

EAU APRIL 2014

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 = 258

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

ELLSWORTH - DURAND

(USH 63 TO CTH A)

USH 10

PIERCE COUNTY

STATE PROJECT NUMBER
1530-07-62

STRUCTURE C-47-48
STA. 222+55.00

STRUCTURE C-47-234
STA. 336+44.77

STRUCTURE C-47-50
STA. 357+45.00

STRUCTURE B-47-80
STA. 384+08.00

T-26-N

EQUATION
STA. 426+00.00 BK.
STA. 438+00.00 AH.

END PROJECT 1530-07-62
STA. 508+02.88

T-25-N

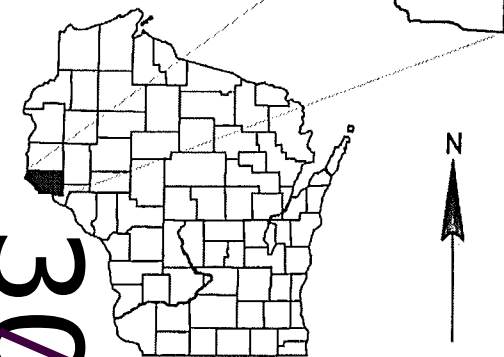
STRUCTURE C-47-51
STA. 454+02.00

STRUCTURE C-47-49
STA. 330+31.00

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN STATE PLANE
COORDINATE SYSTEM (WSPCS), CENTRAL ZONE."

TOTAL NET LENGTH OF CENTERLINE = 8.445 MI.

LAYOUT
SCALE 0 1 MI.



DESIGN DESIGNATION

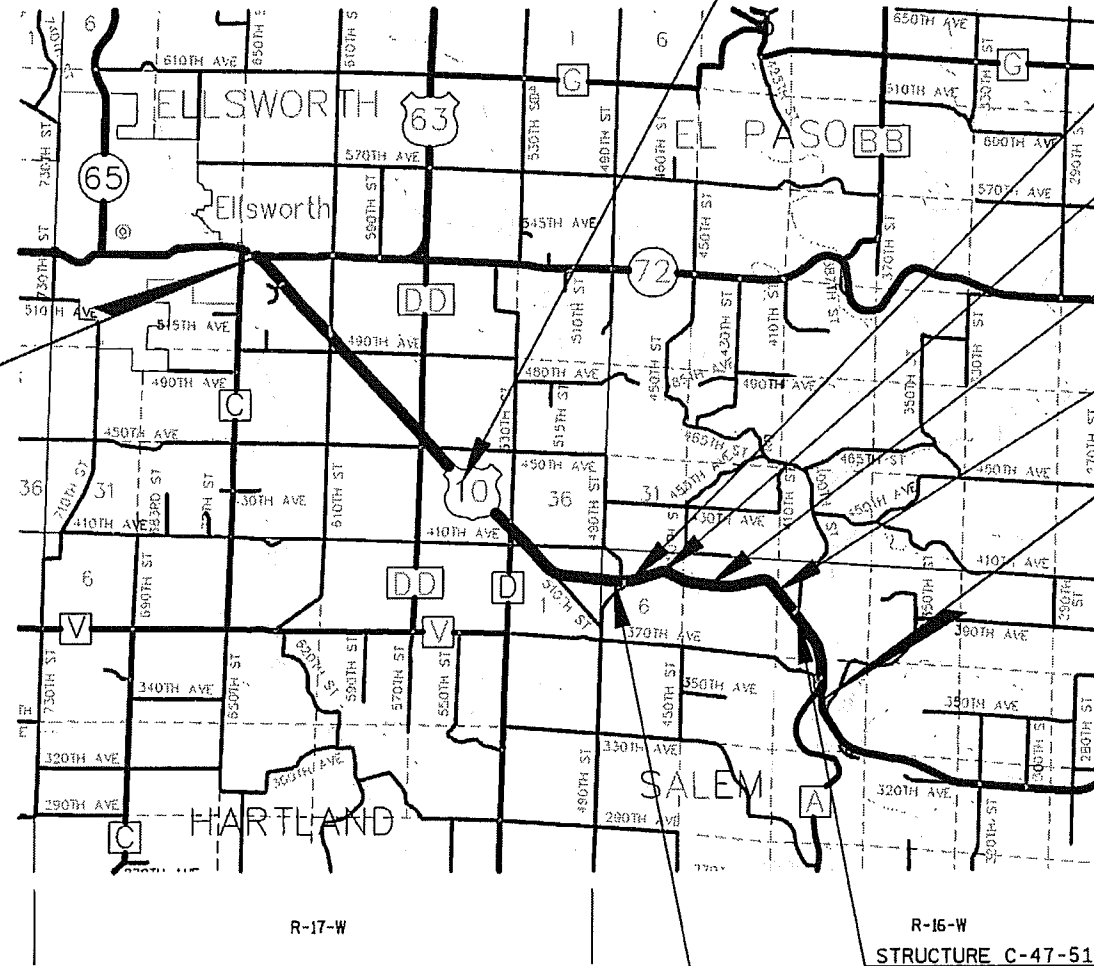
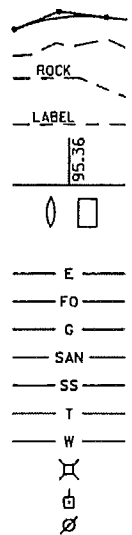
A.A.D.T. 2012	=	1800 - 2700
A.A.D.T. 2033	=	2300 - 3300
D.H.V.	=	300 - 440
D.D.	=	60/40
T.	=	15.8%
DESIGN SPEED	=	55 MPH
ESALS	=	934,400

BEGIN PROJECT 1530-07-62
STA. 50+11.90
Y = 337,369.998
X = 1,331,362.687

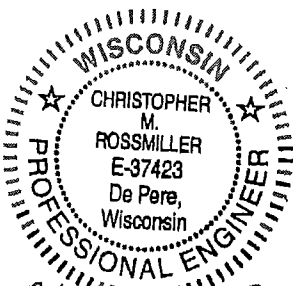
CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	----
LOT LINE	- - - -
LIMITED HIGHWAY EASEMENT	L - - - -
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	95.36
CULVERT (Profile View)	=====
UTILITIES	
ELECTRIC	— E —
FIBER OPTIC	— FO —
GAS	— G —
SANITARY SEWER	— SAN —
STORM SEWER	— SS —
TELEPHONE	— T —
WATER	— W —
UTILITY PEDESTAL	=====
POWER POLE	=====
TELEPHONE POLE	=====



Mead & Hunt



Christopher M. Rossmiller
05/01/2013

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	MEAD & HUNT, INC.
Designer	MEAD & HUNT, INC.
Project Manager	WENDY MAVES, P.E.
Regional Examiner	DAN OJIBWAY, P.E.
Regional Supervisor	DAVID SOLBERG, P.E.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 4/28/13 [Signature]
(Signature)

E

GENERAL NOTES

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOIL, FERTILIZED, SEEDED AND EROSION MAT AS DIRECTED BY THE ENGINEER.

ALL PRIVATE DRIVEWAYS AND COMMERCIAL ENTRANCES SHALL BE RESTORED IN KIND. LIMITS TO BE DETERMINED BY THE ENGINEER.

WHEN PORTIONS OF THE EXISTING ASPHALTIC SURFACES ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF SUCH REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUT JOINT THROUGH THE ASPHALTIC SURFACE SO THAT REMOVAL OF THE ASPHALT SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO REMAINING PORTIONS. THE LOCATION OF SAW JOINTS AND THE AMOUNT REMOVED AT SIDE ROADS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

PAVING LIMITS ARE TO BE DETERMINED BY THE ENGINEER.

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

ALL RADII ARE MEASURED TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED ON THE PLAN.

CURVE DATA IS BASED ON THE ARC DEFINITION.

"ASPHALTIC SURFACE" ITEM IS TO BE USED FOR LEVELING/WEDGING AND SPOT REPAIR.

"ASPHALTIC SURFACE PATCHING" ITEM IS TO BE USED FOR RAMPING AT BUTT JOINT SAW CUTS, MISCELLANEOUS REPAIRS OF POTHOLES AND POPOUTS THAT OCCUR DURING CONSTRUCTION.

"PREPARATION OF FOUNDATION FOR ASPHALTIC PAVING SPECIAL" ITEM IS ASSOCIATED WITH THE WORK FOR THE "ASPHALTIC SURFACE " AND ASPHALTIC SURFACE PATCHING" ITEMS.

PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE , SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.

SHAPING AND COMPACTING EXISTING SHOULDER MATERIAL PRIOR TO ADDING NEW SHOULDER SHOULDER MATERIAL, SHAPING AND COMPACTING GRAVEL SIDE ROADS, EXCAVATION, SHAPING AND DISPOSAL OF EXCESS MATERIAL AND REMOVAL OF EXISTING ASPHALTIC SURFACE TO NECESSARY LENGTHS AND DEPTHS AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED IN THE BID ITEM "PREPARING OF FOUNDATION FOR ASPHALTIC PAVING SPECIAL".

ALL DRIVEWAYS ARE TO BE ADJUSTED TO MATCH THE NEW MAINLINE PROFILE (SEE CONSTRUCTION DETAILS)

THE EROSION CONTROL FEATURES AS SHOWN ON THE PLAN DETAILS ARE AT SUGGESTED LOCATIONS, THEIR EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

ELEVATIONS SHOWN ON THE PLAN ARE BASED NAV88.

OTHER WETLANDS MAY EXIST IN LOCATIONS THAT ARE NOT SHOWN IN THE PLANS. DO NOT STAGE IN OR DISTURB WETLANDS AREAS.

WHEN THE QUANTITY 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 THE MATERIAL AS DIRECTED BY THE ENGINEER.

PRIOR TO REMOVING CURB & GUTTER, FIELD SURVEY THE EXISTING LOCATIONS AND ELEVATIONS. USE THE EXISTING LOCATIONS TO ESTABLISH THE NEW CURBS, ADJUST THE ELEVATIONS TO ACCOMMODATE THE NEW FINISHED PAVEMENT ELEVATIONS. COSTS ASSOCIATED WITH SURVEYING THE EXISTING CURB LOCATIONS ARE INCIDENTAL TO BID ITEM "CONSTRUCTION STAKING RESURFACING REFERENCE".

THE PROPOSED SHOULDER WIDTHS SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTION.

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

STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	NO	NUMBER
AGG	AGGREGATE	PE	PRIVATE ENTRANCE
ASPH	ASPHALTIC	PI	POINT OF INTERSECTION
BM	BENCH MARK	PL	PROPERTY LINE
BOC	BACK OF CURB	QTY	QUANTITY
C&G	CURB AND GUTTER	RHF	RIGHT-HAND FORWARD
CE	COMMERCIAL ENTRANCE	RT	RIGHT
CL	CENTERLINE	R/L	REFERENCE LINE
CWT	HUNDREDWEIGHT	R/W	RIGHT-OF-WAY
CY	CUBIC YARD	SF	SQUARE FOOT
DHV	DESIGN HOURLY VOLUME	SHLDR	SHOULDER
DWY	DRIVEWAY	SS	STORM SEWER
EL	ELEVATION	STA	STATION
EXC	EXCAVATION	SY	SQUARE YARD
FT	FOOT	T	TRUCKS (PERCENT OF)
FTG	FOOTING	TEL	TELEPHONE
HYD	HYDRANT	TLE	TEMPORARY LIMITED EASEMENT
INV	INVERT	TYP	TYPICAL
LB	POUND	UG	UNDERGROUND CABLE
LF	LINEAR FOOT	VAR	VARIABLE
LHF	LEFT-HAND FORWARD	VC	VERTICAL CURVE
LS	LUMP SUM	VPC	VERTICAL POINT OF CURVE
LT	LEFT	VPI	VERTICAL POINT OF INTERSECTION
Mgal	MEGAGALLON	VPT	VERTICAL POINT OF TANGENCY

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL & DRAINAGE
SIGNING
PAVEMENT MARKING
TRAFFIC CONTROL
CONSTRUCTION STAGING

UTILITIES

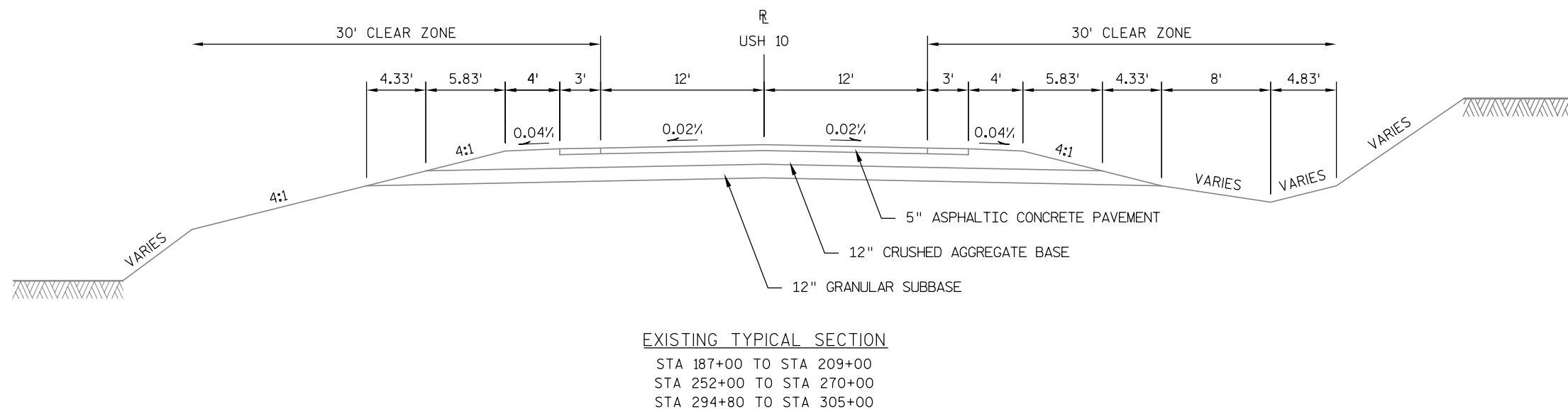
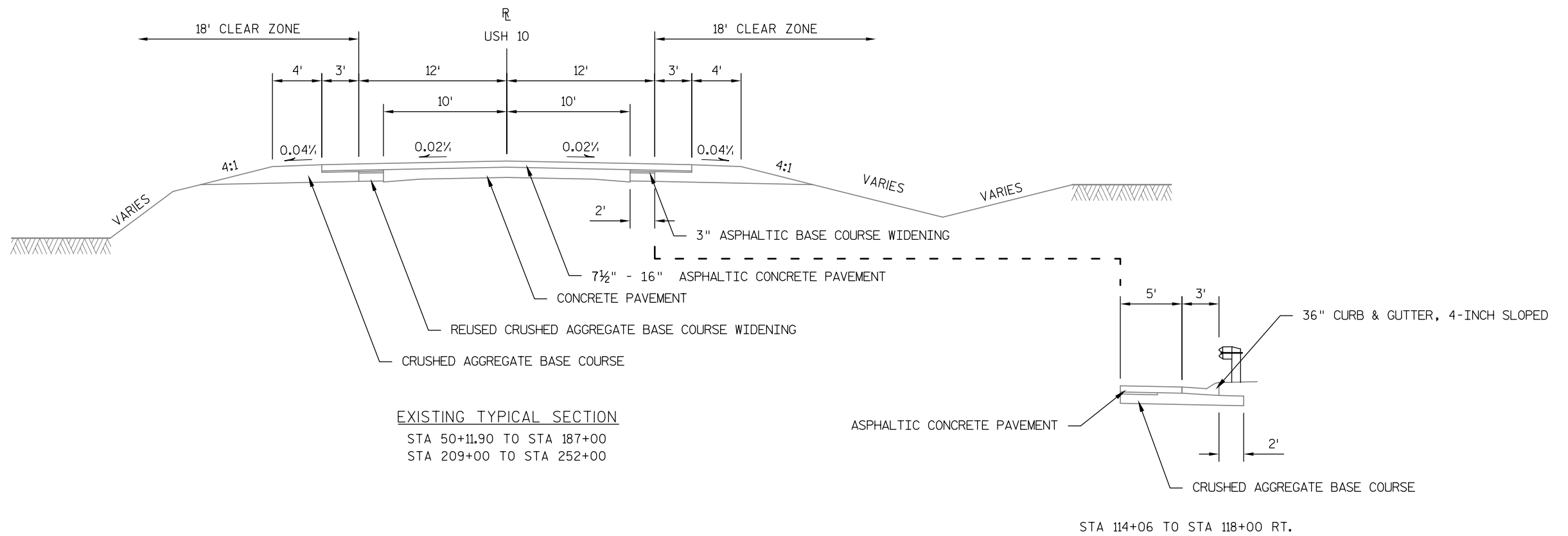
CENTURYLINK - COMMUNICATION LINE 20 S WILSON AVE RICE LAKE, WI 54868 ATTN: BRUCE F. LARSON PHONE: (715) 234-5573	XCEL ENERGY - TRANSMISSION P.O. BOX 8 EAU CLAIRE, WI 54702-0008 ATTN: KYLE NEIDERMIRE PHONE: (715) 737-1576 MOBILE: (715) 450-6743 EMAIL: KYLE.S.NEIDERMIRE@XCELENERGY.COM	XCEL ENERGY - ELECTRIC - GAS 1201 LIVINGSTONE RD HUDSON, WI 54016 ATTN: DARREN NORDSKOG PHONE: (715) 386-4798 MOBILE: (715) 410-3755 DARREN.M.NORDSKOG@XCELENERGY.COM
AT&T WISCONSIN - COMMUNICATION LINE 304 S DEWEY ST, 4TH FLOOR EAU CLAIRE, WI 54701 ATTN: RICK PODOLAK PHONE: (715) 893-5565	PIERCE-PEPIN ELECTRIC COOPERATIVE - ELECTRICITY W7725 US HWY 10 P.O. BOX 420 ELLSWORTH, WI 54011 ATTN: BRADLEY RISTOW PHONE: (715) 273-2473 MOBILE: (715) 307-1904 EMAIL: BRISTOW@PIERCEPEPIN.COM	
KOCH PIPELINE COMPANY L.P. - GAS/PETROLEUM 6483 85TH STREET COTTAGE GROVE, MN 55016 ATTN: MICHAEL CARTER PHONE: (651) 458-4842 MOBILE: (612) 214-4168 EMAIN: MICHAEL.CARTER@KOCHPIPELINE.COM		
WE ENERGIES - GAS/PETROLEUM 104 W SOUTH ST RICE LAKE, WI 54868 ATTN: LEWIS KNAPP PHONE: (715) 234-9605 MOBILE: (715) 419-2196 EMAIL: LEWIS.KNAPP@WE-ENERGIES.COM		
	DNR WISCONSIN DNR 1300 W CLAIRMONT AVE P.O. BOX 4001 EAU CLAIRE, WI 54702-4001 ATTN: NICK SCHAFF PHONE: (715) 839-1609	

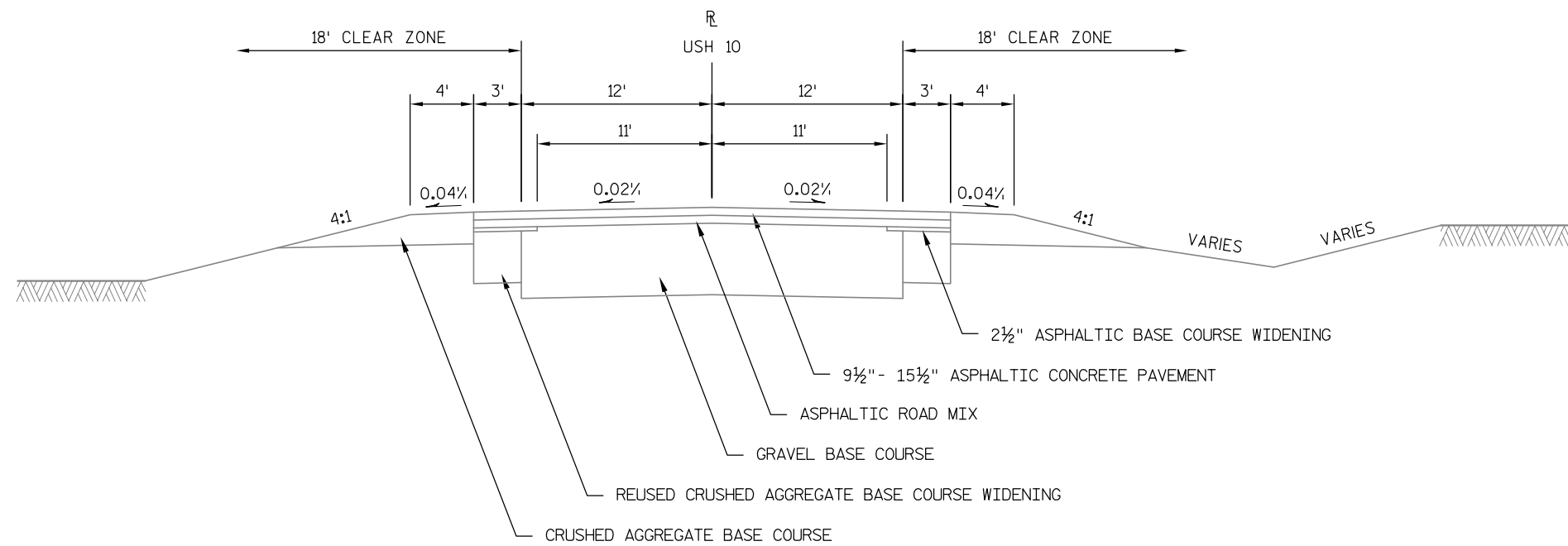
DESIGN CONSULTANT



MEAD & HUNT, INC.
1345B NORTH ROAD
GREEN BAY, WI 54313
ATTN: CHRISTOPHER ROSSMILLER, P.E.
PHONE: (920) 496-0500
EMAIL: CHRISTOPHER.ROSSMILLER@MEADHUNT.COM

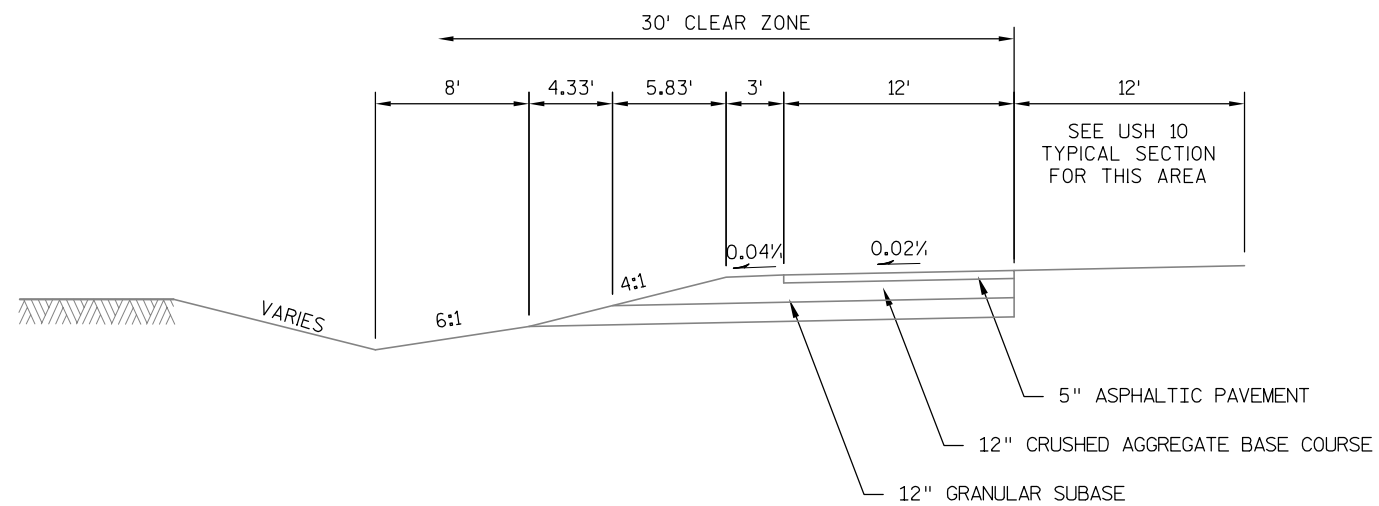






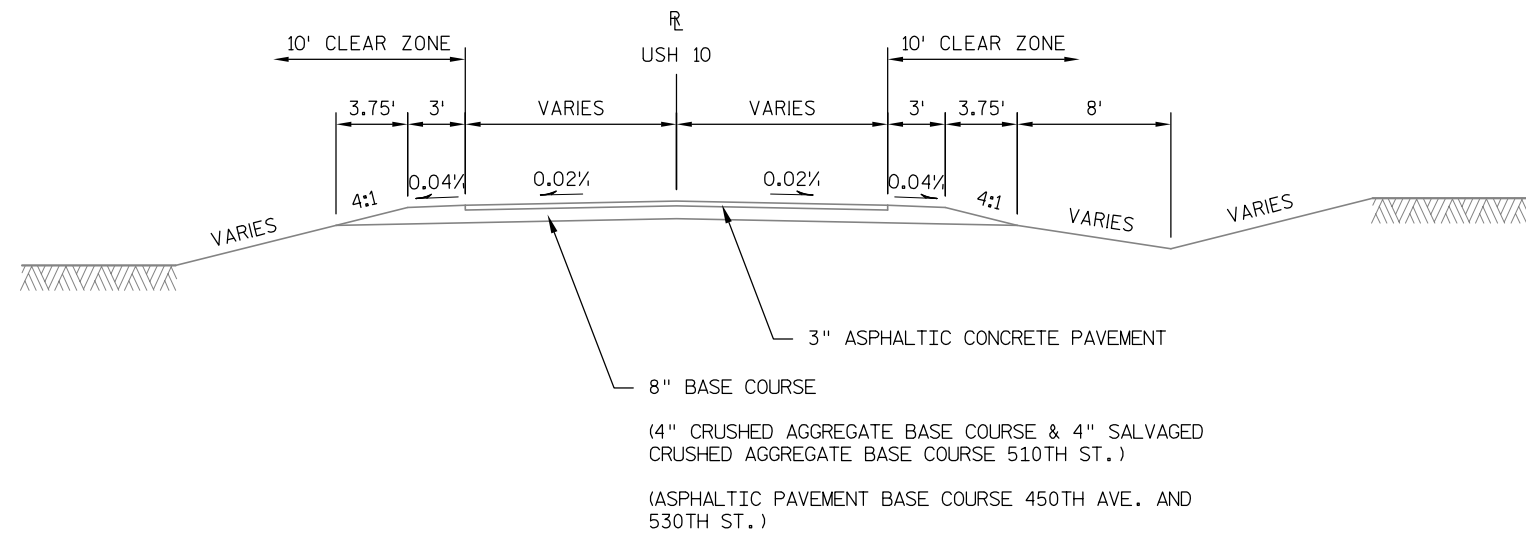
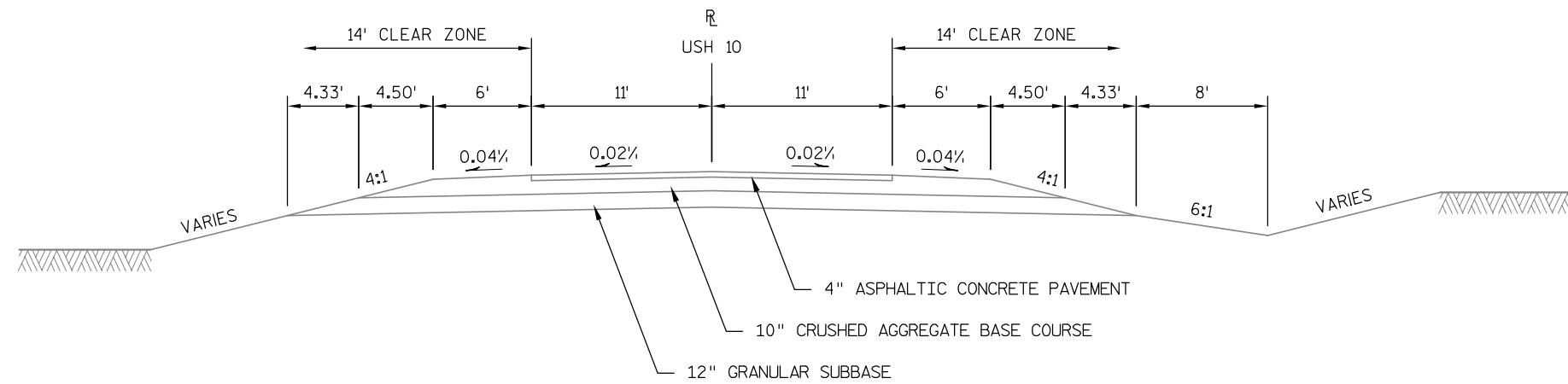
EXISTING TYPICAL SECTION

STA 270+00 TO STA 294+80
STA 305+00 TO STA 506+87.50

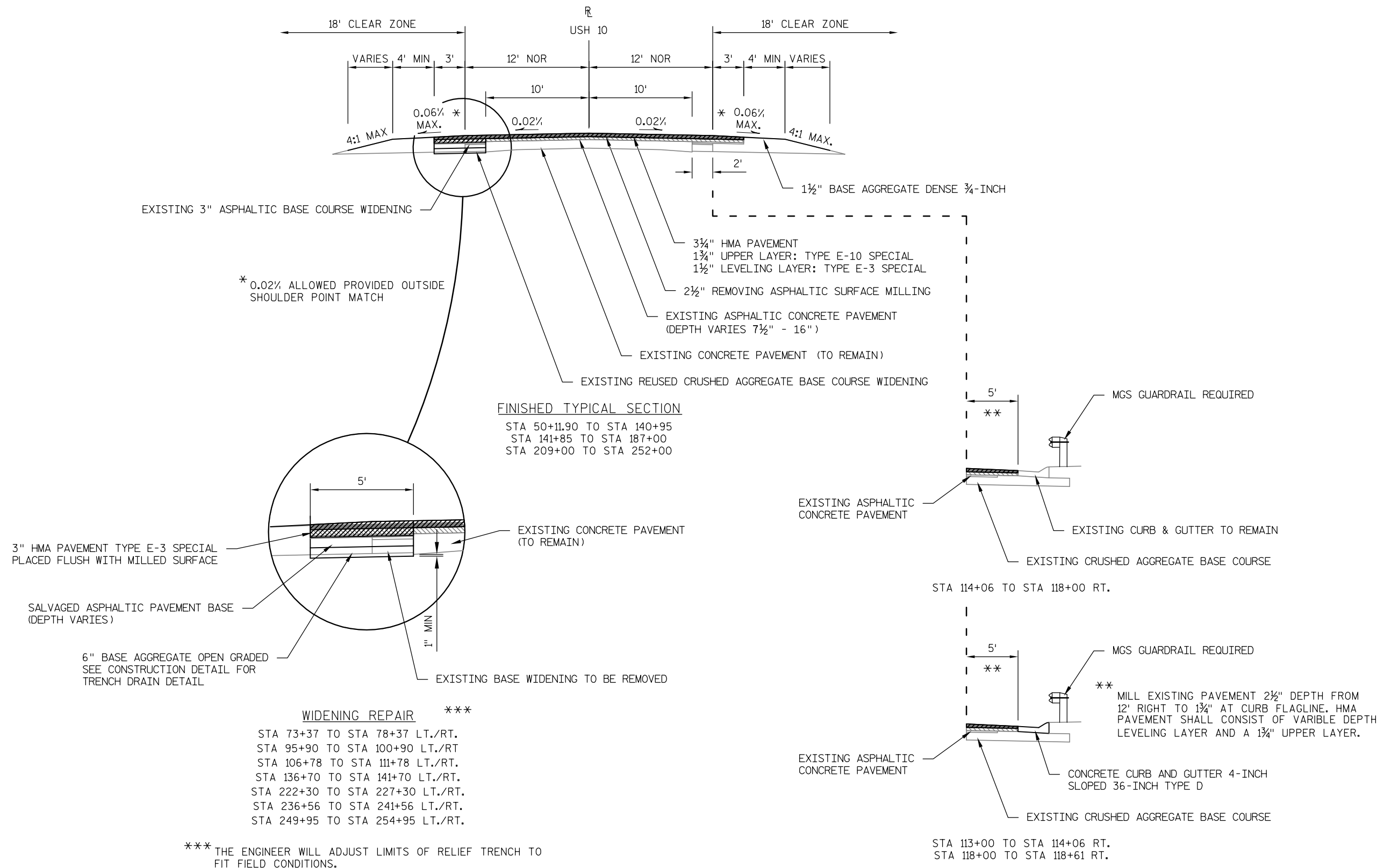


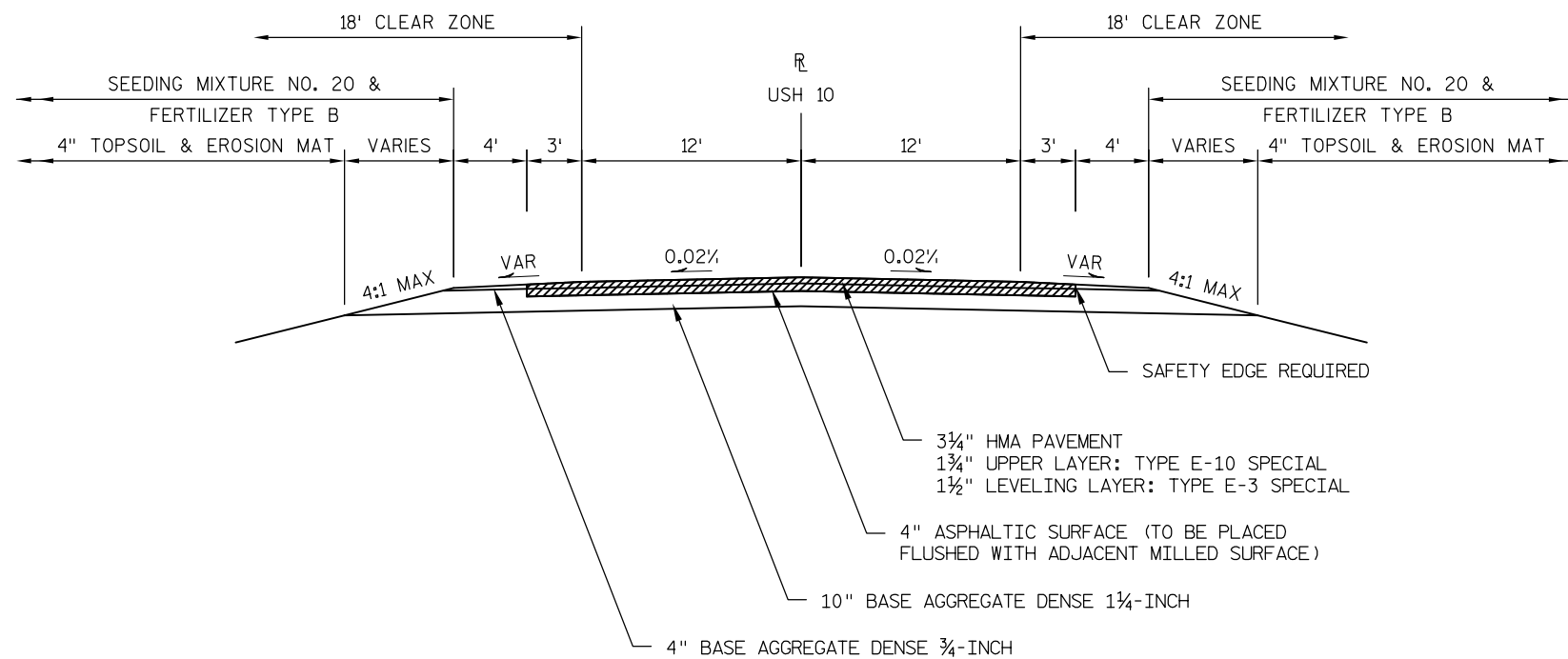
EXISTING TYPICAL SECTION AUXILARY LANE

STA 308+50 TO STA 363+00



PAVEMENT FIELD CORE LOG			
CORE NO.	STATION	OFFSET	PAVEMENT THICKNESS
1	76+50	6' RT	10"
2	102+90	6' RT	6.50"
3	129+30	6' RT	10.75"
4	155+70	6' RT	8.25"
5	182+10	6' RT	8.25"
6	208+50	6' RT	6.25"
7	234+90	6' RT	7.75"
8	261+80	6' RT	9.50"
9	287+70	6' RT	8"
10	314+10	6' RT	8.75"
11	340+50	6' RT	12.25"
12	366+90	5' RT	7"
13	393+30	5' RT	7"
14	419+70	6' RT	6.25"
15	458+10	5' RT	8"
16	484+50	6' RT	8"

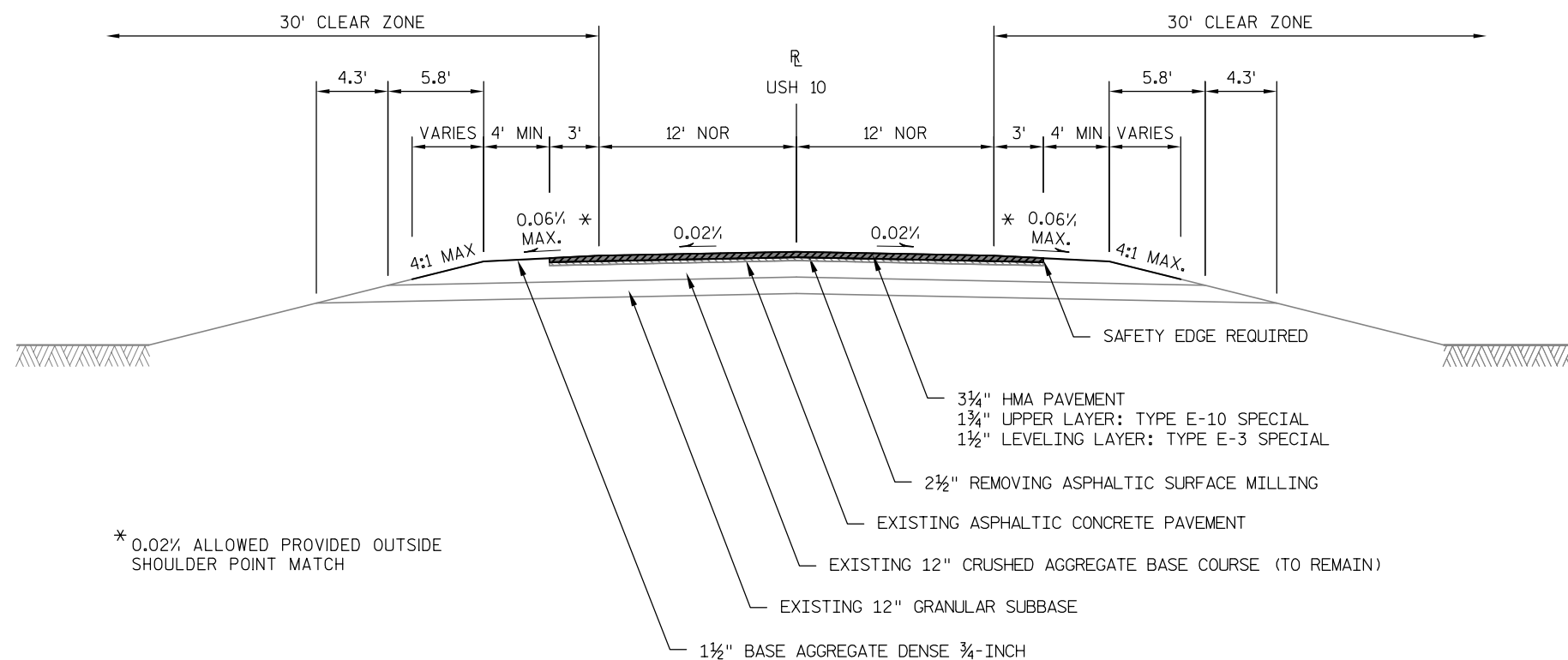




FINISHED TYPICAL SECTION

(CULVERT PIPE REPLACEMENT)

STA 140+95 TO STA 141+85



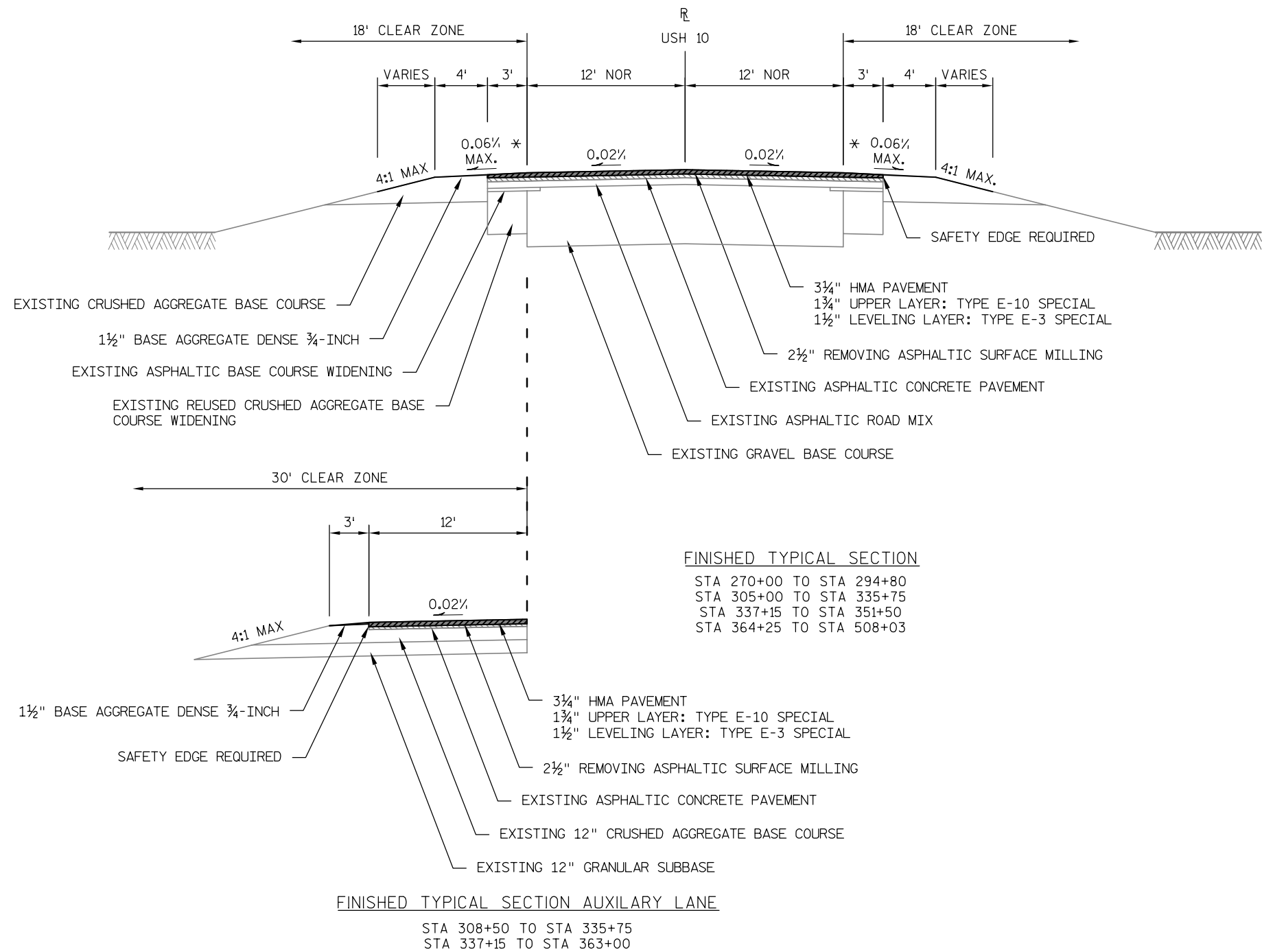
* 0.02% ALLOWED PROVIDED OUTSIDE SHOULDER POINT MATCH

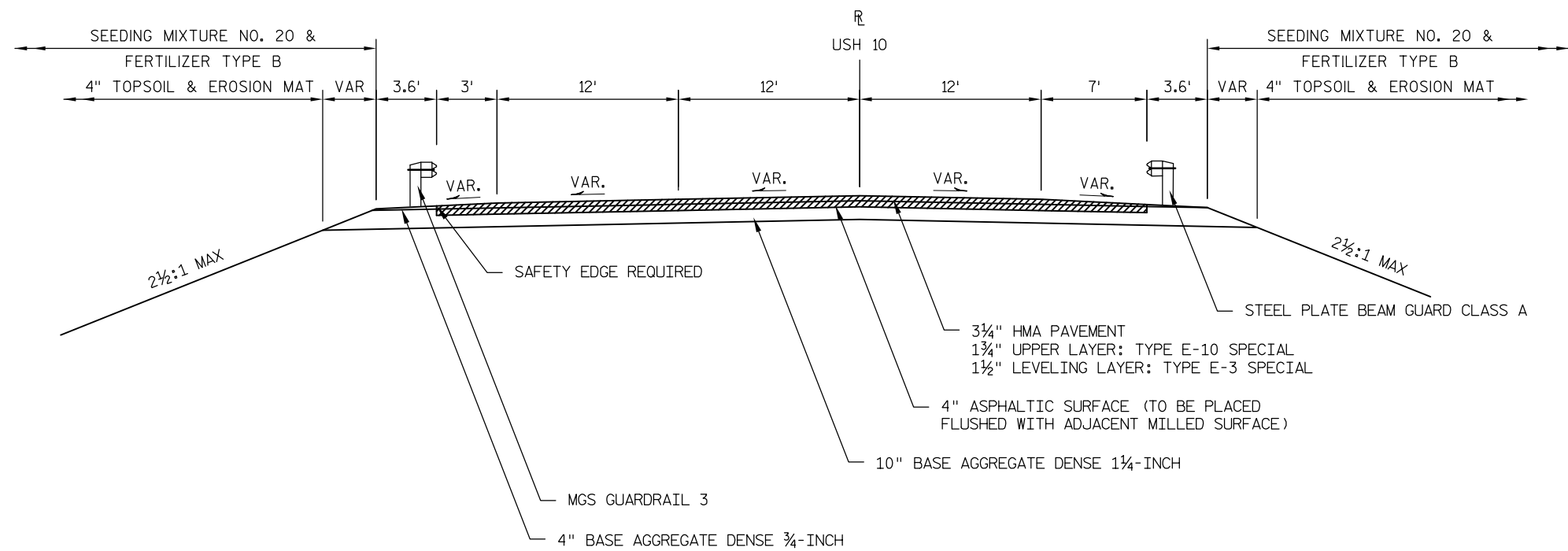
FINISHED TYPICAL SECTION

STA 187+00 TO STA 209+00

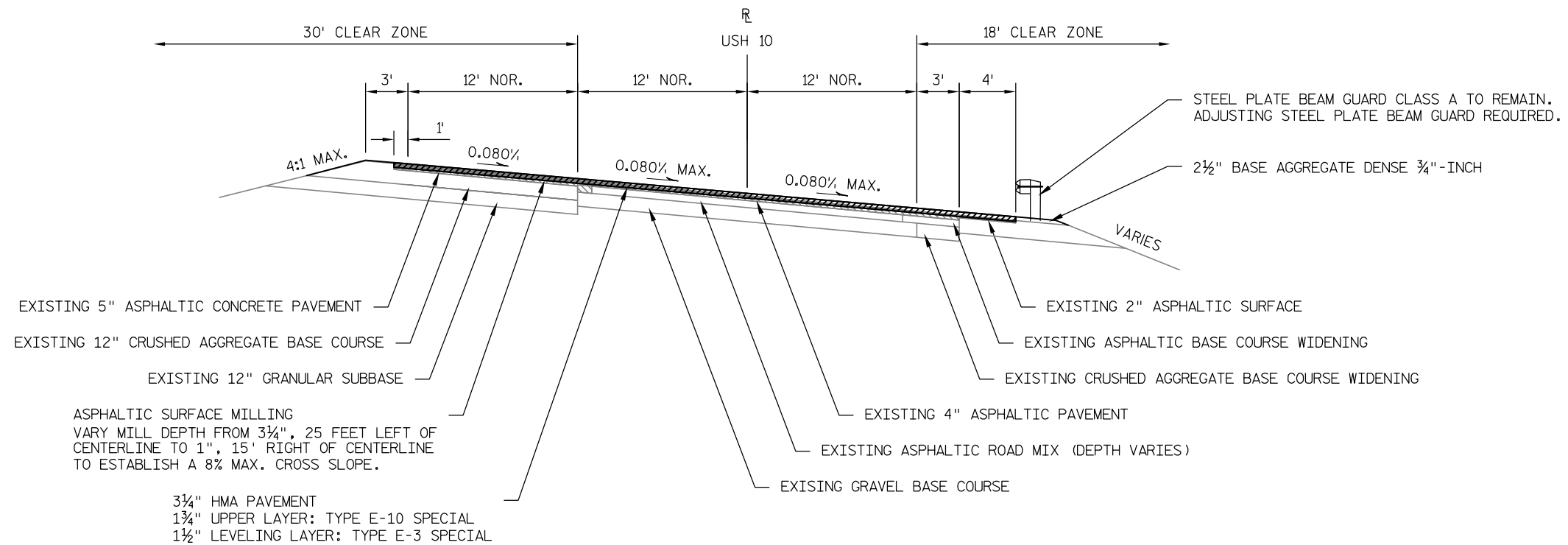
STA 252+00 TO STA 270+00

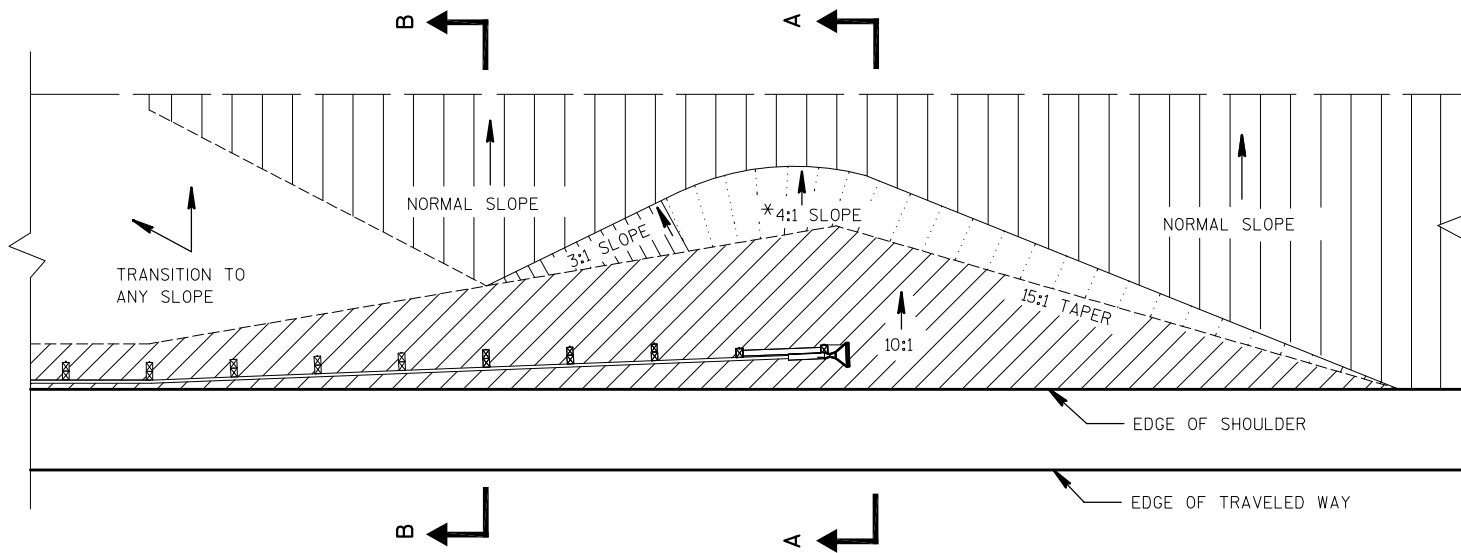
STA 294+80 TO STA 305+00





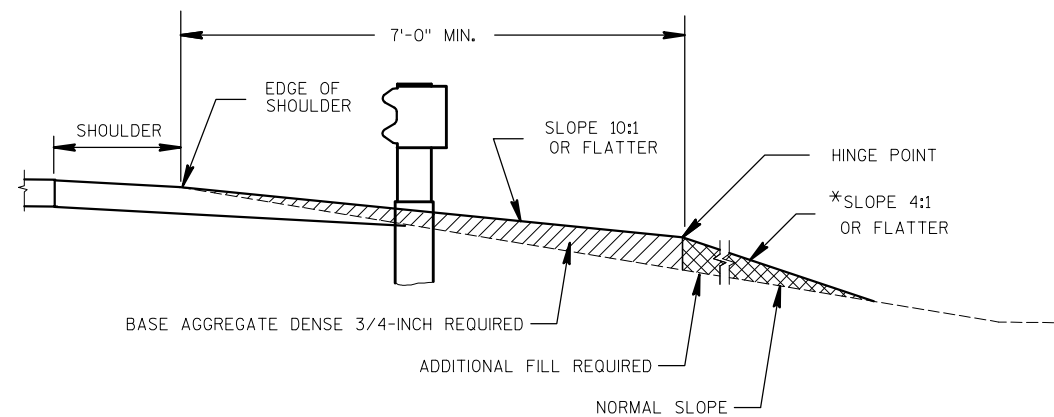
FINISHED TYPICAL SECTION
(CULVERT PIPE REPLACEMENT)
STA 335+75 TO STA 337+15



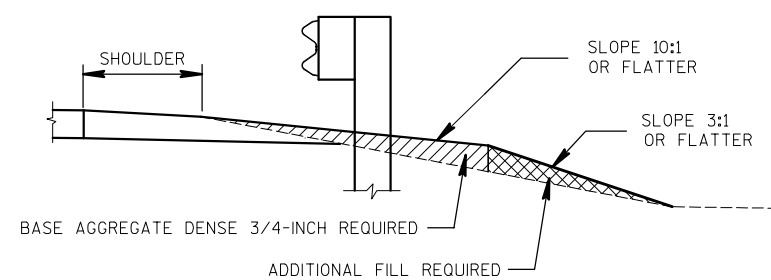


PLAN VIEW

*A 3:1 MAXIMUM SLOPE MAY BE USED FOR INSTALLATIONS ON EXISTING HIGHWAYS.

