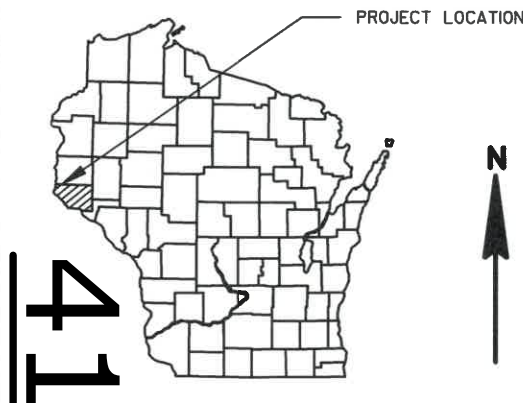


EAU MAY 2018
PROJECT ID: 7919-01-70
WITH: N/A
COUNTY: PIERCE

ORDER OF SHEETS	
Section No. 1	Title
Section No. 2	Typical Sections and Details (Includes Erosion Control Plans)
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 = 122	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
CTH F - RIVER FALLS
CTH F - DRY RUN ROAD
CTH M
PIERCE COUNTY

COUNTY PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7919-01-70	WISC 2018261	1



DESIGN DESIGNATION

A.A.D.T. (2016)	=	1700
A.A.D.T. (2036)	=	2100
D.H.V. (2036)	=	134
D.D.	=	60/40
T.	=	15.6%
DESIGN SPEED	=	55 MPH
ESALS	=	N/A

CONVENTIONAL SYMBOLS

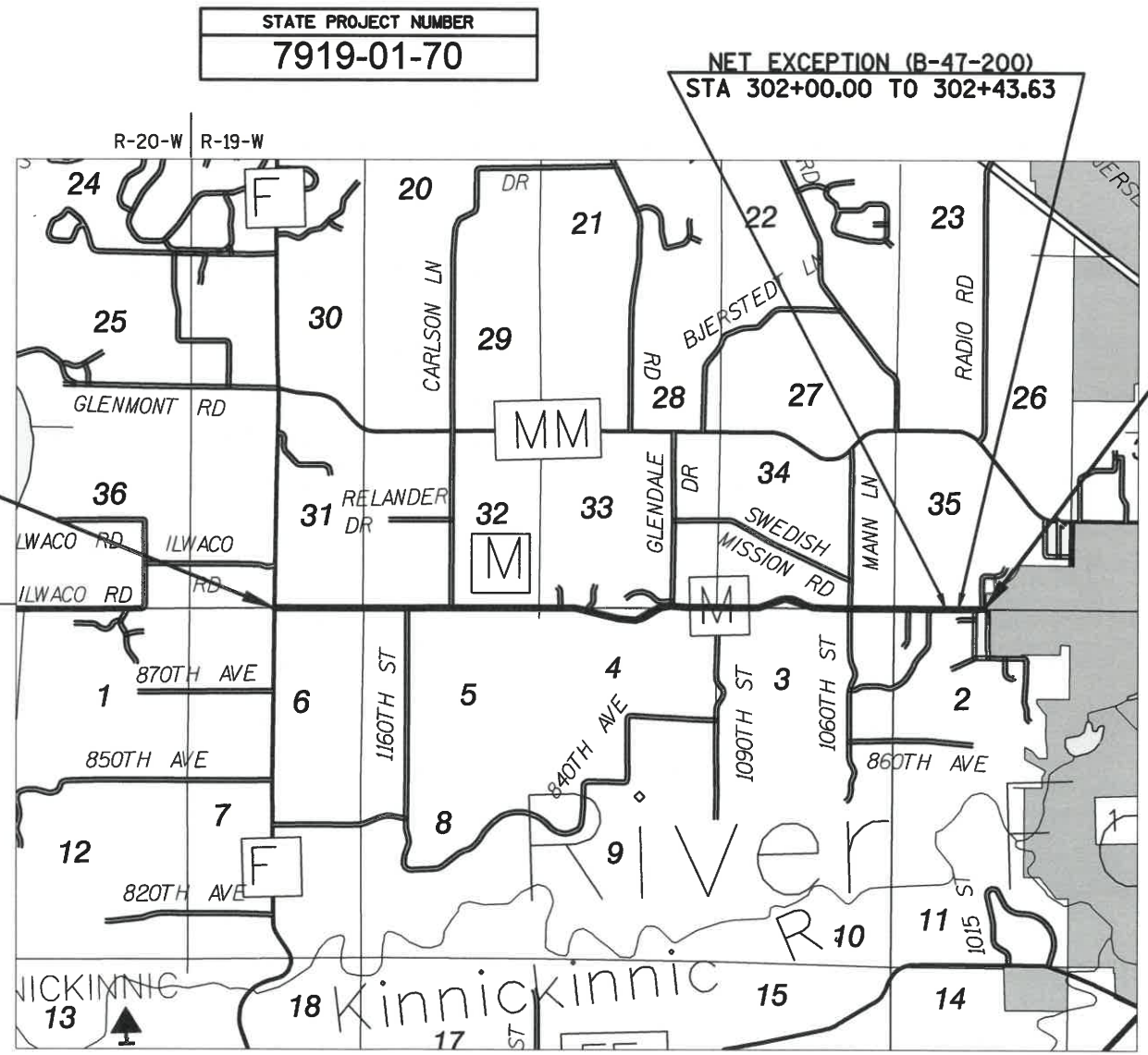
- PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

BEGIN PROJECT
STA 99+39.96
Y=365124.3580
X=419497.7721

ST CROIX COUNTY T-28-N
PIERCE COUNTY T-27-N



TOTAL NET LENGTH OF CENTERLINE = 4.047 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, PIERCE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

NET EXCEPTION (B-47-200)
STA 302+00.00 TO 302+43.63

END PROJECT
STA 313+53.63

APPROVED FOR PIERCE COUNTY

DATE: 1/14/18 (Signature)

ORIGINAL PLANS PREPARED BY

CORRE Structural Environmental Municipal Transportation

WISCONSIN PROFESSIONAL ENGINEER

KEVIN L. MEYER
E-38309-006
ELK MOUND WI

DATE: 1/10/18 (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor: CORRE, INC.

Designer: CORRE, INC.

Management Consultant: KNIGHT E/A, INC.

APPROVED FOR THE DEPARTMENT

DATE: 1/25/18 (Signature)

MANAGEMENT CONSULTANT SIGNATURE

E

STANDARD ABBREVIATIONS

ABUT	ABUTMENT
AGG	AGGREGATE
ASPH	ASPHALTIC
AVG	AVERAGE
AADT	ANNUAL AVERAGE DAILY TRAFFIC
BK	BACK
BF	BACK FACE
BL or B/L	BASE LINE
BM	BENCH MARK
BLK	BLOCK
BR	BRIDGE
CL or C/L	CENTER LINE
CC	CENTER TO CENTER
CH	CHORD
CH BRG	CHORD BEARING
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CR	CREEK
CR	CRUSHED
CABC	CRUSHED AGGREGATE BASE COURSE
CY or CUYD	CUBIC YARD
CP	CULVERT PIPE
C&G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
DWY	DRIVEWAY
E	EAST
EB	EASTBOUND
ELEC	ELECTRIC
EL or ELEV	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXP	EXPANSION
FF	FACE TO FACE OR FRONT FACE
FE	FIELD ENTRANCE
FG	FINISH GRADE
FAB	FLASHING ARROW BOARD
FL or F/L Flow	FLOW LINE
FT	FOOT
FTG	FOOTING
FTMS	FREEWAY TRAFFIC MANAGEMENT SYSTEM
HT	HEIGHT
HES	HIGH EARLY STRENGTH
CWT	HUNDREDWEIGHT
IP	IRON PIPE OR PIN
LT	LEFT
LIN FT or LF	LINEAR FOOT
LS	LUMP SUM
MH	MANHOLE
ML or M/L	MATCH LINE
MB	MESSAGE BOARD
NOM	NOMINAL
N	NORTH
NB	NORTHBOUND
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PCC	PORTLAND CEMENT CONCRETE
PE	PRIVATE ENTRANCE
R	RADIUS
RL or R/L	REFERENCE LINE
RT	RIGHT
R/W	RIGHT-OF-WAY
RD	ROAD
SHLDR	SHOULDER
SW	SIDEWALK
S	SOUTH
SB	SOUTHBOUND
SPECS	SPECIFICATIONS
SF or SQ FT	SQUARE FEET
SY or SQ YD	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAYS
STA	STATION
SE	SUPERELEVATION
TEL	TELEPHONE
UG	UNDERGROUND
VC	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
W	WEST
WB	WESTBOUND

CONSULTANT CONTACT

CORRE, INC.
KEVIN MEYER, P.E.
1802 WARDEN STREET
EAU CLAIRE, WI 54703
608-828-1011
kmeyer@correinc.com

COUNTY CONTACT

* PIERCE COUNTY HIGHWAY DEPARTMENT
CHAD JOHNSON, HIGHWAY COMMISSIONER
621 W CAIRNS STREET
PO BOX 780
ELLSWORTH, WI 54011
(715) 273-5096 EXT 691
chad.johnson@co.pierce.wi.us

UTILITY CONTACTS

* BALDWIN TELECOM, INC.
KEN CARLSRUD
930 MAPLE STREET
BALDWIN, WI 54002
(715) 684-3346
ken.carlsrud@baldwin-telecom.net

* XCEL ENERGY - ELECTRIC
BRIAN MELLO
1201 LIVINGSTON ROAD
HUDSON, WI 54016
(715) 386-4798
brian.mello@xcelenergy.com

* ST. CROIX VALLEY NATURAL GAS CO. INC.
GREG LEE
415 SOUTH 2ND STREET
RIVER FALLS, WI 54702
(715) 425-617
greg@stcroixgas.com

DNR CONTACT

DNR NORTHERN REGION HQ
AMY LESIK
1300 W. CLAIREMONT AVE.
EAU CLAIRE, WI 54701
OFFICE: (715) 839-1609
amy.lesik@wisconsin.gov

COUNTY SURVEYOR CONTACT

PIERCE COUNTY SURVEYOR
JAMES 'LOUIE' FILKINS
414 W. MAIN STREET
ELLSWORTH, WI 54011
(715) 273-6746
lfilkins@co.pierce.wi.us

GENERAL NOTES

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

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

CURVE DATA IS BASED ON THE ARC DEFINITION.

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED, FERTILIZED, SEEDED, AND MULCHED.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARINGS TO THE NEAREST SECOND.

THE LOCATION OF ALL DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IN PLACE PRIOR TO REMOVALS.

UTILITY REFERENCE LINES ON THE CROSS SECTIONS ARE FOR HORIZONTAL REFERENCE ONLY.

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS, EXACT LOCATIONS WILL BE APPROVED BY THE ENGINEER IN THE FIELD.

SIX SECTION CORNER MONUMENTS ARE LOCATED THROUGHOUT THE PROJECT;
STATION 125+61, 0.3' RT
STATION 152+06, 3.9' LT
STATION 178+53, 0.8' RT
STATION 232+67, 2.0' RT
STATION 286+66, 2.7' LT
STATION 312+93, 0.5' RT
THE COUNTY SURVEYOR WILL REPLACE ANY SECTION CORNER OR TIE MONUMENTS LOCATED WITHIN THE CONSTRUCTION LIMITS AND DISTURBED BY THE PROJECT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION SCHEDULES AND MONUMENT PRESERVATION AND REPLACEMENT WITH THE COUNTY SURVEYOR.

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
INTERSECTION DETAILS
SIGNING AND PAVEMENT MARKING
TRAFFIC CONTROL



Dial 811 or (800)242-8511

www.DiggersHotline.com

* DENOTES UTILITIES THAT ARE
DIGGERS HOTLINE MEMBERS

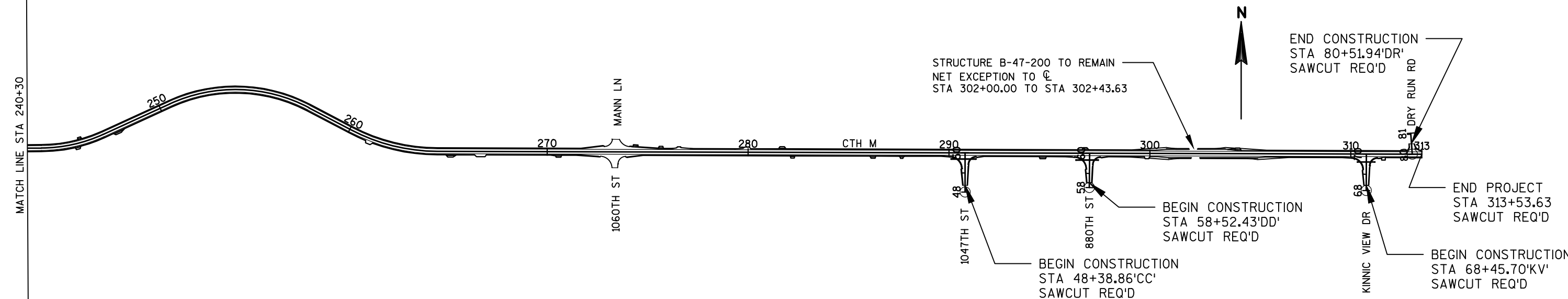
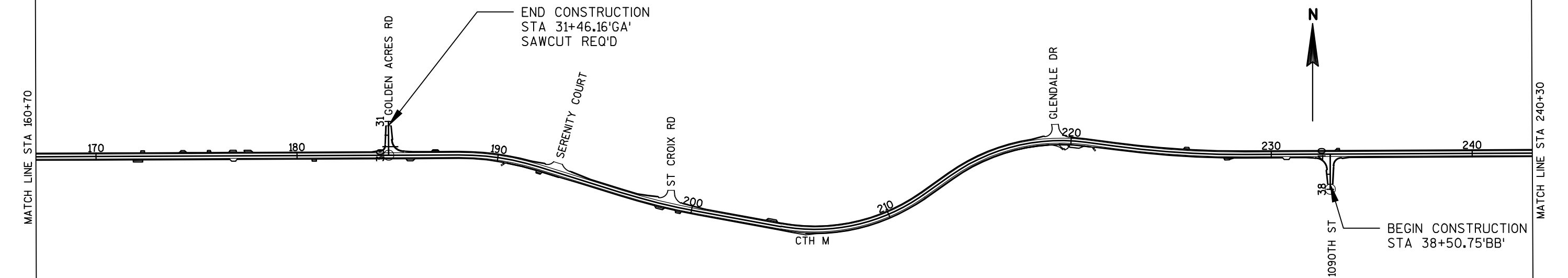
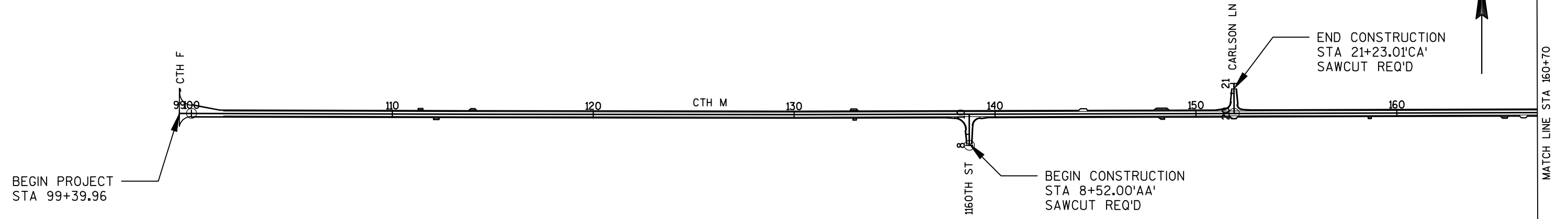
SOIL BORING LOCATIONS

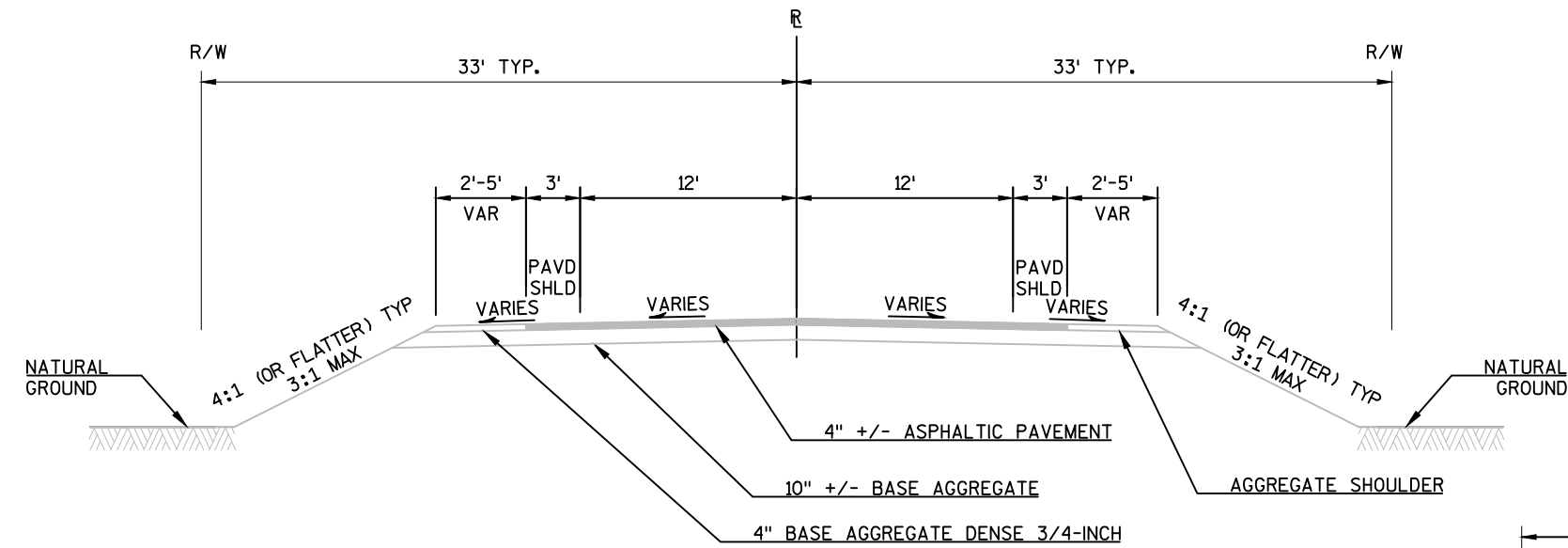
APPROXIMATE STATION	HMA THICKNESS PER BORING (INCHES)	BASE THICKNESS PER BORING (INCHES)
107+00	3.0	14.0
123+00	3.0	14.0
134+00	3.0	12.0
149+00	3.0	15.0
166+00	2.0	6.0
179+00	4.0	8.0
206+00	4.0	12.0
220+00	4.0	12.0
235+00	5.5	7.0
248+00	3.0	10.0
262+00	4.0	12.0
278+00	6.0	5.0
295+00	3.0	6.0
309+00	3.5	6.0

RUNOFF COEFFICIENT TABLE

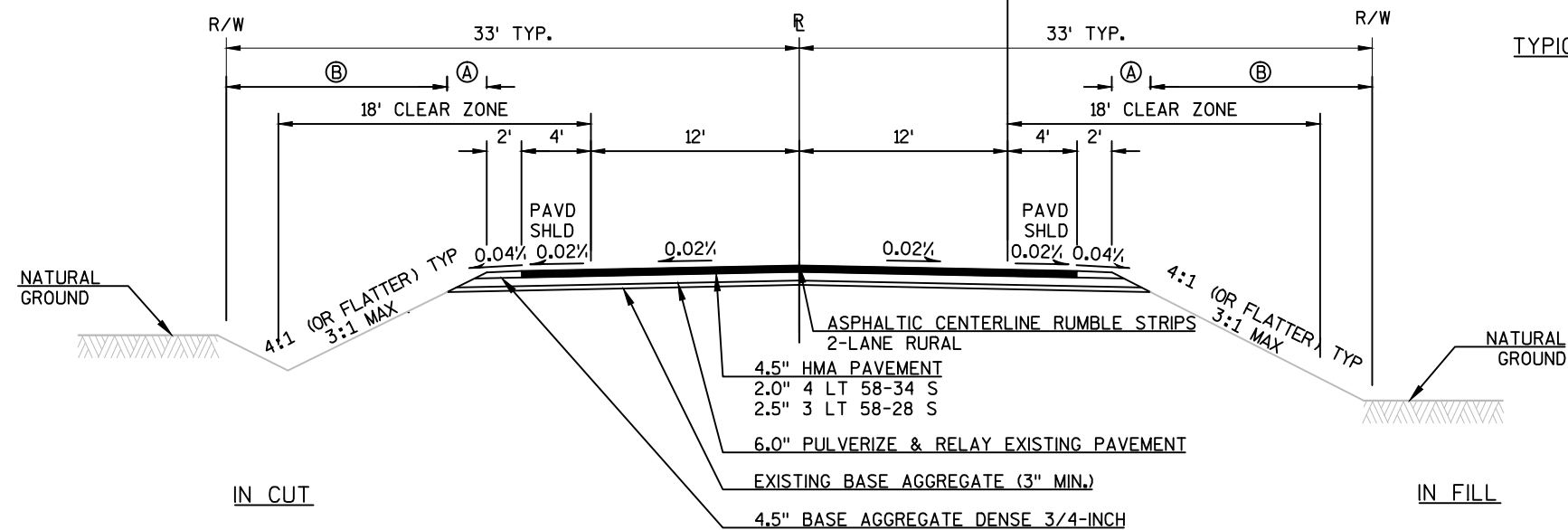
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP- TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE- TURF			.25			.27			.28			.30
			.32			.34			.36			.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 = 32.32 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.62 ACRES

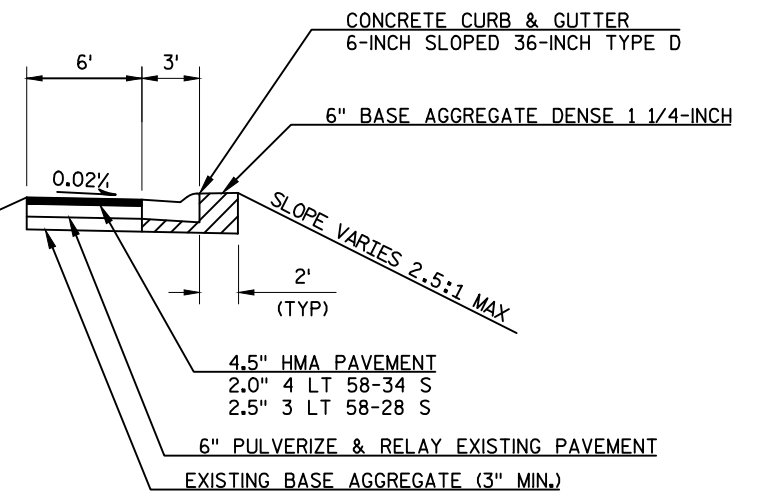




TYPICAL EXISTING SECTION - CTH M
 STA 99+39.96 - STA 302+00.00
 STA 302+43.63 - STA 313+53.63



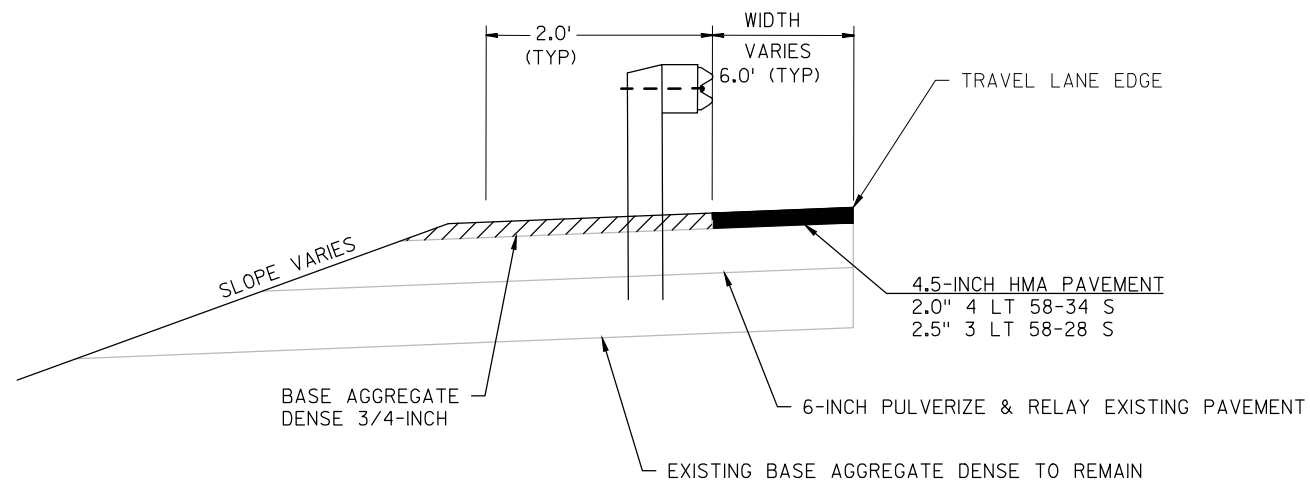
TYPICAL FINISHED SECTION - CTH M
 STA 99+39.96 - STA 302+00.00
 STA 302+43.63 - STA 313+53.63



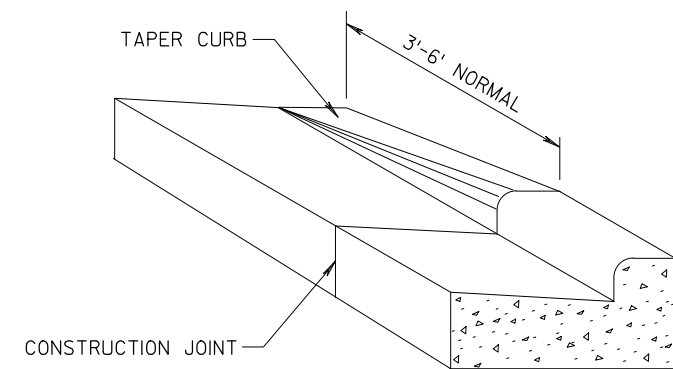
TYPICAL FINISHED CURB AND GUTTER SECTION
 STA 190+50 - STA 193+20
 STA 211+95 - STA 219+25

Ⓐ FERTILIZER TYPE B; SEEDING MIXTURE NO. 20; SEEDING TEMPORARY

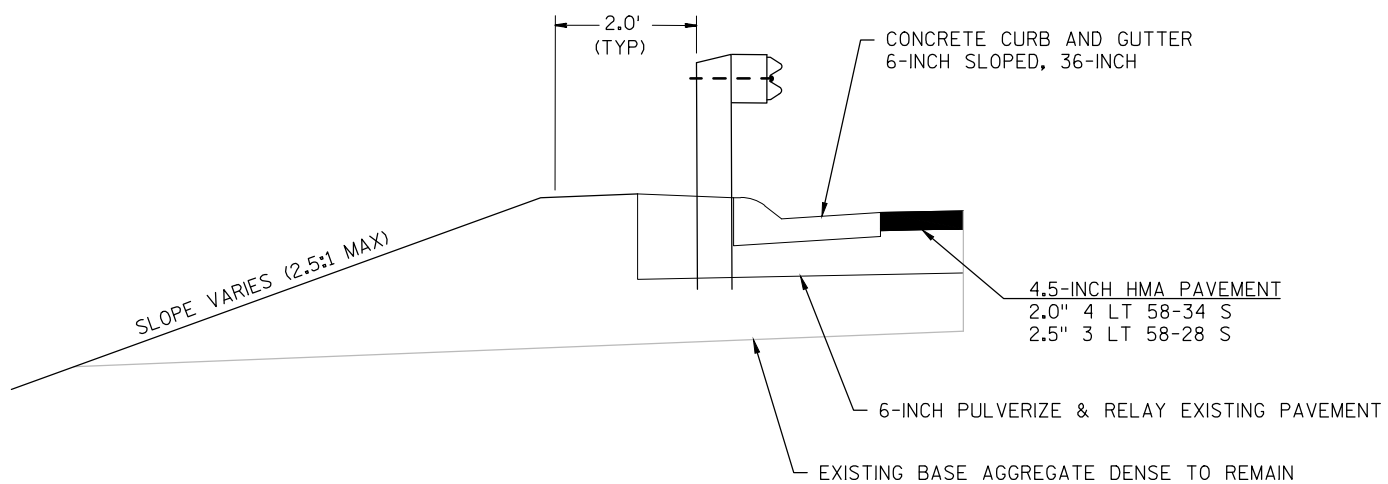
Ⓑ IF DISTURBED-
 SALVAGED TOPSOIL; MULCHING; FERTILIZER TYPE B;
 SEEDING MIXTURE NO. 20; SEEDING TEMPORARY



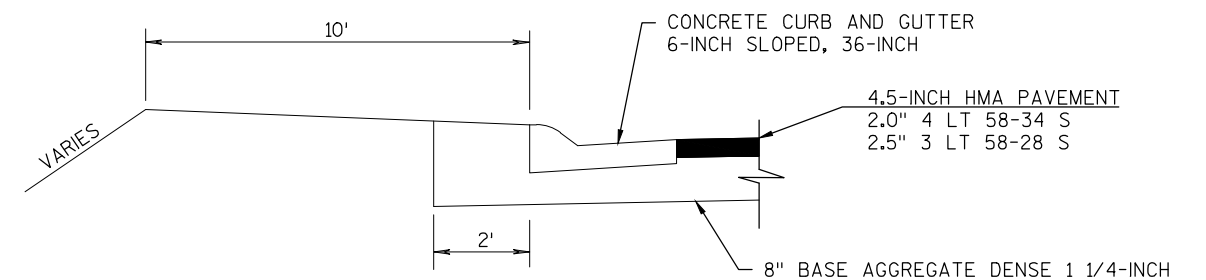
TYPICAL FINISHED BEAM GUARD SECTION



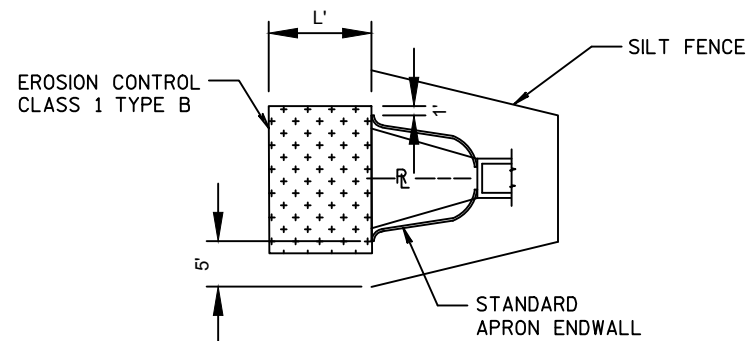
DETAIL OF CURB & GUTTER TERMINI



TYPICAL FINISHED BEAM GUARD WITH C&G SECTION



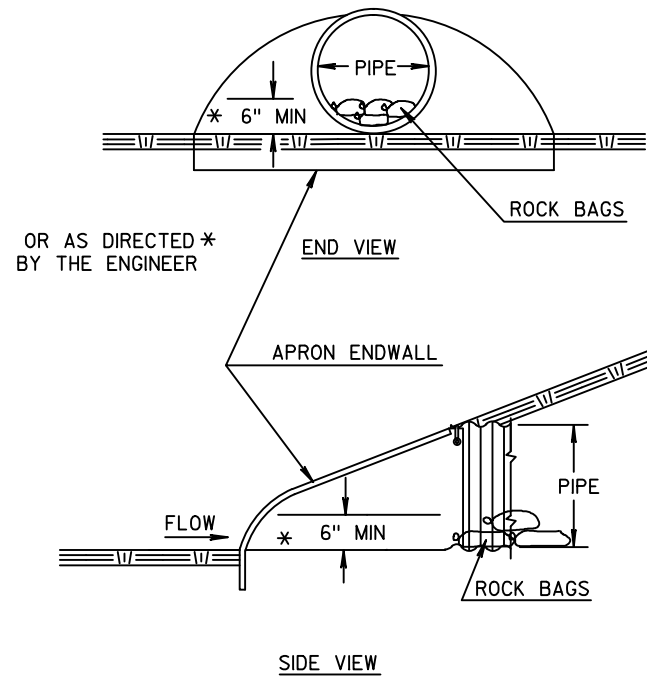
INTERSECTIONS AND SIDEROAD CONSTRUCTION



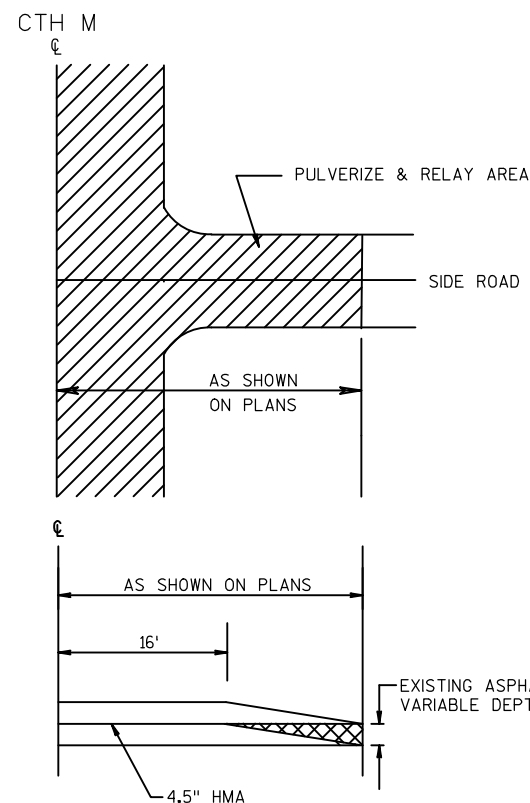
L = 3 TIMES DIAMETER OR 10' MIN.
INCREASE IF WARRANTED

*TO BE DETERMINED BY
ENGINEER IN THE FIELD

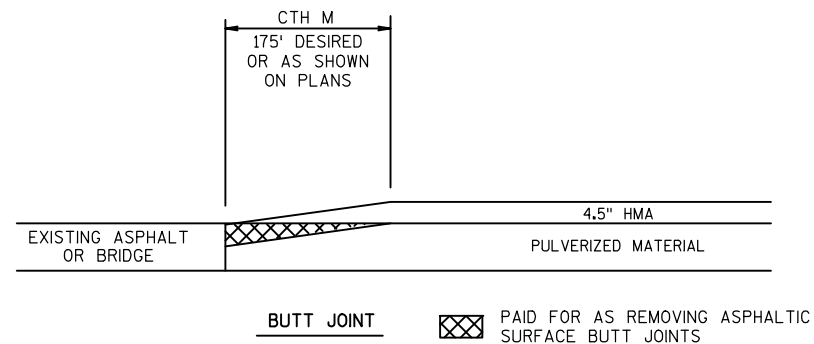
EROSION CONTROL DETAIL AT APRON ENDWALLS



CULVERT PIPE CHECKS

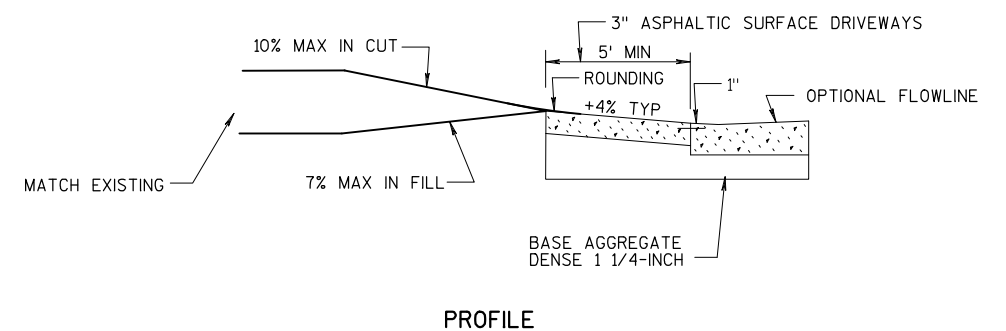
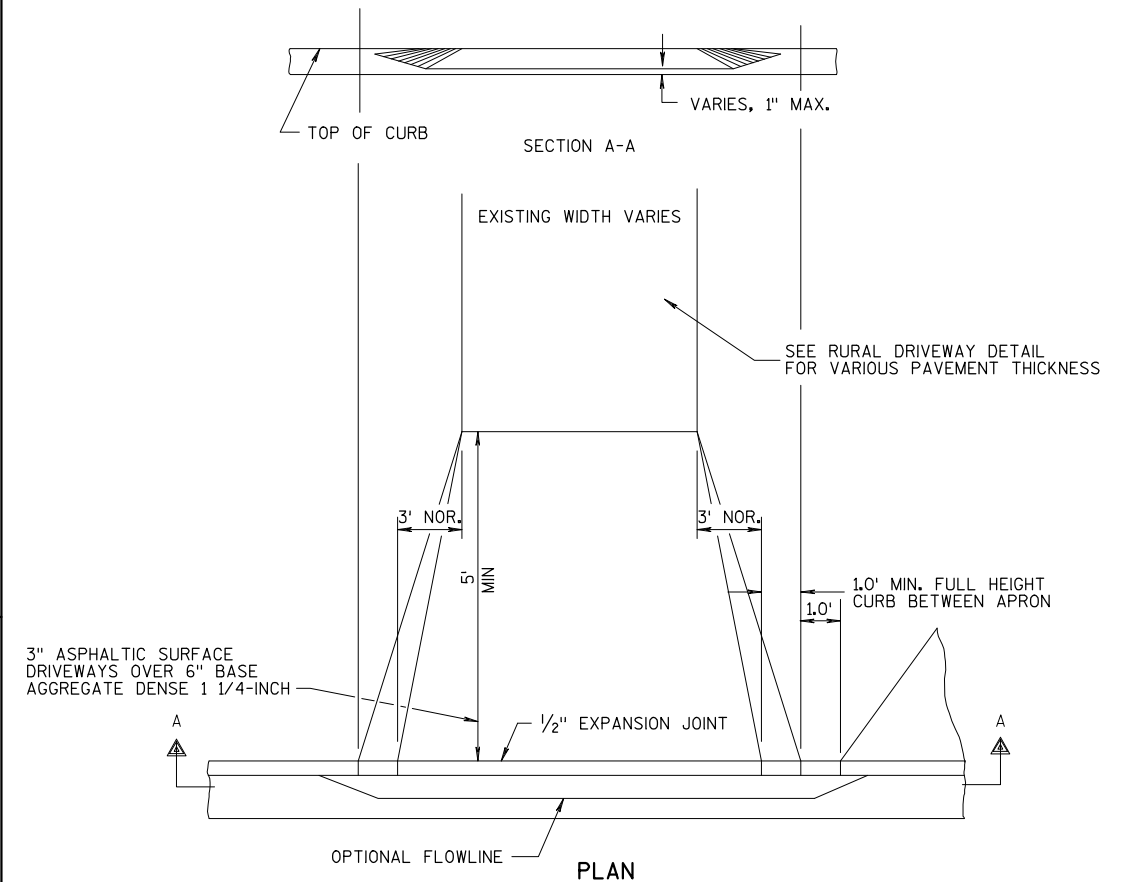


SERENITY COURT
ST. CROIX ROAD
GLENDALE DRIVE
MANN LANE
1060TH STREET



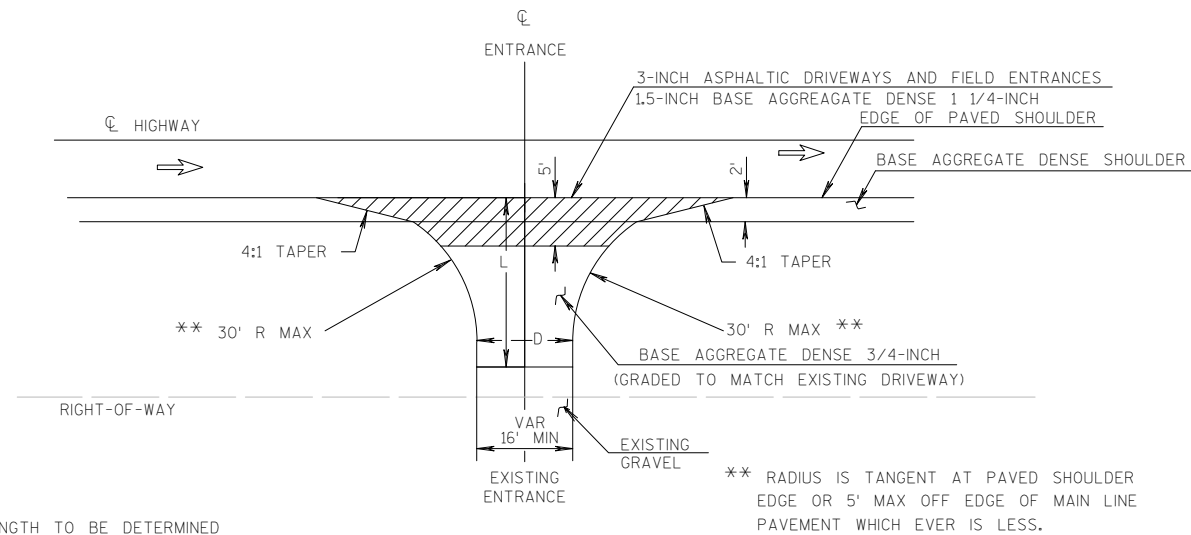
REMOVE MATERIAL UNDER ITEM 'REMOVING ASPHALT SURFACE , BUTT JOINTS'
MATERIAL SHALL NOT BE REMOVED UNDER THIS ITEM UNTIL 24 HOURS
BEFORE PAVING.
SIDEROAD PAVEMENT DEPTH SHALL MATCH AT MAINLINE PAVEMENT
EDGE AND BE TAPERED TO 3" MINIMUM AT JOINT

PAVEMENT TRANSITION NOT TO SCALE



CURB AND GUTTER DRIVEWAY DETAIL

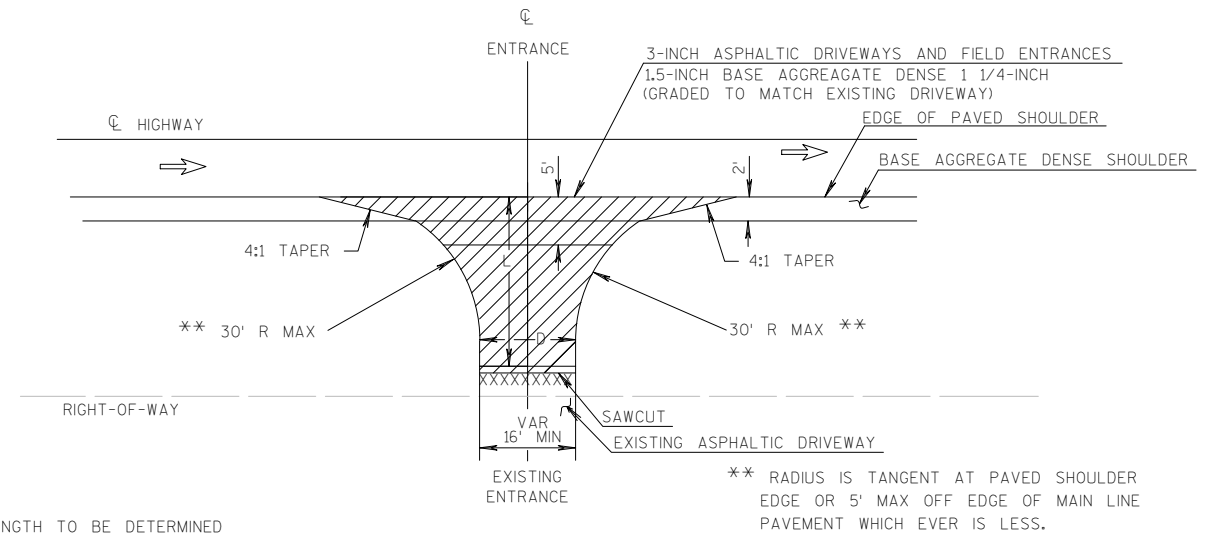
STA 192+15 RT
220+27 RT



L=VARIABLE, EXACT LENGTH TO BE DETERMINED
IN THE FIELD BY THE ENGINEER.
BLEND BACK ON THE ENTRANCE FAR
ENOUGH TO GET A SMOOTH PROFILE.

D=DRIVEWAY WIDTH
D=20'TYP (PE's & FE's) (16'MIN-24'MAX)

GRAVEL DRIVEWAY INTERSECTION DETAIL
(PE)



L=VARIABLE, EXACT LENGTH TO BE DETERMINED
IN THE FIELD BY THE ENGINEER.
BLEND BACK ON THE ENTRANCE FAR
ENOUGH TO GET A SMOOTH PROFILE.

D=DRIVEWAY WIDTH
D=20'TYP (PE's & FE's) (16'MIN-24'MAX)

ASPHALTIC DRIVEWAY INTERSECTION DETAIL
(PE)

CTH M SUPERELEVATION						
NO.	Superelevation Curve	Station	Left Shoulder	Left Lane	Right Lane	Right Shoulder
	<u>Curve 1</u>					
1	End Normal Shoulder	186+56.01'	-4.00%	-2.00%	-2.00%	-4.00%
2	End Normal Crown	186+56.01'	-4.00%	-2.00%	-2.00%	-4.00%
3	Level Crown	187+07.04'	0.00%	0.00%	-2.00%	-4.00%
4	Reverse Crown	187+58.08'	2.00%	2.00%	-2.00%	-4.00%
5	Low Shoulder Match	188+09.11'	4.00%	4.00%	-4.00%	-4.00%
6	Begin Full Super	188+55.04'	5.80%	5.80%	-5.80%	-5.80%
7	End Full Super	191+62.48'	5.80%	5.80%	-5.80%	-5.80%
8	Low Shoulder Match	192+08.41'	4.00%	4.00%	-4.00%	-4.00%
9	Reverse Crown	192+59.45'	2.00%	2.00%	-2.00%	-4.00%
10	Level Crown	193+10.48'	0.00%	0.00%	-2.00%	-4.00%
11	Begin Normal Crown	193+61.52'	-4.00%	-2.00%	-2.00%	-4.00%
12	Begin Normal Shoulder	193+61.52'	-4.00%	-2.00%	-2.00%	-4.00%
	<u>Curve 2</u>					
13	End Normal Shoulder	195+20.52'	-4.00%	-2.00%	-2.00%	-4.00%
14	End Normal Crown	195+20.52'	-4.00%	-2.00%	-2.00%	-4.00%
15	Level Crown	195+71.33'	-4.00%	-2.00%	0.00%	0.00%
16	Reverse Crown	196+22.14'	-4.00%	-2.00%	2.00%	2.00%
17	Begin Full Super	196+65.33'	-4.00%	-3.70%	3.70%	3.70%
18	End Full Super	200+00.78'	-4.00%	-3.70%	3.70%	3.70%
19	Reverse Crown	200+43.97'	-4.00%	-2.00%	2.00%	2.00%
20	Level Crown	200+94.78'	-4.00%	-2.00%	0.00%	0.00%
21	Begin Normal Crown	201+45.59'	-4.00%	-2.00%	-2.00%	-4.00%
22	Begin Normal Shoulder	201+45.59'	-4.00%	-2.00%	-2.00%	-4.00%
	<u>Curve 3</u>					
23	End Normal Shoulder	202+99.67'	-4.00%	-2.00%	-2.00%	-4.00%
24	End Normal Crown	202+99.67'	-4.00%	-2.00%	-2.00%	-4.00%
25	Level Crown	203+50.67'	-4.00%	-2.00%	0.00%	0.00%
26	Reverse Crown	204+01.67'	-4.00%	-2.00%	2.00%	2.00%
27	Low Shoulder Match	204+52.67'	-4.00%	-4.00%	4.00%	4.00%
28	Begin Full Super	205+03.67'	-6.00%	-6.00%	6.00%	6.00%
29	End Full Super	211+45.67'	-6.00%	-6.00%	6.00%	6.00%
	<u>Curve 4</u>					
30	Begin Full Super	214+14.01'	6.00%	6.00%	-6.00%	-6.00%
31	End Full Super	220+22.49'	6.00%	6.00%	-6.00%	-6.00%

CTH M SUPERELEVATION - CONTINUED						
NO.	Superelevation Curve	Station	Left Shoulder	Left Lane	Right Lane	Right Shoulder
	<u>Curve 5</u>					
32	Begin Full Super	222+43.95'	-4.00%	-2.80%	2.80%	2.80%
33	End Full Super	228+46.26'	-4.00%	-2.80%	2.80%	2.80%
34	Reverse Crown	228+66.54'	-4.00%	-2.00%	2.00%	2.00%
35	Level Crown	229+17.26'	-4.00%	-2.00%	0.00%	0.00%
36	Begin Normal Crown	229+67.97'	-4.00%	-2.00%	-2.00%	-4.00%
37	Begin Normal Shoulder	229+67.97'	-4.00%	-2.00%	-2.00%	-4.00%
	<u>Curve 6</u>					
38	End Normal Shoulder	242+17.26'	-4.00%	-2.00%	-2.00%	-4.00%
39	End Normal Crown	242+17.26'	-4.00%	-2.00%	-2.00%	-4.00%
40	Level Crown	242+68.26'	-4.00%	-2.00%	0.00%	0.00%
41	Reverse Crown	243+19.26'	-4.00%	-2.00%	2.00%	2.00%
42	Low Shoulder Match	243+70.26'	-4.00%	-4.00%	4.00%	4.00%
43	Begin Full Super	244+21.26'	-6.00%	-6.00%	6.00%	6.00%
44	End Full Super	246+36.68'	-6.00%	-6.00%	6.00%	6.00%
45	Low Shoulder Match	246+87.68'	-4.00%	-4.00%	4.00%	4.00%
46	Reverse Crown	247+38.68'	-4.00%	-2.00%	2.00%	2.00%
47	Level Crown	247+89.68'	-4.00%	-2.00%	0.00%	0.00%
48	Begin Normal Crown	248+40.68'	-4.00%	-2.00%	-2.00%	-4.00%
49	Begin Normal Shoulder	248+40.68'	-4.00%	-2.00%	-2.00%	-4.00%
	<u>Curve 7</u>					
50	End Normal Shoulder	248+99.23'	-4.00%	-2.00%	-2.00%	-4.00%
51	End Normal Crown	248+99.23'	-4.00%	-2.00%	-2.00%	-4.00%
52	Level Crown	249+50.23'	0.00%	0.00%	-2.00%	-4.00%
53	Reverse Crown	250+01.23'	2.00%	2.00%	-2.00%	-4.00%
54	Low Shoulder Match	250+52.23'	4.00%	4.00%	-4.00%	-4.00%
55	Begin Full Super	251+03.23'	6.00%	6.00%	-6.00%	-6.00%
56	End Full Super	257+18.09'	6.00%	6.00%	-6.00%	-6.00%
	<u>Curve 8</u>					
57	Begin Full Super	260+57.73'	-6.00%	-6.00%	6.00%	6.00%
58	End Full Super	264+01.99'	-6.00%	-6.00%	6.00%	6.00%
59	Low Shoulder Match	264+52.99'	-4.00%	-4.00%	4.00%	4.00%
60	Reverse Crown	265+03.99'	-4.00%	-2.00%	2.00%	2.00%
61	Level Crown	265+54.99'	-4.00%	-2.00%	0.00%	0.00%
62	Begin Normal Crown	266+05.99'	-4.00%	-2.00%	-2.00%	-4.00%
63	Begin Normal Shoulder	266+05.99'	-4.00%	-2.00%	-2.00%	-4.00%

PROJECT NO: 7919-01-70

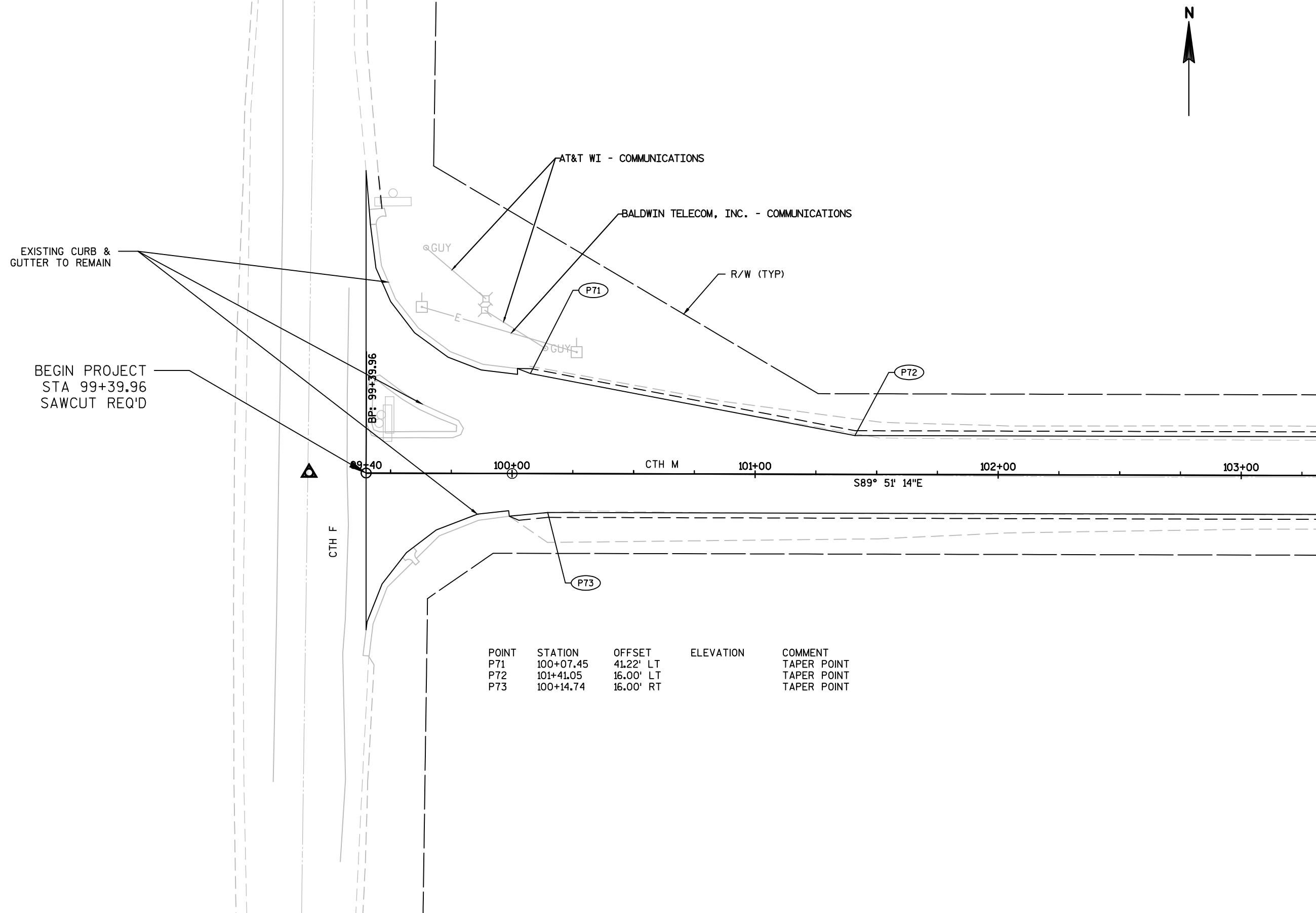
HWY: CTH M

COUNTY: PIERCE

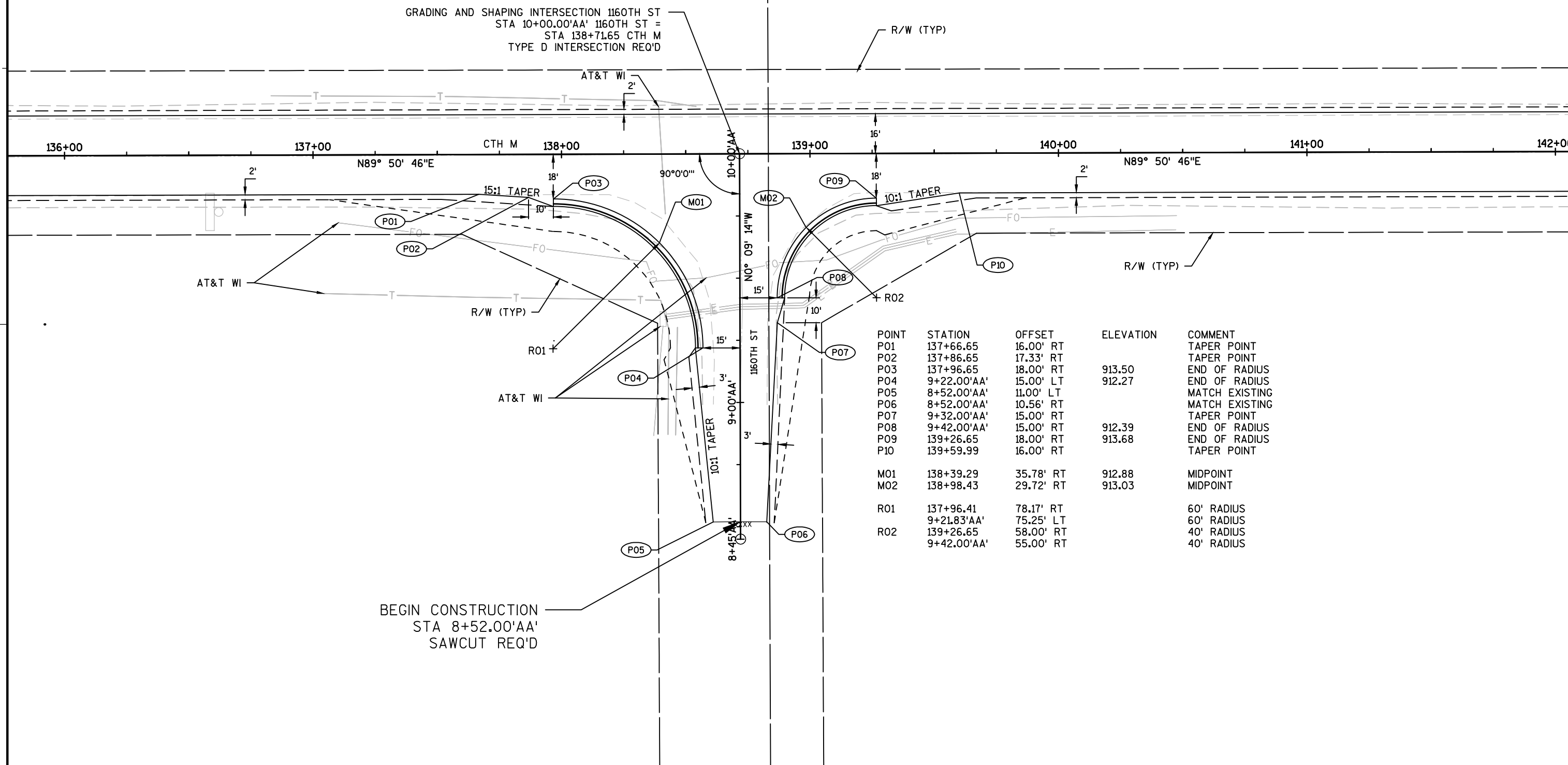
SUPERELEVATION – CTH M

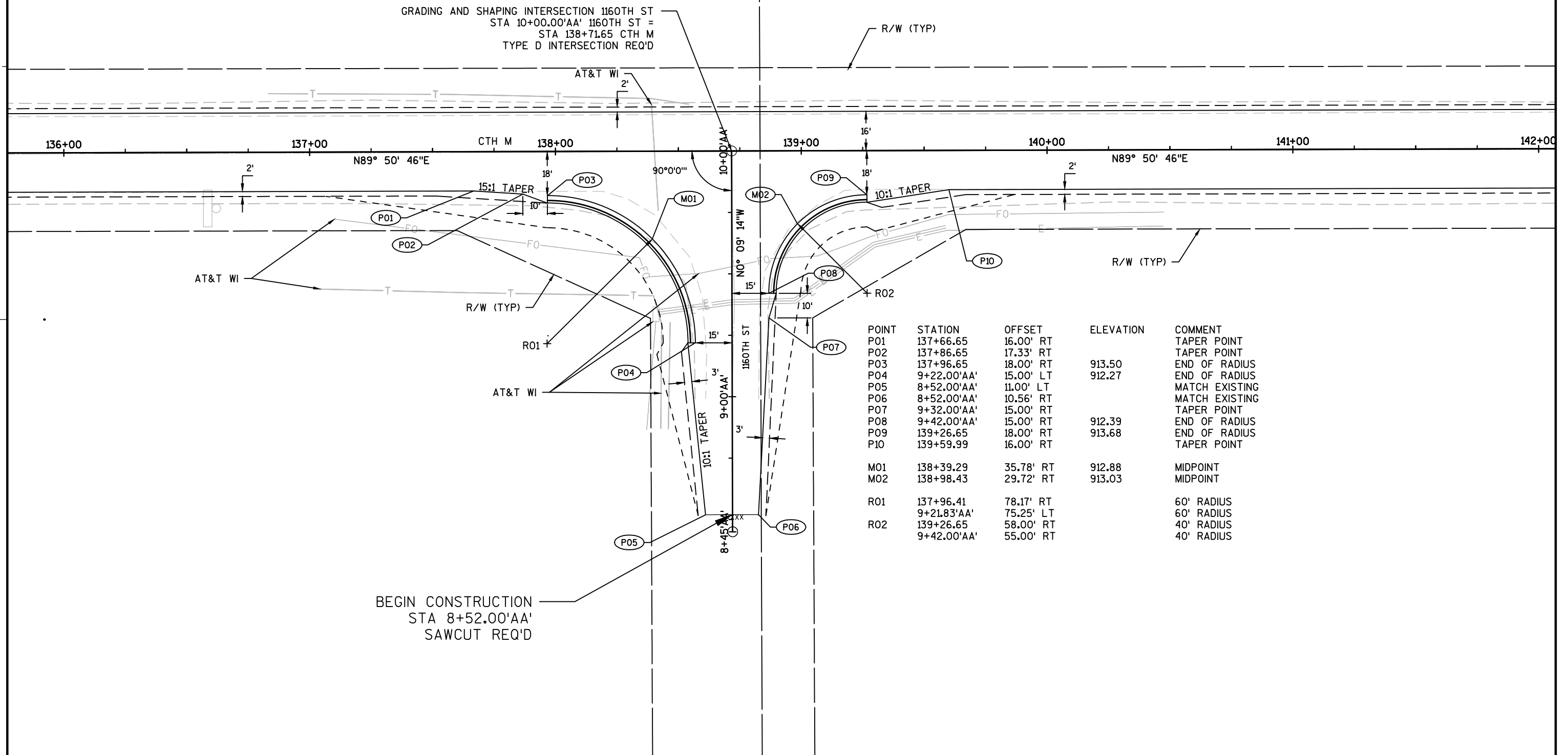
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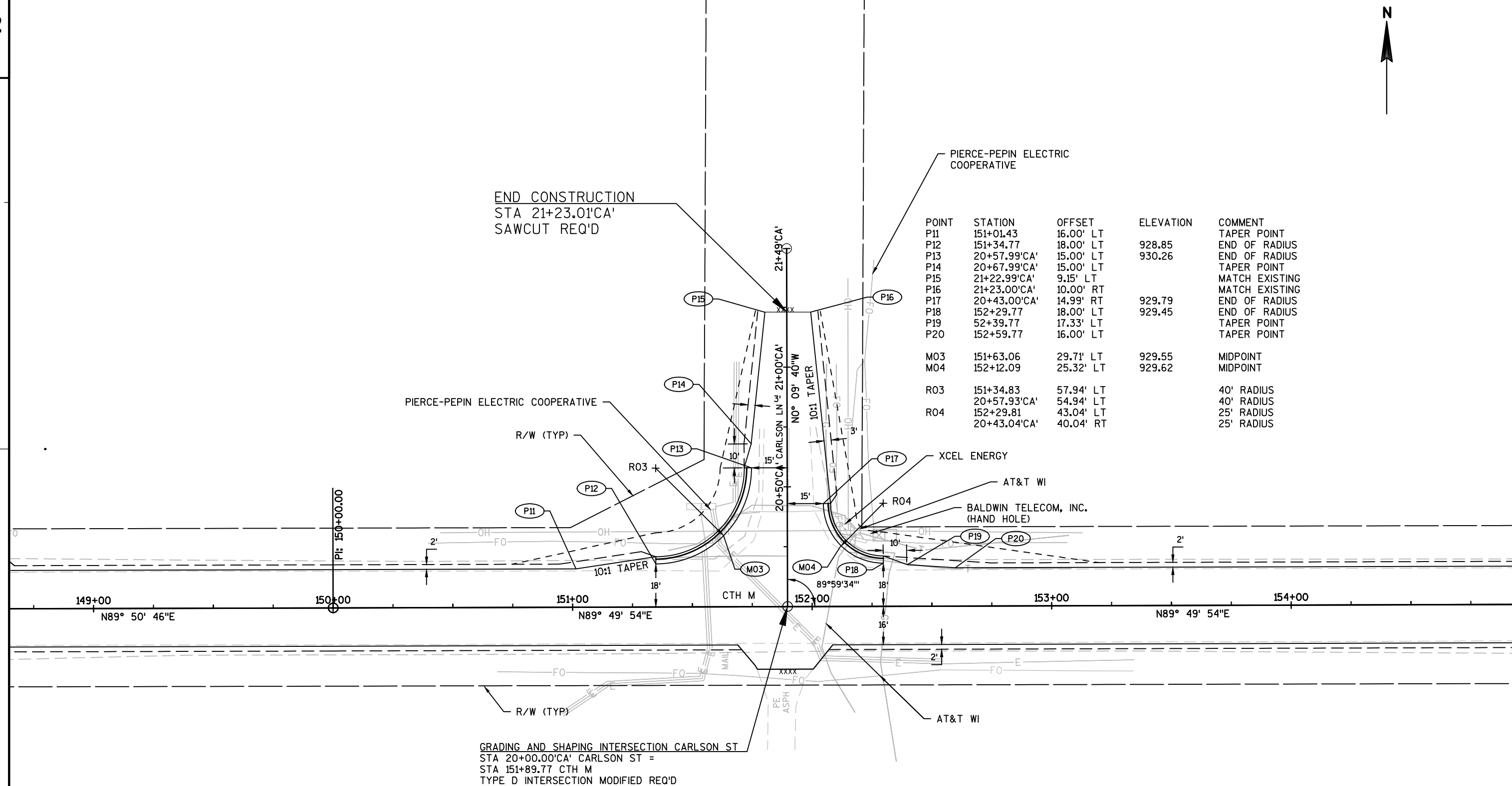
E



POINT	STATION	OFFSET	ELEVATION	COMMENT
P71	100+07.45	41.22' LT		TAPER POINT
P72	101+41.05	16.00' LT		TAPER POINT
P73	100+14.74	16.00' RT		TAPER POINT

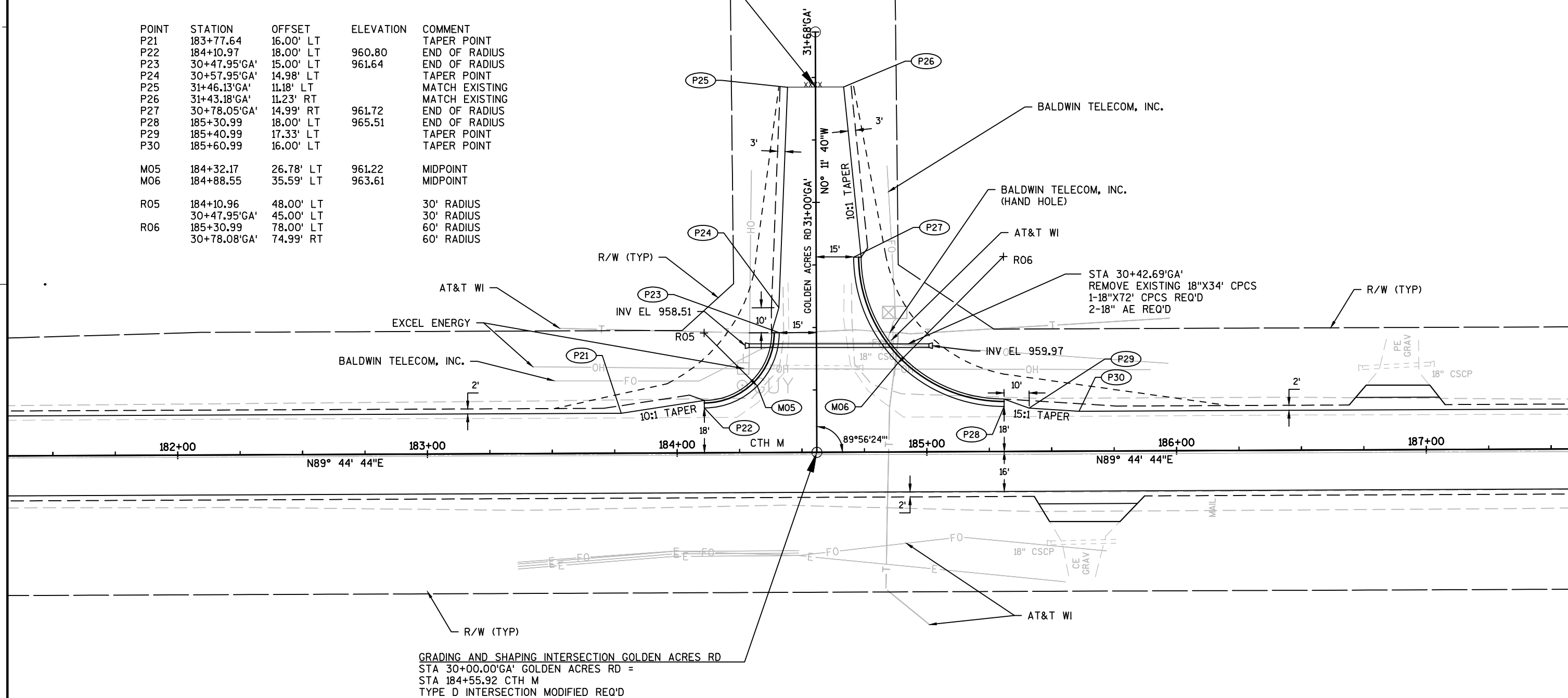








END CONSTRUCTION
STA 31+46.16'GA'
SAWCUT REQ'D

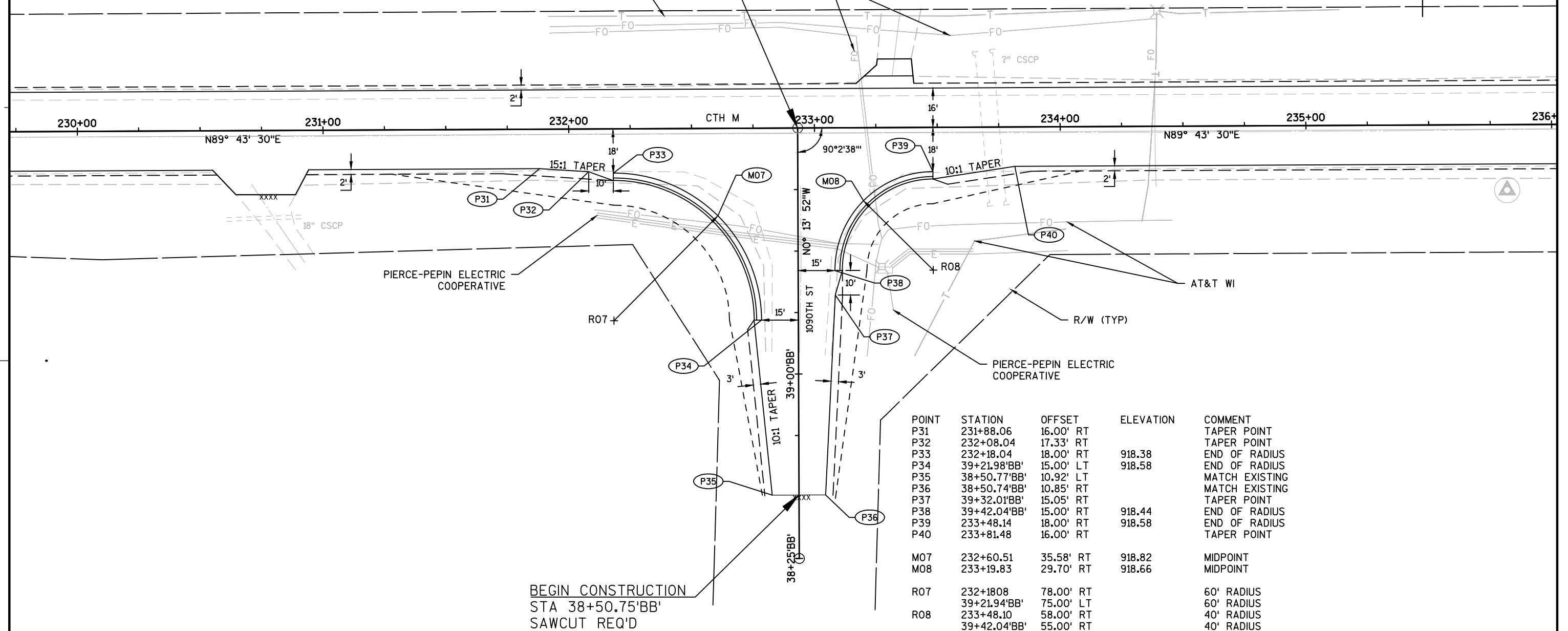


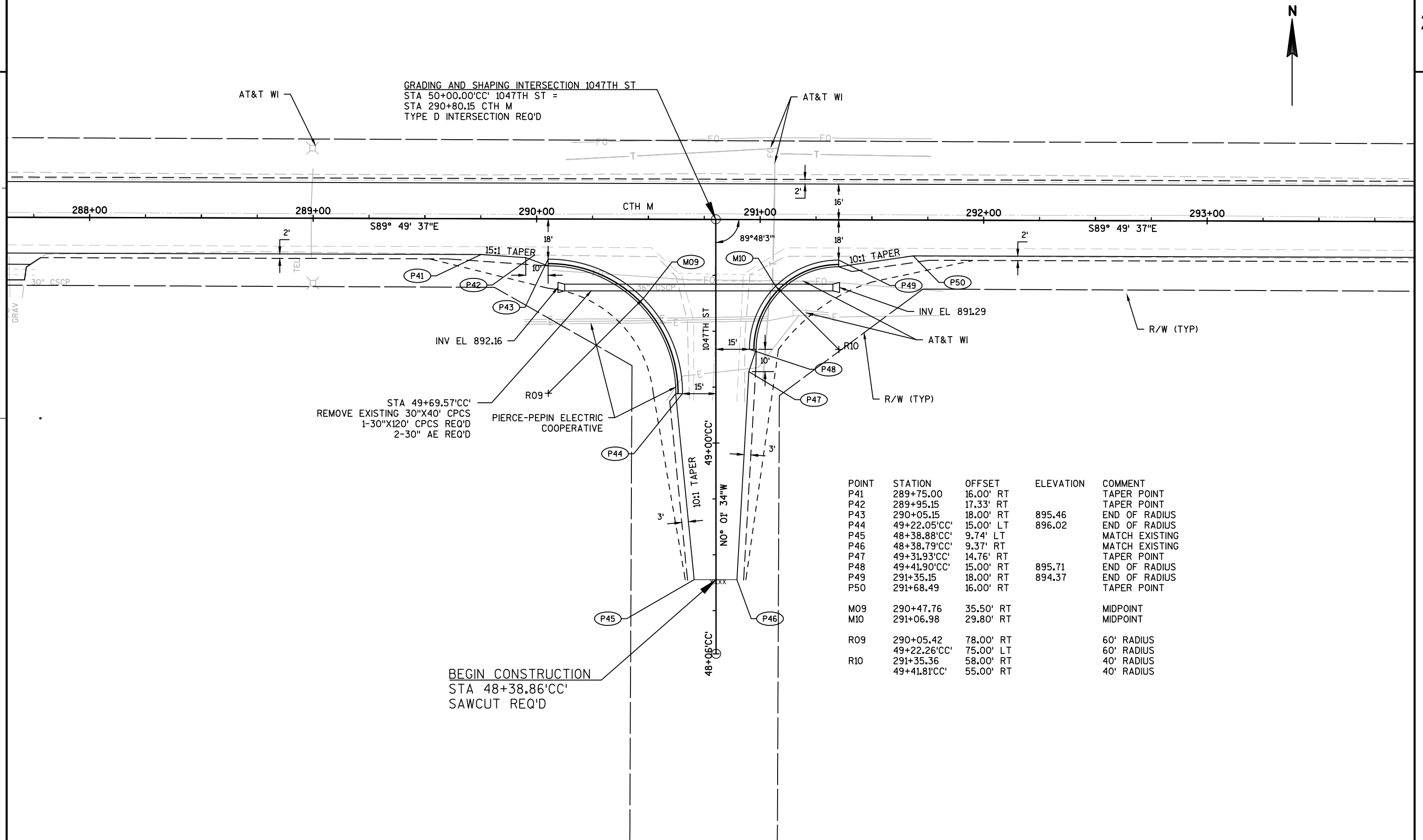
GRADING AND SHAPING INTERSECTION 1090TH ST
STA 40+00.00'BB' 1090TH ST =
STA 232+93.14 CTH M
TYPE D INTERSECTION REQ'D

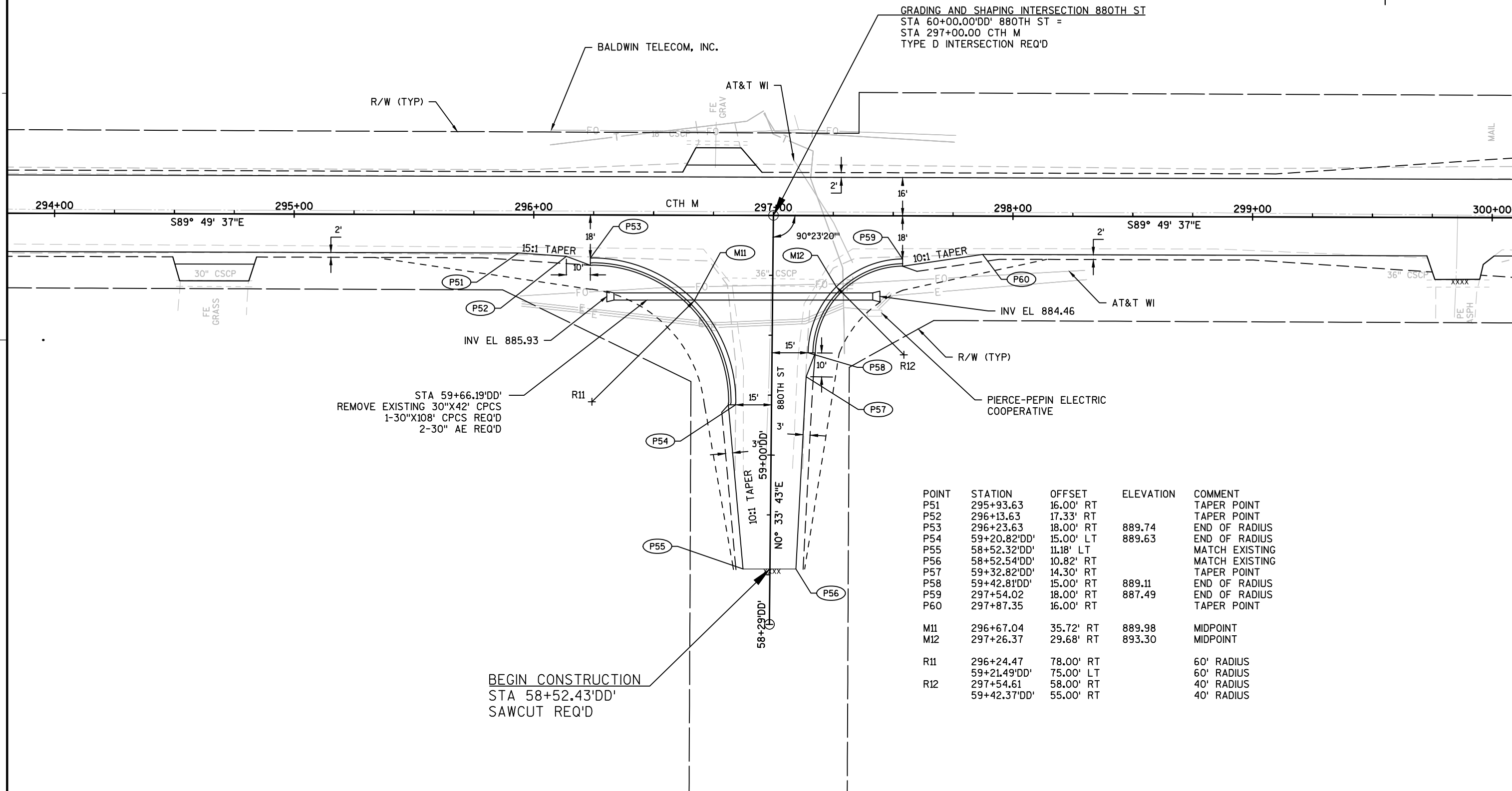
BALDWIN TELECOM, INC.

