

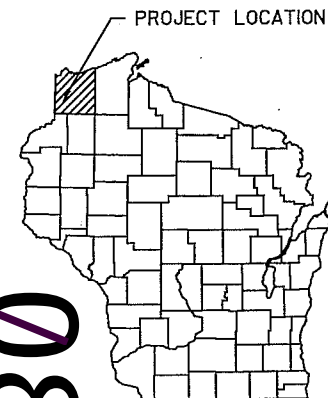
SUP

SEPTEMBER 2017

ORDER OF SHEETS

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

TOTAL SHEETS = 210



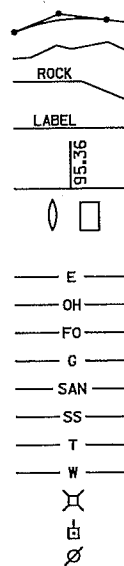
DESIGN DESIGNATION 8010-01-04

A.A.D.T.	2017	=	1200
A.A.D.T.	2037	=	1500
D.H.V.		=	8.2
D.D.		=	63/37
T.		=	12.3%
DESIGN SPEED		=	55
ESALS		=	280,000

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	CAUTION
MARSH AREA	---
WOODED OR SHRUB AREA	---

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



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

DAIRYLAND - SUPERIOR

TOWER FIRE LANE TO S JUNCTION CTH B

STH 35

DOUGLAS COUNTY

STATE PROJECT NUMBER

8010-00-61

DAIRYLAND - SUPERIOR

SOUTH COUNTY LINE TO TOWER FIRE LN

STH 35

DOUGLAS COUNTY

STATE PROJECT NUMBER

8010-01-64

EQUATION
STA 523+70.69 BK=STA 539+77.01 AH

EQUATION
STA 1481+44.62 BK=STA 489+69.86 AH

T-46-N

EQUATION
STA 895+68.81 BK=STA 902+70.20 AH

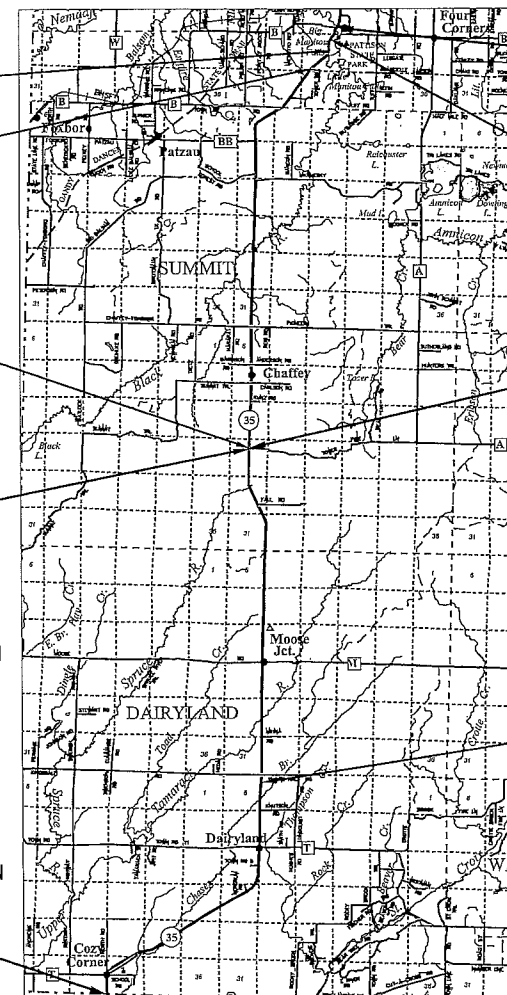
T-45-N

END PROJECT (8010-01-64)
STA 895+68.81
X: 131304.4902
Y: 177793.0146

T-44-N

T-43-N

BEGIN PROJECT (8010-01-64)
STA 8+00.00
X: 112573.7623
Y: 99902.4732



END PROJECT (8010-00-61)
STA 559+00.00
X: 142516.1738
Y: 237919.0707

EQUATION
STA 555+77.73 BK=STA 539+94.36 AH

BEGIN PROJECT (8010-00-61)
STA 902+70.20
X: 131304.4902
Y: 177793.0146

EQUATION
STA 437+97.16 BK=STA 425+32.10 AH

SCALE 0 5 MILES

TOTAL NET LENGTH OF CENTERLINE = 8010-00-61 12.26 MILES
8010-01-64 17.03 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, DOUGLAS COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT

8010-00-61

8010-01-64

FEDERAL PROJECT

PROJECT

WISC 2017455

WISC 2017456

CONTRACT

1

1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NW REGION - SUPERIOR
Designer	MATTHEW BECKLIN
Project Manager	BETH CUNNINGHAM, PE
Regional Examiner	TOU YANG
Regional Supervisor	ANDREW STENSLAND, PE

APPROVED FOR THE DEPARTMENT

DATE: 4/23/17 Andy Stensland (Signature)

E

LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
AH.	AHEAD
APPROX.	APPROXIMATE
A.E.W.	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
AZ.	AZIMUTH
BK.	BACK
BEG.	BEGIN
B.M.	BENCH MARK
C/L	CENTER LINE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
X-SEC.	CROSS SECTION
CR.	CRUSHED
CFS	CUBIC FEET/SECOND
C.Y., CU. YD.	CUBIC YARD
CULV.	CULVERT
C.P.	CULVERT PIPE
D.O.T.	DEPARTMENT OF TRANSPORTATION
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DISCH. OR DIS.	DISCHARGE
EA.	EACH
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
E.B.S.	EXCAVATION BELOW SUBGRADE
EXIST.	EXISTING
FERT.	FERTILIZE
F.E.	FIELD ENTRANCE
FIN.	FINISHED
FT.	FOOT
F.L.	FLOW LINE
GA.	GAUGE
HORIZ.	HORIZONTAL
CWT.	HUNDREDWEIGHT
INL.	INLET
LT.	LEFT
L.H.F.	LEFT-HAND FORWARD
LIN.	LINEAR
LIN. FT.	LINEAR FOOT
L.S.	LUMP SUM
MAX.	MAXIMUM
MI.	MILE
MISC.	MISCELLANEOUS
N.E.	NORTH EAST
N.W.	NORTH WEST
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.O.T.	POINT ON TANGENT
LB.	POUND
P.E.	PRIVATE ENTRANCE
PROJ.	PROJECT
R.	RANGE
REQ'D	REQUIRED
RT.	RIGHT
R.H.F.	RIGHT-HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHR.	SHRINKAGE
SL.	SLOPE
STD.	STANDARD
S.D.D.	STANDARD DETAIL DRAWINGS
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
S.P.P.A.	STRUCTURAL PLATE PIPE ARCH
STRUCT.	STRUCTURE
SURF.	SURFACE
TEL.	TELEPHONE
TN.	TOWN
T.	TRUCKS (PERCENT OF)
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND
V.	VELOCITY OR DESIGN SPEED
V.C.	VERTICAL CURVE

UTILITIES

CENTURYLINK - COMMUNICATION LINE
ALAN NICKELL
P.O. BOX 181
SOLOM SPRINGS, WI 54873
715-378-2131 (OFFICE)
715-566-3879 (CELL)
ALAN.NICKELL@CENTURYLINK.COM
EAST CENTRAL ENERGY - ELECTRICITY
JEROD STAMPER
3617 BAUMGARTNER RD
SUPERIOR, WI 54880
715-399-6169 (OFFICE)
218-293-1273 (CELL)
JEROD.STAMPER@ECEMN.COM
CONSOLIDATED COMMUNICATIONS - COMMUNICATION LINE
JEFF BRIGHT
4960 MILLER TRUNK HY SUITE 500
HERMANTOWN, MN 55811
218-740-6146
JEFF.BRIGHT@CONSOLIDATED.COM
GREAT RIVER ENERGY - ELECTRICITY
MICHELLE LOMMEL
12300 ELM CREEK BLVD
MAPLE GROVE, MN 55369
763-445-5977
MLOMMEL@GRENERGY.COM

GENERAL NOTES

HORIZONTAL CONTROL POINTS AND ANY OTHER SURVEY INFORMATION WILL BE PROVIDED BY NORTHWEST REGIONAL TECHNICAL SERVICES UPON REQUEST.

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

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

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGED TOPSOIL, FERTILIZED AND SEEDED AS DIRECTED BY THE ENGINEER.

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL CONTACT THE COUNTY SURVEYOR REGARDING MONUMENT AND PROPERTY CORNER PRESERVATION.

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

IT IS THE CONTRACTORS RESPONSIBILITY TO CALL DIGGERS HOTLINE PRIOR TO BEGINNING WORK OPERATIONS AND TO CONFIRM ALL UTILITY LOCATIONS.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF ITEMS OF BASE AGGREGATE OR HMA PAVEMENT 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 MATERIAL AS DIRECTED BY THE ENGINEER.

TYPICAL FINISHED SECTIONS SHOW THE GENERAL ROADWAY FEATURES THROUGHOUT THE PROJECT. SLOPES AND DISTANCES MAY VARY WITHIN THE STATION LIMITS.



Dial 811 or (800)242-8511

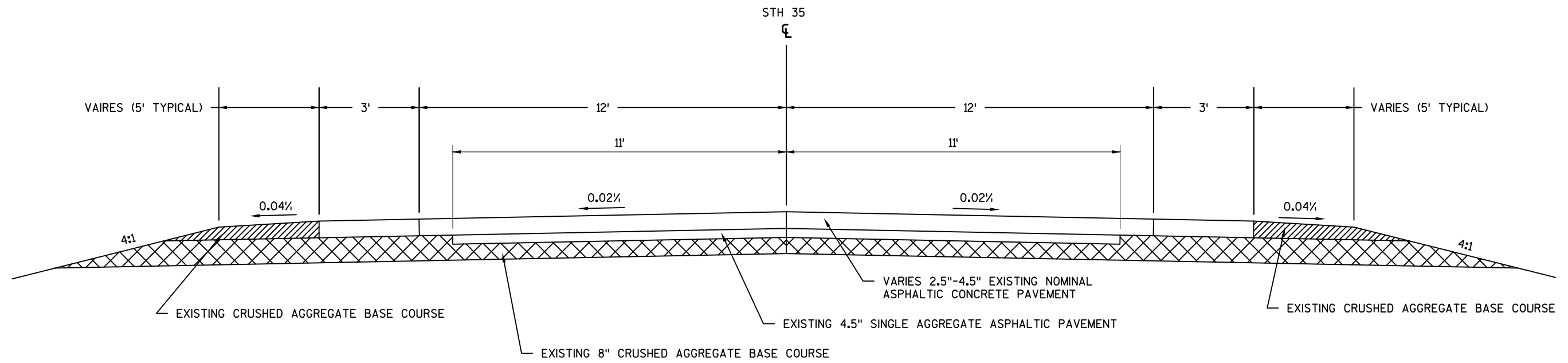
www.DiggersHotline.com

DOUGLAS COUNTY HIGHWAY DEPARTMENT

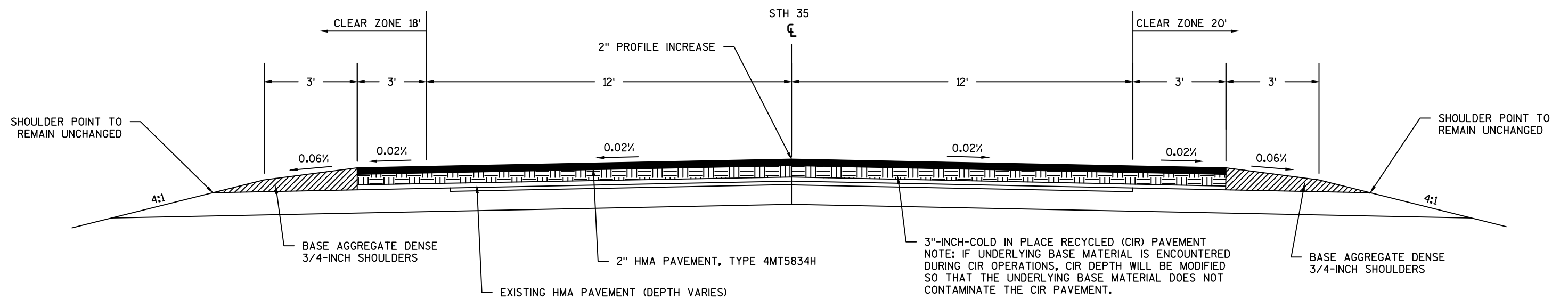
JASON JACKMAN, HIGHWAY COMMISSIONER
DOUGLAS COUNTY HIGHWAY DEPARTMENT
7417 S COUNTY RD E
PO BOX 174
HAWTHORNE, WI 54842
(715) 374-2575

WISCONSIN DNR – LIASON

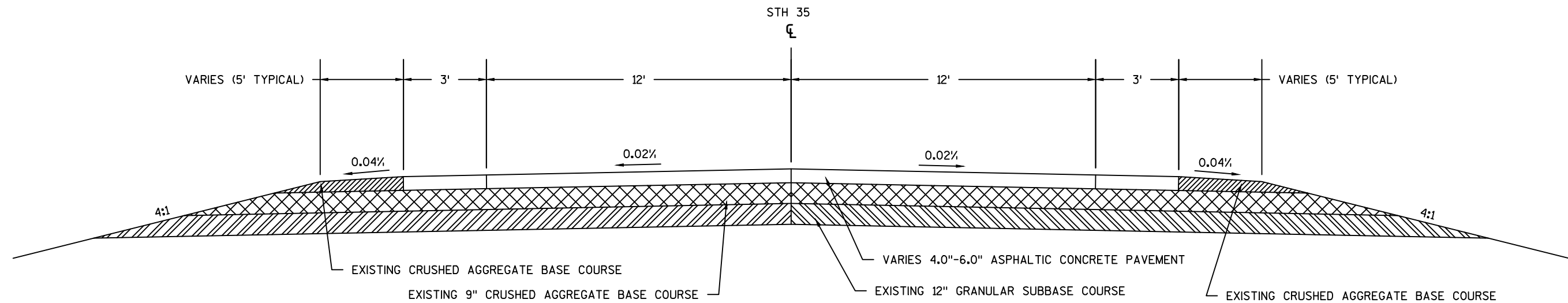
DEPARTMENT OF NATURAL RESOURCES
SPOONER - DNR SERVICE CENTER
810 W MAPLE ST
SPOONER, WI 54801
ATTN.: AMY CRONK
(715) 635-4229
AMY.CRONK@WISCONSIN.GOV



STH 35 EXISTING TYPICAL SECTION
9+65-415+00

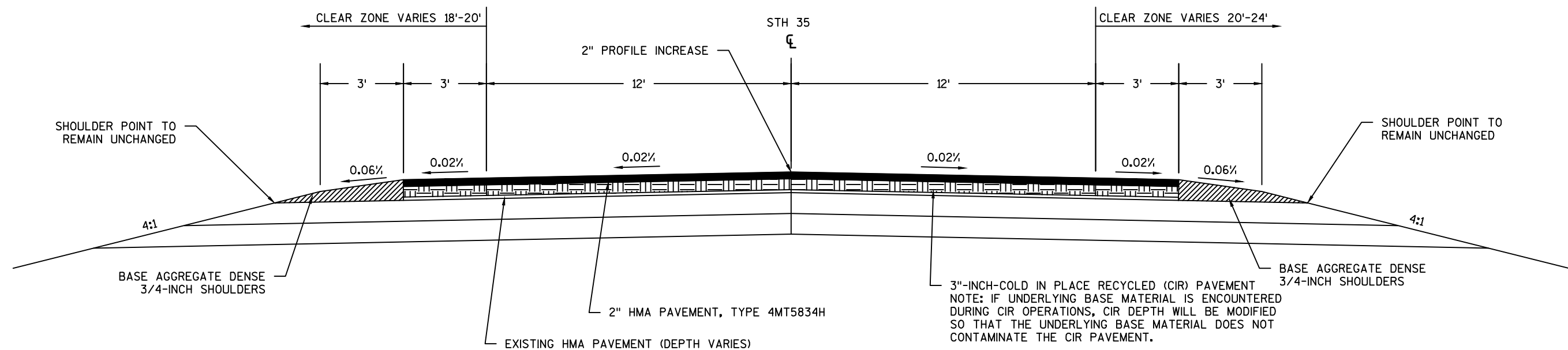


STH 35 PROPOSED TYPICAL SECTION
9+65-415+00



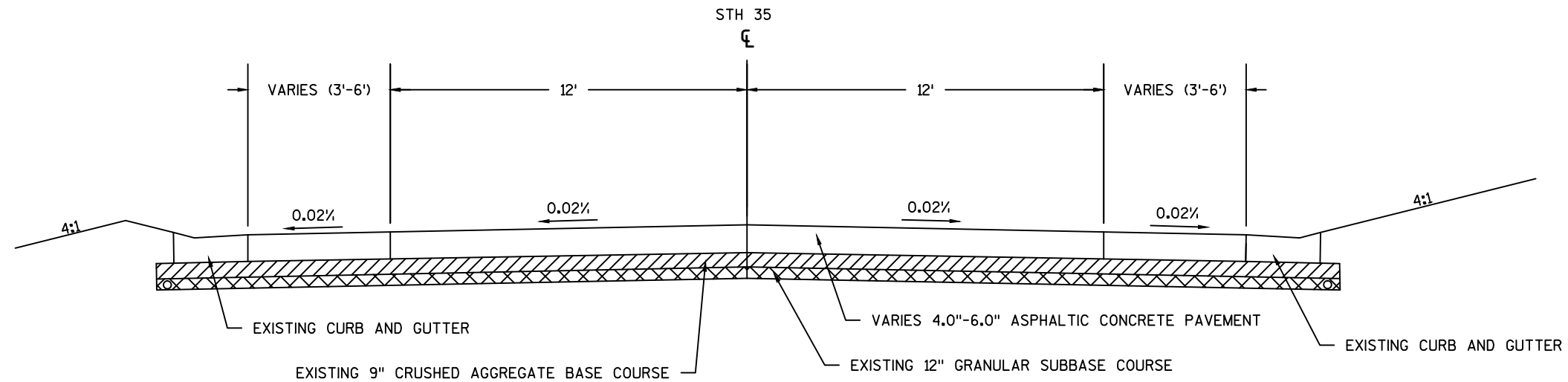
STH 35 EXISTING TYPICAL SECTION

415+00-895+68
902+70-1481+44
489+69-559+00



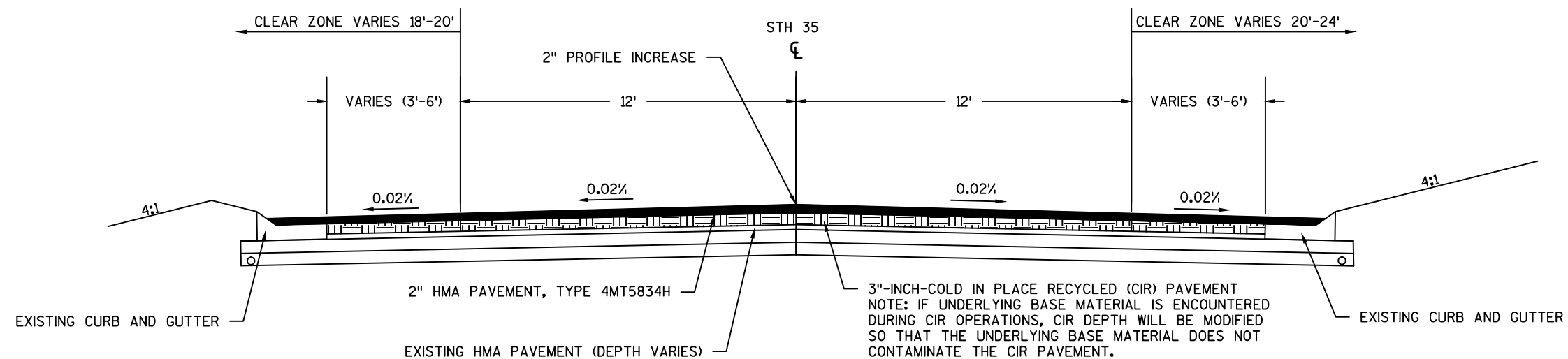
STH 35 PROPOSED TYPICAL SECTION

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902+70-1481+44
489+69-559+00



STH 35 EXISTING TYPICAL SECTION

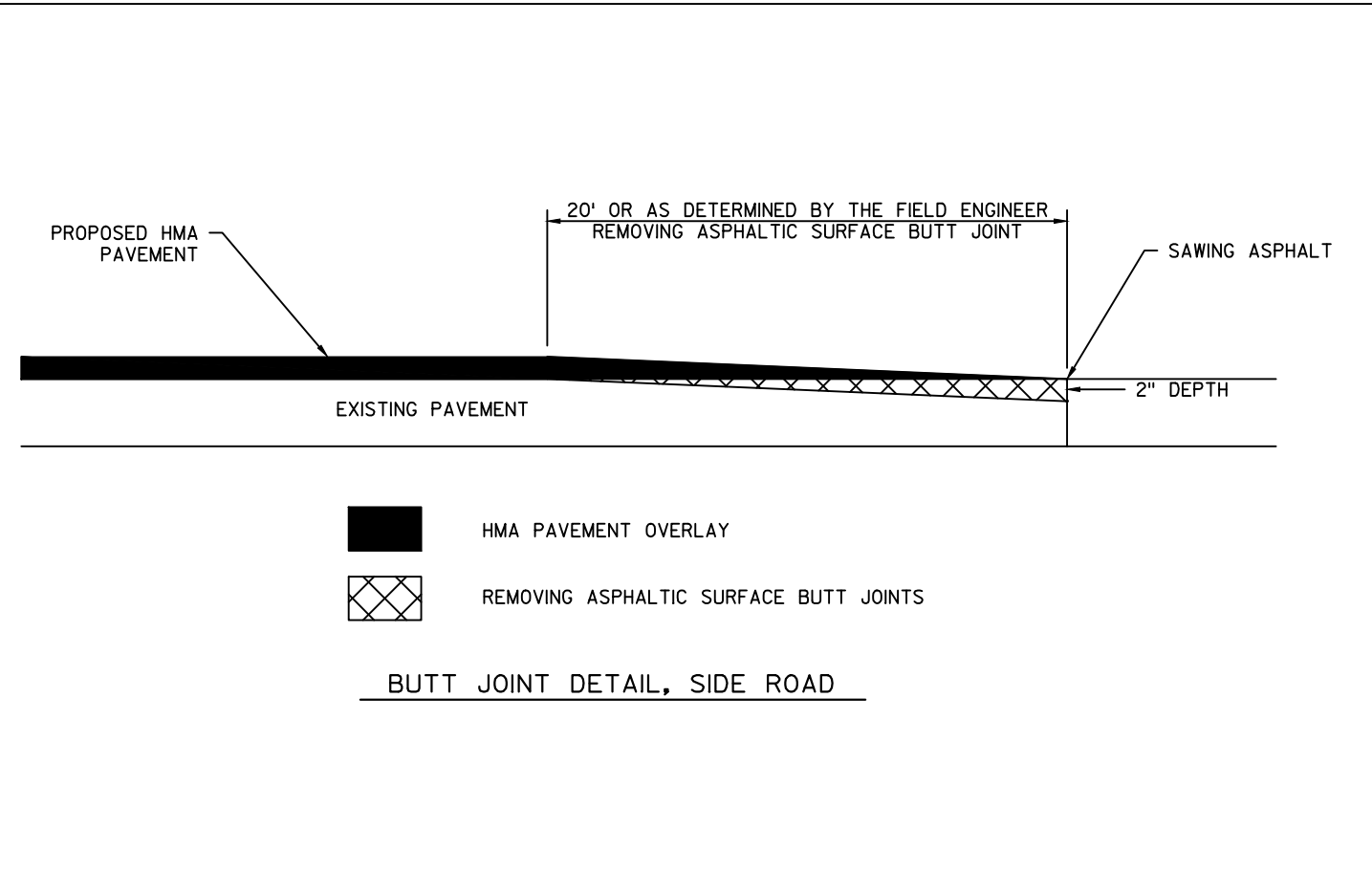
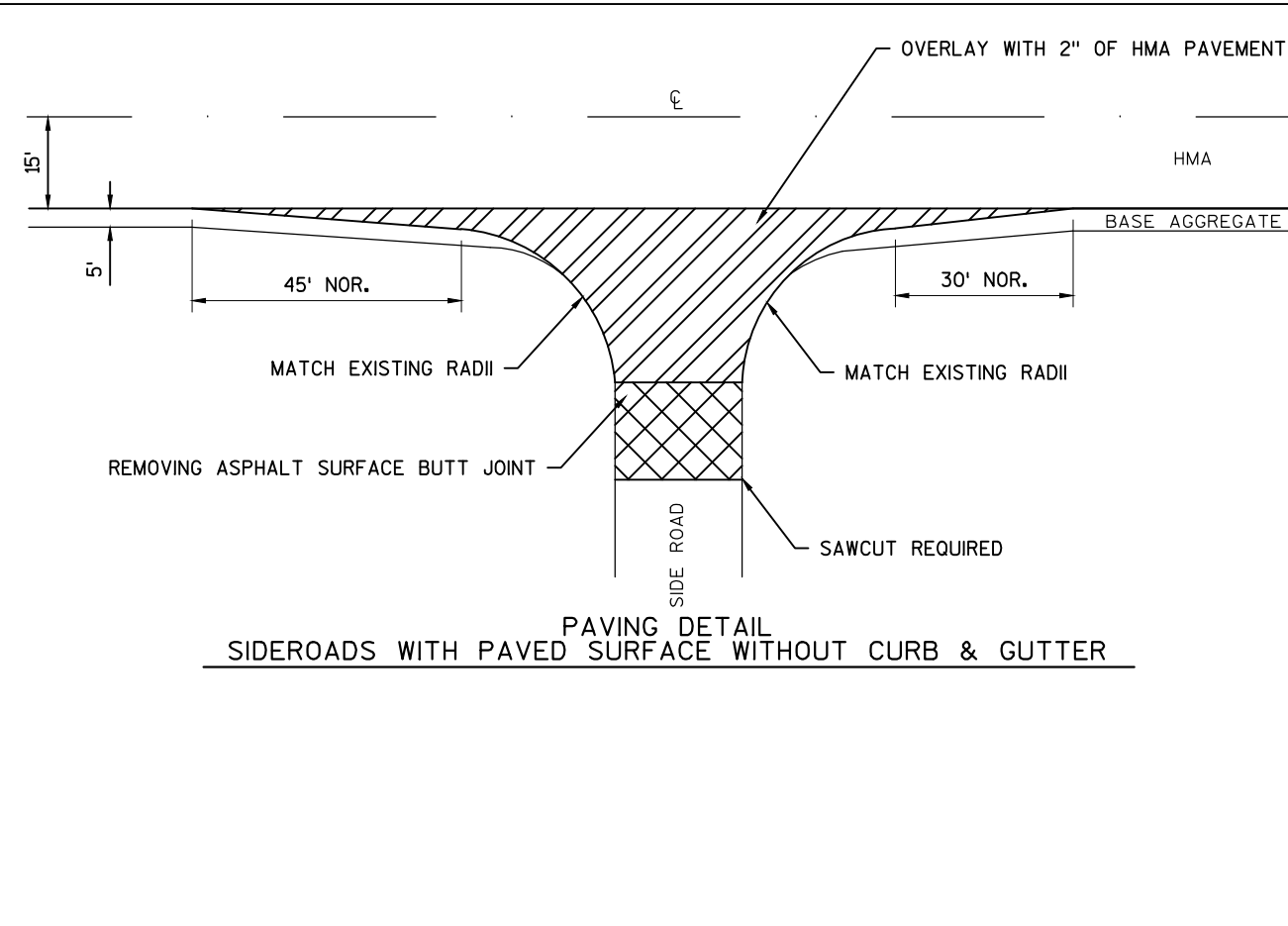
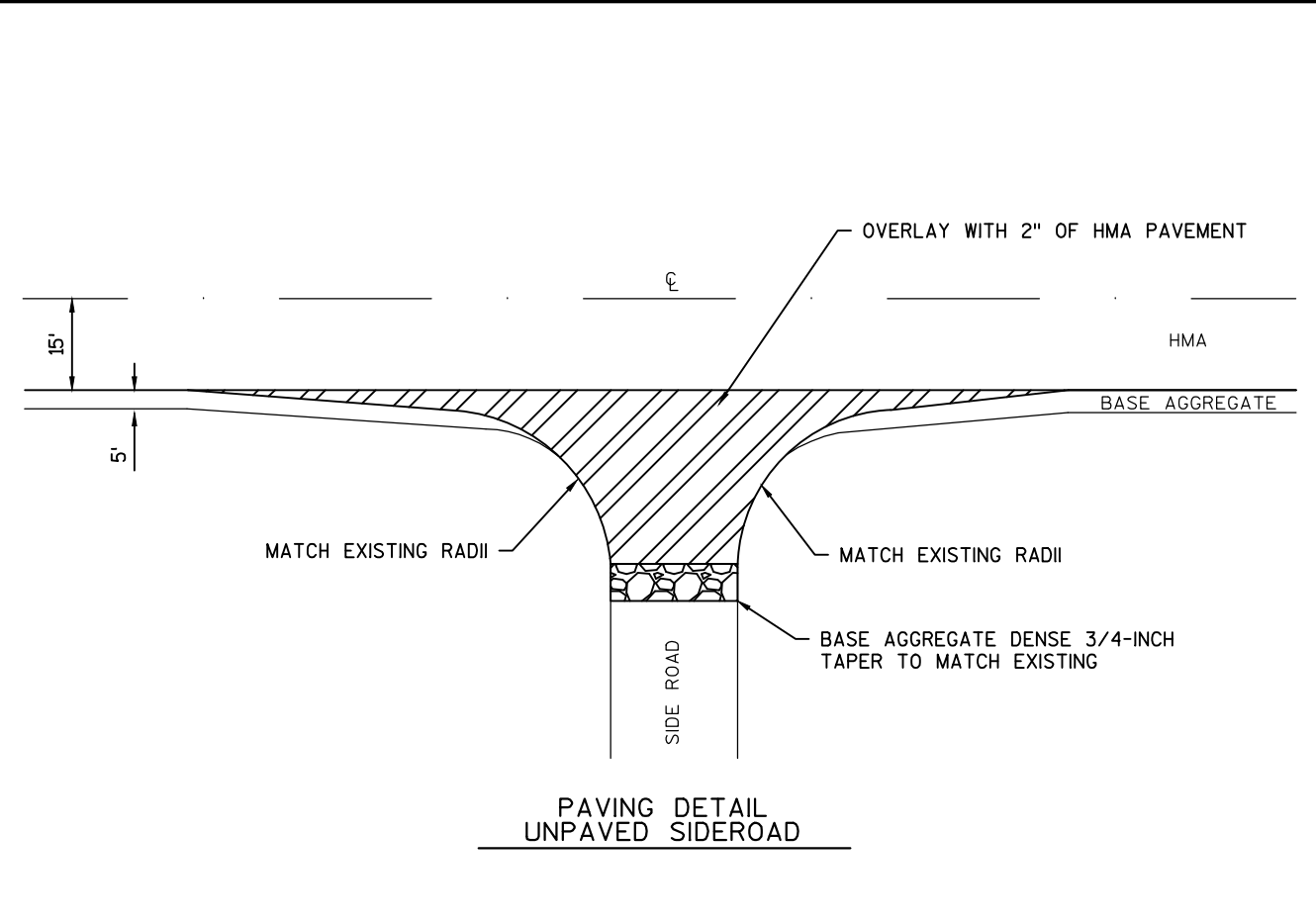
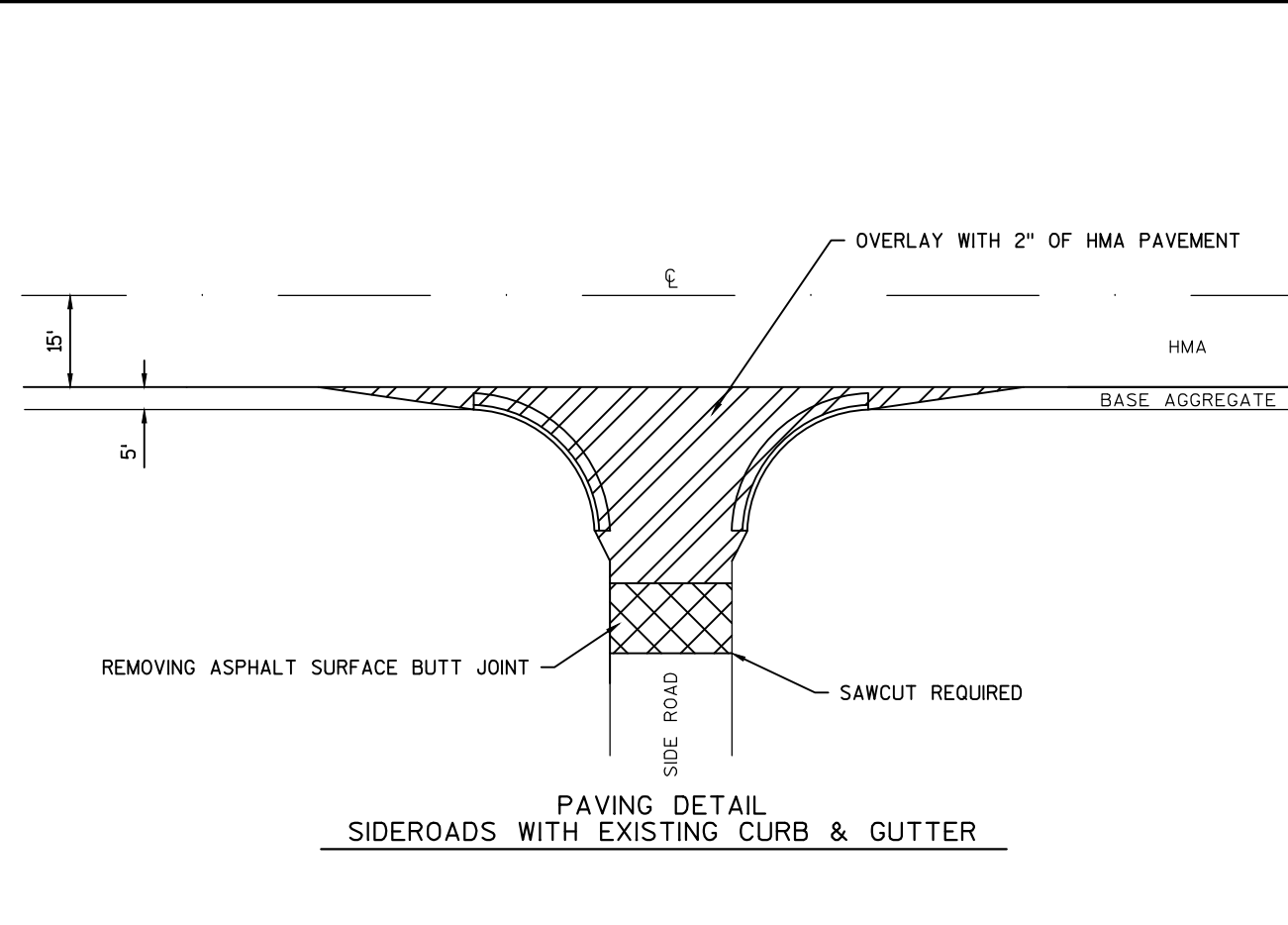
783+70-786+04 RT
 964+28-966+49 RT
 1023+81-1026+24 LT
 1038+74-1046+52 LT & RT
 1268+86-1270+78 RT
 1275+99-1280+40 LT & RT
 1338+75-1343+00 LT & RT



STH 35 PROPOSED TYPICAL SECTION

783+70-786+04 RT
 964+28-966+49 RT
 1023+81-1026+24 LT
 1038+74-1046+52 LT & RT
 1268+86-1270+78 RT
 1275+99-1280+40 LT & RT
 1338+75-1343+00 LT & RT

2



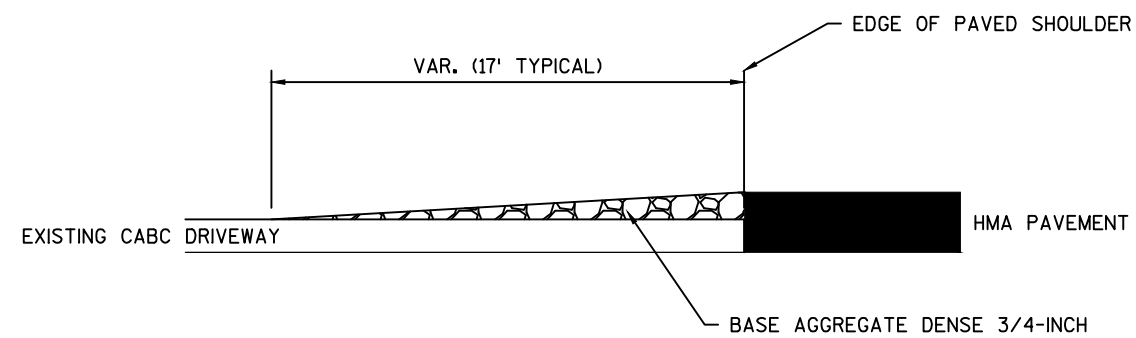
PROJECT NO: 8010-00-61/8010-01-64	HWY: STH 35
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COUNTY: DOUGLAS

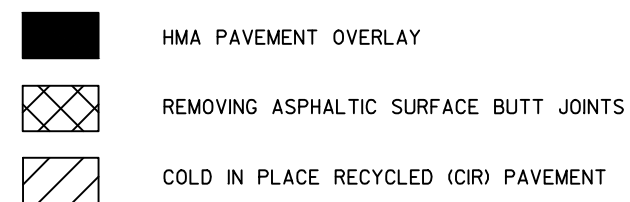
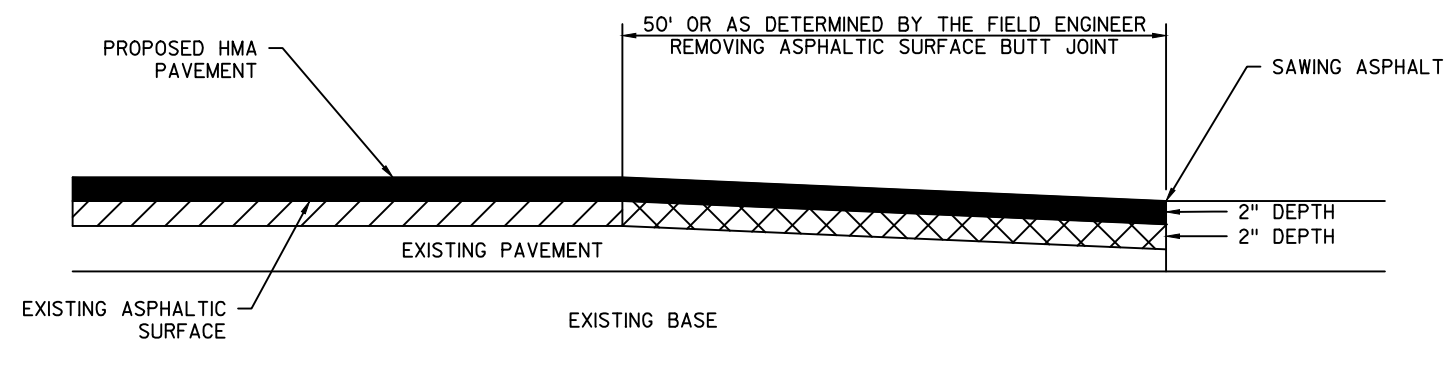
CONSTRUCTION DETAILS

SHEET 6

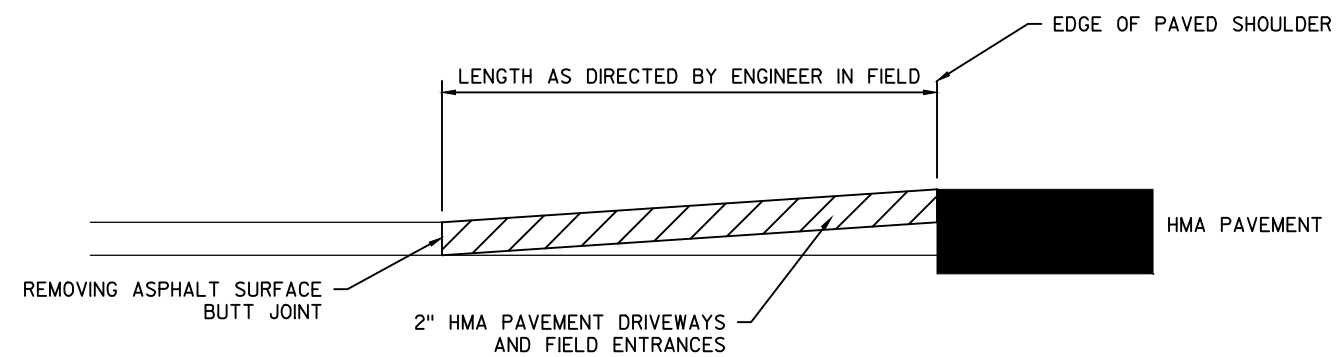
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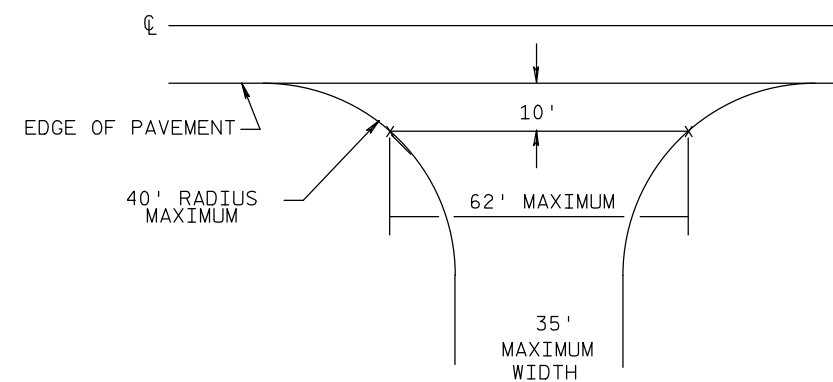
BASE AGGREGATE PRIVATE ENTRANCE DETAIL
PROFILE VIEW



BUTT JOINT DETAIL, MAINLINE

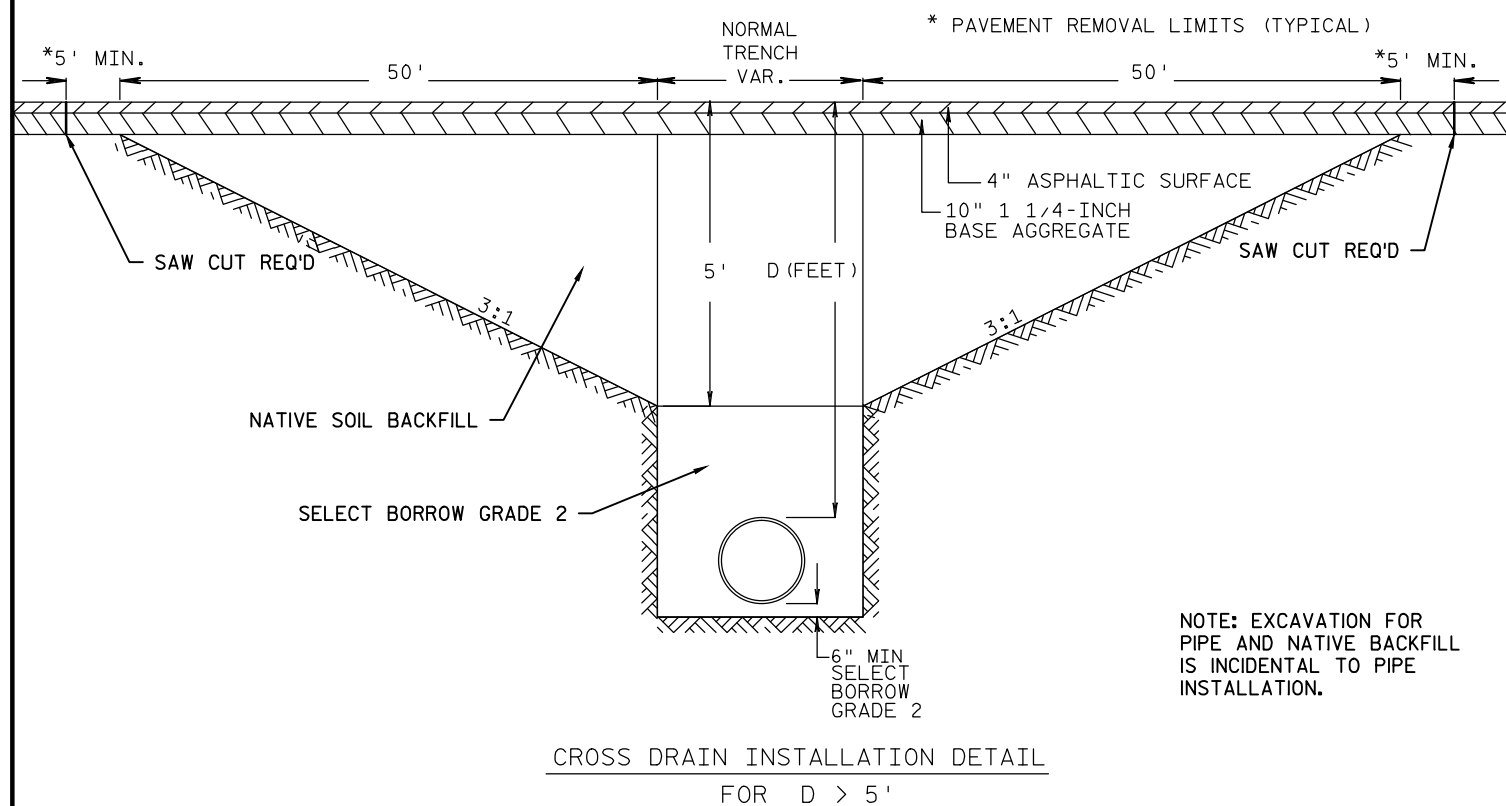
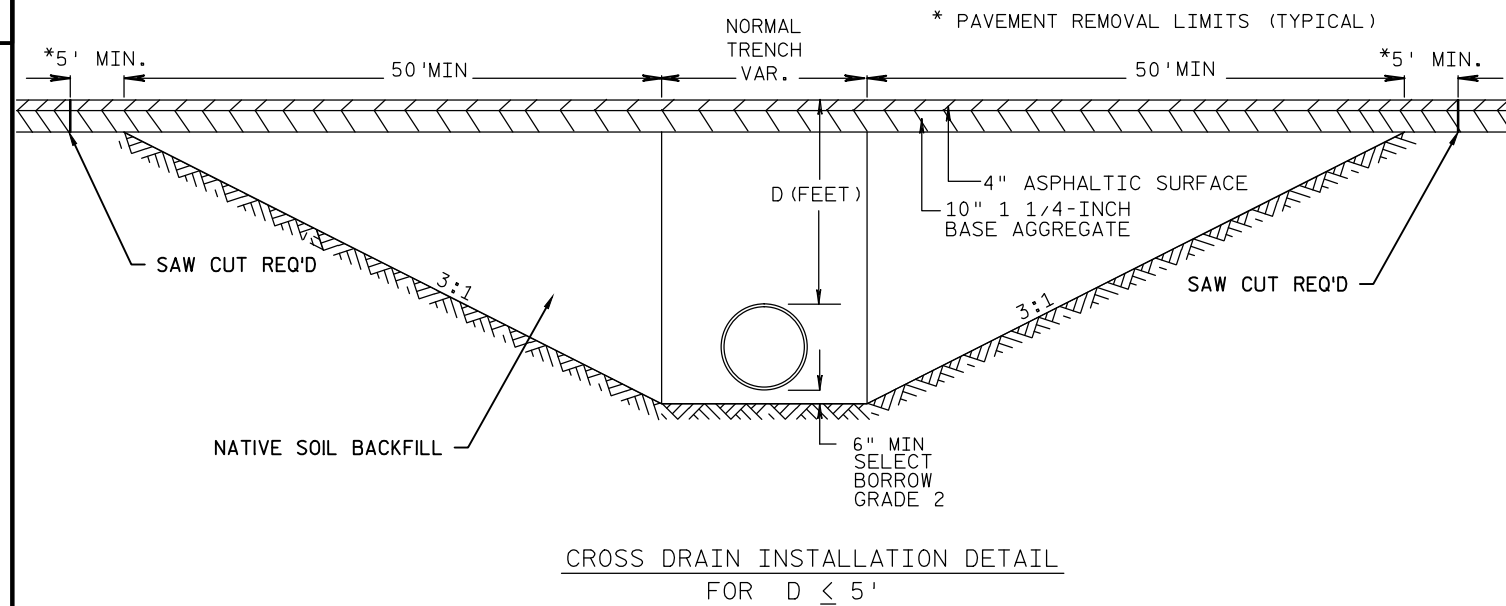


PAVED PRIVATE ENTRANCE DETAIL
PROFILE VIEW

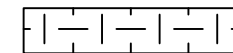


TYPICAL DRIVEWAY DETAIL
(COMMERCIAL RURAL)

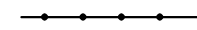
NOTE: CULVERT REPLACEMENT TO OCCUR PRIOR TO CIR OPERATION



LEGEND



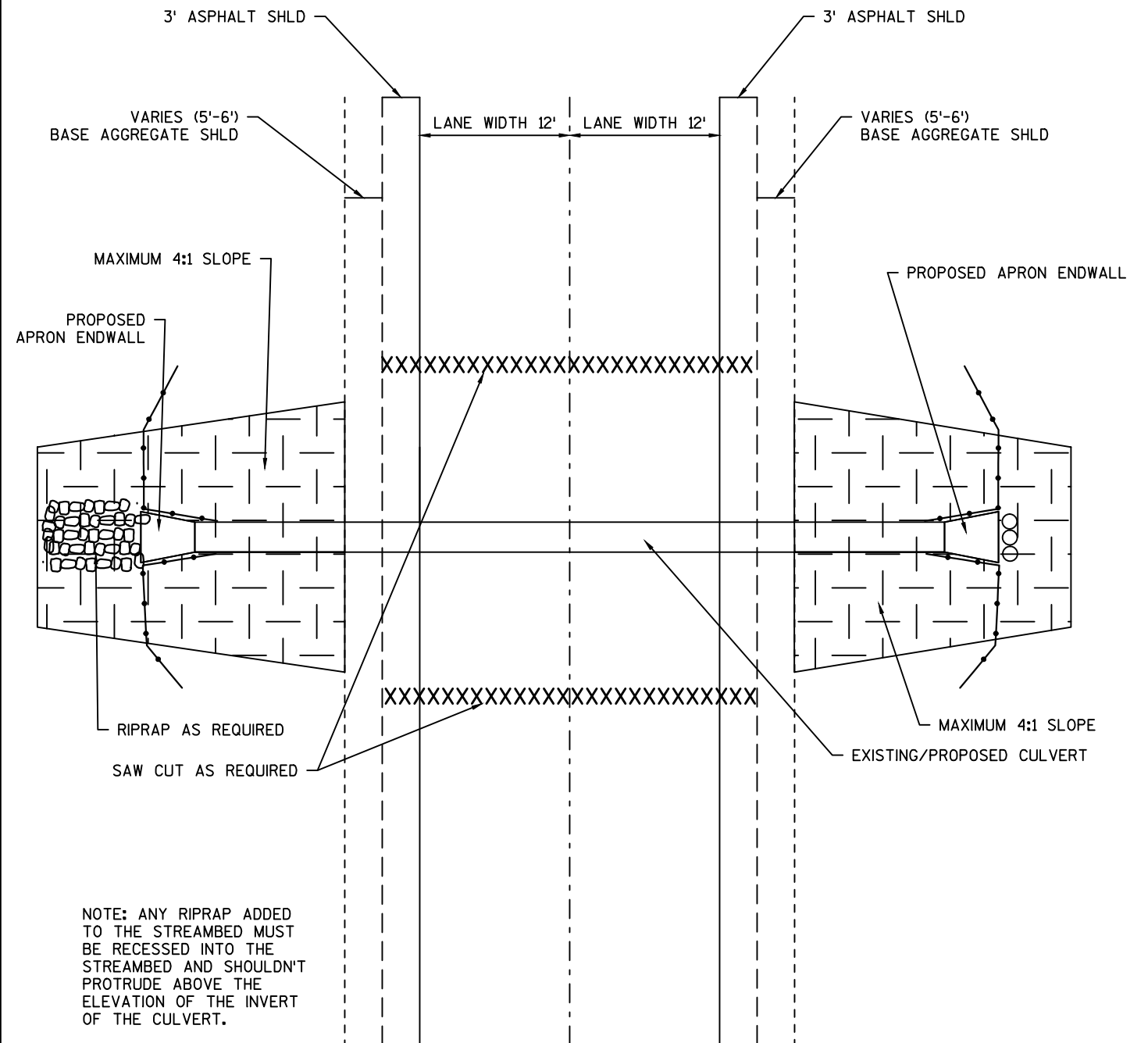
EROSION MAT URBAN CLASS I TYPE B



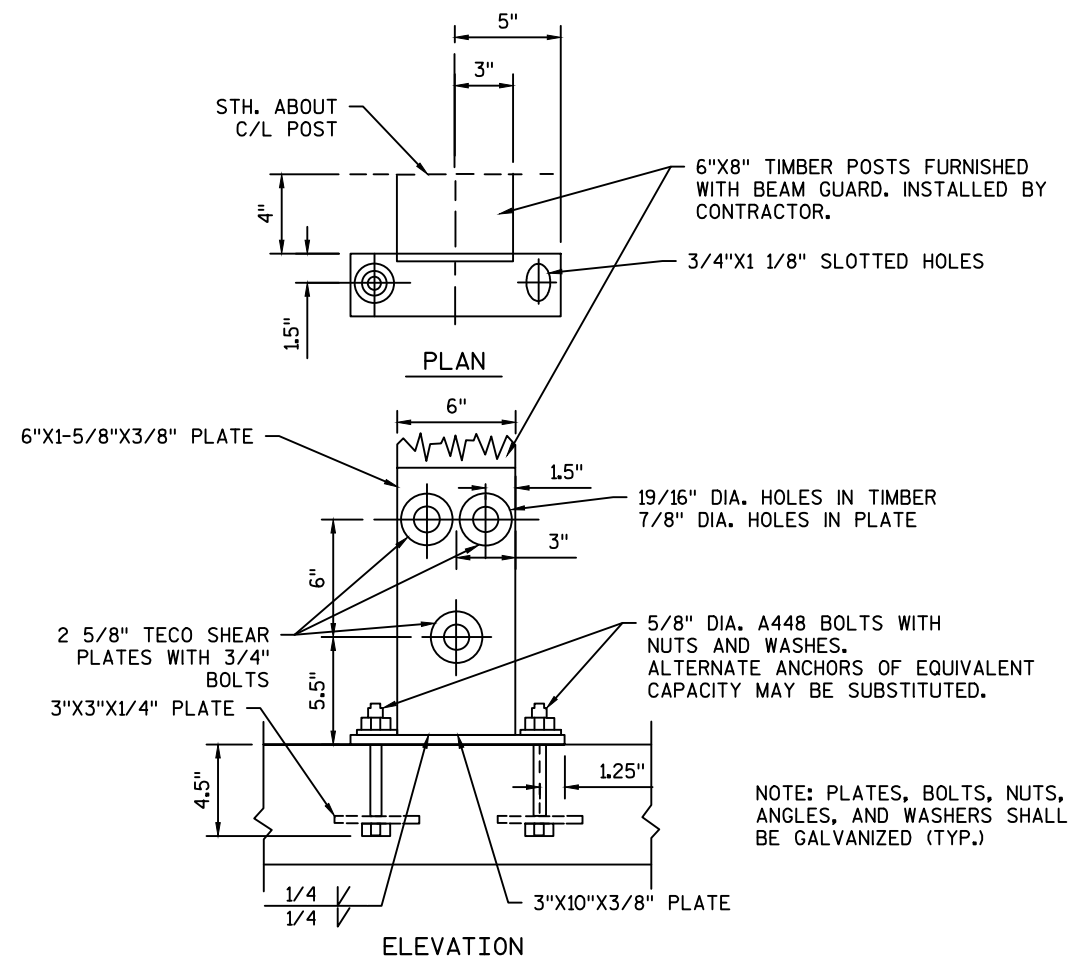
SILT FENCE



RIP RAP

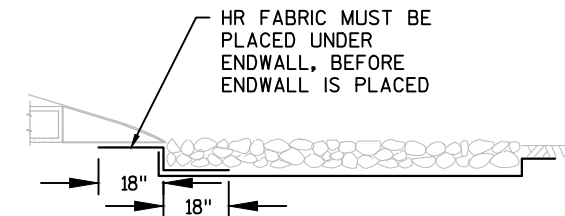


ENDWALL RESTORATION

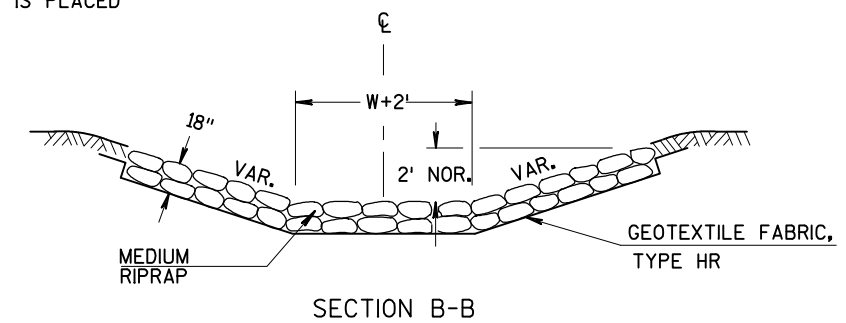
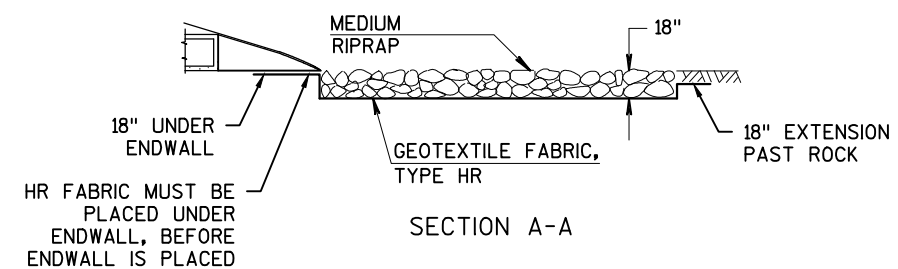
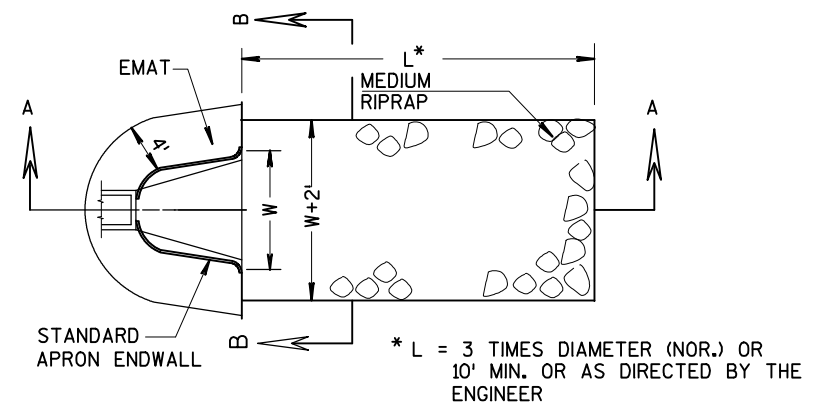


EXISTING BEAM GUARD POST CONNECTION DETAILS

HR FABRIC MAY BE INSTALLED AS TWO SEPARATE PIECES, OVERLAPPING AS SHOWN OR AS APPROVED BY THE ENGINEER IN THE FIELD. EXTRA QUANTITY FOR OVERLAP IS INCIDENTAL TO THE CONTRACT.



ALTERNATE HR FABRIC INSTALLATION

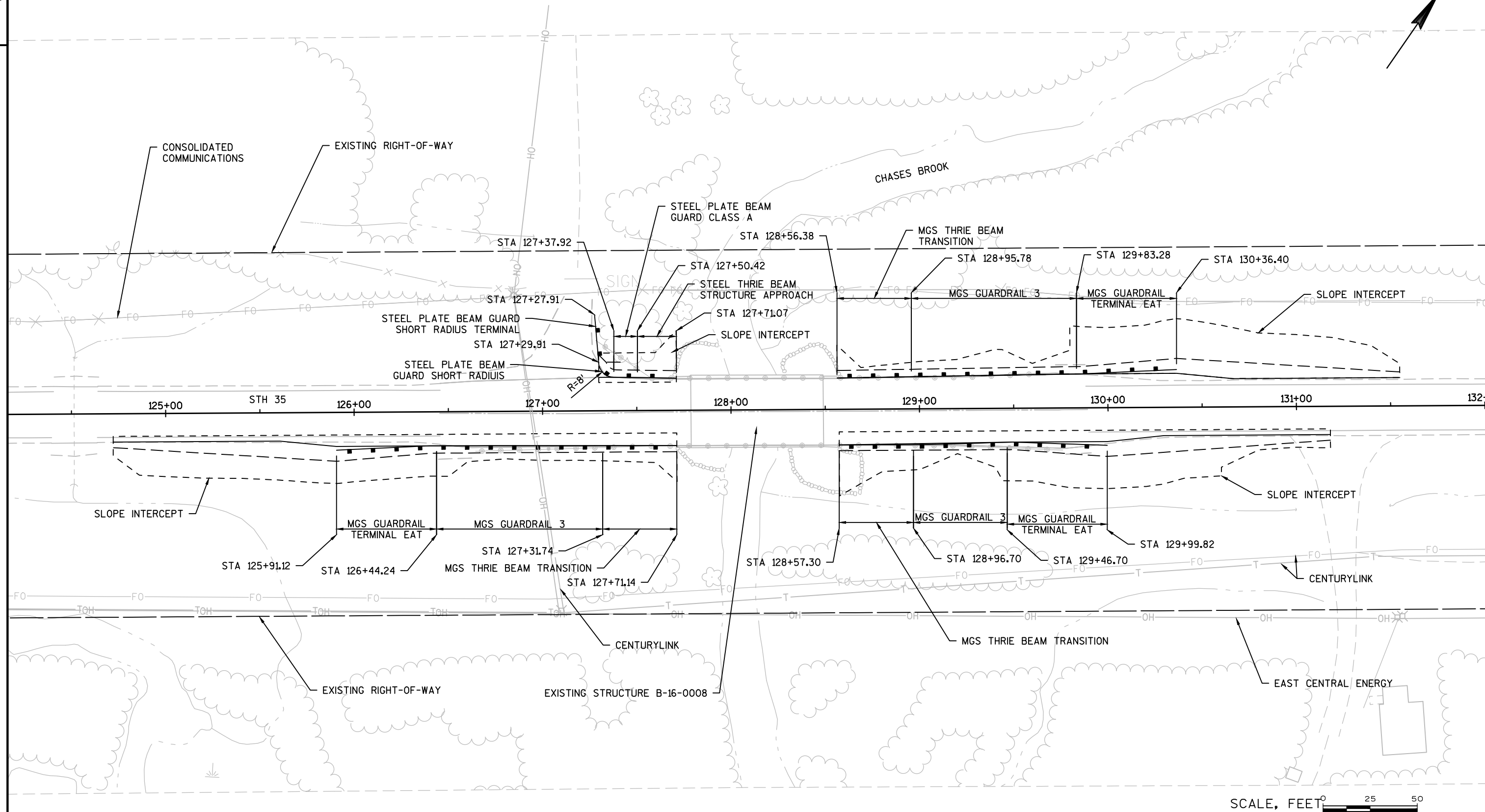
MEDIUM RIPRAP AND GEOTEXTILE FABRIC
DETAIL AT APRON ENDWALLS

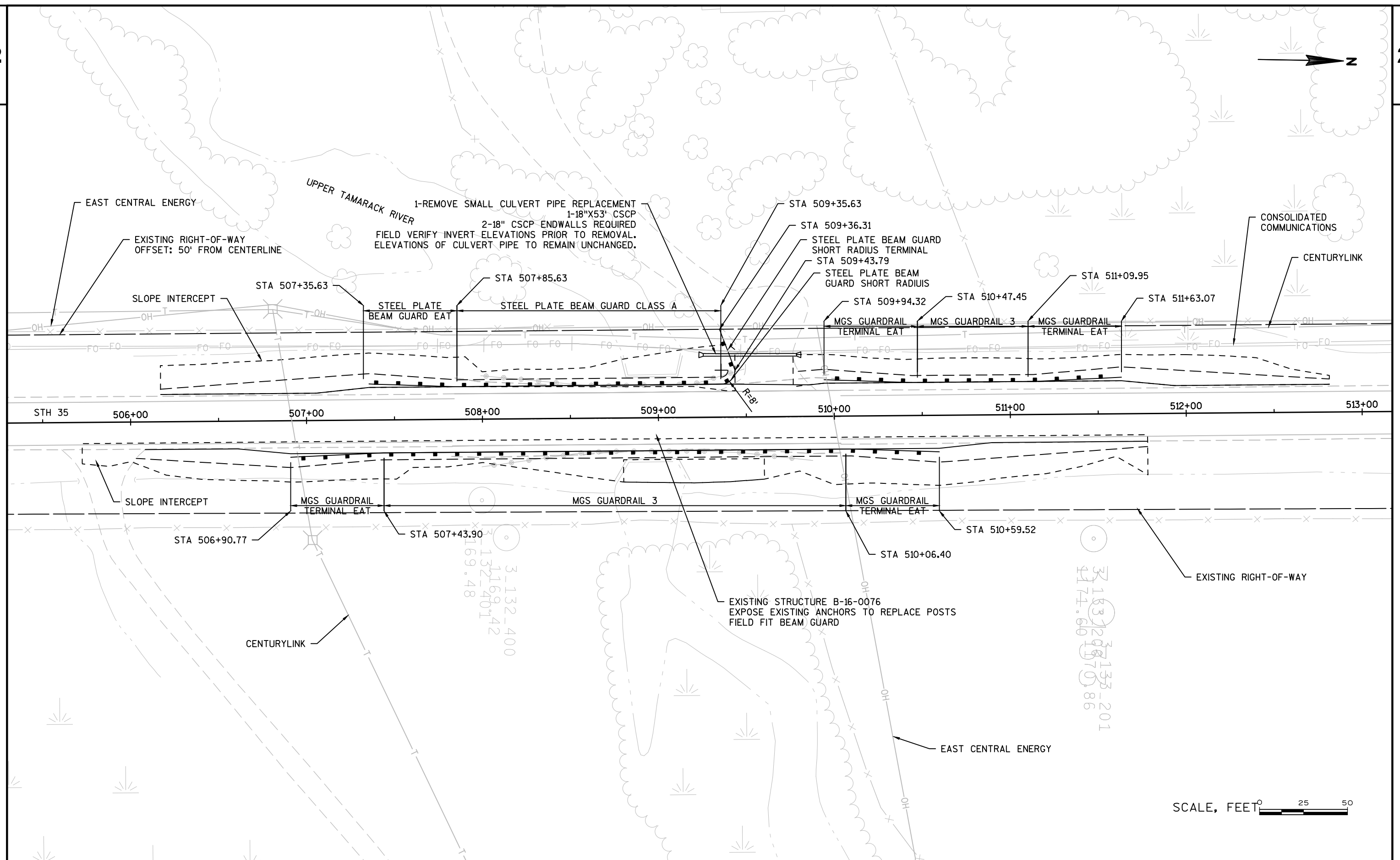
GENERAL NOTE:
ANY RIPRAP ADDED TO THE STREAMBED MUST BE RECESSED INTO THE STREAMBED AND SHOULDN'T PROTRUDE ABOVE THE ELEVATION OF THE INVERT OF THE CULVERT.

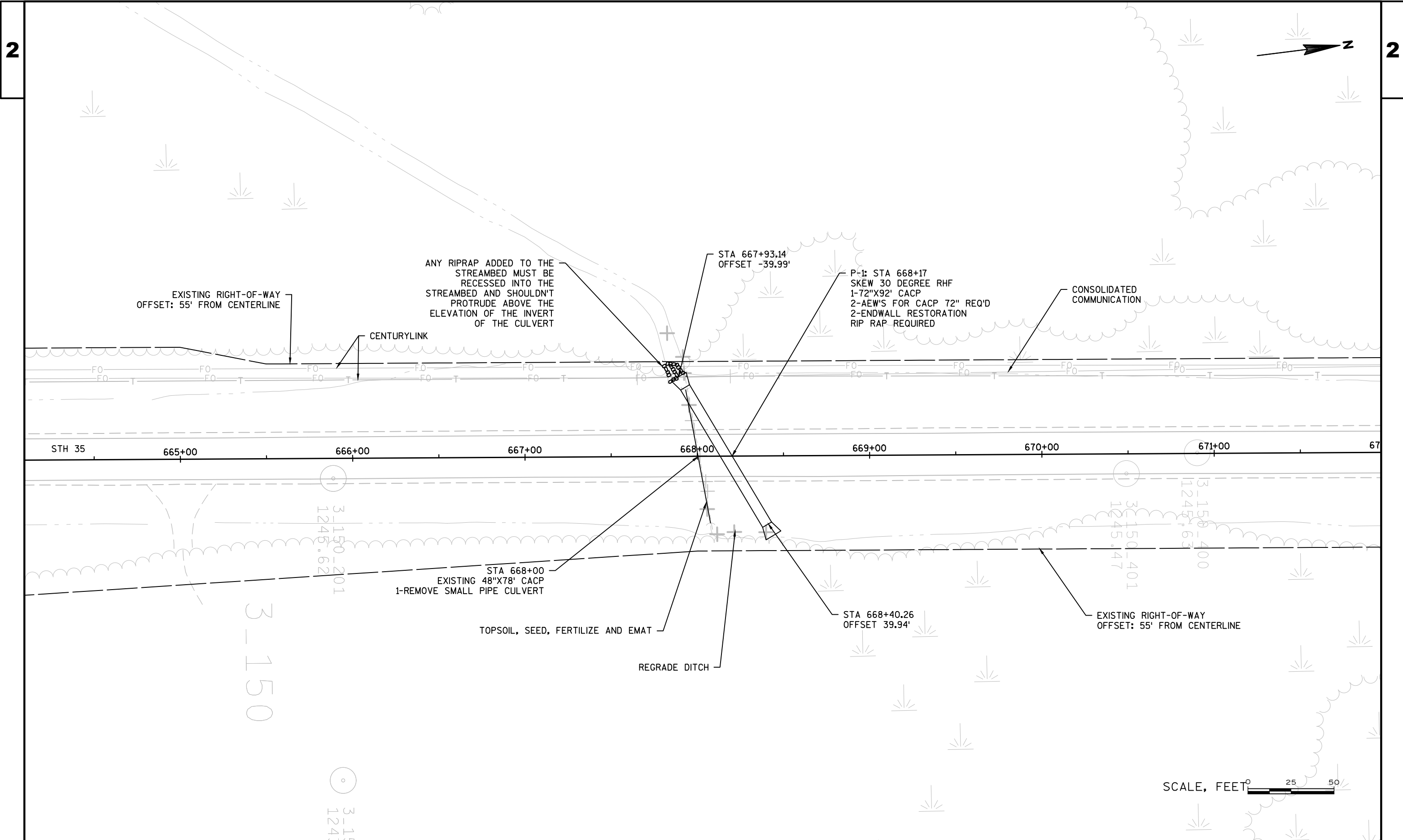
WCCS DOUGLAS COUNTY
NAD 83 (2007)
NAVD 88 (2007)
WCCS DOUGLAS COUNTY (ZONE 9516)
GEOID 12-A

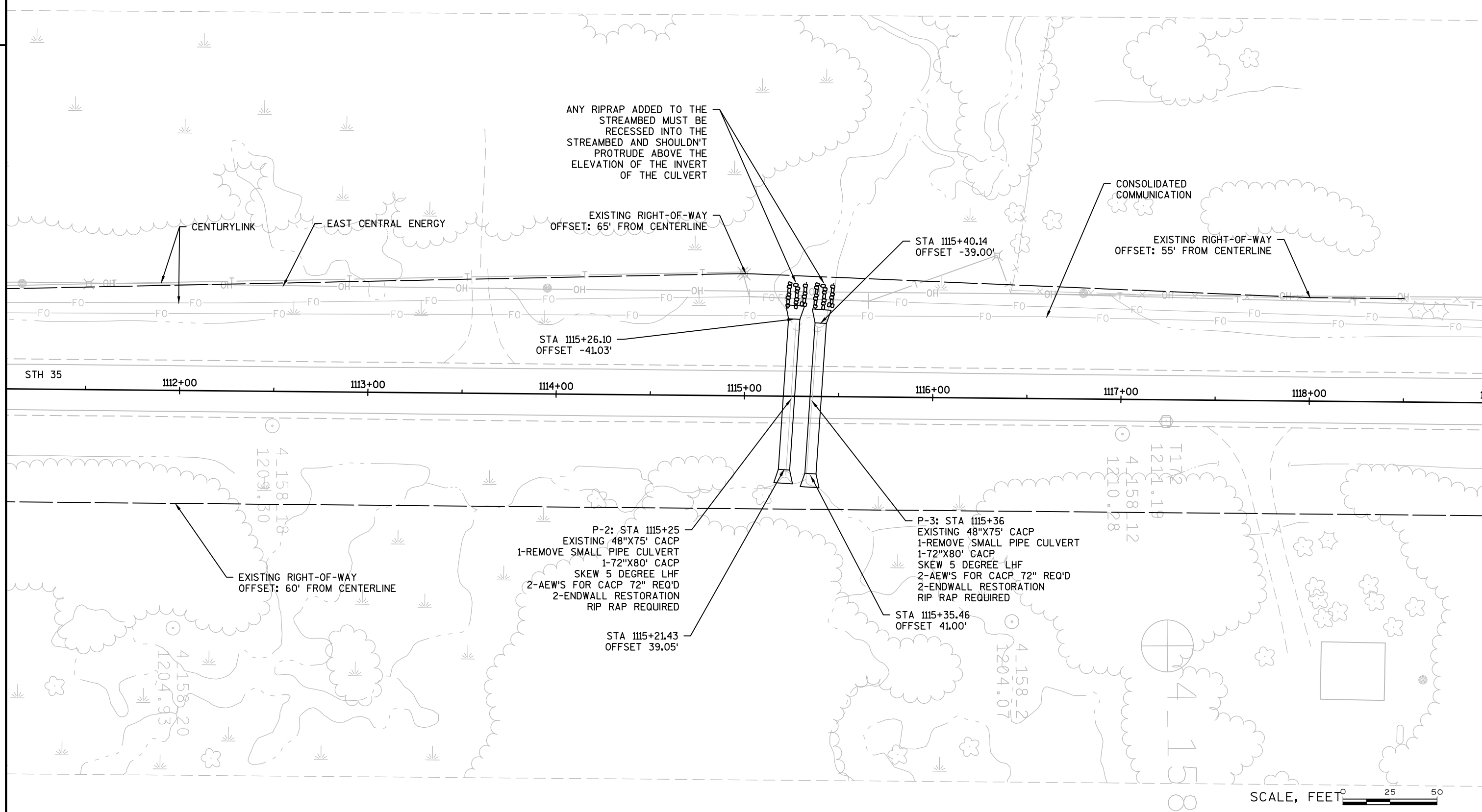
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cp-20048	112632.70	83182.20
cp-20050	112539.06	90533.32
cp-20596	112491.67	98587.31
cp-20042	112509.80	101132.92
cp-20592	112807.43	102989.58
cp-20038	114495.37	104622.80
cp-20588	116662.85	105753.92
cp-20551	119060.87	106502.45
cp-20031	120999.21	107953.68
cp-20547	123292.52	109370.52
cp-20027	125575.84	110942.07
cp-20543	128388.63	112893.19
cp-20021	131848.27	114833.93
cp-20539	133200.53	116162.42
cp-20535	133751.09	118740.00
20009	133819.38	141535.35
20515	133883.98	137193.93
20531	133809.18	124299.23
af9943	133825.01	121479.76
cp-20528	133809.18	124299.23
3501	133608.18	127296.03
cp-20527	133623.43	127660.69
cp-20017	133714.92	129195.03
cp-20523	133932.02	131068.34
3502	133968.57	131703.21
cp-20519	133820.85	134233.78
3503	133922.26	135060.04
cp-20013	133887.56	136133.75
cp-20511	133714.85	140471.01
3504	133819.38	141535.30
3505	133841.36	147533.34

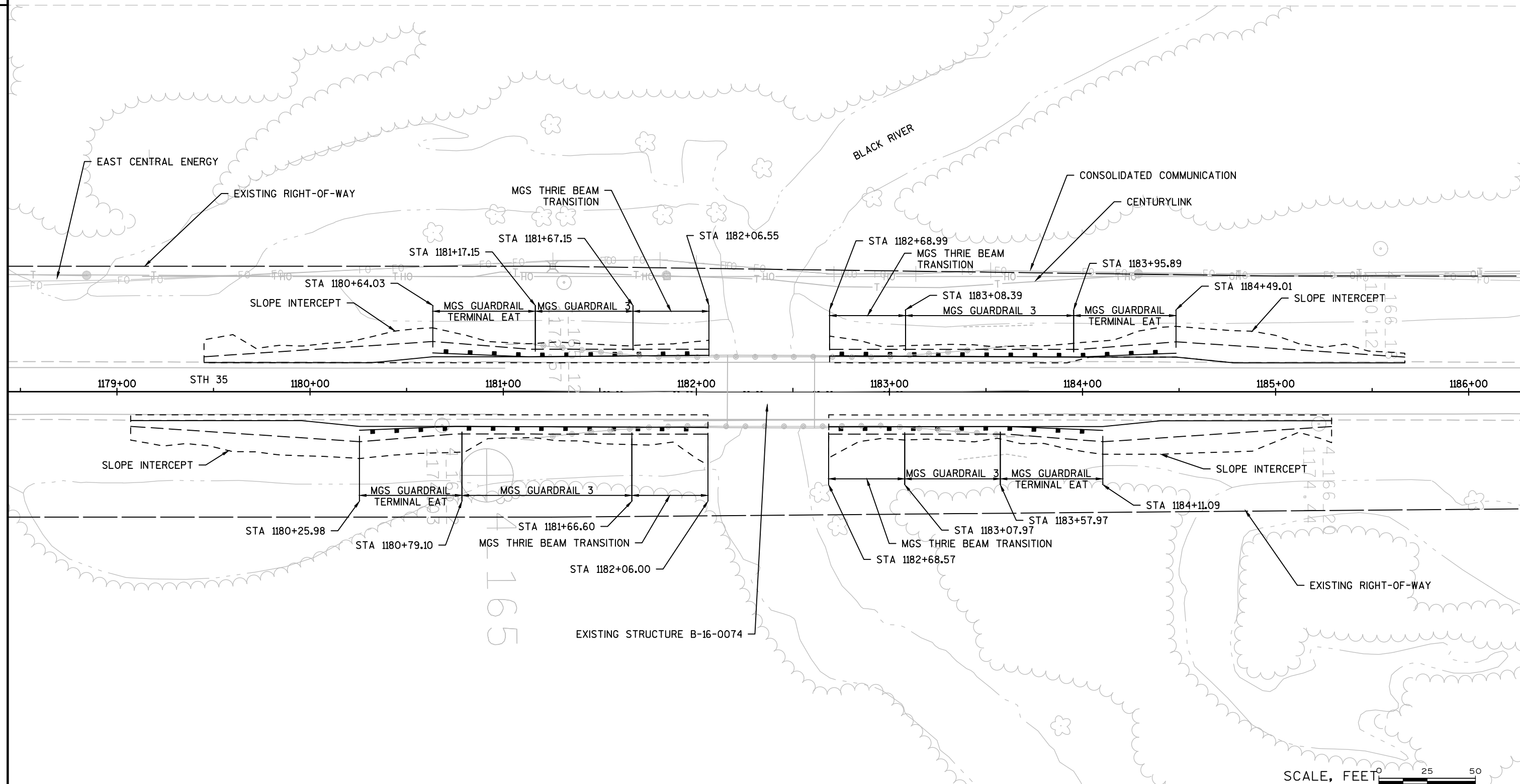
POINT NUMBER	EASTING	NORTHING
3506	133840.17	152394.00
3507	133751.76	156872.30
3508	133729.92	159602.79
3509	133947.31	164451.44
3510	133830.30	167449.19
3511	132732.20	169874.13
3512	131246.77	173693.81
3513	131371.73	177831.09
dn5902	131497.54	183523.56
cp-2107	131391.04	186653.17
cp-2098	131465.92	189670.72
cp-2089	131296.78	192316.48
dn5901	131330.42	195074.83
af9946	131355.46	197520.84
cp2080	131298.54	200071.09
cp-2071	131412.20	202870.02
cp-2062	131354.34	205610.31
cp-600	131380.22	208311.30
cp-2053	131457.18	208725.51
dn5899	131395.65	211709.36
cp-2044	131426.13	215111.65
cp-610	131330.98	218413.44
cp-2035	131346.66	221315.40
dn5898	131270.07	223789.79
cp-2026	132707.23	224949.19
cp-619	135039.78	226339.23
dn5897	136618.78	228575.11
cp-2017	137331.39	229596.01
cp-625	138959.86	231768.92
dn5896	141428.86	234419.36
cp-10045	142378.17	237818.84

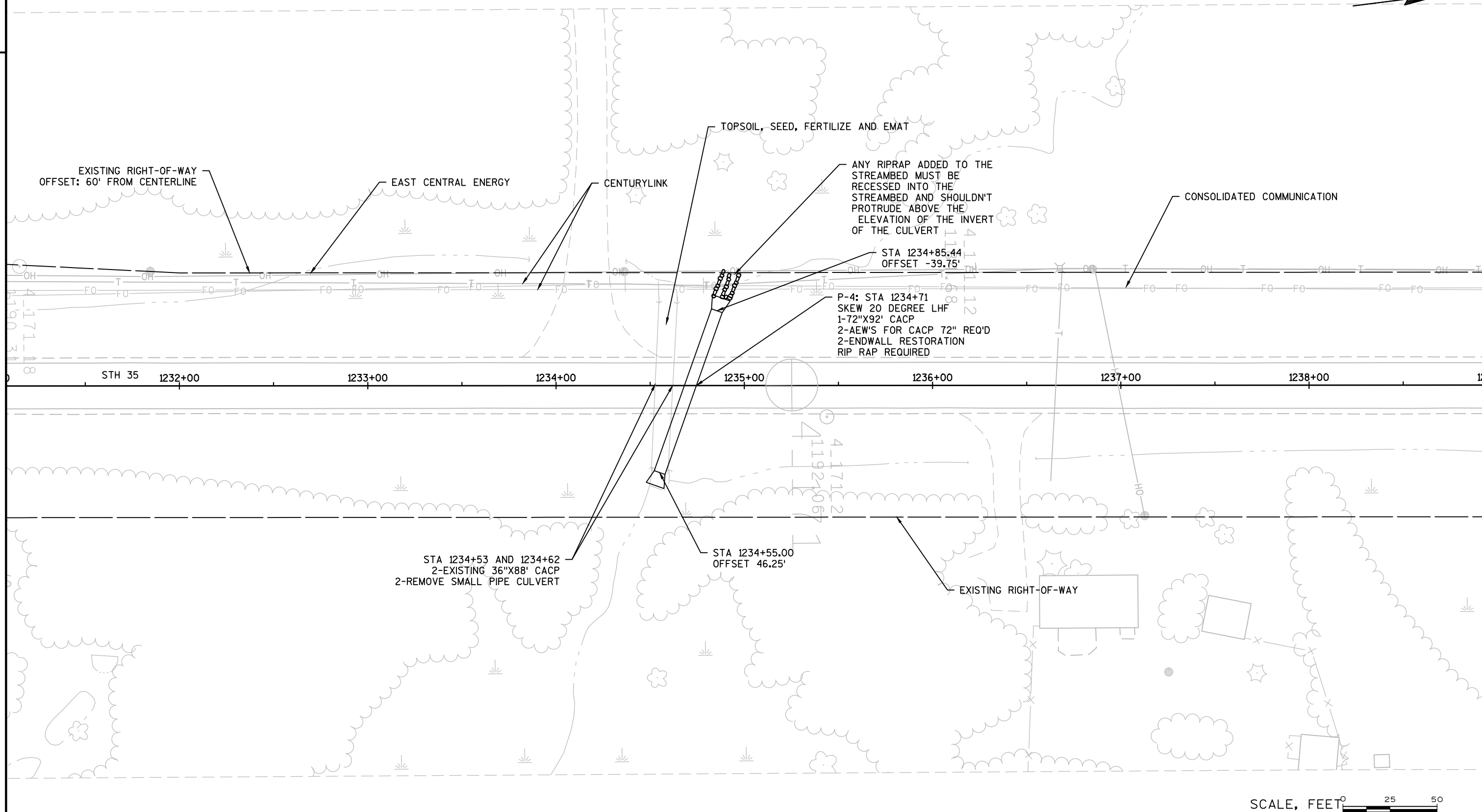


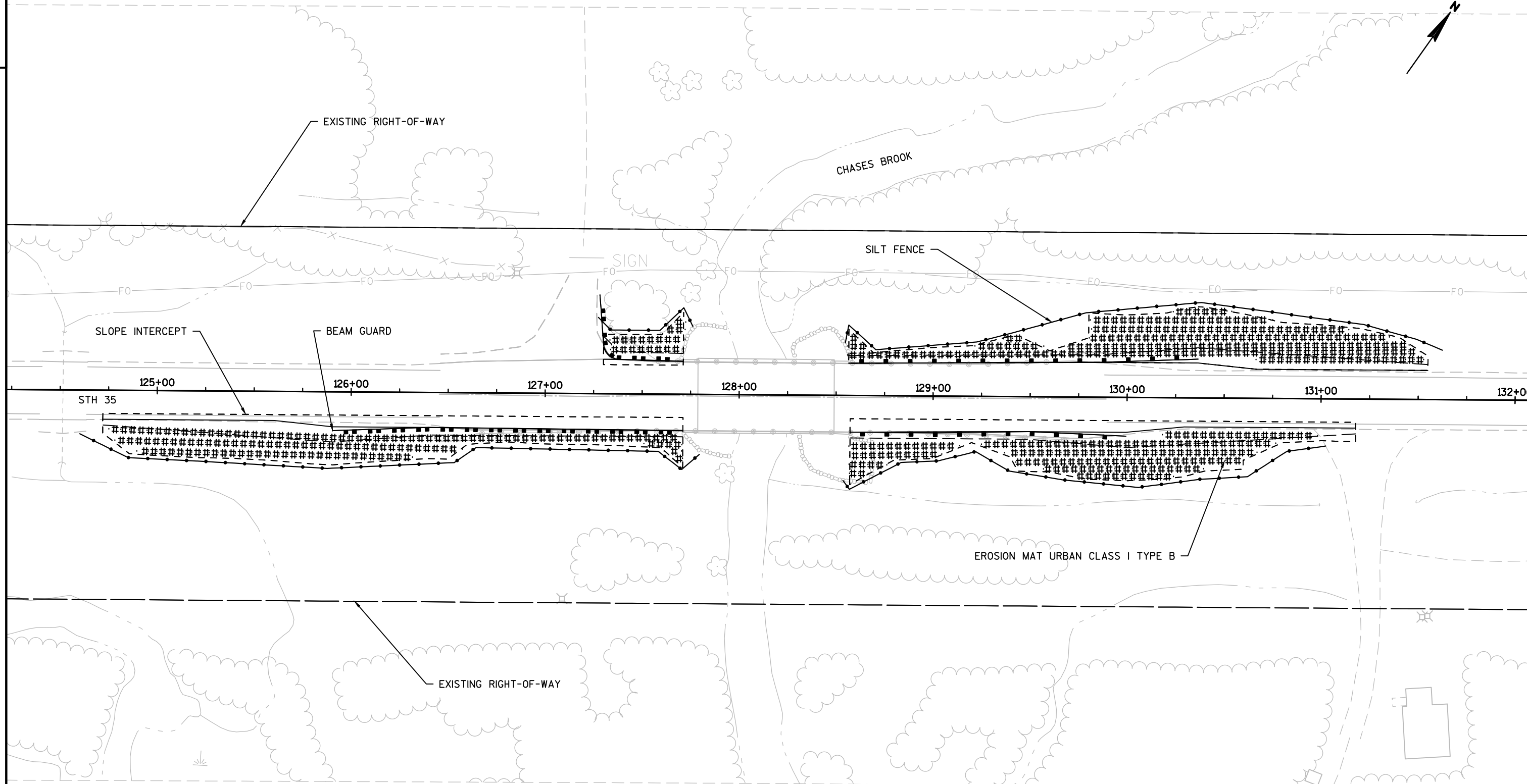




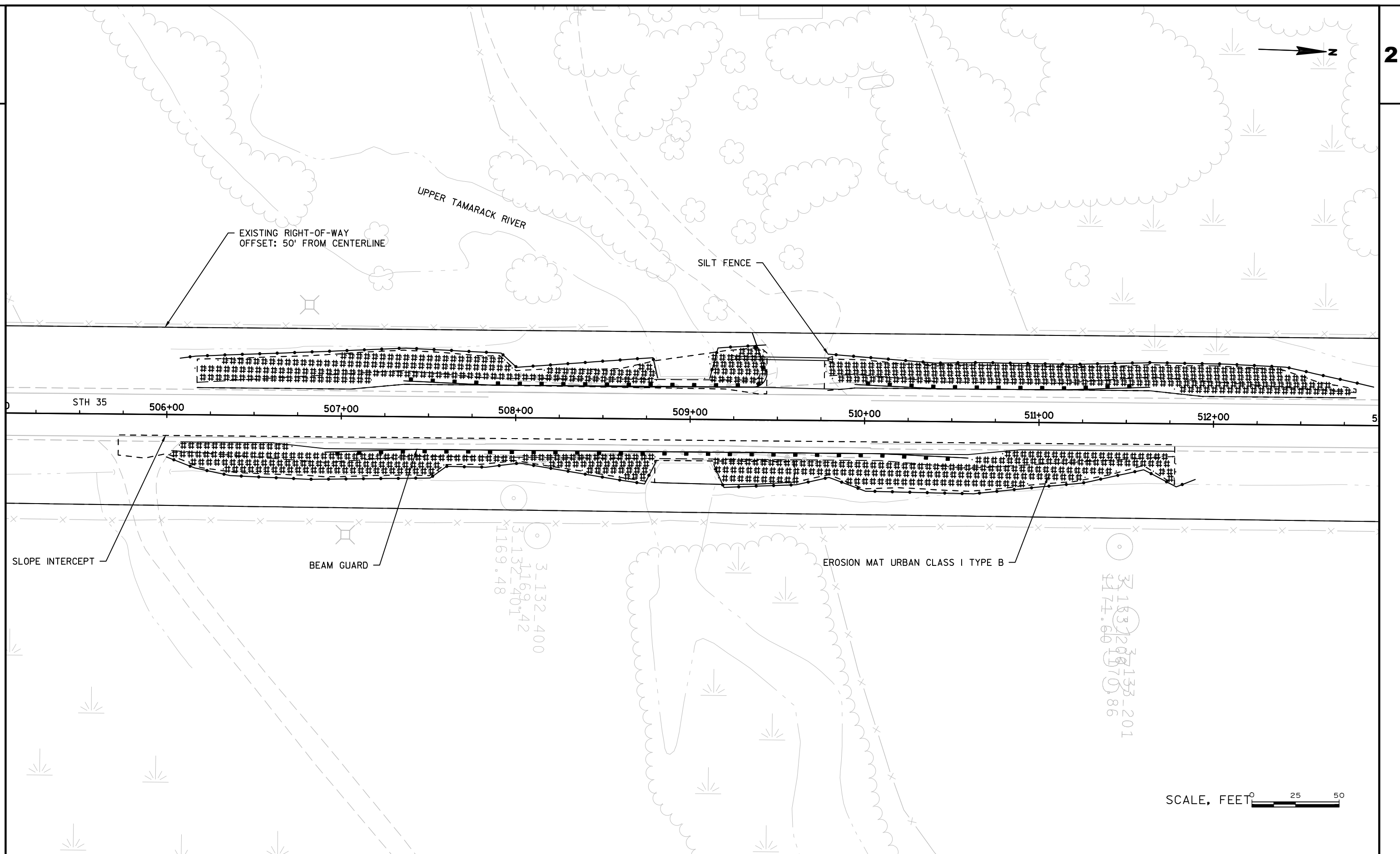








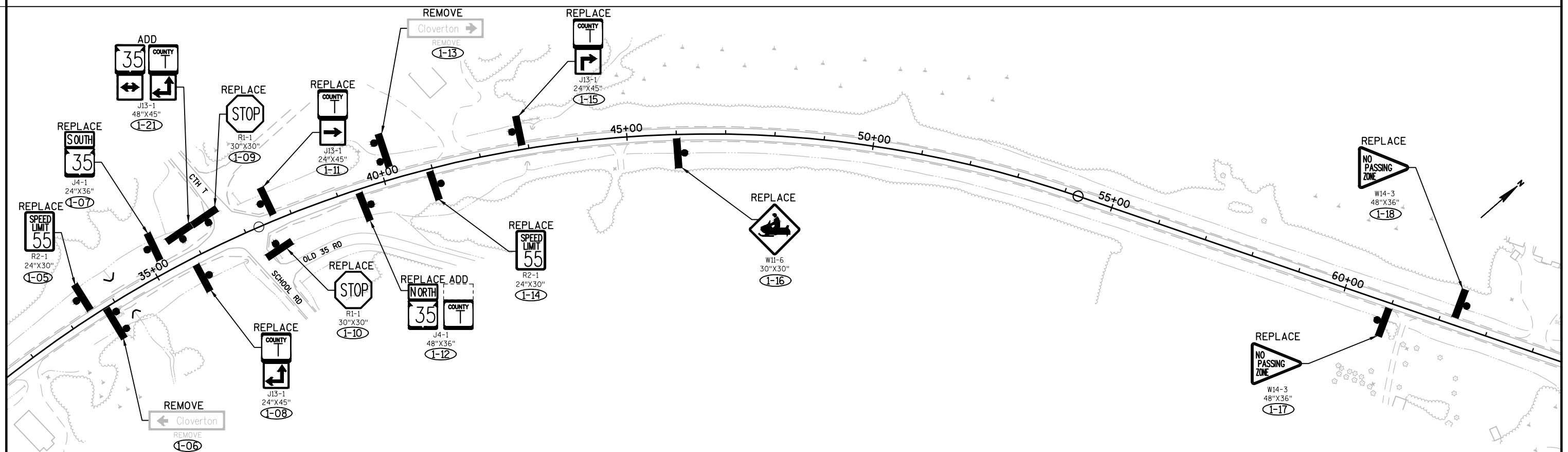
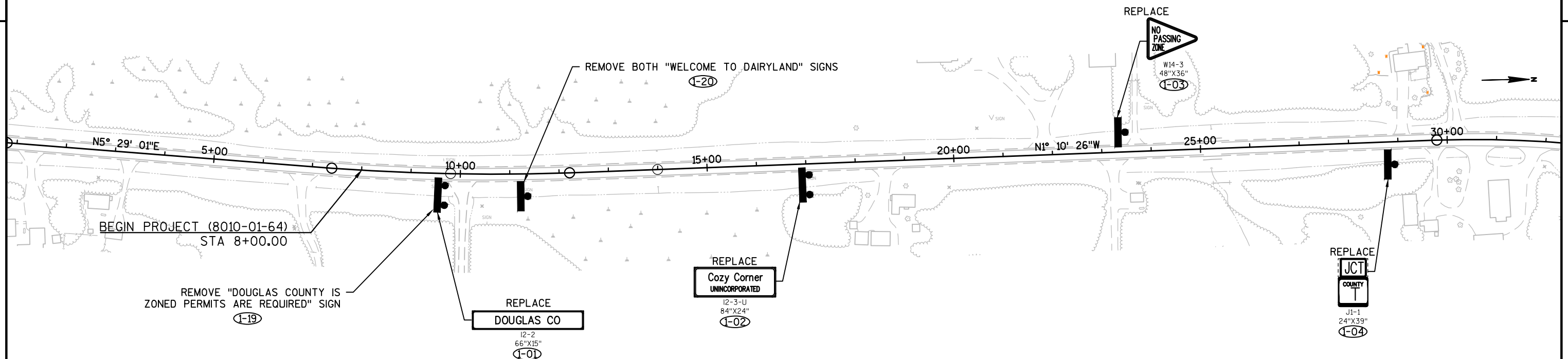
2



2



NO PASSING ZONE SIGNS AND POSTS TO BE INSTALLED
AFTER SPOTTING IS COMPLETED THE NUMBER LOCATION
TO BE DETERMINED BY THE ENGINEER.



PROJECT NO: 8010-01-64

HWY: STH 35

COUNTY: DOUGLAS

PERMANENT SIGNING

SHEET 20

E

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LAYOUT NAME - SHEET - (201)

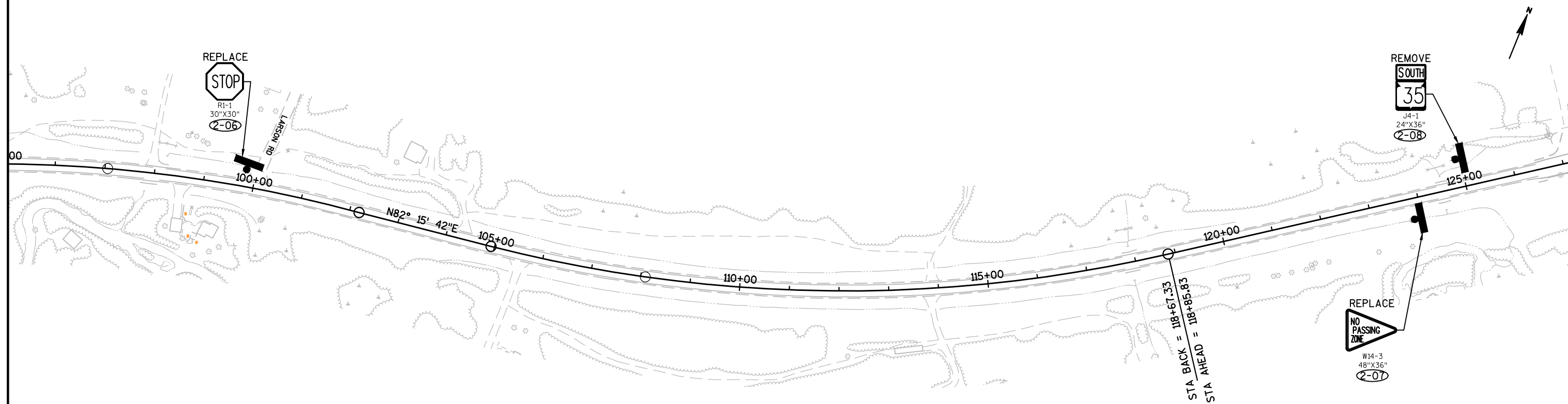
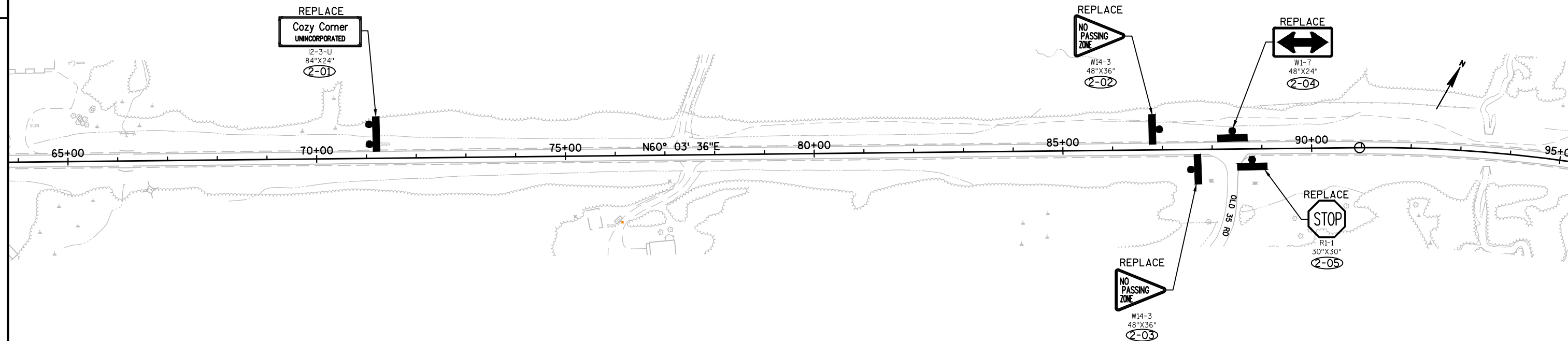
PLOT DATE : 6/13/2017 11:43 AM

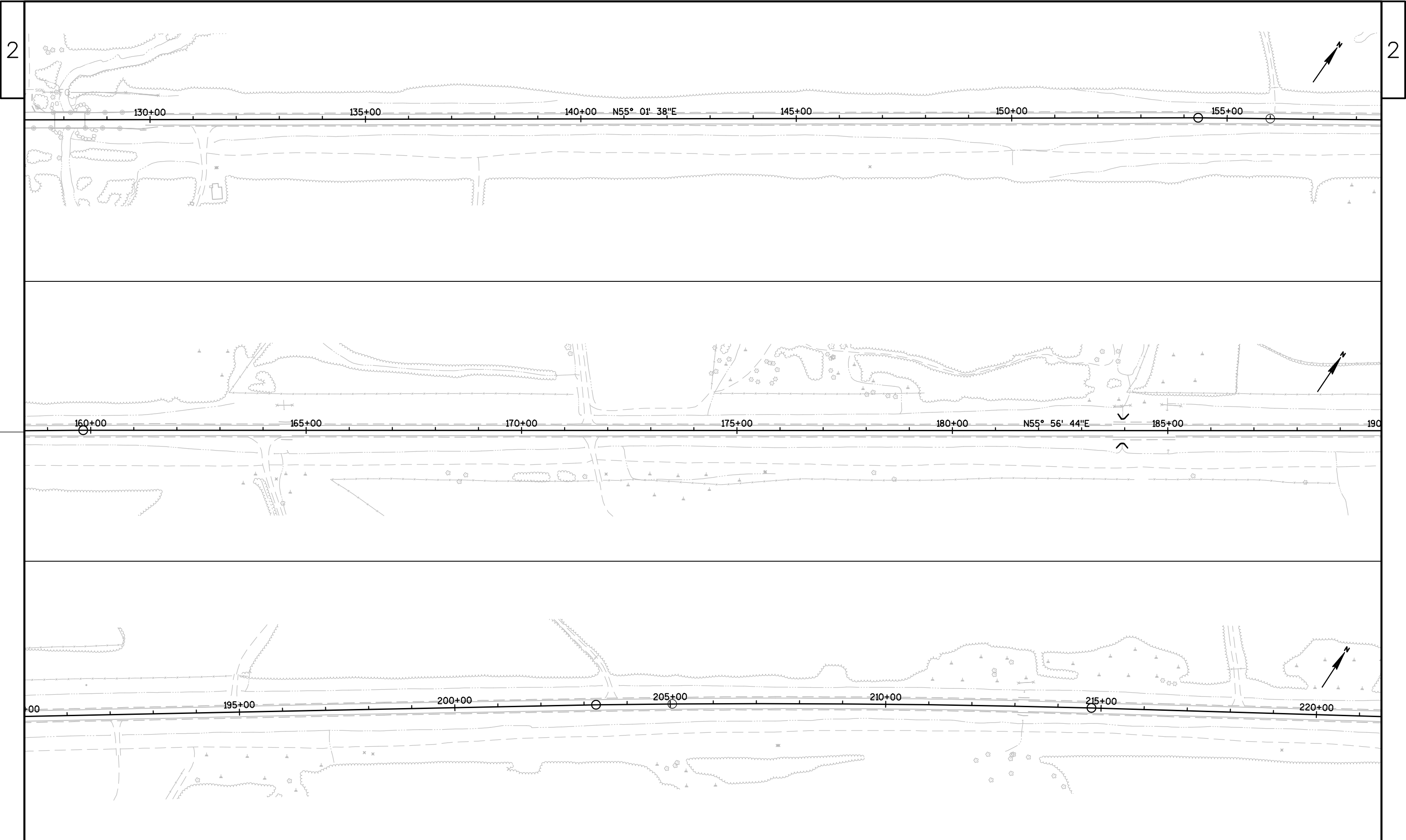
PLOT BY : BECKLIN, MATTHEW R PLOT NAME :

PLOT SCALE : 1 IN:200 FT

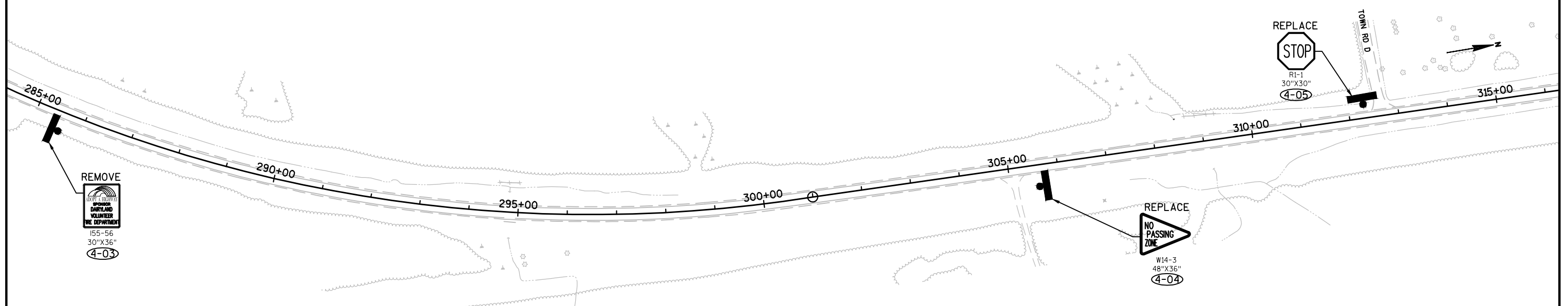
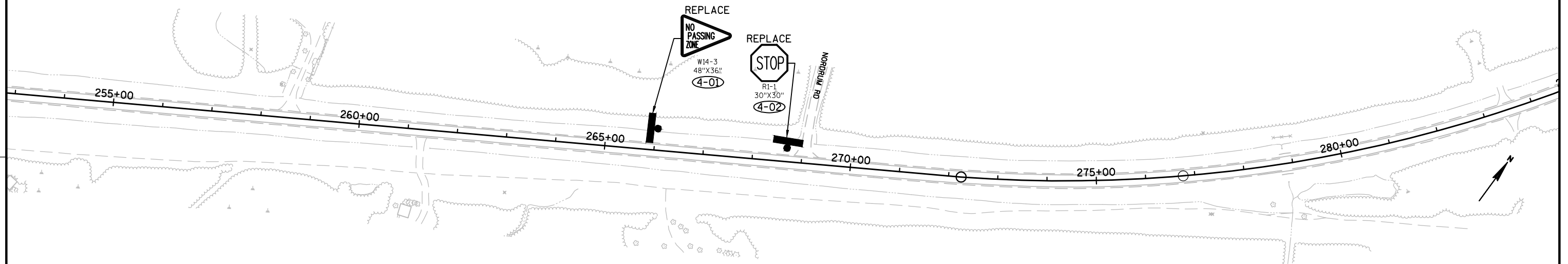
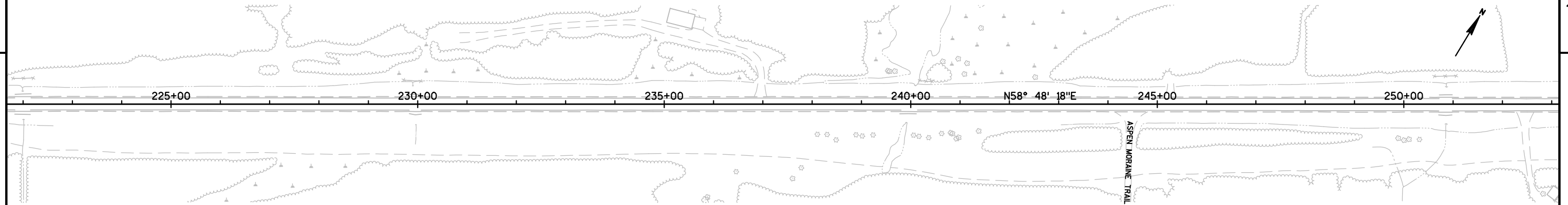
WISDOT/CADDs SHEET 44

NO PASSING ZONE SIGNS AND POSTS TO BE INSTALLED
AFTER SPOTTING IS COMPLETED THE NUMBER LOCATION
TO BE DETERMINED BY THE ENGINEER.





NO PASSING ZONE SIGNS AND POSTS TO BE INSTALLED
AFTER SPOTTING IS COMPLETED THE NUMBER LOCATION
TO BE DETERMINED BY THE ENGINEER.