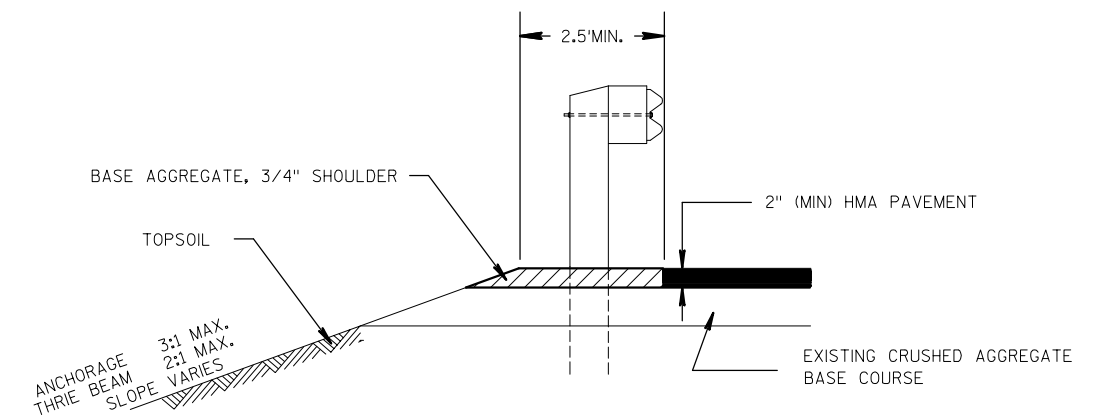


SECTION A-A

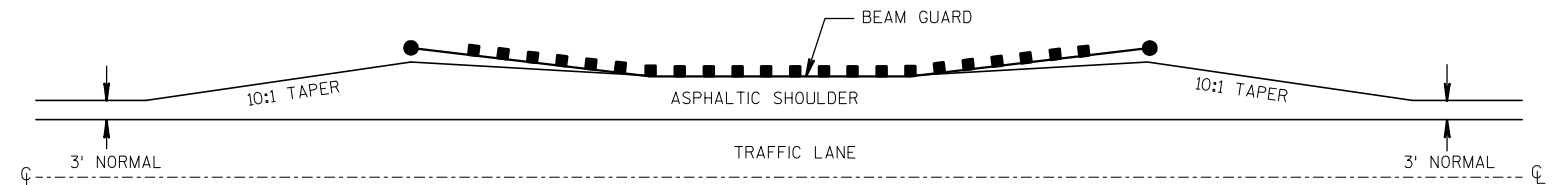


SECTION B-B

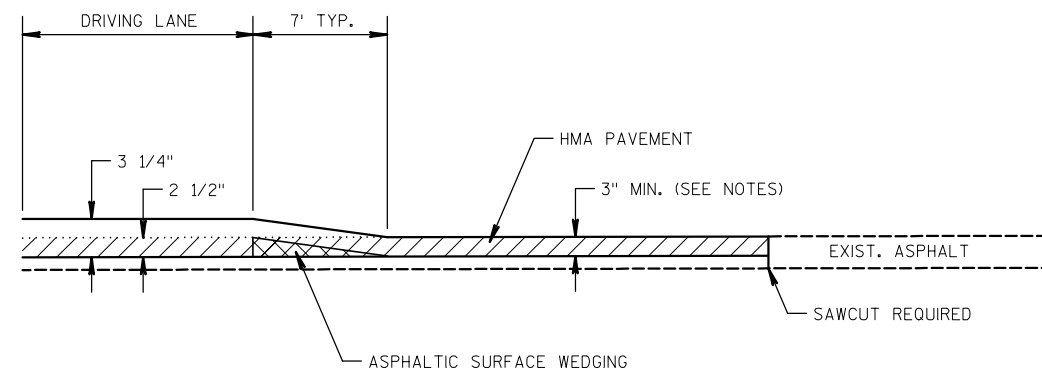
FILL AREA AT BEAM GUARD



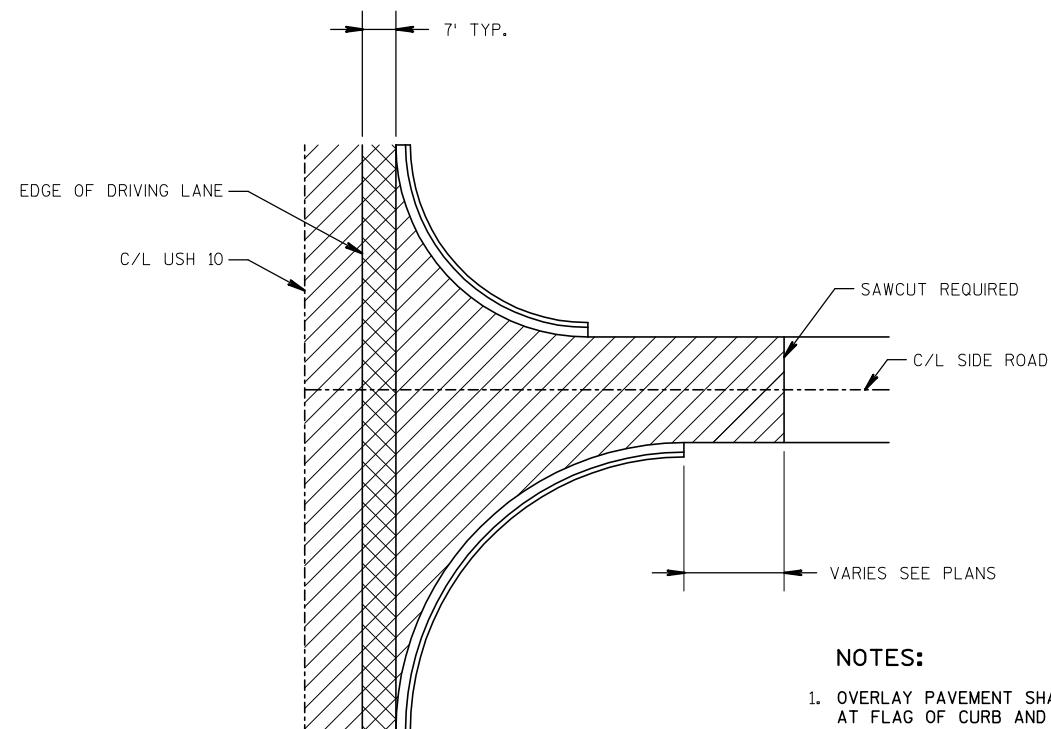
ASPHALTIC SHOULDER AT GUARD RAIL
SECTION A-A



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD
SEE MISCELLANEOUS QUANTITIES
FOR LOCATIONS



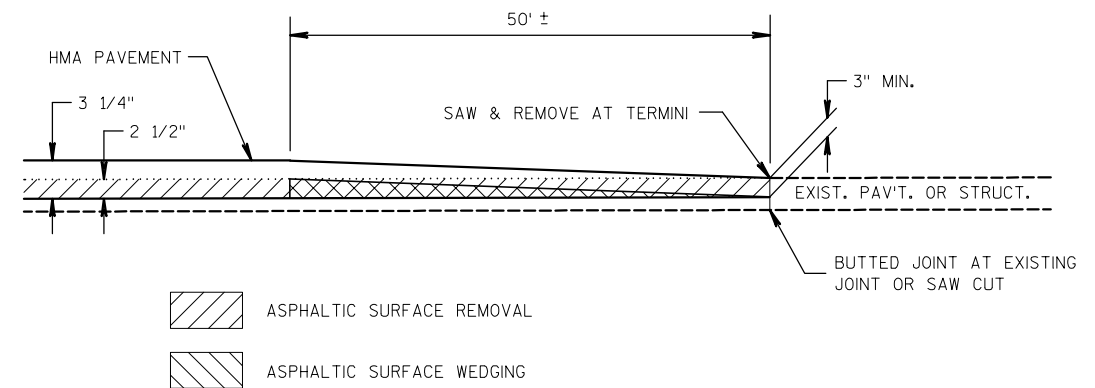
PROFILE VIEW



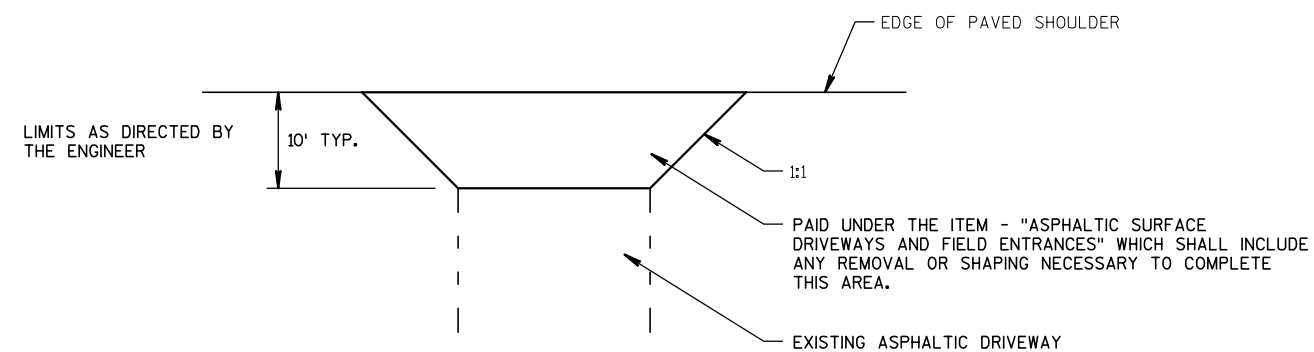
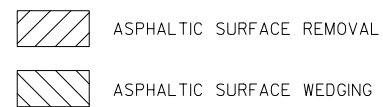
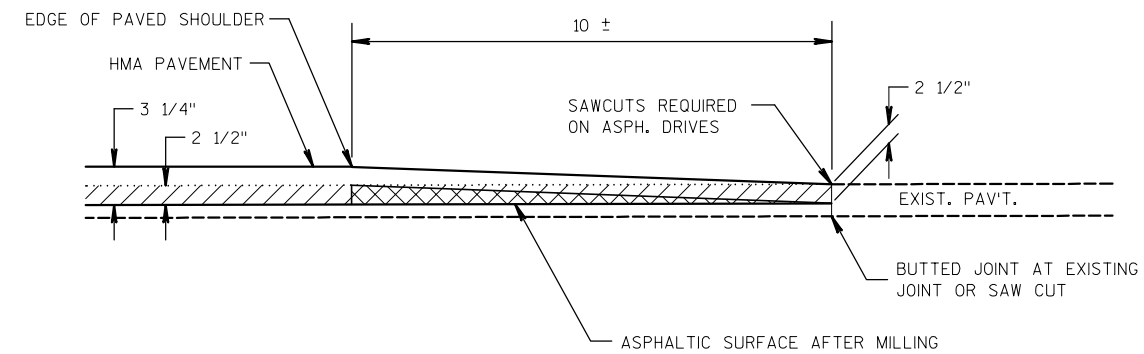
ASPHALTIC SURFACE REMOVAL

ASPHALTIC SURFACE WEDGING

PLAN VIEW

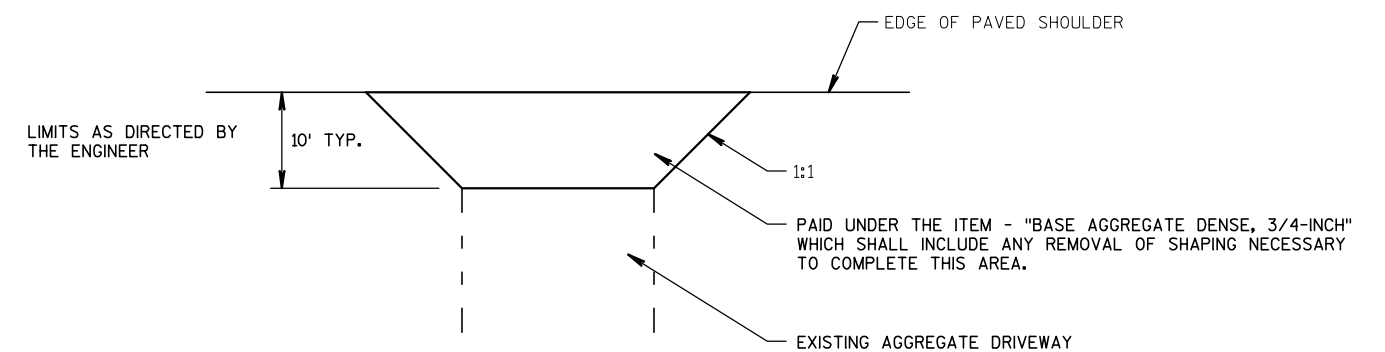
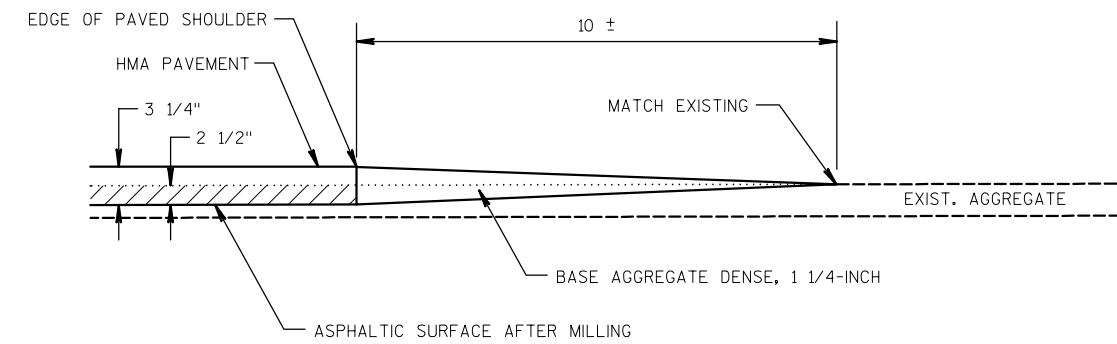
BUTT JOINT DETAILS**NOTES:**

- OVERLAY PAVEMENT SHALL MEET EXISTING ELEVATION AT FLAG OF CURB AND SAWCUT.
- WHEN EXISTING ASPHALT IS LESS THAN 4", MILL/REMOVE EXISTING PAVEMENT FULL DEPTH. NEW PAVEMENT SHALL MATCH EXISTING THICKNESS (3" MIN). THE BASE AGGREGATE SHALL BE ADJUSTED FOR EXISTING PAVEMENT THICKNESS LESS THAN 3".



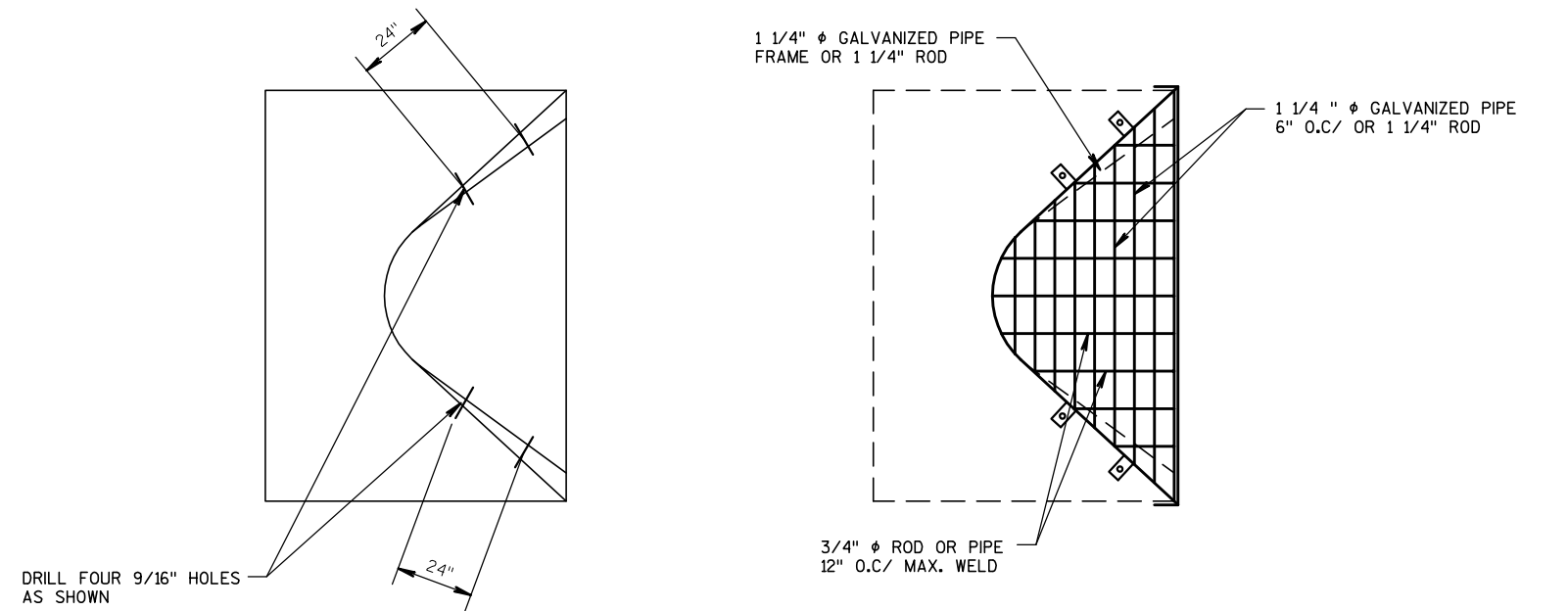
NOTE:
ANY ADDITIONAL BASE AGGREGATE DENSE REQUIRED SHALL BE PAID UNDER THE ITEM - "BASE AGGREGATE DENSE 3/4-INCH"

RURAL DRIVEWAY DETAIL - ASPHALT

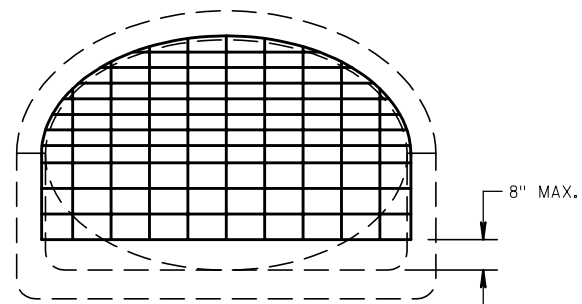
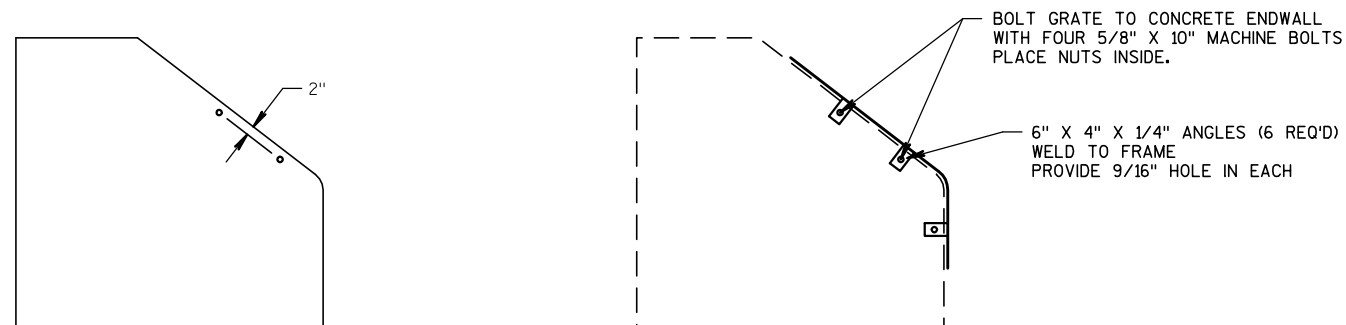


NOTE:
ANY ADDITIONAL BASE AGGREGATE DENSE REQUIRED SHALL BE PAID UNDER THE ITEM - "BASE AGGREGATE DENSE 3/4-INCH"

RURAL DRIVEWAY DETAIL - AGGREGATE



AT EACH PIPE



PIPE GRATE DETAIL

GENERAL NOTES

CONSTRUCT DRAINOUT EVERY 300' AND AT LOW POINTS. SEE PLAN SHEETS FOR APPROXIMATE LOCATIONS. ADJUST AS DIRECTED TO MATCH FIELD CONDITIONS. DRAINOUTS MUST BE CONSTRUCTED PRIOR TO OR THE SAME DAY AS ADJACENT WIDENING REPAIR.

- ① RE-ESTABLISHMENT OF THE EXISTING SHOULDER AT PROPOSED DRAIN-OUT LOCATIONS IS ALLOWED TO BE COMPLETED WITH 3/4-INCH DENSE GRADED BASE COURSE INSTEAD OF SEPARATE 1 1/4-INCH LAYER.

ANY LONGITUDINAL SAW CUTS ARE FOR CONTRACTOR CONVENIENCE
AND ARE INCIDENTAL.

REMOVE EXISTING MATERIAL BY MILLING OR BACKHOE EXVACATION.

MATERIAL REMOVED BY MILLING PAST THE 2" DEPTH, 30' WIDE
MAINLINE REQUIREMENT IS NOT MEASURED FOR PAYMENT UNDER
THE MILL AND REMOVE ITEM.

NO SUBSTITUTION OF THE BASE AGG. OPEN GRADED IS ALLOWED.

WORK MUST BE COMPLETED WITHIN TIMEFRAME ALLOWED FOR THE MILLED ROADWAY TO REMAIN IN THAT CONDITION OR IT CAN BE COMPLETED BEFORE MAINLINE MILLING; HOWEVER, IF COMPLETED BEFORE, THEN EXTRA MILLINGS MUST BE PROVIDED TO RAISE THE OUTSIDE EDGE OF THE LANE AND SHOULDER TO MATCH THE EXISTING CROSS SECTION AT NO EXTRA COST. THE REMOVAL OF THOSE MILLINGS WILL BE PAID UNDER THE MAINLINE MILLING AT THE 30' WIDE, 2" NOMINAL DEPTH.

MAINLINE MILLINGS MAY BE WINDROWED ONTO THE SIDE OF THE ROADWAY FOR USE IN THIS WORK PROVIDED THAT DRAINAGE IS MAINTAINED. ADDITIONAL TRAFFIC CONTROL DRUMS NEEDED DURING THE STORAGE OF MILLINGS ARE INCIDENTAL TO THE WORK, AND THE STORAGE WILL NOT EXCEED 7 CALENDAR DAYS.

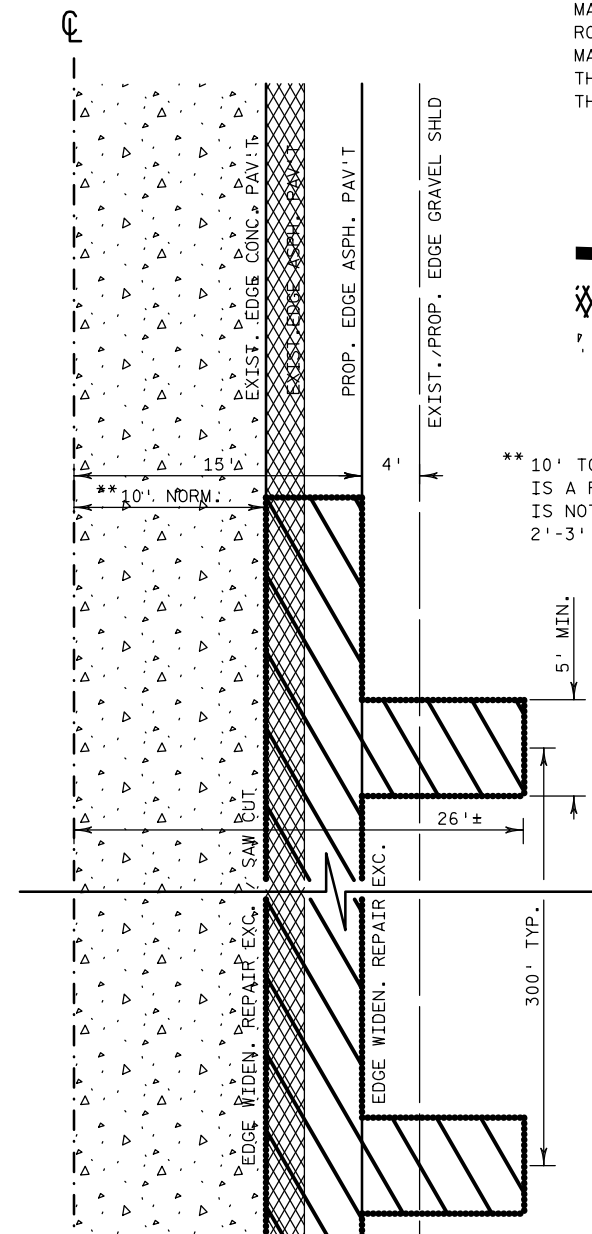
LEGEND

EXIST. ASPH./BIT. PAV'T

EXIST. BIT. WIDENING

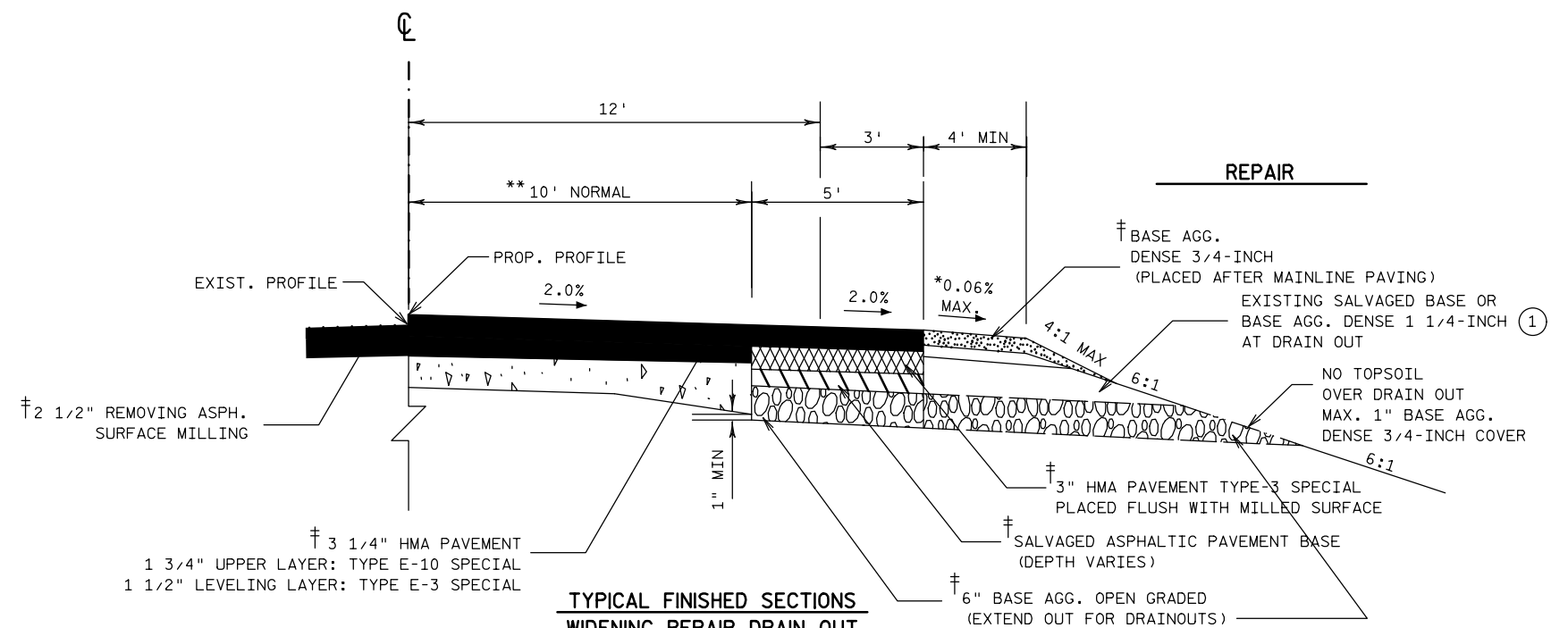
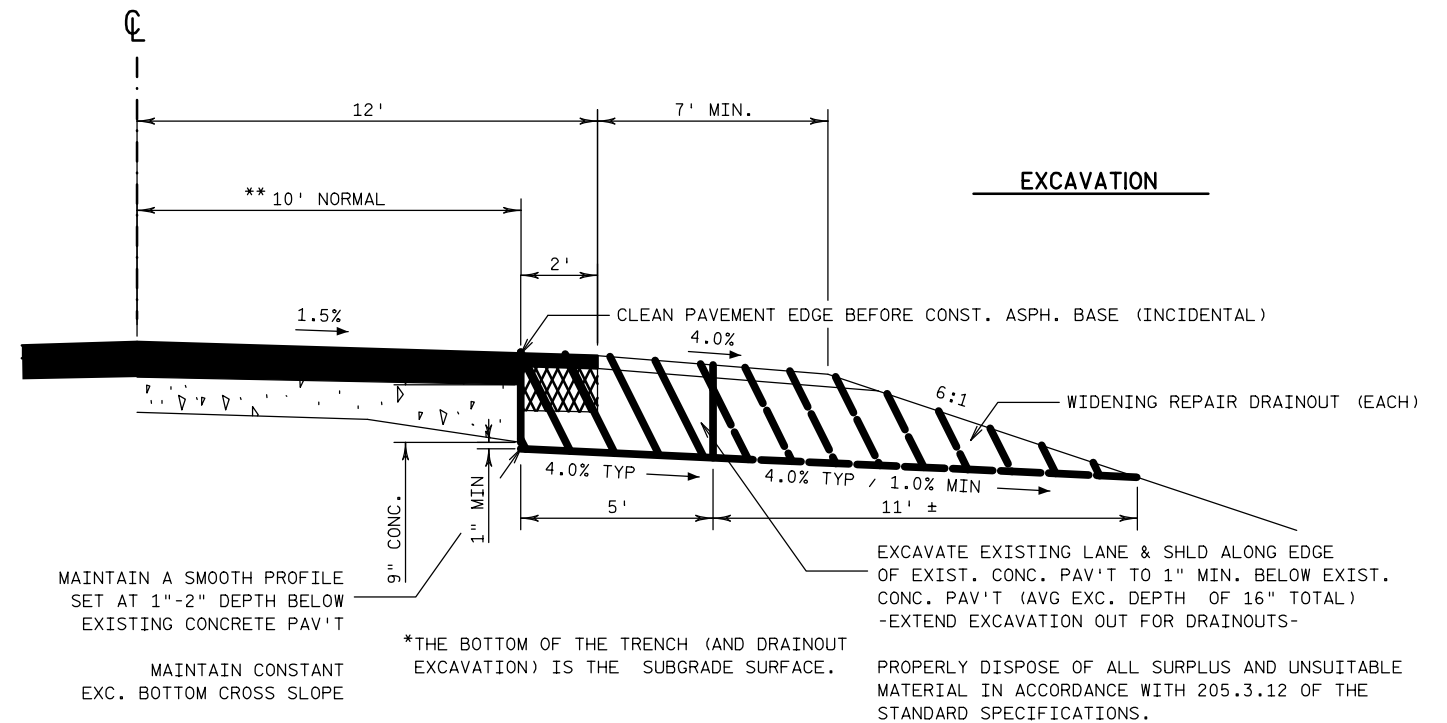
EXIST. CONC. PAV'T

** 10' TO EDGE OF EXIST CONCRETE PAV'T
IS A RECORD DRAWING DIMENSION AND
IS NOT EXACT. EDGE OF CONC MAY VARY BY
2'-3' OR MORE FROM C OF ASPH PAV'T.



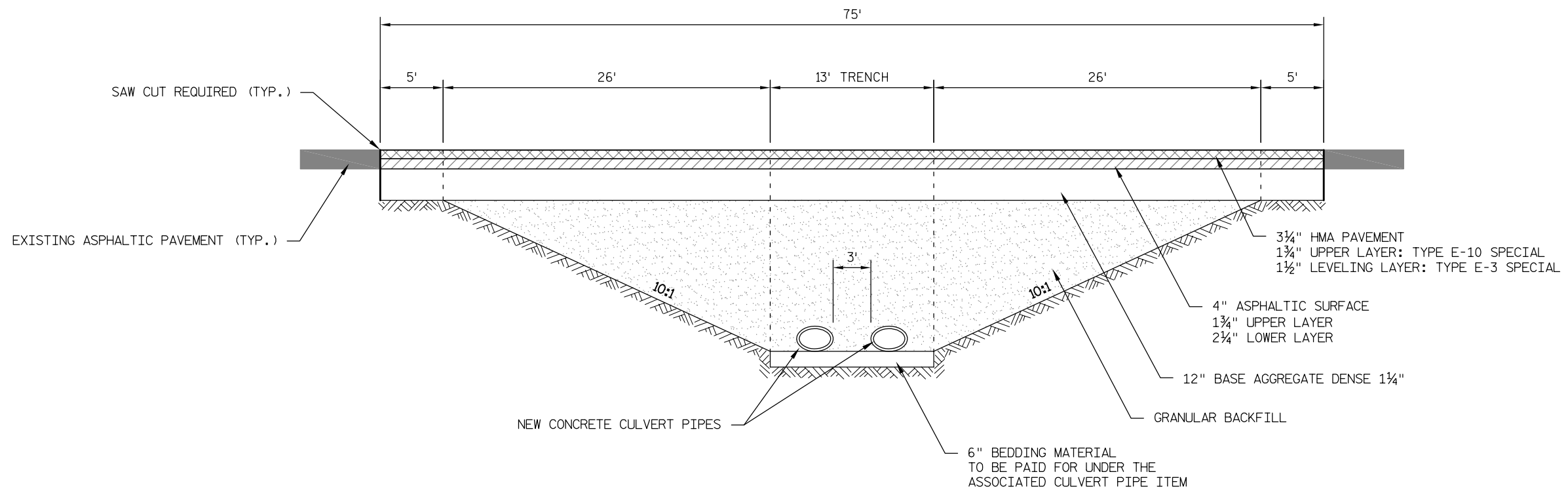
PLAN VIEW
WIDENING REPAIR

† NOTE: THESE REPAIR ITEMS ARE PAID SEPARATELY. ALL OTHER WORK IS INCLUDED WITH WIDENING REPAIR EXC. (CY) AND/OR WIDENING REPAIR DRAINOUT (EACH).

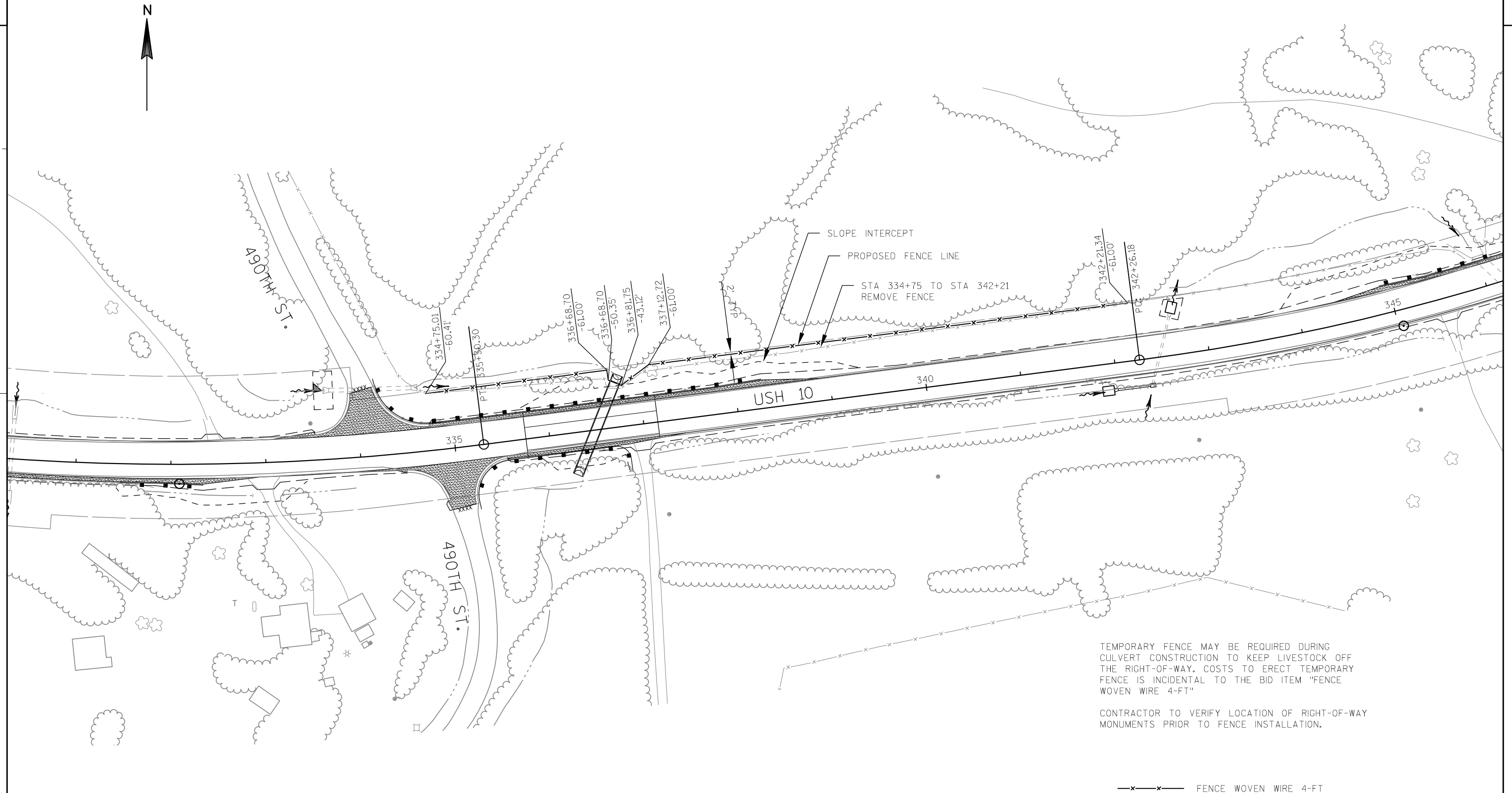


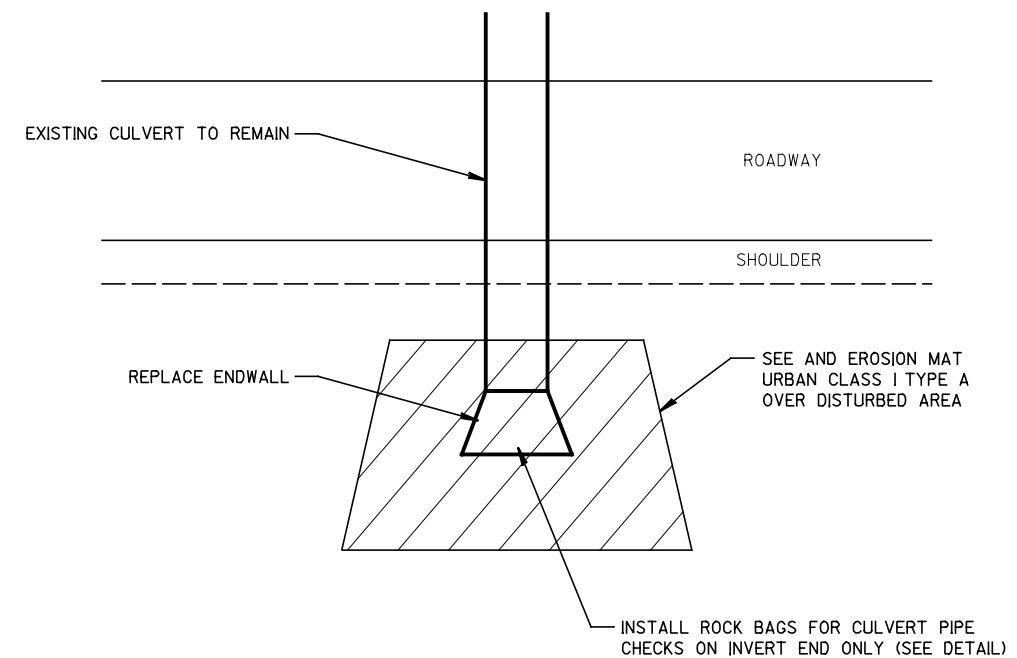
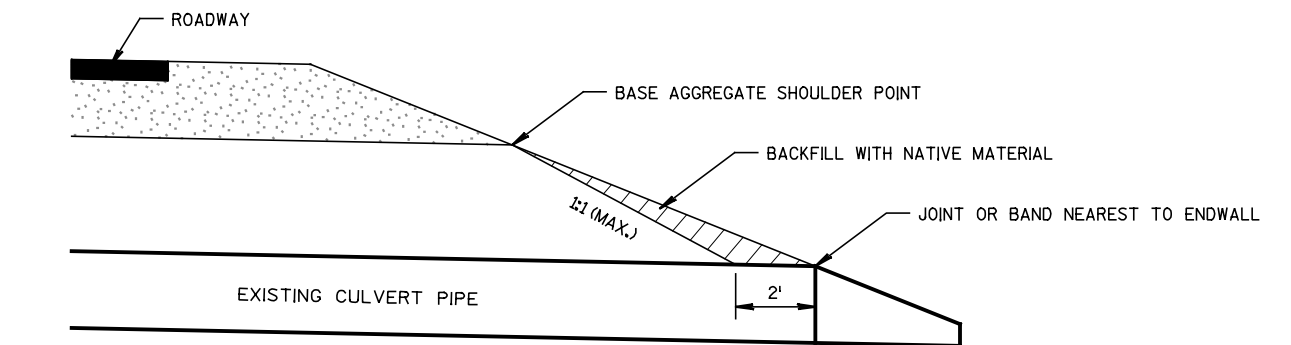
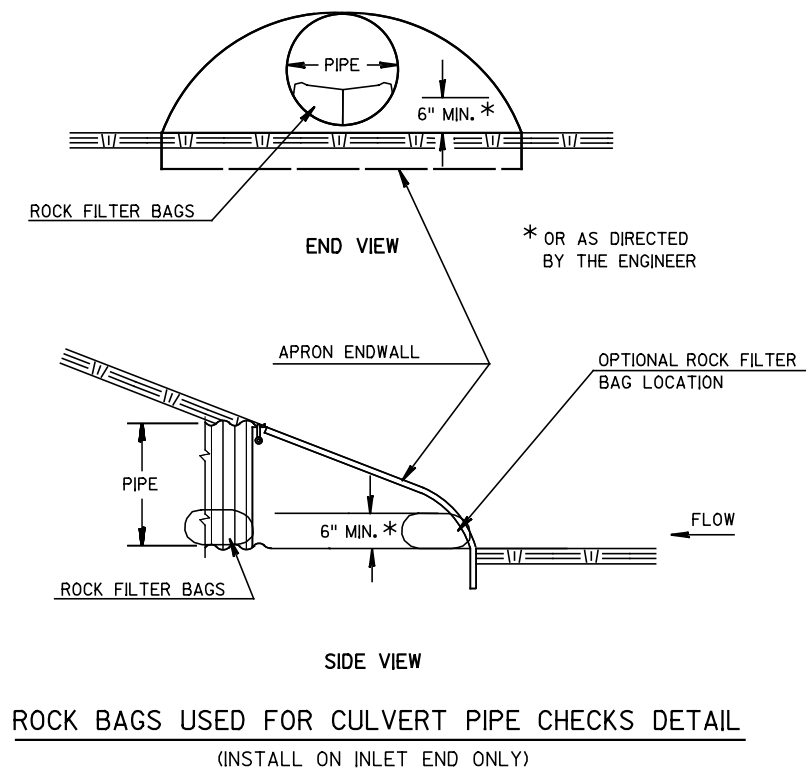
TYPICAL FINISHED SECTIONS
WIDENING REPAIR DRAIN OUT

STA. 73+37 - STA 78+37 LT & RT
STA. 95+90 - STA.100+90 LT & RT
STA. 106+78 - STA.111+78 LT & RT
STA. 136+70 - STA.141+70 LT & RT
STA. 222+30 - STA.227+30LT & RT
STA. 236+56 - STA.241+56 LT & RT
STA. 249+95 - STA.254+95 LT & RT

**CULVERT REPLACEMENT DETAIL**

STA 140+95



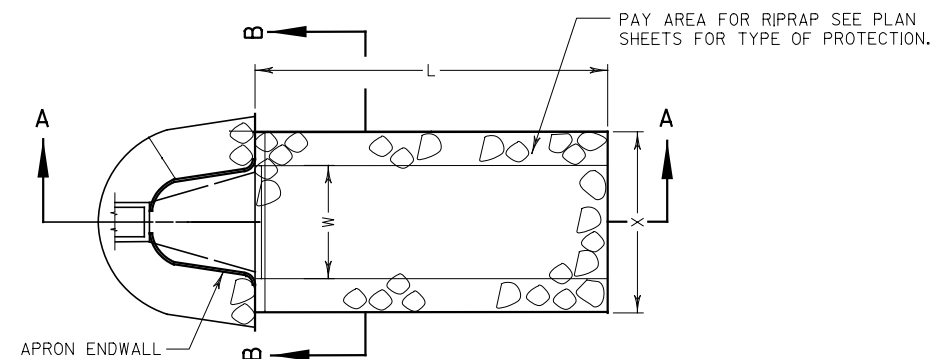


NOTES:

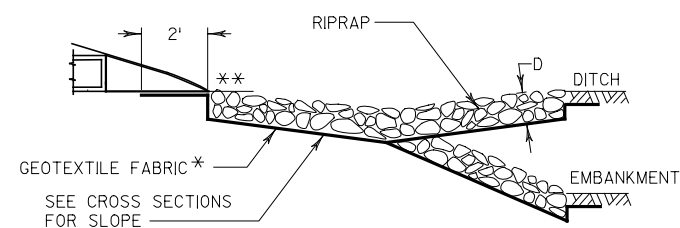
1. INSTALL RIPRAP WHERE INDICATED ON PLAN SHEETS.
2. REPLACE DAMAGED OR DETERIORATED JOINT TIES AND BANDS. ITEMS PAID FOR UNDER ASSOCIATED ENDWALL ITEM.

TYPICAL ENDWALL REPLACEMENT DETAIL

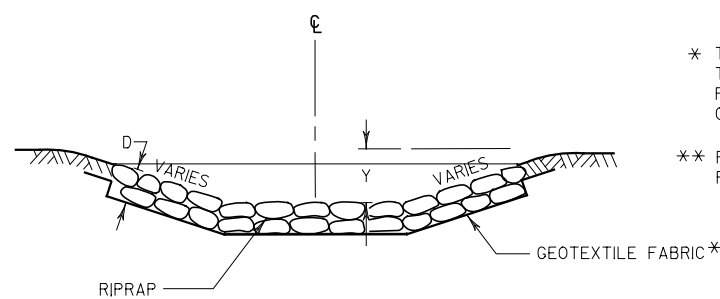
SEE PLAN SHEETS FOR LOCATIONS



PLAN VIEW



SECTION A-A



SECTION B-B

RIPRAP AND GEOTEXTILE FABRIC DETAIL**AT APRON ENDWALLS**

SEE PLAN SHEETS FOR LOCATIONS

L = 3 x W (NOR) OR 10' MIN
OR AS INDICATED IN THE PLANS
OR AS DIRECTED BY THE ENGINEER

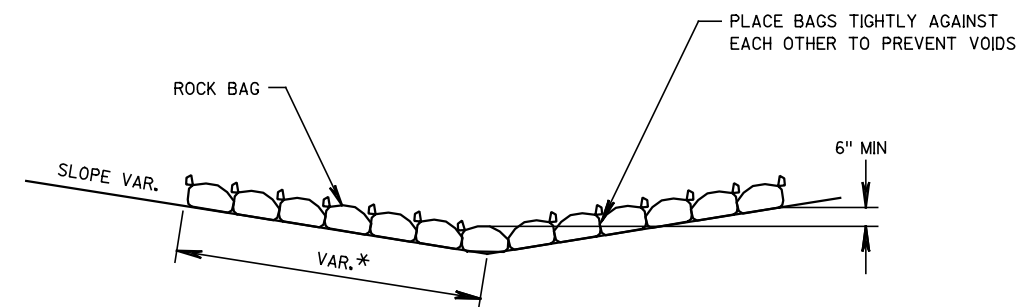
D = 12" FOR RIPRAP LIGHT
18" FOR RIPRAP MEDIUM

X = W+2' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
W+5' FOR CULVERT DISCHARGE
DOWN EMBANKMENT SLOPE

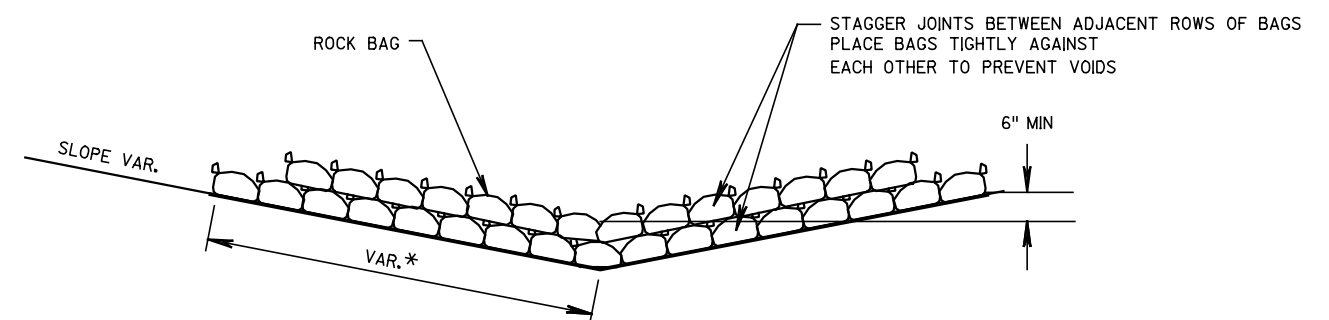
Y = 0' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
12" FOR CULVERT DISCHARGE
DOWN EMBANKMENT SLOPE

* TYPE R (FOR RIPRAP LIGHT ONLY)
TYPE HR (FOR RIPRAP MEDIUM ONLY)
FABRIC REQUIRED TO BE SINGLE SHEET WIDE
OR HAND SEWN

** RIPRAP TO BE PLACED BELOW THE
FLOWLINE OF PIPE OUTLET

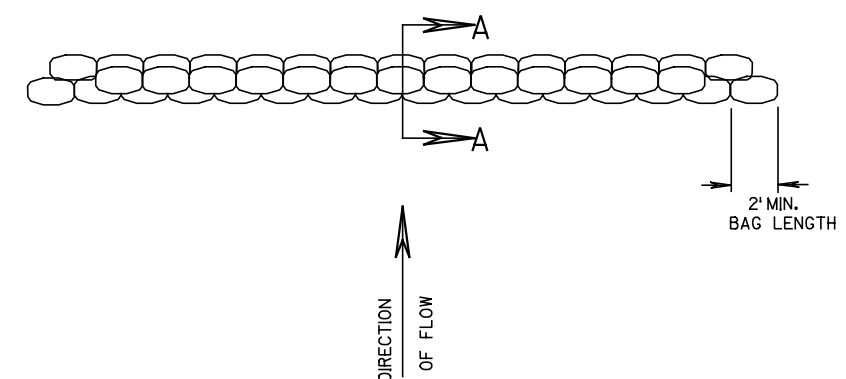


SIDE VIEW (SINGLE LAYER)

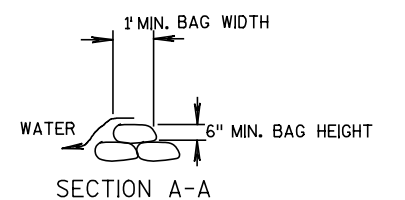


SIDE VIEW (MULTIPLE LAYER)

* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL

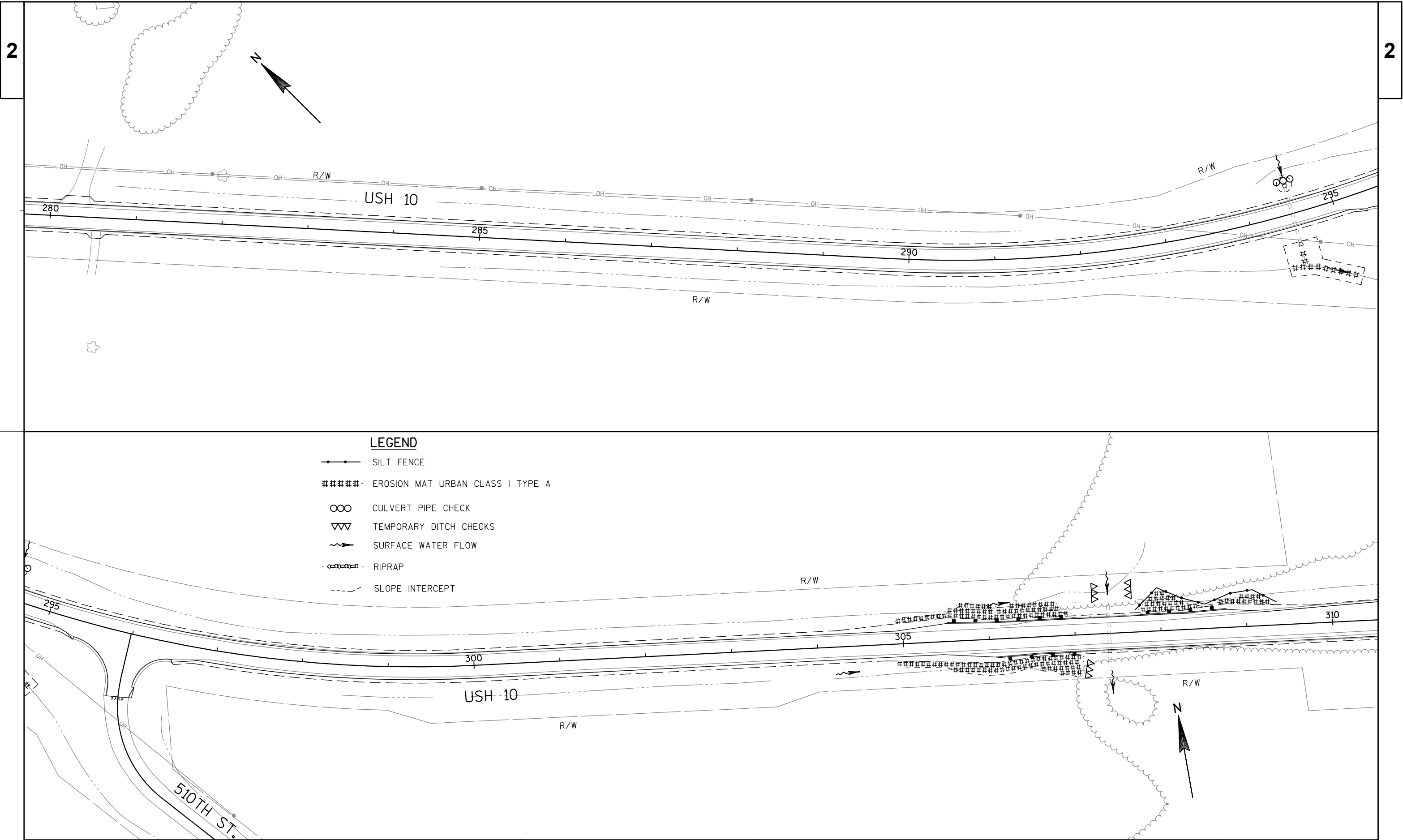


TOP VIEW (MULTIPLE LAYER)



SECTION A-A

ROCK BAGS FOR TEMPORARY DITCH CHECKS



PROJECT NO:1530-07-62

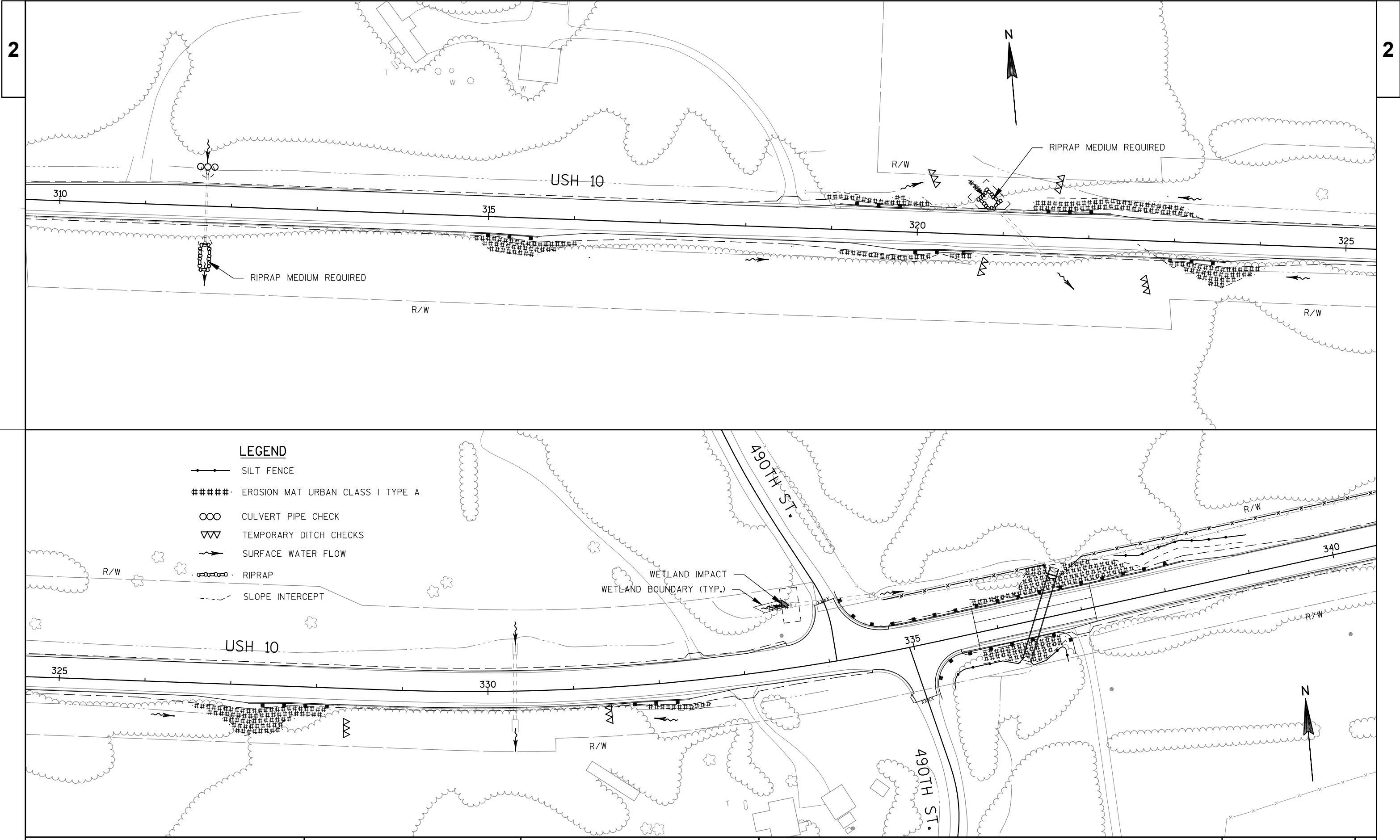
HWY: USH 10

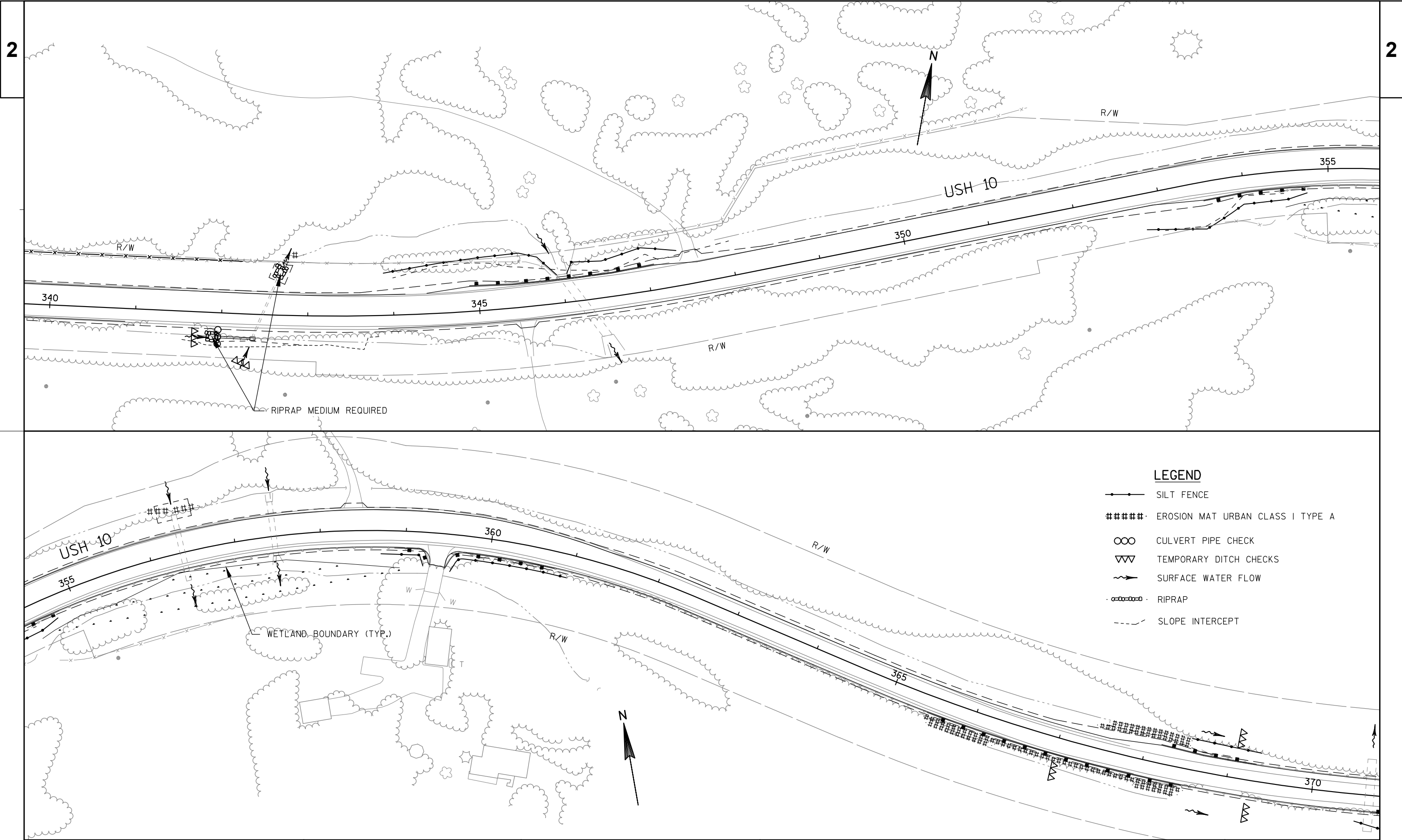
COUNTY: PIERCE

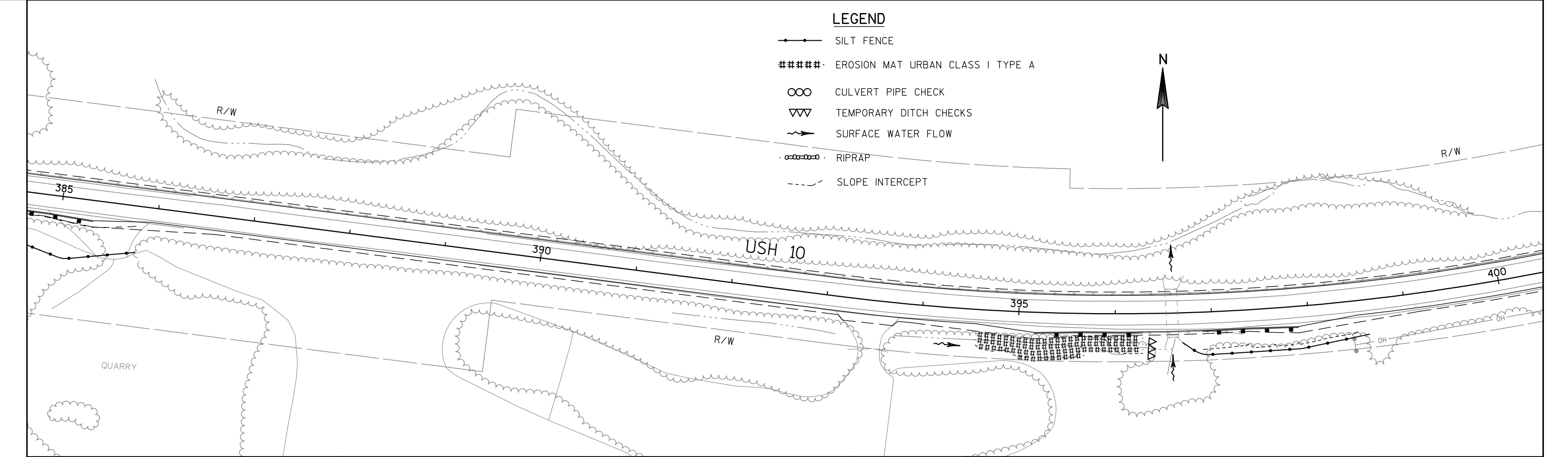
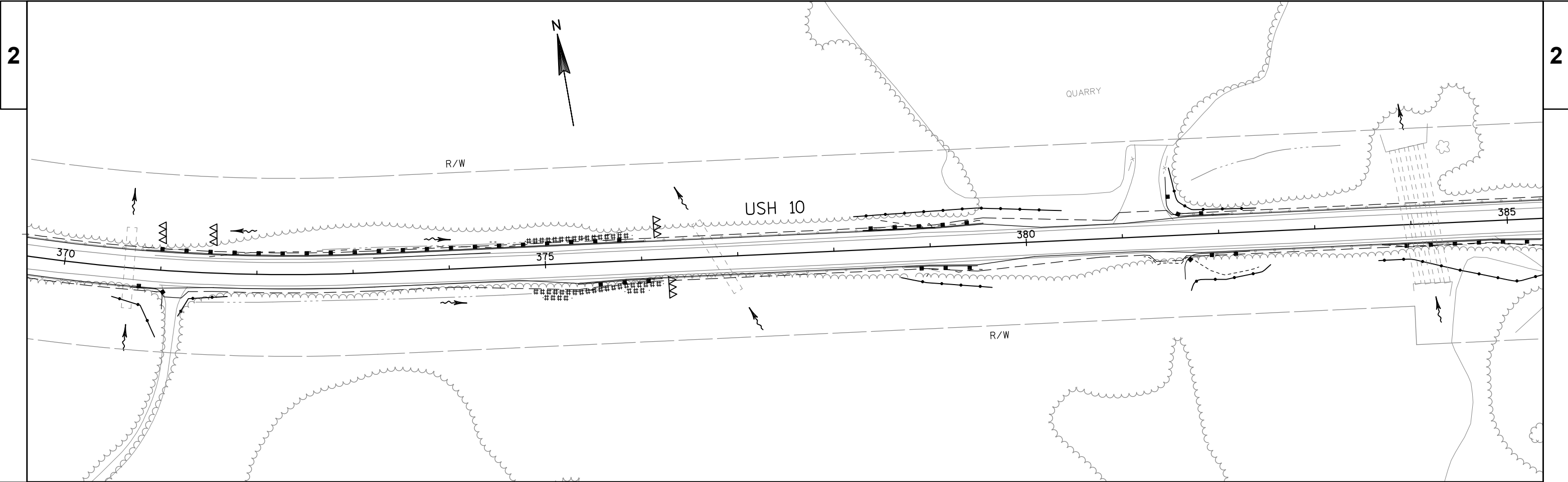
EROSION CONTROL