AT&T WI

N







GRADING AND SHAPING INTERSECTION KINNIC VIEW DR
STA 70+00.00'KV' KINNIC VIEW DR =
STA 310+77.51 CTH M
TYPE D INTERSECTION REQ'D

BALDWIN TELECOM, INC.

ST. CROIX VALLEY
NATURAL GAS CO. INC.

AT&T WI

PIERCE-PEPIN ELECTRIC
COOPERATIVE

ST. CROIX VALLEY
NATURAL GAS CO. INC.

AT&T WI

END CONSTRUCTION
STA 80+51.94'DR'
SAWCUT REQ'D

END PROJECT
STA 313+53.63
SAWCUT REQ'D

GRADING AND SHAPING INTERSECTION DRY RUN RD
STA 80+00.00'DR' DRY RUN RD =
STA 313+06.11 CTH M
TYPE C INTERSECTION MODIFIED REQ'D

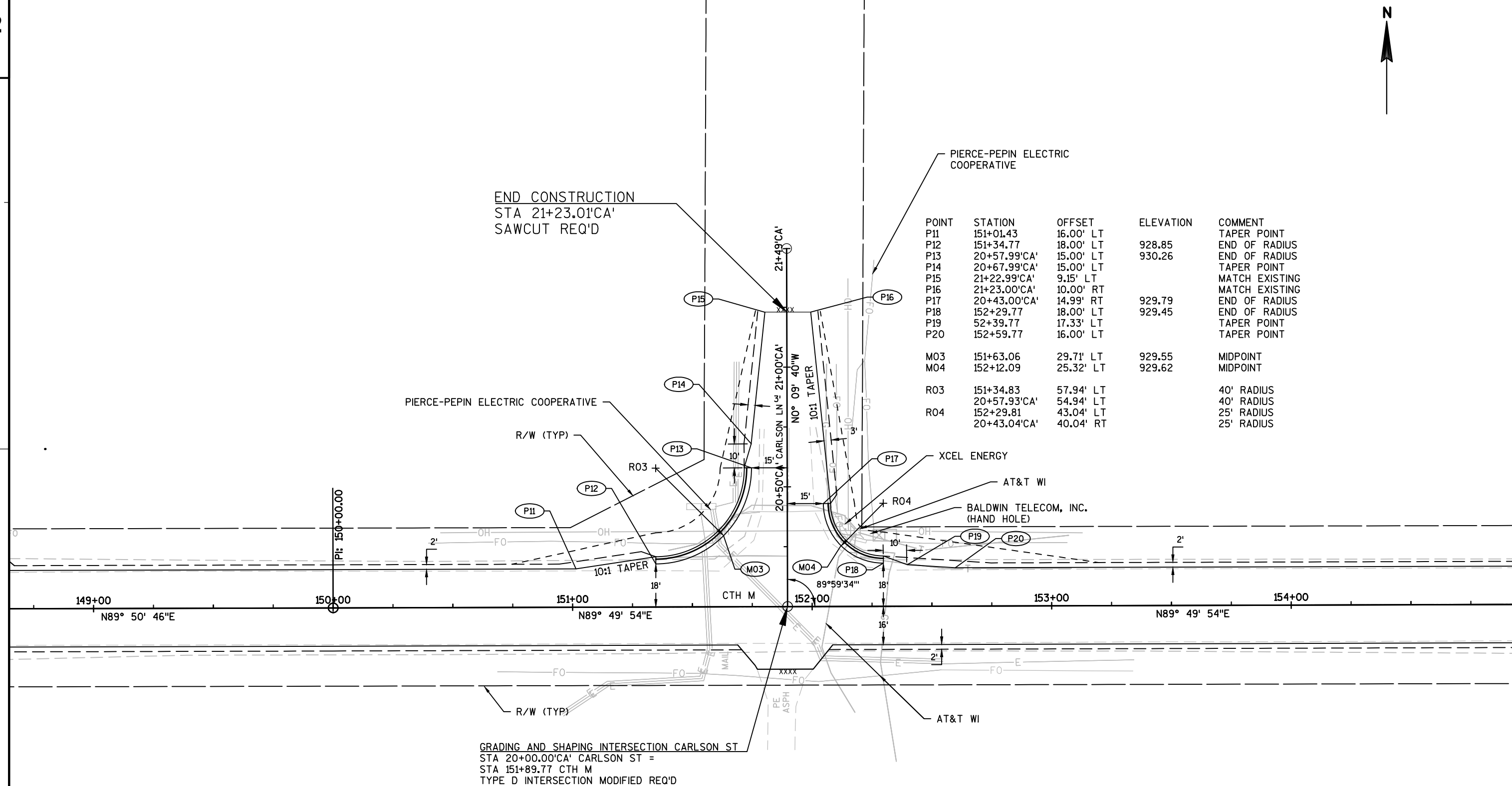
ST. CROIX VALLEY NATURAL GAS CO. INC.

PIERCE-PEPIN ELECTRIC
COOPERATIVE

POINT	STATION	OFFSET	ELEVATION	COMMENT
P61	309+72.51	16.00' RT		TAPER POINT
P62	309+92.51	17.33' RT		TAPER POINT
P63	310+02.51	18.00' RT	896.19	END OF RADIUS
P64	69+22.00'KV'	15.00' LT	898.09	END OF RADIUS
P65	68+45.70'KV'	10.37' LT		MATCH EXISTING
P66	68+45.70'KV'	10.04' RT		MATCH EXISTING
P67	69+32.00'KV'	15.00' RT		TAPER POINT
P68	69+42.34'KV'	15.00' RT	897.87	END OF RADIUS
P69	311+32.51	18.00' RT	899.86	END OF RADIUS
P70	311+65.84	16.00' RT		TAPER POINT
P80	80+52.78'DR'	11.20' LT		TAPER POINT
P81	80+50.95'DR'	13.21' RT		TAPER POINT
M13	310+44.93	35.57' RT	898.86	MIDPOINT
M14	311+04.22	29.72' RT	897.14	MIDPOINT
M15	312+86.19	22.23' LT		MIDPOINT
M16	313+27.80	27.04' LT		MIDPOINT
R13	310+02.51	78.00' RT		60' RADIUS
	69+22.00'KV'	75.00' LT		60' RADIUS
R14	311+32.51	58.00' RT		40' RADIUS
	69+42.00'KV'	55.00' RT		40' RADIUS

STA 69+60.67'KV'
REMOVE EXISTING 30" CPCS
1-30"X96' CPCS REQ'D
2-30" AE REQ'D

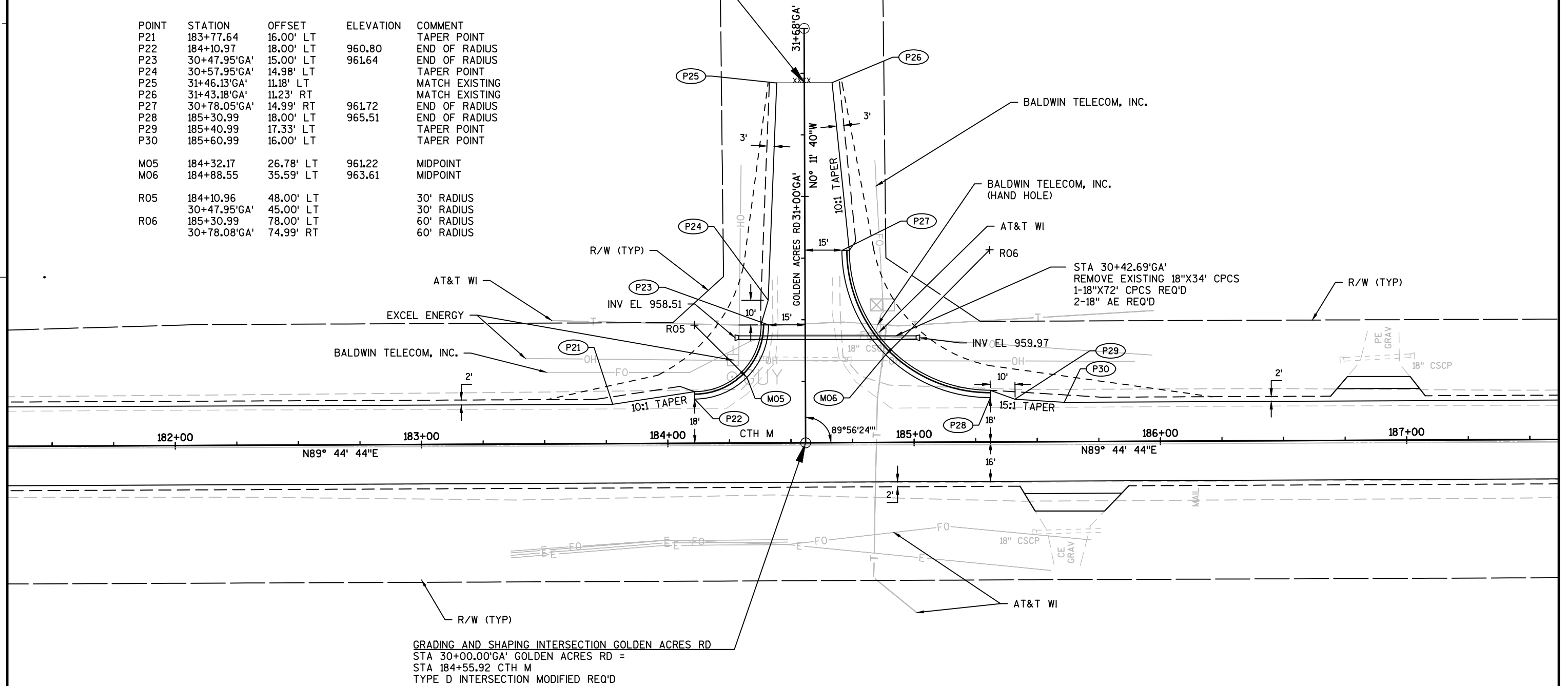
BEGIN CONSTRUCTION
STA 68+45.70'KV'
SAWCUT REQ'D

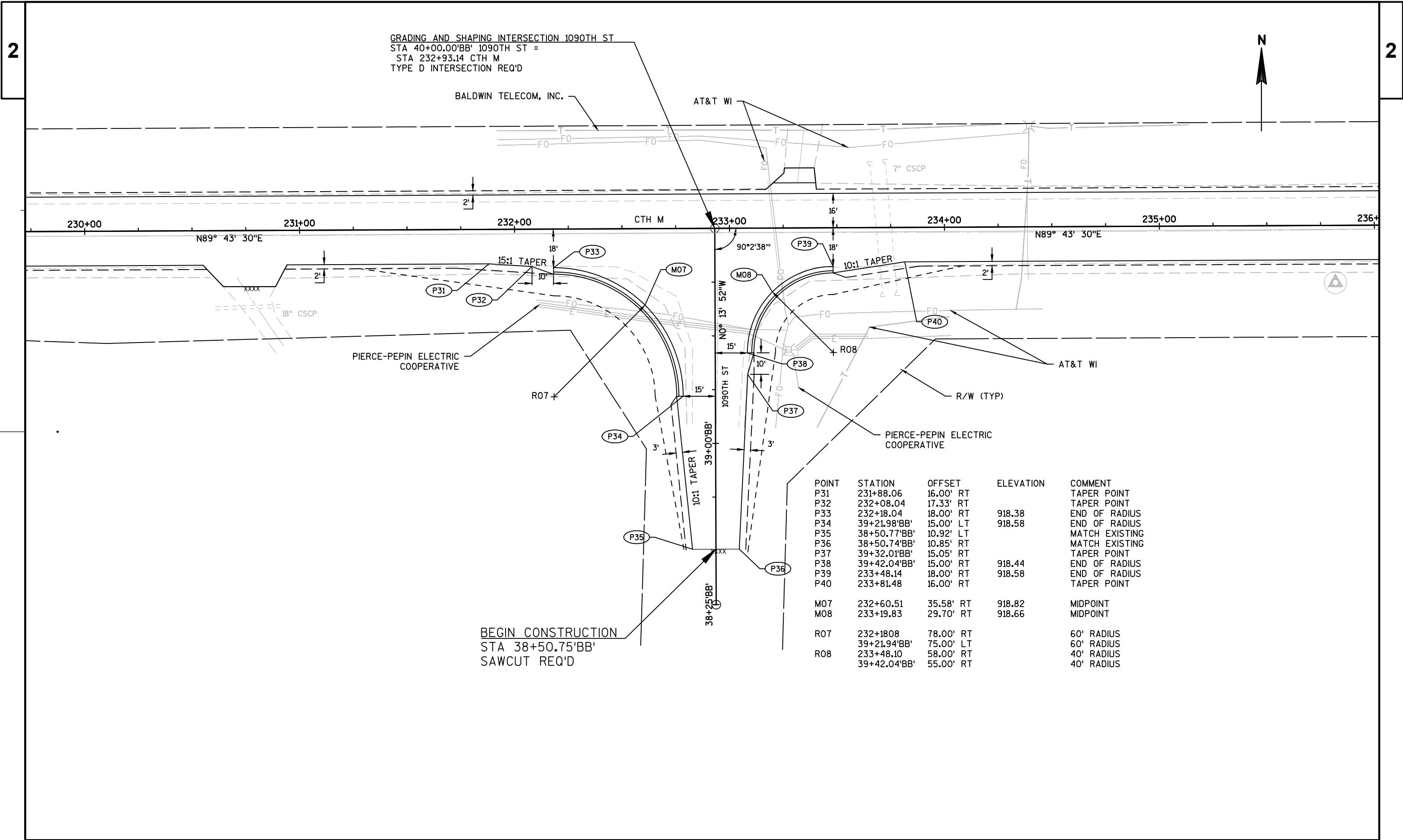




END CONSTRUCTION
STA 31+46.16'GA'
SAWCUT REQ'D

POINT	STATION	OFFSET	ELEVATION	COMMENT
P21	183+77.64	16.00' LT		TAPER POINT
P22	184+10.97	18.00' LT	960.80	END OF RADIUS
P23	30+47.95'GA'	15.00' LT	961.64	END OF RADIUS
P24	30+57.95'GA'	14.98' LT		TAPER POINT
P25	31+46.13'GA'	11.18' LT		MATCH EXISTING
P26	31+43.18'GA'	11.23' RT		MATCH EXISTING
P27	30+78.05'GA'	14.99' RT	961.72	END OF RADIUS
P28	185+30.99	18.00' LT	965.51	END OF RADIUS
P29	185+40.99	17.33' LT		TAPER POINT
P30	185+60.99	16.00' LT		TAPER POINT
M05	184+32.17	26.78' LT	961.22	MIDPOINT
M06	184+88.55	35.59' LT	963.61	MIDPOINT
R05	184+10.96	48.00' LT		30' RADIUS
	30+47.95'GA'	45.00' LT		30' RADIUS
R06	185+30.99	78.00' LT		60' RADIUS
	30+78.08'GA'	74.99' RT		60' RADIUS





GRADING AND SHAPING INTERSECTION 1090TH ST
STA 40+00.00'BB' 1090TH ST =
STA 232+93.14 CTH M
TYPE D INTERSECTION REQ'D

BALDWIN TELECOM, INC.

AT&T WI

230+00

231+00

232+00

CTH M

233+00

234+00

235+00

236+

N89° 43' 30"E

N89° 43' 30"E

15:1 TAPER

10:1 TAPER

PIERCE-PEPIN ELECTRIC
COOPERATIVE

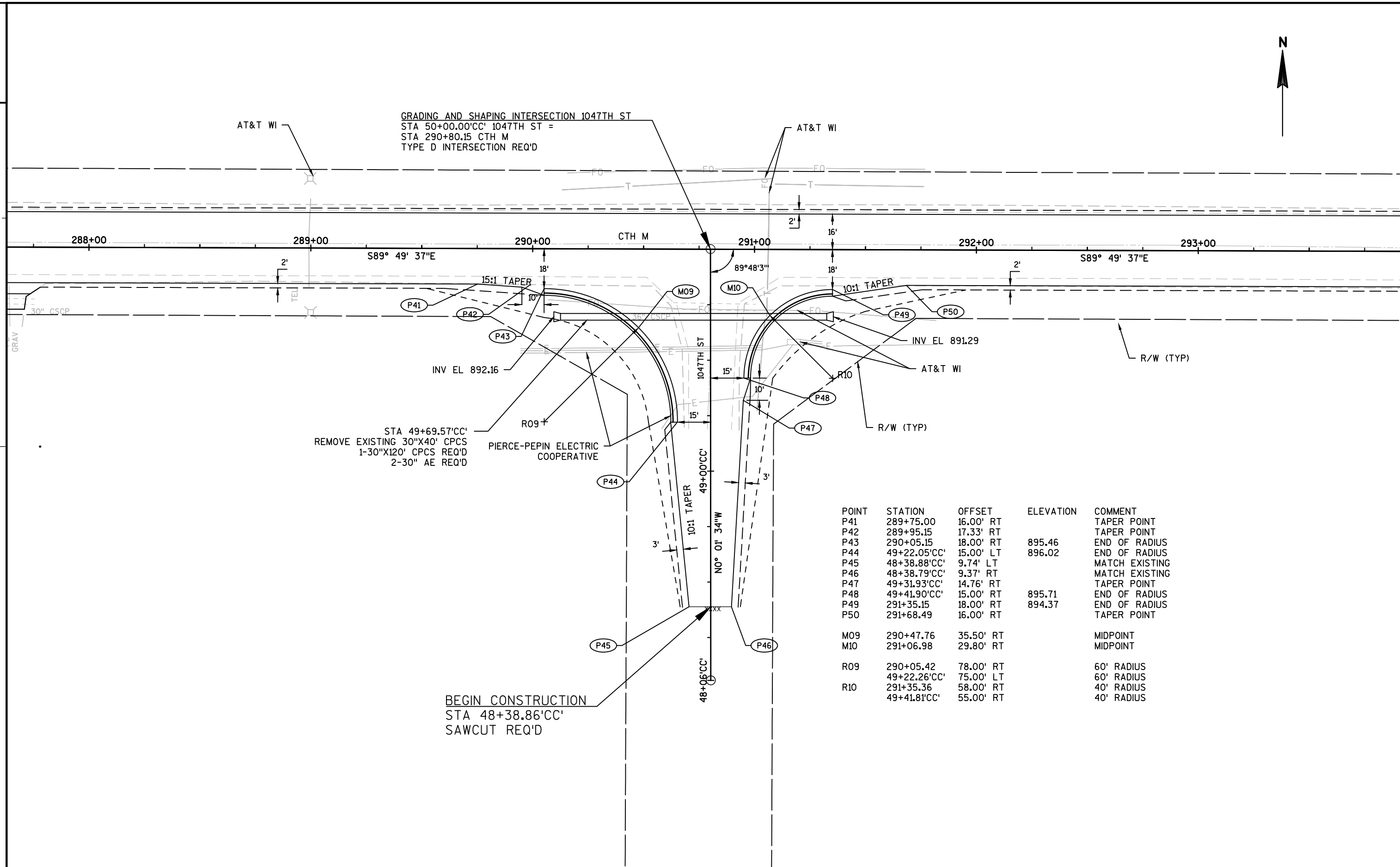
PIERCE-PEPIN ELECTRIC
COOPERATIVE

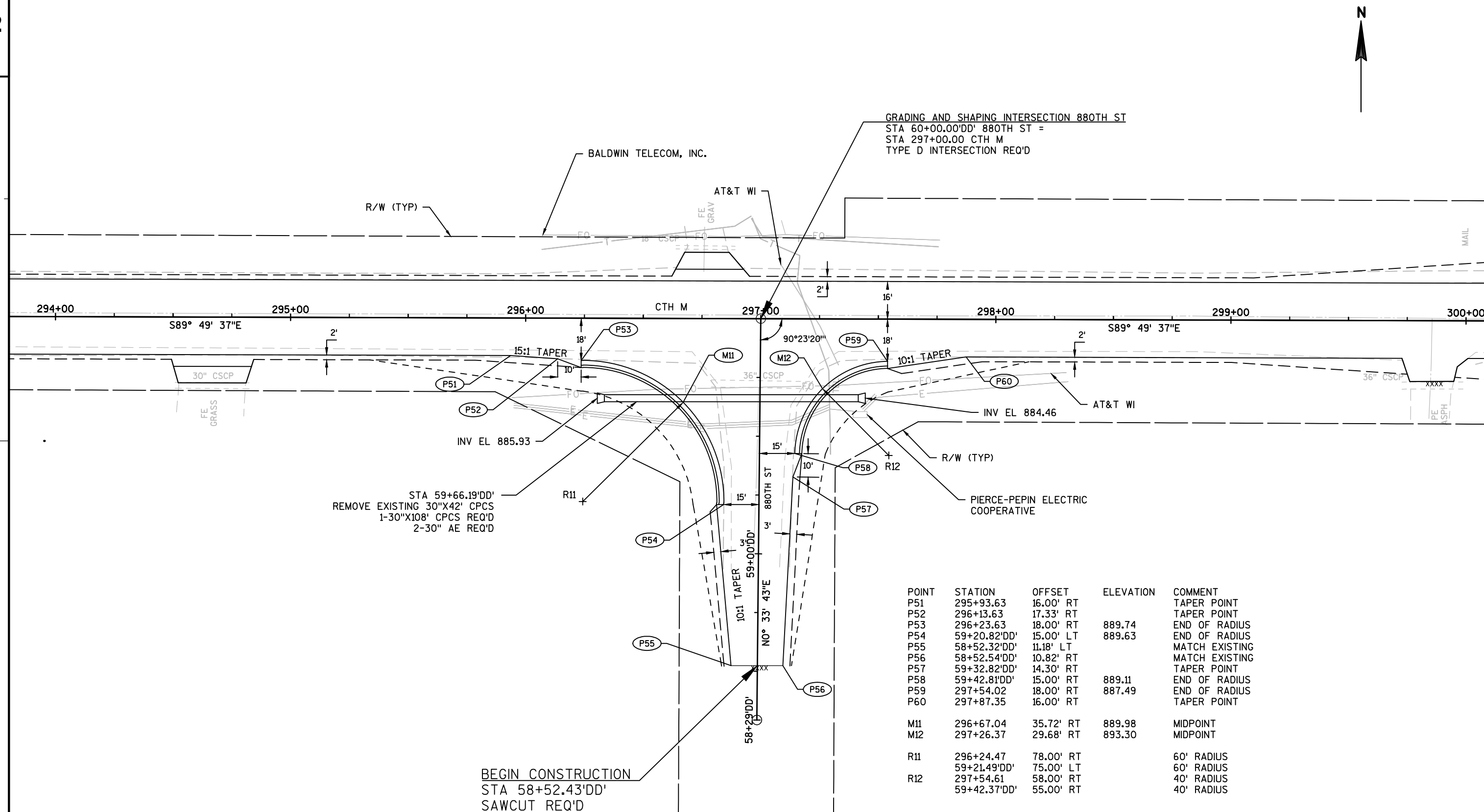
AT&T WI

R/W (TYP)

BEGIN CONSTRUCTION
STA 38+50.75'BB'
SAWCUT REQ'D

POINT	STATION	OFFSET	ELEVATION	COMMENT
P31	231+88.06	16.00' RT		TAPER POINT
P32	232+08.04	17.33' RT		TAPER POINT
P33	232+18.04	18.00' RT	918.38	END OF RADIUS
P34	39+21.98'BB'	15.00' LT	918.58	END OF RADIUS
P35	38+50.77'BB'	10.92' LT		MATCH EXISTING
P36	38+50.74'BB'	10.85' RT		MATCH EXISTING
P37	39+32.01'BB'	15.05' RT		TAPER POINT
P38	39+42.04'BB'	15.00' RT	918.44	END OF RADIUS
P39	233+48.14	18.00' RT	918.58	END OF RADIUS
P40	233+81.48	16.00' RT		TAPER POINT
M07	232+60.51	35.58' RT	918.82	MIDPOINT
M08	233+19.83	29.70' RT	918.66	MIDPOINT
R07	232+18.08	78.00' RT		60' RADIUS
	39+21.94'BB'	75.00' LT		60' RADIUS
R08	233+48.10	58.00' RT		40' RADIUS
	39+42.04'BB'	55.00' RT		40' RADIUS





GRADING AND SHAPING INTERSECTION KINNIC VIEW DR
STA 70+00.00'KV' KINNIC VIEW DR =
STA 310+77.51 CTH M
TYPE D INTERSECTION REQ'D

BALDWIN TELECOM, INC.

ST. CROIX VALLEY
NATURAL GAS CO. INC.

AT&T WI

PIERCE-PEPIN ELECTRIC
COOPERATIVE

ST. CROIX VALLEY
NATURAL GAS CO. INC.

AT&T WI

END CONSTRUCTION
STA 80+51.94'DR'
SAWCUT REQ'D

END PROJECT
STA 313+53.63
SAWCUT REQ'D

GRADING AND SHAPING INTERSECTION DRY RUN RD
STA 80+00.00'DR' DRY RUN RD =
STA 313+06.11 CTH M
TYPE C INTERSECTION MODIFIED REQ'D

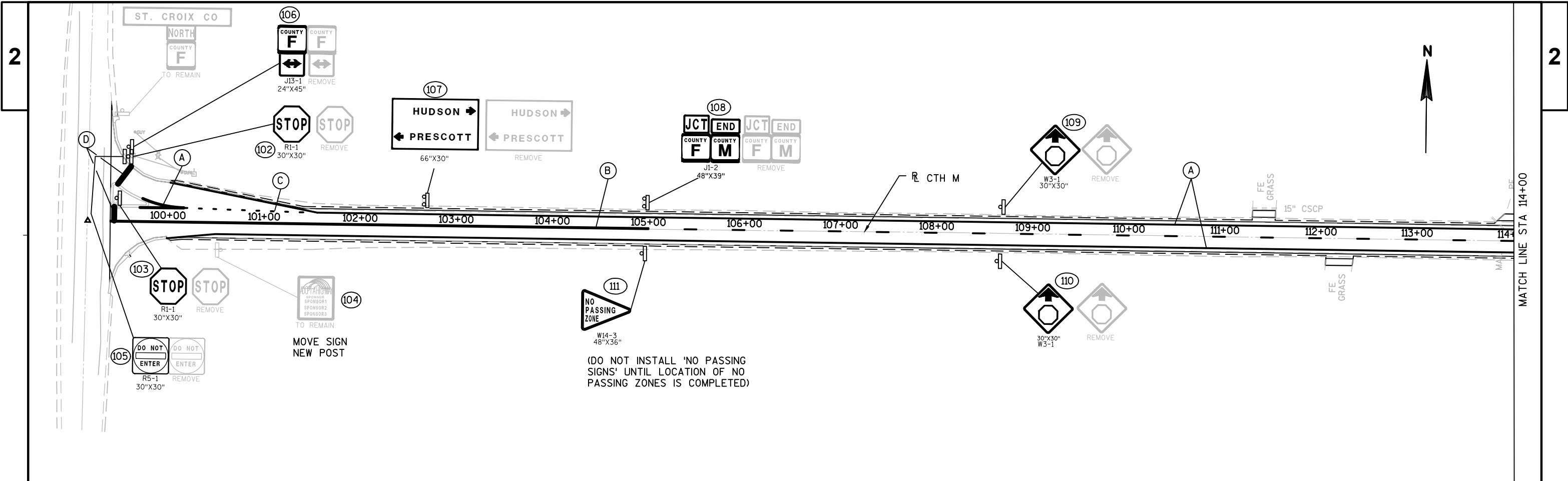
ST. CROIX VALLEY NATURAL GAS CO. INC.

PIERCE-PEPIN ELECTRIC
COOPERATIVE

POINT	STATION	OFFSET	ELEVATION	COMMENT
P61	309+72.51	16.00' RT		TAPER POINT
P62	309+92.51	17.33' RT		TAPER POINT
P63	310+02.51	18.00' RT	896.19	END OF RADIUS
P64	69+22.00'KV'	15.00' LT	898.09	END OF RADIUS
P65	68+45.70'KV'	10.37' LT		MATCH EXISTING
P66	68+45.70'KV'	10.04' RT		MATCH EXISTING
P67	69+32.00'KV'	15.00' RT		TAPER POINT
P68	69+42.34'KV'	15.00' RT	897.87	END OF RADIUS
P69	311+32.51	18.00' RT	899.86	END OF RADIUS
P70	311+65.84	16.00' RT		TAPER POINT
P80	80+52.78'DR'	11.20' LT		TAPER POINT
P81	80+50.95'DR'	13.21' RT		TAPER POINT
M13	310+44.93	35.57' RT	898.86	MIDPOINT
M14	311+04.22	29.72' RT	897.14	MIDPOINT
M15	312+86.19	22.23' LT		MIDPOINT
M16	313+27.80	27.04' LT		MIDPOINT
R13	310+02.51	78.00' RT		60' RADIUS
	69+22.00'KV'	75.00' LT		60' RADIUS
R14	311+32.51	58.00' RT		40' RADIUS
	69+42.00'KV'	55.00' RT		40' RADIUS

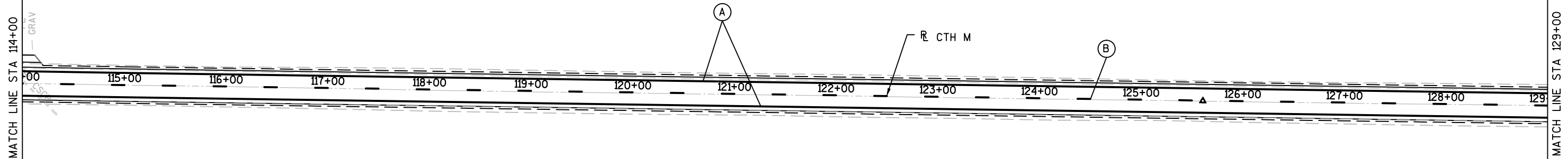
STA 69+60.67'KV'
REMOVE EXISTING 30" CPCS
1-30"X96' CPCS REQ'D
2-30" AE REQ'D

BEGIN CONSTRUCTION
STA 68+45.70'KV'
SAWCUT REQ'D



LEGEND:

- (A) MARKING LINE EPOXY 4-INCH (WHITE)
- (B) MARKING LINE EPOXY 4-INCH (YELLOW)
- (C) MARKING LINE EPOXY 4-INCH (WHITE)
(3' LINE 9' GAP AT INTERSECTIONS)
- (D) MARKING STOP LINE EPOXY 18-INCH (WHITE)



SCALE, FEET 0 50 100

PROJECT NO: 7919-01-70

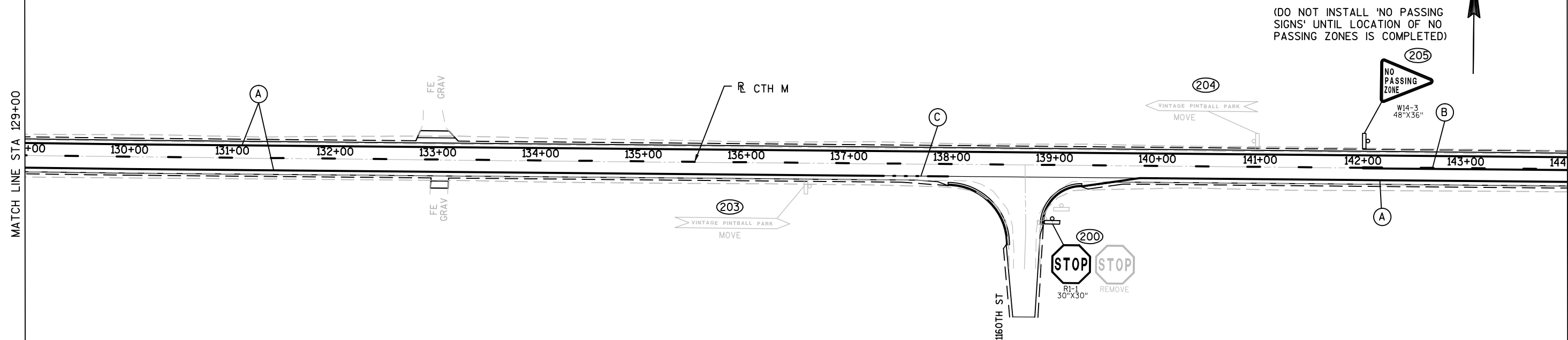
HWY: CTH M

COUNTY: PIERCE

PERMANENT SIGNING AND MARKING: CTH M

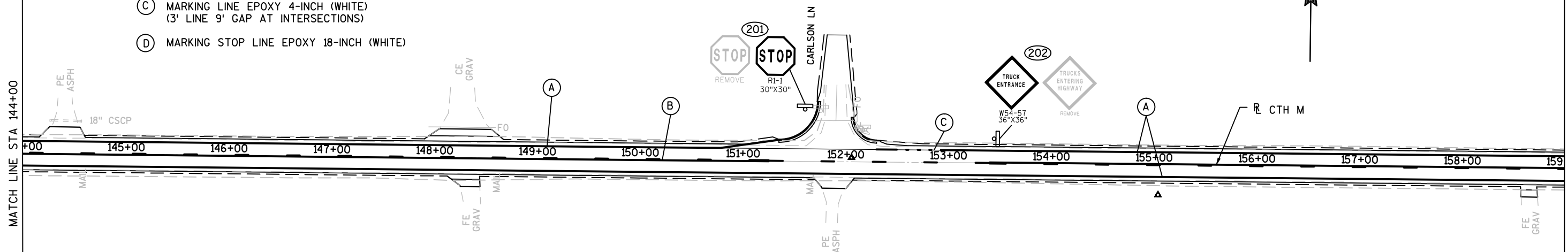
SHEET NO:

E

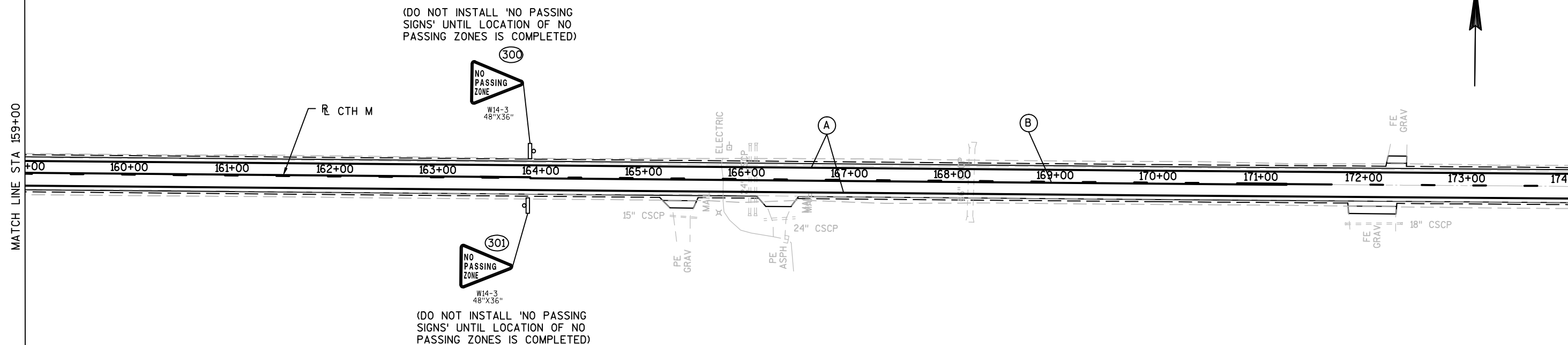


LEGEND:

- (A) MARKING LINE EPOXY 4-INCH (WHITE)
- (B) MARKING LINE EPOXY 4-INCH (YELLOW)
- (C) MARKING LINE EPOXY 4-INCH (WHITE)
(3' LINE 9' GAP AT INTERSECTIONS)
- (D) MARKING STOP LINE EPOXY 18-INCH (WHITE)

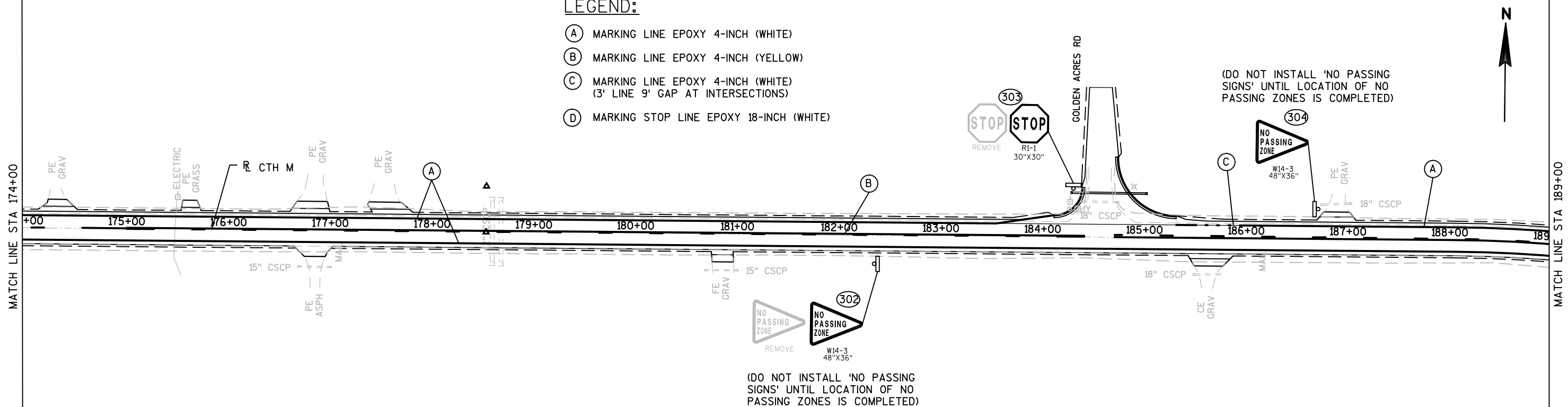


SCALE, FEET 0 50 100



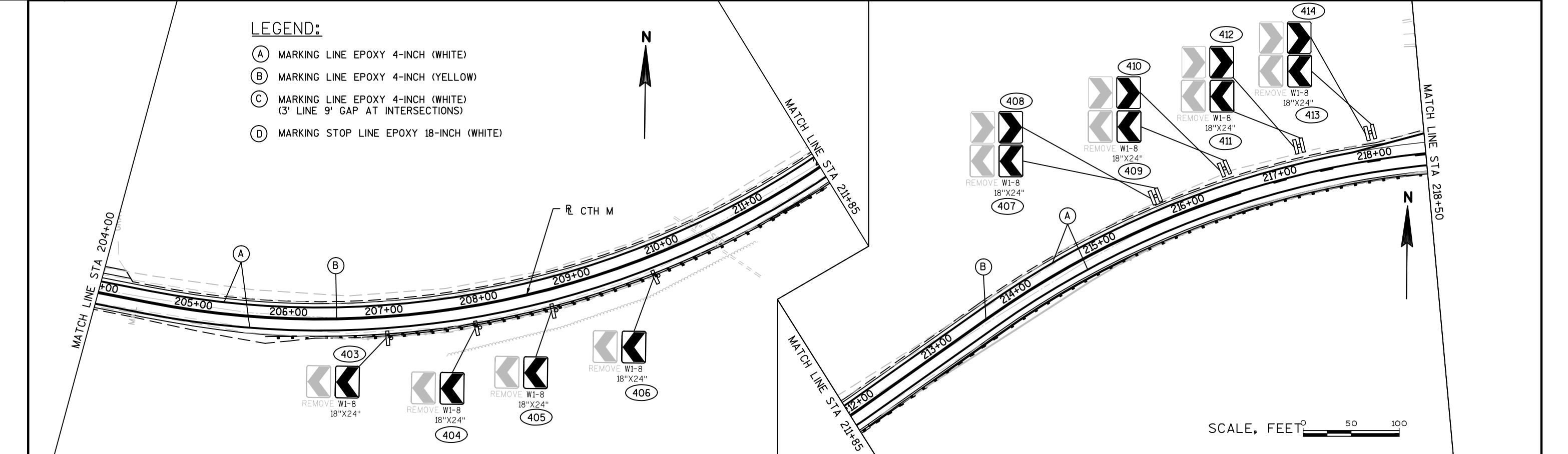
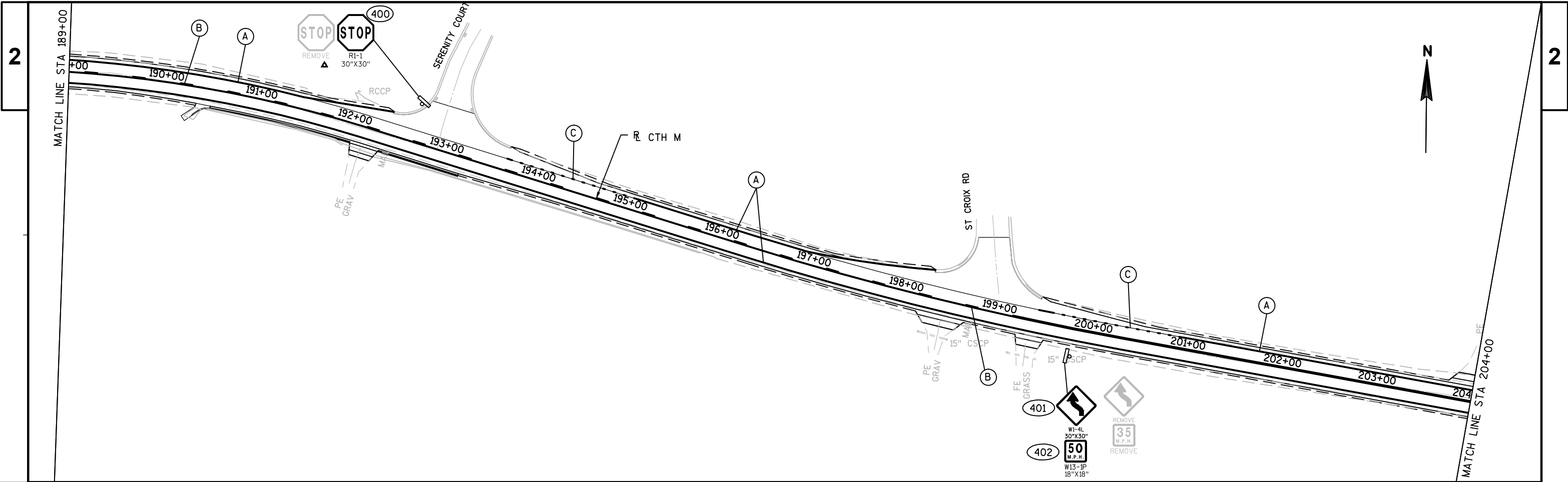
LEGEND:

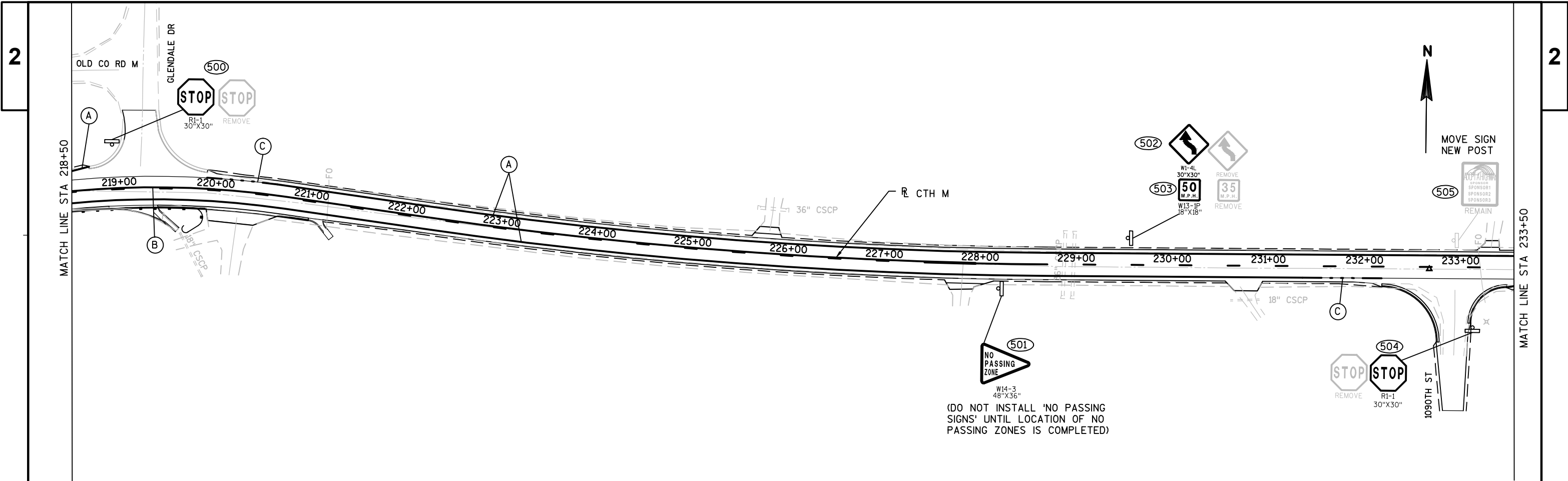
- (A) MARKING LINE EPOXY 4-INCH (WHITE)
- (B) MARKING LINE EPOXY 4-INCH (YELLOW)
- (C) MARKING LINE EPOXY 4-INCH (WHITE)
(3' LINE 9' GAP AT INTERSECTIONS)
- (D) MARKING STOP LINE EPOXY 18-INCH (WHITE)



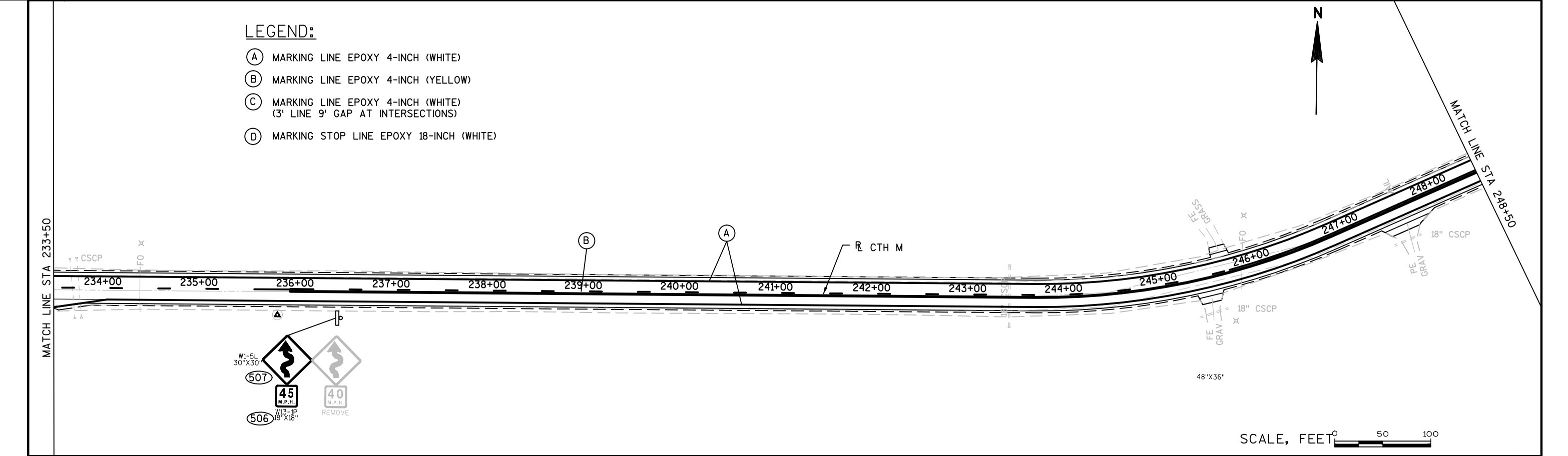
SCALE, FEET

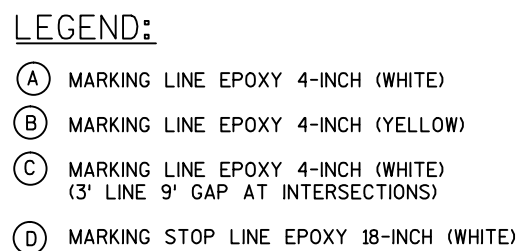
50 100





- LEGEND:**
- (A) MARKING LINE EPOXY 4-INCH (WHITE)
 - (B) MARKING LINE EPOXY 4-INCH (YELLOW)
 - (C) MARKING LINE EPOXY 4-INCH (WHITE)
(3' LINE 9' GAP AT INTERSECTIONS)
 - (D) MARKING STOP LINE EPOXY 18-INCH (WHITE)



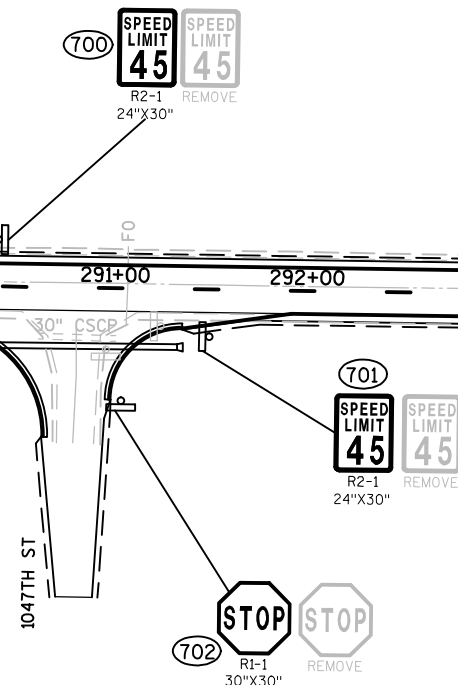


MATCH LINE STA 279+00

MATCH LINE STA 294+00

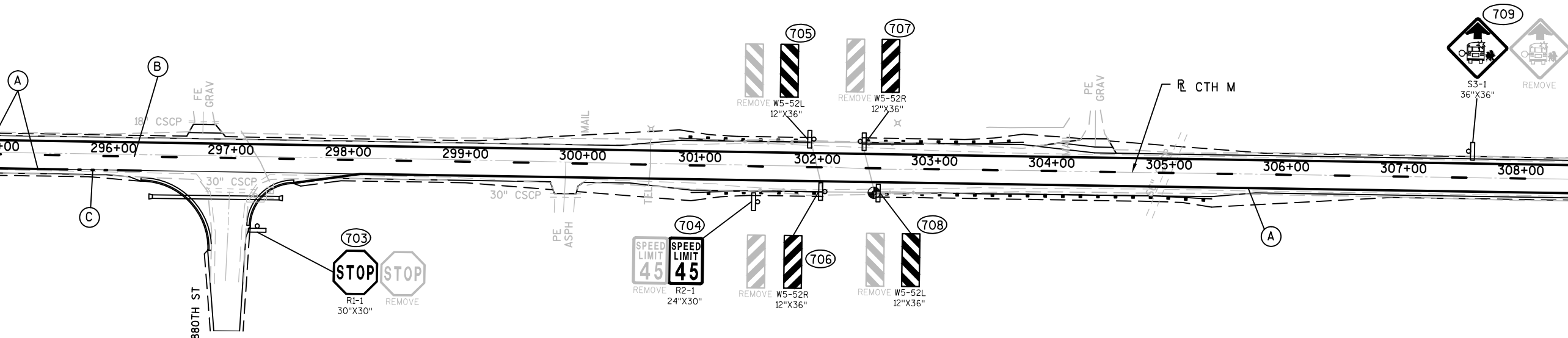
LEGEND:

- (A) MARKING LINE EPOXY 4-INCH (WHITE)
(B) MARKING LINE EPOXY 4-INCH (YELLOW)
(C) MARKING LINE EPOXY 4-INCH (WHITE)
(3' LINE 9' GAP AT INTERSECTIONS)
(D) MARKING STOP LINE EPOXY 18-INCH (WHITE)

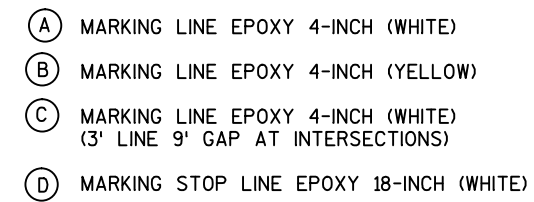


MATCH LINE STA 294+00

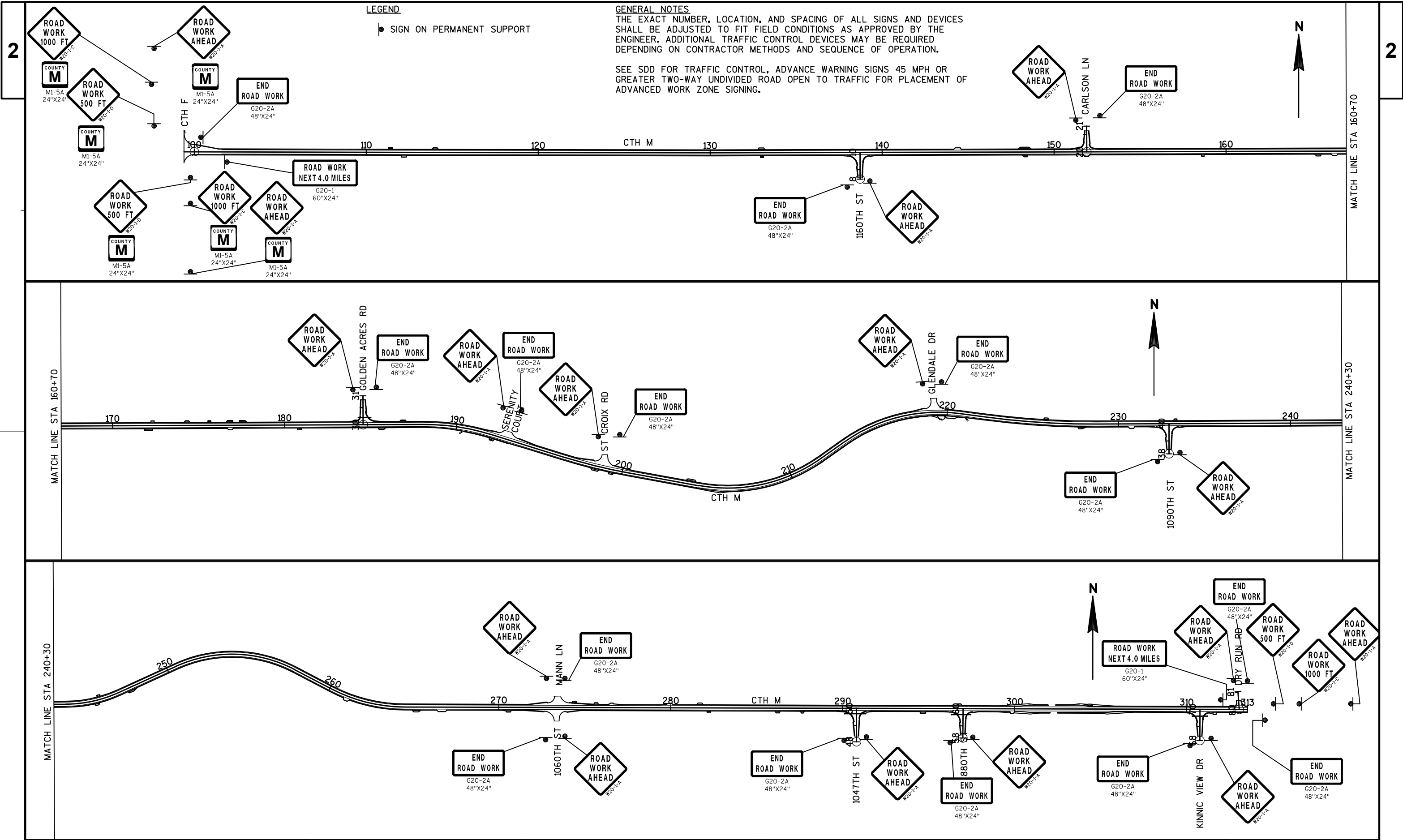
MATCH LINE STA 309+00



SCALE, FEET 0 50 100



WISDOT/CADDS SHEET 44



PROJECT NO: 7919-01-70

HWY: CTH M

COUNTY: PIERCE

TRAFFIC CONTROL: CTH M

SHEET NO:

E

Estimate Of Quantities

7919-01-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0100	Removing Small Pipe Culverts	EACH	4.000	4.000
0008	204.0100	Removing Pavement	SY	24.000	24.000
0010	204.0110	Removing Asphaltic Surface	SY	505.000	505.000
0012	204.0115	Removing Asphaltic Surface Butt Joints	SY	4,350.000	4,350.000
0014	204.0165	Removing Guardrail	LF	975.000	975.000
0016	205.9010.S	Grading and Shaping Intersection (location) 01. 1060th St.	LS	1.000	1.000
0018	205.9010.S	Grading and Shaping Intersection (location) 02. Carlson Ln.	LS	1.000	1.000
0020	205.9010.S	Grading and Shaping Intersection (location) 03. Golden Acres Rd.	LS	1.000	1.000
0022	205.9010.S	Grading and Shaping Intersection (location) 04. 1090th St.	LS	1.000	1.000
0024	205.9010.S	Grading and Shaping Intersection (location) 05. 1047th St.	LS	1.000	1.000
0026	205.9010.S	Grading and Shaping Intersection (location) 06. 880th St.	LS	1.000	1.000
0028	205.9010.S	Grading and Shaping Intersection (location) 07. Kinnic View Dr.	LS	1.000	1.000
0030	213.0100	Finishing Roadway (project) 01. 7919-01-70	EACH	1.000	1.000
0032	305.0110	Base Aggregate Dense 3/4-Inch	TON	2,900.000	2,900.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	530.000	530.000
0036	325.0100	Pulverize and Relay	SY	80,472.000	80,472.000
0038	374.1020.S	QMP Pulverize and Relay Compaction	SY	80,472.000	80,472.000
0040	416.0160	Concrete Driveway 6-Inch	SY	24.000	24.000
0042	440.4410	Incentive IRI Ride	DOL	16,188.000	16,188.000
0044	455.0605	Tack Coat	GAL	4,564.000	4,564.000
0046	460.2000	Incentive Density HMA Pavement	DOL	14,720.000	14,720.000
0048	460.5223	HMA Pavement 3 LT 58-28 S	TON	12,777.000	12,777.000
0050	460.5244	HMA Pavement 4 LT 58-34 S	TON	10,220.000	10,220.000
0052	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	124.000	124.000
0054	465.0315	Asphaltic Flumes	SY	76.000	76.000
0056	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	16,830.000	16,830.000
0058	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000	2.000
0060	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	2.000	2.000
0062	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	4.000	4.000
0064	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	72.000	72.000
0066	521.3130	Culvert Pipe Corrugated Steel 30-Inch	LF	96.000	96.000
0068	521.3136	Culvert Pipe Corrugated Steel 36-Inch	LF	228.000	228.000

Estimate Of Quantities

7919-01-70

Line	Item	Item Description	Unit	Total	Qty
0070	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	2,150.000	2,150.000
0072	614.0010	Barrier System Grading Shaping Finishing	EACH	5.000	5.000
0074	614.2300	MGS Guardrail 3	LF	1,638.000	1,638.000
0076	614.2350	MGS Guardrail Short Radius	LF	37.000	37.000
0078	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0080	614.2610	MGS Guardrail Terminal EAT	EACH	5.000	5.000
0082	614.2630	MGS Guardrail Short Radius Terminal	EACH	1.000	1.000
0084	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7919-01-70	EACH	1.000	1.000
0086	619.1000	Mobilization	EACH	1.000	1.000
0088	624.0100	Water	MGAL	420.000	420.000
0090	625.0500	Salvaged Topsoil	SY	1,577.000	1,577.000
0092	627.0200	Mulching	SY	600.000	600.000
0094	628.1504	Silt Fence	LF	2,290.000	2,290.000
0096	628.1520	Silt Fence Maintenance	LF	2,290.000	2,290.000
0098	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0100	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0102	628.2004	Erosion Mat Class I Type B	SY	2,082.000	2,082.000
0104	628.7555	Culvert Pipe Checks	EACH	15.000	15.000
0106	629.0210	Fertilizer Type B	CWT	1.500	1.500
0108	630.0120	Seeding Mixture No. 20	LB	93.000	93.000
0110	630.0200	Seeding Temporary	LB	46.000	46.000
0112	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	17.000	17.000
0114	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	48.000	48.000
0116	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0118	637.2210	Signs Type II Reflective H	SF	170.000	170.000
0120	637.2230	Signs Type II Reflective F	SF	243.000	243.000
0122	638.2102	Moving Signs Type II	EACH	4.000	4.000
0124	638.2602	Removing Signs Type II	EACH	53.000	53.000
0126	638.3000	Removing Small Sign Supports	EACH	56.000	56.000
0128	642.5001	Field Office Type B	EACH	1.000	1.000
0130	643.0300	Traffic Control Drums	DAY	1,500.000	1,500.000
0132	643.0420	Traffic Control Barricades Type III	DAY	120.000	120.000
0134	643.0705	Traffic Control Warning Lights Type A	DAY	240.000	240.000
0136	643.0900	Traffic Control Signs	DAY	3,825.000	3,825.000
0138	643.5000	Traffic Control	EACH	1.000	1.000
0140	646.1020	Marking Line Epoxy 4-Inch	LF	100,250.000	100,250.000
0142	646.3020	Marking Line Epoxy 8-Inch	LF	90.000	90.000
0144	646.6120	Marking Stop Line Epoxy 18-Inch	LF	38.000	38.000
0146	648.0100	Locating No-Passing Zones	MI	4.050	4.050

Estimate Of Quantities

7919-01-70					
Line	Item	Item Description	Unit	Total	Qty
0148	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	2,150.000	2,150.000
0150	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0152	650.8000	Construction Staking Resurfacing Reference	LF	21,410.000	21,410.000
0154	650.9910	Construction Staking Supplemental Control (project) 01. 7919-01-70	LS	1.000	1.000
0156	690.0150	Sawing Asphalt	LF	862.000	862.000
0158	690.0250	Sawing Concrete	LF	18.000	18.000
0160	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0162	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

3

CLEARING AND GRUBBING ITEMS <table><tr><th>STATION</th><th>LOCATION</th><th>201.0105 CLEARING STA</th><th>201.0205 GRUBBING STA</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td colspan="2">UNDISTRIBUTED</td><td>4</td><td>4</td></tr><tr><td colspan="2">TOTALS</td><td>4</td><td>4</td></tr></table>				STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA	CATEGORY CODE 0010				UNDISTRIBUTED		4	4	TOTALS		4	4	REMOVING SMALL PIPE CULVERTS <table><tr><th>STATION</th><th>LOCATION</th><th>203.0100 (EACH)</th><th>COMMENTS</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>184+50</td><td>LT</td><td>1</td><td>18" CPCS</td></tr><tr><td>290+80</td><td>RT</td><td>1</td><td>30" CPCS</td></tr><tr><td>297+00</td><td>RT</td><td>1</td><td>30" CPCS</td></tr><tr><td>310+77</td><td>RT</td><td>1</td><td>30" CPCS</td></tr><tr><td colspan="2">TOTALS</td><td>4</td><td></td></tr></table>				STATION	LOCATION	203.0100 (EACH)	COMMENTS	CATEGORY CODE 0010				184+50	LT	1	18" CPCS	290+80	RT	1	30" CPCS	297+00	RT	1	30" CPCS	310+77	RT	1	30" CPCS	TOTALS		4		REMOVING ASPHALTIC SURFACE <table><tr><th>STATION</th><th>LOCATION</th><th>204.0110 SY</th><th>COMMENTS</th></tr><tr><td colspan="4">CATEGORY CODE 0010</td></tr><tr><td>144+40</td><td>LT</td><td>41</td><td>DRIVEWAY</td></tr><tr><td>151+88</td><td>RT</td><td>38</td><td>DRIVEWAY</td></tr><tr><td>166+30</td><td>RT</td><td>36</td><td>DRIVEWAY</td></tr><tr><td>176+90</td><td>RT</td><td>32</td><td>DRIVEWAY</td></tr><tr><td>220+27</td><td>RT</td><td>80</td><td>DRIVEWAY</td></tr><tr><td>230+74</td><td>RT</td><td>35</td><td>DRIVEWAY</td></tr><tr><td>261+08</td><td>RT</td><td>50</td><td>DRIVEWAY</td></tr><tr><td>266+71</td><td>RT</td><td>72</td><td>DRIVEWAY</td></tr><tr><td>276+56</td><td>LT</td><td>52</td><td>DRIVEWAY</td></tr><tr><td>280+00</td><td>LT</td><td>43</td><td>DRIVEWAY</td></tr><tr><td>299+86</td><td>RT</td><td>24</td><td>DRIVEWAY</td></tr><tr><td colspan="2">TOTALS</td><td>505</td><td></td></tr></table>				STATION	LOCATION	204.0110 SY	COMMENTS	CATEGORY CODE 0010				144+40	LT	41	DRIVEWAY	151+88	RT	38	DRIVEWAY	166+30	RT	36	DRIVEWAY	176+90	RT	32	DRIVEWAY	220+27	RT	80	DRIVEWAY	230+74	RT	35	DRIVEWAY	261+08	RT	50	DRIVEWAY	266+71	RT	72	DRIVEWAY	276+56	LT	52	DRIVEWAY	280+00	LT	43	DRIVEWAY	299+86	RT	24	DRIVEWAY	TOTALS		505		PULVERIZE AND RELAY <table><tr><th>STATION</th><th>-</th><th>STATION</th><th>LOCATION</th><th>325.0100 SY</th><th>COMMENTS</th></tr><tr><td colspan="6">CATEGORY CODE 0010</td></tr><tr><td>100+28</td><td>-</td><td>302+00</td><td>MAINLINE</td><td>71,724</td><td>CTH M</td></tr><tr><td>99+39</td><td>-</td><td>302+00</td><td>SIDEROADS</td><td>4,282</td><td></td></tr><tr><td>302+43</td><td>-</td><td>313+53</td><td>MAINLINE</td><td>3,947</td><td>CTH M</td></tr><tr><td>302+43</td><td>-</td><td>313+53</td><td>SIDEROADS</td><td>519</td><td></td></tr><tr><td colspan="4">TOTALS</td><td>80,472</td><td></td></tr></table> *Width is existing asphalt width plus 1-foot beyond existing asphalt edge						STATION	-	STATION	LOCATION	325.0100 SY	COMMENTS	CATEGORY CODE 0010						100+28	-	302+00	MAINLINE	71,724	CTH M	99+39	-	302+00	SIDEROADS	4,282		302+43	-	313+53	MAINLINE	3,947	CTH M	302+43	-	313+53	SIDEROADS	519		TOTALS				80,472																																																					
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REMOVING PAVEMENT 204.0100 <table><tr><th>STATION</th><th>LOCATION</th><th>(SY)</th></tr><tr><td colspan="3">CATEGORY CODE 0010</td></tr><tr><td>311+61</td><td>RT</td><td>24</td></tr><tr><td colspan="2">TOTALS</td><td>24</td></tr></table>			STATION	LOCATION	(SY)	CATEGORY CODE 0010			311+61	RT	24	TOTALS		24	WATER 624.0100 <table><tr><th>LOCATION</th><th>MGAL</th></tr><tr><td colspan="2">CATEGORY CODE 0010</td></tr><tr><td>COMPACTION</td><td>300</td></tr><tr><td>DUST CONTROL</td><td>120</td></tr><tr><td colspan="2">TOTALS</td><td>420</td></tr></table>			LOCATION	MGAL	CATEGORY CODE 0010		COMPACTION	300	DUST CONTROL	120	TOTALS		420	REMOVING GUARDRAIL 204.0165 <table><tr><th>STATION</th><th>LOCATION</th><th>(LF)</th></tr><tr><td colspan="3">CATEGORY CODE 0010</td></tr><tr><td>206+75 - 210+90</td><td>RT</td><td>415</td></tr><tr><td>215+10 - 218+30</td><td>RT</td><td>320</td></tr><tr><td>301+25 - 302+00</td><td>LT</td><td>75</td></tr><tr><td>302+33 - 302+80</td><td>RT</td><td>47</td></tr><tr><td>301+40 - 302+10</td><td>LT</td><td>70</td></tr><tr><td>302+57 - 303+05</td><td>RT</td><td>48</td></tr><tr><td colspan="2">TOTALS</td><td>975</td></tr></table>			STATION	LOCATION	(LF)	CATEGORY CODE 0010			206+75 - 210+90	RT	415	215+10 - 218+30	RT	320	301+25 - 302+00	LT	75	302+33 - 302+80	RT	47	301+40 - 302+10	LT	70	302+57 - 303+05	RT	48	TOTALS		975	ASPHALTIC FLUMES 465.0315 <table><tr><th>STATION</th><th>LOCATION</th><th>SY</th></tr><tr><td colspan="3">CATEGORY CODE 0010</td></tr><tr><td>90+40</td><td>RT</td><td>21</td></tr><tr><td>219+30</td><td>RT</td><td>30</td></tr><tr><td>221+10</td><td>RT</td><td>25</td></tr><tr><td colspan="2">TOTALS</td><td>76</td></tr></table>			STATION	LOCATION	SY	CATEGORY CODE 0010			90+40	RT	21	219+30	RT	30	221+10	RT	25	TOTALS		76																									
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CULVERT PIPE ITEMS

