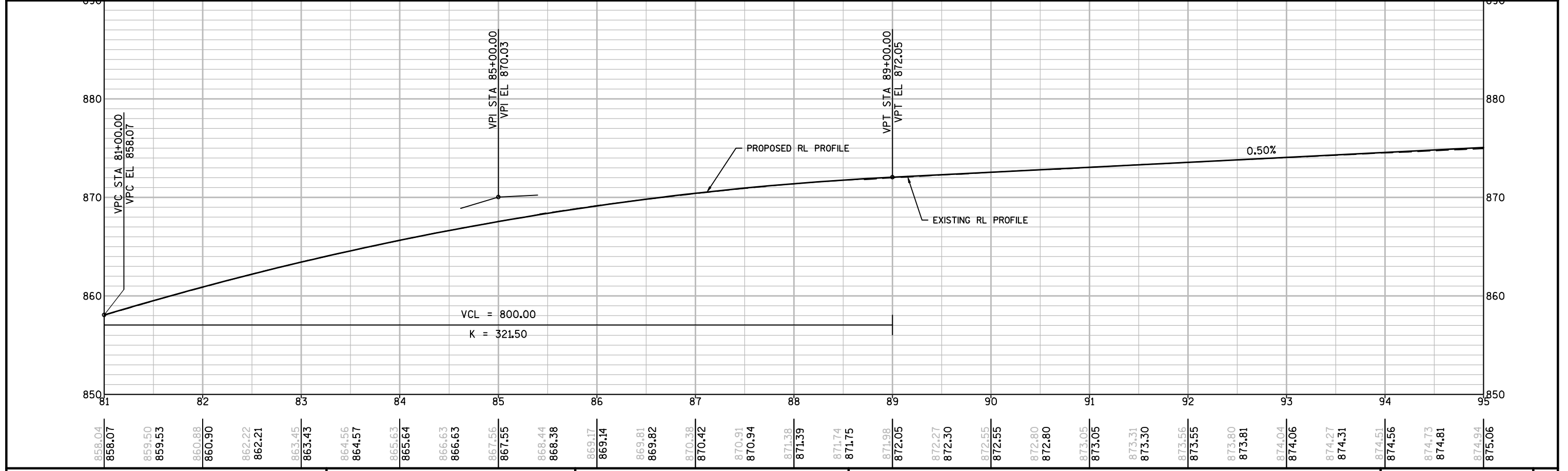


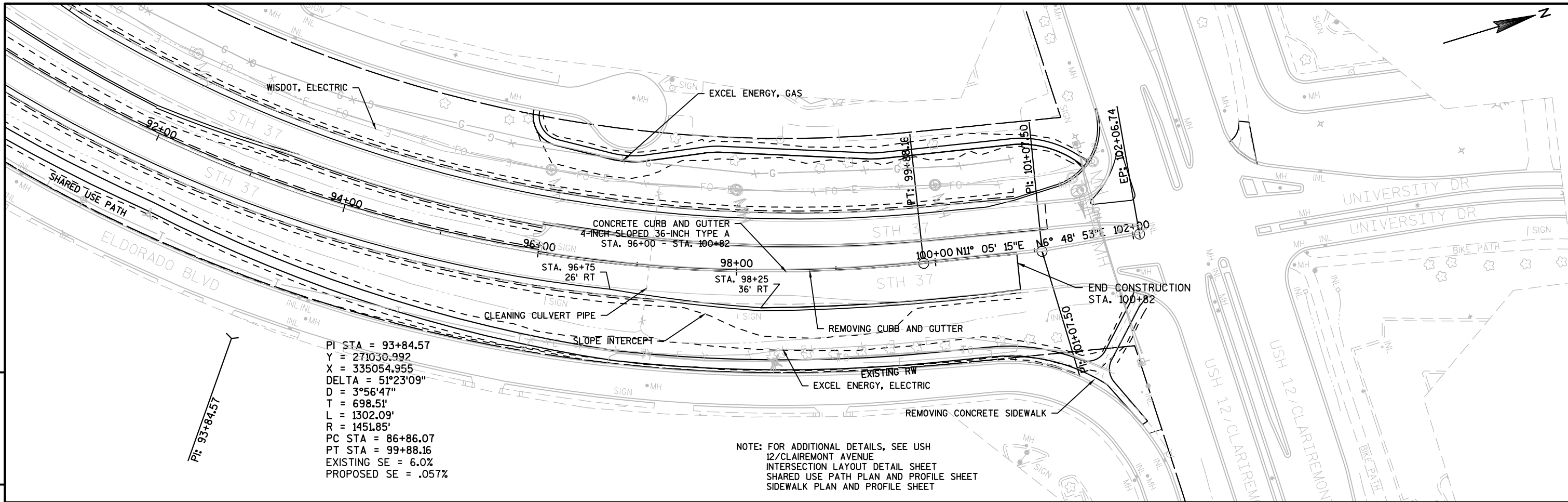
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: NB STH 37 SHEET E



PI STA = 93+84.57
 Y = 271030.992
 X = 335054.955
 DELTA = 51°23'09"
 D = 3°56'47"
 T = 698.51'
 L = 1302.09'
 R = 1451.85'
 PC STA = 86+86.07
 PT STA = 99+88.16
 EXISTING SE = 6.0%
 PROPOSED SE = .057%

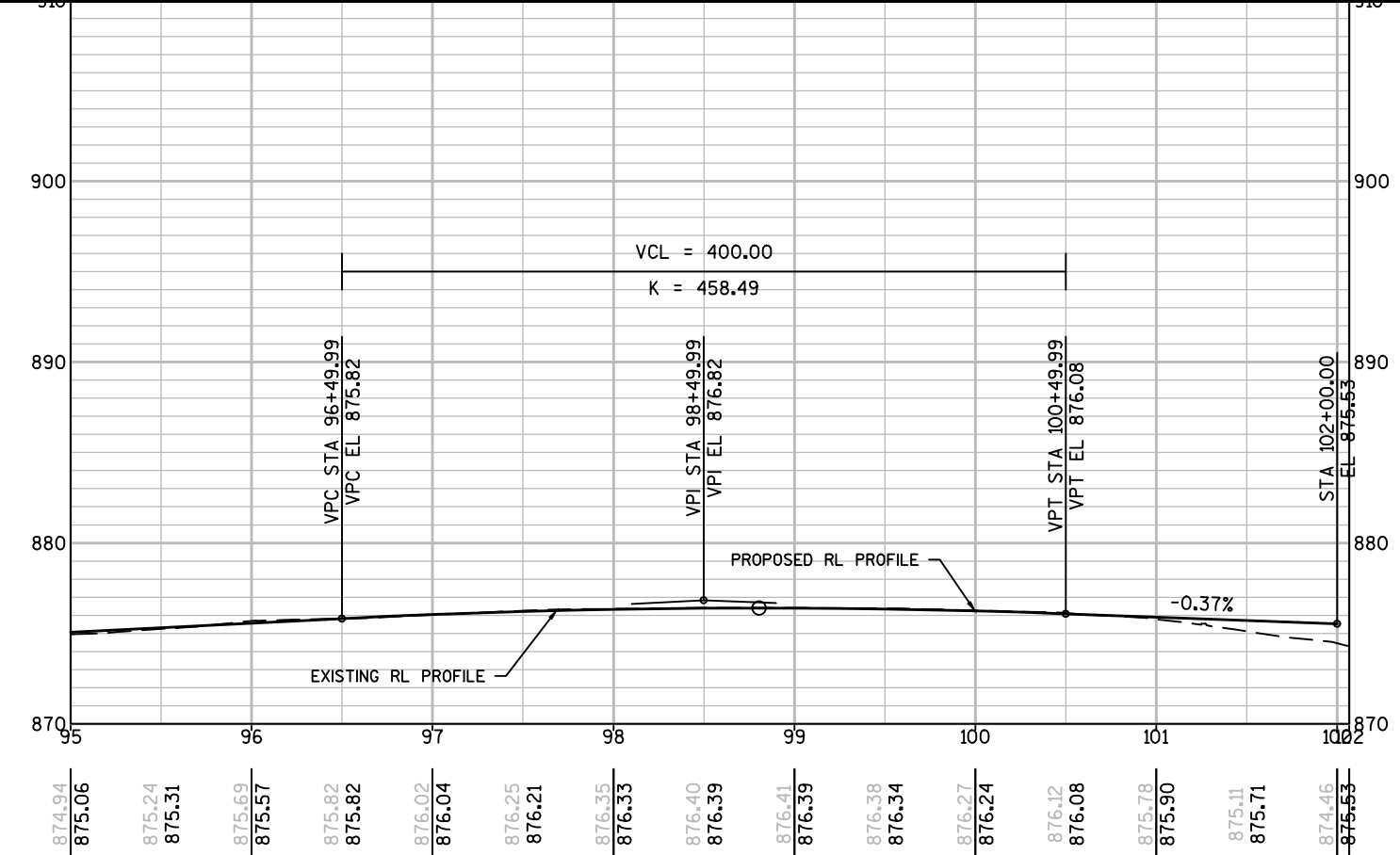
NOTE: SEE CRAIG ROAD
 INTERSECTION LAYOUT DETAIL SHEET



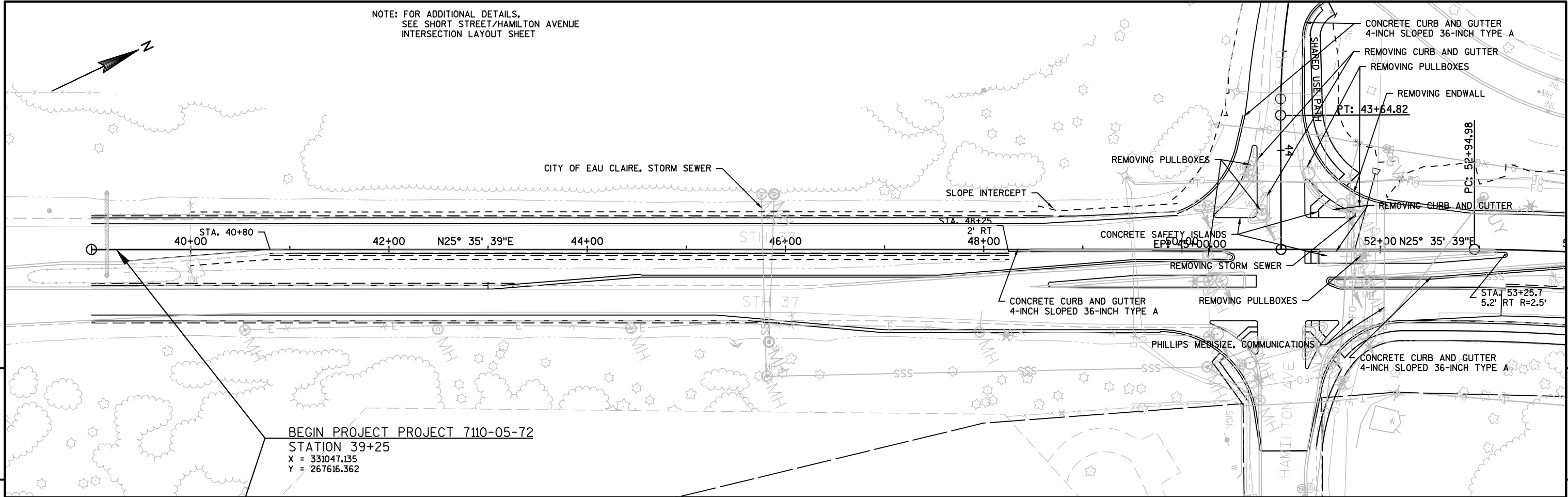


PI STA = 93+84.57
 Y = 271030.992
 X = 335054.955
 DELTA = 51°23'09"
 D = 3°56'47"
 T = 698.51'
 L = 1302.09'
 R = 1451.85'
 PC STA = 86+86.07
 PT STA = 99+88.16
 EXISTING SE = 6.0%
 PROPOSED SE = .057%

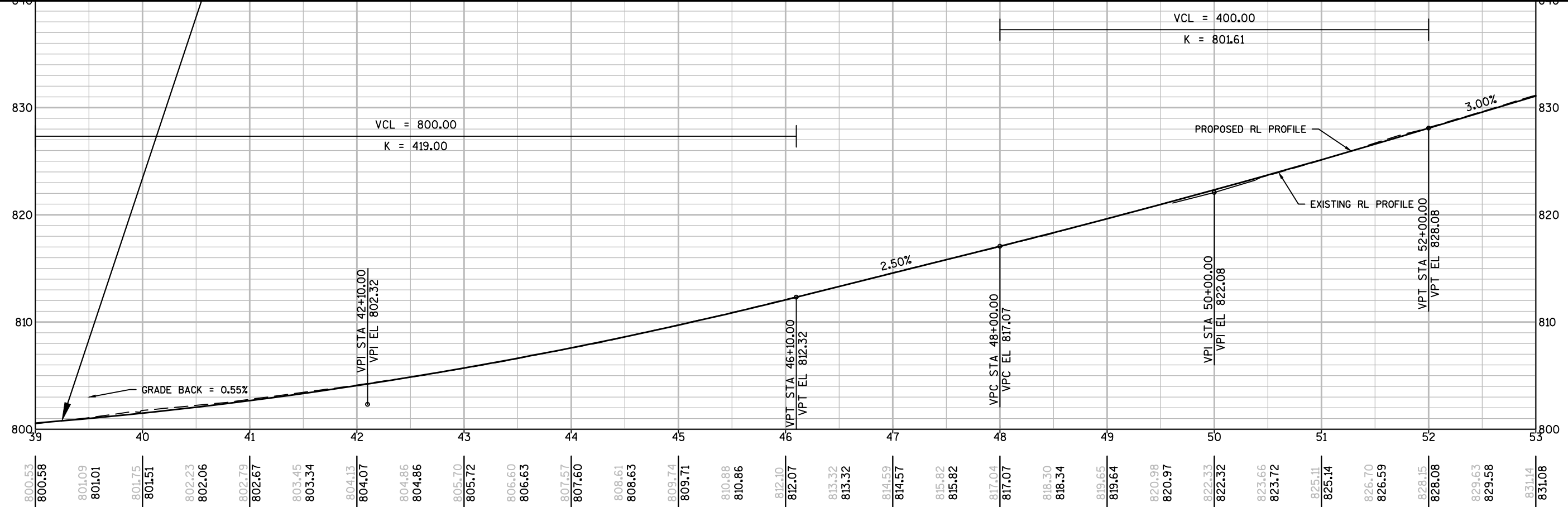
NOTE: FOR ADDITIONAL DETAILS, SEE USH
 12/CLAIREMONT AVENUE
 INTERSECTION LAYOUT DETAIL SHEET
 SHARED USE PATH PLAN AND PROFILE SHEET
 SIDEWALK PLAN AND PROFILE SHEET



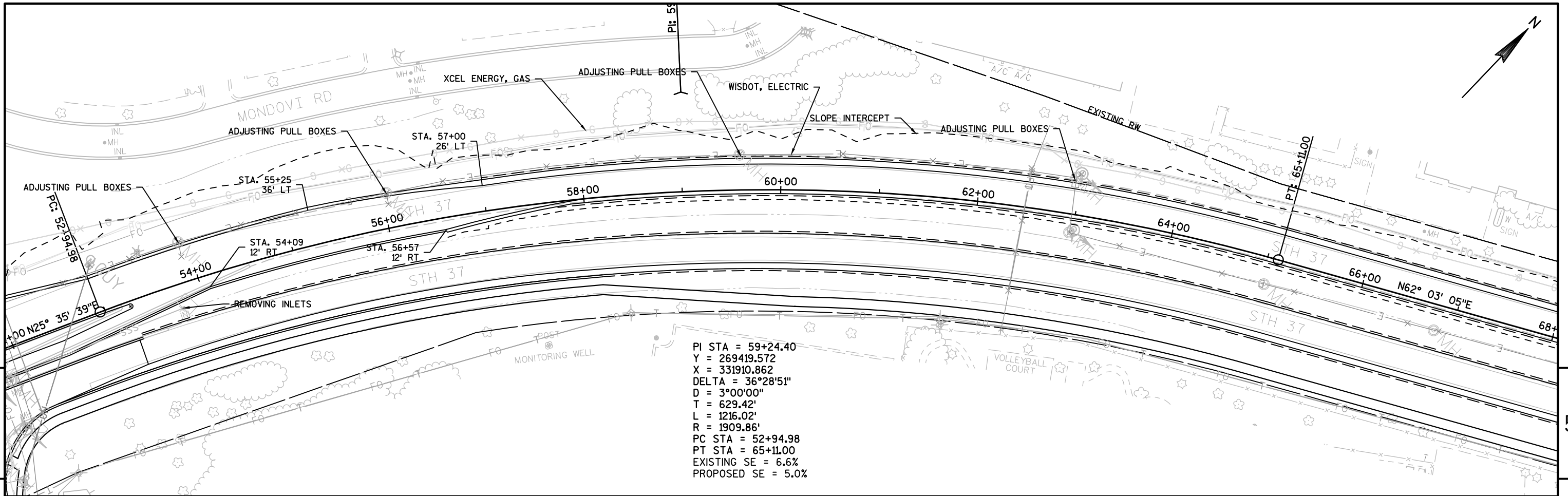
NOTE: FOR ADDITIONAL DETAILS,
SEE SHORT STREET/HAMILTON AVENUE
INTERSECTION LAYOUT SHEET



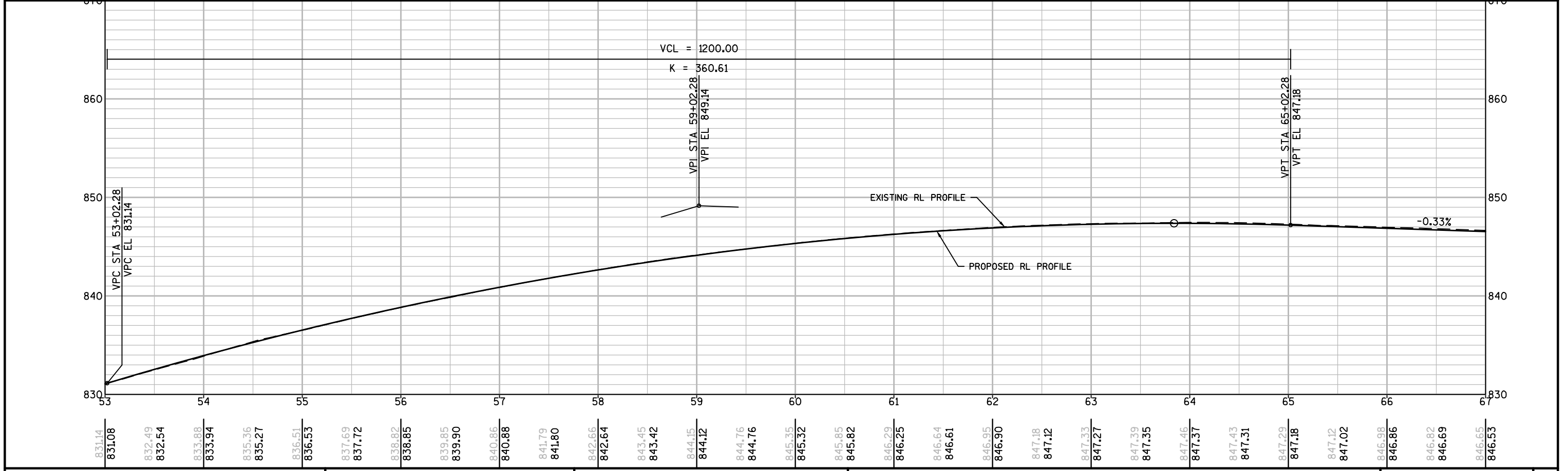
BEGIN PROJECT PROJECT 7110-05-72
 STATION 39+25
 X = 331047.135
 Y = 267616.362



PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	PLAN AND PROFILE: SB STH 37	SHEET	E
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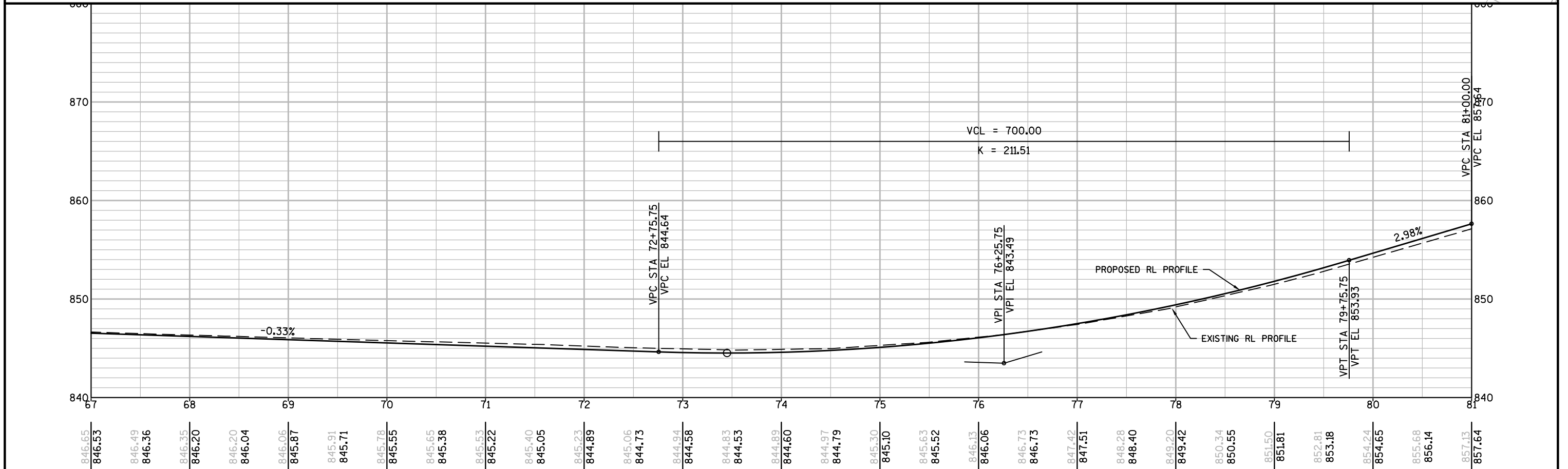
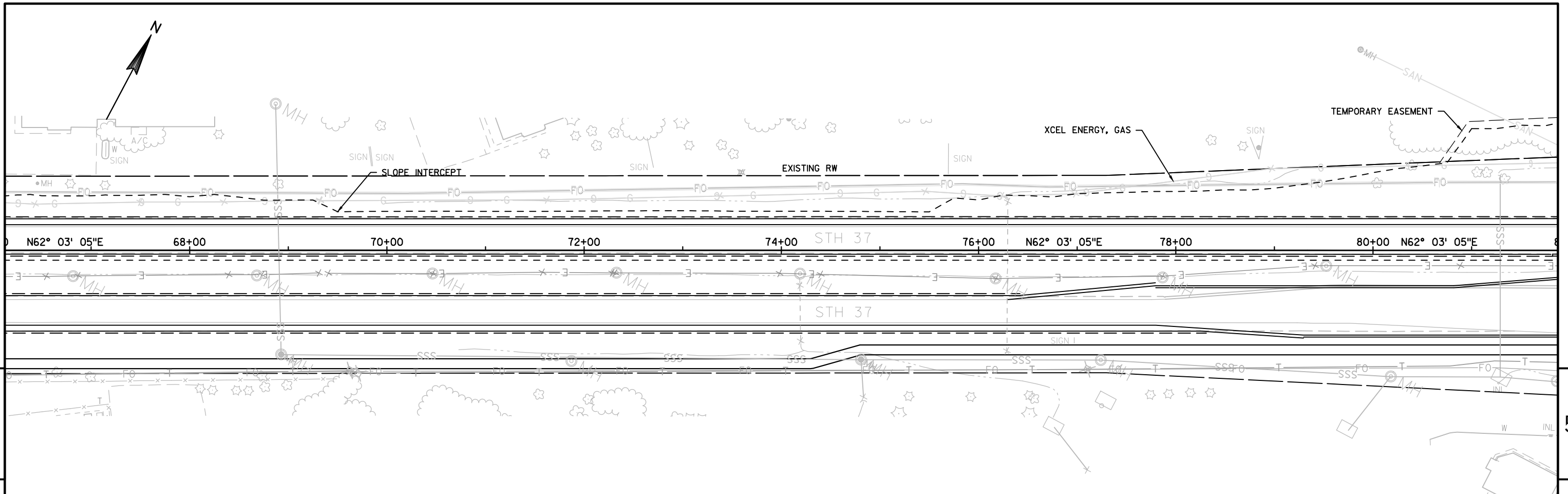


PI STA = 59+24.40
 Y = 269419.572
 X = 331910.862
 DELTA = 36°28'51"
 D = 3°00'00"
 T = 629.42'
 L = 1216.02'
 R = 1909.86'
 PC STA = 52+94.98
 PT STA = 65+11.00
 EXISTING SE = 6.6%
 PROPOSED SE = 5.0%

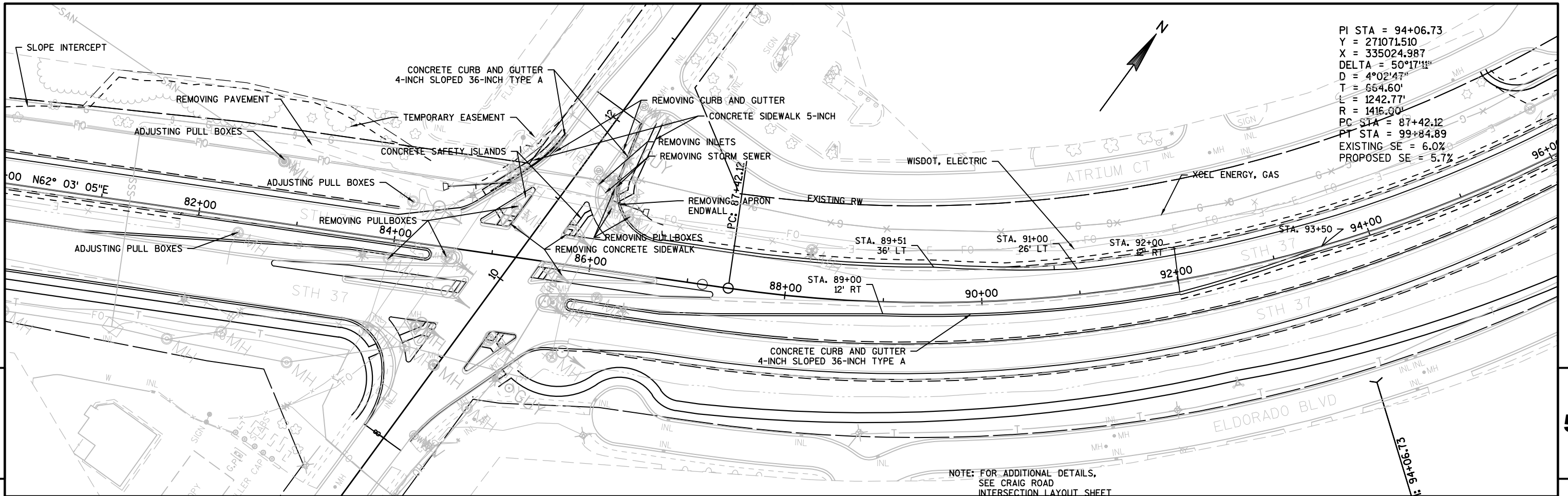


831.14	831.08	832.49	832.54	833.88	833.94	835.36	835.27	836.51	836.53	837.69	837.72	838.82	838.85	839.85	839.90	840.86	840.88	841.79	841.80	842.66	842.64	843.45	843.42	844.15	844.12	844.76	844.76	845.35	845.32	845.85	845.82	846.29	846.25	846.64	846.61	846.95	846.90	847.18	847.12	847.33	847.27	847.39	847.35	847.46	847.37	847.43	847.31	847.29	847.18	847.12	847.02	846.98	846.86	846.82	846.69	846.65	846.53
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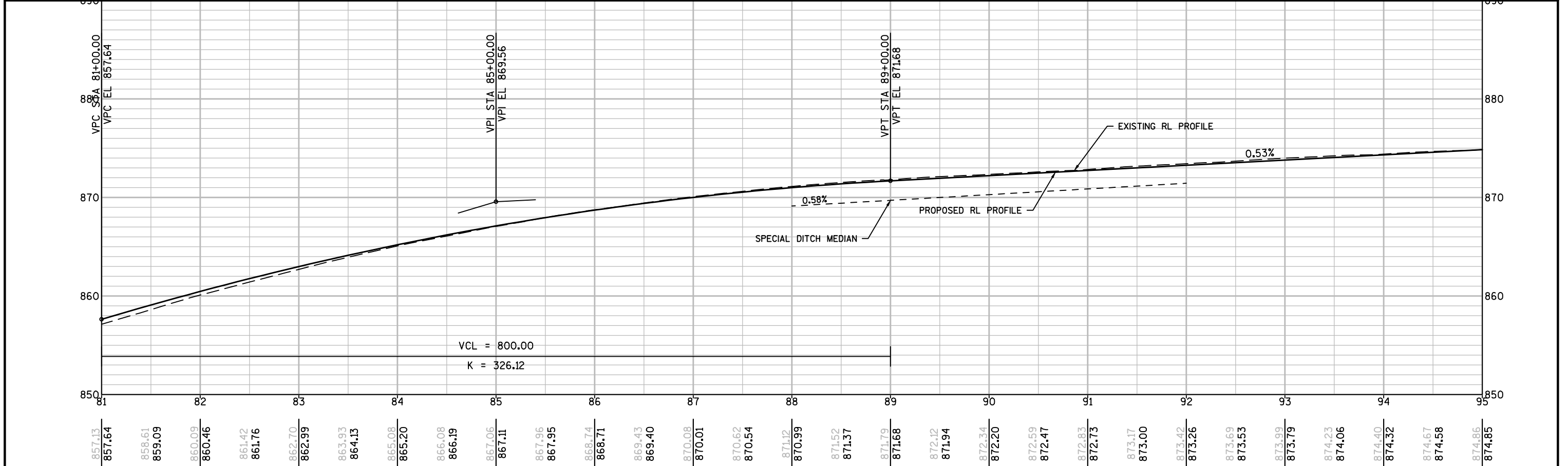
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SB STH 37 SHEET E



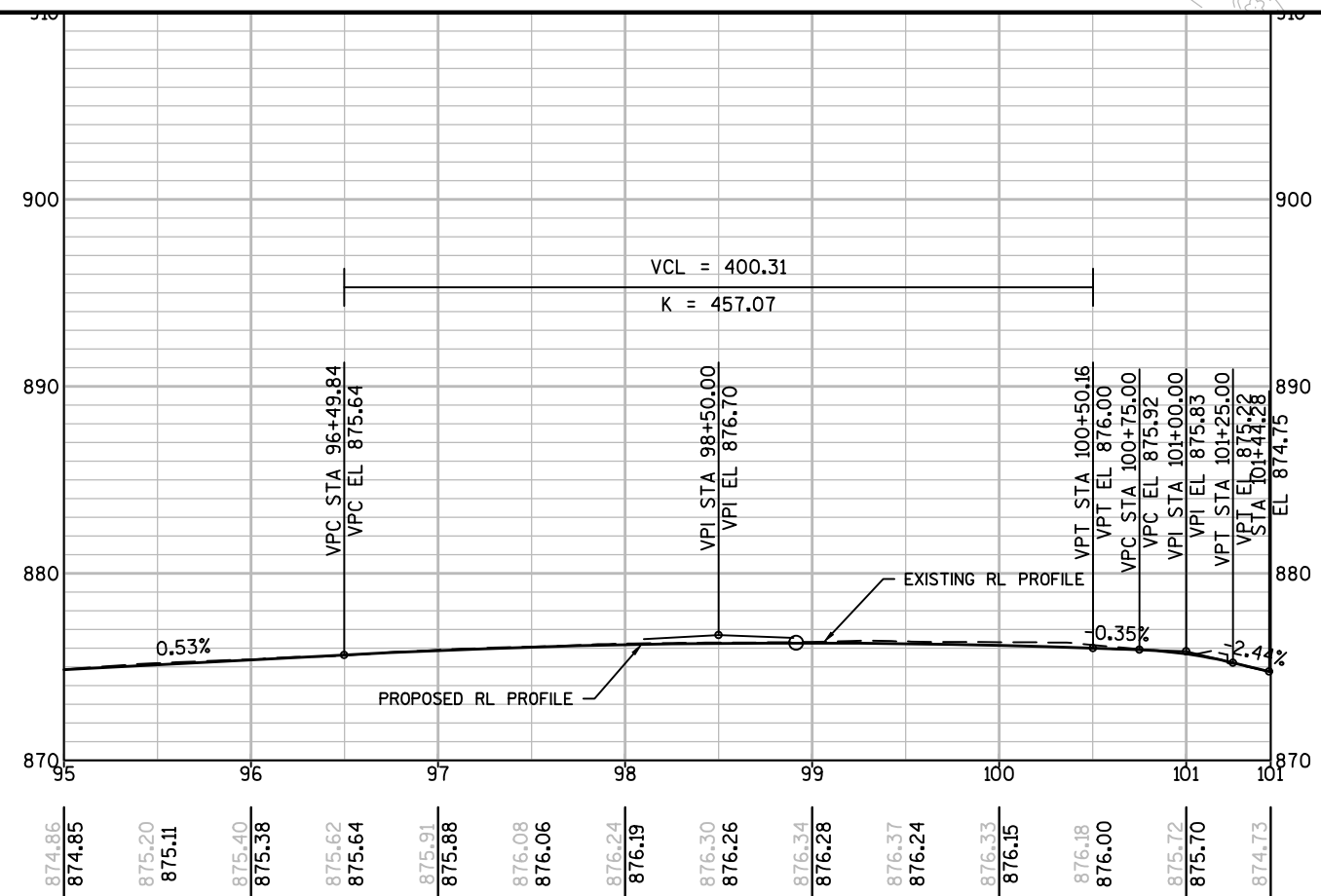
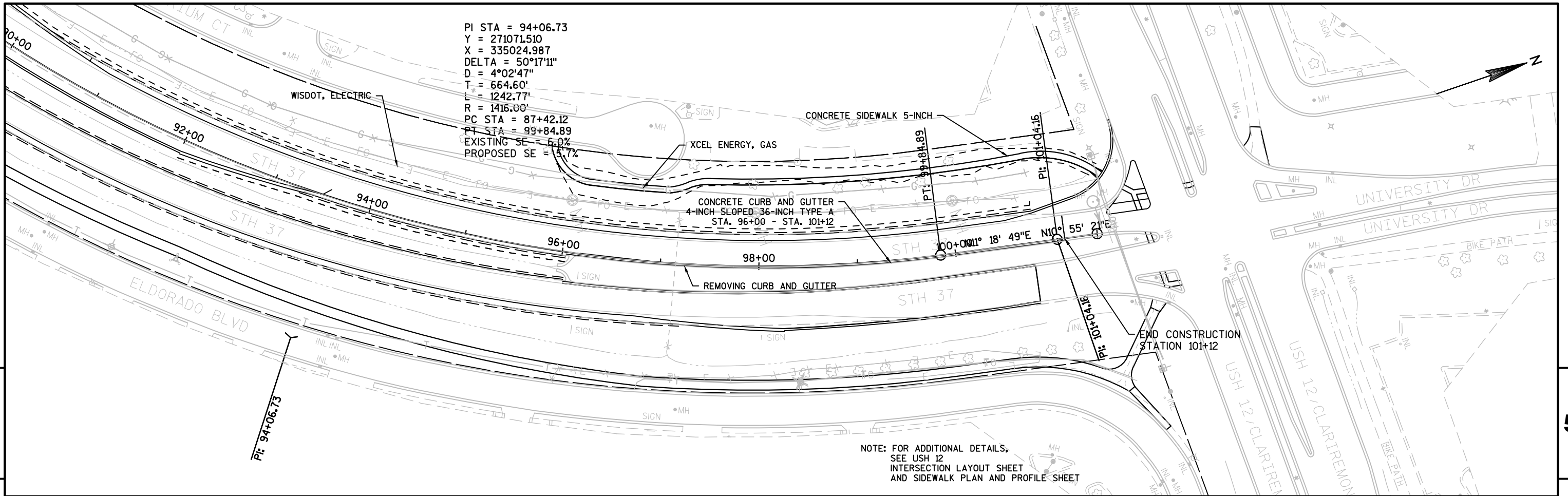
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SB STH 37 SHEET E



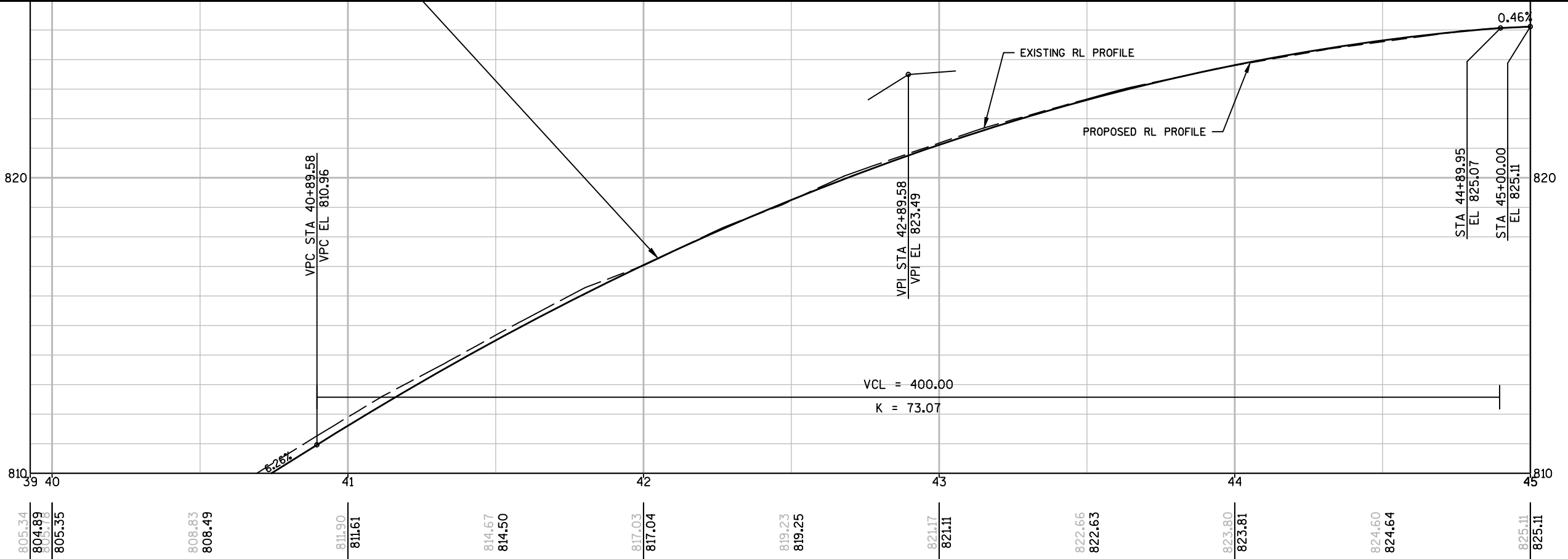
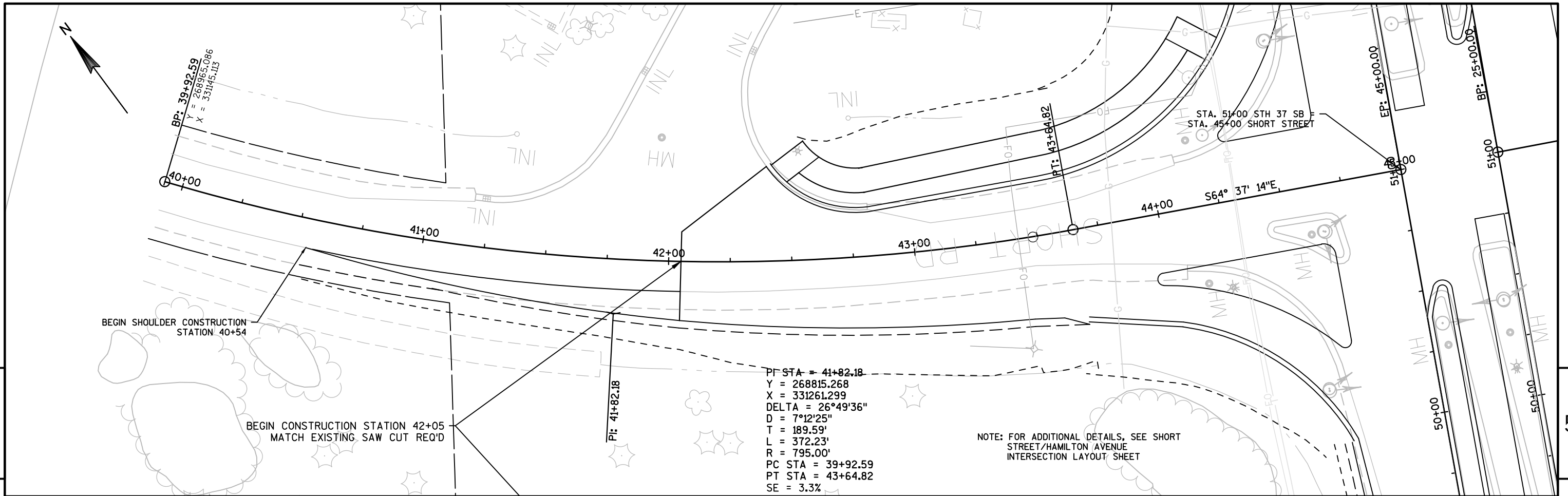
PI STA = 94+06.73
 Y = 271071.510
 X = 335024.987
 DELTA = 50°17'11"
 D = 4°02'47"
 T = 664.60'
 L = 1242.77'
 R = 1416.00'
 PC STA = 87+42.12
 PT STA = 99+84.89
 EXISTING SE = 6.0%
 PROPOSED SE = 5.7%



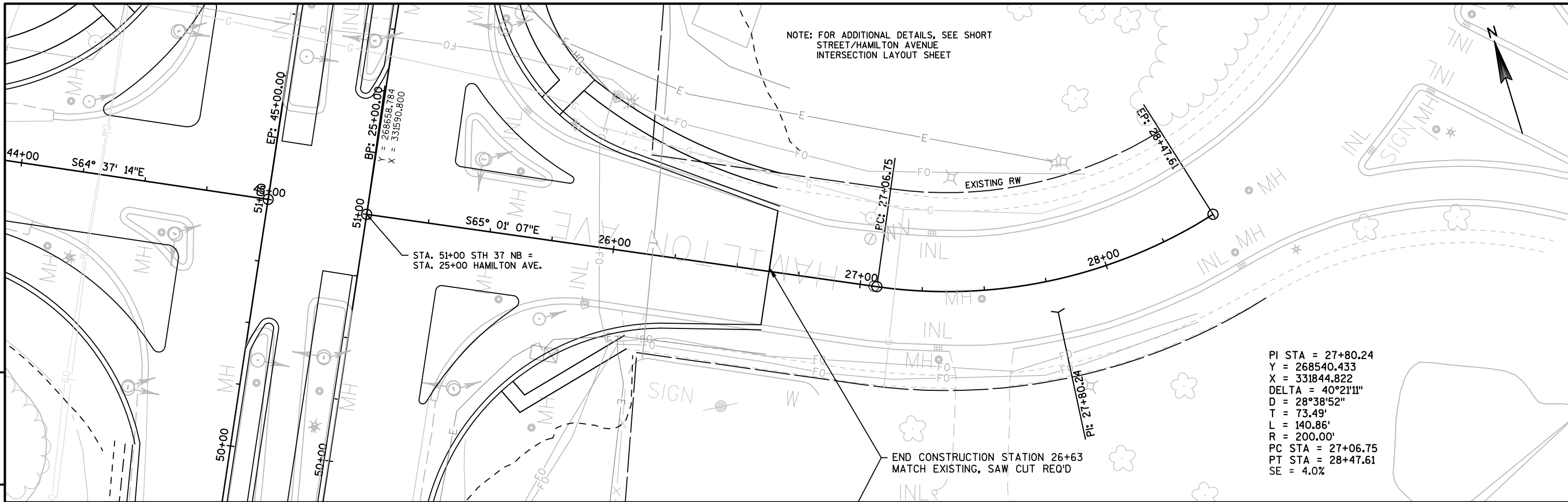
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SB STH 37 SHEET **E**



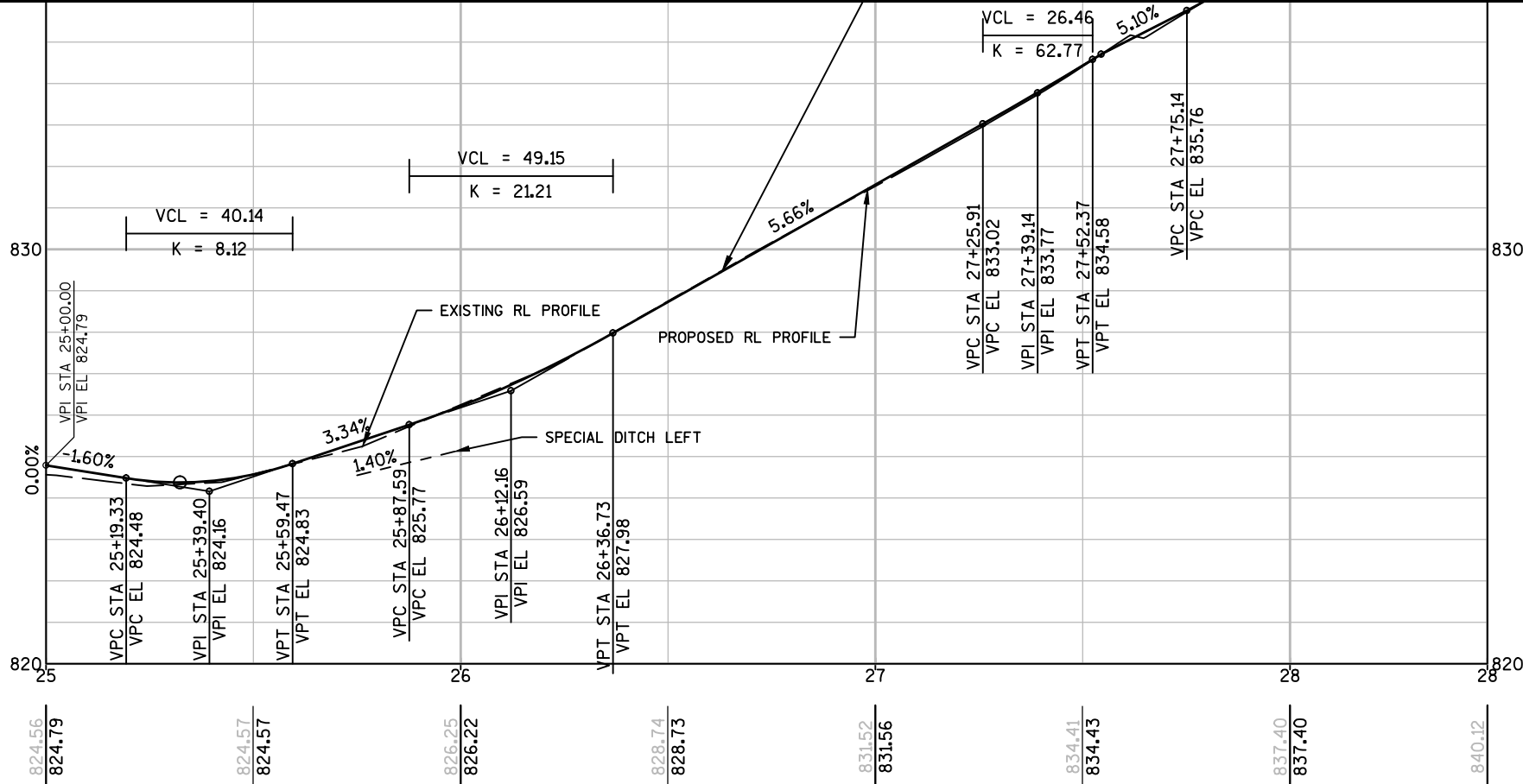
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SB STH 37 SHEET **E**

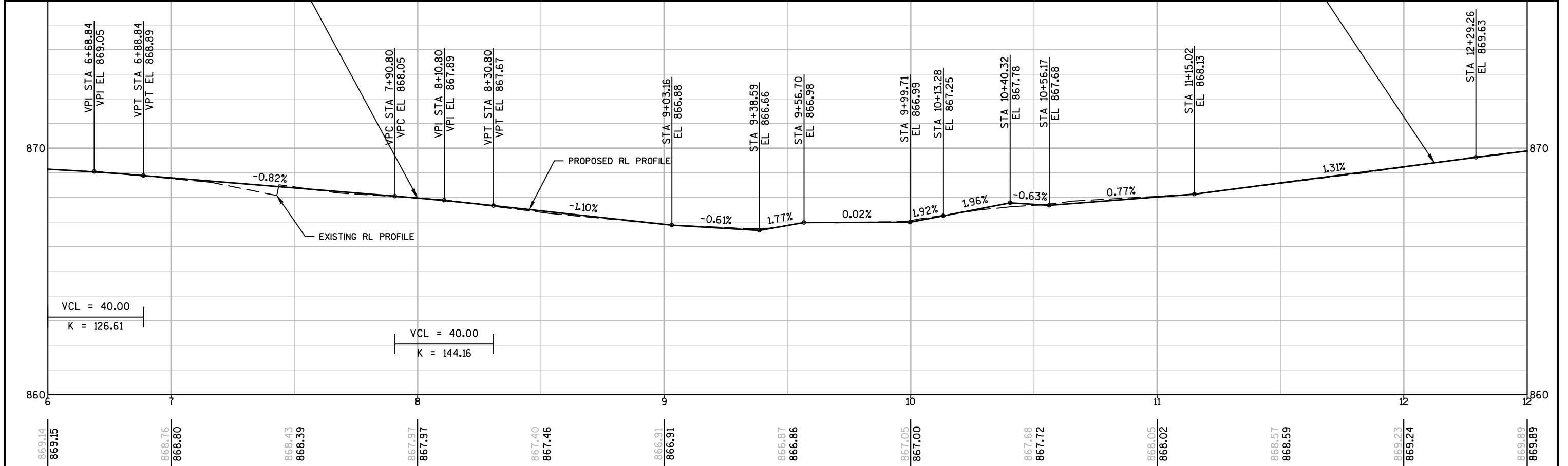
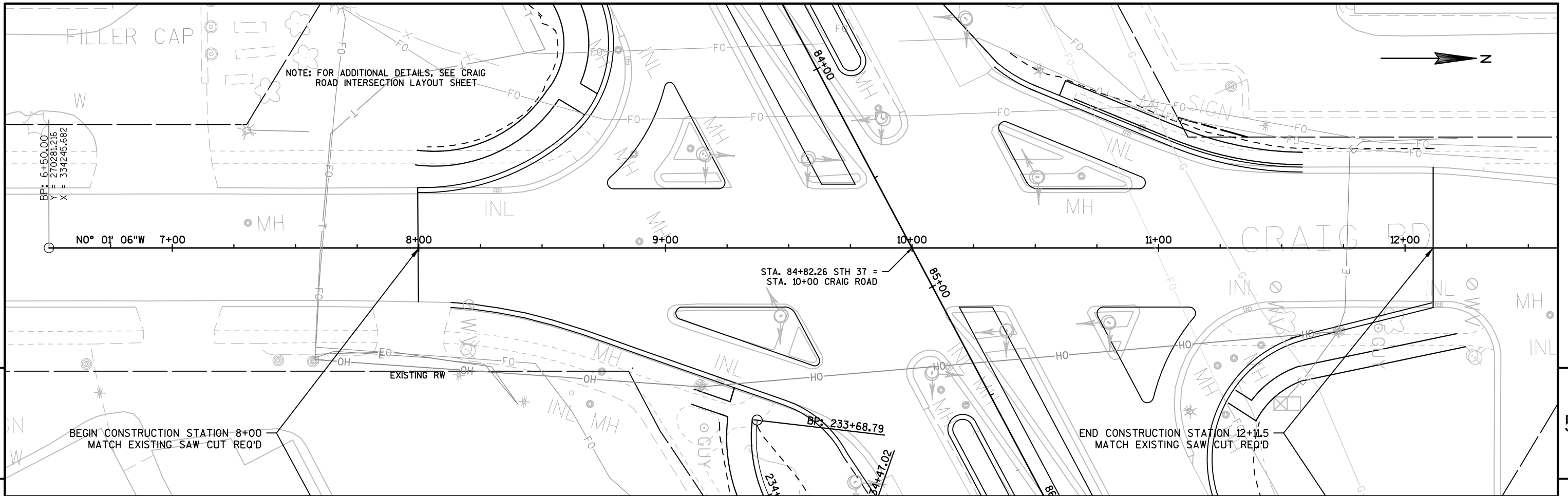


PROJECT NO: 7110-05-72 | HWY: STH 37 | COUNTY: EAU CLAIRE | PLAN AND PROFILE: SHORT STREET | SHEET | E

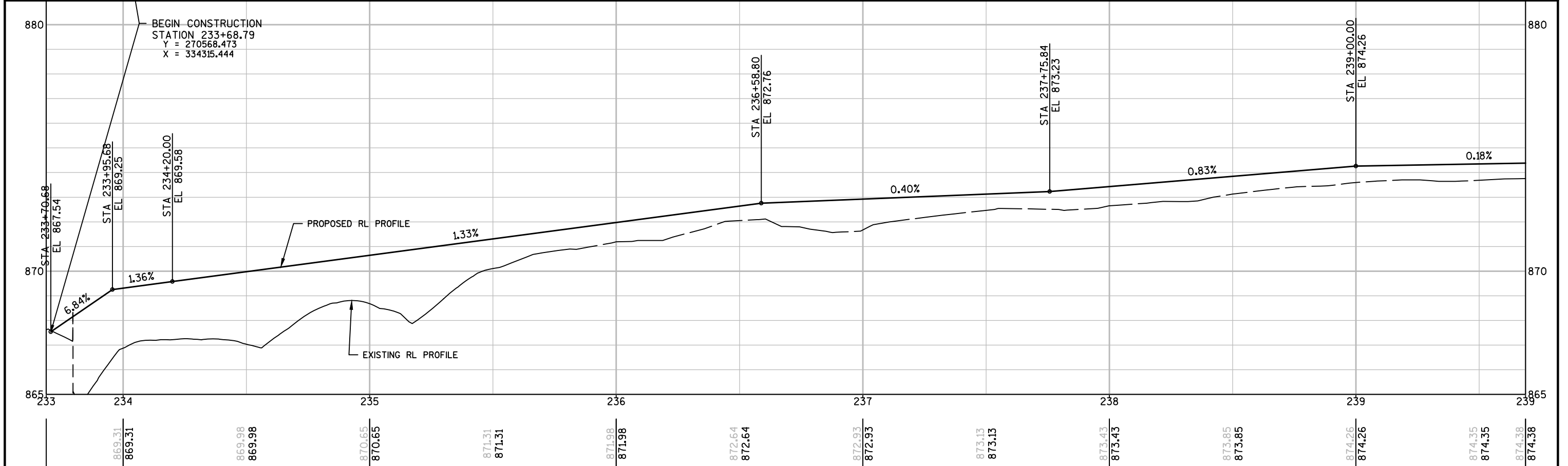
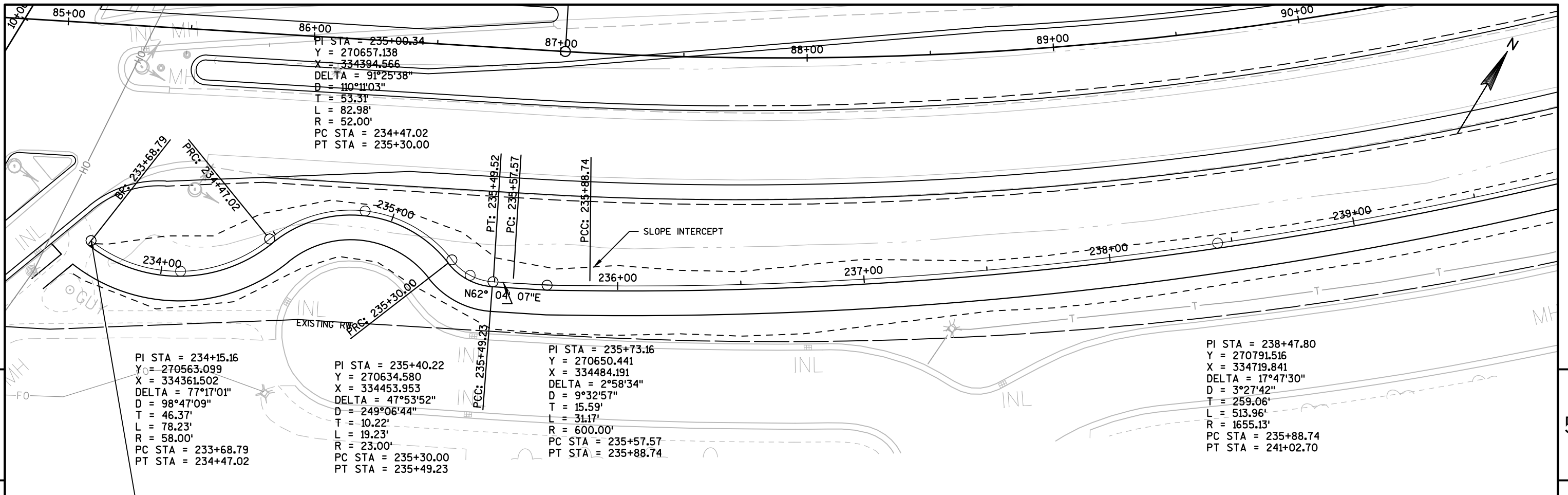


PI STA = 27+80.24
 Y = 268540.433
 X = 331844.822
 DELTA = 40°21'11"
 D = 28°38'52"
 T = 73.49'
 L = 140.86'
 R = 200.00'
 PC STA = 27+06.75
 PT STA = 28+47.61
 SE = 4.0%

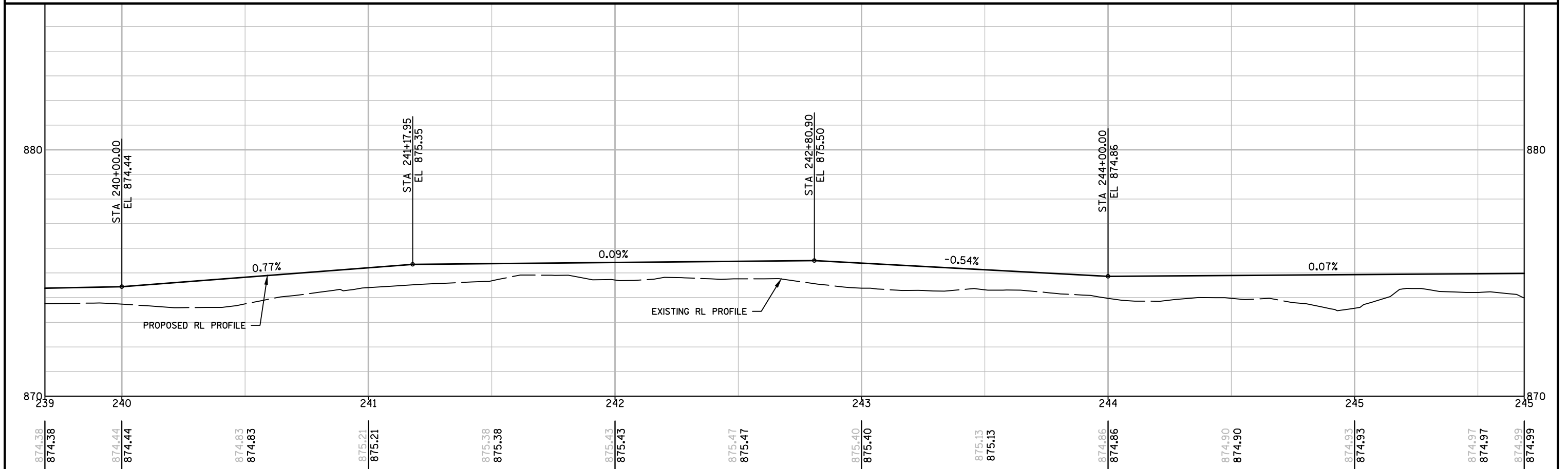
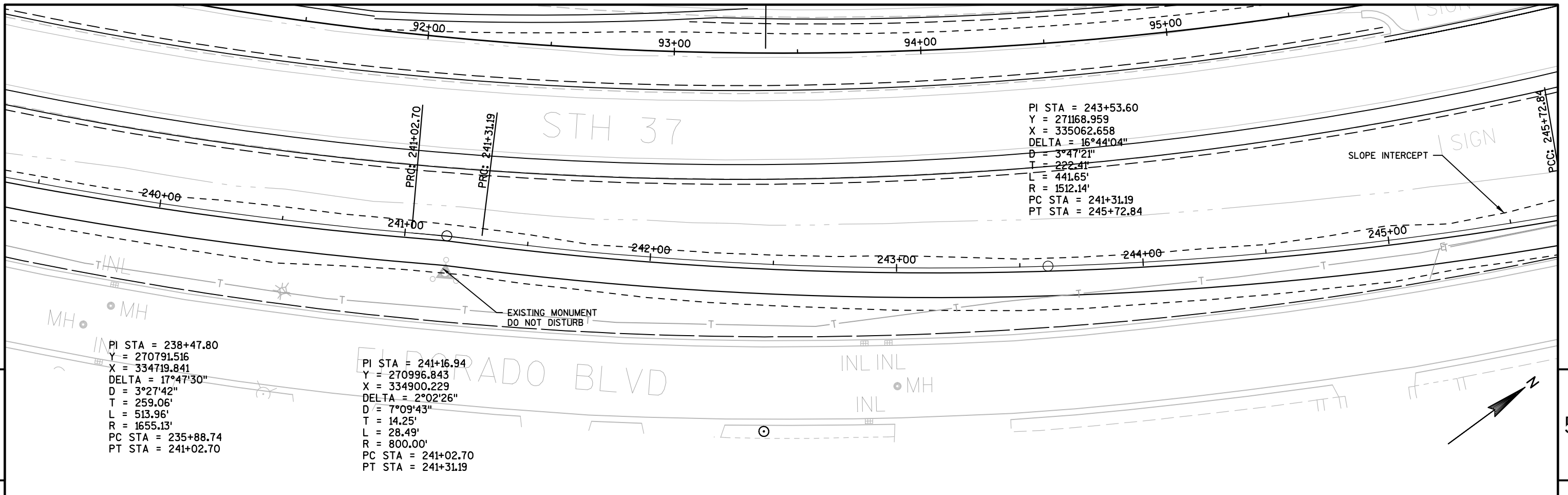




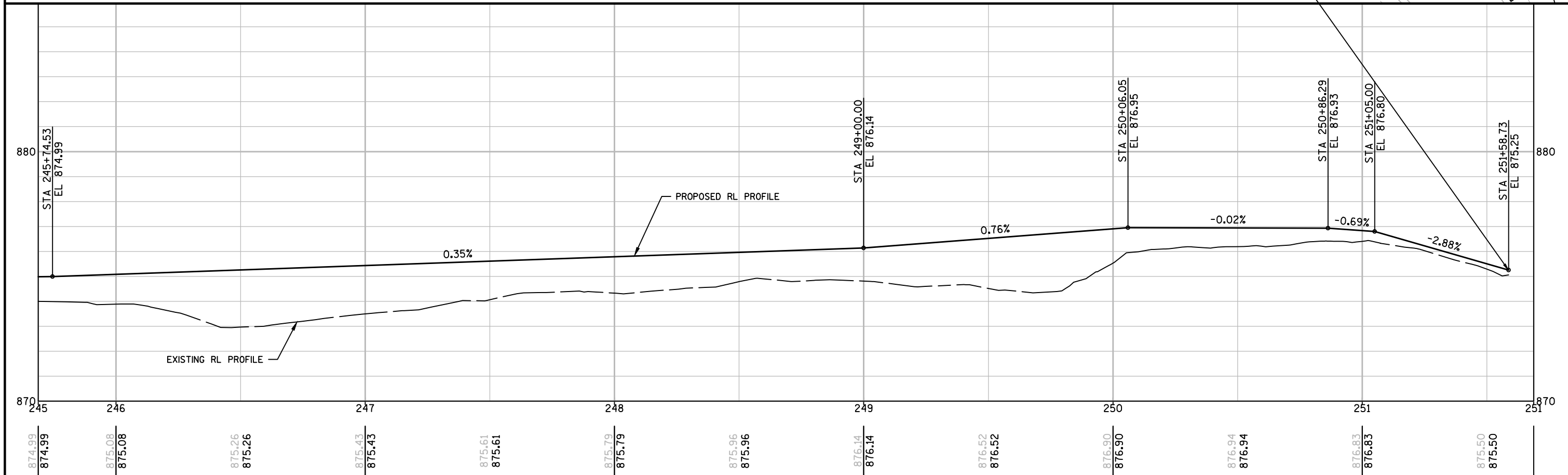
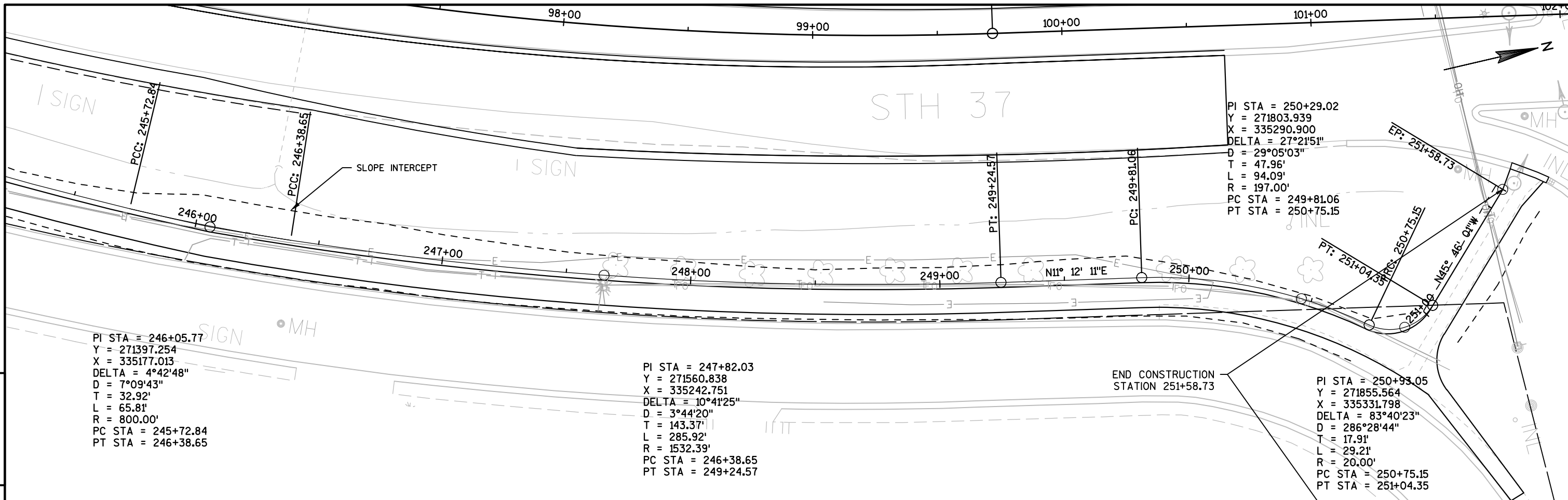
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: CRAIG ROAD SHEET E



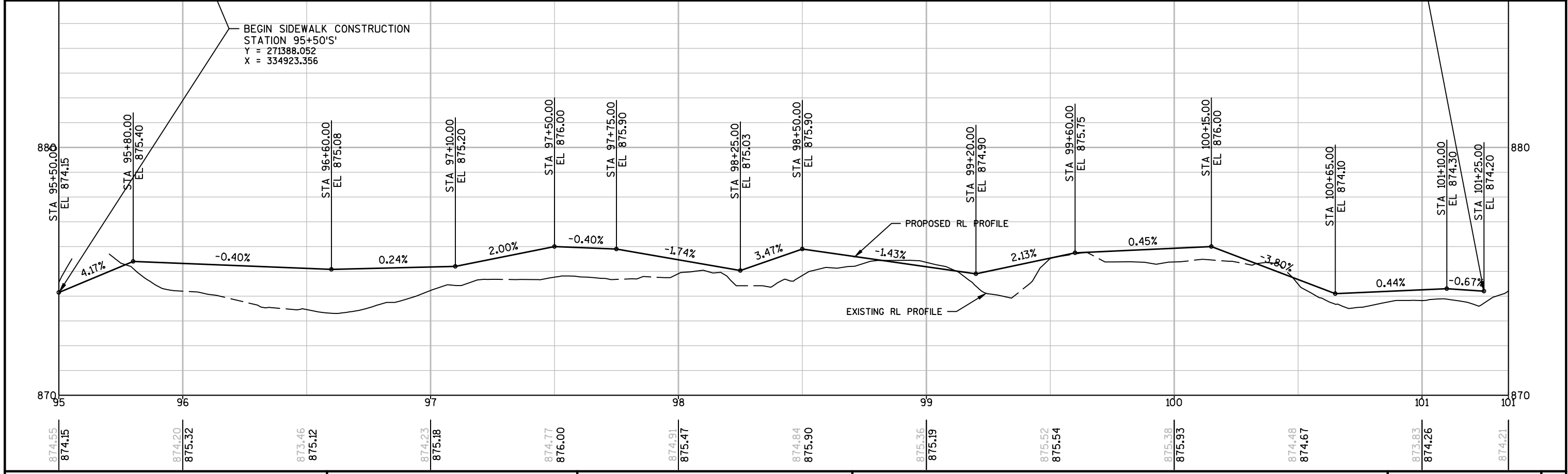
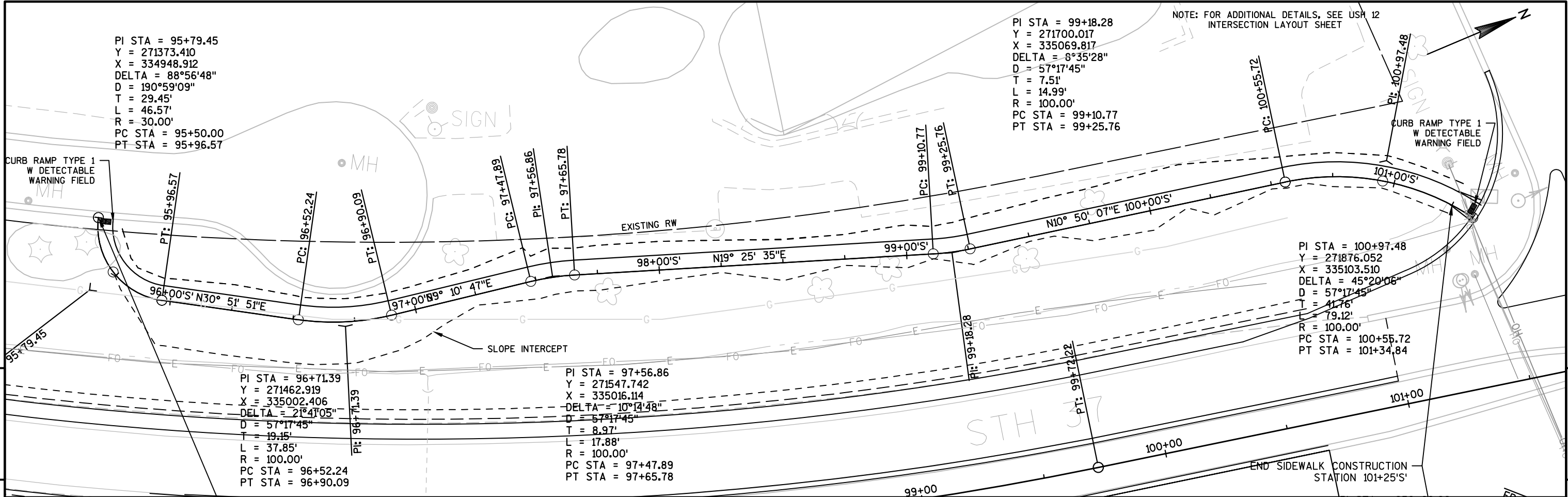
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SHARED USE PATH SHEET E



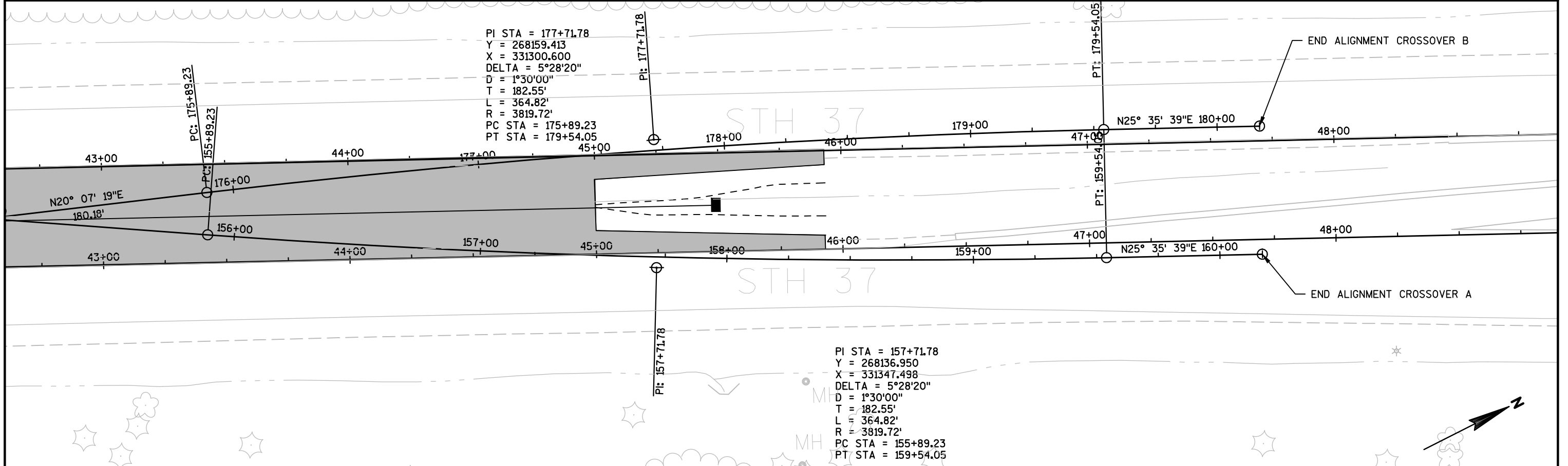
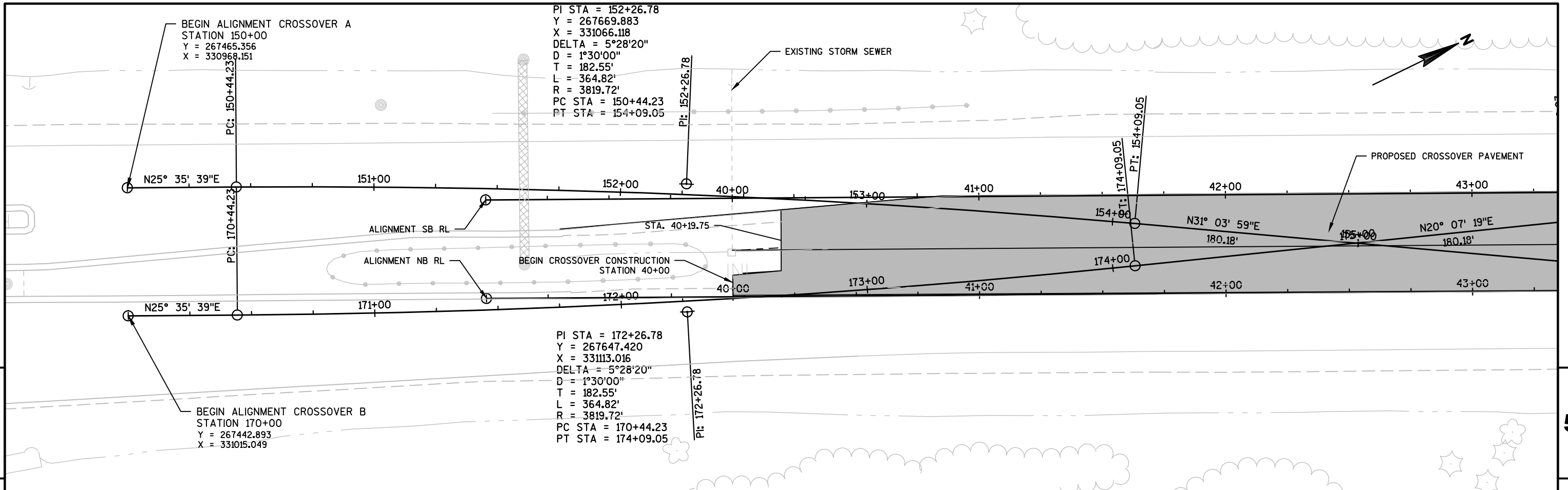
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SHARED USE PATH SHEET E



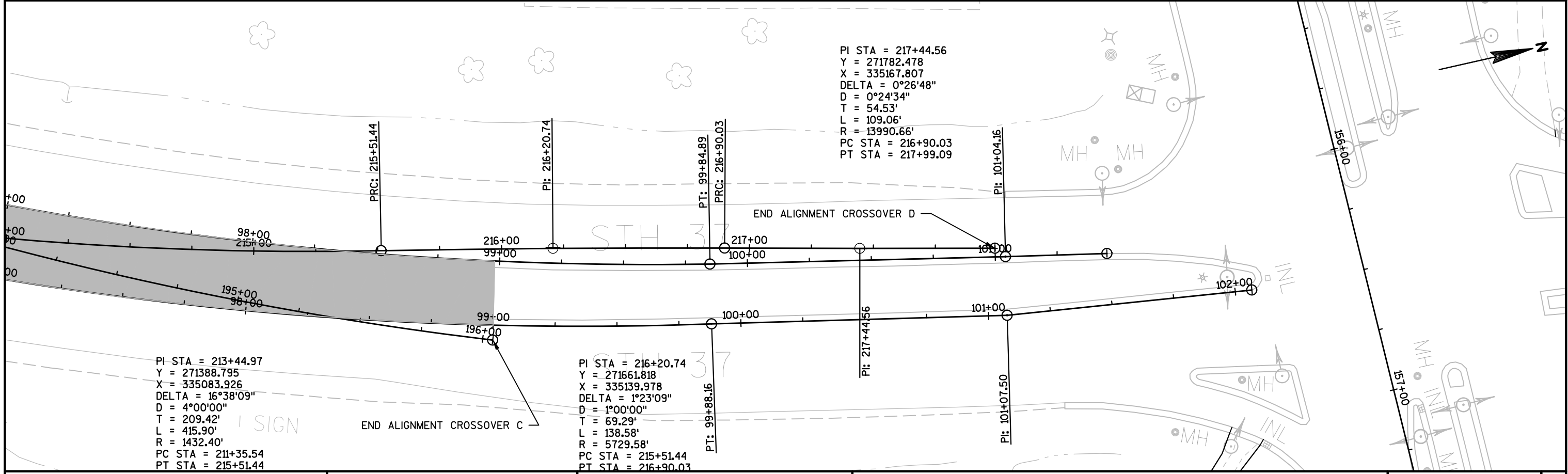
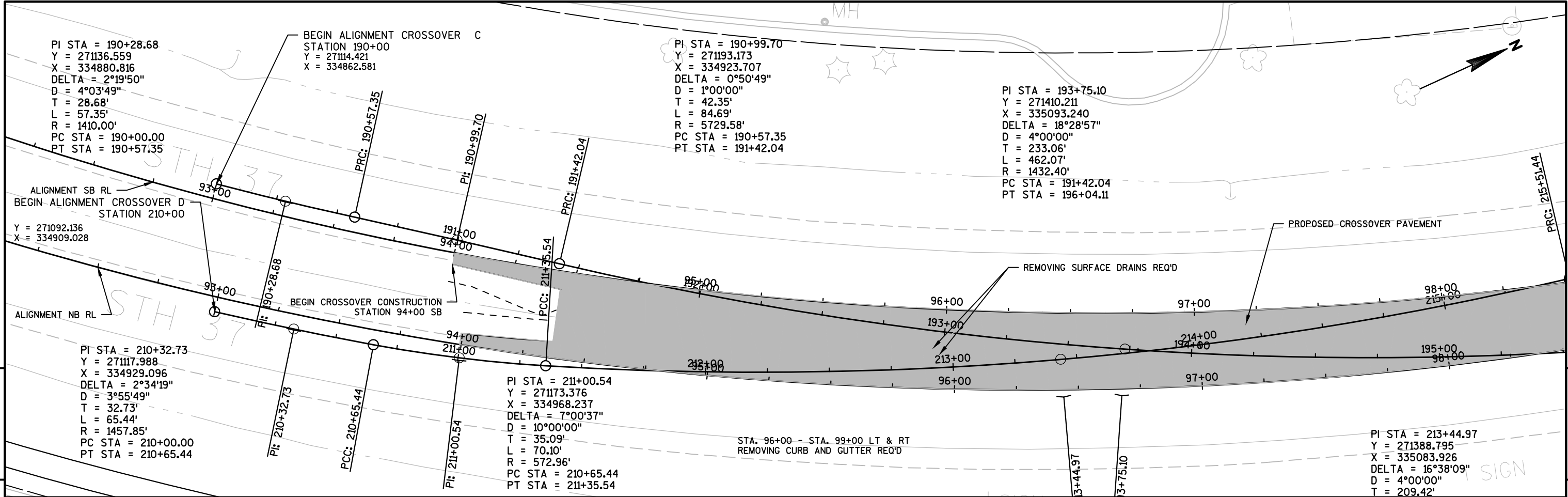
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SHARED USE PATH SHEET 5



PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN AND PROFILE: SIDEWALK SHEET E



PROJECT NO: 7011-05-72 HWY: STH 37 COUNTY: EAU CLAIRE PLAN: CROSSOVERS A & B SHEET 5



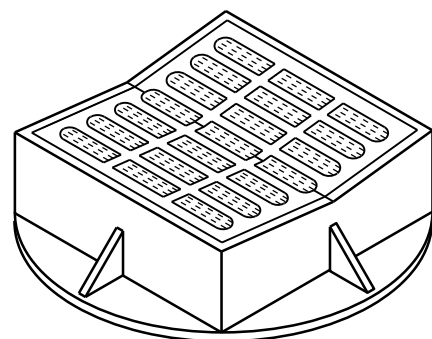
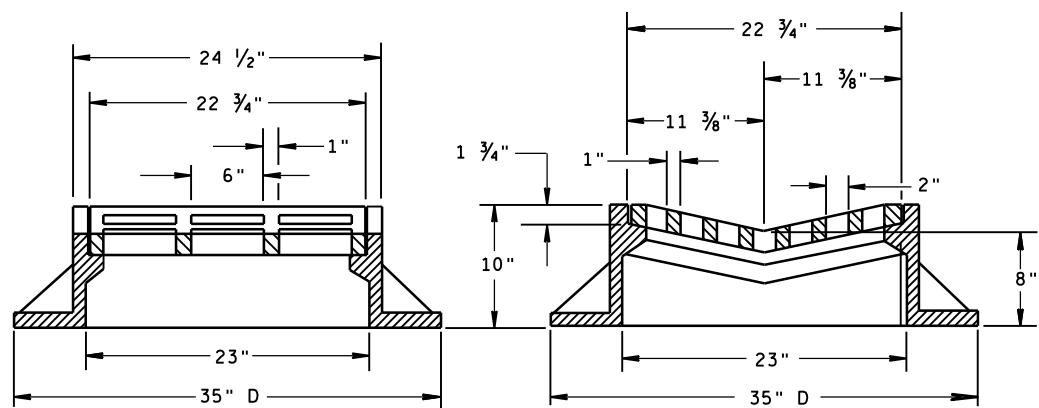
PROJECT NO: 7110-05-72	HWY: STH 37	COUNTY: EAU CLAIRE	PLAN: CROSSOVERS C & D
SHEET			E

Standard Detail Drawing List

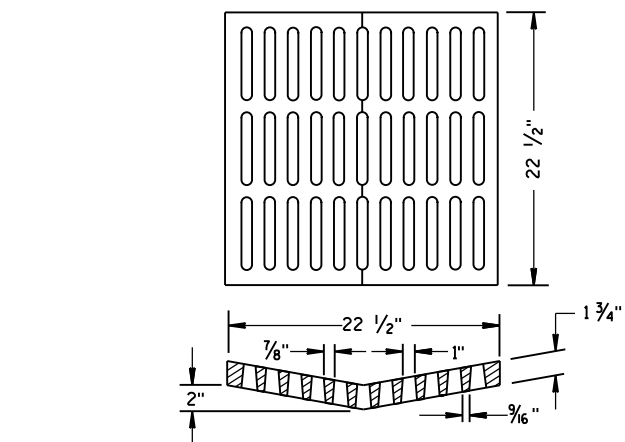
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08A08-02	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-10	CONCRETE BASE TYPE 10
09C12-09A	CONCRETE BASE TYPE 13
09C12-09B	CONCRETE BASE TYPE 13
09C13-02	CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09E01-14C	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4
09E01-14D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-14G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E05-06	TRAFFIC SIGNAL STANDARD ORNAMENTAL BRACKET MOUNTINGS TYPICAL FOR 13 FT. OR 15 FT.
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-08A	TYPE 9 POLE 15' -30' MONOTUBE ARM
09E08-08C	TYPE 12 POLE 35' -55' MONOTUBE ARM
09E08-08E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09F01-04	DETAILS FOR THE INSTALLATION OF TEMPORARY TRAFFIC SIGNAL LOOP DETECTOR WIRES IN ANY EXISTING PAVEMENT
09F09-04	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW CONCRETE PAVEMENT)
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
09G01-04A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04C	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
11B02-02	CONCRETE MEDIAN NOSE
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13A03-06	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C18-05A	CONCRETE PAVEMENT JOINTING
13C18-05B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-05C	CONCRETE PAVEMENT JOINT TYPES
13C18-05D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

Standard Detail Drawing List

14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A02-09	DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A04-03A	FLEXIBLE DELINEATOR POST
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C08-18B	PAVEMENT MARKING (TURN LANES)
15C11-07A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D06-03	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D09-03	TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT
15D11-06	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D30-03A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-03B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-03C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

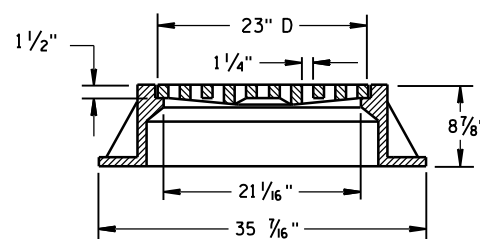
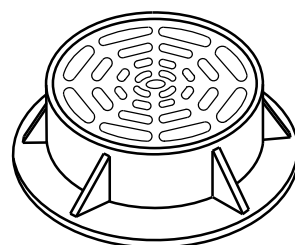
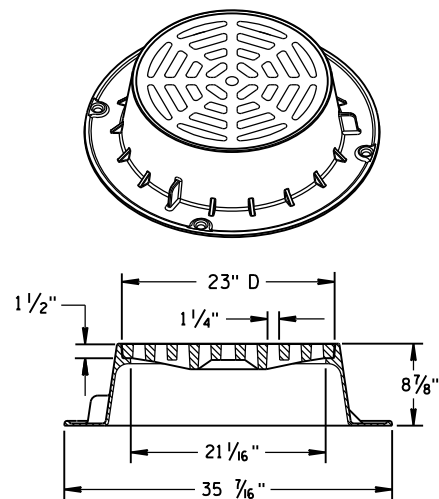


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

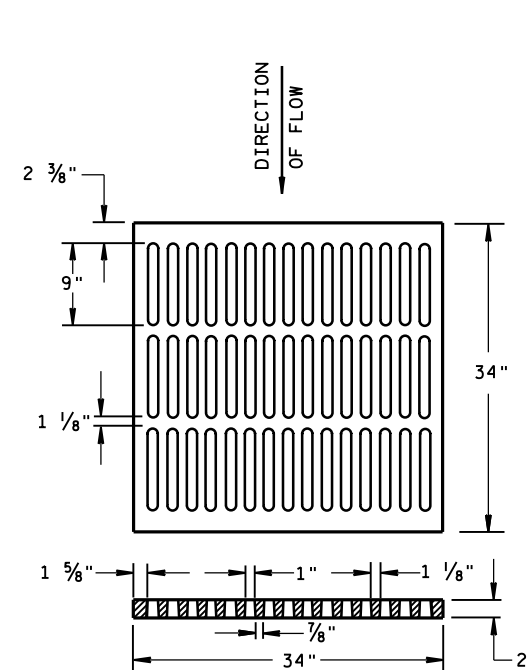
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

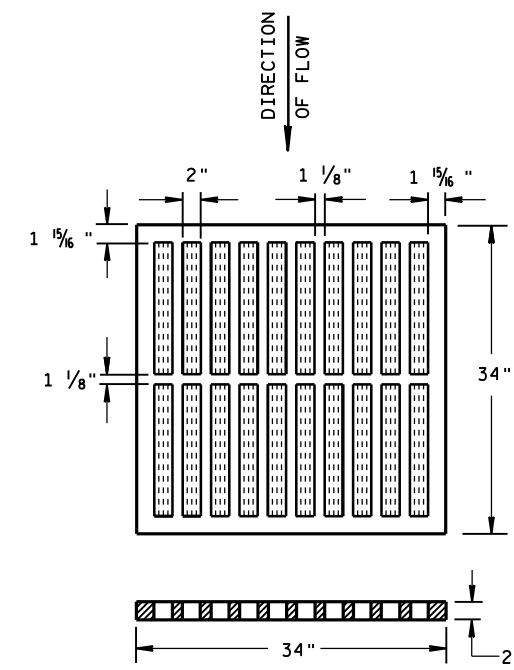
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



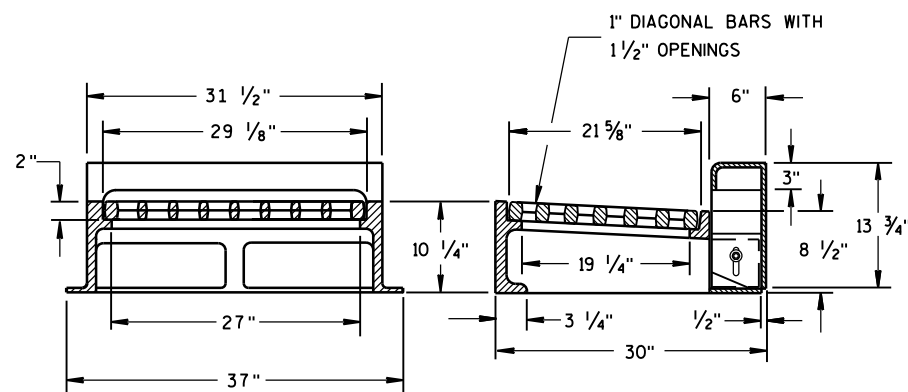
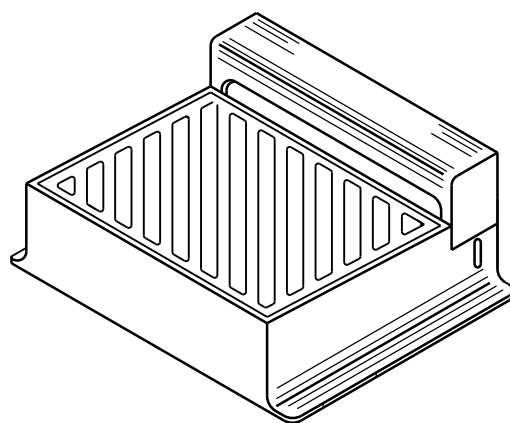
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

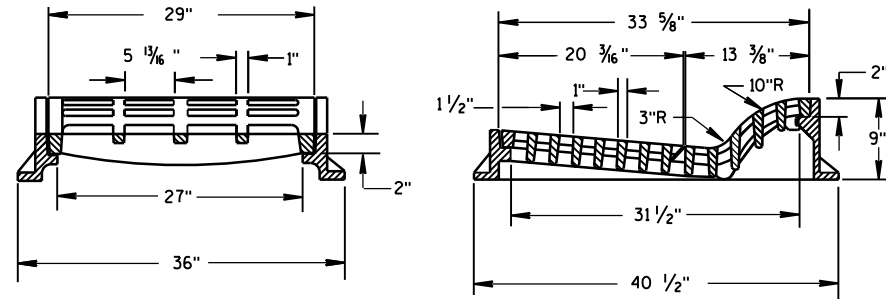
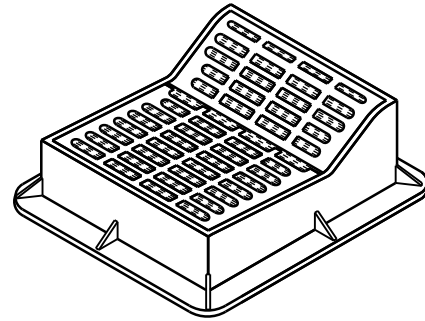
DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION OF FLOW

INLET COVERS
TYPE B, B-A, C,
MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 11/27/2013 /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



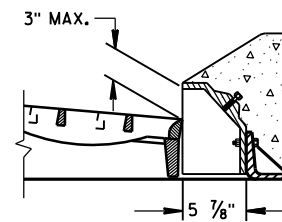
TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

GENERAL NOTES

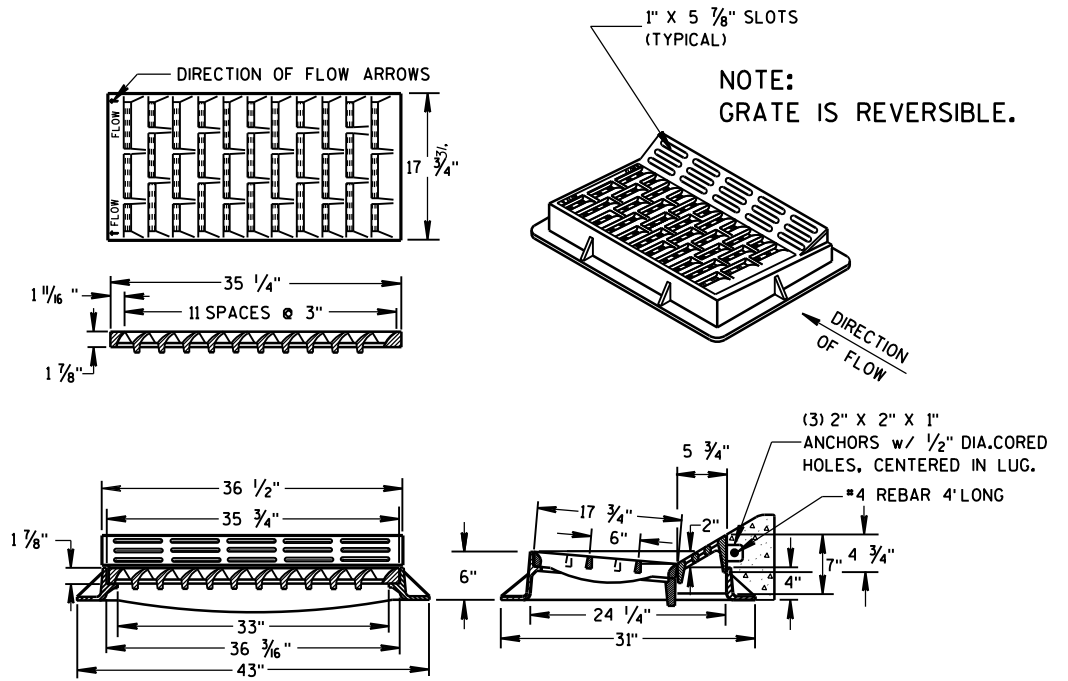
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH NOTED AS TYPE HM-GJ ON DRAINAGE TABLE



TYPE "HM"

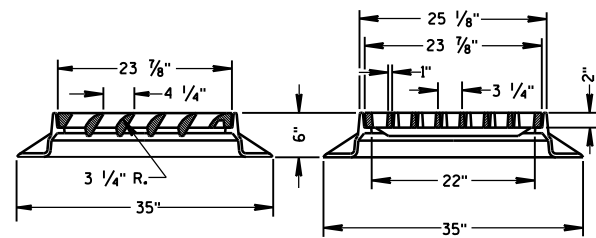
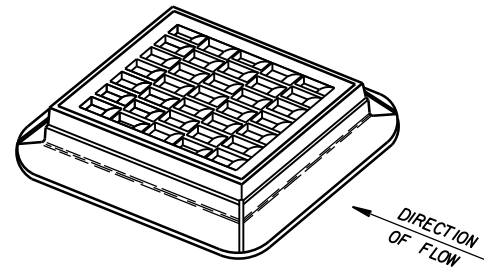
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM" COVER NOTED AS TYPE HM-S ON DRAINAGE TABLE

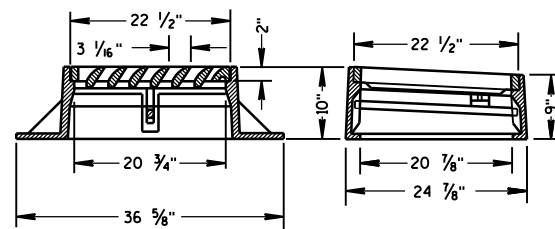
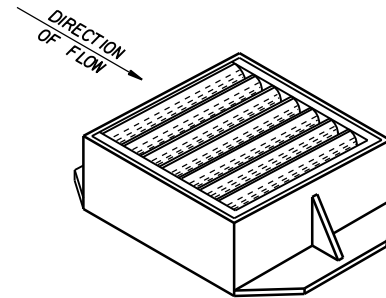
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

6

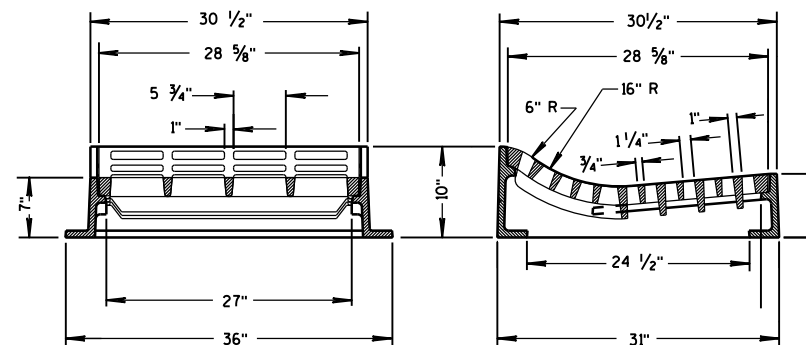
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TYPE "S"

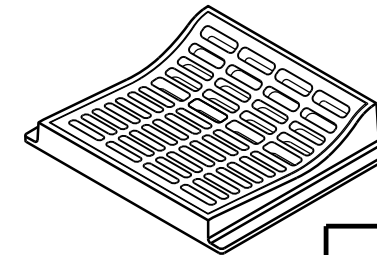


TYPE "V"



TYPE "T"

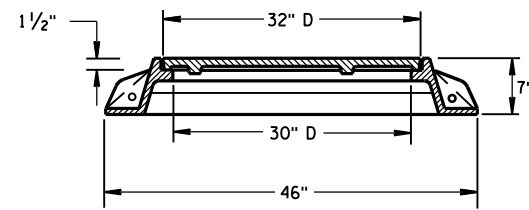
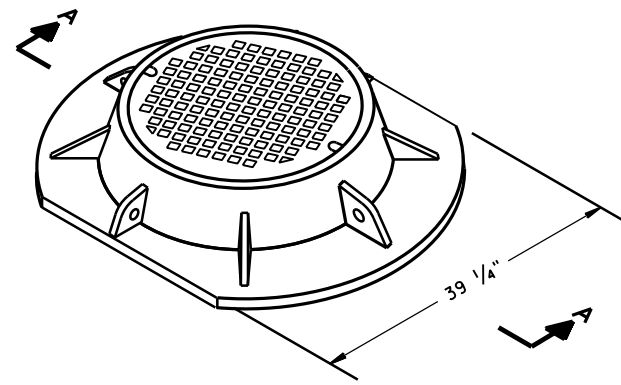
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



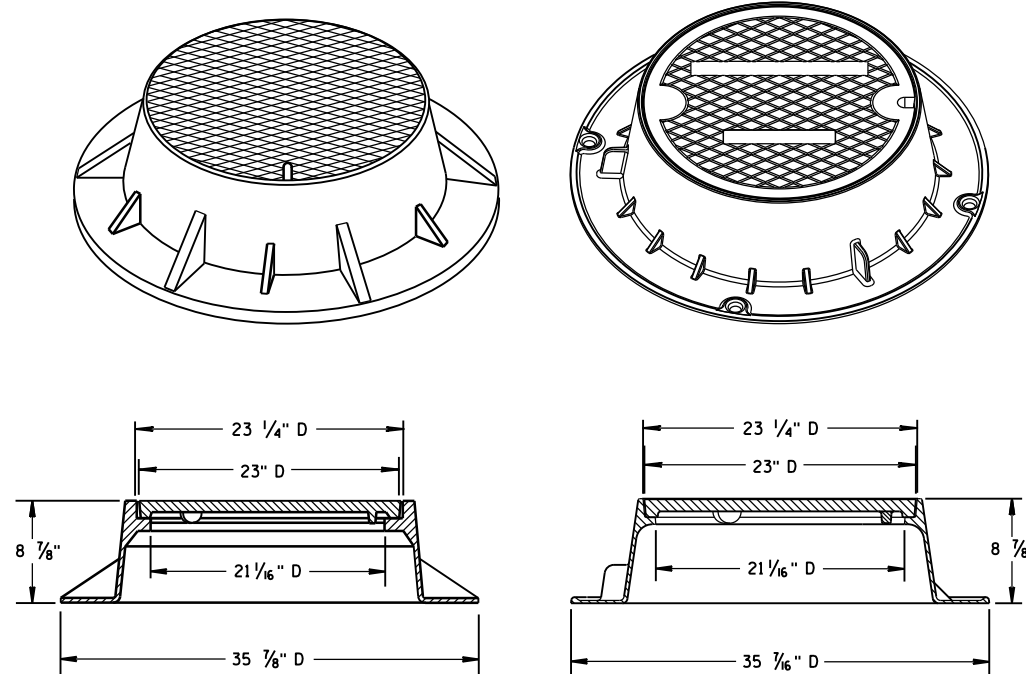
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013 DATE /s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

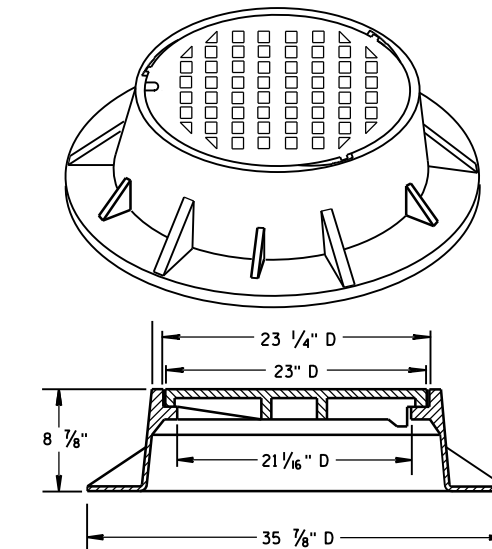
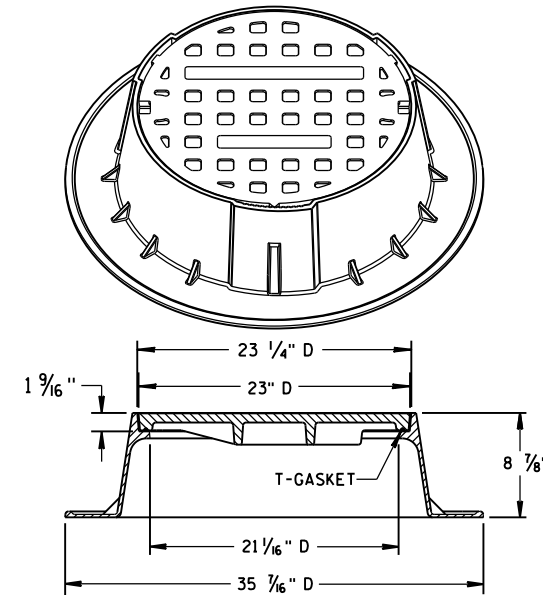


SECTION A-A
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

NOTE: EITHER CASTING IS ACCEPTABLE

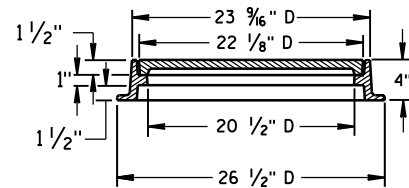
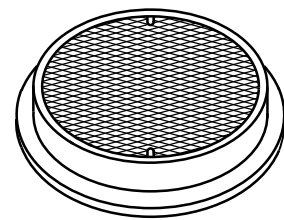
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

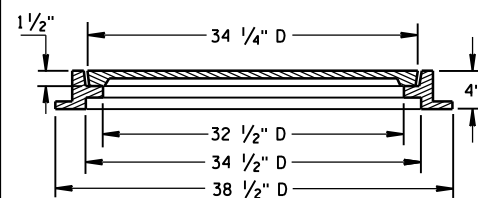
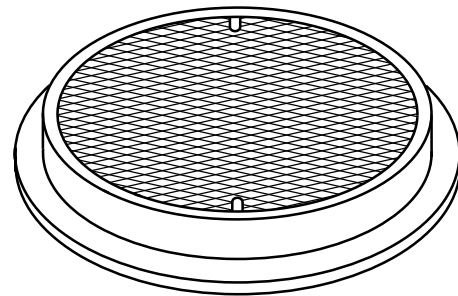
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

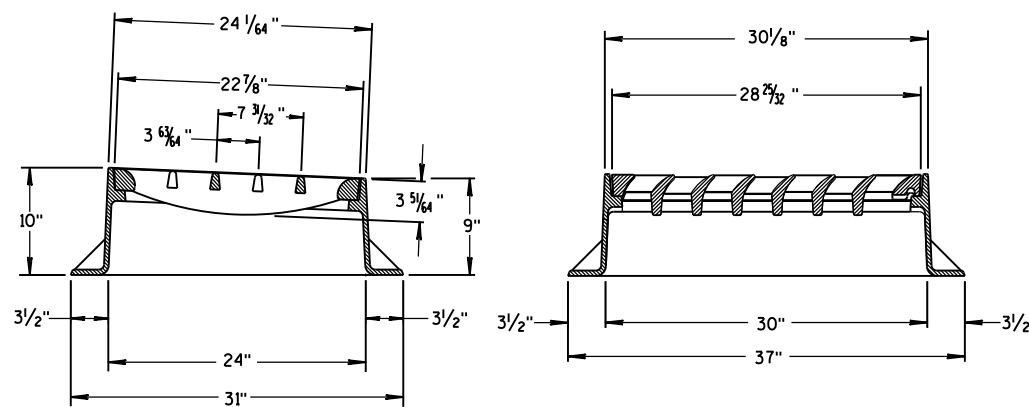
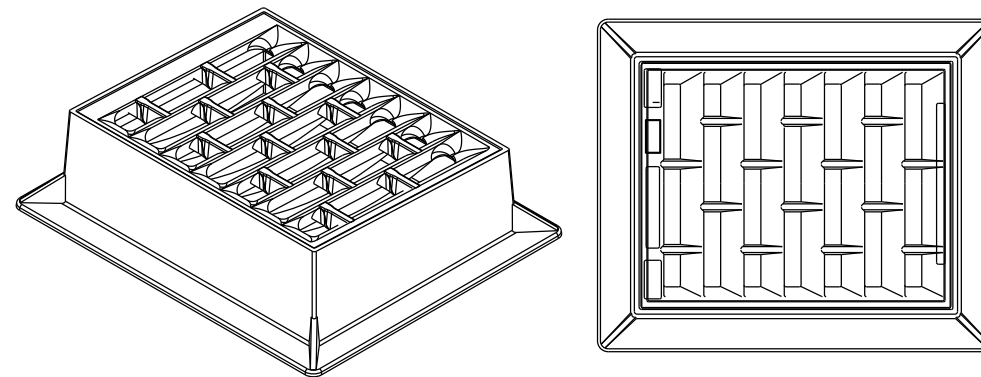
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TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

6

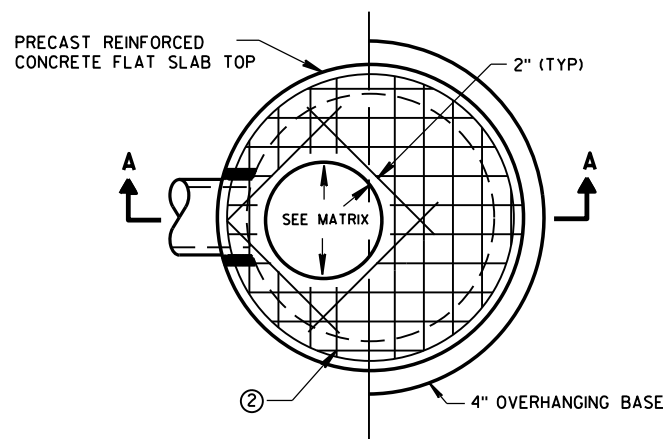
S.D.D. 8 A 5-19d

S.D.D. 8 A 5-19d

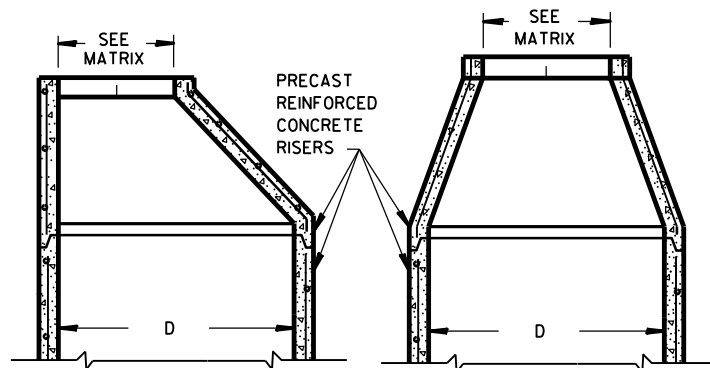
**INLET COVER TYPE BW
MANHOLE COVERS, TYPE K,
J, J-S, L & M**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

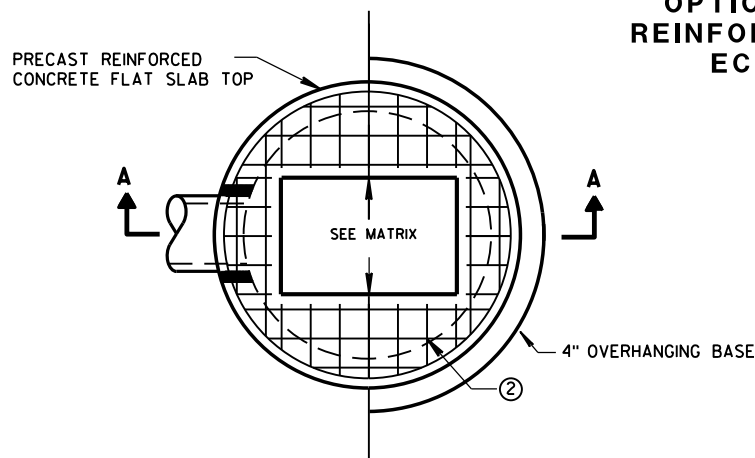


PLAN VIEW CIRCULAR OPENING

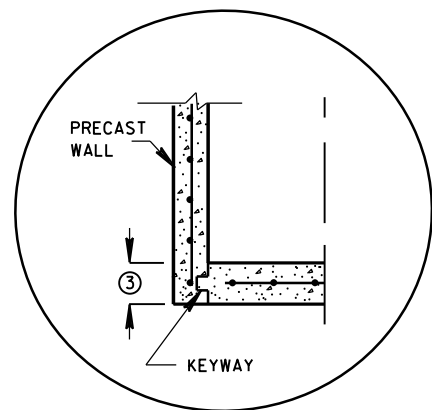


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



PLAN VIEW RECTANGULAR OPENING



PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

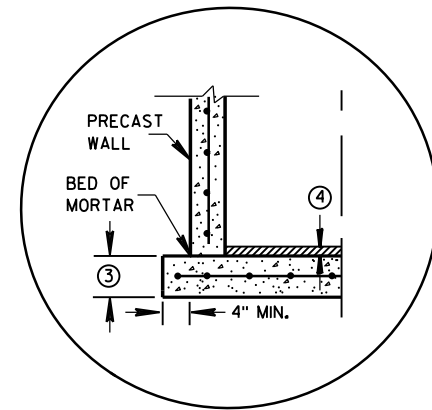
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)

TOP WITH PLAIN END JOINT

TOP WITH TONGUE AND GROOVE JOINT

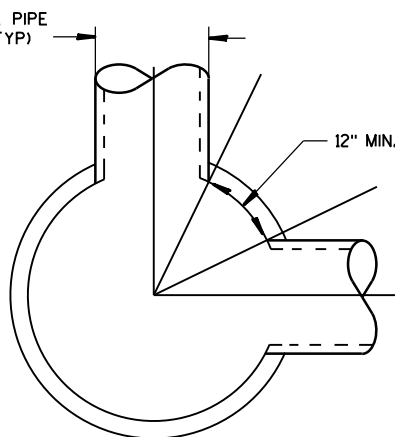
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST CATCH BASIN UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".
- ④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2" SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE OPENING SIZE (FT)	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2X2	X	X					X		X		
	2 DIA.				X					X		X
4-FT-6-FT	2X2	X	X					X		X		X
	2X2.5			X				X	X	X	X	
	2 DIA.				X							X
	2X3						X					
	2.5X3											

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sep 1, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE **CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②**

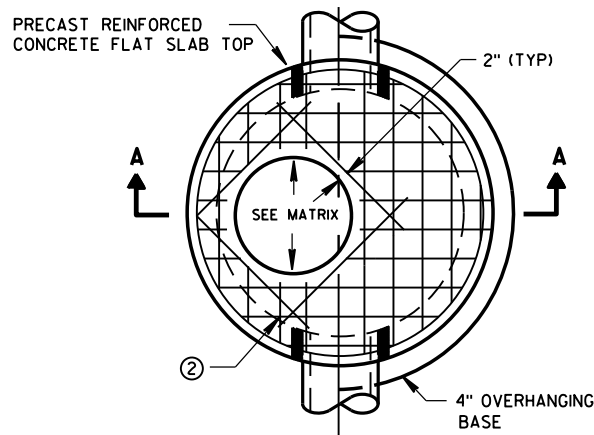
CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

6

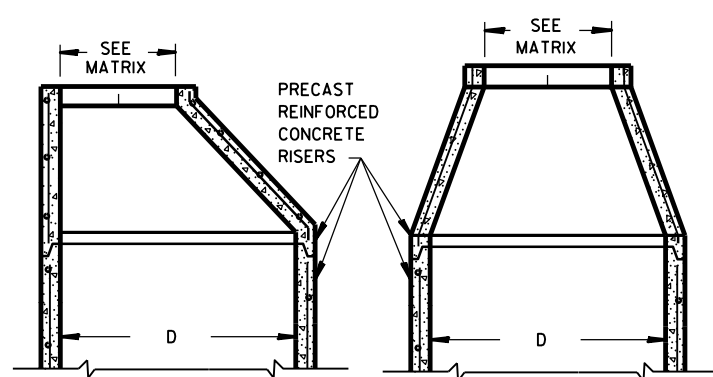
6

S.D.D. 8 A 8-2

S.D.D. 8 A 8-2

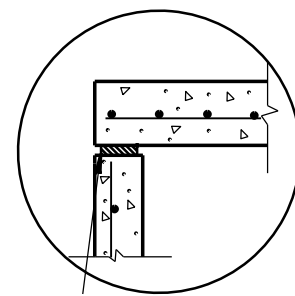


PLAN VIEW CIRCULAR OPENING

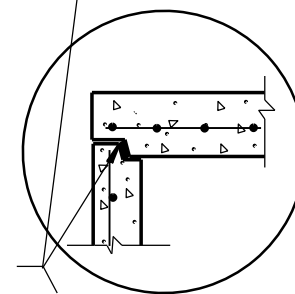


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

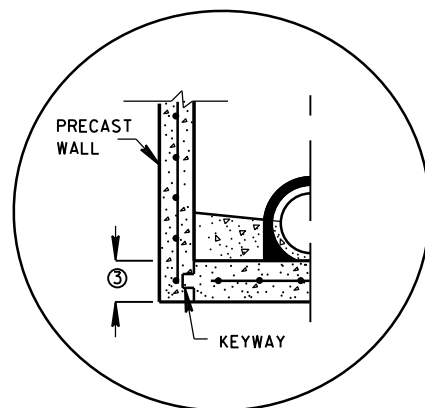
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

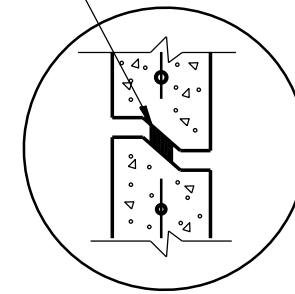


TOP WITH TONGUE AND GROOVE JOINT



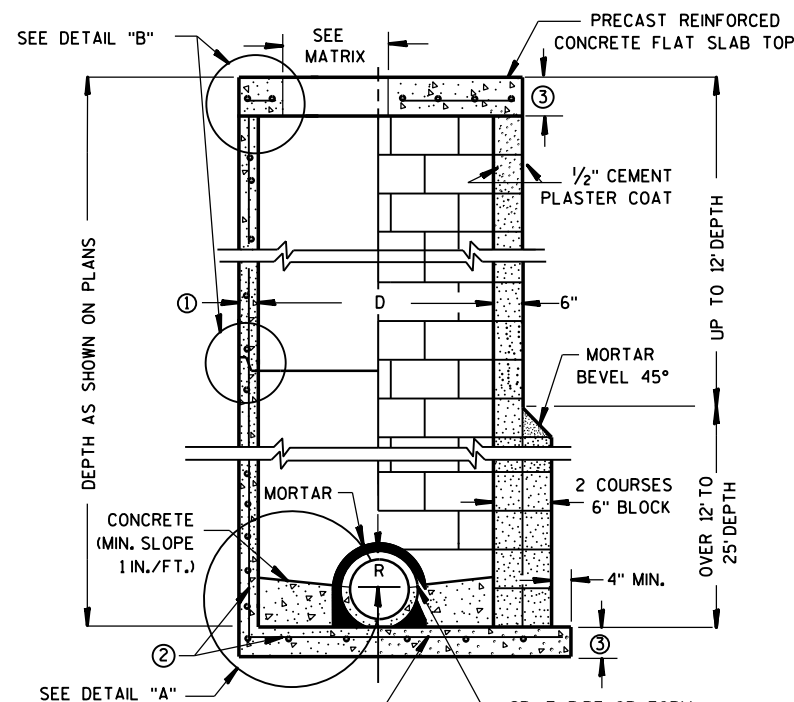
PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)



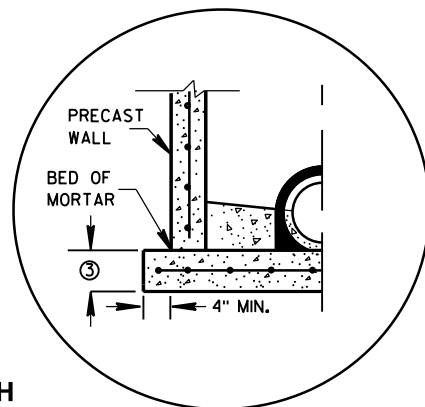
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"



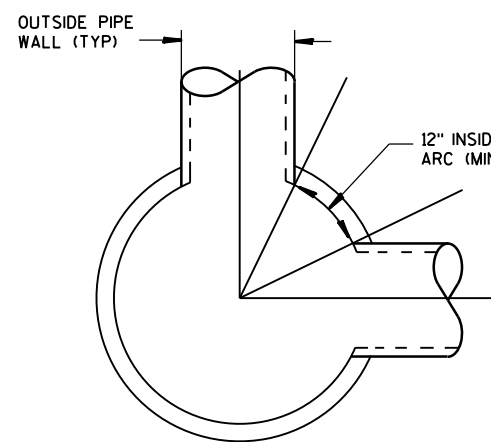
CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES

PRECAST REINFORCED CONCRETE BLOCK WITH CONCRETE WITH MONOLITHIC BASE CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED. CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

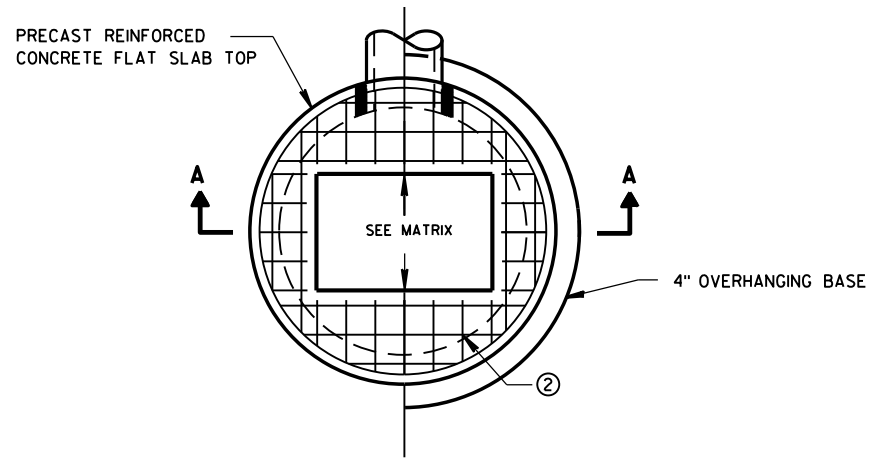
MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

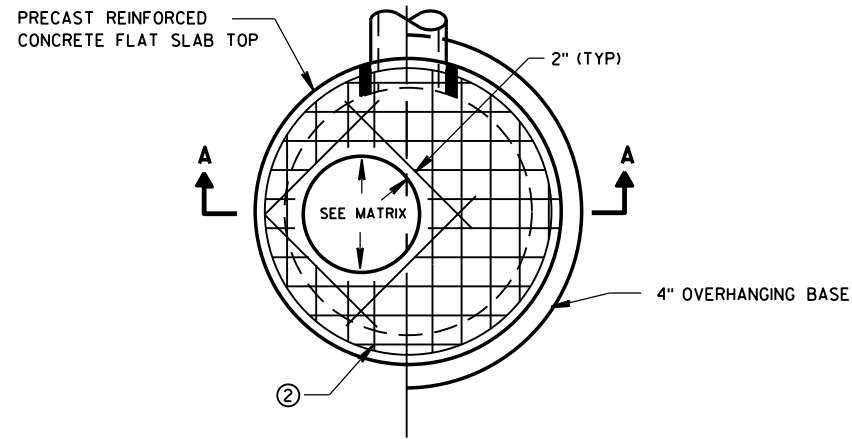
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APPROVED
 Sept., 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
 FHWA

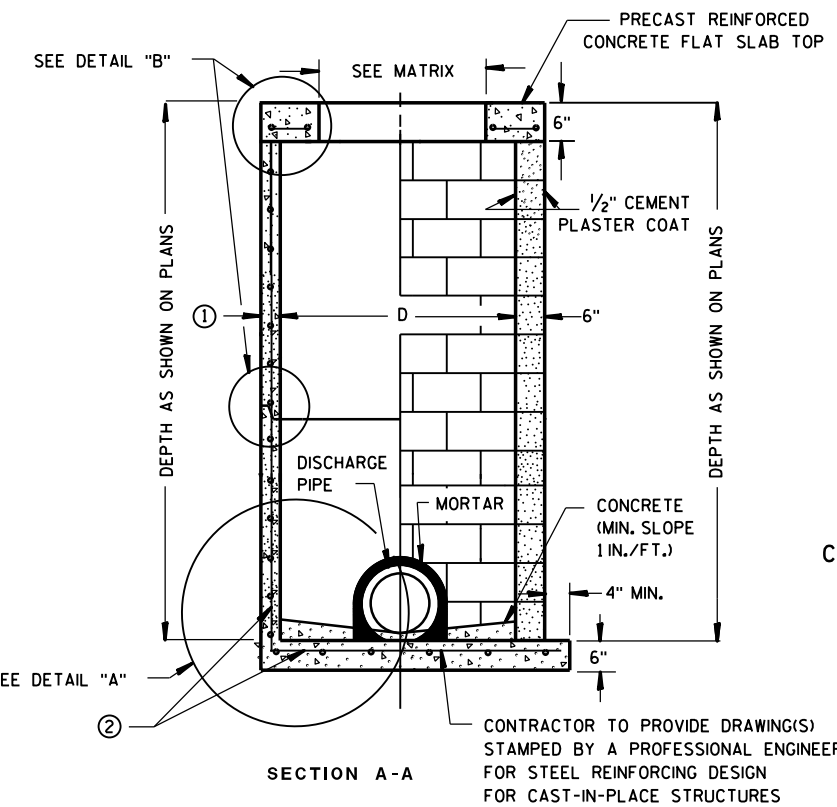
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER



PLAN VIEW RECTANGULAR OPENING



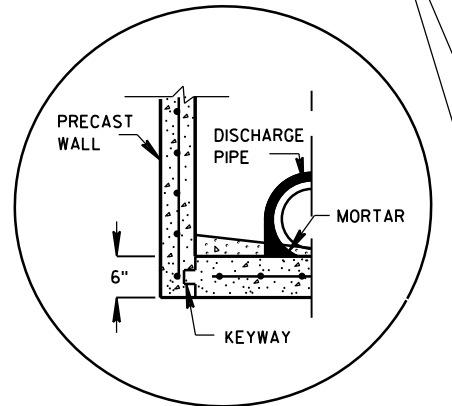
PLAN VIEW CIRCULAR OPENING



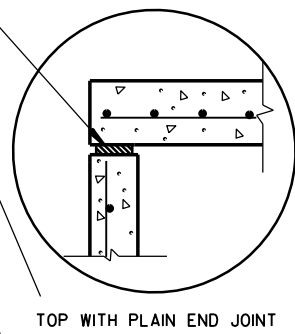
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE OR CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

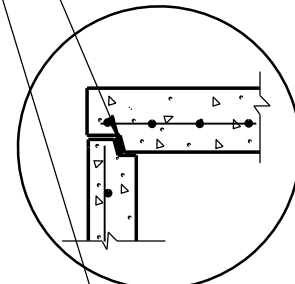
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)



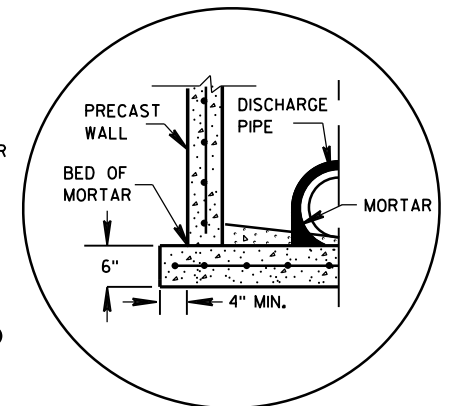
PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



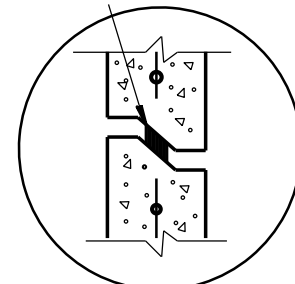
TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "A"

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

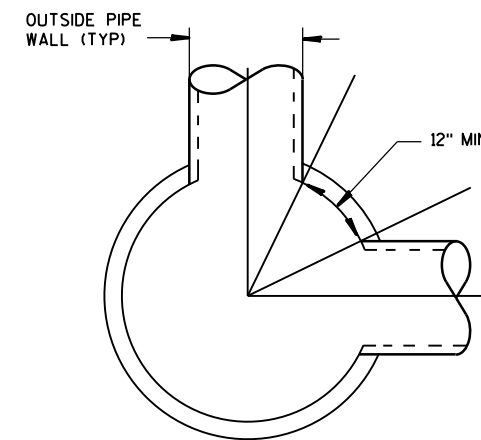
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X	X	
	2X2.5			X								
	2X3						X					
	2.5X3					X						



DETAIL "C"

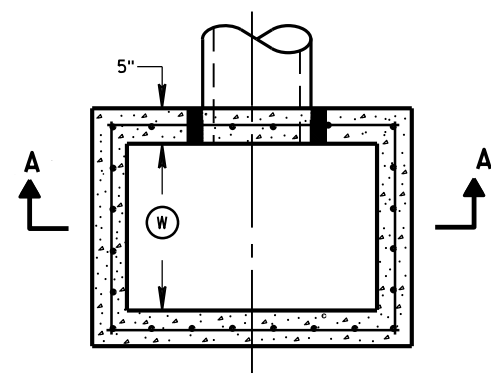
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

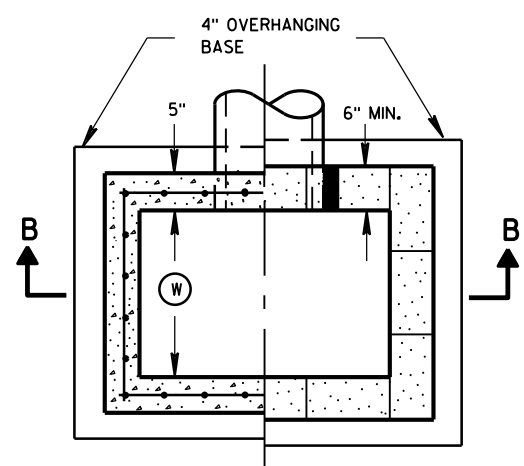
INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

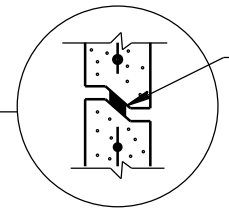
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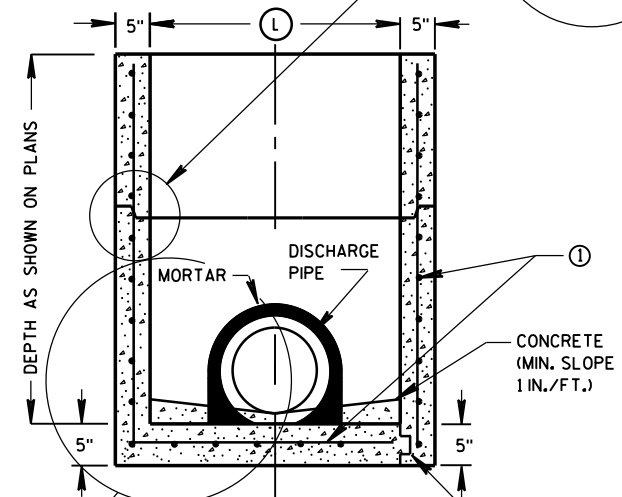
PLAN VIEW



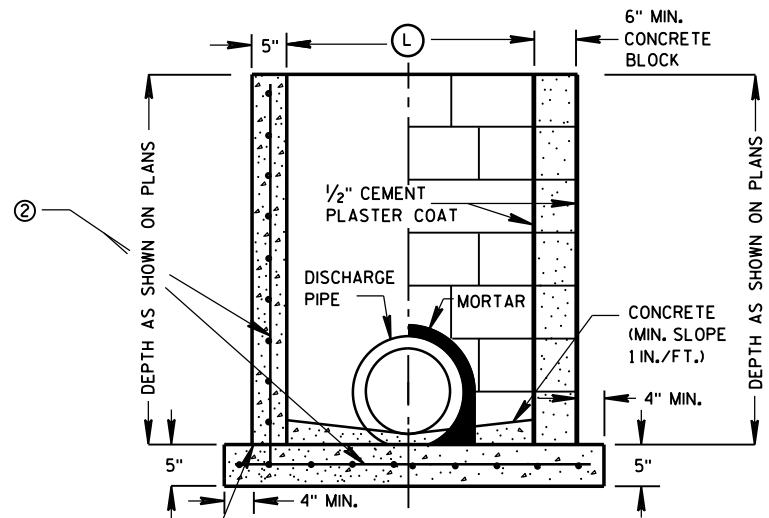
PLAN VIEW



RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



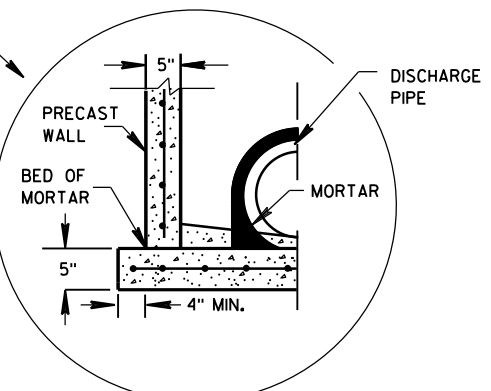
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE
 KEYWAY

CONSTRUCTION JOINT
 CAST-IN-PLACE REINFORCED CONCRETE
 CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ①



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

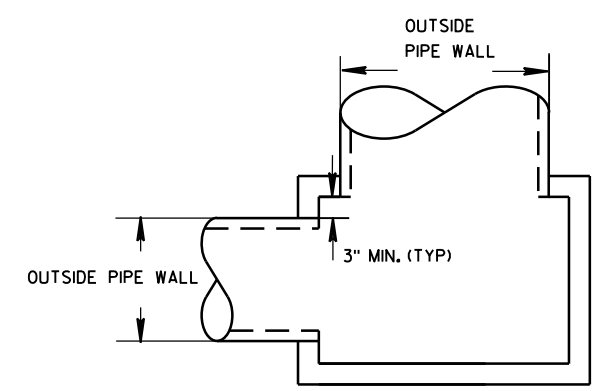
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	INLET COVER TYPE		ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



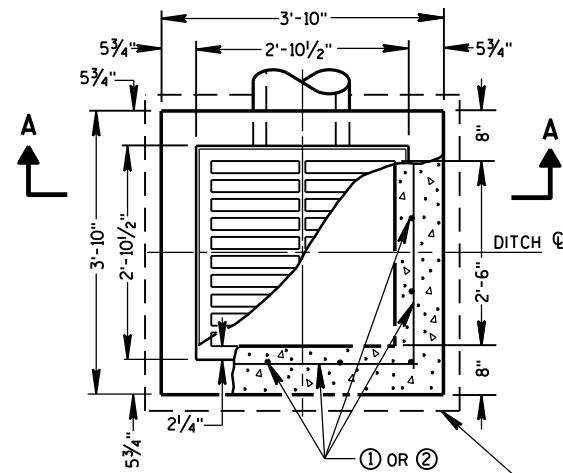
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

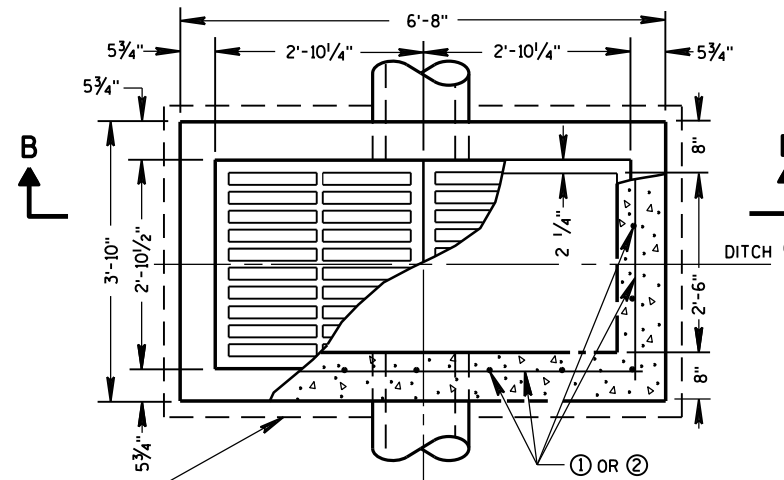
**INLETS 2X2-FT, 2X2.5-FT,
2X3-FT AND 2.5X3-FT**

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DEPARTMENT OF TRANSPORTATION

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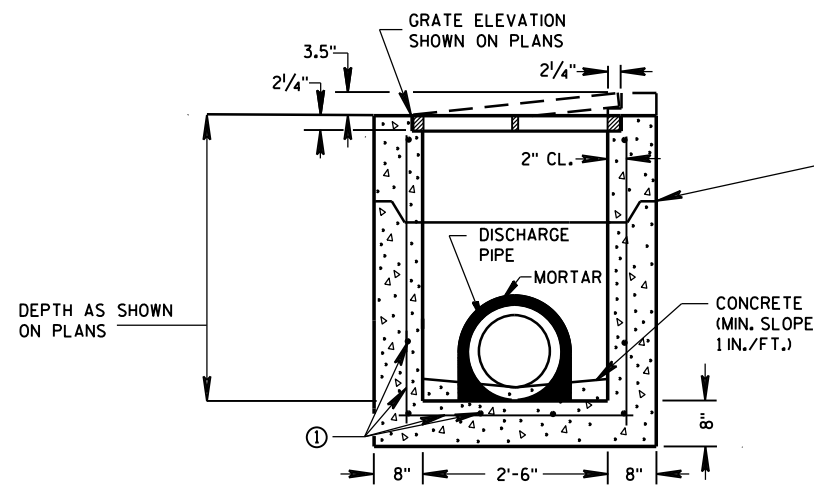


PLAN VIEW

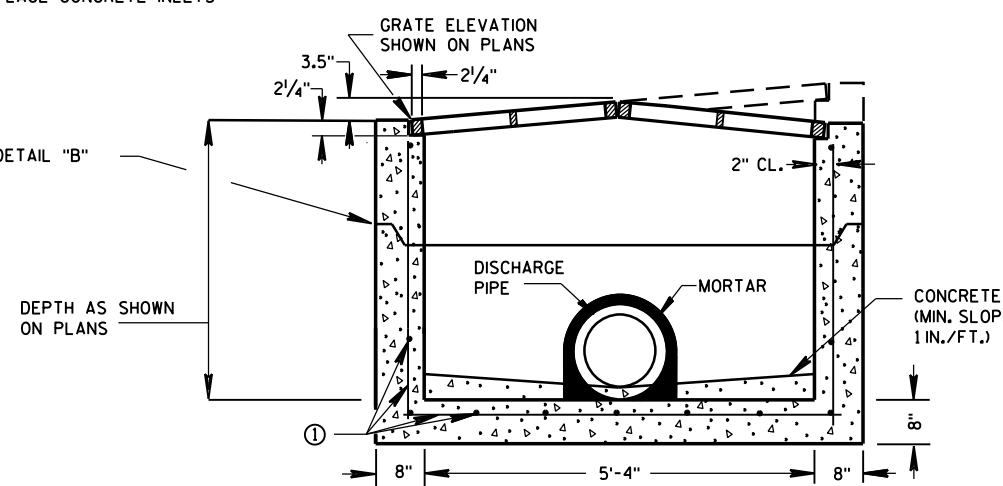


PLAN VIEW

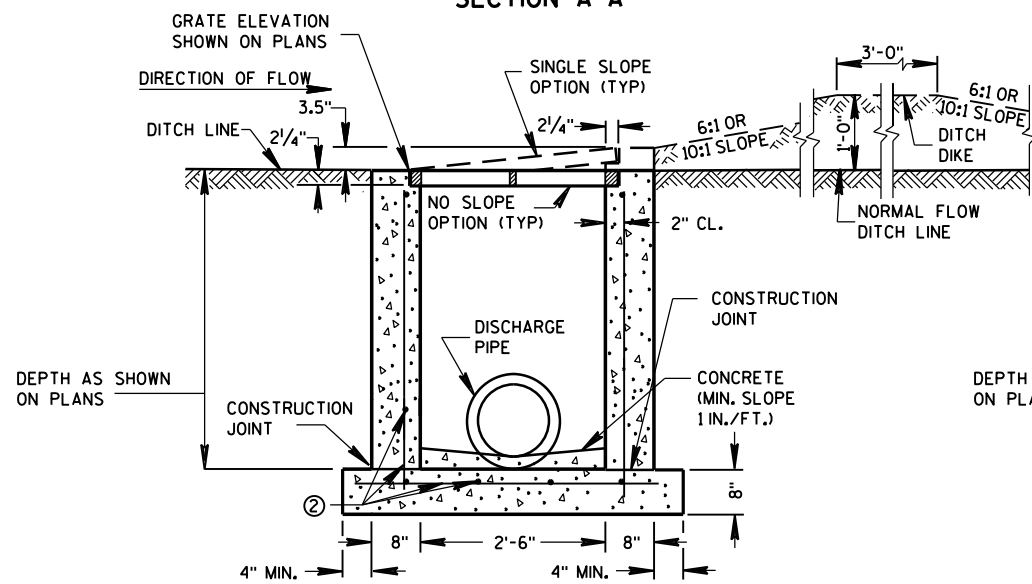
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



PRECAST REINFORCED CONCRETE SECTION A-A

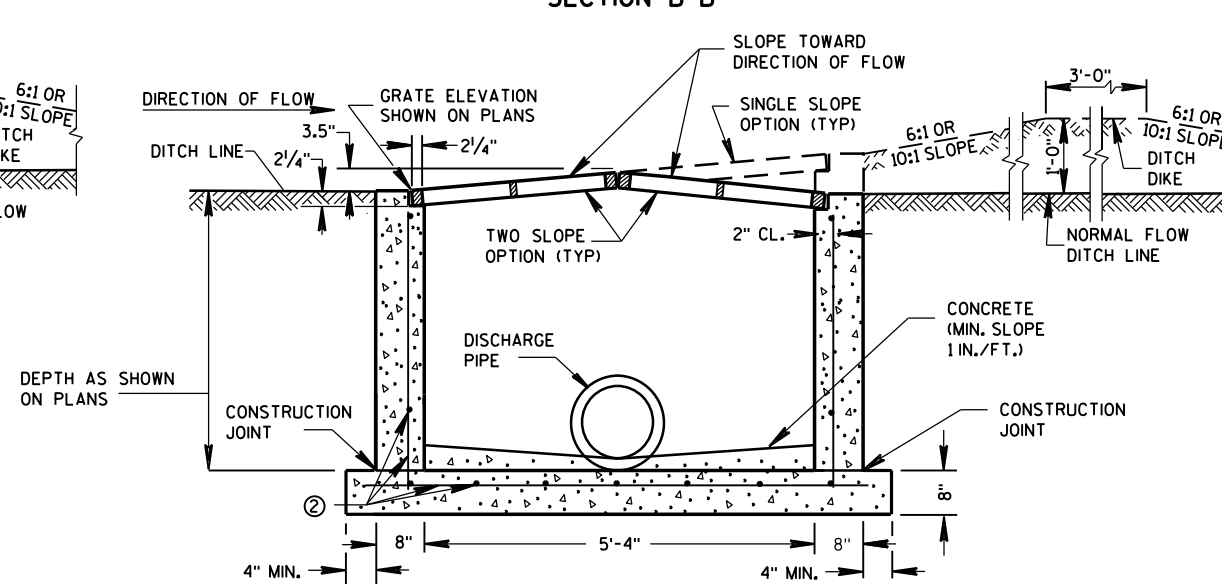


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT. BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

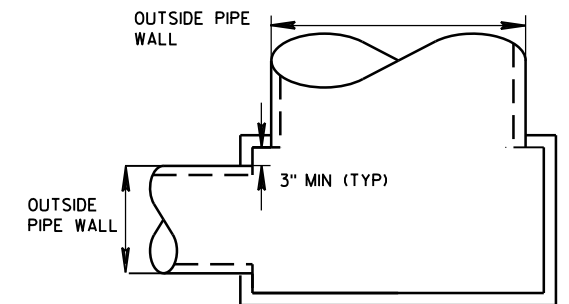
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

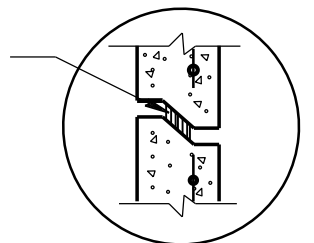
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)

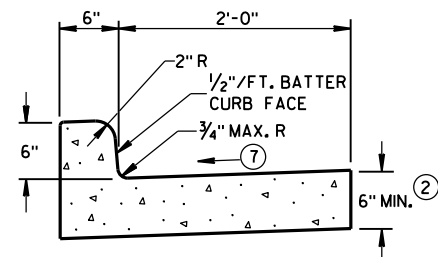


DETAIL "B"

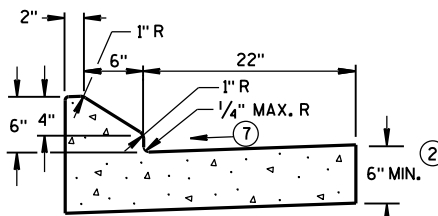
INLETS MEDIAN 1 AND 2 GRATE

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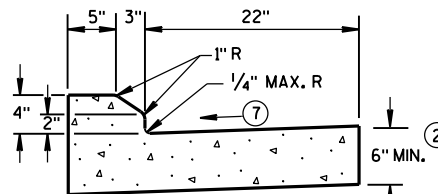
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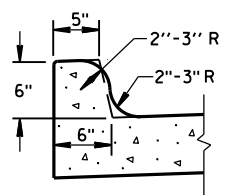
TYPES A^① & D



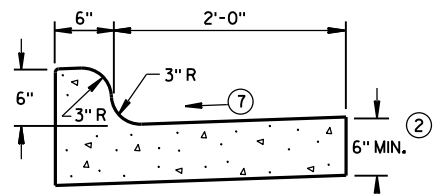
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

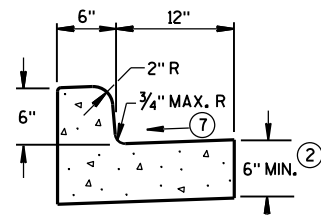


TYPES K^① & L
(OPTIONAL CURB SHAPE)



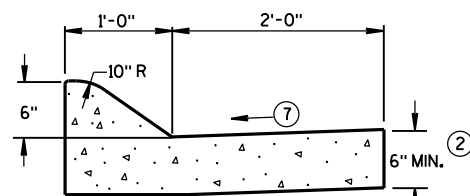
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

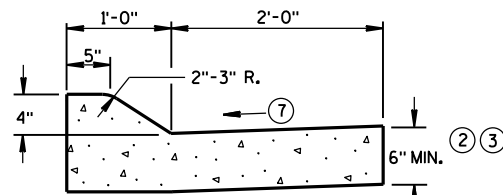


TYPES A^① & D

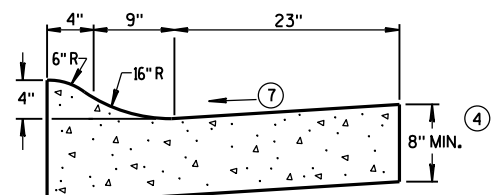
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

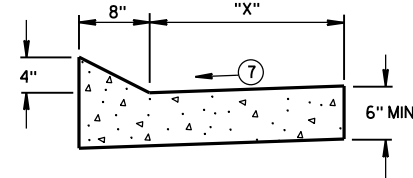


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

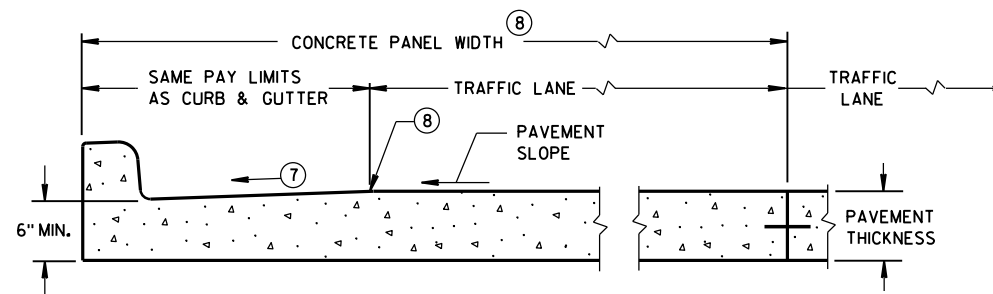
CONCRETE CURB & GUTTER 36"



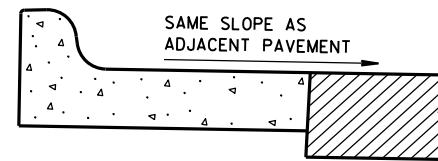
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

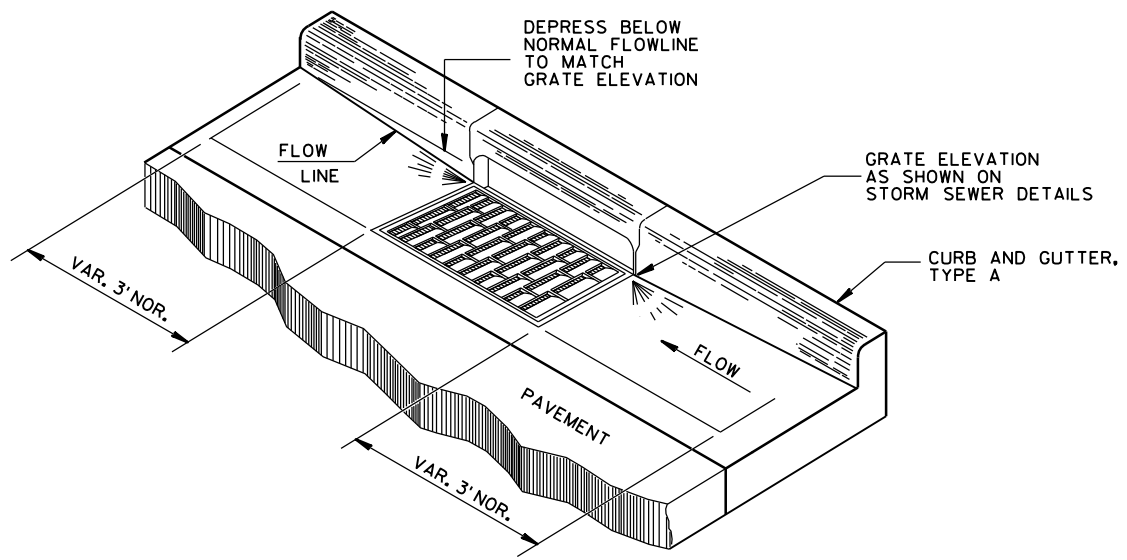
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'

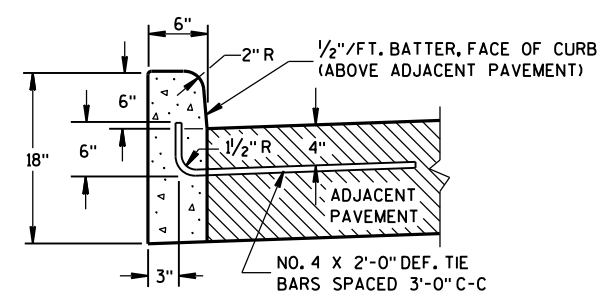
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

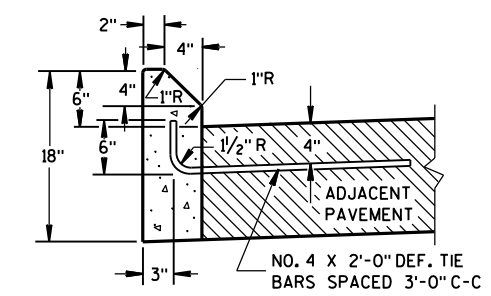
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL OF CURB AND GUTTER AT INLETS
(TYPE H INLET COVER SHOWN)



TYPES A^① & D

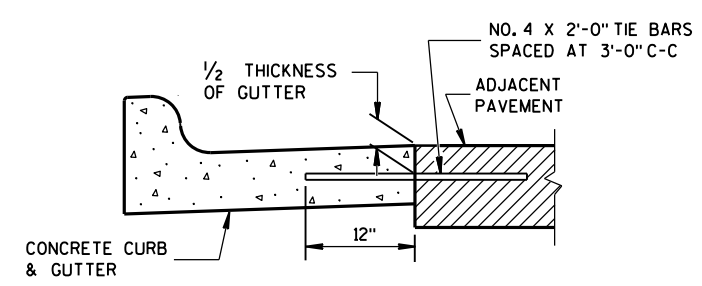


TYPES G^① & J

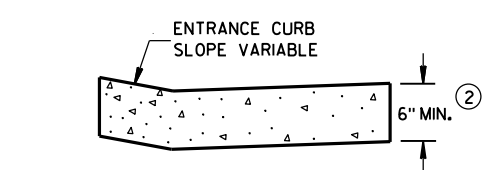
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
 - ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ③ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

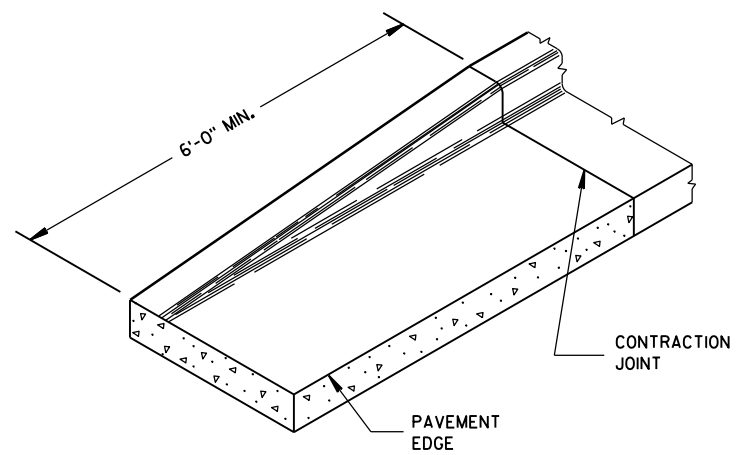
CONCRETE CURB



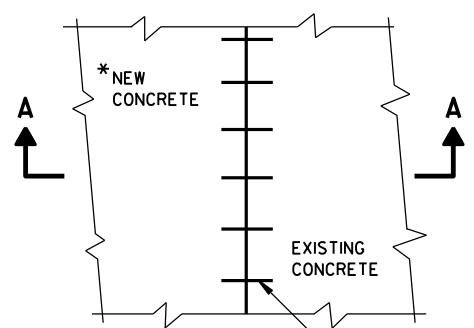
TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)



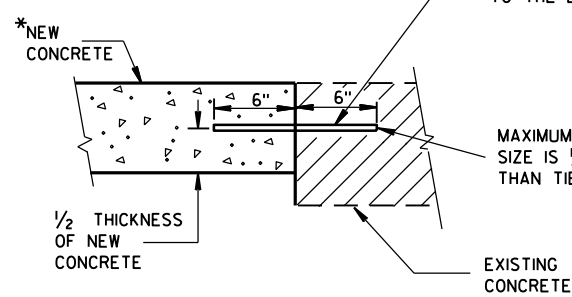
END SECTION CURB & GUTTER



PLAN VIEW

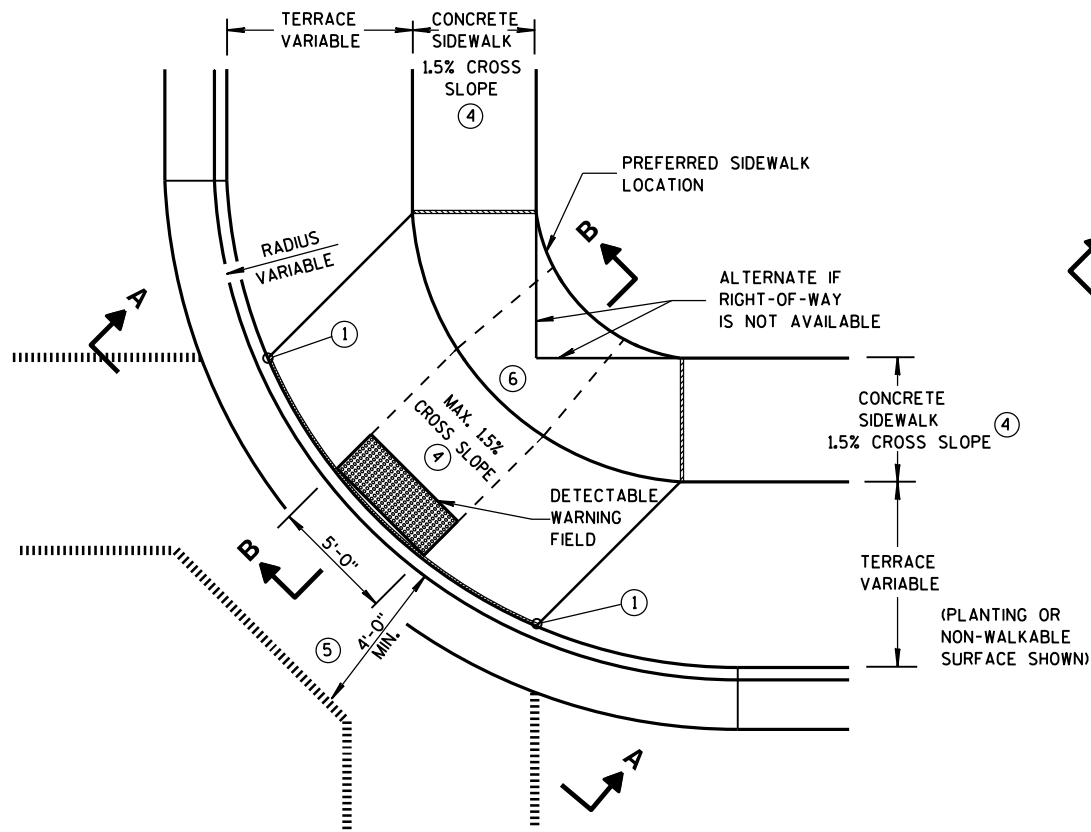
* NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

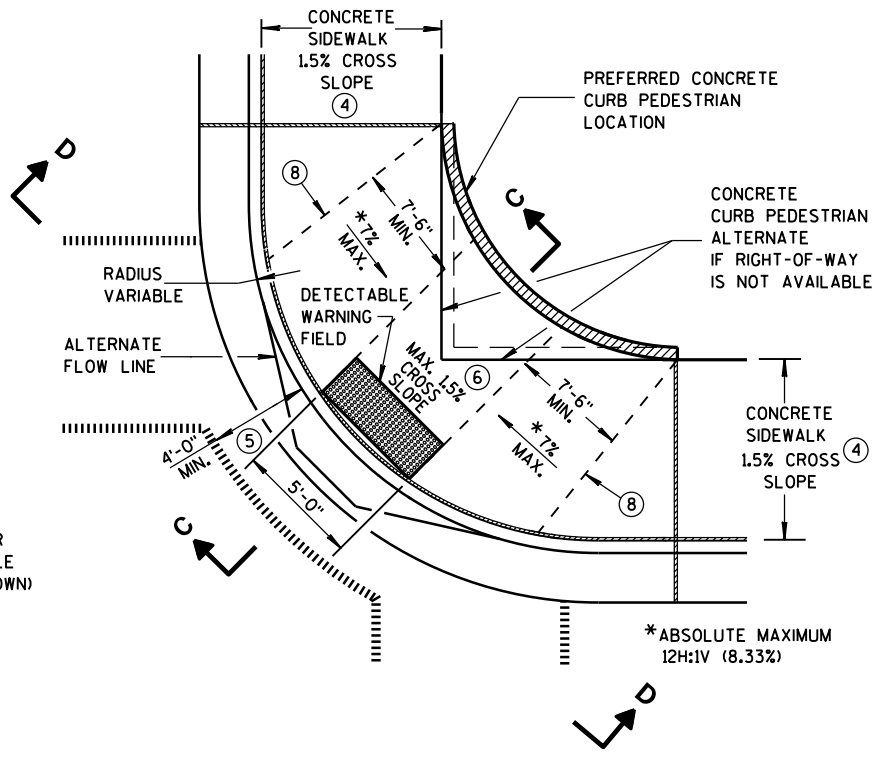


SECTION A-A
TIE BARS DRILLED INTO EXISTING PAVEMENT

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



**PLAN VIEW
TYPE 1 RAMP**
(CENTER OF CORNER RADIUS)



**PLAN VIEW
TYPE 1-A RAMP**
(NO TERRACE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

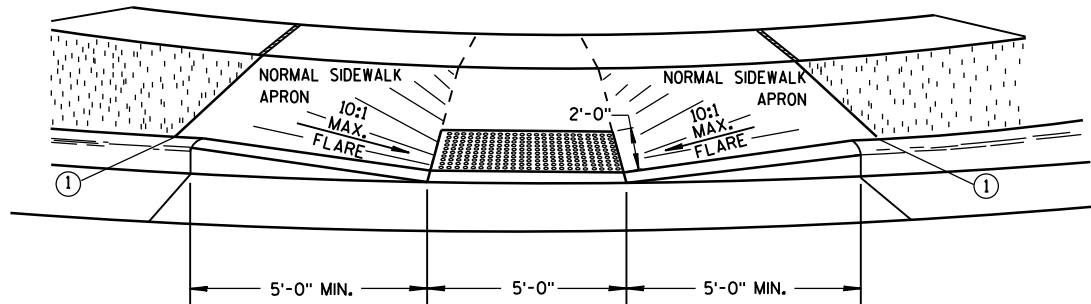
DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

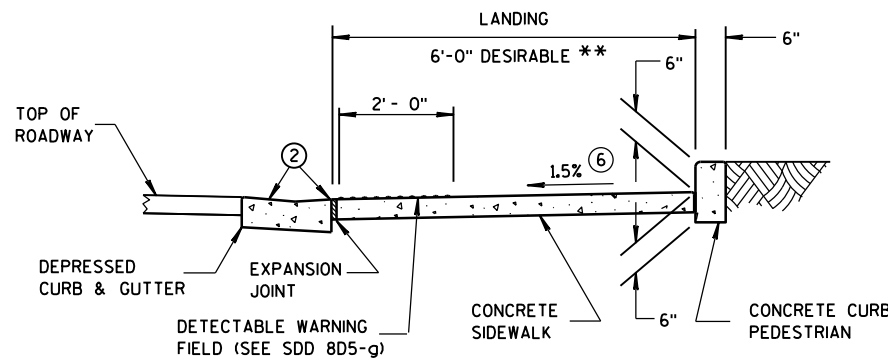
SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.