SHEET

E

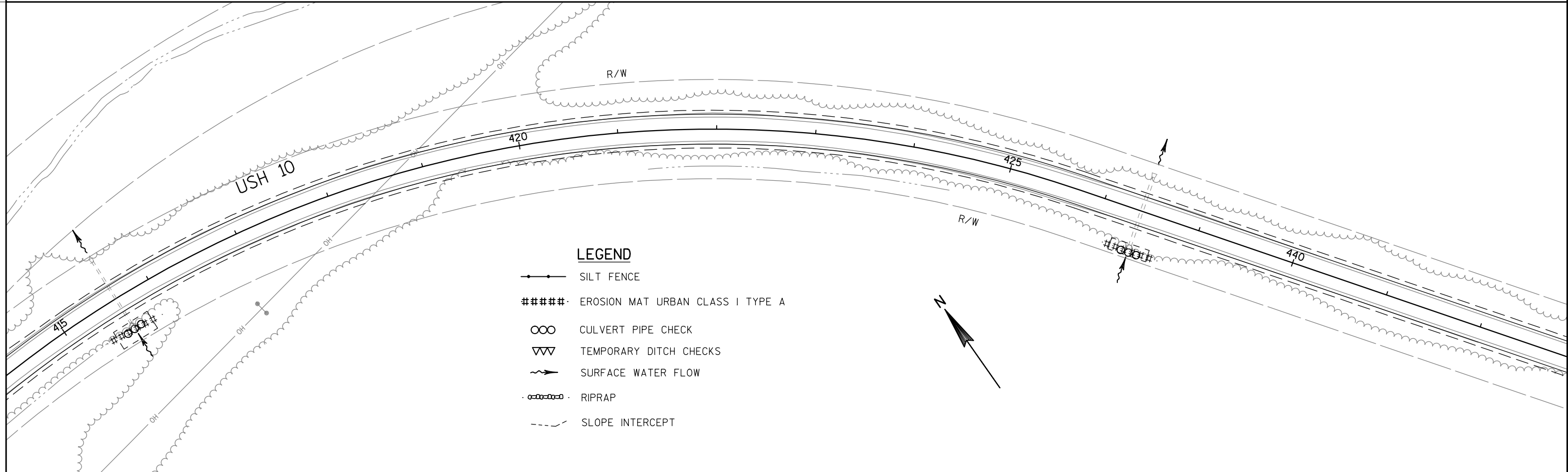
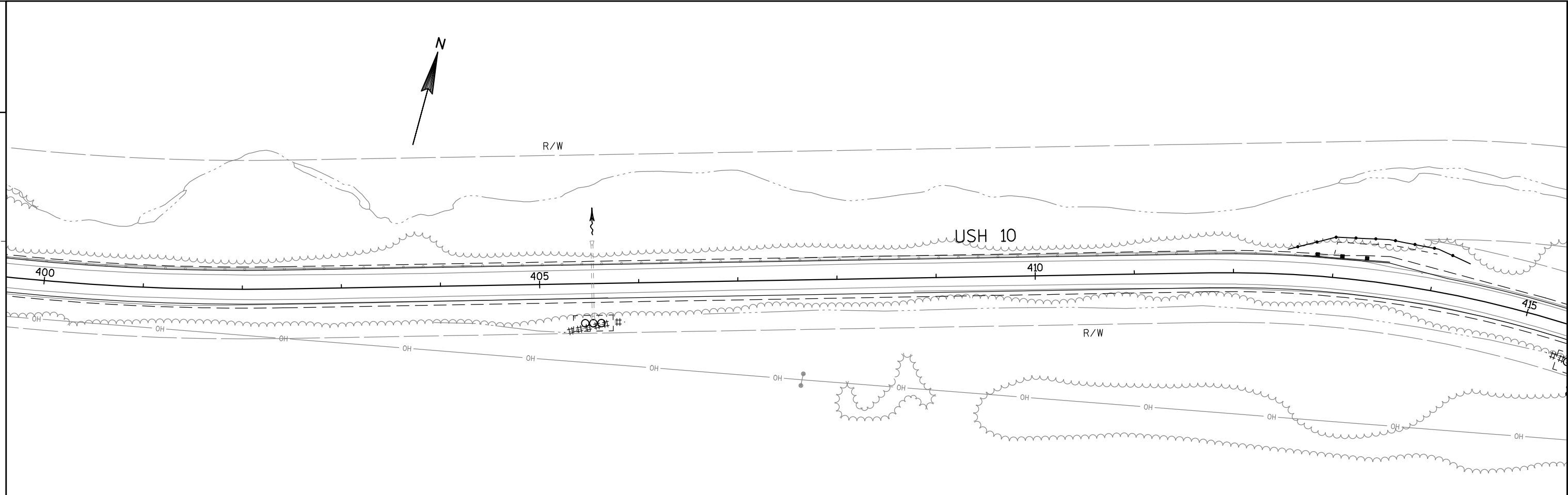






2

2



PROJECT NO:1530-07-62	HWY: USH 10	COUNTY: PIERCE	EROSION CONTROL	SHEET	-----	E
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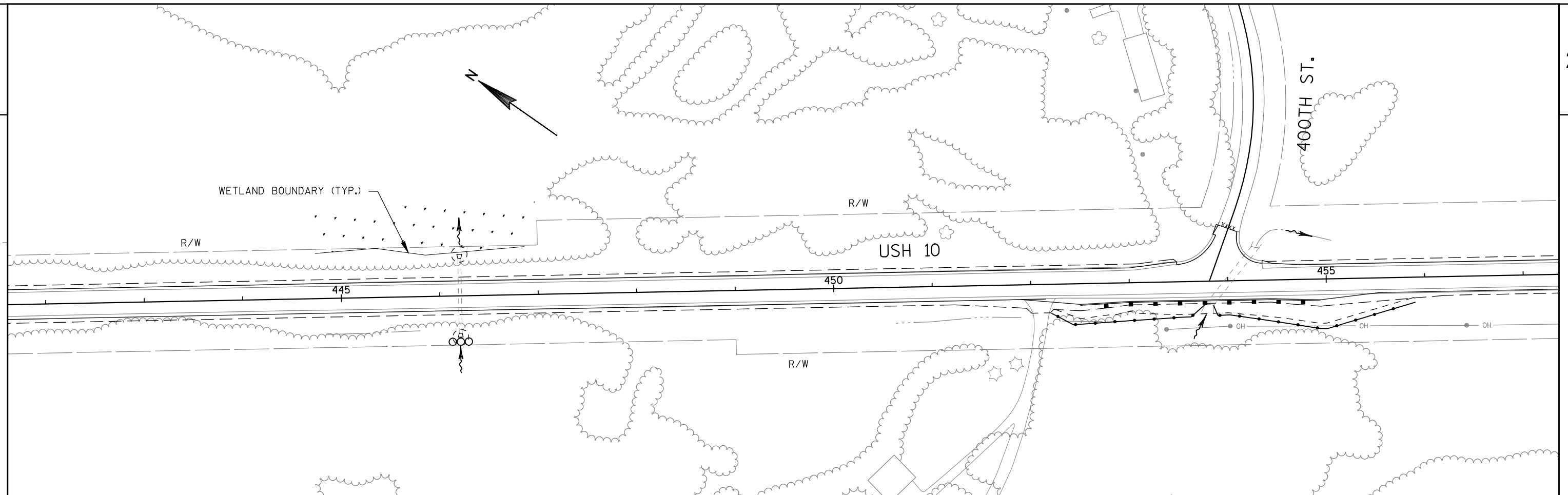
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PLOT DATE : 10/29/2013 10:36 AM

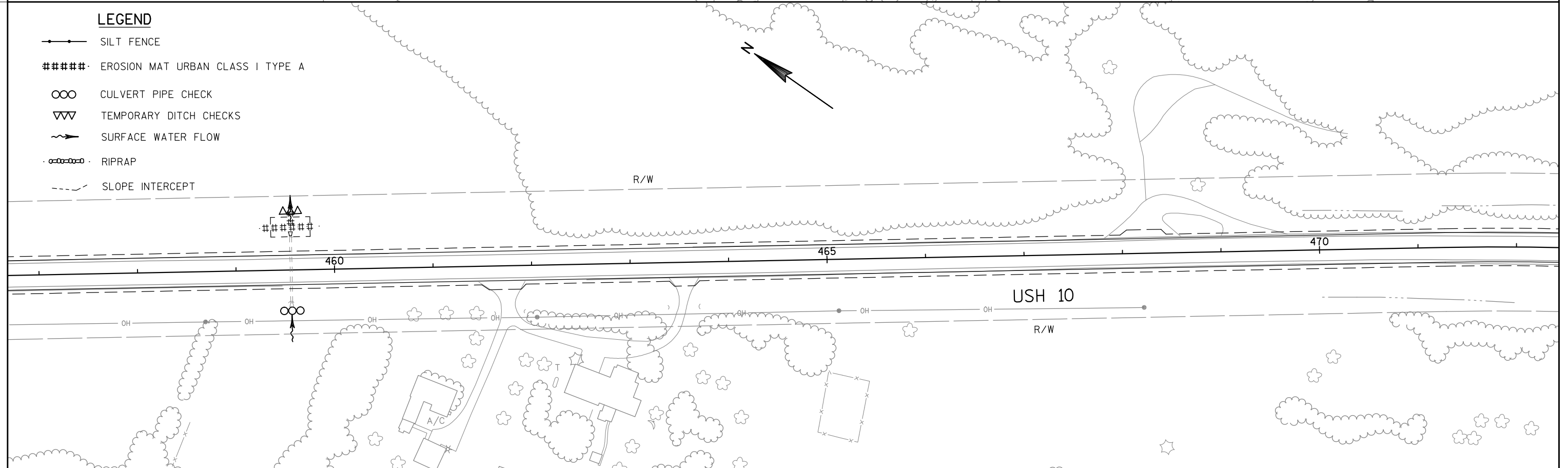
PLOT BY : JEFF BREU

PLOT NAME : _____ PLOT SCALE : 1" = 100' _XREF

WISDOT/CADDS SHEET 44

**LEGEND**

- SILT FENCE
- ##### EROSION MAT URBAN CLASS I TYPE A
- OO CULVERT PIPE CHECK
- ∇∇ TEMPORARY DITCH CHECKS
- ~> SURFACE WATER FLOW
- o-o-o- RIPRAP
- - - SLOPE INTERCEPT



PROJECT NO:1530-07-62

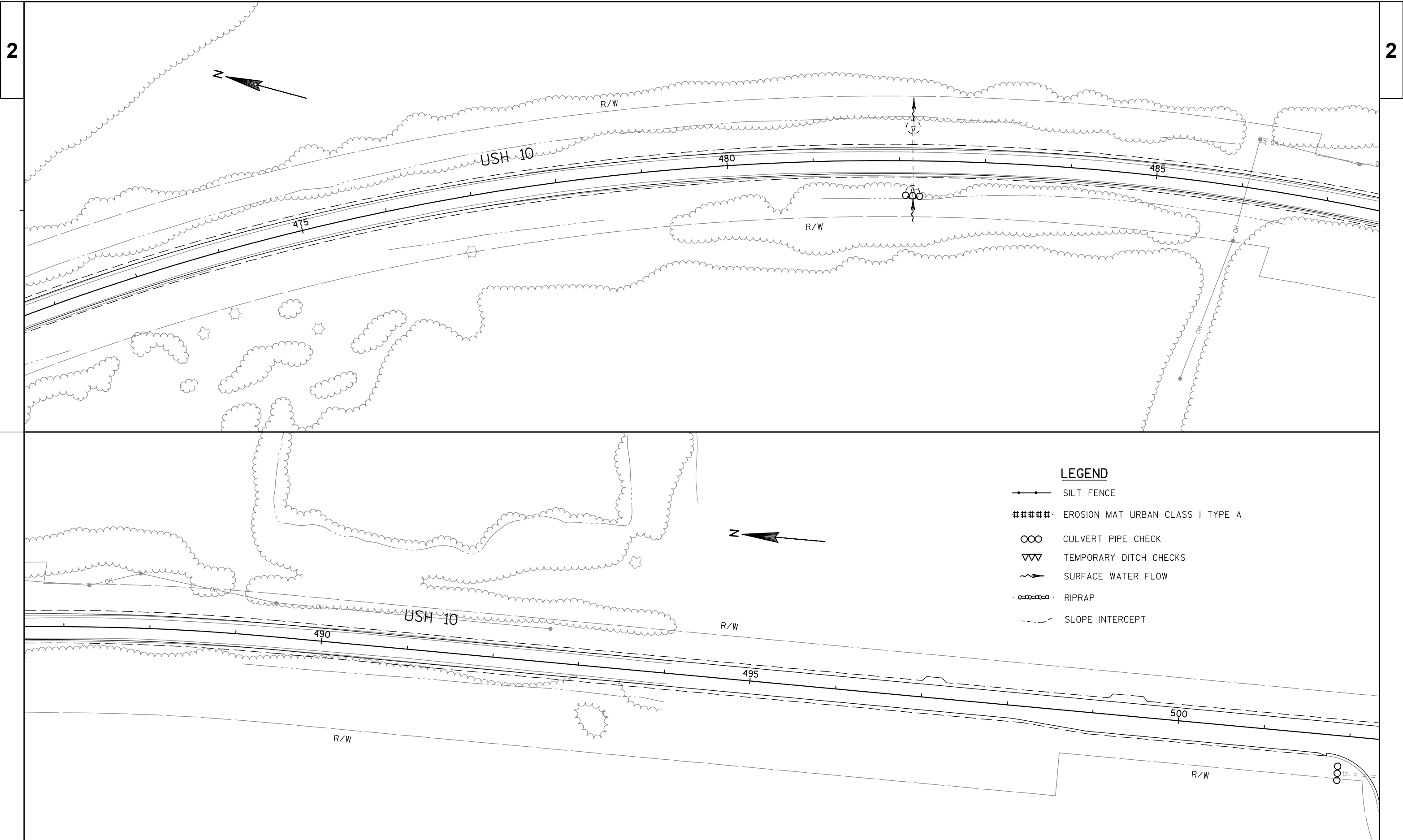
HWY: USH 10

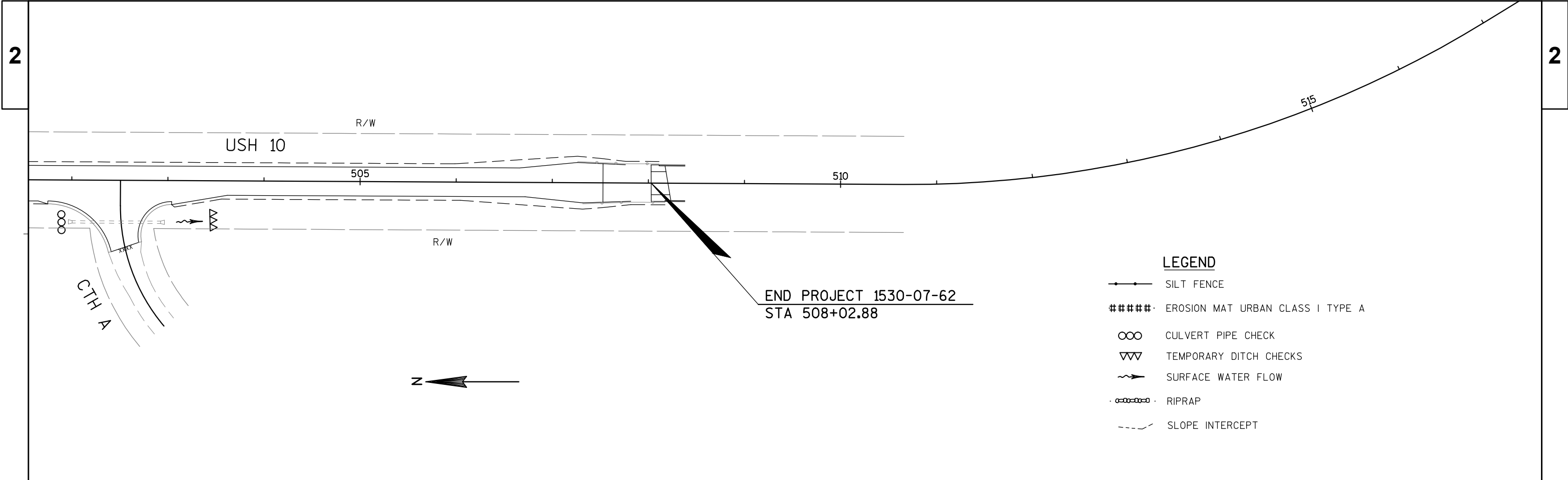
COUNTY: PIERCE

EROSION CONTROL

SHEET

E

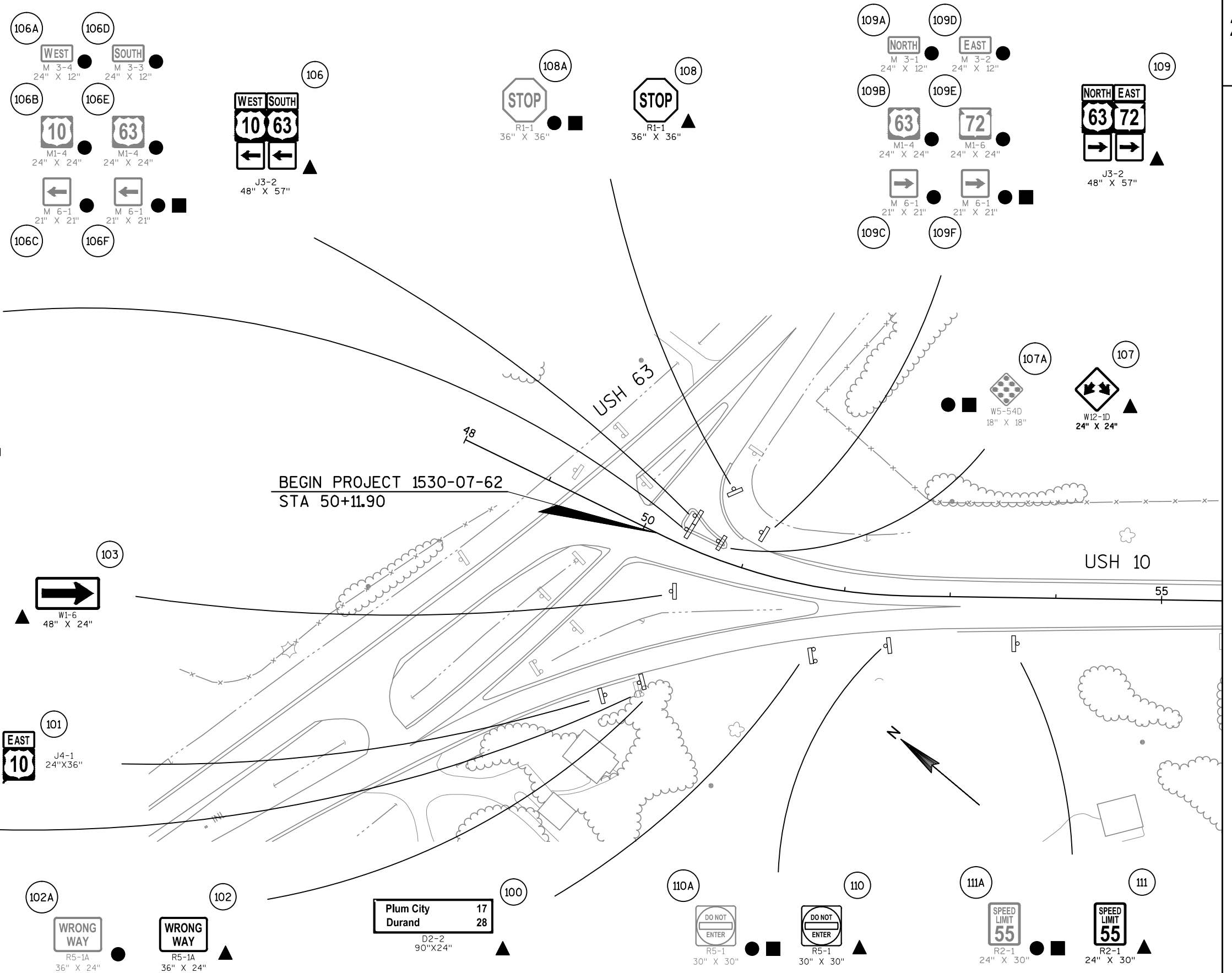


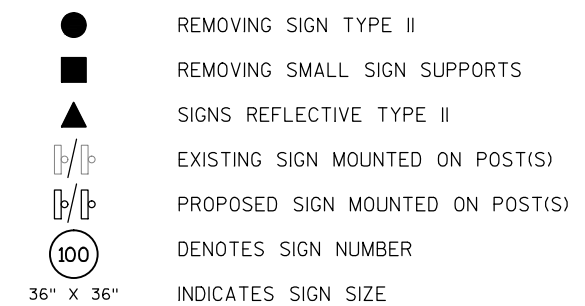


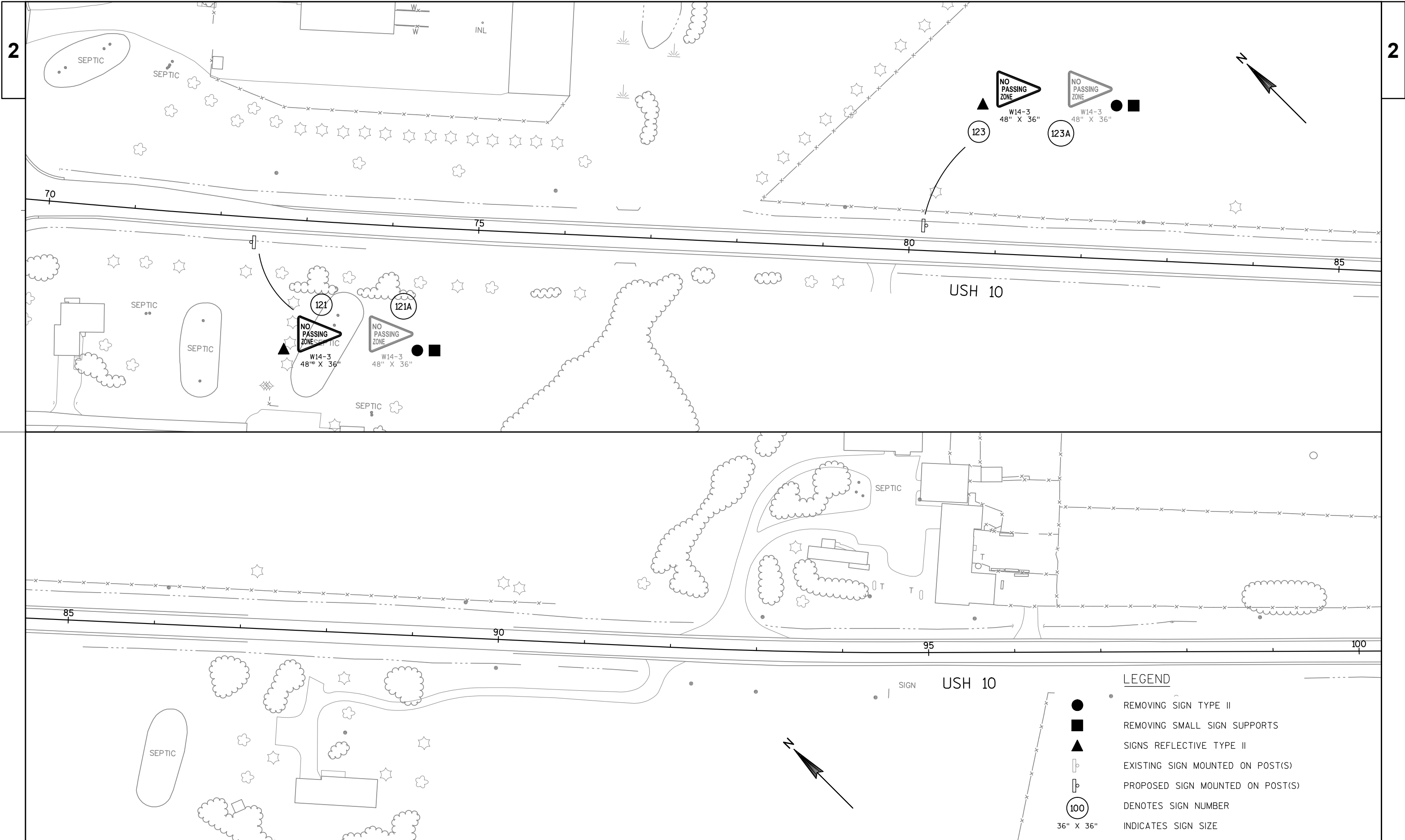
LEGEND

- REMOVING SIGN TYPE II
- REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE II
-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
- 100 DENOTES SIGN NUMBER
- 36" X 36" INDICATES SIGN SIZE

NOTE: WISDOT ELECTRICIANS TO INSTALL RED FLASHING BEACON AND ANCILLARY ELECTRICAL ITEMS TO SUPPLEMENT THE STOP SIGN ON USH 10 AT USH 63. ALLOW WISDOT 3 DAYS TO PLACE CONDUIT UNDER THE RIGHT TURN LANE AFTER MILLING OPERATIONS ARE COMPLETE AND BEFORE ASPHALT IS PLACED.







PROJECT NO:1530-07-62

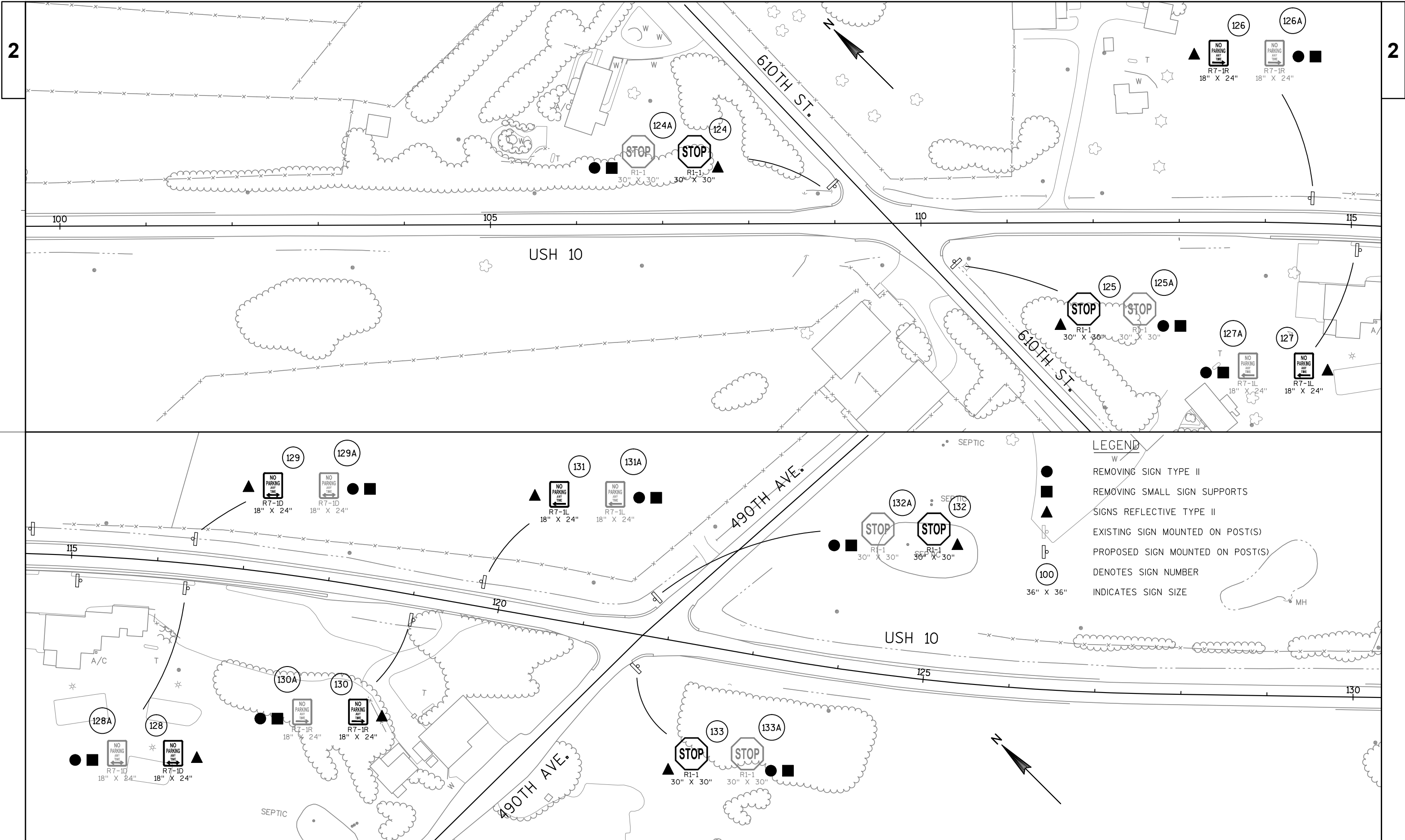
HWY:USH 10

COUNTY:PIERCE

PERMANENT SIGNING

SHEET

E



PROJECT NO:1530-07-62

HWY:USH 10

COUNTY:PIERCE

PERMANENT SIGNING

SHEET

E

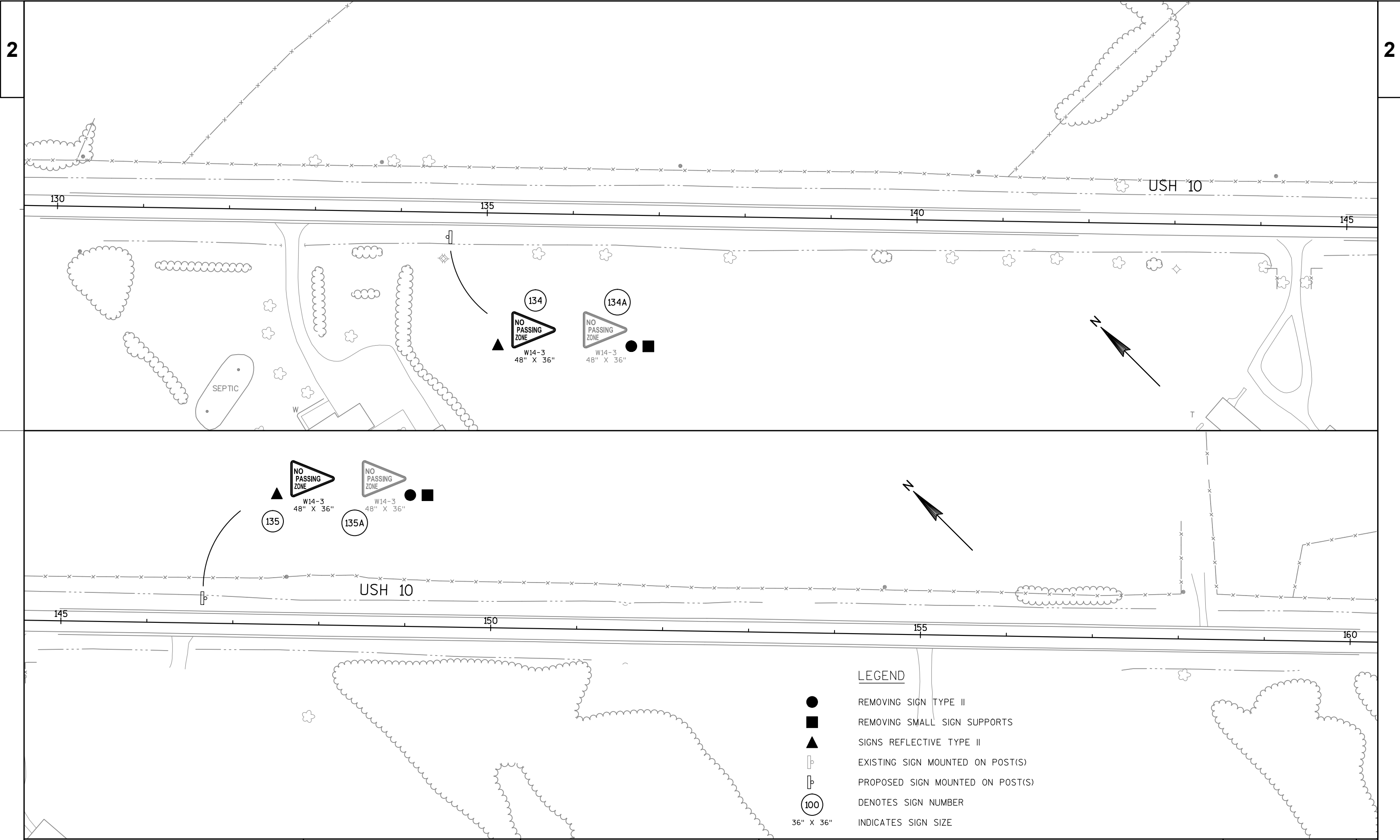
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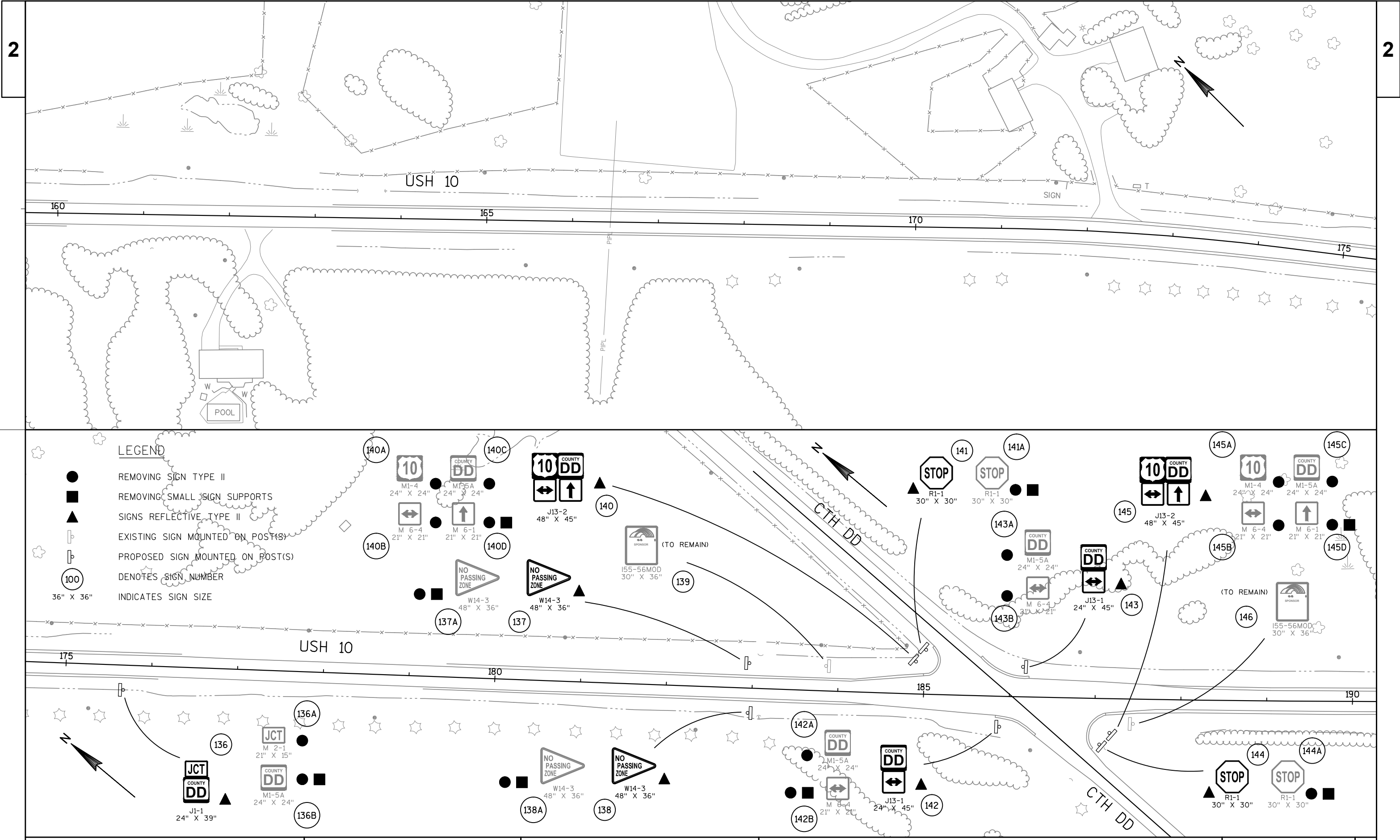
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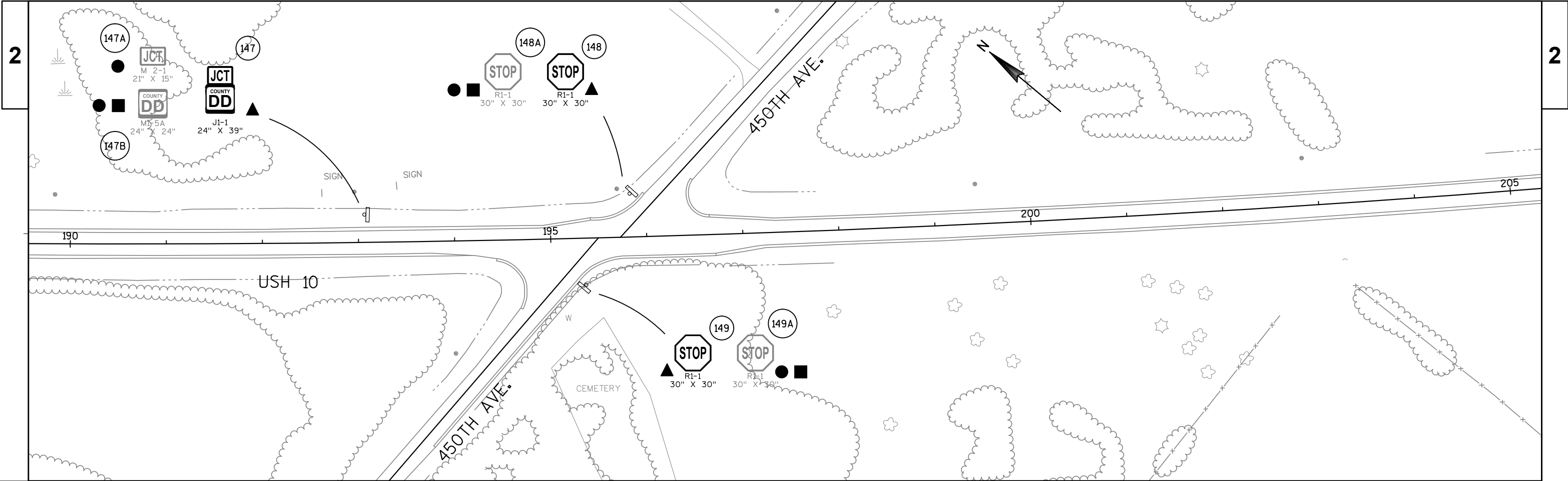
PLOT BY : JEFF BREU

PLOT NAME : PLOT SCALE : *****

WISDOT/CADDs SHEET 44

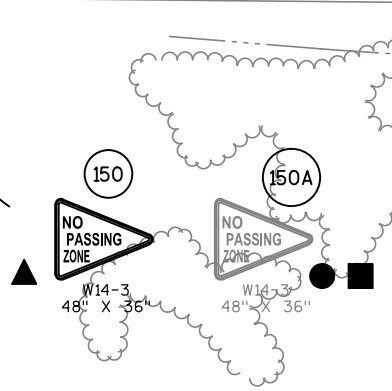
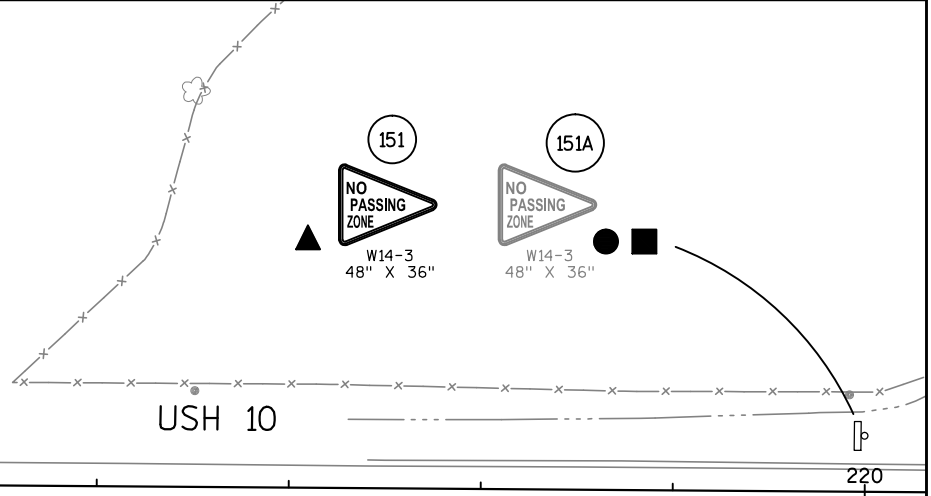


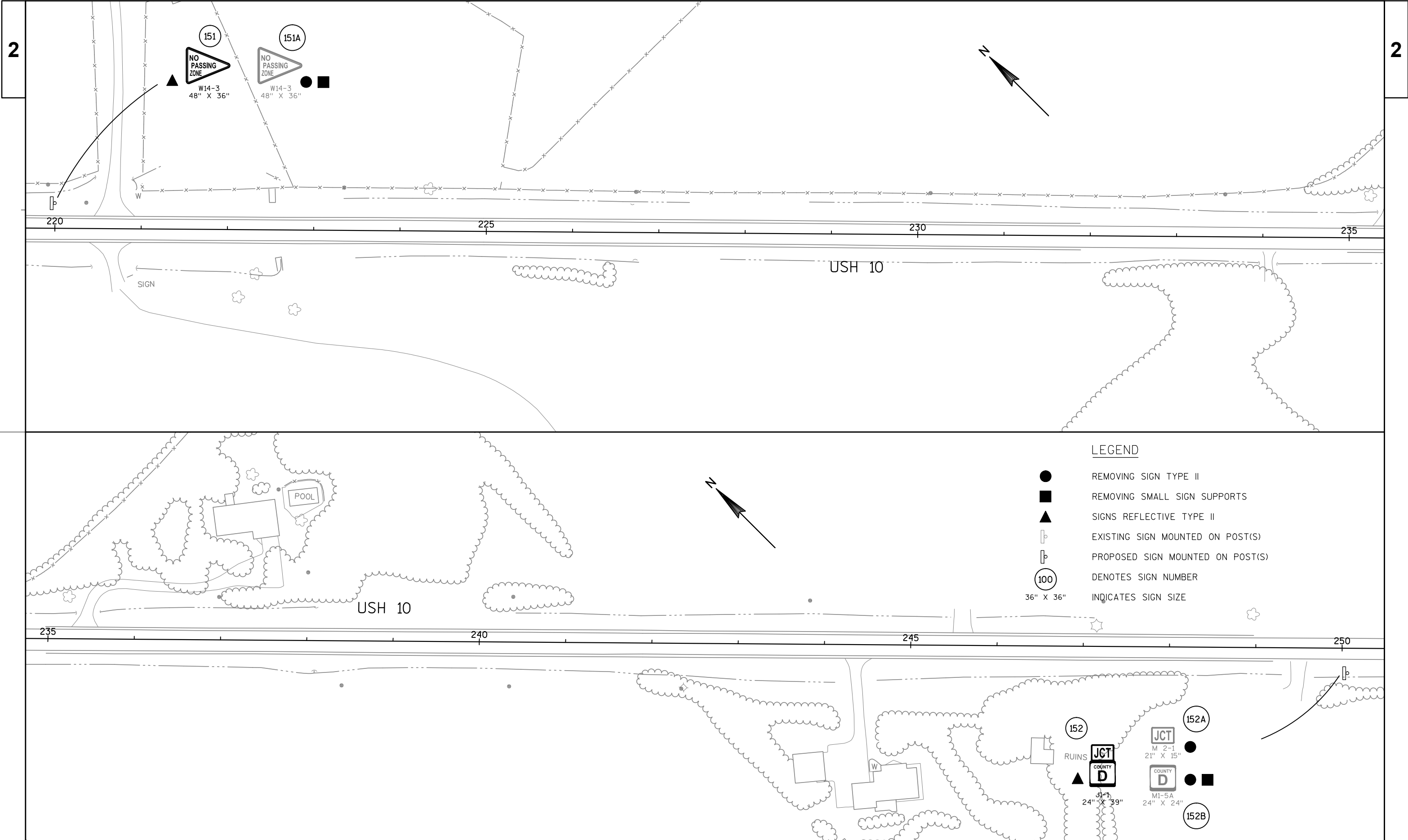


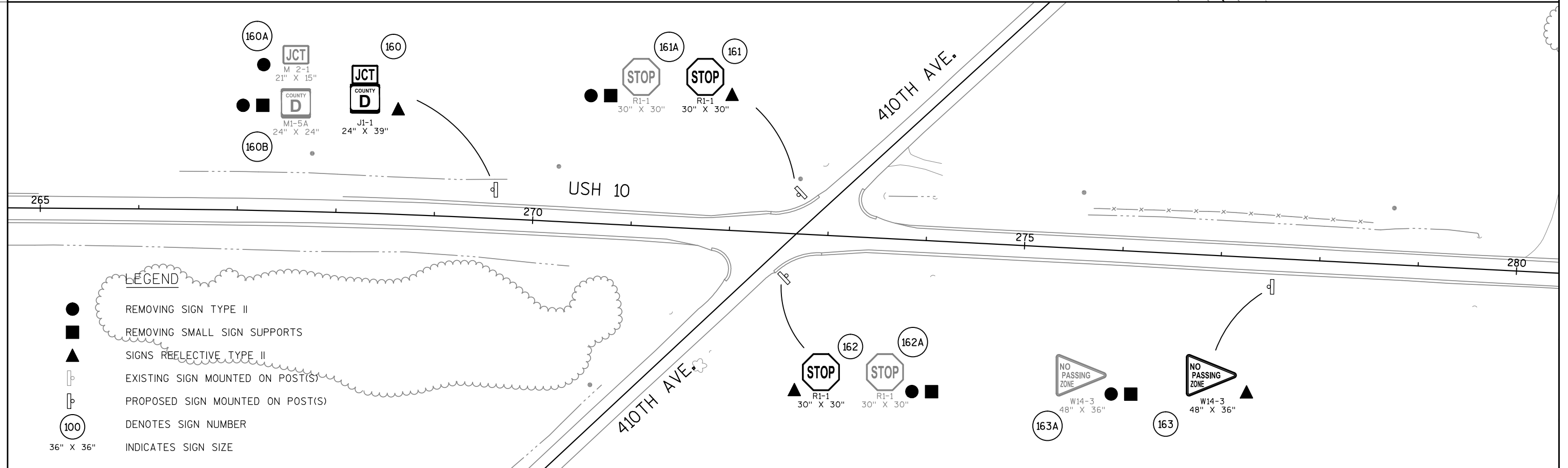
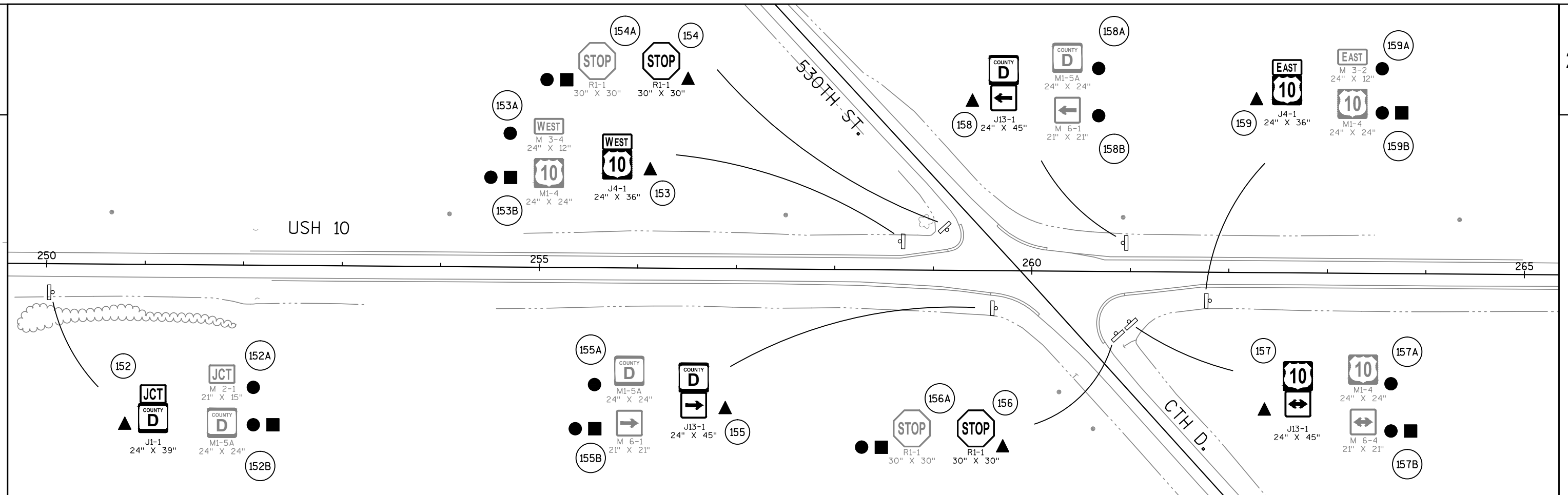


LEGEND

- REMOVING SIGN TYPE II
- REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE II
- ┆ EXISTING SIGN MOUNTED ON POST(S)
- ┆ PROPOSED SIGN MOUNTED ON POST(S)
- 100 DENOTES SIGN NUMBER
- 36" X 36" INDICATES SIGN SIZE







LEGEND

- REMOVING SIGN TYPE II
- REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE II
- ⌋ EXISTING SIGN MOUNTED ON POST(S)
- ⌋ PROPOSED SIGN MOUNTED ON POST(S)
- 100 DENOTES SIGN NUMBER
- 36" X 36" INDICATES SIGN SIZE