PROJECT NO:8010-01-64

HWY:STH 35

COUNTY:DOUGLAS

PERMANENT SIGNING

SHEET 23

E

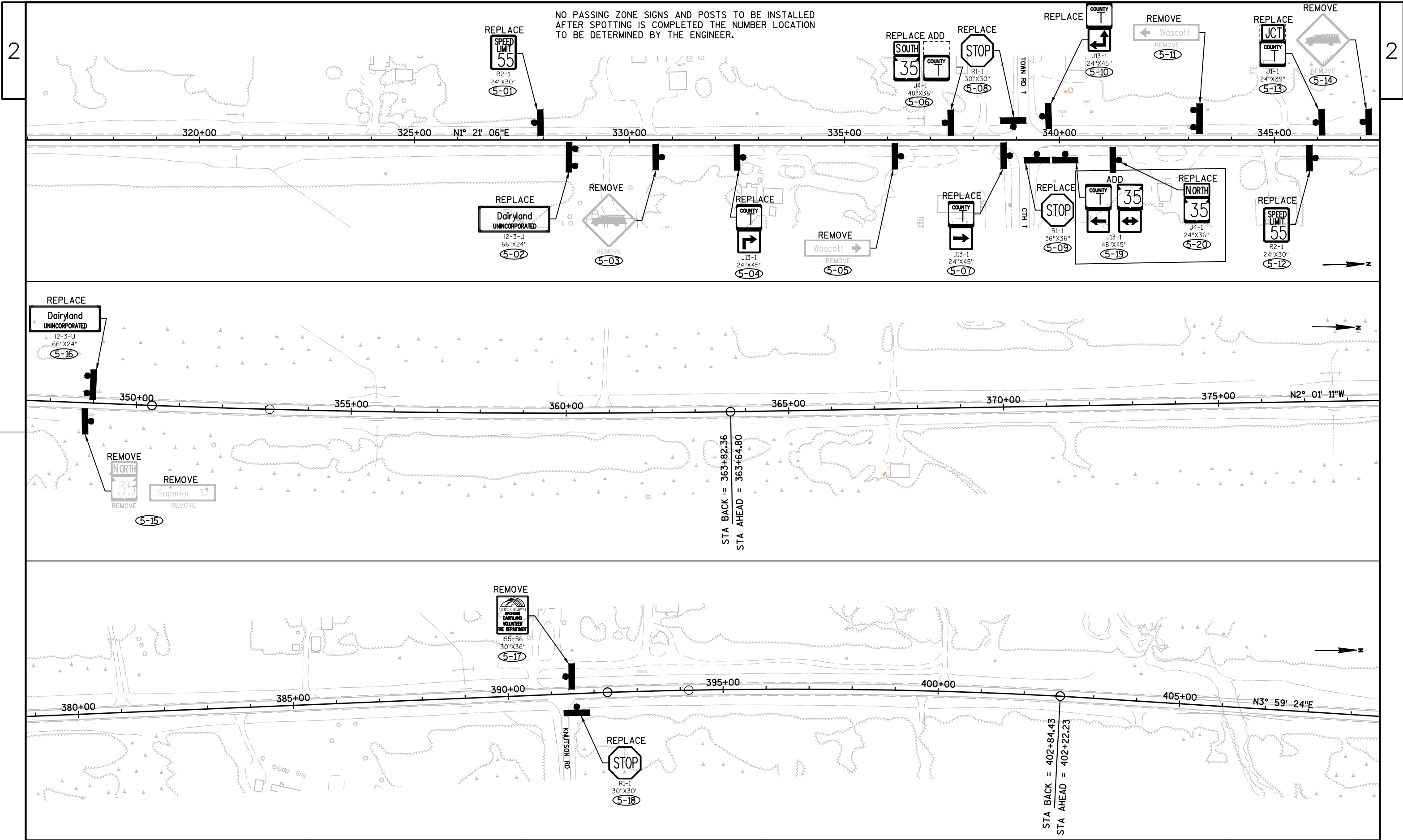
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LAYOUT NAME - SHEET - (208)

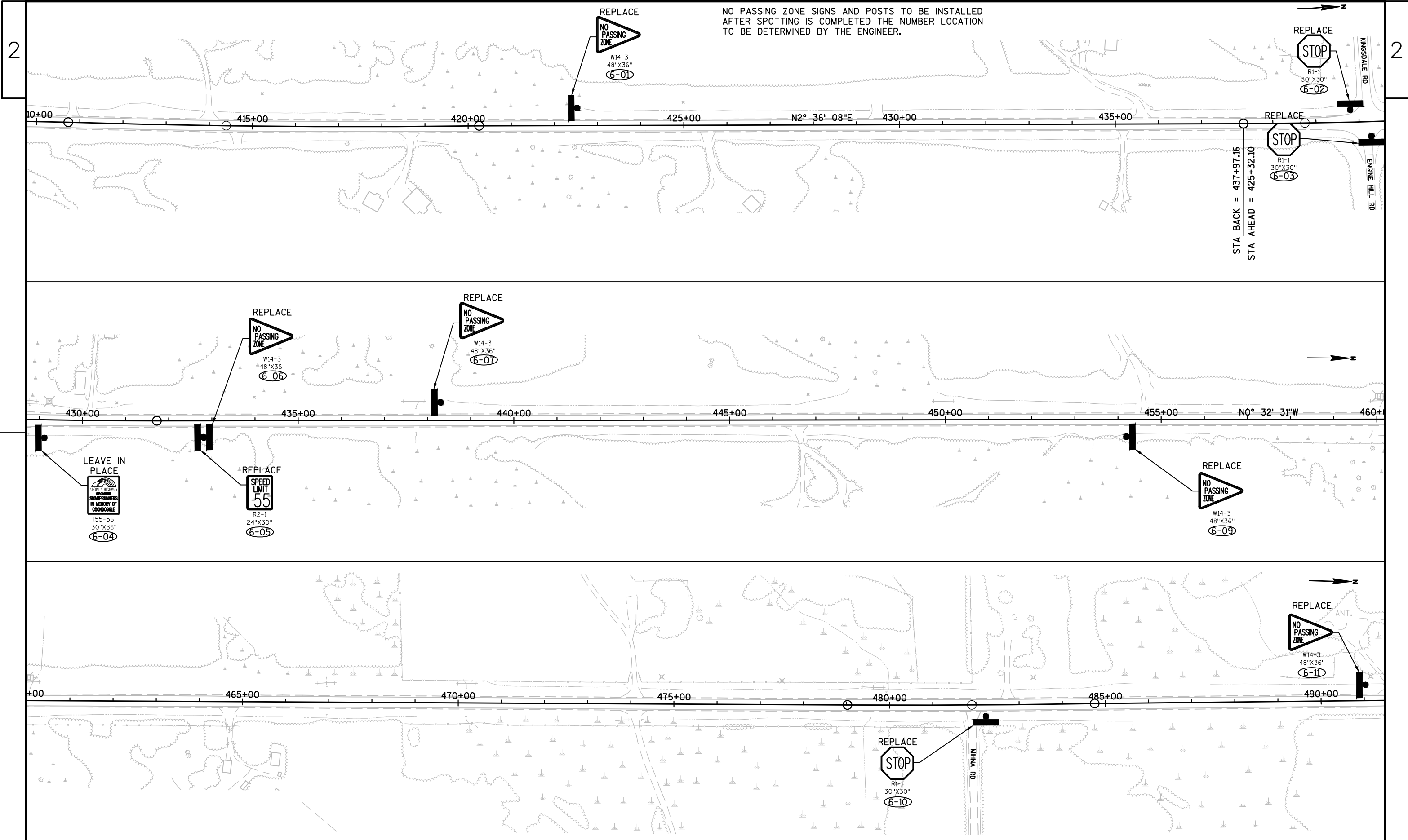
PLOT DATE : 6/13/2017 11:44 AM

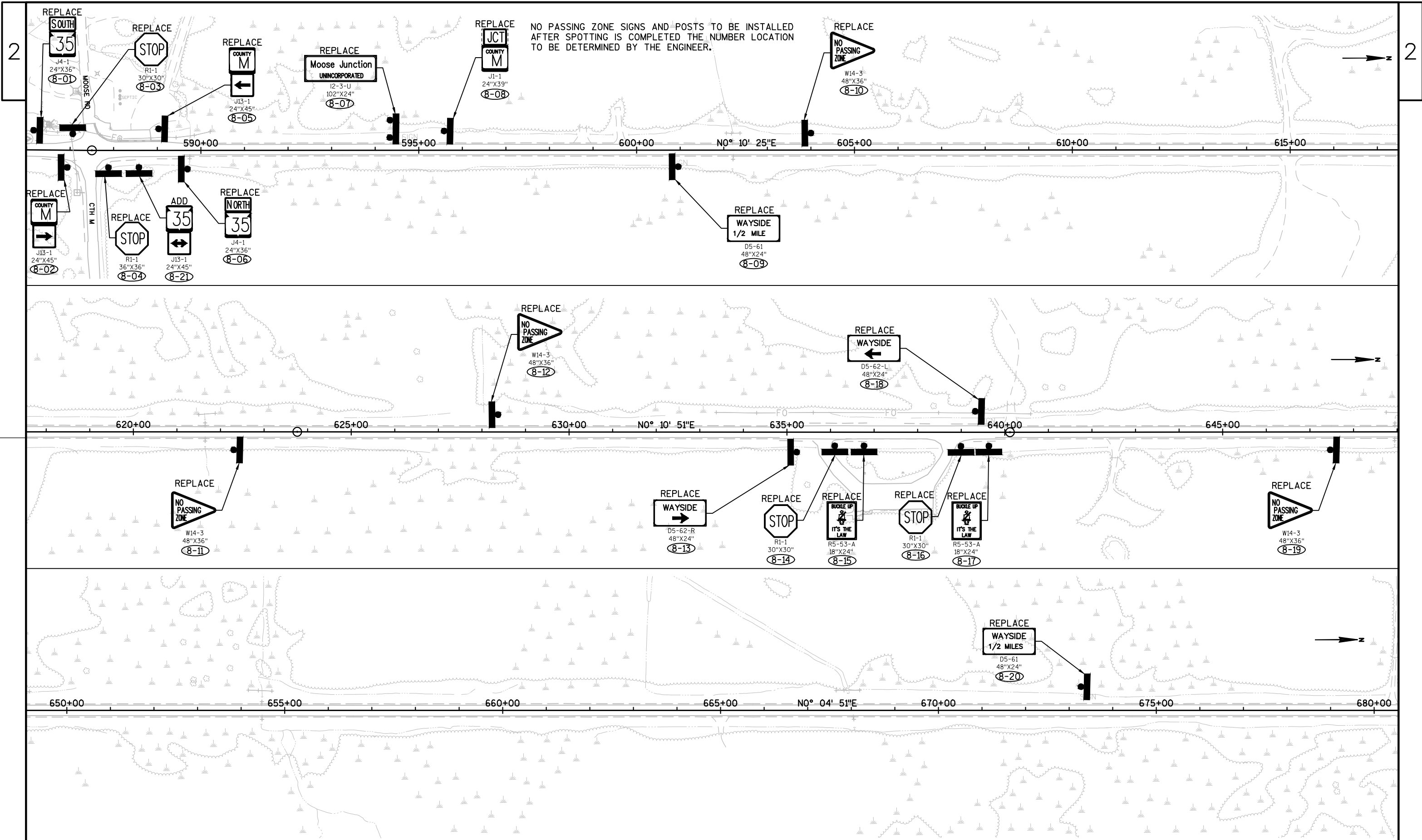
PLOT BY : BECKLIN, MATTHEW R PLOT NAME :

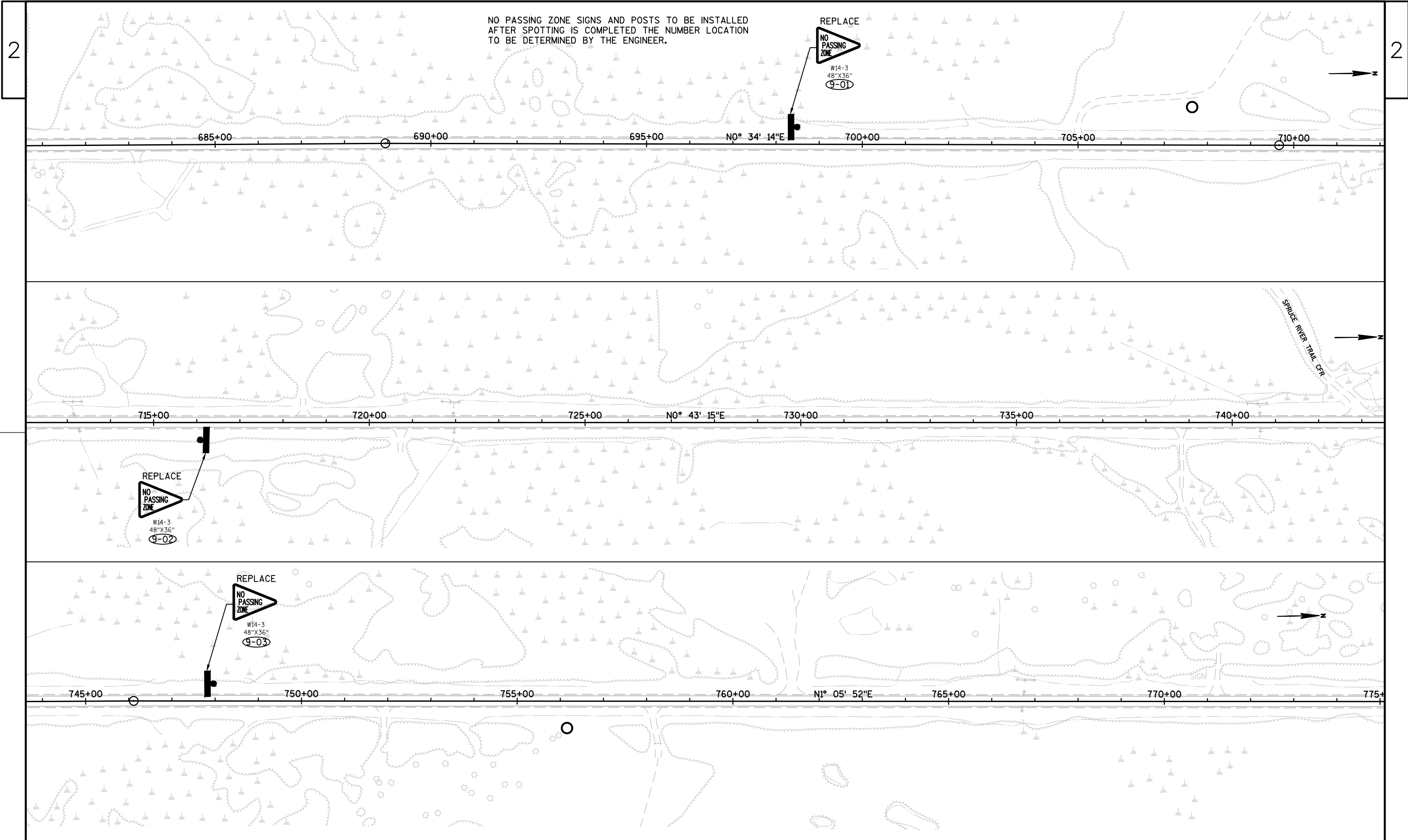
PLOT SCALE : 1 IN:200 FT

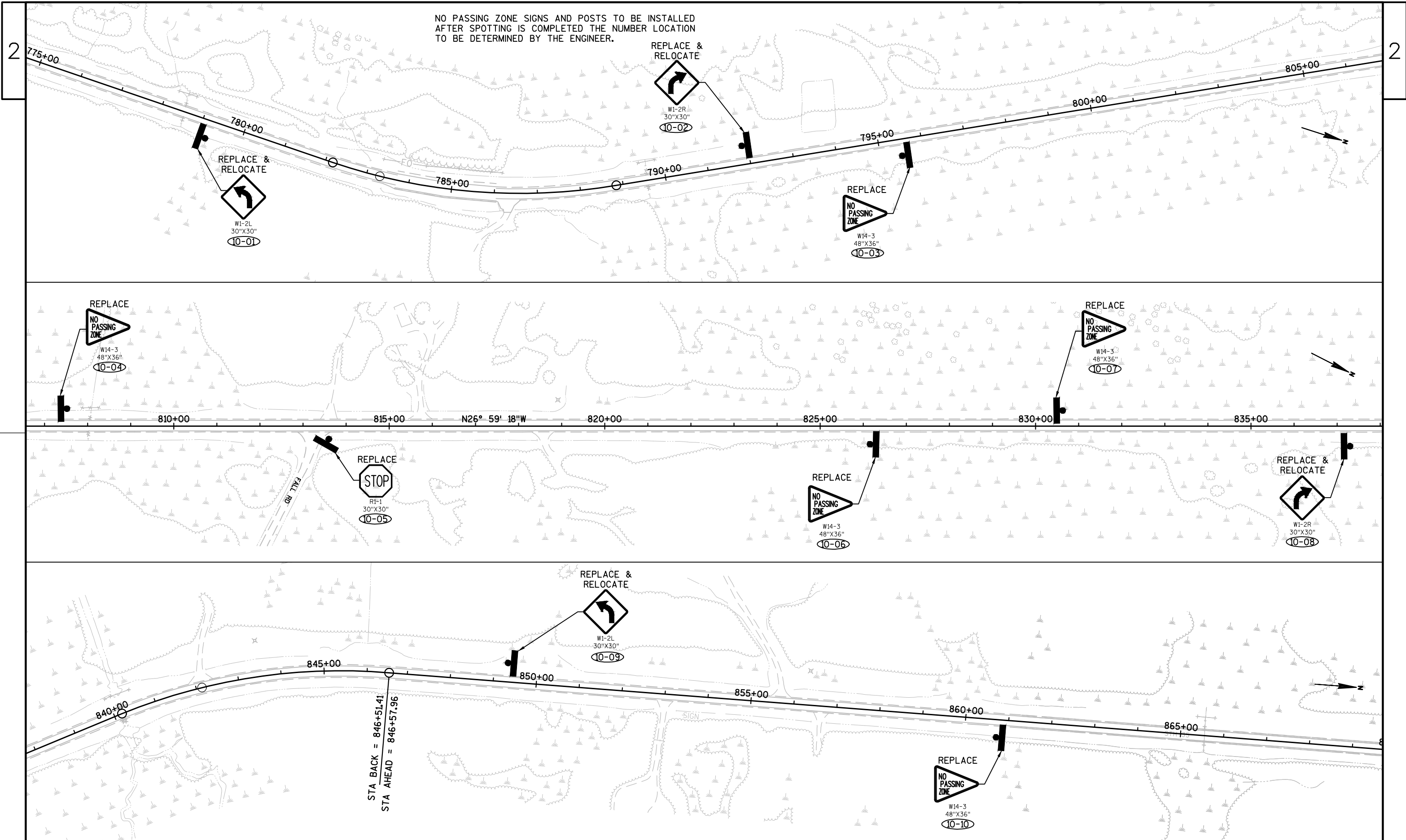
WISDOT/CADDs SHEET 44











PROJECT NO: 8010-01-64

HWY: STH 35

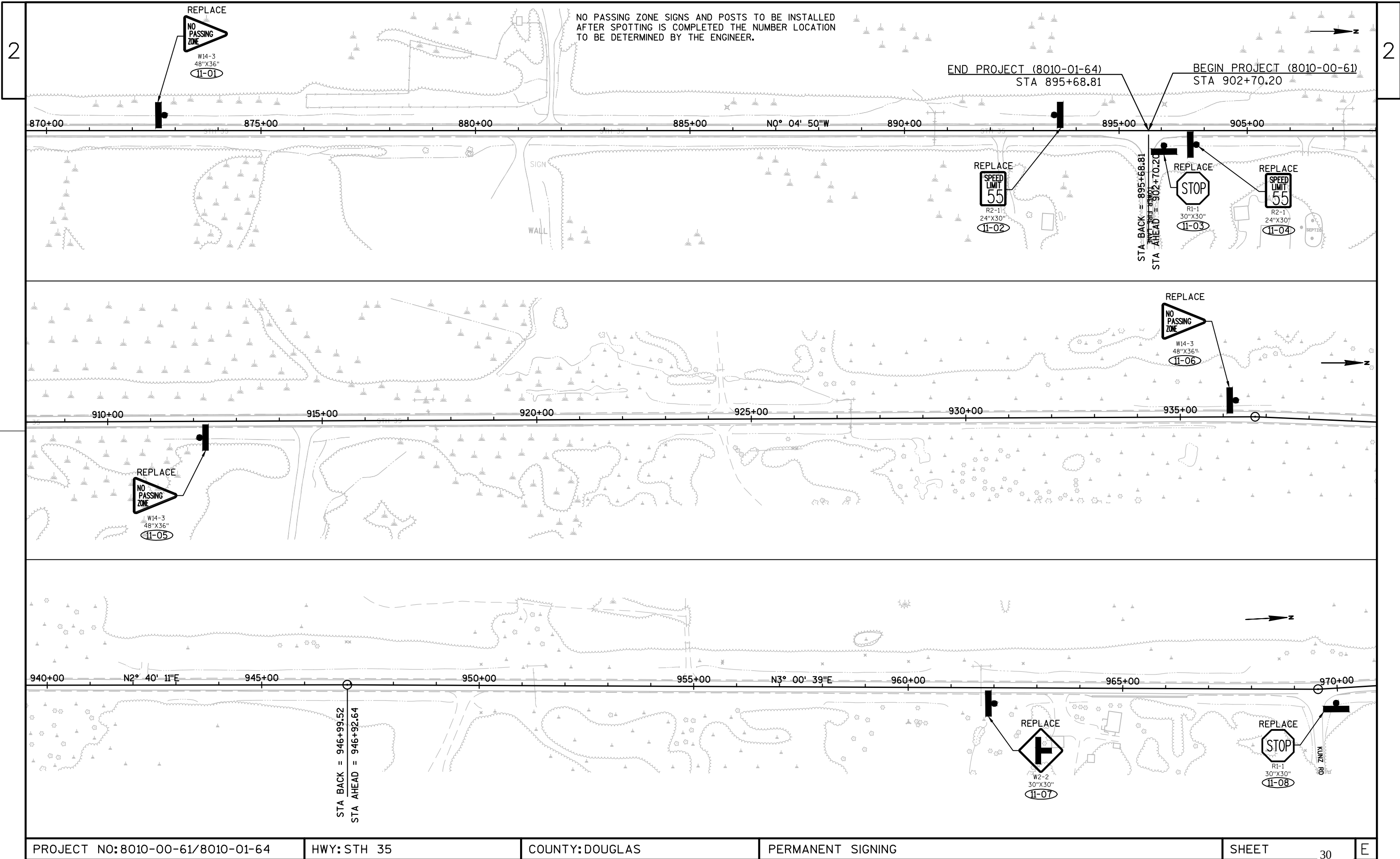
COUNTY: DOUGLAS

PERMANENT SIGNING

SHEET

29

E



PROJECT NO: 8010-00-61/8010-01-64

HWY: STH 35

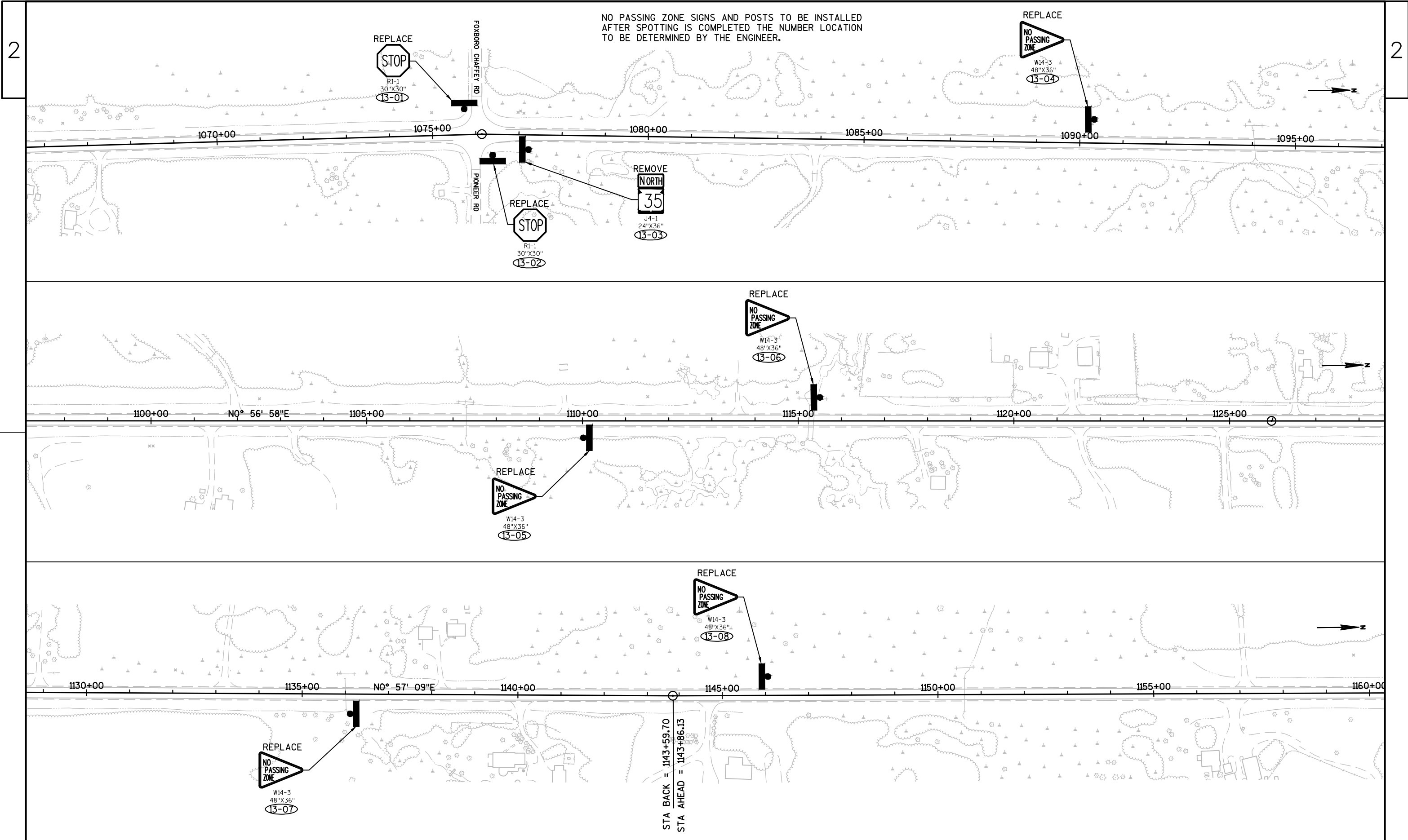
COUNTY: DOUGLAS

PERMANENT SIGNING

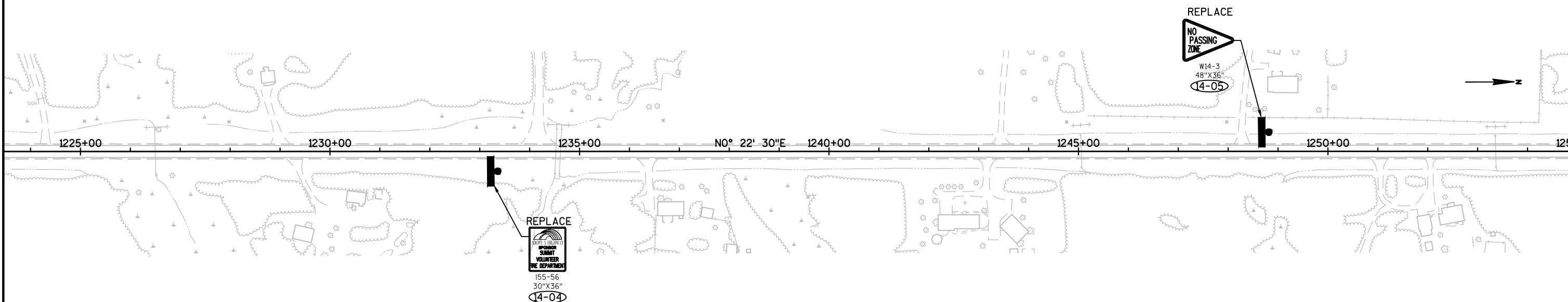
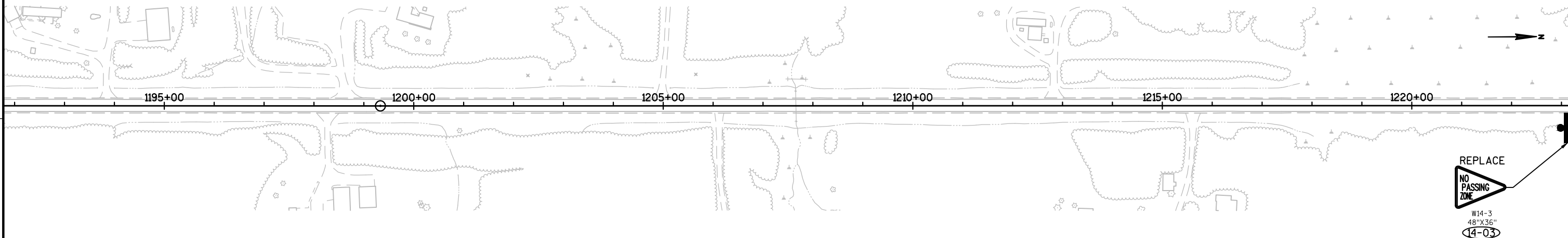
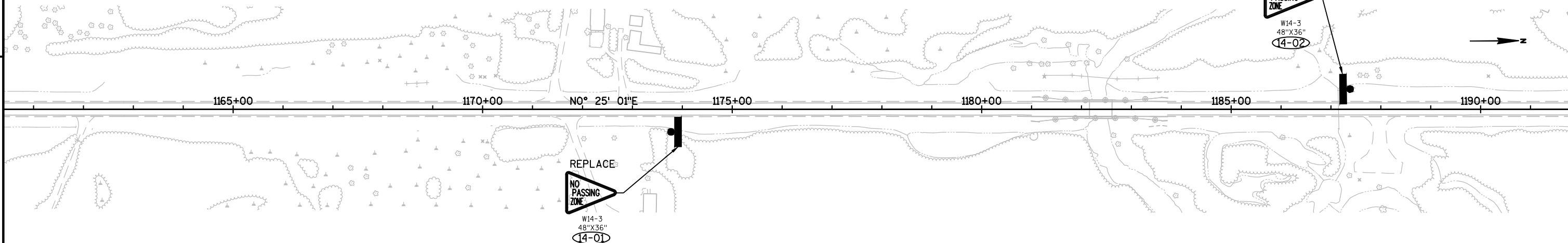
SHEET

30

E



NO PASSING ZONE SIGNS AND POSTS TO BE INSTALLED
AFTER SPOTTING IS COMPLETED THE NUMBER LOCATION
TO BE DETERMINED BY THE ENGINEER.



PROJECT NO: 8010-00-61

HWY: STH 35

COUNTY: DOUGLAS

PERMANENT SIGNING

SHEET

33

E

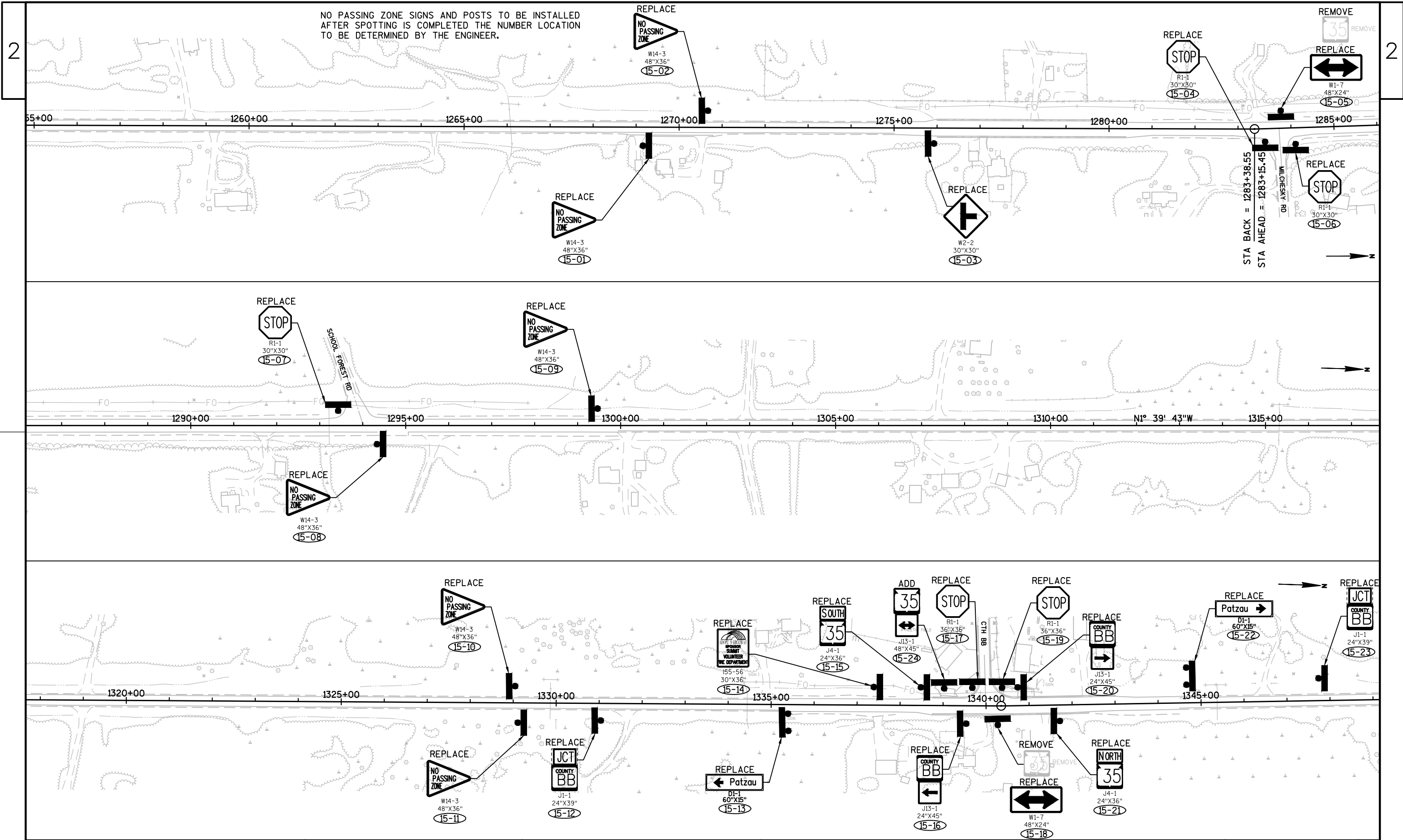
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LAYOUT NAME - SHEET - (238)

PLOT DATE : 6/13/2017 11:47 AM

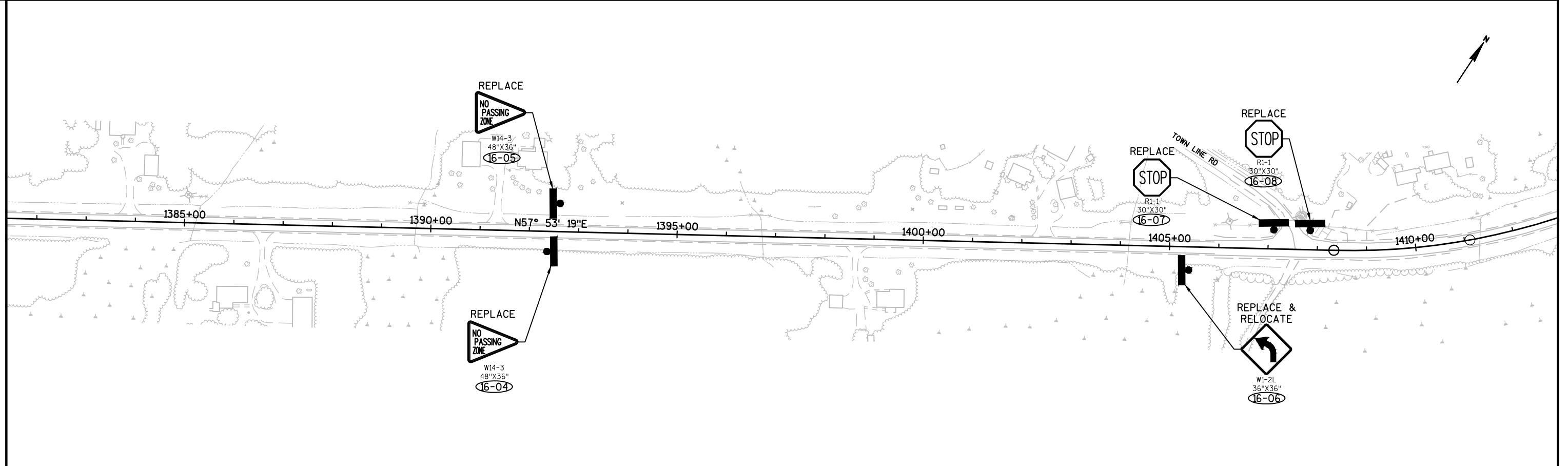
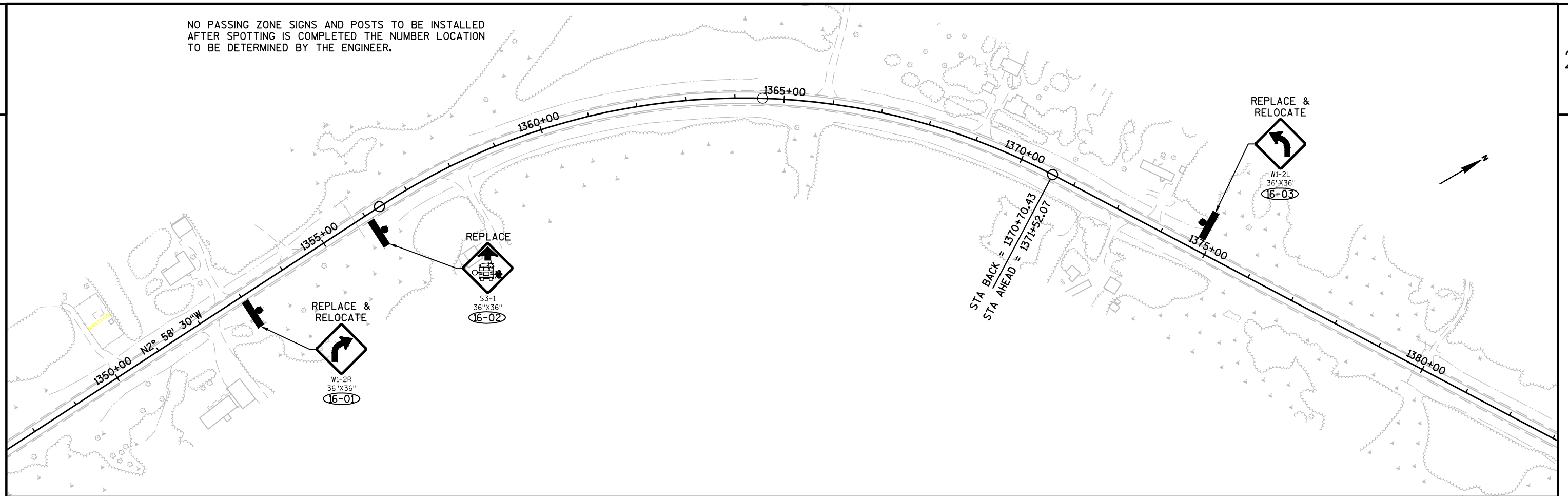
PLOT BY : BECKLIN, MATTHEW R PLOT NAME :

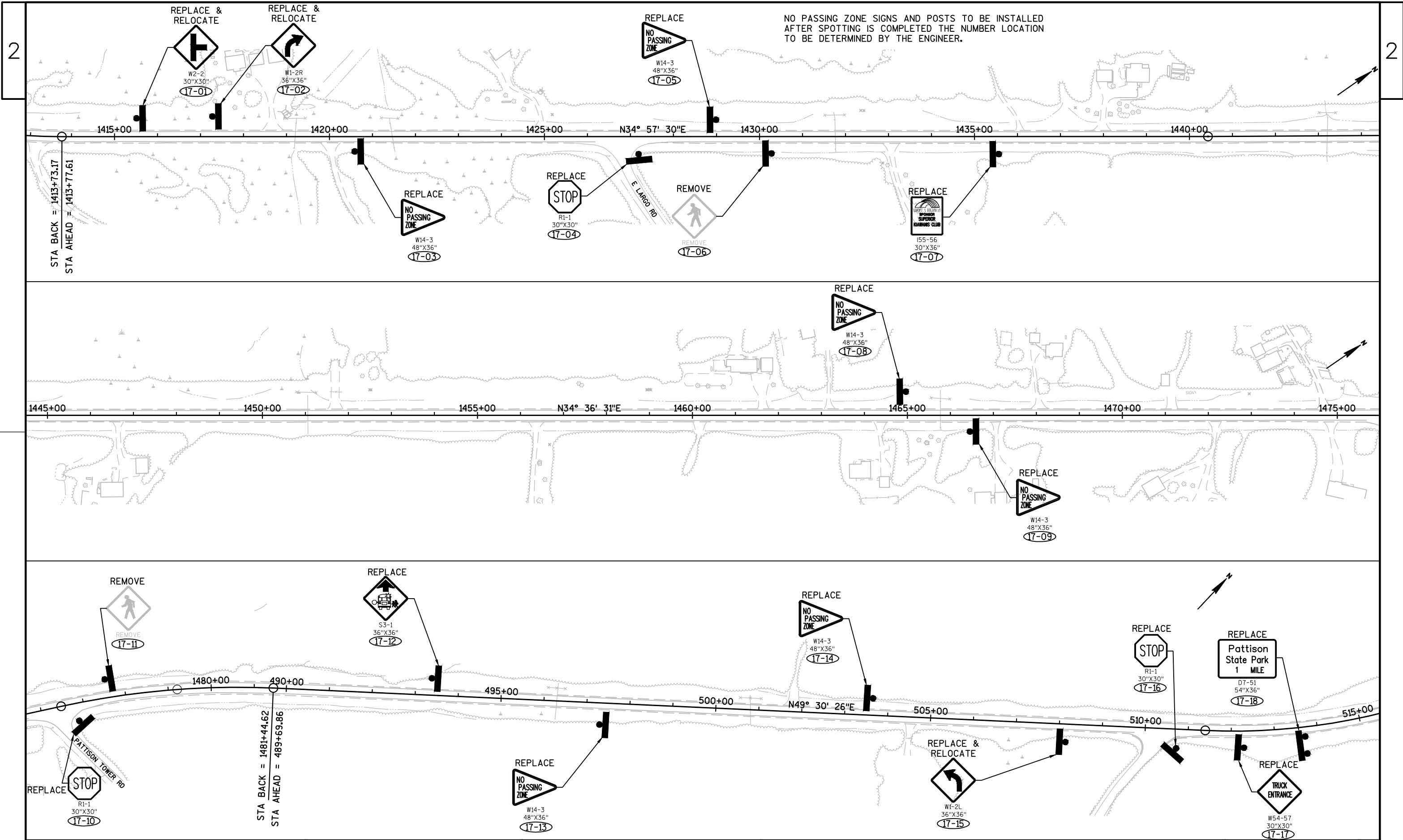
PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 44



NO PASSING ZONE SIGNS AND POSTS TO BE INSTALLED
AFTER SPOTTING IS COMPLETED THE NUMBER LOCATION
TO BE DETERMINED BY THE ENGINEER.





PROJECT NO: 8010-00-61

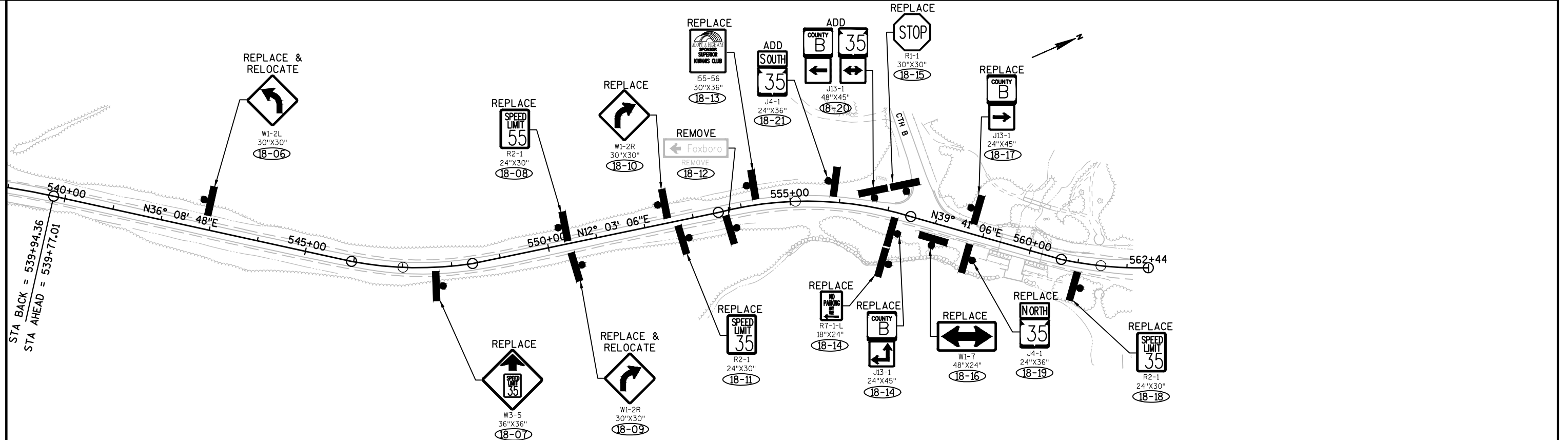
HWY: STH 35

COUNTY: DOUGLAS

PERMANENT SIGNING

SHEET 36

E



NOTES:

PLACE SIGNS IN EACH DIRECTION AT THE END OF EACH WORK DAY.

MAINTAIN 'BUMP' AND 'LOOSE GRAVEL' SIGN UNTIL ASPHALTIC SURFACE PAVEMENT IS COMPLETED.

COORDINATE CONSTRUCTION ACTIVITIES SO THAT STH 35 TRAFFIC DOES NOT TRAVEL ON BASE AGGREGATE FOR LONGER THAN 5 CALENDAR DAYS OR ANY TIME PERIODS COVERED BY THE HOLIDAY WORK.

PLACE DRUMS ON GRAVEL 15 FEET FROM CENTERLINE UNTIL ASPHALTIC SURFACING AND SHOULDERS ARE IN PLACE.

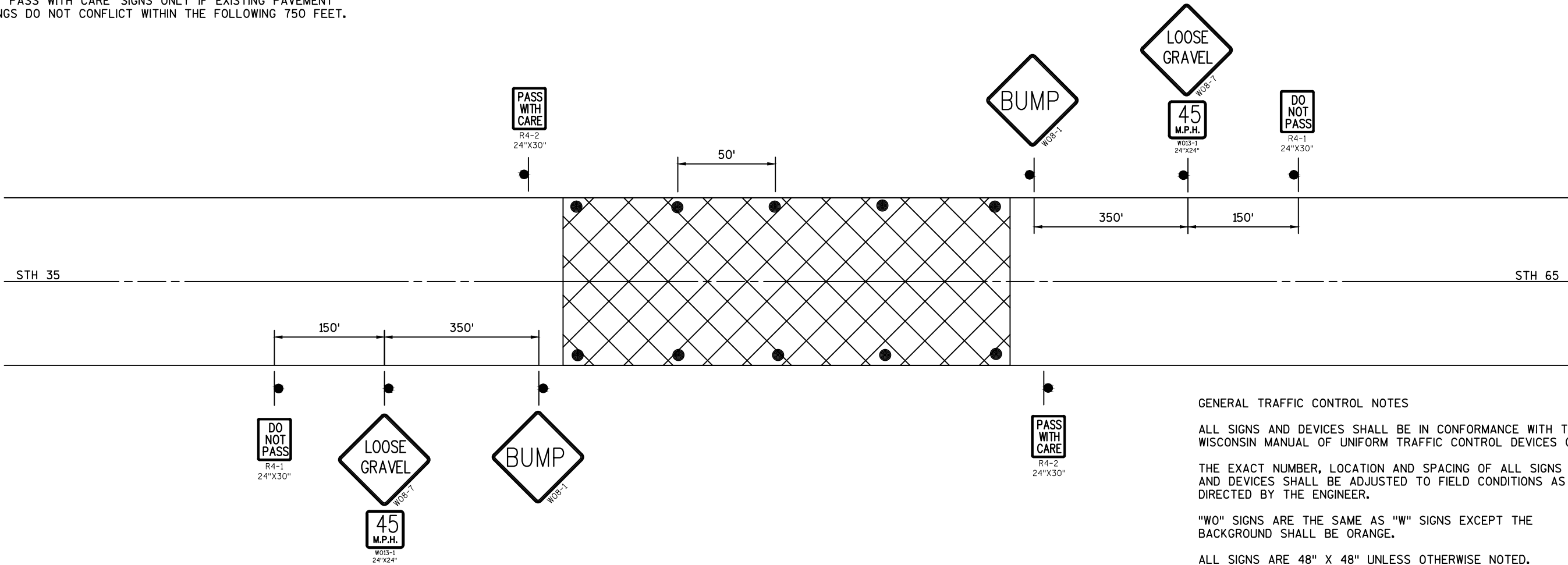
PLACE 'PASS WITH CARE' SIGNS ONLY IF EXISTING PAVEMENT MARKINGS DO NOT CONFLICT WITHIN THE FOLLOWING 750 FEET.

TRAFFIC CONTROL LEGEND

 CULVERT REPLACEMENT ZONE

 DRUM

 POST MOUNTED SIGN



GENERAL TRAFFIC CONTROL NOTES

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND SHALL BE ORANGE.

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

PAVEMENT MARKINGS NOT APPROPRIATE TO THE TRAVEL PATH SHALL BE REMOVED IF TRAFFIC CONTROL WILL BE INPLACE FOR MORE THAN 4 DAYS.

Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Shoulder	Right Outside Lane
0+79.95'	Begin Alignment	-4.00%	-2.00%	-4.00%	-2.00%
5+74.06'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
6+27.39'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
6+80.72'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
7+34.06'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
7+68.72'	Begin Full Super	-4.00%	-3.30%	-4.00%	3.30%
11+92.14'	End Full Super	-4.00%	-3.30%	-4.00%	3.30%
12+26.81'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
12+80.14'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
13+33.48'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
13+86.81'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
27+81.75'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
28+35.08'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
28+88.41'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
29+41.74'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
29+95.08'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
30+24.41'	Begin Full Super	-4.00%	5.10%	-5.10%	-5.10%
53+82.73'	End Full Super	-4.00%	5.10%	-5.10%	-5.10%
54+12.07'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
54+65.40'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
55+18.73'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
55+72.07'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
56+25.40'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
89+09.70'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
89+63.03'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
90+16.36'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
90+69.70'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
91+23.03'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
91+36.36'	Begin Full Super	-4.00%	4.50%	-4.50%	-4.50%
101+79.51'	End Full Super	-4.00%	4.50%	-4.50%	-4.50%
101+92.84'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
102+46.17'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
102+99.51'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
103+52.84'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
103+55.84'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%

Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Shoulder	Right Outside Lane
103+59.69'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
103+60.02'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
104+13.36'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
104+66.69'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
105+20.02'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
105+33.36'	Begin Full Super	-4.50%	-4.50%	-4.00%	4.50%
118+27.34'	End Full Super	-4.50%	-4.50%	-4.00%	4.50%
118+40.67'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
119+12.50'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
119+65.83'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
120+19.17'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
120+72.50'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
270+39.18'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
270+92.51'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
271+45.84'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
271+99.17'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
272+52.51'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
272+65.84'	Begin Full Super	-4.50%	-4.50%	-4.00%	4.50%
300+59.72'	End Full Super	-4.50%	-4.50%	-4.00%	4.50%
300+73.06'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
301+26.39'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
301+79.72'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
302+33.06'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
302+86.39'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
780+04.19'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
780+57.52'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
781+10.86'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
781+64.19'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
782+17.52'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
782+70.86'	Begin Full Super	-6.00%	-6.00%	-4.00%	6.00%
788+30.99'	End Full Super	-6.00%	-6.00%	-4.00%	6.00%
788+84.32'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
789+37.66'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
789+90.99'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
790+44.32'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
790+97.65'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%

Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Shoulder	Right Outside Lane
839+05.06'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
838+58.39'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
839+11.73'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
839+65.06'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
840+18.39'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
840+71.73'	Begin Full Super	-4.00%	6.00%	-6.00%	-6.00%
845+98.08'	End Full Super	-4.00%	6.00%	-6.00%	-6.00%
846+57.97'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
847+11.30'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
847+64.63'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
848+17.97'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
848+71.30'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
1354+22.19'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
1354+75.52'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
1355+28.85'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
1355+82.19'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
1356+35.52'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
1356+88.85'	Begin Full Super	-4.00%	6.00%	-6.00%	-6.00%
1370+17.11'	End Full Super	-4.00%	6.00%	-6.00%	-6.00%
1371+52.08'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
1372+05.41'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
1372+58.74'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
1373+12.08'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
1373+65.41'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
1406+20.60'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
1406+73.93'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
1407+27.27'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
1407+80.60'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
1408+33.93'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
1408+87.27'	Begin Full Super	-6.00%	-6.00%	-4.00%	6.00%
1413+19.84'	End Full Super	-6.00%	-6.00%	-4.00%	6.00%
1413+77.62'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
1414+30.95'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
1414+84.28'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
1415+37.62'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
1415+90.95'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%

Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Shoulder	Right Outside Lane
1474+43.22'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
1474+96.55'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
1475+50.01'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
1476+03.46'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
1476+56.92'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
1476+97.01'	Begin Full Super	-4.00%	5.50%	-5.50%	-5.50%
1480+95.62'	End Full Super	-4.00%	5.50%	-5.50%	-5.50%
1481+35.71'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
490+14.41'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
490+67.86'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
491+21.32'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
491+85.33'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
509+26.47'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
509+79.80'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
510+33.13'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
510+86.47'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
511+39.80'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
511+93.13'	Begin Full Super	-6.00%	-6.00%	-4.00%	6.00%
523+17.36'	End Full Super	-6.00%	-6.00%	-4.00%	6.00%
523+93.65'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
524+46.98'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
525+00.31'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
525+53.65'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
526+06.98'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
528+85.53'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
529+38.86'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
529+92.19'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
530+45.52'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
530+98.86'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
531+52.19'	Begin Full Super	-4.00%	6.00%	-6.00%	-6.00%
539+41.03'	End Full Super	-4.00%	6.00%	-6.00%	-6.00%
539+77.02'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
540+30.35'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
540+83.68'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
541+37.02'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
541+90.35'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%

Station	Description	Left Outside Shoulder	Left Outside Lane	Right Outside Shoulder	Right Outside Lane
543+82.54'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
544+35.87'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
544+89.20'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
545+42.54'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
545+95.87'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
546+49.20'	Begin Full Super	-6.00%	-6.00%	-4.00%	6.00%
547+89.57'	End Full Super	-6.00%	-6.00%	-4.00%	6.00%
548+42.91'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
548+96.24'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
549+49.57'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
550+02.91'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
550+56.24'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
551+80.18'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
552+33.51'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
552+74.94'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
553+16.37'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
553+57.79'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
553+90.94'	Begin Full Super	-4.00%	5.60%	-5.60%	-5.60%
557+09.41'	End Full Super	-4.00%	5.60%	-5.60%	-5.60%
557+42.56'	Low Shoulder Match	-4.00%	4.00%	-4.00%	-4.00%
557+83.99'	Reverse Crown	-4.00%	2.00%	-4.00%	-2.00%
558+25.41'	Level Crown	-4.00%	0.00%	-4.00%	-2.00%
558+66.84'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
559+20.17'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
558+96.31'	End Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
559+49.64'	End Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
559+91.12'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
560+32.60'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
560+74.08'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
561+03.12'	Begin Full Super	-5.40%	-5.40%	-4.00%	5.40%
562+06.41'	End Full Super	-5.40%	-5.40%	-4.00%	5.40%
562+35.45'	Low Shoulder Match	-4.00%	-4.00%	-4.00%	4.00%
562+76.93'	Reverse Crown	-4.00%	-2.00%	-4.00%	2.00%
563+18.41'	Level Crown	-4.00%	-2.00%	-4.00%	0.00%
563+59.90'	Begin Normal Crown	-4.00%	-2.00%	-4.00%	-2.00%
564+13.23'	Begin Normal Shoulder	-4.00%	-2.00%	-4.00%	-2.00%
562+43.74'	End Alignment	-4.00%	-2.00%	-4.00%	-2.00%

Estimate Of Quantities

		8010-00-61	8010-01-64			
Line	Item	Item Description	Unit	Total	Qty	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	5.000	4.000	1.000
0004	203.0200	Removing Old Structure (station) 01. 668+00	LS	1.000		1.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	3,140.000	1,784.000	1,356.000
0008	206.5000	Cofferdams (structure) 01. Culvert STA 1115+30	LS	1.000	1.000	
0010	208.1100	Select Borrow	CY	188.000	95.000	93.000
0012	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 8010-00-61	LS	1.000	1.000	
0014	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 8010-01-64	LS	1.000		1.000
0016	213.0100	Finishing Roadway (project) 01. 8010-00-61	EACH	1.000	1.000	
0018	213.0100	Finishing Roadway (project) 01. 8010-01-64	EACH	1.000		1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	25,372.000	10,574.000	14,798.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	418.000	271.000	147.000
0024	305.0500	Shaping Shoulders	STA	1,564.000	663.000	901.000
0026	440.4410	Incentive IRI Ride	DOL	118,562.000	50,380.000	68,182.000
0028	455.0605	Tack Coat	GAL	21,407.000	9,272.000	12,135.000
0030	460.2000	Incentive Density HMA Pavement	DOL	40,380.000	17,470.000	22,910.000
0032	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	156,237.000	66,288.000	89,949.000
0034	460.6444	HMA Pavement 4 MT 58-34 H	TON	63,081.000	27,294.000	35,787.000
0036	465.0105	Asphaltic Surface	TON	152.000	98.000	54.000
0038	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	152.000	96.000	56.000
0040	521.0118	Culvert Pipe Corrugated Steel 18-Inch	LF	53.000		53.000
0042	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	2.000		2.000
0044	525.0172	Culvert Pipe Corrugated Aluminum 72-Inch	LF	330.000	252.000	78.000
0046	525.0372	Apron Endwalls for Culvert Pipe Aluminum 72-Inch	EACH	8.000	6.000	2.000
0048	606.0200	Riprap Medium	CY	32.000	24.000	8.000
0050	614.0010	Barrier System Grading Shaping Finishing	EACH	12.000	4.000	8.000
0052	614.0200	Steel Thrie Beam Structure Approach	LF	20.000		20.000
0054	614.0305	Steel Plate Beam Guard Class A	LF	162.500		162.500
0056	614.0345	Steel Plate Beam Guard Short Radius	LF	25.000		25.000
0058	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000		1.000
0060	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000		1.000
0062	614.0920	Salvaged Rail	LF	1,122.000	369.000	753.000
0064	614.2300	MGS Guardrail 3	LF	825.000	275.000	550.000
0066	614.2500	MGS Thrie Beam Transition	LF	280.000	160.000	120.000
0068	614.2610	MGS Guardrail Terminal EAT	EACH	11.000	4.000	7.000
0070	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8010-00-61	EACH	1.000	1.000	
0072	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8010-01-64	EACH	1.000		1.000
0074	619.1000	Mobilization	EACH	1.000	0.500	0.500

Estimate Of Quantities

		8010-00-61		8010-01-64		
Line	Item	Item Description	Unit	Total	Qty	Qty
0076	624.0100	Water	MGAL	259.000	109.000	150.000
0078	625.0500	Salvaged Topsoil	SY	210.000	140.000	70.000
0080	628.1504	Silt Fence	LF	2,927.000	1,239.000	1,688.000
0082	628.1520	Silt Fence Maintenance	LF	2,927.000	1,239.000	1,688.000
0084	628.1905	Mobilizations Erosion Control	EACH	6.000	3.000	3.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	2.000	2.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	37,740.000	10,019.000	27,721.000
0090	629.0210	Fertilizer Type B	CWT	2.000	1.000	1.000
0092	630.0110	Seeding Mixture No. 10	LB	5.000	3.000	2.000
0094	633.5200	Markers Culvert End	EACH	8.000	6.000	2.000
0096	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	183.000	85.000	98.000
0098	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	20.000	15.000	5.000
0100	637.2210	Signs Type II Reflective H	SF	733.715	291.440	442.275
0102	637.2230	Signs Type II Reflective F	SF	553.800	352.550	201.250
0104	638.2602	Removing Signs Type II	EACH	237.000	113.000	124.000
0106	638.3000	Removing Small Sign Supports	EACH	217.000	101.000	116.000
0108	642.5201	Field Office Type C	EACH	1.000	0.500	0.500
0110	643.0100	Traffic Control (project) 01. 8010-00-61	EACH	1.000	1.000	
0112	643.0100	Traffic Control (project) 01. 8010-01-64	EACH	1.000		1.000
0114	643.0300	Traffic Control Drums	DAY	60.000	40.000	20.000
0116	643.0310.S	Temporary Portable Rumble Strips 01. 8010-00-61	LS	1.000	1.000	
0118	643.0310.S	Temporary Portable Rumble Strips 02. 8010-01-64	LS	1.000		1.000
0120	643.0900	Traffic Control Signs	DAY	3,428.000	1,348.000	2,080.000
0122	645.0120	Geotextile Type HR	SY	120.000	90.000	30.000
0124	646.0106	Pavement Marking Epoxy 4-Inch	LF	142,298.000	77,352.000	64,946.000
0126	646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF	312,754.000	132,576.000	180,178.000
0128	648.0100	Locating No-Passing Zones	MI	29.750	12.500	17.250
0130	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	455,052.000	209,928.000	245,124.000
0132	650.6000	Construction Staking Pipe Culverts	EACH	5.000	3.000	2.000
0134	650.8000	Construction Staking Resurfacing Reference	LF	156,237.000	66,288.000	89,949.000
0136	650.9910	Construction Staking Supplemental Control (project) 01. 8010-00-61	LS	1.000	1.000	
0138	650.9910	Construction Staking Supplemental Control (project) 01. 8010-01-64	LS	1.000		1.000
0140	690.0150	Sawing Asphalt	LF	1,305.000	780.000	525.000
0142	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,400.000	2,400.000	
0144	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	990.000	990.000	
0146	SPV.0035	Special 01. Base Repair For CIR Pavement	CY	550.000	200.000	350.000
0148	SPV.0060	Special 01. Endwall Restoration	EACH	8.000	6.000	2.000

Estimate Of Quantities

				8010-00-61	8010-01-64	
Line	Item	Item Description	Unit	Total	Qty	Qty
0150	SPV.0090	Special 01. Regrade Ditch	LF	34.000		34.000
0152	SPV.0105	Special 01. Prepare Foundation For CIR Pavement 8010-00-61	LS	1.000	1.000	
0154	SPV.0105	Special 02. Prepare Foundation For HMA Upper Layer 8010-00-61	LS	1.000	1.000	
0156	SPV.0105	Special 03. Prepare Foundation For CIR Pavement 8010-01-64	LS	1.000		1.000
0158	SPV.0105	Special 04. Prepare Foundation For HMA Upper Layer 8010-01-64	LS	1.000		1.000
0160	SPV.0105	Special 05. Temporary Water Diversion STA 668+17	LS	1.000		1.000
0162	SPV.0105	Special 06. Temporary Water Diversion STA 1234+71	LS	1.000	1.000	
0164	SPV.0180	Special 01. Cold In Place Recycling (CIR) Pavement Partial Depth	SY	533,867.000	230,994.000	302,873.000
0166	SPV.0195	Special 01. Asphalt Stabilizing Agent	TON	2,136.000	924.000	1,212.000

3

PROJECT NUMBER 8010-00-61			CULVERT REPLACEMENT												REMARKS
			THICKNESS (0.164")												
			*												
			REMOVING SMALL PIPE CULVERTS 203.0100	SELECT BORROW 208.1100	BASE AGGREGATE DENSE 1 1/4-INCH 305.0120	ASPHALTIC SURFACE 465.0105	CULVERT PIPE CORRUGATED ALUMINUM 72-INCH 525.0172	ALUMINUM APRON ENDWALLS FOR ALUMINUM CULVERT PIPE 72-INCH 525.0372	RIPRAP MEDIUM 606.0200	MARKERS CULVERT END 633.5200	GEOTEXTILE FABRIC TYPE HR 645.0120	CONSTRUCTION STAKING PIPE CULVERTS 650.6000	SAWING ASPHALT 690.0150	SPECIAL 01. ENDWALL RESTORATION SPV.0060.01	
CATEGORY	STATION	LOCATION	EACH	CY	TON	TON	LF	EACH	CY	EACH	SY	EACH	LF	EACH	
0010	1115+30	STH 35	1	80	122	44	80	2	8	2	30	1	60	2	EXISTING 48"X75'
0010	1115+30	STH 35	1				80	2	8	2	30	1		2	EXISTING 48"X75'
0010	1234+50	STH 35	2	15	149	54	92	2	8	2	30	1	60	2	2 - EXISTING 36"X88'
TOTAL 0010			4	95	271	98	252	6	24	6	90	3	120	6	
* QUANTITIES SHOWN ELSEWHERE															
REMOVING ASPHALTIC SURFACE BUTT JOINTS															
			204.0115			BASE AGGREGATE DENSE 3/4-INCH									
CATEGORY	STATION	LOCATION	SY			REMARKS									
0010	969+54	KUNZ RD	100												
0010	995+81	CARLSON RD	100												
0010	995+83	SUMMIT TRAIL	100												
0010	1021+92	ANDERSON RD	100												
0010	1021+97	GARRISON RD	100												
0010	1075+97	PIONEER TRL	100												
0010	1076+05	FOXBORO CHAFFER RD	100												
0010	1283+72	MILCHESKY RD	100												
0010	1339+96	CTH BB	100												
0010	1407+48	TOWN LINE RD	100												
0010	1426+90	E LARGO RD	100												
0010	1476+58	PATTISON TOWER RD	100												
0010	510+28	PATTISON STATE PARK DRIVEWAY	100												
0010	520+20	LANDFILL RD	100												
0010	557+77	CTH B	100												
0010	559+40	STH 35	200			END OF PROJECT									
0010			84			DRIVEWAYS									
TOTAL 0010			1784												
SHAPING SHOULDERS															
			305.0500												
CATEGORY	STATION TO	STATION	LOCATION	STA			REMARKS								
0010	902+71	-	559+01	STH 35			663								
TOTAL 0010			663												
TACK COAT															
			455.0605												
CATEGORY	STATION TO	STATION	LOCATION	GAL			REMARKS (0.04 GAL/SY)								
0010	902+70	-	559+40	STH 35			9044								
0010							196								
0010							32								
TOTAL 0010			9272												
PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 8010-00-61															
			211.0100												
CATEGORY	STATION TO	STATION	LOCATION	LS			REMARKS								
0010	902+70	-	559+40	STH 35			1 INTERSECTIONS								
TOTAL 0010			1												

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PROJECT NUMBER 8010-00-61

REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

CATEGORY	STATION TO	STATION	LOCATION	460.4110.S LF
0010	902+70 -	559+40	STH 35	66288
TOTAL 0010				66288

BEAM GUARD

CATEGORY	STATION TO	STATION	LOCATION	OFFSET	BARRIER SYSTEM GRADING SHAPING FINISHING 614.0010 EACH	SALVAGED RAIL 614.0920 LF	MGS GUARDRAIL 3 614.2300 LF	MGS THRIE BEAM TRANSITION 614.2500 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH
0010	1180+25 -	1182+06	STH 35	RT	1	92	87.5	40	1
0010	1180+64 -	1182+06	STH 35	LT	1	92	50.0	40	1
0010	1182+68 -	1183+25	STH 35	RT	1	93	50.0	40	1
0010	1182+68 -	1184+49	STH 35	LT	1	92	87.5	40	1
TOTAL 0010					4	369	275	160	4

3

HMA PAVEMENT 4 MT 58-34 H

CATEGORY	STATION TO	STATION	LOCATION	460.6444 TON	REMARKS
0010	902+70 -	559+40	STH 35	26716	MAINLINE
0010				578	INTERSECTIONS
TOTAL 0010				27294	

BARRIER SYSTEM GRADING SHAPING FINISHING

CATEGORY	STATION TO	STATION	LOCATION	OFFSET	* FILL CY	* SALVAGED TOPSOIL SY	* FERTILIZER TYPE B CWT	* SEEDING NO. 10 LB
0010	1180+25 -	1182+06	STH 35	RT	87	3248	2	87.7
0010	1180+64 -	1182+06	STH 35	LT	33	1968	1	53.1
0010	1182+68 -	1183+25	STH 35	RT	22	2400	2	64.8
0010	1182+68 -	1184+49	STH 35	LT	29	2263	1	61.1

* ITEMS AND QUANTITIES FOR INFORMATION ONLY

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

CATEGORY	STATION	LOCATION	465.0120 TON	REMARKS
0010	987+00	STH 35	8	LT
0010	1041+90	STH 35	8	LT
0010	1056+40	STH 35	8	RT
0010	1198+20	STH 35	8	RT
0010	1243+10	STH 35	8	LT
0010	1252+00	STH 35	8	RT
0010	1307+40	STH 35	8	LT
0010	1398+70	STH 35	8	RT
0010	1424+90	STH 35	8	LT
0010	1438+00	STH 35	8	LT
0010	1456+30	STH 35	8	RT
0010	510+10	STH 35	8	RT
TOTAL 0010			96	

SILT FENCE

CATEGORY	STATION TO	STATION	LOCATION	SILT FENCE 628.1504 LF	SILT FENCE MAINTENANCE 628.1520 LF
0010	1179+03 -	1182+07	STH 35	337	337
0010	1179+38 -	1182+08	STH 35	289	289
0010	1182+67 -	1185+30	STH 35	294	294
0010	1182+68 -	1185+69	STH 35	319	319
TOTAL 0010				1239	1239

WATER

CATEGORY	STATION TO	STATION	LOCATION	624.0100 MGAL	REMARKS
0010	902+70 -	559+00	STH 35	1100	BASE COURSE
TOTAL 0010				1100	

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PROJECT NUMBER 8010-00-61

SALVAGED TOPSOIL

625.0500				
CATEGORY	STATION	LOCATION	SY	REMARKS
0010	1234+58	STH 35	140	LEFT
TOTAL 0010			140	

EROSION MAT URBAN CLASS I TYPE B

628.2008					
CATEGORY	STATION TO	STATION	LOCATION	SY	REMARKS
0010	1179+10 -	1182+10	STH 35	3248	RIGHT
0010	1179+40 -	1182+10	STH 35	1968	LEFT
0010	1182+70 -	1185+30	STH 35	2400	RIGHT
0010	1182+70 -	1185+65	STH 35	2263	LEFT
0010		1234+58	STH 35	140	LEFT
TOTAL 0010				10019	

FIELD OFFICE TYPE C

642.5201					
CATEGORY	STATION TO	STATION	LOCATION	EACH	
0010	902+70 -	559+00	STH 35	0.5	
TOTAL 0010				0.5	

TRAFFIC CONTROL (PROJECT) 01. 8010-00-61

643.0100				
CATEGORY	STATION TO	STATION	LOCATION	EACH
0010	902+70 -	559+00	STH 35	1
TOTAL 0010				1

TRAFFIC CONTROL SIGNS

643.0900						
CATEGORY	STATION TO	STATION	LOCATION	NO.	DAY	REMARKS
0010	902+70 -	559+00	STH 35	16	1008	ADVANCE WARNING
0010	902+71 -	559+01	STH 35	10	340	LANE CLOSURE
TOTAL 0010					1348	

MOBILIZATIONS EROSION CONTROL

628.1905				
CATEGORY	STATION TO	STATION	LOCATION	EACH
0010	902+70 -	559+40	STH 35	3
TOTAL 0010				3

FERTILIZER TYPE B

629.0210				
CATEGORY	STATION	LOCATION	CWT	REMARKS
0010	1234+58	STH 35	1	LEFT
TOTAL 0010			1	

MOBILIZATIONS EMERGENCY EROSION CONTROL

628.1910				
CATEGORY	STATION TO	STATION	LOCATION	EACH
0010	902+70 -	559+40	STH 35	2
TOTAL 0010				2

SEEDING MIXTURE NO. 10

630.0110				
CATEGORY	STATION	LOCATION	LB	REMARKS
0010	1234+58	STH 35	3	LEFT
TOTAL 0010			3	

TEMPORARY PORTABLE RUMBLE STRIPS 01. 8010-00-61

643.0310.S.01				
CATEGORY	STATION TO	STATION	LOCATION	LS
0010	902+70 -	559+00	STH 35	1
TOTAL 0010				1

PAVEMENT MARKING EPOXY 4-INCH

646.0106					
CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS
0010	902+70 -	559+00	STH 35	77352	CENTERLINE
TOTAL 0010				77352	

TRAFFIC CONTROL DRUMS

643.0300						
CATEGORY	STATION TO	STATION	LOCATION	NO.	DAY	REMARKS
0010	902+71 -	559+01	STH 35	10	40	LANE CLOSURE
TOTAL 0010					40	

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PROJECT NUMBER 8010-00-61					SIGNING SCHEDULE (NB)							
						POSTS WOOD 4X6-INCH X 14-FT 634.0614	POSTS WOOD 4X6-INCH X 16-FT 634.0616	SIGNS TYPE II REFLECTIVE H 637.2210	SIGNS TYPE II REFLECTIVE F 637.2230	REMOVING SIGNS TYPE II 638.2602	REMOVING SMALL SIGN SUPPORTS 638.3000	
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	EACH	EACH	SF	SF	EACH	EACH
0010	903+05	11-03	R1-1	STOP	55	30"X30"	1		5.2		1	1
0010	903+68	11-04	R2-1	SPEED LIMIT		24"X30"	1		5.0		1	1
0010	936+15	11-06	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	961+87	11-07	W2-2	SIDE ROAD (90 DEGREE)		30"X30"	1			6.3	1	1
0010	969+94	11-08	R1-1	STOP		30"X30"	1		5.2		1	1
0010	981+26	12-02	W14-3	NO PASSING ZONE		48"X36"		1		6.0	1	1
0010	996+13	12-04	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1015+07	12-06	W11-2	PEDESTRIAN CROSSING SYMBOL		30"X30"					1	1
0010	1015+79	12-07	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1022+23	12-09	R1-1	STOP		30"X30"	1		5.2	6.3	1	1
0010	1076+40	13-02	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1077+07	13-03	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.0			1
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010	1090+19	13-04	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1115+36	13-06	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1145+92	13-08	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1187+24	14-02	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1233+20	14-04	I55-56	ADOPT-A-HIGHWAY	SUMMIT VOLUNTEER FIRE DEPARTMENT	30"X36"		1	7.5		1	1
0010	1248+67	14-05	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1270+52	15-02	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1275+79	15-03	W2-2	SIDE ROAD (90 DEGREE)		30"X30"	1			6.3	1	1
0010	1283+38	15-04	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1284+09	15-06	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1299+31	15-09	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1328+89	15-10	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1330+87	15-12	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.5			1
0010			M2-1	JCT		21"X15"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	BB	24"X24"					1	
0010	1335+24	15-13	D1-1	ONE DESTINATION	LEFT ARROW PATZAU	60"X15"	2		6.3		1	2
0010	1339+38	15-16	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.5			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	BB	24"X24"					1	
0010			M6-1	LEFT ARROW		21"X21"					1	
0010	1340+27	15-18	W1-7	NIGHT ARROW (DOUBLE)		48"X24"	1			8.0	1	1
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010	1341+56	15-21	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.0			1
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010	1353+00	16-01	W1-2R	RIGHT CURVE		36"X36"		1		9.0	1	1
0010	1356+07	16-02	S3-1	SCHOOL BUS STOP AHEAD		36"X36"	1			9.0	1	1
SHEET SUBTOTAL							28	3	81	111	36	32
PROJECT NO: 8010-00-61		HWY: STH 35		COUNTY: DOUGLAS		MISCELLANEOUS QUANTITIES				SHEET: 48		E

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PROJECT NUMBER 8010-00-61

SIGNING SCHEDULE (NB)							POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING
							4X6-INCH X	4X6-INCH X	SIGNS TYPE II	SIGNS TYPE II	SIGNS TYPE	SMALL SIGN
							14-FT	16-FT	REFLECTIVE H	REFLECTIVE F	II	SUPPORTS
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	634.0614	634.0616	637.2210	637.2230	638.2602	638.3000
							EACH	EACH	SF	SF	EACH	EACH
0010	1392+48	16-05	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1405+15	16-06	W1-2L	LEFT CURVE		36"X36"	1			9.0	1	1
0010	1427+20	17-04	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1428+85	17-05	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1430+16	17-06	W11-2	PEDESTRIAN CROSSING SYMBOL		30"X30"					1	1
0010	1435+43	17-07	I55-56	ADOPT-A-HIGHWAY	SUPERIOR KIWANIS CLUB	30"X36"	1		7.5		1	1
0010	1464+84	17-08	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	1476+89	17-10	R1-1	STOP		30"X30"	1		5.2		1	1
0010	503+50	17-14	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	508+00	17-15	W1-2L	LEFT CURVE		36"X36"	1			9.0	1	1
0010	510+64	17-16	R1-1	STOP		30"X30"	1		5.2		1	1
0010	512+15	17-17	W54-57	TRUCK ENTRANCE		30"X30"	1			6.3	1	1
0010	513+55	17-18	D7-51	PATTISON STATE PARK 1 MILE		54"X36"	2		13.5		1	2
0010	528+00	18-02	W1-2R	RIGHT CURVE		36"X36"	1			9.0	1	1
0010	541+90	18-04	W1-2L	LEFT CURVE		30"X30"	1			6.3	1	1
0010			W13-1	ADVISORY SPEED PLATE (YELLOW BACK)	35	18"X18"				2.3	1	
0010	545+83	18-05	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.5			1
0010			M2-1	JCT		21"X15"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	B	24"X24"					1	
0010	547+83	18-07	W3-5	SPEED LIMIT ARROW	35	36"X36"	1			9.0	1	1
0010	550+50	18-09	W1-2R	RIGHT CURVE		30"X30"		1		6.3	1	1
0010	552+85	18-11	R2-1	SPEED LIMIT	35	24"X30"	1		5.0		1	1
0010	553+83	18-12	D1-1	ONE DESTINATION	LEFT ARROW FOXBORO	66"X15"					1	1
0010	557+35	18-14	J13-1	DIRECTIONAL WO CARDINAL		24"X45"		1	7.5			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	B	24"X24"					1	
0010			M6-6	LEFT AHEAD ARROW AND STRAIGHT		21"X21"					1	
0010			R7-1L	NO PARKING ANY TIME		18"X24"	1		3.0		1	
0010	558+23	18-16	W1-7	NIGHT ARROW (DOUBLE)		48"X24"		1		8.0	1	1
0010	558+80	18-19	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.0			1
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010	561+00	18-18	R2-1	SPEED LIMIT	35	24"X30"	1		5.0		1	1
SUBTOTAL NORTH BOUND							21	3	70	89	29	25
TOTAL NORTH BOUND							49	6	151	200	65	57

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PROJECT NUMBER 8010-00-61					SIGNING SCHEDULE (SB)		POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING
							4X6-INCH X	4X6-INCH X	SIGNS TYPE II	SIGNS TYPE II	SIGNS TYPE	SMALL SIGN
							14-FT	16-FT	REFLECTIVE H	REFLECTIVE F	II	SUPPORTS
							634.0614	634.0616	637.2210	637.2230	638.2602	638.3000
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	EACH	EACH	SF	SF	EACH	EACH
0010	558+91	18-17	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.5			1
0010			M6-1	RIGHT ARROW		21"X21"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	B	24"X24"					1	
0010	557+40	18-15	R1-1	STOP		30"X30"	1		5.2		1	1
0010	557+35	18-20	J13-1	DIRECTIONAL WO CARDINAL		48"X45"		1	15.0			
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	B	24"X24"						
0010			M6-1	RIGHT ARROW		21"X21"						
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)		24"X24"						
0010			M6-4	DOUBLE ARROW		21"X21"						
0010	555+95	18-21	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.0			
0010			M3-1	NORTH		24"X12"						
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"						
0010	556+46	18-13	I55-56	ADOPT-A-HIGHWAY	SUPERIOR KIWANIS CLUB	30"X36"	1		7.5		1	1
0010	552+65	18-10	W1-2R	RIGHT CURVE		30"X30"	1			6.3	1	1
0010	550+58	18-08	R2-1	SPEED LIMIT	55	24"X30"	1		5.0		1	1
0010	543+00	18-06	W1-2L	LEFT CURVE		30"X30"	1			6.3	1	1
0010	527+00	18-03	W1-2R	RIGHT CURVE		36"X36"	1			9.0	1	1
0010	519+84	18-01	R1-1	STOP		30"X30"	1		5.2		1	1
0010	497+45	17-13	W14-3	NO PASSING ZONE		48"X36"		1		6.0	1	1
0010	493+49	17-12	S3-1	SCHOOL BUS STOP AHEAD		36"X36"	1			9.0	1	1
0010	1477+70	17-11	W11-2	CROSSWALK		30"X30"					1	1
0010	1466+58	17-09	W14-3	NO PASSING ZONE		48"X36"		1		6.0	1	1
0010	1420+72	17-03	W14-3	NO PASSING ZONE		48"X36"		1		6.0	1	1
0010	1417+80	17-02	W1-2R	RIGHT CURVE		36"X36"	1			9.0	1	1
0010	1415+50	17-01	W2-2	SIDE ROAD (90 DEGREE)		30"X30"	1			6.3	1	1
0010	1407+84	16-08	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1407+09	16-07	R1-1	STOP		30"X30"	1		5.2		1	1
0010	1392+51	16-04	W14-3	NO PASSING ZONE		48"X36"		1		6.0	1	1
0010	1374+70	16-03	W1-2L	LEFT CURVE		36"X36"	1			9.0	1	1
0010	1347+87	15-23	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.5			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	BB	24"X24"					1	
0010			M2-1	JCT		21"X15"					1	
0010	1344+81	15-22	D1-1	ONE DESTINATION	PATZAU RIGHT ARROW	60"X15"		2	6.3		1	2
0010	1340+88	15-20	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.5			1
0010			M6-1	RIGHT ARROW		21"X21"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	BB	24"X24"					1	
0010	1340+39	15-19	R1-1	STOP		36"X36"	1		7.5		1	1
0010	1339+67	15-17	R1-1	STOP		36"X36"	1		7.5		1	1
0010	1339+61	15-24	J13-1	DIRECTIONAL WO CARDINAL		24"X45"		1	7.5			
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"						
SHEET SUBTOTAL							19	8	104	79	27	25

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PROJECT NUMBER 8010-00-61						SIGNING SCHEDULE (SB)					POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING		
						4X6-INCH X	4X6-INCH X	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING							
						14-FT	16-FT	REFLECTIVE H	REFLECTIVE F	TYPE II	TYPE II							
						634.0614	634.0616	637.2210	637.2230	638.2602	638.3000							
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	EACH	EACH	SF	SF	EACH	EACH						
0010			M6-4	DOUBLE ARROW		21"X21"												
0010	1338+72	15-15	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.0							1		
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"										1		
0010			M3-3	SOUTH		24"X12"										1		
0010	1337+52	15-14	I55-56	ADOPT-A-HIGHWAY	SUMMIT VOLUNTEER FIRE DEPARTMENT	30"X36"	1		7.5							1	1	
0010	1329+24	15-11	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1294+46	15-08	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1293+43	15-07	R1-1	STOP		36"X36"	1		7.5							1	1	
0010	1283+77	15-05	W1-7	NIGHT ARROW (DOUBLE)		48"X24"		1		8.0						1	1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"										1		
0010	1269+29	15-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1223+12	14-03	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1173+91	14-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1136+25	13-07	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1110+15	13-05	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1075+76	13-01	R1-1	STOP		30"X30"	1		5.2							1	1	
0010	1052+74	12-11	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1033+76	12-10	W11-2	PEDESTRIAN CROSSING SYMBOL		30"X30"										1	1	
0010	1021+57	12-08	R1-1	STOP		30"X30"	1		5.2							1	1	
0010	1015+07	12-05	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	1006+74	12-03	R1-1	STOP		30"X30"	1		5.2							1	1	
0010	995+53	12-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
0010	975+14	11-05	W14-3	NO PASSING ZONE		48"X36"	1			6.0						1	1	
							SUBTOTAL SOUTH BOUND	17	1	37	74	21	19					
							TOTAL SOUTH BOUND	36	9	141	153	48	44					
							TOTAL PROJECT	85	15	291	353	113	101					
PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH						LOCATING NO-PASSING ZONES						TEMPORARY PAVEMENT MARKING PAINT 4-INCH						
646.2304.S						648.0100						649.0402						
CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS	CATEGORY	STATION TO	STATION	LOCATION	MI	CATEGORY	STATION TO	STATION	LOCATION	LF	REMARKS		
0010	902+70	- 559+00	STH 35	66288	EDGE LINE	0010	902+70	- 559+00	STH 35	12.50	0010	902+70	- 559+00	STH 35	66288	EDGE LINE		
0010	902+70	- 559+00	STH 35	66288	EDGE LINE						0010	902+70	- 559+00	STH 35	77352	CENTERLINE		
				TOTAL 0010	132576					TOTAL 0010	12.50					TOTAL 0010	209928	
PROJECT NO: 8010-00-61					HWY: STH 35			COUNTY: DOUGLAS			MISCELLANEOUS QUANTITIES					SHEET: 51		E

3

PROJECT NUMBER 8010-00-61

CONSTRUCTION STAKING RESURFACING REFERENCE					
CATEGORY	STATION TO	STATION	LOCATION	650.8000 LF	
0010	902+70	- 559+00	STH 35	66288	
TOTAL 0010				66288	

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8010-00-61					
CATEGORY	STATION TO	STATION	LOCATION	650.9910 LS	
0010	902+70	- 559+00	STH 35	1	
TOTAL 0010				1	

SPECIAL 02. COFFERDAM

CATEGORY	STATION	LOCATION	SPV.0060.02 EACH
0010	1115+30	STH 35	4
TOTAL 0010			4

COLD-IN-PLACE PAVEMENT

CATEGORY	STATION TO	STATION	LOCATION	SPECIAL 01. BASE REPAIR FOR CIR PAVEMENT SPV.0035.01 CY	SPECIAL 01. PREPARE FOUNDATION FOR CIR PAVEMENT 8010-00-61 SPV.0105.01 LS	SPECIAL 02. PREPARE FOUNDATION FOR HMA FOUNDATION 8010-00-61 SPV.0105.02 LS	SPECIAL 01. COLD IN PLACE RECYCLING (CIR) PAVEMENT PARTIAL DEPTH SPV.0180.01 SY	SPECIAL 01. ASPHALT STABILIZING AGENT SPV.0195.01 TON
0010	902+70	- 559+00	STH 35	200	1	1	230994	924
TOTAL 0010				200	1	1	230994	924

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 LF	REMARKS
0010	969+54	KUNZ RD	30	
0010	995+81	CARLSON RD	30	
0010	995+83	SUMMIT TRAIL	30	
0010	1021+92	ANDERSON RD	30	
0010	1021+97	GARRISON RD	30	
0010	1075+97	PIONEER TRL	30	
0010	1076+05	FOXBORO CHAFFER RD	30	
0010	1283+72	MILCHESKY RD	30	
0010	1339+96	CTH BB	30	
0010	1407+48	TOWN LINE RD	30	
0010	1426+90	E LARGO RD	30	
0010	1476+58	PATTISON TOWER RD	30	
0010	510+28	PATTISON STATE PARK DRIVEWAY	30	
0010	520+20	LANDFILL RD	30	
0010	557+77	CTH B	30	
0010	559+40	STH 35	30	END OF PROJECT
0010			180	DRIVEWAYS (15' PER)
TOTAL 0010			660	

* QUANTITIES SHOWN ELSEWHERE

SPECIAL 06. TEMPORARY WATER DIVERSION STA 1234+71

CATEGORY	STATION	LOCATION	SPV.0105.06 LS
0010	1234+71	STH 35	1
TOTAL 0010			1

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PROJECT NUMBER 8010-01-64

REMOVING SMALL PIPE CULVERTS

203.0100					
CATEGORY	STATION TO	STATION	LOCATION	EACH	REMARKS
0010	509+25 -	509+79	STH 35	1	EXISTING 18"X33' CMCP
TOTAL 0010				1	

PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. 8010-01-64

211.0100					
CATEGORY	STATION TO	STATION	LOCATION	LS	REMARKS
0010	8+00 -	895+68	STH 35	1	INTERSECTIONS
TOTAL 0010				1	

BASE AGGREGATE DENSE 3/4-INCH

305.0110					
CATEGORY	STATION TO	STATION	LOCATION	TON	REMARKS
0010	8+00 -	895+68	STH 35	7000	RT
0010	8+00 -	895+68	STH 35	7000	LT
0010				140	INTERSECTIONS
0010				658	DRIVEWAYS
TOTAL 0010				14798	

TACK COAT

455.0605					
CATEGORY	STATION TO	STATION	LOCATION	GAL	REMARKS (0.04 GAL/SY)
0010	8+00 -	895+68	STH 35	12004	MAINLINE
0010				111	INTERSECTIONS
0010				20	DRIVEWAYS
TOTAL 0010				12135	

CULVERT REPLACEMENT
THICKNESS (0.164")

CATEGORY	STATION	LOCATION	REMOVING OLD	SELECT	BASE AGGREGATE	ASPHALTIC	CULVERT PIPE	ALUMINUM APRON	MARKERS	GEOTEXTILE	CONSTRUCTION	SPECIAL 01.				
			STRUCTURE											ENDWALLS FOR	CONSTRUCTION	SPECIAL 01.
			(STATION) 01.											ALUMINUM CULVERT	STAKING PIPE	ENDWALL
			668+00											PIPE 72-INCH	PIPE	RESTORATION
			203.0200	208.1100	305.0120	465.0105	525.0172	525.0372	606.0200	633.5200	645.0120	650.6000	690.0150	SPV.0060.01		
			LS	CY	TON	TON	LF	EACH	CY	EACH	SY	EACH	LF	EACH	REMARKS	
0010	668+00	STH 35	1	93	147	54	78	2	8	2	30	1	60	2	EXISTING 72"X92'	
TOTAL 0010			1	93	147	54	78	2	8	2	30	1	60	2		

* QUANTITIES SHOWN ELSEWHERE

REMOVING ASPHALTIC SURFACE BUTT JOINTS

204.0115				
CATEGORY	STATION	LOCATION	SY	REMARKS
0010	8+00	STH 35	200	START OF PROJECT
0010	36+88	SCHOOL RD	100	
0010	36+88	CTH T	100	
0010	88+41	OLD 35 RD	100	
0010	339+18	CTH T	100	
0010	339+16	TOWN RD T	100	
0010	391+29	KNUTSON RD	100	
0010	428+21	ENGINE HILL RD	100	
0010	428+18	KINGSDALE RD	100	
0010	587+48	CTH M	100	
0010	587+42	MOOSE RD	100	
0010	895+67	TOWER FIRE LANE	100	
0010			56	DRIVEWAYS
TOTAL 0010			1356	

SHAPING SHOULDERS

305.0500				
CATEGORY	STATION TO	STATION	LOCATION	STA
0010	8+00 -	895+68	STH 35	901
TOTAL 0010				901

REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

460.4110.S				
CATEGORY	STATION TO	STATION	LOCATION	LF
0010	8+00 -	895+68	STH 35	89949
TOTAL 0010				89949

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PROJECT NUMBER 8010-01-64

HMA PAVEMENT 4 MT 58-34 H

CATEGORY	STATION TO	STATION	LOCATION	460.6444 TON	REMARKS
0010	8+00	- 895+68	STH 35	35461	MAINLINE
0010				326	INTERSECTIONS
TOTAL 0010				35787	

CULVERT PIPE CORRUGATED STEEL 18-INCH

CATEGORY	STATION TO	STATION	LOCATION	521.0118 LF
0010	509+25	- 509+79	STH 35	53
TOTAL 0010				53

APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH

CATEGORY	STATION	LOCATION	521.1018 EACH
0010	509+25	STH 35	1
0010	509+79	STH 35	1
TOTAL 0010			2

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

CATEGORY	STATION	LOCATION	465.0120 TON	REMARKS
0010	30+60	STH 35	8	RT
0010	31+70	STH 35	8	RT
0010	337+80	STH 35	8	RT
0010	338+30	STH 35	8	RT
0010	635+90	STH 35	8	RT
0010	638+70	STH 35	8	RT
0010	786+30	STH 35	8	RT
TOTAL 0010			56	

BARRIER SYSTEM GRADING SHAPING FINISHING

CATEGORY	STATION TO	STATION	LOCATION	OFFSET	FILL CY	SALVAGED TOPSOIL SY	FERTILIZER TYPE B CWT	SEEDING NO. 20 LB
0010	125+90	- 127+71	STH 35	RT	98	4077	3	110
0010	127+27	- 127+71	STH 35	LT	18	566	1	15
0010	128+56	- 130+36	STH 35	LT	167	3271	3	88
0010	128+57	- 129+99	STH 35	RT	125	4541	3	123
0010	506+90	- 510+59	STH 35	RT	322	7155	5	193
0010	507+35	- 509+36	STH 35	LT	194	4319	3	117
0010	509+94	- 511+63	STH 35	LT	15	3722	3	100

* ITEMS AND QUANTITIES FOR INFORMATION ONLY

BEAM GUARD

CATEGORY	STATION TO	STATION	LOCATION	OFFSET	BARRIER SYSTEM GRADING SHAPING FINISHING 614.0010 EACH	STEEL THRIE BEAM STRUCTURE APPROACH 614.0200 LF	STEEL PLATE BEAM GUARD CLASS A 614.0305 LF	STEEL PLATE BEAM GUARD SHORT RADIUS 614.0345 LF	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL 614.0370 EACH	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL 614.0390 EACH	SALVAGED RAIL 614.0920 LF	MGS GUARDRAIL 3 614.2300 LF	MGS THRIE BEAM TRANSITION 614.2500 LF	MGS GUARDRAIL TERMINAL EAT 614.2610 EACH
0010	125+90	- 127+71	STH 35	RT	1						107	87.5	40	1
0010	127+27	- 127+71	STH 35	LT	1	20	12.5	12.5		1	58			
0010	128+56	- 130+36	STH 35	LT	1						113	87.5	40	1
0010	128+57	- 129+99	STH 35	RT	1						119	50.0	40	1
0010	337+95	- 338+10	STH 35	RT							15			
0010	506+90	- 510+59	STH 35	RT	1						189	262.5		2
0010	507+35	- 509+36	STH 35	LT	1		150	12.5	1		152			
0010	509+94	- 511+63	STH 35	LT	2							62.5		2
TOTAL 0010					8	20	163	25.0	1	1	753	550.0	120	7

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PROJECT NUMBER 8010-01-64

SILT FENCE

CATEGORY	STATION TO	STATION	LOCATION	SILT FENCE	SILT FENCE MAINTENANCE
				628.1504 LF	628.1520 LF
0010	124+99	-	127+71	STH 35	272
0010	127+27	-	127+71	STH 35	44
0010	128+57	-	130+70	STH 35	213
0010	128+56	-	131+03	STH 35	247
0010	506+68	-	511+24	STH 35	456
0010	506+68	-	511+24	STH 35	456
TOTAL 0010				1688	1688

EROSION MAT URBAN CLASS I TYPE B

CATEGORY	STATION TO	STATION	LOCATION	628.2008	
				SY	REMARKS
0010	124+75	-	127+75	STH 35	4077 RT
0010	127+25	-	127+75	STH 35	566 LT
0010	128+60	-	131+00	STH 35	3271 RT
0010	128+60	-	131+55	STH 35	4541 LT
0010	506+00	-	508+75	STH 35	3062 RT
0010	506+15	-	508+80	STH 35	3774 LT
0010	509+10	-	509+40	STH 35	545 LT
0010	509+15	-	511+80	STH 35	4093 RT
0010	509+75	-	512+80	STH 35	3722 LT
0010			668+07	STH 35	70 RIGHT
TOTAL 0010				27721	

TRAFFIC CONTROL (PROJECT) 01. 8010-01-64

CATEGORY	STATION TO	STATION	LOCATION	643.0100
				EACH
0010	8+00	-	895+68	STH 35 1
TOTAL 0010				1

TEMPORARY PORTABLE RUMBLE STRIPS

CATEGORY	STATION TO	STATION	LOCATION	643.0310.S.02
				LS
0010	8+00	-	895+68	STH 35 1
TOTAL 0010				1

SALVAGED TOPSOIL

CATEGORY	STATION	LOCATION	625.0500	
			SY	REMARKS
0010	668+07	STH 35	70	RIGHT
TOTAL 0010			70	

MOBILIZATIONS EMERGENCY EROSION CONTROL

CATEGORY	STATION TO	STATION	LOCATION	628.1910
				EACH
0010	8+00	-	895+68	STH 35 2
TOTAL 0010				2

SEEDING MIXTURE NO. 10

CATEGORY	STATION	LOCATION	630.0110	REMARKS
			LB	
0010	668+07	STH 35	2	RIGHT
TOTAL 0010			2	

WATER

CATEGORY	STATION TO	STATION	LOCATION	624.0100	REMARKS
				MGAL	
0010	8+00	-	895+68	STH 35 150	BASE COURSE
TOTAL 0010				150	

MOBILIZATIONS EROSION CONTROL

CATEGORY	STATION TO	STATION	LOCATION	628.1905
				EACH
0010	8+00	-	895+68	STH 35 3
TOTAL 0010				3

FERTILIZER TYPE B

CATEGORY	STATION	LOCATION	629.0210	REMARKS
			CWT	
0010	668+07	STH 35	1	RIGHT
TOTAL 0010			1	

FIELD OFFICE TYPE C

CATEGORY	STATION TO	STATION	LOCATION	642.5201
				EACH
0010	8+00	-	895+68	STH 35 0.5
TOTAL 0010				0.5

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PROJECT NUMBER 8010-01-64				SIGNING SCHEDULE (NB)								
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING
							4X6-INCH X 14-FT 634.0614	4X6-INCH X 16-FT 634.0616	REFLECTIVE H 637.2210	REFLECTIVE F 637.2230	SIGNS TYPE II 638.2602	SMALL SIGN SUPPORTS 638.3000
							EACH	EACH	SF	SF	EACH	EACH
0010	9+56	1-01	I2-2	DOUGLAS COUNTY	DOUGLAS	66"X15"	2		6.88		1	2
0010	9+56	1-19		DOUGLAS COUNTY IS ZONED							1	
0010	11+21	1-20		WELCOME TO DAIRYLAND							2	2
0010	16+93	1-02	I2-3U	MUNICIPALITY POPULATION SIGN	COZY CORNER	84"X24"	2		14.00		1	2
0010	23+36	1-03	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	28+78	1-04	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.50			1
0010			M2-1	JCT		21"X15"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1	
0010	33+75	1-06	D1-1	ONE DESTINATION (ARROW)	CLOVERTON	72"X15"					1	2
0010	35+82	1-08	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1	
0010			M6-6	RIGHT AHEAD ARROW AND STRAIGHT		21"X21"					1	
0010	37+48	1-10	R1-1	STOP		30"X30"	1		5.18		1	1
0010	39+45	1-12	J4-1	REASSURANCE ASSEMBLY		48"X36"	1		6.00			1
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"						
0010	40+96	1-14	R2-1	SPEED LIMIT	55	24"X30"		1	5.00		1	1
0010	46+04	1-16	W11-6	SNOWMOBILE CROSSING SYMBOL		30"X30"	1			6.3	1	1
0010	62+31	1-18	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	86+78	2-02	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	88+80	2-05	R1-1	STOP		30"X30"	1		5.18		1	1
0010	265+91	4-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	285+41	4-03	I55-56	ADOPT-A-HIGHWAY	DAIRYLAND VOLUNTEER	30"X36"					1	1
0010	328+58	5-02	I2-3U	MUNICIPALITY POPULATION SIGN	FIRE DEPARTMENT DAIRYLAND	66"X24"	2		11.00		1	2
0010	330+61	5-03	W11-8	FIRE STATION TRUCK ENTRANCE SYMBOL		36"X36"					1	1
0010	332+48	5-04	J13-1	DIRECTIONAL WO CARDINAL		24"X45"		1	7.50			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1	
0010			M5-1R	ADVANCE ARROW (RIGHT TURN)		21"X21"					1	
0010	336+16	5-05	D1-1	ONE DESTINATION	WASCOTT RIGHT ARROW	72"X15"					1	1
0010	338+70	5-07	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1	
0010			M6-1	RIGHT ARROW		21"X21"					1	
0010	339+46	5-09	R1-1	STOP		36"X36"	1		7.46		1	1
0010	339+50	5-19	J13-1	DIRECTIONAL WO CARDINAL		48"X45"	1		15.00			
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"						
0010			M6-1	LEFT OR RIGHT ARROW		21"X21"						
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"						
0010			M6-1	LEFT ARROW		21"X21"						
0010	341+20	5-20	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.00			
SHEET SUBTOTAL							20	2	110.70	30.3	29	27
PROJECT NO: 8010-01-64			HWY: STH 35		COUNTY: DOUGLAS		MISCELLANEOUS QUANTITIES				SHEET: 56	
E												

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PROJECT NUMBER 8010-01-64					SIGNING SCHEDULE (NB)							
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING
							4X6-INCH X 14-FT 634.0614 EACH	4X6-INCH X 16-FT 634.0616 EACH	REFLECTIVE H 637.2210 SF	REFLECTIVE F 637.2230 SF	SIGNS TYPE II 638.2602 EACH	SMALL SIGN SUPPORTS 638.3000 EACH
0010			M3-1	NORTH		24"X12"						
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"						
0010	345+80	5-12	R2-1	SPEED LIMIT	55	24"X30"	1		5.00		1	1
0010	348+80	5-15	J4-1	REASSURANCE ASSEMBLY		24"X36"					1	2
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010			D2-1	DESTINATION/DISTANCE	SUPERIOR 37	72"X15"					1	
0010	391+58	5-18	R1-1	STOP		30"X30"	1		5.18		1	1
0010	422+37	6-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	428+27	6-03	R1-1	STOP		30"X30"	1		5.18		1	1
0010	432+68	6-05	R2-1	SPEED LIMIT	55	24"X30"	1		5.00		1	1
0010	436+30	6-07	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	482+22	6-10	R1-1	STOP		30"X30"	1		5.18		1	1
0010	490+87	6-11	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	508+66	7-01	I3-1	LAKE/RIVER (NAME)	TAMARACK RIVER	60"X24"	1		10.00		1	1
0010	580+14	7-04	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.50			1
0010			M2-1	JCT		21"X15"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	M	24"X24"					1	
0010	581+91	7-05	I2-3U	MUNICIPALITY POPULATION SIGN	MOOSE JUNCTION	102"X24"	2		17.00		1	2
0010	586+79	8-02	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	M	24"X24"					1	
0010			M6-1	RIGHT ARROW		21"X21"					1	
0010	587+86	8-04	R1-1	STOP		36"X36"	1		7.46		1	1
0010	587+90	8-21	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"						
0010			M6-1	LEFT AND RIGHT ARROW		21"X21"						
0010	589+54	8-06	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.00			1
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010	600+72	8-09	D5-61	WAYSIDE 1/2 MILE		48"X24"	2		8.00		1	2
0010	603+84	8-10	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	628+21	8-12	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	635+06	8-13	D5-62R	WAYSIDE RIGHT ARROW		48"X24"		2	8.00		1	2
0010	636+08	8-14	R1-1	STOP		30"X30"	1		5.18		1	1
0010	636+10	8-15	R5-53A	BUCKLE UP-IT'S THE LAW		18"X24"	1		3.00		1	1
0010	638+98	8-16	R1-1	STOP		30"X30"	1		5.18		1	1
0010	639+00	8-17	R5-53A	BUCKLE UP-IT'S THE LAW		18"X24"	1		3.00		1	1
0010	698+34	9-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	747+81	9-03	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	779+00	10-01	W1-2L	LEFT CURVE		30"X30"	1			6.3	1	1
SHEET SUBTOTAL							27	2	119.86	48.3	32	30
PROJECT NO: 8010-01-64			HWY: STH 35		COUNTY: DOUGLAS		MISCELLANEOUS QUANTITIES				SHEET: 57	
E												

3

PROJECT NUMBER 8010-01-64

SIGNING SCHEDULE (NB)

PROJECT NUMBER 0010-01-04							POSTS WOOD	POSTS WOOD		REMOVING	REMOVING	
							4X6-INCH X	4X6-INCH X	SIGNS TYPE II	SIGNS TYPE II	SIGNS TYPE	SMALL SIGN
							14-FT	16-FT	REFLECTIVE H	REFLECTIVE F	II	SUPPORTS
							634.0614	634.0616	637.2210	637.2230	638.2602	638.3000
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	EACH	EACH	SF	SF	EACH	EACH
0010	807+36	10-04	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	813+57	10-05	R1-1	STOP		30"X30"	1		5.18		1	1
0010	830+48	10-07	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	837+10	10-08	W1-2R	RIGHT CURVE		30"X30"	1			6.3	1	1
0010	872+61	11-01	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
SHEET SUBTOTAL							5	0	5.18	24	5	5
TOTAL NORTH BOUND							52	4	235.74	103	66	62

SIGNING
SIGNING SCHEDULE (SB)

							POSTS WOOD	POSTS WOOD			REMOVING	REMOVING
							4X6-INCH X	4X6-INCH X	SIGNS TYPE II	SIGNS TYPE II	SIGNS TYPE	SMALL SIGN
							14-FT	16-FT	REFLECTIVE H	REFLECTIVE F	II	SUPPORTS
							634.0614	634.0616	637.2210	637.2230	638.2602	638.3000
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	EACH	EACH	SF	SF	EACH	EACH
0010	893+48	11-02	R2-1	SPEED LIMIT	55	24"X30"	1		5.00		1	1
0010	860+87	10-10	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	849+30	10-09	W1-2L	LEFT CURVE		30"X30"	1			6.3	1	1
0010	826+30	10-06	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	795+66	10-03	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	792+00	10-02	W1-2R	RIGHT CURVE		30"X30"	1			6.3	1	1
0010	716+21	9-02	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	673+35	8-20	D5-61	WAYSIDE 1/2 MILE		48"X24"	2		8.00		1	2
0010	647+61	8-19	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	639+43	8-18	D5-62L	WAYSIDE LEFT ARROW		48"X24"	2		8.00		1	2
0010	622+44	8-11	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	595+72	8-08	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.50			1
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	M	24"X24"					1	
0010			M2-1	JCT		21"X15"					1	
0010	594+48	8-07	I2-3U	MUNICIPALITY POPULATION SIGN	MOOSE JUNCTION	102"X24"	2		17.00		1	2
0010	589+15	8-05	J13-1	DIRECTIONAL W0 CARDINAL		24"X45"	1		7.50			1
0010			M6-1	LEFT ARROW		21"X21"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	M	24"X24"					1	
0010	587+05	8-03	R1-1	STOP		30"X30"	1		5.18		1	1
0010	586+29	8-01	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.00			1
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35.00	24"X24"					1	
0010			M3-3	SOUTH		24"X12"					1	
0010	509+56	7-03	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
0010	509+23	7-02	I-3-1	LAKE/RIVER (NAME)	TAMARACK RIVER	60"X24"	1		10.00		1	1
0010	454+33	6-09	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1
SHEET SUBTOTAL							22	0	73.18	61	22	22

PROJECT NO: 8010-01-64

HWY: STH 35

COUNTY: DOUGLAS

MISCELLANEOUS QUANTITIES

SHEET: 58

E

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3

PROJECT NUMBER 8010-01-64				SIGNING SCHEDULE (SB)									
CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING	
							4X6-INCH X 14-FT 634.0614 EACH	4X6-INCH X 16-FT 634.0616 EACH	REFLECTIVE H 637.2210 SF	REFLECTIVE F 637.2230 SF	SIGNS TYPE II 638.2602 EACH	SMALL SIGN SUPPORTS 638.3000 EACH	
0010	432+93	6-06	W14-3	NO PASSING ZONE		48"X36"				6.0	1	1	
0010	427+79	6-02	R1-1	STOP		30"X30"	1		5.18		1	1	
0010	391+49	5-17	I55-56	ADOPT-A-HIGHWAY	DAIRYLAND VOLUNTEER	30"X36"					1	1	
					FIRE DEPARTMENT								
0010	348+96	5-16	I2-3U	MUNICIPALITY POPULATION SIGN	DAIRYLAND	66"X24"	2		11.00		1	2	
0010	347+17	5-14	W11-8	FIRE STATION TRUCK ENTRANCE SYMBOL		36"X36"					1	1	
0010	346+09	5-13	J1-1	JUNCTION OR END ASSEMBLY		24"X39"	1		6.50			1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1		
0010			M2-1	JCT		21"X15"					1		
0010	343+26	5-11	D1-1	ONE DESTINATION	LEFT ARROW WASCOTT	72"X15"					1	2	
0010	339+74	5-10	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			1	
0010			M6-6	RIGHT AHEAD ARROW AND STRAIGHT		21"X21"					1		
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1		
0010	338+93	5-08	R1-1	STOP		30"X30"	1		5.18		1	1	
0010	337+46	5-06	J4-1	REASSURANCE ASSEMBLY		48"X36"	1		12.00			1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1		
0010			M3-3	SOUTH		24"X12"					1		
0010			J1-1	JUNCTION OR END ASSEMBLY		24"X39"							
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"							
0010	327+92	5-01	R2-1	SPEED LIMIT	55	24"X30"	1		5.00		1	1	
0010	312+31	4-05	R1-1	STOP		30"X30"	1		5.18		1	1	
0010	305+72	4-04	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1	
0010	268+69	4-02	R1-1	STOP		30"X30"	1		5.18		1	1	
0010	125+04	2-08	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.00			1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1		
0010			M3-3	SOUTH		24"X12"					1		
0010	123+98	2-07	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1	
0010	99+83	2-06	R1-1	STOP		30"X30"	1		5.18		1	1	
0010	88+40	2-04	W1-7	NIGHT ARROW (DOUBLE)		48"X24"	1			8.0	1	1	
0010	87+71	2-03	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1	
0010	71+19	2-01	I2-3U	MUNICIPALITY POPULATION SIGN	COZY CORNER	84"X24"	2		14.00		1	2	
0010	60+94	1-17	W14-3	NO PASSING ZONE		48"X36"	1			6.0	1	1	
0010	42+84	1-15	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			1	
0010			M5-1R	ADVANCE ARROW (LEFT TURN)		21"X21"					1		
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1		
0010	40+15	1-13	D1-1	ONE DESTINATION	RIGHT ARROW CLOVERTON	72"X15"					1	2	
0010	37+63	1-11	J13-1	DIRECTIONAL WO CARDINAL		24"X45"	1		7.50			1	
0010			M6-1	RIGHT ARROW		21"X21"					1		
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"					1		
0010	36+39	1-09	R1-1	STOP		36"X36"	1		7.46		1	1	
0010	36+35	1-21	J4-1	REASSURANCE ASSEMBLY		48"X36"	1		12.00			1	
SHEET SUBTOTAL							23	0	122.36	38	31	30	
PROJECT NO: 8010-01-64			HWY: STH 35		COUNTY: DOUGLAS		MISCELLANEOUS QUANTITIES				SHEET: 59		

3

3

PROJECT NUMBER 8010-01-64

SIGNING SCHEDULE (SB)

CATEGORY	STATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	LINE 1	SIGN SIZE	POSTS WOOD	POSTS WOOD	SIGNS TYPE II REFLECTIVE H	SIGNS TYPE II REFLECTIVE F	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS
							4X6-INCH X 14-FT 634.0614 EACH	4X6-INCH X 16-FT 634.0616 EACH			638.2602 EACH	
0010			M3-1	NORTH		24"X12"					1	
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010			M1-5A	COUNTY MARKER (2-3 DIGITS)	T	24"X24"						
0010	35+21	1-07	J4-1	REASSURANCE ASSEMBLY		24"X36"	1		6.00			1
0010			M1-6	STATE ROUTE MARKER (2-3 DIGITS)	35	24"X24"					1	
0010			M3-3	SOUTH		24"X12"					1	
0010	33+49	1-05	R2-1	SPEED LIMIT	55	24"X30"		1	5.00		1	1
SHEET SUBTOTAL							1	1	11.00	0	5	2
TOTAL SOUTH BOUND							46	1	206.54	99	58	54
PROJECT TOTALS							98	5	442.28	201	124	116

TRAFFIC CONTROL SIGNS

CATEGORY	STATION TO	STATION	LOCATION	NO.	643.0900		REMARKS
					DAY		
0010	8+00	-	895+68	STH 35	22	1650	ADVANCE WARNING
0010	8+00		895+68	STH 35	10	430	LANE CLOUSRE
					2080		

TRAFFIC CONTROL DRUMS

CATEGORY	STATION TO	STATION	LOCATION	NO.	643.0300		REMARKS
					DAY		
0010	8+00	-	895+68	STH 35	10	20	LANE CLOSURE
TOTAL 0010					20		

PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH

CATEGORY	STATION TO	STATION	LOCATION	LF	646.2304.S		REMARKS
0010	8+00	-	895+68	STH 35	90089		EDGE LINE
0010	8+00	-	895+68	STH 35	90089		EDGE LINE
TOTAL 0010					180178		

PAVEMENT MARKING EPOXY 4-INCH

CATEGORY	STATION TO	STATION	LOCATION	LF	646.0106		REMARKS
0010	8+00	-	895+68	STH 35	64946		CENTERLINE
TOTAL 0010					64946		

LOCATING NO-PASSING ZONES

CATEGORY	STATION TO	STATION	LOCATION	MI	648.0100		REMARKS
0010	8+00	-	895+68	STH 35	17.25		
TOTAL 0010					17.25		

TEMPORARY PAVEMENT MARKING PAINT 4-INCH

CATEGORY	STATION TO	STATION	LOCATION	LF	649.0402		REMARKS
0010	8+00	-	895+68	STH 35	90089		EDGE LINE
0010	8+00	-	895+68	STH 35	90089		EDGE LINE
0010	8+00	-	895+68	STH 35	64946		CENTERLINE
TOTAL 0010					245124		

3

CONSTRUCTION STAKING RESURFACING REFERENCE

CATEGORY	STATION TO	STATION	LOCATION	650.8000 LF
0010	8+00 -	895+68	STH 35	89949
TOTAL 0010				89949

SAWING ASPHALT

CATEGORY	STATION	LOCATION	690.0150 LF	REMARKS
0010	8+00	STH 35	30	START OF PROJECT
0010	36+88	SCHOOL RD	30	
0010	36+88	CTH T	30	
0010	88+41	OLD 35 RD	30	
0010	339+18	CTH T	30	
0010	339+16	TOWN RD T	30	
0010	391+29	KNUTSON RD	30	
0010	428+21	ENGINE HILL RD	30	
0010	428+18	KINGSDALE RD	30	
0010	587+48	CTH M	30	
0010	587+42	MOOSE RD	30	
0010	895+67	TOWER FIRE LANE	30	
0010			105	DRIVEWAYS (15' PER)
TOTAL 0010			465	

* QUANTITIES SHOWN ELSEWHERE

SPECIAL 05. TEMPORARY WATER DIVERSION STA 668+17

CATEGORY	STATION	LOCATION	SPV.0105.05 LS
0010	668+17	STH 35	1
TOTAL 0010			1

COLD-IN-PLACE PAVEMENT

CATEGORY	STATION TO	STATION	LOCATION	SPECIAL 01. BASE REPAIR FOR CIR PAVEMENT SPV.0035.01 CY	SPECIAL 03. PREPARE FOUNDATION FOR CIR PAVEMENT 8010-01-64 SPV.0105.03 LS	SPECIAL 04. PREPARE FOUNDATION FOR HMA UPPER LAYER 8010-01-64 SPV.0105.04 LS	SPECIAL 01. COLD IN PLACE RECYCLING (CIR) PAVEMENT PARTIAL DEPTH SPV.0180.01 SY	SPECIAL 01. ASPHALT STABILIZING AGENT SPV.0195.01 TON
0010	8+00 -	895+68	STH 35	350	1	1	302873	1212
TOTAL 0010				350	1	1	302873	1212

CONSTRUCTION STAKING PIPE CULVERTS

CATEGORY	STATION	STATION	LOCATION	650.6000 EACH	REMARKS
0010	509+25	509+79	STH 35	1	DRIVEWAY CULVERT
TOTAL 0010				1	

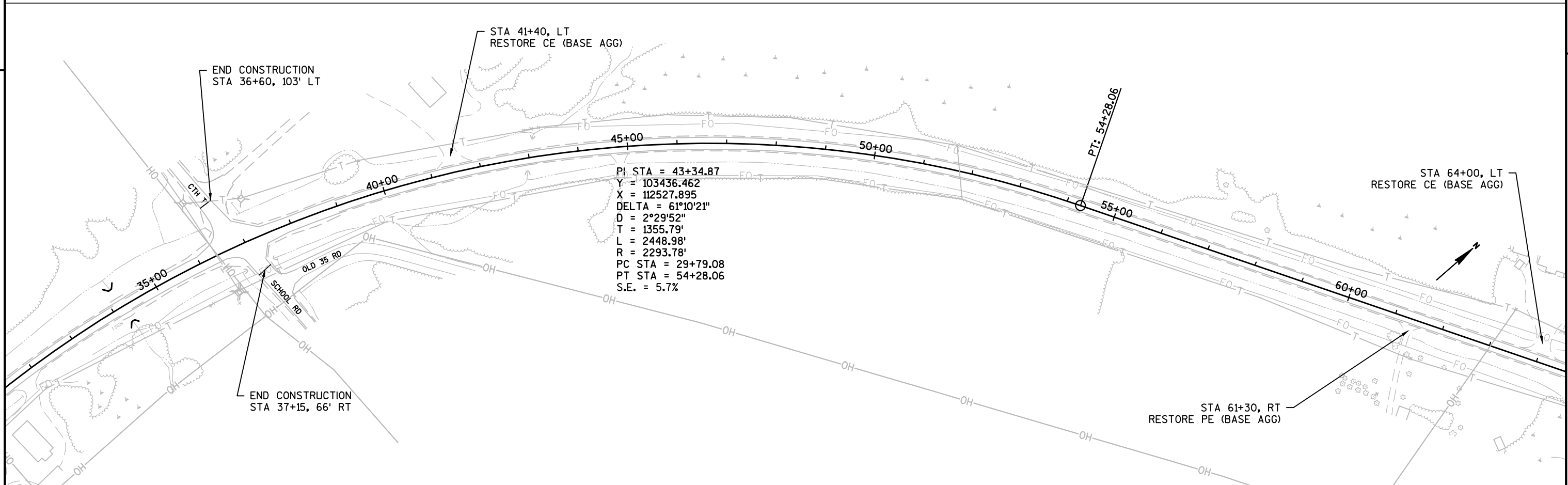
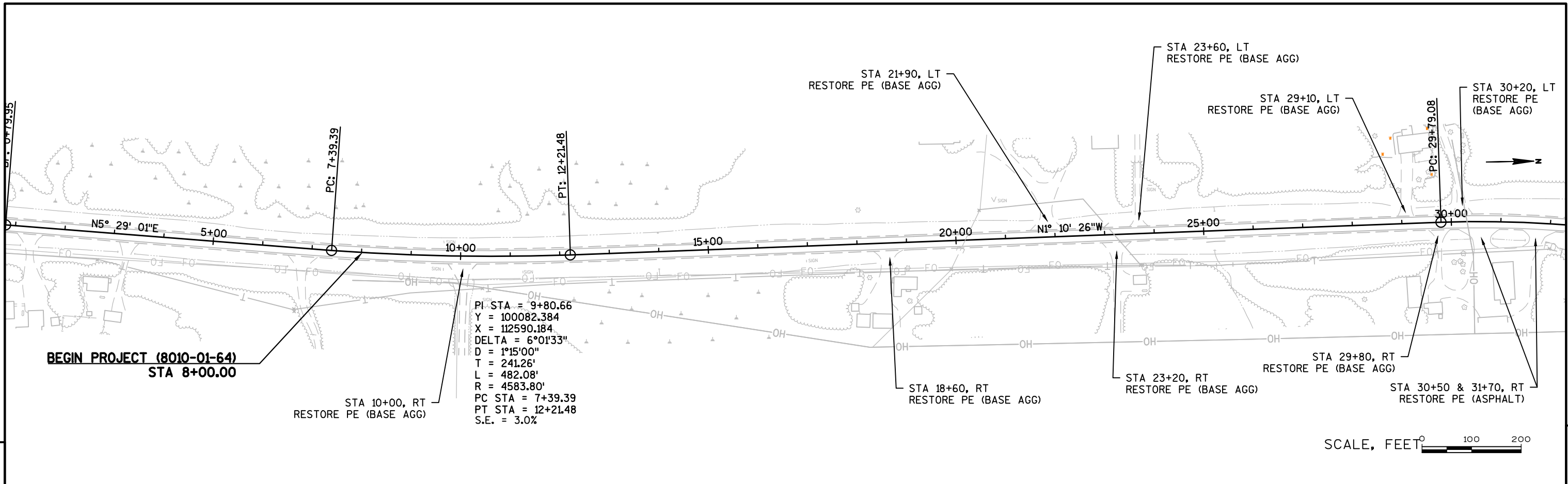
* QUANTITIES SHOWN ELSEWHERE