VIEW A-A

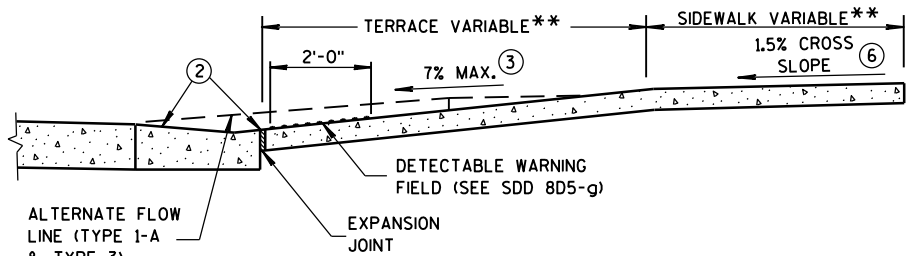
** WIDTH SHOWN ELSEWHERE IN THE PLANS



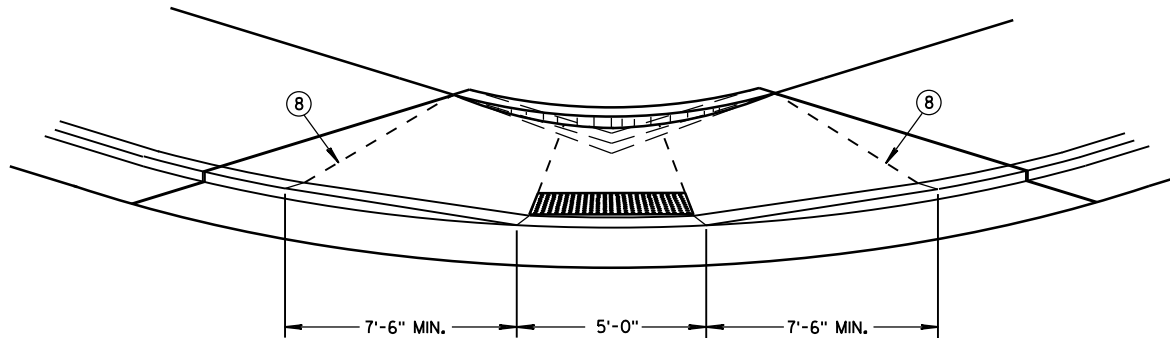
SECTION C-C

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



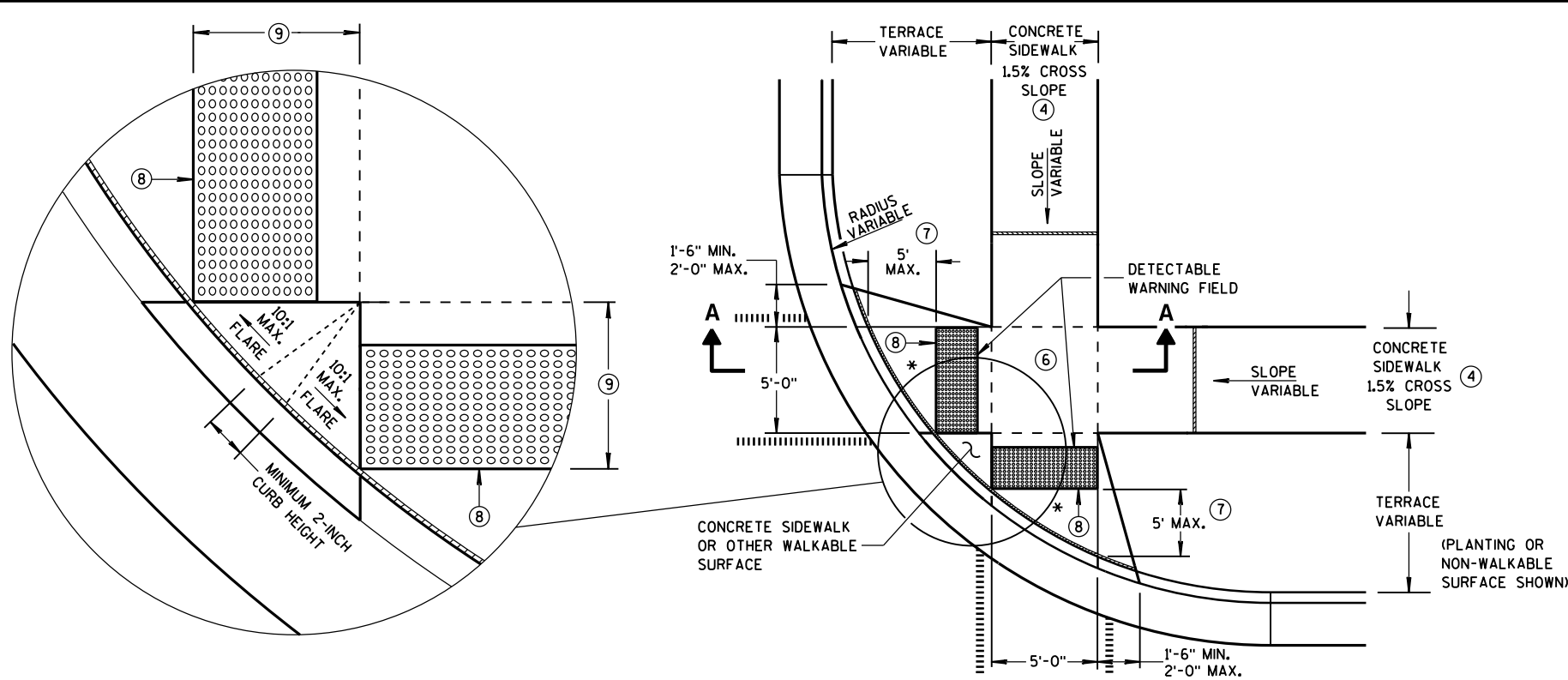
SECTION B-B



VIEW D-D

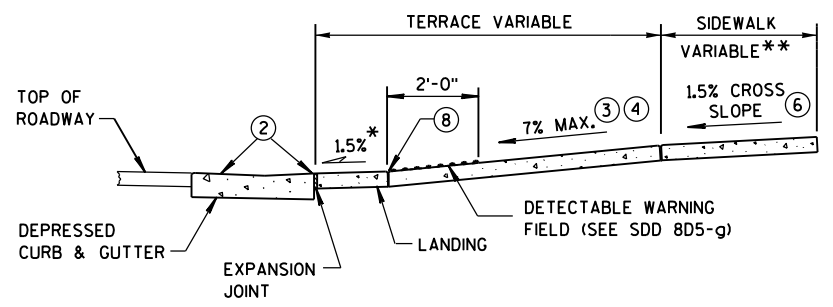
**CURB RAMPS
TYPES 1 AND 1-A**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



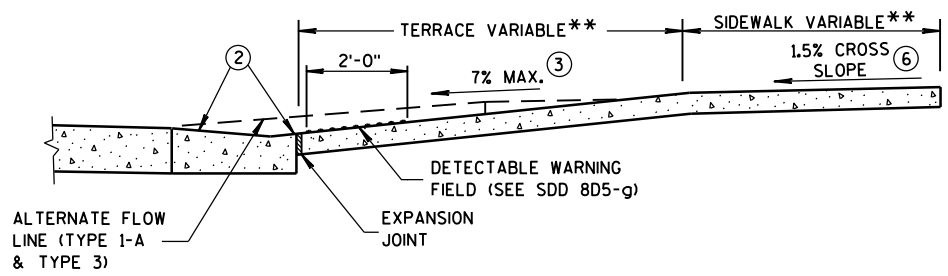
**PLAN VIEW
TYPE 2 RAMP**
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE
IN THE PLANS



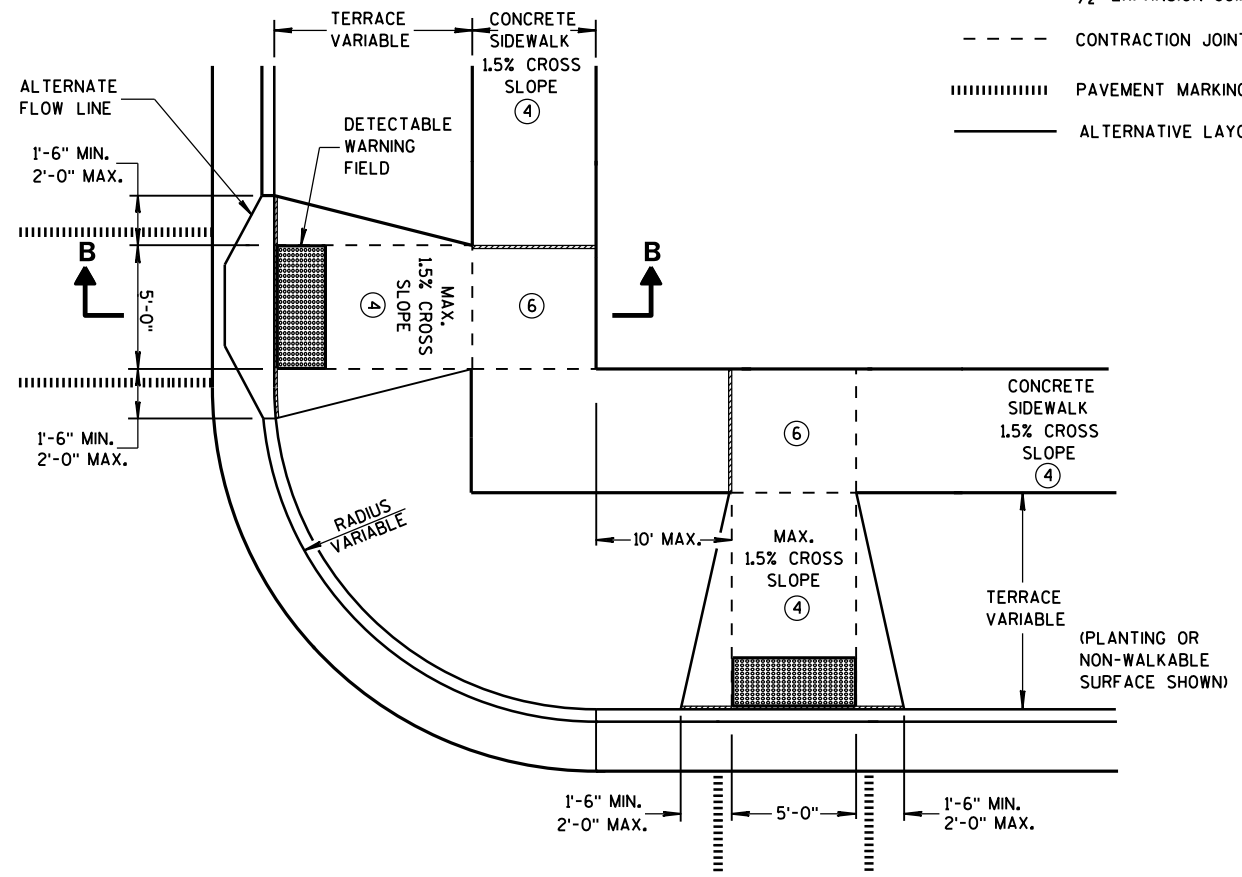
SECTION B-B

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

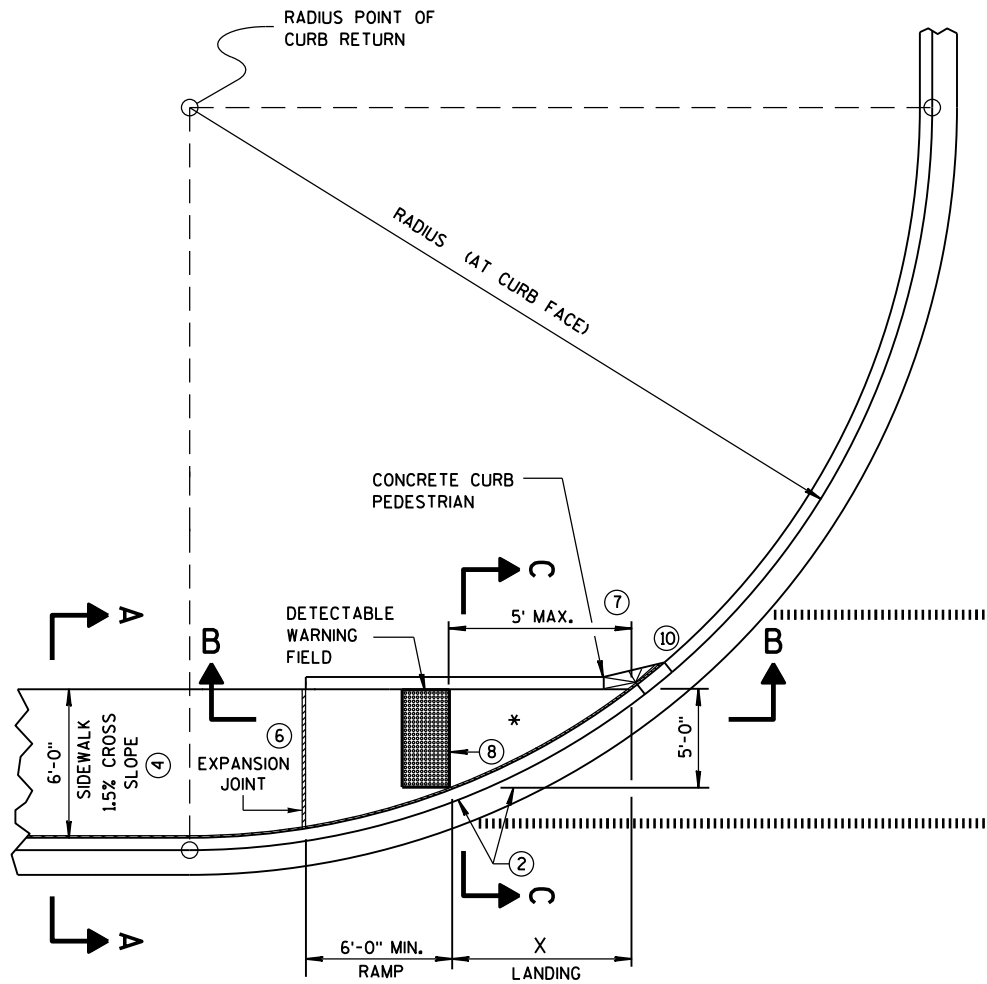
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



**PLAN VIEW
TYPE 3 RAMP**
(OUTSIDE OF CROSSWALK AREA)

**CURB RAMPS
TYPES 2 AND 3**

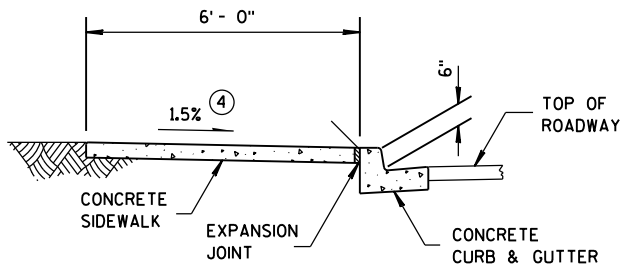
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CURB RAMP TYPE 4A
PLAN VIEW**

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5/2"

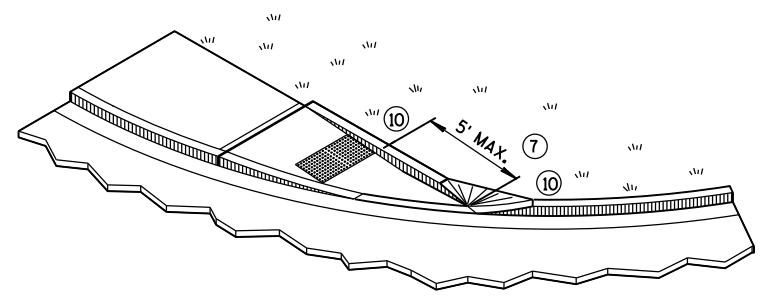
INTERMEDIATE RADII CAN BE INTERPOLATED



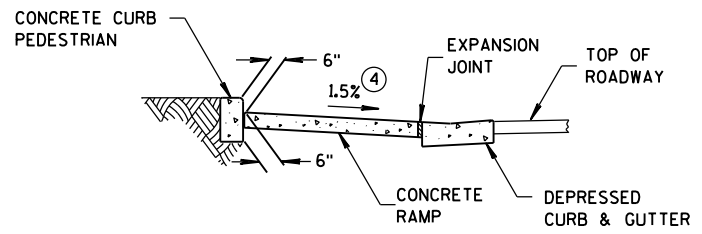
SECTION A-A FOR TYPE 4A

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

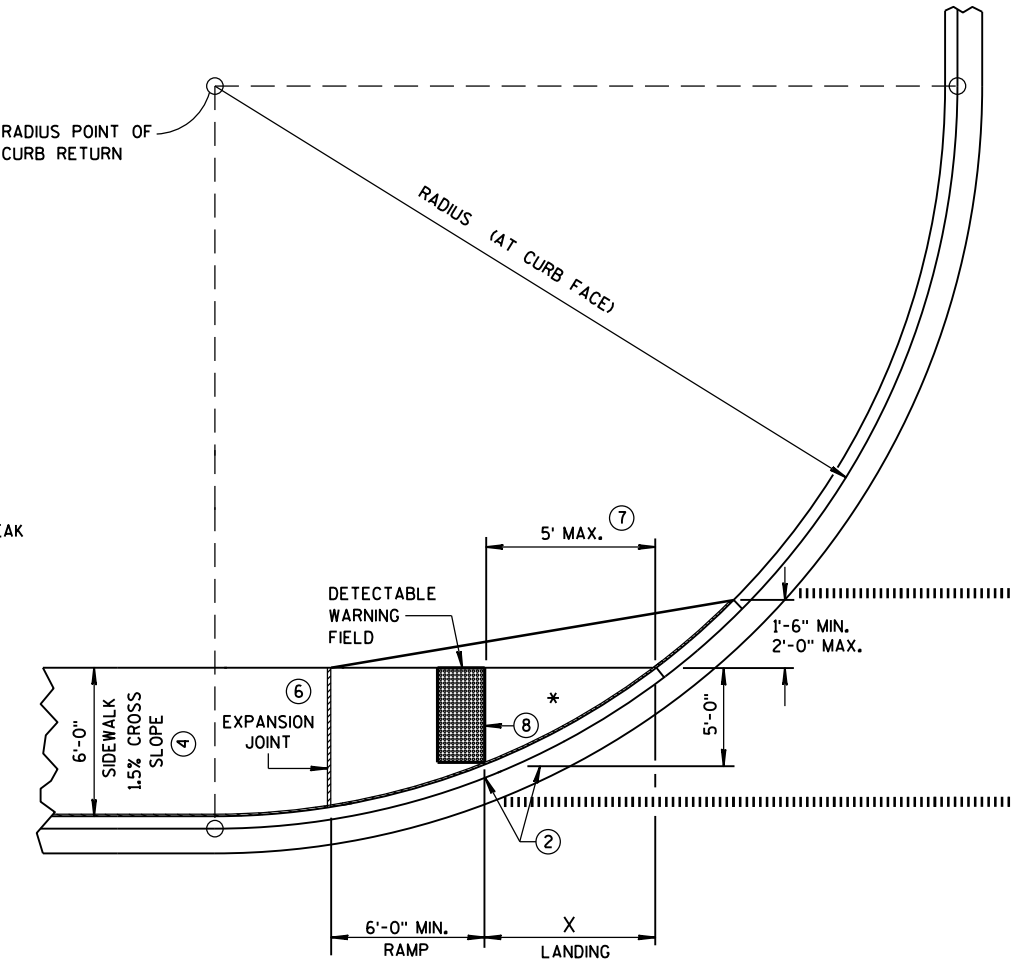


ISOMETRIC VIEW FOR TYPE 4A

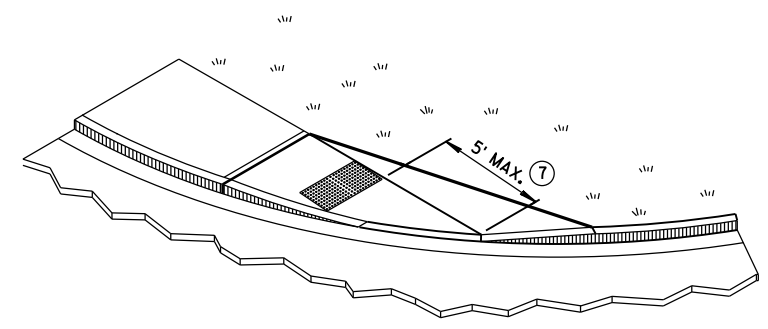


SECTION C-C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



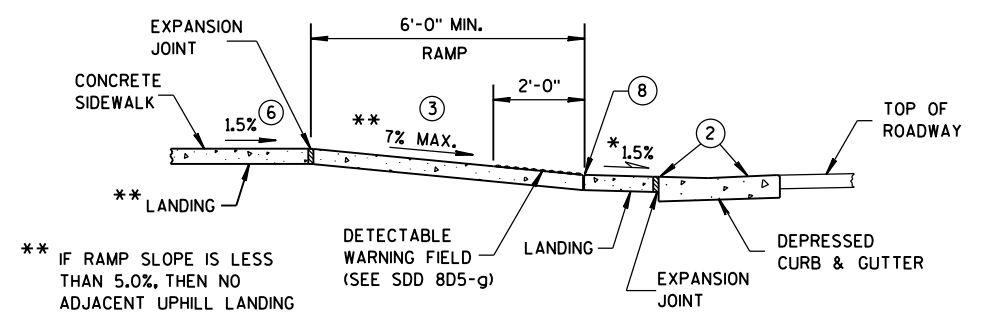
**CURB RAMP TYPE 4A1
PLAN VIEW**



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ▤ PAVEMENT MARKING CROSSWALK (WHITE)



SECTION B-B FOR TYPE 4A

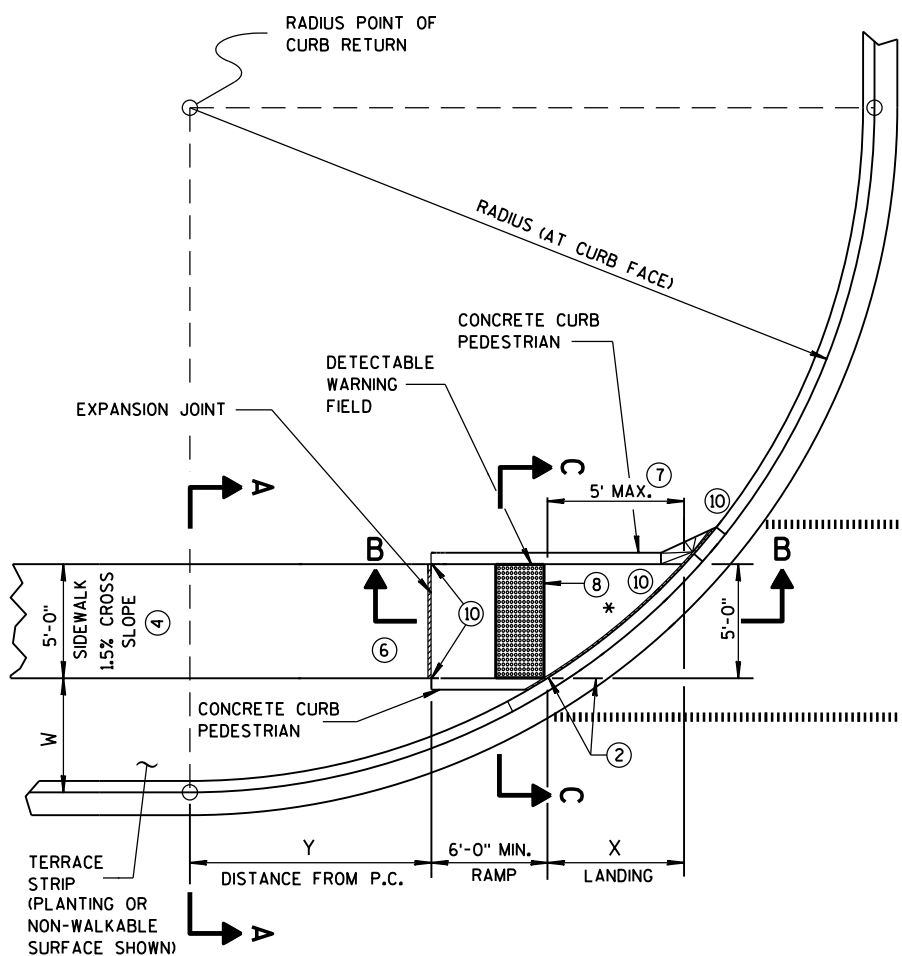
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

**CURB RAMPS
TYPES 4A AND 4A1**

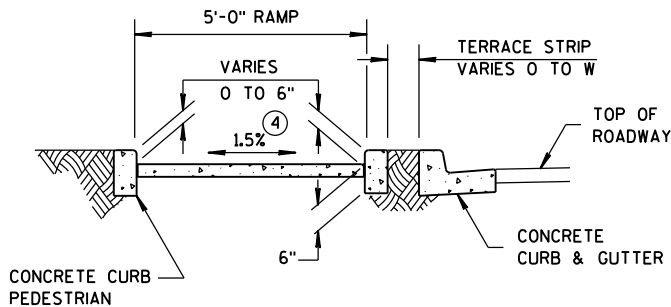
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10 1/4"	0'-5"	2'-1"	1'-4 1/2"	1'-5"	2'-1"	0'-10"	2'-7 1/2"	0'-3 1/4"	3'-0 1/4"						
15 FEET	4'-6 3/4"	2'-1 3/4"	3'-9"	3'-5 1/4"	3'-1 1/4"	4'-6"	2'-6 3/4"	5'-4 1/2"	2'-1"	6'-1"	1'-8"	6'-8 1/2"	1'-3 1/4"	7'-2 1/2"	0'-10 3/4"	7'-7 1/4"
20 FEET	5'-9 3/4"	3'-6 1/2"	4'-11 1/2"	5'-1 3/4"	4'-3 1/4"	6'-5 1/2"	3'-8 3/4"	7'-7"	3'-3"	8'-6 1/2"	2'-10"	9'-4 1/2"	2'-5 1/2"	10'-1 1/4"	2'-1 1/4"	10'-9"
30 FEET			6'-9 1/4"	7'-11 1/4"	6'-0 1/4"	9'-8"	5'-5"	11'-1 3/4"	4'-10 3/4"	12'-5 3/4"	4'-5 1/2"	13'-7 3/4"	4'-0 3/4"	14'-8 1/2"	3'-8 1/2"	15'-8 1/4"
40 FEET									6'-1 3/4"	15'-8 1/2"	5'-8"	17'-2"	5'-3"	18'-5 3/4"	4'-10 3/4"	19'-8 1/4"
50 FEET															5'-10 1/4"	23'-2"

INTERMEDIATE RADII CAN BE INTERPOLATED
 DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
 DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



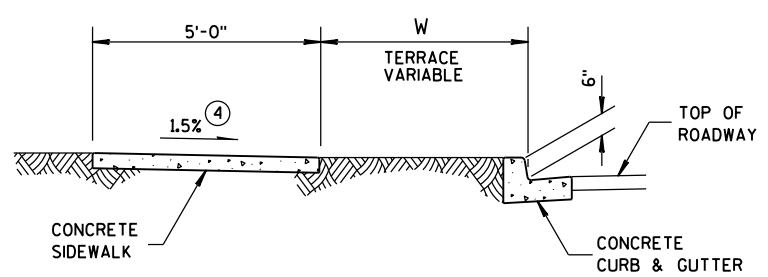
**CURB RAMP TYPE 4B
PLAN VIEW**



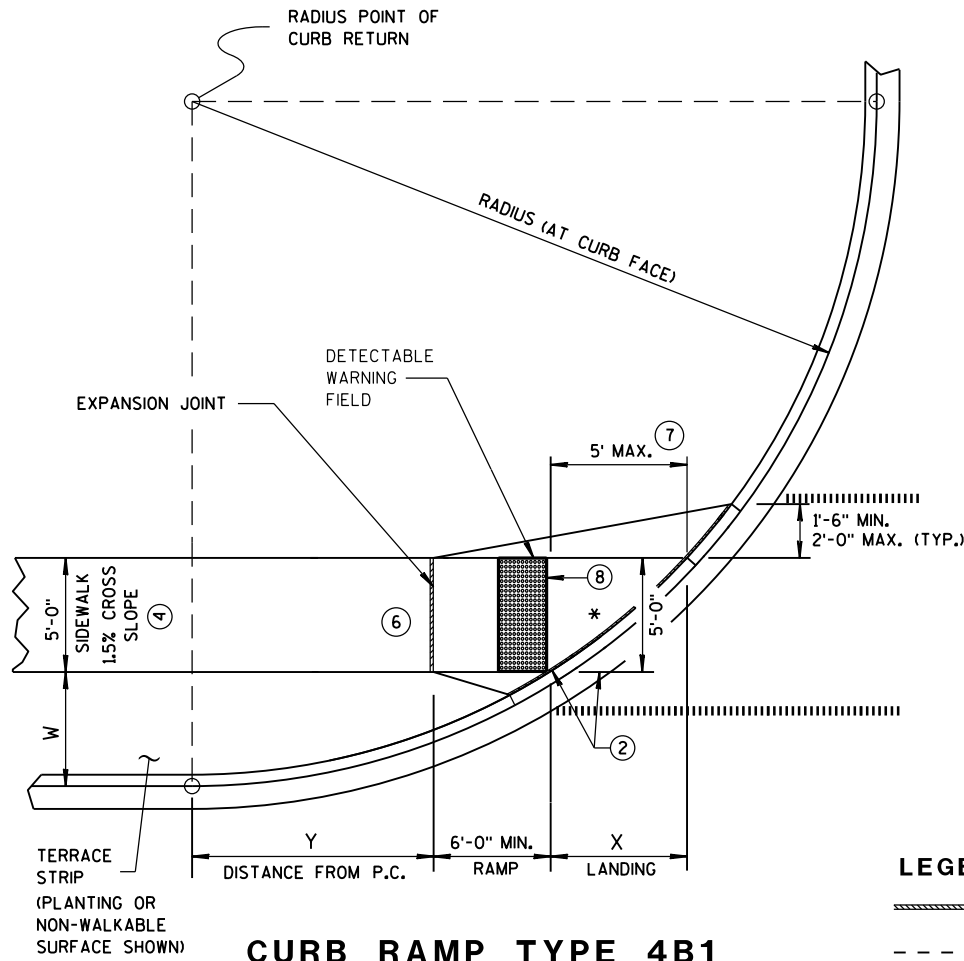
SECTION C-C FOR TYPE 4B

GENERAL NOTES

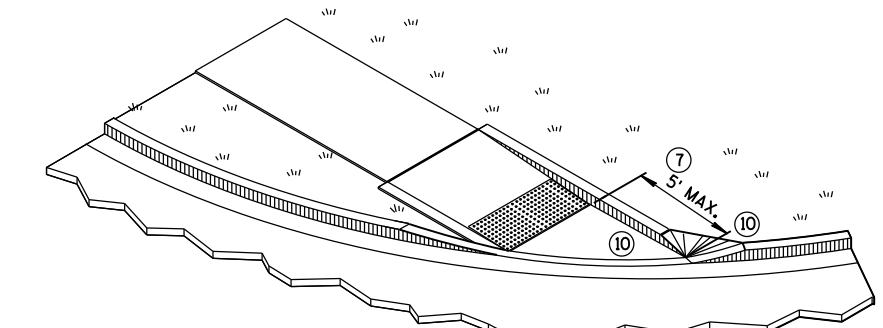
- 1. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS. DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- 2. GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3. ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4. ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6. PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- 7. WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- 8. PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 10. INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



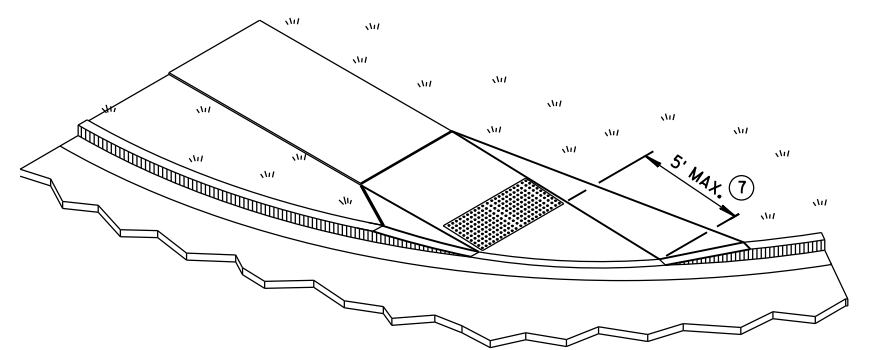
SECTION A-A FOR TYPE 4B



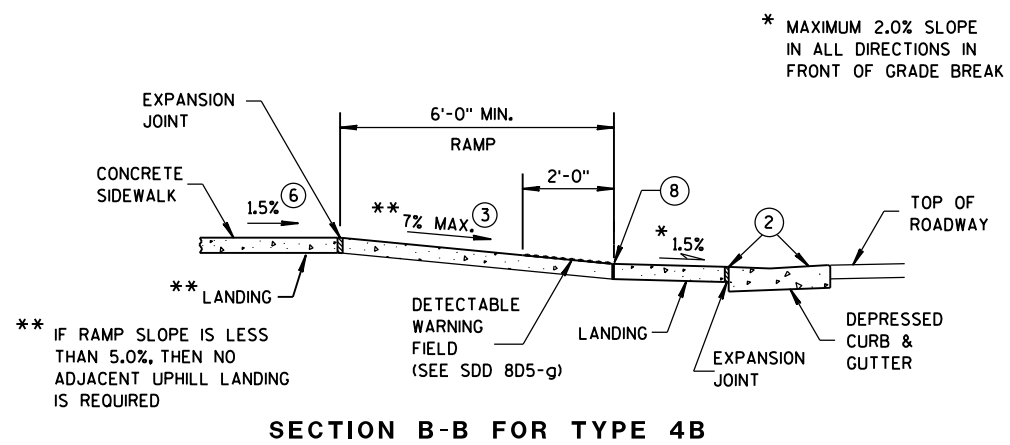
**CURB RAMP TYPE 4B1
PLAN VIEW**



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

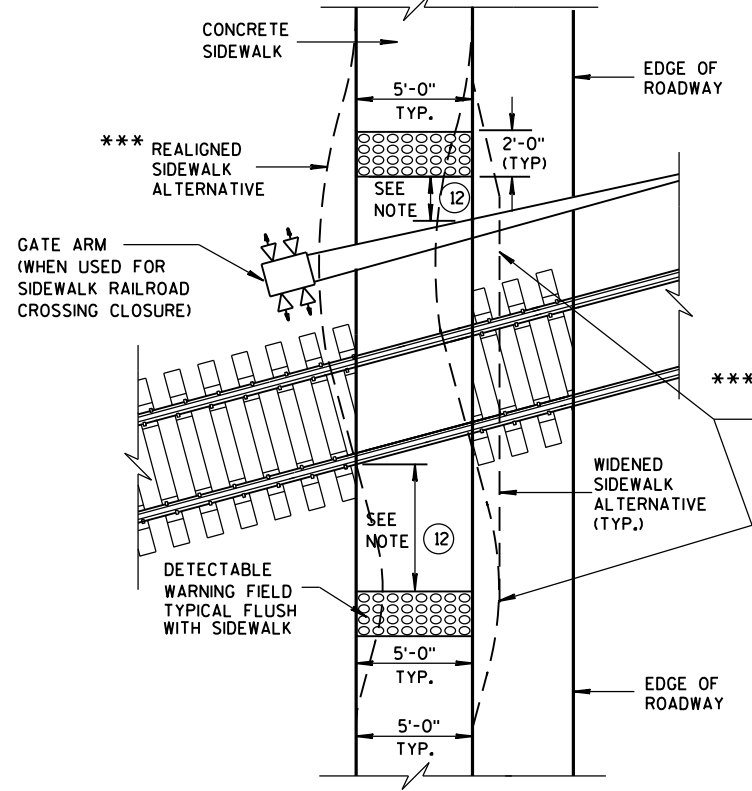


SECTION B-B FOR TYPE 4B

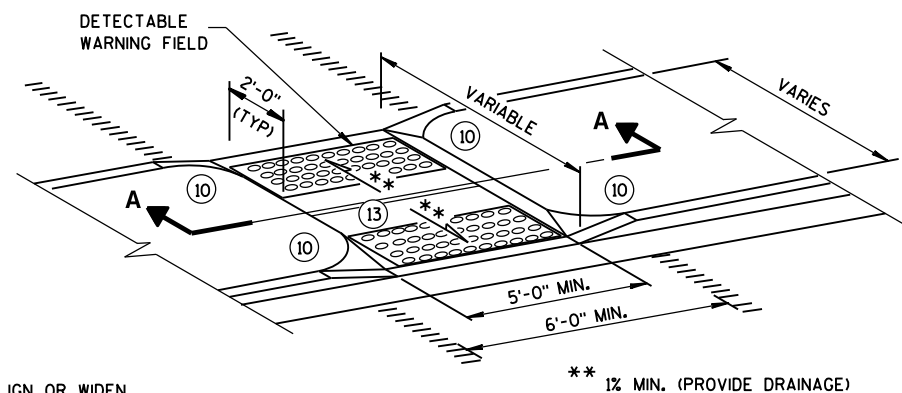
- LEGEND**
- ===== 1/2" EXPANSION JOINT-SIDEWALK
 - CONTRACTION JOINT FIELD LOCATED
 - ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPE 4B AND 4B1**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING**



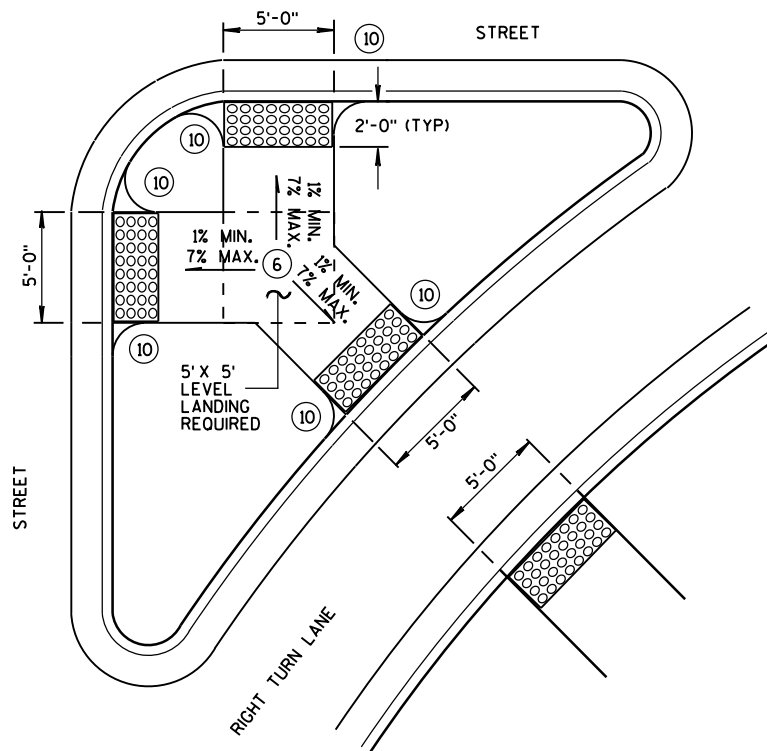
**MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5**

*** DETAILS TO BE DETERMINED BY DESIGNER

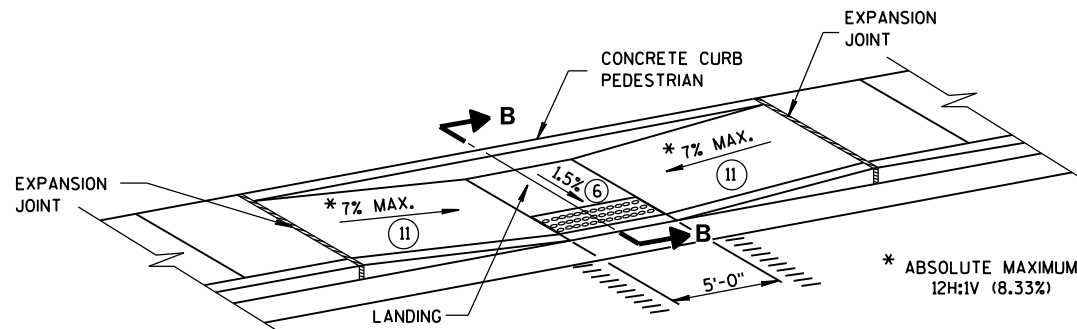
GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 15 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

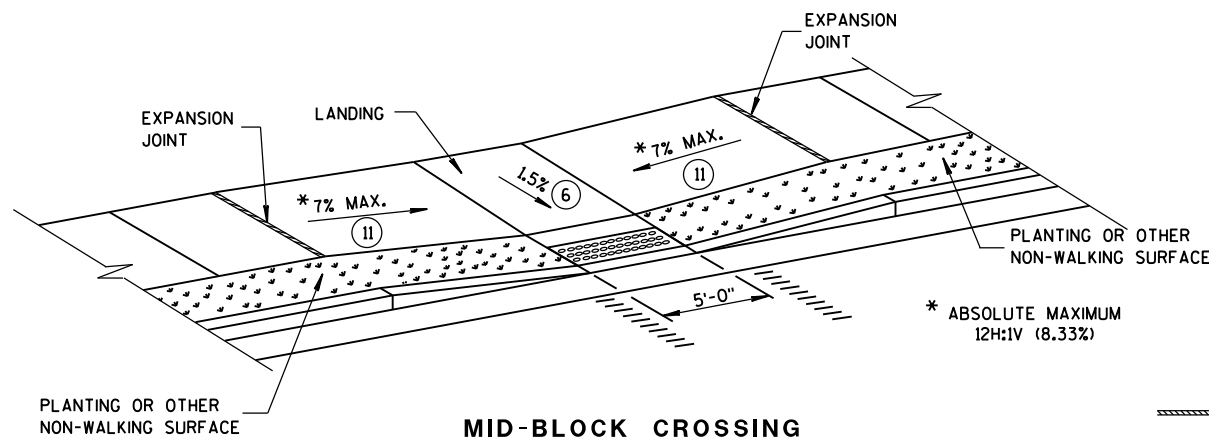
REFER TO GENERAL NOTES ② AND ③ FOR ALL ISLAND CURB RAMPS



**TYPE 6
DETECTABLE WARNING AT ISLANDS**

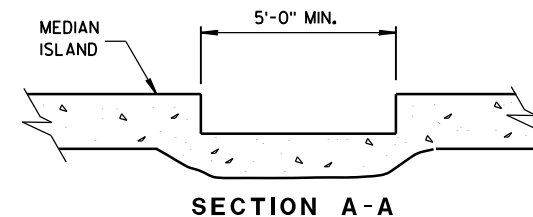


**MID-BLOCK CROSSING
TYPE 7A**

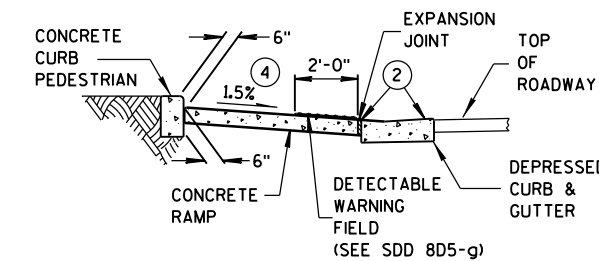


**MID-BLOCK CROSSING
TYPE 7B**

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



SECTION A-A



SECTION B-B

LEGEND

- — — — — 1/2" EXPANSION JOINT-SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPES 5, 6, 7A, 7B & 8**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

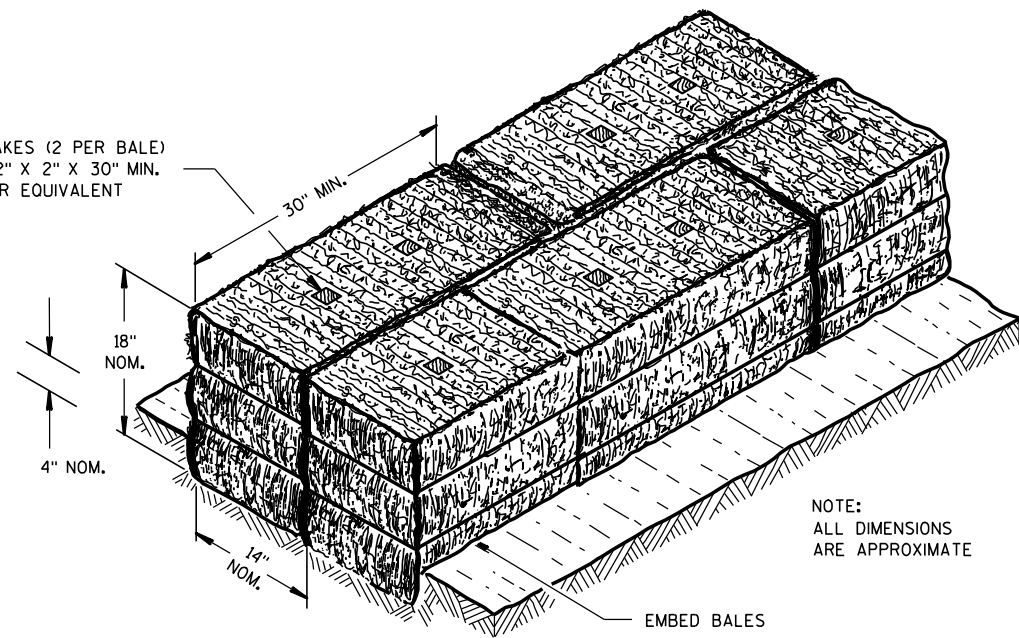
6

6

S.D.D. 8 D 5-19e

S.D.D. 8 D 5-19e

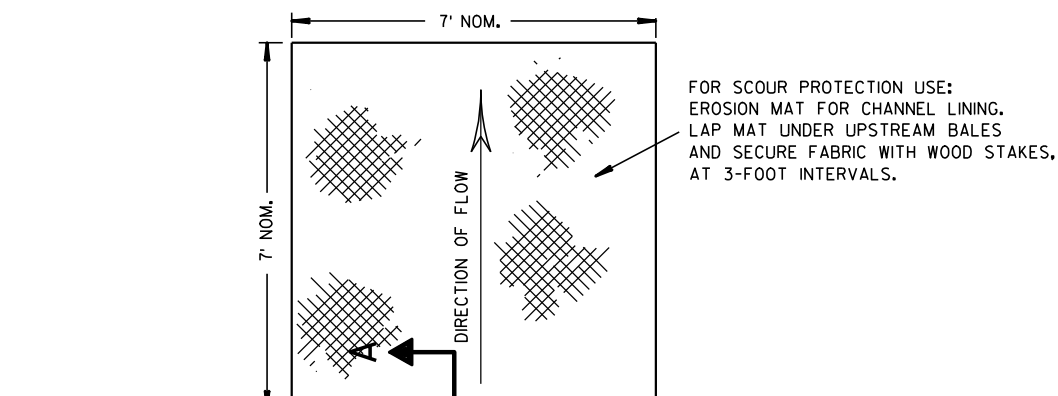
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



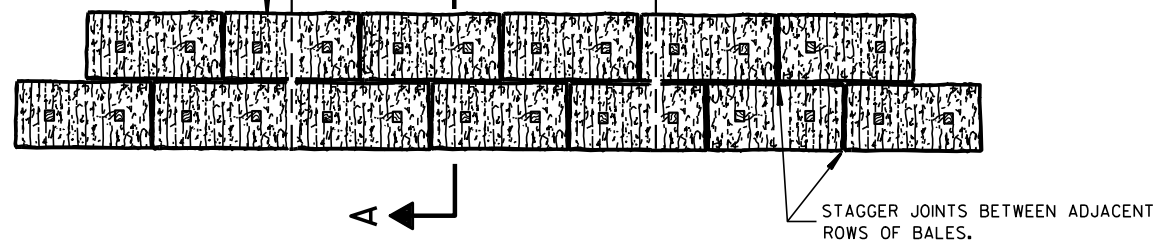
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A



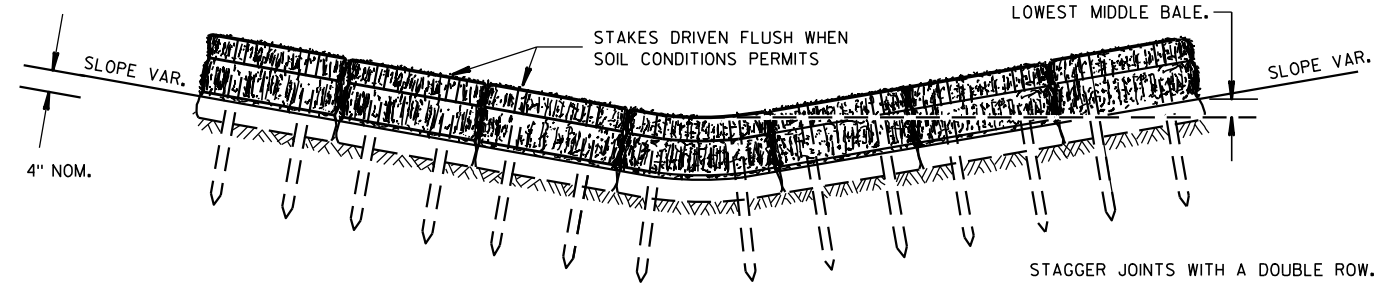
FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.



STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



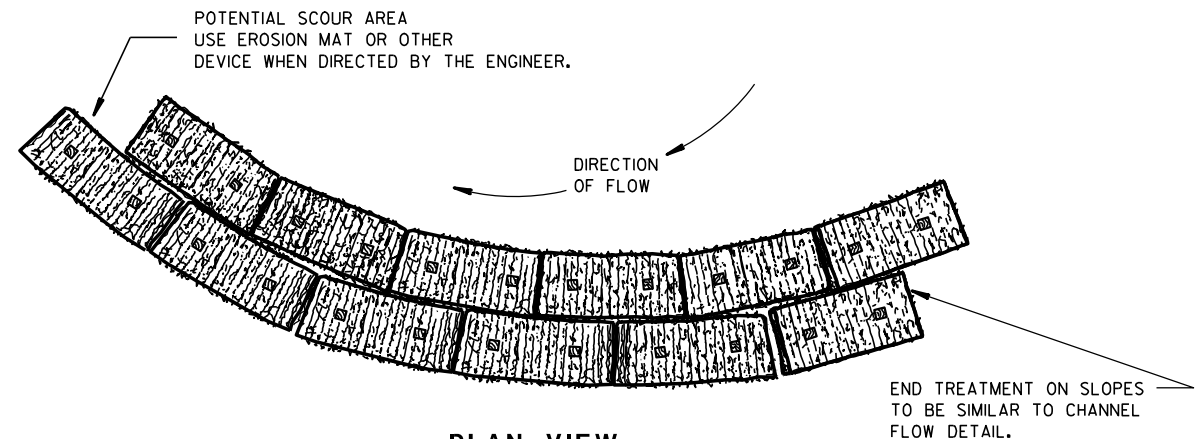
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

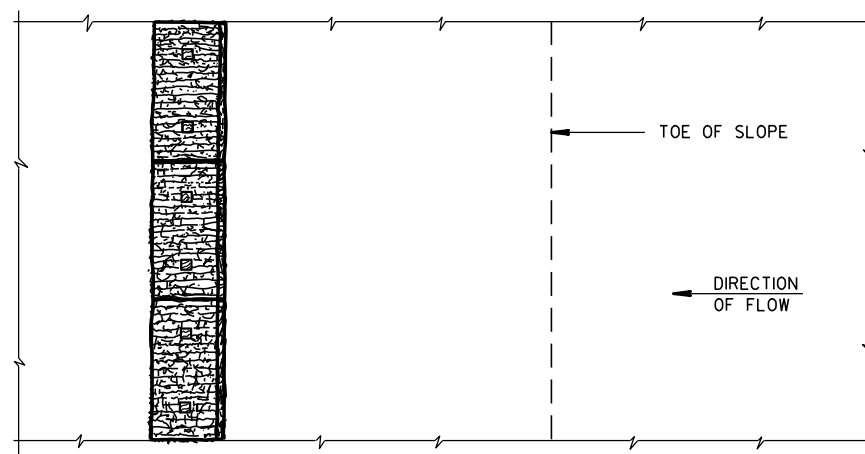
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

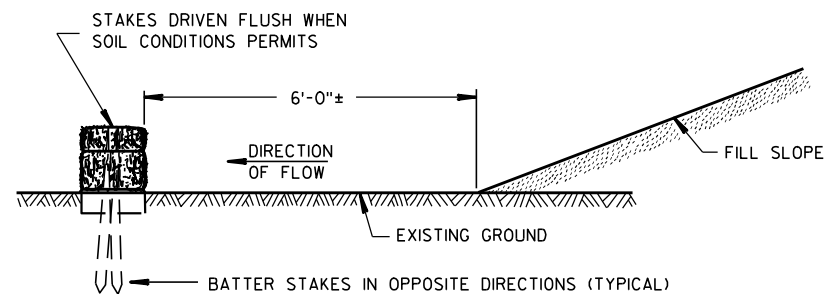


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

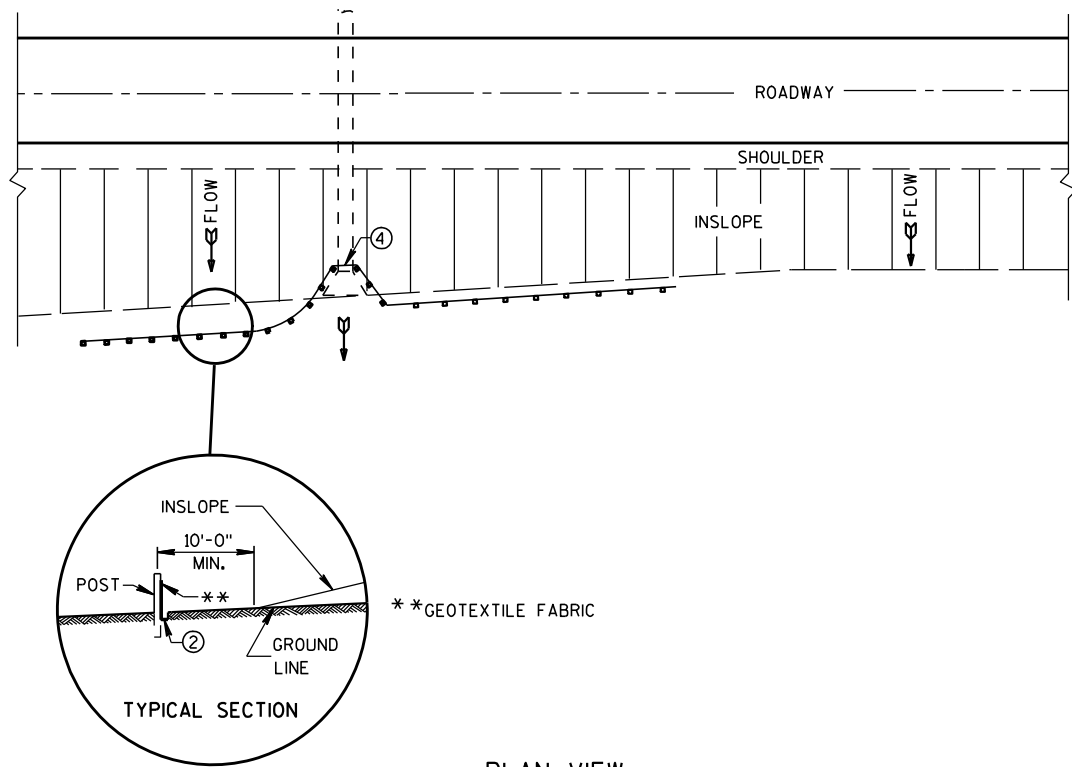
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

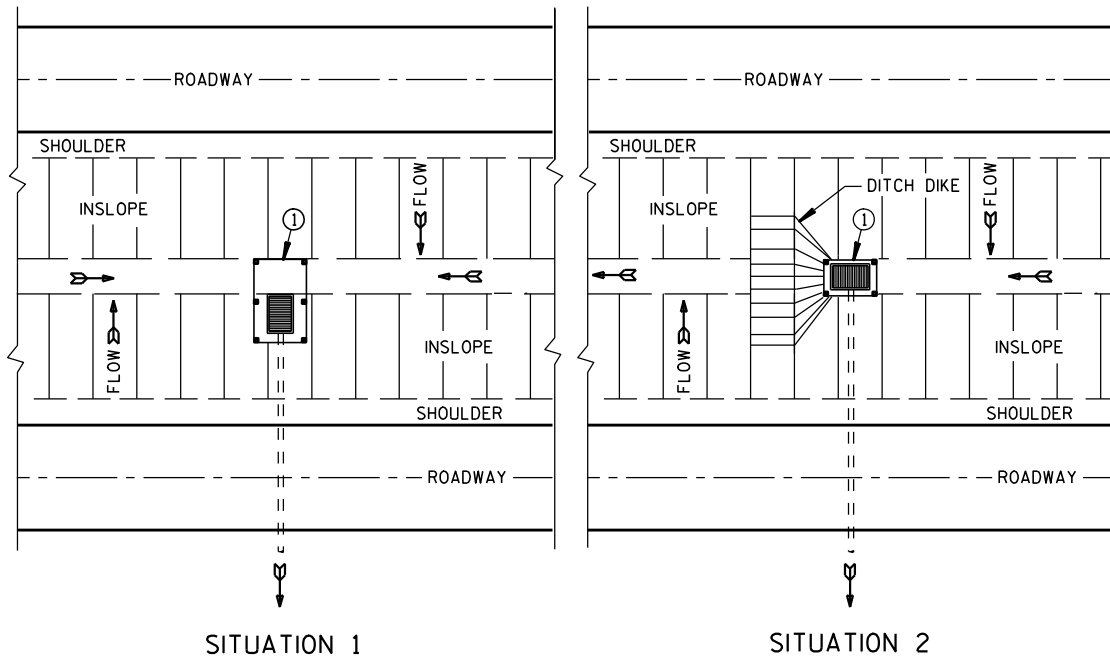
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
 6/04/02 /S/ Beth Canestra
 DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
 FHWA



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

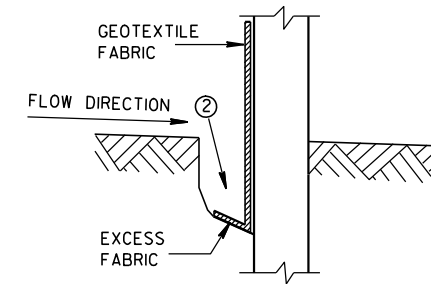


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

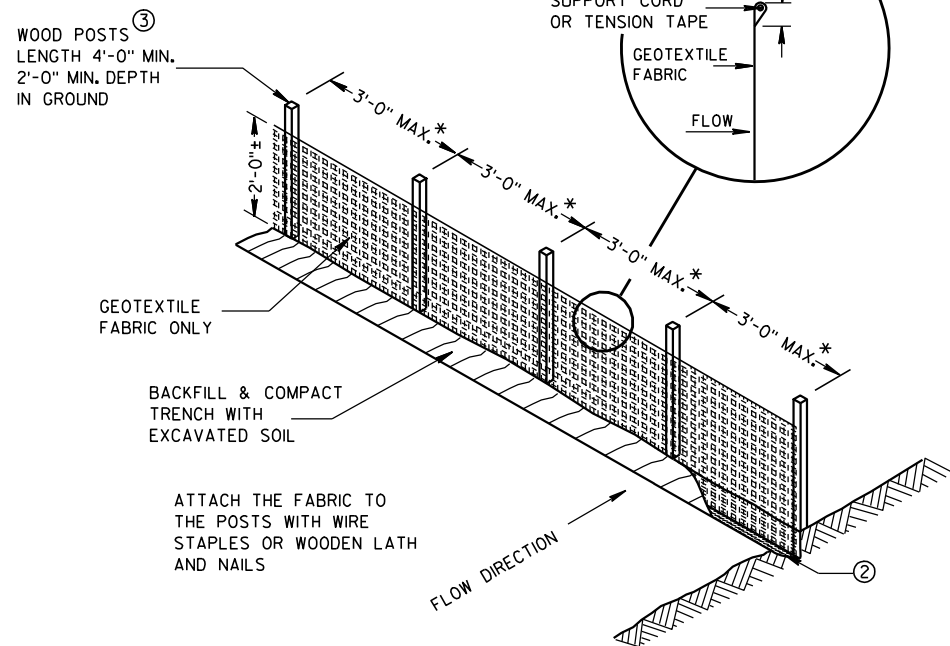
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



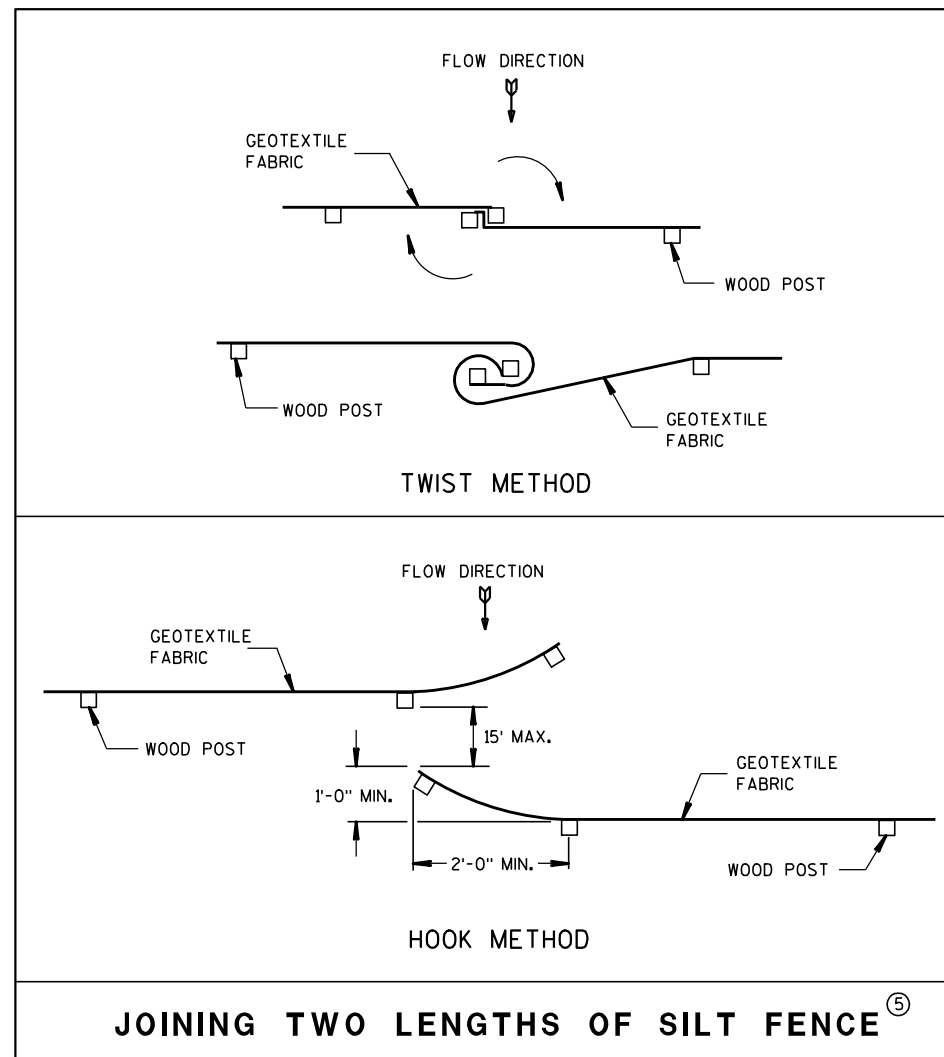
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

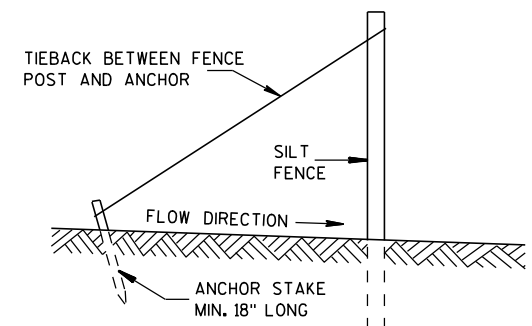


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤

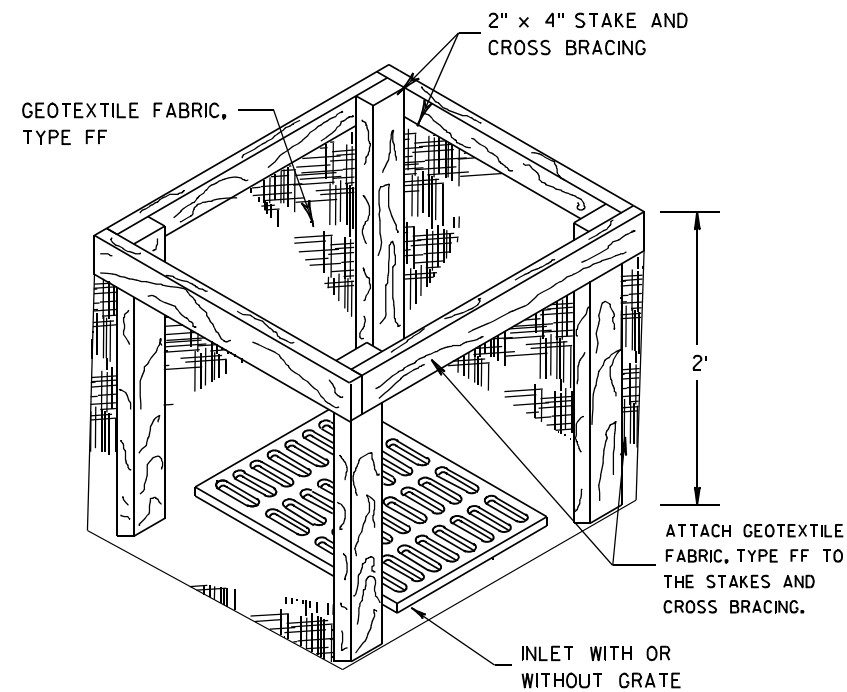
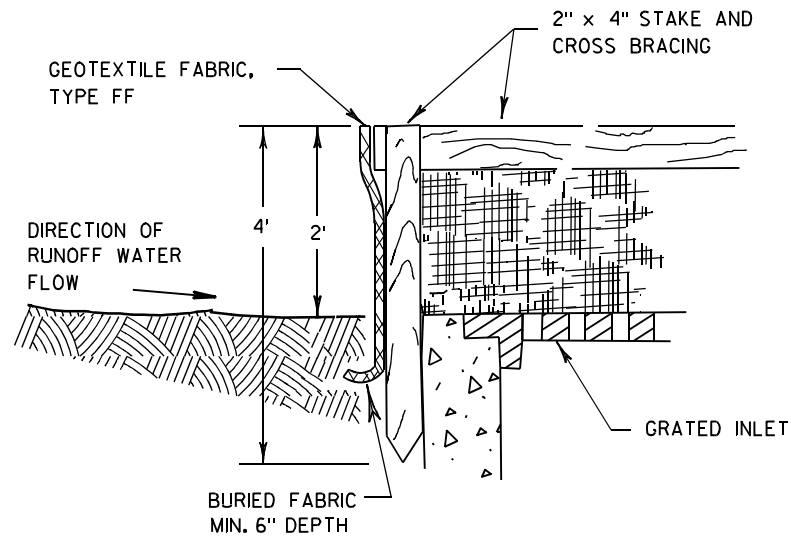


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



INLET PROTECTION, TYPE A

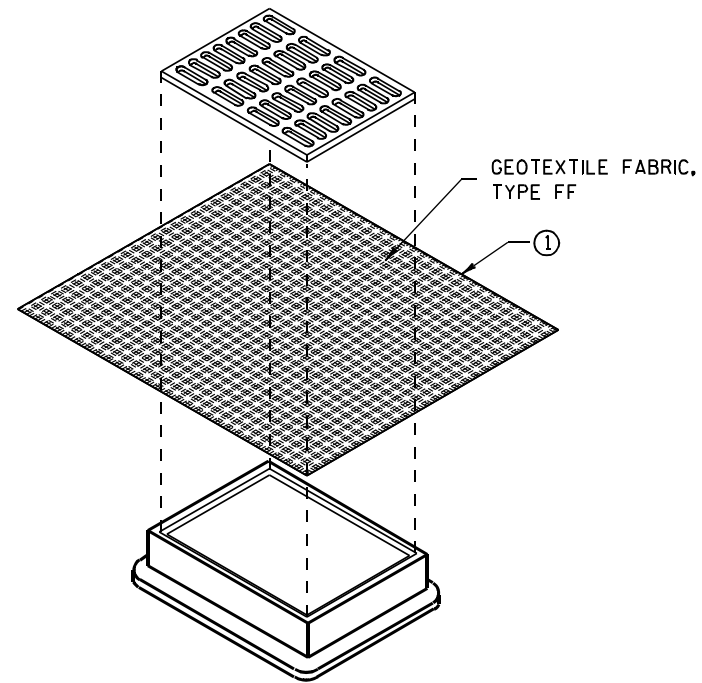
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

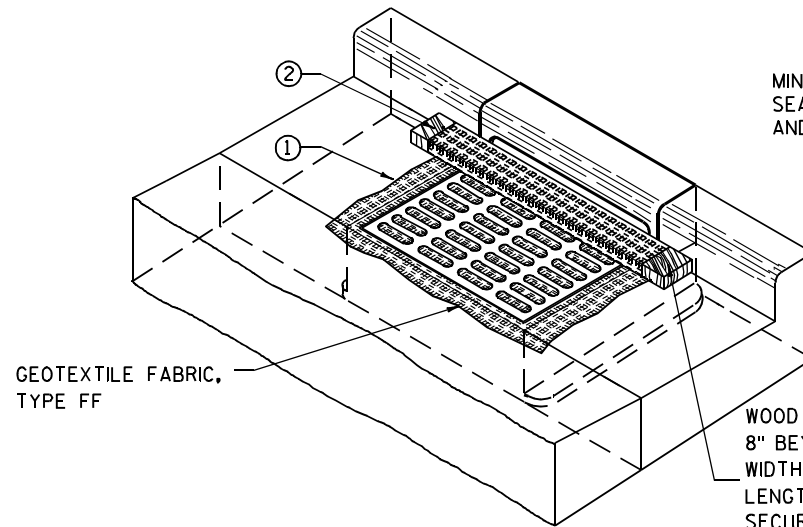
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

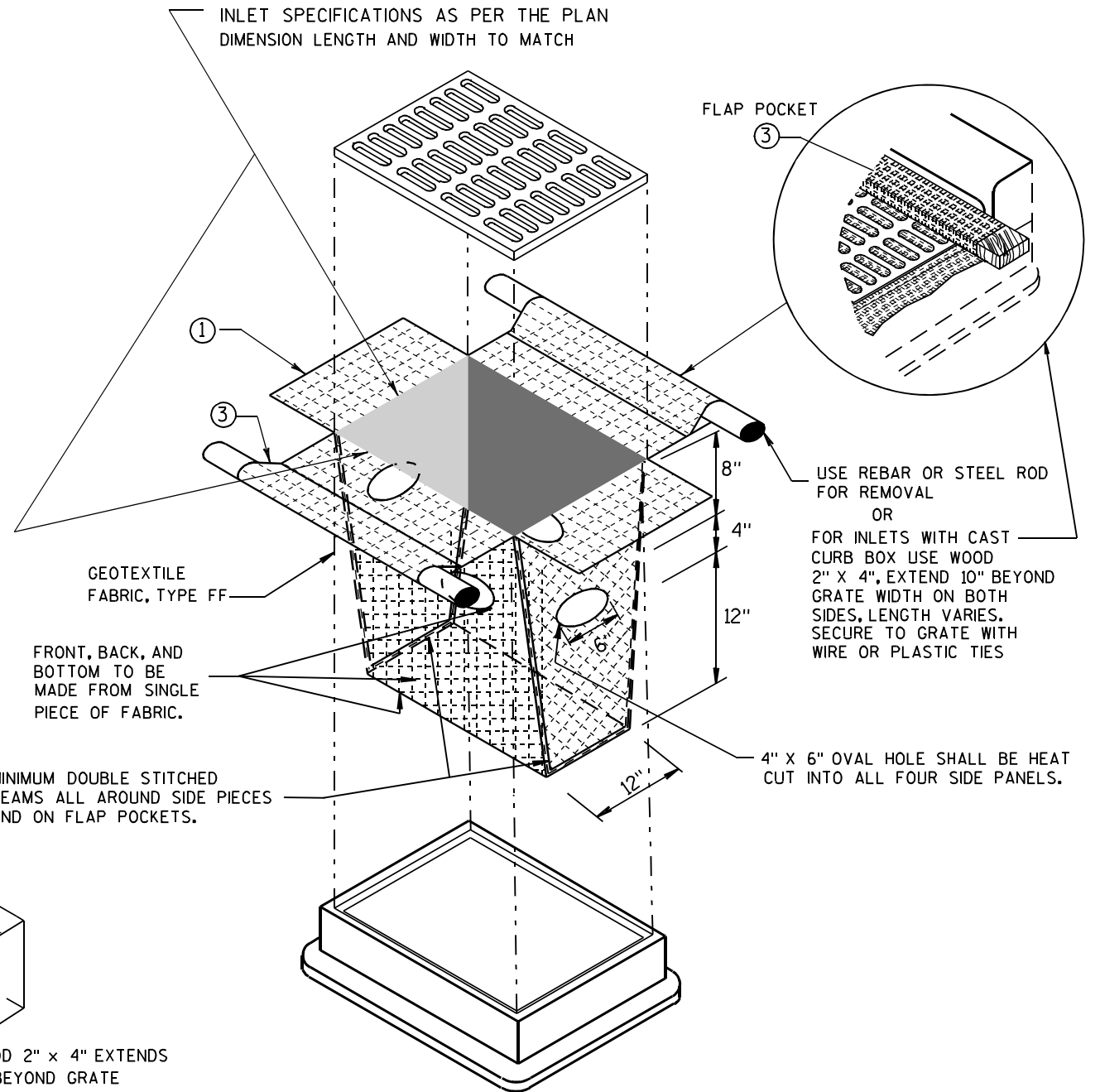
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

INLET PROTECTION TYPE A, B, C, AND D	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/s/ Beth Connestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

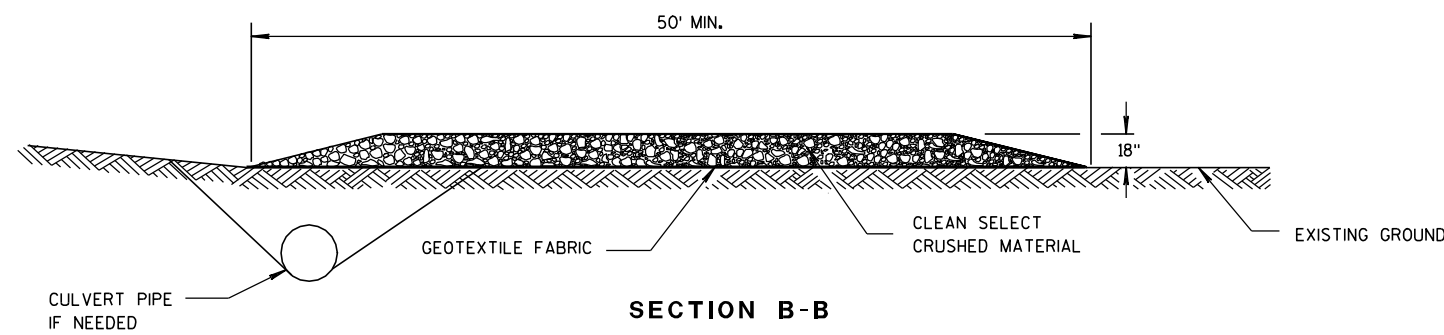
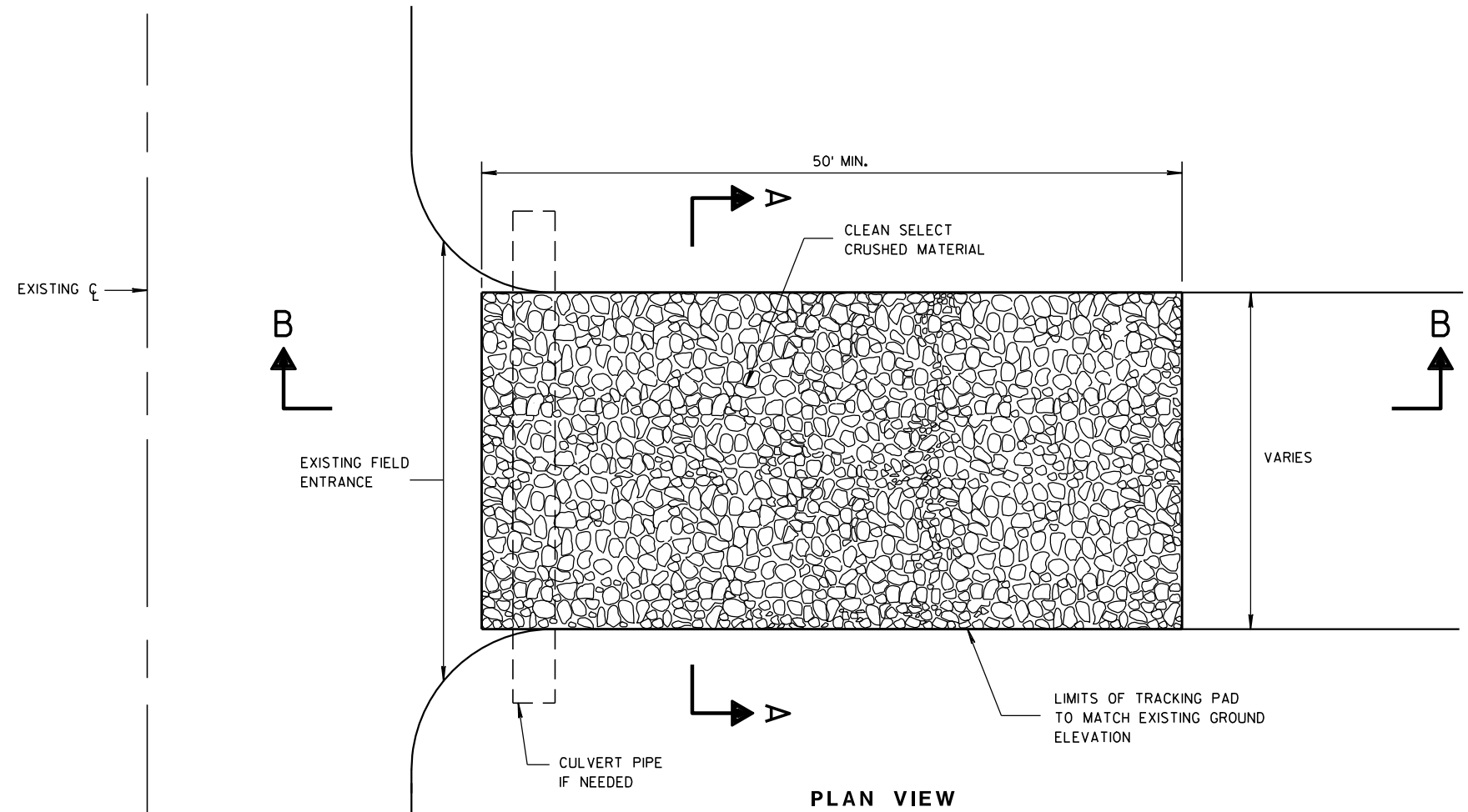
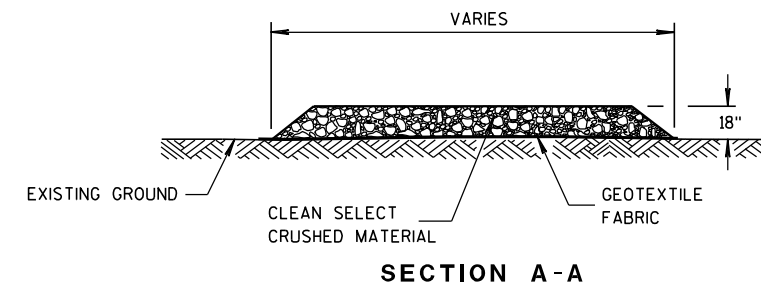
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



TRACKING PAD

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

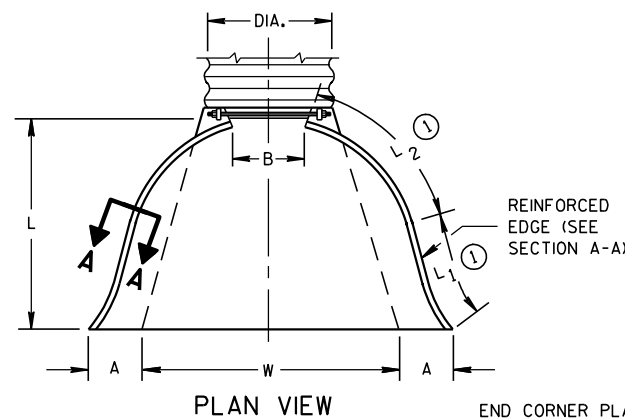
APPROVED
3/24/2011 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ (±1")	L ₂ (±2")	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

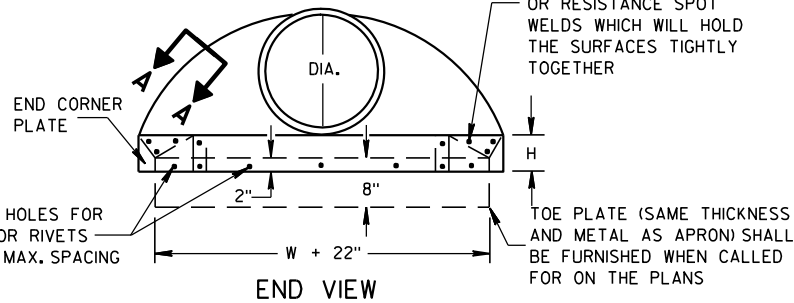
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

* MINIMUM
** MAXIMUM



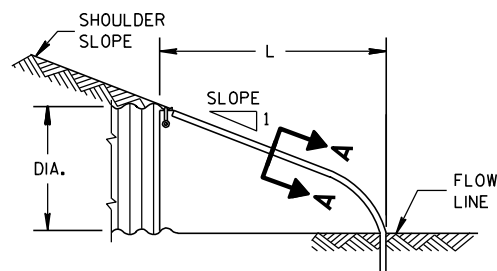
PLAN VIEW

END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER

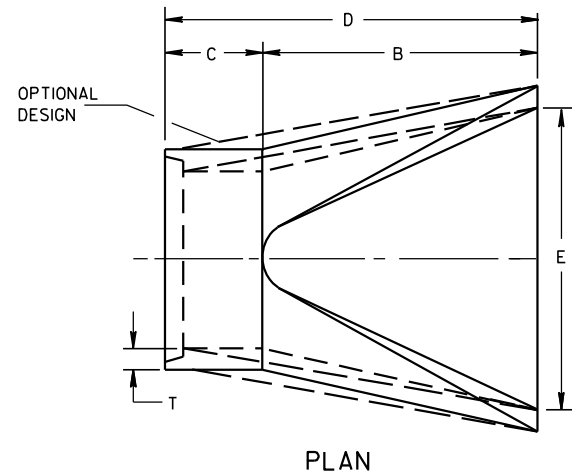


END VIEW

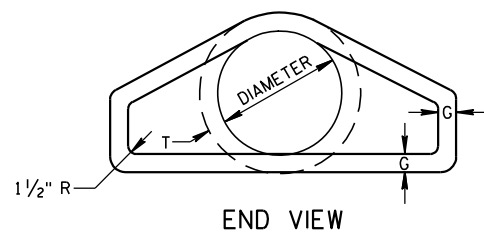
TOE PLATE (SAME THICKNESS AND METAL AS APRON) SHALL BE FURNISHED WHEN CALLED FOR ON THE PLANS



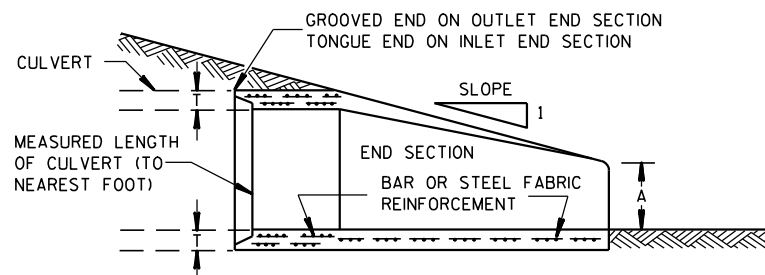
SIDE ELEVATION
METAL ENDWALLS



PLAN

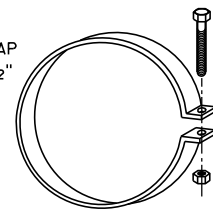


END VIEW

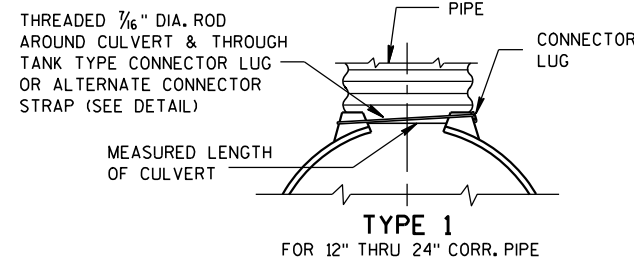


LONGITUDINAL SECTION
CONCRETE ENDWALLS

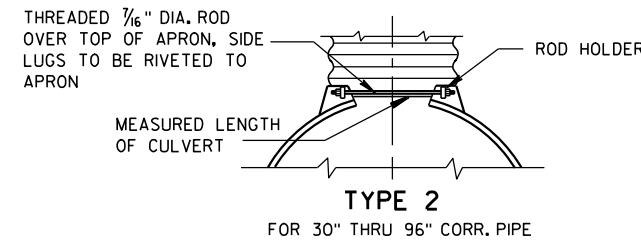
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



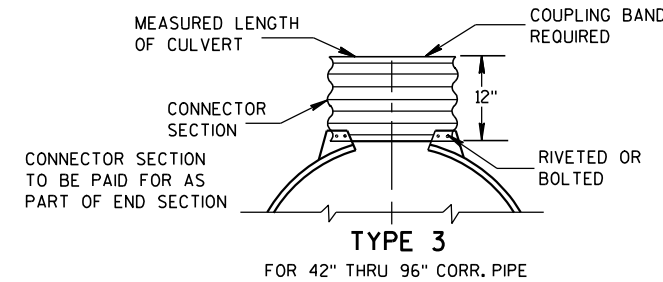
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



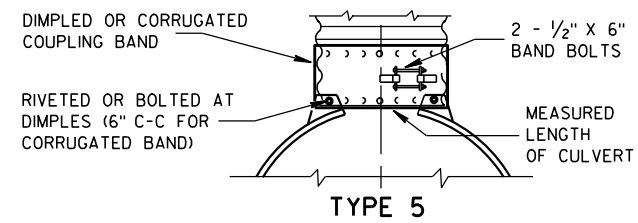
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

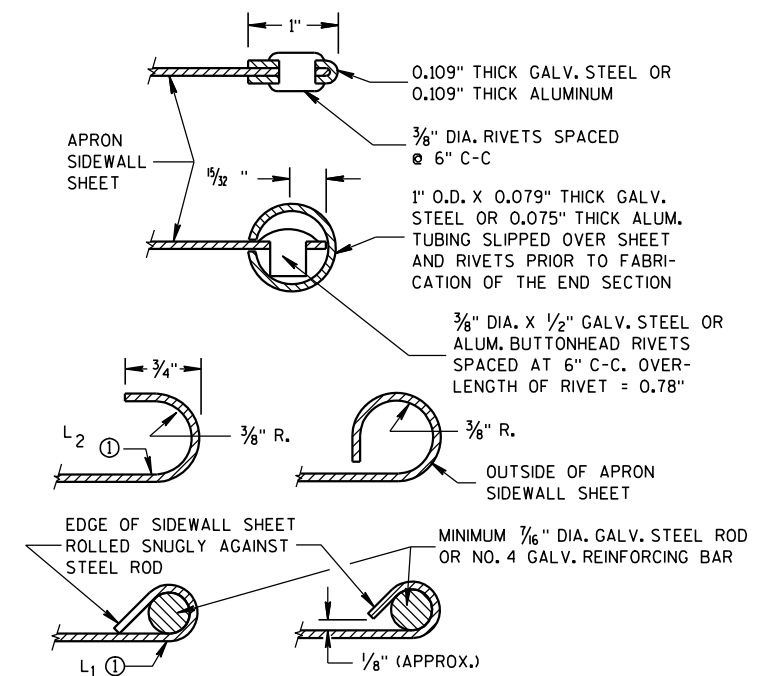
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

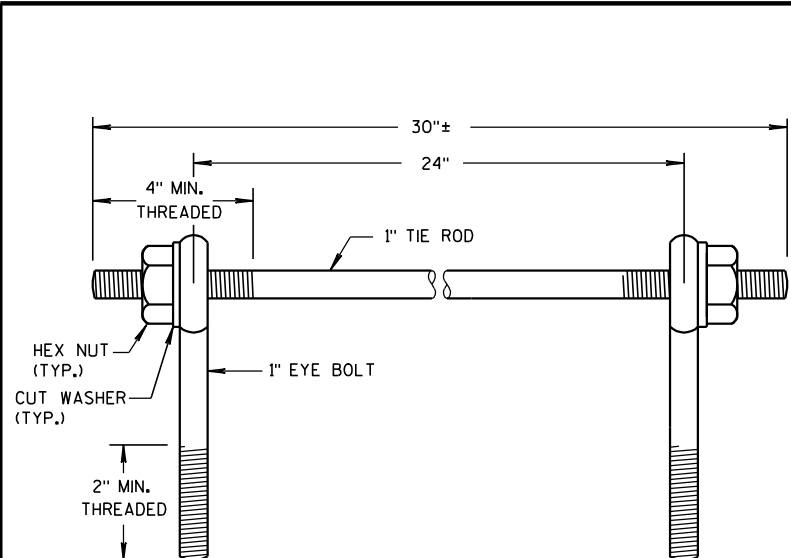
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94
DATE

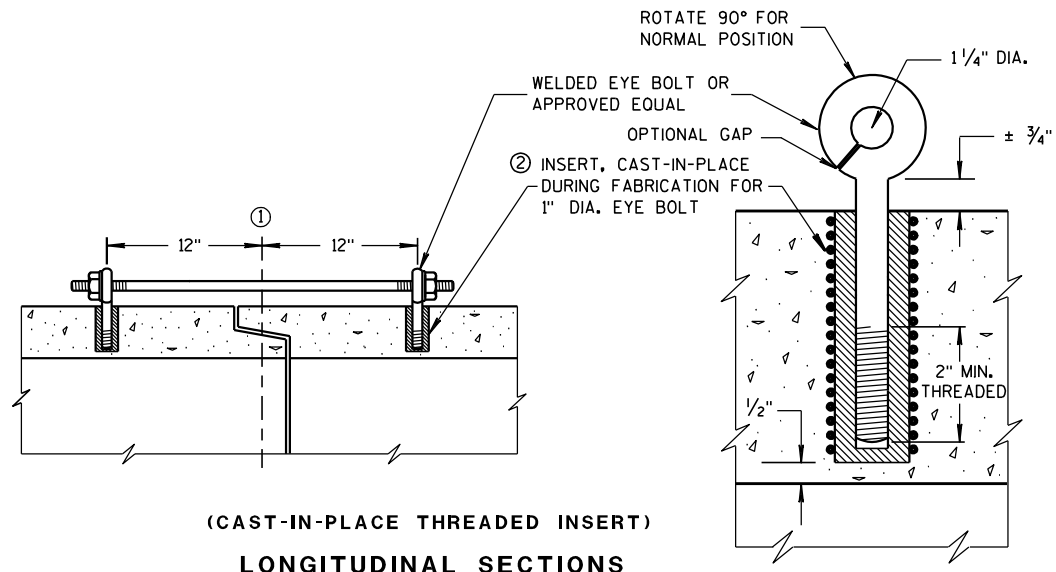
FHWA

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

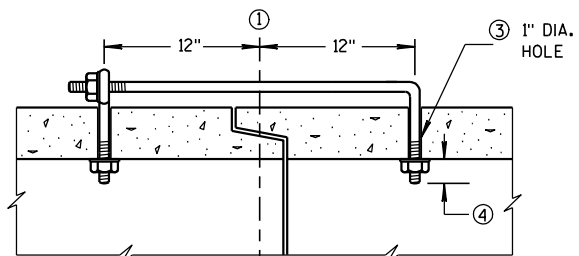
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

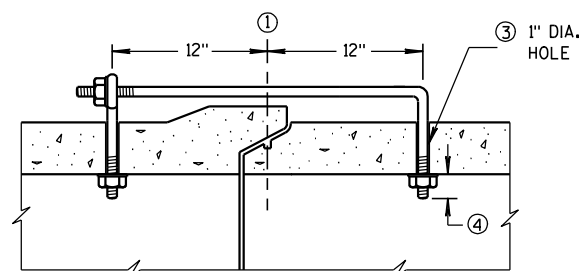
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

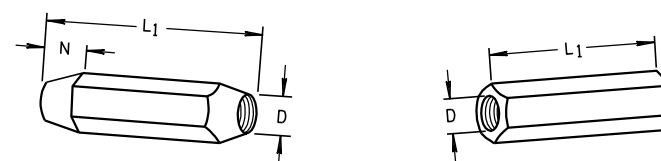
EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	

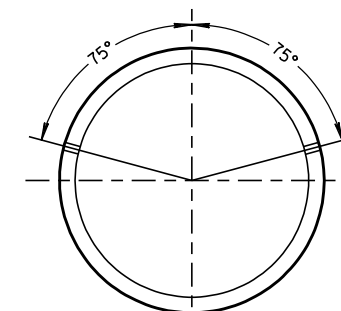
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/6

DIMENSIONS SHOWN ARE IN INCHES

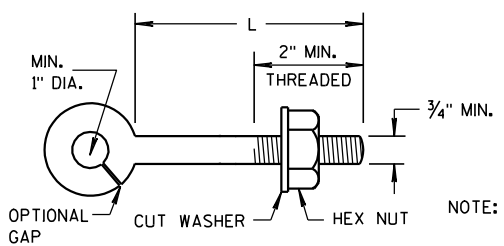


TAPERED PLAIN
RIGHT AND LEFT THREADS
SLEEVE NUTS



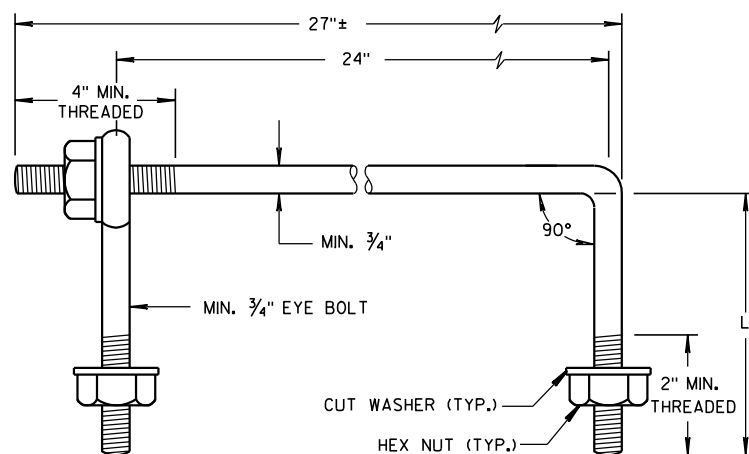
PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



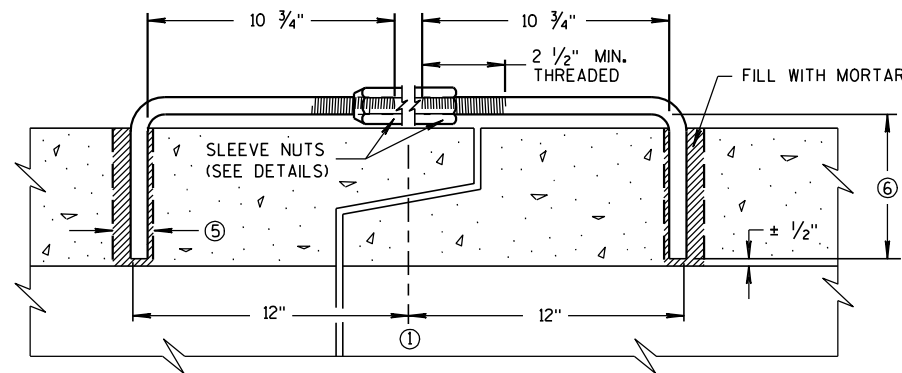
EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



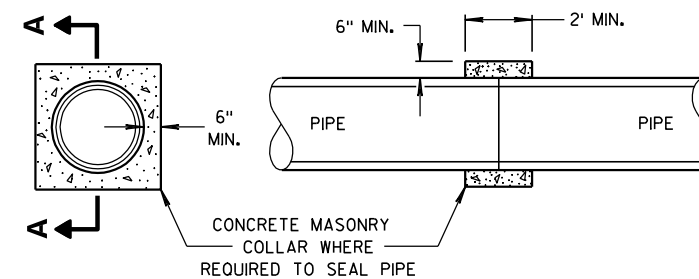
EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION

(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



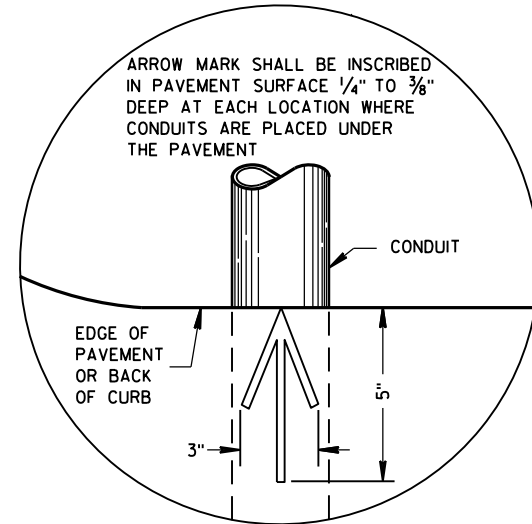
SECTION A-A

CONCRETE COLLAR DETAIL

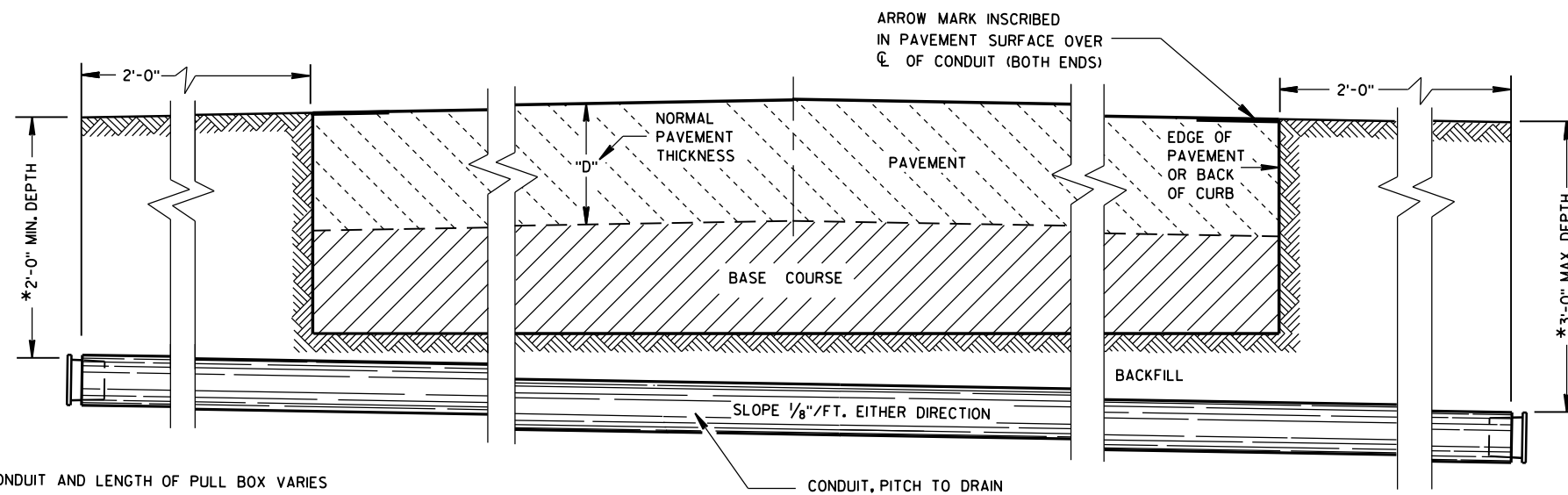
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



**PLAN VIEW
ARROW MARK**



**SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS**

*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSON TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

6

6

S.D.D. 9 B 2-10

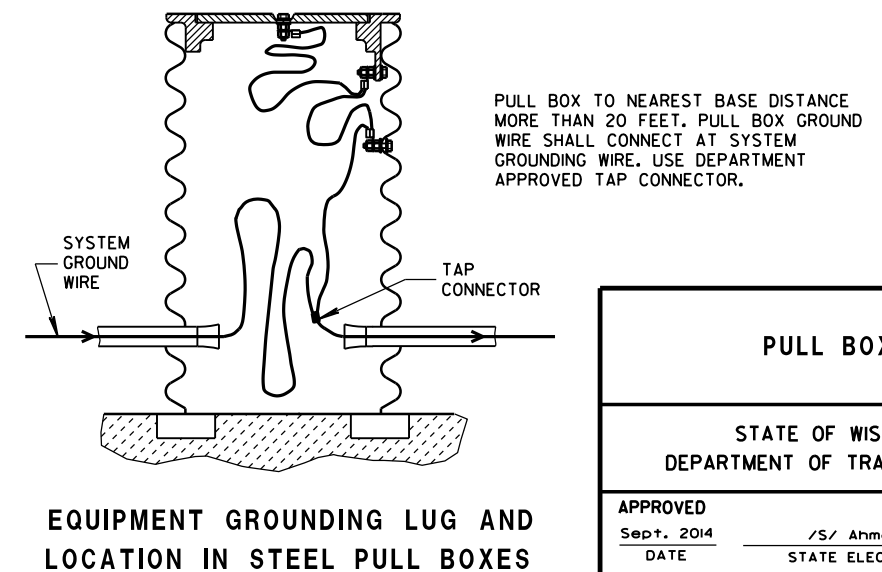
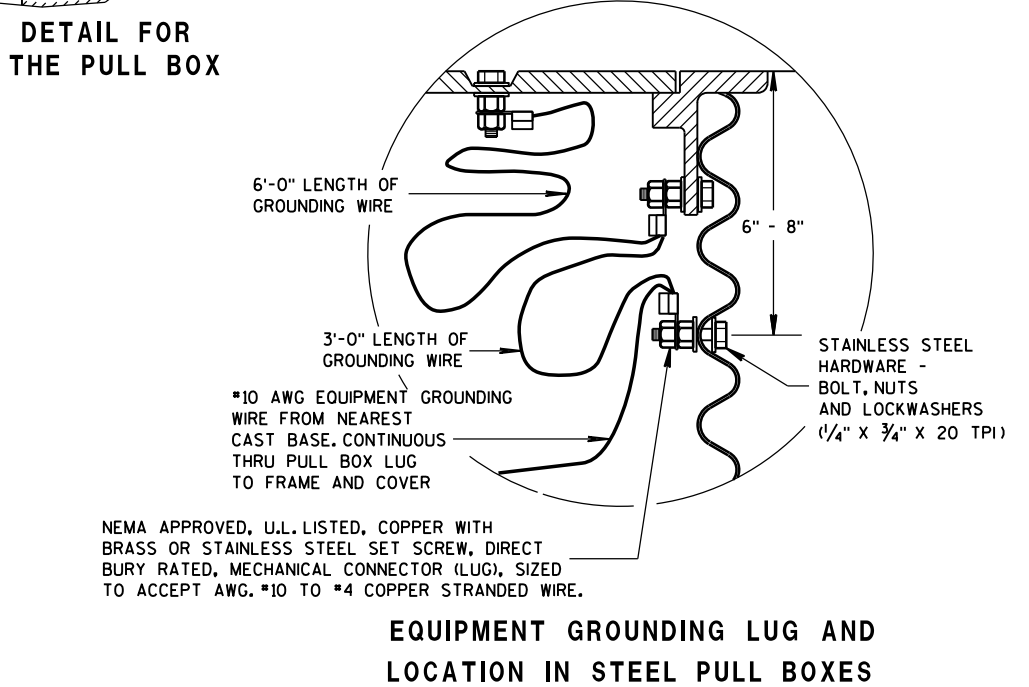
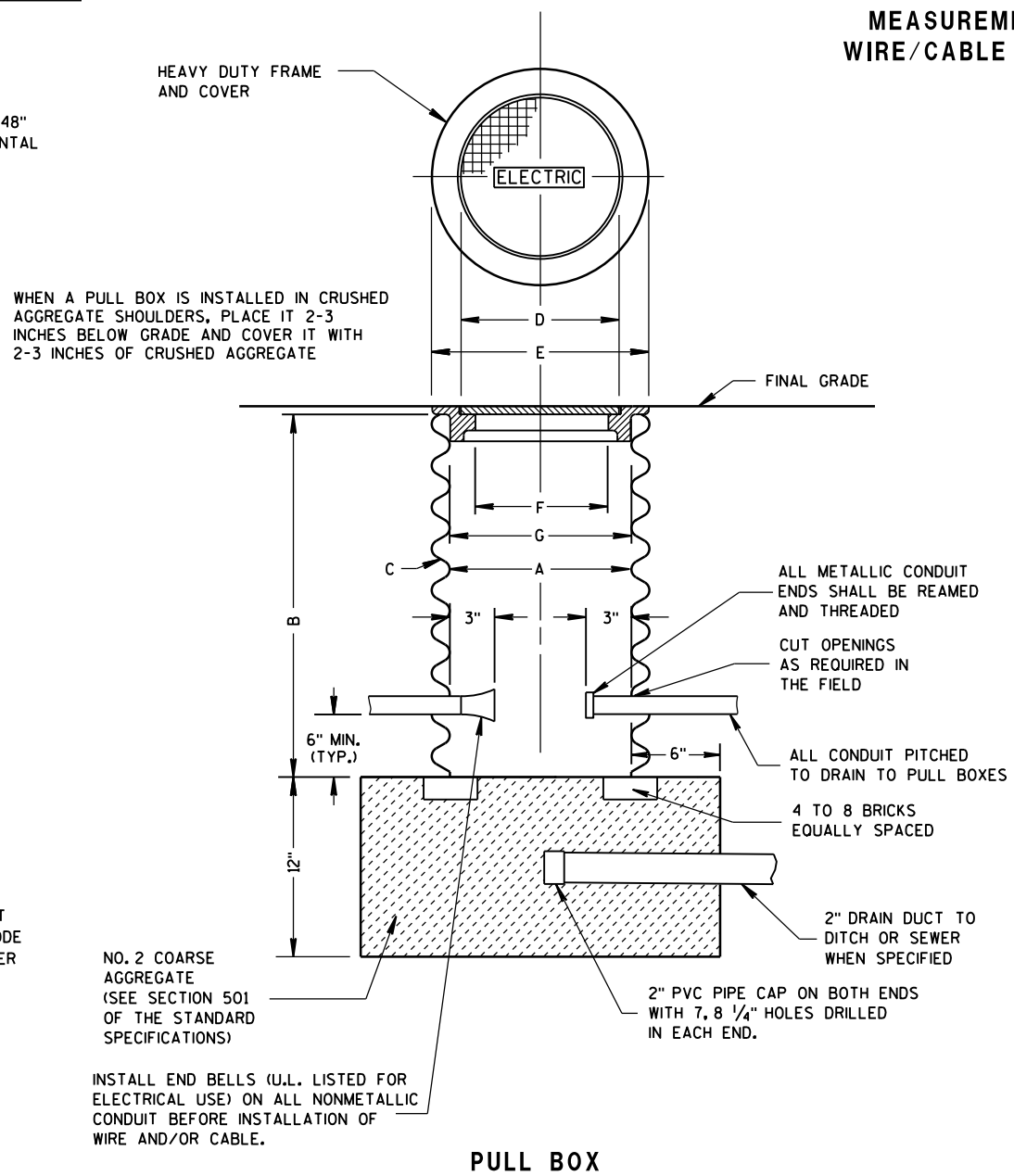
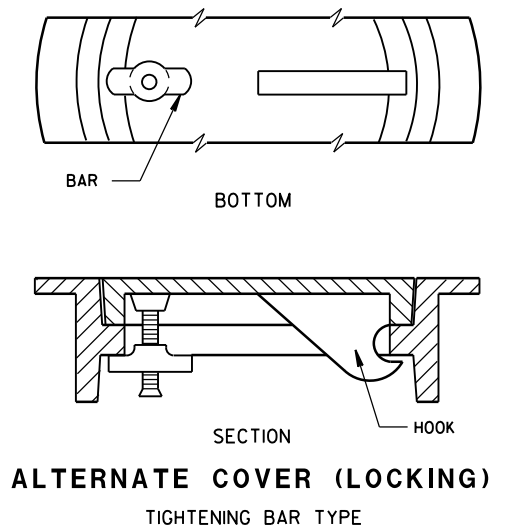
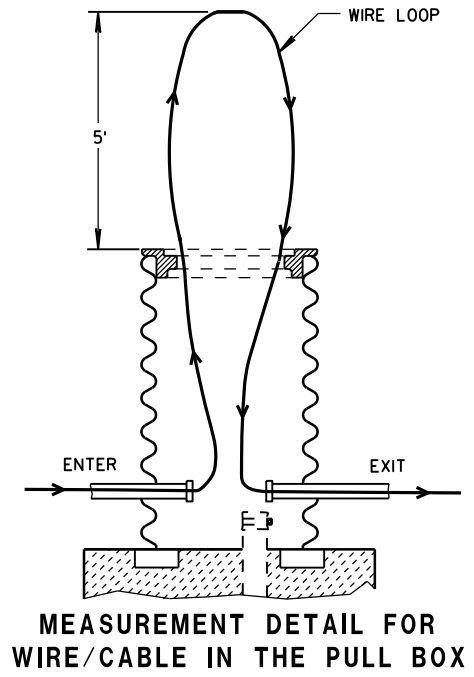
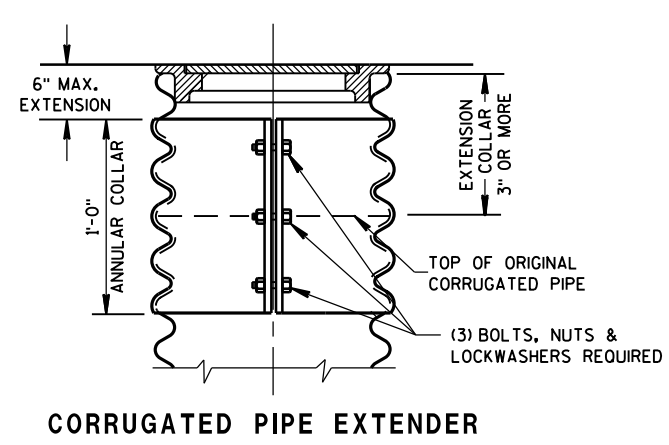
S.D.D. 9 B 2-10

CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.
 ** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
 ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.
 PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.
 ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".
 THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.
 GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.
 ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.
 WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demircbilek STATE ELECTRICAL ENGINEER
FHWA	

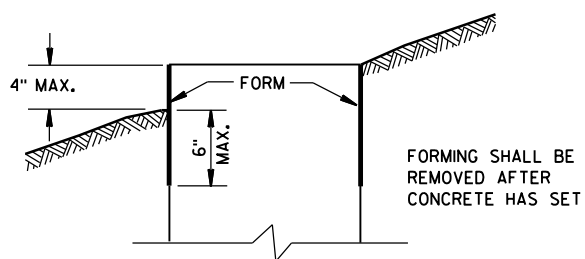
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S.D.D. 9 B 4-11

S.D.D. 9 B 4-11

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD, ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

2 (4) 1" DIA. X 3'-6" ANCHOR RODS.

3 (4) 1" DIA. X 5'-0" ANCHOR RODS.

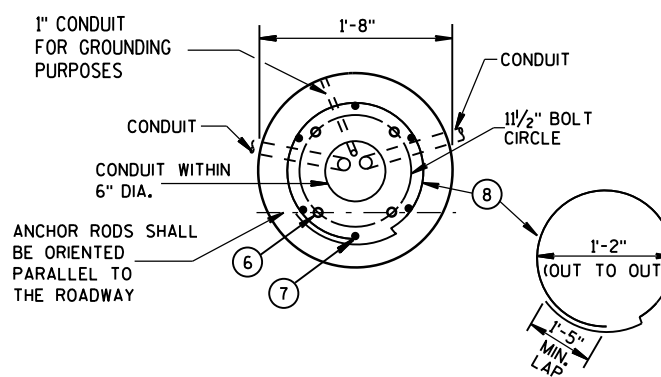
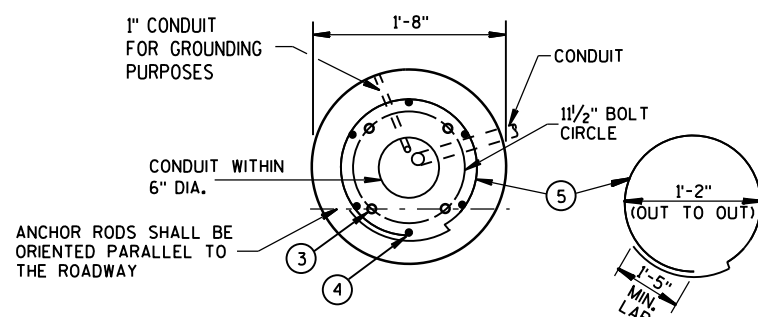
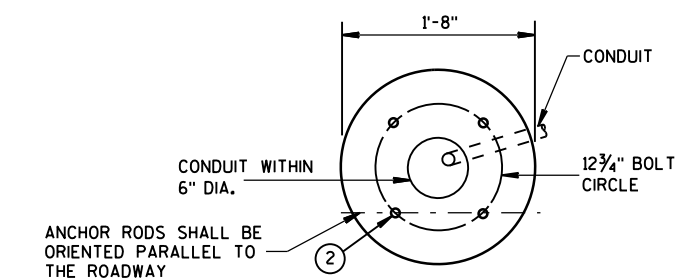
4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

5 (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

6 (4) 1" DIA. X 3'-6" ANCHOR RODS.

7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

8 (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



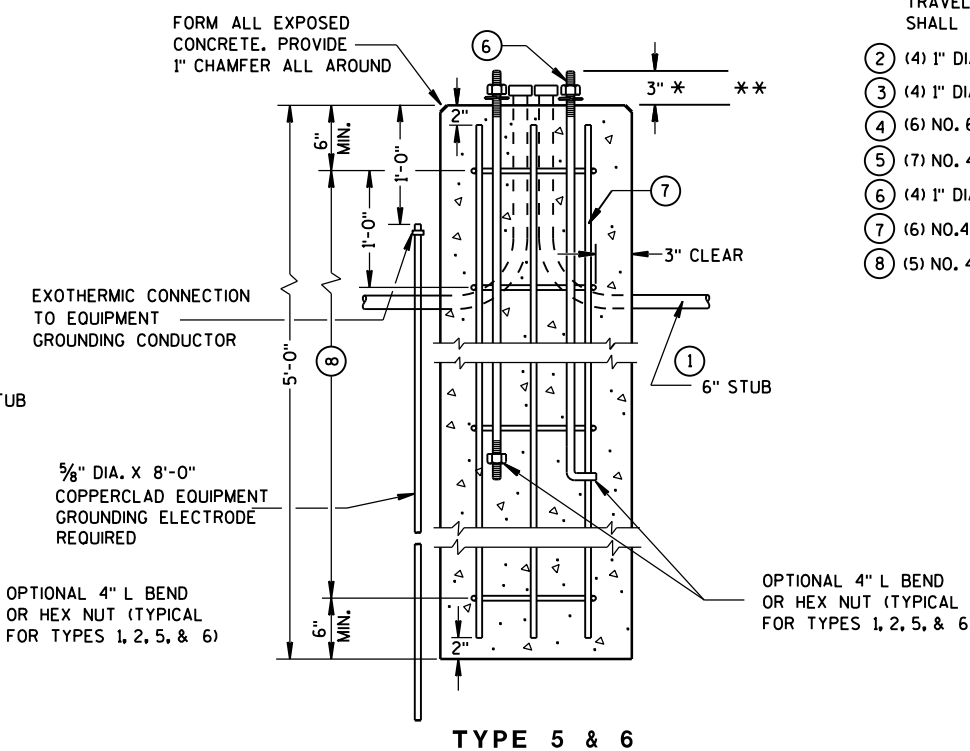
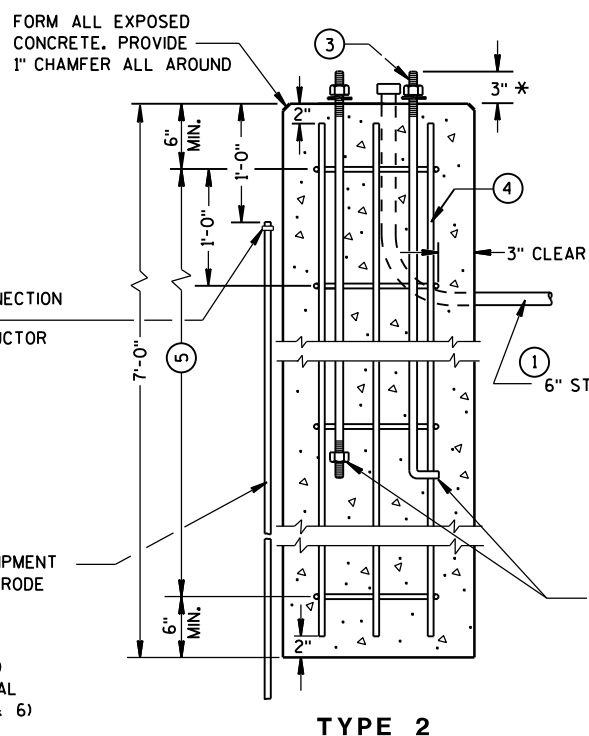
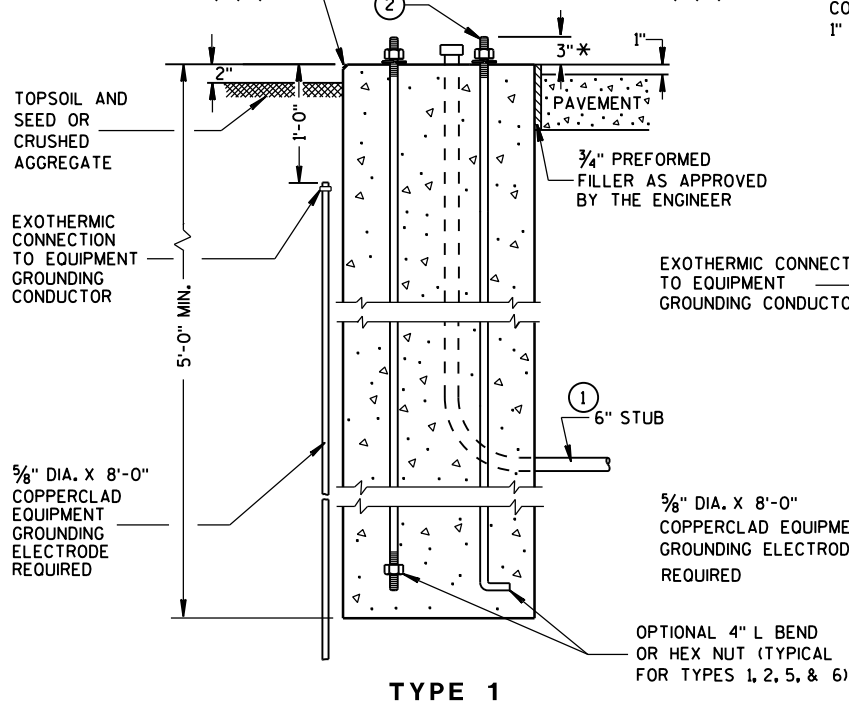
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

HALF SECTION IN UNPAVED AREA

(TYPICAL FOR TYPES 1, 2, 5, & 6)

HALF SECTION IN PAVEMENT

(TYPICAL FOR TYPES 1, 2, 5, & 6)



CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sep. 2014 /S/ Ahmet Demirelek
DATE STATE ELECTRICAL ENGINEER
FHWA

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

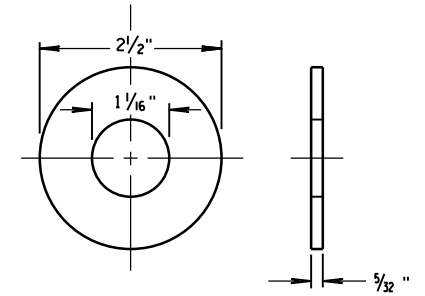
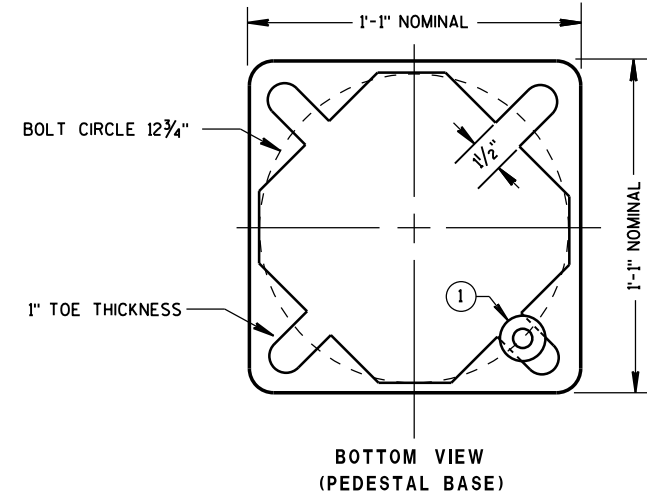
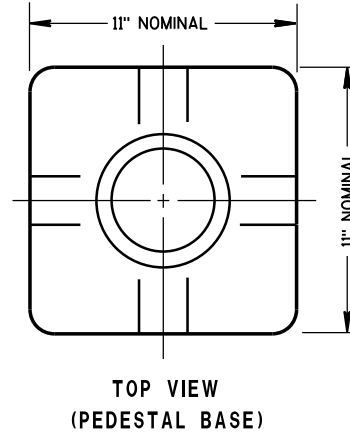
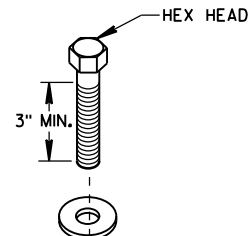
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

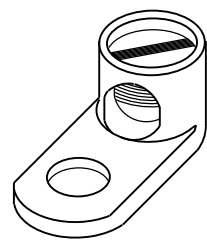
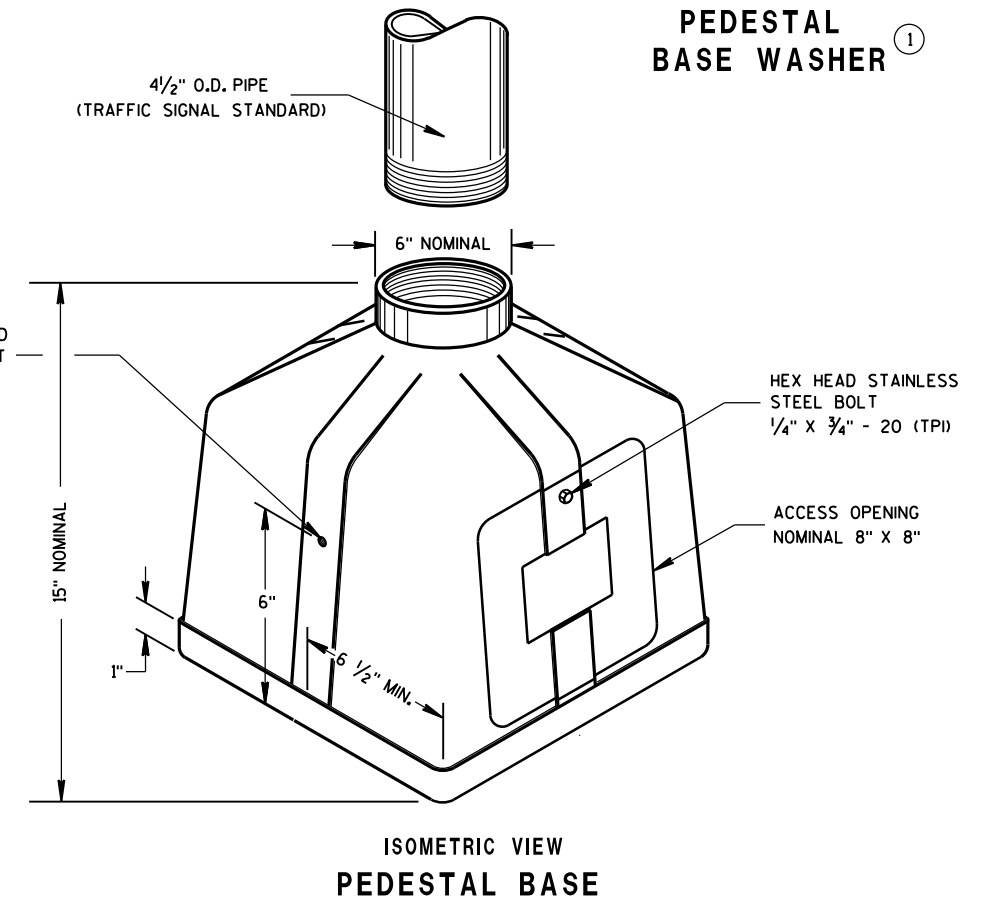
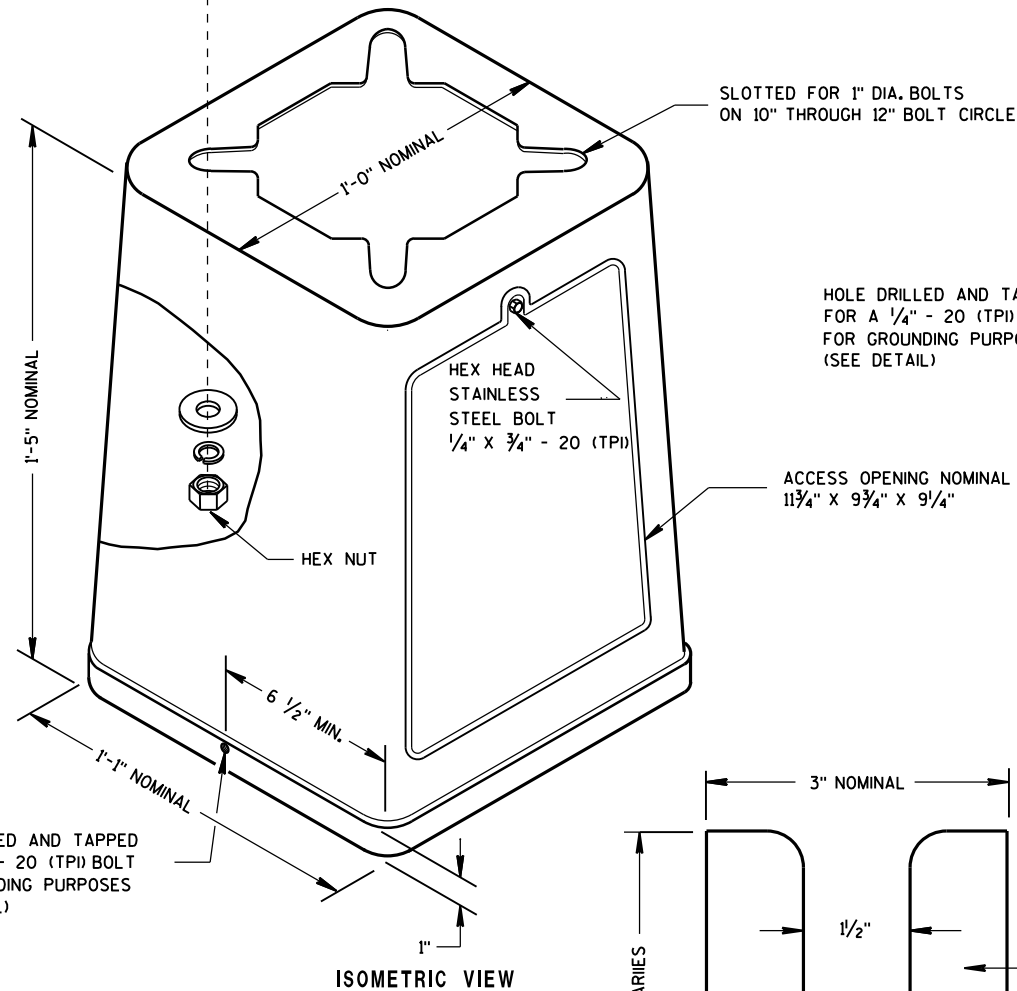
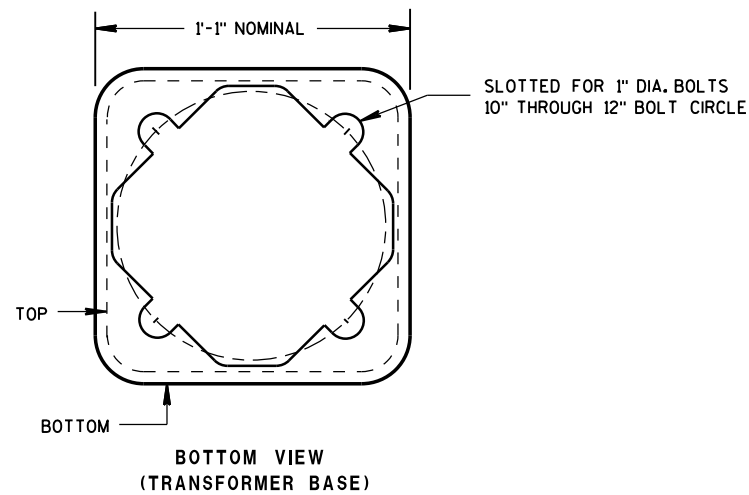
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

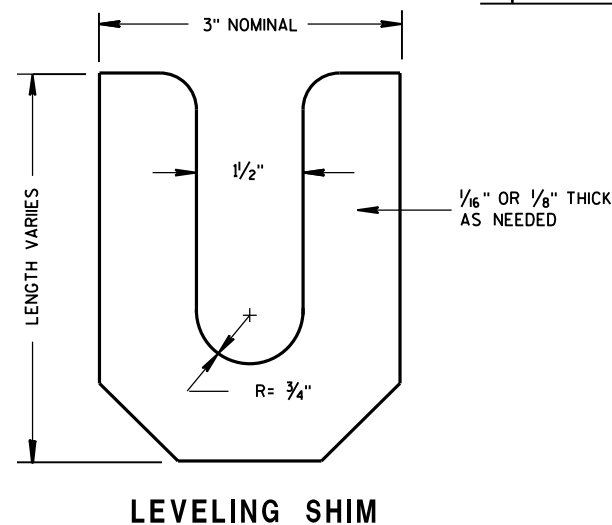


ZINC COATED STEEL WASHER TO BE PROVIDED BY THE CONTRACTOR
PEDESTAL BASE WASHER ①



TYPICAL MECHANICAL CONNECTOR LUG
TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE
INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

6

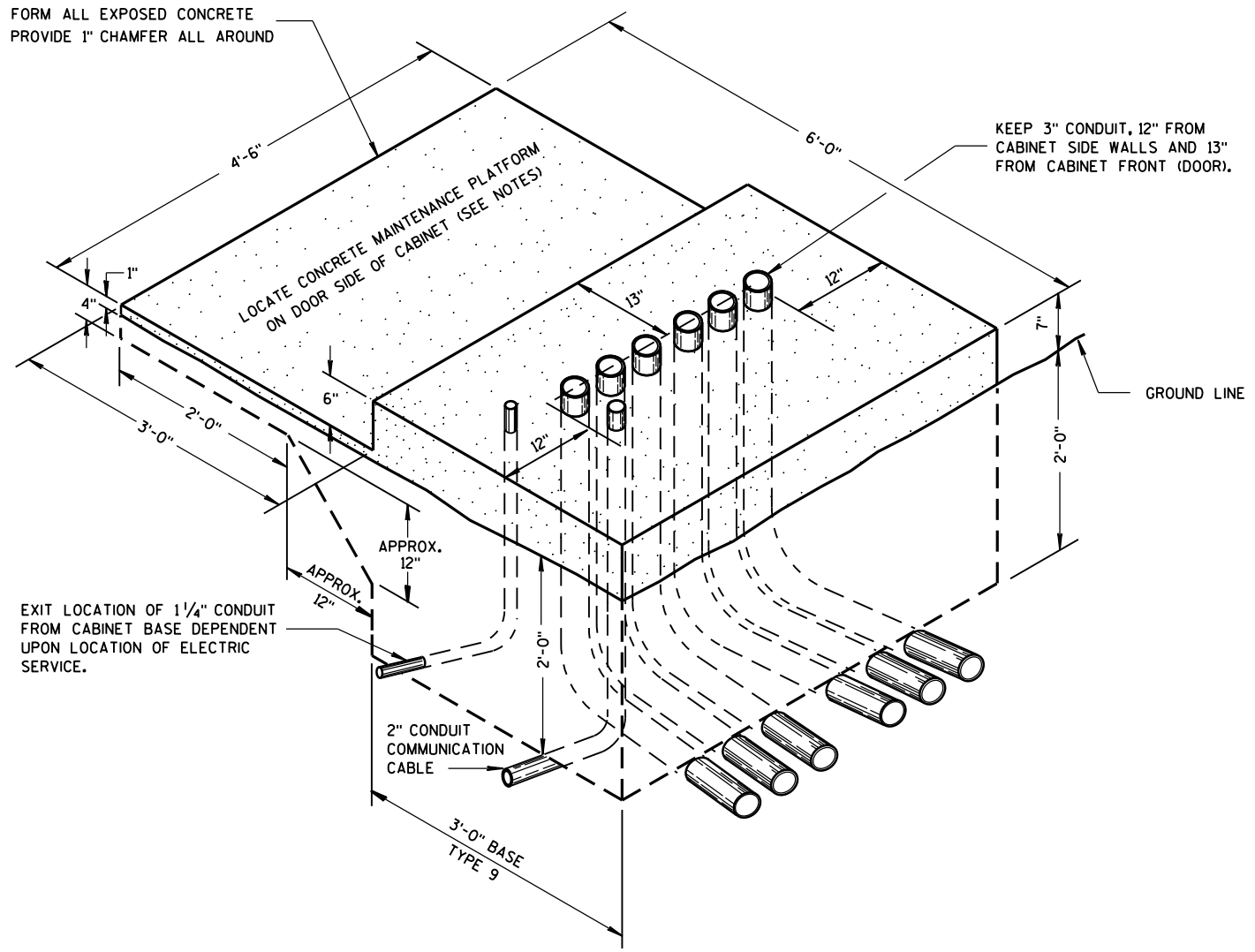
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S.D.D. 9 C 3-4

S.D.D. 9 C 3-4

TRANSFORMER/PEDESTAL BASES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

FORM ALL EXPOSED CONCRETE
PROVIDE 1" CHAMFER ALL AROUND

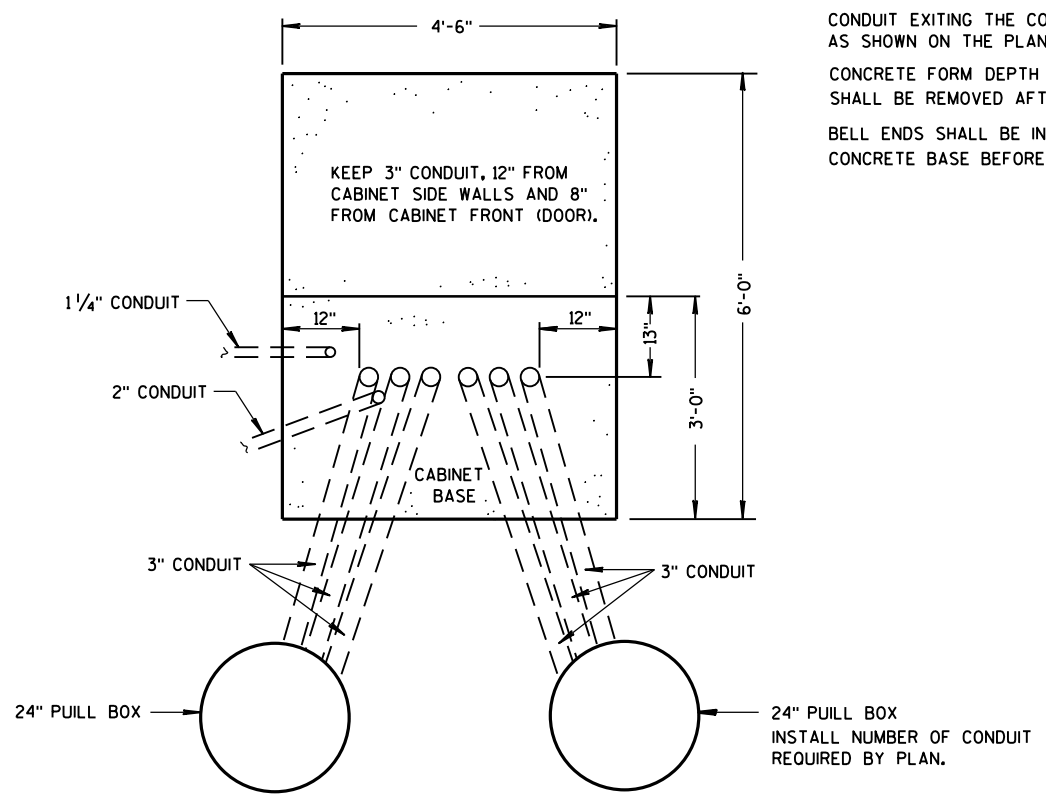


KEEP 3" CONDUIT, 12" FROM
CABINET SIDE WALLS AND 13"
FROM CABINET FRONT (DOOR).

GROUND LINE

EXIT LOCATION OF 1/4" CONDUIT
FROM CABINET BASE DEPENDENT
UPON LOCATION OF ELECTRIC
SERVICE.

ISOMETRIC VIEW
TYPE 9, SPECIAL
(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.
- WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.
- CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.
- DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.
- MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.
- MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.
- MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.
- ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.
- CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
- PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
- ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS Poured. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.
- CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.
- BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

6

6

S.D.D. 9 C 6-7

S.D.D. 9 C 6-7

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUIT IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

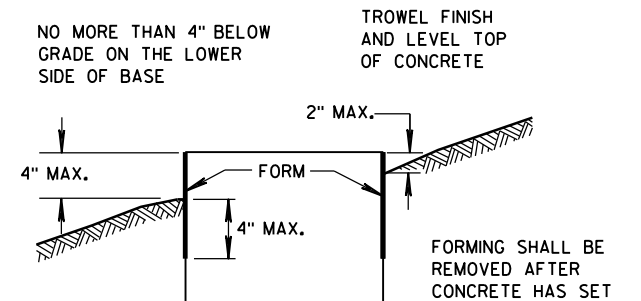
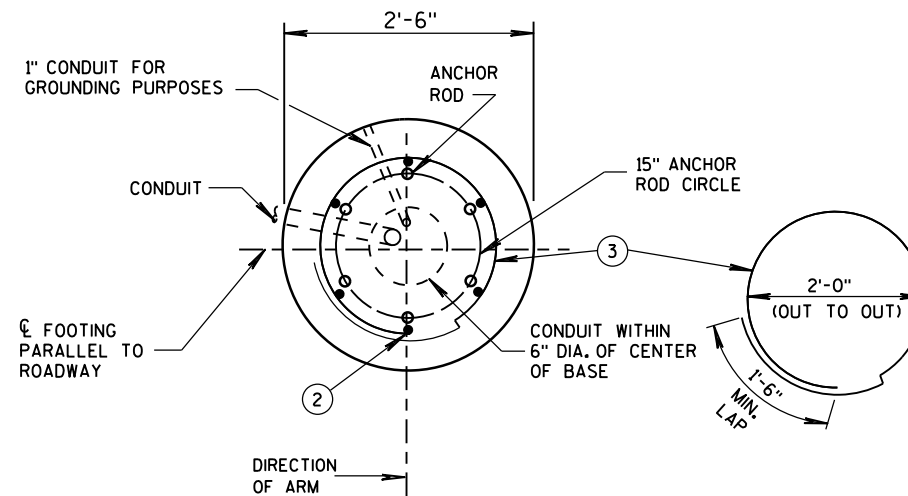
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES, (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

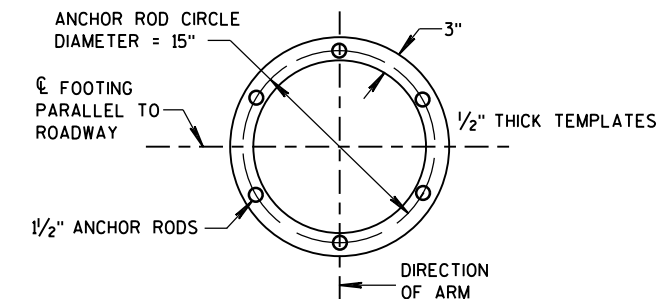
② (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.

③ (2) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

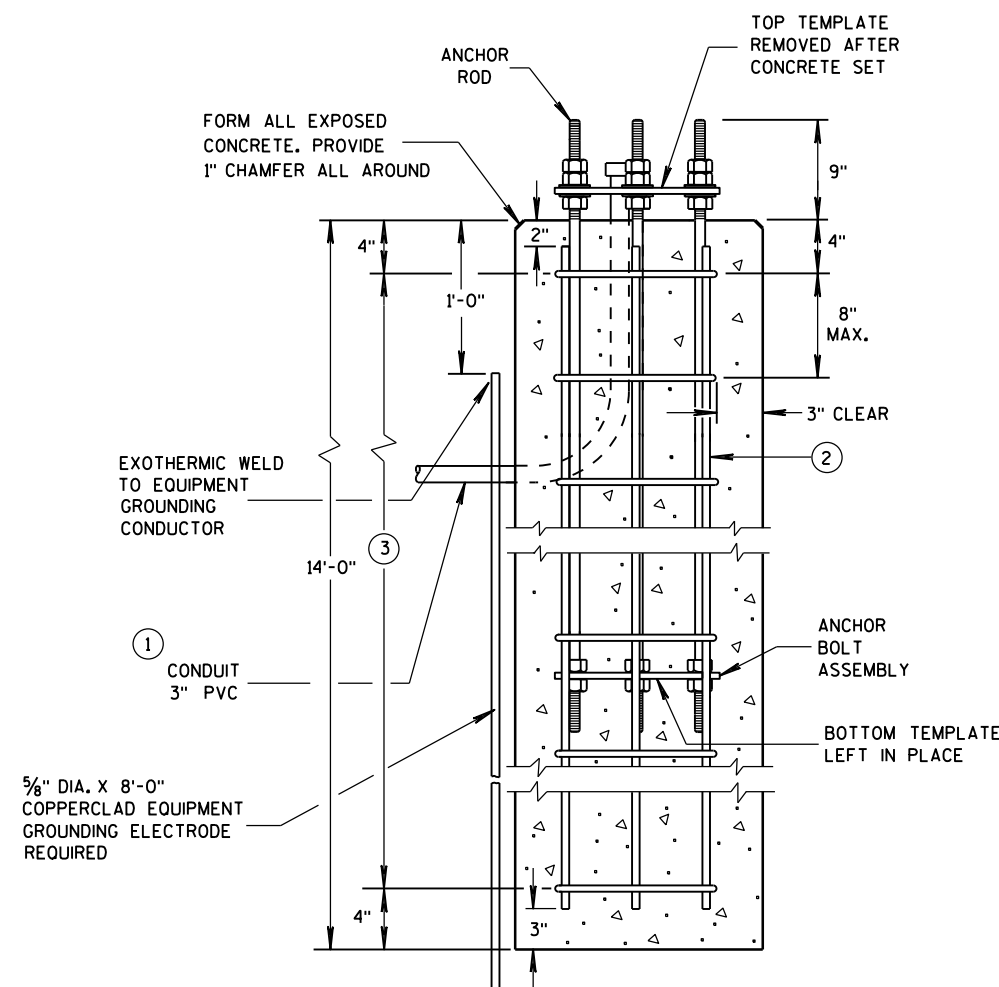
CONCRETE MASONRY	$f_c=3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	$f_y=60,000$ p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATION)	$f_y=55,000$ p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	$f_y=36,000$ p.s.i.



FORMING DETAIL



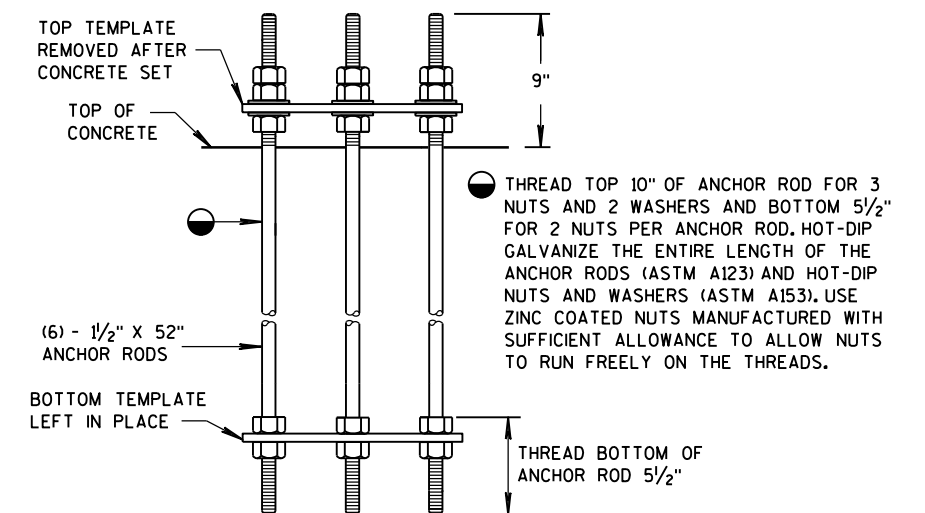
TOP AND BOTTOM TEMPLATES



CONCRETE BASE TYPE 10

(FOR TYPE 9 & 10 & OVER HEIGHT (OH) POLES)

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



ANCHOR BOLT ASSEMBLY DETAIL

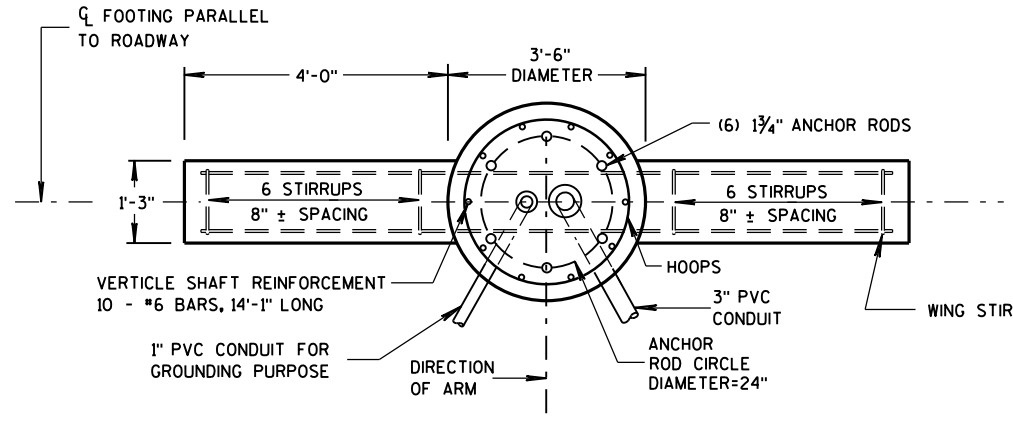
CONCRETE BASE TYPE 10 ANCHOR ASSEMBLY

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122

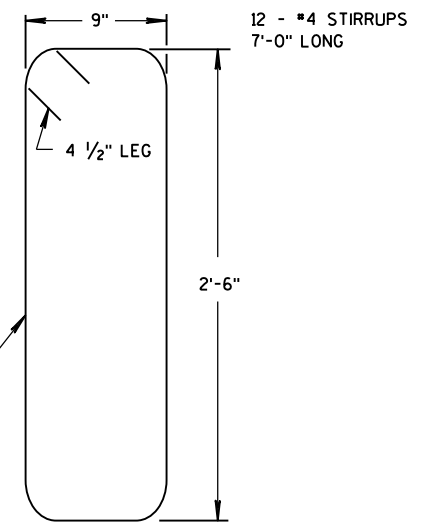
CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

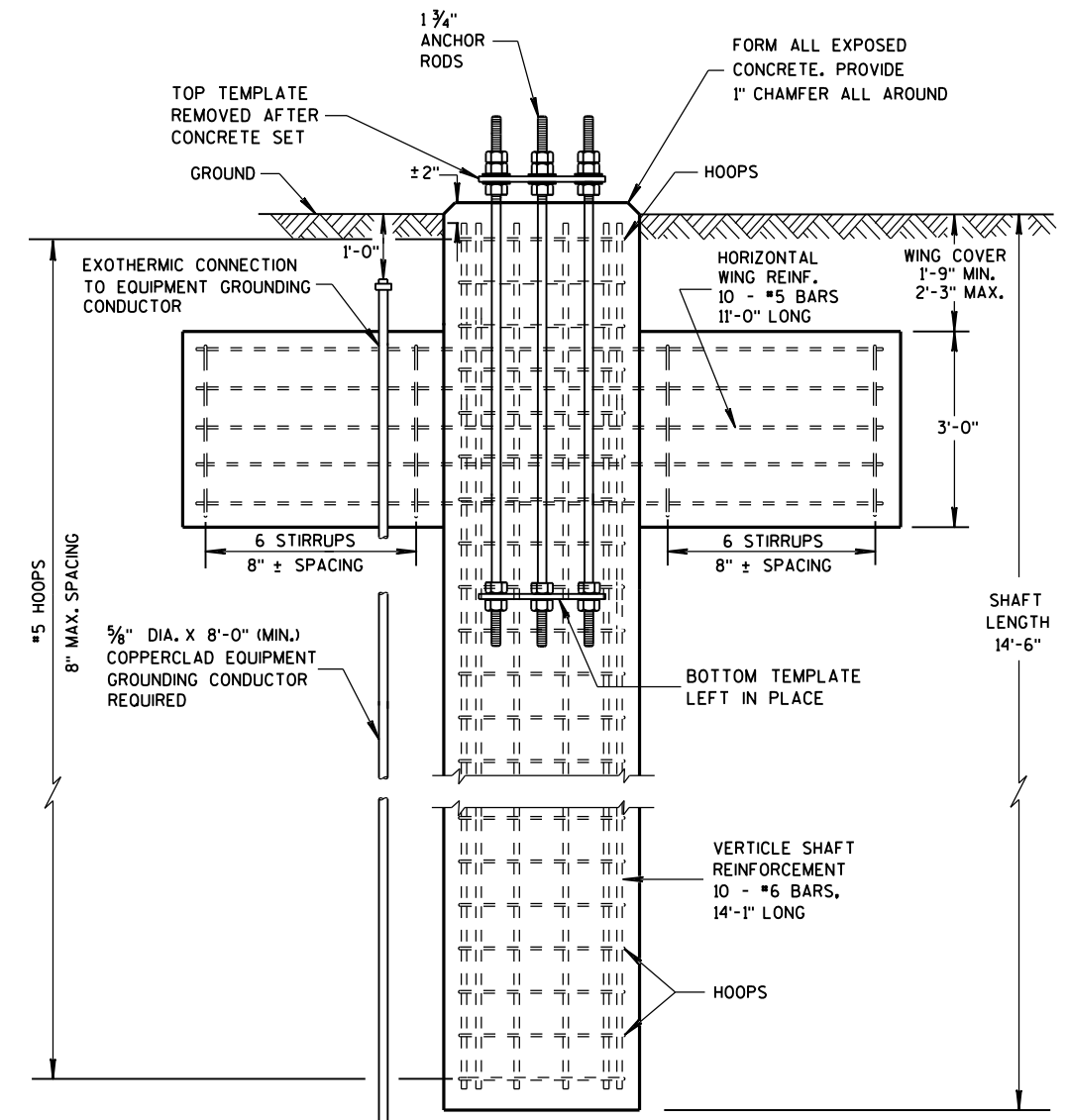
APPROVED
May 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



PLAN VIEW

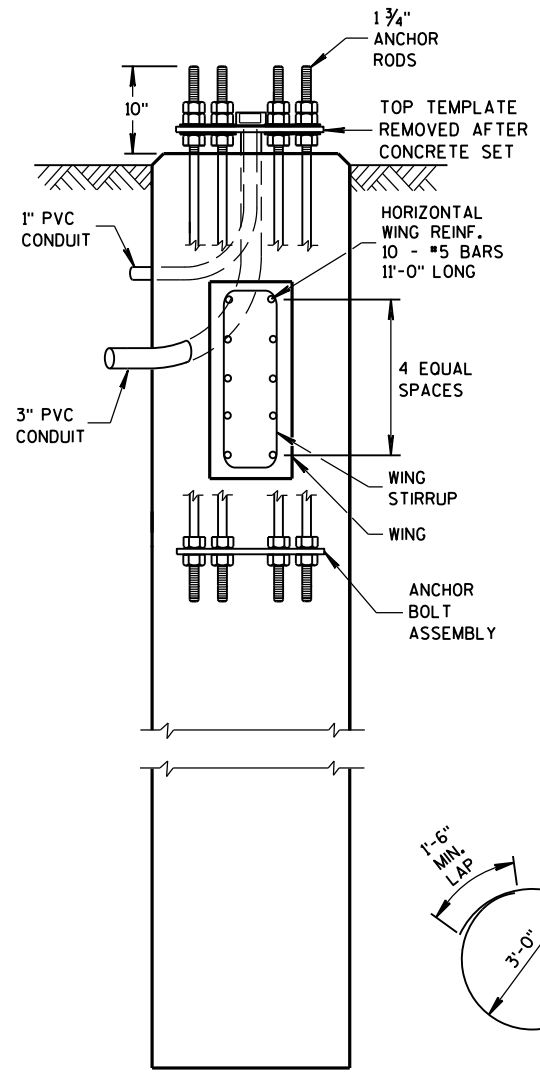


WING STIRRUP



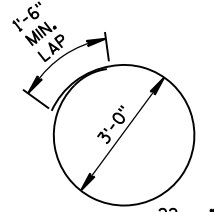
ELEVATION VIEW*

* CONDUITS ARE NOT SHOWN ON THIS VIEW FOR CLARITY



SIDE VIEW**

** HOOPS AND VERTICAL SHAFT REINFORCEMENT NOT SHOWN ON THIS VIEW FOR CLARITY



HOOP DETAIL

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.
- BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.
- USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
- WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.
- BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.
- TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.
- CONDUIT SIZE AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.
- MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.
- CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4 1/2" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.
- ALL CONDUIT ENDS AT THE TOP OF THE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.
- WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTOR FITTINGS, UL LISTED FOR ELECTRICAL USE, SHALL BE USED.
- A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).
- THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1-INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4-FOOT COIL OF WIRE ABOVE THE CONCRETE BASE, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.
- BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS.
- THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL WAY SHALL BE 24-INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36-INCHES, (GREATER THAN 36-INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATIONS)	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

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S.D.D. 9 C 12-9a

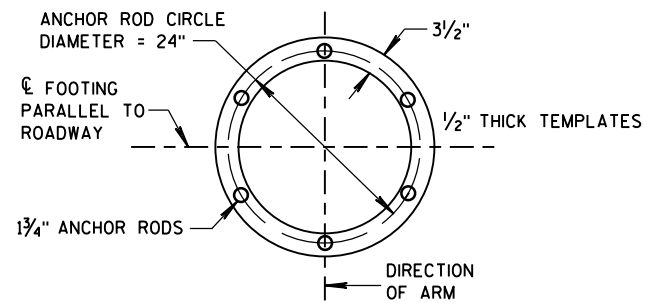
S.D.D. 9 C 12-9a

(FOR TYPE 12 & 13 & OVER HEIGHT (OH) POLES)

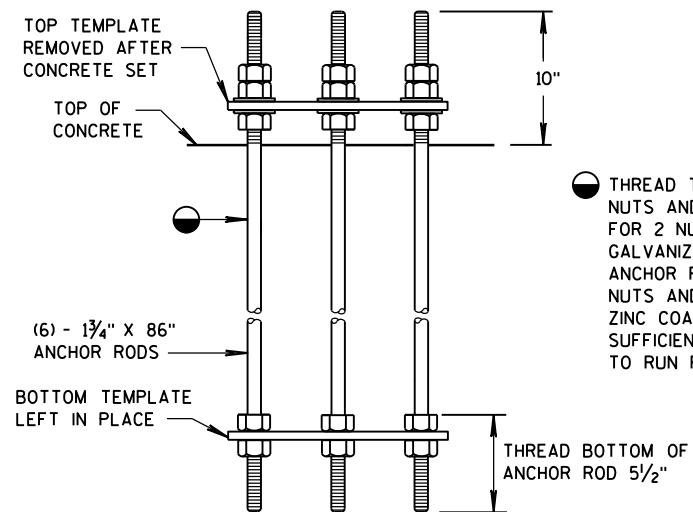
CONCRETE = 6.3 C.Y.
H.S. REINFORCEMENT = 635 LBS.

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.
SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE TYPE 13
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

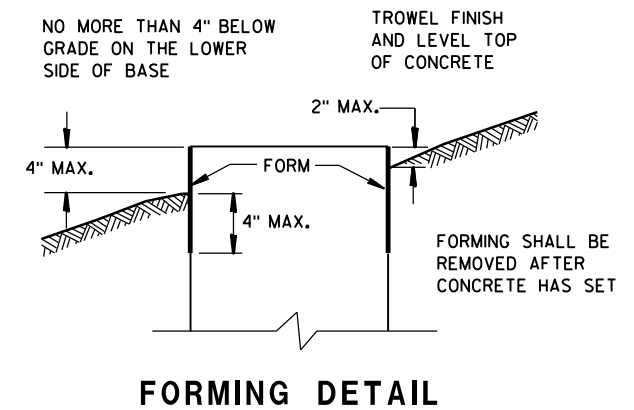


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY



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6

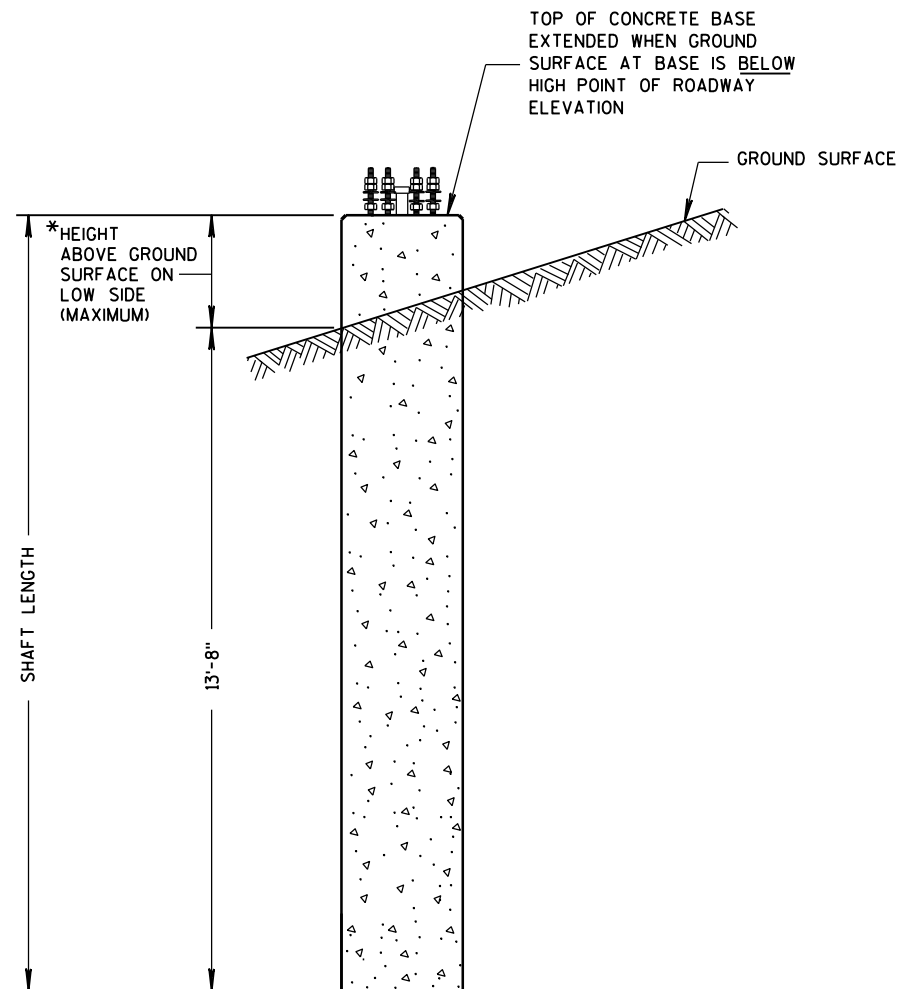
CONCRETE BASE TYPE 13	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE May 2017	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

**REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 10 CONCRETE BASE**

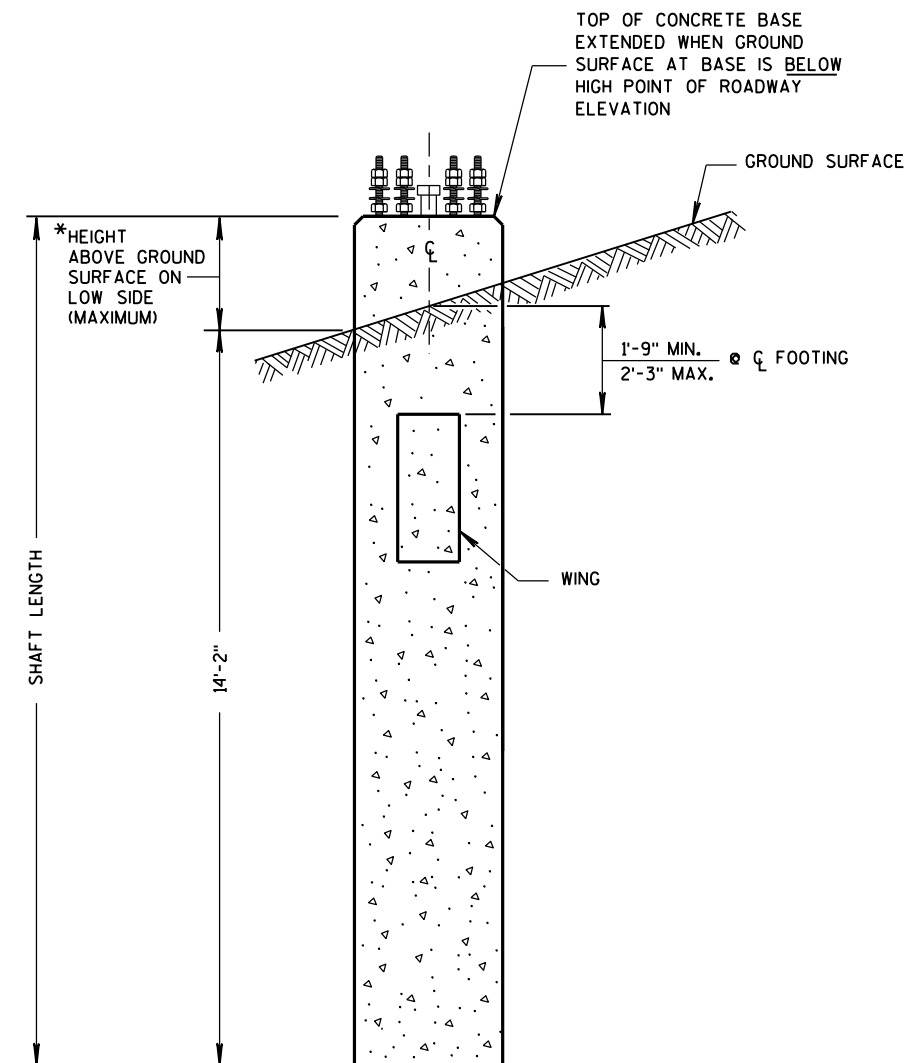
HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL BAR STEEL
>0" TO 6"	10"	14'-6"	14'-1"	16	2.6	78	127
>6" TO 1'-0"	1'-4"	15'-0"	14'-7"	16	2.7	78	131
>1'-0" TO 1'-6"	1'-10"	15'-6"	15'-1"	17	2.8	83	136
>1'-6" TO 2'-0"	2'-4"	16'-0"	15'-7"	17	2.9	83	141

**REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 13 CONCRETE BASE**

HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF H.S. BAR STEEL
>0" TO 6"	10"	15'-0"	14'-7"	16	6.5	447
>6" TO 1'-0"	1'-4"	15'-6"	15'-1"	16	6.6	454
>1'-0" TO 1'-6"	1'-10"	16'-0"	15'-7"	17	6.8	469
>1'-6" TO 2'-0"	2'-4"	16'-6"	16'-1"	17	7.0	476



CONCRETE BASE TYPE 10 (EXTENDED)

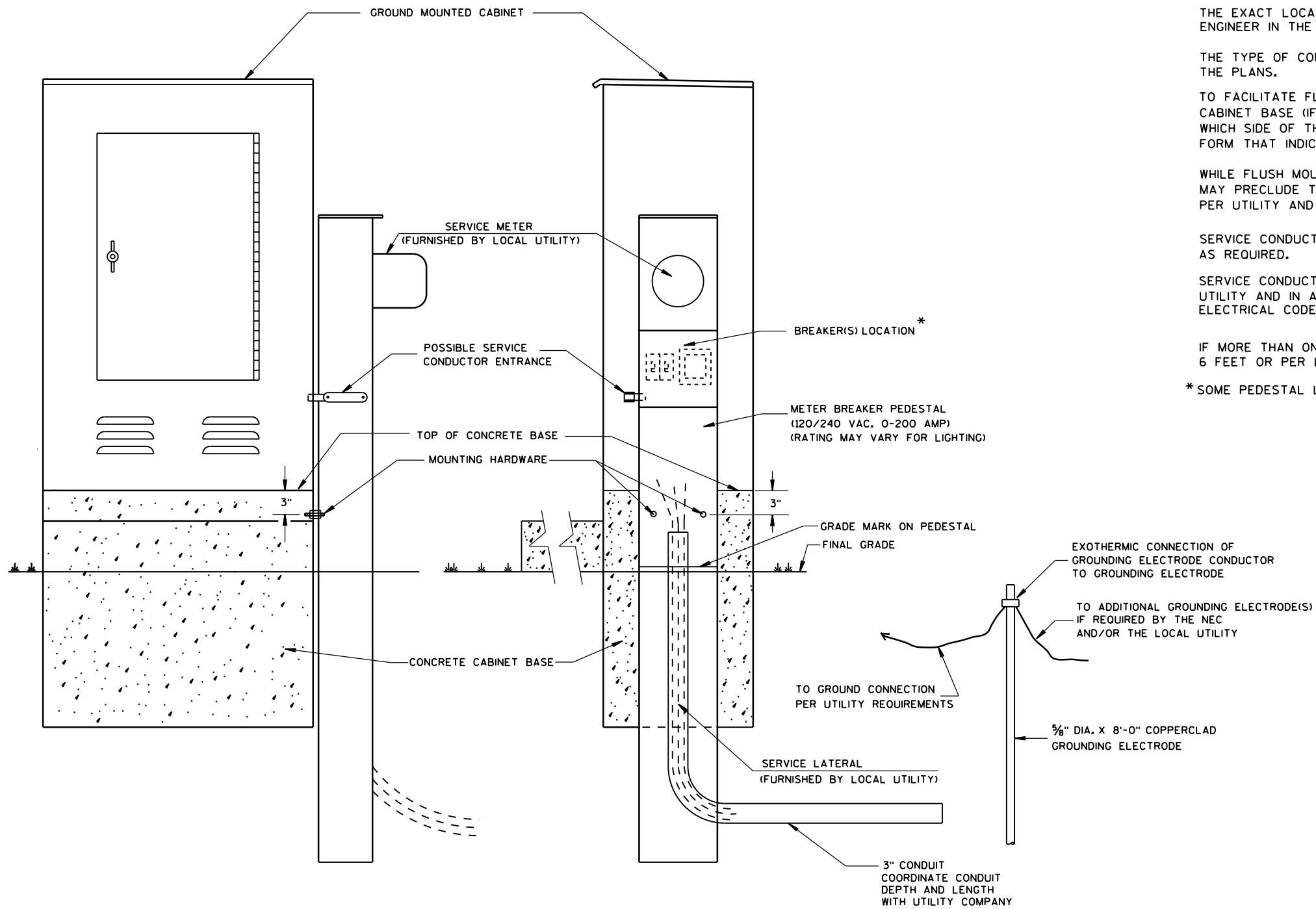


CONCRETE BASE TYPE 13 (EXTENDED)

**CONCRETE BASE
TYPE 10 & TYPE 13 EXTENSION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 11-26-2013
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER
FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

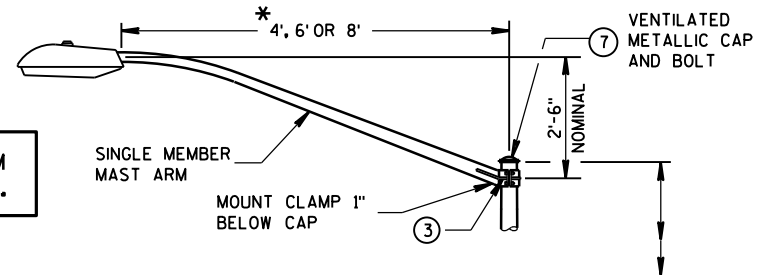
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

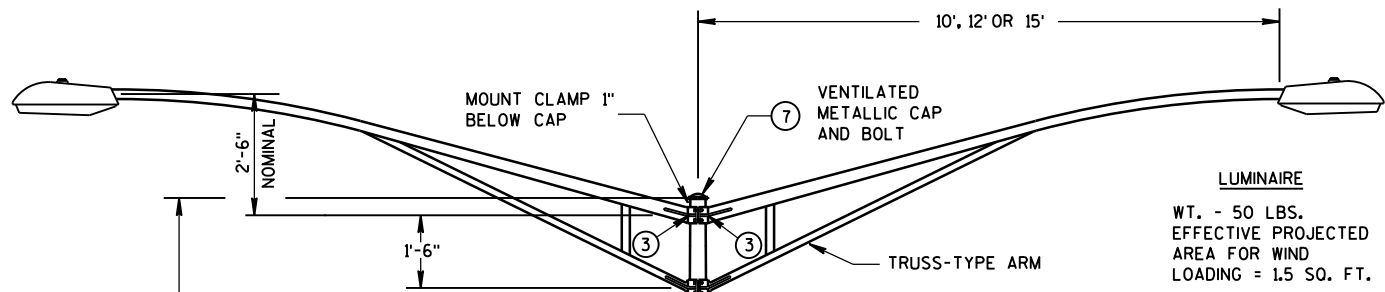
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

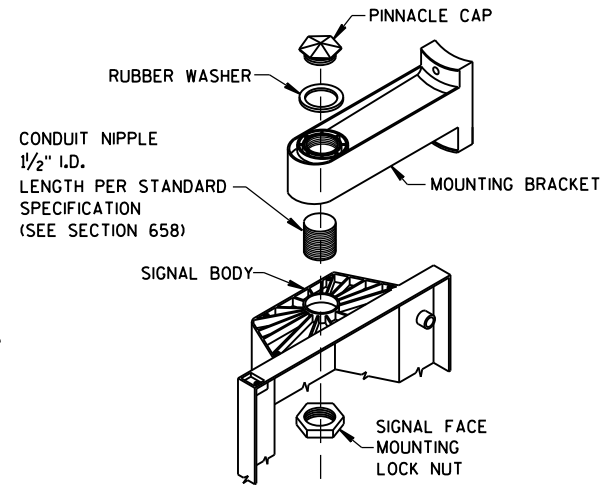
CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER



* RISE FOR 4' ARM SHALL BE 2'-0".



LUMINAIRE
WT. - 50 LBS.
EFFECTIVE PROJECTED AREA FOR WIND LOADING = 1.5 SQ. FT.



SIGNAL FACE MOUNTING DETAIL (BANDED)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL TYPE 4 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

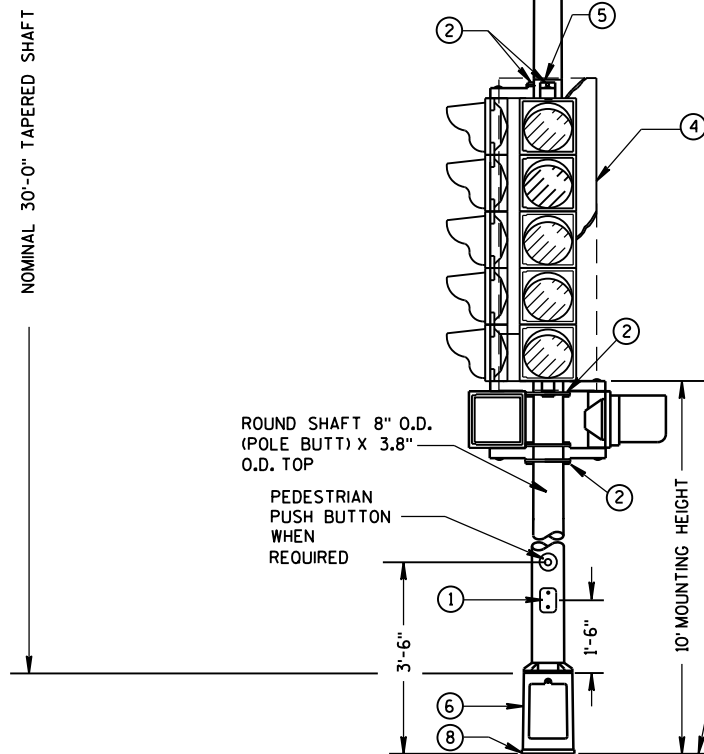
POLES SHALL BE GALVANIZED STEEL WITH A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

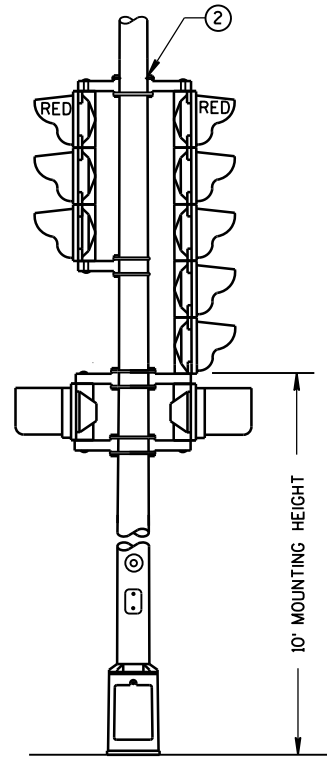
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

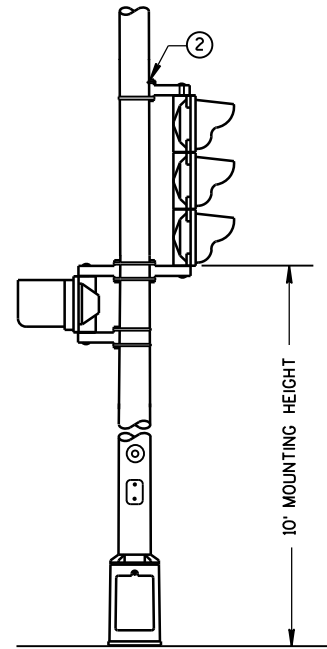
- ① 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658).
- ③ GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑧ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.



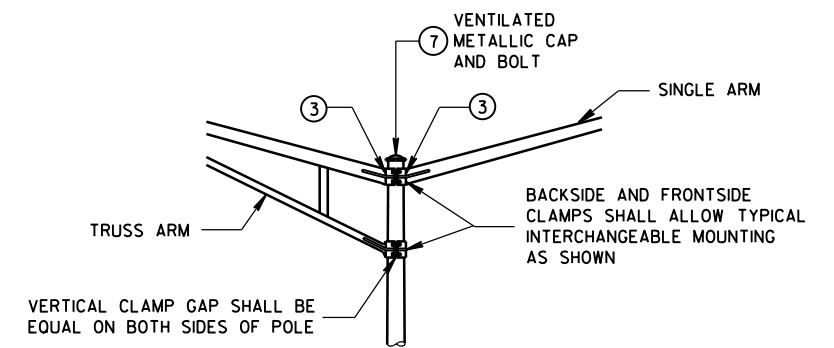
(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE



INTERCHANGEABLE MOUNTING DETAIL

POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4

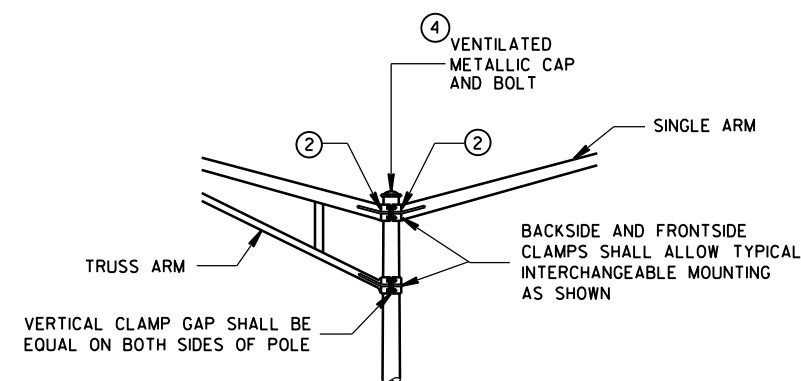
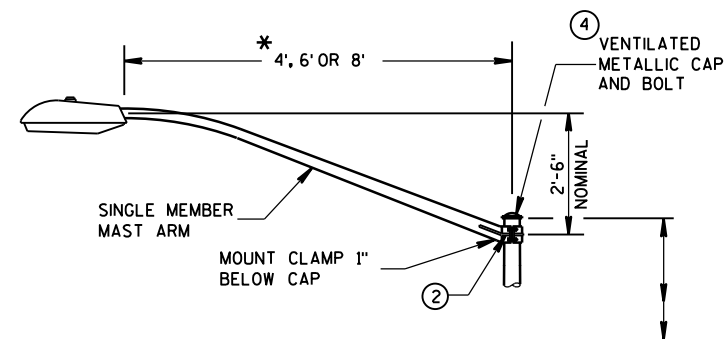
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

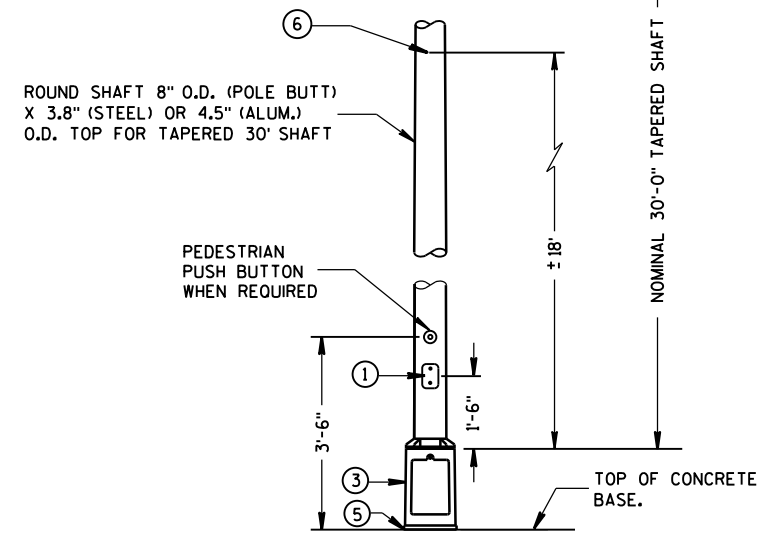
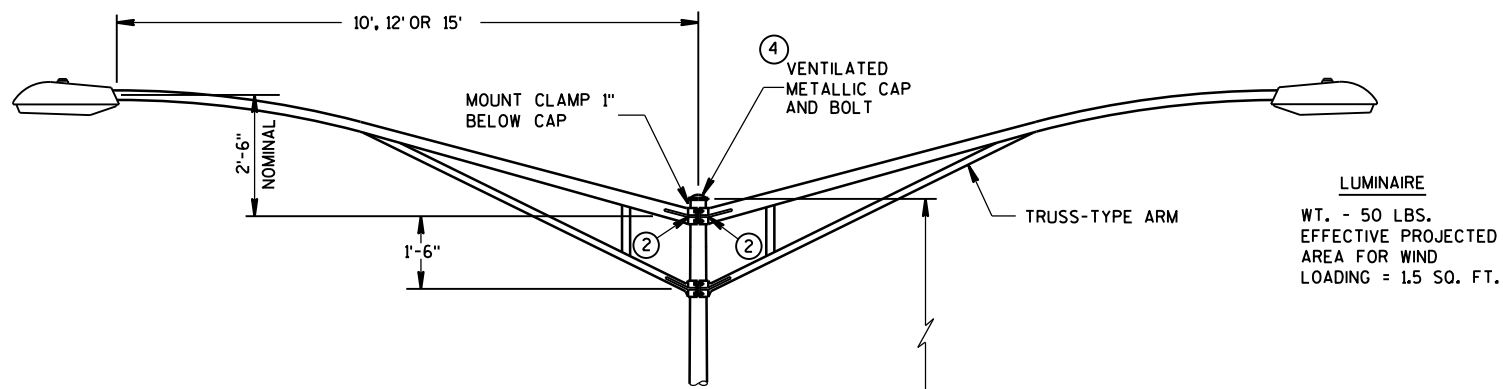
6

TYPE 4 POLE MOUNTING CONFIGURATION

* RISE FOR 4' ARM SHALL BE 2'-0".



INTERCHANGEABLE MOUNTING DETAIL



TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.
TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".
TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

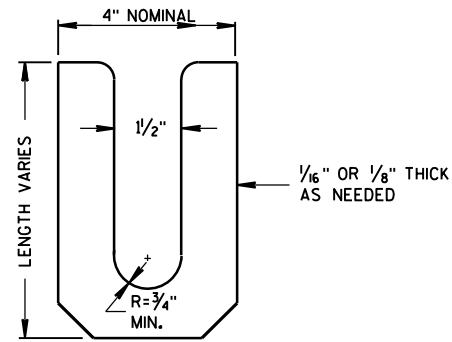
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

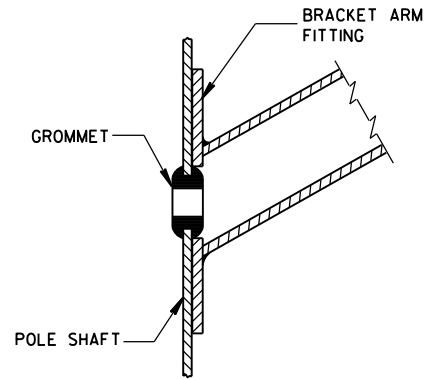
- ① 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" x 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" x 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- ⑥ INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

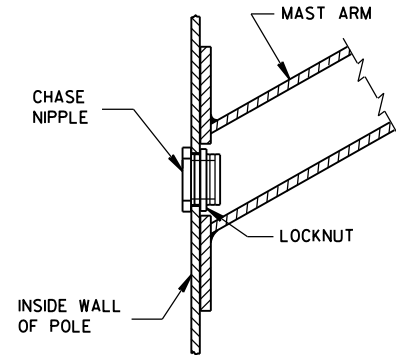
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



⑬ LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



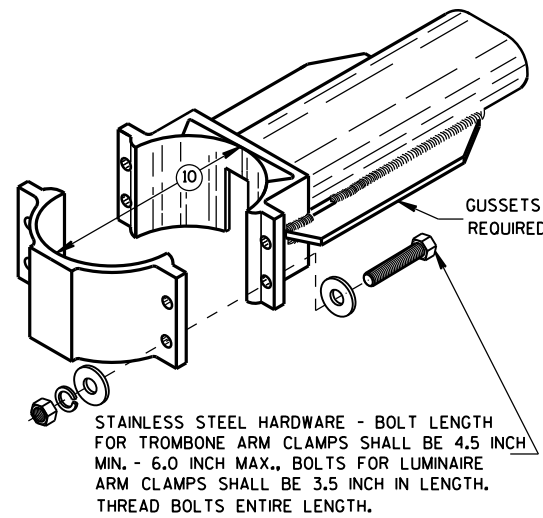
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

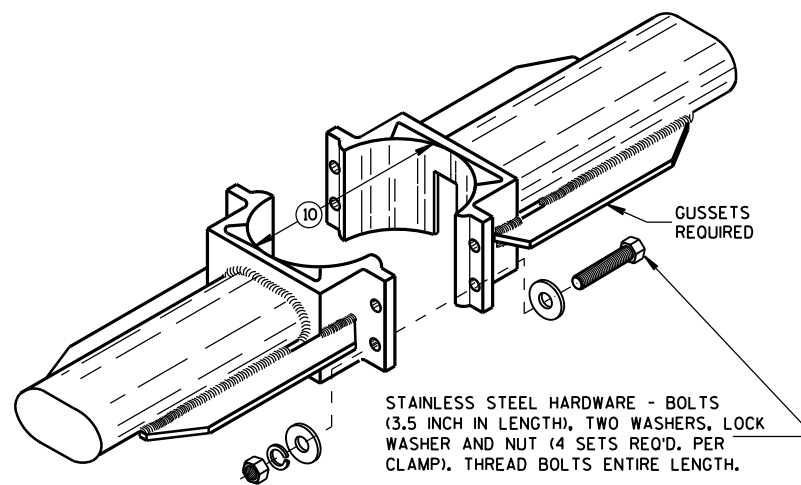
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ⑩ 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ⑪ INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ⑫ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ⑬ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

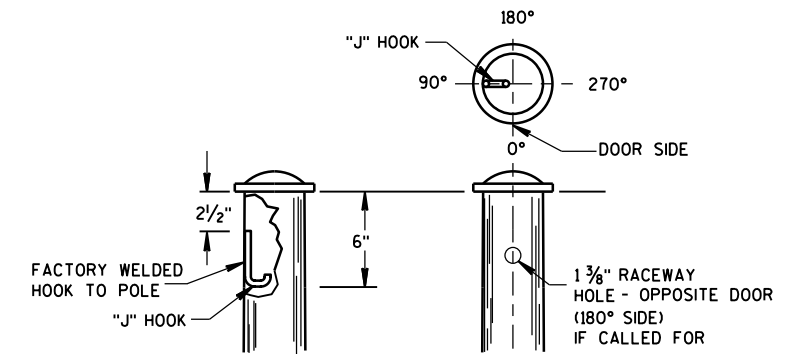
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



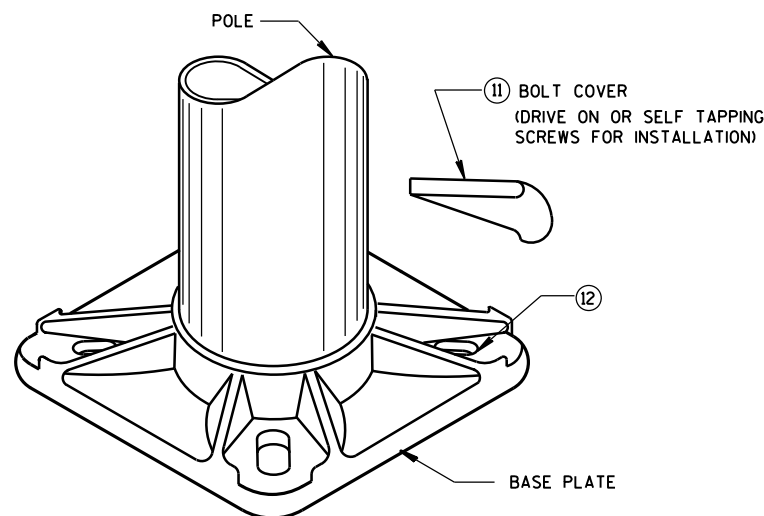
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



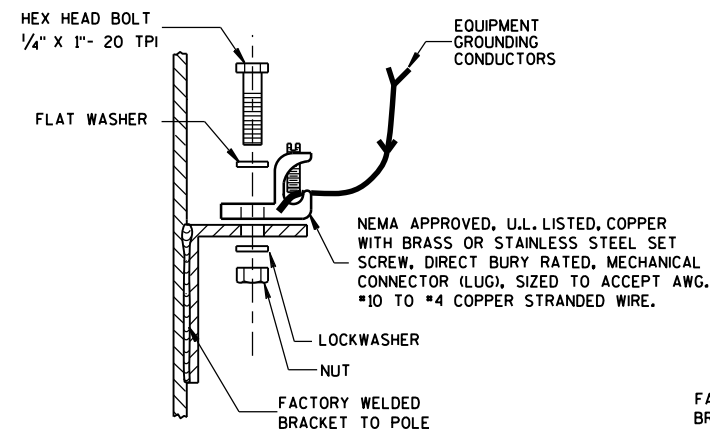
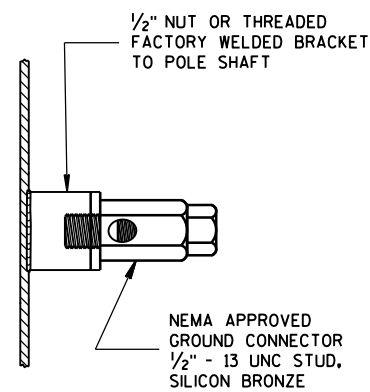
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



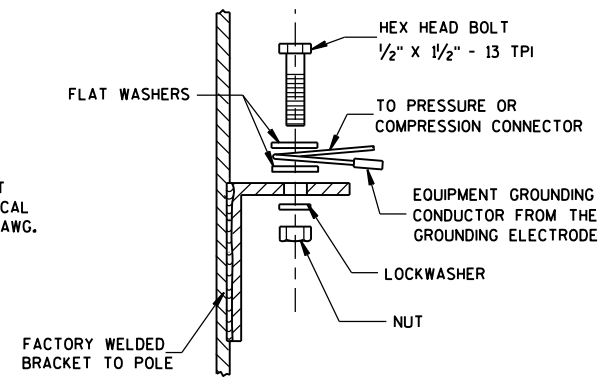
TYPICAL "J" HOOK LOCATION



BASE PLATE



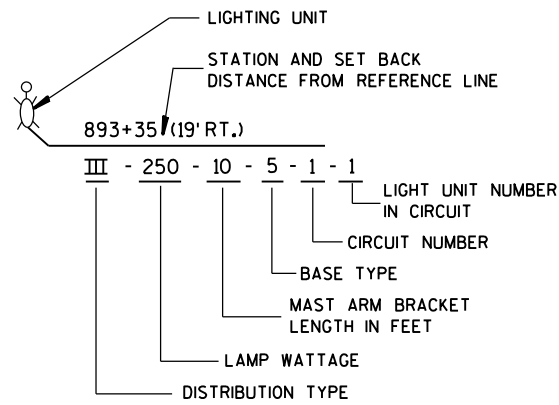
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



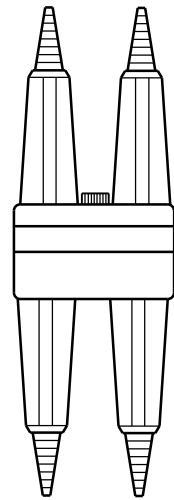
HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

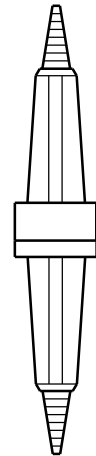
APPROVED
Feb. 2015 /s/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA



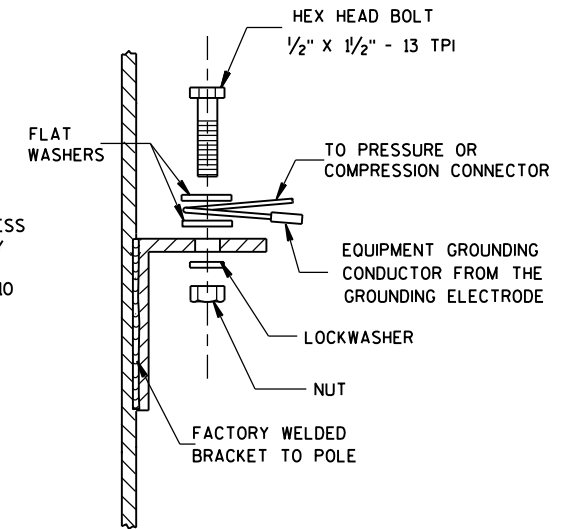
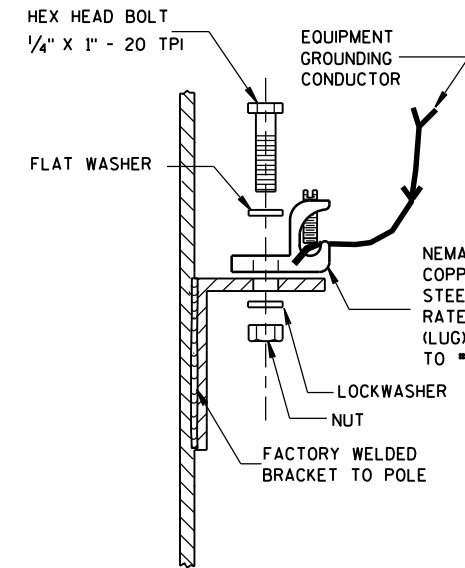
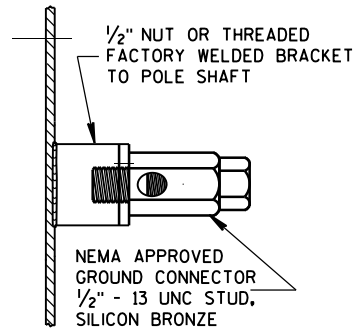
LIGHTING UNIT CODE
(TYPICAL)



DETAIL "A"
BREAKAWAY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT



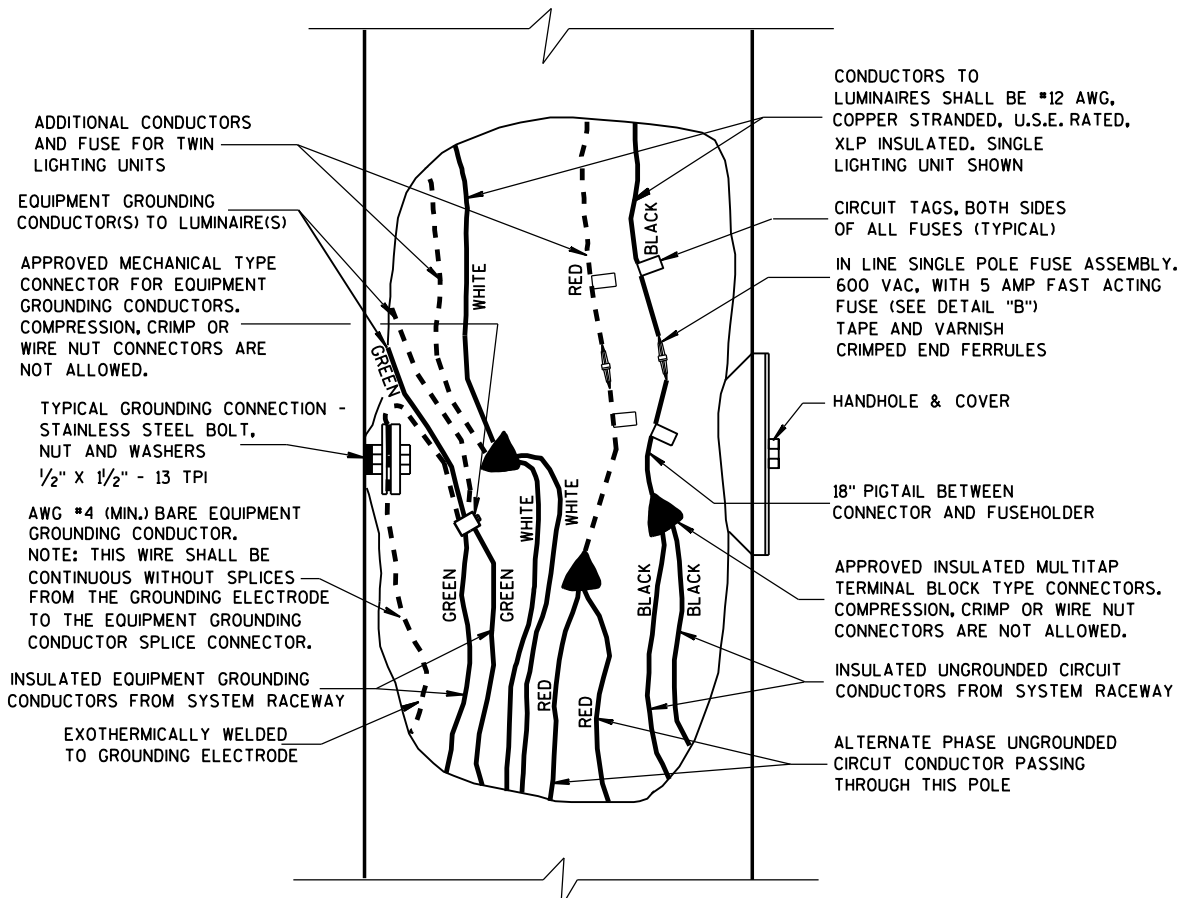
DETAIL "B"
BREAKAWAY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT



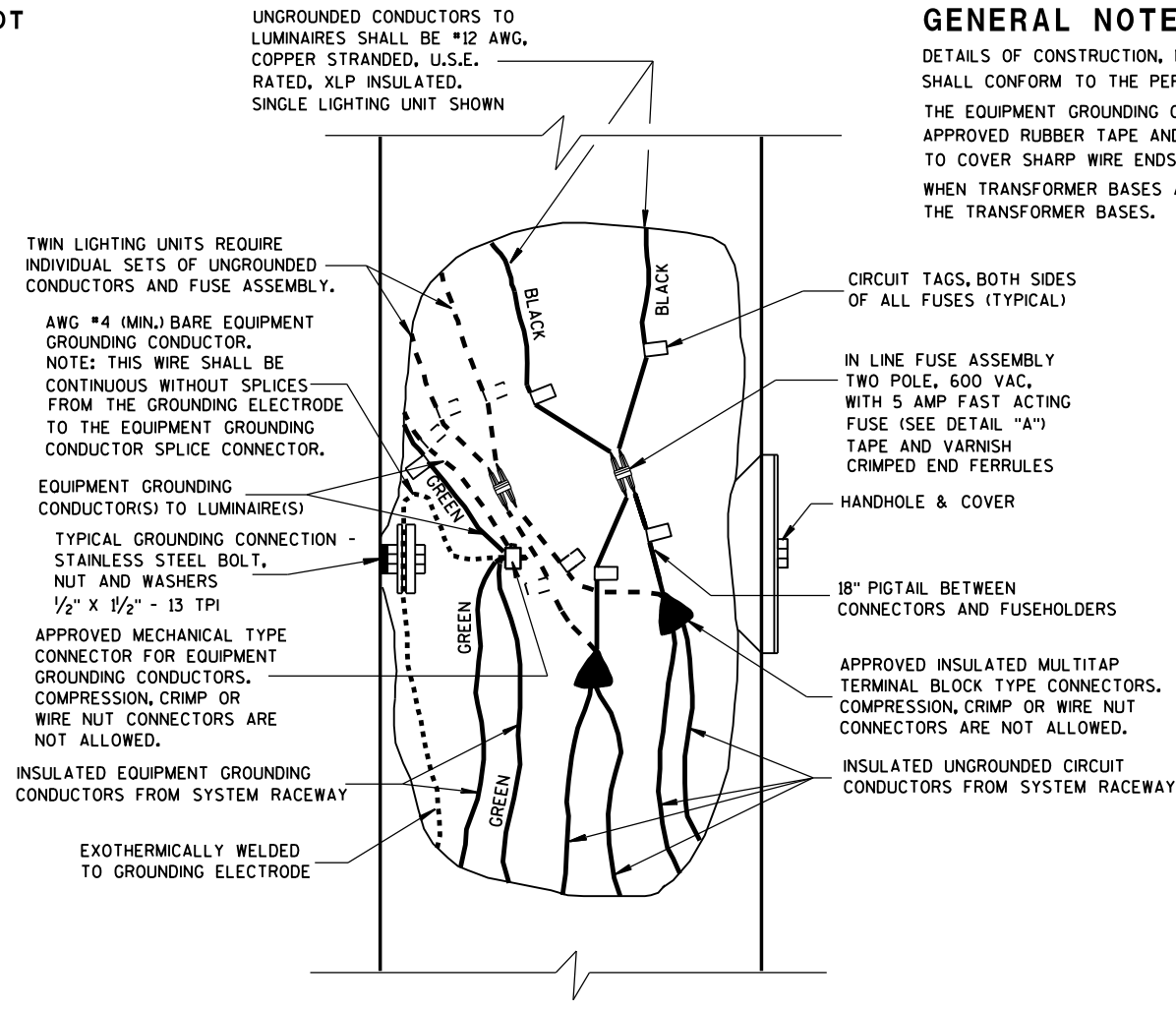
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.
WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.