STATION	OFFSET	LOCATION	CULVERT PIPE			AEW FOR CULVERT			MINIMUM THICKNESS (INCHES)
			CORUGATED STEEL			PIPE CORUGATED STEEL			
			521.3118	521.3130	521.3136	521.1018	521.1030	521.1036	
			18-INCH	30-INCH	36-INCH	18-INCH	30-INCH	36-INCH	
CATEGORY CODE 0010			LF	LF	LF	LF	LF	LF	
184+23.43	30.64' LT	GOLDEN ACRES RD	72	--	--	1	--	--	0.064
185+08.93	30.26' LT	GOLDEN ACRES RD		--	--	1	--	--	0.064
290+26.27	27.92' RT	1047TH ST	--	--	120	--	--	1	0.064
291+22.27	27.63' RT	1047TH ST	--	--		--	--	1	0.064
296+44.18	28.31' RT	880TH ST	--	--	108	--	--	1	0.064
297+40.18	28.02' RT	880TH ST	--	--		--	--	1	0.064
310+29.33	30.80' RT	KINNIC VIEW DR	--	96	-	--	1	--	0.064
311+13.33	30.55' RT	KINNIC VIEW DR	--		-	--	1	--	0.064
TOTALS			72	96	228	2	2	4	

MGS GUARDRAIL ITEMS

STATION - STATION	LOCATION	614.2350	614.2630	614.2300	614.2500	614.2610	614.0010
		BEAM GUARD	SHORT RADIUS	GUARDRAIL 3	THRIE BEAM	TERMINAL	BARRIER SYSTEM
		SHORT RADIUS	TERMINAL		TRANSITION	EAT	GRADING SHAPING FINISHING
CATEGORY CODE 0010		LF	EACH	LF	LF	EACH	EACH
205+77.45 - 206+30.58	RT	--	--	---	--	1	1
206+30.58 - 219+80.58	RT	--	--	1,350	--	---	
219+80.58	RT	--	1	--	---	---	
219+80.58	RT	37	--	--	---	---	
300+81.95 - 301+99.45	LT	--	--	25	39.4	1	1
300+92.86 - 302+10.36	RT	--	--	25	39.4	1	1
302+32.90 - 303+75.43	LT	--	--	50	39.4	1	1
302+56.79 - 305+36.82	RT	--	--	187.5	39.4	1	1
TOTALS		37	1	1,638	158	5	5

CONCRETE CURB AND GUTTER

601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D		
STATION - STATION	LOCATION	LF
CATEGORY CODE 0010		
1160TH ST	SW QUAD	95
	SE QUAD	63
CARLSON LN	NW QUAD	63
	NE QUAD	40
GOLDEN ACRES RD	NW QUAD	48
	NE QUAD	95
190+50 - 193+20	RT	270
211+95 - 221+00	RT	905
1090TH ST	SW QUAD	95
	SE QUAD	63
1047TH ST	SW QUAD	95
	SE QUAD	63
880TH ST	SW QUAD	95
	SE QUAD	63
KINNIC VIEW DR	SW QUAD	95
	SE QUAD	63
TOTALS		2,150

LANDSCAPE AND EROSION CONTROL ITEMS										
		625.0500	627.0200	628.1504	628.1520	628.2004	629.0210	630.0120	630.0200	
		SALVAGED	MULCHING	SILT FENCE	SILT FENCE	EROSION	FERTILIZER	SEEDING	SEEDING	
		TOPSOIL			MAINTENANCE	MAT CLASS I	TYPE B	MIXTURE	TEMPORARY	
STATION - STATION	LOCATION	SY	SY	LF	LF	SY	CWT	NO. 20	LBS	
CATEGORY CODE 0010										
--	--	1160TH St	220	--	300	300	220	0.14	5.9	3.0
--	--	CARLSON LN	130	--	250	250	130	0.08	3.5	1.8
--	--	GOLDEN ACRES	200	--	290	290	200	0.13	5.4	2.7
--	190+40	RT	9	--	--	--	9	0.01	0.2	0.1
205+50 -	206+00	RT	--	--	50	50	105	--	--	--
--	219+50	RT	9	--	--	--	9	0.01	0.2	0.1
--	221+40	RT	9	--	--	--	9	0.01	0.2	0.1
--	--	1090TH St	200	--	300	300	200	0.13	5.4	2.7
--	--	1047TH St	250	--	200	200	250	0.16	6.8	3.4
--	--	880TH St	300	--	300	300	300	0.19	8.1	4.1
--	301+00	LT	--	--	50	50	100	--	--	--
--	301+00	RT	--	--	50	50	100	--	--	--
303+50 -	304+50	LT	--	--	100	100	100	--	--	--
304+50 -	305+50	RT	--	--	100	100	100	--	--	--
		KINNIC VIEW	250	--	300	300	250	0.16	6.8	3.4
UNDISTRIBUTED			--	600	--	--	--	0.5	50	25
TOTALS			1,577	600	2,290	2,290	2,082	1.5	93	46

MOBILIZATION		
628.1905		628.1910
MOBILIZATION		MOBILIZATIONS EMERGENCY
EROSION CONTROL		EROSION CONTROL
EACH		EACH
CATEGORY CODE 0010		
ID 7919-01-70		3
		2
TOTALS		3
		2

TRAFFIC CONTROL ITEMS												
			643.0420			643.0705			643.0900			
			BARRICADES			WARNING LIGHTS			SIGNS			
			TYPE III			TYPE A						
			IN SERVICE	TOTAL		IN SERVICE	TOTAL		IN SERVICE	TOTAL		
LOCATION			DAYS	NUMBER	DAYS	DAYS	NUMBER	DAYS	DAYS	NUMBER	DAYS	
CATEGORY CODE 0010												
PROJECT			--	--	--	--	--	--	--	85	45	3,825
UNDISTRIBUTED			30	50	1,500	30	4	120	30	8	240	--
TOTALS				1,500			120			240		3,825

CULVERT PIPE CHECKS		
		628.7555
		CULVERT PIPE
		CHECKS
STATION	LOCATION	EACH
CATEGORY CODE 0010		
185+09	LT	2
290+26	RT	3
296+44	RT	3
311+13	RT	3
UNDISTRUBUTED		4
TOTALS		15

SAWING PAVEMENT ITEMS				
		690.0150	690.0250	
		SAWING	SAWING	
		ASPHALT	CONCRETE	
STATION	LOCATION	LF	LF	COMMENTS
CATEGORY CODE 0010				
99+39.96	CTH M	189	--	MAINLINE
8+52 'AA'	1160TH ST	22	--	SIDE ROAD
144+40	LT	30	--	DRIVEWAY
151+88	RT	23	--	DRIVEWAY
21+23'CA'	CARLSON LN	19	--	SIDE ROAD
166+30	RT	25	--	DRIVEWAY
176+90	RT	21	--	DRIVEWAY
31+46'GA'	GOLDEN ACRES RD	22	--	SIDE ROAD
193+00	LT	45	--	SERENITY COURT
199+00	LT	32	--	ST CROIX RD
219+25	LT	25	--	GLENDALE DR
220+27	RT	63	--	DRIVEWAY
230+74	RT	24	--	DRIVEWAY
40+25'BB'	1090TH ST	22	--	SIDE ROAD
261+08	RT	24	--	DRIVEWAY
266+71	RT	42	--	DRIVEWAY
273+36	RT	29	--	1060TH ST
273+41	LT	29	--	MANN LN
276+56	LT	17	--	DRIVEWAY
280+00	LT	22	--	DRIVEWAY
50+33.20	107TH ST	19	--	SIDE ROAD
60+23.15	880TH ST	22	--	SIDE ROAD
299+86	RT	19	--	DRIVEWAY
70+27.04	KINNIC VIEW DR	20	--	SIDE ROAD
311+61	RT	--	18	DRIVEWAY
225+57	DRY RUN RD	25	--	SIDE ROAD
313+54	CTH M	32	--	MAINLINE
TOTALS		862	18	

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SIGNING ITEMS														
SIGN NO.	SIGN CODE	STATION	LOCATION	SIZE	637.2210	637.2230	634.0612	634.0614	634.0618	638.2102	638.2602	638.3000	MESSAGE	REMARKS
					SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	POSTS WOOD 4X6X12 EACH	POSTS WOOD 4X6X14 EACH	POSTS WOOD 4X6X18 EACH	MOVING SIGNS TYPE II EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH		
102	R1-1	99+57	LT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
103	R1-1	99+45	CL	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
104	--	100+55	RT	--	--	--	--	1	--	1	--	1	ADOPT-A-HIGHWAY	SALVAGE SIGN ONTO NEW POST
105	R5-1	99+45	LT	30" X 30"	6.25	--	--	--	--	--	1	--	DO NOT ENTER	MOUNT ON SAME POST AS SIGN 102
106	J13-1	99+45	CL	24" X 45"	7.50	--	--	1	--	--	1	1	CTH F, DOUBLE ARROW	
107	--	102+66	LT	66" X 30"	13.75	--	--	--	2	--	1	1	HUDSON ARROW, PRESCOTT ARROW	
108	J1-2	104+95	LT	48" X 39"	13.00	--	--	2	--	--	1	1	JCT, END, CTH F, AND CTH M	
109	W3-1	108+66	LT	30" X 30"	--	6.25	--	1	--	--	1	1	STOP AHEAD	
110	W3-1	108+63	RT	30" X 30"	--	6.25	--	1	--	--	1	1	STOP AHEAD	
111	W14-3	105+00	RT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
200	R1-1	138+91	RT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
201	R1-1	151+75	LT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
202	W54-57	153+44	LT	36" X 36"	--	9.00	--	1	--	--	1	1	TRUCK ENTRANCE	
203	--	136+55	RT	-- X --	--	--	1	--	--	1	--	1	VINTAGE PAINTBALL PARK	SALVAGE SIGN ONTO NEW POST
204	--	141+00	LT	-- X --	--	--	1	--	--	1	--	1	VINTAGE PAINTBALL PARK	SALVAGE SIGN ONTO NEW POST
205	W14-3	142+00	LT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
300	W14-3	163+95	LT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
301	W14-3	184+37	RT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
302	W14-3	182+45	RT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
303	R1-1	184+35	LT	30" X 30"	5.18	--	--	1	--	--	--	--	STOP SIGN	
304	W14-3	186+65	LT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
400	R1-1	192+62	LT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
401	W1-4L	199+81	RT	30" X 30"	--	6.25	--	1	--	--	1	1	CURVE AHEAD	
402	W13-1P	199+81	RT	18" X 18"	--	2.25	--	--	--	--	--	--	ADVISORY 50 MPH	MOUNT ON SAME POST AS SIGN 401
403	W1-8L	207+05	RT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
404	W1-8L	207+96	RT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
405	W1-8L	208+76	RT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
406	W1-8L	209+85	RT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
407	W1-8L	215+72	LT	18" X 24"	--	3.00	1	--	--	--	--	1	LEFT ARROW	MOUNT ON SAME POST AS SIGN 408
408	W1-8R	215+72	LT	18" X 24"	--	3.00	--	--	--	--	1	--	RIGHT ARROW	
409	W1-8L	216+47	LT	18" X 24"	--	3.00	1	--	--	--	--	1	LEFT ARROW	MOUNT ON SAME POST AS SIGN 410
410	W1-8R	216+47	LT	18" X 24"	--	3.00	--	--	--	--	1	--	RIGHT ARROW	
411	W1-8L	217+26	LT	18" X 24"	--	3.00	1	--	--	--	--	1	LEFT ARROW	MOUNT ON SAME POST AS SIGN 412
412	W1-8R	217+26	LT	18" X 24"	--	3.00	--	--	--	--	1	--	RIGHT ARROW	
413	W1-8L	217+99	LT	18" X 24"	--	3.00	1	--	--	--	--	1	LEFT ARROW	MOUNT ON SAME POST AS SIGN 414
414	W1-8R	217+99	LT	18" X 24"	--	3.00	--	--	--	--	1	--	RIGHT ARROW	
500	R1-1	218+94	LT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
501	W14-3	228+25	RT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
502	W1-4L	229+53	LT	30" X 30"	--	6.25	--	1	--	--	--	1	CURVE AHEAD	MOUNT ON SAME POST AS SIGN 503
503	W13-1P	229+53	LT	18" X 18"	--	2.25	--	--	--	--	1	--	ADVISORY 50 MPH	
504	R1-1	233+13	RT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
505	--	232+92	LT	--	--	--	--	1	--	1	--	1	ADOPT-A-HIGHWAY	SALVAGE SIGN ONTO NEW POST
506	W13-1P	236+48	RT	18" X 18"	--	2.25	--	--	--	--	--	--	ADVISORY 45 MPH	MOUNT ON SAME POST AS SIGN 507
507	W1-5L	236+48	RT	30" X 30"	--	6.25	--	1	--	--	1	1	CURVE AHEAD	
600	W1-8L	251+40	LT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
601	W1-8L	252+18	LT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
602	W1-8L	252+98	LT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
603	W1-8L	253+80	LT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
604	W1-8L	254+62	LT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
605	W1-8L	255+41	LT	18" X 24"	--	3.00	1	--	--	--	1	1	LEFT ARROW	
606	W1-8R	251+40	LT	18" X 24"	--	3.00	--	--	--	--	--	--	RIGHT ARROW	MOUNT ON SAME POST AS SIGN 600
607	W1-8R	252+18	LT	18" X 24"	--	3.00	--	--	--	--	--	--	RIGHT ARROW	MOUNT ON SAME POST AS SIGN 601
608	W1-8R	252+98	LT	18" X 24"	--	3.00	--	--	--	--	--	--	RIGHT ARROW	MOUNT ON SAME POST AS SIGN 602
609	W1-8R	253+80	LT	18" X 24"	--	3.00	--	--	--	--	--	--	RIGHT ARROW	MOUNT ON SAME POST AS SIGN 603
610	W1-8R	254+62	LT	18" X 24"	--	3.00	--	--	--	--	--	--	RIGHT ARROW	MOUNT ON SAME POST AS SIGN 604
SHEET SUBTOTALS					82	155	16	26	2	4	31	34		

3

3

3

SIGNING ITEMS - CONT'D

					637.2210	637.2230	634.0612	634.0614	634.0618	638.2102	638.2602	638.3000	MESSAGE	REMARKS
					SIGNS TYPE II	SIGNS TYPE II	POSTS WOOD	POSTS WOOD	POSTS WOOD	MOVING SIGNS	REMOVING SIGNS	REMOVING SMALL		
SIGN NO.	SIGN CODE	STATION	LOCATION	SIZE	REFLECTIVE H SF	RELECTIVE F SF	4X6X12 EACH	4X6X14 EACH	4X6X18 EACH	TYPE II EACH	TYPE II EACH	SIGN SUPPORTS EACH		
611	W1-8R	255+41	LT	18" X 24"	--	3.00	--	--	--	--	--	--	RIGHT ARROW	MOUNT ON SAME POST AS SIGN 605
612	W3-5	268+27	RT	36" X 36"	--	9.00	--	1	--	--	1	1	REDUCED SPEED AHEAD	
614	W1-5L	268+81	LT	30" X 30"	--	6.25	--	1	--	--	1	1	CURVE AHEAD	
615	W13-1P	268+81	LT	18" X 18"	--	2.25	--	--	--	--	--	--	ADVISORY 45 MPH	MOUNT ON SAME POST AS SIGN 614
616	D11-1	272+35	LT	24" X 18"	3.00	--	1	--	--	--	1	1	BIKE ROUTE	
617	R1-1	273+15	LT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
618	R1-1	273+57	RT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
619	R2-1	274+64	RT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 45	
620	R2-1	274+64	RT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 55	
621	W14-3	272+25	RT	48" X 36"	--	5.56	--	1	--	--	--	--	NO PASSING ZONE	
700	R2-1	290+39	LT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 45	
701	R2-1	291+24	RT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 45	
702	R1-1	290+95	RT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
703	R1-1	297+21	RT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
704	R2-1	301+50	RT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 45	
705	W5-52L	301+97	LT	12" X 36"	--	3.00	--	1	--	--	1	1	BRIDGE SIGN	
706	W5-52R	302+07	RT	12" X 36"	--	3.00	--	1	--	--	1	1	BRIDGE SIGN	
707	W5-52R	302+36	LT	12" X 36"	--	3.00	--	1	--	--	1	1	BRIDGE SIGN	
708	W5-52L	302+49	RT	12" X 36"	--	3.00	--	1	--	--	1	1	BRIDGE SIGN	
709	S3-1	307+55	LT	36" X 36"	9.00	--	--	1	--	--	1	1	BUS STOP AHEAD	
800	R2-1	310+07	LT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 45	
801	R2-1	310+04	RT	24" X 30"	5.00	--	--	1	--	--	1	1	SPEED LIMIT 35	
802	R1-1	311+01	RT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
803	W14-3	312+71	LT	48" X 36"	--	5.56	--	1	--	--	1	--	NO PASSING ZONE	
804	R1-1	312+81	LT	30" X 30"	5.18	--	--	1	--	--	1	1	STOP SIGN	
805	I2-2	312+71	LT	60" X 15"	6.25	--	--	--	--	--	--	1	PIERCE CO	MOUNT ON SAME POST AS SIGN 803
806	M1-5A	312+71	LT	24" X 24"	4.00	--	--	--	--	--	--	--	CTH M	MOUNT ON SAME POST AS SIGN 803
SHEET SUBTOTALS					88	44	1	22	--	--	22	22		
TOTALS					170	243	17	48	2	4	53	56		

PAVEMENT MARKING EPOXY 4-INCH

		646.1020			REMARKS
STATION - STATION	LOCATION	WHITE LF	YELLOW LF		
CATEGORY CODE 0010					
99+40 - 313+53	CL	60,750	39,500		
TOTALS		60,750	39,500		
		100,250			

PAVEMENT MARKING EPOXY 8-INCH

STATION - STATION		LOCATION	646.3020	
CATEGORY CODE 0010			LF	
REMARKS				
99+40	- 313+53	CL	90	ISLAND GORE
TOTALS			90	

CONSTRUCTION STAKING ITEMS

		650.5500	650.6000	650.8000	650.9910
		CURB & GUTTER LF	PIPE CULVERTS LF	RESURFACING REFERENCE LF	SUPPLEMENTAL CONTROL LS
STATION - STATION	LOCATION				
CATEGORY CODE 0010					
99+40 - 313+53	CTH M	--	--	21,413	--
PROJECT		2,150	--	--	1
GOLDEN ACRES RD		--	1	--	--
1047TH ST		--	1	--	--
880TH ST		--	1	--	--
KINNIC VIEW DR		---	1	--	--
TOTALS		2,150	4	21,410	1

LOCATING NO PASSING ZONES

		648.0100	
STATION - STATION	LOCATION	MI	
CATEGORY CODE 0010		REMARKS	
	CTH M	4.05	PROJECT
TOTALS		4.05	

PAVEMENT MARKING STOP LINE EPOXY 18-INCH

STATION - STATION		LOCATION	646.6120 LF	
CATEGORY CODE 0010				REMARKS
99+50		CTH F	23	RIGHT TURN LANE
99+44		CTH F	15	MAINLINE
TOTALS			38	

CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	•
QUARTER LINE	---			NON-MONUMENTED R/W POINT	○
SIXTEENTH LINE	---			FOUND IRON PIN (1-INCH UNLESS NOTED)	IP
NEW REFERENCE LINE	---	SECTION CORNER MONUMENT			
NEW R/W LINE	---	GEODETIC SURVEY MONUMENT			
EXISTING R/W OR HE LINE	---	SIXTEENTH CORNER MONUMENT			
PROPERTY LINE	---	SIGN		OFF-PREMISE SIGN	
LOT, TIE & OTHER MINOR LINES	---				
SLOPE INTERCEPT	---			COMPENSABLE	NON-COMPENSABLE
CORPORATE LIMITS	---	ELECTRIC POLE			
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)	---	TELEPHONE POLE			
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)	---	PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)			
TEMPORARY LIMITED EASEMENT AREA	---	ACCESS RESTRICTED BY ACQUISITION			
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)	---	NO ACCESS (BY STATUTORY AUTHORITY)			
TRANSMISSION STRUCTURES	---	ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)			
BUILDING		NO ACCESS (NEW HIGHWAY)			
BRIDGE		PARCEL NUMBER (25)		UTILITY NUMBER (40)	
		PARALLEL OFFSETS			

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS (100')	(100')
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTRICTIVE DEVELOPMENT	RDE
CENTERLINE	C/L	EASEMENT	
CERTIFIED SURVEY MAP	CSM	RIGHT	RT
CONCRETE	CONC	RIGHT OF WAY	R/W
COUNTY	CO	SECTION	SEC
COUNTY TRUNK HIGHWAY	CTH	SEPTIC VENT	SEPV
DISTANCE	DIST	SQUARE FEET	SF
CORNER	COR	STATE TRUNK HIGHWAY	STH
DOCUMENT NUMBER	DOC	STATION	STA
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED	TLE
GAS VALVE	GV	EASEMENT	
GRID NORTH	GN	TRANSPORTATION PROJECT	TPP
HIGHWAY EASEMENT	HE	PLAT	
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED	PLE		
EASEMENT			
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		
POINT OF COMPOUND CURVE	PCC		

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), PIERCE COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

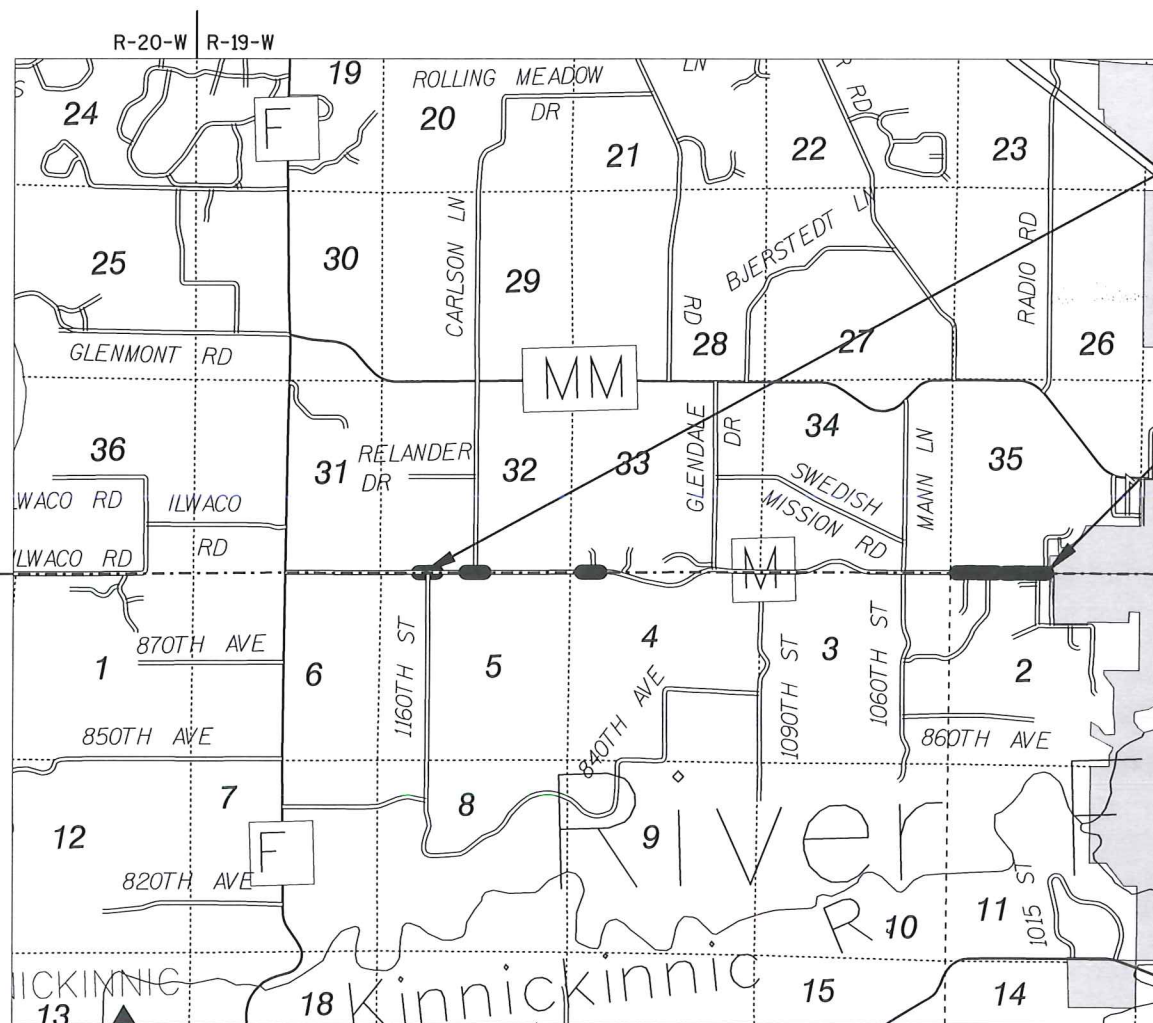
RIGHT OF WAY MONUMENTS ARE REBAR AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

CONVENTIONAL UTILITY SYMBOLS

WATER	---
GAS	---
TELEPHONE	---
OVERHEAD	---
TRANSMISSION LINES	---
ELECTRIC	---
CABLE TELEVISION	---
FIBER OPTIC	---
SANITARY SEWER	---
STORM SEWER	---

CAUTION
THIS PLAT IS FOR ILLUSTRATIVE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES.



LAYOUT
SCALE 0 1MI.
TOTAL NET LENGTH OF CENTERLINE = 3.314 MI

R/W PROJECT NUMBER 7919-01-00	SHEET NUMBER 4.01	TOTAL SHEETS 9
FEDERAL PROJECT NUMBER N/A		
PLAT OF RIGHT OF WAY REQUIRED FOR CTH F - RIVER FALLS CTH F - DRY RUN ROAD		
CTH M		PIERCE COUNTY
CONSTRUCTION PROJECT NUMBER 7919-01-70		

BEGIN RELOCATION ORDER

PROJECT
STA 137+00.00

1139.18' EAST AND 1.55' NORTH OF THE
NW CORNER OF SEC 5, T27N, R19W

END RELOCATION ORDER

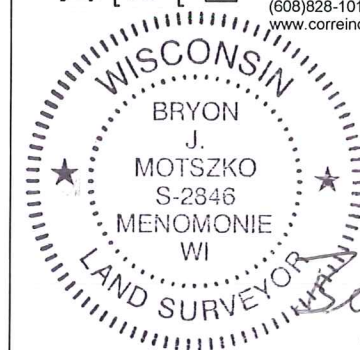
PROJECT
STA 312+00.00

93.46' WEST AND 0.78' NORTH OF THE
N 1/4 CORNER OF SEC 2, T27N, R19W

CORRE



1802 WARDEN STREET
EAU CLAIRE, WI 54703
(608)828-1011
www.correinc.com



I, BRYON J. MOTSZKO, REGISTERED
LAND SURVEYOR, S-2846, HEREBY
CERTIFY THAT I HAVE SURVEYED THE
LAND DESCRIBED HEREON AND THAT
THE MAP HEREON IS A CORRECT
REPRESENTATION OF THAT SURVEY
TO THE BEST OF MY KNOWLEDGE
AND BELIEF.

SIGNATURE DATE

REVISION DATE

PIERCE COUNTY
HIGHWAY DEPARTMENT

APPROVED FOR THE COUNTY

DATE: 9/14/16

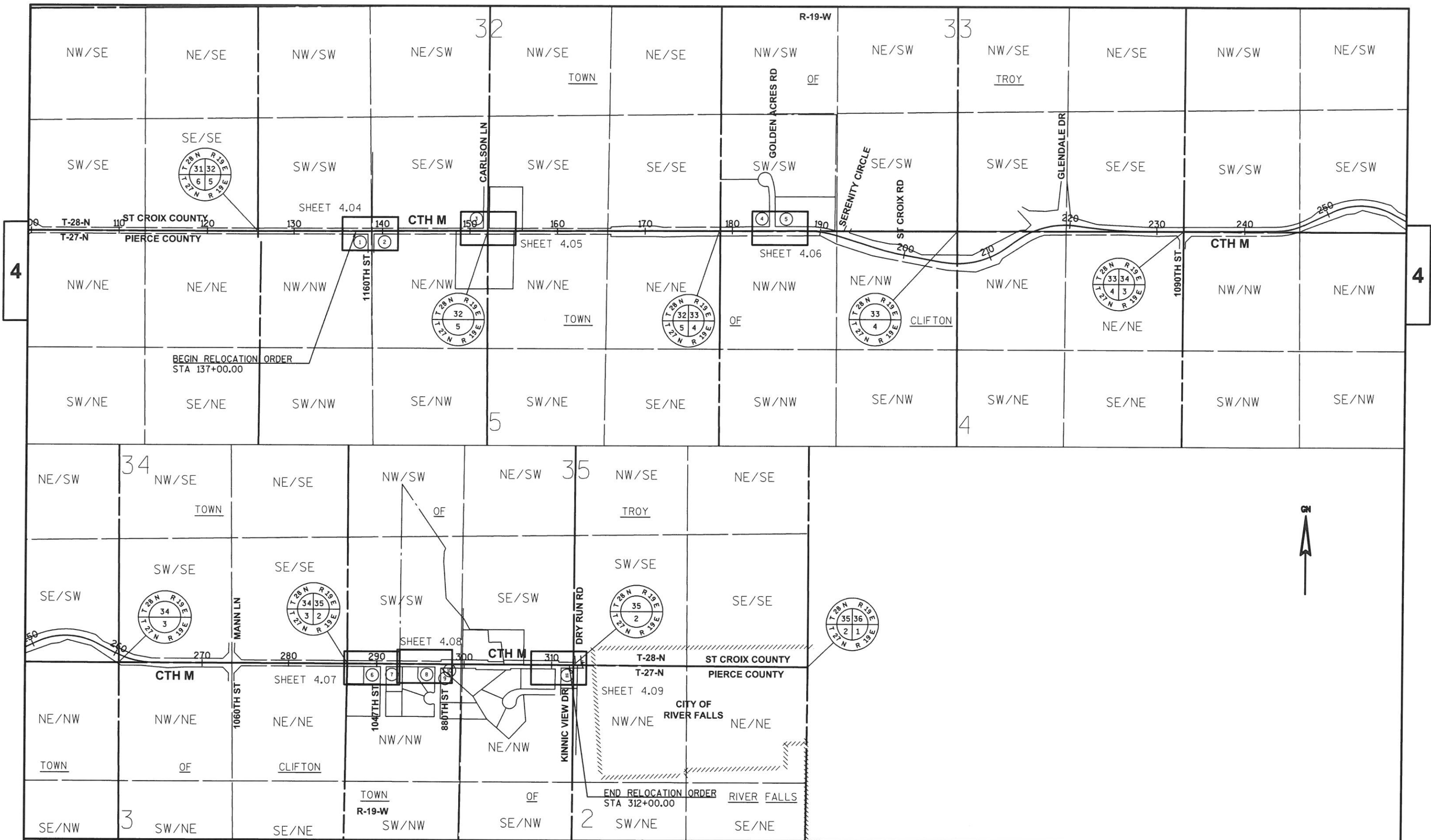
ST. CROIX COUNTY
HIGHWAY DEPARTMENT

APPROVED FOR THE COUNTY

DATE: 10/10/16

SCHEDULE OF LANDS & INTERESTS REQUIRED						
PARCEL NUMBER	SHEET NUMBER	OWNER(S)	INTEREST REQUIRED	R/W NEW AC	R/W EXISTING AC	R/W TOTAL AC
1	4.04	MARYLN L. AND MARLEEN M. JENNINGS LIFE ESTATE	FEE	0.03	0.14	0.17
2	4.04	TIMOTHY E. JENNINGS AND CAROLYN J. SELLNER	FEE	0.03	0.08	0.11
3	4.05	GARY J. MOELTER	FEE	0.02	0.10	0.12
4	4.06	TOM AND SUE BURMOOD	FEE	0.01	---	0.01
5	4.06	DAVID M. AND KIMBERLY S. LANGLOIS	FEE	0.01	---	0.01
6	4.07	GABRIEL J. MCKINNEY	FEE	0.02	---	0.02
7	4.07	GARY L. AND SHEILA W. GRAMMOND	FEE	0.04	---	0.04
8	4.08	DANIEL E. MEYER AND SANDRA K. ERICKSON	FEE	0.03	---	0.03
9	4.08	RICHARD C. AND GAYLE C. WILLIAMS	FEE	0.01	---	0.01
10	4.08	STACHA LYNN REED	FEE	0.01	---	0.01
11	4.09	PAULINE L. WYMER FAMILY TRUST	FEE	0.01	0.02	0.03
50	4.04-4.05 & 4.07-4.09	PIERCE PEPIN ELECTRIC COOPERATIVE	RELEASE OF RIGHTS	---	---	---
51	4.04 & 4.08-4.09	AT&T	RELEASE OF RIGHTS	---	---	---

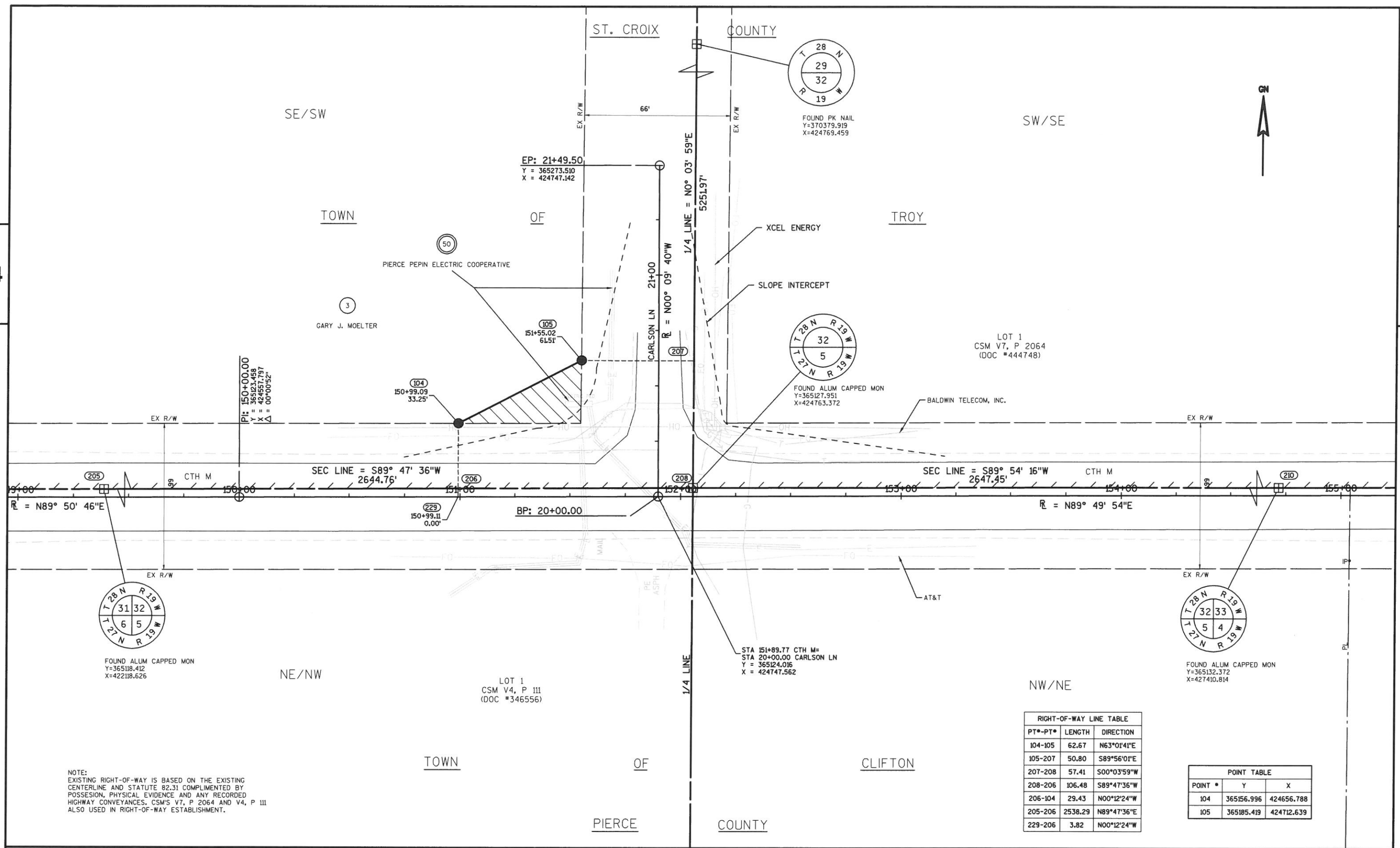
NOTE:
OWNER NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY
AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF
LAND INTERESTS TO THE COUNTY.



REVISION DATE		DATE		SCALE, FEET		HWY: CTH M		STATE R/W PROJECT NUMBER 7919-01-00		PLAT SHEET 4.03	
GRID FACTOR				0 500 1000		COUNTY: PIERCE		CONSTRUCTION PROJECT NUMBER 7919-01-70		PS&E SHEET	
										E	

4

4

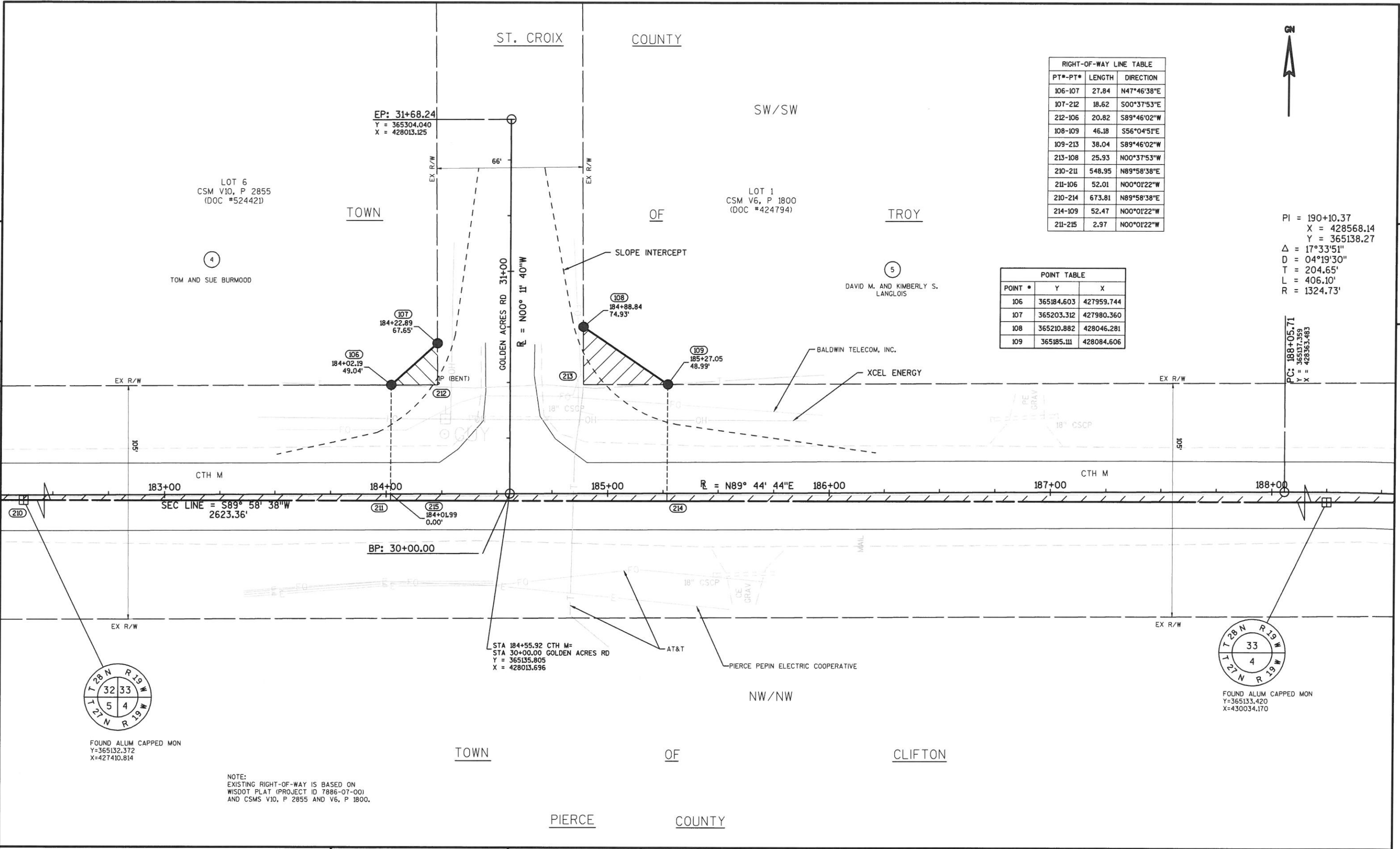


NOTE:
EXISTING RIGHT-OF-WAY IS BASED ON THE EXISTING
CENTERLINE AND STATUTE 82.31 COMPLIMENTED BY
POSSESSION, PHYSICAL EVIDENCE AND ANY RECORDED
HIGHWAY CONVEYANCES, CSM'S V7, P 2064 AND V4, P 111
ALSO USED IN RIGHT-OF-WAY ESTABLISHMENT.

RIGHT-OF-WAY LINE TABLE		
PT*-PT*	LENGTH	DIRECTION
104-105	62.67	N63°01'41"E
105-207	50.80	S89°56'01"E
207-208	57.41	S00°03'59"W
208-206	106.48	S89°47'36"W
206-104	29.43	N00°12'24"W
205-206	2538.29	N89°47'36"E
229-206	3.82	N00°12'24"W

POINT TABLE		
POINT *	Y	X
104	365156.996	424656.788
105	365185.419	424712.639

REVISION DATE	DATE	SCALE, FEET	HWY: CTH M	STATE R/W PROJECT NUMBER 7919-01-00	PLAT SHEET 4.05
	GRID FACTOR	0 20 40	COUNTY: PIERCE	CONSTRUCTION PROJECT NUMBER 7919-01-70	PS&E SHEET E



RIGHT-OF-WAY LINE TABLE		
PT#-PT#	LENGTH	DIRECTION
106-107	27.84	N47°46'38"E
107-212	18.62	S00°37'53"E
212-106	20.82	S89°46'02"W
108-109	46.18	S56°04'51"E
109-213	38.04	S89°46'02"W
213-108	25.93	N00°37'53"W
210-211	548.95	N89°58'38"E
211-106	52.01	N00°01'22"W
210-214	673.81	N89°58'38"E
214-109	52.47	N00°01'22"W
211-215	2.97	N00°01'22"W

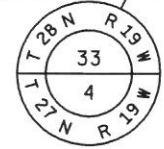
POINT TABLE		
POINT #	Y	X
106	365184.603	427959.744
107	365203.312	427980.360
108	365210.882	428046.281
109	365185.111	428084.606

PI = 190+10.37
X = 428568.14
Y = 365138.27
Δ = 17°33'51"
D = 04°19'30"
T = 204.65'
L = 406.10'
R = 1324.73'

PC: 188+05.71
Y = 365137.359
X = 428363.483



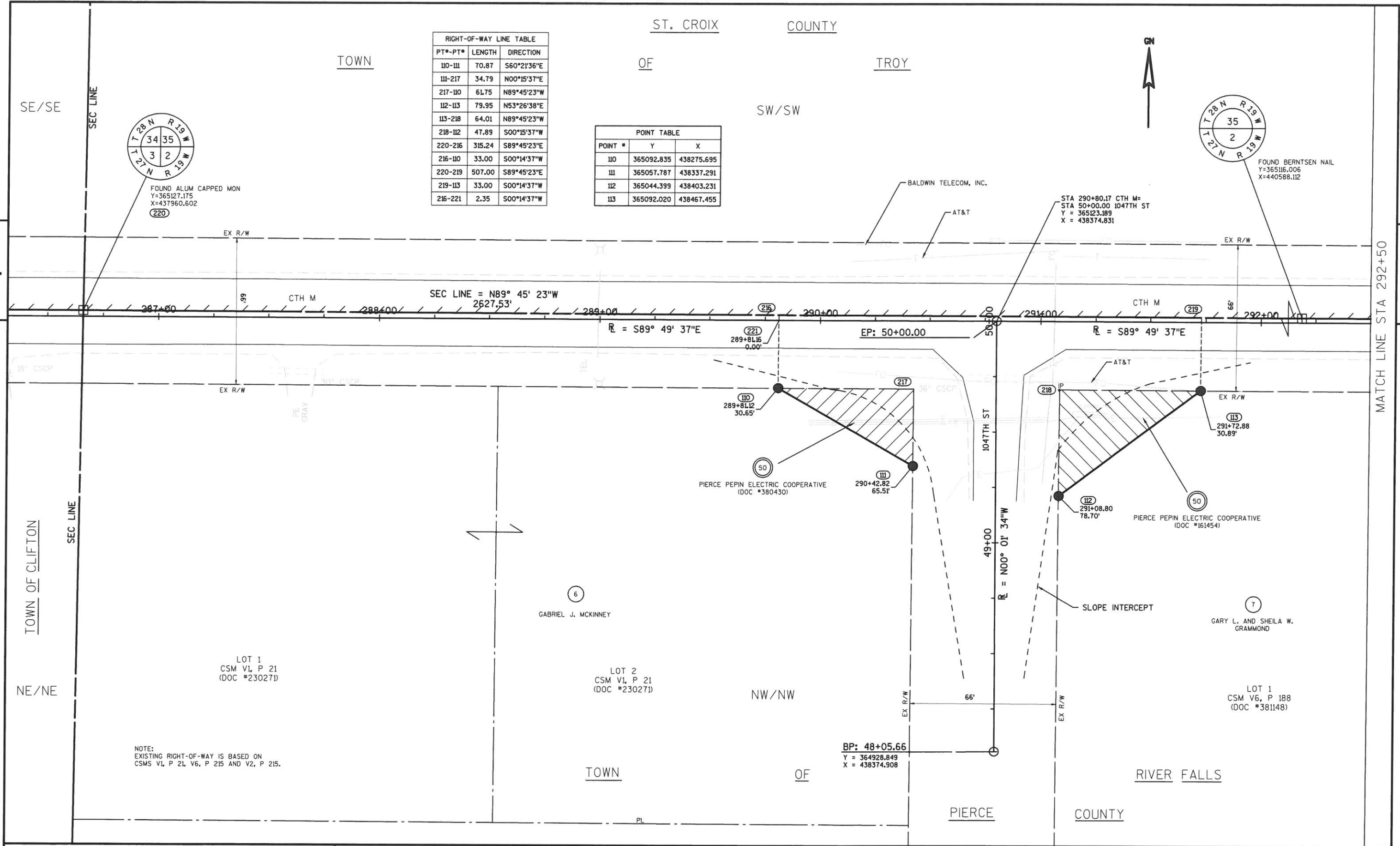
FOUND ALUM CAPPED MON
Y=365132.372
X=427410.814



FOUND ALUM CAPPED MON
Y=365133.420
X=430034.170

NOTE:
EXISTING RIGHT-OF-WAY IS BASED ON
WISDOT PLAT (PROJECT ID 7886-07-00)
AND CSMS V10, P 2855 AND V6, P 1800.

REVISION DATE	DATE	SCALE, FEET 0 20 40	HWY: CTH M	STATE R/W PROJECT NUMBER 7919-01-00	PLAT SHEET 4.06
	GRID FACTOR		COUNTY: PIERCE	CONSTRUCTION PROJECT NUMBER 7919-01-70	PS&E SHEET E



REVISION DATE	DATE	SCALE, FEET 0 20 40	HWY: CTH M	STATE R/W PROJECT NUMBER 7919-01-00	PLAT SHEET 4.07
	GRID FACTOR		COUNTY: PIERCE		PS&E SHEET

ST. CROIX COUNTY

TOWN OF TROY

SW/SW

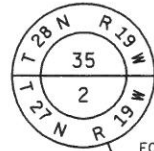


RIGHT-OF-WAY LINE TABLE		
PT*-PT*	LENGTH	DIRECTION
114-115	87.44	S64°02'30"E
115-223	37.94	N00°15'37"E
223-114	78.79	N89°45'23"W
116-117	40.33	N61°02'39"E
117-224	35.20	N89°45'23"W
224-116	19.68	S00°15'37"W
220-222	92.20	S89°45'23"E
222-114	33.00	S00°14'37"W
222-225	1.60	S00°14'37"W
220-226	110.19	S89°45'23"E
226-117	45.00	S00°14'37"W

POINT TABLE		
POINT #	Y	X
114	365090.260	438881.653
115	365051.986	438960.271
116	365057.968	439026.299
117	365077.495	439061.590

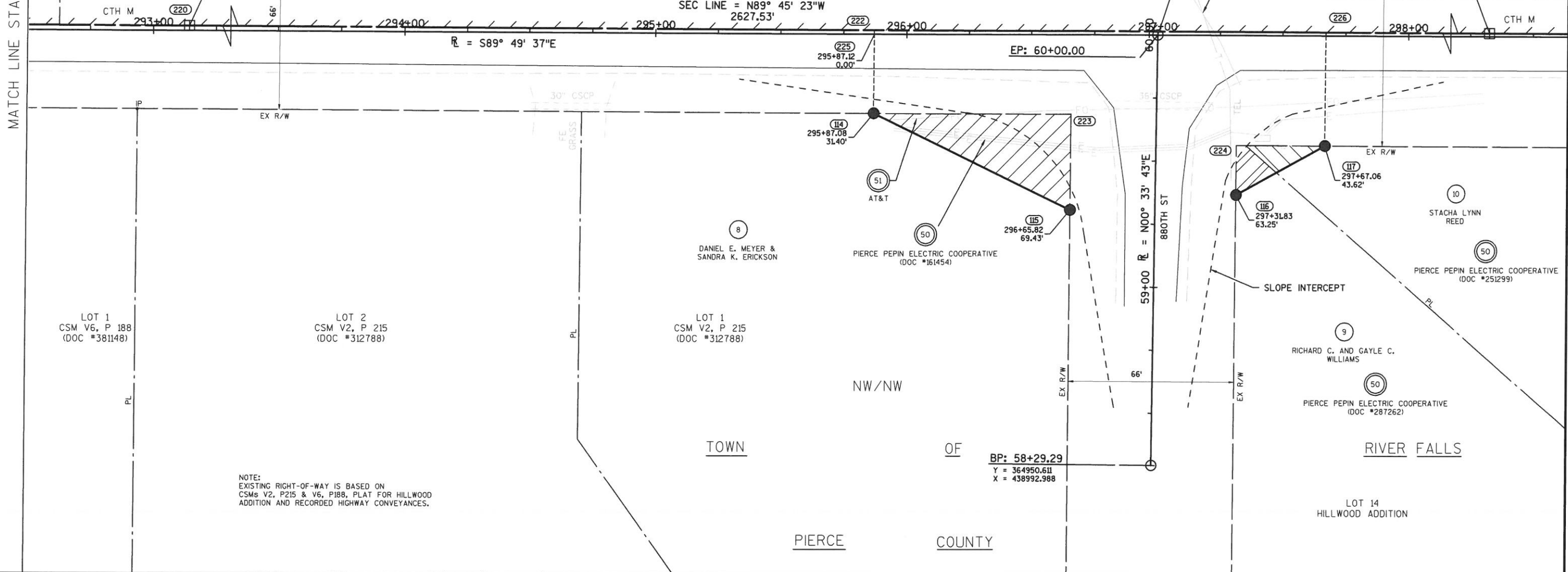


FOUND ALUM CAPPED MON
Y=365127.175
X=437960.602



FOUND BERTSEN NAIL
Y=365116.006
X=440588.112

MATCH LINE STA 292+50



NOTE:
EXISTING RIGHT-OF-WAY IS BASED ON
CSMS V2, P215 & V6, P188, PLAT FOR HILLWOOD
ADDITION AND RECORDED HIGHWAY CONVEYANCES.

REVISION DATE

DATE

SCALE, FEET

HWY: CTH M

STATE R/W PROJECT NUMBER 7919-01-00

PLAT SHEET 4.08

GRID FACTOR

0 20 40

COUNTY: PIERCE

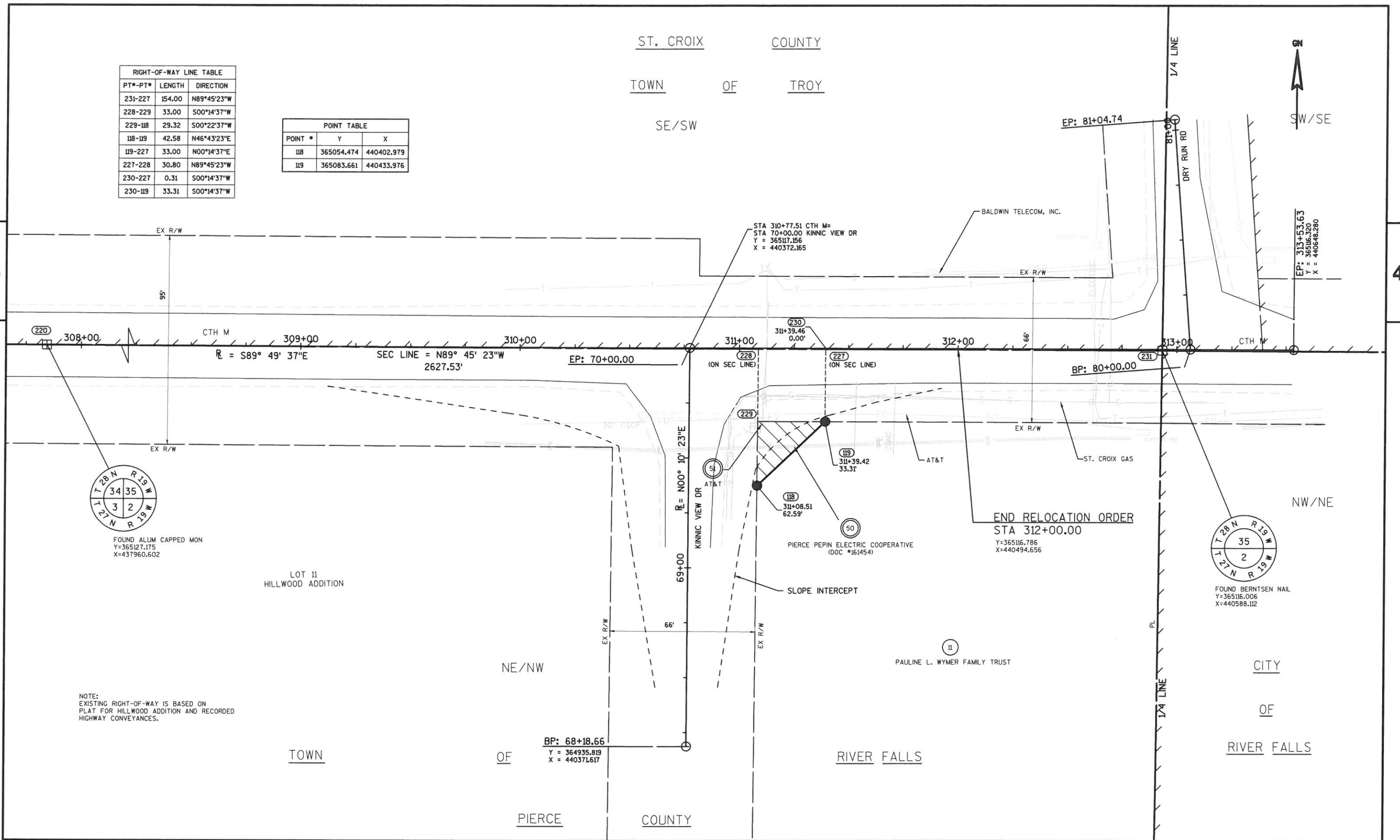
CONSTRUCTION PROJECT NUMBER 7919-01-70

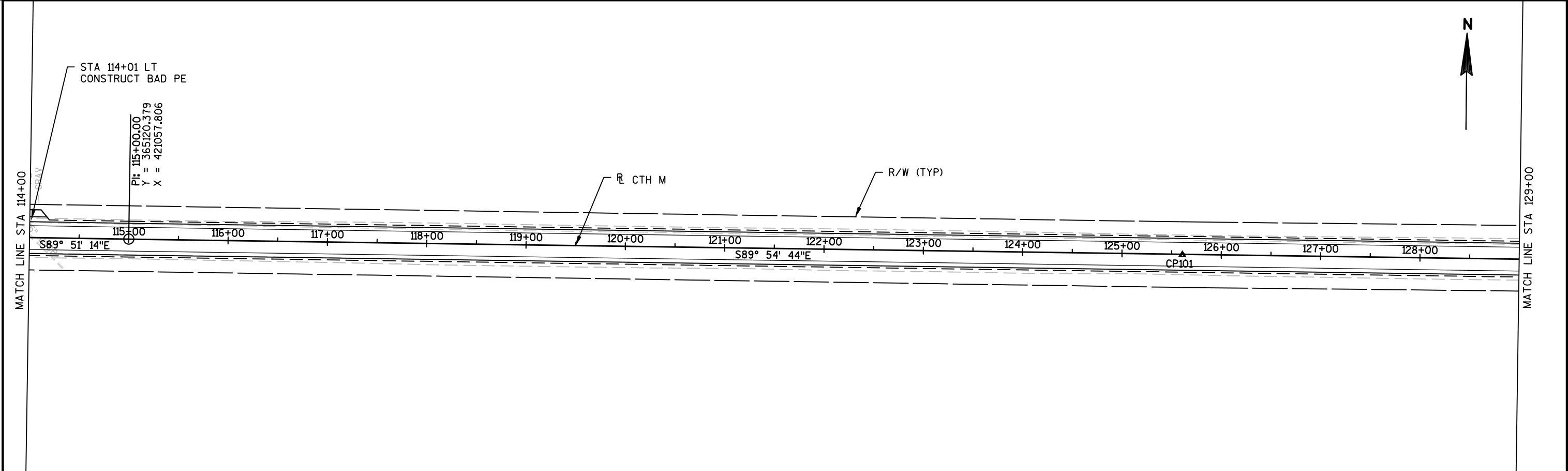
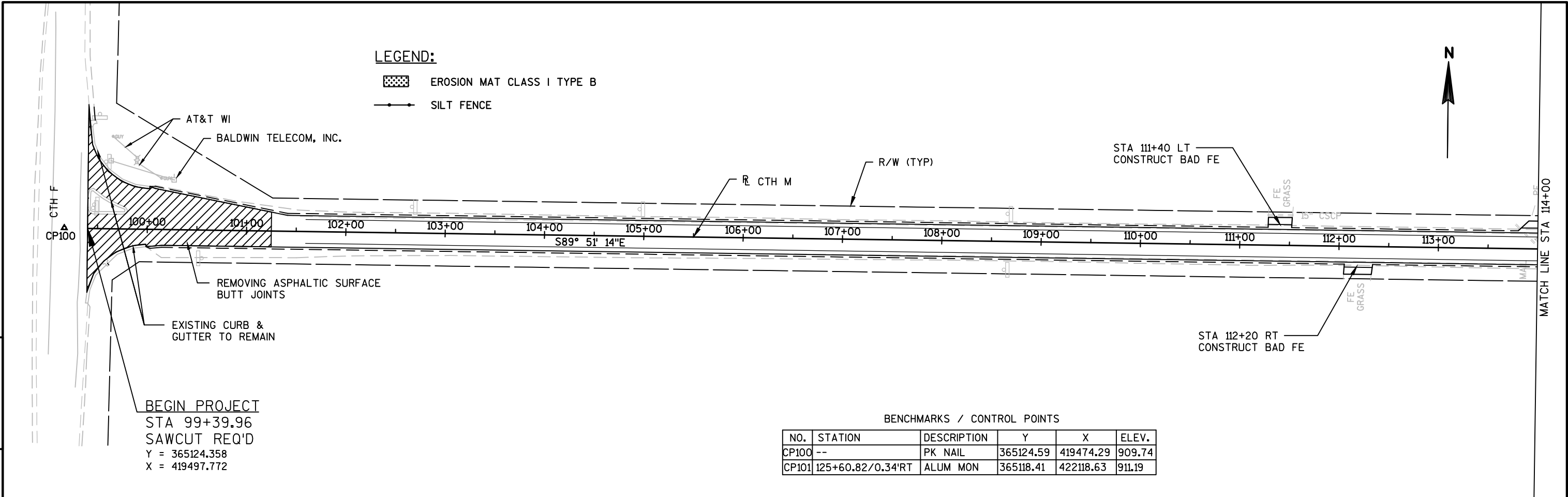
PS&E SHEET

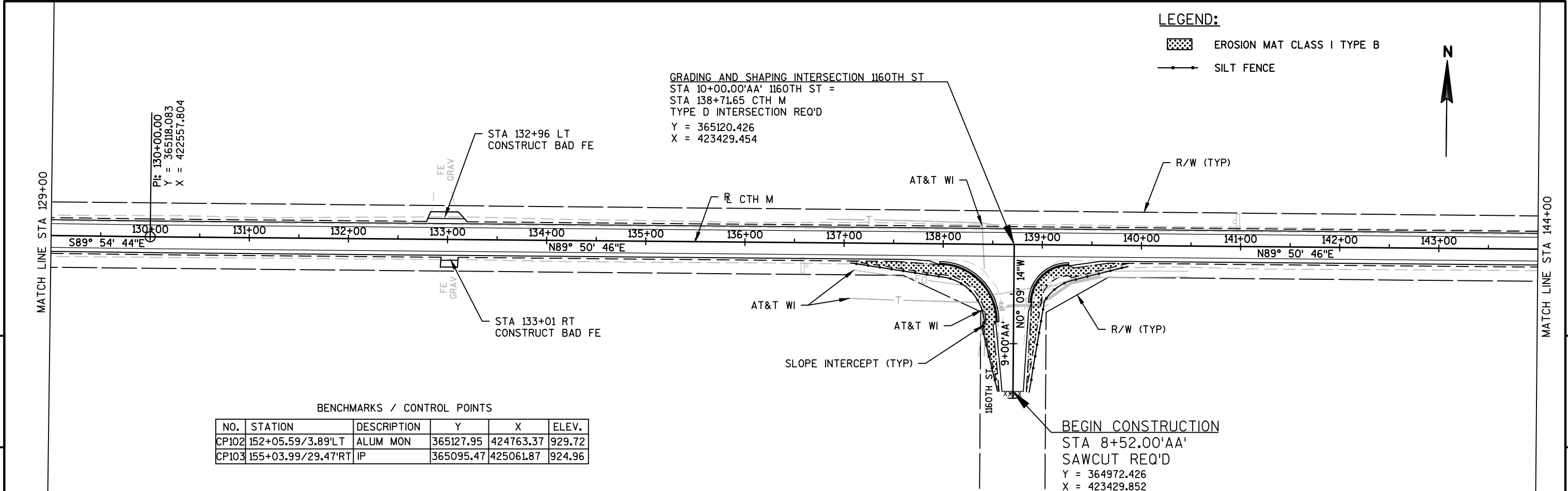
E

RIGHT-OF-WAY LINE TABLE		
PT*-PT*	LENGTH	DIRECTION
231-227	154.00	N89°45'23"W
228-229	33.00	S00°14'37"W
229-118	29.32	S00°22'37"W
118-119	42.58	N46°43'23"E
119-227	33.00	N00°14'37"E
227-228	30.80	N89°45'23"W
230-227	0.31	S00°14'37"W
230-119	33.31	S00°14'37"W

POINT TABLE		
POINT *	Y	X
118	365054.474	440402.979
119	365083.661	440433.976

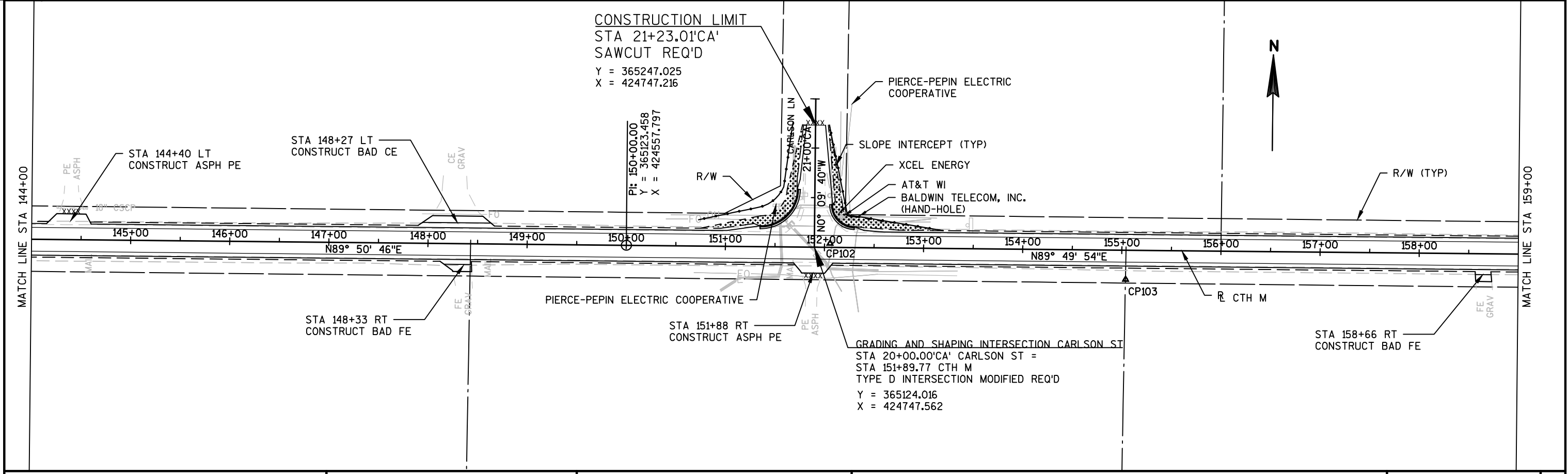


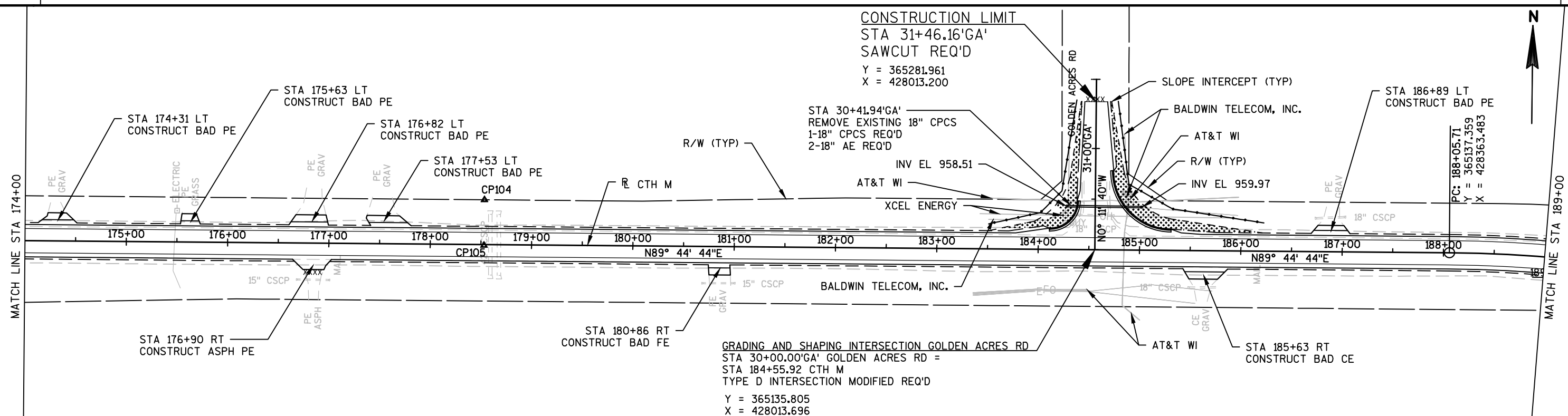
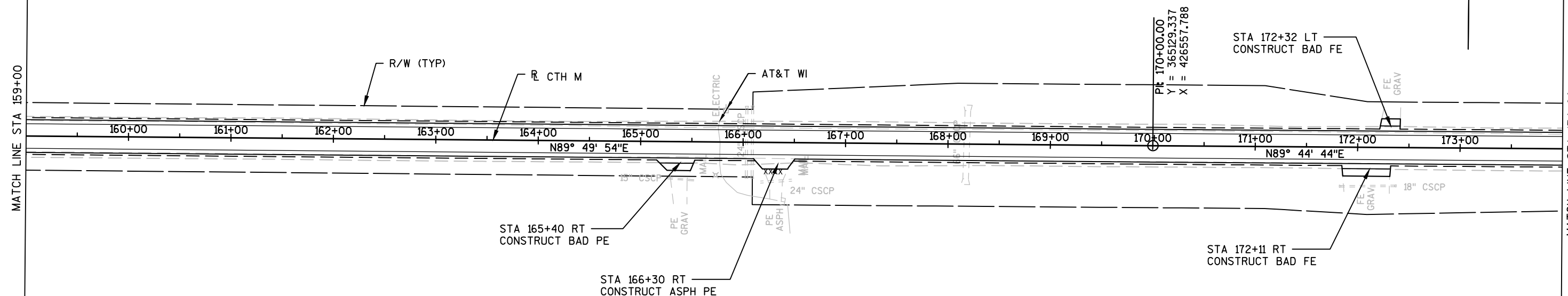
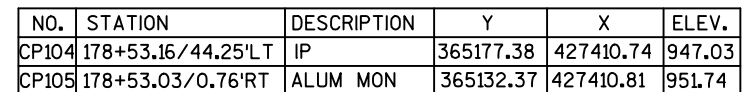


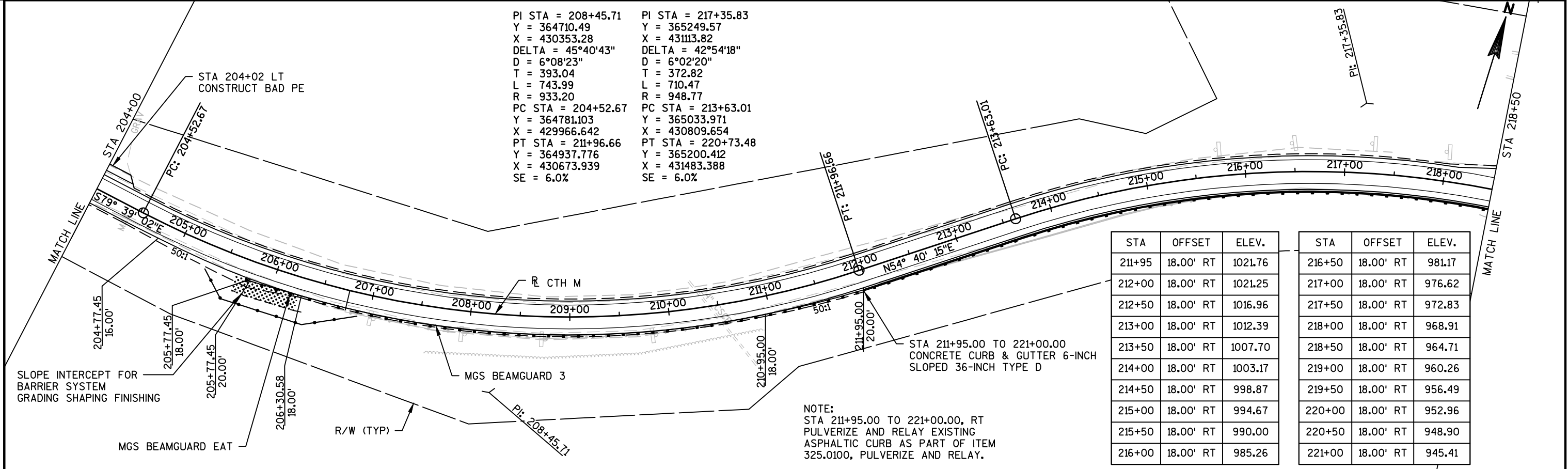
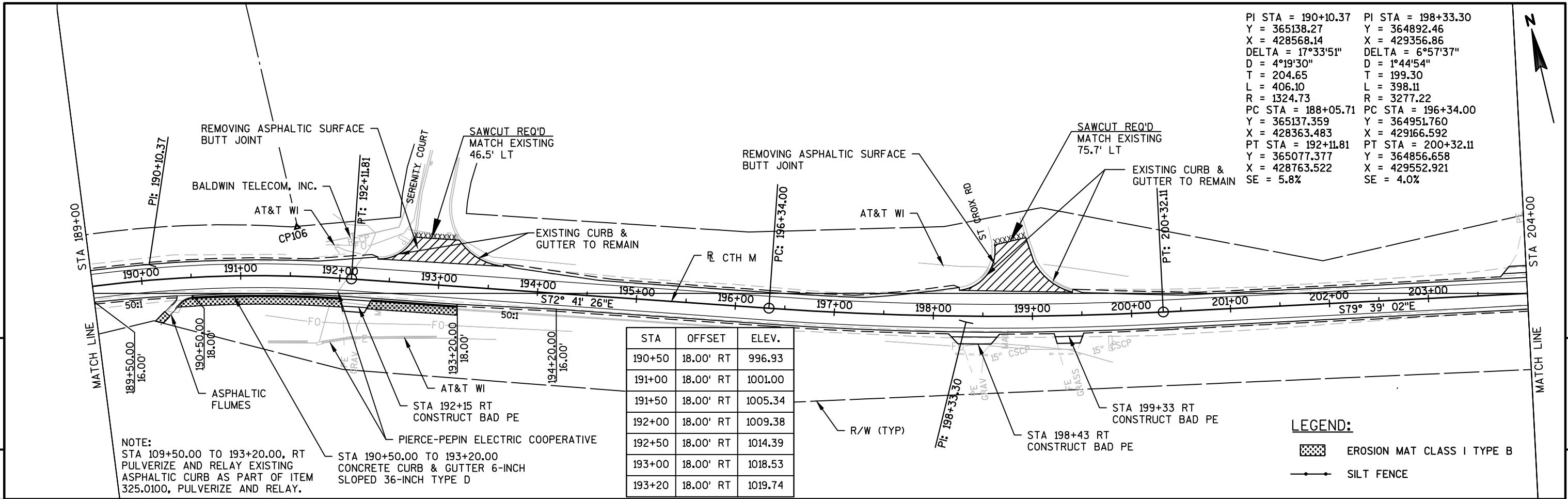