PROJECT NO: 1530-07-62

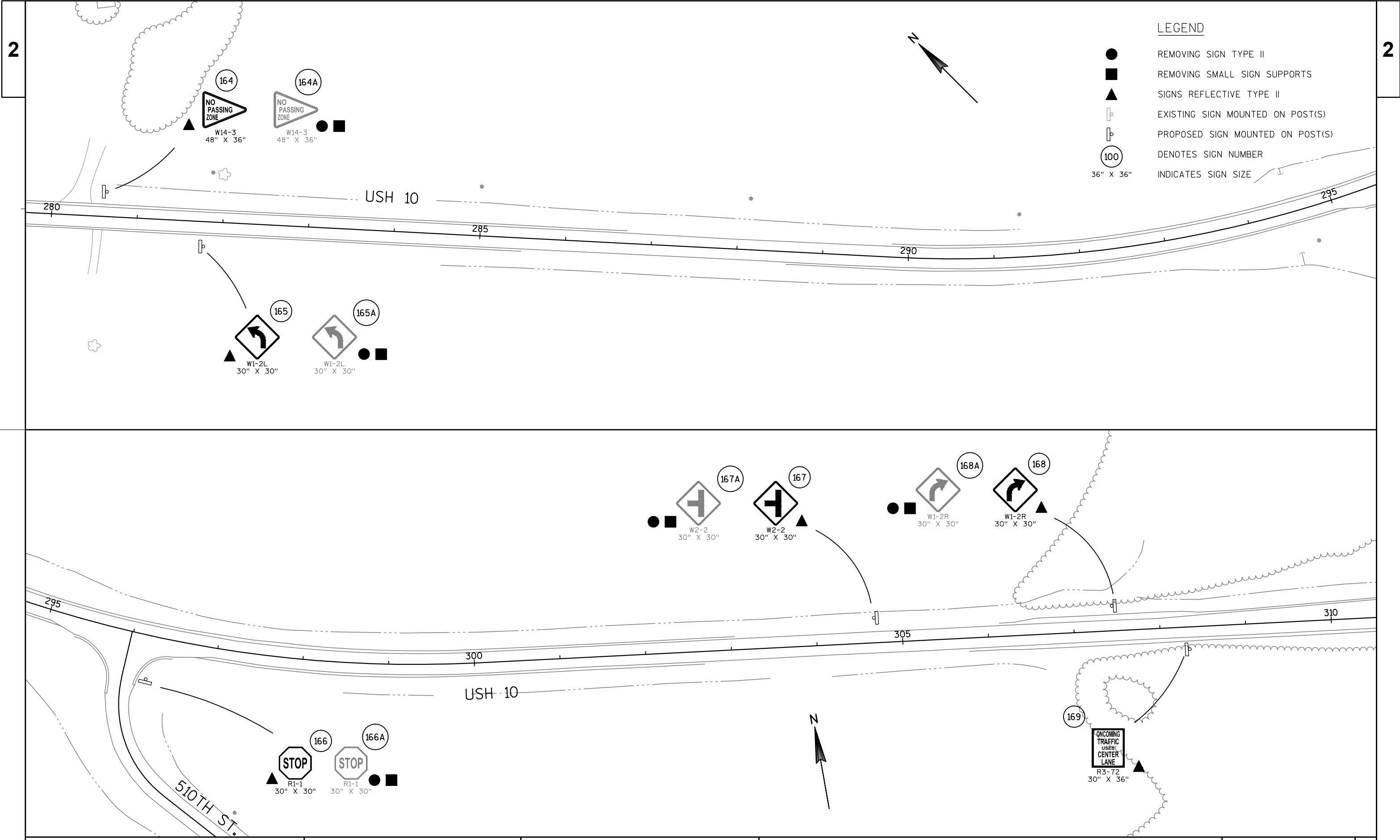
HWY: USH 10

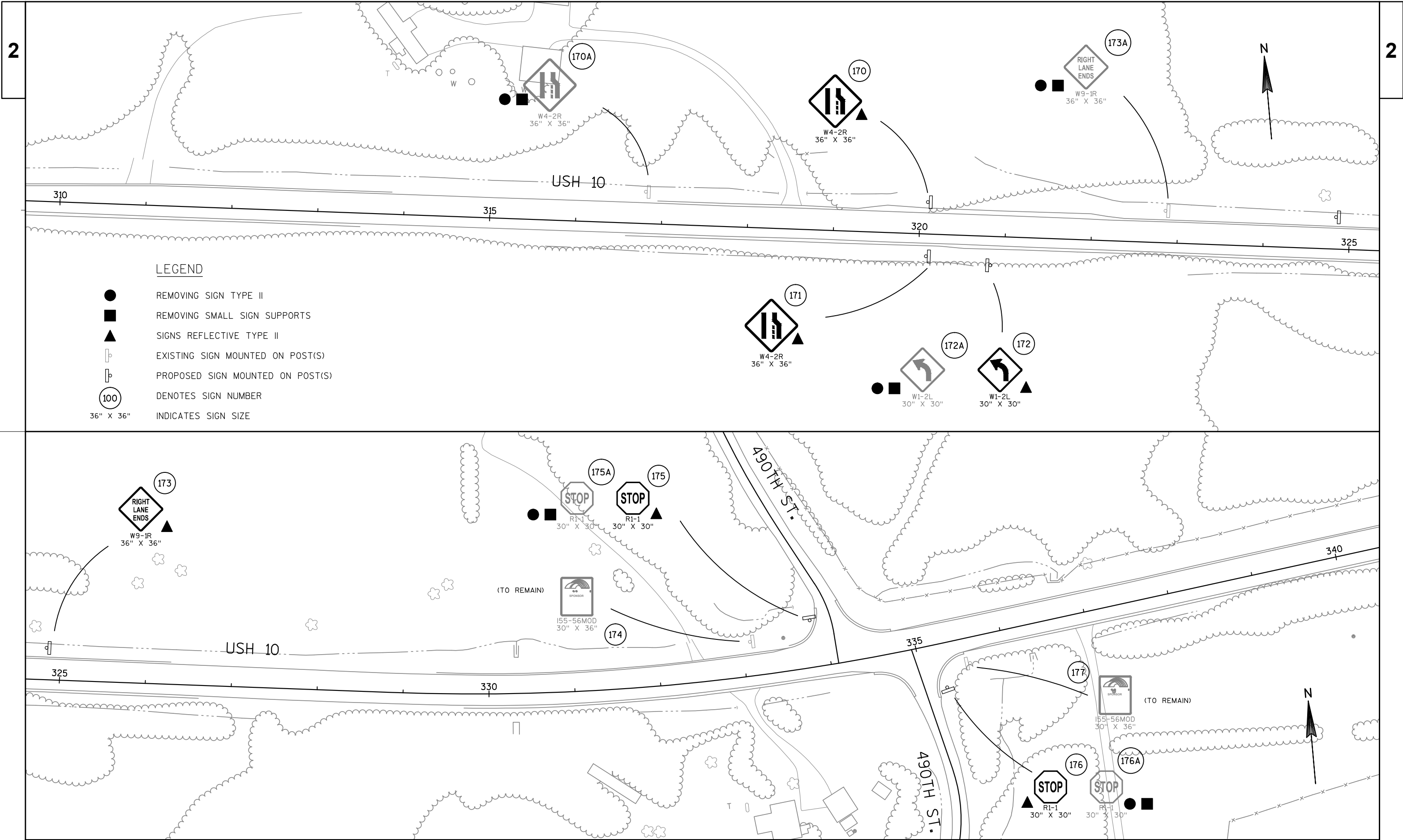
COUNTY: PIERCE

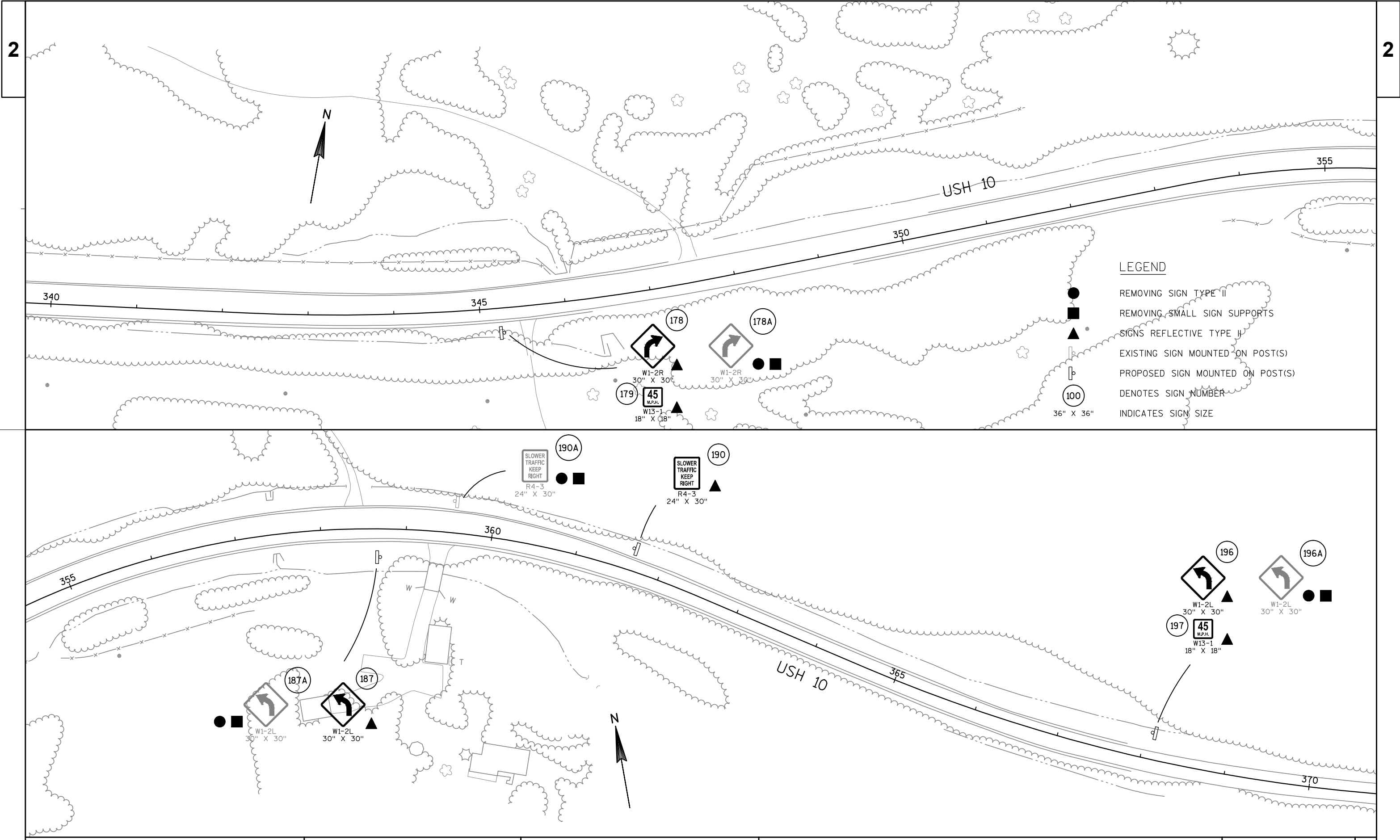
PERMANENT SIGNING

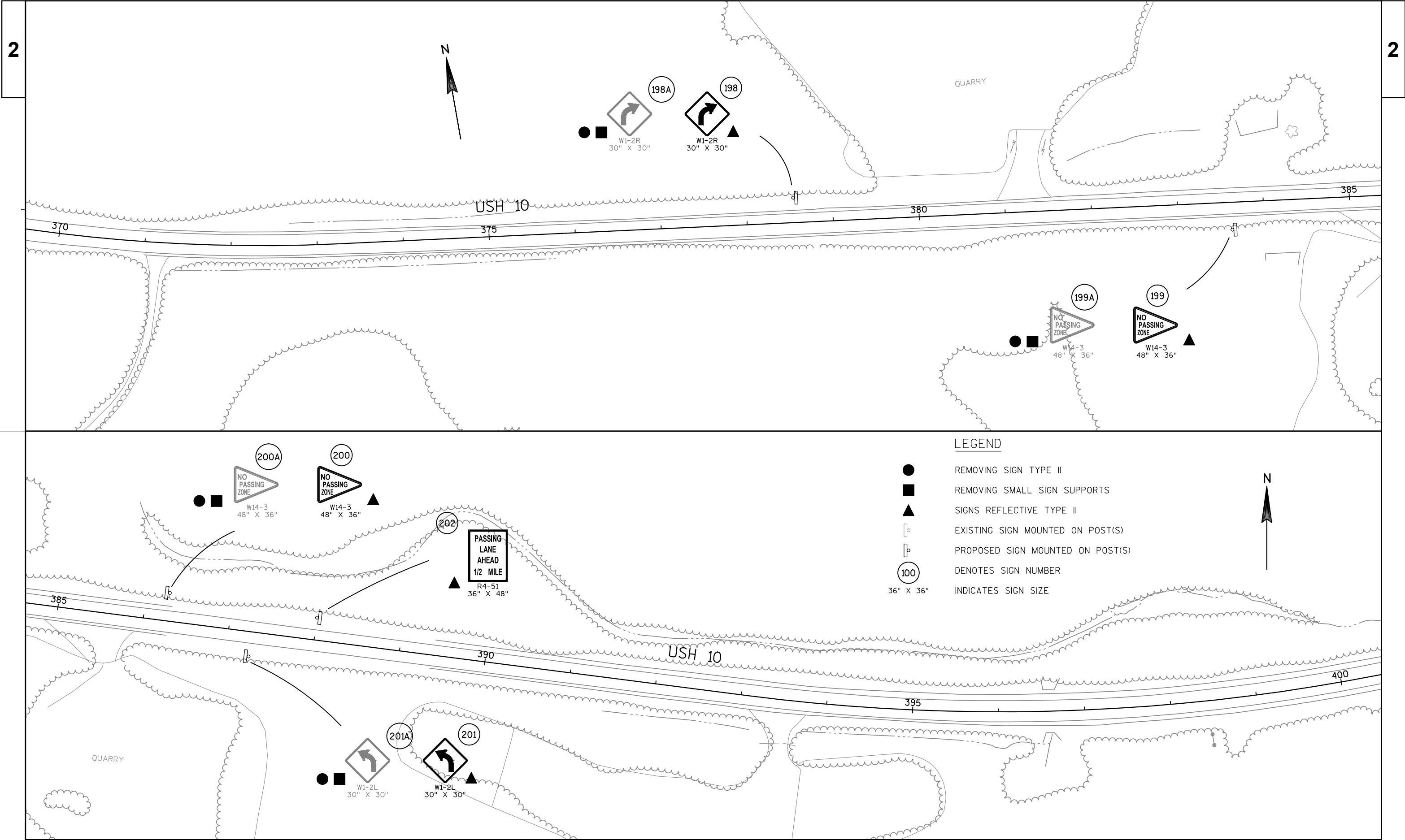
SHEET

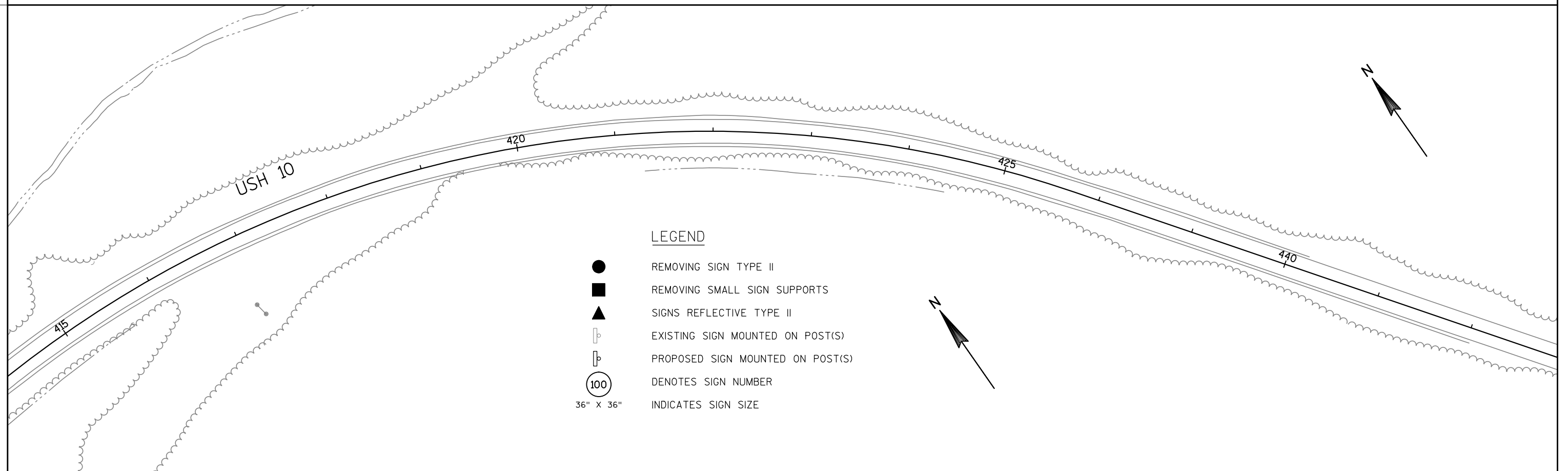
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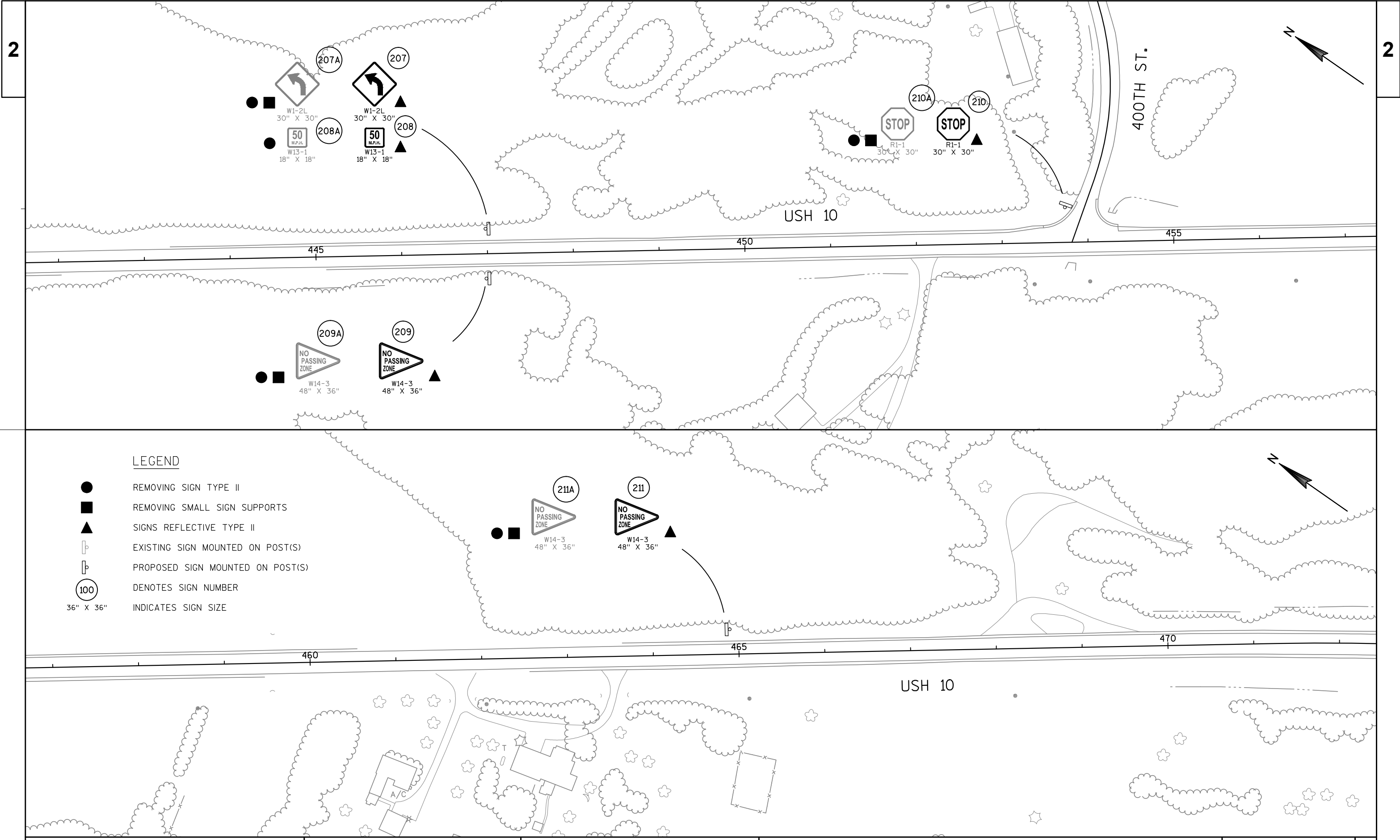


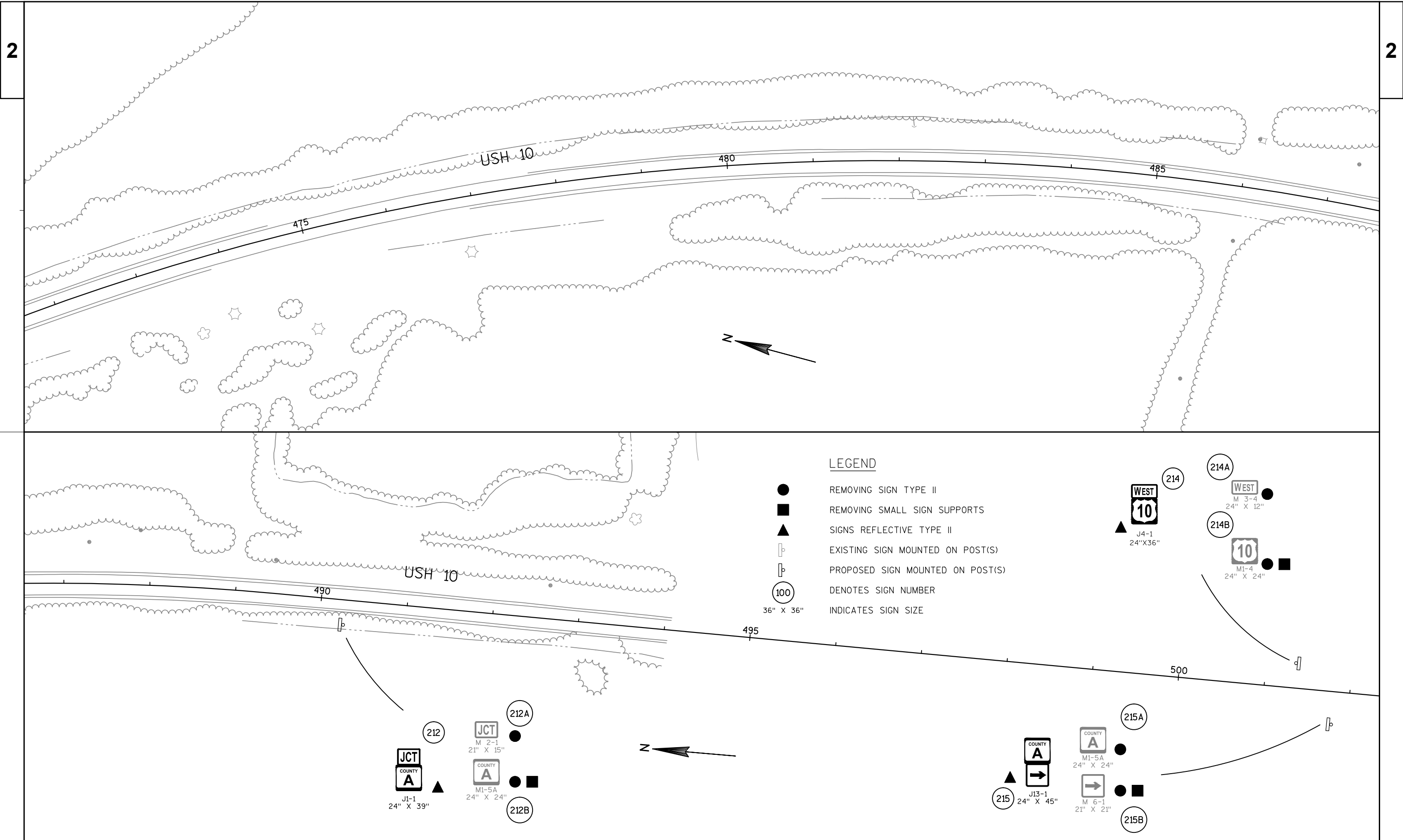


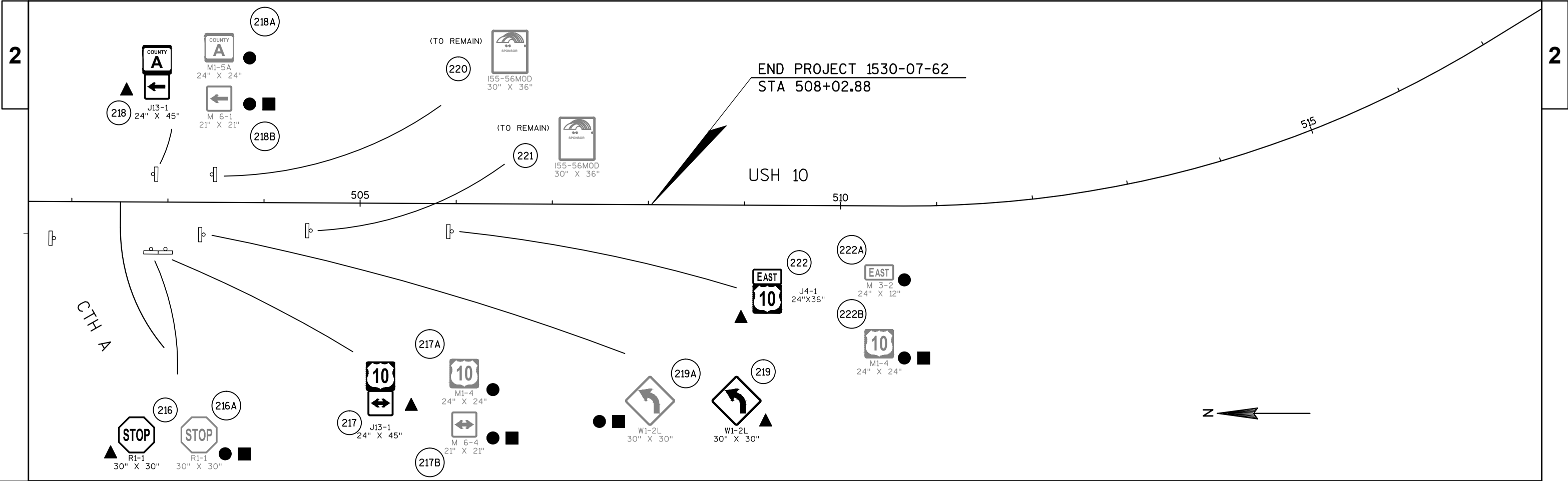












LEGEND

- REMOVING SIGN TYPE II
- REMOVING SMALL SIGN SUPPORTS
- ▲ SIGNS REFLECTIVE TYPE II
- ⌋ EXISTING SIGN MOUNTED ON POST(S)
- ⌋ PROPOSED SIGN MOUNTED ON POST(S)
- 100 DENOTES SIGN NUMBER
- 36" X 36" INDICATES SIGN SIZE

NOTE:
NO PASSING ZONE LOCATIONS ARE APPROXIMATE. LOCATION OF NO
PASSING ZONES WILL BE DETERMINED AFTER THE ITEM OF LOCATING NO
PASSING ZONES HAS BEEN COMPLETED.

BEGIN PROJECT 1530-07-62
STA 50+11.90

PAVEMENT MARKING STOP LINE EPOXY 18-INCH
(WHITE)

USH 63

PAVEMENT MARKING EPOXY 4-INCH
(DOUBLE YELLOW)

PAVEMENT MARKING EPOXY 8-INCH
(WHITE CHANNELIZING LINE)

PAVEMENT MARKING EPOXY 4-INCH
(WHITE EDGE LINE)

USH 10

PAVEMENT MARKING EPOXY 8-INCH
(WHITE CHANNELIZING LINE)

PAVEMENT MARKING EPOXY 4-INCH
(YELLOW EDGE LINE)

PAVEMENT MARKING EPOXY 4-INCH
(WHITE EDGE LINE)

PAVEMENT MARKING EPOXY 4-INCH
(DOUBLE YELLOW)

PAVEMENT MARKING EPOXY 4-INCH
(WHITE EDGE LINE)

USH 10

PAVEMENT MARKING EPOXY 4-INCH
(SOLID YELLOW WB, DASHED YELLOW EB)

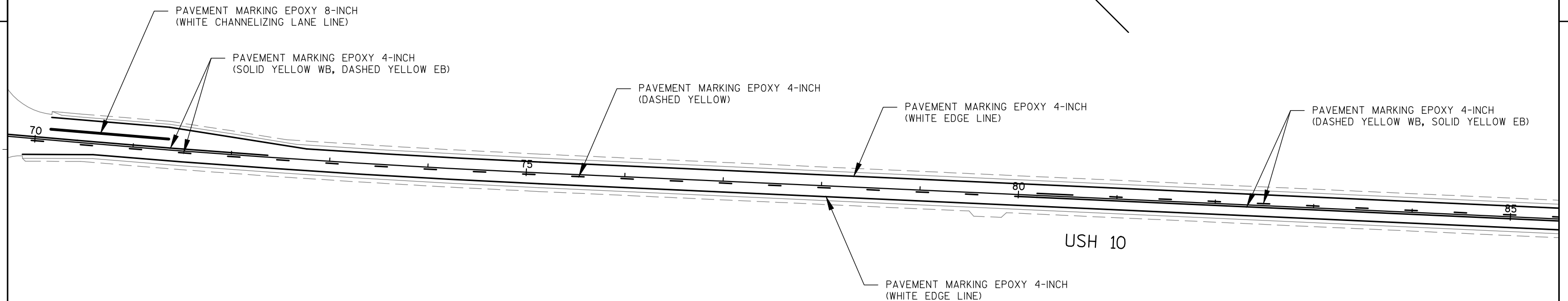
PAVEMENT MARKING EPOXY 4-INCH
(WHITE EDGE LINE)

PAVEMENT MARKING EPOXY 4-INCH
(DASHED WHITE)

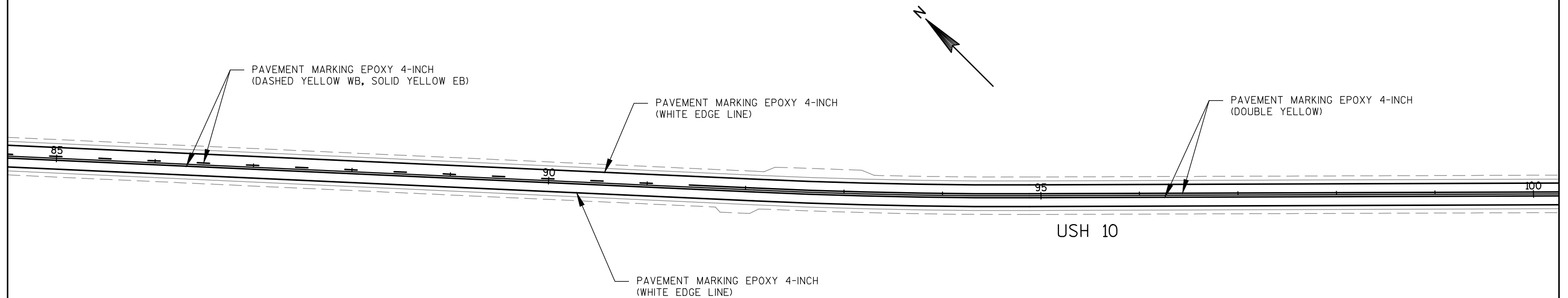
518TH AVE.

635TH ST.

2



2



PROJECT NO:1530-07-62

HWY: USH 10

COUNTY: PIERCE

PAVEMENT MARKING PLAN

SHEET -----

E

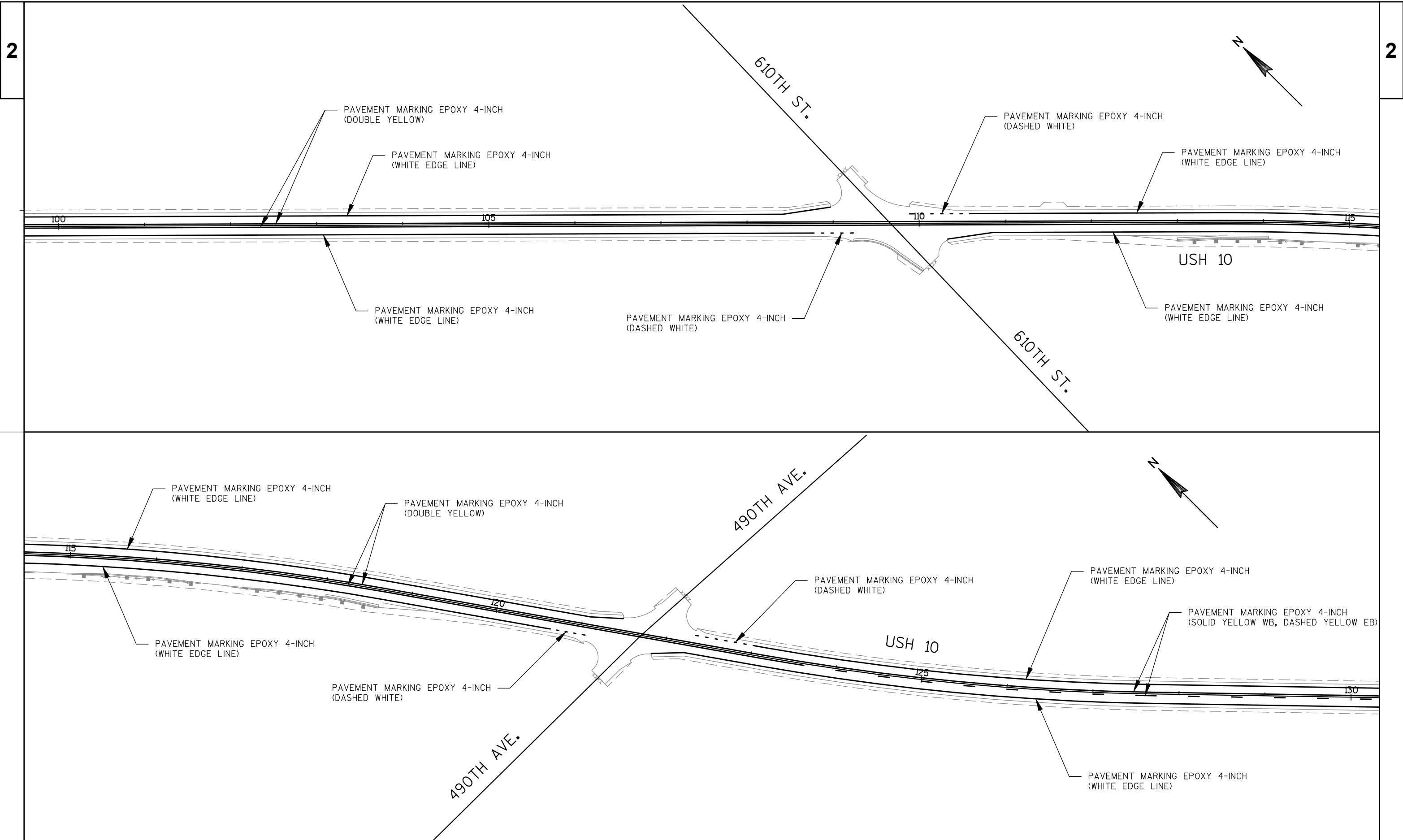
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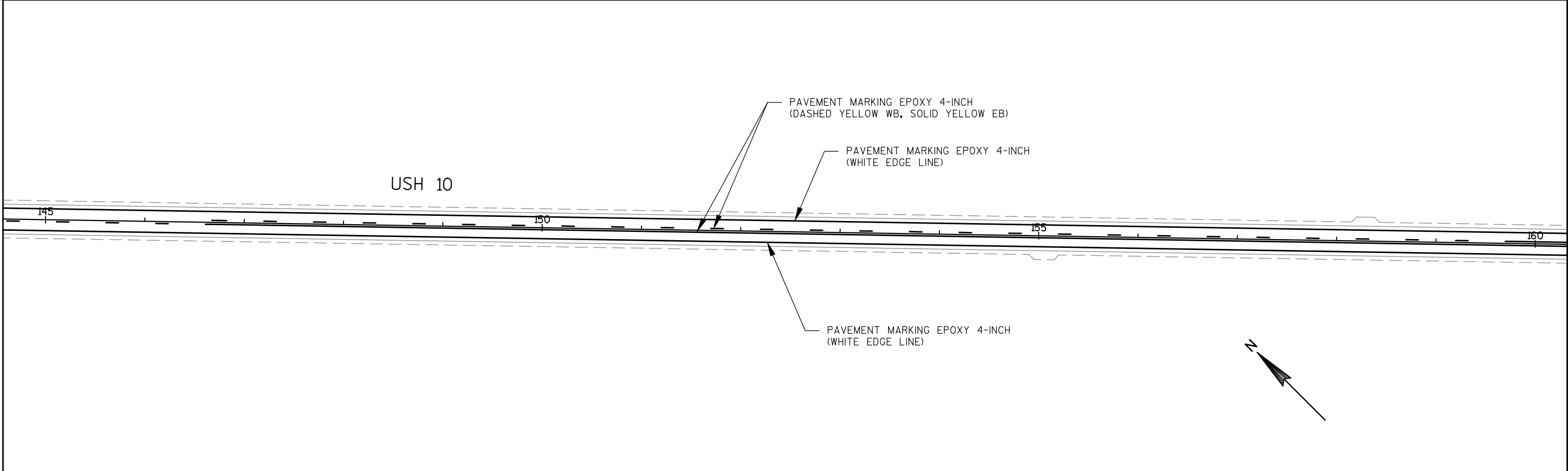
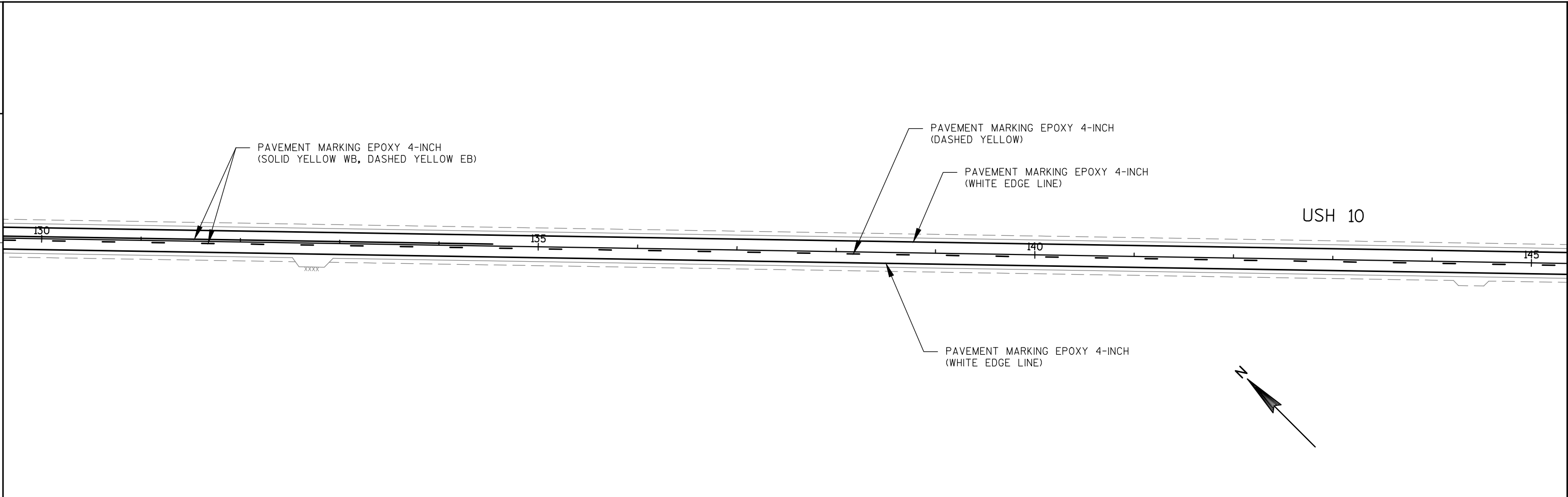
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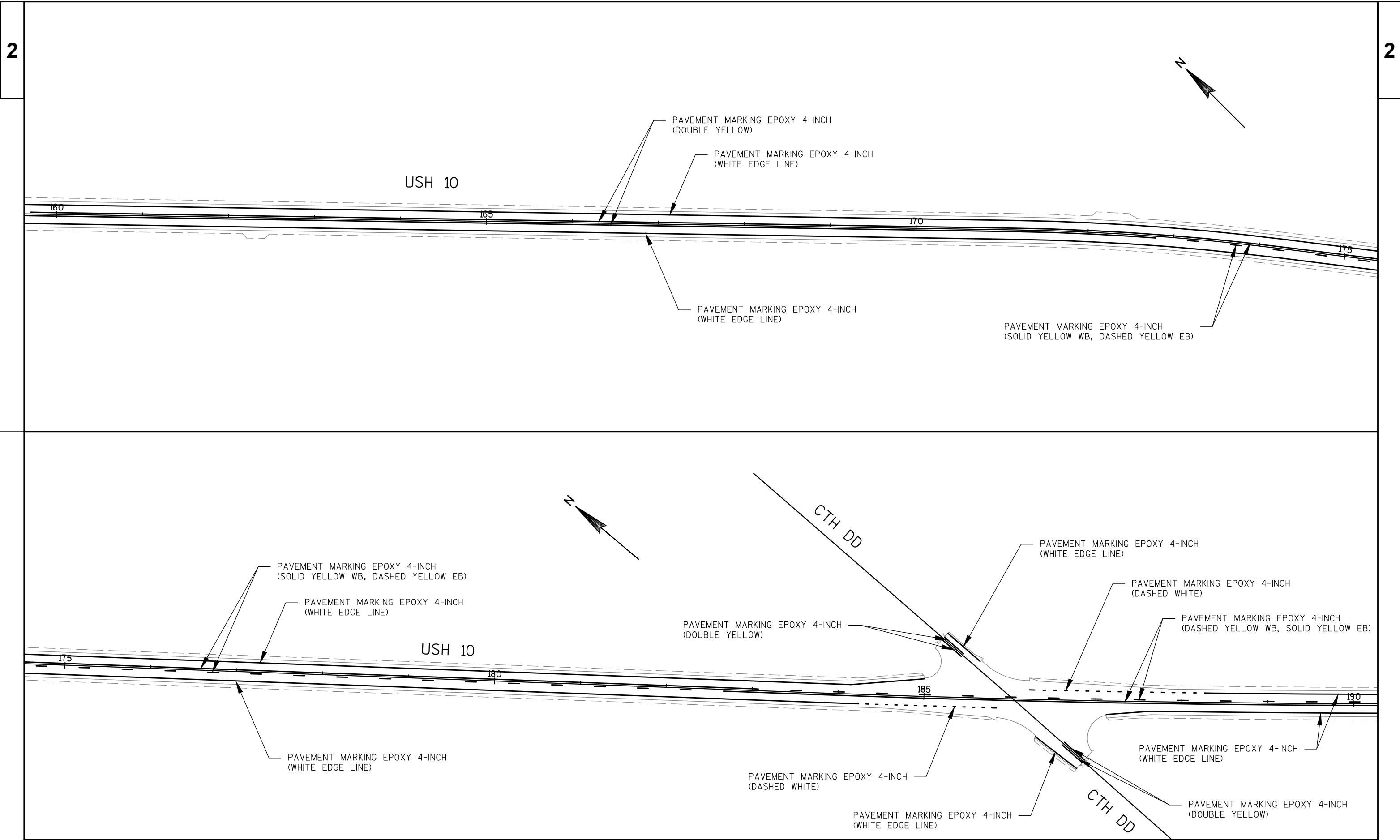
PLOT BY : JEFF BREU

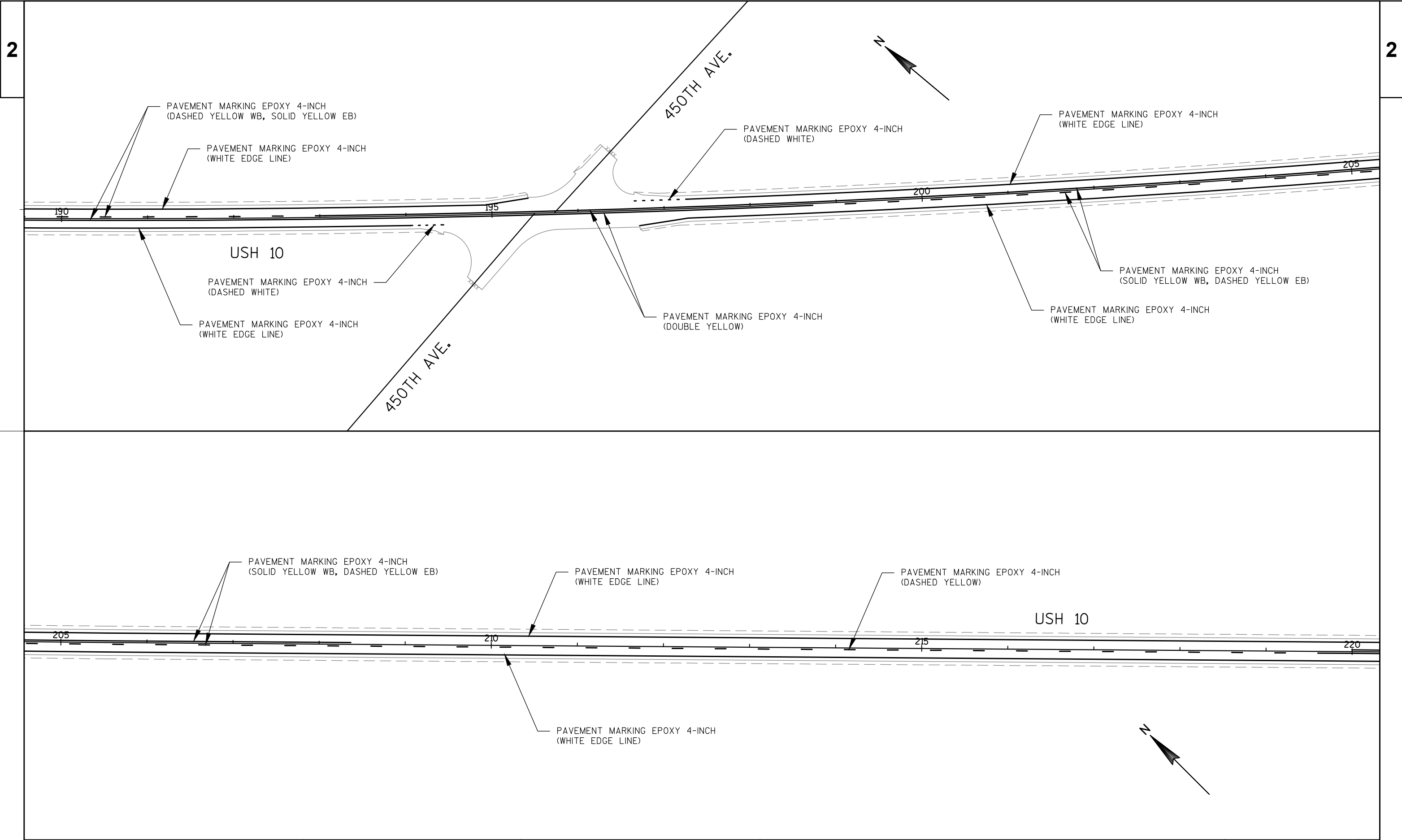
PLOT NAME : ----- PLOT SCALE : 1" = 100' XREF

WISDOT/CADDs SHEET 44



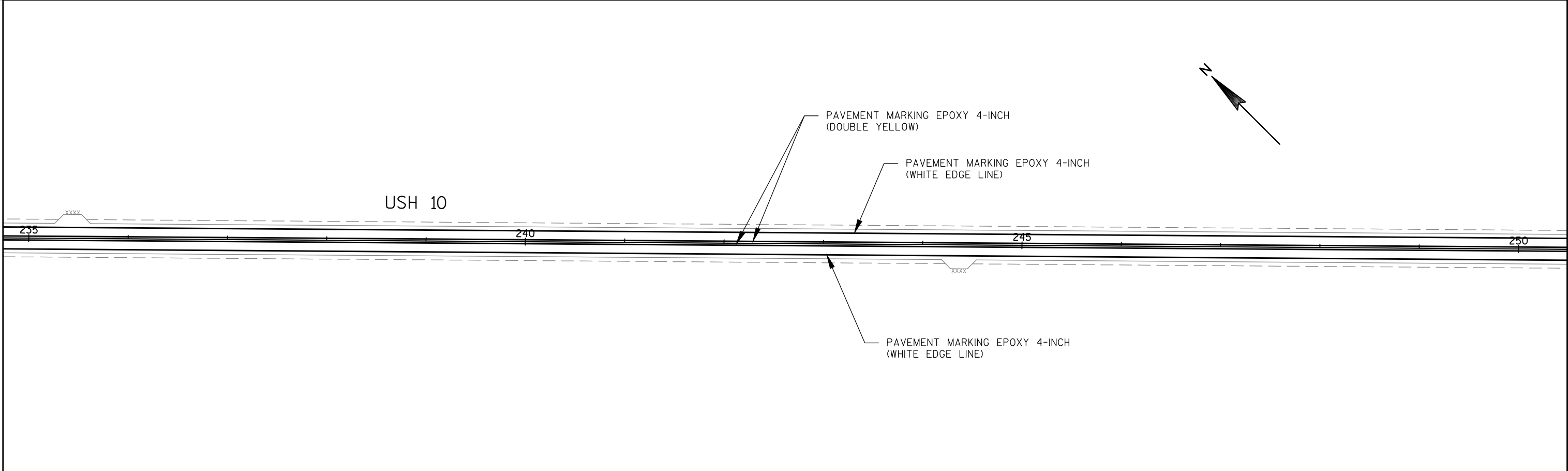
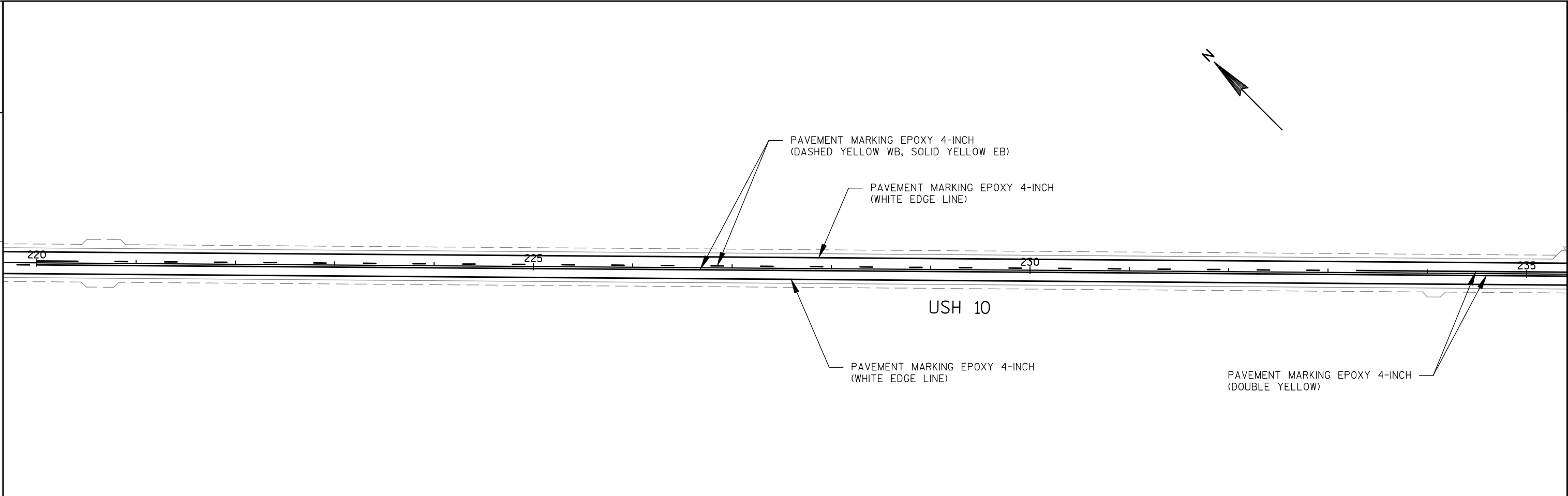






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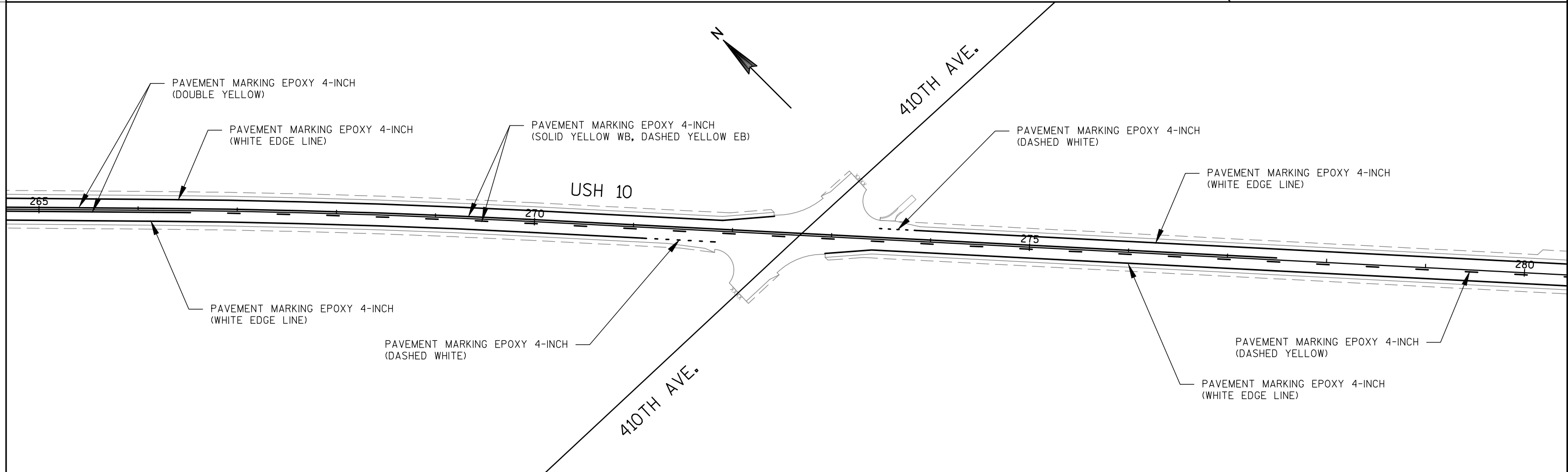
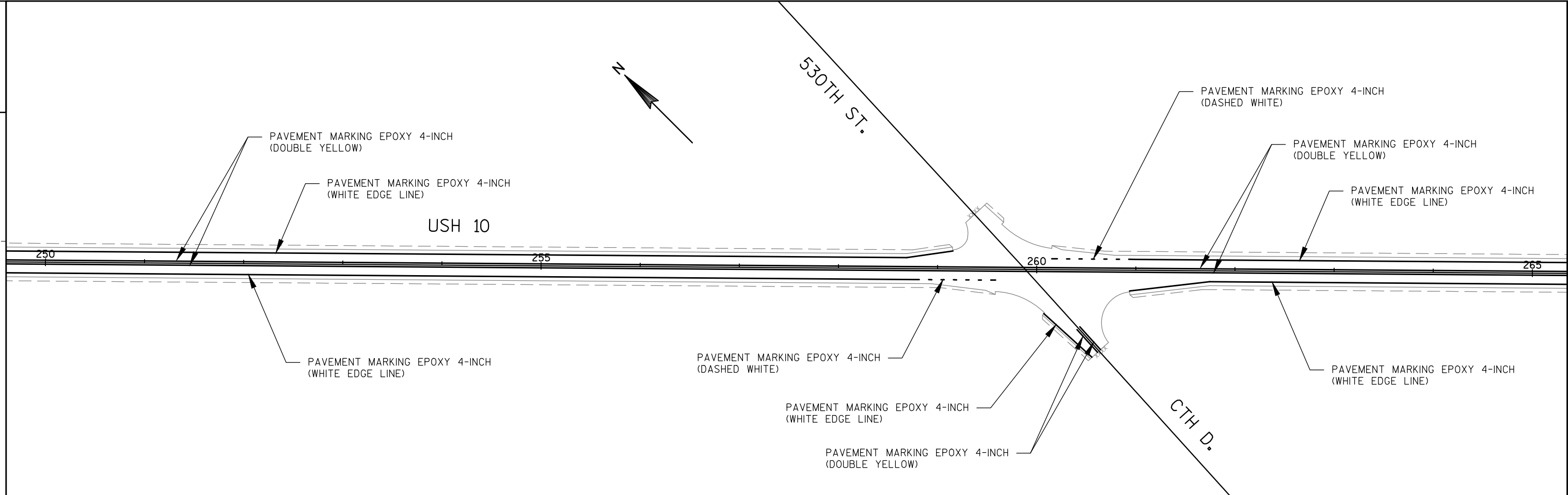
2



PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PAVEMENT MARKING PLAN	SHEET	2
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2

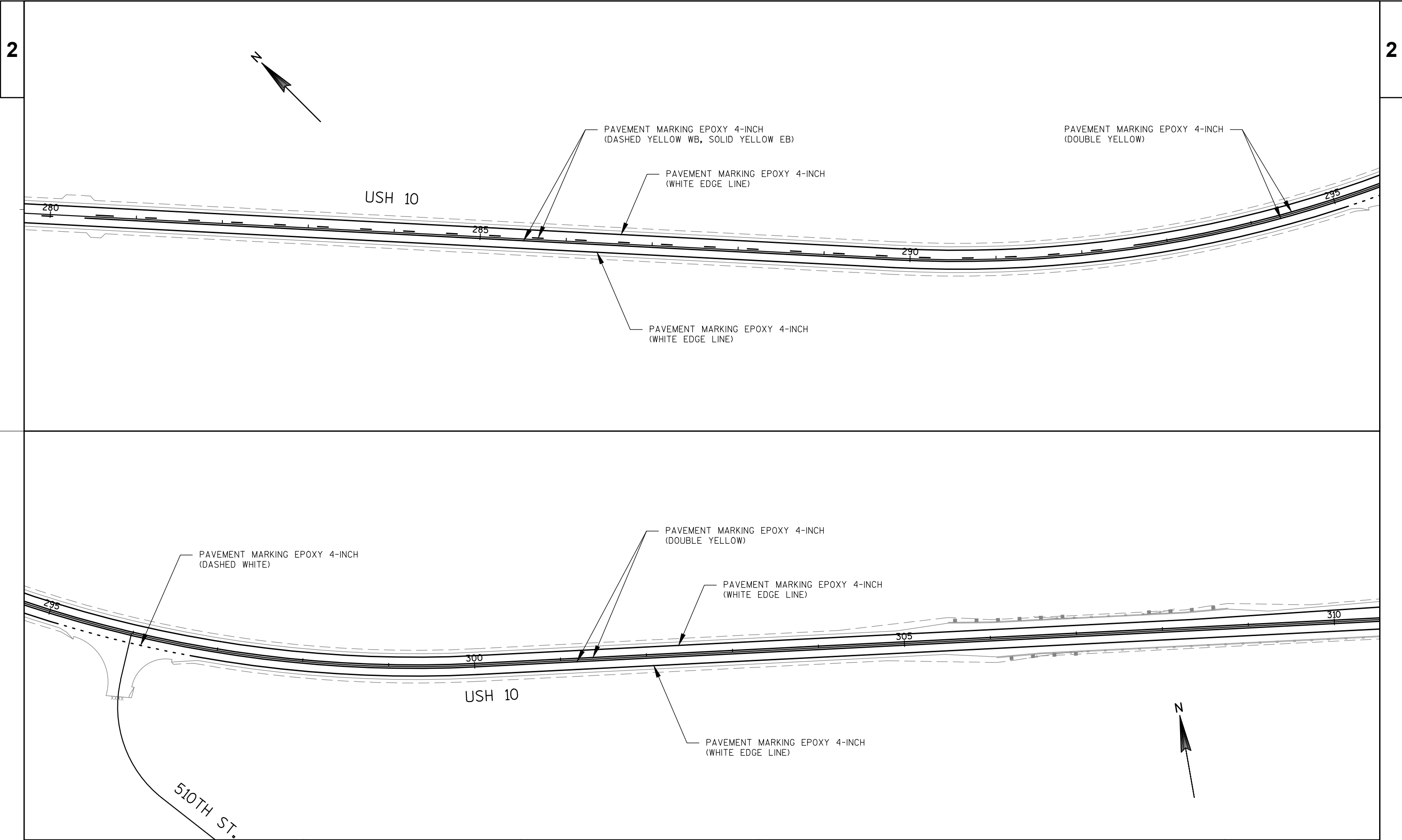
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PROJECT NO:1530-07-62	HWY: USH 10	COUNTY: PIERCE	PAVEMENT MARKING PLAN	SHEET	-----	E
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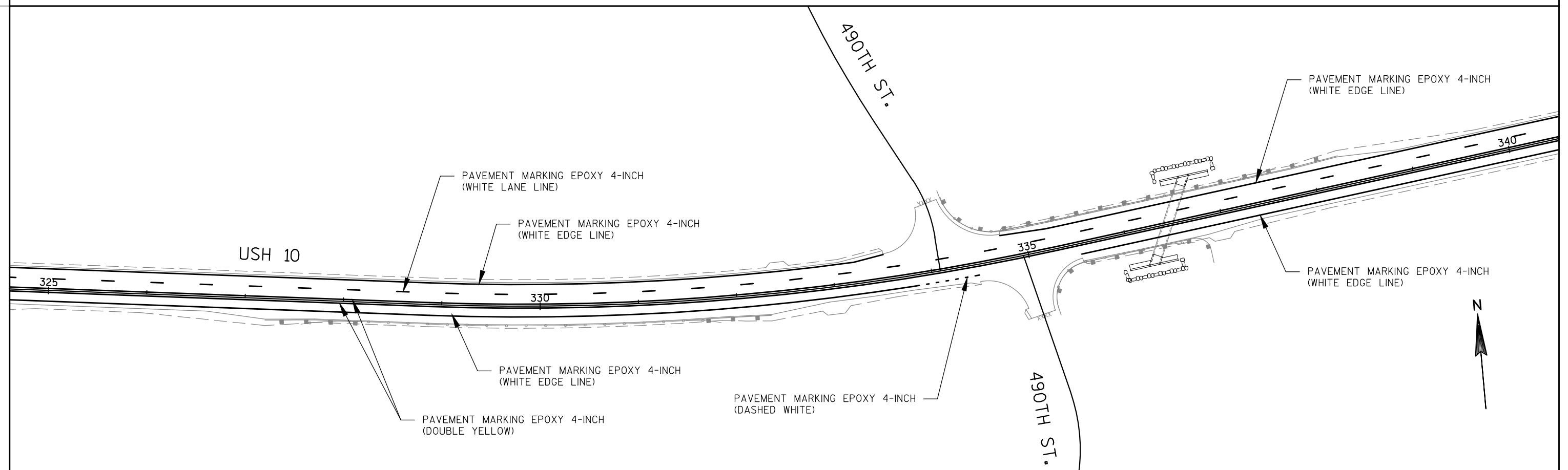
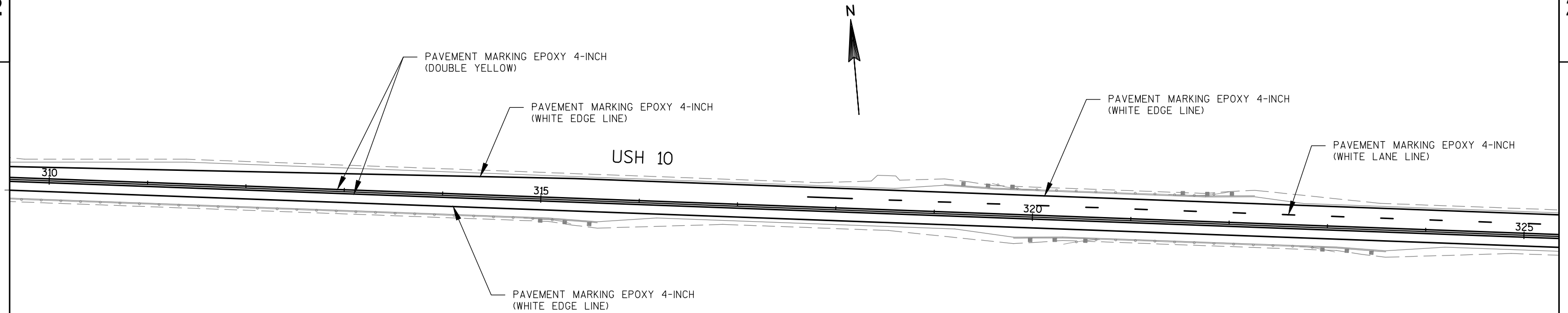
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WISDOT/CADDS SHEET 44