**3 WIRE - 120, 240 OR 480 VAC (UNGROUNDING CONDUCTOR)
WITH GROUNDED CONDUCTOR AND
WITH EQUIPMENT GROUNDING CONDUCTOR**



**2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR**

**NON-FREWAY LIGHTING UNIT
POLE WIRING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER
FHWA

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLE CLAMP (AS SHOWN) MOUNTING BRACKETS SHALL BE USED.

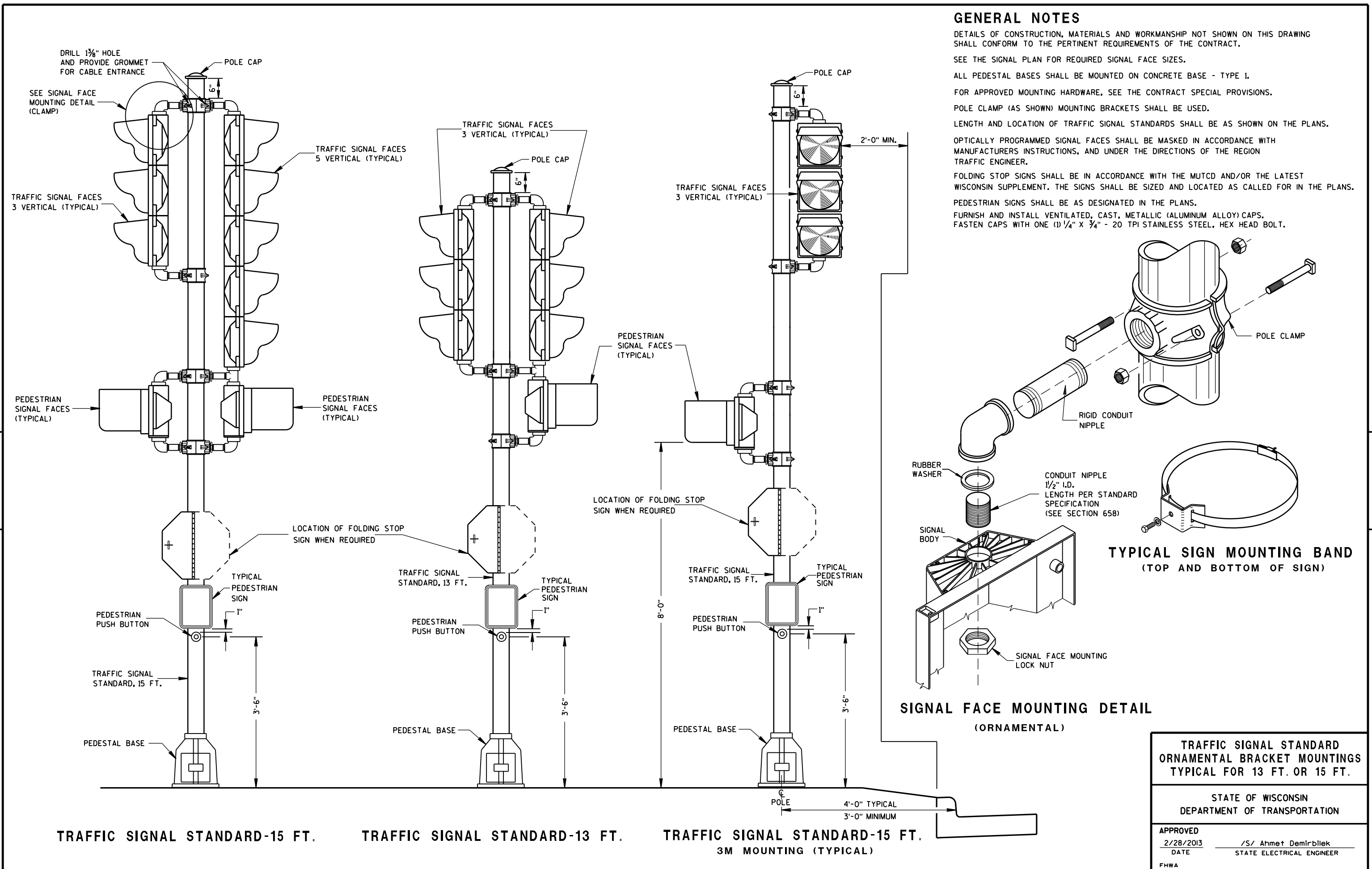
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



TRAFFIC SIGNAL STANDARD-15 FT.

TRAFFIC SIGNAL STANDARD-13 FT.

TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

SIGNAL FACE MOUNTING DETAIL
(ORNAMENTAL)

TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)

TRAFFIC SIGNAL STANDARD
ORNAMENTAL BRACKET MOUNTINGS
TYPICAL FOR 13 FT. OR 15 FT.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013 DATE /S/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER
FHWA

6

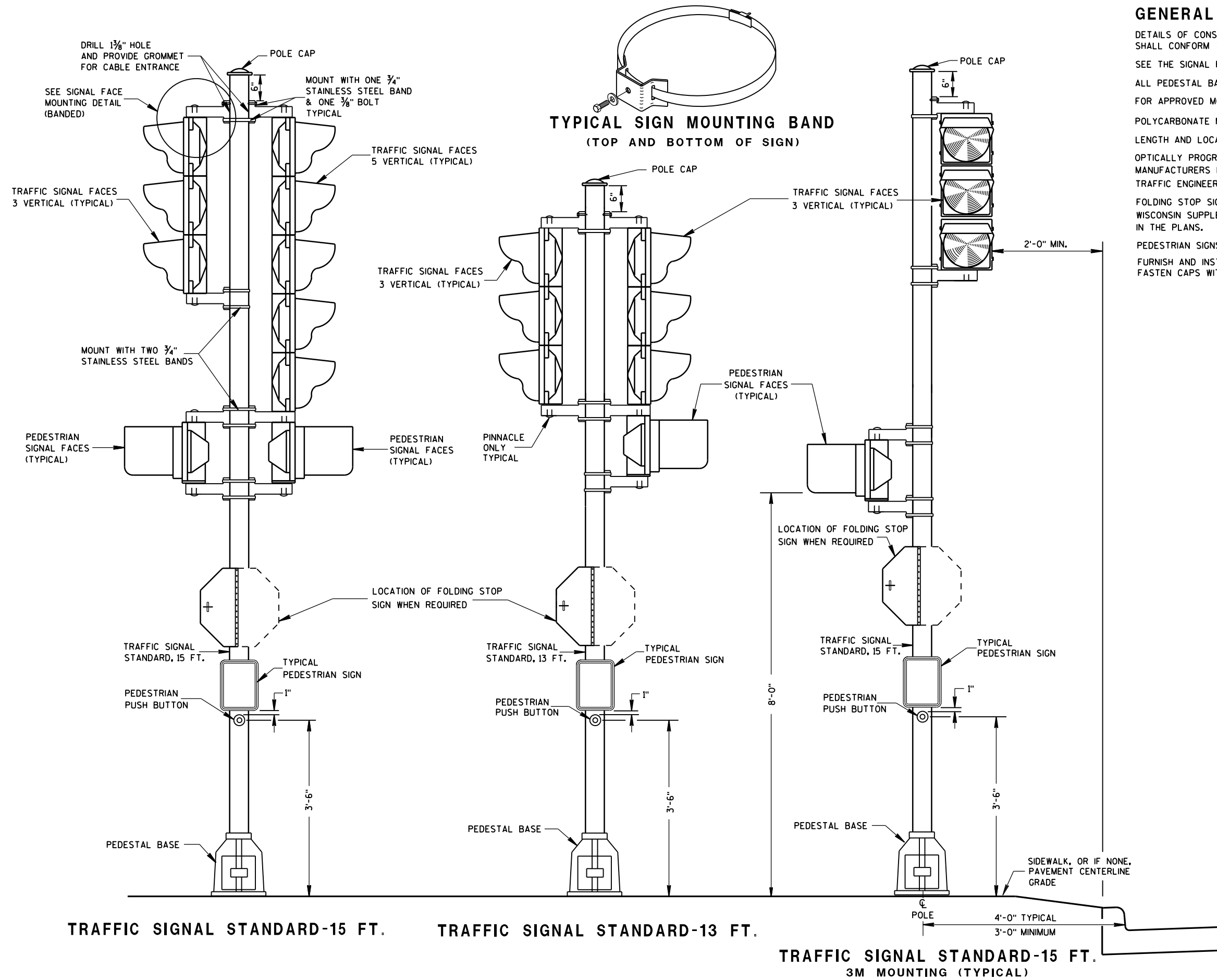
6

S.D.D. 9 E 5-6

S.D.D. 9 E 5-6

6

6



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

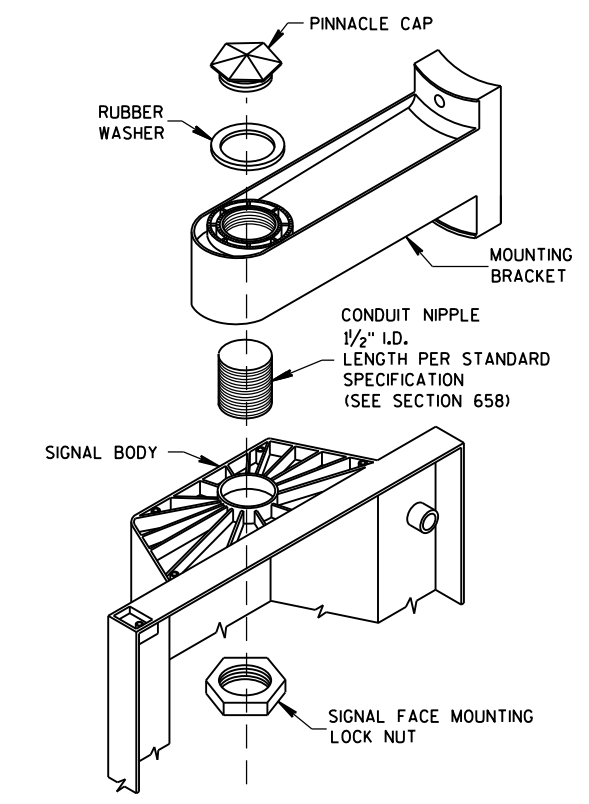
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SIGNAL FACE MOUNTING DETAIL (BANDED)

TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2/28/2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

S.D.D. 9 E 6-5

S.D.D. 9 E 6-5

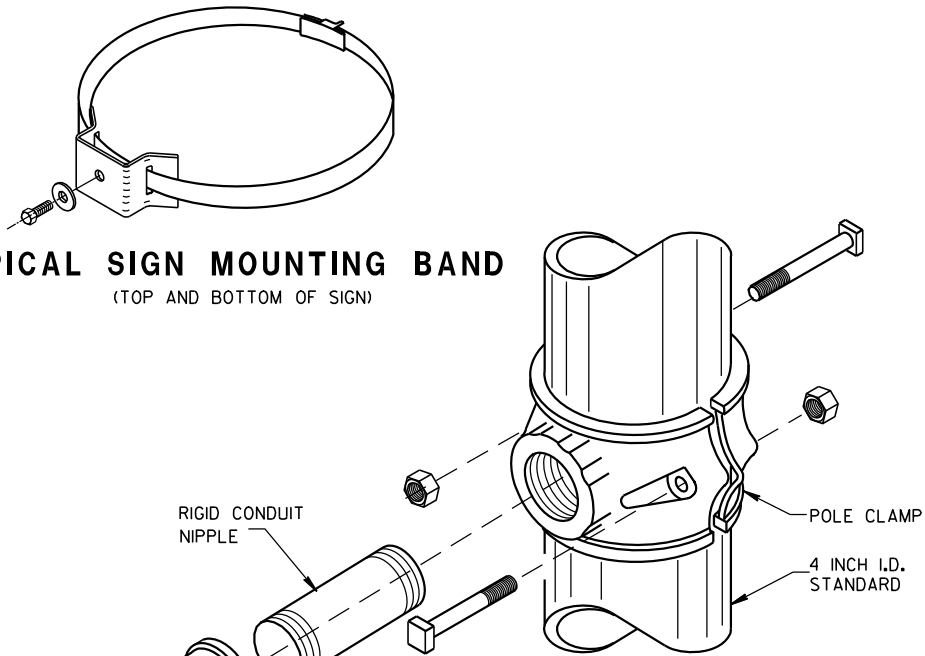
TRAFFIC SIGNAL STANDARD-15 FT.

TRAFFIC SIGNAL STANDARD-13 FT.

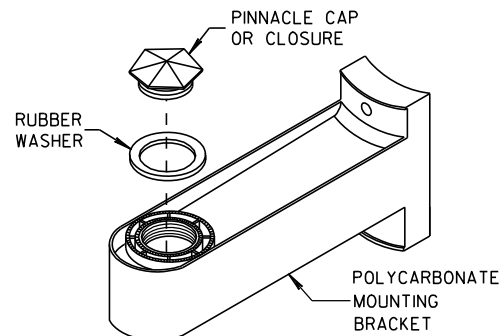
TRAFFIC SIGNAL STANDARD-15 FT. 3M MOUNTING (TYPICAL)

TYPICAL SIGN MOUNTING BAND

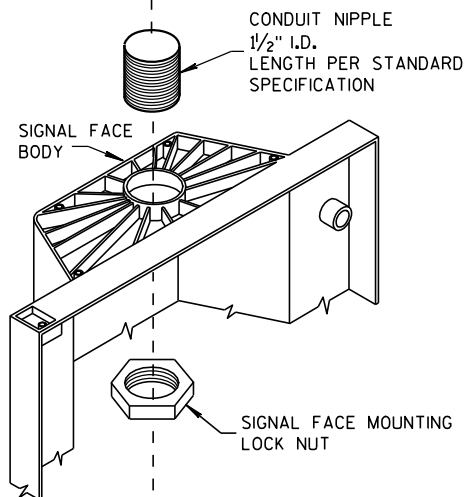
(TOP AND BOTTOM OF SIGN)



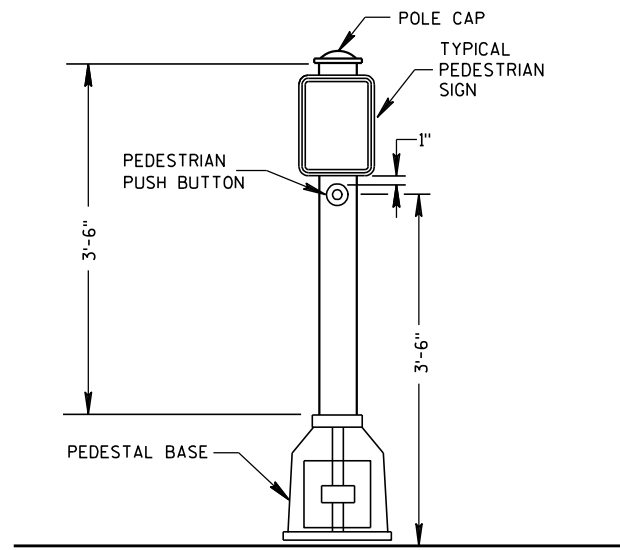
(ORNAMENTAL)



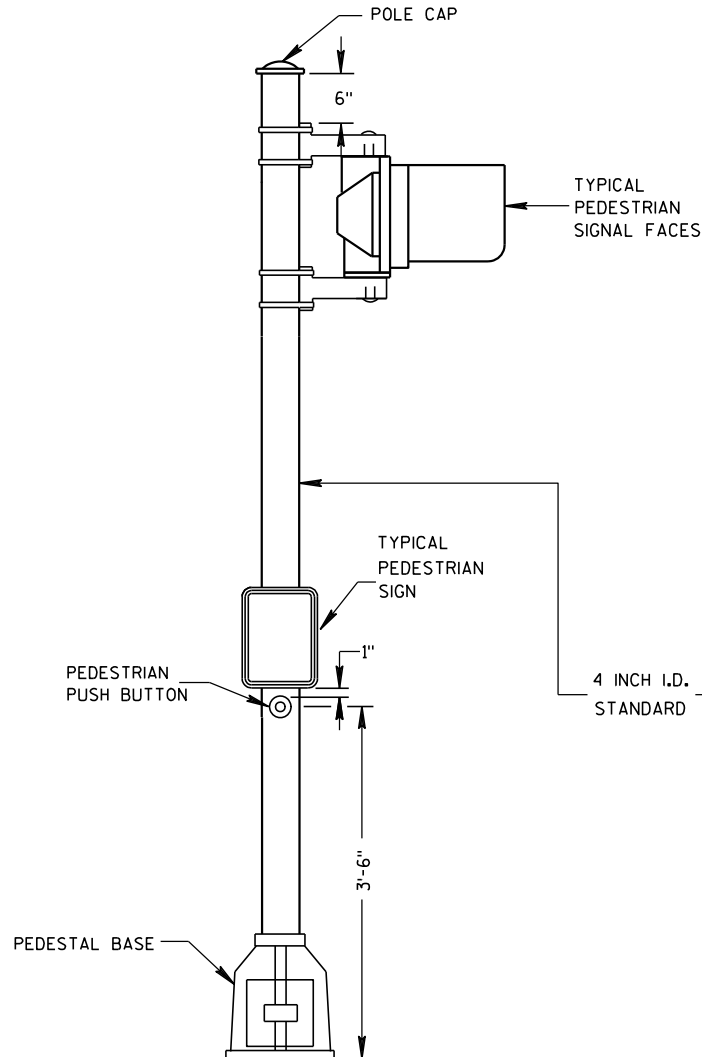
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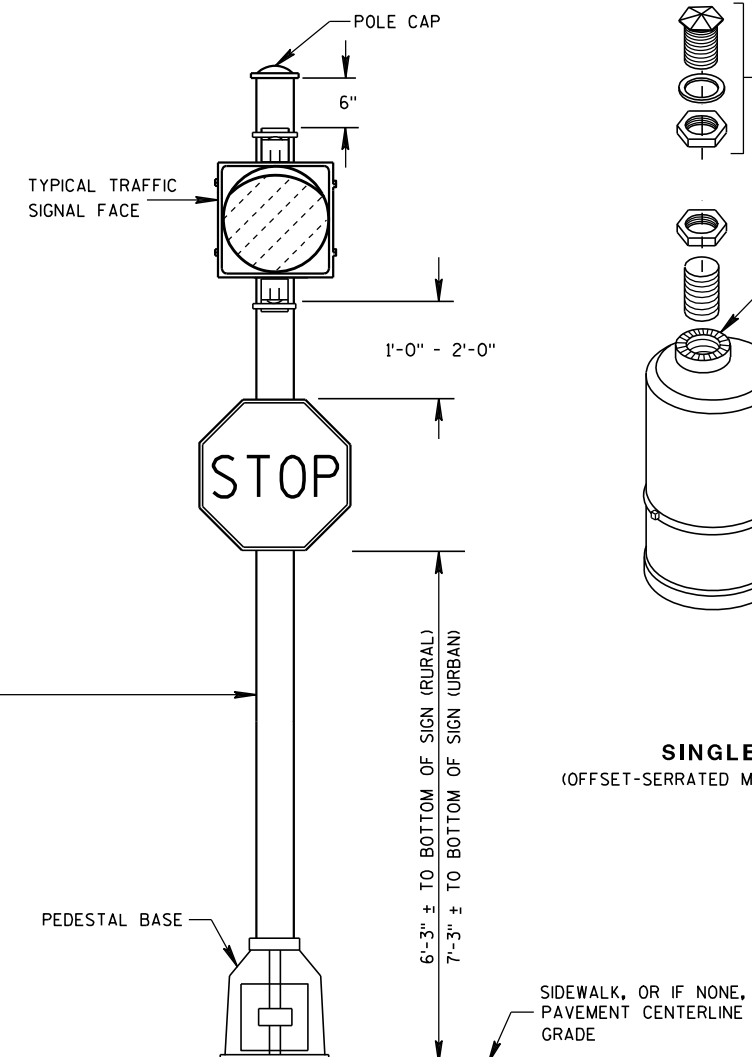
SIGNAL FACE MOUNTING DETAILS



**PEDESTRIAN PUSH BUTTON
TYPICAL MOUNTING**



**PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)**



**STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED**

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

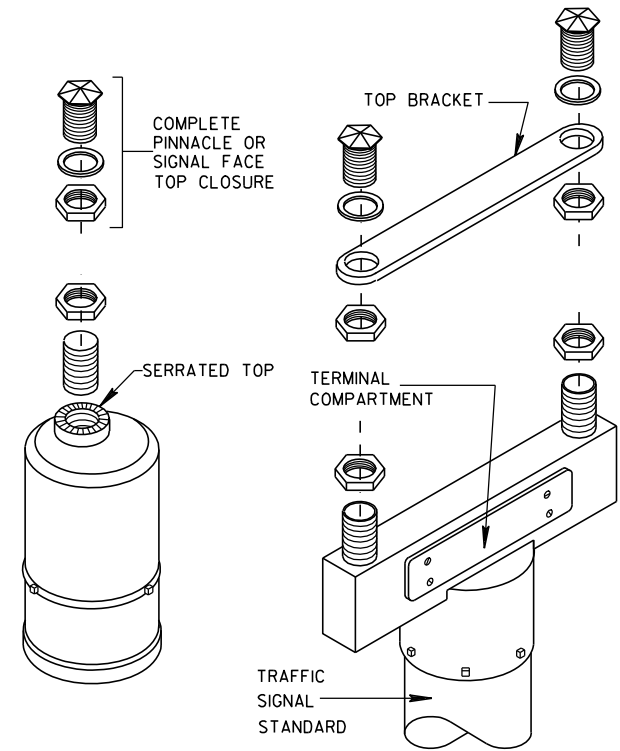
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SINGLE
(OFFSET-SERRATED MOUNTING)

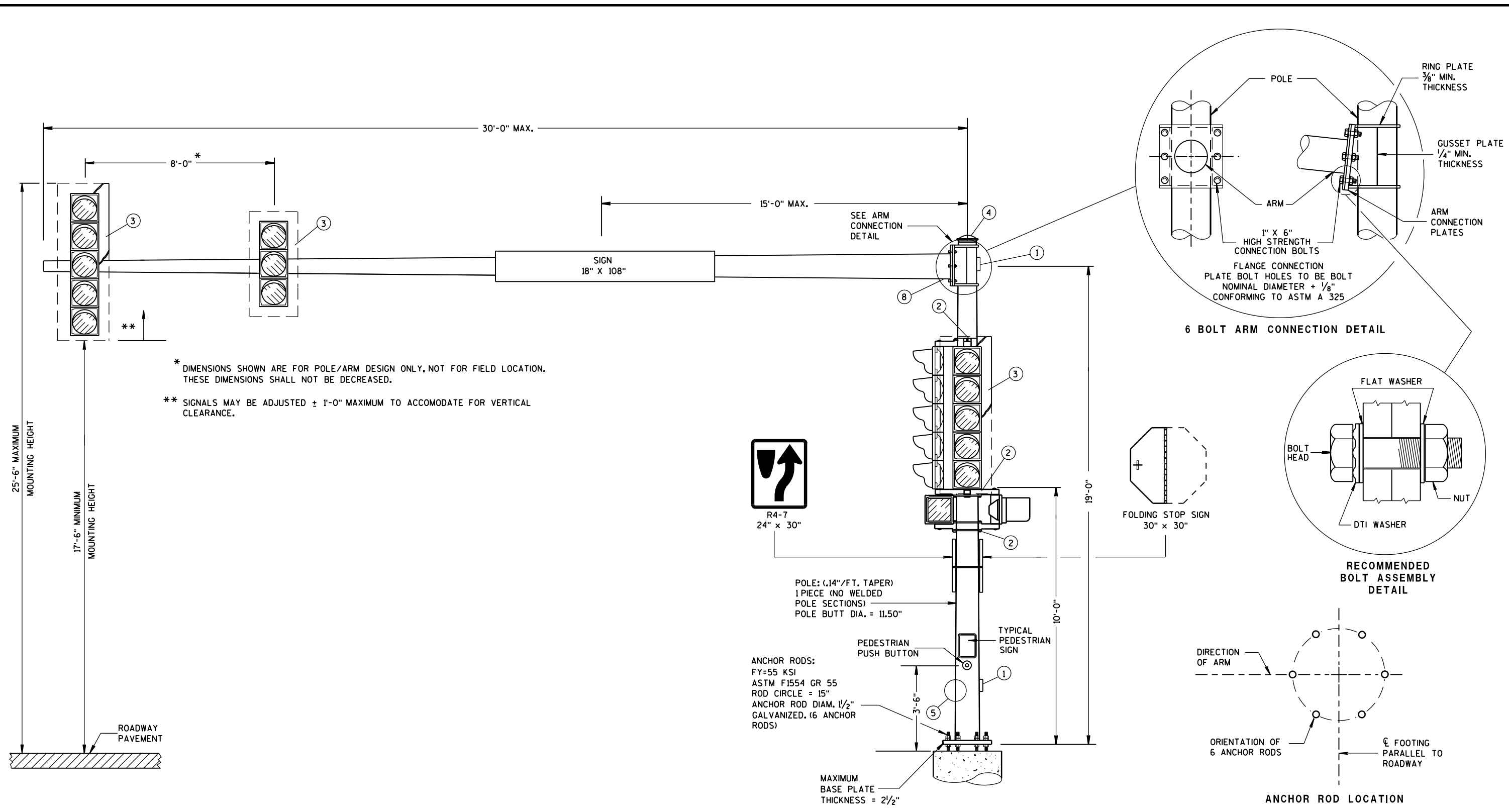
DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

**TRAFFIC SIGNAL STANDARD
PEDESTRIAN AND FLASHER
TYPICAL MOUNTING DETAILS**

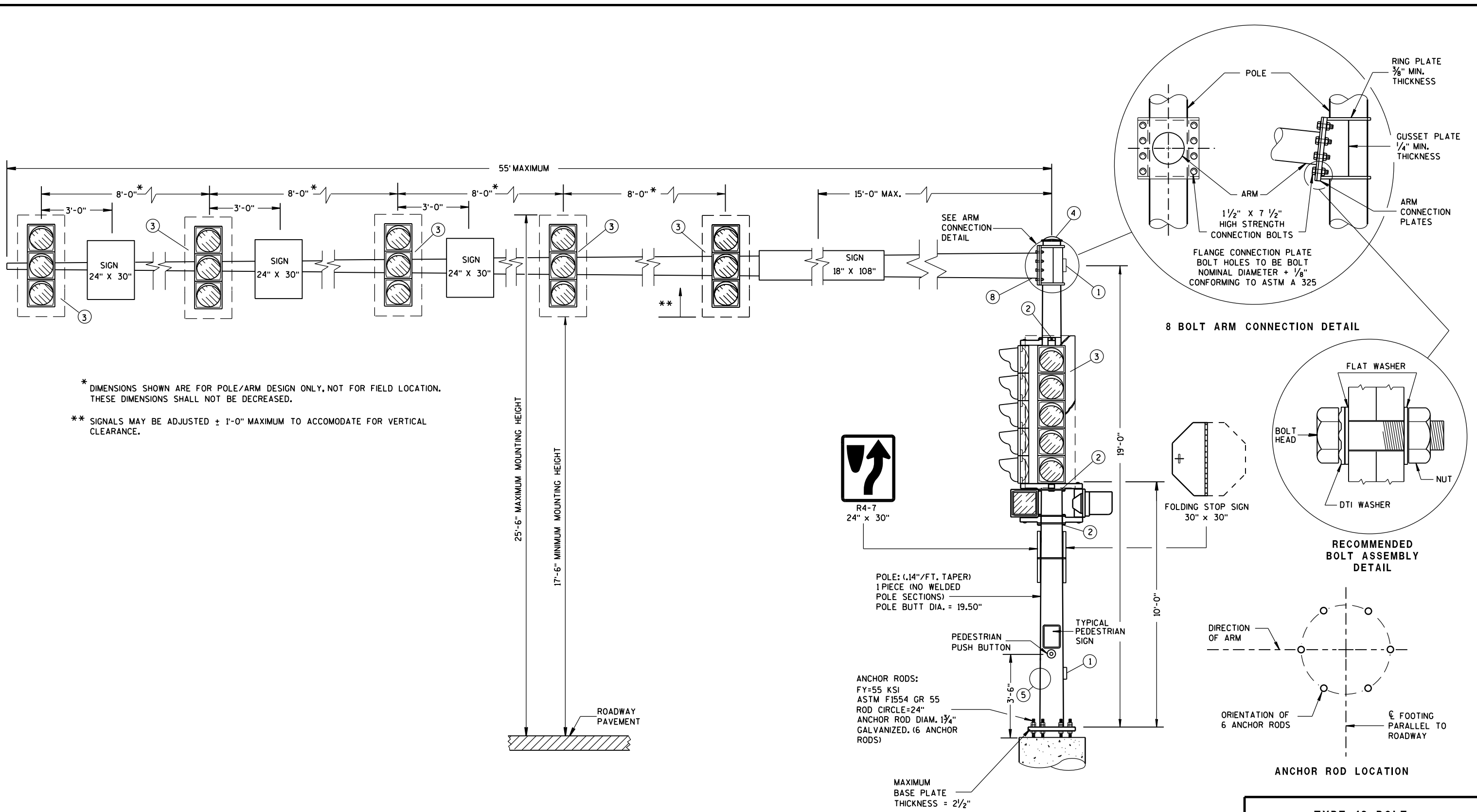
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/11/10 DATE /S/ John Corbin
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



(MAXIMUM LOAD)
TYPE 9 POLE 15' - 30' MONOTUBE ARM

TYPE 9 POLE 15' - 30' MONOTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May, 2016 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE.

(MAXIMUM LOAD)
TYPE 12 POLE 35' - 55' MONOTUBE ARM

TYPE 12 POLE 35' - 55' MONOTUBE ARM	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May, 2015 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

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GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 1/2% ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH 3/4" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL 1/2" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

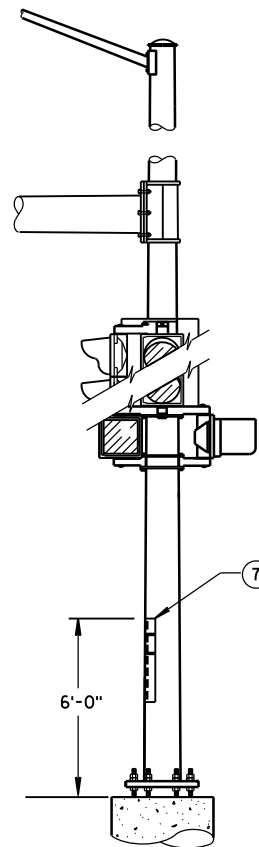
SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

- ① DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO 1/4" x 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
- ② SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).
- ③ SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- ④ THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.
- ⑤ FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR 1/4" x 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.
- ⑥ FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
- ⑦ INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

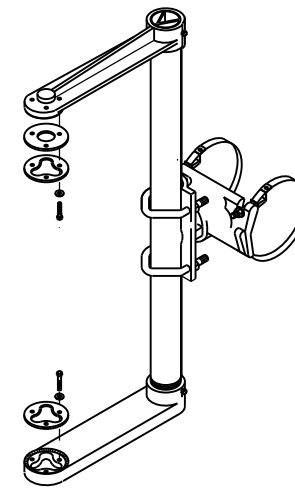
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

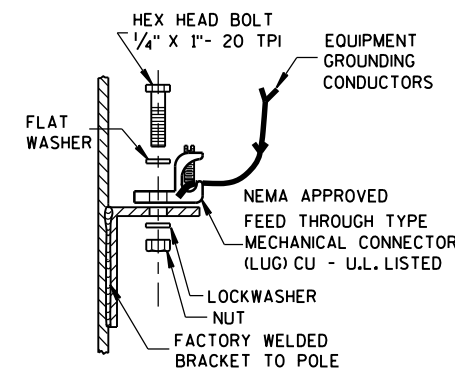
- ⑧ FACTORY DRILLED 1/2" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.



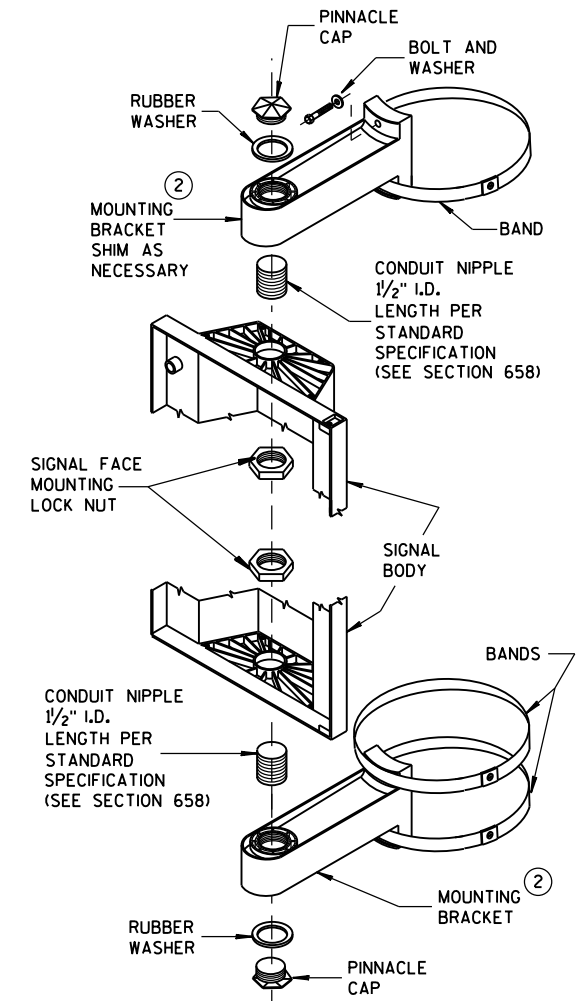
STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



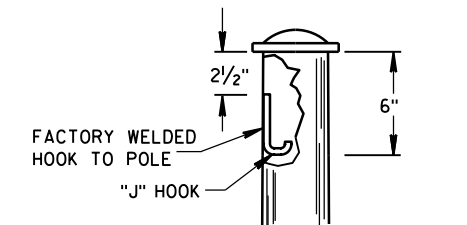
SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM
(MOUNT PER MANUFACTURER'S RECOMMENDATION)



TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



SIGNAL FACE
VERTICAL MOUNTING DETAIL

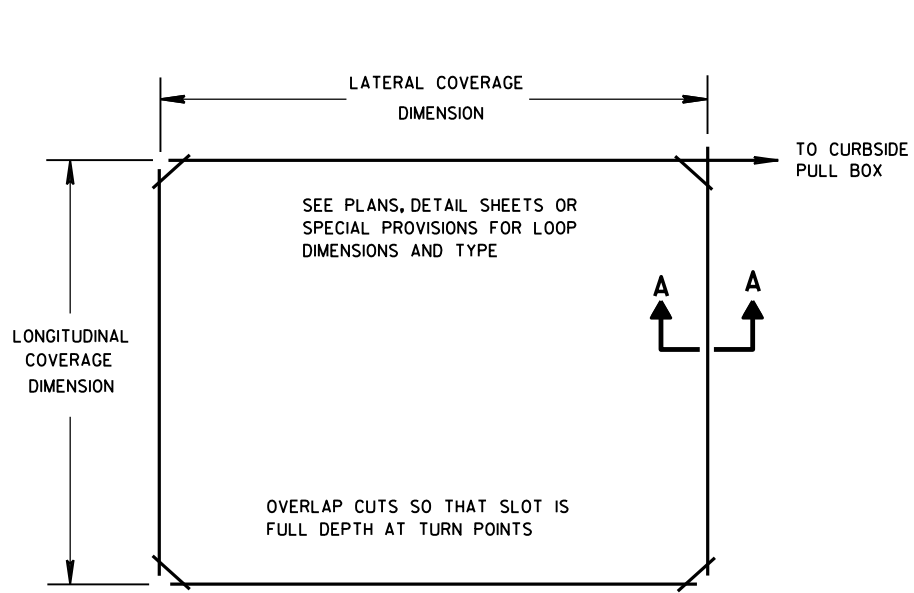


"J" HOOK WIRE SUPPORT

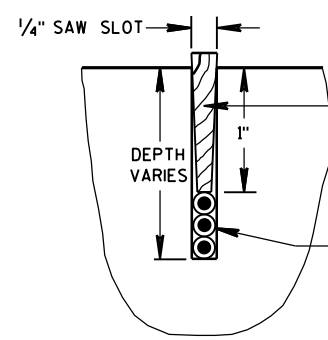
GENERAL NOTES AND HARDWARE
DETAILS FOR TYPE 9, 10, 12 & 13
POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

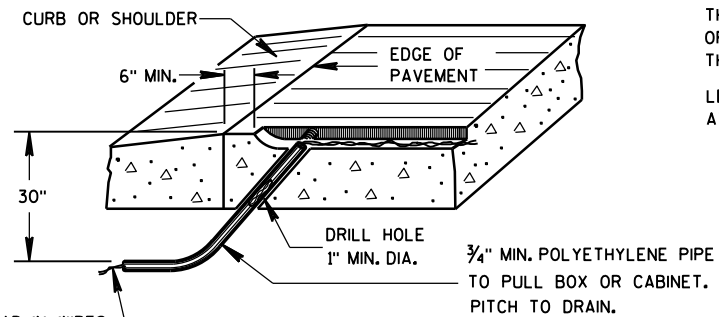
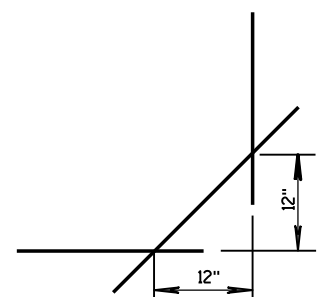
APPROVED
May 2016 /S/ Ahmet Demirebilek
DATE STATE ELECTRICAL ENGINEER
FHWA



LOOP WIRE SLOT CONSTRUCTION



**SECTION A-A
LOOP AND LEAD-IN WIRES IN PAVEMENT**



LOOP LEAD-IN WIRES THROUGH PAVEMENT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

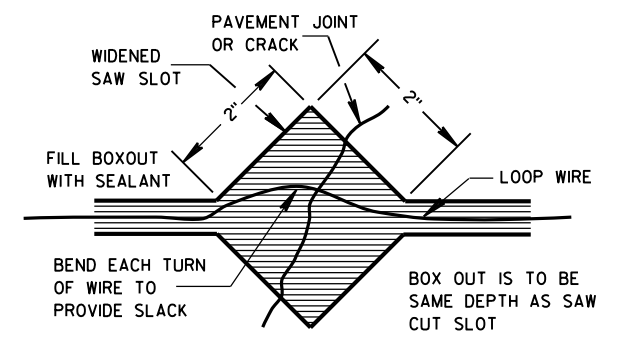
THE SLOTS IN THE PAVEMENT SHALL BE CUT TO DIMENSION WITH A SAW. THE SLOTS SHALL BE CLEANED FREE OF DIRT, DUST, MOISTURE AND DEBRIS PRIOR TO INSTALLATION OF THE WIRE.

AFTER PLACING THE WIRE IN THE SLOT, FILL THE SLOT WITH AN ASPHALTIC MATERIAL IN ACCORDANCE WITH THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D6690".

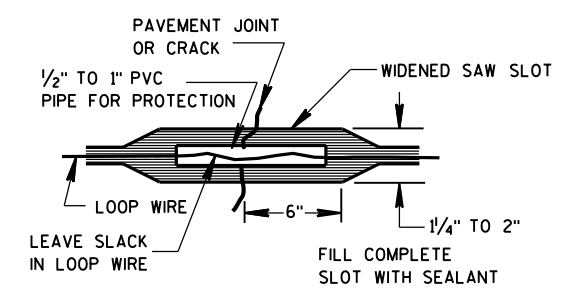
IN THE EVENT ASPHALTIC MATERIAL IS UNAVAILABLE, A FLEXIBLE TYPE EPOXY MAY BE USED AS A LOOP SLOT FILLER. THE LOOP SLOT SHALL BE CLEAN AND DRY BEFORE EPOXY IS INSTALLED. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED ONLY AFTER WRITTEN APPROVAL BY THE BY THE PROJECT ENGINEER.

THE TWO SINGLE CONDUCTOR LOOP WIRES SHALL BE TWISTED TOGETHER AT A RATE OF THREE TWISTS PER FOOT FROM THE PAVEMENT EDGE TO THE SPLICE CONNECTION WITH THE LOOP LEAD-IN CABLE.

LEAD-IN CABLES AND LOOP LEAD-IN WIRES SHALL BOTH BE CUT TO 6 FEET IN LENGTH AT THE SPLICING PULL BOX.

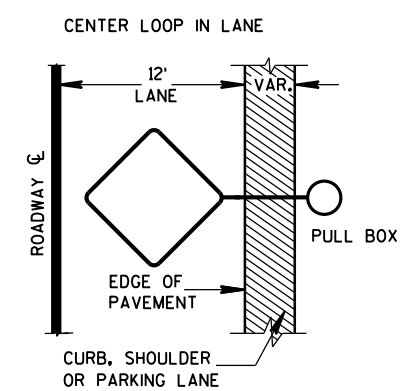


PLAN VIEW

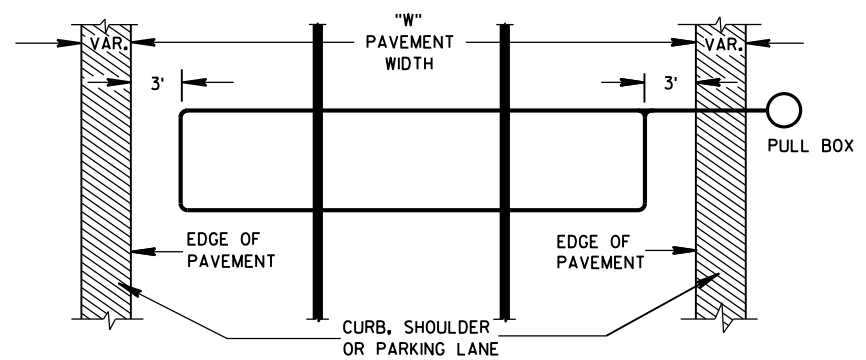


FRONT VIEW

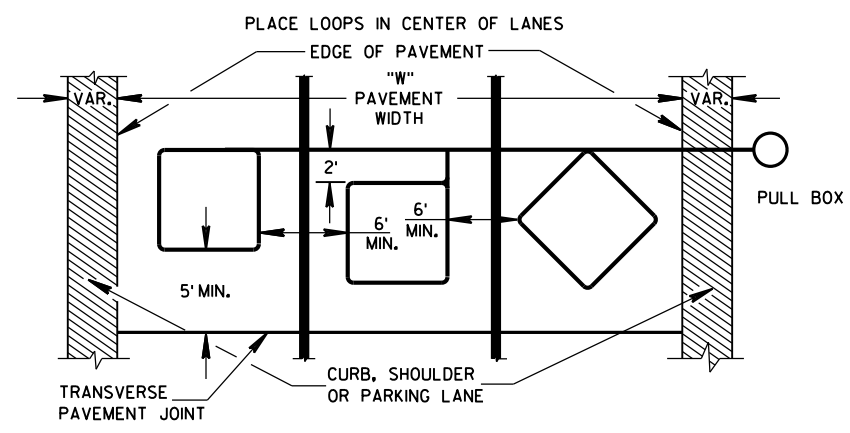
LOOP WIRE INSTALLATION ACROSS PAVEMENT JOINT OR CRACK



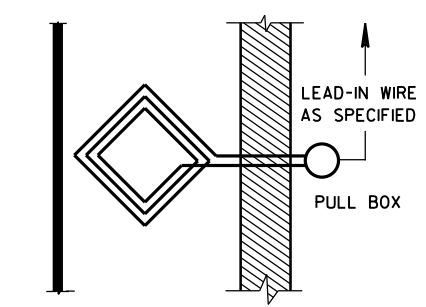
LOOP WIRE SLOT PLAN



LOOP WIRE SLOT PLAN

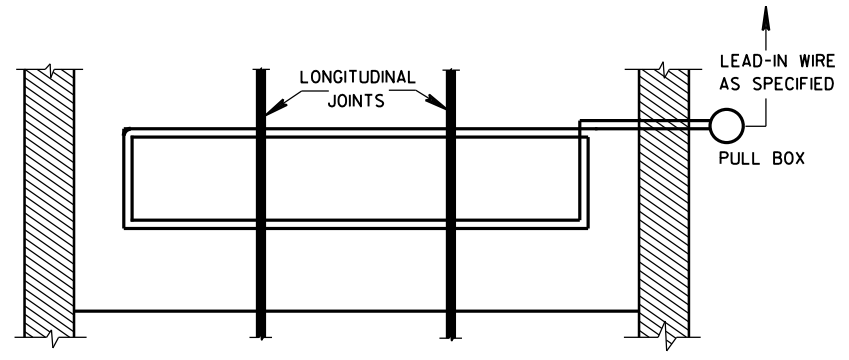


LOOP WIRE SLOT PLAN



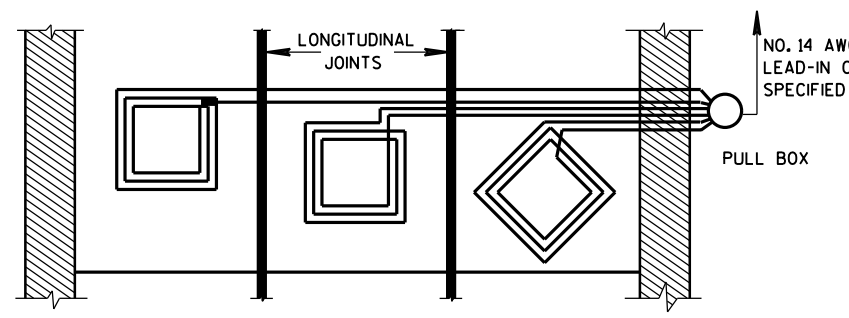
LOOP WIRE LAY CONSTRUCTION DETAILS

SINGLE LANE LOOP DETECTION



LOOP WIRE LAY CONSTRUCTION DETAILS

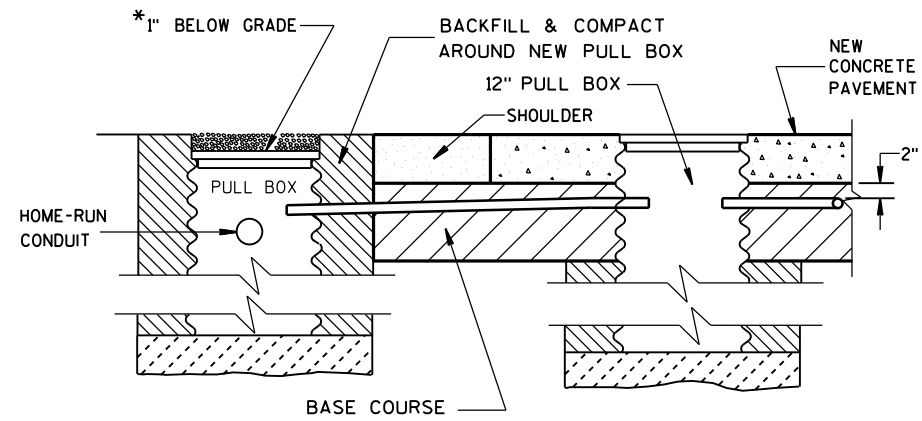
MULTIPLE LANE MASS LOOP DETECTION



LOOP WIRE LAY CONSTRUCTION DETAILS

MULTIPLE LANE DETECTION BY INDIVIDUAL LANES, TYPICAL TYPE LOOPS

DETAILS FOR THE INSTALLATION OF TEMPORARY TRAFFIC SIGNAL LOOP DETECTOR WIRES IN ANY EXISTING PAVEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



SECTION A-A
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAILS

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

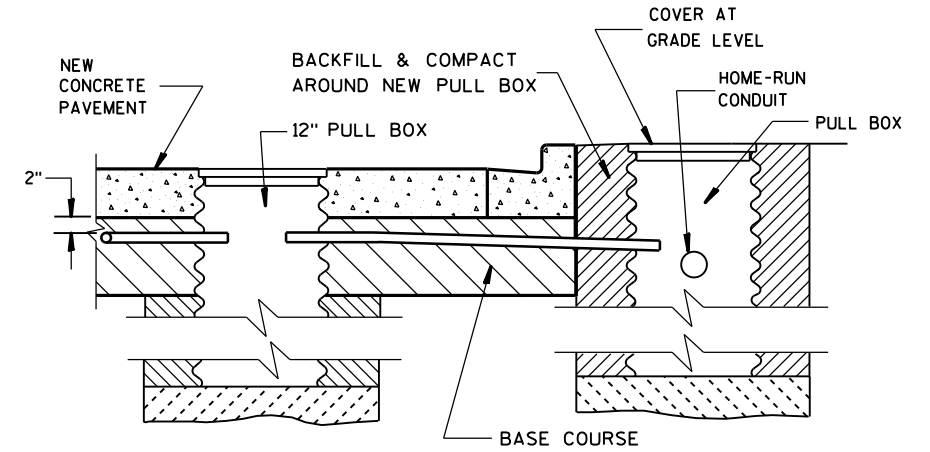
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

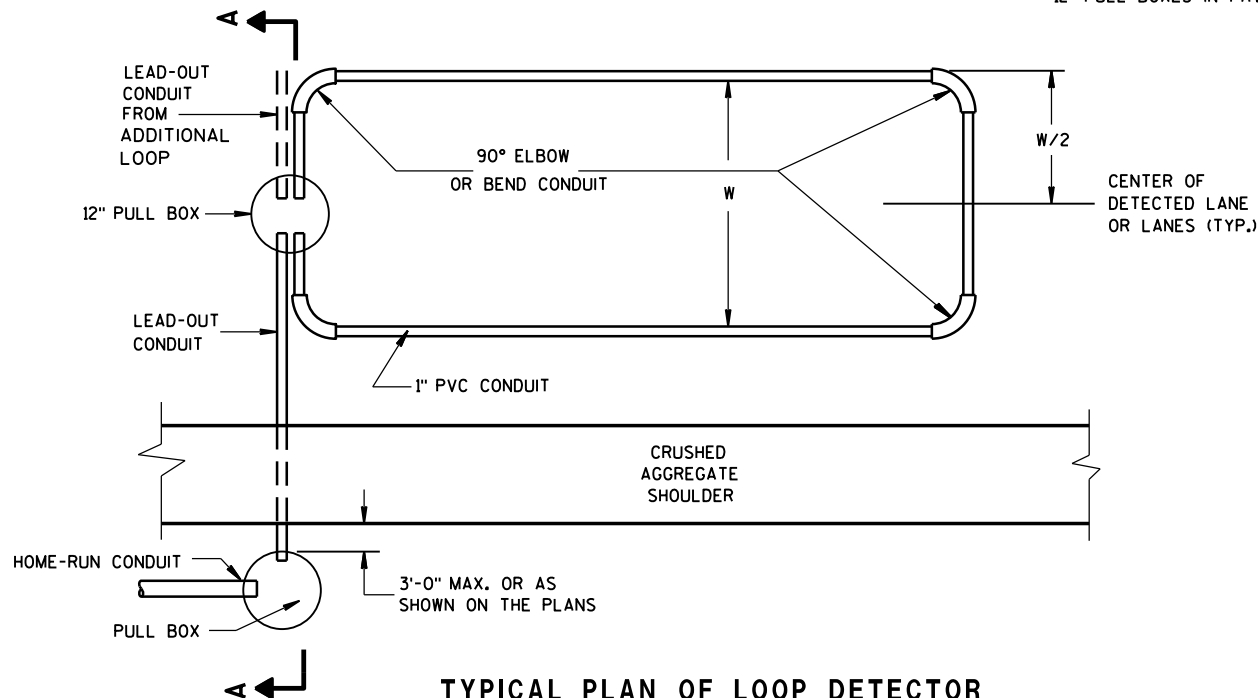
PROTECTION OF THE CONDUIT, CONDULET AND PULL BOX SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE NEW CONCRETE PAVEMENT IS PLACED.

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.

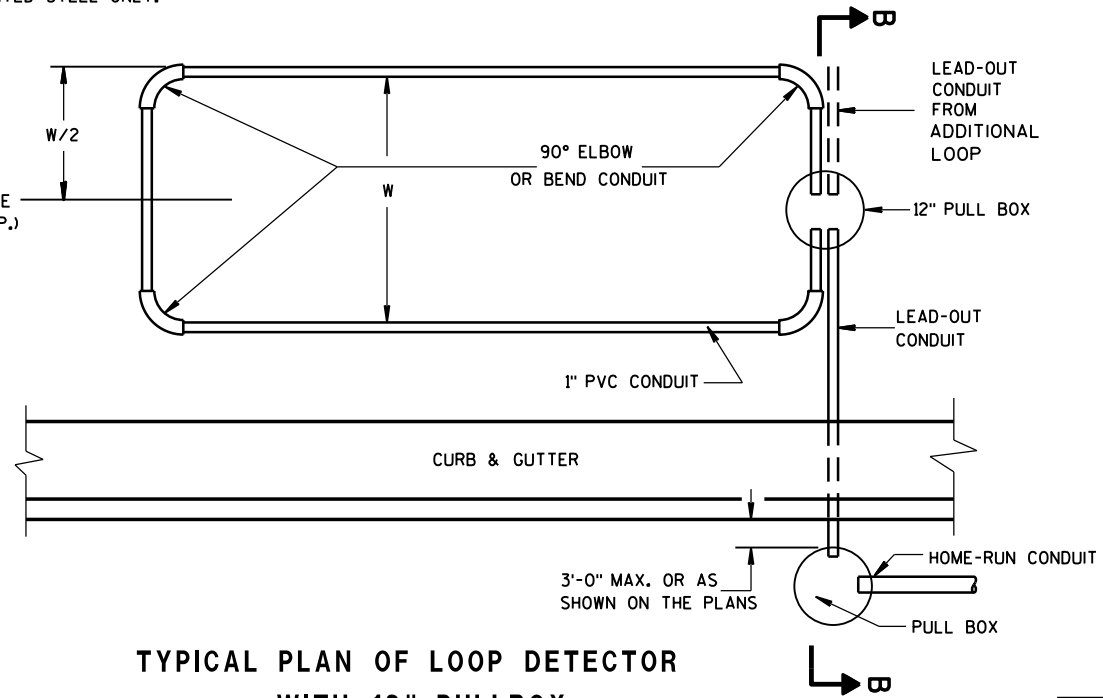


SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAILS



TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX



TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX

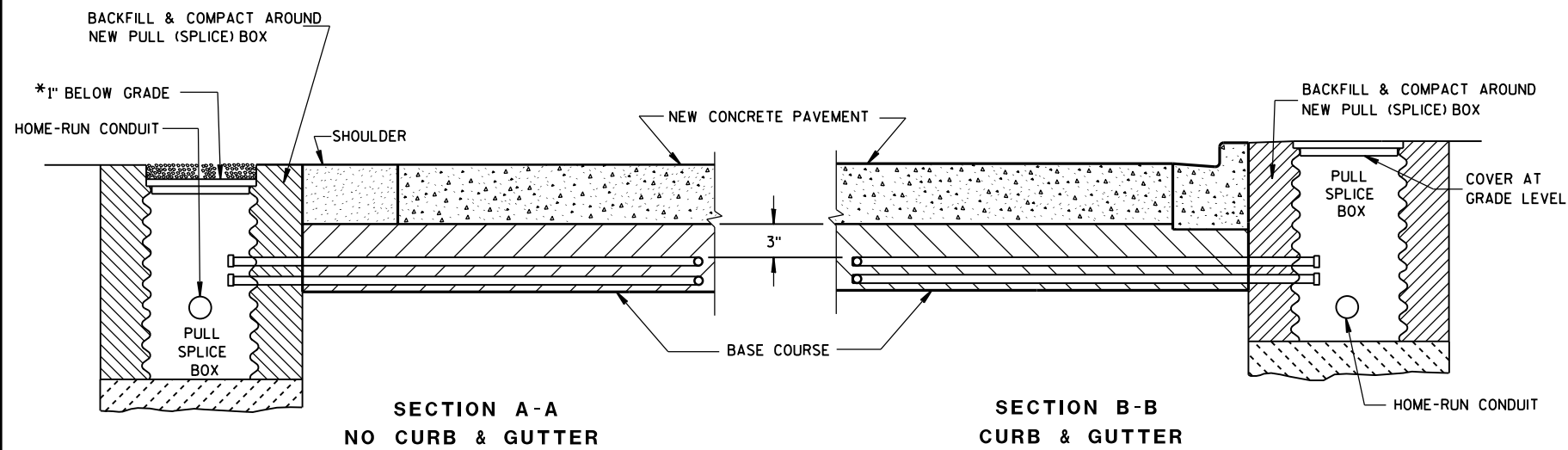
LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW CONCRETE PAVEMENT)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

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S.D.D. 9 F 9-4

S.D.D. 9 F 9-4



**SECTION A-A
NO CURB & GUTTER**

*RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

**SECTION B-B
CURB & GUTTER**

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

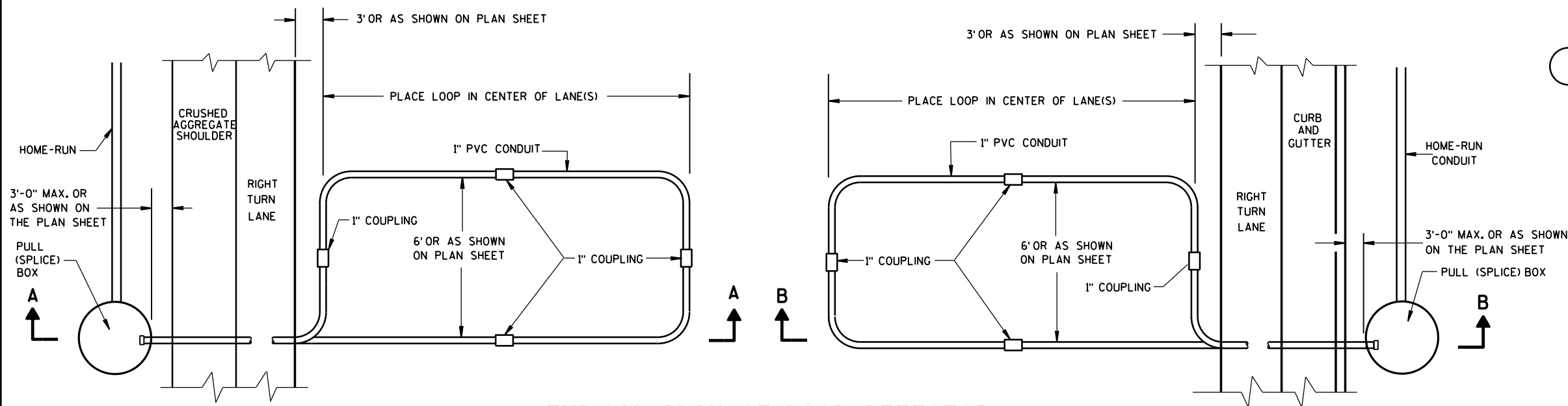
THE #12 AWG LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

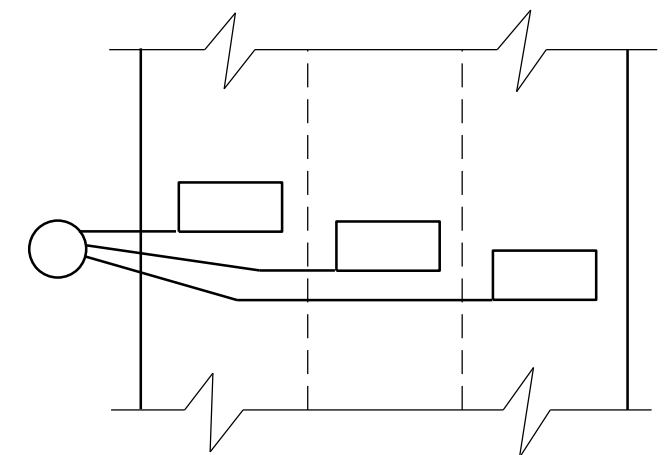
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 24" PULL (SPLICE) BOX



MULTI-LANE INSTALLATION

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)

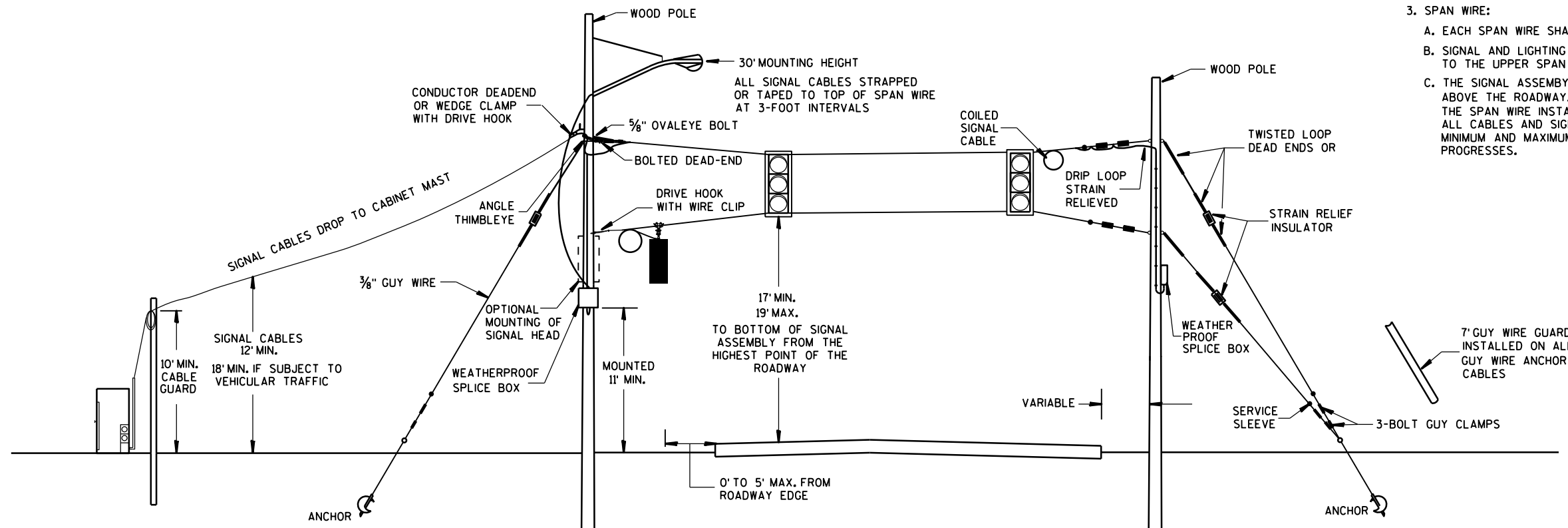
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: Sept. 2014 /S/ Ahmet Demirelek
STATE ELECTRICAL ENGINEER
FHWA

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.
2. SIGNAL FACES:
 - A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
 - B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
 - C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
 - D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
3. SPAN WIRE:
 - A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
 - B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
 - C. THE SIGNAL ASSEMBLY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.



SPAN WIRE TEMPORARY SIGNALS

MINIMUM POLE LENGTHS	POLE BURIAL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

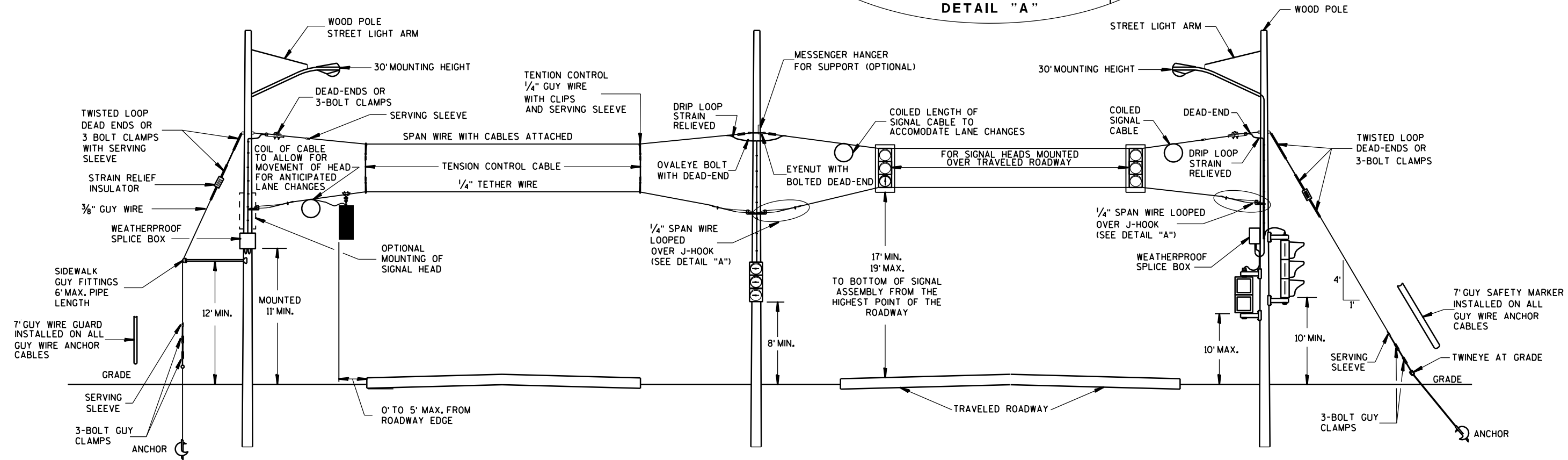
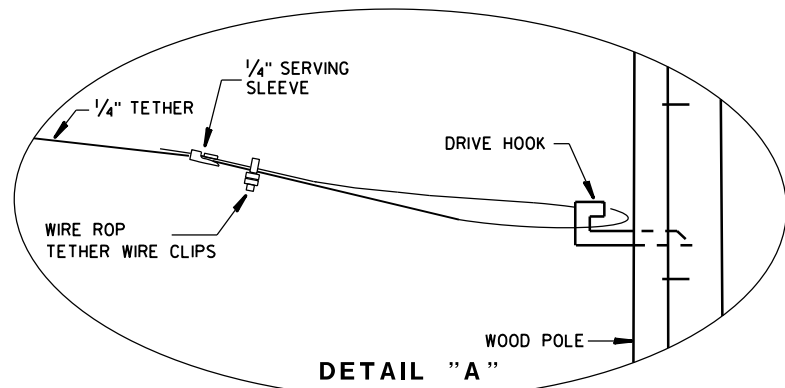
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015
DATE

FHWA

/s/ Ahmet Demirbilek
STATE ELECTRICAL ENGINEER



**SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS**

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.
2. SIGNAL FACES:
 - A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
 - B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
 - C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
 - D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
 - E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.

3. SPAN WIRE:
 - A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
 - B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
 - C. THE SIGNAL ASSEMBLY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.

MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
25'	Ⅴ	5'
30'	Ⅴ	6'
35'	Ⅳ	7'
40'	Ⅳ	8'
45'	Ⅳ	9'

**SPAN WIRE
TEMPORARY TRAFFIC SIGNAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

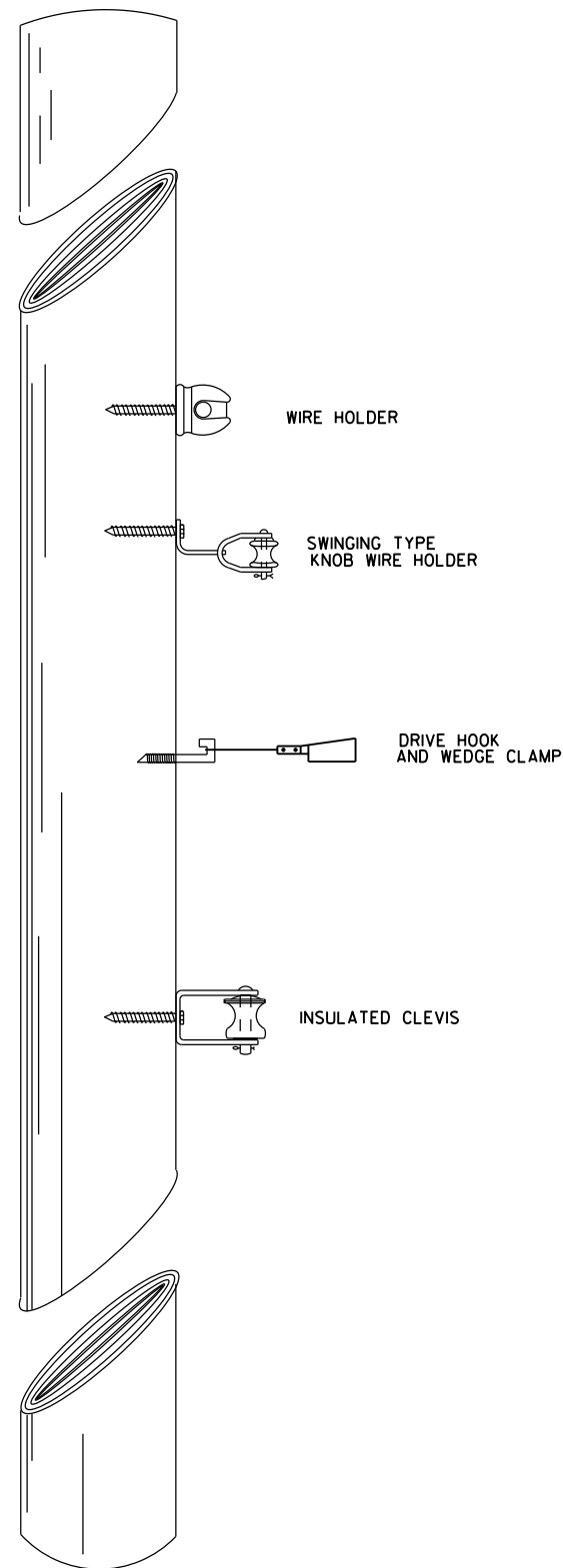
APPROVED
June, 2015 DATE /S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA

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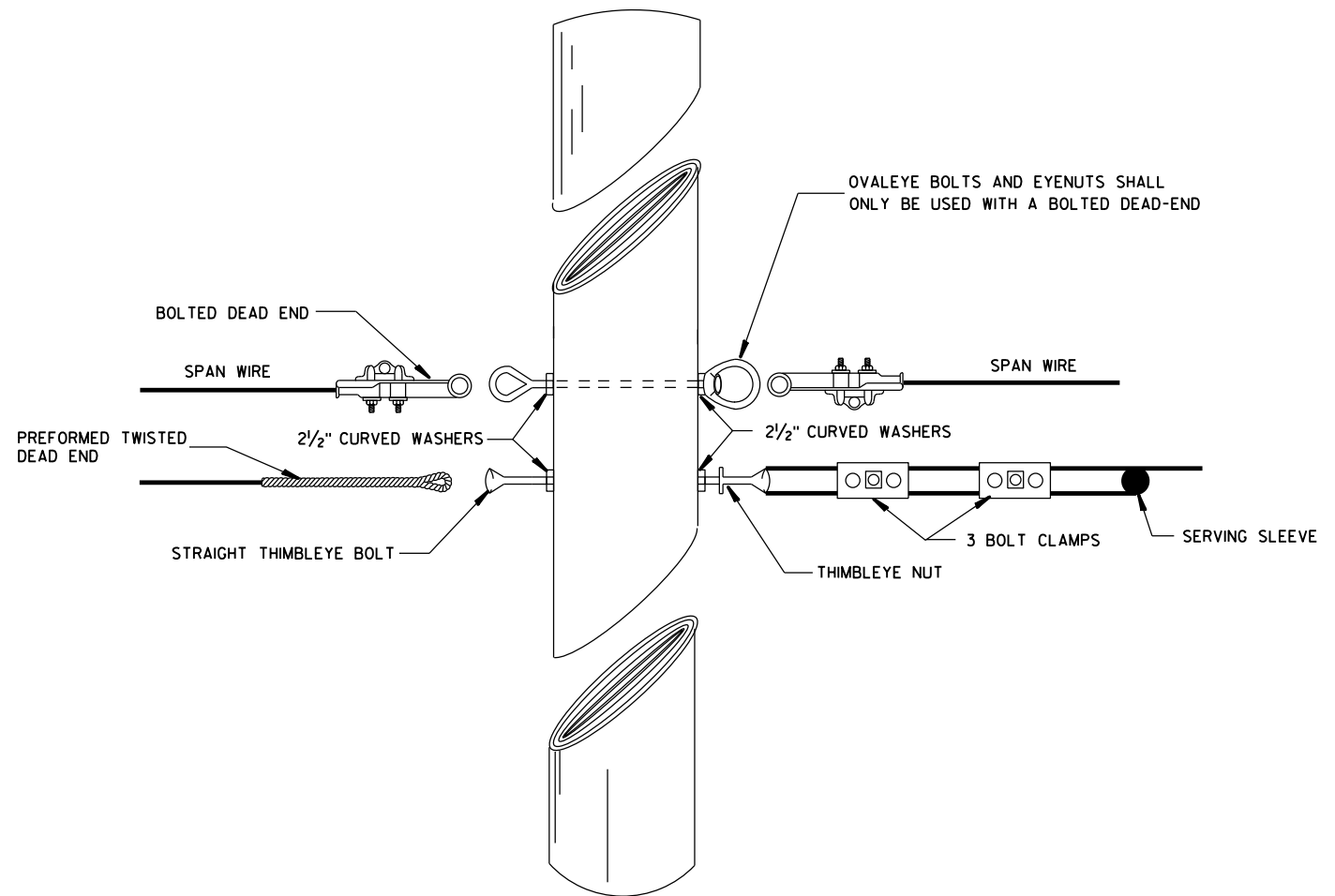
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S.D.D. 9 G 1-4c



TYPICAL CABLE HANGERS

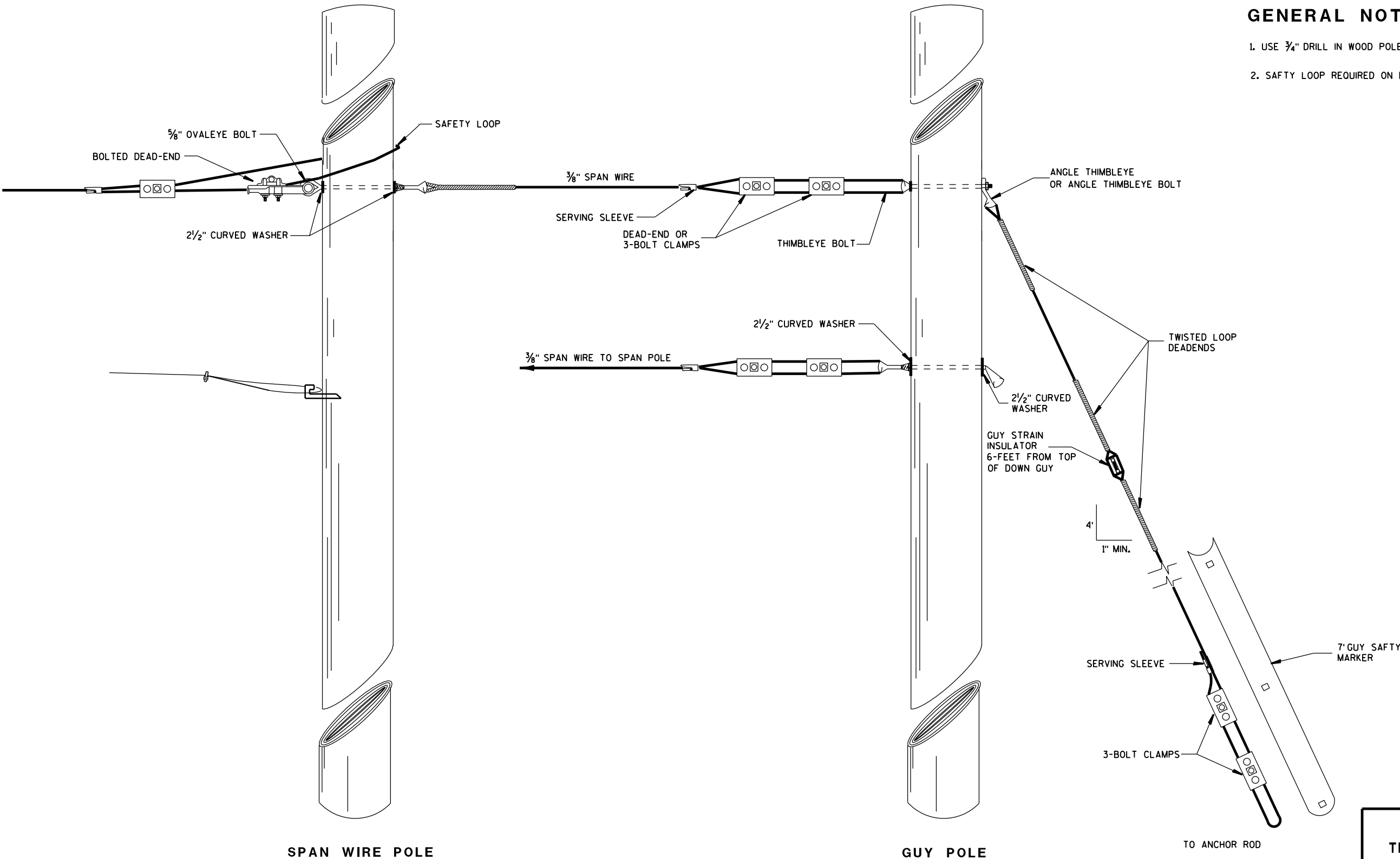


TYPICAL DEAD-ENDING

SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

GENERAL NOTES

- 1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.
- 2. SAFETY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.



6

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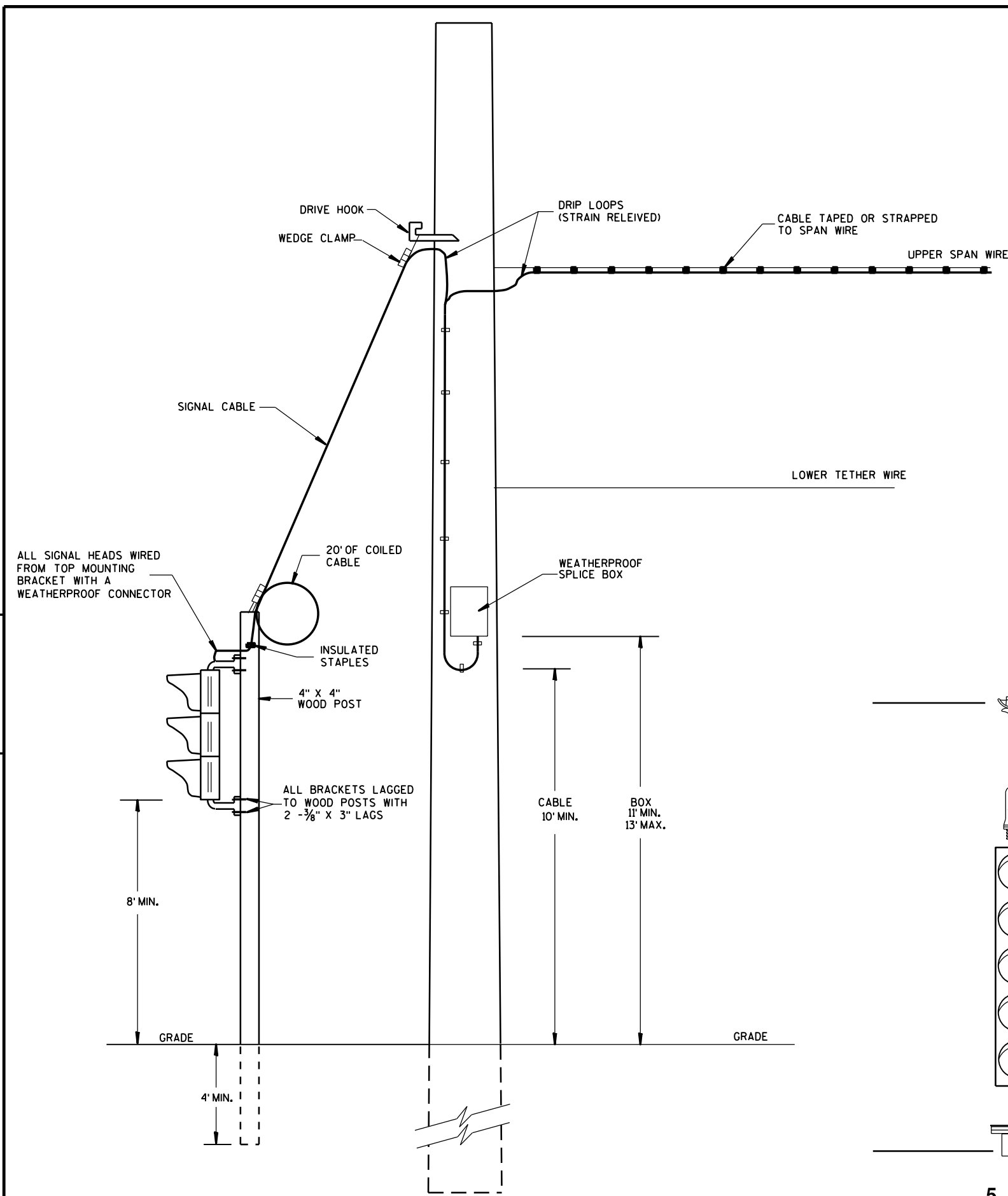
S.D.D. 9 G 1-4e

S.D.D. 9 G 1-4e

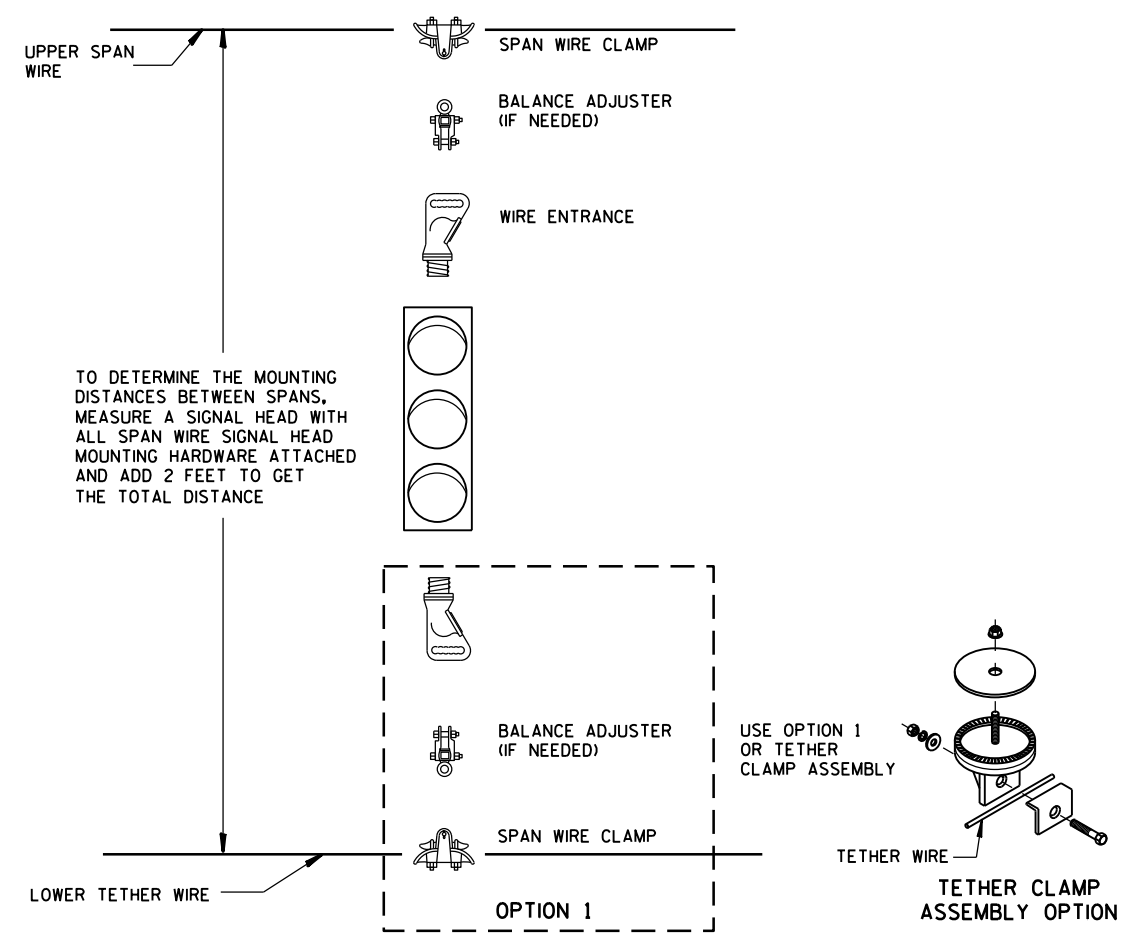
TYPICAL DEAD-ENDINGS OR GUYING

SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

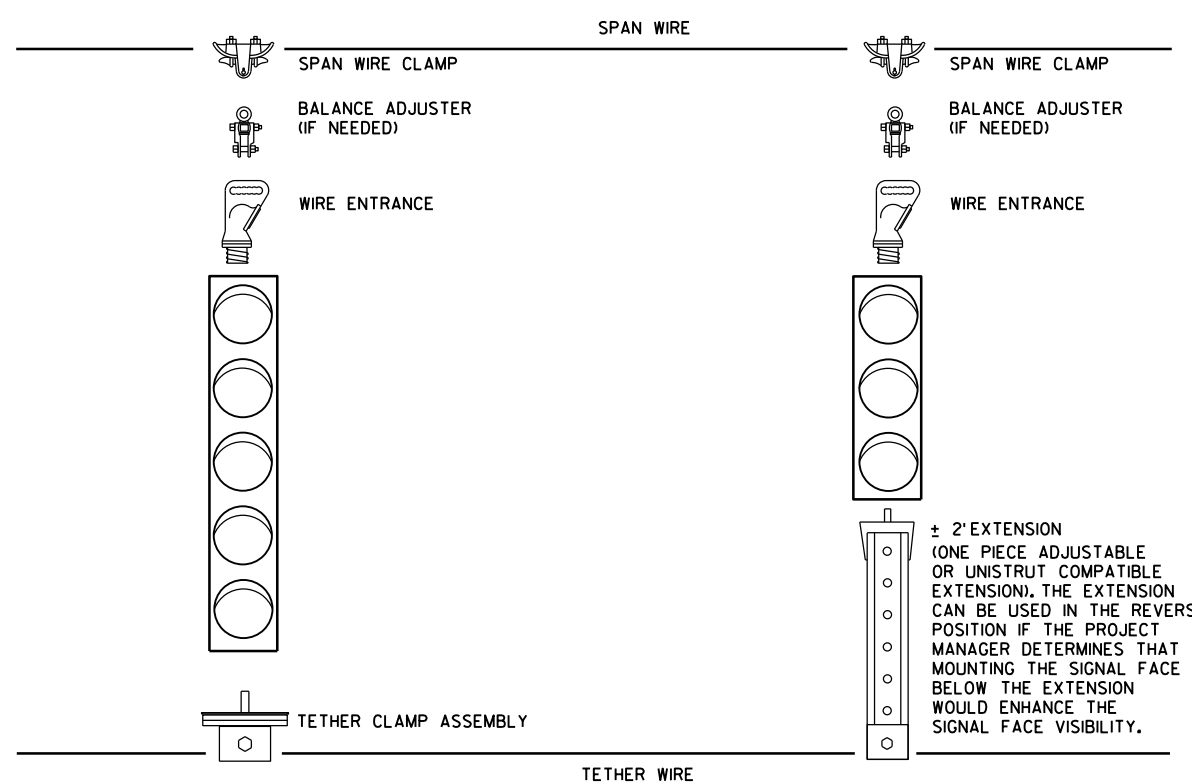
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TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL



TYPICAL SPAN WIRE MOUNTING HARDWARE

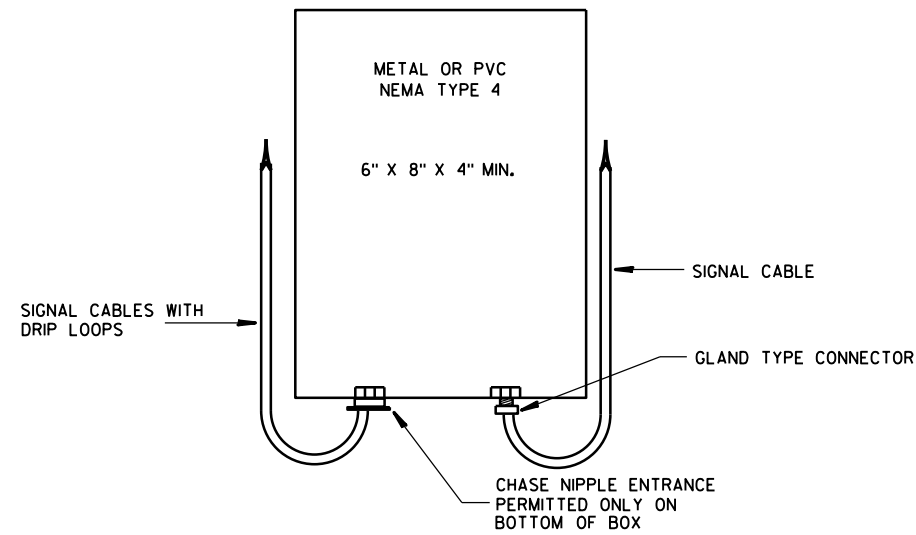
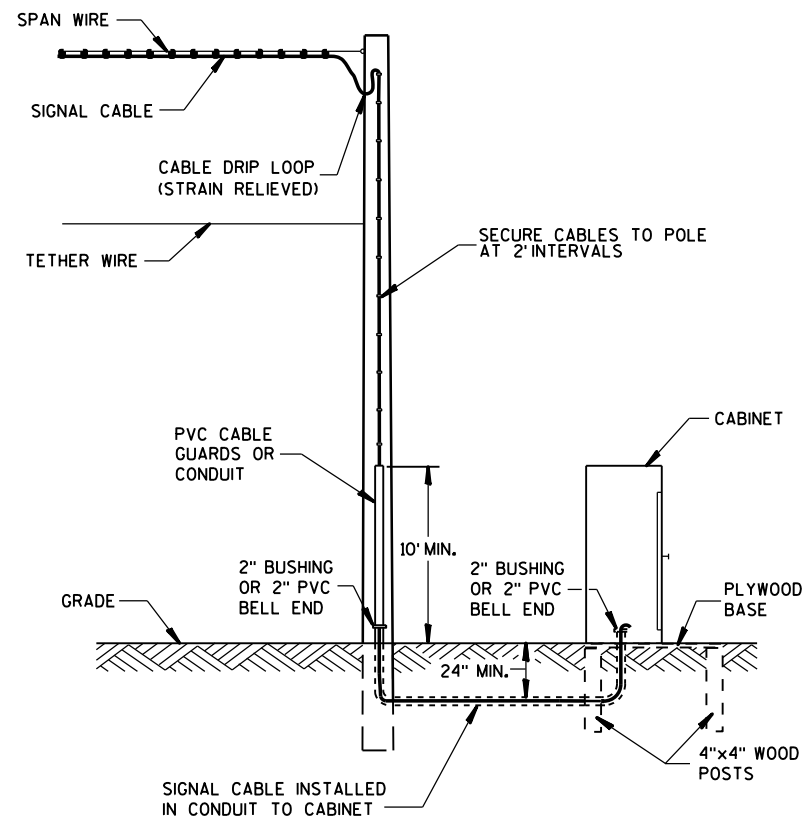


5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

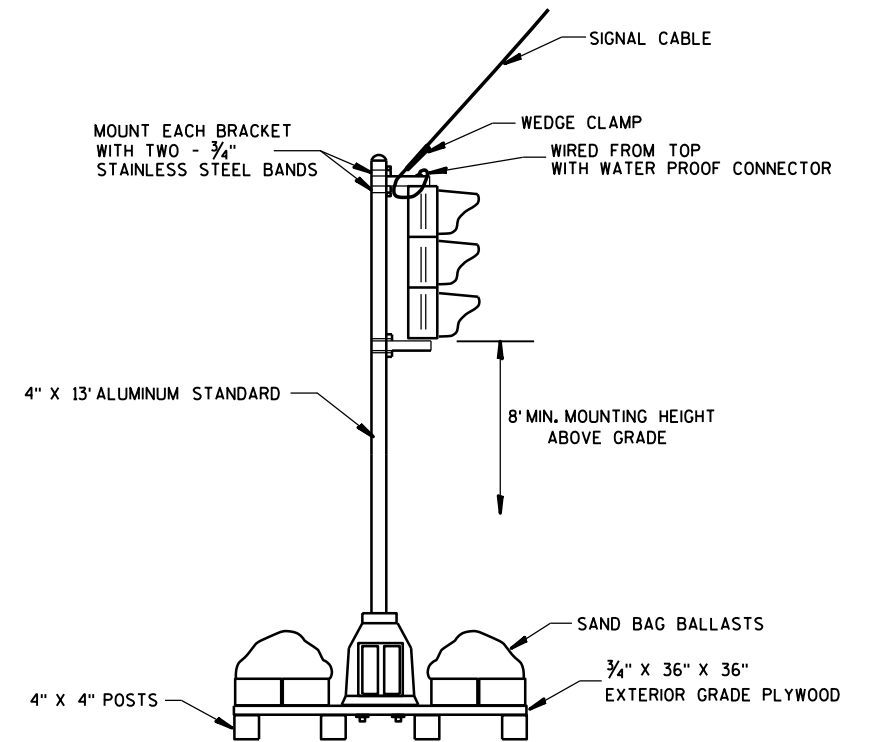
S.D.D. 9 G 1-4f

S.D.D. 9 G 1-4f

SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



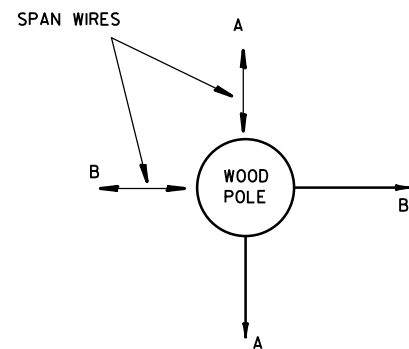
SPLICE BOX



TYPICAL SKID TYPE TEMPORARY

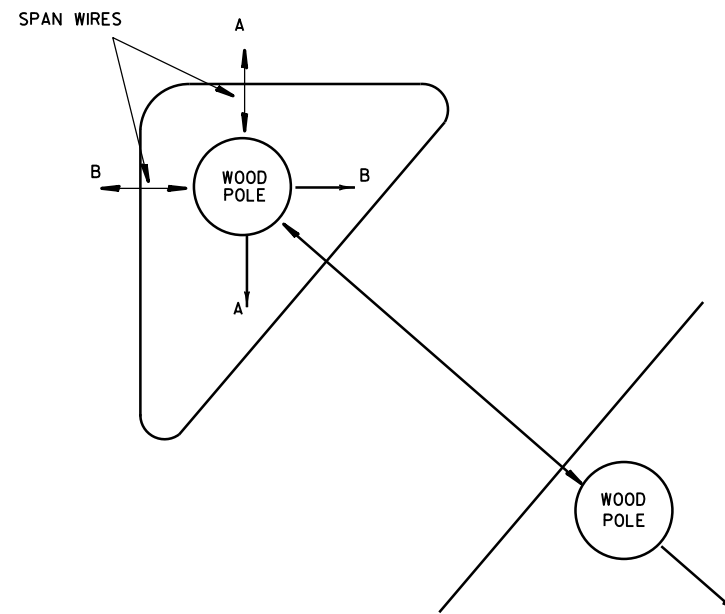
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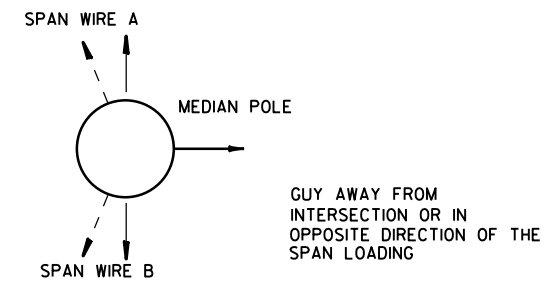


ALL DOWN OR SIDEWALK GUYS SHALL BE INSTALLED IN THE OPPOSITE DIRECTION OF THE STRAIN OF THE SPAN WIRE

CORNER POLES



ISLAND POLES

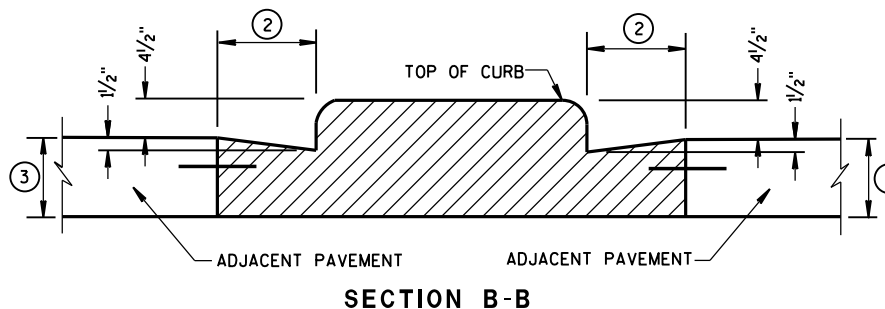
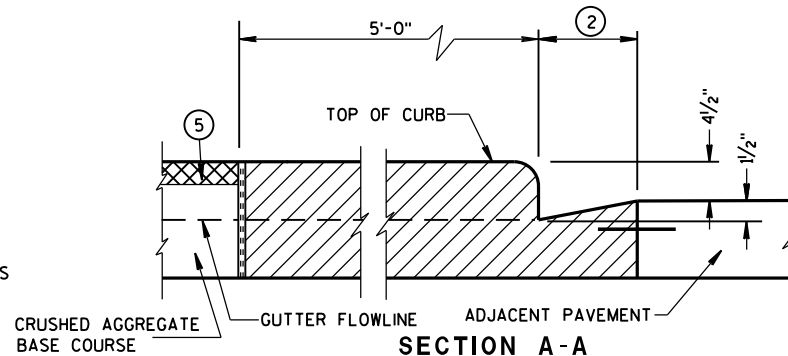
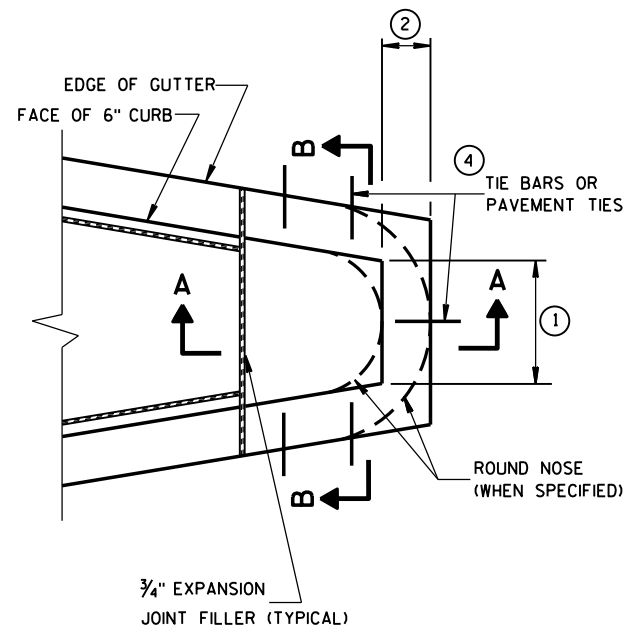
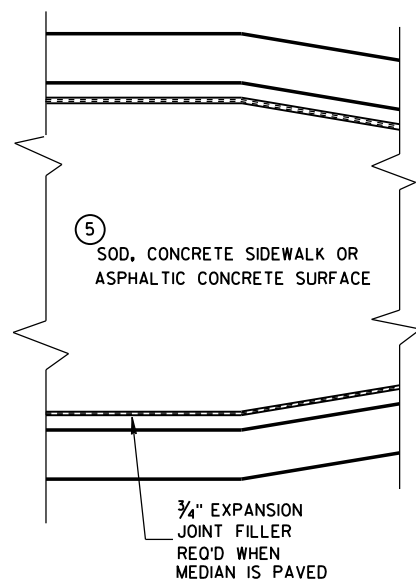


MEDIAN POLES

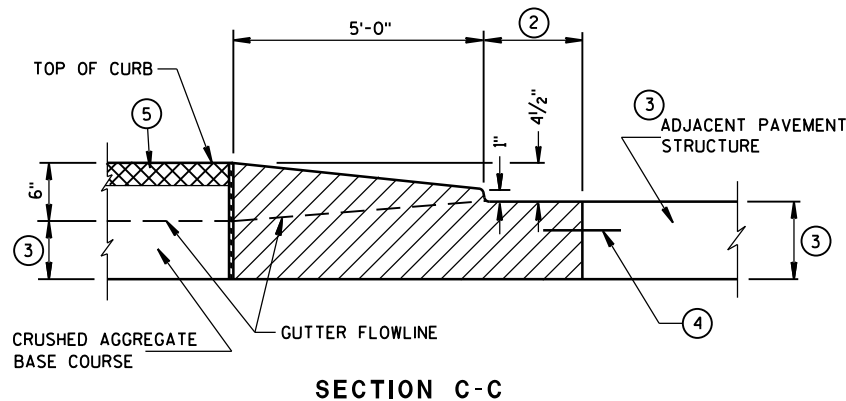
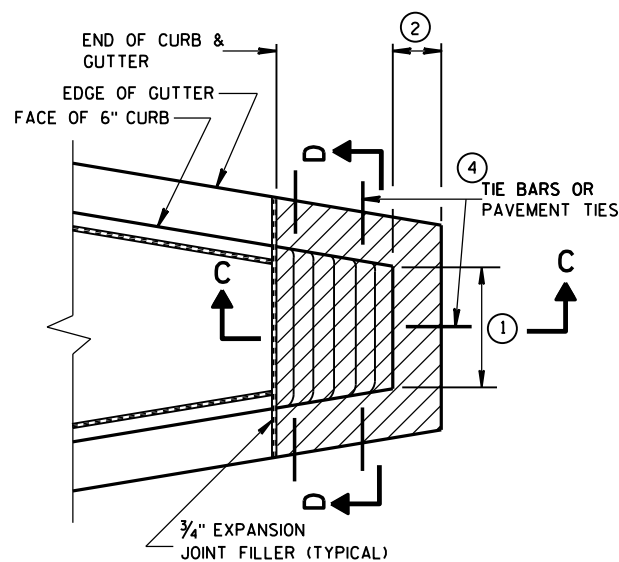
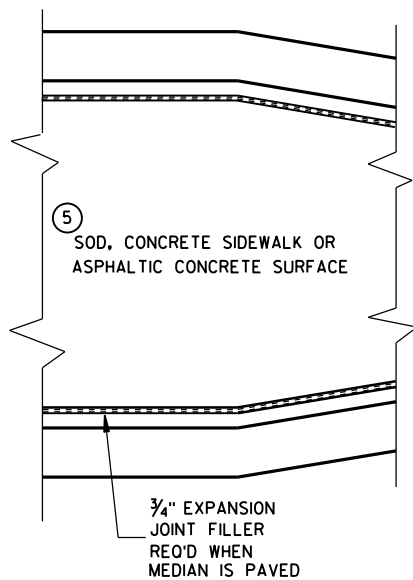
SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

S.D.D. 9 G 1-49

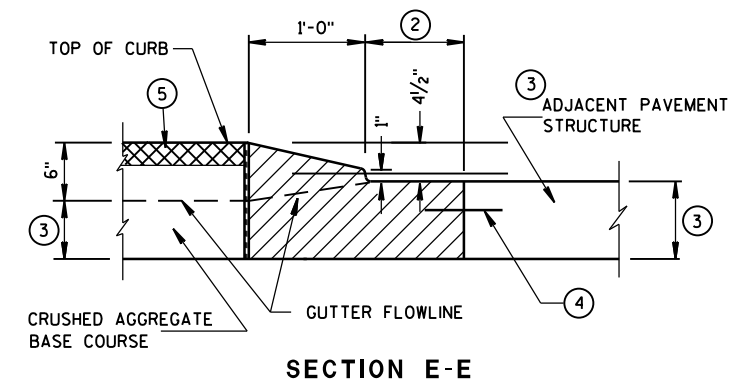
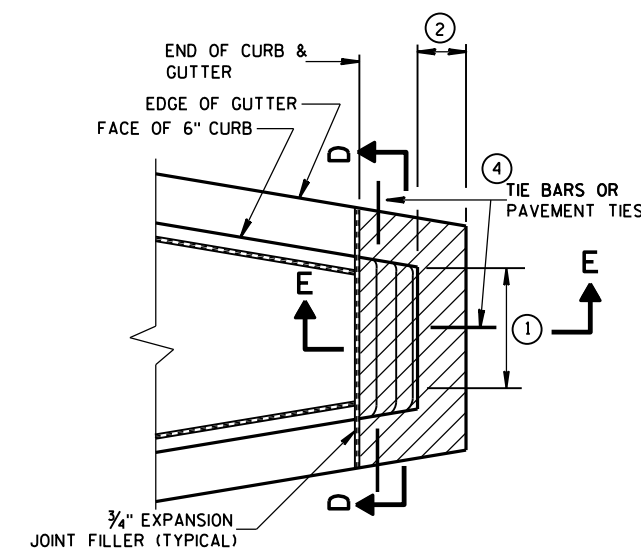
S.D.D. 9 G 1-49



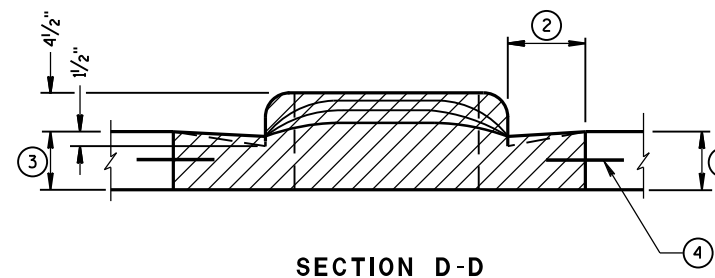
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

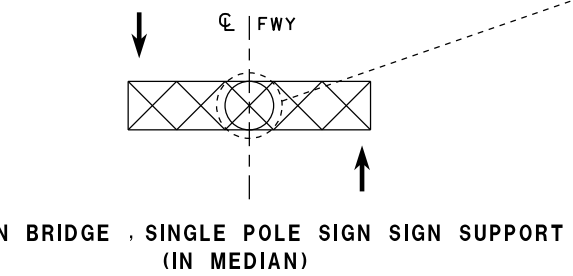
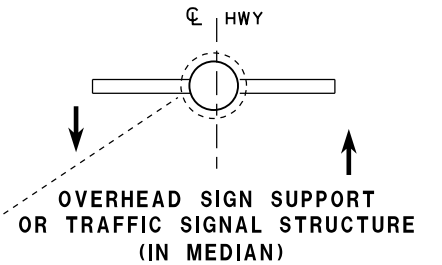
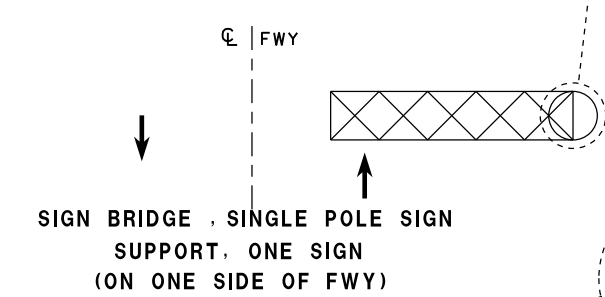
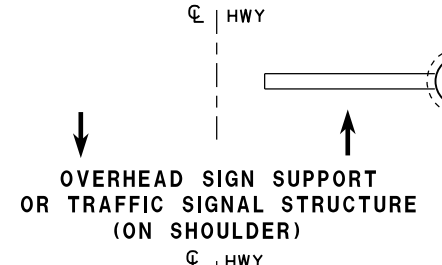
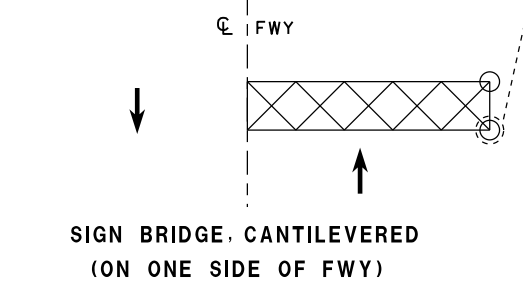
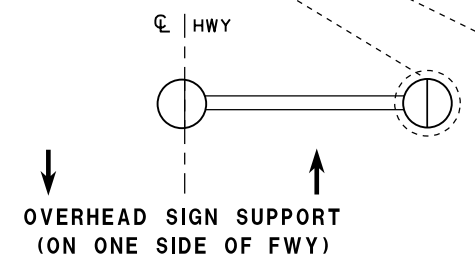
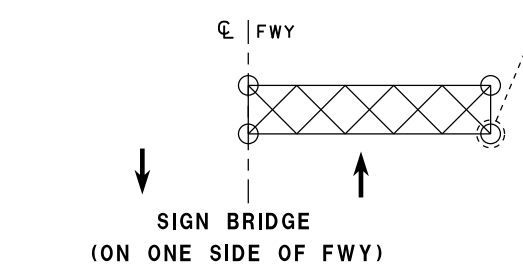
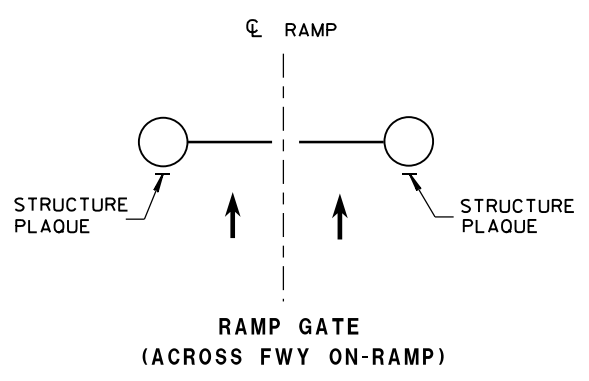
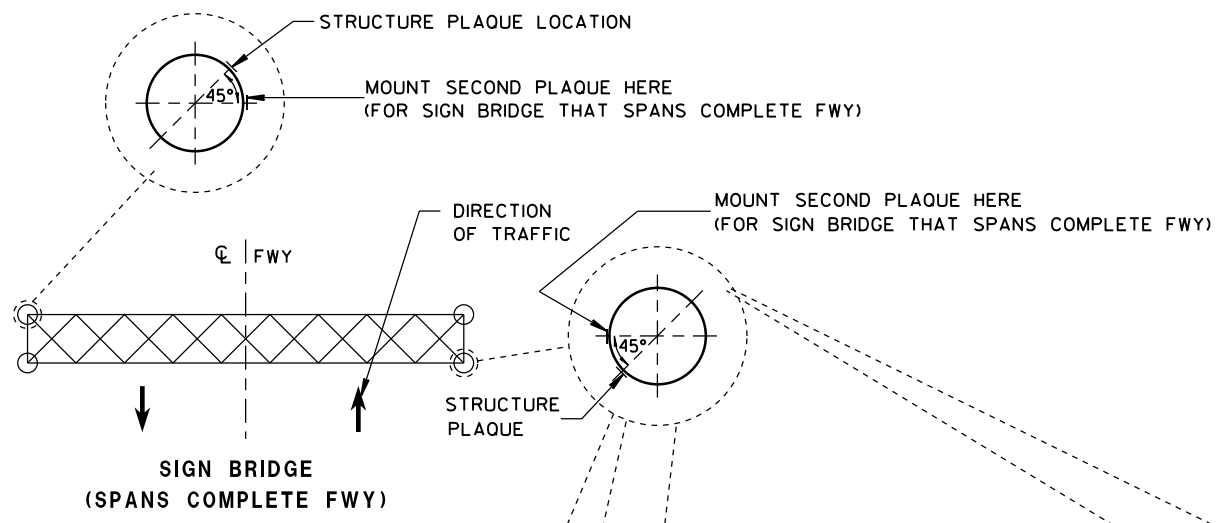
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.
- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.
- PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.
- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

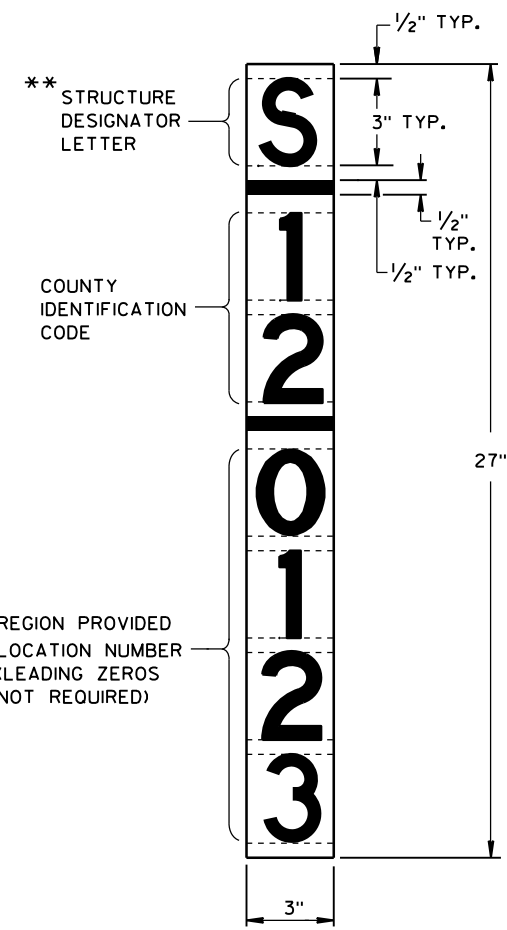
CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/8/2006 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



* WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.



GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

- GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS
- A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS
- ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

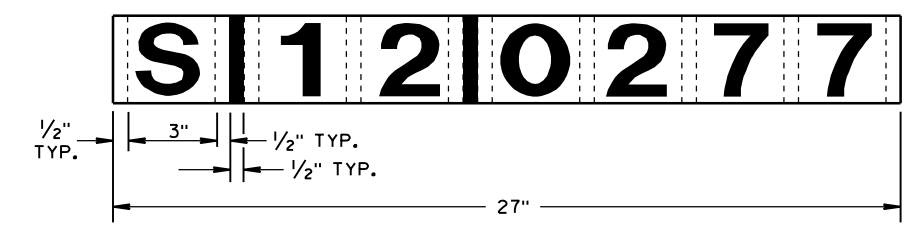
MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

- BASE - SHEET ALUMINUM, 0.060" THICK.
- FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE
- LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE
- CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.



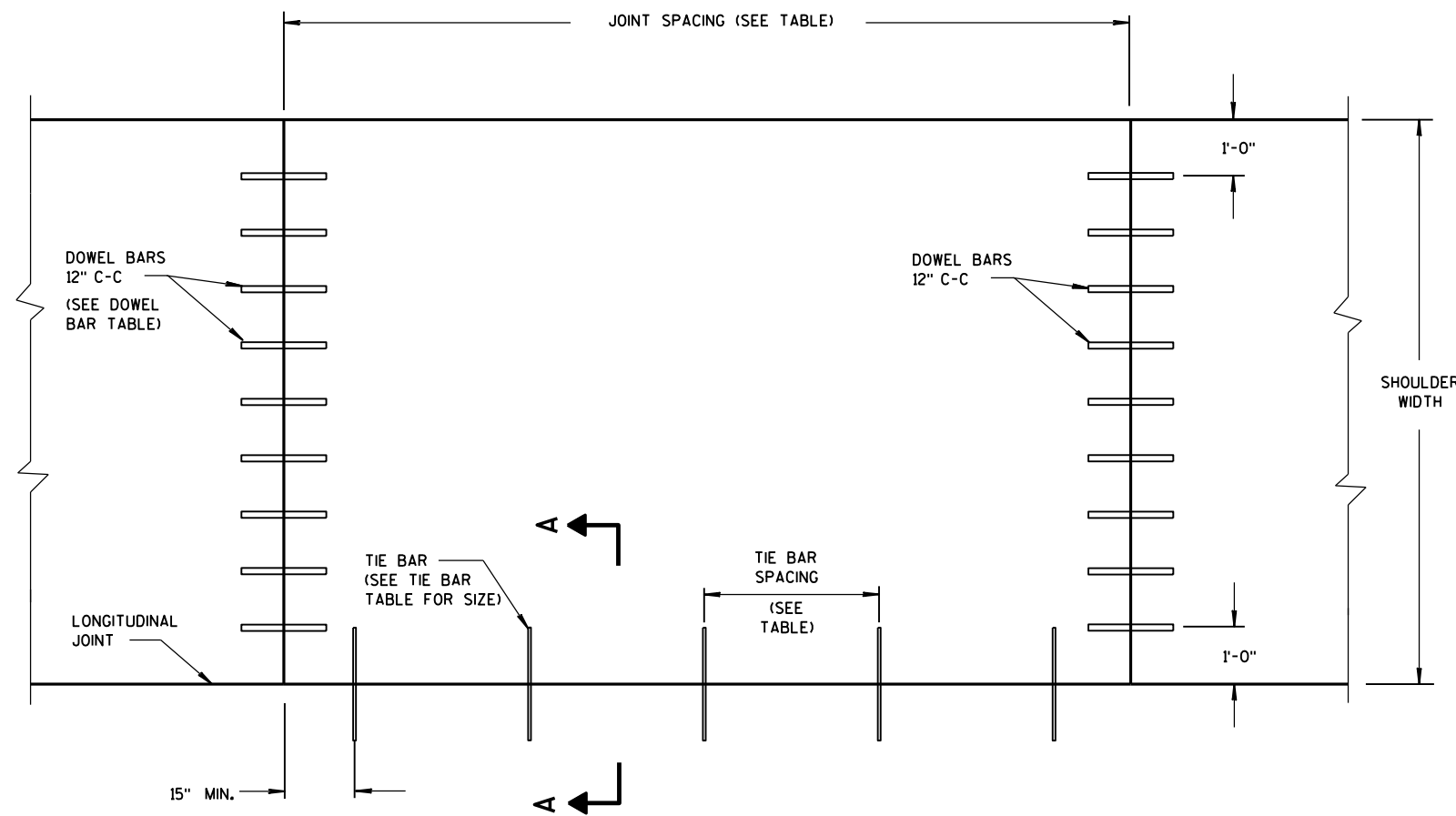
IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES

RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/4/2012 DATE	/s/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

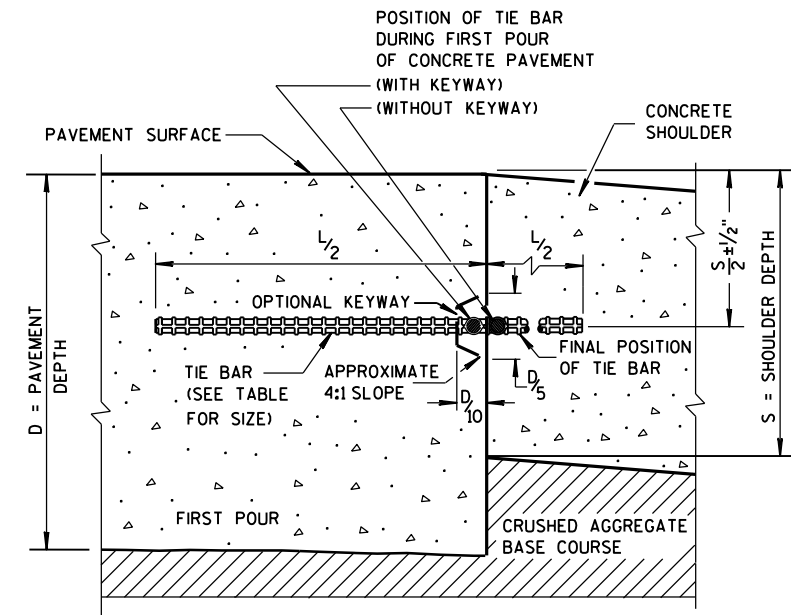
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

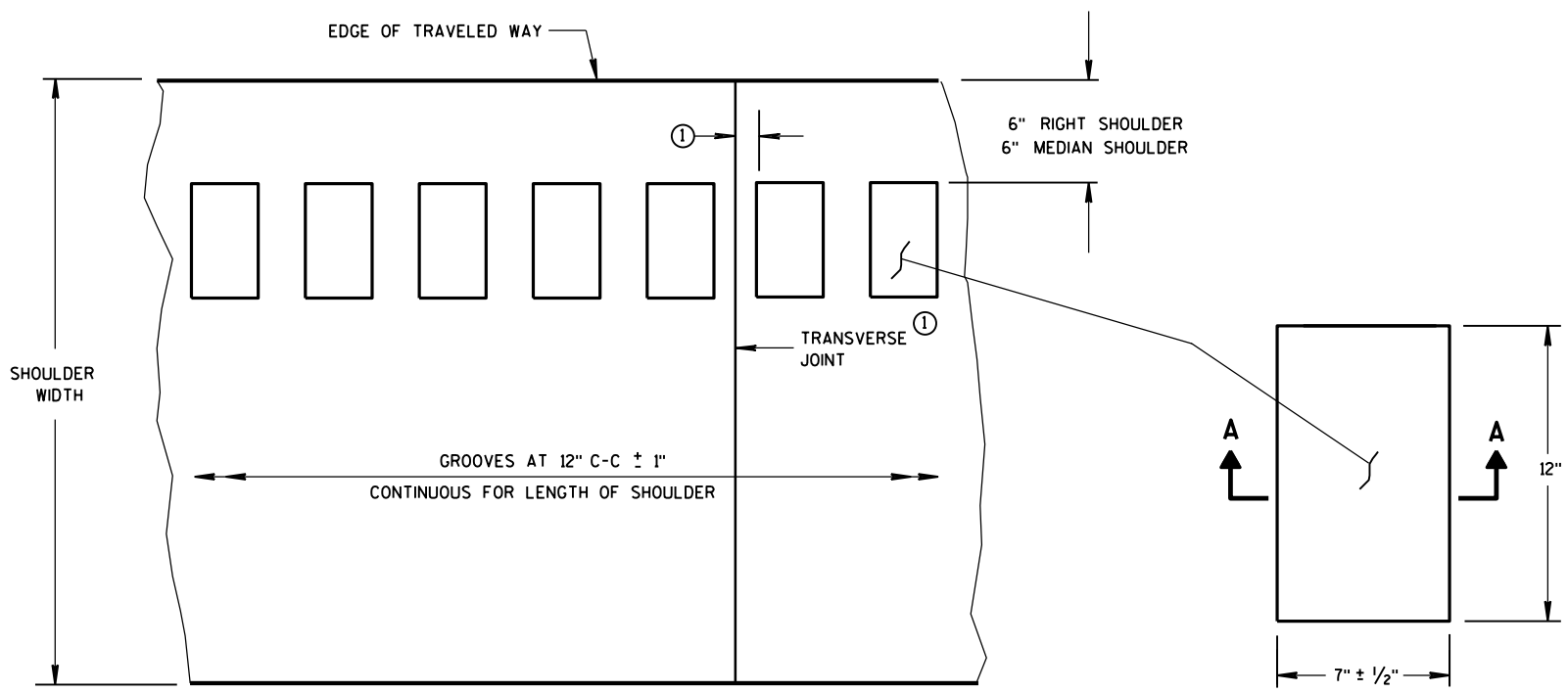
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER***	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

*** FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

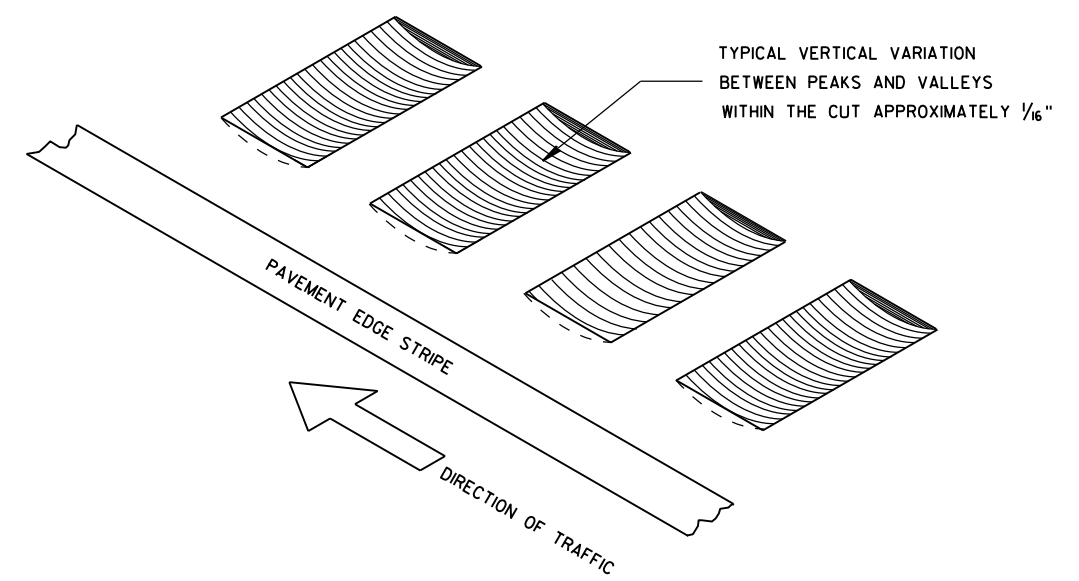
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

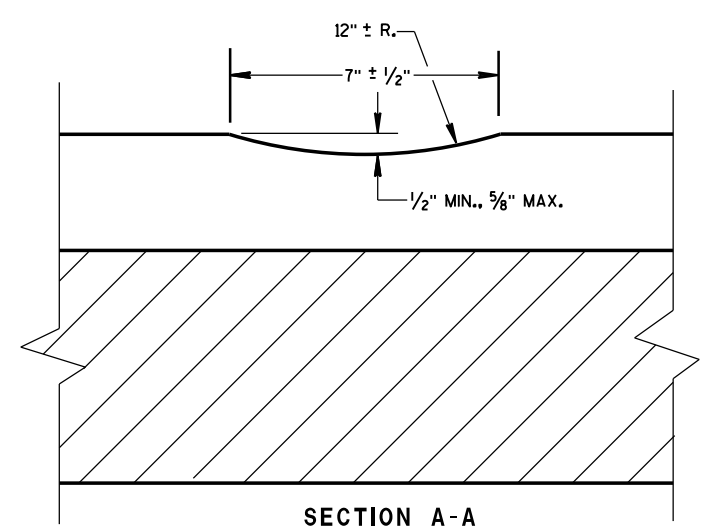
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

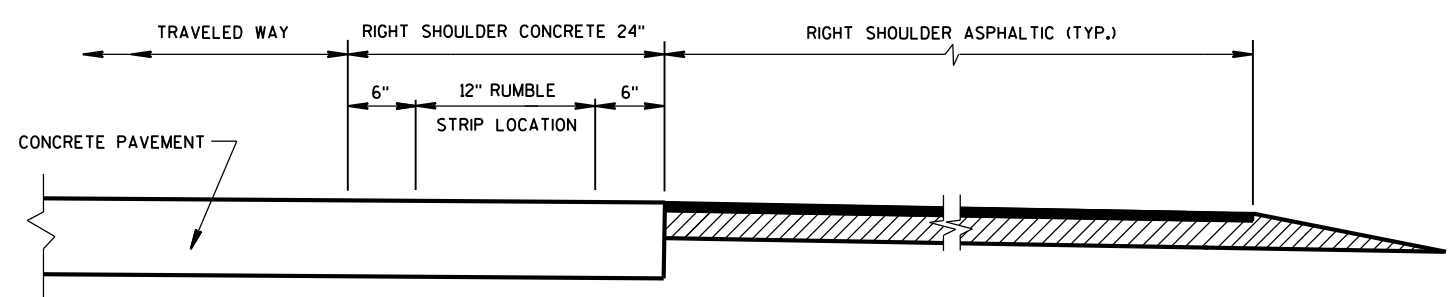
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



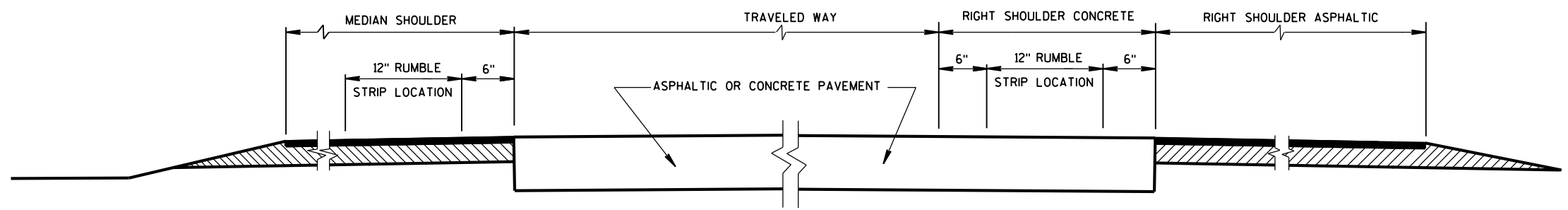
ISOMETRIC



SECTION A-A



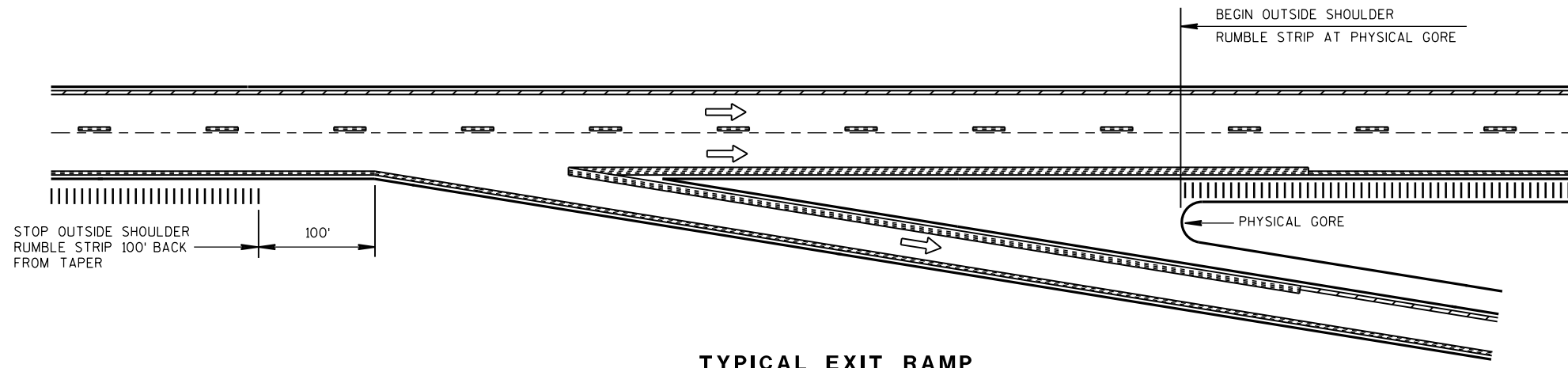
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

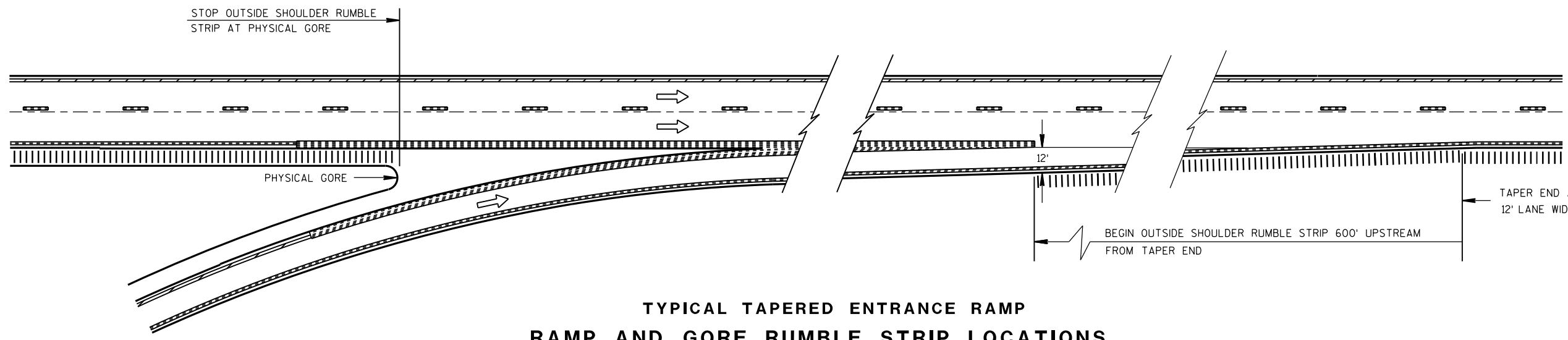


TYPICAL EXIT RAMP

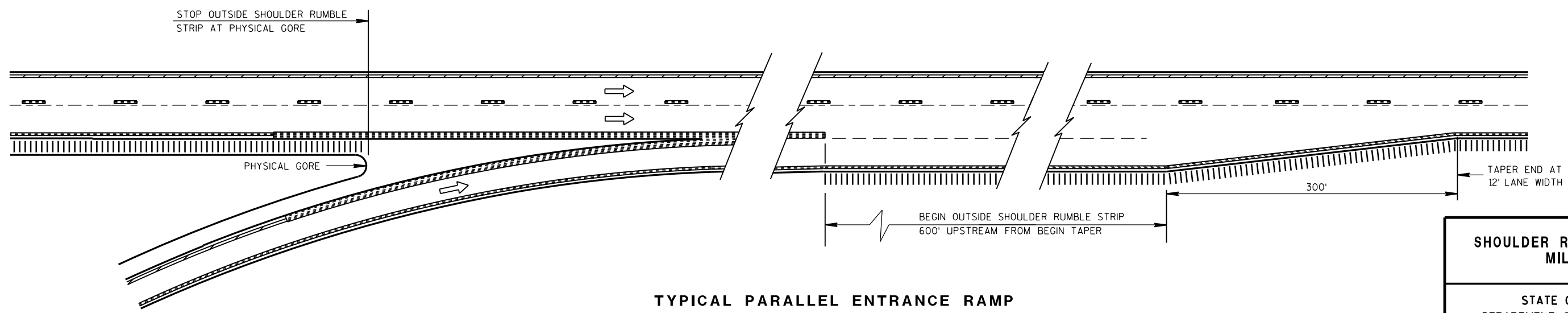
NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.
 PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
 ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP
 RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP
 RAMP AND GORE RUMBLE STRIP LOCATIONS

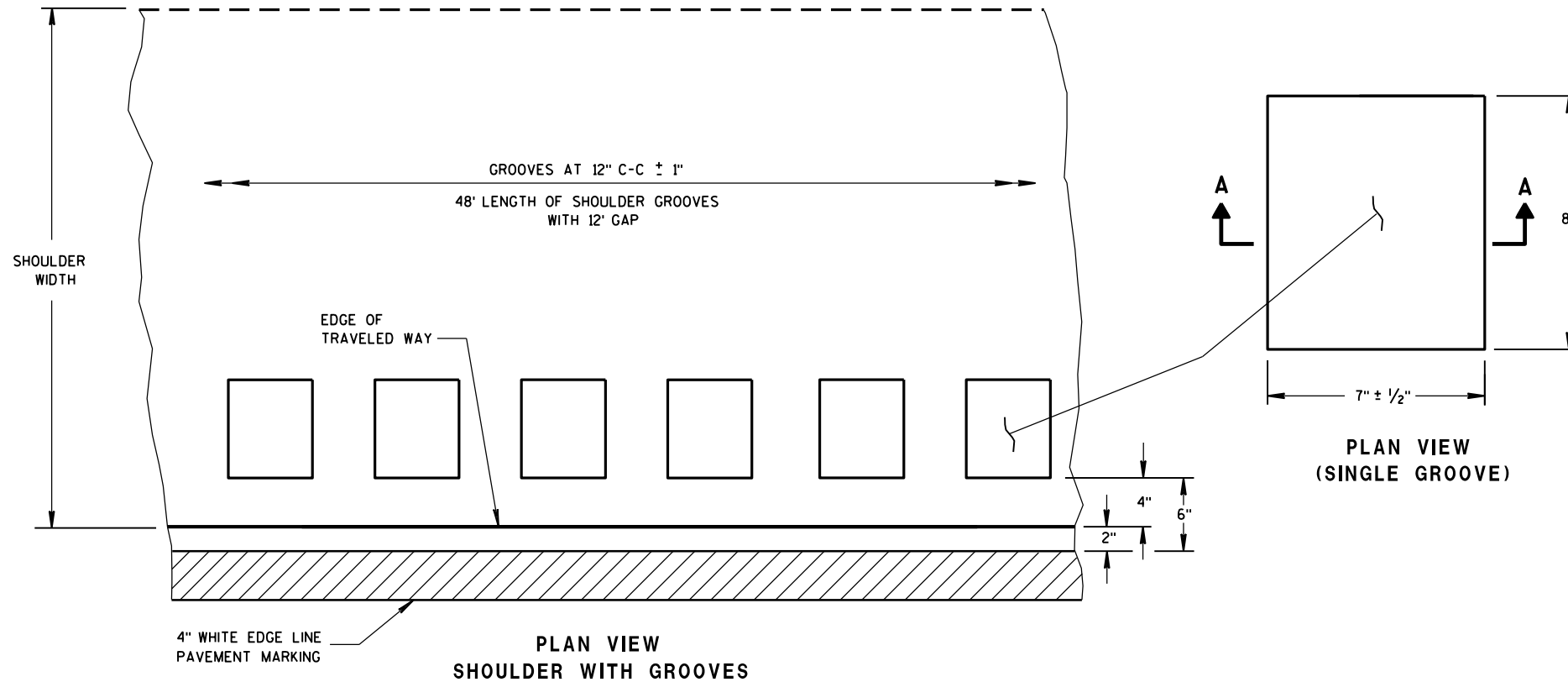
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S.D.D. 13 A 5-5b

S.D.D. 13 A 5-5b

SHOULDER RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 12/17/2012	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



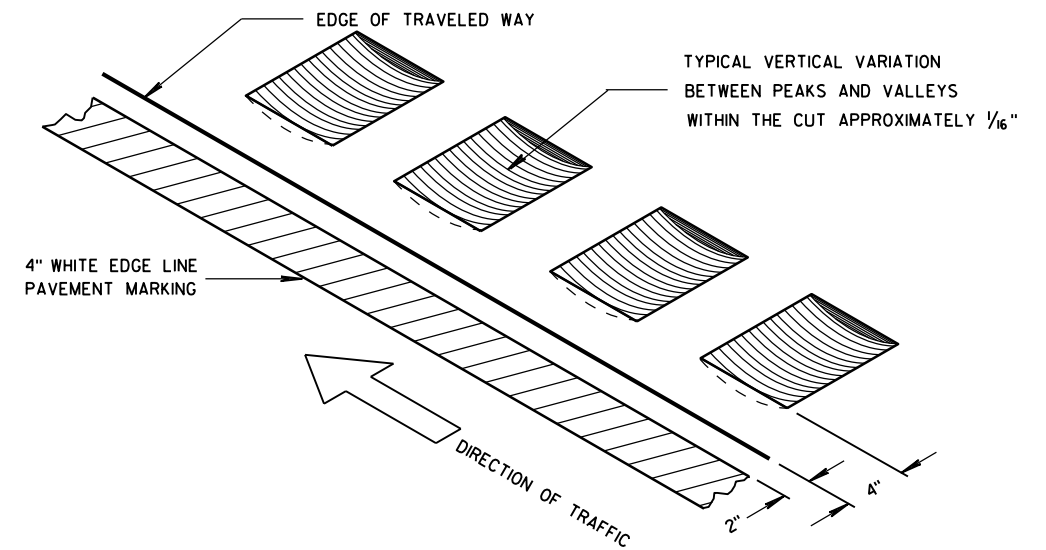
PLAN VIEW
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

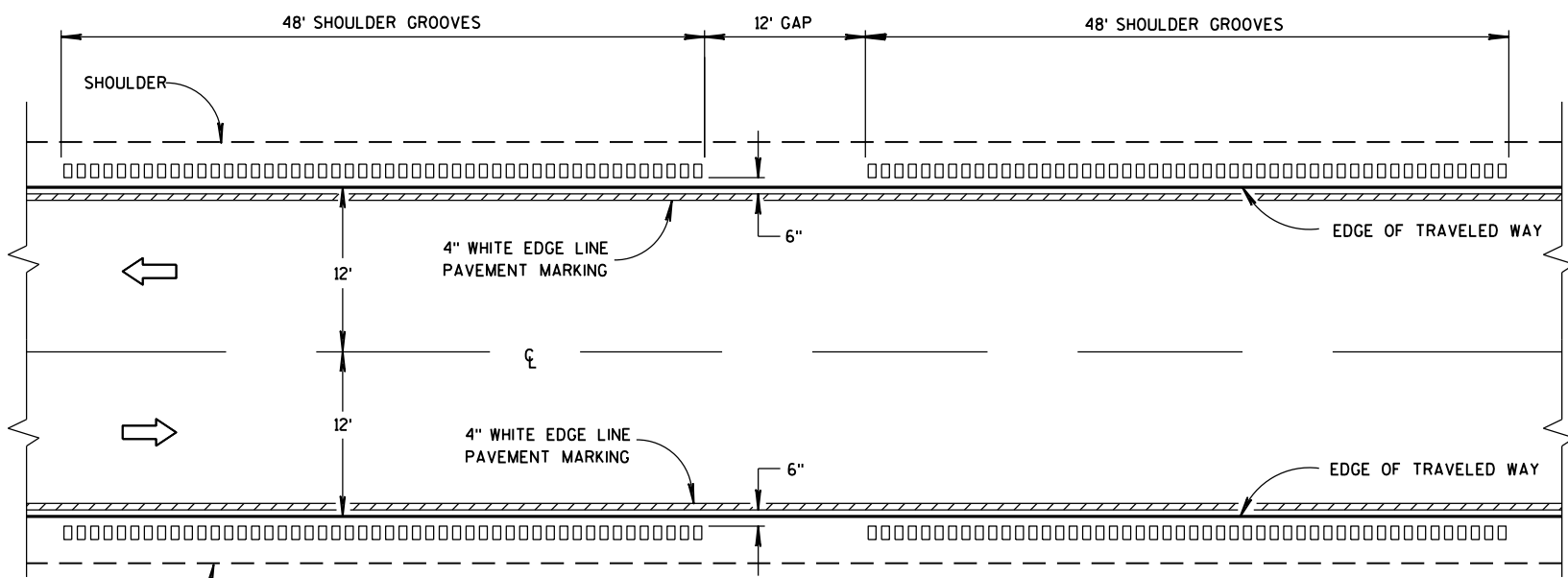
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

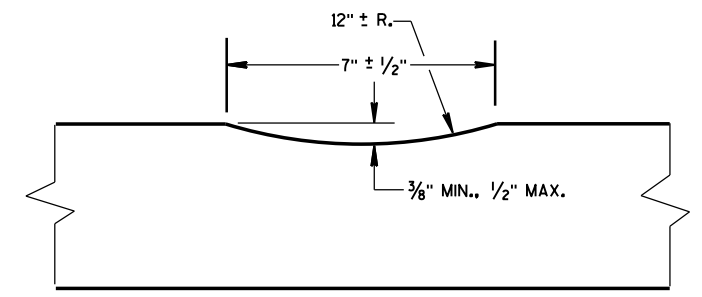
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



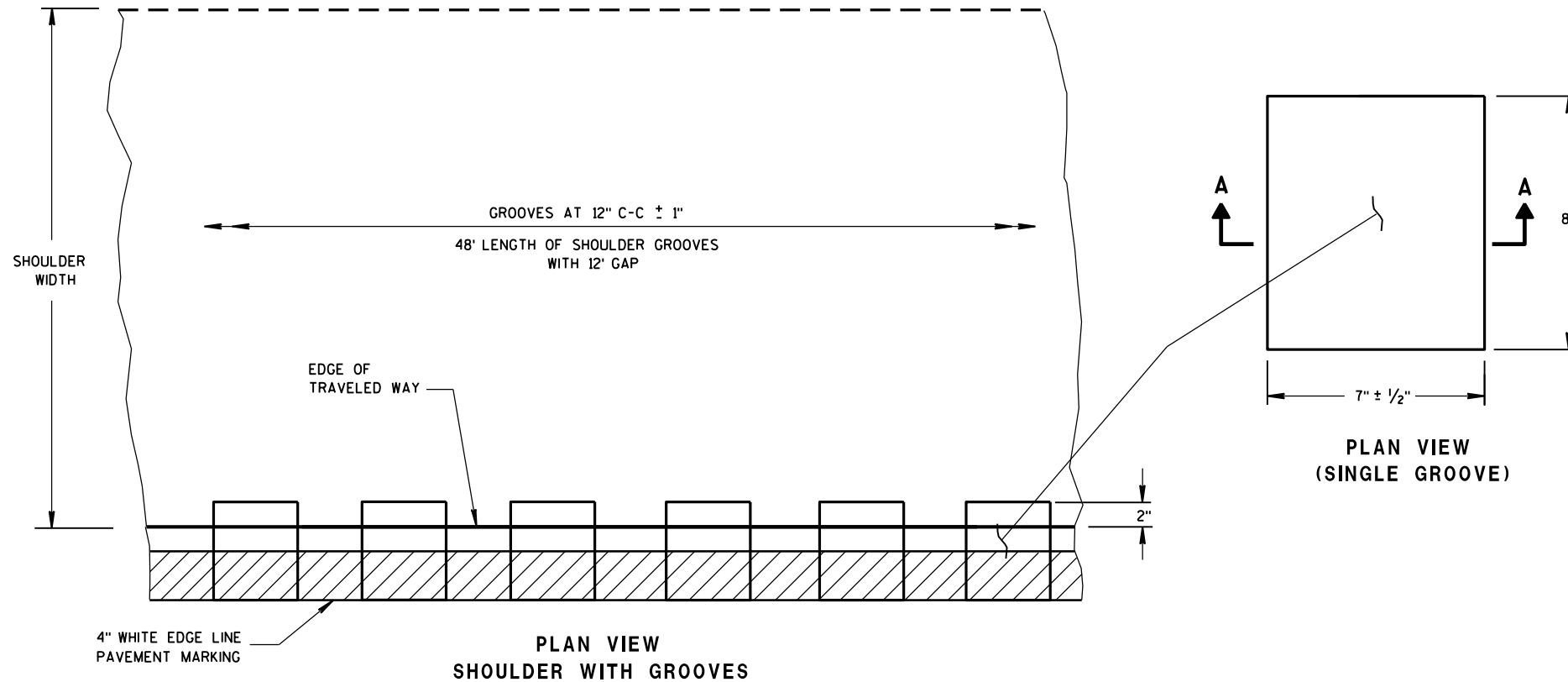
TYPE 1
2-LANE SHOULDER RUMBLE STRIP



SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



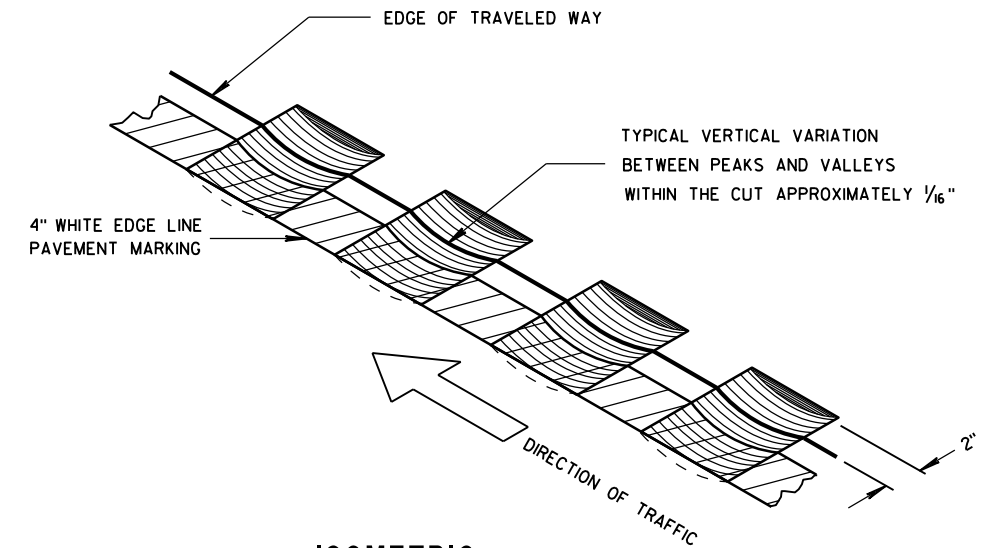
PLAN VIEW
SHOULDER WITH GROOVES

PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP

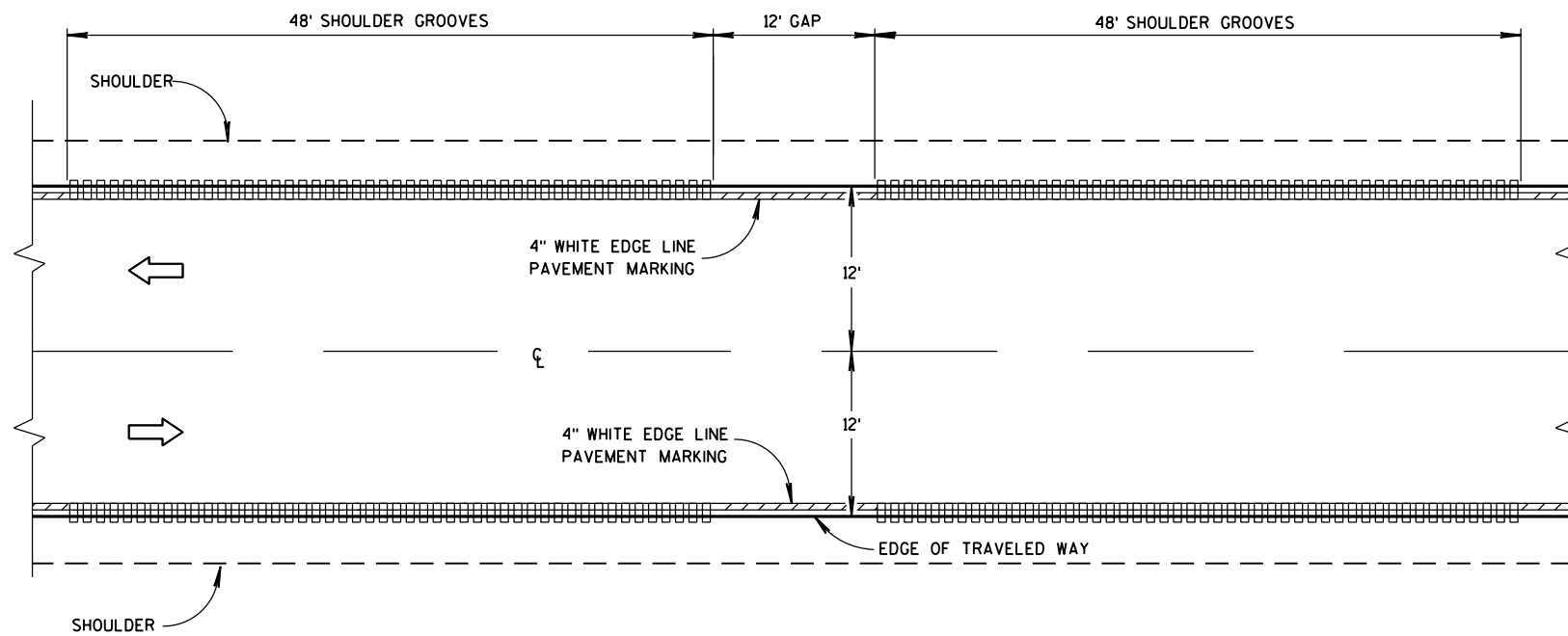
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

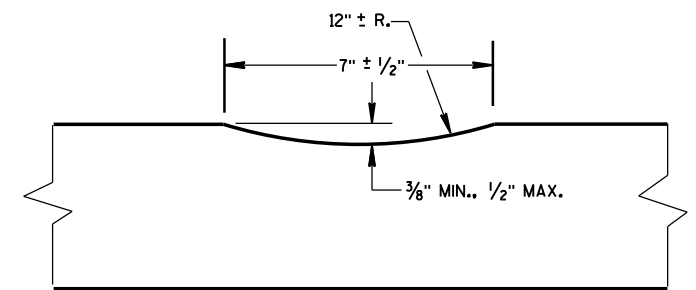
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



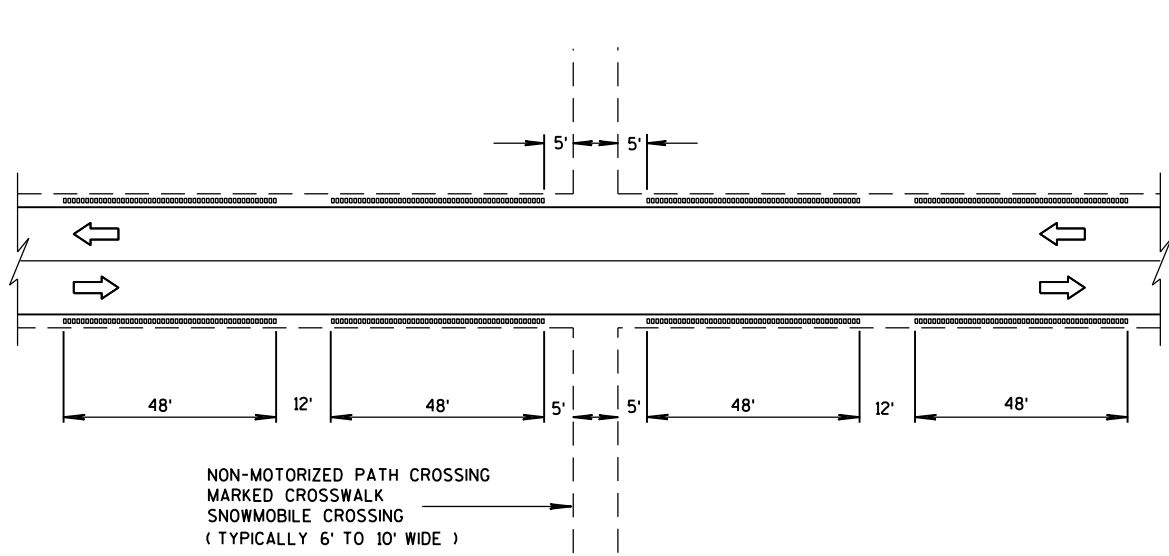
**TYPE 2
2-LANE SHOULDER RUMBLE STRIP**



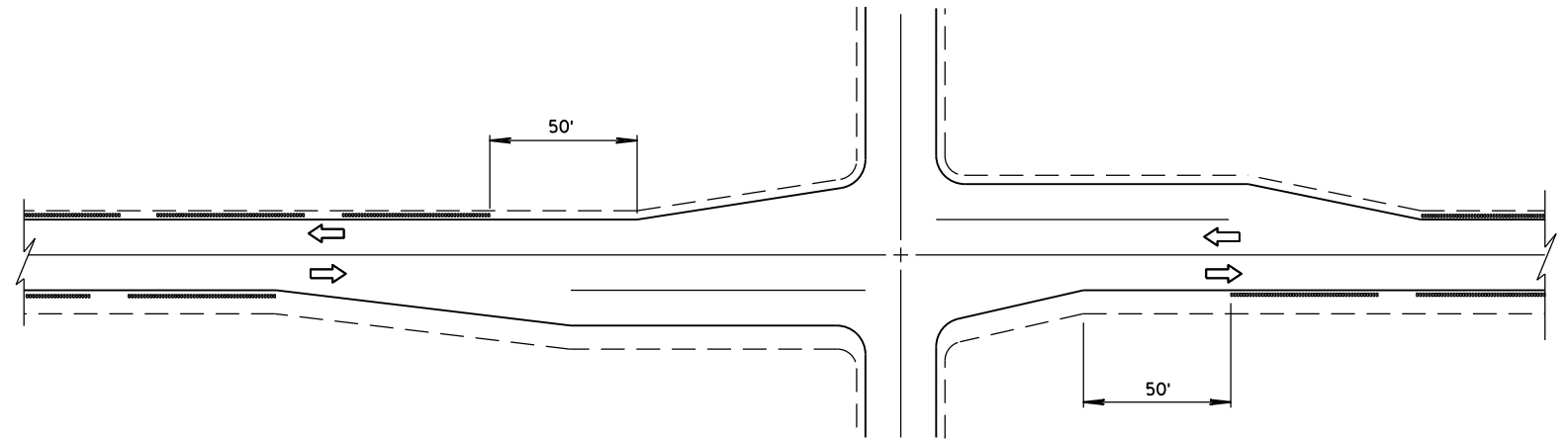
SECTION A-A

**2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING**

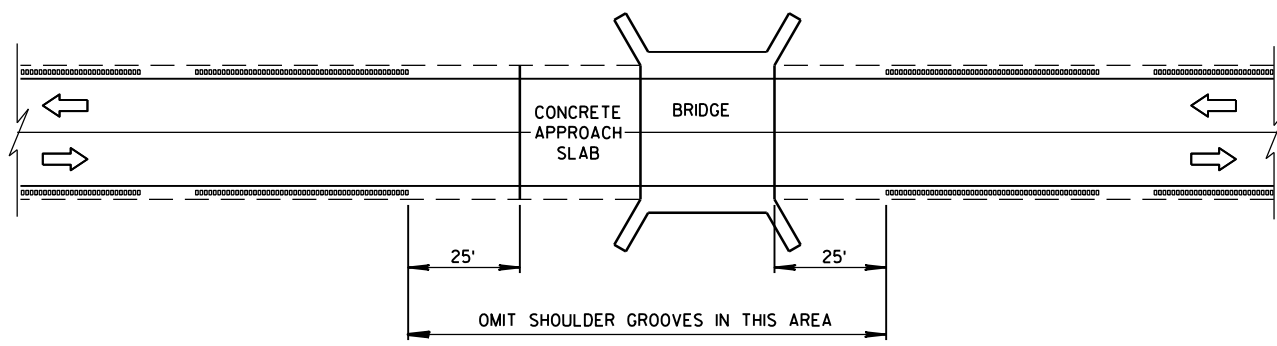
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



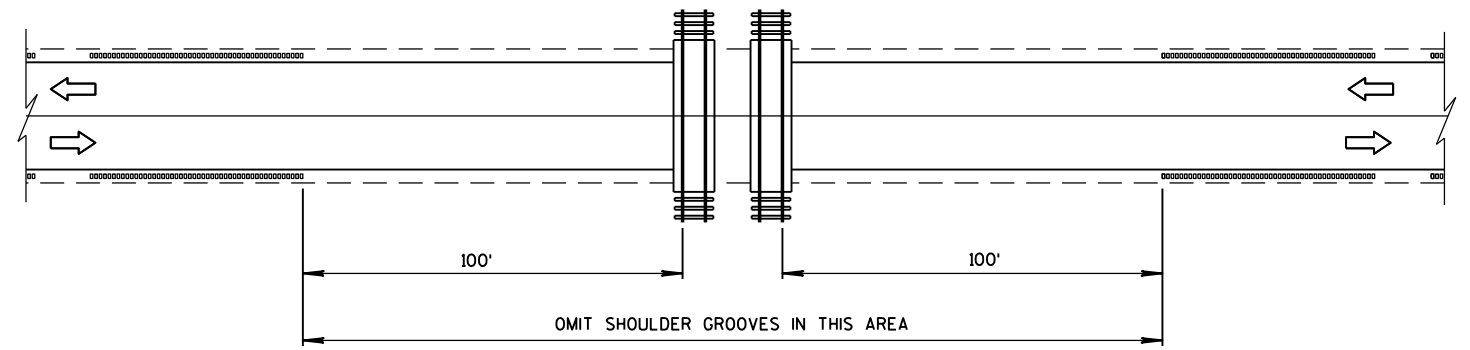
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



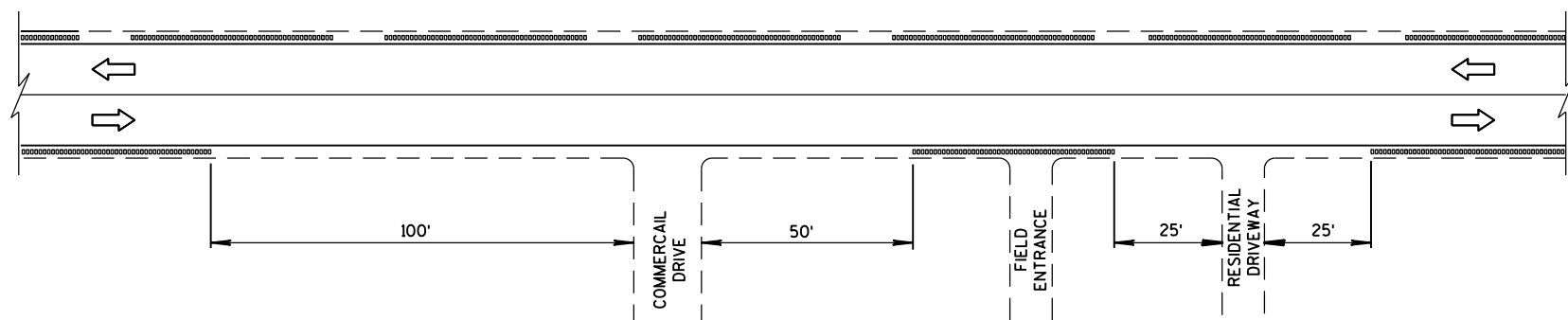
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



SHOULDER GROOVES AT RAILROADS



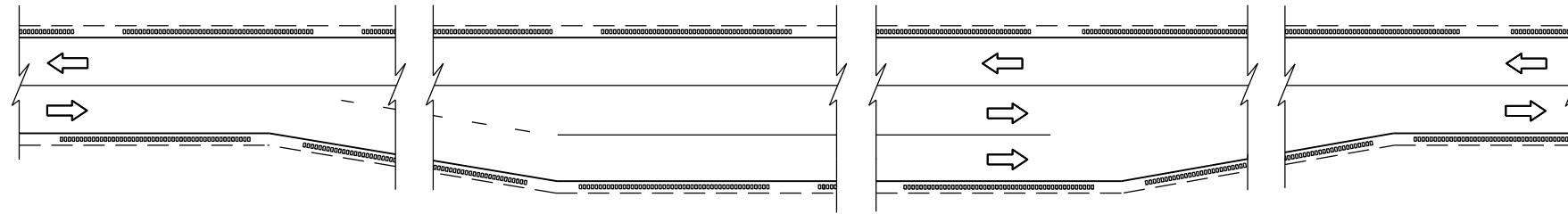
SHOULDER GROOVES AT DRIVEWAYS^①

6

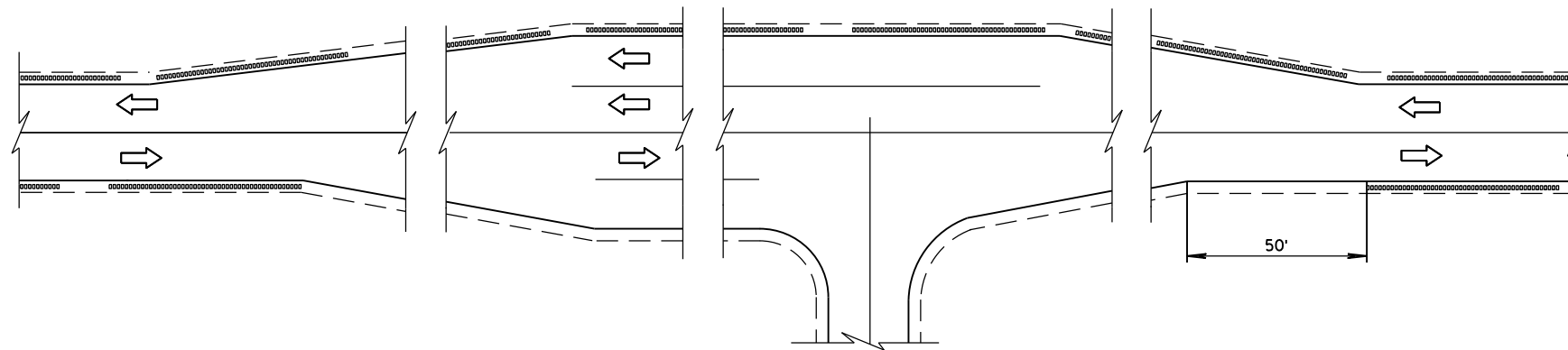
6

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

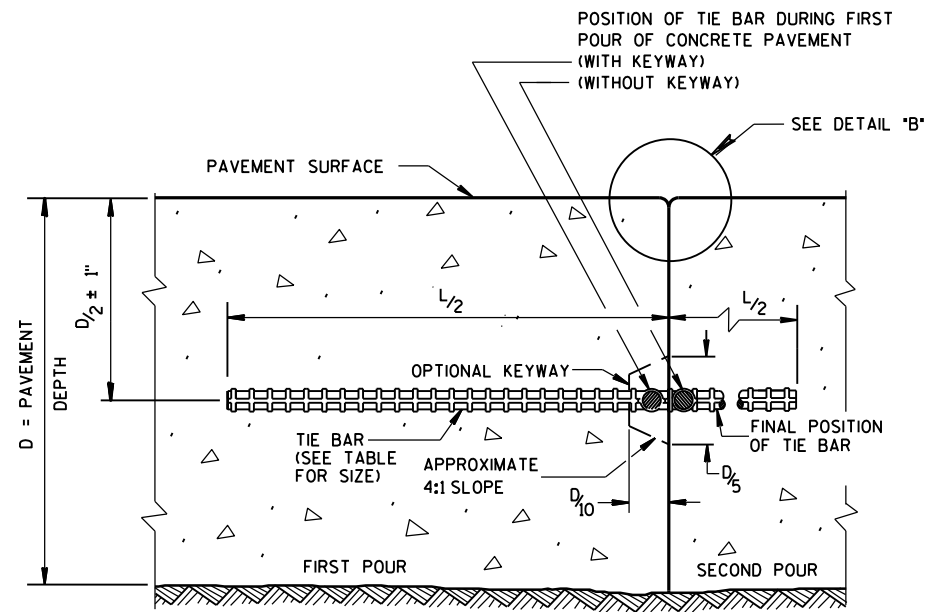
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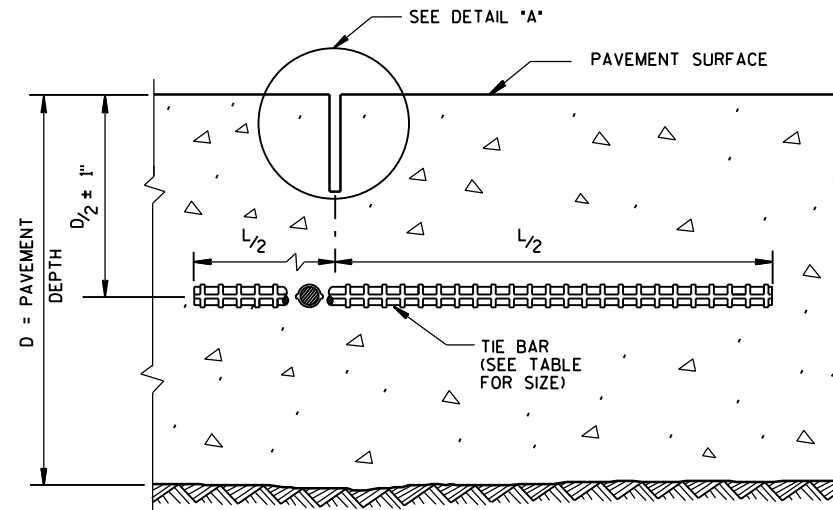
S.D.D. 13 A 10-1d

S.D.D. 13 A 10-1d

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/17/2012 DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
<small>FHWA</small>	



CONSTRUCTION JOINT



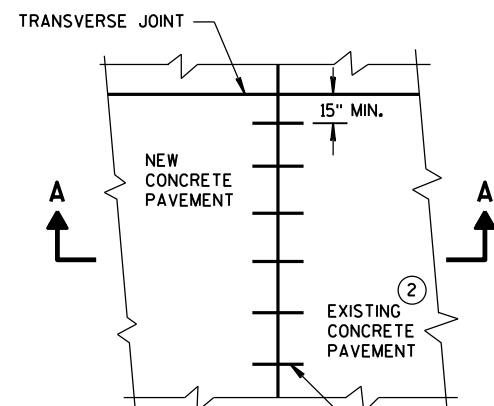
SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.
 CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

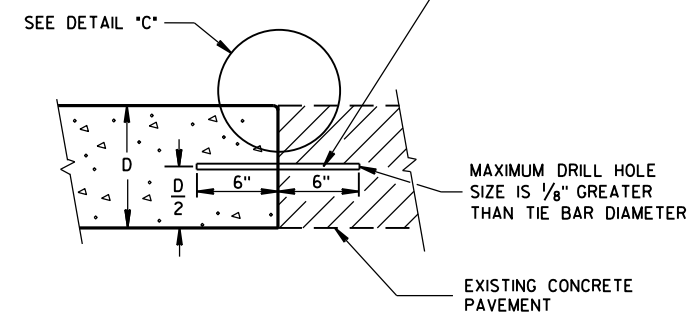
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

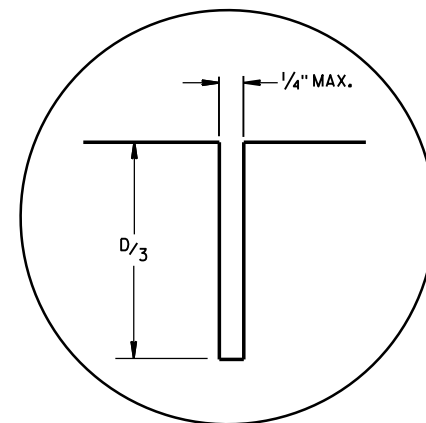


PLAN VIEW

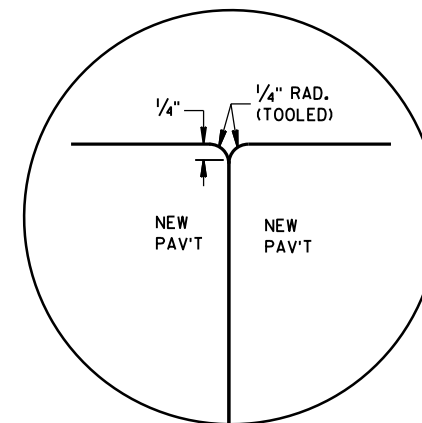
NO. 6 TIE BARS SPACED 30\"/>



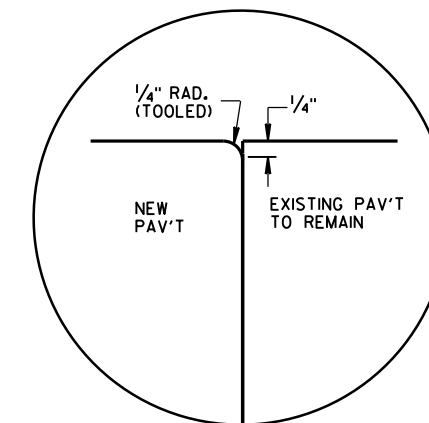
**SECTION A-A
 LONGITUDINAL CONSTRUCTION JOINT
 TIE BARS ANCHORED
 INTO EXISTING PAVEMENT**



DETAIL "A"



DETAIL "B"



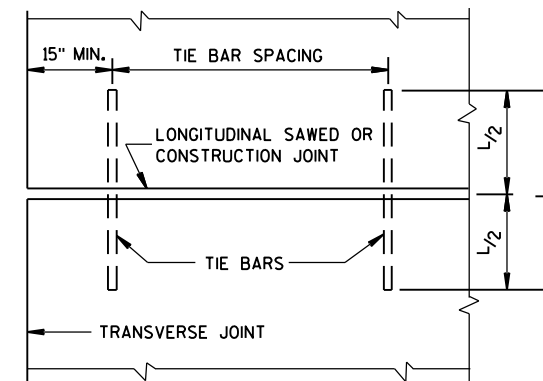
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