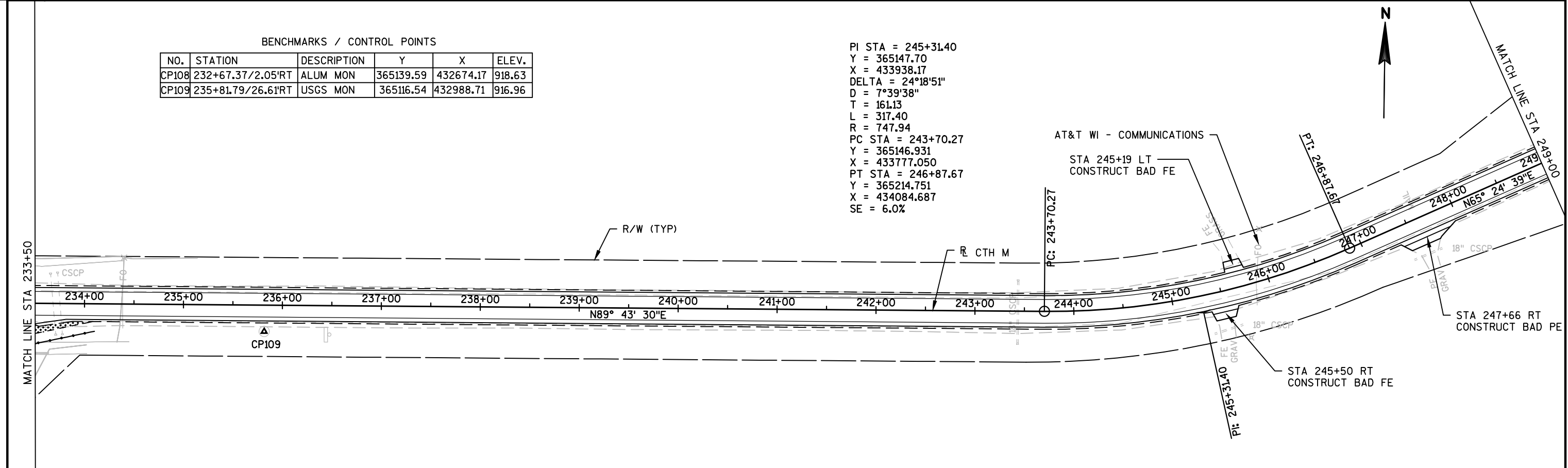
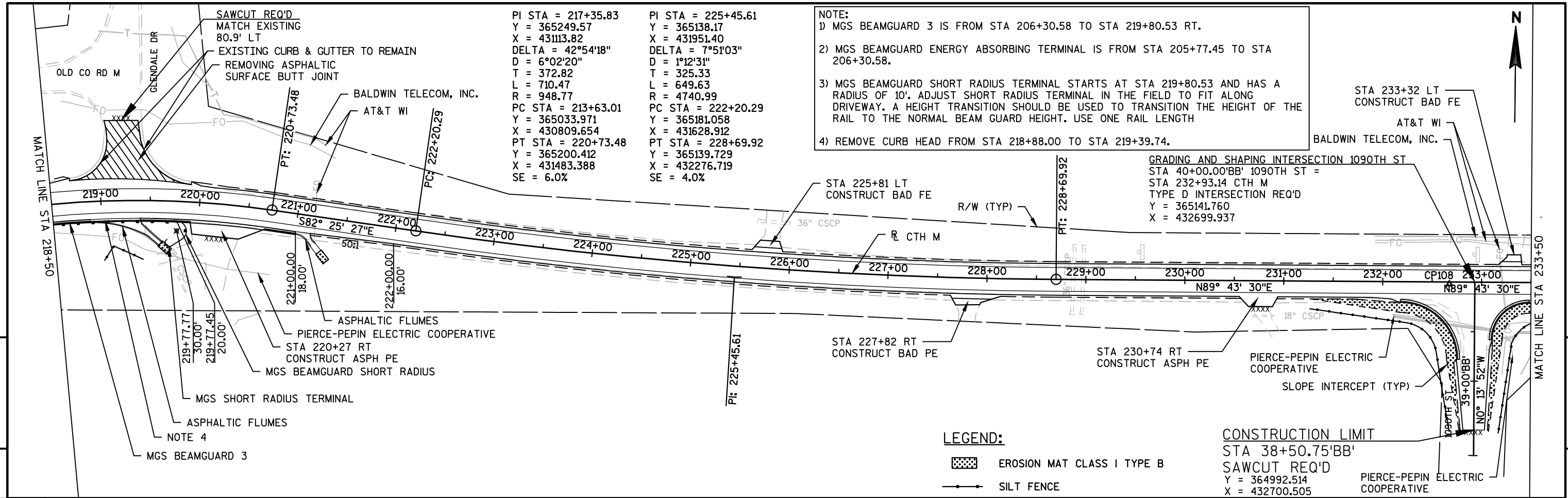
BENCHMARKS / CONTROL POINTS

NO.	STATION	DESCRIPTION	Y	X	ELEV.
CP102	152+05.59/3.89'LT	ALUM MON	365127.95	424763.37	929.72
CP103	155+03.99/29.47'RT	IP	365095.47	425061.87	924.96

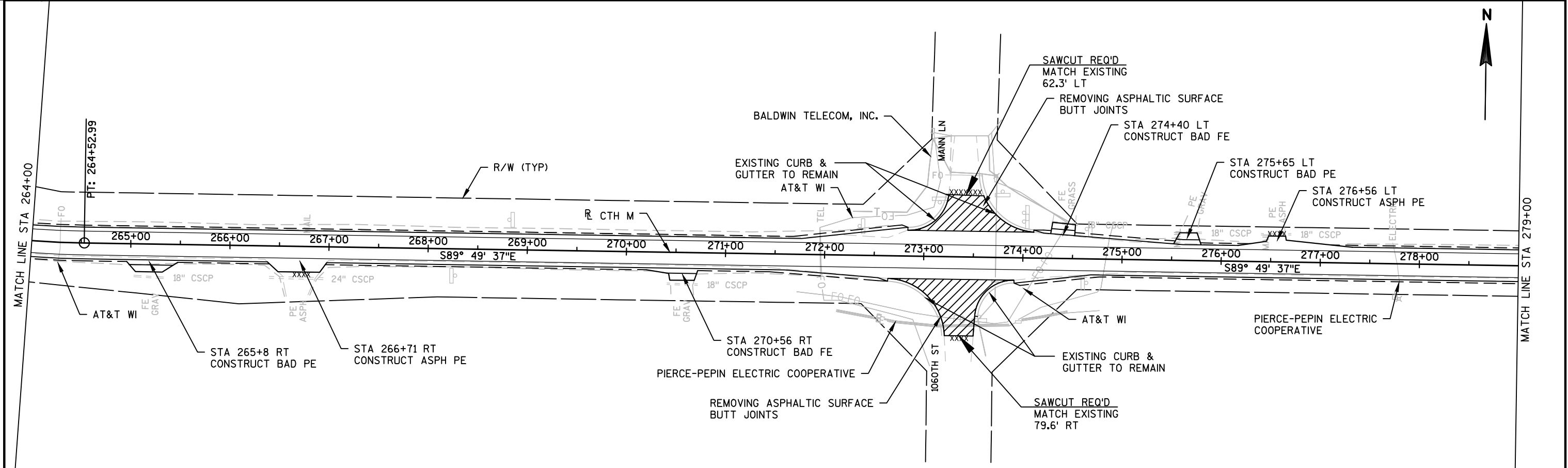
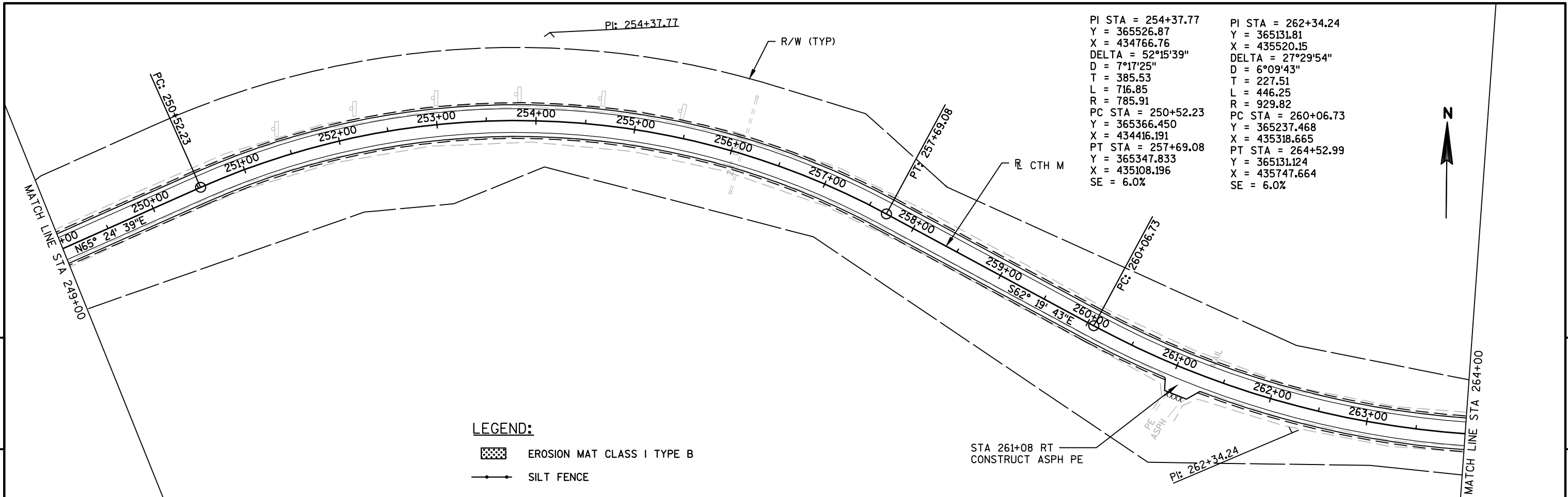




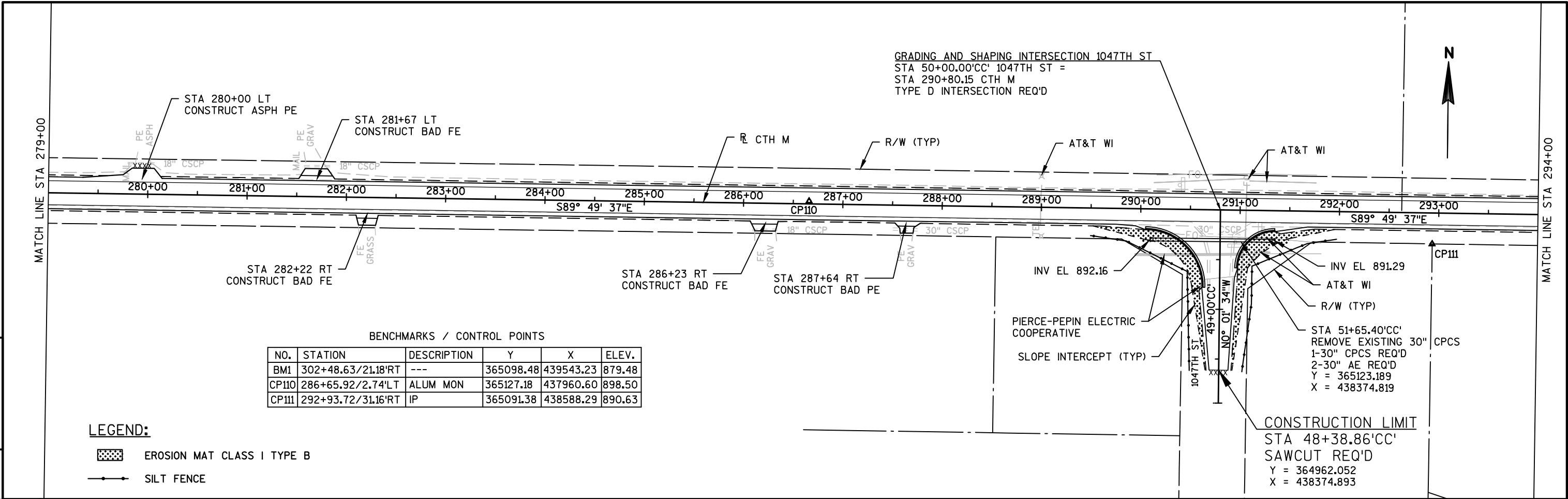




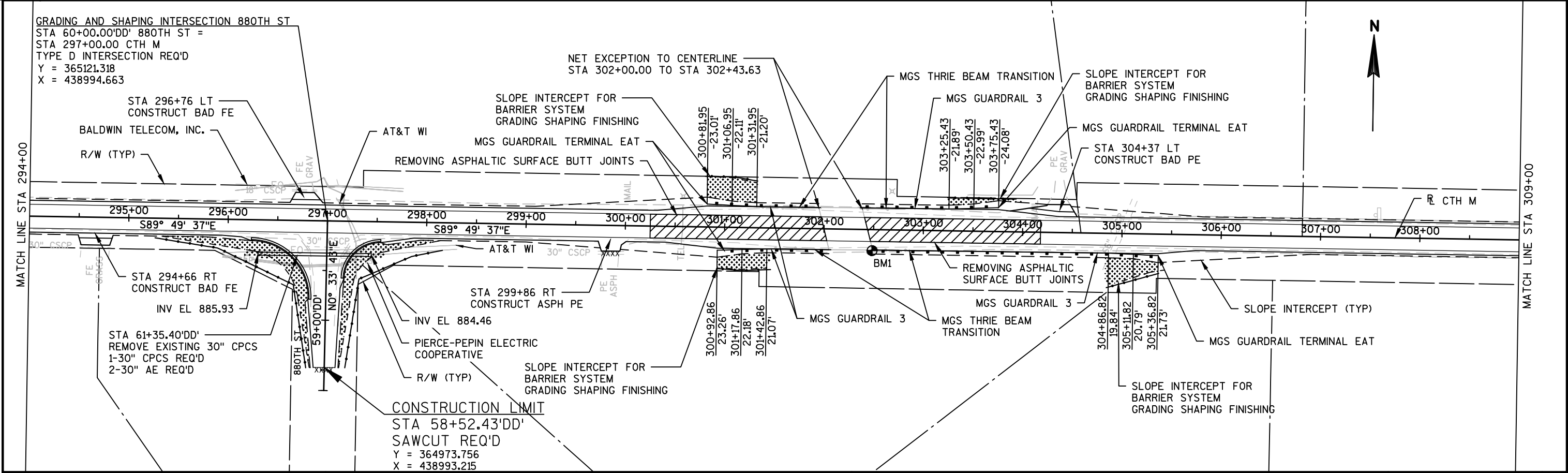
BENCHMARKS / CONTROL POINTS					
NO.	STATION	DESCRIPTION	Y	X	ELEV.
CP108	232+67.37/2.05'RT	ALUM MON	365139.59	432674.17	918.63
CP109	235+81.79/26.61'RT	USGS MON	365116.54	432988.71	916.96

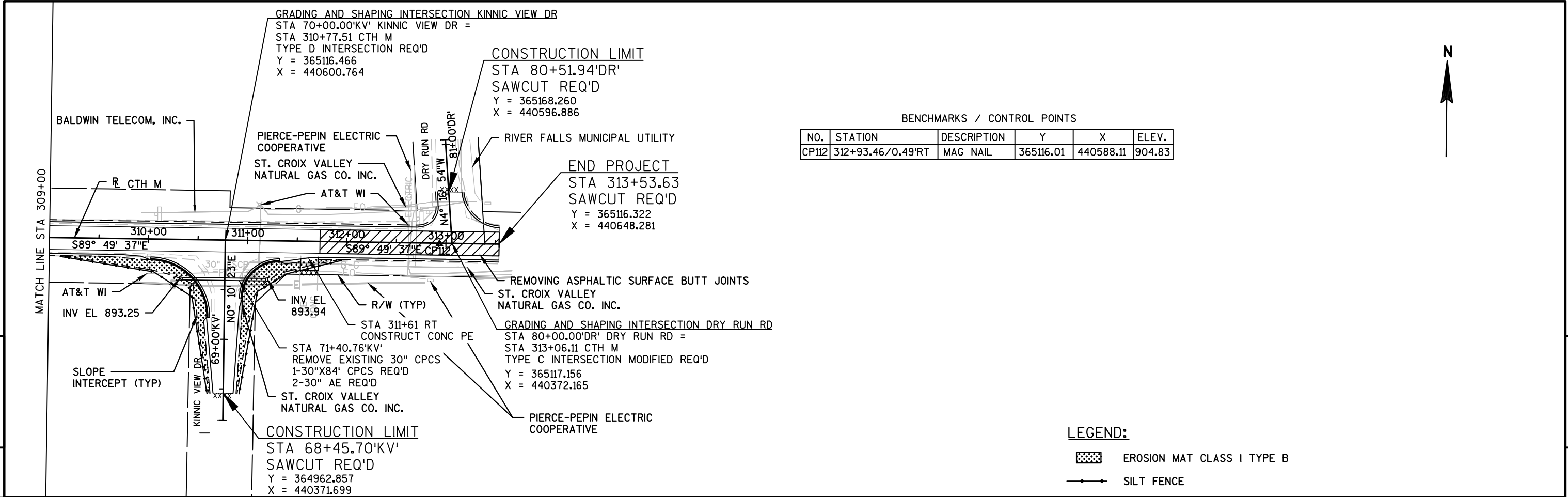


5



5





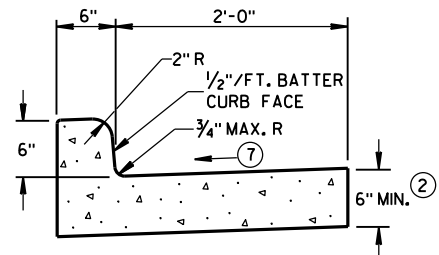
BENCHMARKS / CONTROL POINTS

NO.	STATION	DESCRIPTION	Y	X	ELEV.
CP112	312+93.46/0.49'RT	MAG NAIL	365116.01	440588.11	904.83

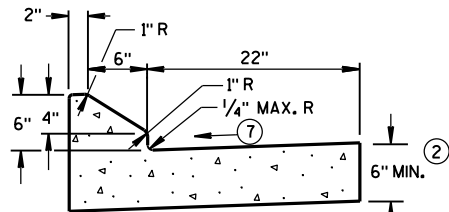
- LEGEND:
- EROSION MAT CLASS I TYPE B
 - SILT FENCE

Standard Detail Drawing List

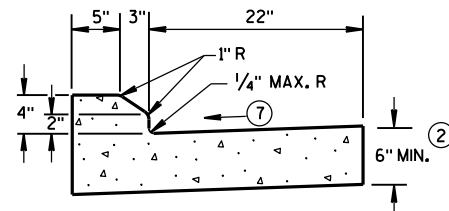
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	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)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B53-01A	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01B	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01C	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01D	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01E	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01F	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01G	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01H	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
14B53-01I	SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)
15C04-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C27-02A	DOUBLE ARROW WARNING SIGN PLACEMENT
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



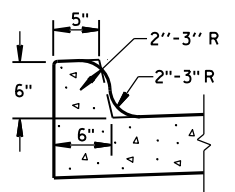
TYPES A^① & D



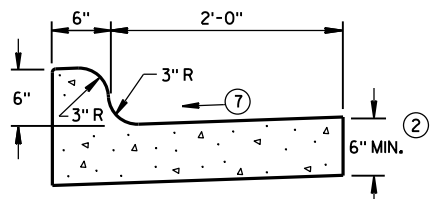
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

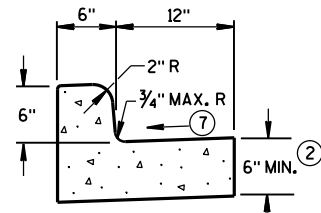


TYPES K^① & L
(OPTIONAL CURB SHAPE)



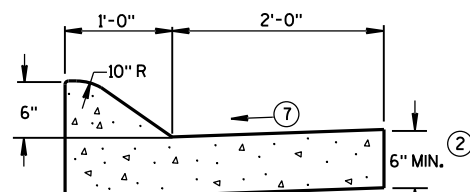
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

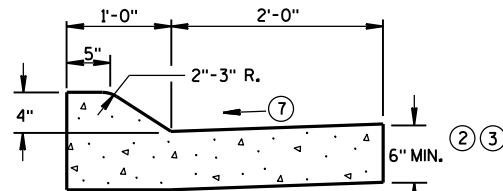


TYPES A^① & D

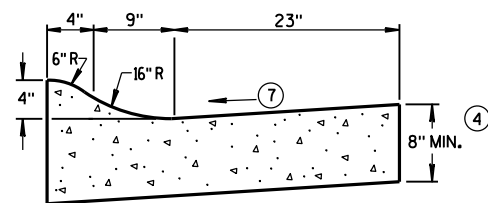
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

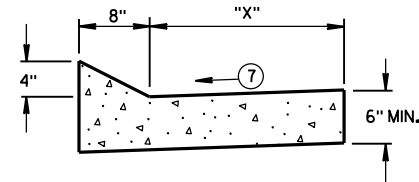


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

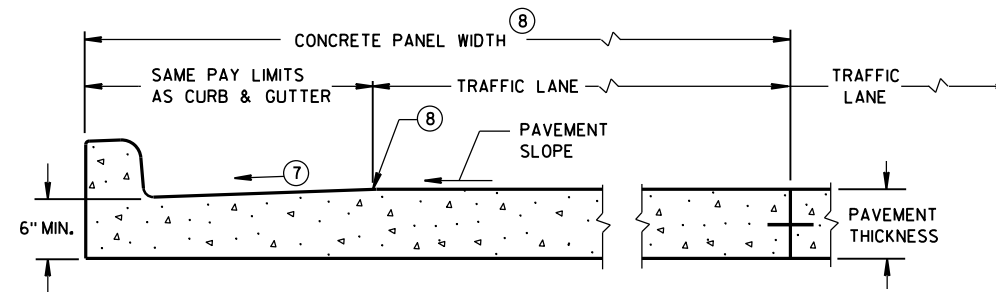
CONCRETE CURB & GUTTER 36"



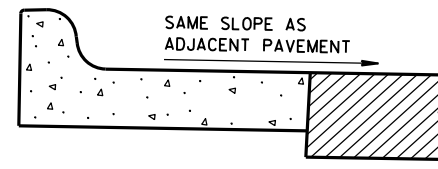
TYPES TBT & TBTT^①

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.

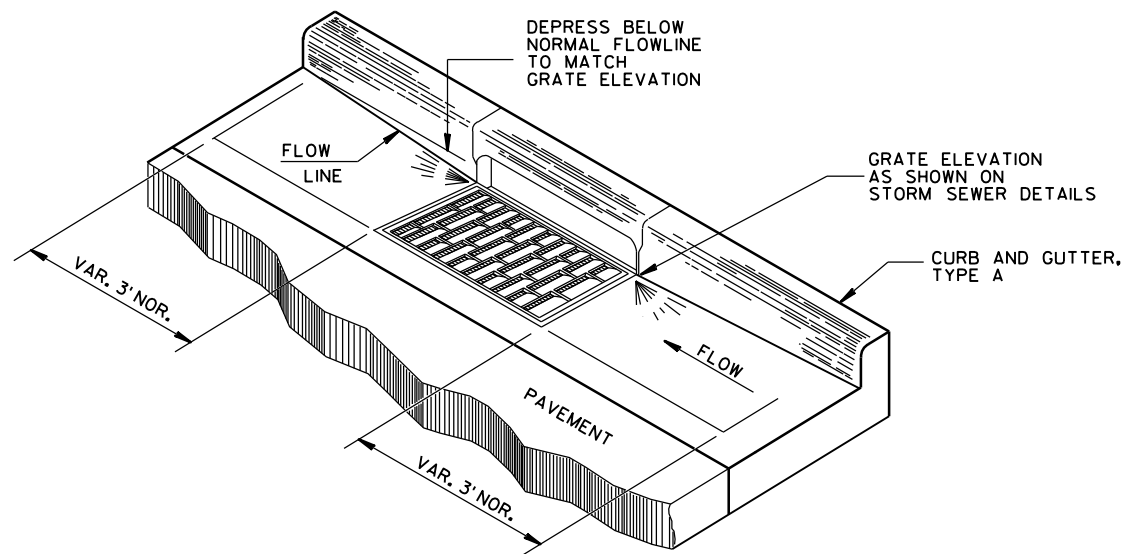
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

* BIKE LANE IS NOT SHOWN.

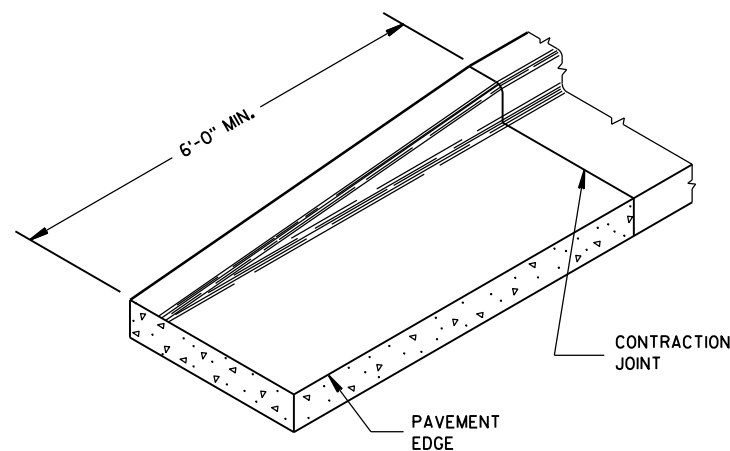
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

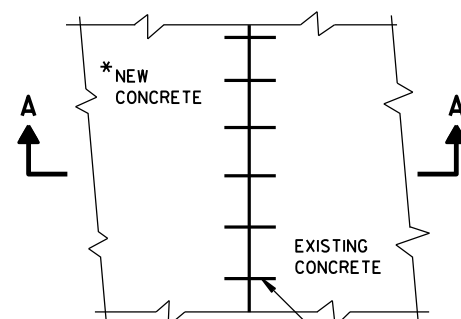


DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

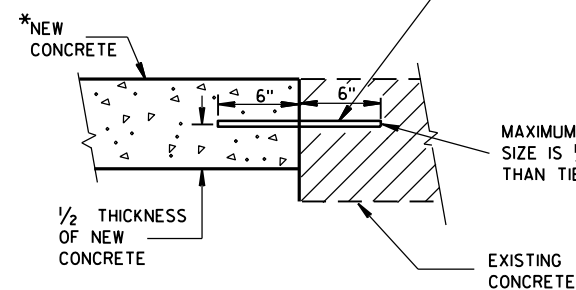


END SECTION CURB & GUTTER



PLAN VIEW

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

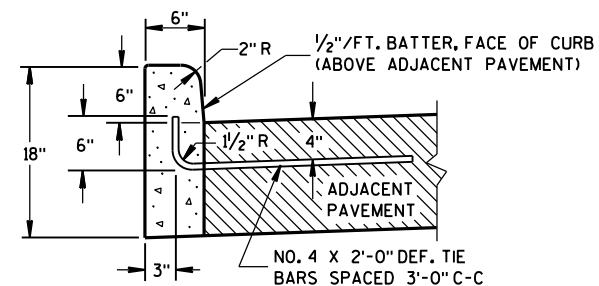


**SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT**

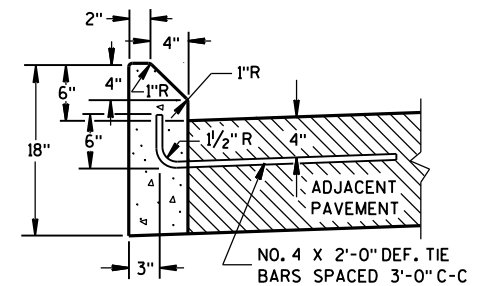
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

EXISTING CONCRETE



TYPES A^① & D



TYPES G^① & J

GENERAL NOTES

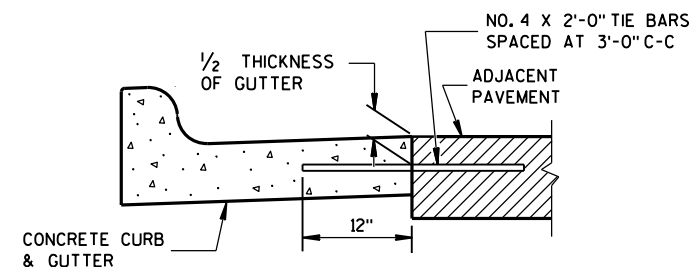
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

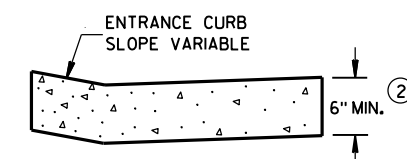
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- 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.
- ⑨ 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)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

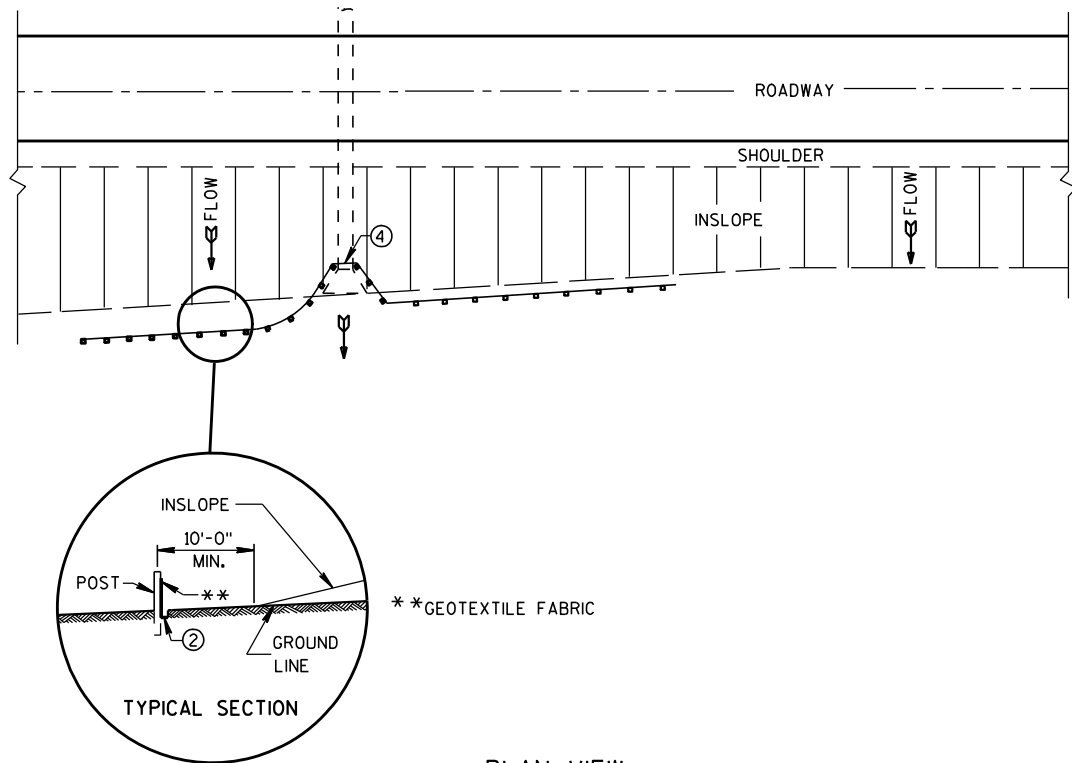
DATE

FHWA

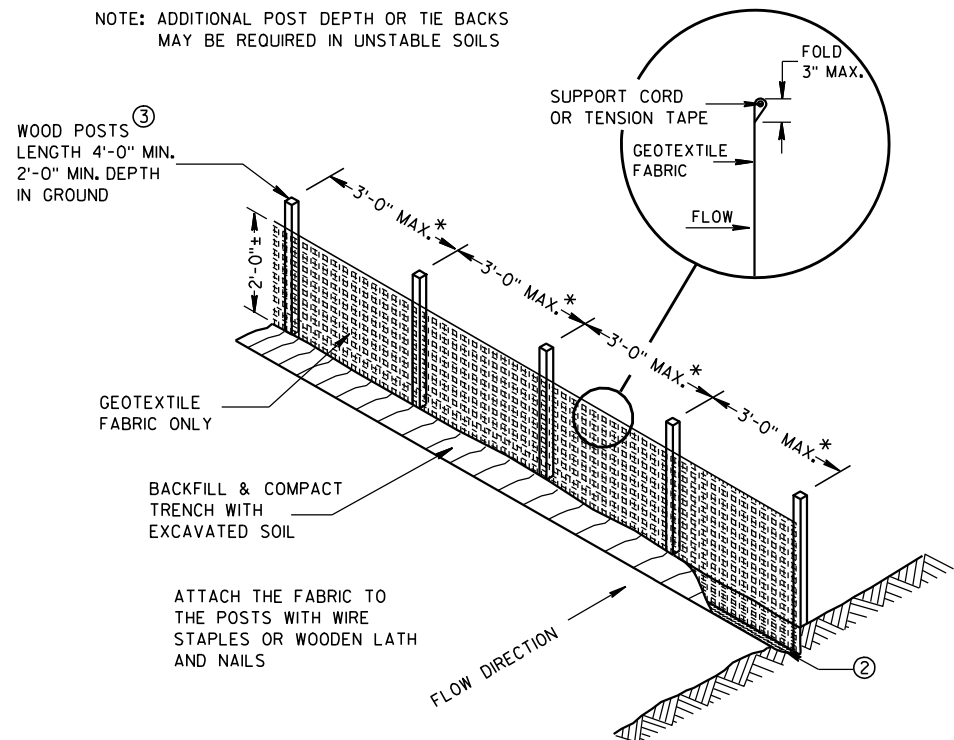
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

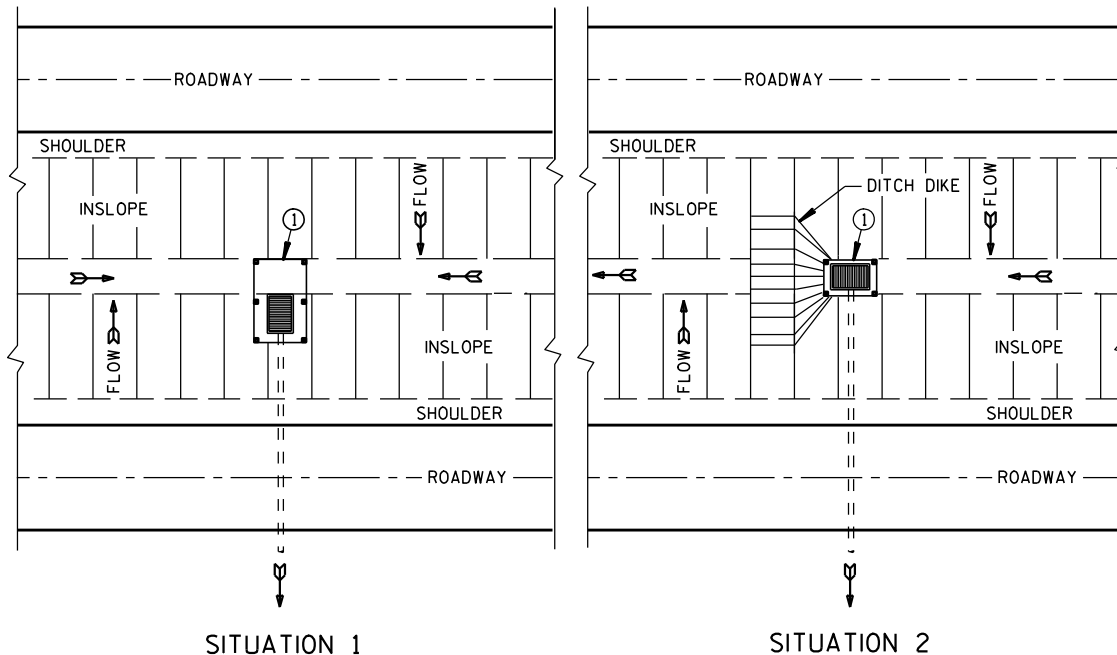
UNIT SUPERVISOR



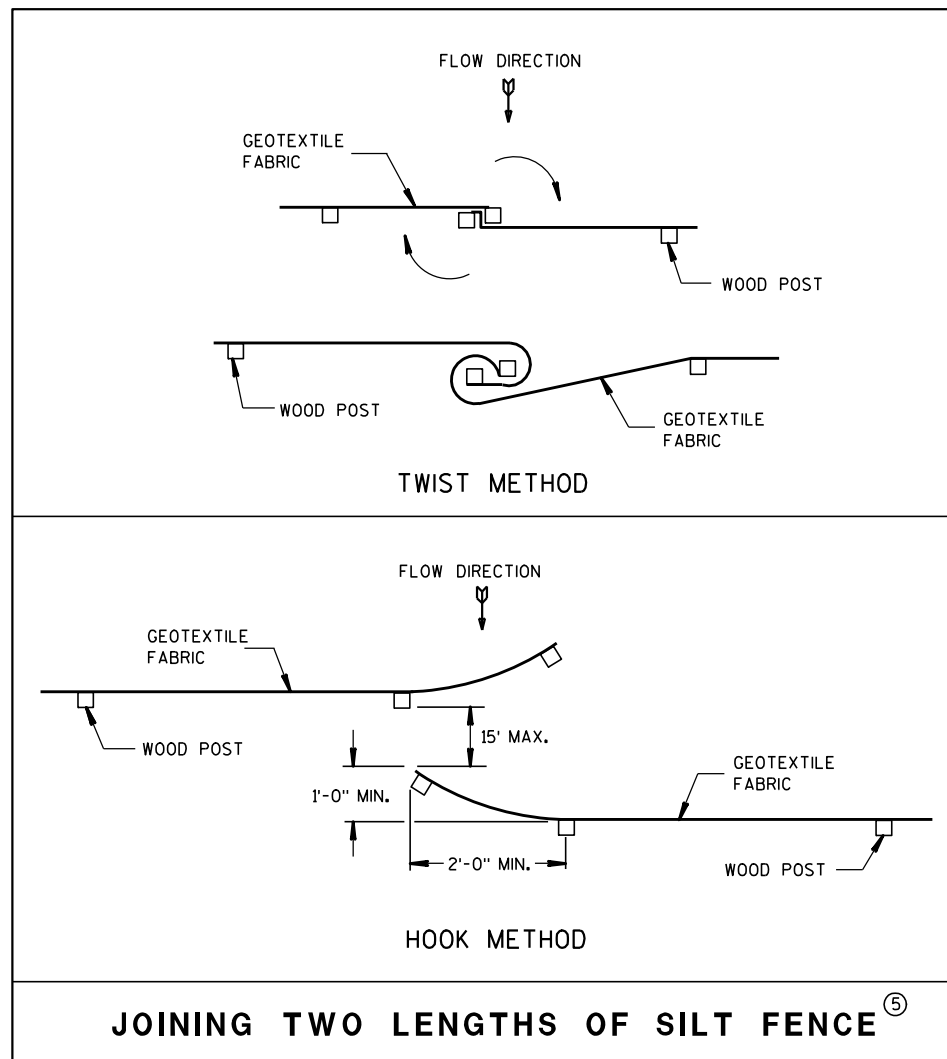
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

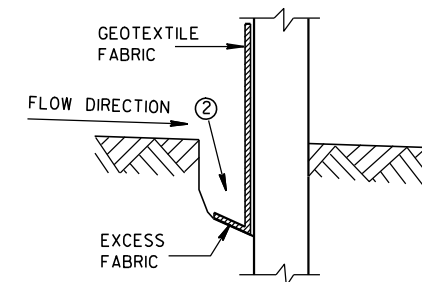


JOINING TWO LENGTHS OF SILT FENCE

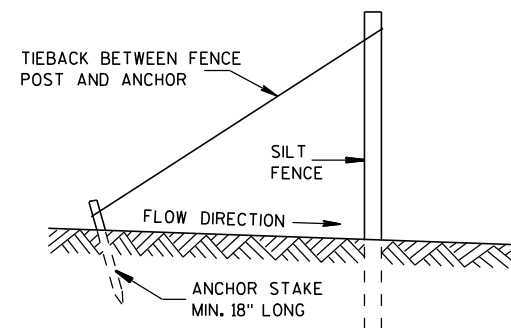
GENERAL NOTES

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

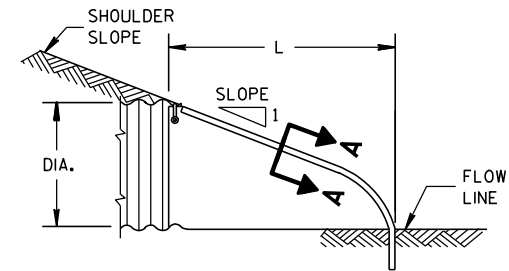
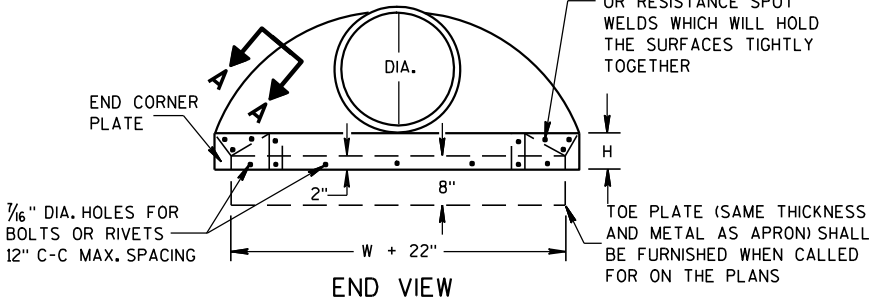
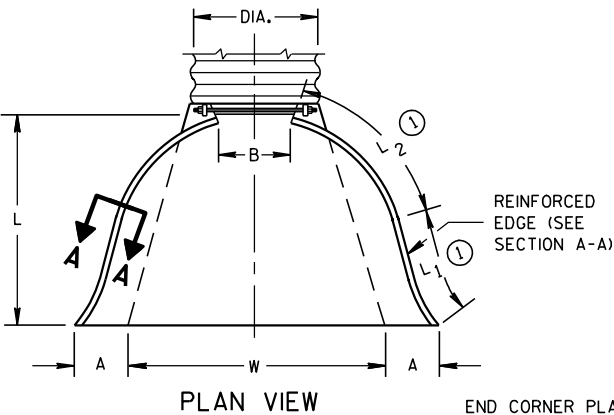


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY 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")	L1 ①	L2 ①	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.

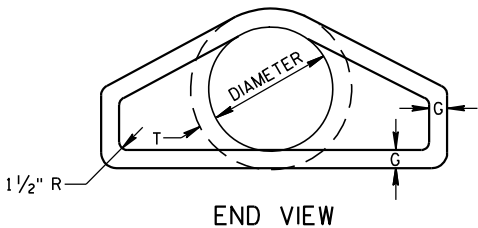
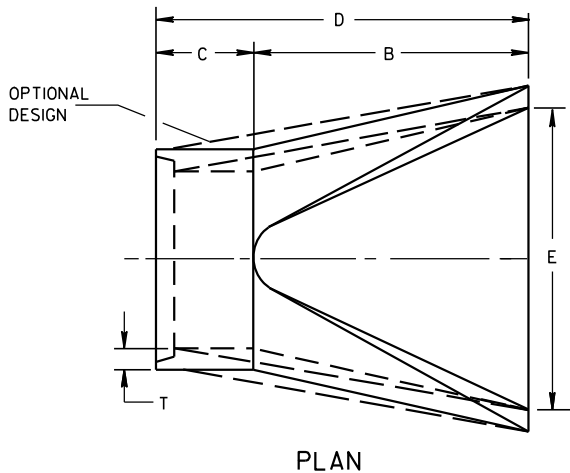
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



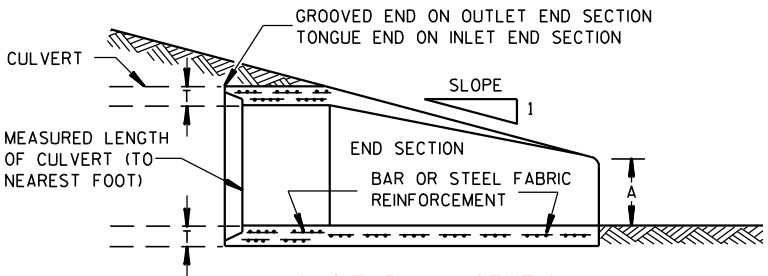
SIDE ELEVATION
METAL ENDWALLS

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			

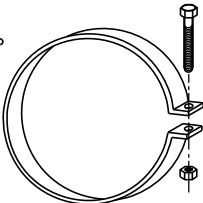
* MINIMUM
** MAXIMUM



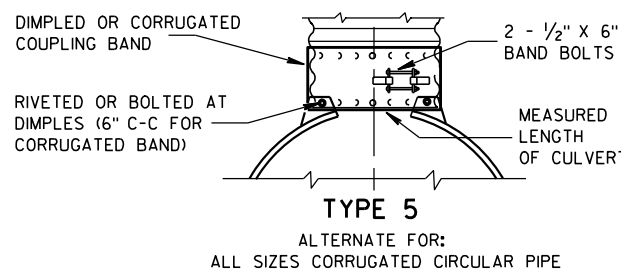
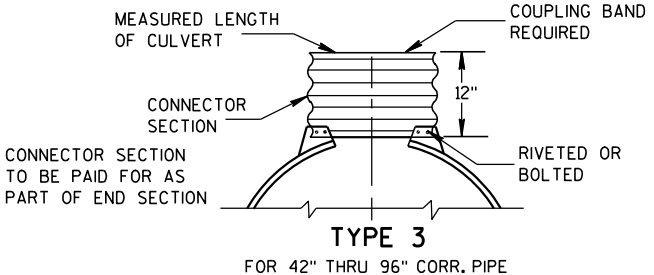
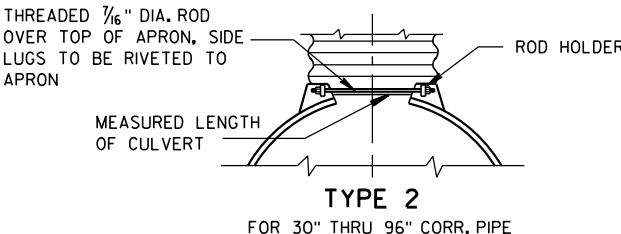
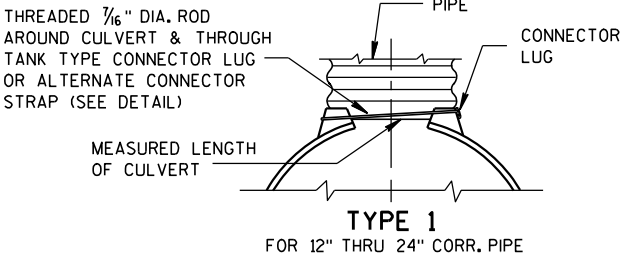
LONGITUDINAL SECTION
CONCRETE ENDWALLS



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



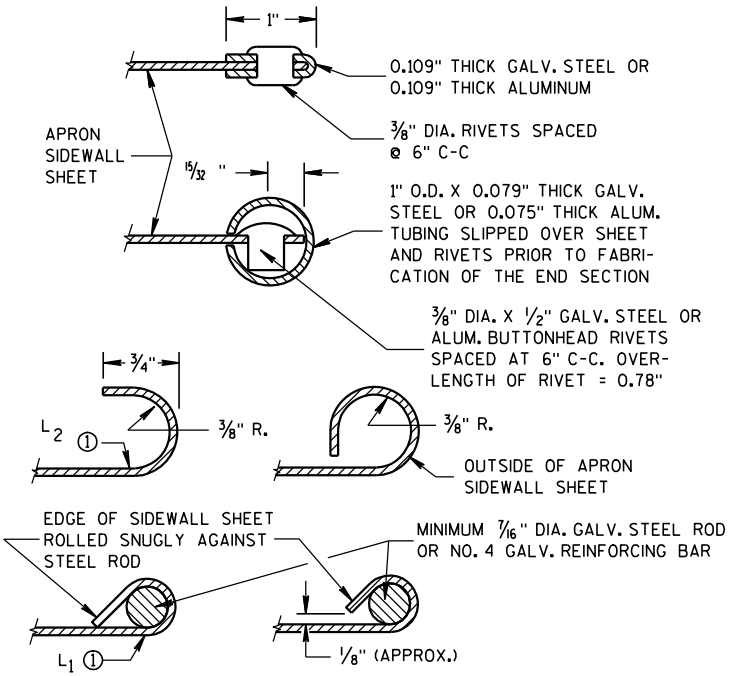
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

GENERAL NOTES

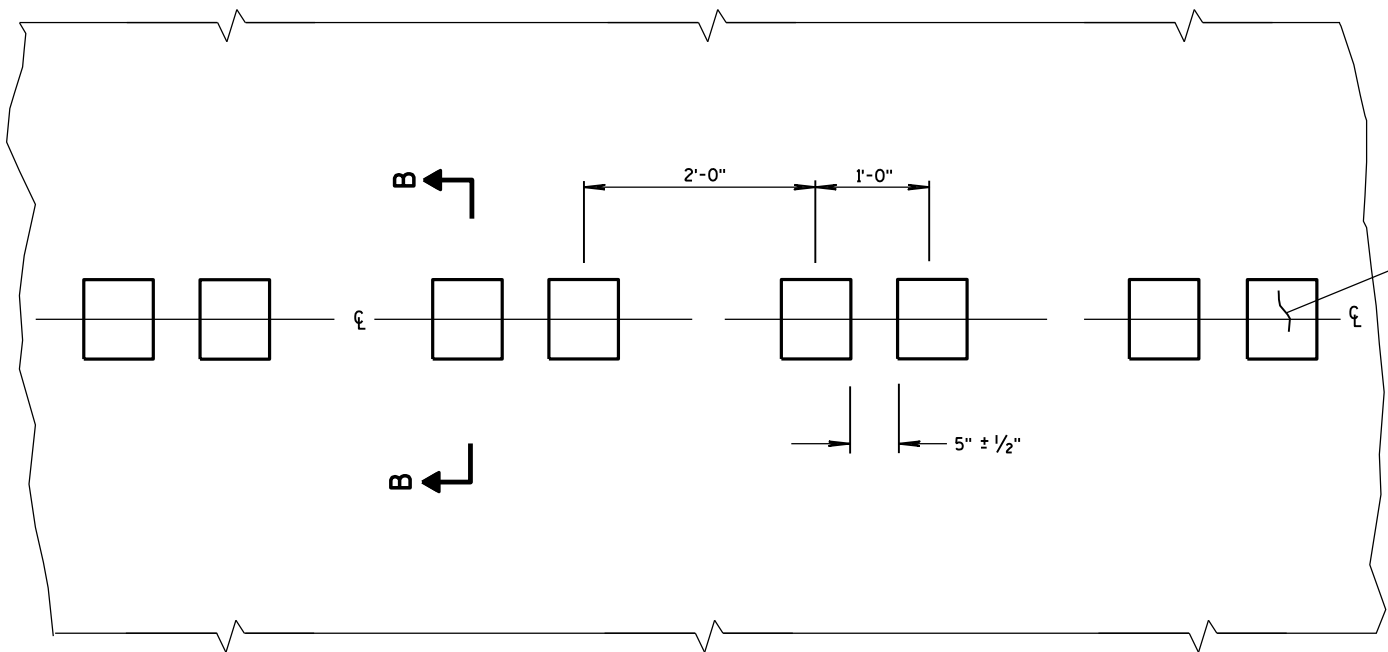
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

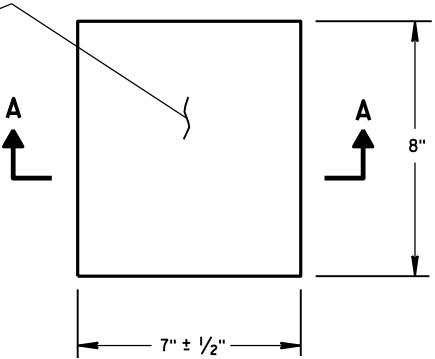
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

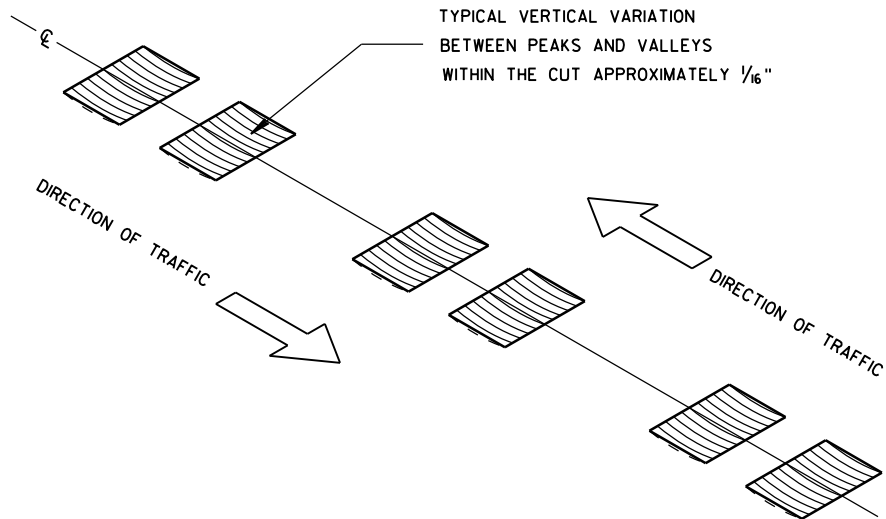
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



PLAN VIEW
CENTER LINE WITH GROOVES

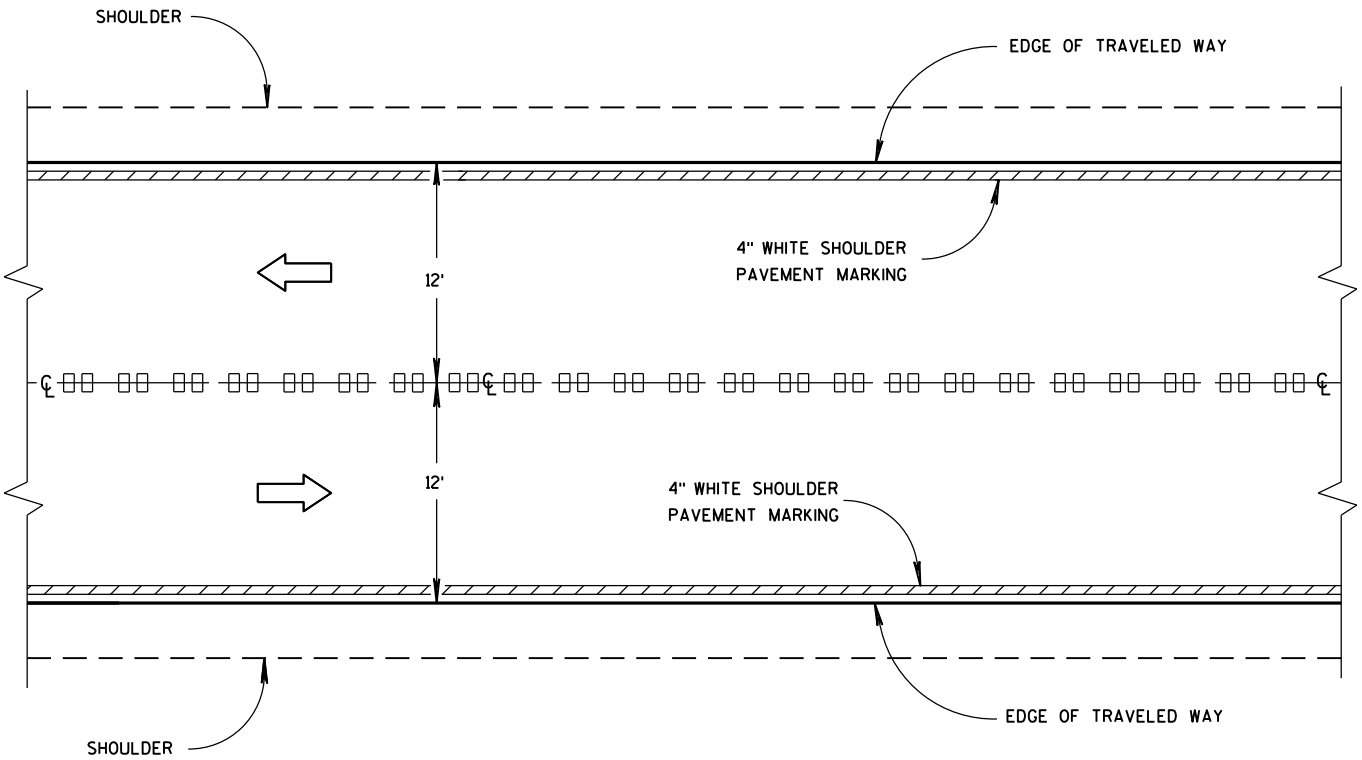


PLAN VIEW
(SINGLE GROOVE)

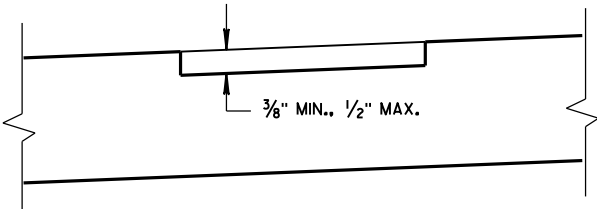


ISOMETRIC

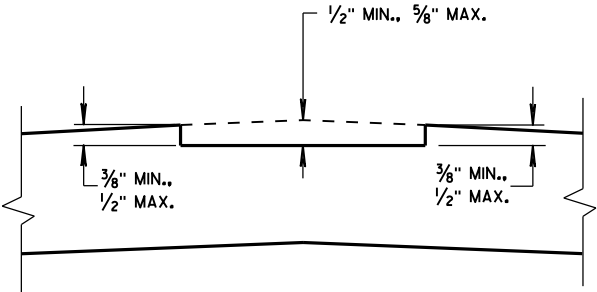
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP



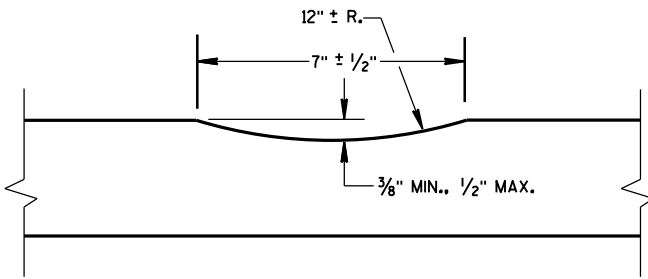
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



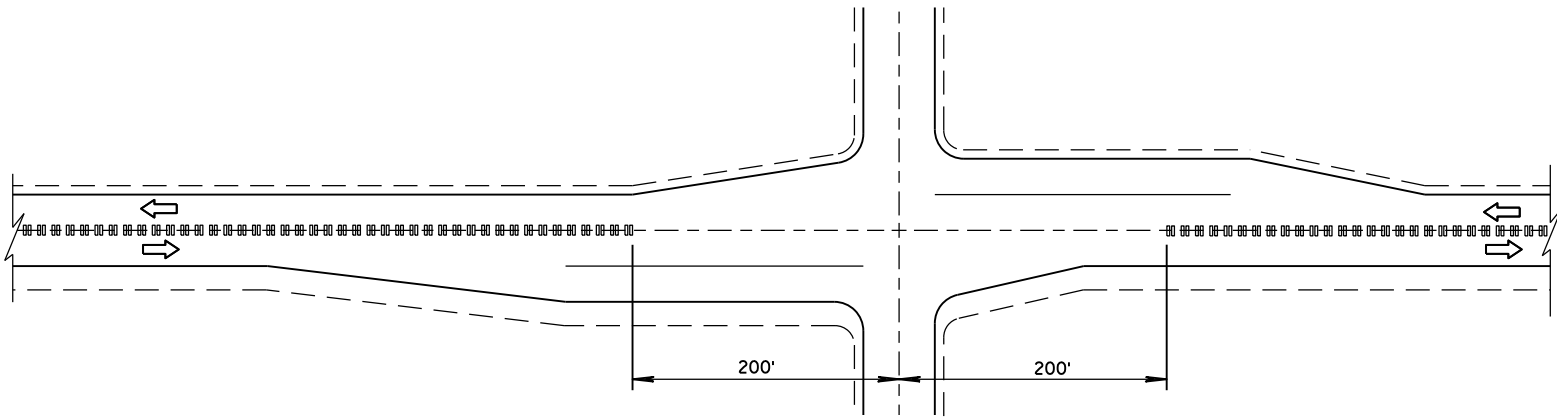
SECTION B-B
CROWNED ROADWAY



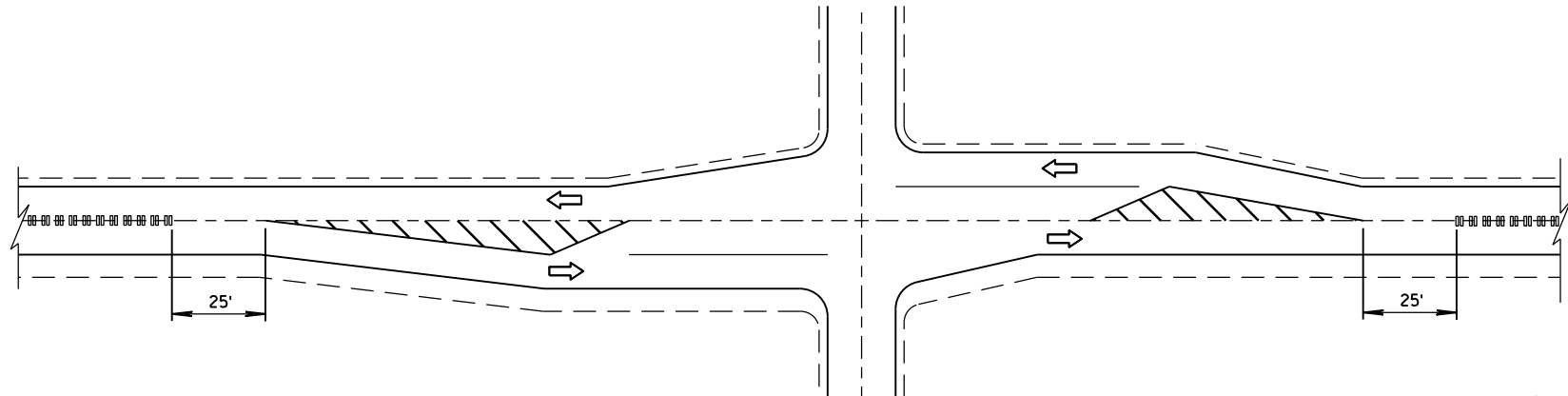
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

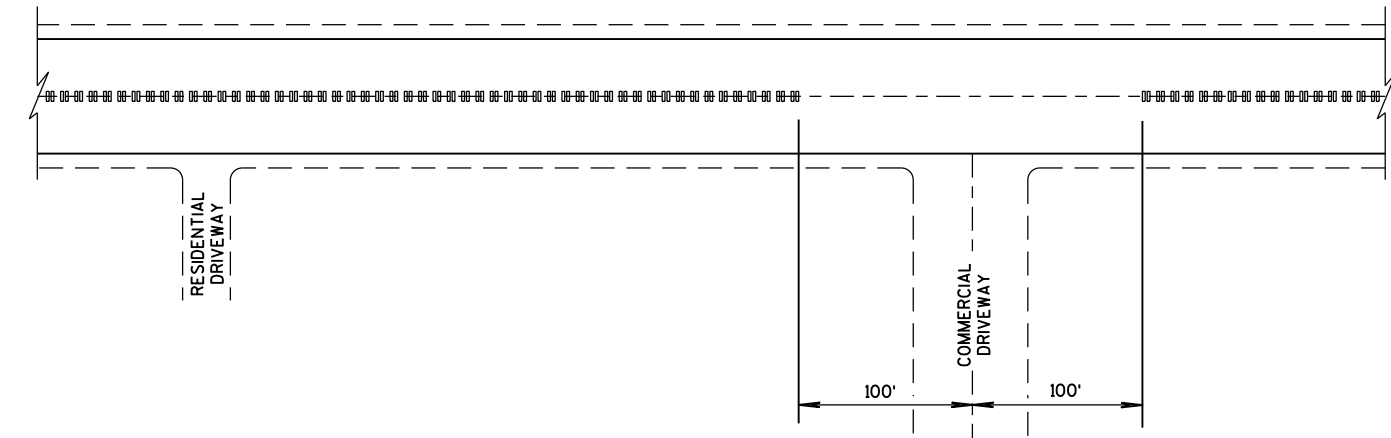
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

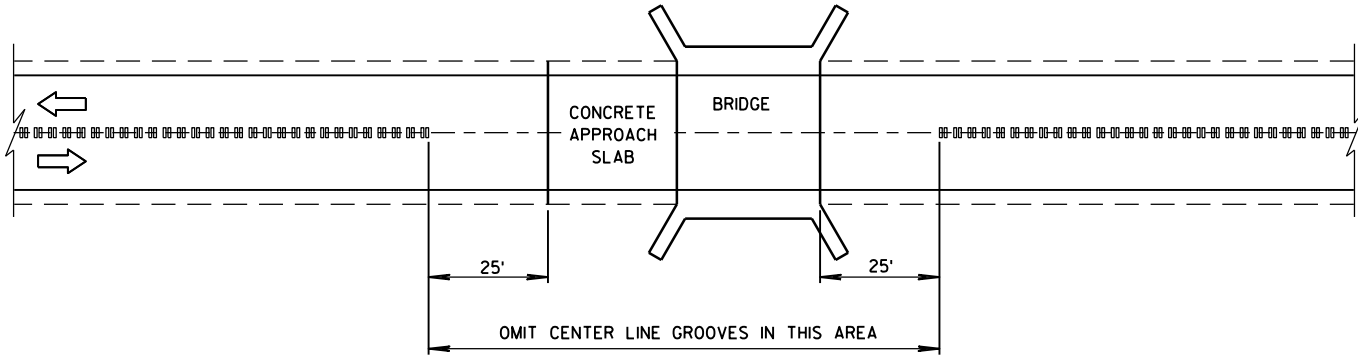


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

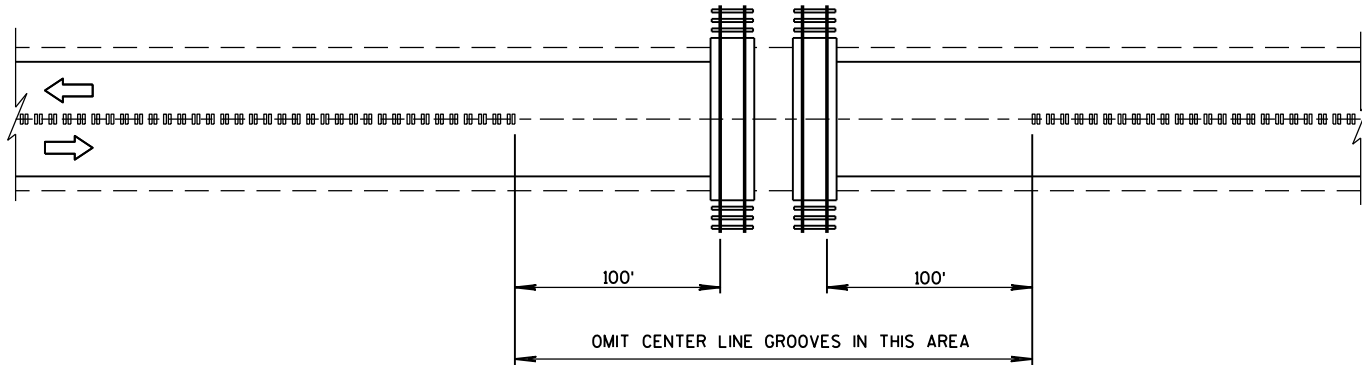


CENTER LINE GROOVES AT DRIVEWAYS^①

① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



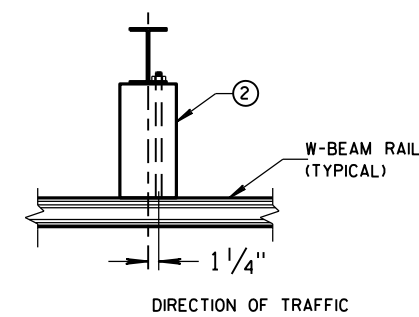
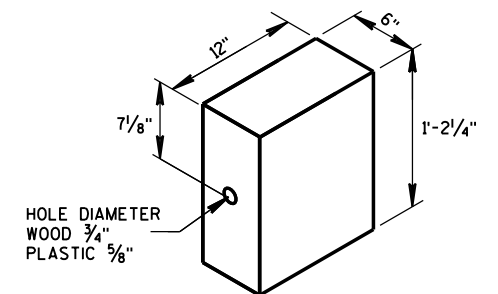
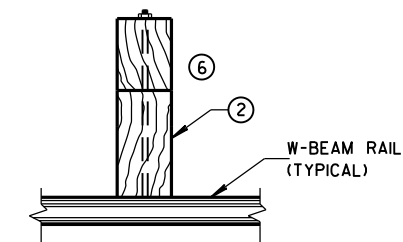
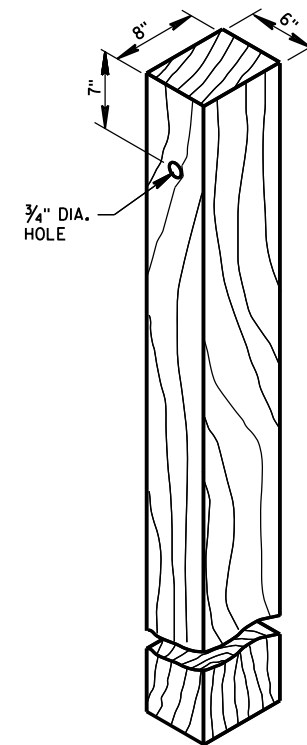
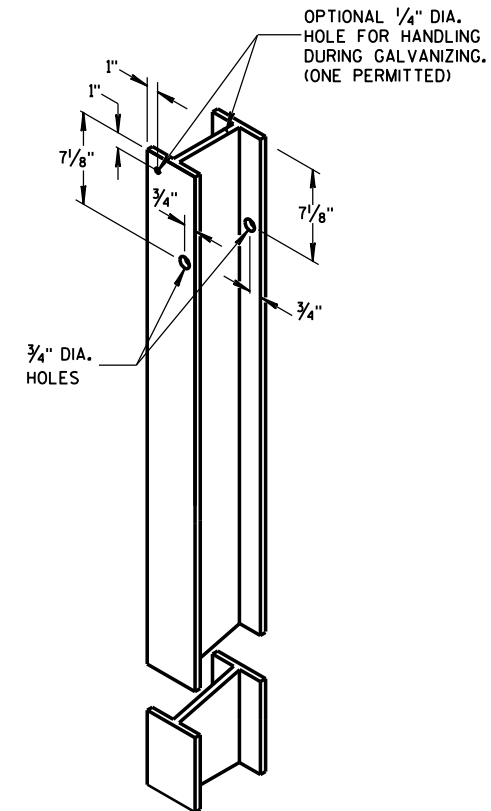
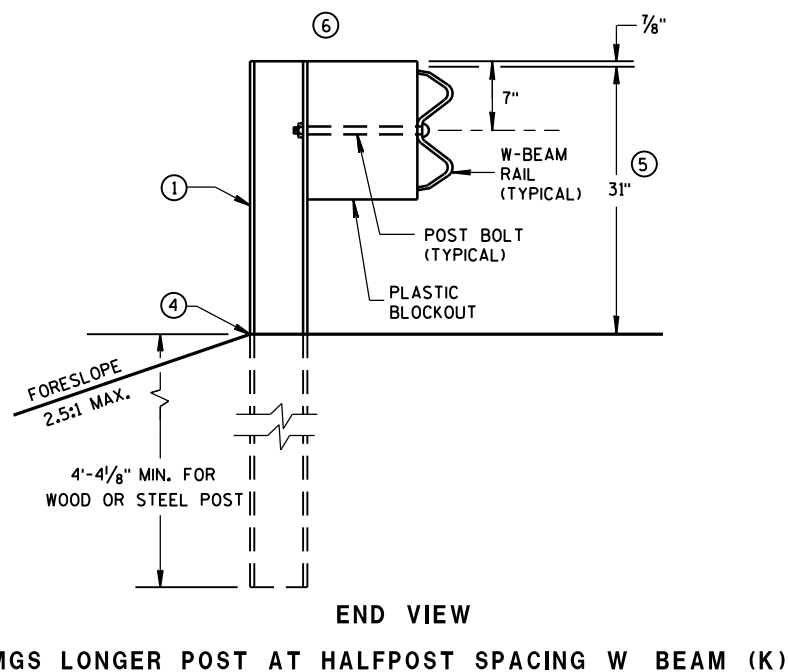
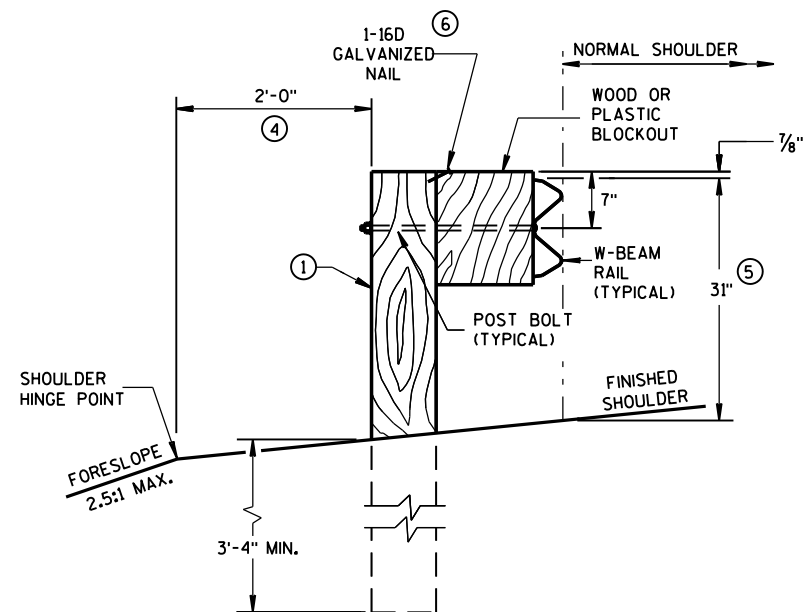
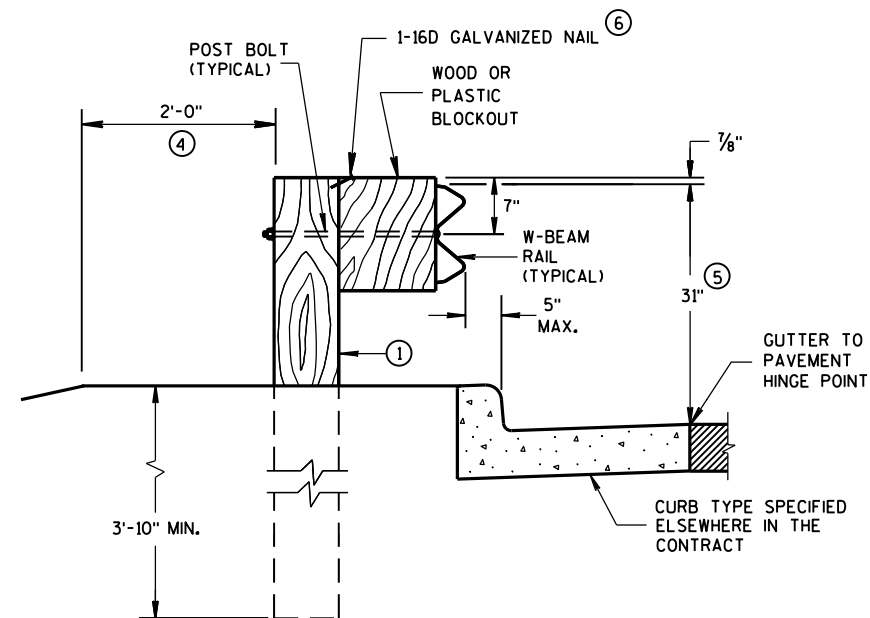
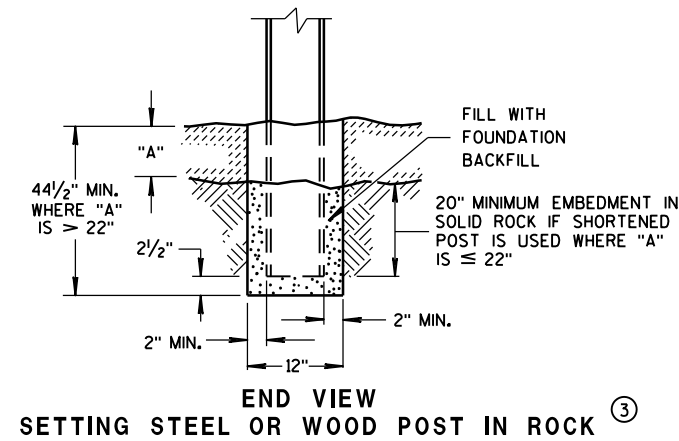
CENTER LINE GROOVES AT BRIDGES



CENTER LINE GROOVES AT RAILROADS

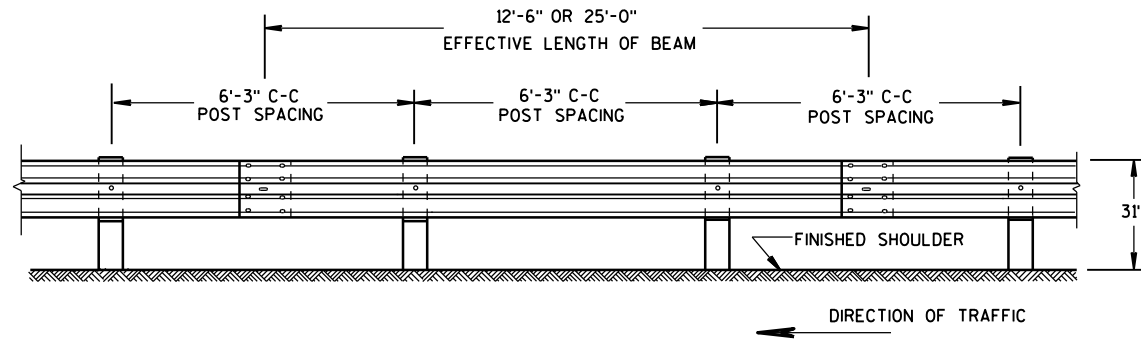
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/15/2013 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

- 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 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS 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 27¾" 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.