2

2



PROJECT NO:1530-07-62

HWY: USH 10

COUNTY: PIERCE

PAVEMENT MARKING PLAN

SHEET

E

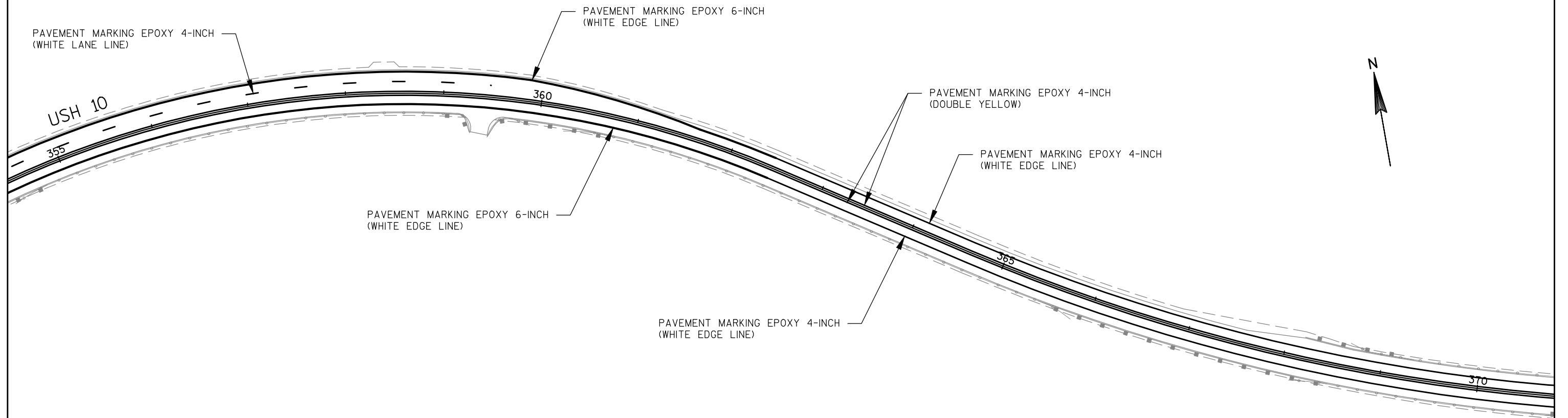
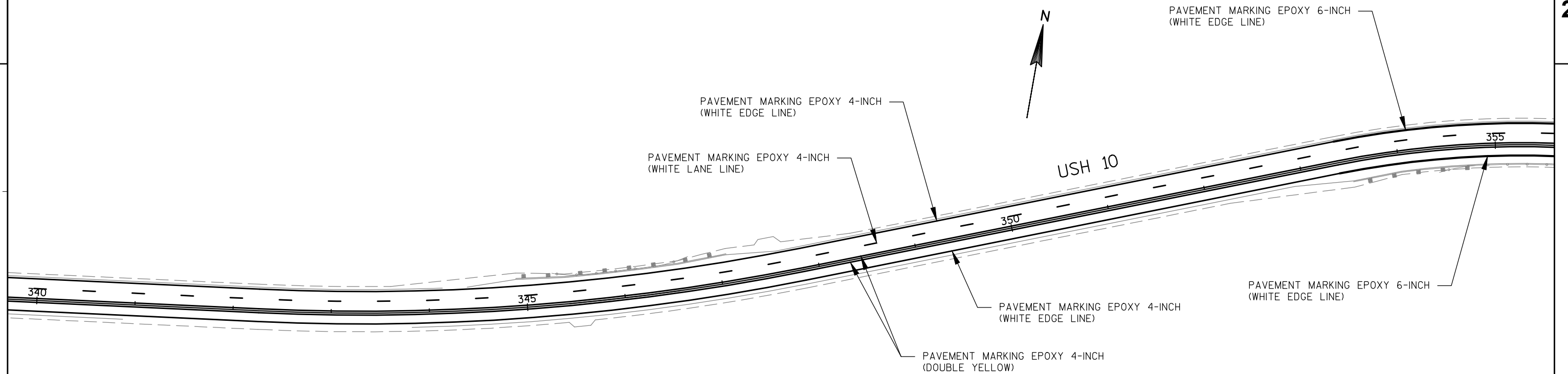
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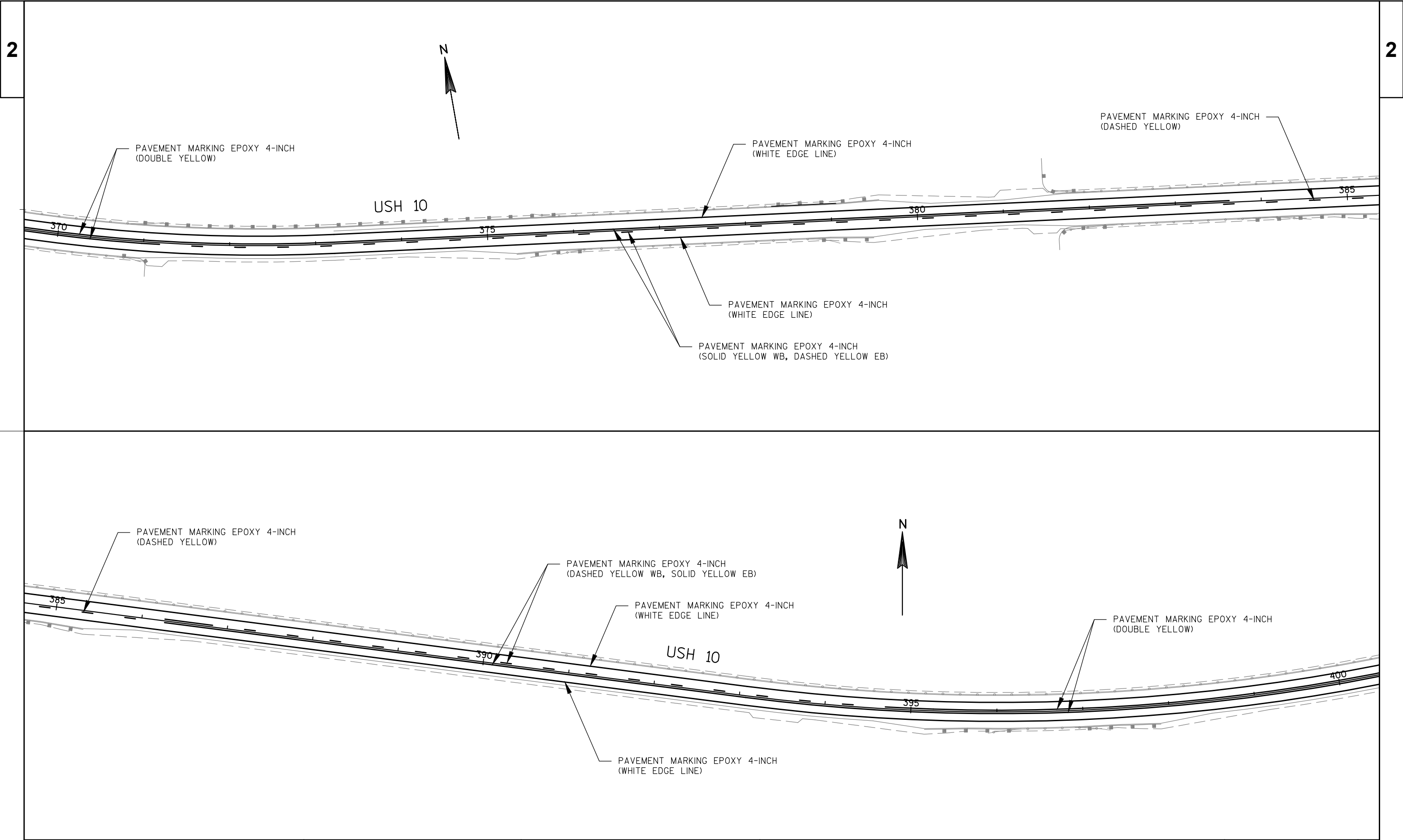
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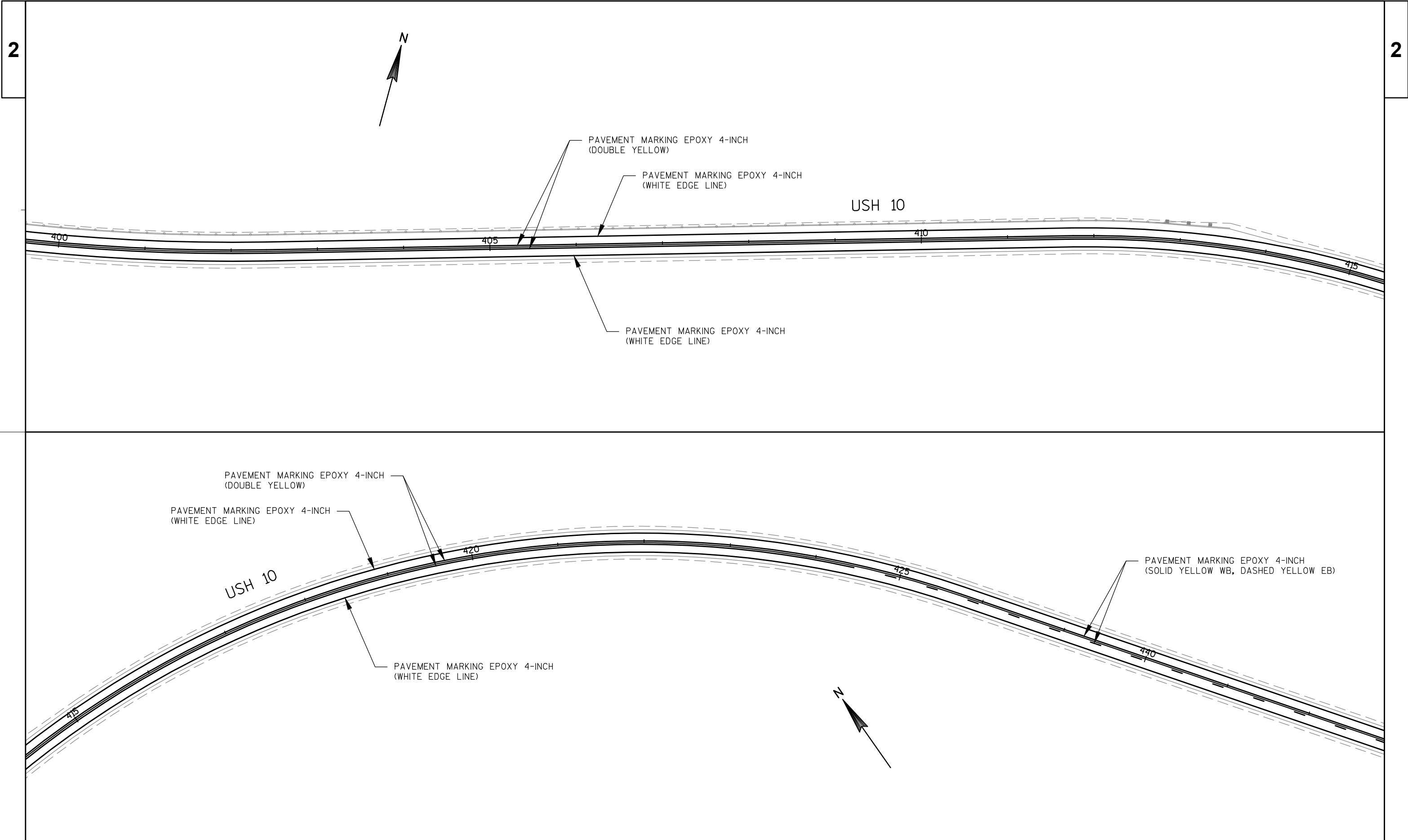
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PLOT NAME : PLOT SCALE : 1" = 100'-XREF

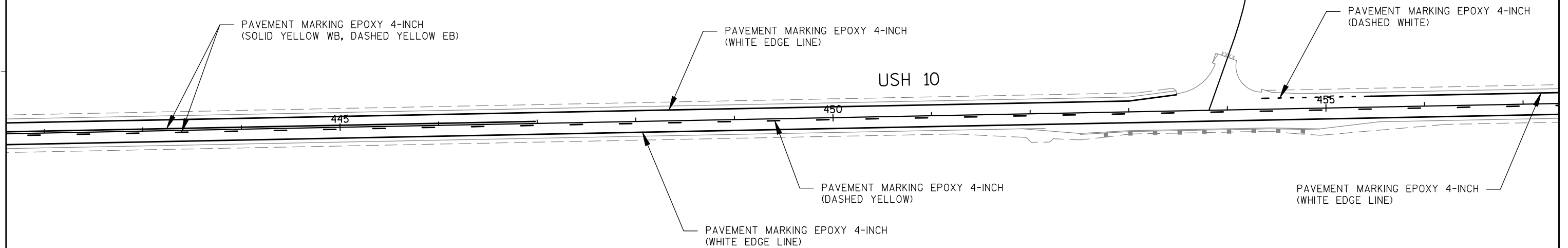
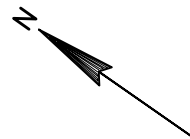
WISDOT/CADDs SHEET 44



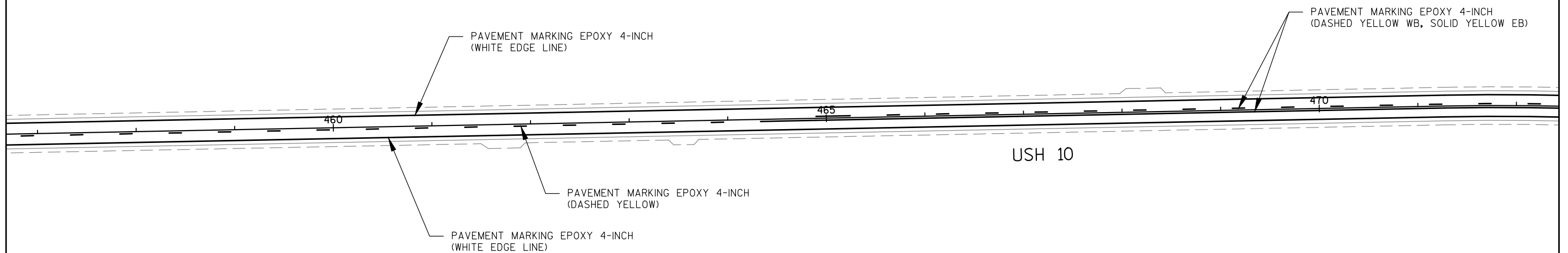
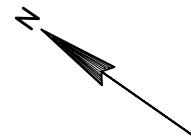




2



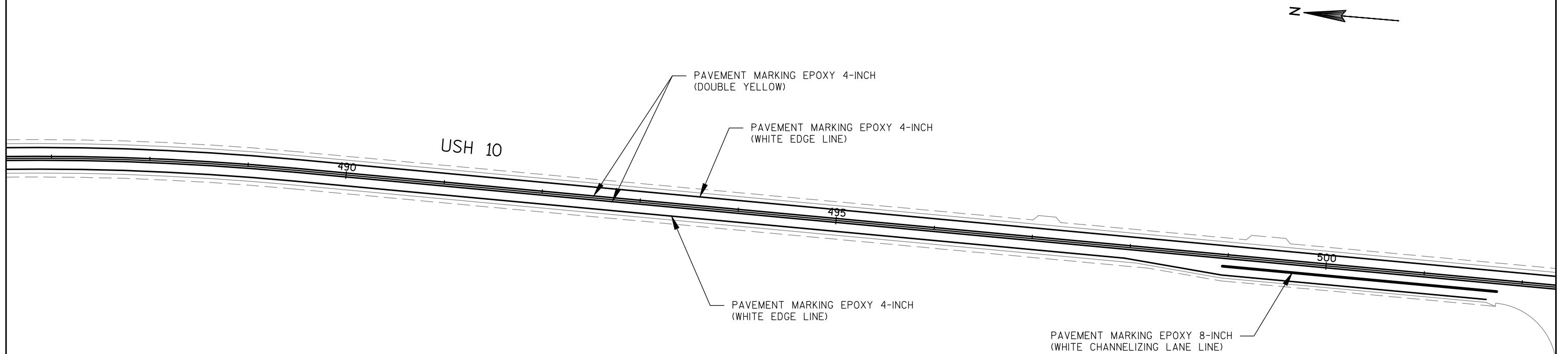
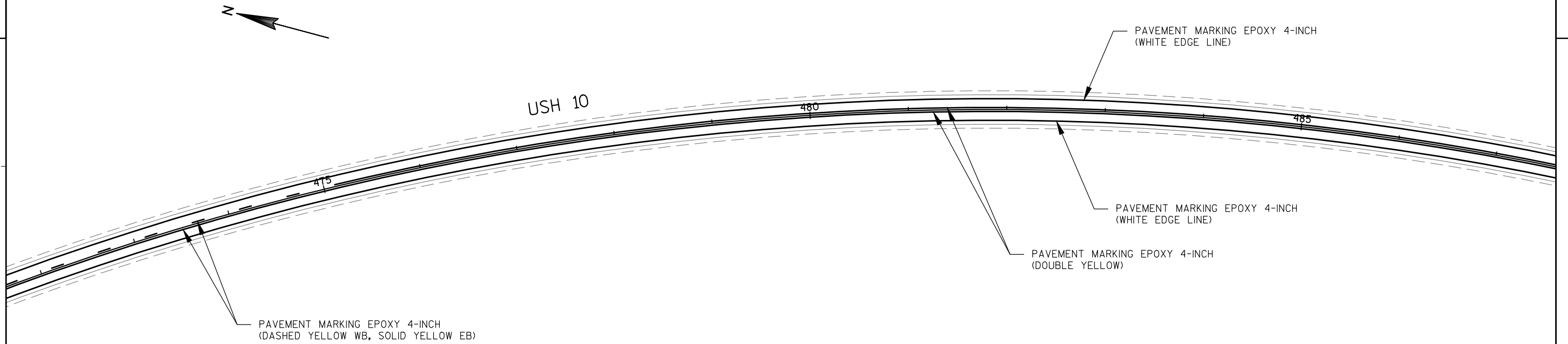
2

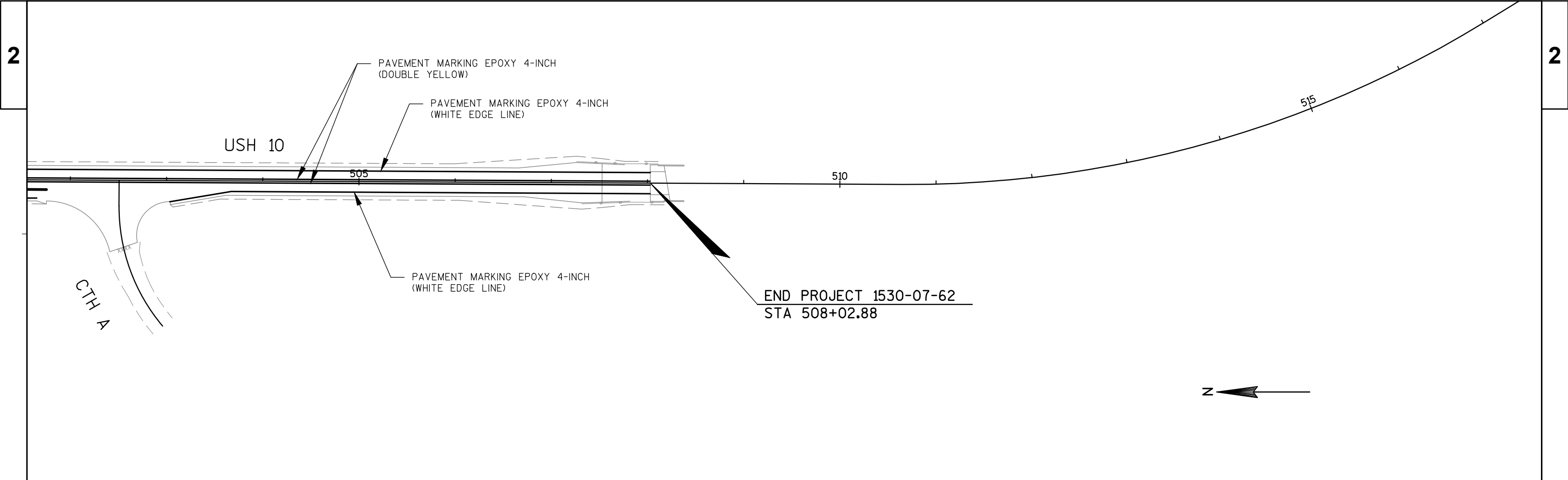


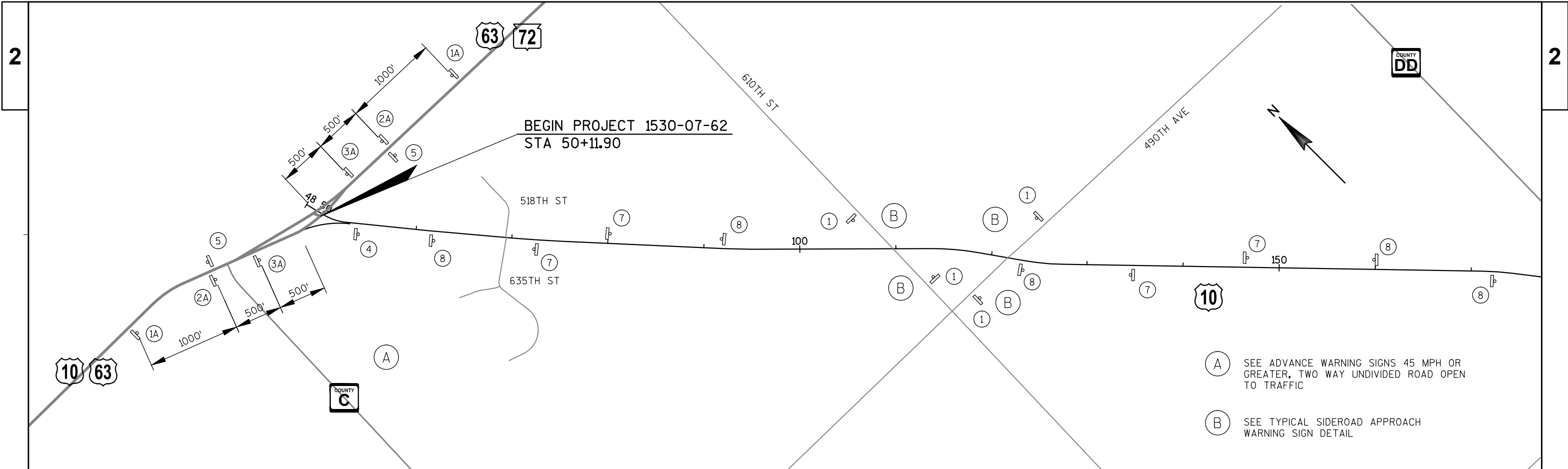
PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PAVEMENT MARKING PLAN	SHEET	-----	E
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2

2







- (A) SEE ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
- (B) SEE TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

NOTES:

REFER TO SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR SIGN SPACING.

FOR TRAFFIC CONTROL SIGNING DURING MOVING OPERATIONS, SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".

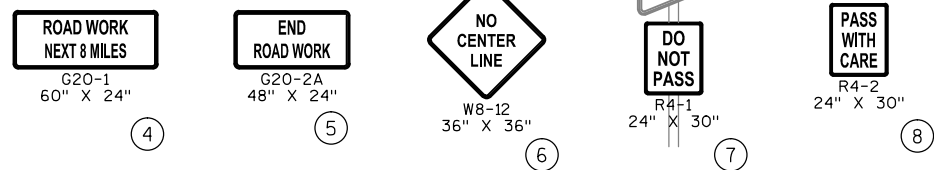
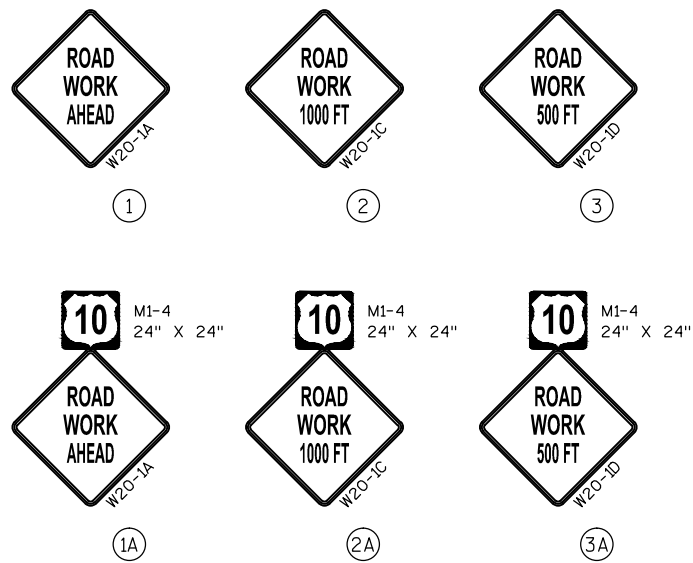
FOR TRAFFIC CONTROL SIGNING DURING SHOULDER WORK AT BEAMGUARD, SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY".

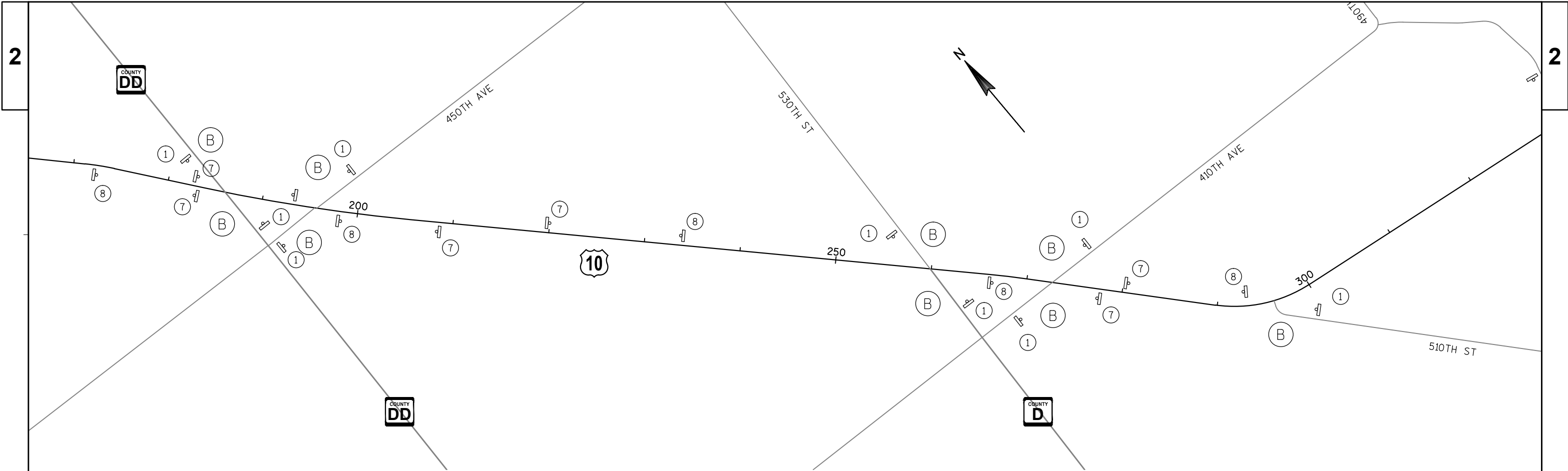
ALL SIGNS ARE 48" X 48" UNLESS NOTED.

LOCAL ACCESS SHALL BE MAINTAINED AT ALL TIMES.

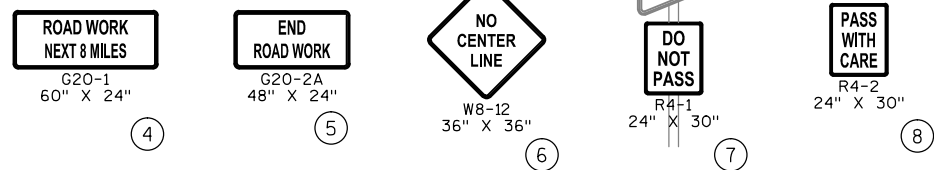
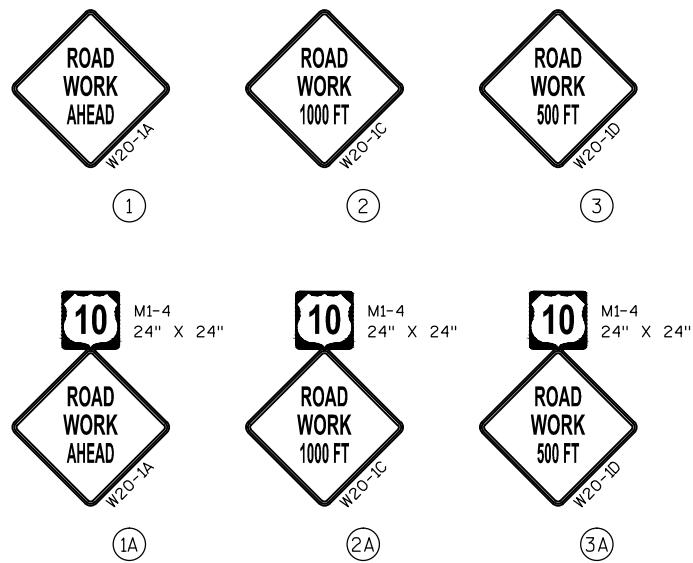
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

SIGNS NUMBERED 6, 7 AND 8 SHALL BE PLACED PRIOR TO MILLING OPERATION. THESE SIGNS SHALL REMAIN UNTIL PAVEMENT MARKING IS PLACED ON THE FINAL LIFT OF MAINLINE ASPHALTIC PAVEMENT.





- (A) SEE ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
- (B) SEE TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



NOTES:

REFER TO SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR SIGN SPACING.

FOR TRAFFIC CONTROL SIGNING DURING MOVING OPERATIONS, SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)".

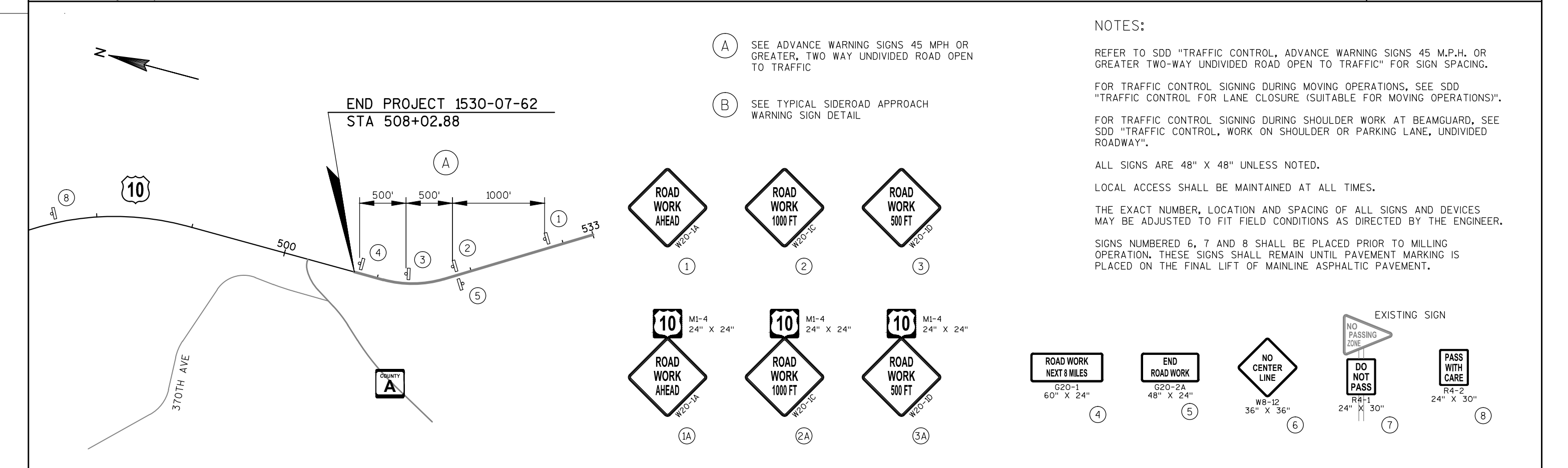
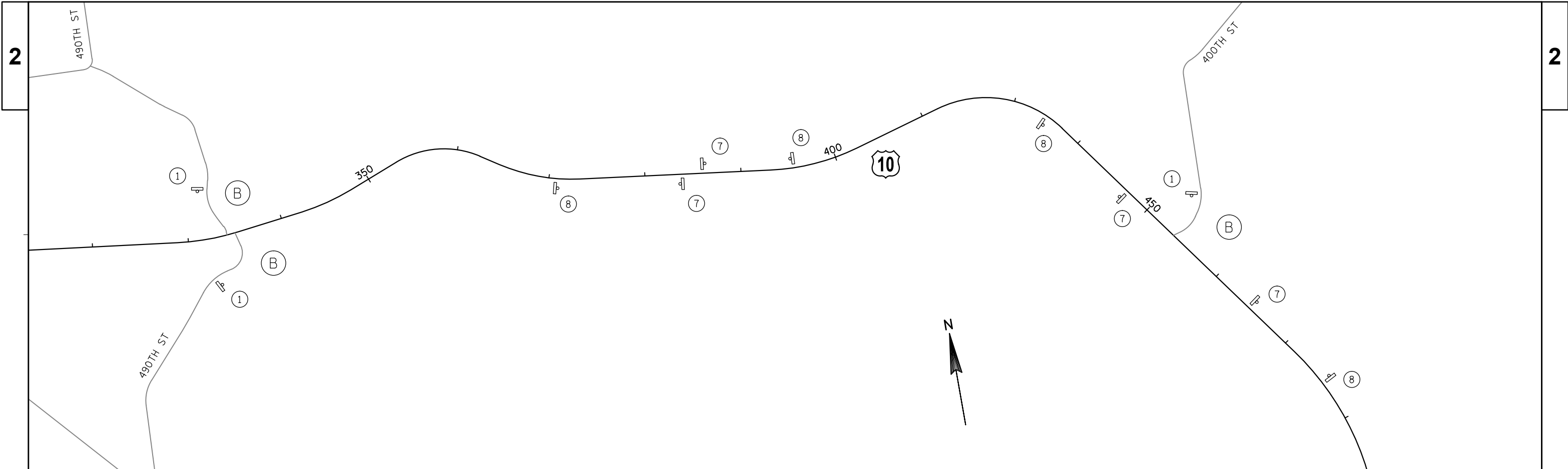
FOR TRAFFIC CONTROL SIGNING DURING SHOULDER WORK AT BEAMGUARD, SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY".

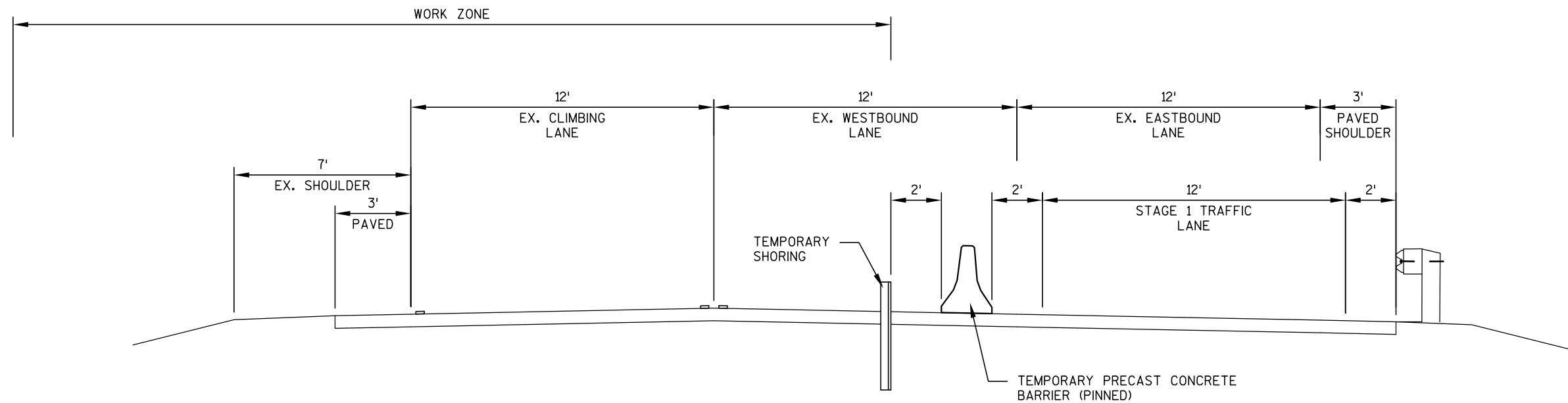
ALL SIGNS ARE 48" X 48" UNLESS NOTED.

LOCAL ACCESS SHALL BE MAINTAINED AT ALL TIMES.

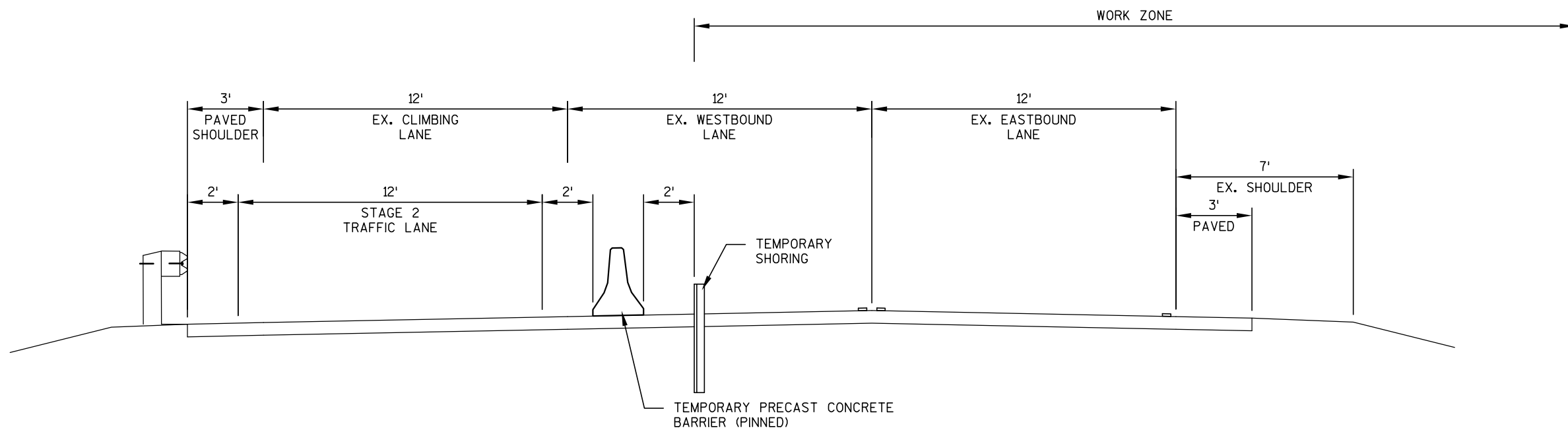
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

SIGNS NUMBERED 6, 7 AND 8 SHALL BE PLACED PRIOR TO MILLING OPERATION. THESE SIGNS SHALL REMAIN UNTIL PAVEMENT MARKING IS PLACED ON THE FINAL LIFT OF MAINLINE ASPHALTIC PAVEMENT.

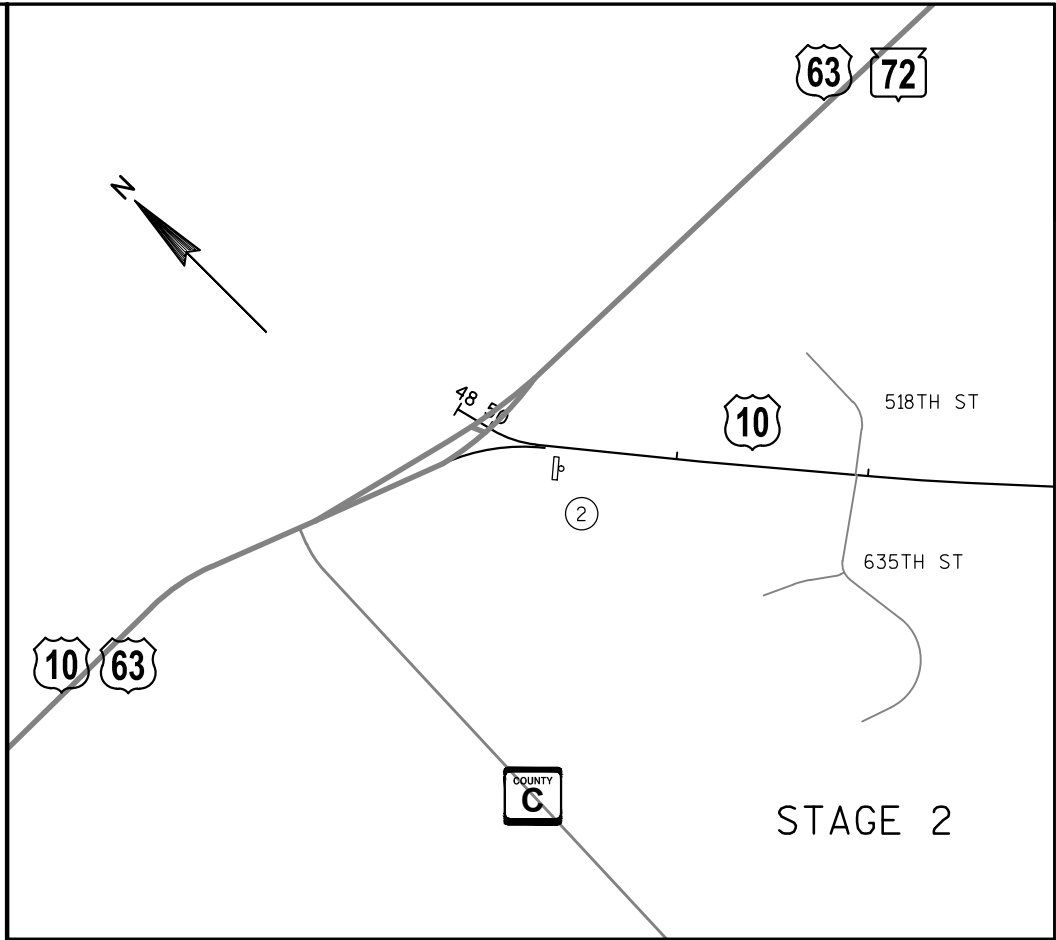
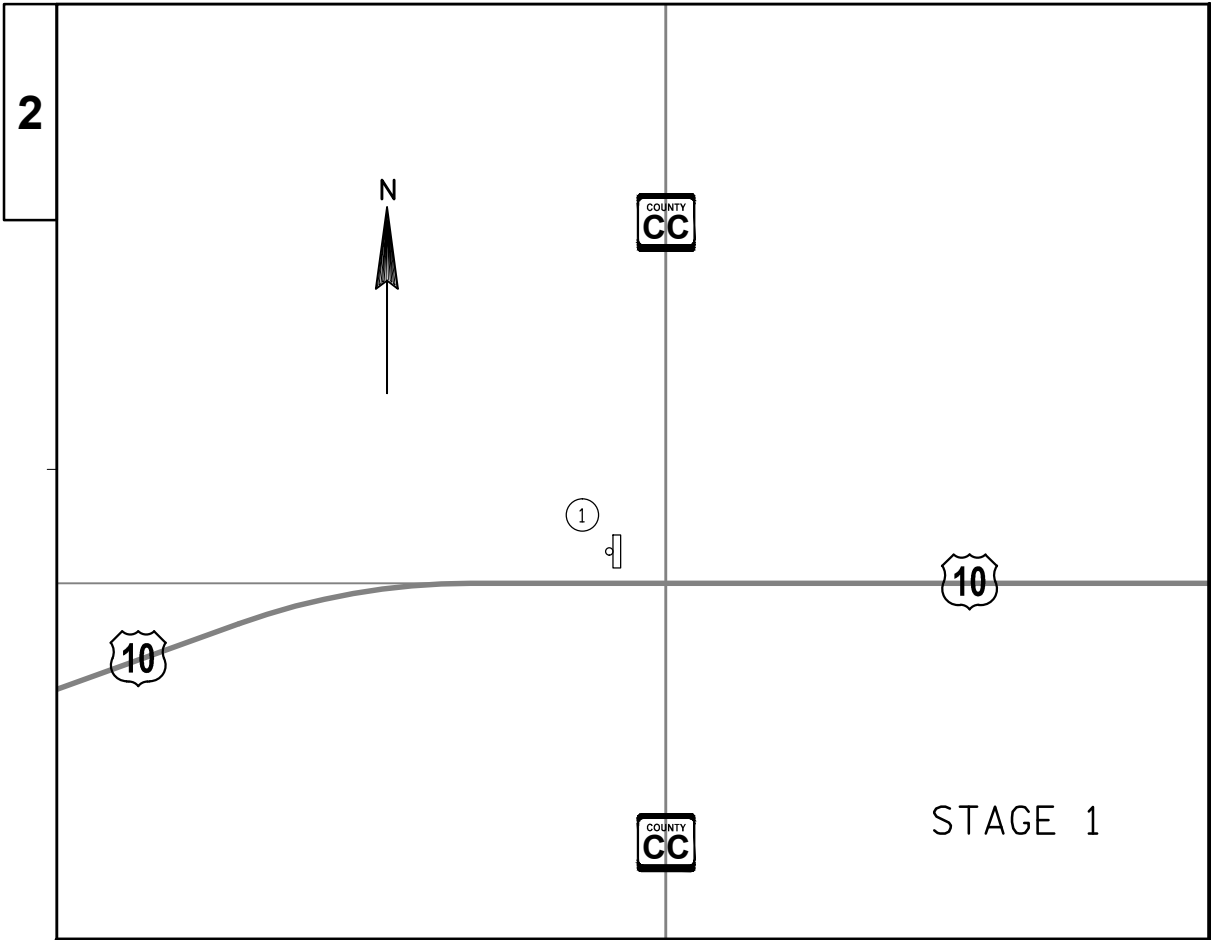




STAGE 1 - TYPICAL SECTION



STAGE 2 - TYPICAL SECTION



NOTES:

ALL SIGNS ARE 48" X 48" UNLESS NOTED.

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



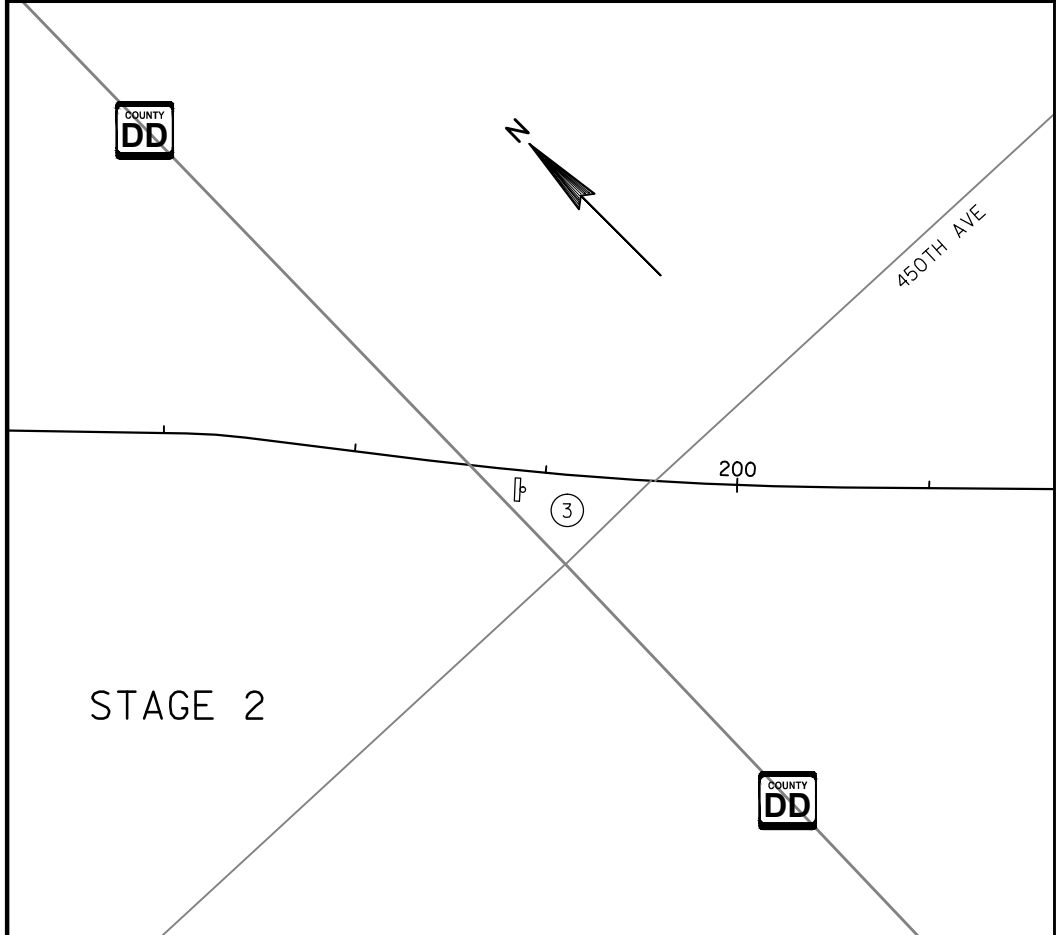
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②



③



PROJECT NO:1530-07-62

HWY:USH 10

COUNTY:PIERCE

PLAN: STAGE 1 & 2 DETAILS

SHEET

E

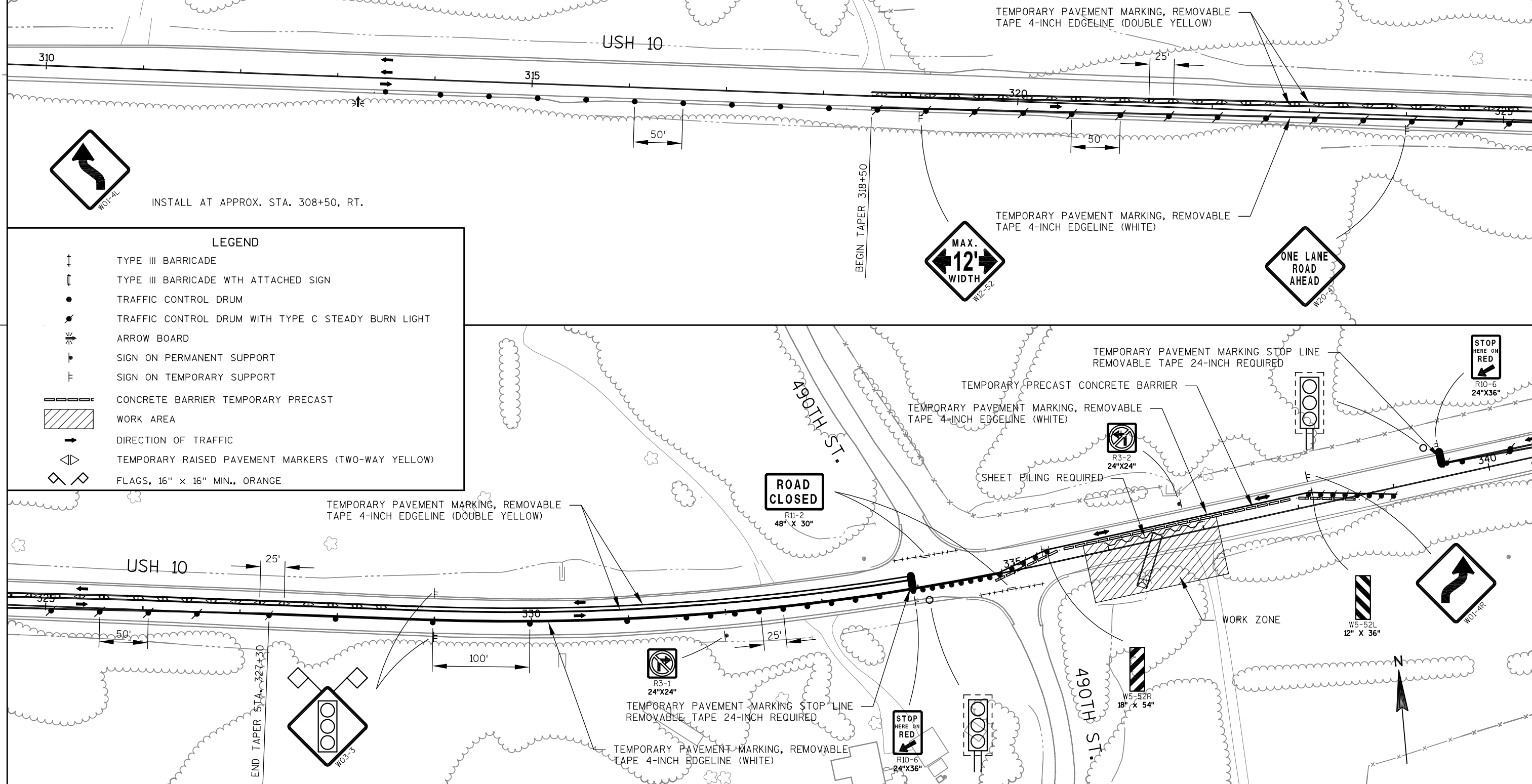
TIMING FOR ACTUATED SIGNALS	
RECOMMENDED SETTING (SECS.)	
INITIAL (MIN. GREEN)	12.00
EXTENSION	2.50
MAXIMUM GREEN	25.00
YELLOW	5.00
ALL RED	25.00



INSTALL AT APPROX. STA. 308+50, RT.

LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  CONCRETE BARRIER TEMPORARY PRECAST
-  WORK AREA
-  DIRECTION OF TRAFFIC
-  TEMPORARY RAISED PAVEMENT MARKERS (TWO-WAY YELLOW)
-  FLAGS, 16" x 16" MIN., ORANGE



PROJECT NO:1530-07-62

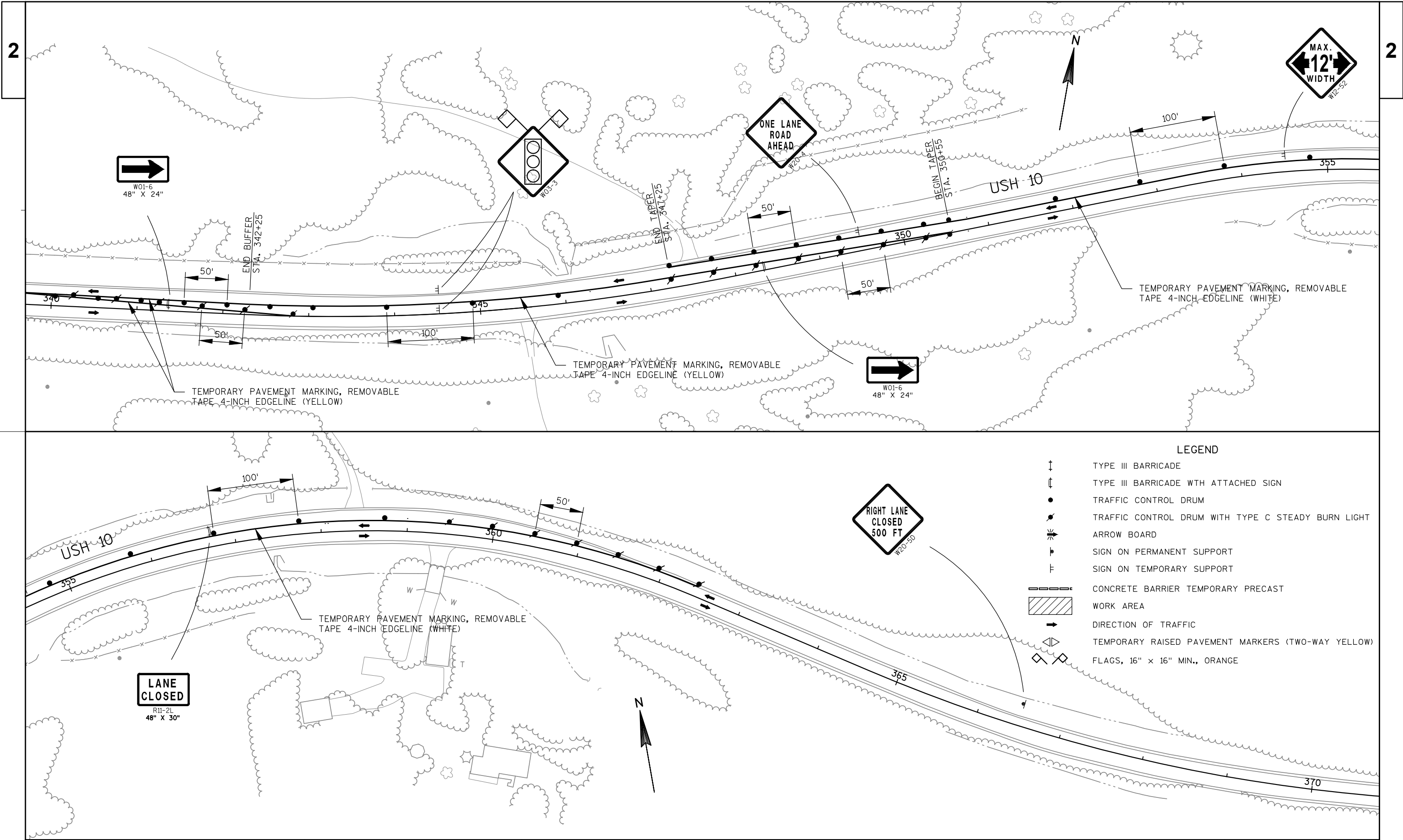
HWY: USH 10

COUNTY: PIERCE

STAGE 1 CONSTRUCTION

SHEET

E



PROJECT NO:1530-07-62

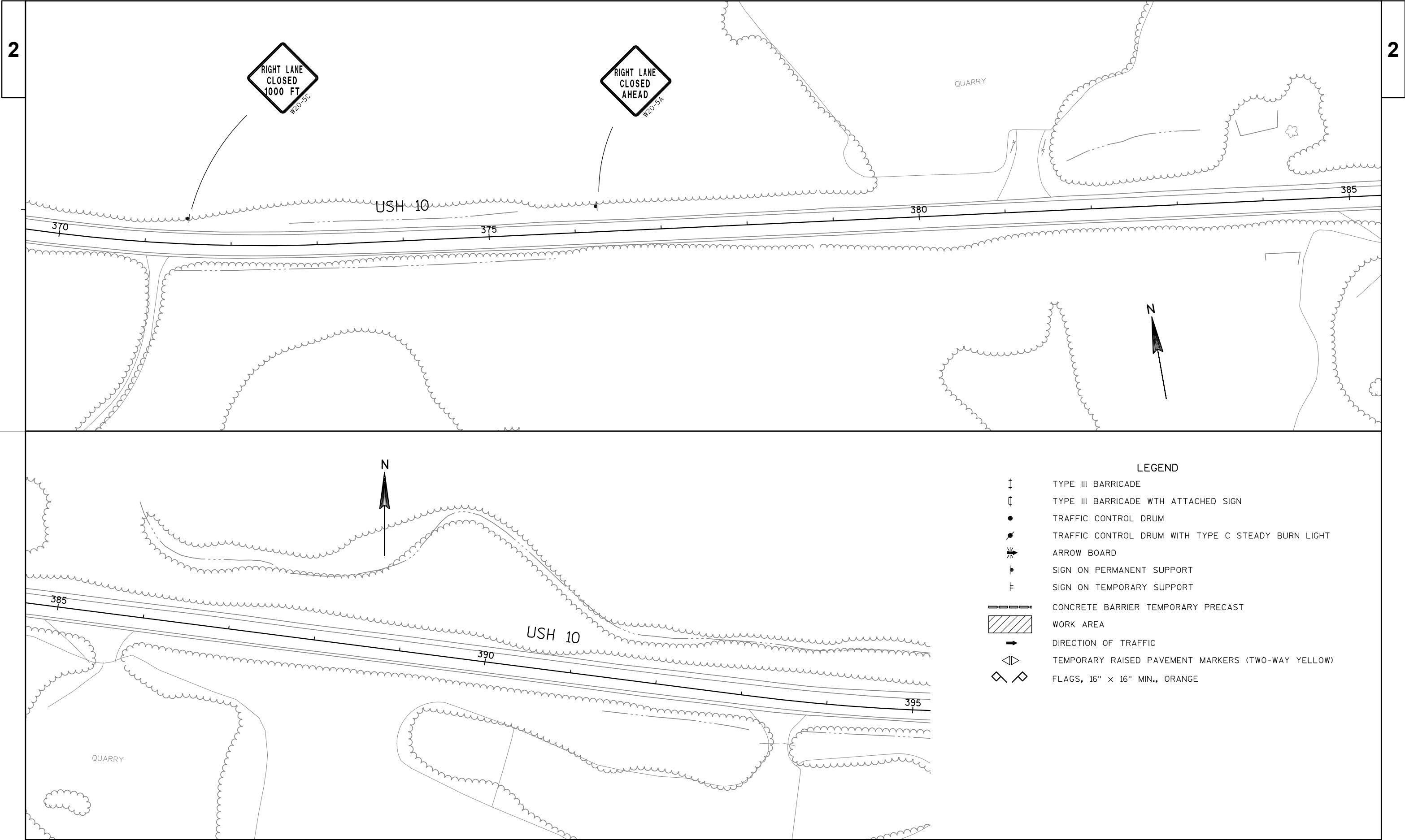
HWY:USH 10

COUNTY:PIERCE

STAGE 1 CONSTRUCTION

SHEET

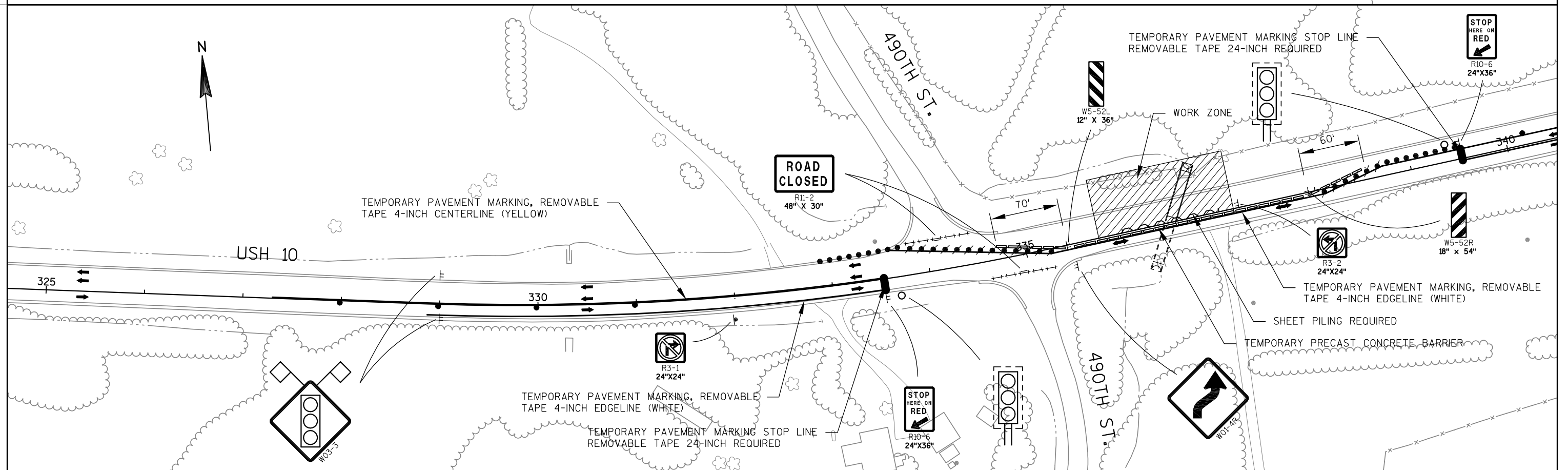
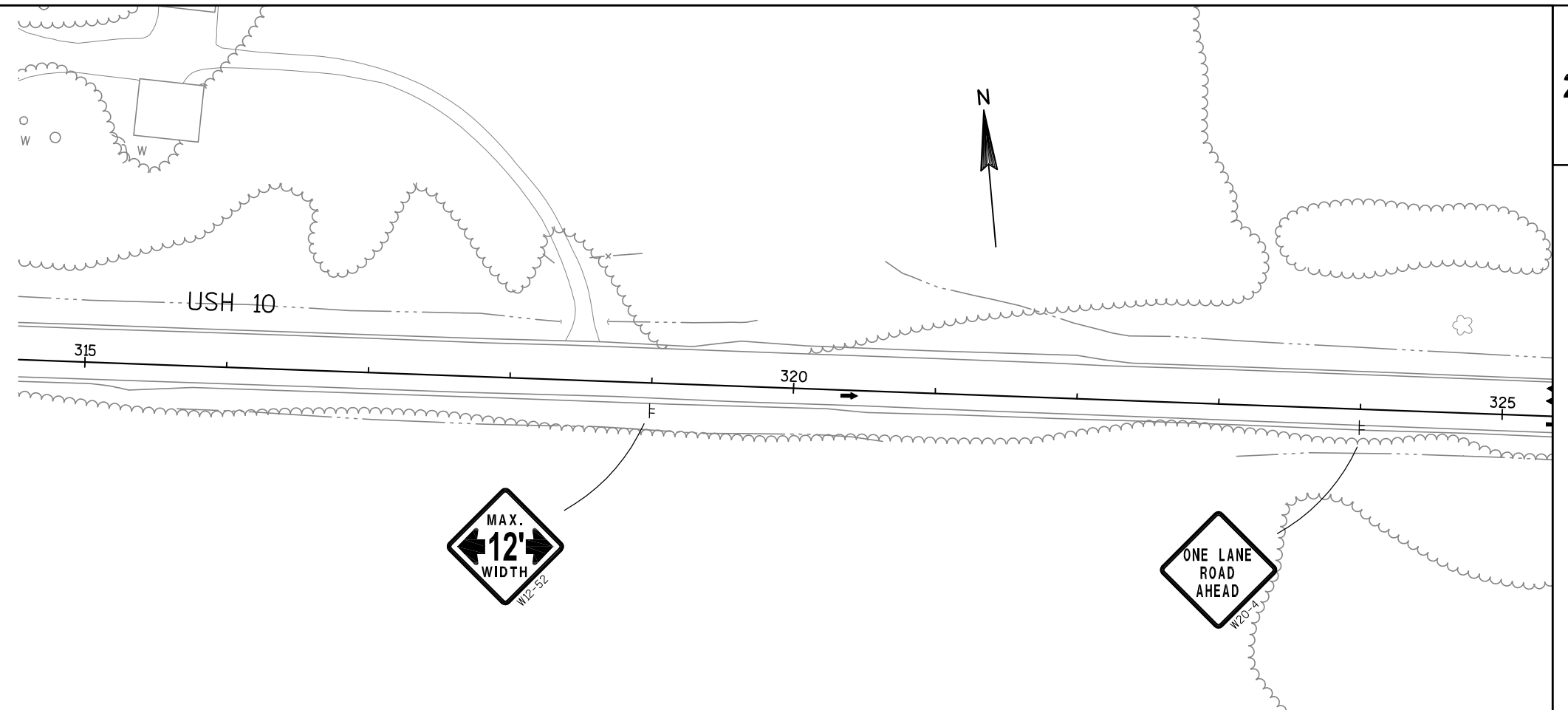
E

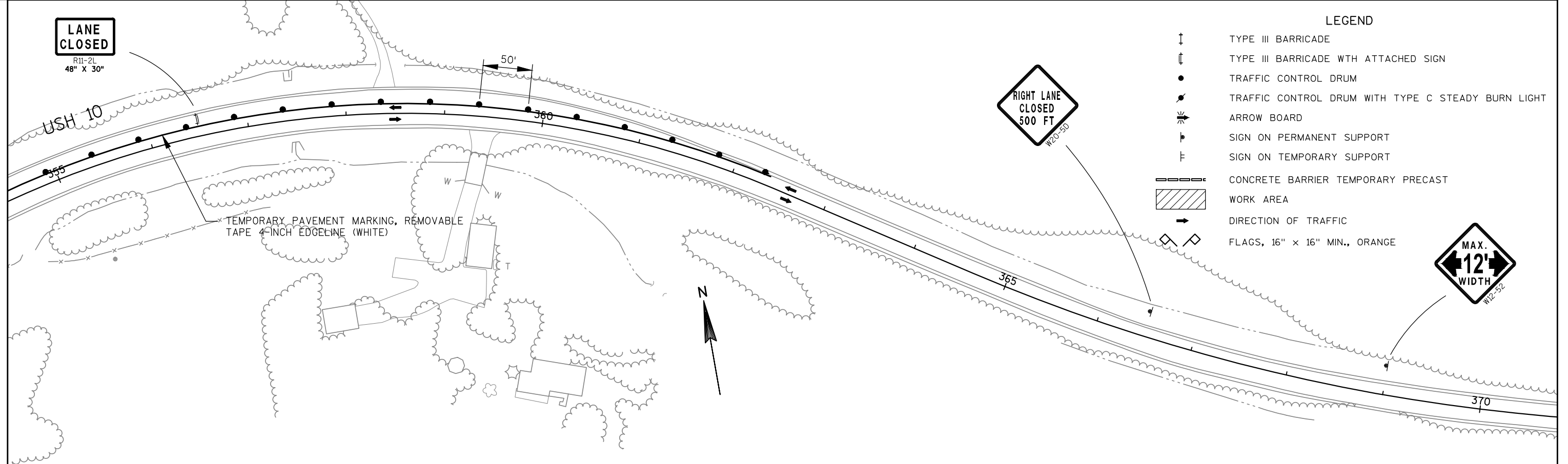
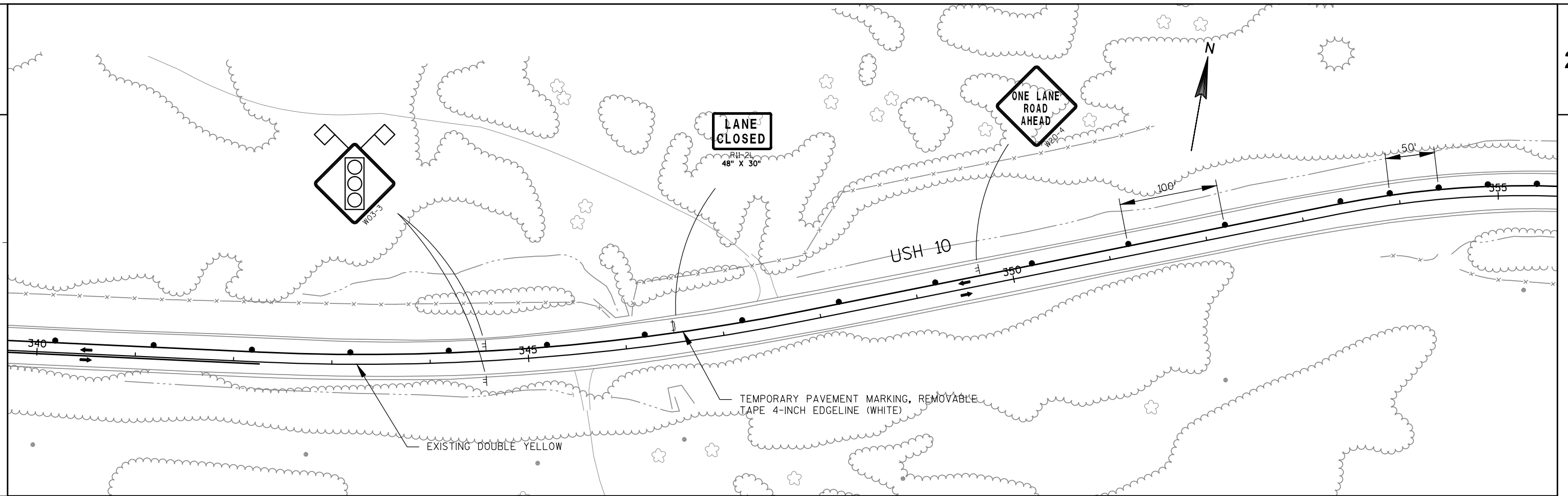


	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	DIRECTION OF TRAFFIC
	FLAGS, 16" x 16" MIN., ORANGE

RECOMMENDED SETTING (SECS.)