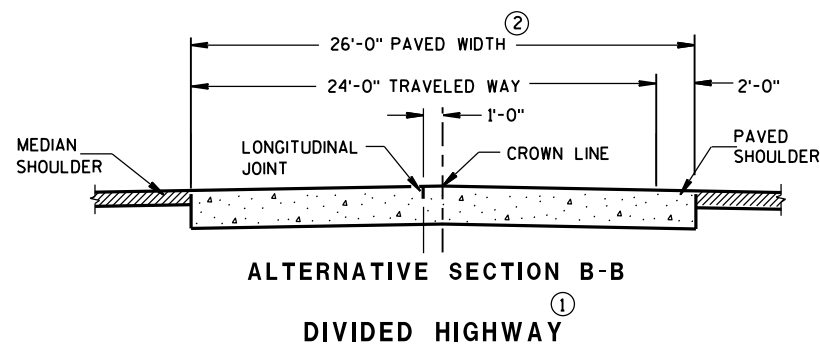
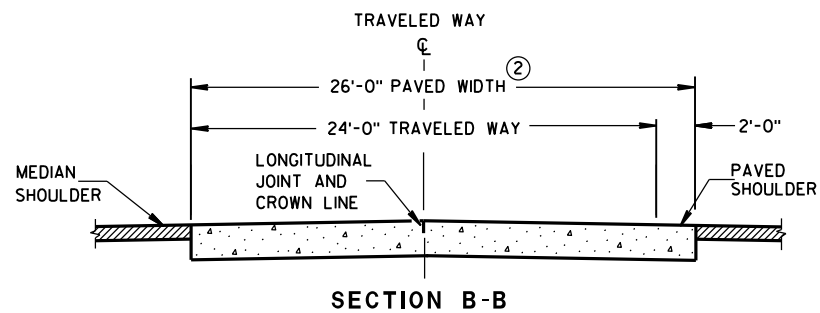
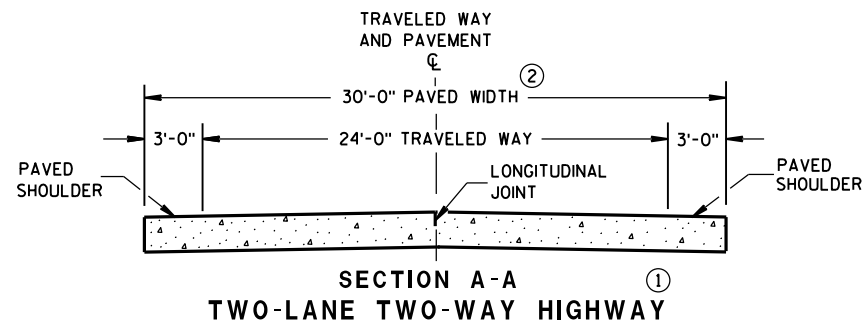
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



**PLAN VIEW
 SHOWING LOCATION OF TIE BARS**

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June, 2015 DATE	/s/ Peter Kemp, P.E. PAVEMENT SUPERVISOR
FHWA	



GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

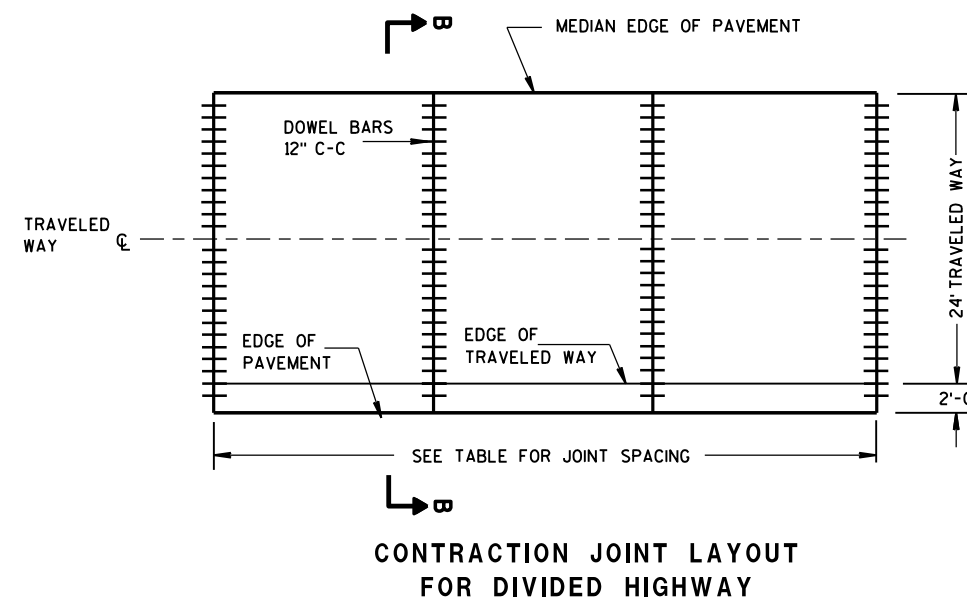
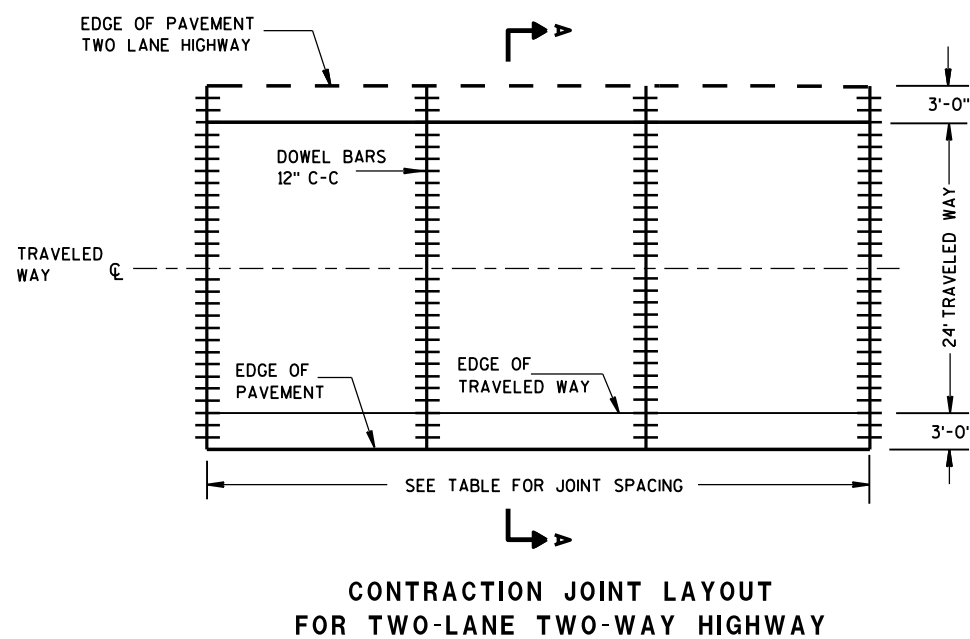
- ① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- ② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

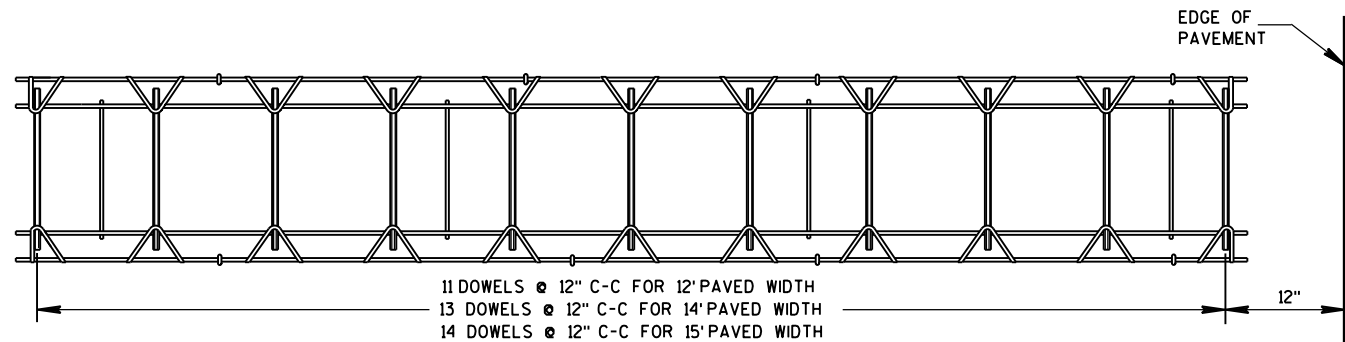
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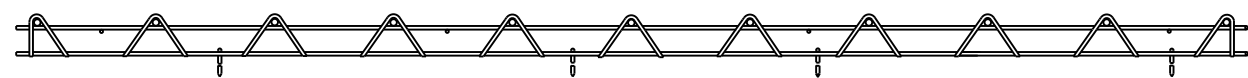
**RURAL DOWELED
CONCRETE PAVEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



11 DOWELS @ 12" C-C FOR 12' PAVED WIDTH
 13 DOWELS @ 12" C-C FOR 14' PAVED WIDTH
 14 DOWELS @ 12" C-C FOR 15' PAVED WIDTH

PLAN VIEW

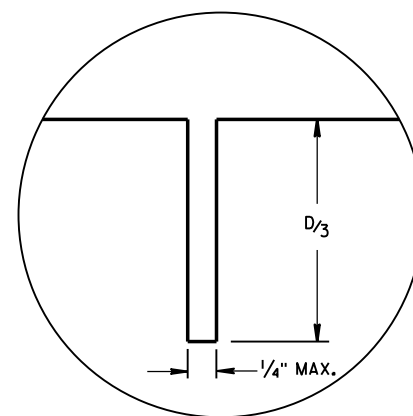


②

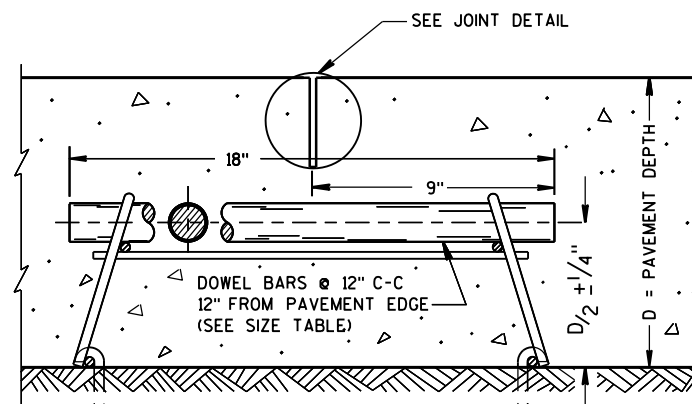
SIDE VIEW

(NORMAL TO CENTERLINE)

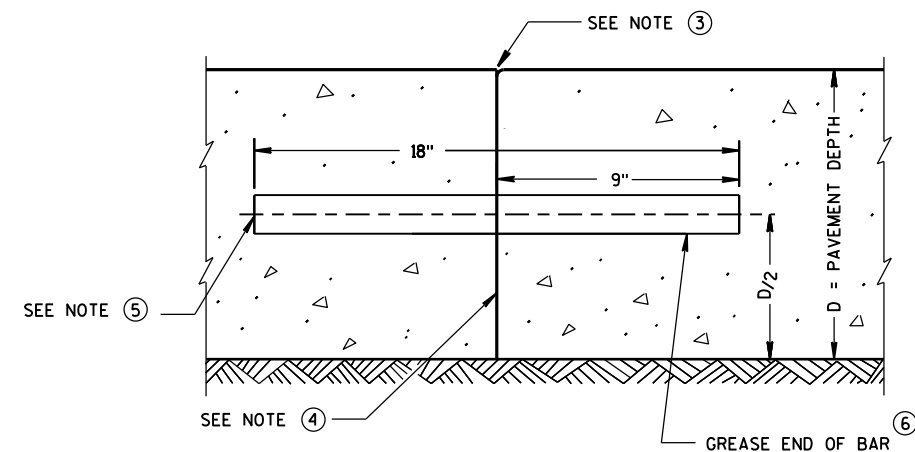
CONTRACTION JOINT DOWEL ASSEMBLY ①



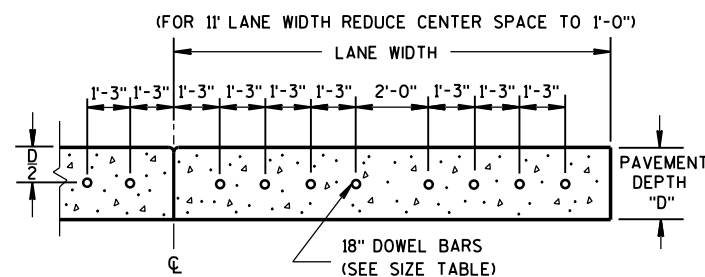
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT

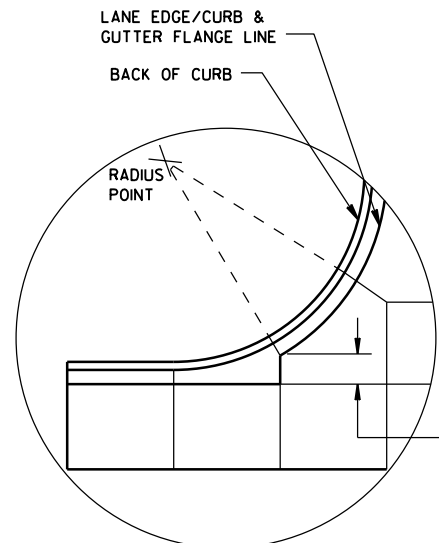


DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

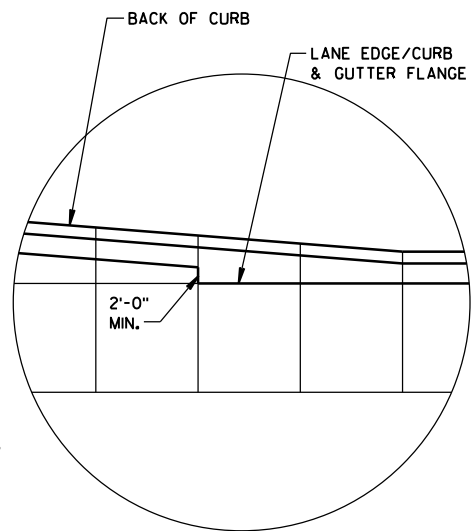
GENERAL NOTES

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

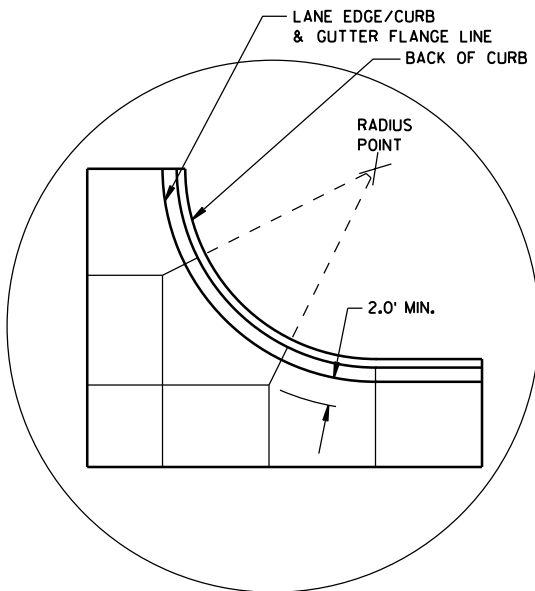
RURAL DOWELED CONCRETE PAVEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	/S/ Deb Bischoff
DATE 5/3/2013	PAVEMENT POLICY & DESIGN ENGINEER
FHWA	



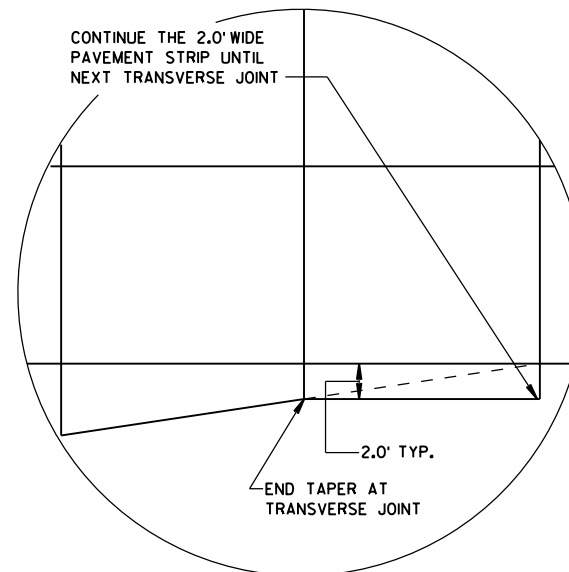
DETAIL "A"



DETAIL "B"



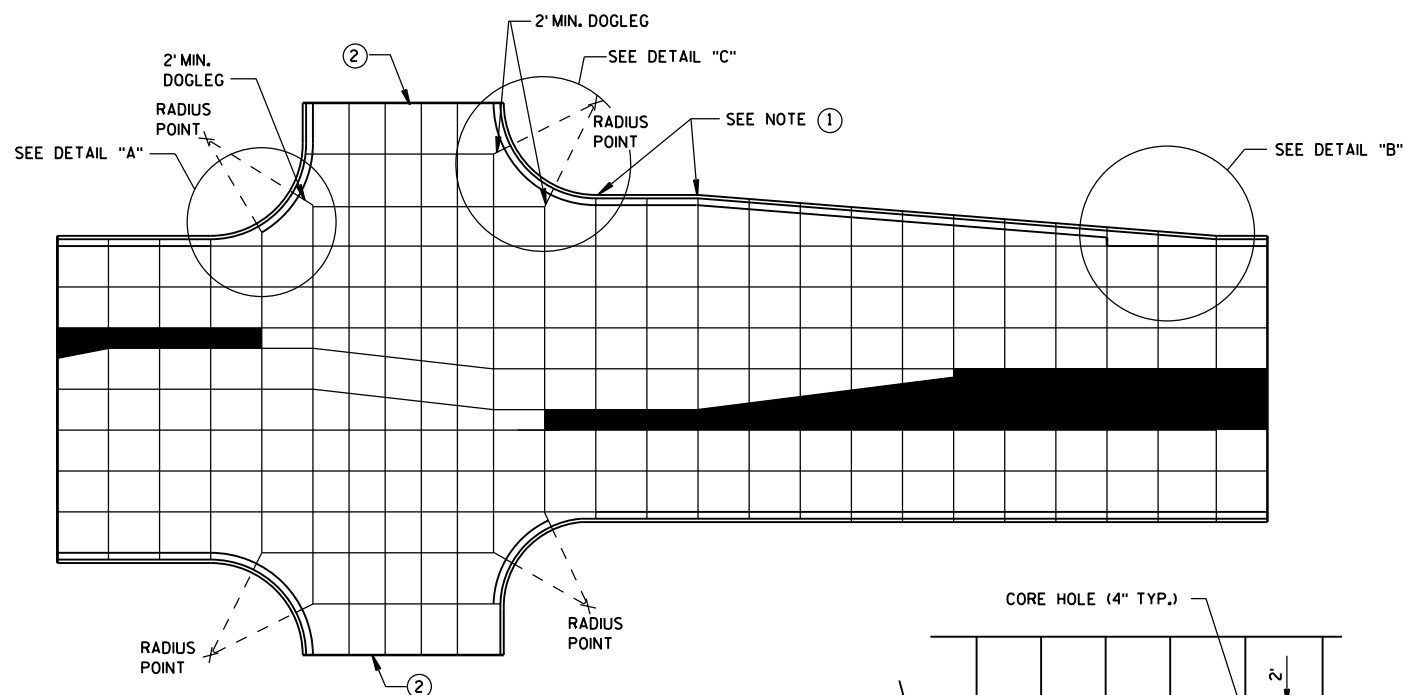
DETAIL "C"



DETAIL "D"

GENERAL NOTES

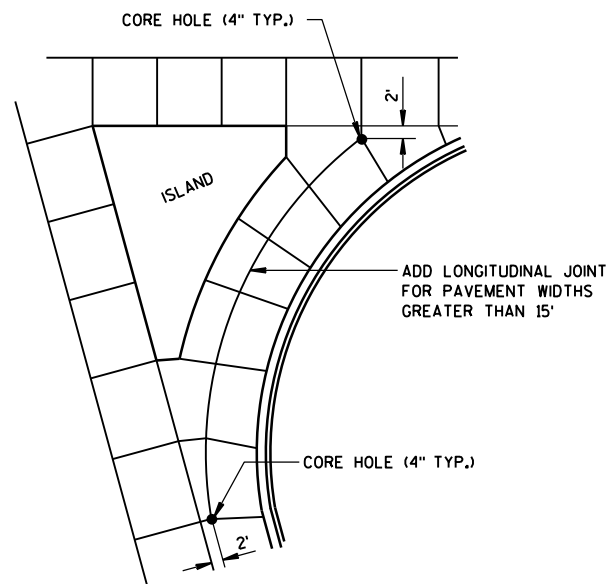
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- 1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
- 2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
- 3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



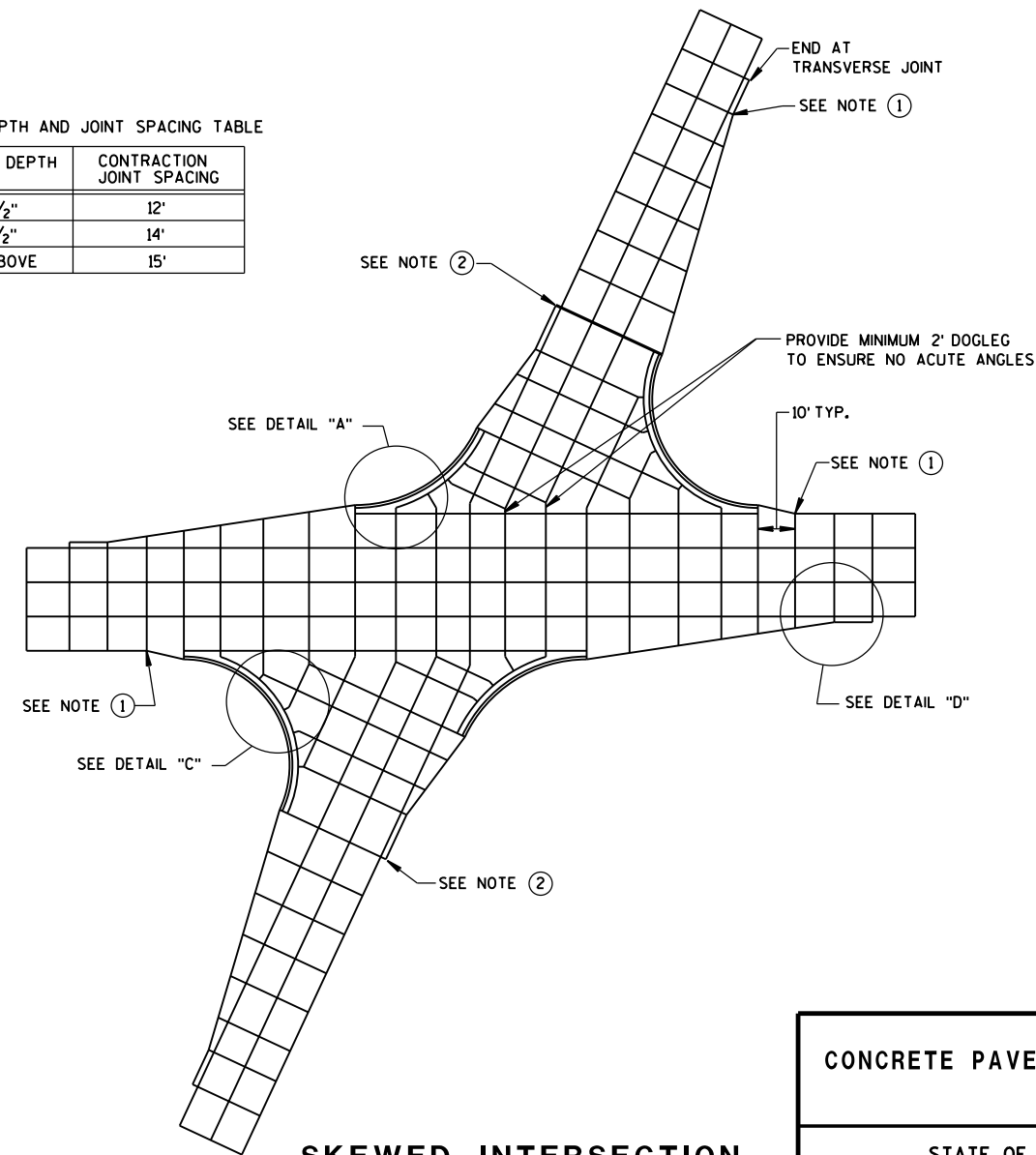
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

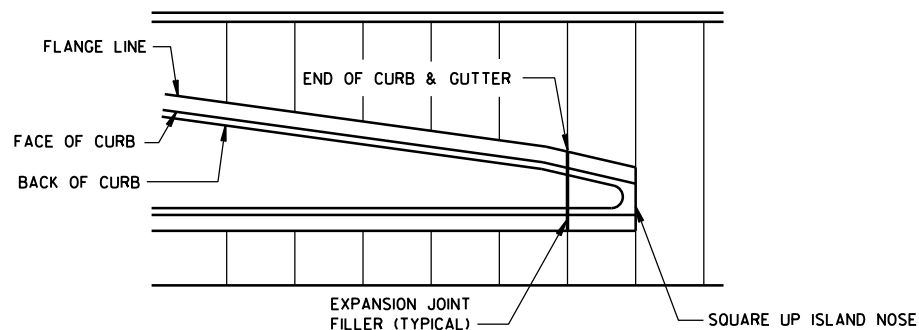
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



LARGE RIGHT TURN



SKEWED INTERSECTION



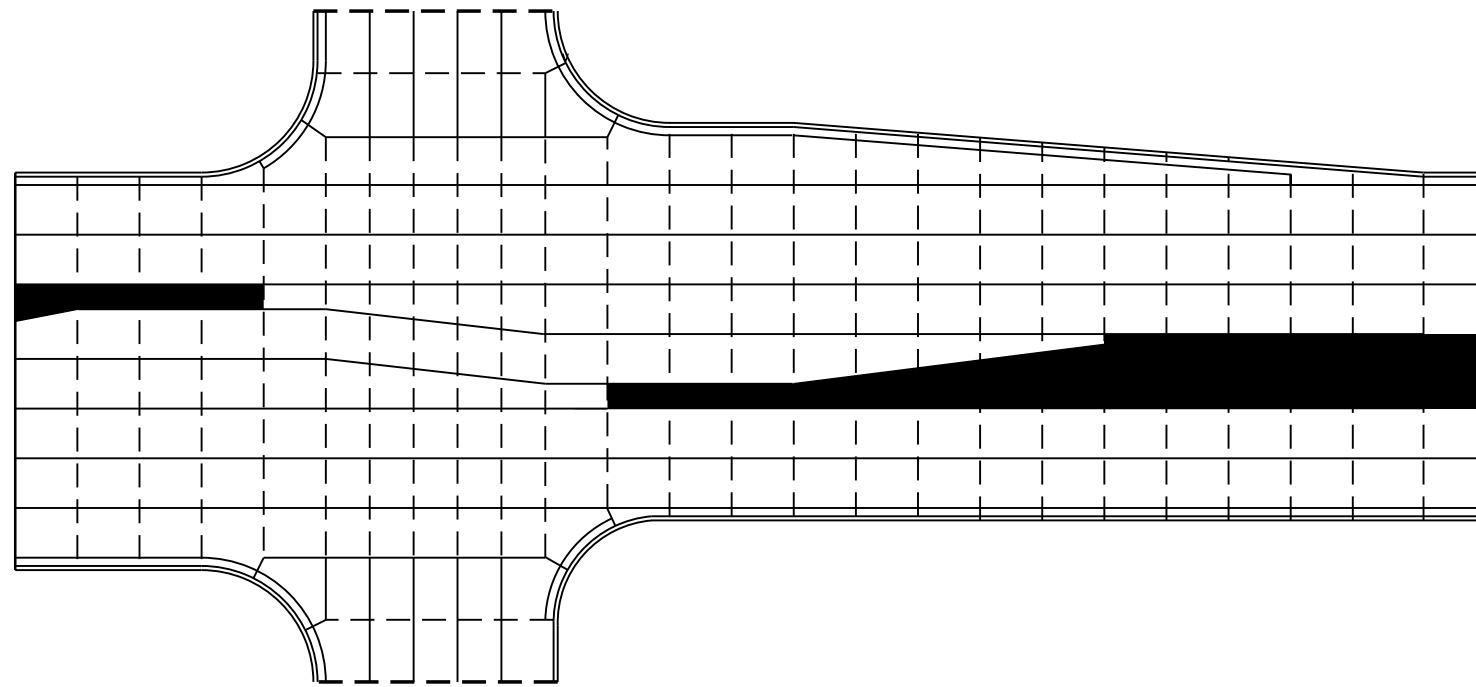
APPROACH TO MEDIAN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

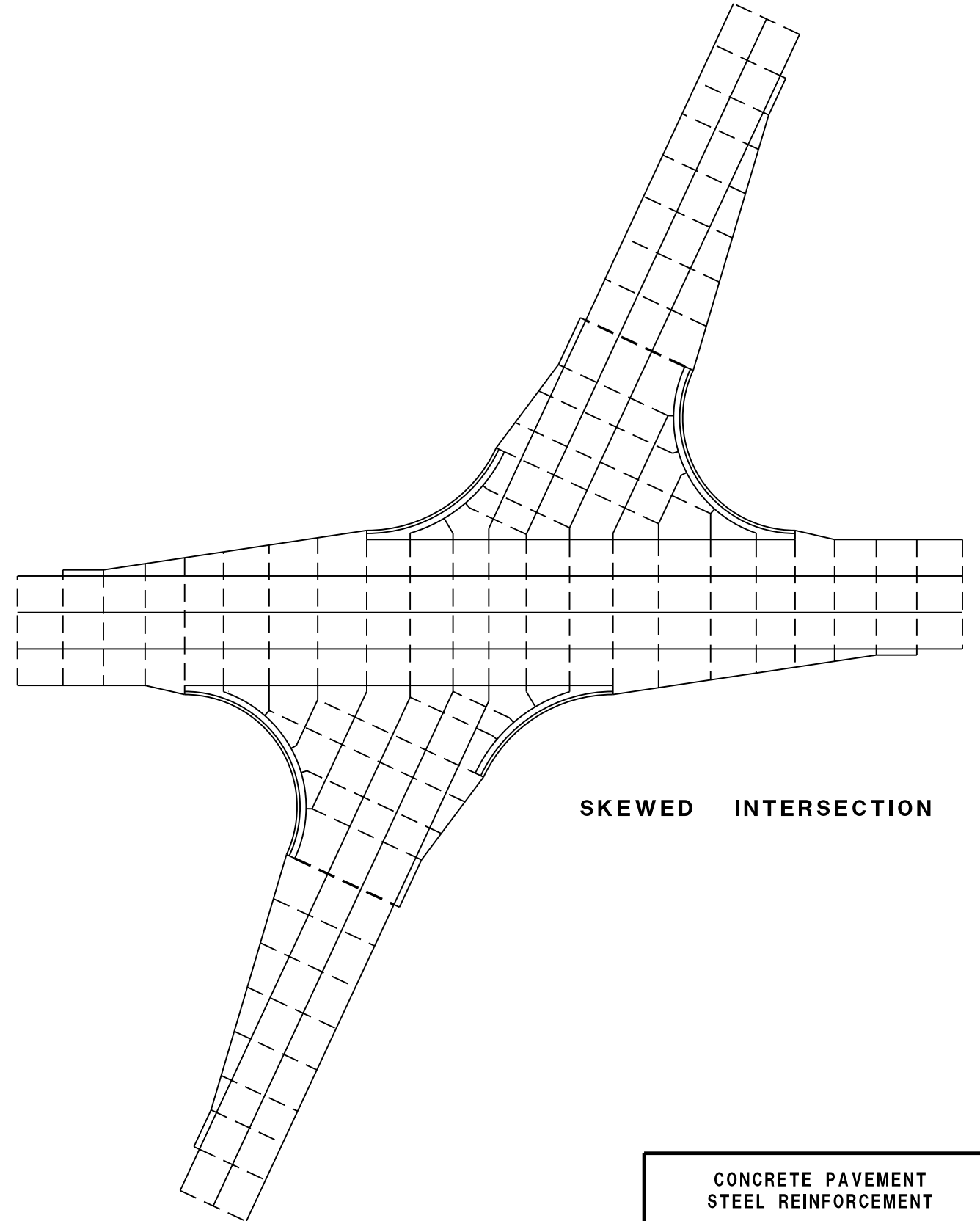
- POTENTIAL DOWELED EXPANSION JOINT
- - - DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

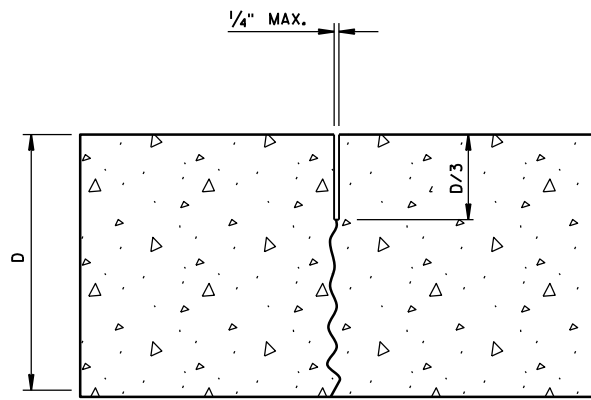
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



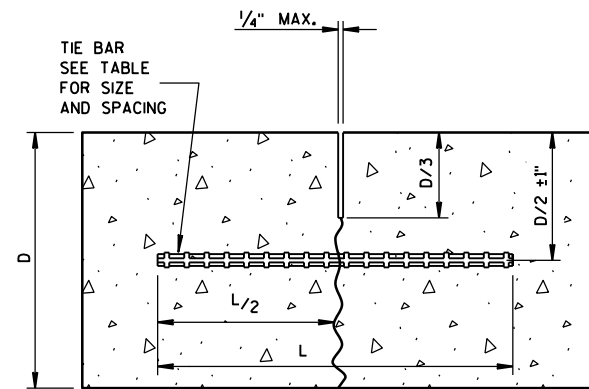
SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

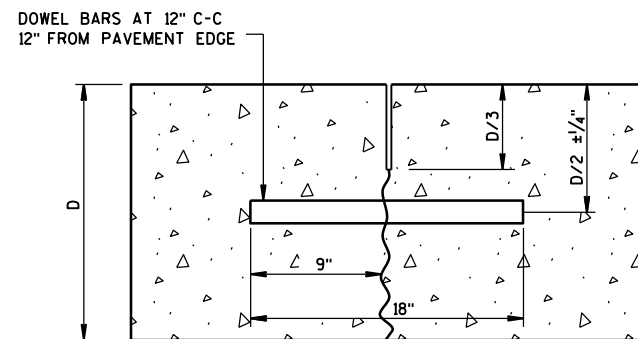
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

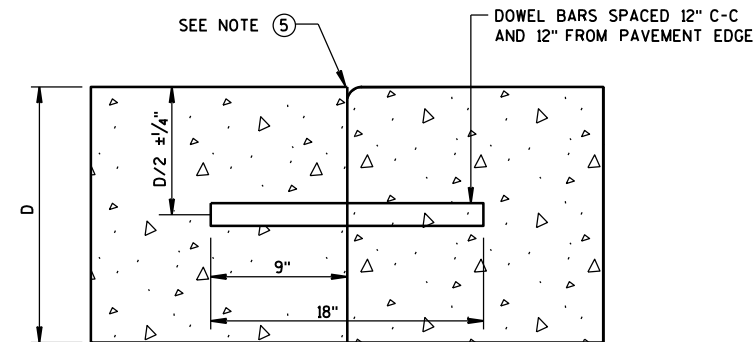
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

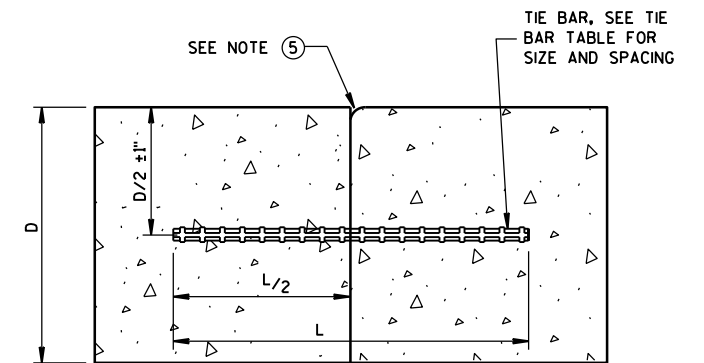
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
- ④ CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
- ⑤ IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
- ⑥ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



DOWELED-TRANSVERSE



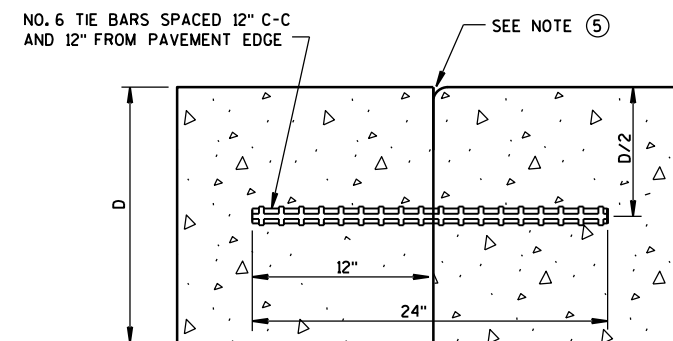
DOWELED TRANSVERSE ③



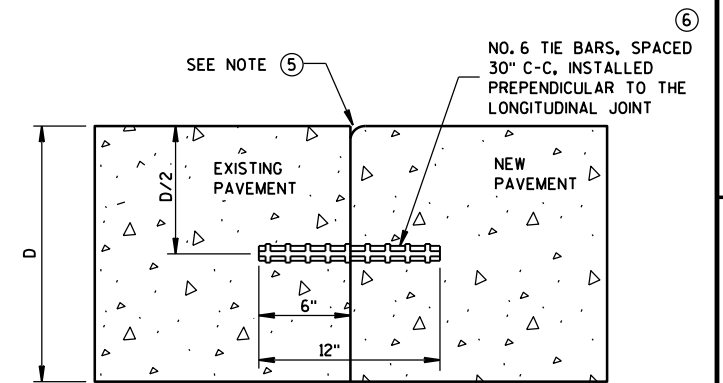
TIED LONGITUDINAL

CONTRACTION JOINTS

SEE NOTE ②



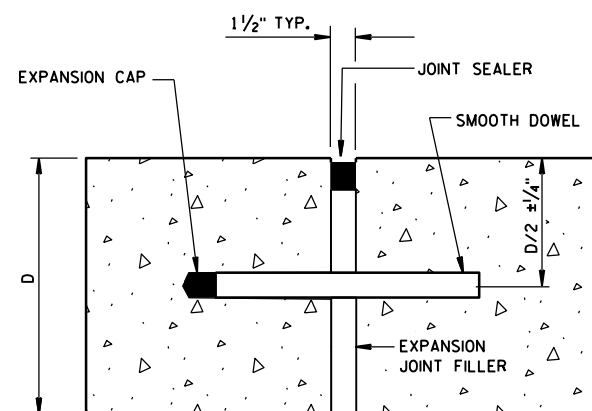
TIED TRANSVERSE ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



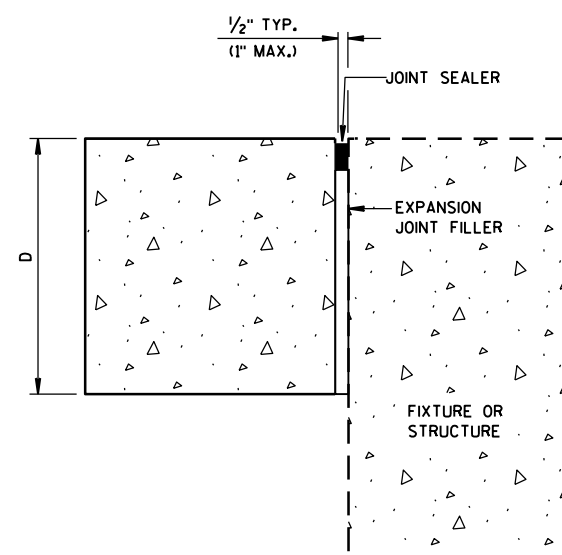
TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS

SEE NOTE ④



DOWELED-TRANSVERSE
SEE NOTE ①

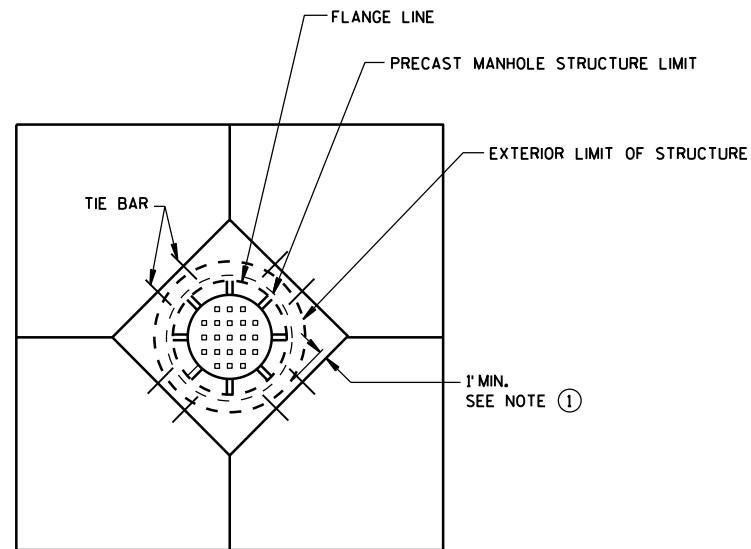


UNTIED-LONGITUDINAL

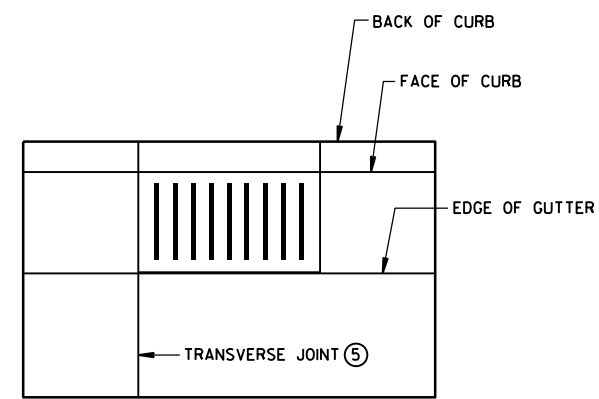
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

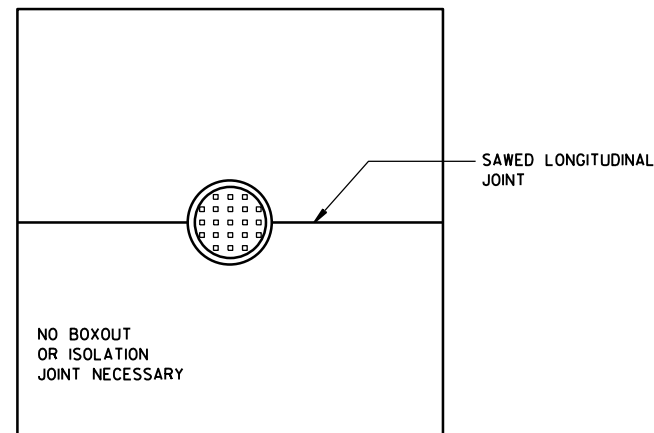
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



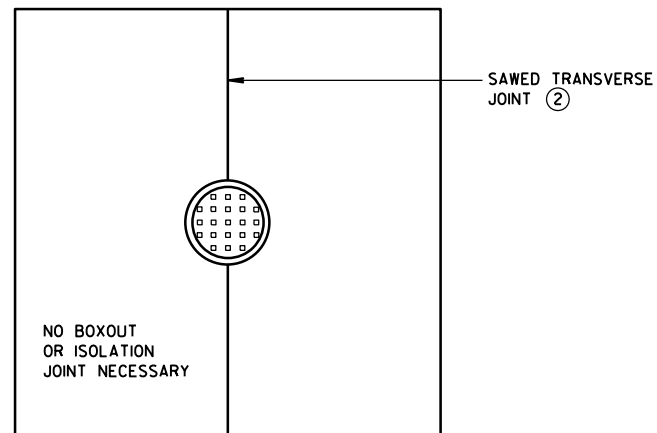
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



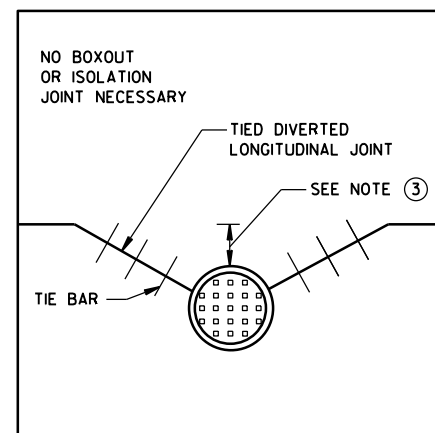
INLET WITH TRANSVERSE JOINT



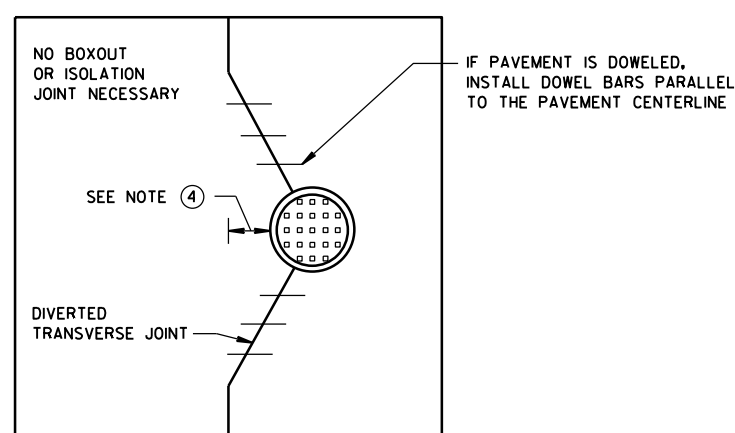
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ④ IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

6

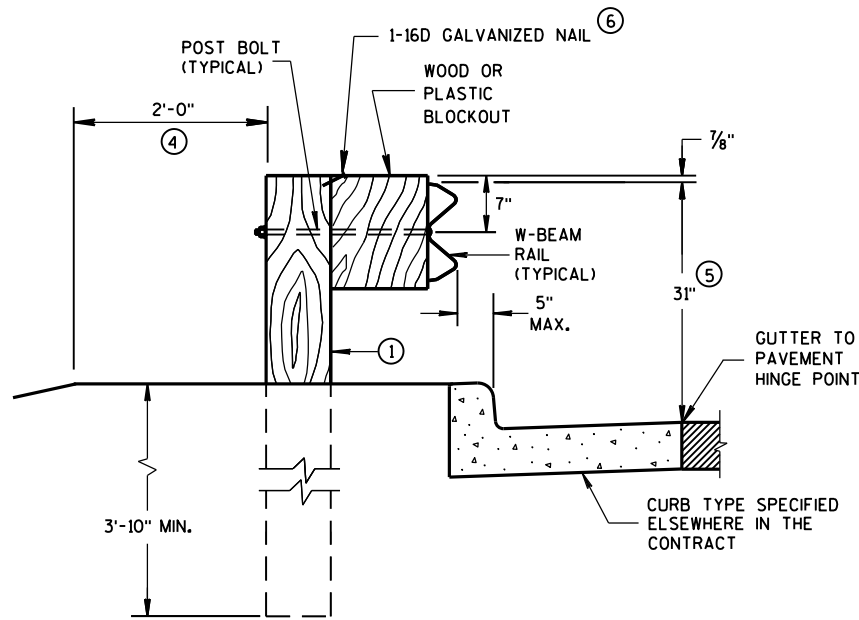
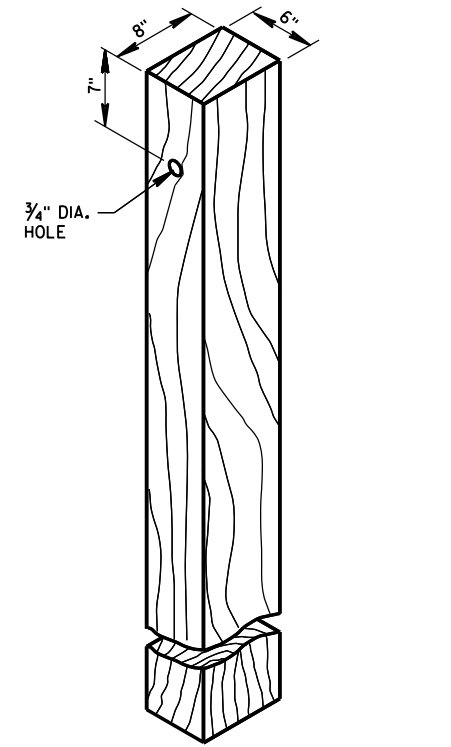
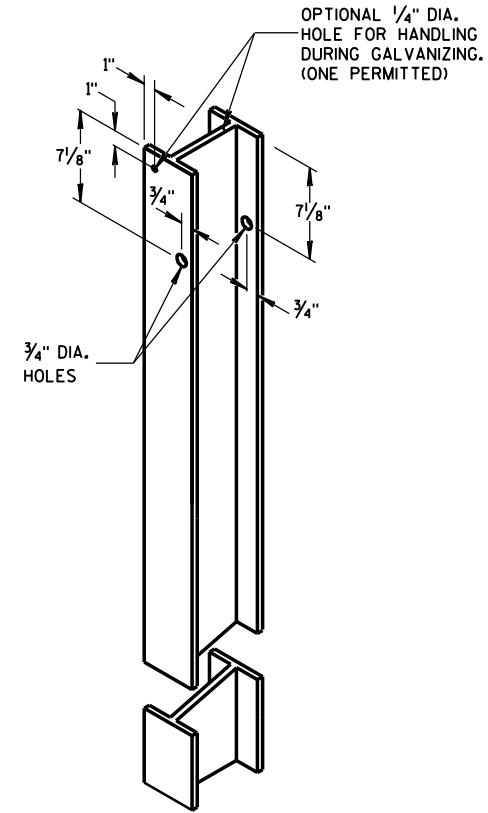
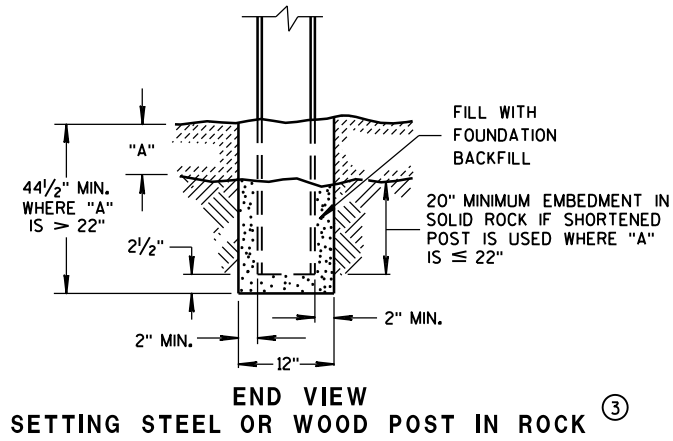
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S.D.D. 13 C 18-5d

S.D.D. 13 C 18-5d

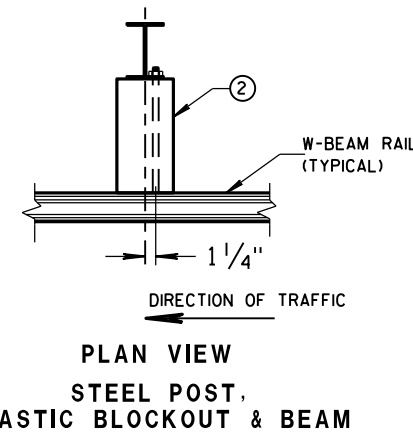
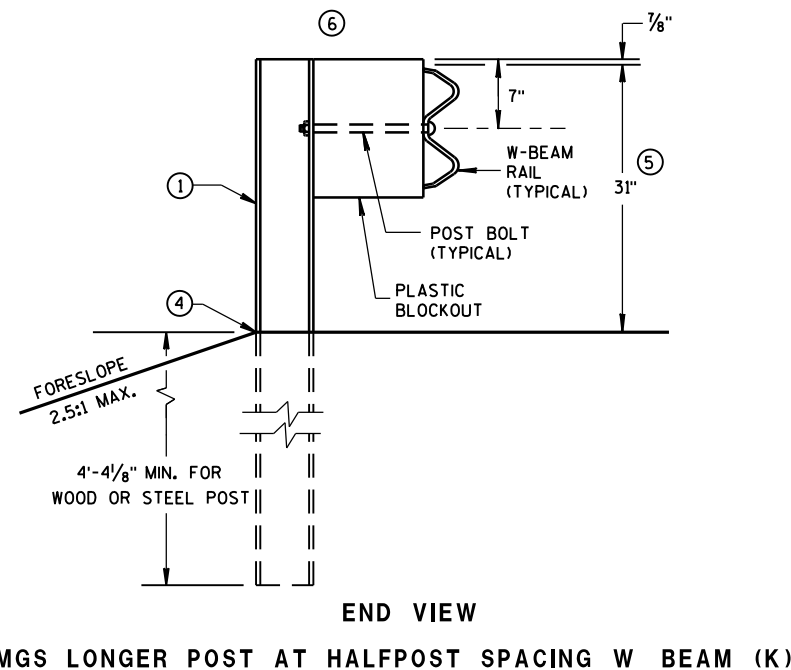
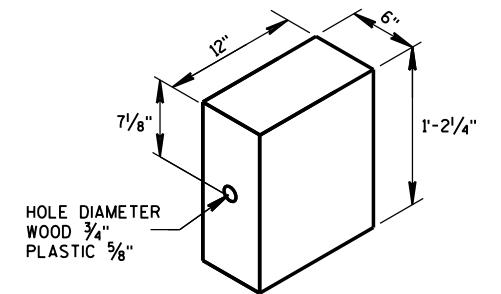
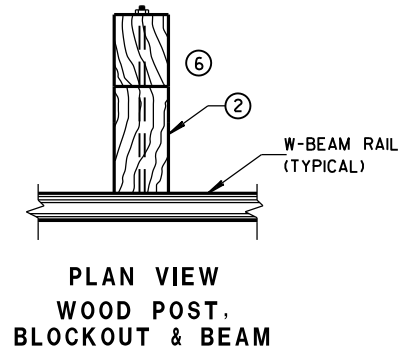
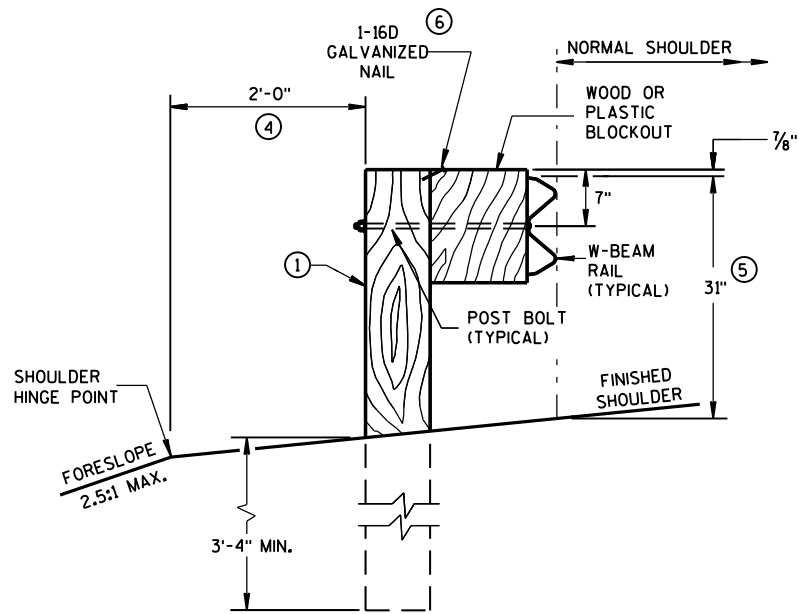
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016 DATE	/s/ Peter Kemp, P.E. PAVEMENT SUPERVISOR
FHWA	

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



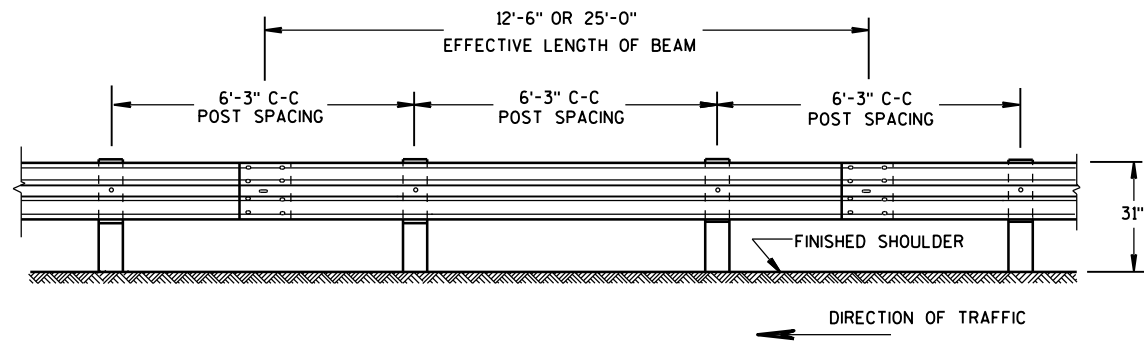
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①

WOOD POST
(6" X 8") NOMINAL ①



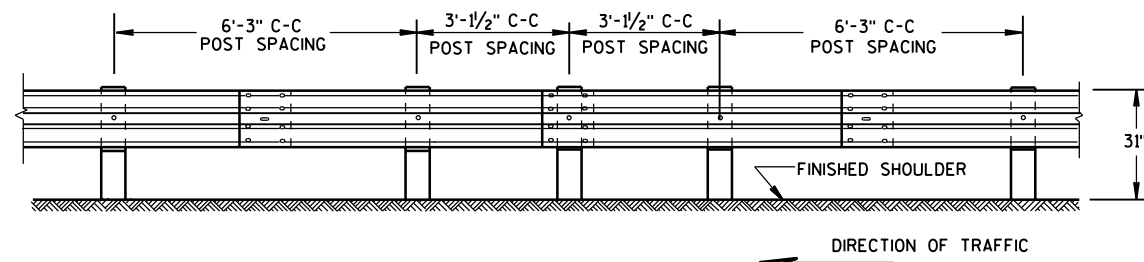
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



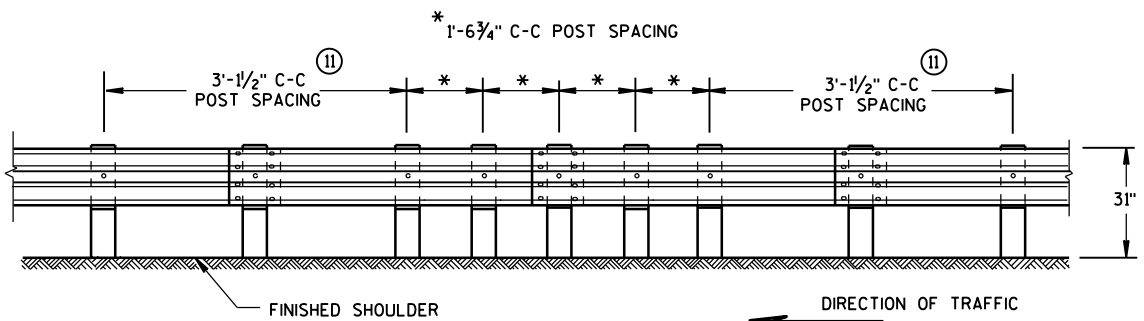
FRONT VIEW

POST SPACING STANDARD INSTALLATION



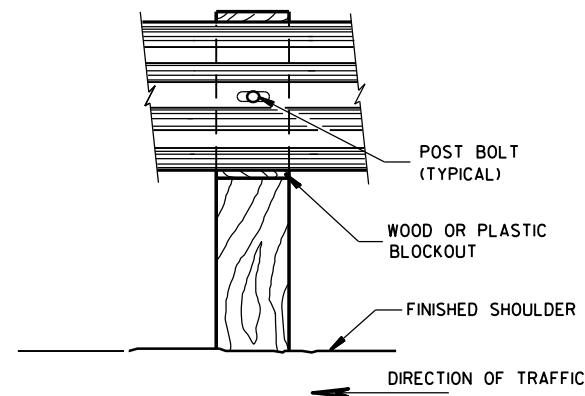
FRONT VIEW

**HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**

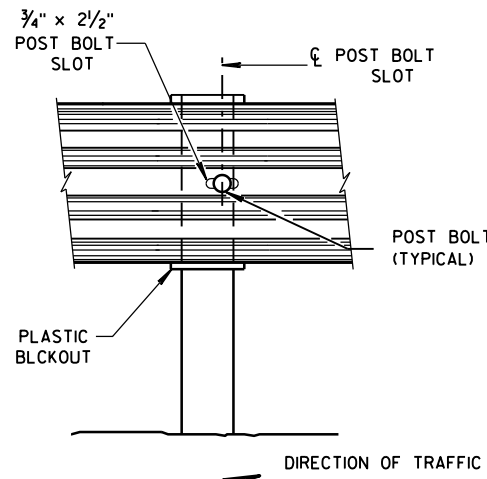


FRONT VIEW

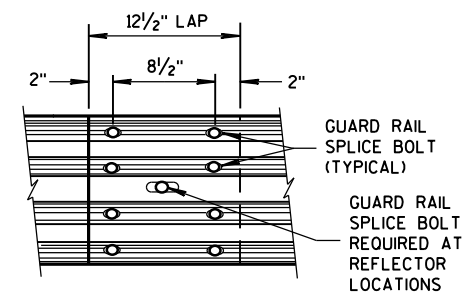
QUARTER POST SPACING (QS)



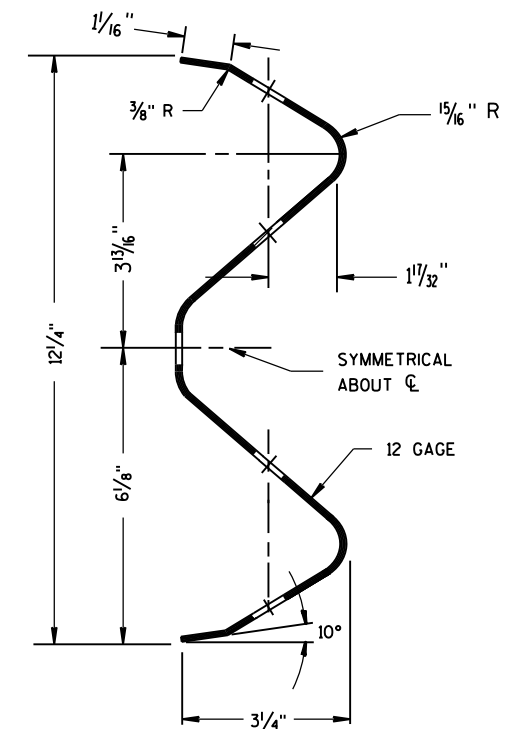
FRONT VIEW AT WOOD POST



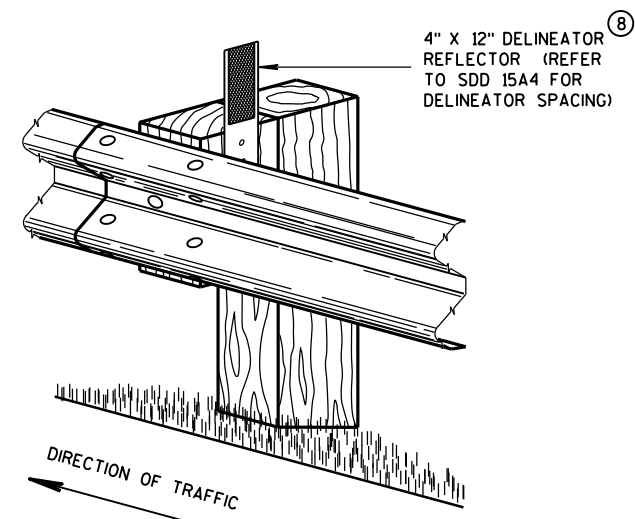
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

6

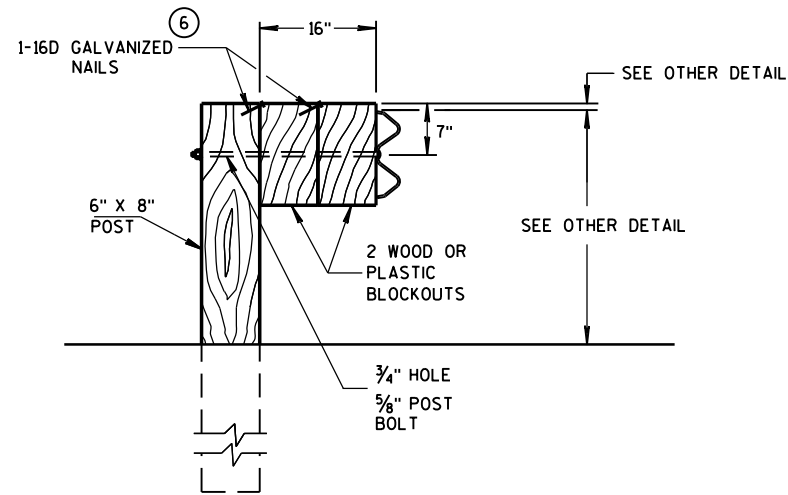
6

S.D.D. 14 B 42-5b

S.D.D. 14 B 42-5b

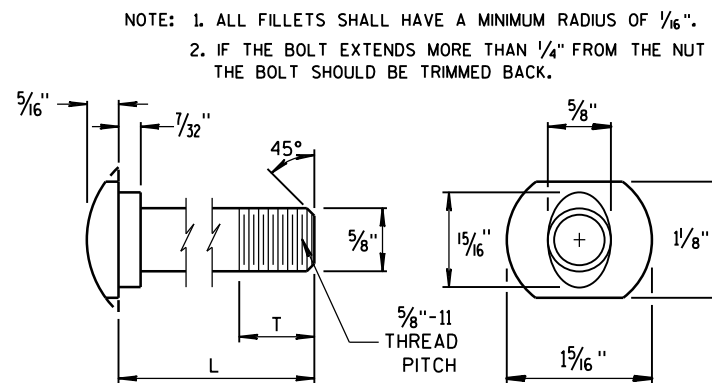
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



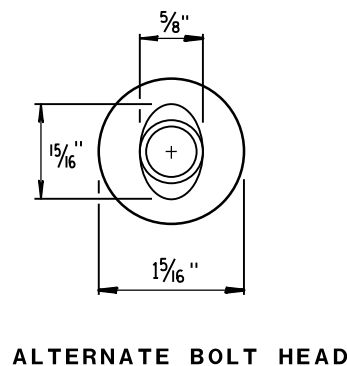
DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

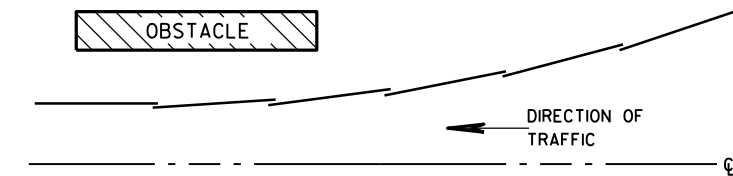


POST BOLT TABLE

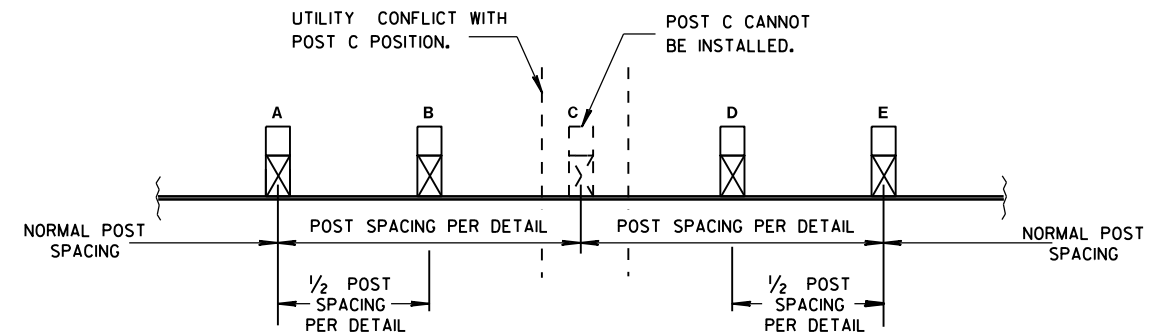
L	T (MIN.)
1/4"	1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



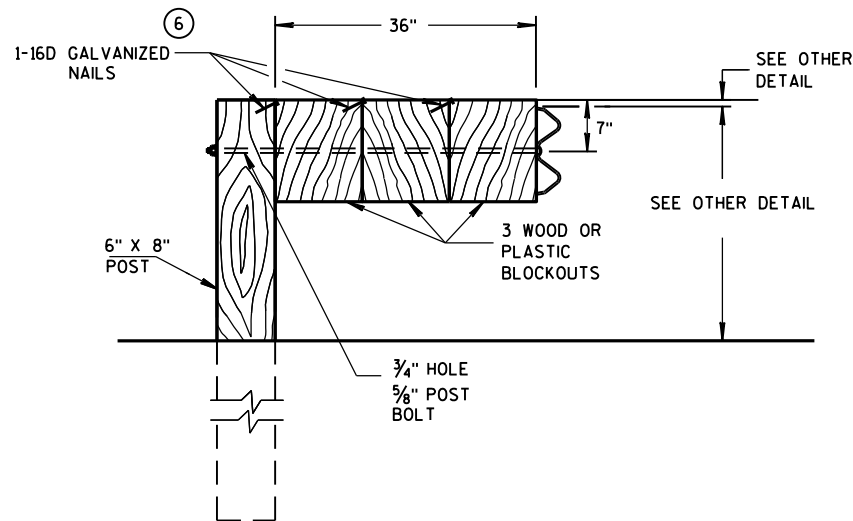
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**



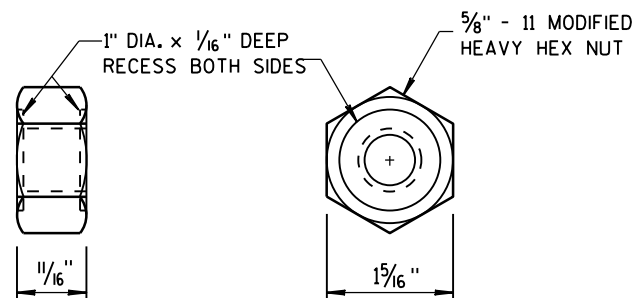
**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**



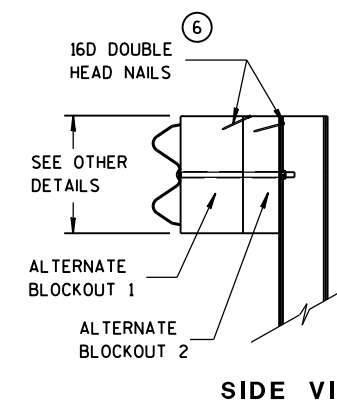
DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

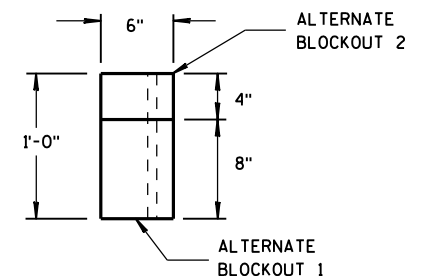
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



TOP VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

6

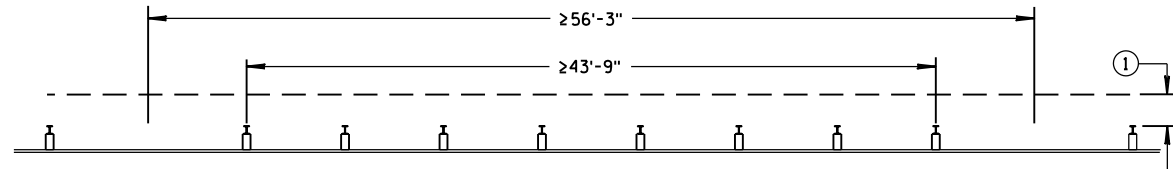
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S.D.D. 14 B 42-5c

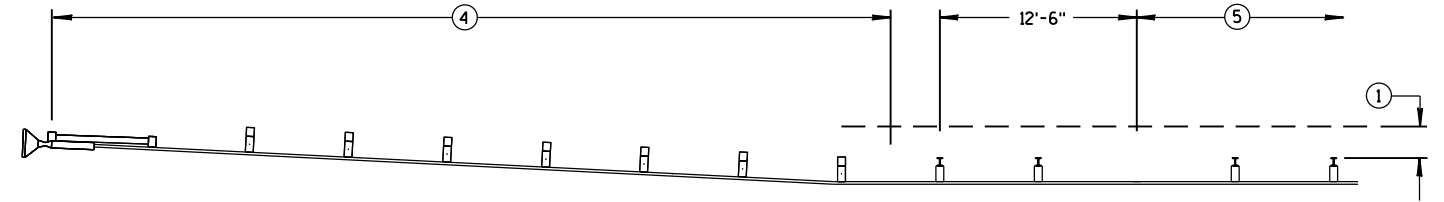
S.D.D. 14 B 42-5c

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

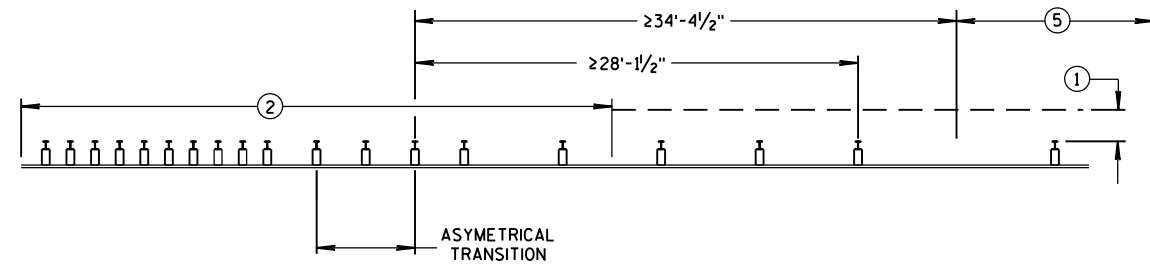
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



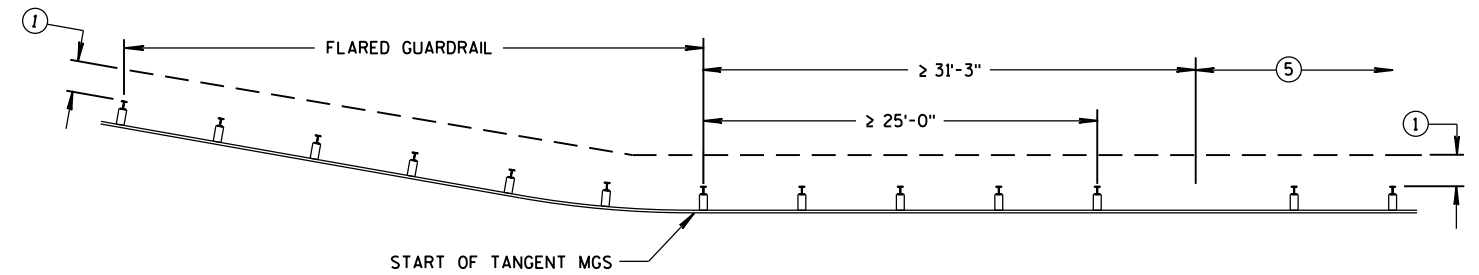
MISSING POST IN NORMAL BEAM GUARD RUN



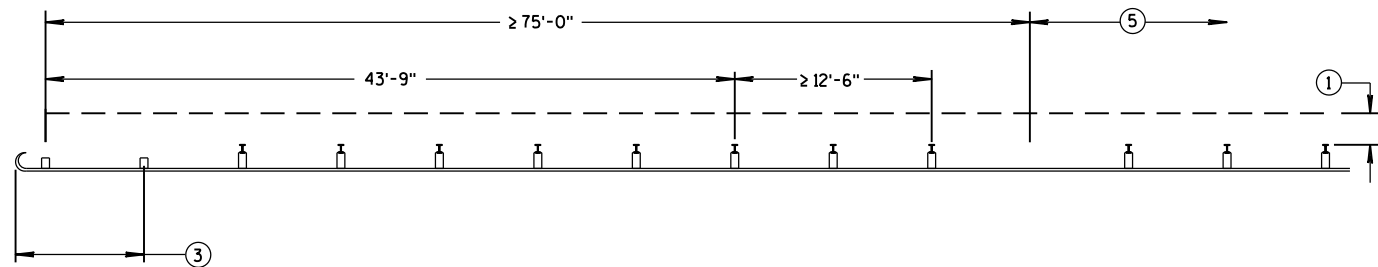
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



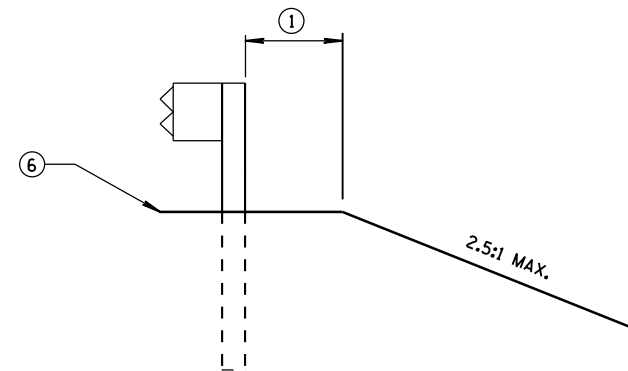
MISSING POST NEAR APPROACH THREE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

6

6

S.D.D. 14 B 42-5d

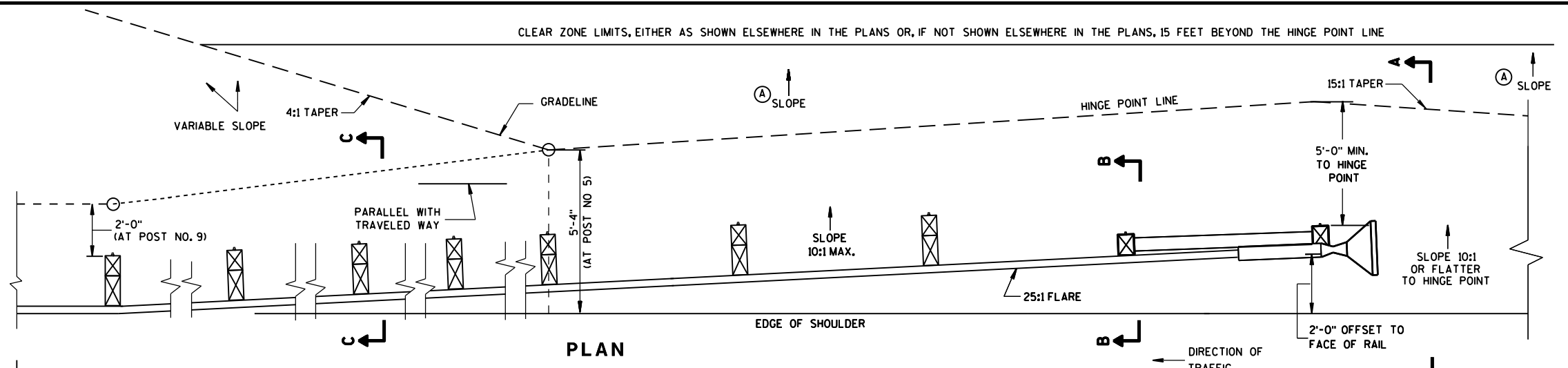
S.D.D. 14 B 42-5d

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

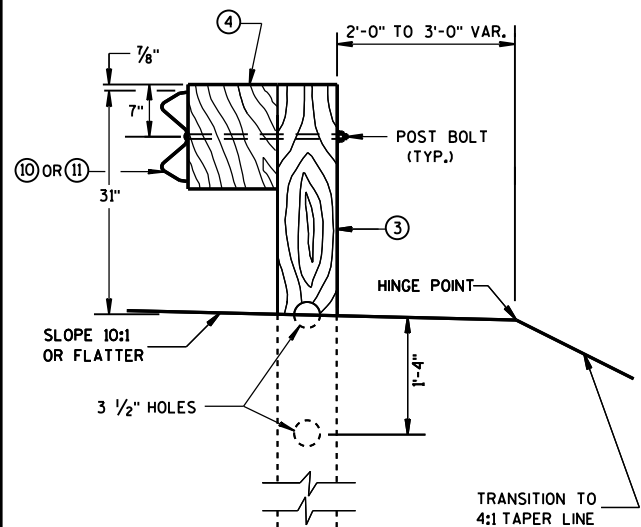
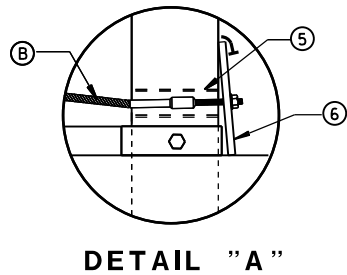
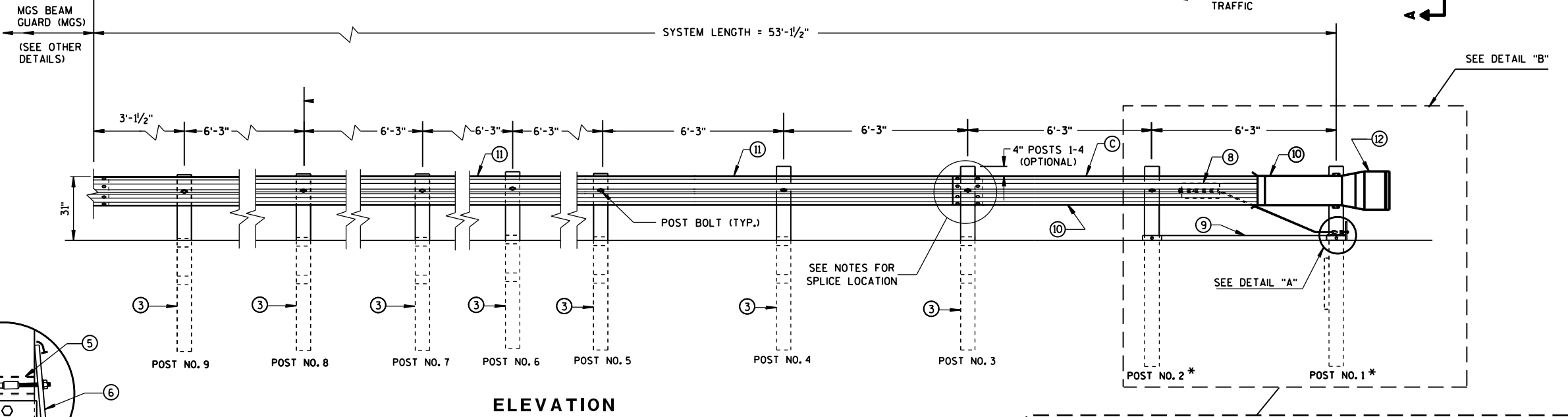
CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE

GENERAL NOTES

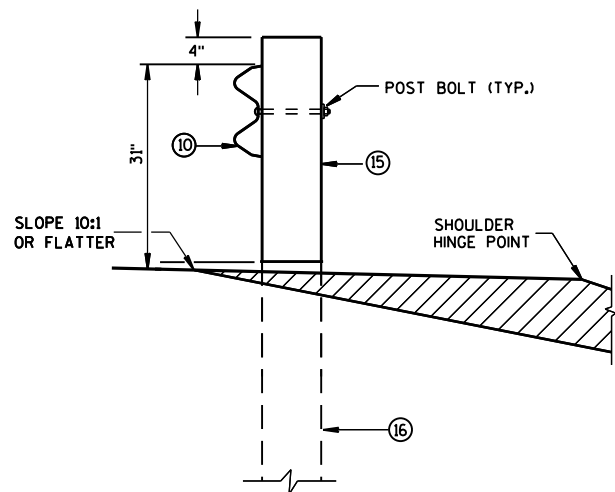
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.



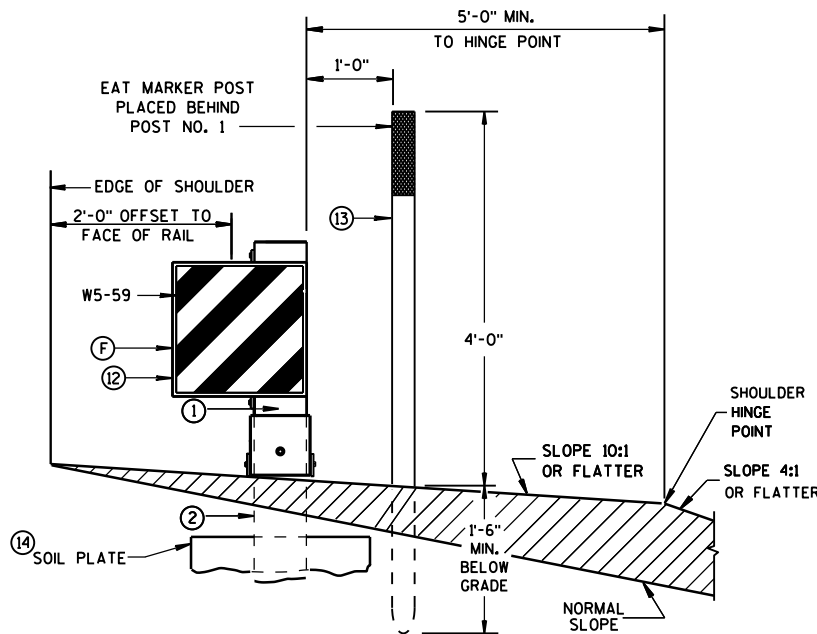
SEE SDD 14B42 FOR MORE INFORMATION.
 * DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.
 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.
 THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



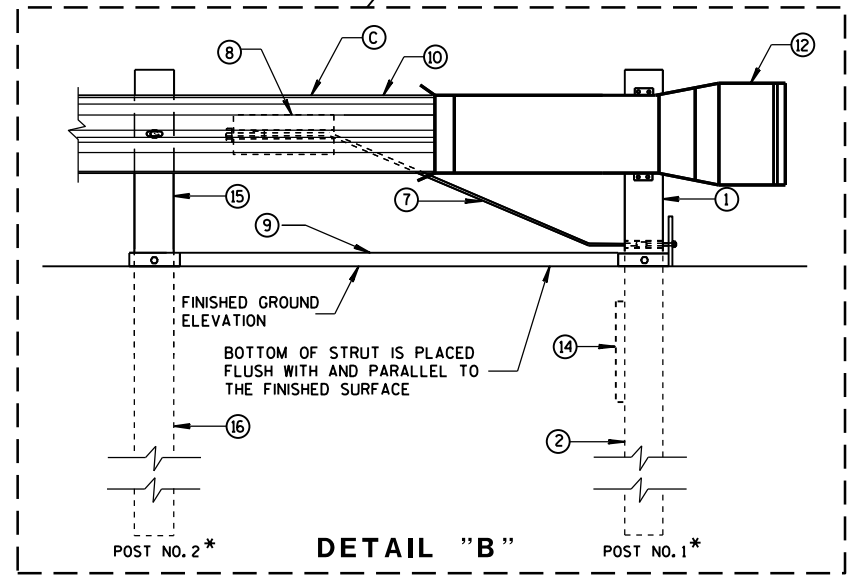
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



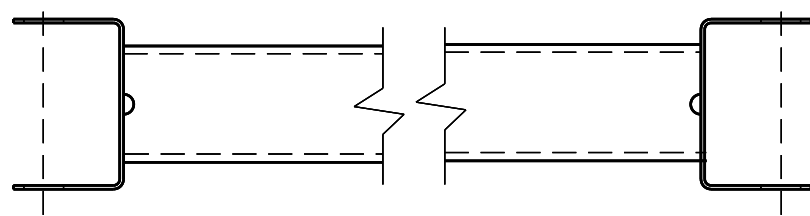
SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "B"

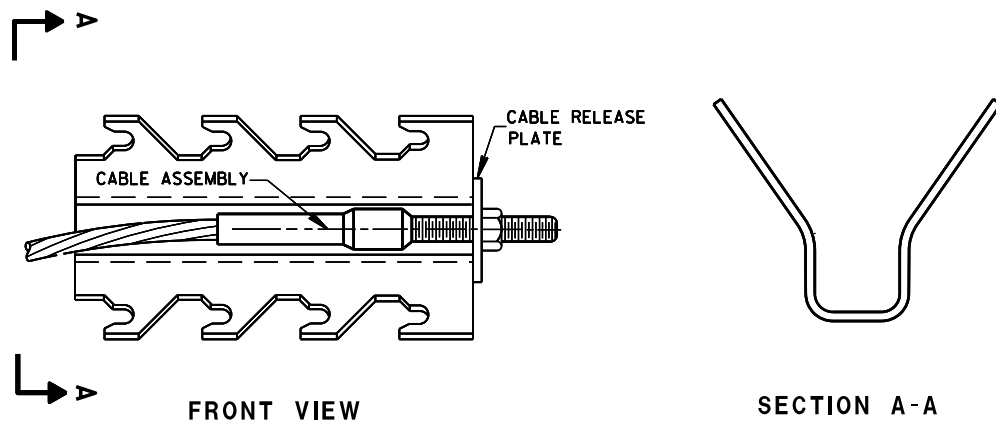
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



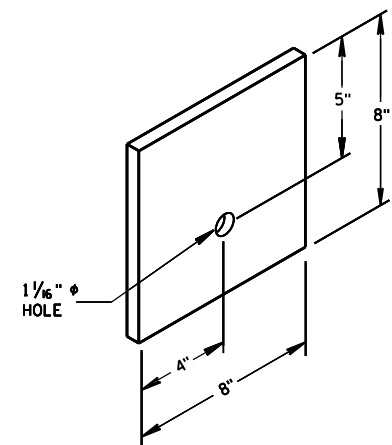
GENERIC GROUND STRUT

⑨ H



GENERIC ANCHOR CABLE BOX

⑧ H

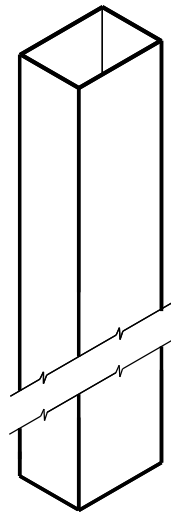


BEARING PLATE

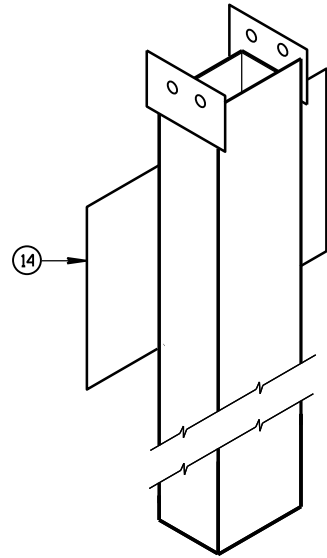
⑥

BILL OF MATERIALS

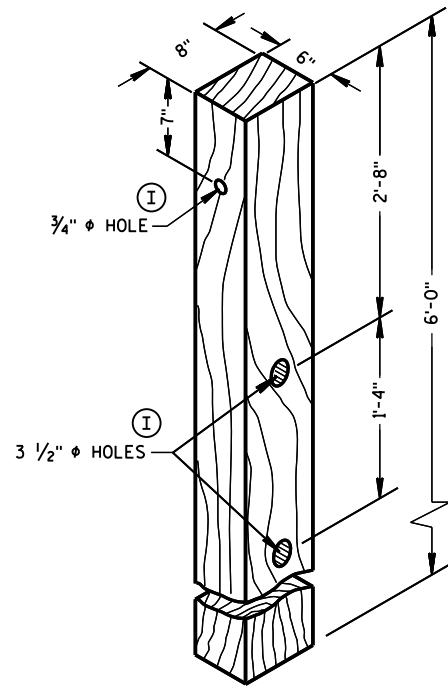
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	UPPER POST NO.1 6" X 6" TUBE
②	LOWER POST NO.1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



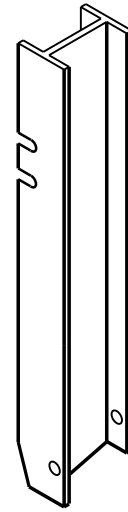
UPPER POST NO. 1 ^①



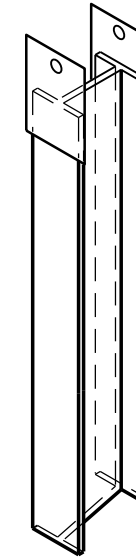
LOWER POST NO. 1 ^②



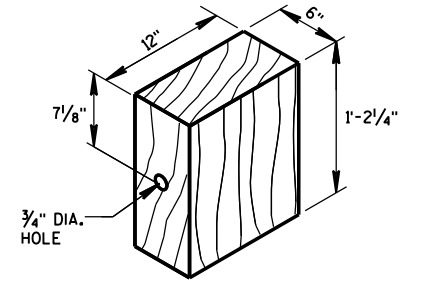
POSTS NUMBER 3-9
WOOD CRT POST ^③



UPPER POST NO. 2 ^⑮

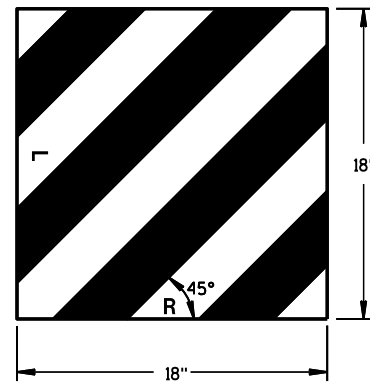


LOWER POST NO. 2 ^⑯

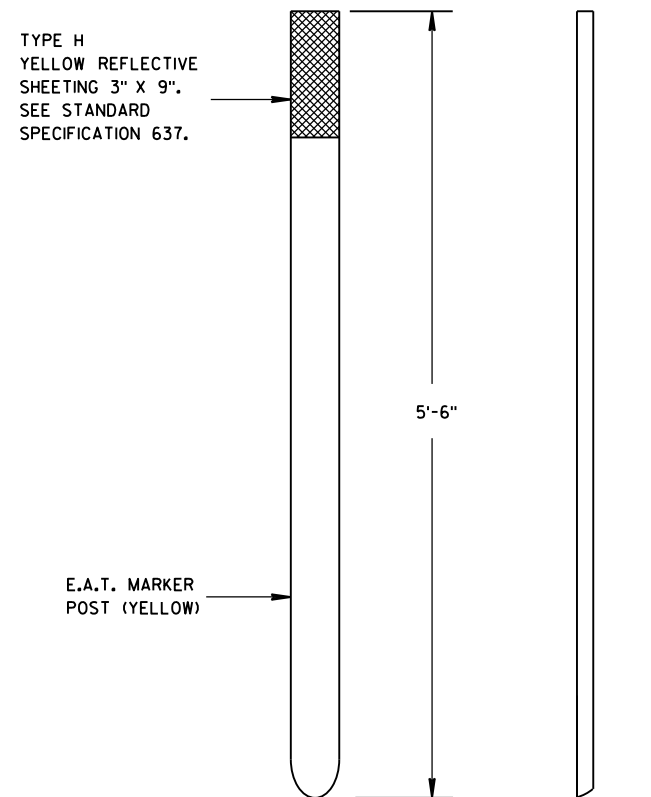


WOOD BLOCKOUT ^④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

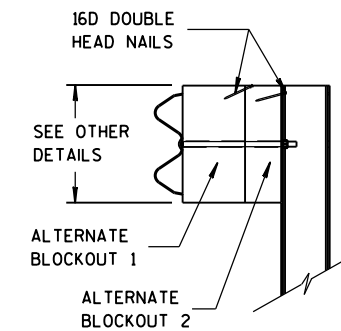
6



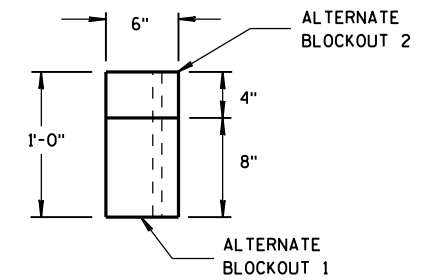
W5-59
REFLECTIVE SHEETING DETAIL ^⑨



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ^⑬



SIDE VIEW



TOP VIEW

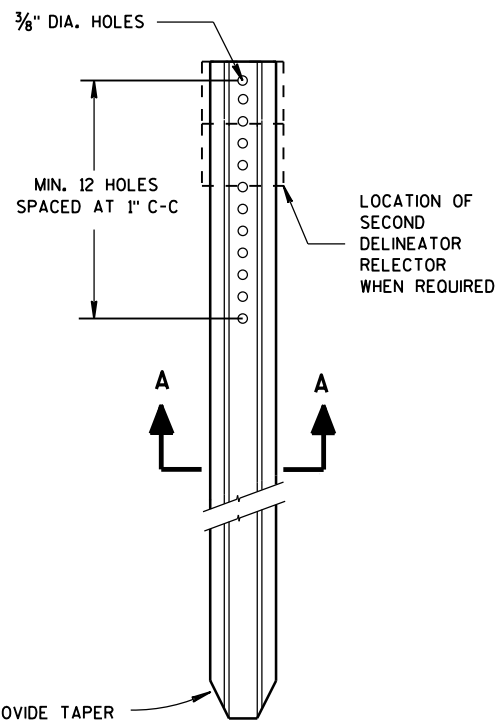
ALTERNATE WOOD
BLOCKOUT DETAIL

6

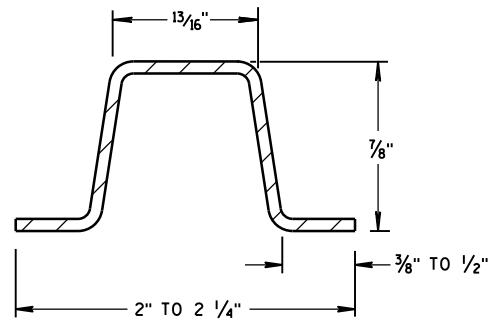
S.D.D. 14 B 44-3C

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

S.D.D. 14 B 44-3C

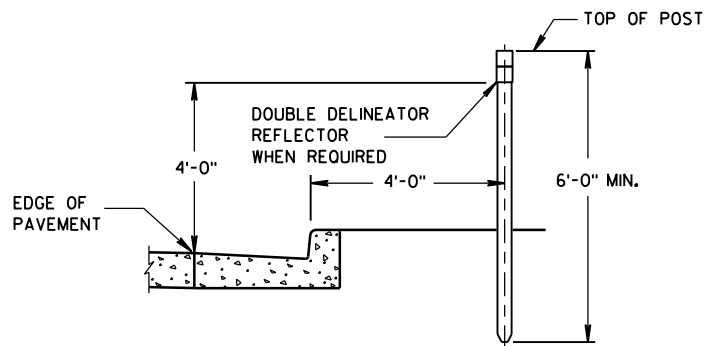
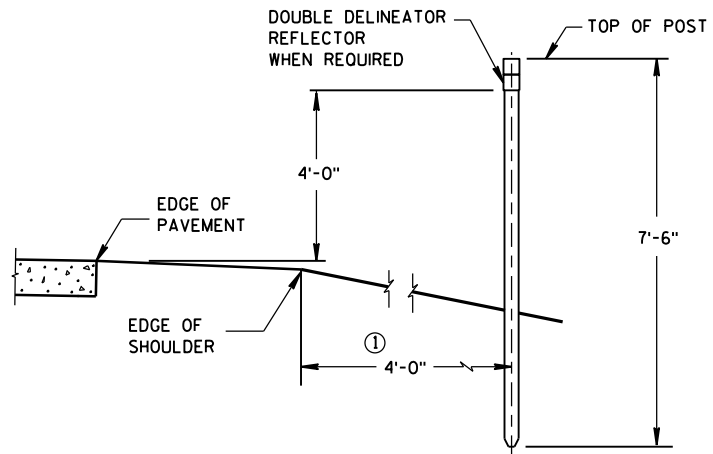


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

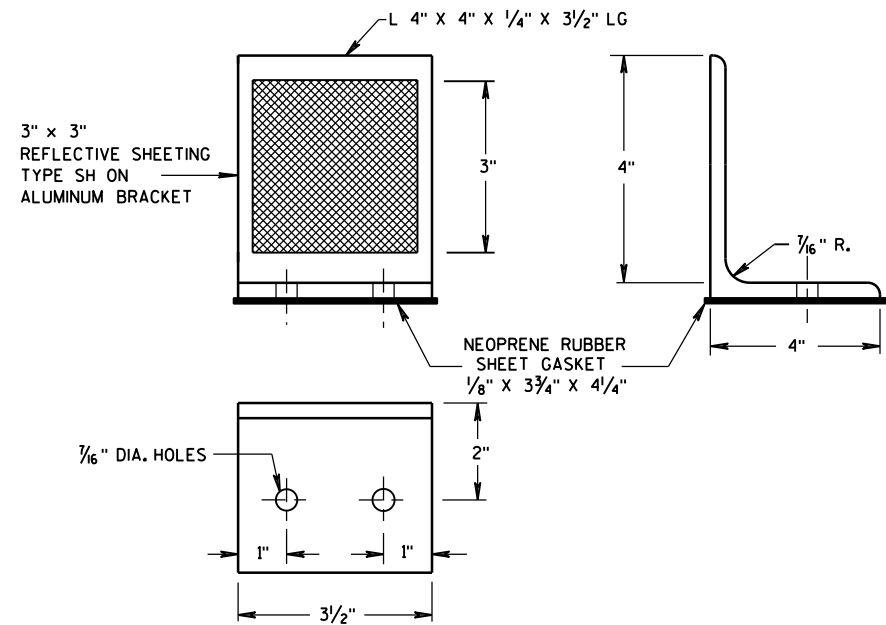


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

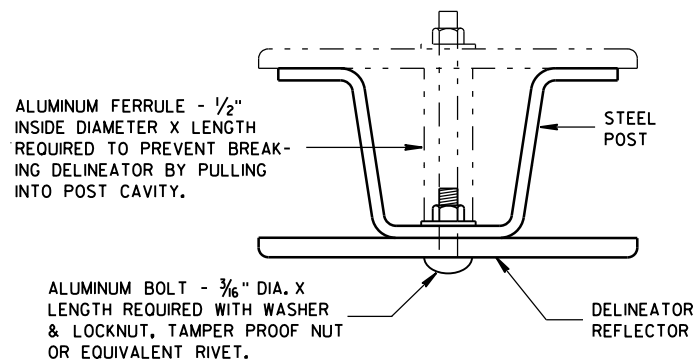
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

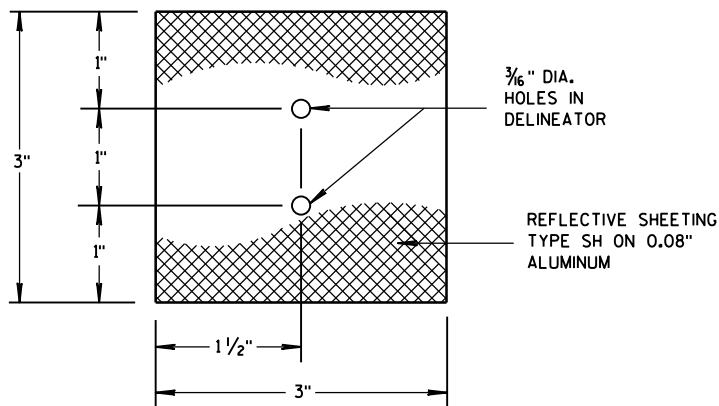
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



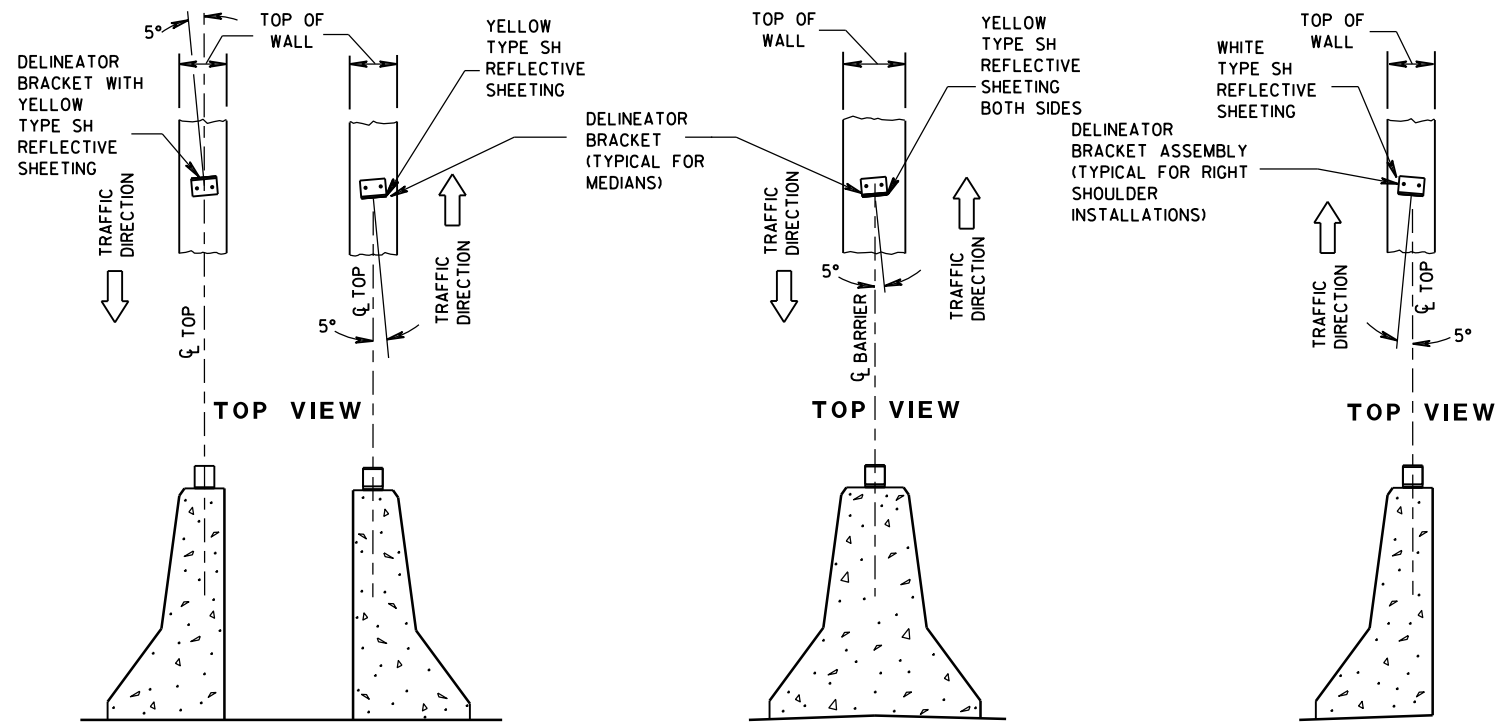
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR REFLECTOR



3"x 3" DELINEATOR REFLECTOR

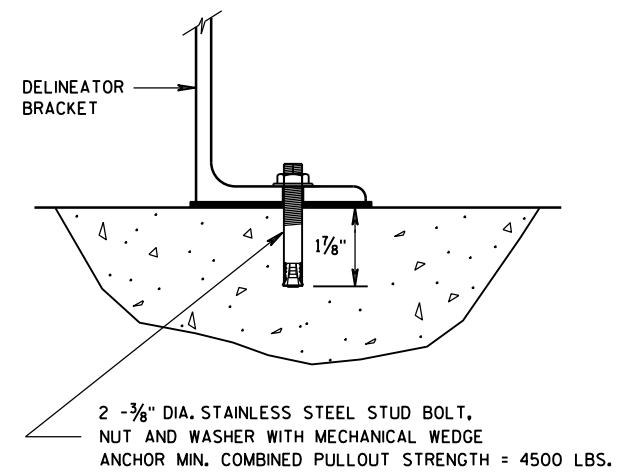


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS

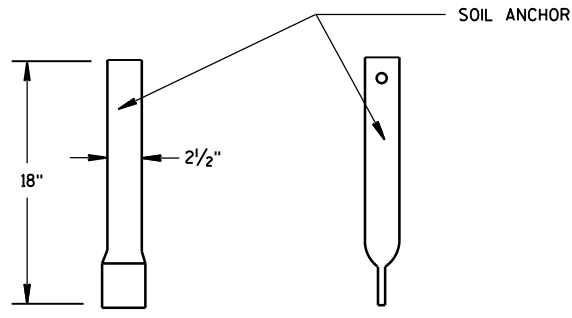
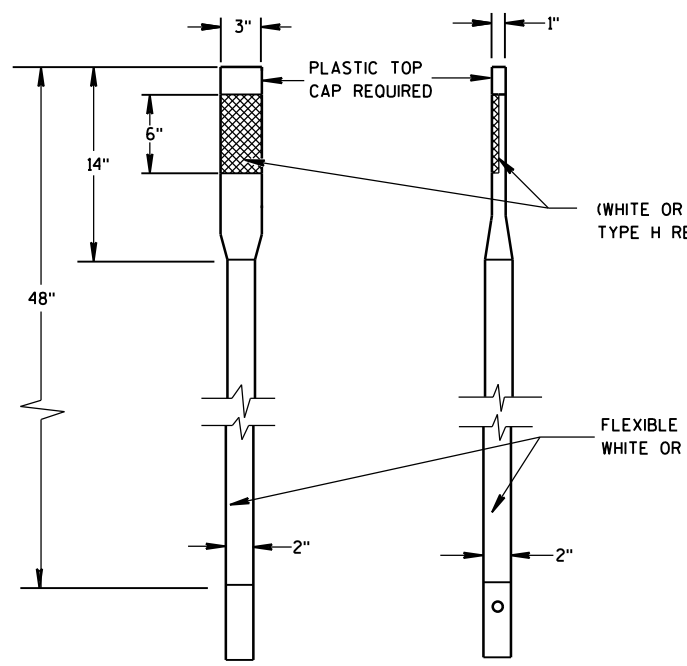


DELINEATOR BRACKET MOUNTING DETAIL

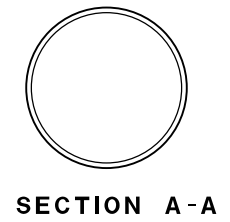
DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

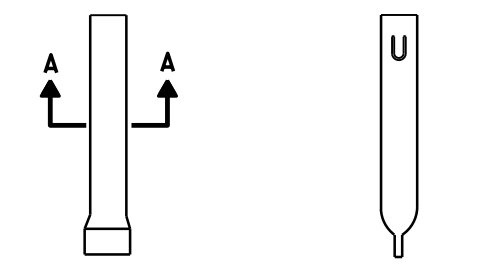
APPROVED
4-18-16 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



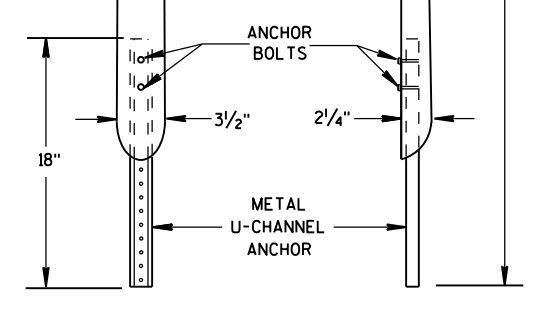
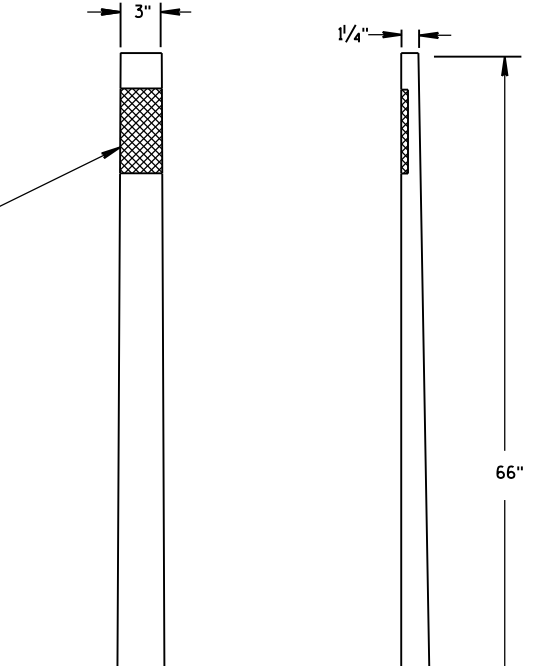
FRONT VIEW SIDE VIEW
ALTERNATE 1



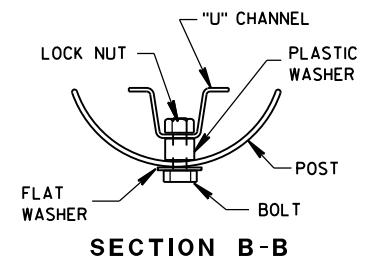
SECTION A-A



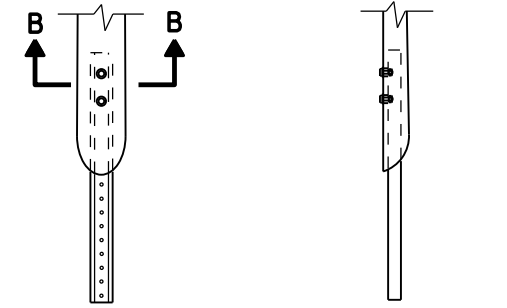
FRONT VIEW SIDE VIEW
ALTERNATE 1



FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE DELINEATOR POSTS

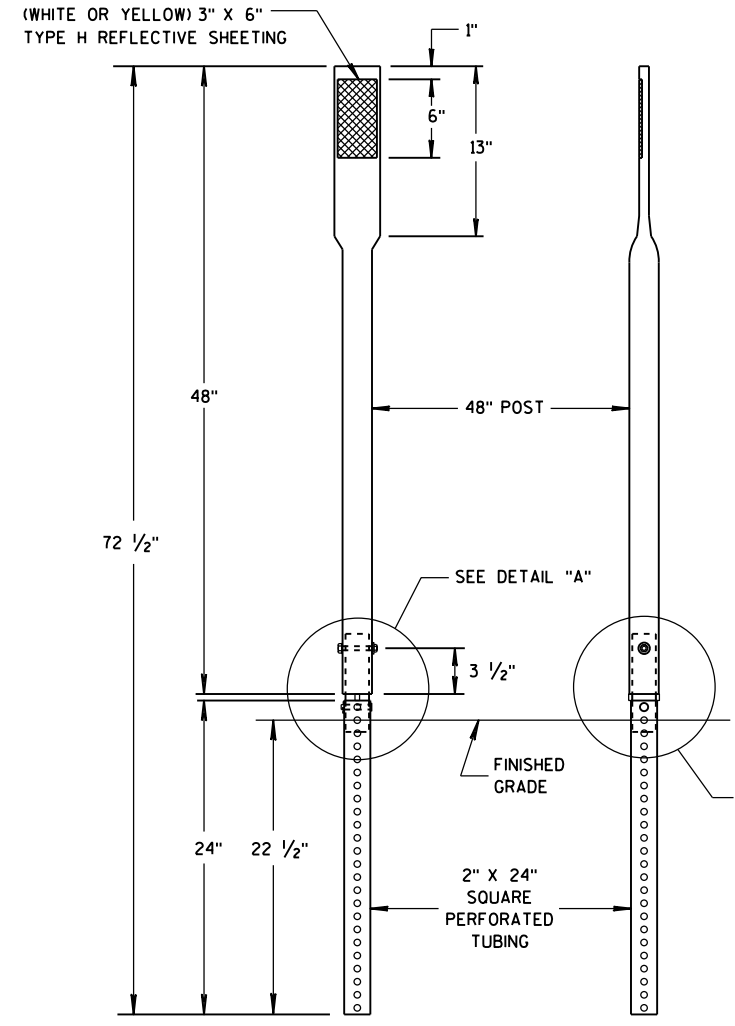


SECTION B-B



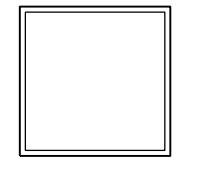
FRONT VIEW SIDE VIEW

ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS

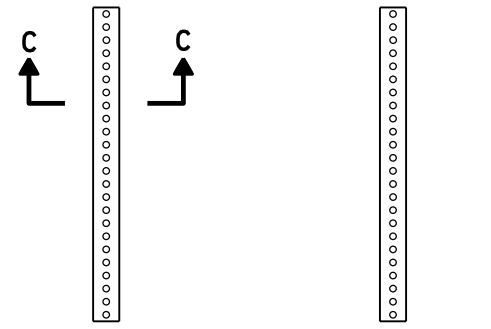


FRONT VIEW SIDE VIEW

ALTERNATE 3



SECTION C-C

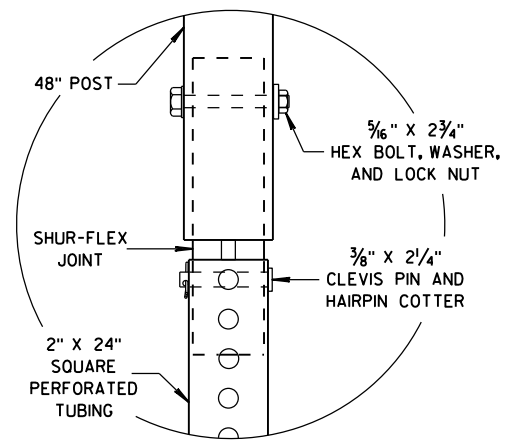


FRONT VIEW SIDE VIEW

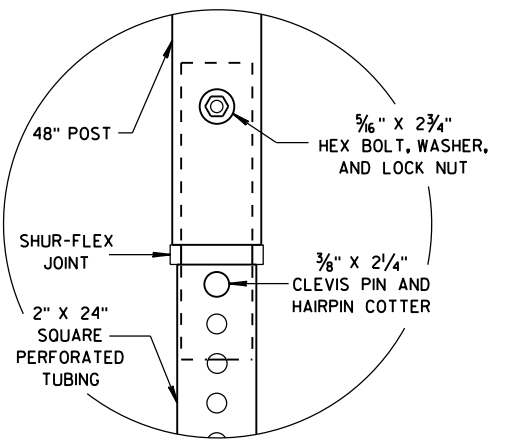
ALTERNATE 3

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



DETAIL A



DETAIL B

REFLECTOR SPACING TABLE

REFLECTOR SPACING	LOCATION
*100' C-C	RAMPS
400' C-C	MAINLINE

*START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

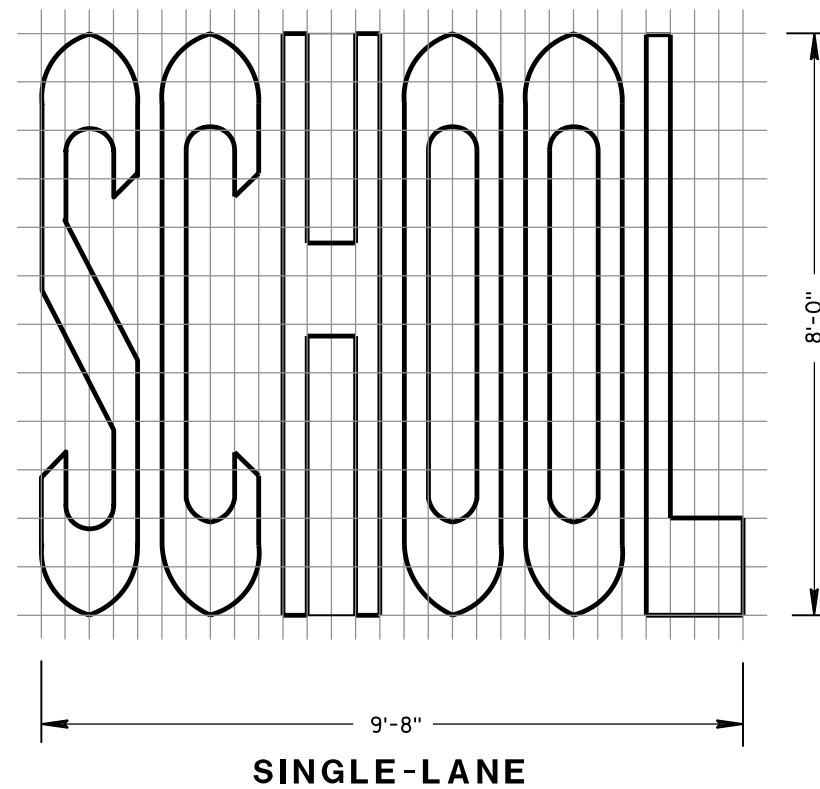
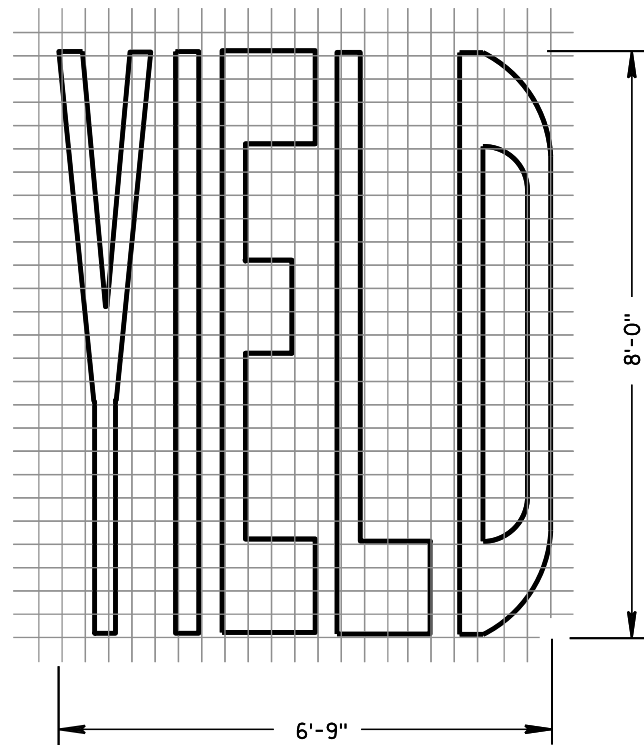
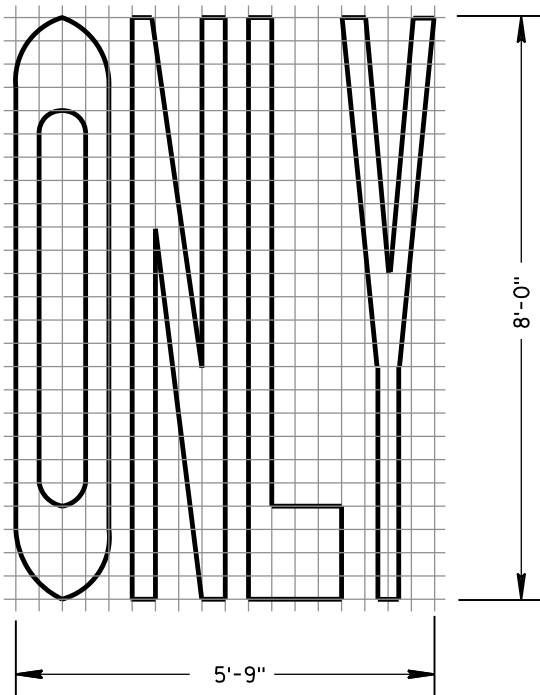
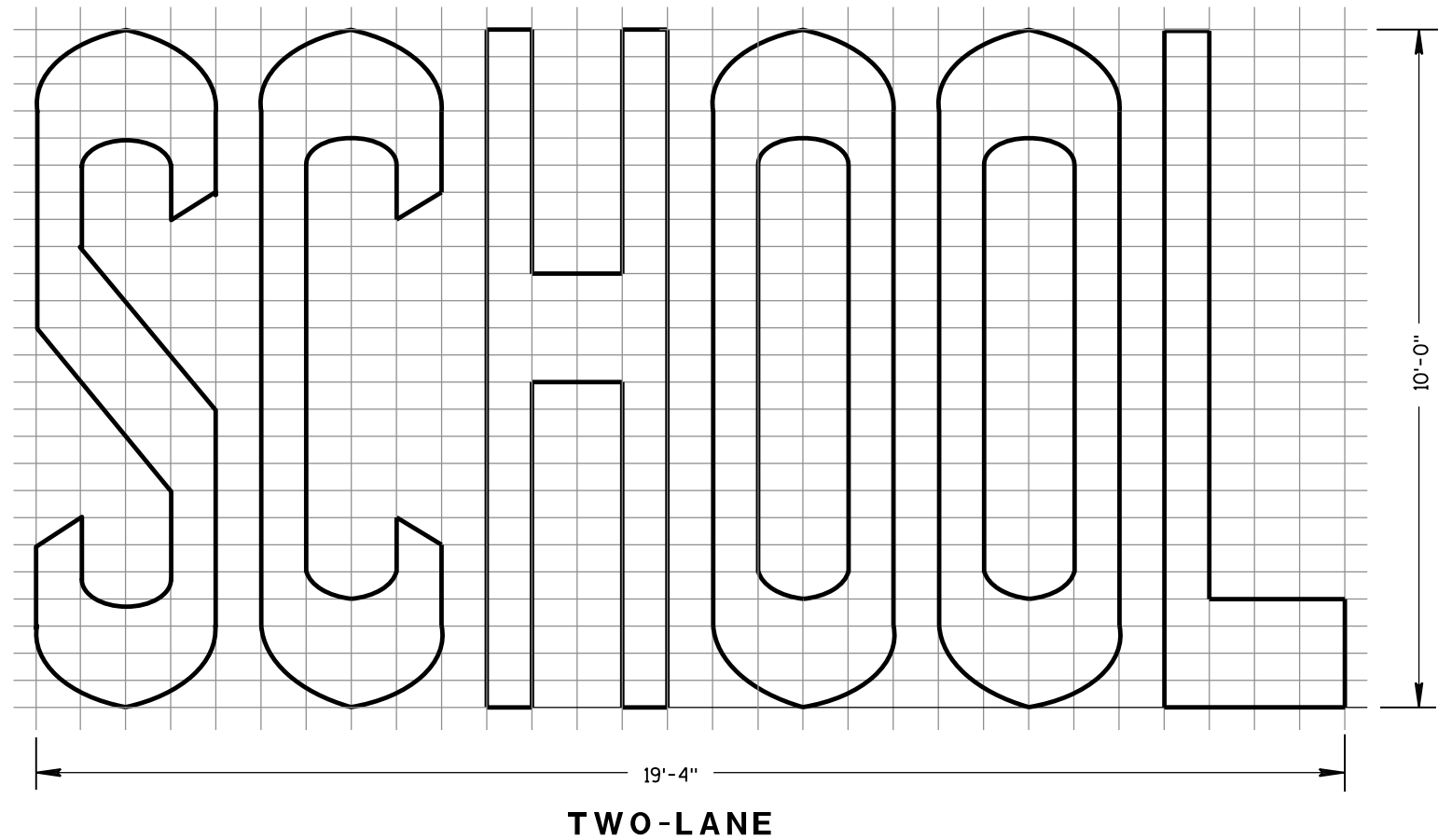
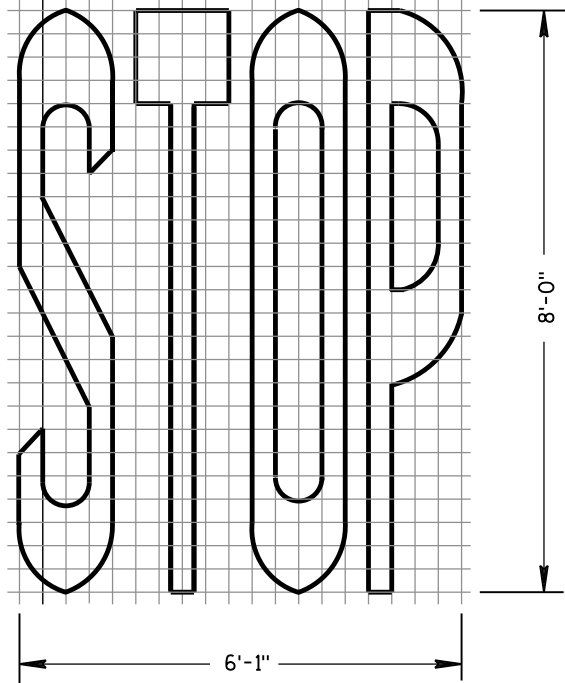
FLEXIBLE DELINEATOR POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

GENERAL NOTES

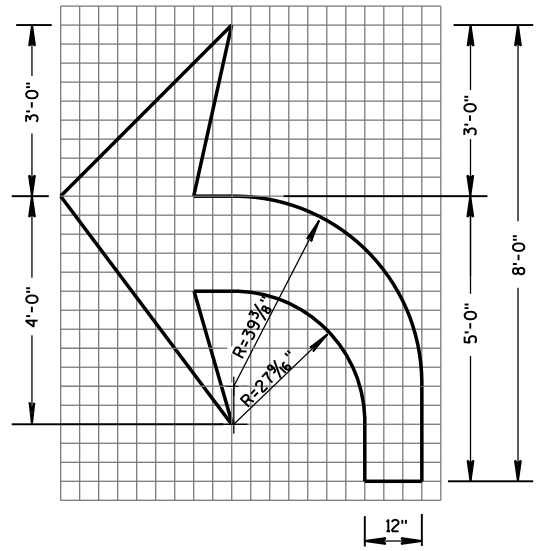
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



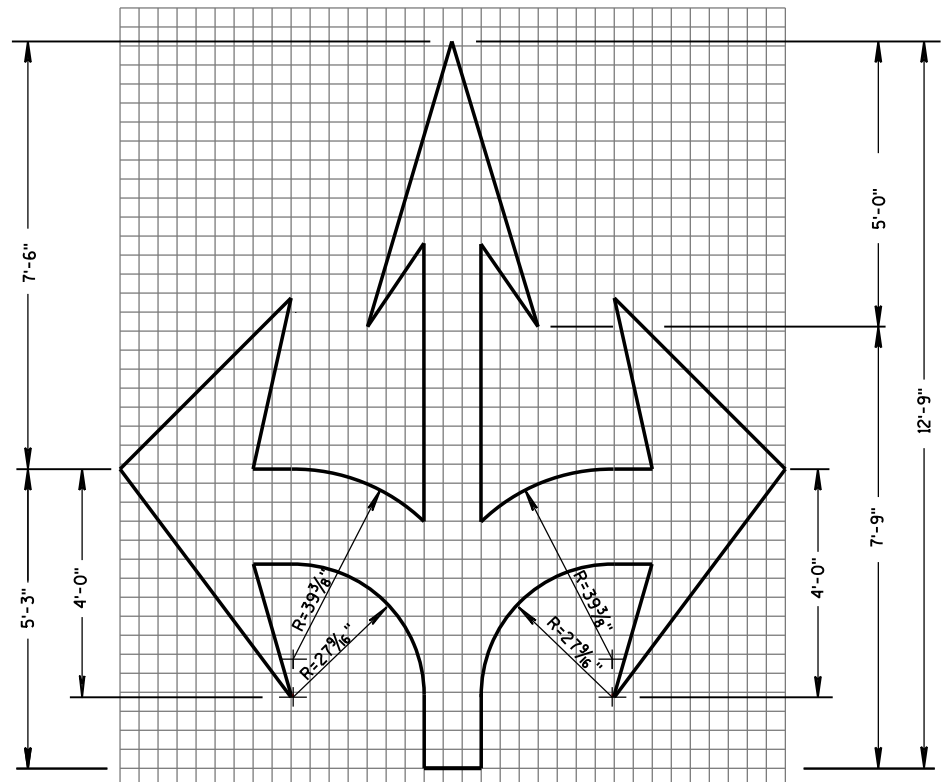
PAVEMENT MARKING WORDS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	

6

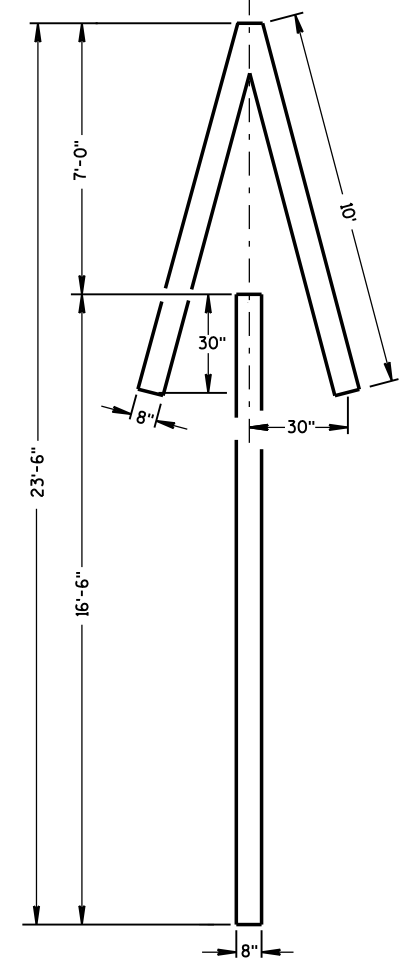
6



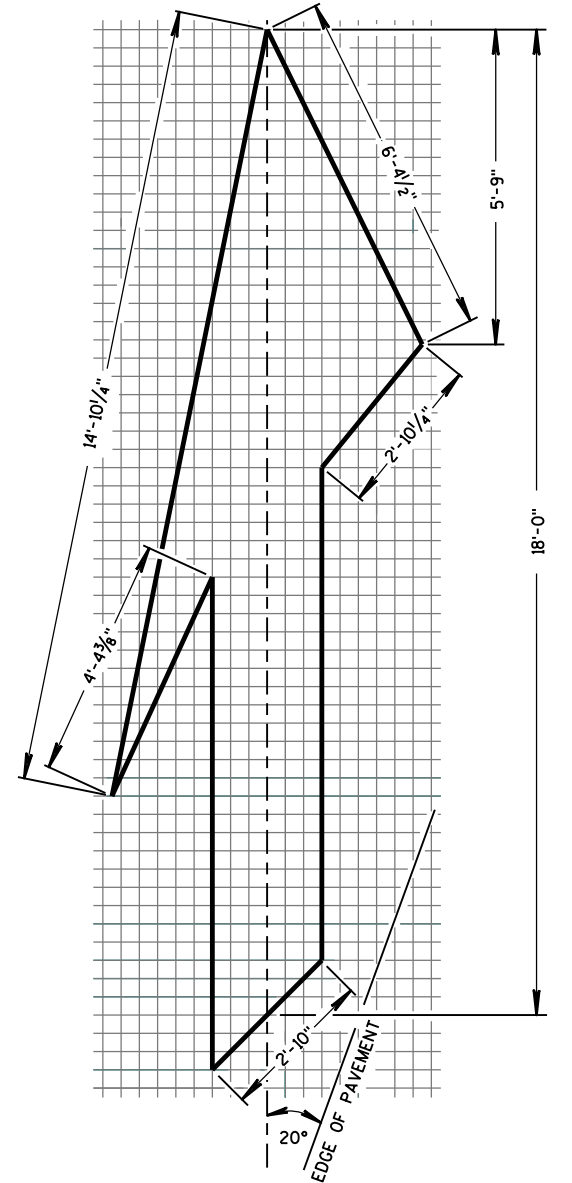
TYPE 2



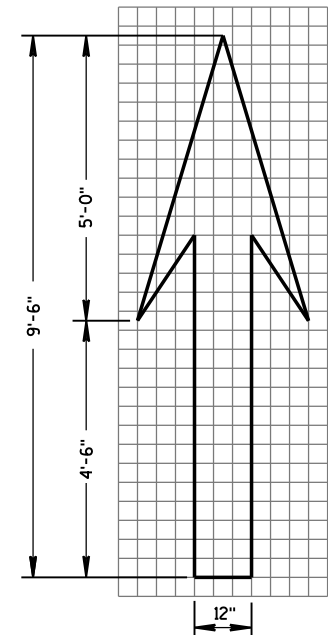
TYPE 6



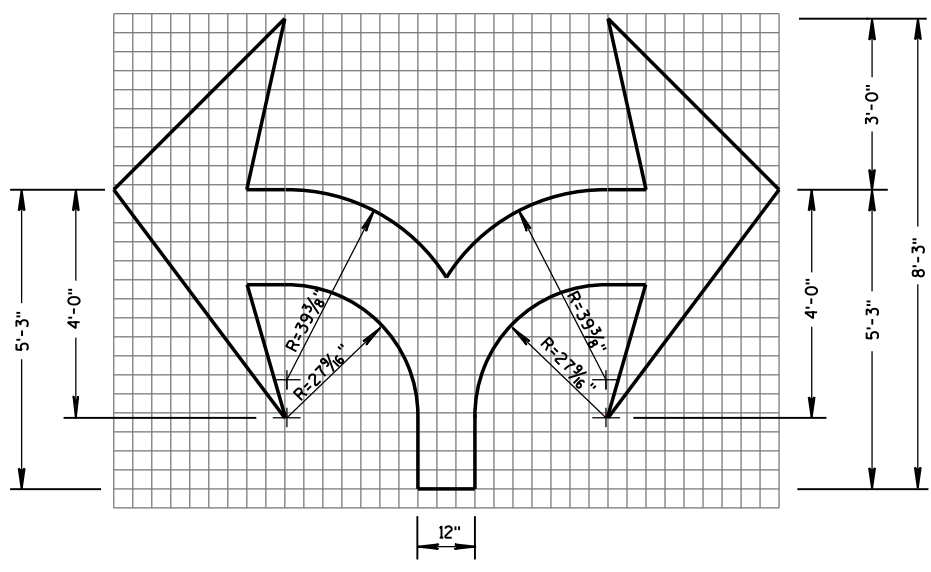
TYPE 4



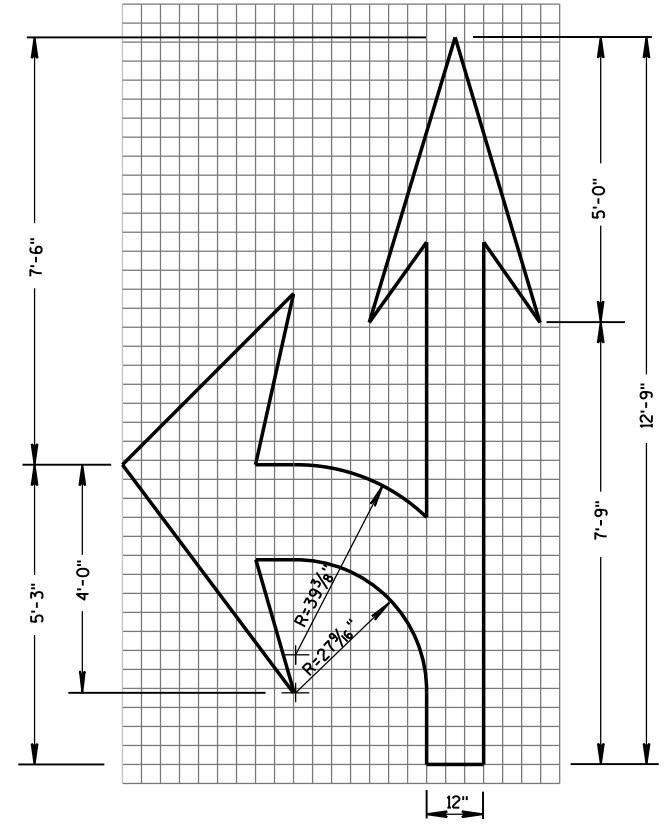
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7

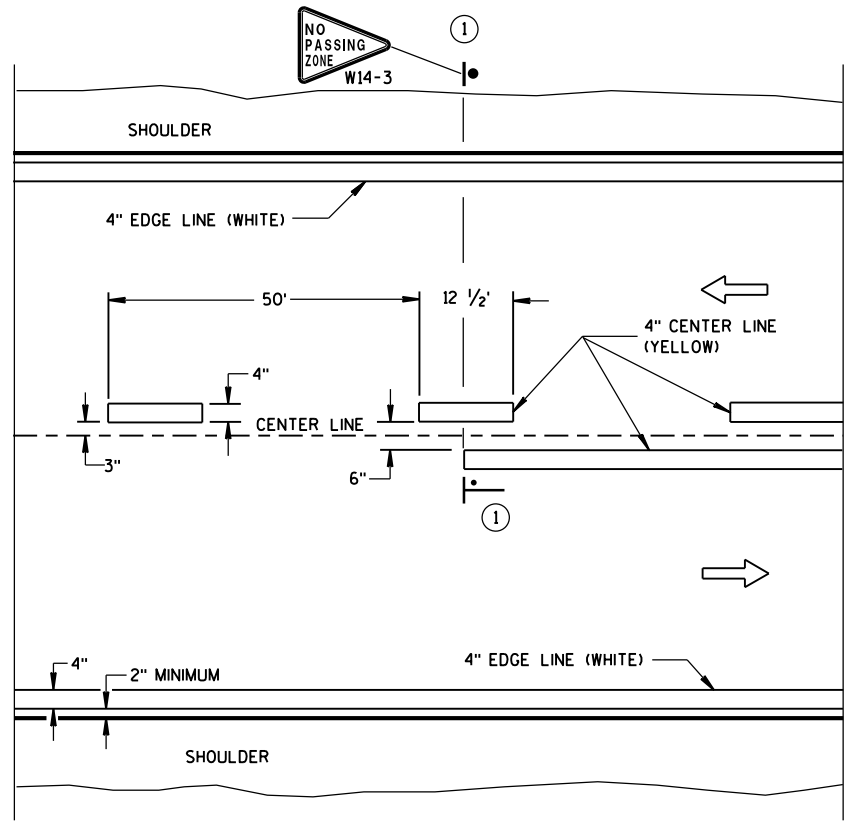


TYPE 3

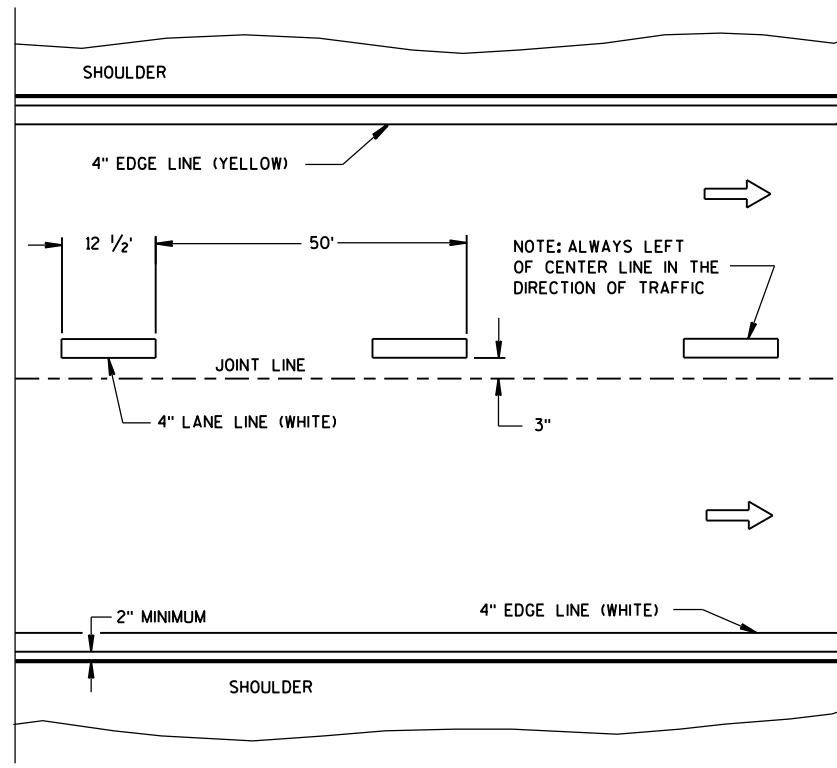
GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Matthew R. Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	

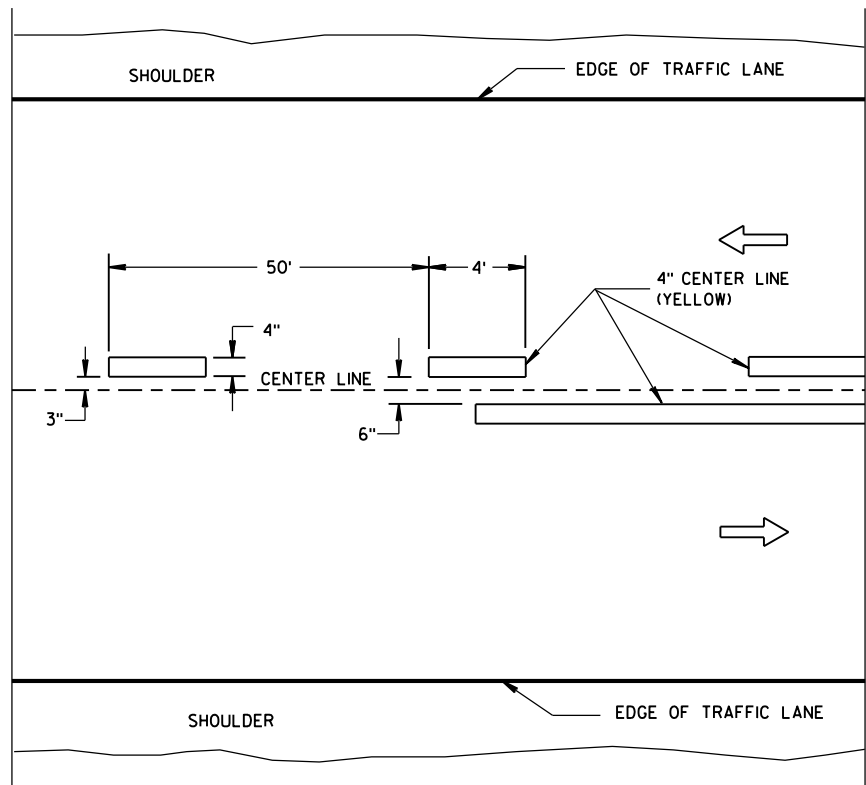


TWO WAY TRAFFIC

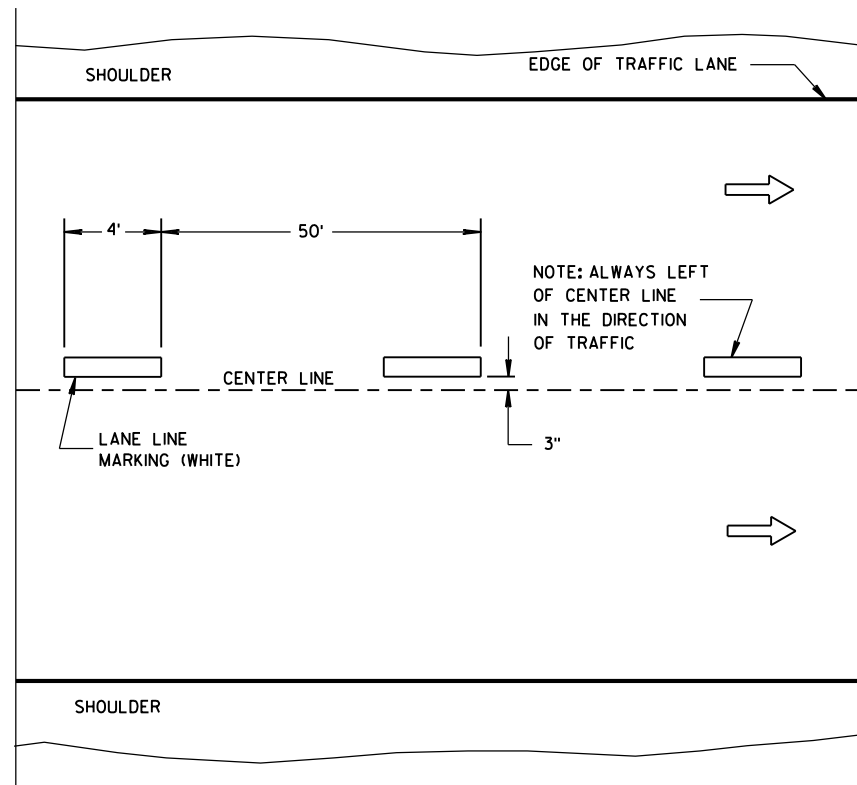


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

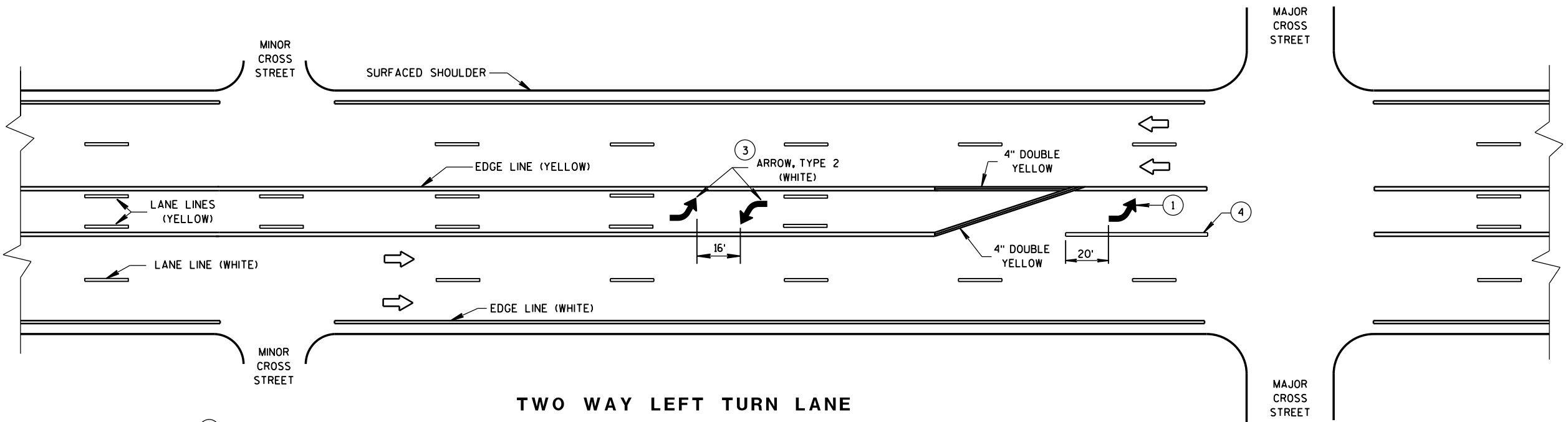
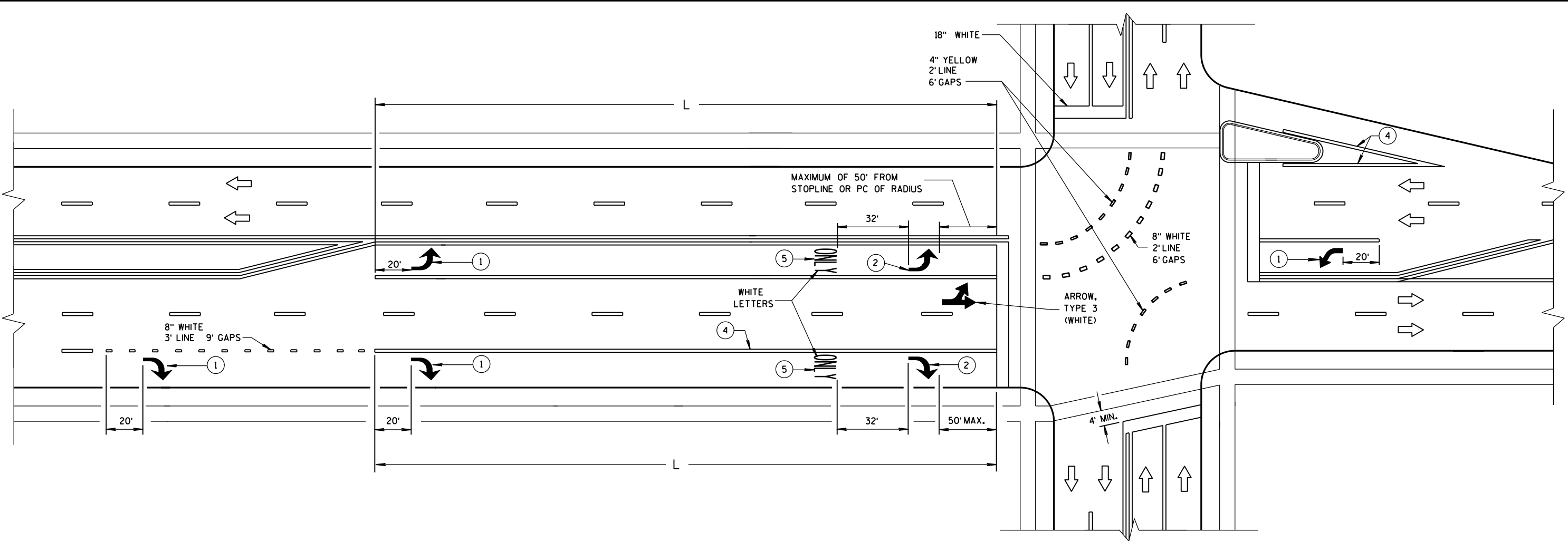
6

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S.D.D. 15 C 8-18a

S.D.D. 15 C 8-18a

LONGITUDINAL MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017	/S/ Matthew R. Rauch
DATE	STATE SIGNING AND MARKING ENGINEER
FHWA	



TWO WAY LEFT TURN LANE

GENERAL NOTES

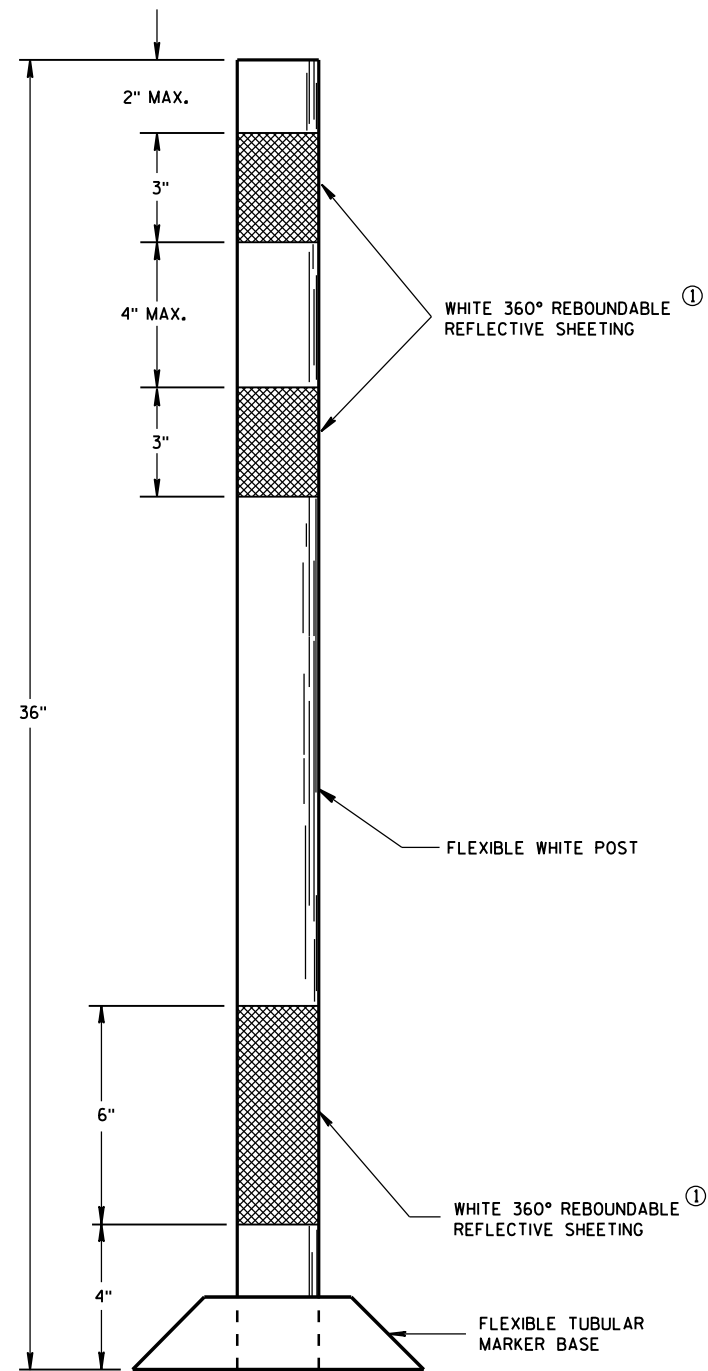
- ① REQUIRED ARROW, TYPE 2 (WHITE).
- ② REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ④ 8" WHITE
- ⑤ REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

NOTE:
 ARROW SYMBOL ()
 SHOWS DIRECTION OF TRAVEL

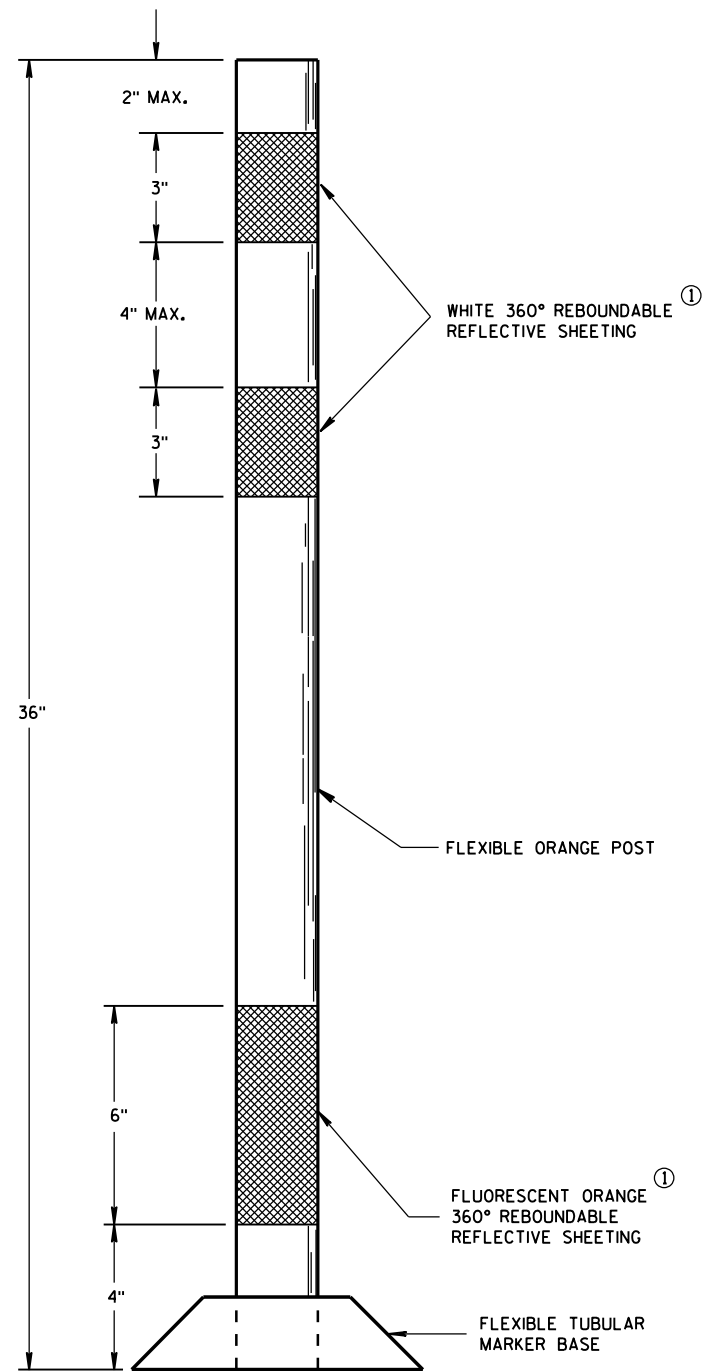
L = LENGTH OF TURN BAY

**PAVEMENT MARKING
(TURN LANES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**FLEXIBLE
TUBULAR MARKER POST
PERMANENT CROSSOVER**



**FLEXIBLE
TUBULAR MARKER POST
WORK ZONE**

GENERAL NOTES

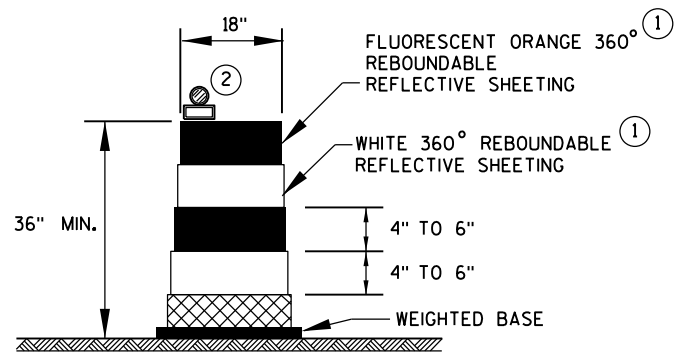
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

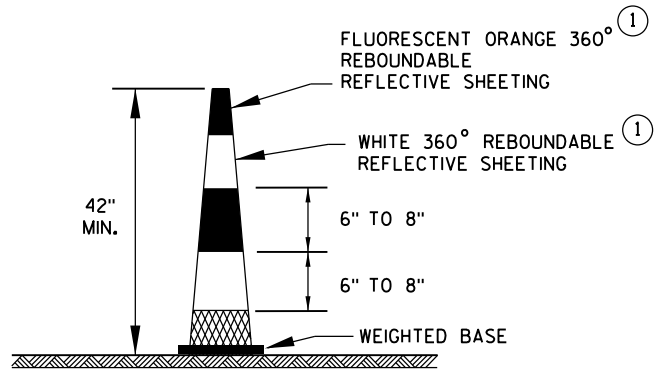
THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



DRUM

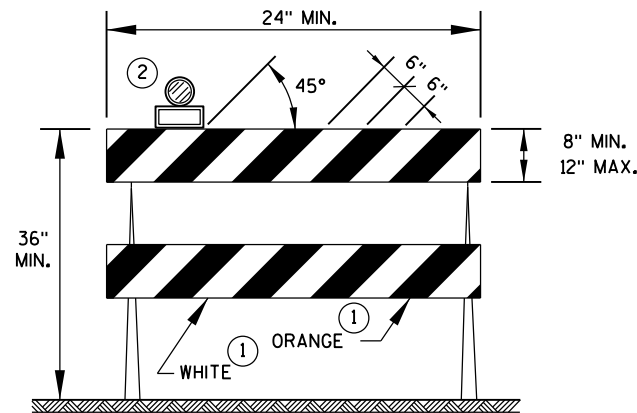


42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

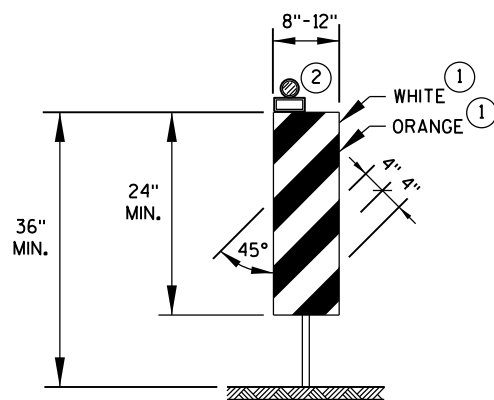
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



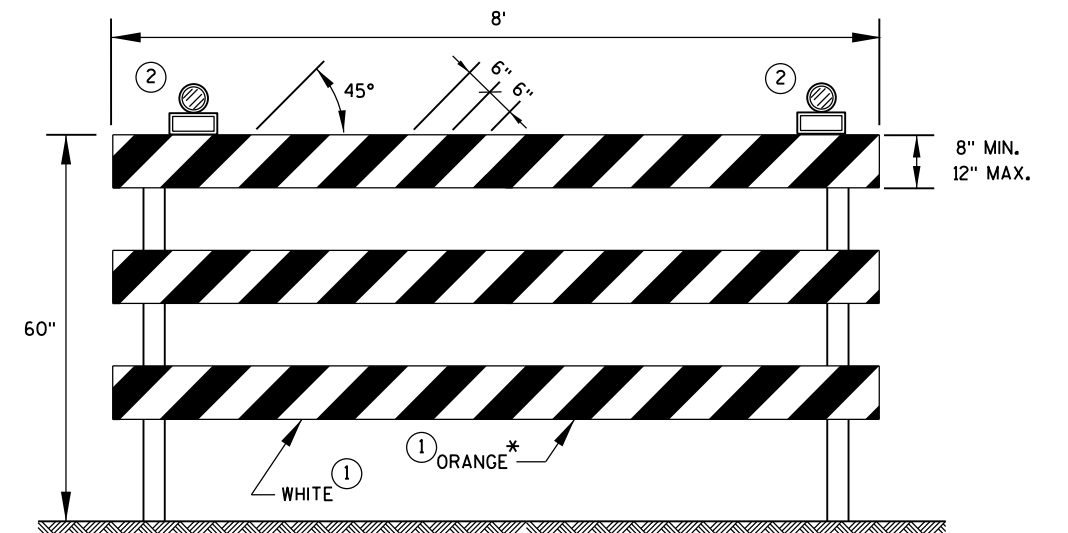
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
 ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

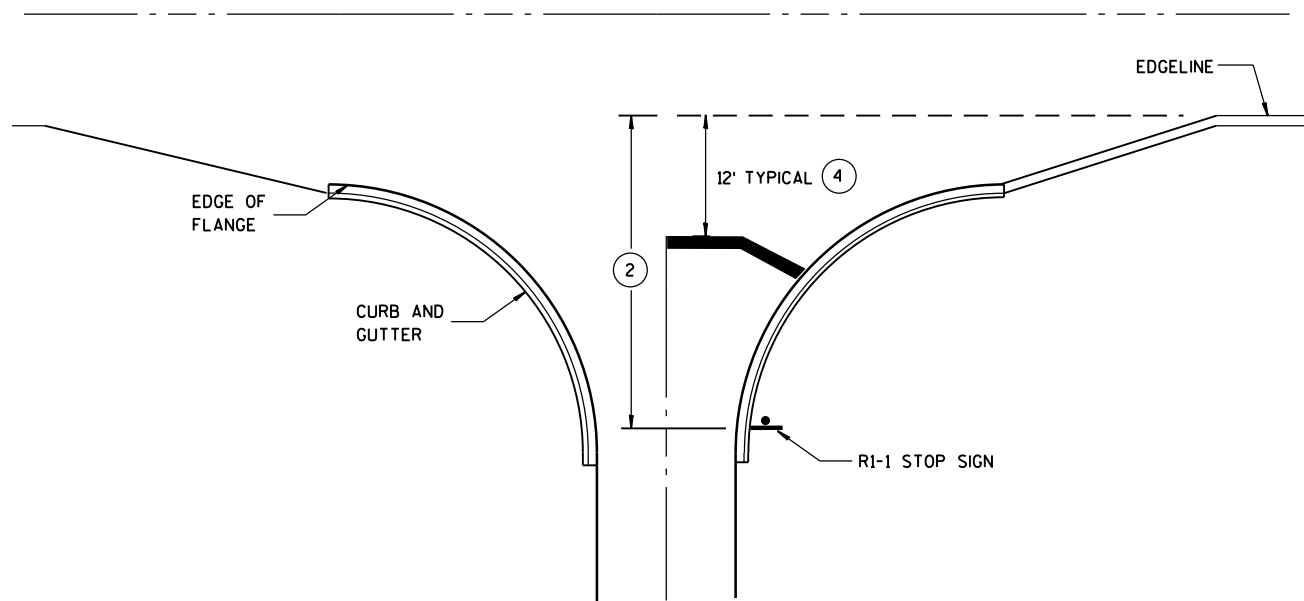
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

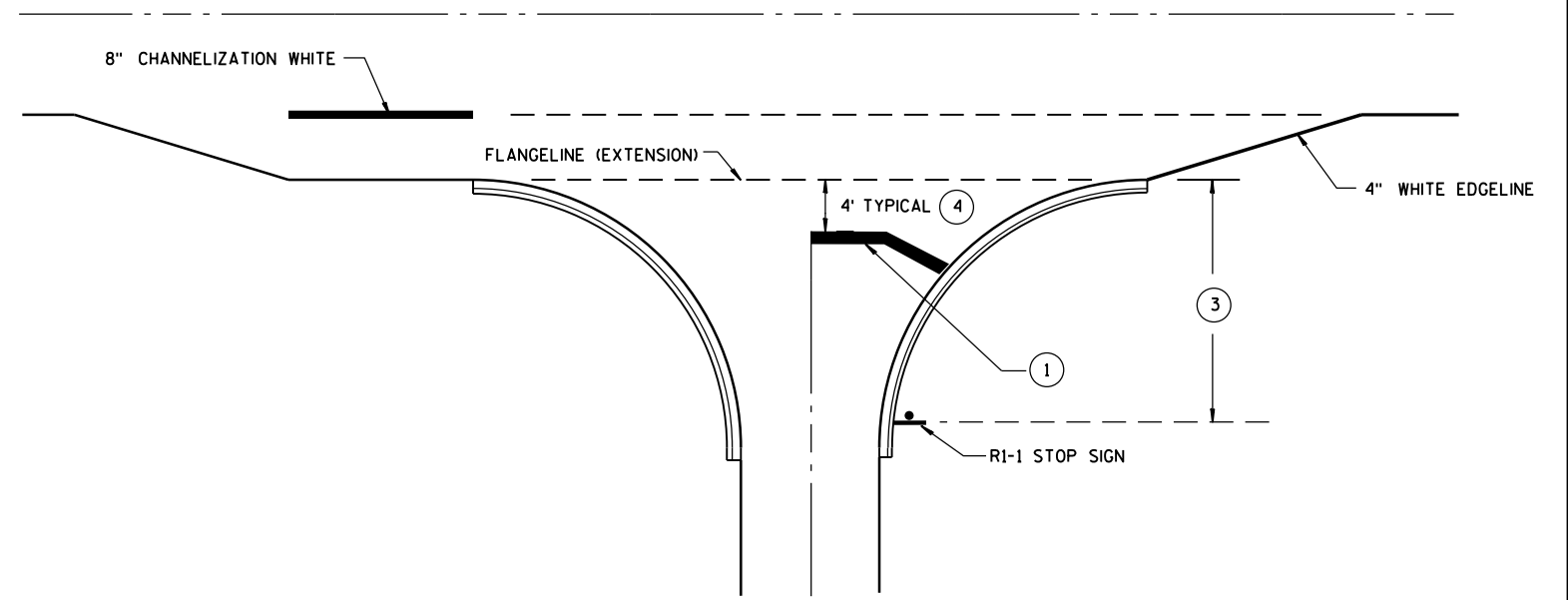
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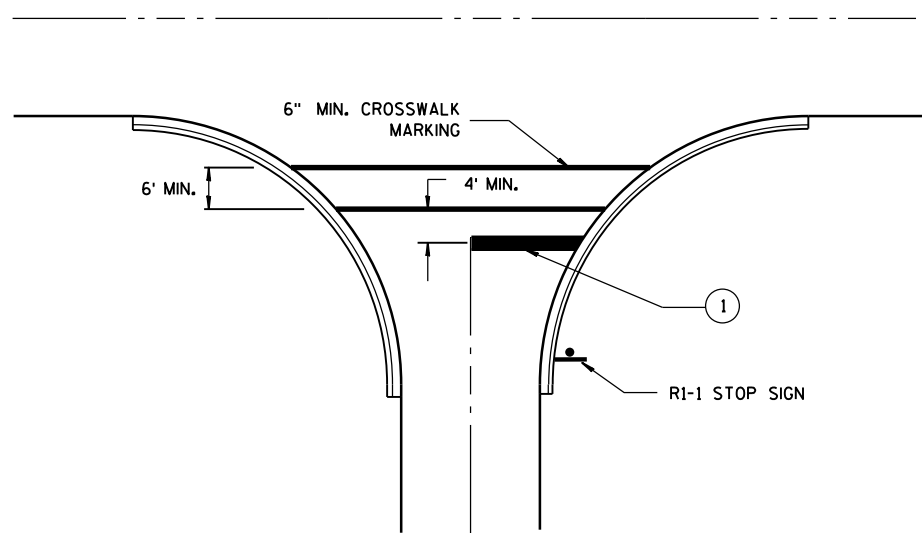
CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



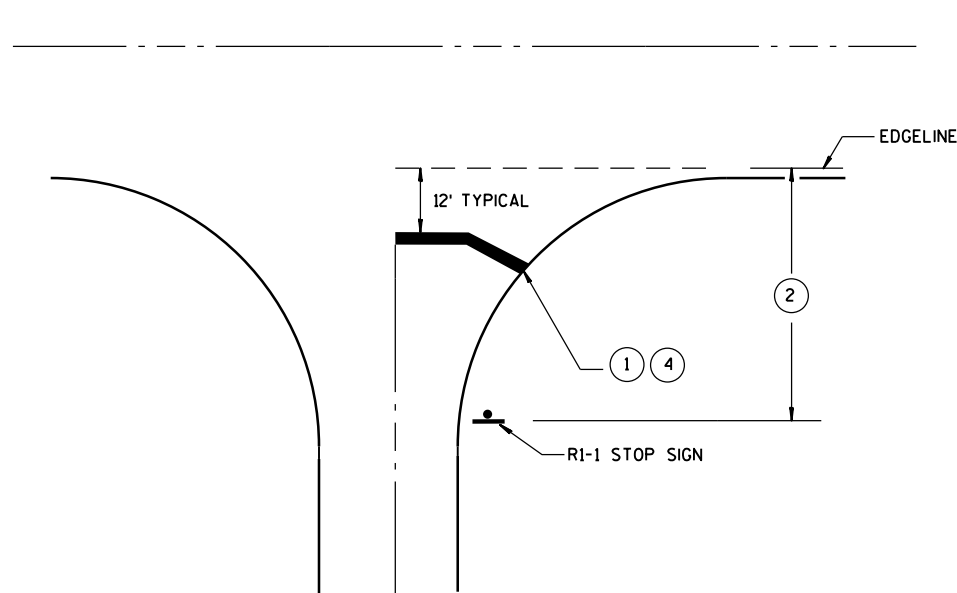
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

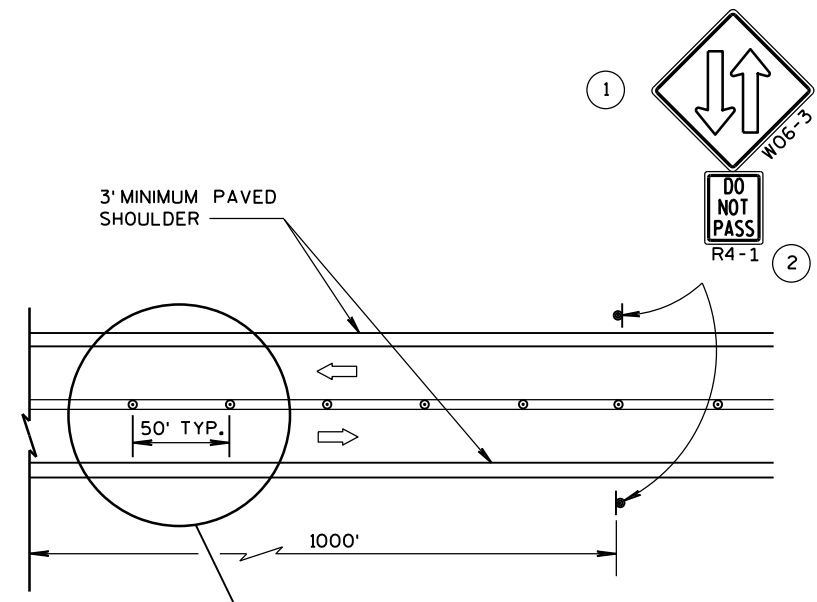
GENERAL NOTES

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- ④ MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

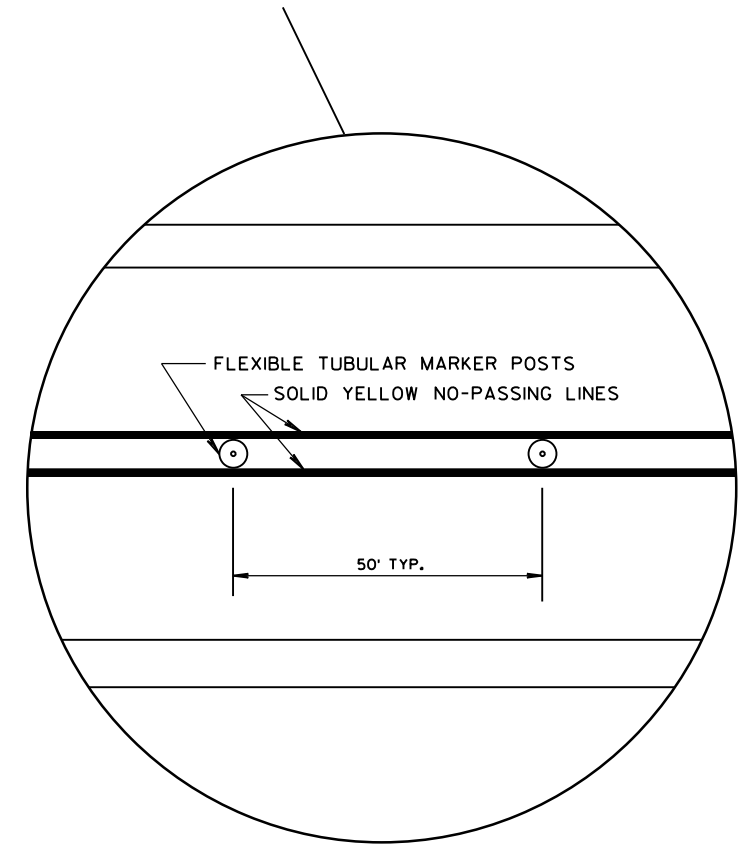
STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



TWO LANE, TWO WAY OPERATION



- LEGEND**
- ⊙ SIGN ON PERMANENT SUPPORT
 - ⊙ DELINEATOR FLEXIBLE/TUBULAR MARKER
 - ➡ DIRECTION OF TRAFFIC

GENERAL NOTES

ALL SIGNS ARE 48"x48" UNLESS OTHERS NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC AT 50-FOOT SPACING.

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING, 4-INCH DOUBLE YELLOW.



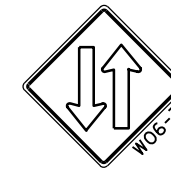
THE W06-3 WITH THE W057-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND/OR 500 FEET BEYOND ANY SIDEROAD. THE W06-3 WITH THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE W06-3 AND THE W057-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN W06-3 SIGNS.