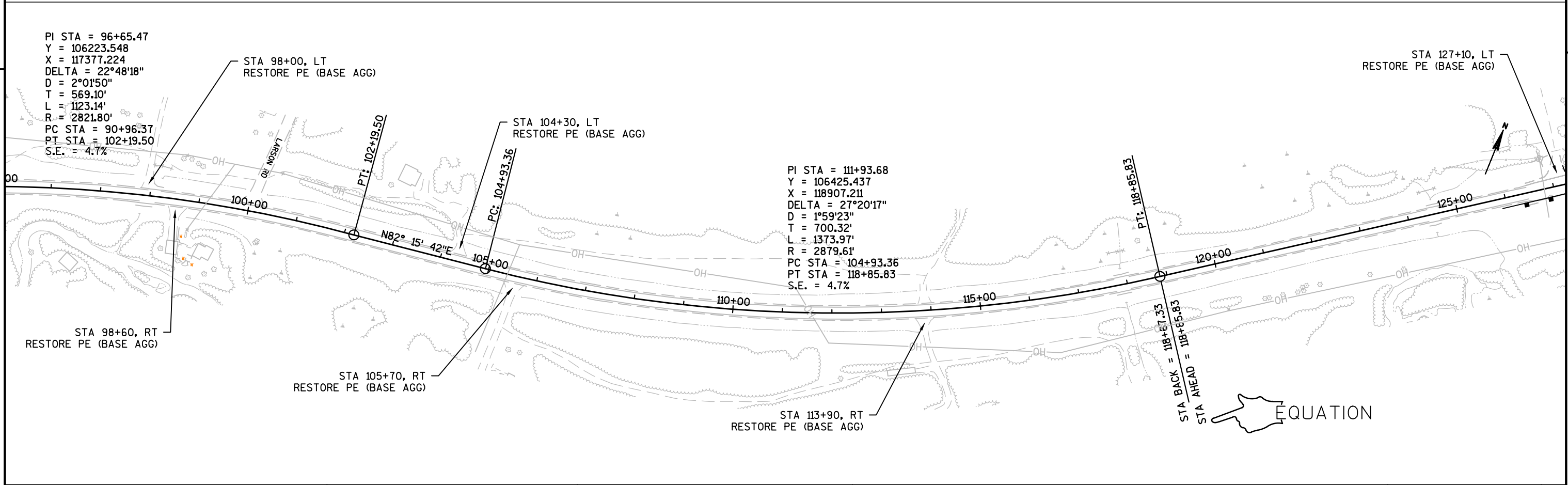
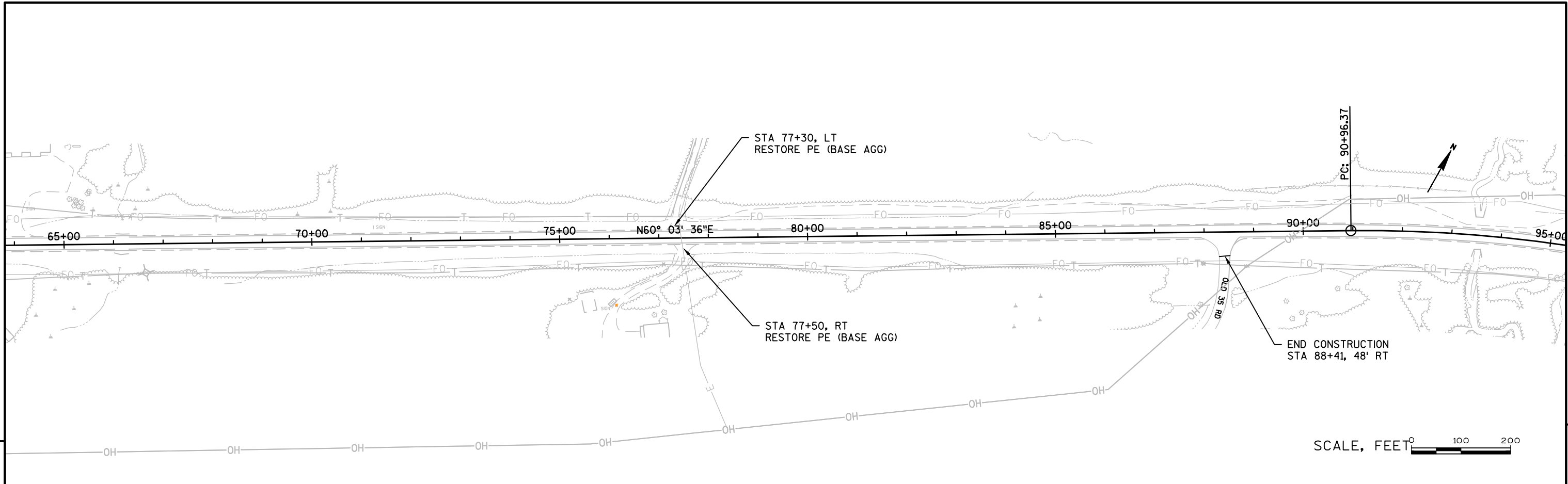
CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8010-01-64

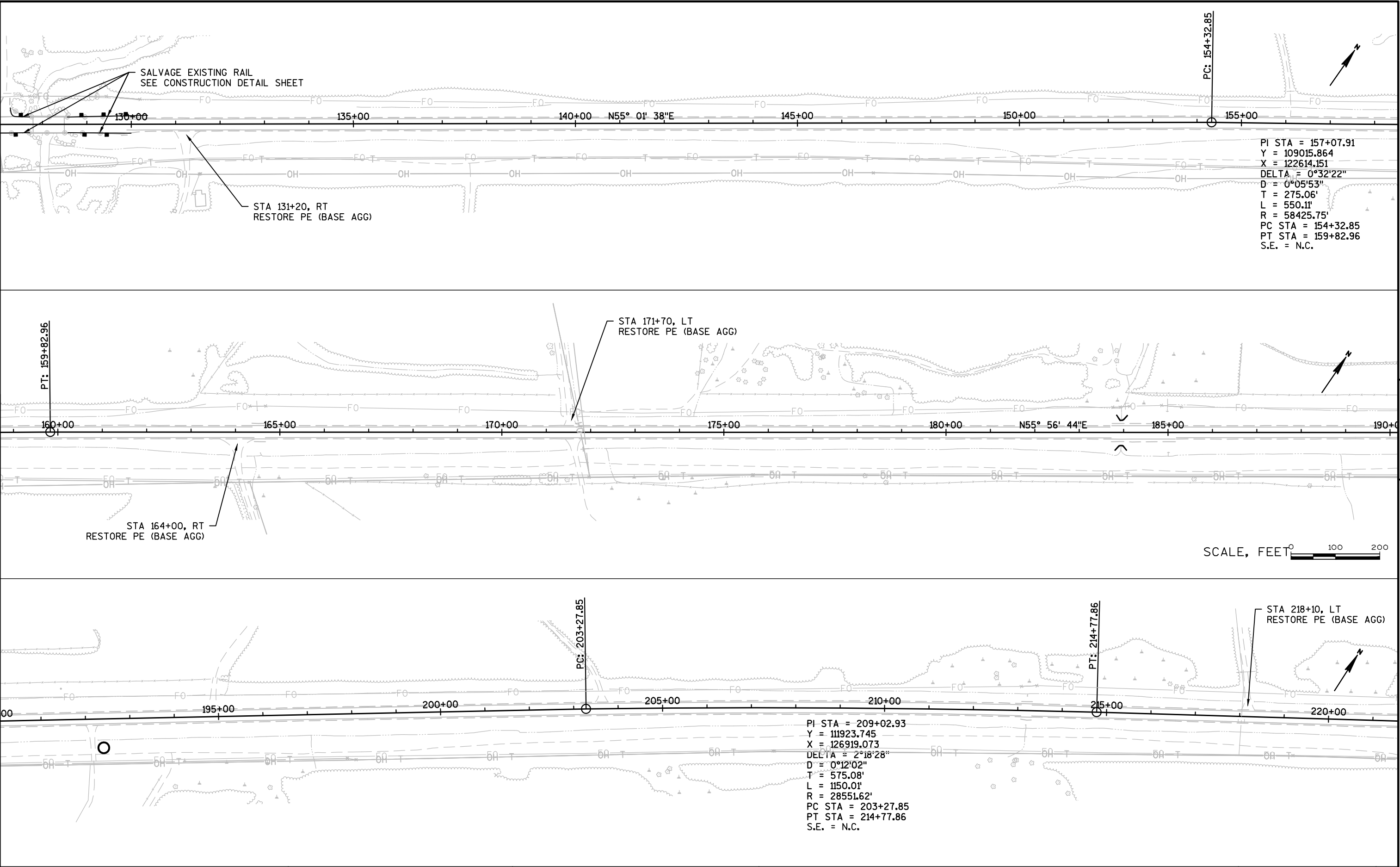
CATEGORY	STATION	TO	STATION	LOCATION	650.9910 LS
0010	8+00 -		895+68	STH 35	1
TOTAL 0010					1

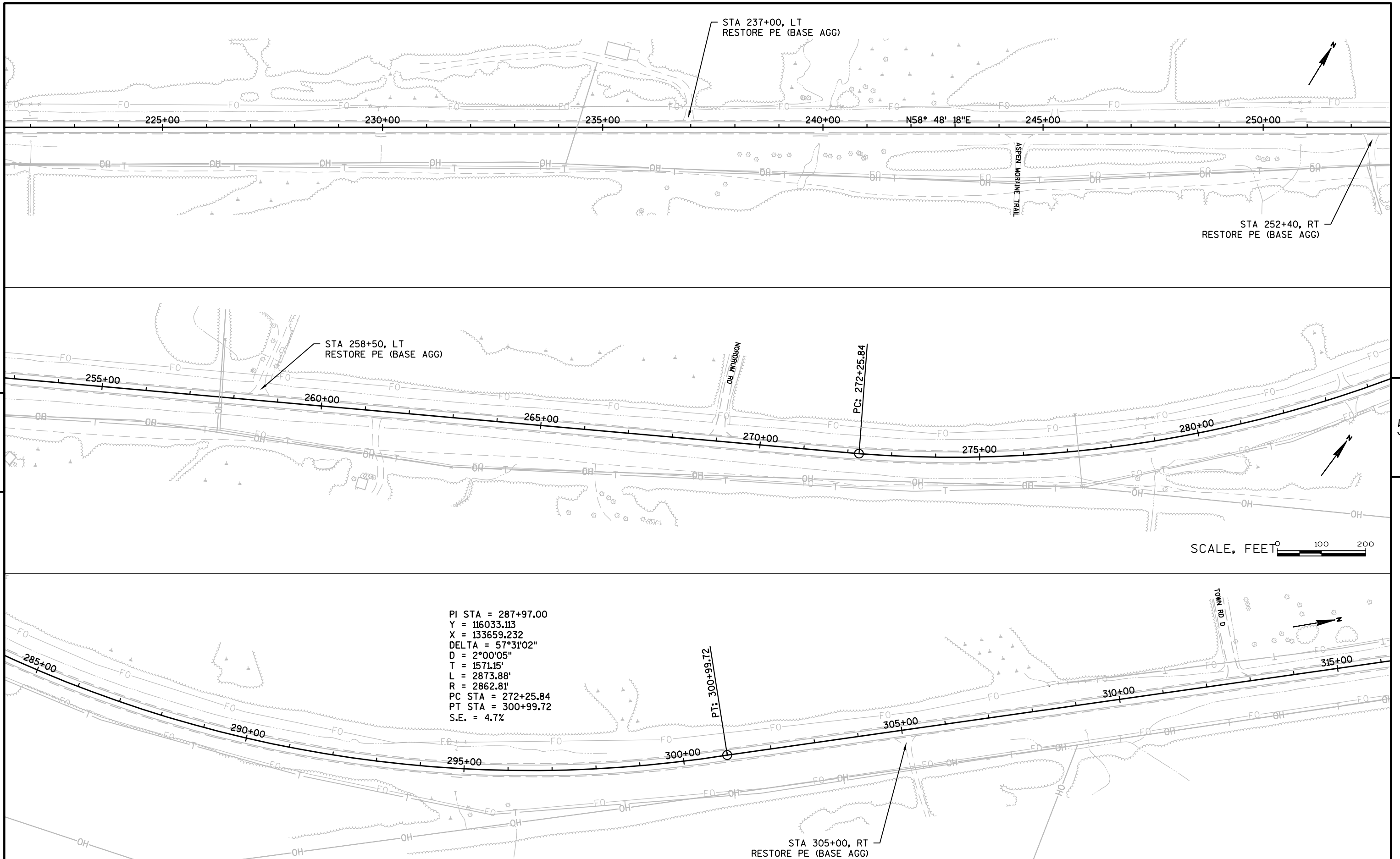
SPECIAL 01. REGRADE DITCH

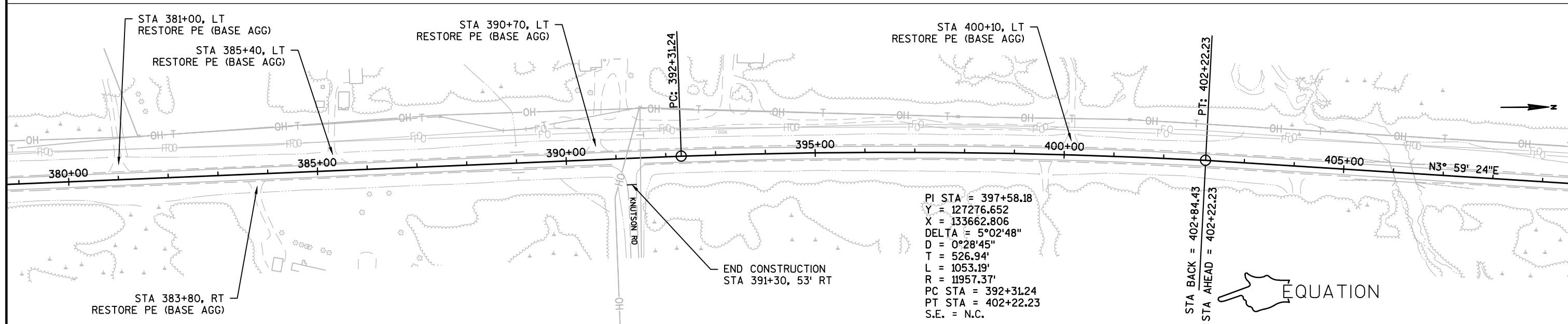
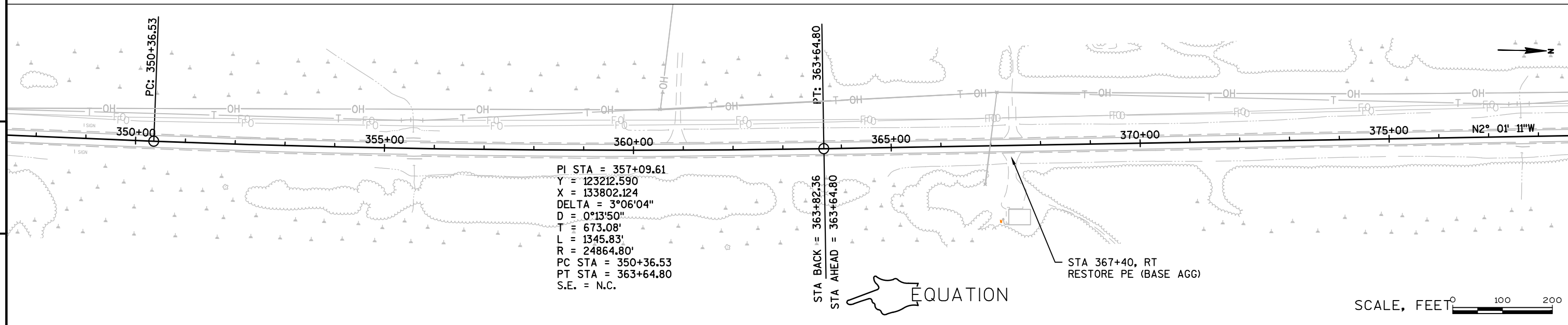
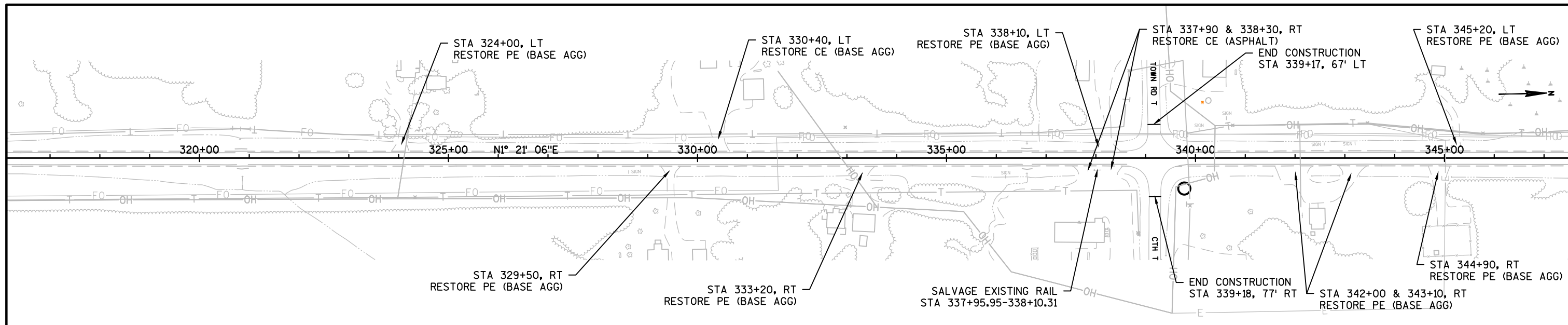
CATEGORY	STATION TO	STATION	LOCATION	SPV.0090.01 LF
0010	668+07 -	668+40	STH 35	34
TOTAL 0010				34

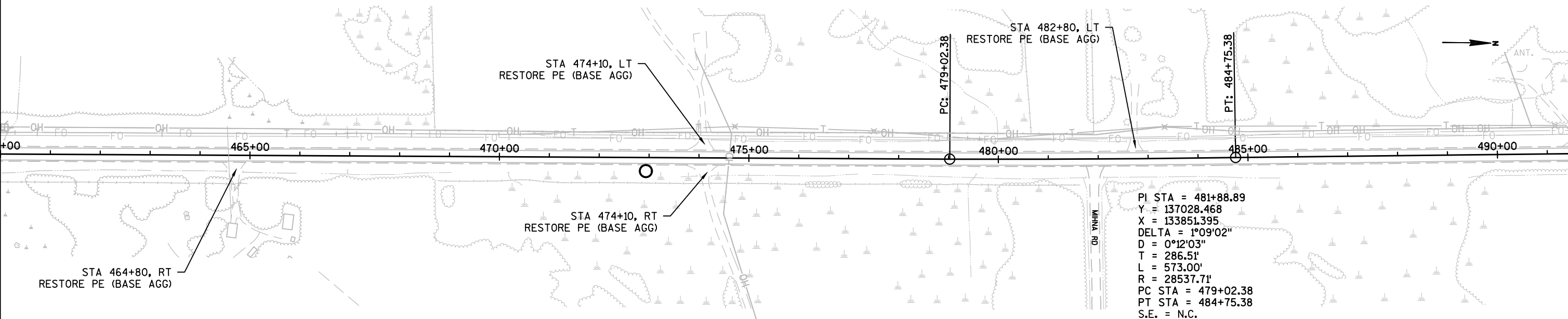
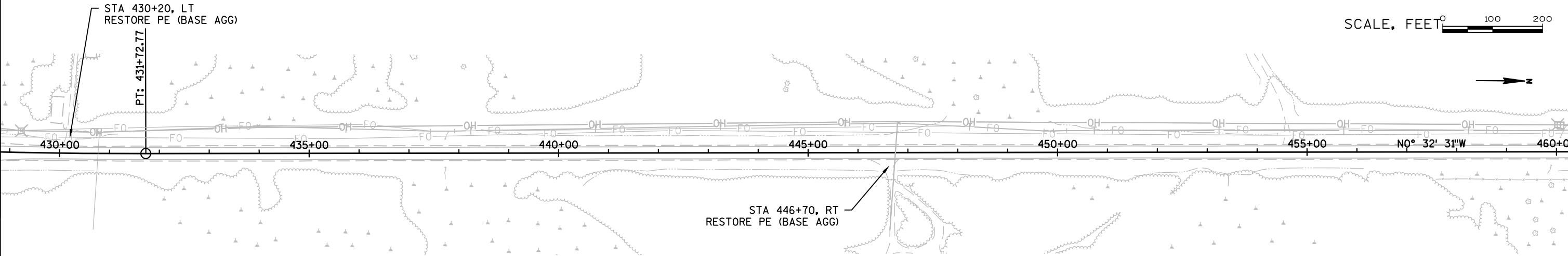
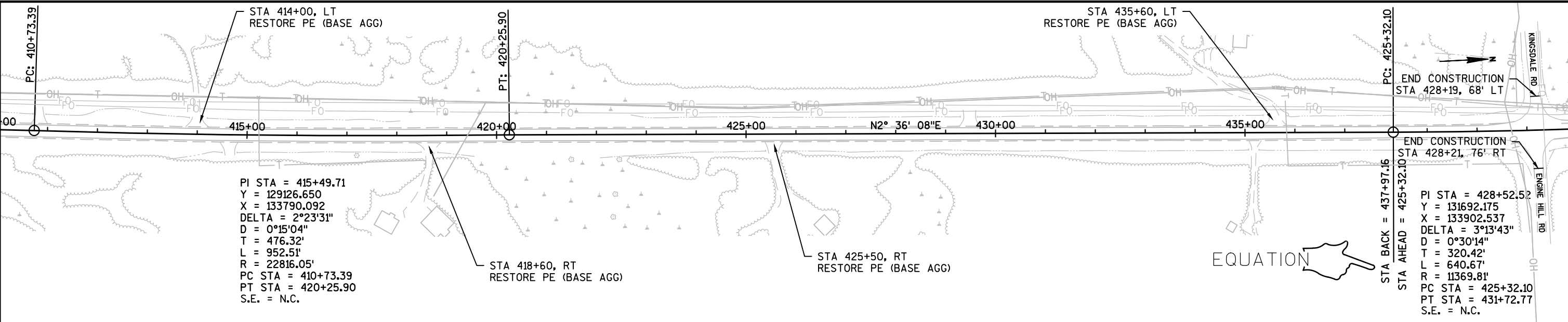


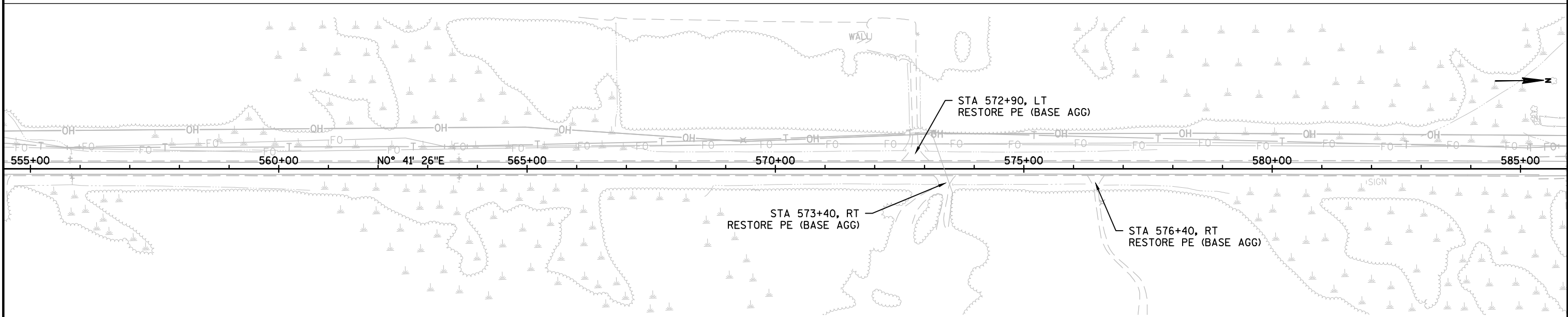
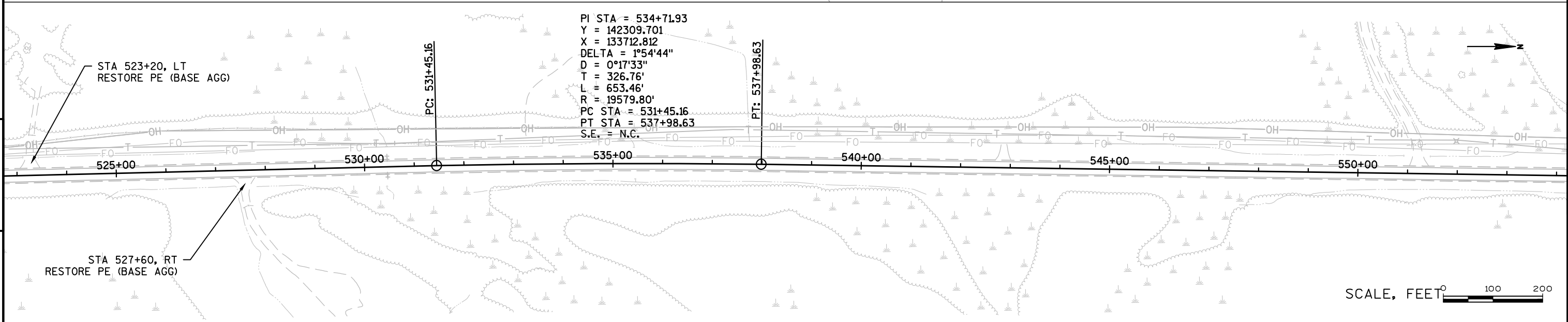
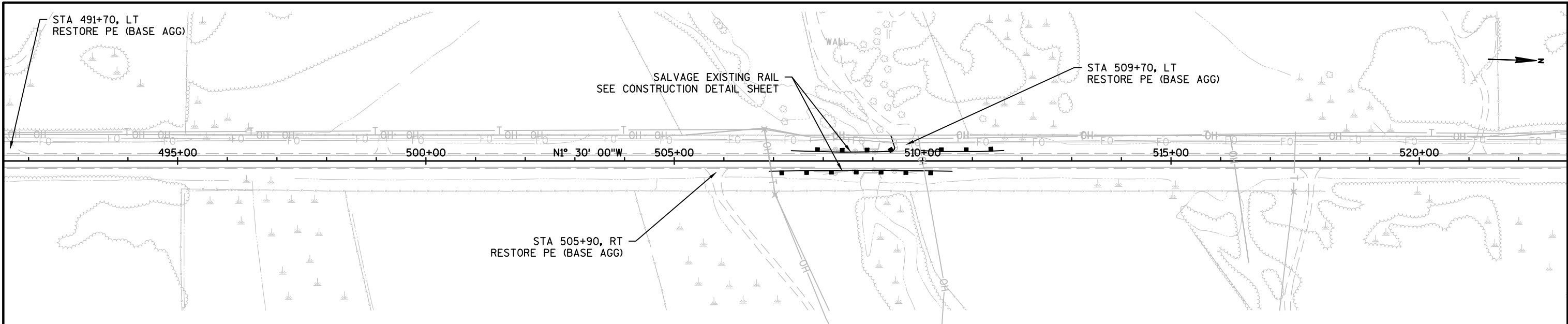


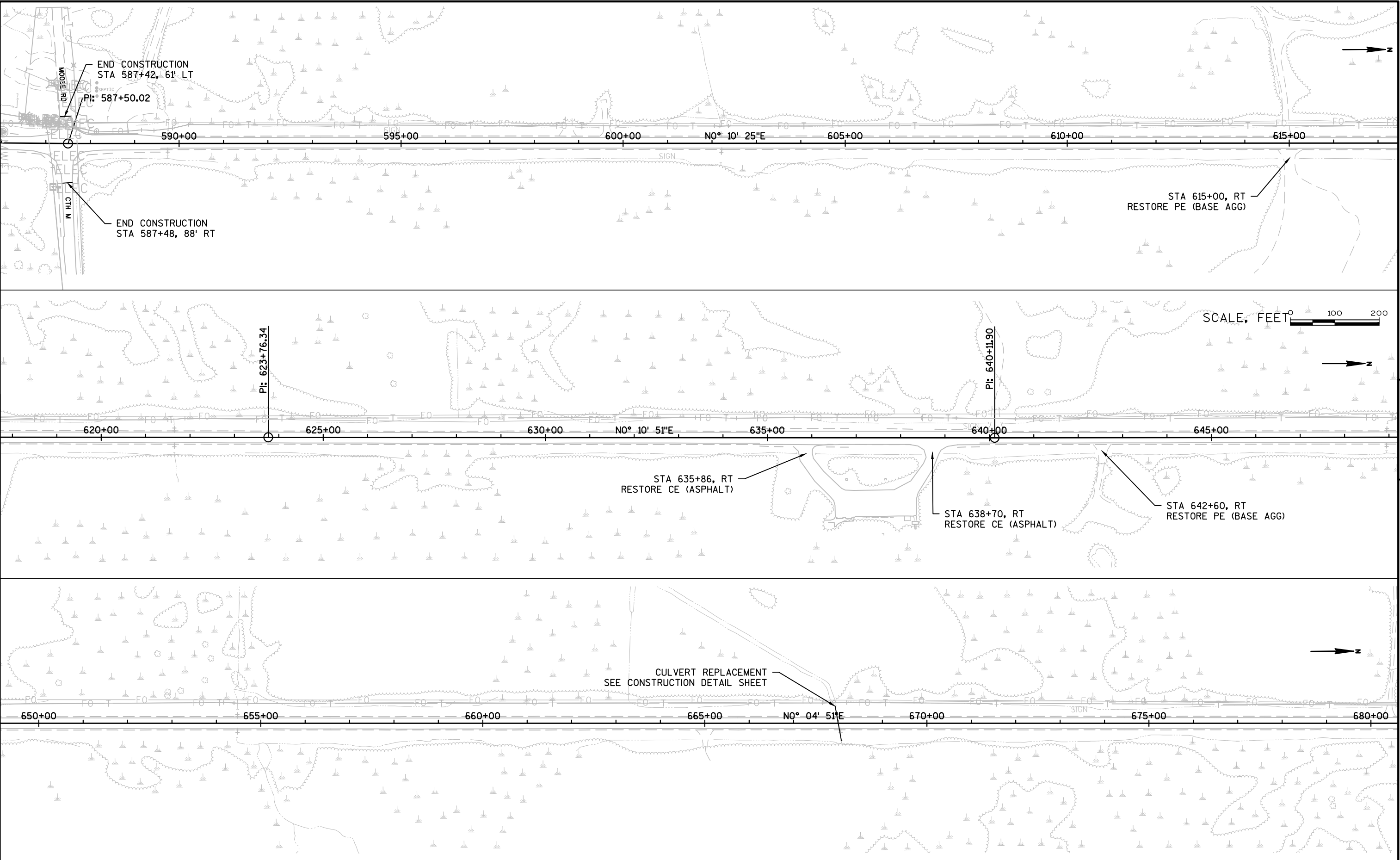


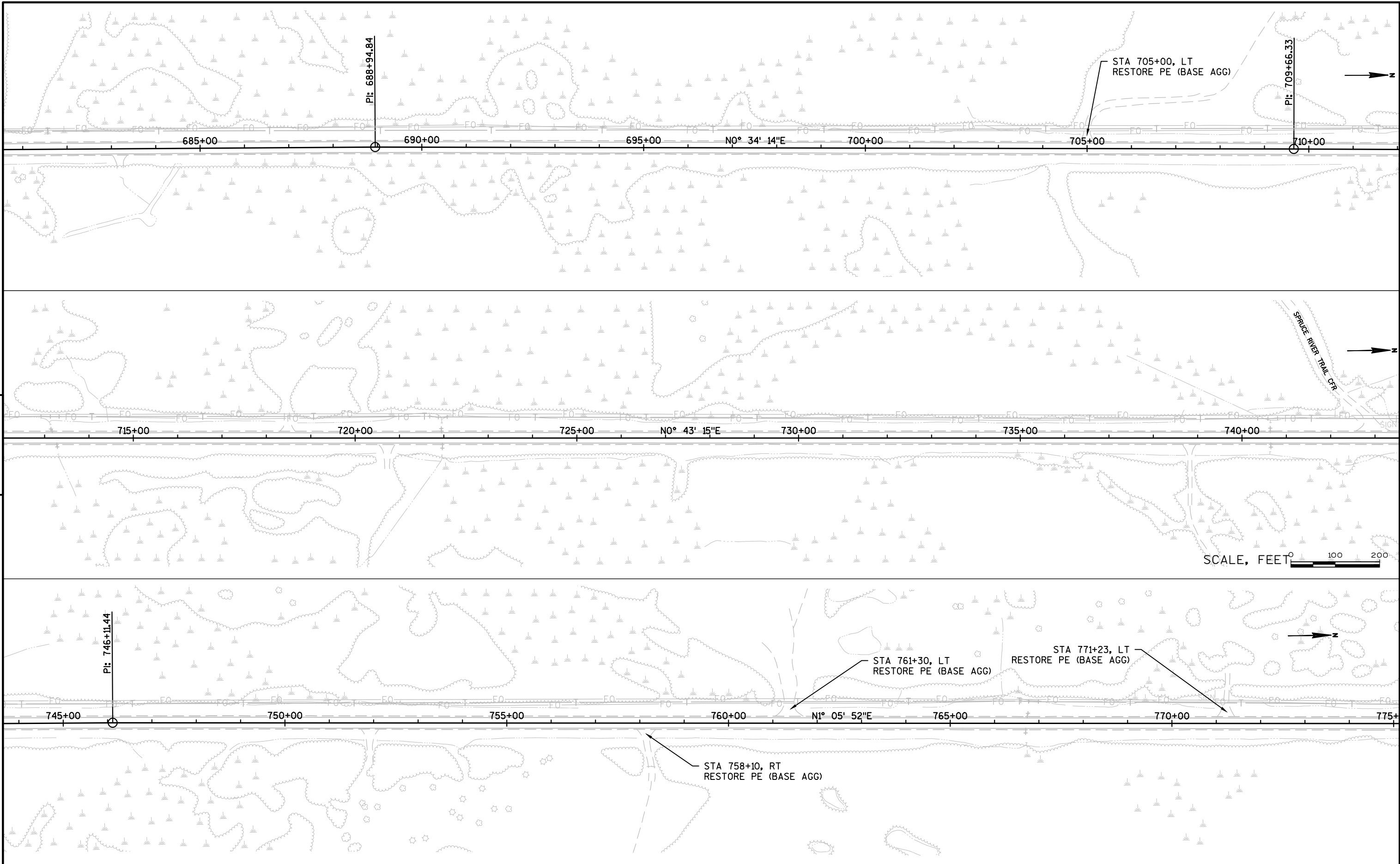












PROJECT NO: 8010-01-64

HWY: STH 35

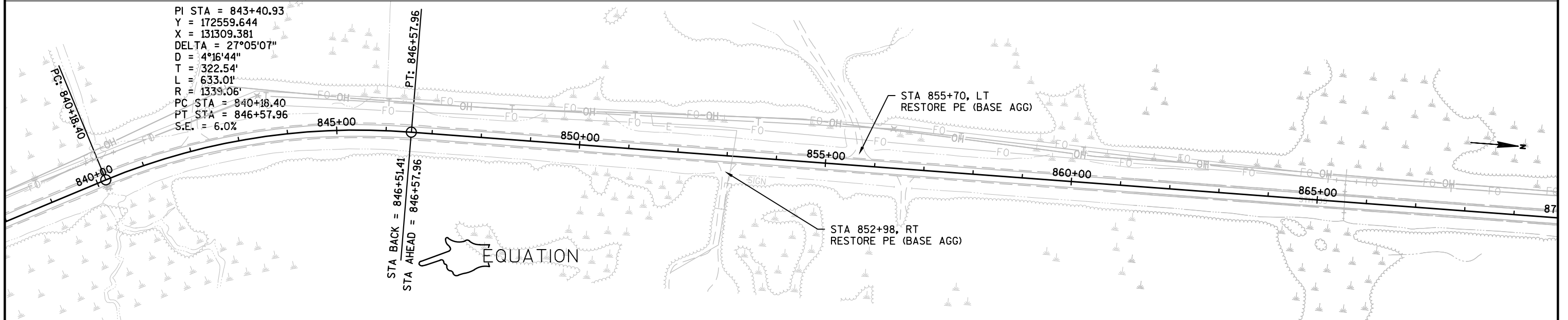
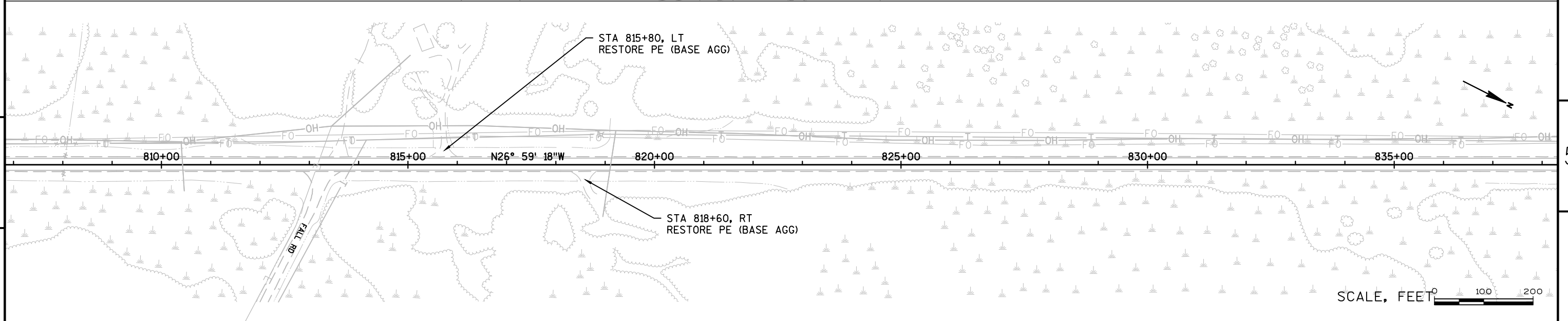
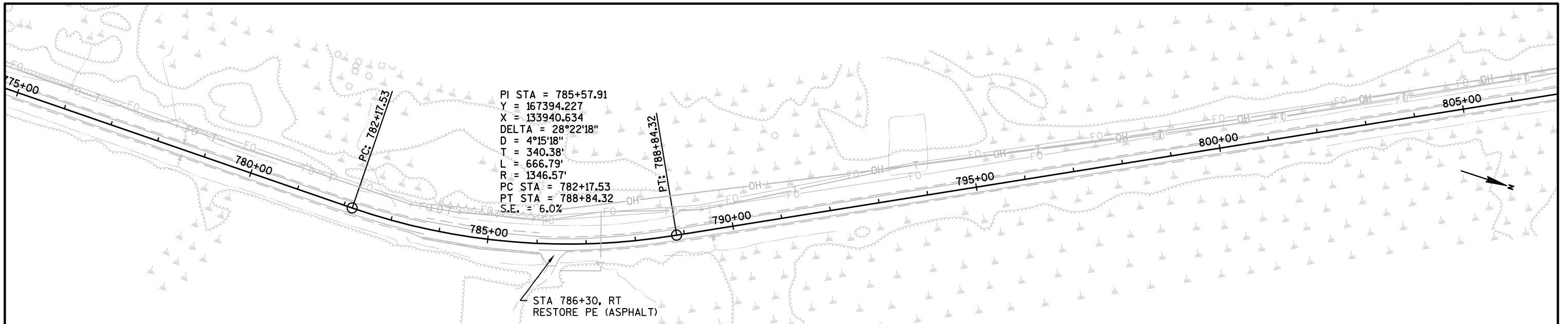
COUNTY: DOUGLAS

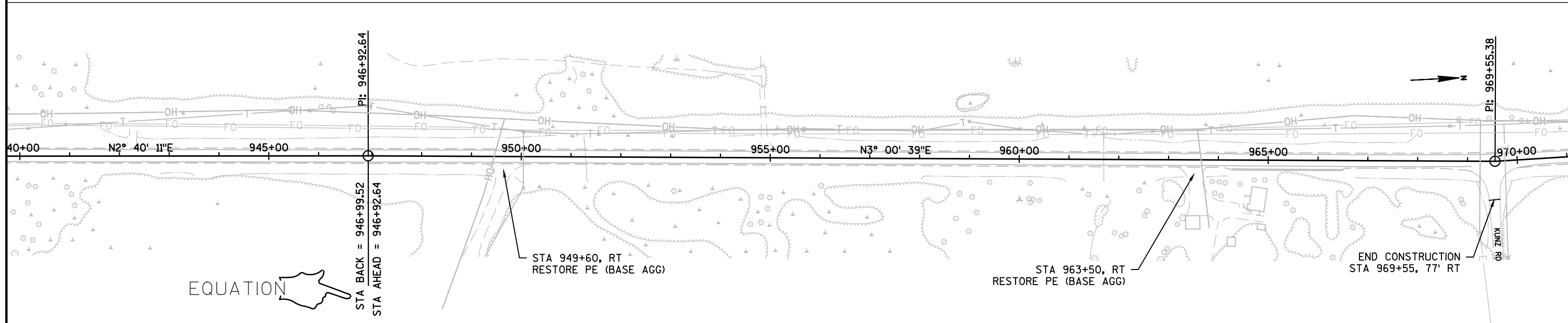
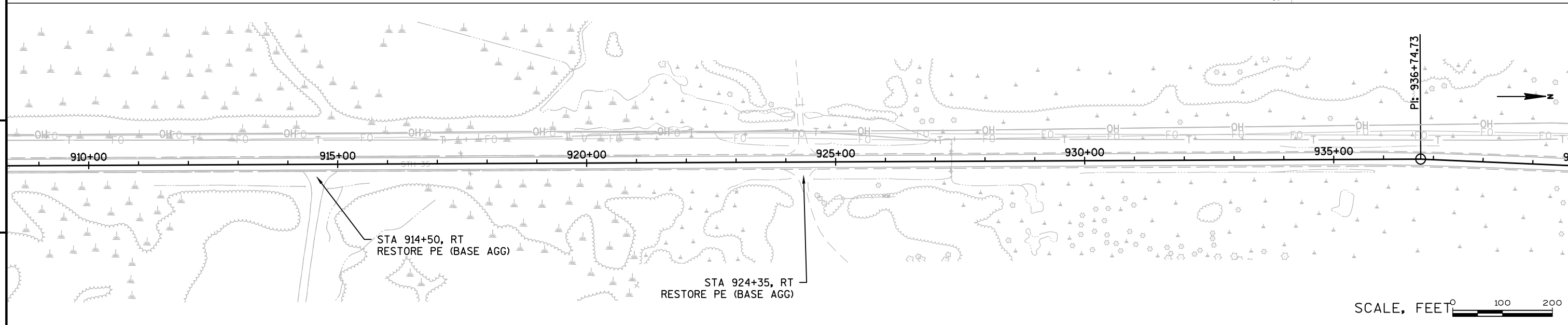
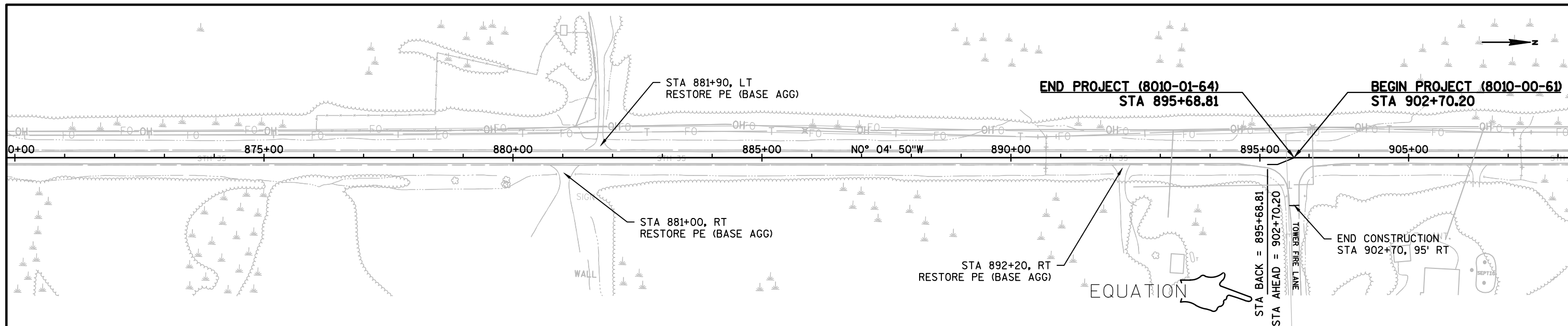
PLAN

SHEET

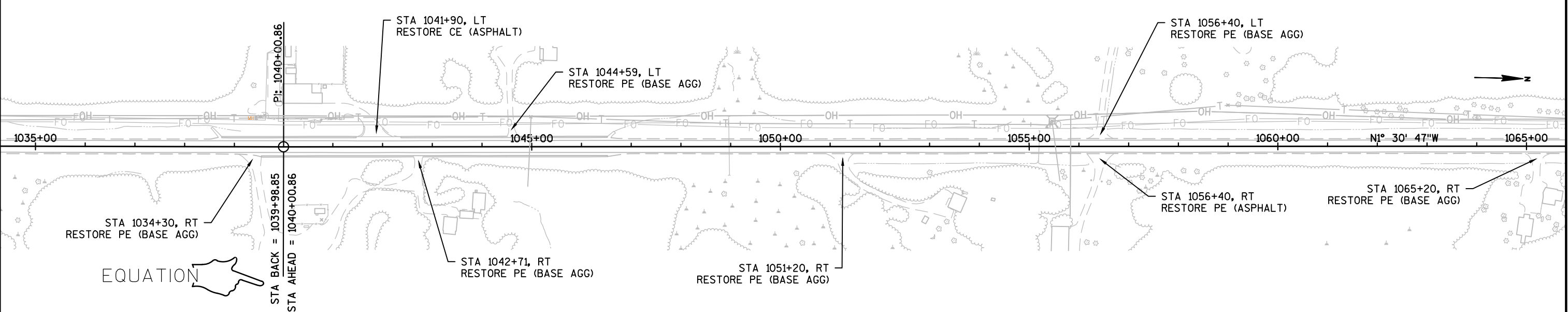
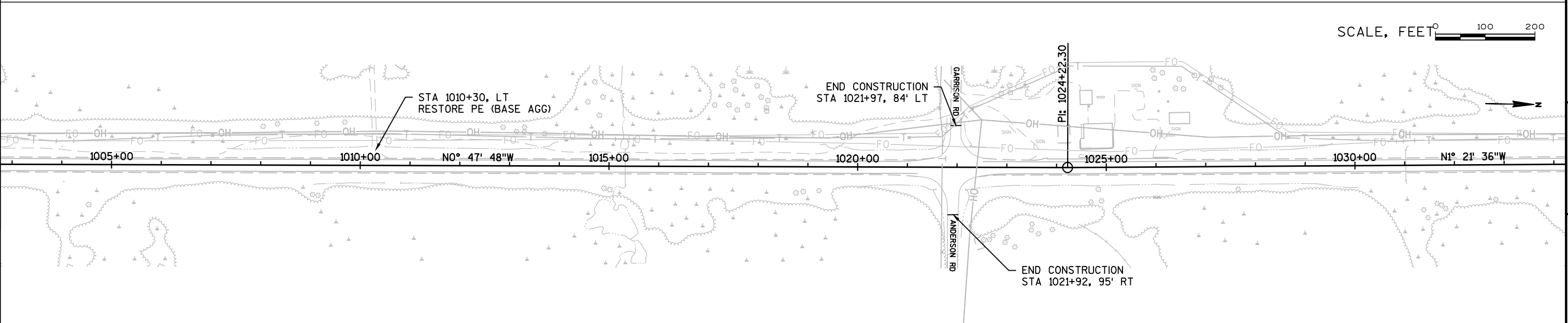
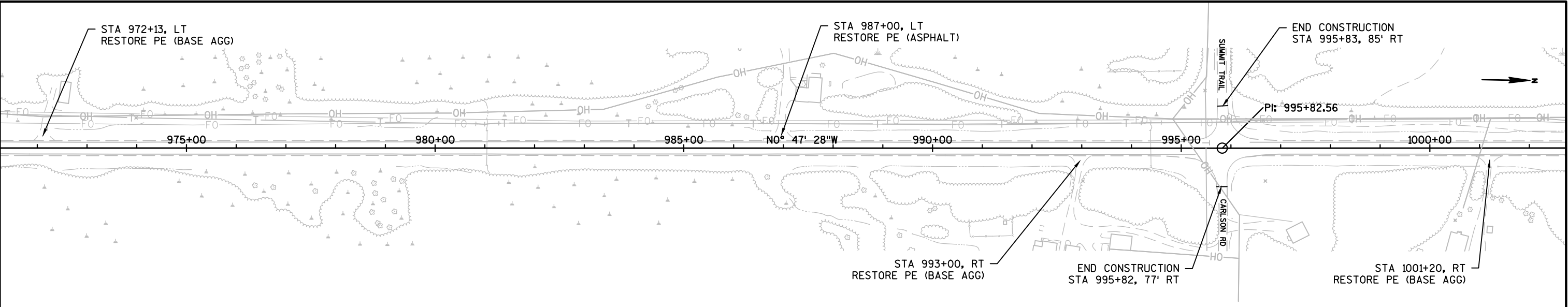
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E

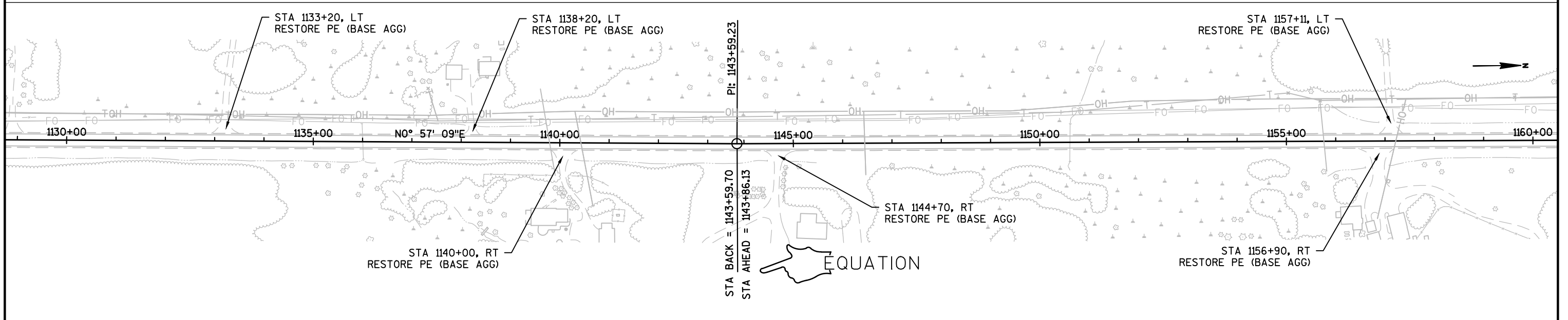
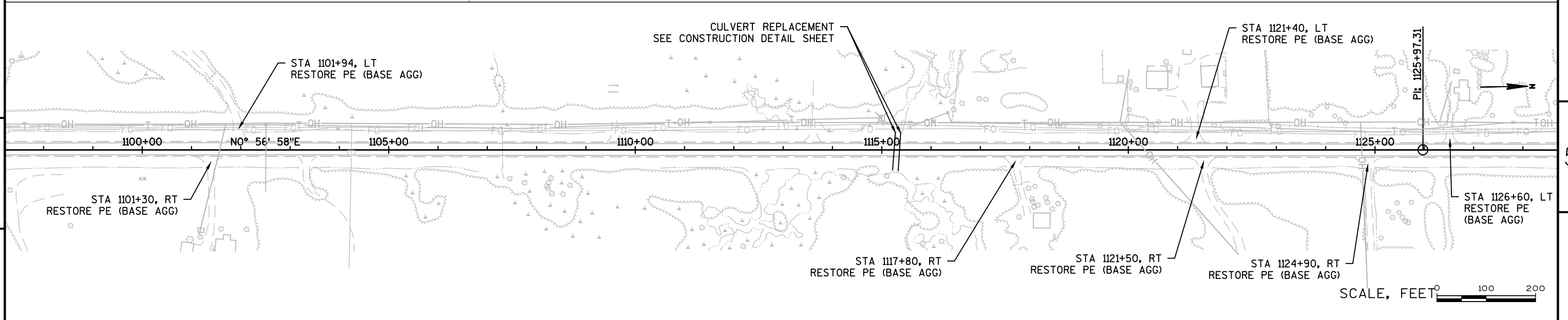
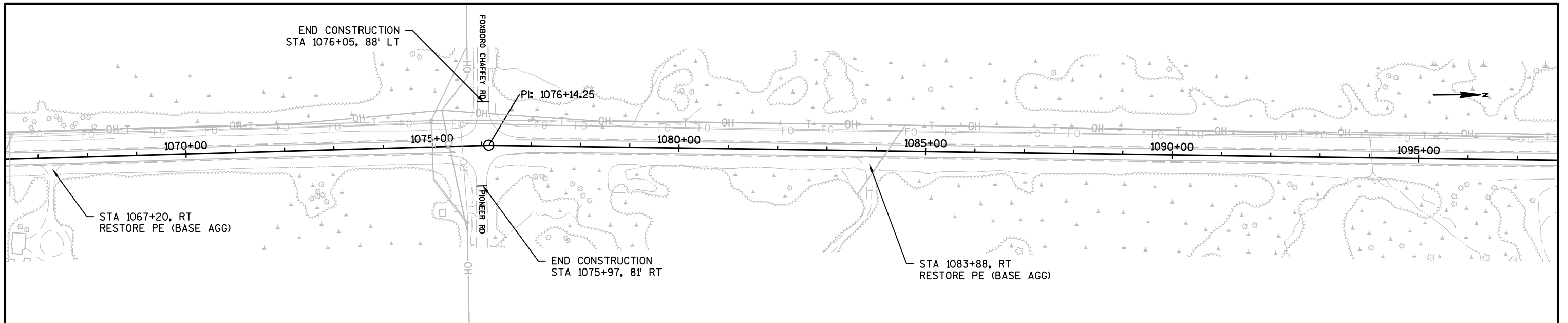


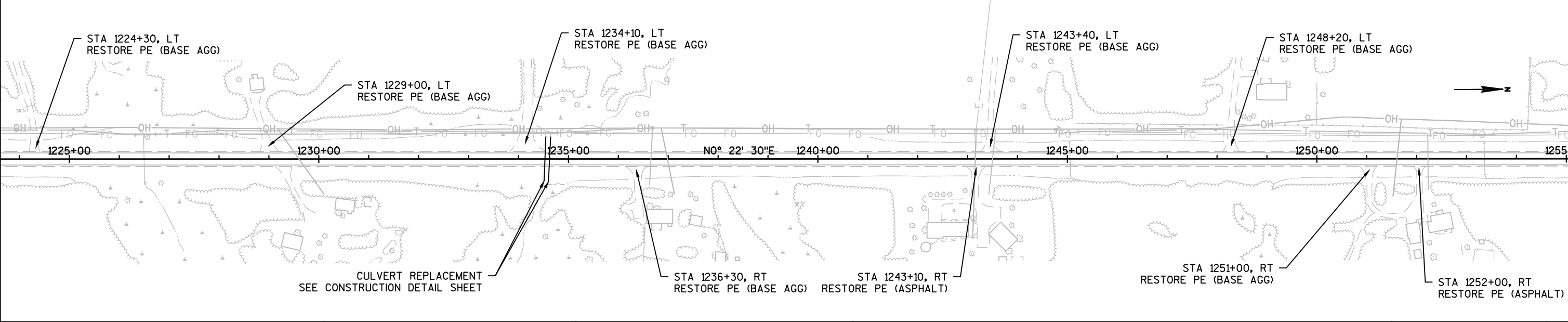
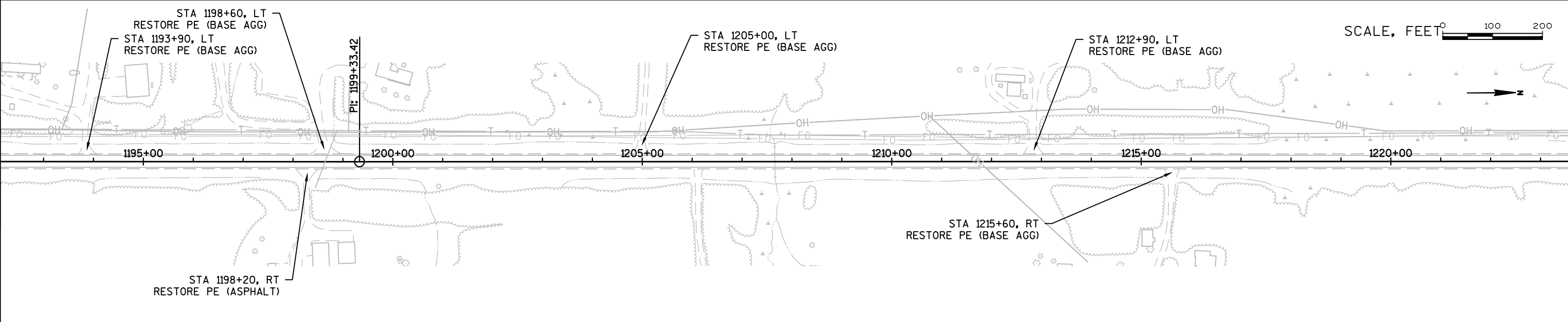
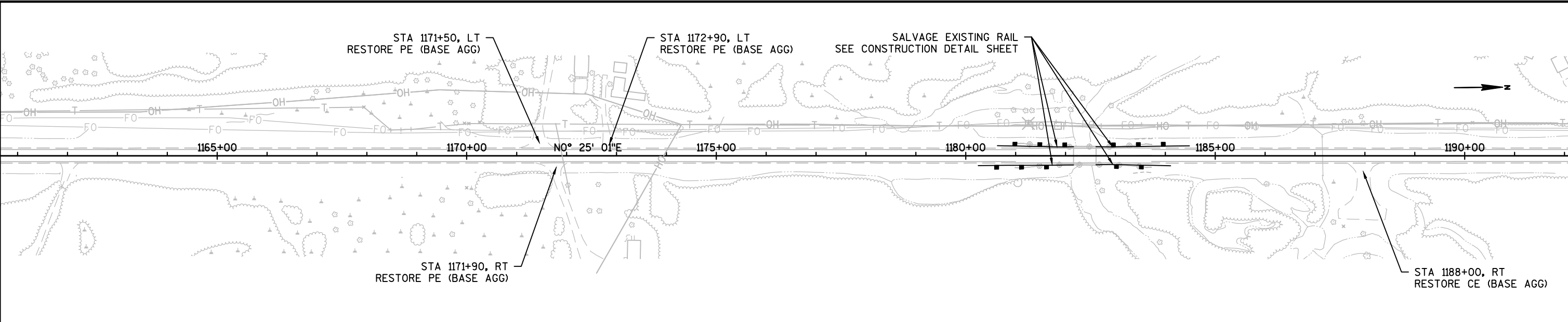


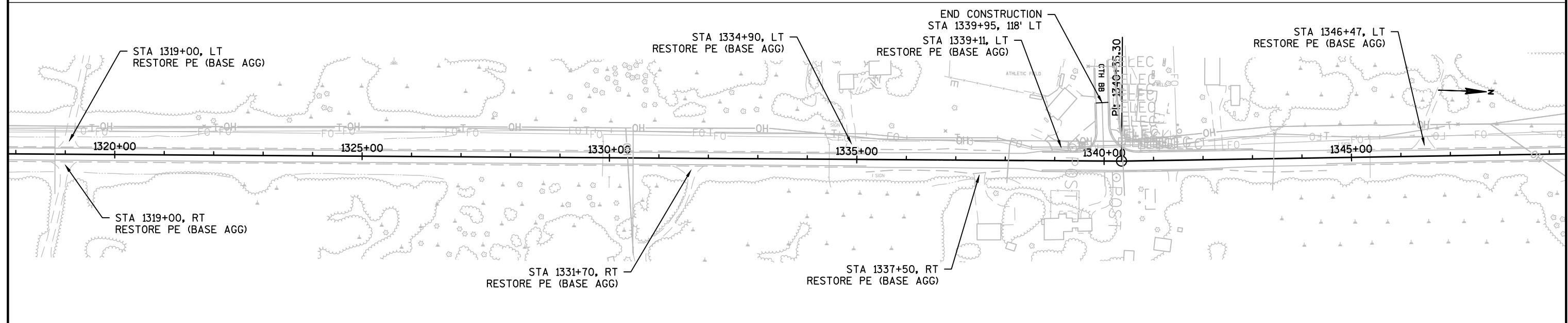
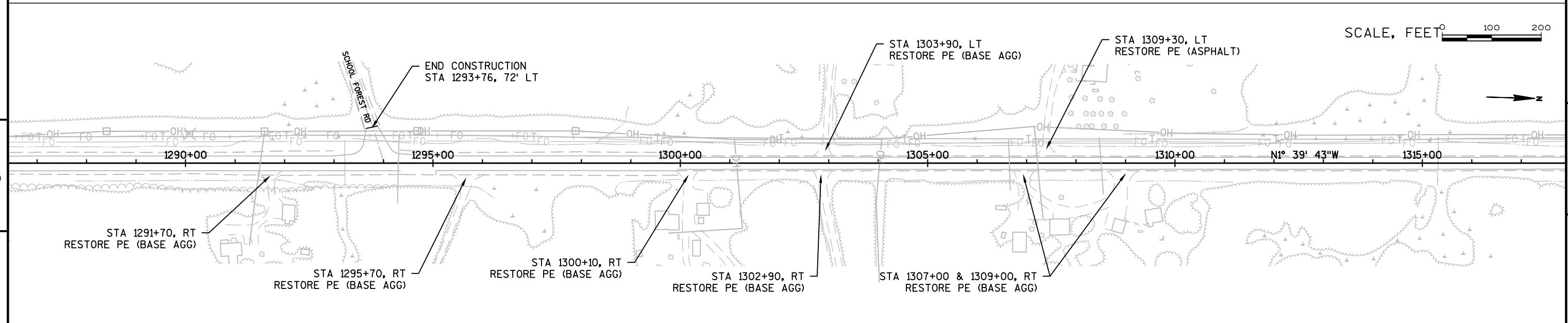
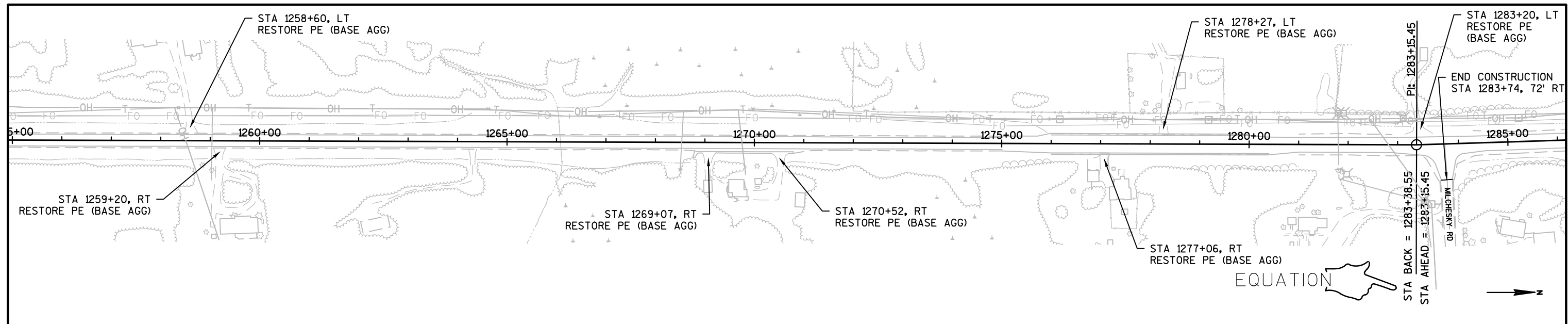
PROJECT NO: 8010-00-61/8010-01-64	HWY: STH 35	COUNTY: DOUGLAS	PLAN	SHEET 72	E
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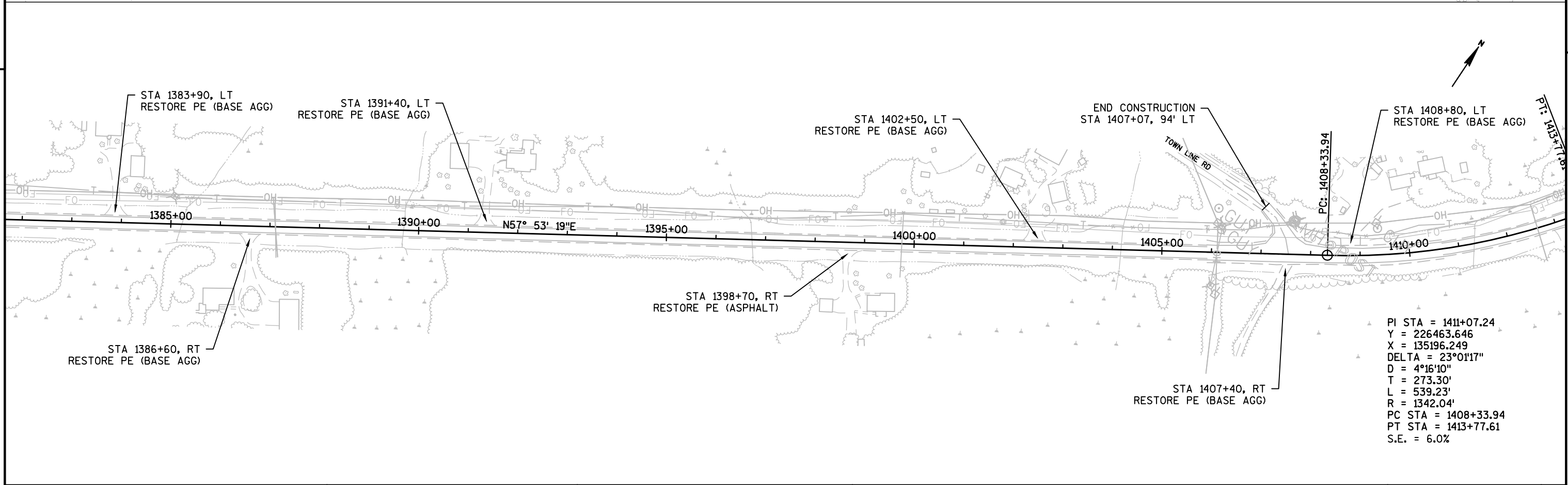
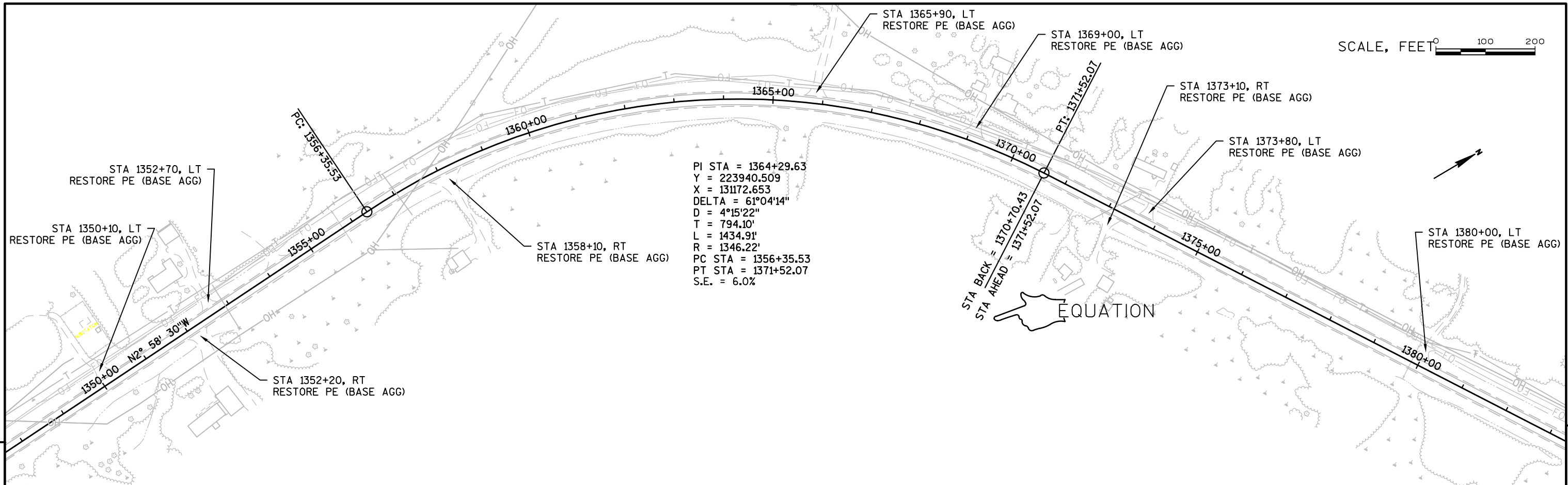
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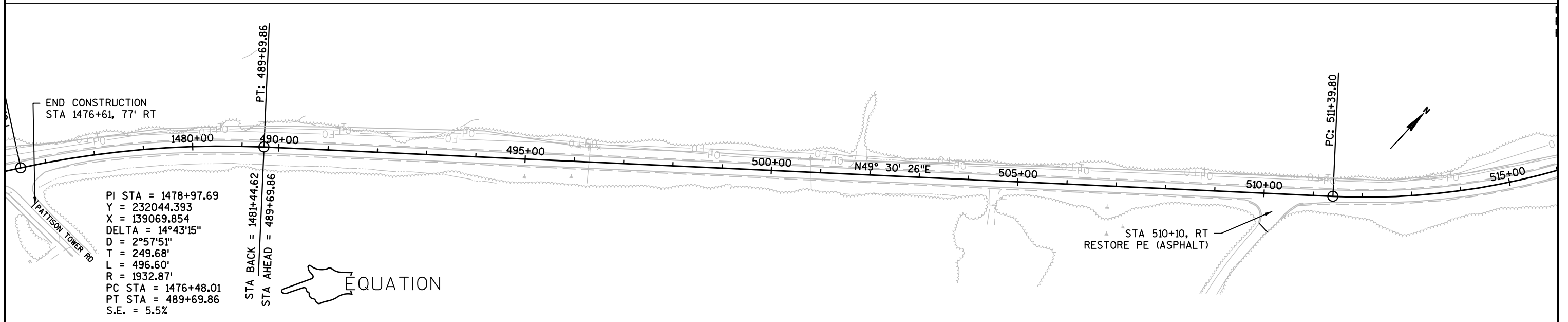
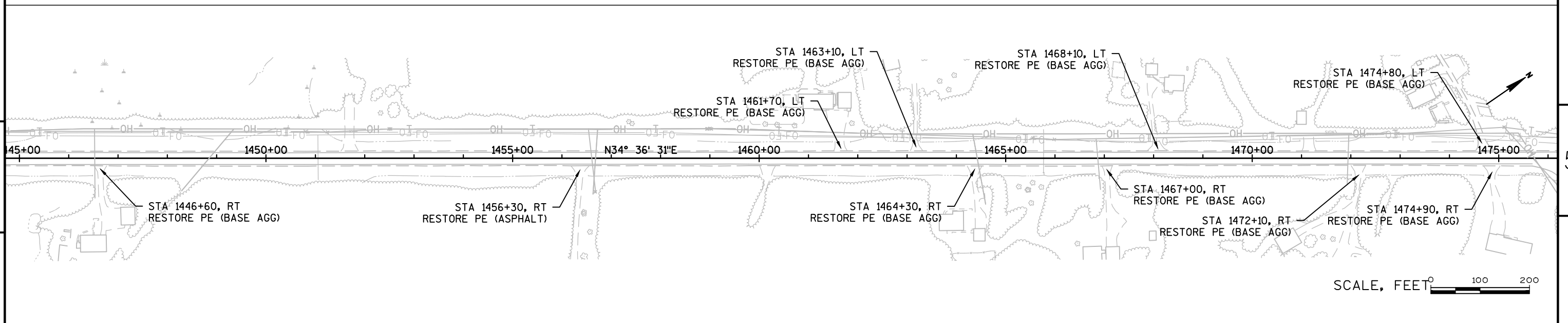
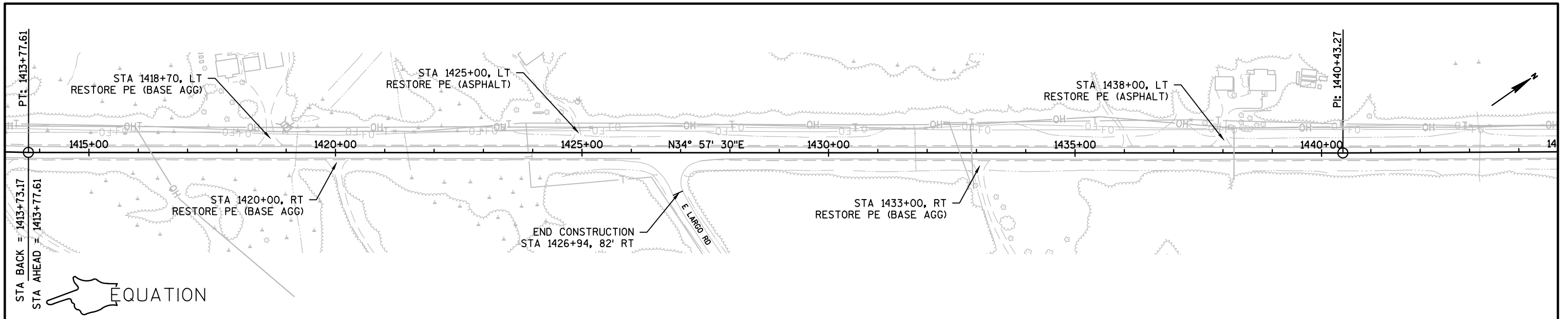






PROJECT NO: 8010-00-61	HWY: STH 35	COUNTY: DOUGLAS	PLAN	SHEET 76	E
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PI STA = 517+96.46
Y = 234042.317
X = 141409.033
DELTA = 49°24'45"
D = 4°00'52"
T = 656.65'
L = 1230.88'
R = 1427.26'
PC STA = 511+39.80
PT STA = 523+93.64
S.E. = 5.9%

END CONSTRUCTION
STA 520+20, 74' LT

STA 530+79, LT
RESTORE CE (BASE AGG)

PI STA = 535+62.32
Y = 235867.633
X = 141415.505
DELTA = 36°25'09"
D = 4°04'01"
T = 463.46'
L = 895.49'
R = 1408.81'
PC STA = 530+98.86
PT STA = 539+77.01
S.E. = 6.3%

STA BACK = 539+94.36
STA AHEAD = 539+77.01
EQUATION

PI STA = 547+20.57
Y = 236842.949
X = 142126.492
DELTA = 19°17'02"
D = 7°48'23"
T = 124.69'
L = 247.02'
R = 733.95'
PC STA = 545+95.88
PT STA = 548+42.90
S.E. = 5.3%

SCALE, FEET 0 100 200

PI STA = 547+20.57
Y = 236842.949
X = 142126.492
DELTA = 19°17'02"
D = 7°48'23"
T = 124.69'
L = 247.02'
R = 733.95'
PC STA = 545+95.88
PT STA = 548+42.90
S.E. = 5.3%

END CONSTRUCTION
STA 557+40, 116' LT

PI STA = 555+55.32
Y = 237661.814
X = 142298.246
DELTA = 31°30'04"
D = 7°57'32"
T = 203.04'
L = 395.80'
R = 719.90'
PC STA = 553+52.27
PT STA = 557+48.08
S.E. = 4.7%

END CONSTRUCTION (8010-00-61)
STA 559+00.00

PI STA = 561+55.18
Y = 238132.393
X = 142686.269
DELTA = 13°24'18"
D = 7°31'59"
T = 89.38'
L = 177.95'
R = 760.60'
PC STA = 560+65.79
PT STA = 562+43.74

STA BACK = 539+94.36
STA AHEAD = 539+77.01
PT: 539+77.01

PC: 545+95.88

PT: 548+42.90

PC: 553+52.27

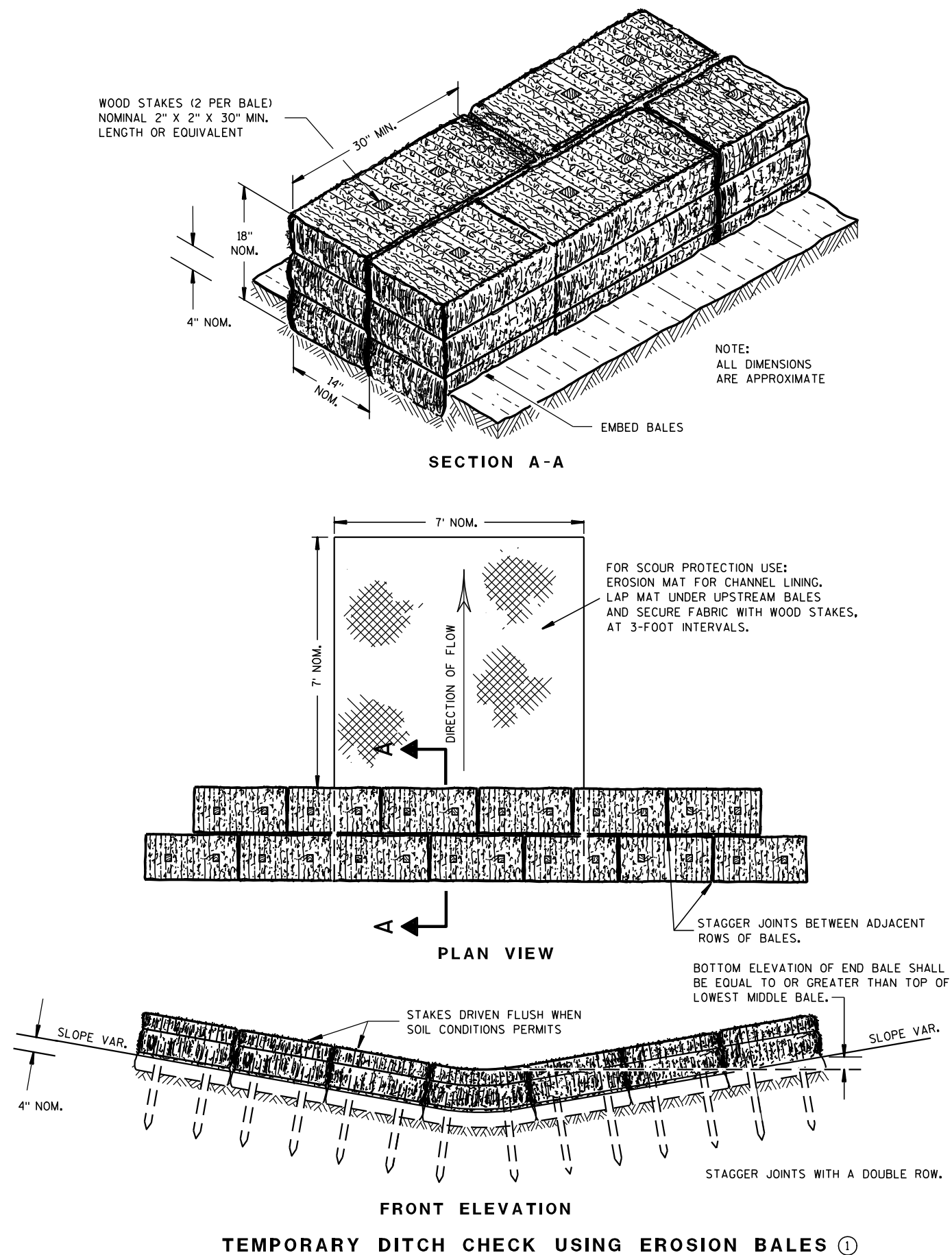
PT: 557+48.08

PC: 560+65.79

EP: 562+43.74

Standard Detail Drawing List

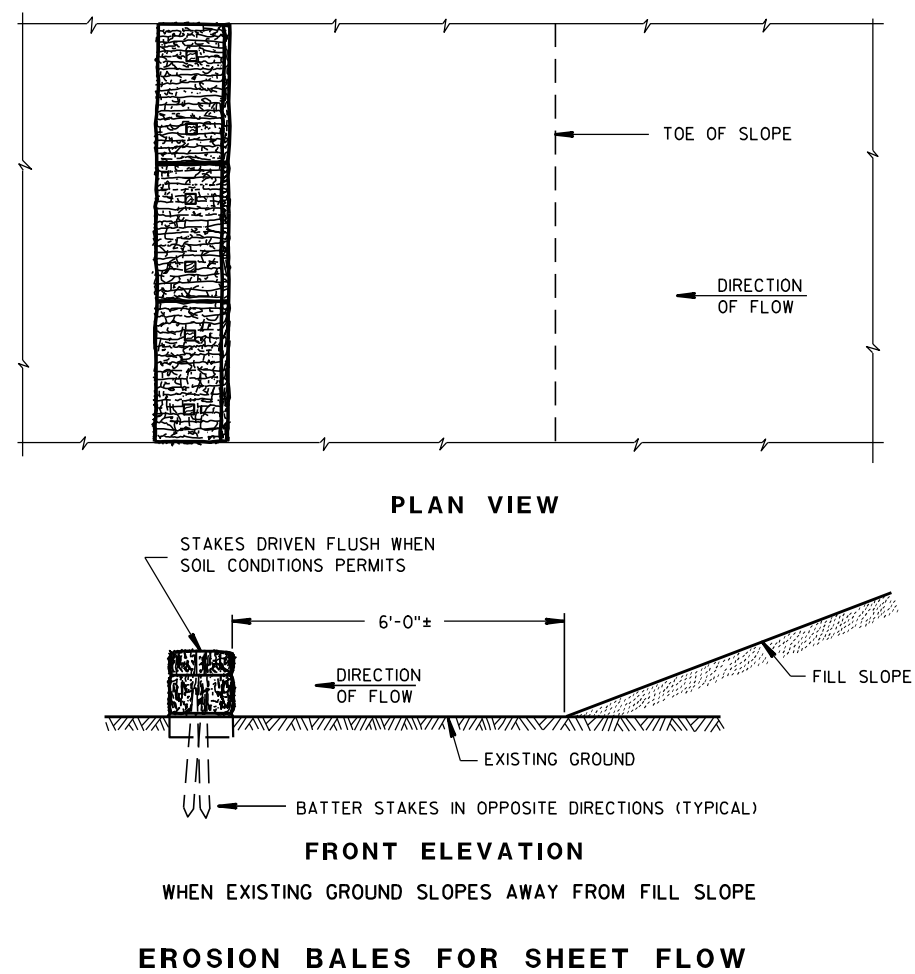
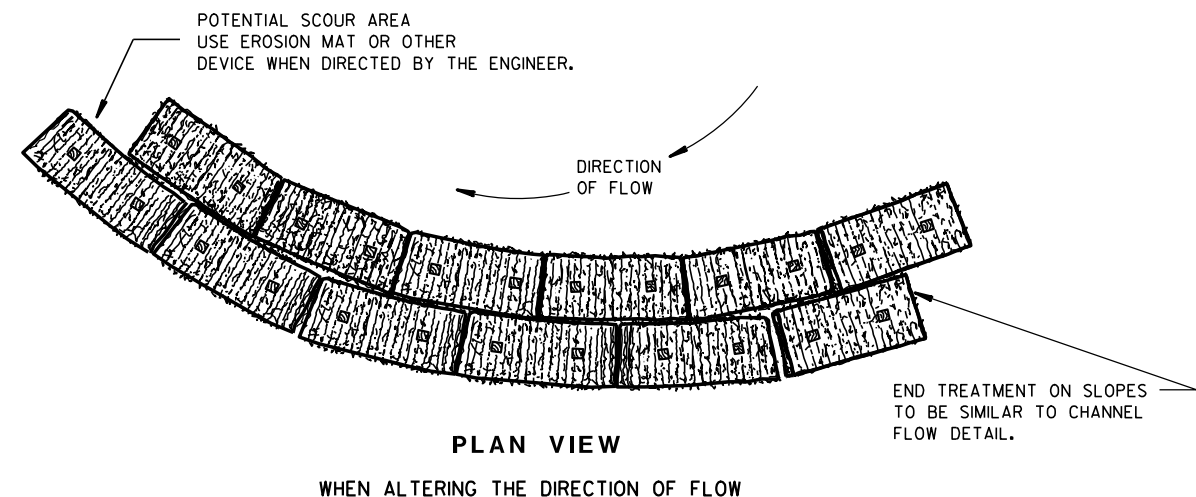
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
14B15-09A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	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)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C08-17B	PAVEMENT MARKING (TURN LANES)
15C12-05	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-01A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE/S/ Beth Conn
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



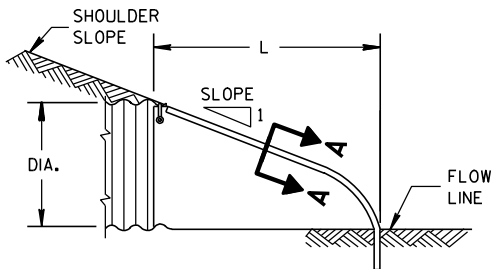
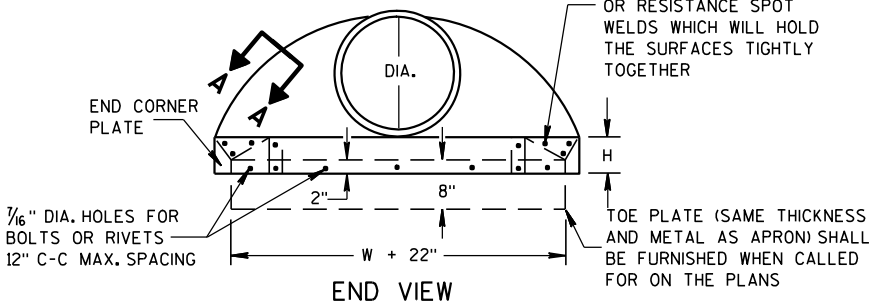
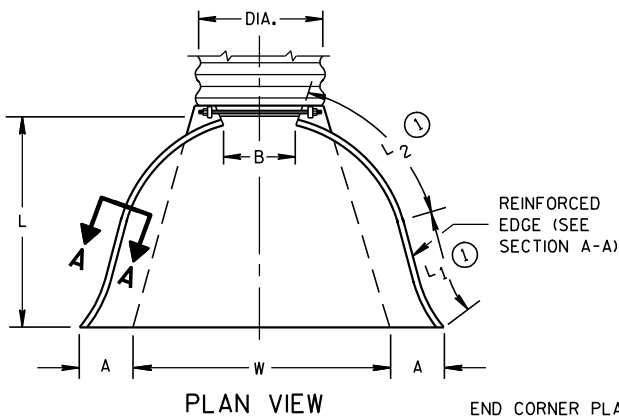
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



SILT FENCE
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED <u>4-29-05</u> DATE <u>/S/ Beth Cannata</u> CHIEF ROADWAY DEVELOP <u>82</u> 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	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	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.

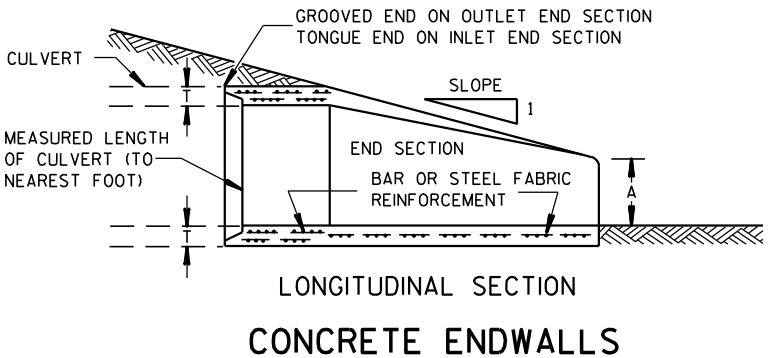
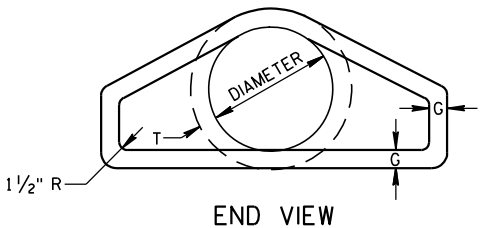
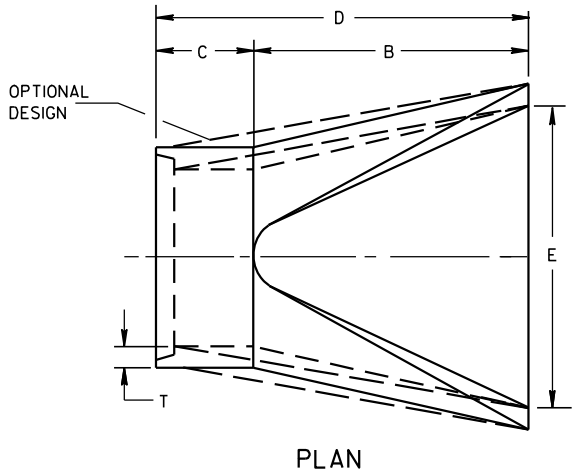
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

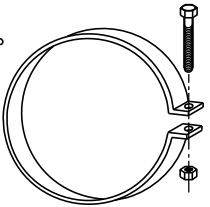
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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 2/5 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

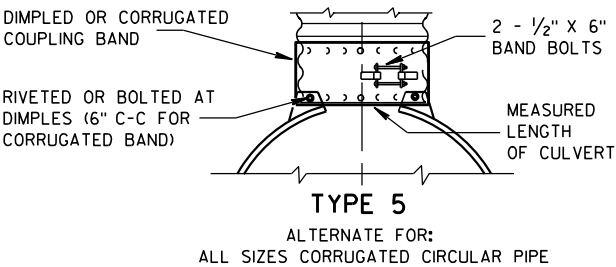
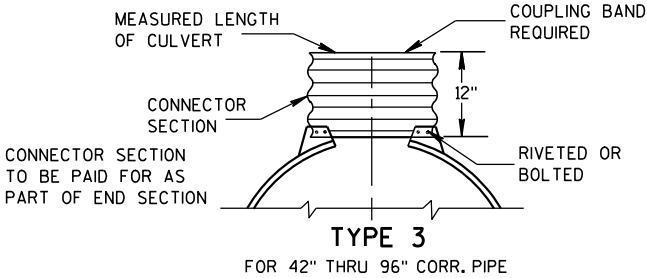
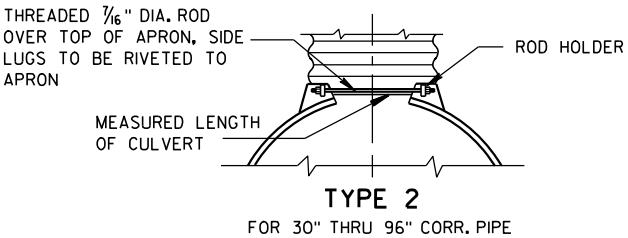
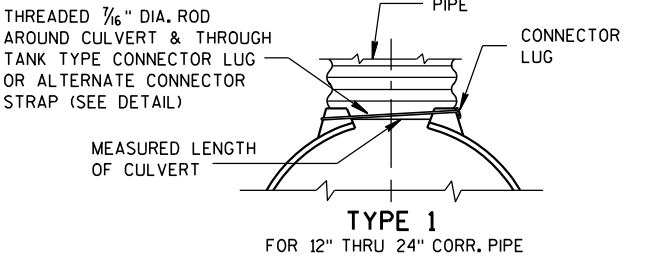


CONCRETE ENDWALLS

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



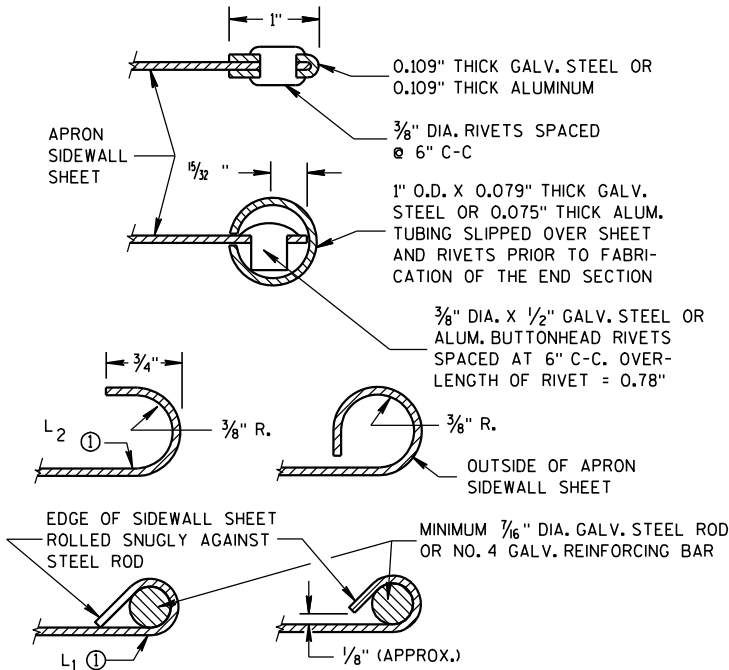
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

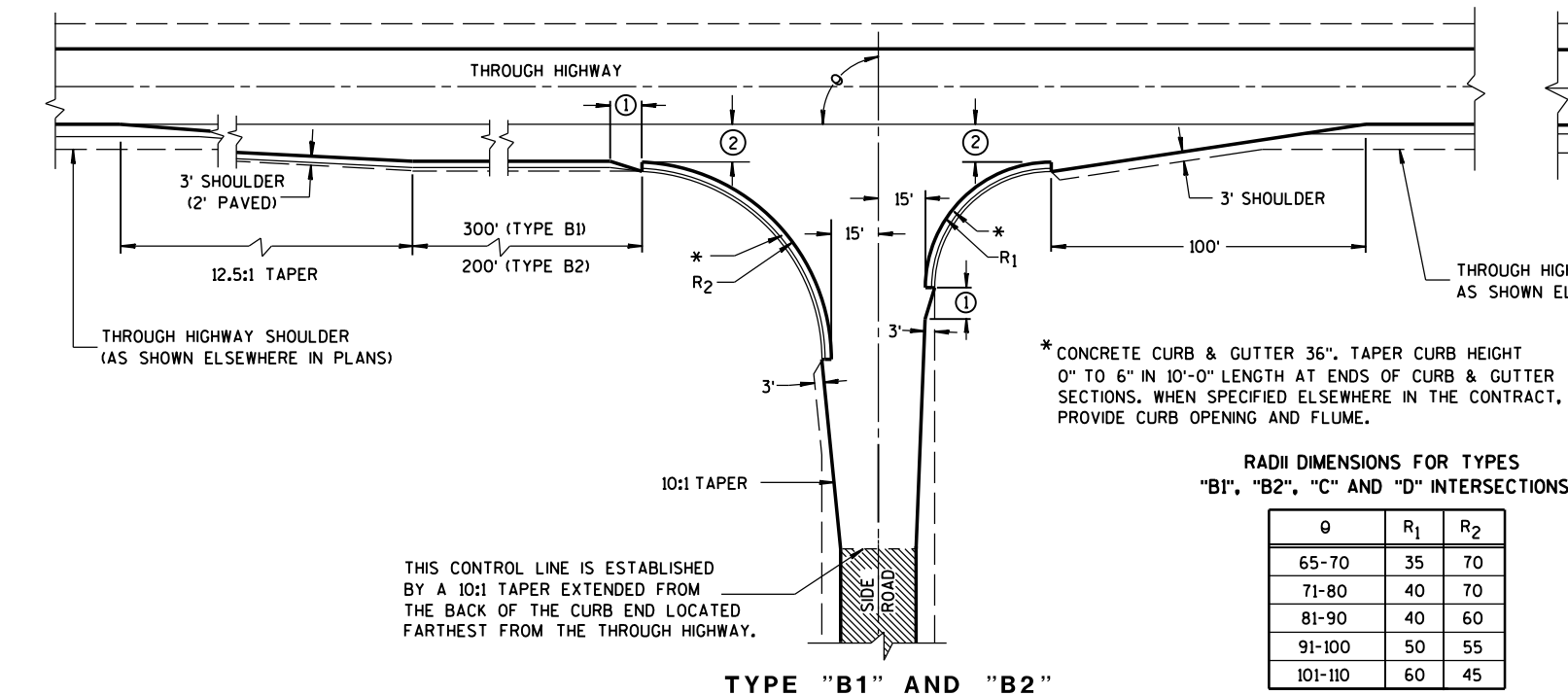


SECTION A-A

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. Rhinehart CHIEF ROADWAY DEVELOP	83	NEER
FHWA			



GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

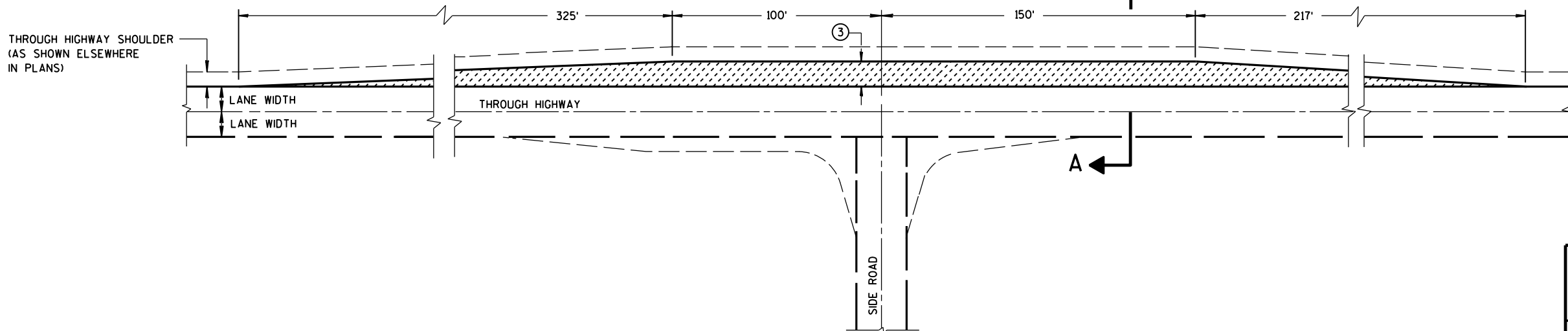
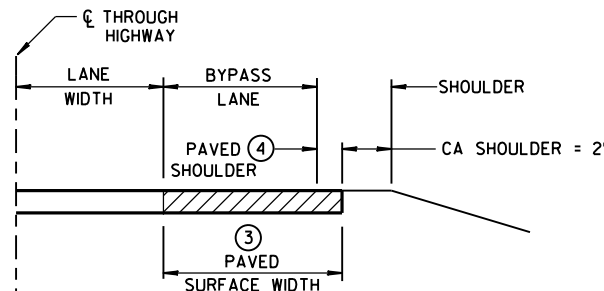
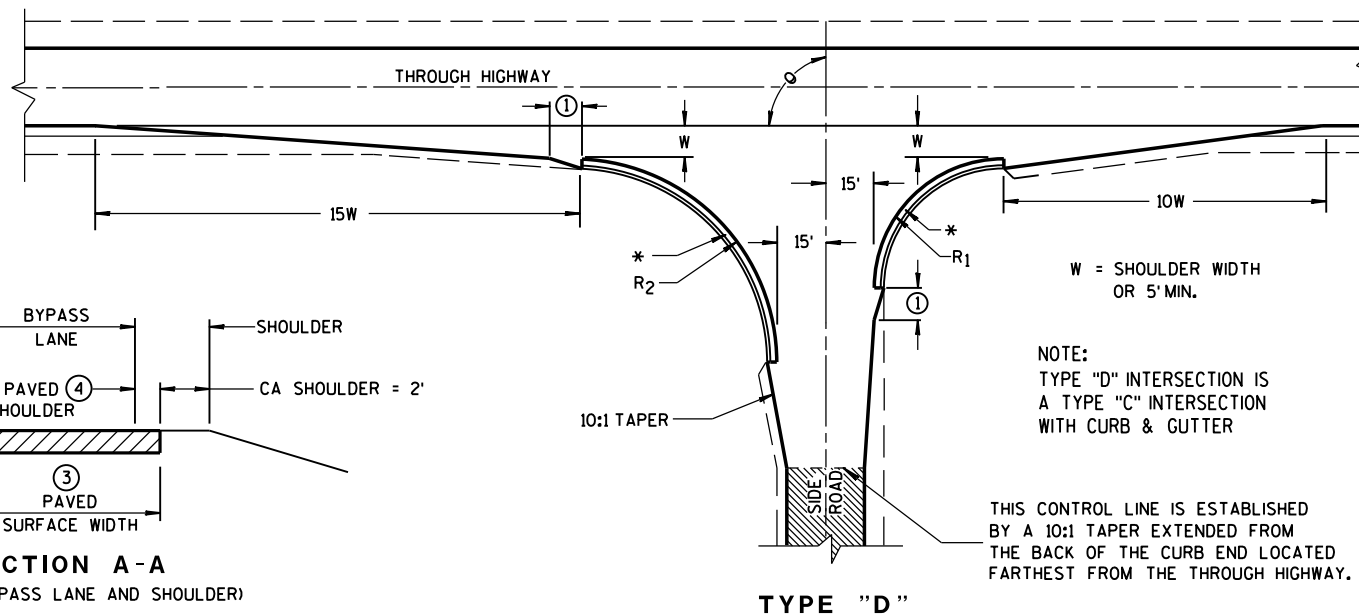
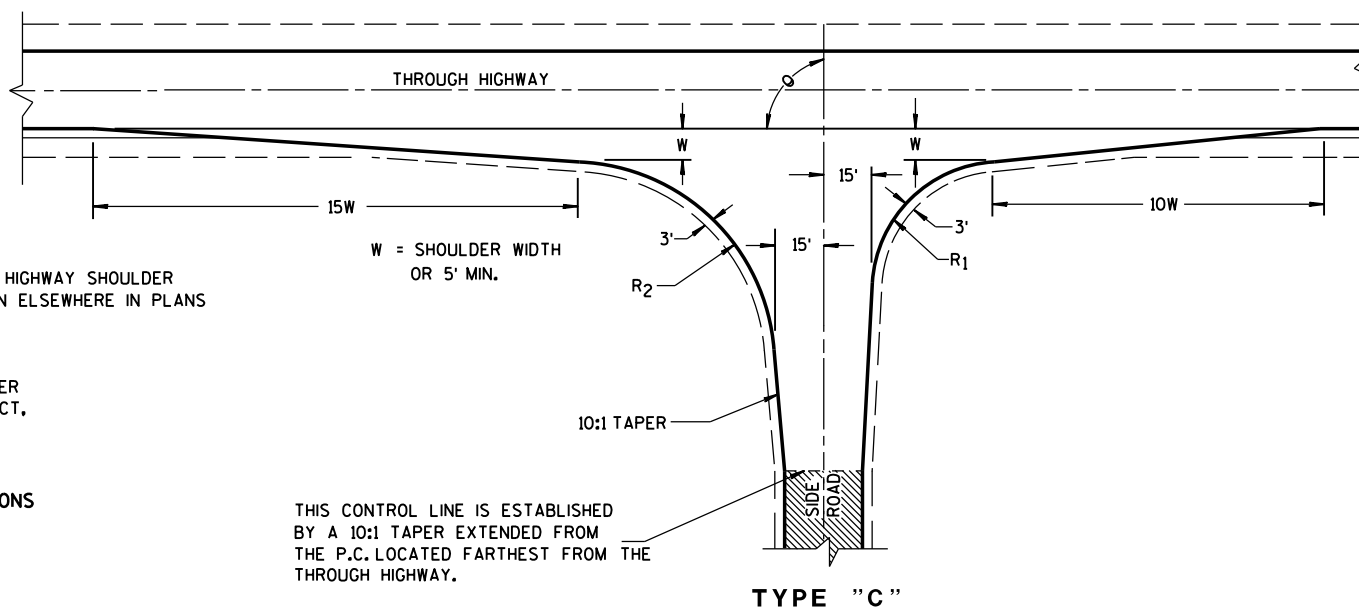
EXISTING PAVED SURFACE

BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

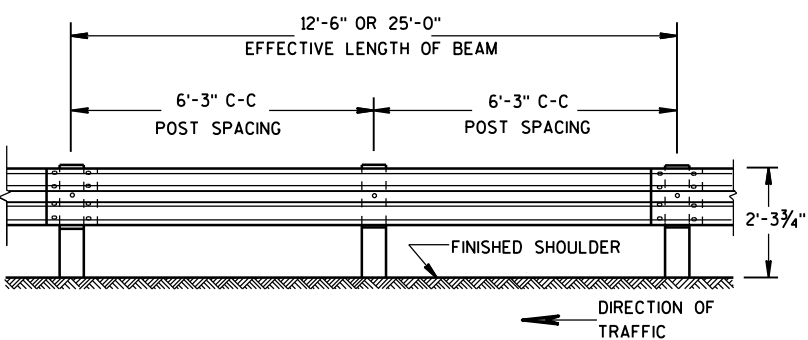
- S.D.D. 14 B 15-9a



TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD



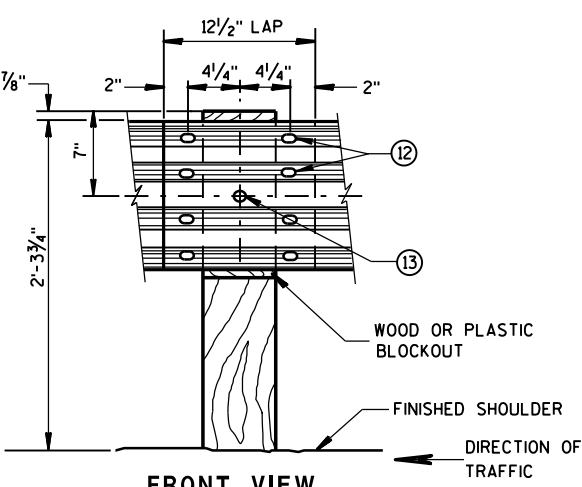
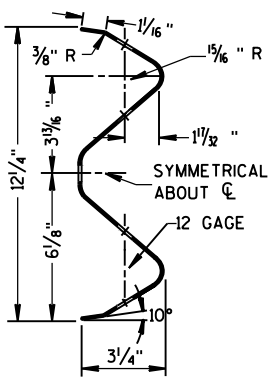
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁸⁵



FRONT VIEW

POST SPACING STANDARD INSTALLATION

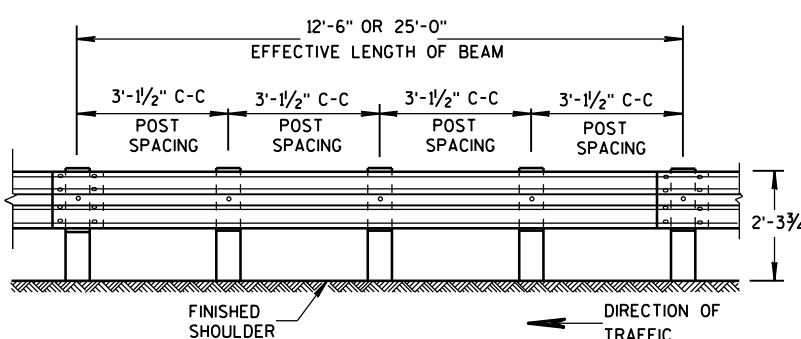
SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

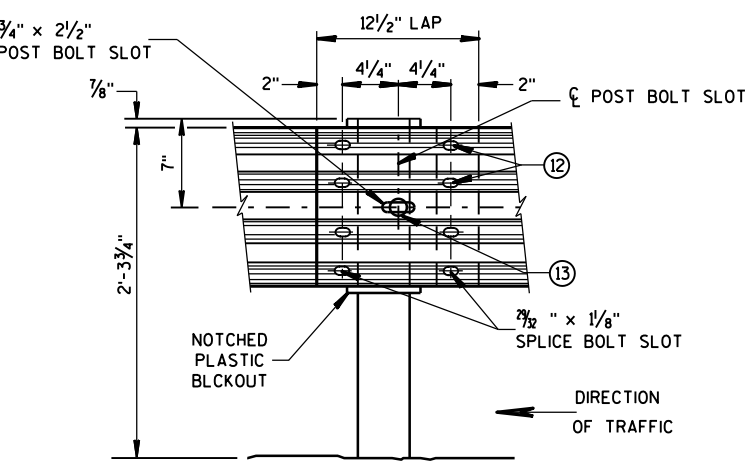
GENERAL NOTES

- ⑧ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑩ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑪ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



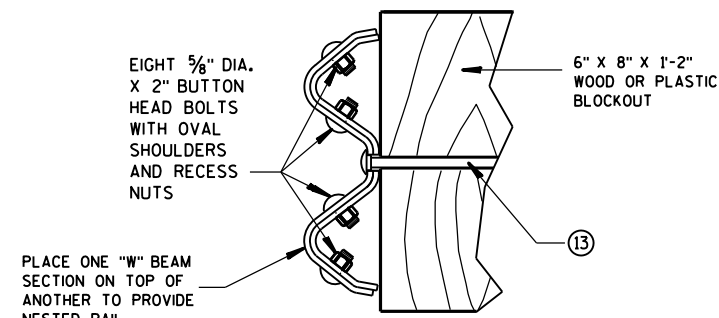
FRONT VIEW

POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

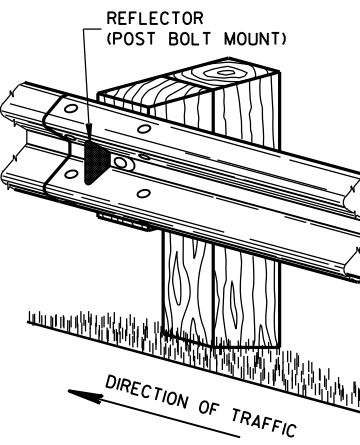


NESTED W BEAM (NW)

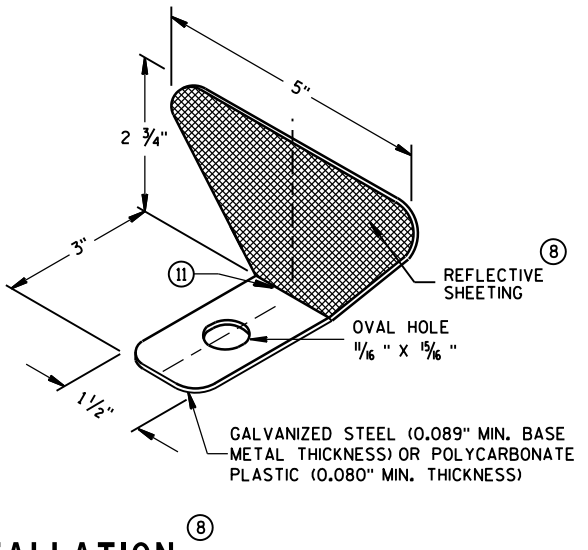
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING ⑨

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑩	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑪	3
	> 200'	100' C-C	2	

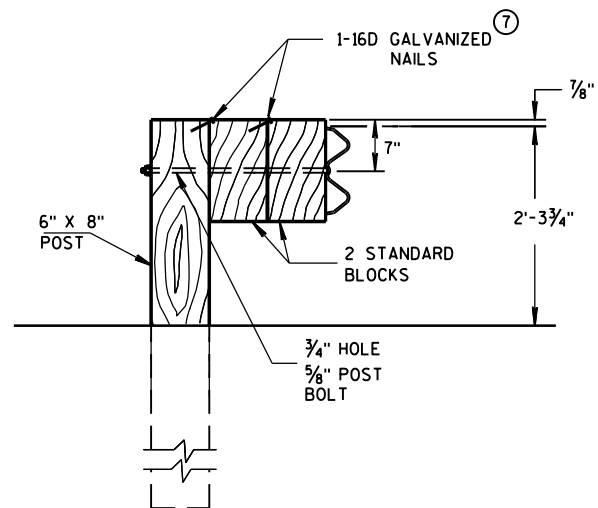


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



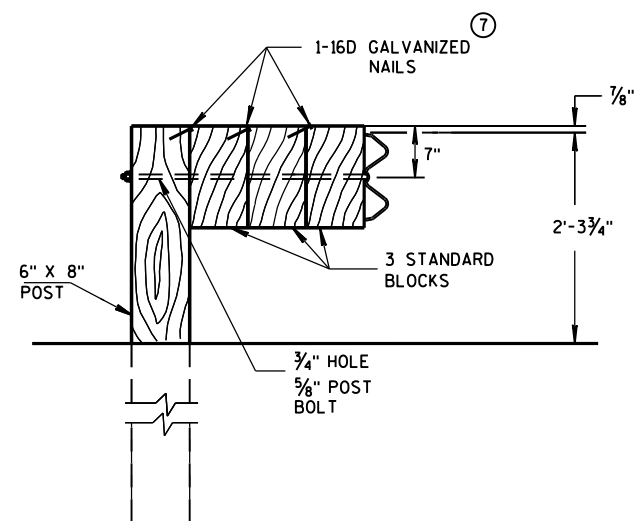
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

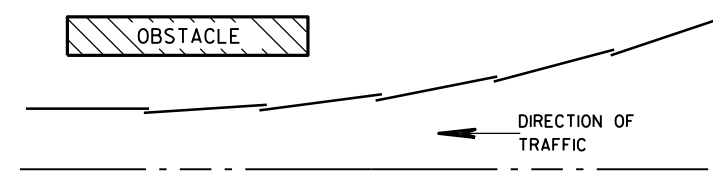


DETAIL FOR TRIPLE BLOCKS

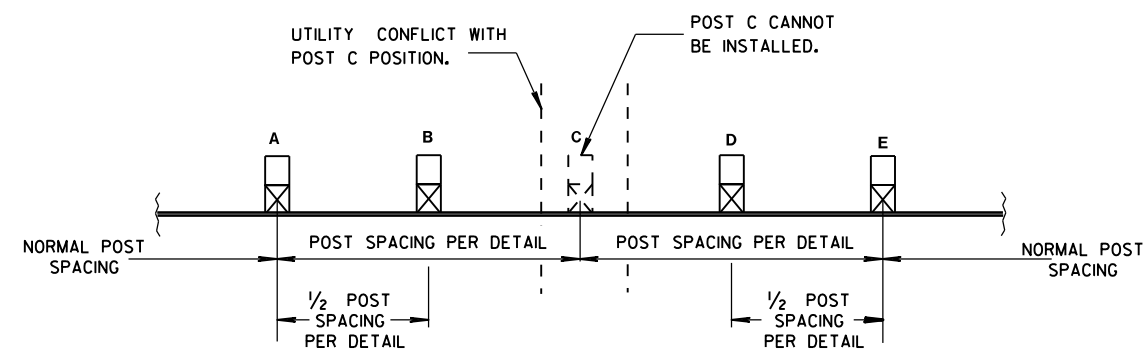
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

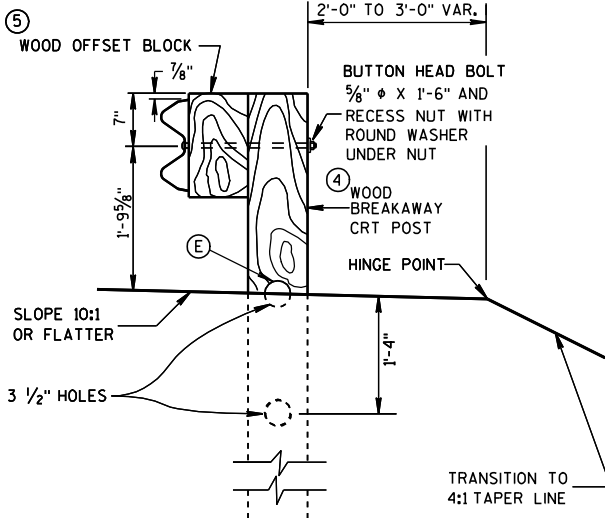
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BILL OF MATERIALS

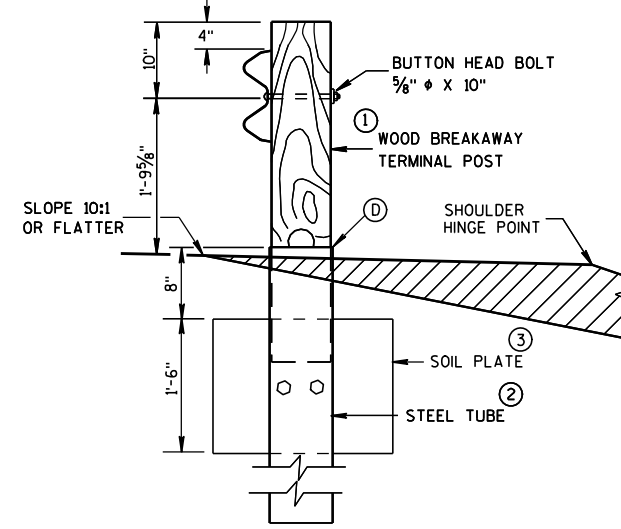
NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X 1/4" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA, 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA, 13'-6 1/2"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
⑮	1	E.A.T. MARKER POST

GENERAL NOTES

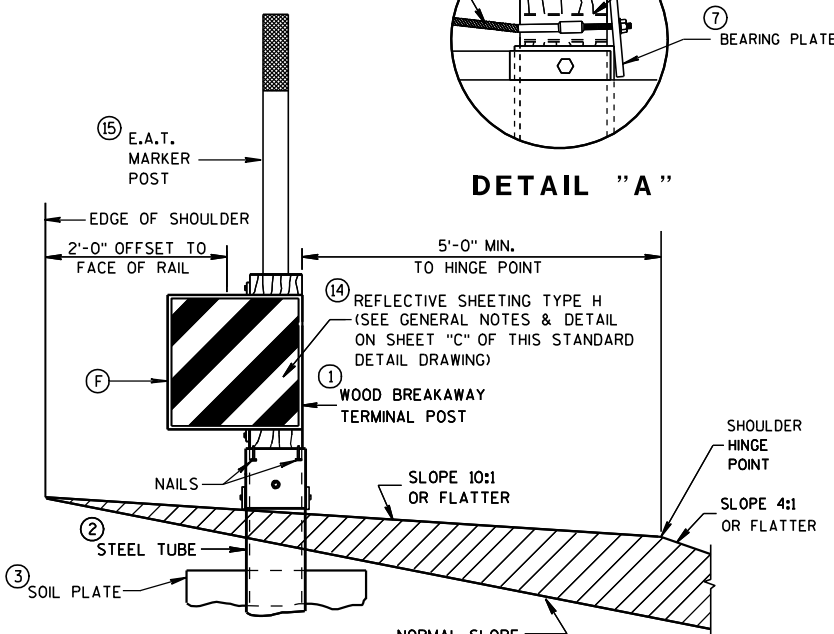
- FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL 5/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.
- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER OF E.A.T. STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.
- DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- * DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.
- ** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



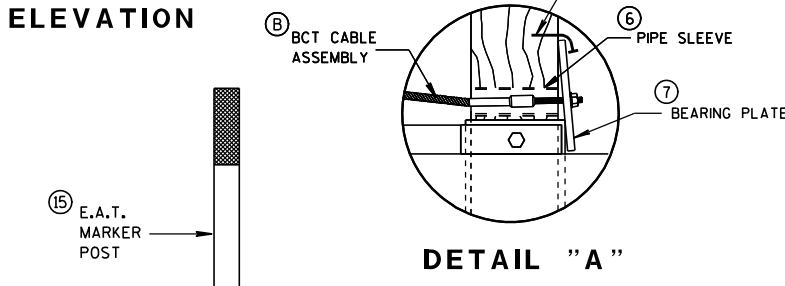
SECTION C-C
TYPICAL AT POST NOS. 6, 8



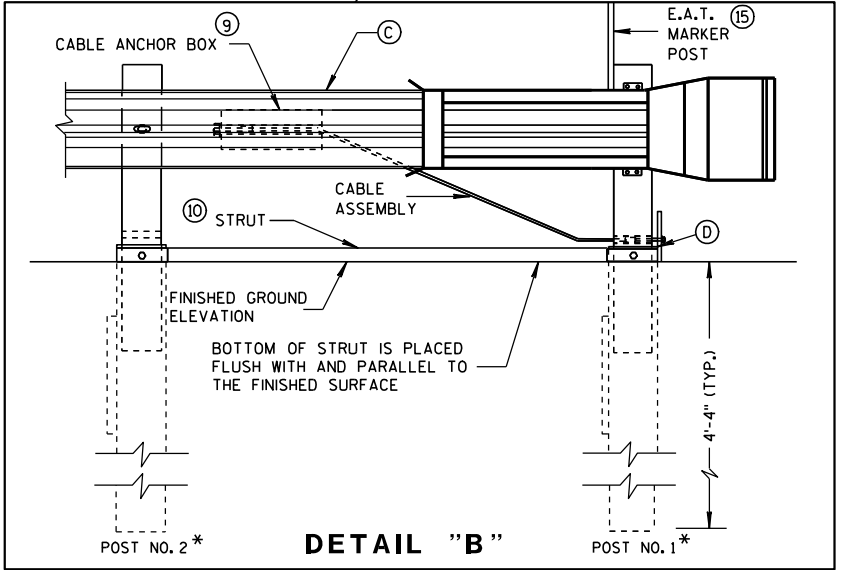
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



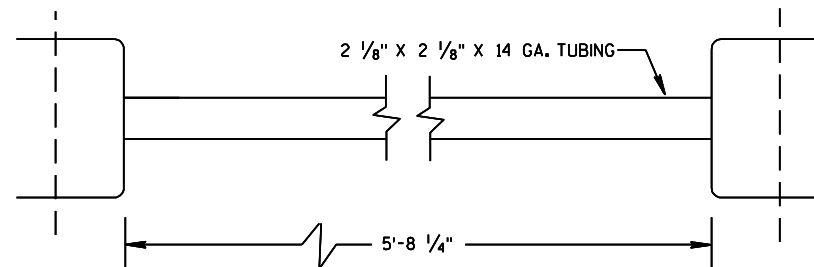
DETAIL "A"



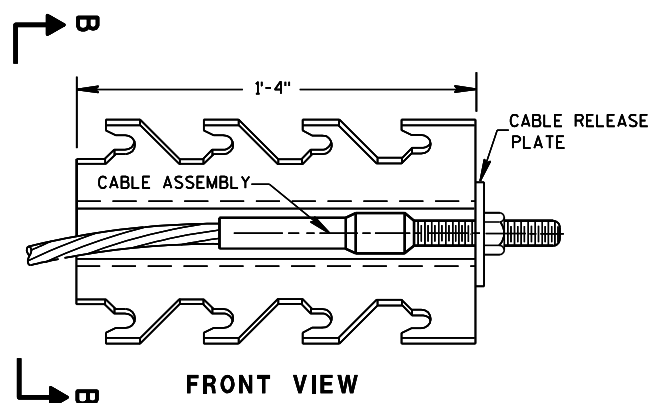
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

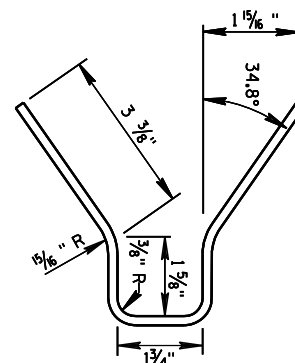


⑩ STRUT DETAIL (SKT-350)

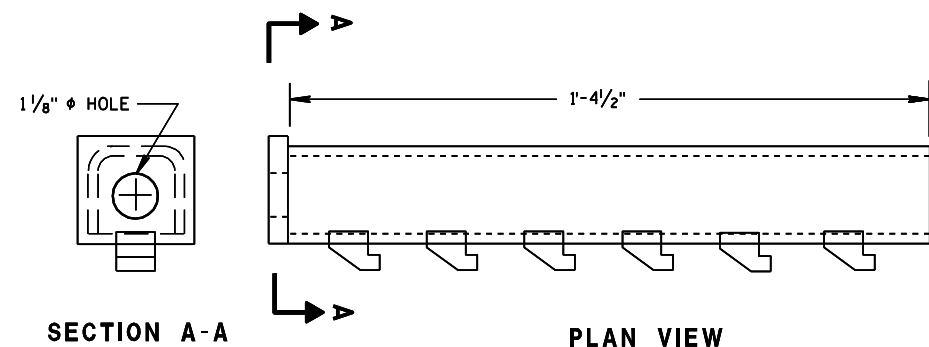


⑨ CABLE ANCHOR BOX (SKT-350)

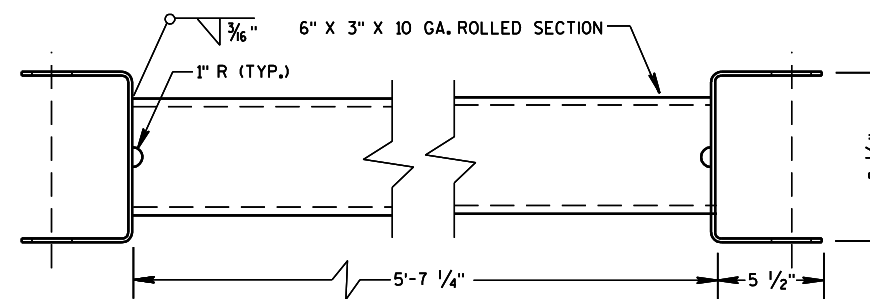
(SKT-350)



SECTION B-B

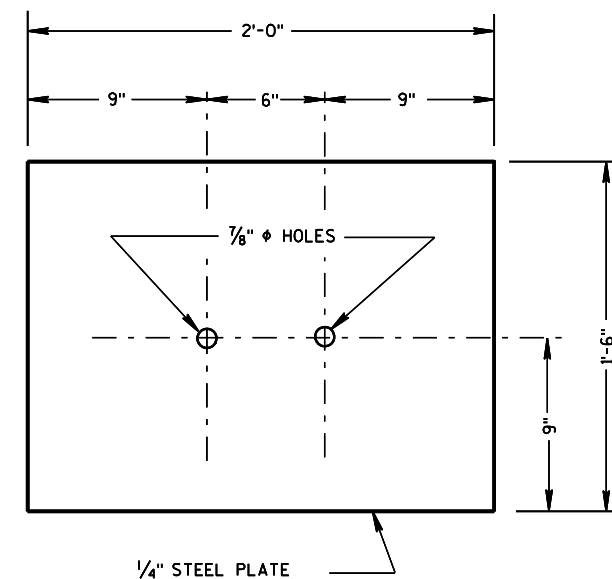


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)

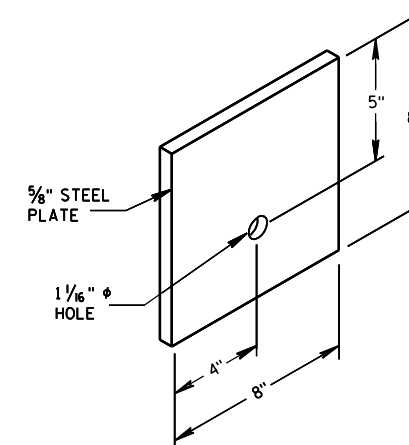


⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



ET-2000 PLUS ONLY



14 REFLECTIVE SHEETING DETAILS

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

(G) 1/2" DIA. X 3" LAG BOLT WITH WASHER.