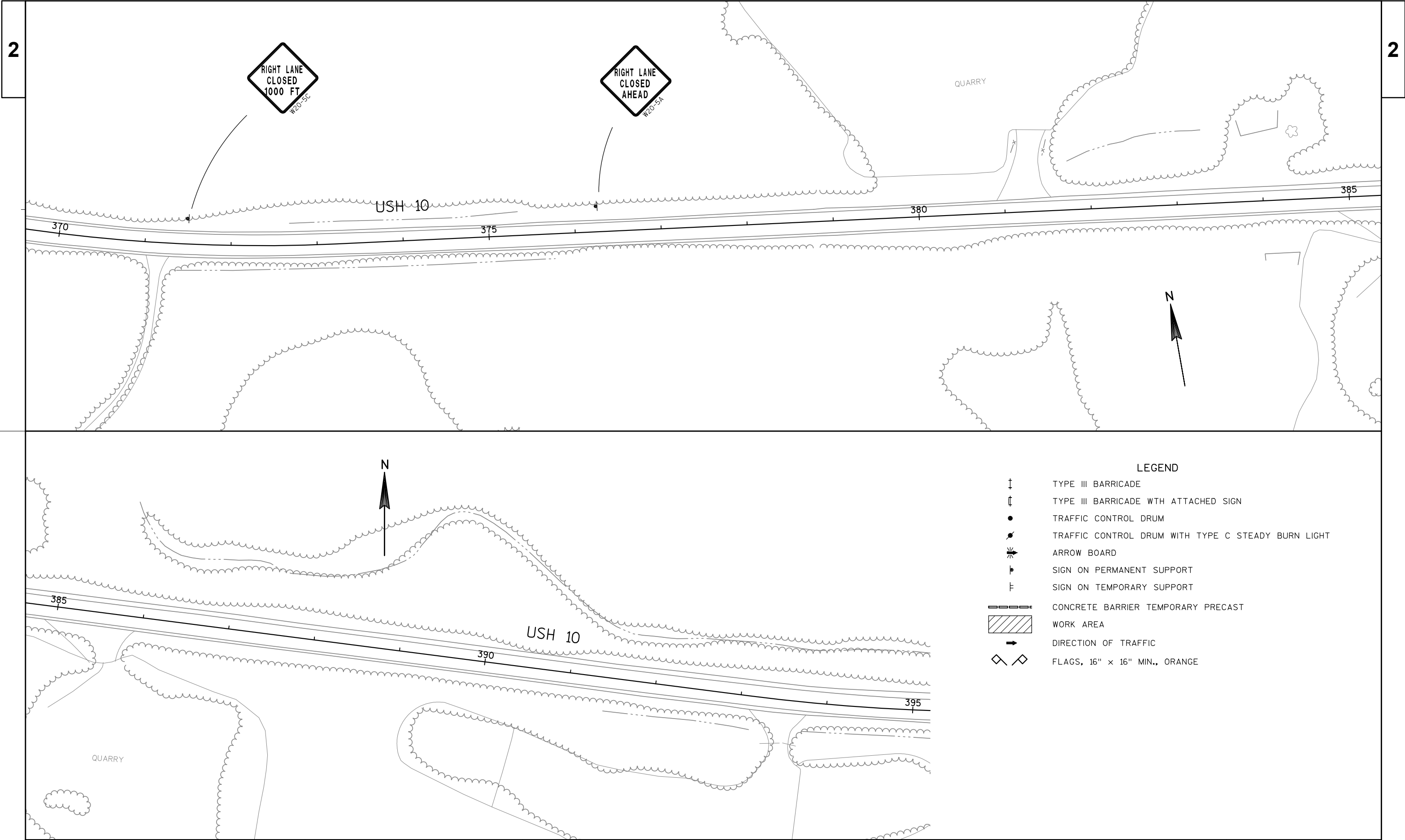
INITIAL (MIN. GREEN)	12.00
EXTENSION	2.50
MAXIMUM GREEN	25.00
YELLOW	5.00
ALL RED	25.00

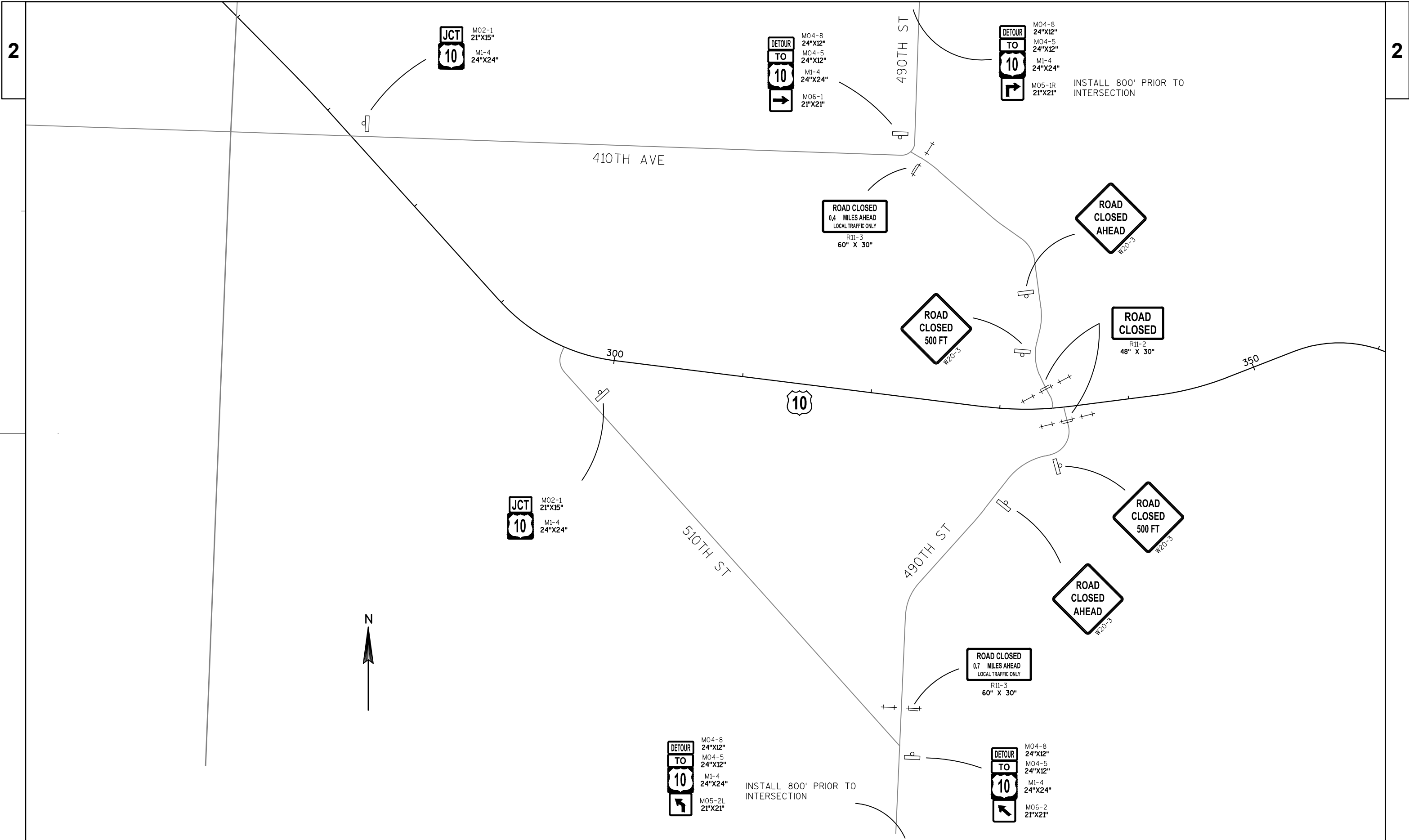




LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK AREA
- DIRECTION OF TRAFFIC
- FLAGS, 16" x 16" MIN., ORANGE





DATE 03FEB14		E S T I M A T E O F Q U A N T I T I E S			
LINE				1530-07-62	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	1.000	1.000
0020	203.0200	REMOVING OLD STRUCTURE (STATION) 01. 336+45	LS	1.000	1.000
0030	204.0100	REMOVING PAVEMENT	SY	300.000	300.000
0040	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	2,592.000	2,592.000
0050	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	151,657.000	151,657.000
0060	204.0150	REMOVING CURB & GUTTER	LF	1,539.000	1,539.000
0070	204.0170	REMOVING FENCE	LF	760.000	760.000
0080	204.9060.S	REMOVING (ITEM DESCRIPTION) 01. APRON ENDWALLS	EACH	22.000	22.000
0090	206.6000.S	TEMPORARY SHORING	SF	2,500.000	2,500.000
0100	209.0100	BACKFILL GRANULAR	CY	150.000	150.000
0110	209.0200.S	BACKFILL CONTROLLED LOW STRENGTH	CY	200.000	200.000
0120	213.0100	FINISHING ROADWAY (PROJECT) 01. 1530-07-62	EACH	1.000	1.000
0130	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	4,277.000	4,277.000
0140	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,060.000	1,060.000
0150	305.0500	SHAPING SHOULDERS	STA	892.000	892.000
0160	306.0110	SALVAGED ASPHALTIC PAVEMENT BASE	TON	2,071.000	2,071.000
0170	310.0110	BASE AGGREGATE OPEN GRADED	TON	1,330.000	1,330.000
0180	440.4410.S	INCENTIVE IRI RIDE	DOL	33,780.000	33,780.000
0190	455.0605	TACK COAT	GAL	4,210.000	4,210.000
0200	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	7,240.000	7,240.000
0210	465.0105	ASPHALTIC SURFACE	TON	3,500.000	3,500.000
0220	465.0110	ASPHALTIC SURFACE PATCHING	TON	50.000	50.000
0230	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	16.000	16.000
0240	465.0315	ASPHALTIC FLUMES	SY	27.000	27.000
0250	465.0425	ASPHALTIC SHOULDER RUMBLE STRIP 2-LANE RURAL	LF	86,000.000	86,000.000
0260	465.0450	ASPHALTIC INTERSECTION RUMBLE STRIP	SY	90.000	90.000
0270	465.0475	ASPHALT CENTER LINE RUMBLE STRIP 2-LANE RURAL	LF	40,200.000	40,200.000
0280	490.0205	SALVAGED ASPHALTIC PAVEMENT MILLING	TON	2,071.000	2,071.000
0290	520.7000	CLEANING CULVERT PIPES	EACH	18.000	18.000
0300	521.0124	CULVERT PIPE CORRUGATED STEEL 24-INCH	LF	37.000	37.000
0310	521.1524	APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS STEEL 24-INCH 6 TO 1	EACH	1.000	1.000
0320	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	7.000	7.000
0330	522.1030	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	EACH	9.000	9.000
0340	522.1036	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	EACH	4.000	4.000
0350	523.0119	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 19X30-INCH	LF	136.000	136.000
0360	523.0519	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 19X30-INCH	EACH	4.000	4.000
0370	524.0130	CULVERT PIPE SALVAGED 30-INCH	LF	16.000	16.000
0380	601.0553	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D	LF	252.000	252.000
0390	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	1,562.000	1,562.000
0400	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	387.500	387.500

DATE 03FEB14		E S T I M A T E O F Q U A N T I T I E S			
LINE				1530-07-62	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0410	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	775.000	775.000
0420	606.0100	RIPRAP LIGHT	CY	2.000	2.000
0430	606.0200	RIPRAP MEDIUM	CY	38.000	38.000
0440	606.0300	RIPRAP HEAVY	CY	27.000	27.000
0450	611.0642	INLET COVERS TYPE MS	EACH	2.000	2.000
0460	611.3902	INLETS MEDIAN 2 GRATE	EACH	1.000	1.000
0470	611.9800.S	PIPE GRATES	EACH	1.000	1.000
0480	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	34.000	34.000
0490	614.0115	ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2	EACH	1.000	1.000
0500	614.0305	STEEL PLATE BEAM GUARD CLASS A	LF	2,577.000	2,577.000
0510	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS	LF	151.500	151.500
0520	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	20.000	20.000
0530	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	7.000	7.000
0540	614.0400	ADJUSTING STEEL PLATE BEAM GUARD	LF	6,251.000	6,251.000
0550	614.0920	SALVAGED RAIL	LF	2,348.000	2,348.000
0560	614.2300	MGS GUARDRAIL 3	LF	187.500	187.500
0570	614.2340	MGS GUARDRAIL 3 L	LF	225.000	225.000
0580	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	10.000	10.000
0590	616.0100	FENCE WOVEN WIRE (HEIGHT) 01. 4-FT HEIGHT	LF	760.000	760.000
0600	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1530-07-62	EACH	1.000	1.000
0610	619.1000	MOBILIZATION	EACH	1.000	1.000
0620	625.0100	TOPSOIL	SY	3,177.000	3,177.000
0630	628.1504	SILT FENCE	LF	3,565.000	3,565.000
0640	628.1520	SILT FENCE MAINTENANCE	LF	1,790.000	1,790.000
0650	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	6.000	6.000
0660	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000
0670	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	7,262.000	7,262.000
0680	628.7504	TEMPORARY DITCH CHECKS	LF	380.000	380.000
0690	628.7555	CULVERT PIPE CHECKS	EACH	135.000	135.000
0700	629.0210	FERTILIZER TYPE B	CWT	12.000	12.000
0710	630.0120	SEEDING MIXTURE NO. 20	LB	88.000	88.000
0720	633.5200	MARKERS CULVERT END	EACH	24.000	24.000
0730	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	81.000	81.000
0740	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	14.000	14.000
0750	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	1.000	1.000
0760	637.2210	SIGNS TYPE II REFLECTIVE H	SF	464.590	464.590
0770	637.2230	SIGNS TYPE II REFLECTIVE F	SF	219.500	219.500
0780	638.2602	REMOVING SIGNS TYPE II	EACH	142.000	142.000
0790	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	93.000	93.000
0800	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0810	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1530-07-62	EACH	1.000	1.000
0820	643.0300	TRAFFIC CONTROL DRUMS	DAY	12,343.000	12,343.000
0830	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,789.000	1,789.000
0840	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,314.000	2,314.000
0850	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	1,260.000	1,260.000
0860	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	21.000	21.000
0870	643.0900	TRAFFIC CONTROL SIGNS	DAY	8,155.000	8,155.000

DATE 03FEB14		E S T I M A T E O F Q U A N T I T I E S			
LINE				1530-07-62	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0880	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01.	EACH	1.000	1.000
		1530-07-62			
0890	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	1,134.000	1,134.000
0900	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	101.000	101.000
0910	645.0130	GEOTEXTILE FABRIC TYPE R	SY	7.000	7.000
0920	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	86,357.000	86,357.000
0930	646.0116	PAVEMENT MARKING EPOXY 6-INCH	LF	1,820.000	1,820.000
0940	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	867.000	867.000
0950	646.0406	PAVEMENT MARKING SAME DAY EPOXY 4-INCH	LF	68,000.000	68,000.000
0960	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	36.000	36.000
0970	648.0100	LOCATING NO-PASSING ZONES	MI	7.250	7.250
0980	649.0100	TEMPORARY PAVEMENT MARKING 4-INCH	LF	136,000.000	136,000.000
0990	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	11,600.000	11,600.000
1000	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	48.000	48.000
1010	649.2100	TEMPORARY RAISED PAVEMENT MARKERS	EACH	40.000	40.000
1020	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	1,527.000	1,527.000
1030	650.6000	CONSTRUCTION STAKING PIPE CULVERTS	EACH	2.000	2.000
1040	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	44,600.000	44,600.000
1050	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 1530-07-62	LS	1.000	1.000
1060	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. C-47-234	LS	1.000	1.000
1070	690.0150	SAWING ASPHALT	LF	8,214.000	8,214.000
1080	690.0250	SAWING CONCRETE	LF	46.000	46.000
1090	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	1,000.000	1,000.000
1100	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	315.000	315.000
1110	SPV.0035	SPECIAL 01. WIDENING REPAIR EXCAVATION	CY	1,040.000	1,040.000
1120	SPV.0060	SPECIAL 01. WIDENING REPAIR DRAINOUT	EACH	14.000	14.000
1130	SPV.0060	SPECIAL 02. APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONC HORZ ELLIP 72X113-INCH	EACH	2.000	2.000
1140	SPV.0060	SPECIAL 03. GRADING, SHAPING, FINISHING CROSS CULVERTS	EACH	2.000	2.000
1150	SPV.0060	SPECIAL 04. GRADING, SHAPING, FINISHING DRIVEWAY MODIFICATION	EACH	2.000	2.000
1160	SPV.0090	SPECIAL 01. CONCRETE CURB AND GUTTER CURE AND SEAL TREATMENT	LF	1,814.000	1,814.000
1170	SPV.0090	SPECIAL 02. DITCH CLEANING	LF	500.000	500.000
1180	SPV.0090	SPECIAL 03. CULVERT PIPE REINFORCED CONC HORZ ELLIPTICAL CLASS HE-III 72X113-INCH	LF	97.000	97.000
1190	SPV.0105	SPECIAL 01. PREPARATION OF FOUNDATION FOR ASPHALTIC PAVING SPECIAL	LS	1.000	1.000
1200	SPV.0105	SPECIAL 02. MATERIAL TRANSFER VEHICLE	LS	1.000	1.000
1210	SPV.0105	SPECIAL 03. MILLING AND REMOVING TEMPORARY JOINT	LS	1.000	1.000
1220	SPV.0170	SPECIAL 01. REHEATING HMA PAVEMENT LONGITUDINAL JOINTS SPECIAL	STA	968.000	968.000
1230	SPV.0195	SPECIAL 01. HMA PAVEMENT TYPE E-3 SPECIAL	TON	16,488.000	16,488.000
1240	SPV.0195	SPECIAL 02. HMA PAVEMENT TYPE E-10 SPECIAL	TON	18,174.000	18,174.000

3

REMOVING SMALL CULVERT PIPES

203.0100 REMOVING SMALL CULVERT PIPES			
LOCATION	STATION	(EACH)	REMARKS
USH 10	141+40	1	30-INCH
TOTAL:		1	

REMOVING OLD STRUCTURE

203.0200 REMOVING OLD STRUCTURE			
CATEGORY	LOCATION	STATION	(LS)
0020	USH 10	336+45	1
TOTAL:		1	

REMOVING PAVEMENT

204.0100 REMOVING PAVEMENT					
LOCATION	STATION	STATION	OFFSET	(SY)	REMARKS
USH 10	55+07	- 55+32	LT	33	RUMBLE STRIP
	57+85	- 58+10	LT	34	RUMBLE STRIP
	60+50	- 60+75	LT	33	RUMBLE STRIP
	140+95	- 141+85	RT/LT	200	PIPE REPLACEMENT
TOTAL:				300	

REMOVING APRON ENDWALLS

204.9060.S.01 REMOVING APRON ENDWALLS			
LOCATION	STATION	OFFSET	(EACH)
USH 10	97+88	RT/LT	2
	141+40	RT/LT	2
	151+56	RT/LT	2
	183+08	RT/LT	2
	203+15	RT/LT	2
	274+07	RT/LT	2
	294+50	RT/LT	2
	311+70	RT/LT	2
	342+37	RT	1
	446+20	RT/LT	2
	459+55	LT	1
	482+16	RT/LT	2
	TOTAL:		22

REMOVAL QUANTITIES

**									
		204.0115		204.0120		490.0205		204.0150	
		REMOVING		REMOVING		SALVAGED			
		ASPHALTIC		ASPHALTIC		ASPHALTIC			
		SURFACE		SURFACE		PAVEMENT		REMOVING	
		BUTT JOINTS		MILLING		MILLING		CURB AND	
LOCATION	STATION	-	STATION	OFFSET	(SY)	(SY)	(TON)	GUTTER	REMARKS
USH 10	49+95	-	50+45	CL	574	--	--	--	BEGIN CONSTRUCTION 50'
	50+45	-	187+00	CL	--	45,909	1,276	--	MAINLINE
	113+02	-	114+08	RT	--	--	--	6	CURB & GUTTER EXTENSION
	118+02	-	118+63	RT	--	--	--	6	CURB & GUTTER EXTENSION
	209+00	-	252+00	CL	--	8,943	795	--	MAINLINE
	252+00	-	270+00	CL	--	6,000	--	--	MAINLINE
	270+00	-	294+80	CL	--	8,267	--	--	MAINLINE
	294+80	-	305+00	CL	--	3,400	--	--	MAINLINE
	305+00	-	508+03	CL	--	68,634	--	--	MAINLINE
	304+92	-	309+25	LT	--	192	--	--	WIDENING FOR GUARDRAIL
	305+47	-	316+18	RT	--	474	--	--	WIDENING FOR GUARDRAIL
	318+59	-	322+75	LT	--	144	--	--	WIDENING FOR GUARDRAIL
	319+22	-	324+20	RT	--	219	--	--	WIDENING FOR GUARDRAIL
	326+61	-	332+93	RT	--	279	--	--	WIDENING FOR GUARDRAIL
	334+75	-	338+88	LT	--	183	--	--	WIDENING FOR GUARDRAIL
	335+53	-	337+42	RT	--	69	--	--	WIDENING FOR GUARDRAIL
	340+88	-	343+82	RT	--	128	--	--	WIDENING FOR GUARDRAIL
	344+14	-	347+59	LT	--	121	--	--	WIDENING FOR GUARDRAIL
	352+91	-	371+55	RT	--	859	--	--	WIDENING FOR GUARDRAIL
	367+57	-	373+08	LT	--	244	--	--	WIDENING FOR GUARDRAIL
	374+43	-	380+16	LT	--	252	--	--	WIDENING FOR GUARDRAIL
	374+73	-	380+08	RT	--	236	--	--	WIDENING FOR GUARDRAIL
	381+02	-	414+15	LT	--	1,452	--	--	WIDENING FOR GUARDRAIL
	381+21	-	385+94	RT	--	196	--	--	WIDENING FOR GUARDRAIL
	394+57	-	398+49	RT	--	170	--	--	WIDENING FOR GUARDRAIL
	452+18	-	455+50	RT	--	146	--	--	WIDENING FOR GUARDRAIL
	507+53	-	508+03	CL	223	--	--	--	END CONSTRUCTION 50'
	518TH ST	10+15"B"	- 10+87"B"	PL	104	700	--	165	INCLUDES RT TURN LANE
	635TH ST	9+85"A"	- 9+42"A"	PL	102	139	--	117	30' BUTT JOINT
	610TH ST	10+20"C"	- 10+79"C"	PL	74	188	--	83	30' BUTT JOINT
		9+80"C"	- 9+34"C"	PL	110	132	--	78	30' BUTT JOINT
	490TH AVE	10+19"D"	- 10+67"D"	PL	89	108	--	76	30' BUTT JOINT
		9+82"D"	- 9+31"D"	PL	82	128	--	72	30' BUTT JOINT
	CTH DD	10+23"E"	- 11+07"E"	PL	76	395	--	111	30' BUTT JOINT
		9+77"E"	- 8+91"E"	PL	102	399	--	107	30' BUTT JOINT
	450TH AVE	9+80"F"	- 8+93"F"	PL	82	417	--	--	30' BUTT JOINT
		10+21"G"	- 10+95"G"	PL	85	270	--	--	30' BUTT JOINT
	CTH D	9+80"H"	- 8+89"H"	PL	93	474	--	--	30' BUTT JOINT
	530TH ST	10+20"H"	- 10+76"H"	PL	100	198	--	--	30' BUTT JOINT
	410TH AVE	9+79"I"	- 9+15"I"	PL	88	214	--	99	30' BUTT JOINT
SUBTOTAL					1984	150,279	2,071	920	

** SALVAGED ASPHALTIC PAVEMENT MILLING TO BE USED FOR THE RELIEF TRENCH AREAS.
SEE "WIDENING REPAIR ITEMS" TABLE FOR LOCATIONS

CONTINUED ON NEXT PAGE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

PROJECT NO: 1530-07-62

HWY: USH 10

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

E

3

REMOVAL QUANTITIES CONTINUED

**									
				204.0115	204.0120	490.0205	204.0150		
				REMOVING	REMOVING	SALVAGED	REMOVING		
				ASPHALTIC	ASPHALTIC	ASPHALTIC	CURB AND		
				SURFACE	SURFACE	PAVEMENT	GUTTER		
				BUTT JOINTS	MILLING	MILLING			
LOCATION	STATION	-	STATION	OFFSET	(SY)	(SY)	(TON)		REMARKS
410TH AVE	10+21"I"	-	10+81"I"	PL	84	199	--	94	30' BUTT JOINT
510TH ST	9+85"J"	-	9+25"J"	PL	100	248	--	--	30' BUTT JOINT
490TH ST	10+24"K"	-	10+70"K"	PL	110	159	--	144	30' BUTT JOINT
	9+85"L"	-	9+37"L"	PL	100	142	--	128	30' BUTT JOINT
	10+16"M"	-	10+75"M"	PL	89	95	--	99	30' BUTT JOINT
CTH A	9+85"N"	-	9+30"N"	PL	125	535	--	154	30' BUTT JOINT
TOTAL					2592	151,657	2,071	1539	

** SALVAGED ASPHALTIC PAVEMENT MILLING TO BE USED FOR THE RELIEF TRENCH REPAIR AREAS.
SEE "WIDENING REPAIR ITEMS" TABLE FOR LOCATIONS

PREPARING FOUNDATION ITEM

		SPV.0105.01	
		PREPARATION OF	
		FOUNDATION FOR	
		ASPHALTIC	
		PAVING SPECIAL	
PROJECT		(LS)	
1530-07-62		1	
TOTAL		1	

TEMPORARY SHORING

						206.6000.S
						TEMPORARY
						SHORING
CATEGORY	STATION	-	STATION	STAGE	(SF)	
0020	335+75	-	337+25	1	1,250	
				2	1,250	
TOTAL					2,500	

REMOVING FENCE

					204.0170
					REMOVING
					FENCE
STATION	-	STATION	OFFSET	(LF)	
334+75	-	342+22	LT	760	
TOTAL				760	

FINISHING ROADWAY (PROJECT)

		213.0100	
		FINISHING	
		ROADWAY	
PROJECT		(EACH)	
1530-07-62		1	
TOTAL		1	

SALVAGED RAIL ITEM

				614.0920
				SALVAGED
				RAIL
STATION	-	STATION	OFFSET	(LF)
114+05	-	114+58	RT	53
115+03	-	116+43	RT	140
116+86	-	118+01	RT	115
306+41	-	307+03	RT	62.5
306+50	-	307+00	LT	50
307+75	-	308+12	LT	37.5
314+80	-	315+30	RT	50
319+56	-	320+06	LT	50
320+28	-	320+65	RT	37.5
321+35	-	321+97	LT	62.5
322+70	-	323+07	RT	37.5
327+56	-	328+18	RT	62.5
331+43	-	331+80	RT	37.5
334+21	-	337+65	LT	365
335+16	-	336+63	RT	175
345+26	-	346+64	LT	137.5
354+36	-	354+73	RT	37.5
358+87	-	359+29	RT	50
359+49	-	359+91	RT	50
360+28	-	360+78	RT	50
365+45	-	365+83	RT	37.5
368+10	-	368+47	RT	37.5
368+27	-	368+65	LT	62.5
370+72	-	370+97	RT	25
370+82	-	371+23	LT	37.5
375+50	-	376+00	LT	50
375+81	-	376+18	RT	37.5
378+28	-	378+65	LT	37.5
378+70	-	379+07	RT	37.5
381+59	-	382+09	LT	50
381+66	-	382+28	RT	62.5
383+69	-	384+56	RT	87.5
395+89	-	396+26	RT	37.5
396+86	-	397+36	RT	50
412+65	-	413+02	LT	37.5
TOTAL				2,348.0

* SALVAGED RAIL IS NOTED AS REMOVING
GUARDRAIL ON PLAN SHEETS.

* ADDITIONAL QUANTITIES ELSEWHERE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

WIDENING REPAIR ITEMS

		305.0110	310.0110	306.0110	SPV.0035.01	SPV.0060.01	SPV.0195.01				
		BASE AGGREGATE DENSE 3/4 - INCH (TON)	BASE AGGREGATE OPEN GRADED (TON)	SALVAGED ASPHALTIC PAVEMENT BASE (TON)	WIDENING REPAIR EXCAVATION (CY)	WIDENING REPAIR DRAINOUT (EA)	* HMA PAVEMENT TYPE E-3 SPECIAL (TON)				
LOCATION	STATION	-	STATION	OFFSET				REMARKS			
USH 10	73+37	-	78+37	RT/LT	6	190	319	155	2	97	APPROX SALVAGE DEPTH 10.25"
	95+90	-	100+90	RT/LT	6	190	319	155	2	97	APPROX SALVAGE DEPTH 10.25"
	106+78	-	111+78	RT/LT	6	190	319	155	2	97	APPROX SALVAGE DEPTH 10.25"
	136+70	-	141+70	RT/LT	6	190	319	155	2	97	APPROX SALVAGE DEPTH 10.25"
	222+30	-	227+30	RT/LT	6	190	265	140	2	97	APPROX SALVAGE DEPTH 8.5"
	236+56	-	241+56	RT/LT	6	190	265	140	2	97	APPROX SALVAGE DEPTH 8.5"
	249+95	-	254+95	RT/LT	6	190	265	140	2	97	APPROX SALVAGE DEPTH 8.5"
	TOTAL				42	1,330	2,071	1,040	14	679	

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE
NOTE: DEPTHS SHOWN ARE APPROXIMATE AND MAY VARY BASED ON ACTUAL FIELD CONDITIONS

ASPHALTIC SURFACE

		465.0105	465.0110	465.0120	465.0425	465.0450	465.0475				
		ASPHALTIC SURFACE PATCHING (TON)	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (TON)	ASPHALTIC SURFACE (TON)	ASPHALTIC SHOULDER RUMBLE STRIP 2-LANE RURAL (LF)	ASPHALTIC INTERSECTION RUMBLE STRIP (SY)	ASPHALTIC CENTER LINE RUMBLE STRIP 2-LANE RURAL (LF)				
LOCATION	STATION	-	STATION	OFFSET				REMARKS			
USH 10	54+35	-	54+60	LT	--	--	--	--	30	--	
	56+60	-	56+85	LT	--	--	--	--	30	--	
	60+10	-	60+35	LT	--	--	--	--	30	--	
	132+59	-	132+85	RT	--	--	4	--	--	--	PE
	140+95	-	141+85	LT/RT	75	--	--	--	--	--	PIPE REPLACEMENT
	235+35	-	235+53	LT	--	--	3	--	--	--	PE
	244+29	-	244+46	RT	--	--	3	--	--	--	PE
	335+75	-	337+15	LT/RT	175	--	--	--	--	--	PIPE REPLACEMENT
	359+30	-	359+48	RT	--	--	6	--	--	--	PE
	50+11	-	508+02	LT/RT	--	--	--	86000	--	40200	
	50+11	-	508+02	LT/RT	250	--	--	--	--	--	SEE NOTE 1.
	50+11	-	508+02	LT/RT	3000	--	--	--	--	--	SEE NOTE 2.
	50+11	-	508+02	LT/RT	--	50	--	--	--	--	SEE NOTE 3.
	TOTAL				3500	50	16	86000	90	40200	

1. ASPHALTIC SURFACE TO BE USED FOR FULL DEPTH PAVEMENT REPAIRS (SUCH AS PAVEMENT EDGES THAT BREAK OR BREAK-UPS ON THE MILLED SURFACE.)
2. ASPHALTIC SURFACE TO BE USED FOR LEVELING AND WEDGING
3. ASPHALTIC SURFACE PATCHING TO BE USED TO MAKE MINOR REPAIRS (SUCH AS FILLINING POT HOLES, TRAFFIC POP-OUTS, OR FOR RAMPING AT BUTT JOINT SAW CUTS)

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

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ASPHALTIC ITEMS

* 455.0605 SPV.0170.01 SPV.0195.01 SPV.0195.02 REHEATING HMA HMA HMA PAVEMENT PAVEMENT PAVEMENT LONGITUDINAL JOINTS TYPE E-3 TYPE E-10 TACK COAT SPECIAL SPECIAL (GAL) (STA) (TON) (TON) LOCATION STATION - STATION OFFSET REMARKS									
USH 10	49+96	-	50+45	CL	14	1	53	61	BEGIN CONSTRUCTION
	50+45	-	187+00	CL	1,364	273	5,117	5,879	MAINLINE
	209+00	-	252+00	CL	358	86	1,348	1,549	MAINLINE
	252+00	-	270+00	CL	150	36	564	648	MAINLINE
	270+00	-	294+80	CL	207	50	777	893	MAINLINE
	294+80	-	305+00	CL	85	21	320	367	MAINLINE
	305+00	-	507+53	CL	1,716	381	6,475	7,450	MAINLINE
	304+92	-	309+25	LT	5	--	18	20	WIDENING FOR GUARDRAIL
	305+47	-	316+18	RT	12	--	44	50	WIDENING FOR GUARDRAIL
	318+59	-	322+75	LT	4	--	13	15	WIDENING FOR GUARDRAIL
	319+22	-	324+20	RT	5	--	20	23	WIDENING FOR GUARDRAIL
	326+61	-	332+93	RT	7	--	26	30	WIDENING FOR GUARDRAIL
	334+75	-	338+88	LT	5	--	17	19	WIDENING FOR GUARDRAIL
	335+53	-	337+42	RT	2	--	6	7	WIDENING FOR GUARDRAIL
	340+88	-	343+82	RT	3	--	12	13	WIDENING FOR GUARDRAIL
	344+14	-	347+59	LT	3	--	11	13	WIDENING FOR GUARDRAIL
	352+91	-	371+55	RT	21	--	77	89	WIDENING FOR GUARDRAIL
	367+57	-	373+08	LT	6	--	23	26	WIDENING FOR GUARDRAIL
	374+43	-	380+16	LT	6	--	23	27	WIDENING FOR GUARDRAIL
	374+73	-	380+08	RT	6	--	22	25	WIDENING FOR GUARDRAIL
	381+02	-	414+15	LT	36	--	134	154	WIDENING FOR GUARDRAIL
	381+21	-	385+94	RT	5	--	18	21	WIDENING FOR GUARDRAIL
	394+57	-	398+49	RT	4	--	16	18	WIDENING FOR GUARDRAIL
	452+18	-	455+50	RT	4	--	13	15	WIDENING FOR GUARDRAIL
	507+53	-	508+03	CL	6	1	21	24	END CONSTRUCTION
518TH ST	10+15"B"	-	10+87"B"	PL	20	12	74	85	INCLUDES RT TURN LANE
635TH ST	9+85"A"	-	9+42"A"	PL	6	6	22	26	
610TH ST	10+20"C"	-	10+79"C"	PL	7	6	24	28	
	9+80"C"	-	9+34"C"	PL	6	5	22	26	
490TH AVE	10+19"D"	-	10+67"D"	PL	5	4	18	21	
	9+82"D"	-	9+31"D"	PL	5	4	19	22	
CTH DD	10+23"E"	-	11+07"E"	PL	12	10	44	50	
	9+77"E"	-	8+91"E"	PL	13	8	46	53	
450TH AVE	9+80"F"	-	8+93"F"	PL	12	8	46	53	
	10+21"G"	-	10+95"G"	PL	9	6	33	38	
CTH D	9+80"H"	-	8+89"H"	PL	14	8	52	60	
530TH ST	10+20"H"	-	10+76"H"	PL	7	6	28	32	
410TH AVE	9+79"I"	-	9+15"I"	PL	8	6	28	32	
	10+21"I"	-	10+81"I"	PL	7	6	26	30	
510TH ST	9+85"J"	-	9+25"J"	PL	9	5	32	37	
490TH ST	10+24"K"	-	10+70"K"	PL	7	5	25	29	
	9+85"L"	-	9+37"L"	PL	6	5	23	26	
	10+16"M"	-	10+75"M"	PL	5	5	17	20	
CTH A	9+85"N"	-	9+30"N"	PL	17	4	61	70	
TOTAL:					4,210	968	15,809	18,174	

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

PROJECT NO: 1530-07-62

HWY: USH 10

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET 77

E

ASPHALTIC FLUMES

465.0315 ASPHALTIC FLUMES			
STATION	-	STATION	OFFSET (SY)
273+48	-	273+63	42'LT 27
TOTAL			27

DITCH CLEANING

SPV.0090.02 (LF)		
76+70	RT	30
97+82	LT	15
97+85	RT	15
108+65	LT	50
108+65	RT	15
151+55	LT	15
151+55	RT	15
203+15	LT	15
203+15	RT	15
238+10	LT	15
238+10	RT	15
294+50	RT	100
311+70	LT	15
311+70	RT	15
320+91	LT	15
342+48	LT	15
356+37	LT	20
415+60	RT	15
438+38	RT	15
459+55	LT	15
482+16	LT	15
482+16	RT	15
10+80'I	LT	15
10+72'K'	LT	15
TOTAL		500

3

3

3

CULVERT PIPE ITEMS																
			521.0124	521.1524	522.1024	522.1030	522.1036	520.7000	523.0119	523.0519	524.0130	633.5200				
			APRON ENDWALLS FOR CULVERT PIPE		APRON ENDWALLS FOR CULVERT PIPE	APRON ENDWALLS FOR CULVERT PIPE	APRON ENDWALLS FOR CULVERT PIPE	CLEANING CULVERT PIPES		CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 19X30-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 19X30-INCH	CULVERT PIPE SALVAGED 30-INCH	* MARKERS CULVERT END	INLET ELEVATION	DISCHARGE ELEVATION	REMARKS
LOCATION	STATION	OFFSET	CULVERT PIPE CORRUGATED STEEL 24-INCH (LF)	SLOPED SIDE DRAINS STEEL 24-INCH 6 TO 1 (EACH)	REINFORCED CONCRETE 24-INCH (EACH)	REINFORCED CONCRETE 30-INCH (EACH)	REINFORCED CONCRETE 36-INCH (EACH)	(EACH)	(LF)	(EACH)	(EACH)	(LF)	(EACH)			
USH 10	97+88		--	--	--	2	--	1	--	--	--	--	2			
610TH ST	10+55"C"		--	--	--	--	--	1	--	--	--	--	--			
USH 10	108+65		--	--	--	--	--	1	--	--	--	--	--			
USH 10	129+50		--	--	--	--	--	1	--	--	--	--	--			
USH 10	141+40	34' LT/RT	--	--	--	--	--	--	136	4	--	--	2	943.01	942.40	2X56' CPRC-HE
USH 10	151+56		--	--	--	2	--	--	--	--	--	--	2			
USH 10	161+11		--	--	--	2	--	--	--	--	--	--	2			
USH 10	183+08		--	--	--	1	--	1	--	--	--	16	2			SEE NOTE 2
USH 10	203+15		--	--	2	--	--	1	--	--	--	--	--			
USH 10	226+70		--	--	--	--	--	1	--	--	--	--	--			
USH 10	274+07		--	--	--	2	--	1	--	--	--	--	2			
USH 10	294+50		--	--	--	--	2	--	--	--	--	--	2			
USH 10	311+70		--	--	2	--	--	--	--	--	--	--	2			
USH 10	321+31		--	--	--	--	--	1	--	--	--	--	--			
490TH ST	10+72"K"	LT	--	--	--	--	--	1	--	--	--	--	--			
USH 10	330+31	LT	--	--	--	--	--	1	--	--	--	--	--			C-47-49 BOX CULVERT
USH 10	342+17	RT	37	1	--	--	--	--	--	--	--	--	1			SEE NOTE 1
USH 10	357+45	LT	--	--	--	--	--	1	--	--	--	--	--			C-47-50 BOX CULVERT
USH 10	384+08	RT	--	--	--	--	--	1	--	--	--	--	--			B-47-80 BOX CULVERT
USH 10	405+50	RT	--	--	--	--	--	1	--	--	--	--	--			24" CULVERT PIPE
USH 10	415+60	RT	--	--	--	--	--	1	--	--	--	--	--			24" CULVERT PIPE
USH 10	438+38	RT	--	--	--	--	--	1	--	--	--	--	--			36" CULVERT PIPE
USH 10	446+20	RT	--	--	--	--	2	--	--	--	--	--	2			
USH 10	454+02	RT	--	--	--	--	--	1	--	--	--	--	--			C-47-51 BOX CULVERT
USH 10	459+55	LT	--	--	1	--	--	--	--	--	--	--	1			
USH 10	482+16	RT	--	--	2	--	--	1	--	--	--	--	2			24" CULVERT PIPE

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE

NOTES:

- 1.) MINIMUM THICKNESS FOR STEEL = 0.064 INCHES
2.) RELAY SOUTH END OF EXISTING PIPE TO REPAIR SEPARATED JOINT.

CULVERT PIPE REINFORCED CONCRETE

			209.0200.S	611.9800.S	SPV.0060.02	SPV.0090.02	606.0300	633.5200	645.0120					
			BACKFILL CONTROLLED LOW		PIPE GRATES	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 72x113-INCH	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 72x113-INCH	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-III 72x113-INCH	RIPRAP HEAVY	* MARKERS CULVERT END	* GEOTEXTILE FABRIC TYPE HR	JOINT TIES		
CATEGORY	ROADWAY	UPSTREAM STATION OFFSET ELEV	DOWNSTREAM STATION OFFSET ELEV	SLOPE	(CY)	(EA)	(EA)	(LF)	(CY)	(EACH)	(SY)	(EACH)	REMARKS	
0020	USH 10	336+28.65 37.3' RT 849.25	336+75.60 47.4' LT 849.00	0.25%	200	1	2	97	27	2	80	12	C-47-234	
TOTAL					200		2	97	27	2	80	12		

PROPOSED INVERTS BURIED 1-FOOT BELOW EXISTING STREAMBED.

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

PROJECT NO: 1530-07-62

HWY: USH 10

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

E

CONCRETE CURB AND GUTTER ITEMS

					601.0553	601.0557	611.3902	611.0642	SPV.0090.01
					CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	INLETS MEDIAN 2 GRATE (EACH)	INLET COVERS TYPE MS (EACH)	CONCRETE CURB AND GUTTER CURE AND SEAL TREATMENT (LF)
LOCATION	STATION	-	STATION	OFFSET	(LF)	(LF)			
USH 10	113+02	-	114+08	RT	106	--	--	--	106
USH 10	118+02	-	118+63	RT	61	--	--	--	61
USH 10	342+00	-	343+20	RT	--	120	--	--	120
USH 10	342+37	-	-	RT	--	--	1	2	--
518TH ST	10+15"B"	-	10+87"B"	LT/RT	--	165	--	--	165
635TH ST	9+85"A"	-	9+42"A"	LT/RT	--	117	--	--	117
610TH ST	10+20"C"	-	10+79"C"	LT/RT	--	83	--	--	83
610TH ST	9+80"C"	-	9+34"C"	LT/RT	--	78	--	--	78
490TH AVE	10+19"D"	-	10+67"D"	LT/RT	40	36	--	--	76
490TH AVE	9+82"D"	-	9+31"D"	LT/RT	45	27	--	--	72
CTH DD	10+23"E"	-	11+07"E"	LT/RT	--	111	--	--	111
CTH DD	9+77"E"	-	8+91"E"	LT/RT	--	107	--	--	107
410TH AVE	9+79"I"	-	9+15"I"	LT/RT	--	99	--	--	99
410TH AVE	10+21"I"	-	10+81"I"	LT/RT	--	94	--	--	94
490TH ST	10+24"K"	-	10+70"K"	LT/RT	--	144	--	--	144
490TH ST	9+85"L"	-	9+37"L"	LT/RT	--	128	--	--	128
400TH ST	10+16"M"	-	10+75"M"	LT/RT	--	99	--	--	99
CTH A	9+85"N"	-	9+30"N"	LT/RT	--	154	--	--	154
TOTAL:					252	1562	1	2	1814

RIP RAP AND GEOTEXTILE FABRIC

		606.0100	606.0200	645.0120*	645.0130
		RIPRAP LIGHT (CY)	RIPRAP MEDIUM (CY)	GEOTEXTILE FABRIC TYPE HR (SY)	GEOTEXTILE FABRIC TYPE R (SY)
STATION	OFFSET				
52+39	69' RT	2	--	--	7
161+11	36' RT	--	5	3	--
311+71	45' RT	--	3	2	--
320+91	35' LT	--	16	8	--
342+00	30' RT	--	7	4	--
342+71	58' LT	--	7	4	--
TOTAL		2	38	21	7

* ADDITIONAL QUANTITIES LOCATED ELSEWHERE

TEMPORARY PRECAST BARRIER

					603.8000	603.8125
					CONCRETE BARRIER TEMPORARY PRECAST	
STATION -	STATION	STAGE	DELIVERED (LF)	INSTALLED (LF)		
334+65 -	339+90	1	387.5	387.5		
335+25 -	340+00	2	--	387.5		
TOTAL			387.5	775		

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

GUARDRAIL ITEMS												
		614.0115	614.0305	614.0345	614.0370	614.0390	614.0400	614.2300	614.2340	614.2610		
		ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2	STEEL PLATE BEAM GUARD CLASS A	STEEL PLATE BEAM GUARD SHORT RADIUS	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	ADJUSTING STEEL PLATE BEAM GUARD	MGS GUARDRAIL 3	MGS GUARDRAIL 3L (LF)	MGS GUARDRAIL TREATMENT EAT		
STATION	OFFSET	(EACH)	(LF)	(LF)	(EACH)	(EACH)	(LF)	(LF)	3L (LF)	(EACH)		
113+00	-	113+53	RT	--	--	--	--	--	--	1		
113+53	-	114+03	RT	--	--	--	--	50	--	--		
114+03	-	114+56	RT	--	--	--	--	--	--	1		
114+96	-	115+49	RT	--	--	--	--	--	--	1		
115+49	-	115+99	RT	--	--	--	--	50	--	--		
115+99	-	116+52	RT	--	--	--	--	--	--	1		
116+92	-	117+45	RT	--	--	--	--	--	--	1		
117+45	-	118+08	RT	--	--	--	--	62.5	--	--		
118+08	-	118+61	RT	--	--	--	--	--	--	1		
305+50	-	306+00	LT	--	--	1	--	--	--	--		
306+00	-	307+00	LT	--	100	--	--	--	--	--		
306+03	-	306+53	RT	--	--	1	--	--	--	--		
306+53	-	307+03	RT	--	50	--	--	--	--	--		
307+00	-	307+75	LT	--	--	--	75	--	--	--		
307+03	-	314+80	RT	--	--	--	777	--	--	--		
307+75	-	308+25	LT	--	50	--	--	--	--	--		
308+25	-	308+75	LT	--	--	1	--	--	--	--		
314+80	-	315+05	RT	--	25	--	--	--	--	--		
315+05	-	315+55	RT	--	--	1	--	--	--	--		
319+06	-	319+56	LT	--	--	1	--	--	--	--		
319+56	-	320+06	LT	--	50	--	--	--	--	--		
319+78	-	320+28	RT	--	--	1	--	--	--	--		
320+28	-	320+65	RT	--	37.5	--	--	--	--	--		
320+06	-	321+35	LT	--	--	--	129	--	--	--		
320+65	-	322+70	RT	--	--	--	205	--	--	--		
321+35	-	321+72	LT	--	37.5	--	--	--	--	--		
321+72	-	322+22	LT	--	--	1	--	--	--	--		
322+70	-	323+07	RT	--	37.5	--	--	--	--	--		
323+07	-	323+57	RT	--	--	1	--	--	--	--		
327+68	-	328+18	RT	--	50	--	--	--	--	--		
327+18	-	327+68	RT	--	--	1	--	--	--	--		
328+18	-	331+43	RT	--	--	--	325	--	--	--		
331+43	-	331+80	RT	--	37.5	--	--	--	--	--		
331+80	-	332+30	RT	--	--	1	--	--	--	--		
334+21	-	337+78	LT	1	375.0	--	--	--	--	--		
335+16	-	335+50	RT	--	--	63	1	--	--	--		
335+50	-	336+63	RT	--	112.5	--	--	--	--	--		
336+63	-	336+78	RT	--	--	25	1	--	--	--		
337+78	-	338+28	LT	--	--	1	--	--	--	--		
SUBTOTAL				1	962.5	87.5	11	2	1511	162.5	0	6

CONTINUED ON NEXT PAGE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

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GUARDRAIL ITEMS CONTINUED												
		614.0115	614.0305	614.0345	614.0370	614.0390	614.0400	614.2300	614.2340	614.2610		
		ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2	STEEL PLATE BEAM GUARD CLASS A	STEEL PLATE BEAM GUARD SHORT RADIUS	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	ADJUSTING STEEL PLATE BEAM GUARD	MGS GUARDRAIL 3	MGS GUARDRAIL 3L (LF)	MGS GUARDRAIL TREATMENT EAT (EACH)		
STATION	OFFSET	(EACH)	(LF)	(LF)	(EACH)	(EACH)	(LF)	(LF)	3L (LF)	(EACH)		
344+90	-	--	--	--	--	--	--	--	--	1		
345+43	-	--	--	--	--	--	--	--	112.5	--		
346+56	-	--	--	--	--	--	--	--	--	1		
353+48	-	--	--	--	1	--	--	--	--	--		
353+98	-	--	75	--	--	--	--	--	--	--		
357+73	-	--	--	--	--	--	114	--	--	--		
358+87	-	--	25	--	--	--	--	--	--	--		
359+12	-	--	--	8	--	--	--	--	--	--		
359+29	-	--	--	--	--	1	--	--	--	--		
359+49	-	--	--	--	--	1	--	--	--	--		
359+49	-	--	--	16	--	--	--	--	--	--		
359+65	-	--	112.5	--	--	--	--	--	--	--		
360+78	-	--	--	--	--	--	465	--	--	--		
365+45	-	--	302	--	--	--	--	--	--	--		
368+15	-	--	--	--	1	--	--	--	--	--		
368+65	-	--	62.5	--	--	--	--	--	--	--		
368+69	-	--	--	--	--	--	217	--	--	--		
368+65	-	--	--	--	--	--	207	--	--	--		
370+86	-	--	512.5	--	--	--	--	--	--	--		
370+72	-	--	25	--	--	--	--	--	--	--		
370+97	-	--	--	8	--	--	--	--	--	--		
371+03	-	--	--	--	--	1	--	--	--	--		
375+31	-	--	--	--	1	--	--	--	--	--		
375+81	-	--	37.5	--	--	--	--	--	--	--		
SUBTOTAL		0	1152	32	3	3	1003	0	112.5	2		

CONTINUED ON NEXT PAGE

FENCING ITEMS

				616.0100
				FENCE WIRE
				WOVEN 4-FT
STATION	-	STATION	OFFSET	(LF)
334+75	-	342+22	LT	760
TOTAL				760

MAINTENANCE AND REPAIR OF
HAUL ROADS (PROJECT)

		618.0100
		MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT)
PROJECT		(EACH)
1530-07-62		1
TOTAL		1

MOBILIZATION

		619.1000
		MOBILIZATION
PROJECT		(EACH)
1530-07-62		1
TOTAL		1

MOBILIZATION EROSION CONTROL

		628.1905	628.1910
		MOBILIZATIONS	MOBILIZATIONS
		EROSION	EROSION
		CONTROL	CONTROL
PROJECT		(EACH)	(EACH)
1530-07-62		6	4
TOTAL		6	4

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

GUARDRAIL ITEMS CONTINUED												
		614.0115	614.0305	614.0345	614.0370	614.0390	614.0400	614.2300	614.2340	614.2610		
		ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2	STEEL PLATE BEAM GUARD CLASS A	STEEL PLATE BEAM GUARD SHORT RADIUS	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	ADJUSTING STEEL PLATE BEAM GUARD	MGS GUARDRAIL 3	MGS GUARDRAIL 3L (LF)	MGS GUARDRAIL TREATMENT EAT		
STATION	-	STATION	OFFSET	(EACH)	(LF)	(LF)	(EACH)	(EACH)	(LF)	(LF)	3L (LF)	(EACH)
376+00	-	378+28	LT	--	--	--	--	--	228	--	--	--
376+18	-	378+70	RT	--	--	--	--	--	252	--	--	--
378+28	-	379+03	LT	--	75	--	--	--	--	--	--	--
378+70	-	378+95	RT	--	25	--	--	--	--	--	--	--
378+95	-	379+45	RT	--	--	--	1	--	--	--	--	--
379+03	-	379+53	LT	--	--	--	1	--	--	--	--	--
381+44	-	381+59	LT	--	--	16	--	--	--	--	--	--
381+44	-	381+44	LT	--	--	--	--	1	--	--	--	--
381+59	-	382+09	LT	--	50	--	--	--	--	--	--	--
381+60	-	381+78	RT	--	--	16	--	--	--	--	--	--
381+60	-	381+60	RT	--	--	--	--	1	--	--	--	--
381+78	-	382+28	RT	--	50	--	--	--	--	--	--	--
382+09	-	412+65	LT	--	--	--	--	--	3056	--	--	--
382+28	-	383+69	RT	--	--	--	--	--	141	--	--	--
383+69	-	384+82	RT	--	112.5	--	--	--	--	--	--	--
384+82	-	385+32	RT	--	--	--	1	--	--	--	--	--
395+13	-	395+63	RT	--	--	--	1	--	--	--	--	--
395+63	-	396+26	RT	--	62.5	--	--	--	--	--	--	--
396+26	-	396+86	RT	--	--	--	--	--	60	--	--	--
396+86	-	397+36	RT	--	50	--	--	--	--	--	--	--
397+36	-	397+86	RT	--	--	--	1	--	--	--	--	--
412+65	-	413+02	LT	--	37.5	--	--	--	--	--	--	--
413+02	-	413+52	LT	--	--	--	1	--	--	--	--	--
452+50	-	453+03	RT	--	--	--	--	--	--	--	--	1
453+03	-	453+28	RT	--	--	--	--	--	25	--	--	--
453+28	-	454+41	RT	--	--	--	--	--	--	112.5	--	--
454+41	-	454+94	RT	--	--	--	--	--	--	--	--	1
SUBTOTAL				0	462.5	32	6	2	3737.00	25	112.5	2
TOTAL				1	2577	151.5	20	7	6251	187.5	225.0	10

GRADING SHAPING FINISHING CROSS CULVERTS, ITEM SPV.0060.03

				EACH	AREA	* EXCAVATION COMMON	* BORROW	* SALVAGED TOPSOIL	* FERTILIZER TYPE B	* SEEDING	* MULCHING
STATION	-	STATION	OFFSET		SF	(CY)	(CY)	(SY)	(CWT)	(LB)	(SY)
140+95	-	141+85	LT/RT	1	1600	--	--	180	0.1	7.0	180
335+75	-	337+15	LT/RT	1	5925	400	350	655	0.4	26.0	655
TOTAL				2		400	350	835	1	33	835