- 2 CONVENTIONAL: 24"x30"
FREEWAY AND EXPRESSWAY: 36"x48"

TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/s/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

LEGEND

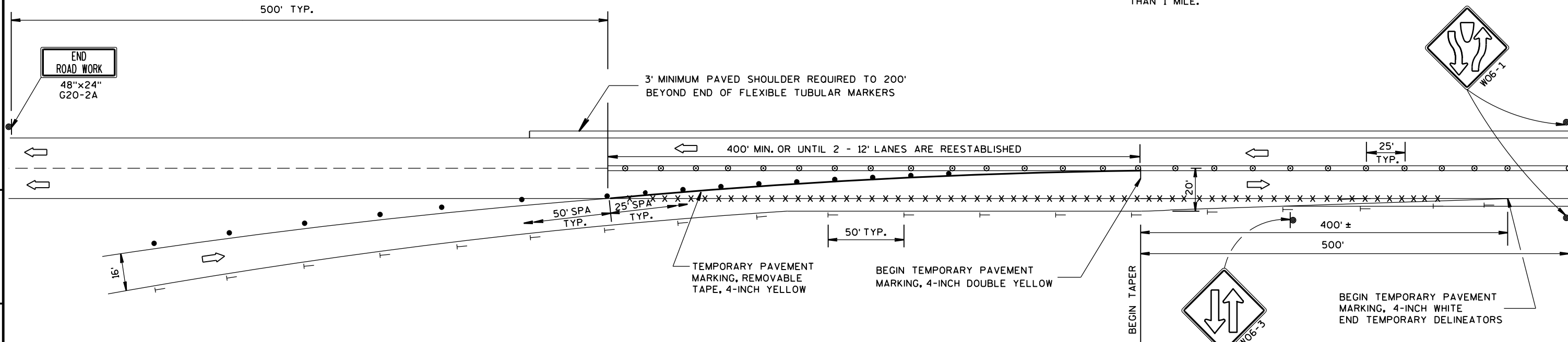
- ⊙ SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- ⊙ DELINEATOR FLEXIBLE/TUBULAR MARKER
- TEMPORARY DELINEATOR
(STEEL POST W/SINGLE DELINEATOR)
COLOR OF DELINEATOR SHALL MATCH THE COLOR OF
THE RESPECTIVE EDGELINE MARKING
- *** REMOVE PAVEMENT MARKINGS
- ➡ DIRECTION OF TRAFFIC



DO NOT PASS

24"x30"
R4-1

REPEAT EVERY 1/4 MILE
IF PROJECT IS LONGER
THAN 1 MILE.



GENERAL NOTES

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER.

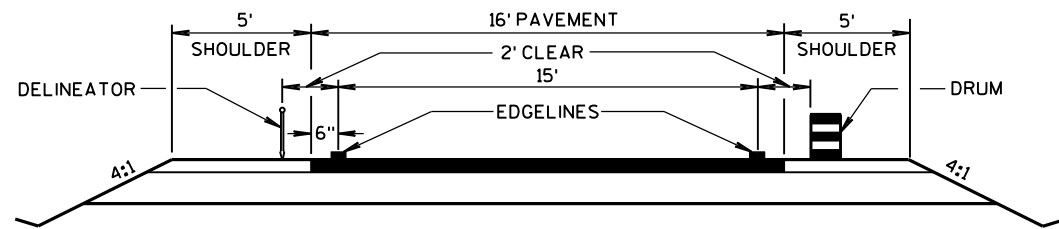
TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/s/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

6

6

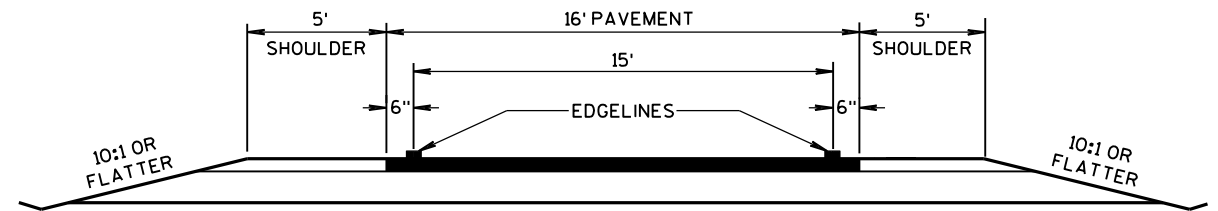
S.D.D. 15 D 9-3

S.D.D. 15 D 9-3



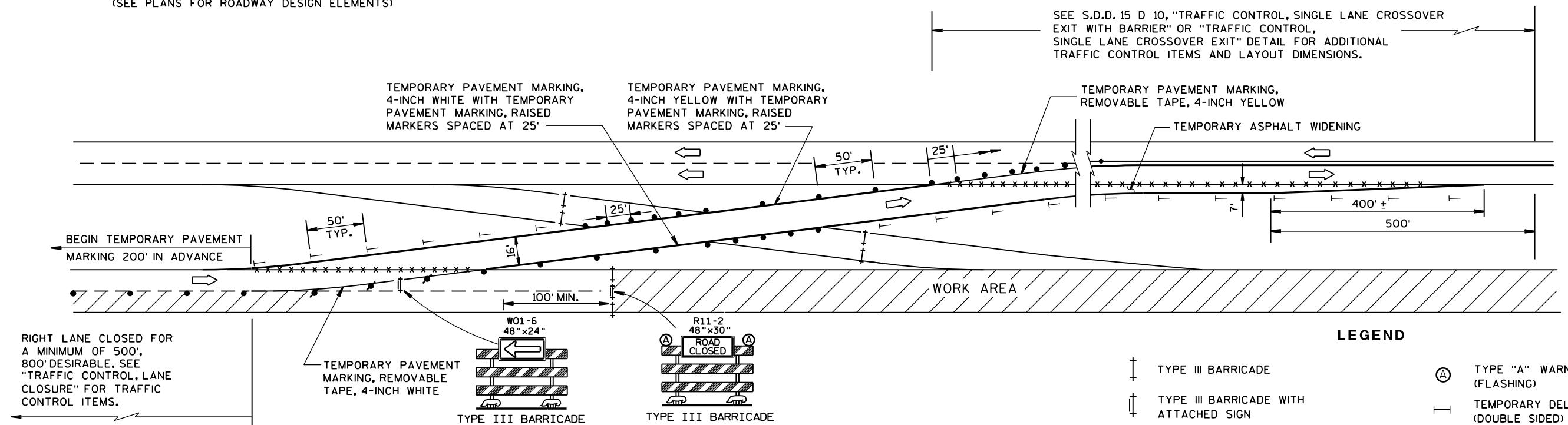
TYPICAL TEMPORARY CROSSOVER ROADWAY DIMENSIONS

(SEE PLANS FOR ROADWAY DESIGN ELEMENTS)



TYPICAL CROSSOVER TO REMAIN IN PLACE ROADWAY DIMENSIONS

(SEE PLANS FOR ROADWAY DESIGN ELEMENTS)



SEE S.D.D. 15 D 10, "TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT WITH BARRIER" OR "TRAFFIC CONTROL, SINGLE LANE CROSSOVER EXIT" DETAIL FOR ADDITIONAL TRAFFIC CONTROL ITEMS AND LAYOUT DIMENSIONS.

RIGHT LANE CLOSED FOR A MINIMUM OF 500', 800' DESIRABLE, SEE "TRAFFIC CONTROL, LANE CLOSURE" FOR TRAFFIC CONTROL ITEMS.

TEMPORARY PAVEMENT MARKING, 4-INCH WHITE WITH TEMPORARY PAVEMENT MARKING, RAISED MARKERS SPACED AT 25'

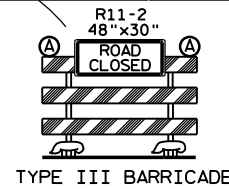
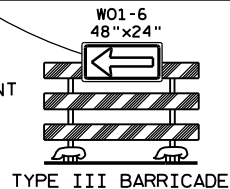
TEMPORARY PAVEMENT MARKING, 4-INCH YELLOW WITH TEMPORARY PAVEMENT MARKING, RAISED MARKERS SPACED AT 25'

TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE, 4-INCH YELLOW

TEMPORARY ASPHALT WIDENING

BEGIN TEMPORARY PAVEMENT MARKING 200' IN ADVANCE

WORK AREA



LEGEND

- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- ⊥ TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR) COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE EDGELINE MARKING
- ⊙ TYPE "A" WARNING LIGHT (FLASHING)
- ⊥ TEMPORARY DELINEATOR (DOUBLE SIDED)
- XXXXX REMOVING PAVEMENT MARKINGS
- ⊙ DELINEATOR FLEXIBLE/TUBULAR MARKER
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK AREA

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER AND TEMPORARY PAVEMENT MARKING WHERE USED.

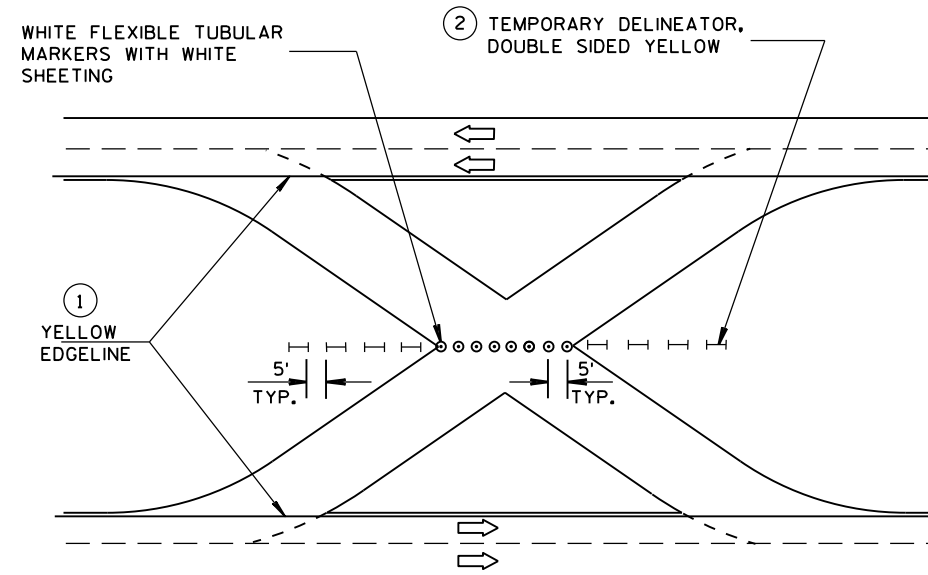
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.

- 1 FOR PERMANENT CROSSOVER, PAVEMENT MARKING SHOULD CONFORM TO SECTION 646 OF THE STANDARD SPECIFICATIONS.
- 2 FOR PERMANENT CROSSOVER, INSTALL PERMANENT DELINEATORS ACCORDING TO SECTION 633 OF THE STANDARD SPECIFICATIONS.

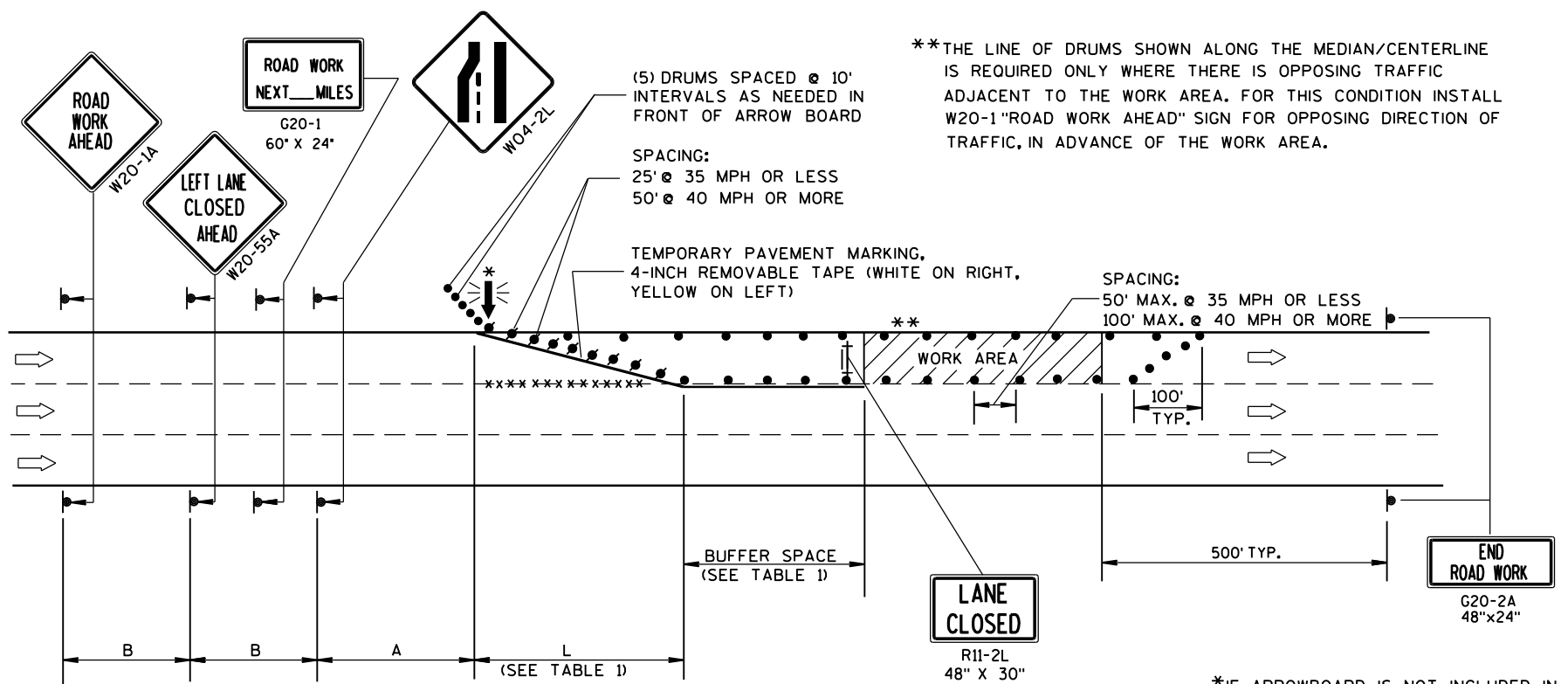


TRAFFIC CONTROL FOR CROSSOVER THAT IS NOT IN USE

TRAFFIC CONTROL, SINGLE LANE CROSSOVER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-16-2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA



B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

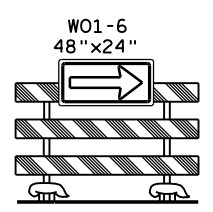
TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':
 L = WS AT 45 MPH OR GREATER
 $L = \frac{WS^2}{60}$ AT 40 MPH OR LESS
 L = TAPER LENGTH IN FEET
 S = NON-CONSTRUCTION SPEED LIMIT (MPH)
 W = WIDTH OF LANE CLOSURE

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.



LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

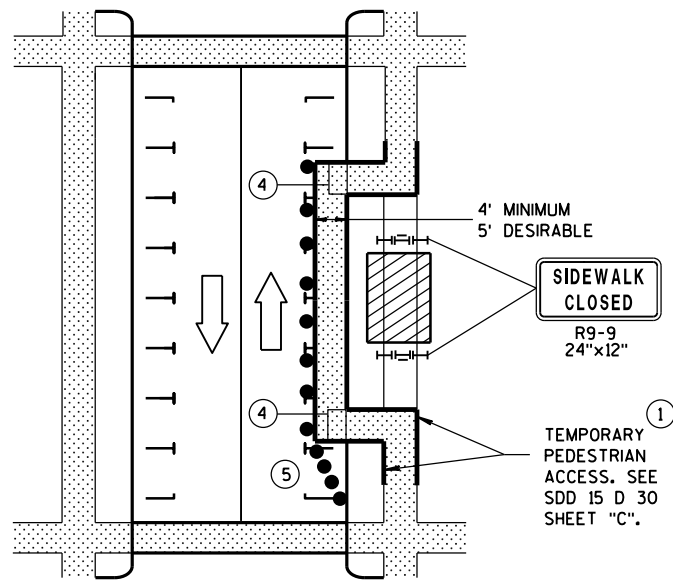
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

**TRAFFIC CONTROL,
SINGLE LANE CLOSURE,
NON-FREEWAY/EXPRESSWAY**

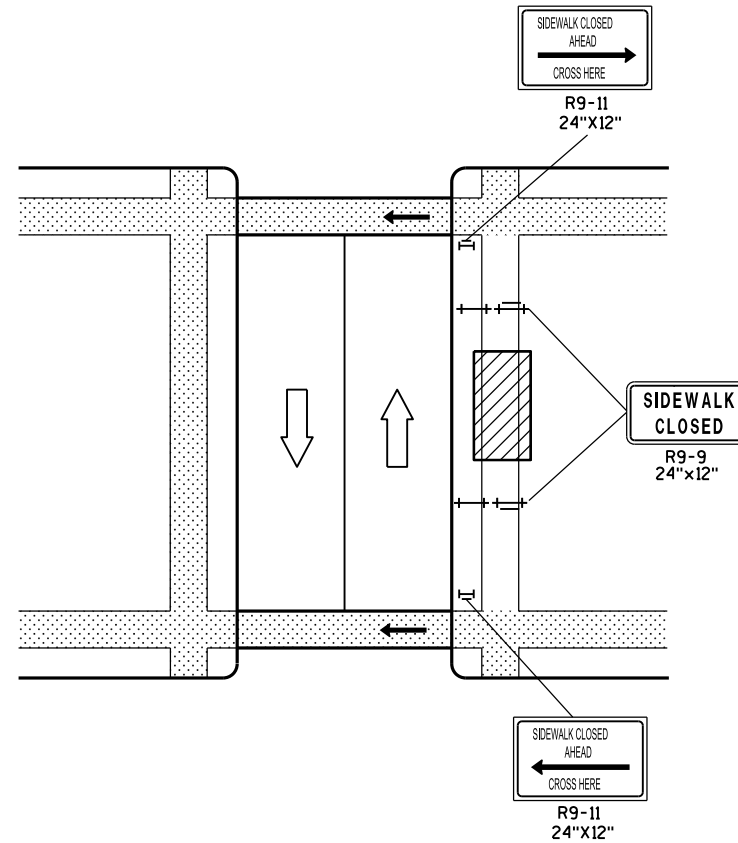
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /s/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

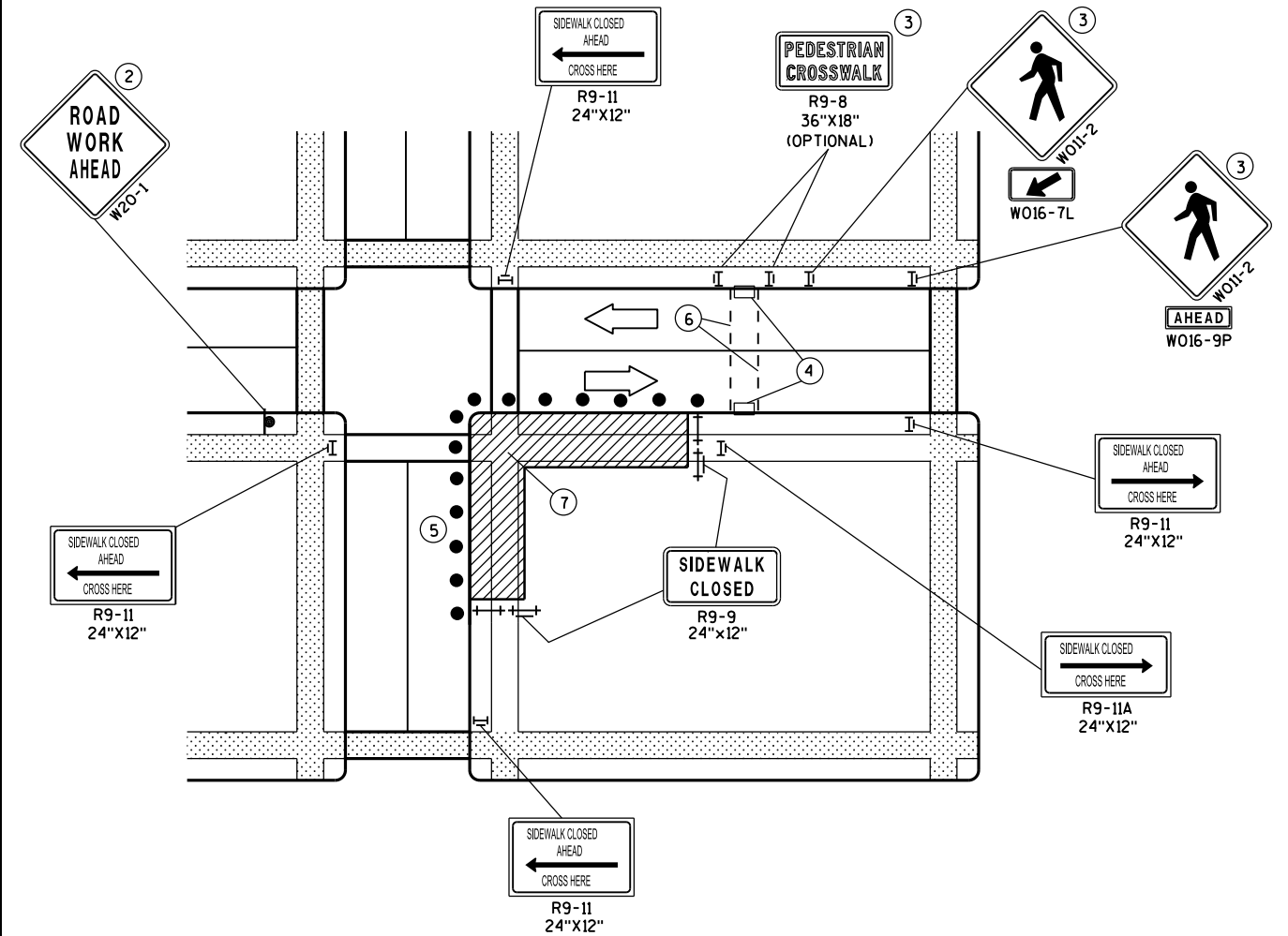
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.



MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

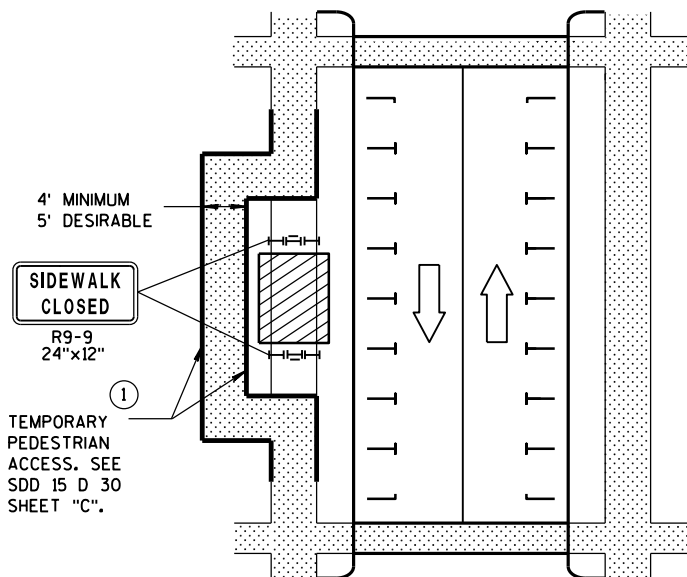


MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

- ① IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.
- ② "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
- ③ IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
- ④ TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".
- ⑤ DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
- ⑥ TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
- ⑦ LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

	SIGN ON PERMANENT SUPPORT		DIRECTION OF TRAFFIC
	UNDER PEDESTRIAN TRAFFIC		TRAFFIC CONTROL DRUM
	WORK AREA		
	PEDESTRIAN CHANNELIZATION DEVICE		
	TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)		
	TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)		

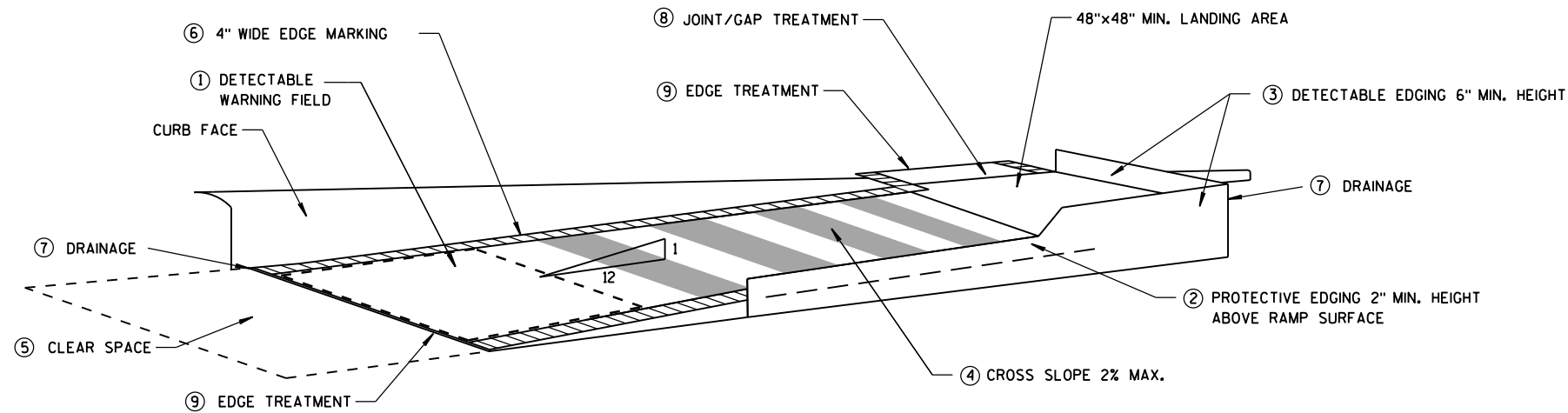
**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

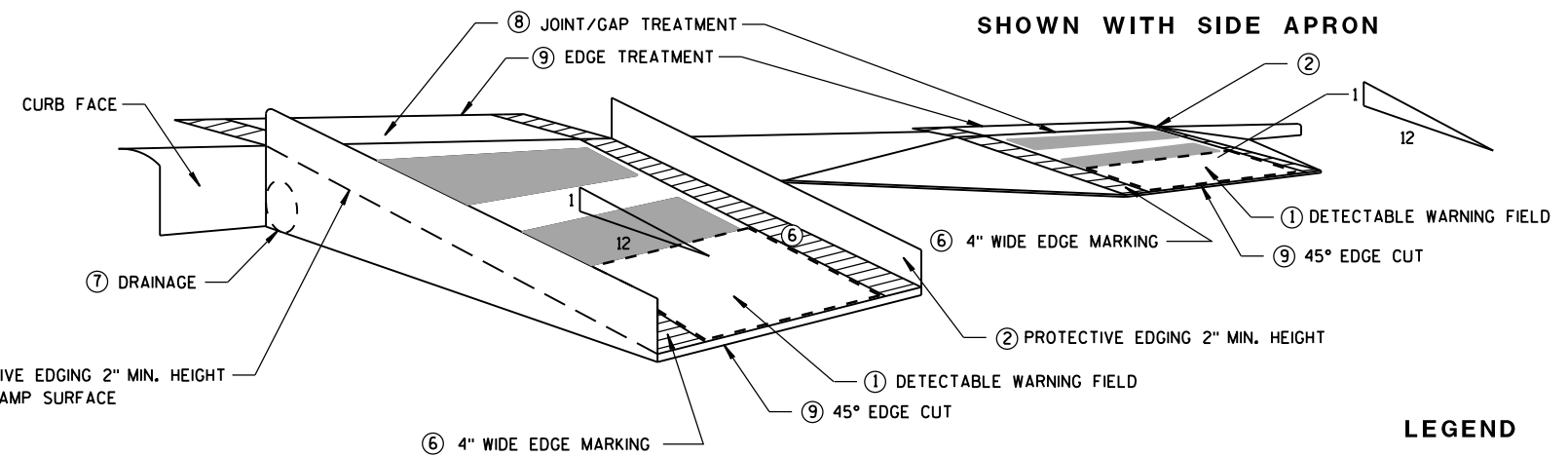
GENERAL NOTES

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

- ① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
- ⑤ CLEAR SPACE OF 48"x48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
- ⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.
- ⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- ⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".
- ⑩ 5' WIDE MIN. WITH PEDESTRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.

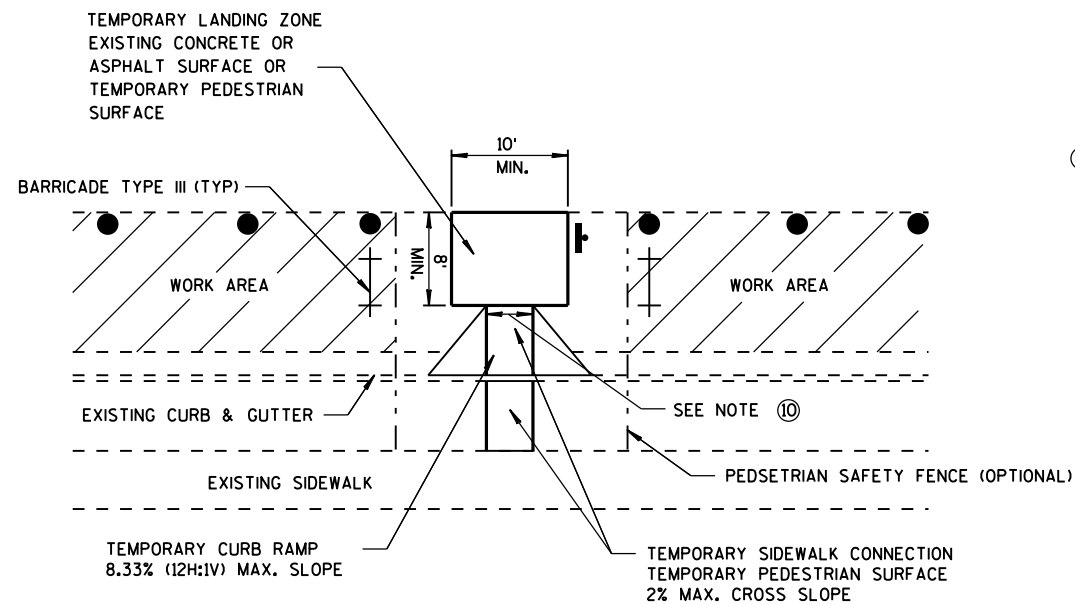


**TEMPORARY CURB RAMP
PARALLEL TO CURB**



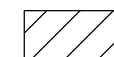


SHOWN WITH PROTECTIVE EDGE

**TEMPORARY CURB RAMP
PERPENDICULAR TO CURB**



TEMPORARY BUS STOP PAD

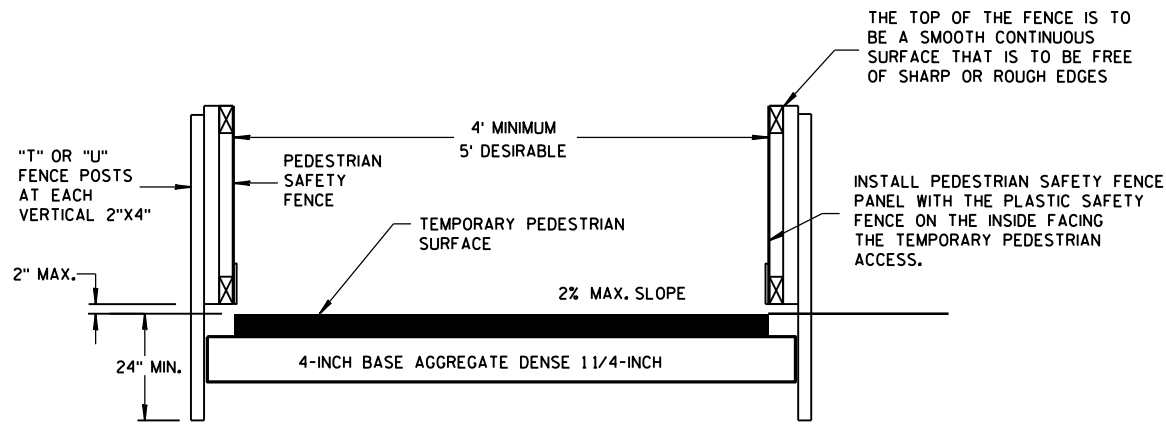
LEGEND

-  WORK AREA
-  TYPE III BARRICADE
-  TRAFFIC CONTROL DRUM

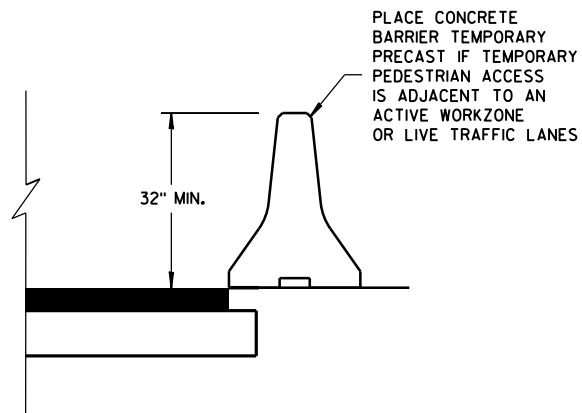
**TRAFFIC CONTROL,
TEMPORARY ADA COMPLIANT
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

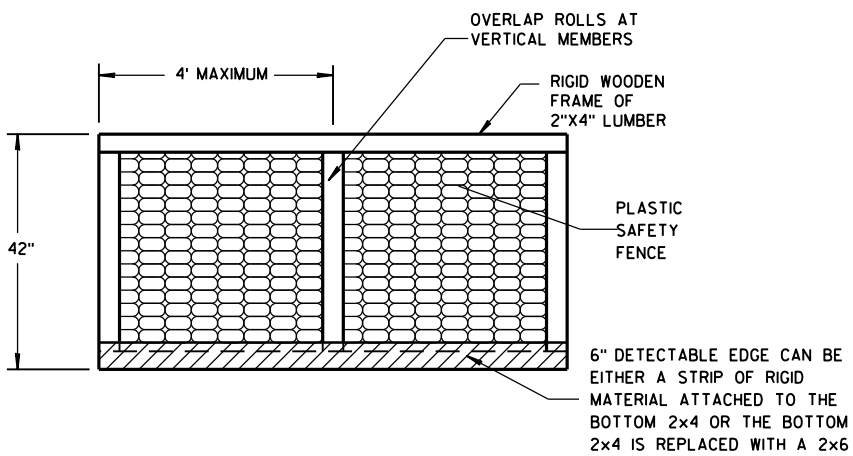
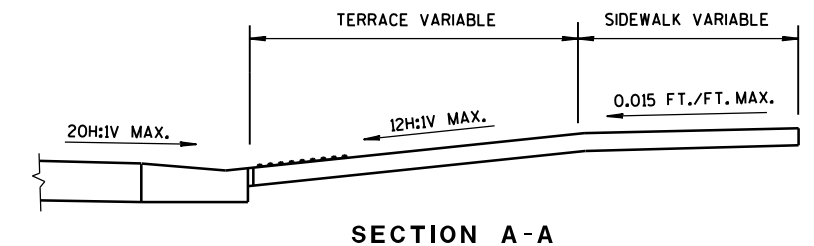


TEMPORARY PEDESTRIAN ACCESS

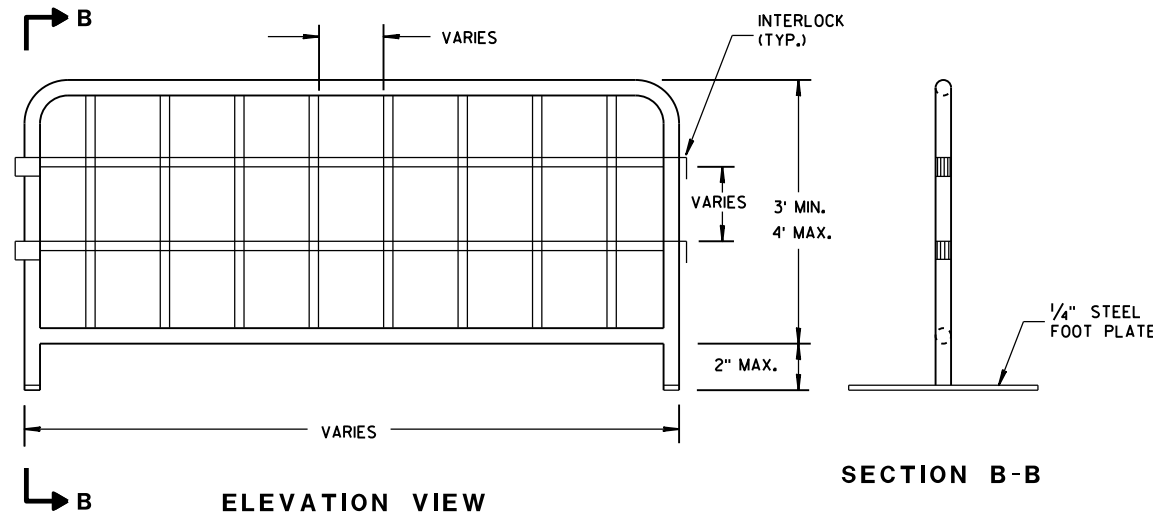


GENERAL NOTES

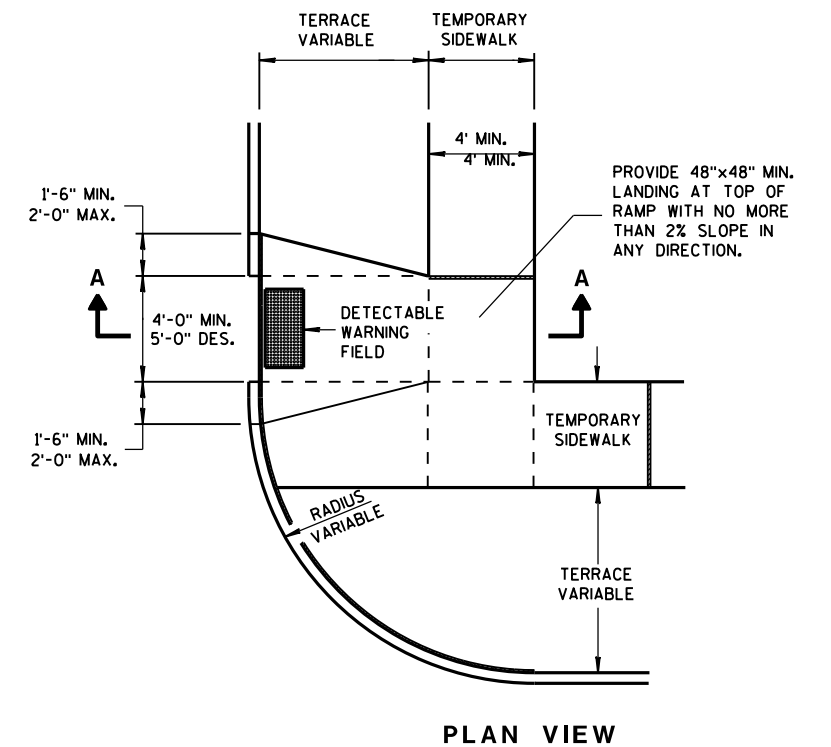
① INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



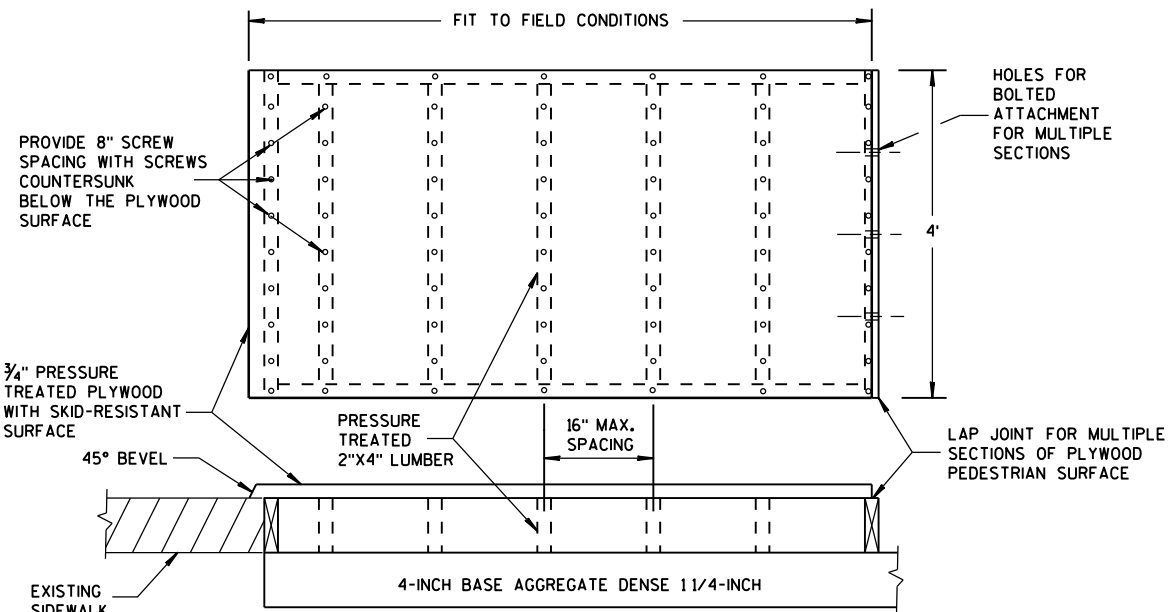
PEDESTRIAN SAFETY FENCE



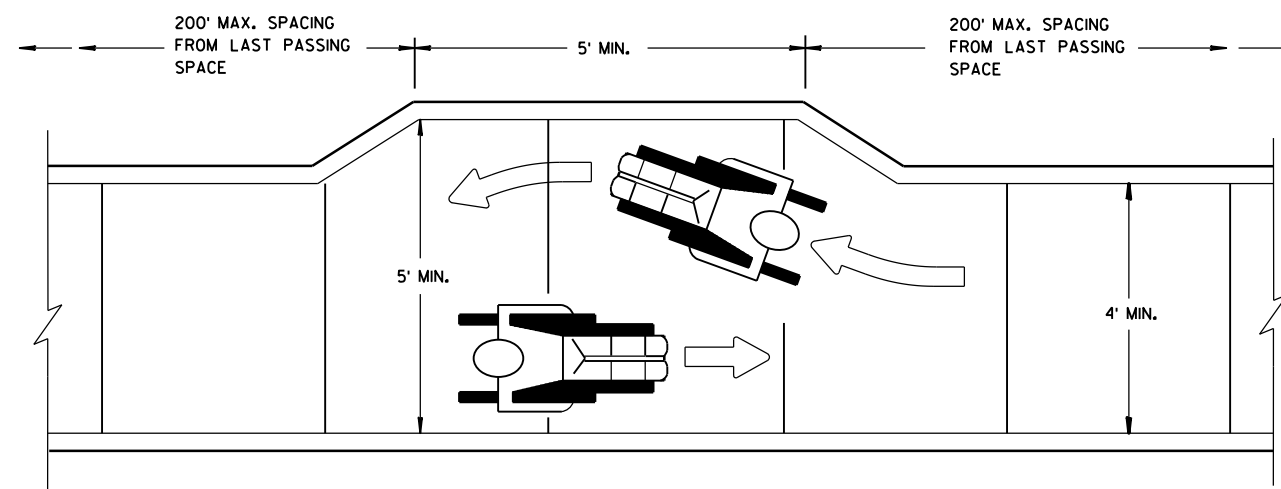
TEMPORARY PEDESTRIAN STEEL BARRICADE



TEMPORARY TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

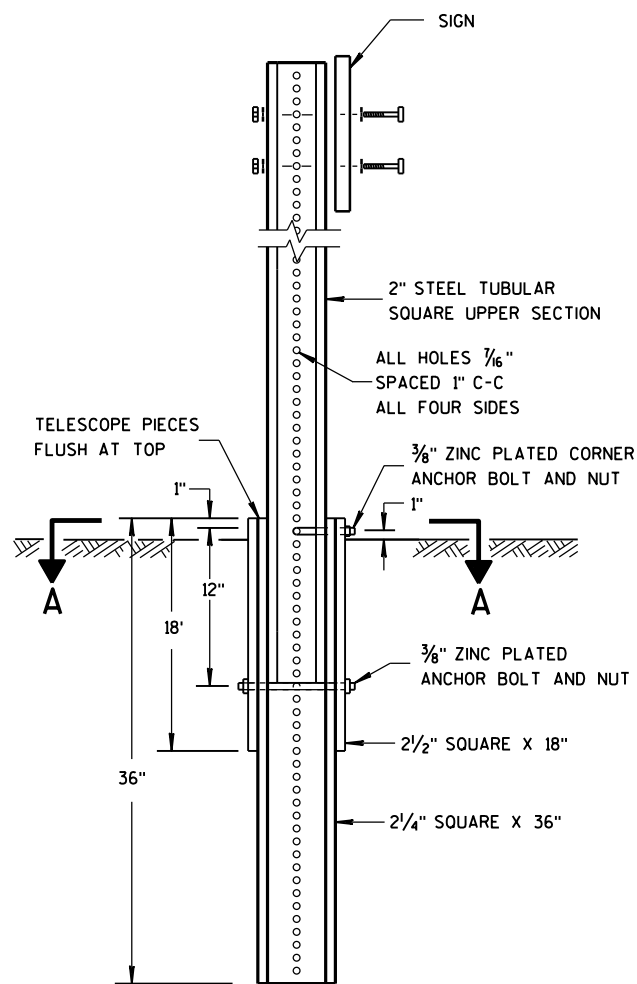


TEMPORARY PEDESTRIAN SURFACE PLYWOOD

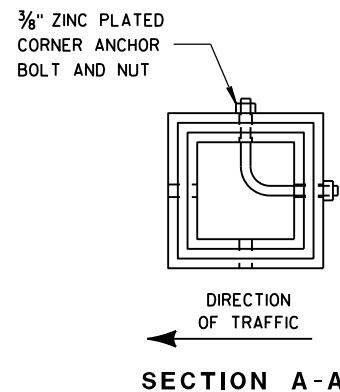


NARROW SIDEWALK PASSING DETAIL

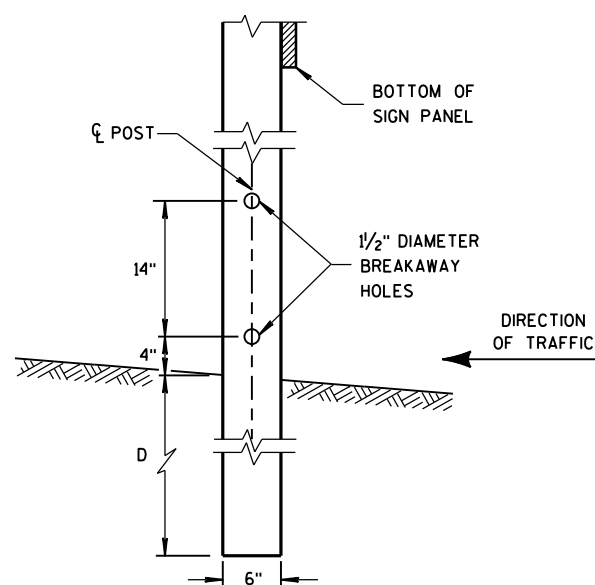
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



DETAIL OF TUBULAR STEEL SIGN POST



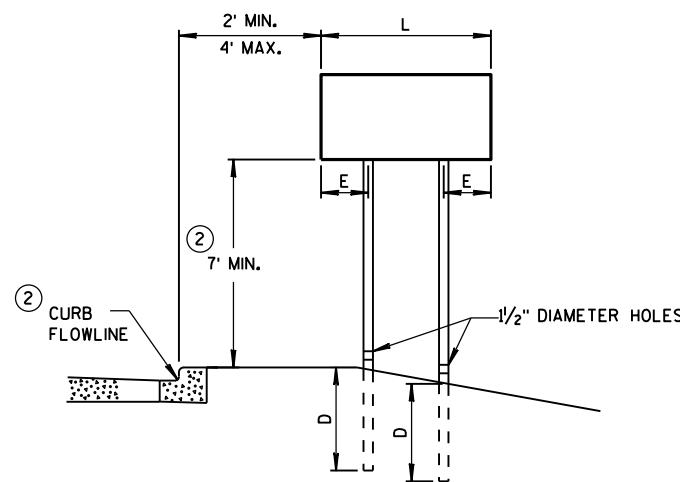
SECTION A-A



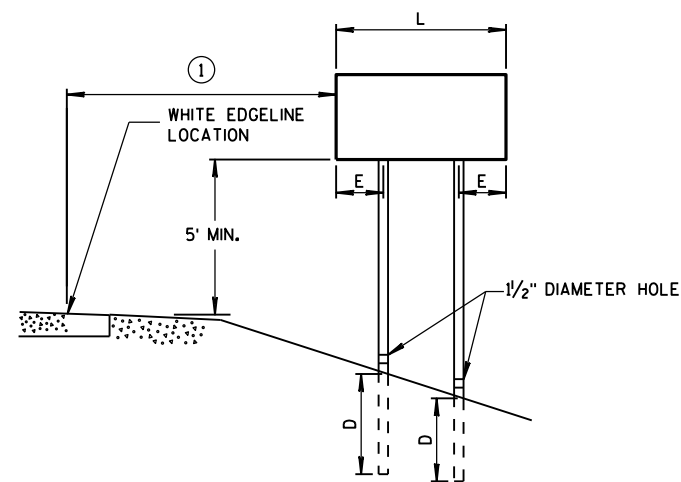
4" X 6" WOOD POST MODIFICATION

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA



RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

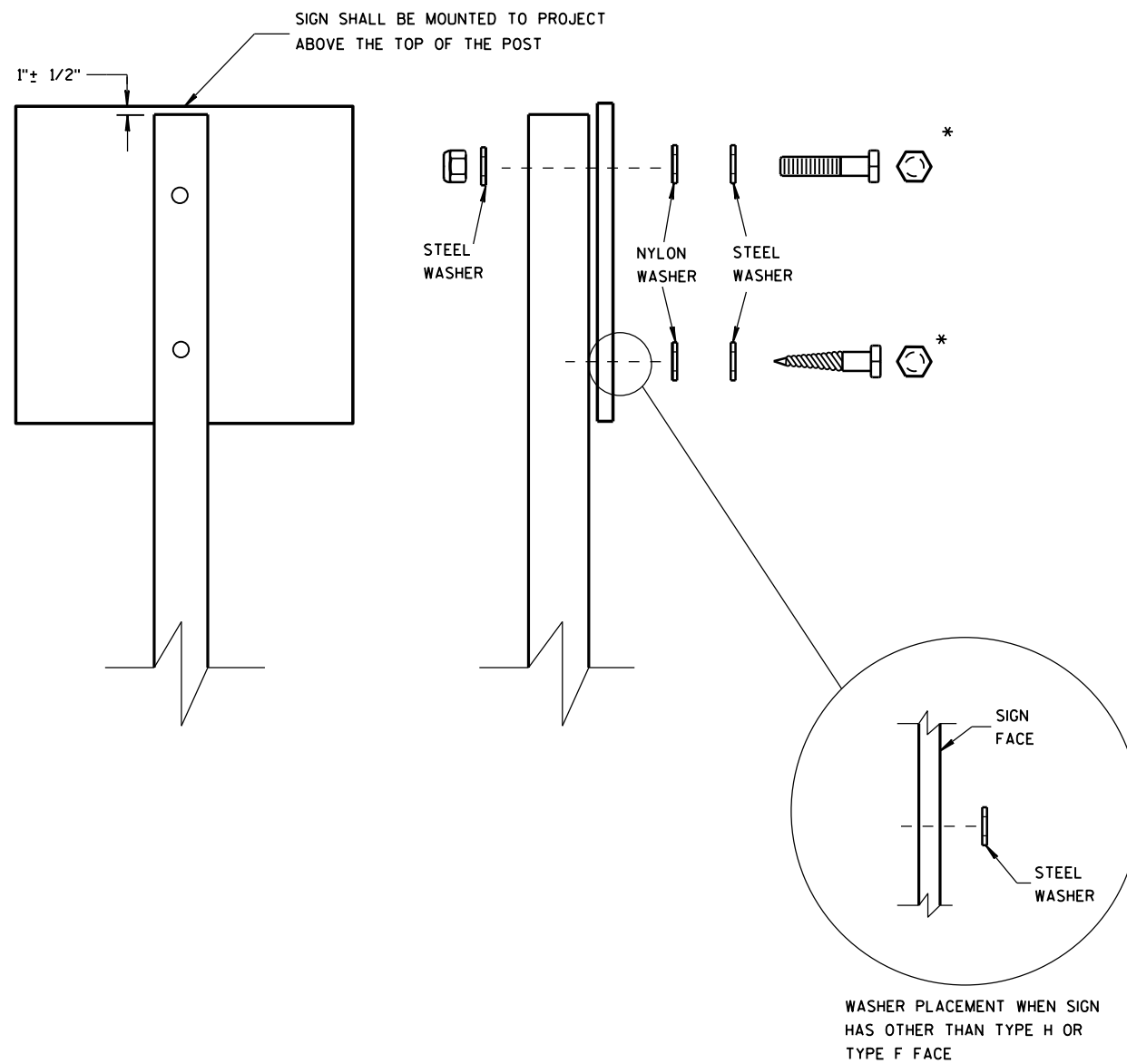
4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE ③

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" x 3"

MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS

RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL

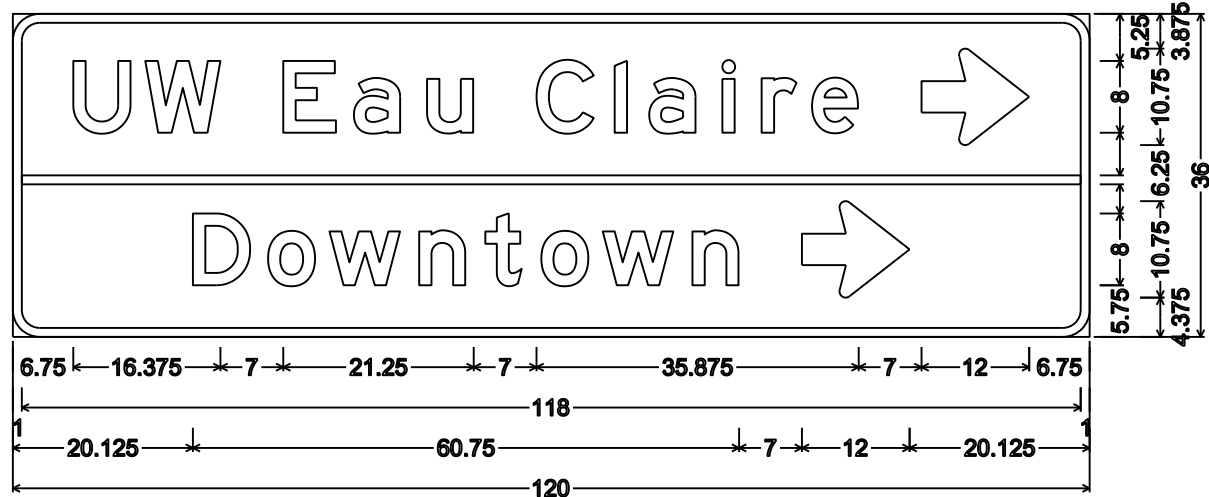
1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

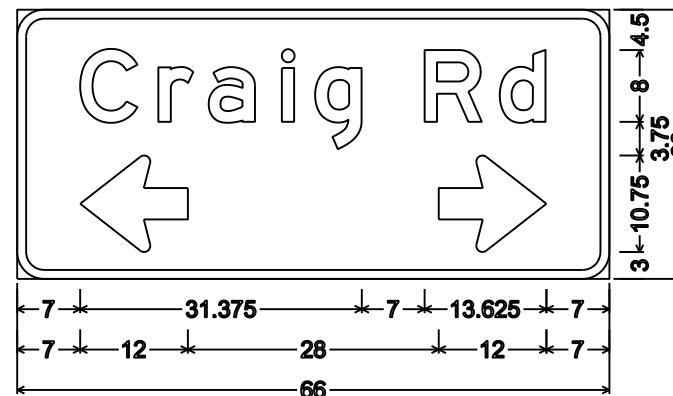
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

NOTES

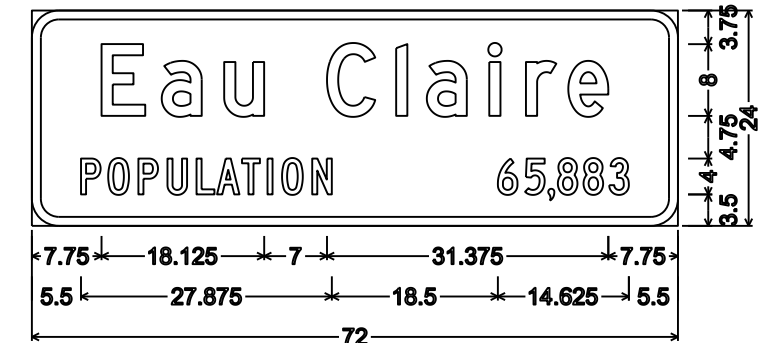
1. Sign is Type II - Type H Reflective
2. Color:
Background - Green except as noted
Message - White
3. Message Series - E except as noted



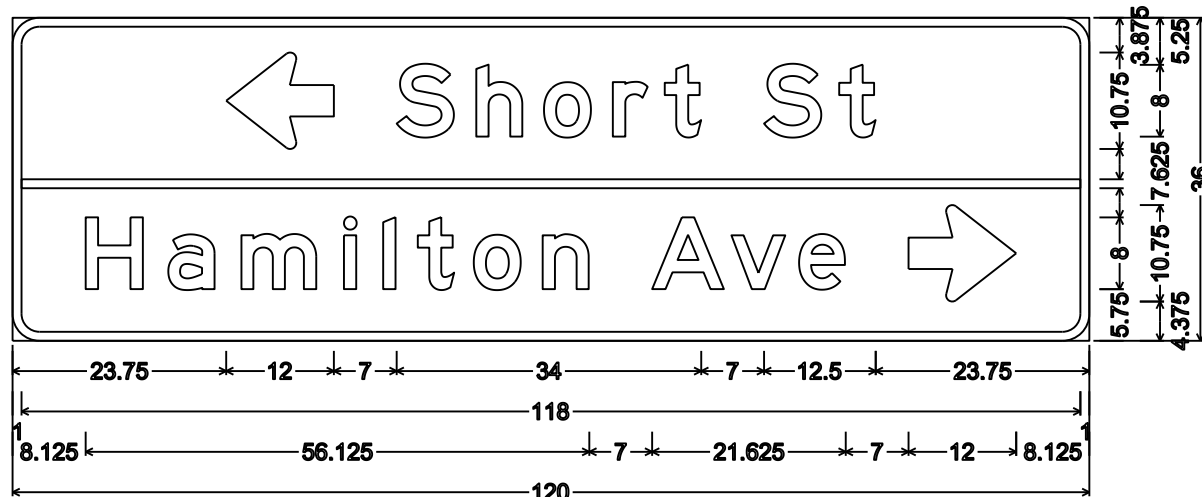
D1-2; 3.000" Radius, 1.000" Border



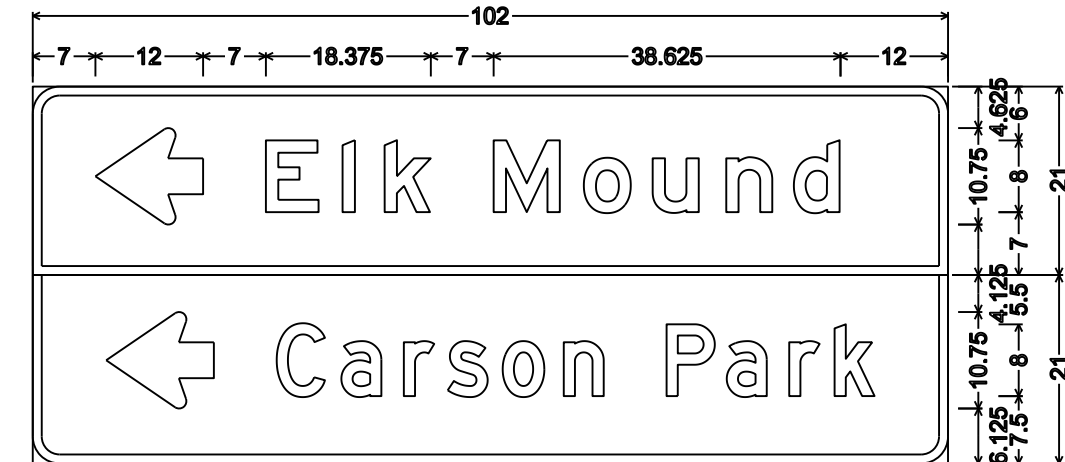
D1-61;
3.000" Radius, 1.000" Border



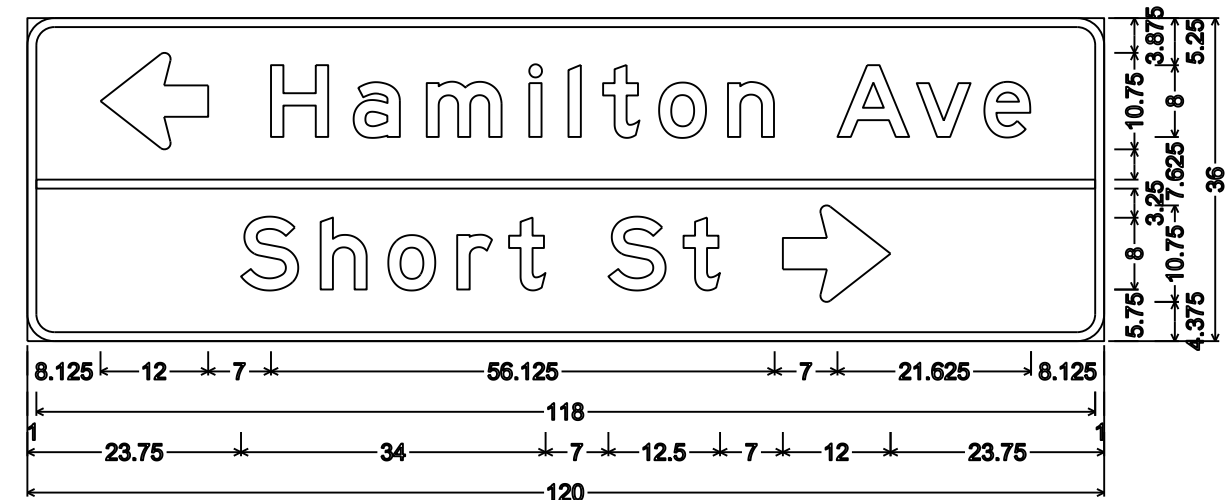
I2-3; 3.000" Radius, 1.000" Border,
"Eau" D; "Claire" D; "POPULATION" C; "65,883" C



D1-2; 3.000" Radius, 1.000" Border



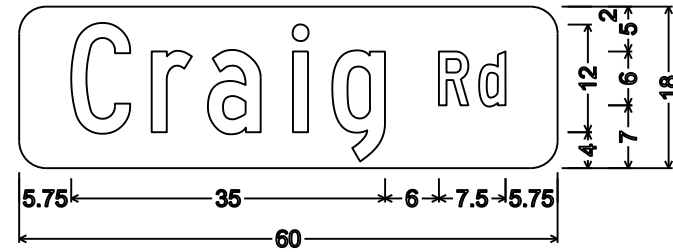
I2-2; 3.000" Radius, 1.000" Border, White on Green;
"Elk" E; "Mound" E;
3.000" Radius, 1.000" Border, White on Brown;
"Carson" D; "Park" D



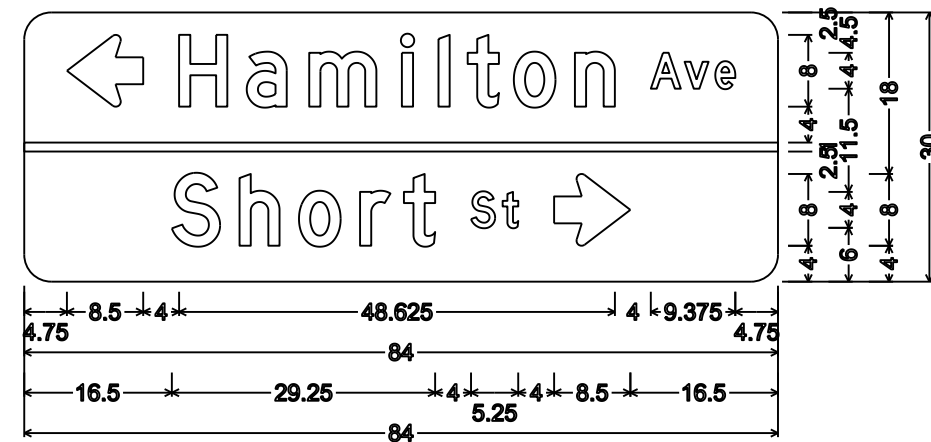
D1-2; 3.000" Radius, 1.000" Border

NOTES

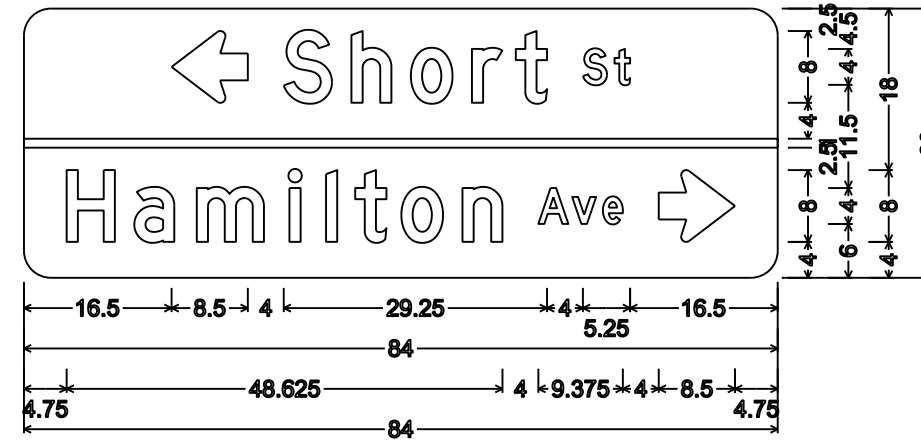
1. Sign is Type II - Type H Reflective
2. Color:
Background - Green except as noted
Message - White
3. Message Series - D except as noted
4. Sign base material is .125" aluminum



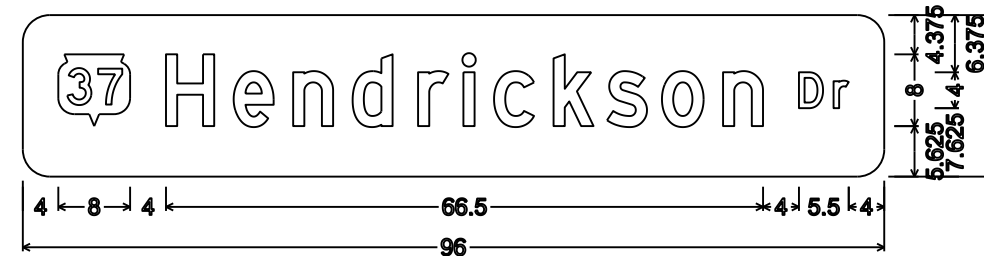
M1-94H;
3.000" Radius, No border,
"Craig" C; "Rd" C



M1-94H; 3.000" Radius, No border



M1-94H; 3.000" Radius, No border,

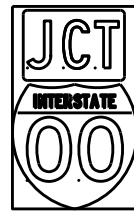


M1-94S; 3.000" Radius, No border

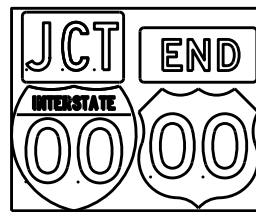
7

7

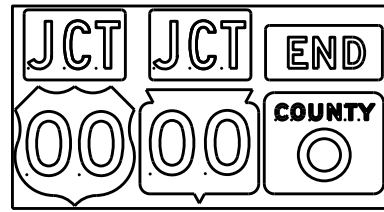
TYPICAL ASSEMBLIES



J1-1



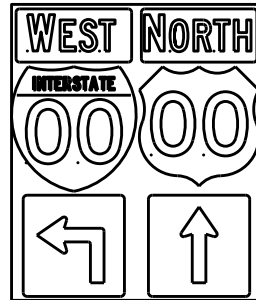
J1-2



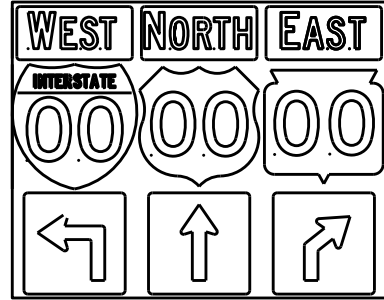
J1-3



J2-1



J2-2

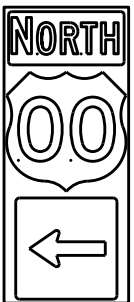


J2-3

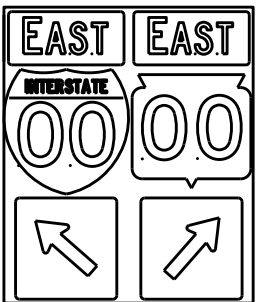


JV

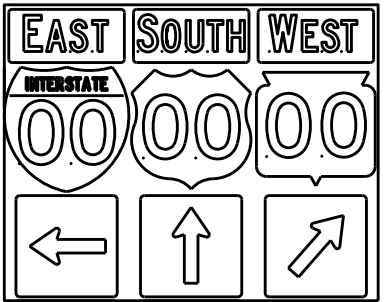
(Typical Vertical J-Assembly
See Note 10 and 11)



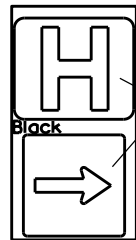
J3-1



J3-2

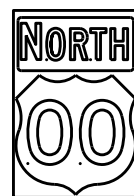


J3-3

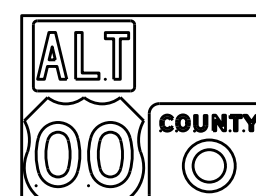


JH-1

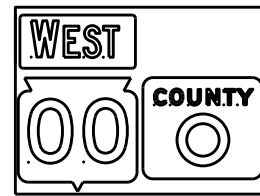
Blue Background



J4-1

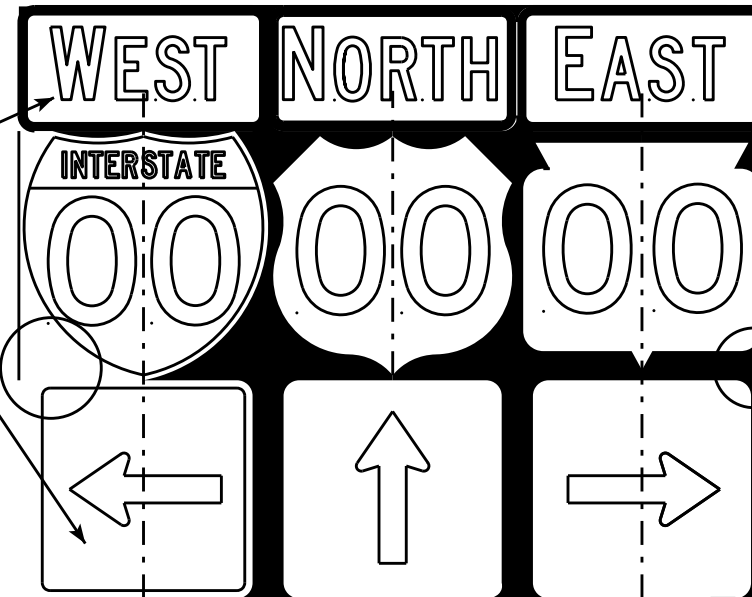
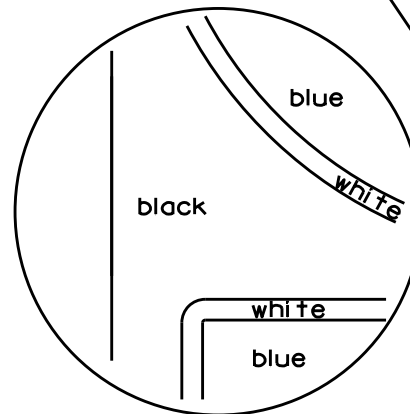


J4-2



J4-2

[blue background with interstate]



black

white

[black background]

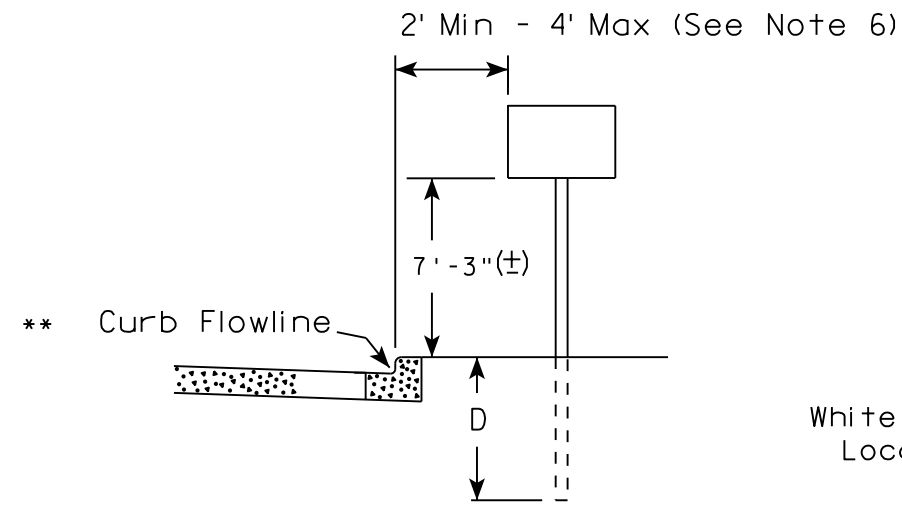
ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/06/14	PLATE NO. A2-1S.8

- NOTES**
- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 - Color:
Background - Black Non-reflective
Message - see Note 5
 - Message Series - See Note 5
 - Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
 - The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
 - Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
 - Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
 - Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
 - Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
 - All Vertical J Assemblies are given a Sign Code of JV
 - For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

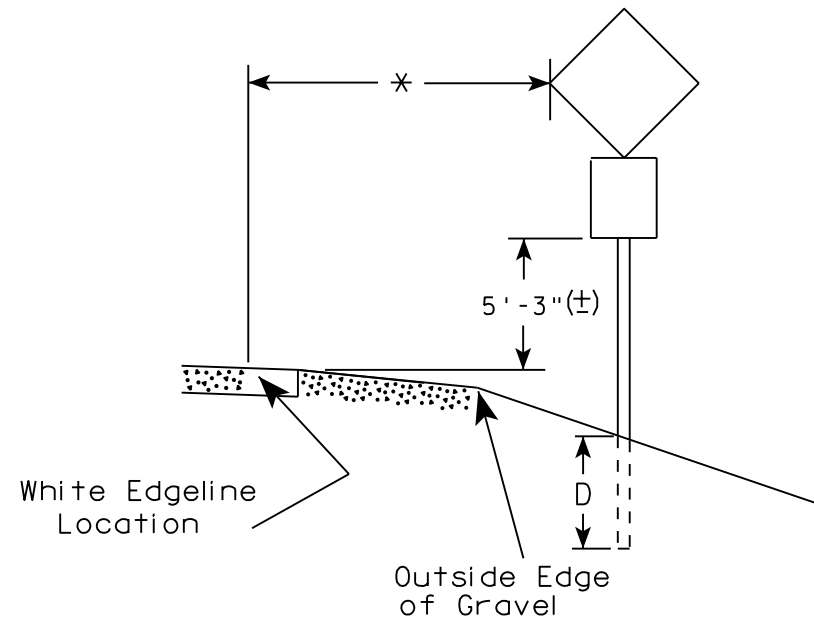
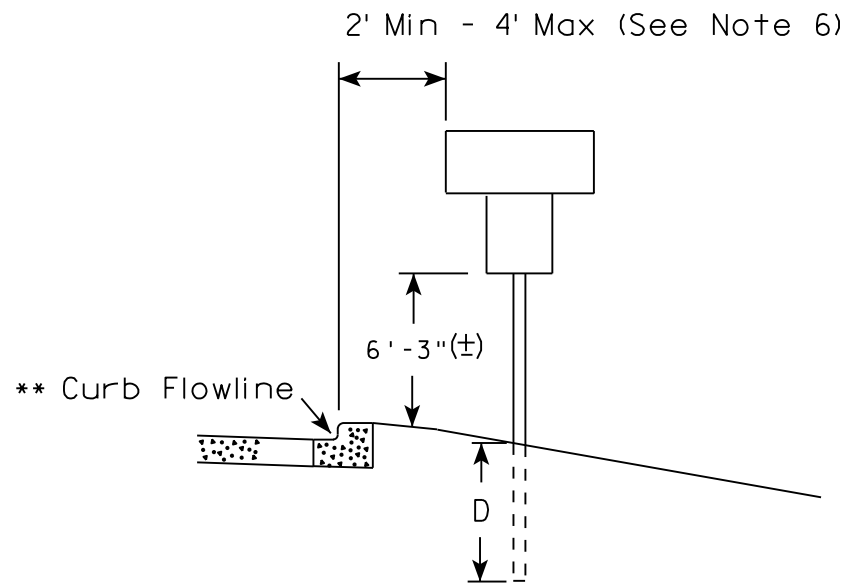
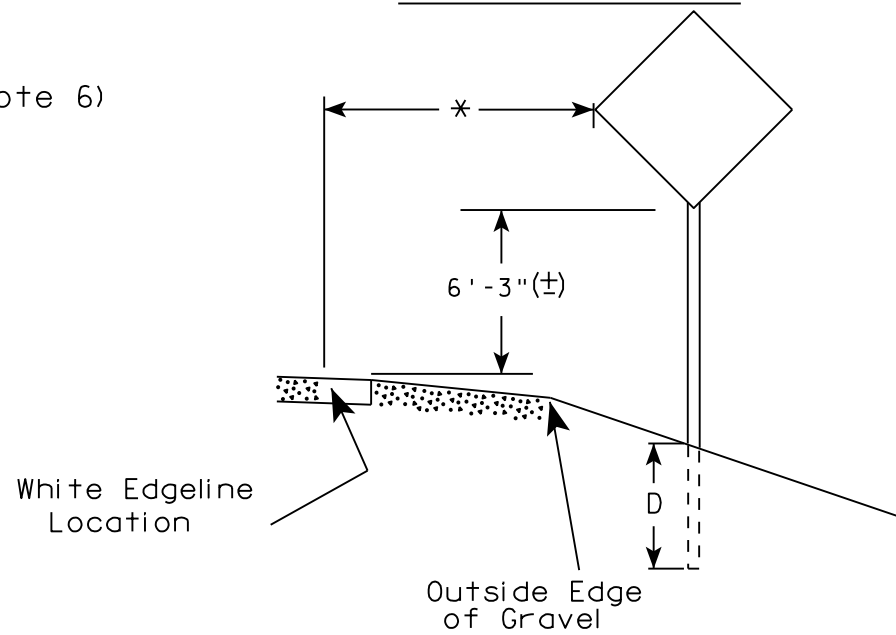
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URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

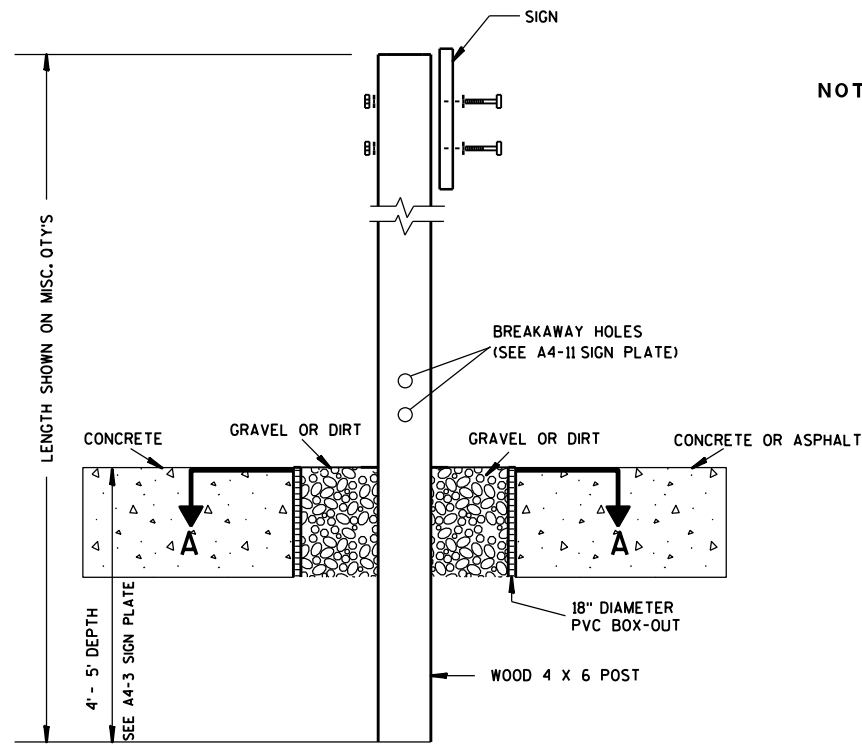
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

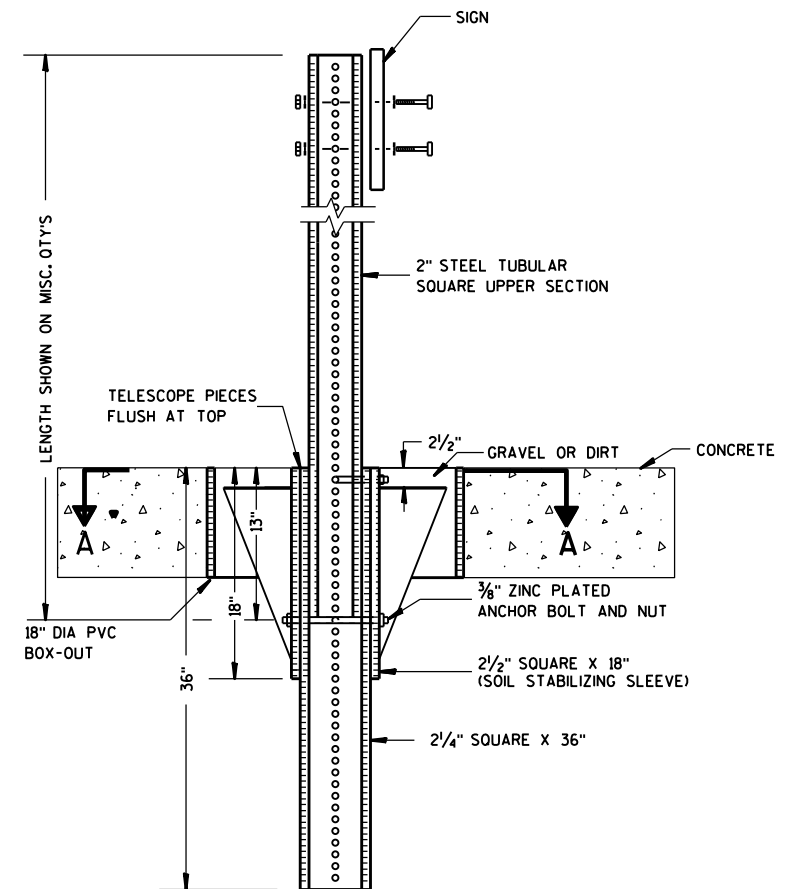
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

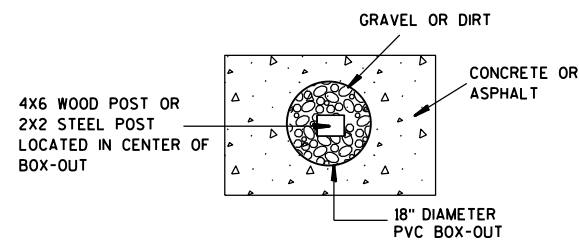
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

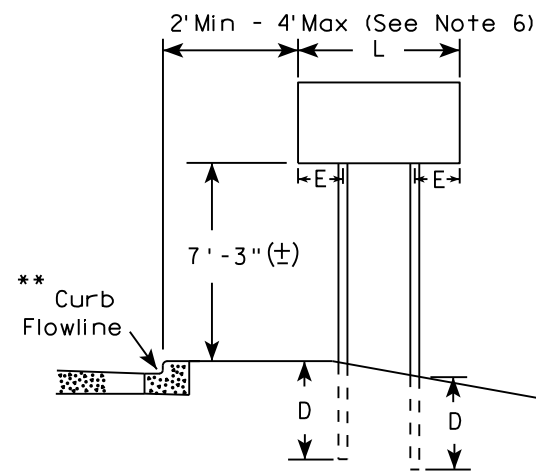
7

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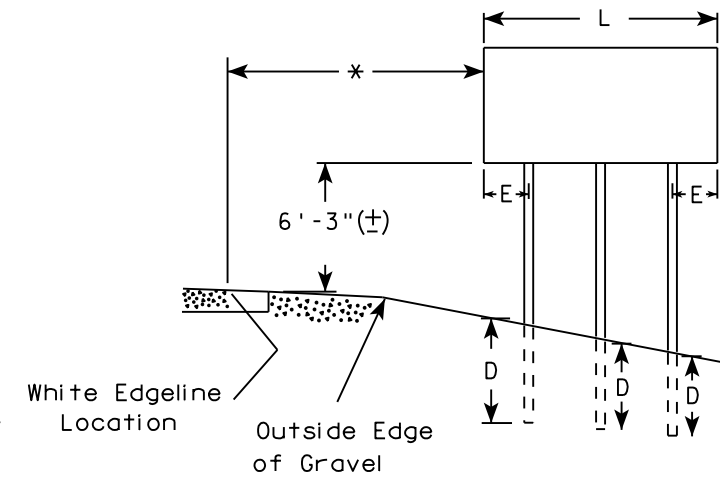
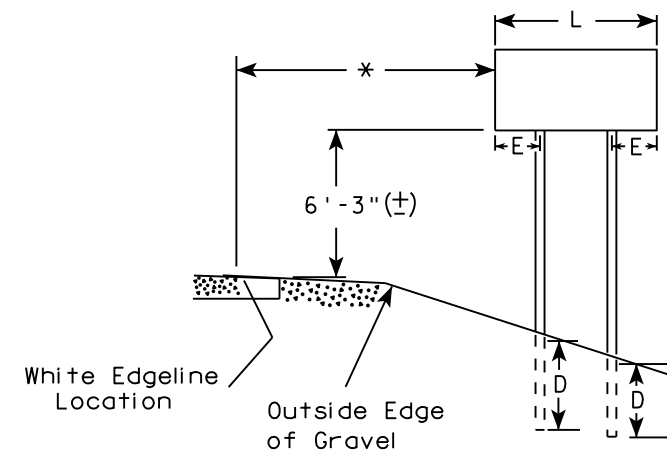
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

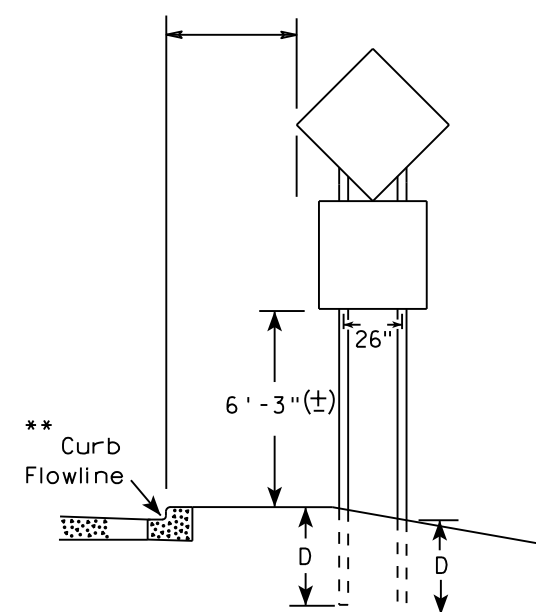
URBAN AREA



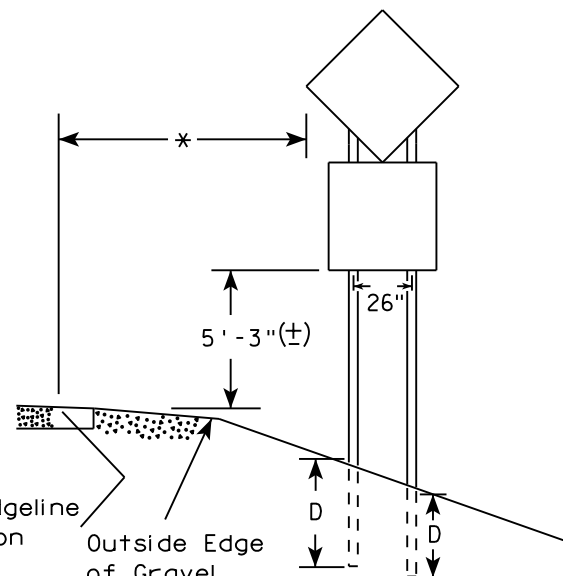
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

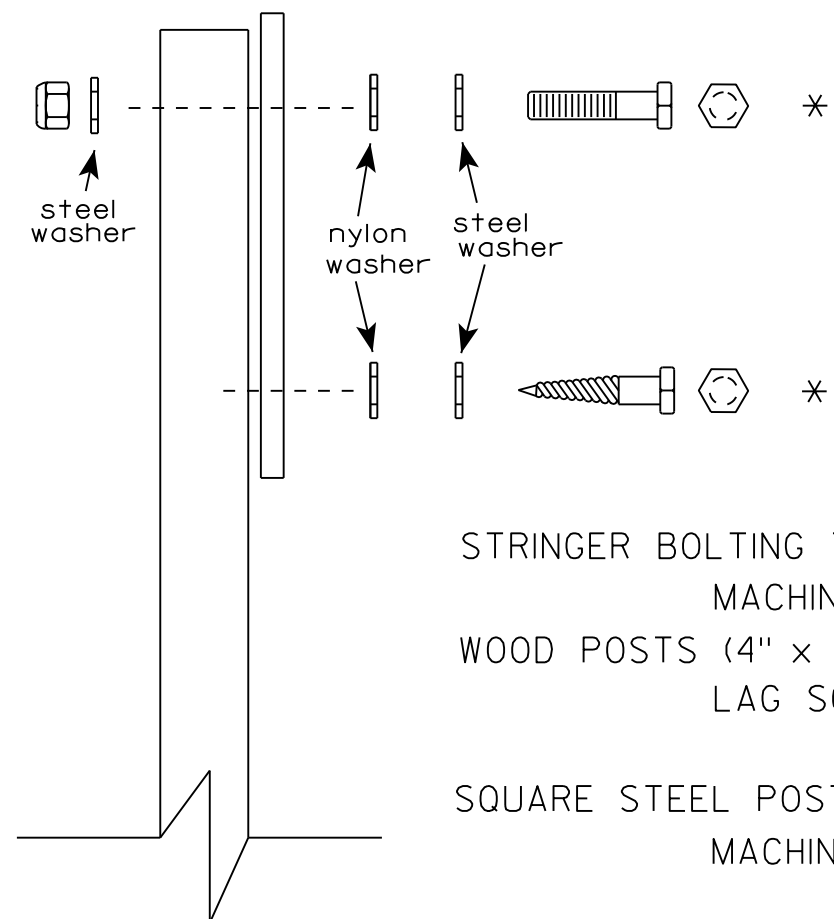
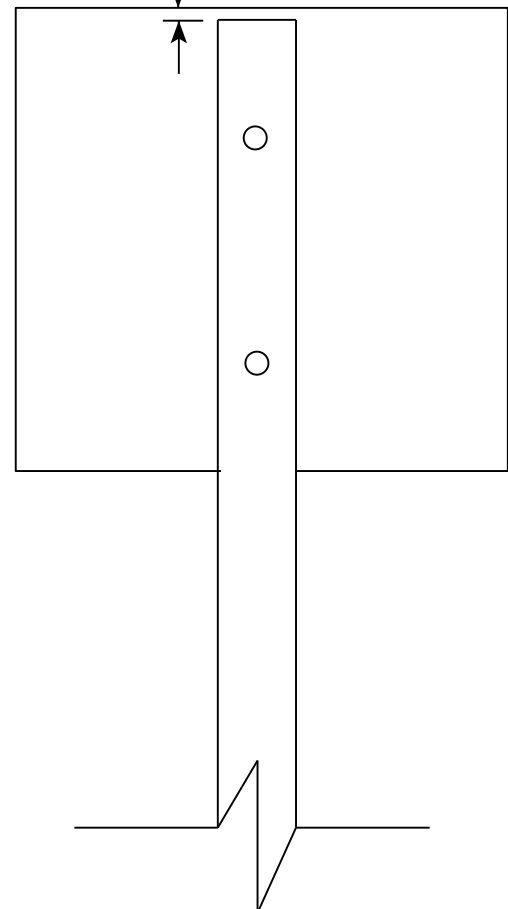
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 8/21/17 PLATE NO. A4-4.15

1"± 1/2"

SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

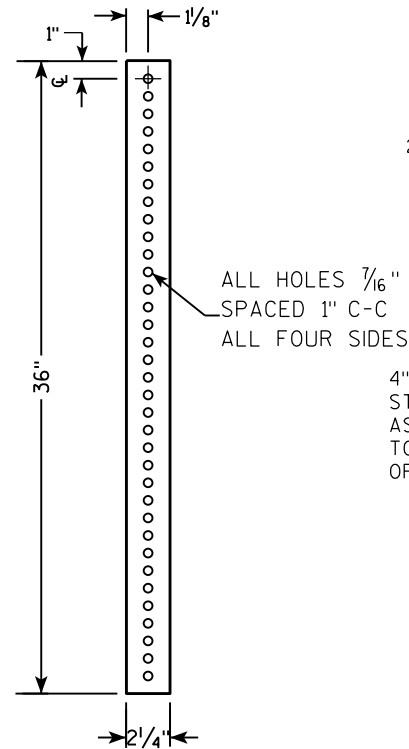
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

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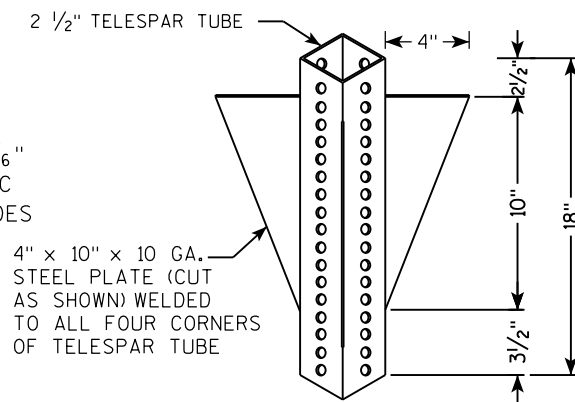
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

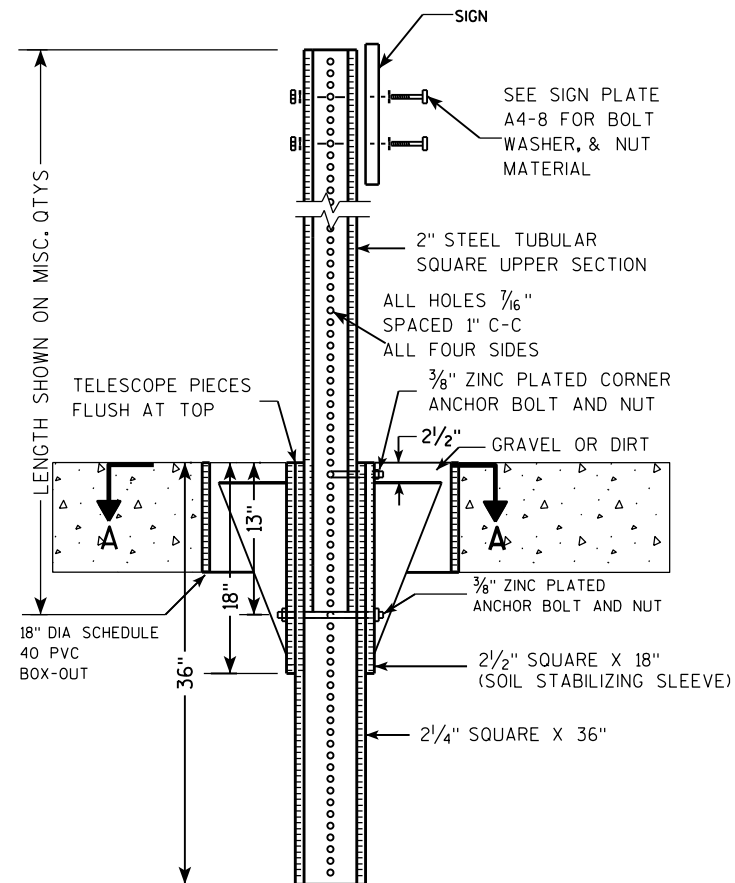
**2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



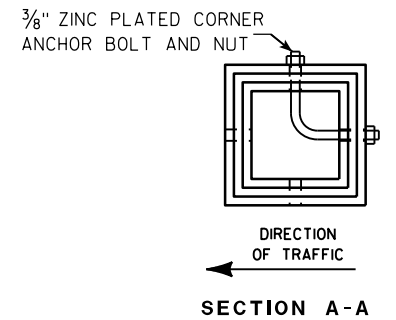
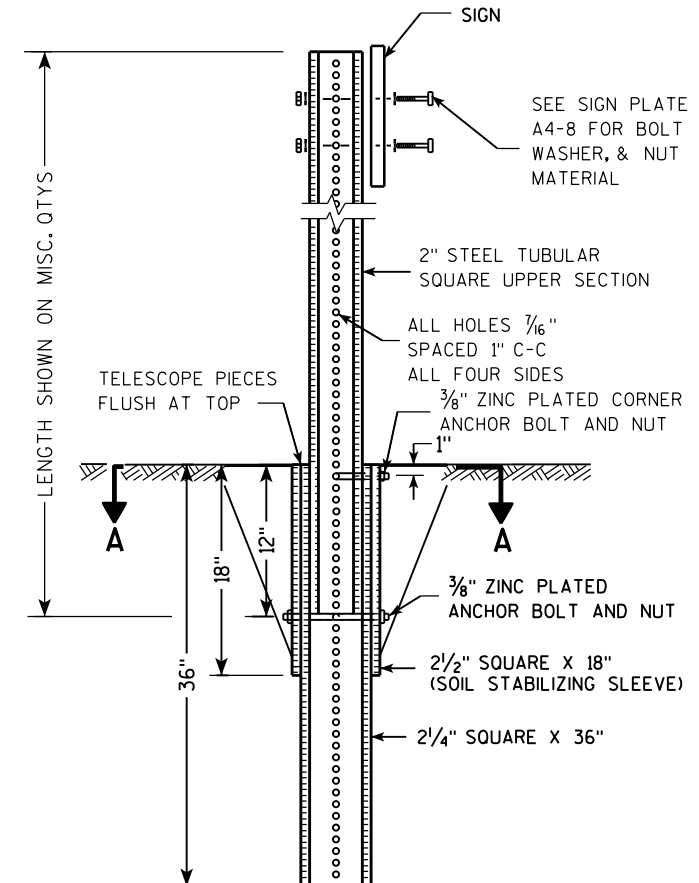
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)**



**DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)**



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

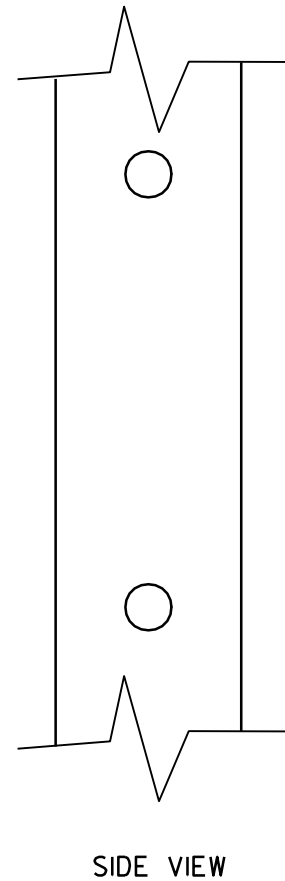
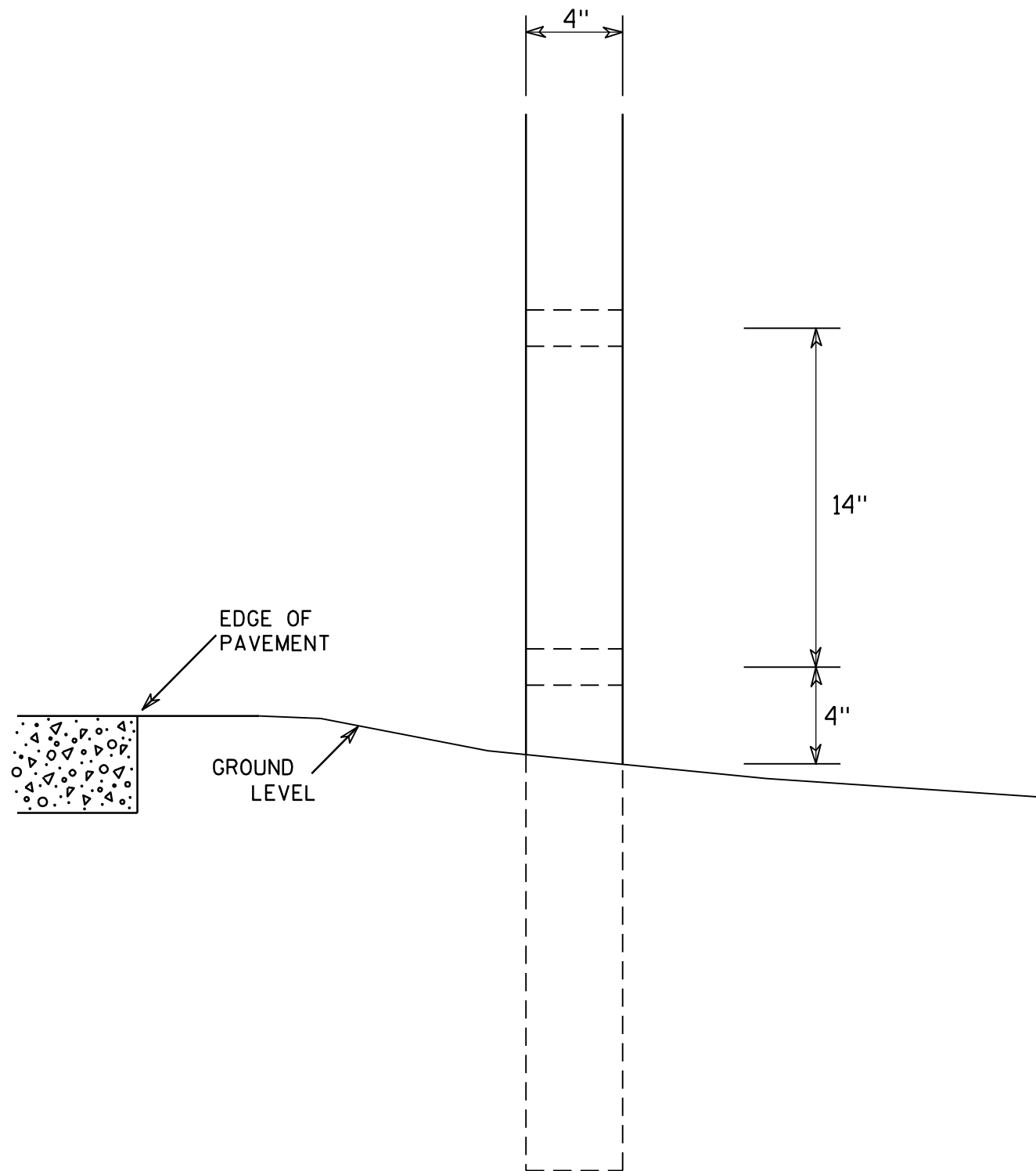
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

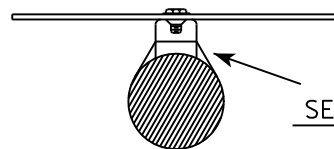
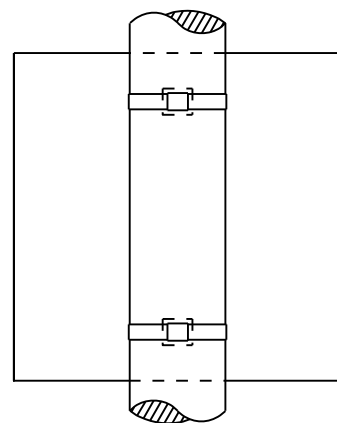
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4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

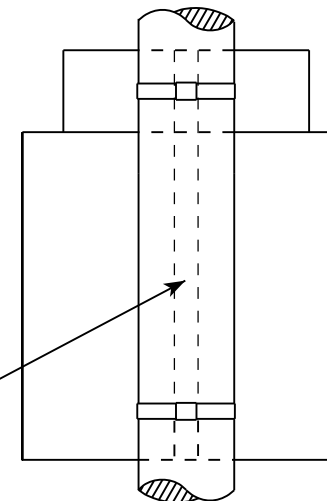
BANDING

SINGLE SIGN

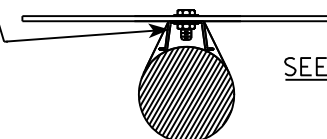


SEE DETAIL A

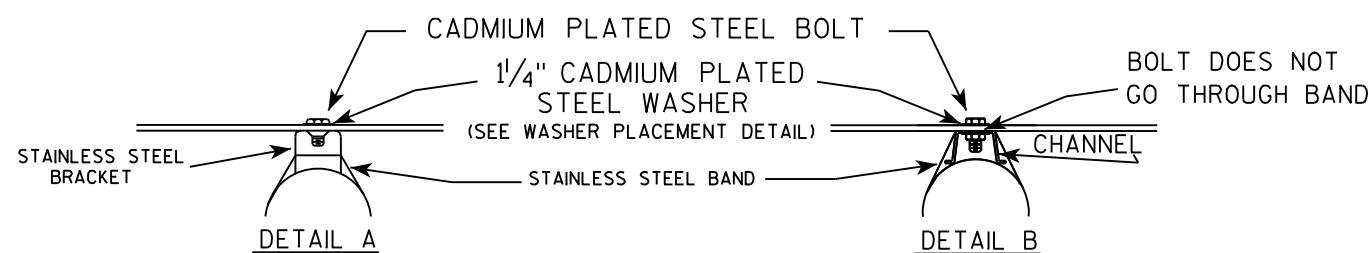
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



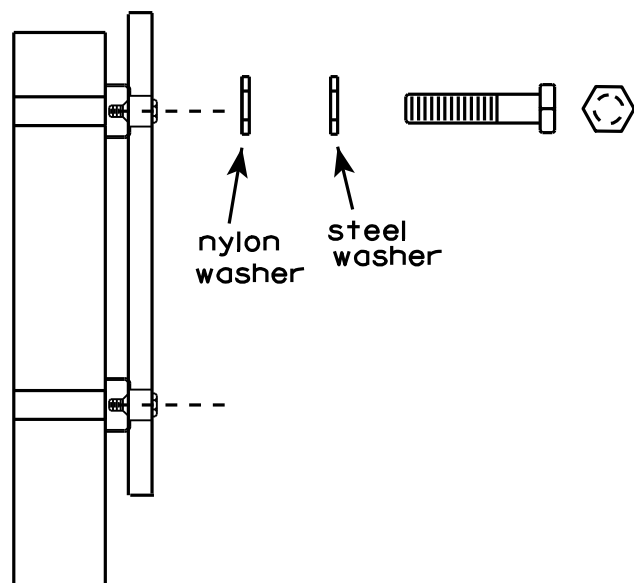
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

WASHER PLACEMENT



WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
 SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
 for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

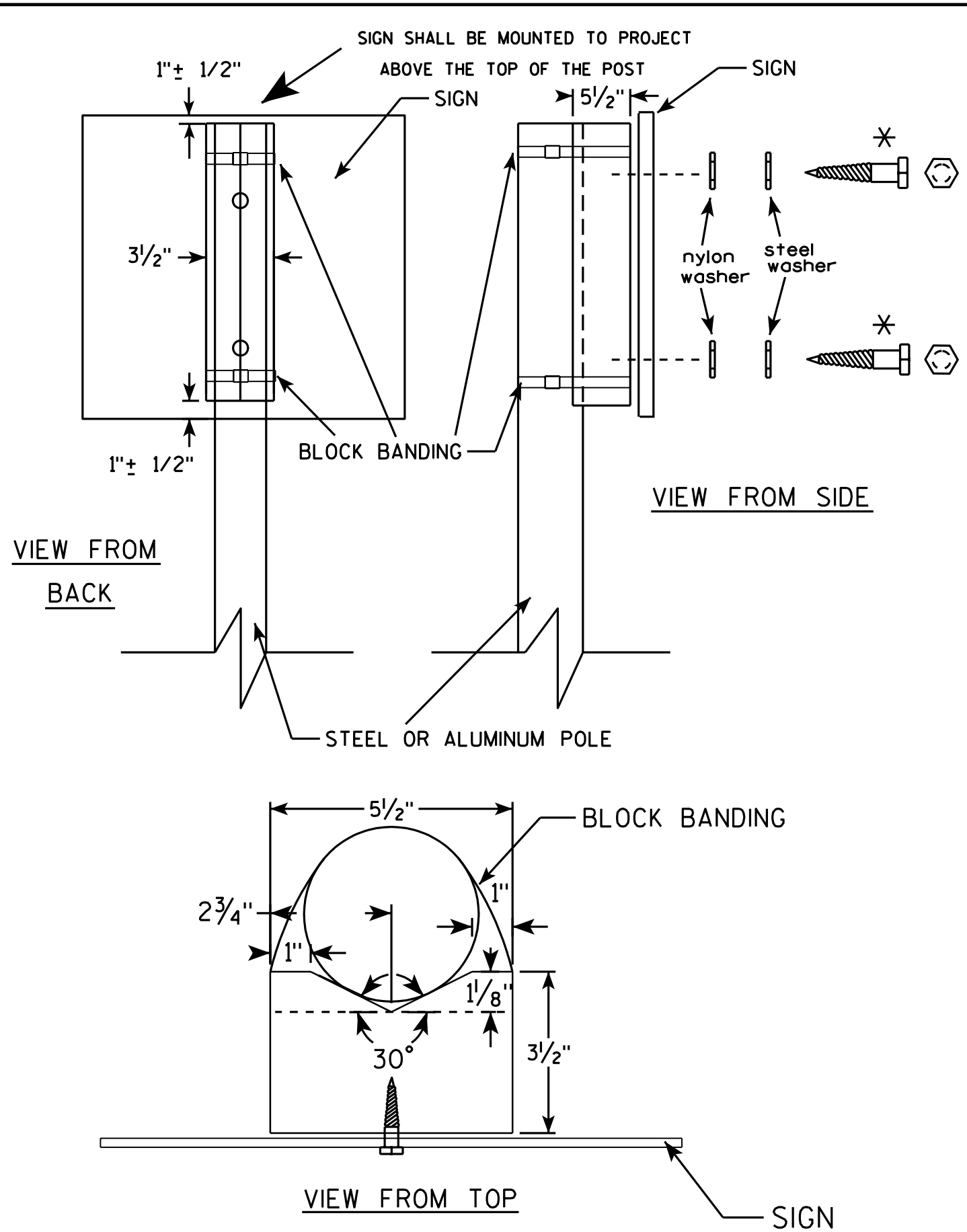
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

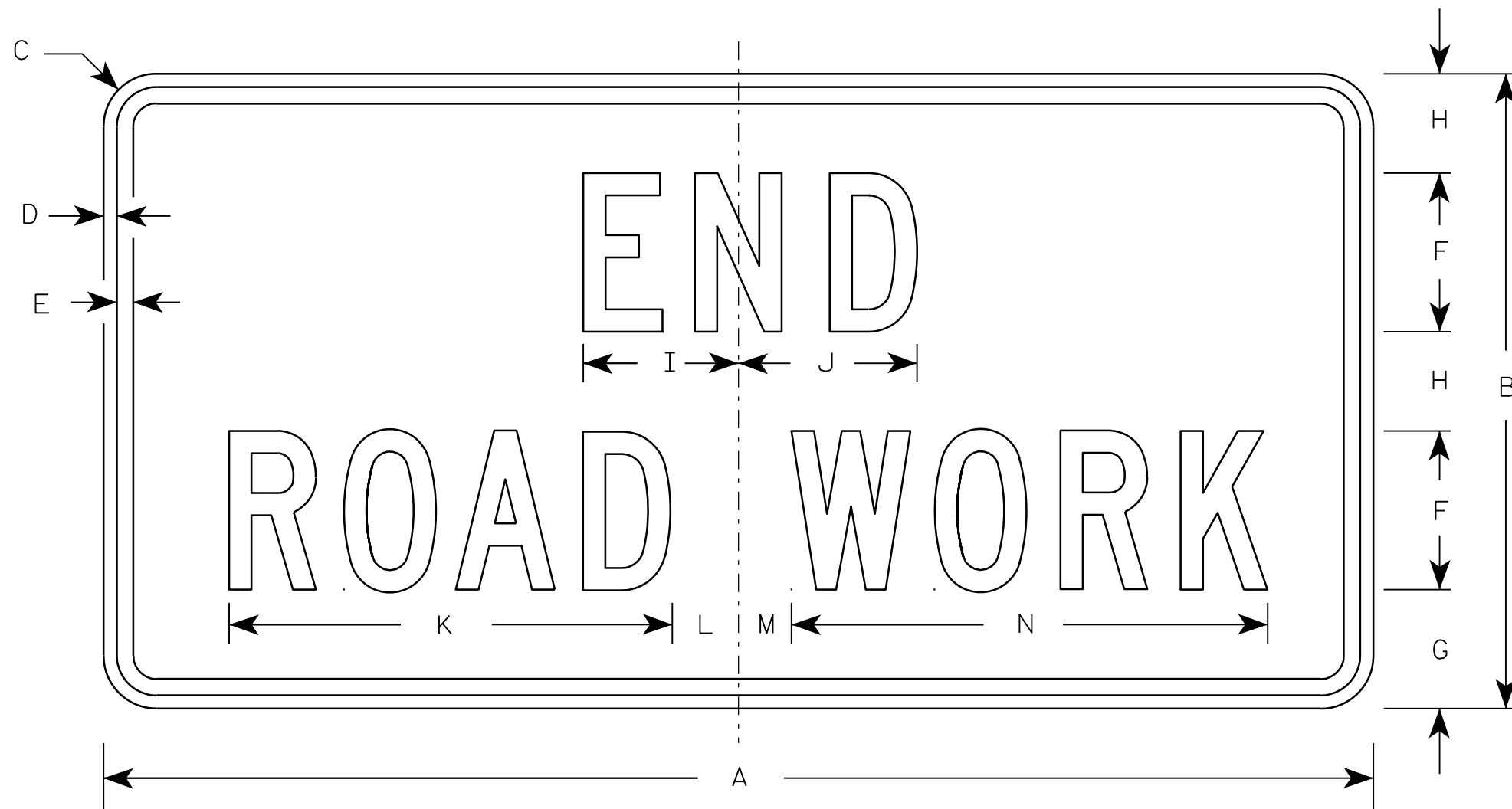
1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

* LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/12/07	PLATE NO. A5-10.1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

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Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

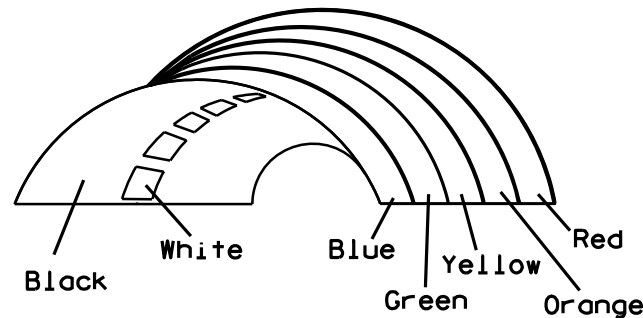
STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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* VARIES

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
Line 1 - Red
Line 2 - Black
Line 3-5 - Blue
6. Line 1 - Dutch 8011L
Line 2 - Series E
Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

STANDARD SIGN
I55-56

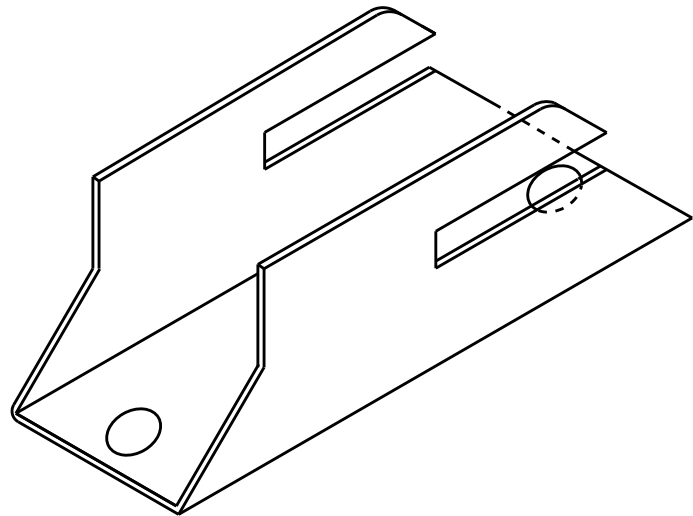
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

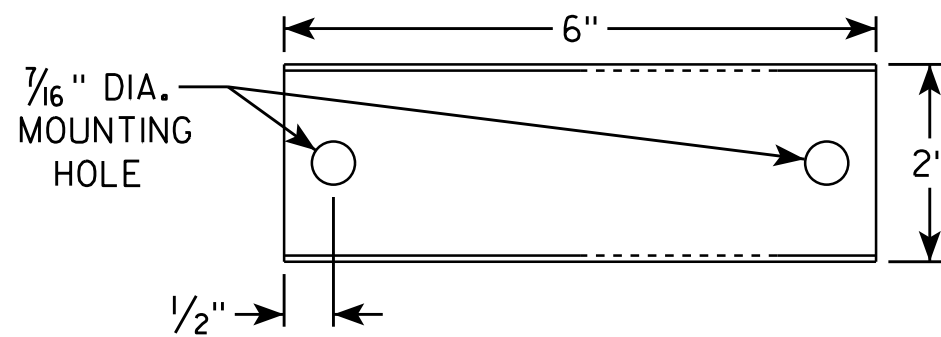
DATE 4/27/11 PLATE NO. I55-56.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____

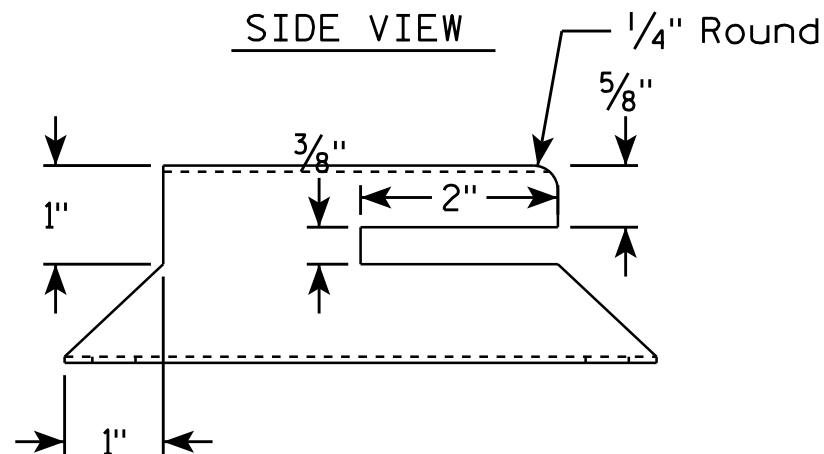
ISOMETRIC VIEW



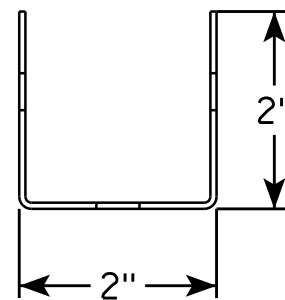
TOP VIEW



SIDE VIEW



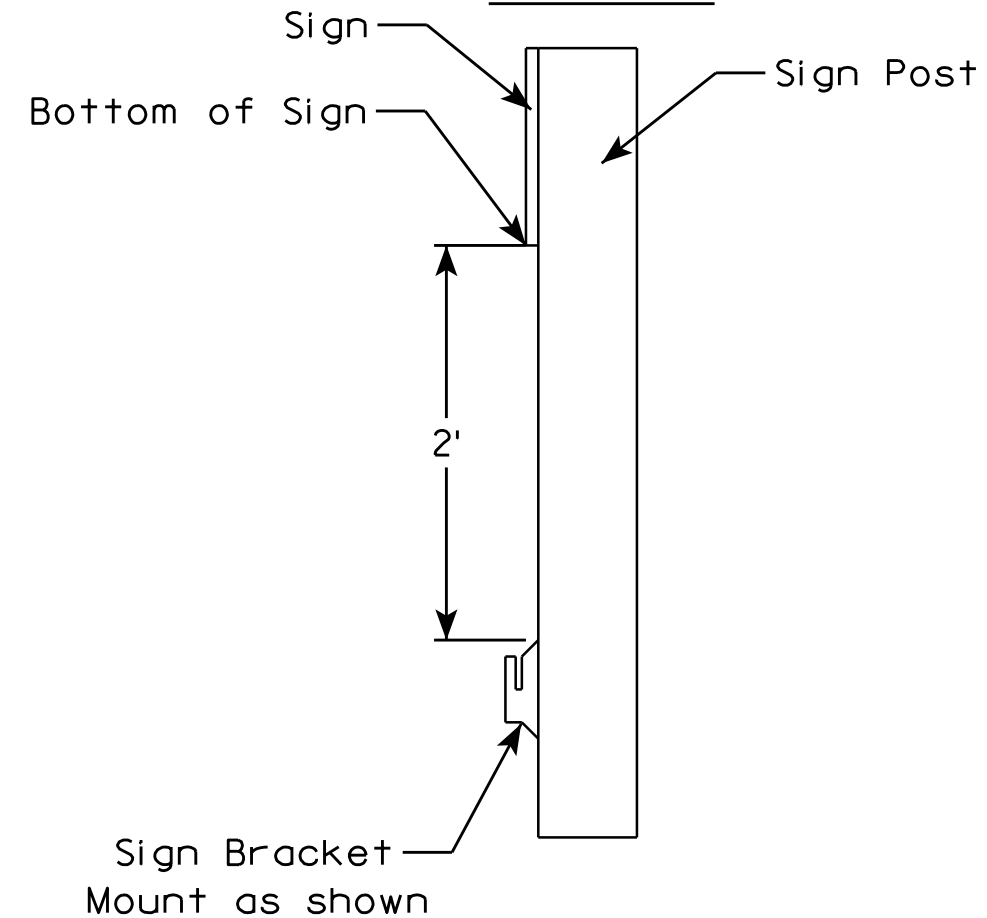
END VIEW



NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW

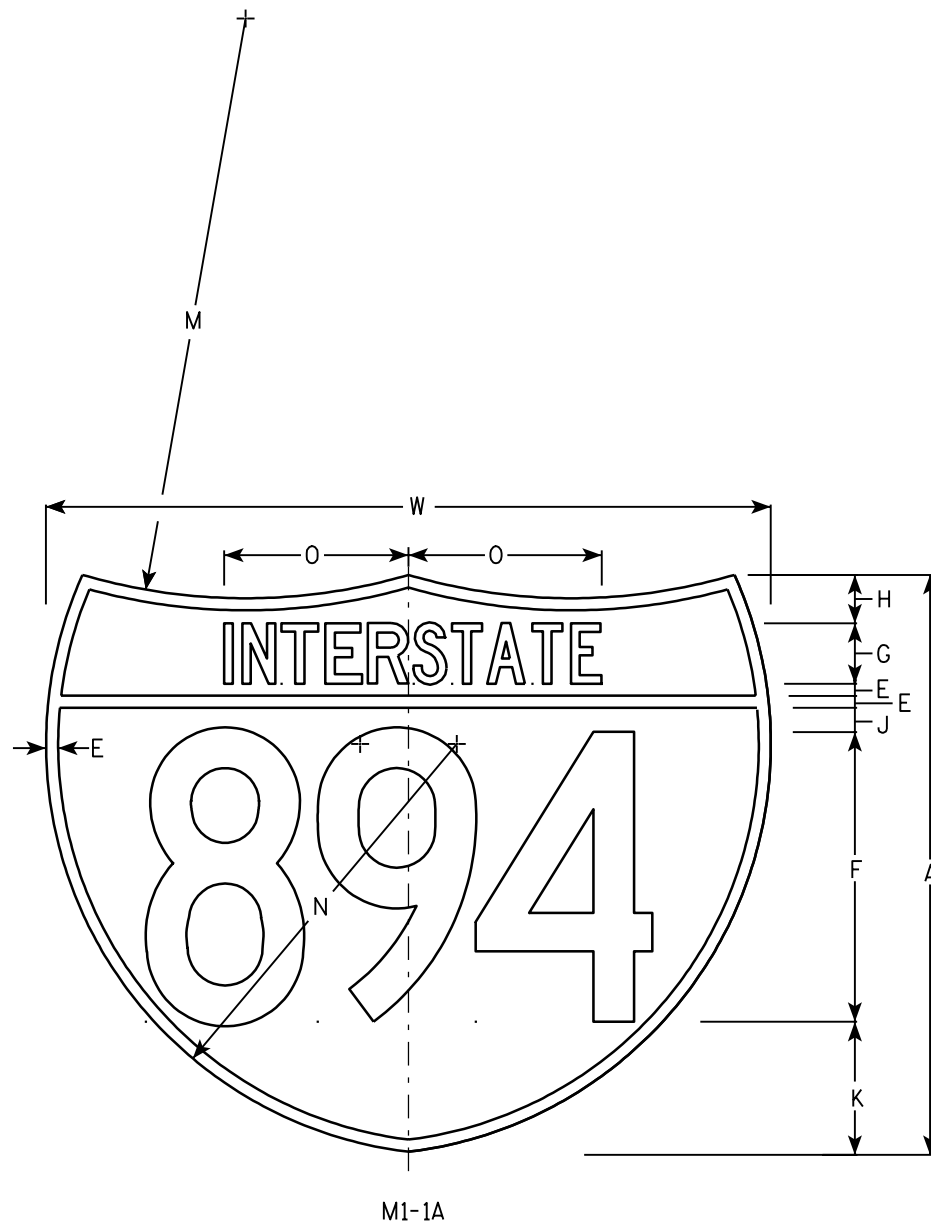
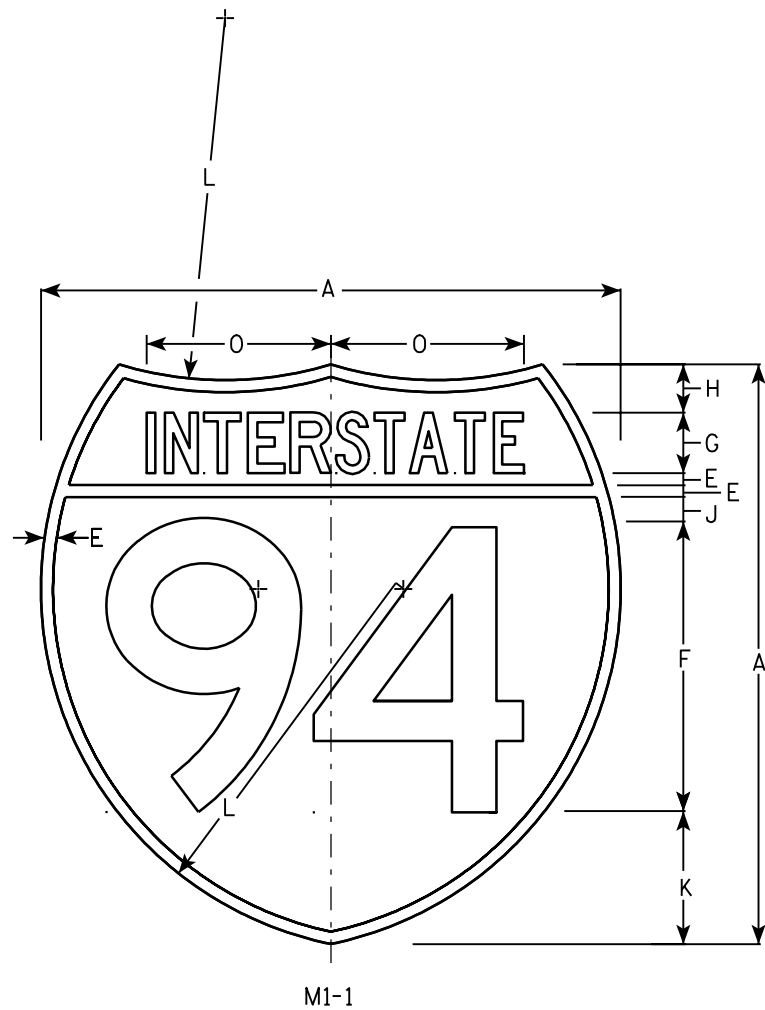


ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE NO: I55-56B.2



NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Top Red - Bottom Blue (See Note 6)
Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C
6. Permanent Signs
Message - Type H Reflective
Detour or other temporary signs
Background - Reflective
Message - Reflective

7

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m ²	M1-1A Area m ²
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

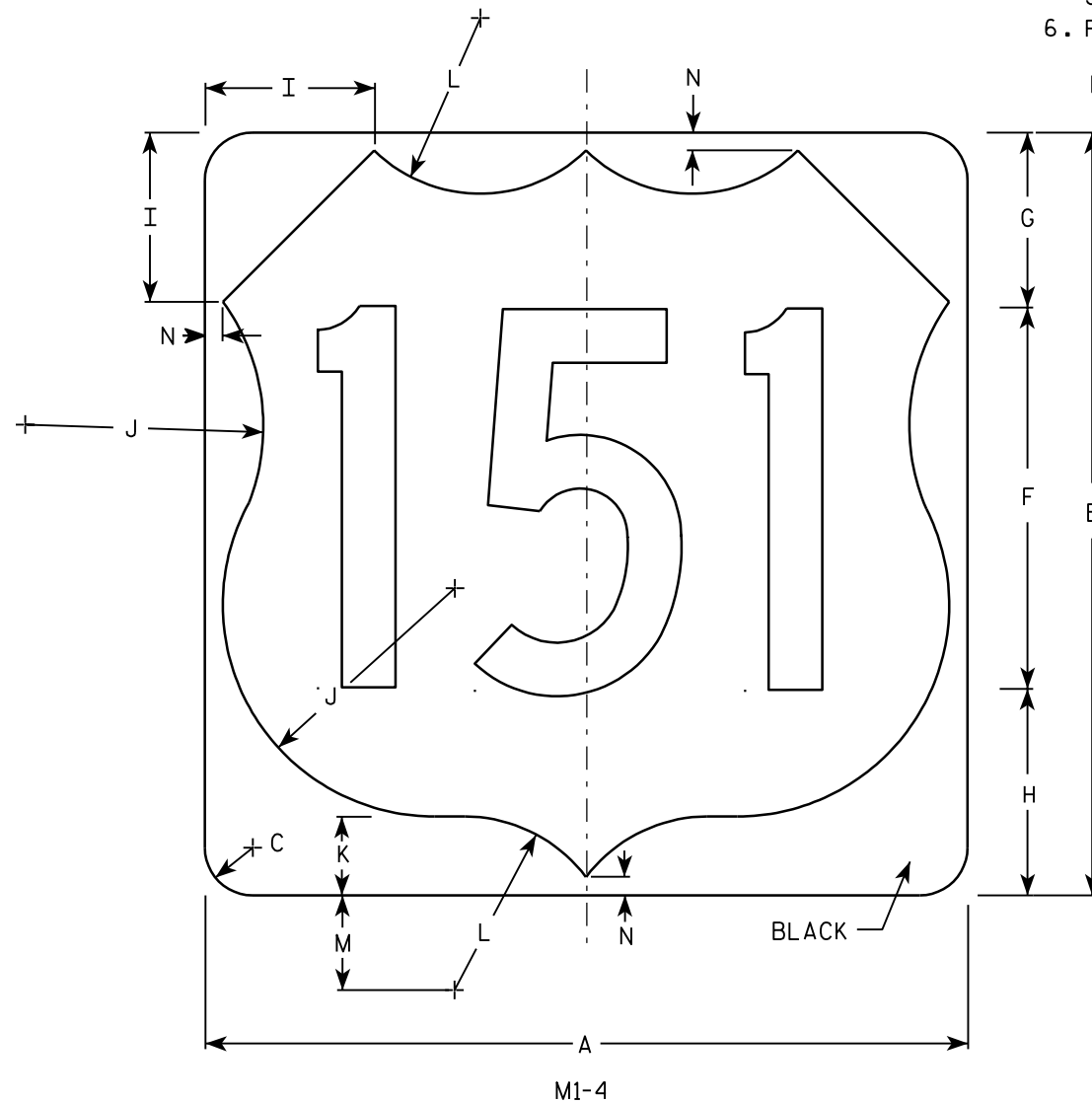
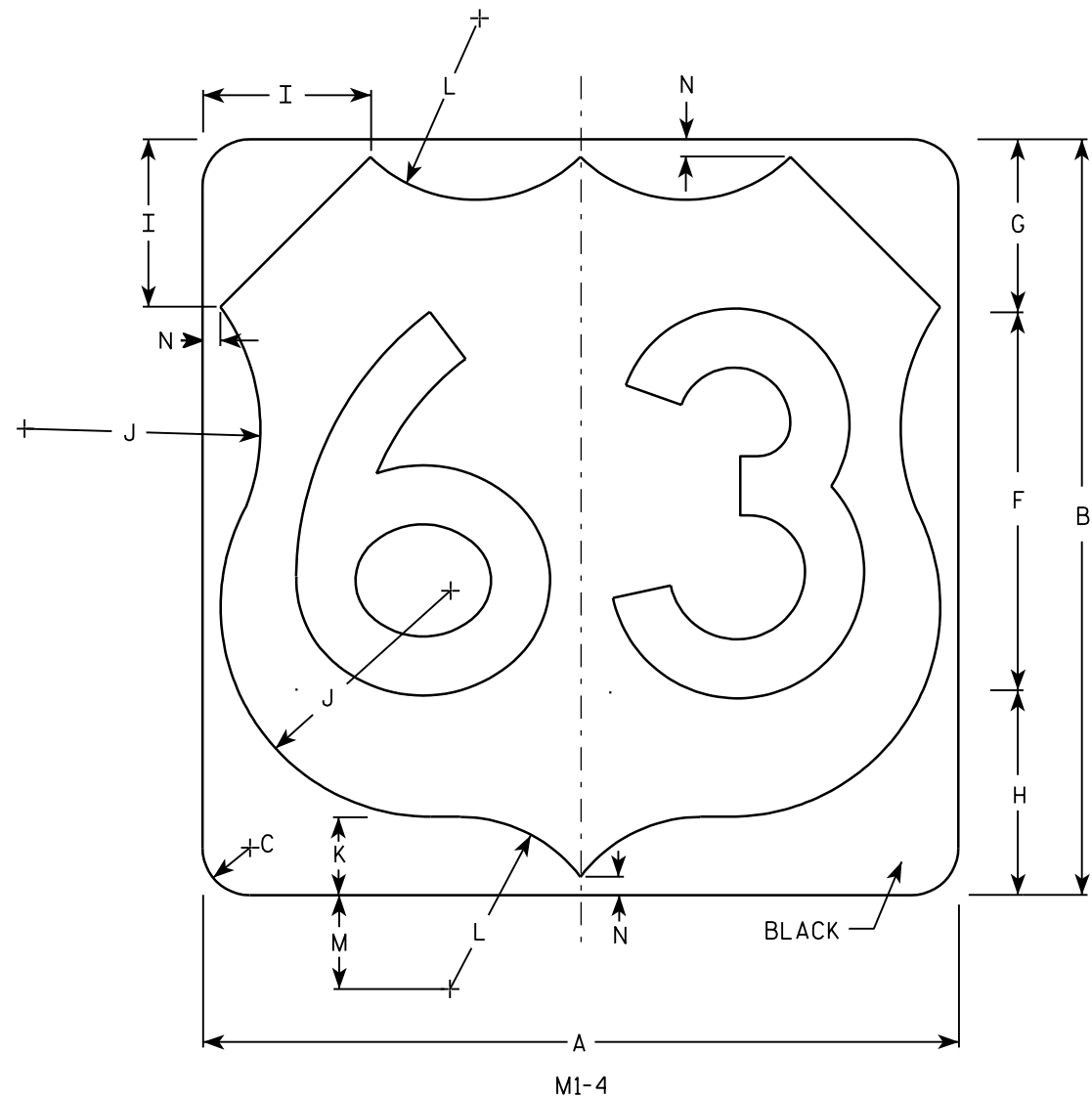
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or other temporary signs
Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

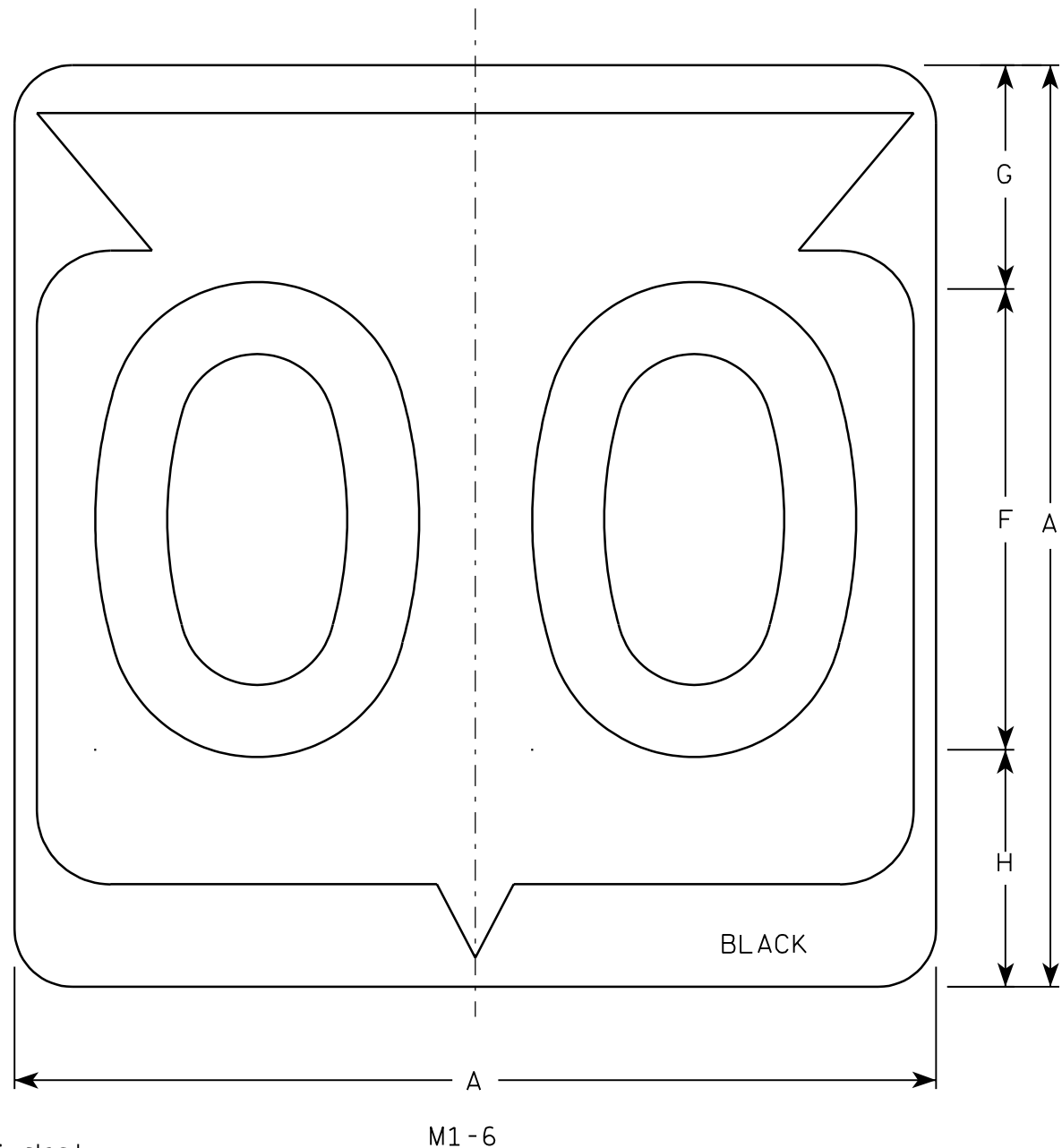
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 08/25/05 PLATE NO. M1-4.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



7

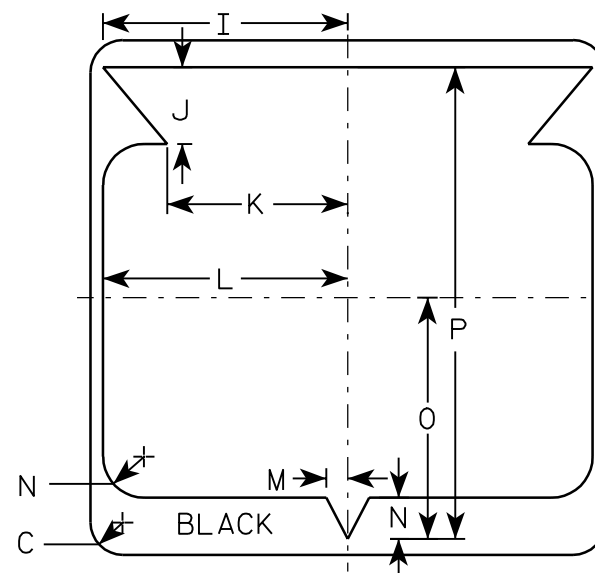
Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

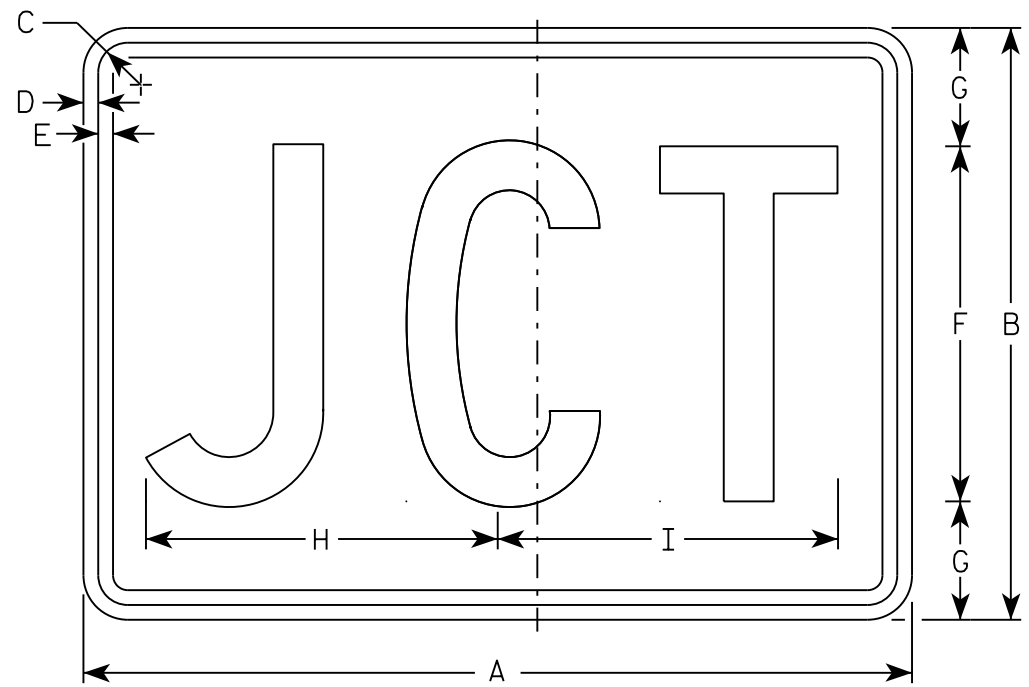
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*
for State Traffic Engineer

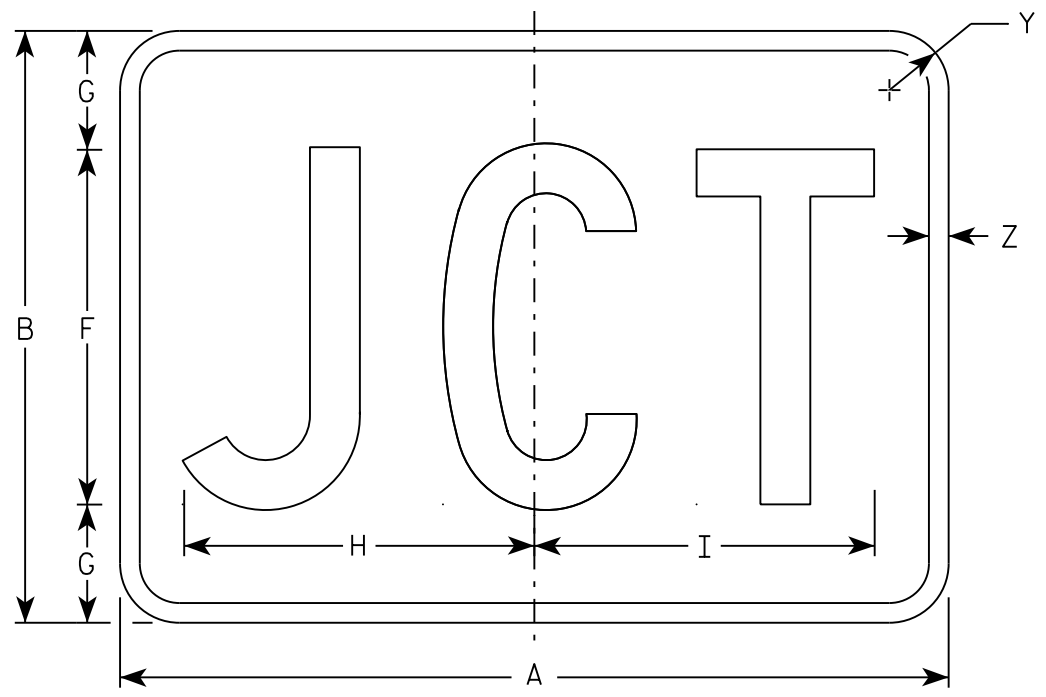
DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

7



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

1. Sign is Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
Message - Black
MB2-1 Background - Blue
Message - White
MK2-1 Background - Green
Message - White
MM2-1 Background - White
Message - Green
MN2-1 Background - Brown
Message - White
MP2-1 Background - White
Message - Blue
MR2-1 Background - Brown
Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

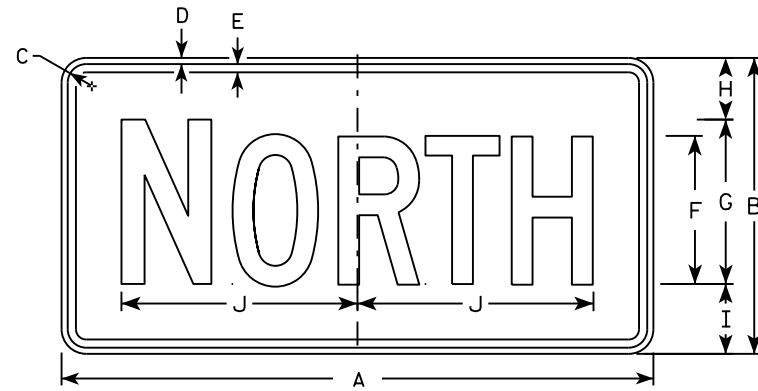
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

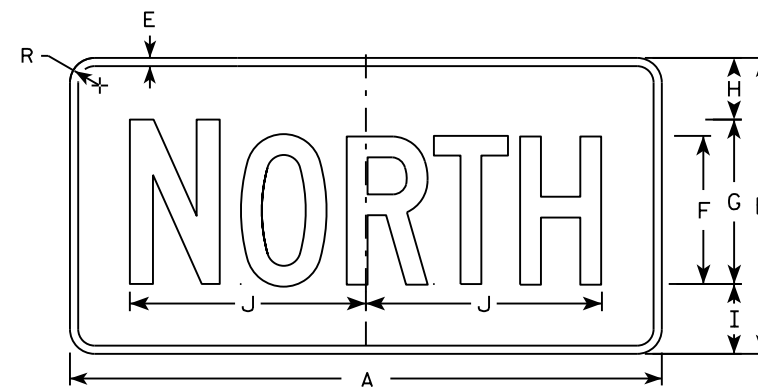
DATE 10/15/15 PLATE NO. M2-1.12

NOTES

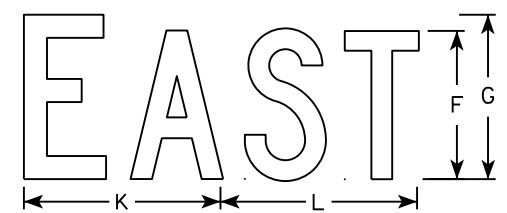
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
 Message - Black
 MB3-1 thru MB3-4 Background - Blue
 Message - White
 MK3-1 thru MK3-4 Background - Green
 Message - White
 MM3-1 thru MM3-4 Background - White
 Message - Green
 MN3-1 thru MN3-4 Background - Brown
 Message - White
 MP3-1 thru MP3-4 Background - White
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



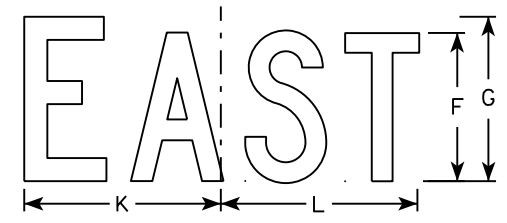
M3-1
MM3-1
MP3-1



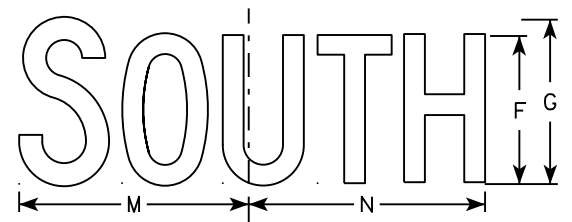
MB3-1
MK3-1
MN3-1



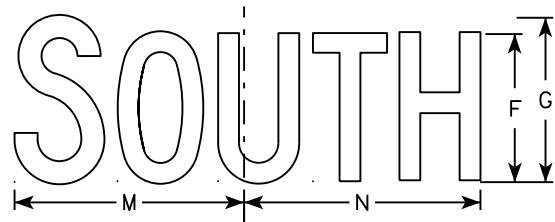
M3-2
MM3-2
MP3-2



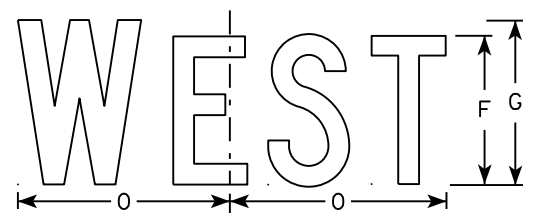
MB3-2
MK3-2
MN3-2



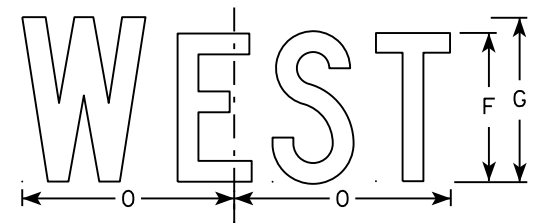
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

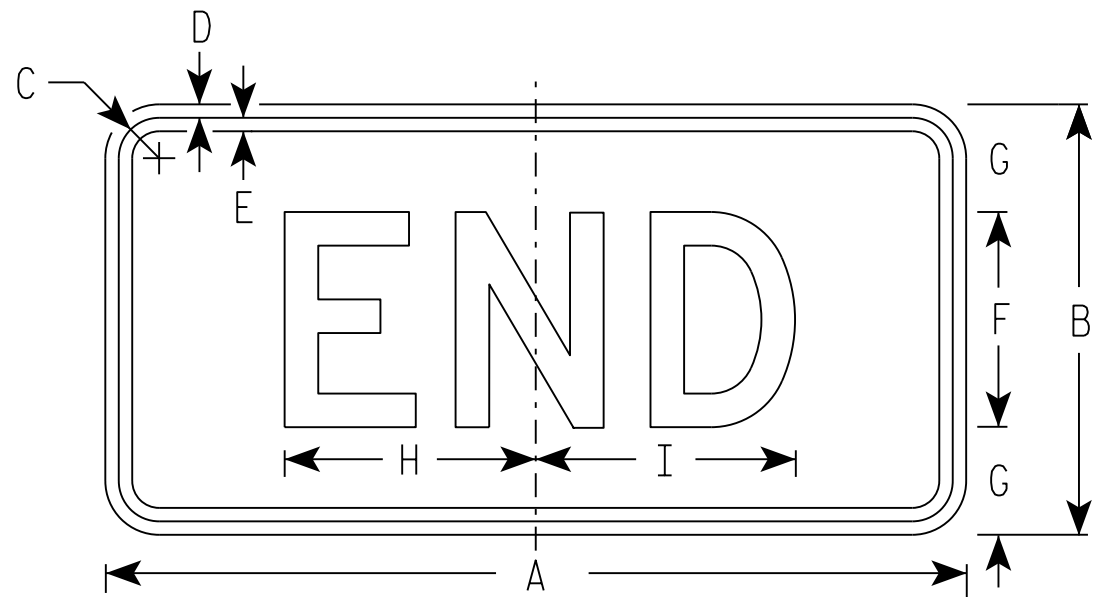
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

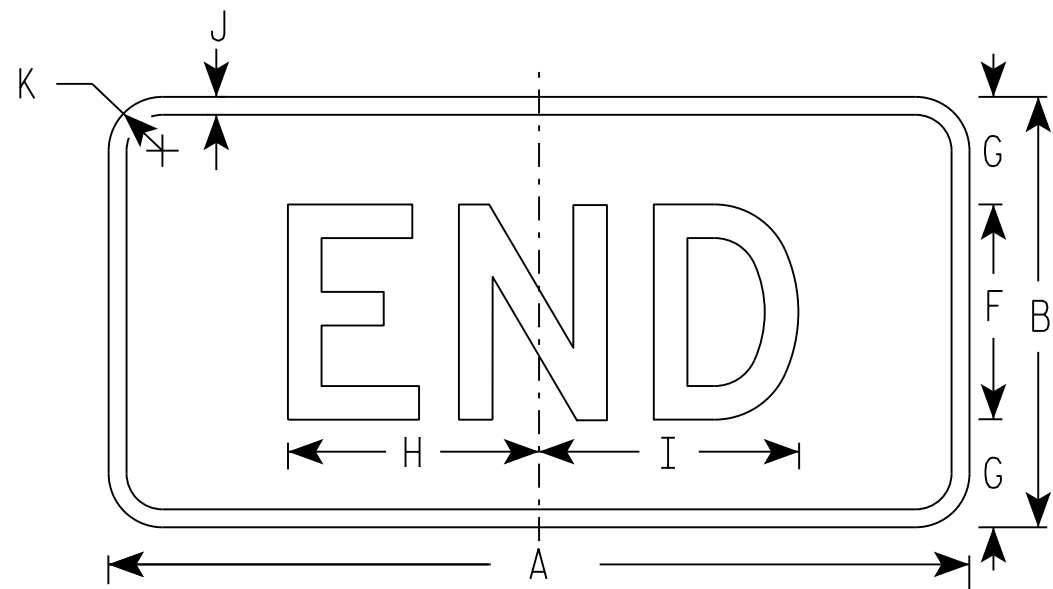
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14



M4-6
MM4-6
MP4-6



MB4-6
MK4-6
MN4-6
MR4-6

NOTES

1. Sign is Type II - Type H
2. Color:
 - Background - See note 5
 - Message - See note 5
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-6 Background - White
Message - Black
- MB4-6 Background - Blue
Message - White
- MK4-6 Background - Green
Message - White
- MM4-6 Background - White
Message - Green
- MN4-6 Background - Brown
Message - White
- MP4-6 Background - White
Message - Blue
- MR4-6 Background - Brown
Message - Yellow

7

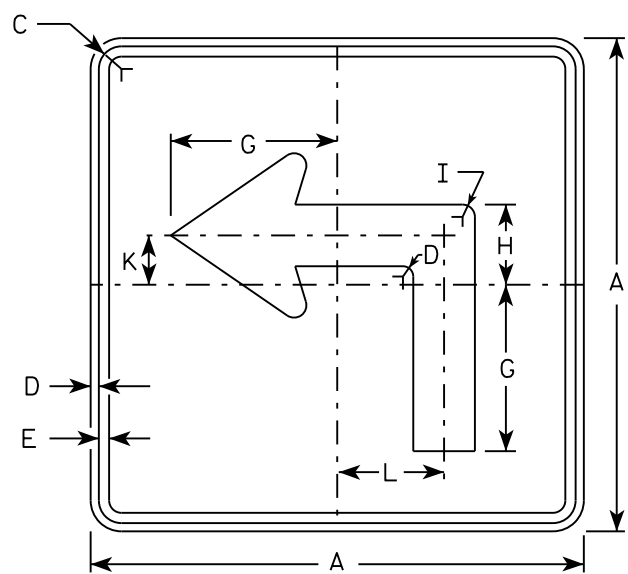
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	7	7 1/4	1/2	1 1/2																2.00
3	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
4	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
5	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-6

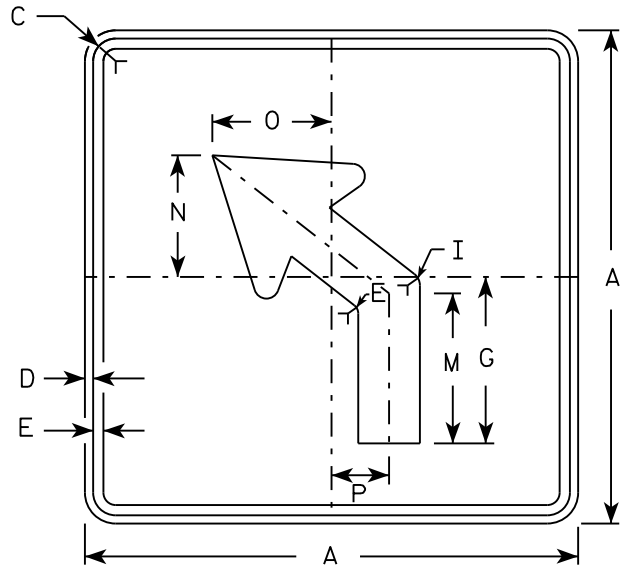
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

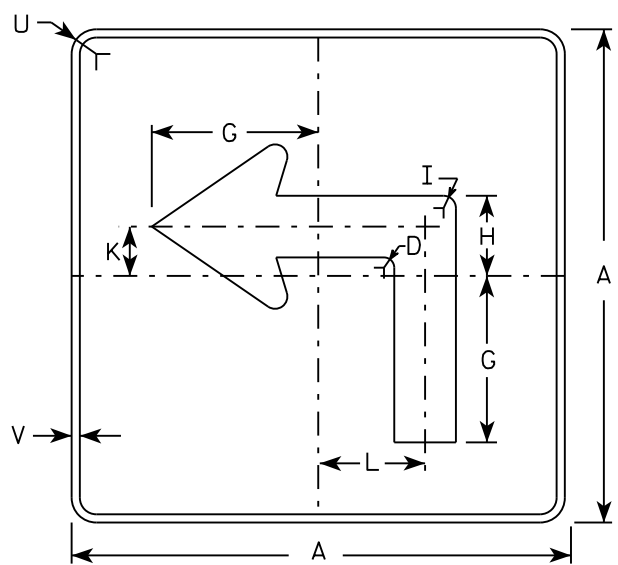
DATE 10/15/15 PLATE NO. M4-7.9



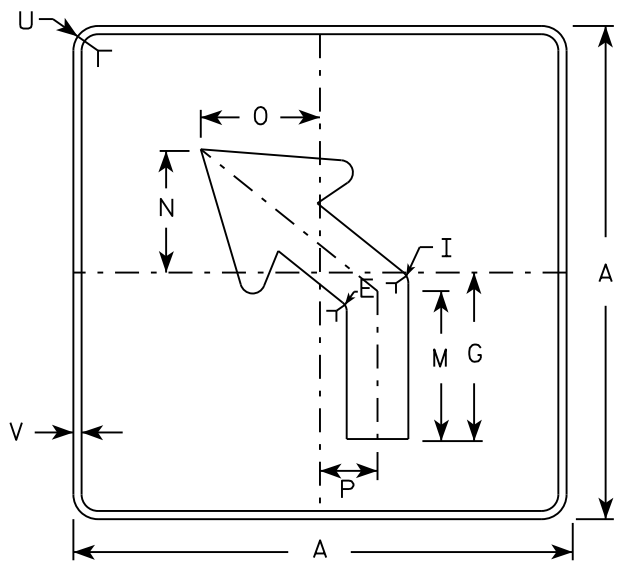
M5-1L
MM5-1L
M05-1L
MP5-1L



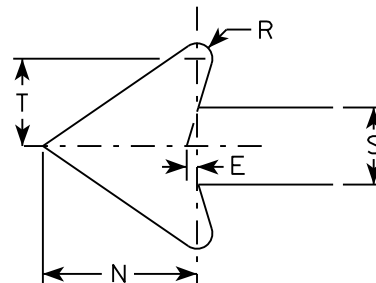
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
 - Background - See note 4
 - Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M5-1 and M5-2 Background - White
Message - Black
 - MB5-1 and MB5-2 Background - Blue
Message - White
 - MK5-1 and MK5-2 Background - Green
Message - White
 - MM5-1 and MM5-2 Background - White
Message - Green
 - MN5-1 and MN5-2 Background - Brown
Message - White
 - M05-1 and M05-2 Background - Orange - Type F Reflective
Message - Black
 - MP5-1 and MP5-2 Background - White - Type H Reflective
Message - Blue
 - MR5-1 and MR5-2 Background - Brown
Message - Yellow
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

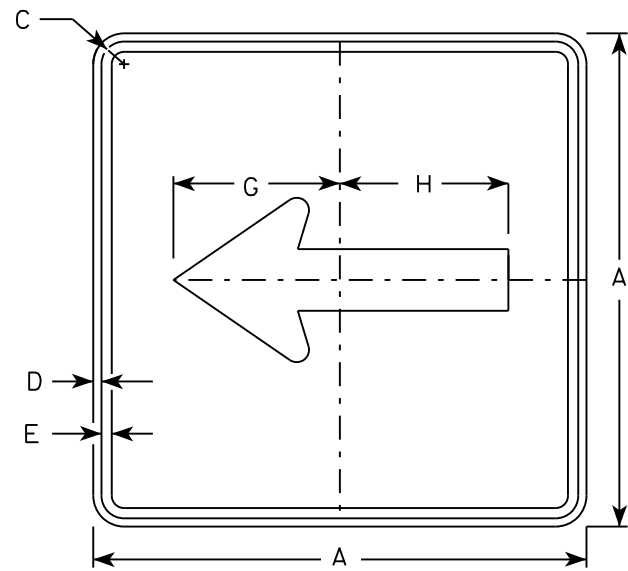
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

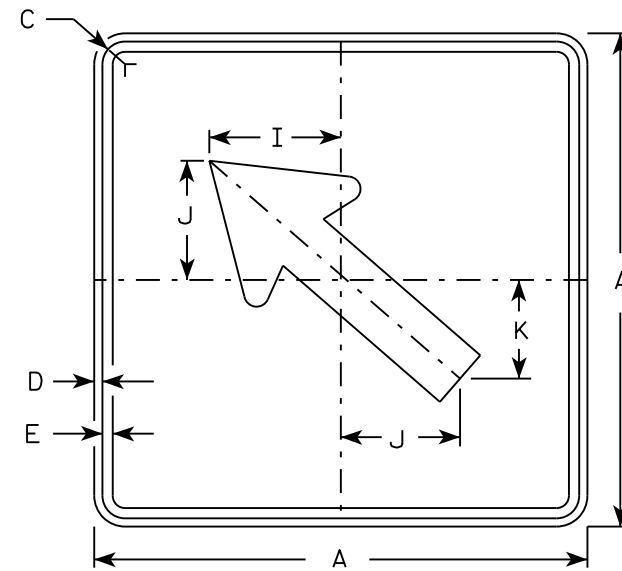
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

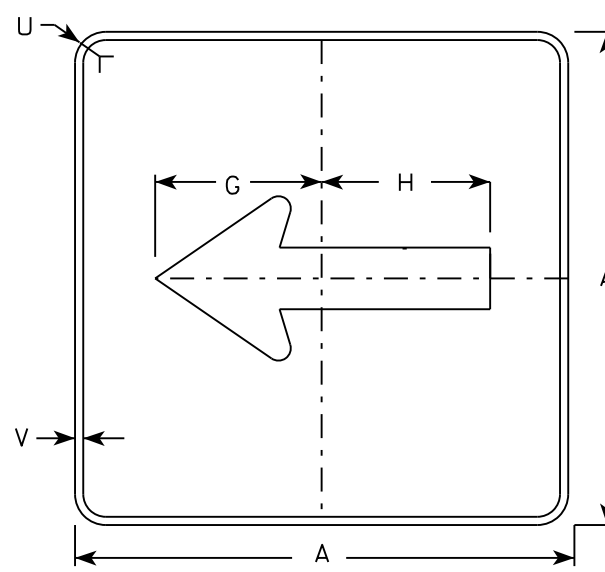
DATE 10/15/15 PLATE NO. M5-1.13



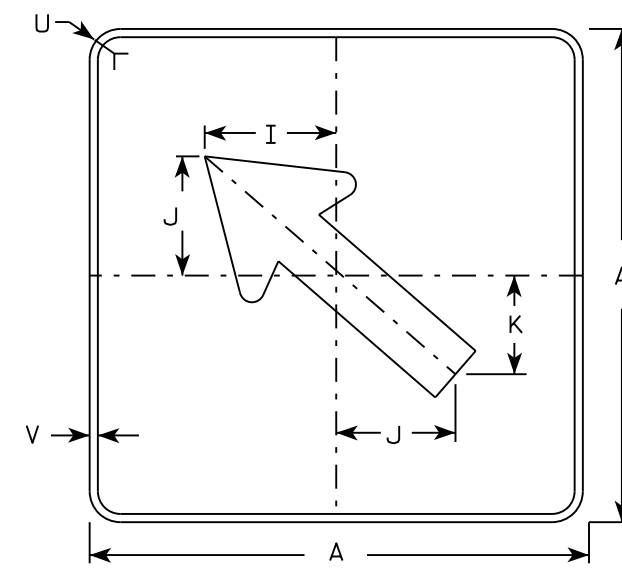
M6-1
MM6-1
M06-1
MP6-1



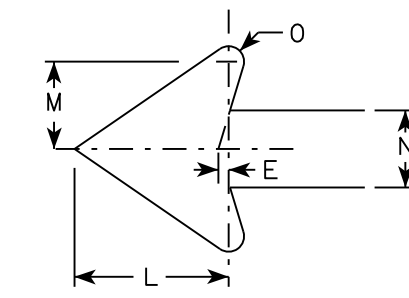
M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

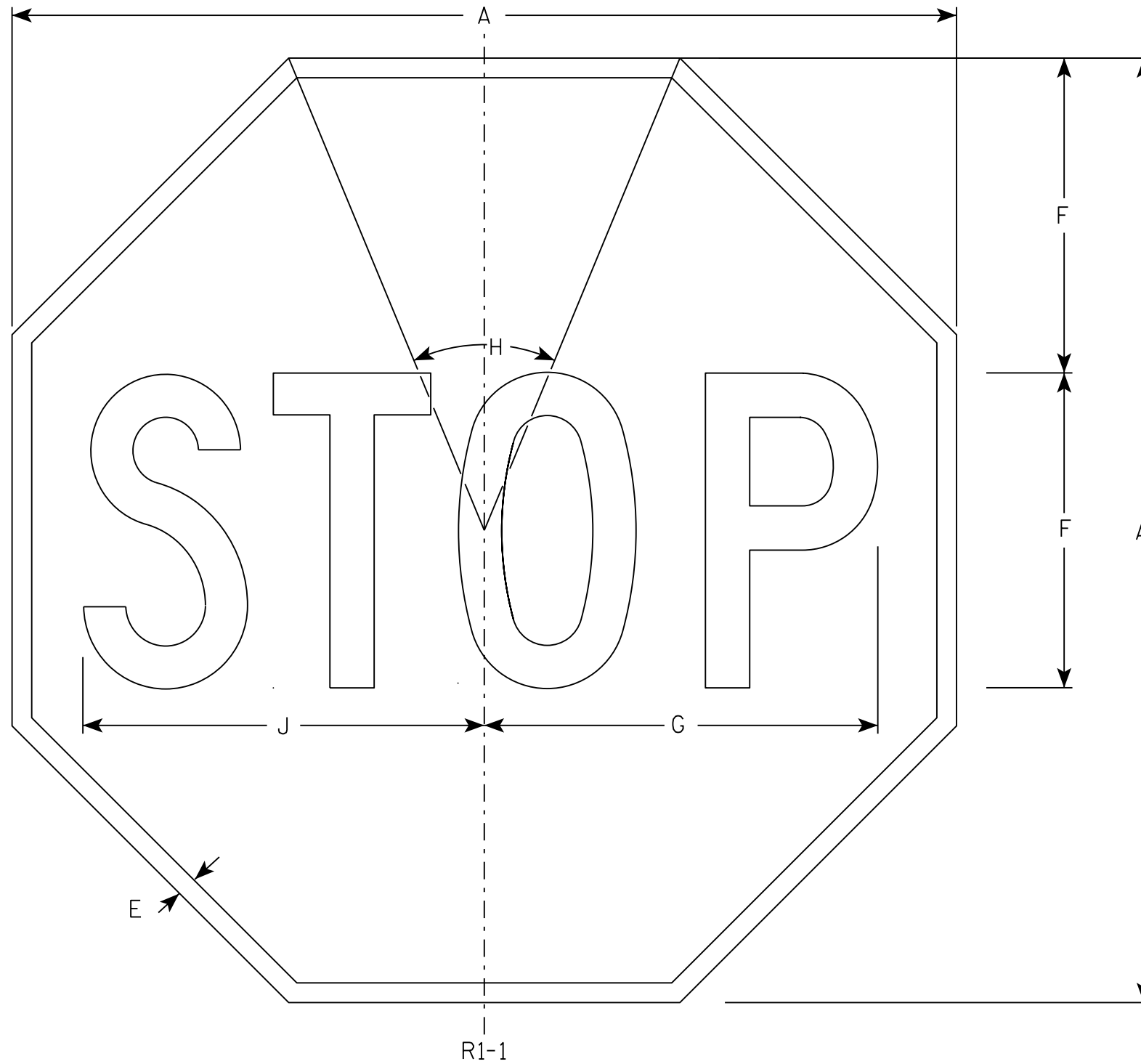
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C



R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

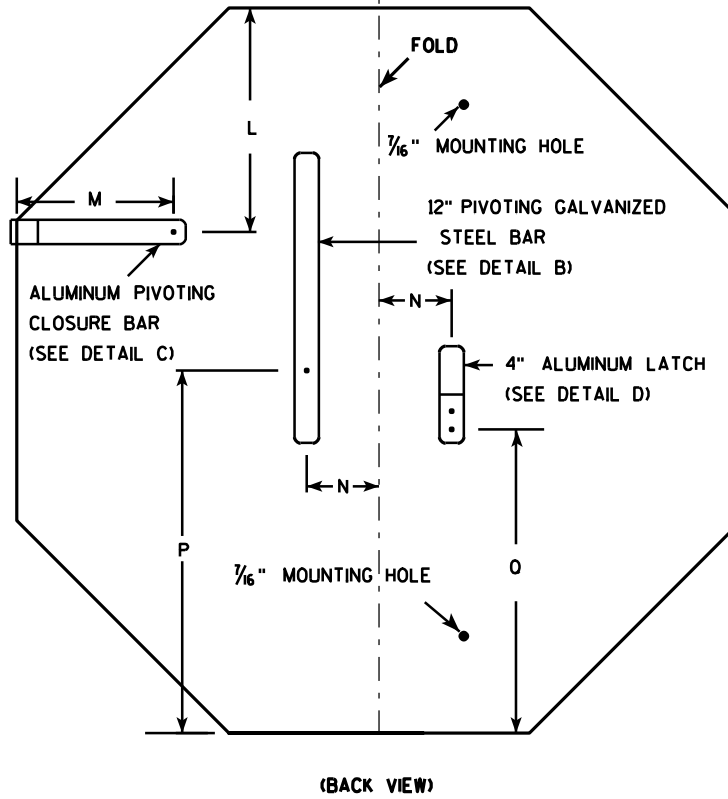
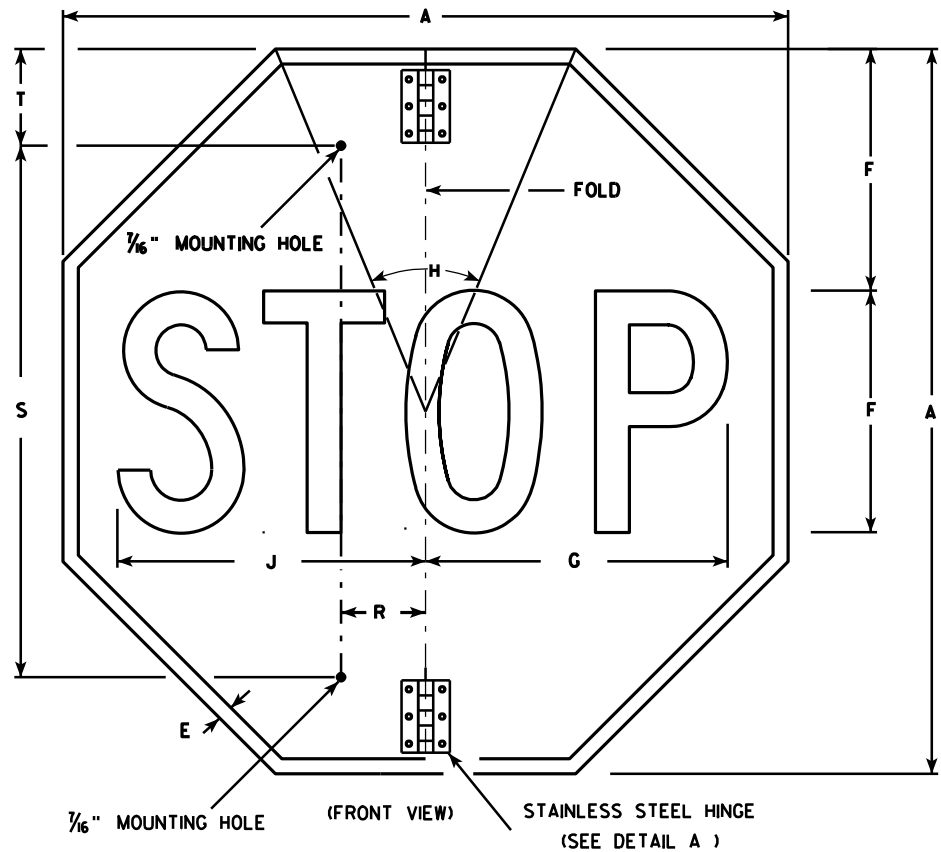
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

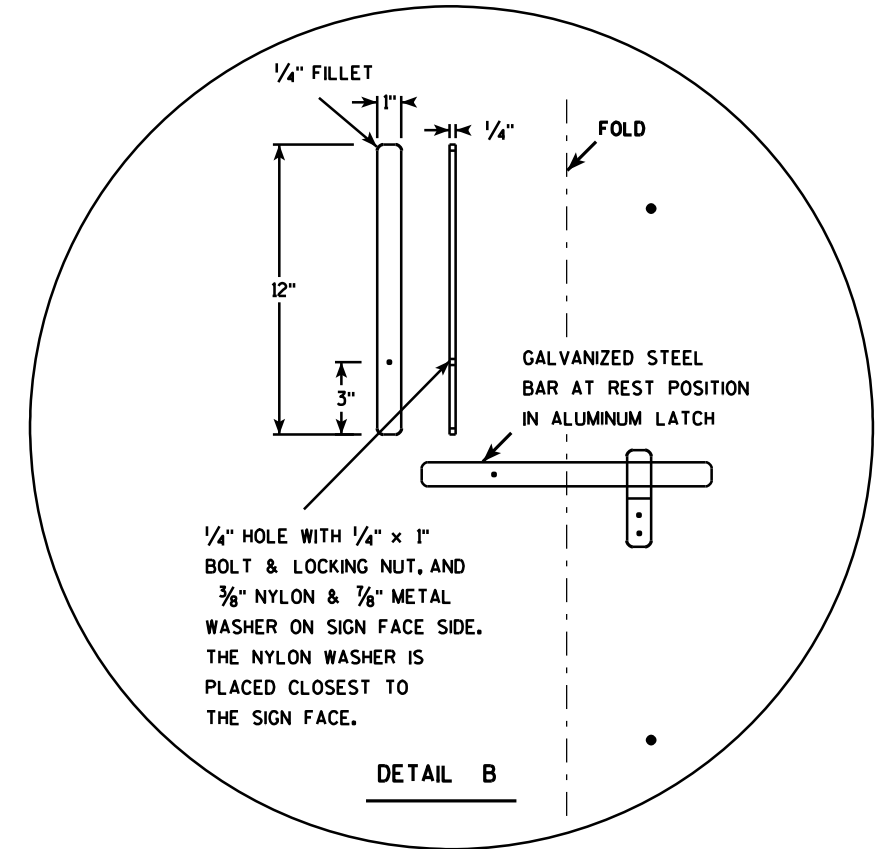
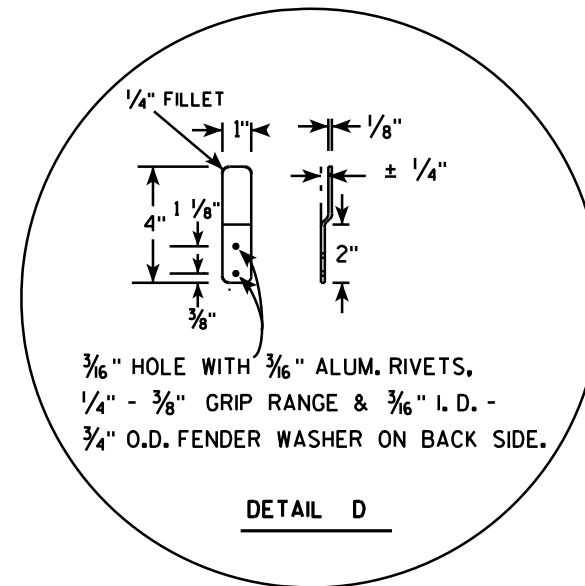
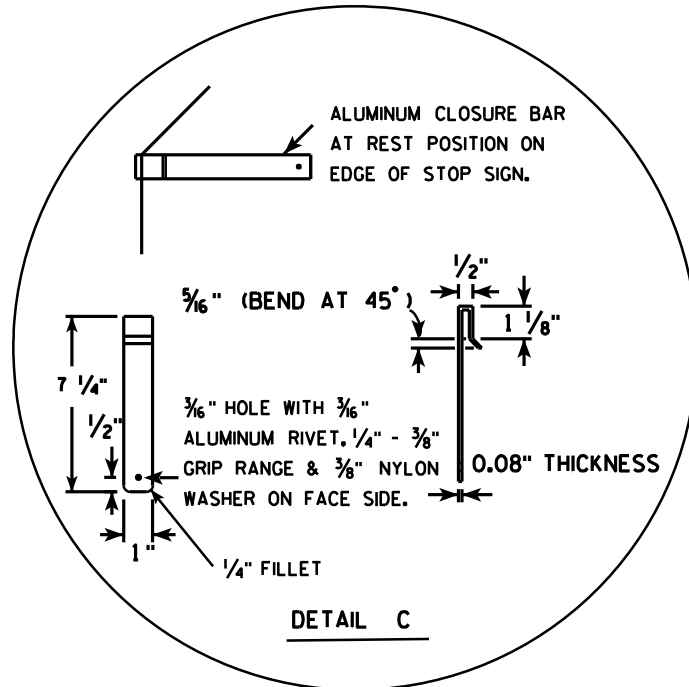
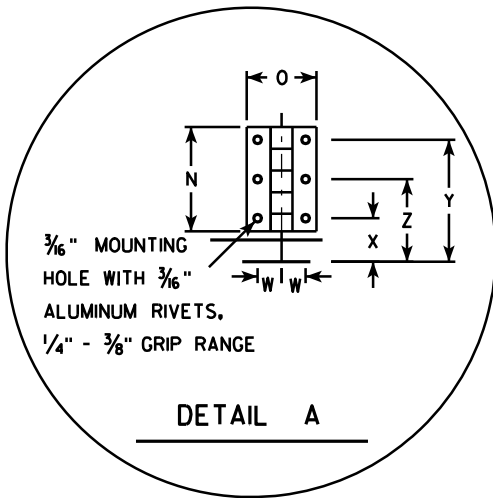
DATE 11/12/15 PLATE NO. R1-1.13