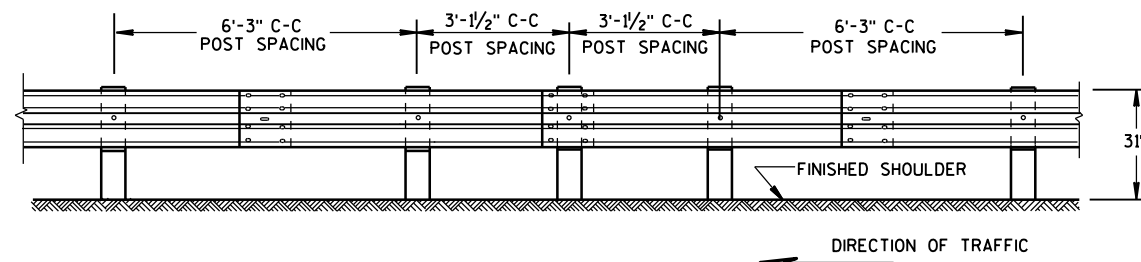
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



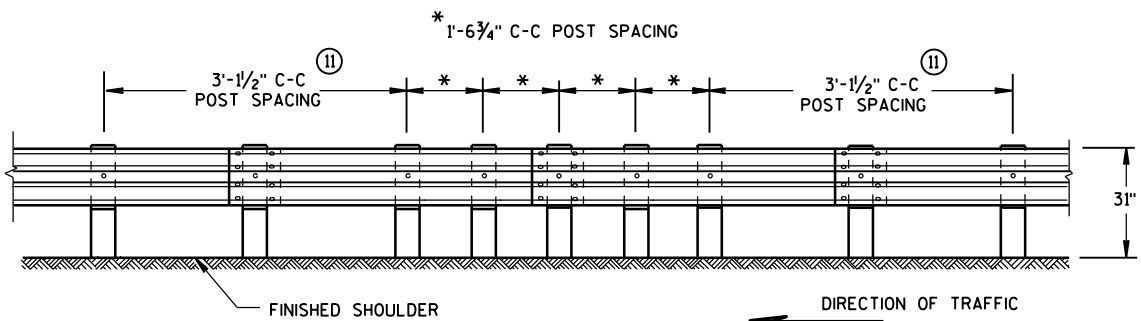
FRONT VIEW

POST SPACING STANDARD INSTALLATION



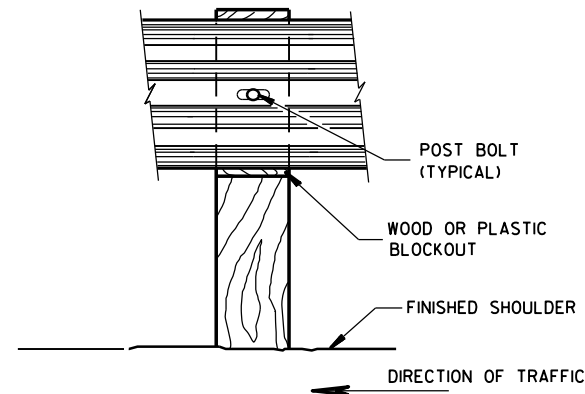
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

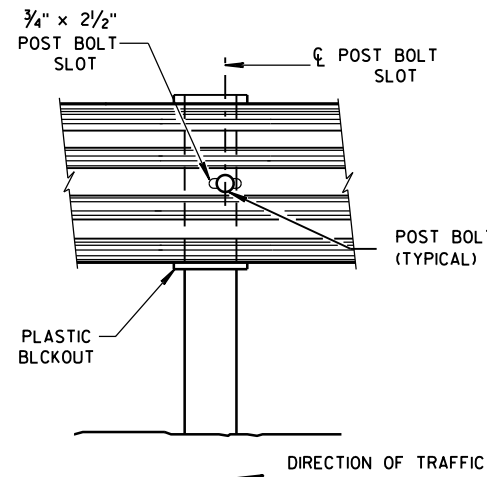


FRONT VIEW

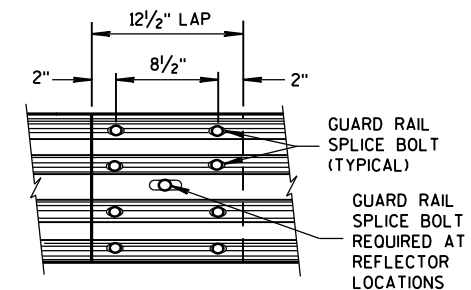
QUARTER POST SPACING (QS)



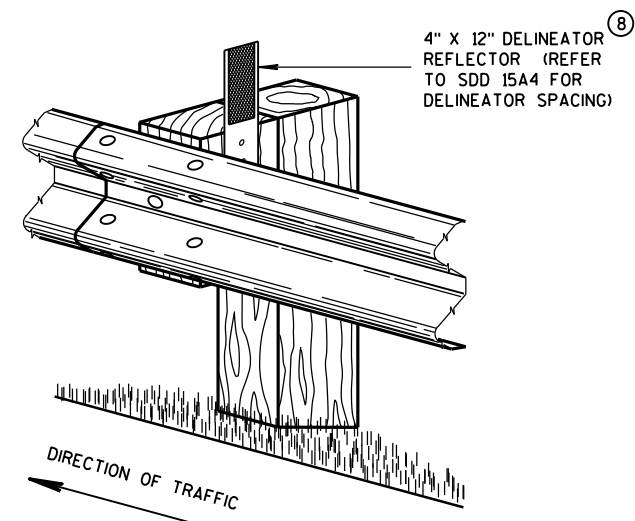
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



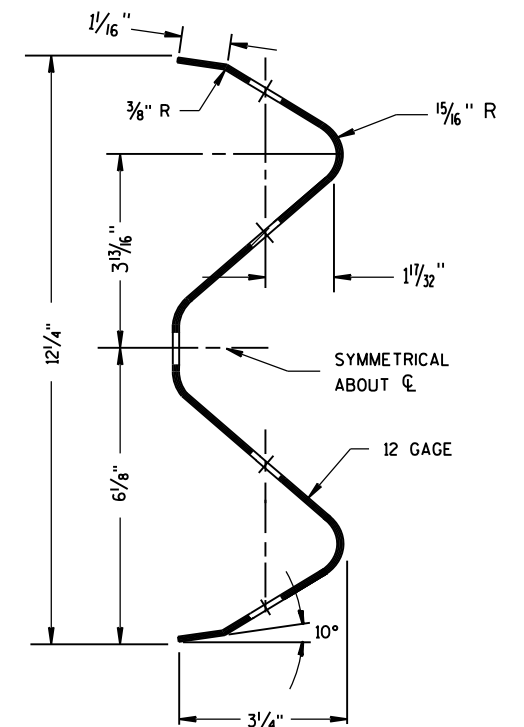
FRONT VIEW
MID-SPAN BEAM SPLICE



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

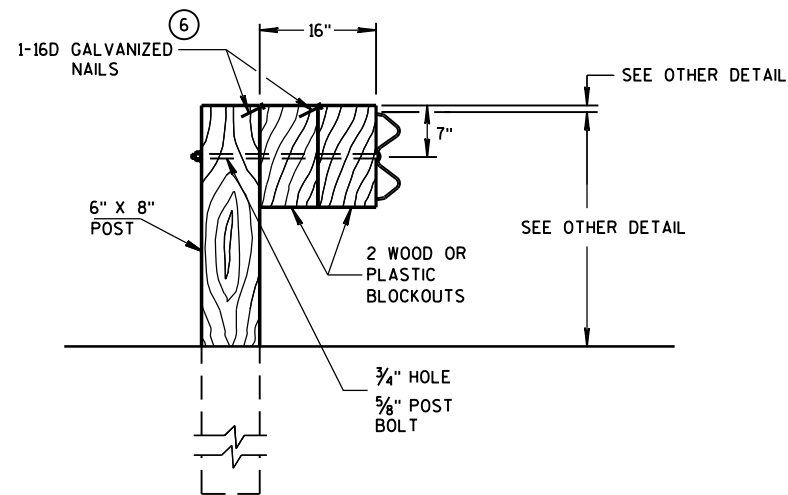
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" 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.



SECTION THRU W-BEAM RAIL

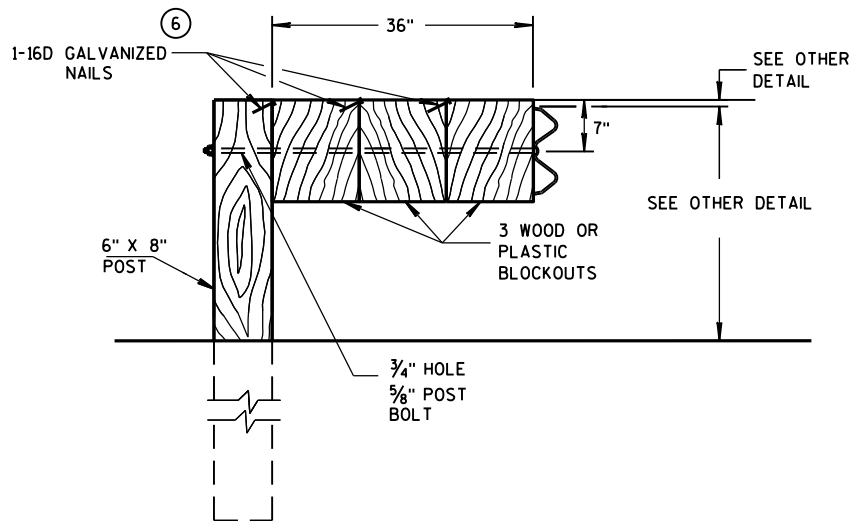
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

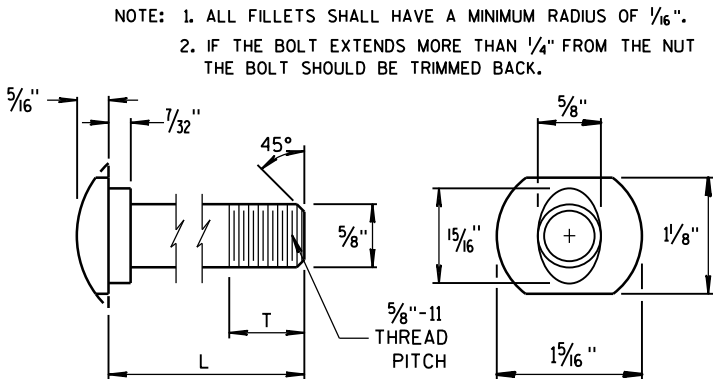
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

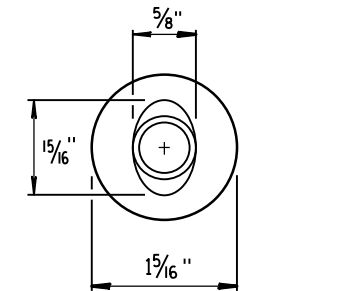
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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.

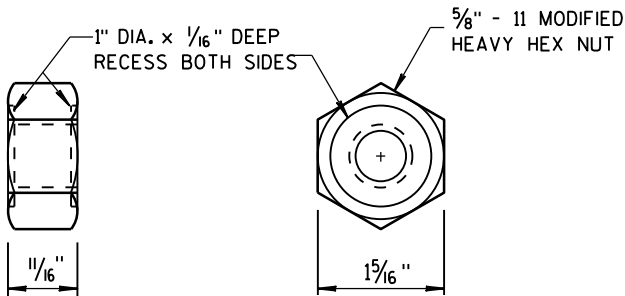


POST BOLT TABLE

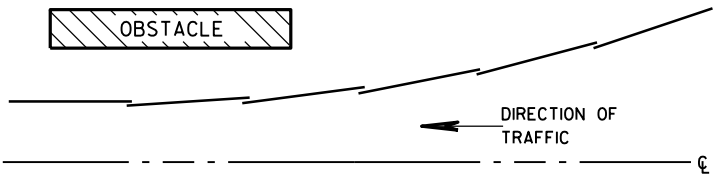
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



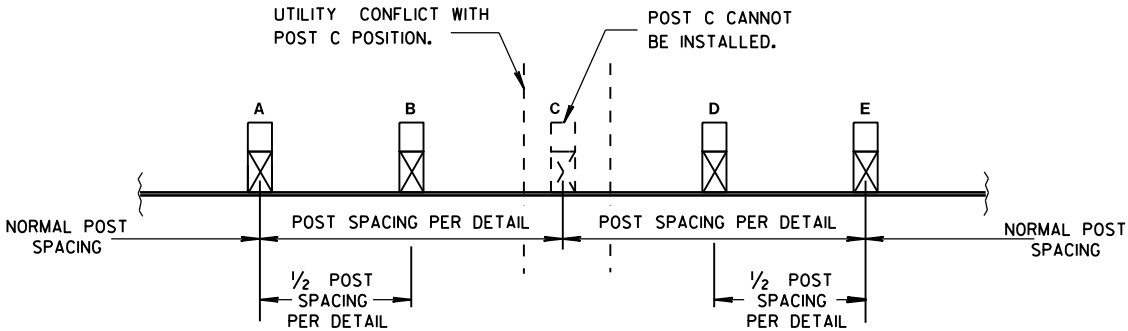
ALTERNATE BOLT HEAD



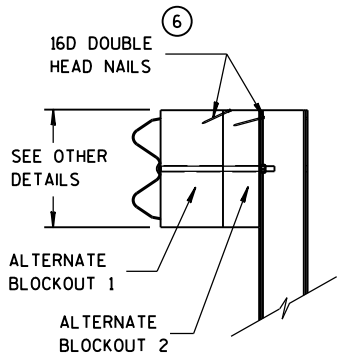
POST BOLT, SPLICE BOLT AND RECESS NUT



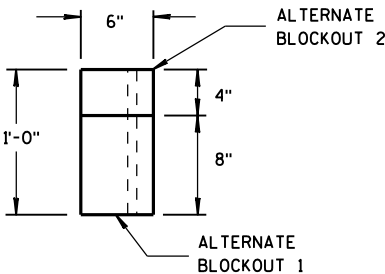
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

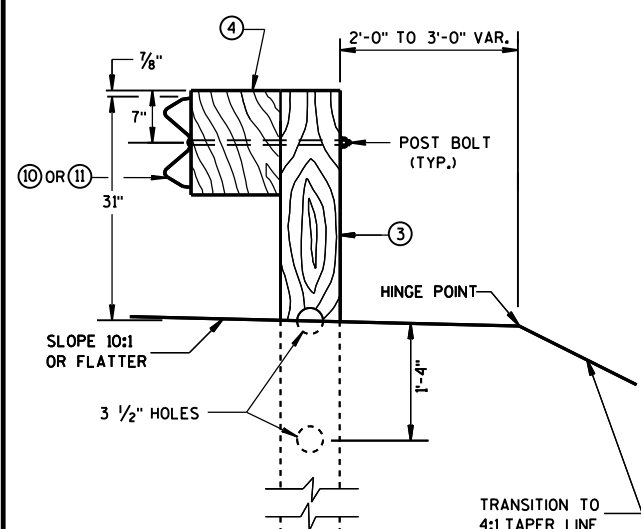
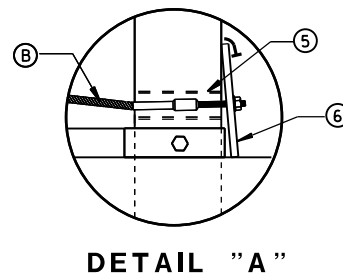
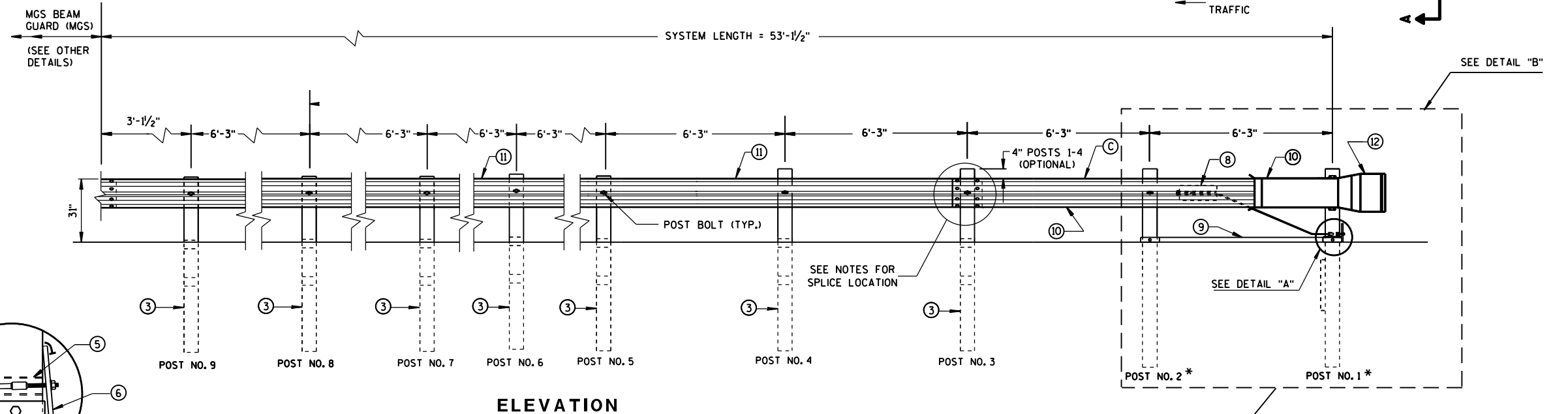
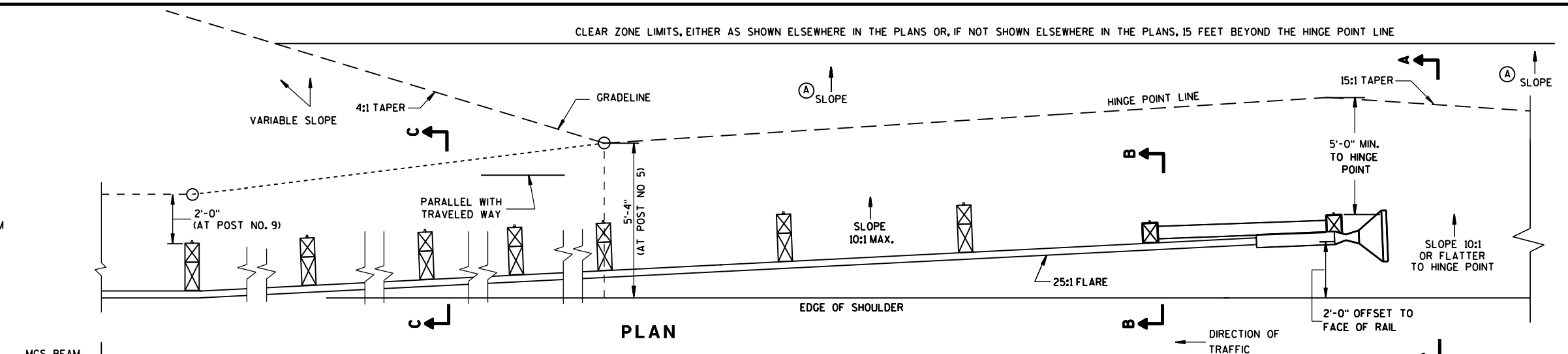
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

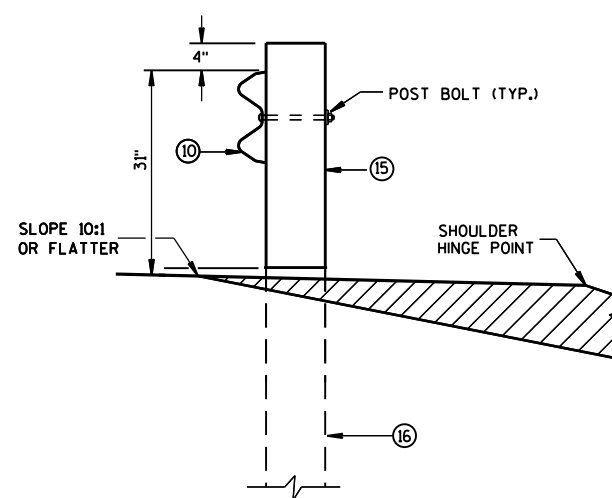
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

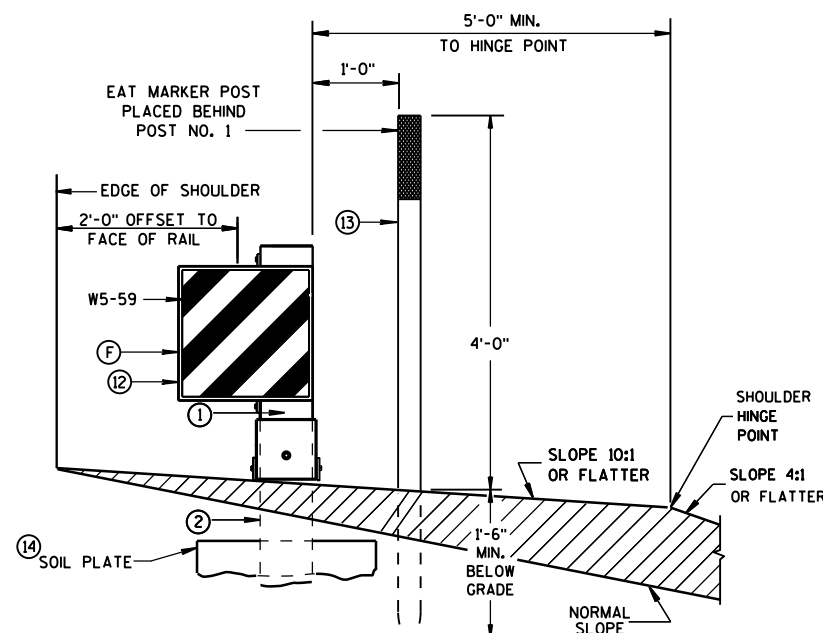
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



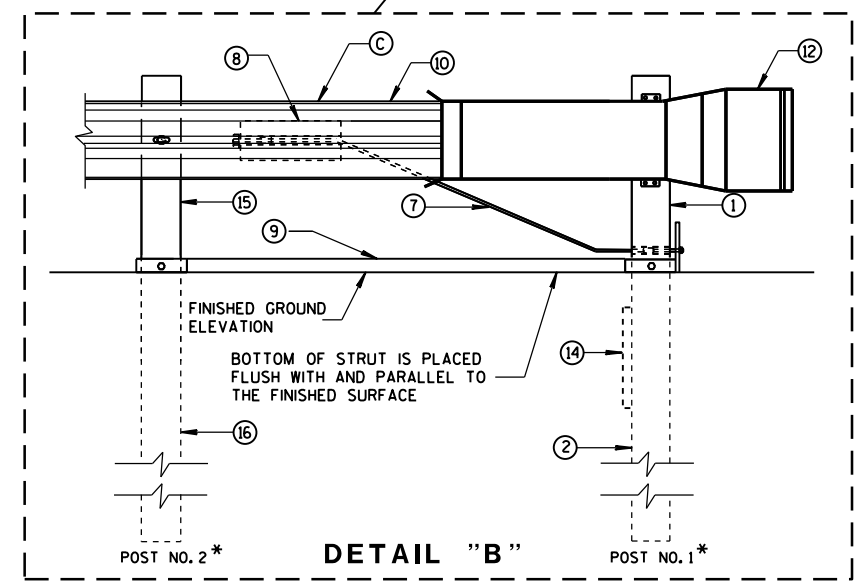
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*



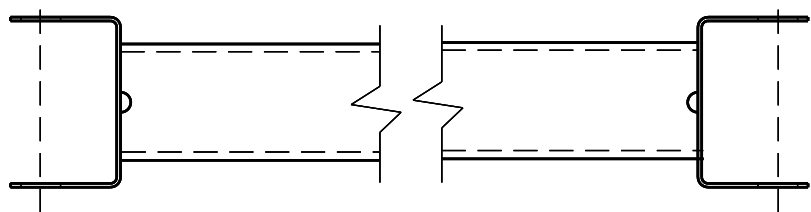
SECTION A-A
TYPICAL AT POST NO. 1*



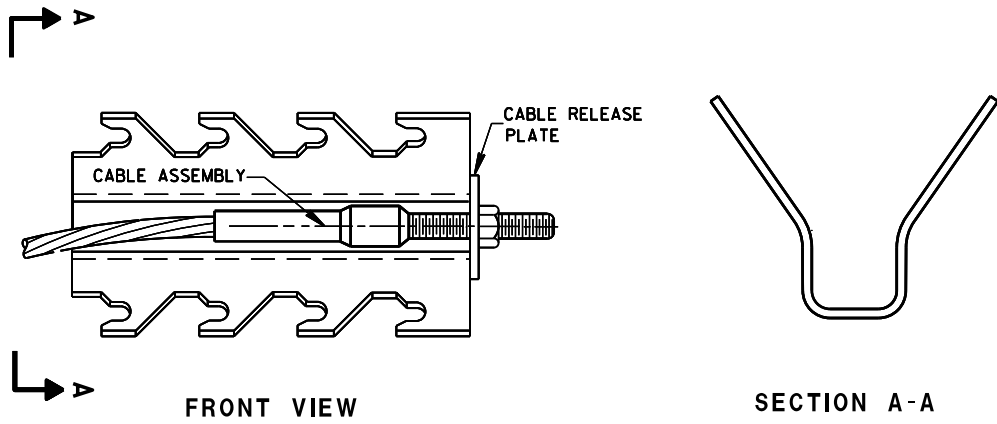
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

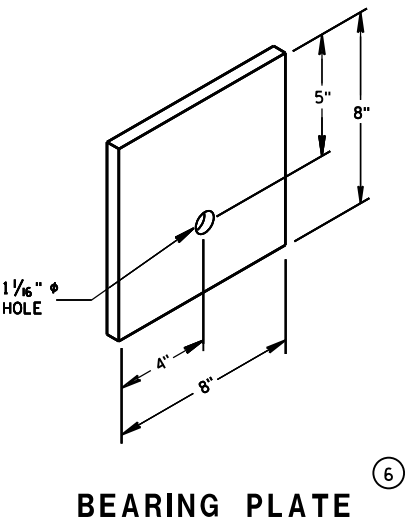


GENERIC GROUND STRUT (9) (H)

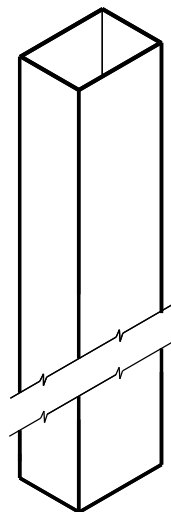


GENERIC ANCHOR CABLE BOX (8) (H)

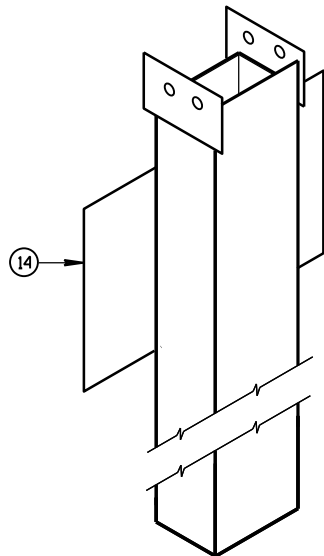
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
(1)	UPPER POST NO.1 6" X 6" TUBE
(2)	LOWER POST NO.1
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND 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



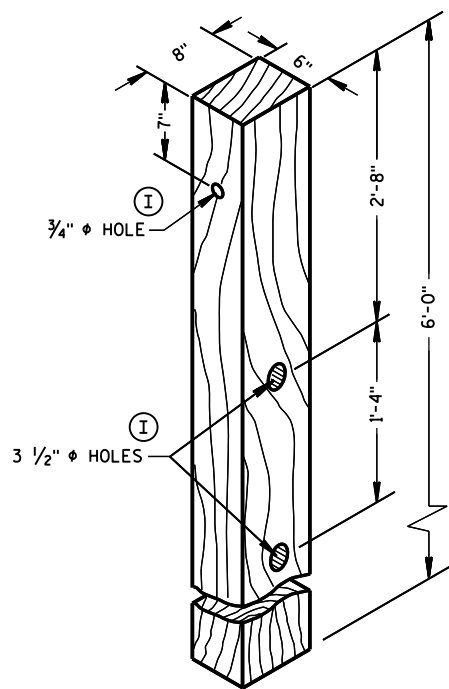
BEARING PLATE (6)



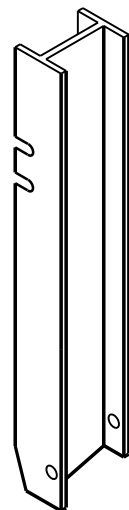
UPPER POST NO. 1⁽¹⁾



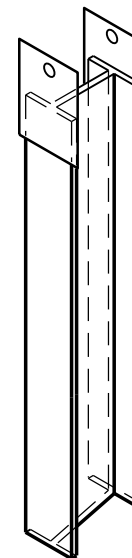
LOWER POST NO. 1⁽²⁾



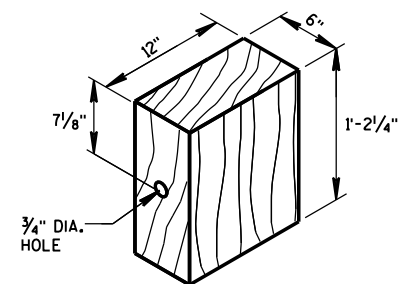
POSTS NUMBER 3-9
WOOD CRT POST⁽³⁾



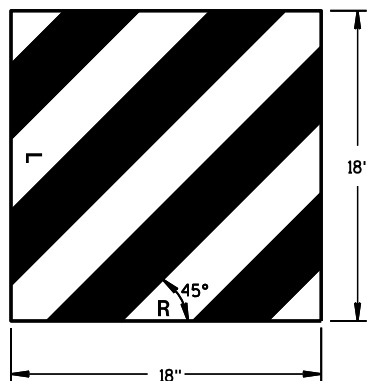
UPPER POST NO. 2⁽¹⁵⁾



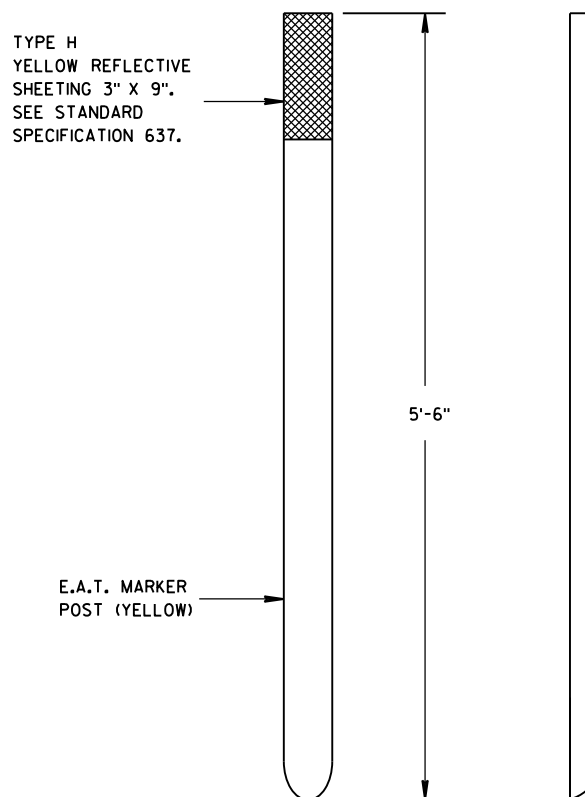
LOWER POST NO. 2⁽¹⁶⁾



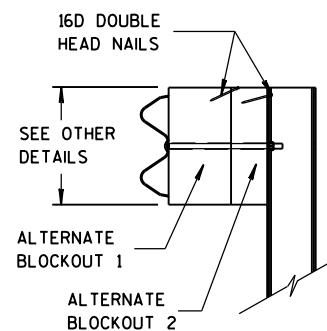
WOOD BLOCKOUT⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



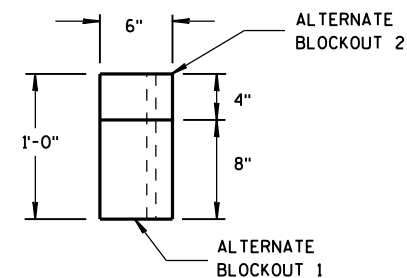
W5-59
REFLECTIVE SHEETING DETAIL^(H)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST⁽¹³⁾

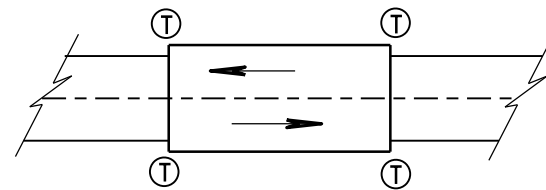


SIDE VIEW
ALTERNATE WOOD
BLOCKOUT DETAIL



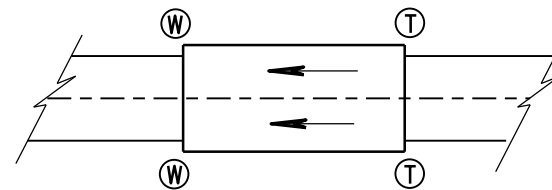
TOP VIEW

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	



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

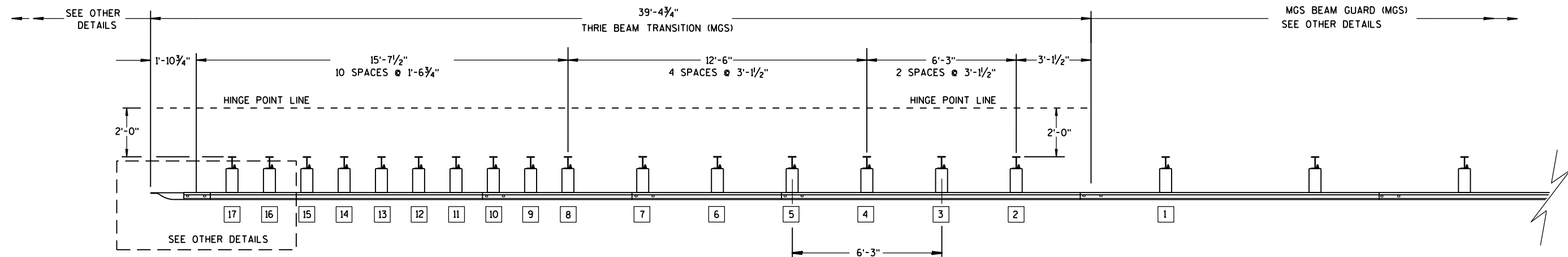
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

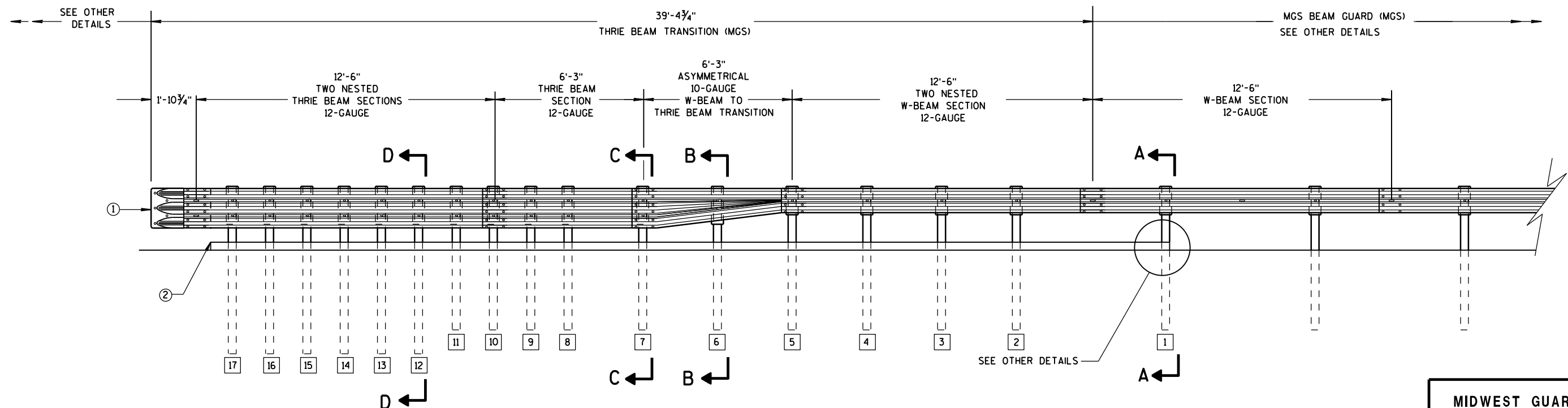
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

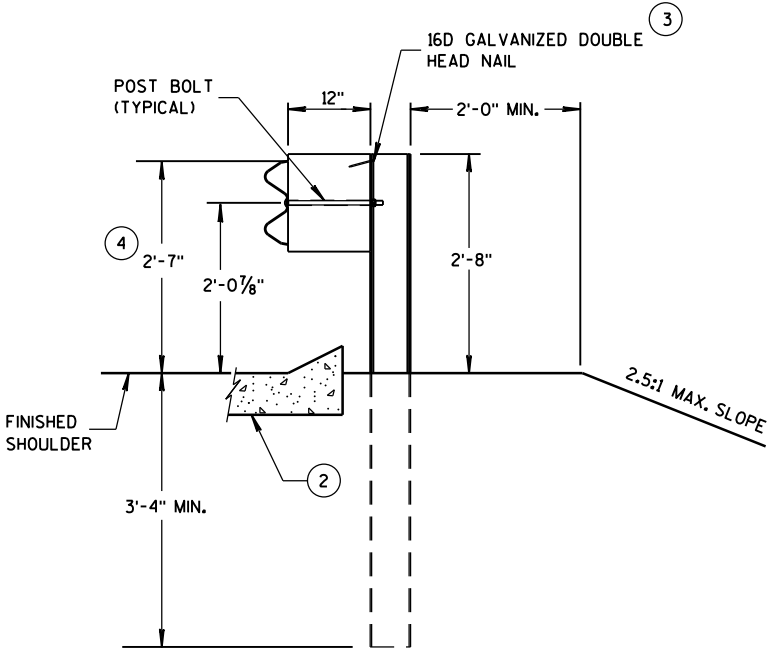
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

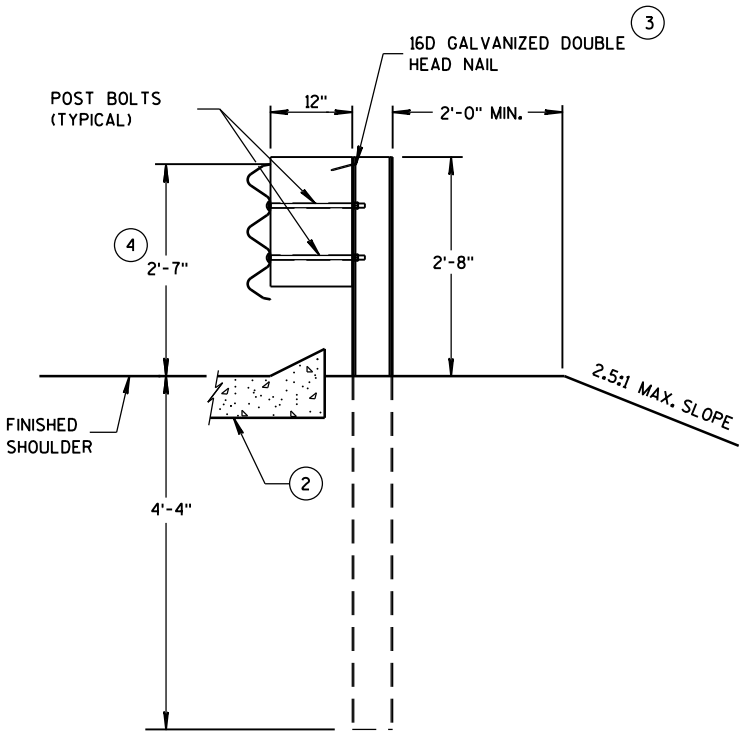
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

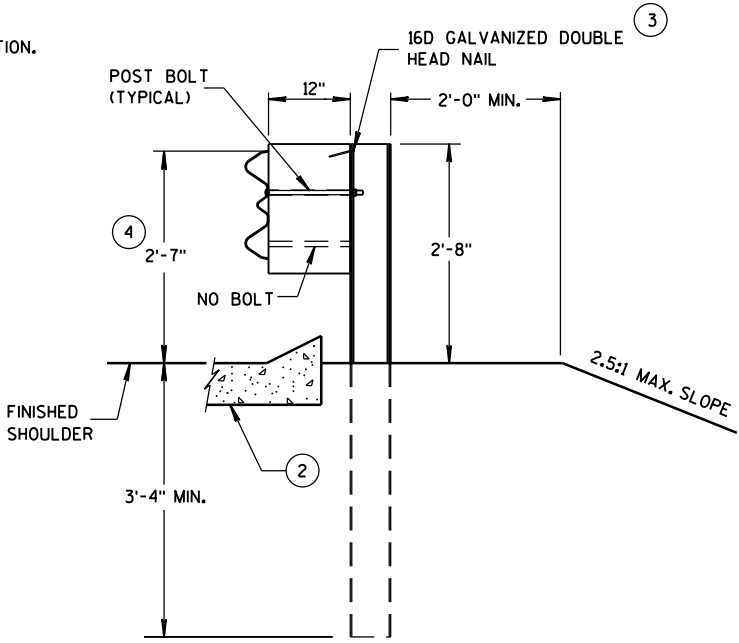
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



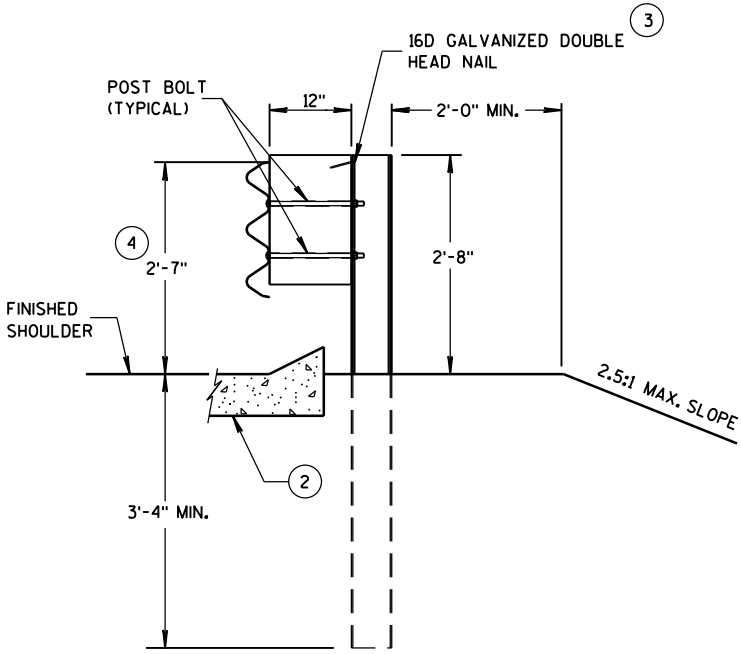
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

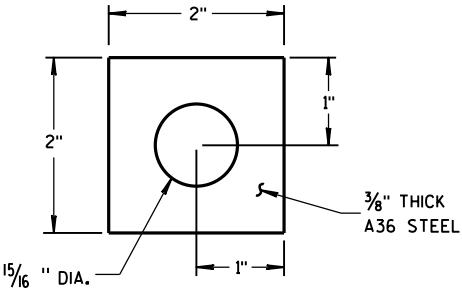
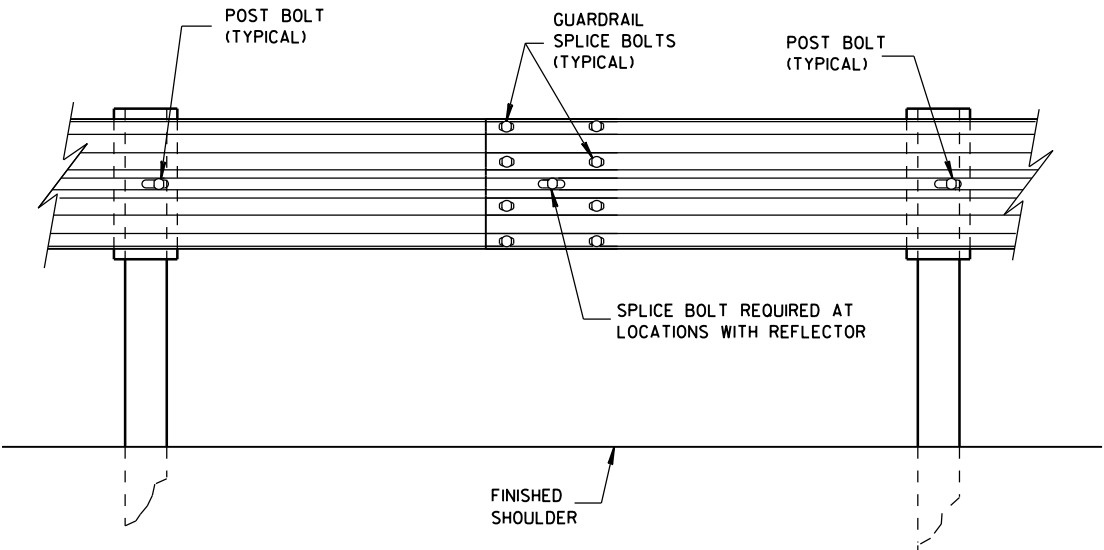
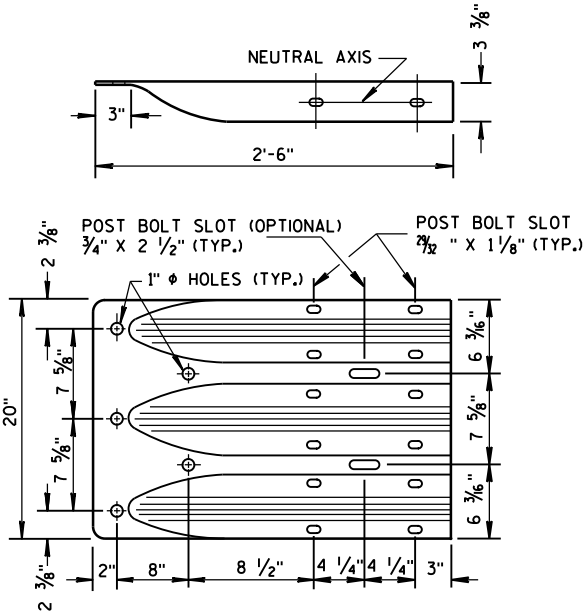


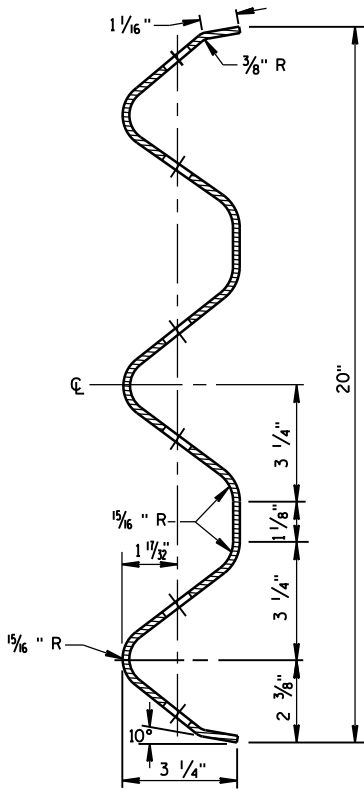
PLATE WASHER DETAIL



SPlice DETAIL



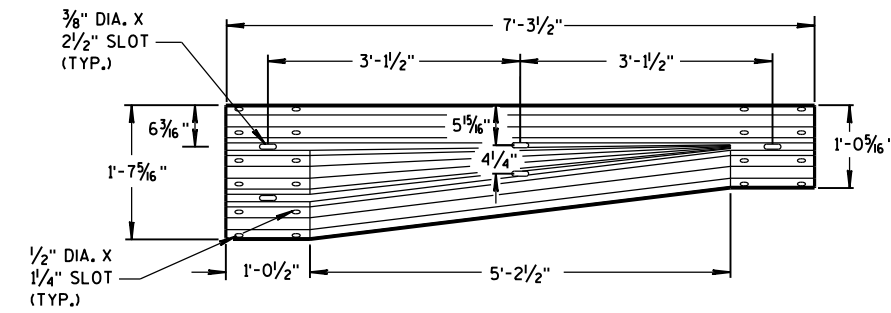
THRIE BEAM
TERMINAL CONNECTOR



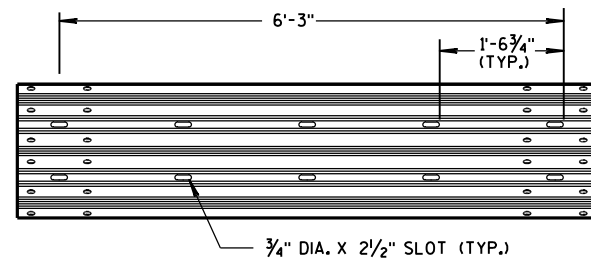
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

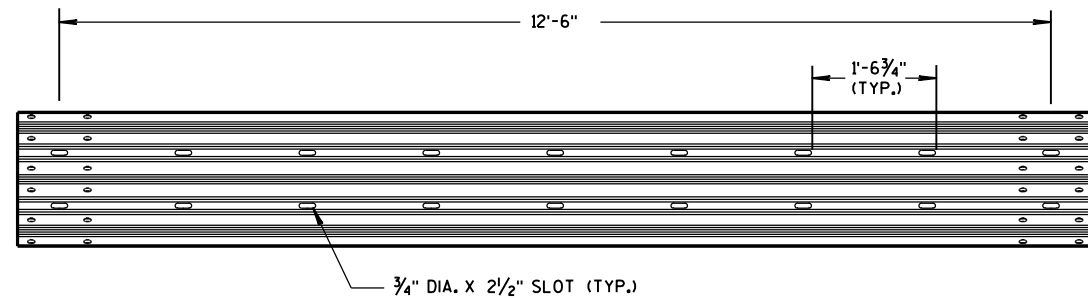
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



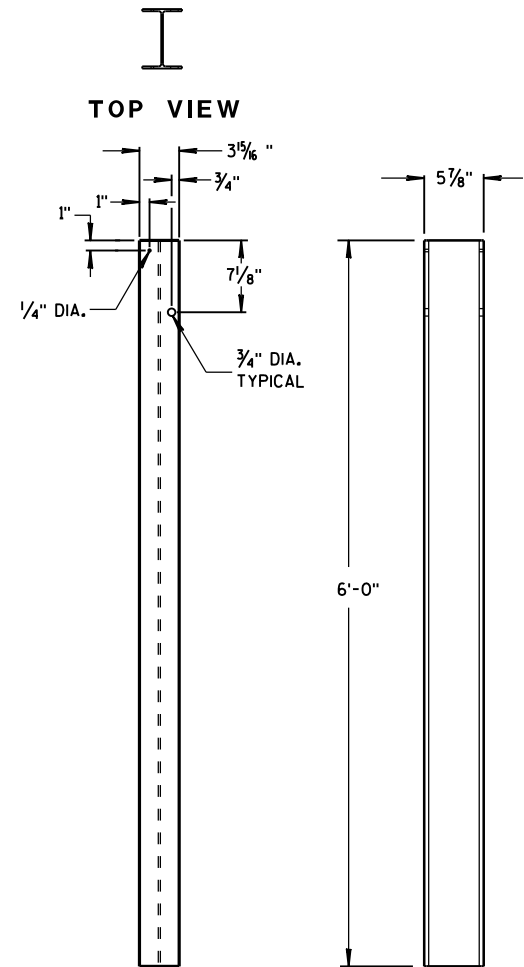
W-BEAM TO THRIE BEAM TRANSITION SECTION



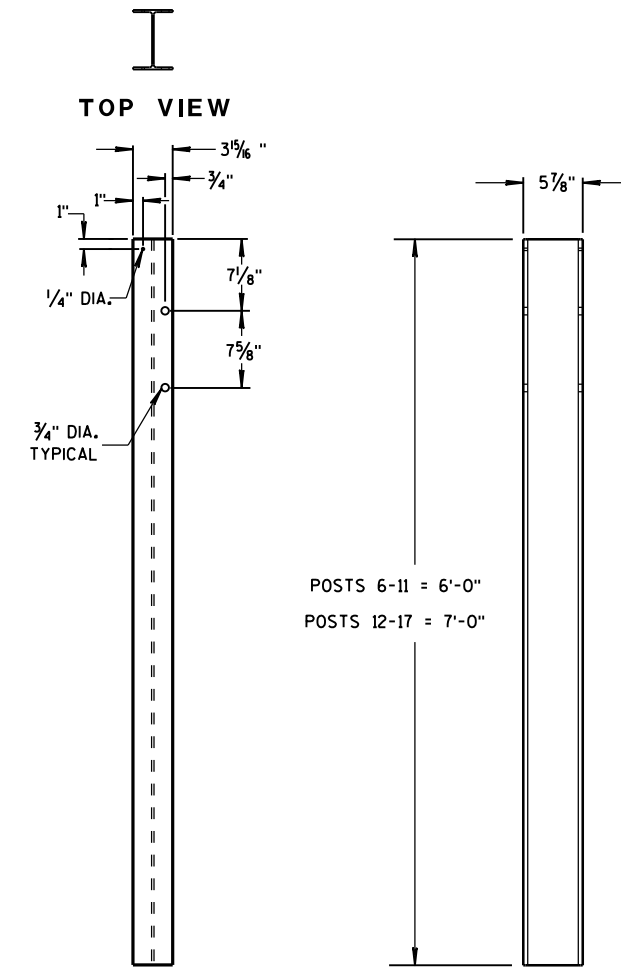
6'-3" THRIE BEAM SECTION



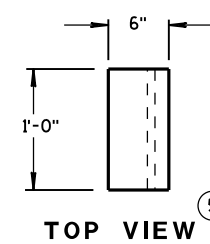
12'-6" THRIE BEAM SECTION



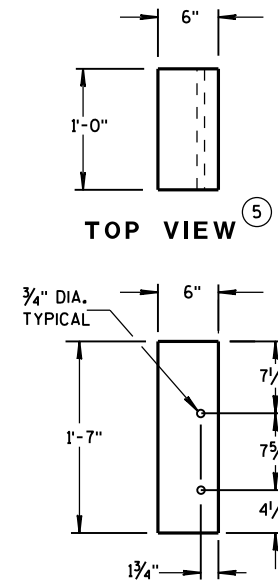
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17

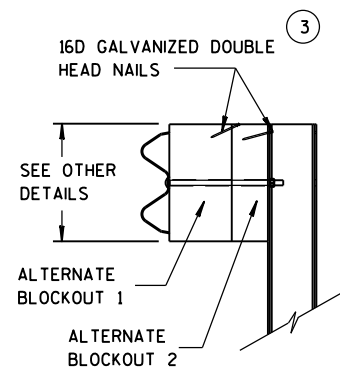
GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

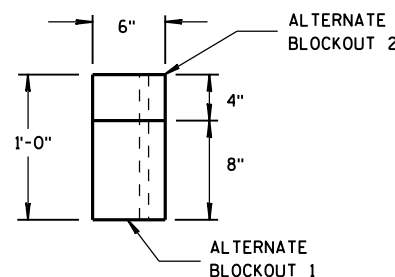
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS 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.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



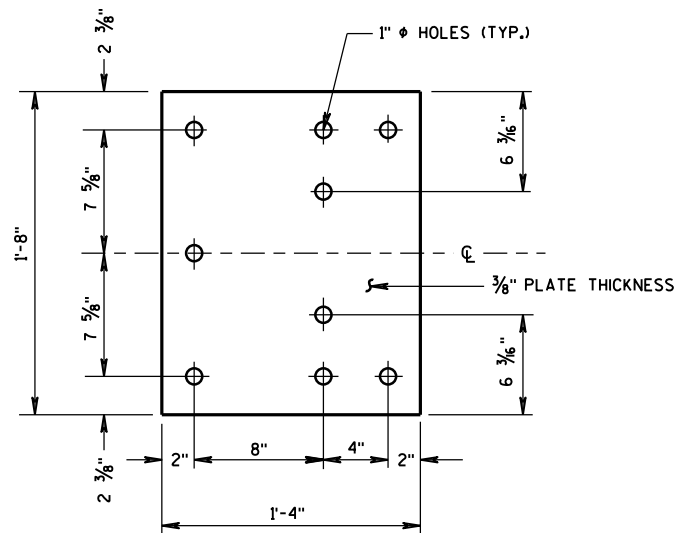
ALTERNATE WOOD BLOCKOUT DETAIL



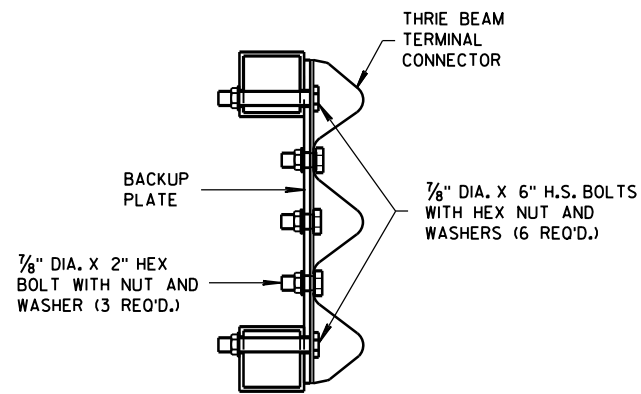
TOP VIEW

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

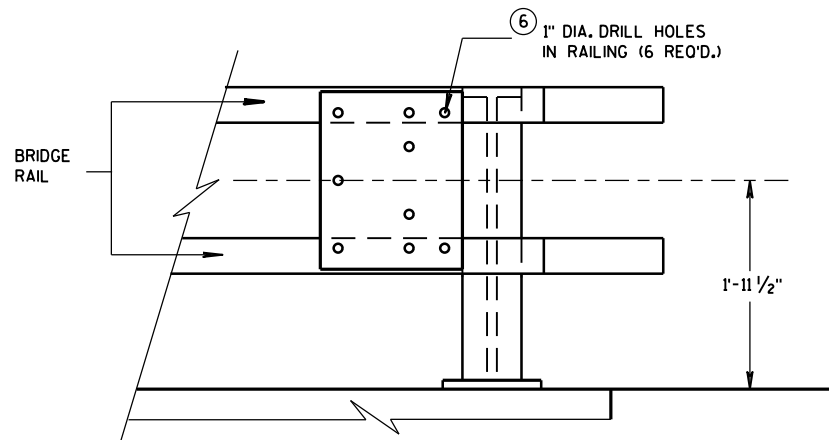
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



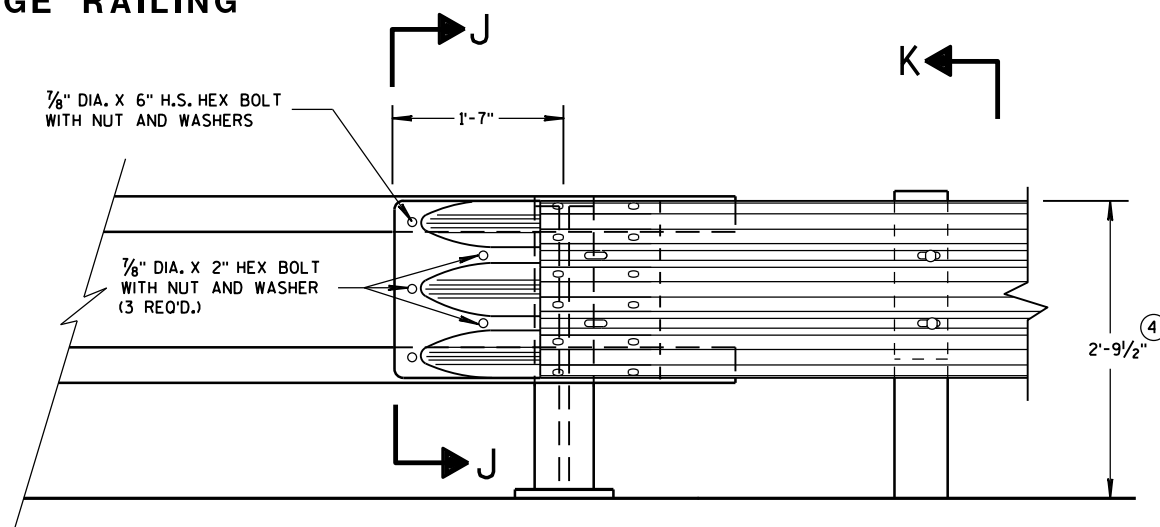
BACK-UP PLATE DETAIL



SECTION J-J

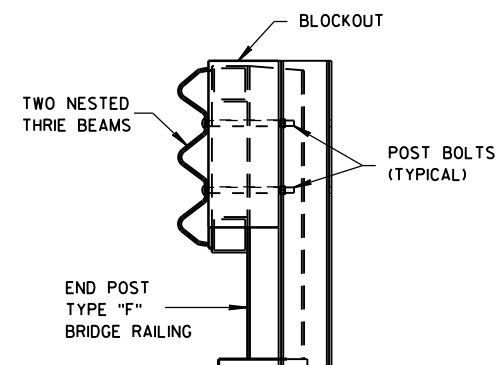


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

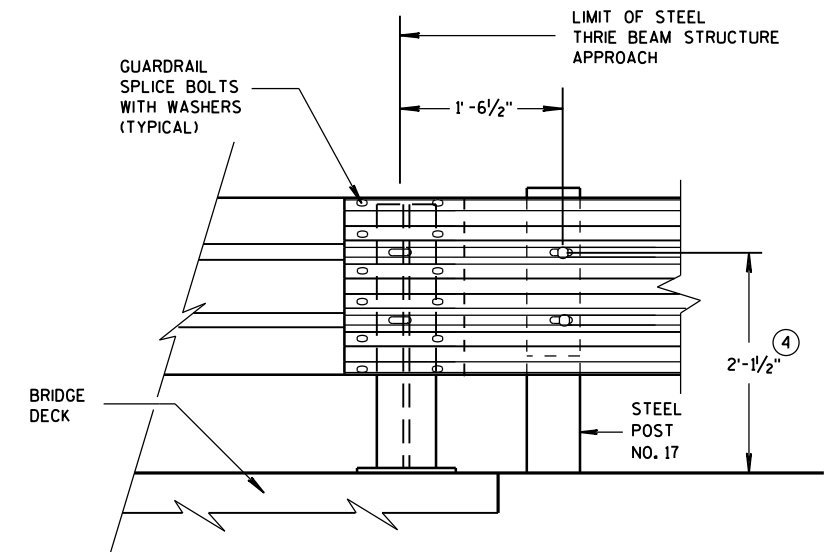
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



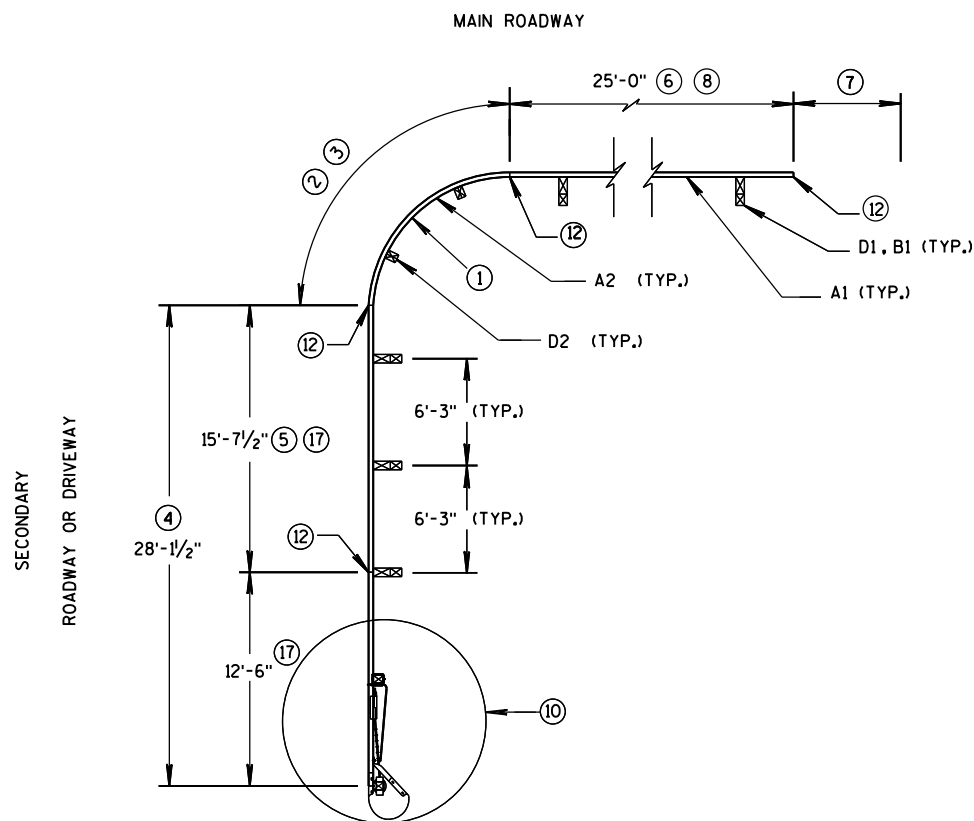
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

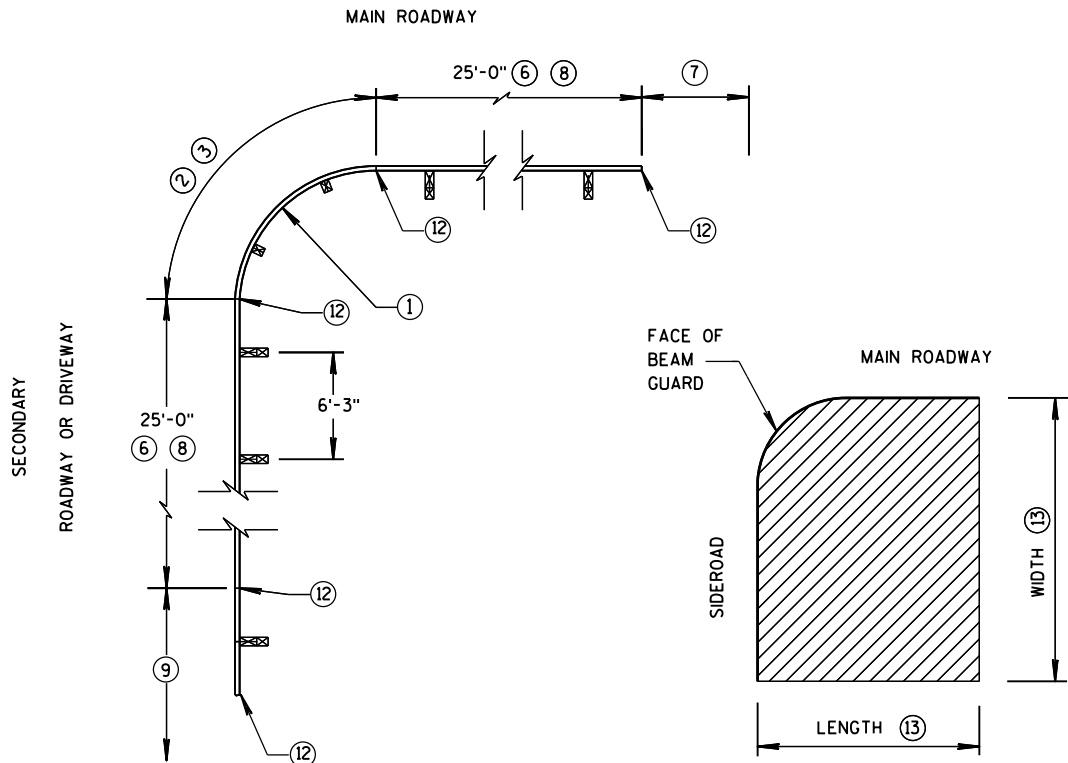
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

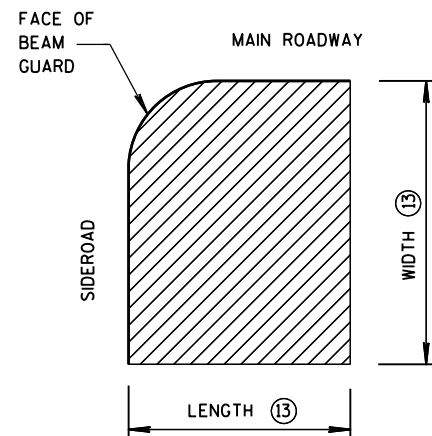
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER



SHORT RADIUS BEAM GUARD WITH
SHORT RADIUS TERMINAL ON
SECONDARY ROAD OR DRIVEWAY
PLAN VIEW



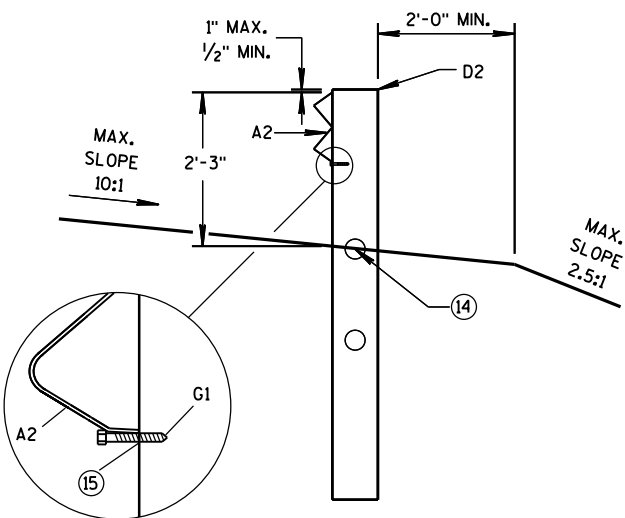
SHORT RADIUS BEAM GUARD WITH
EAT, ADDITIONAL BEAM GUARD
OR
TRANSITION TO RIGID BARRIER
ON SECONDARY ROAD OR
DRIVEWAY
PLAN VIEW



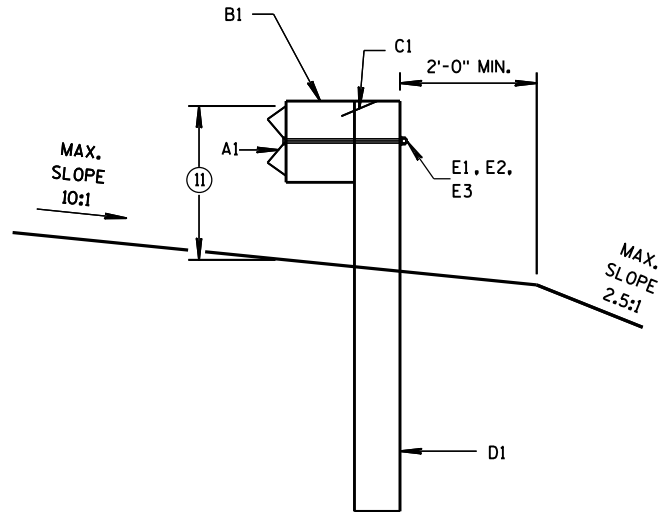
AREA FREE OF
FIXED OBJECTS FOR
RADIUS 32' AND LESS ¹⁶

TABLE FOR RADIUS OF 32' AND LESS

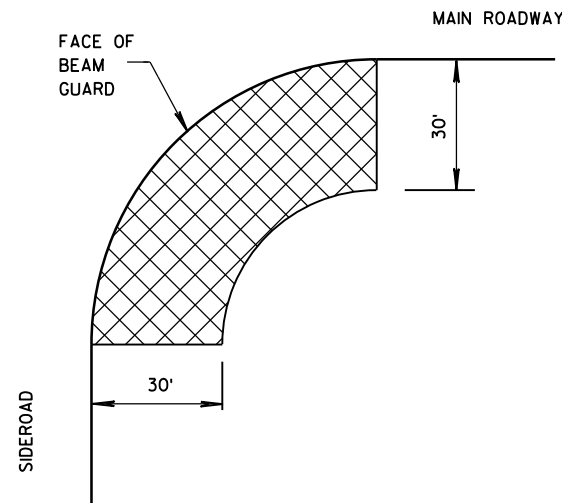
RADIUS FT	LENGTH FT	WIDTH FT
8	25	15
16	30	15
24	40	20
32	50	30



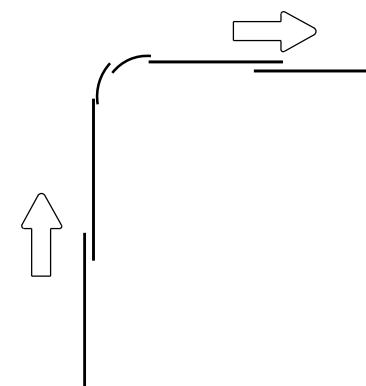
CONTROLLED RELEASE
TERMINAL POST (CRT) IN RADIUS



BEAM GUARD POSTS
IN HEIGHT TRANSITION



AREA FREE OF FIXED OBJECTS ¹⁶
RADIUS GREATER THAN 32'



LAP SPLICE DETAIL

GENERAL NOTES

SEE PLANS FOR OTHER BARRIER SYSTEM AND LOCATION SPECIFICS.