* ITEMS & QUANTITIES LISTED FOR BID INFORMATION ONLY

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

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PROJECT NO: 1530-07-62

BARRIER SYSTEM GRADING SHAPING FINISHING, ITEM 614.0010

			EACH	AREA	* EXCAVATION COMMON	* BORROW	* SALVAGED TOPSOIL	* FERTILIZER TYPE B	* SEEDING	* MULCHING
STATION -	STATION	OFFSET		SF	(CY)	(CY)	(SY)	(CWT)	(LB)	(SY)
113+00 -	114+06	RT	1	1700	85	10	190	0.1	8.0	190
118+00 -	118+61	RT	1	1200	32	2	135	0.1	5.0	135
304+90 -	307+00	LT	1	3250	5	--	360	0.2	15.0	--
304+90 -	307+05	RT	1	3600	3	140	400	0.3	16.0	--
307+60 -	309+30	LT	1	1900	11	--	210	0.1	9.0	--
314+80 -	316+20	RT	1	1700	--	30	190	0.1	8.0	--
318+60 -	320+60	LT	1	1050	1	--	120	0.1	5.0	--
319+05 -	320+60	RT	1	920	1	0	100	0.1	4.0	--
321+36 -	323+25	LT	1	2700	--	25	300	0.2	12.0	--
322+75 -	324+20	RT	1	1950	--	10	220	0.1	9.0	--
326+55 -	328+25	RT	1	3770	8	55	420	0.3	17.0	--
331+40 -	332+90	RT	1	515	--	1	60	0.1	3.0	--
337+15 -	338+90	LT	1	2225	1	24	250	0.2	11.0	250
341+45 -	343+80	RT	1	2200	70	90	245	0.2	10.0	245
344+15 -	347+40	LT	1	6175	--	120	690	0.4	28.0	690
352+25 -	354+75	RT	1	3550	--	120	395	0.2	16.0	395
358+87 -	359+29	RT	1	650	--	70	75	0.1	3.0	75
359+50 -	360+07	RT	1	750	--	--	85	0.1	3.0	85
360+35 -	360+78	RT	1	550	--	--	60	0.1	3.0	60
365+45 -	368+50	RT	1	450	--	--	50	0.1	2.0	--
367+45 -	369+40	LT	1	1250	--	--	140	0.1	6.0	--
370+75 -	371+00	RT	1	650	--	--	75	0.1	3.0	75
370+80 -	373+10	LT	1	550	--	--	60	0.1	3.0	--
374+45 -	376+20	LT	1	650	--	--	75	0.1	3.0	--
374+45 -	376+20	RT	1	500	--	--	55	0.1	2.0	--
378+30 -	380+15	LT	1	950	--	--	105	0.1	4.0	105
378+30 -	380+15	RT	1	950	--	--	105	0.1	4.0	105
381+44 -	382+12	LT	1	350	--	--	40	0.1	2.0	40
381+70 -	382+40	RT	1	350	--	--	40	0.1	2.0	40
383+70 -	385+30	RT	1	800	--	--	90	0.1	4.0	90
394+50 -	396+30	RT	1	3700	--	--	410	0.3	17.0	--
397+00 -	398+50	RT	1	2400	--	--	270	0.2	11.0	270
412+70 -	414+35	LT	1	2800	--	30	310	0.2	13.0	310
452+20 -	455+90	RT	1	3650	1	65	400	0.3	16.0	400
TOTAL			34		218	727	6730	5	277	3560

* ITEMS & QUANTITIES LISTED FOR BID INFORMATION ONLY

GRADING SHAPING FINISHING DRIVEWAY MODIFICATION, ITEM SPV.0060.04

			EACH	AREA	* EXCAVATION COMMON	* BORROW	* SALVAGED TOPSOIL	* FERTILIZER TYPE B	* SEEDING	* MULCHING
STATION -	STATION	OFFSET		SF	(CY)	(CY)	(SY)	(CWT)	(LB)	(SY)
467+90 -	469+70	LT	1	6250	600	--	700	0.4	30.0	700
499+20 -	499+80	LT	1	1250	50	--	140	0.1	6.0	140
TOTAL			2		650	0	840	1	36	840

* ITEMS & QUANTITIES LISTED FOR BID INFORMATION ONLY

EROSION MAT URBAN CLASS I TYPE A

				* 628.2006 EROSION MAT URBAN CLASS I TYPE A
STATION	-	STATION	OFFSET	(SY)
304+90	-	307+00	LT	360
304+90	-	307+05	RT	400
307+60	-	309+30	LT	210
314+80	-	316+20	RT	210
318+60	-	320+60	LT	190
319+05	-	320+60	RT	100
321+36	-	323+25	LT	300
322+75	-	324+20	RT	220
326+55	-	328+25	RT	420
331+40	-	332+90	RT	60
335+75	-	337+80	LT/RT	655
365+45	-	368+50	RT	50
367+45	-	369+40	LT	140
370+80	-	373+10	LT	60
374+45	-	376+20	LT	75
374+45	-	376+20	RT	55
394+49	-	396+29	RT	410
UNDISTRIBUTED (25%)				980
TOTAL				4895

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE

FIELD FACILITIES

		642.5001 FIELD OFFICE TYPE B
PROJECT	(EACH)	
1530-07-62	1	
TOTAL	1	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

PROJECT NO: 1530-07-62

HWY: USH 10

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

E

3

LANDSCAPING AND RESTORATION ITEMS

* 625.0100 628.2006 629.0210 630.0120 EROSION MAT URBAN CLASS I TYPE A TOPSOIL (SY)									FERTILIZER TYPE B (CWT)	SEEDING MIXTURE TYPE 20 (LB)	REMARKS
LOCATION	STATION	-	STATION	OFFSET	(SY)	(SY)	(CWT)	(LB)			
USH 10	97+88	-		RT/LT	36	36	0.02	1			
USH 10	108+45	-	109+00	LT	121	44	0.08	3			
USH 10	140+95	-	141+85	RT/LT	127	127	0.08	3			
USH 10	151+56	-		RT/LT	36	36	0.02	1			
USH 10	161+11	-		RT/LT	36	36	0.02	1			
USH 10	183+08	-		RT/LT	18	18	0.01	0			
USH 10	203+15	-		RT/LT	36	36	0.02	1			
USH 10	238+10	-		RT/LT	36	36	0.02	1			
USH 10	272+95	-		RT/LT	89	40	0.06	2			
USH 10	273+60	-	274+10	LT	156	53	0.10	4			
USH 10	294+30	-	295+10	RT	289	111	0.18	8			
USH 10	294+50	-		RT/LT	18	18	0.01	0			
USH 10	310+90	-		RT/LT	36	36	0.02	1			
USH 10	320+91	-		LT	76	18	0.05	2			
USH 10	333+55	-		LT	89	31	0.06	2			
USH 10	342+00	-	343+20	RT	67	67					
USH 10	342+71	-		LT	18	18	0.01	0			
USH 10	356+10	-	356+60	LT	89	44	0.06	2			
USH 10	405+30	-	405+70	RT	71	36	0.04	2			
USH 10	415+40	-	415+80	RT	36	36	0.02	2			
USH 10	438+20	-	438+60	RT	53	36	0.03	1			
USH 10	446+20	-		RT/LT	36	36	0.02	1			
USH 10	459+35	-	459+75	LT	89	58	0.06	2			
USH 10	482+16	-		RT/LT	36	36	0.02	1			
518TH ST	10+15"B"	-	10+87"B"	LT/RT	92	92	0.06	2			
635TH ST	9+85"A"	-	9+42"A"	LT/RT	65	65	0.04	2			
610TH ST	10+20"C"	-	10+79"C"	LT/RT	46	46	0.03	1			
610TH ST	9+80"C"	-	9+34"C"	LT/RT	43	43	0.03	1			
490TH AVE	10+19"D"	-	10+67"D"	LT/RT	42	42	0.03	1			
490TH AVE	9+82"D"	-	9+31"D"	LT/RT	40	40	0.03	1			
CTH DD	10+23"E"	-	11+07"E"	LT/RT	62	62	0.04	2			
CTH DD	9+77"E"	-	8+91"E"	LT/RT	59	59	0.04	2			
410TH AVE	9+79"I"	-	9+15"I"	LT/RT	55	55	0.03	1			
410TH AVE	10+21"I"	-	10+81"I"	LT/RT	52	52	0.03	1			
490TH ST	10+24"K"	-	10+70"K"	LT/RT	80	80	0.05	2			
490TH ST	9+85"L"	-	9+37"L"	LT/RT	71	71	0.04	2			
400TH ST	10+16"M"	-	10+75"M"	LT/RT	55	55	0.03	1			
CTH A	9+85"N"	-	9+30"N"	LT/RT	86	86	0.05	2			
UNDISTRIBUTED (25%)					640	480	10	20			
TOTAL					3,177	2,367	12	88			

*ADDITIONAL QUANTITIES LOCATED ELSEWHERE

SILT FENCE

				628.1504	628.1520
				SILT FENCE	SILT FENCE MAINTENANCE
STATION	-	STATION		(LF)	(LF)
335+85	-	336+72	RT	115	60
337+40	-	339+35	LT	200	100
343+75	-	347+35	LT	380	190
352+75	-	354+80	RT	210	105
358+75	-	359+25	RT	55	30
359+50	-	361+00	RT	150	75
368+50	-	369+35	LT	80	40
370+50	-	371+00	RT	70	35
371+20	-	371+70	RT	60	30
378+20	-	380+40	LT	220	110
378+65	-	379+75	RT	110	55
381+50	-	382+40	LT	120	60
381+65	-	382+50	RT	105	55
383+70	-	385+35	RT	180	90
396+70	-	398+60	RT	200	100
412+55	-	414+40	LT	190	95
452+20	-	455+90	RT	400	200
UNDISTRIBUTED (25%)				720	360
TOTAL				3565	1790

TEMPORARY DITCH CHECKS

628.7504 TEMPORARY DITCH CHECKS (LF)		
STATION		
307+05	LT	15
307+05	RT	15
307+80	RT	15
320+15	LT	15
320+70	RT	15
321+33	LT	15
322+75	RT	15
328+25	RT	15
331+45	RT	15
341+80	RT	15
342+37	RT	30
367+00	RT	15
369+20	RT	15
369+25	LT	15
370+85	LT	15
371+50	LT	15
376+10	LT	15
376+20	RT	15
396+30	RT	15
UNDISTRIBUTED (25%)		80
TOTAL		380

TRAFFIC CONTROL (PROJECT)

643.0100 TRAFFIC CONTROL (PROJECT) (EACH)	
PROJECT	
1530-07-62	1
TOTAL	1

TRAFFIC CONTROL DETOUR
(PROJECT)

643.2000 TRAFFIC CONTROL DETOUR (PROJECT) (EACH)	
PROJECT	
1530-07-62	1
TOTAL	1

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

ERECTION AND REMOVAL OF TYPE II SIGNS AND SUPPORTS

		637.2210	637.2230	634.0614	634.0616	634.0618	638.2602	638.0300		
		SIGNS TYPE II REFLECTIVE	SIGNS TYPE II REFLECTIVE	POSTS WOOD 4X6-INCH	POSTS WOOD 4X6-INCH	POSTS WOOD 4X6-INCH	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS		
SIGN NO.	SIGN CODE	W X H	H SF	F SF	X 14-FT (EACH)	X 16-FT (EACH)	X 18-FT (EACH)	(EACH)	(EACH)	REMARKS
100	D2-2	90" X 24"	15.00	--	--	2	--	3	2	
101	J4-1	24" X 36"	6.00	--	1	--	--	--	--	
102	R5-1A	36" X 24"	6.00	--	1	--	--	1	1	
103	W1-6	48" X 24"	--	8.00	1	--	--	1	1	
104	R6-3A	30" X 24"	5.00	--	--	--	1	1	1	
105	R1-1	36" X 36"	7.46	--	--	--	--	1	--	
106	J3-2	48" X 57"	19.00	--	--	1	--	6	1	
107	W12-1D	24" X 24"	--	4.00	1	--	--	1	1	
108	R1-1	36" X 36"	7.46	--	1	--	--	1	1	
109	J3-2	48" X 57"	19.00	--	--	1	--	6	1	
110	R5-1	30" X 30"	6.25	--	1	--	--	1	1	
111	R2-1	24" X 30"	5.00	--	1	--	--	1	1	
112			--	--	--	--	--	1	1	REMOVE ONLY
113	D1-3	72" X 36"	18.00	--	--	2	--	1	2	
114			--	--	--	--	--	--	--	EXISTING TO REMAIN
115	W3-1	36" X 36"	--	9.00	1	--	--	1	1	
116	J2-4	96" X 57"	38.00	--	--	2	--	12	2	
117			--	--	--	--	--	1	1	REMOVE ONLY
118	J1-2	48" X 39"	13.00	--	1	--	--	4	1	
119	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
120	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
121	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
123	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
124	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
125	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
126	R7-1R	18" X 24"	3.00	--	1	--	--	1	1	
127	R7-1L	18" X 24"	3.00	--	1	--	--	1	1	
128	R7-1D	18" X 24"	3.00	--	1	--	--	1	1	
129	R7-1D	18" X 24"	3.00	--	1	--	--	1	1	
130	R7-1R	18" X 24"	3.00	--	1	--	--	1	1	
131	R7-1L	18" X 24"	3.00	--	1	--	--	1	1	
132	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
133	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
134	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
135	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
136	J1-1	24" X 39"	6.50	--	1	--	--	2	1	
137	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
138	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
139			--	--	--	--	--	--	--	EXISTING TO REMAIN
SUBTOTAL			220.75	57.00	28	8	1	63	38	

CULVERT PIPE CHECKS

		628.7555
		CULVERT PIPE CHECKS (EACH)
STATION		
97+83	LT	5
108+66	LT	5
141+34	LT	4
141+40	LT	4
151+56	LT	5
161+11	LT	5
183+08	RT	5
203+15	LT	3
238+10	RT	5
272+95	LT	5
274+07	LT	5
294+50	LT	5
310+90	LT	3
320+91	LT	5
333+64	LT	6
342+00	RT	3
356+38	LT	8
405+54	RT	3
415+62	RT	3
438+39	RT	5
446+21	LT	5
482+16	LT	3
501+67	LT	5
UNDISTRIBUTED (25%)		30
TOTAL		135

TRAFFIC CONTROL DETOUR SIGNS

					643.3000
					TRAFFIC CONTROL DETOUR SIGNS
LOCATION	STAGE	DAYS	SIGNS	(DAY)	
USH 10	-	42	27		1,134
TOTAL					1,134

CONTINUED ON NEXT PAGE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

ERECTION AND REMOVAL OF TYPE II SIGNS AND SUPPORTS - CONTINUED

		637.2210	637.2230	634.0614	634.0616	634.0618	638.2602	638.0300		
		SIGNS TYPE II REFLECTIVE	SIGNS TYPE II REFLECTIVE	POSTS WOOD 4X6-INCH	POSTS WOOD 4X6-INCH	POSTS WOOD 4X6-INCH	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS		
SIGN NO.	SIGN CODE	W X H	H SF	F SF	X 14-FT (EACH)	X 16-FT (EACH)	X 18-FT (EACH)	(EACH)	(EACH)	REMARKS
140	J13-2	48" X 45"	15.00	--	1	--	--	4	1	
141	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
142	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
143	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
144	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
145	J13-2	48" X 45"	15.00	--	1	--	--	4	1	
146			--	--	--	--	--	--	--	EXISTING TO REMAIN
147	J1-1	24" X 39"	6.50	--	1	--	--	2	1	
148	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
149	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
150	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
151	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
152	J1-1	24" X 39"	6.50	--	1	--	--	2	1	
153	J4-1	24" X 36"	6.00	--	1	--	--	2	1	
154	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
155	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
156	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
157	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
158	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
159	J4-1	24" X 36"	6.00	--	1	--	--	2	1	
160	J1-1	24" X 39"	6.50	--	1	--	--	2	1	
161	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
162	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
163	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
164	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
165	W1-2L	30" X 30"	--	6.25	1	--	--	1	1	
166	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
167	W2-2	30" X 30"	--	6.25	1	--	--	1	1	
168	W1-2R	30" X 30"	--	6.25	1	--	--	1	1	
169	R3-72	30" X 36"	7.50	--	1	--	--	--	--	
170	W4-2R	36" X 36"	--	9.00	1	--	--	1	1	
171	W4-2R	36" X 36"	--	9.00	1	--	--	--	--	
172	W1-2L	30" X 30"	--	6.25	1	--	--	1	1	
173	W9-1R	36" X 36"	--	6.25	1	--	--	1	1	
174			--	--	--	--	--	--	--	EXISTING TO REMAIN
175	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
176	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
177			--	--	--	--	--	--	--	EXISTING TO REMAIN
178	W1-2R	30" X 30"	--	6.25	--	1	--	1	1	
179	W13-1	18" X 18"	--	2.25	--	--	--	--	--	
SUBTOTAL			163.48	81.75	35	1	--	50	34	

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ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

ERECTION AND REMOVAL OF TYPE II SIGNS AND SUPPORTS - CONTINUED

		637.2210	637.2230	634.0614	634.0616	634.0618	638.2602	638.0300		
		SIGNS TYPE II REFLECTIVE	SIGNS TYPE II REFLECTIVE	POSTS WOOD 4X6-INCH	POSTS WOOD 4X6-INCH	POSTS WOOD 4X6-INCH	REMOVING SIGNS TYPE II	REMOVING SMALL SIGN SUPPORTS		
SIGN NO.	SIGN CODE	W X H	H SF	F SF	X 14-FT (EACH)	X 16-FT (EACH)	X 18-FT (EACH)	(EACH)	(EACH)	REMARKS
187	W1-2L	30" X 30"	--	6.25	1	--	--	1	1	
190	R4-3	24" X 30"	5.00	--	1	--	--	1	1	
196	W1-2L	30" X 30"	--	6.25	--	1	--	1	1	
197	W13-1	18" X 18"	--	2.25	--	--	--	--	--	
198	W1-2R	30" X 30"	--	6.25	1	--	--	1	1	
199	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
200	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
201	W1-2L	30" X 30"	--	6.25	1	--	--	1	1	
202	R4-51	36" X 48"	12.00	--	--	1	--	--	--	
203	W1-2R	30" X 30"	--	6.25	--	1	--	1	1	
204	W13-1	18" X 18"	--	2.25	--	--	--	1	--	
205	W1-2R	30" X 30"	--	6.25	1	--	--	1	1	
206	R4-51	36" X 48"	12.00	--	--	1	--	--	--	
207	W1-2L	30" X 30"	--	6.25	--	1	--	1	1	
208	W13-1	18" X 18"	--	2.25	--	--	--	1	--	
209	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
210	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
211	W14-3	48" X 36"	--	6.00	1	--	--	1	1	
212	J1-1	24" X 39"	6.50	--	1	--	--	2	1	
214	J4-1	24" X 36"	6.00	--	1	--	--	2	1	
215	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
216	R1-1	30" X 30"	5.18	--	1	--	--	1	1	
217	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
218	J13-1	24" X 45"	7.50	--	1	--	--	2	1	
219	W1-2L	30" X 30"	--	6.25	1	--	--	1	1	
220			--	--	--	--	--	--	--	EXISTING TO REMAIN
221			--	--	--	--	--	--	--	EXISTING TO REMAIN
222	J4-1	24" X 36"	6.00	--	1	--	--	2	1	
SUBTOTAL			80.36	80.75	18	5	--	29	21	
TOTAL			464.59	219.50	81	14	1	142	93	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

3

TRAFFIC CONTROL

				643.0300				643.0420	649.2100				643.0705				643.0715	643.0800			643.0900
				TRAFFIC CONTROL				TRAFFIC CONTROL	TEMPORARY RAISED				TRAFFIC CONTROL				TRAFFIC CONTROL	TRAFFIC CONTROL			TRAFFIC CONTROL
				DRUMS	BARRICADES			BARRICADES	PAVEMENT MARKERS	WARNING LIGHTS			WARNING LIGHTS			WARNING LIGHTS	WARNING LIGHTS	ARROW	ARROW		
LOCATION	STAGE	DAYS	DRUMS	(DAY)	TYPE III	(DAY)	(DAY)	(DAY)	(EACH)	A	(DAY)	TYPE A	TYPE C	(DAY)	(DAY)	(DAY)	(DAY)	BOARDS	BOARDS	SIGNS	(DAY)
USH 10	-	79	106	8,374	16	1,264	--	--	--	16	1,264	--	--	--	--	--	--	--	--	66	5,214
C-47-234	1	21	114	2,394	13	273	40	26	40	26	546	40	840	1	21	24	504				
C-47-234	2	21	75	1,575	12	252	--	24	20	420	--	--	--	--	--	22	462				
TOTAL				12,343		1789	40	66	2,314	60	1,260										8,155

3

PAVEMENT MARKING

					646.0106			646.0116		646.0126		646.0406		647.0566		649.0100		649.0400	
					PAVEMENT MARKING EPOXY 4-INCH			PAVEMENT MARKING EPOXY 6-INCH		PAVEMENT MARKING EPOXY 8-INCH		PAVEMENT MARKING SAME DAY EPOXY 4-INCH		PAVEMENT MARKING STOP LINE EPOXY 18-INCH		TEMPORARY PAVEMENT MARKING 4-INCH		TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	
					WHITE	12.5 FT SKIPS	YELLOW	WHITE	WHITE	YELLOW		WHITE						WHITE	YELLOW
LOCATION	STATION	-	STATION	STAGE	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)	(LF)
USH 10	48+19 RT	-	68+94 RT	-	2,098	18	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	49+05 RT	-	51+32 RT	-	--	--	273	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	49+96 LT	-	53+76 LT	-	--	--	177	--	--	--	--	--	36	--	--	--	--	--	--
USH 10	50+33	-	53+76	-	--	--	--	--	467	--	--	--	--	--	--	--	--	--	--
USH 10	50+12	-	508+03	-	--	--	--	--	--	68,000	--	--	--	136,000	--	--	--	--	--
USH 10	50+91 LT	-	68+82 LT	-	1,787	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	69+88 RT	-	109+24 RT	-	3,905	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	70+15 LT	-	108+97 LT	-	3,864	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	70+15 LT	-	71+35 LT	-	--	--	--	--	120	--	--	--	--	--	--	--	--	--	--
USH 10	109+89 LT	-	121+46 LT	-	1,106	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	110+31 RT	-	121+06 RT	-	1,042	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	121+85 RT	-	185+84 RT	-	6,281	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	122+32 LT	-	185+00 LT	-	6,216	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	186+22 LT	-	195+42 LT	-	762	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	187+12 RT	-	194+43 RT	-	708	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	196+65 LT	-	259+15 LT	-	6,209	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	196+71 RT	-	259+58 RT	-	6,227	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	260+15 LT	-	272+41 LT	-	1,164	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	260+93 RT	-	271+83 RT	-	1,036	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	272+94 RT	-	334+47 RT	-	6,004	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	273+48 LT	-	333+53 LT		5,971	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	317+71 LT	-	359+47 LT	-	--	1,103	--	--	--	--	--	--	--	--	--	--	6,400	5,200	
USH 10	334+75 LT	-	453+48 LT	-	10,685	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	335+53 RT	-	501+75 RT	-	13,574	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	353+38	-	362+44	-	--	--	--	1,820	--	--	--	--	--	--	--	--	--	--	--
USH 10	454+35 LT	-	508+03 LT	-	5,290	--	--	--	--	--	--	--	--	--	--	--	--	--	--
USH 10	498+95 RT	-	501+75 RT	-	--	--	--	--	280	--	--	--	--	--	--	--	--	--	--
USH 10	503+04 RT	-	508+03 RT		501	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CTH DD	8+91"E"	-	9+51"E"	-	60	--	62	--	--	--	--	--	--	--	--	--	--	--	--
CTH DD	10+58"E"	-	11+07"E"	-	49	--	58	--	--	--	--	--	--	--	--	--	--	--	--
CTH D	8+89"H"	-	9+54"H"	-	65	--	62	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL					84,604	1,121	632	1,820	867	68,000	36	136,000	6,400	5,200	11,600				
					86,357														

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

PROJECT NO: 1530-07-62

HWY: USH 10

COUNTY: PIERCE

MISCELLANEOUS QUANTITIES

SHEET

E

3

TEMPORARY PAVEMENT MARKING STOP LINE
REMOVABLE TAPE 24-INCH

				649.1400
LOCATION	STATION -	STATION	STAGE	(LF)
USH 10	333+90LT -	339+50LT	1	24
	333+90RT -	339+50RT	2	24
TOTAL				48

LOCATING NO-PASSING ZONES

	648.0100
	LOCATING
	NO-PASSING
	ZONES
PROJECT	(MI)
1530-07-62	7.25
TOTAL	7.25

SAWING ITEMS

					690.0150	690.0250	
					SAWING	SAWING	
					ASPHALT	CONCRETE	
LOCATION	STATION -	STATION	OFFSET	(LF)	(LF)		REMARKS
USH 10	50+12.	-	-	BOP	144	--	
USH 10	49+00	-	49+20	BOP	23	--	
USH 10	113+02	-	114+08	RT	--	3	
USH 10	118+02	-	118+63	RT	--	3	
518TH AVE	10+87"B"	-	-	PL	28	--	
635TH ST	9+42"A"	-	-	PL	21	--	
610TH ST	9+34"C"	-	-	PL	26	--	
610TH ST	10+79"C"	-	-	PL	22	--	
490TH AVE	10+67"D"	-	-	PL	24	--	
490TH AVE	9+31"D"	-	-	PL	22	--	
USH 10	132+59	-	132+85	24' RT	26	--	PE
USH 10	140+95.	-	141+85.	CL	90	40	CPRC REPLACE
CTH DD	11+07"E"	-	-	PL	25	--	
CTH DD	8+91"E"	-	-	PL	28	--	
450TH AVE	8+93"F"	-		PL	23	--	
450TH AVE	10+95"G"	-	-	PL	24	--	
USH 10	235+35	-	235+53	24' LT	18	--	PE
USH 10	244+29	-	244+46	24' RT	17	--	PE
CTH D	8+89"H"	-	-	PL	24	--	
530TH ST	10+76"H"	-	-	PL	26	--	
410TH AVE	10+81"I"	-	-	PL	23	--	
410TH AVE	9+15"I"	-	-	PL	25	--	
510TH ST	9+25"J"	-	-	PL	27	--	
USH 10	335+75	-	-	PL	46	--	
USH 10	337+15	-	-	PL	46	--	
USH 10	335+75.	-	337+15.	7' LT	140	--	
490TH ST	10+70"K"	-	-	PL	24	--	
490TH ST	9+37"L"	-	-	PL	26	--	
USH 10	359+30	-	359+48	38' RT	18	--	PE
400TH ST	10+57"M"	-	-	PL	20	--	
CTH A	9+30"N"	-	-	PL	30	--	
USH 10	73+37.	-	78+37.	10' LT/RT	1020	--	BASE REPAIR
USH 10	95+90.	-	100+90.	10' LT/RT	1020	--	BASE REPAIR
USH 10	106+78.	-	111+78.	10' LT/RT	1020	--	BASE REPAIR
USH 10	136+70.	-	141+70.	10' LT/RT	1020	--	BASE REPAIR
USH 10	222+30.	-	227+30.	10' LT/RT	1020	--	BASE REPAIR
USH 10	236+56.	-	241+56.	10' LT/RT	1020	--	BASE REPAIR
USH 10	249+95.	-	254+95.	10' LT/RT	1020	--	BASE REPAIR
USH 10	508+02.88	-	-	EOP	38	--	
TOTAL					8214	46	

3

CONSTRUCTION STAKING

			650.6000	650.5500	650.8000	650.9910
			CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION
			STAKING PIPE	STAKING CURB	STAKING	STAKING
			CULVERTS	GUTTER AND	RESURFACING	SUPPLEMENTAL
				CURB & GUTTER	REFERENCE	CONTROL (PROJECT)
LOCATION	STATION -	STATION	(EACH)	(LF)	(LF)	(LS)
USH 10	50+12.00 -	508+03.00	2	1527	44600	1
TOTAL			2	1527	44600	1

ASPHALT PAVING ITEMS

	SPV.0105.02	SPV.0105.03
		MILLING
		AND
	MATERIAL	REMOVING
	TRANSFER	TEMPORARY
	VEHICLE	JOINT
PROJECT	(LS)	(LS)
1530-07-62	1	1
TOTAL	1	1

TEMPORARY SIGNAL ITEMS

	661.0100
	TEMPORARY
	TRAFFIC
	SIGNALS FOR
	BRIDGE
	INSTALLATION
PROJECT	(LS)
1530-07-62	1
TOTAL	1

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.

PROJECT NO: 1530-07-62

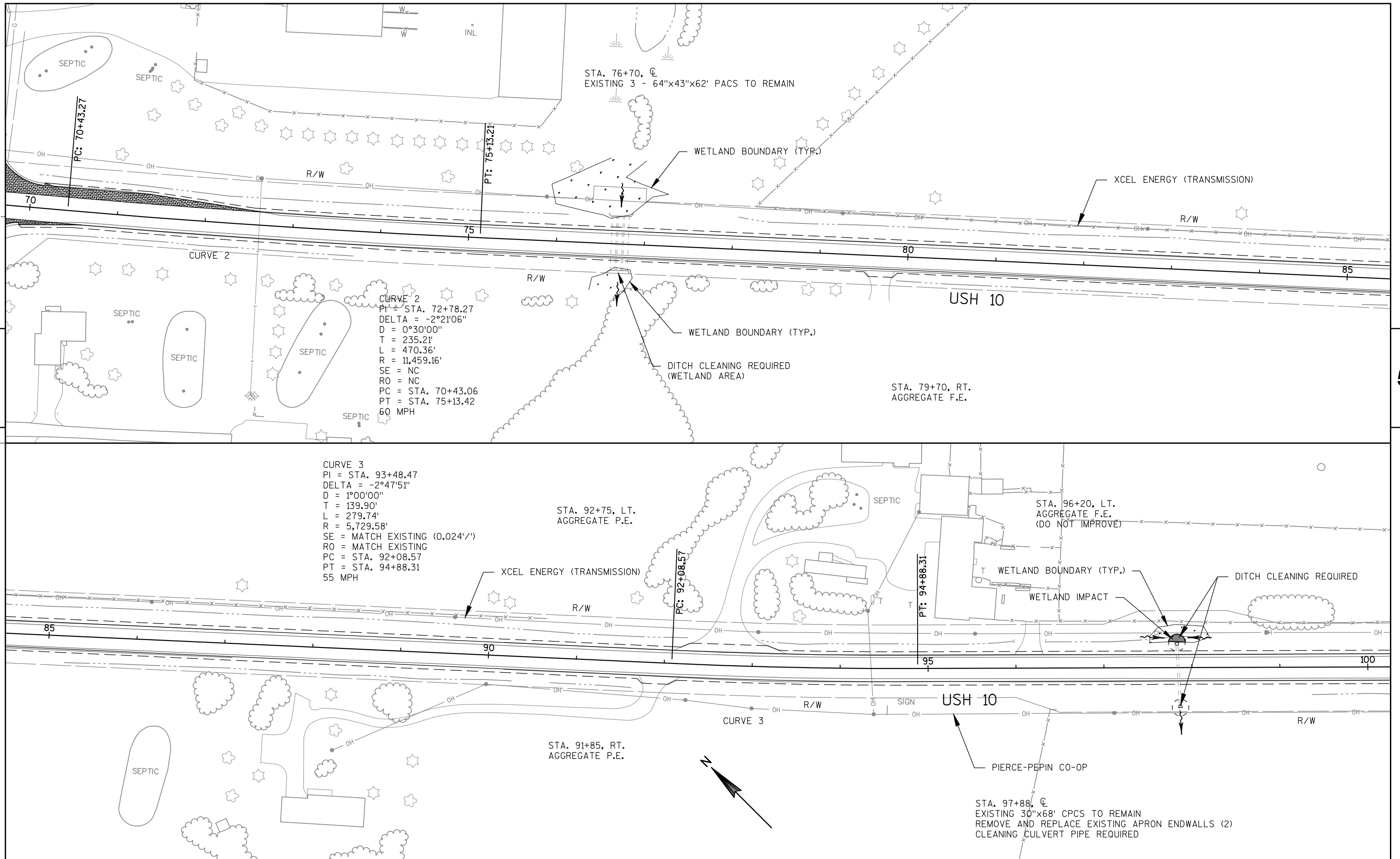
HWY: USH 10

COUNTY: PIERCE

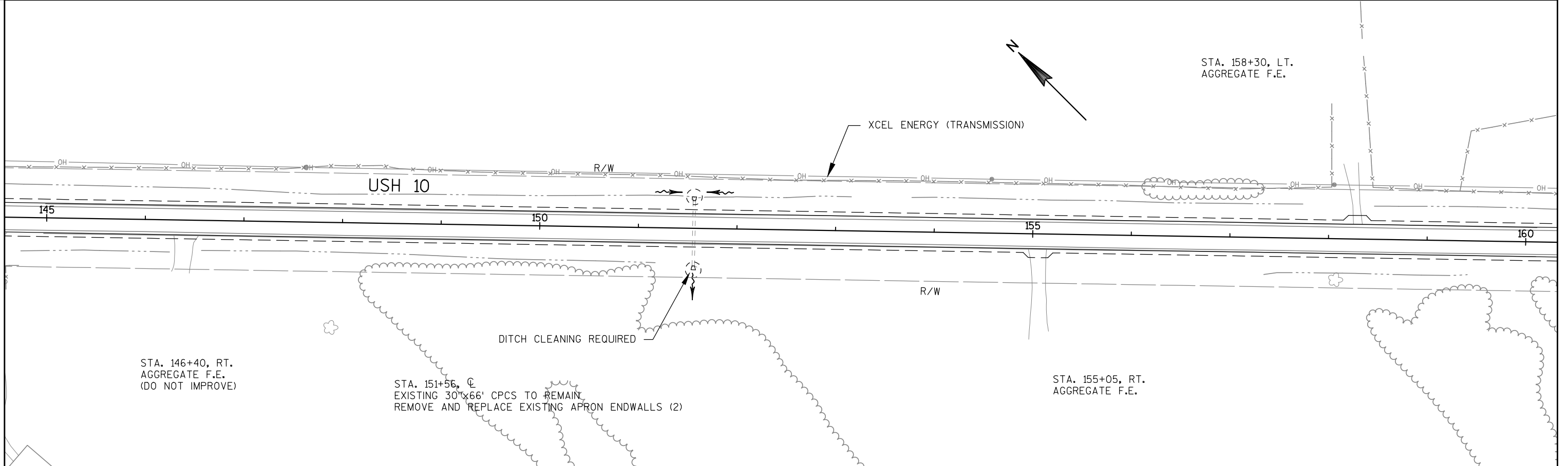
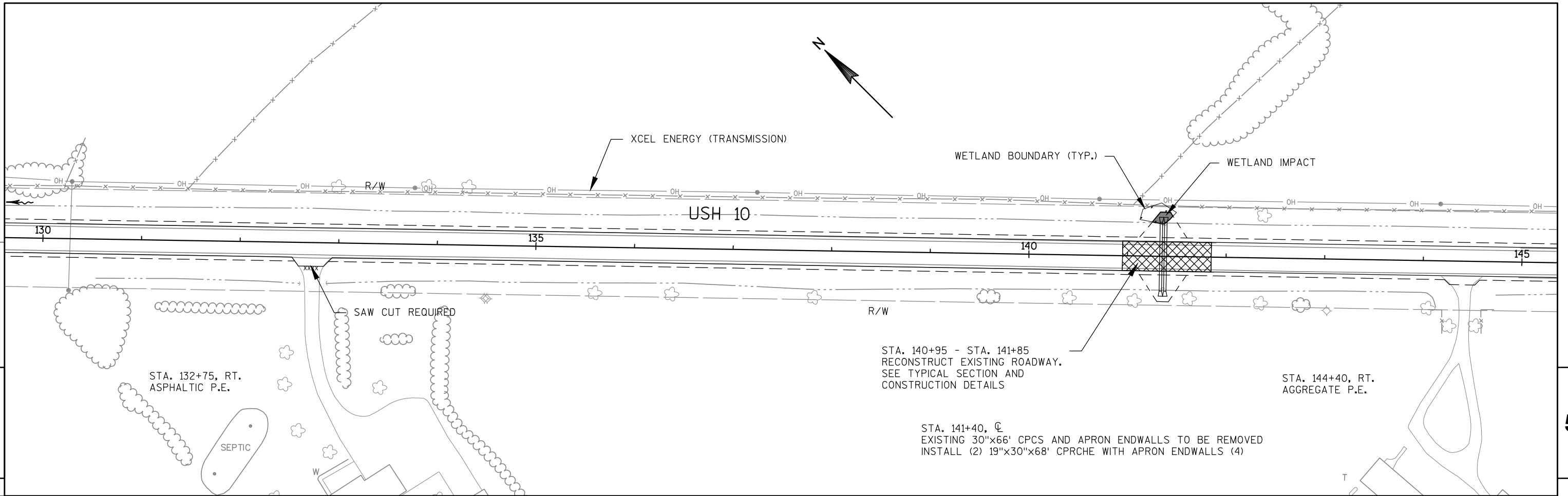
MISCELLANEOUS QUANTITIES

SHEET

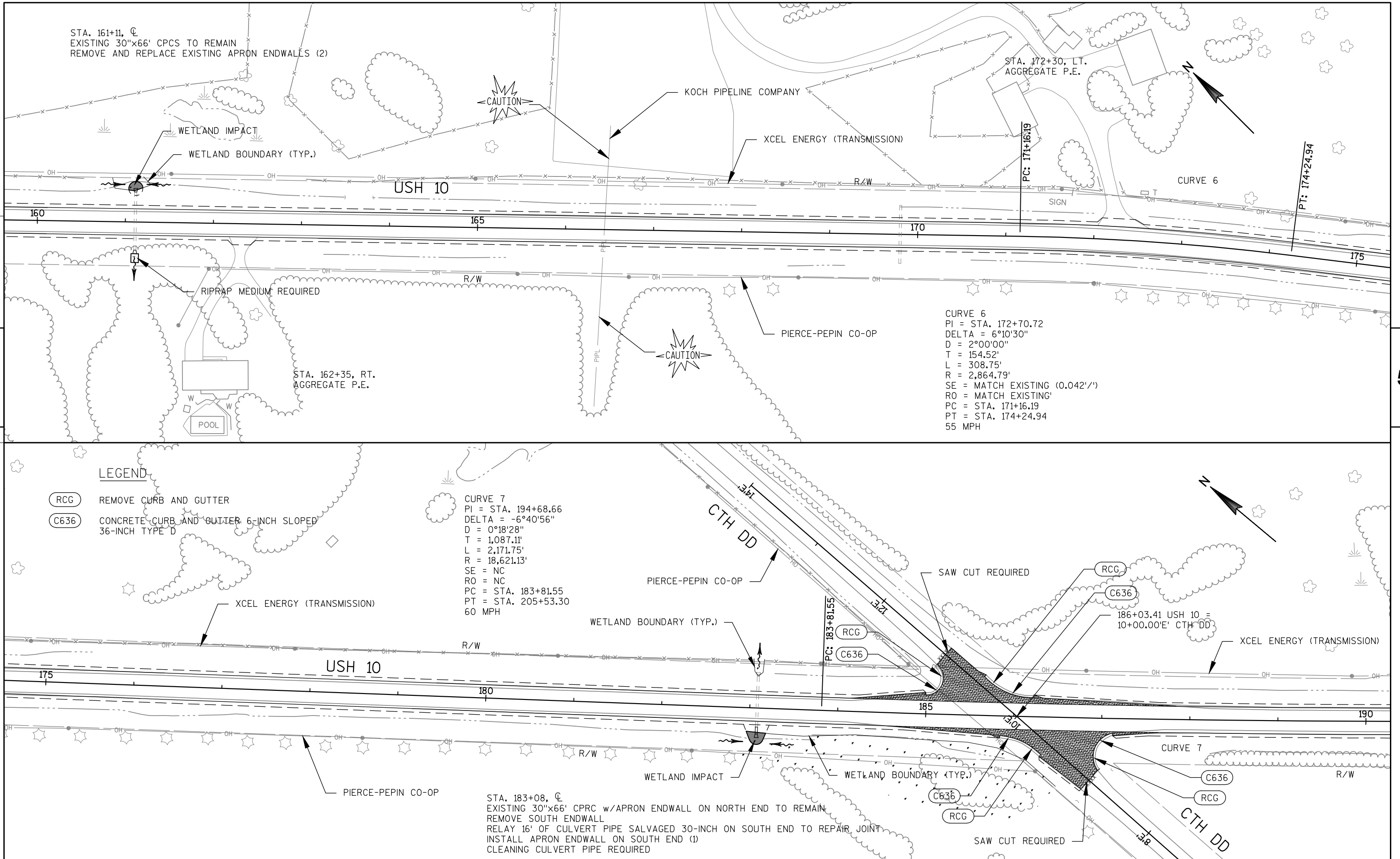
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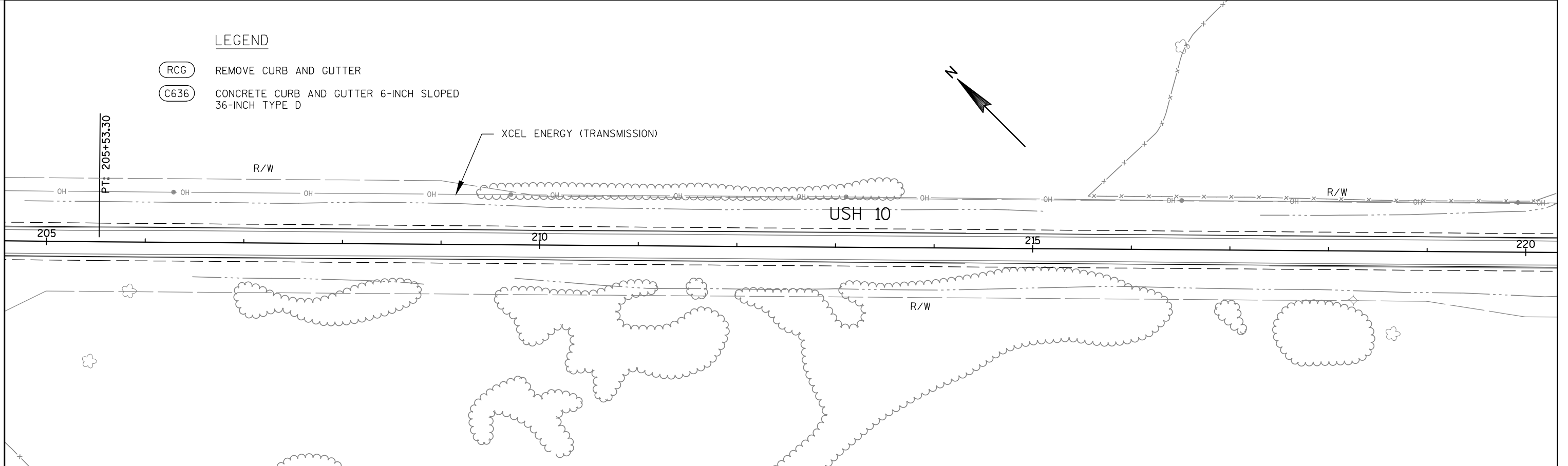
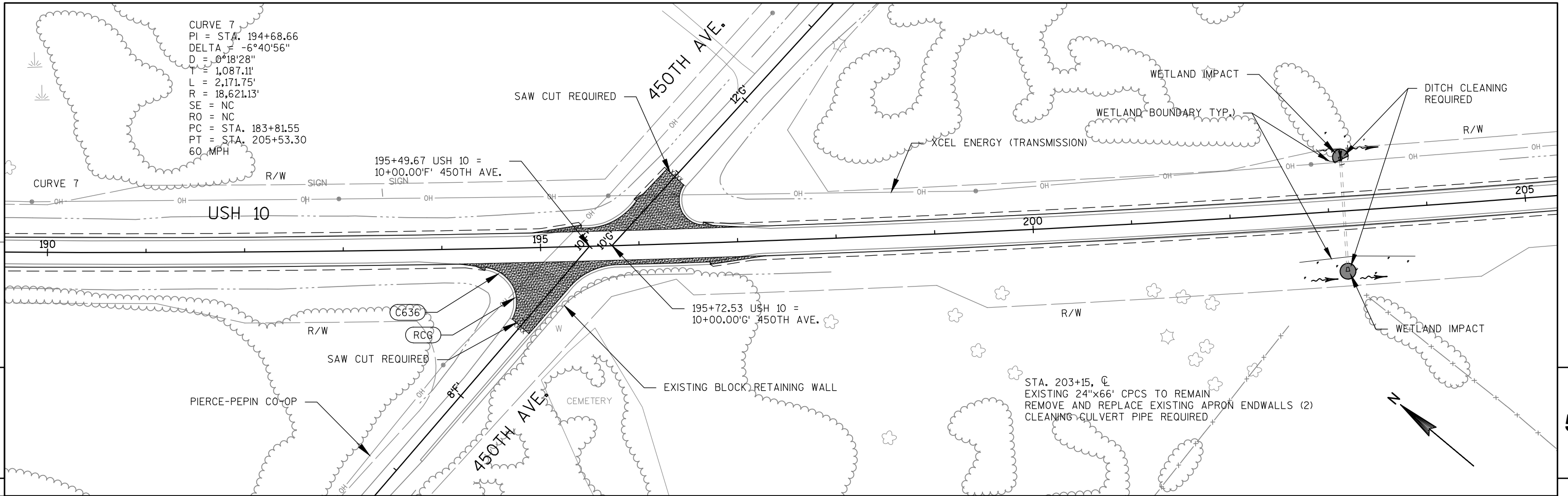


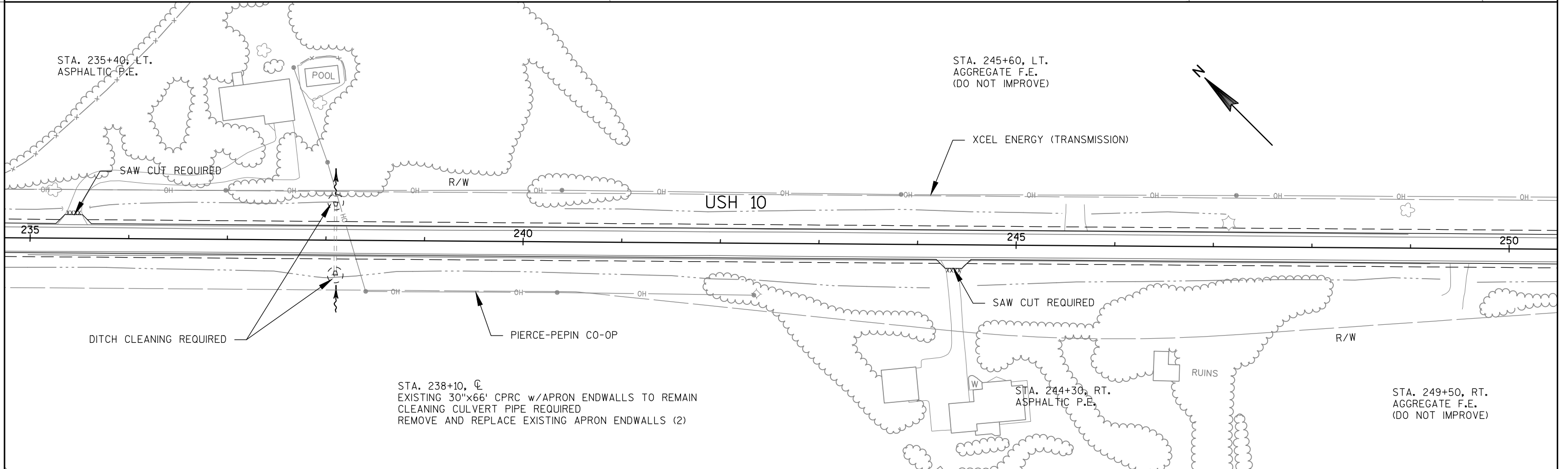
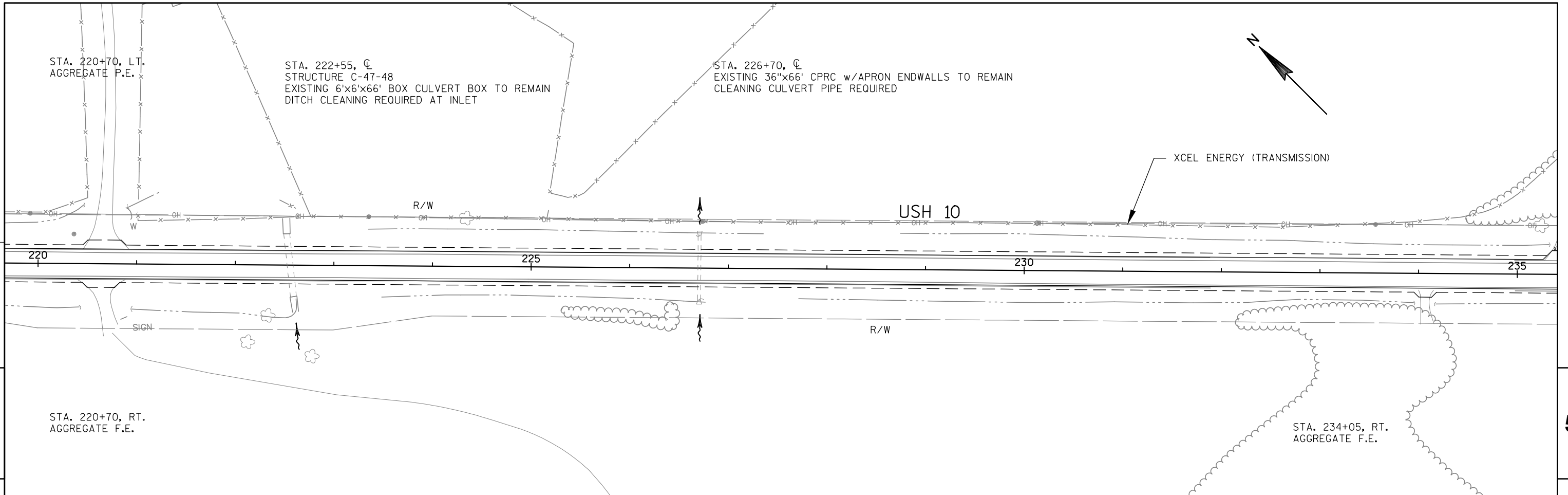
PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PLAN SHEET	SHEET	E
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PROJECT NO:1530-07-62	HWY: USH 10	COUNTY: PIERCE	PLAN SHEET	SHEET	E
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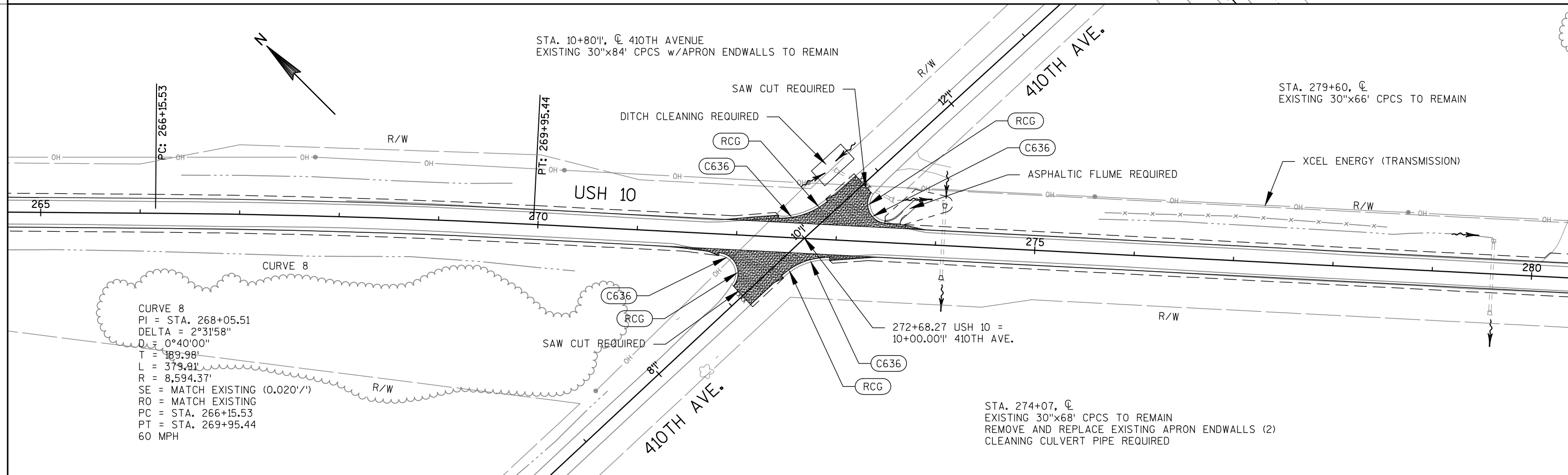
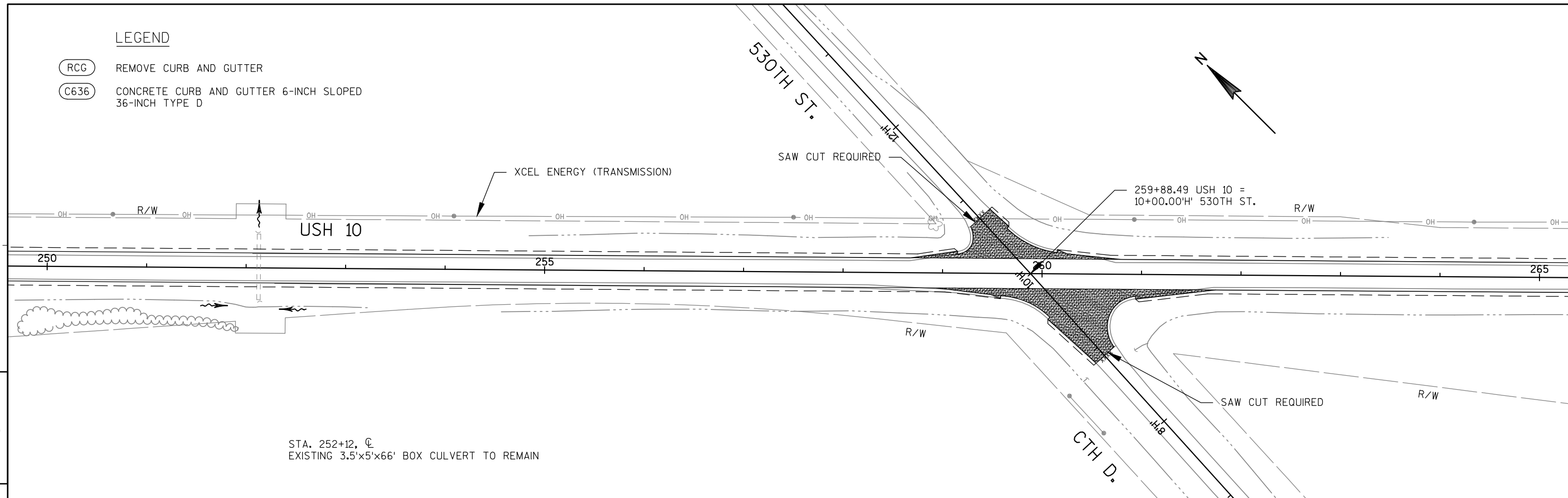




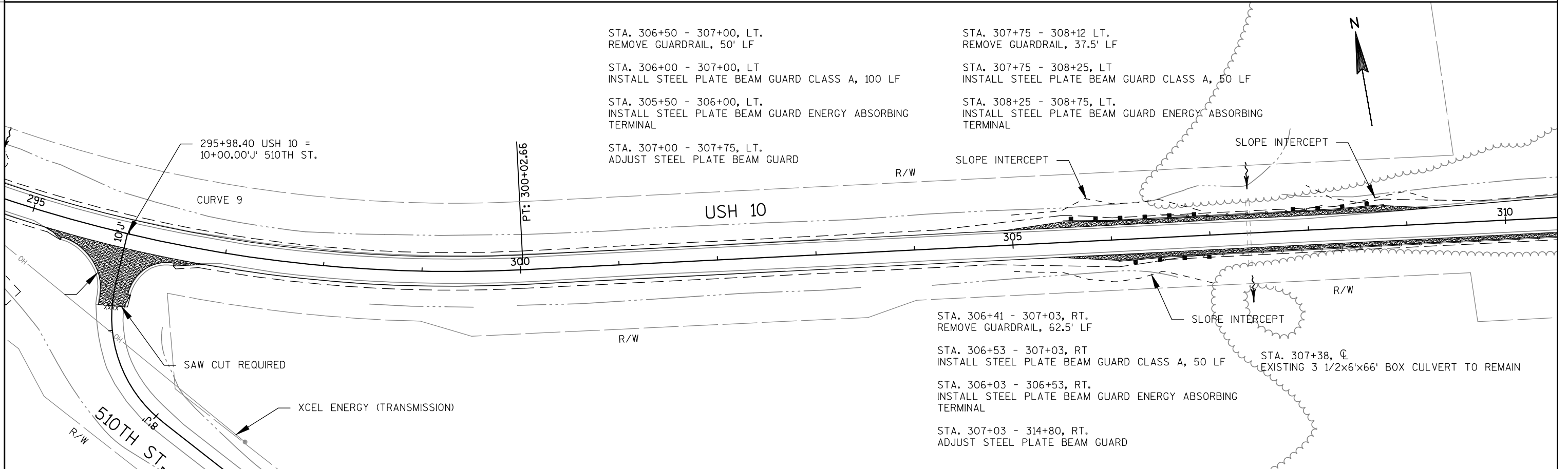
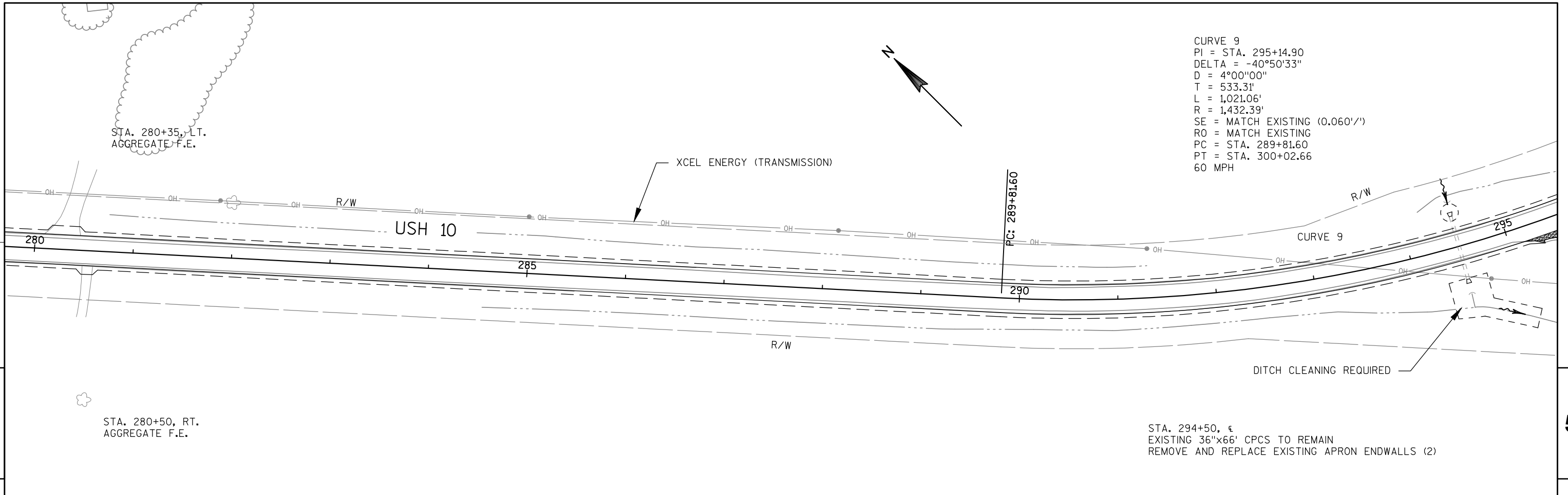
PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PLAN SHEET	SHEET	E
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LEGEND

- RCG REMOVE CURB AND GUTTER
- C636 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D