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1 1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

STANDARD SIGN
R1-1F

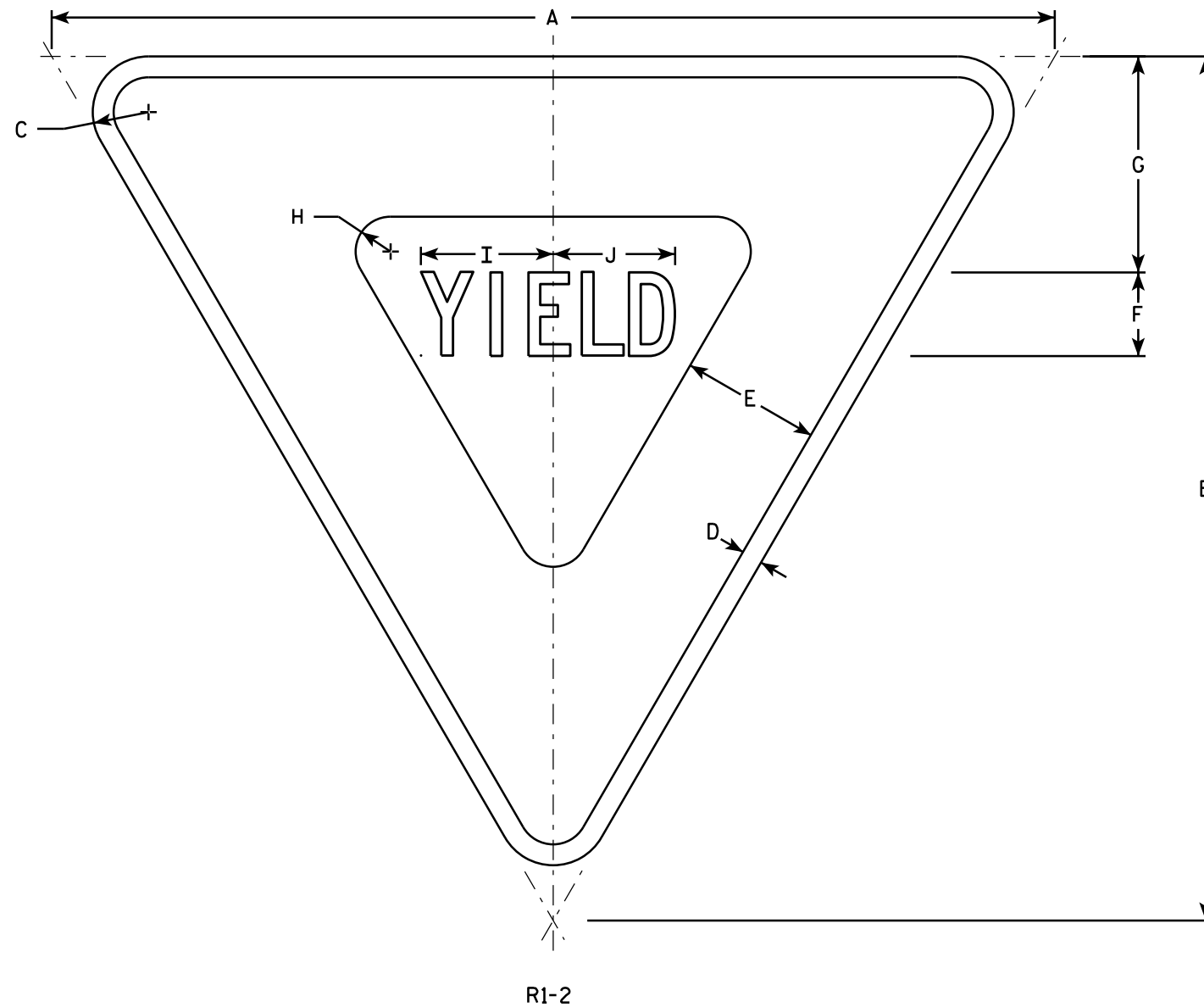
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The border strip and word message are reflectorized red.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

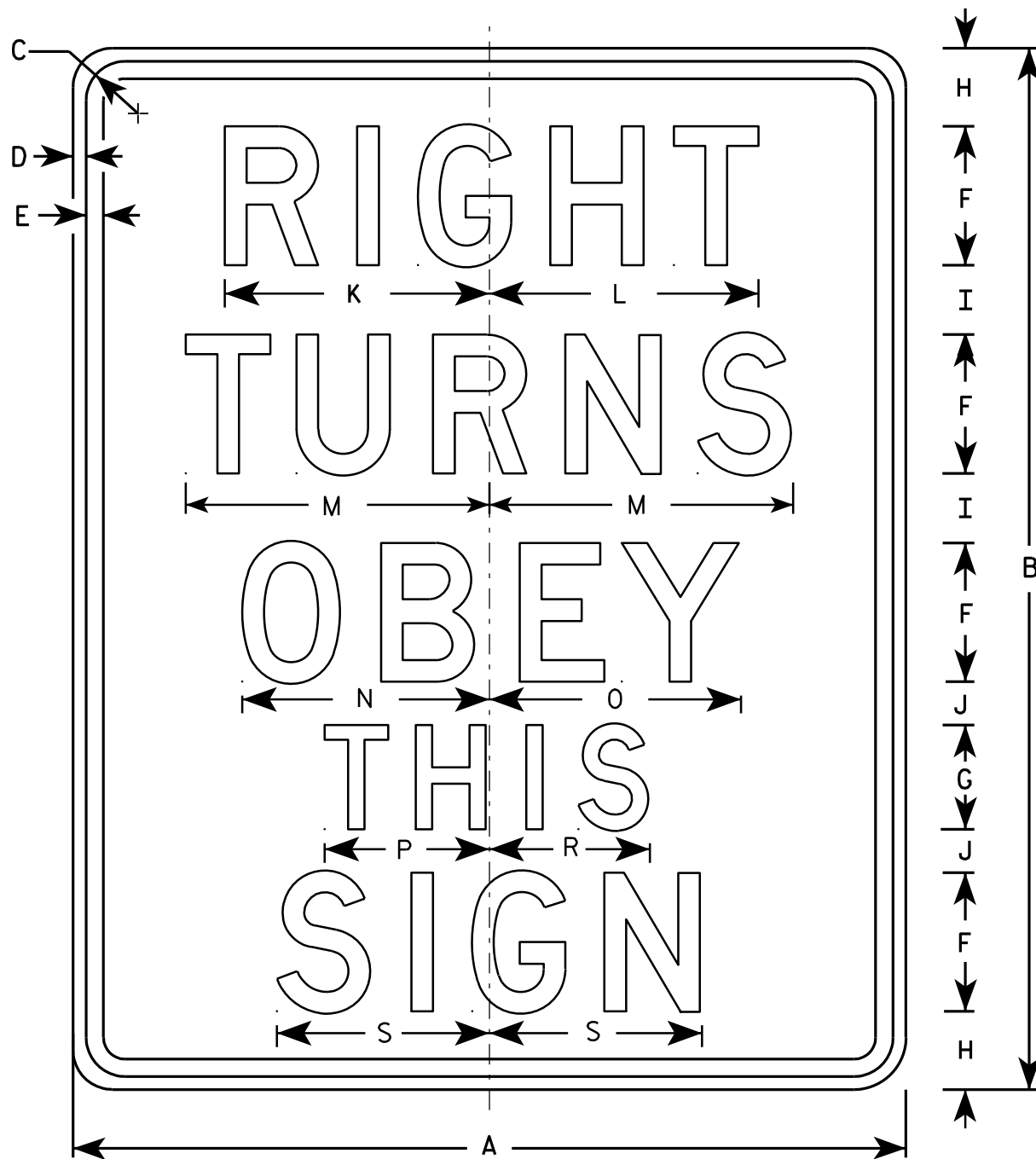
STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE NO. R1-2.12

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R1-53

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	3	2 1/4	2	1 1/4	7 5/8	7 3/4	8 3/4	7 1/8	7 1/4	4 3/4		4 5/8	6 1/8								5.0
2M	24	30	1 1/8	3/8	1/2	4	3	2 1/4	2	1 1/4	7 5/8	7 3/4	8 3/4	7 1/8	7 1/4	4 3/4		4 5/8	6 1/8								5.0
3																											
4																											
5																											

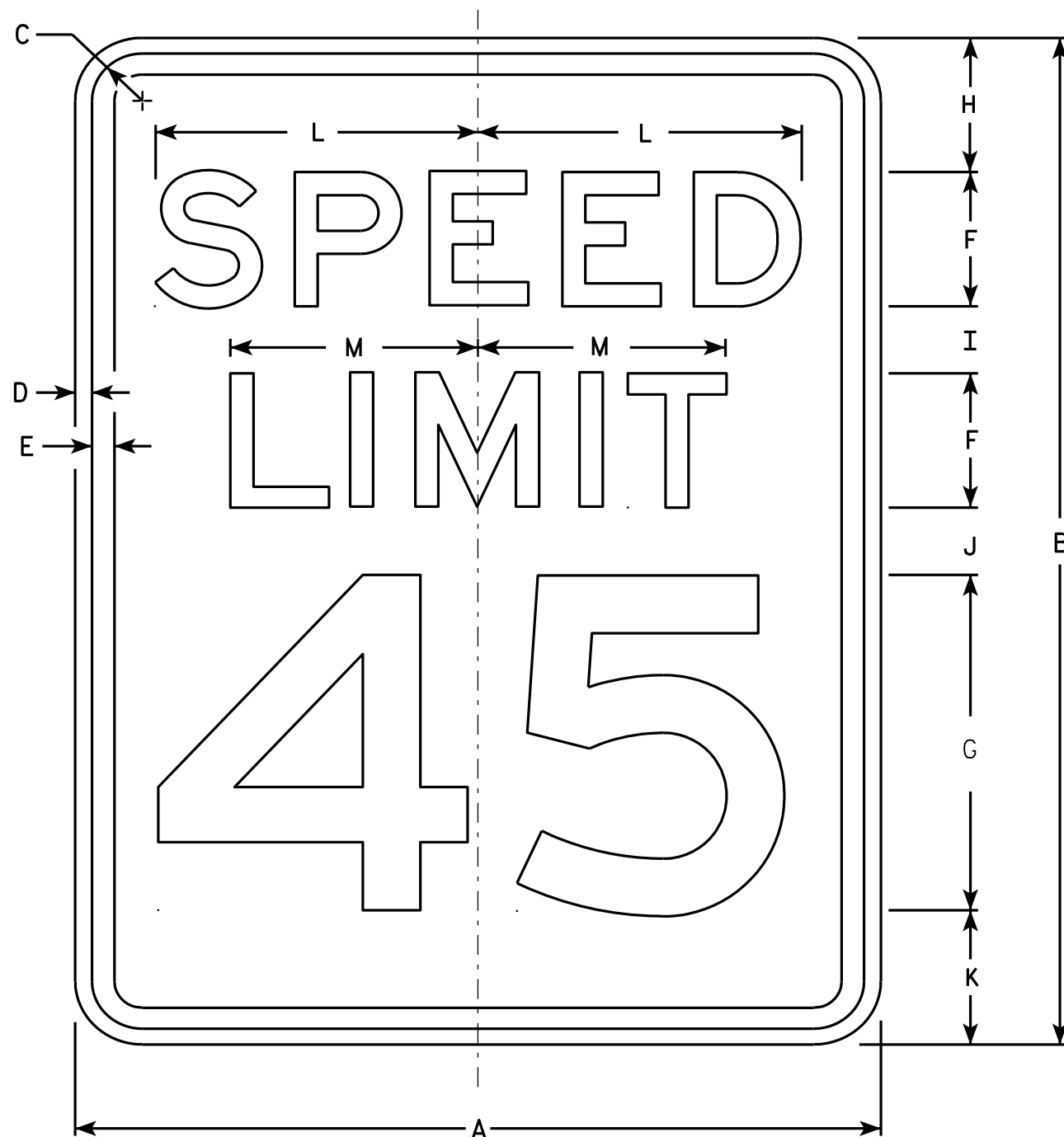
STANDARD SIGN
R1-53

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-53.10

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

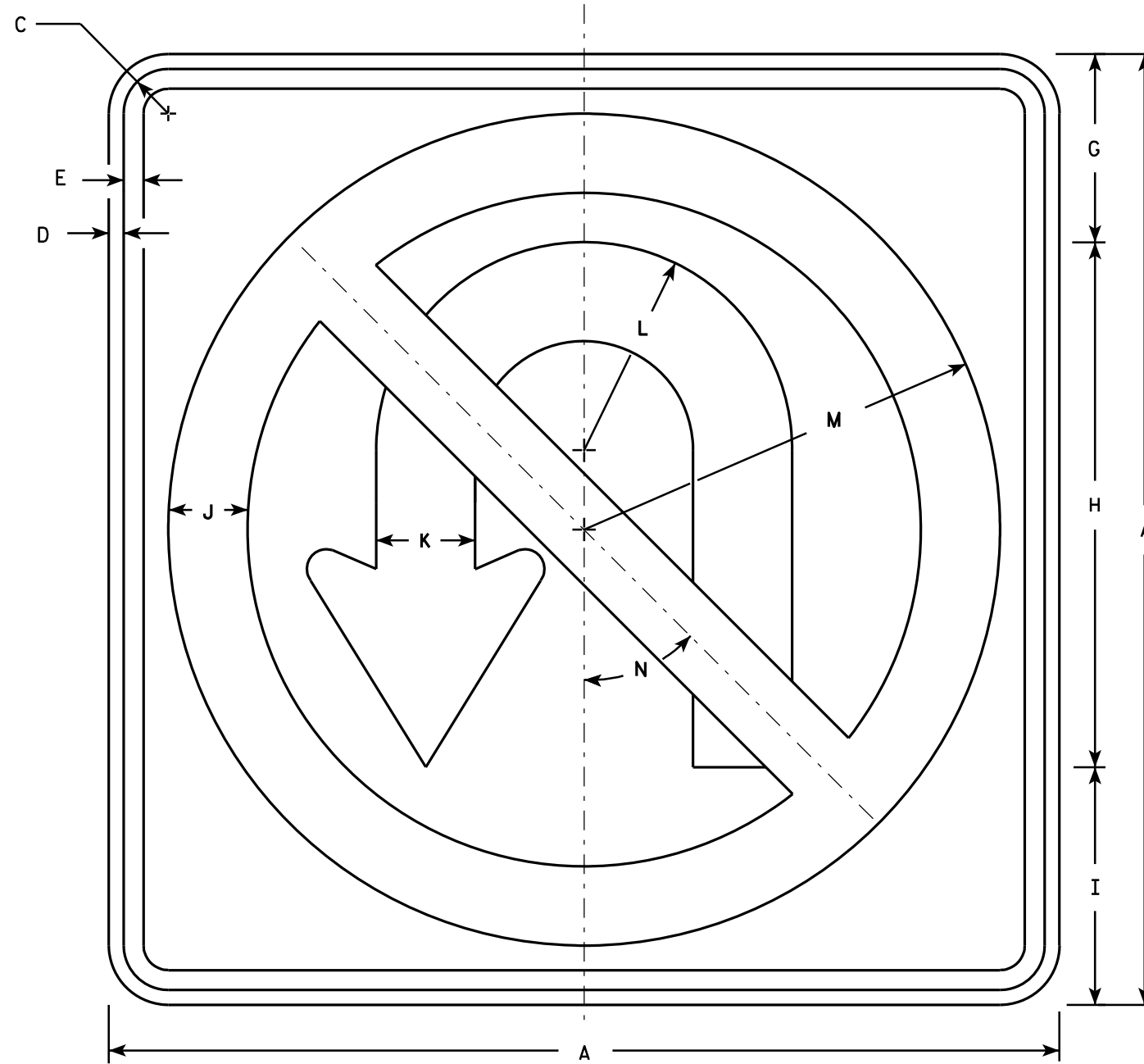
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

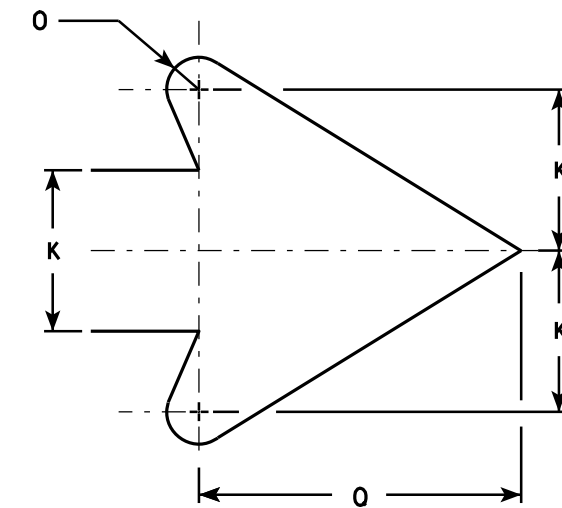
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



R3-4



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.	
1																												
2S	24		1 1/8	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5											4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8											9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8											9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8											9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8											9.0

STANDARD SIGN
R3-4

WISCONSIN DEPT OF TRANSPORTATION

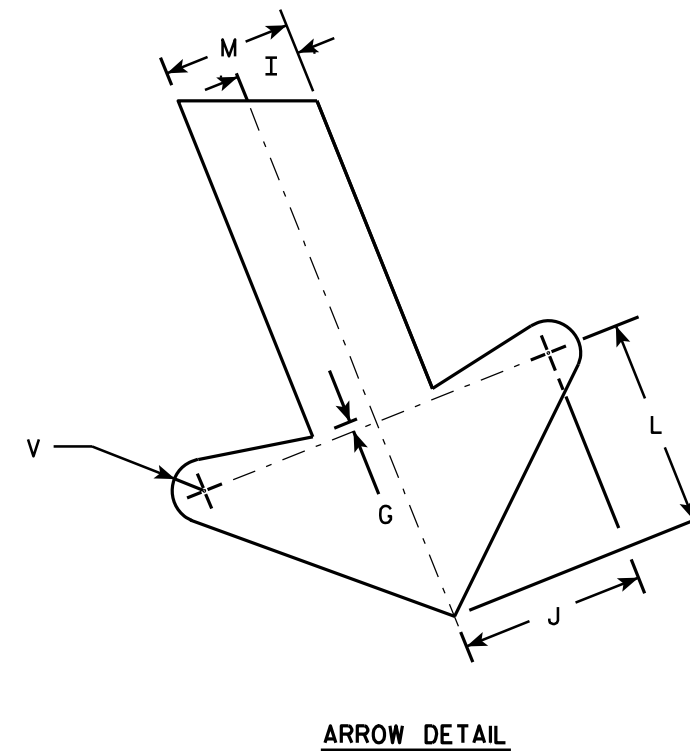
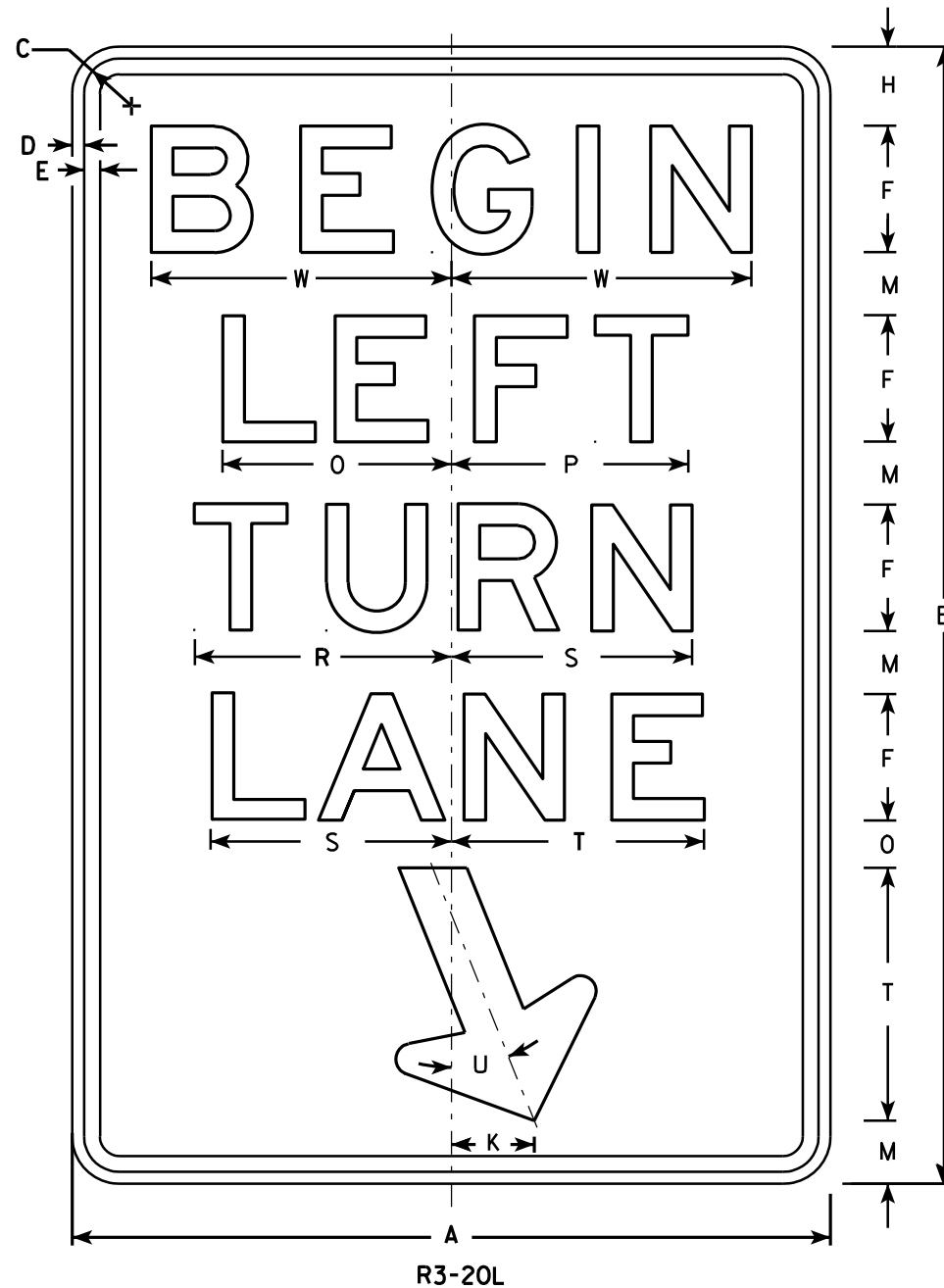
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE: 12/08/10 PLATE NO. R3-4.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

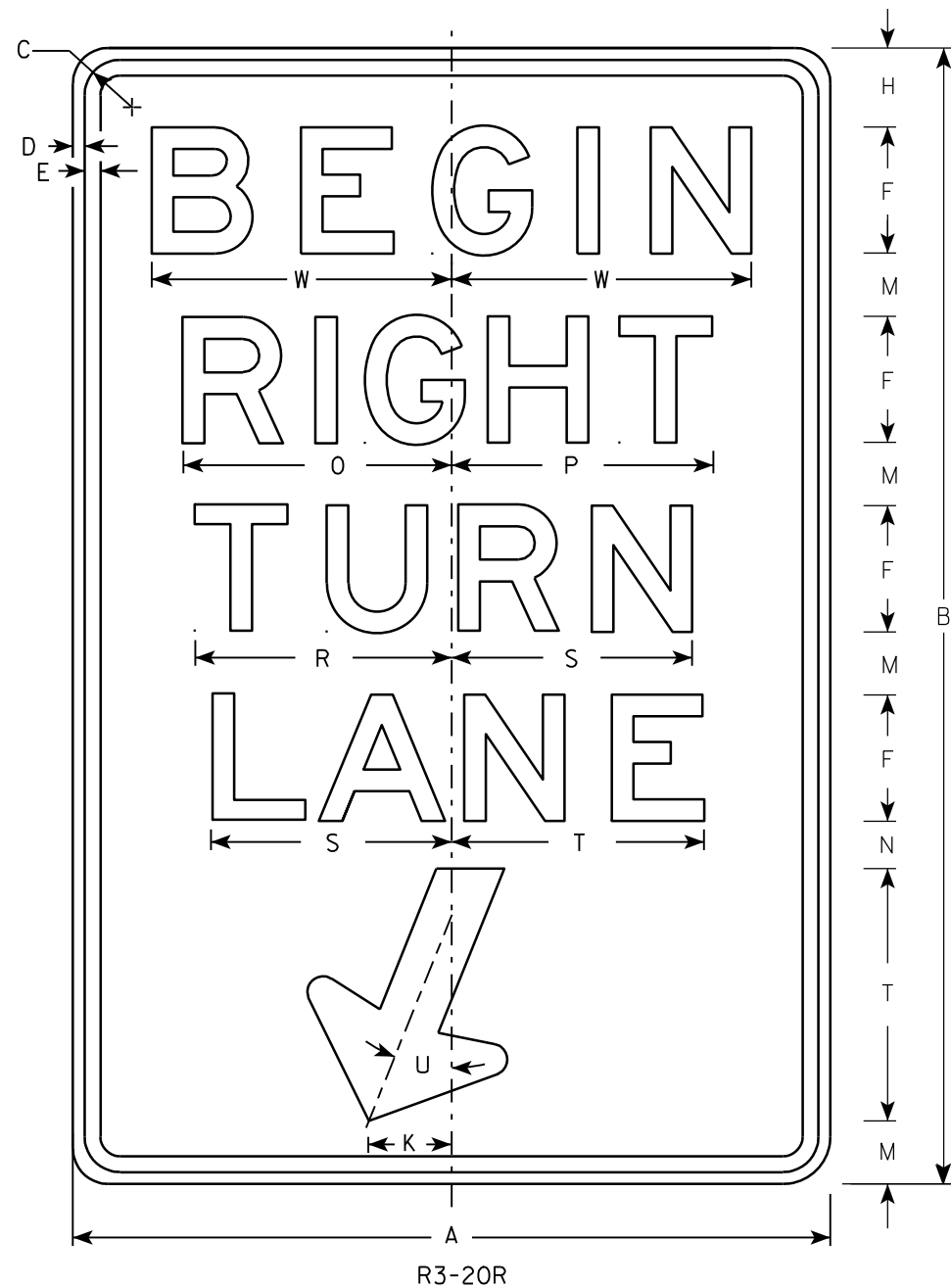
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

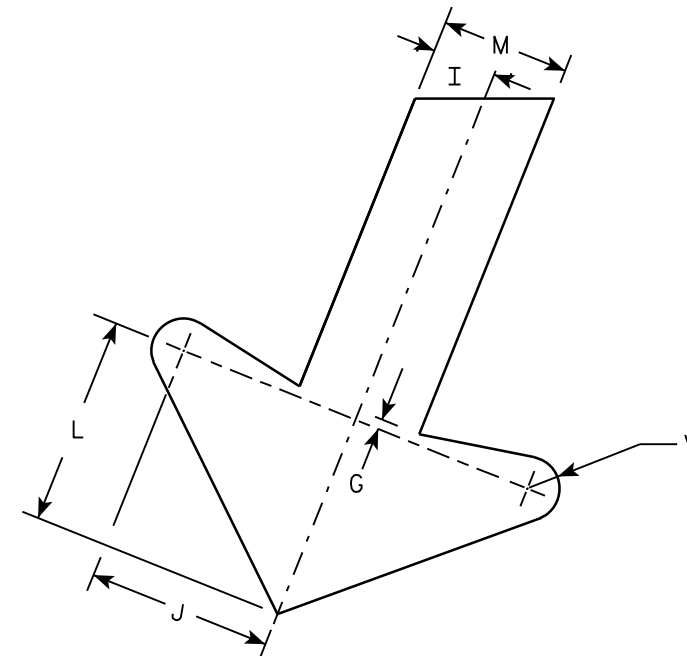
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**



R3-20R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	
1																												
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0	
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0	
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5	
4																												
5																												

STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

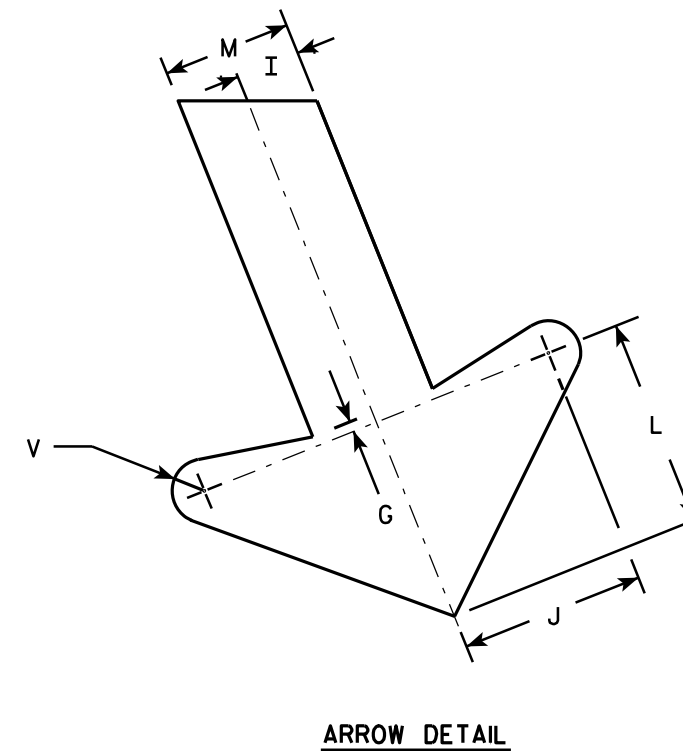
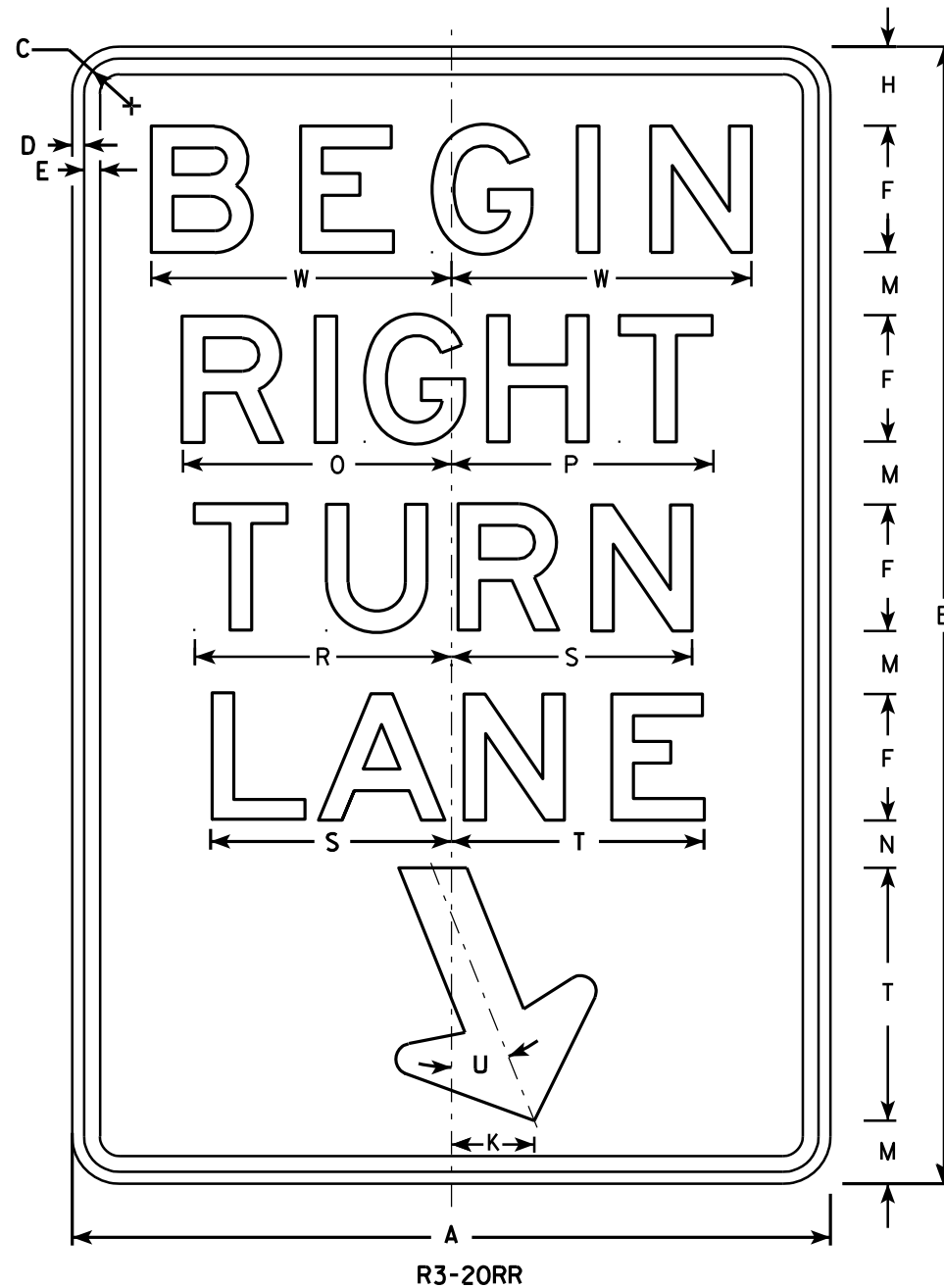
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2			6.0	
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2			6.0	
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4			13.5	
4																											
5																											

STANDARD SIGN
R3-20RR

WISCONSIN DEPT OF TRANSPORTATION

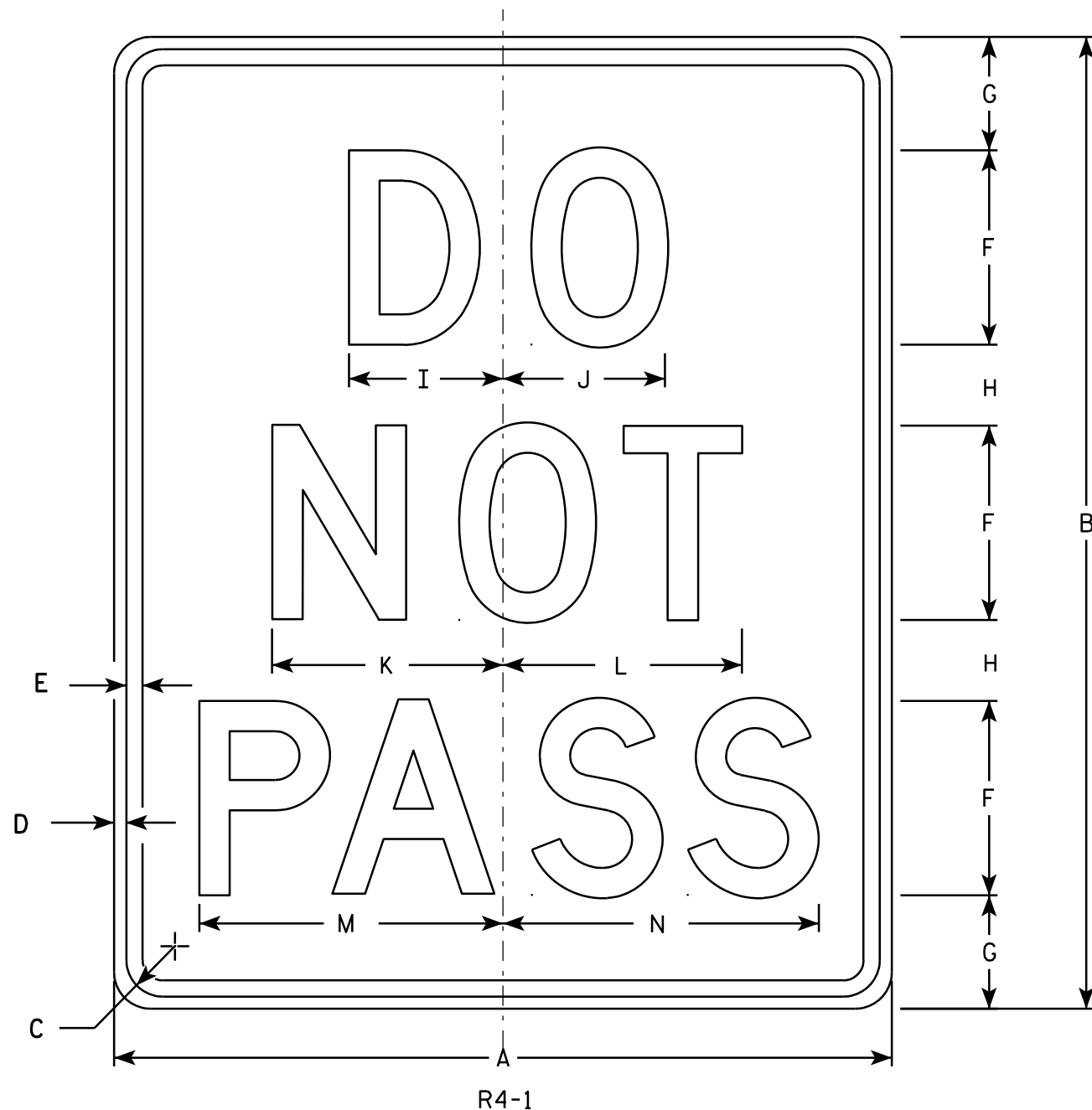
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20RR.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3																											
4	36	48	1 5/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	2 1/4	3/4	1	10	8	7	7 3/4	8 3/8	11 1/8	12 1/4	15 5/8	16 1/4													20.0

STANDARD SIGN
R4-1

WISCONSIN DEPT OF TRANSPORTATION

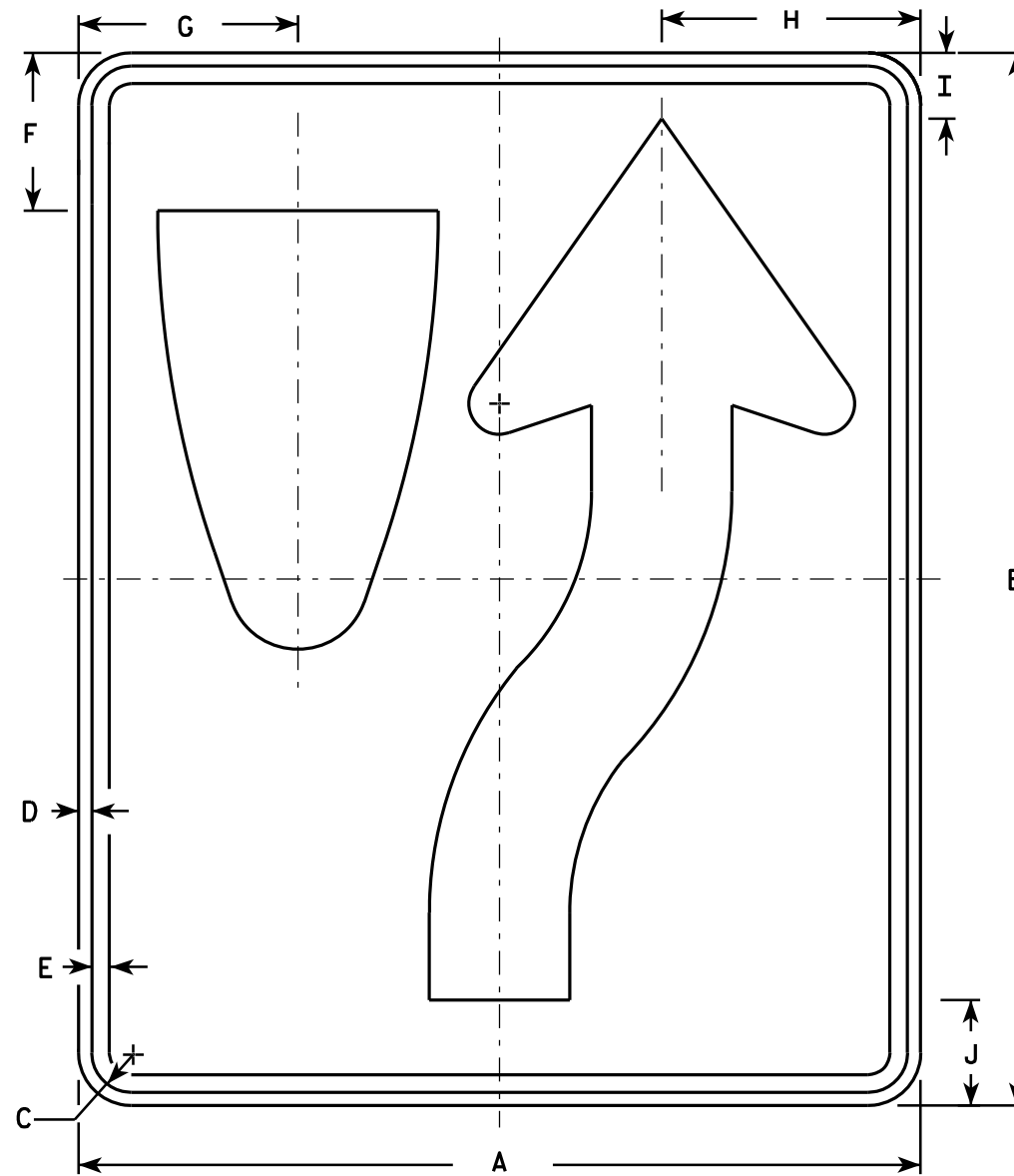
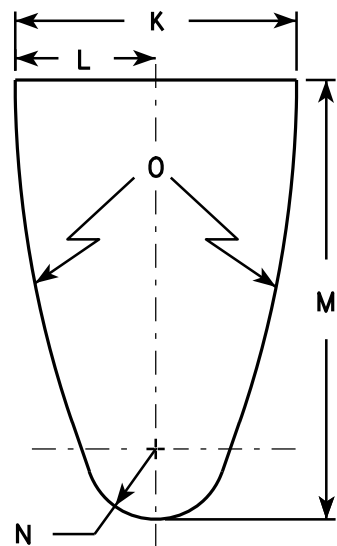
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-1.7

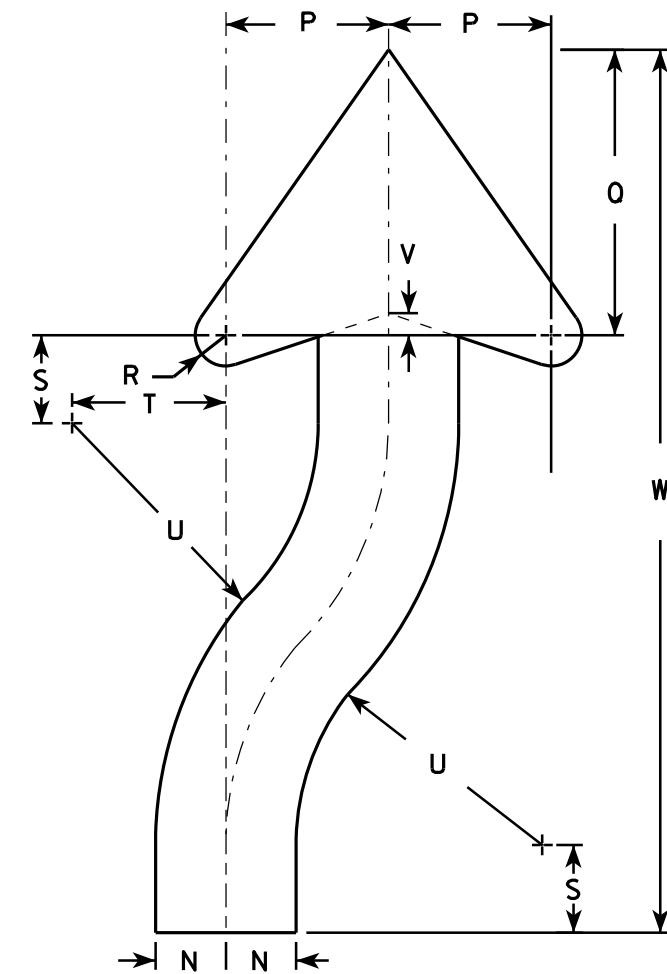
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
Background - White
Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



R4-7



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

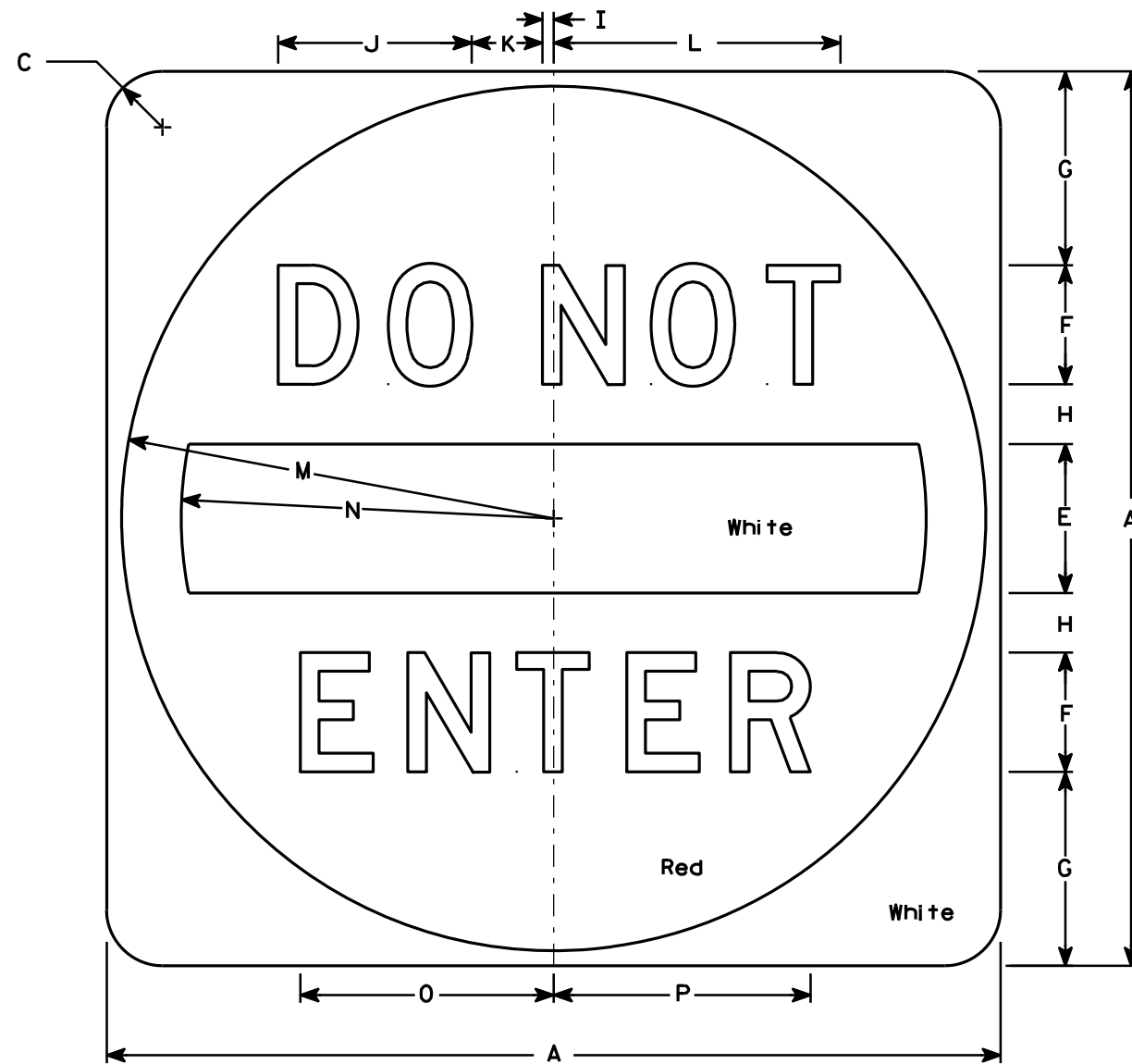
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - See detail
Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the corners shall be rounded.



R5-1

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.26
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

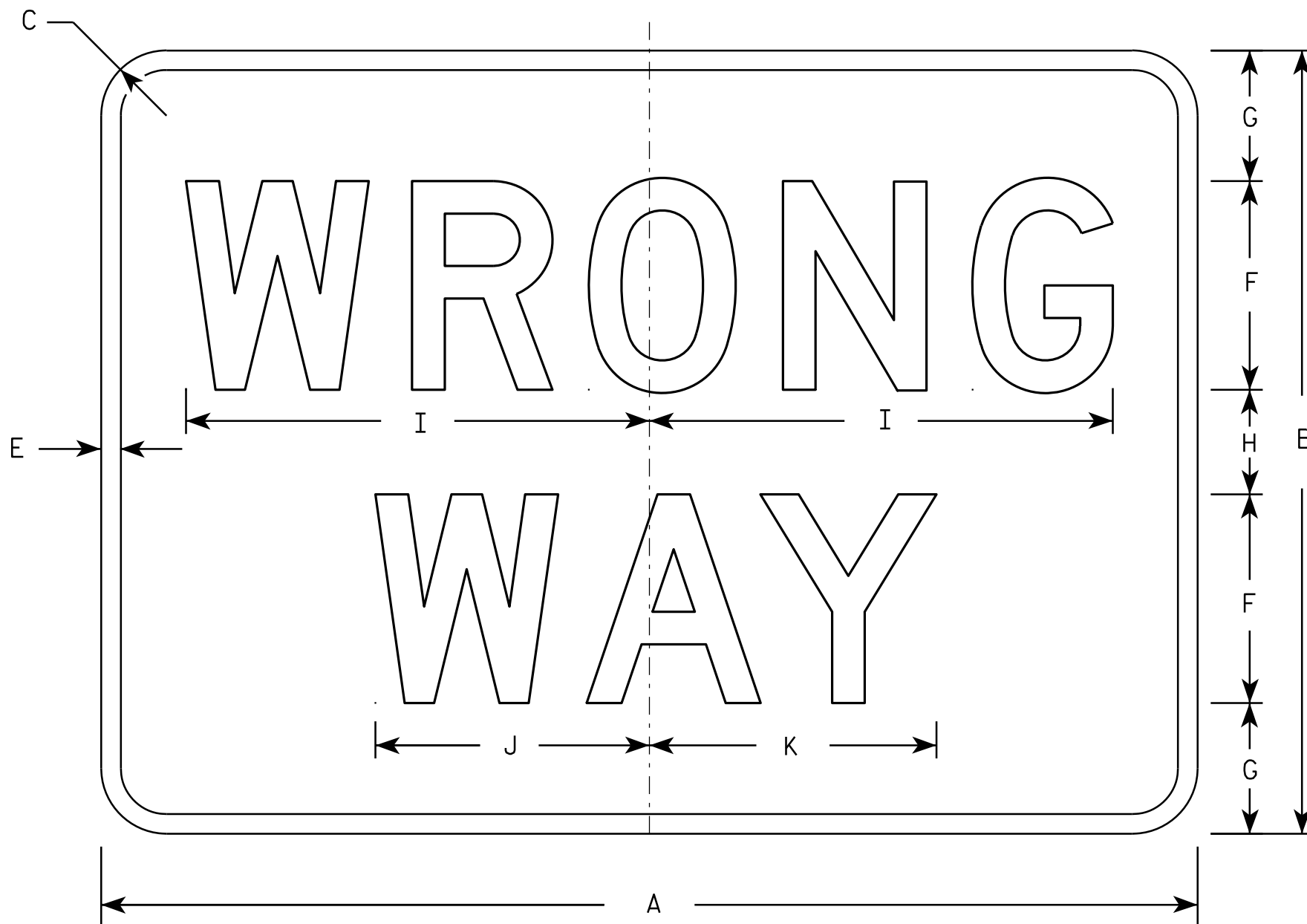
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

7

R5-1A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

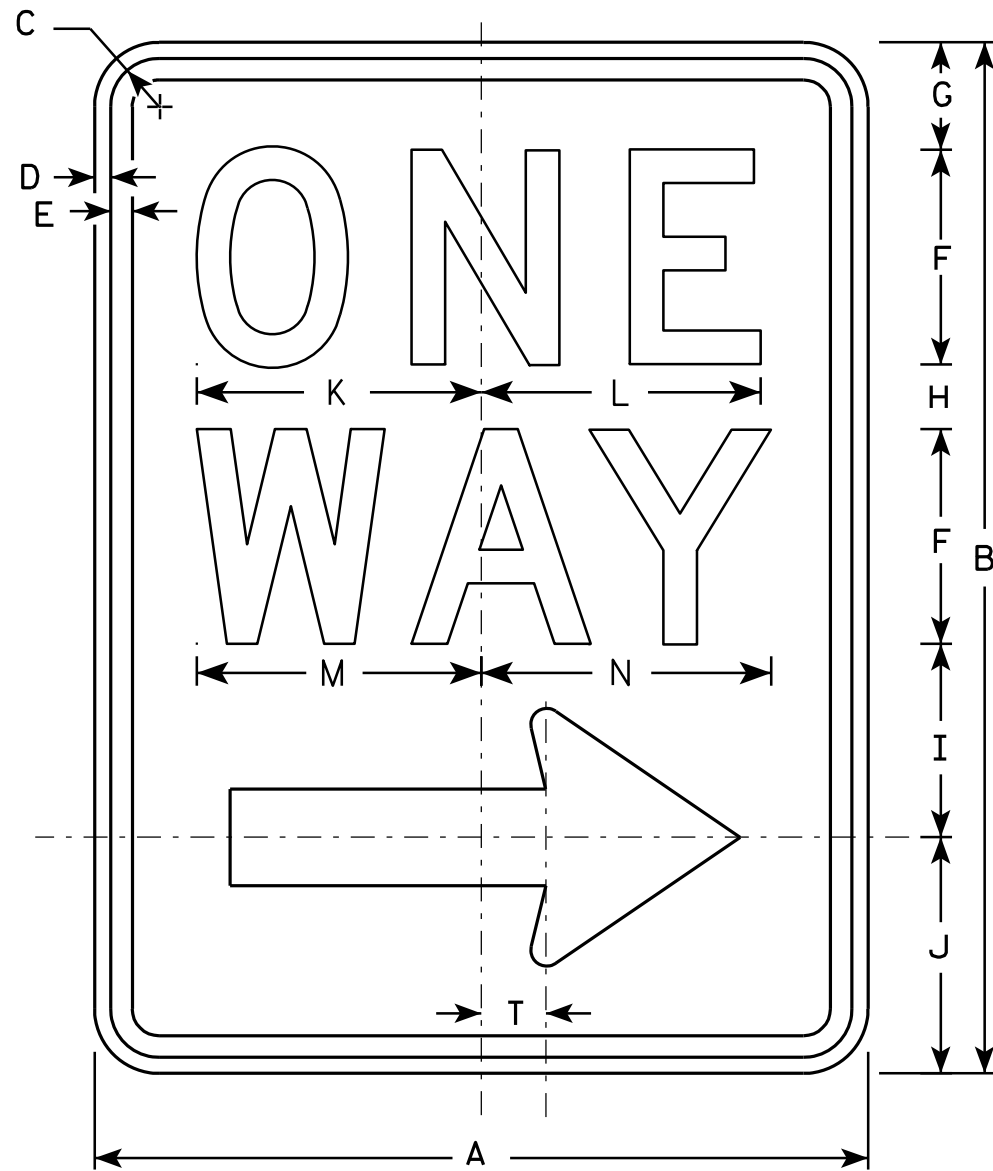
STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

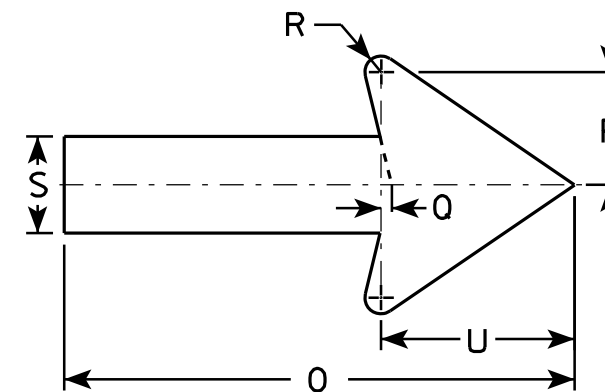
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R6-2R

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R6-2L same as R6-2R except arrow points to the left.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

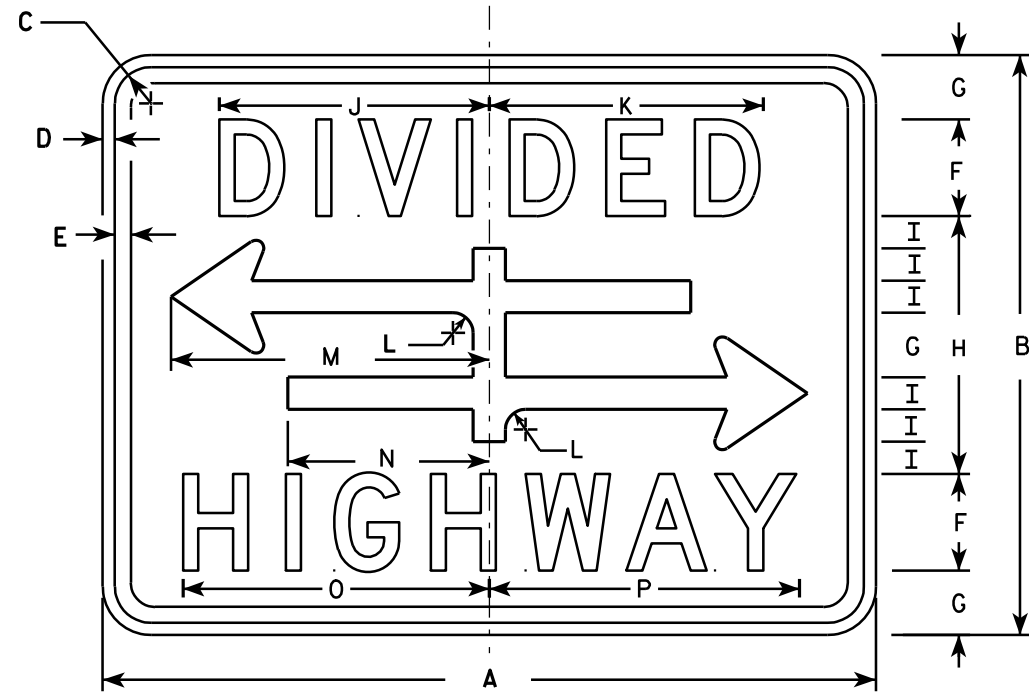
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

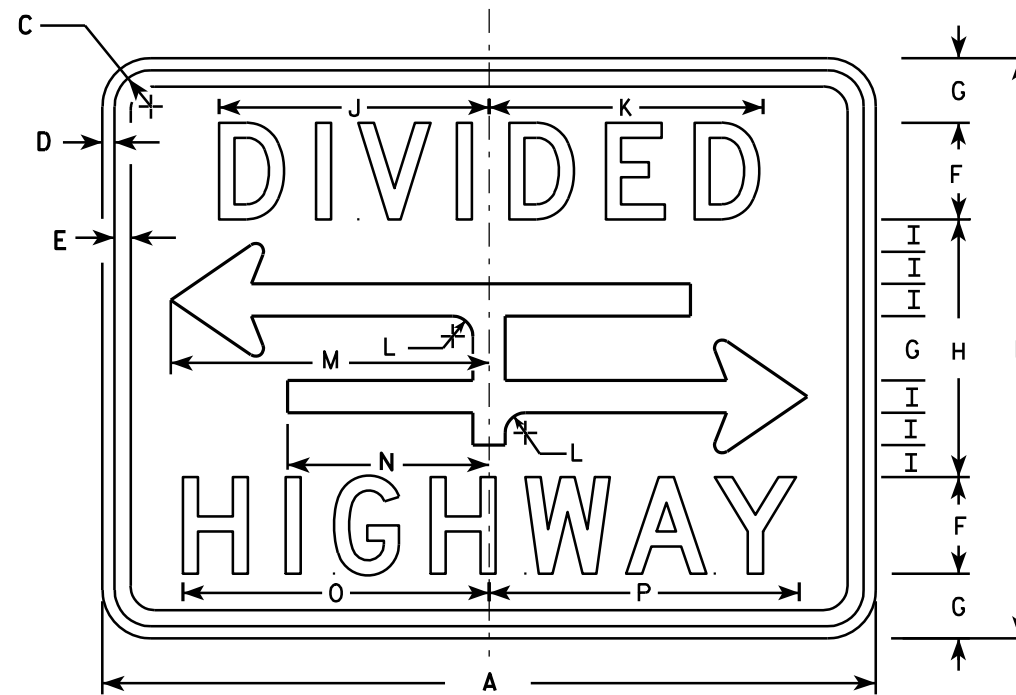
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

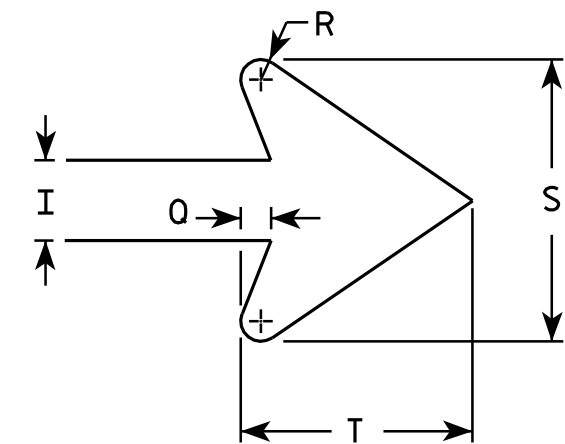
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



R6-3



R6-3A



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	18	1/8	3/8	3/8	3	2	8	1	8 3/8	8 1/2	5/8	9 7/8	6 1/4	9 1/2	9 5/8	3/8	1/4	3 1/2	2 3/4							3.0
2S	30	24	1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
2M	30	24	1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
3																											
4																											
5																											

STANDARD SIGN
R6-3 & R6-3A

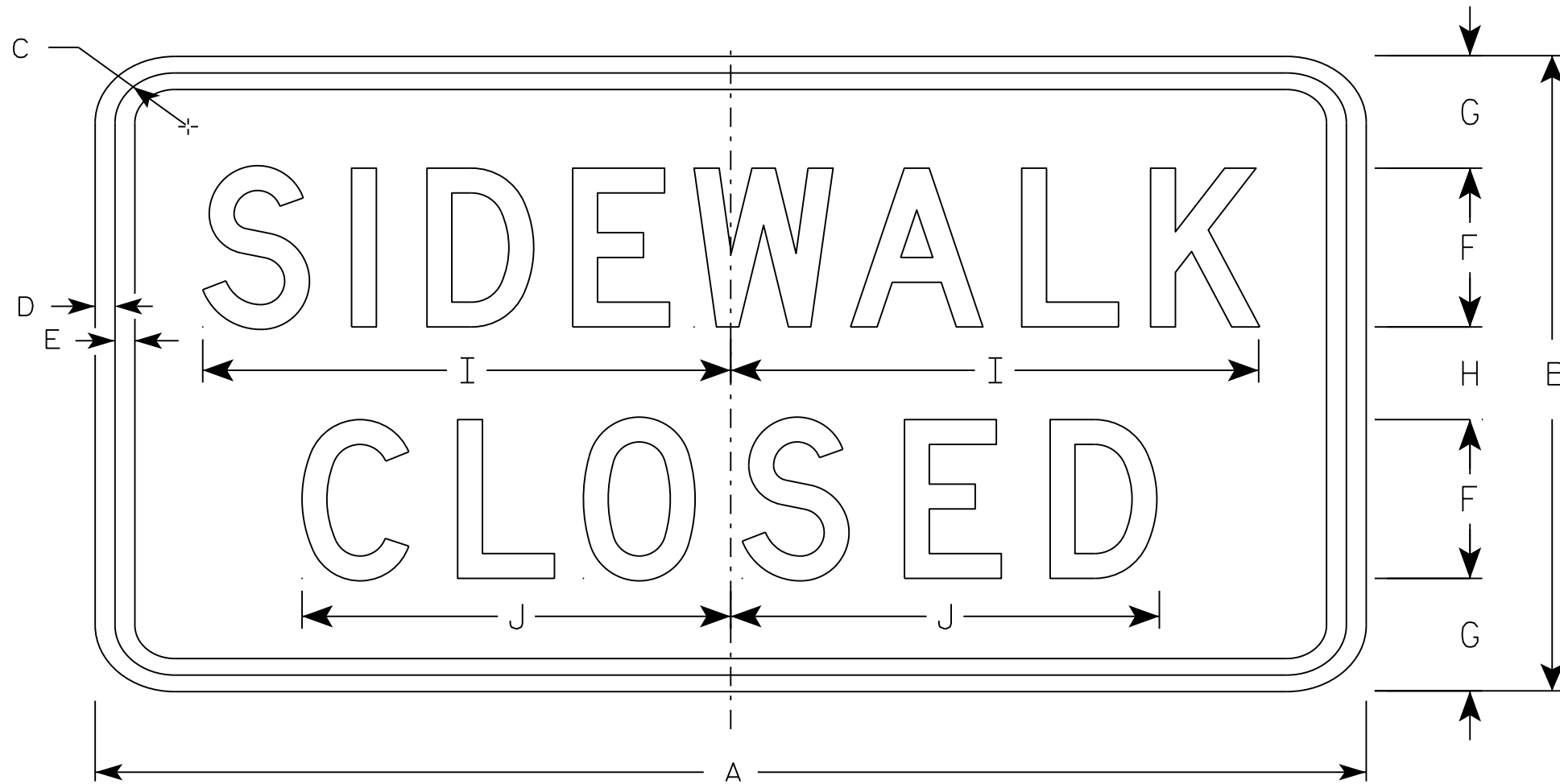
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R6-3.5

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.



R9-9

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

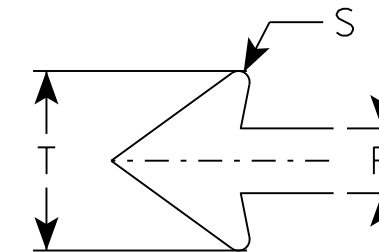
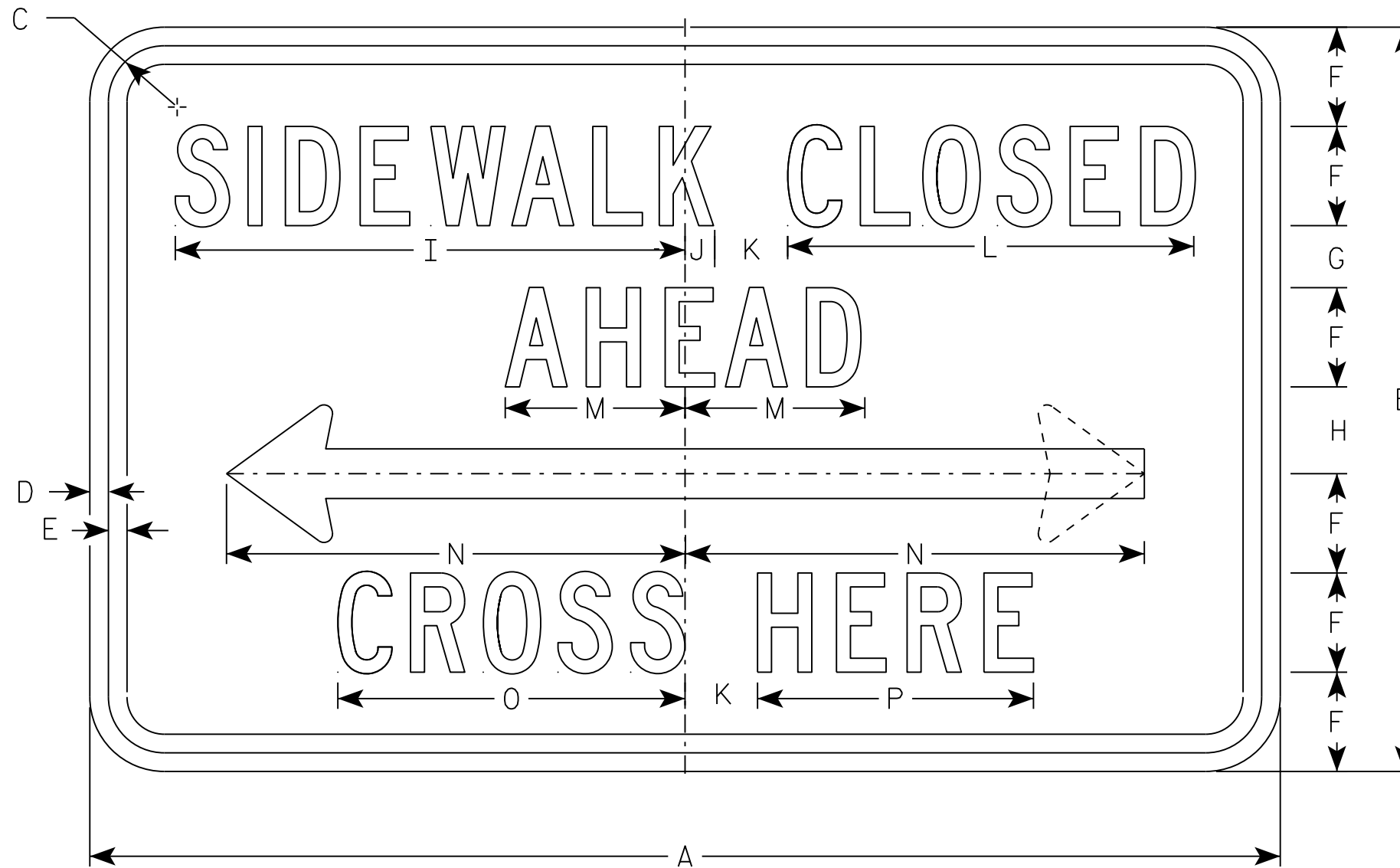
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. R9-9.6

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C except Size 1 is Series D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.



R9-11

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
2M	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
3	30	15	1 1/8	3/8	1/2	2	1 1/2	1 1/2	13	3/4	2	10 1/4	4 5/8	12 3/8	8 7/8	6 7/8		1 1/4	1/4	3 5/8							3.125
4																											
5																											

STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

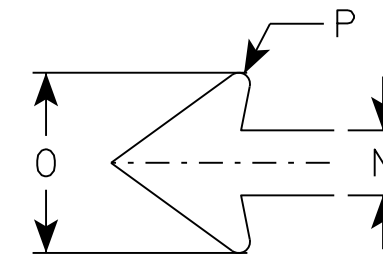
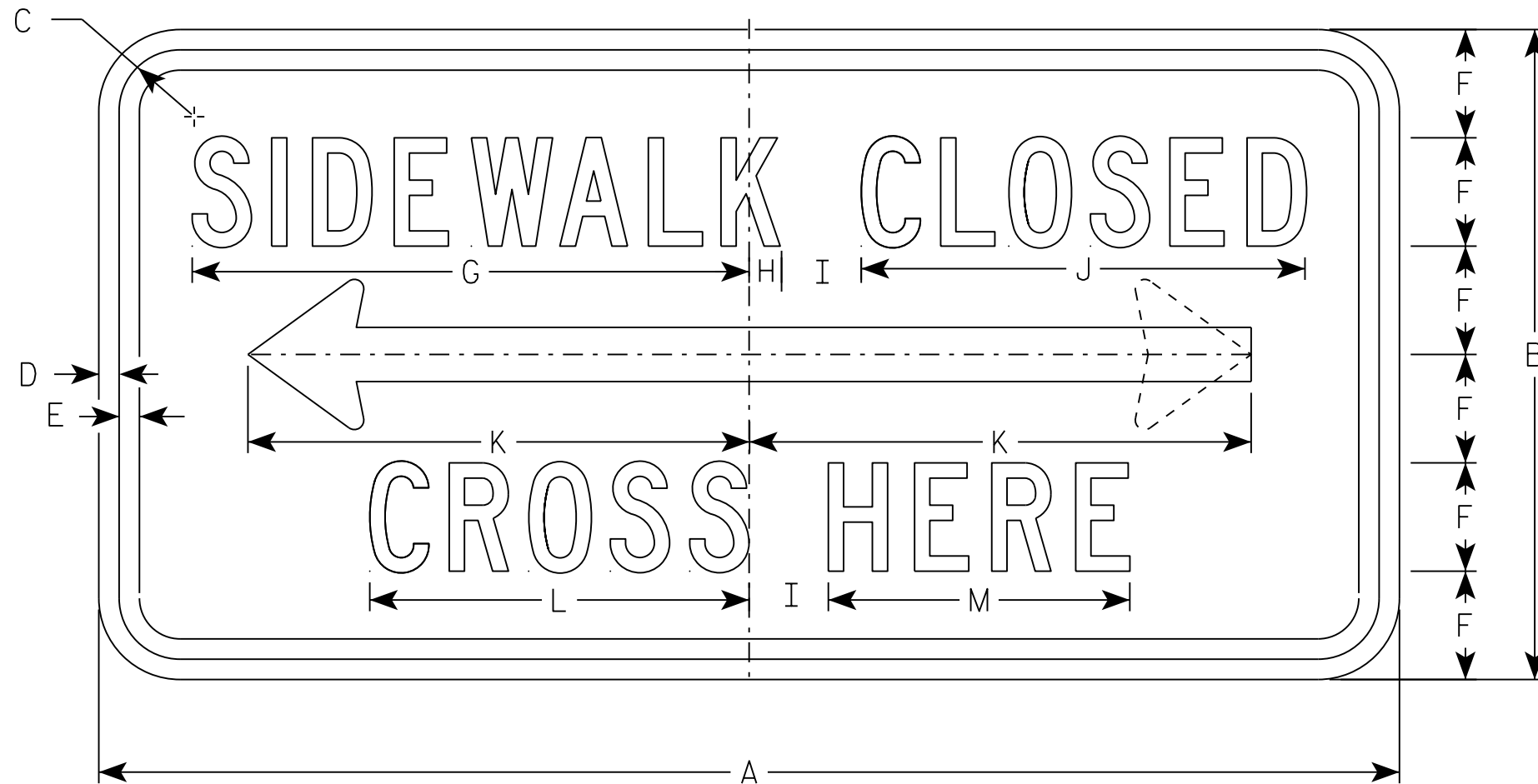
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R9-11.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Use Size 2 for Sidewalks. Use Size 3 for paths and Trails.



R9-11A

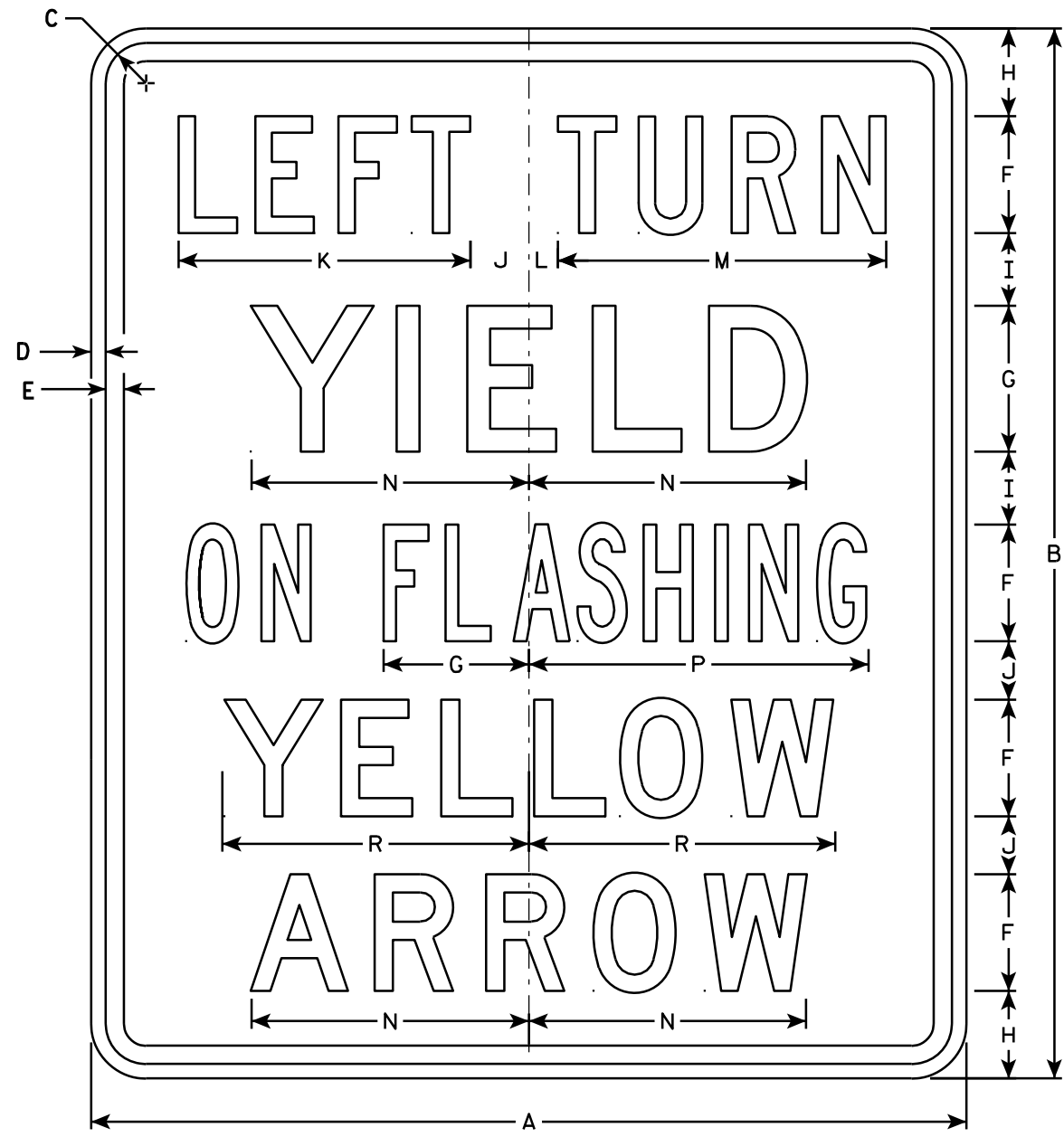
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
2M	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
3	30	15	1 1/8	3/8	1/2	2	13	3/4	2	10 1/4	12 3/8	8 7/8	6 7/8	1 1/4	3 5/8	1/4											3.125
4																											
5																											

STANDARD SIGN
R9-11A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R9-11A.3

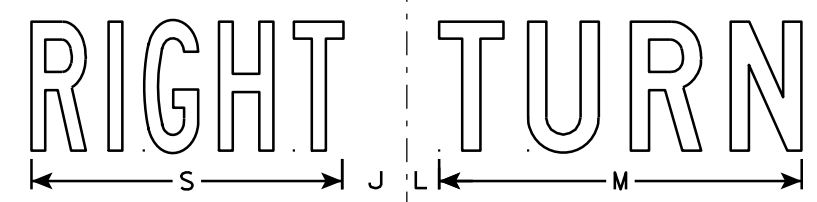


R10-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series C.
Lines 2, 4 and 5 are Series D.
Line 3 is Series B.

"RIGHT" is Series B



R10-50R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
2M	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
3																											
4																											
5																											

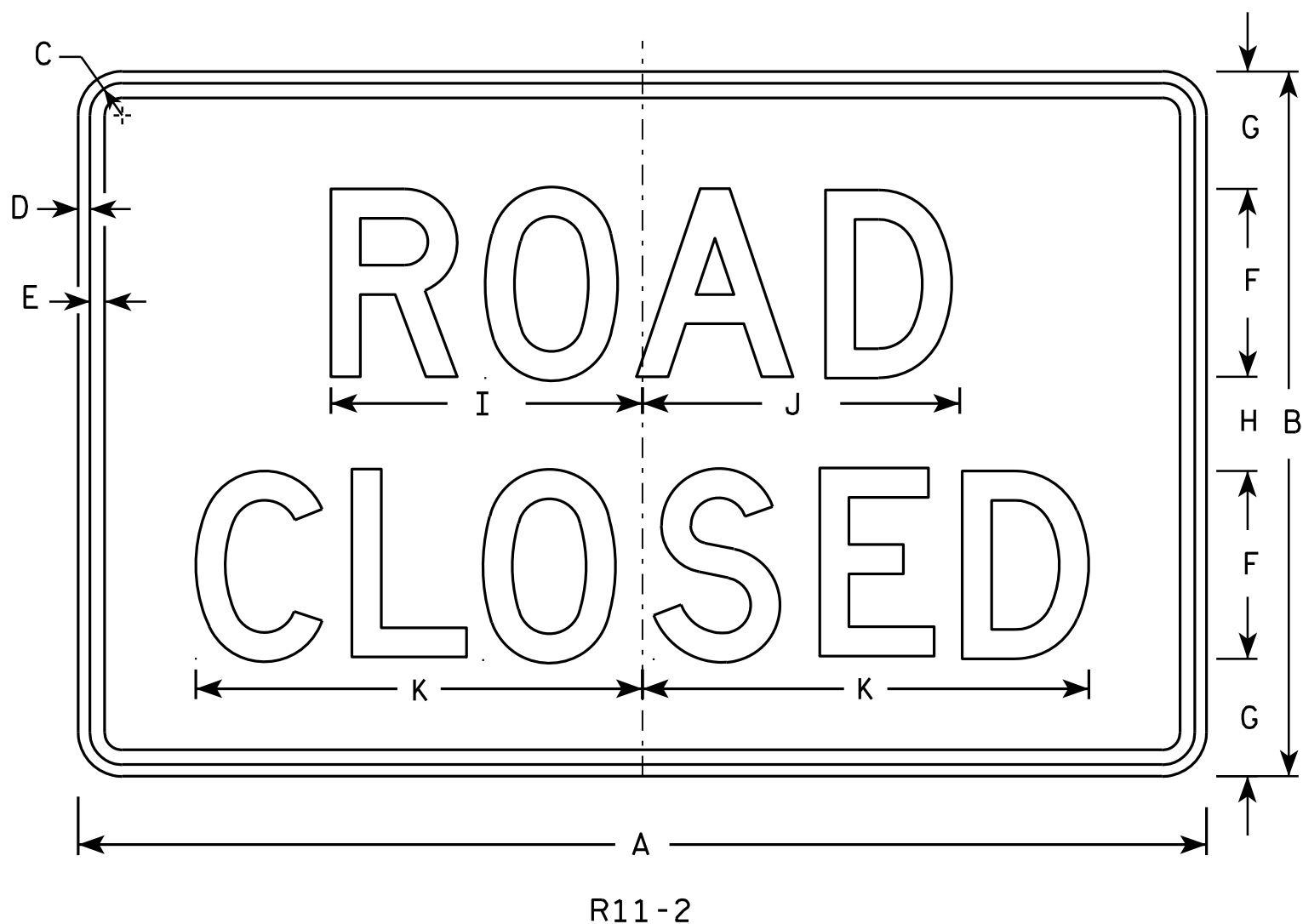
STANDARD SIGN
R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

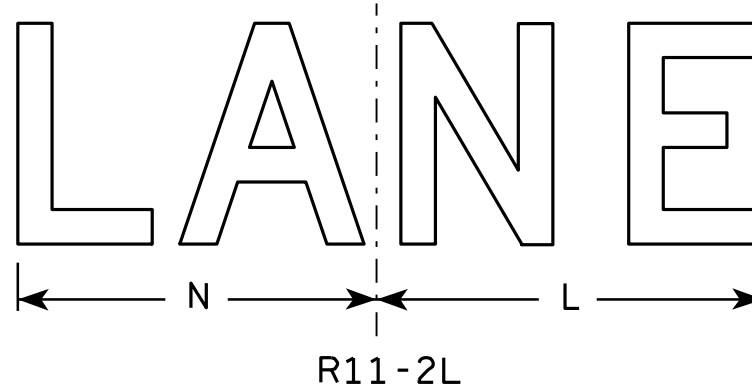
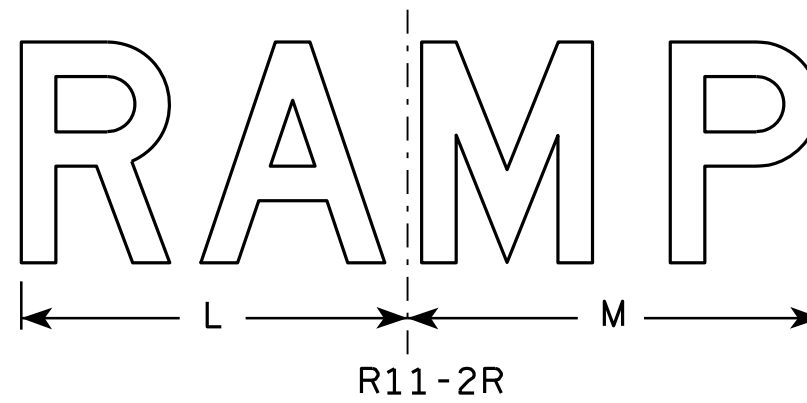
DATE 4/11/13 PLATE NO. R10-50.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13												10.0	
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13												10.0	
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13												10.0	
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13												10.0	
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13												10.0	

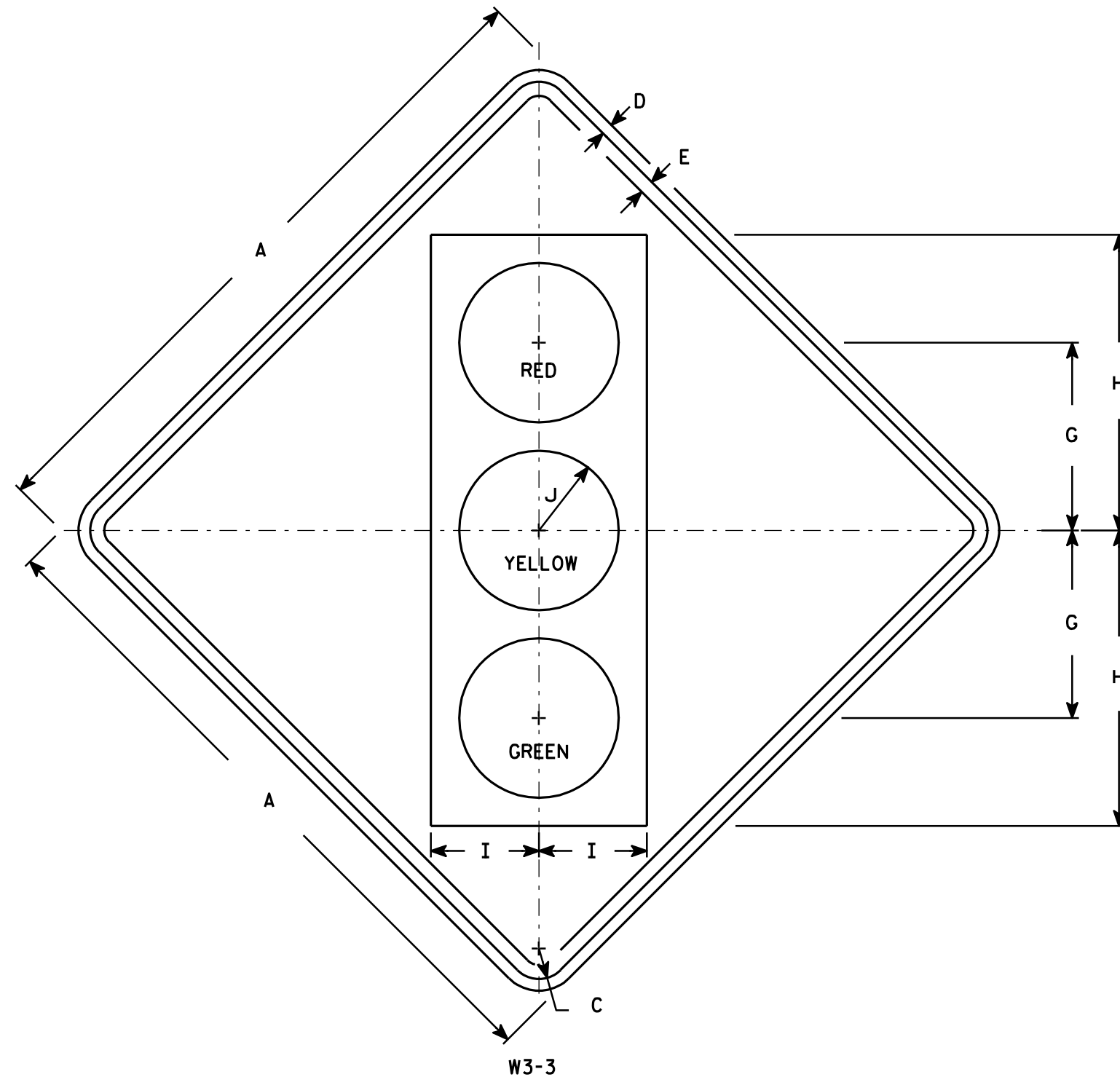
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Symbol and border are non-reflective black.
Top circle - Type H ReflectORIZED Red
Center circle - Same as background
Bottom circle - Type H ReflectORIZED Green

7

7

W3-3

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

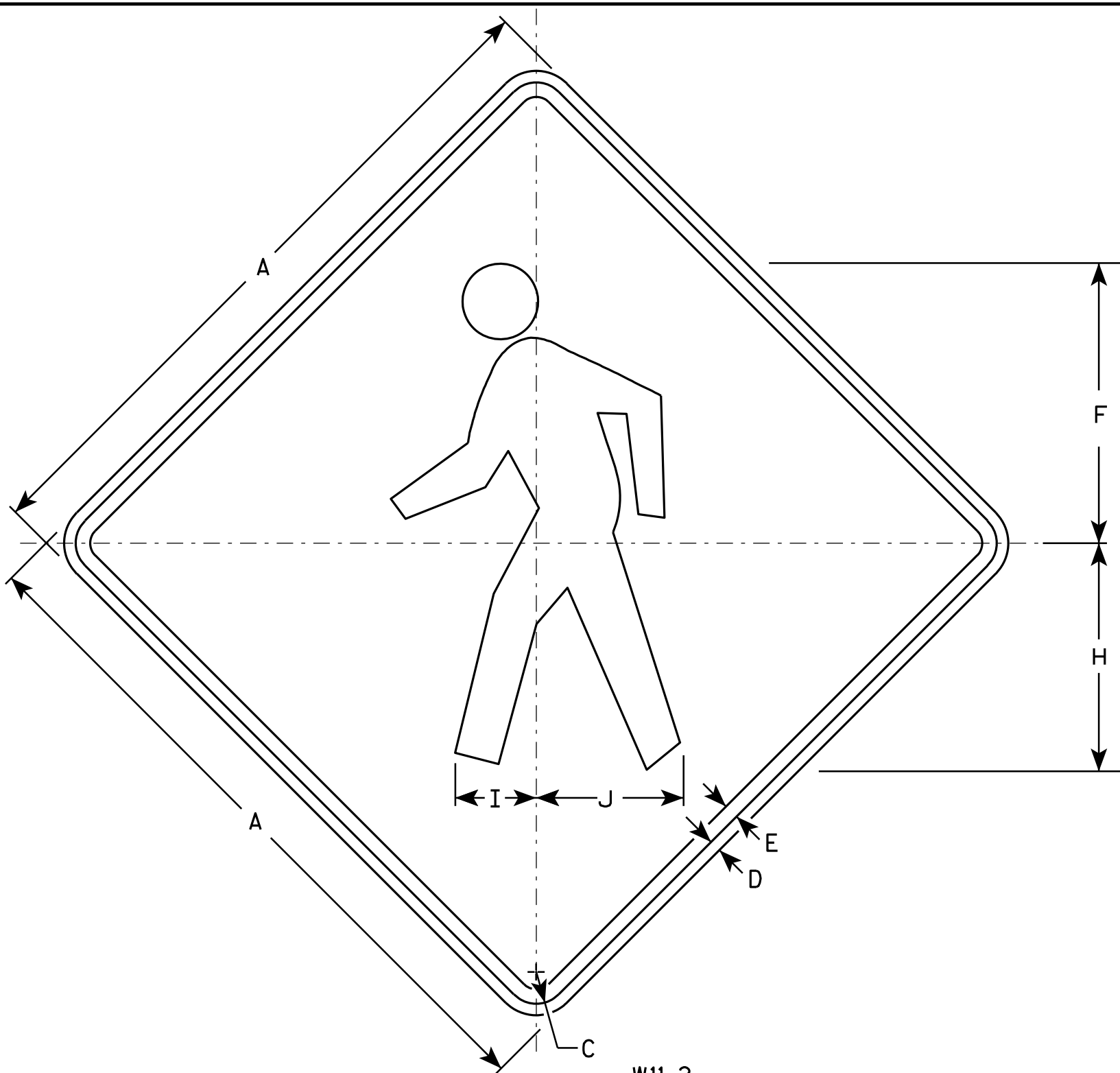
STANDARD SIGN
W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 Background - Yellow
 Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

W11-2

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

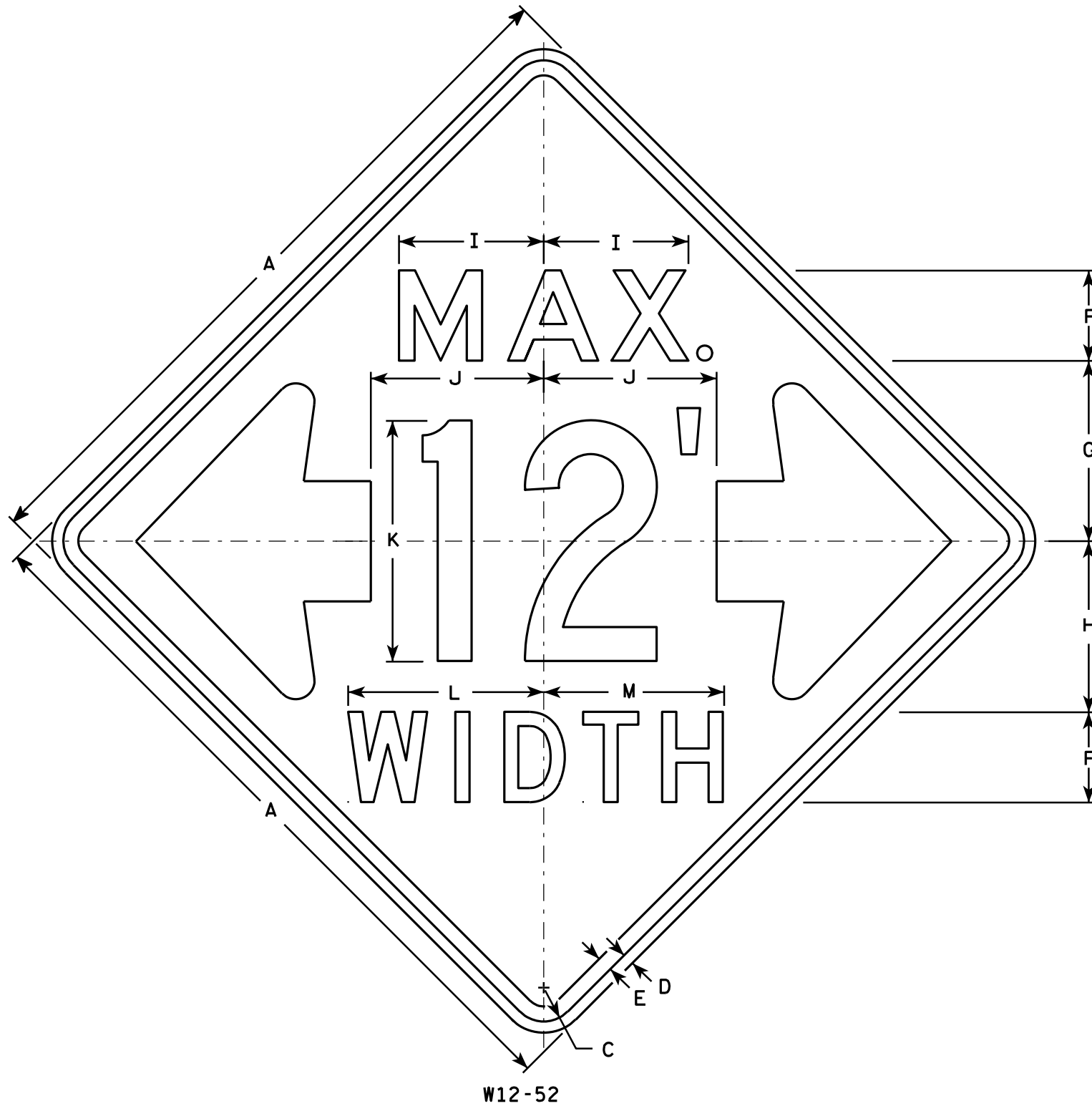
STANDARD SIGN
W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

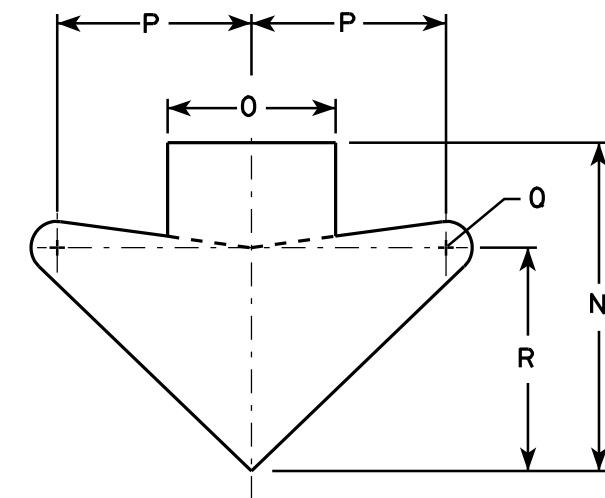
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W12-52

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN
W12-52

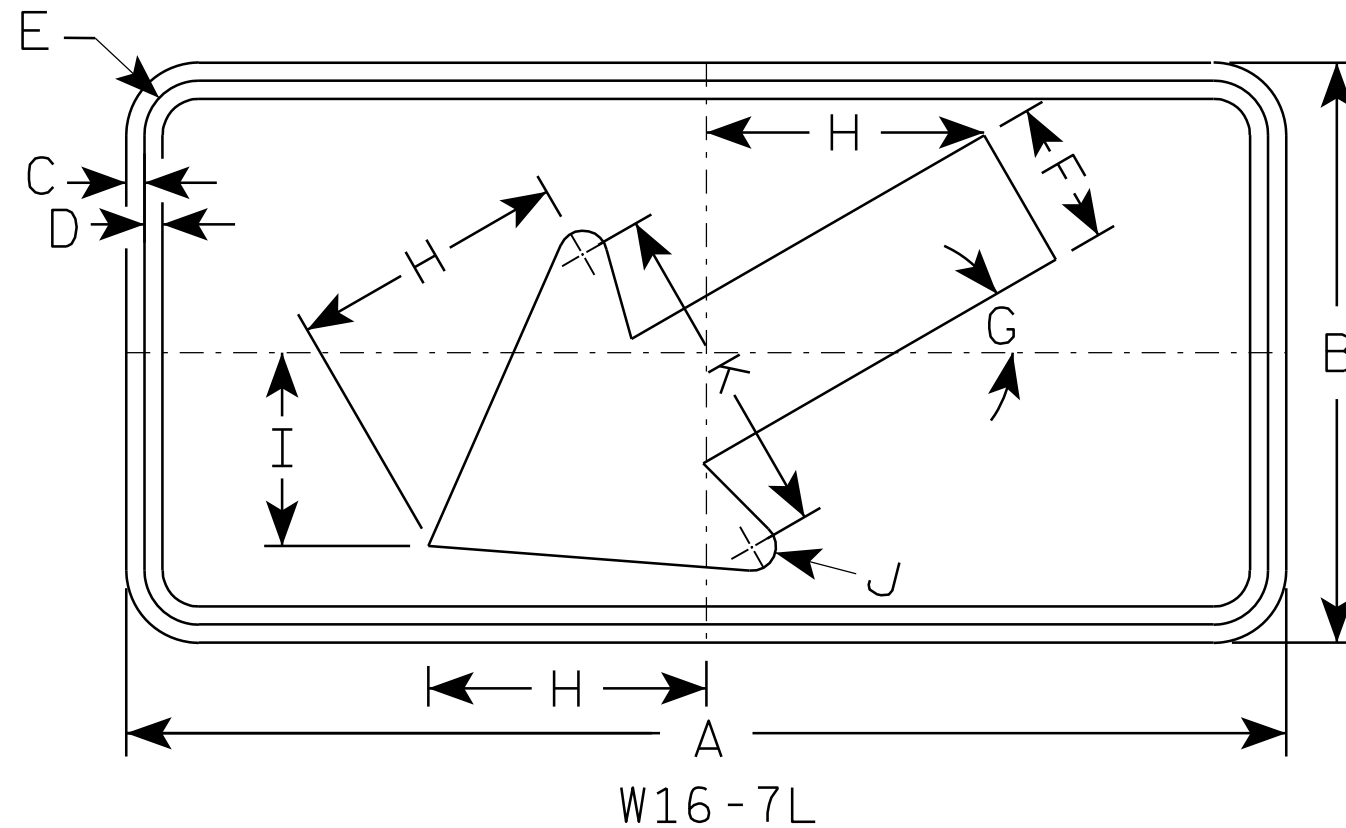
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W16-7R is the same as W16-L except the arrow is reversed along the vertical centerline.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	3/8	3/8	1 1/8	3	30°	5 3/4	4	1/2	7																2.0
2M	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
3	30	18	3/8	1/2	1 1/8	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
4																											8
5																											8

STANDARD SIGN
W16-7

WISCONSIN DEPT OF TRANSPORTATION

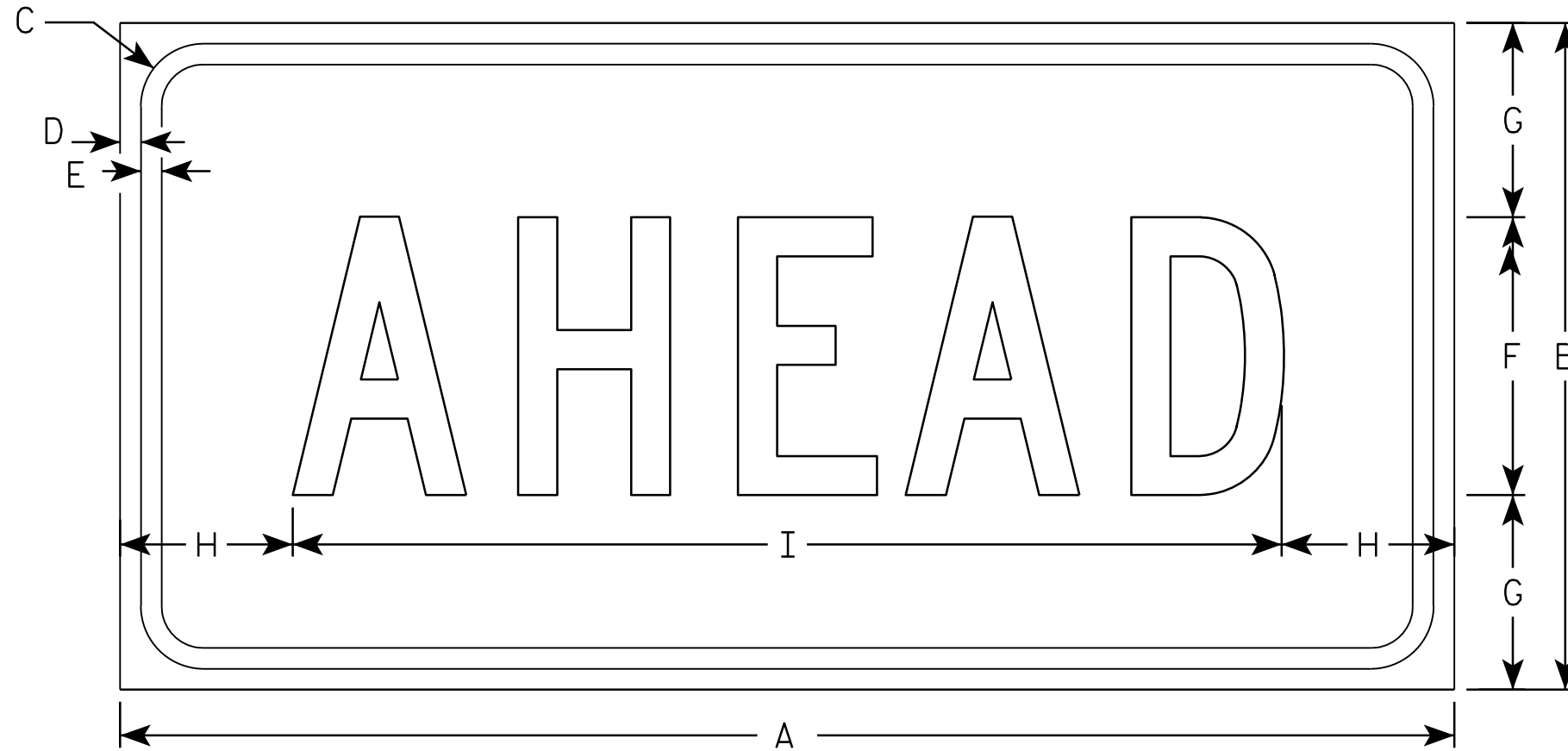
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/02/10 PLATE NO. W16-7.5

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W16-9P

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

STANDARD SIGN

W16-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/28/10 PLATE NO. W16-9P.6

PROJECT NO:

HWY:

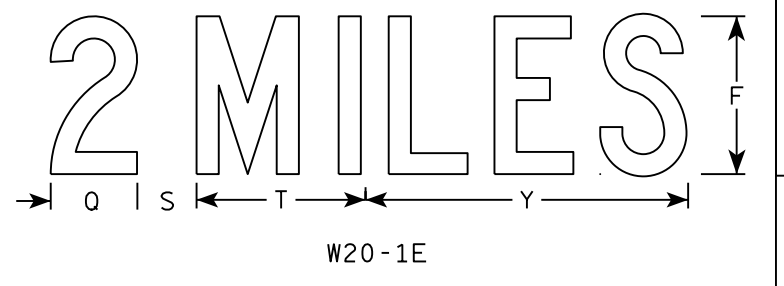
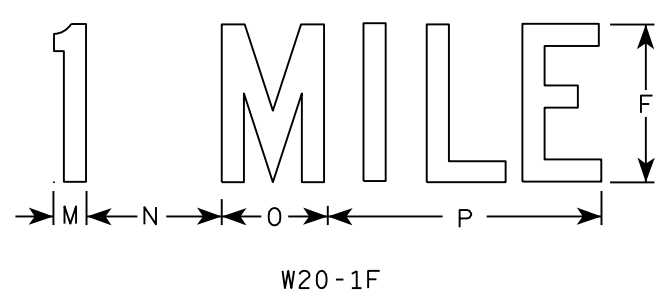
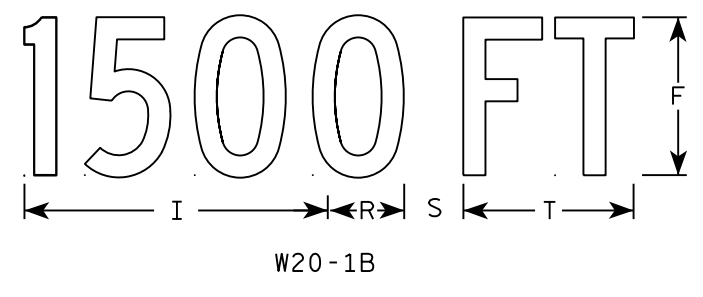
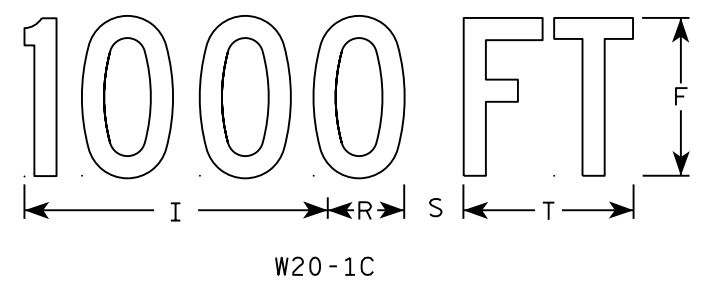
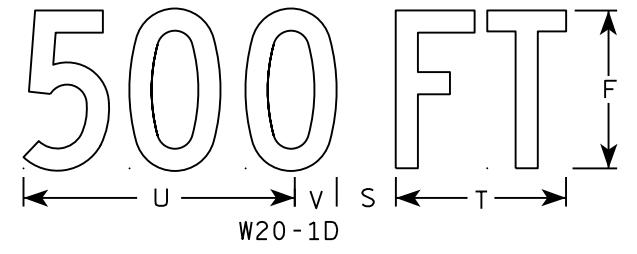
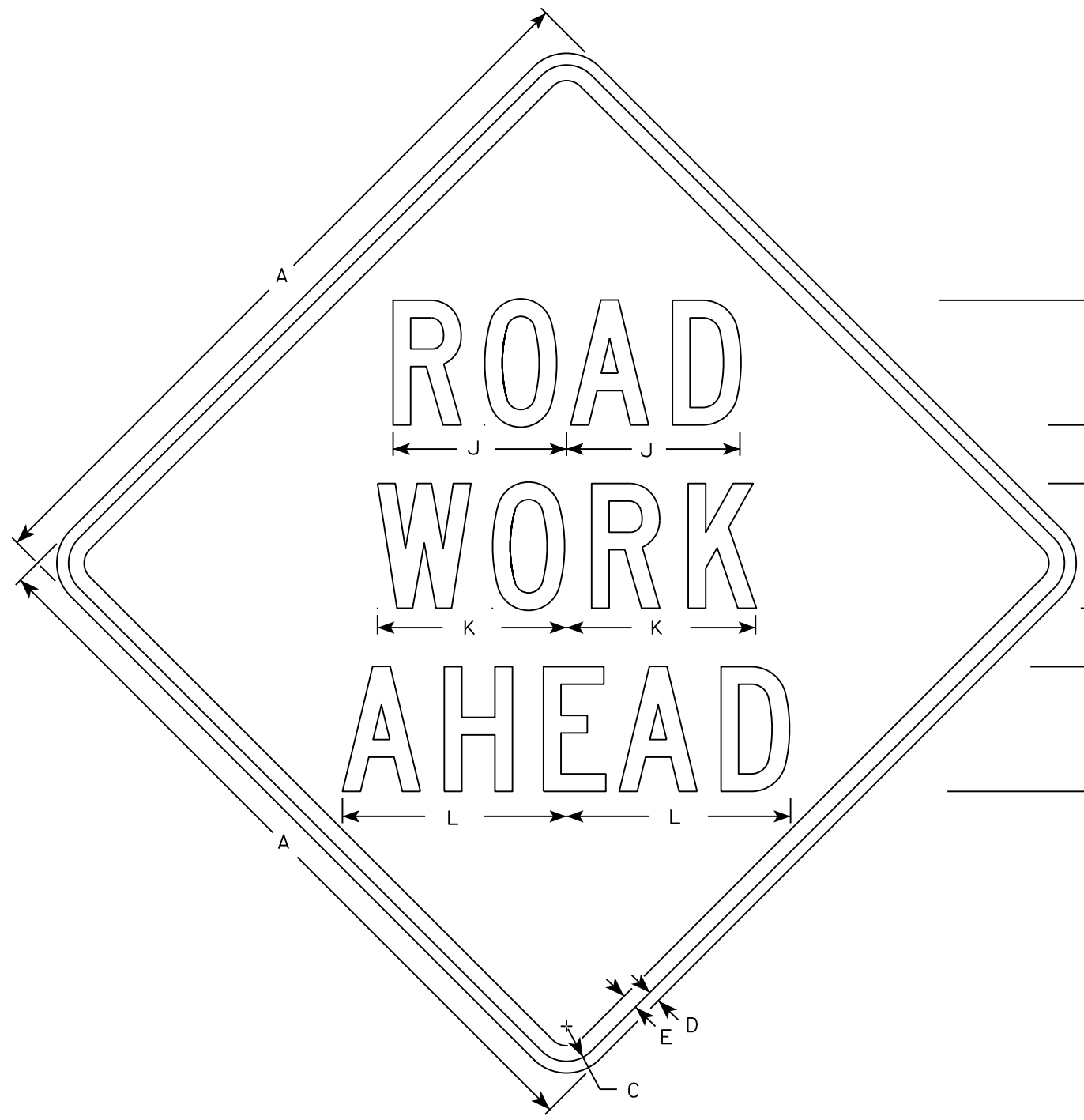
COUNTY:

SHEET NO:

E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

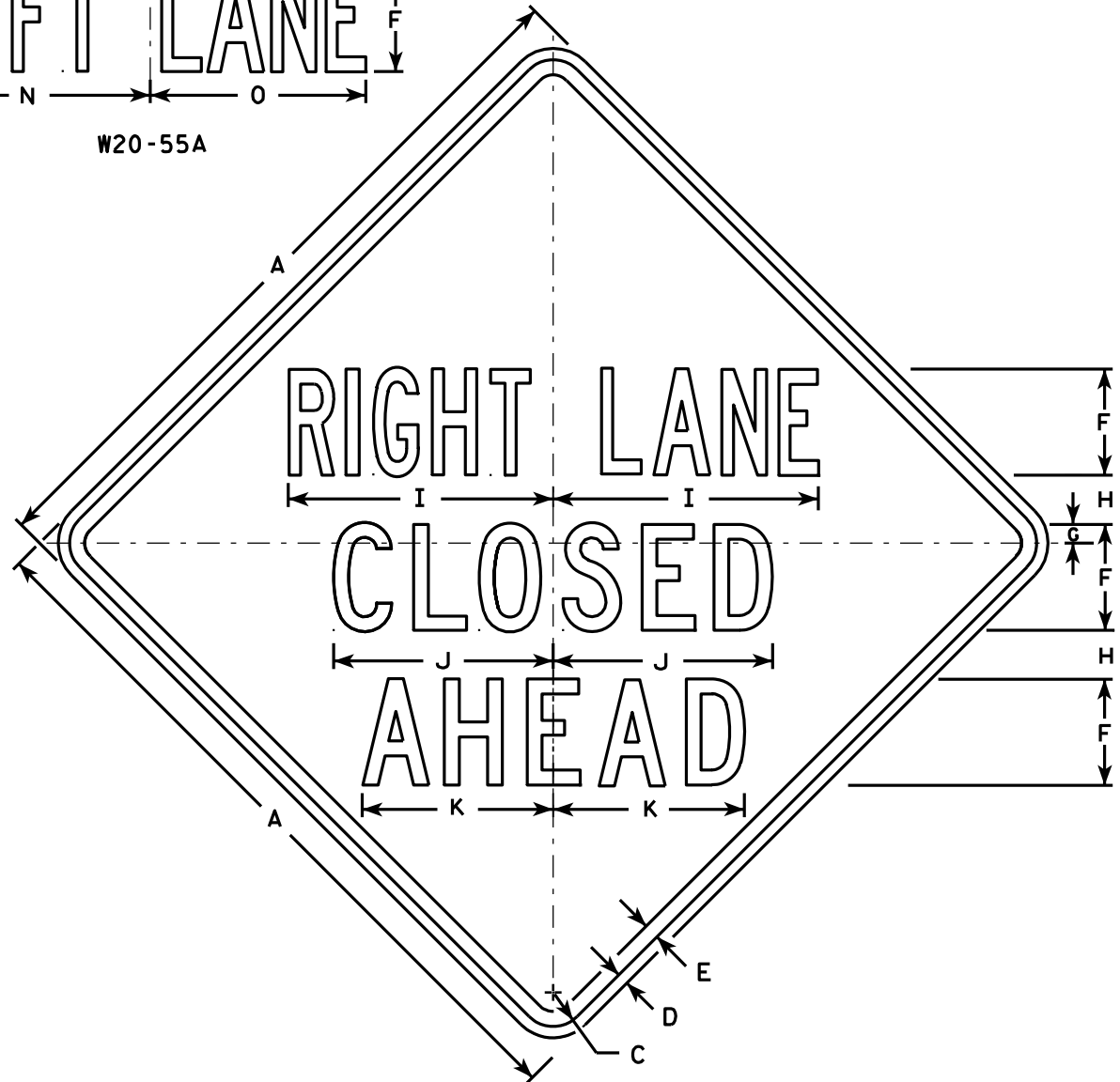
DATE 5/07/15 PLATE NO. W20-1.10

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. "-----LANE" is Series B.
All other copy is Series C.

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

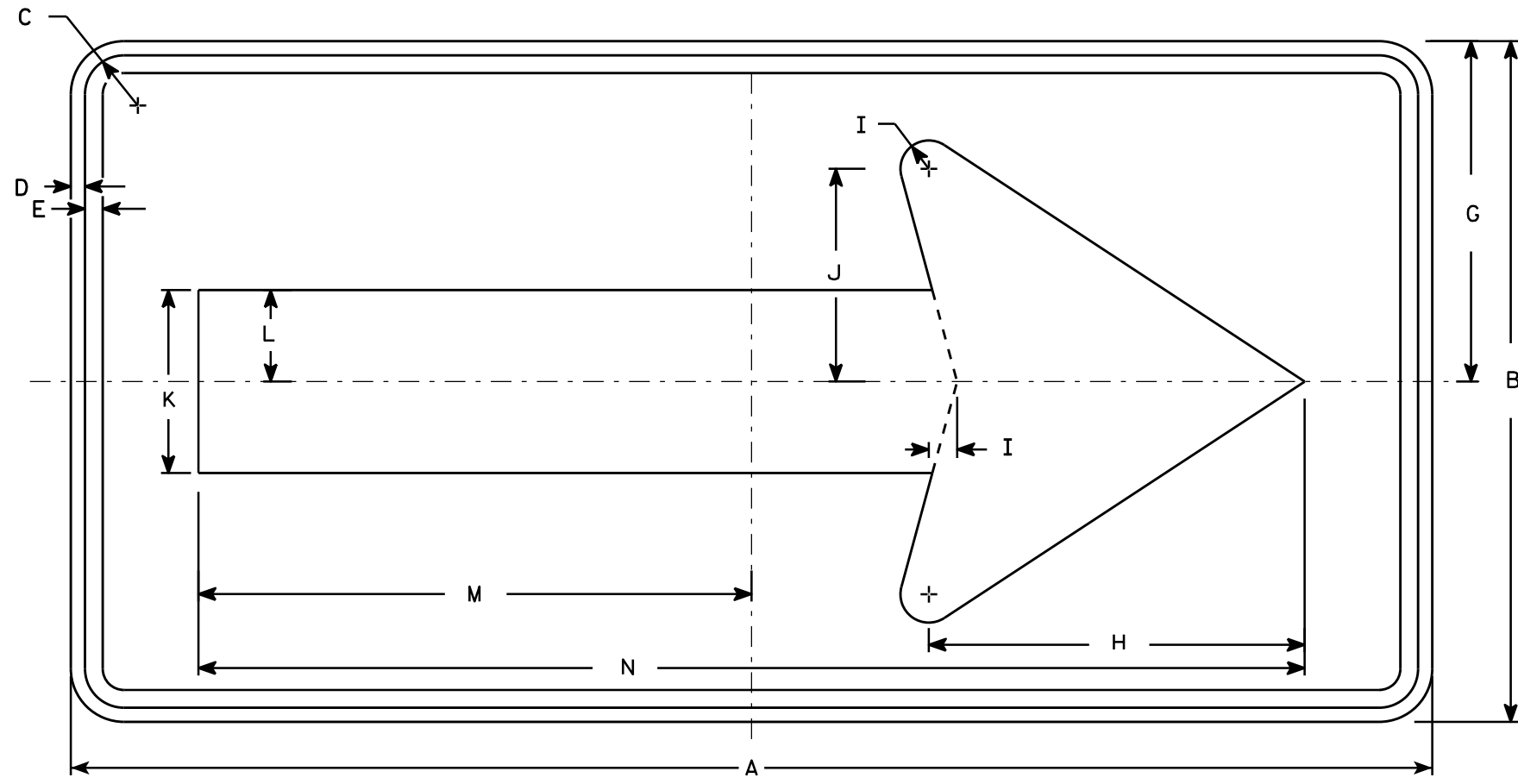
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W01-6

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

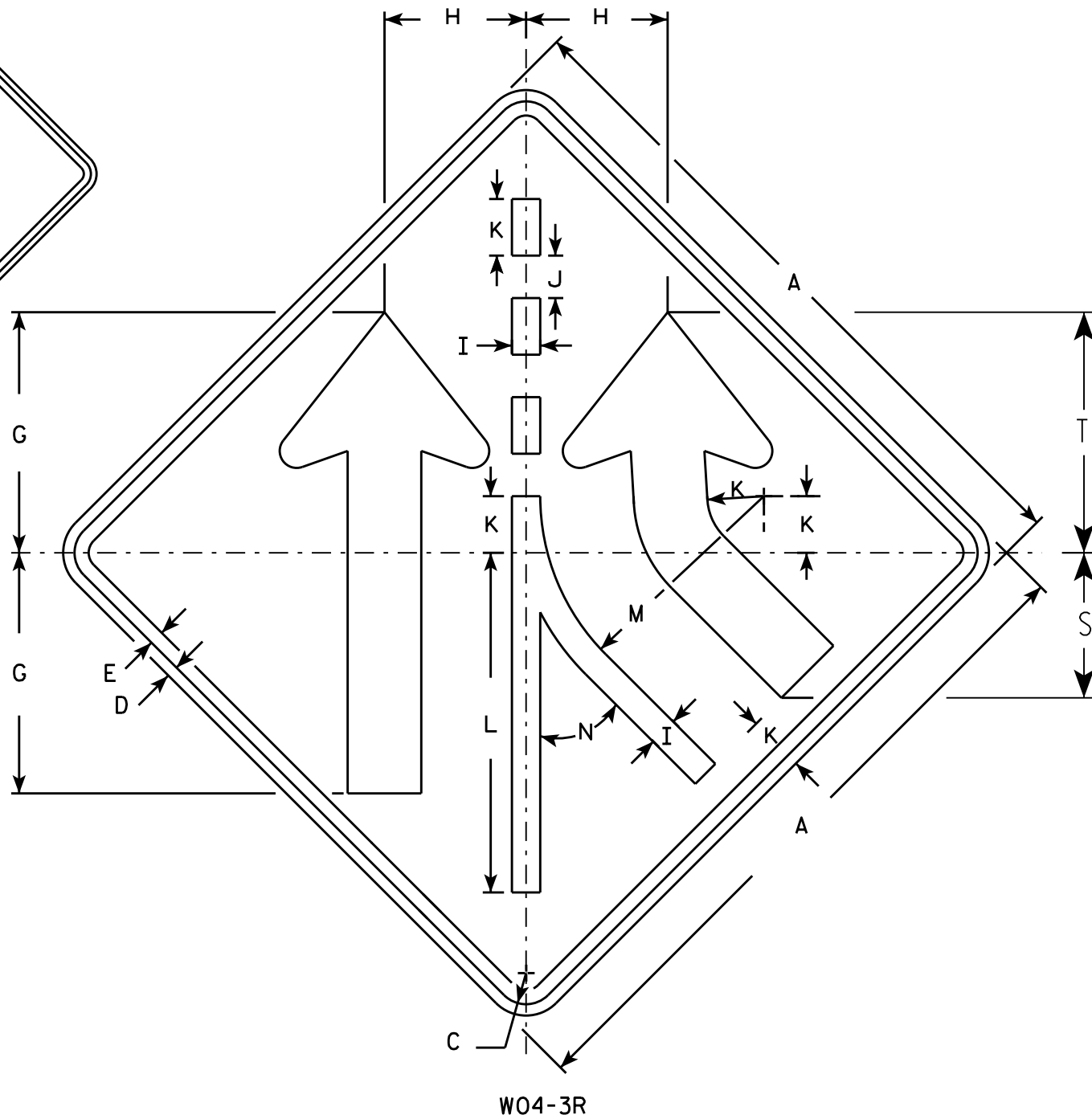
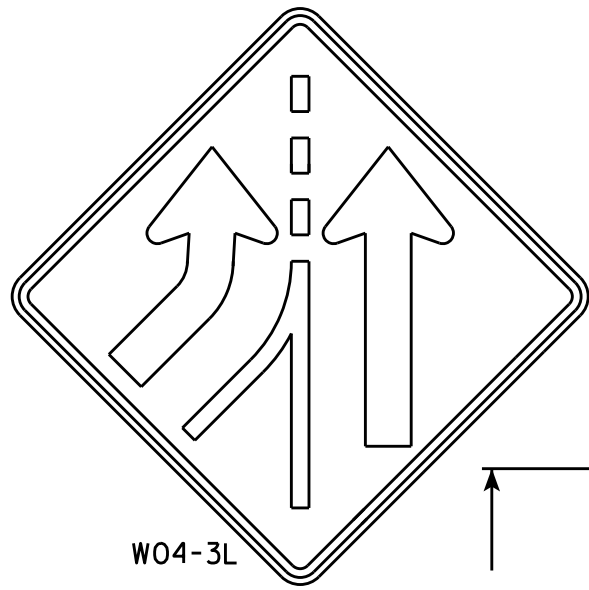
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

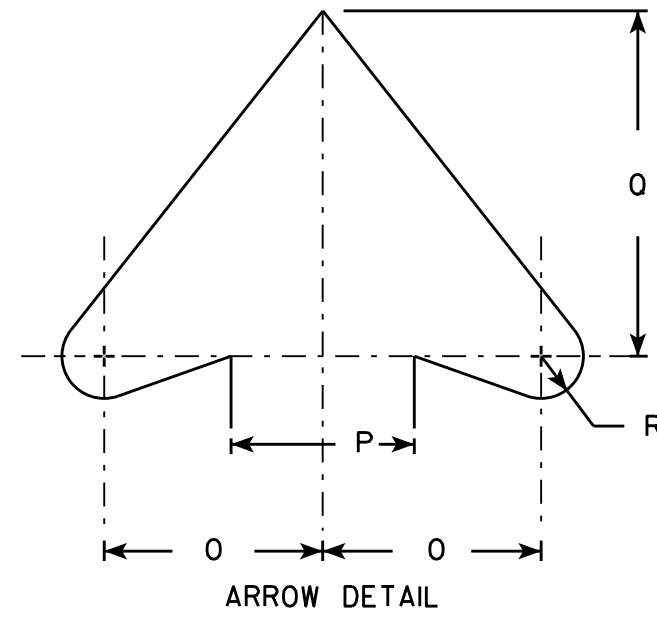
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W04-3R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-3 L is the same as W04-3 R except the arrow is reversed along the vertical centerline.



7

7

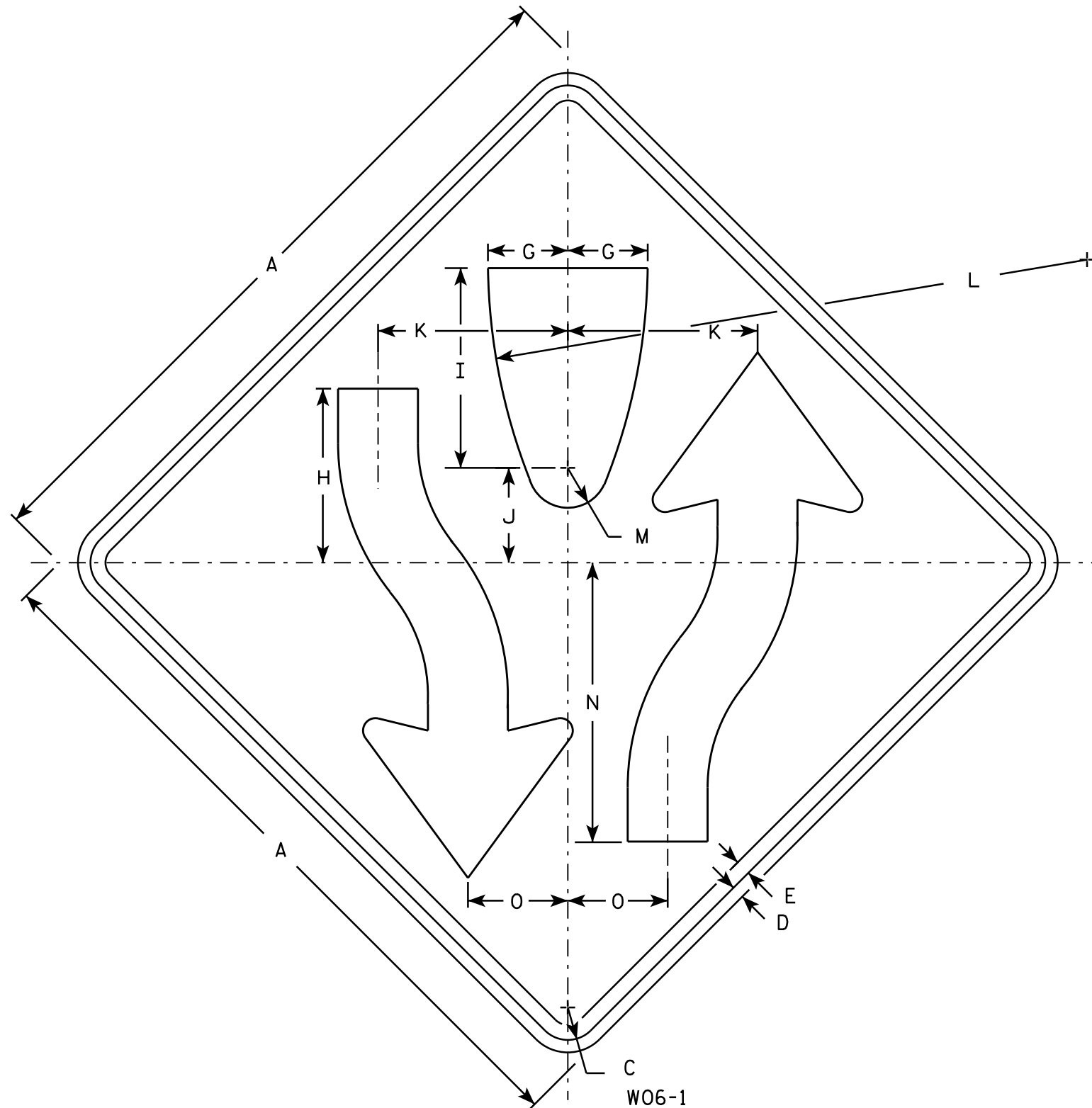
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		12 3/4	7 1/2	1 1/2	2 1/4	3	18	11 7/8	45°	4 5/8	4	7 3/8	7/8	7 3/4	12 3/4							9.0
2S	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
2M	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
3	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
4	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0
5	48		2 1/4	3/4	1		17	10	2	3	4	24	15 3/4	45°	6 1/4	5 1/2	9 7/8	1 1/4	10 1/4	17							16.0

STANDARD SIGN
W0433

WISCONSIN DEPT OF TRANSPORTATION

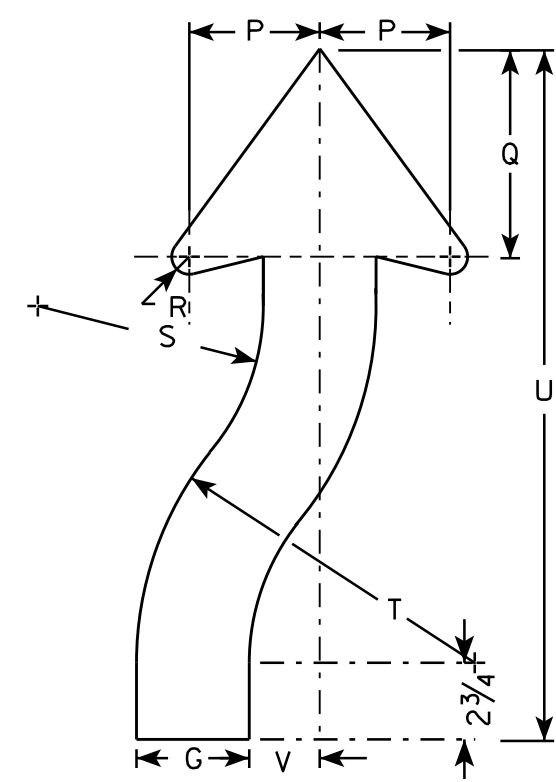
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-3.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W06-2 same as W06-1 but is rotated 180° when mounted.



ARROW DETAIL

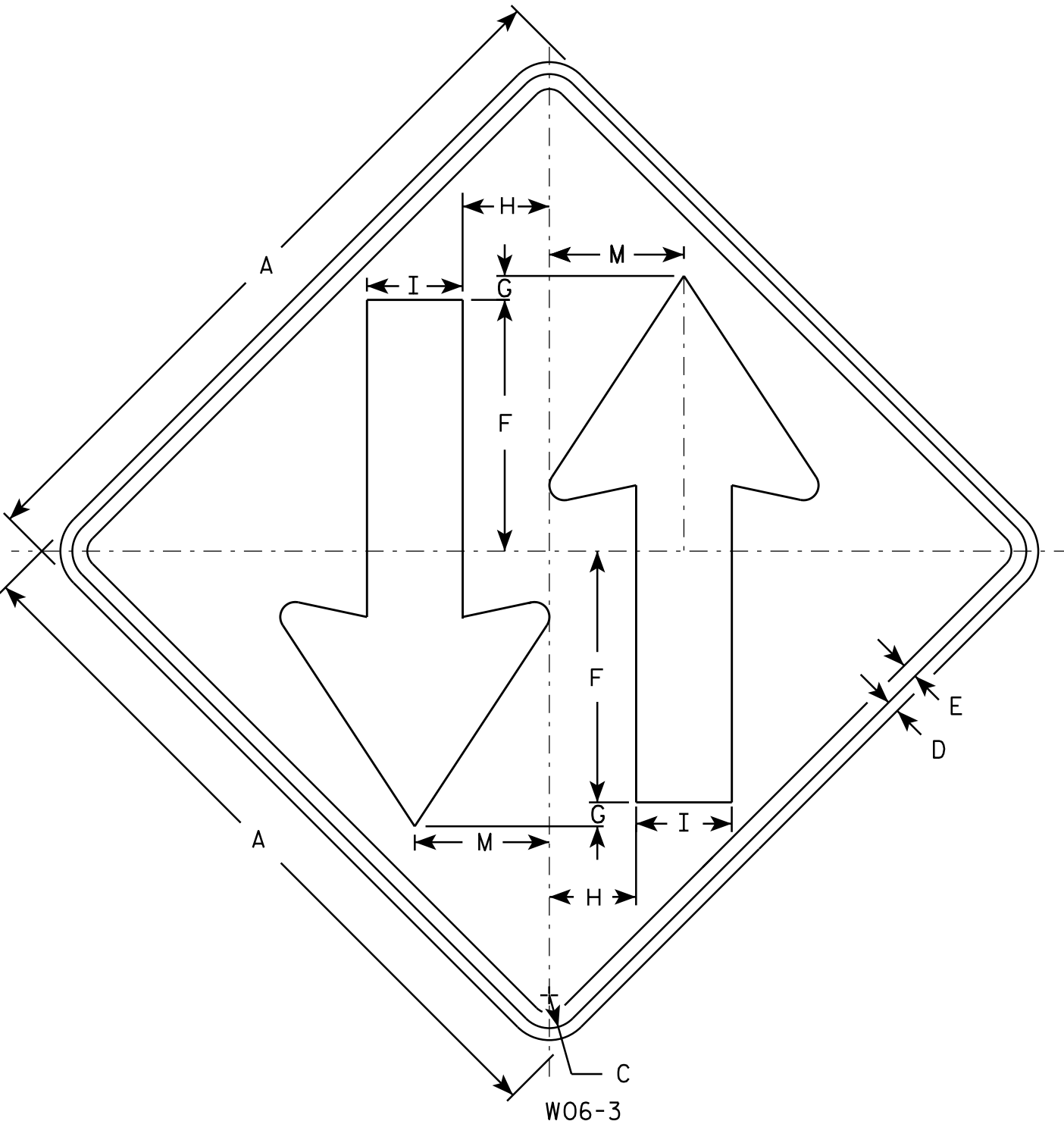
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4		4	8 3/4	10	4 3/4	9 1/2	30	2	14	5	4 5/8	7 3/8	7/8	8	12	24 1/2	2 1/2				9.0	
2S	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8				16.0	
2M	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8				16.0	
3	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8				16.0	
4	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8				16.0	
5	48		2 1/4	3/4	1		5 3/8	11 5/8	13 3/8	6 3/8	12 5/8	40	2 5/8	18 5/8	6 5/8	6 1/4	9 7/8	1 1/4	10 5/8	16	32 5/8	3 3/8				16.0	

STANDARD SIGN
W06-1 & W06-2

WISCONSIN DEPT OF TRANSPORTATION

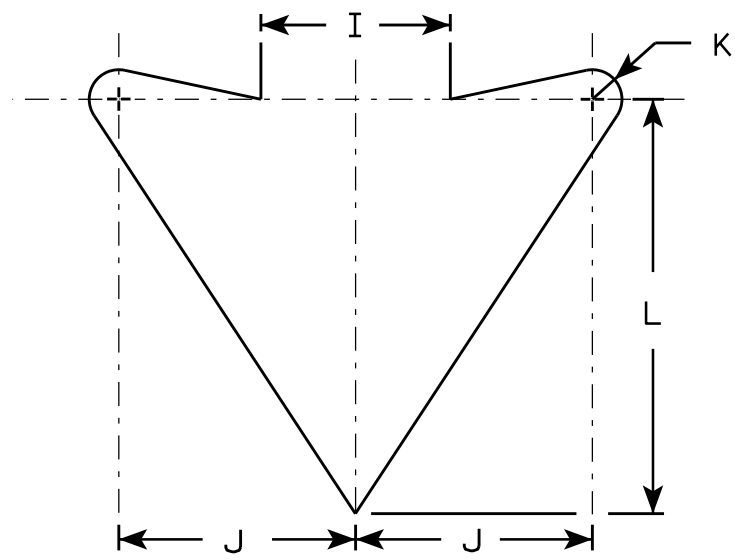
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W06-1.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	1	4 1/4	5	6	3/4	10 1/2	6 3/4														9.0
2S	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
2M	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
3	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
4	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
5	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0

STANDARD SIGN
W06-3

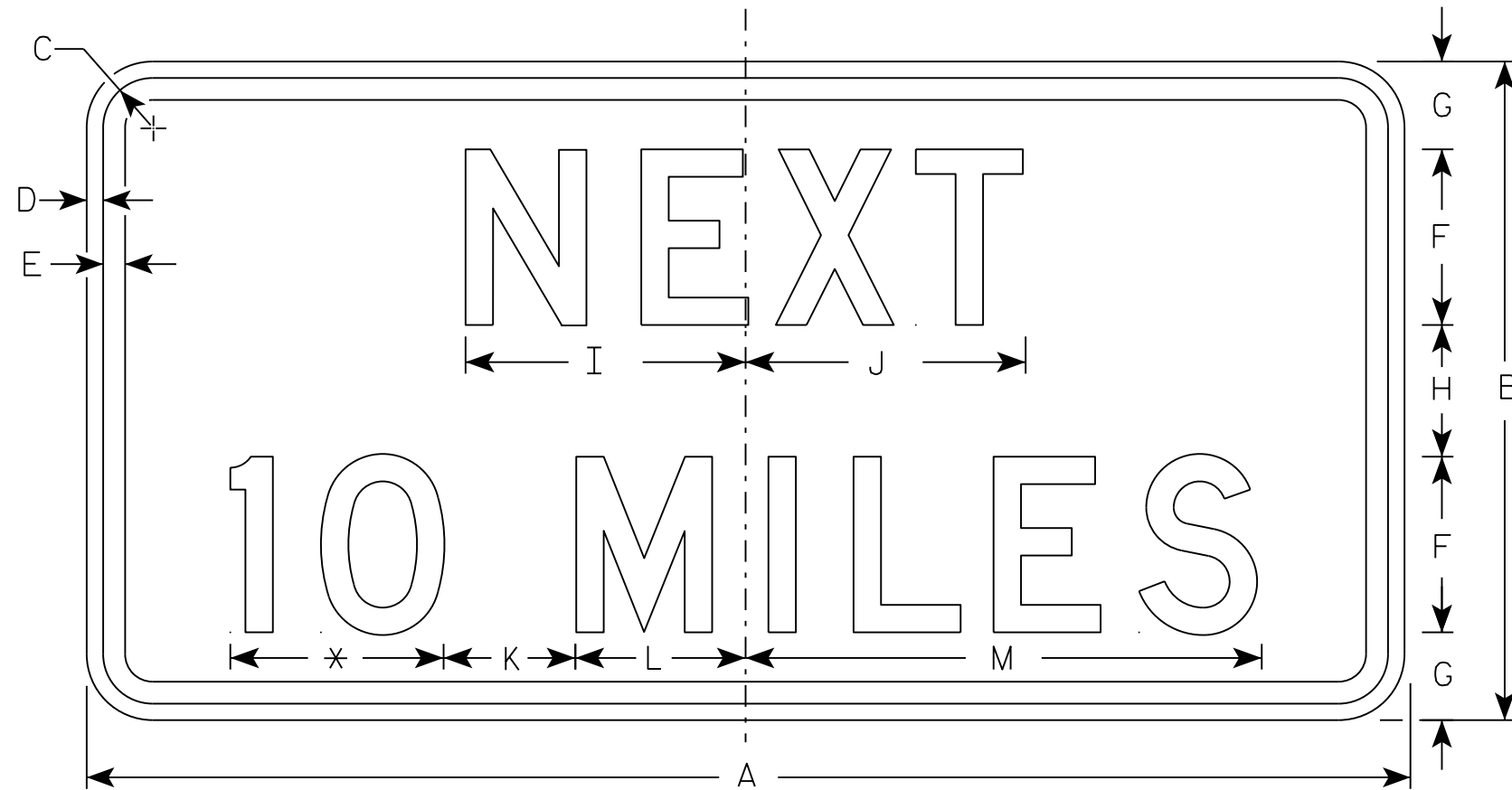
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
For State Traffic Engineer

DATE 11/20/13 PLATE NO. W06-3.1

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Round distance to the nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance.



W057-51

* See note 5

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 5/8	2 3/4	7 7/8	8	5	4 1/8	15 3/8														4.5
2S	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
2M	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
3	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
4	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
5	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0

STANDARD SIGN
W057-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/14/17 PLATE NO. W057-51.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

3

3

NORTH BOUND ROADWAY

Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)
39+25	28.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40+00	28.4	78.9	72.2	0.0	0.0	78.9	72.2	0.0	72.2
41+00	27.5	77.6	68.3	0.0	0.0	156.5	140.5	0.0	140.5
42+00	22.1	68.9	59.6	0.0	0.0	225.4	200.1	0.0	200.1
43+00	18.4	56.3	47.0	0.0	0.0	281.7	247.1	0.0	247.1
44+00	17.3	49.6	40.3	1.8	0.0	331.3	287.4	0.0	287.4
45+00	17.1	47.8	38.5	11.3	24.3	379.0	325.8	30.4	295.4
46+00	8.8	35.9	26.6	10.3	40.1	414.9	352.4	80.5	272.0
47+00	6.7	21.5	18.7	3.3	25.2	436.4	371.1	111.9	259.1
48+00	11.5	25.3	22.5	0.0	6.1	461.7	393.6	119.6	274.0
49+00	32.0	60.4	57.6	0.0	0.0	522.1	451.2	119.6	331.6
50+00	30.2	86.4	83.6	0.0	0.0	608.5	534.8	119.6	415.2
51+00	8.0	53.1	53.1	0.0	0.0	661.5	587.8	119.6	468.2
52+00	2.3	14.3	14.3	0.0	0.0	675.8	602.1	119.6	482.6
53+00	14.1	22.8	17.2	46.0	85.2	698.6	619.3	226.1	393.2
54+00	15.1	40.6	31.3	49.5	176.9	739.2	650.6	447.1	203.4
55+00	18.0	46.0	36.7	39.4	164.6	785.1	687.2	652.9	34.3
56+00	15.6	46.7	37.4	40.0	147.0	831.8	724.6	836.7	-112.1
57+00	16.6	44.7	35.4	36.7	142.0	876.5	760.0	1014.3	-254.2
58+00	12.9	41.0	31.7	40.0	142.0	917.5	791.7	1191.8	-400.1
59+00	17.3	41.9	32.6	29.0	127.8	959.4	824.3	1351.5	-527.2
60+00	12.9	42.0	32.7	11.9	75.7	1001.4	857.0	1446.2	-589.2
61+00	21.3	47.5	38.2	9.8	40.2	1049.0	895.3	1496.4	-601.2
62+00	13.5	48.3	39.0	6.6	30.4	1097.3	934.3	1534.4	-600.1
63+00	15.0	39.6	30.3	5.4	22.2	1136.9	964.6	1562.2	-597.6
64+00	14.3	40.7	31.4	39.7	83.5	1177.6	996.0	1666.6	-670.6
65+00	14.6	40.1	30.8	73.2	209.1	1217.7	1026.8	1927.9	-901.1
66+00	22.1	51.0	41.7	89.4	301.1	1268.7	1068.5	2304.3	-1235.8
67+00	17.1	54.4	45.1	75.1	304.6	1323.1	1113.6	2685.1	-1571.5
68+00	17.8	48.5	39.2	55.8	242.4	1371.6	1152.8	2988.1	-1835.3
69+00	23.9	57.9	48.6	5.4	113.3	1429.5	1201.4	3129.8	-1928.3
70+00	28.6	72.9	63.6	9.5	27.6	1502.4	1265.0	3164.3	-1899.2
71+00	33.7	86.5	77.2	2.0	21.3	1589.0	1342.3	3190.9	-1848.6
72+00	33.5	93.3	84.0	4.3	11.7	1682.3	1426.3	3205.5	-1779.2
73+00	38.6	100.1	90.8	2.2	12.0	1782.4	1517.1	3220.5	-1703.4
74+00	22.0	84.2	74.9	15.1	32.0	1866.6	1592.0	3260.6	-1668.5
75+00	19.5	57.6	48.3	66.6	151.3	1924.3	1640.4	3449.7	-1809.3
76+00	14.2	46.8	37.5	120.5	346.5	1971.1	1677.9	3882.8	-2204.9
77+00	17.4	43.9	34.6	122.0	449.1	2014.9	1712.4	4444.1	-2731.7
78+00	24.5	58.2	52.6	103.8	418.1	2073.1	1765.0	4966.8	-3201.8
79+00	21.6	64.0	58.4	222.8	604.8	2137.2	1823.5	5722.8	-3899.4
80+00	16.2	52.5	49.7	214.0	808.9	2189.7	1873.2	6733.9	-4860.8
81+00	18.5	48.2	48.2	158.3	689.4	2237.9	1921.4	7595.7	-5674.4
82+00	28.6	65.4	65.4	85.3	451.1	2303.3	1986.8	8159.6	-6172.9
83+00	22.2	70.6	70.6	33.4	219.8	2373.8	2057.3	8434.4	-6377.1
84+00	27.1	68.5	68.5	0.0	61.9	2442.3	2125.8	8511.7	-6385.9
85+00	14.6	57.9	57.9	0.0	0.0	2500.2	2183.7	8511.7	-6328.0
86+00	23.8	53.3	44.0	0.0	0.0	2553.6	2227.8	8511.7	-6284.0
87+00	24.9	67.6	58.3	0.0	0.0	2621.2	2286.1	8511.7	-6225.6
88+00	24.3	68.3	59.0	0.0	0.0	2689.5	2345.1	8511.7	-6166.6
89+00	25.2	68.8	59.5	0.0	0.0	2758.3	2404.6	8511.7	-6107.1
90+00	24.3	68.8	59.5	0.0	0.0	2827.0	2464.0	8511.7	-6047.7
91+00	23.4	66.3	57.0	0.0	0.0	2893.3	2521.0	8511.7	-5990.7
92+00	23.3	64.9	55.6	0.0	0.0	2958.1	2576.5	8511.7	-5935.2
93+00	23.4	64.9	55.6	0.0	0.0	3023.0	2632.1	8511.7	-5879.6
94+00	23.6	65.3	56.0	0.0	0.0	3088.3	2688.1	8511.7	-5823.6
95+00	23.8	65.8	56.5	0.0	0.0	3154.1	2744.6	8511.7	-5767.1
96+00	22.0	63.6	54.3	0.0	0.0	3217.7	2798.9	8511.7	-5712.8
97+00	20.7	59.3	53.7	0.0	0.0	3277.0	2852.6	8511.7	-5659.1
98+00	14.7	49.2	43.6	5.9	10.9	3326.2	2896.2	8525.4	-5629.2
99+00	17.1	44.2	41.4	26.0	59.1	3370.4	2937.6	8599.2	-5661.7
100+00	17.0	47.4	44.6	0.0	48.1	3417.7	2982.1	8659.4	-5677.3
100+50	0.0	23.6	20.8	0.0	0.0	3441.3	3002.9	8659.4	-5656.5

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SOUTH BOUND ROADWAY										
Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)	
39+25	34.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
40+00	34.0	94.4	87.7	0.0	0.0	94.4	87.7	0.0	87.7	
41+00	34.1	94.6	85.3	0.0	0.0	189.0	173.0	0.0	173.0	
42+00	33.3	93.6	84.3	0.0	0.0	282.6	257.3	0.0	257.3	
43+00	32.0	90.7	81.4	0.0	0.0	373.3	338.7	0.0	338.7	
44+00	30.6	86.9	77.6	0.0	0.0	460.3	416.4	0.0	416.4	
45+00	31.8	86.7	77.4	0.0	0.0	546.9	493.7	0.0	493.7	
46+00	33.0	90.0	80.7	0.0	0.0	636.9	574.4	0.0	574.4	
47+00	31.1	89.0	79.7	0.0	0.0	726.0	654.2	0.0	654.2	
48+00	29.8	84.6	75.3	0.0	0.0	810.6	729.5	0.0	729.5	
49+00	28.8	81.4	75.8	0.0	0.0	891.9	805.2	0.0	805.2	
50+00	16.0	62.2	59.4	0.0	0.0	954.2	864.7	0.0	864.7	
51+00	8.9	34.6	34.6	0.0	0.0	988.8	899.3	0.0	899.3	
52+00	14.4	32.4	32.4	0.0	0.0	1021.1	931.6	0.0	931.6	
53+00	28.3	59.3	56.5	4.6	0.0	1080.4	988.1	0.0	988.1	
54+00	37.8	91.8	86.2	8.7	24.6	1172.2	1074.3	30.8	1043.5	
55+00	28.5	92.1	86.5	37.5	85.6	1264.3	1160.8	137.7	1023.1	
56+00	34.0	86.8	77.5	43.4	149.8	1351.1	1238.3	325.0	913.3	
57+00	43.8	108.1	98.8	0.0	80.4	1459.2	1337.1	425.5	911.6	
58+00	42.6	120.0	110.7	1.0	1.8	1579.2	1447.8	427.7	1020.1	
59+00	48.0	125.8	116.5	0.0	1.8	1705.0	1564.3	429.9	1134.4	
60+00	43.7	127.4	118.1	0.0	0.0	1832.4	1682.4	429.9	1252.5	
61+00	43.5	121.1	111.8	0.0	0.0	1953.5	1794.2	429.9	1364.3	
62+00	60.6	144.6	135.3	0.0	0.0	2098.1	1929.5	429.9	1499.6	
63+00	57.5	164.0	154.7	0.0	0.0	2262.1	2084.2	429.9	1654.3	
64+00	51.1	150.8	141.5	0.0	0.0	2412.8	2225.6	429.9	1795.8	
65+00	41.9	129.1	119.8	0.0	0.0	2541.9	2345.4	429.9	1915.6	
66+00	40.3	114.2	104.9	0.0	0.0	2656.1	2450.3	429.9	2020.5	
67+00	52.7	129.2	119.9	0.0	0.0	2785.3	2570.2	429.9	2140.3	
68+00	49.4	141.8	132.5	0.0	0.0	2927.1	2702.7	429.9	2272.8	
69+00	38.1	121.5	112.2	0.0	0.0	3048.6	2814.9	429.9	2385.1	
70+00	34.8	101.3	92.0	0.0	0.0	3149.9	2906.9	429.9	2477.0	
71+00	37.1	99.9	90.6	0.0	0.0	3249.7	2997.4	429.9	2567.6	
72+00	38.7	105.3	96.0	0.0	0.0	3355.0	3093.4	429.9	2663.5	
73+00	40.2	109.6	100.3	0.0	0.0	3464.6	3193.7	429.9	2763.8	
74+00	37.3	107.6	98.3	0.0	0.0	3572.2	3292.0	429.9	2862.2	
75+00	31.6	95.7	86.4	0.0	0.0	3667.9	3378.4	429.9	2948.6	
76+00	30.6	86.4	77.1	0.0	0.0	3754.3	3455.5	429.9	3025.6	
77+00	20.2	70.6	61.3	3.6	6.7	3824.9	3516.8	438.2	3078.6	
78+00	11.7	44.3	35.0	6.1	18.0	3869.2	3551.8	460.6	3091.1	
79+00	9.1	28.9	19.6	9.4	28.7	3898.1	3571.4	496.5	3074.8	
80+00	3.8	17.9	8.6	27.1	67.6	3916.0	3580.0	581.0	2999.0	
81+00	12.3	22.4	13.1	146.0	320.6	3938.3	3593.0	981.7	2611.3	
82+00	37.7	69.4	60.1	174.4	593.3	4007.8	3653.2	1723.4	1929.8	
83+00	17.1	76.1	66.8	352.0	974.8	4083.9	3720.0	2941.9	778.1	
84+00	52.0	96.0	86.7	66.9	775.7	4179.9	3806.7	3911.6	-104.9	
85+00	7.5	82.6	82.6	0.0	123.9	4262.5	3889.3	4066.4	-177.1	
86+00	23.3	42.8	42.8	0.0	0.0	4305.3	3932.1	4066.4	-134.4	
87+00	23.6	65.1	62.3	3.3	6.1	4370.4	3994.4	4074.1	-79.7	
88+00	31.9	77.1	71.5	16.9	37.4	4447.5	4065.9	4120.8	-54.9	
89+00	34.1	91.7	82.4	19.8	68.0	4539.2	4148.3	4205.8	-57.5	
90+00	31.6	91.3	82.0	16.1	66.5	4630.4	4230.2	4288.9	-58.7	
91+00	29.7	85.1	75.8	17.4	62.0	4715.6	4306.1	4366.4	-60.4	
92+00	29.1	81.7	72.4	13.5	57.2	4797.2	4378.4	4438.0	-59.5	
93+00	27.8	79.0	69.7	0.0	25.0	4876.3	4448.2	4469.2	-21.1	
94+00	26.0	74.7	65.4	0.0	0.0	4951.0	4513.6	4469.2	44.4	
95+00	23.1	68.2	58.9	0.0	0.0	5019.2	4572.5	4469.2	103.3	
96+00	22.3	63.1	53.8	0.0	0.0	5082.2	4626.2	4469.2	157.0	
97+00	20.5	59.4	50.1	0.0	0.0	5141.7	4676.4	4469.2	207.2	
98+00	22.4	59.6	50.3	0.0	0.0	5201.3	4726.7	4469.2	257.4	
99+00	33.3	77.4	68.1	0.0	0.0	5278.6	4794.7	4469.2	325.5	
100+00	37.4	98.2	88.9	0.0	0.0	5376.8	4883.6	4469.2	414.4	
101+00	28.1	91.0	81.7	0.0	0.0	5467.8	4965.3	4469.2	496.1	

SHARED PATH

Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)
234+00	0.6	0.0	0.0	28.5	0.0	0.0	0.0	0.0	0.0
235+00	0.0	1.1	1.1	32.1	112.2	1.1	1.1	140.3	-139.2
236+00	3.0	5.6	5.6	8.1	74.4	6.7	6.7	233.3	-226.7
237+00	0.7	6.9	6.9	10.8	35.0	13.5	13.5	277.1	-263.6
238+00	1.7	4.4	4.4	5.2	29.6	18.0	18.0	314.1	-296.2
239+00	2.4	7.6	7.6	4.3	17.6	25.6	25.6	336.1	-310.6
240+00	2.7	9.4	9.4	4.1	15.6	35.0	35.0	355.6	-320.6
241+00	4.4	13.1	13.1	3.7	14.4	48.1	48.1	373.6	-325.5
242+00	4.1	15.7	15.7	4.0	14.3	63.9	63.9	391.4	-327.5
243+00	0.0	7.6	7.6	6.7	19.8	71.5	71.5	416.2	-344.7
244+00	0.0	0.0	0.0	5.6	22.8	71.5	71.5	444.7	-373.2
245+00	0.0	0.0	0.0	10.8	30.4	71.5	71.5	482.6	-411.2
246+00	4.1	7.6	7.6	9.5	37.6	79.1	79.1	529.6	-450.6
247+00	0.8	9.1	9.1	15.1	45.6	88.1	88.1	586.6	-498.4
248+00	1.8	4.8	4.8	8.0	42.8	93.0	93.0	640.0	-547.1
249+00	3.6	10.0	10.0	6.6	27.0	103.0	103.0	673.8	-570.9
250+00	3.9	13.9	13.9	5.8	23.0	116.9	116.9	702.5	-585.7
251+00	3.6	13.9	13.9	3.4	17.0	130.7	130.7	723.8	-593.1
251+50	0.0	3.3	3.3	6.6	9.3	134.1	134.1	735.4	-601.3

SIDEWALK

Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)
96+00	2.10	0.0	0.0	11.70	0.0	0.0	0.0	0.0	0.0
97+00	2.50	8.5	8.5	7.40	35.4	8.5	8.5	44.2	-35.7
98+00	4.70	13.3	13.3	2.10	17.6	21.9	21.9	66.2	-44.4
99+00	6.30	20.4	20.4	1.10	5.9	42.2	42.2	73.6	-31.4
100+00	0.00	11.7	11.7	11.00	22.4	53.9	53.9	101.6	-47.7
101+00	2.10	3.9	3.9	2.72	25.4	57.8	57.8	133.4	-75.6

HAMILTON AVE. LEFT

FILL EXPANSION = 1.25

Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Usable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)
1+00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1+25	87.7	40.6	30.5	0.0	0.0	40.6	30.5	0.0	30.5
1+50	165.3	117.1	105.3	0.0	0.0	157.7	135.8	0.0	135.8
1+75	219.3	178.0	163.7	0.0	0.0	335.8	299.6	0.0	299.6
2+00	163.3	177.1	155.6	0.0	0.0	512.9	455.2	0.0	455.2
2+25	168.3	153.5	153.5	9.1	4.2	666.4	608.7	5.3	603.4
2+50	1.6	78.7	78.7	33.3	19.6	745.1	687.4	29.8	657.6
2+80	4.7	3.5	3.5	34.2	31.3	748.6	690.9	68.9	622.0

HAMILTON AVE. RIGHT

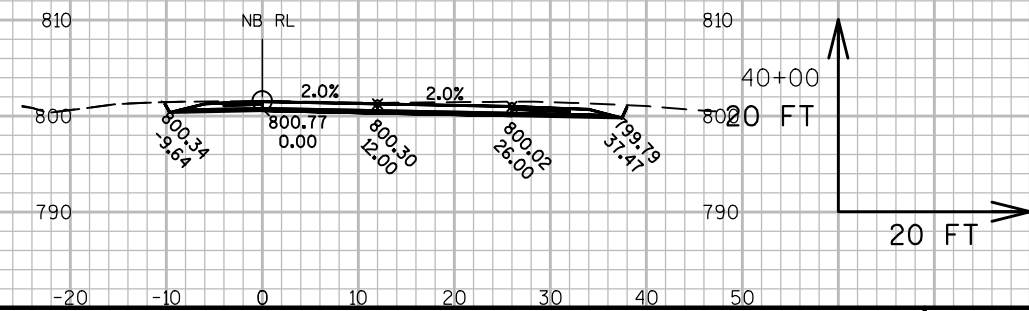
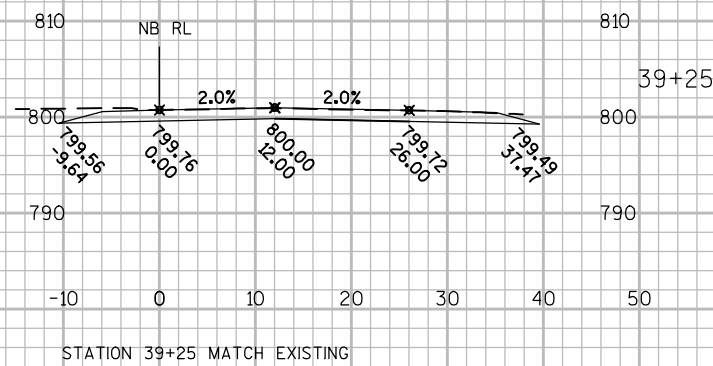
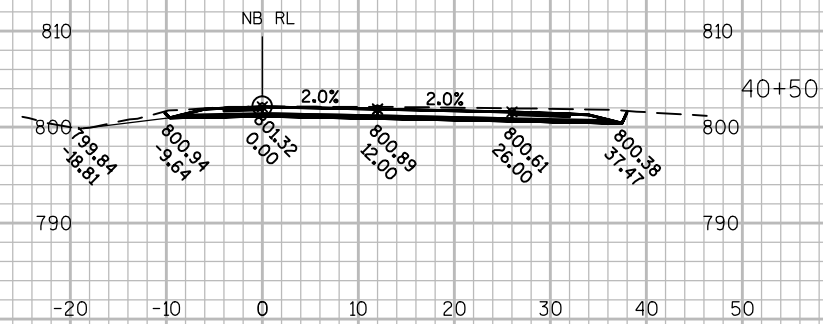
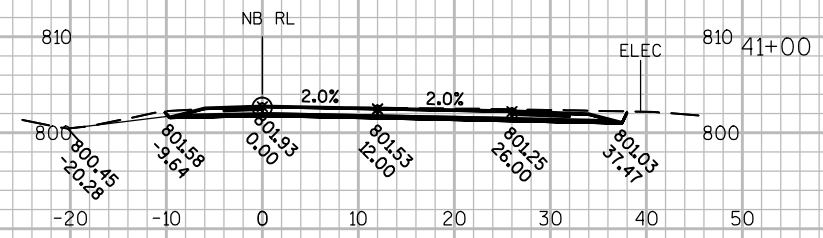
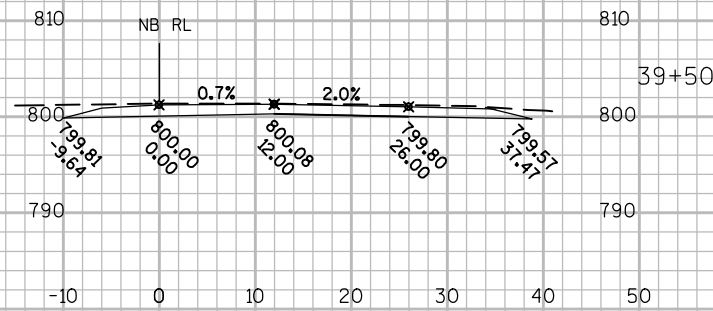
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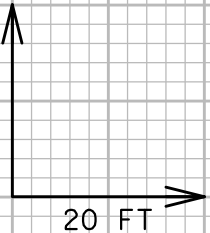
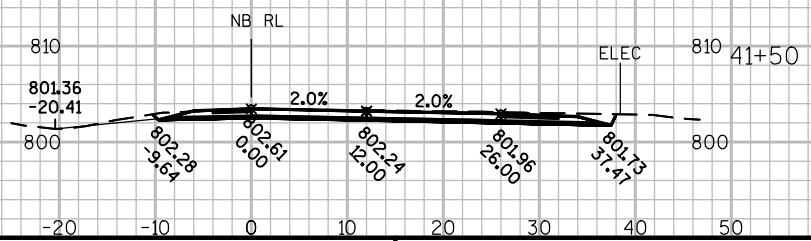
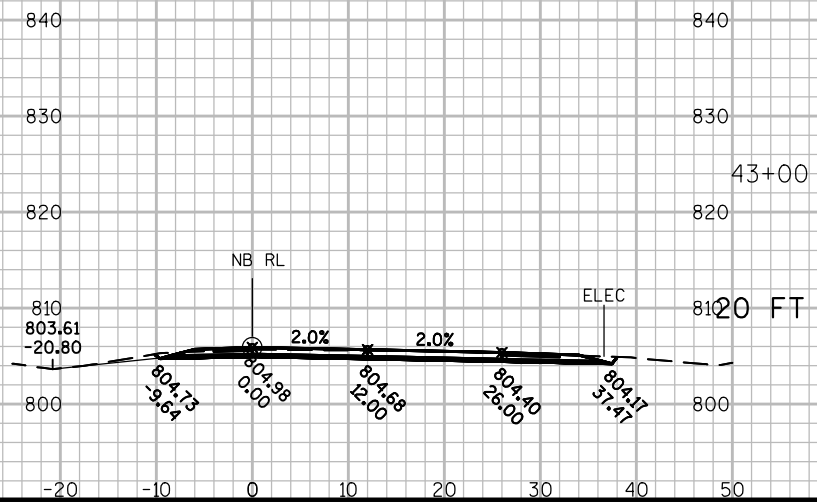
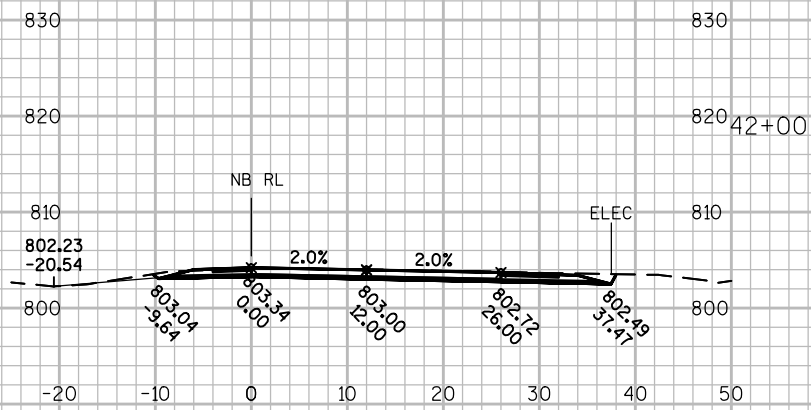
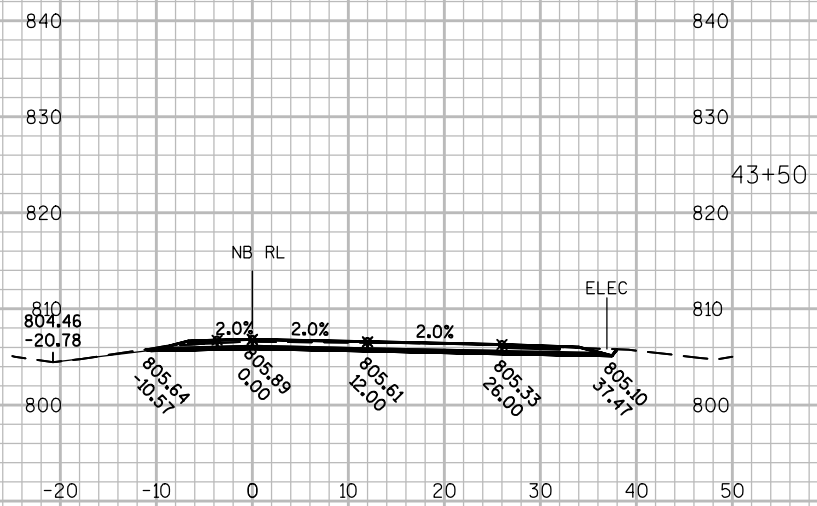
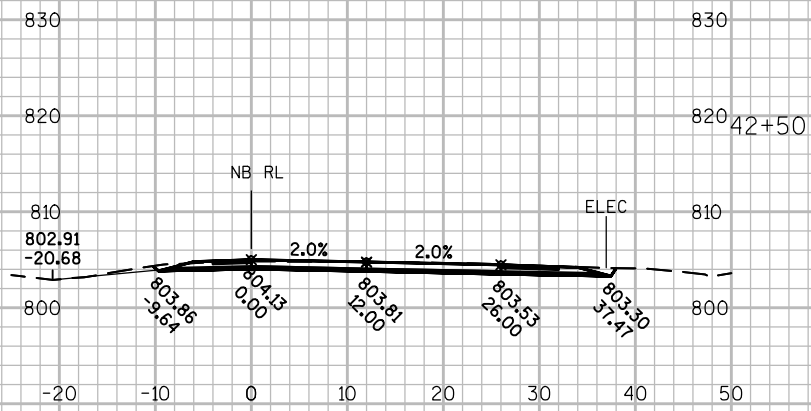
Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Usable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)
0+10	9.3	0.0	0.0	7.2	0.0	0.0	0.0	0.0	0.0
0+25	10.1	5.4	5.4	7.6	11.0	5.4	5.4	13.7	-8.3
0+50	21.4	16.4	16.4	8.6	15.0	21.8	21.8	32.5	-10.7
0+75	50.8	42.7	42.7	0.0	8.0	64.6	64.6	42.5	22.1
1+00	109.4	95.8	84.5	0.0	0.0	160.3	149.1	42.5	106.6
1+25	125.6	145.8	138.3	0.0	0.0	306.1	287.4	42.5	244.9
1+50	33.8	86.7	79.5	0.0	0.0	392.8	366.9	42.5	324.4
1+75	26.5	27.9	20.8	0.0	0.0	420.7	387.7	42.5	345.2
1+88	25.2	12.4	5.3	0.0	0.0	433.2	393.0	42.5	350.5

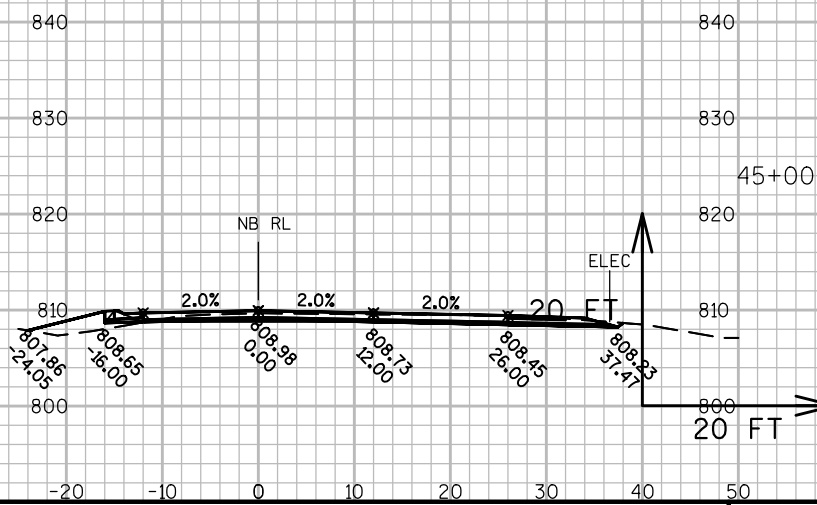
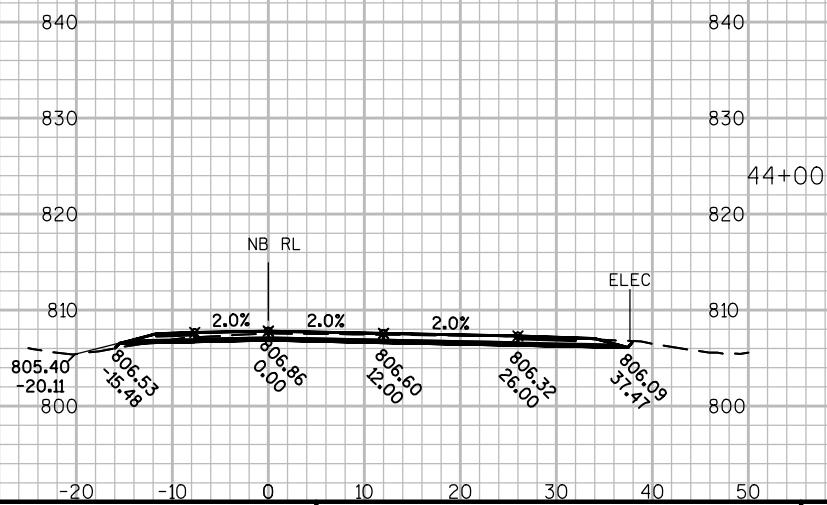
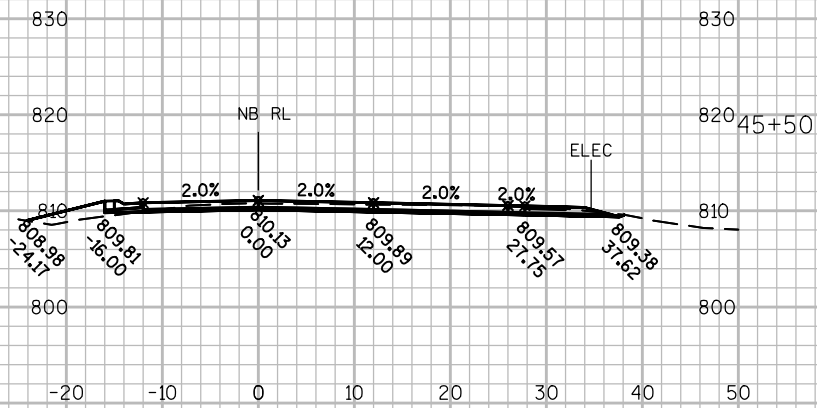
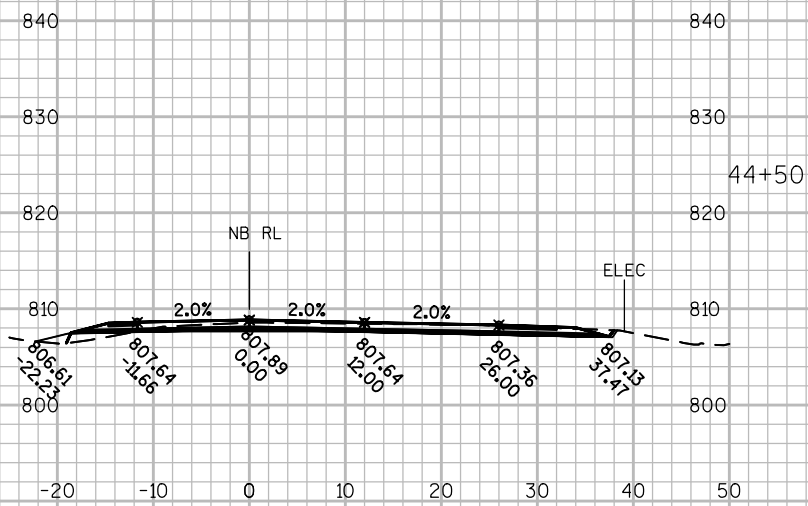
SHORT STREET RIGHT										
Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)	
41+25	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
42+00	2.3	12.8	12.8	0.2	0.3	12.8	12.8	0.3	12.4	
43+00	10.2	11.6	11.6	12.0	11.3	24.4	24.4	14.5	9.9	
43+50	6.4	15.4	15.4	21.8	31.3	39.7	39.7	53.6	-13.9	
						39.7	39.7	53.6	-13.9	
5+00	18.2	0.0	0.0	0.0	0.0	39.7	39.7	53.6	-13.9	
5+50	31.6	46.1	46.1	22.2	20.6	85.8	85.8	79.3	6.6	
6+00	35.6	62.2	62.2	56.0	72.4	148.1	148.1	169.8	-21.7	
6+25	19.6	25.6	25.6	33.0	41.2	173.6	173.6	221.3	-47.7	
6+36	19.0	7.9	7.9	29.8	12.8	181.5	181.5	237.3	-55.8	