SEE 14B42 FOR MORE INFORMATION ON BEAM GUARD INSTALLATION, PARTS, MATERIALS, AND INSTALLATION INFORMATION.

GALVANIZE PARTS AFTER FABRICATION.

WELDING IS TO FOLLOW CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1

UNLESS NOTED OTHERWISE, ALL PLATES ARE FLAT AND FREE OF WARP.

UNLESS NOTED OTHERWISE, ALL EDGES ARE SMOOTH, STRAIGHT AND VERITCAL.

ALL CUTS AND HOLES, EXCEPT IN BEAM GUARD RAIL ARE TO BE MACHINED OR MACHINE FLAME CUTS.

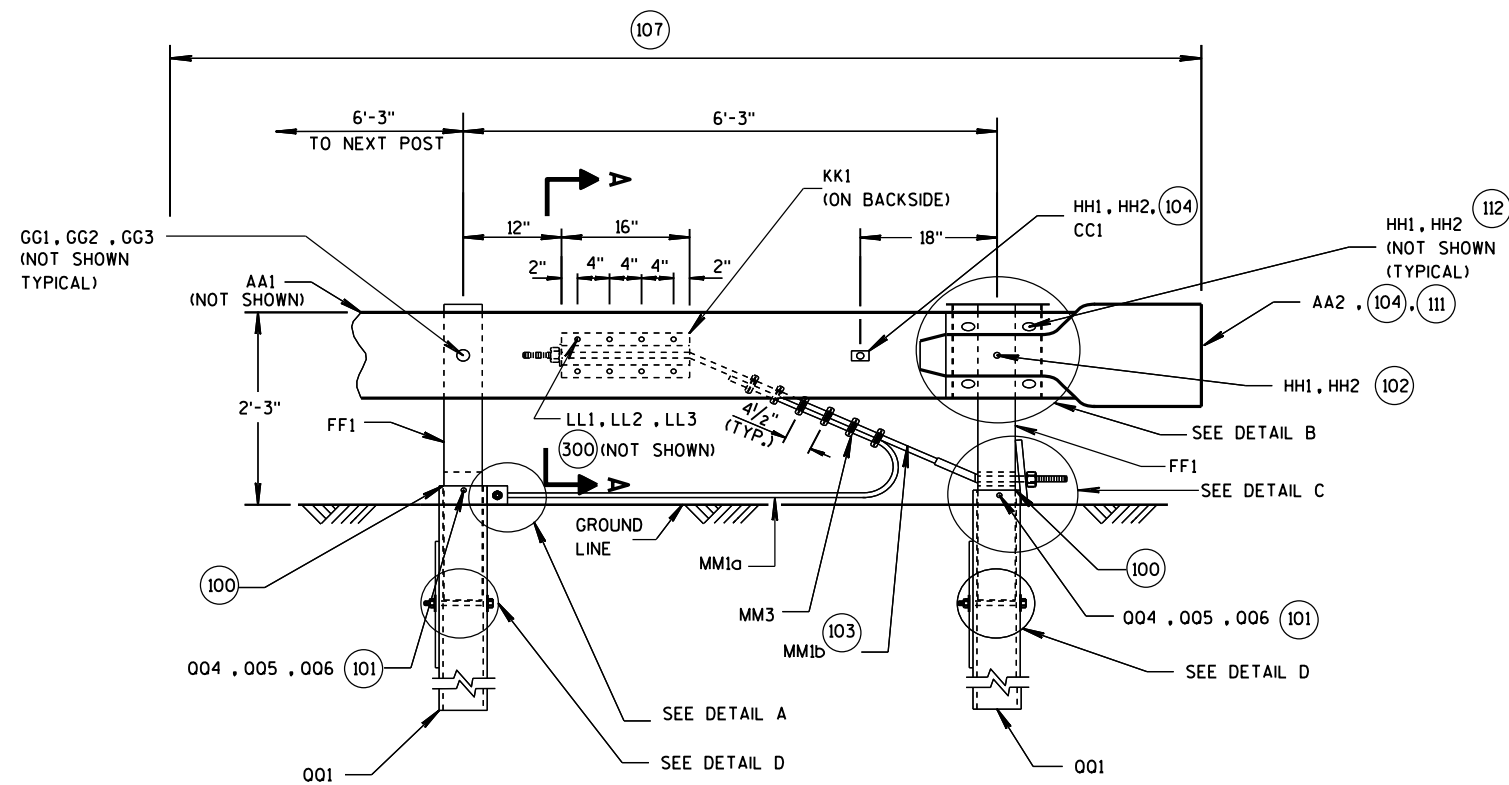
UNLESS NOTED OTHERWISE CUT OR PROVIDE BOLTS THAT ARE 1/4" TO 1/2" BEYOND THE NUT

DRAWINGS ARE NOT TO SCALE.

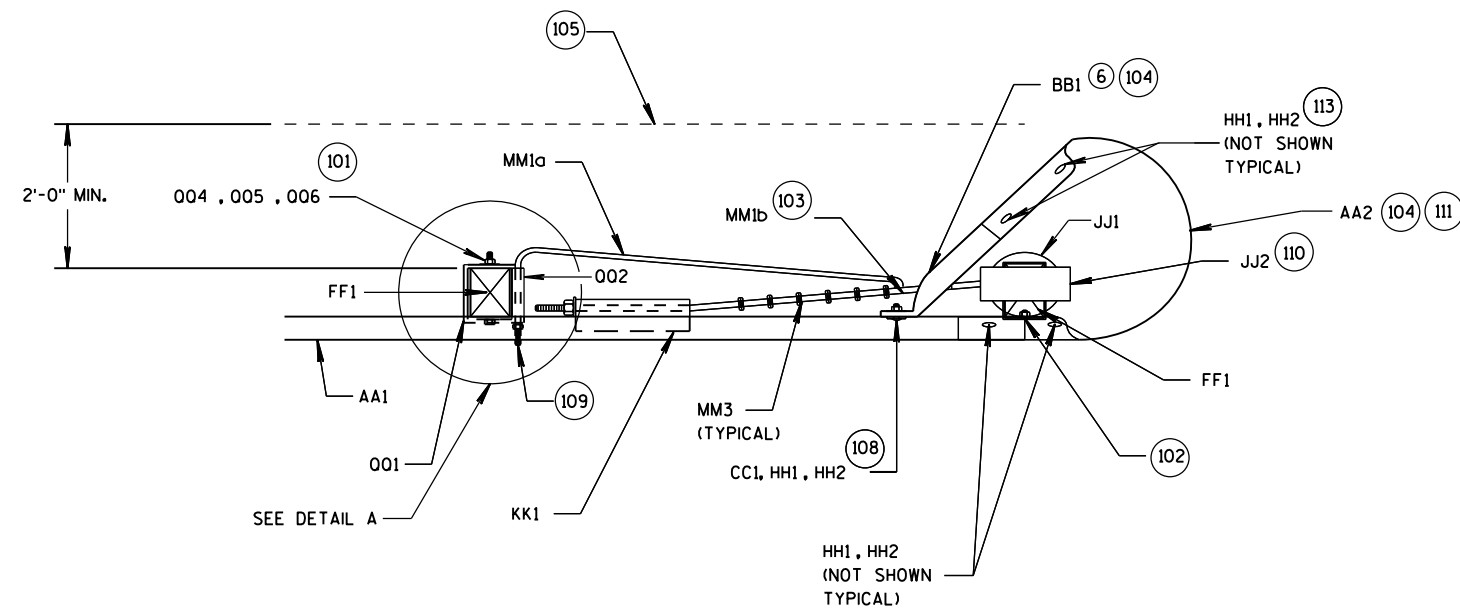
- RADIUS MEASURE FROM INSIDE OF RAIL. LENGTH OF BEAM GUARD SHORT RADIUS GUARD MEASURED ALONG TRAFFIC SIDE OF RAIL. RADIUS BETWEEN 8 FEET TO 150 FEET. SEE PLAN FOR REQUIRED RADIUS. BEAM GUARD RAIL IN RADIUS IS SHOP BENT. ODD RAIL LENGTH OR FIELD CUTS MAY BE REQUIRED.
- CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE USED IN THE RADIUS. CONTROLLED RELEASE TERMINAL (CRT) POSTS ARE SPACED 6'-3". SEE PLAN FOR NUMBER OF CONTROLLED RELEASE TERMINAL (CRT) POSTS.
- WITHIN RADIUS BEAM GUARD RAILS ARE NOT BOLTED TO POSTS. BEAM GUARD RAILS RESTED ON TOP OF LAG SCREW.
- MINIMUM LENGTH OF BEAM GUARD ALONG SIDE ROAD OR DRIVEWAY TO INSTALL SHORT RADIUS TERMINAL. BEAM GUARD IS PAID FOR WITH BEAM GUARD ITEM.
- ODD LENGTH OF BEAM GUARD REQUIRED TO INSTALL SHORT RADIUS TERMINAL.
- MINIMUM AMOUNT OF BEAM GUARD TO BE INSTALLED PRIOR TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD, OR EAT. BEAM GUARD PAID FOR WITH BEAM GUARD ITEM. SEE PLANS FOR MORE DETAIL.
- BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. SEE PLAN.
- TOP OF BEAM GUARD BY THE RADIUS IS 27". HEIGHT OF BEAM GUARD IS 31" BY TRANSITION TO RIGID BARRIER, ADDITIONAL BEAM GUARD OR EAT.
- ADDITIONAL BEAM GUARD, EAT OR TRANSITION TO RIGID BARRIER. BEAM GUARD SHOWN. SEE PLAN FOR DETAILS.
- SHORT RADIUS TERMINAL (SEE OTHER DETAILS)
- HEIGHT VARIES. SEE NOTE (8) AND (17).
- BEAM GUARD RAIL SPLICE LOCATION. SPLICE LOCATION REQUIRE PART F1 AND F2. SEE SDD 14B42 FOR DETAILS.
- SEE TABLE FOR VALUES.
- MAXIMUM HEIGHT FOR CENTER OF HOLE IS 3/4" ABOVE FINISHED GROUND ±1".
- DRILL 15/64" DIA. PILOT HOLE. DO NOT HAMMER LAG SCREW INTO POST.
- SMALL SIGNS ON BREAKAWAY HARDWARE ARE ACCEPTABLE.
- TOP OF RAIL HEIGHT IS 27" WHEN USING A SHORT RADIUS TERMINAL.

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

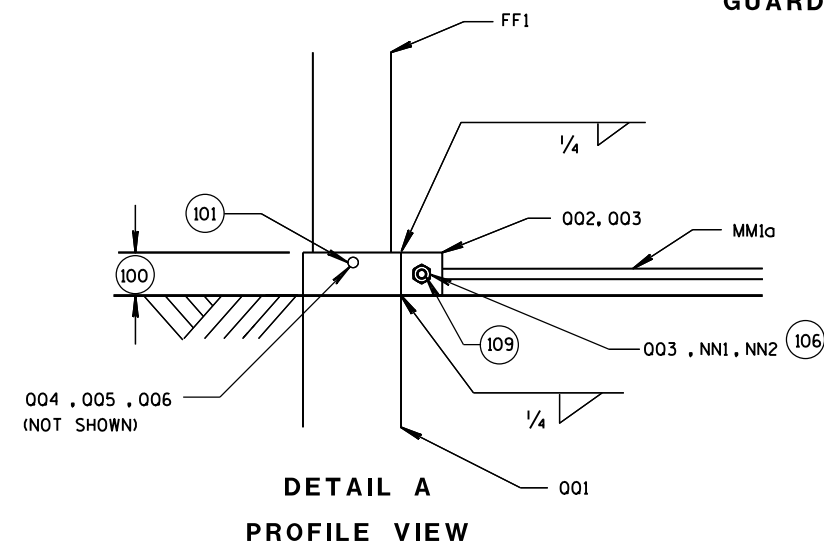
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



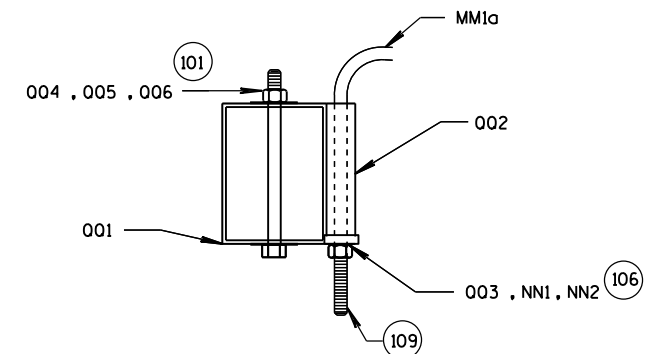
**SHORT RADIUS TERMINAL
PROFILE VIEW**



**SHORT RADIUS TERMINAL
TOP VIEW**



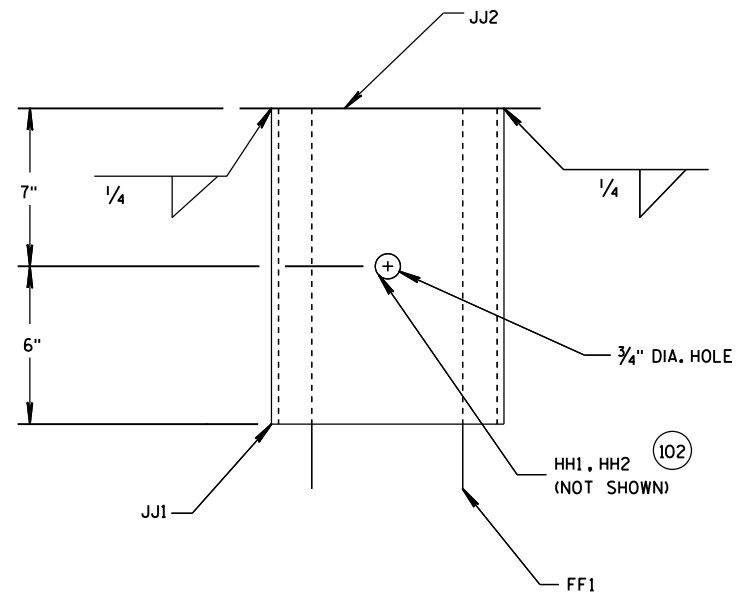
**DETAIL A
PROFILE VIEW**



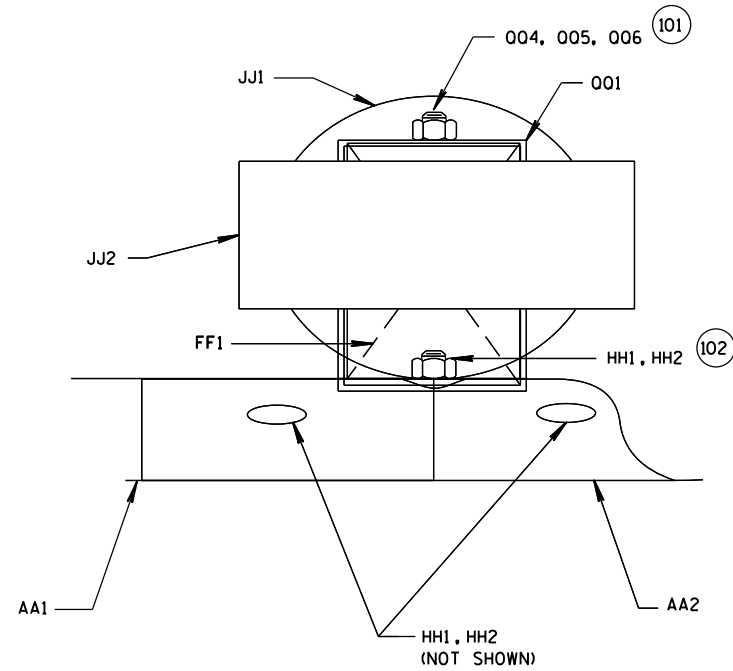
**DETAIL A
TOP VIEW
(WOOD BREAKAWAY AND BEAM
GUARD RAIL POSTS NOT SHOWN)**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL
MGS**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

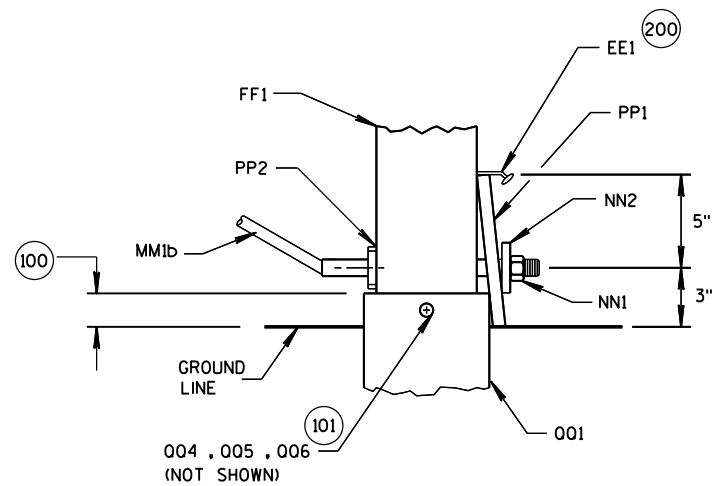


DETAIL B
PROFILE VIEW OF STEEL PIPE ASSEMBLY
(BEAM GUARD AND W-BEAM
END SECTION NOT SHOWN)

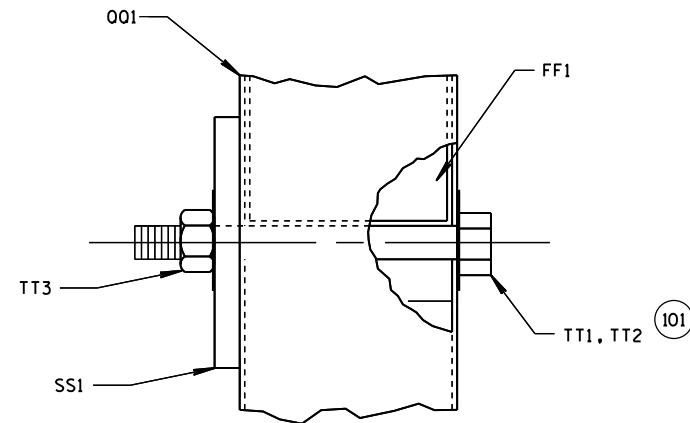


DETAIL B
PLAN VIEW OF STEEL PIPE ASSEMBLY

(200) 2 NAILS SPACED 4 INCHES CENTER TO CENTER.



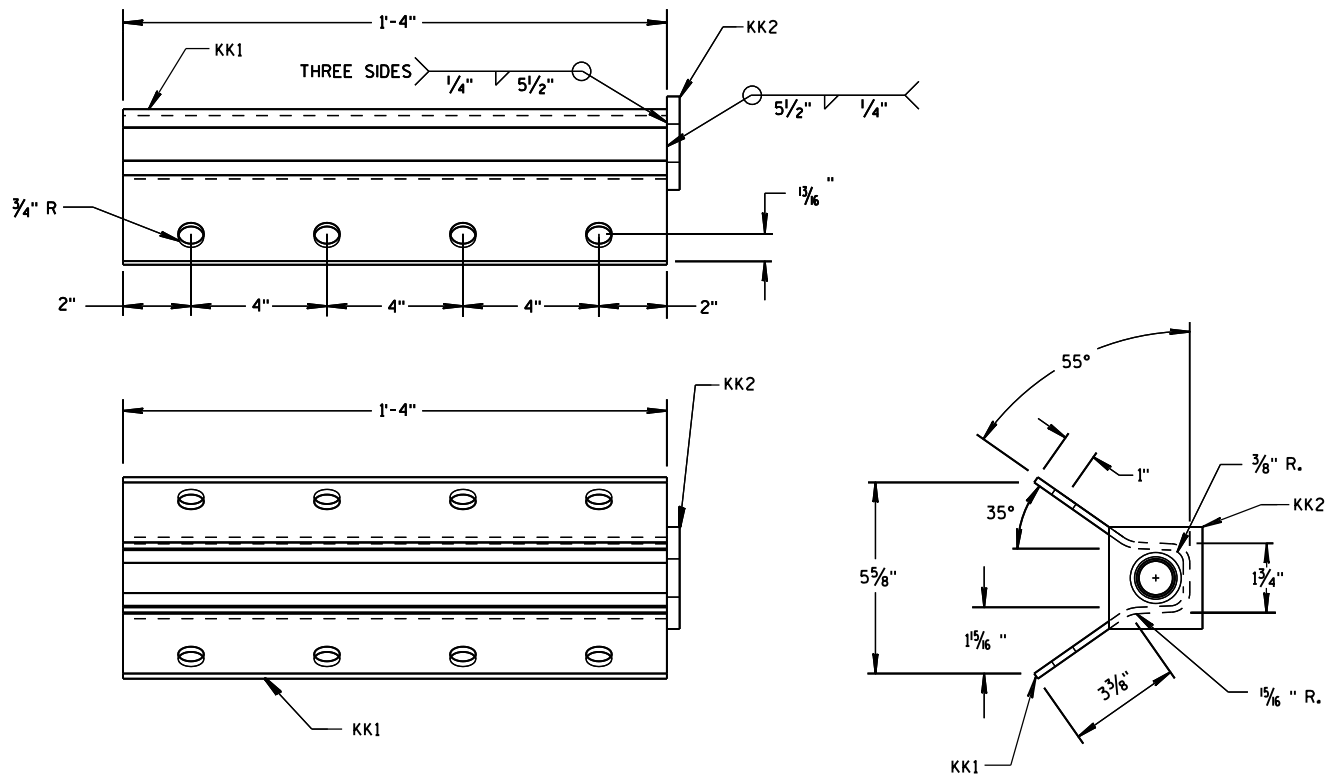
DETAIL C
PROFILE VIEW



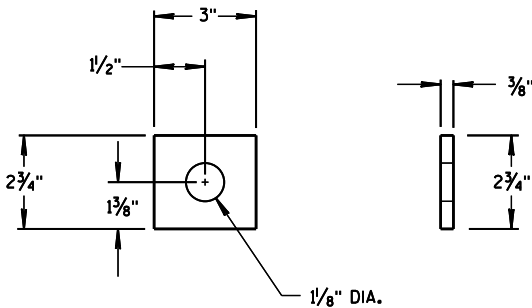
DETAIL D
PROFILE VIEW

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

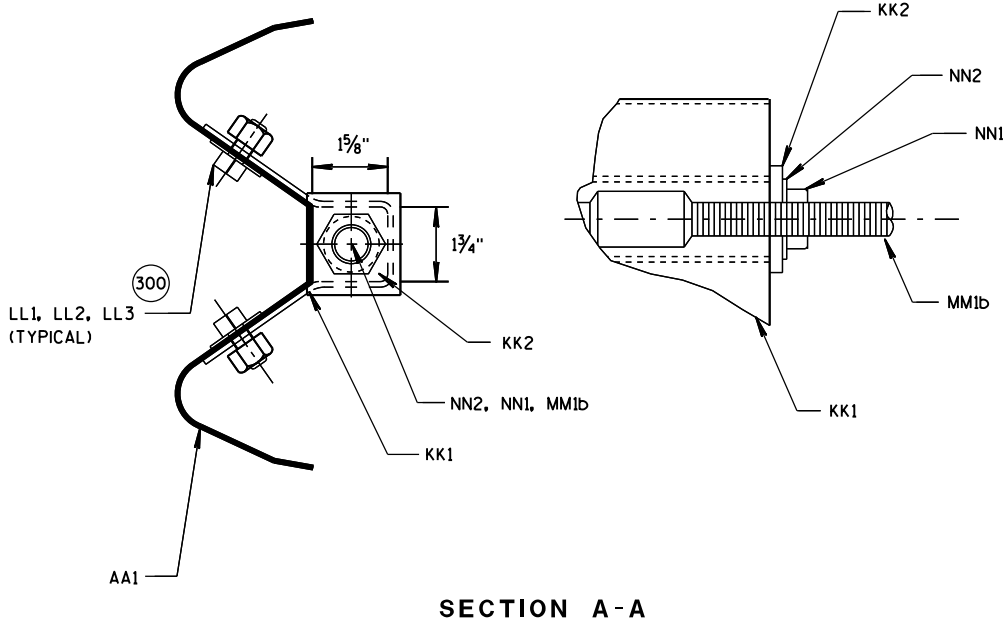


ANCHOR BRACKET (KK1, KK2)



ANCHOR BRACKET BEARING PLATE (KK2)

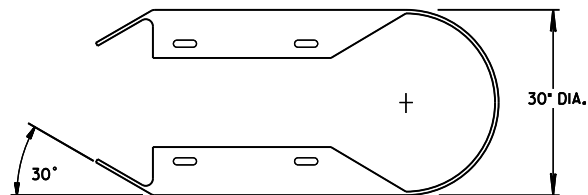
300 WASHERS REQUIRED BETWEEN BOLT HEAD AND BEAM GUARD RAIL AND BETWEEN NUT AND ANCHOR BRACKET. EIGHT LL1 AND LL3 REQUIRED. SIXTEEN LL2 REQUIRED.



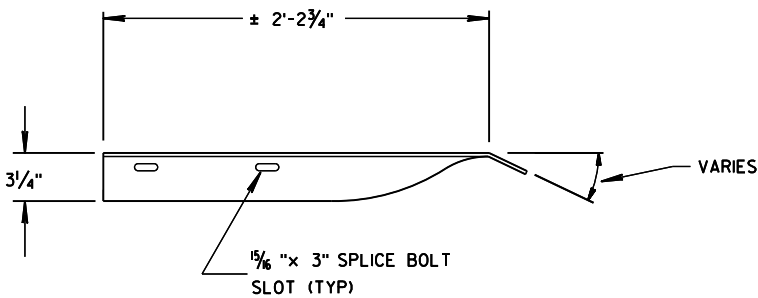
SECTION A-A

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

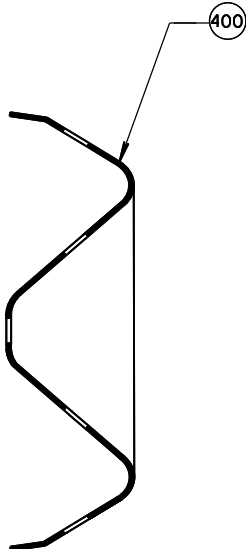


TOP VIEW

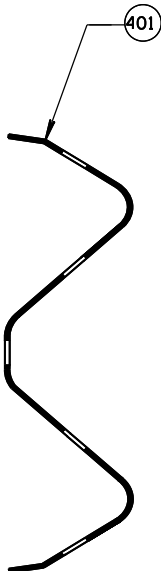


TOP VIEW

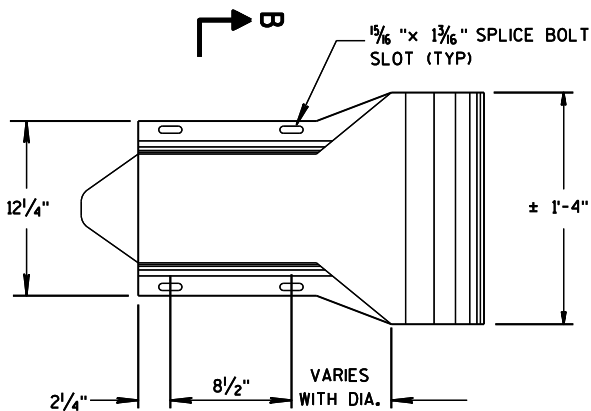
400 CROSS SECTION OF PART IS TO FIT OVER AA1.
401 CROSS SECTION OF PART IS TO FIT OVER OR UNDER AA1.



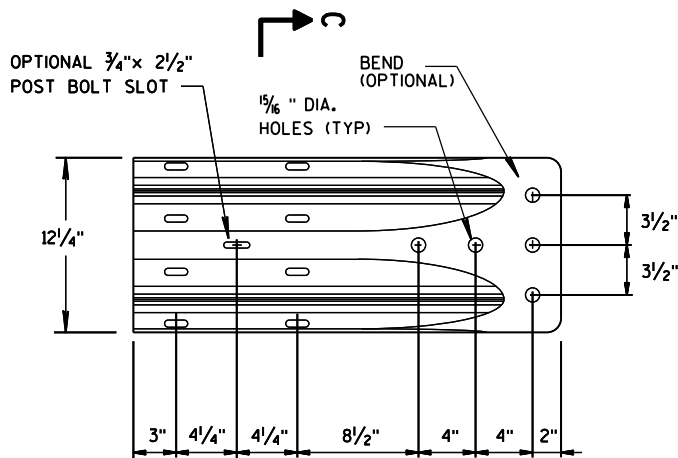
SECTION B-B



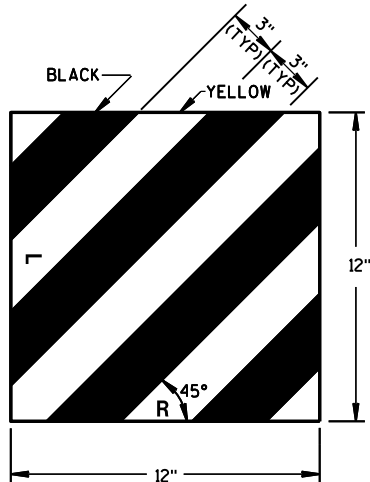
SECTION C-C



W-BEAM
END SECTION BUFFER (AA2)
PROFILE VIEW



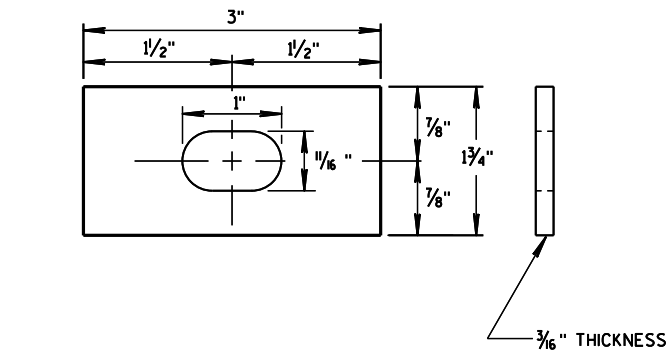
W-BEAM
TERMINAL CONNECTOR (BB1)
PROFILE VIEW



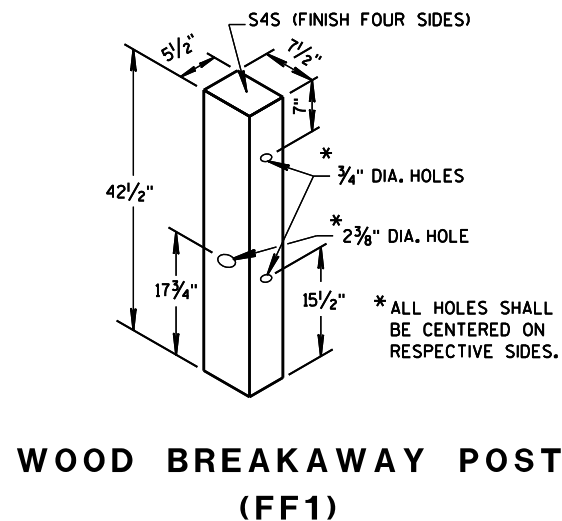
REFLECTIVE SHEETING
(UU1, UU2)

SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)

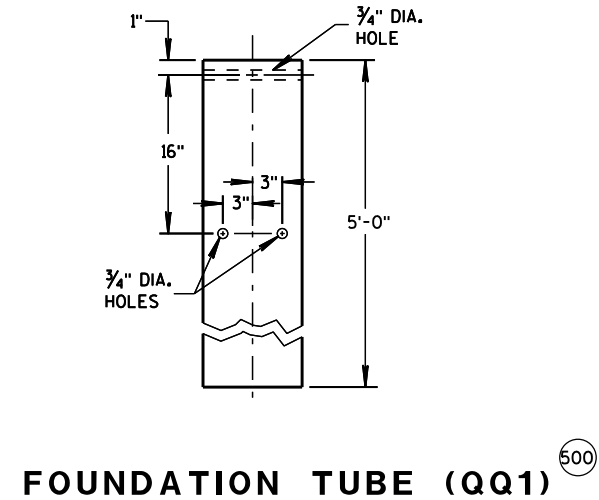
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**RECTANGULAR
PLATE WASHER (CC1)**

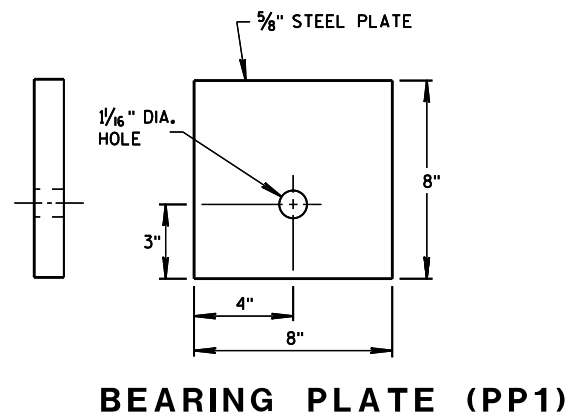


**WOOD BREAKAWAY POST
(FF1)**

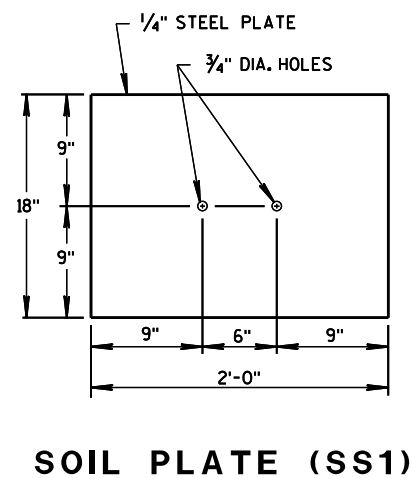


FOUNDATION TUBE (QQ1)

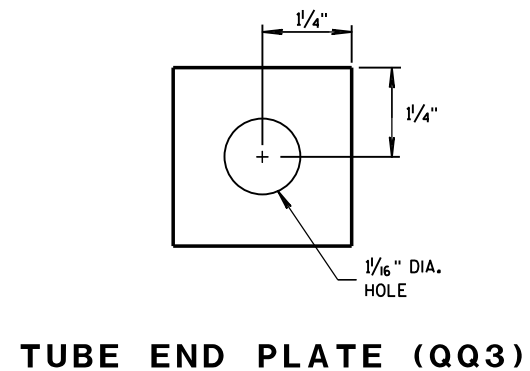
- (500) SEE DETAIL "D" FOR LOCATION AND ATTACHING SSL.
- (501) FOR MM1a THREADED STUD ONLY REQUIRED ON ONE END. SWAGED FITTING REQUIRED.
- (502) LOCATE HOLES ON THE CENTERLINE OF THE SIDE OF THE POST.
- (503) MM1a MAY HAVE ONE THREADED STUD 4 INCHES LONG. SEE NOTE (109).



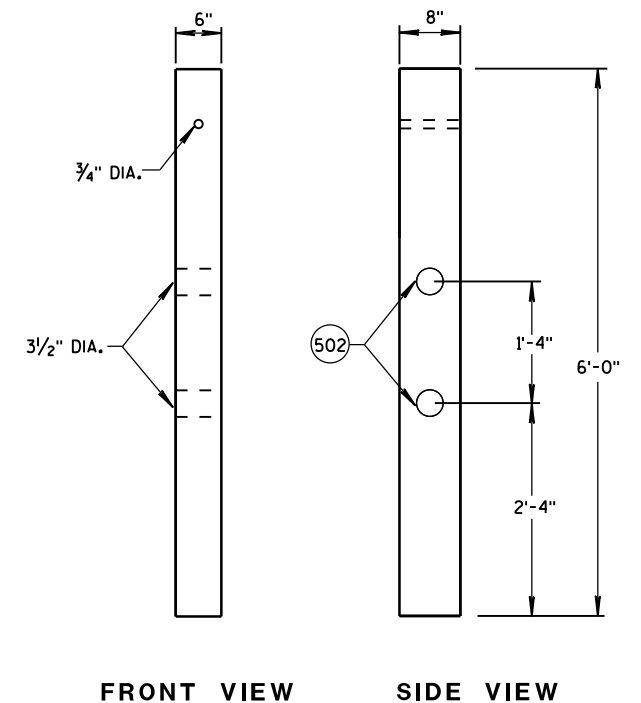
BEARING PLATE (PP1)



SOIL PLATE (SS1)

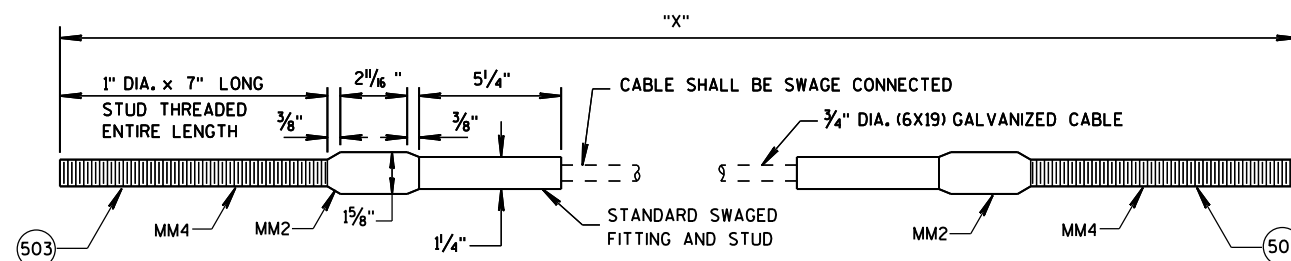


TUBE END PLATE (QQ3)



FRONT VIEW SIDE VIEW

**CONTROLLED RELEASE
TERMINAL POST (CRT) (D2)**



CABLE ASSEMBLY (MM1a , MM1b)

"X" LENGTH	
MM1a	9'-0"
MM1b	6'-8"

**SHORT RADIUS BEAM GUARD
(MGS) SHORT RADIUS
TERMINAL (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	BEAM GUARD RAIL	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
A2	BEAM GUARD RAIL - SHOP BENT	INDICATE ON BACK OF RAIL RADIUS THAT RAIL WAS BENT TO. SHOP BEND RADIUS IS TO THE NEAREST FOOT. FOLLOW AASHTO M180 ON HOW TO MARK RADIUS INFORMATION.	
		AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
B1	BLOCK - WOOD	WISDOT SPEC. 614	SEE SDD 14B42
C1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEAD)	
D1	POST-STRONG POST-WOOD	WISDOT SPEC. 614	SEE SDD 14B42
D2	POST-CRT-WOOD	WISDOT SPEC. 614	
E1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	5/8" DIA. SEE SDD 14B42 FOR BOLT GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
E2	POST BOLT-WASHER	ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	5/8" DIA.
		GALV. AASHTO M111/ASTM A 123 OR GALV. HOT DIP, TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329	
E3	POST BOLT - NUT		5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
F1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY AND OTHER INFORMATION
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
F2	SPLICE BOLT - NUT	ASTM A563 GRADE A	5/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C/ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
G1	LAG SCREW	UNC	
		ASTM A308 GRADE A ASTM A153 CLASS D	
H1	DELINEATOR - BEAM GUARD		3/8" DIA. 3" LONG
H2	DELINEATION - SHEETING		SEE SDD 14B42 FOR MORE INFORMATION
J1	FOUNDATION BACKFILL	YELLOW OR WHITE	
		WISDOT SPEC 637 TYPE SH	
AA1	BEAM GUARD RAIL - PUNCHED	APPROVED PRODUCT LIST	
		STANDARD SPEC. 614	
AA2	BEAM GUARD RAIL - END SECTION BUFFER	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
BB1	BEAM GUARD RAIL - TERMINAL CONNECTOR MODIFIED	AASHTO M180, CLASS A, TYPE 2	
		APPROVED PRODUCER	
CC1	SHORT RADIUS - SQUARE WASHER	AASHTO M180	
		GALV. AASHTO M111 / ASTM A123	
EE1	NAIL	ASTM A153 HOT DIP CLASS D	
		ASTM F1667 TYPE 1 STYLE 12 (16 DOUBLE HEADED)	
FF1	POST - BCT - WOOD	S4S FINISH ON 4 SIDES	
		WISDOT SPEC. 614	
GG1	POST BOLT	ASTM A307 GRADE A OR SAE J429 GRADE 2	3/8" DIA. SEE SDD 14B42 FOR GEOMETRY
		AASHTO M180	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
GG2	POST BOLT - WASHER	UNC	
		ASTM F436 TYPE 1 (HARDEN TYPICALLY USED WITH STEEL) OR ASTM F844 (UNHARDENED TYPICALLY WITH WOOD)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	3/8" DIA.

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
GG3	POST BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		ASTM A563 GRADE A HEAVY HEX HEAD	
HH1	SPLICE BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	3/8" DIA. SEE 14B42 FOR GEOMETRY
		ASTM A307 GRADE A OR SAE J429 GRADE 2	
		UNC	
		AASHTO M180 HEAD GEOMETRY	
HH2	SPLICE BOLT - NUT	ASTM A563 GRADE A	3/8" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	SEE 14B42 FOR GEOMETRY
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		UNC	
JJ1	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	10" O.D.
JJ2	TOP PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 3/8" X 4" X 1'-0"
		GALV. AASHTO M111 / ASTM A123	
KK1	ANCHOR BRACKET	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
KK2	ANCHOR BRACKET - BEARING PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
LL1	ANCHOR BRACKET - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
LL2	ANCHOR BRACKET - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
LL3	ANCHOR BRACKET - NUT	ASTM A563 GRADE A	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
		UNC	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
MM1a	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM1b	ANCHOR CABLE	AASHTO M30 / ASTM A741 INDEPENDENT WIRE CORE (IWRC) OR WIRE STRAND CORE (WCS), IMPROVED PLOW STEEL (IPS), 6X19, TYPE II OR IIC CLASS C ZINC COATED	
MM2	ANCHOR CABLE - SWAGE FITTING	ASTM A576 GRADE 1035	
		SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. WITH A BREAKING STRENGTH 40,000 LBS.	
		GALV. AASHTO M111 / ASTM A123	
		ASME B30.26 FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING INTO CONNECTION: NAME OF MANUFACTURER OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE.	
MM3	WIRE ROPE CABLE CLAMPS	FF-C-450D TYPE 1 CLASS 1	3/4"
		ASTM A153 HOT DIP CLASS D	
MM4	ANCHOR CABLE - SWAGE FITTING - STUD	ASTM F3125 GRADE A325 TYPE 1 OR SAE GRADE 5 OR ASTM A449 TYPE 1 HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		UNC	
NN1	ANCHOR CABLE - NUT	ASTM A563 GRADE A	1" DIA.
		AASHTO M180 DOUBLE RECESSED HEAVY HEX HEAD	
		GALV. HOT DIP TO AASHTO M232 CLASS C/ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1/ASTM B695 CLASS 50, TYPE 1	
		OVER TAPPED NUTS OVER-SIZE AS SPECIFIED IN AASHTO 291 / ASTM A563	
NN2	ANCHOR CABLE - NUT - WASHER	UNC	1" DIA.
		ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
PP1	BEARING PLATE AT POST	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
PP2	PIPE - STEEL	ASTM A53 GALVANIZED GRADE B SCHEDULE 40	2" DIA. x 6" LONG
QQ1	FOUNDATION TUBE	ASTM A500 GRADE B	8" X 6" X 3/16"
		GALV. AASHTO M111 / ASTM A123	
QQ2	SHORT RADIUS - FOUNDATION TUBE - ANCHOR CABLE - TUBE	ASTM A500 GRADE B	DIMENSIONS 2 1/2" X 2 1/4" X 1/4" X 8"
		GALV. AASHTO M111 / ASTM A123	

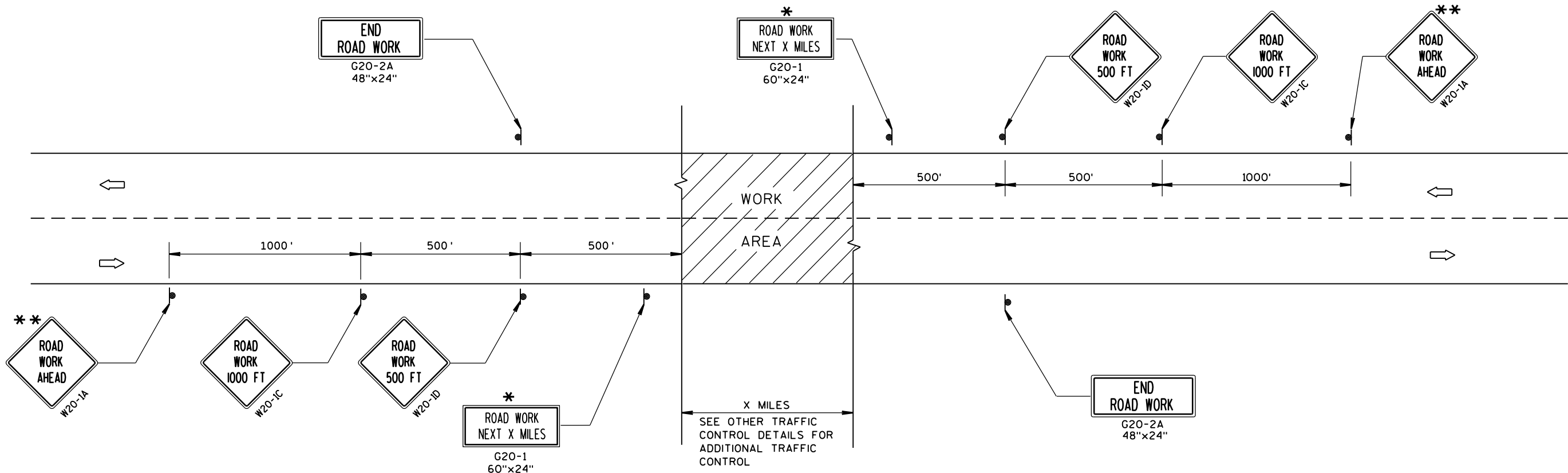
SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - SHORT RADIUS BEAM GUARD (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
003	SHORT RADIUS - SOIL TUBE - ANCHOR CABLE - TUBE - END PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	DIMENSIONS 2 1/2" X 2 1/2" X 1/4"
		GALV. AASHTO M111 / ASTM A123	
004	GROUND STRUT AND YOKE - BOLT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
		ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	
		UNC	
005	GROUND PLATE AND YOKE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
006	GROUND STRUT AND YOKE - NUT	HEAVY HEX	5/8" DIA.
		UNC	
		ASTM A563 GRADE A	
		OVER TAPPED NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563	
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
SS1	SOIL PLATE	ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI OR ASTM A709 MAX STRENGTH 50 KSI OR ASTM A992 MAX STRENGTH 50 KSI	
		GALV. AASHTO M111 / ASTM A123	
TT1	SOIL PLATE - BOLT	ASTM A307 GRADE B HEAVY HEX HEAD OR SAE J429 GRADE 2 HEAVY HEX HEAD	5/8" DIA.
		GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	
		UNC	
TT2	SOIL PLATE - WASHER	ASTM F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
		GALV. AASHTO M111 / ASTM A123 OR 5 GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329	
TT3	SOIL PLATE - NUT	GALV. HOT DIP TO AASHTO M232 CLASS C / ASTM A153 CLASS C / ASTM F2329 OR GALV. MECHANICALLY TO AASHTO M298 CLASS 50, TYPE 1 / ASTM B695 CLASS 50, TYPE 1	5/8" DIA.
UU1	OBJECT MARKER - SHEETING	MUTCD / WISDOT OBJECT MARKER TYPE 3	PATTERN AND COLOR FOR SHEETING SHEETING TYPE FOR MARKER
		WISDOT SPEC 637 TYPE F	
		APPROVED PRODUCT LIST	
UU2	OBJECT MARKER - ALUMINUM PLATE	WISDOT SPEC 637 ALUMINUM PLATE	MATERIAL AND THICKNESS OF MATERIALS
UU3	OBJECT MARKER - SCREWS	STAINLESS SELF-TAPPING SCREWS	
VV1	FOUNDATION BACKFILL	WISDOT SPEC 614	

SHORT RADIUS BEAM GUARD (MGS) SHORT RADIUS TERMINAL (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

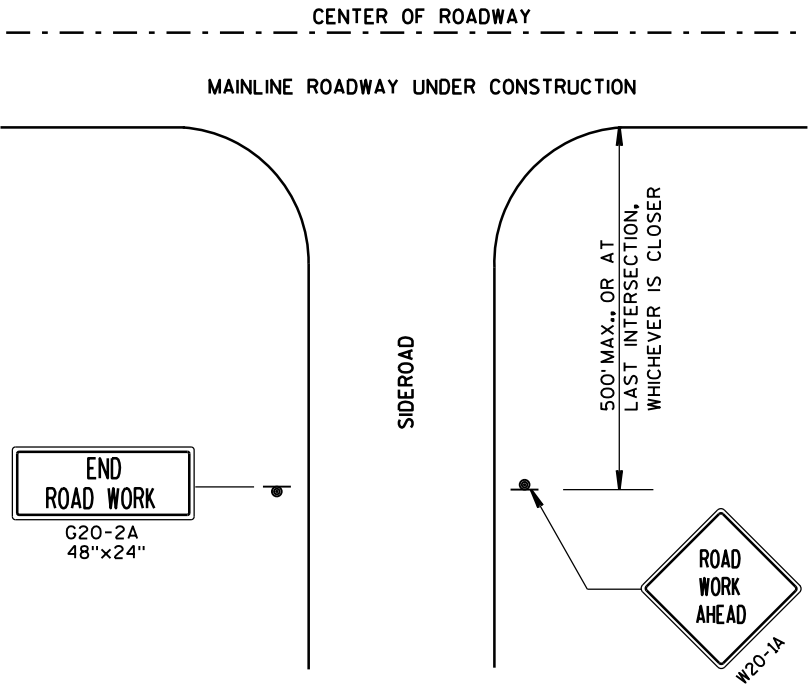
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



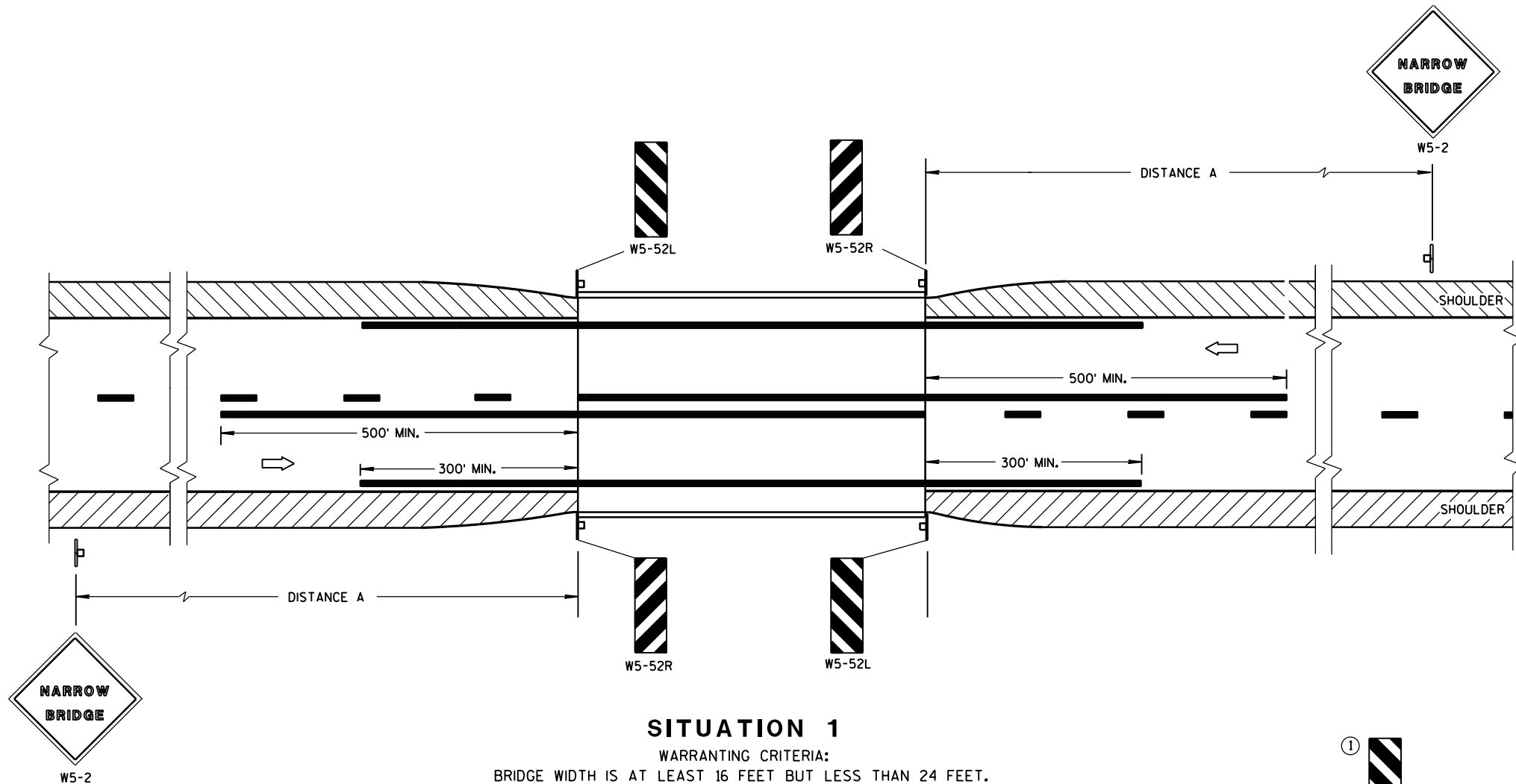
LEGEND

- SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A "
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

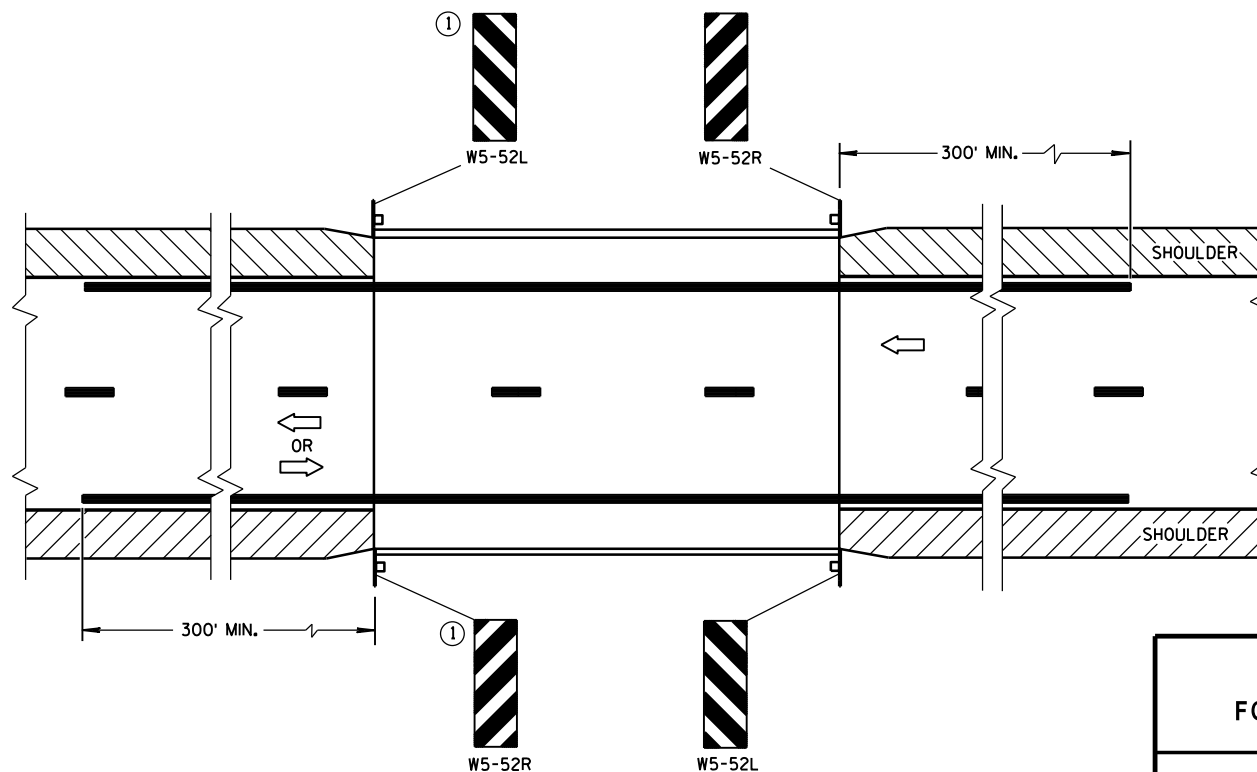
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

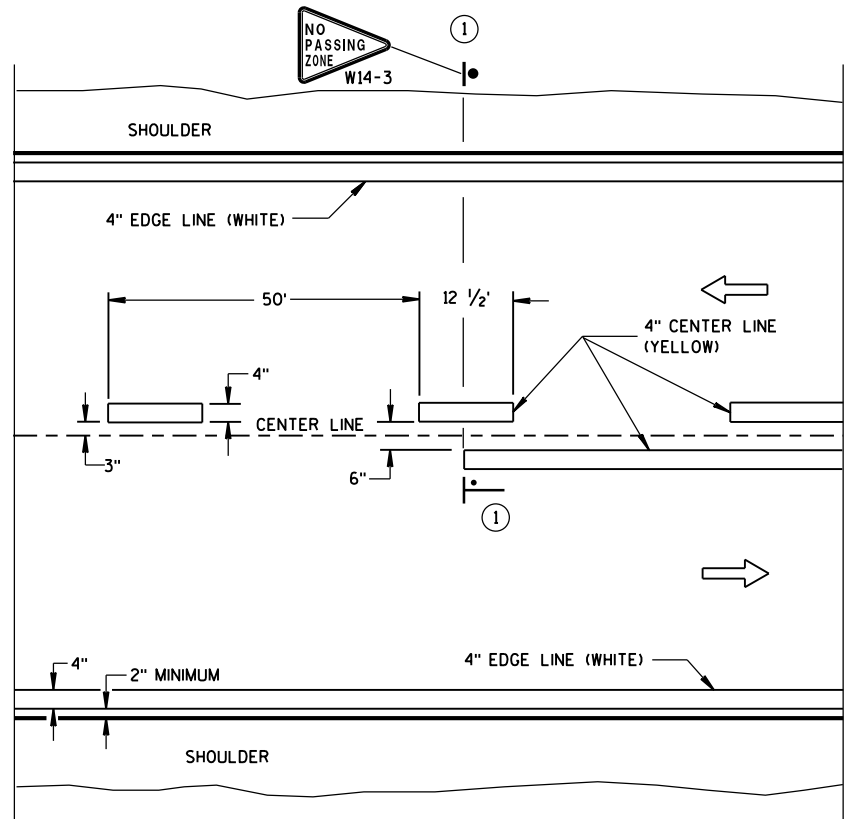
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

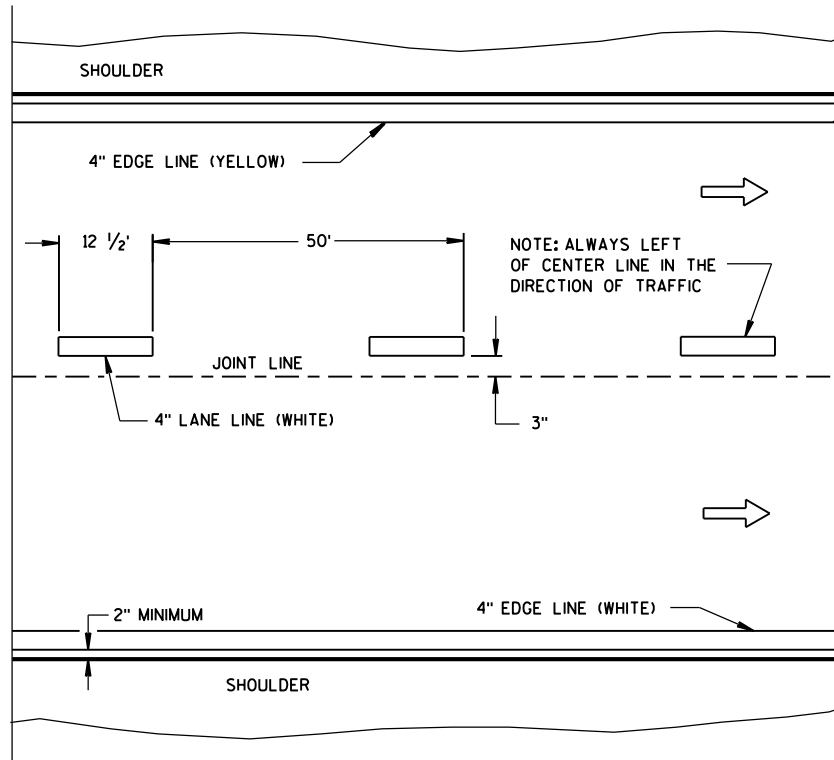
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

FHWA

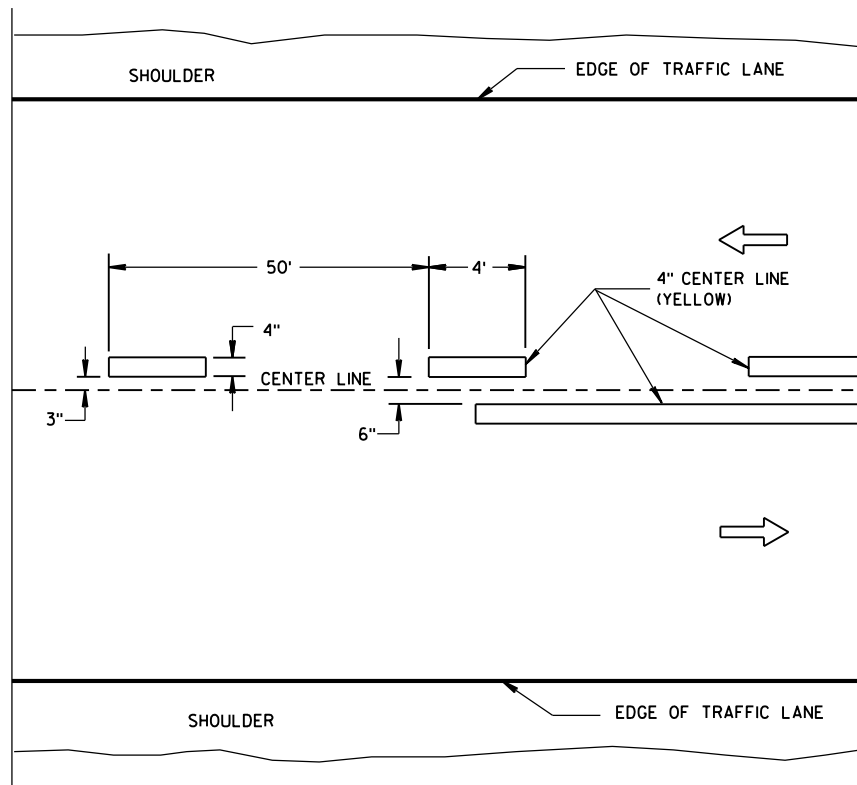


TWO WAY TRAFFIC

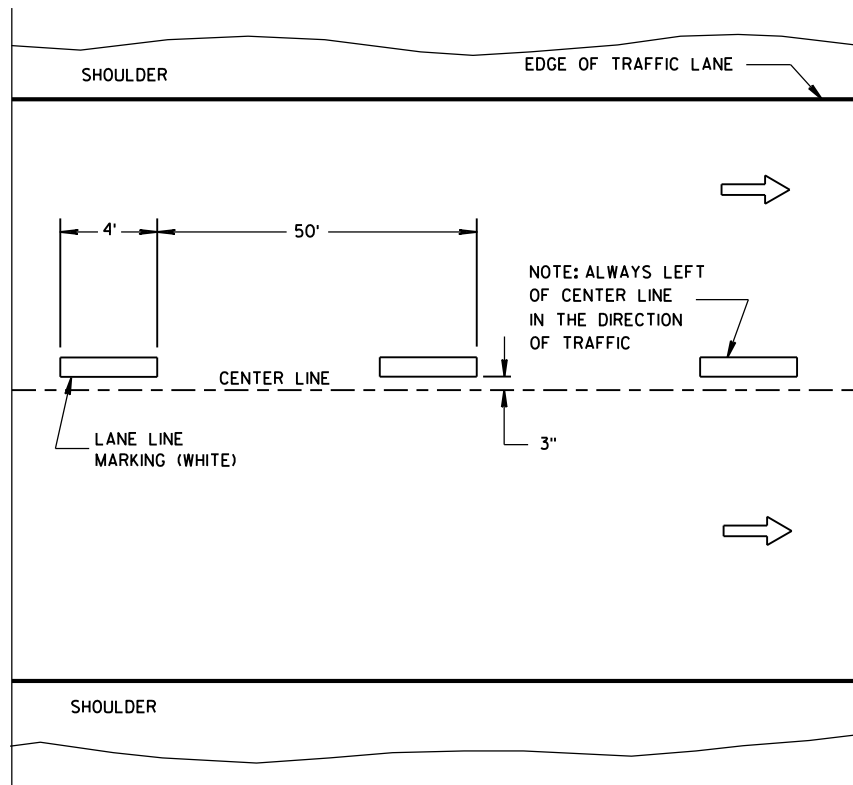


ONE WAY TRAFFIC

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

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

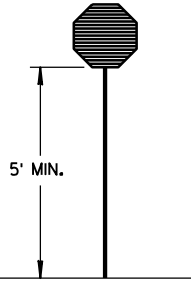
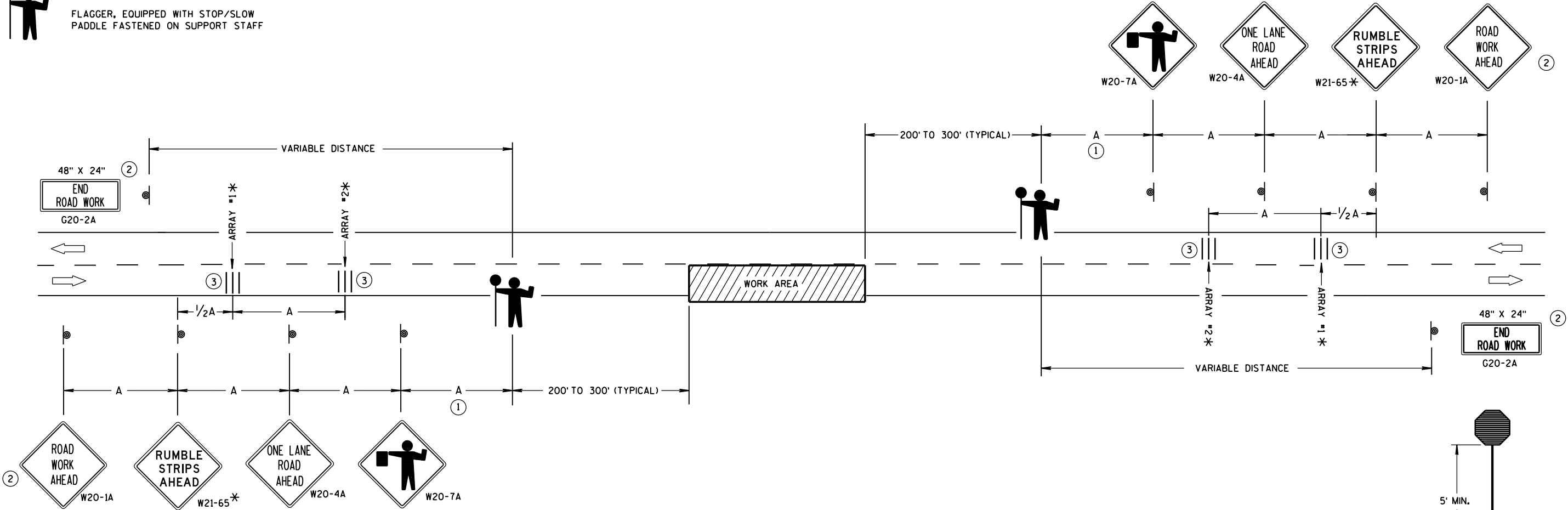
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING A.