6

S.D.D. 14 B 24-7c

6

S.D.D. 14 B 24-7c

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

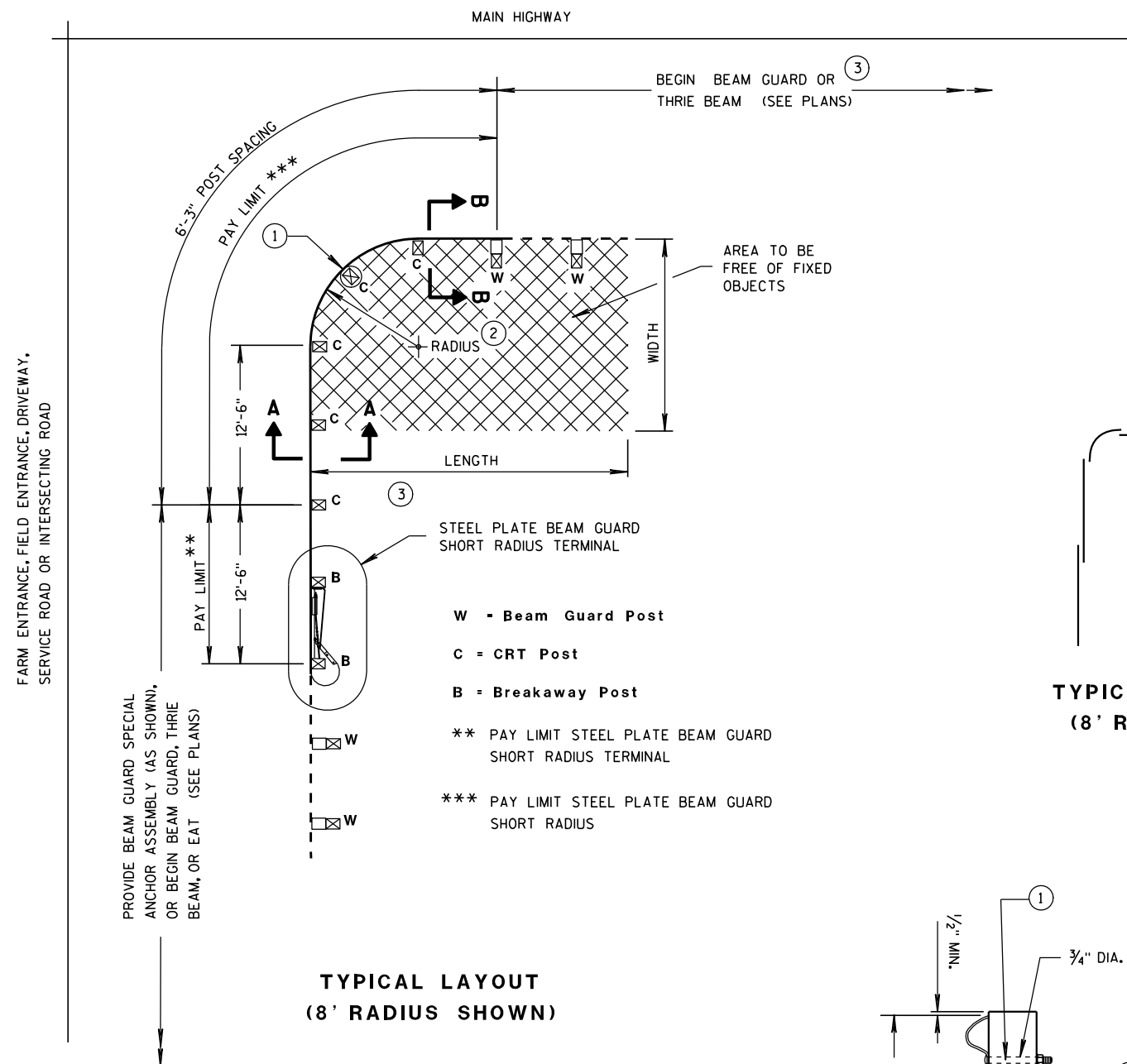
APPROVED

4-12-10
DATE

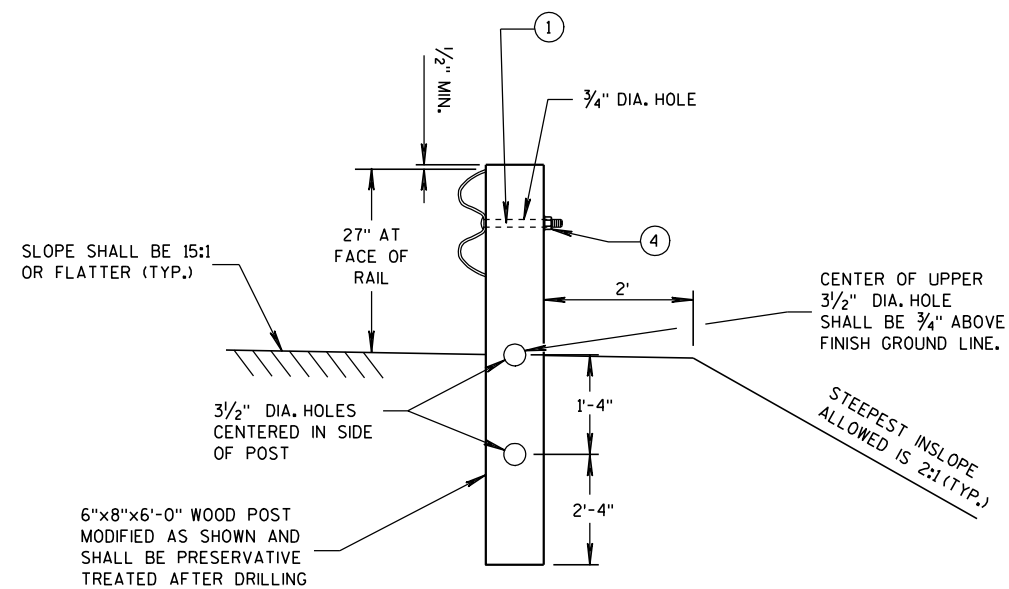
FHWA

/S/ Jerry H. Zoon
ROADWAY STANDARDS 90
ENGINEER

EN



**TYPICAL LAYOUT
(8' RADIUS SHOWN)**



**SECTION A-A
(CRT POST)**

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2, UNLESS NOTED OTHERWISE.

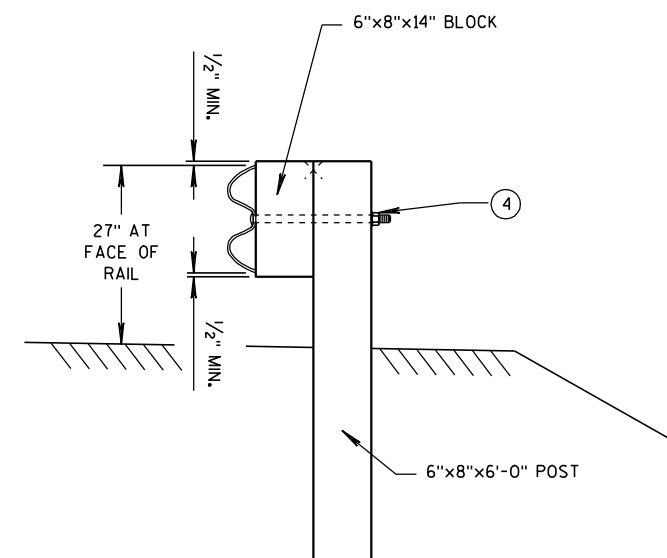
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- ① ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- ② RADIUS FROM 8' - 36'. SEE PLAN.
- ③ HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- ④ 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

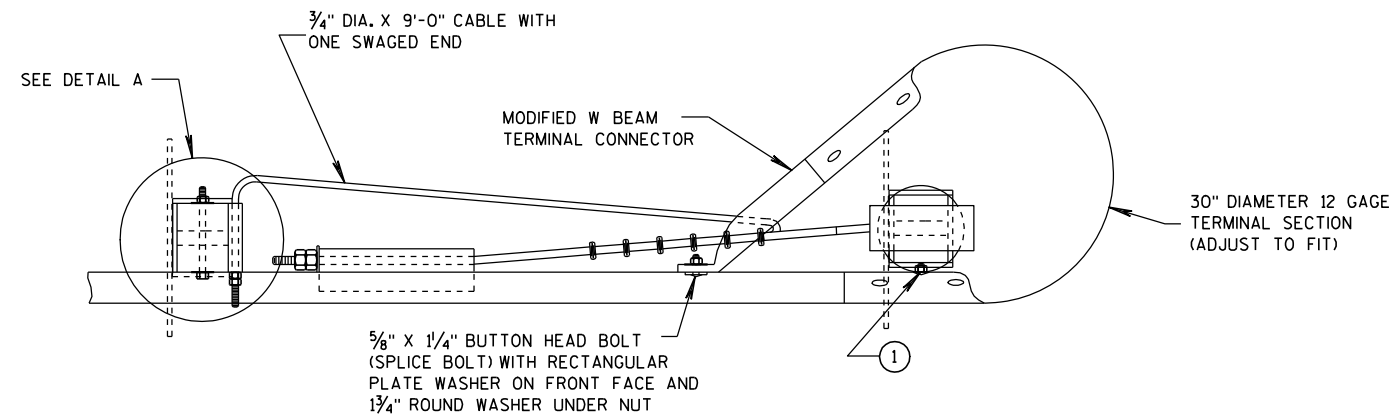
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



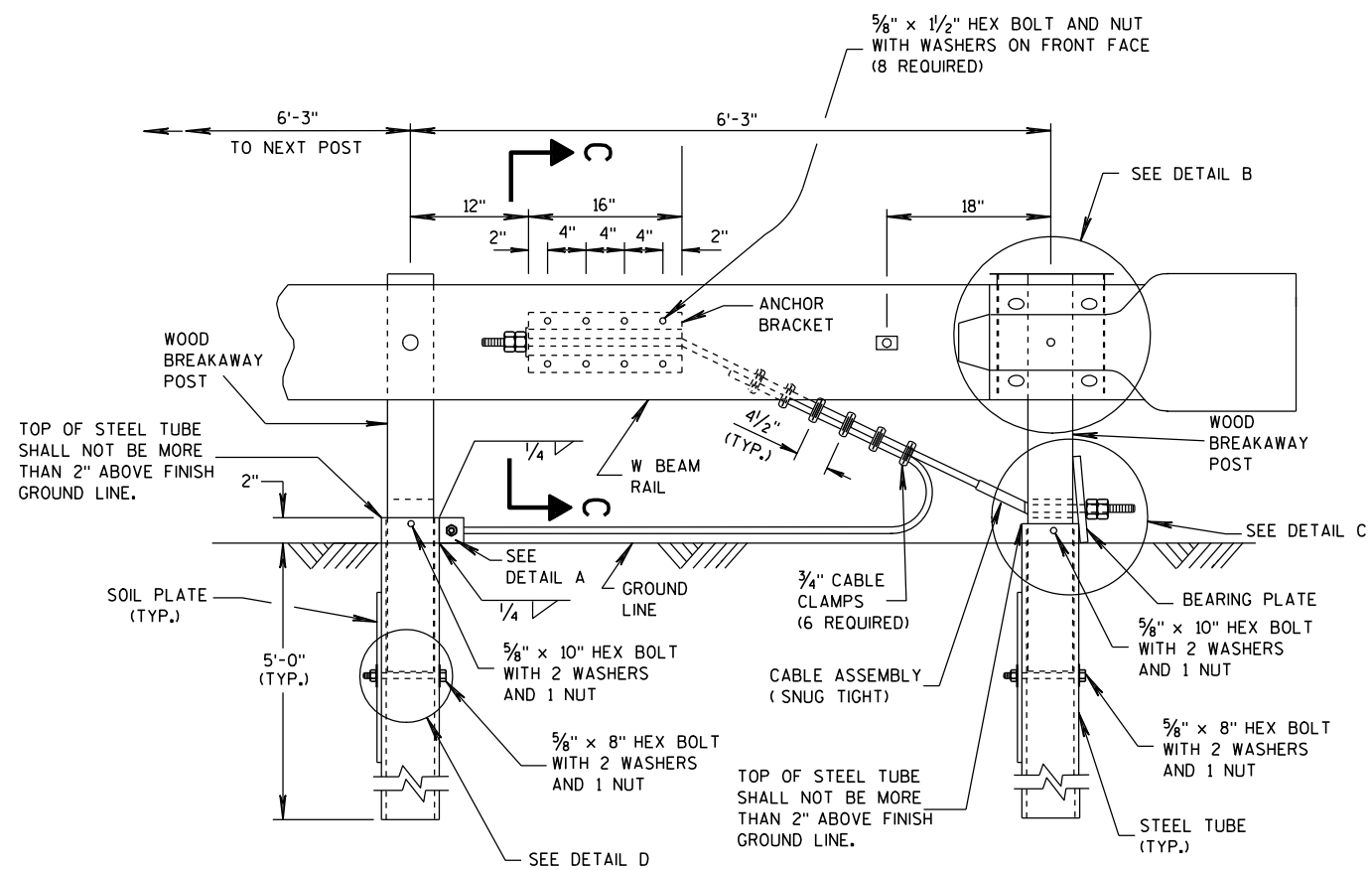
**SECTION B-B
(BEAM GUARD POST)**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

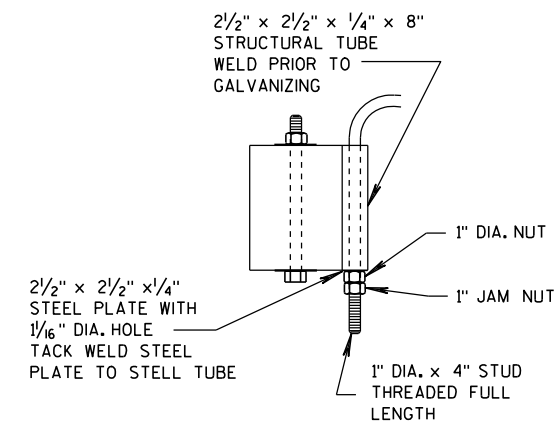


ELEVATION VIEW

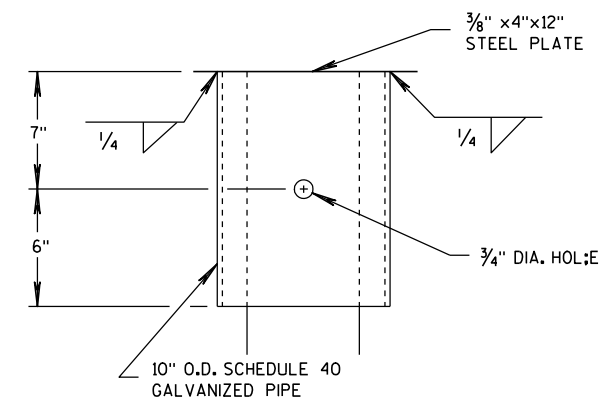
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

- 1 ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A 5/8" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.
- INSTALL GALVANIZED 3/4" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED FLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



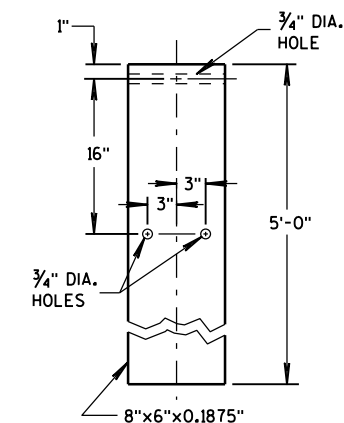
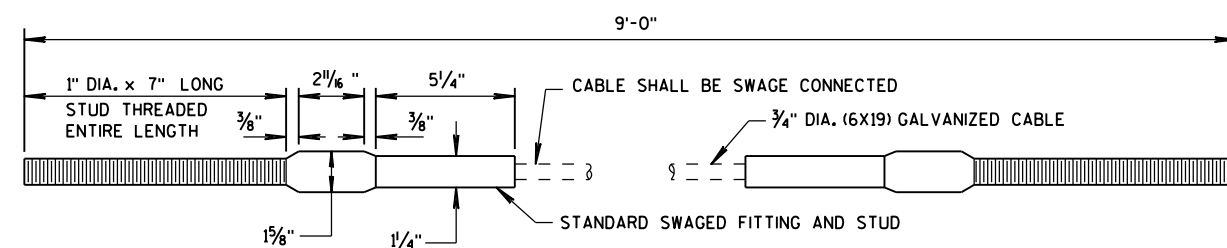
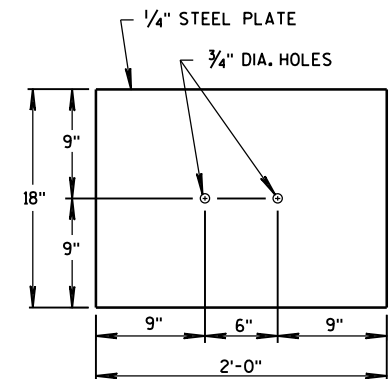
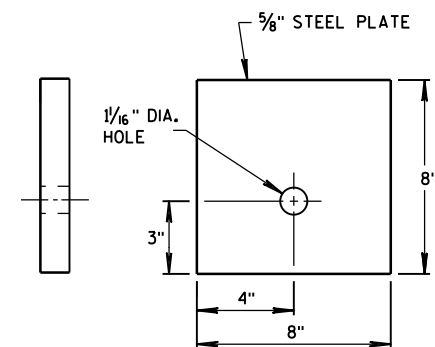
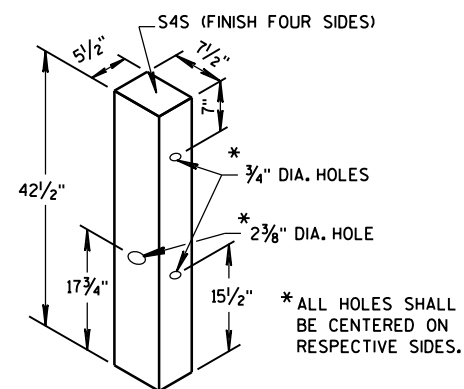
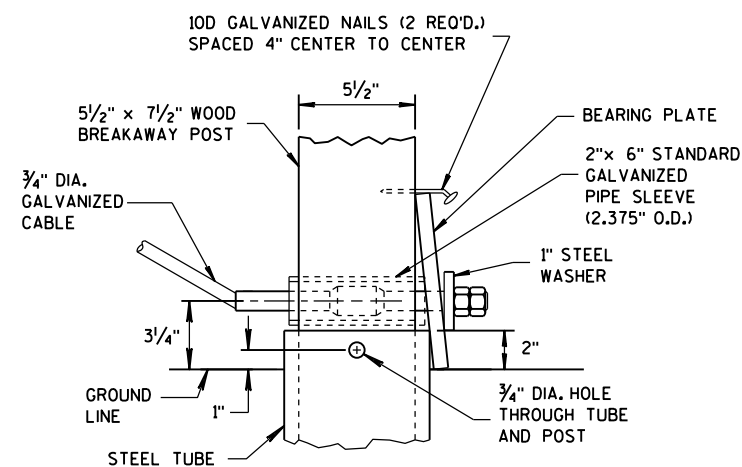
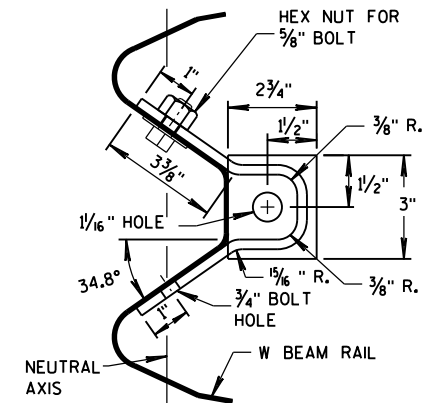
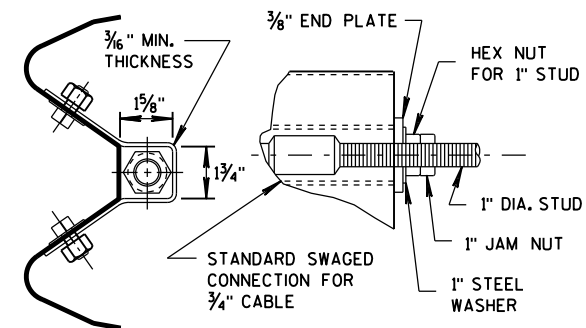
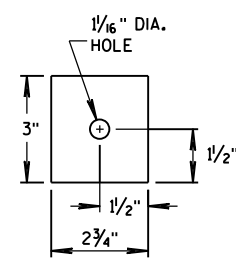
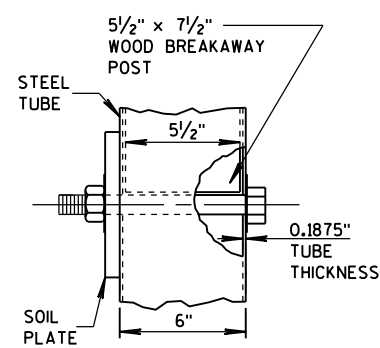
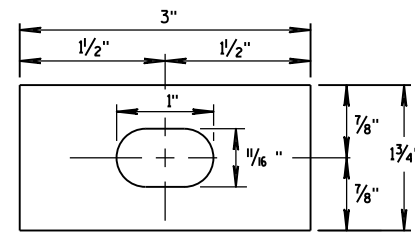
DETAIL A



DETAIL B

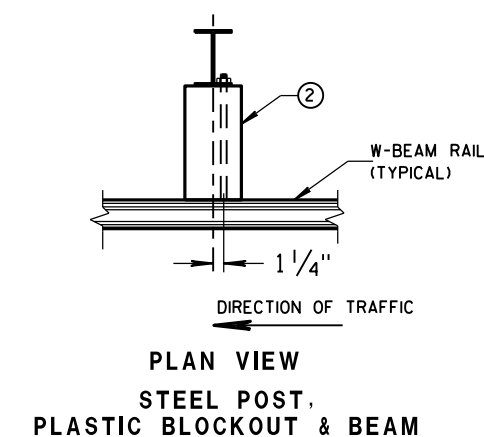
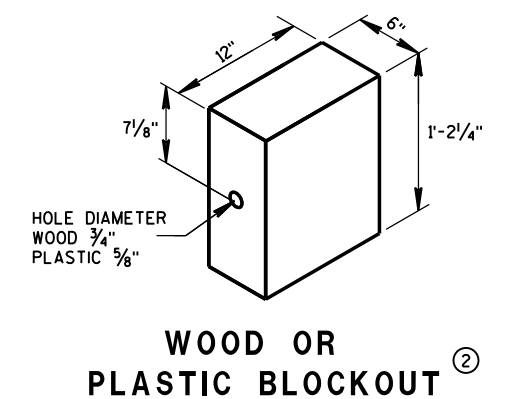
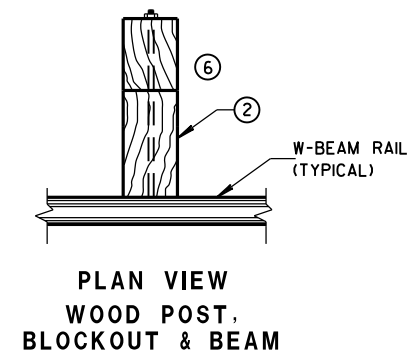
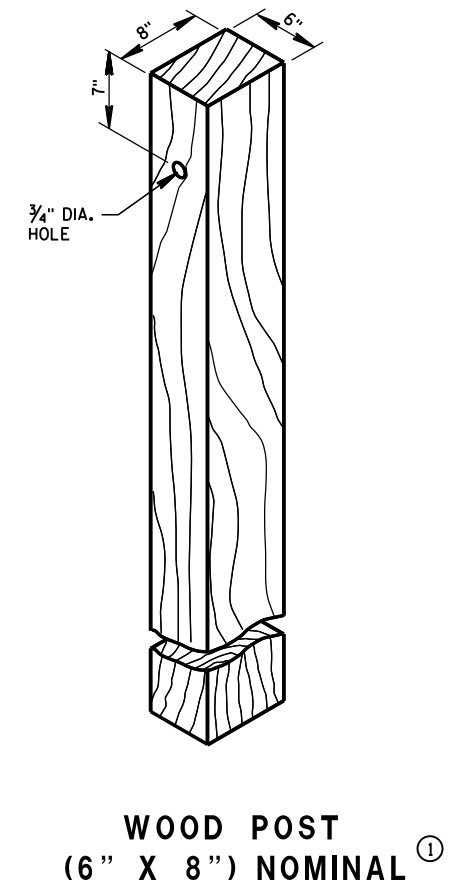
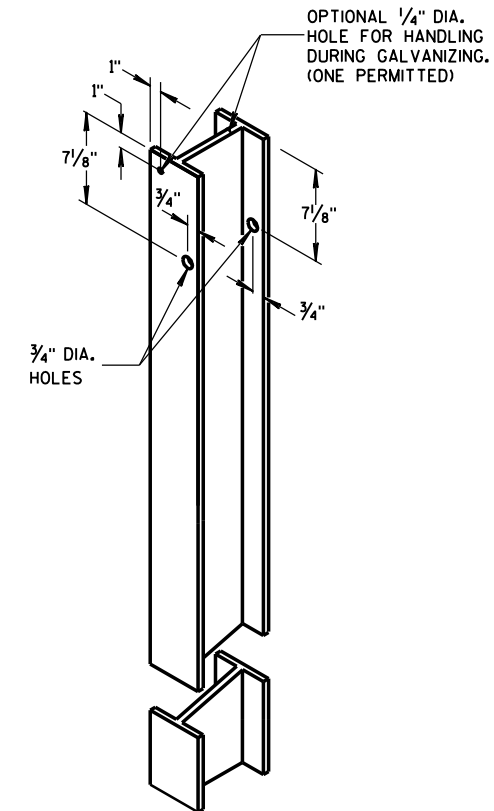
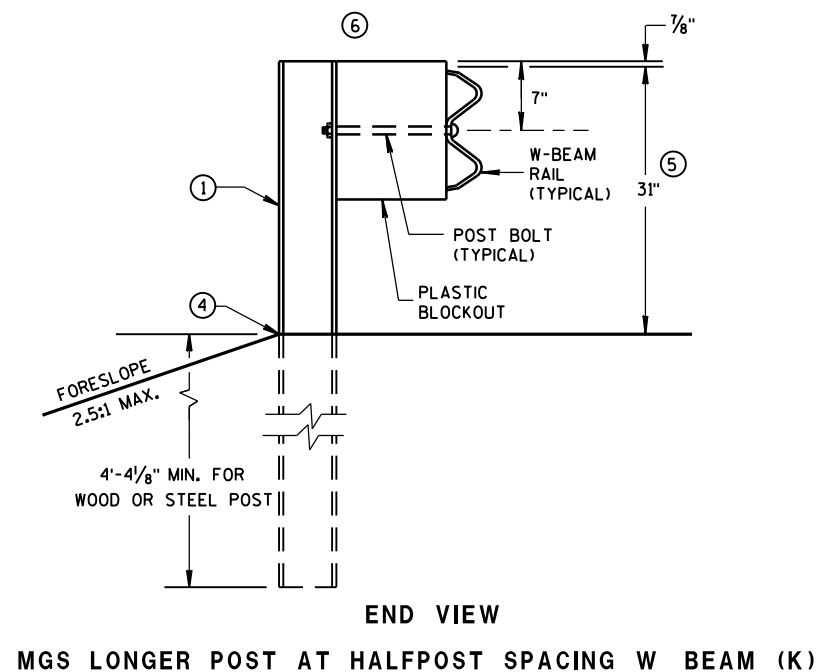
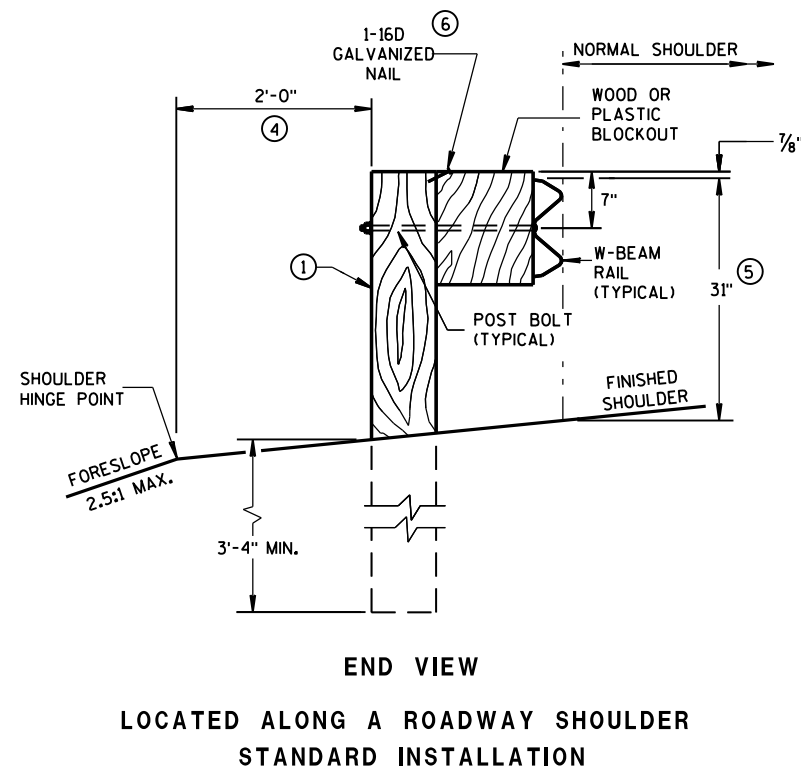
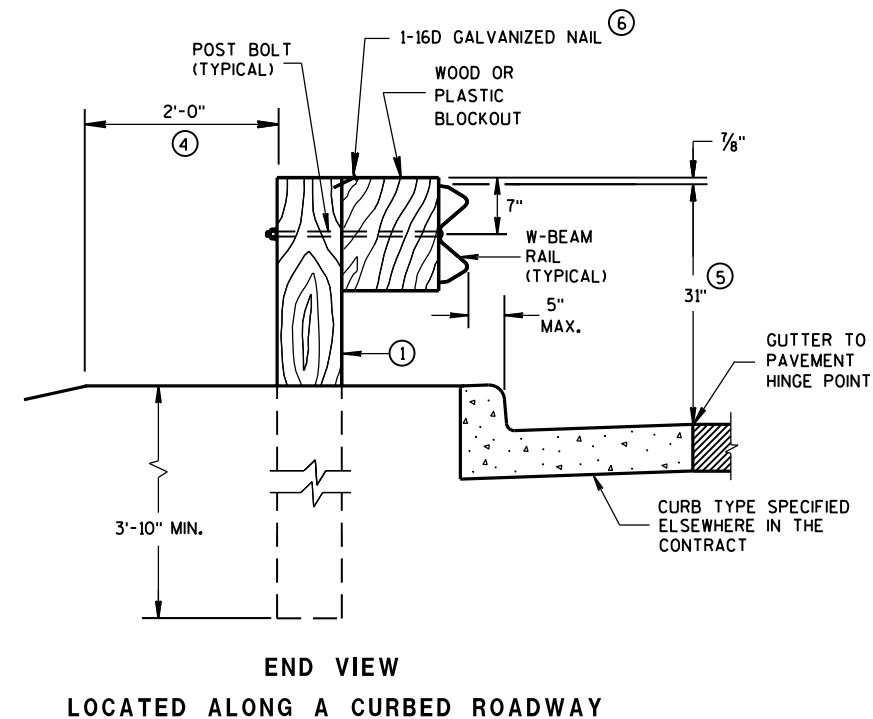
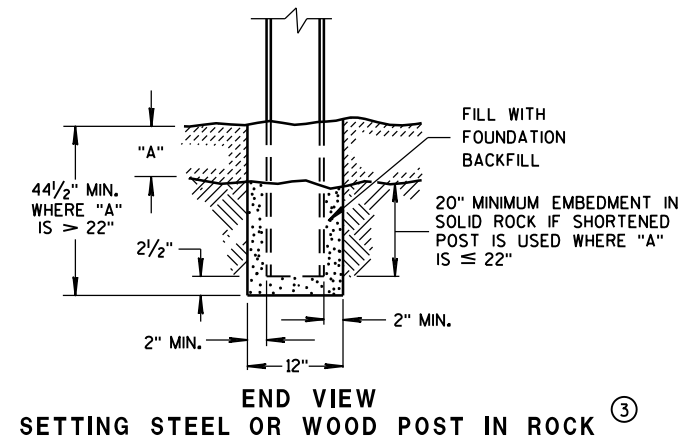
(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

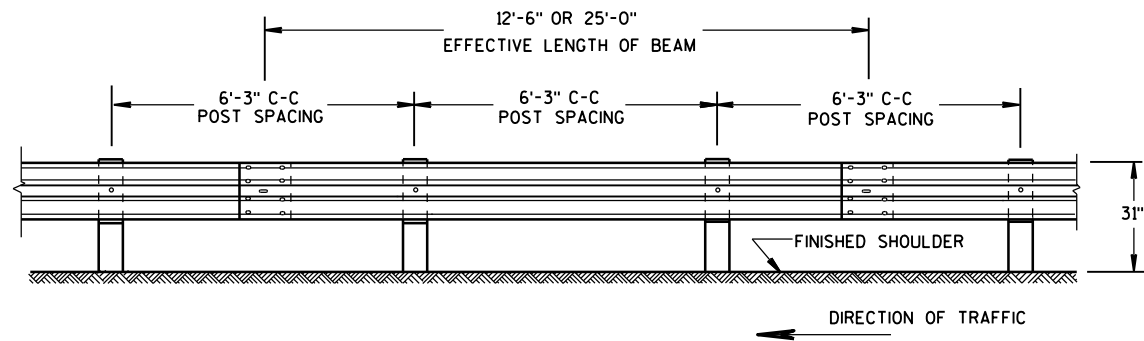
STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

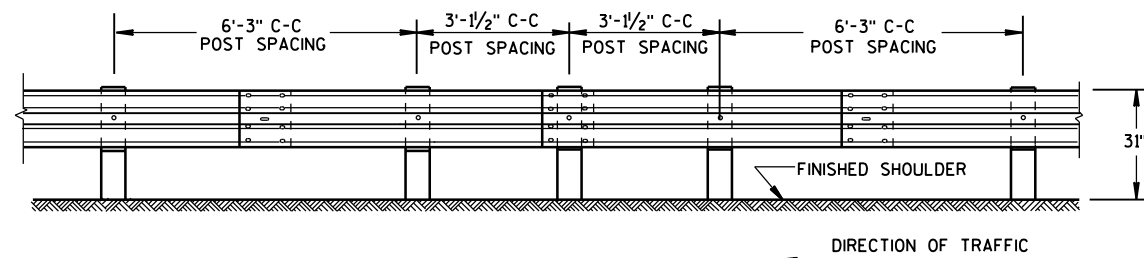
- ① WOOD OR STEEL POSTS (W6X9 OR W6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY $2\frac{1}{2}$ 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 $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN $27\frac{3}{4}"$ TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.





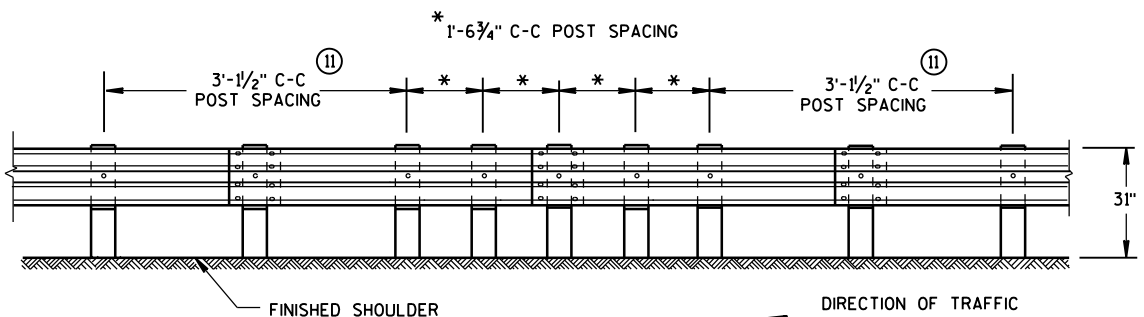
FRONT VIEW

POST SPACING STANDARD INSTALLATION



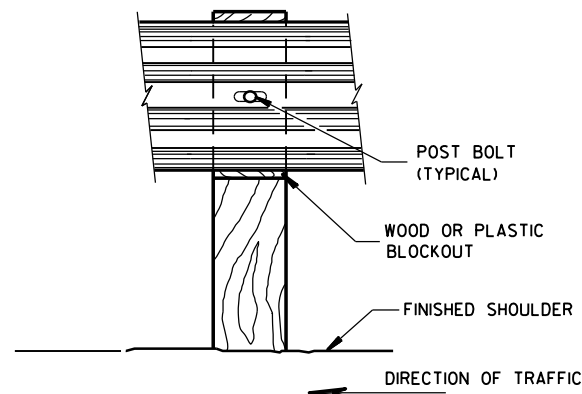
FRONT VIEW

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

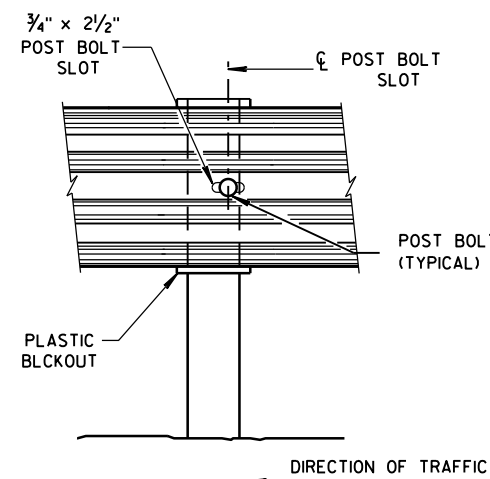


FRONT VIEW

QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST

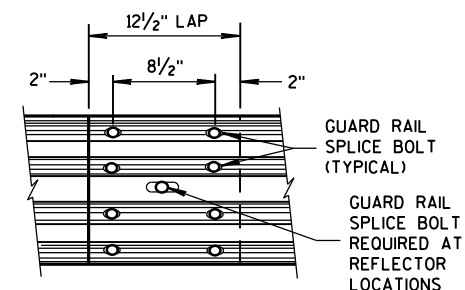


FRONT VIEW AT STEEL POST

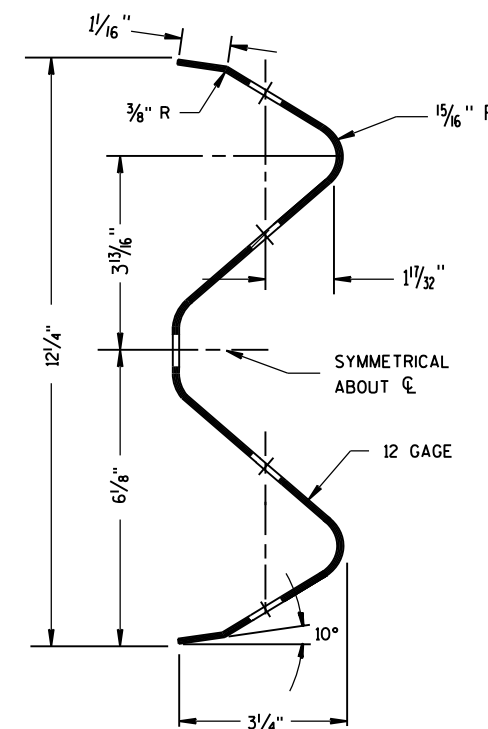
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

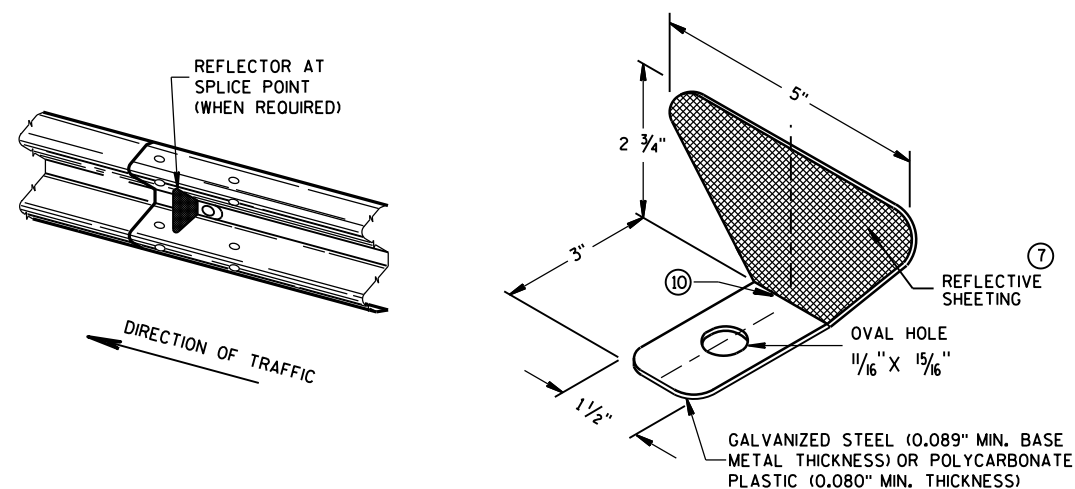
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



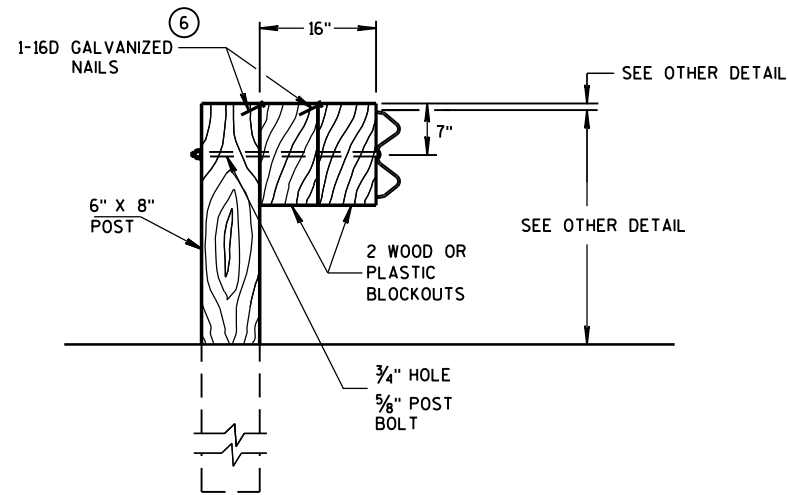
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

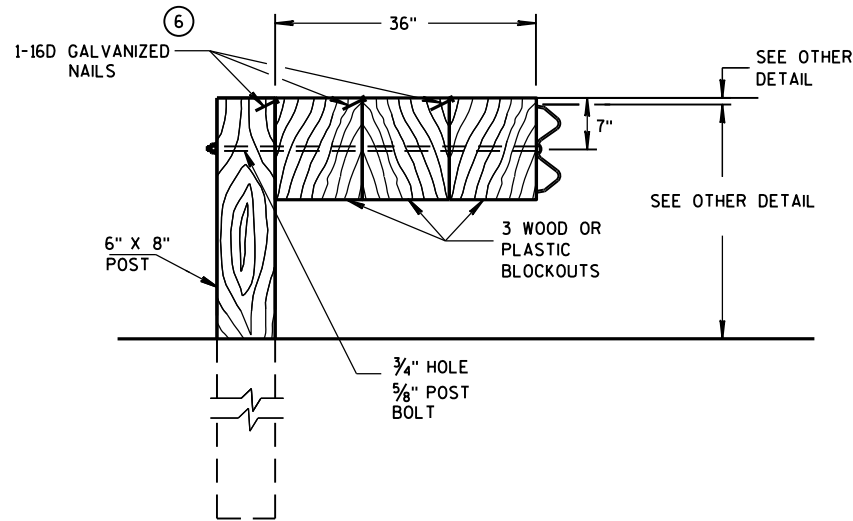
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

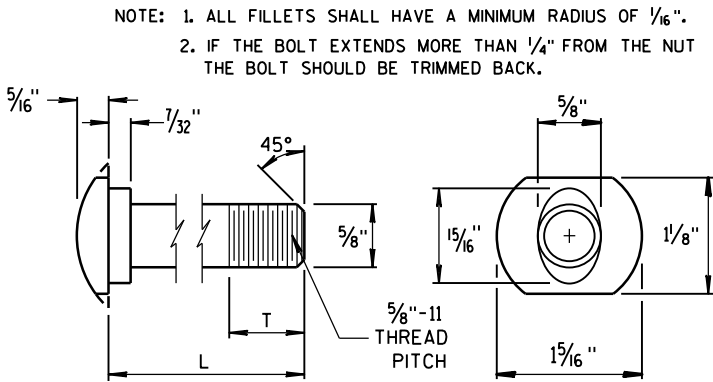
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



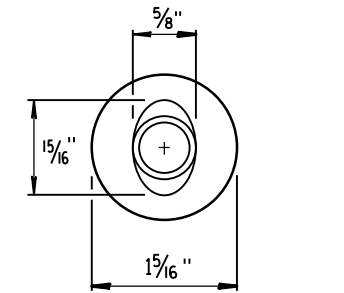
DETAIL FOR 36" BLOCKOUT DEPTH

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.

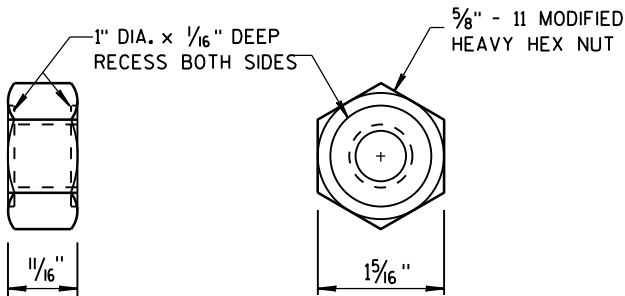
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



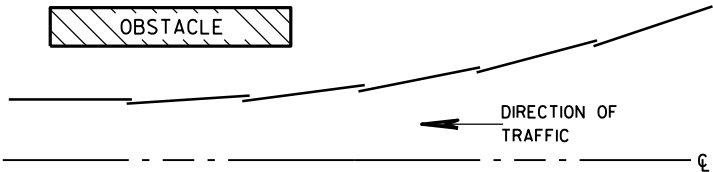
POST BOLT TABLE



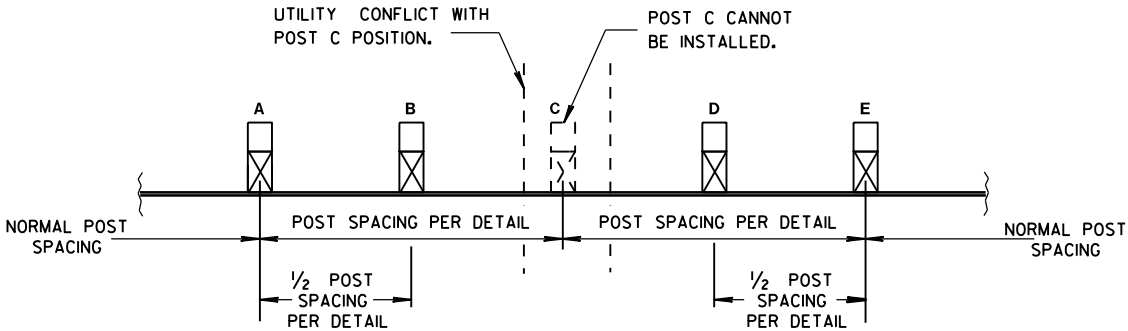
ALTERNATE BOLT HEAD



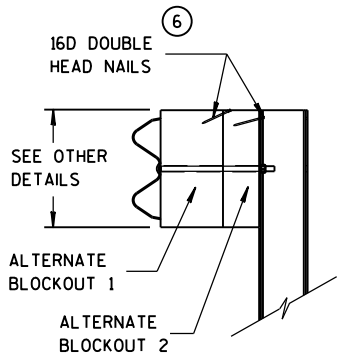
POST BOLT, SPLICE BOLT AND RECESS NUT



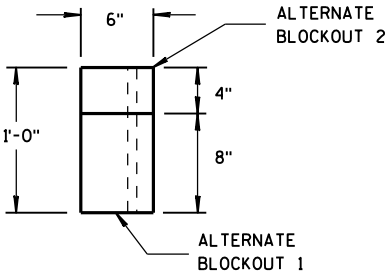
PLAN VIEW
BEAM LAPPING DETAIL



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

APPROVED
June 2016 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 196 INT
FHWA ENGINEER

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.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

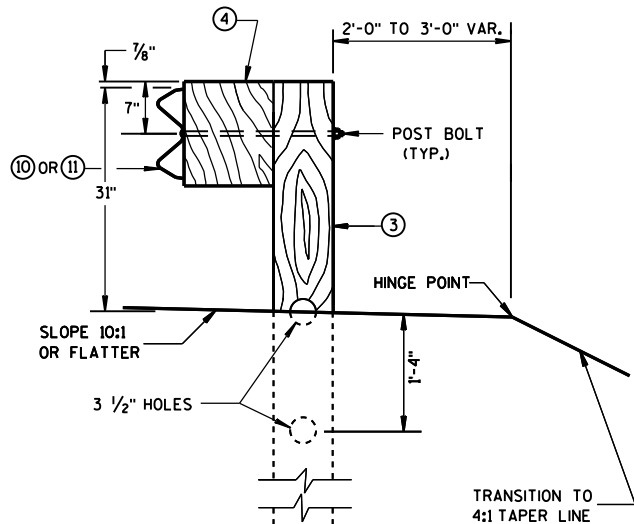
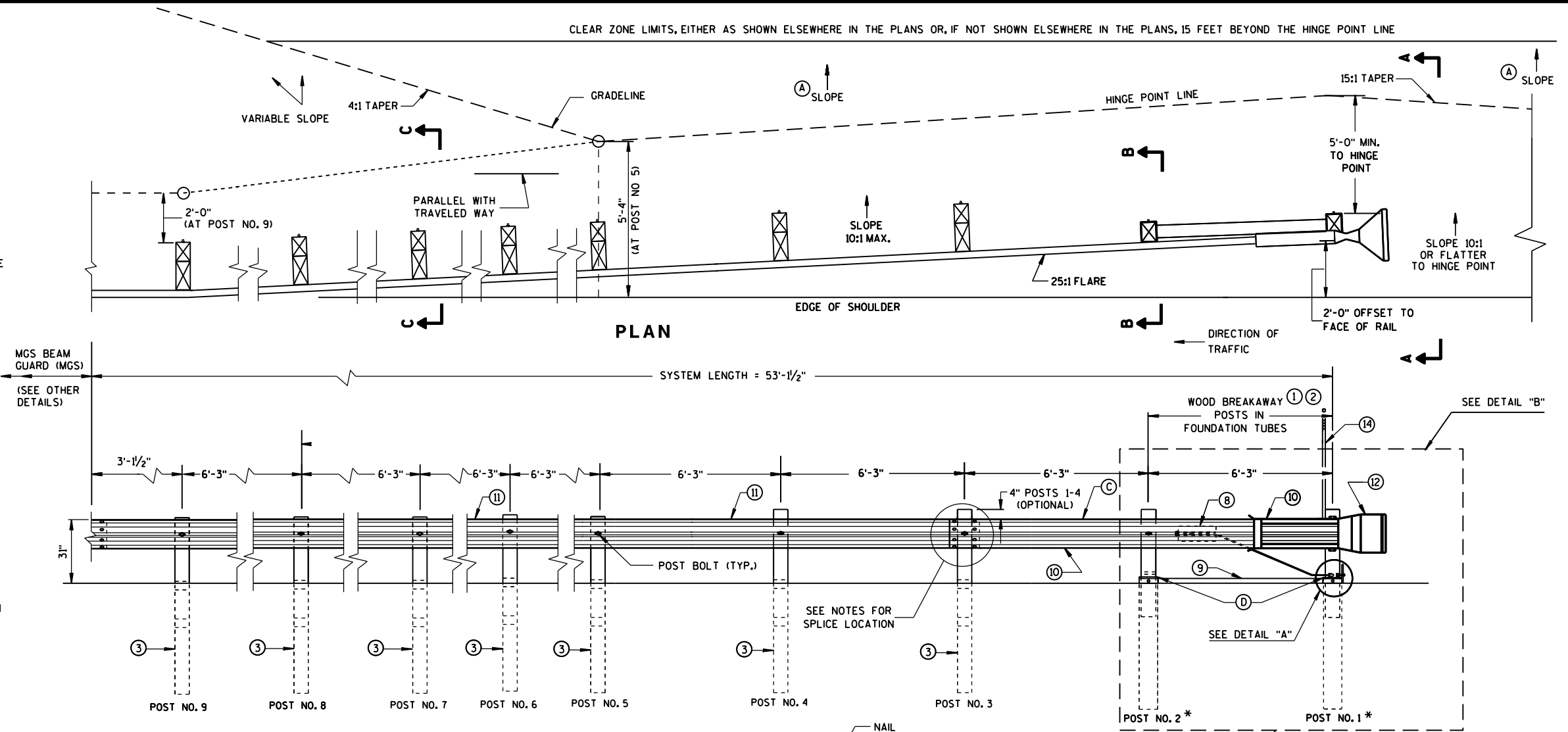
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

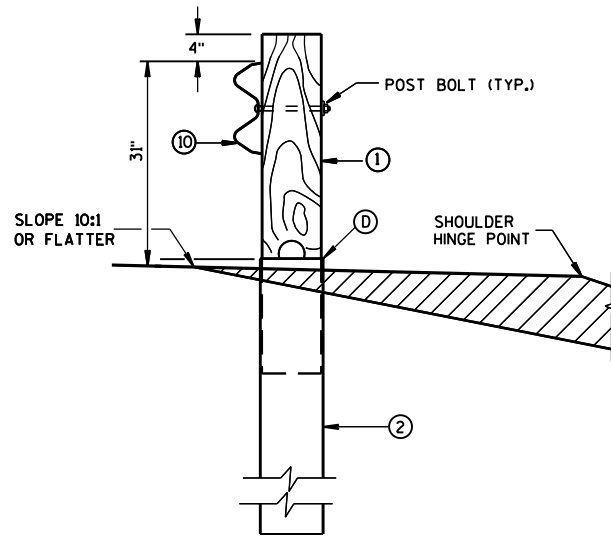
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

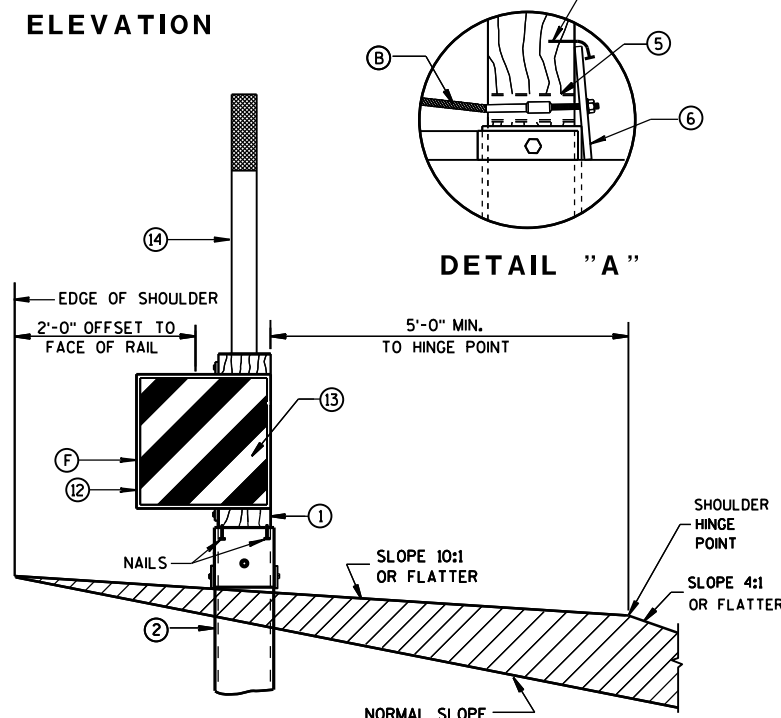
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



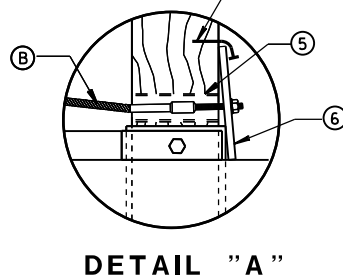
SECTION C-C
TYPICAL AT POST NOS. 3-9



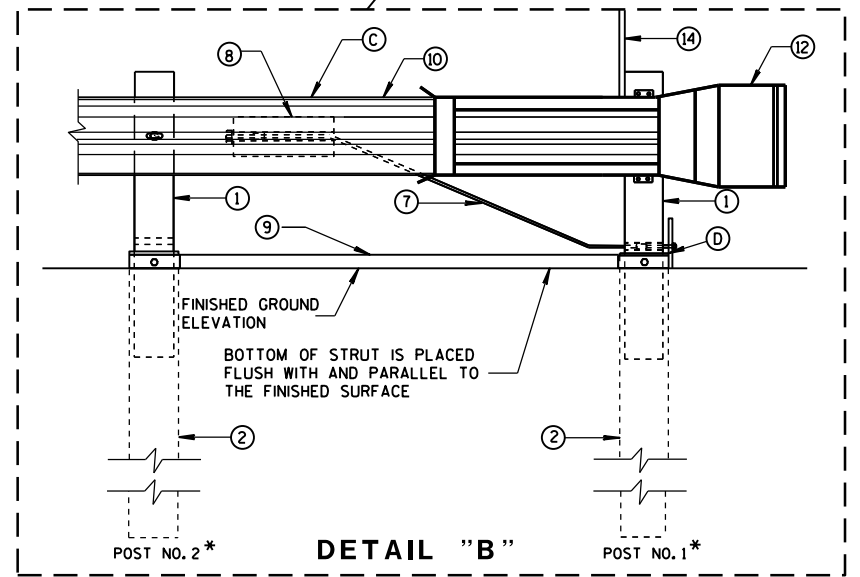
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



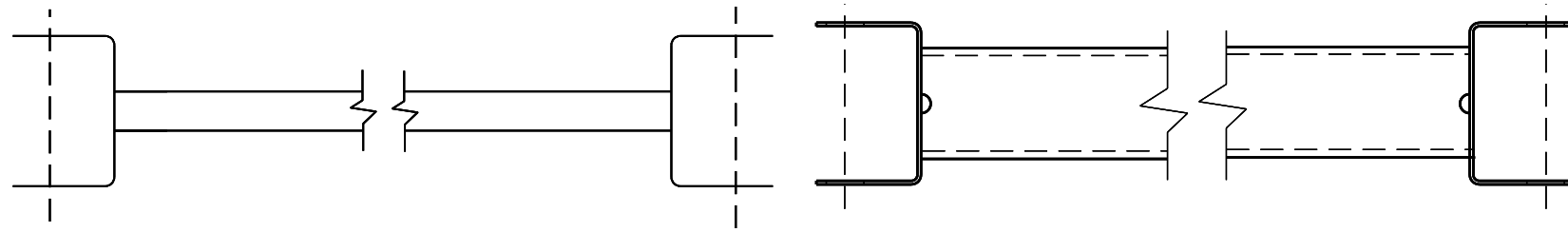
DETAIL "A"



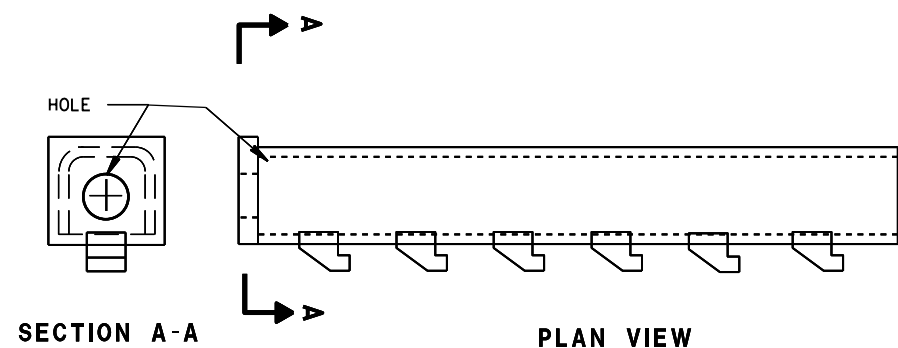
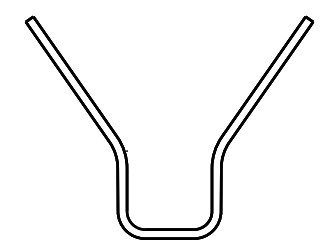
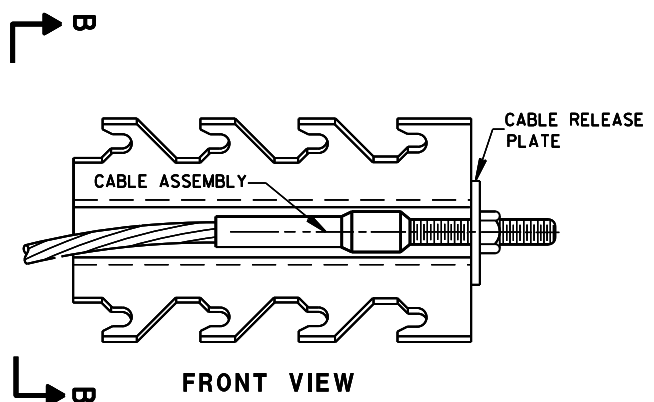
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



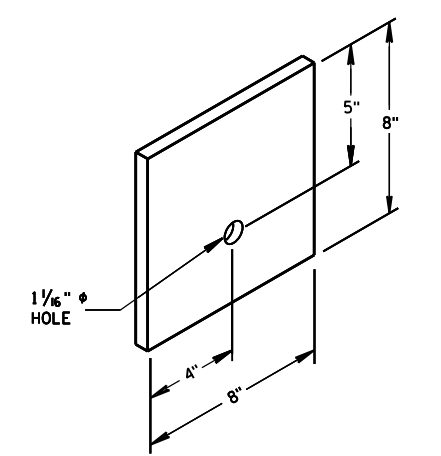
9 H
GENERIC GROUND STRUT



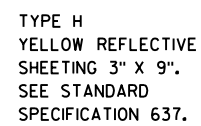
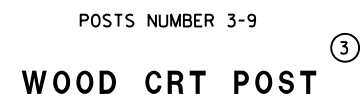
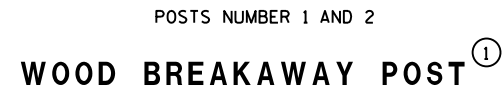
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

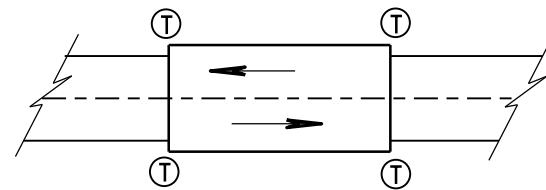
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



⑥
BEARING PLATE

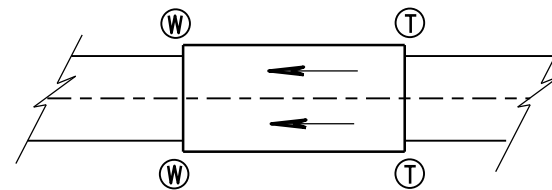


MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED <u>June 2014</u> <u>DATE</u>	 <u>/S/ Jerry H. Zogg</u> <u>ROADWAY STANDARDS</u>	 <u>99</u> <u>ENGINEER</u>	 <u>ENT</u>
FHWA			



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.

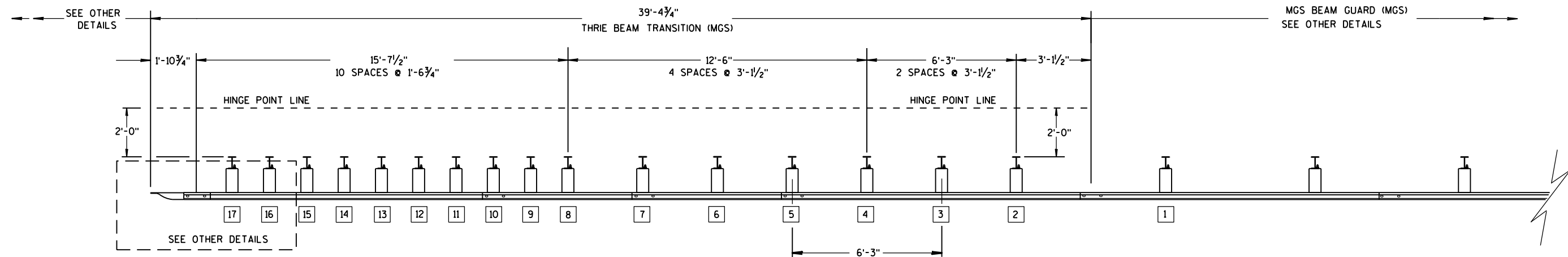
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

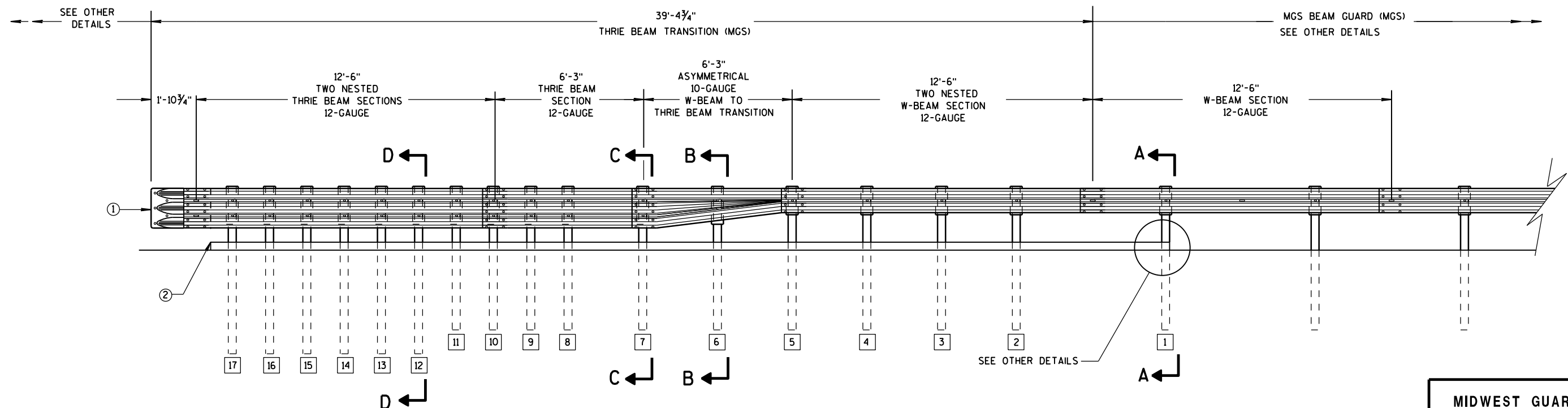
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

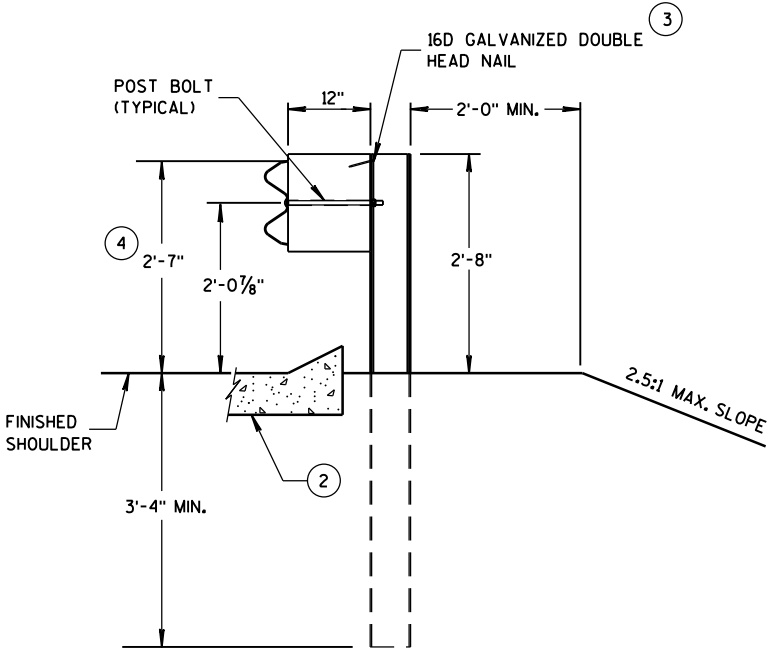
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

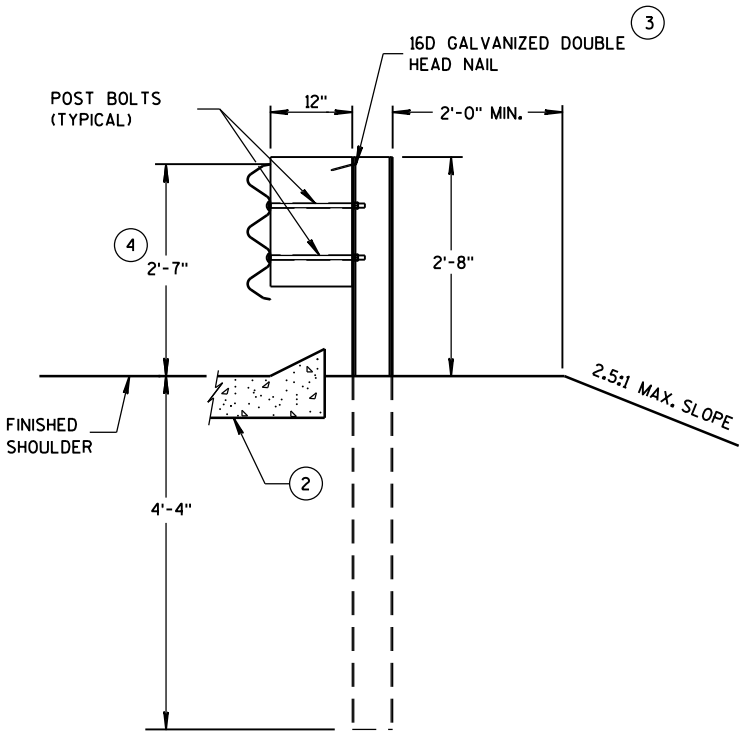
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 100

GENERAL NOTES

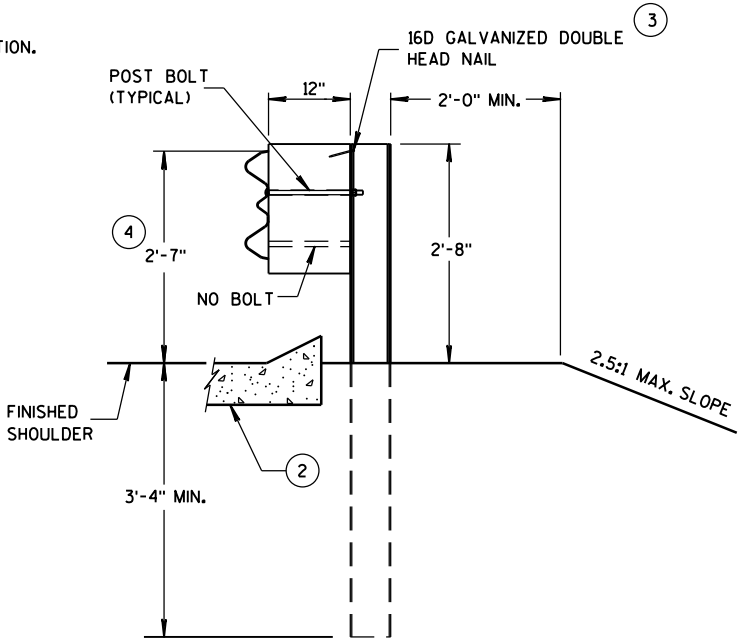
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



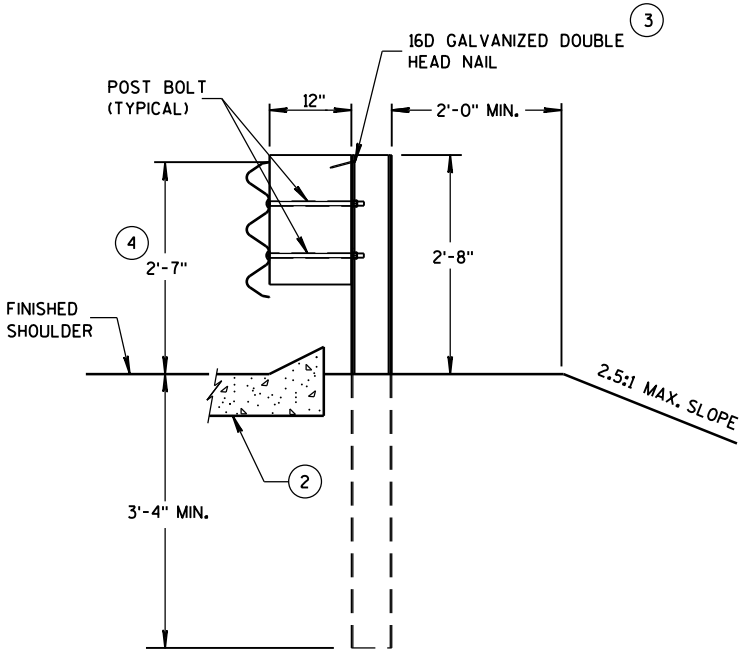
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

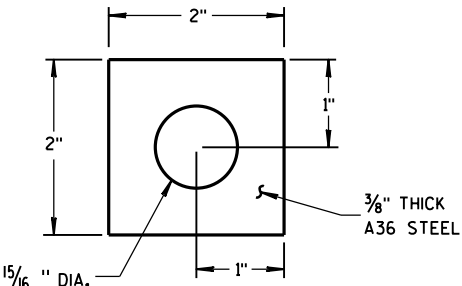
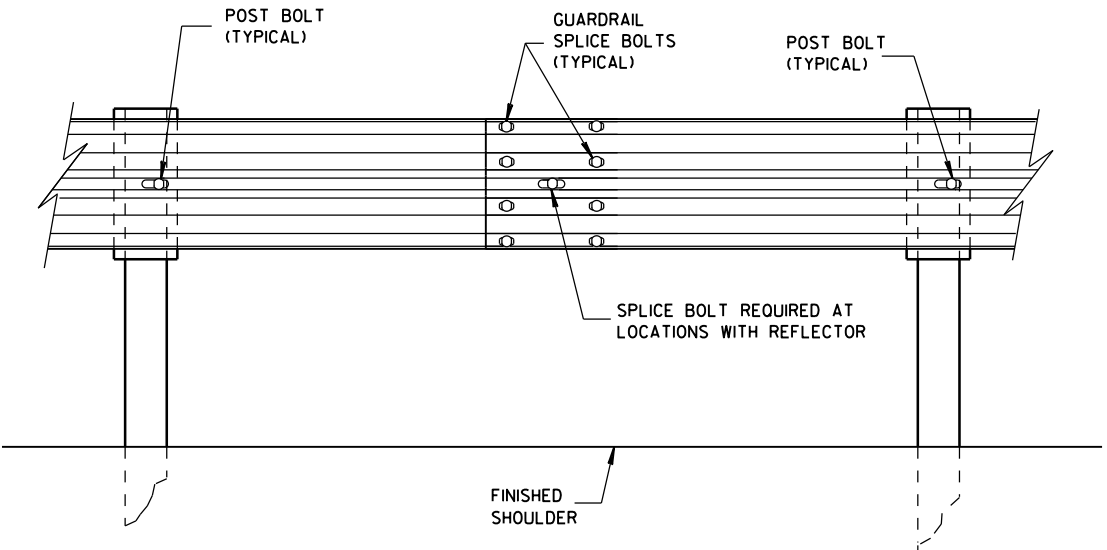
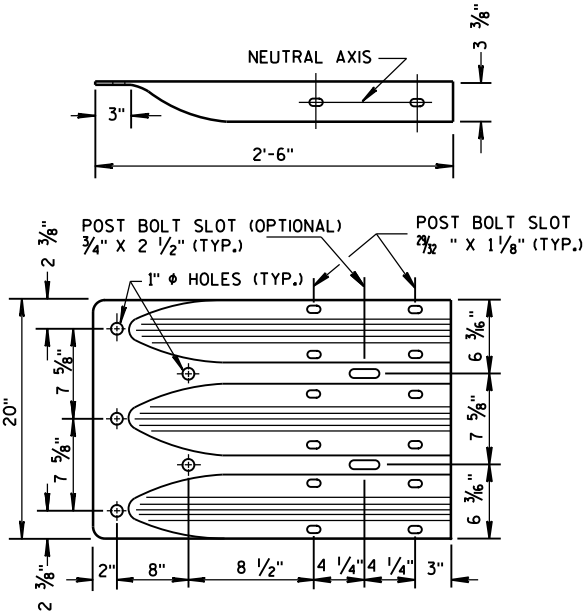


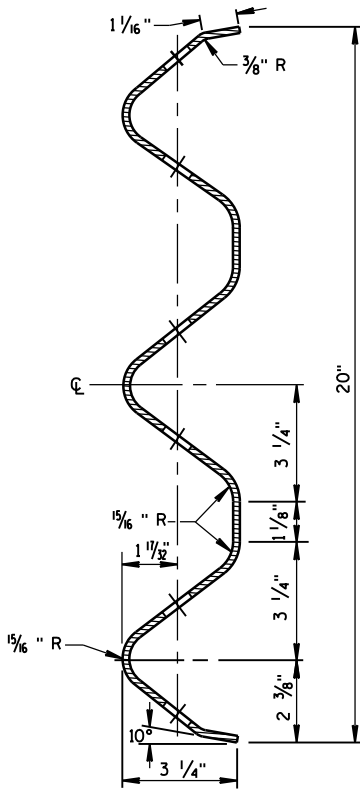
PLATE WASHER DETAIL



SPlice DETAIL



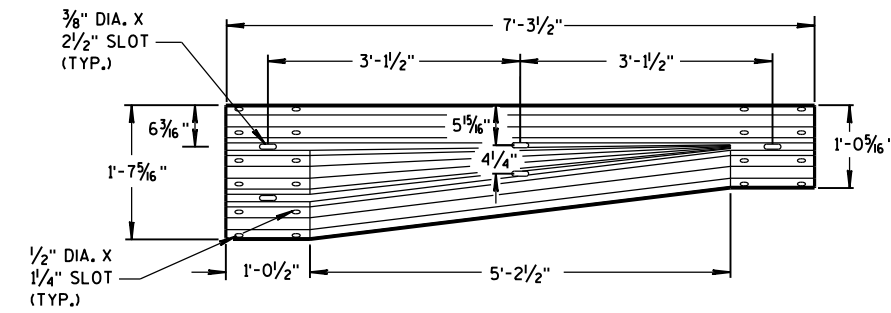
THRIE BEAM
TERMINAL CONNECTOR



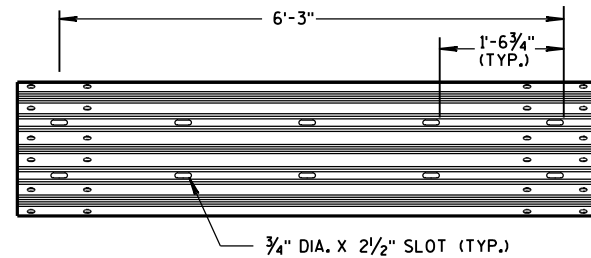
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

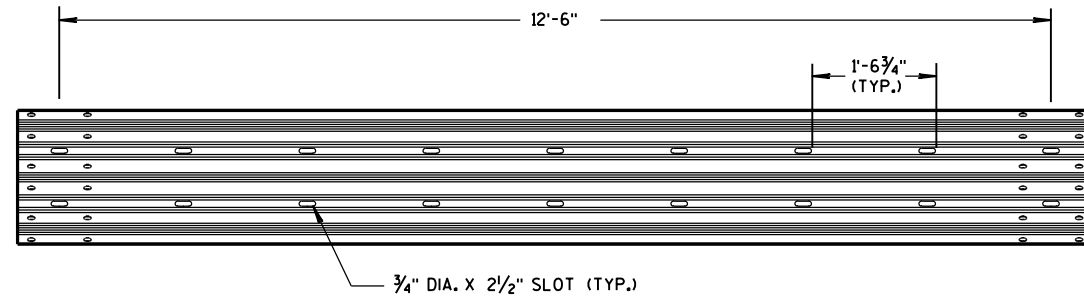
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



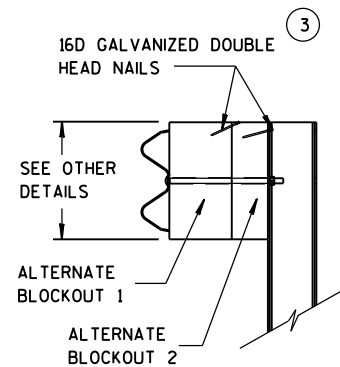
W-BEAM TO THRIE BEAM TRANSITION SECTION



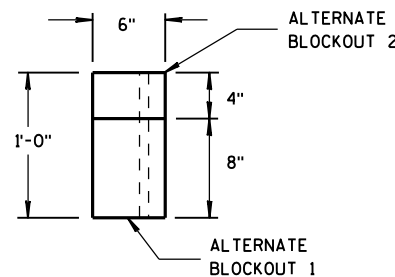
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

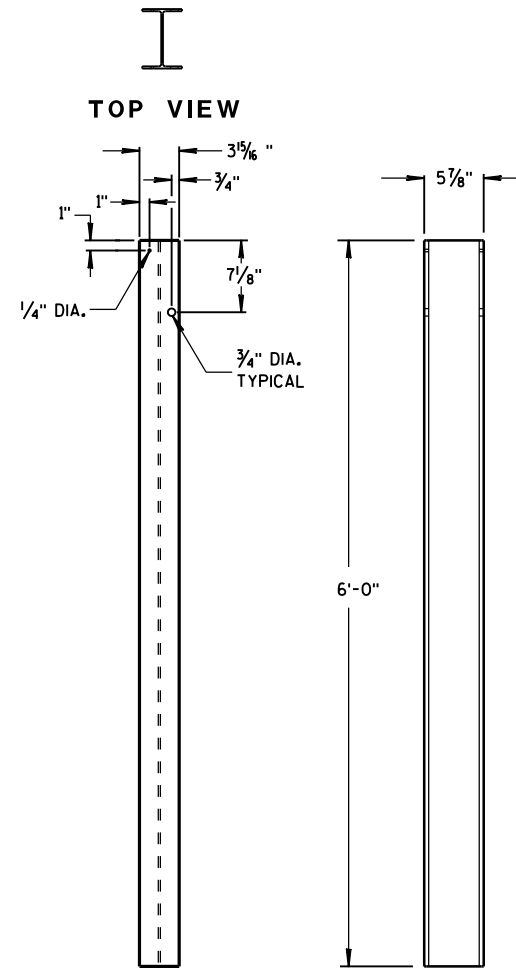


SIDE VIEW



TOP VIEW

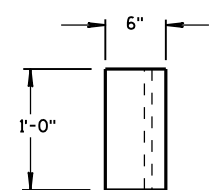
ALTERNATE WOOD BLOCKOUT DETAIL



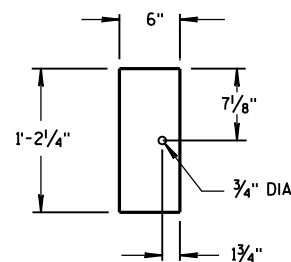
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

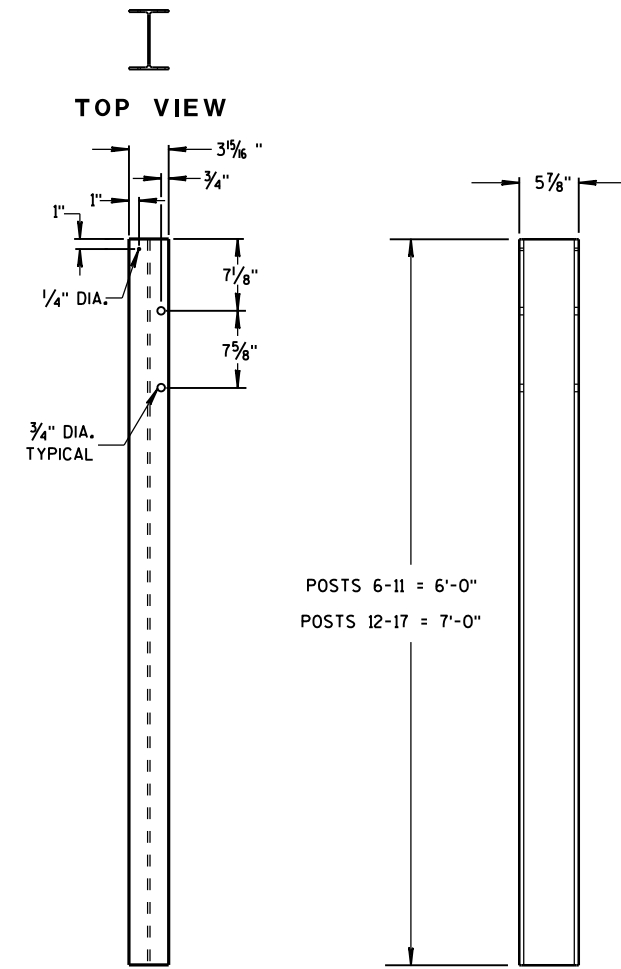


TOP VIEW



FRONT VIEW

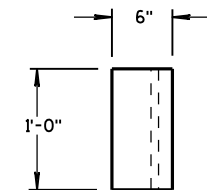
BLOCKOUT
POSTS 1-5



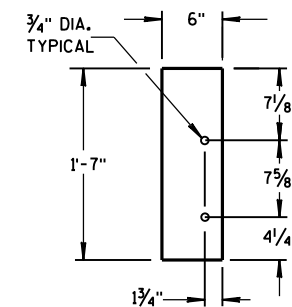
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

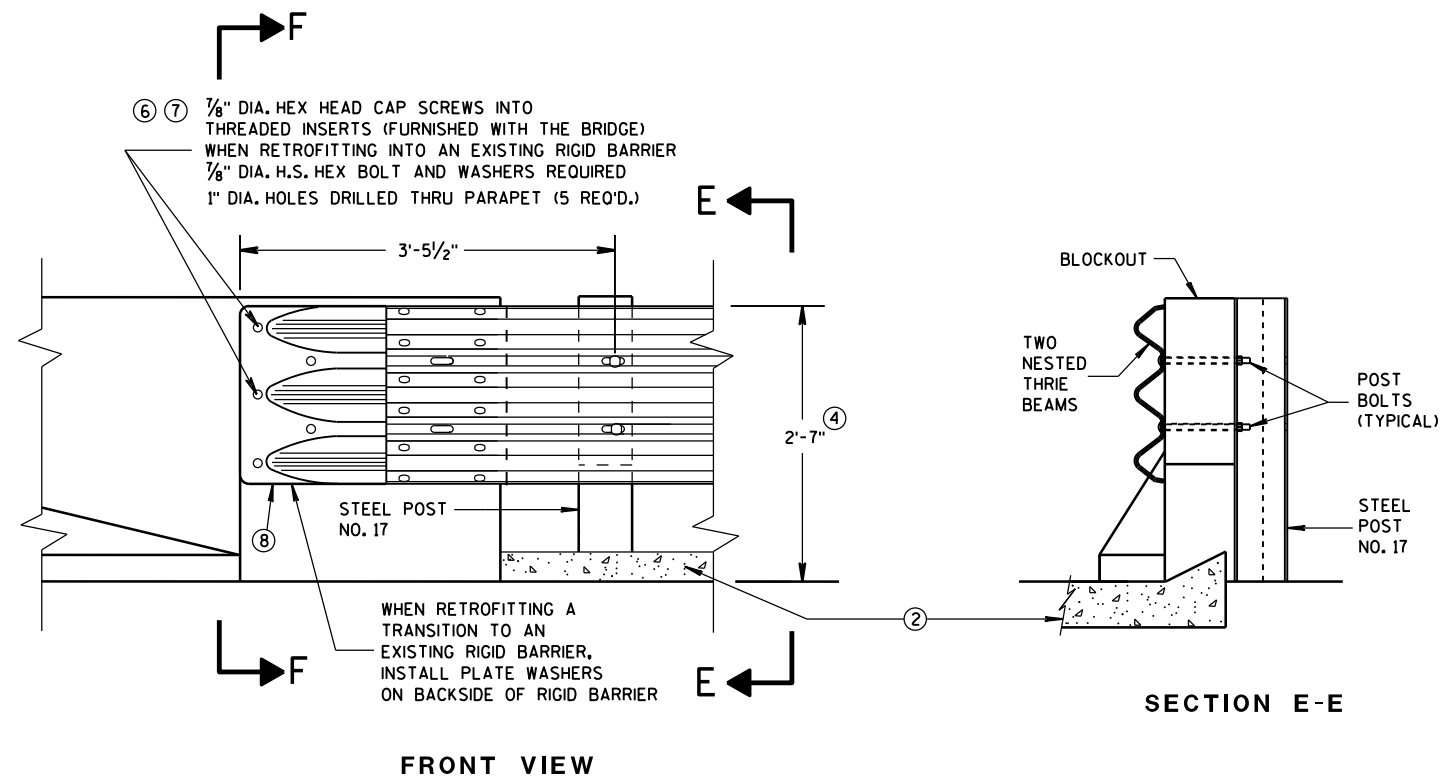
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(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.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

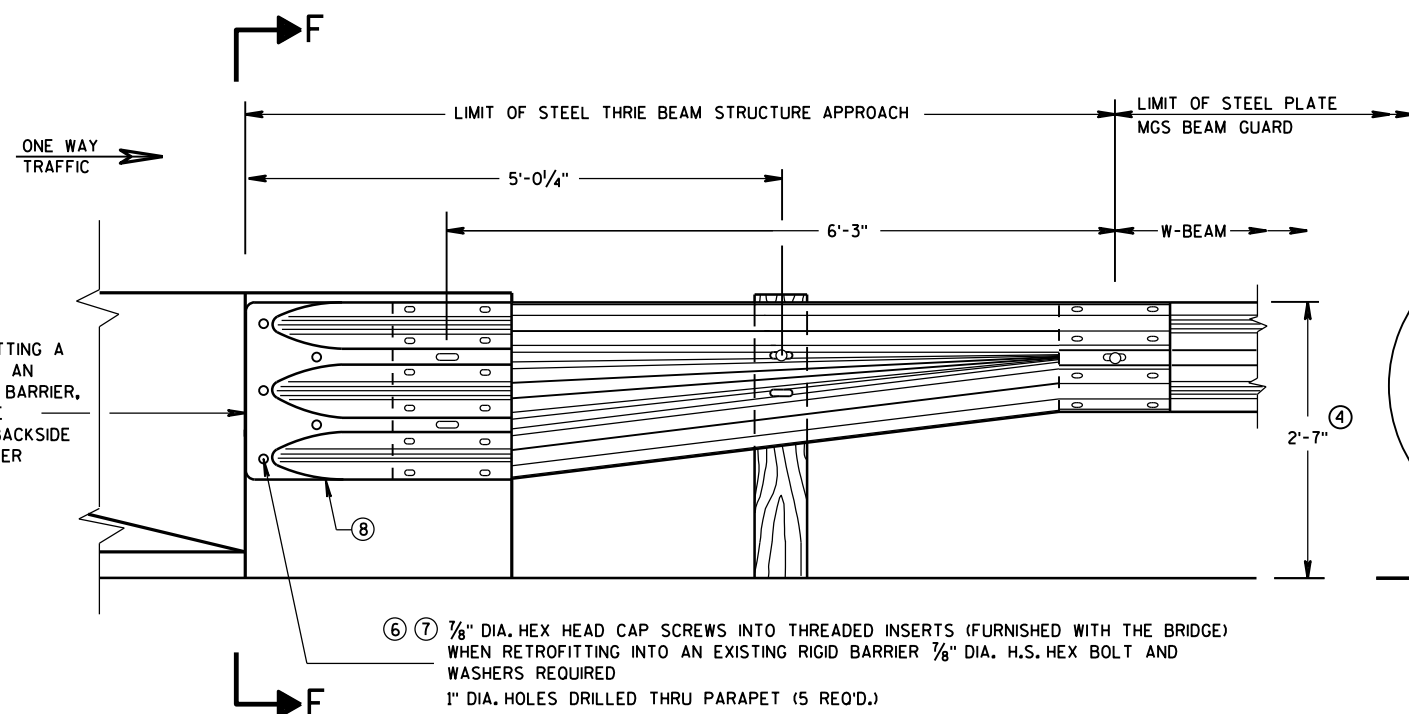
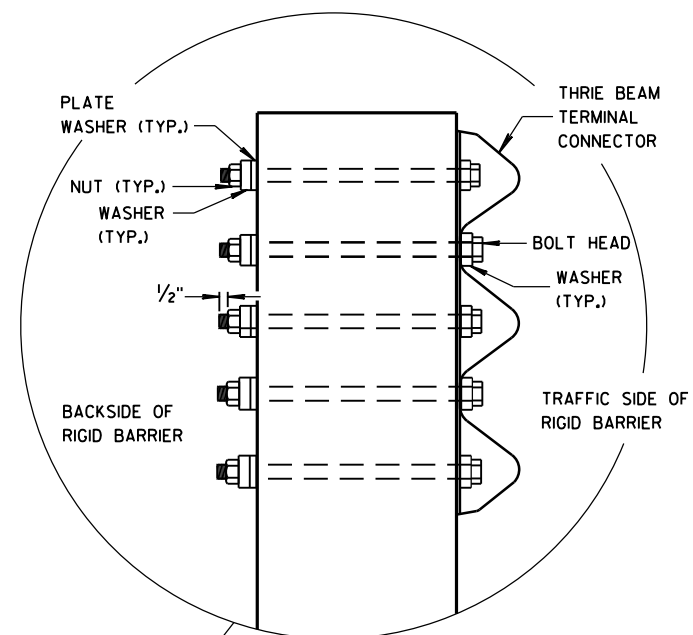
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 102



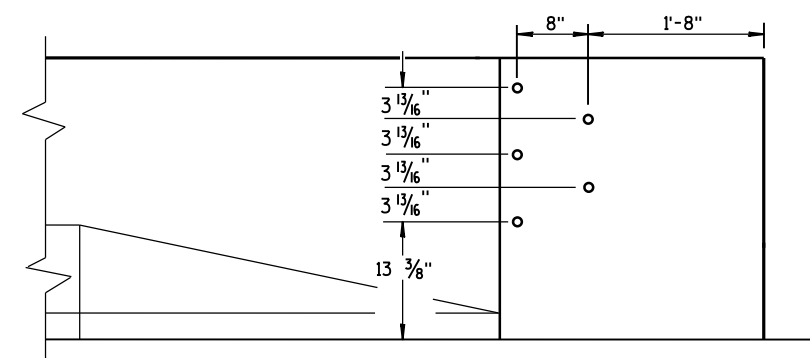
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS 103

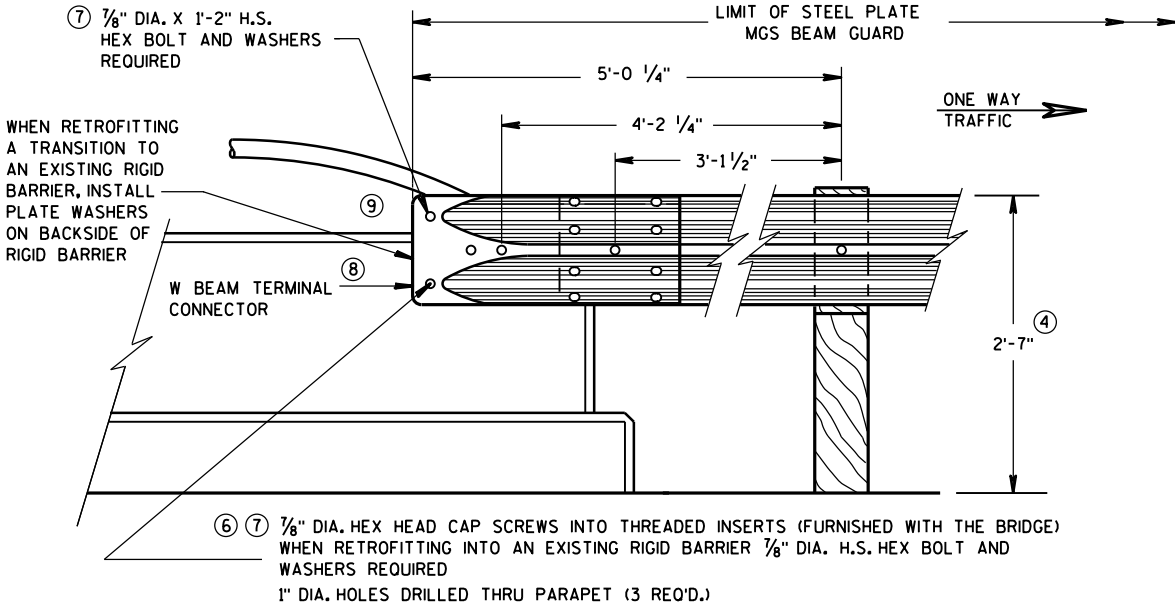
ENGINEER

NT

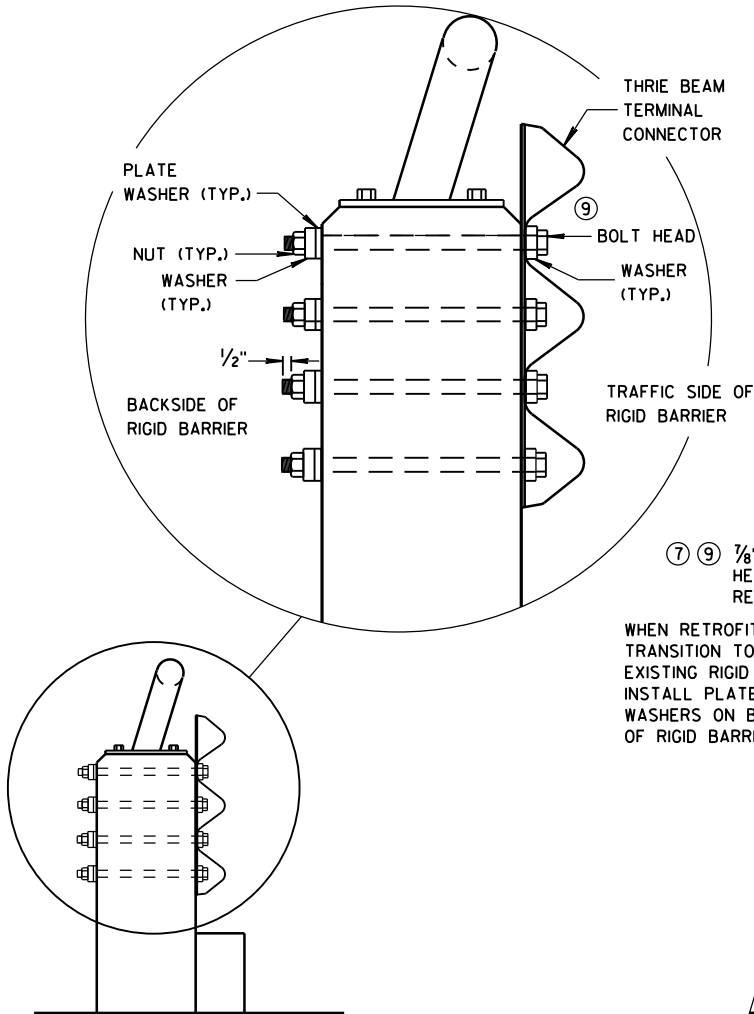
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