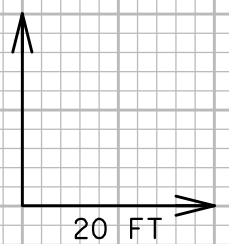
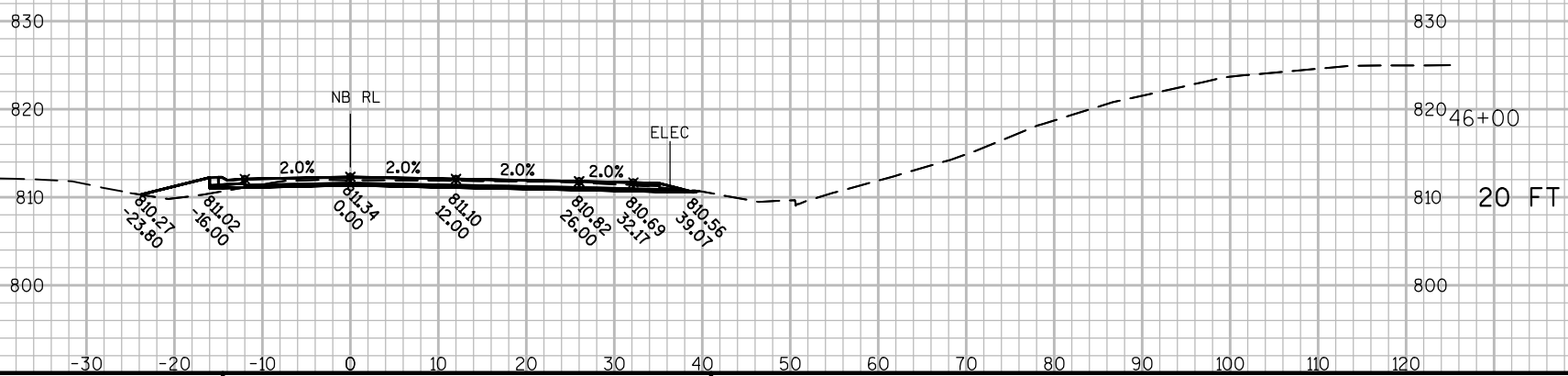
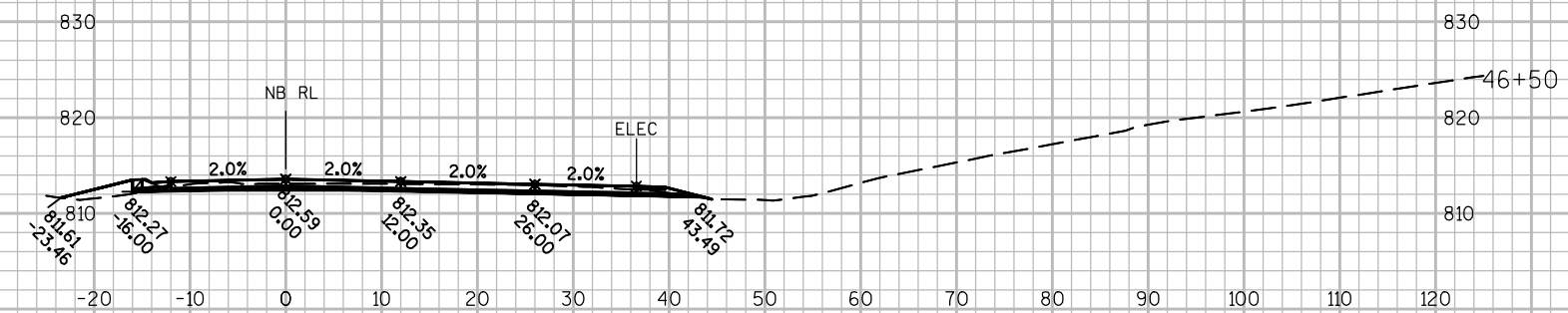
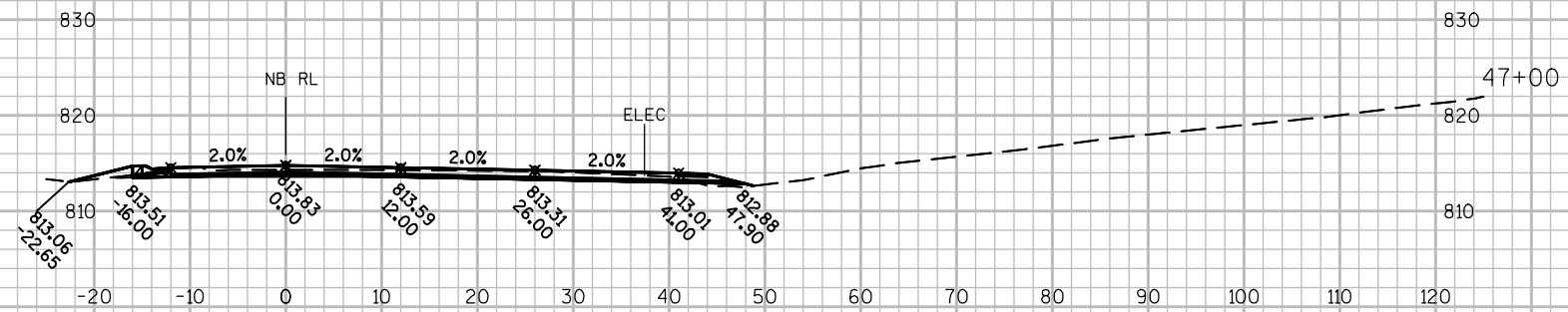
SHORT STREET LEFT										
Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)	
7+00	16.3	0.0	0.0	109.8	0.0	0.0	0.0	0.0	0.0	
7+50	5.7	20.4	20.4	156.5	246.6	20.4	20.4	308.2	-287.8	
8+00	9.0	13.6	13.6	84.2	222.9	34.0	34.0	586.8	-552.8	
8+50	18.0	25.0	25.0	64.9	138.1	59.0	59.0	759.4	-700.4	
9+00	15.3	30.8	30.8	33.4	91.0	89.8	89.8	873.1	-783.3	
9+50	14.7	27.8	27.8	3.7	34.4	117.6	117.6	916.1	-798.5	

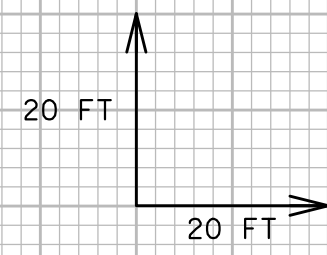
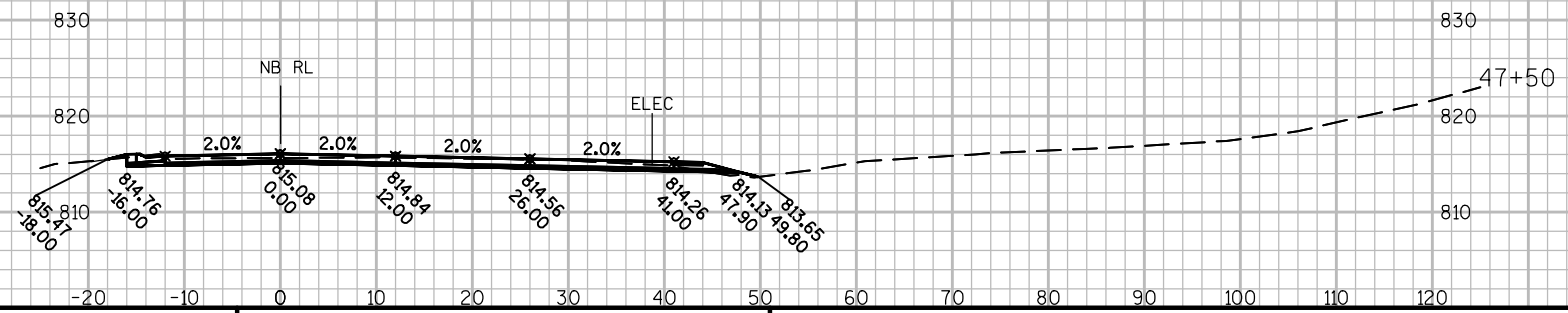
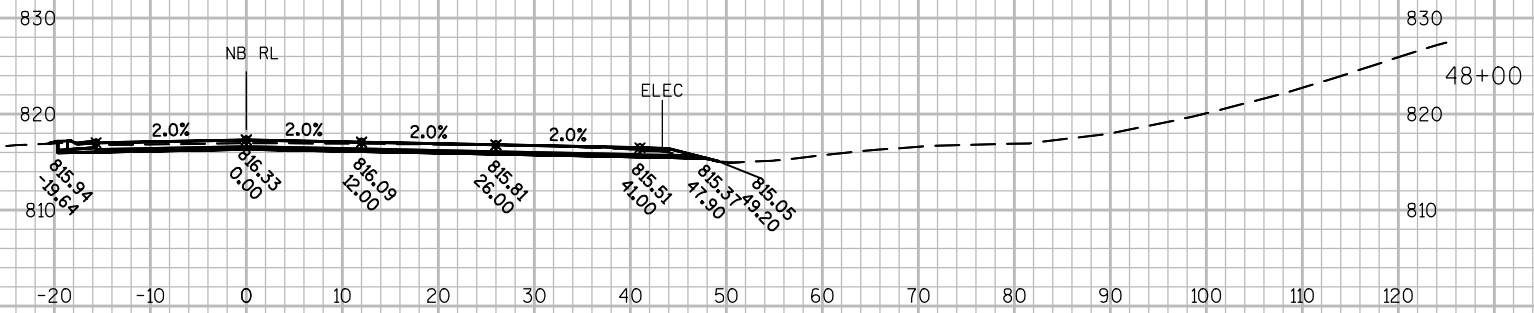
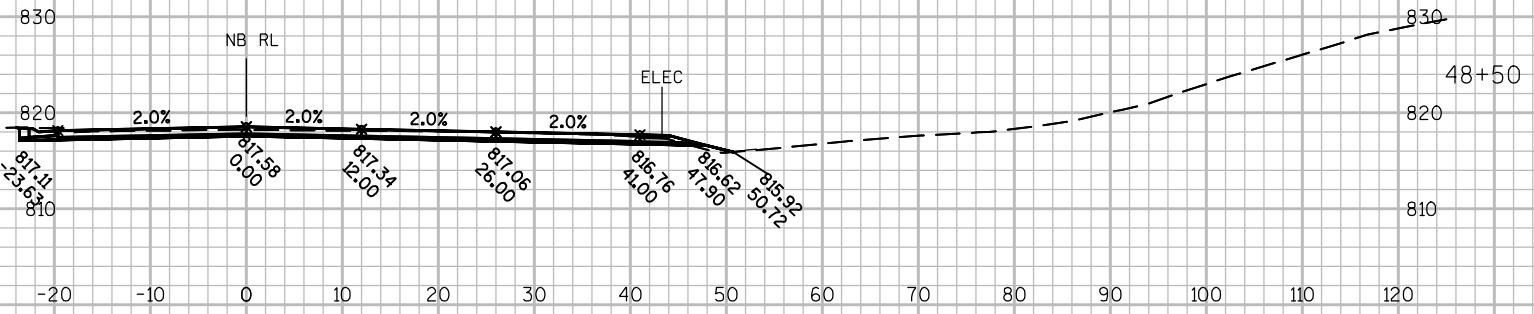
CRAIG ROAD										
Station	Cut Area (SF)	Cut Volume (CY)	Usable Material (CY)	Fill Area (SF)	Fill Volume (CY)	Cum. Cut Vol. (CY)	Cum. Unusable Vol. (CY)	Cum. Fill Vol. (CY)	Cum. Net Volu. (CY)	
13+00	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
13+50	19.6	28.7	28.7	0.0	0.0	28.7	28.7	0.0	28.7	
14+00	49.6	64.1	64.1	0.0	0.0	92.8	92.8	0.0	92.8	
14+25	32.3	37.9	37.9	0.0	0.0	130.7	130.7	0.0	130.7	
	0.0	0.0	0.0	0.0	0.0	130.7	130.7	0.0	130.7	
16+75	38.8	0.0	0.0	0.0	0.0	130.7	130.7	0.0	130.7	
17+00	29.7	31.7	31.7	0.0	0.0	162.4	162.4	0.0	162.4	
17+50	44.6	68.8	68.8	0.0	0.0	231.2	231.2	0.0	231.2	
18+00	56.6	93.7	93.7	0.0	0.0	324.9	324.9	0.0	324.9	
	0.0	0.0	0.0	0.0	0.0	324.9	324.9	0.0	324.9	
20+25	18.9	0.0	0.0	18.4	0.0	324.9	324.9	0.0	324.9	
20+50	46.6	30.3	30.3	47.8	30.6	355.2	355.2	38.3	316.9	
21+00	36.6	77.0	77.0	2.2	46.3	432.3	432.3	96.2	336.1	
21+25	40.0	35.5	35.5	0.0	2.0	467.7	467.7	98.7	369.0	
						467.7	467.7	98.7	369.0	
25+25	37.7	0.0	0.0	0.0	0.0	467.7	467.7	98.7	369.0	
25+50	38.4	35.2	35.2	0.0	0.0	503.0	503.0	98.7	404.2	
26+00	51.9	83.6	83.6	0.0	0.0	586.6	586.6	98.7	487.8	
26+50	61.3	104.8	104.8	0.0	0.0	691.4	691.4	98.7	592.7	
26+75	26.0	40.4	40.4	0.0	0.0	731.8	731.8	98.7	633.1	

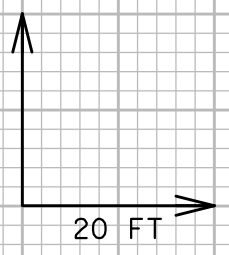
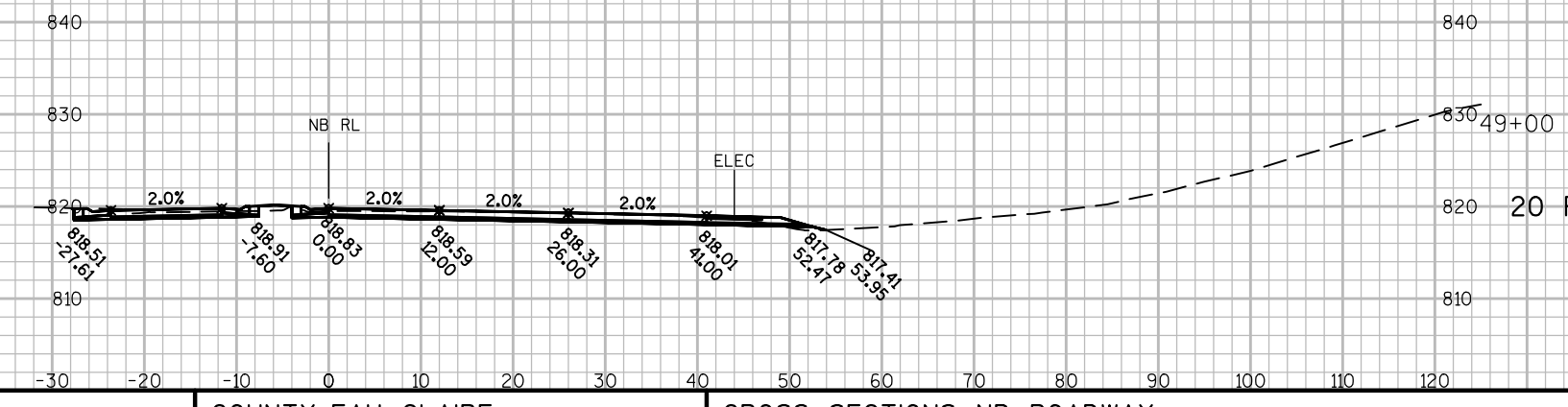
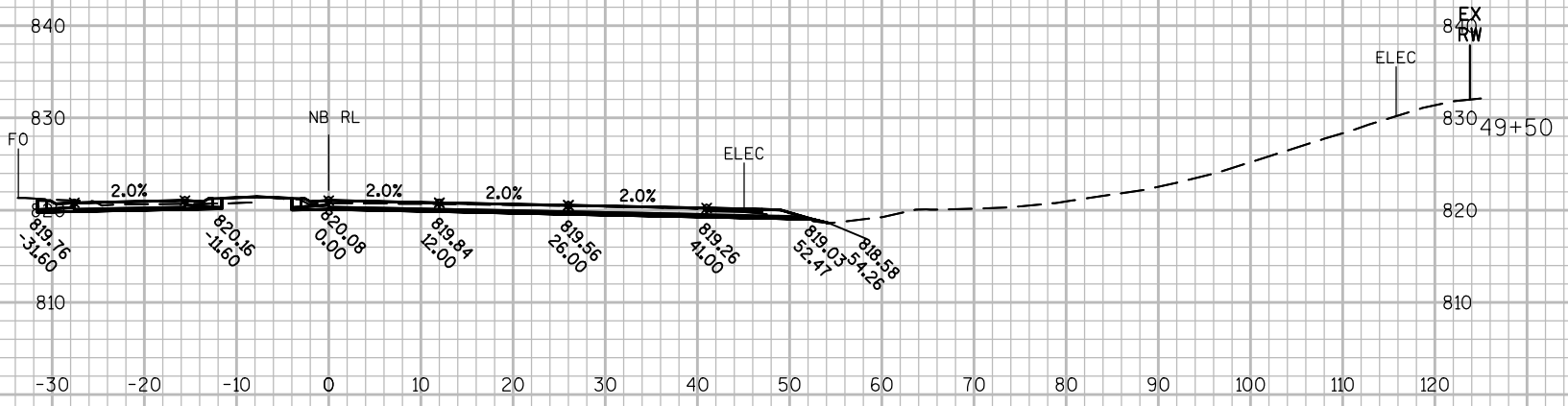
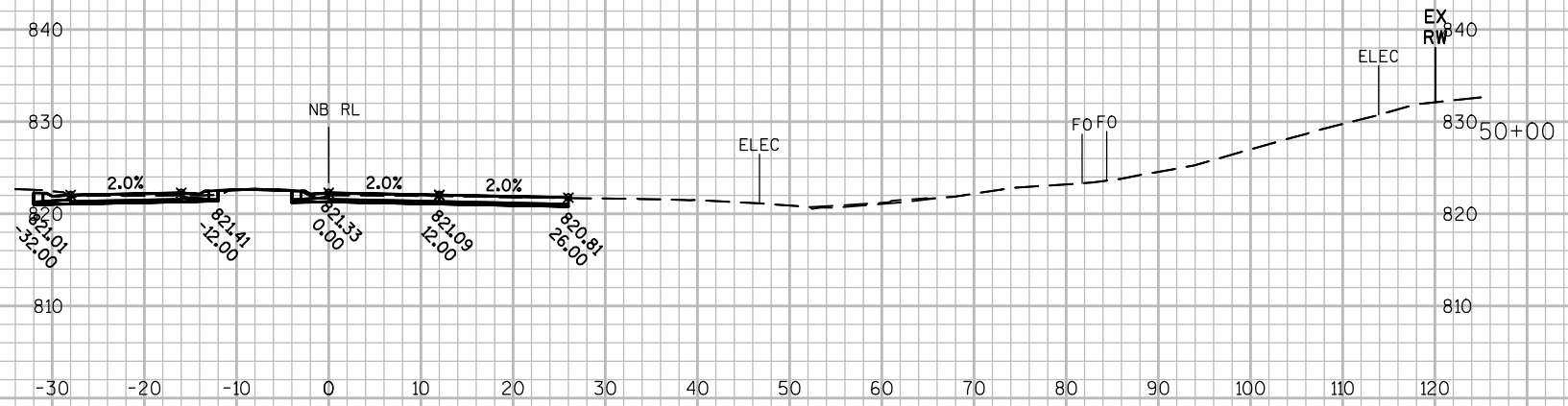


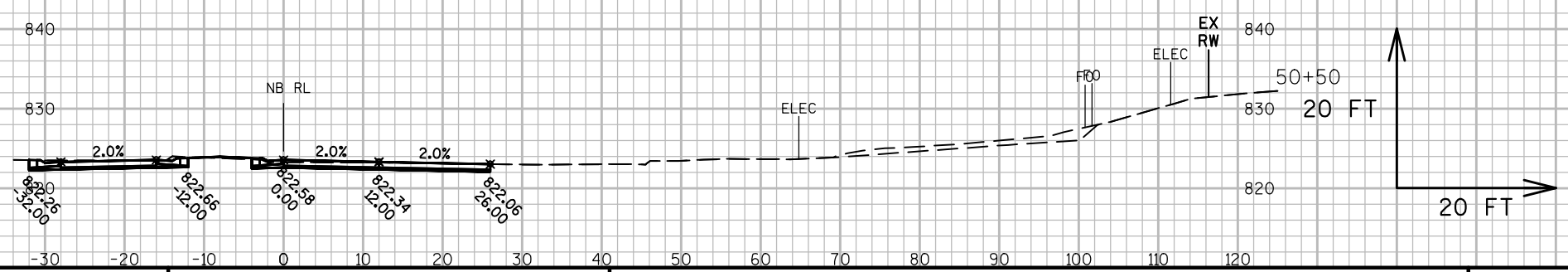
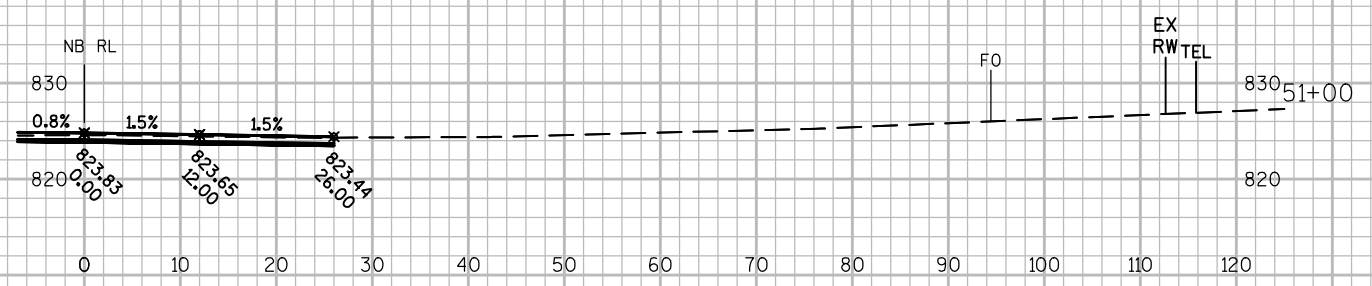
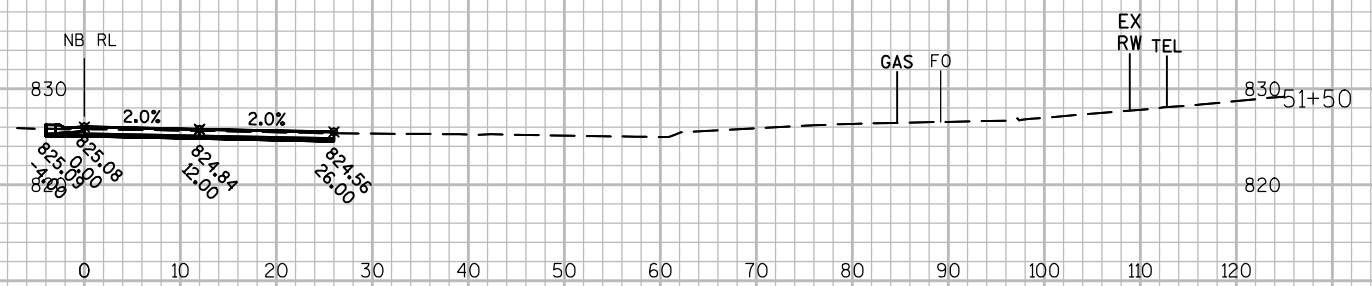


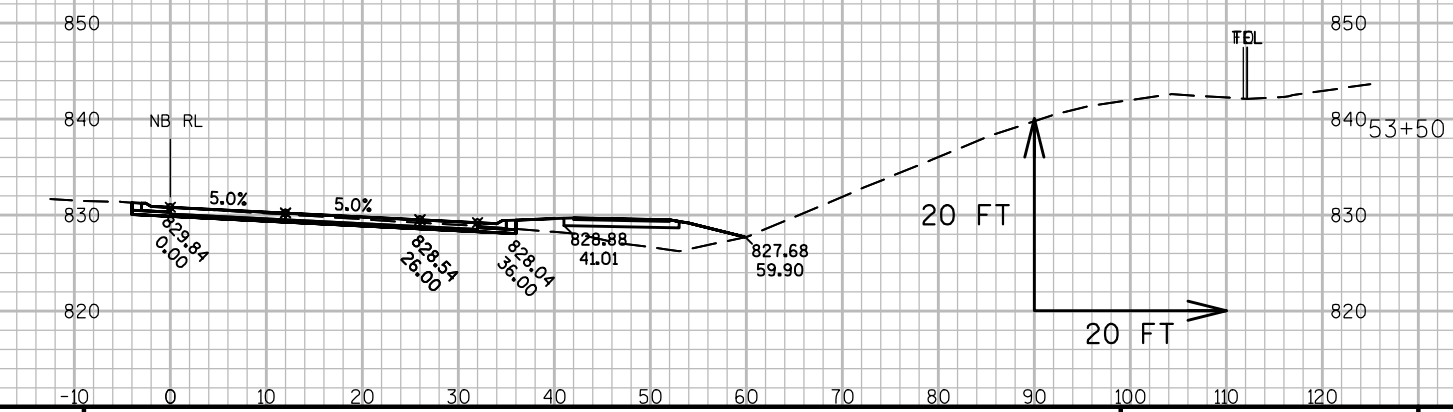
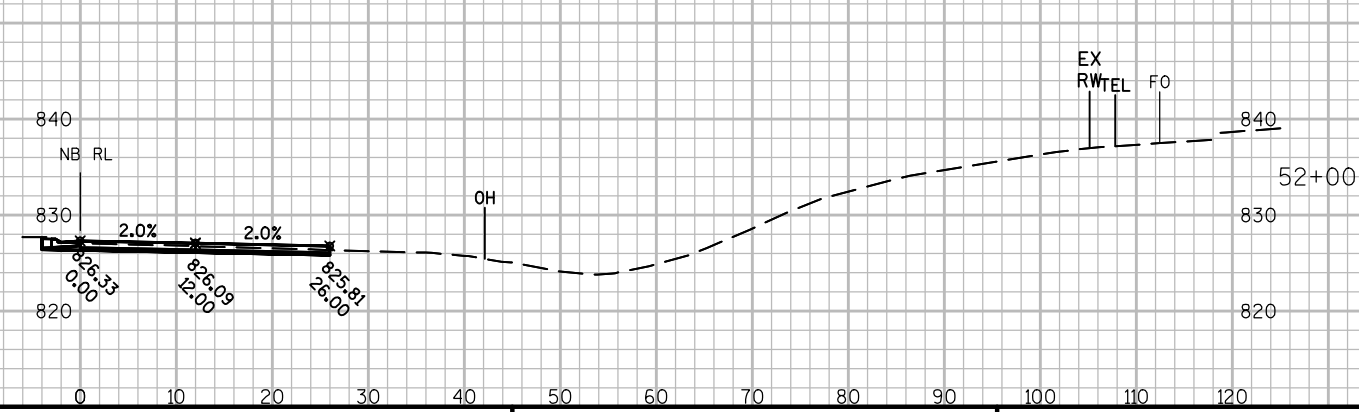
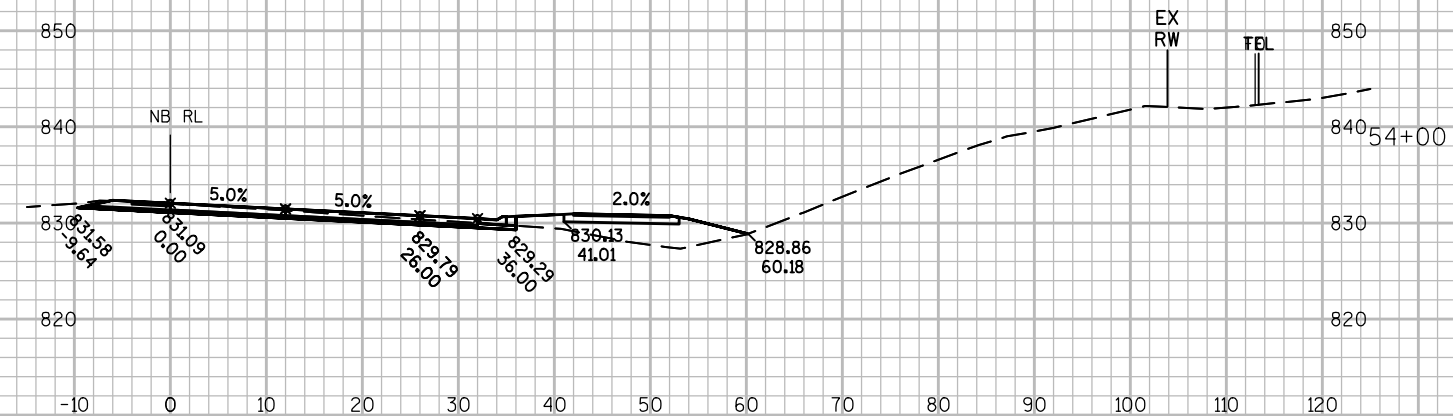
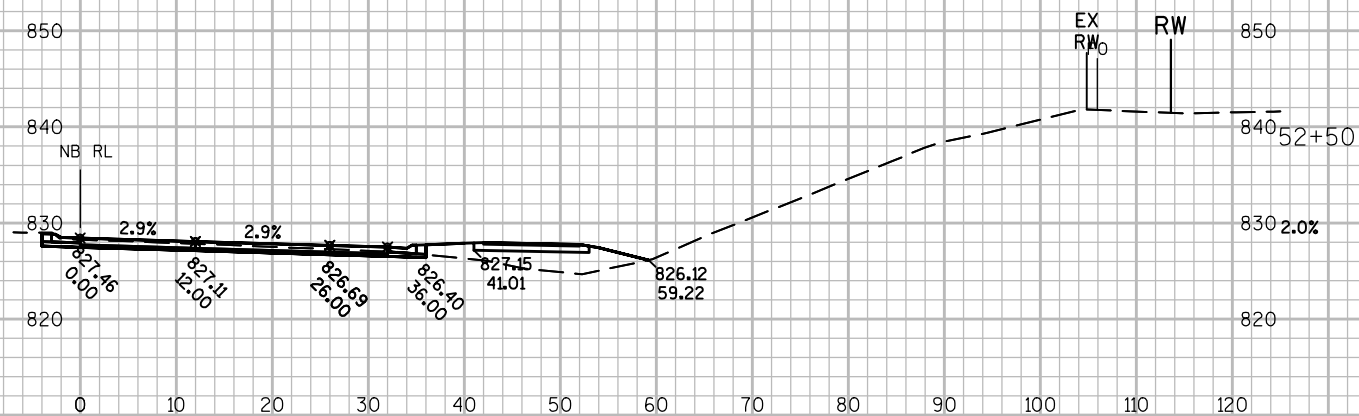
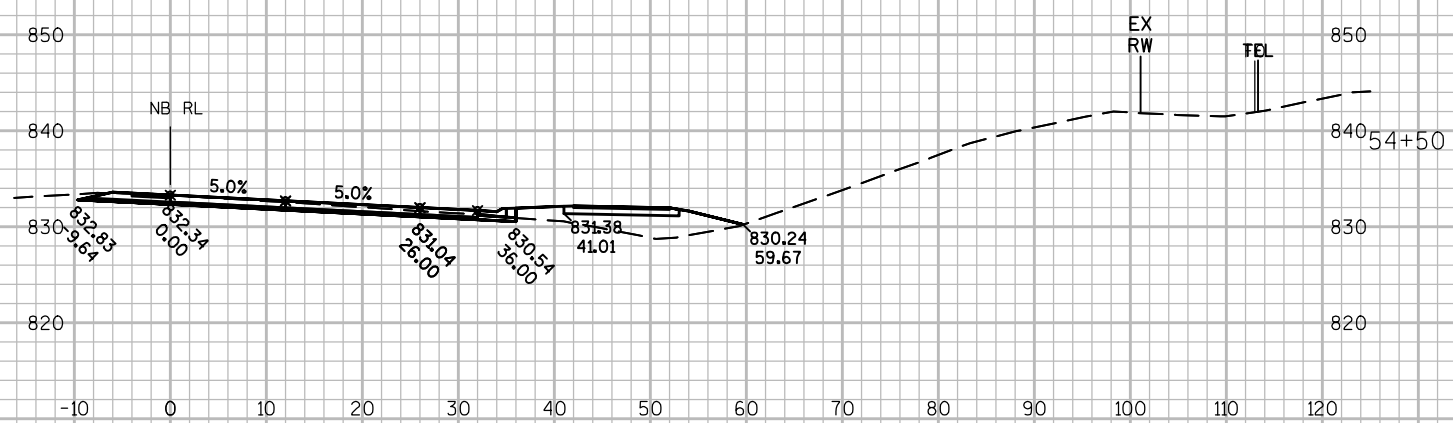
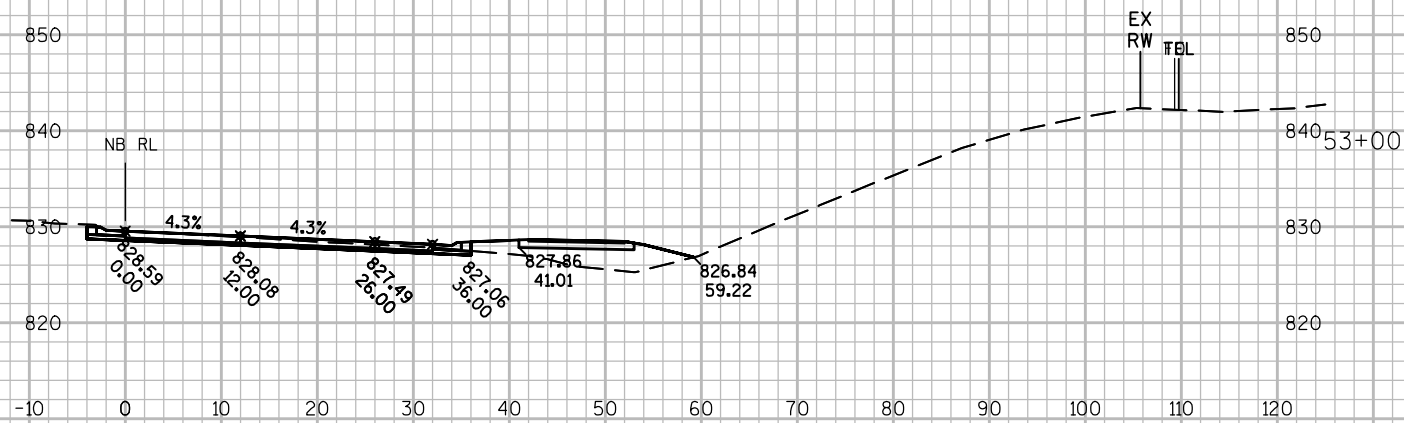












PROJECT NO: 7110-05-72

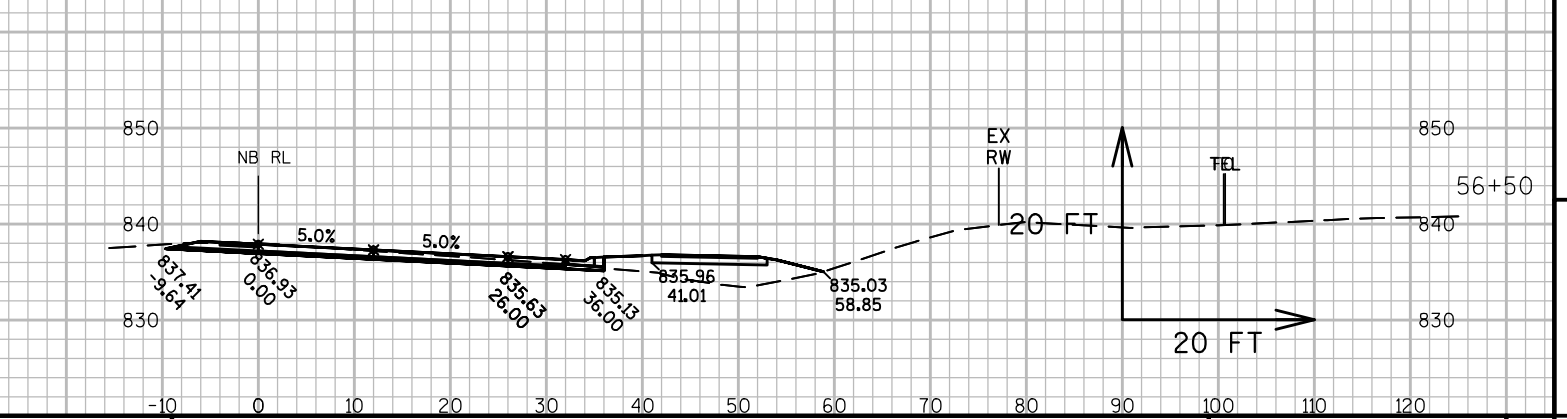
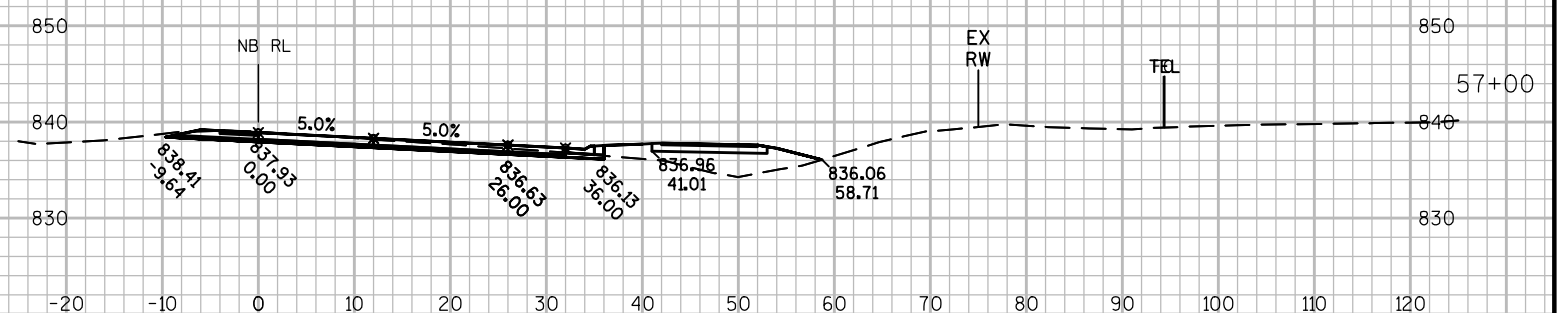
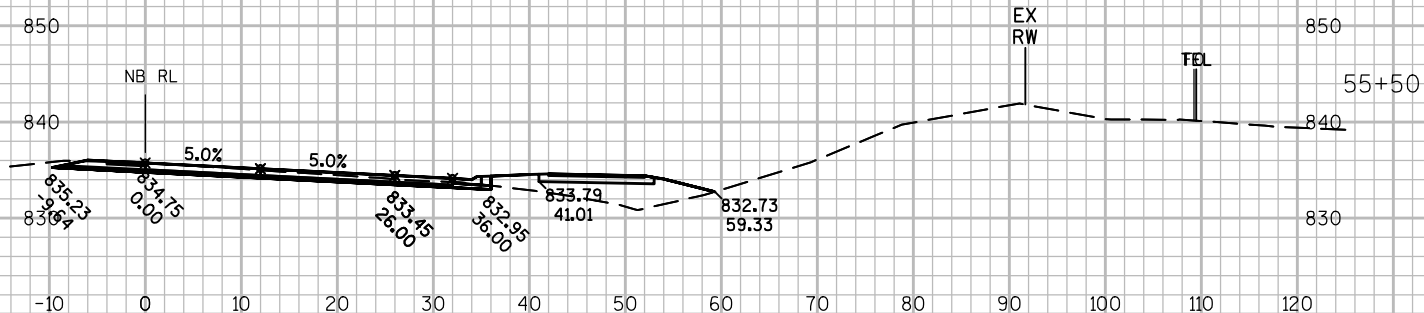
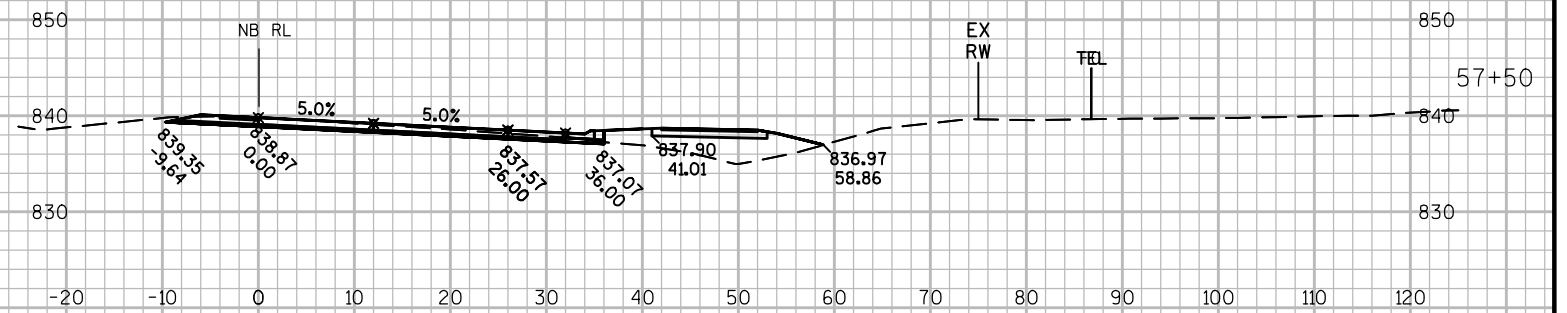
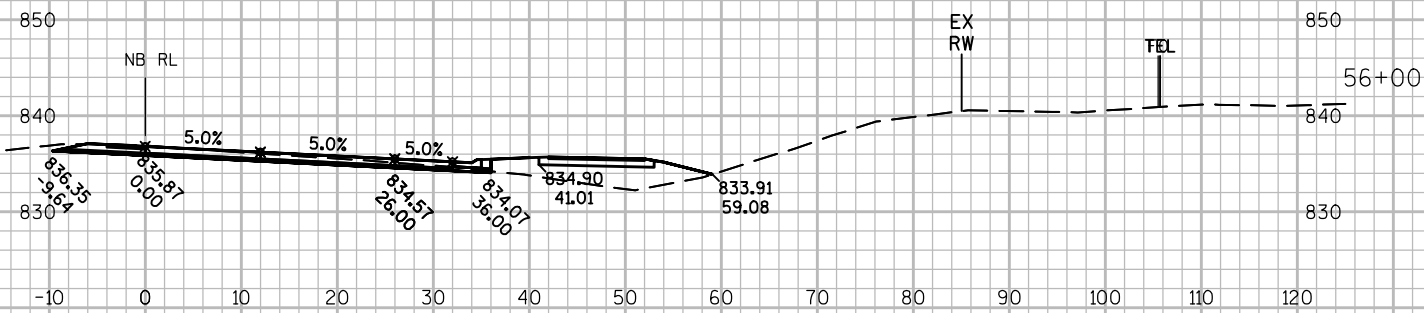
HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: NB ROADWAY

SHEET

E



PROJECT NO: 7110-05-72

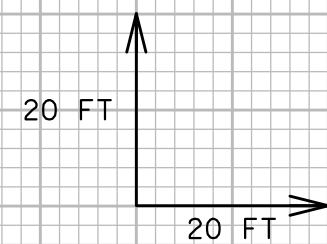
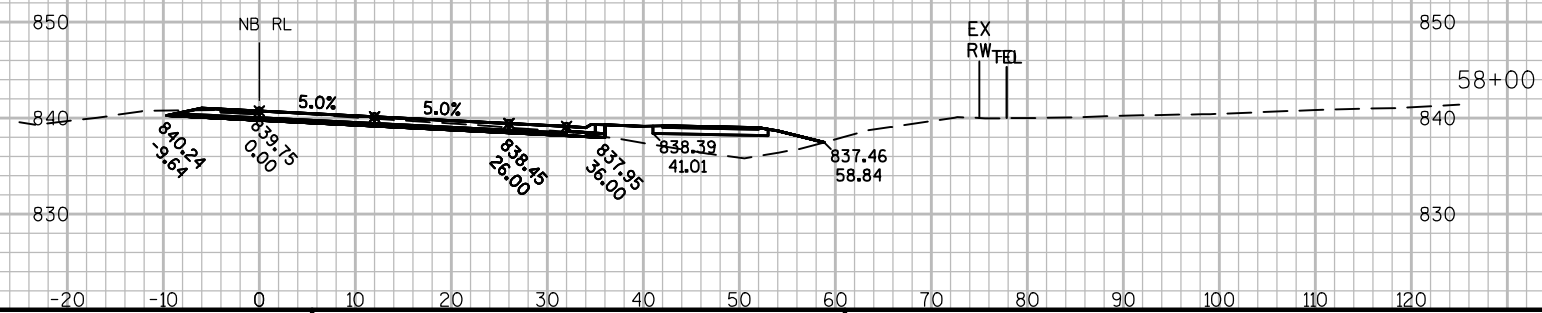
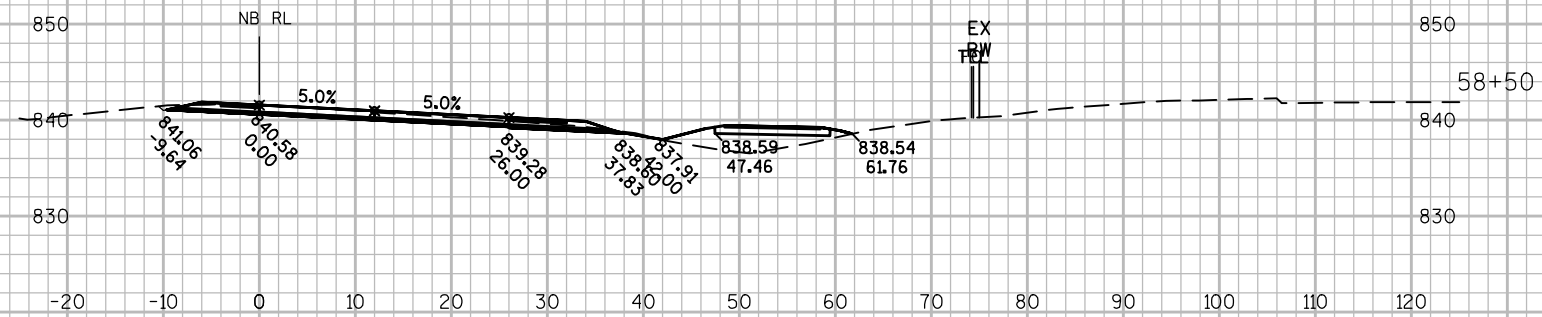
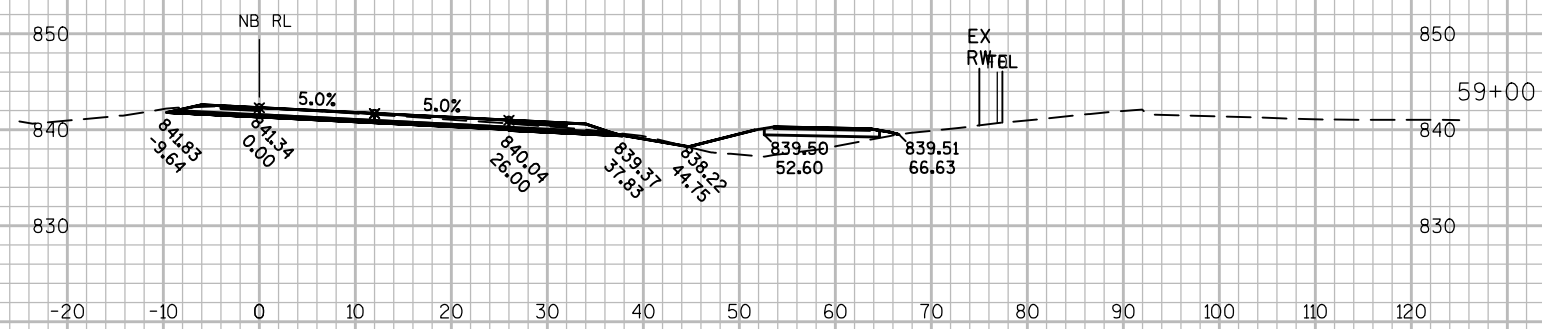
HWY: STH 37

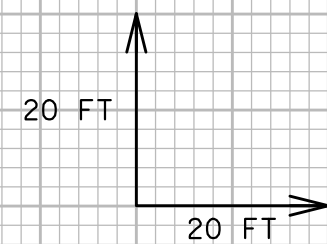
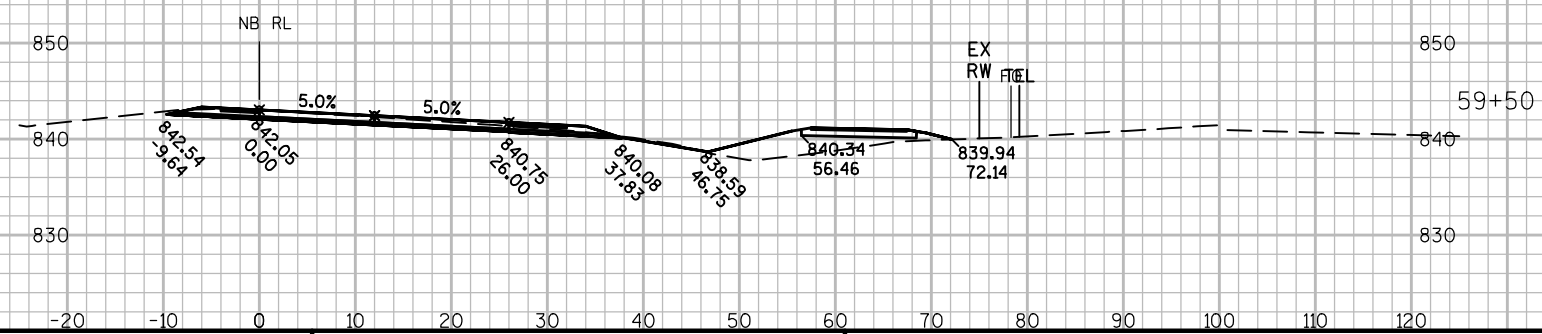
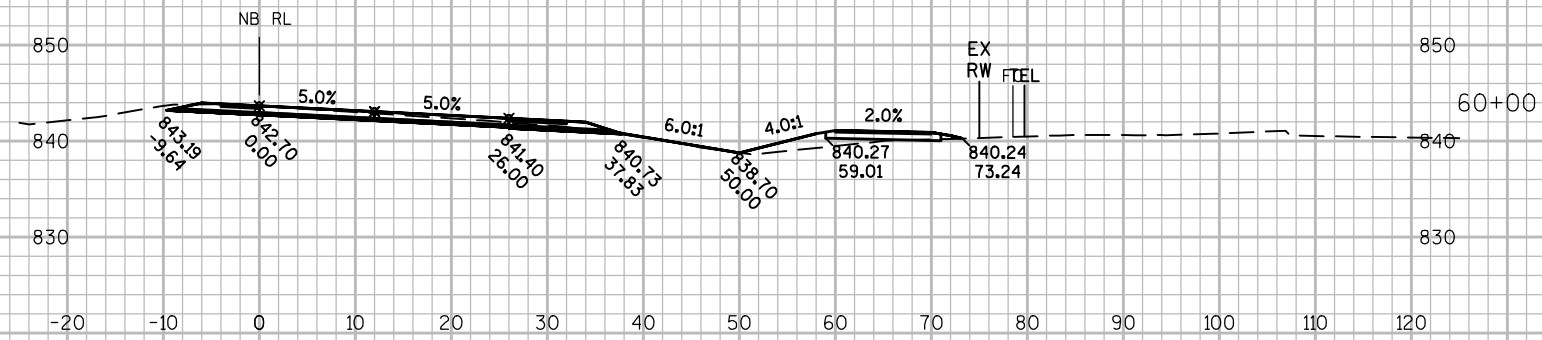
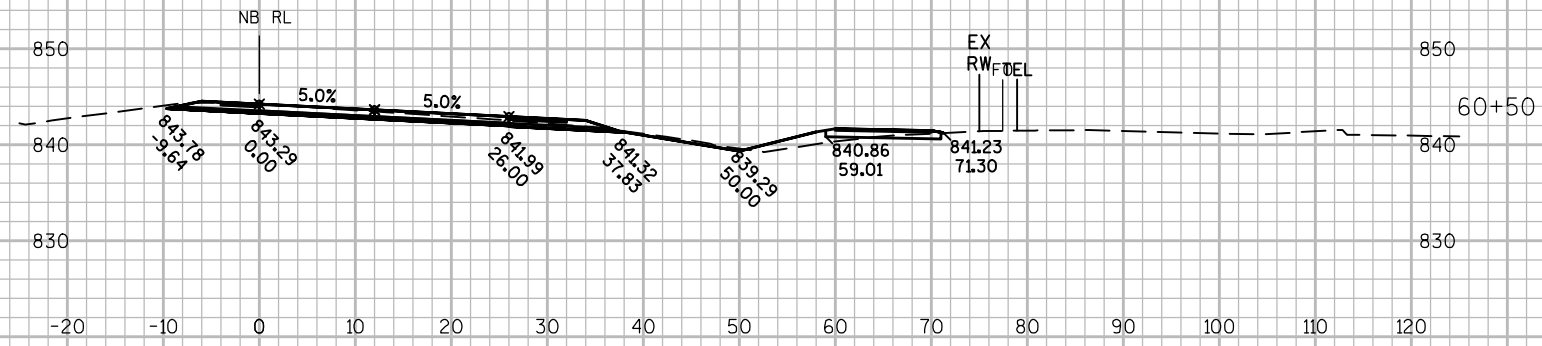
COUNTY: EAU CLAIRE

CROSS SECTIONS: NB ROADWAY

SHEET

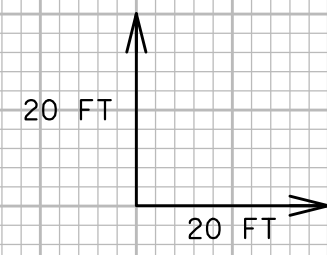
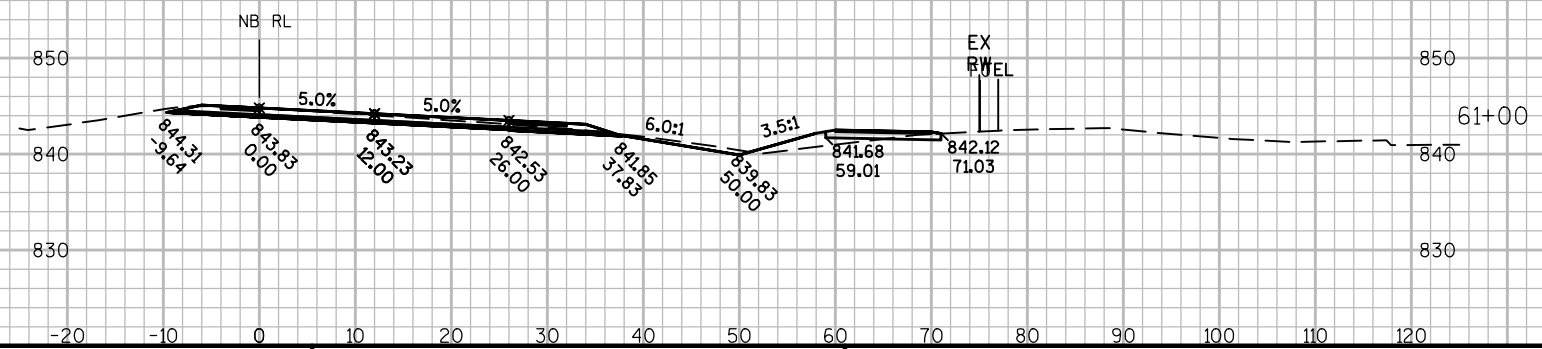
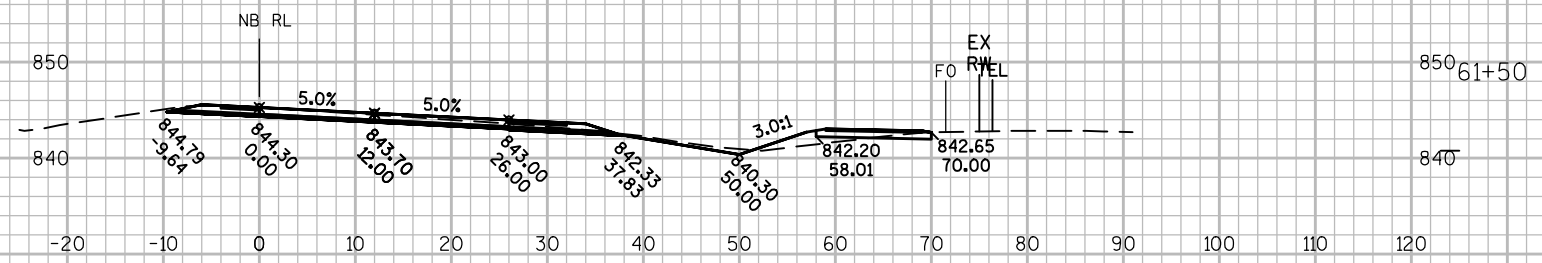
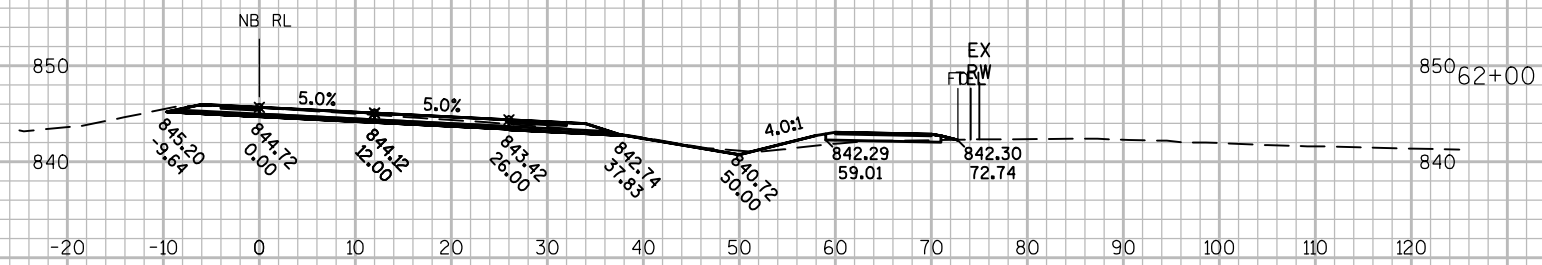
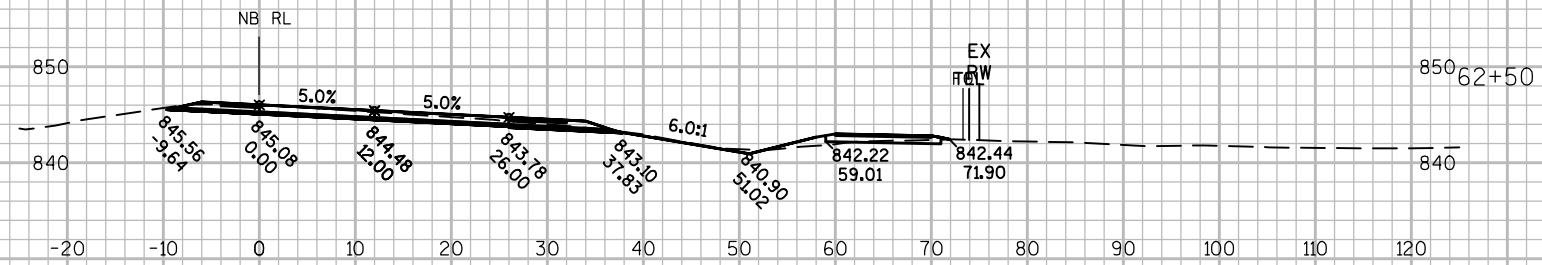
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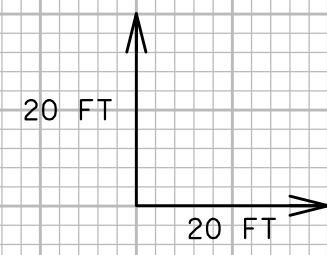
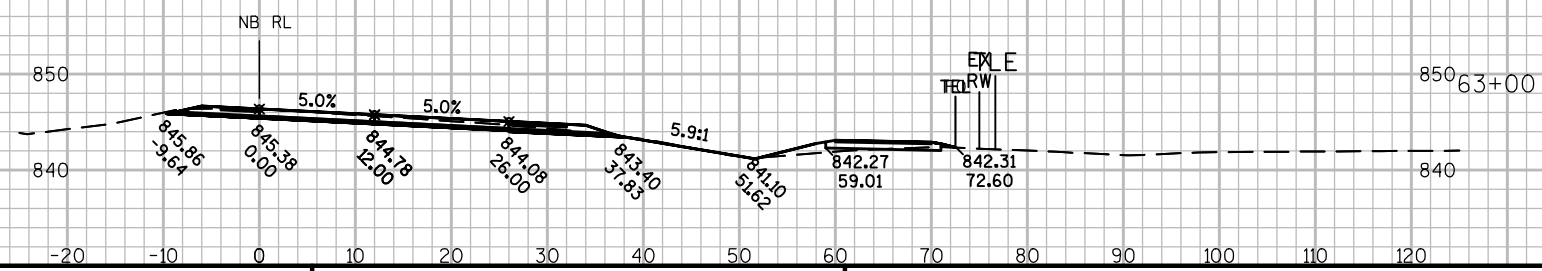
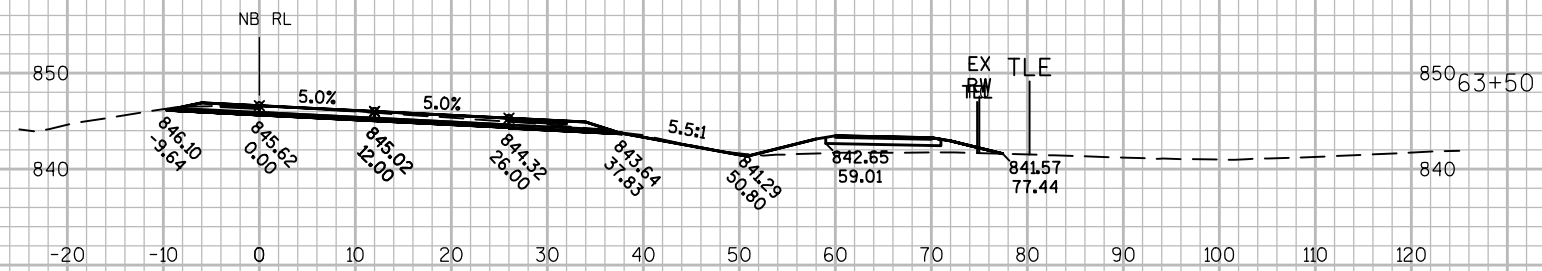
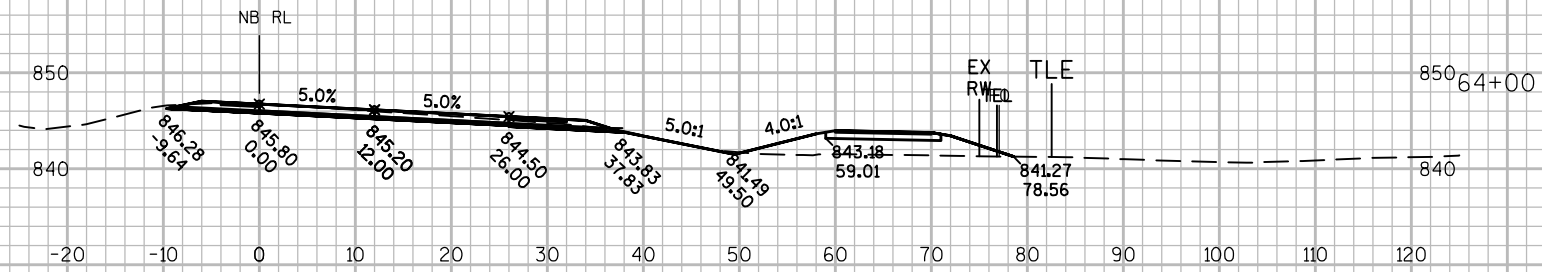
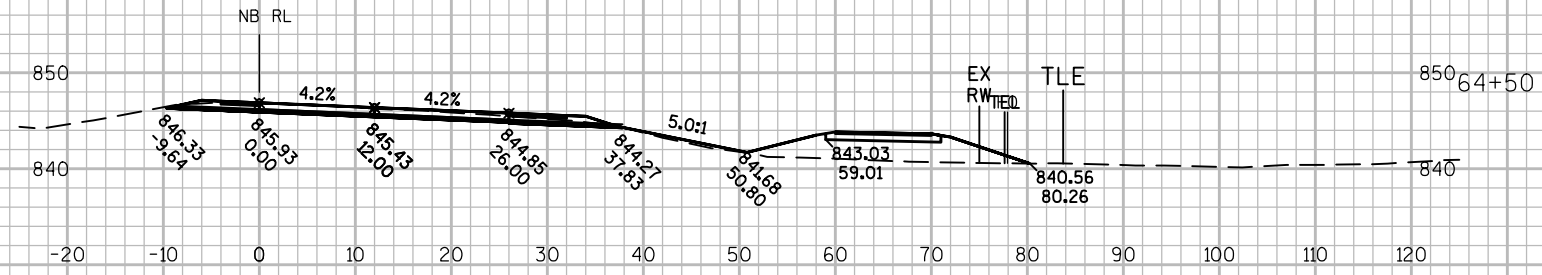
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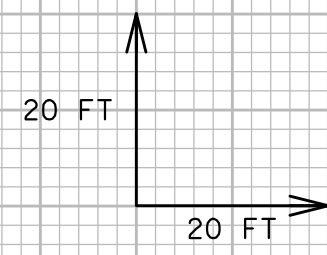
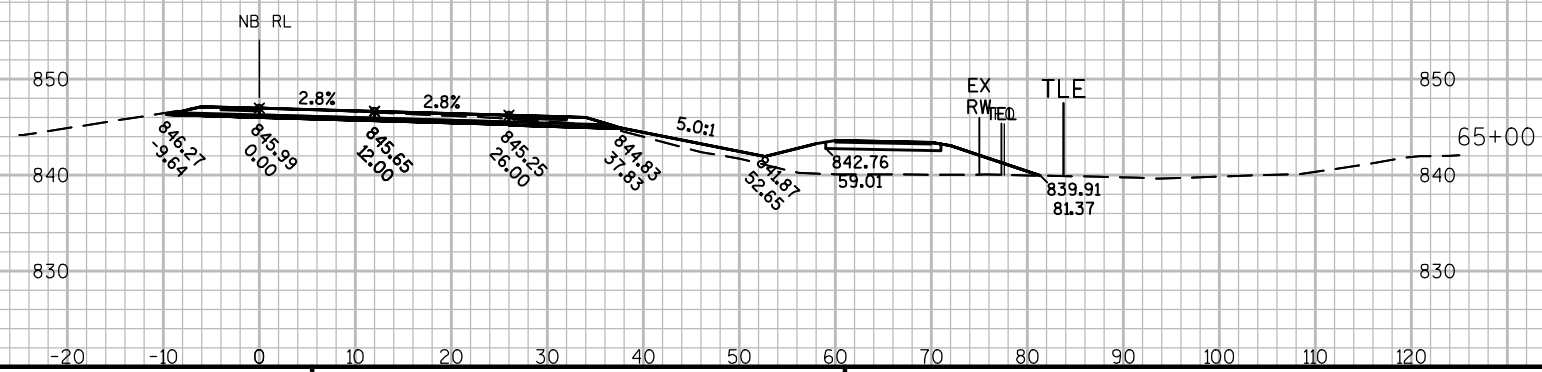
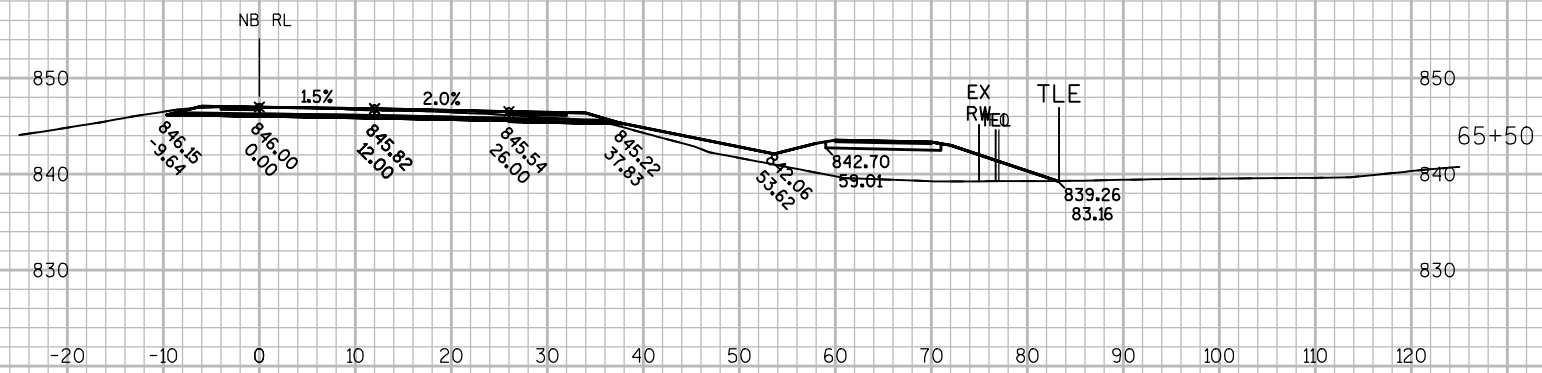
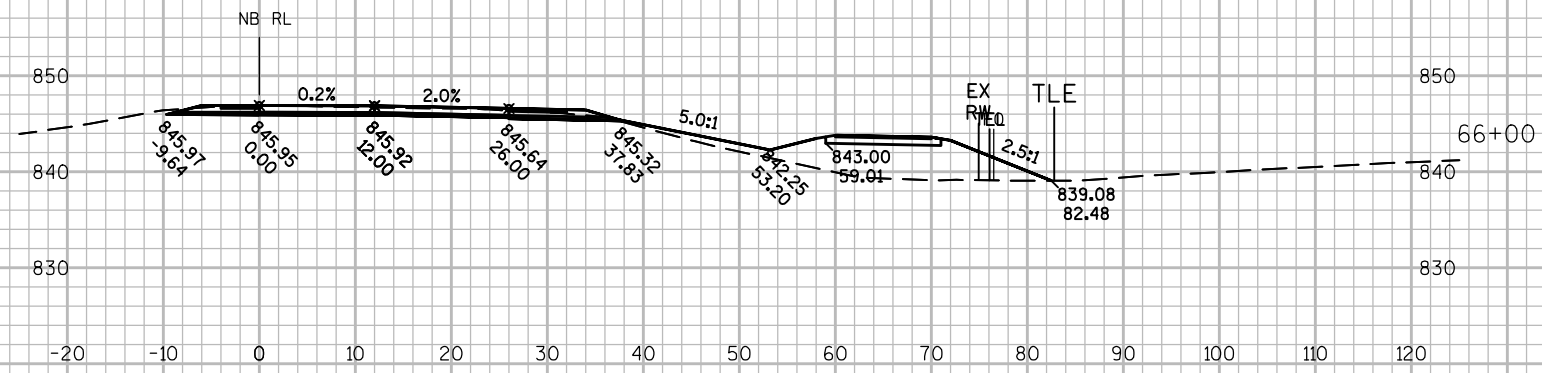
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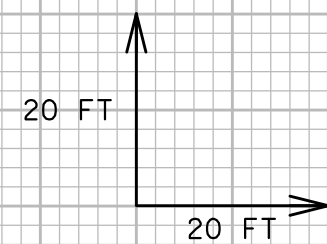
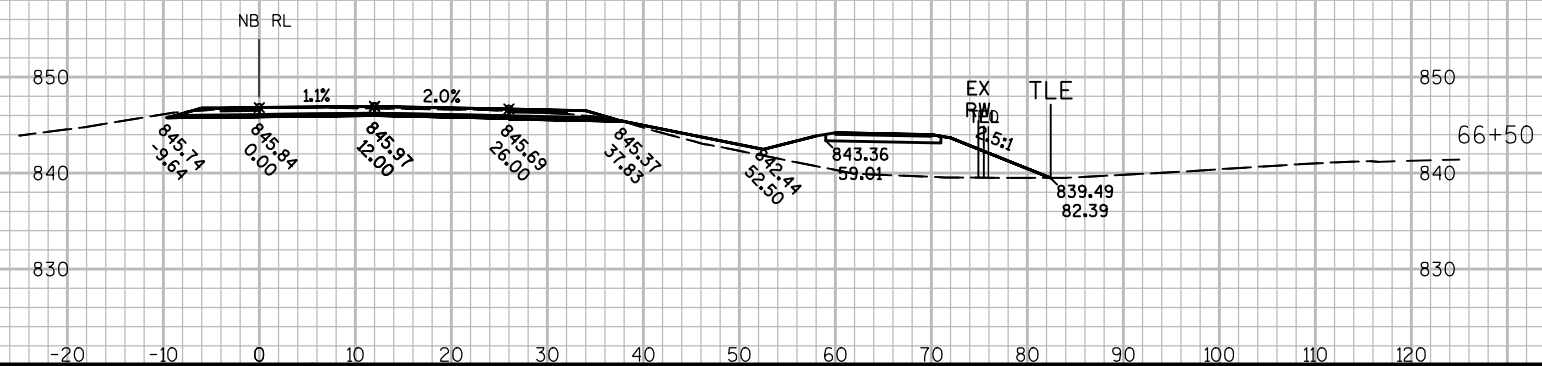
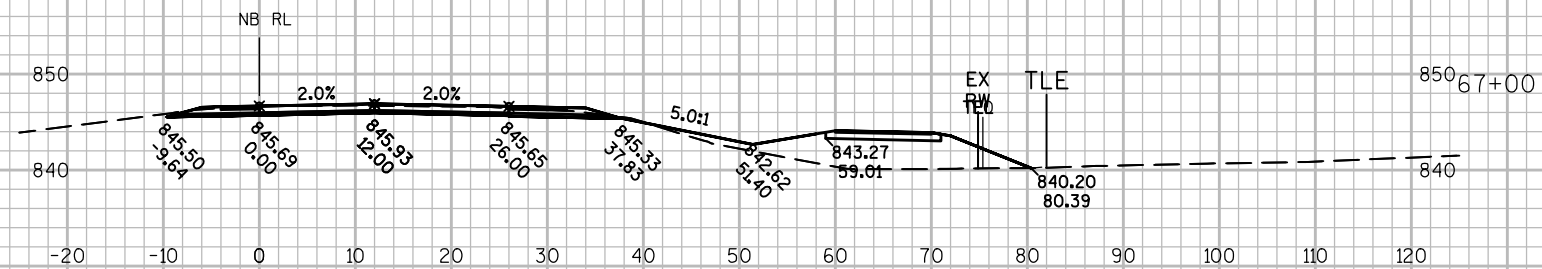
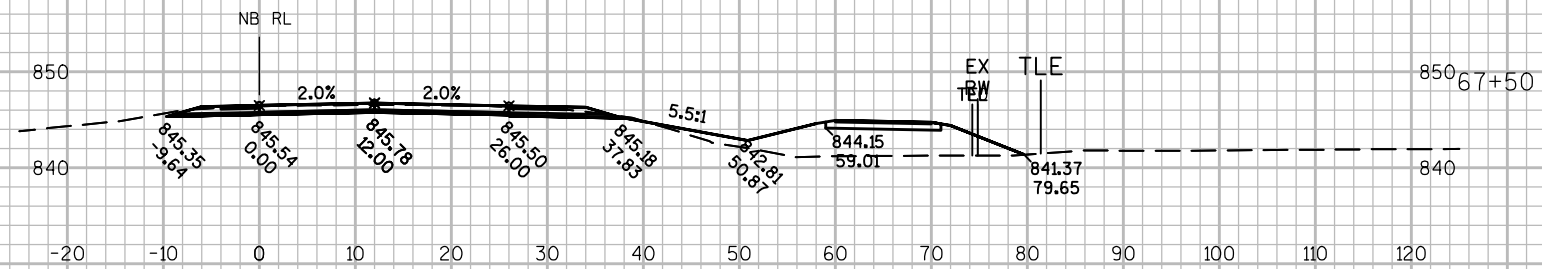
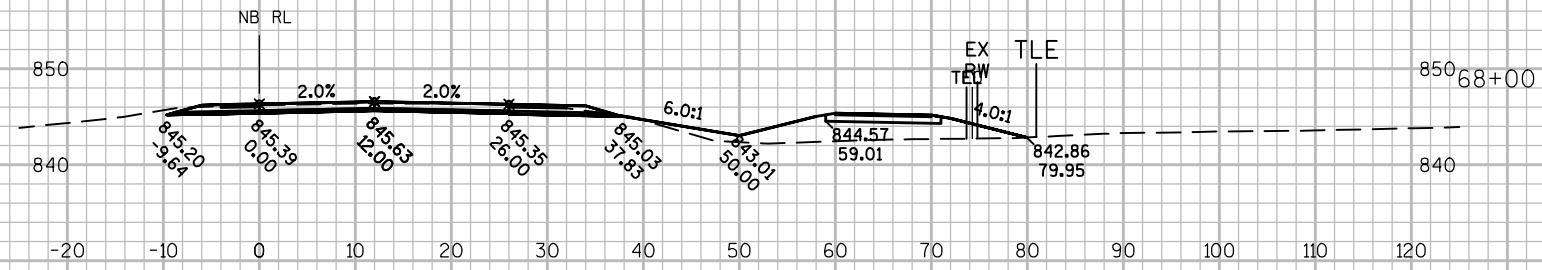


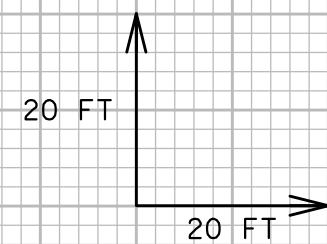
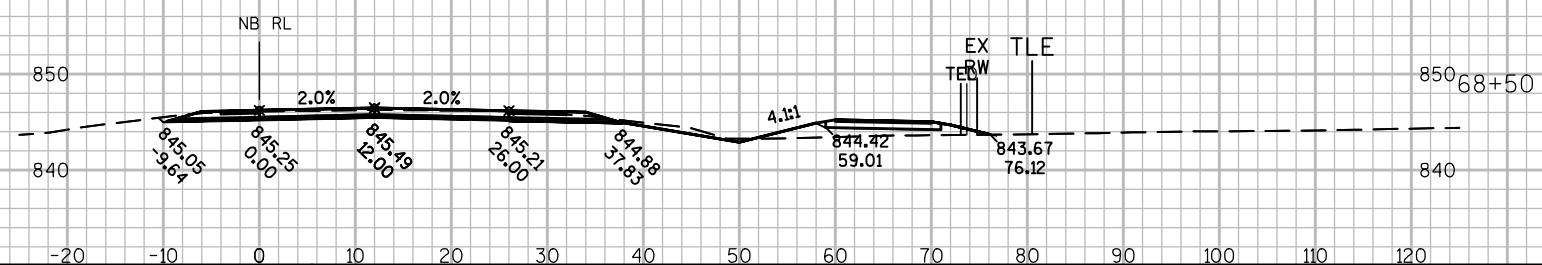
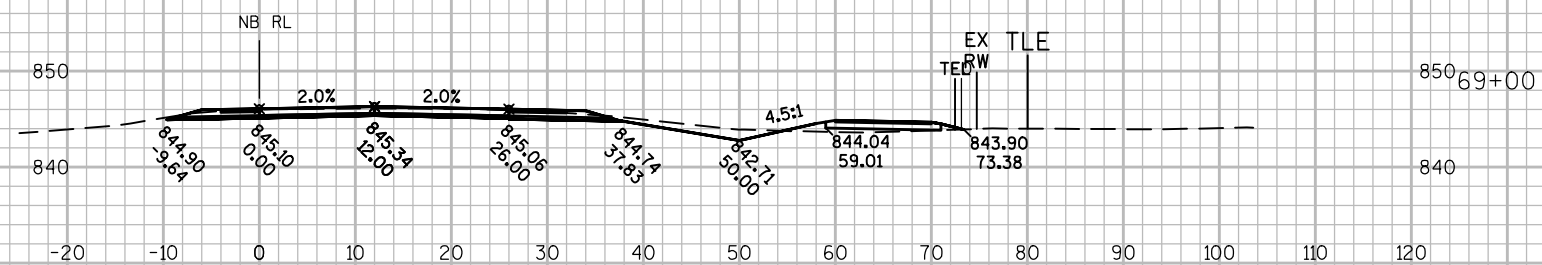
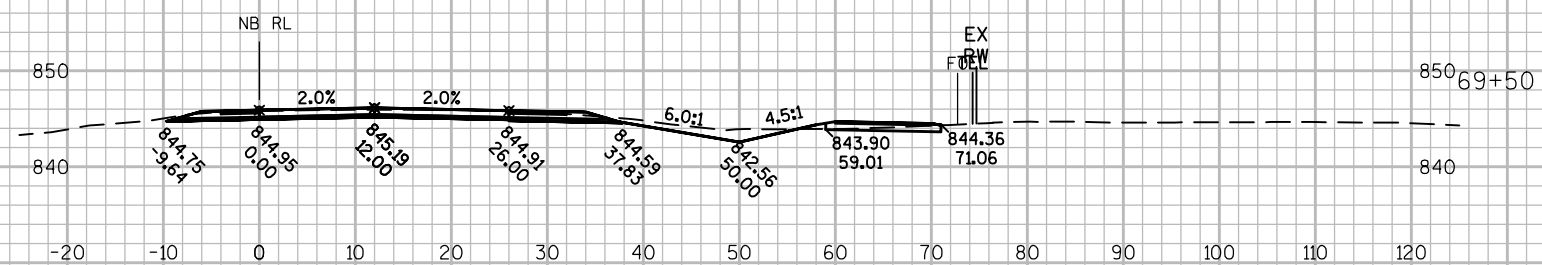
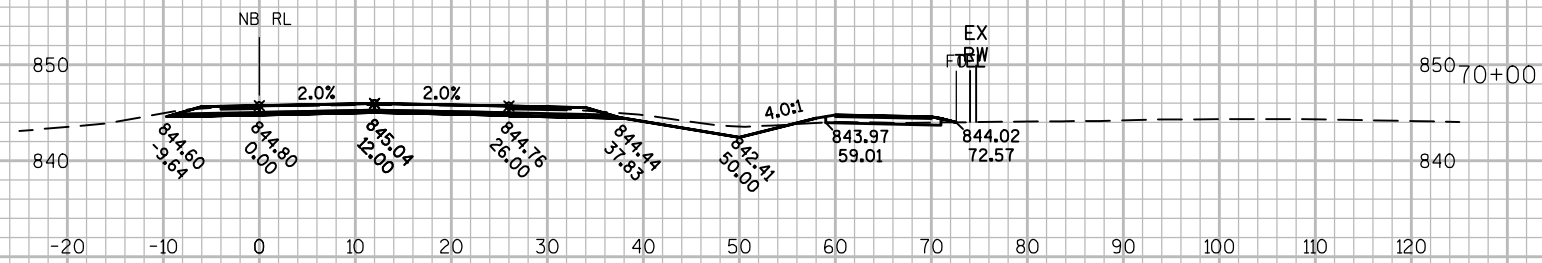
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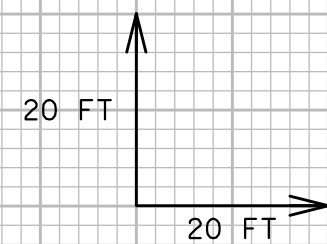
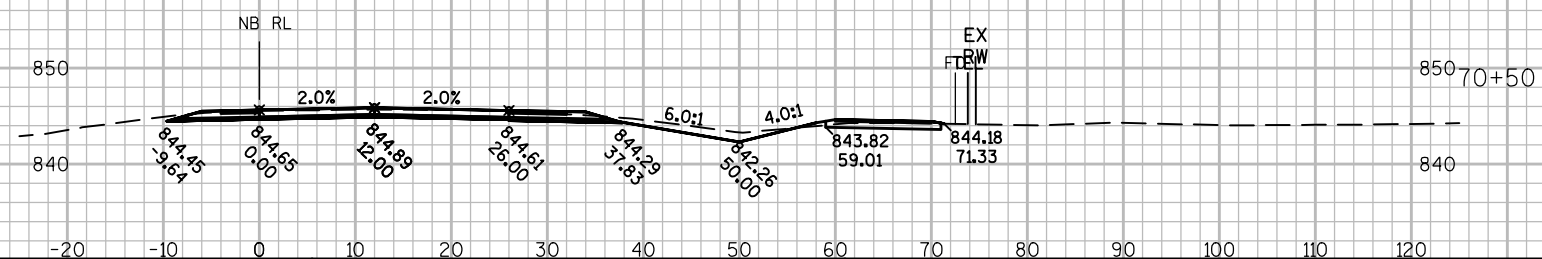
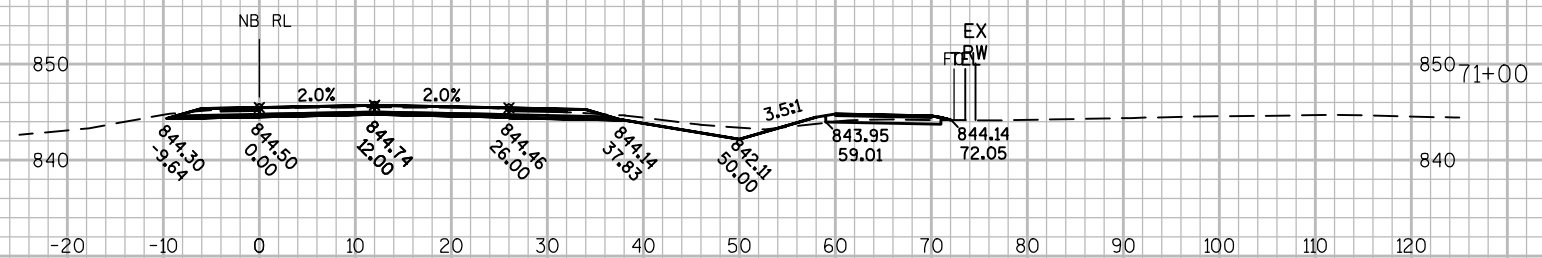
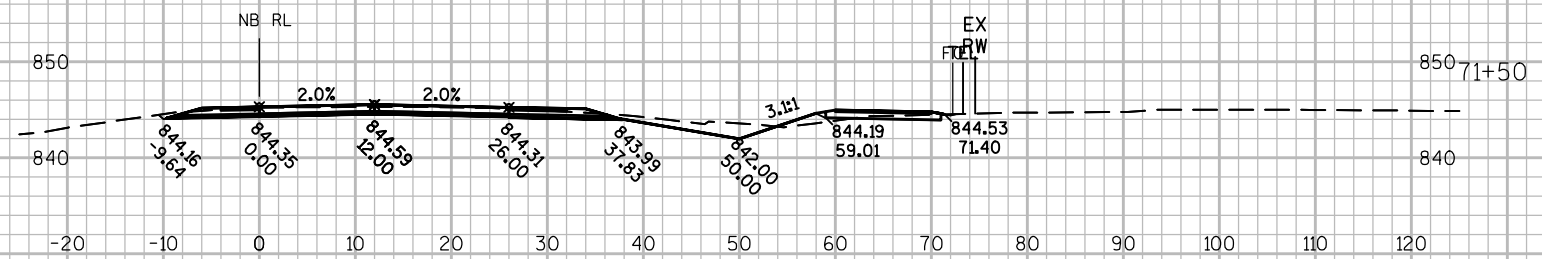
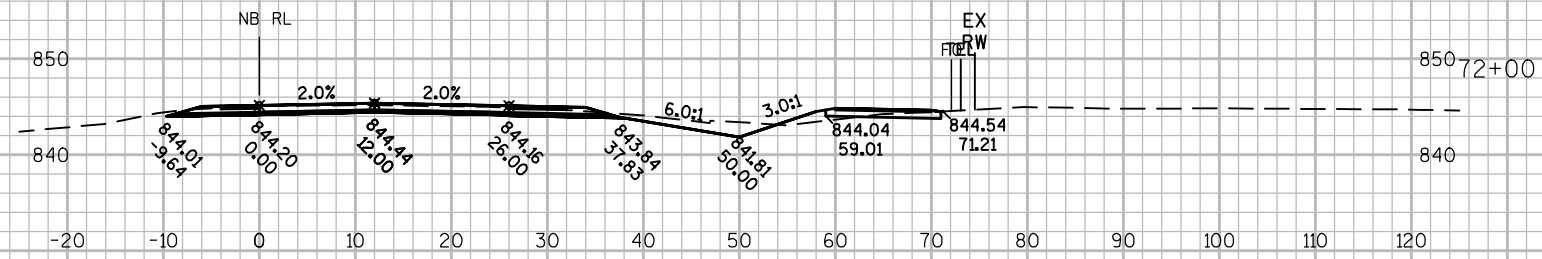
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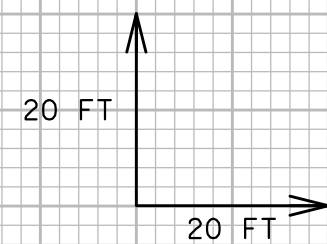
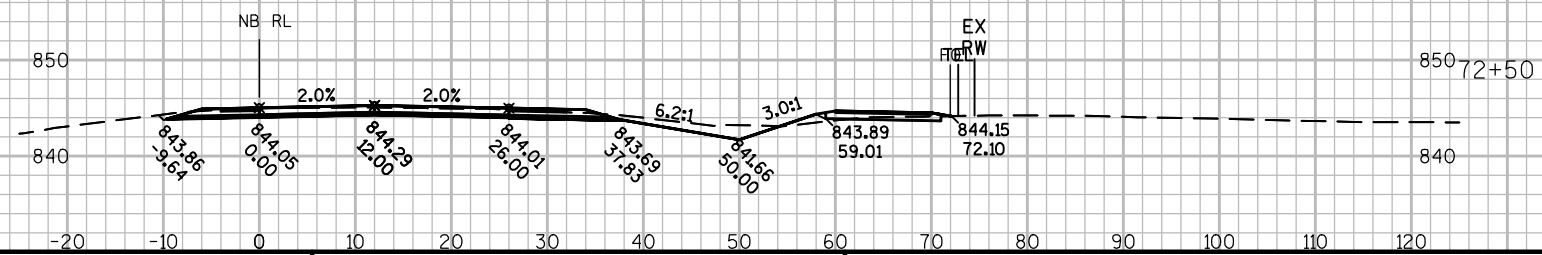
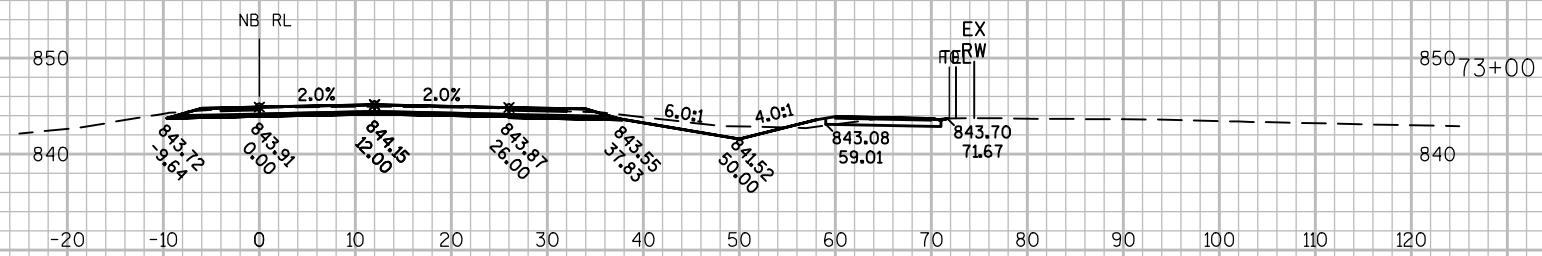
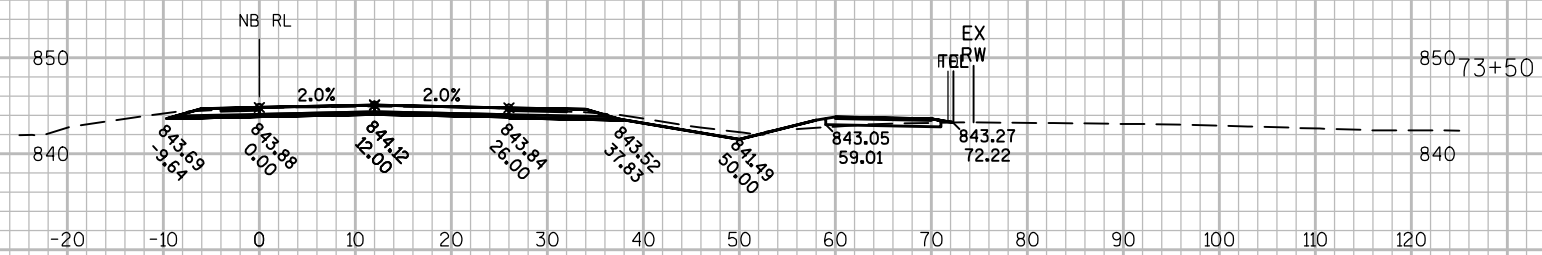
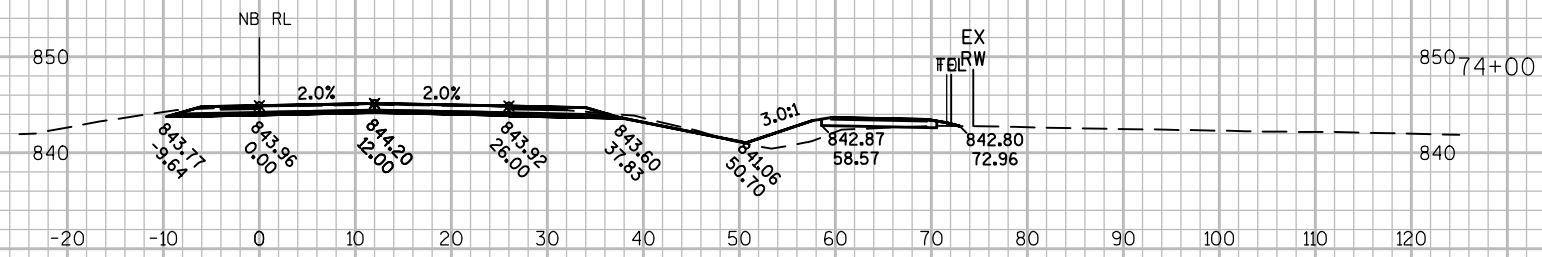


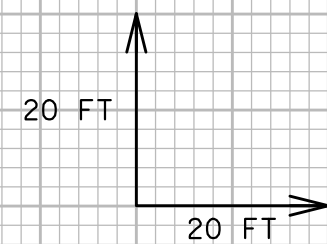
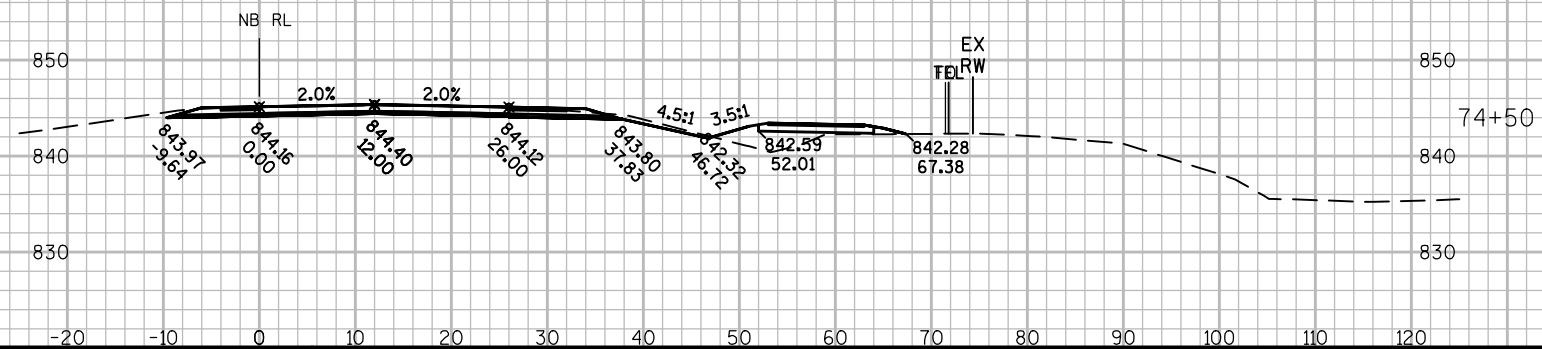
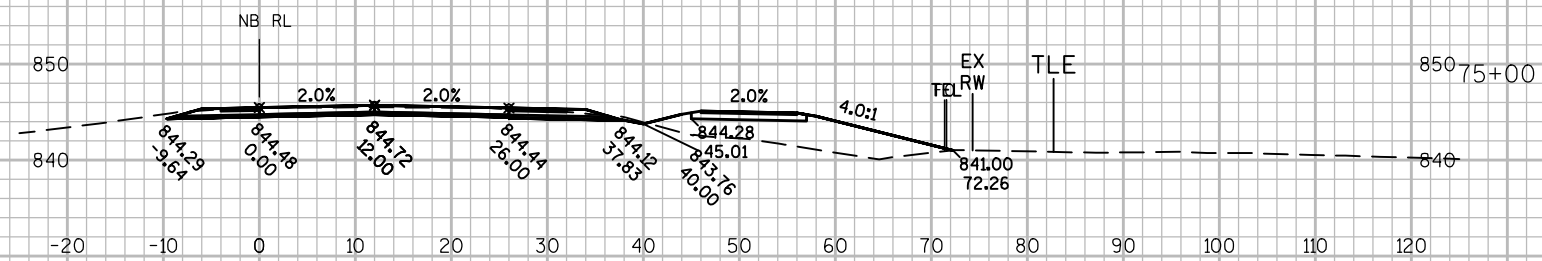
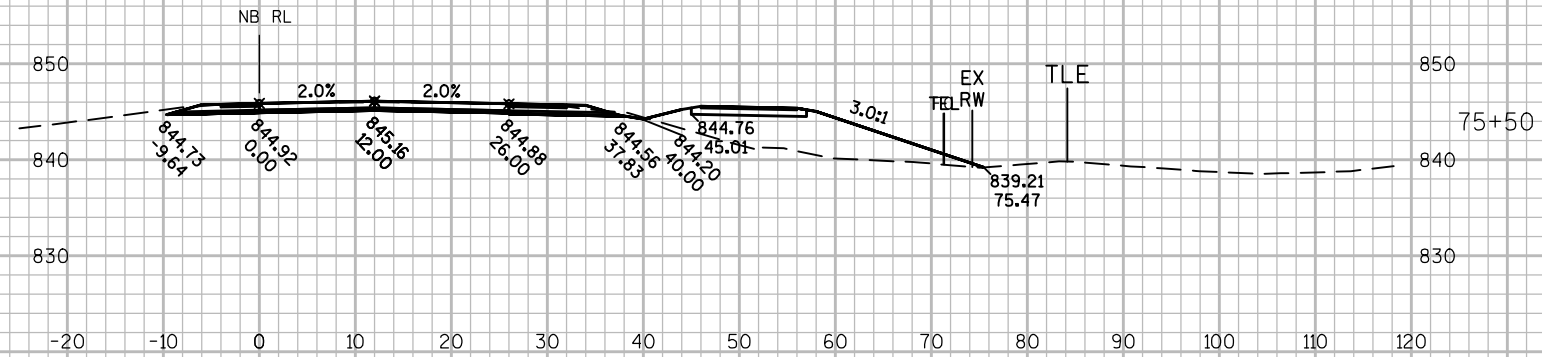


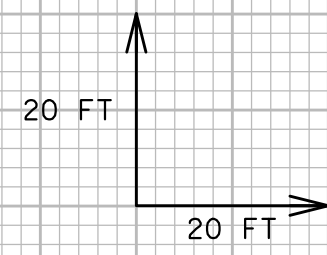
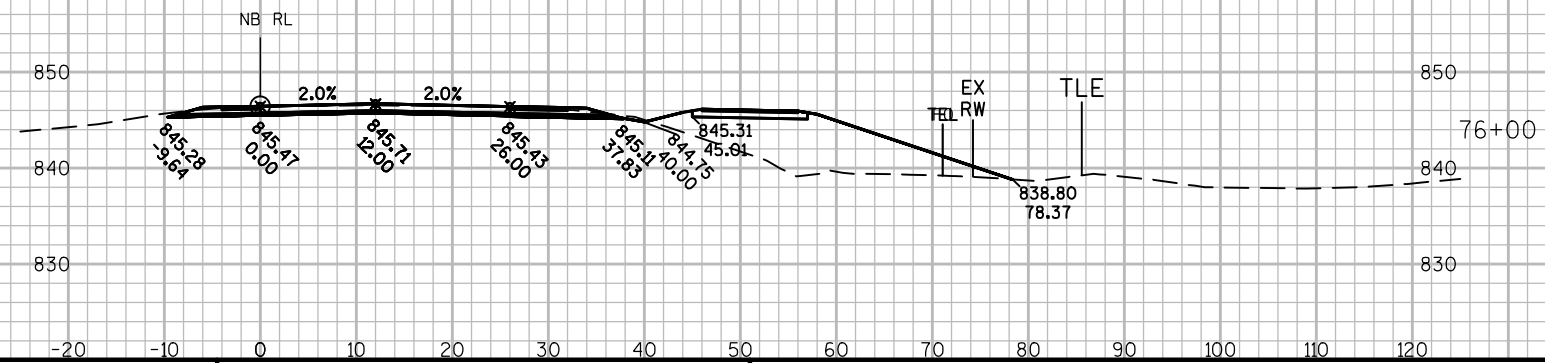
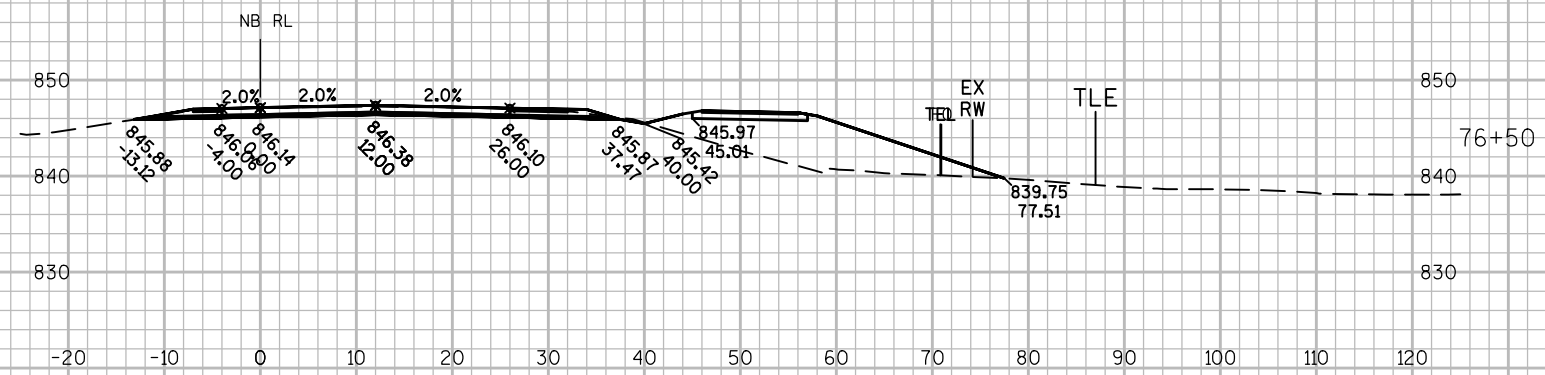
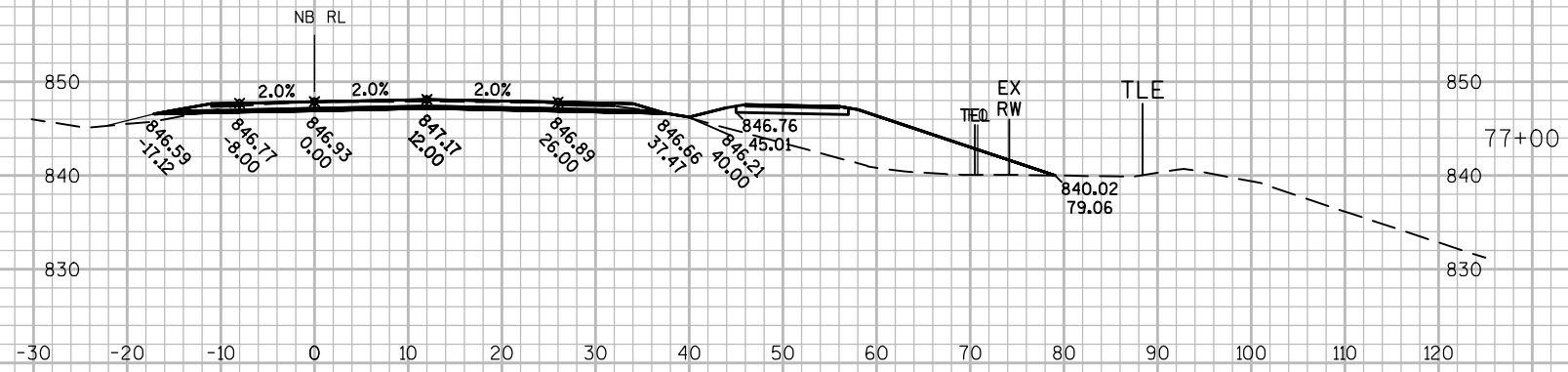






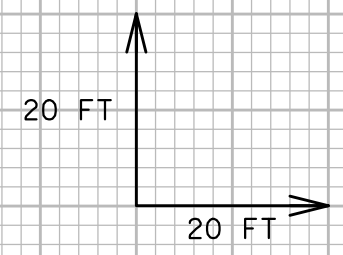
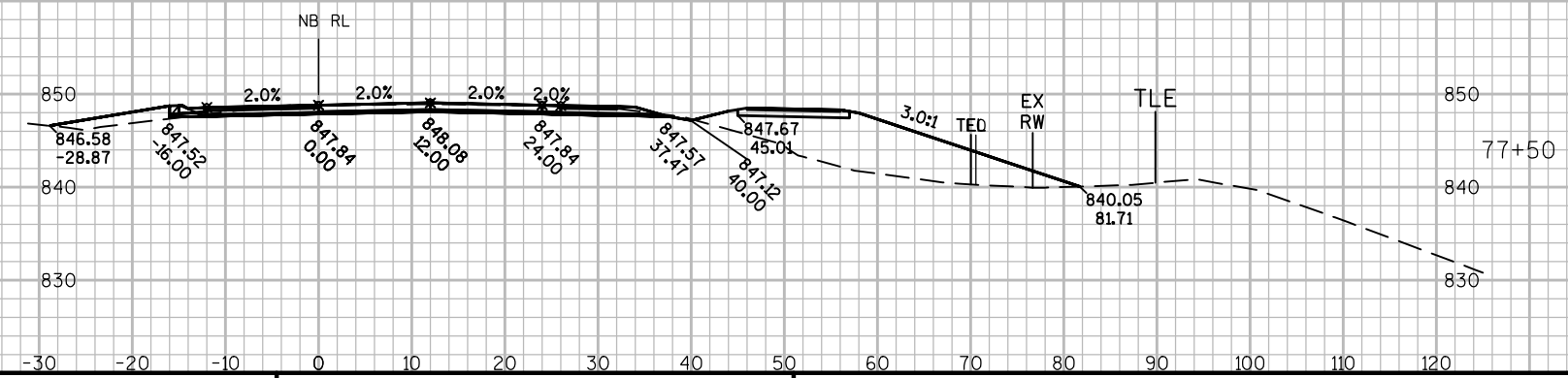
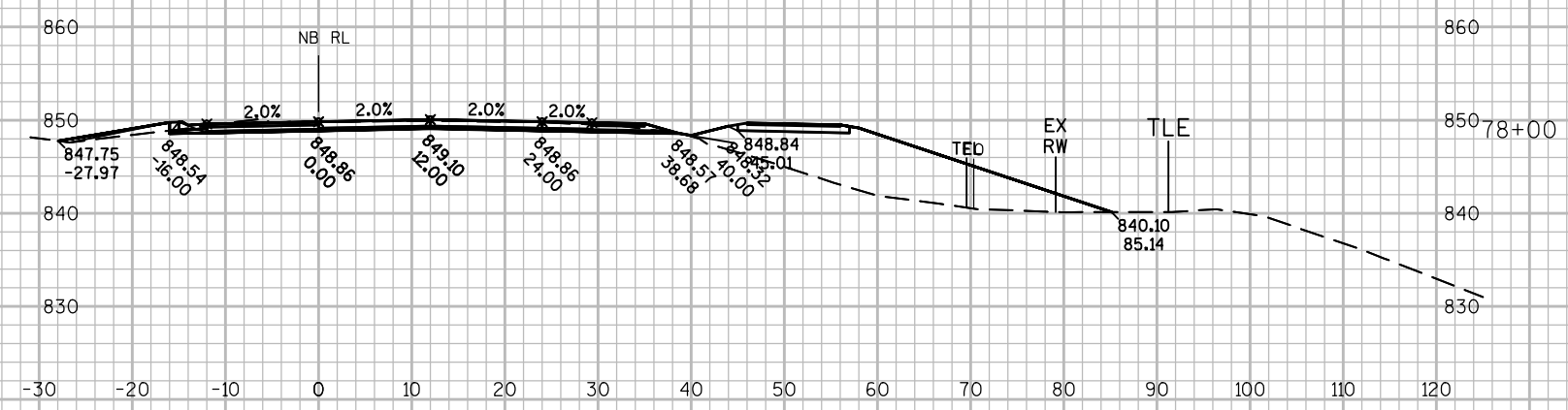
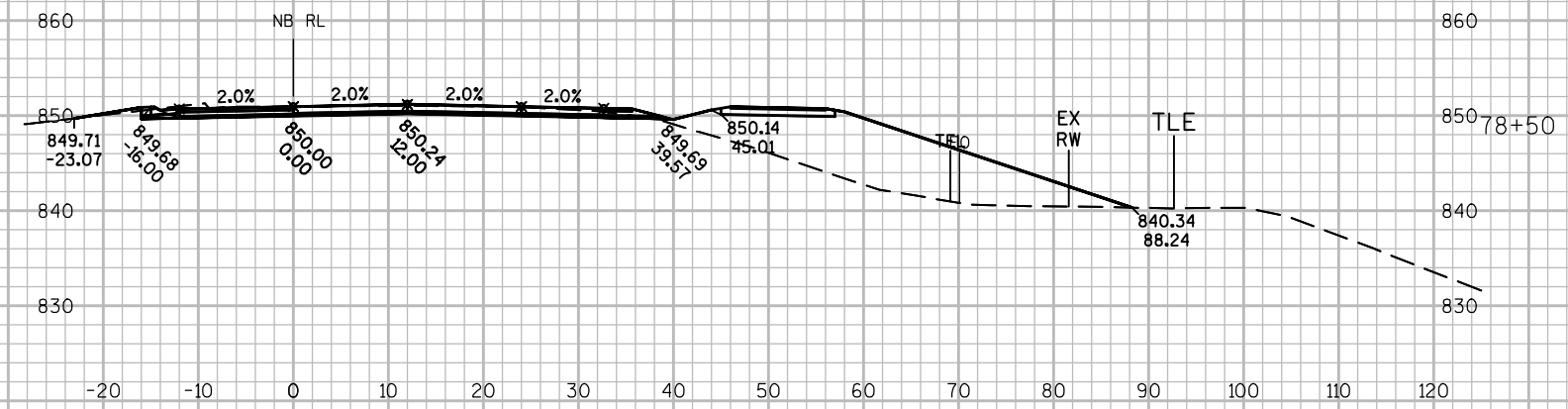


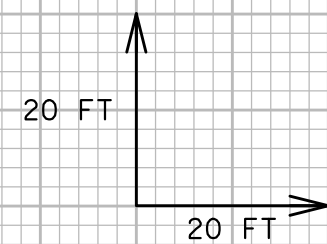
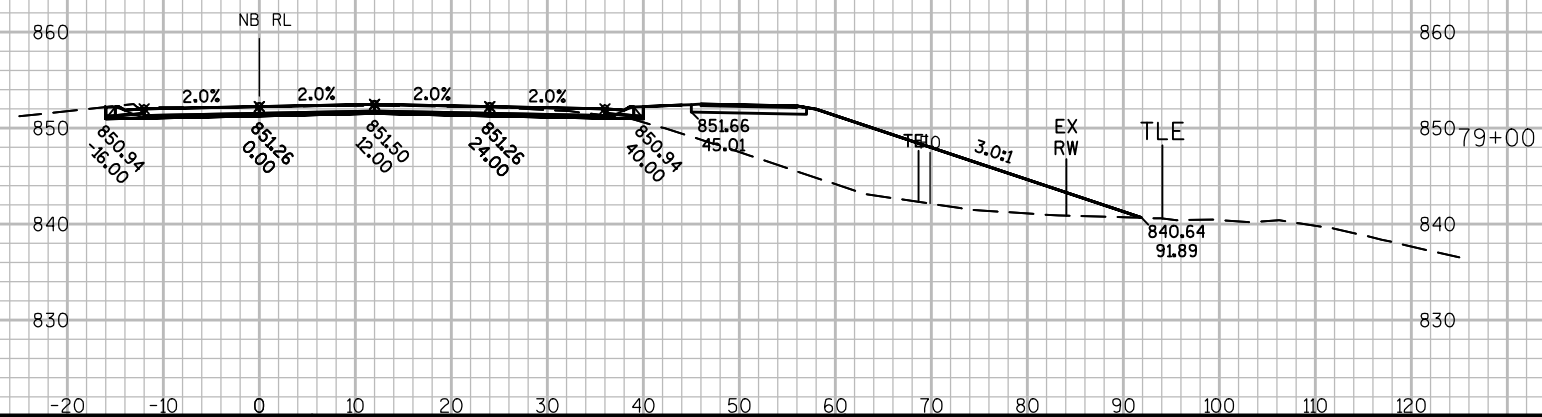
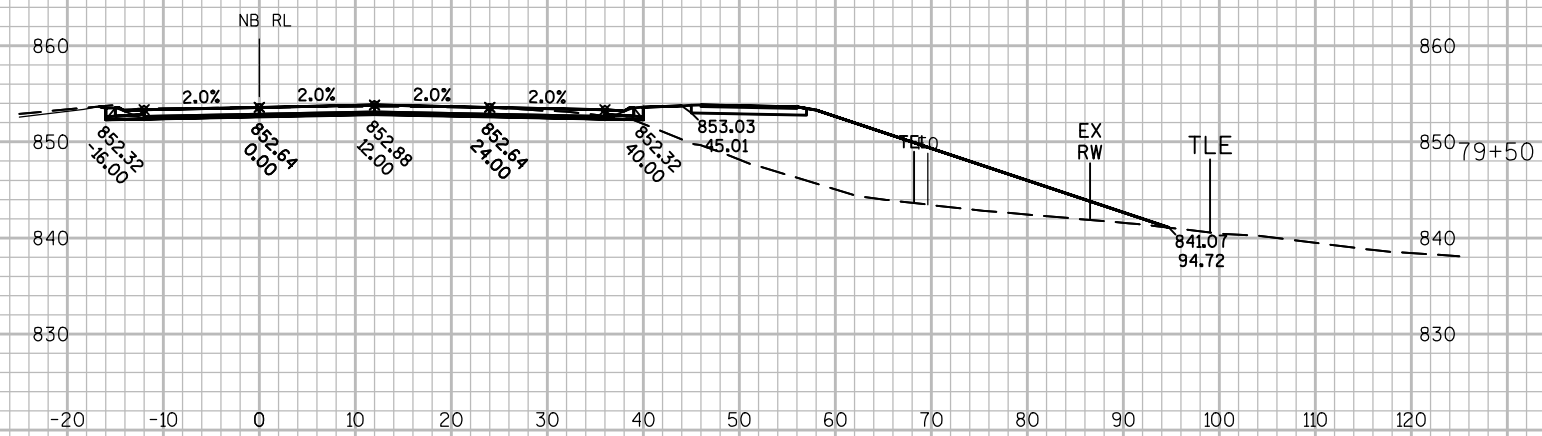
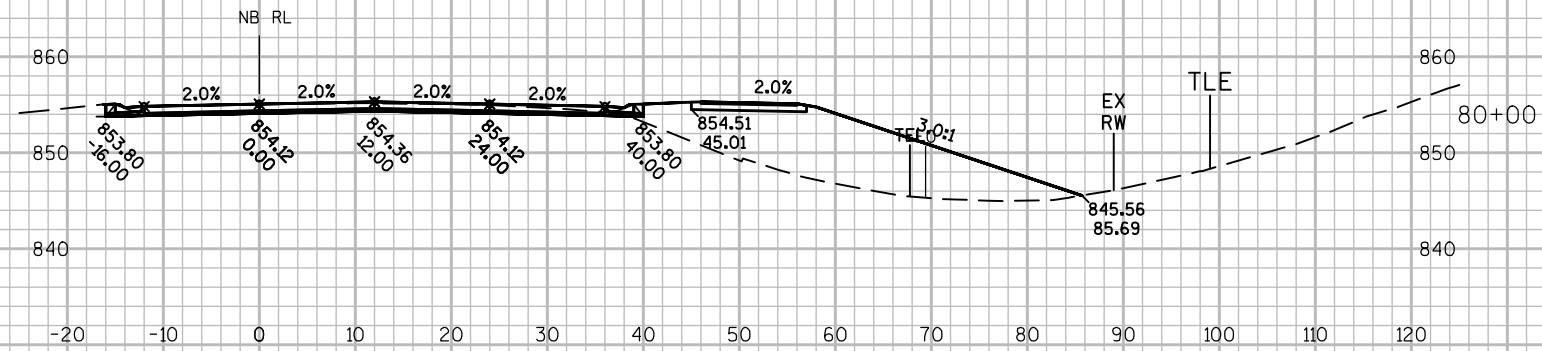


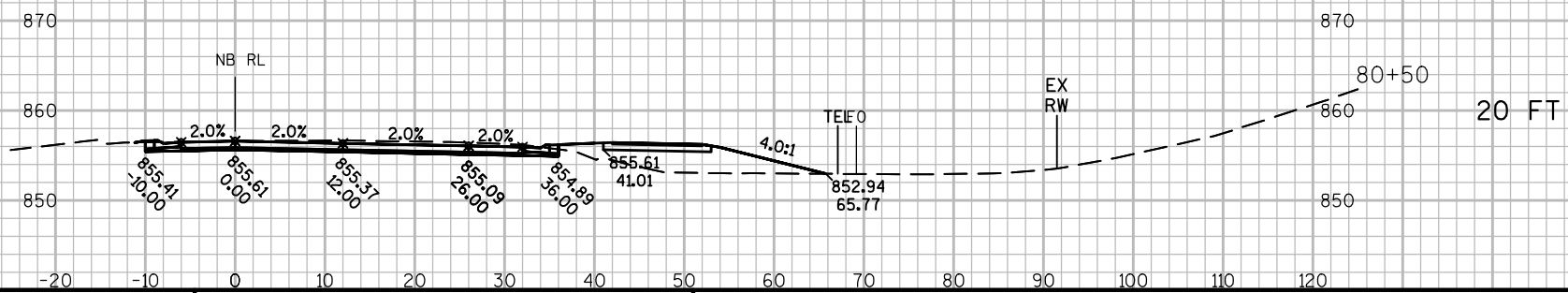
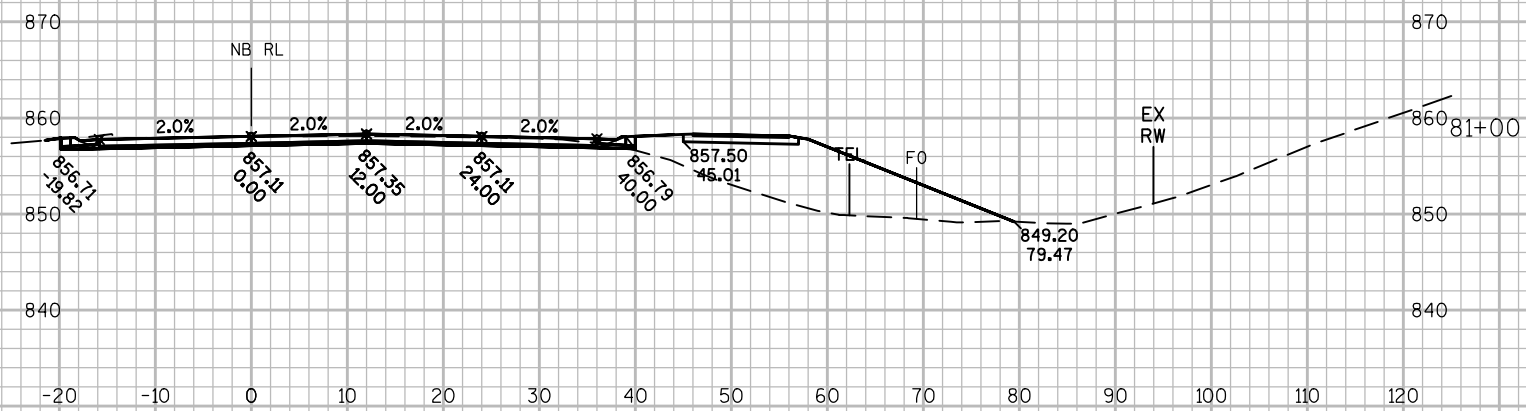
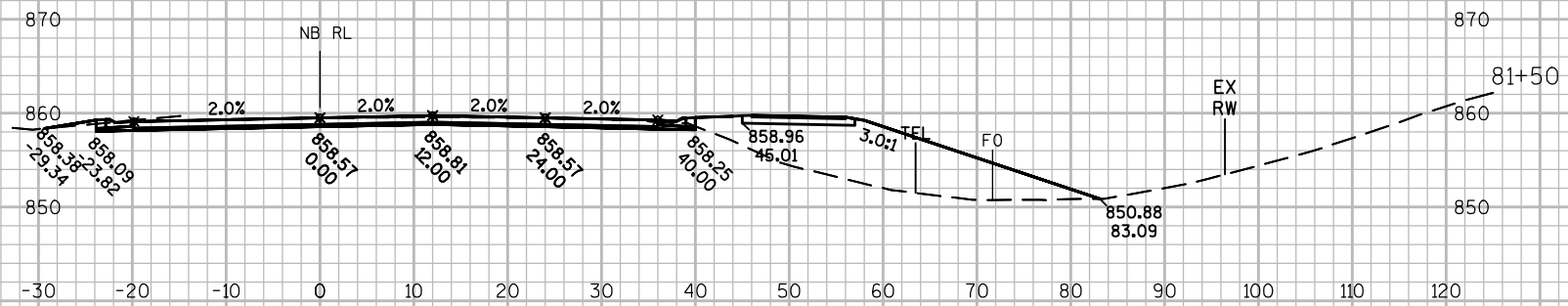


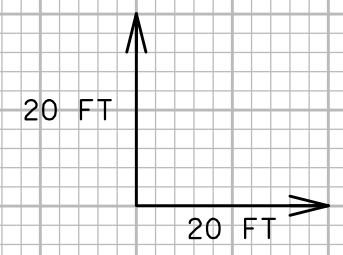
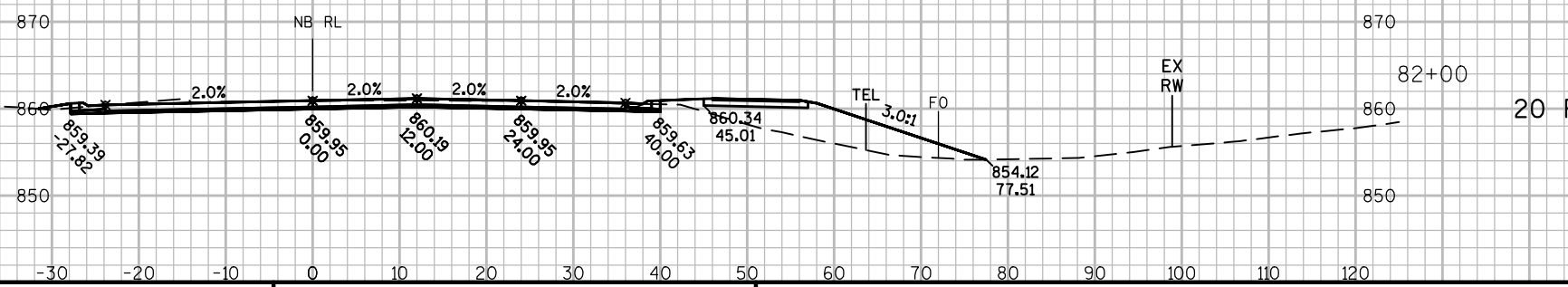
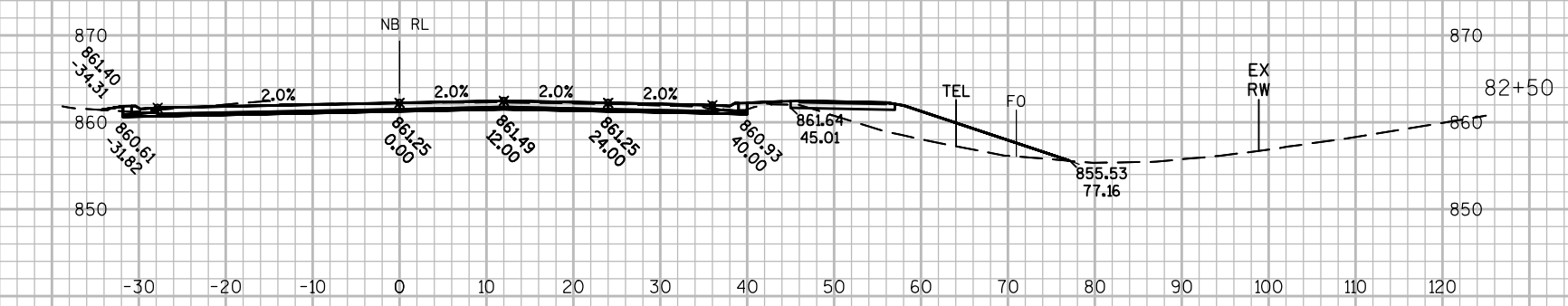
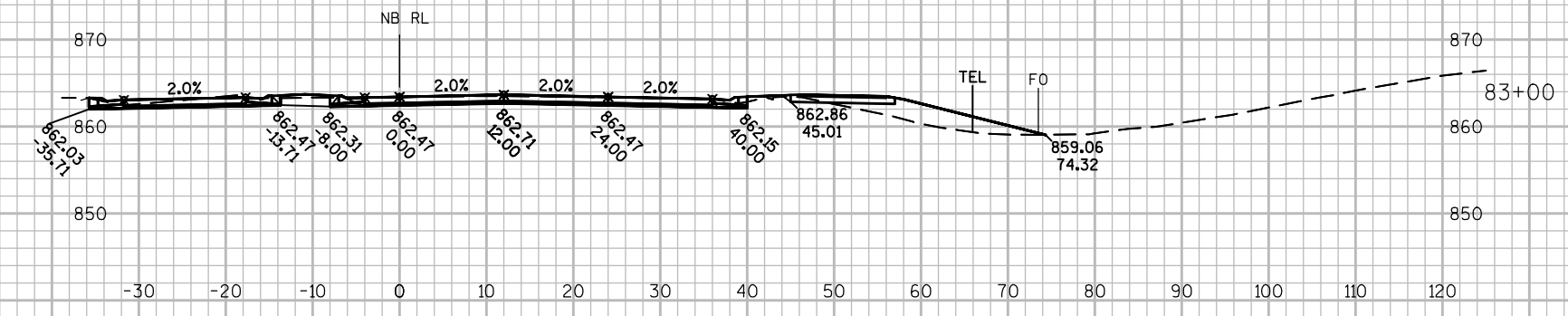
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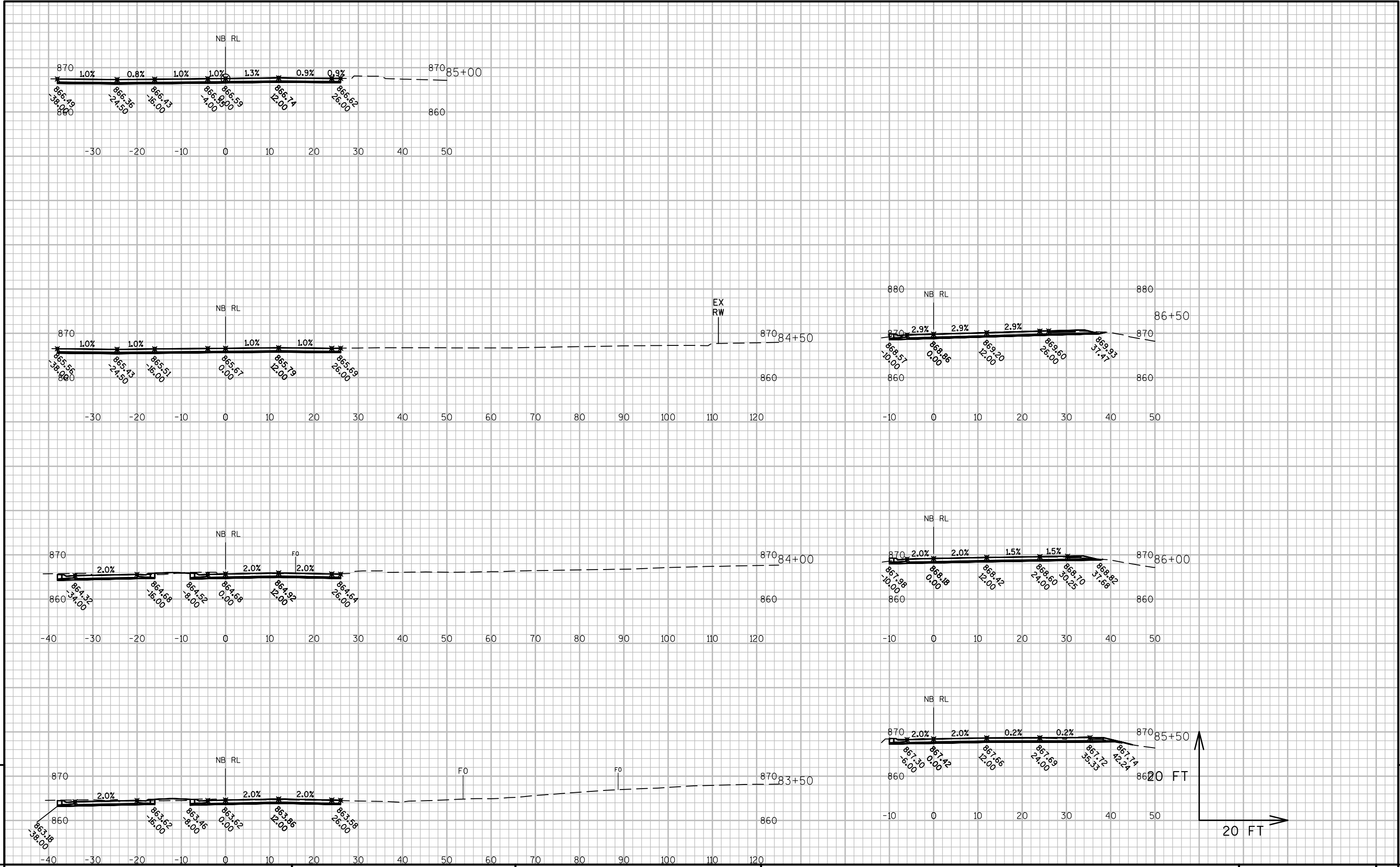




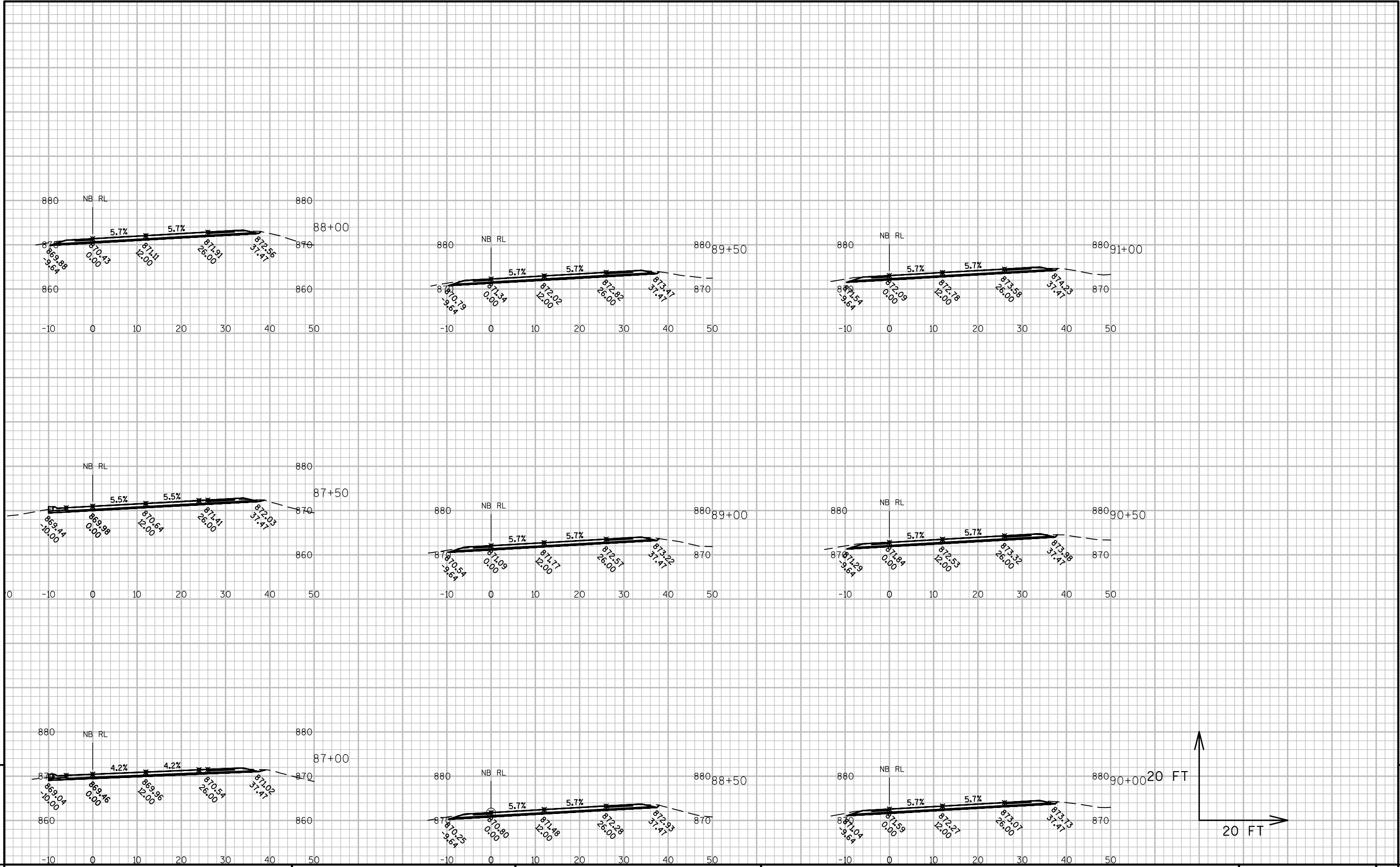


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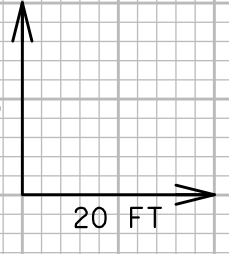
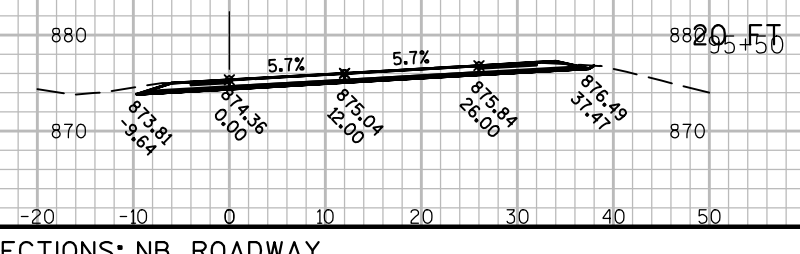
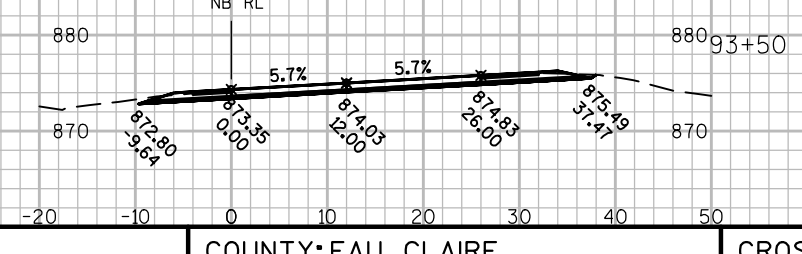
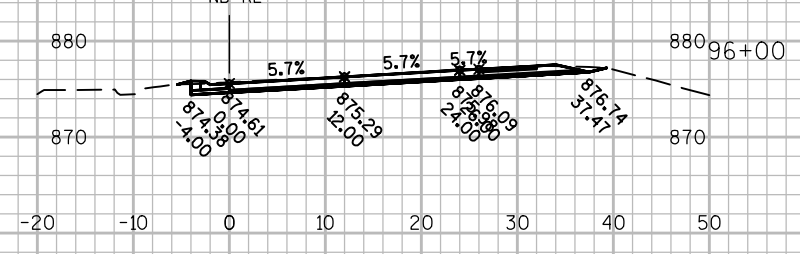
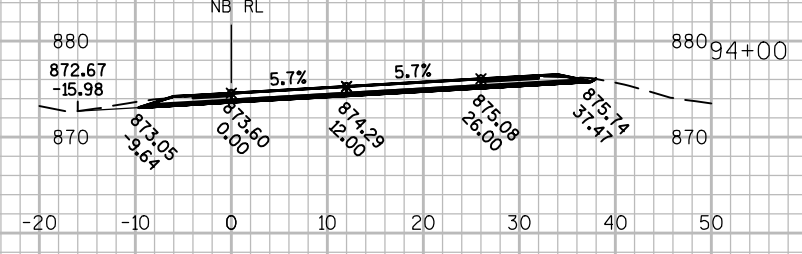
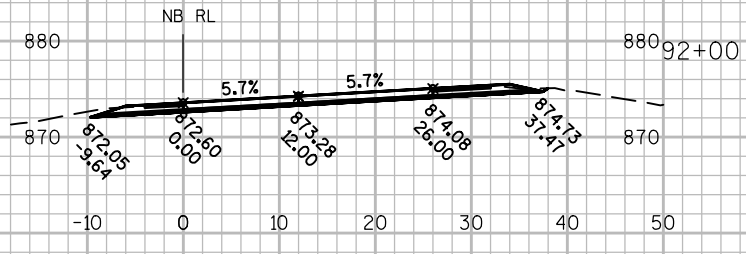
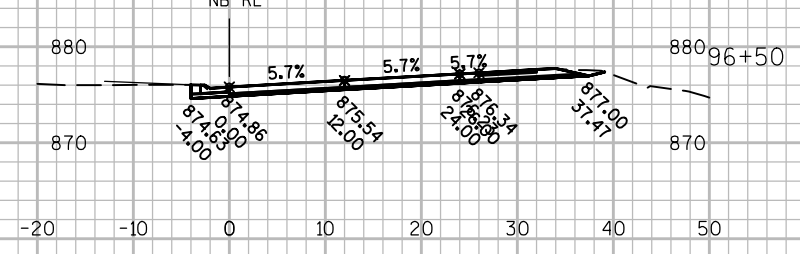
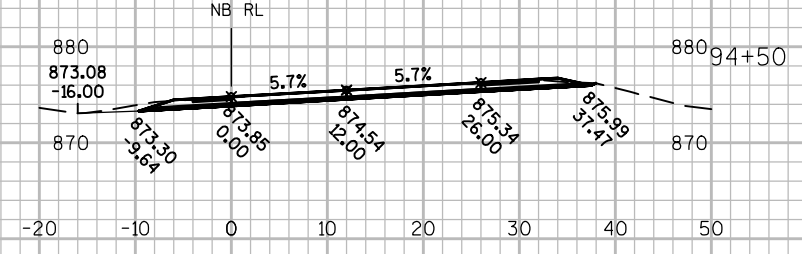
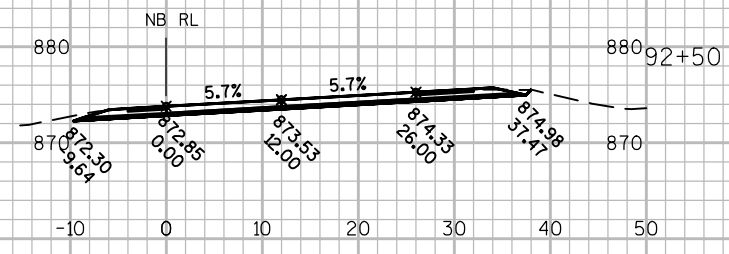
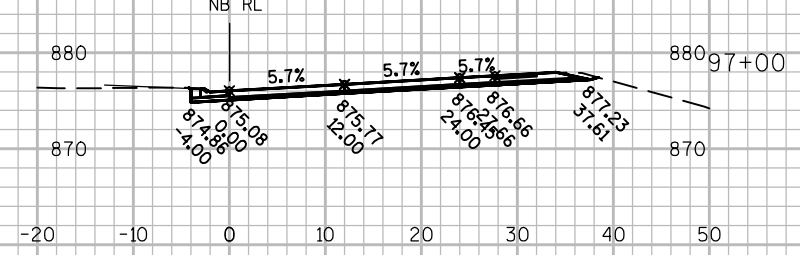
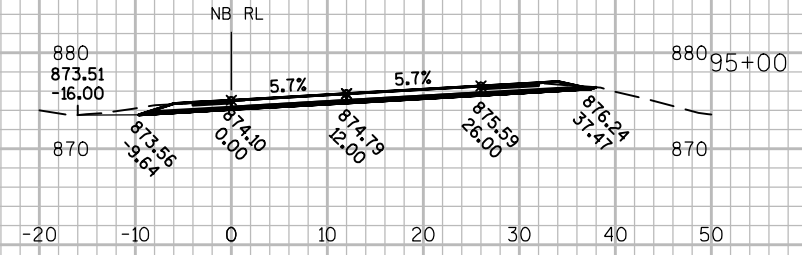
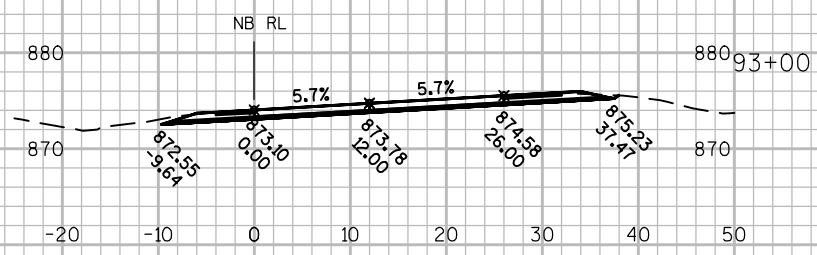
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: NB ROADWAY SHEET E



PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: NB ROADWAY SHEET E

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PROJECT NO: 7110-05-72

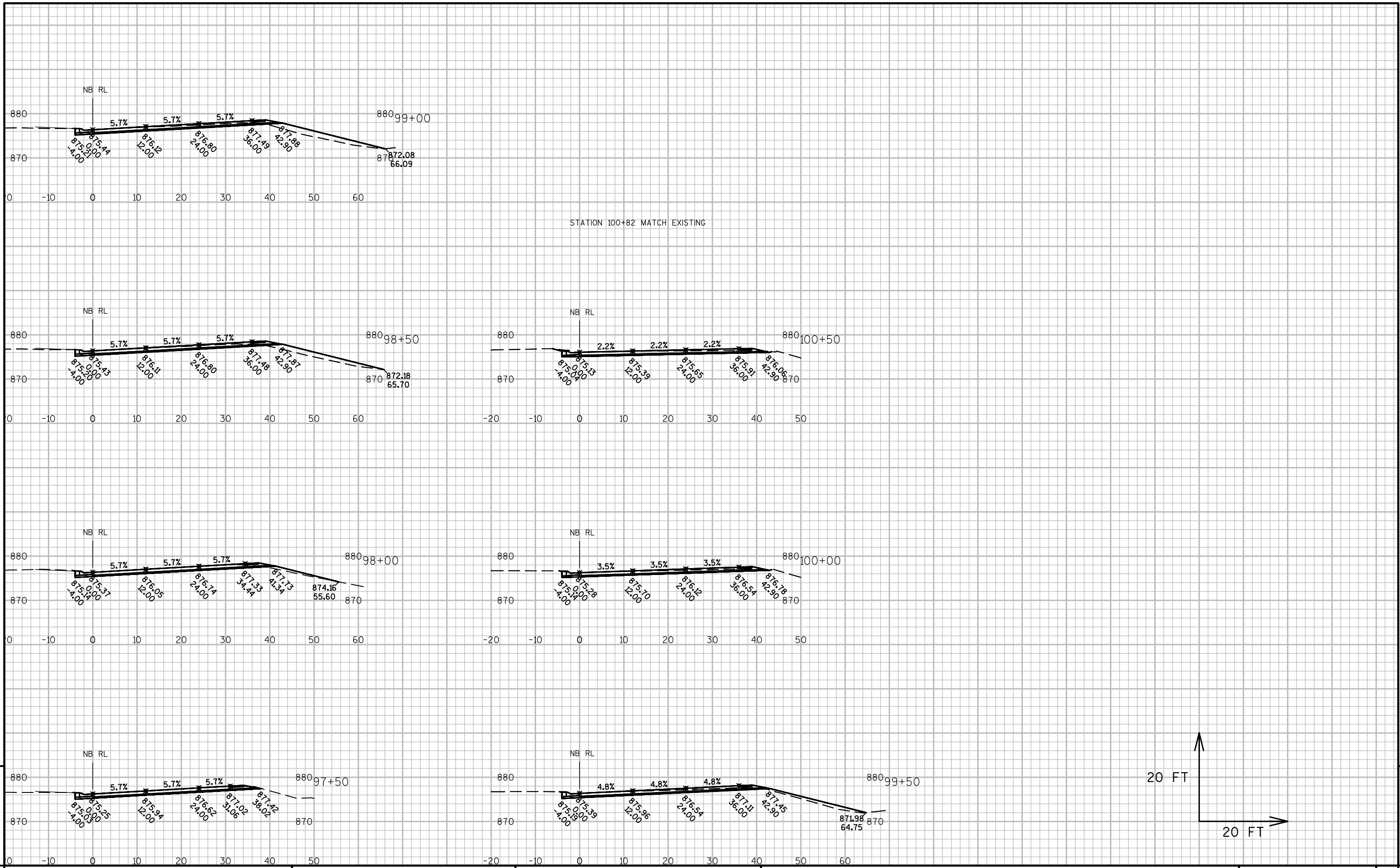
HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: NB ROADWAY

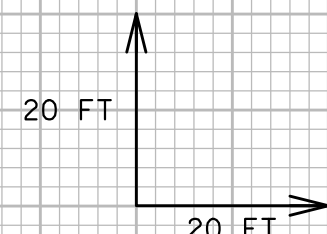
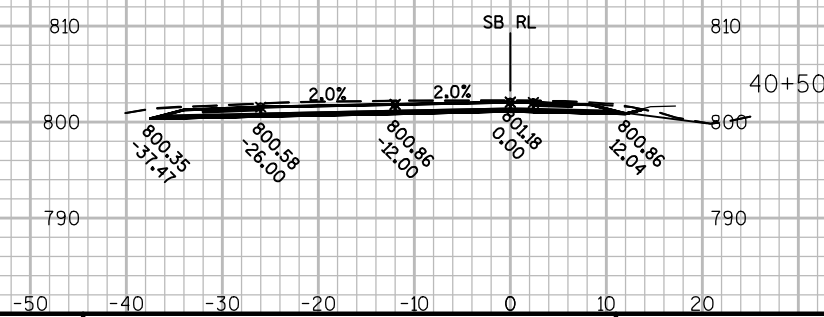
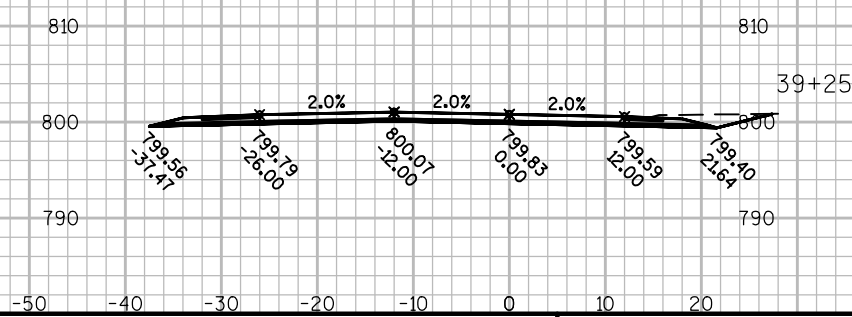
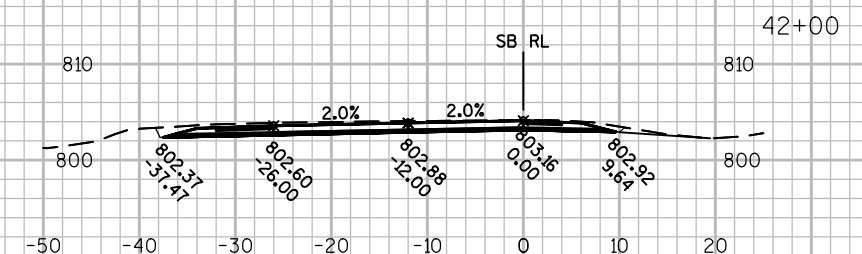
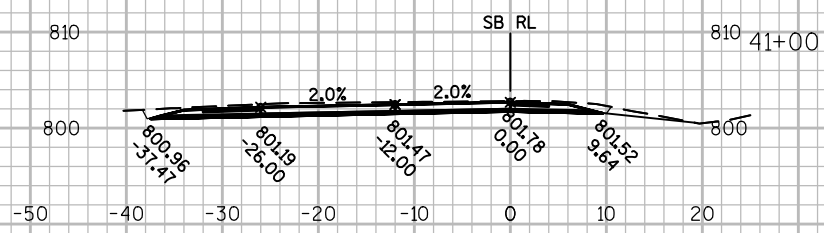
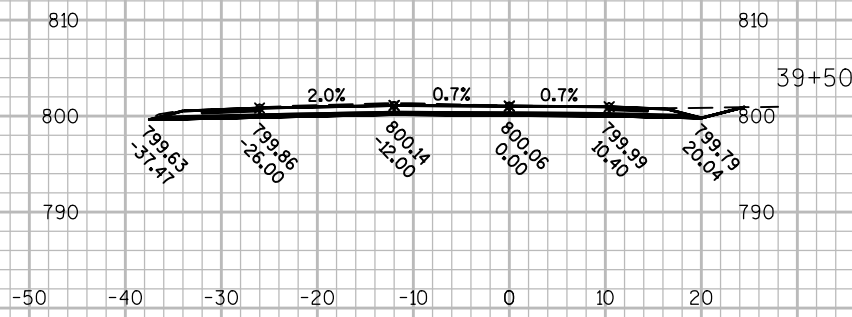
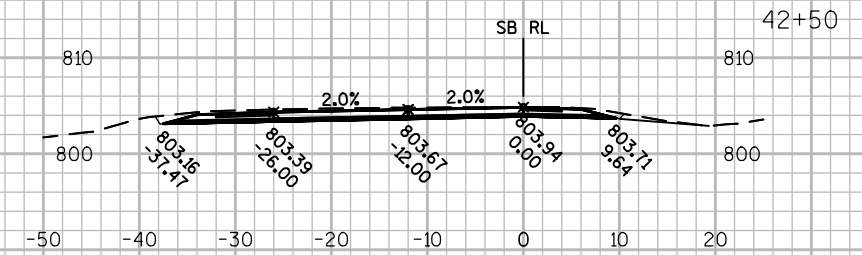
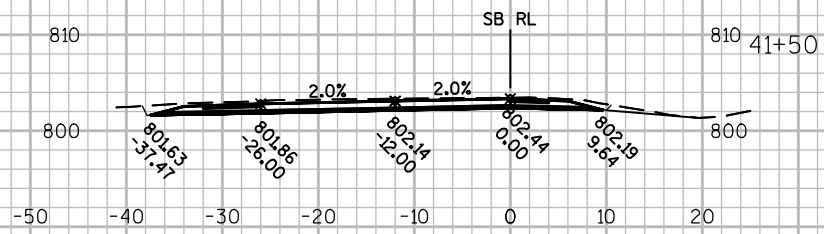
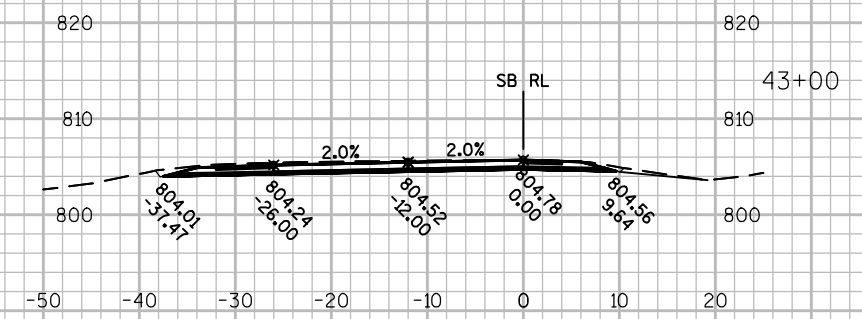
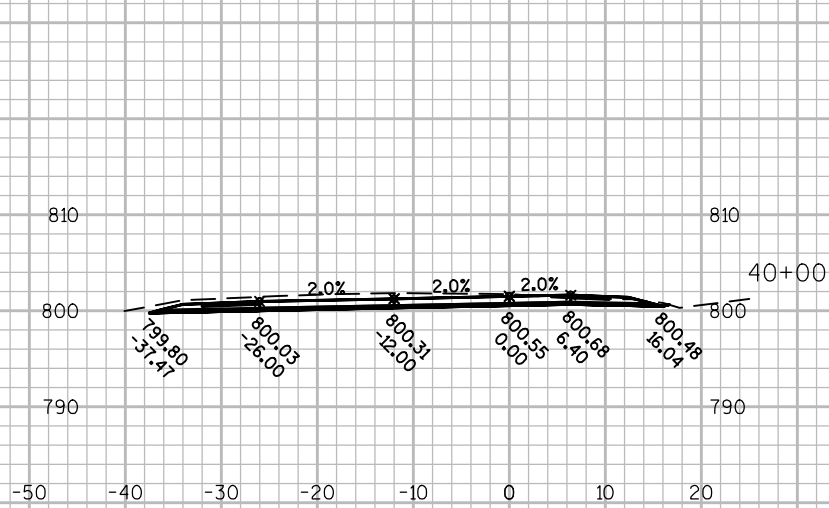
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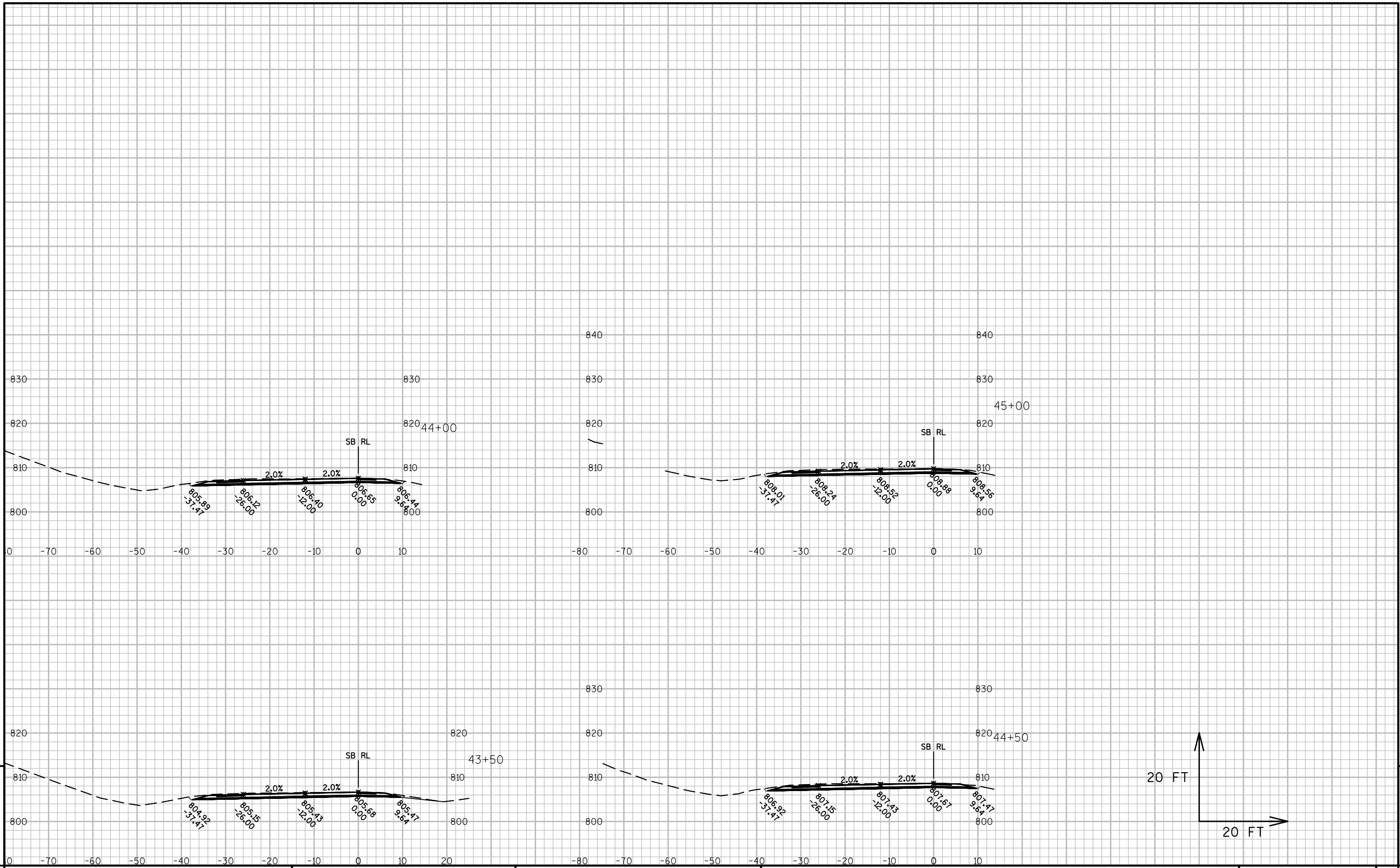
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STATION 100+82 MATCH EXISTING

PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: NB ROADWAY SHEET E





PROJECT NO: 7110-05-72

HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: SB ROADWAY

SHEET

E

FILE NAME : N:\PDS\C3D\71100502\SHEETSPLAN\X-SECTIONS\STH 37 SB.DWG
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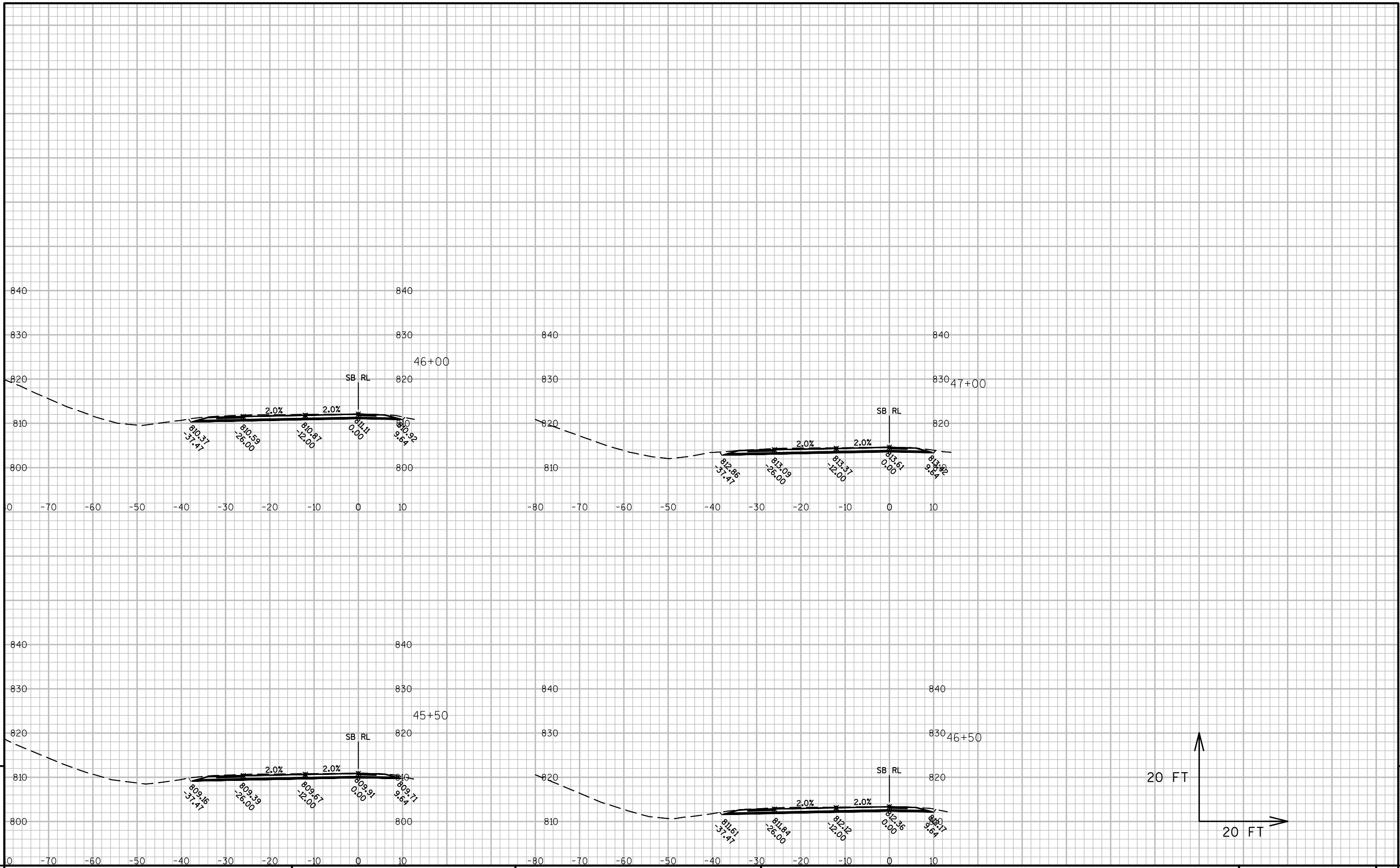
PLOT DATE : 10/23/2017 1:05 PM

PLOT BY : KRUG, GARY W

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD SHEET 49



PROJECT NO: 7110-05-72

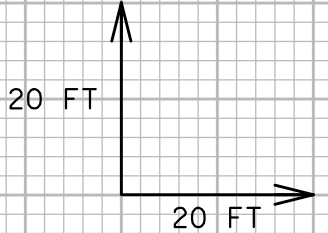
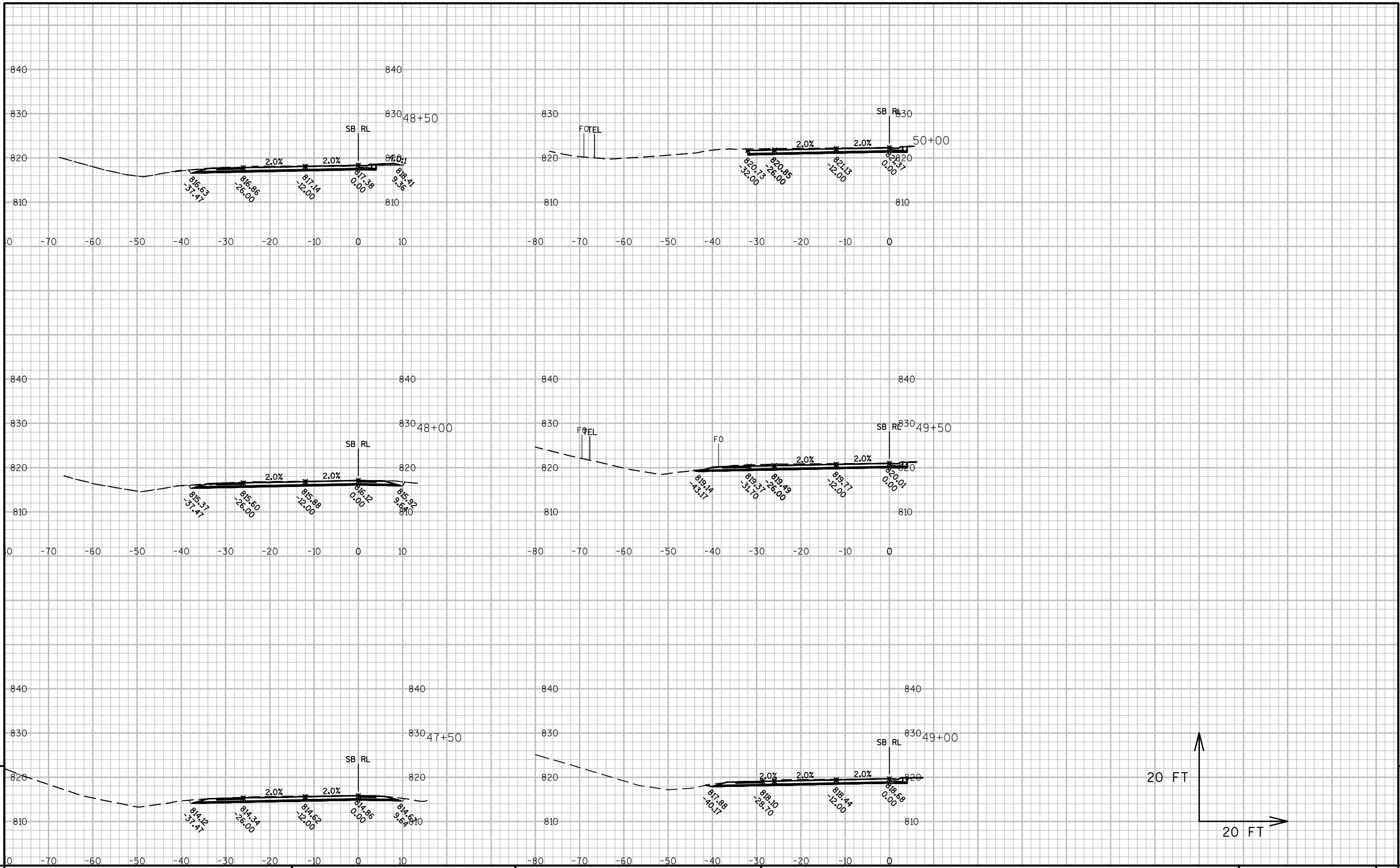
HWY: STH 37

COUNTY: EAU CLAIRE

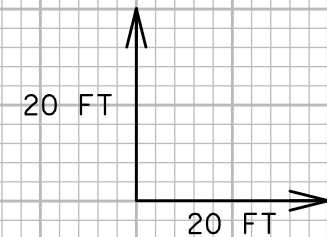
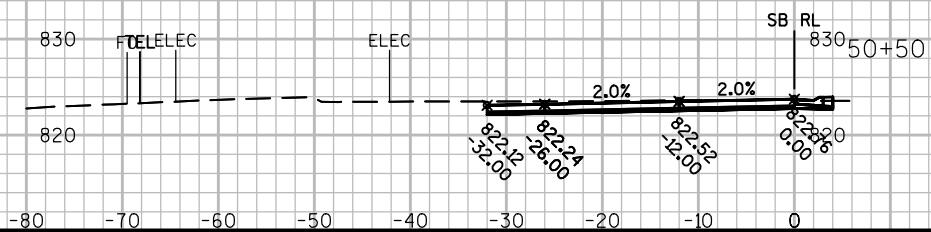
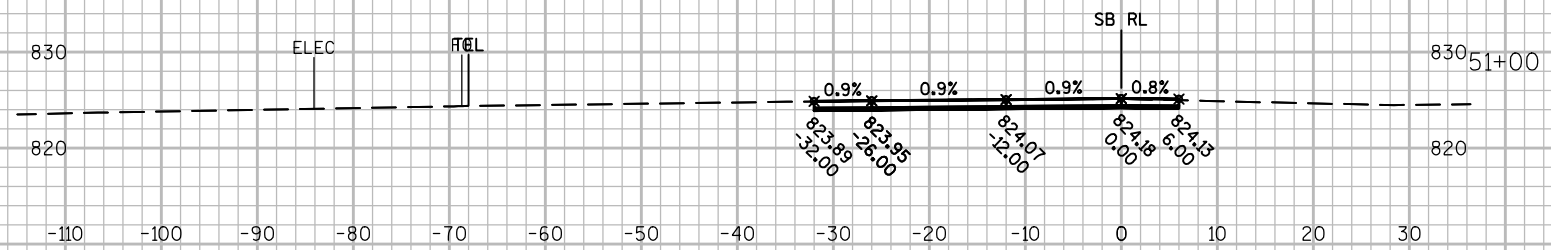
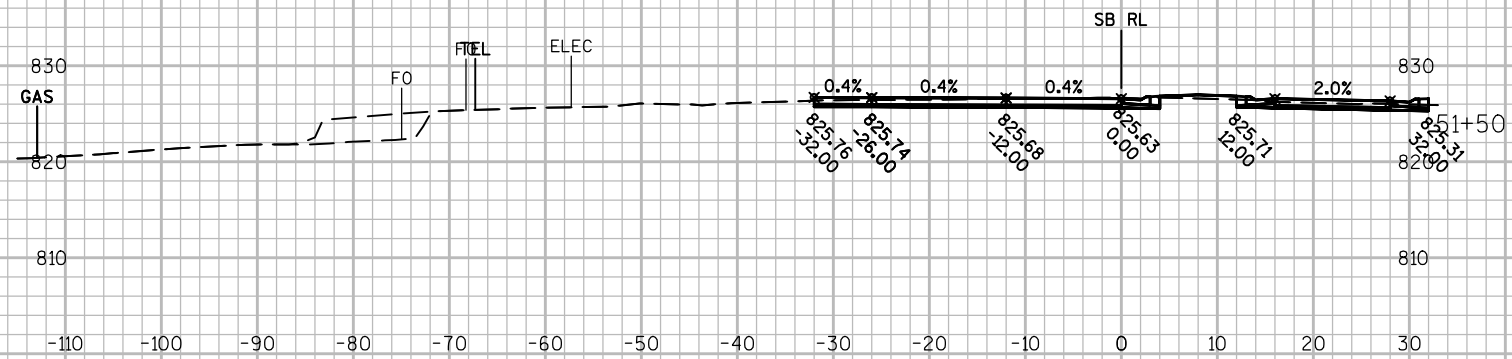
CROSS SECTIONS: SB ROADWAY

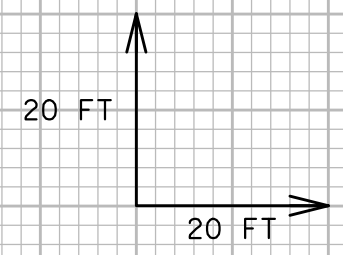
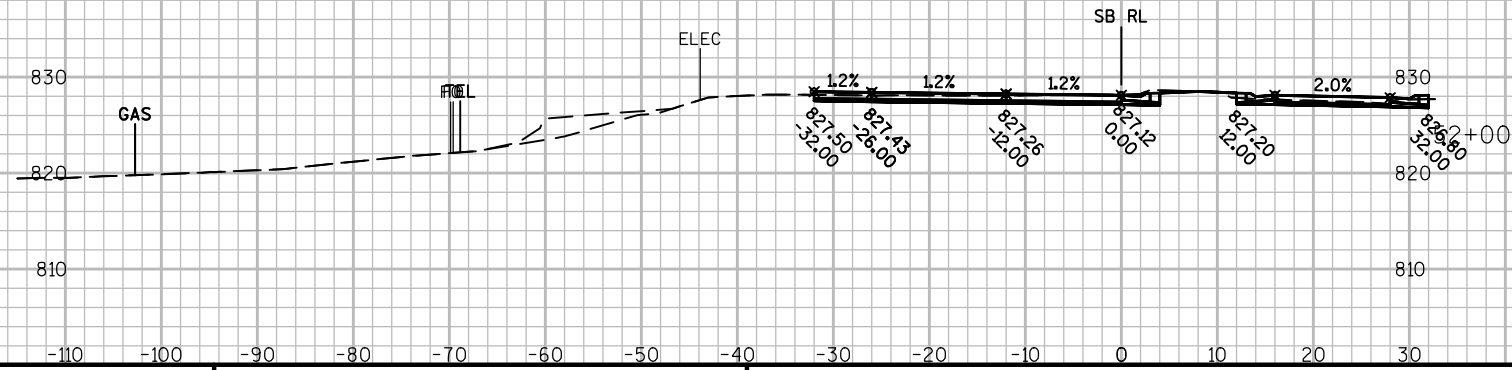
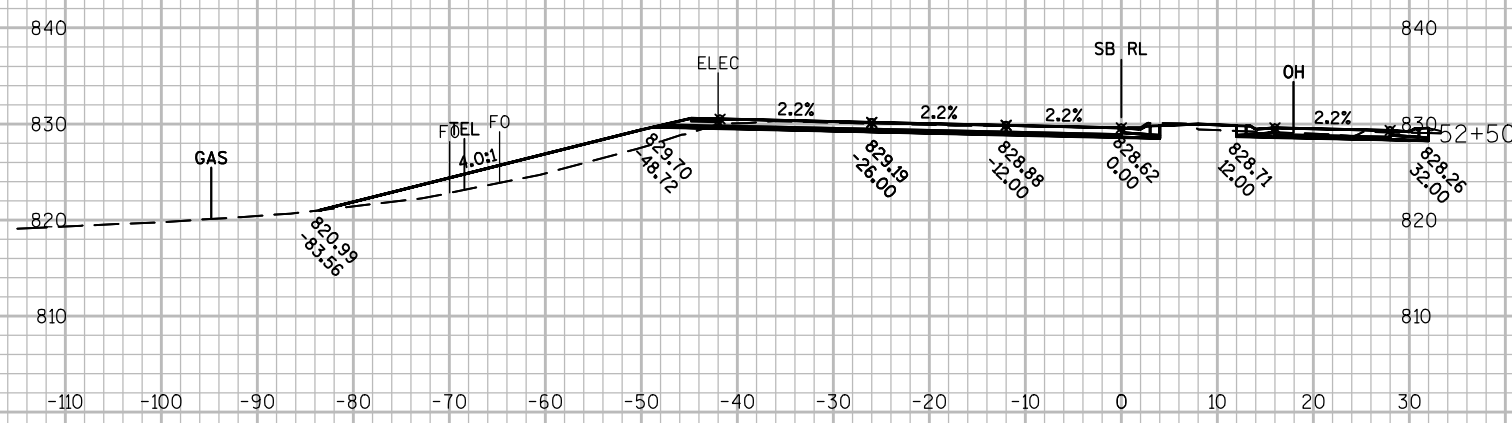
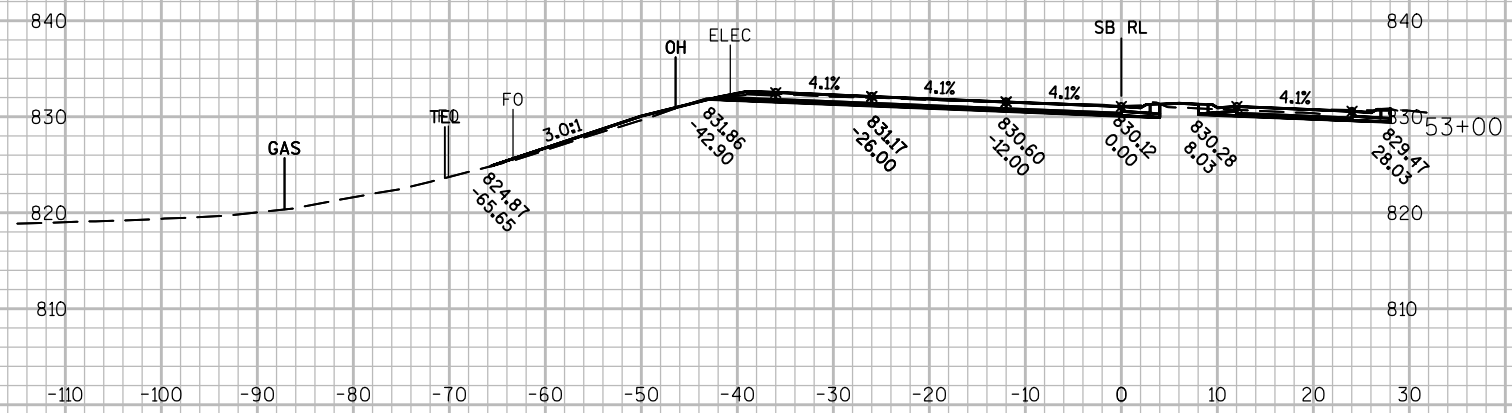
SHEET