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE LOCATION OF ALL FLAGGERS) SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

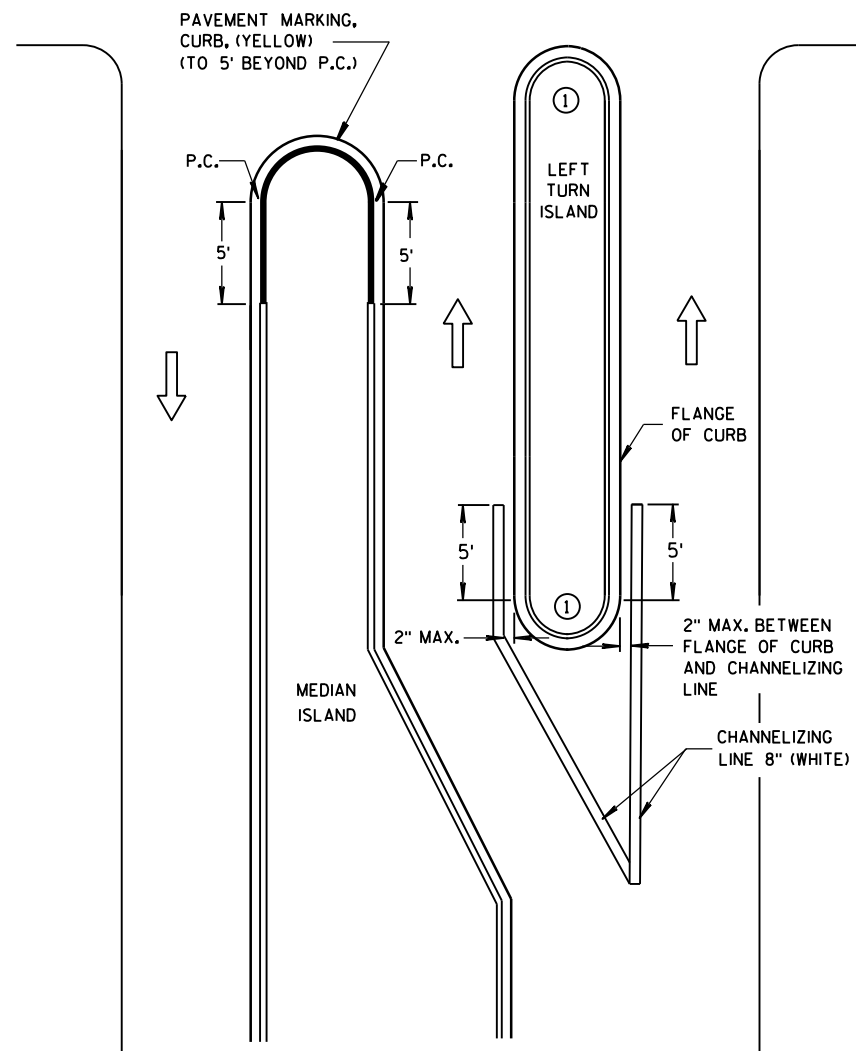
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA



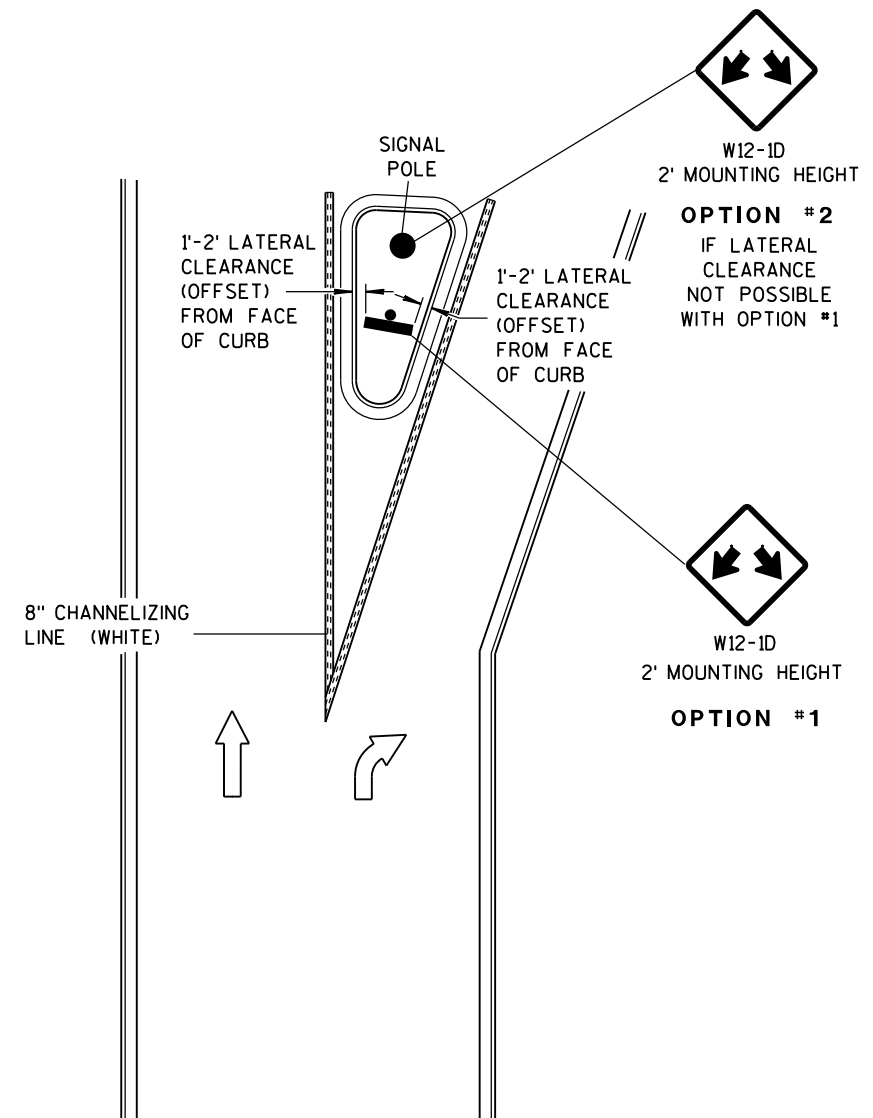
LEFT TURN & MEDIAN ISLAND

GENERAL NOTE

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

DIRECTION OF TRAVEL



RIGHT TURN ISLAND

**DOUBLE ARROW
WARNING SIGN PLACEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

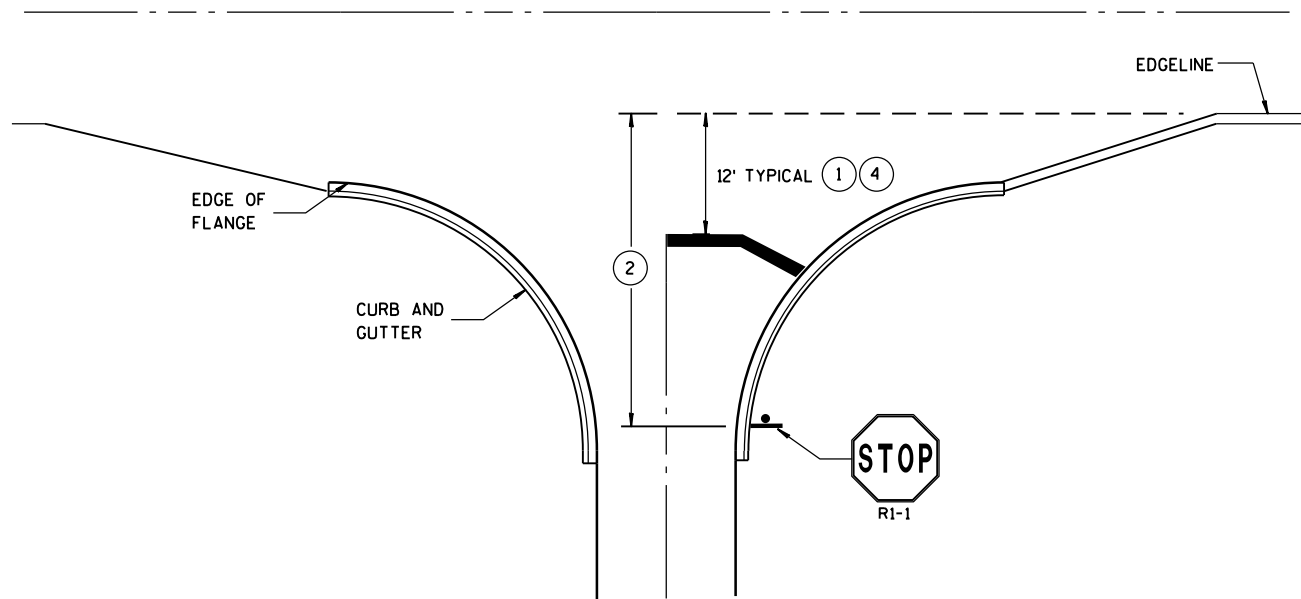
APPROVED

June 2017

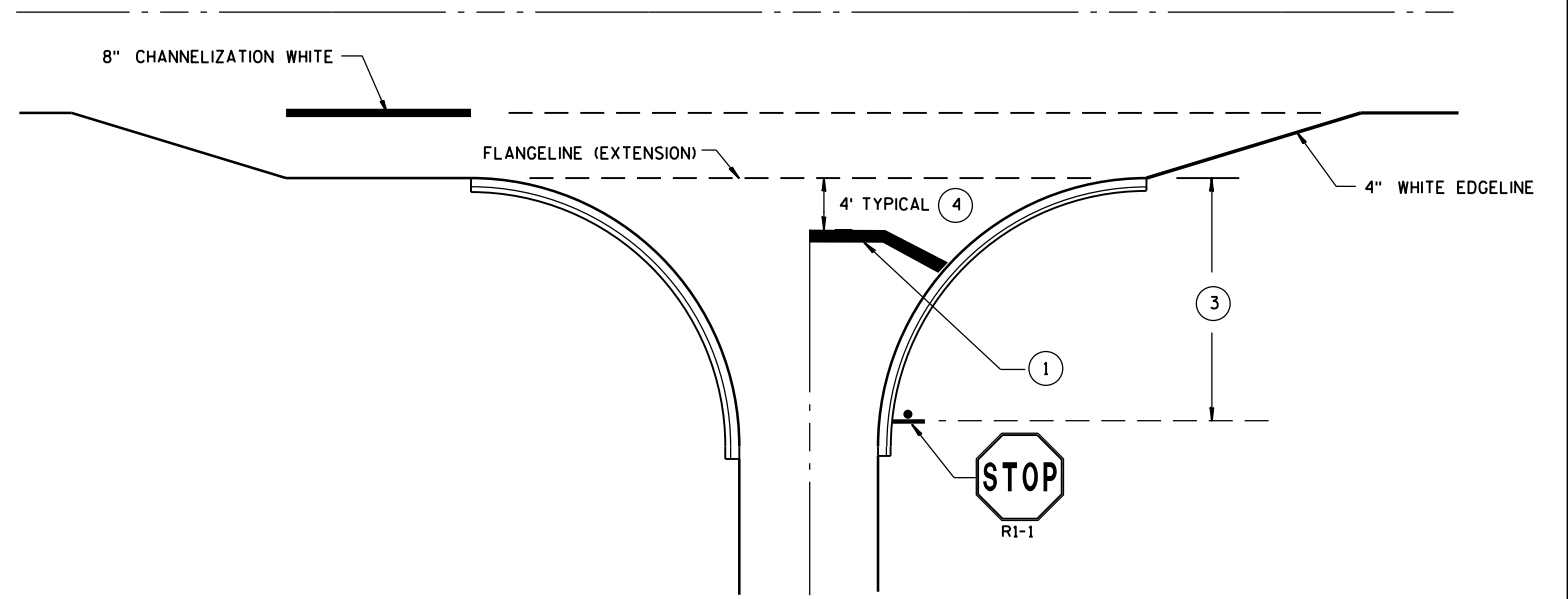
DATE

FHWA

/S/ Matthew Rauch
STATE SIGNING AND MARKING ENGINEER



TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER

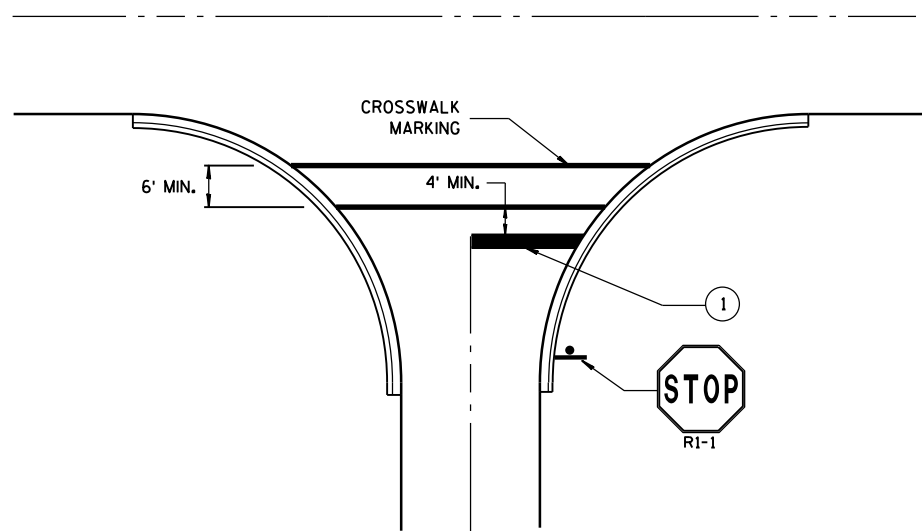


TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE

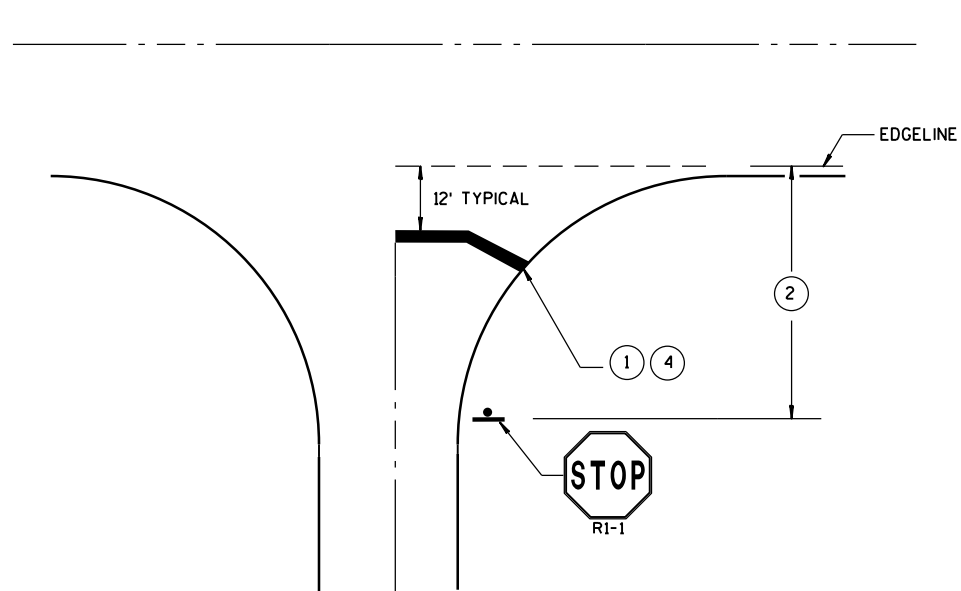
GENERAL NOTES

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- 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 EDGE LINE 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).



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING

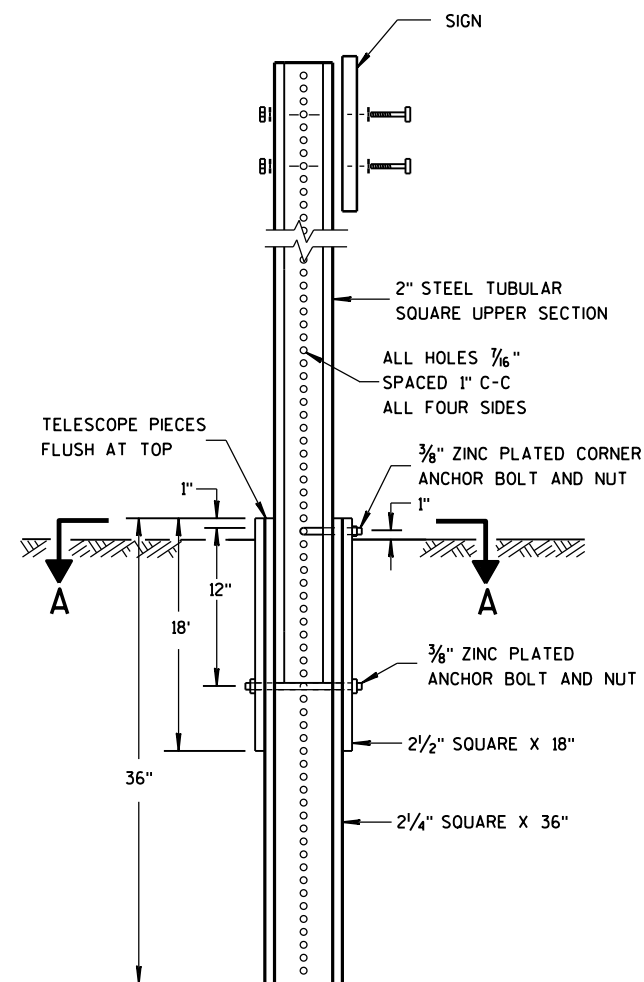


TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept., 2017 /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



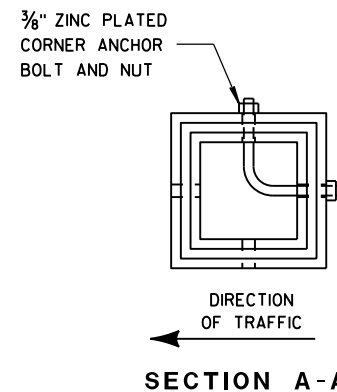
DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

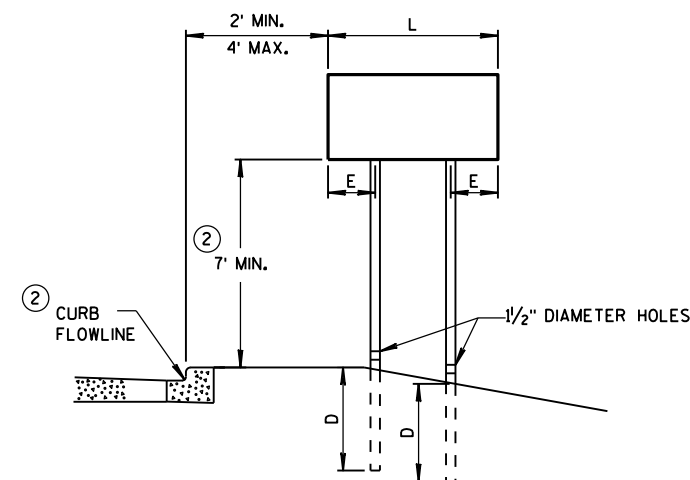
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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.



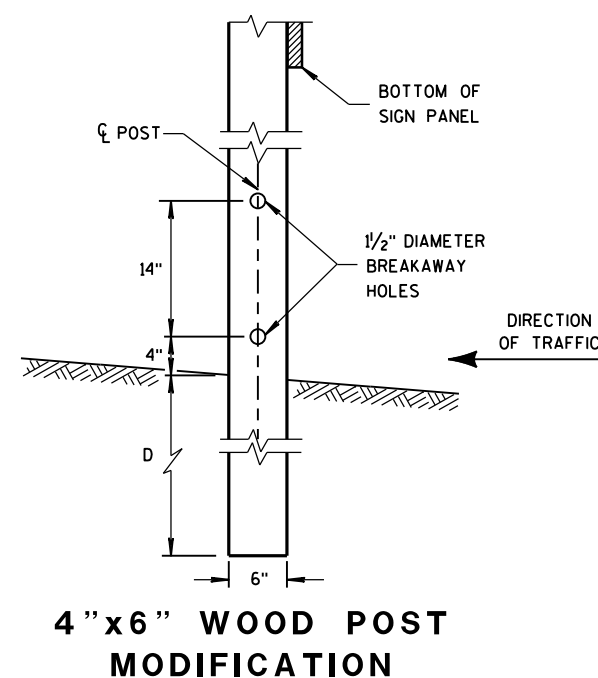
SECTION A-A



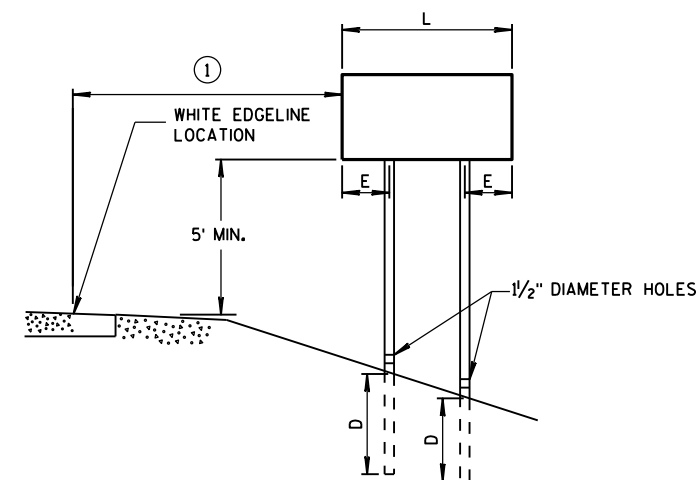
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH	
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4"x6" WOOD POST
MODIFICATION



RURAL AREA

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

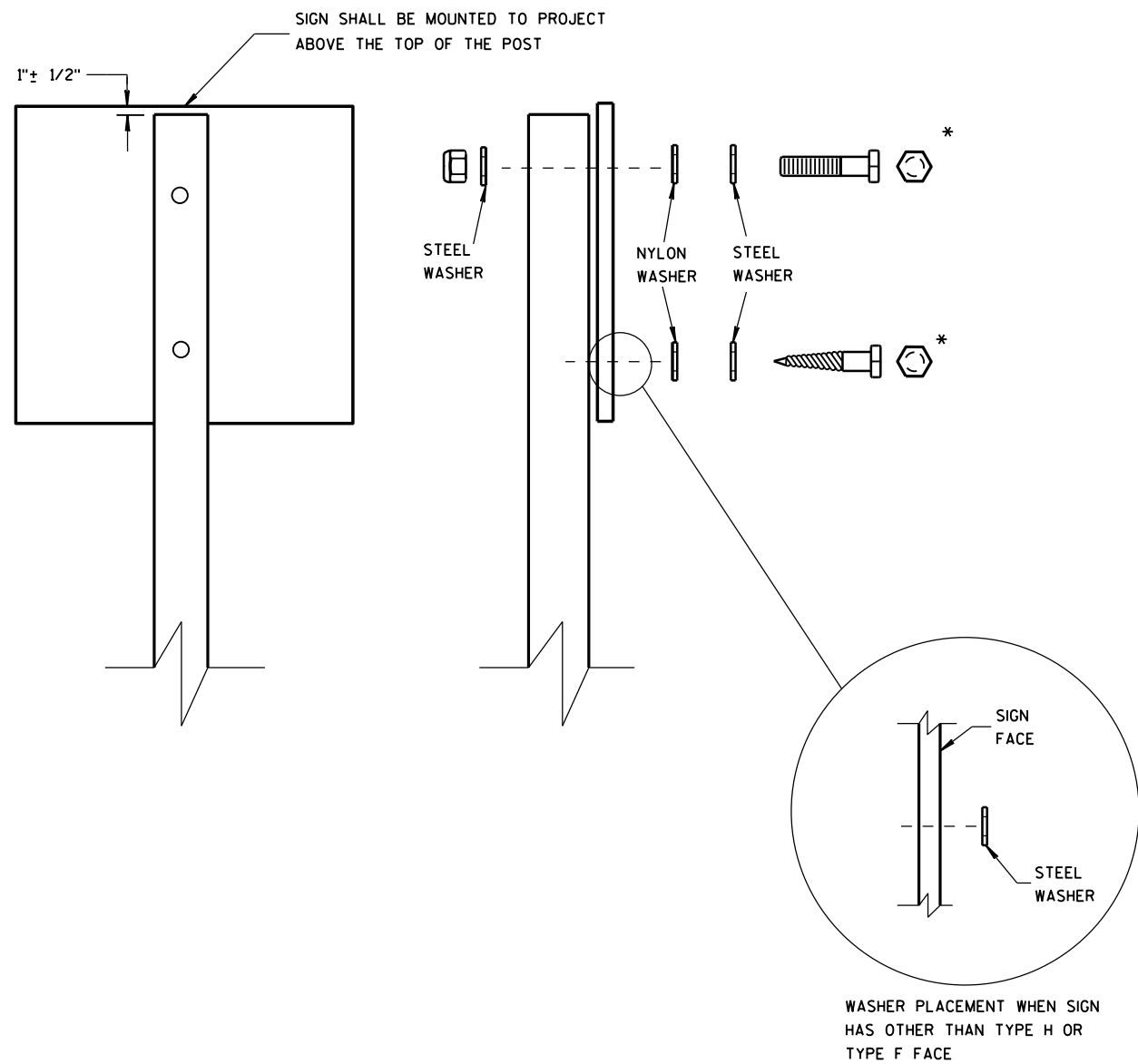
SEE NOTE ③

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.

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 - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

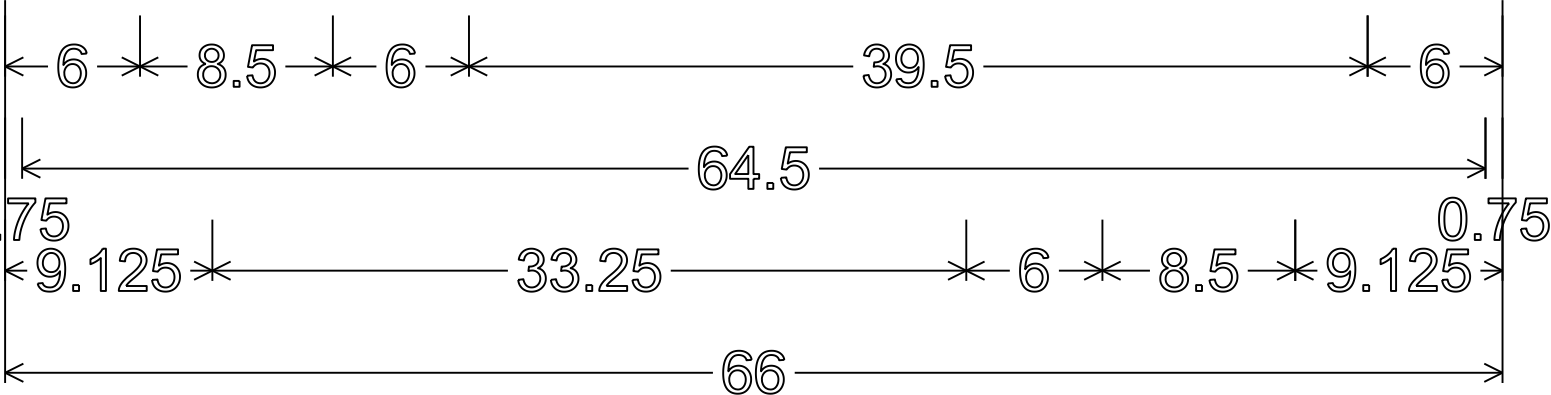
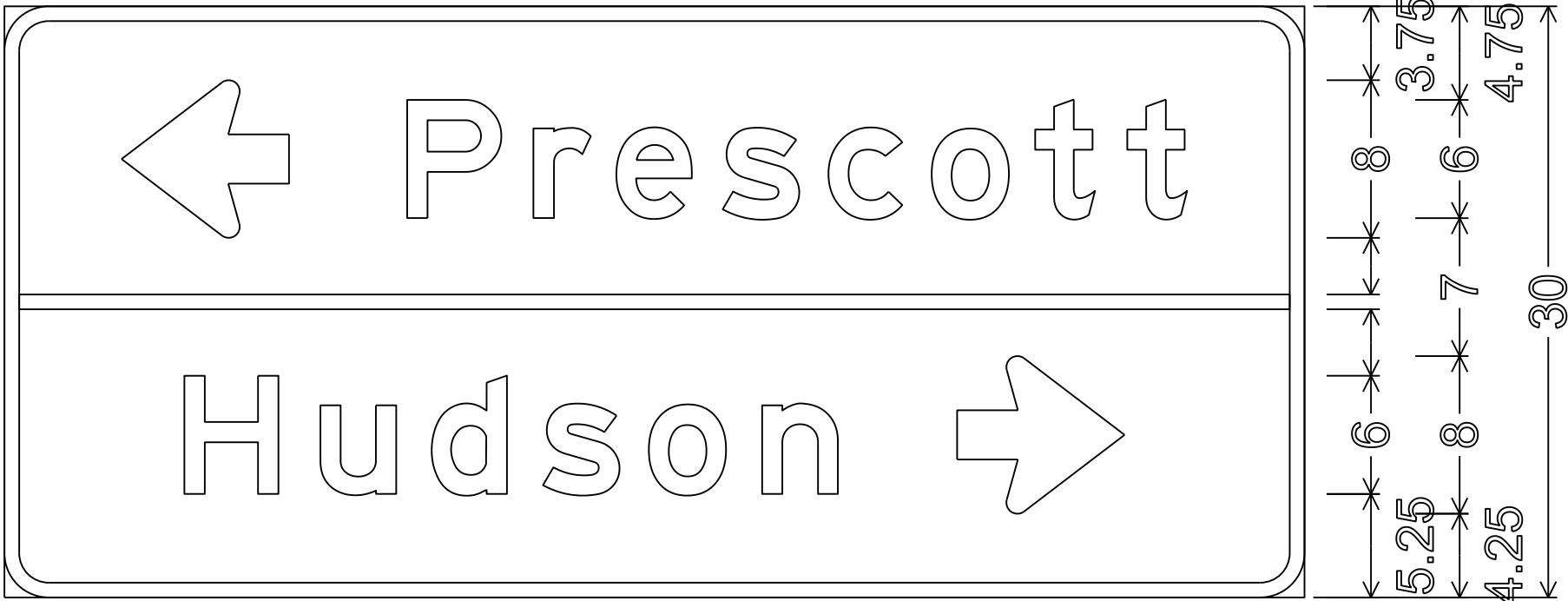
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* 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 Heldtke WORK ZONE ENGINEER
FHWA	

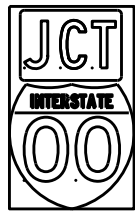
NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E

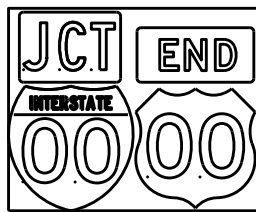


D1-2; 2.250" Radius, 0.750" Border

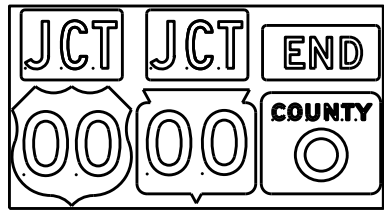
TYPICAL ASSEMBLIES



J1-1



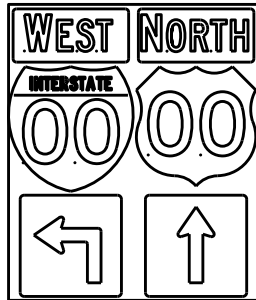
J1-2



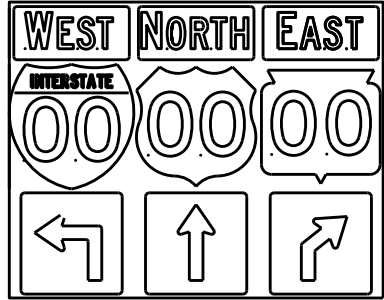
J1-3



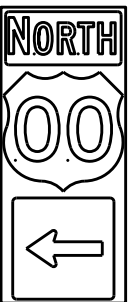
J2-1



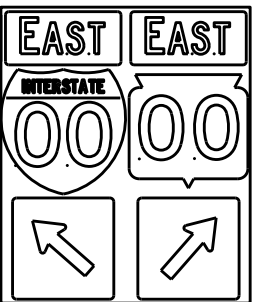
J2-2



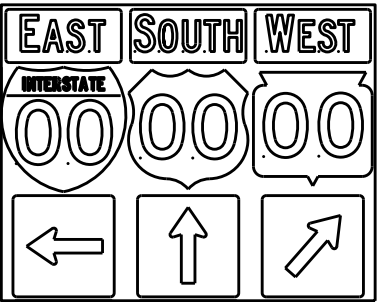
J2-3



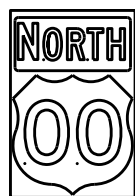
J3-1



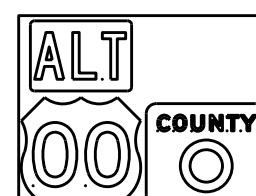
J3-2



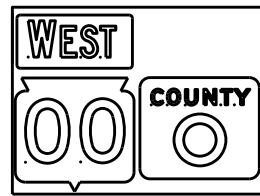
J3-3



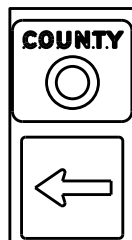
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

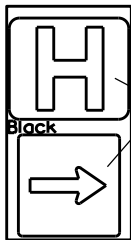


J22-1



JV

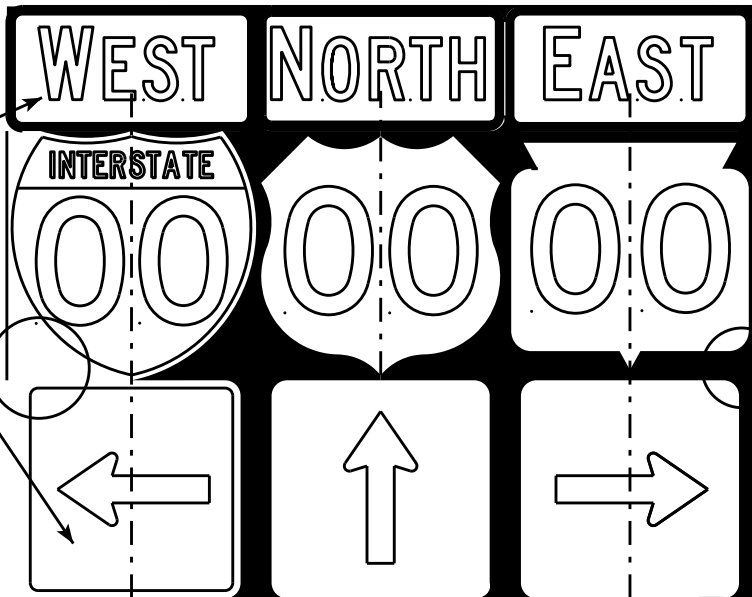
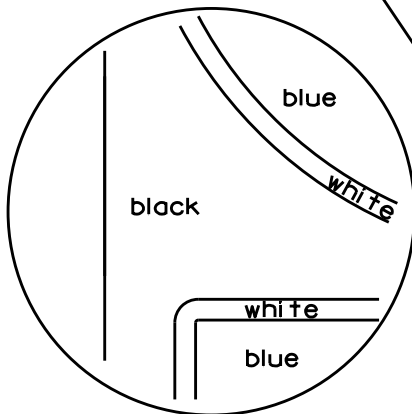
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. 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.
8. 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.
9. 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.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

PROJECT NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN

PLOT DATE : 06-FEB-2014 14:10

PLOT BY : mscs.ja

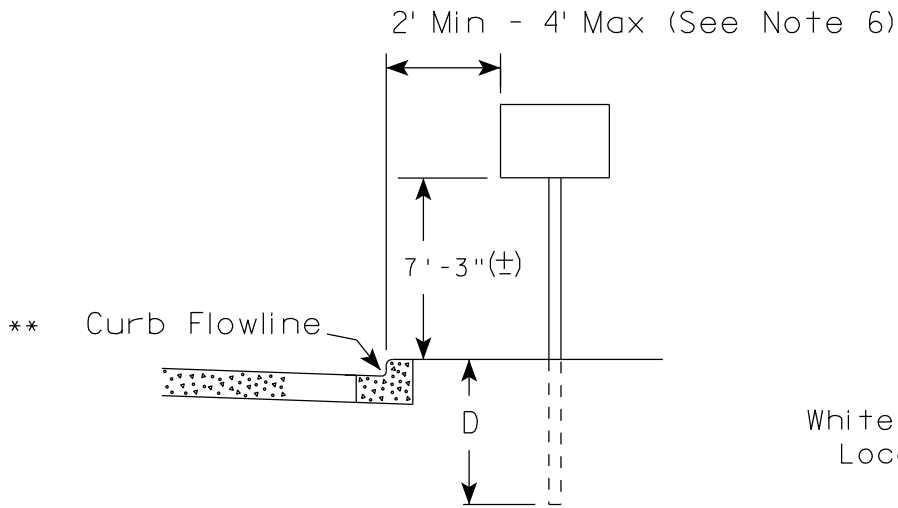
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SHEET NO:

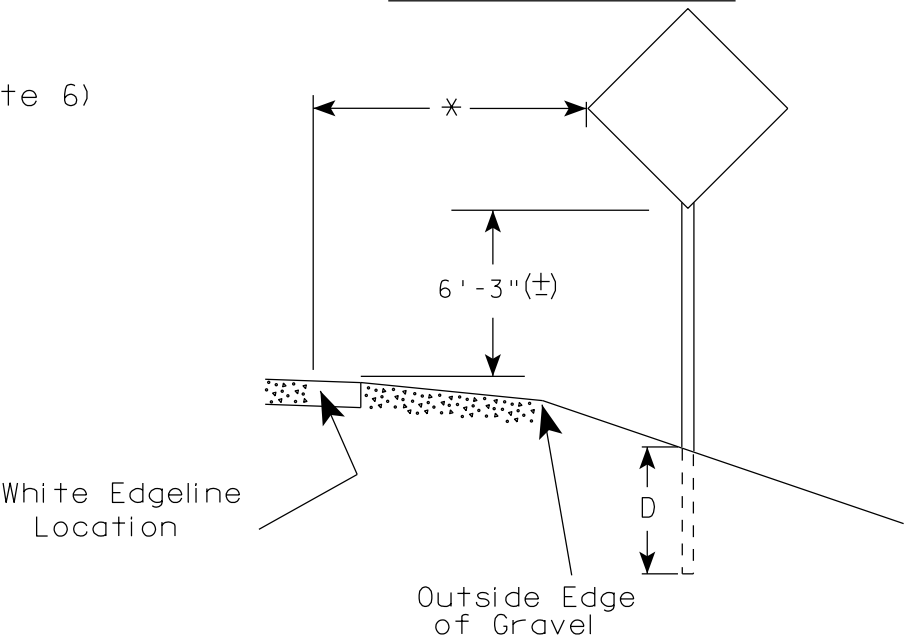
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WISDOT/CADDs SHEET 42

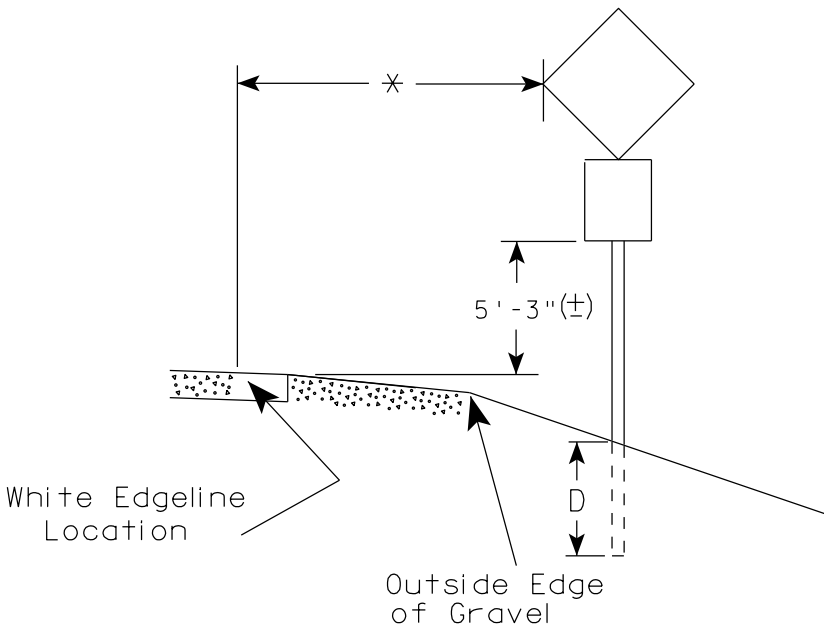
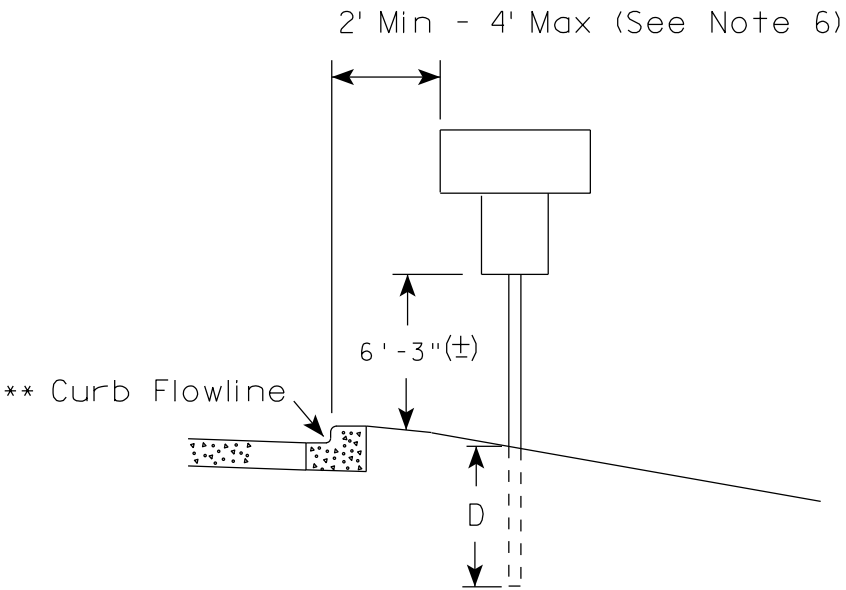
URBAN AREA



RURAL AREA (See Note 2)



- 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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 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" (±).



POST EMBEDMENT DEPTH

Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

* * 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.

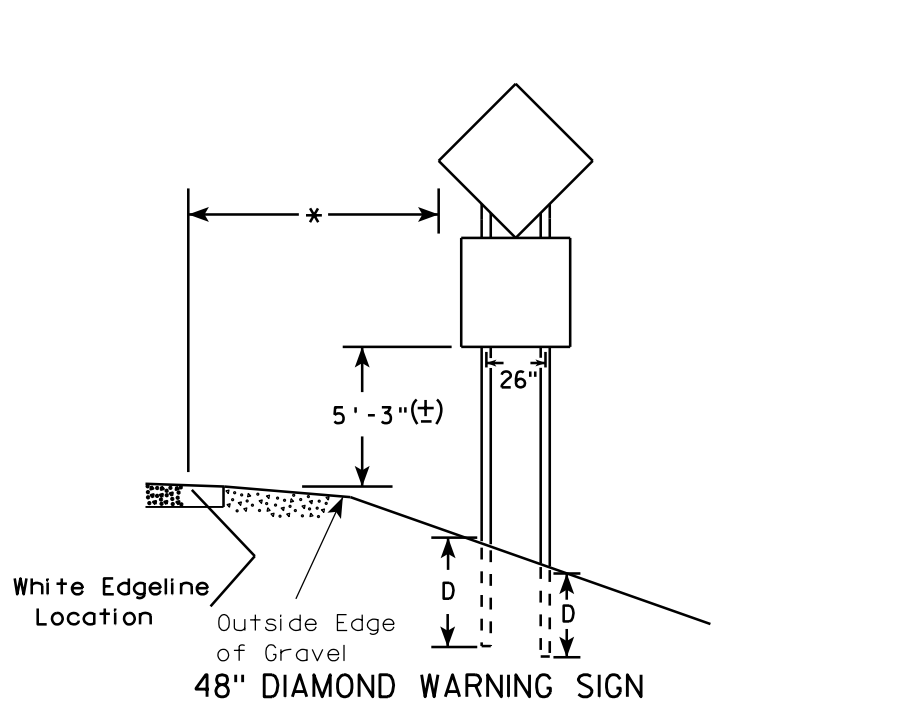
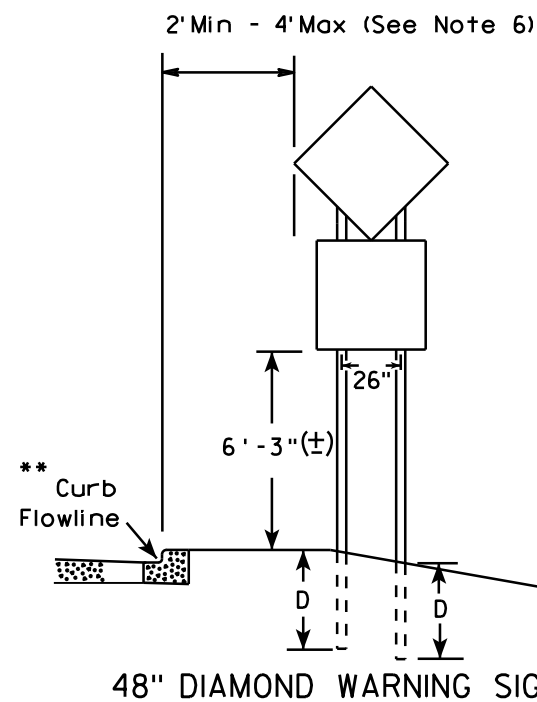
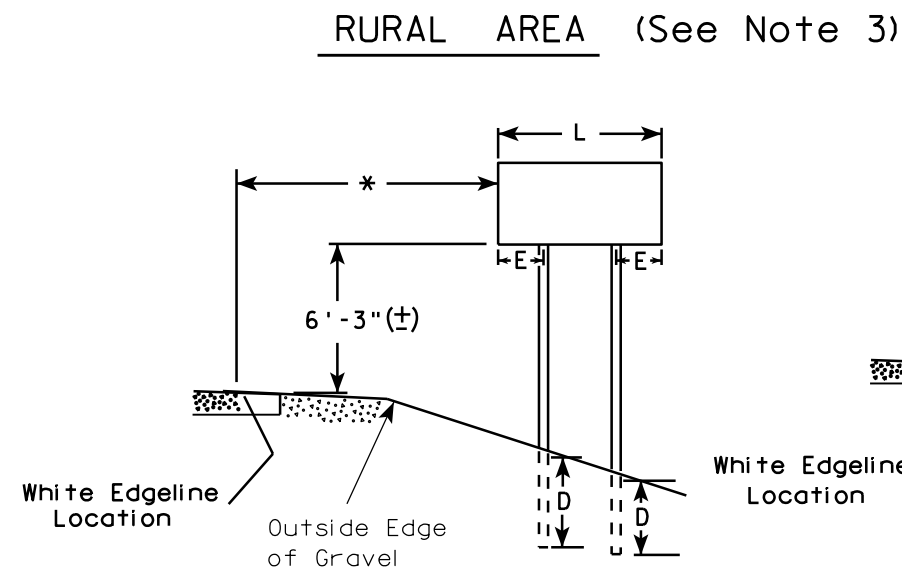
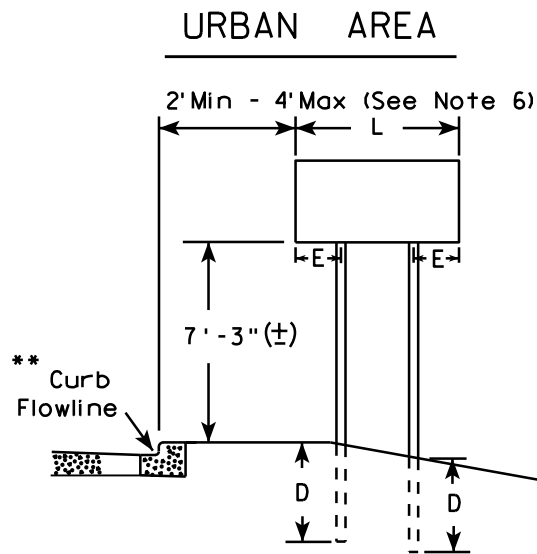
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20



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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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" (±).

* 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 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

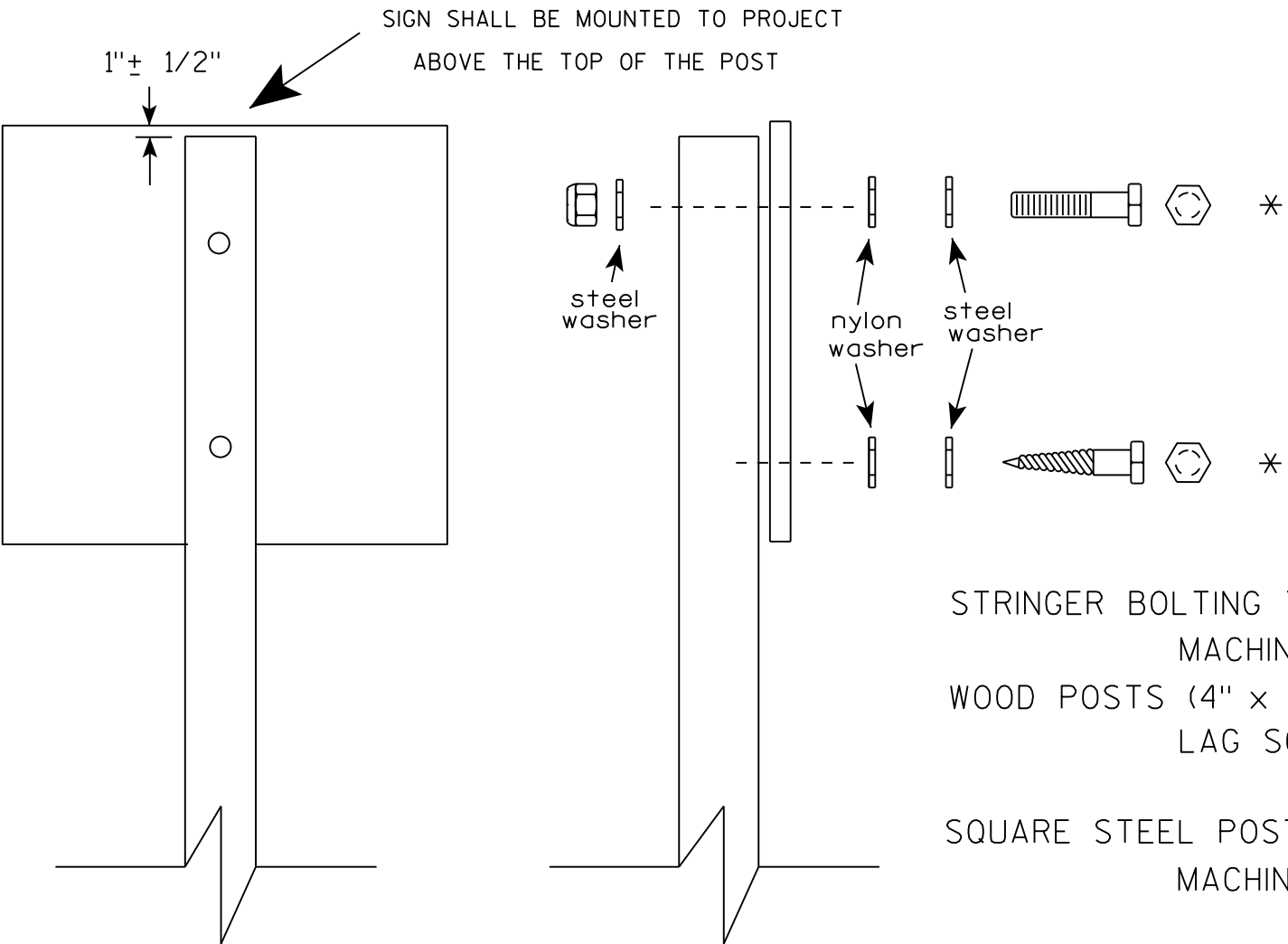
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4.14



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.

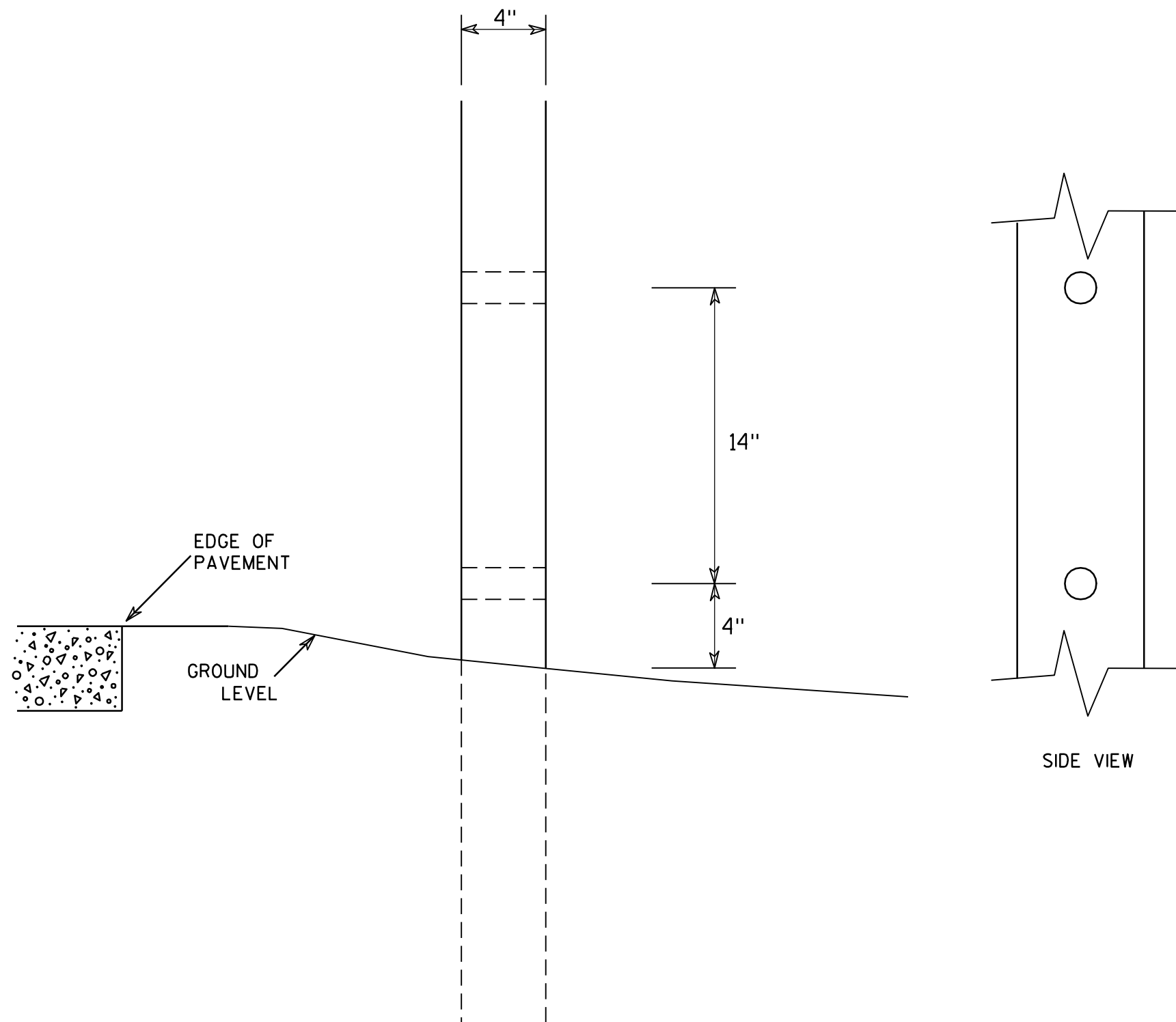
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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.

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

7

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

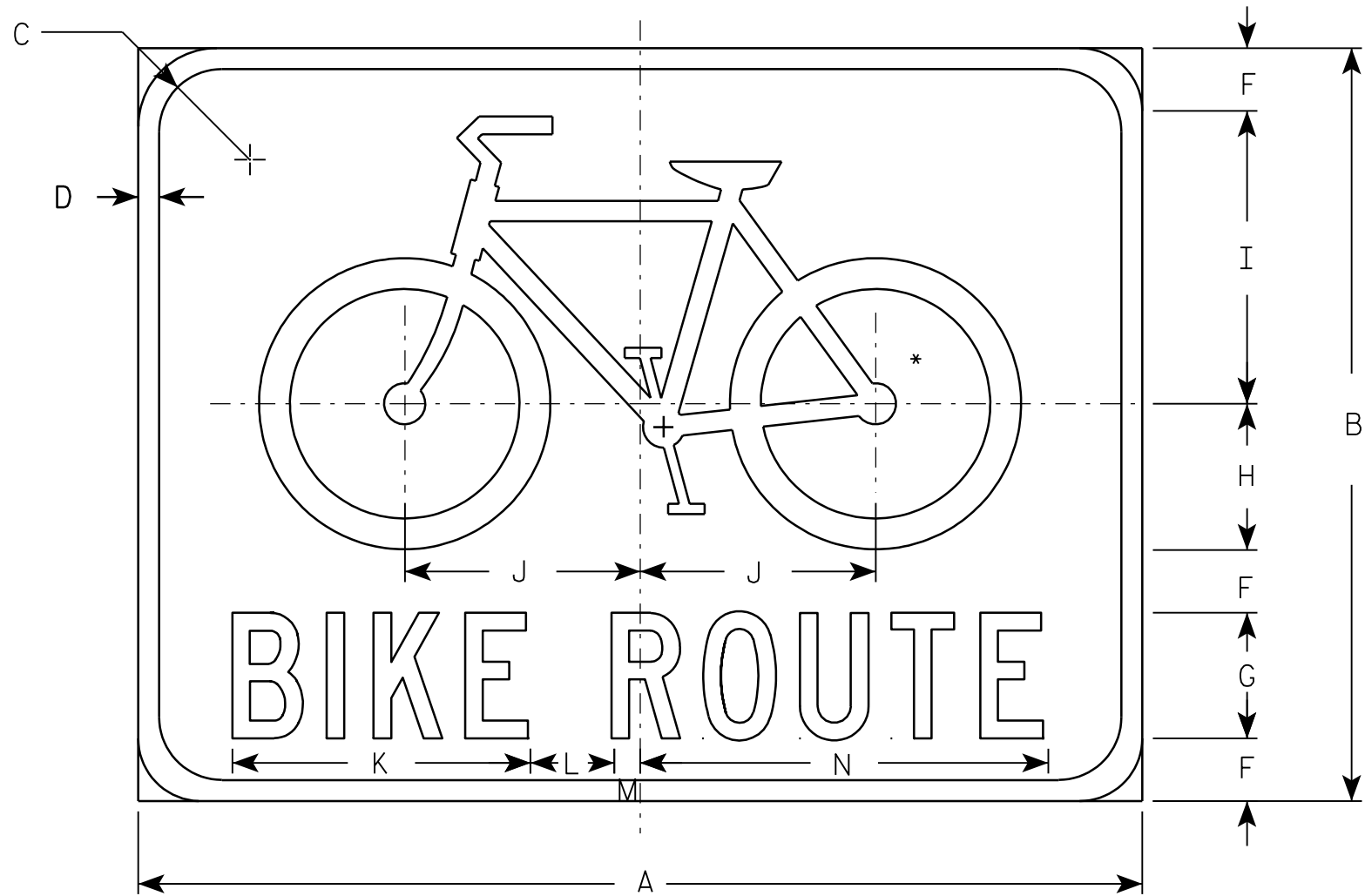
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



D11-1

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - GREEN
 - Message - WHITE
- 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.

* See W11-1 for symbol design

Metric equivalent
for this sign is:

SIZE	
1	
2	600 mm X 450 mm
3	750 mm X 600 mm
4	
5	

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	18	1 1/2	1/2		1 1/2	3	3 1/2	7	5 5/8	7 1/8	2	5/8	9 3/4													3.0	0.27
3	30	24	1 1/4	5/8		2	4	4 3/4	9 1/4	7 1/2	9 1/2	2 5/8	7/8	13													5.0	0.45
4																												
5																												

STANDARD SIGN
D11-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/24/04 PLATE NO. D11-1.1

PROJECT NO:

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 - Green
 - Message - White - Type H Reflective
- 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 message and adjust spacing as required to achieve proper balance.



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		15	2 1/4		3/4	6	4 1/2	4	5																		Varies
3																											
4		21	3		1	8	6	6	7																		Varies
5		21	3		1	8	6	6	7																		Varies

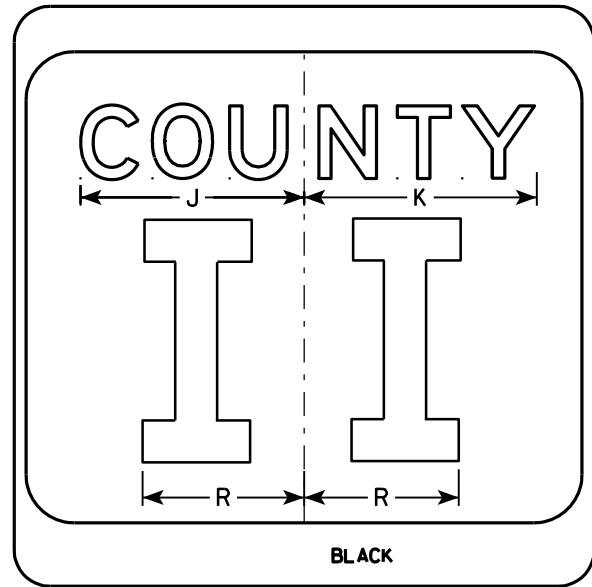
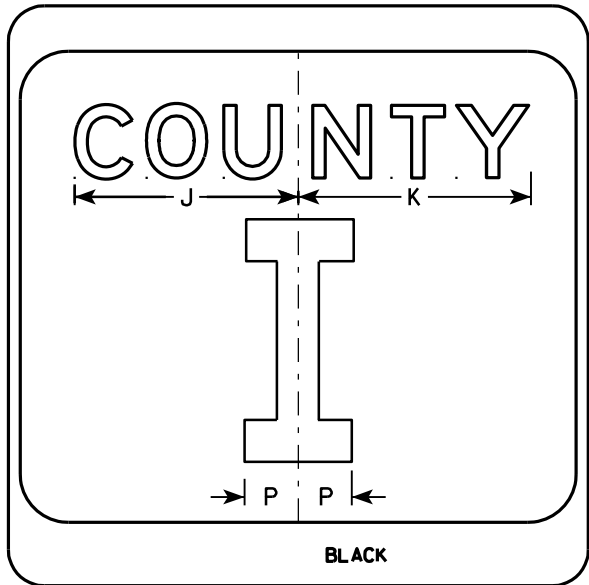
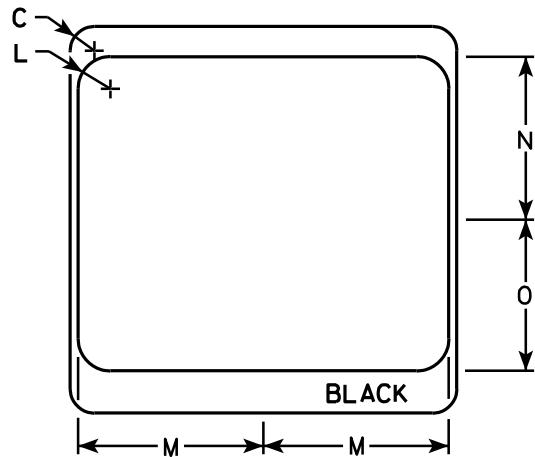
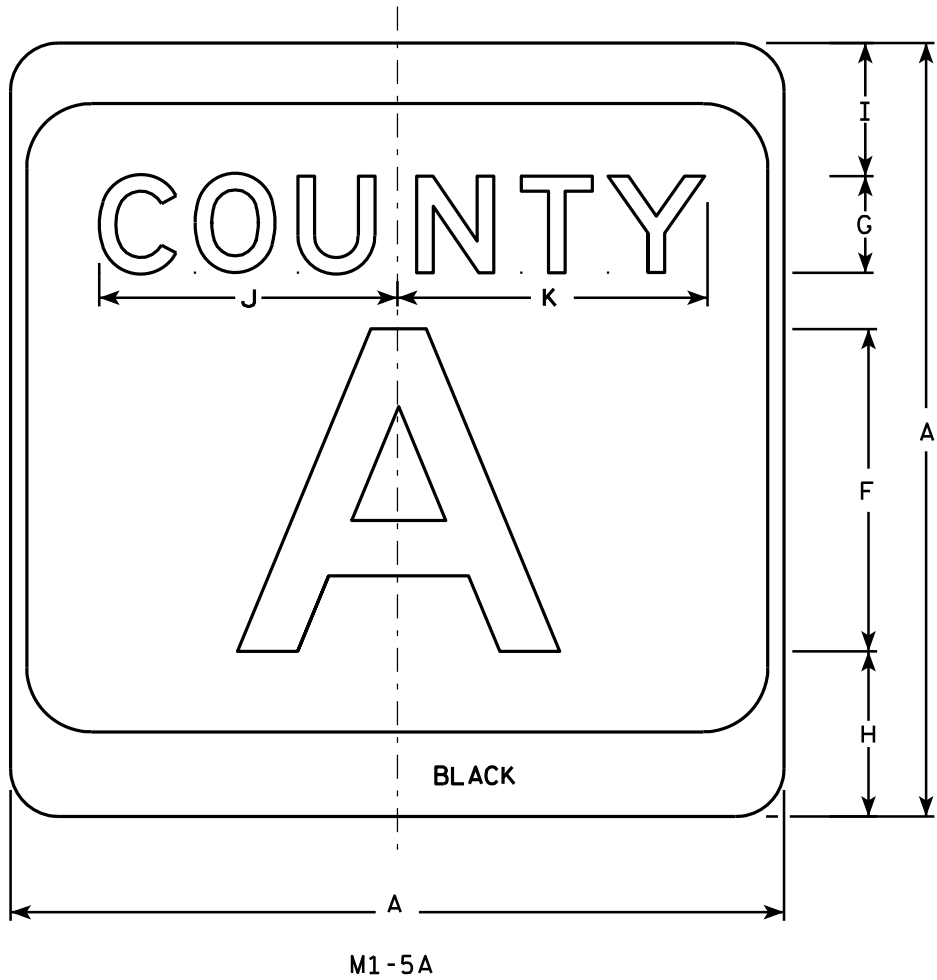
STANDARD SIGN
I2-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. I2-2.5

7



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
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. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

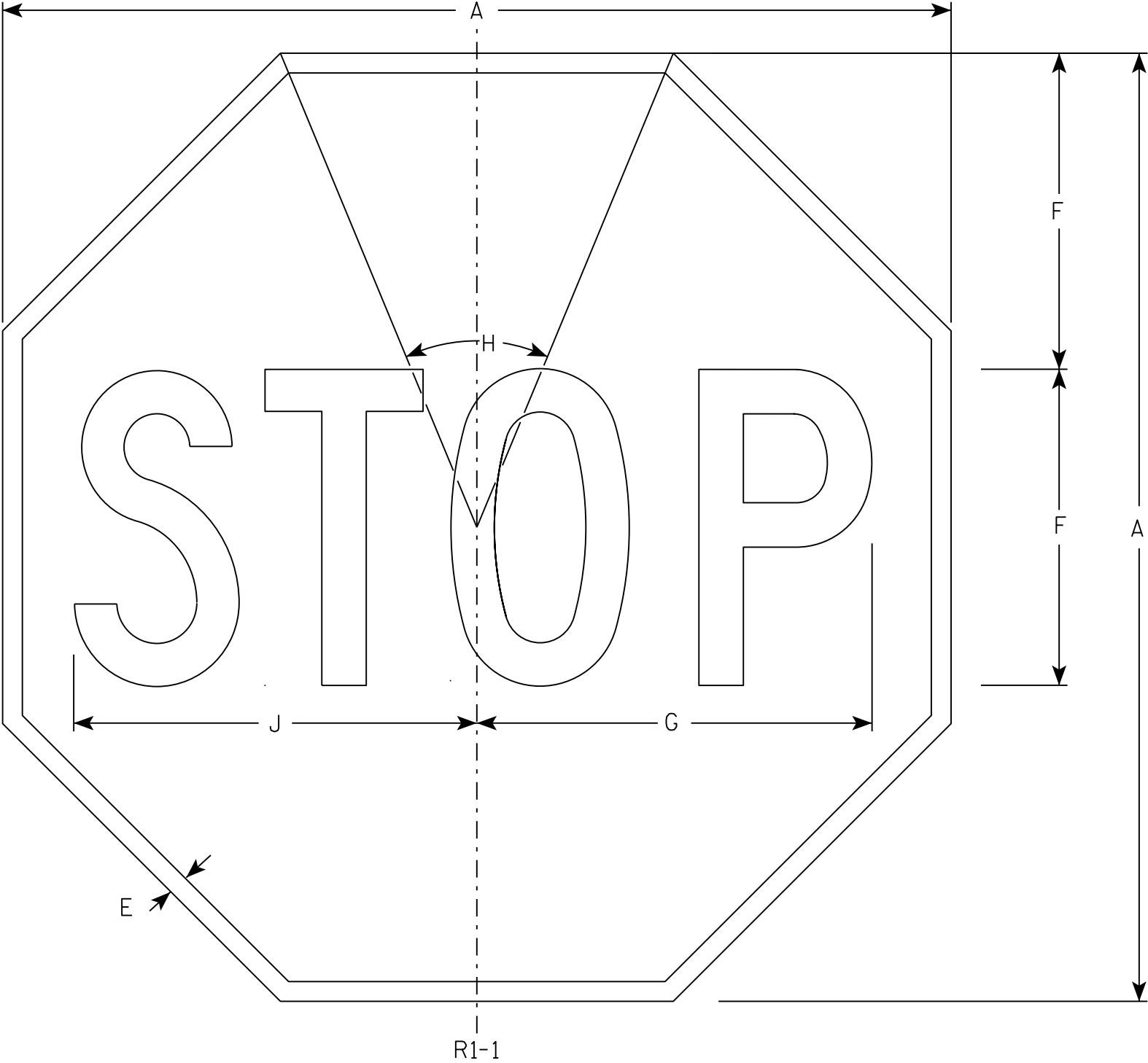
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER	
M1-5A FOR ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/27/11	PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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7

7



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

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				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

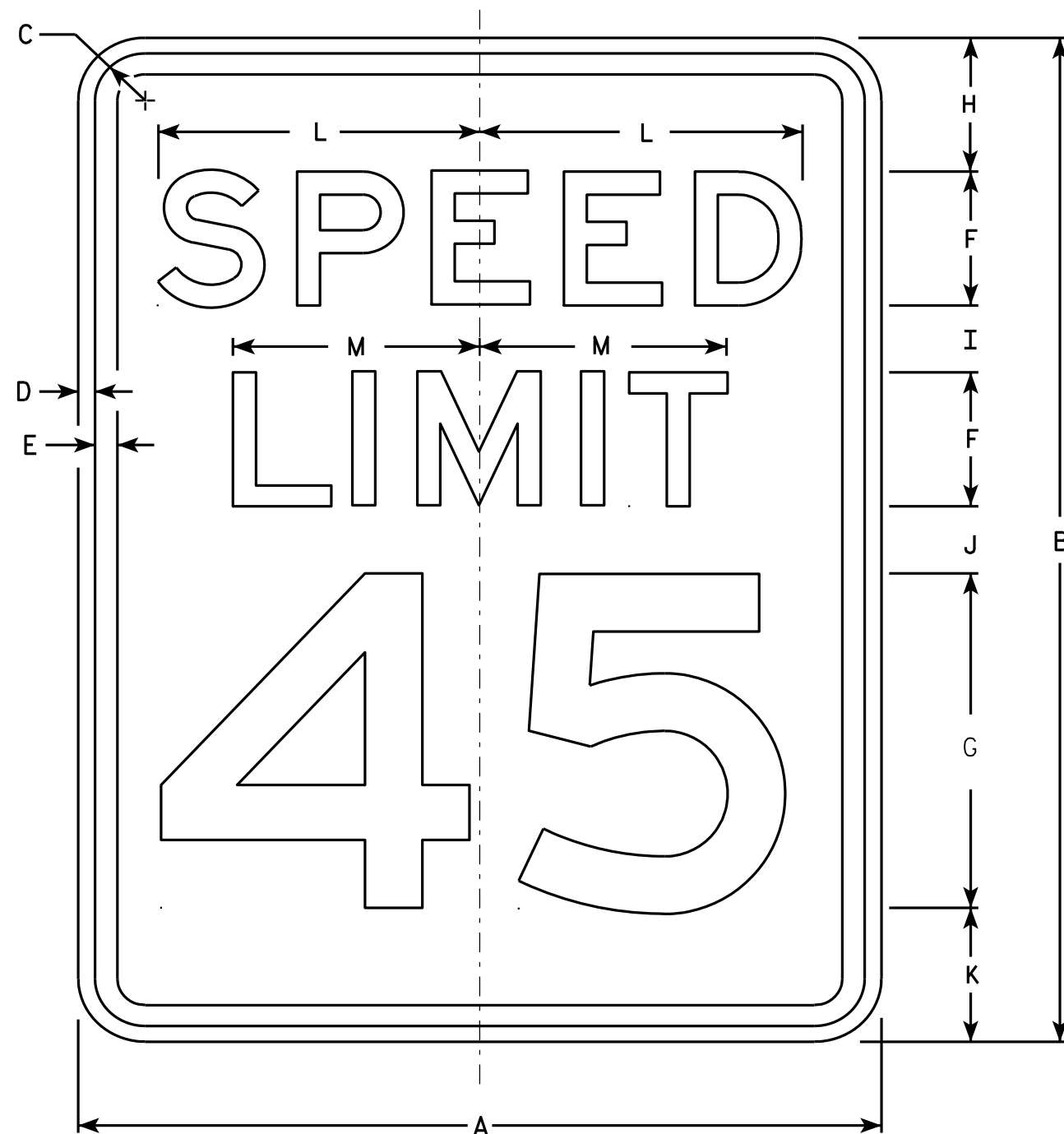
STANDARD SIGN

R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



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.