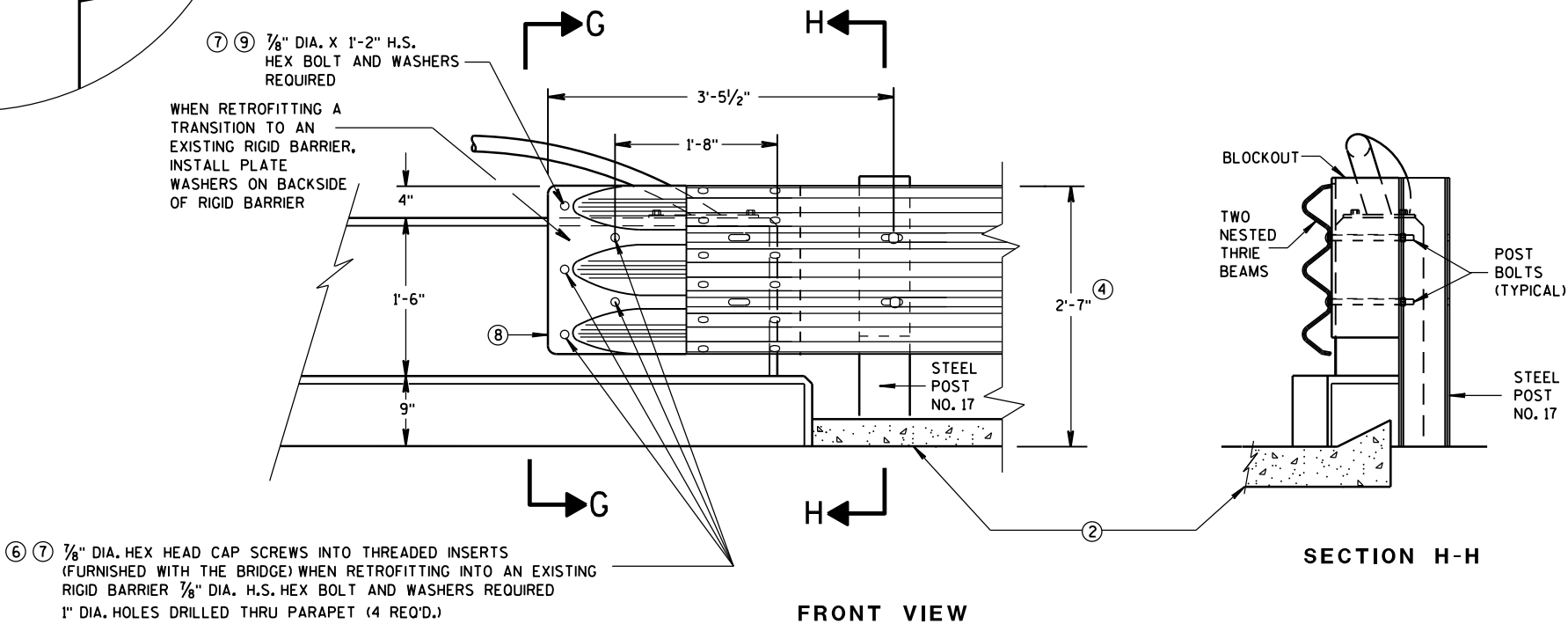
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X $3\frac{1}{2}"$.
- ⑨ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

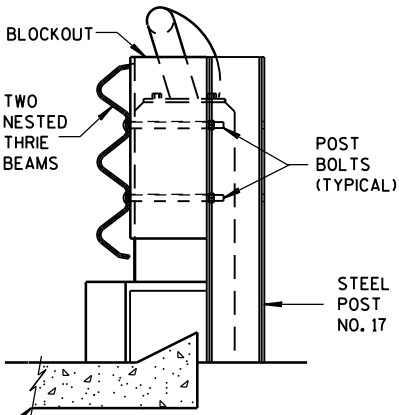


SECTION G-G



FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

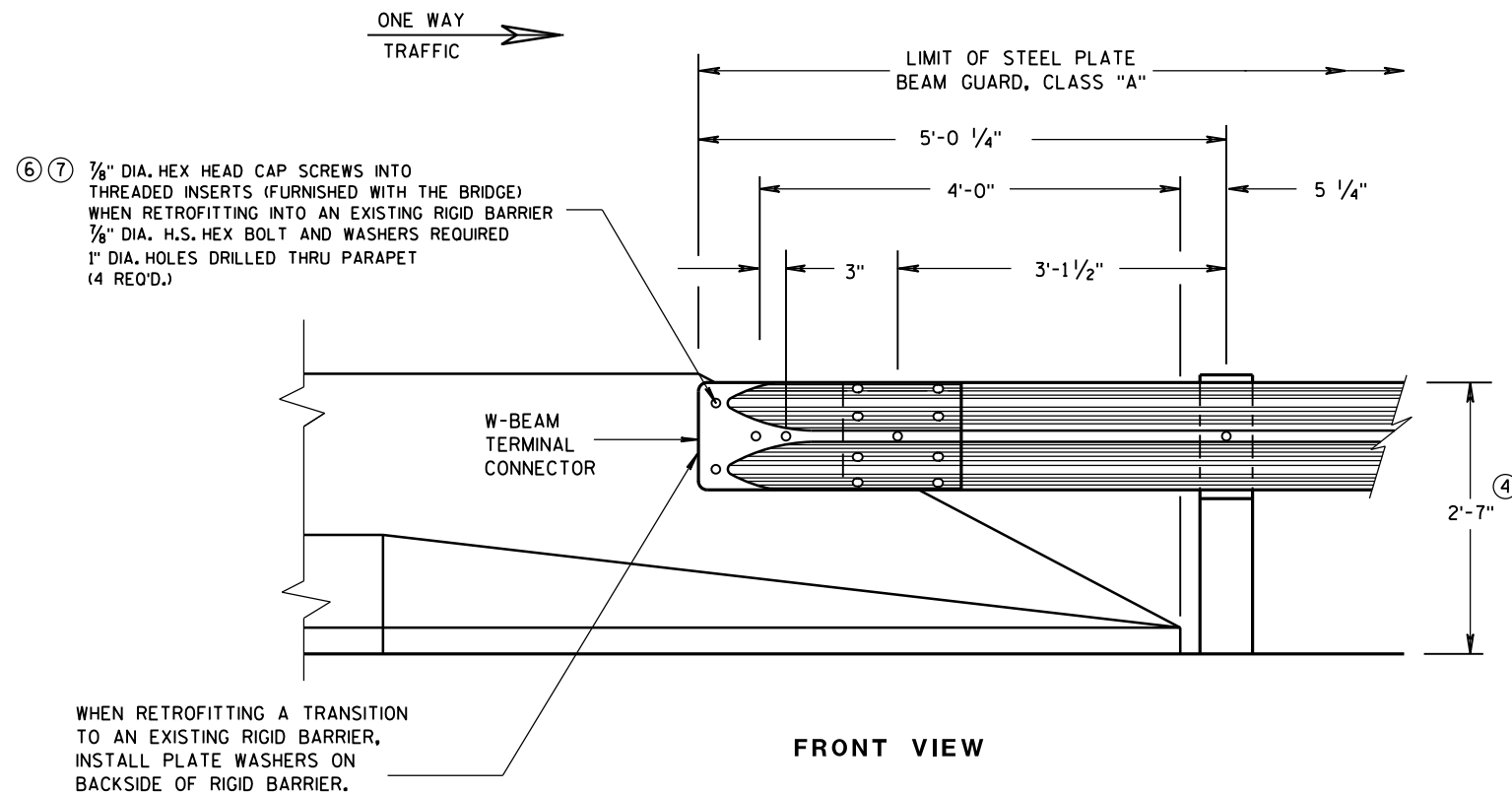


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

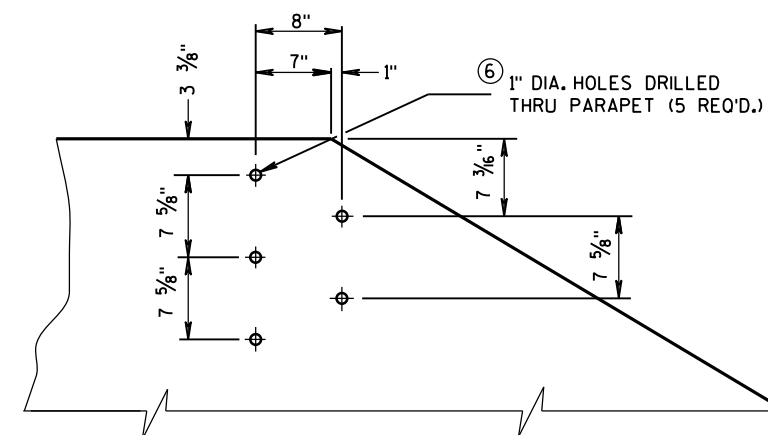
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 104 NT
FHWA ENGINEER

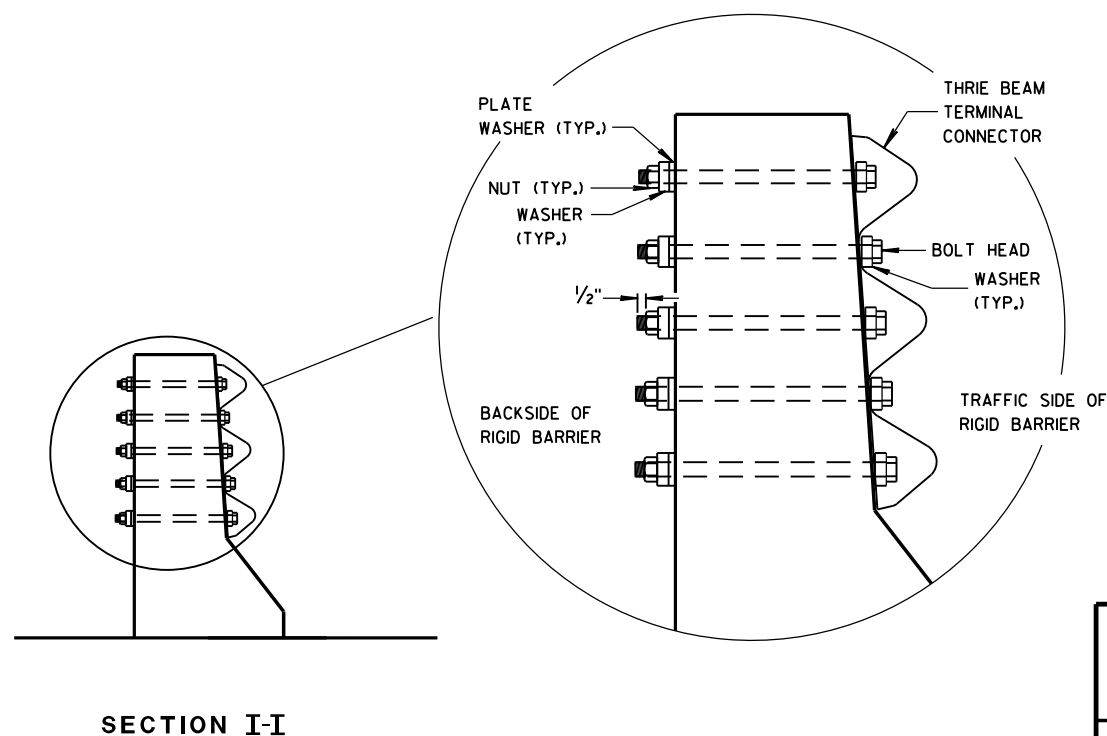
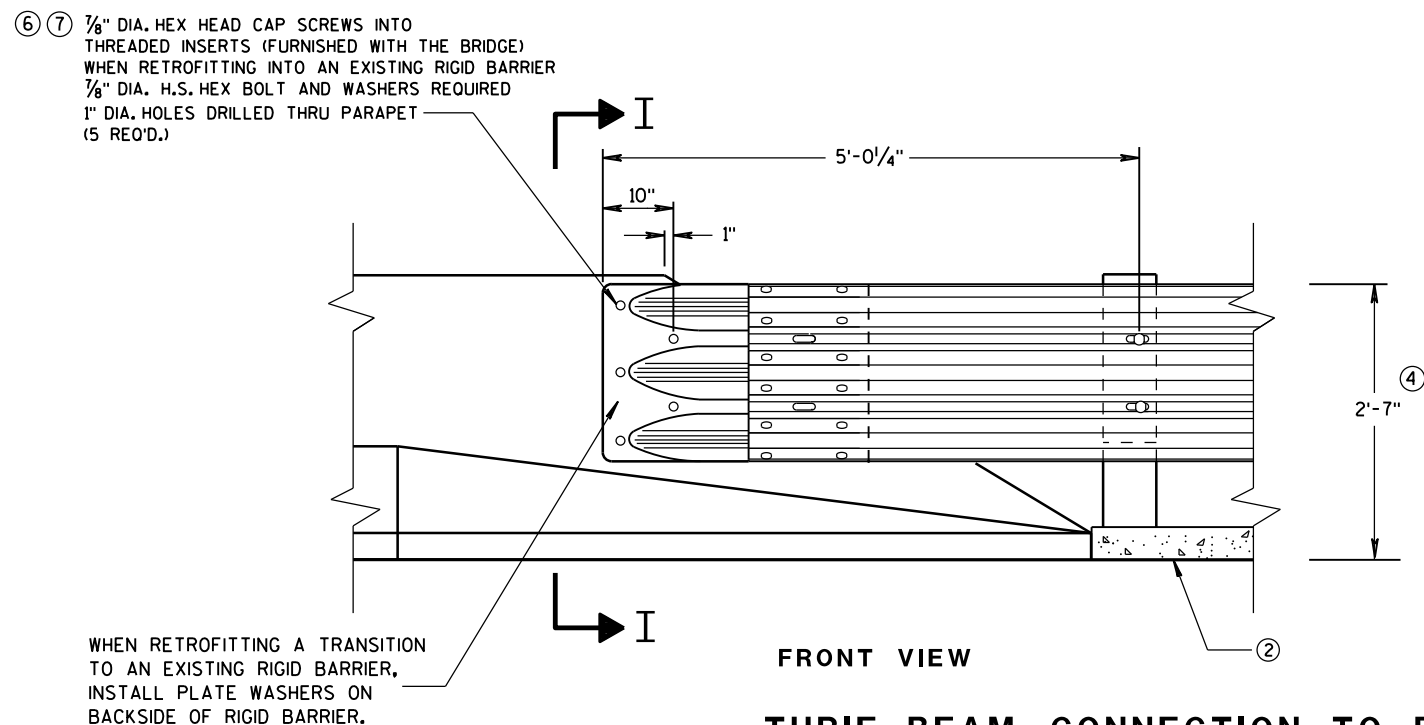


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



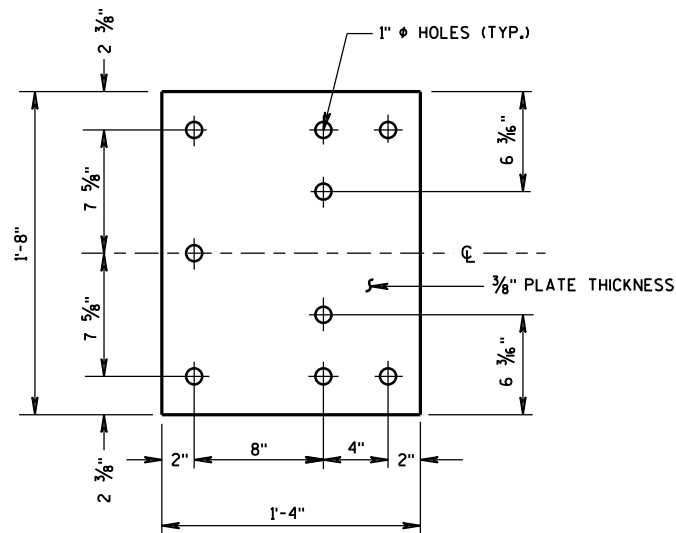
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



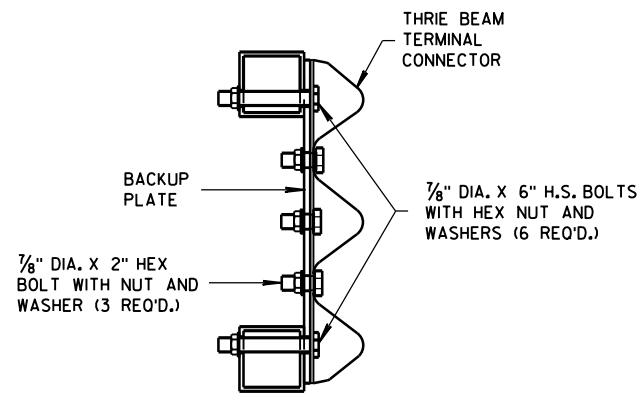
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

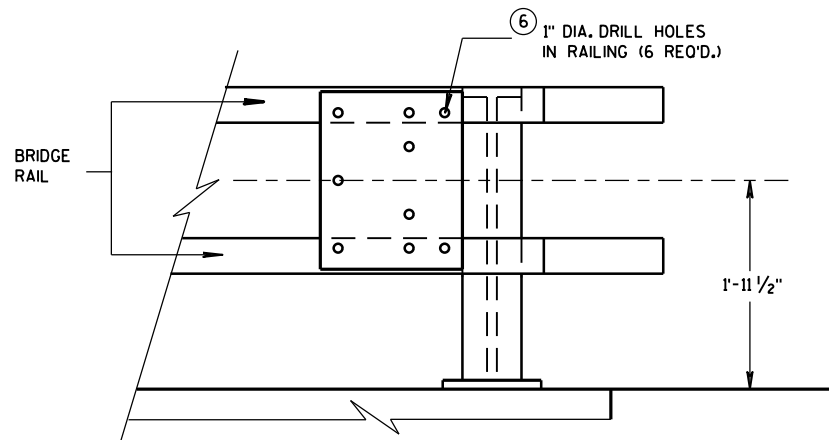
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 105 INT
FHWA



BACK-UP PLATE DETAIL



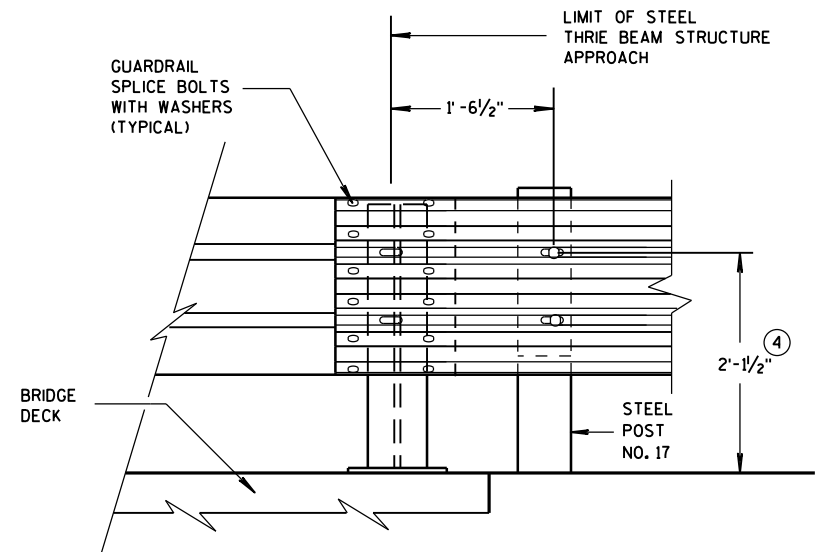
SECTION J-J



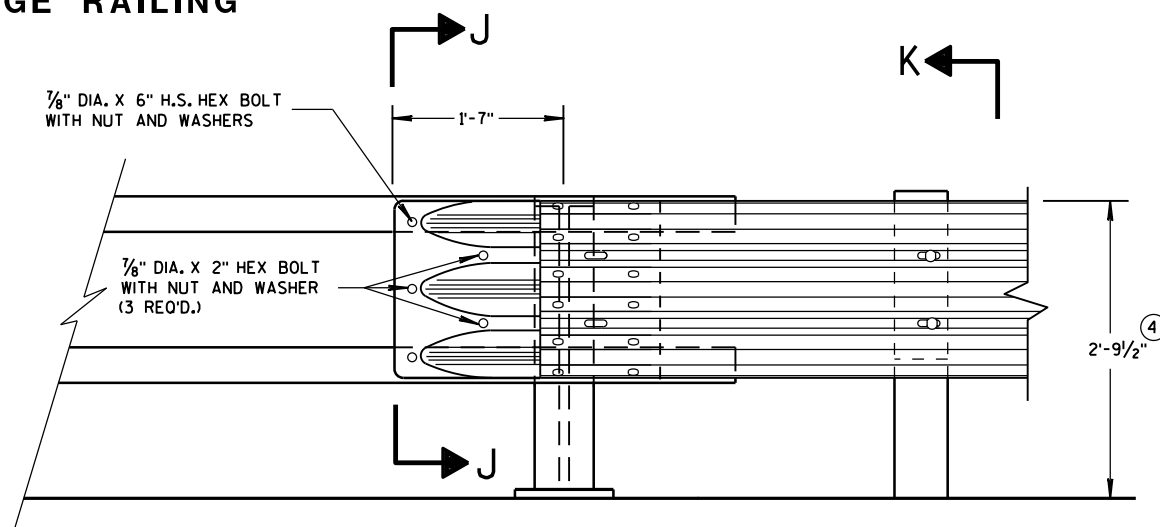
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

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.

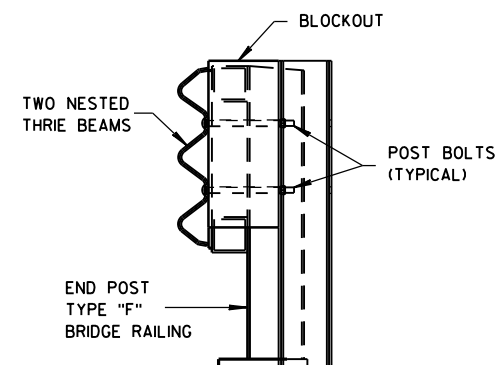


FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"



FRONT VIEW

THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"



SECTION K-K

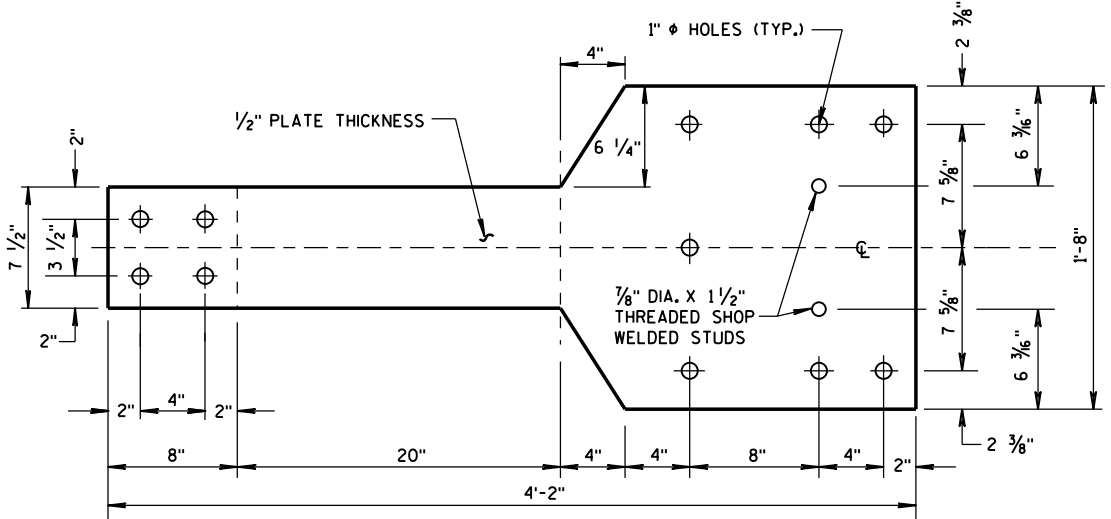
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

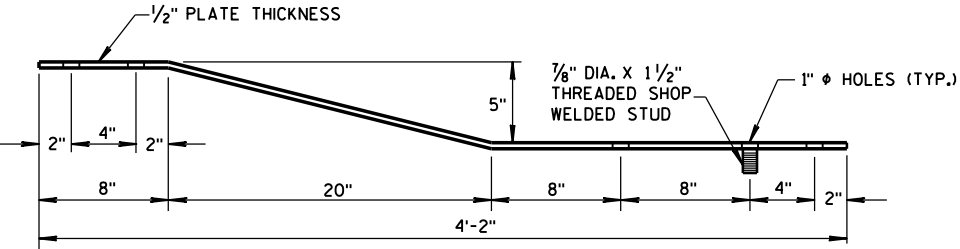
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 106 NT
FHWA ENGINEER

GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

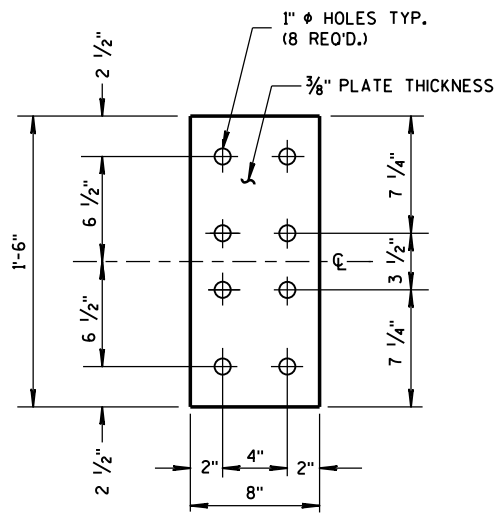


FRONT VIEW



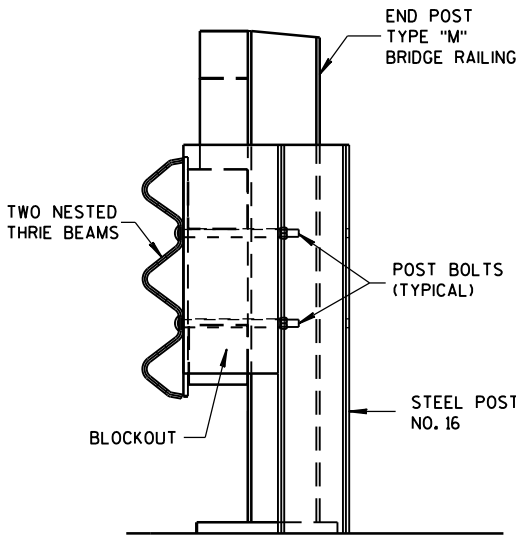
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

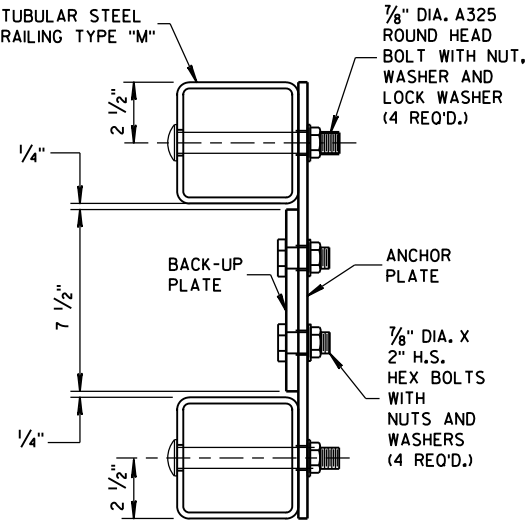


FRONT VIEW

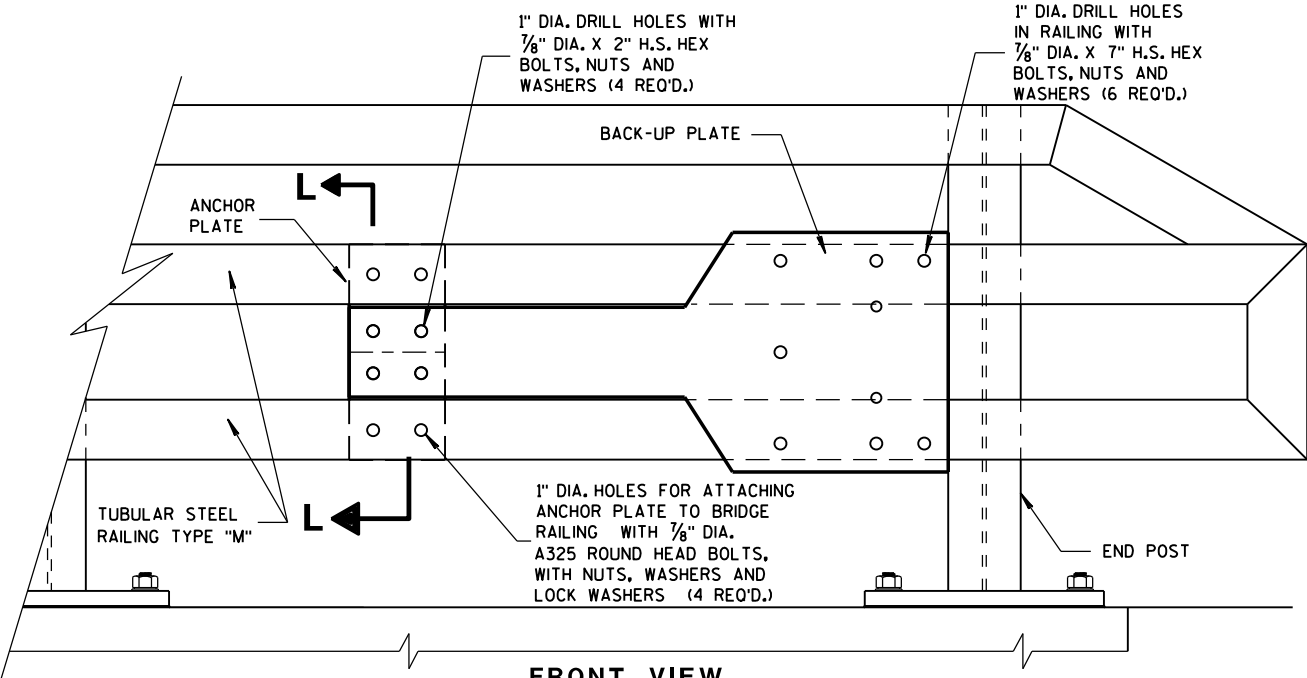
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

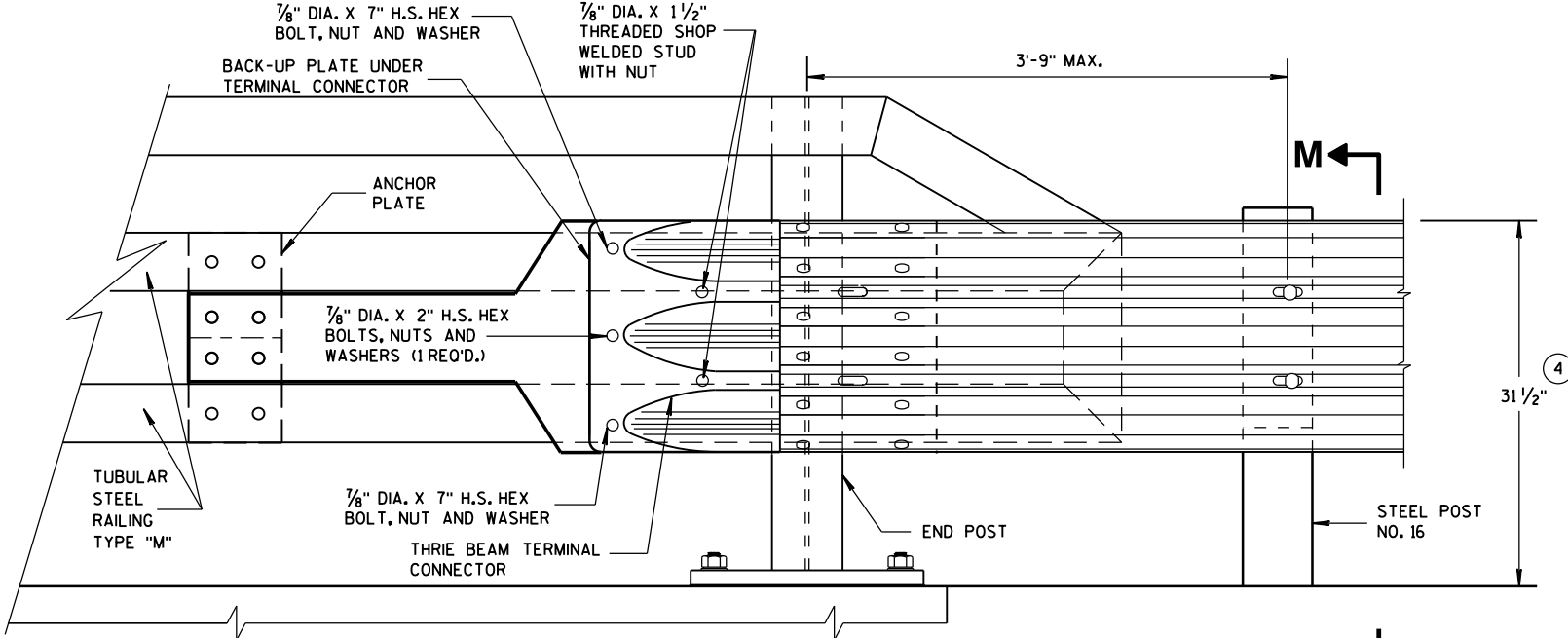


SECTION L-L

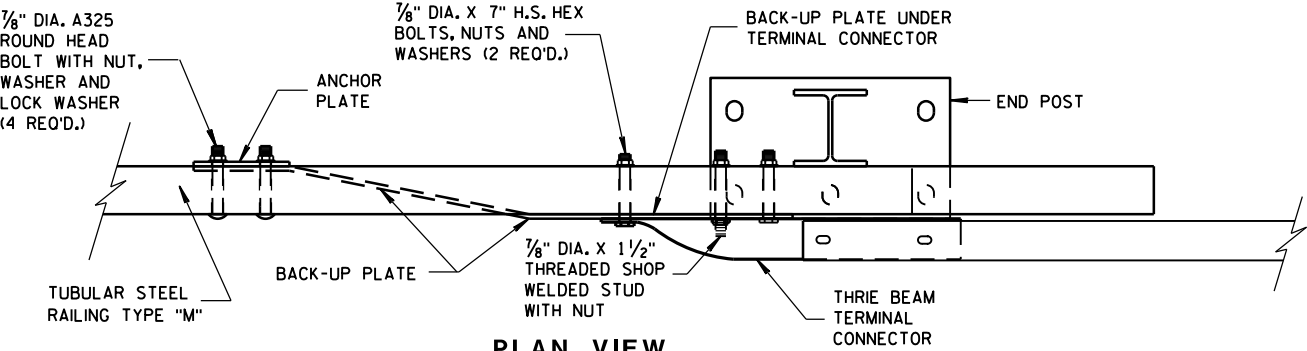


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 107 INT
FHWA ENGINEER



- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
 $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 1/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1/16" x 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 3/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015

DATE

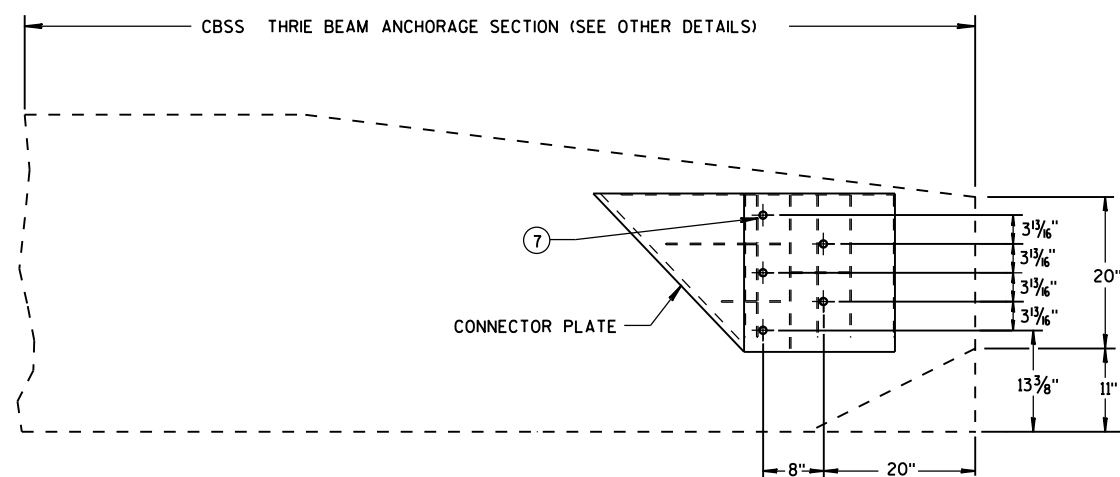
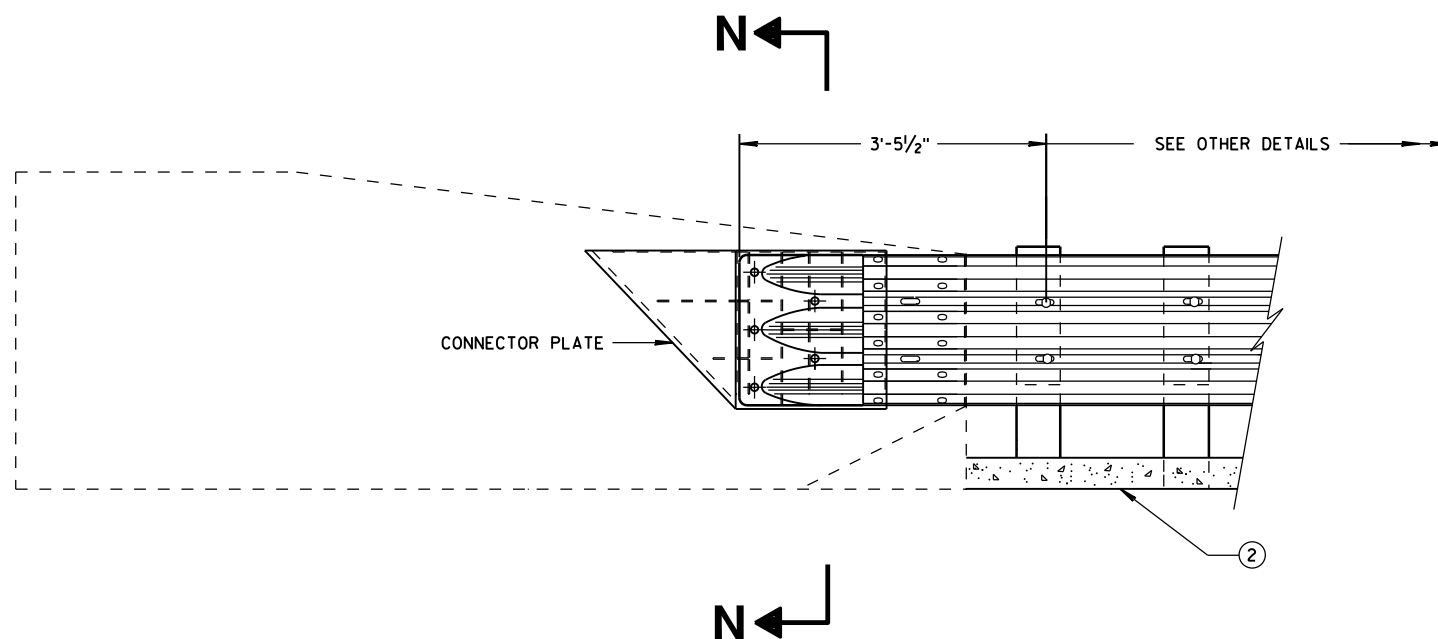
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

108

INT

FHWA

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



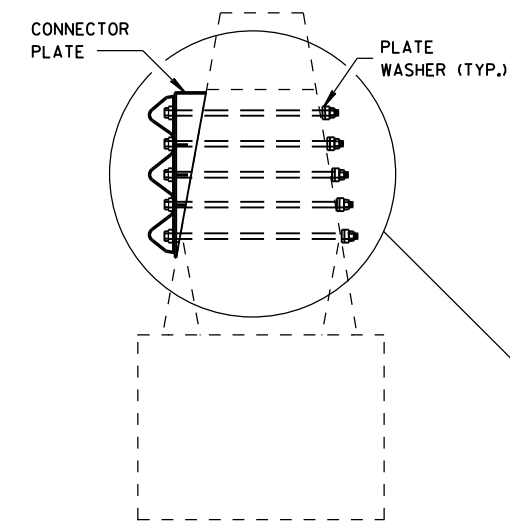
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

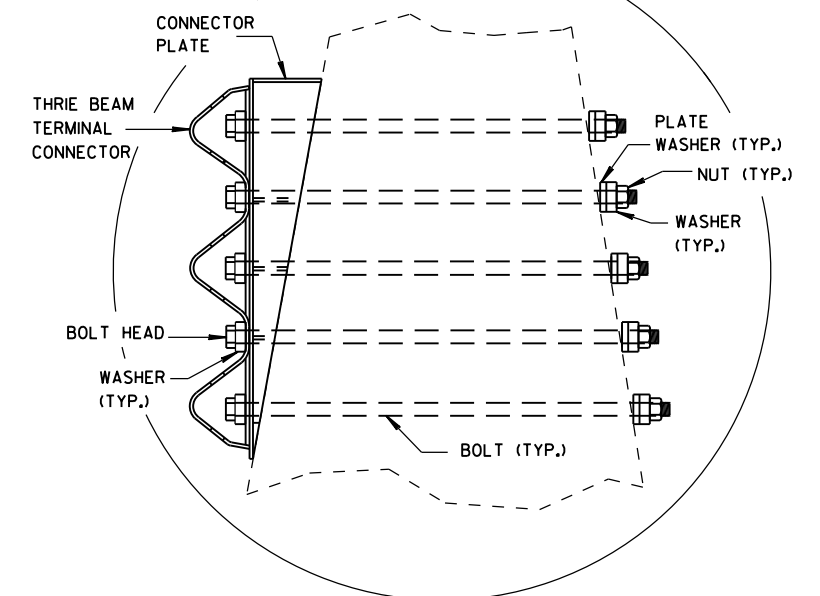
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/s/ Jerry H. Zoog

ROADWAY STANDARDS D 109

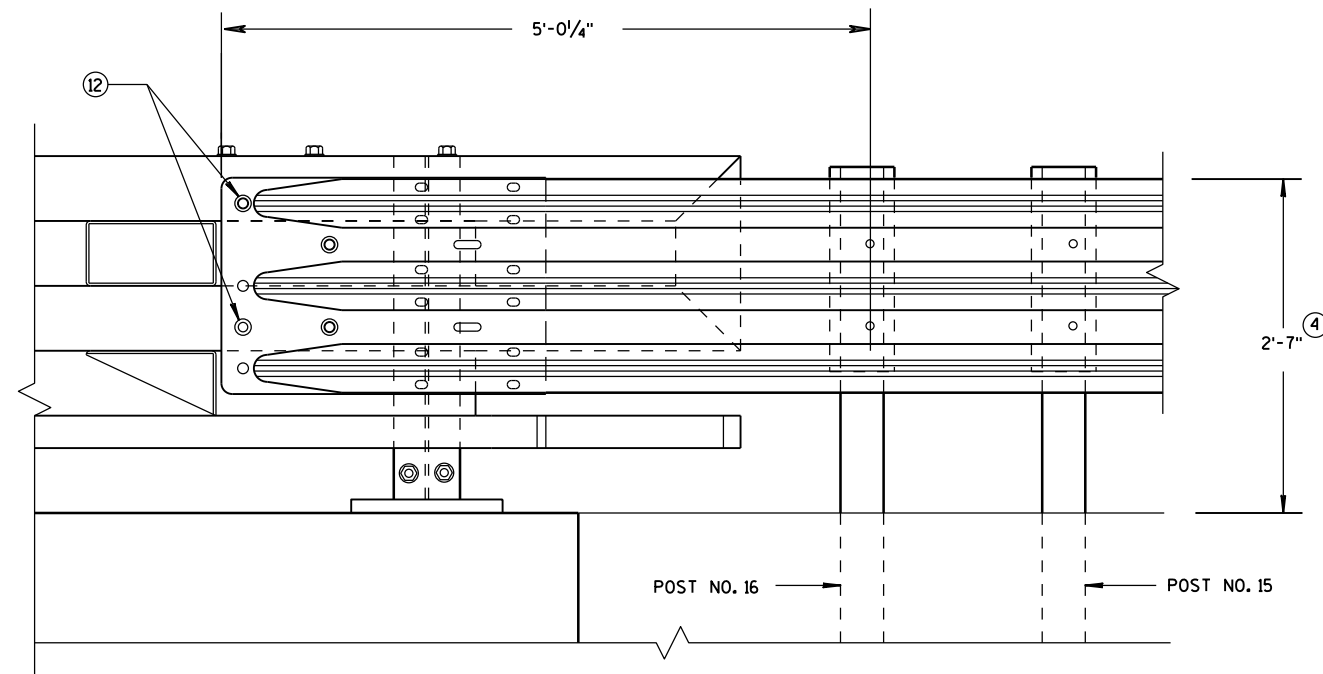
ENGINEER

NT

GENERAL NOTES

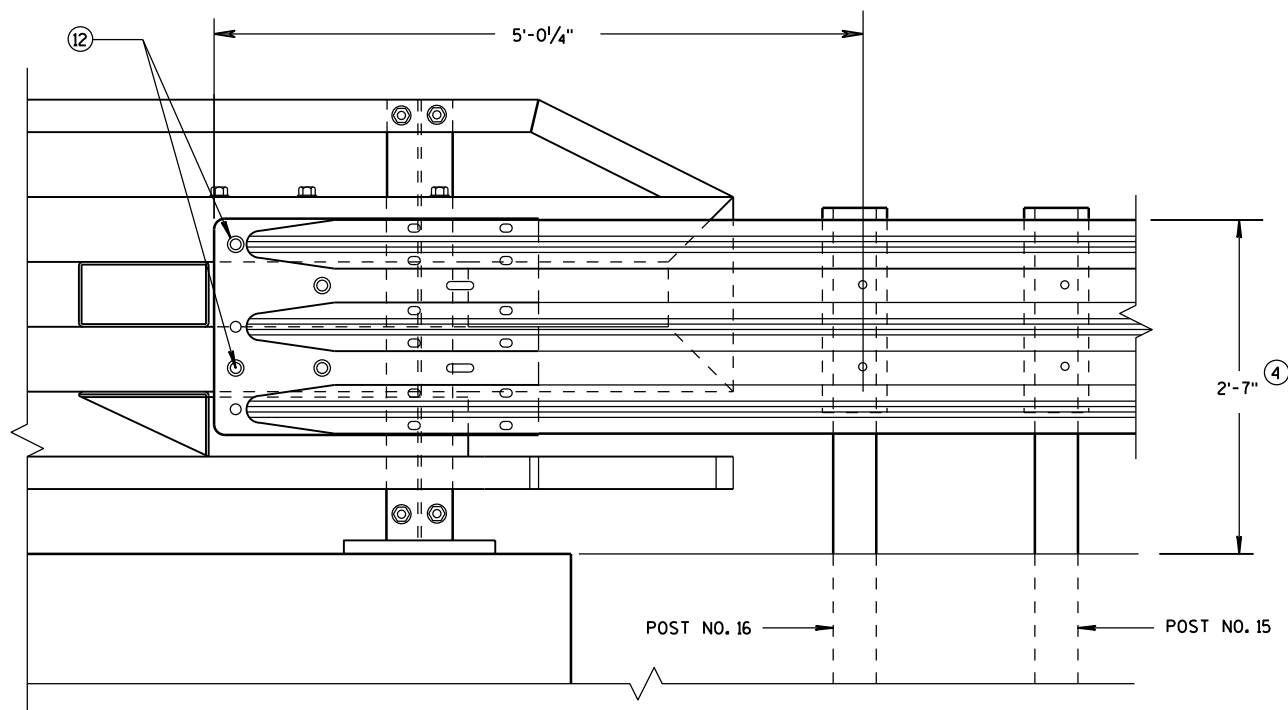
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

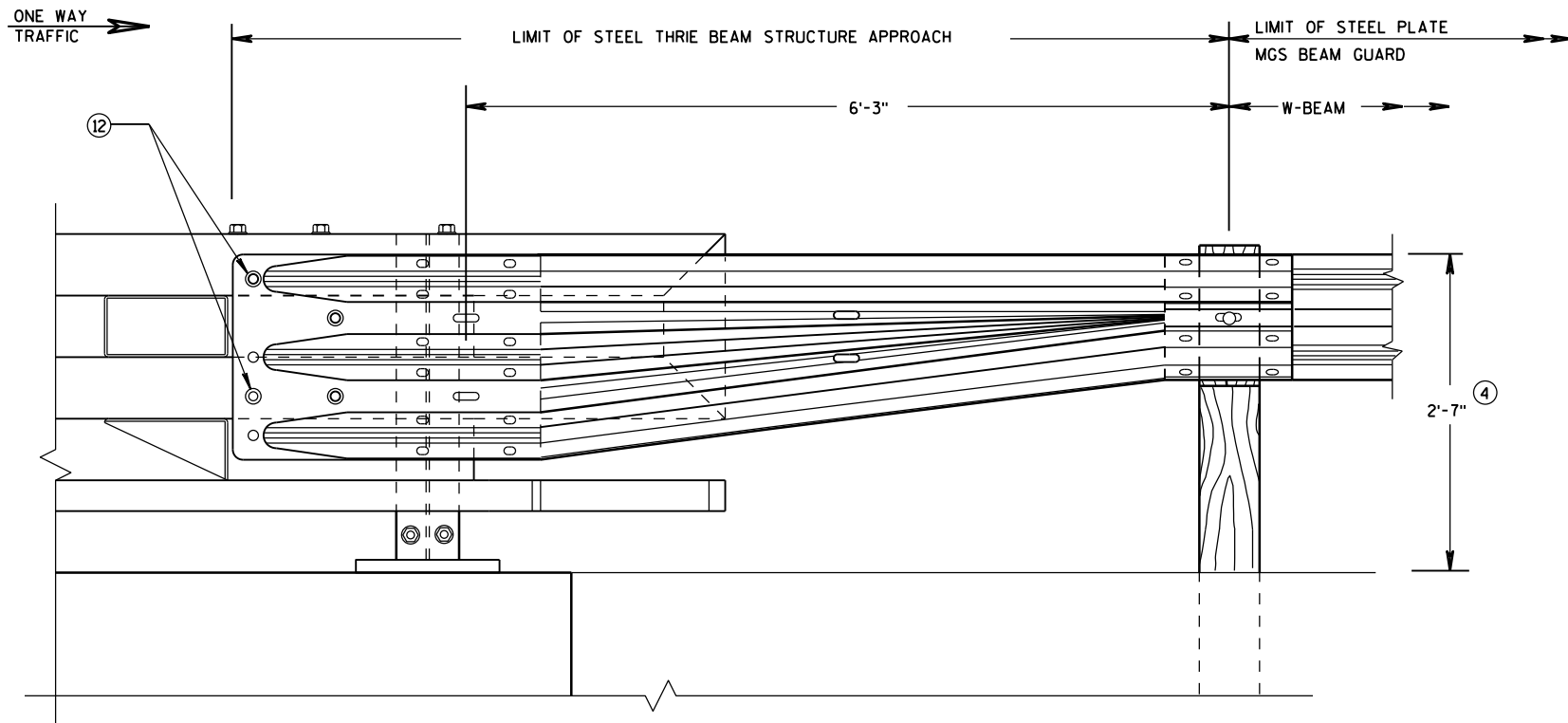
FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS D 110

ENGINEER

NT

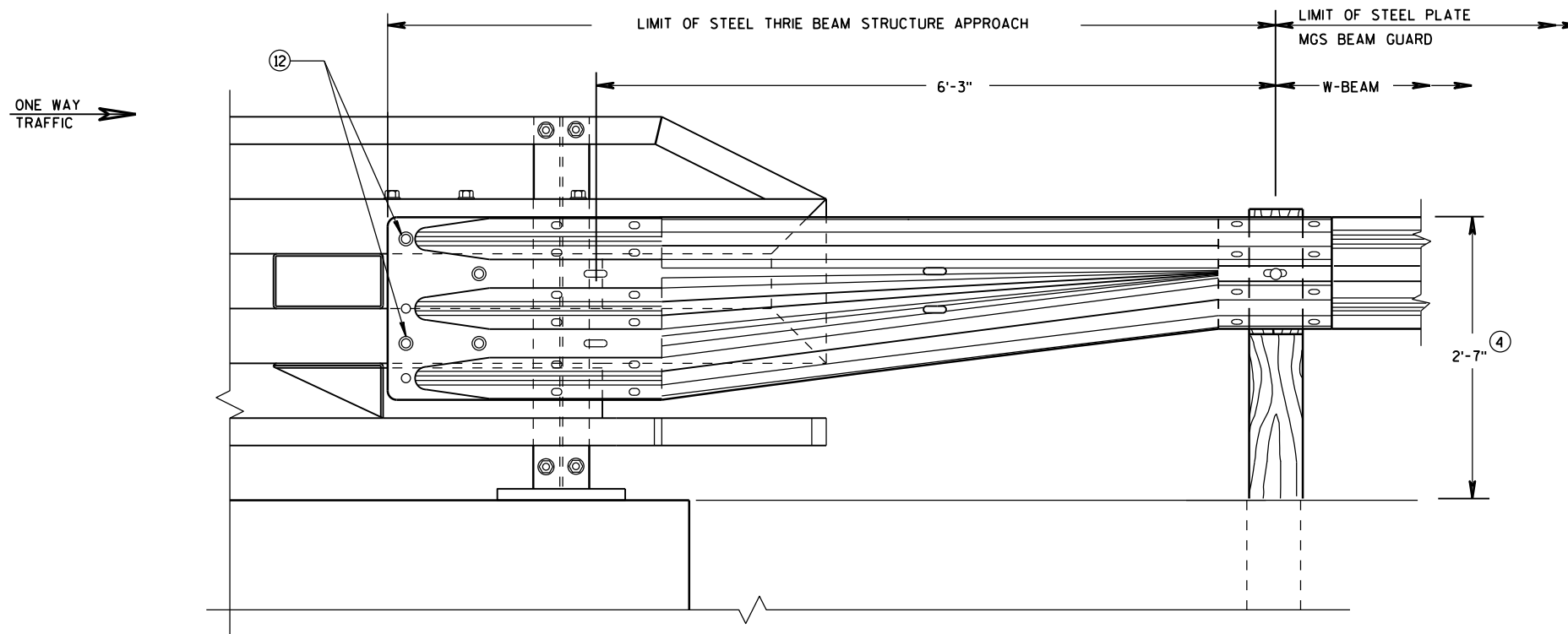


FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY3"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



FRONT VIEW

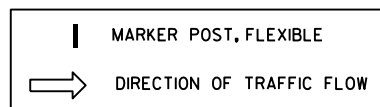
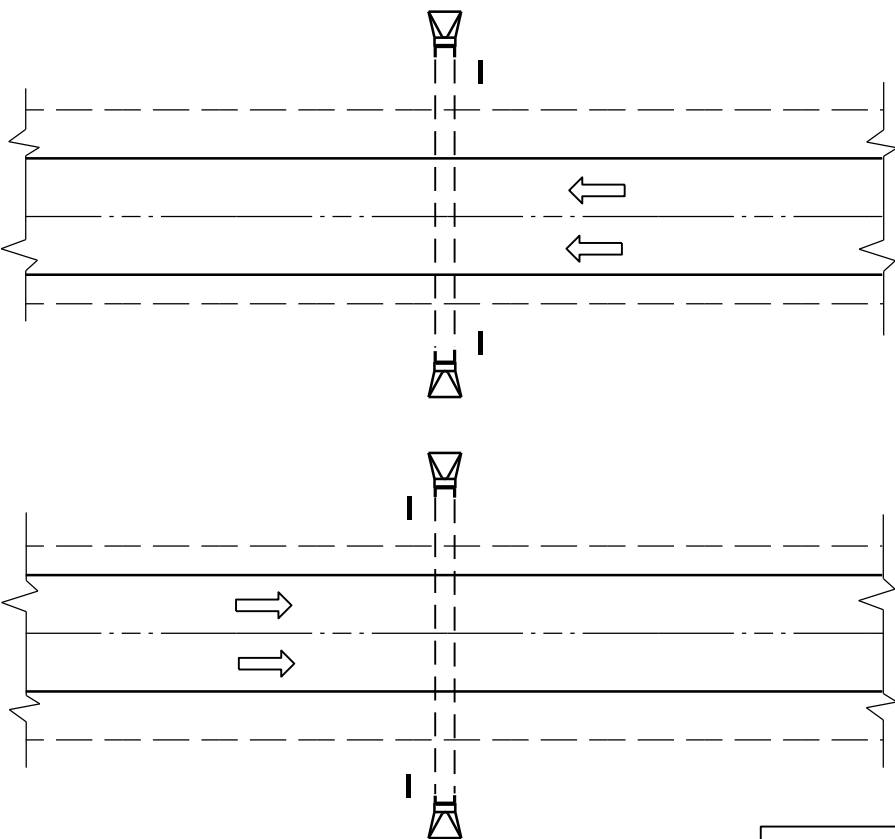
**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

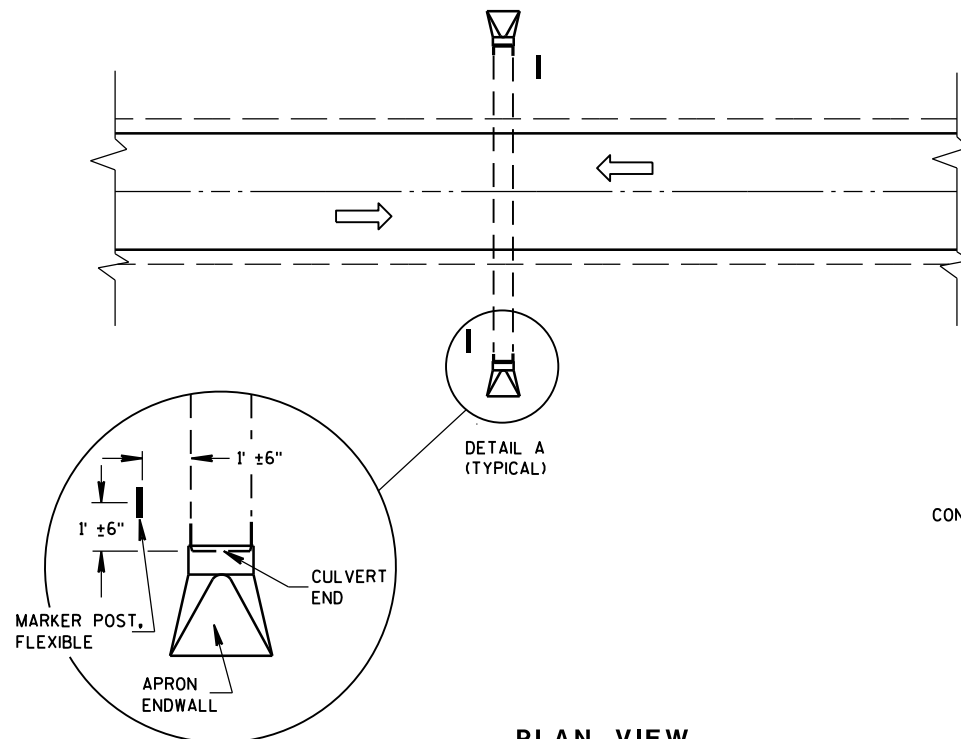
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 111 NT
FHWA ENGINEER

PLAN VIEW
DIVIDED HIGHWAY

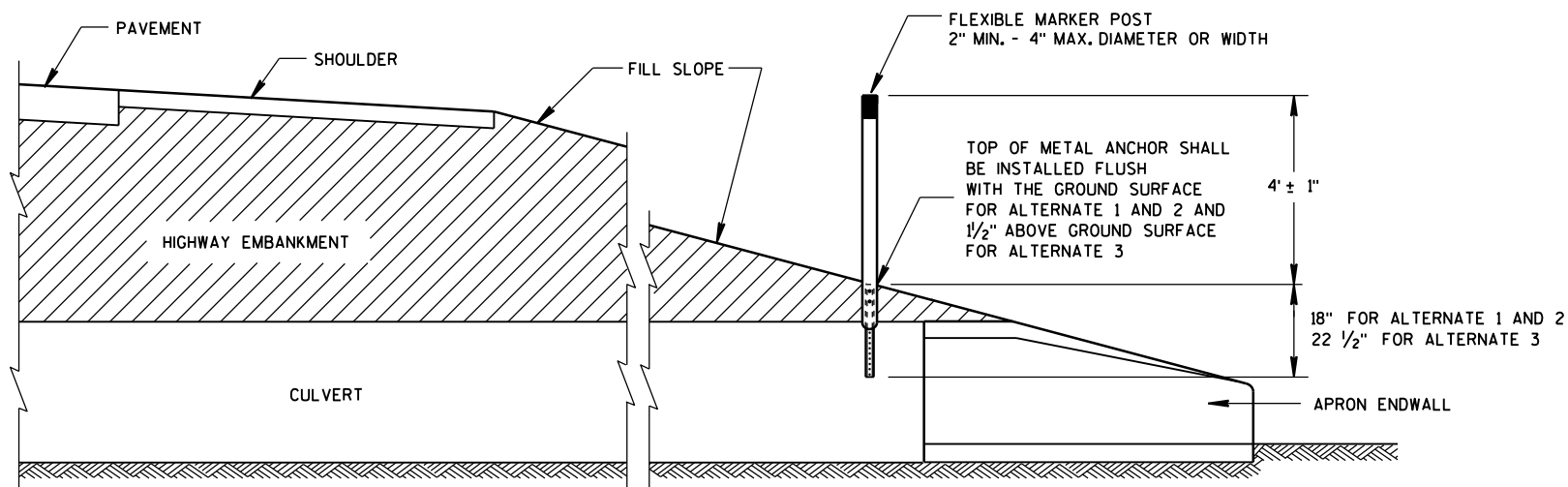


PLAN VIEW
UNDIVIDED HIGHWAY



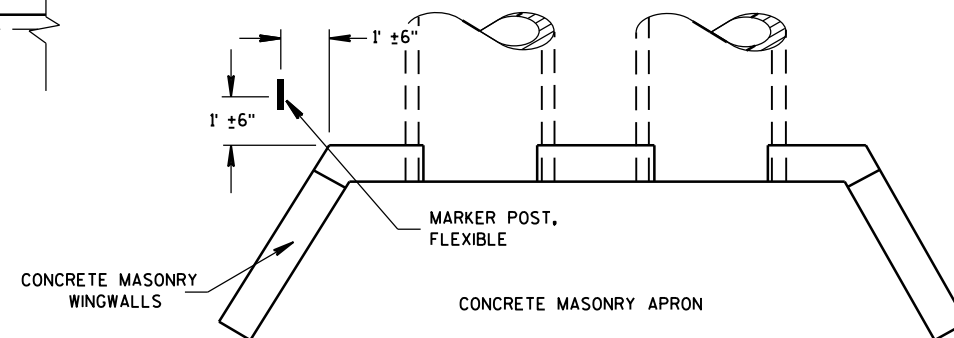
FLEXIBLE MARKER POST LOCATION

CROSS SECTION
FLEXIBLE MARKER POST



GENERAL NOTES

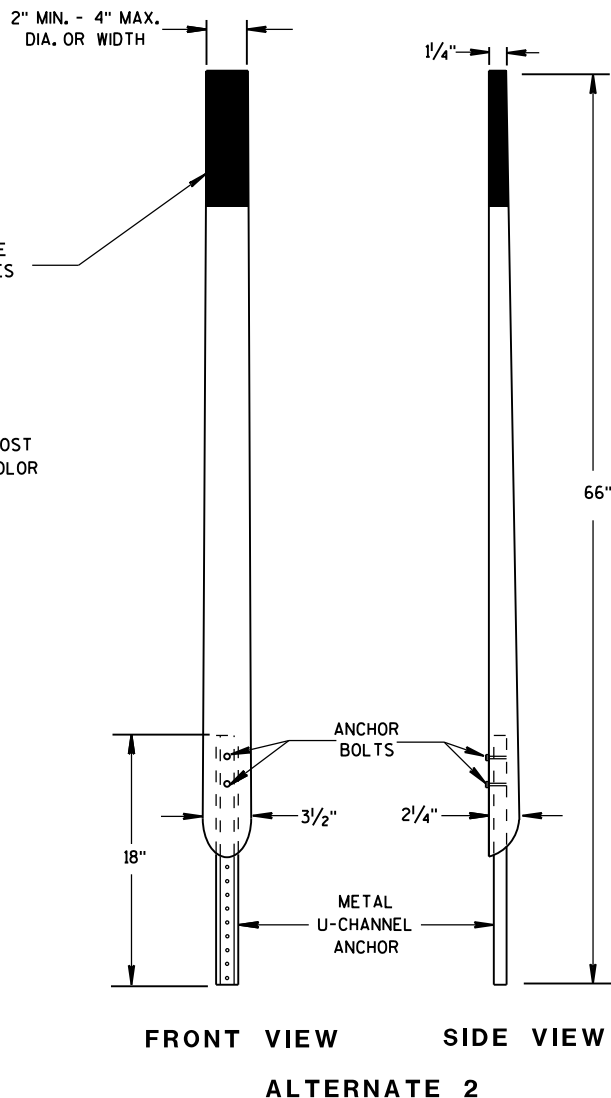
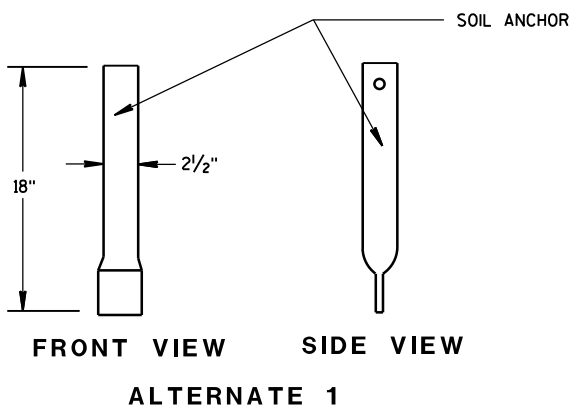
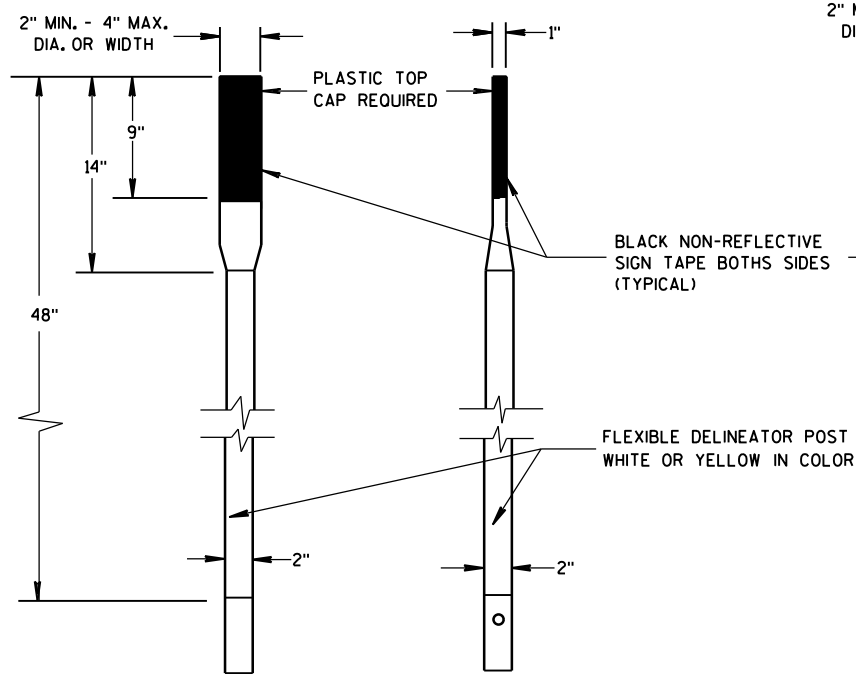
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



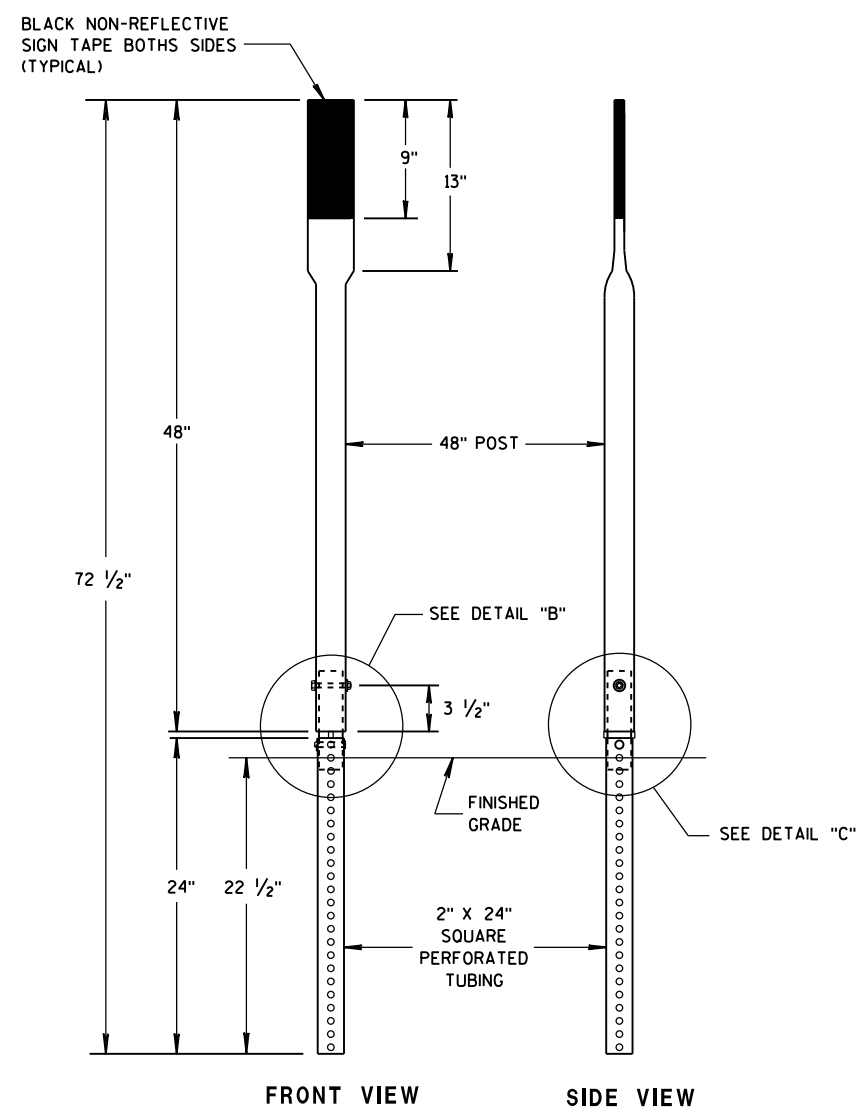
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST
FOR CULVERT END

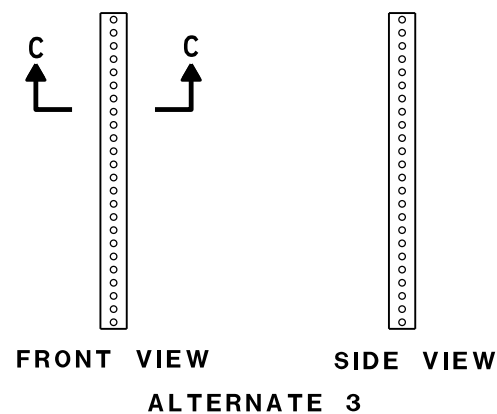
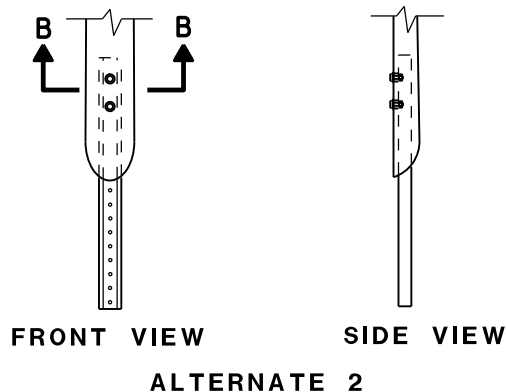
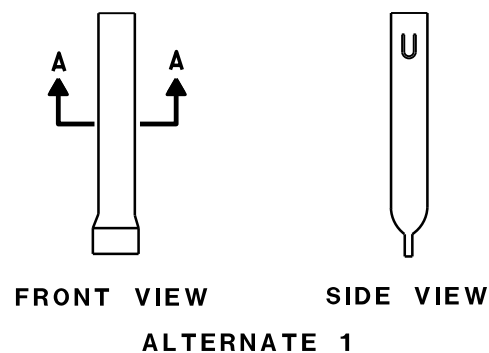
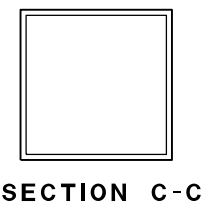
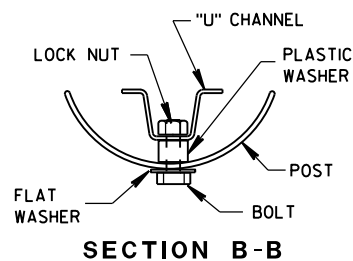
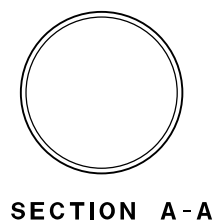
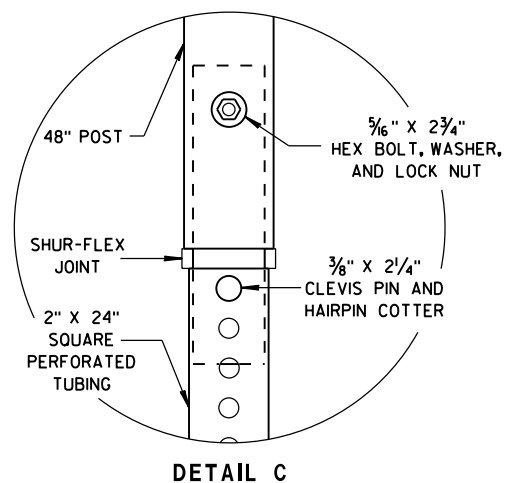
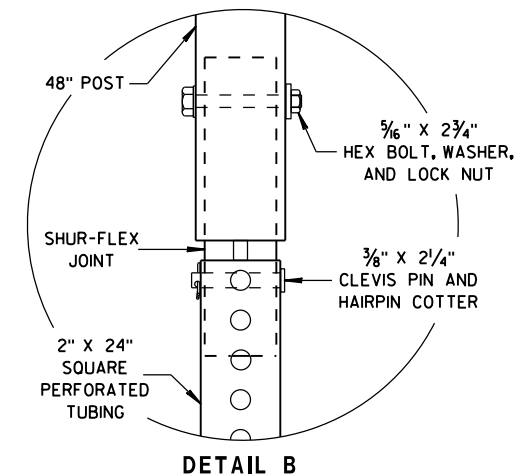
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 112



FLEXIBLE MARKER POSTS



ALTERNATE 3

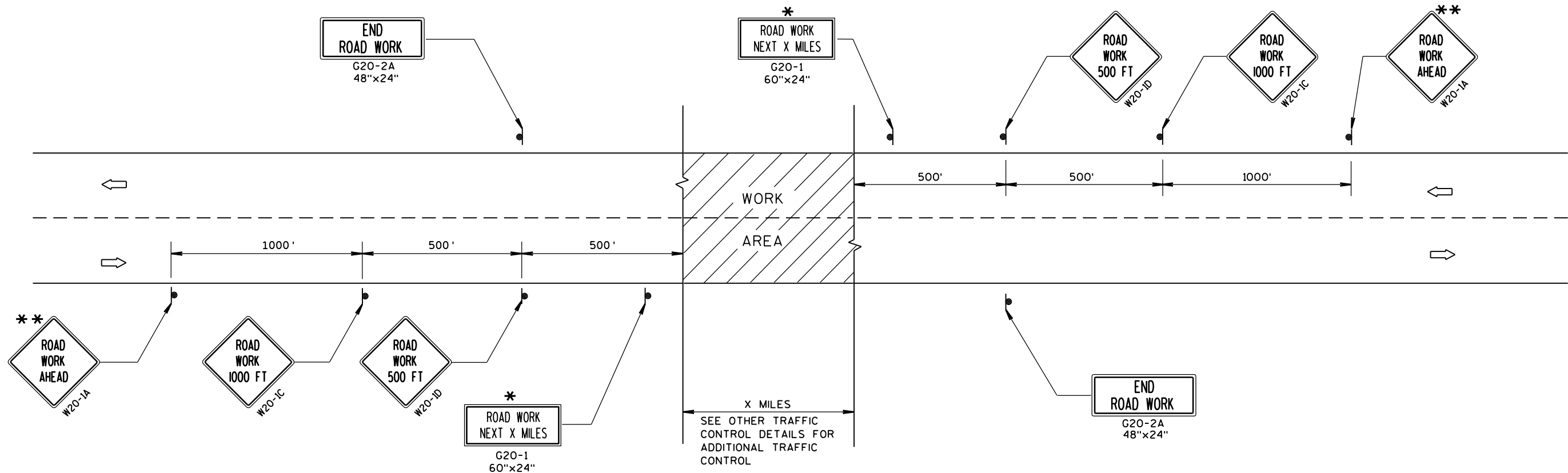


FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER 113 IGN
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.

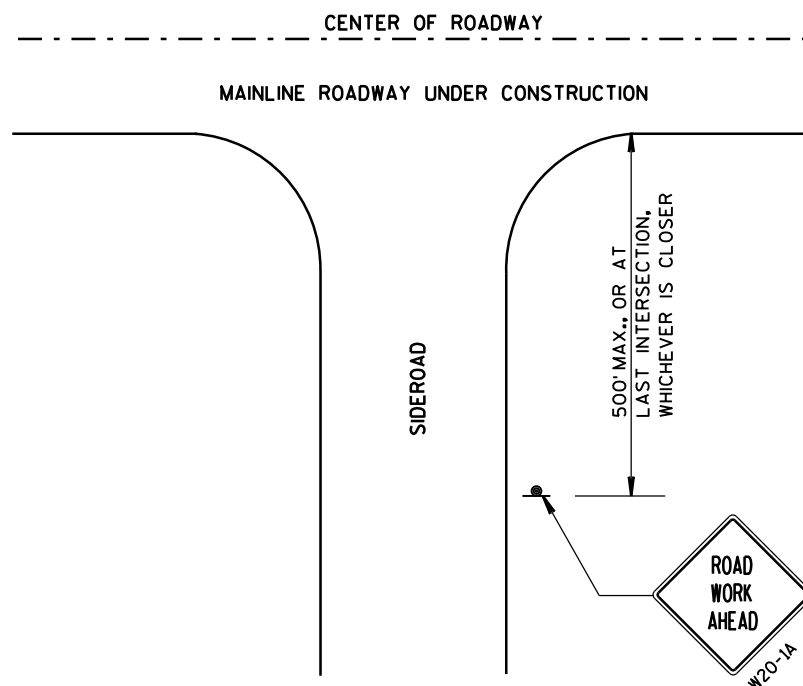
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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.



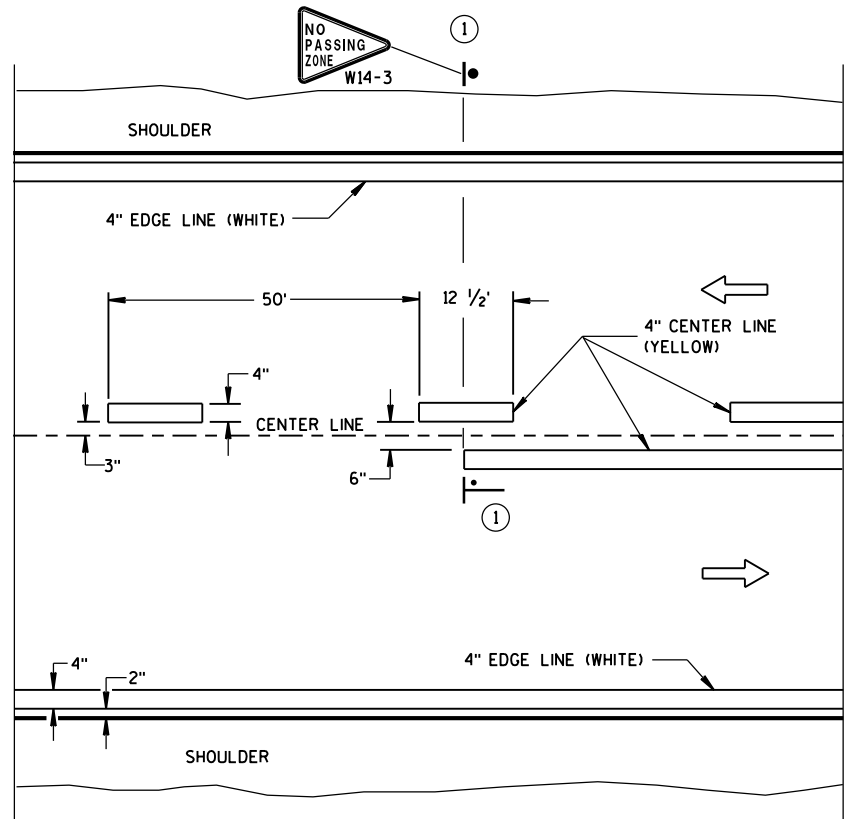
LEGEND

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

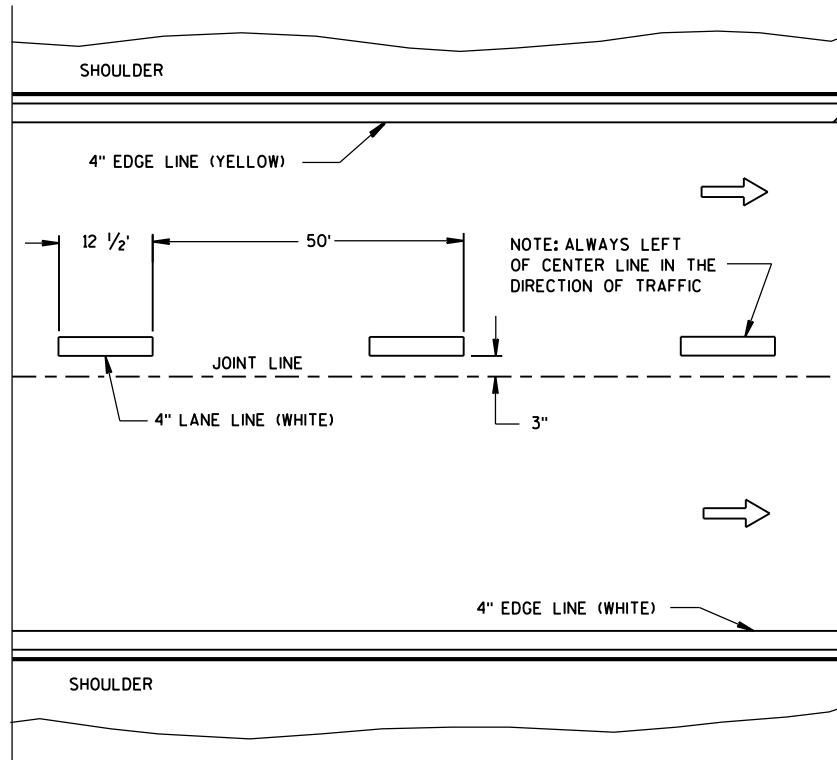
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept. 2015 /S/ Peter Amokobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

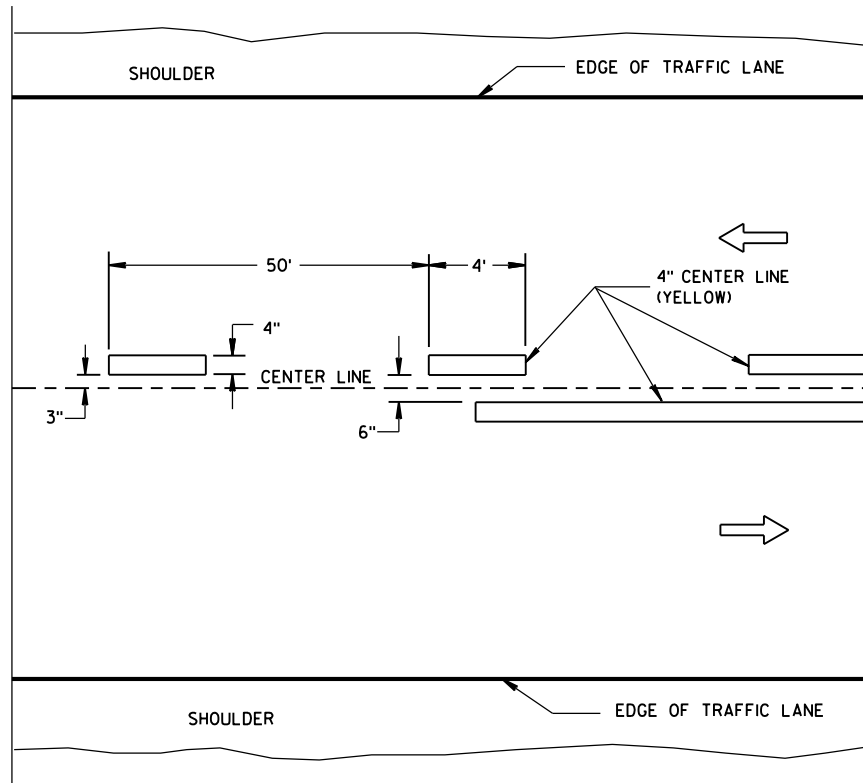


TWO WAY TRAFFIC

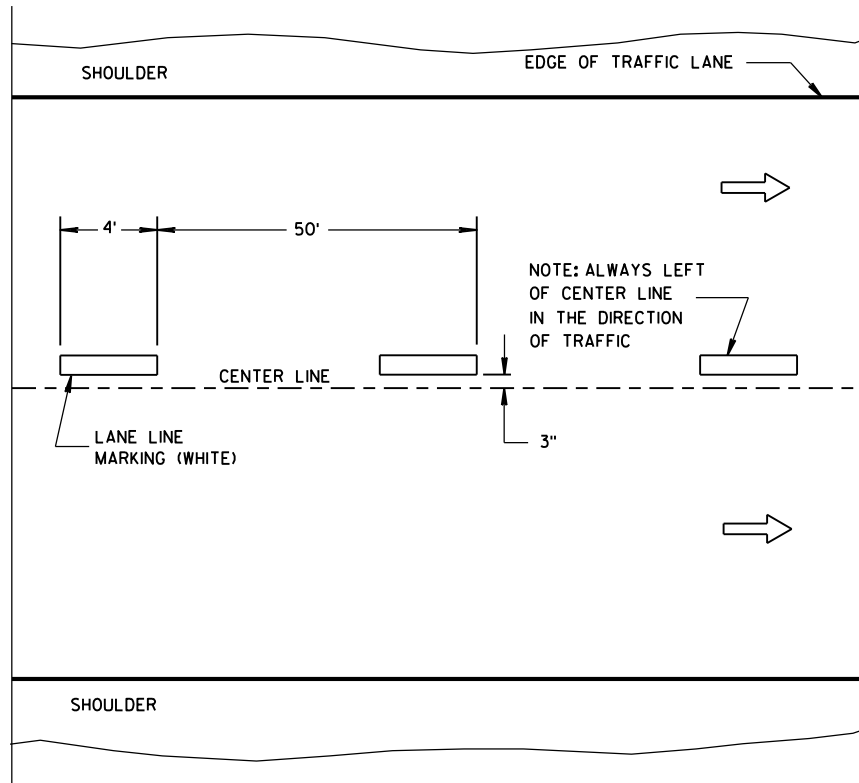


ONE WAY TRAFFIC

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 NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

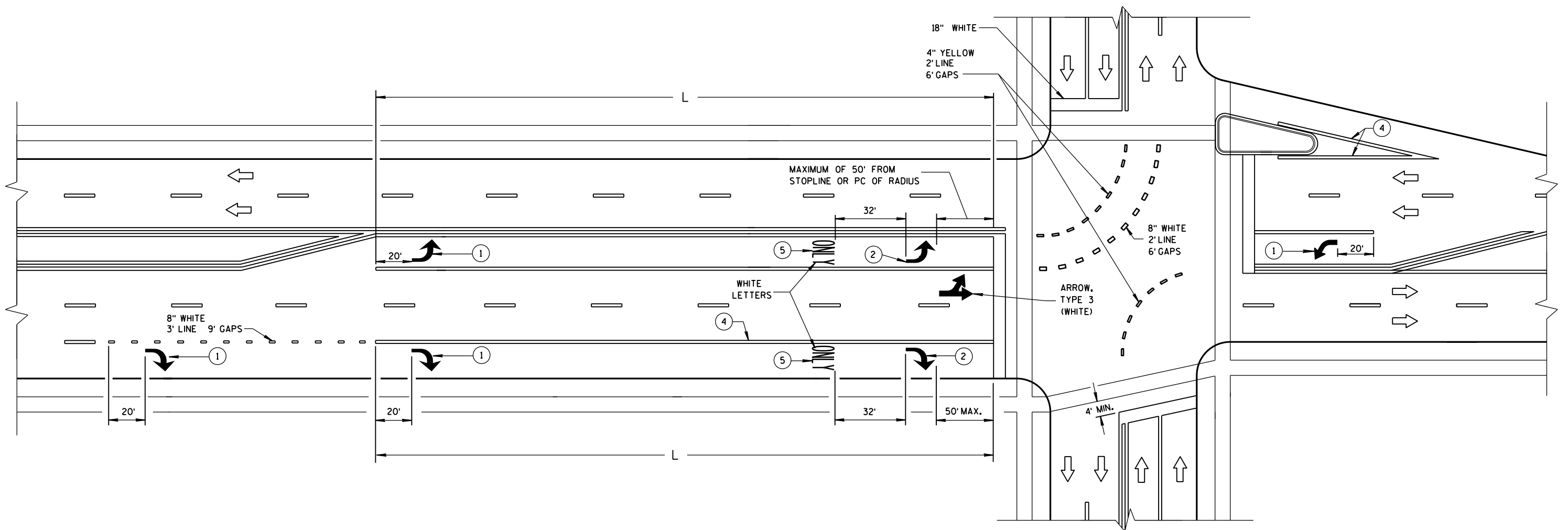
—●— "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept., 2016 /S/ Matthew R. Rauch
STATE SIGNING AND MAP 115 ENGINEER
FHWA



GENERAL NOTES

- ① REQUIRED ARROW, TYPE 2 (WHITE).
- ② REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ④ 8" WHITE
- ⑤ REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

TWO WAY LEFT TURN LANE

NOTE:
ARROW SYMBOL ()
SHOWS DIRECTION OF TRAVEL

L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 116

LEGEND

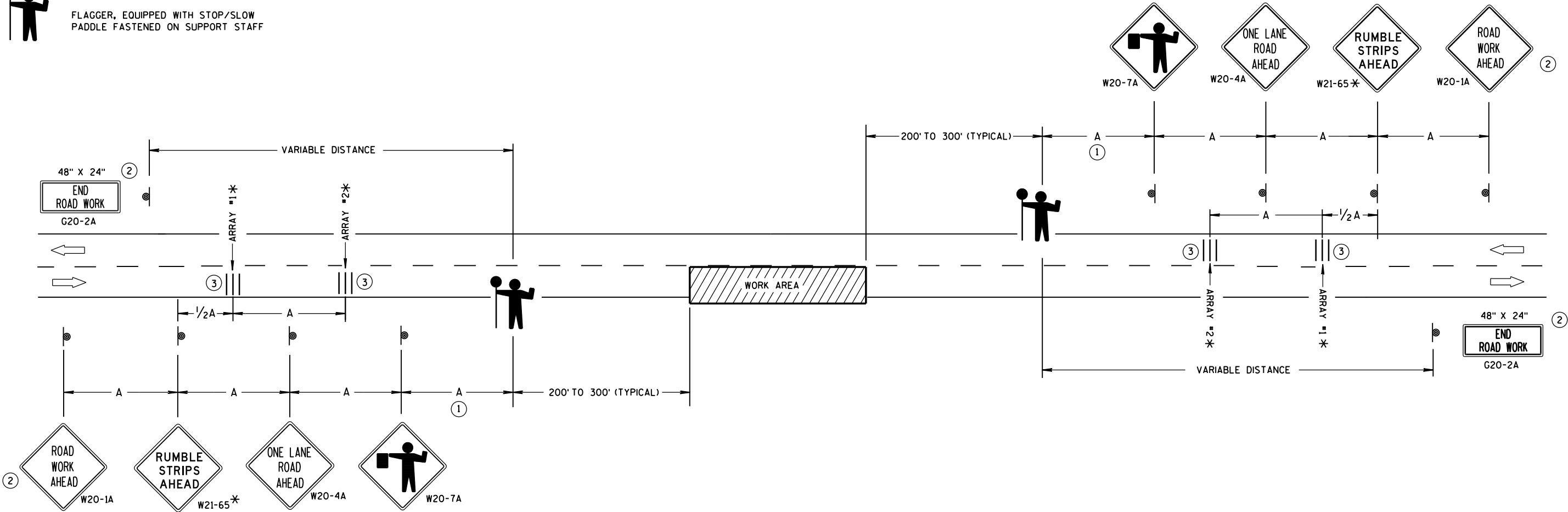
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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.



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.

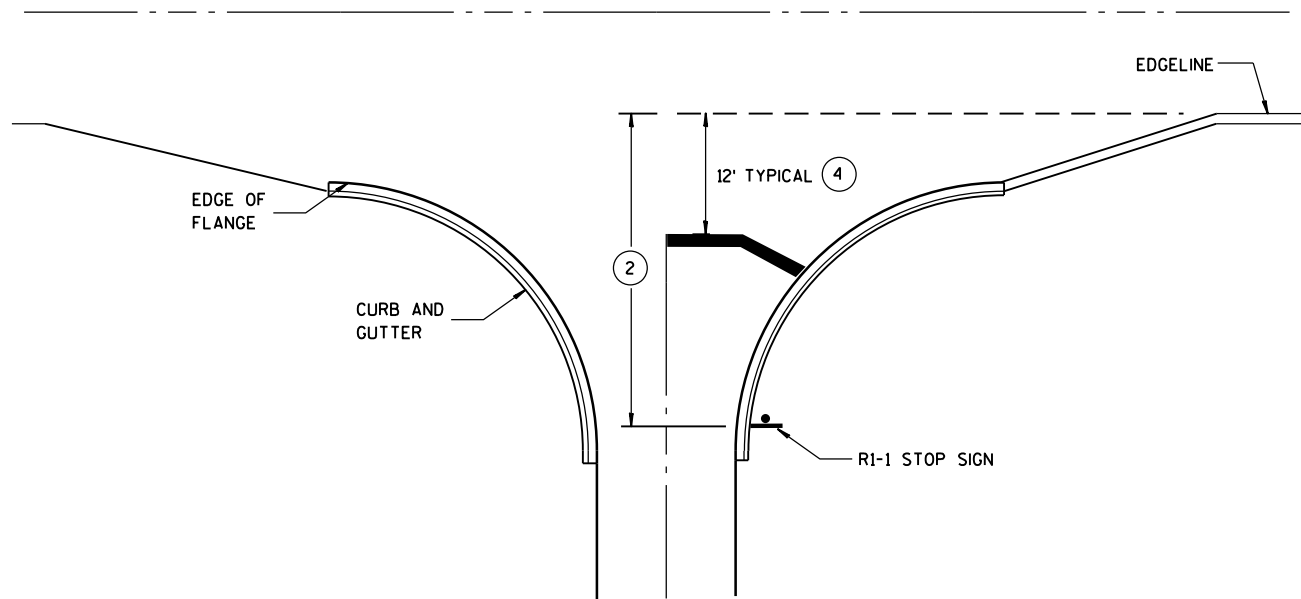
INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

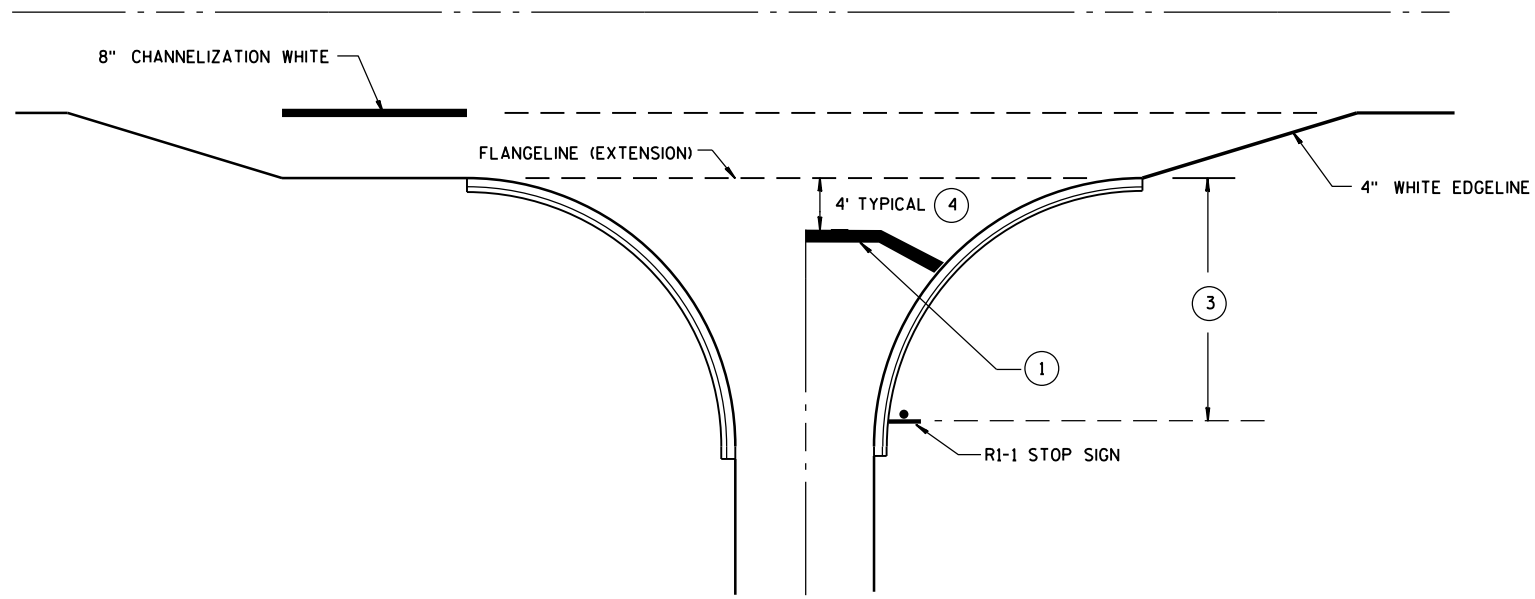
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① 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.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

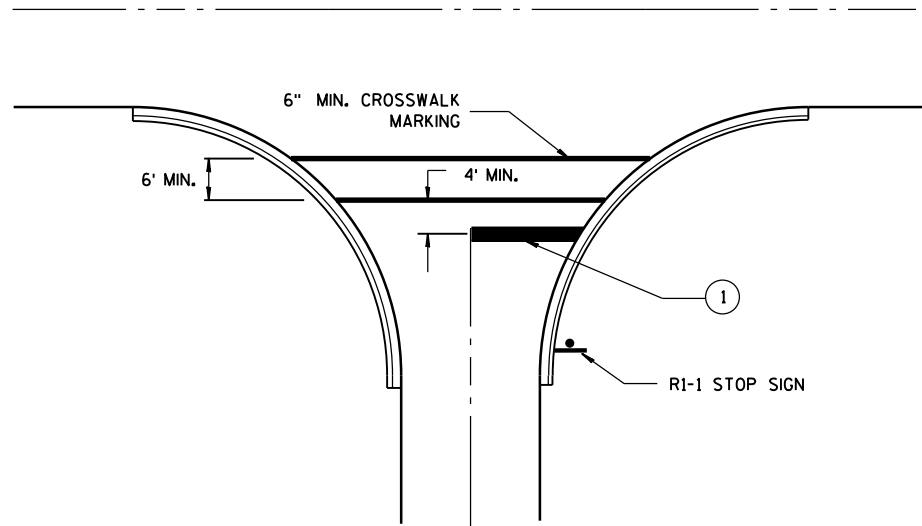
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016 DATE	/S/ Andrew Heidtke WORK ZONE ENG 117
FHWA	



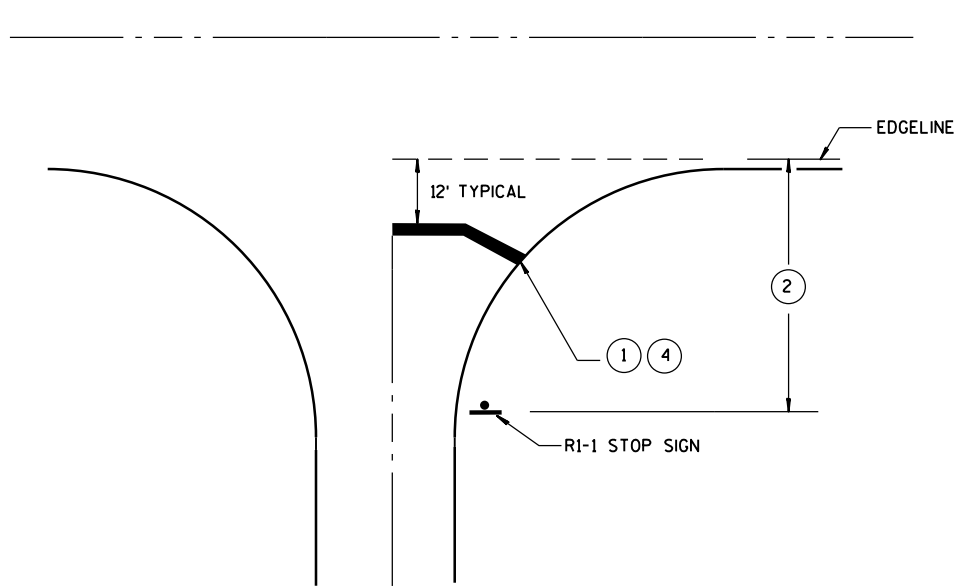
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

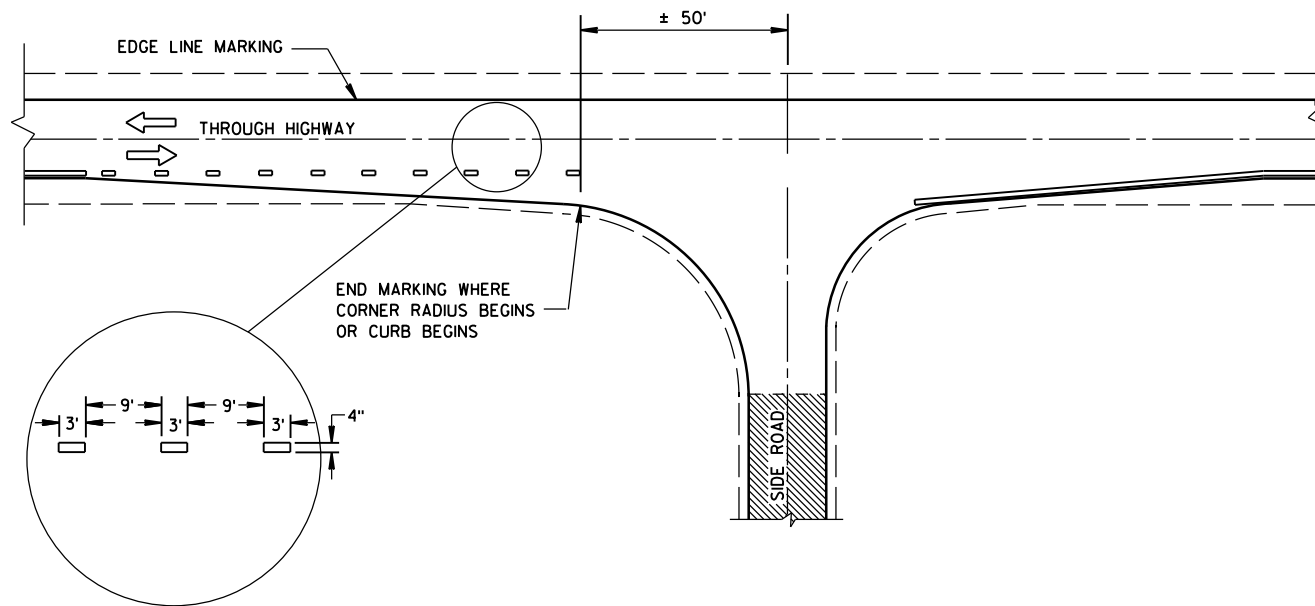
GENERAL NOTES

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE 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).

STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 118
FHWA JER



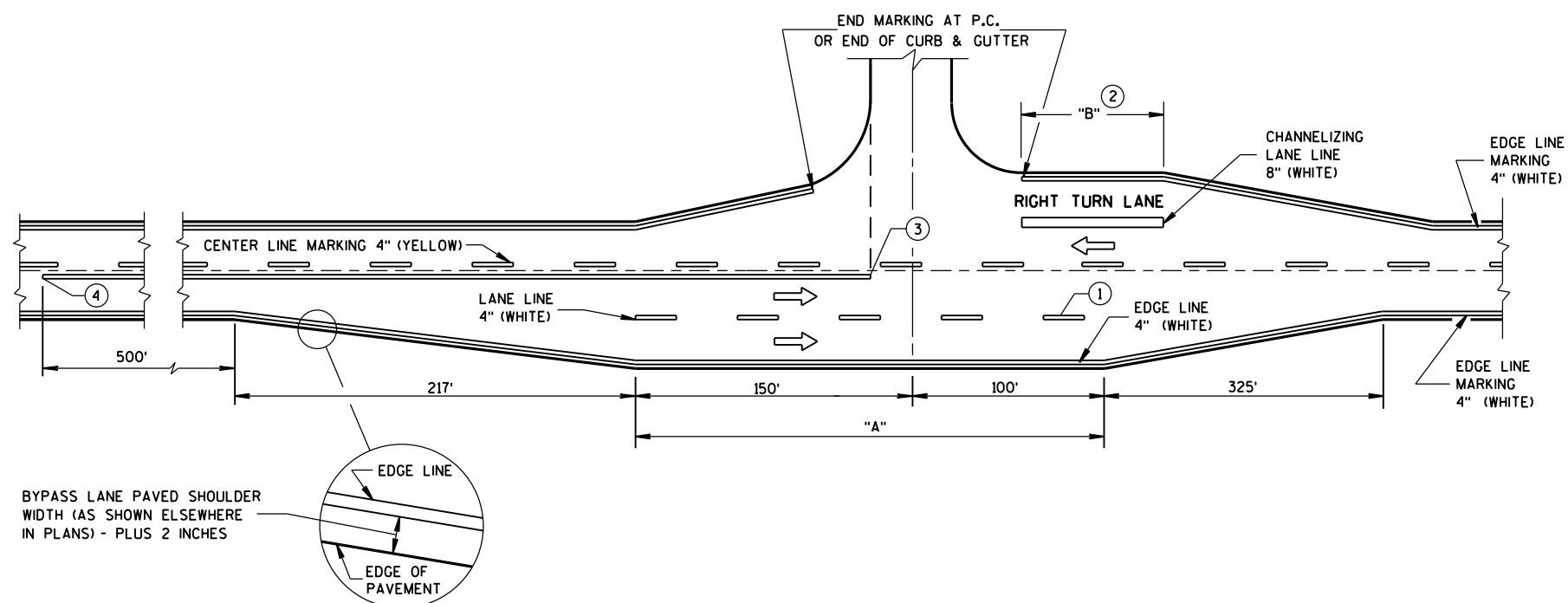
MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 119

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

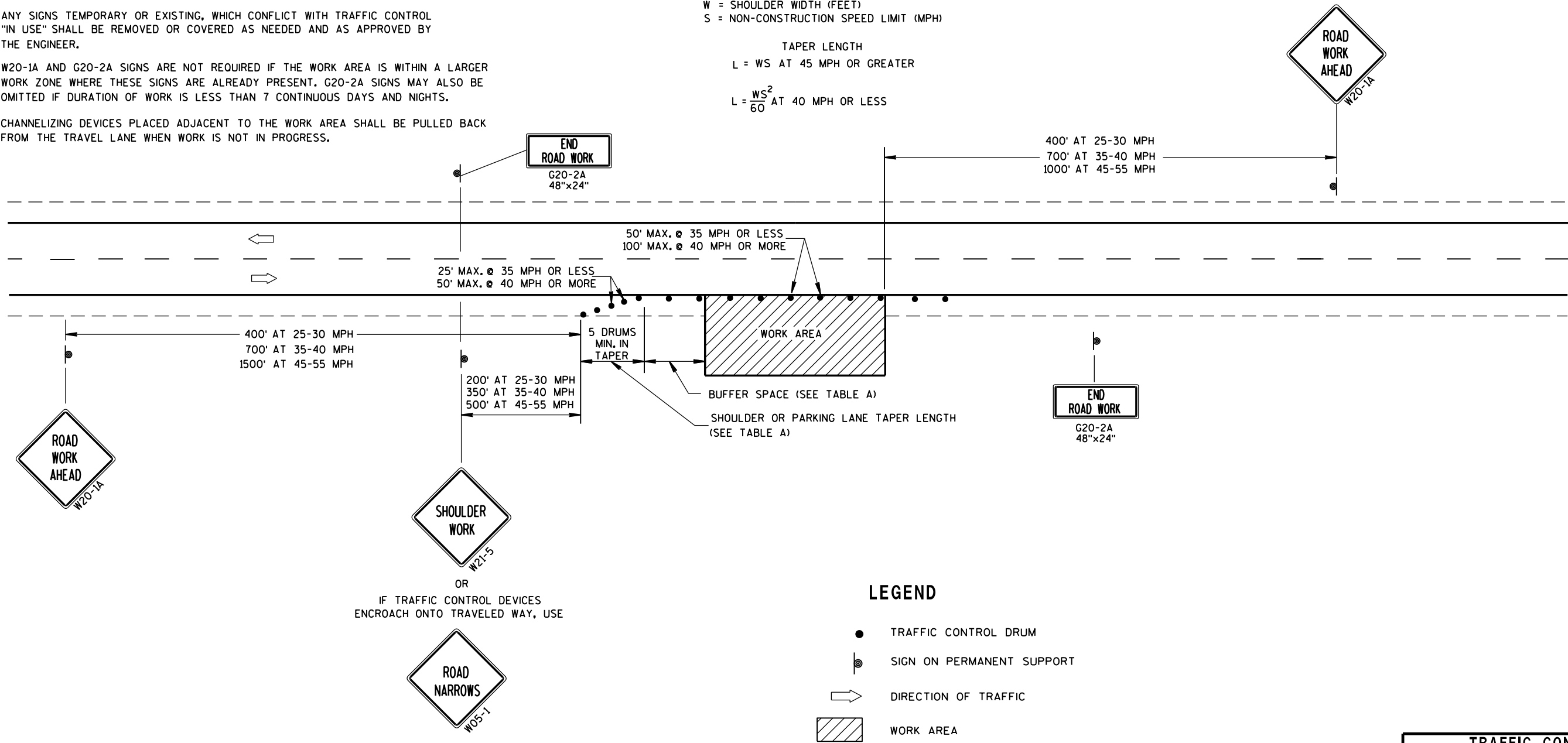
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



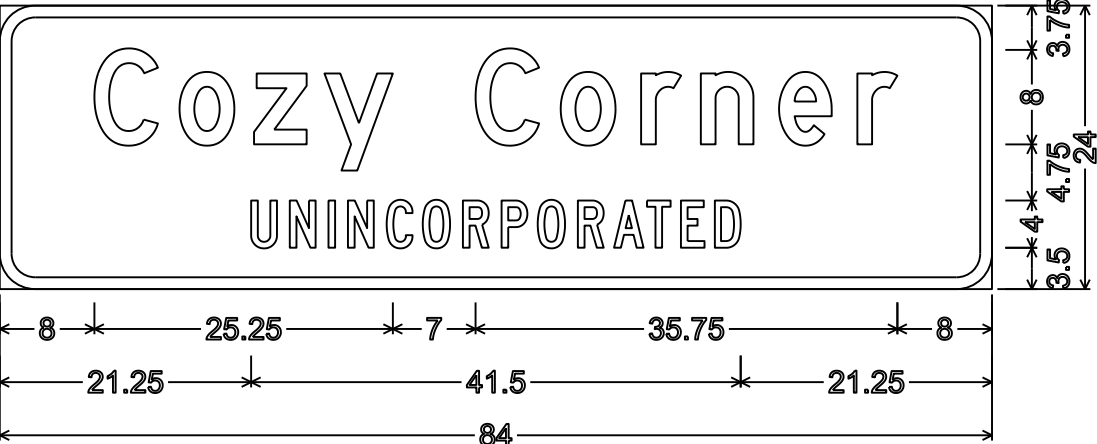
LEGEND

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

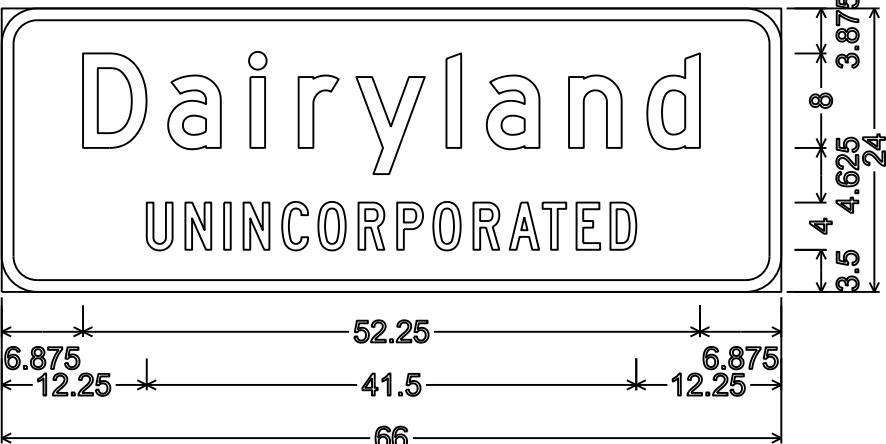
TRAFFIC CONTROL,
WORK ON SHOULDER OR
PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

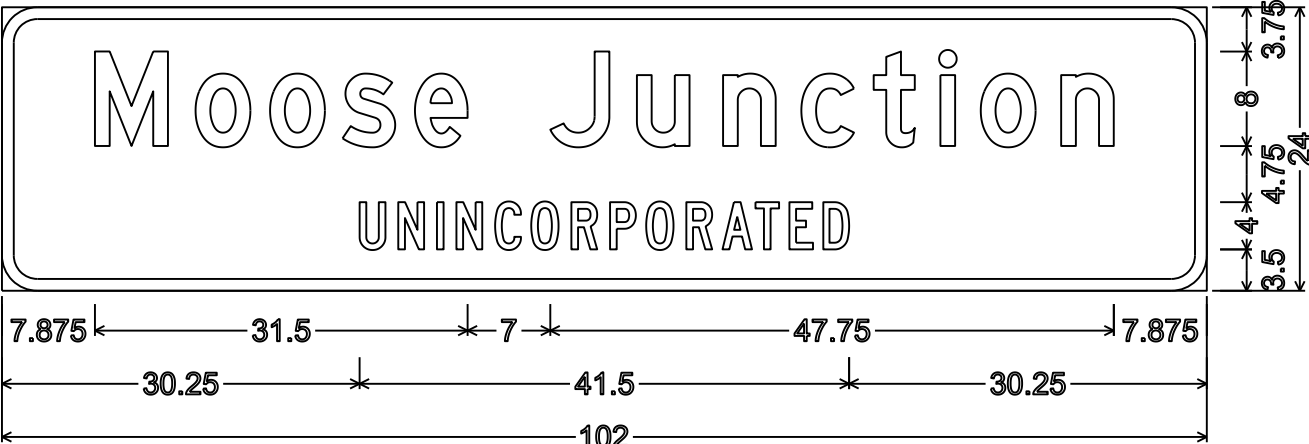
APPROVED
July 14, 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA



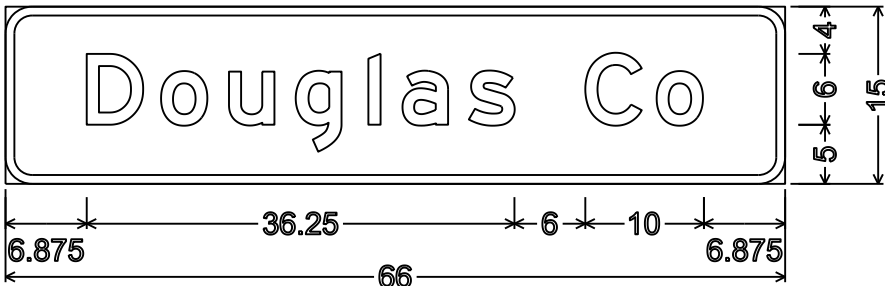
I2-3; 3.000" Radius, 1.000" Border,
"Cozy" D; "Corner" D; "UNINCORPORATED" C



I2-3; 3.000" Radius, 1.000" Border,
"Dairyland" D; "UNINCORPORATED" C



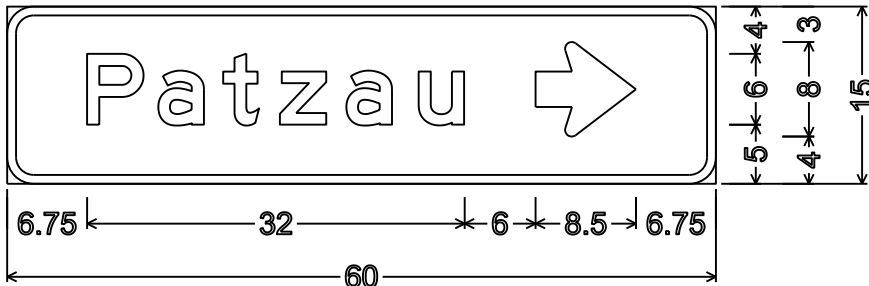
I2-3; 3.000" Radius, 1.000" Border,
"Moose" D; "Junction" D; "UNINCORPORATED" C



I2-2; 2.250" Radius, 0.750" Border



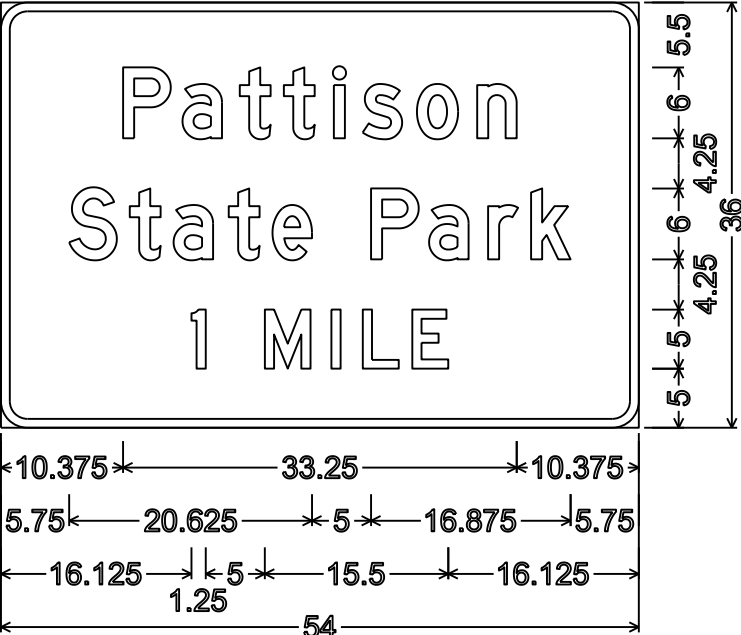
D1-1;
2.250" Radius, 0.750" Border



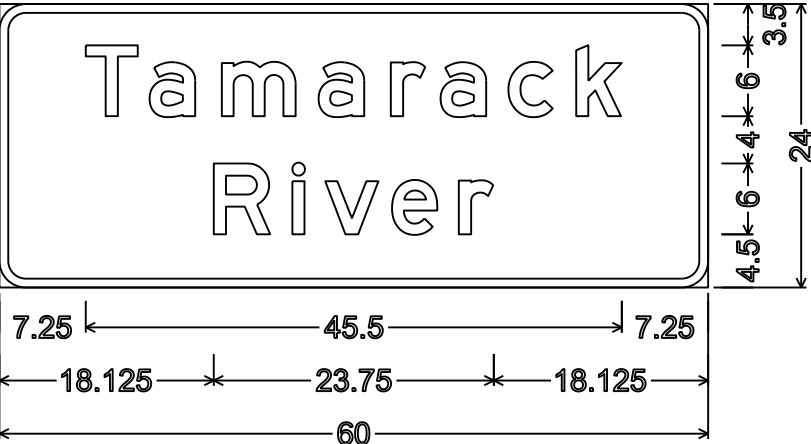
D1-1;
2.250" Radius, 0.750" Border

NOTES

- 1. All Signs Type II - Type H Reflective
- 2. Color:
Background - Green except as noted
Message - White
- 3. Message Series - E except as noted

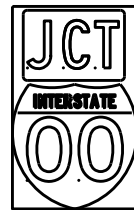


D7-51;
2.250" Radius, 0.750" Border, White on Brown;
"Pattison" D; "State" D; "Park" D; "1" D; "MILE" D

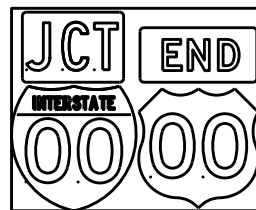


I3-1;
2.250" Radius, 0.750" Border

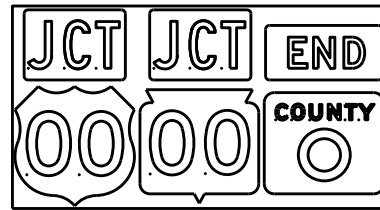
TYPICAL ASSEMBLIES



J1-1



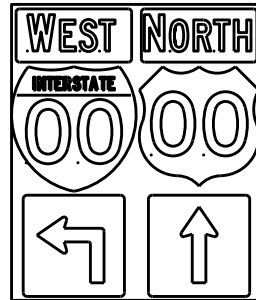
J1-2



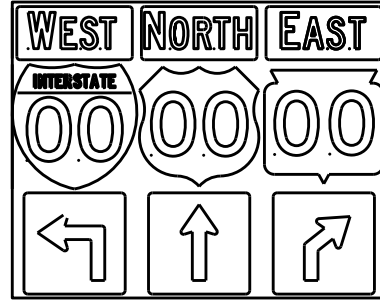
J1-3



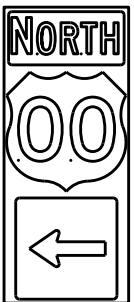
J2-1



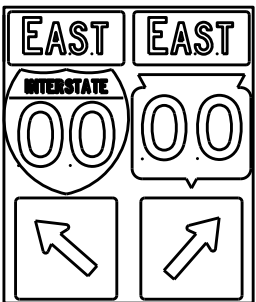
J2-2



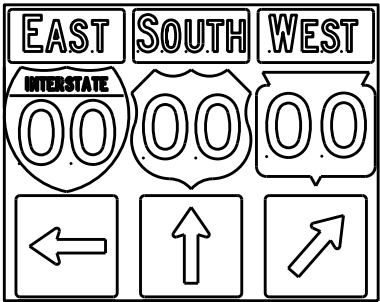
J2-3



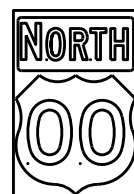
J3-1



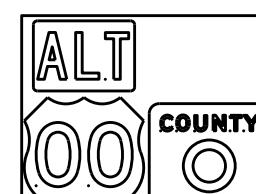
J3-2



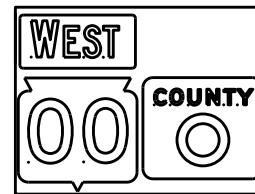
J3-3



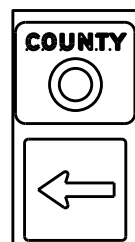
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

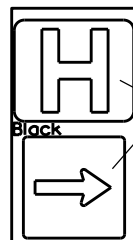


J22-1



JV

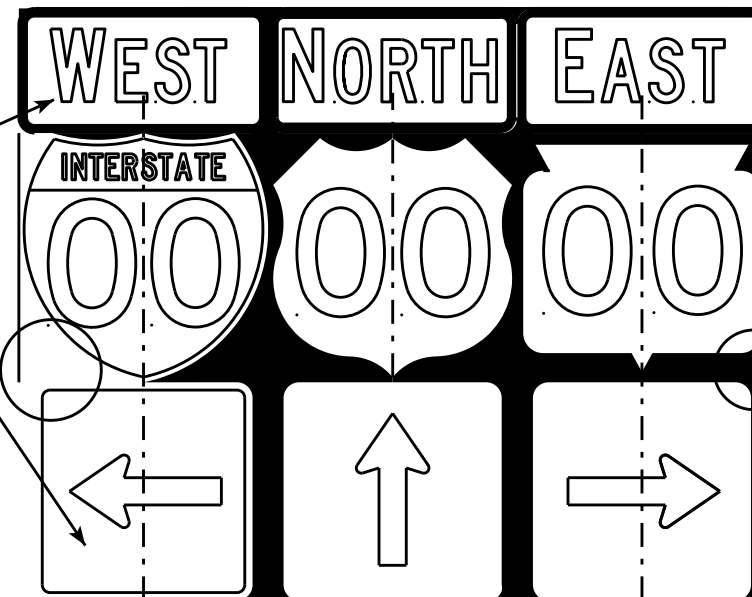
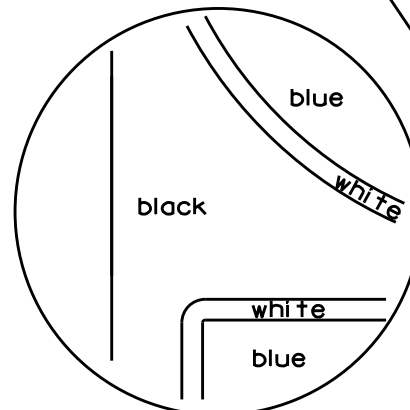
(Typical Vertical J-Assembly
See Note 10 and 11)



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

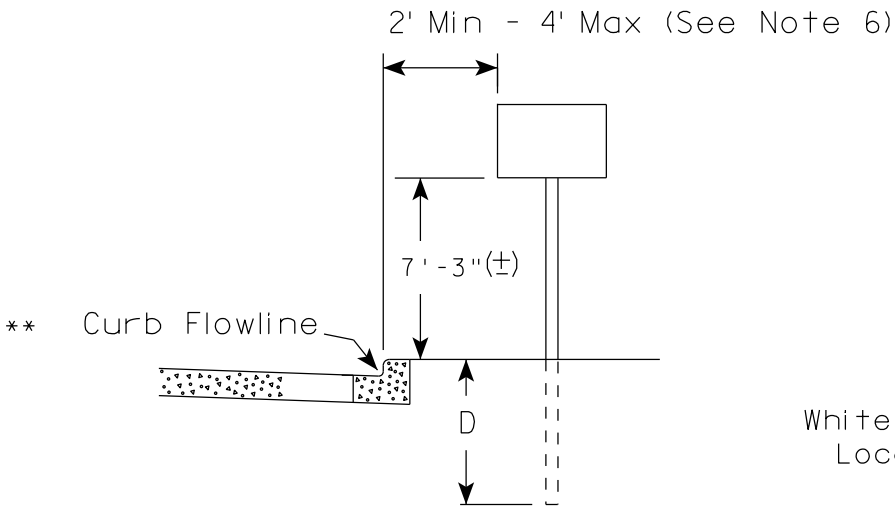
DATE 2/06/14 PL 122 A2-1S.8

SHEET NO: E

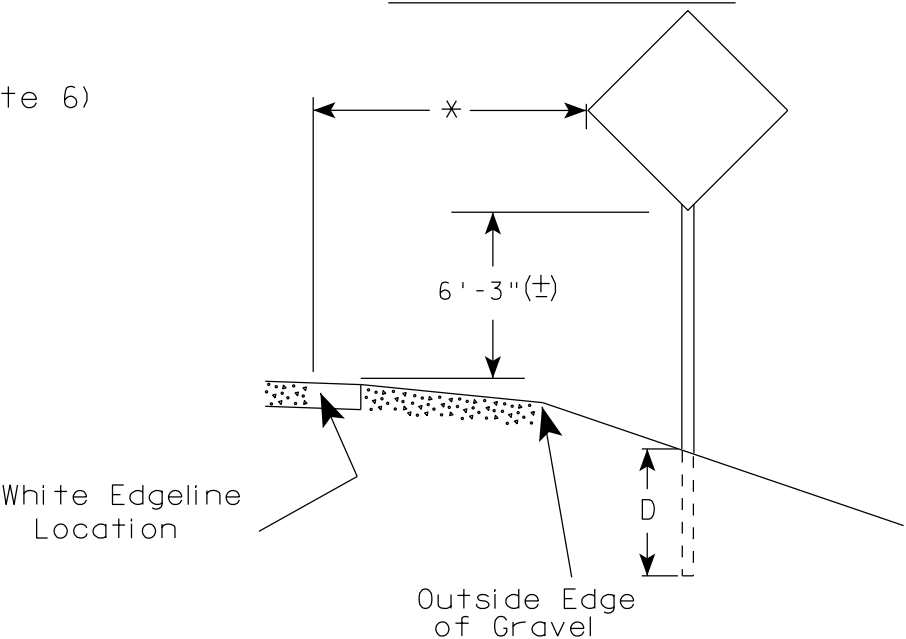
NOTES

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.

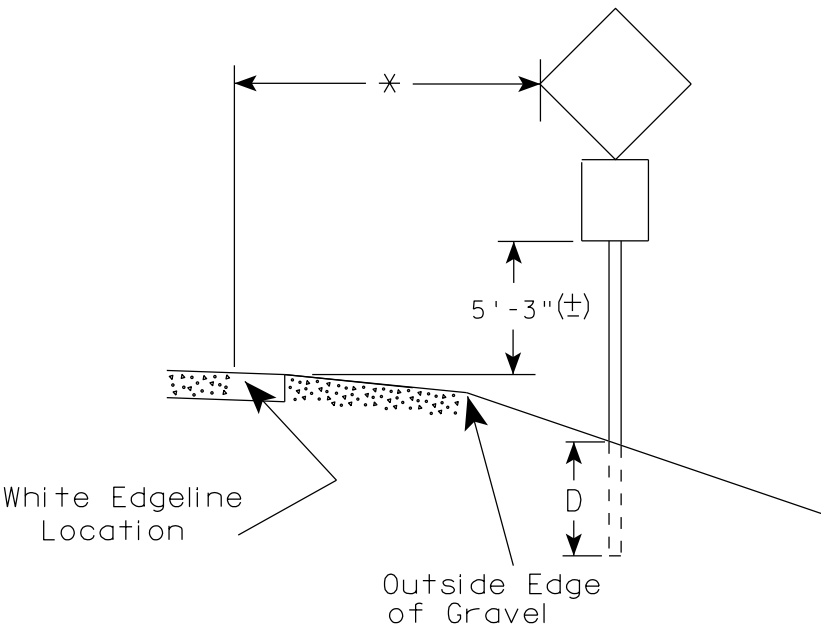
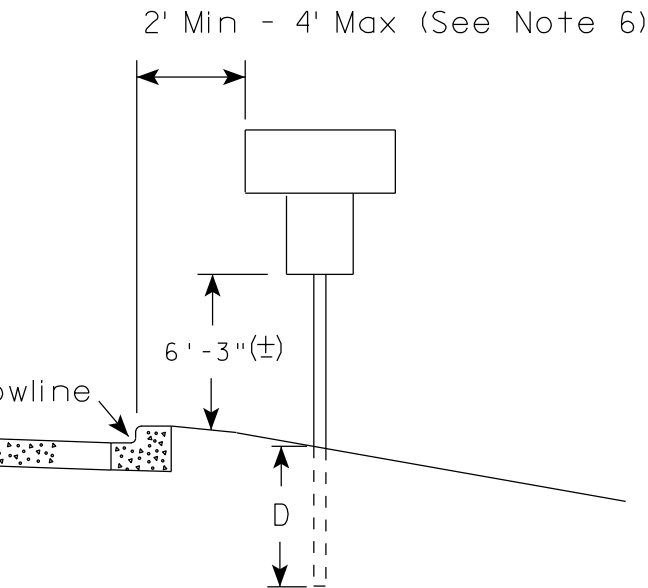
URBAN AREA



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.

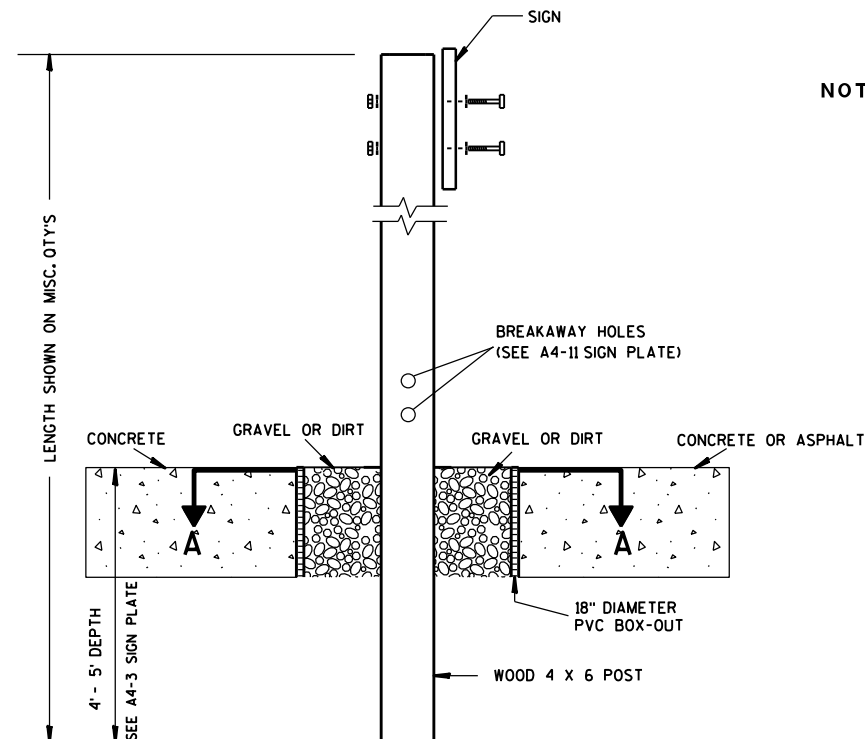
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

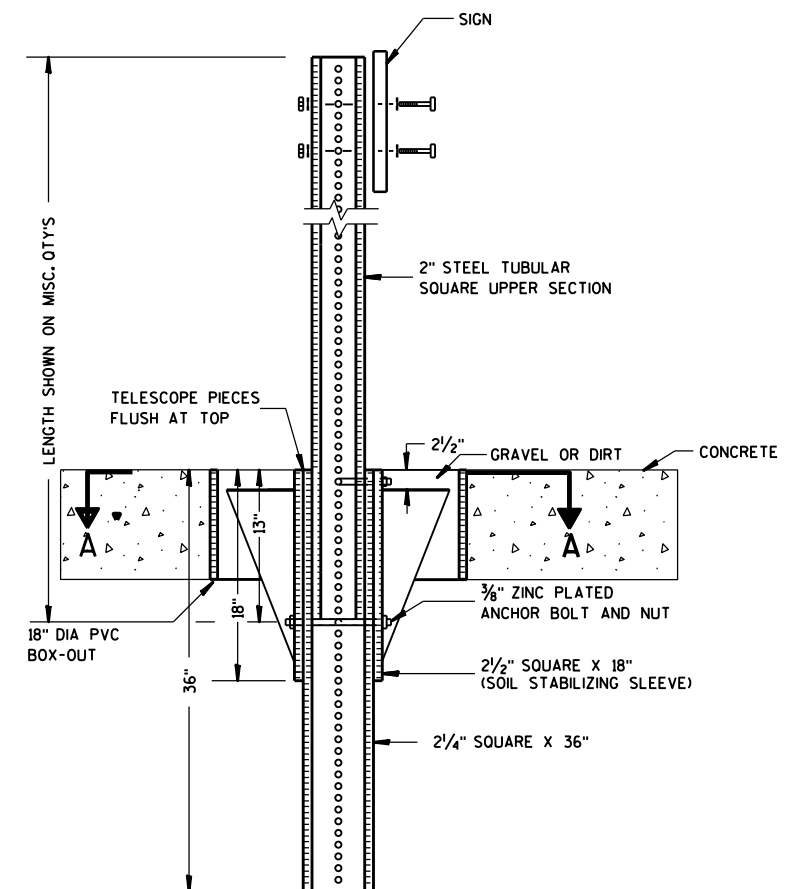
DATE 7/23/15 PLATE NO. A4-3.20



ELEVATION VIEW

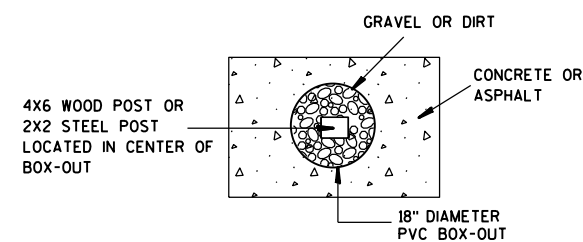
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 124 A4-3B.1

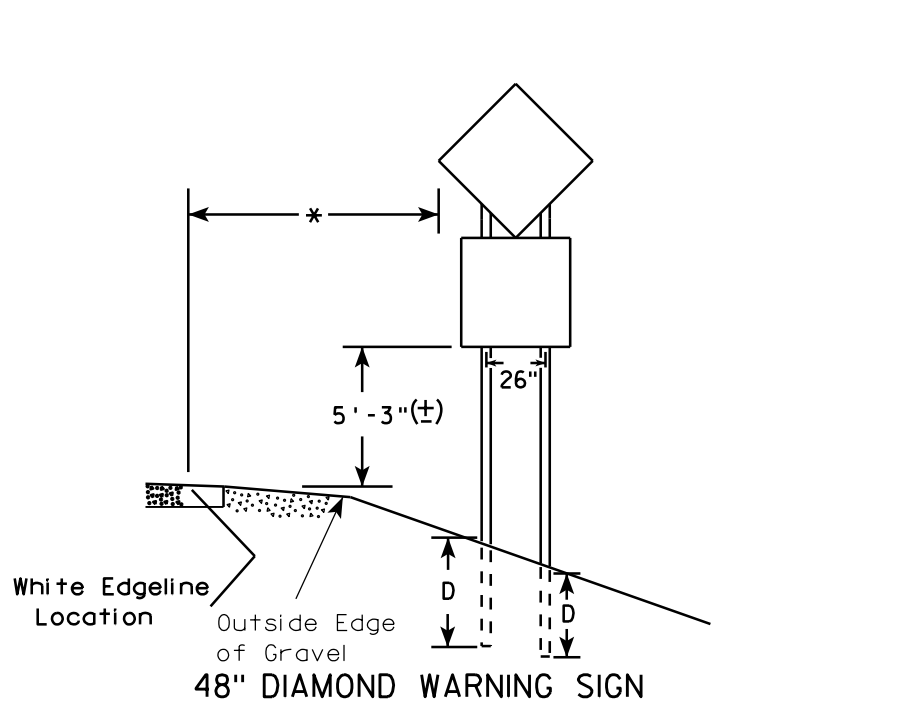
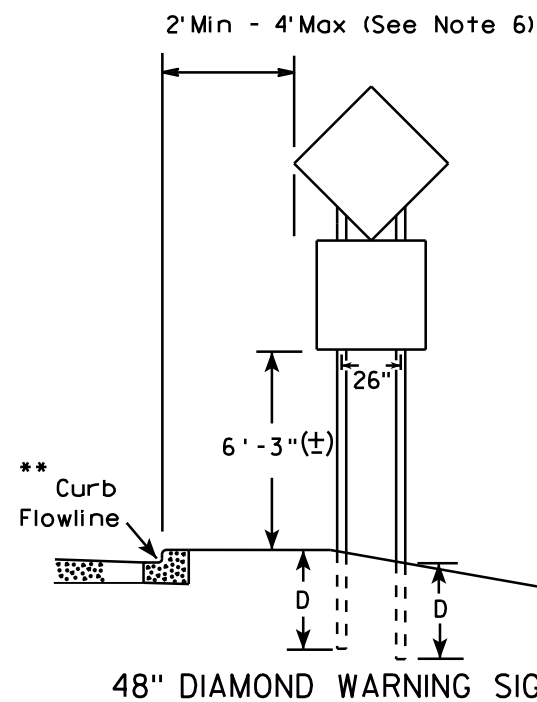
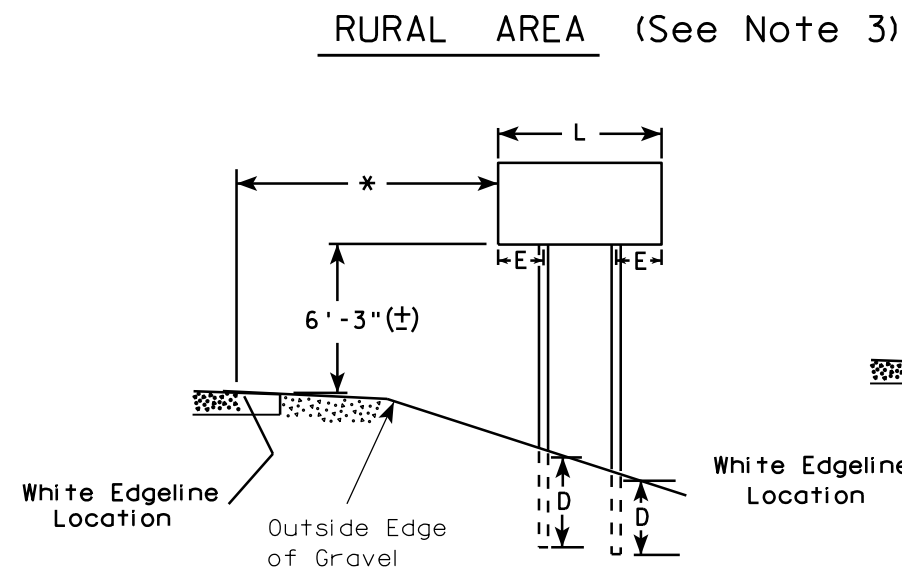
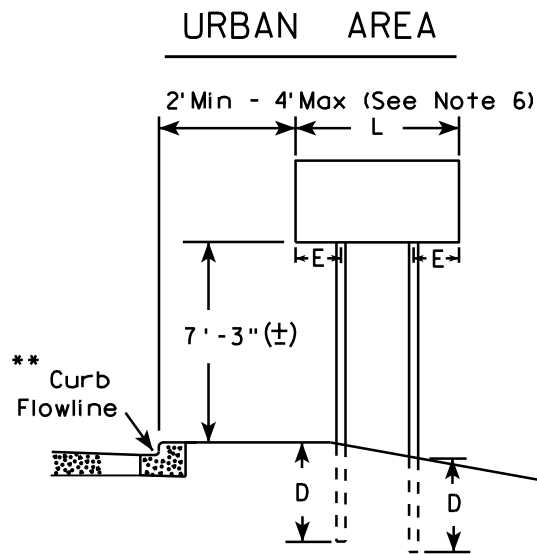
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

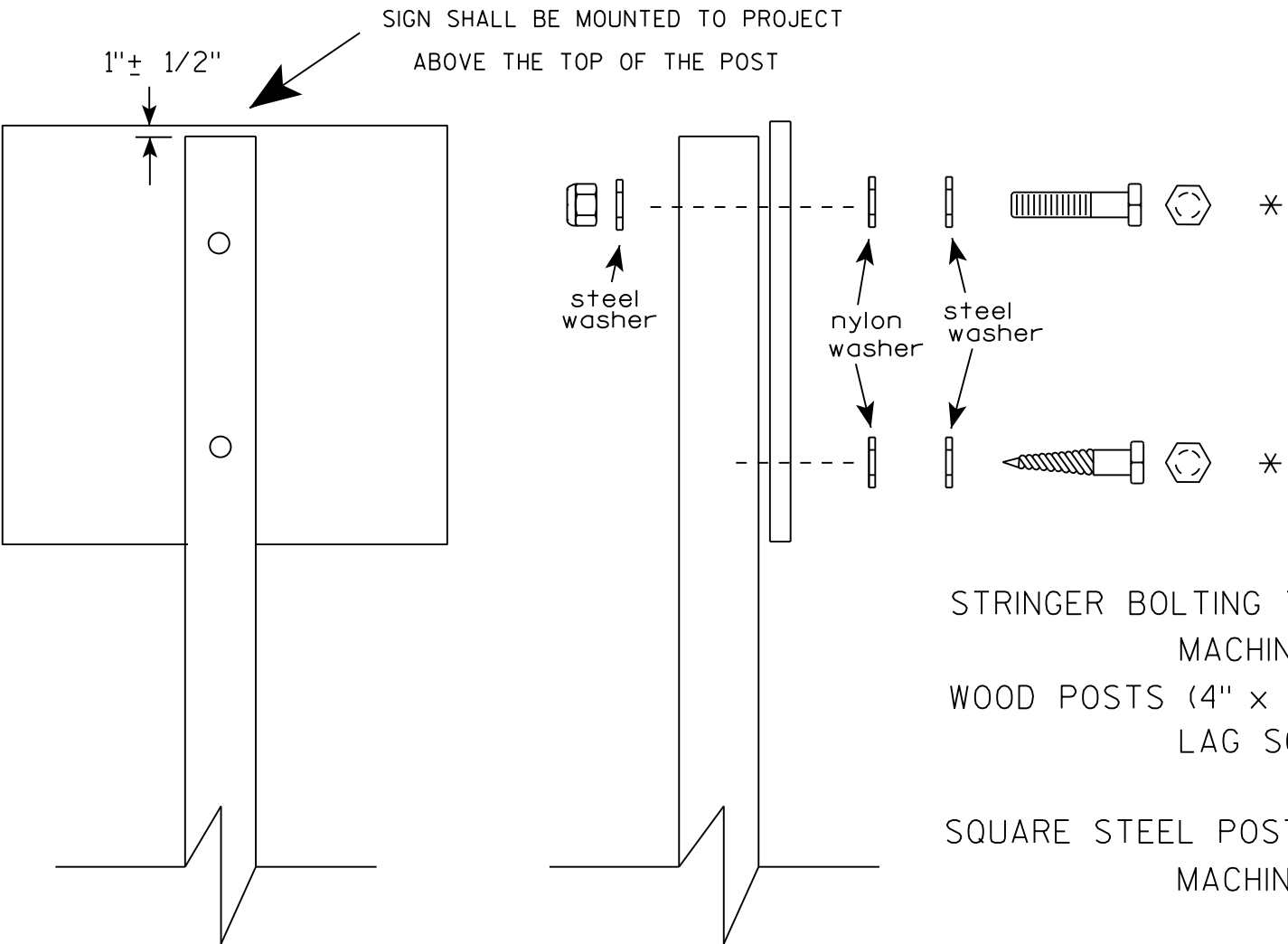
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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. 14-125



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 - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " 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.

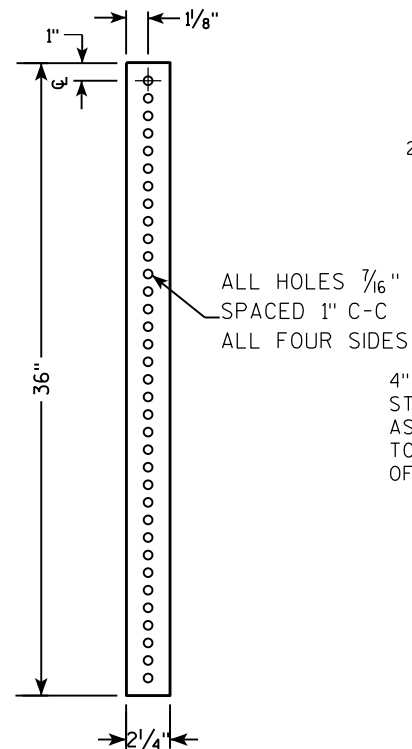
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

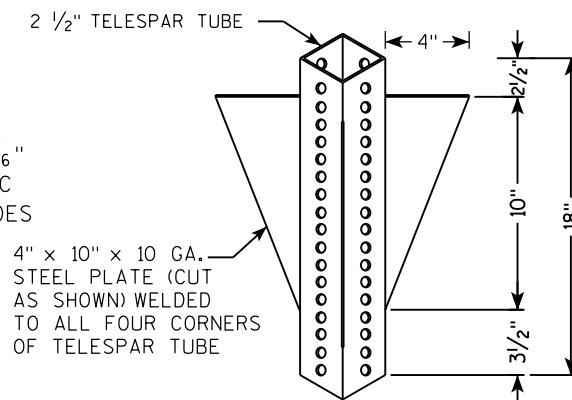
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8
126

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. QTY'S

18" DIA SCHEDULE 40 PVC BOX-OUT

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SIGN

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

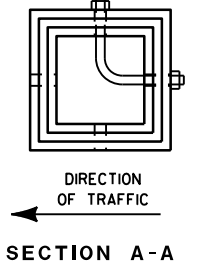
36"

18"

13"

[illegible]

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 127 14-9.9

SHEET NO: E

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN

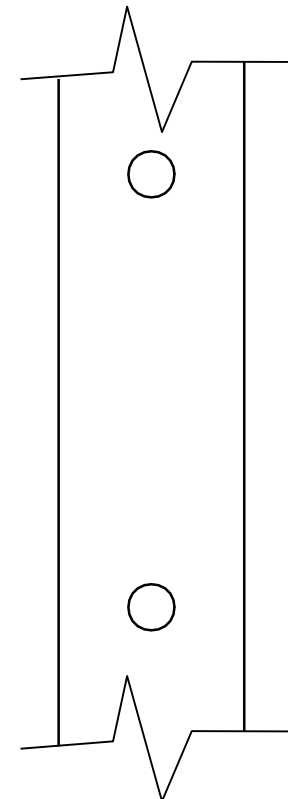
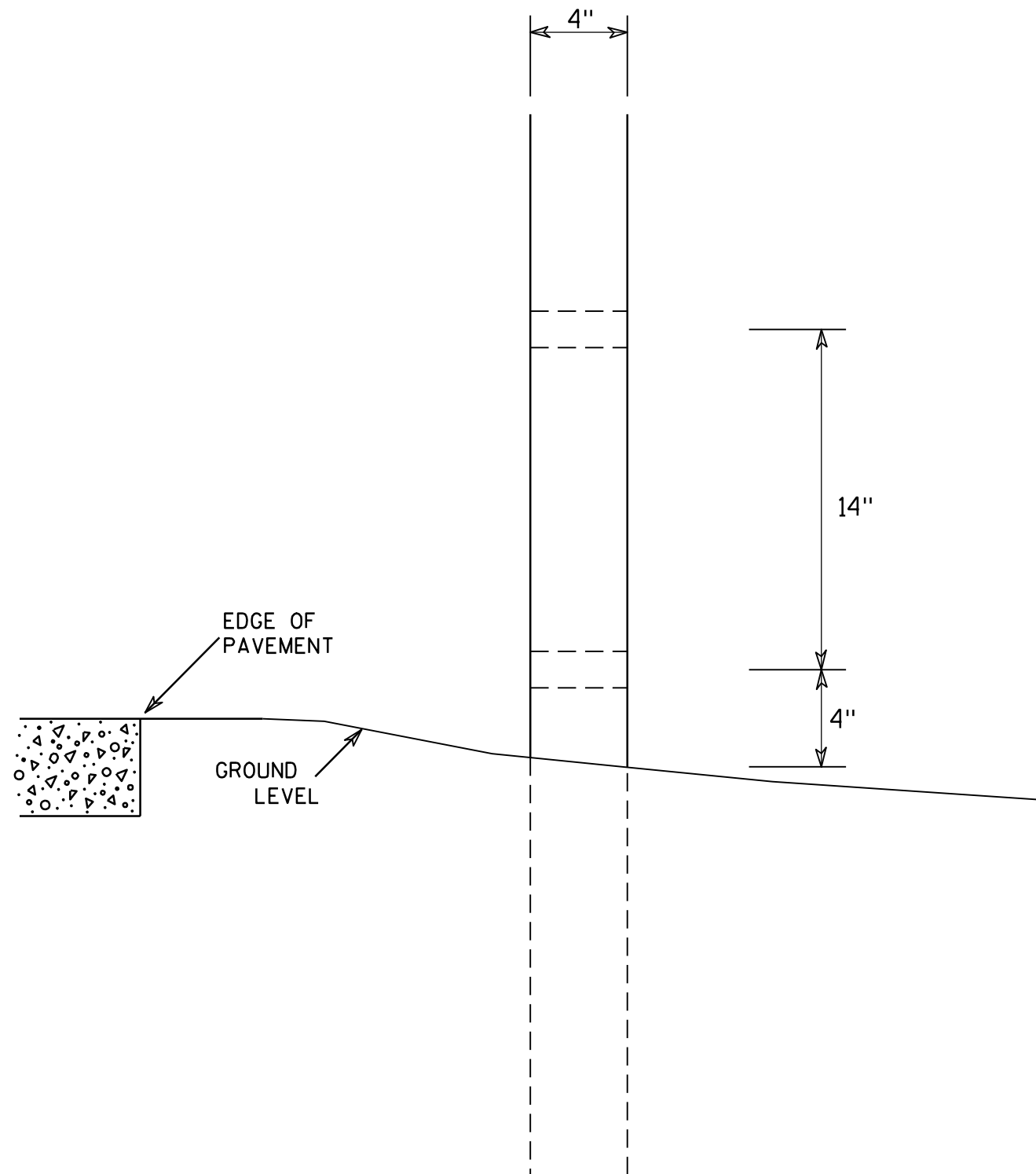
PLOT DATE : 05-FEB-2015 17:09

PLOT BY : mscs_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

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

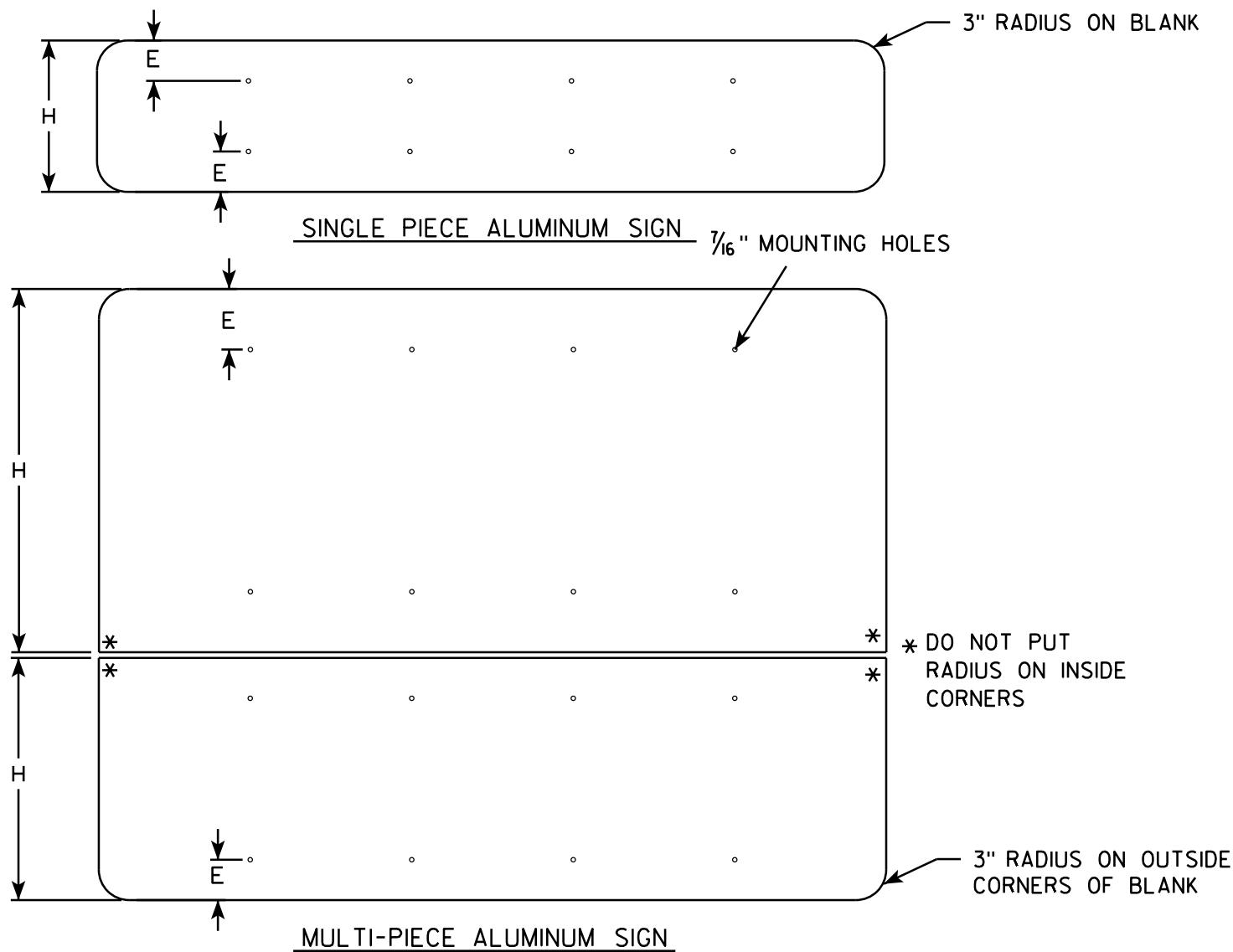
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 128

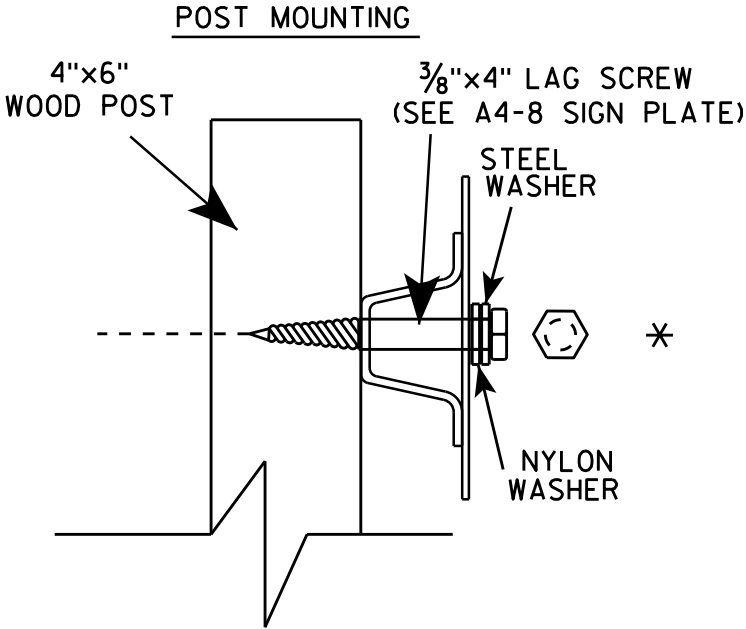
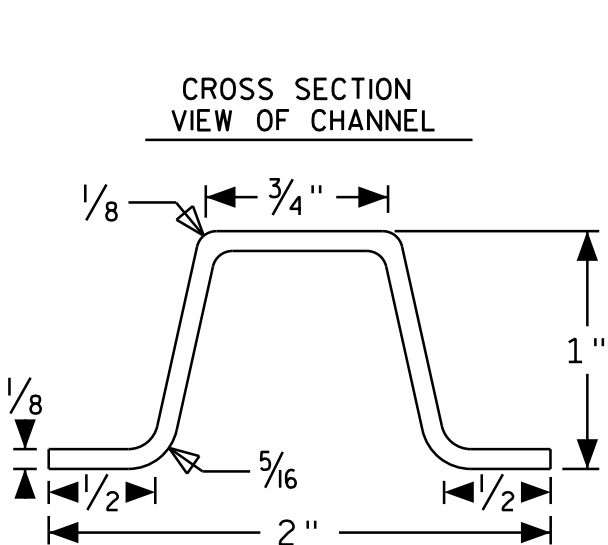
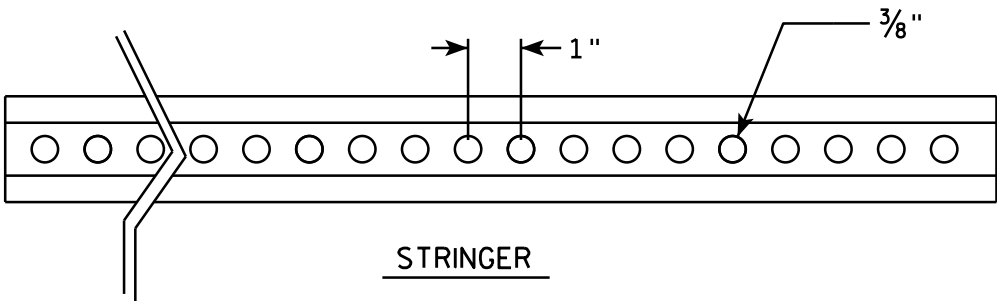
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



SIGN STRINGER
MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

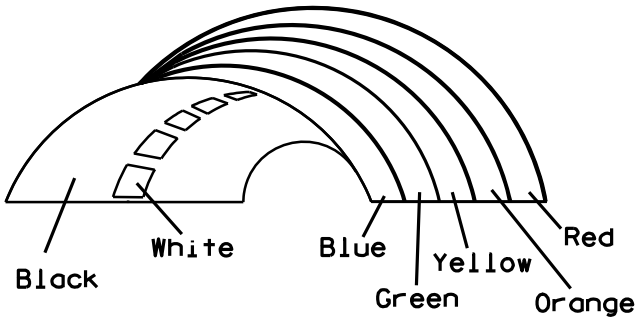
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
129



* VARIES

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
Line 1 - Red
Line 2 - Black
Line 3-5 - Blue
6. Line 1 - Dutch 8011L
Line 2 - Series E
Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 130

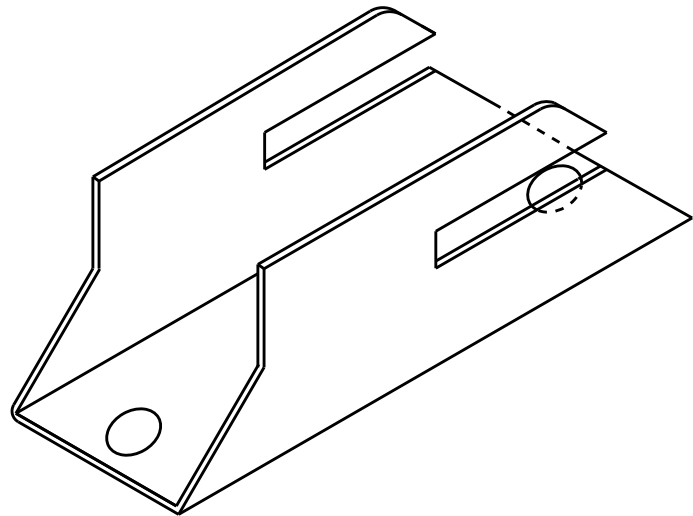
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

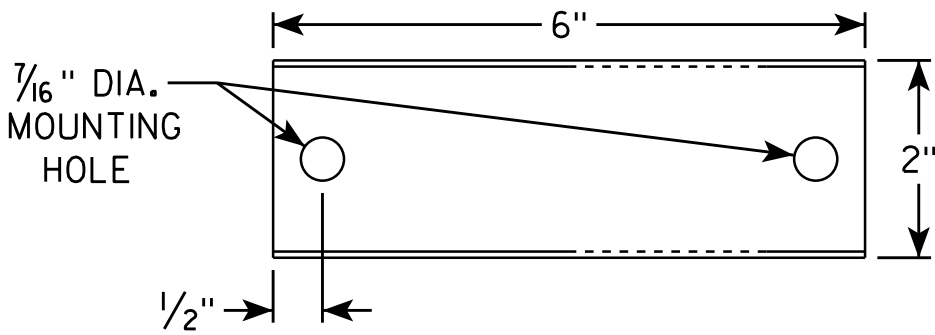
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/27/11 PLATE NO. I55-56.3

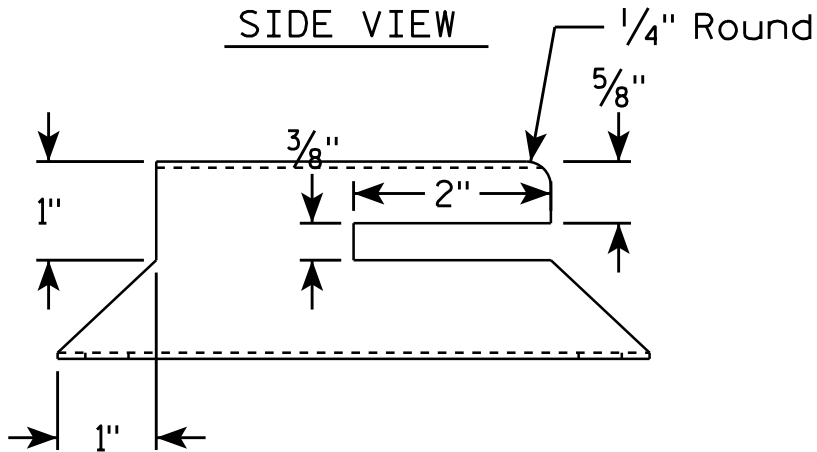
ISOMETRIC VIEW



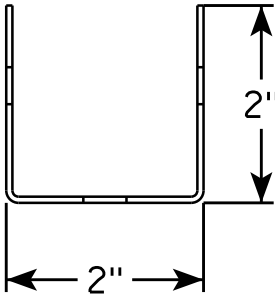
TOP VIEW



SIDE VIEW



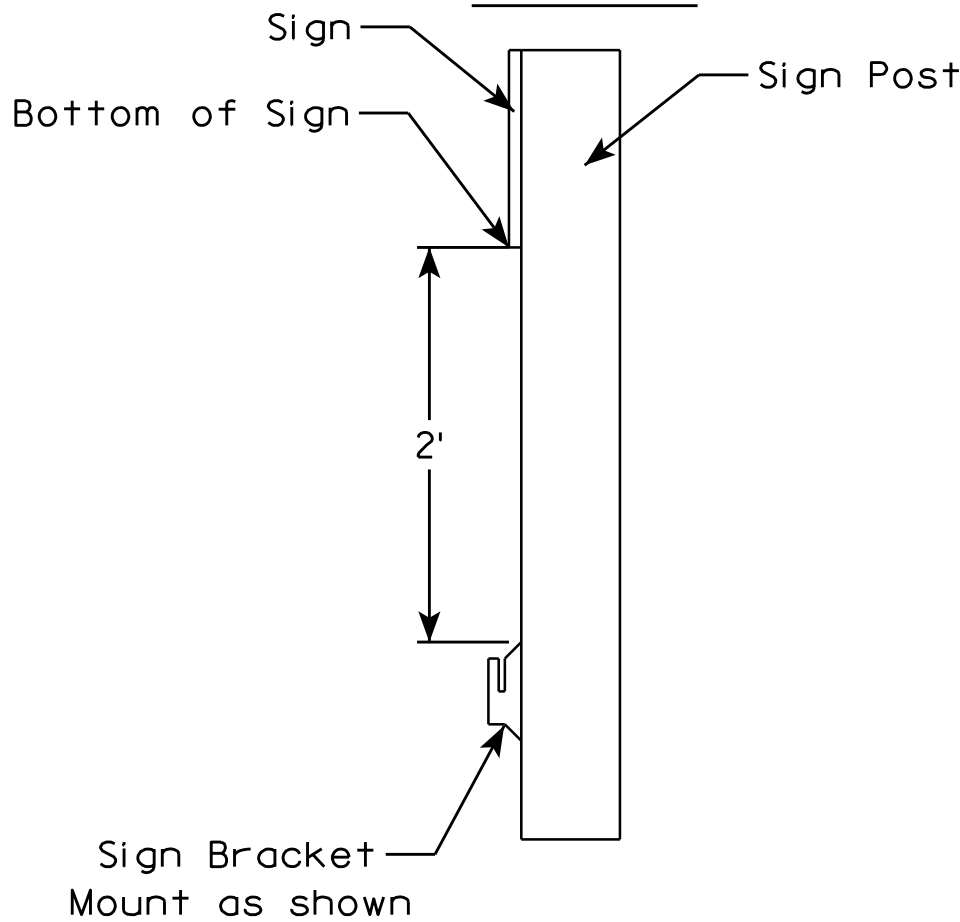
END VIEW



NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

SIDE VIEW

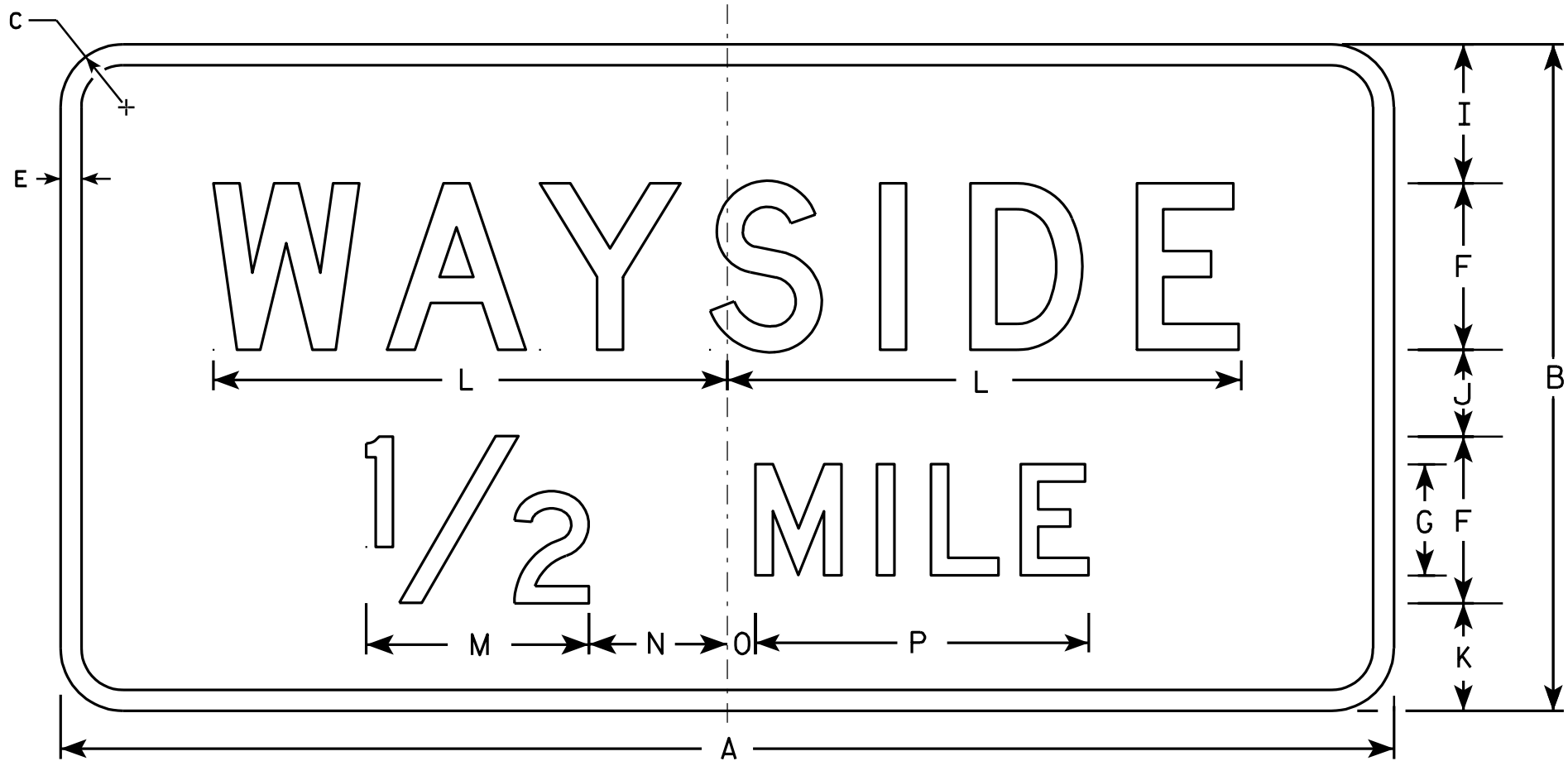


ROLLUP SIGN BRACKET I55-56B	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/26/16	PLA 131 I55-56B.2

58, 59, 60, 61, 62, 63

7

LEVELS ON - 2, 3, 5, 6, 10,



D5-61

Metric equivalent
for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
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		
1																												
2	48	24	2 1/4		3/4	6	4	6	5	3 1/8	3 7/8	18 1/2	8	5	1	12											8.0	0.72
3																												
4	78	42	3		1	10	7	10 1/2	8 3/4	5 3/4	7	30 1/8	14	8 3/4	1 3/4	21											22.8	2.05
5																												

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Blue
Message - White
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

STANDARD SIGN
D5-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Charles J. Spang
for State Traffic Engineer

DATE 1/09/02

PLATE NO. D5-61.9

STATE PROJECT NUMBER:

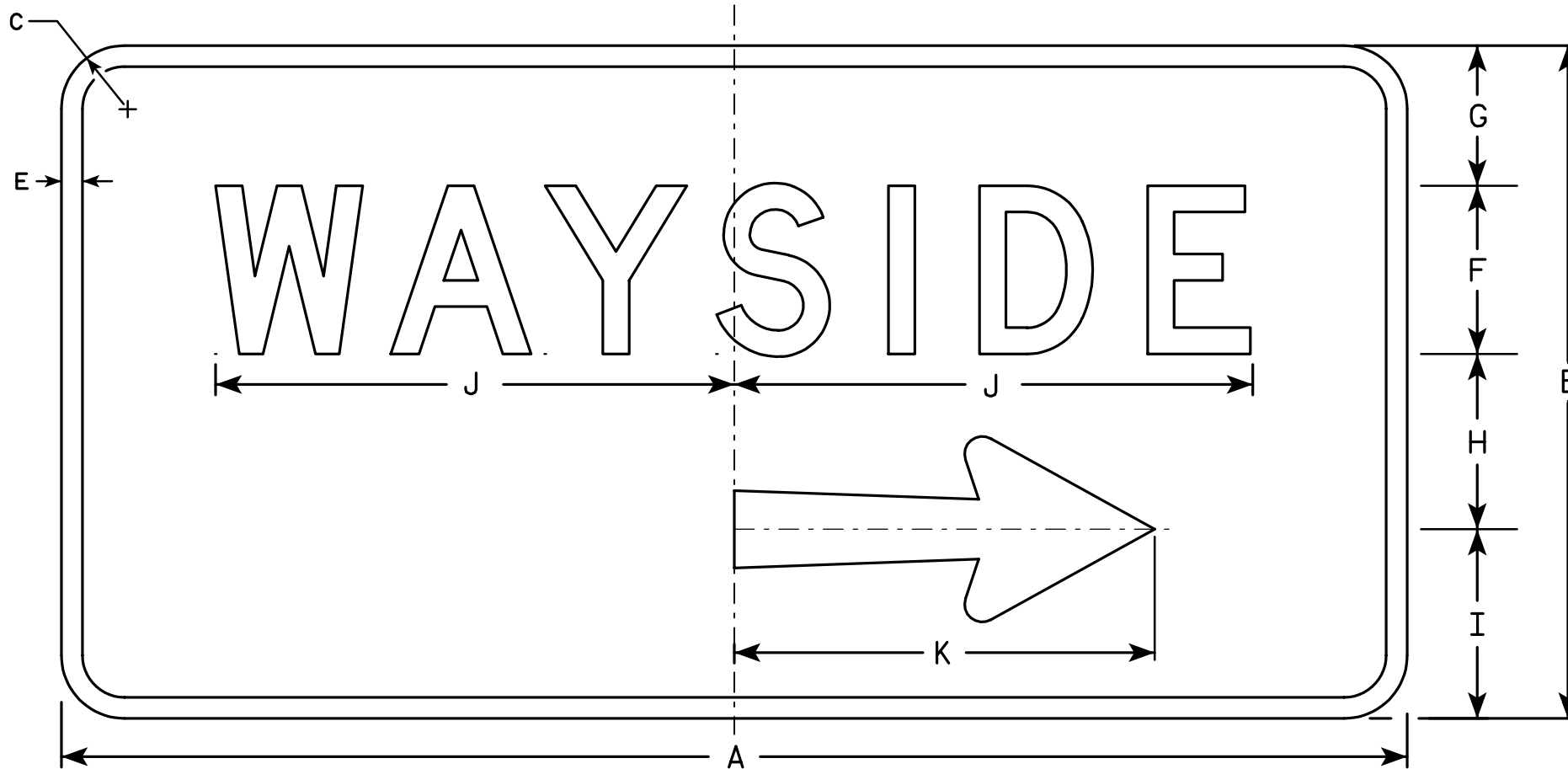
SHEET NO: 132

E

58, 59, 60, 61, 62, 63

7

LEVELS ON - 2, 3, 5, 6, 14, 10,



D5-62R

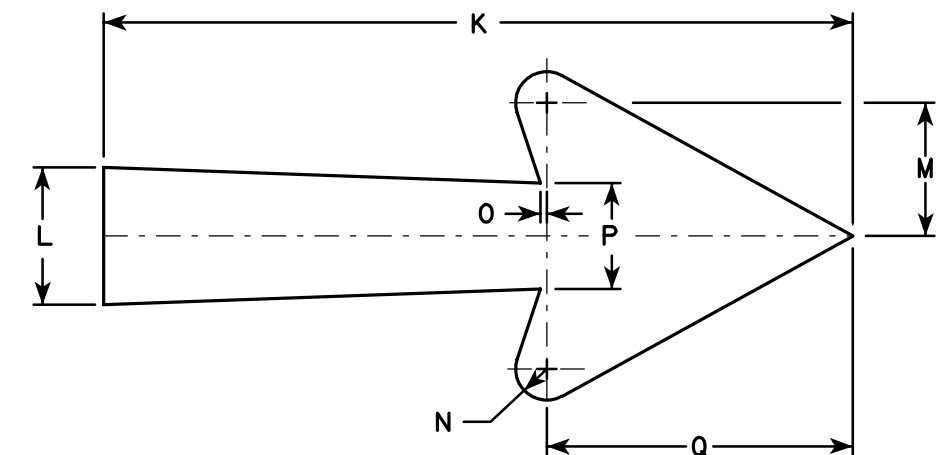
Metric equivalent
for this sign is:

SIZE	
1	
2	1200 mm X 600 mm
3	
4	1950 mm X 1050 mm
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 m2
1																												
2	48	24	2 1/4		3/4	6	4	6 1/4	6 3/4	18 1/2	15	2 3/4	3 1/8	5/8	1/8	2 1/8	6 1/8										8.0	0.72
3																												
4	78	42	3		1	10	8 3/4	11	12 1/4	30 1/8	26 1/4	4 3/4	4 5/8	1 1/8	1/4	3 3/4	10 3/4										22.8	2.05
5																												

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Blue
Message - White
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. D5-62L is the same as D5-62R except that the arrow is rotated 180° about the vertical center line.



Arrow Detail

STANDARD SIGN
D5-62

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Christa J. Spang
for State Traffic Engineer

DATE 1/09/02

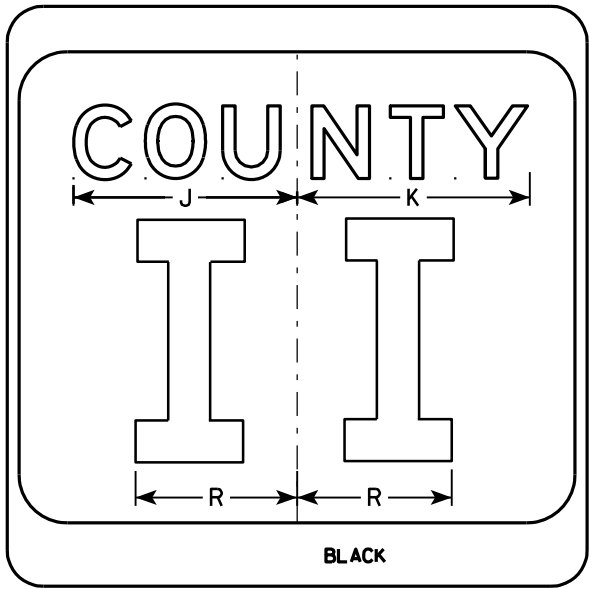
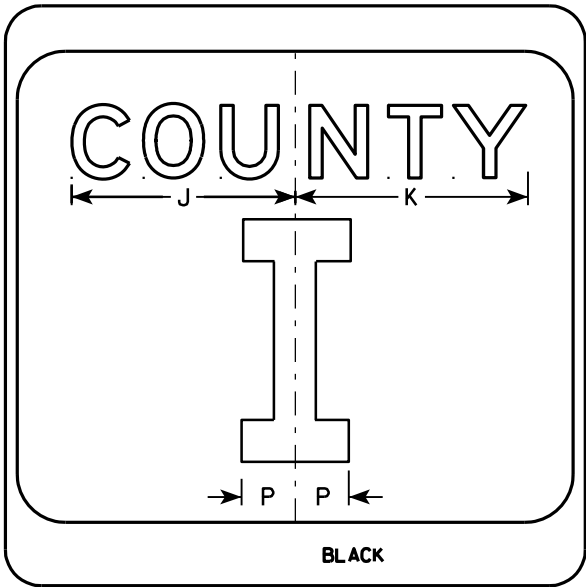
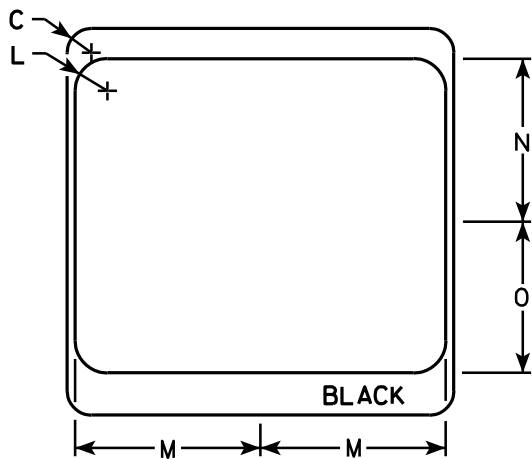
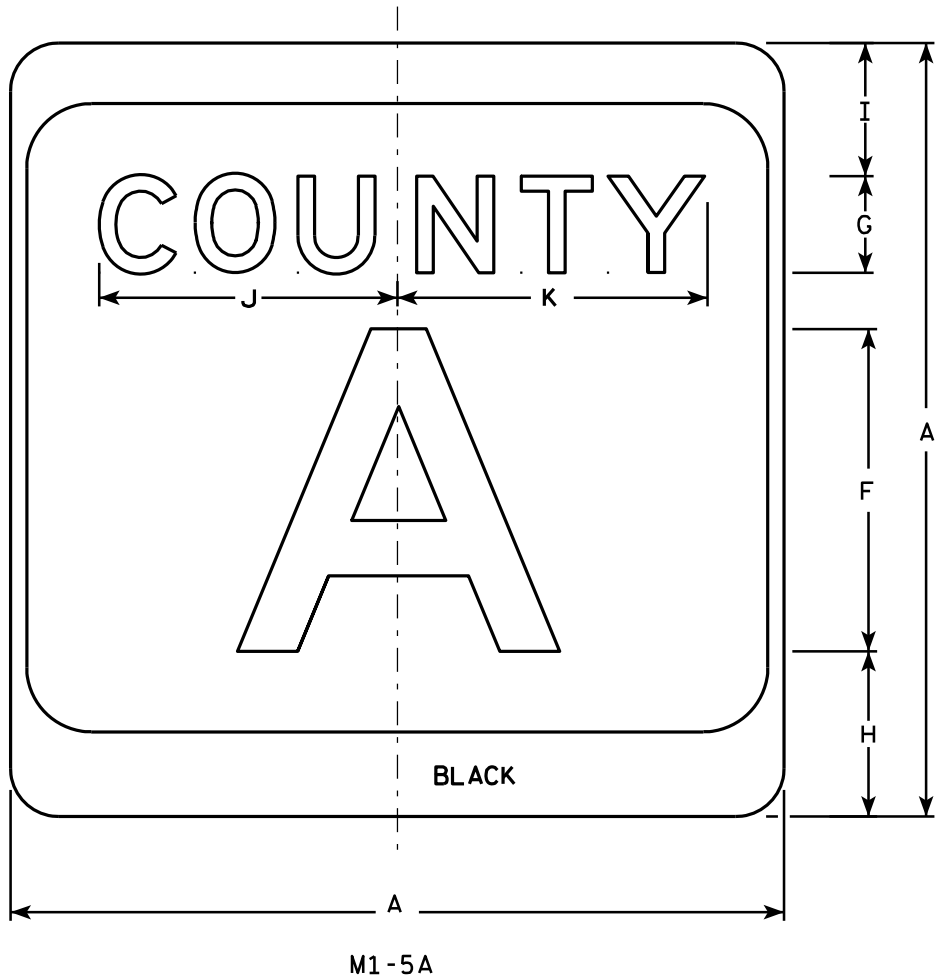
PLATE NO. D5-62.10

STATE PROJECT NUMBER:

SHEET NO: 133

E

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 134

E

CTH MARKER

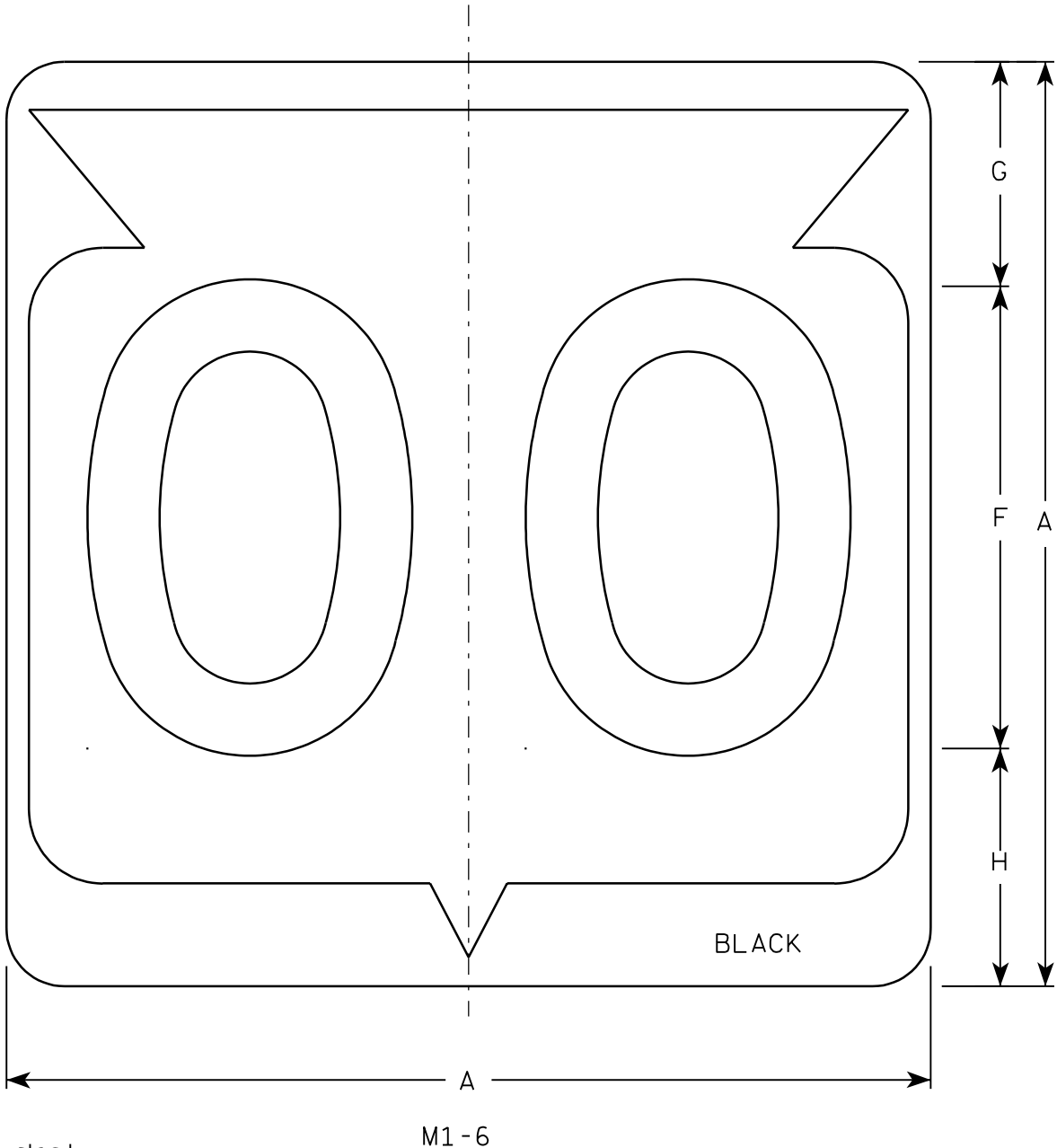
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

7



Metric equivalent
for this sign is:

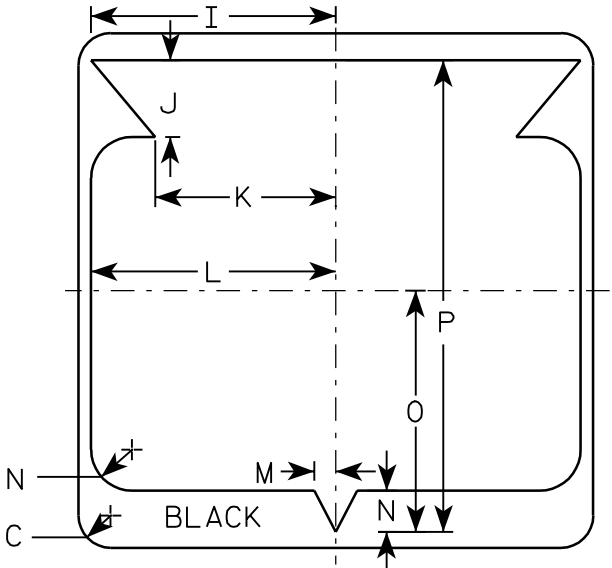
SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

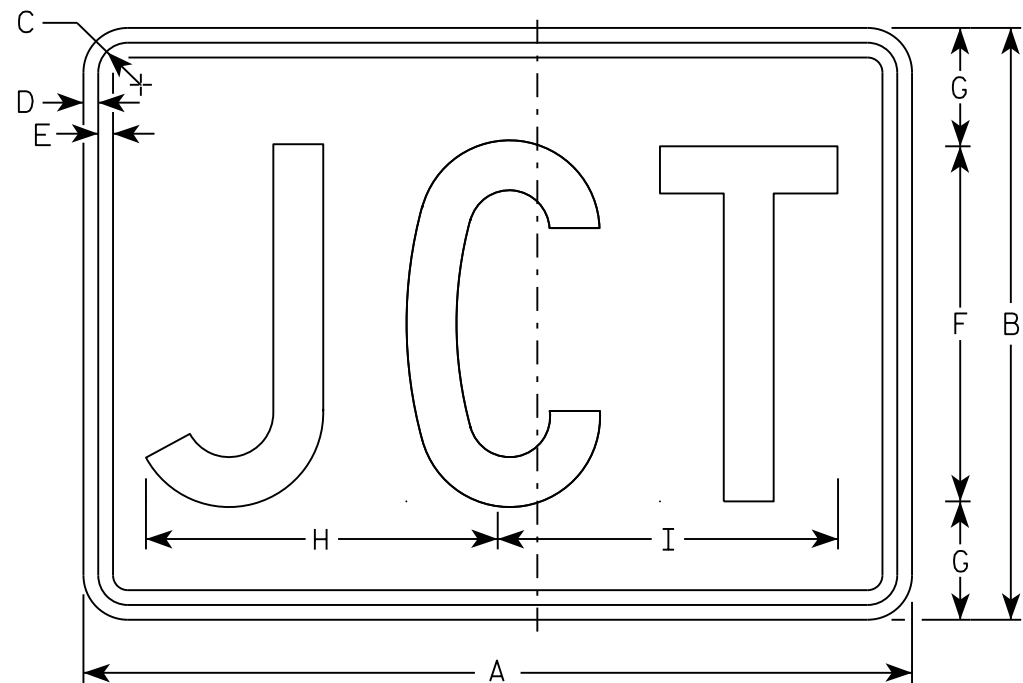
PROJECT NO:				HWY:				COUNTY:																SHEET NO: 135				E
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NOTES

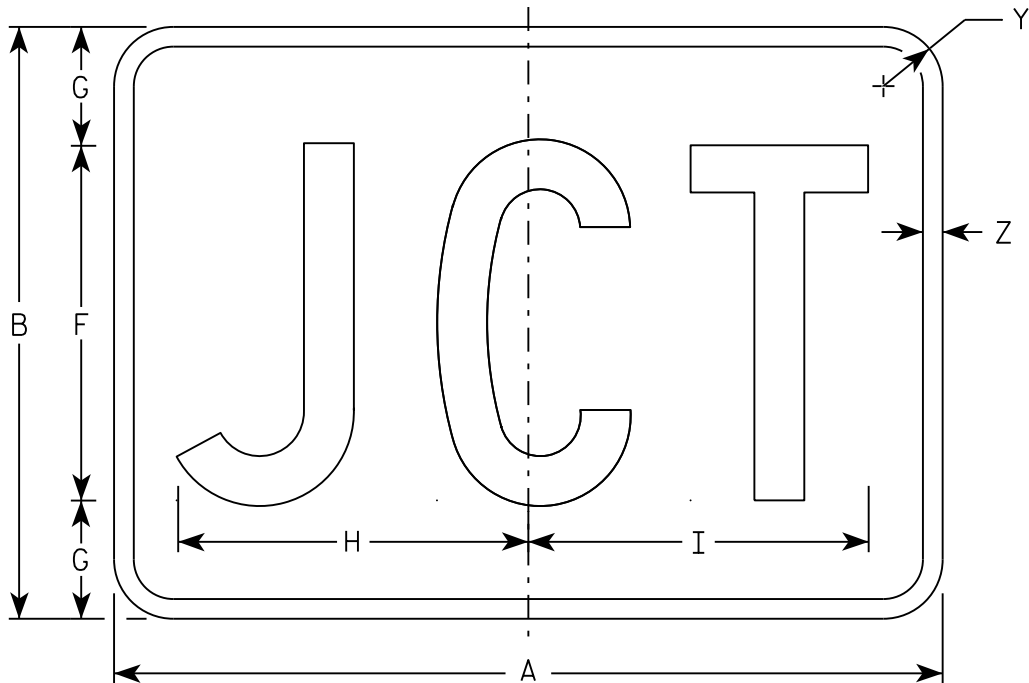
1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 6
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



7



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

- 1. Sign is Type II - Type H
- 2. Color:
 - Background - See note 5
 - Message - See note 5
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M2-1 Background - White
Message - Black
MB2-1 Background - Blue
Message - White
MK2-1 Background - Green
Message - White
MM2-1 Background - White
Message - Green
MN2-1 Background - Brown
Message - White
MP2-1 Background - White
Message - Blue
MR2-1 Background - Brown
Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

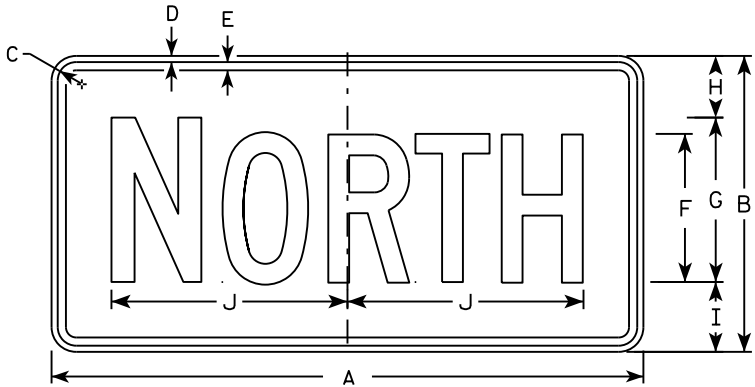
Matthew R. Rauch

For State Traffic Engineer

DATE 10/15/15

PLATE 136

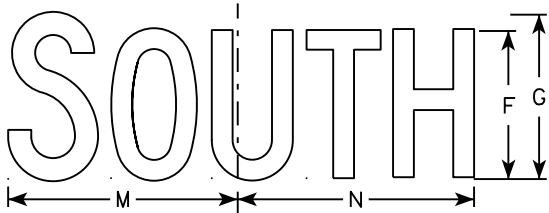
'2-1.12



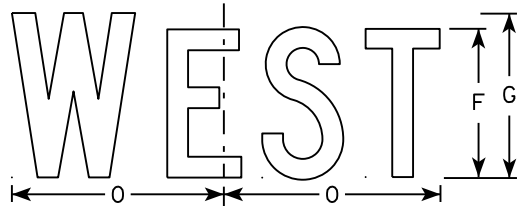
M3-1
MM3-1
MP3-1



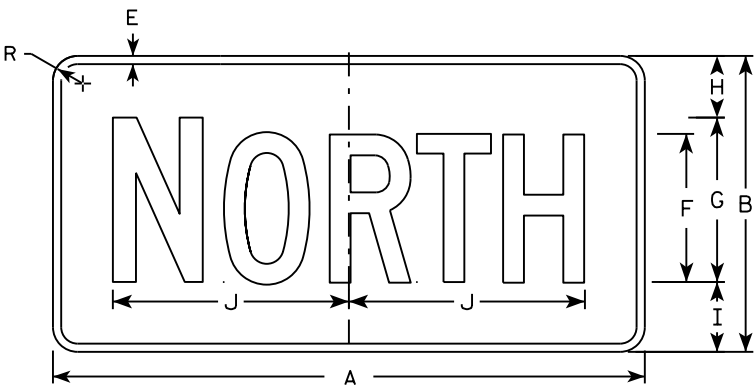
M3-2
MM3-2
MP3-2



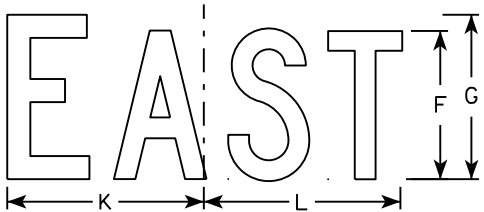
M3-3
MM3-3
MP3-3



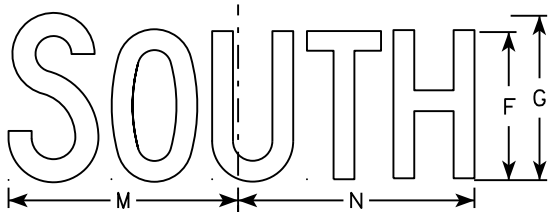
M3-4
MM3-4
MP3-4



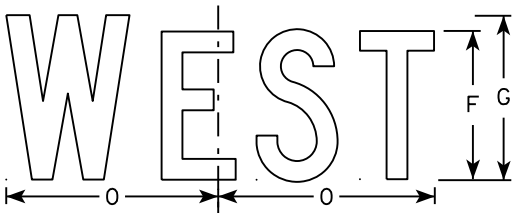
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

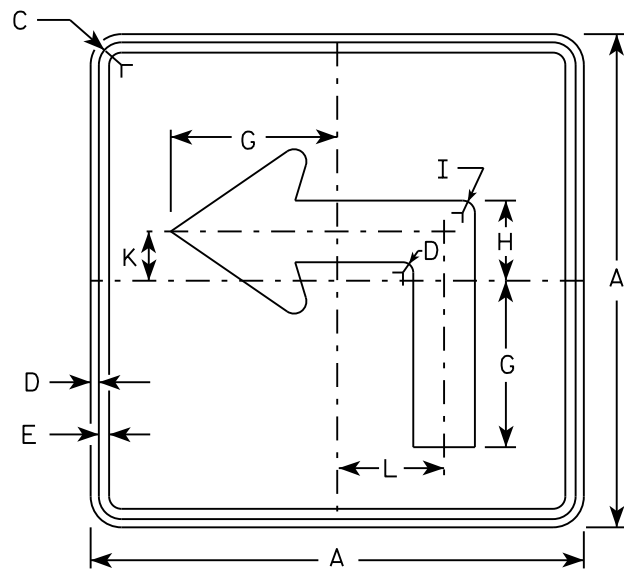
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

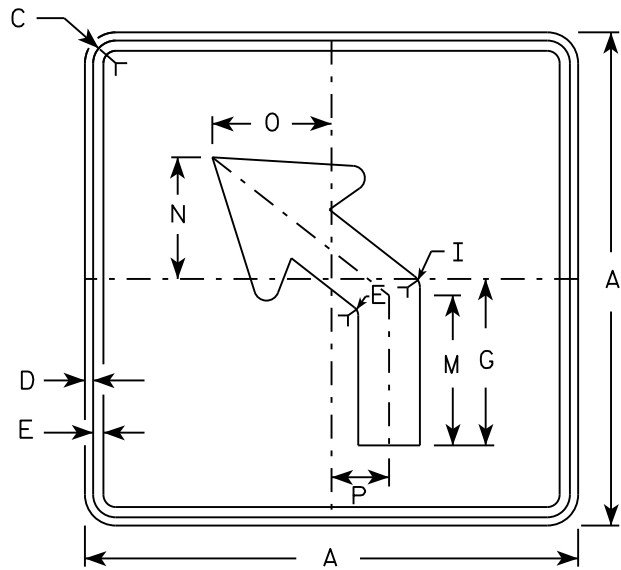
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

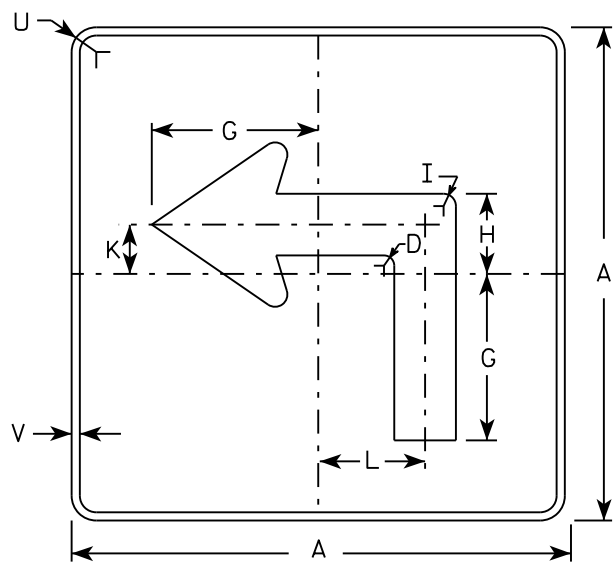
DATE 10/15/15 PLATE NO. 137 M3-1.14



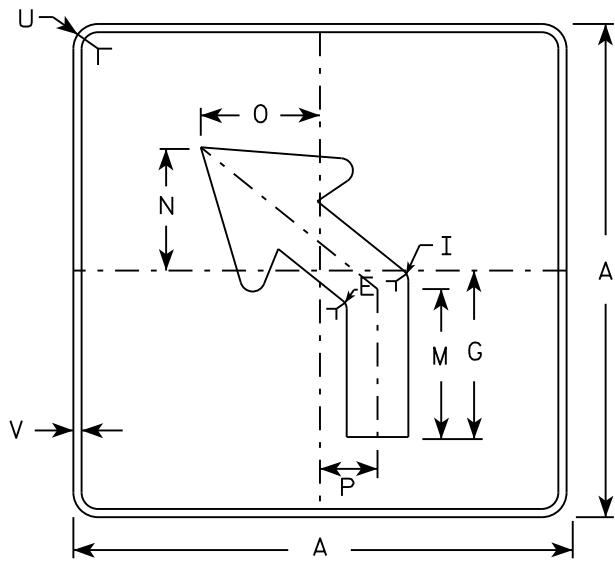
M5-1L
MM5-1L
M05-1L
MP5-1L



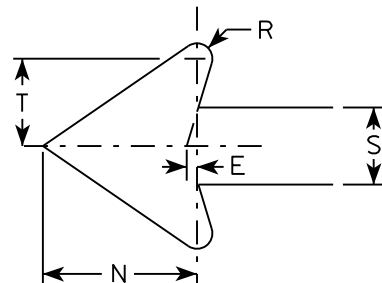
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

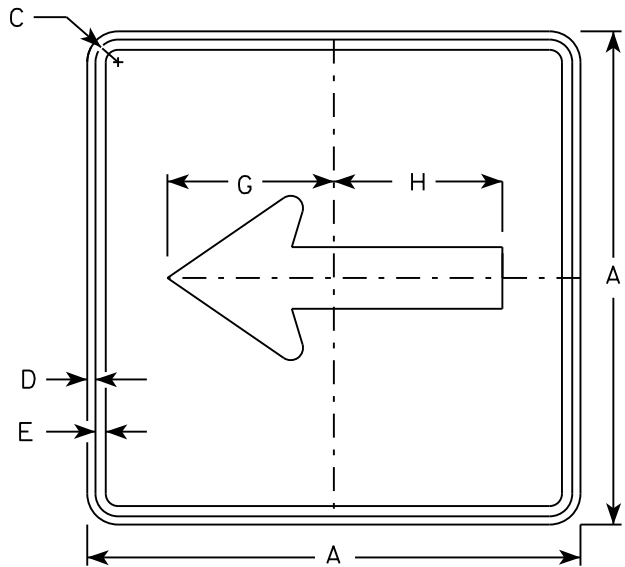
E

STANDARD SIGN
M5-1 & M5-2

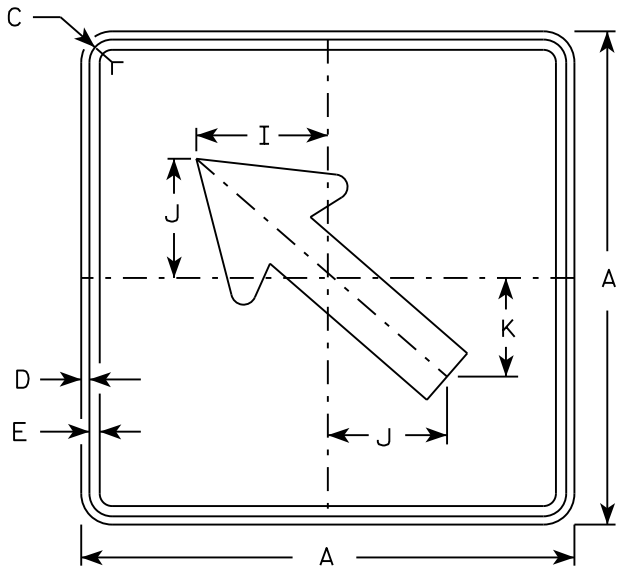
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

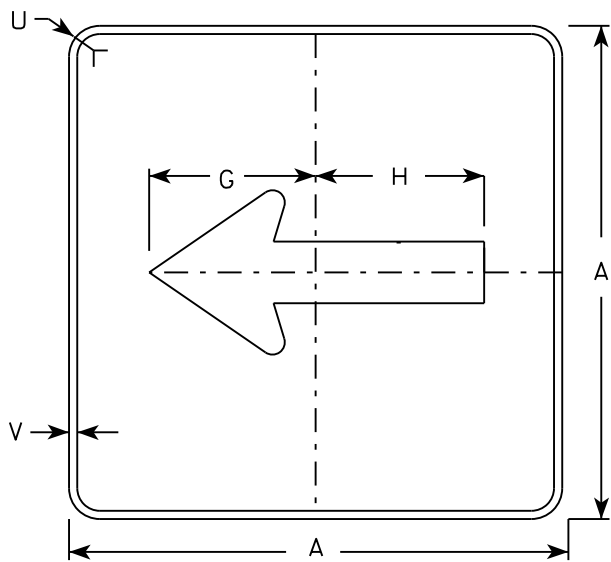
DATE 10/15/15 PLATE 138 M5-1.13



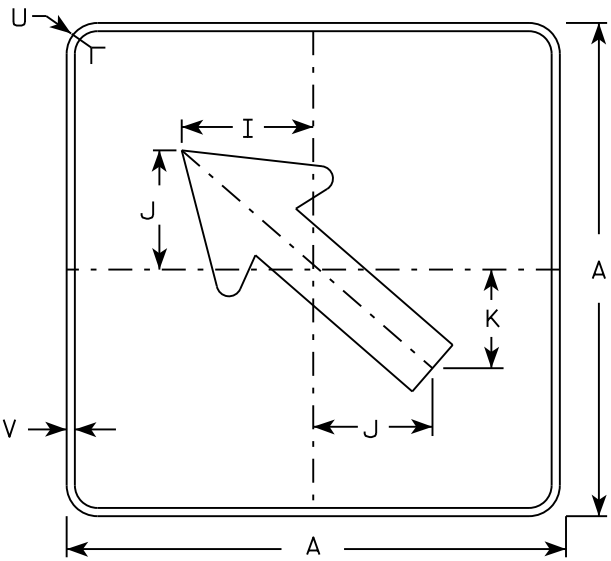
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



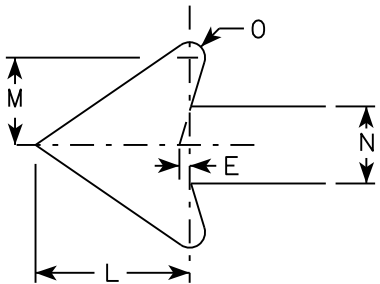
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



MB6 - 1
MK6 - 1
MN6 - 1
MR6 - 1



MB6 - 2
MK6 - 2
MN6 - 2
MR6 - 2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

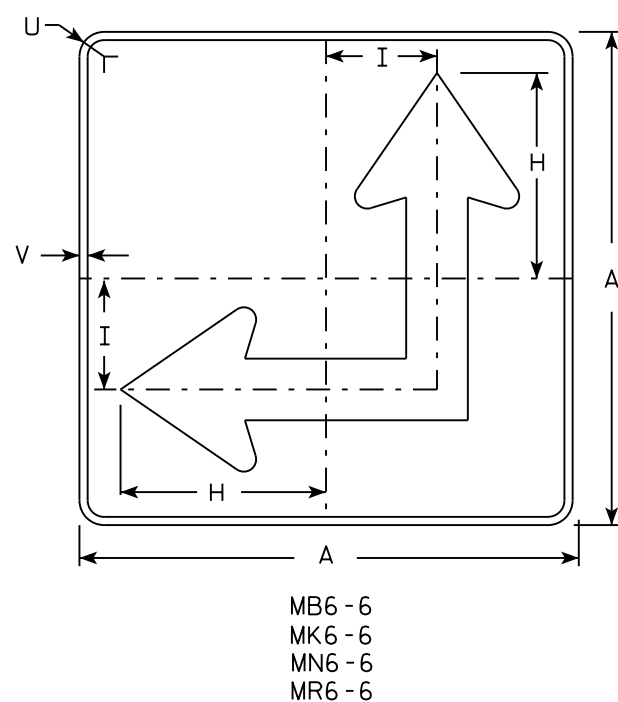
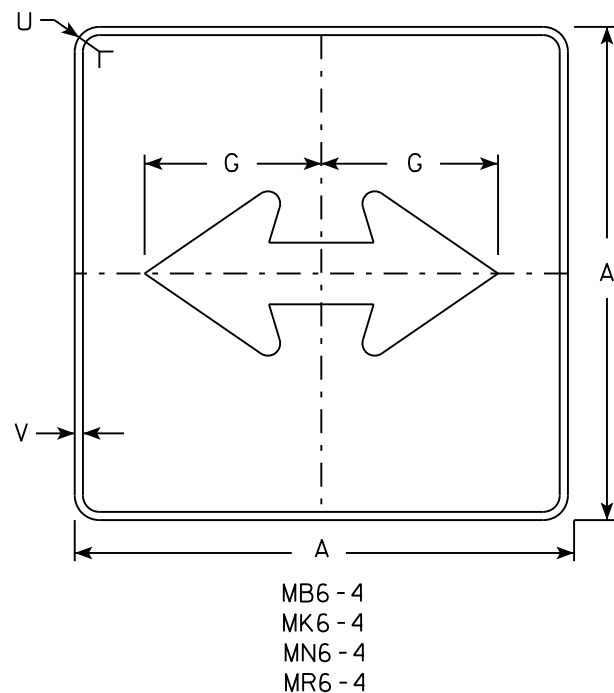
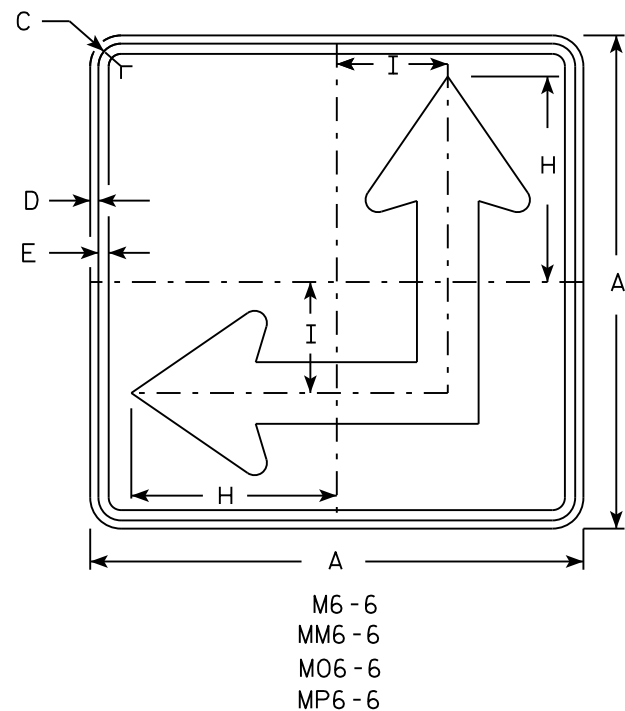
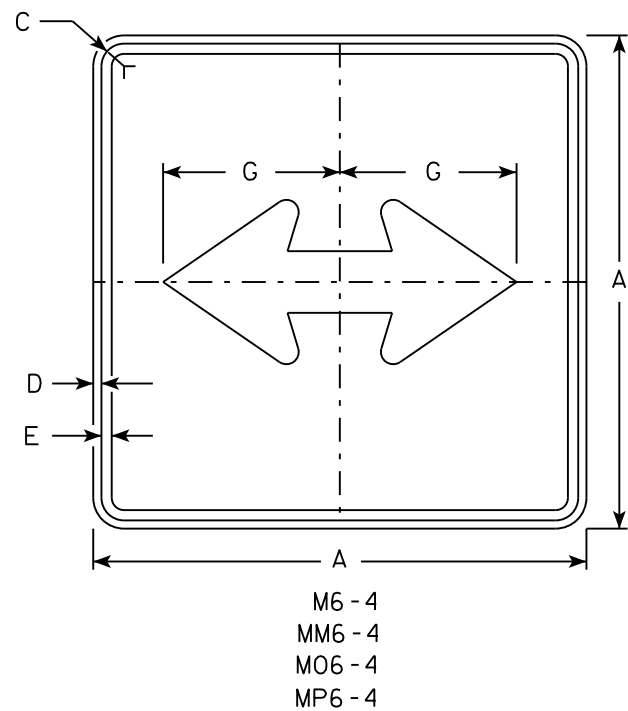
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

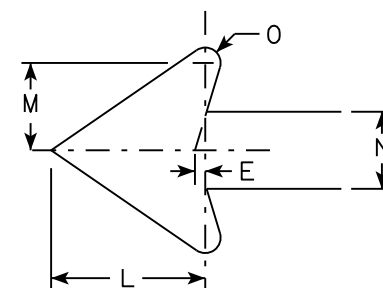
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLAT 139 M6-1.15



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See Note 4
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
MO6-4 and MO6-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and right.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

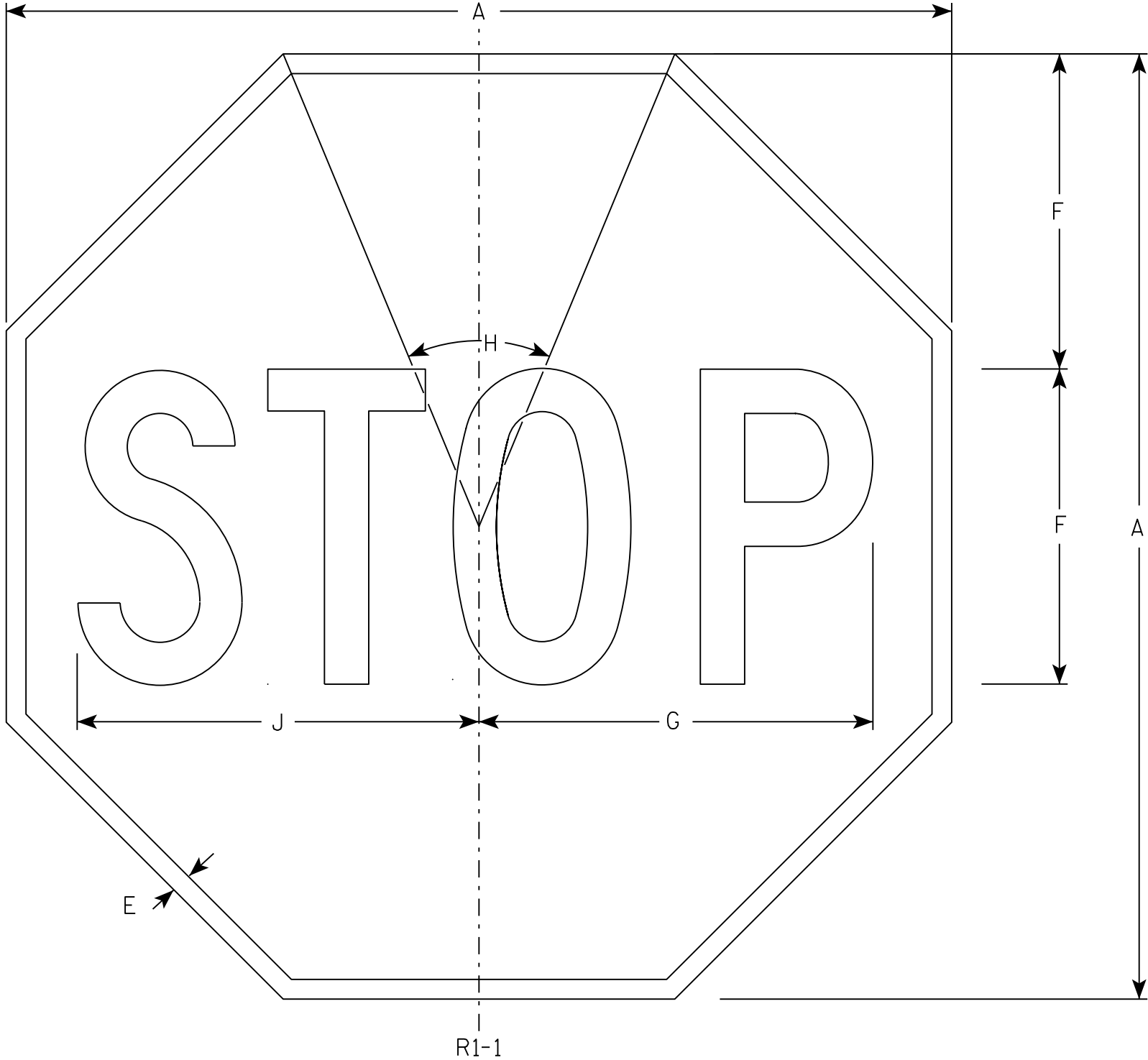
PROJECT NO:	HWY:	COUNTY:	PLAT NO:	SHEET NO:	E
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STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLAT 140 M6-4.10



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

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

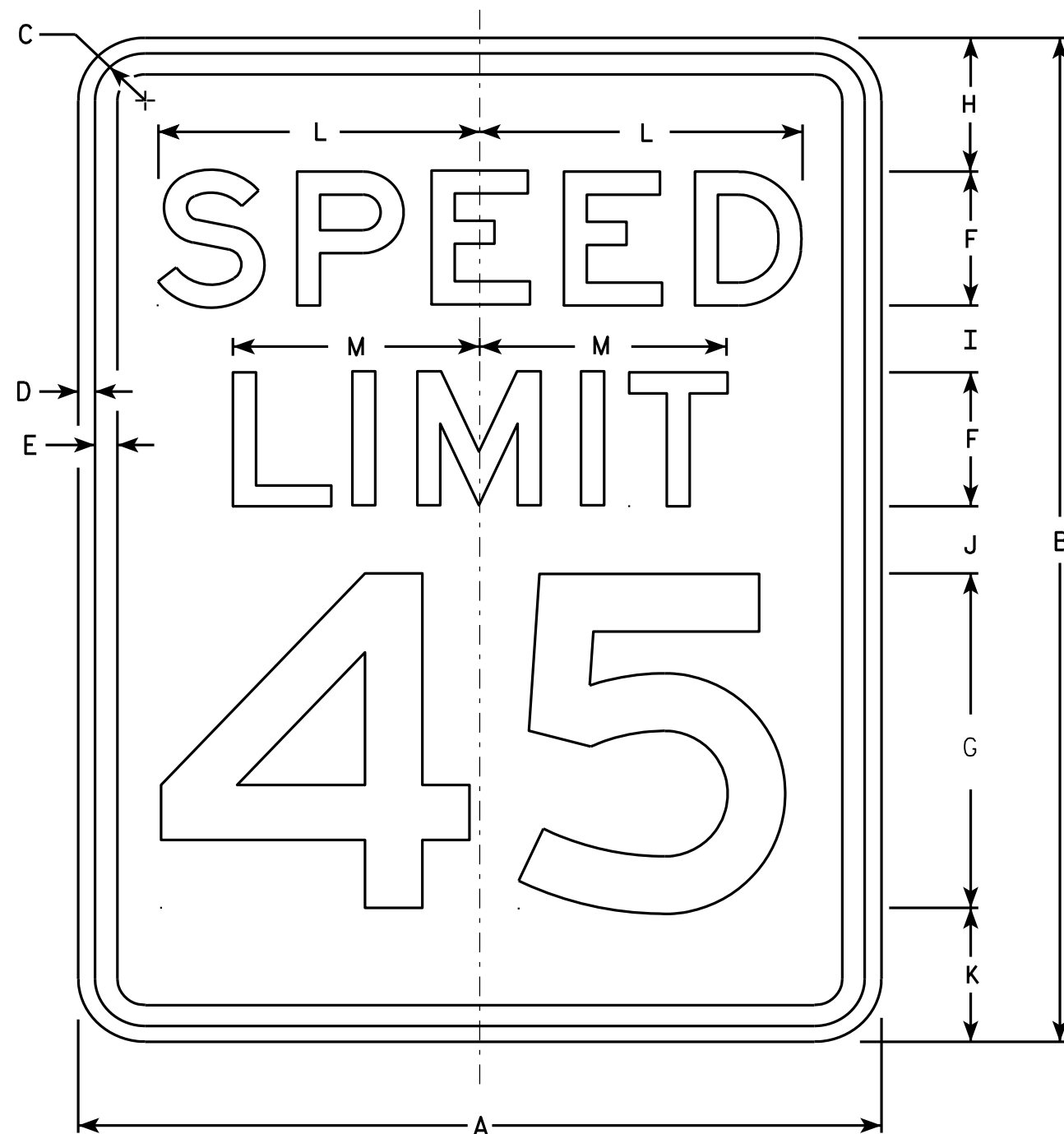
STANDARD SIGN

R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE 141 R1-1.13



R2-1

NOTES

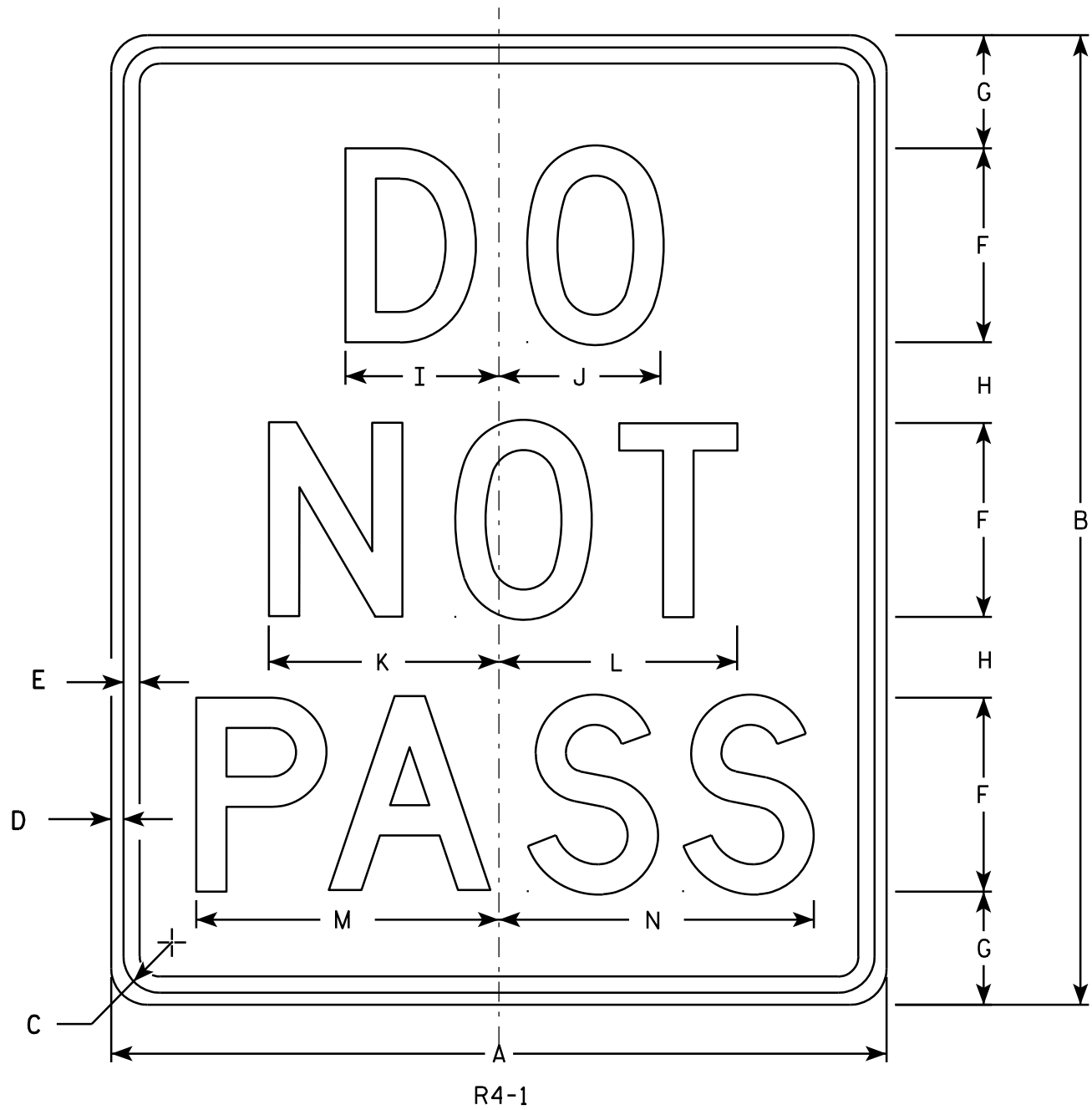
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as 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: 142 E