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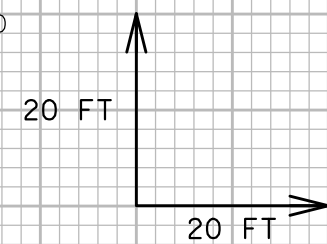
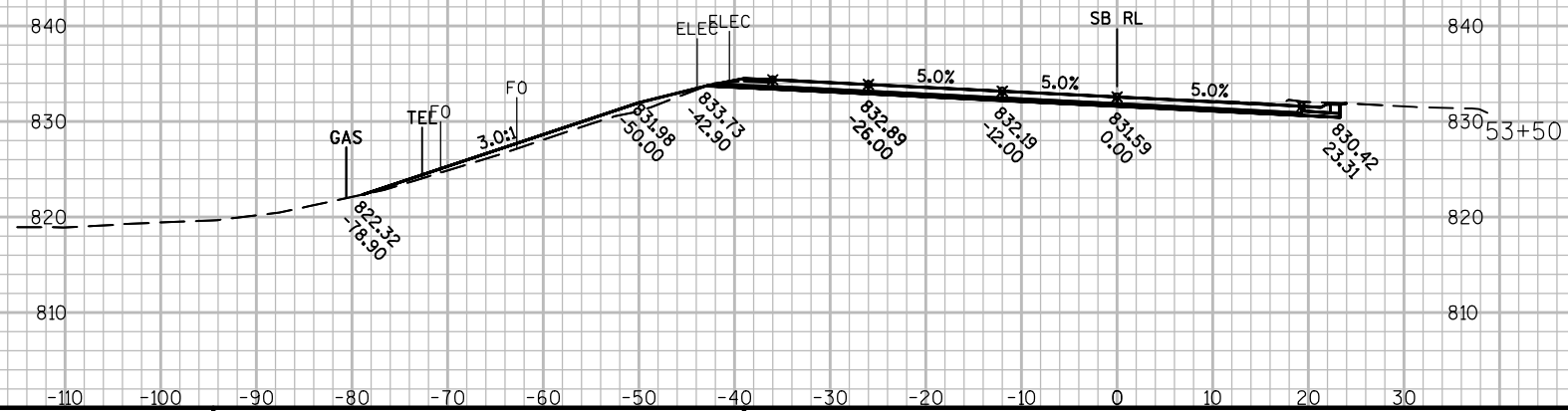
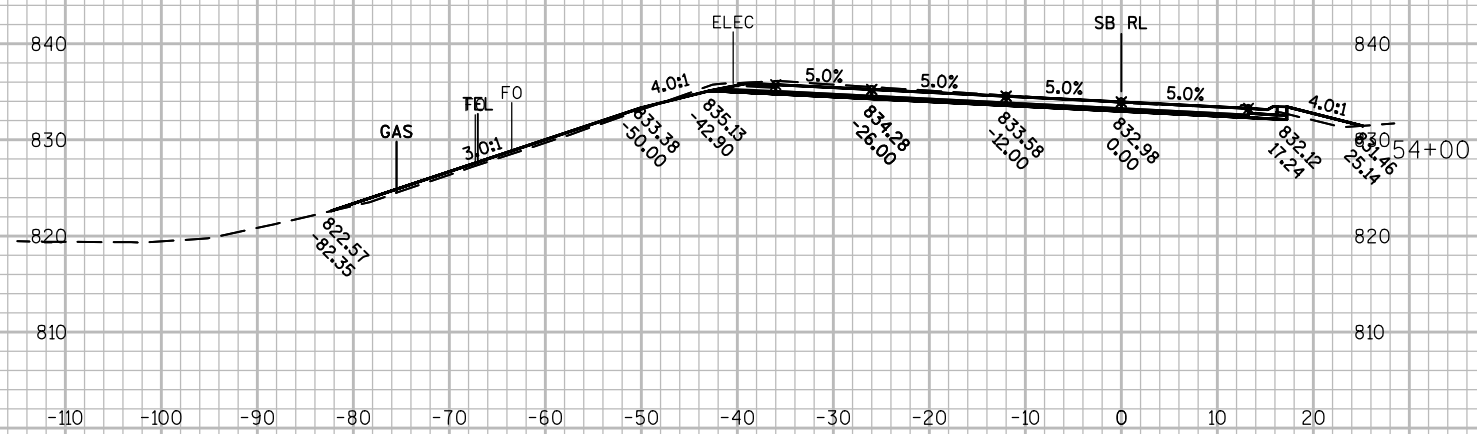
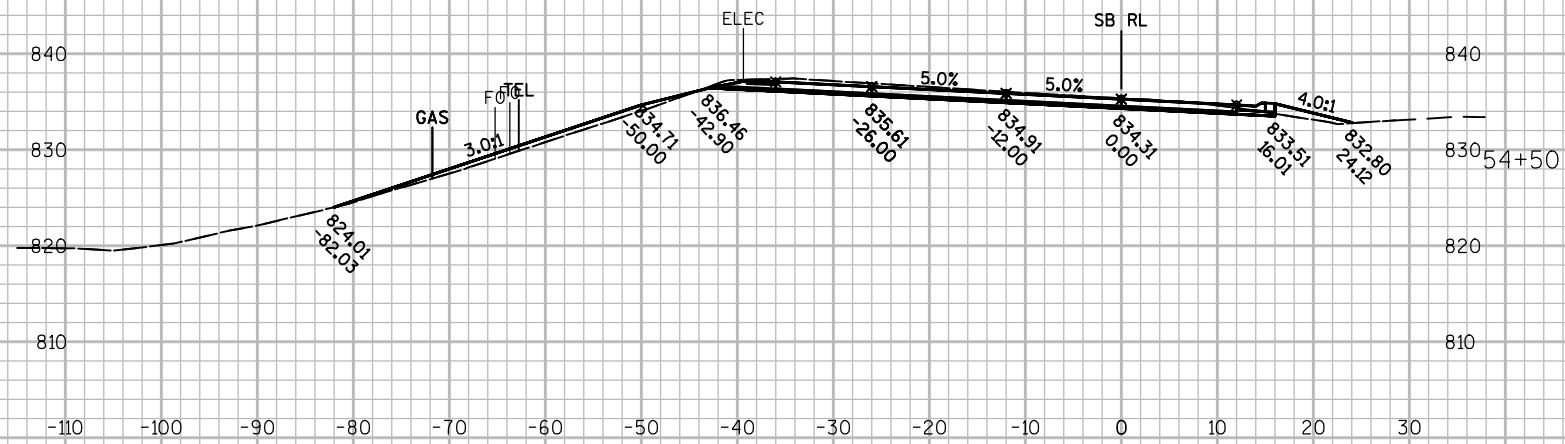
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SB ROADWAY SHEET E





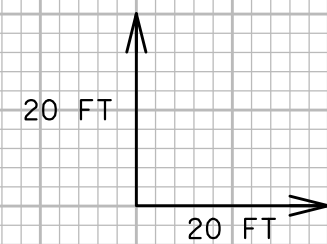
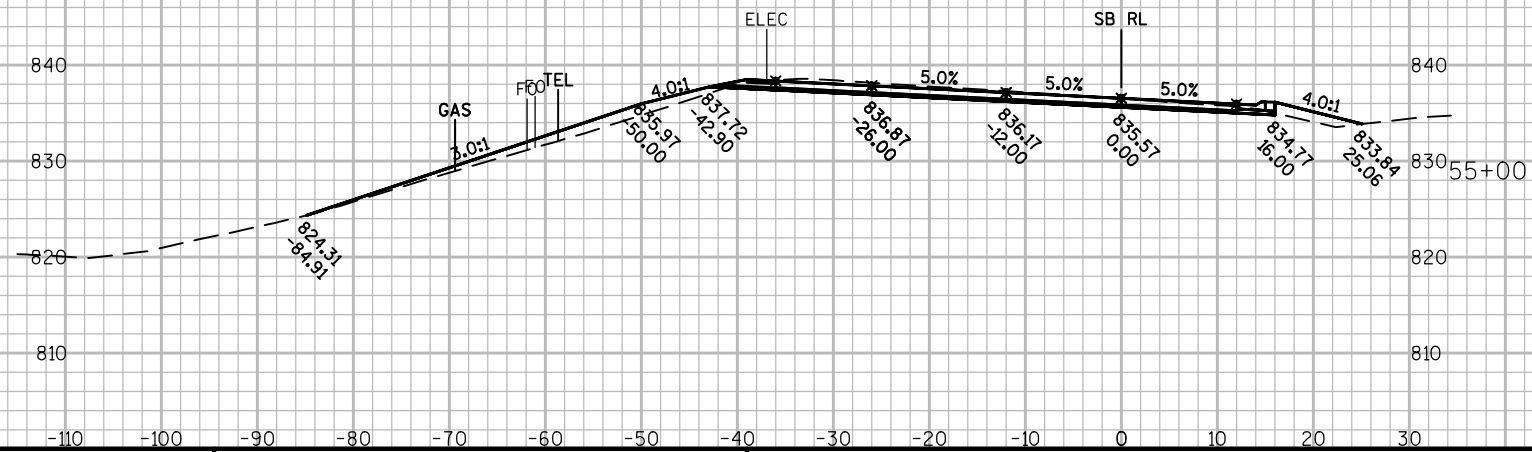
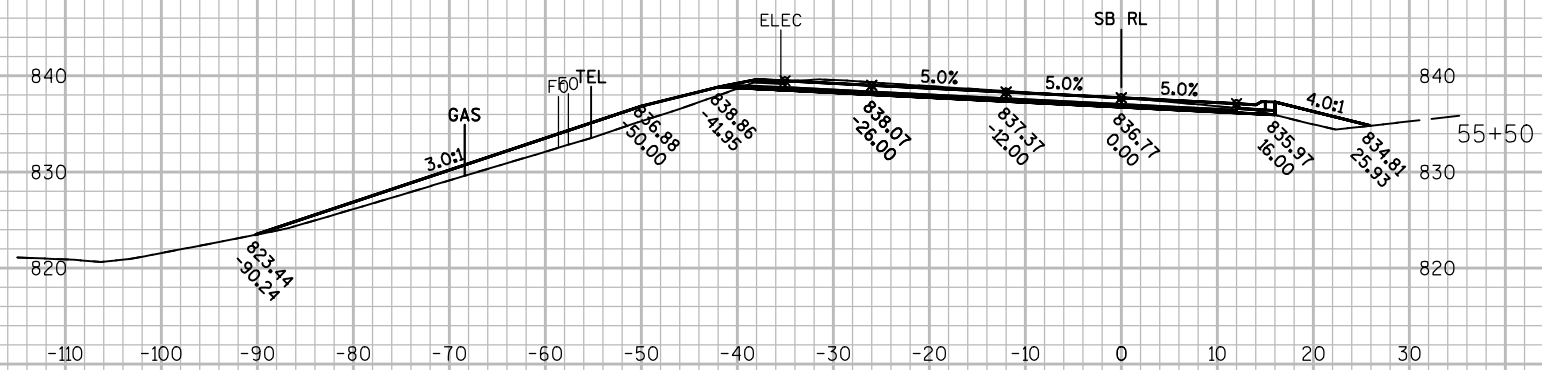
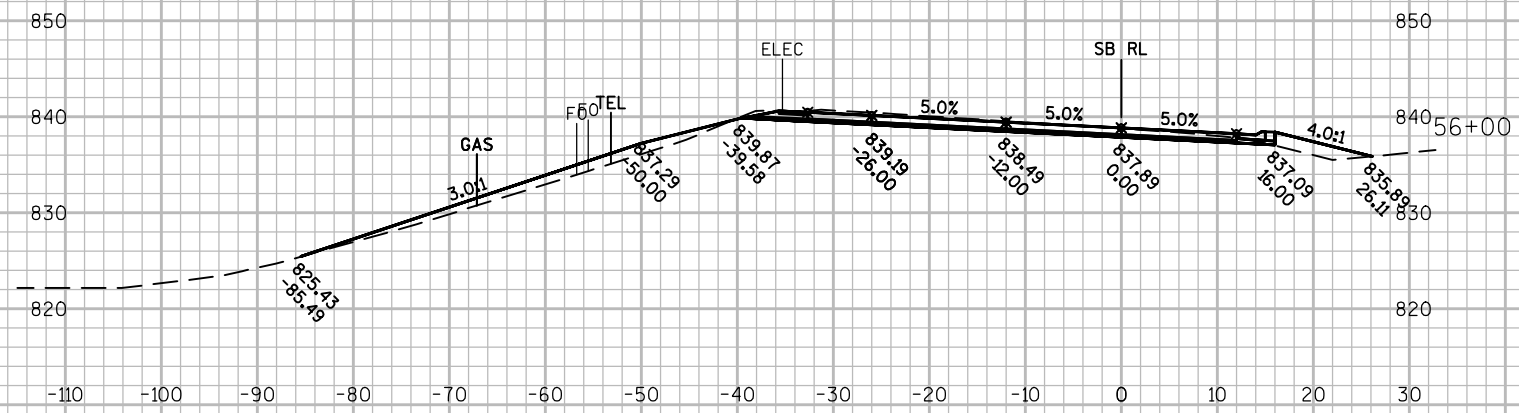
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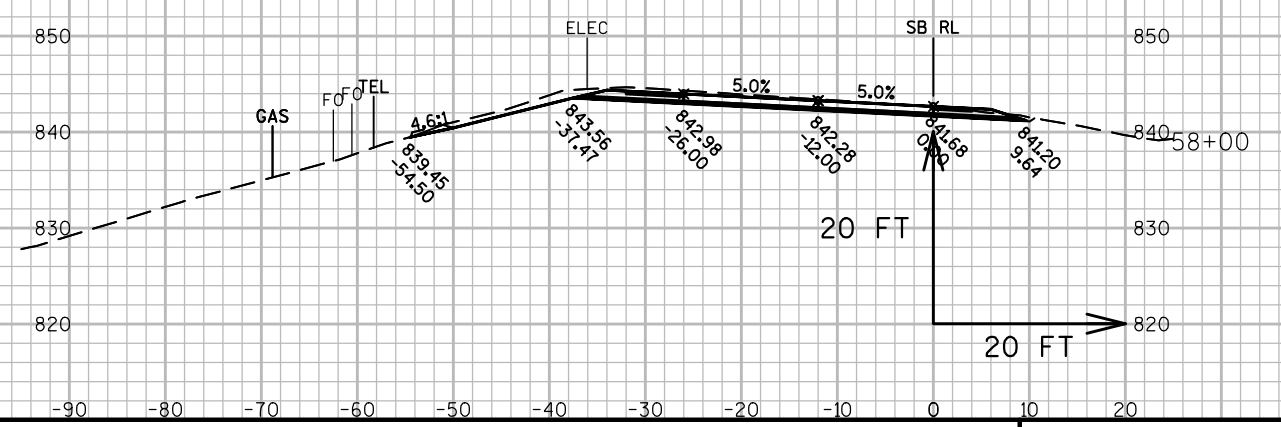
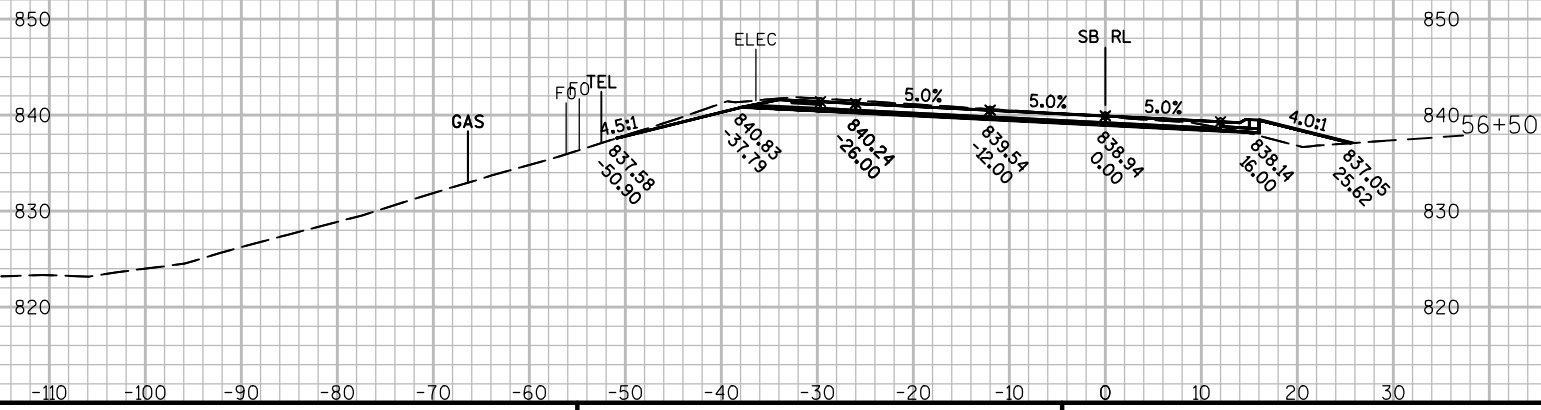
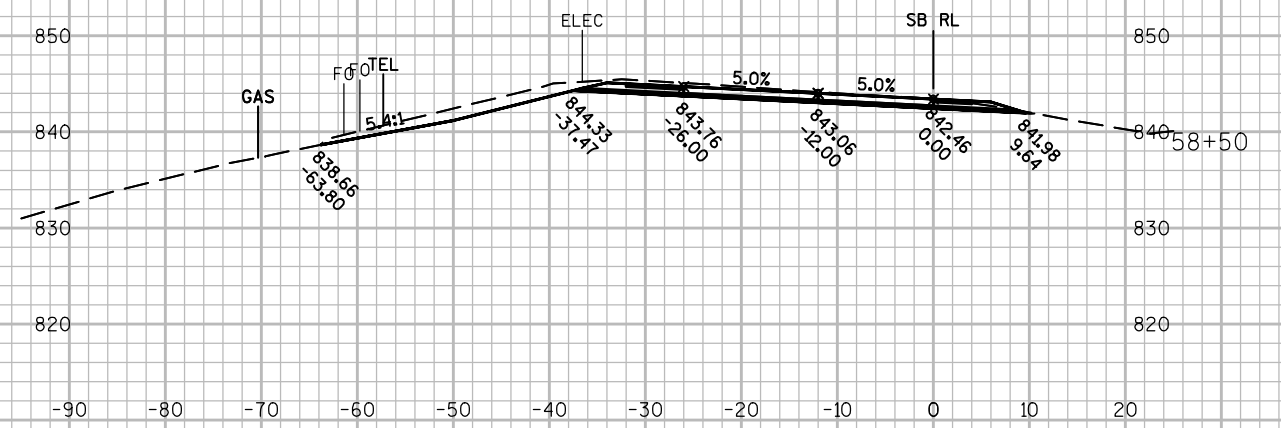
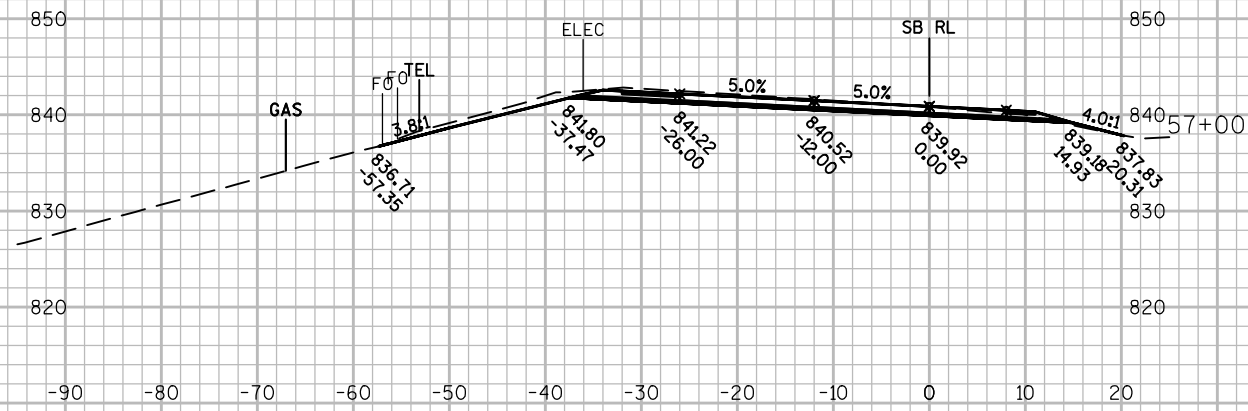
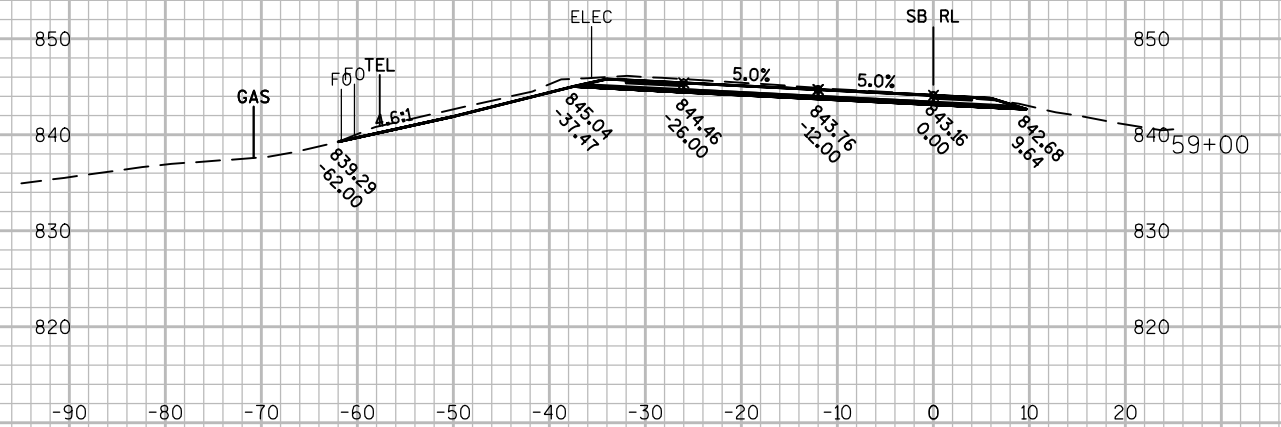
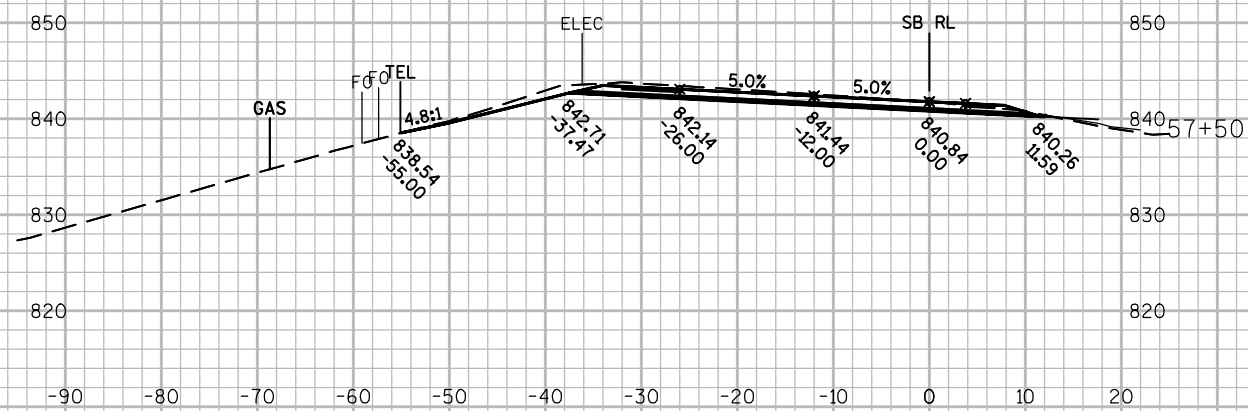
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PROJECT NO: 7110-05-72

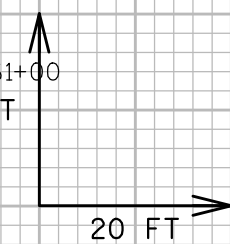
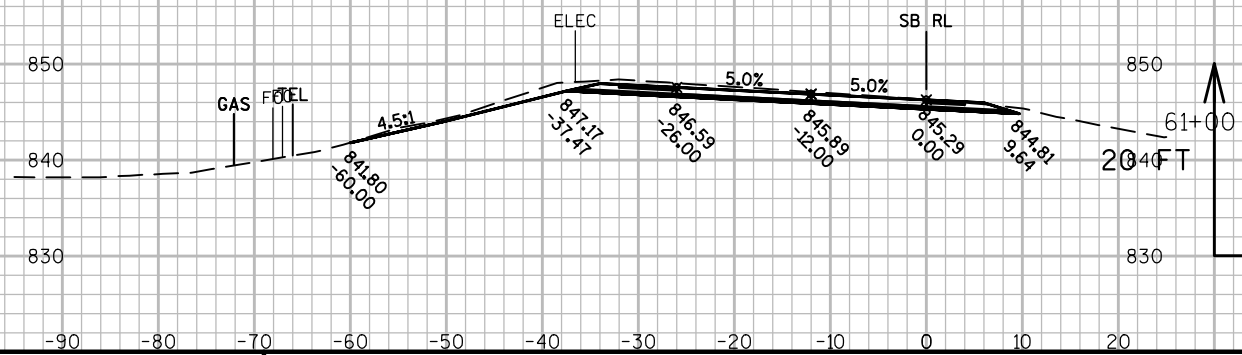
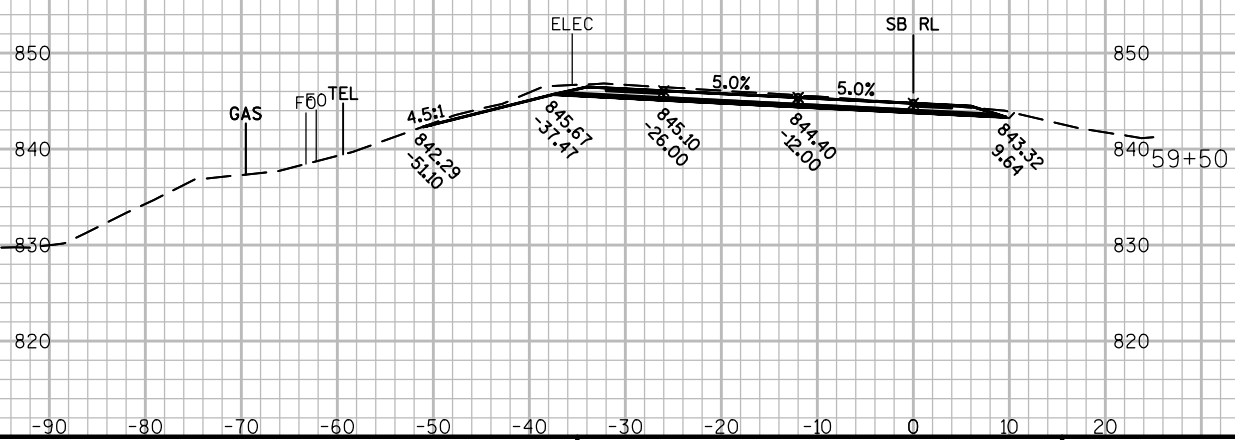
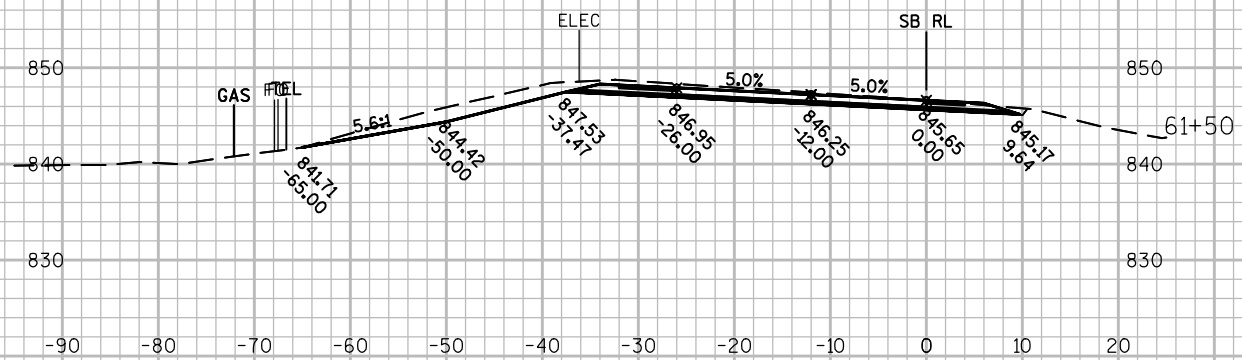
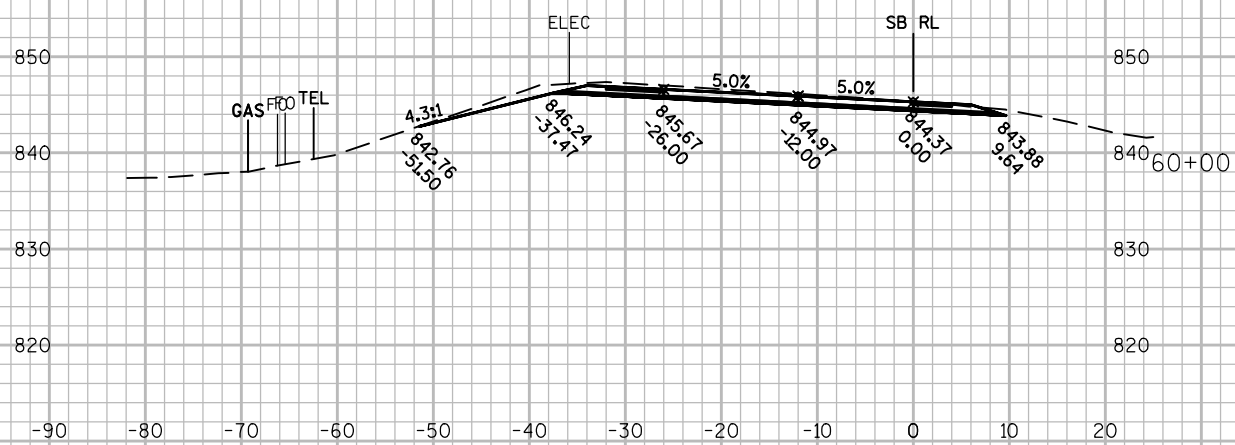
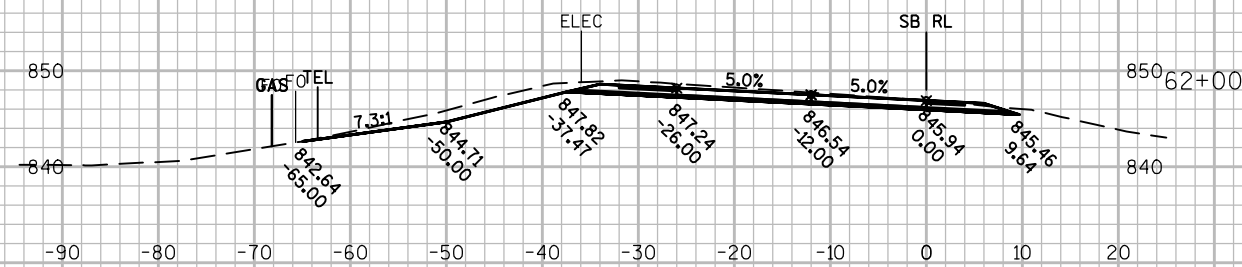
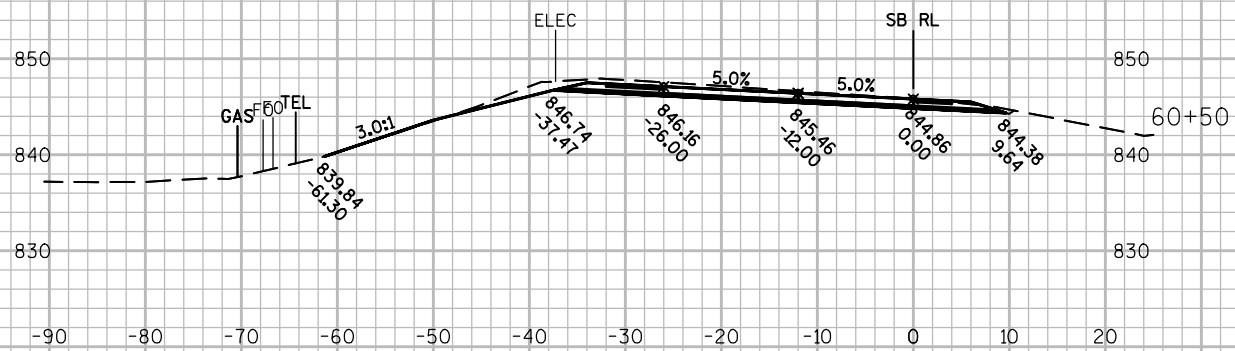
HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: SB ROADWAY

SHEET

E



PROJECT NO: 7110-05-72

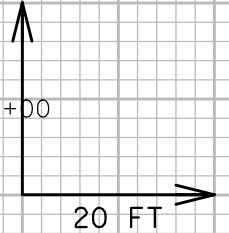
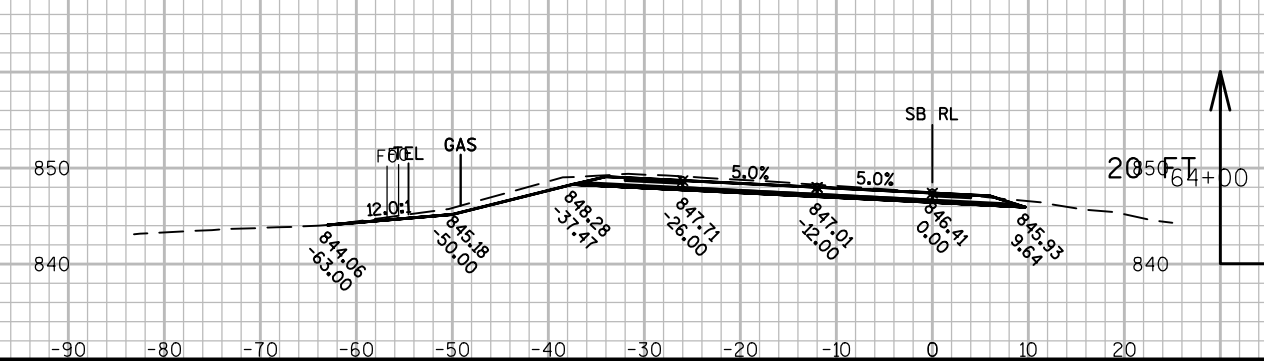
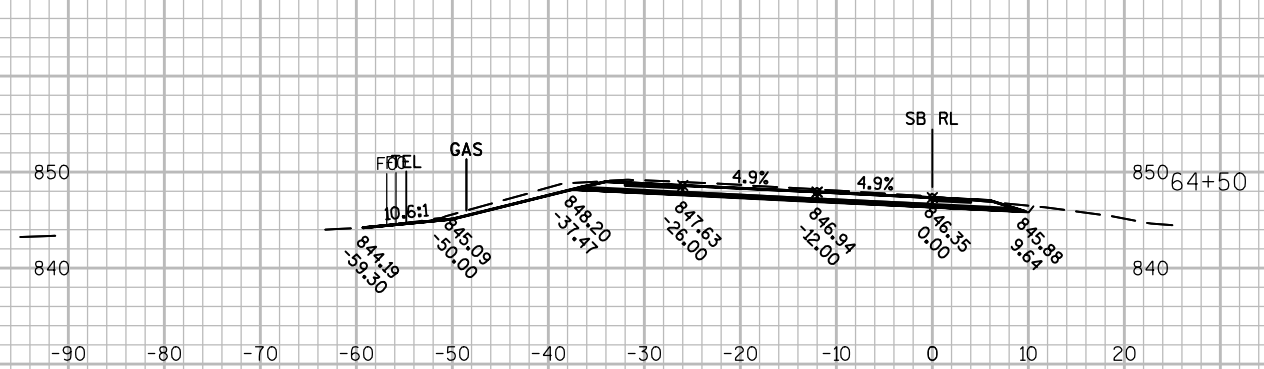
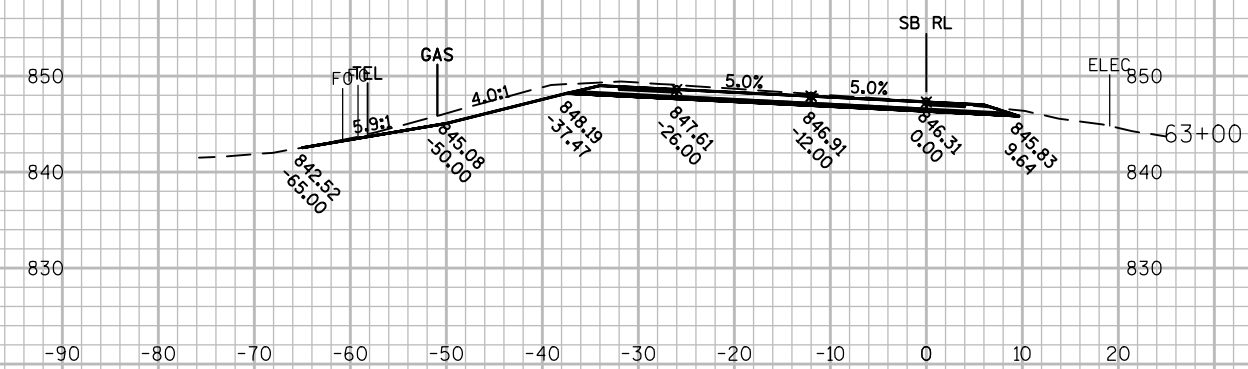
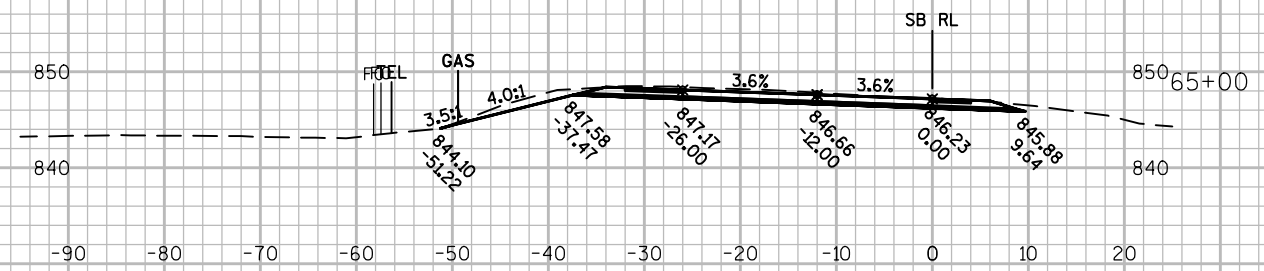
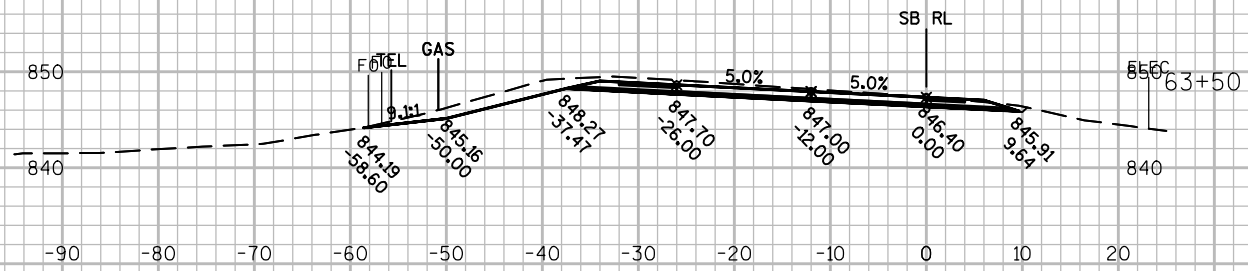
HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: SB ROADWAY

SHEET

E



PROJECT NO: 7110-05-72

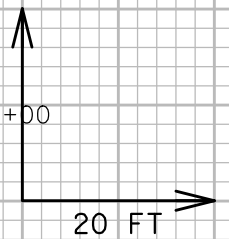
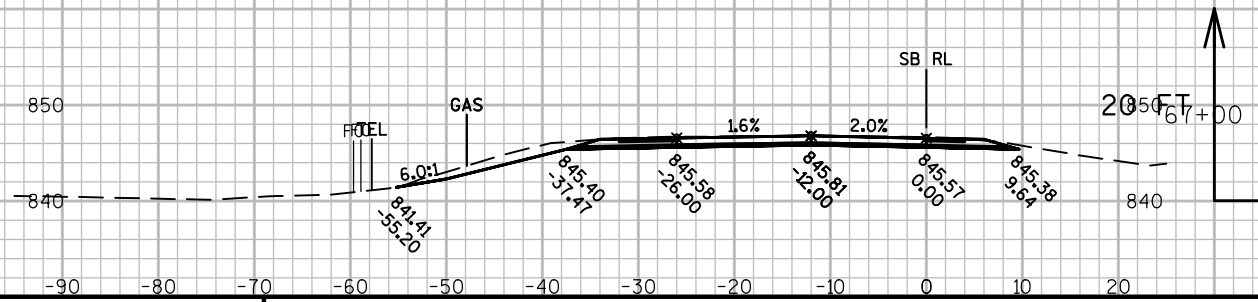
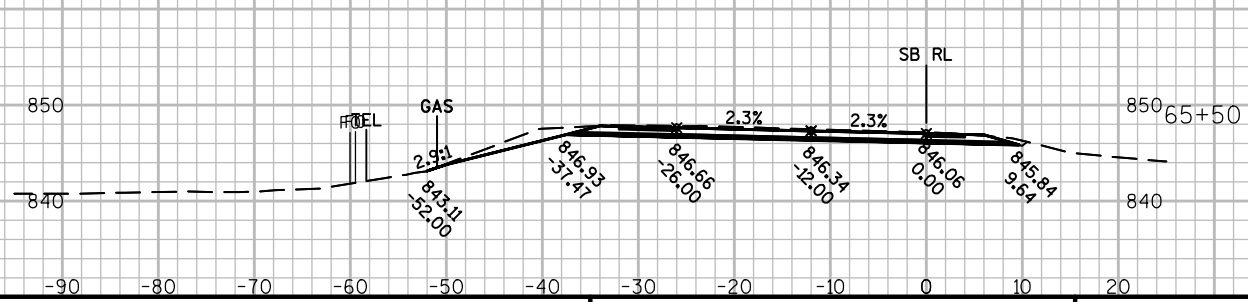
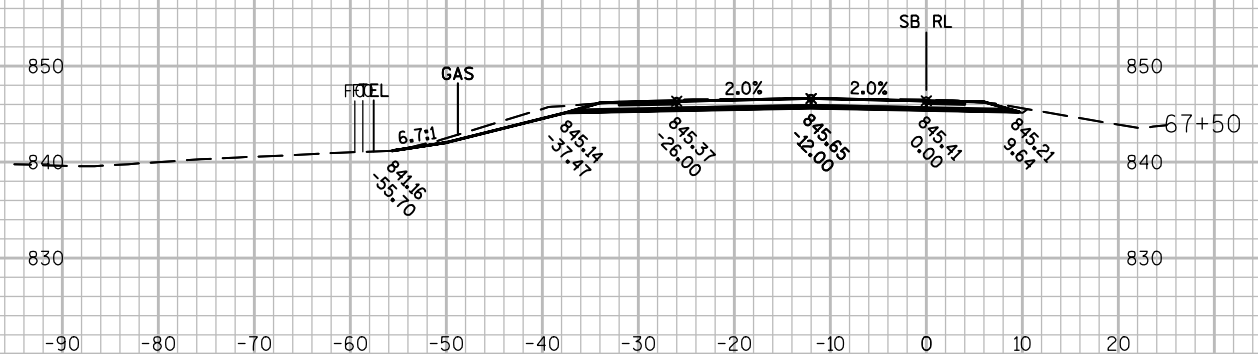
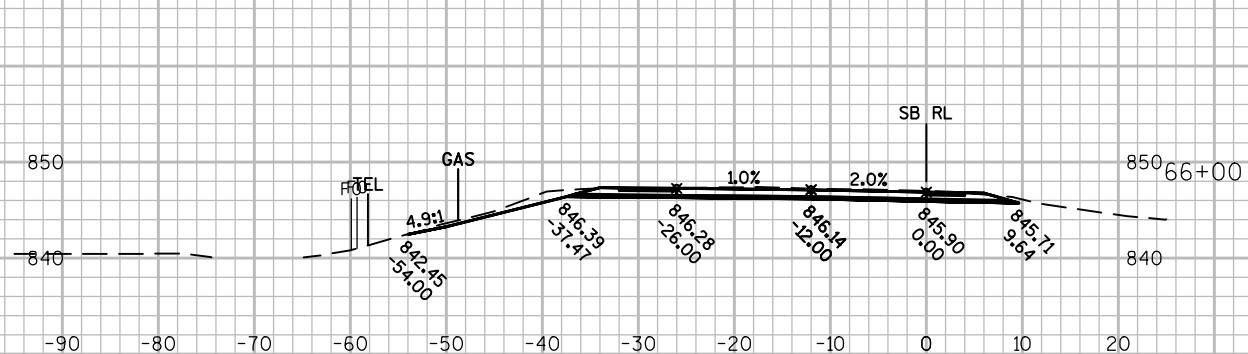
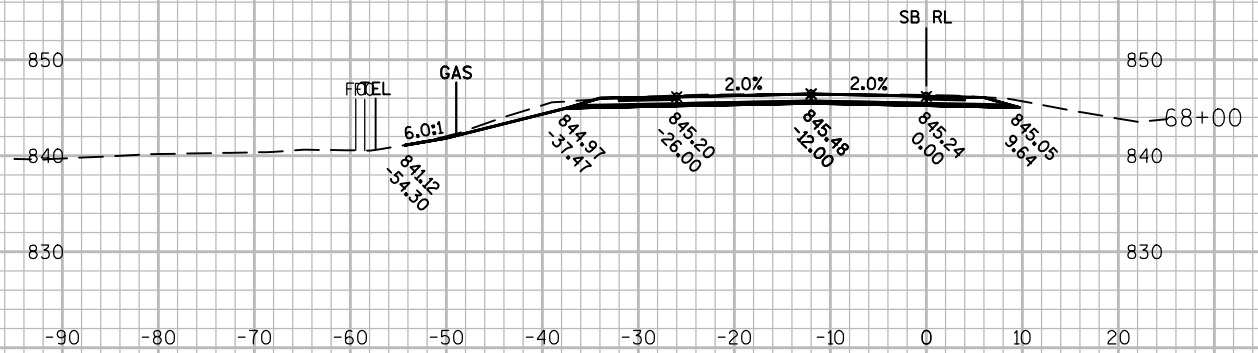
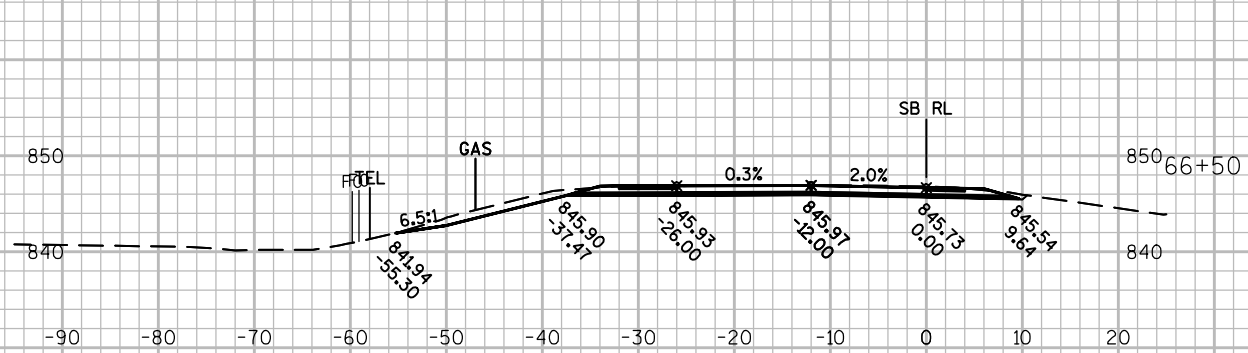
HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: SB ROADWAY

SHEET

E



PROJECT NO: 7110-05-72

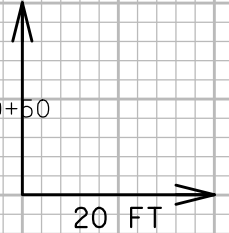
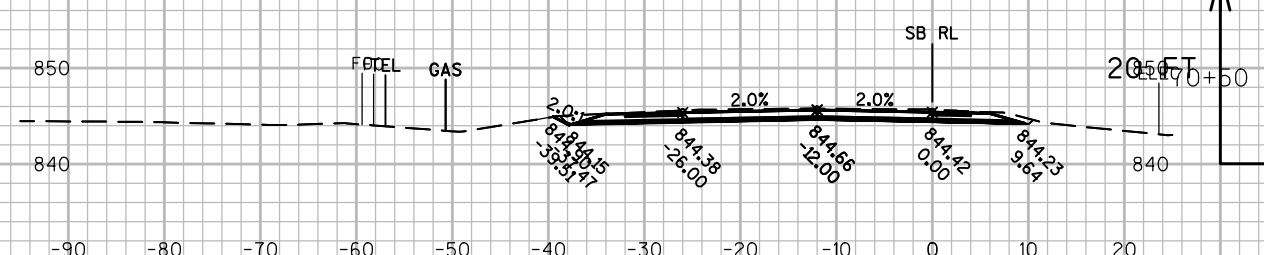
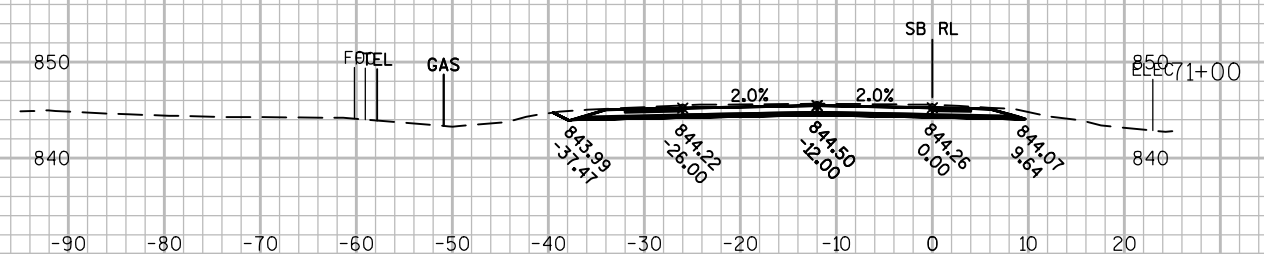
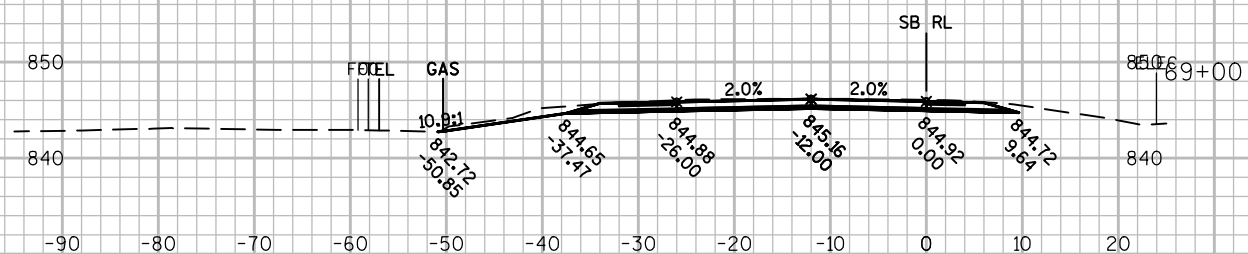
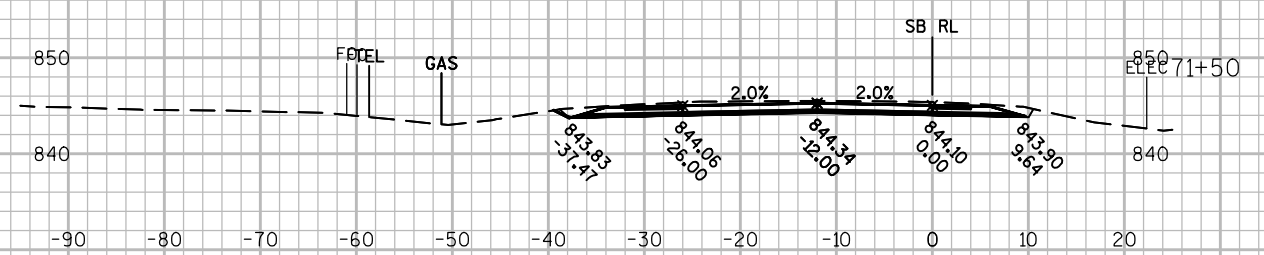
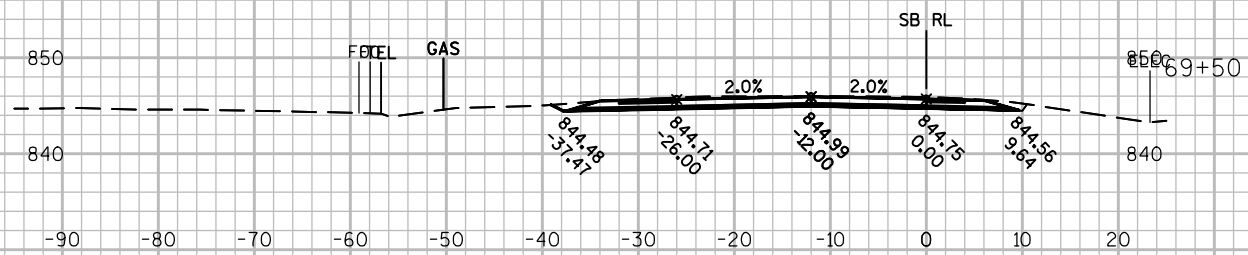
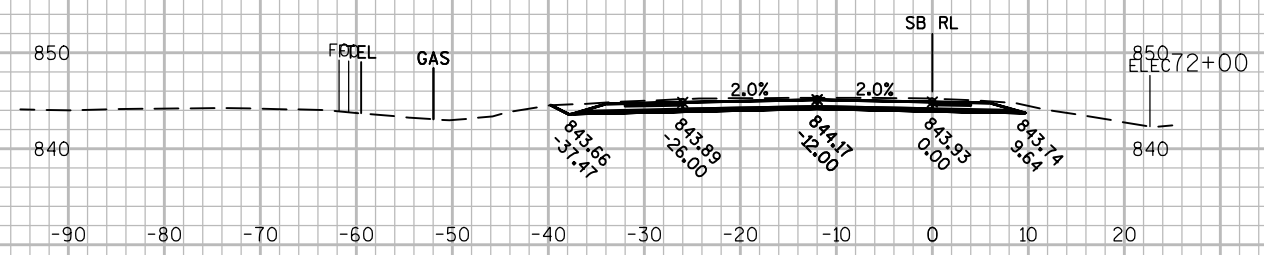
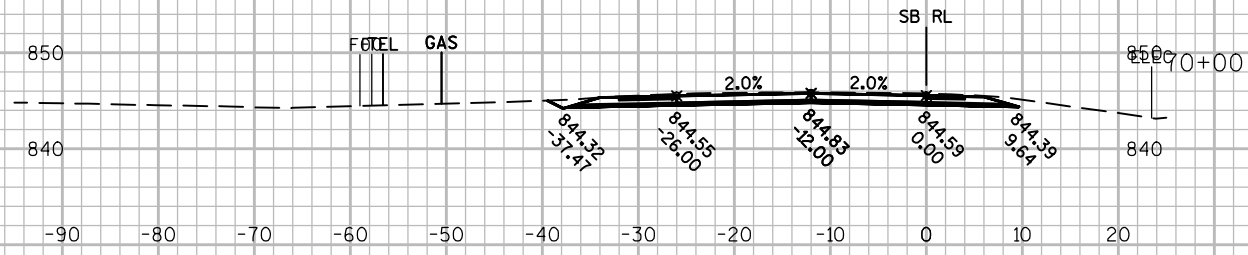
HWY: STH 37

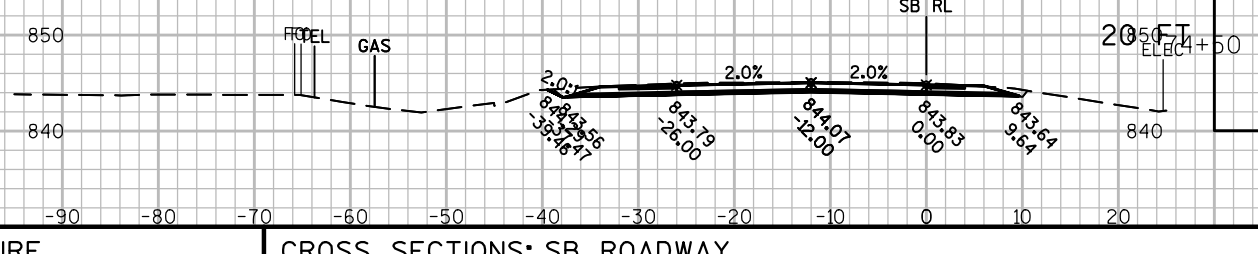
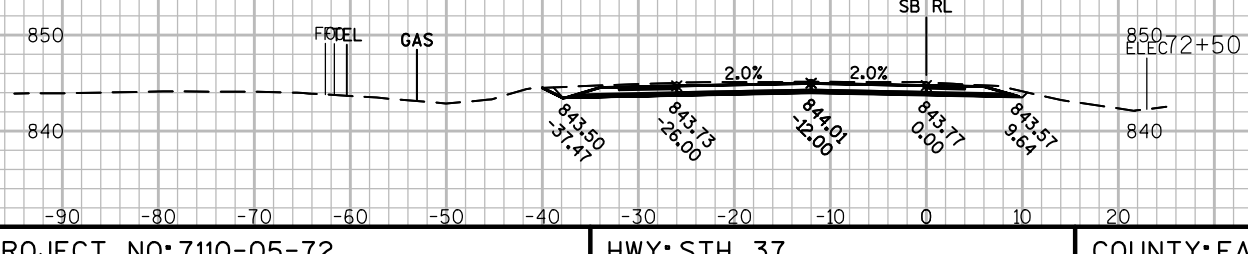
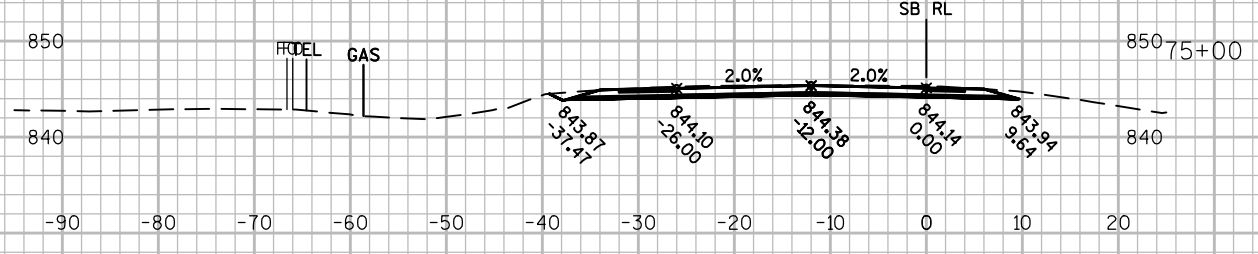
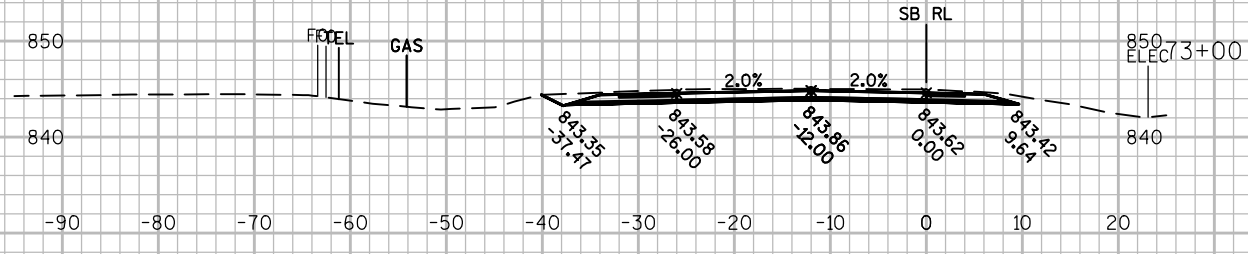
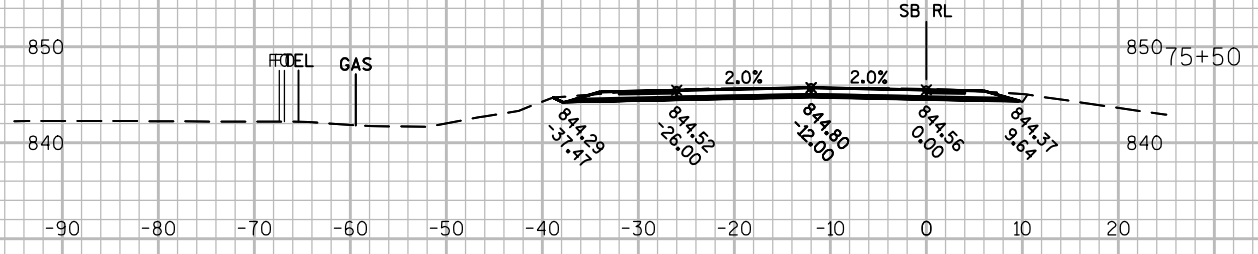
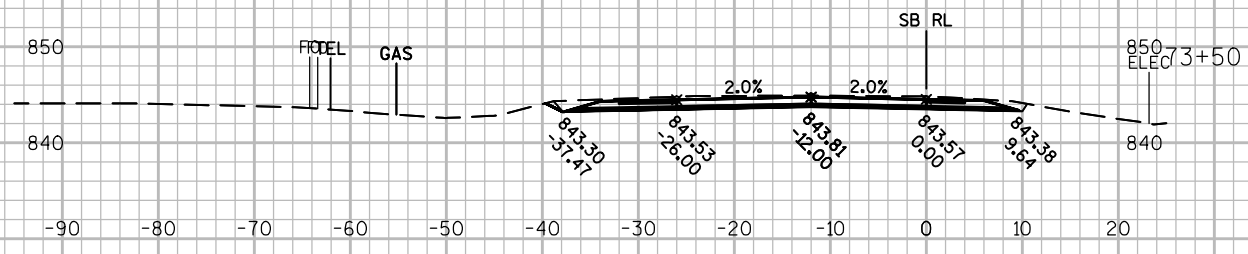
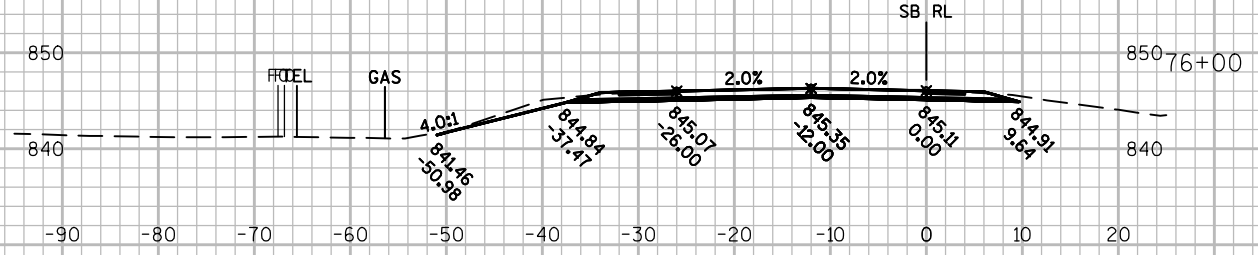
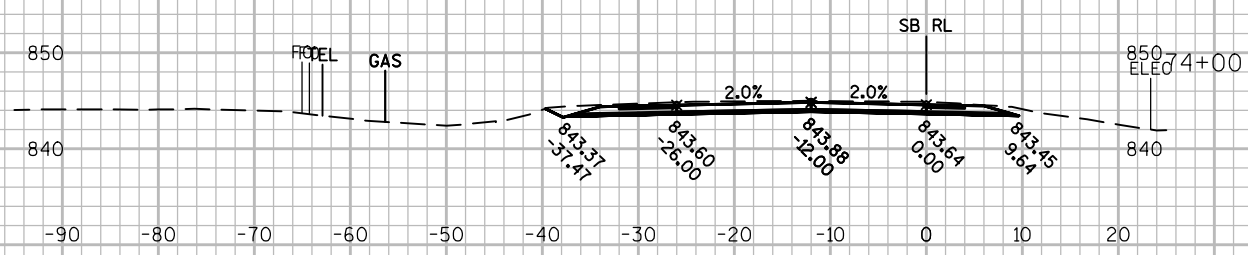
COUNTY: EAU CLAIRE

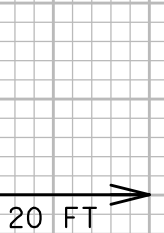
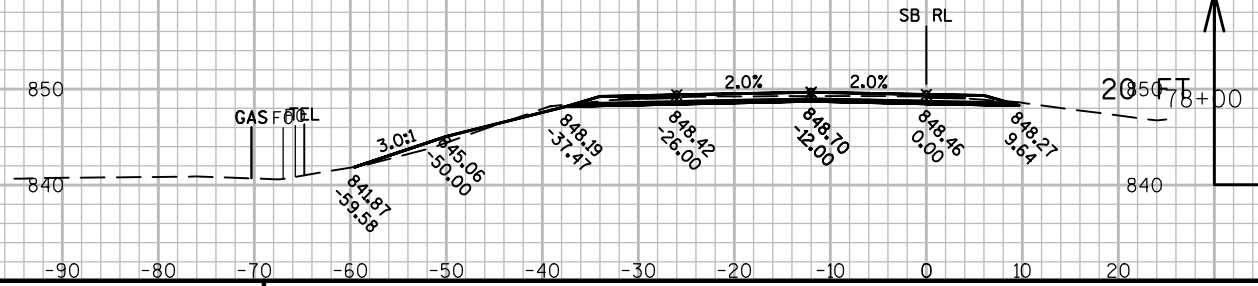
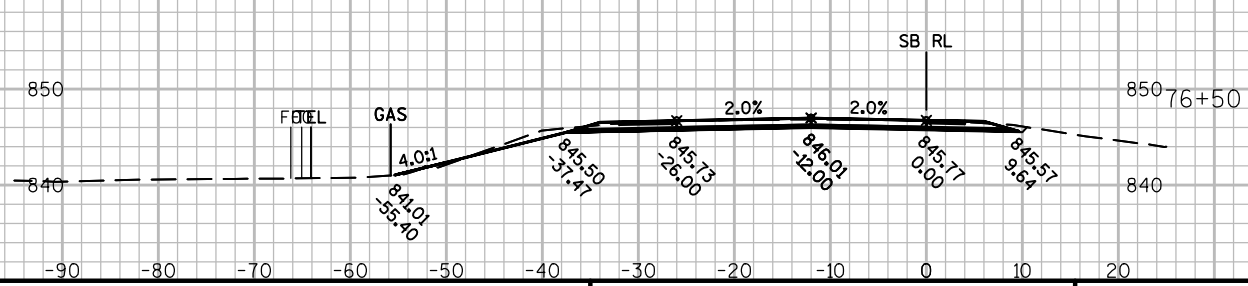
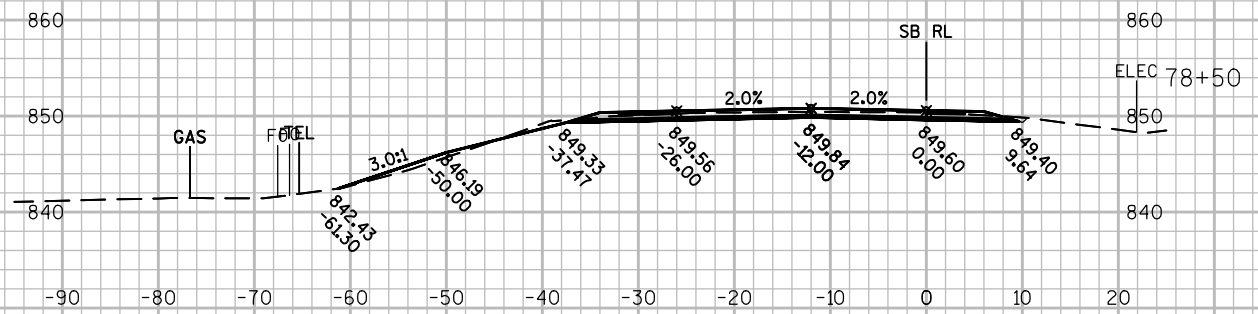
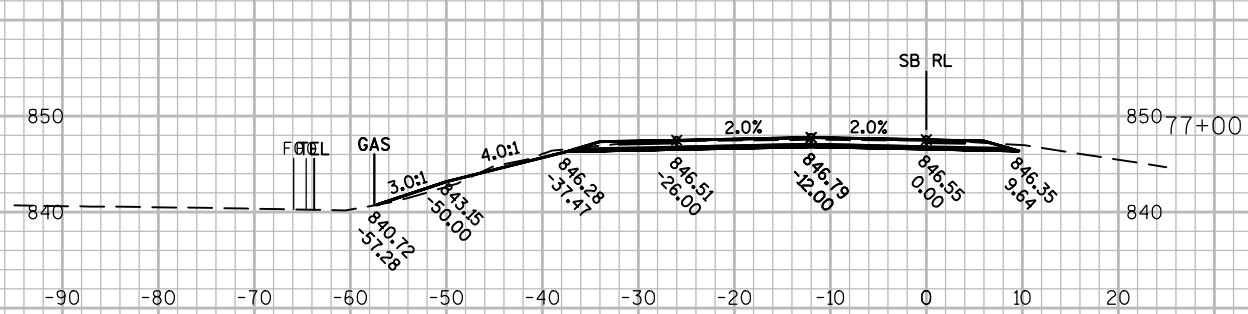
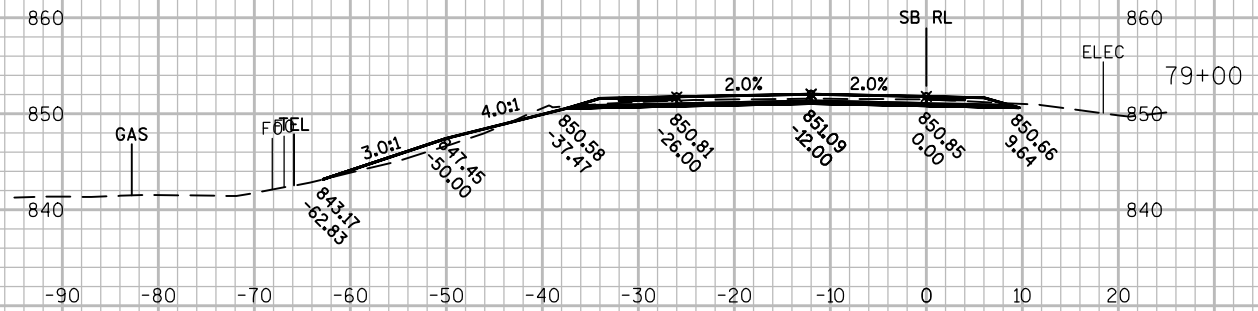
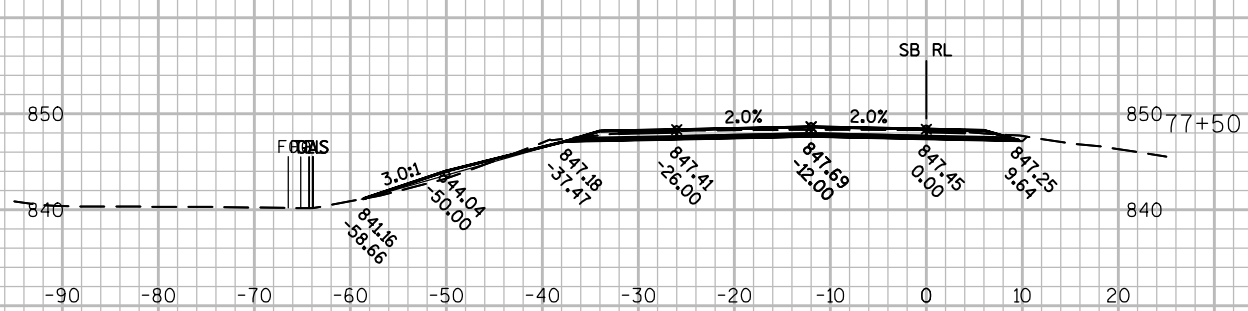
CROSS SECTIONS: SB ROADWAY

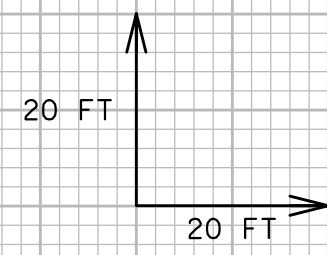
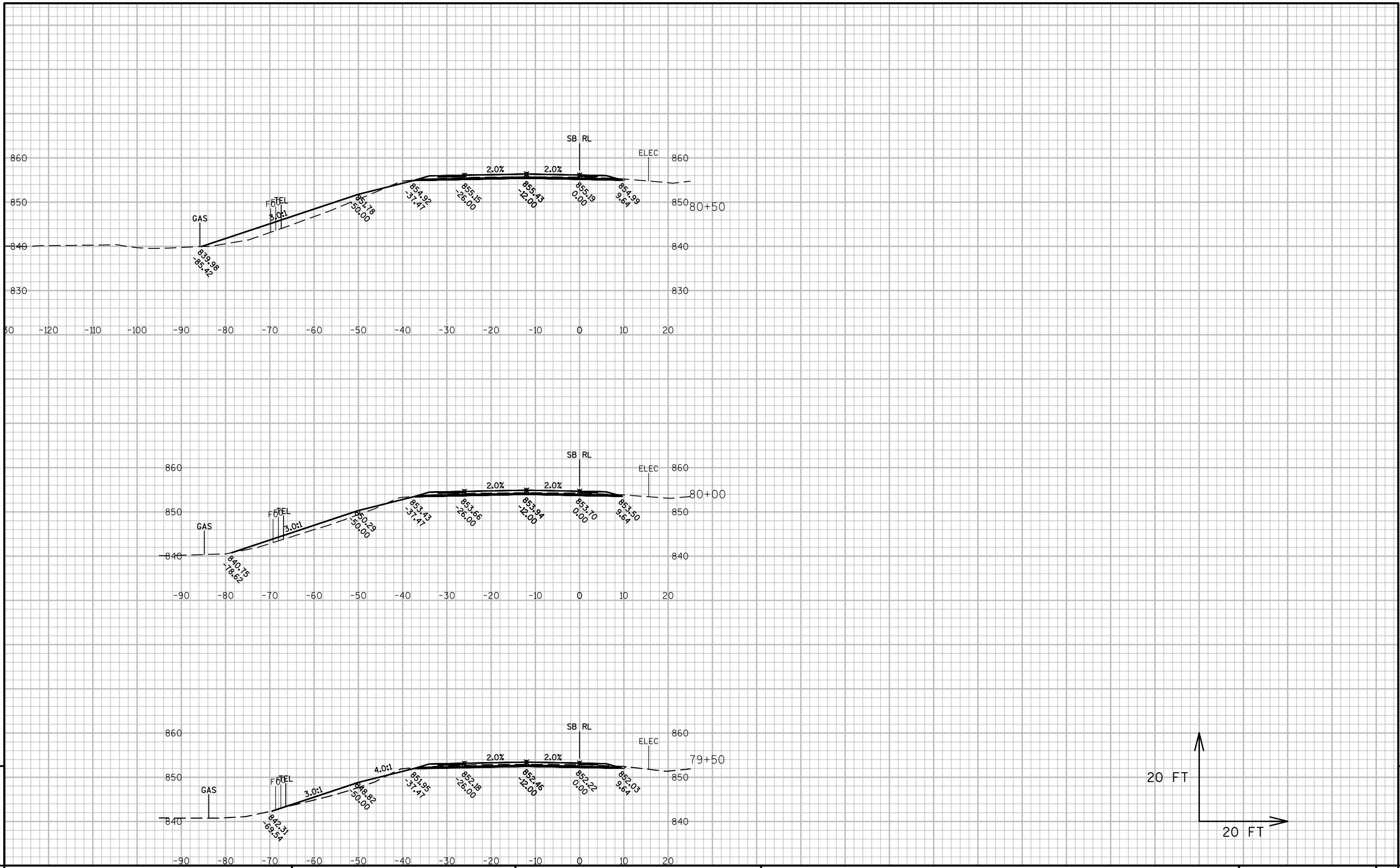
SHEET

E









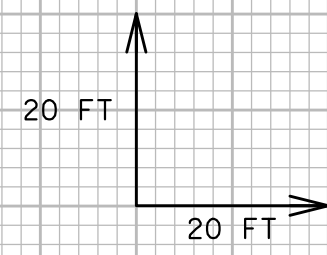
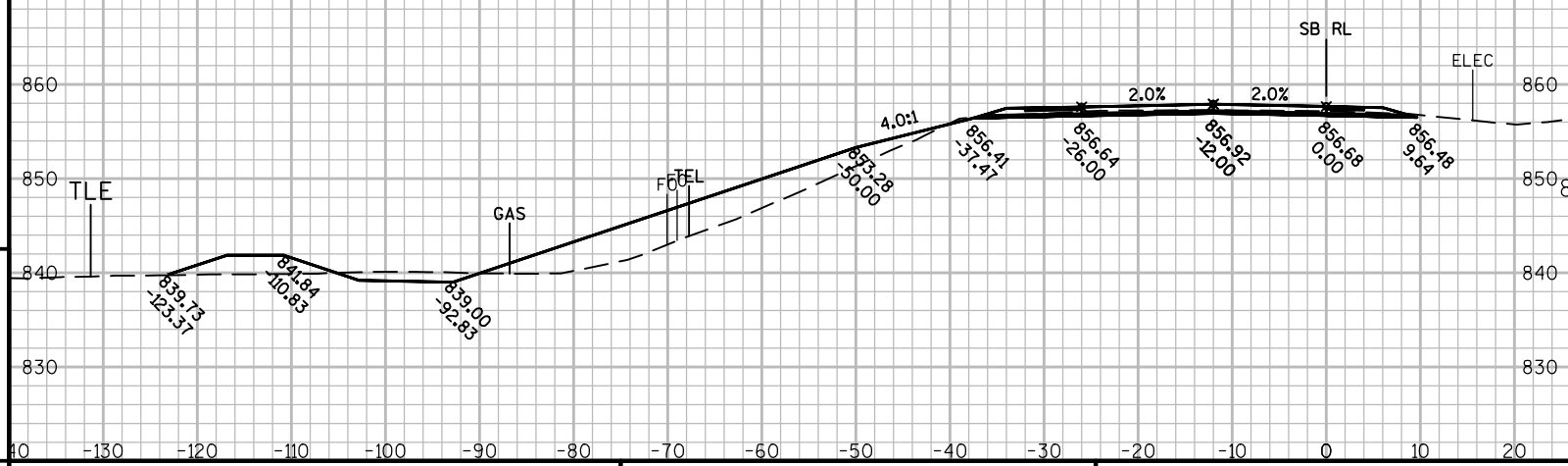
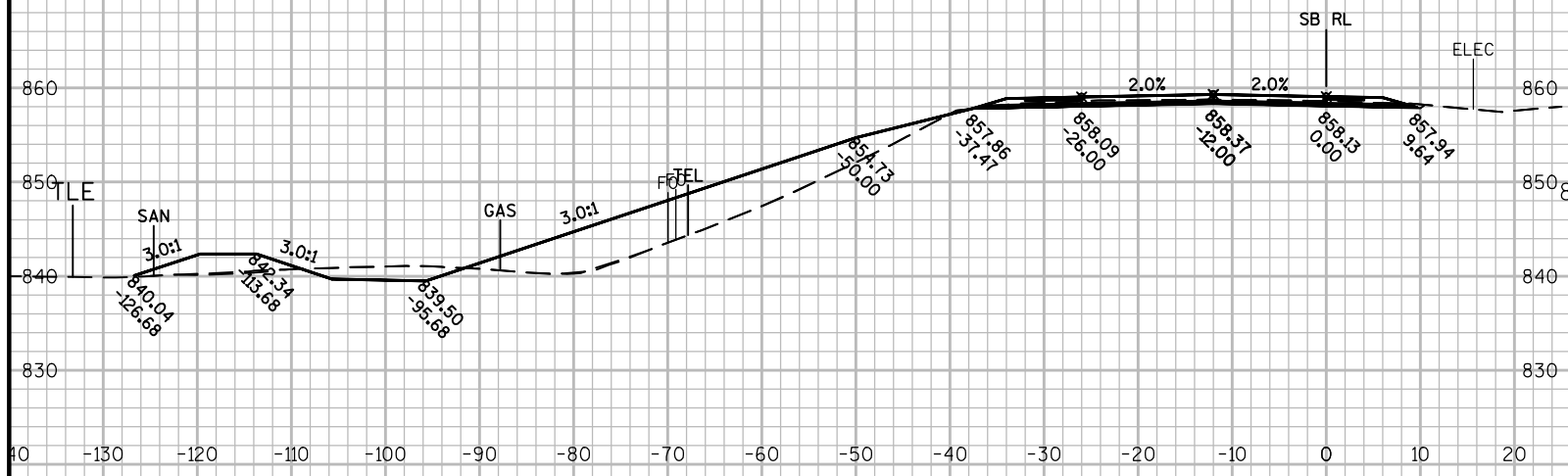
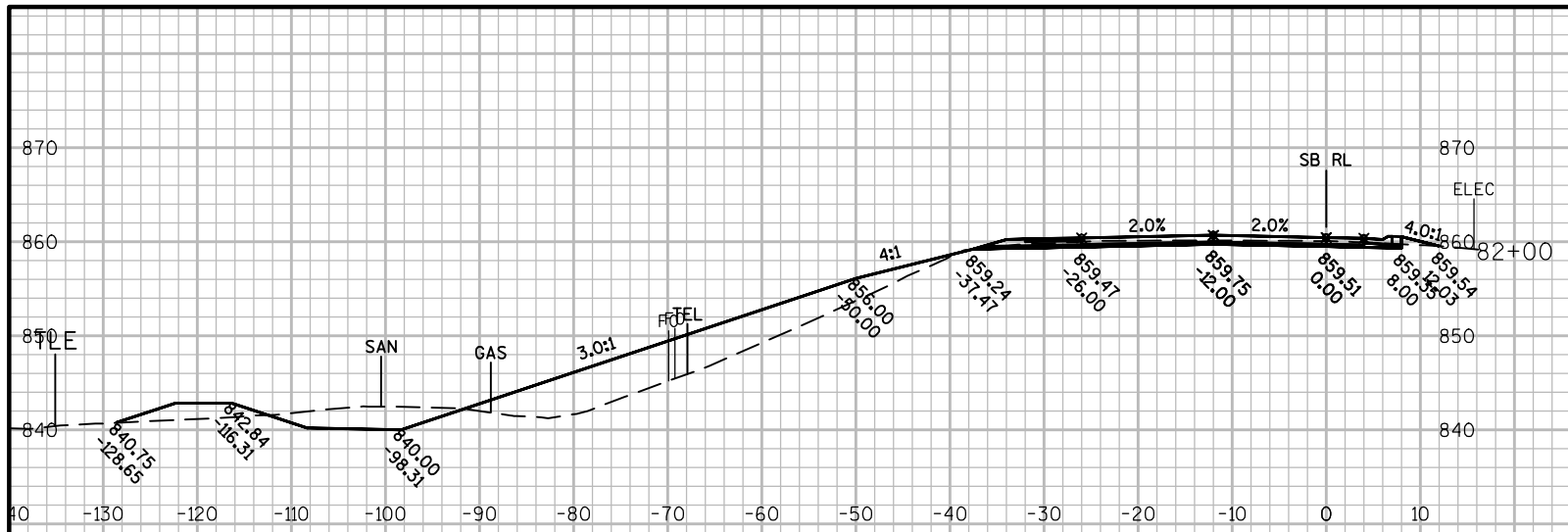
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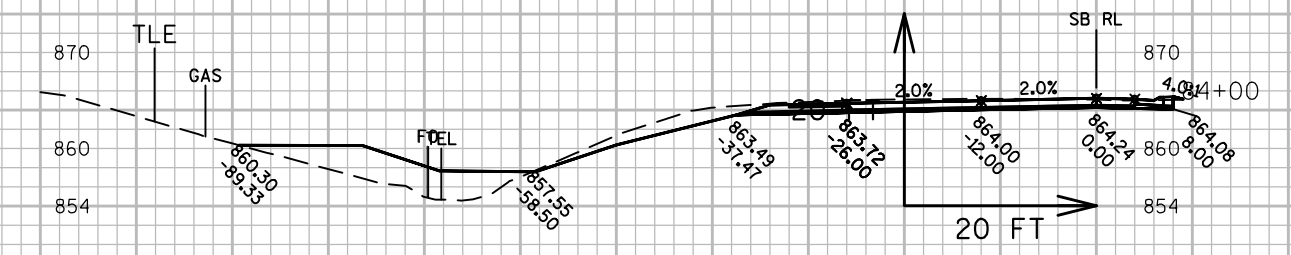
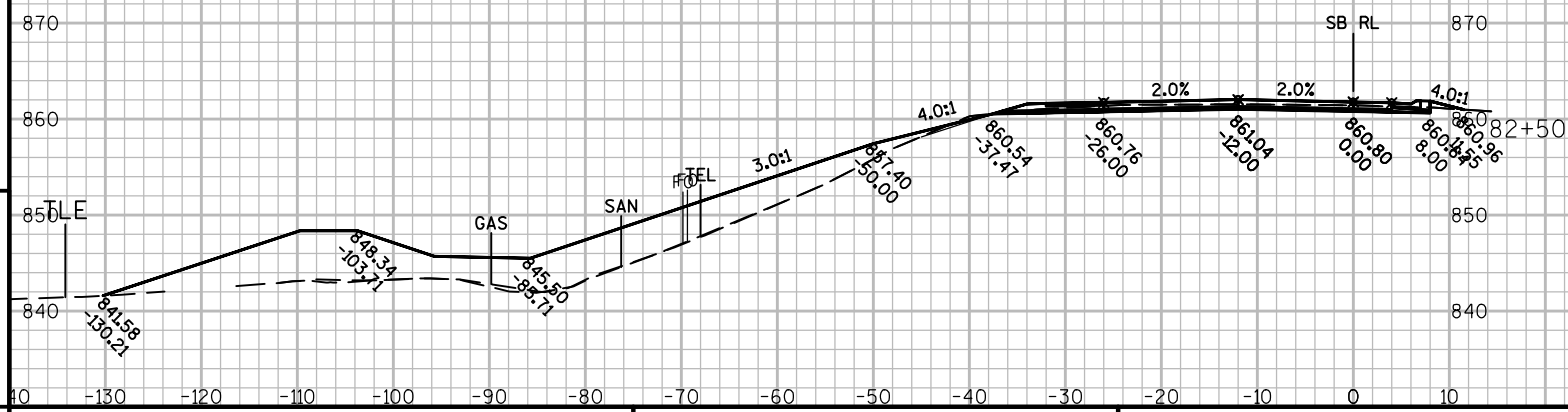
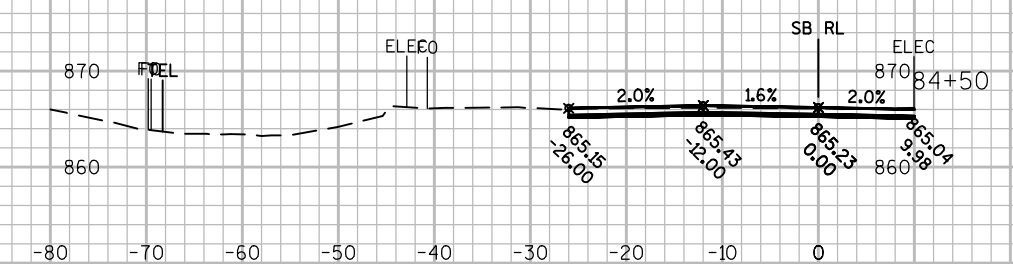
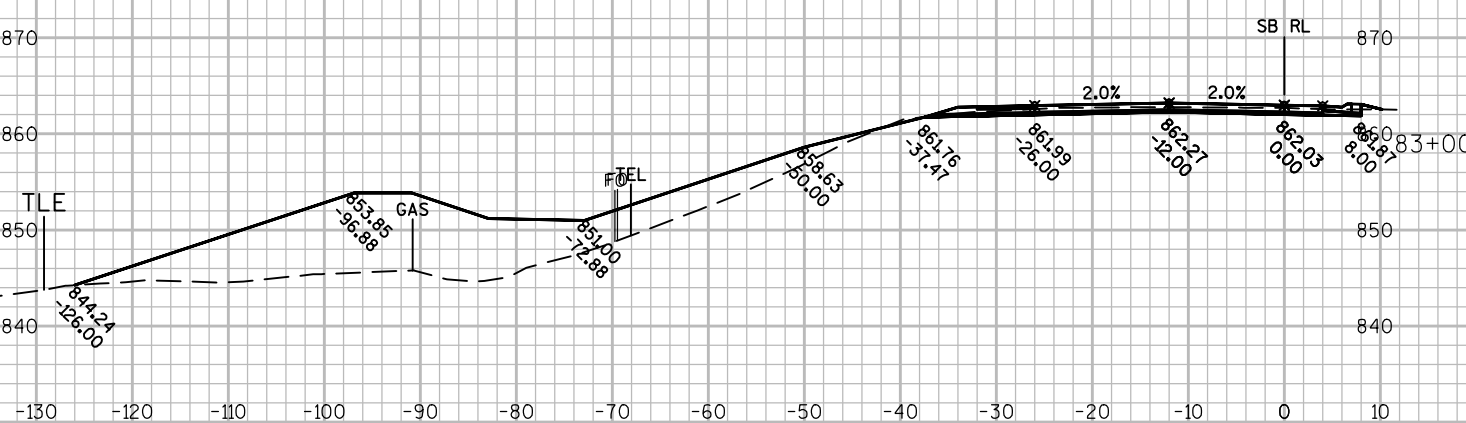
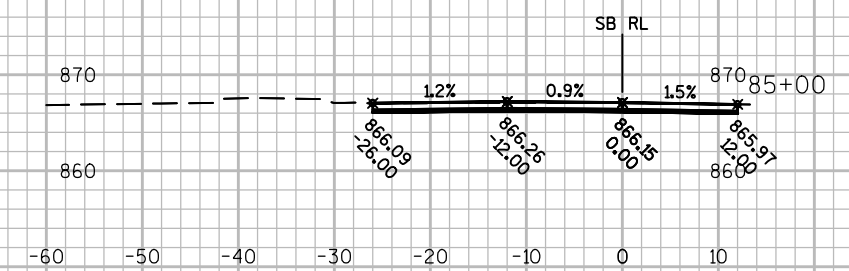
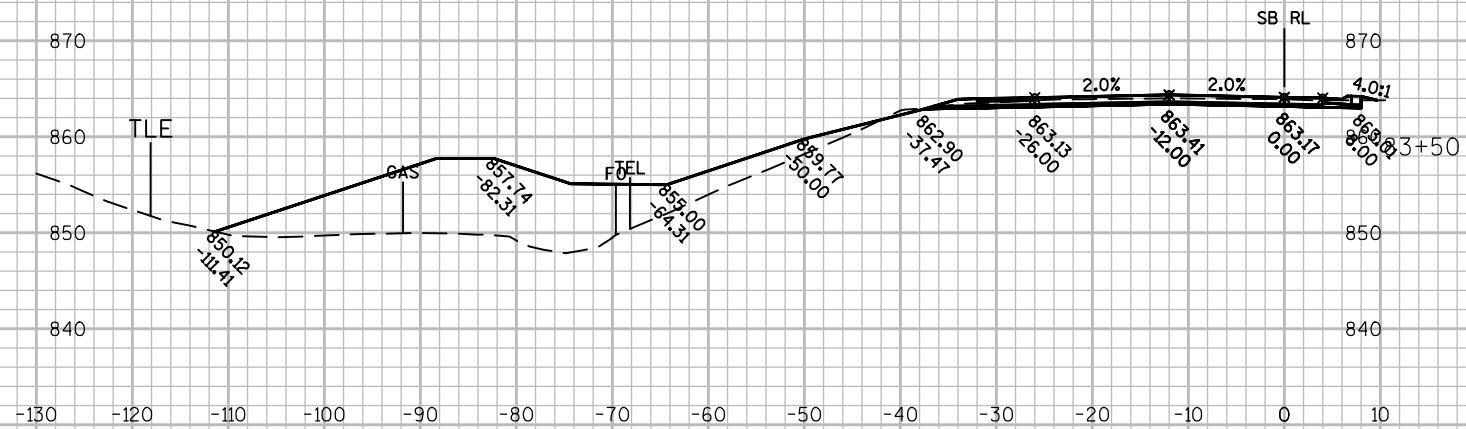
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PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SB ROADWAY SHEET E

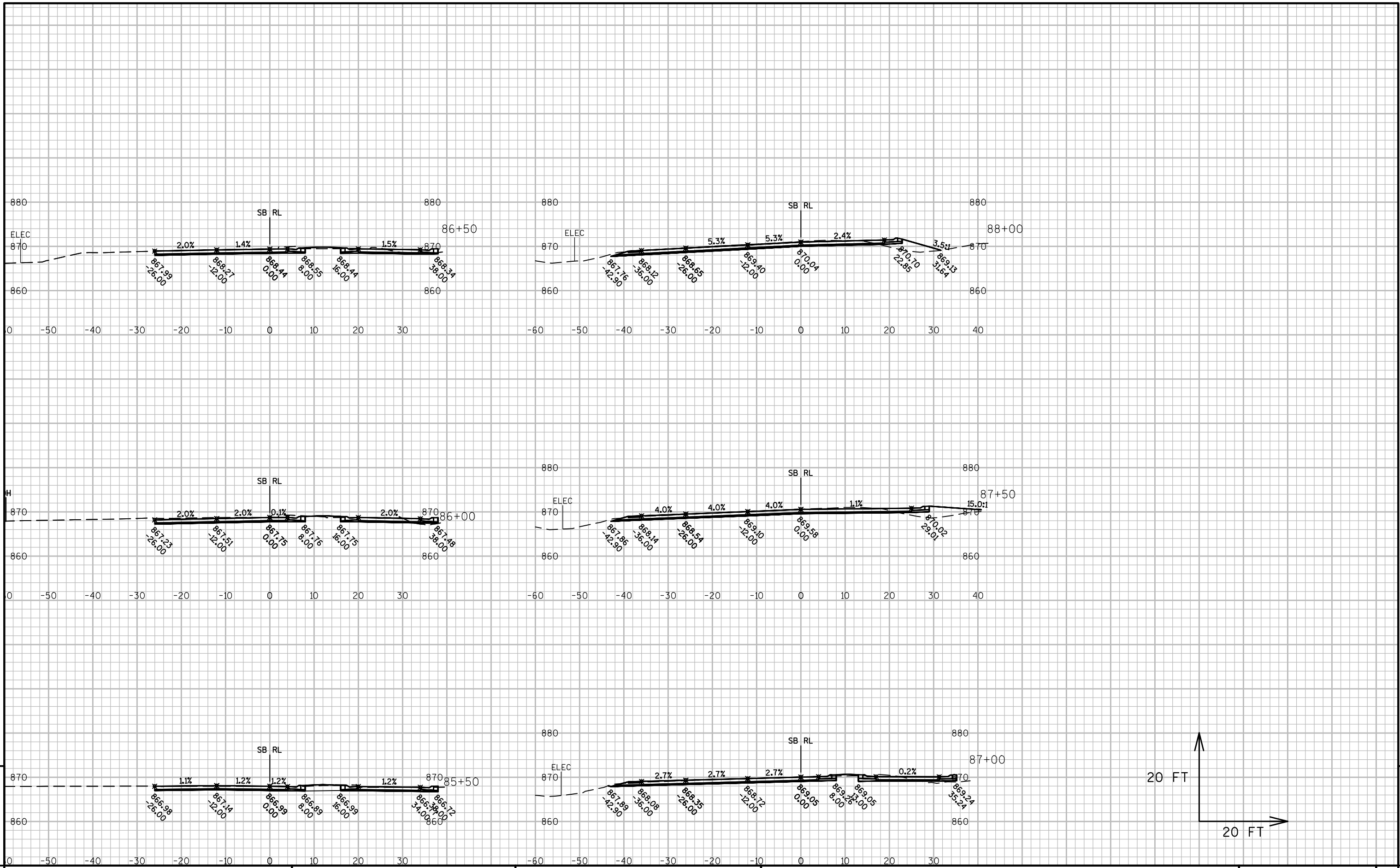
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LAYOUT NAME - (16)

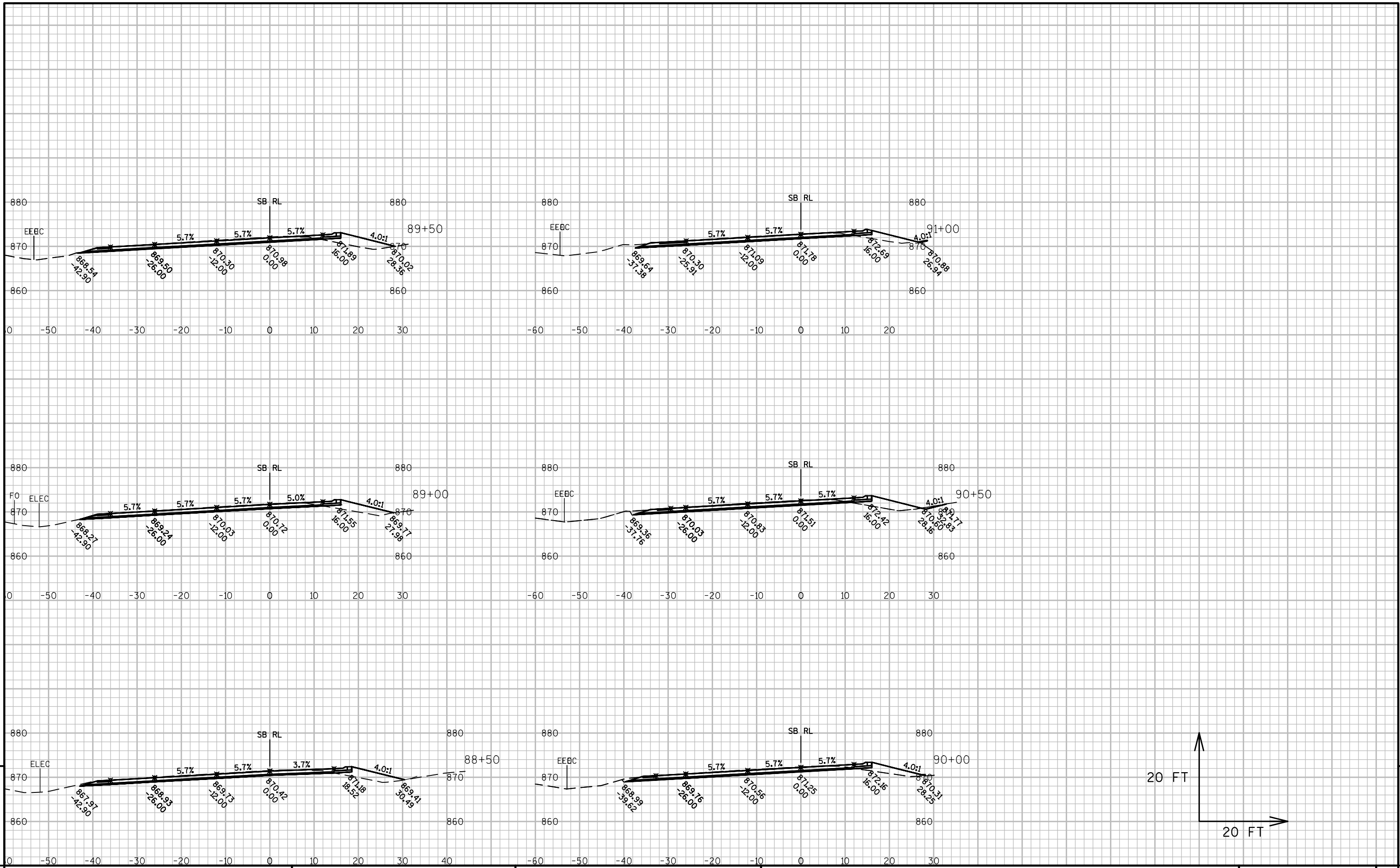




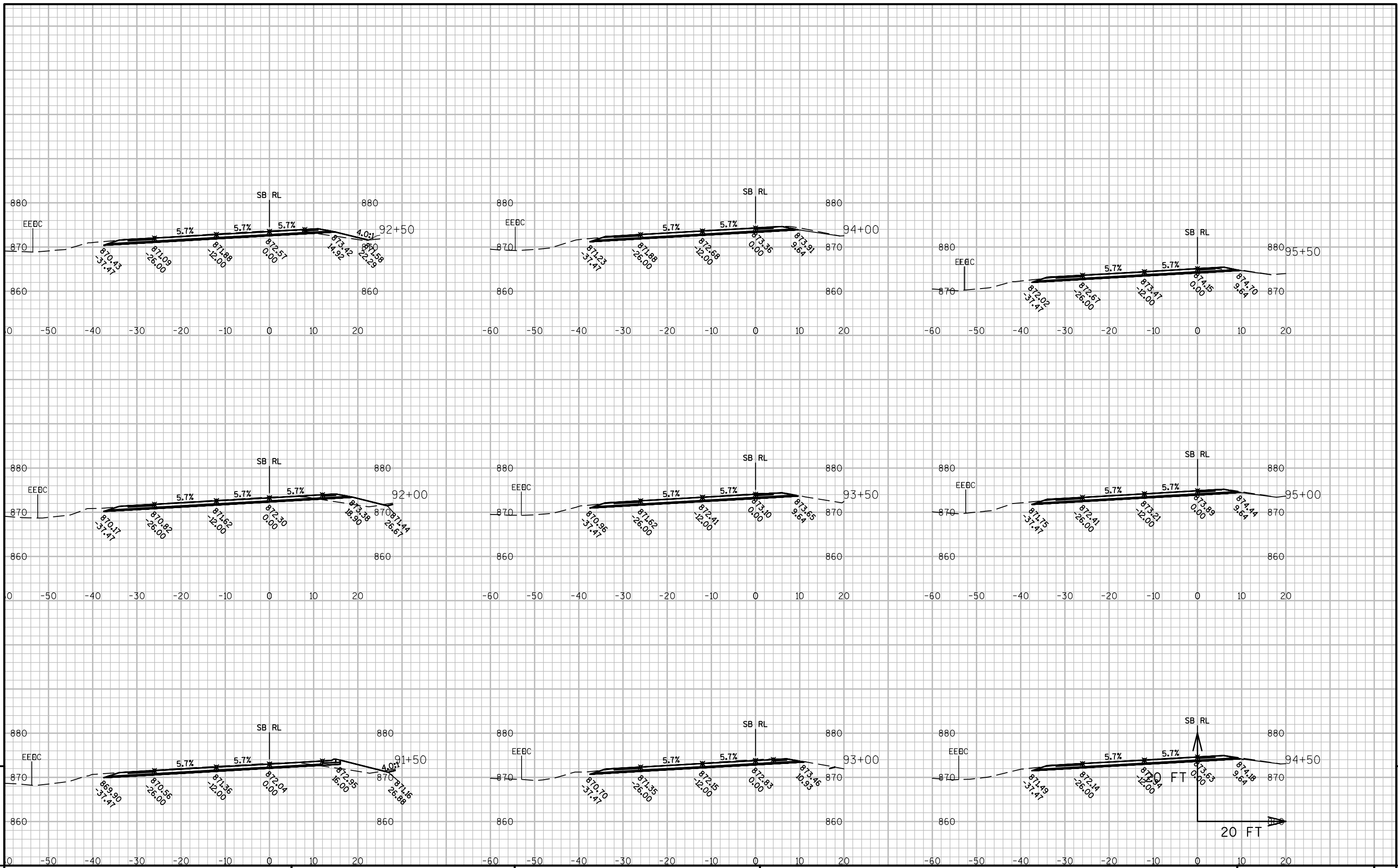
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SB ROADWAY SHEET E



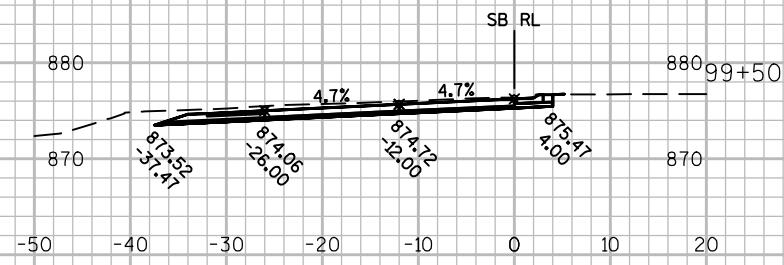
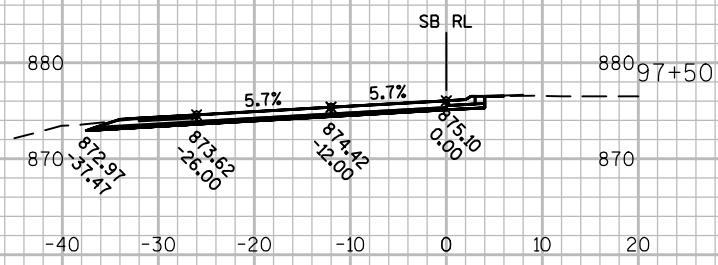
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SB ROADWAY SHEET E



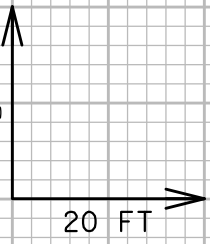
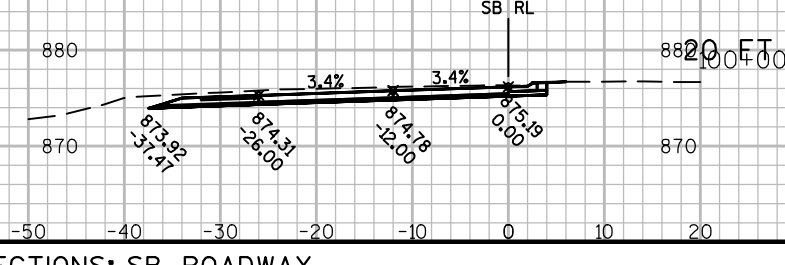
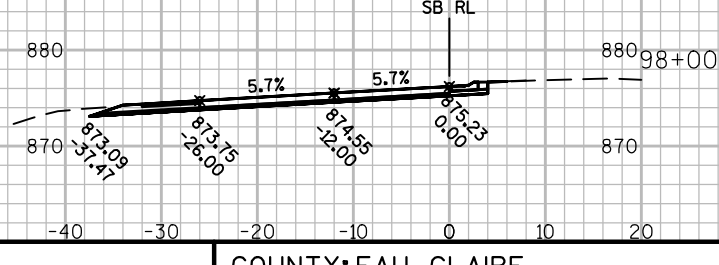
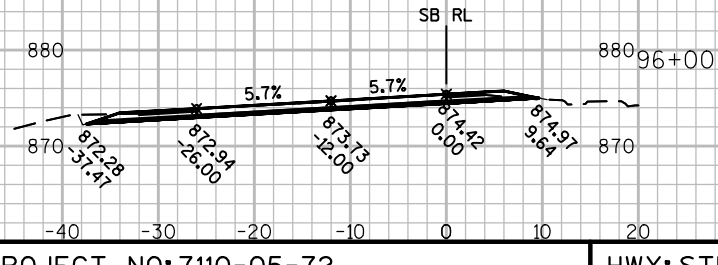
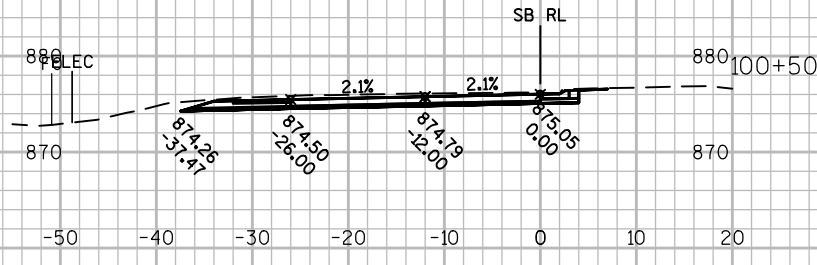
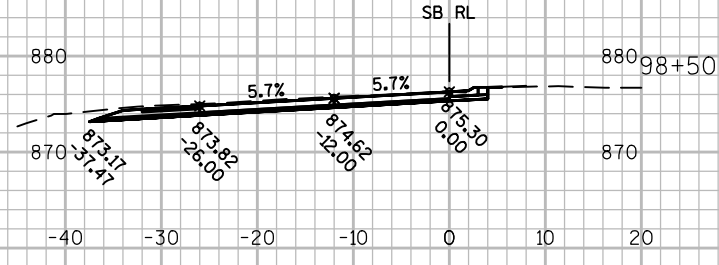
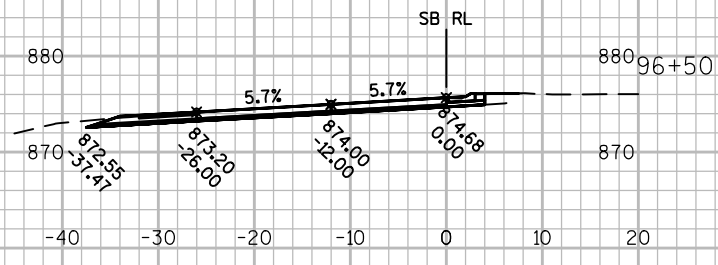
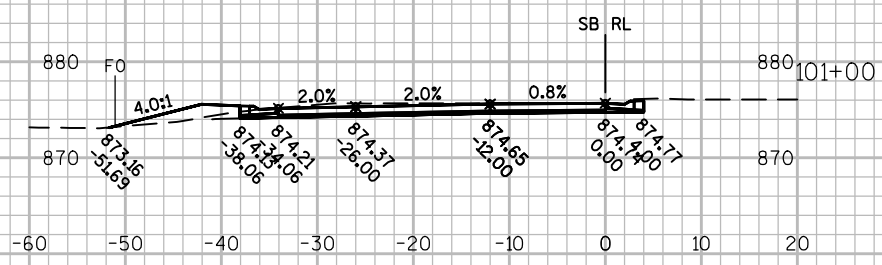
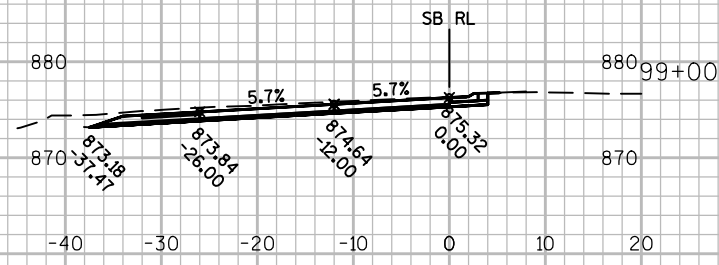
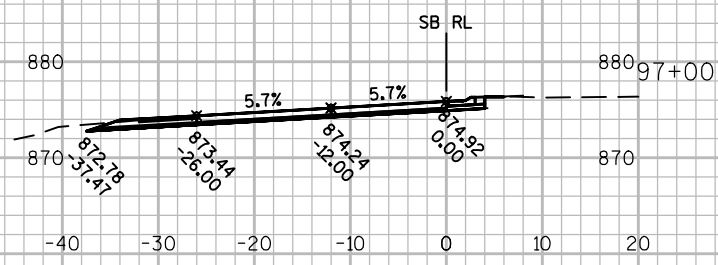
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SB ROADWAY SHEET E

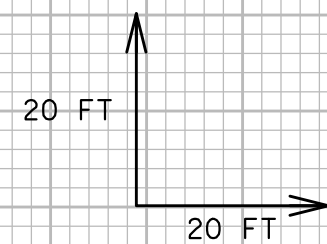
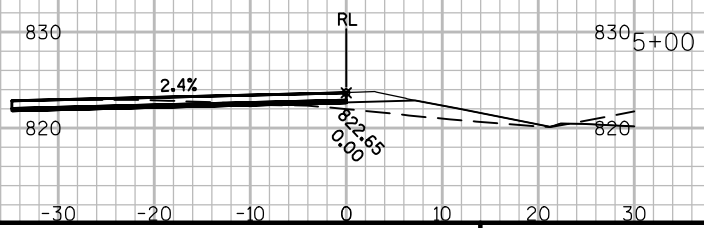
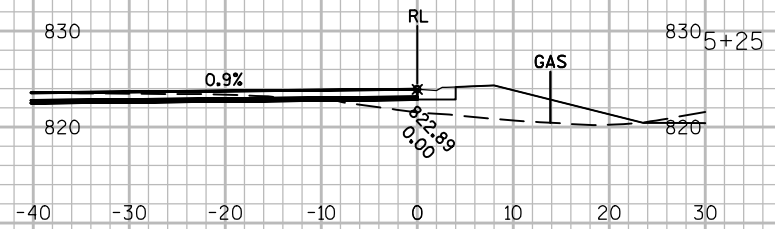
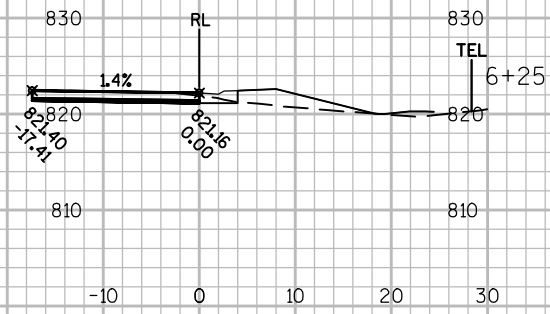
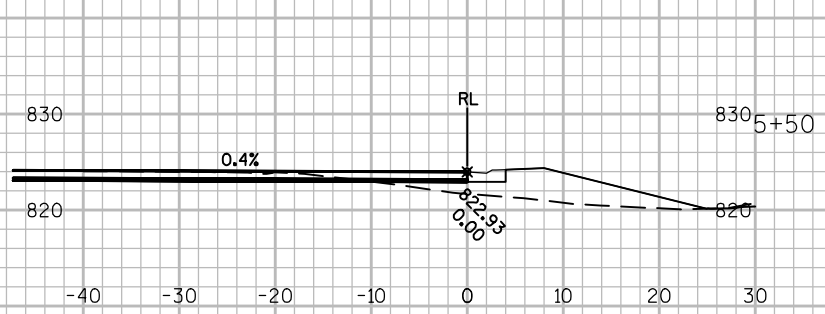


PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SB ROADWAY SHEET E



STATION 101+12 MATCH EXISTING





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PROJECT NO: 7110-05-72

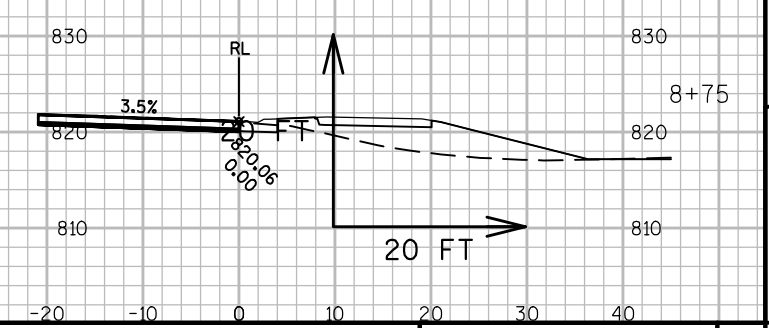
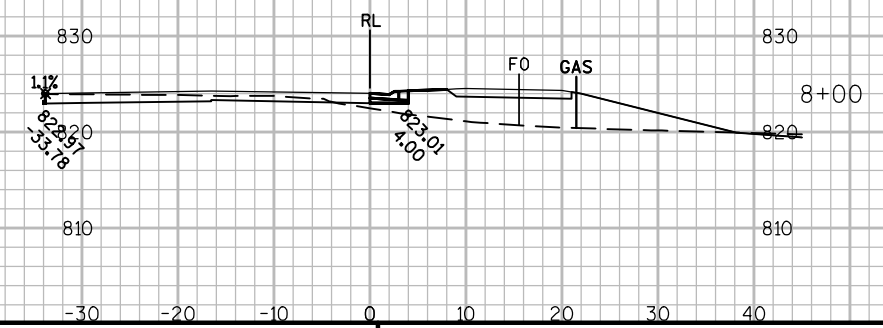
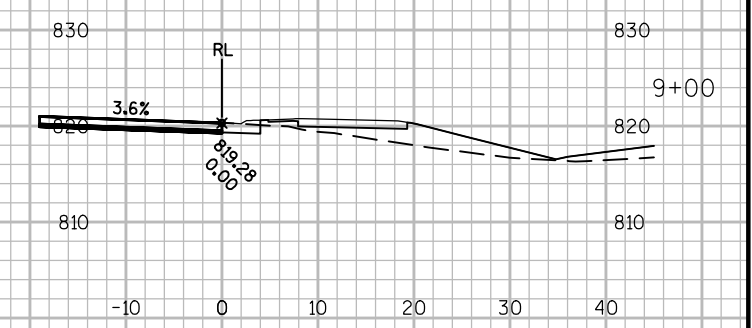
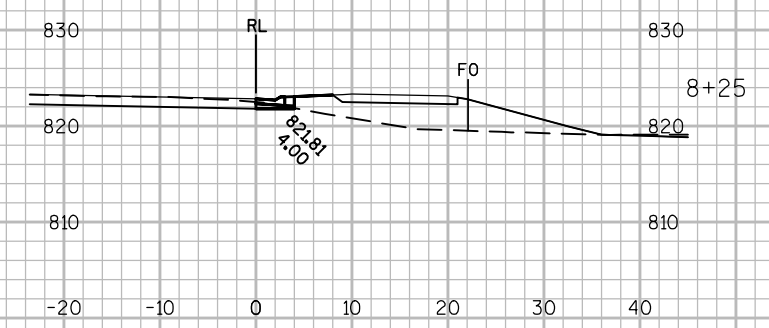
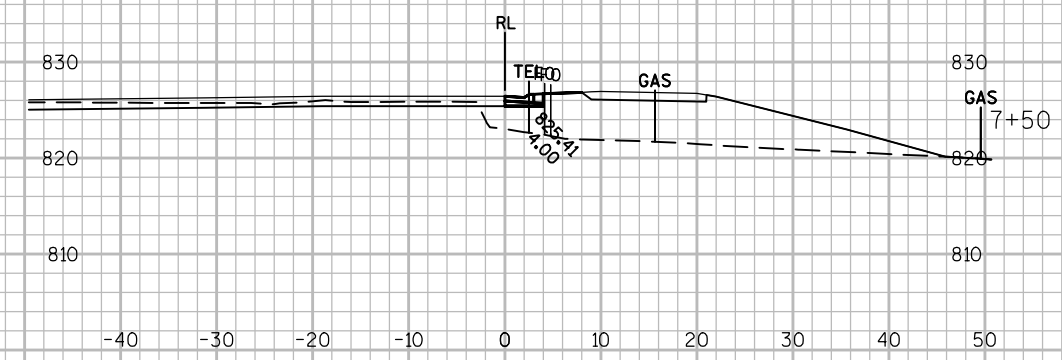
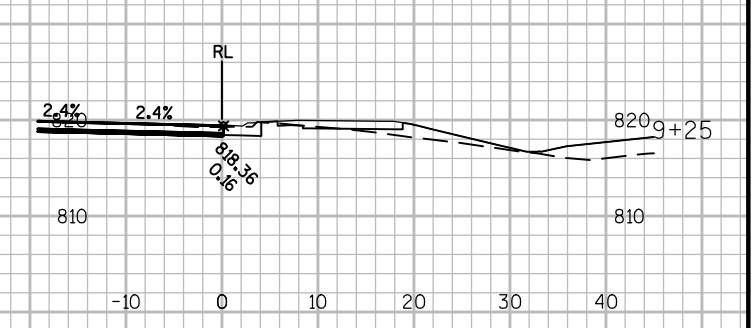
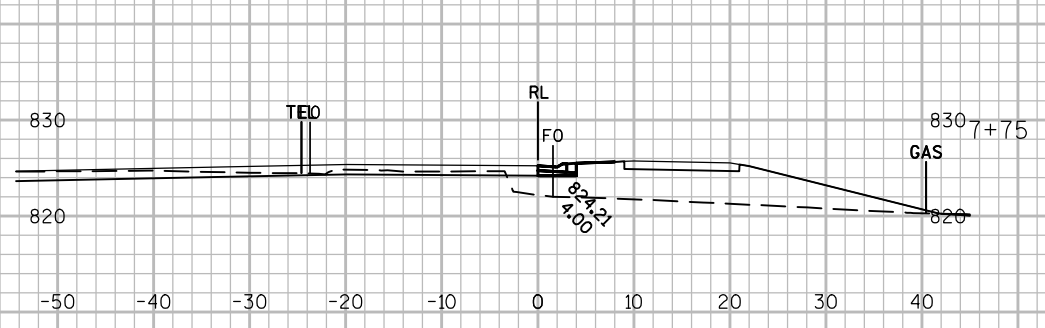
HWY: STH 37

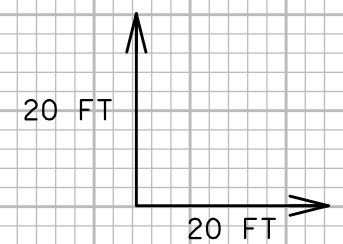
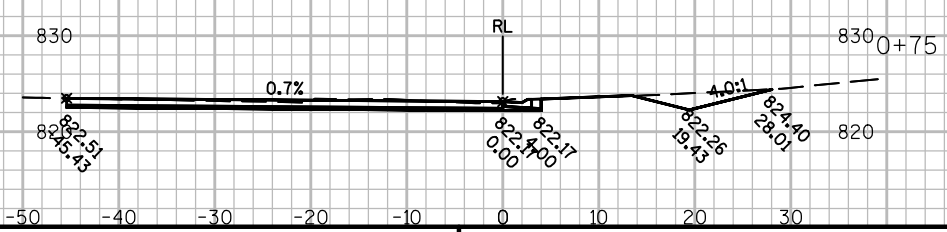
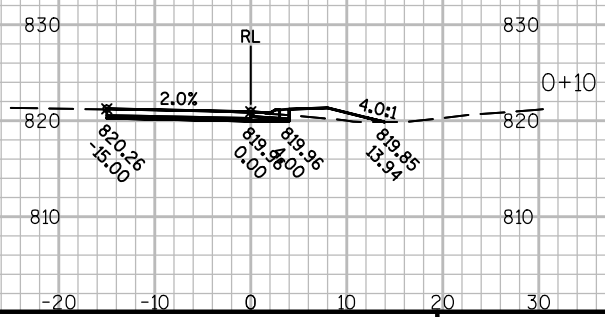
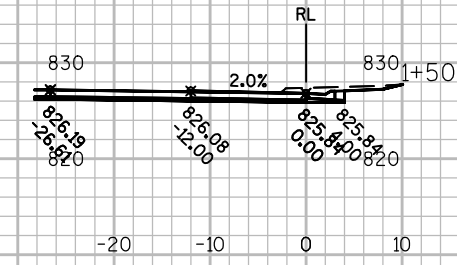
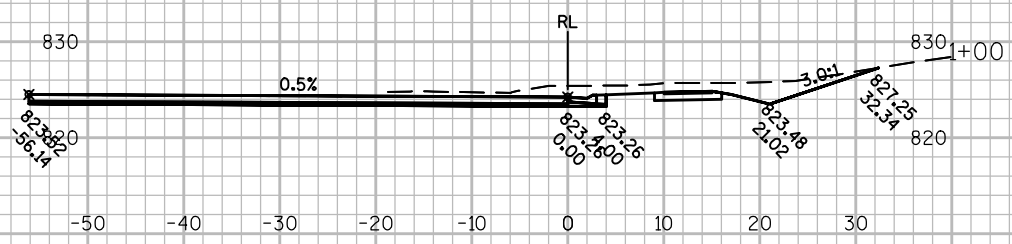
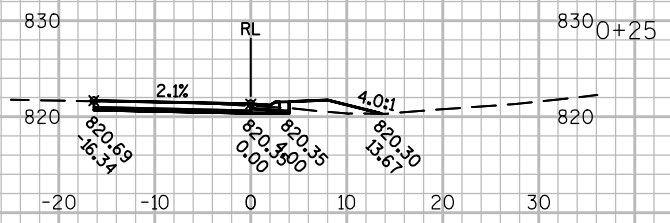
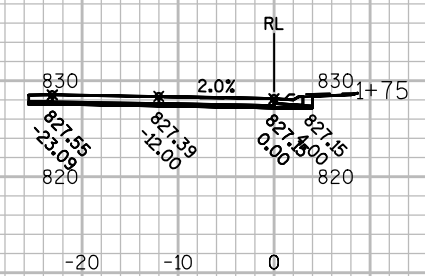
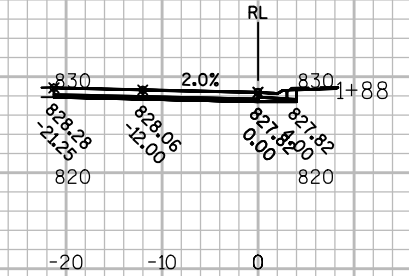
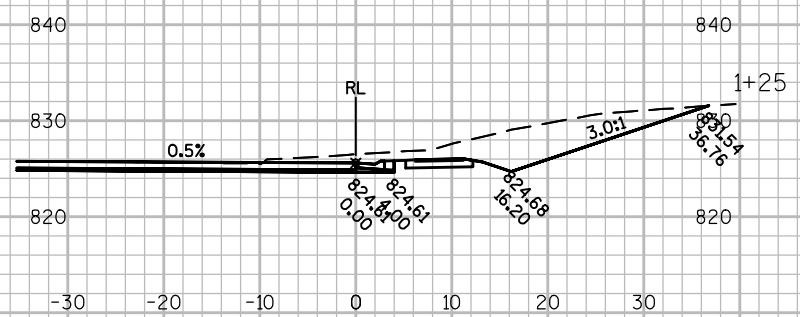
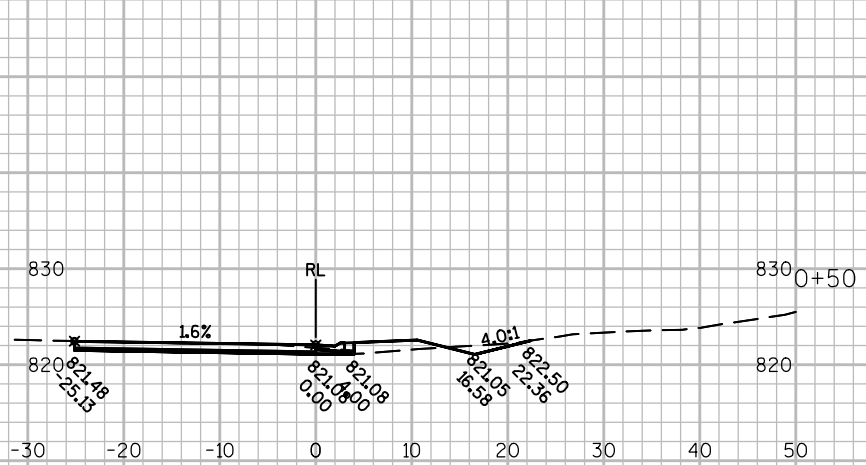
COUNTY: EAU CLAIRE

CROSS SECTIONS: SHORT STREET-SOUTH QUADRANT

SHEET

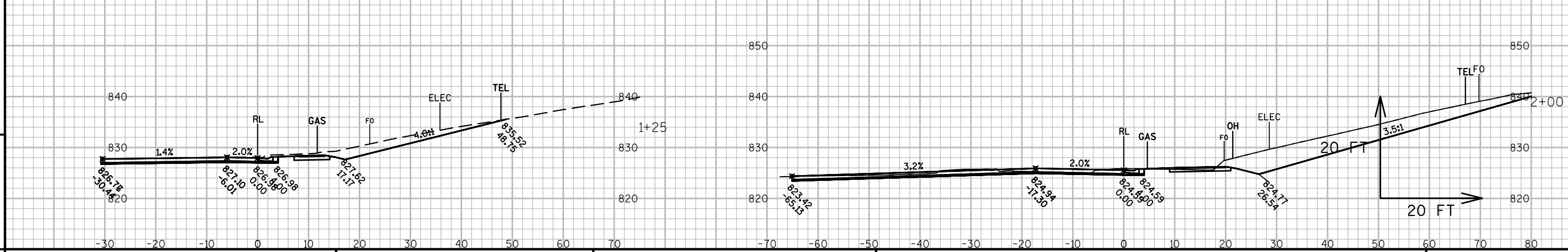
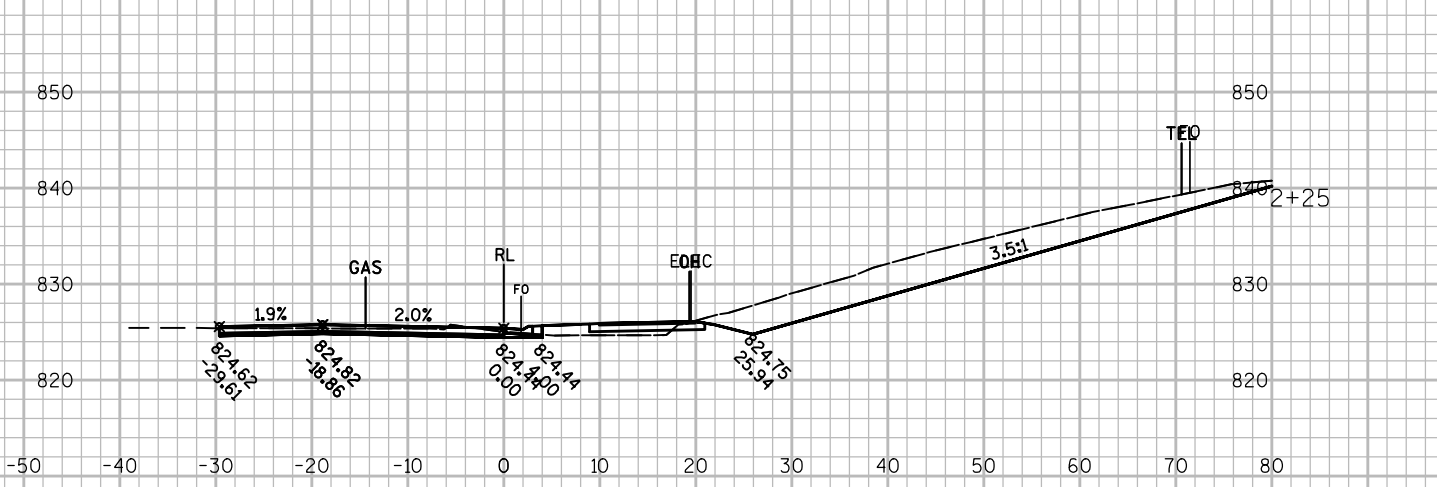
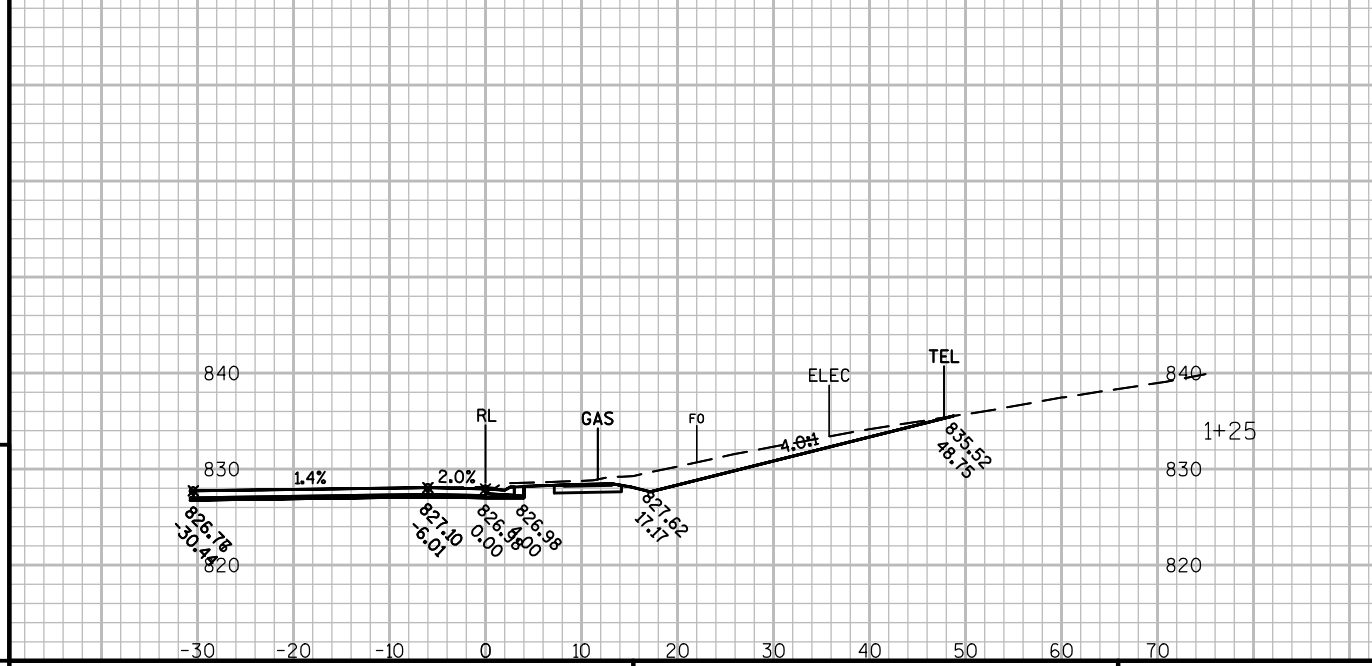
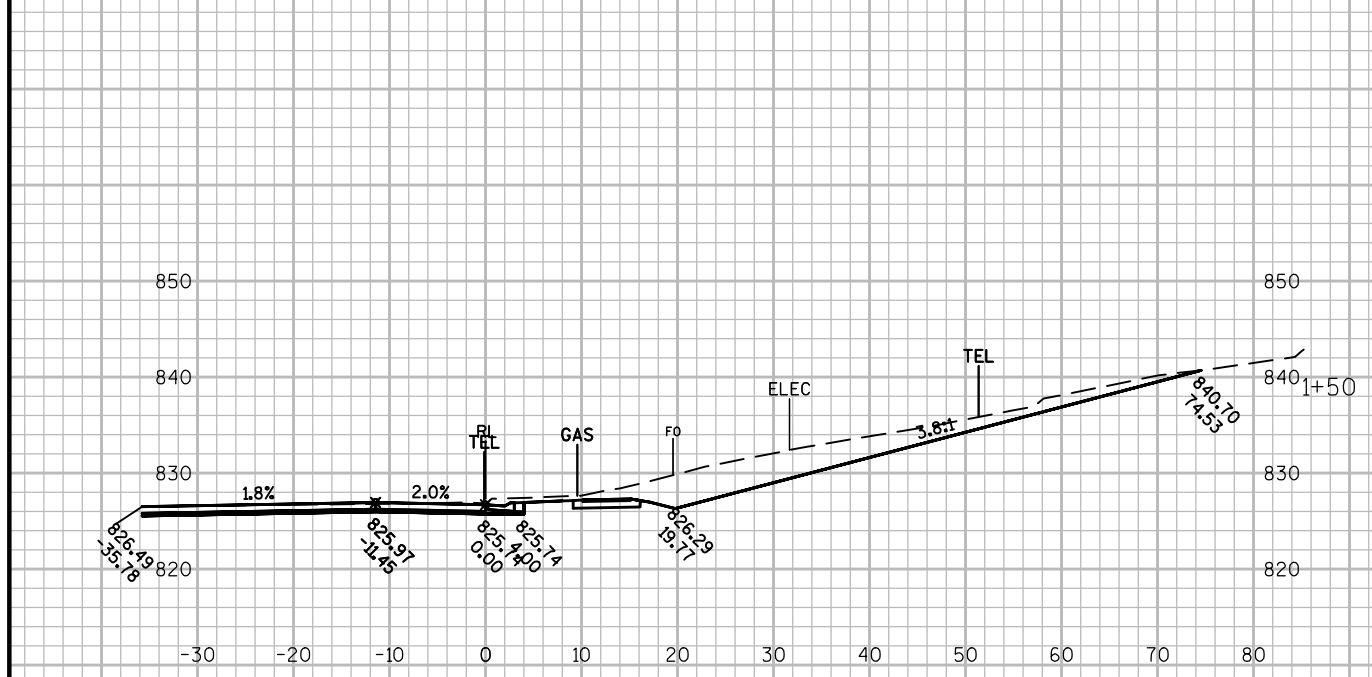
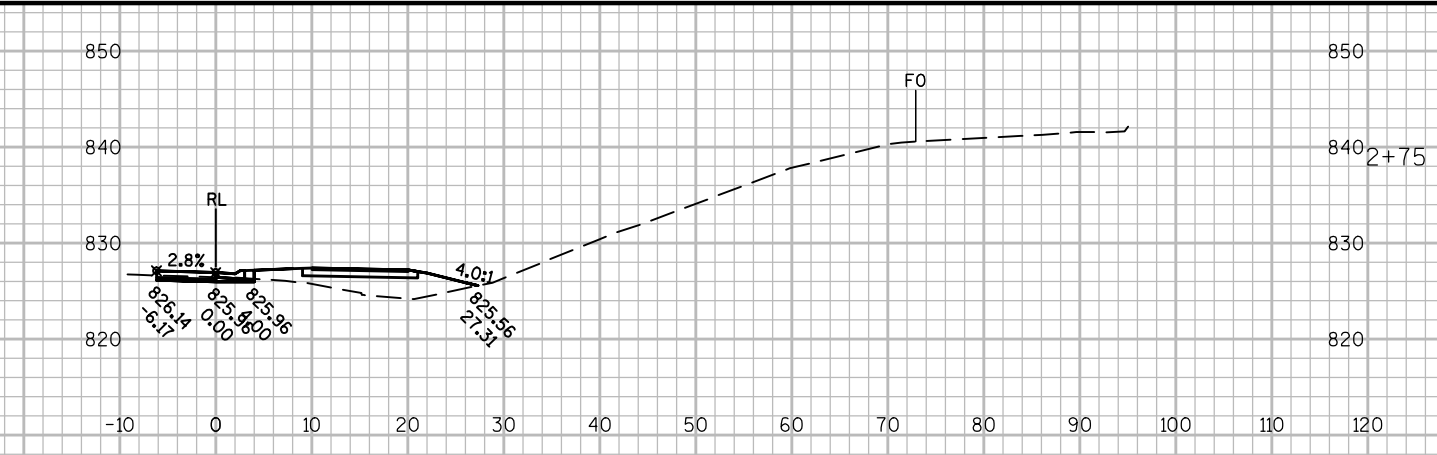
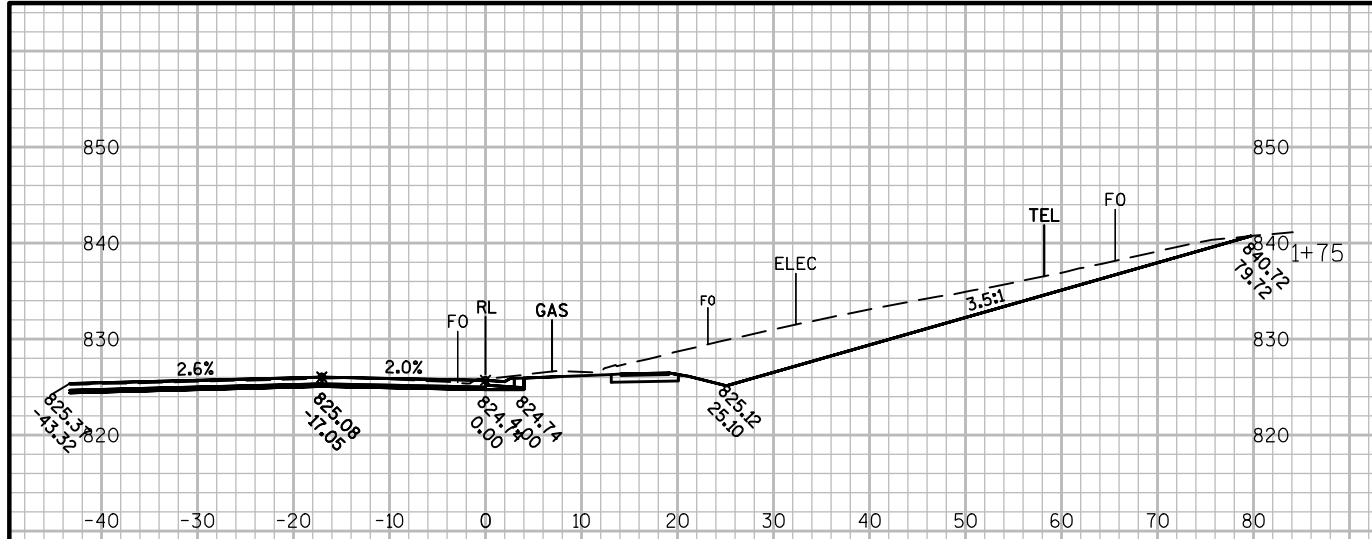
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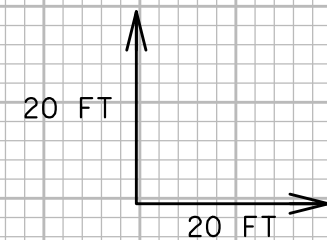
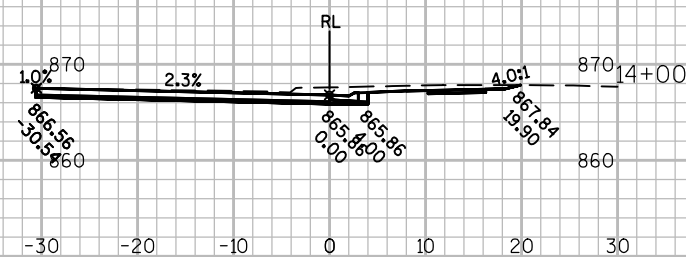
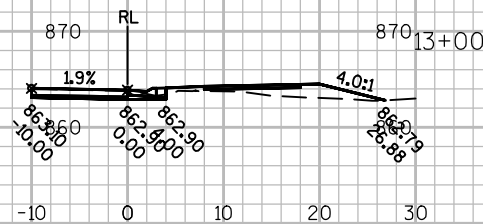
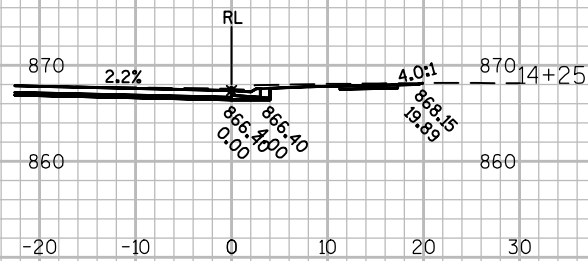
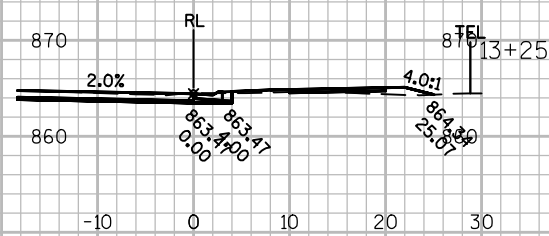
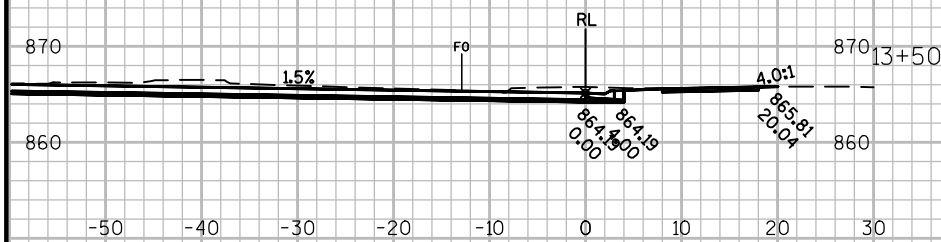
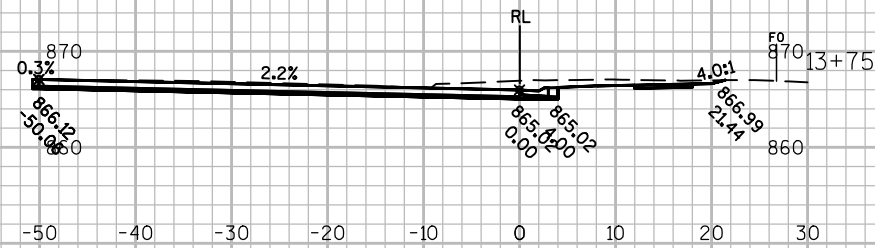


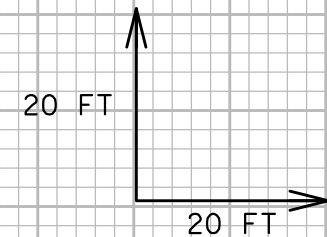
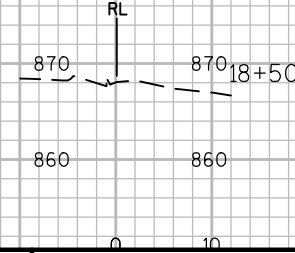
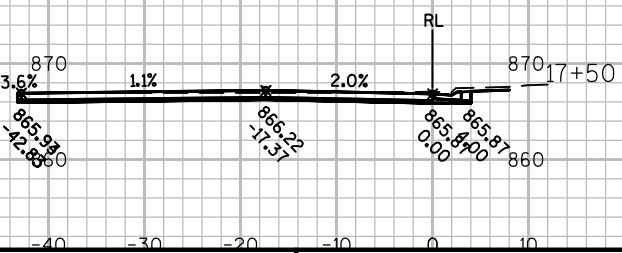
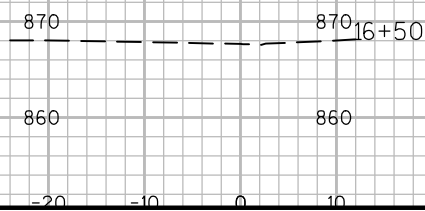
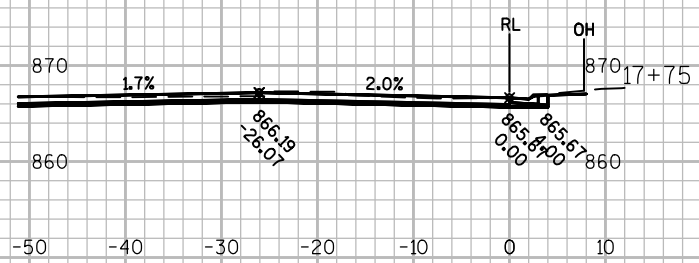
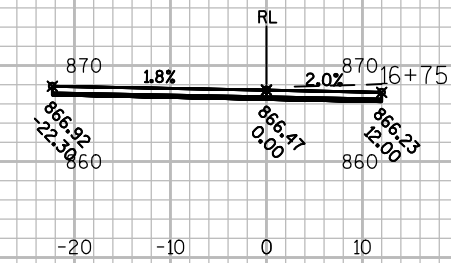
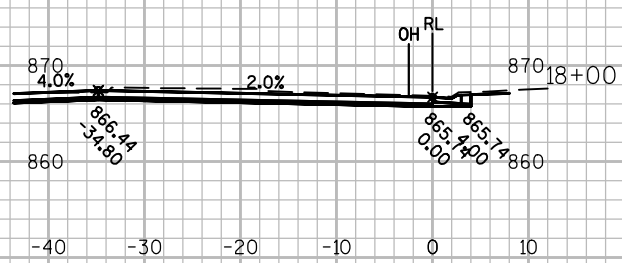
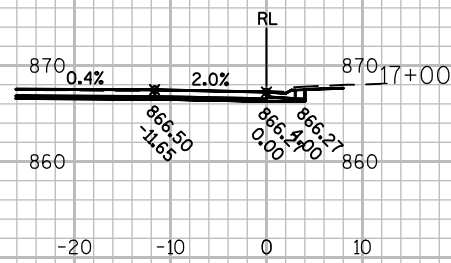
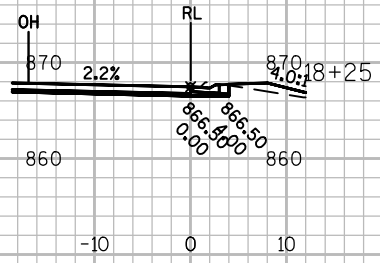
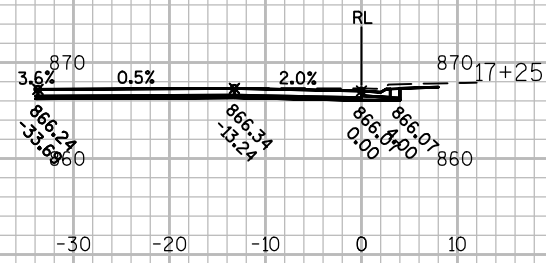
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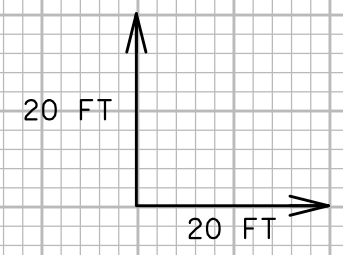
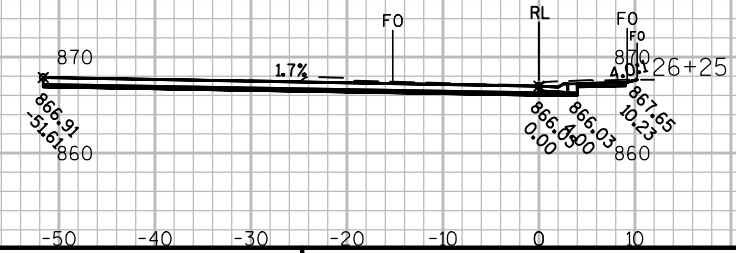
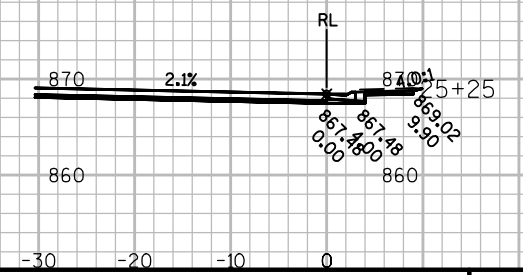
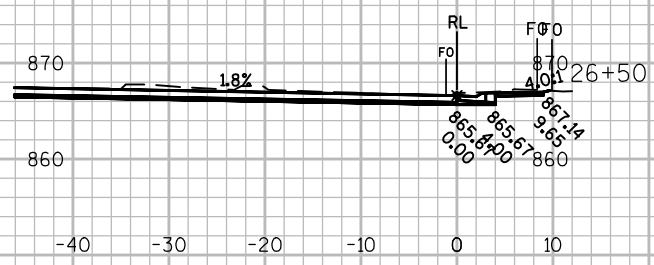
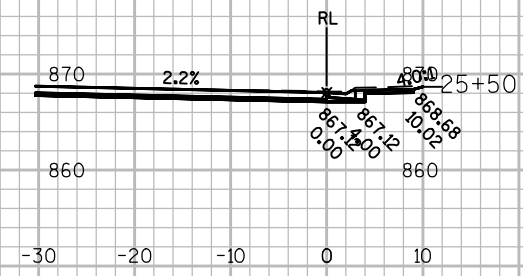
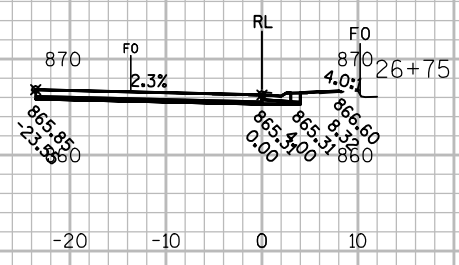
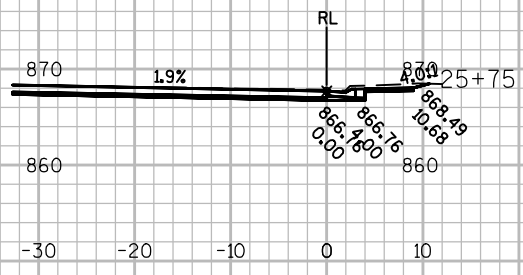
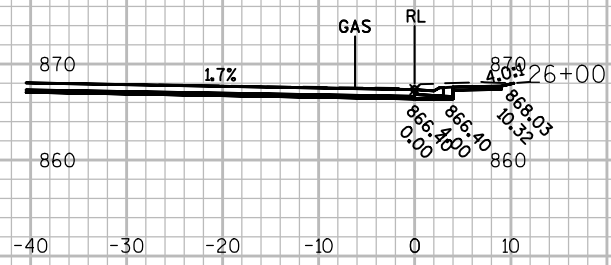
PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: HAMILTON AVENUE-NORTH QUADRANT SHEET E





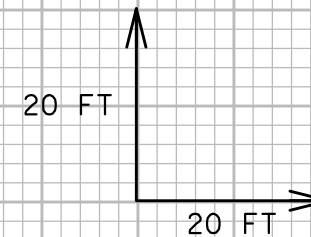
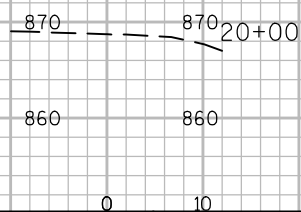
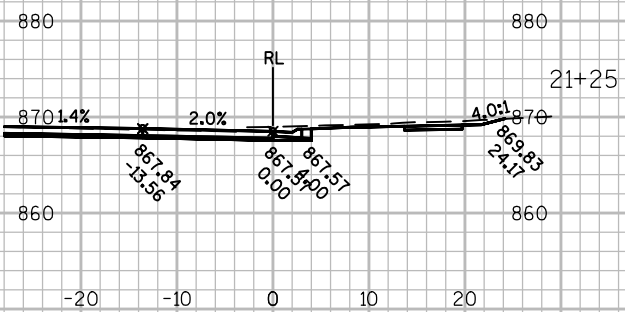
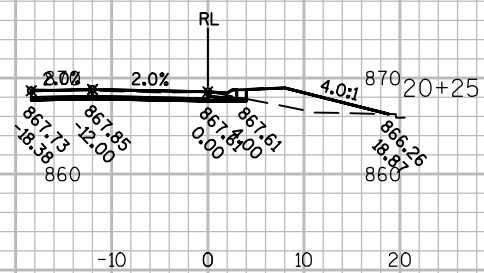
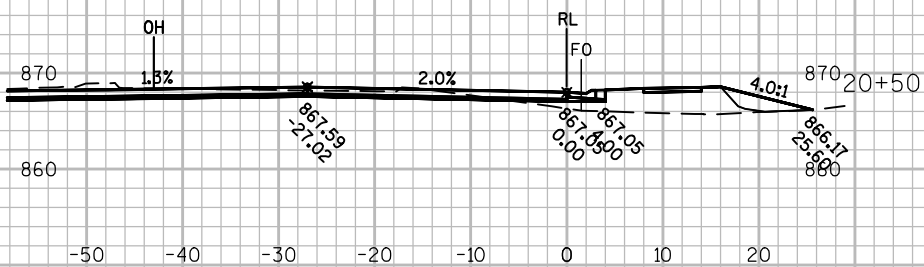
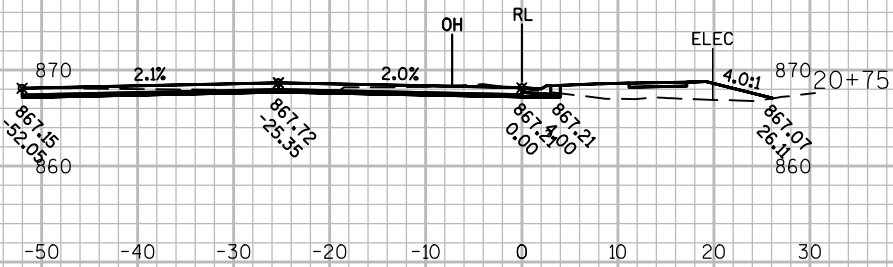
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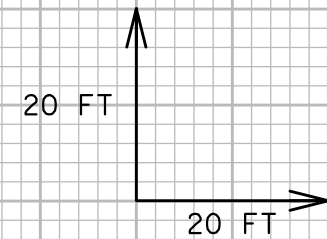
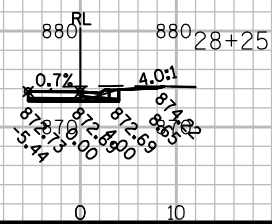
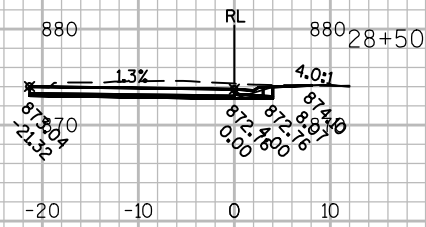
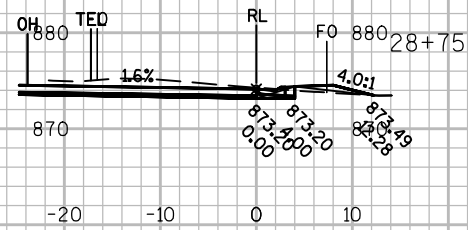
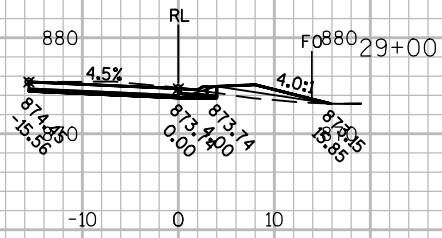
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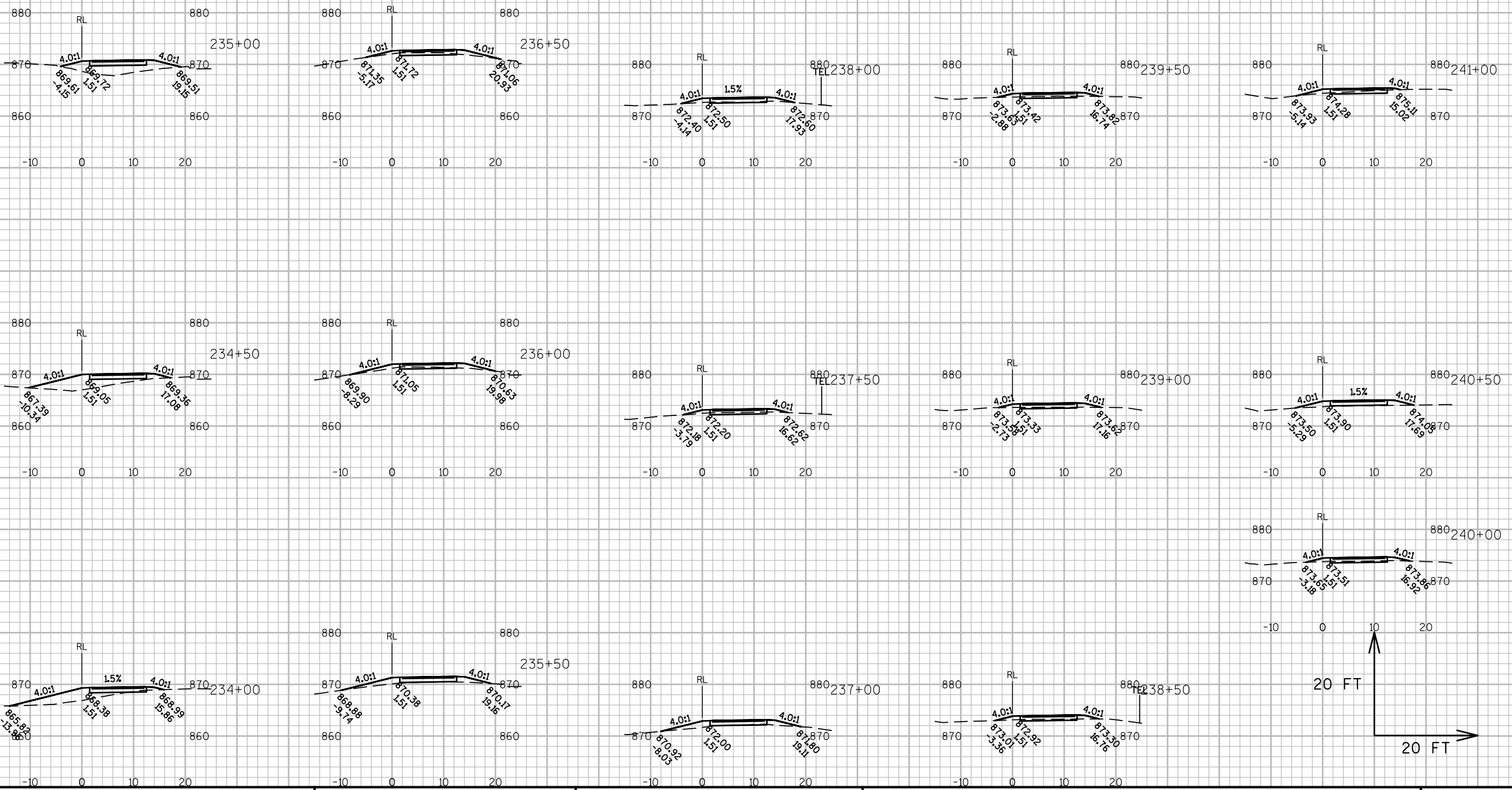
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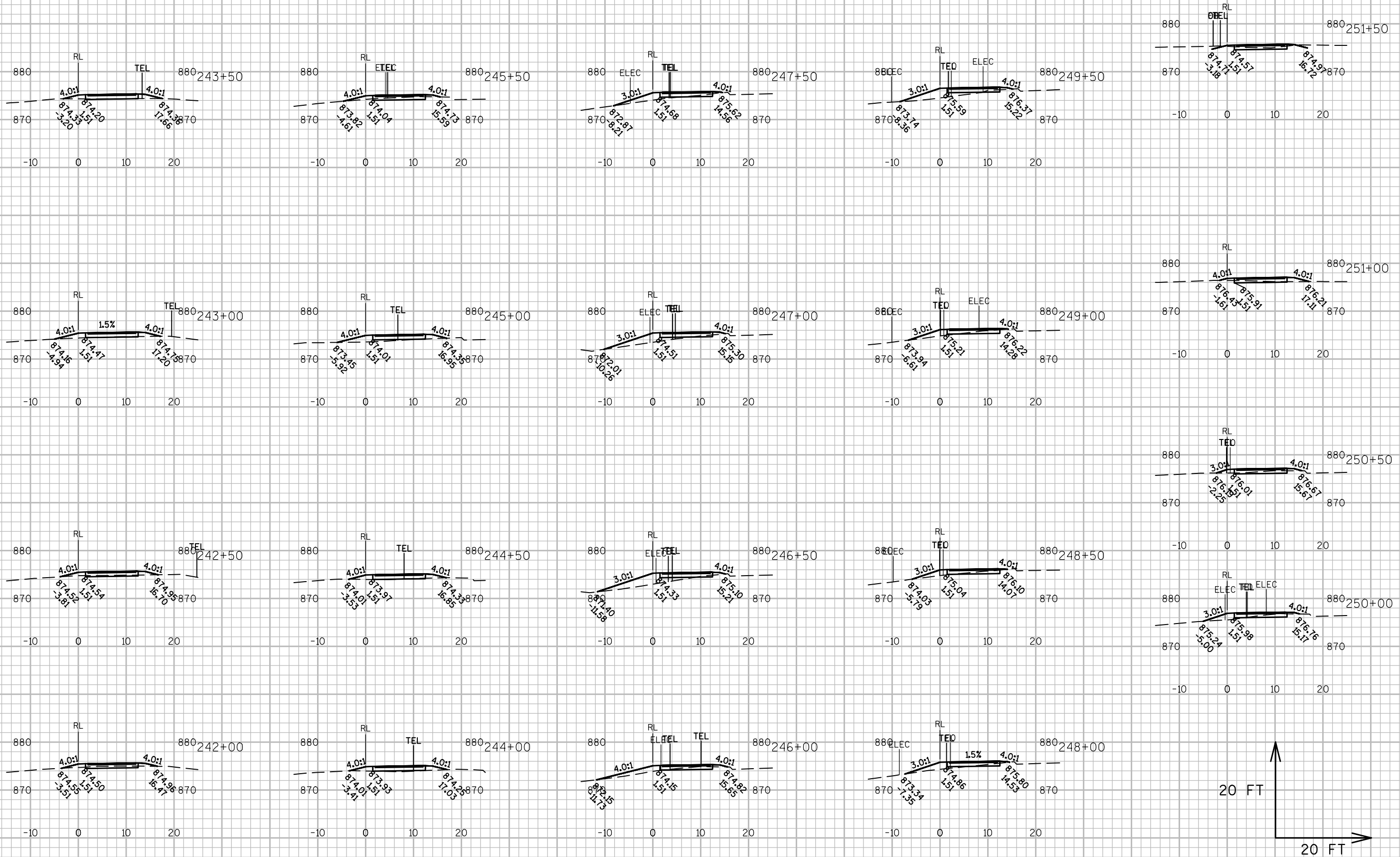
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PROJECT NO: 7110-05-72 HWY: STH 37 COUNTY: EAU CLAIRE CROSS SECTIONS: SHARED USE PATH SHEET E



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PROJECT NO: 7110-05-72

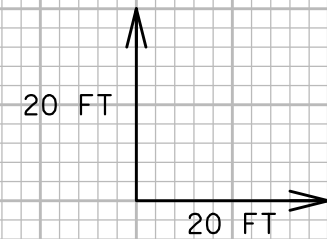
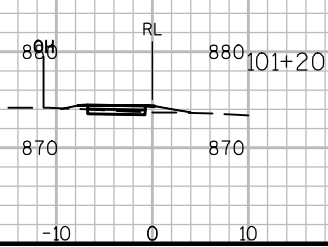
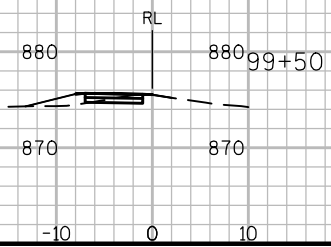
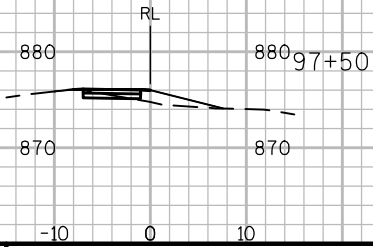
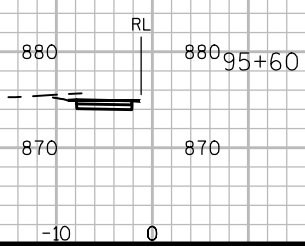
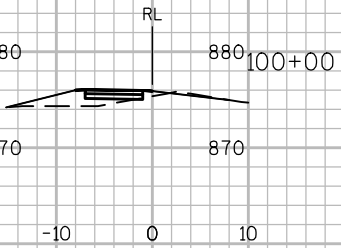
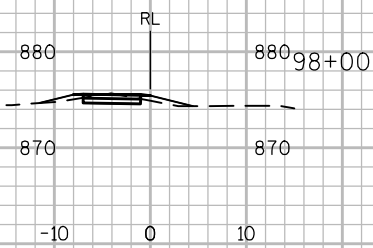
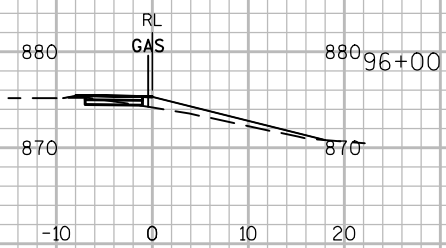
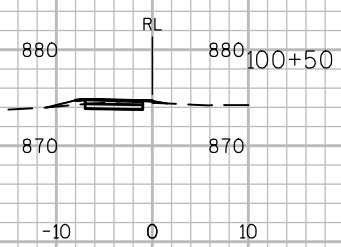
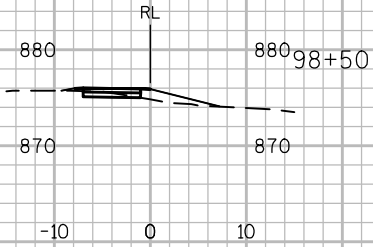
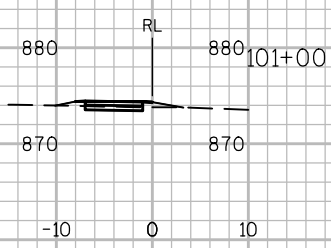
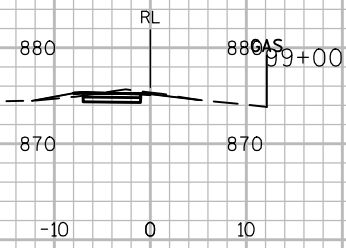
HWY: STH 37

COUNTY: EAU CLAIRE

CROSS SECTIONS: SHARED USE PATH

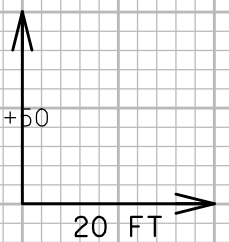
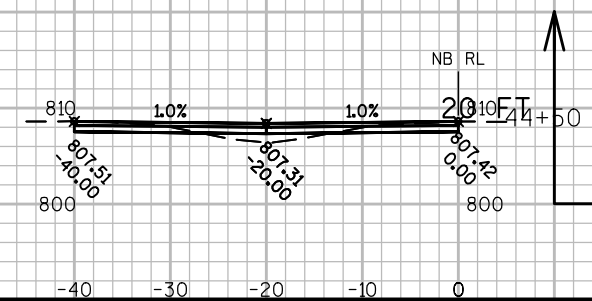
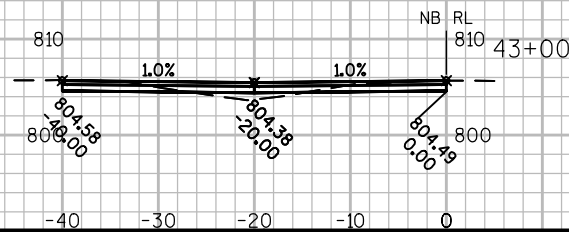
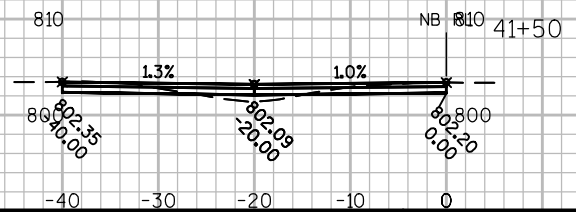
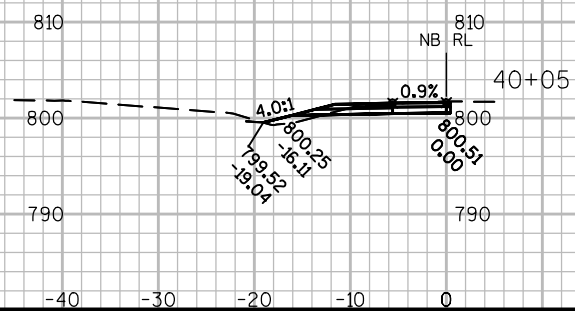
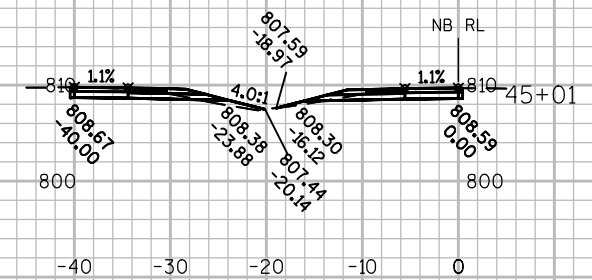
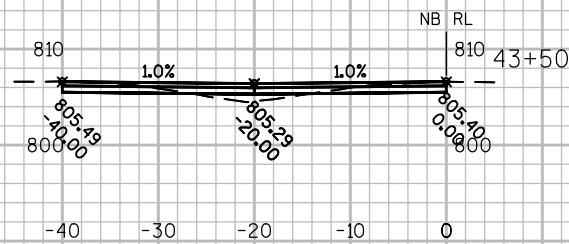
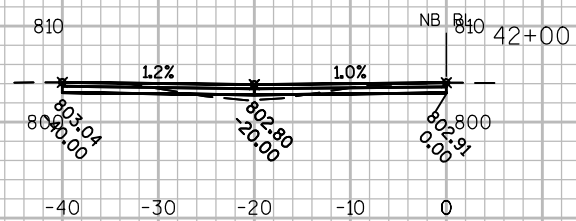
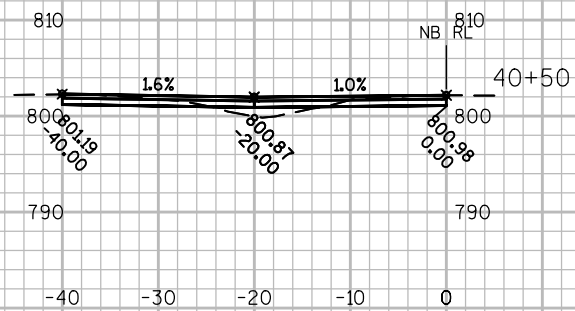
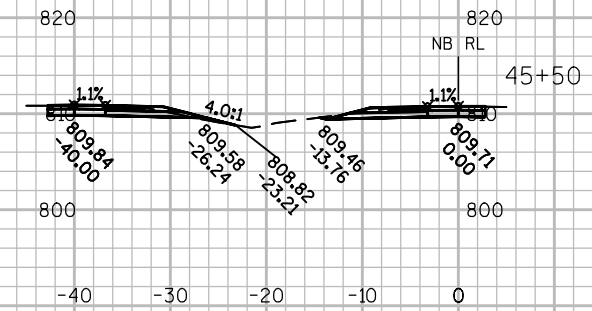
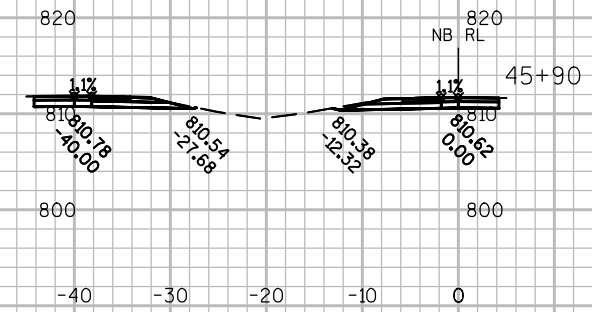
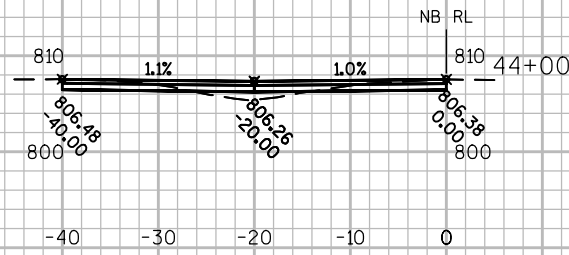
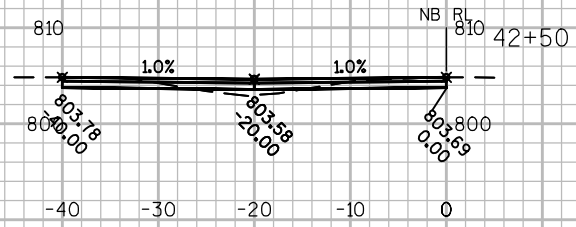
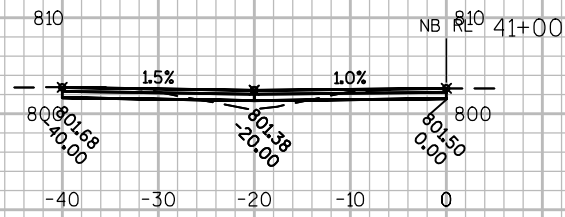
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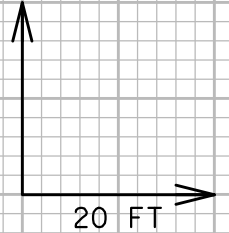
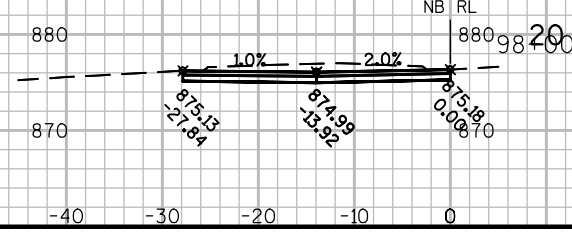
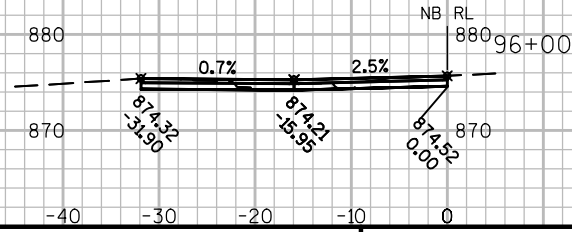
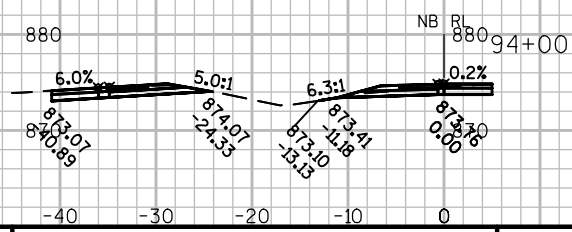
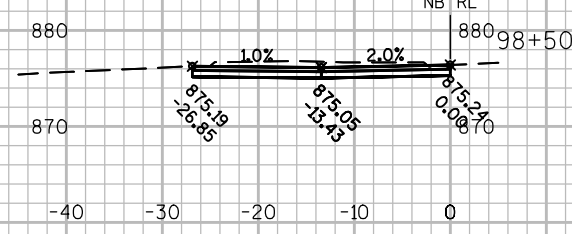
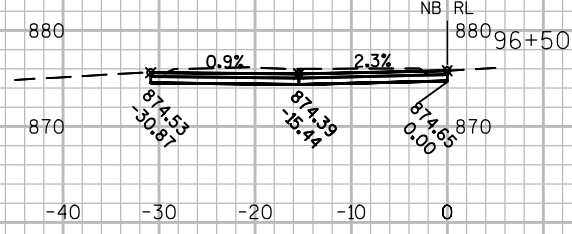
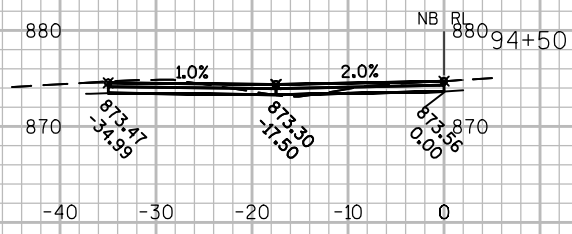
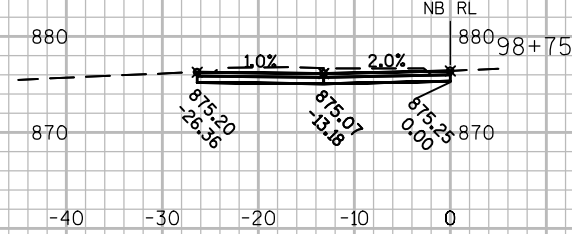
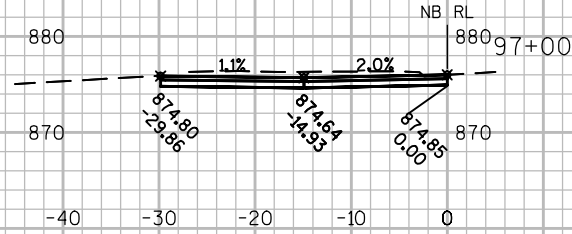
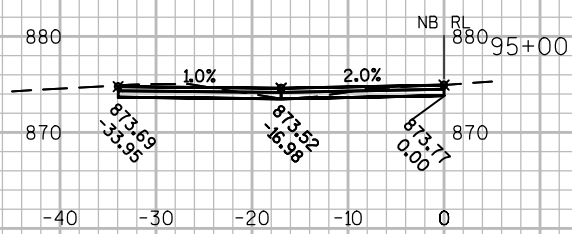
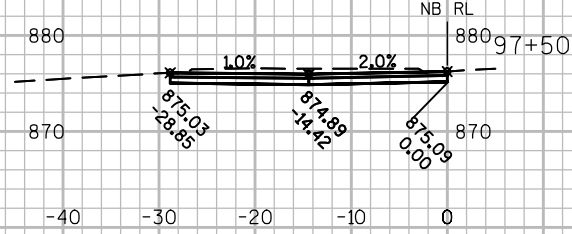
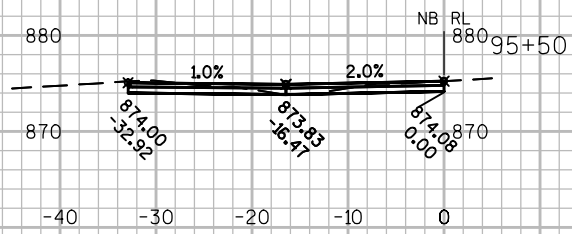
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Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>