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

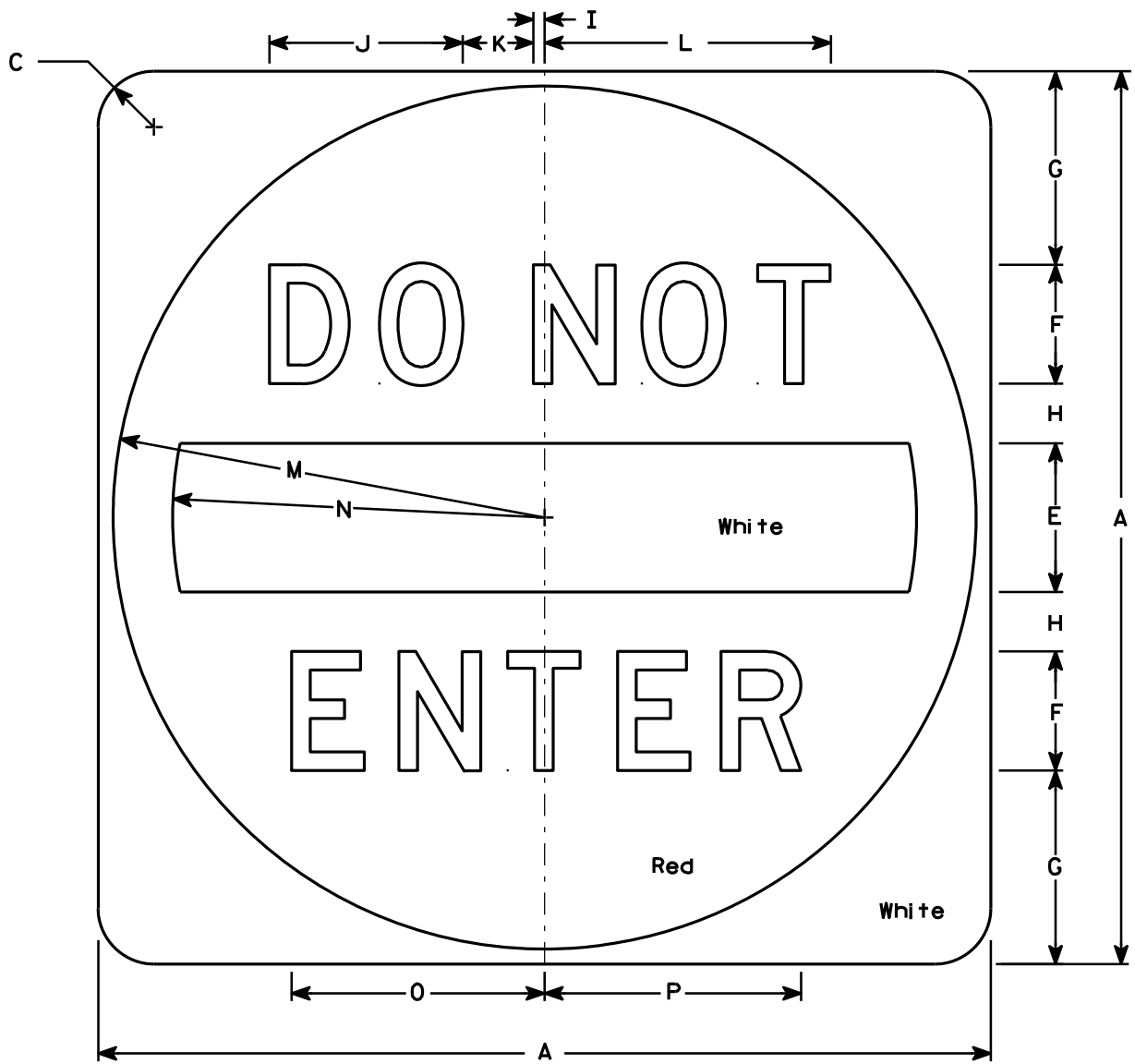
STANDARD SIGN R2-1

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 - 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

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

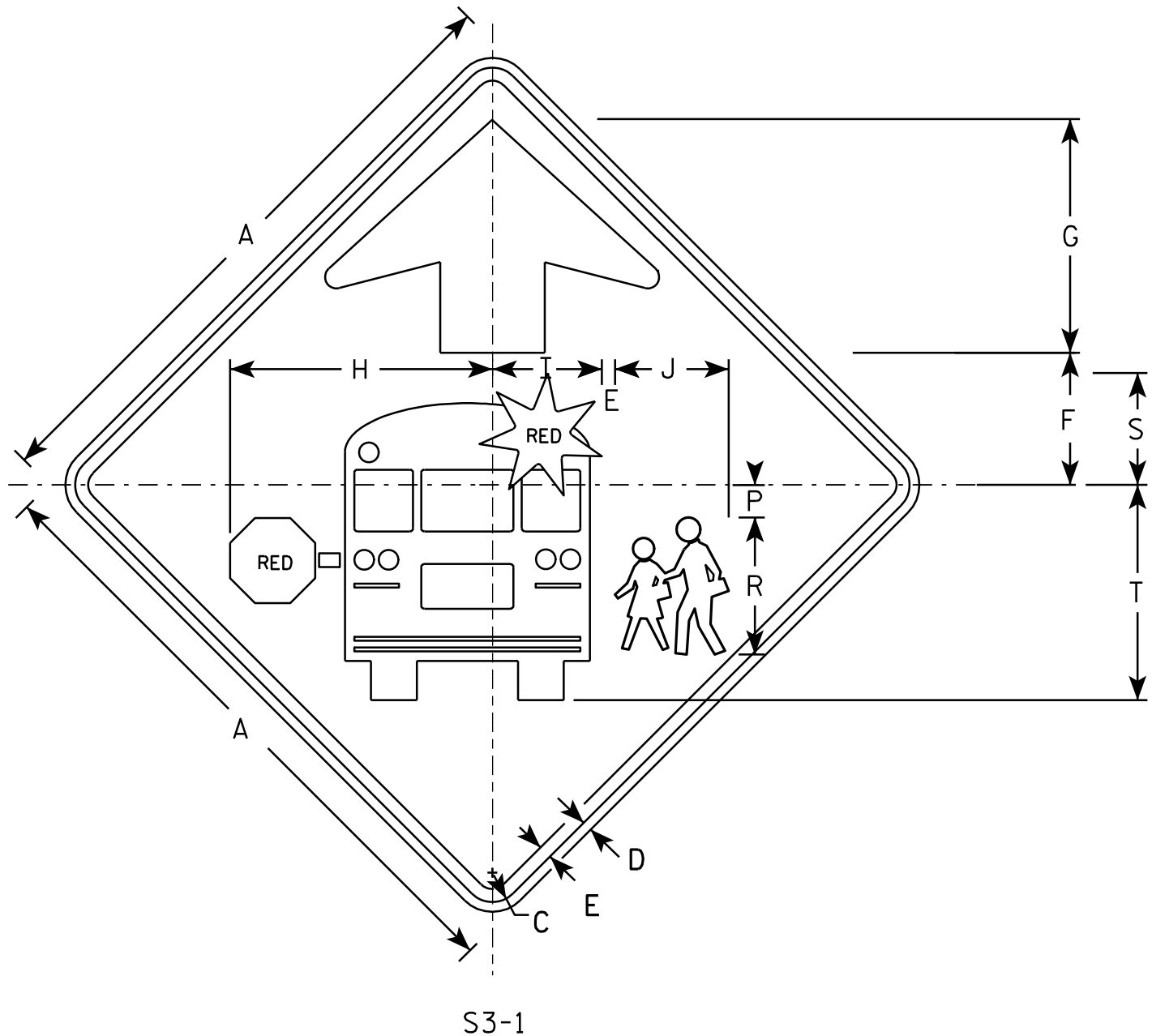
STANDARD SIGN
R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

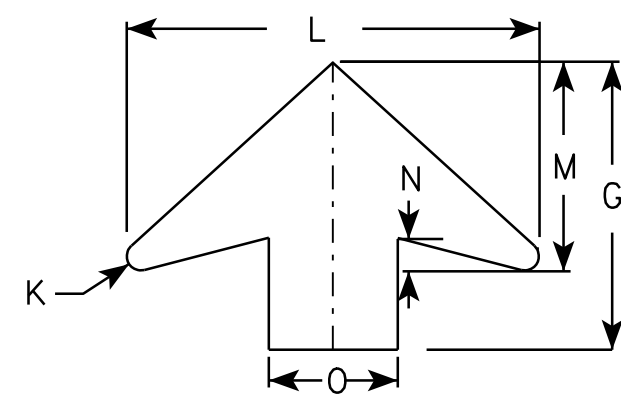
PROJECT NO: HWY: COUNTY: SHEET NO: E



S3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW-GREEN
Message - BLACK except as noted
Circles except PEDS- RED BACKGROUND
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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	12 1/2	5 1/4	5 1/2	1/2	16	8	1 1/4	5	1 1/2		6 5/8	5 3/8	10 3/8							6.25
2	36		1 5/8	5/8	3/4	7 1/2	13 1/2	15 1/8	6 1/4	6 1/2	5/8	19 1/4	9 3/4	1 5/8	6	1 7/8		7 7/8	6 3/8	12 3/8							9.0
3	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
4	48		2 1/4	3/4	1	10	17 7/8	20 1/8	8 3/8	8 3/4	7/8	25 5/8	13	2	8	2 1/2		10 1/2	8 1/2	16 1/2							16.0
5																											

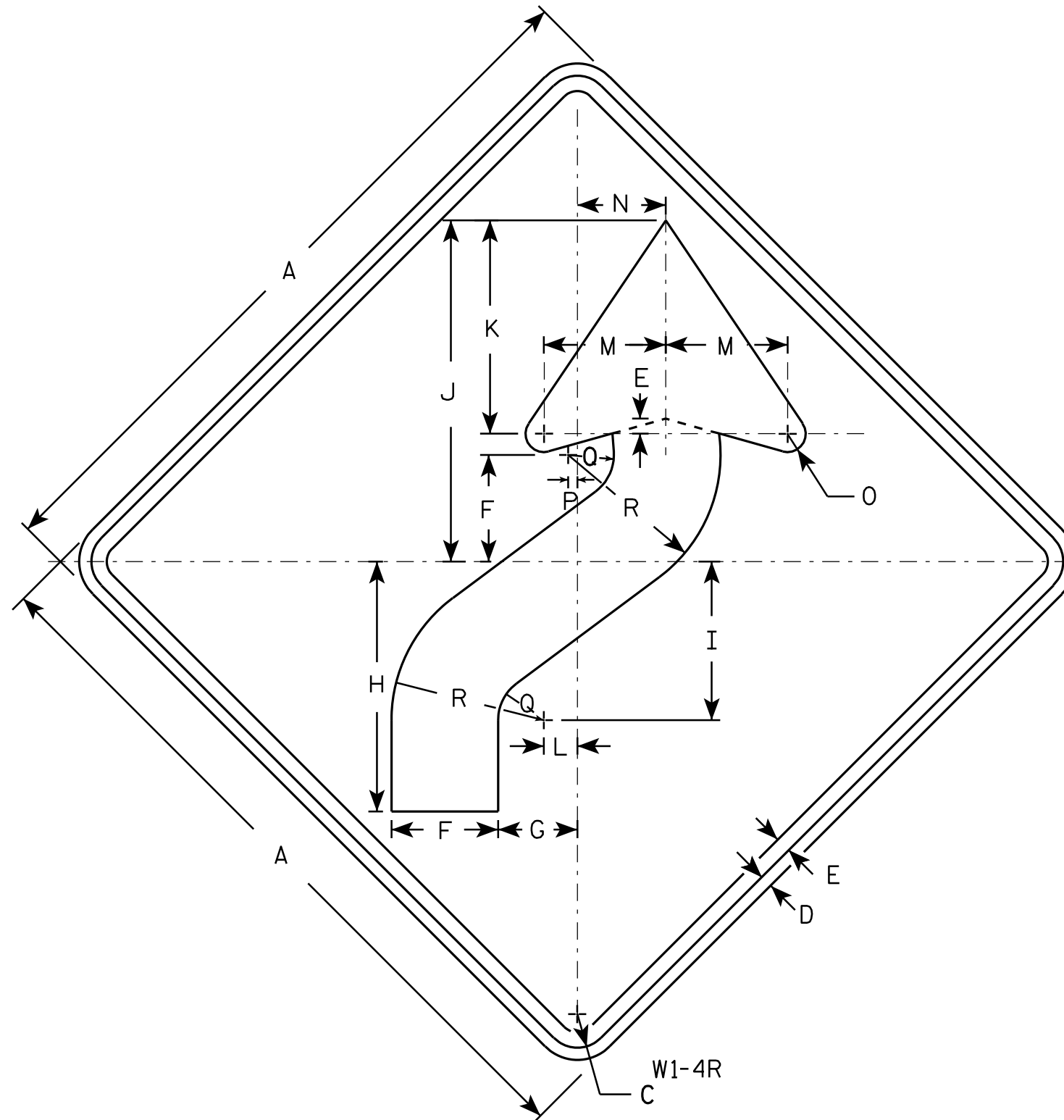
PROJECT NO:			
SHEET NO:			E

STANDARD SIGN
S3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/8/10 PLATE NO. S3-1.6



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - Black
- 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.
- W1-4L is the same as W1-4R except the arrow is reversed along the vertical centerline.

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	3 1/2	2 5/8	8 1/4	5 1/4	11 1/4	7	1 1/8	4	3	5/8	1/4	1 1/2	5									4.0
2S	30		1 3/8	1/2	5/8	4 3/8	3 1/4	10 1/4	6 1/2	14	8 3/4	1 3/8	5	3 5/8	3/4	3/8	1 7/8	6 1/4									6.25
2M	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
3	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
4	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

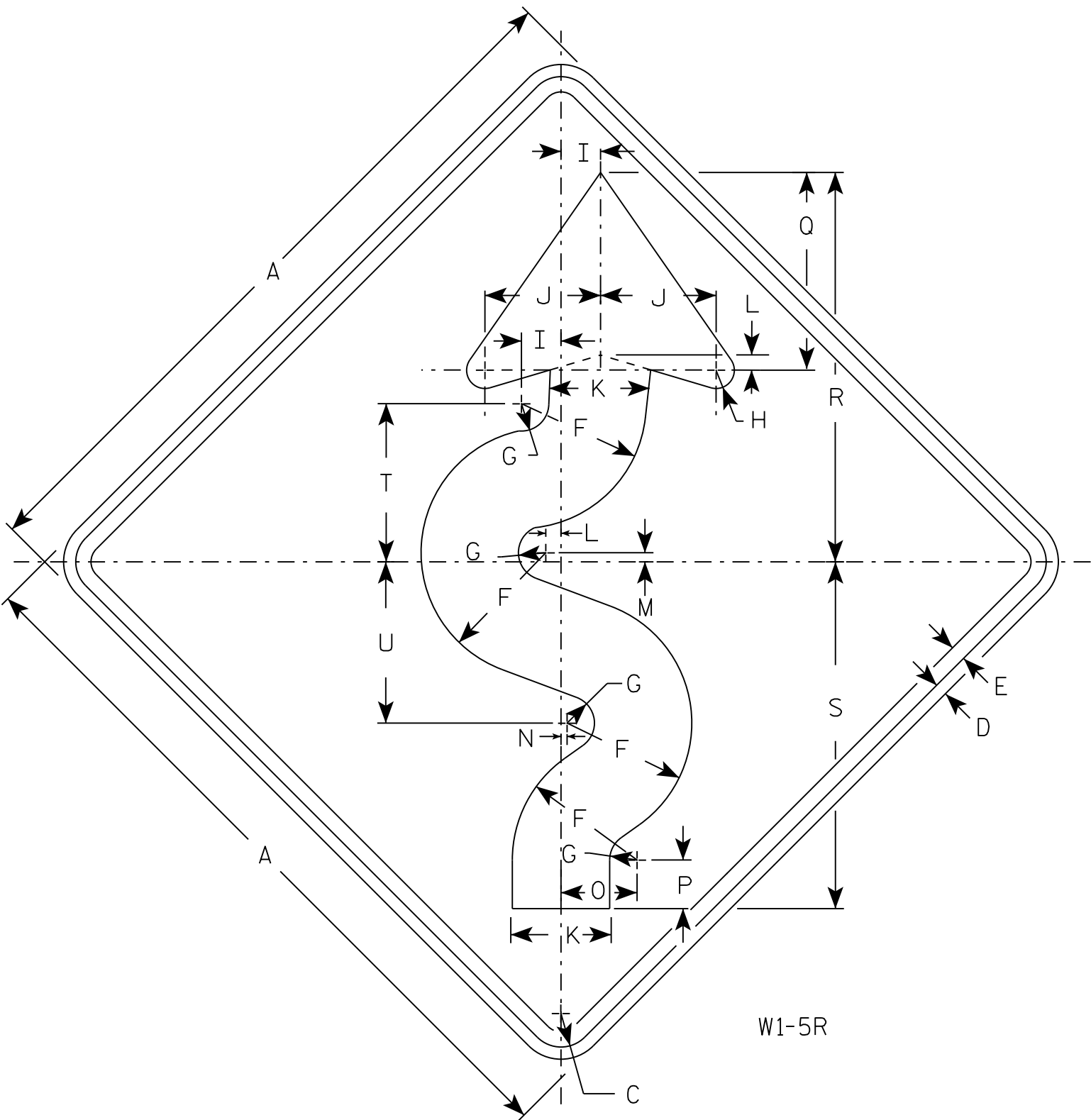
STANDARD SIGN W1 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/17/12 PLATE NO. W1-4.11

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. W1-5L is the same as W1-5R except the arrow is reversed along the vertical centerline.
- 4. If used with W13-1 of 30 MPH or less, use 36" sign for Size 2S.

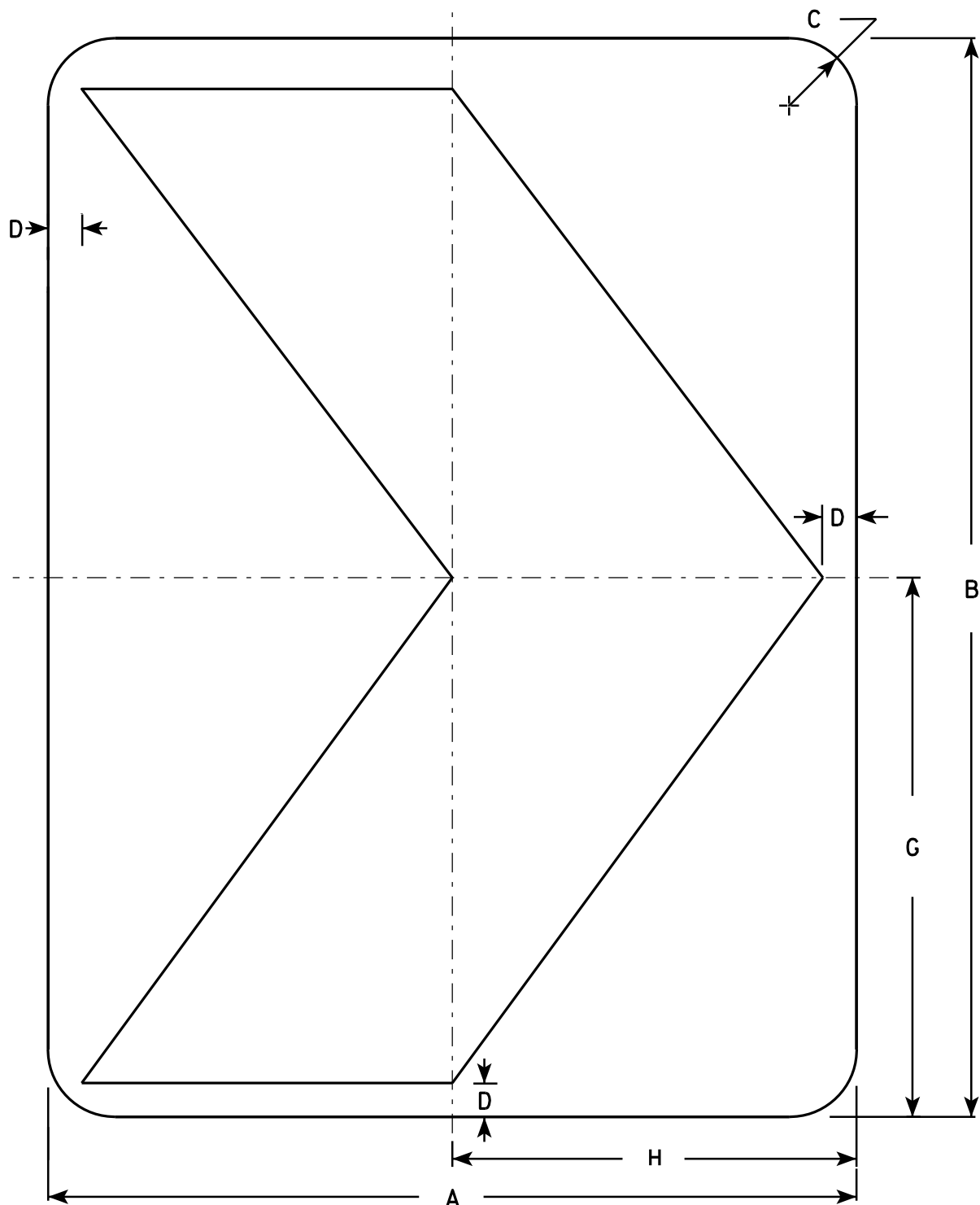
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4 1/8	7/8	5/8	1 1/4	3 3/4	3 1/4	1/2	1/4	1/8	2 1/2	1 5/8	6 1/2	12 3/4	11 3/8	5 1/4	5 1/4						4.0
2S	30		1 3/8	1/2	5/8	5 1/8	1 1/8	3/4	1 5/8	4 3/4	4 1/8	5/8	3/8	1/4	3 1/8	2	8 1/8	16	14 1/4	6 1/2	6 5/8						6.25
2M	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
3	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
4	36		1 5/8	5/8	3/4	6 1/4	1 3/8	1	1 7/8	5 5/8	4 7/8	3/4	3/8	1/4	3 3/4	2 7/8	9 3/4	19 1/8	17 1/8	7 3/4	7 7/8						9.0
5	48		2 1/4	3/4	1	8 1/4	1 3/4	1 1/4	2 1/2	7 1/2	6 1/2	1	1/2	3/8	5	3 1/4	13	25 1/2	22 3/4	10 3/8	10 1/2						16.0

STANDARD SIGN
W1-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/1/16 PLATE NO. W1-5.9



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.

W1-8

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	12	18	1 1/2	1/2			9	6																			1.5
2S	18	24	1 1/2	3/4			12	9																			3.0
2M	18	24	1 1/2	3/4			12	9																			3.0
3	24	30	1 1/2	1			15	12																			5.0
4	30	36	1 7/8	1 1/4			18	15																			7.5
5	36	48	2 1/4	1 1/2			24	18																			12.0

STANDARD SIGN

W1-8

WISCONSIN DEPT OF TRANSPORTATION

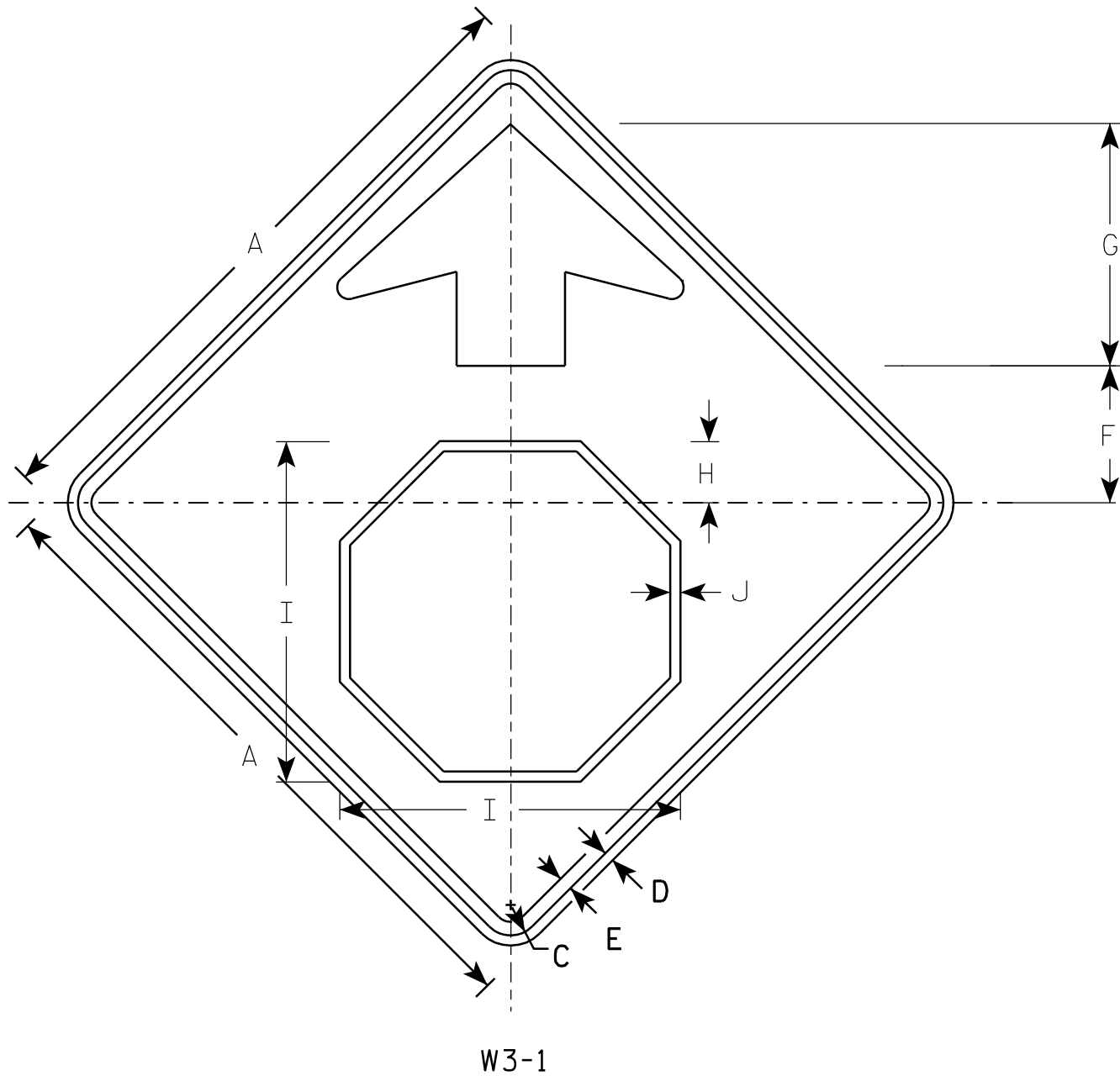
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

PROJECT NO:

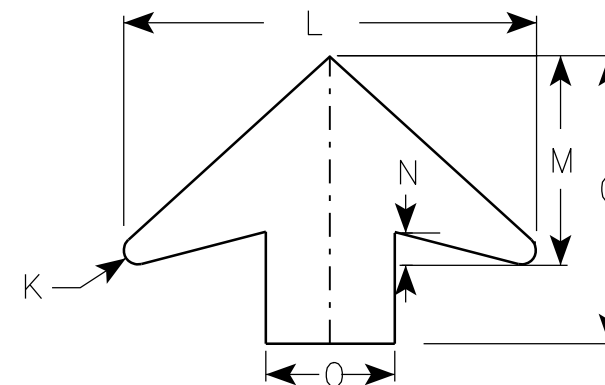
SHEET NO:

E



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



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	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

PROJECT NO:

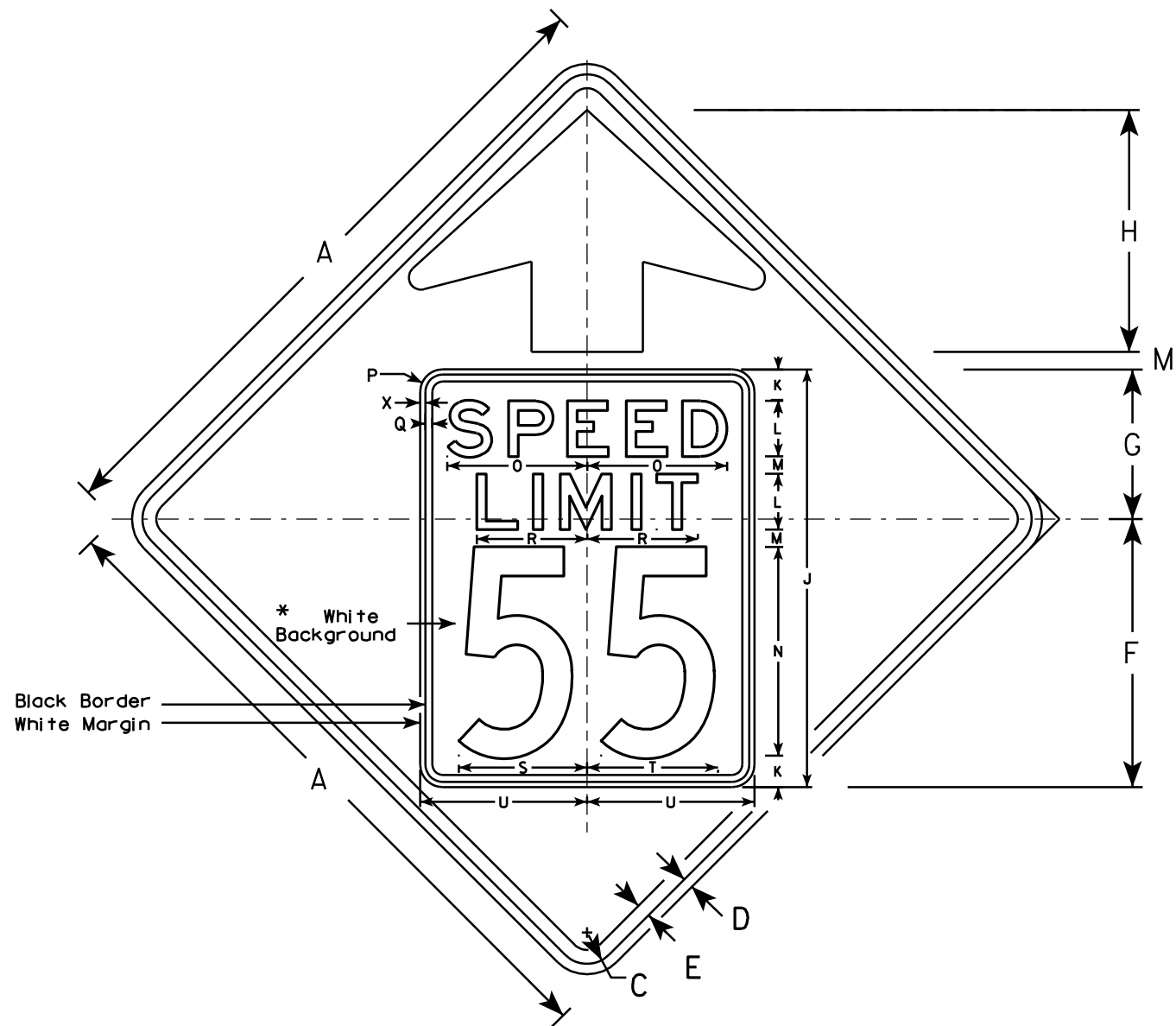
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO:

E

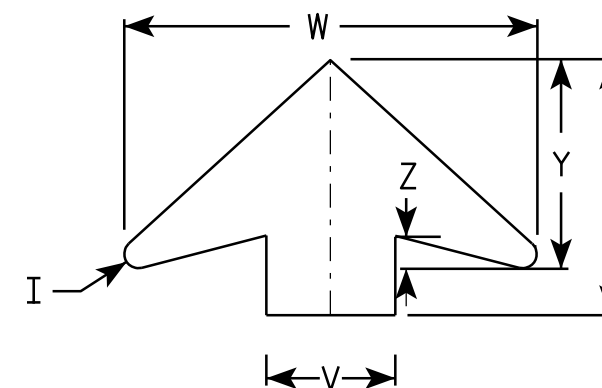


W3-5

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 for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



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	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
2M	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
3	36		1 5⁄8	5⁄8	3⁄4	14 1⁄2	9 1⁄2	11 1⁄2	5⁄8	24	2	3	1	12	7 1⁄8	1 1⁄2	3⁄8	5 3⁄4	7 1⁄4	7 1⁄8	9	6	19 1⁄4	3⁄8	9 3⁄4	1 5⁄8	9.0
4	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0
5	48		2 1⁄4	3⁄4	1	19 1⁄4	10 3⁄4	17 3⁄8	7⁄8	30	2 1⁄4	4	1 1⁄4	15	10	1 5⁄8	1⁄2	8	9 1⁄4	9 3⁄8	12	8	25 5⁄8	3⁄8	13	2	16.0

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

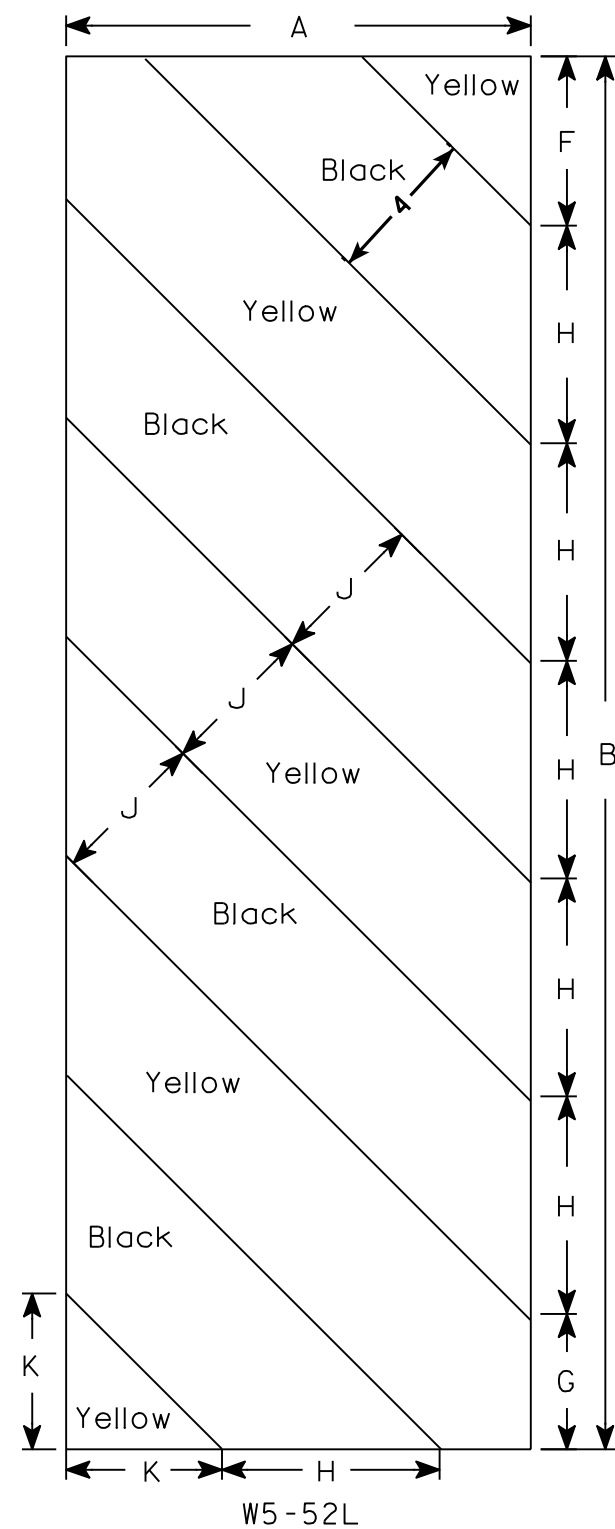
DATE 5/29/12

PLATE NO. W3-5.5

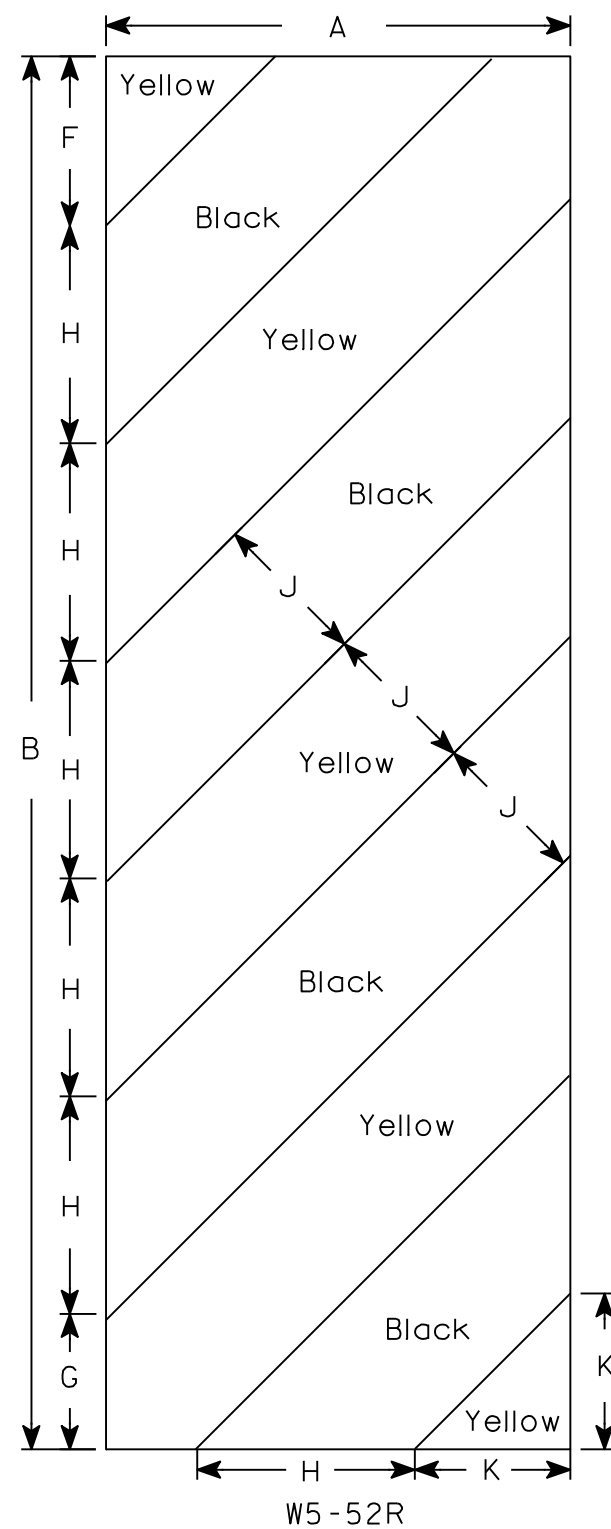
PROJECT NO:

SHEET NO:

E



W5-52L



W5-52R

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. Alternate colors of stripes as shown.

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	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
2M	12	36				4 3⁄8	3 1⁄2	5 5⁄8	45°	4	4																3.0
3	18	54				6	5 1⁄2	8 1⁄2	45°	6	6 5⁄6																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

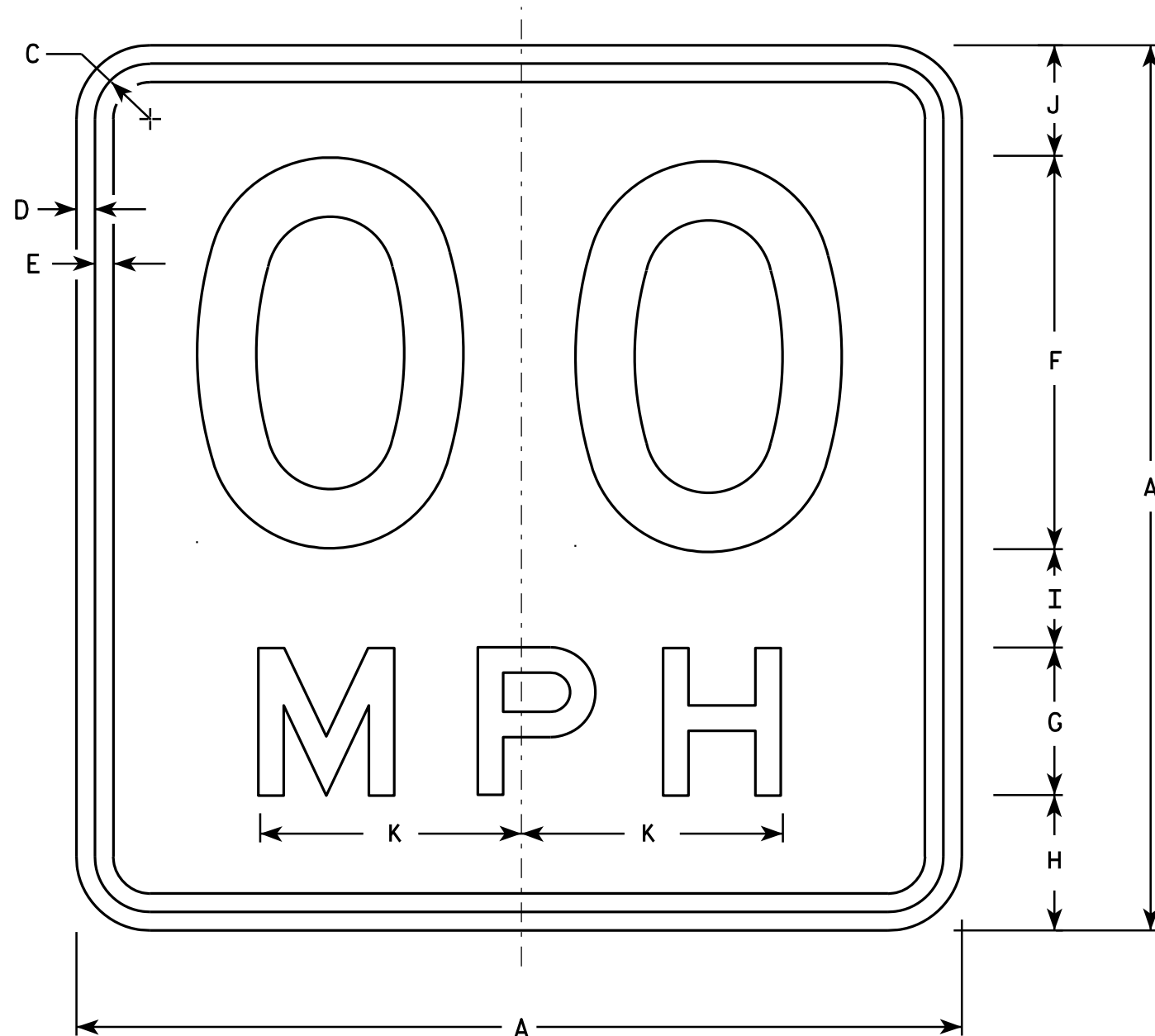
PROJECT NO:

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 - 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. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:

HWY:

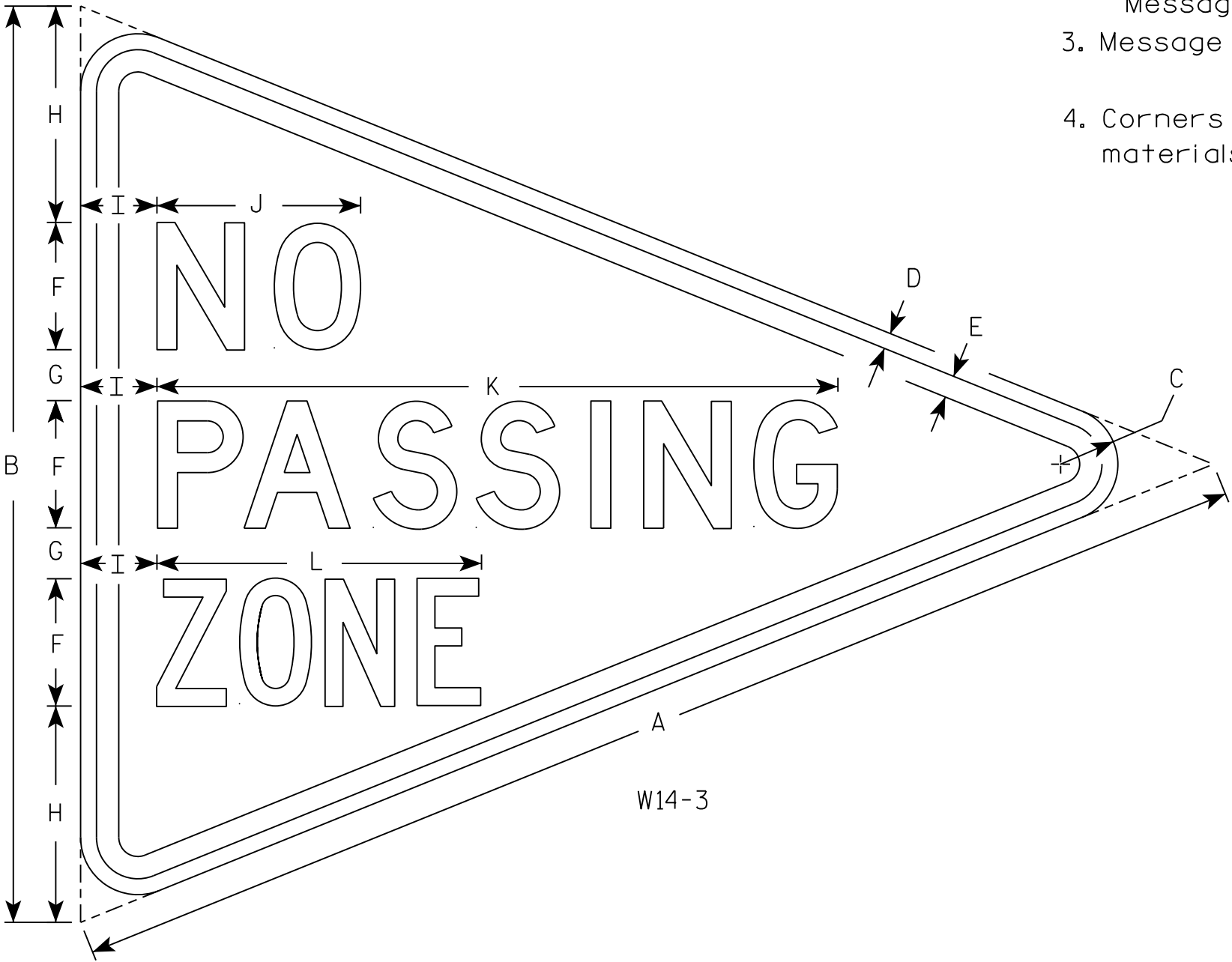
COUNTY:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - Lines 1 and 2 are Series D.
Line 3 is series C.
- 4. Corners and borders shall be rounded on all base materials for this sign.



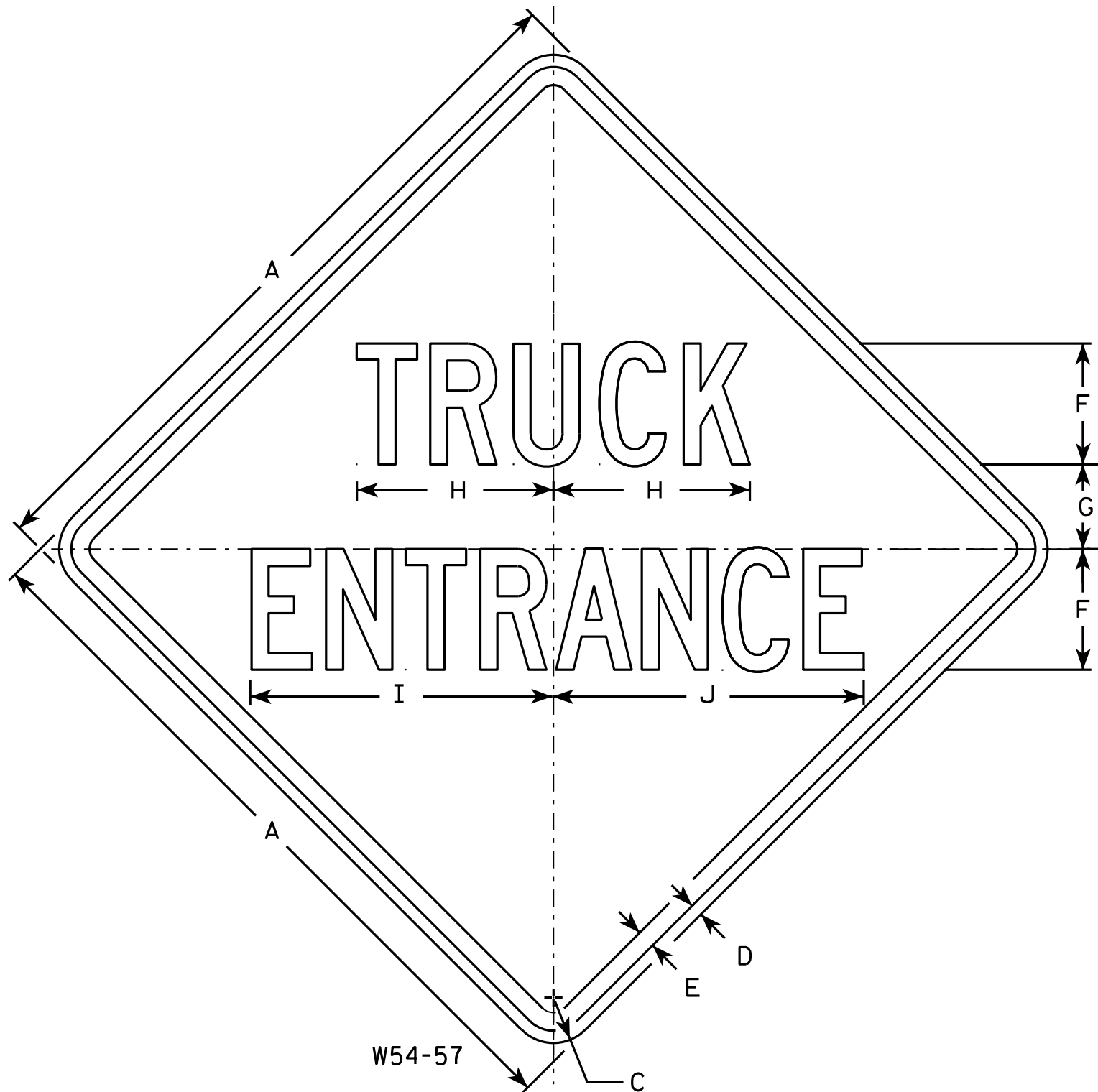
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W14-3.10



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.

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 ³ / ₈	¹ / ₂	⁵ / ₈	5	3 ¹ / ₂	8 ¹ / ₈	12 ¹ / ₂	12 ⁷ / ₈																	6.25
2M	36		1 ⁵ / ₈	⁵ / ₈	³ / ₄	6	4 ¹ / ₄	9 ⁵ / ₈	15	15 ³ / ₈																	9.00
3	36		1 ⁵ / ₈	⁵ / ₈	³ / ₄	6	4 ¹ / ₄	9 ⁵ / ₈	15	15 ³ / ₈																	9.00
4																											
5																											

STANDARD SIGN

W54-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/13/13 PLATE NO. W54-57.9

PROJECT NO:

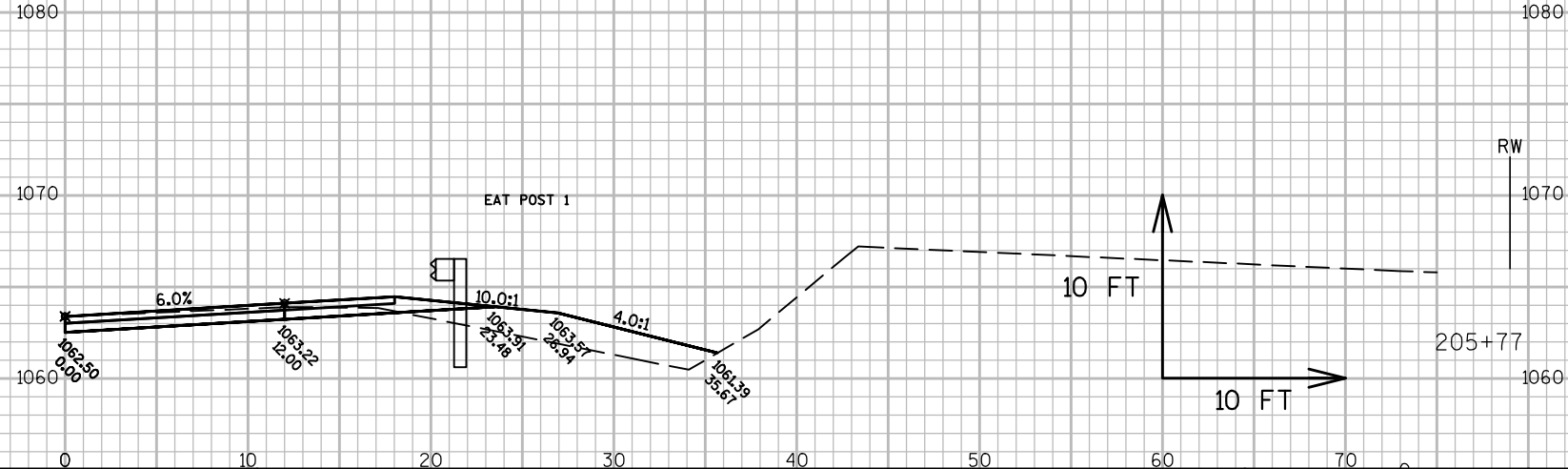
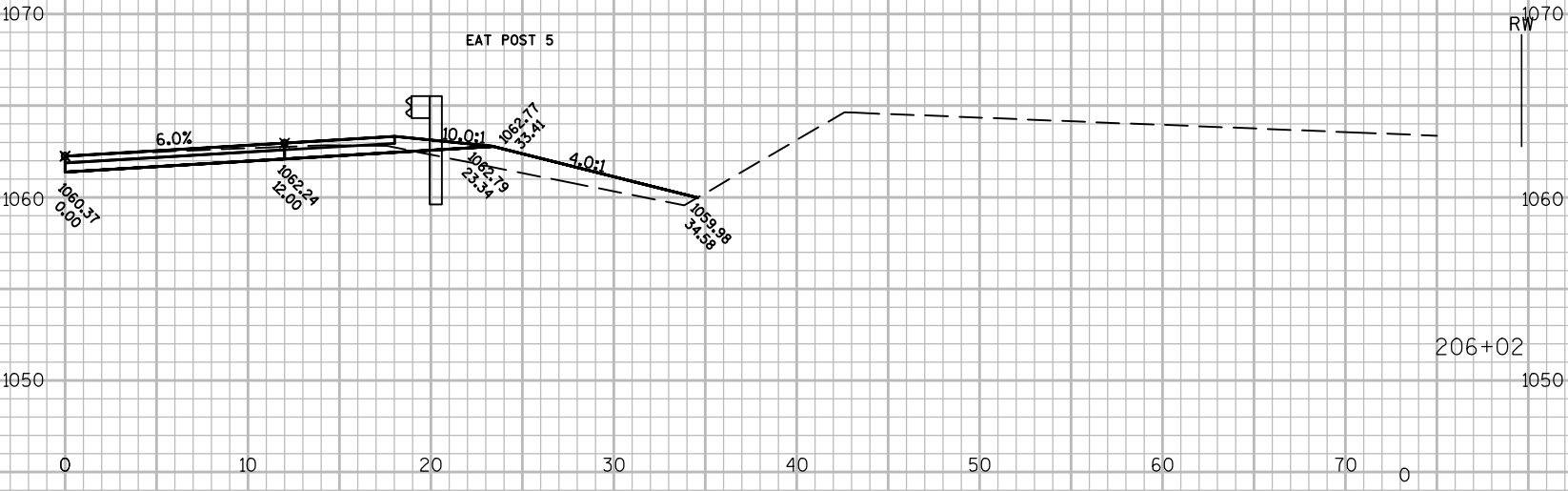
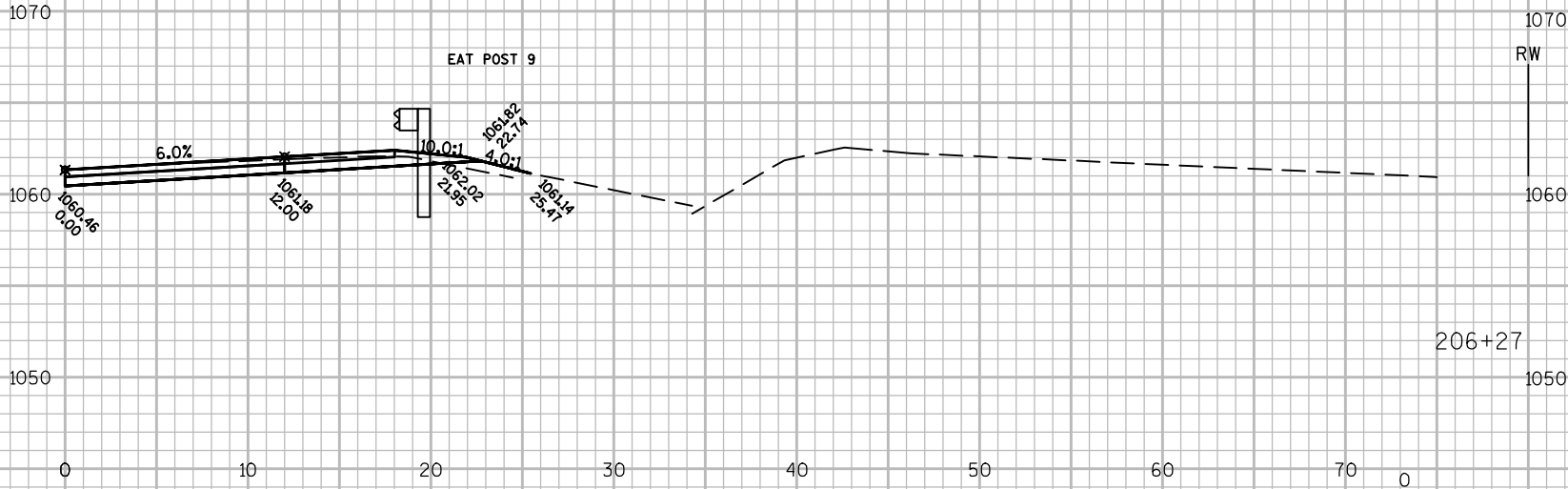
HWY:

COUNTY:

SHEET NO:

E

9



9

PROJECT NO: 7919-01-70

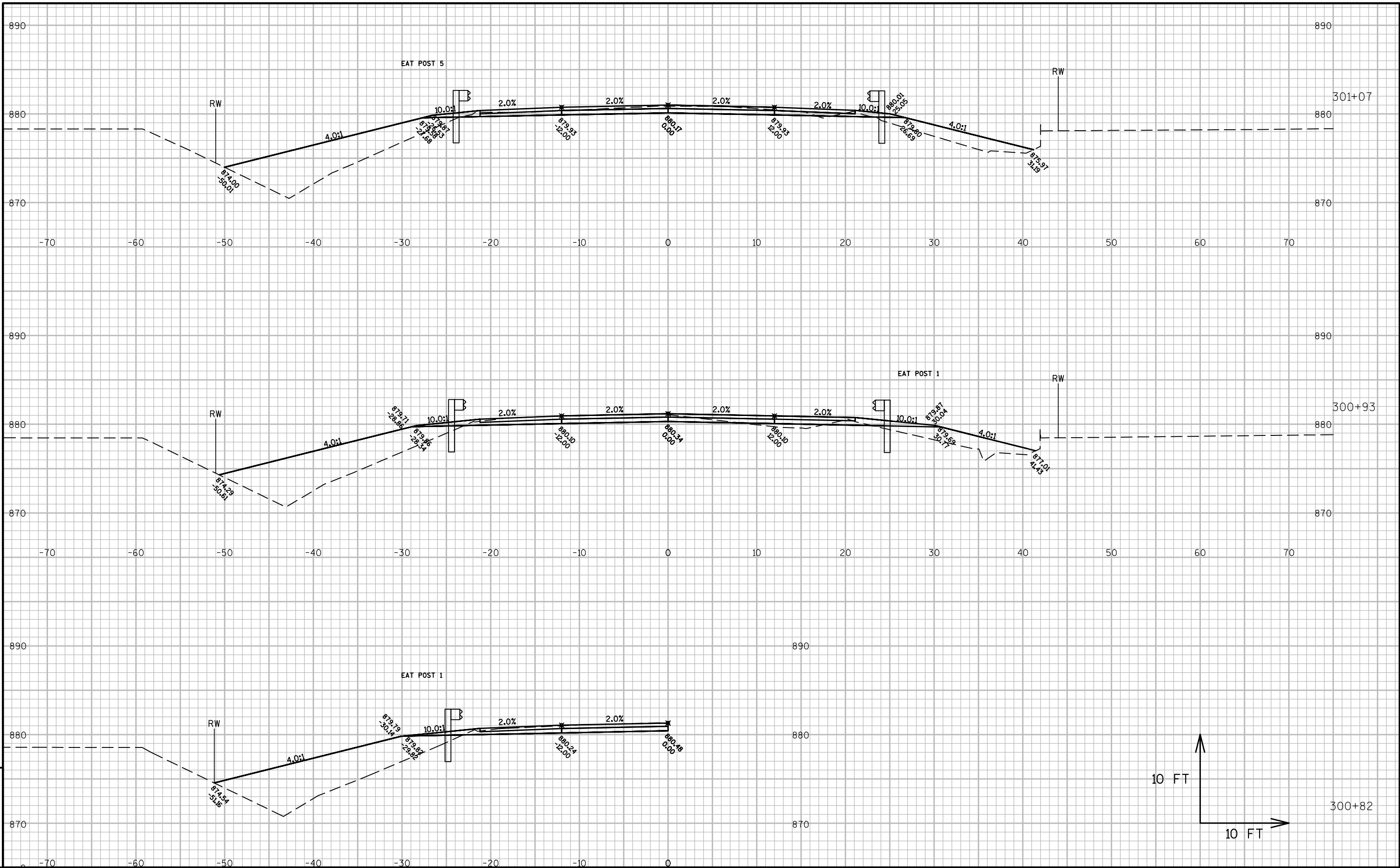
HWY: CTH M

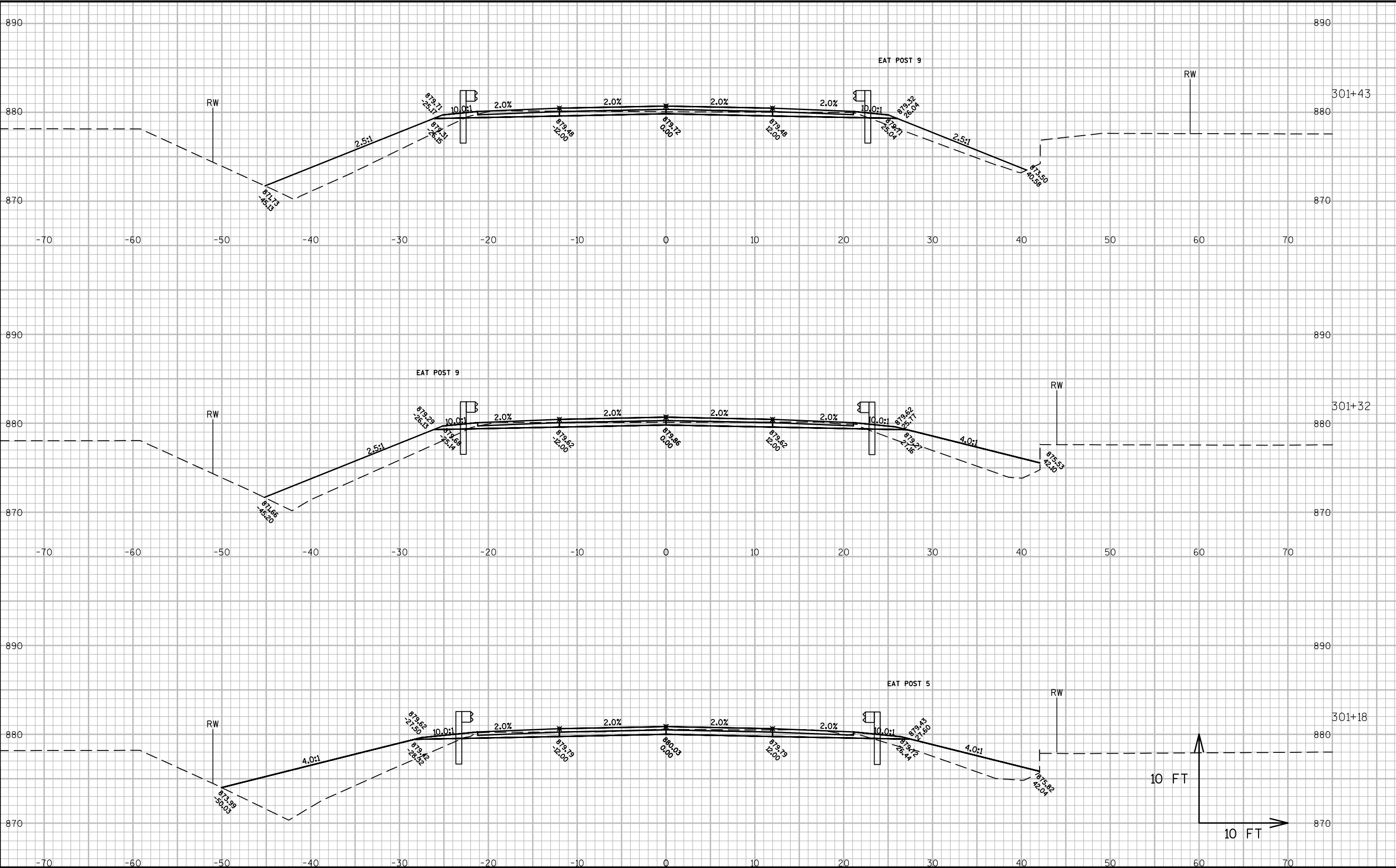
COUNTY: PIERCE

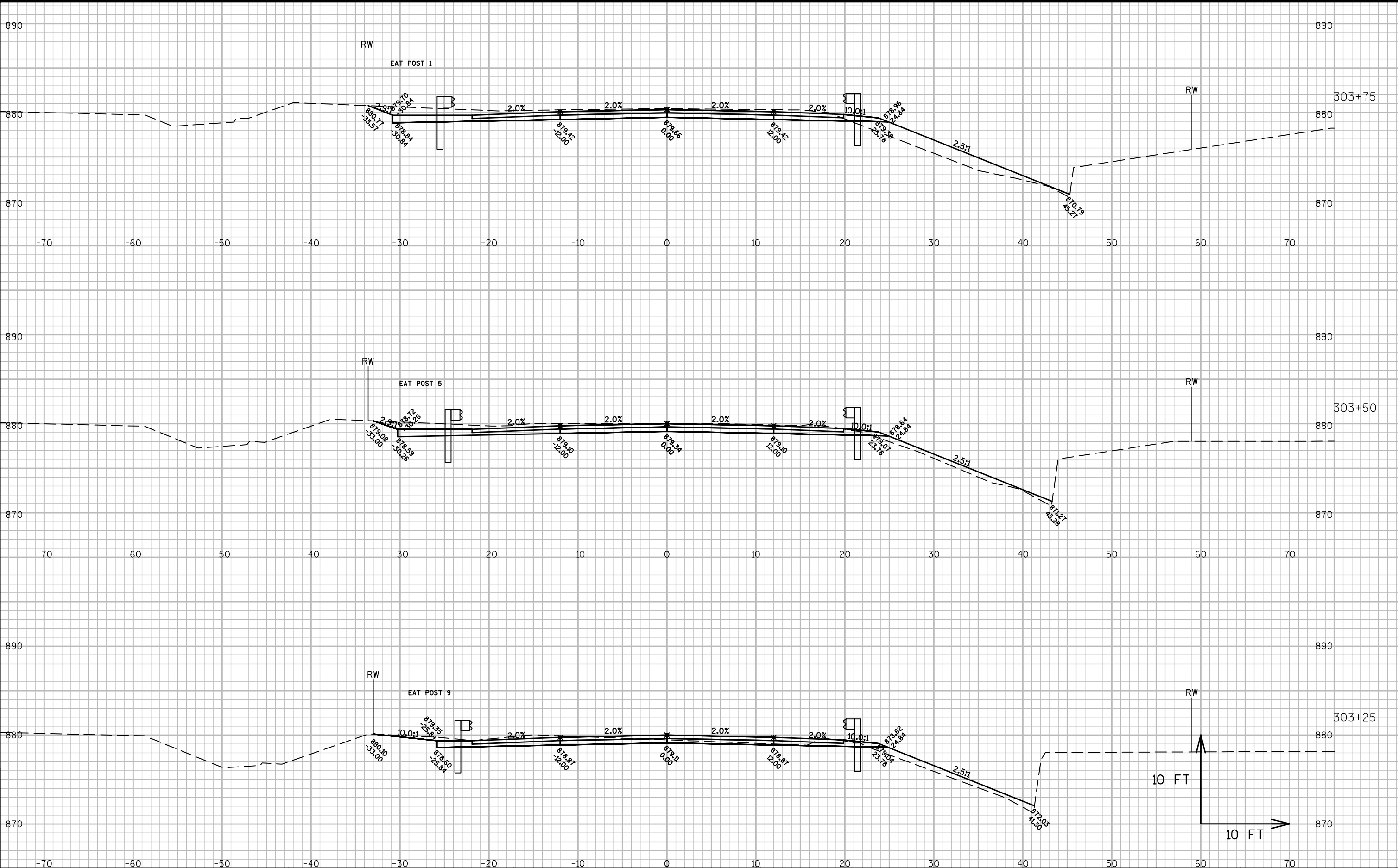
CROSS SECTIONS: CTH M

SHEET NO:

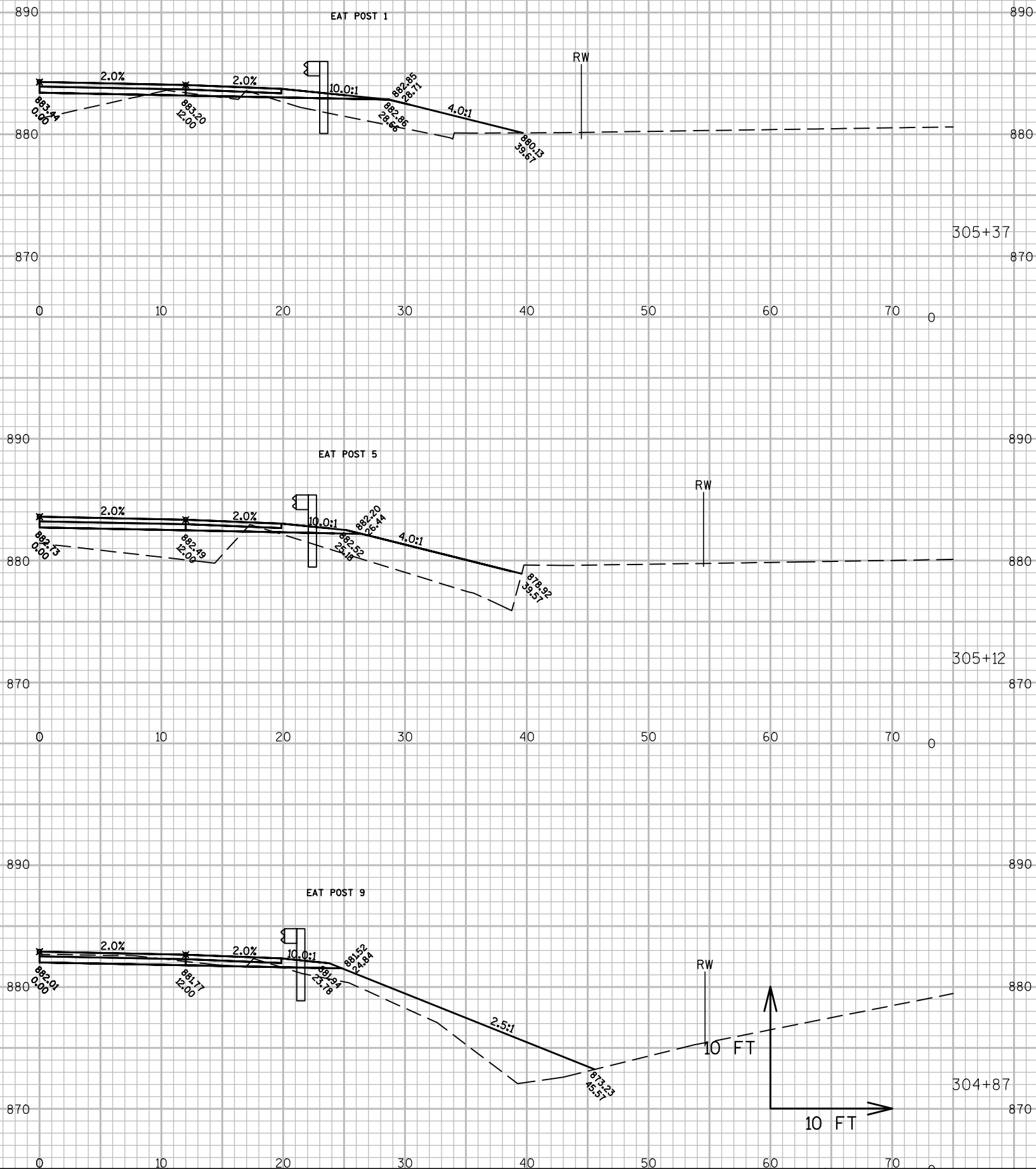
E





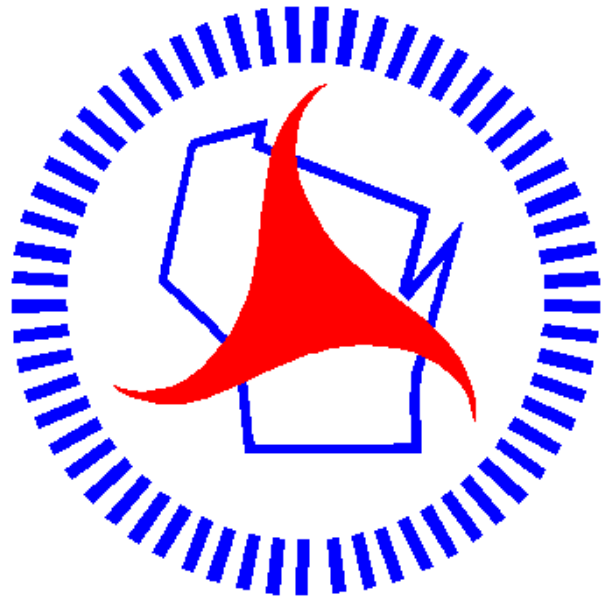


9



9

Notes



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