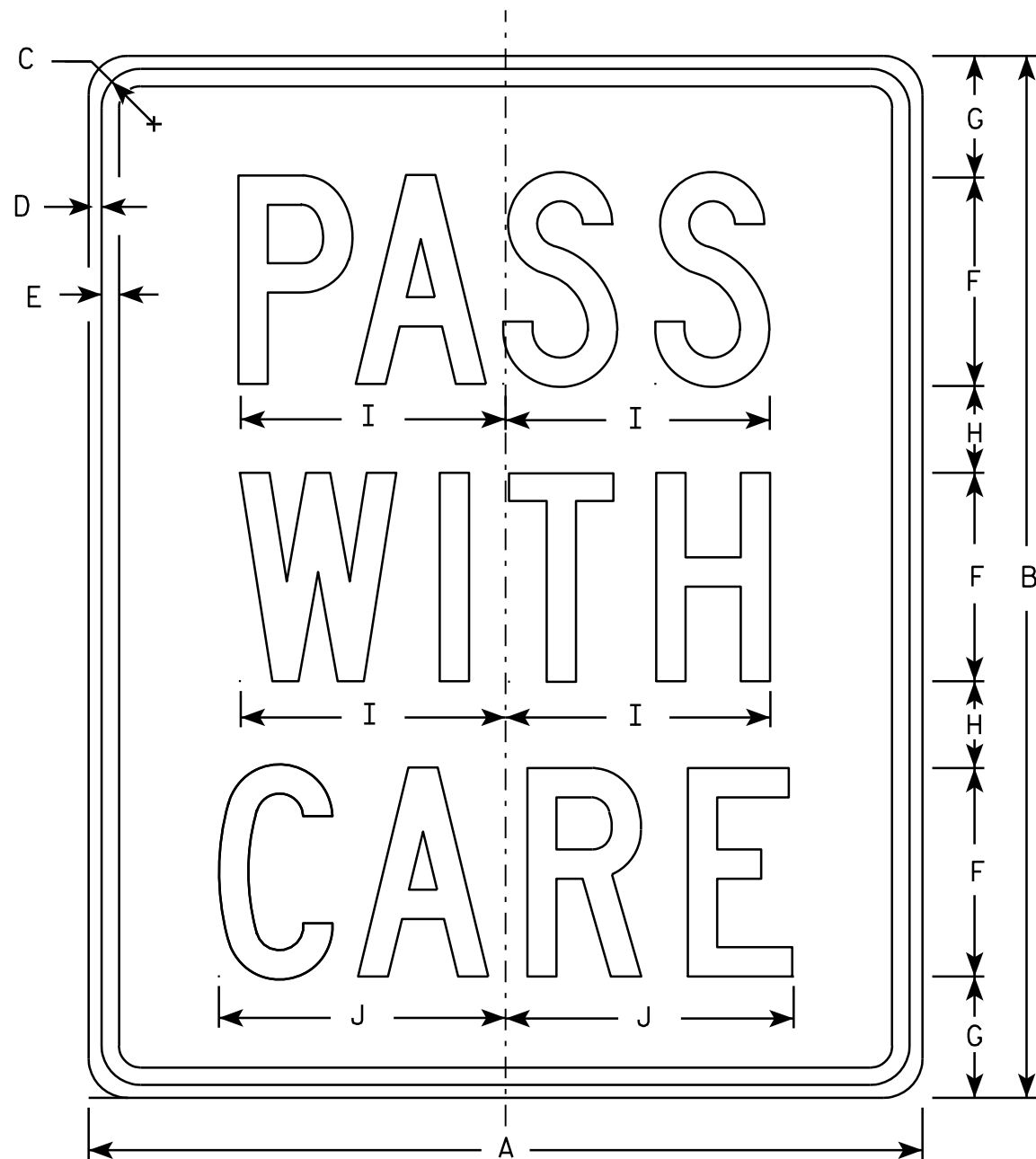
NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3																											
4	36	48	1 5/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	2 1/4	3/4	1	10	8	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4													20.0

STANDARD SIGN R4-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/25/2011	PLATE NO. R4-1.7

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 143	E
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R4 - 2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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	5	2 3/4	1 3/4	6 3/8	6 7/8																	3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	7 5/8	8 1/4																	5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	7 5/8	8 1/4																	5.0
3	36	48	1 3/8	1/2	5/8	10	5 1/2	3 1/2	12 3/4	13 3/4																	12.0
4																											
5																											

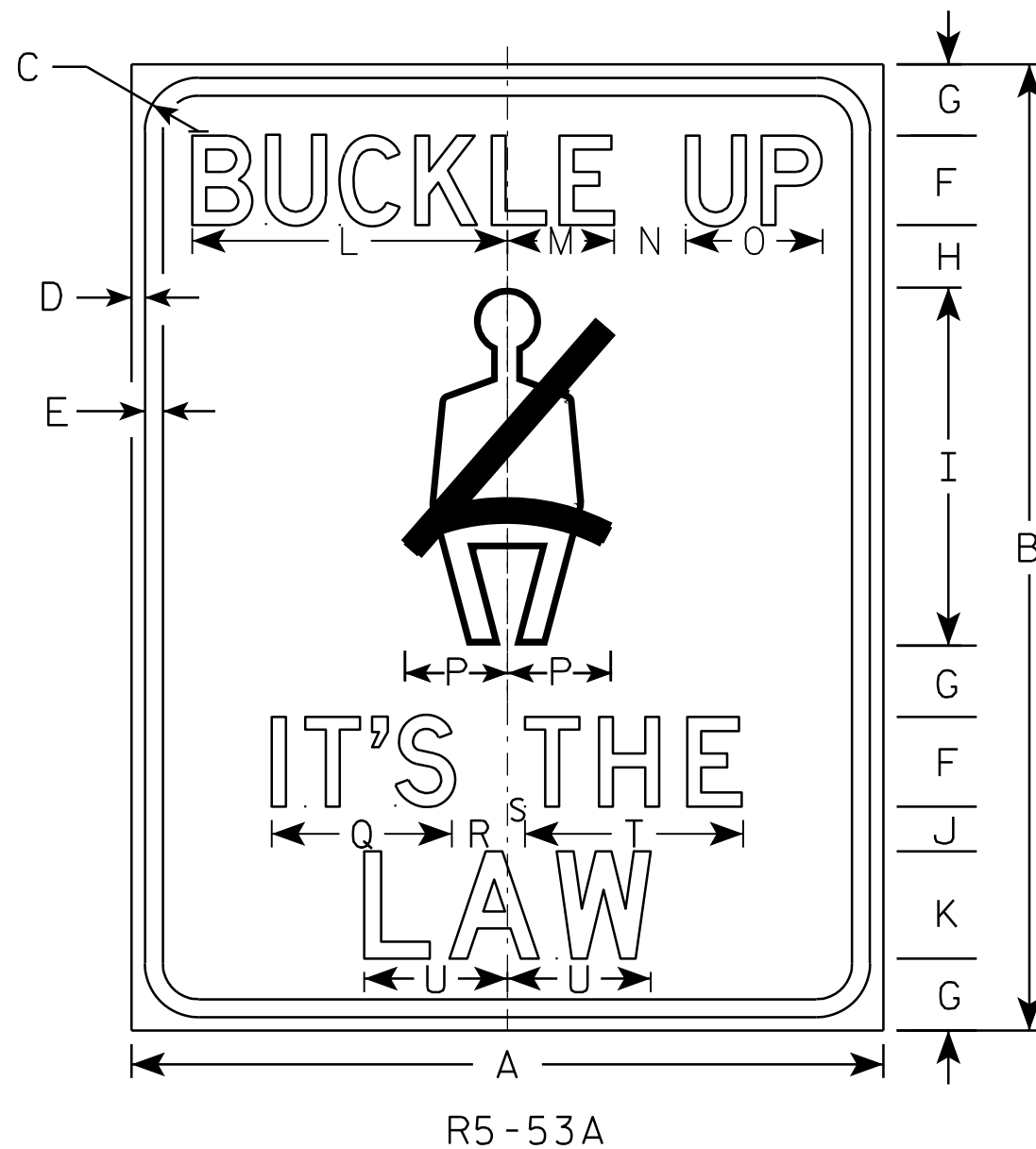
STANDARD SIGN R4 - 2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

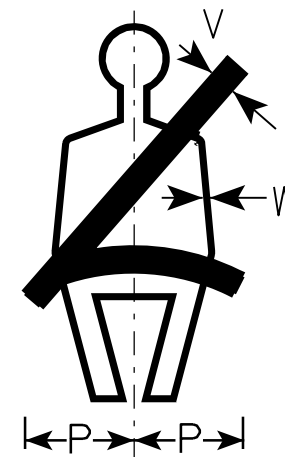
DATE 3/25/2011 PLATE NO. R4-2.6

PROJECT NO: HWY: COUNTY: SHEET NO: 144 E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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	18	24	1 1/8	3/8	3/8	2	1 3/4	1 1/2	9	1 1/4	3	6 3/4	2 1/4	1 1/2	2 7/8	2 1/2	3 7/8	1 1/4	3/8	4 5/8	3 7/8	5/8	1/8				3.00
2M	18	24	1 1/8	3/8	3/8	2	1 3/4	1 1/2	9	1 1/4	3	6 3/4	2 1/4	1 1/2	2 7/8	2 1/2	3 7/8	1 1/4	3/8	4 5/8	3 7/8	5/8	1/8				3.00
3																											
4																											
5	42	54	2 1/4	3/4	1	5	4	3 1/2	20	2 1/2	6	17 5/8	6	4	7 5/8	5 3/4	10	3 1/2	1	12 1/4	8	1 1/2	3/8				15.75

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 145	E
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STANDARD SIGN
R5-53A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

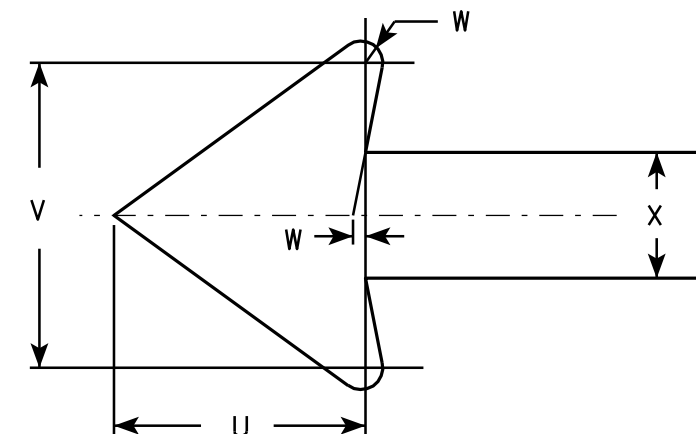
DATE 3/29/2011 PLATE NO. R5-53A.5



R7-1

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 - Red
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. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



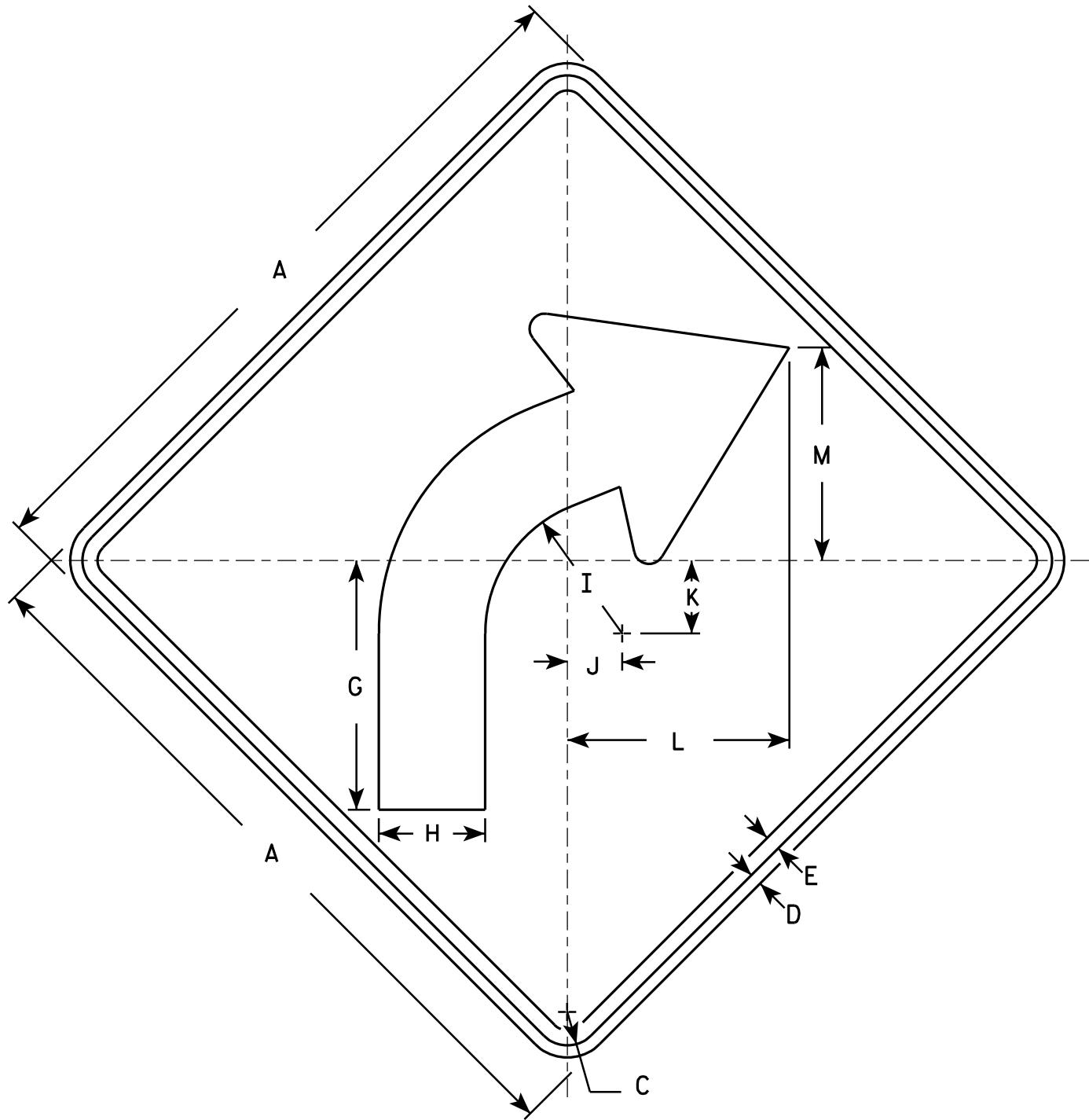
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN R7-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/31/2011	PLATE NO. R7-1.9

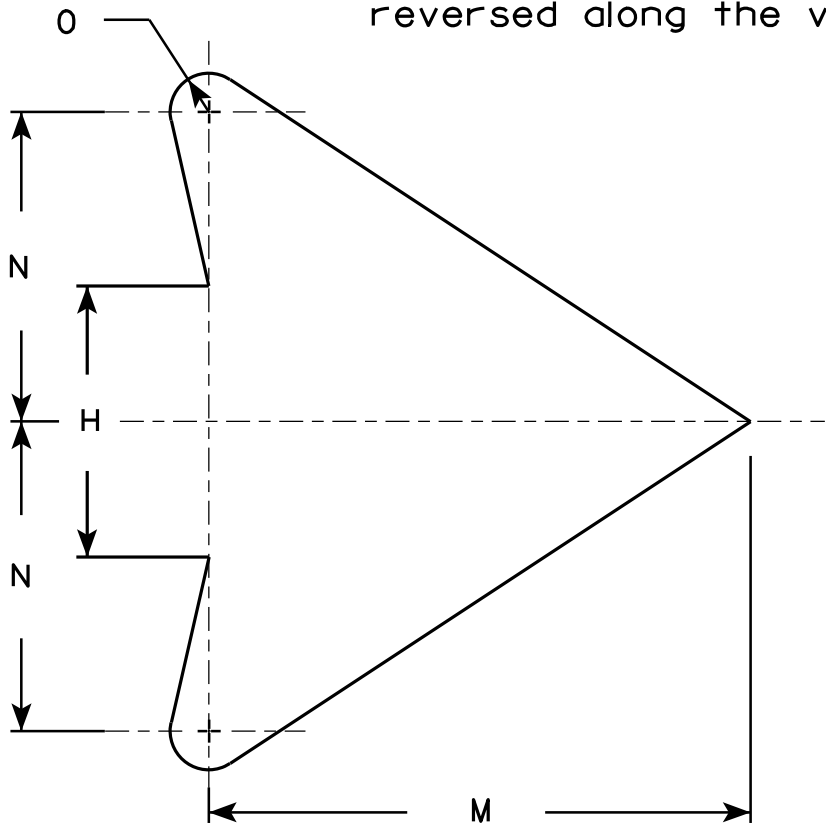
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 146	E
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NOTES

- 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. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

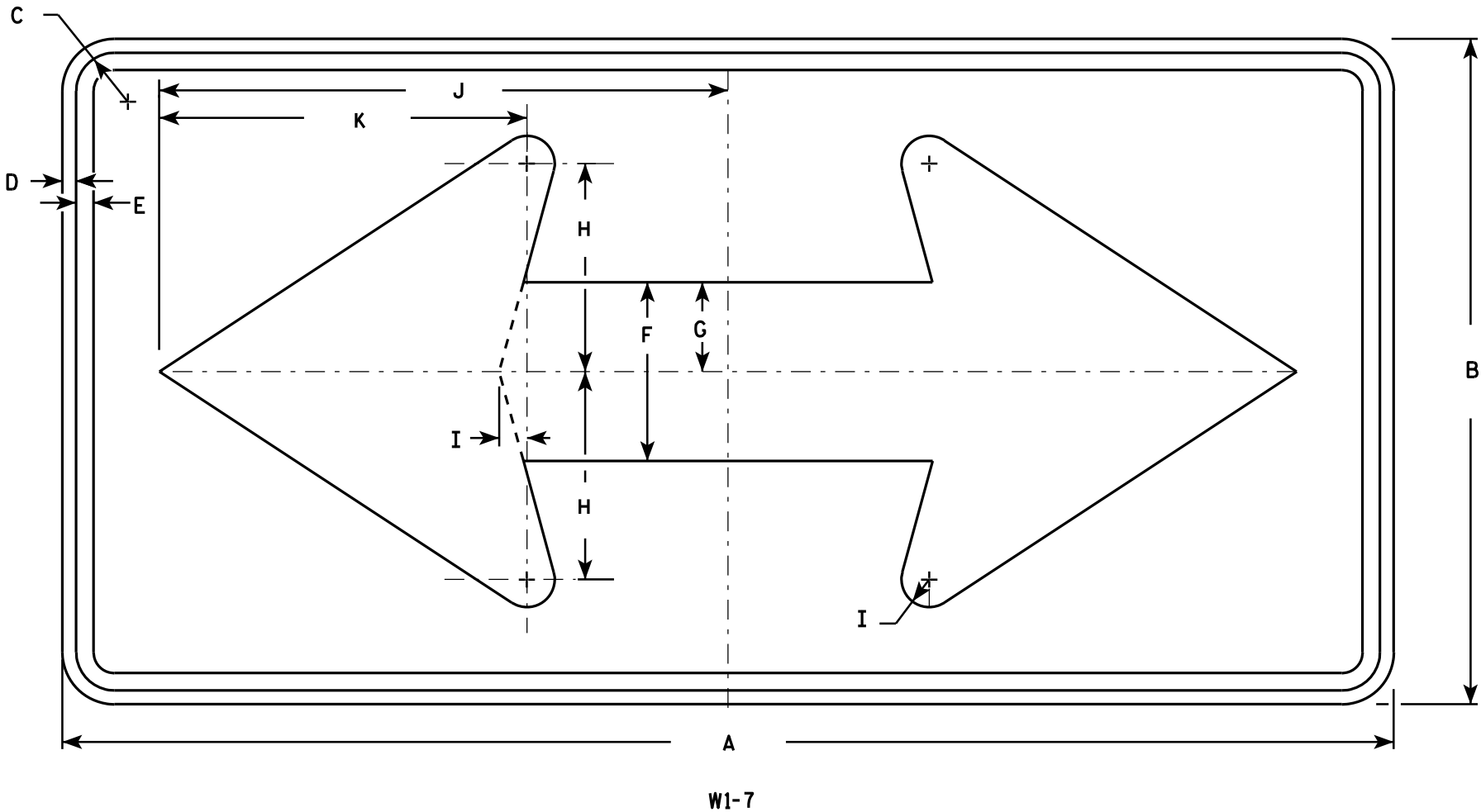
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6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

STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10



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. 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.

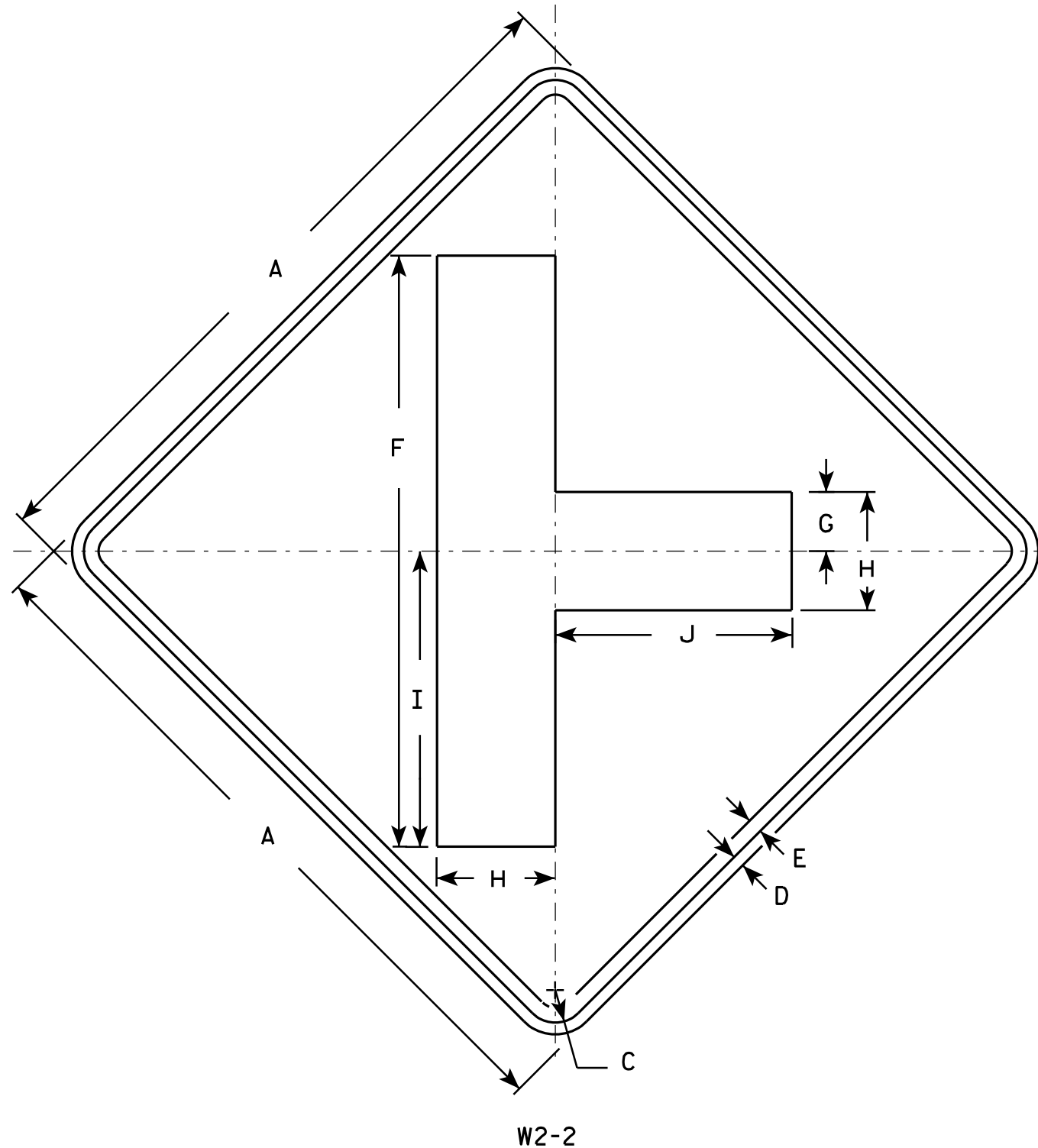
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

STANDARD SIGN
W1 - 7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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	20	2	4	10	8																	4.0
2S	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
2M	30		1 3/8	1/2	5/8	25	2 1/2	5	12 1/2	10																	6.25
3	36		1 5/8	5/8	3/4	30	3	6	15	12																	9.0
4	48		2 1/4	3/4	1	40	4	8	20	16																	16.0
5																											

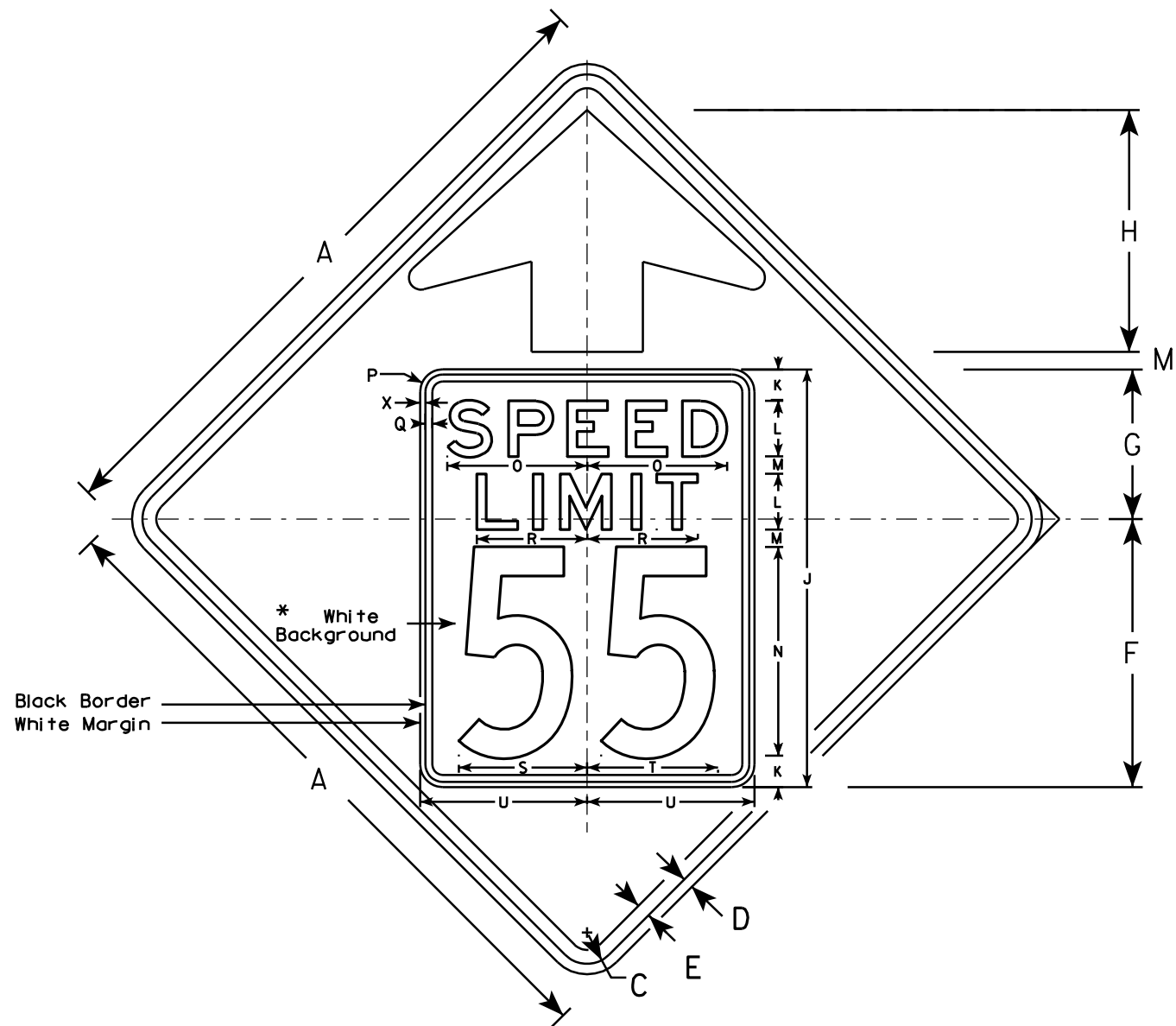
STANDARD SIGN W2-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-2.6

PROJECT NO: HWY: COUNTY: SHEET NO: 149 E

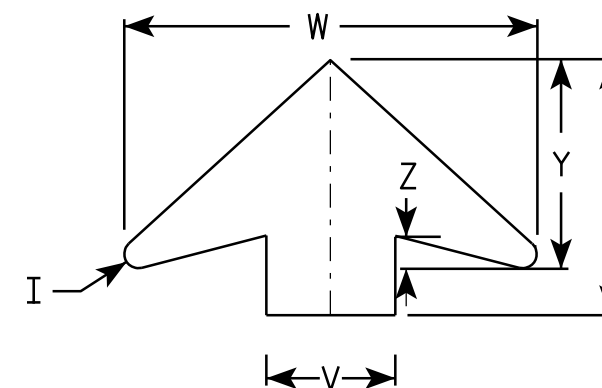


W3-5

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

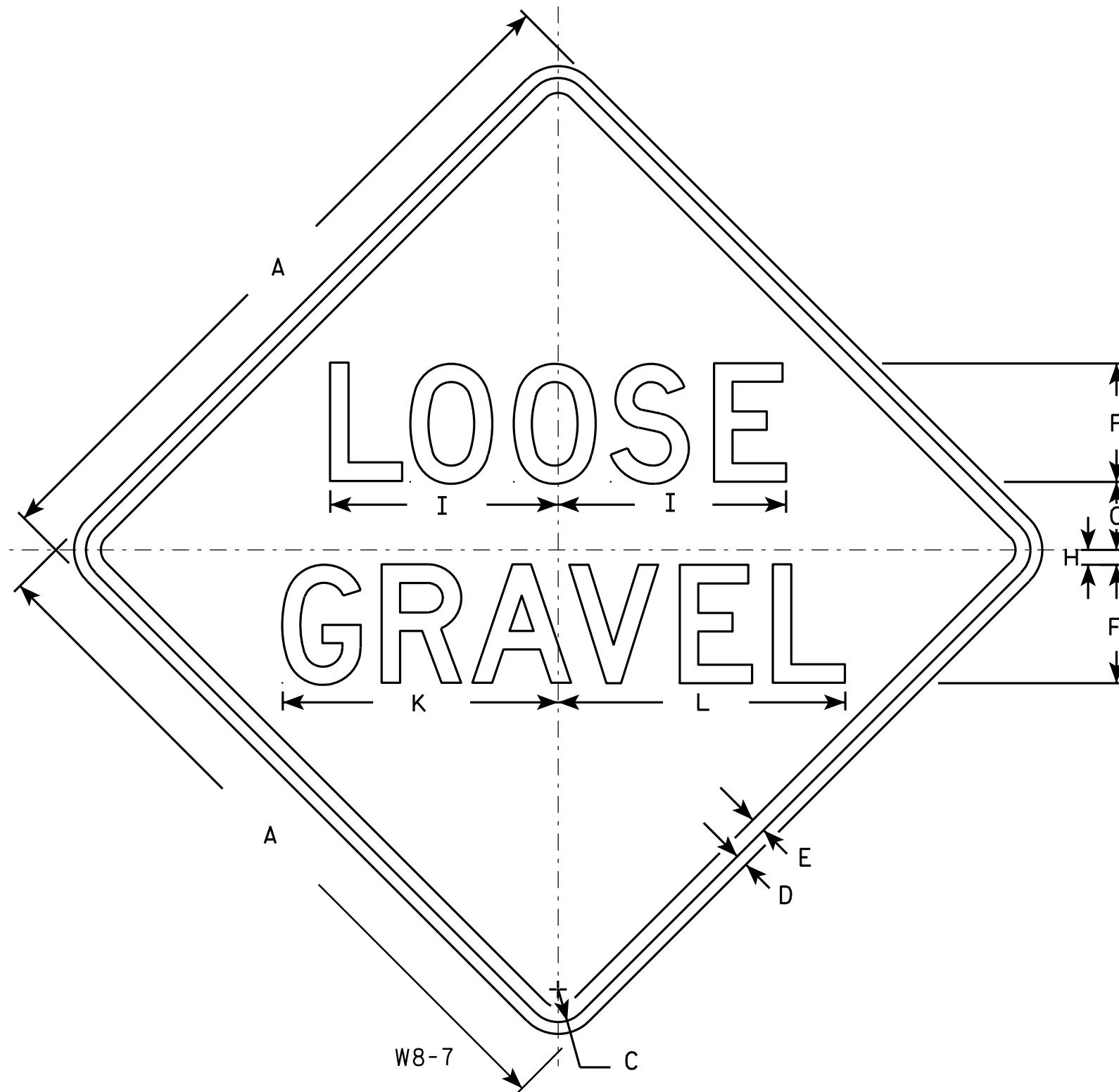
DATE 5/29/12

PLATE NO. W3-5.5

PROJECT NO:

SHEET NO: 150

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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	2 3/4	1/2	7 3/4		9 1/4	9 3/4															4.0
2S	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
2M	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
3	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
4	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
5	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0

STANDARD SIGN

W8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 5/30/12 PLATE NO. W8-7.7

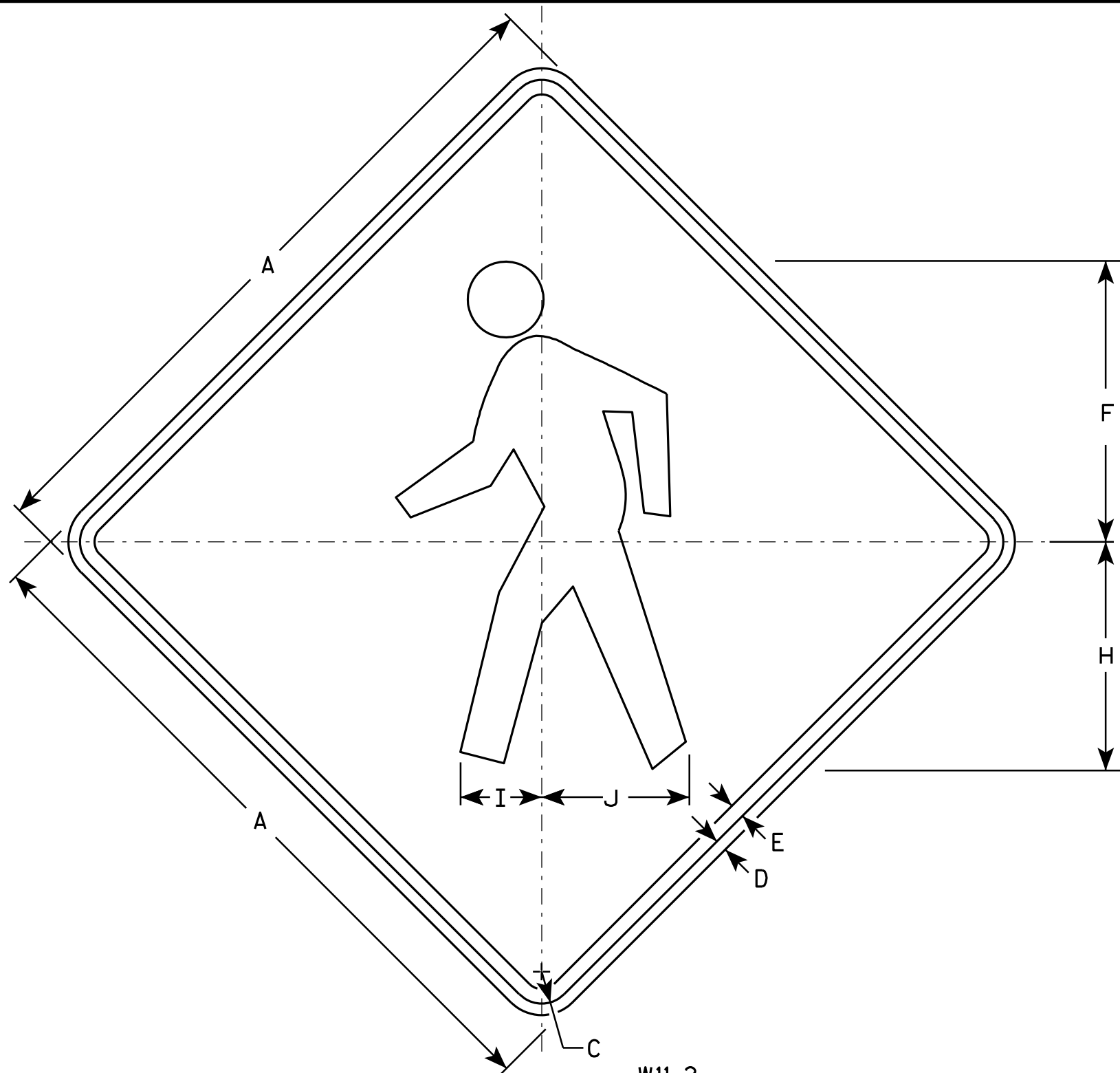
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 151

E



W11-2

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

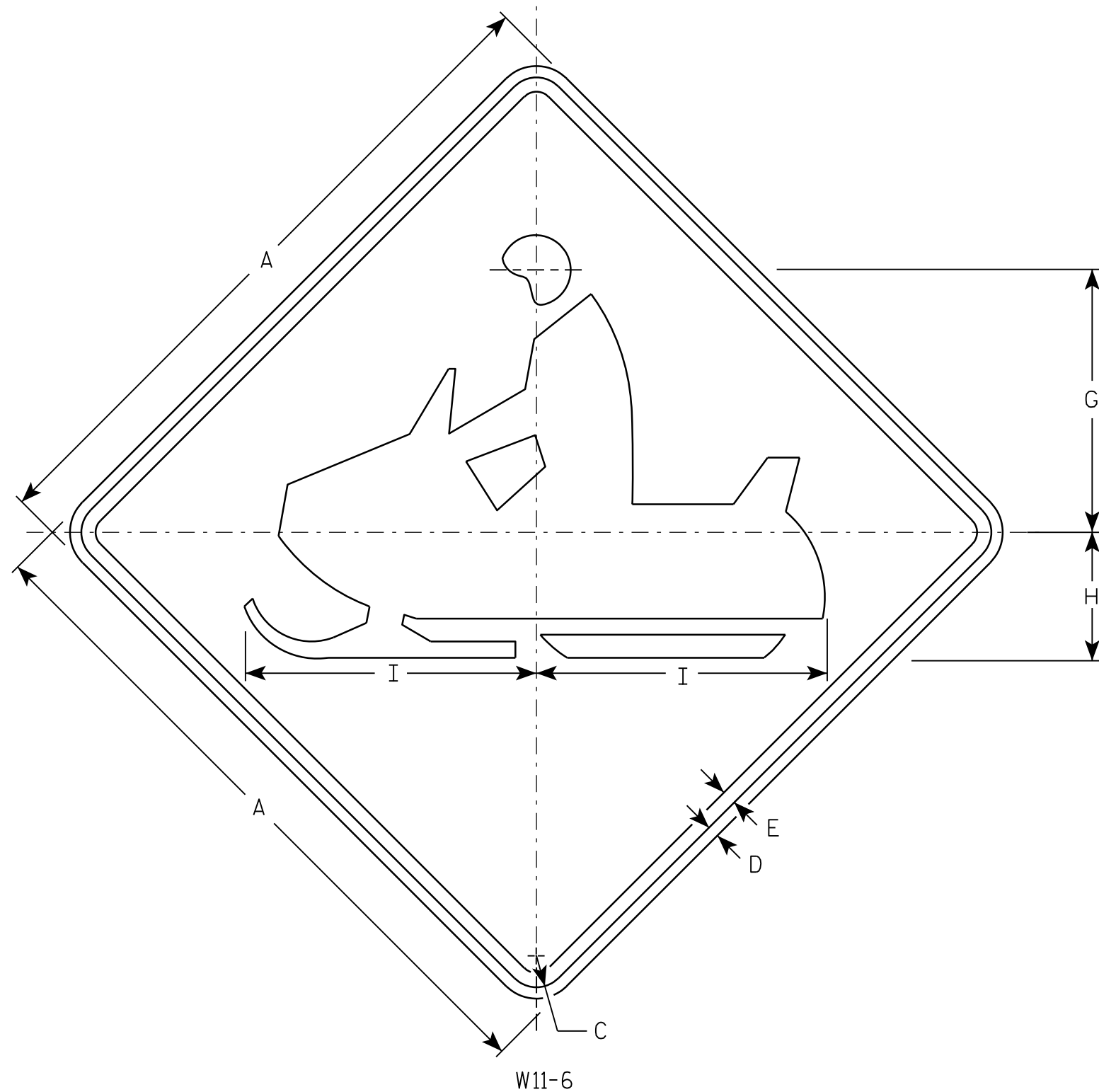
STANDARD SIGN W11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7

PROJECT NO: HWY: COUNTY: SHEET NO: 152 E



W11-6

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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		9 1/2	4 1/2	10 1/4																		4.0
2S	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
2M	30		1 3/8	1/2	5/8		11 1/2	5 5/8	12 3/4																		6.25
3	36		1 5/8	5/8	3/4		14 1/8	6 3/4	15 1/4																		9.0
4	48		2 1/4	3/4	1		19	9	20 1/2																		16.0
5																											

STANDARD SIGN
W11-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W11-6.8

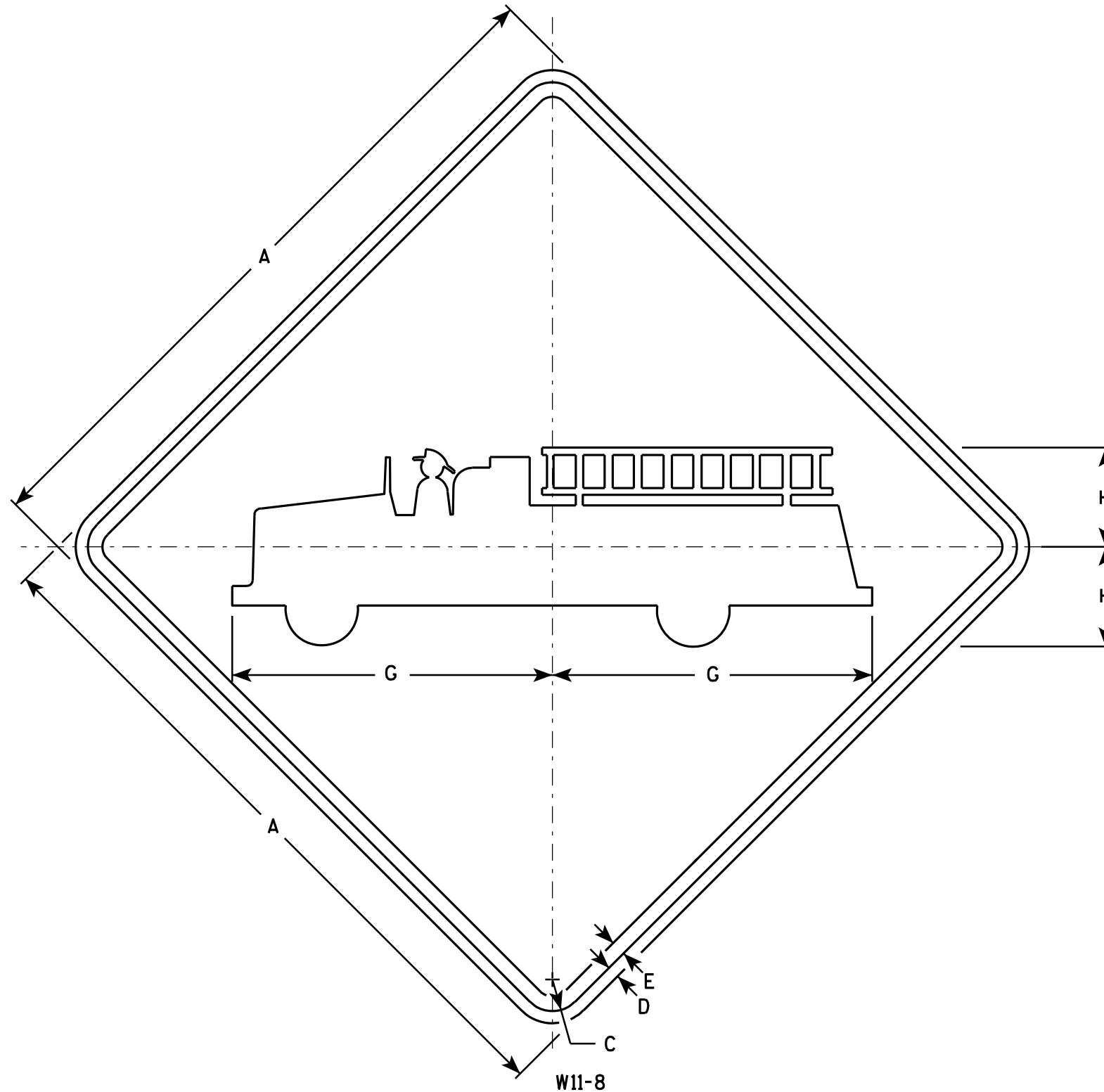
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 153

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

W11-8

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	24		1 1/8	3/8	1/2		11	3 3/8																			4.0
2S	30		1 3/8	1/2	5/8		13 3/4	4 3/8																			6.25
2M	30		1 3/8	1/2	5/8		13 3/4	4 3/8																			6.25
3	36		1 5/8	5/8	3/4		16 1/2	5 1/4																			9.0
4	48		2 1/4	3/4	1		22	7																			16.0
5																											

STANDARD SIGN W11-8

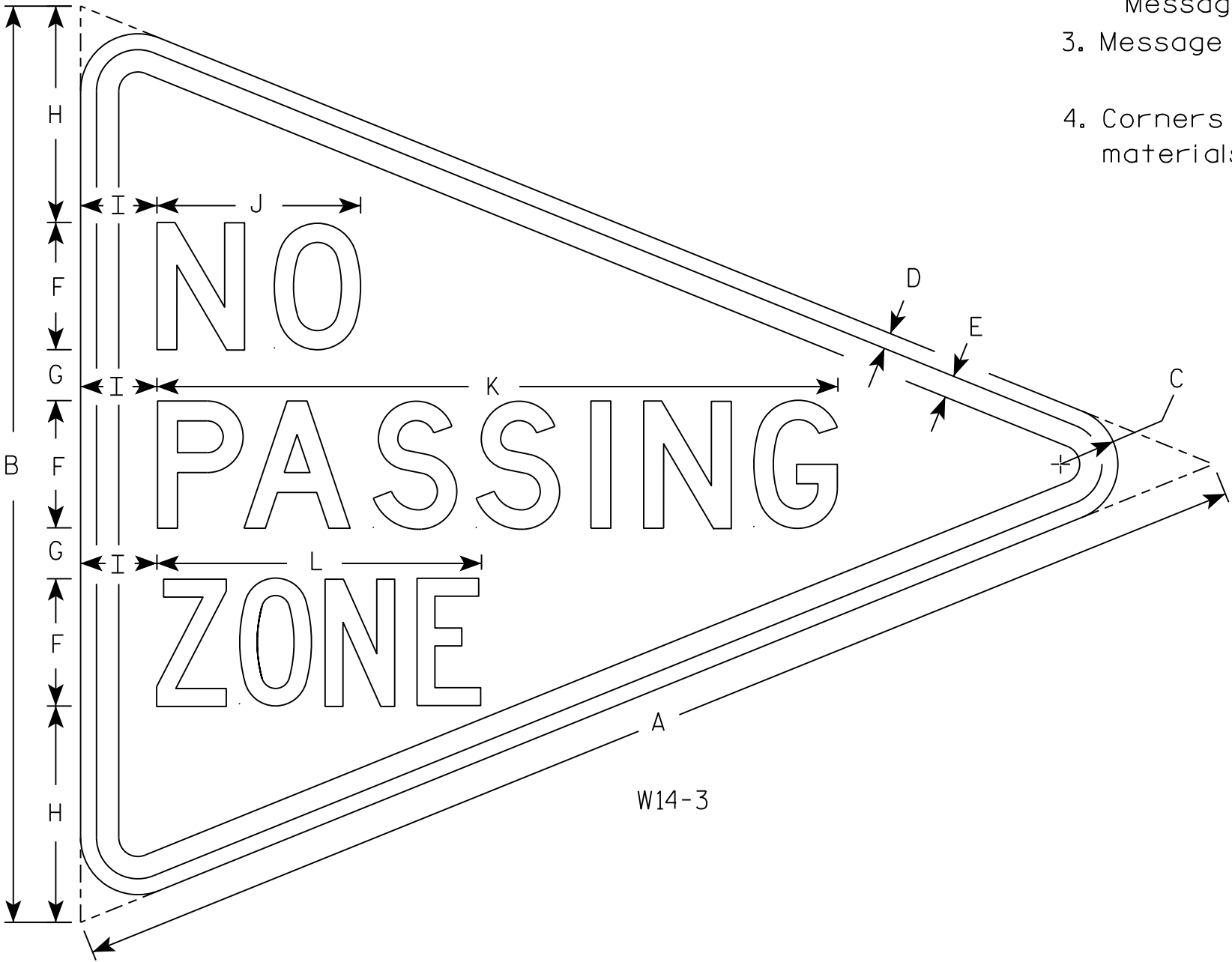
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/13/13 PLATE NO. W11-8.7

PROJECT NO:

SHEET NO: 154

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.



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	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																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 155

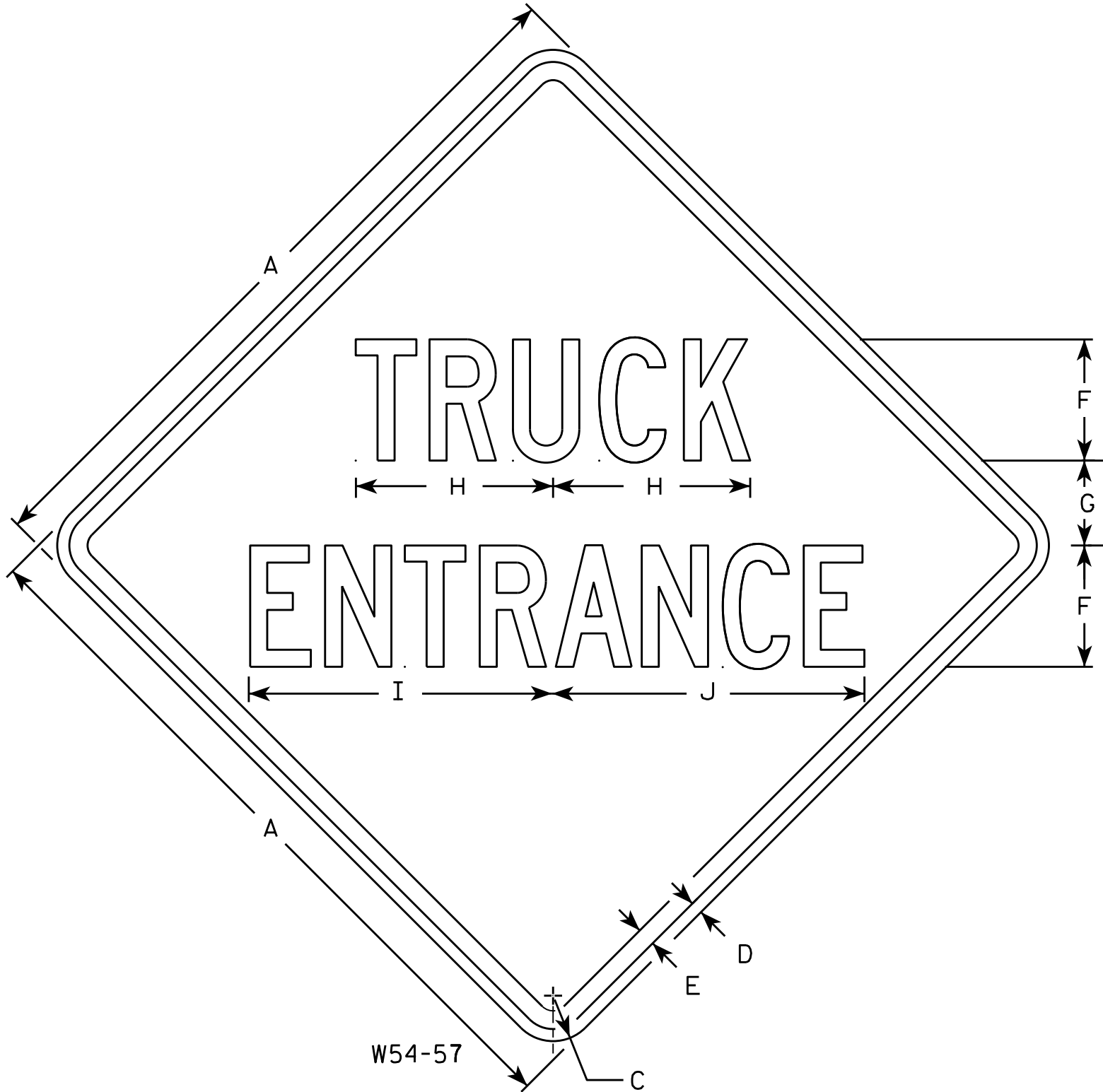
E

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.

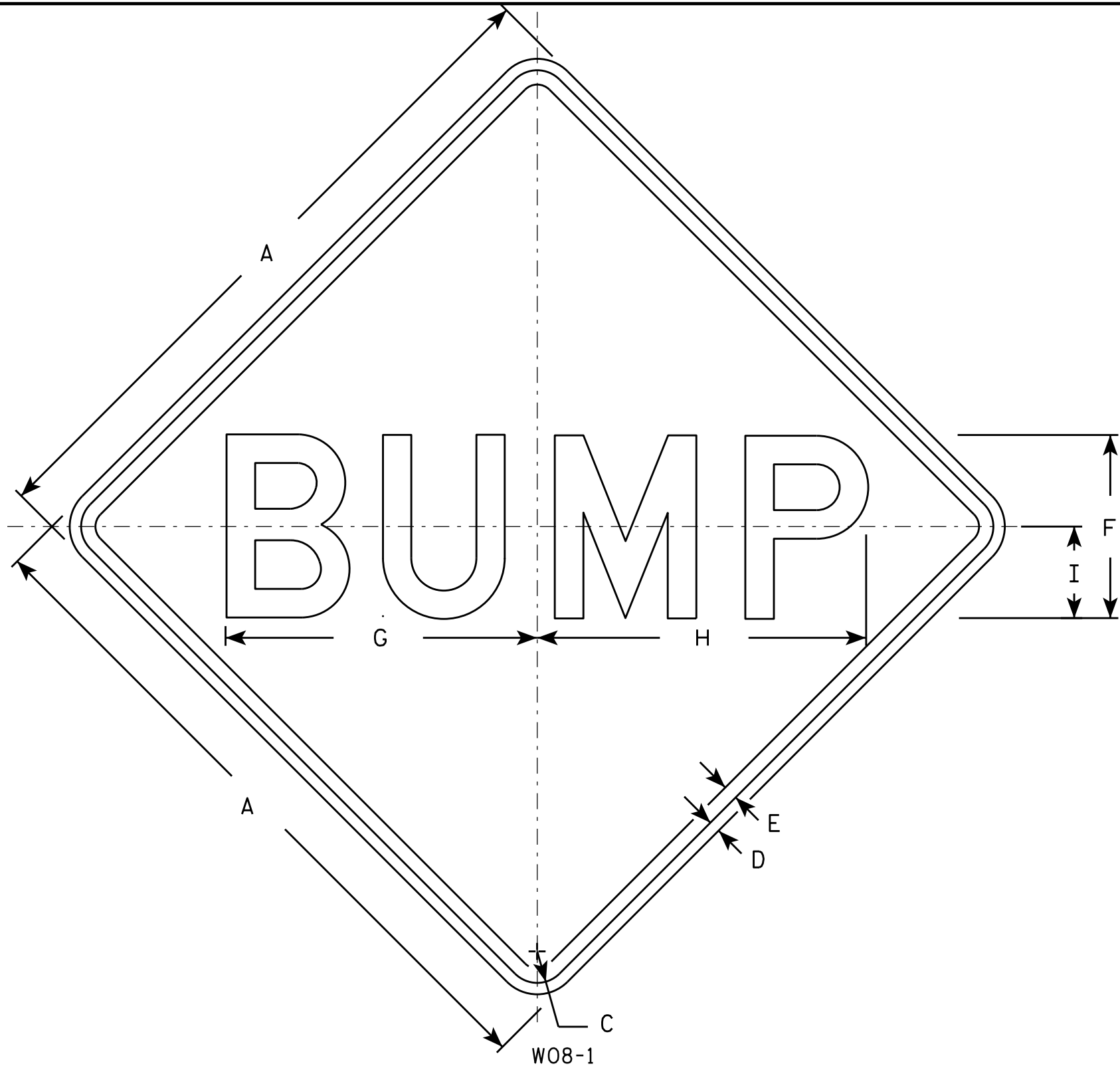
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 3⁄8	1⁄2	5⁄8	5	3 1⁄2	8 1⁄8	12 1⁄2	12 7⁄8																	6.25
2M	36		1 5⁄8	5⁄8	3⁄4	6	4 1⁄4	9 5⁄8	15	15 3⁄8																	9.00
3	36		1 5⁄8	5⁄8	3⁄4	6	4 1⁄4	9 5⁄8	15	15 3⁄8																	9.00
4	48		2 1⁄4	3⁄4	1	8	5 1⁄2	13	20	20 5⁄8																	16.00
5																											

STANDARD SIGN
W54-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/13/13 PLATE 156 W54-57.9



NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5⁄8	5⁄8	3⁄4	10	16 7⁄8	17 7⁄8	5																		9.0
2S	48		2 1⁄4	3⁄4	1	12	20 3⁄8	21 5⁄8	6																		16.0
2M	48		2 1⁄4	3⁄4	1	12	20 3⁄8	21 5⁄8	6																		16.0
3	48		2 1⁄4	3⁄4	1	12	20 3⁄8	21 5⁄8	6																		16.0
4	48		2 1⁄4	3⁄4	1	12	20 3⁄8	21 5⁄8	6																		16.0
5	48		2 1⁄4	3⁄4	1	12	20 3⁄8	21 5⁄8	6																		16.0

PROJECT NO:

HWY:

COUNTY:

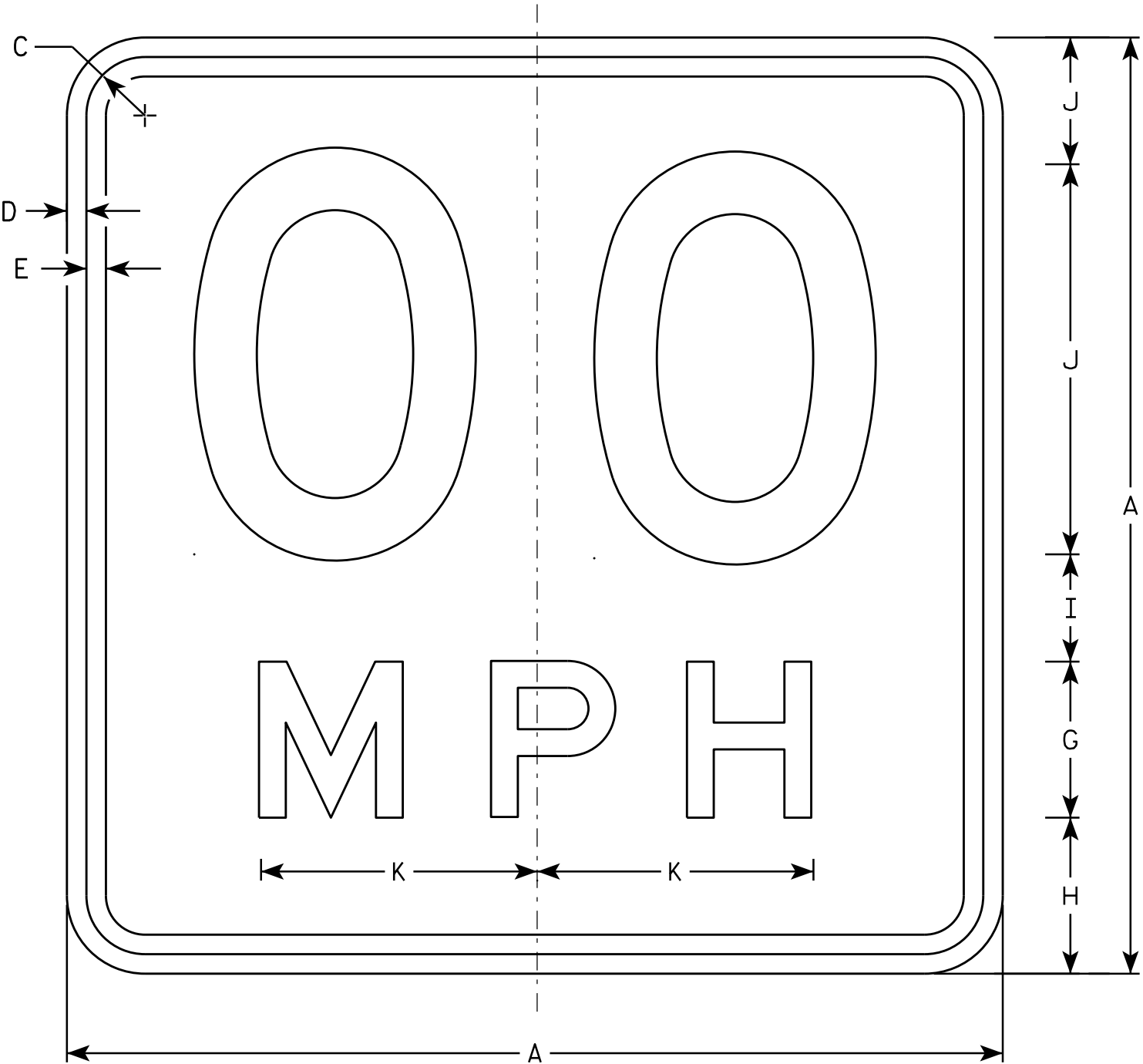
DATE 11/20/13

PLATE 157

W08-1.1

SHEET NO:

E



W013-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - 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

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	10	4	4	2 3/4	3 1/4	7 1/8																4.00
2S	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
2M	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
3	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
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
W013-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 11/21/13 PLATE 158 W013-1.1

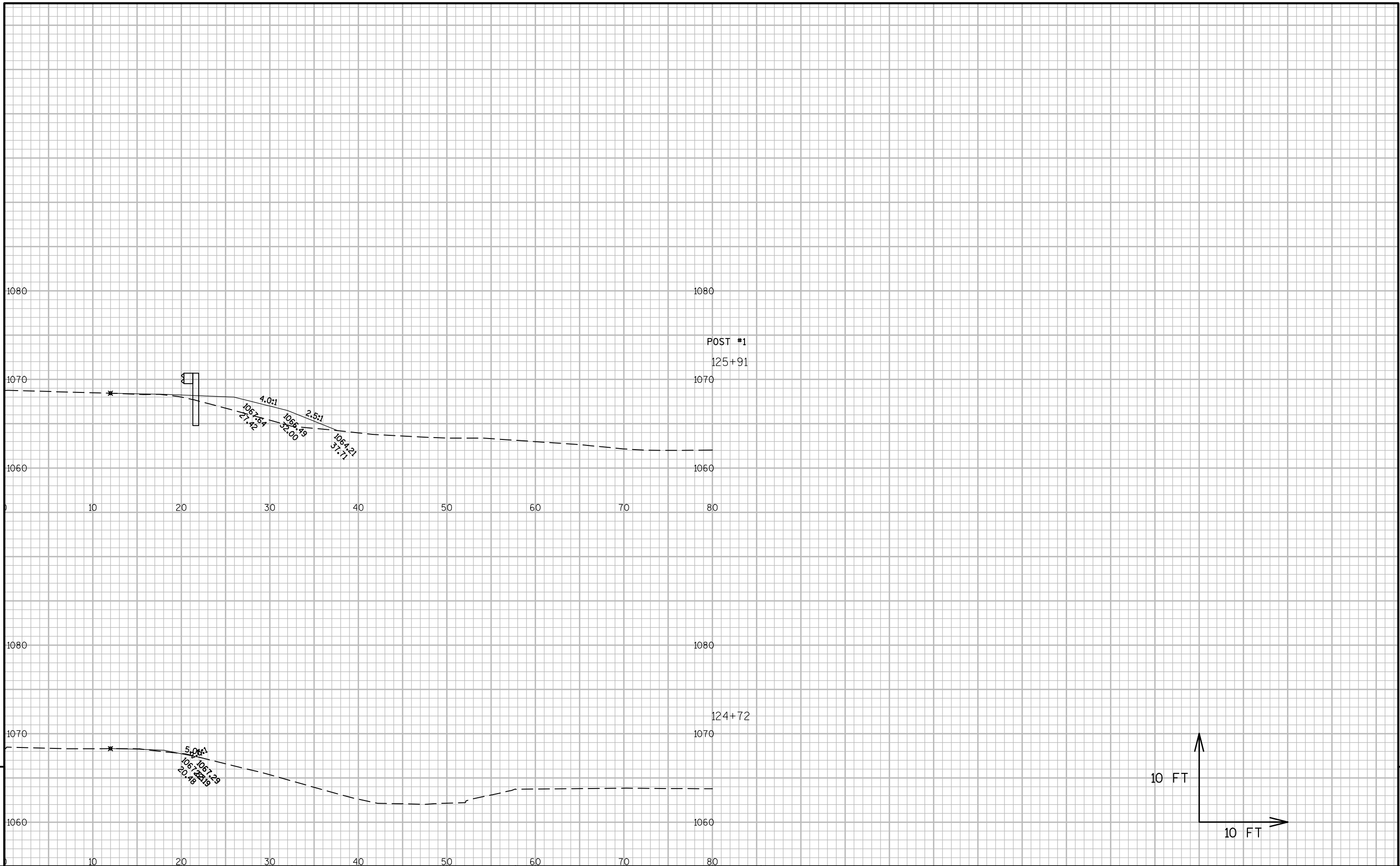
PROJECT NO:

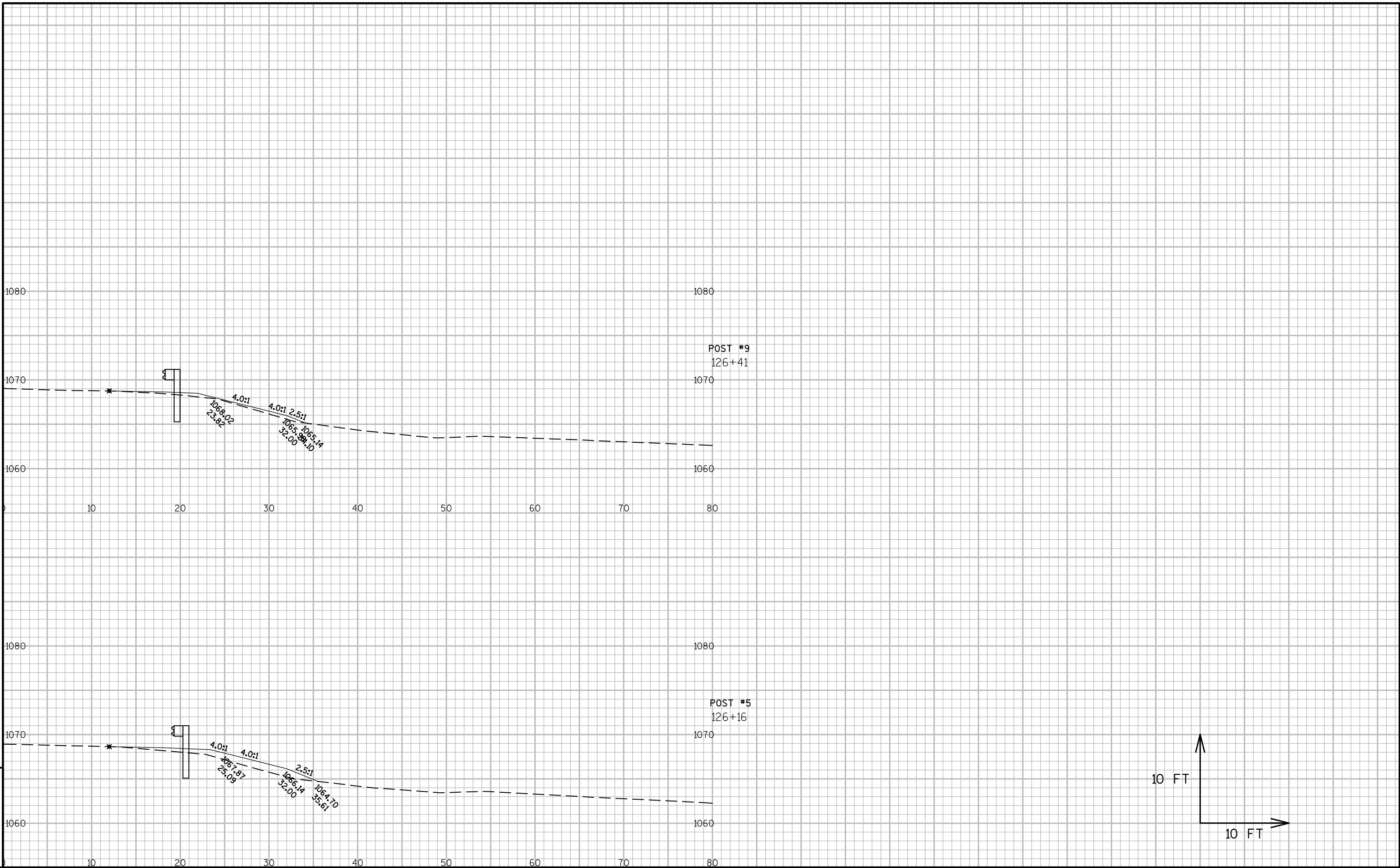
HWY:

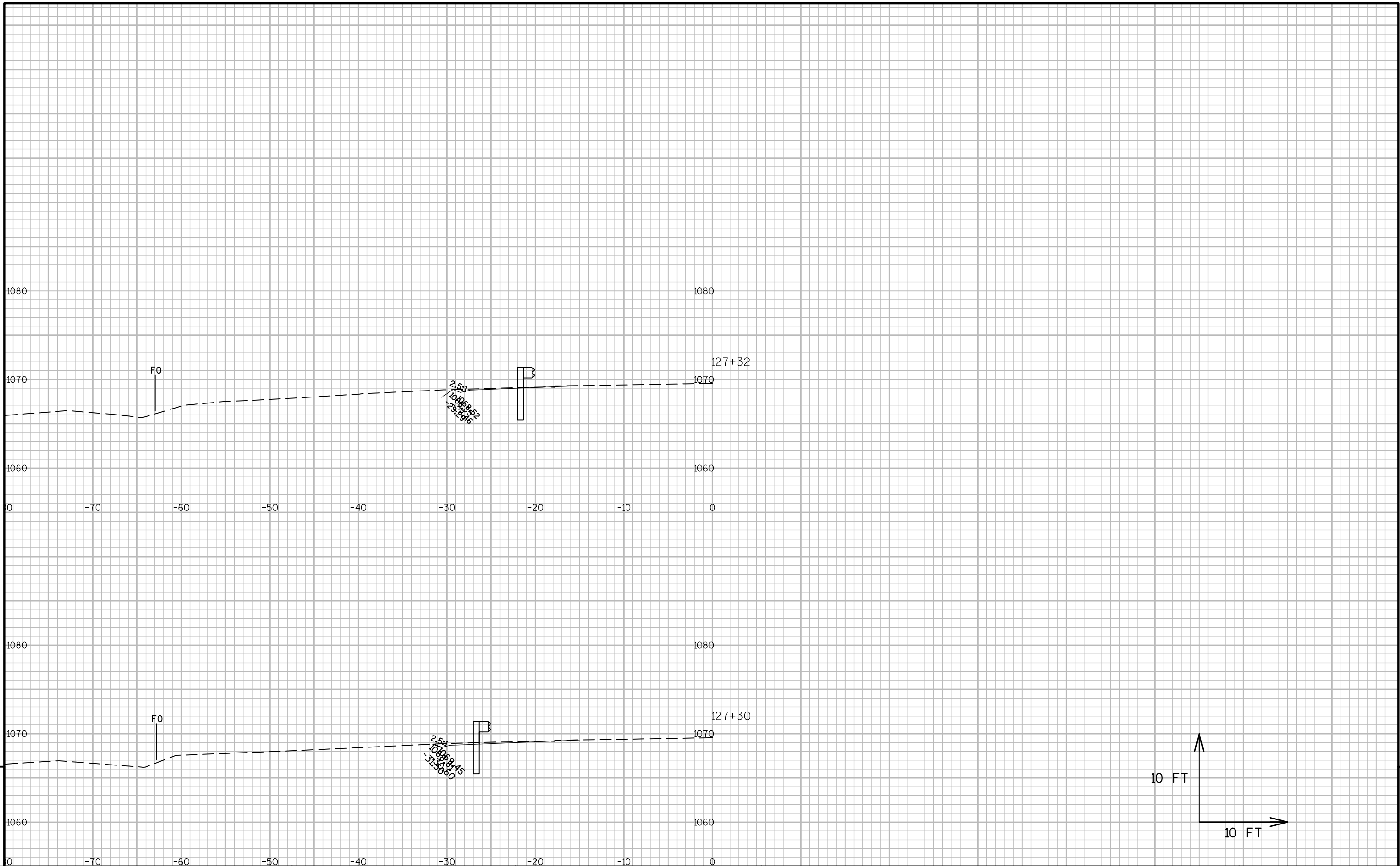
COUNTY:

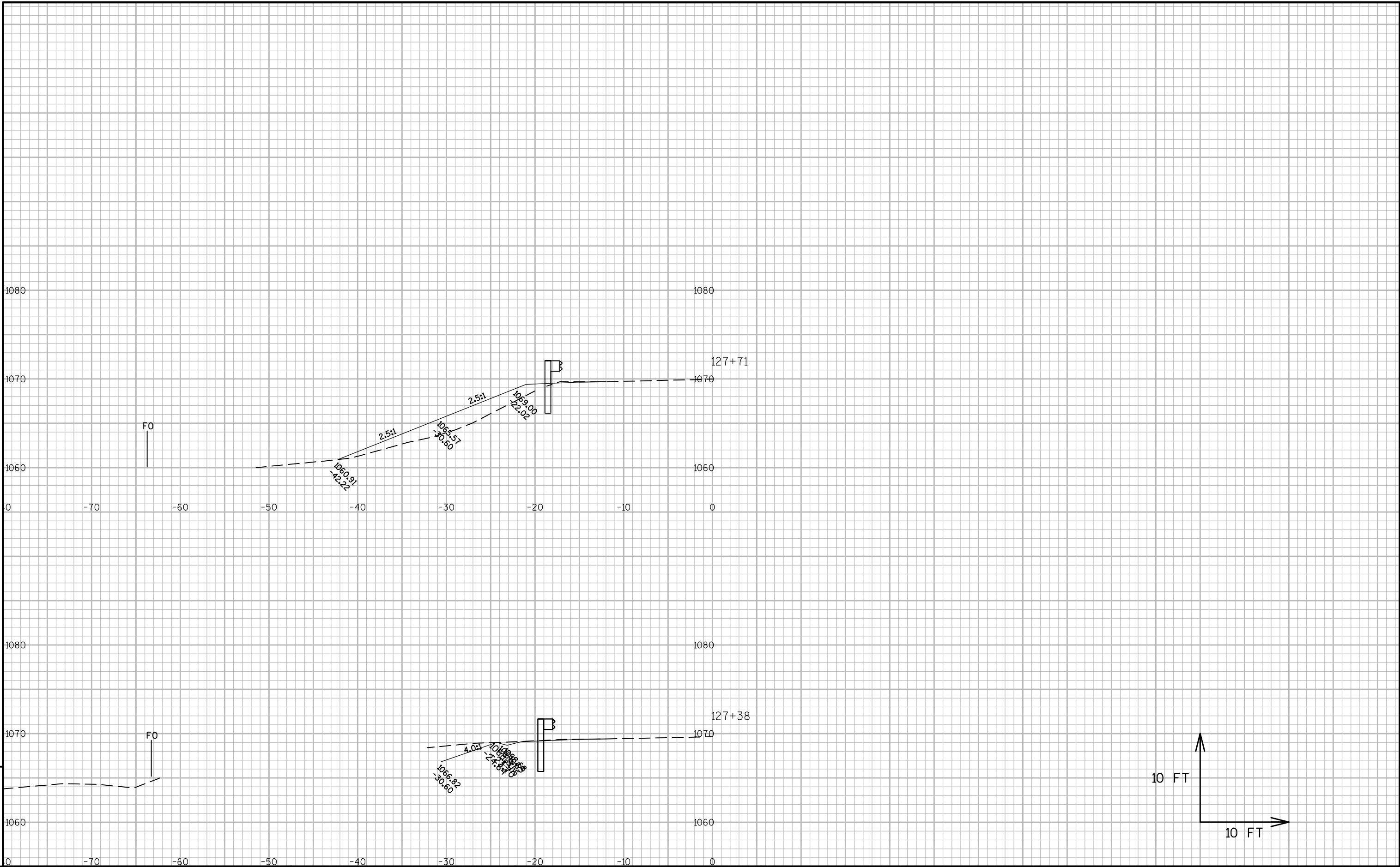
SHEET NO:

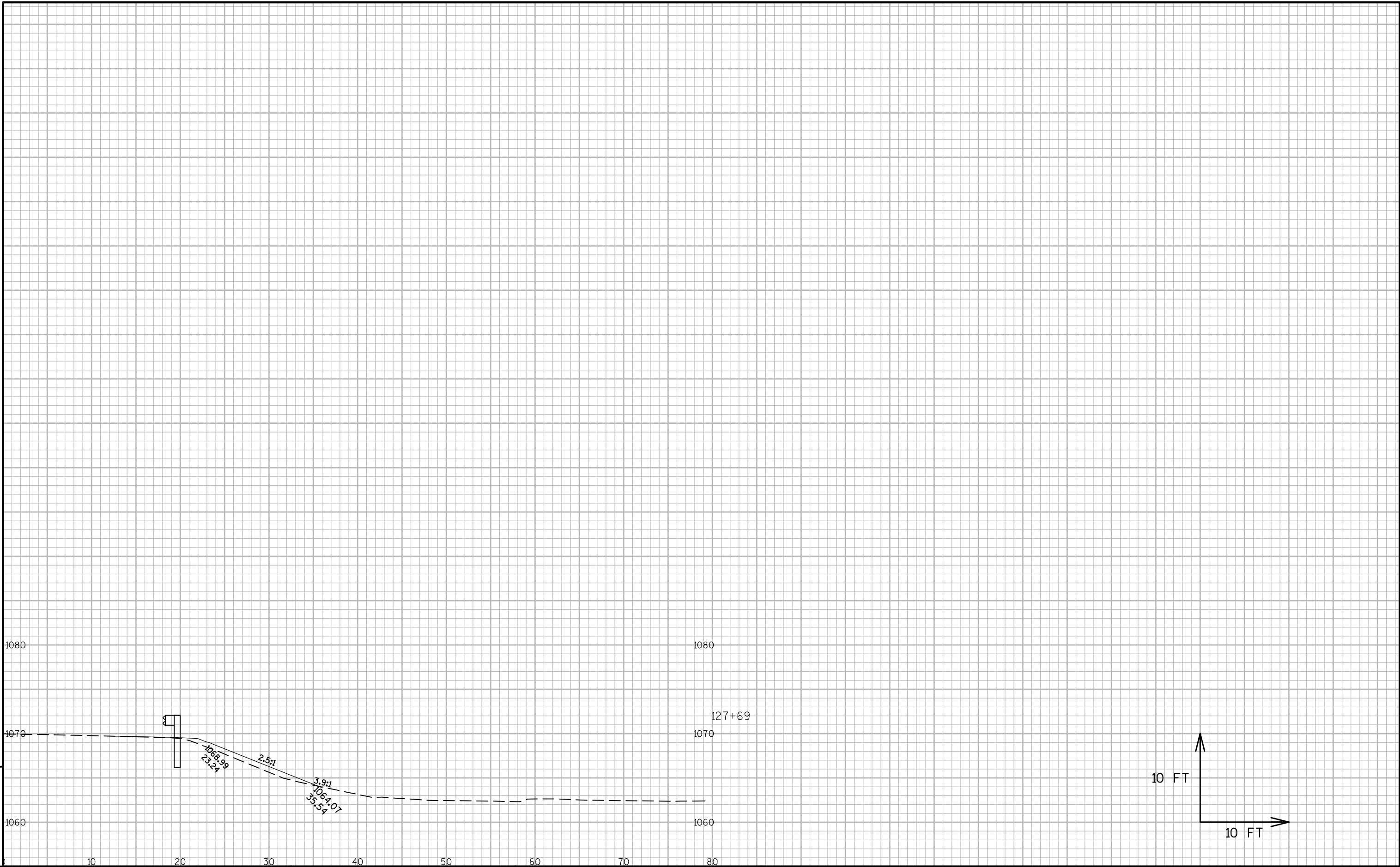
E

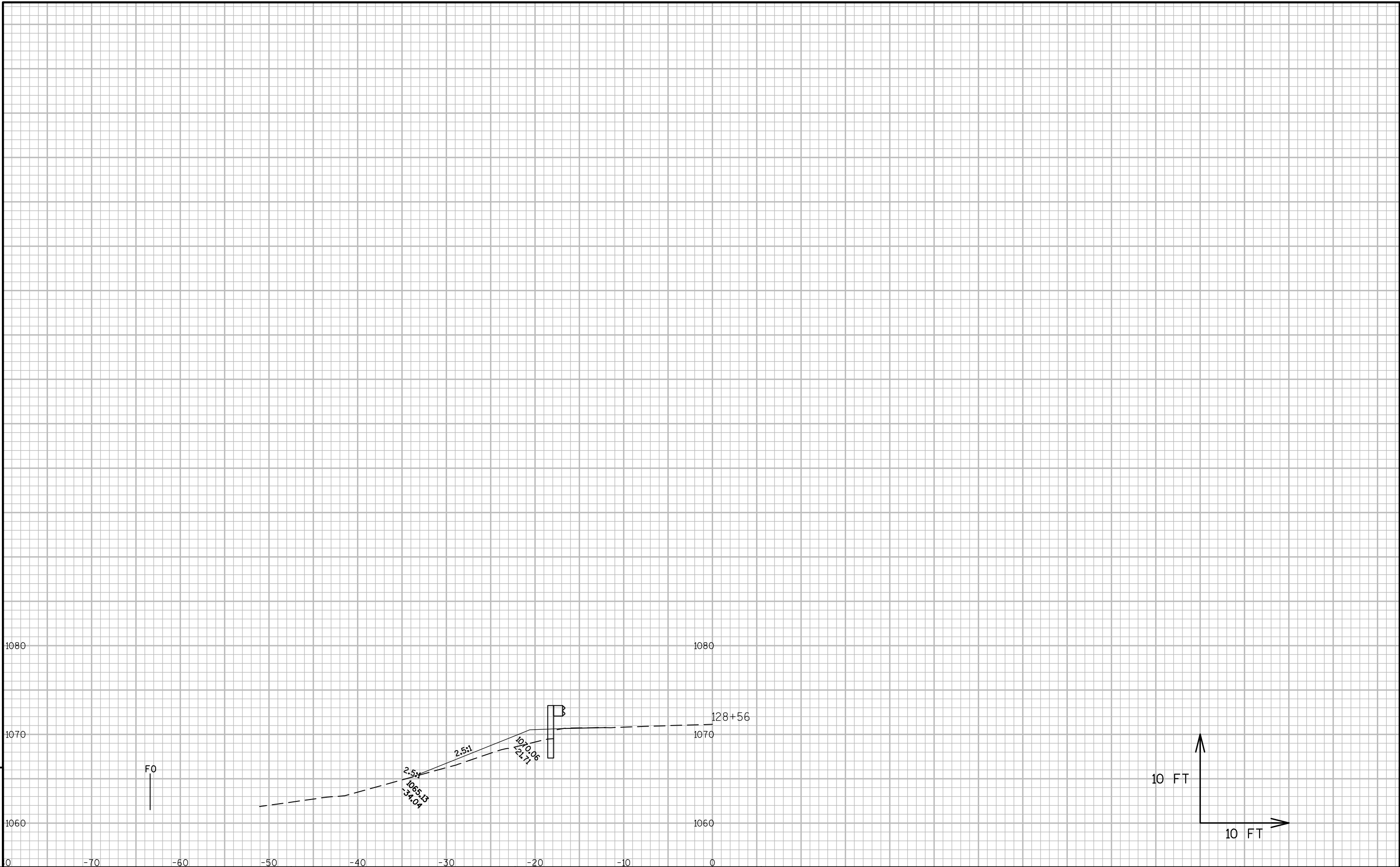


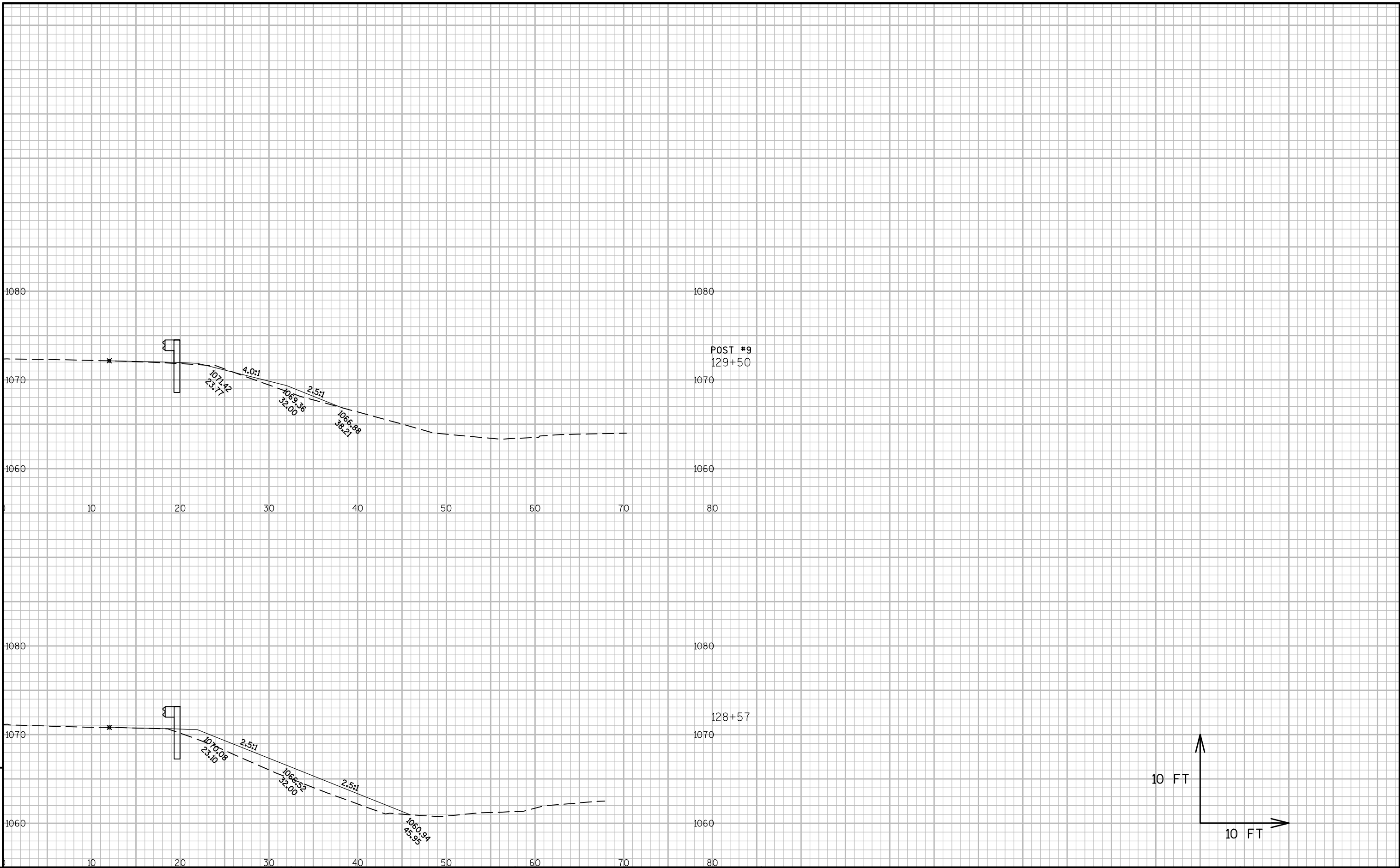


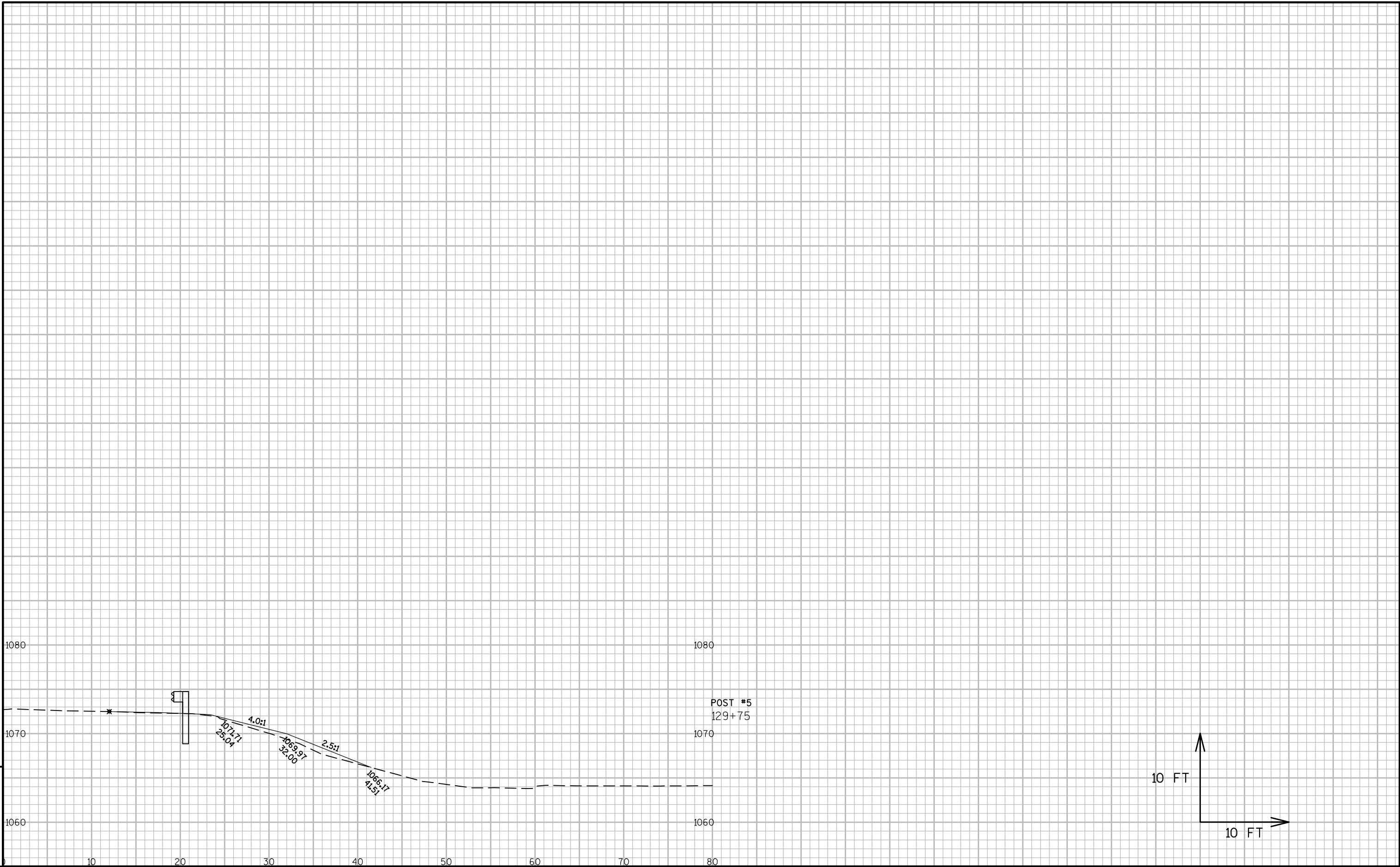


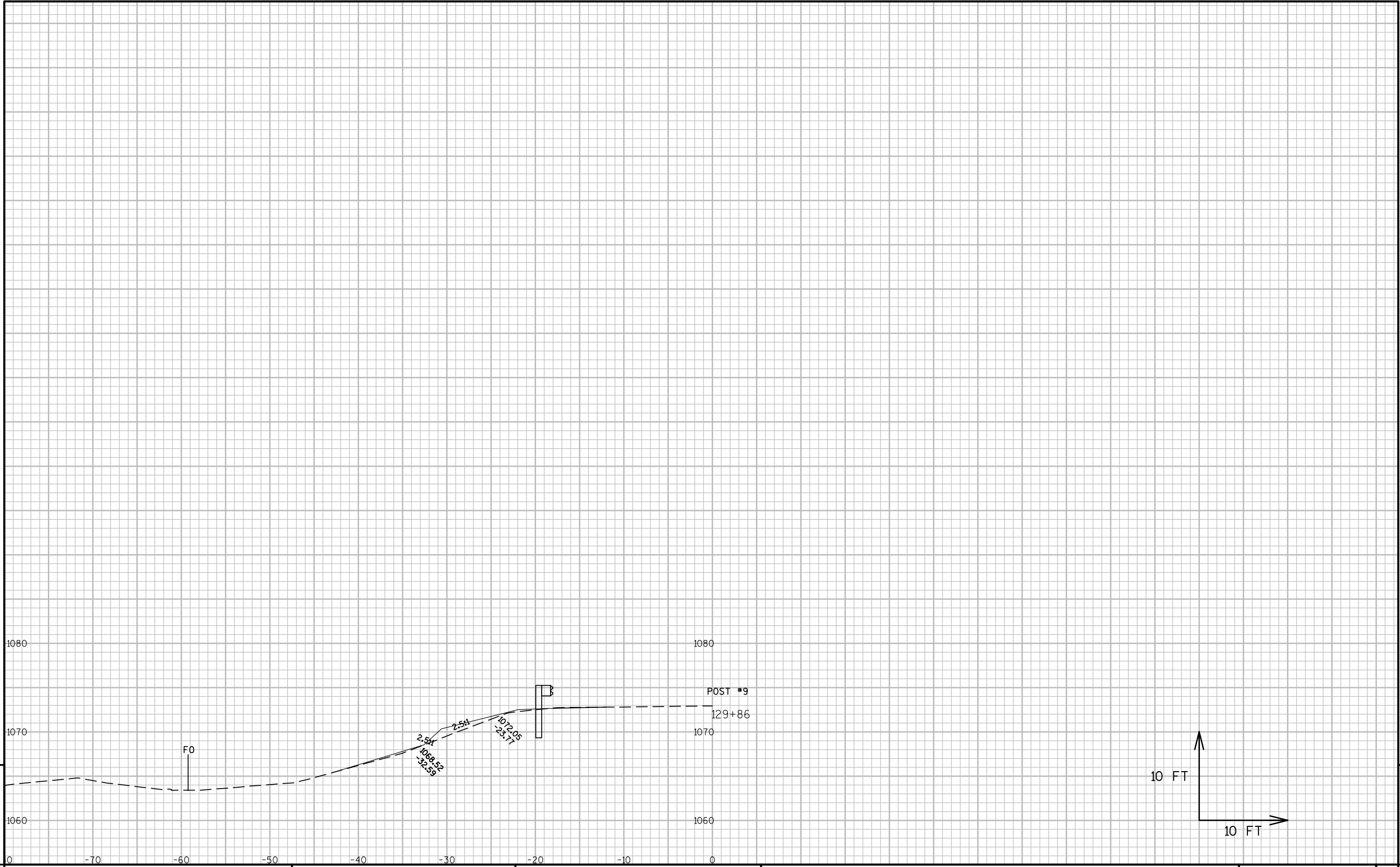






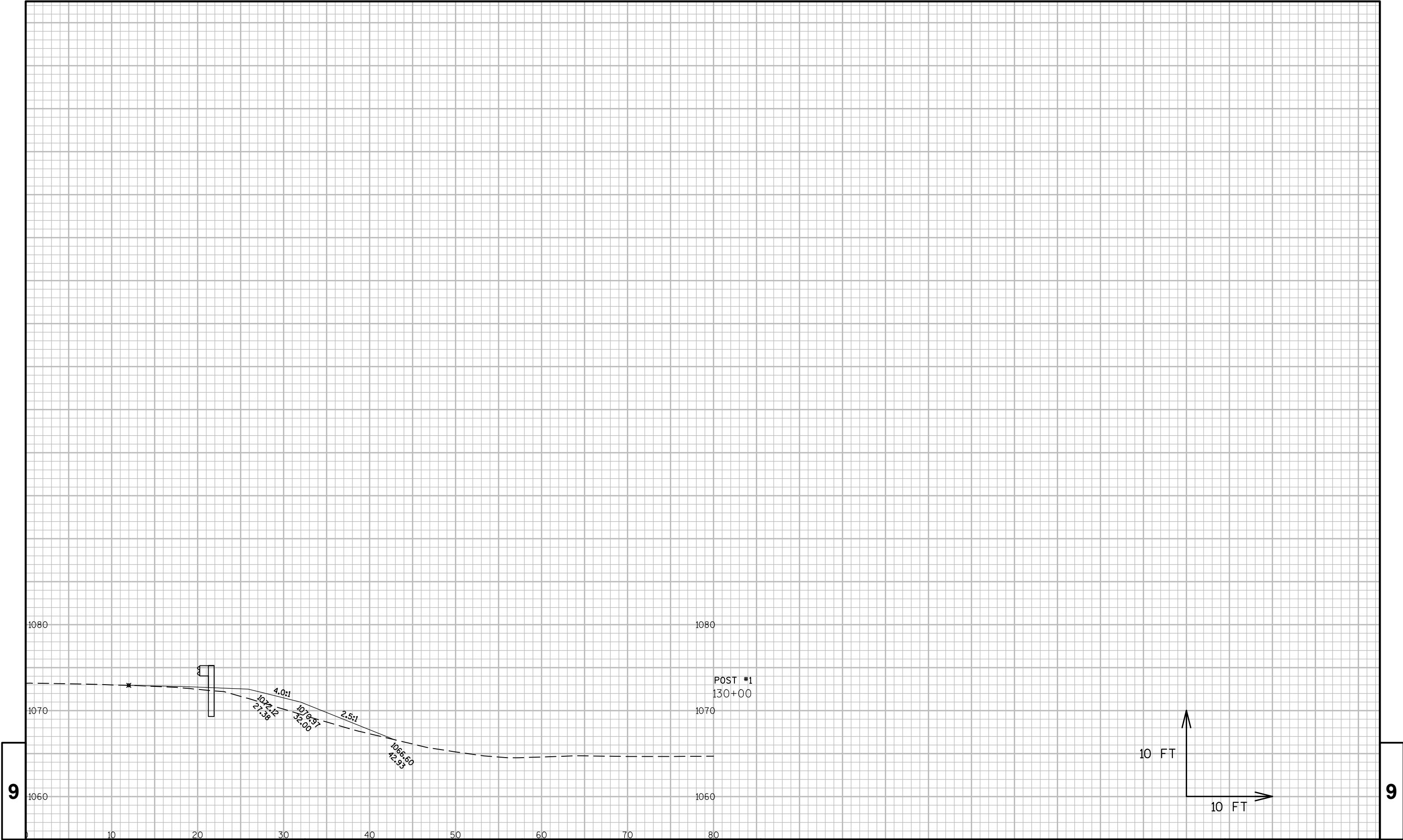






9

9



PROJECT NO: 8010-01-64

HWY: STH 35

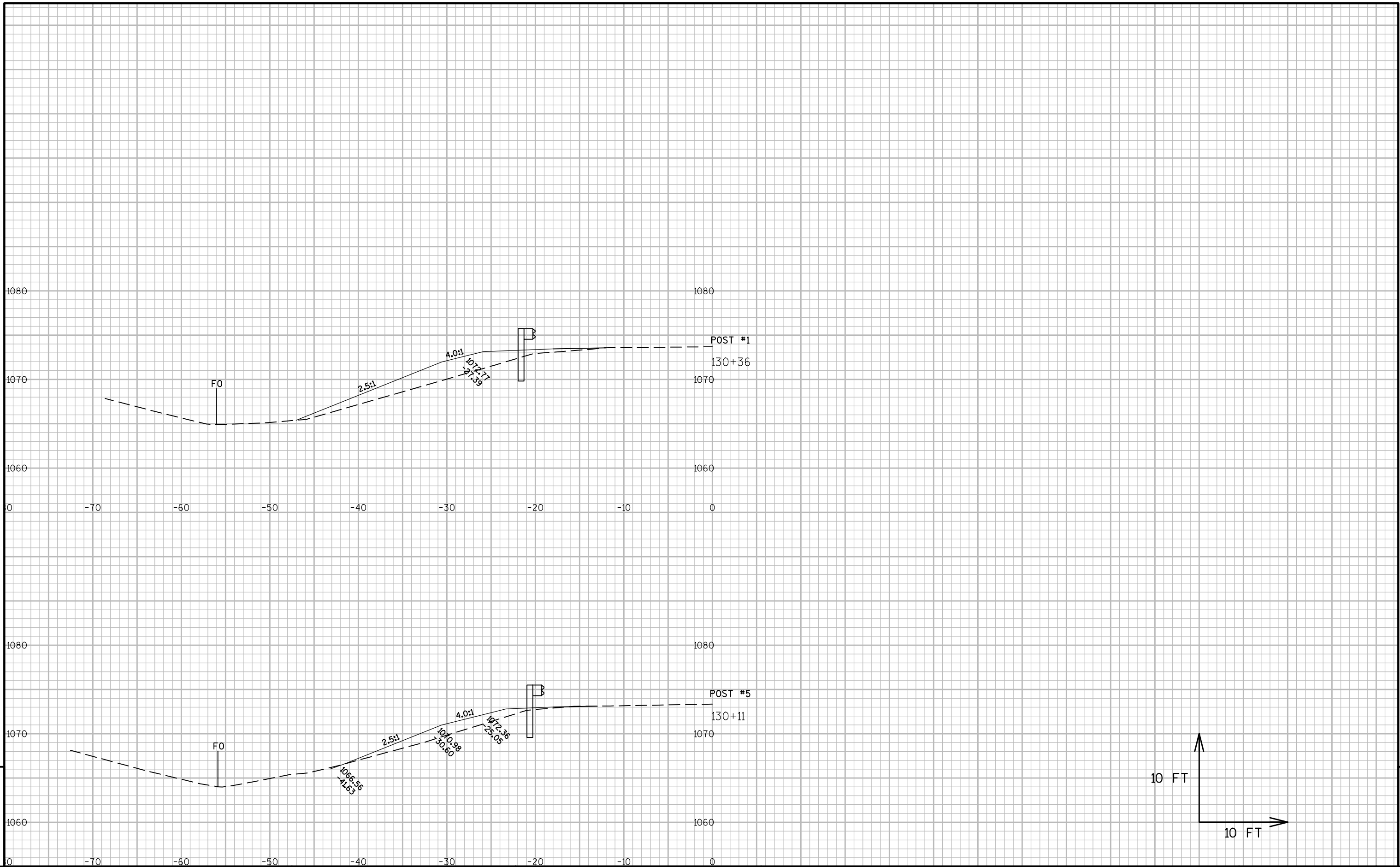
COUNTY: DOUGLAS

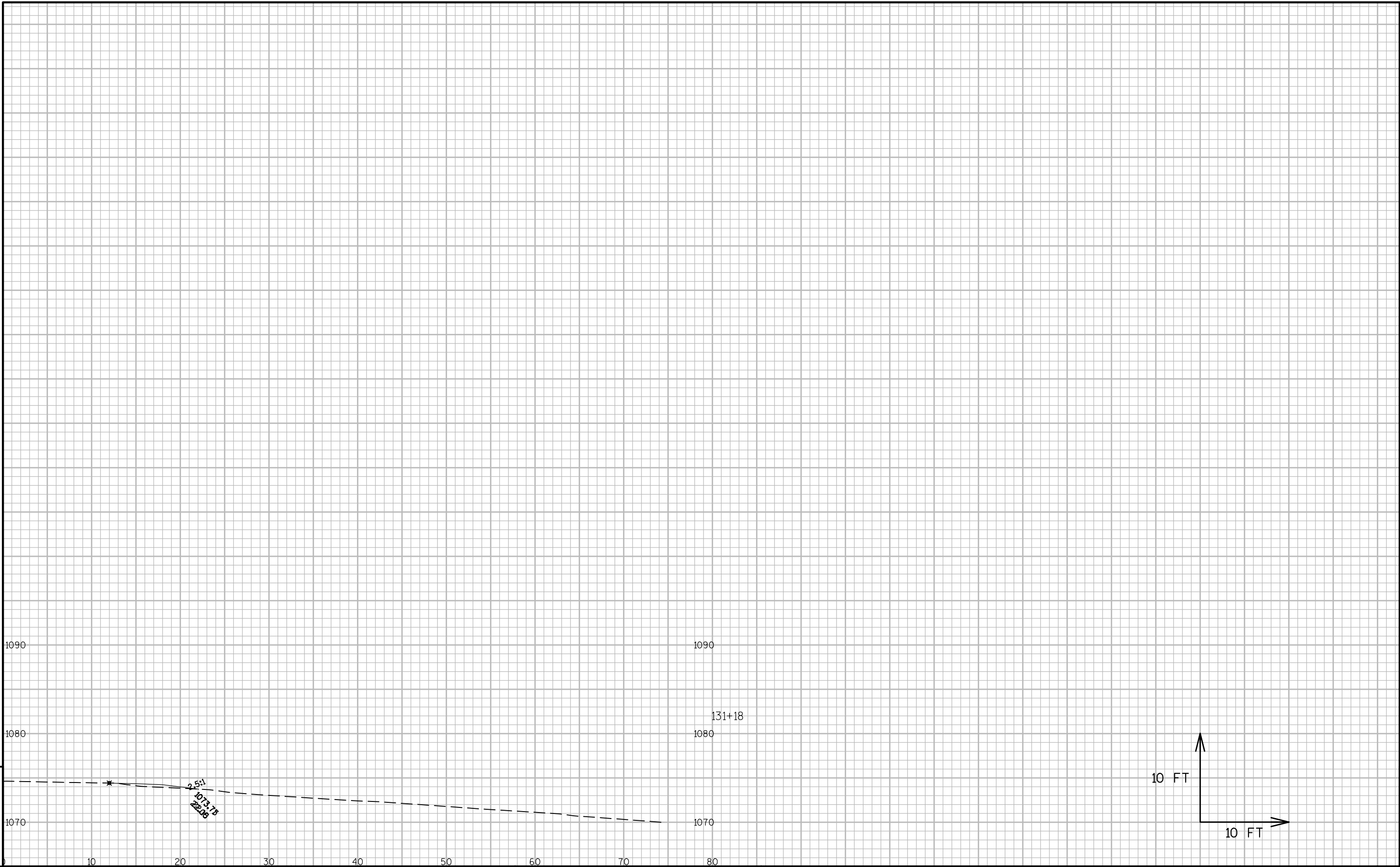
CROSS SECTIONS: BEAM GUARD

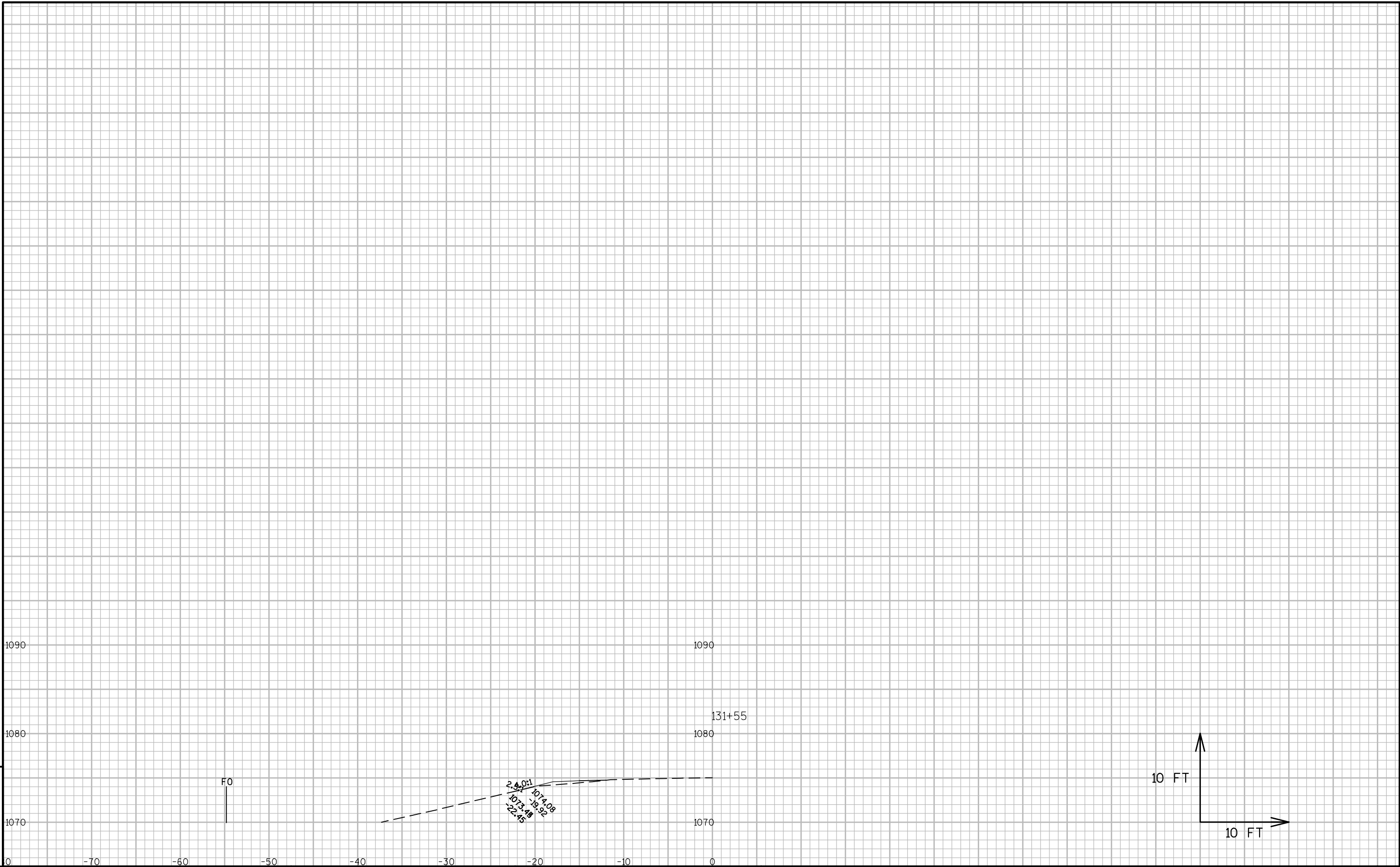
SHEET

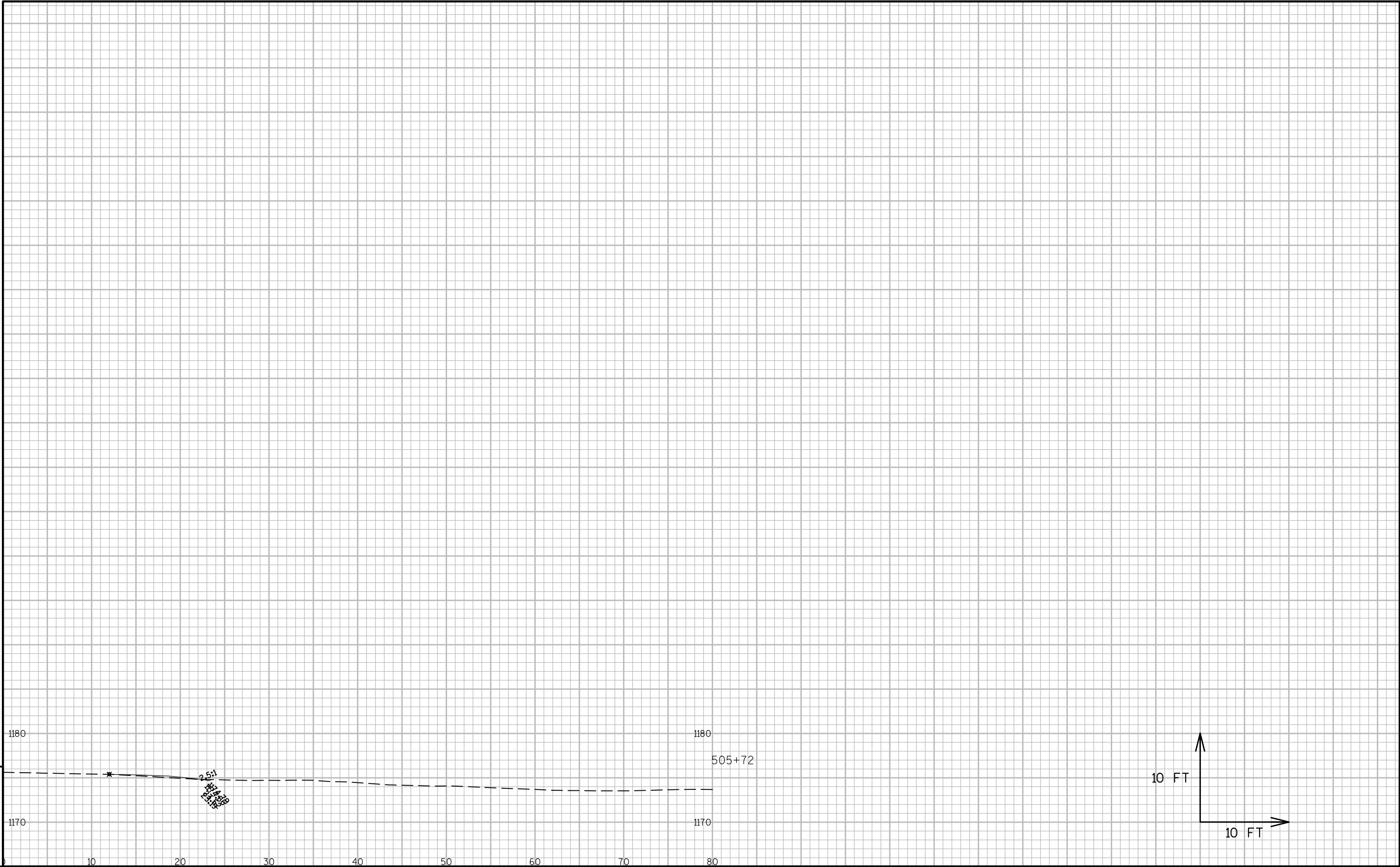
168

E



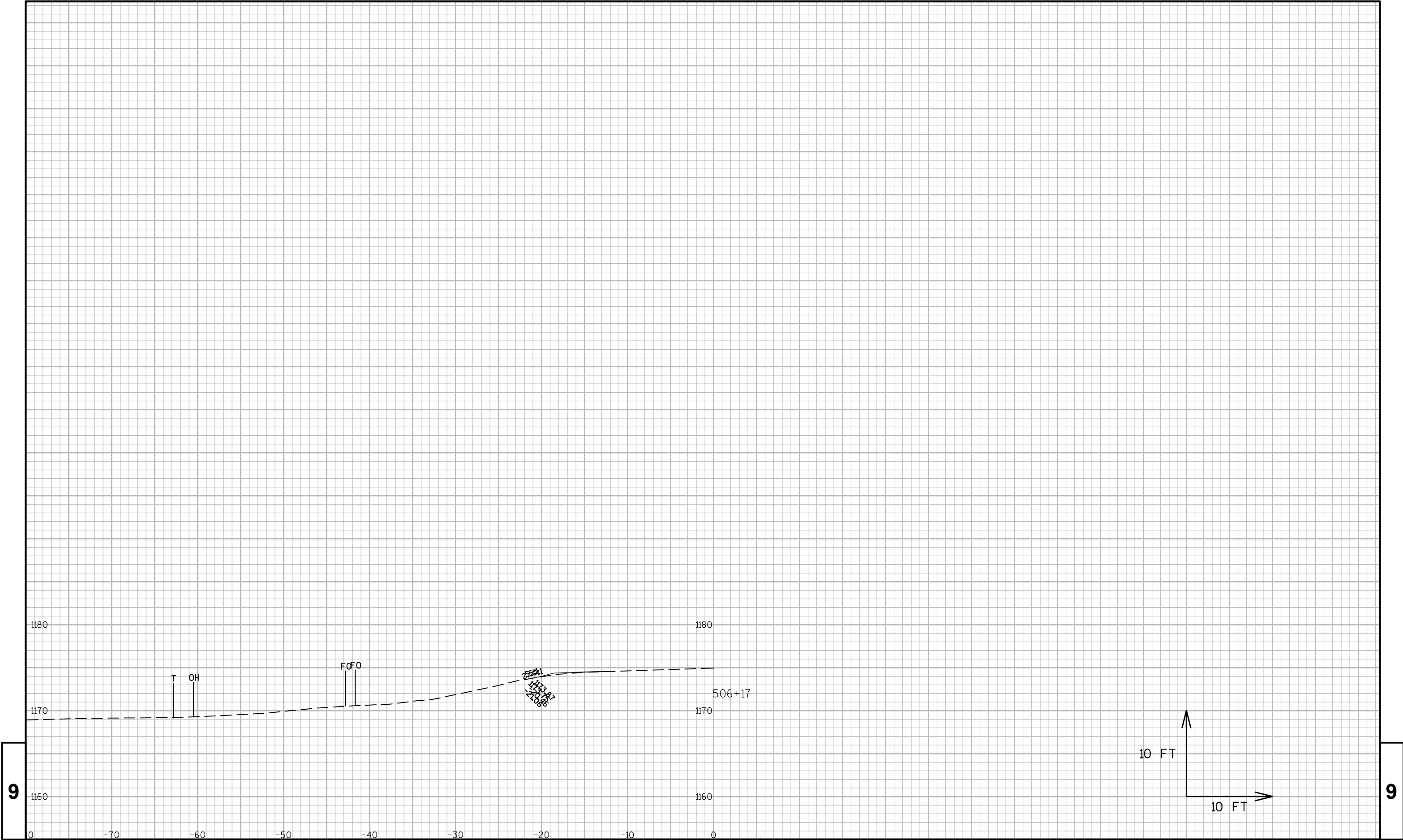






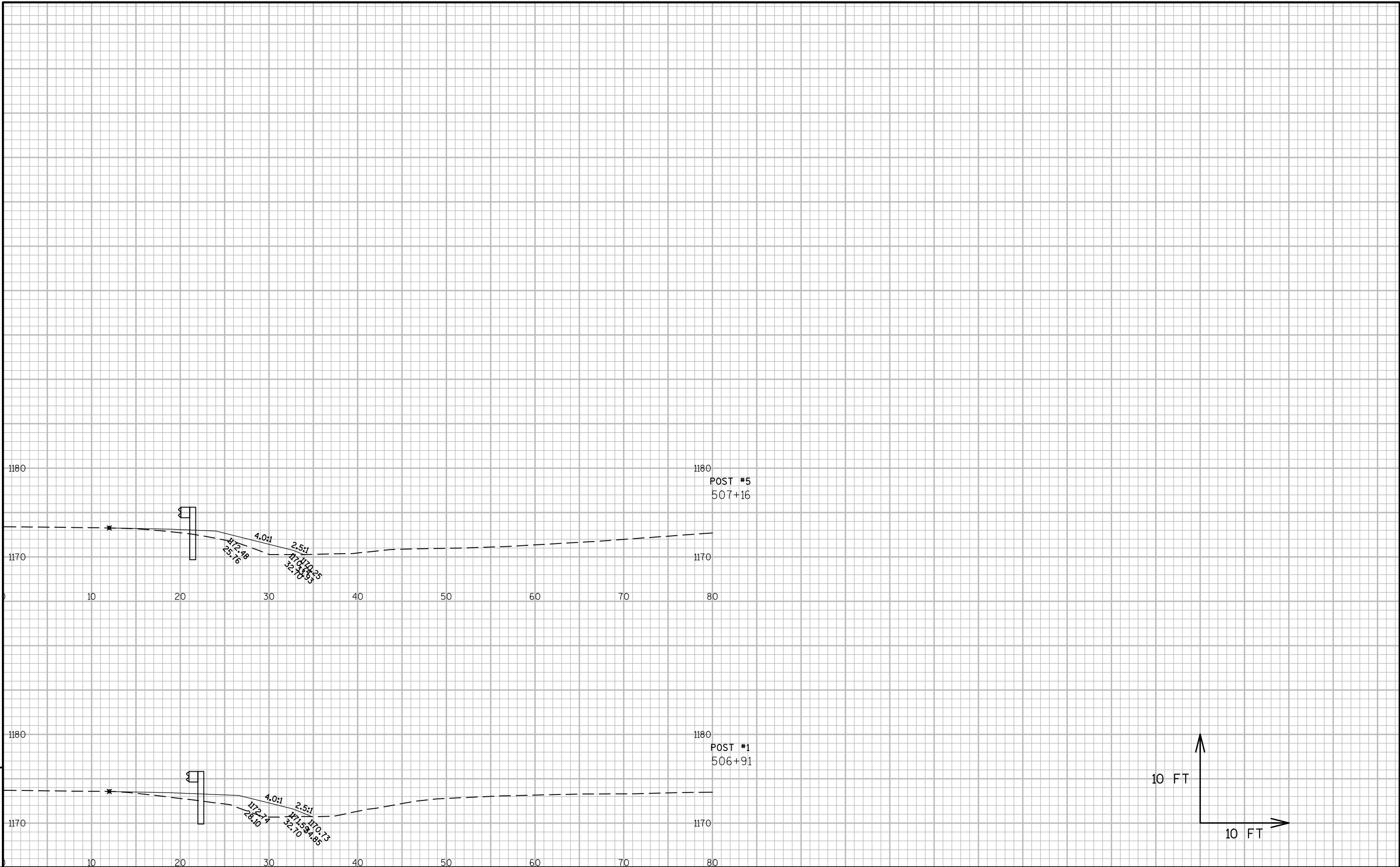
9

9

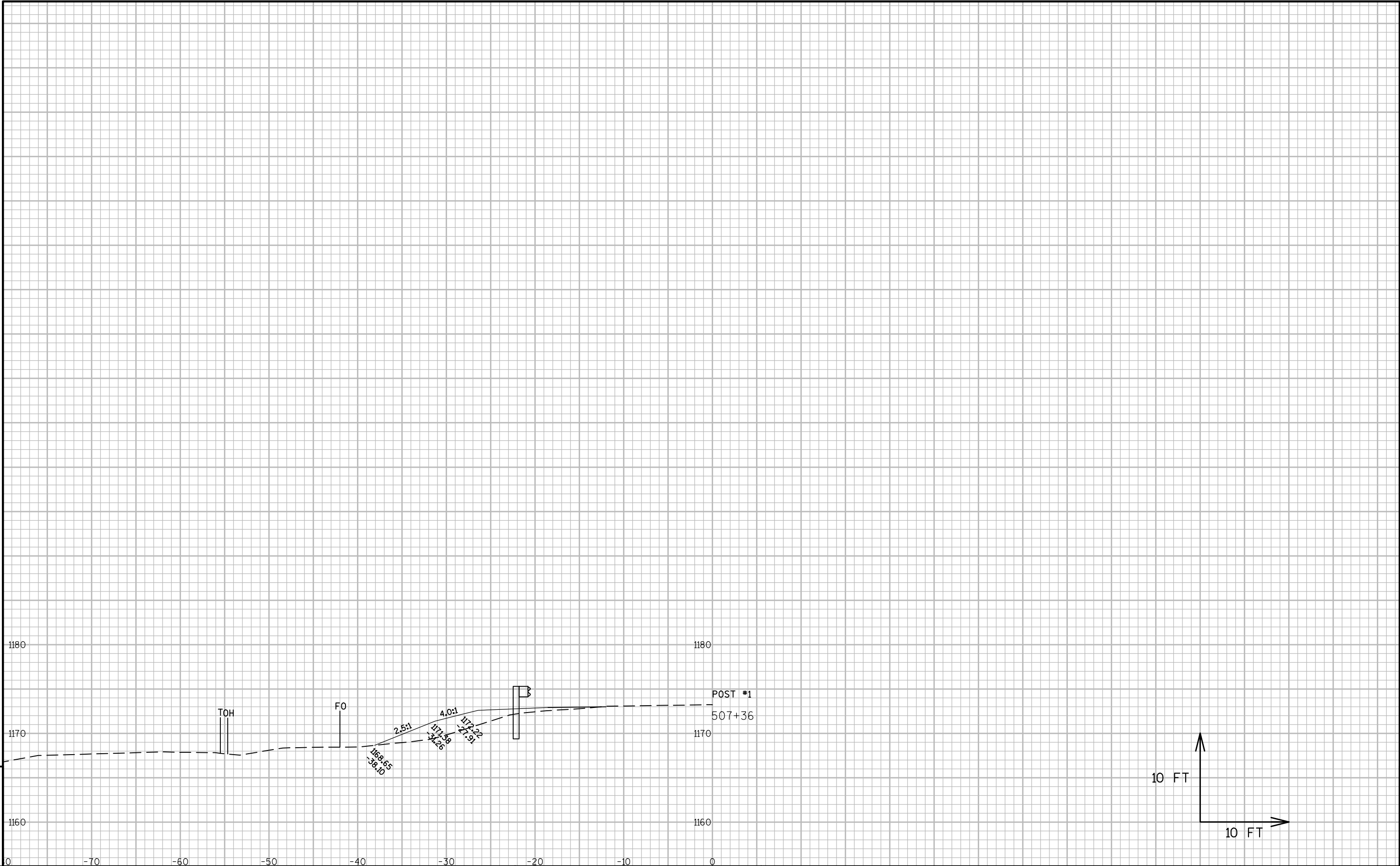


9

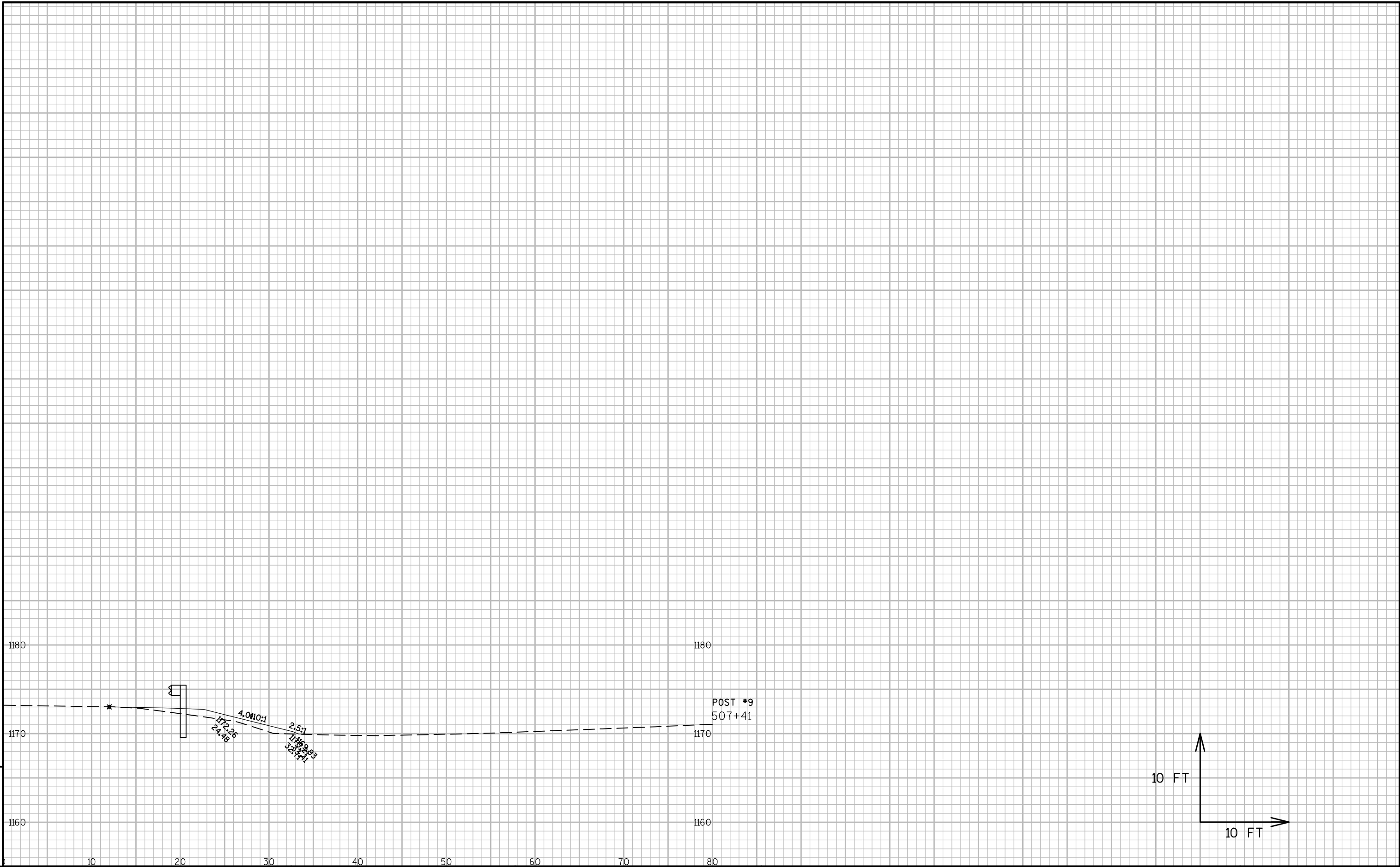
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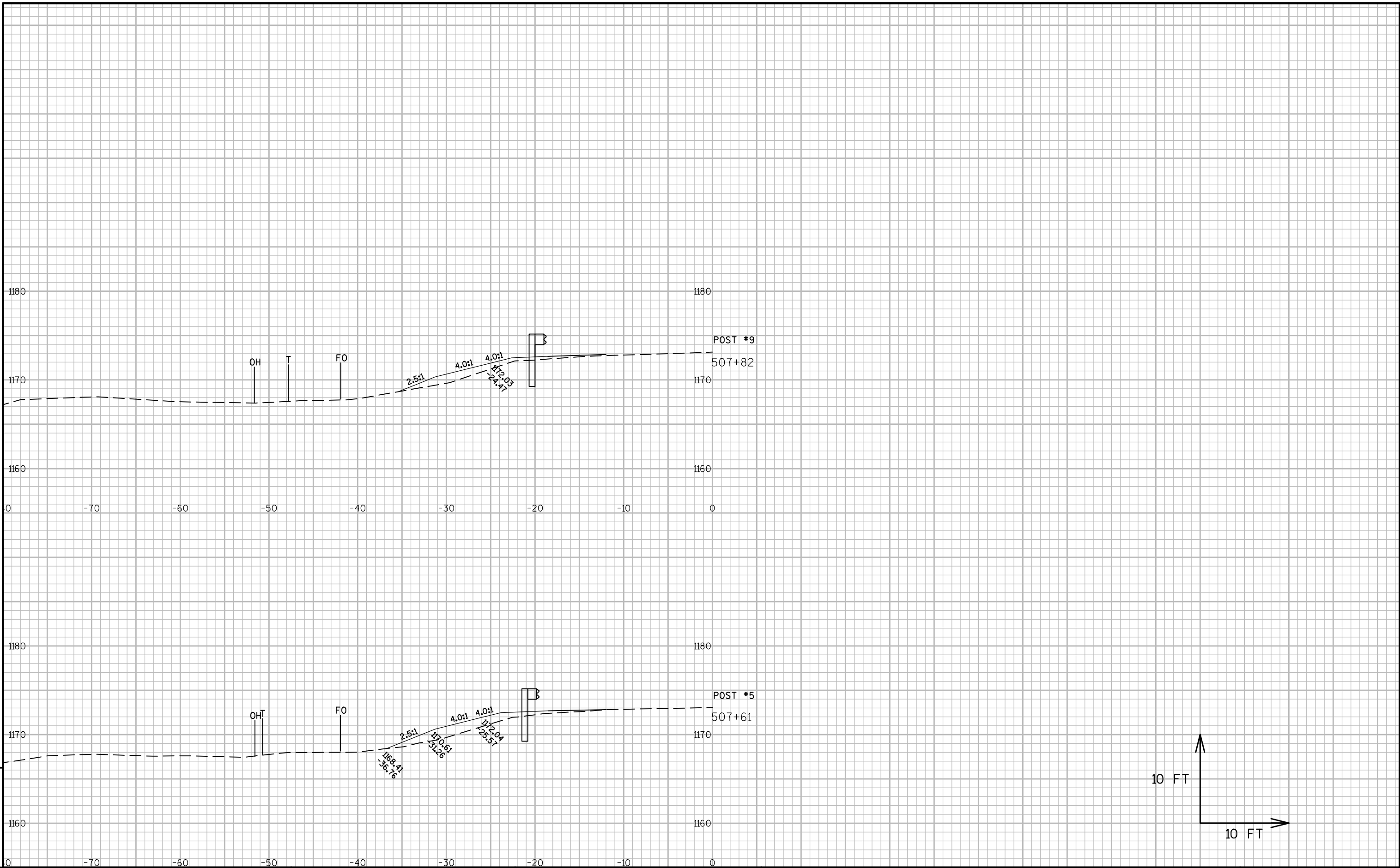


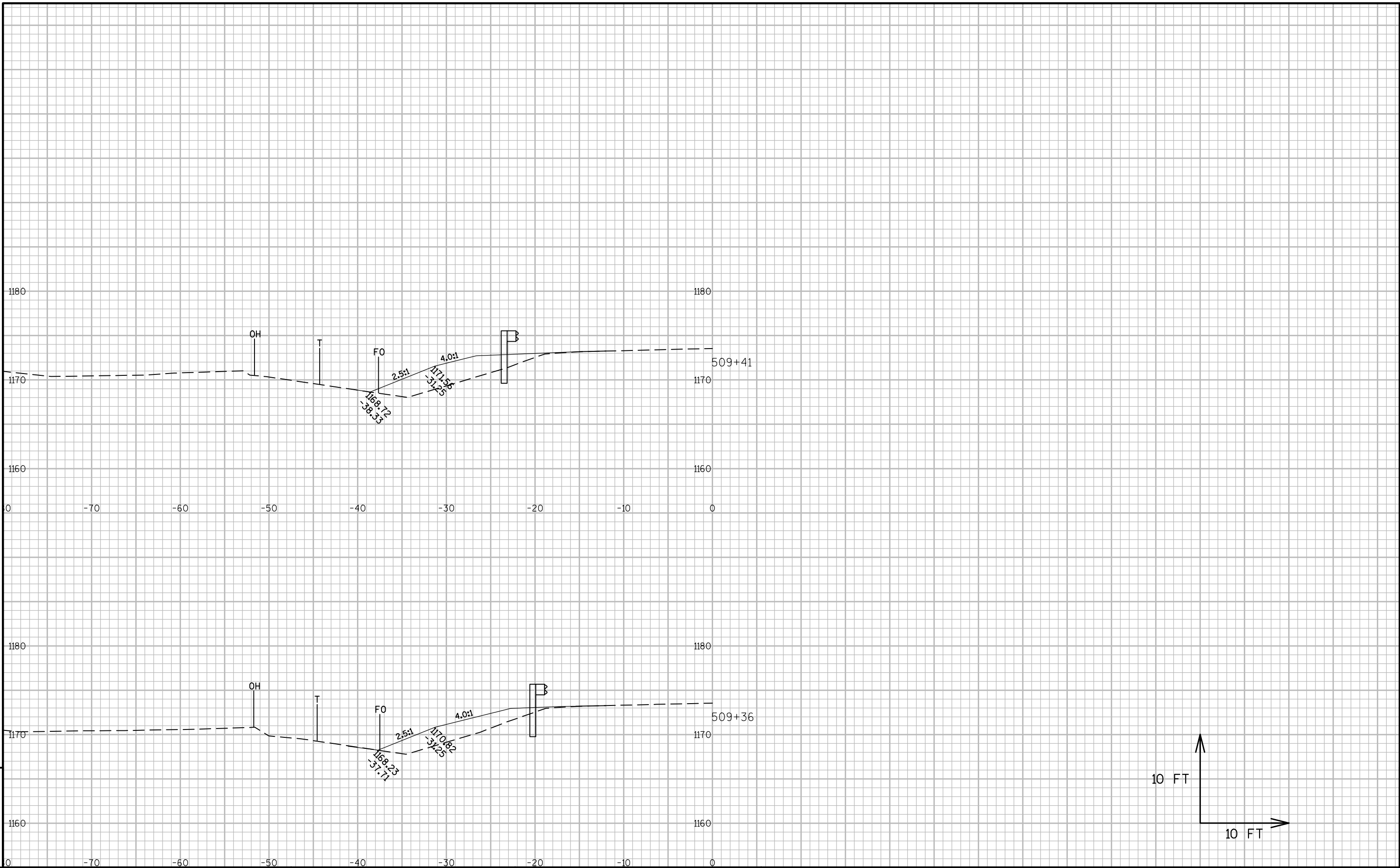
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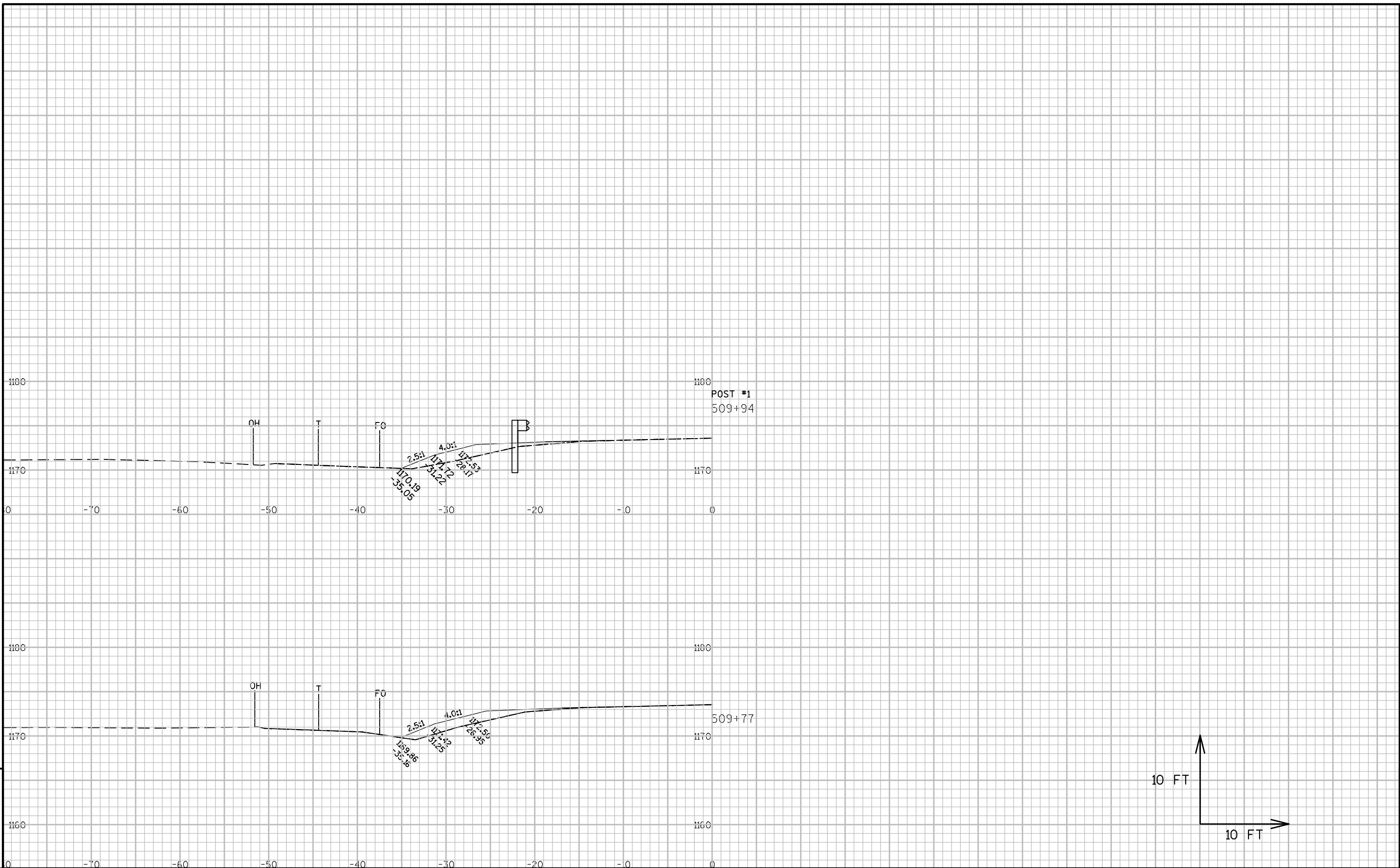


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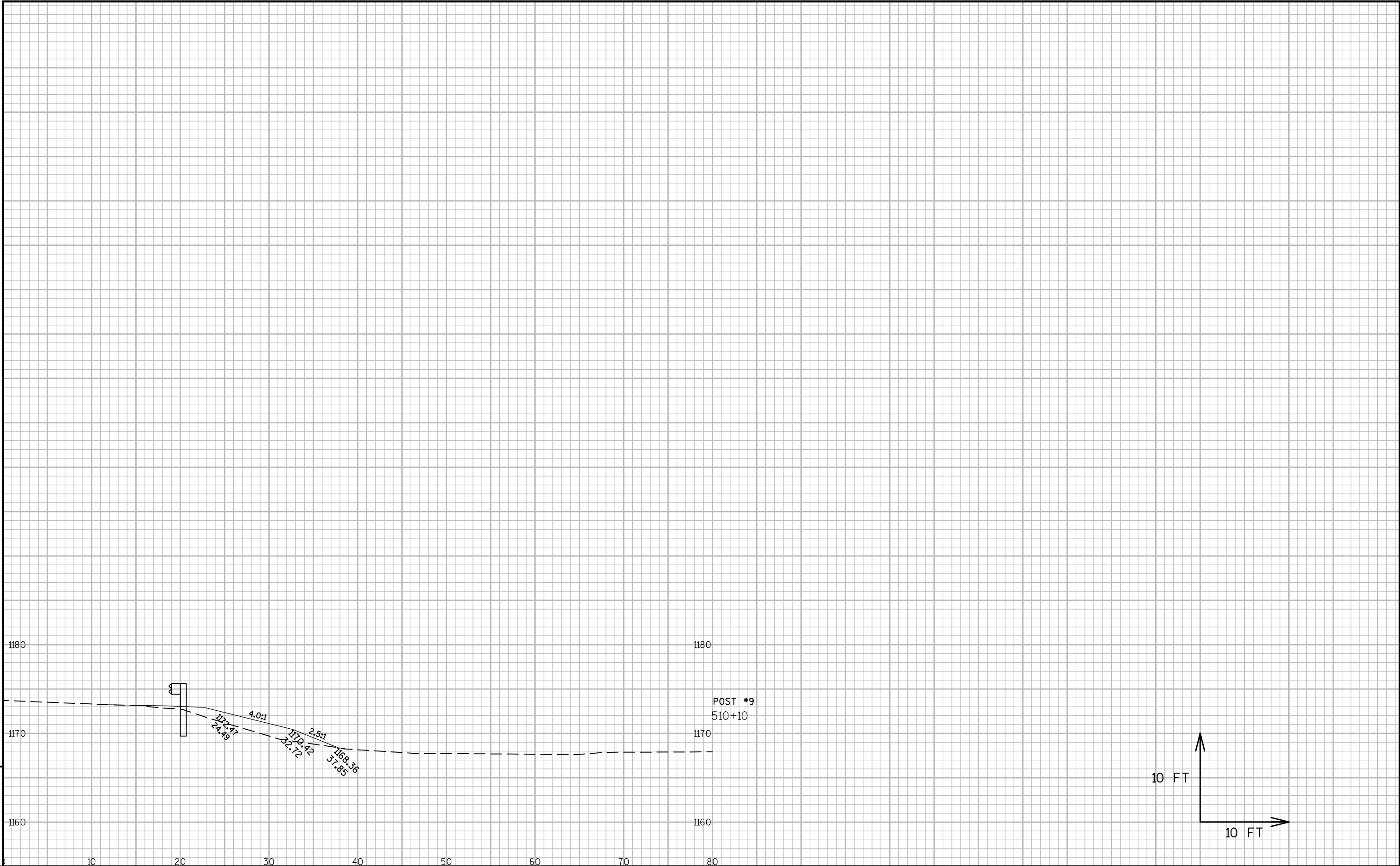




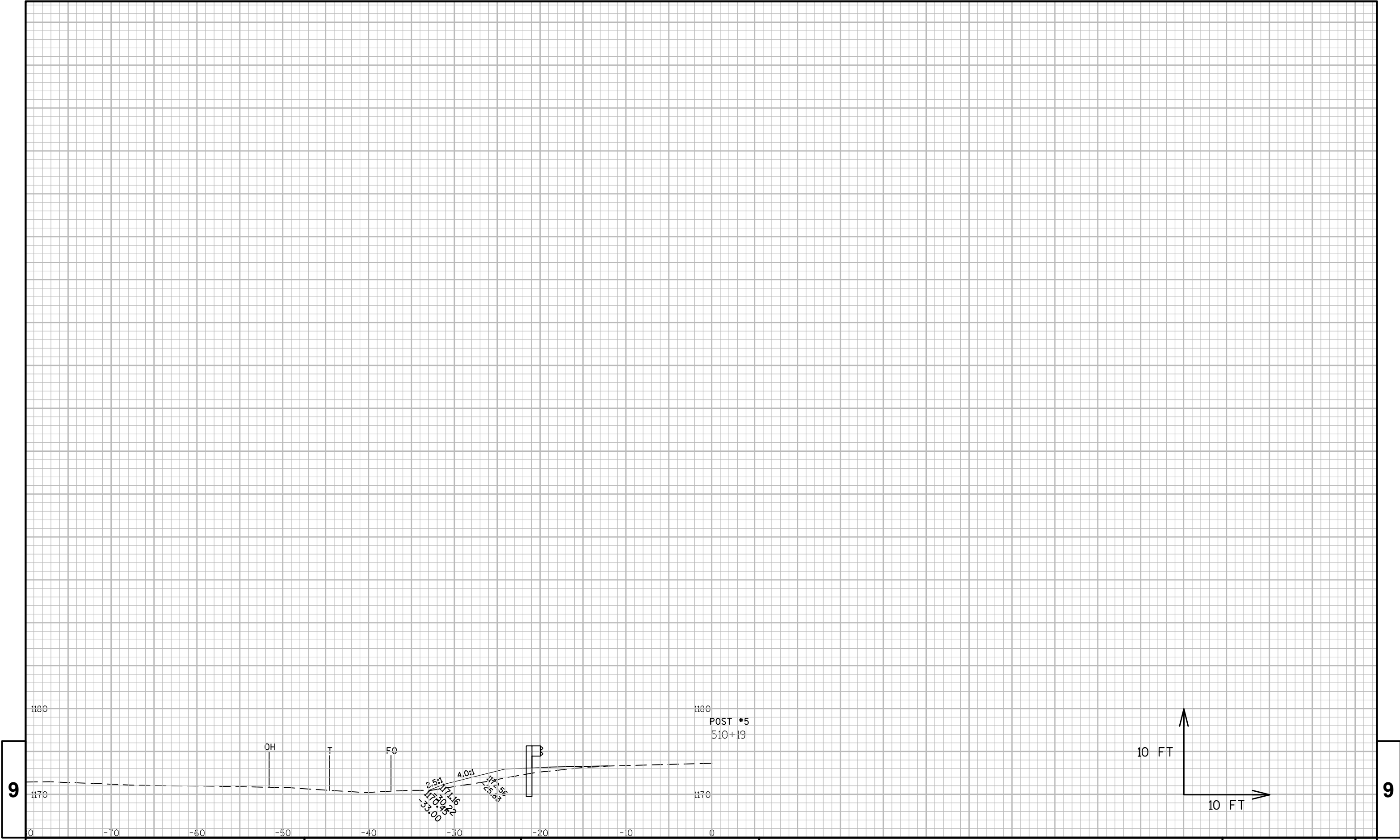




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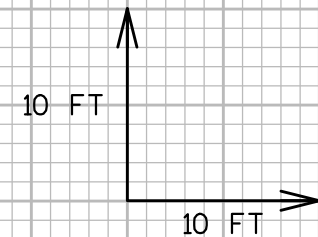
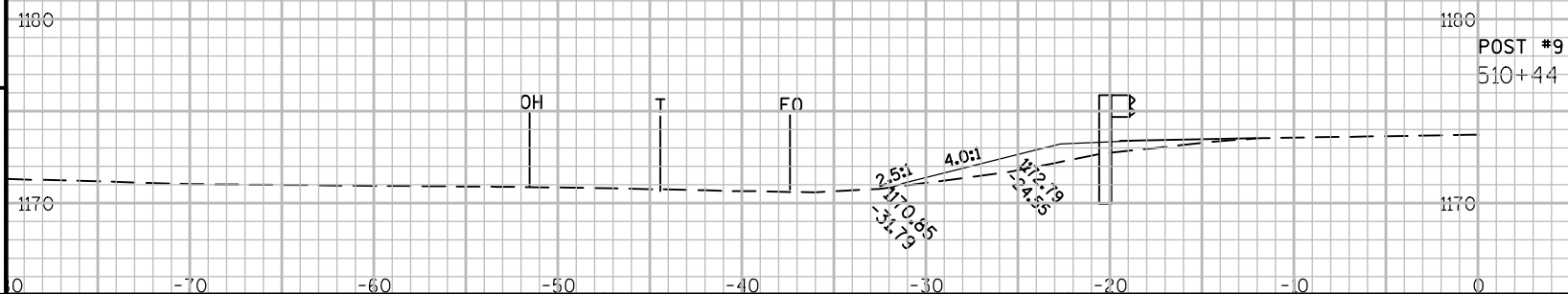
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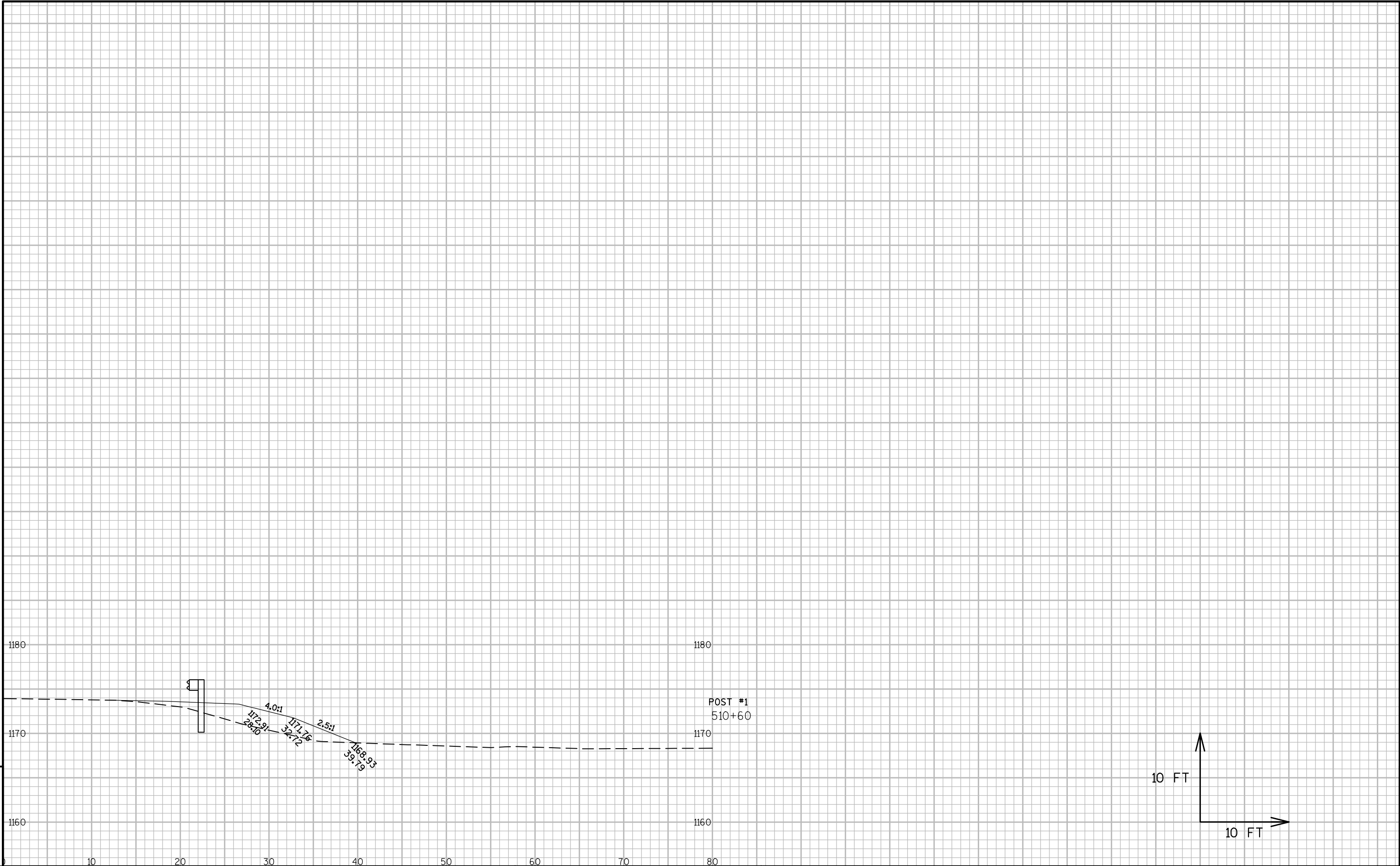
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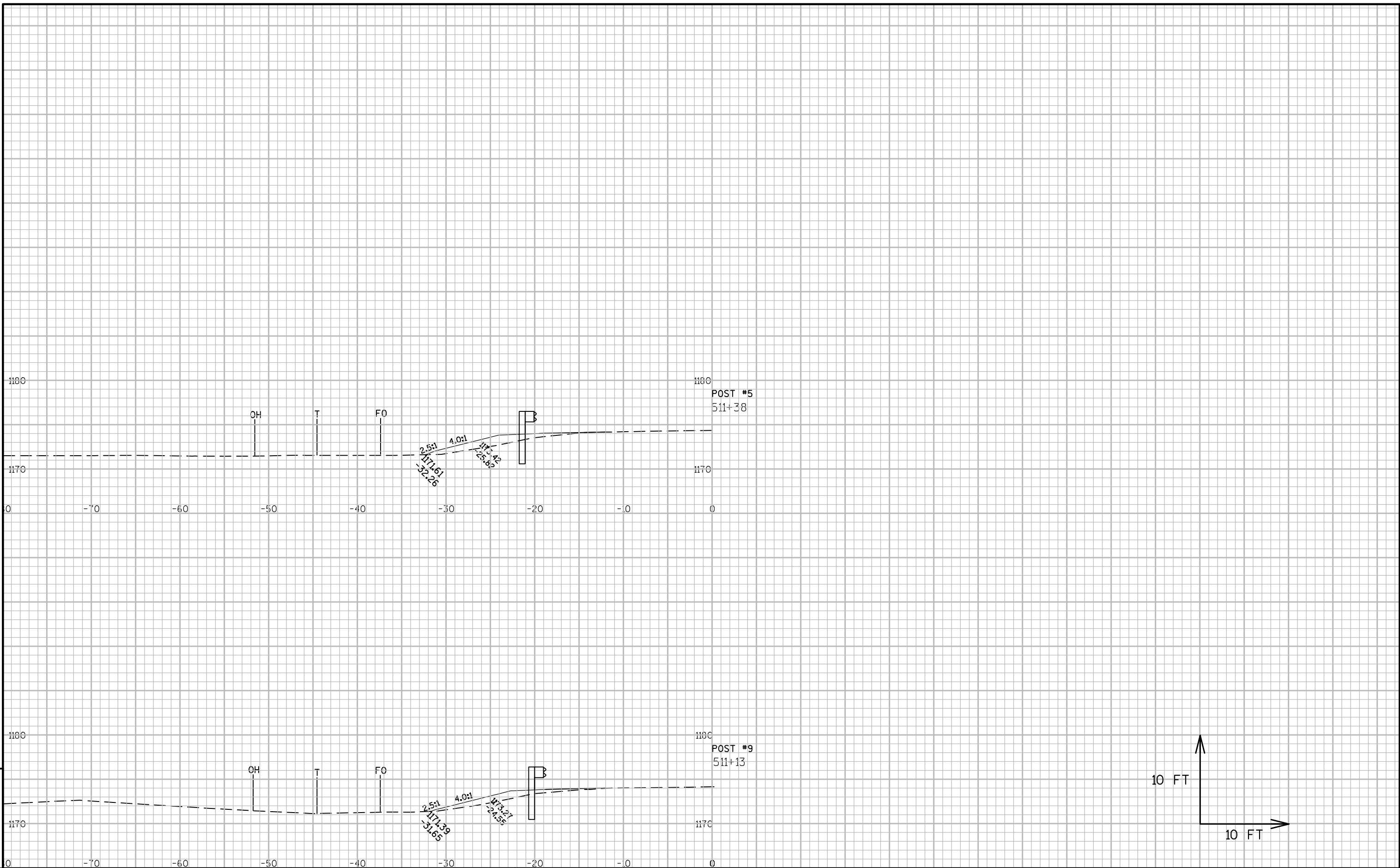


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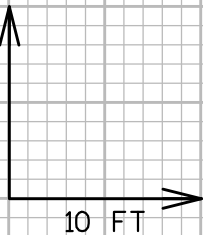
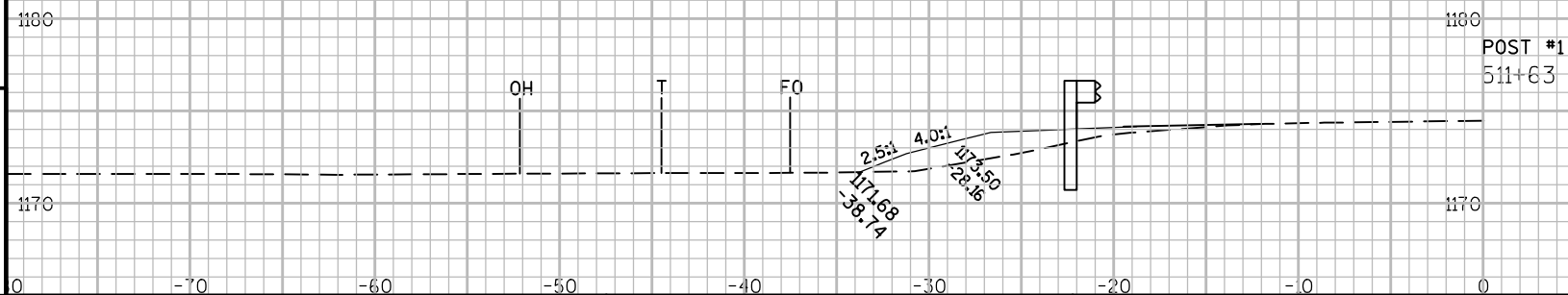
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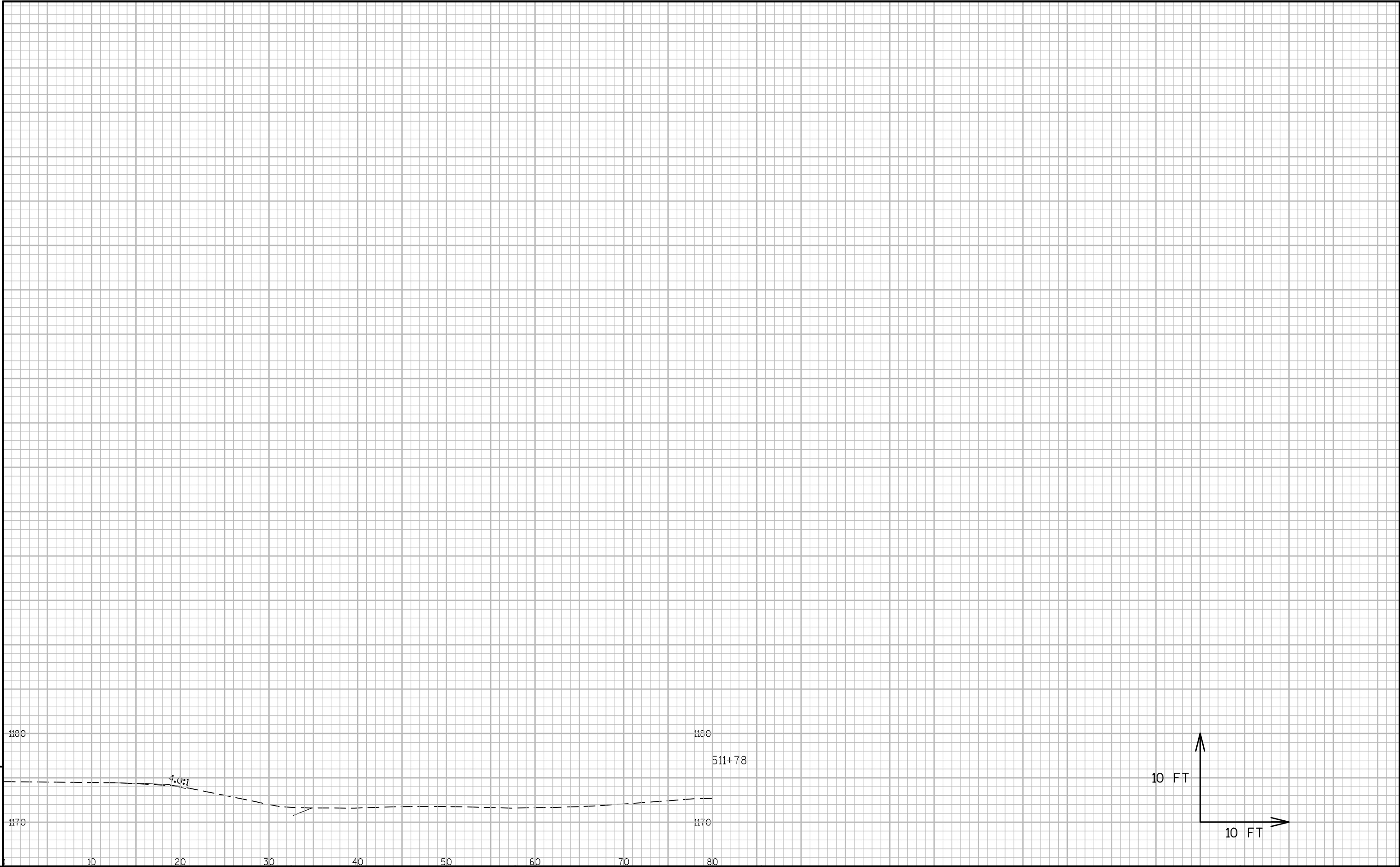
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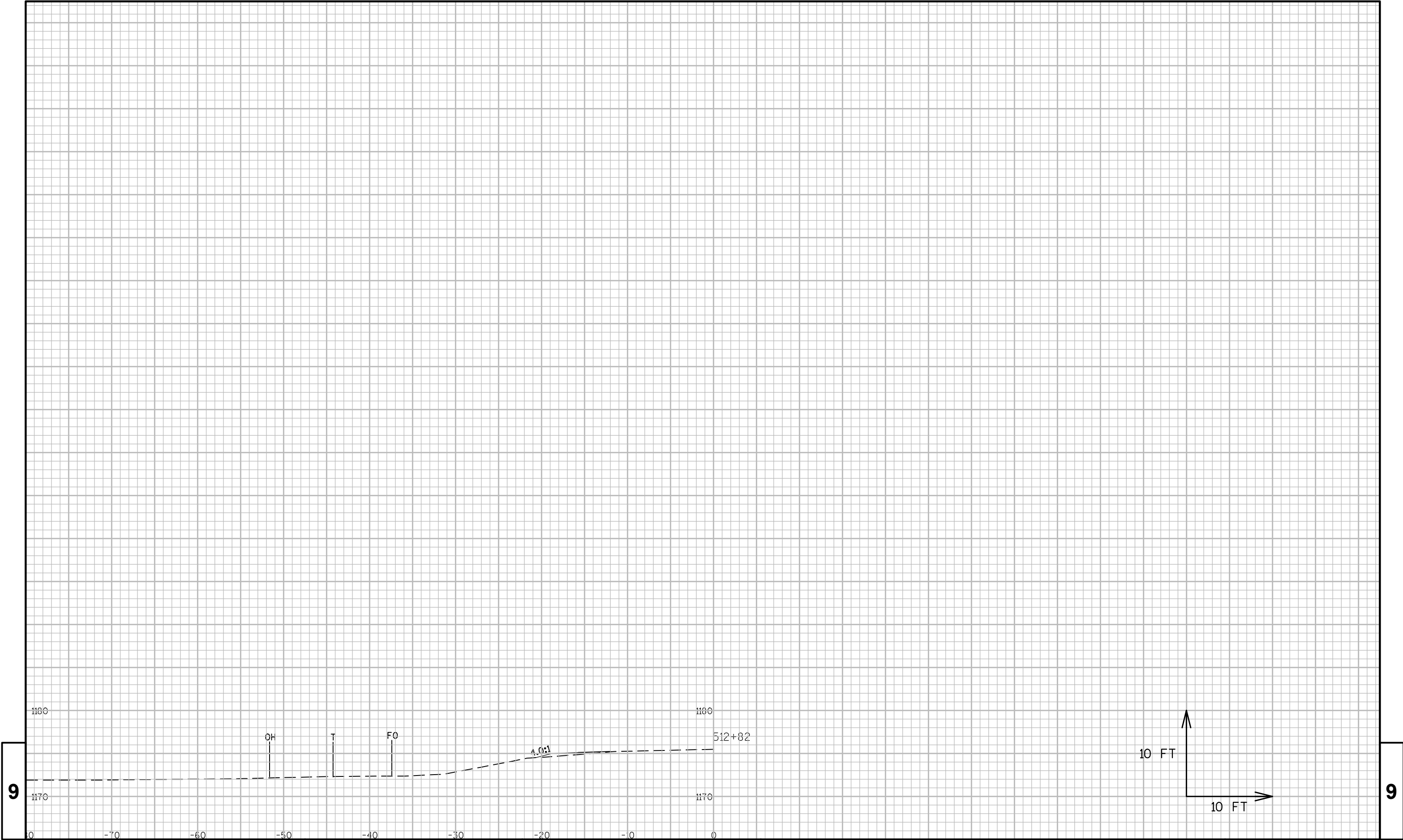


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PROJECT NO:8010-01-64

HWY:STH 35

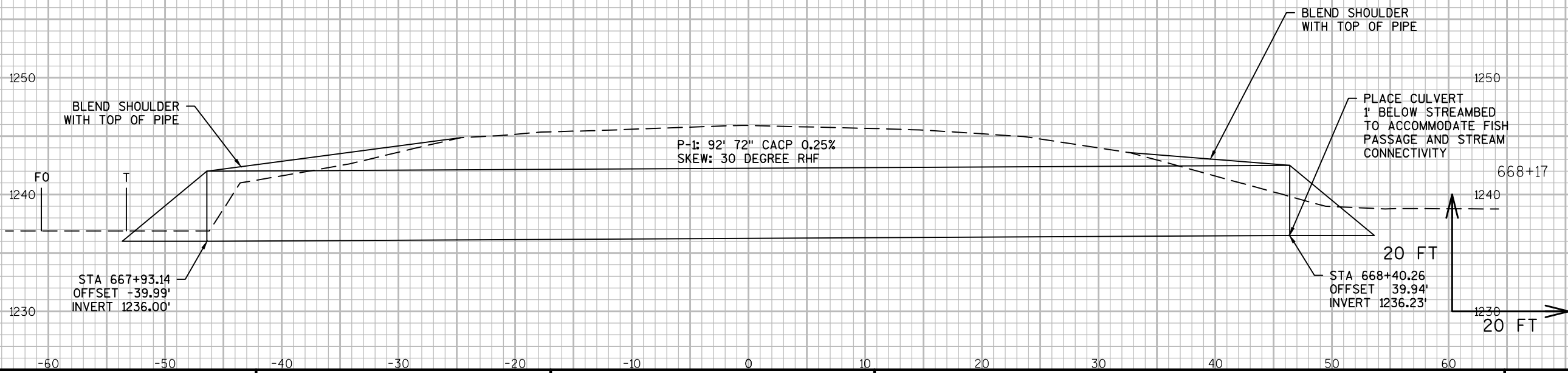
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CROSS SECTIONS: BEAM GUARD

SHEET

189

E



PROJECT NO: 8010-01-64

HWY: STH 35

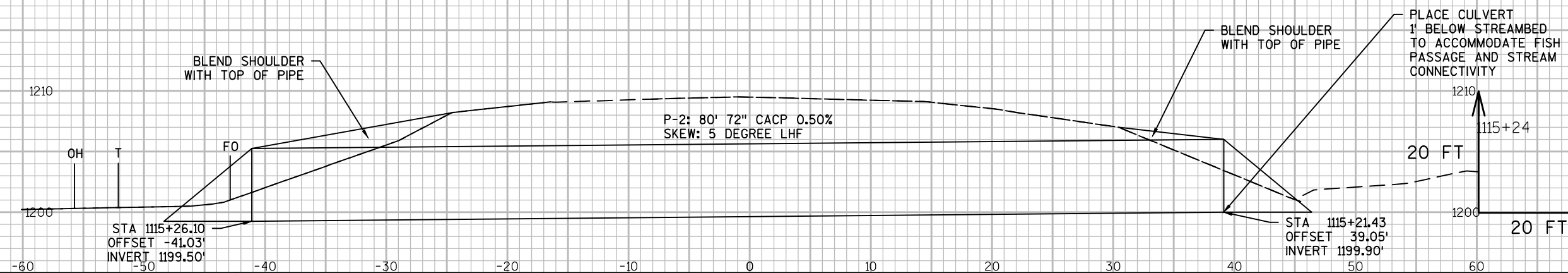
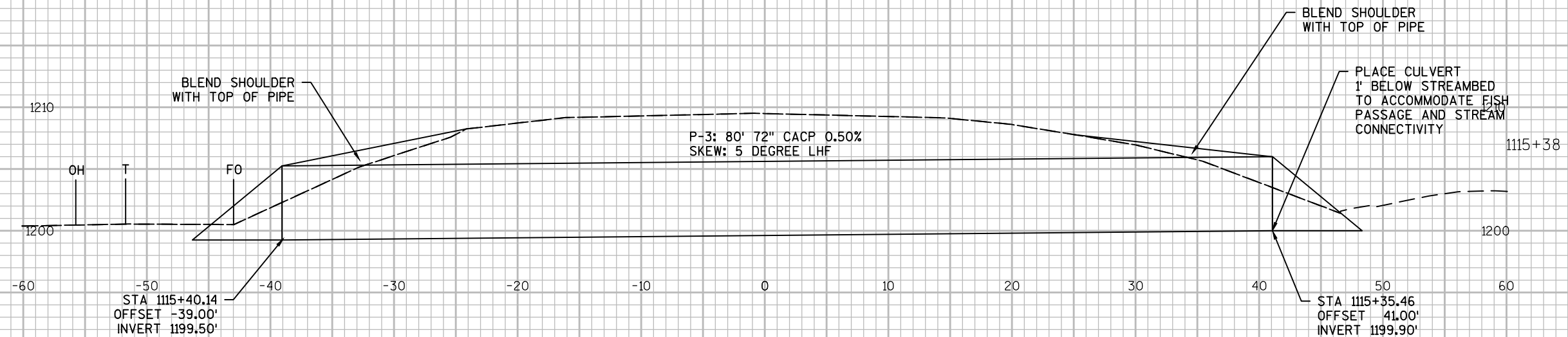
COUNTY: DOUGLAS

CROSS SECTIONS: CULVERT REPLACEMENT

SHEET

190

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PROJECT NO: 8010-00-61

HWY: STH 35

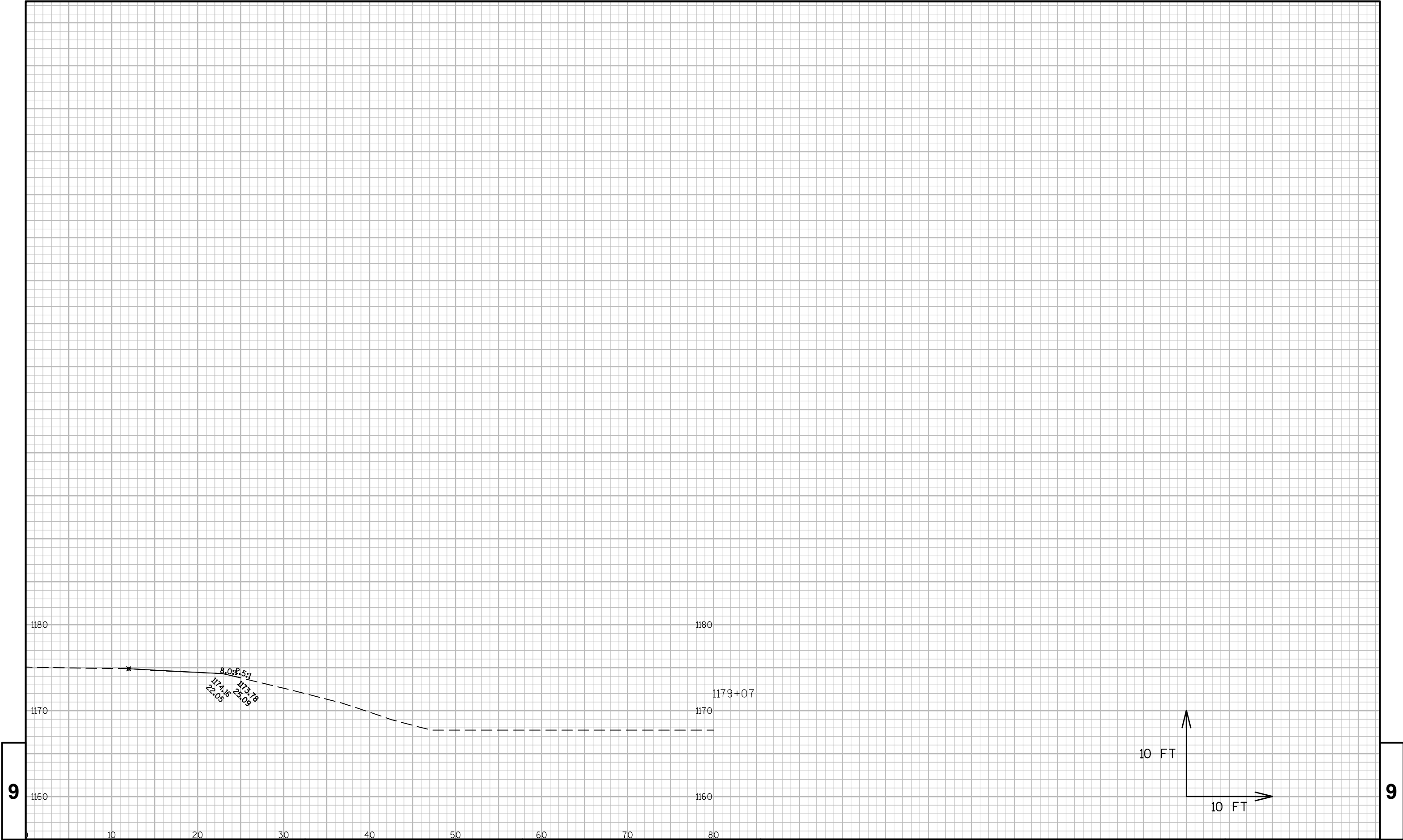
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CROSS SECTIONS: CULVERT REPLACEMENT

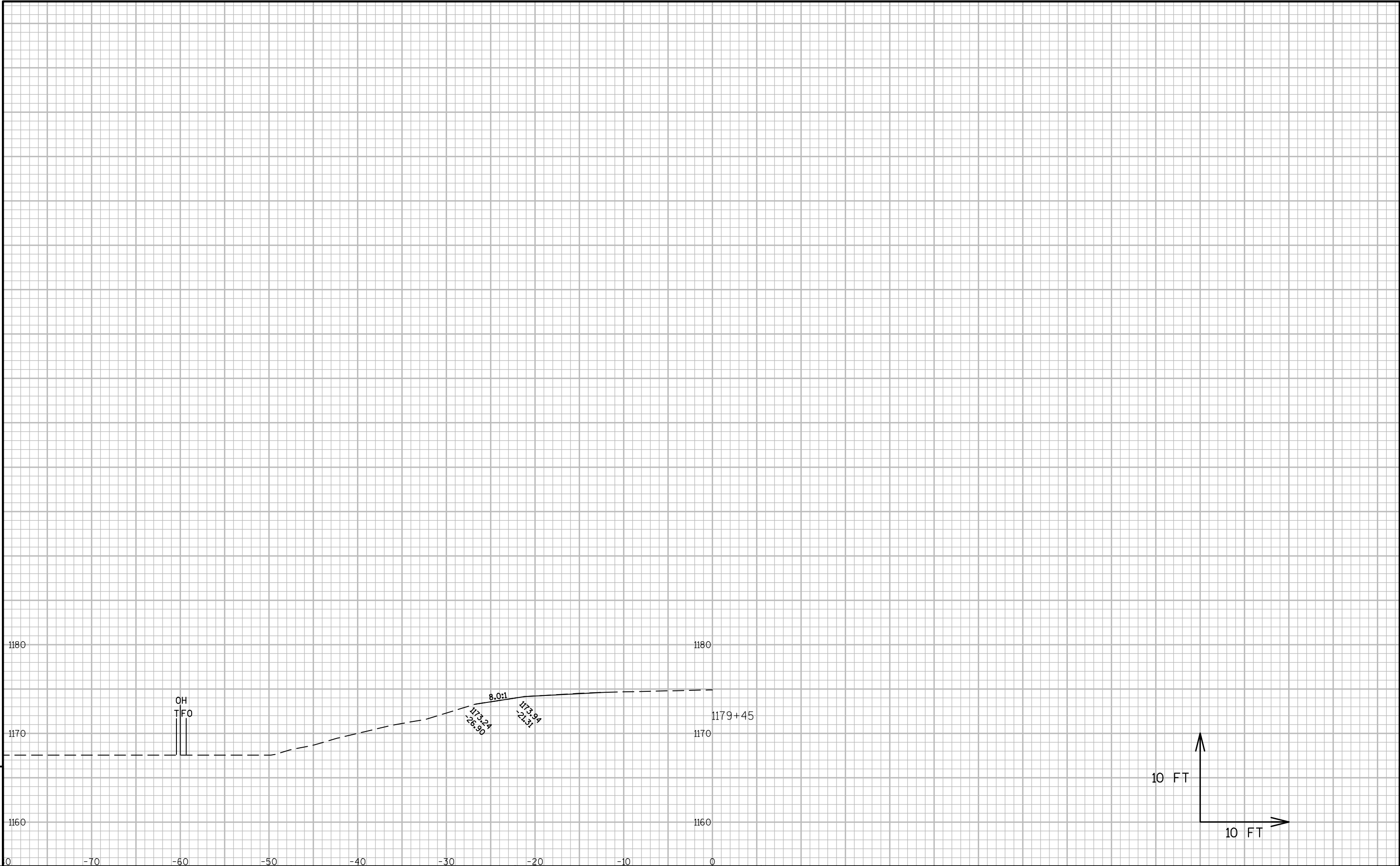
SHEET

191

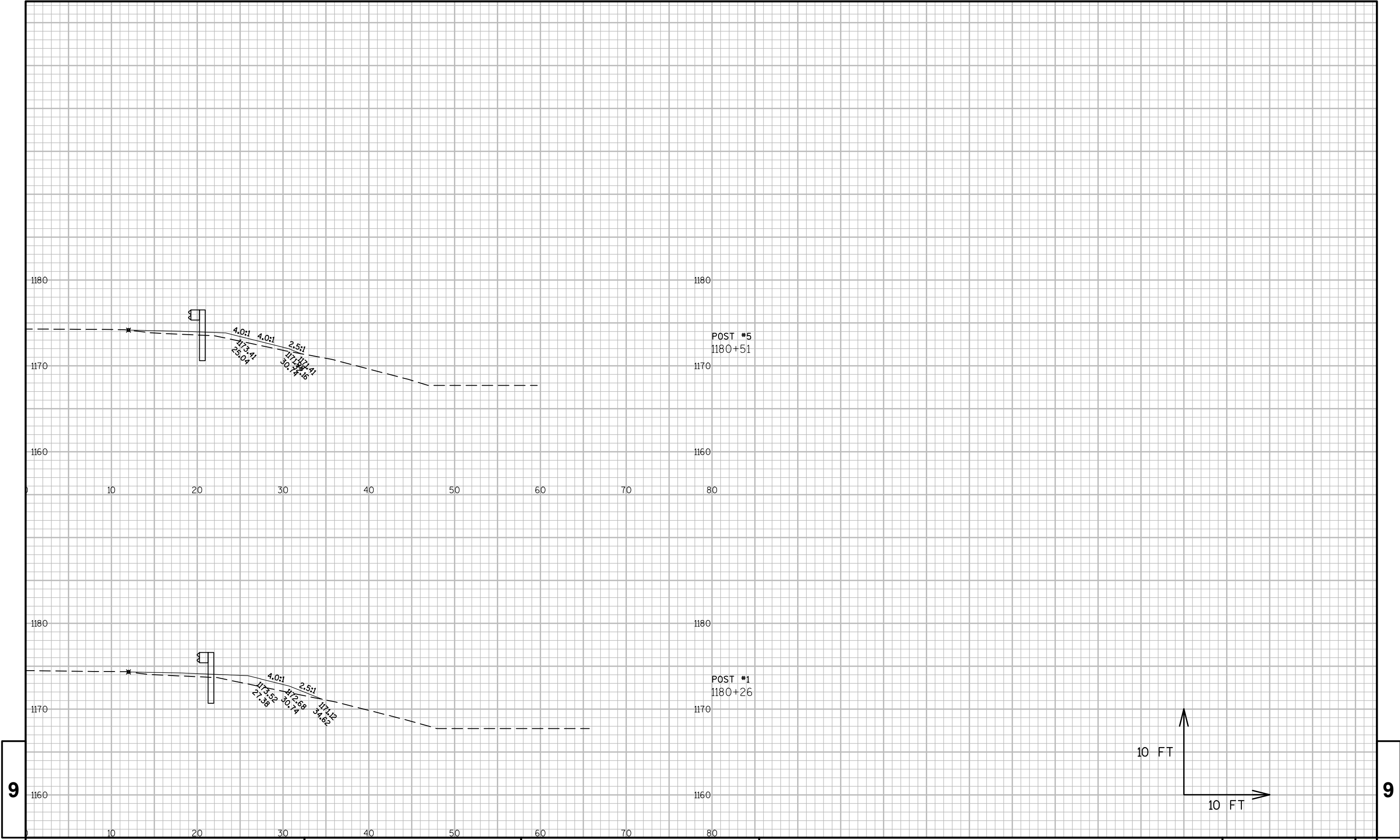
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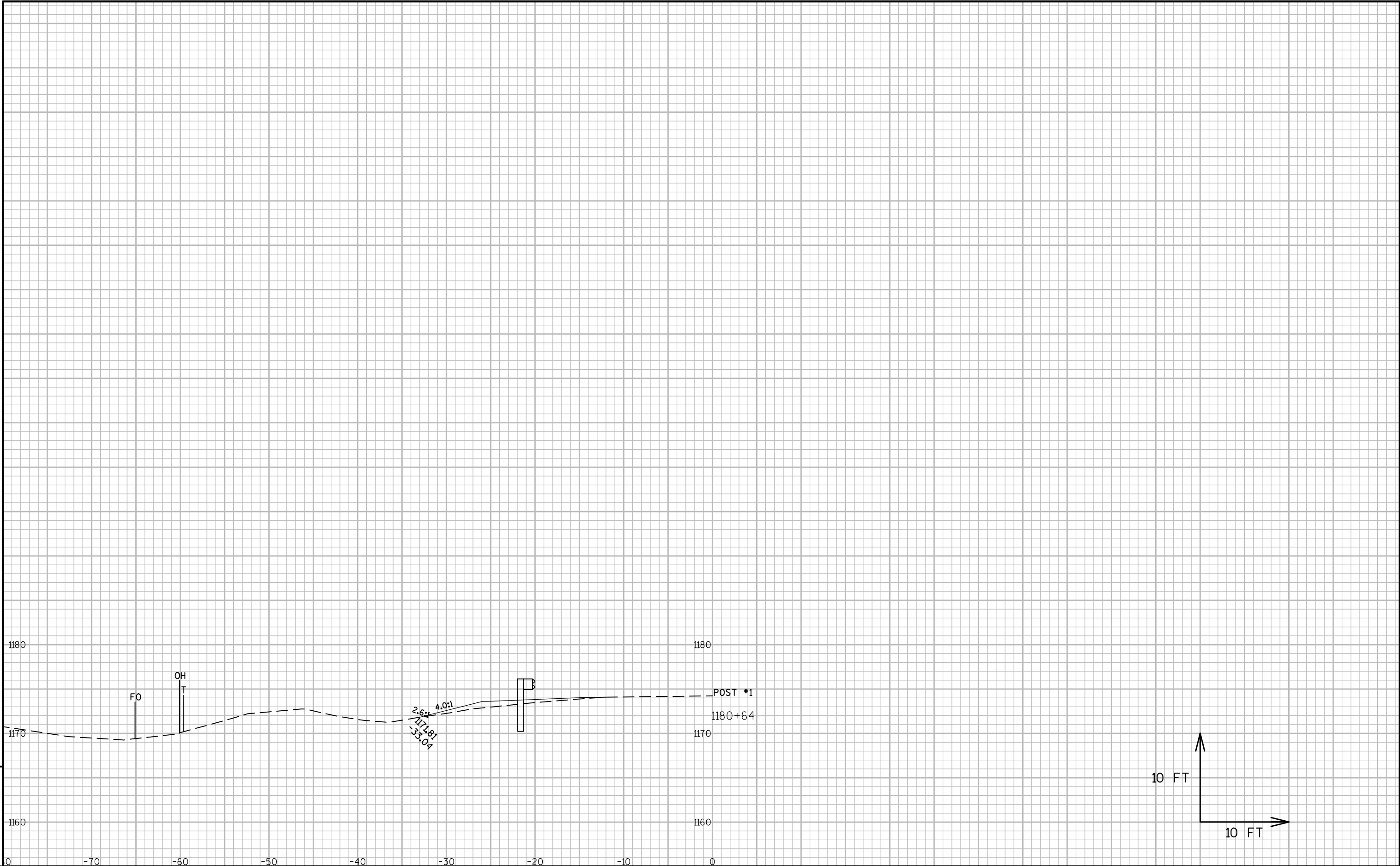
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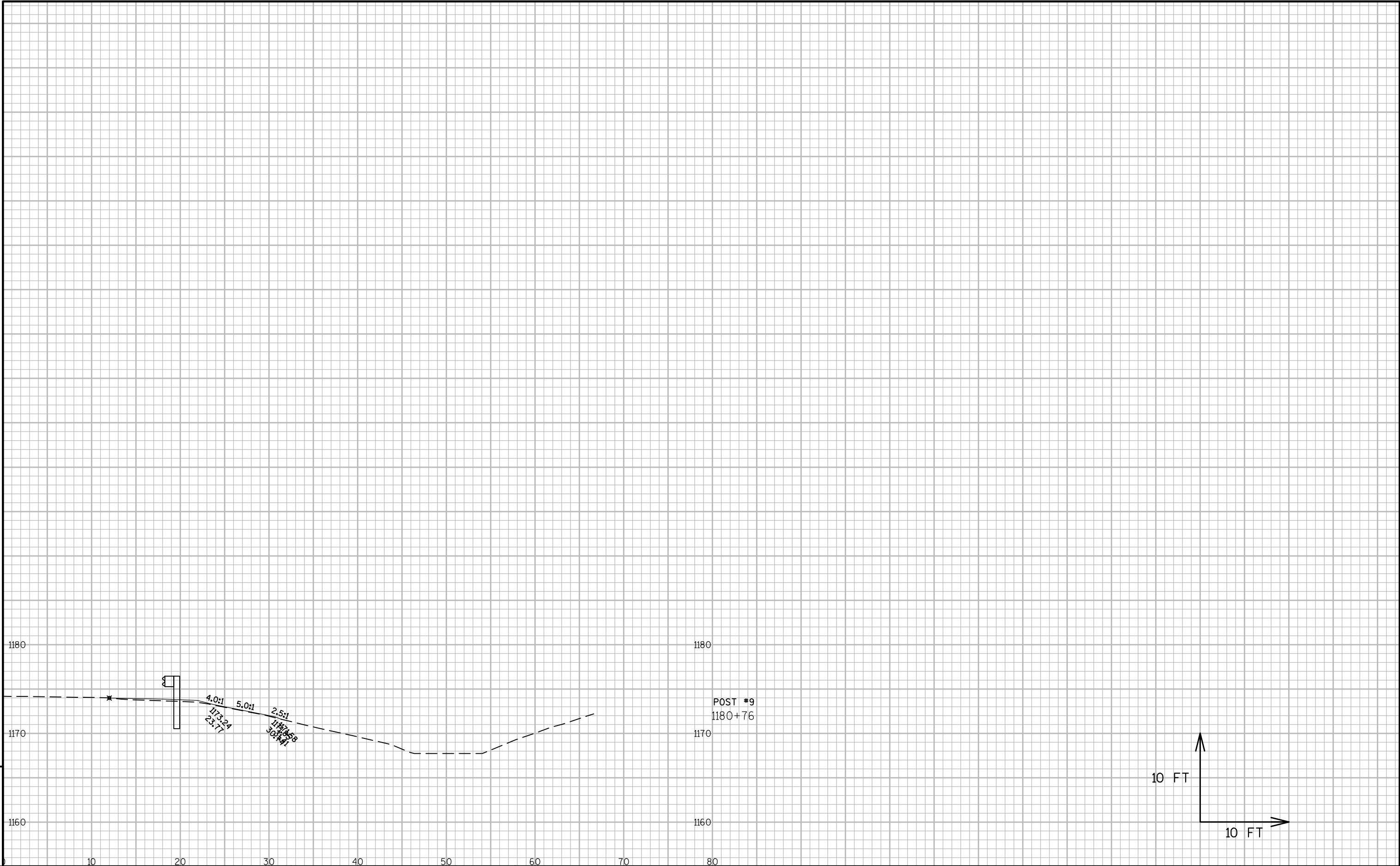
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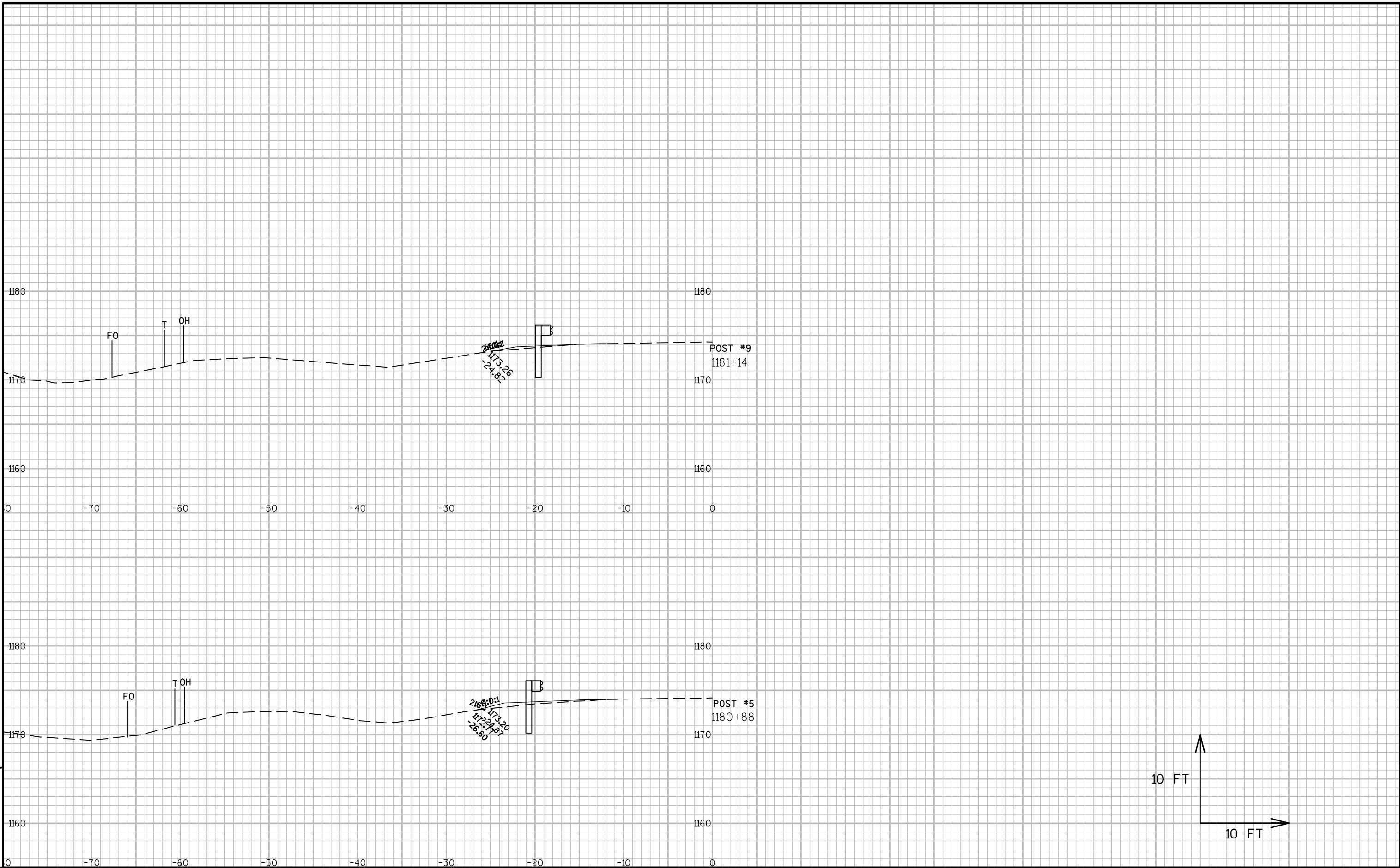


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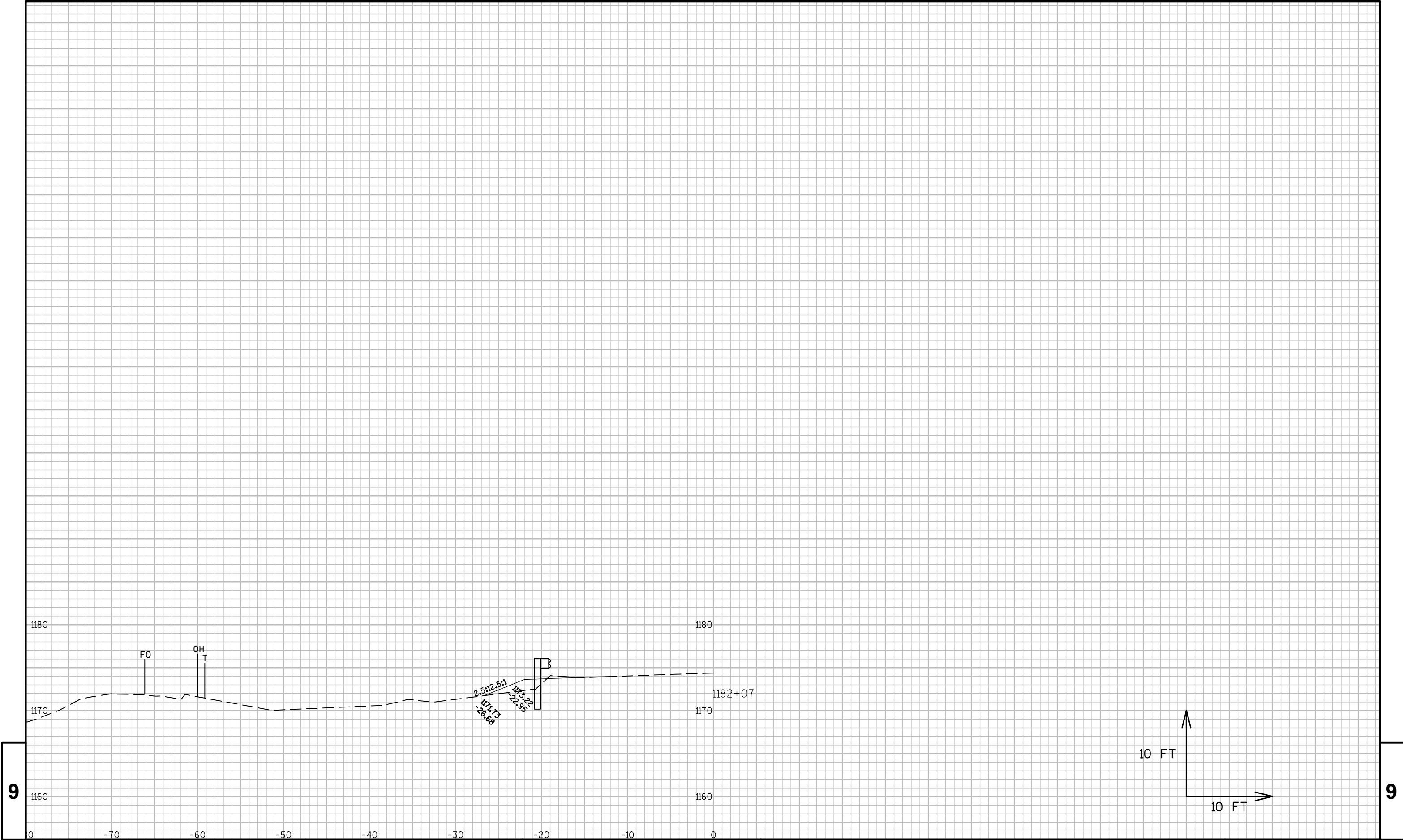
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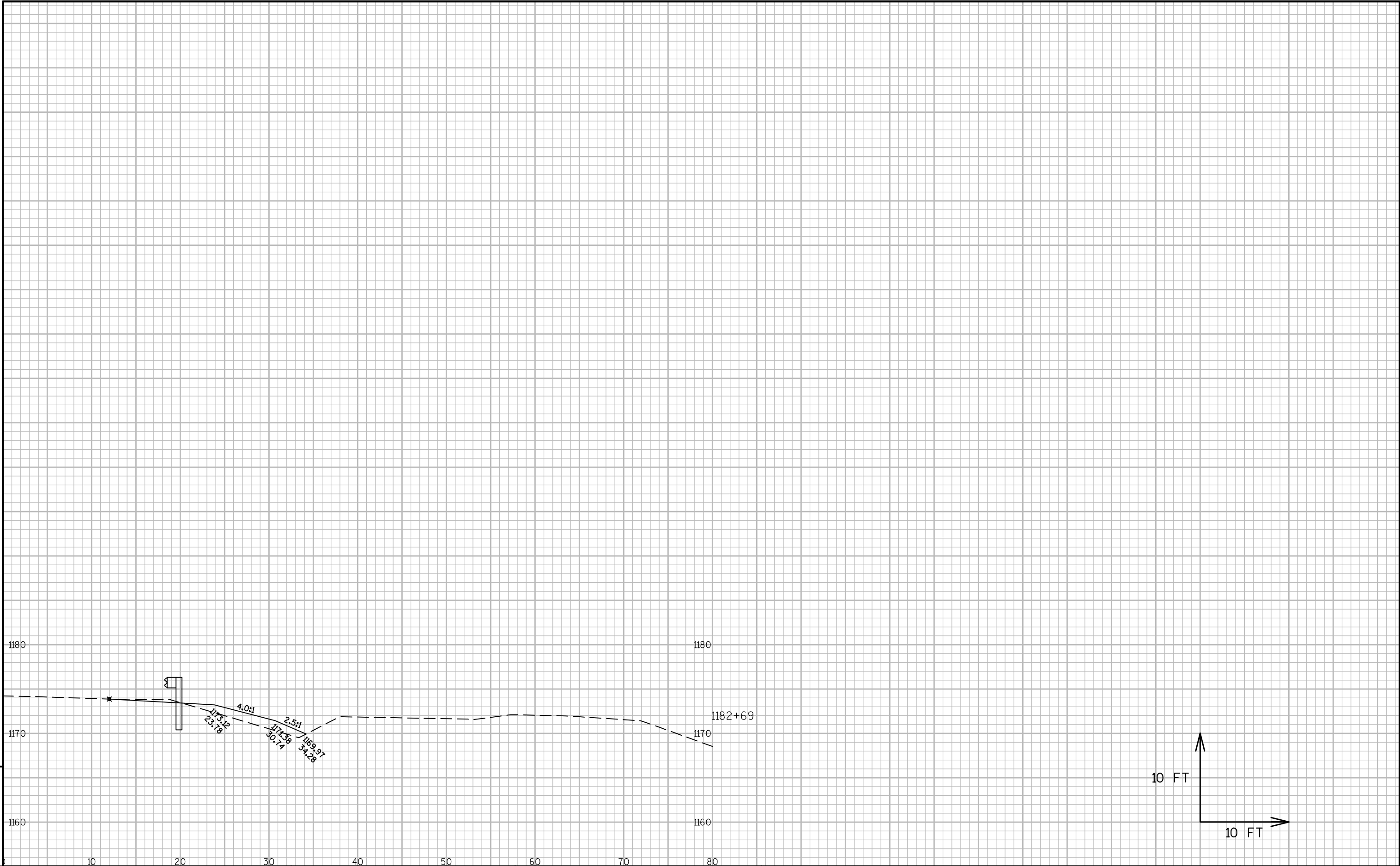
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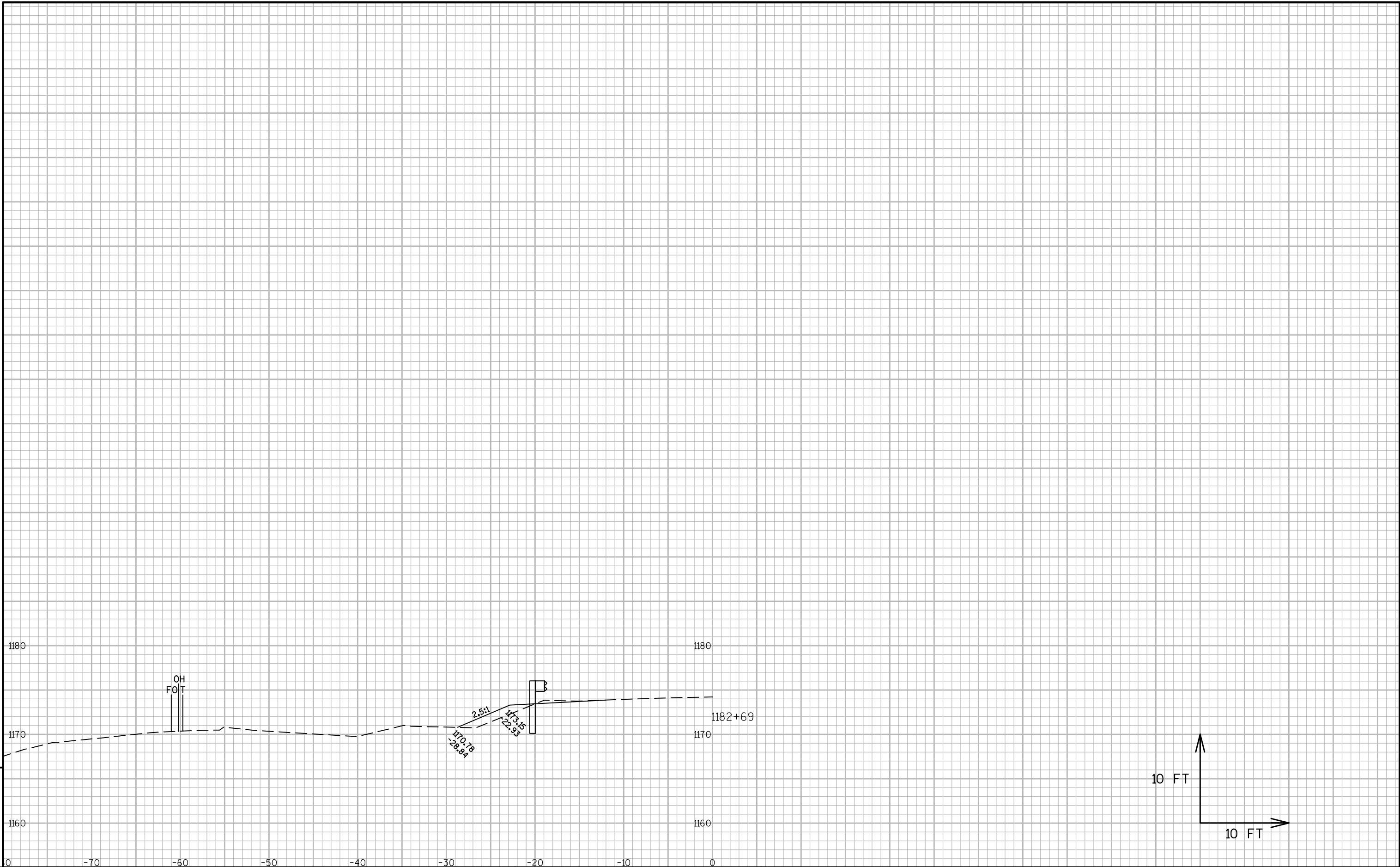
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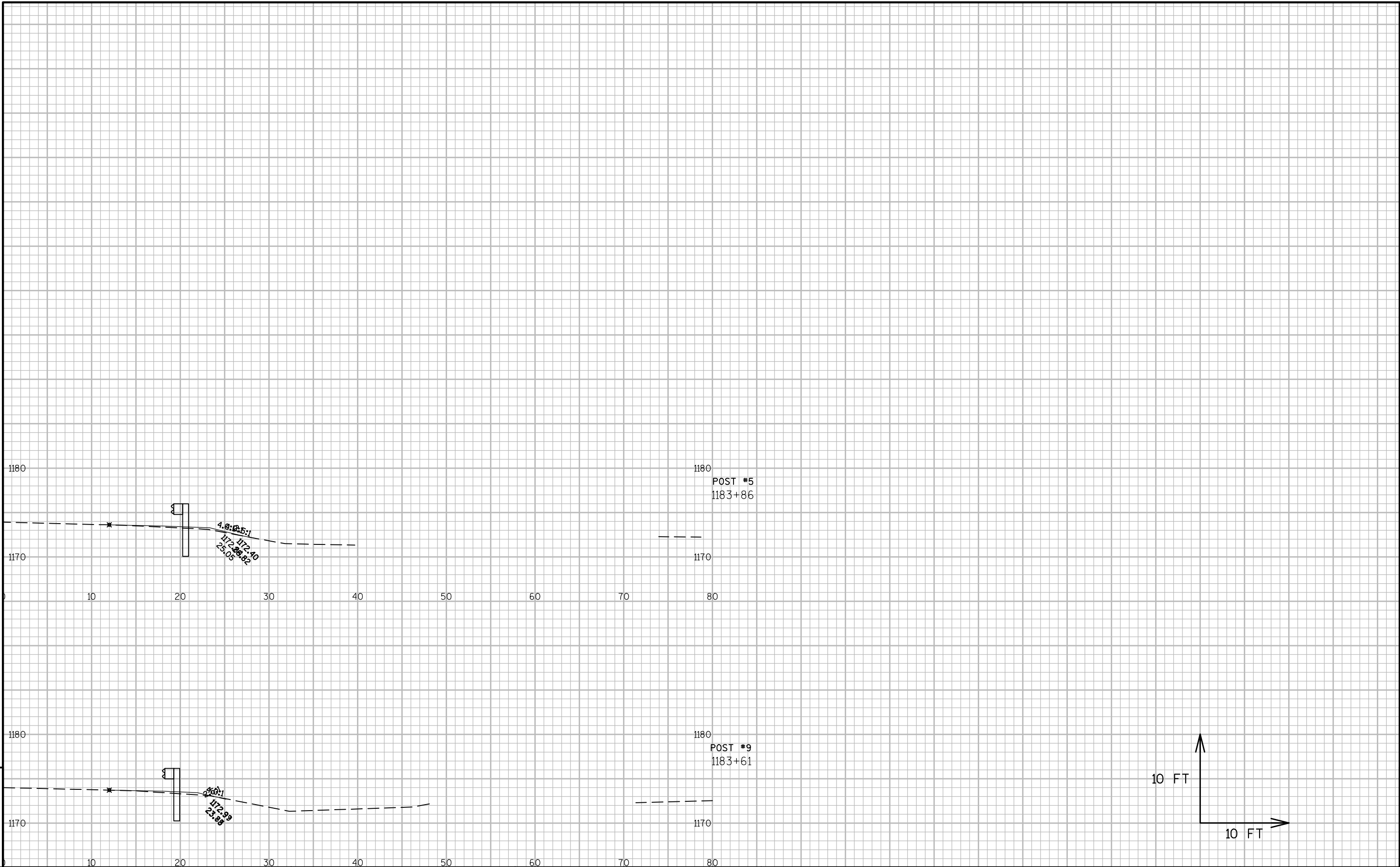


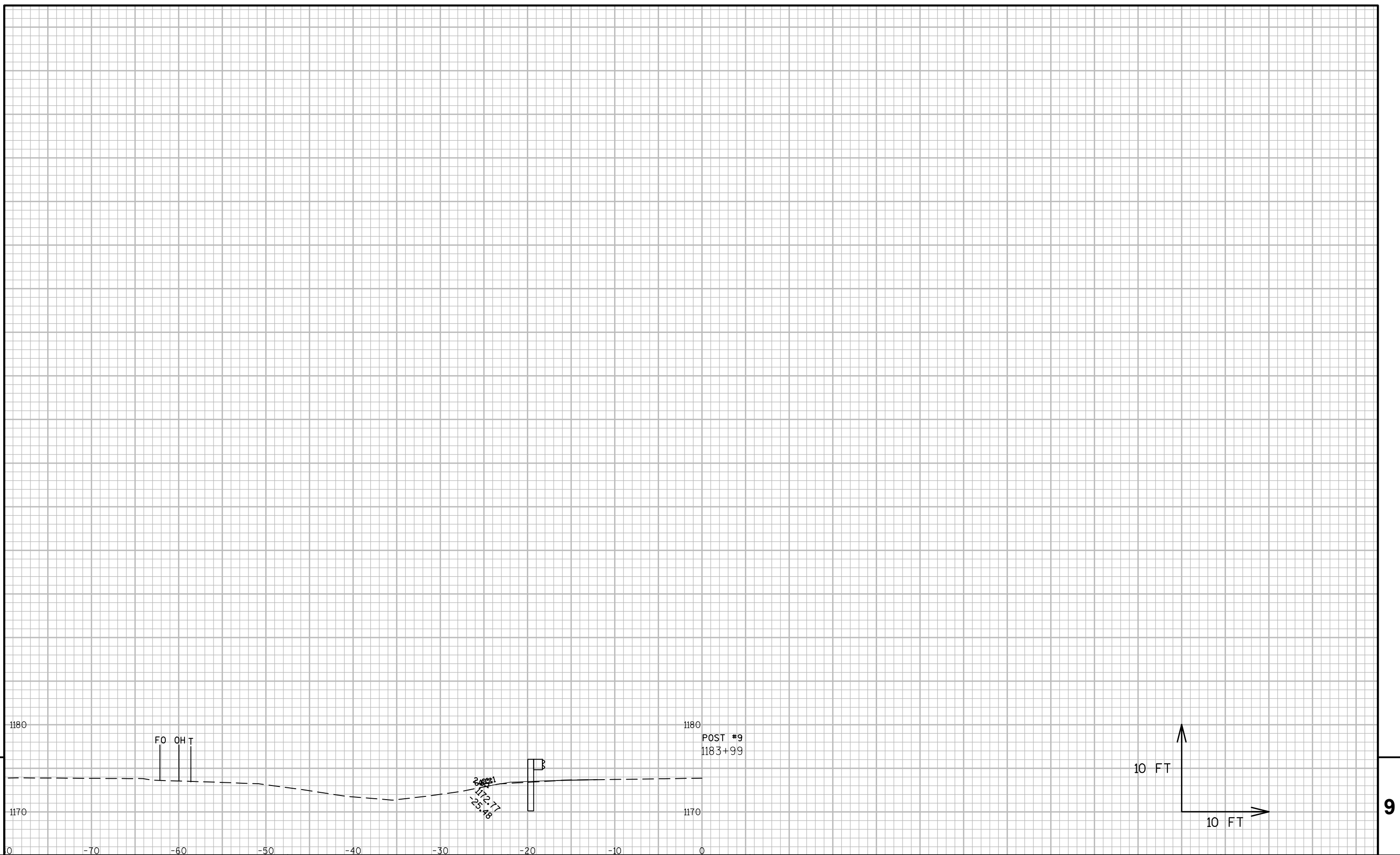
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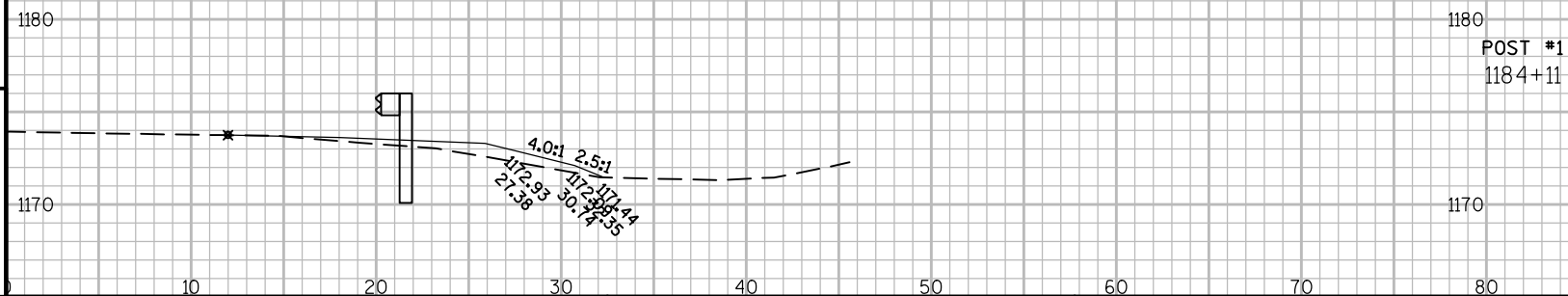
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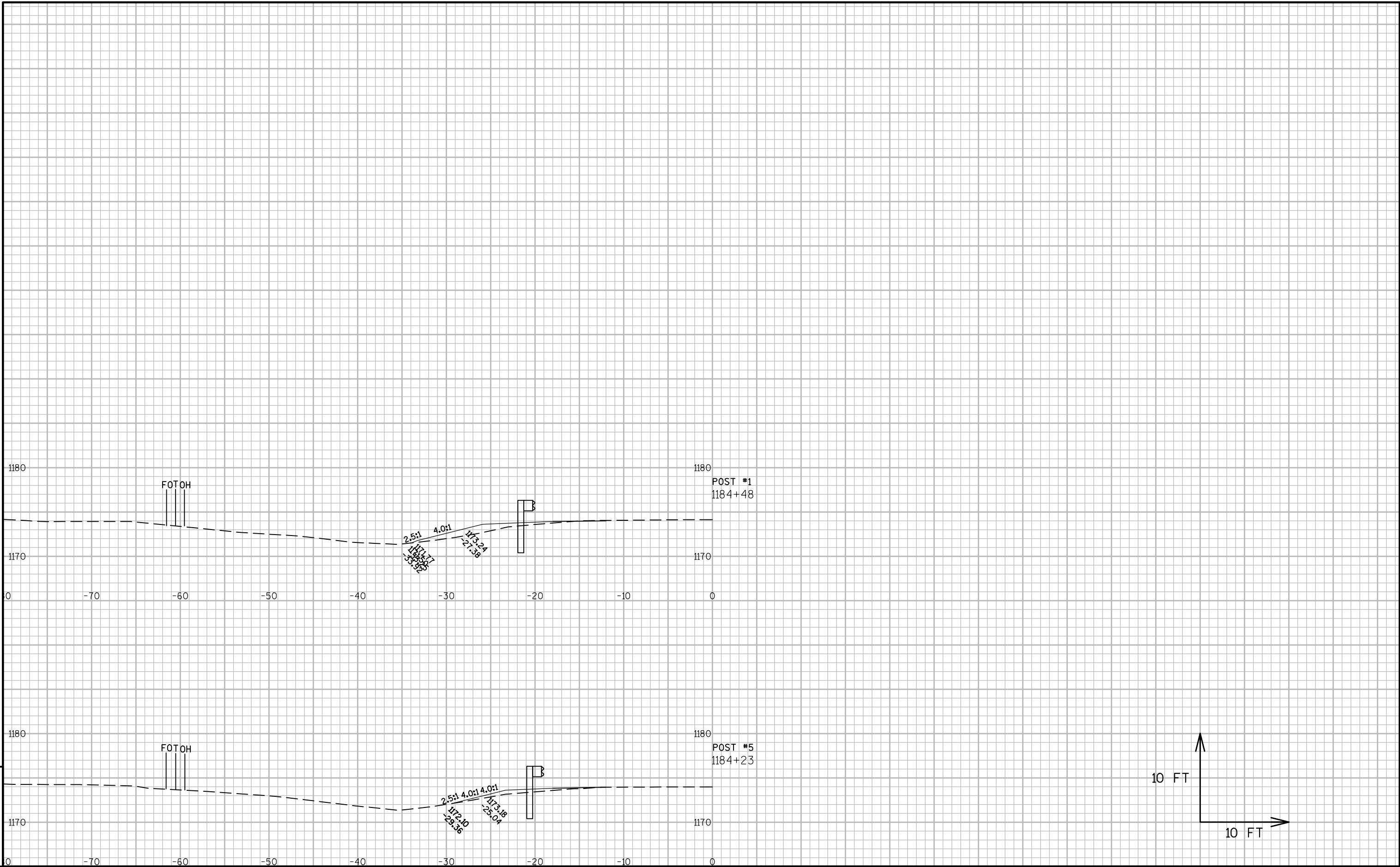




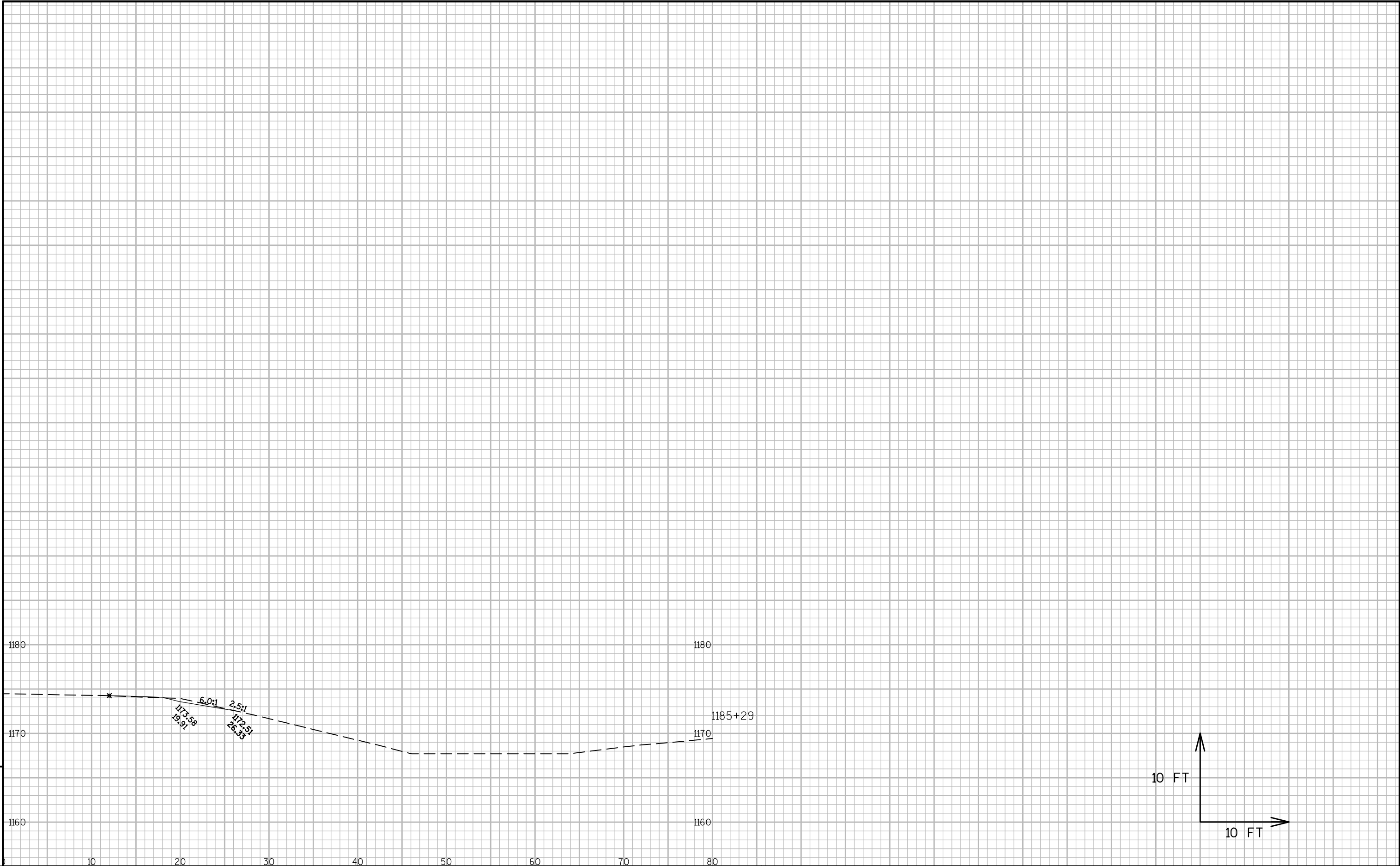
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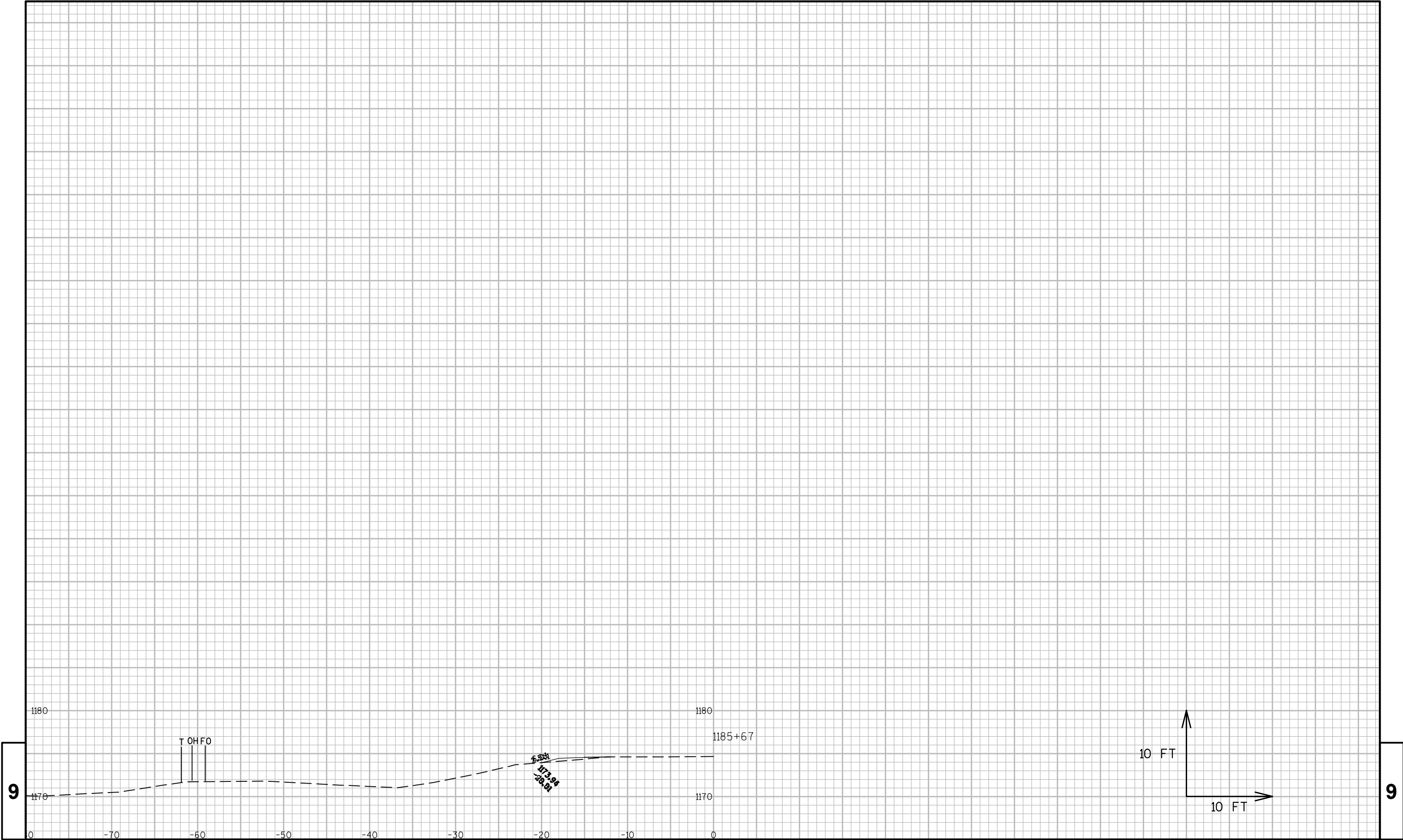
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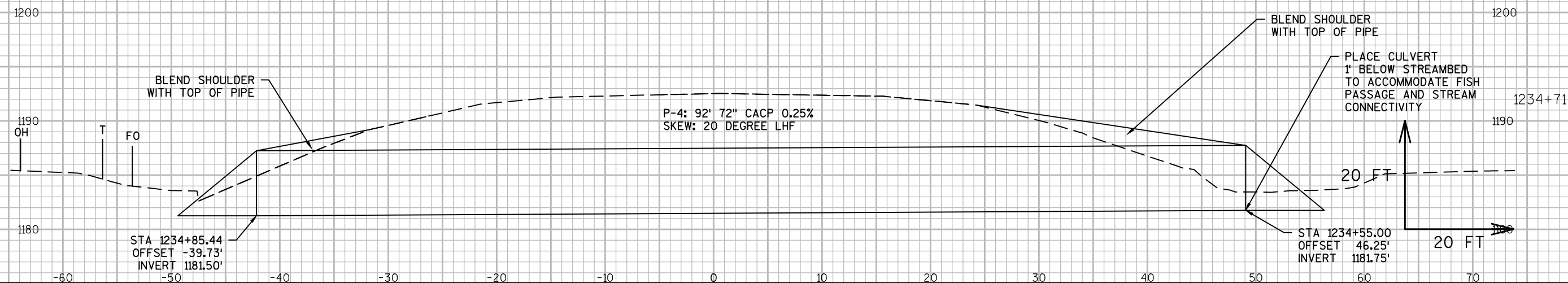
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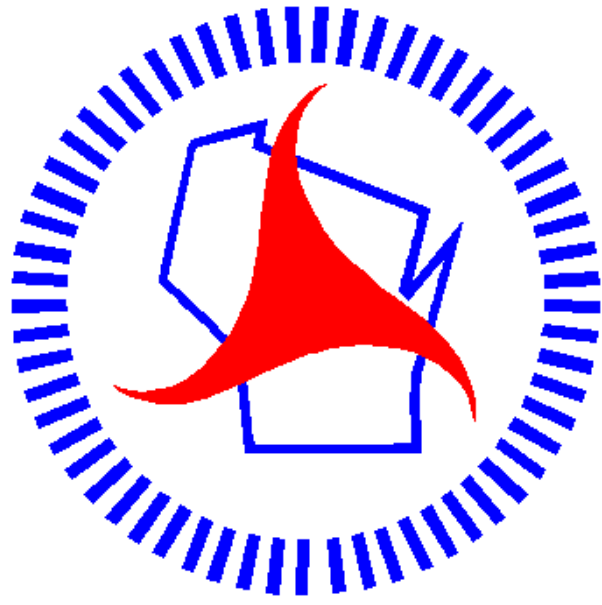
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Notes



Wisconsin Department of Transportation

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