PROJECT NO:1530-07-62	HWY: USH 10	COUNTY: PIERCE	PLAN SHEET	SHEET	E
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PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PLAN SHEET	SHEET	E
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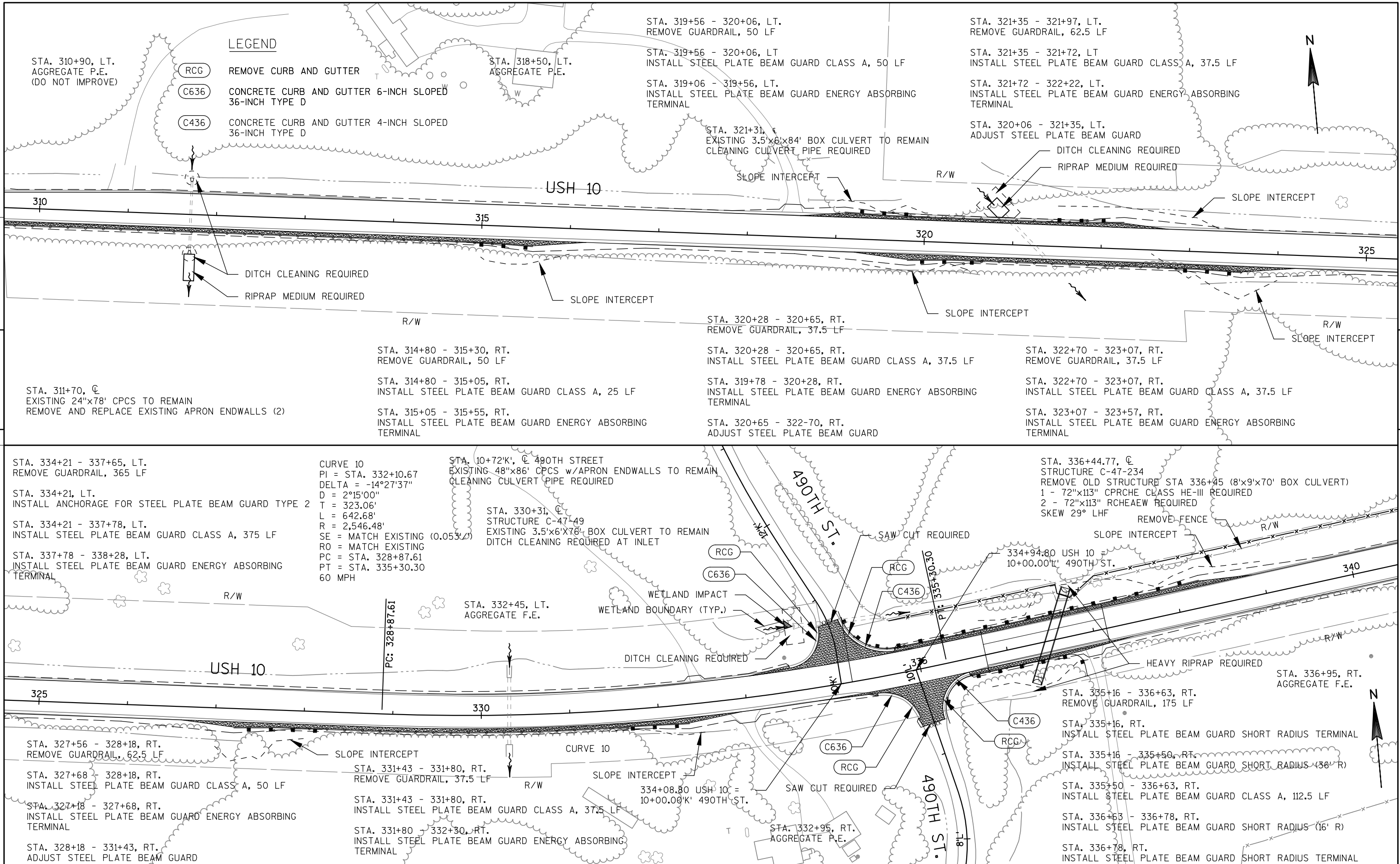
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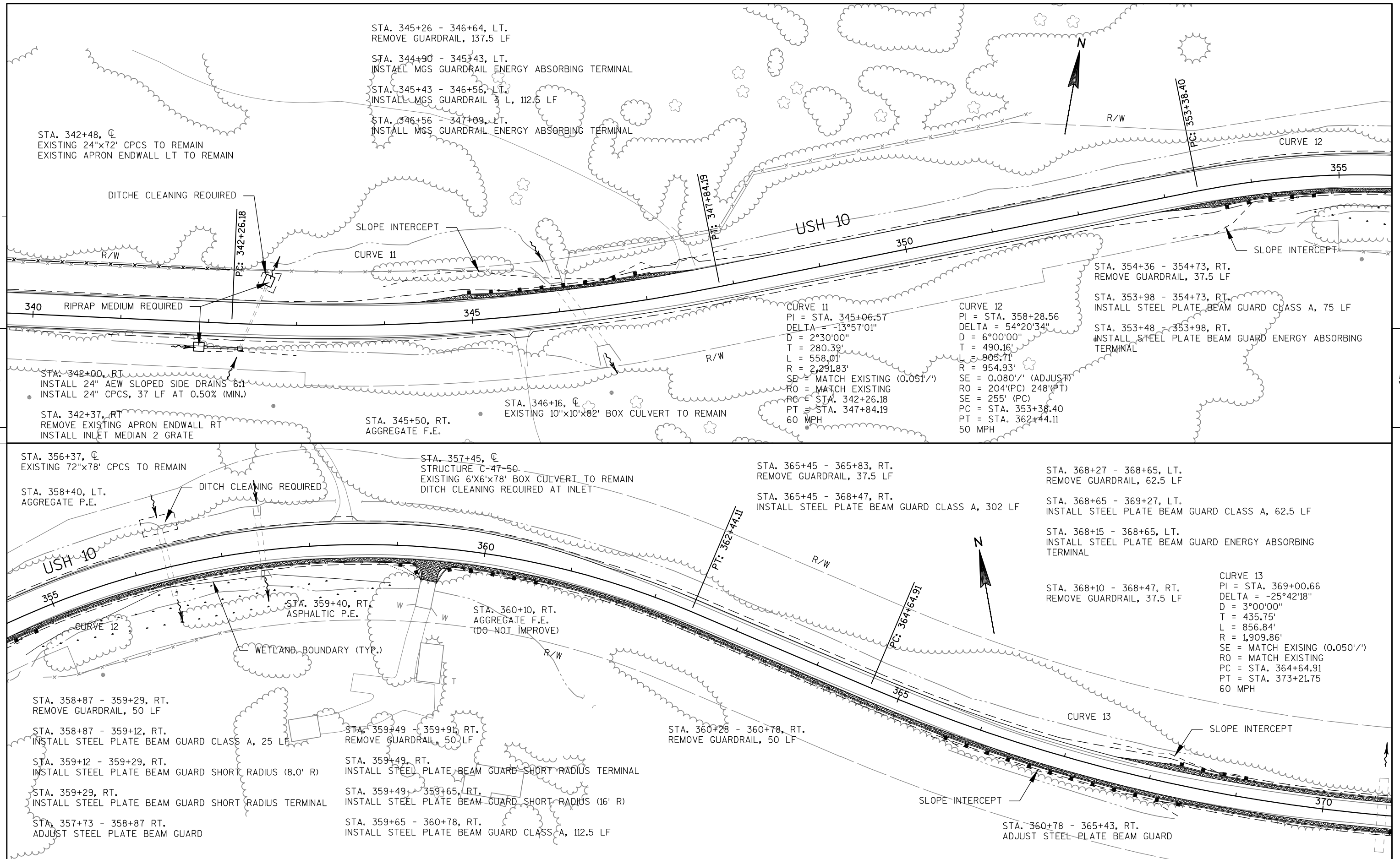
PLOT DATE : 10/25/2013 11:00 AM

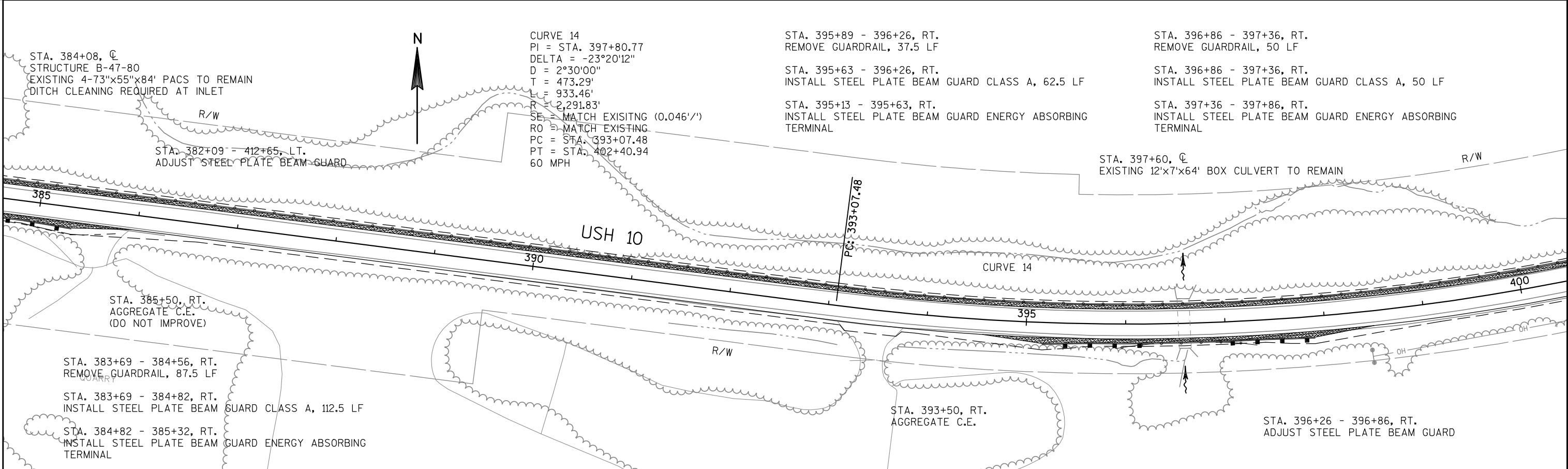
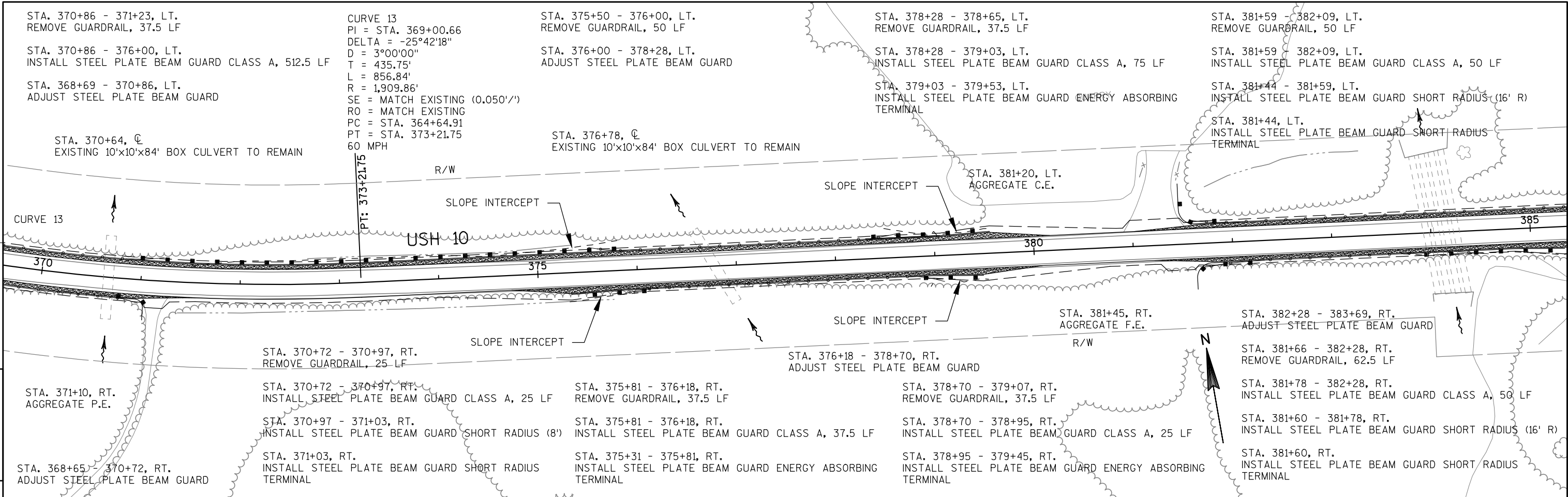
PLOT BY : JEFF BREU

PLOT NAME : PLOT SCALE : 1" = 100' XREF

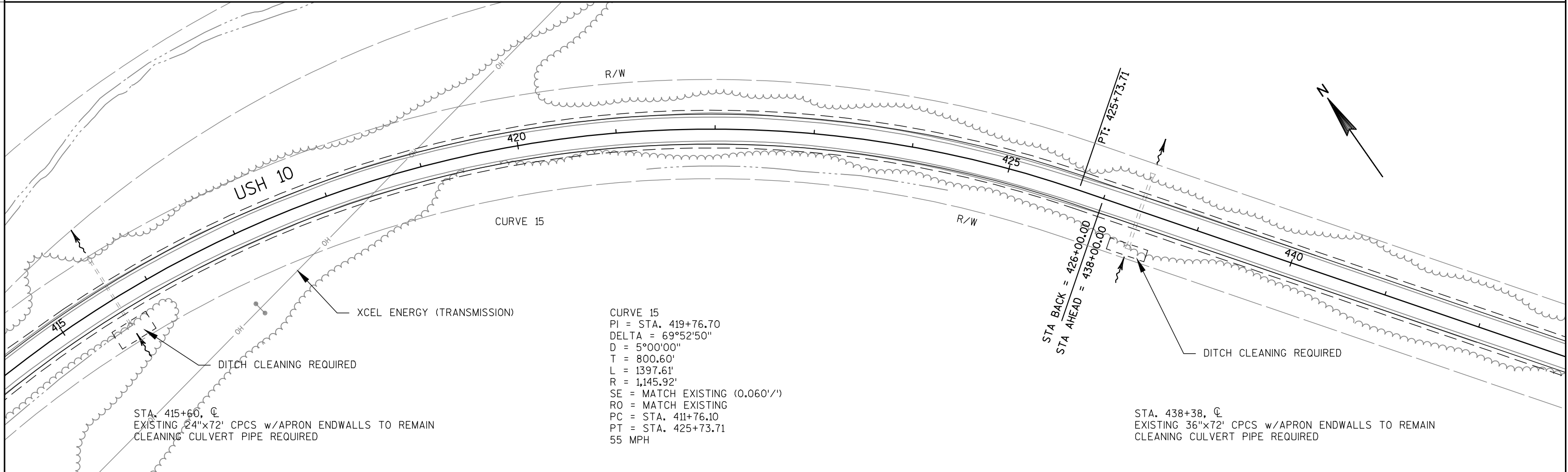
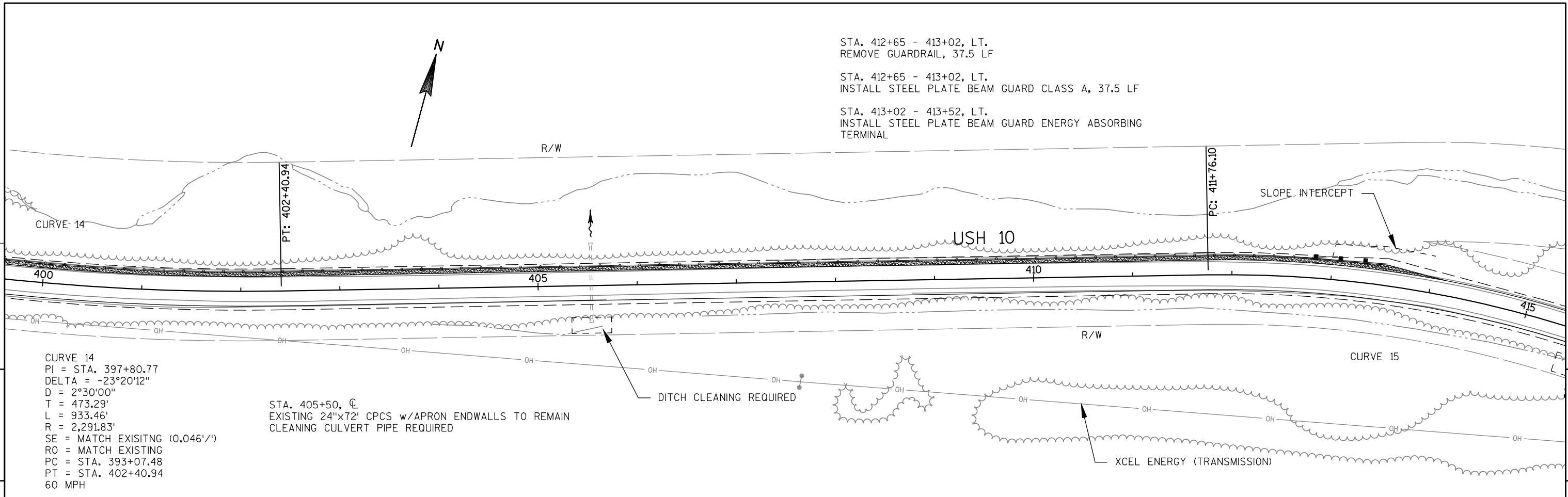
WISDOT/CADDs SHEET 44







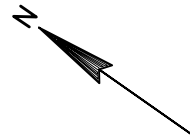
PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PLAN SHEET	SHEET	E
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PROJECT NO:1530-07-62	HWY: USH 10	COUNTY: PIERCE	PLAN SHEET	SHEET	E
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LEGEND

- (RCG) REMOVE CURB AND GUTTER
- (C636) CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D



STA. 452+50 - 453+03, RT.
INSTALL MGS GUARDRAIL ENERGY ABSORBING TERMINAL

STA. 453+03, RT. - 453+28, RT.
INSTALL MGS GUARDRAIL 3, 25 LF

STA. 453+28 - 454+41, RT.
INSTALL MGS GUARDRAIL 3L, 112.5 LF

STA. 454+41 - 454+94, RT.
INSTALL MGS GUARDRAIL ENERGY ABSORBING TERMINAL

400TH ST.

SAW CUT REQUIRED

WETLAND BOUNDARY (TYP.)

R/W

USH 10

(RCG)

(C636)

(RCG)

(C636)

R/W

445

450

455

R/W

SLOPE INTERCEPT

STA. 452+10, RT.
AGGREGATE P.E.

453+81.34 USH 10 =
10+00.00'M 400TH ST.

PIERCE-PEPIN CO-OP

STA. 446+20, C
EXISTING 36"x76' CPCS TO REMAIN
REMOVE AND REPLACE EXISTING APRON ENDWALLS (2)

STA. 454+02, C
STRUCTURE C-47-51
EXISTING 6'x4.5'x76' BOX CULVERT TO REMAIN
CLEANING CULVERT PIPE REQUIRED

5

5

STA. 459+55, C
EXISTING 24"x68' CPCS TO REMAIN
EXISTING APRON ENDWALL RT TO REMAIN
REMOVE AND REPLACE EXISTING APRON ENDWALL LT (1)

DITCH CLEANING REQUIRED

R/W

460

465

470

USH 10

CURVE 16

R/W

PIERCE-PEPIN CO-OP

A/C STA. 461+75, RT.
AGGREGATE P.E.

STA. 463+55, RT.
AGGREGATE P.E.

CURVE 16
PI = STA. 480+69.76
DELTA = 36°25'09"
D = 2°00'00"
T = 942.42'
L = 1,820.95'
R = 2,864.79'
SE = MATCH EXISTING (0.045'/'')
RO = MATCH EXISTING
PC = STA. 471+27.33
PT = STA. 489+48.29
60 MPH

PROJECT NO: 1530-07-62

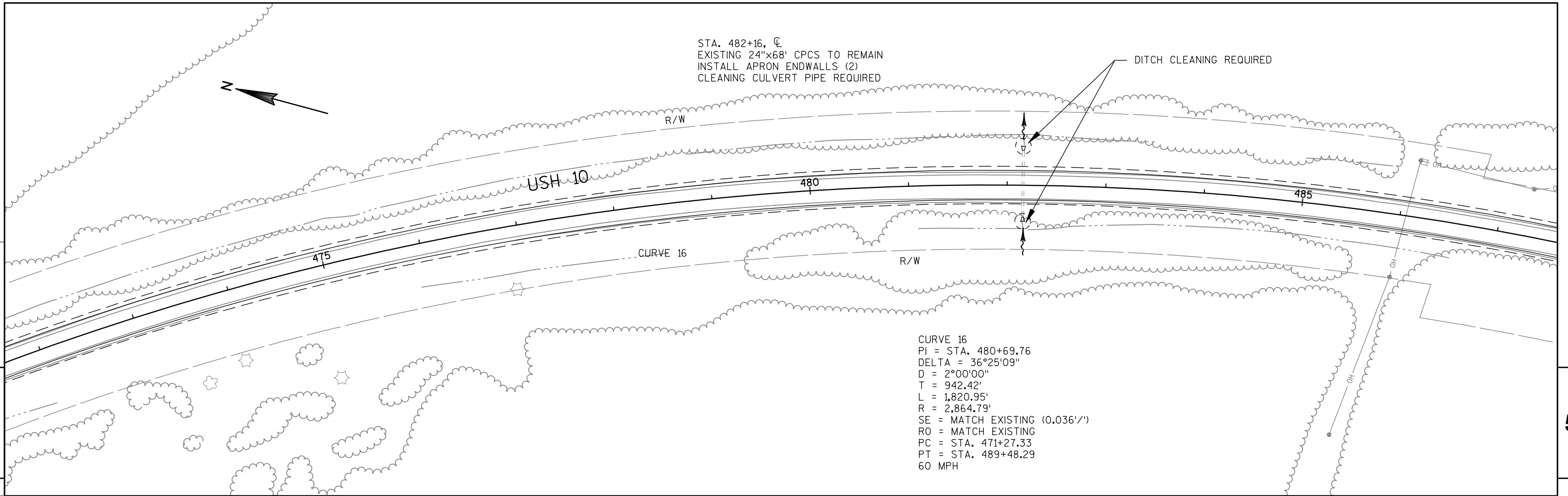
HWY: USH 10

COUNTY: PIERCE

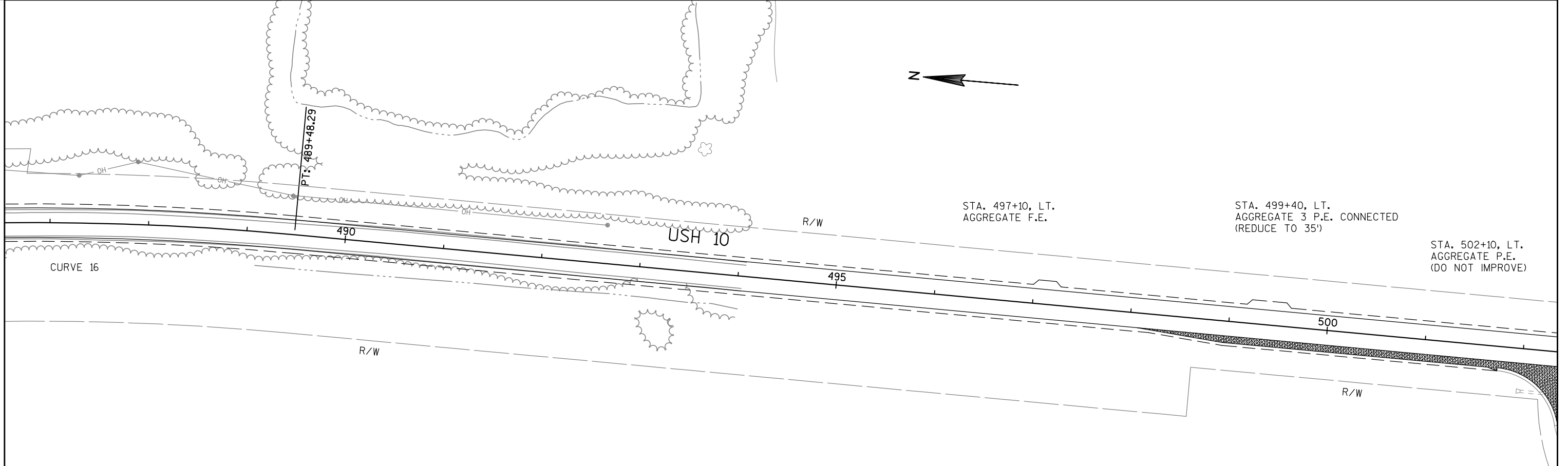
PLAN SHEET

SHEET

E



CURVE 16
 PI = STA. 480+69.76
 DELTA = 36°25'09"
 D = 2°00'00"
 T = 942.42'
 L = 1,820.95'
 R = 2,864.79'
 SE = MATCH EXISTING (0.036'/'')
 RO = MATCH EXISTING
 PC = STA. 471+27.33
 PT = STA. 489+48.29
 60 MPH

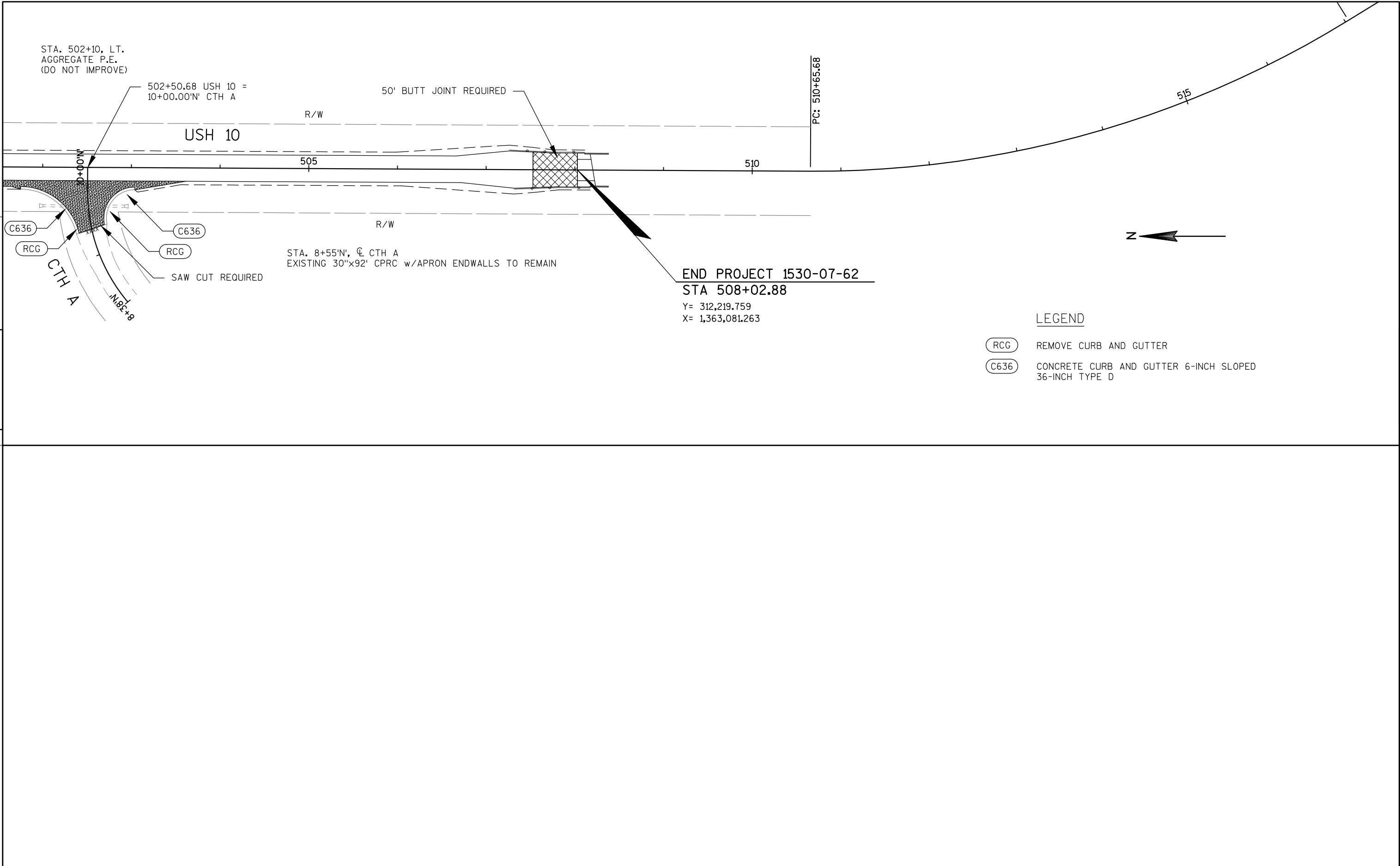


STA. 497+10, LT.
 AGGREGATE F.E.

STA. 499+40, LT.
 AGGREGATE 3 P.E. CONNECTED
 (REDUCE TO 35')

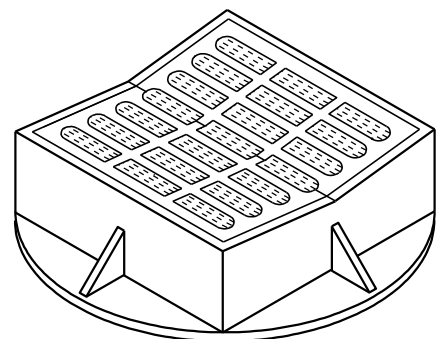
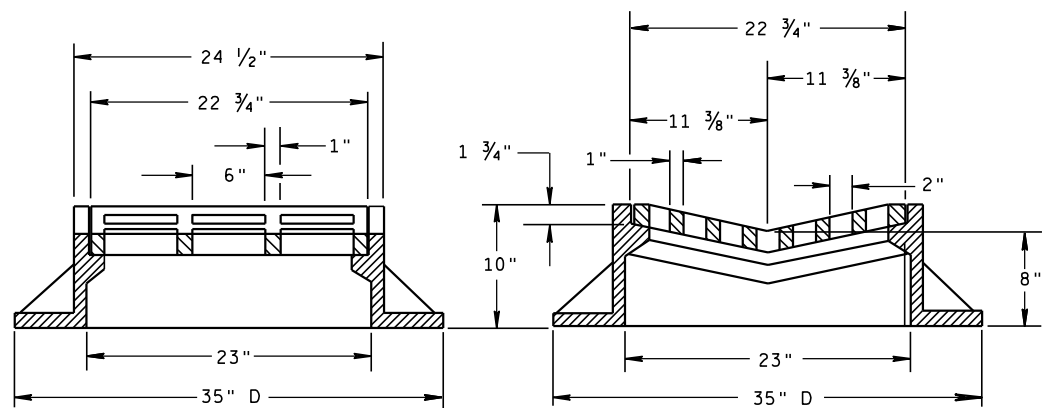
STA. 502+10, LT.
 AGGREGATE P.E.
 (DO NOT IMPROVE)

PROJECT NO:1530-07-62	HWY:USH 10	COUNTY:PIERCE	PLAN SHEET	SHEET	E
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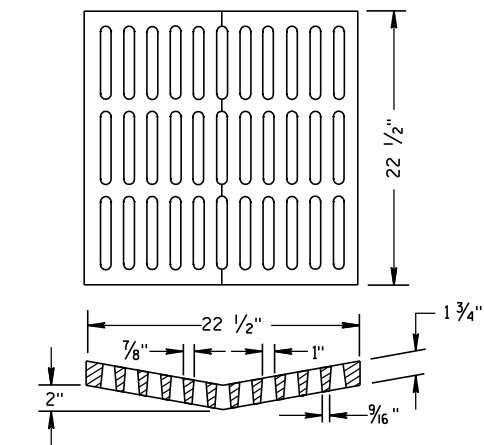


Standard Detail Drawing List

08A05-18B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F07-05	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE FRAINS
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13A08-01	ASPHALTIC RUMBLE STRIPS AT INTERSECTION
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B16-04A	ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2
14B16-04B	ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
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
14B25-01	STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS
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
14B29-01	SAFETY EDGE
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-03A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16C	PAVEMENT MARKING (CLIMBING LANE & PASSING LANE)
15C08-16D	PAVEMENT MARKING (CLIMBING LANE & PASSING LANE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C27-01	DOUBLE ARROW WARNING SIGN PLACEMENT
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D33-03	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



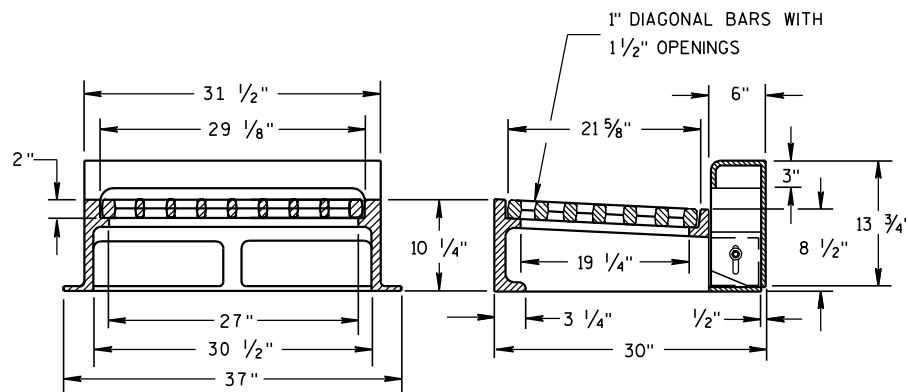
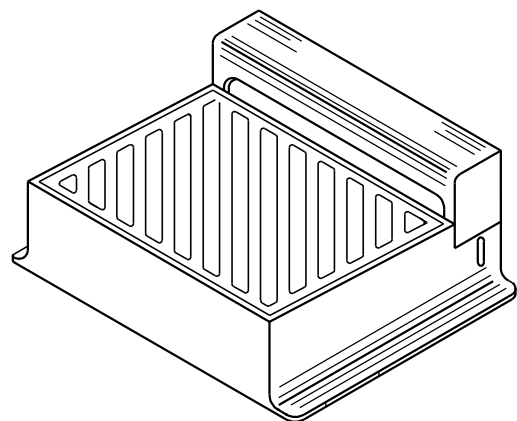
TYPE "B"
(APPROXIMATE WEIGHT 405 LBS.)
FRAME..... 294 LBS.
GRATE..... 111 LBS.



**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

(APPROXIMATE GRATE WEIGHT 134 LBS.)

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



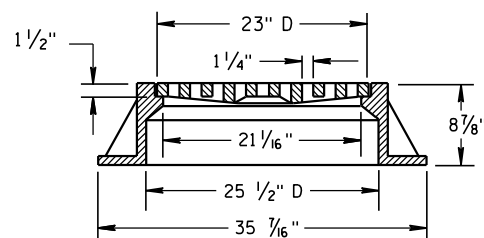
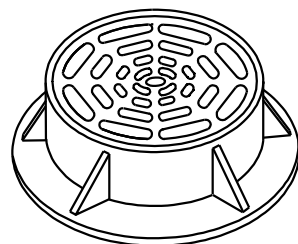
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"
(APPROXIMATE WEIGHT 648 LBS.)

FRAME..... 355 LBS.
GRATE..... 156 LBS.
CURB BOX..... 137 LBS.

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

DIRECTION
OF FLOW



TYPE "C"
(APPROXIMATE WEIGHT 259 LBS.)

FRAME..... 152 LBS.
GRATE..... 107 LBS.

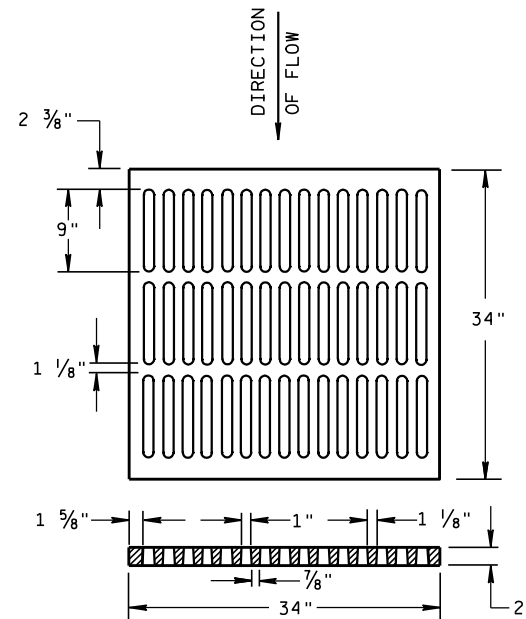
GENERAL NOTES

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

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

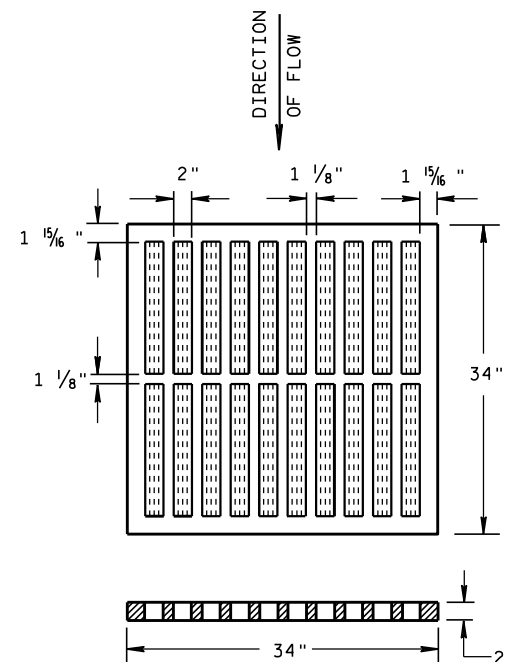
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.



ALTERNATIVE TYPE "MS"
(APPROXIMATE GRATE WEIGHT 329 LBS.)

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



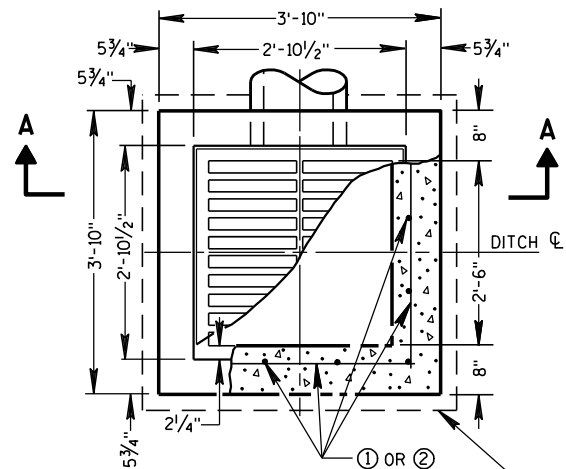
TYPE "MS"
(APPROXIMATE GRATE WEIGHT 268 LBS.)

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

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

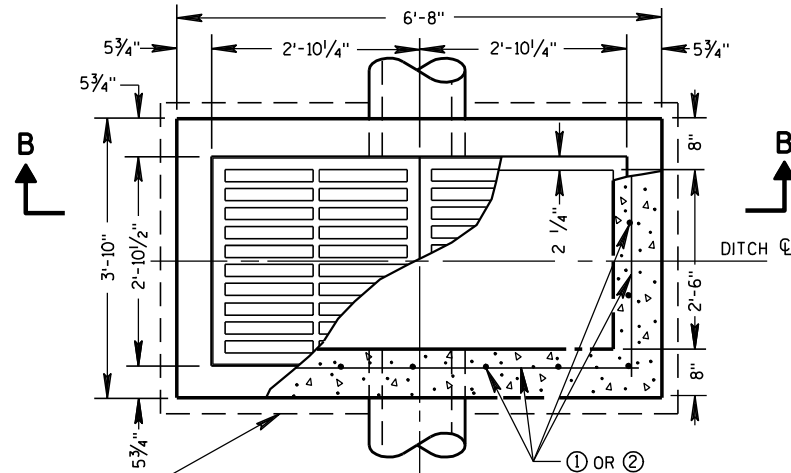
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

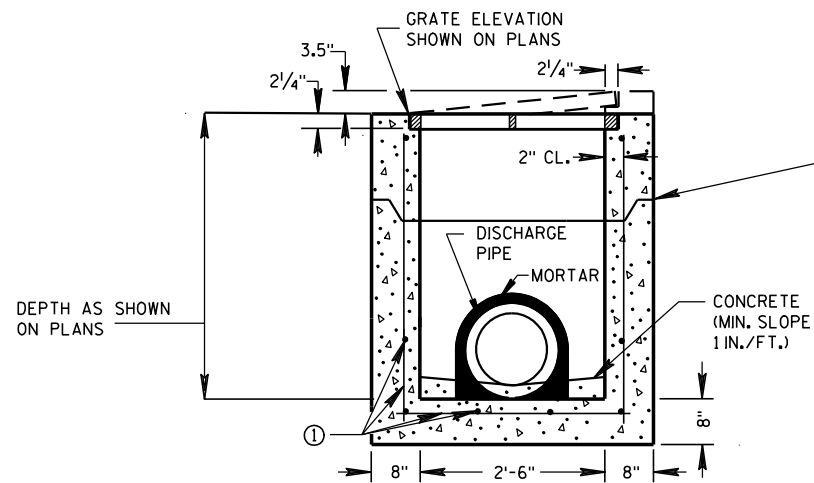


PLAN VIEW

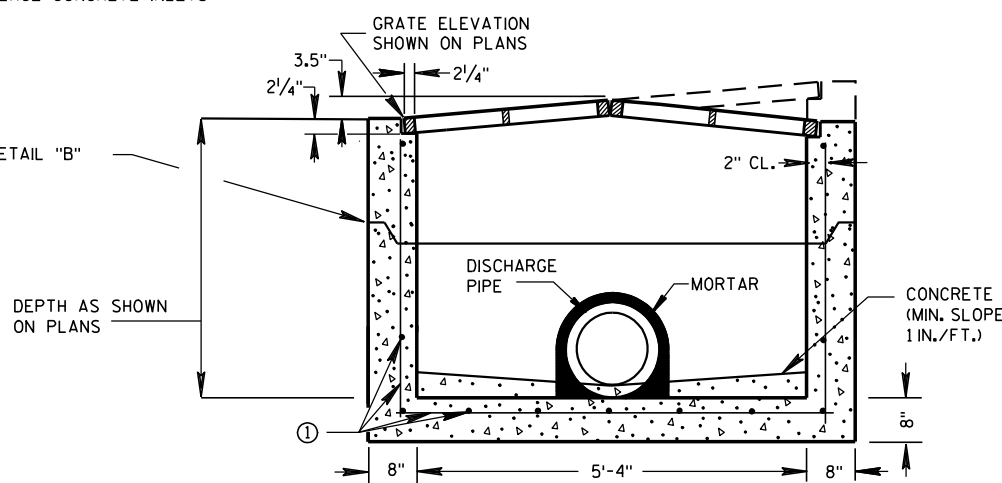
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



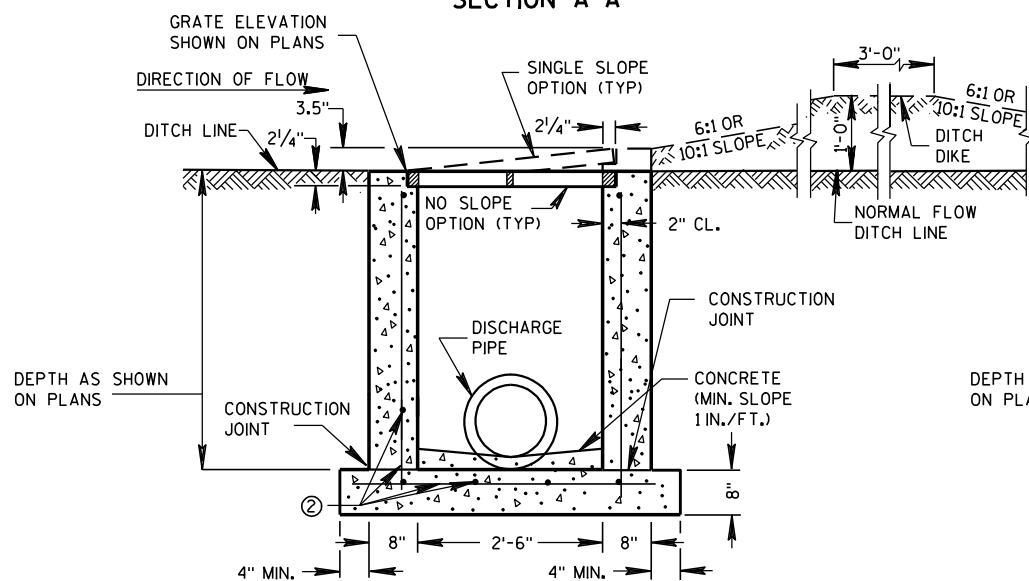
PLAN VIEW



PRECAST REINFORCED CONCRETE SECTION A-A

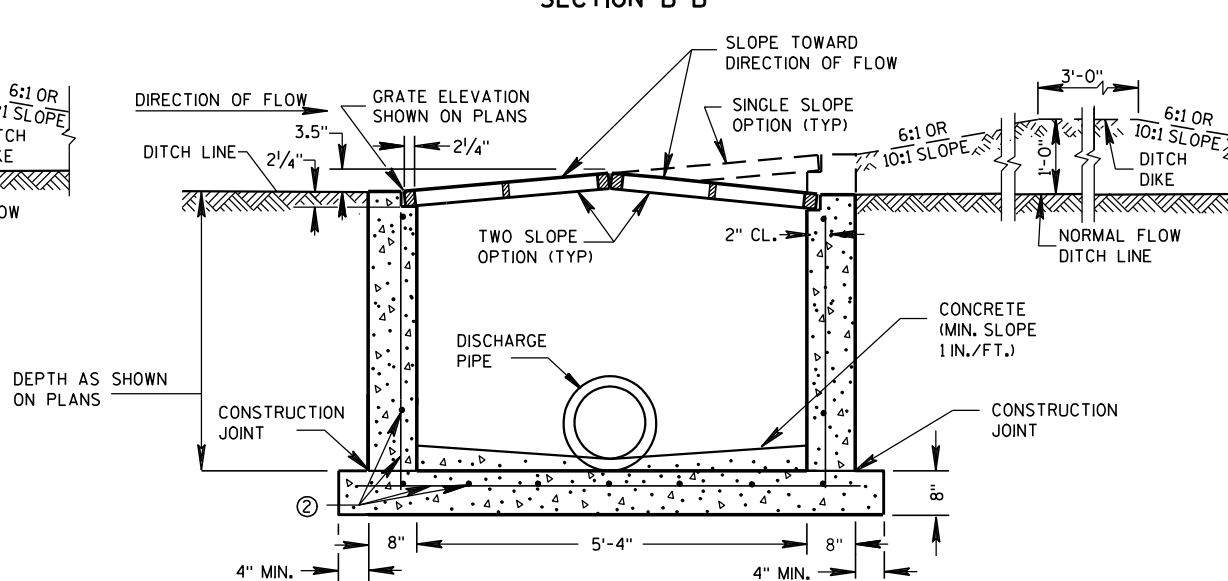


PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A

INLETS MEDIAN 1 GRATE



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

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

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

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

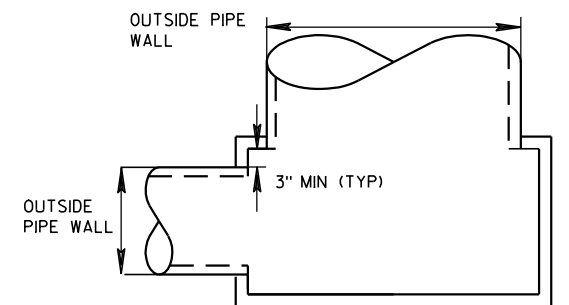
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

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

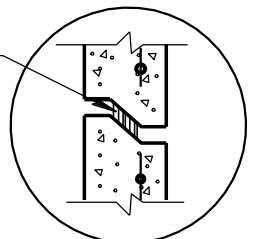
PIPE MATRIX

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



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

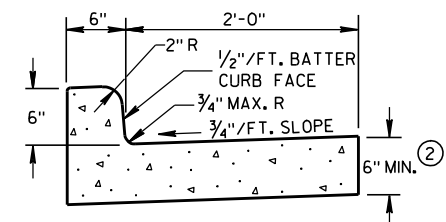
APPROVED

6/5/2012

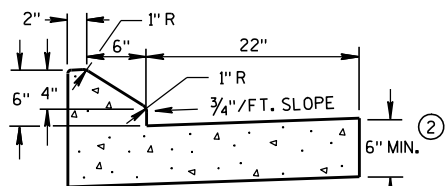
DATE

FHWA

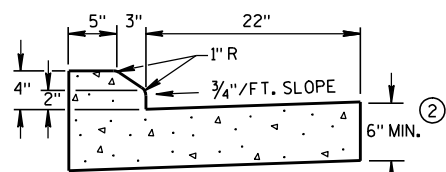
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPES A & D ①

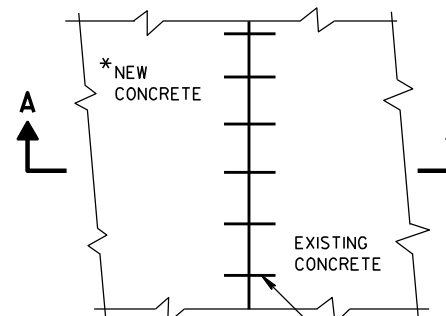


6" SLOPED CURB TYPES G & J ①



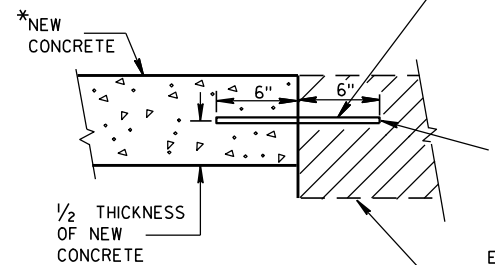
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



PLAN VIEW

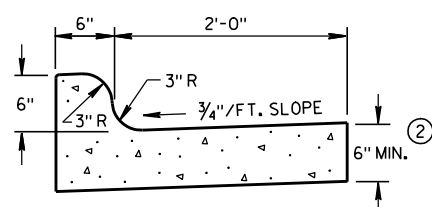
* NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

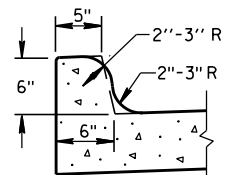
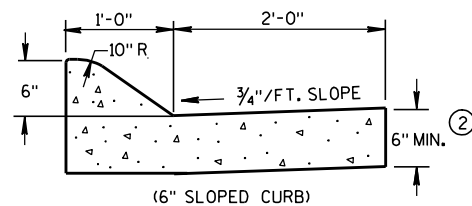
NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

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

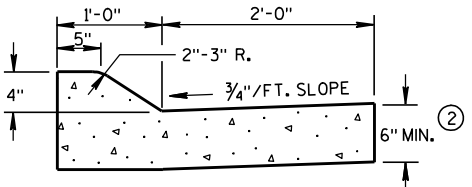
EXISTING
CONCRETE



TYPES K & L ①

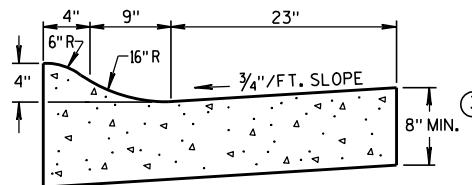
OPTIONAL CURB SHAPE
FOR TYPES K & L ①

(6" SLOPED CURB)



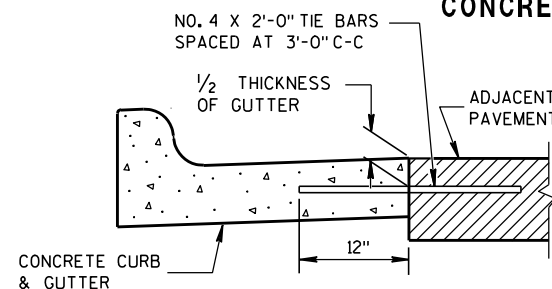
(4" SLOPED CURB)

TYPES A & D ①

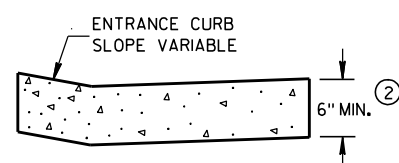
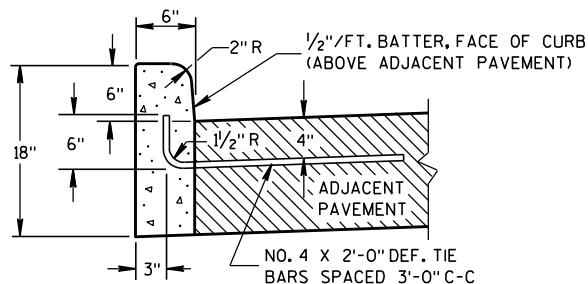


4" SLOPED CURB TYPES R & T ① ④

CONCRETE CURB & GUTTER 36"

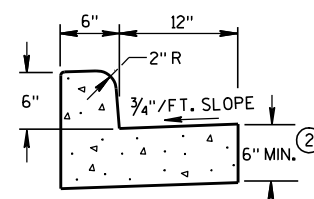
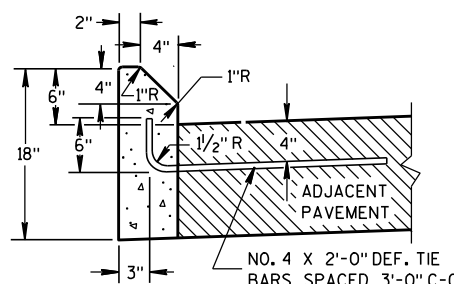


TYPICAL TIE BAR LOCATION ①

DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

TYPES A & D ①

CONCRETE CURB

TYPES A & D
CONCRETE CURB & GUTTER 18"

TYPES G & J ①

GENERAL NOTES

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

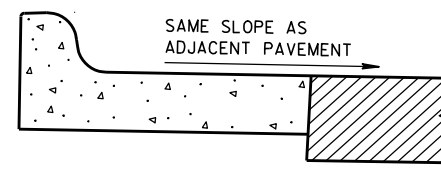
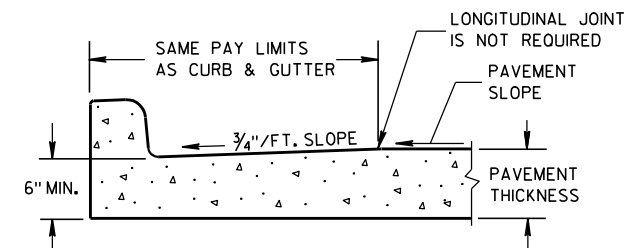
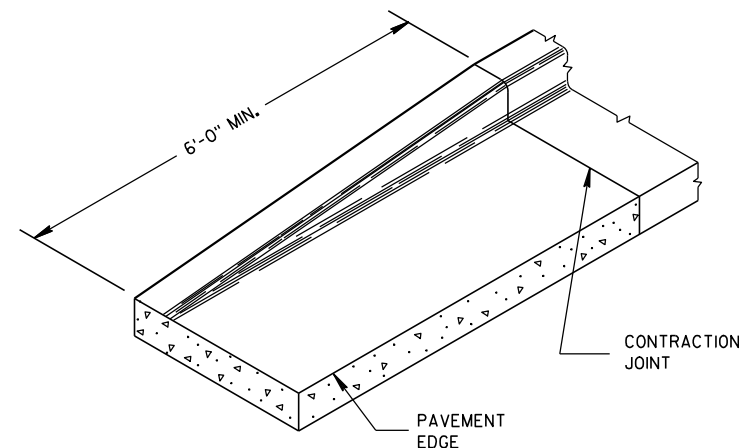
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

REVERSE SLOPE GUTTER ⑤
(TYPICAL FOR ALL CURB & GUTTER TYPES)PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER

END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08

DATE

FHWA

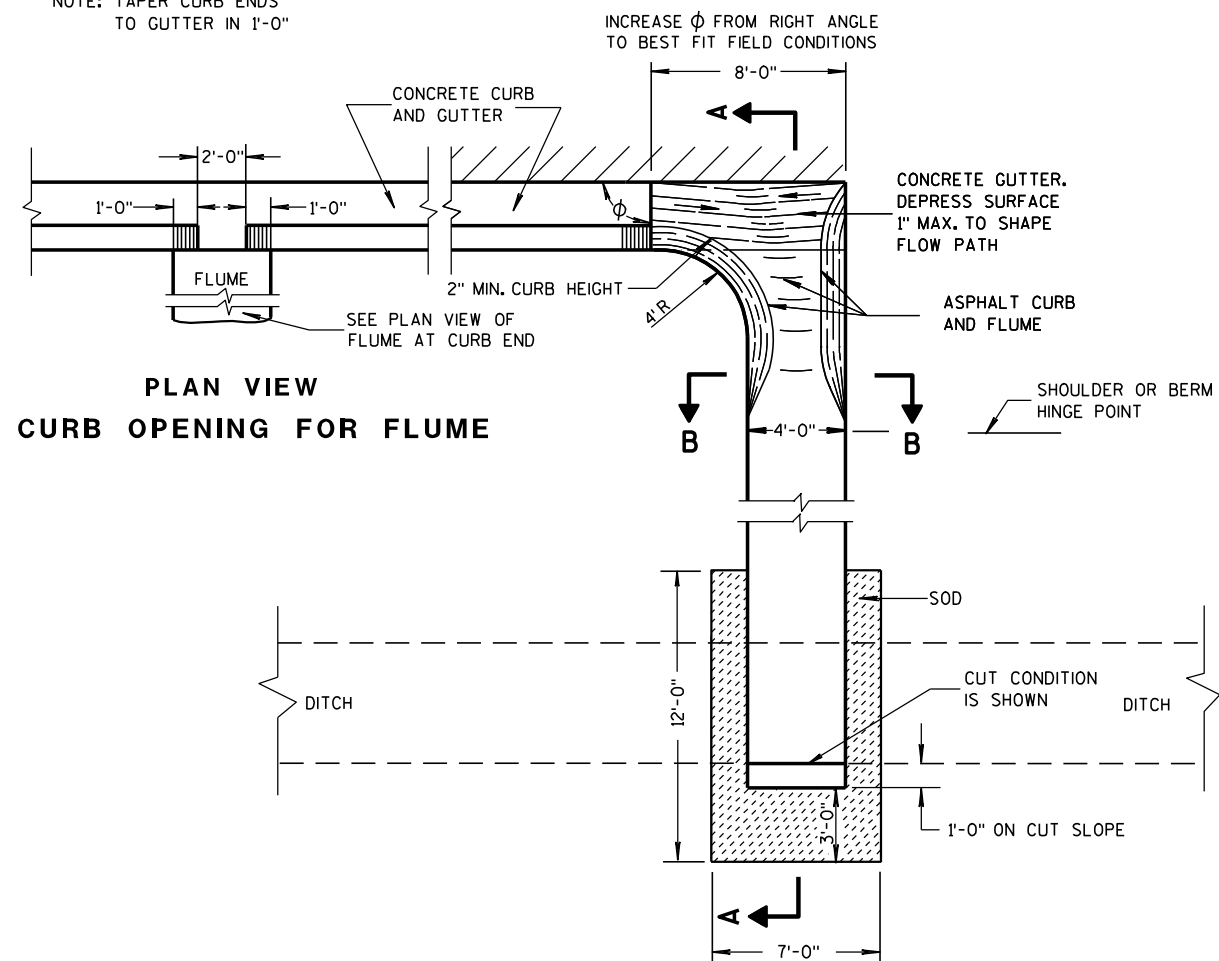
/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

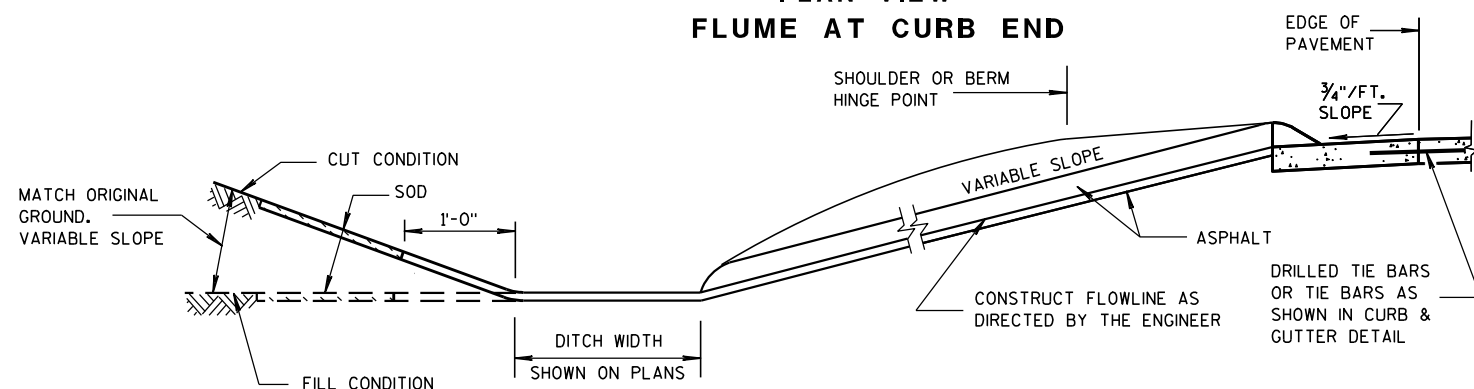
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

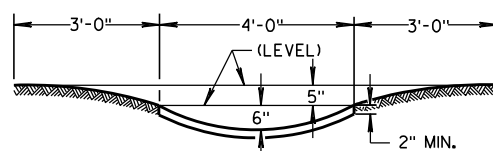


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

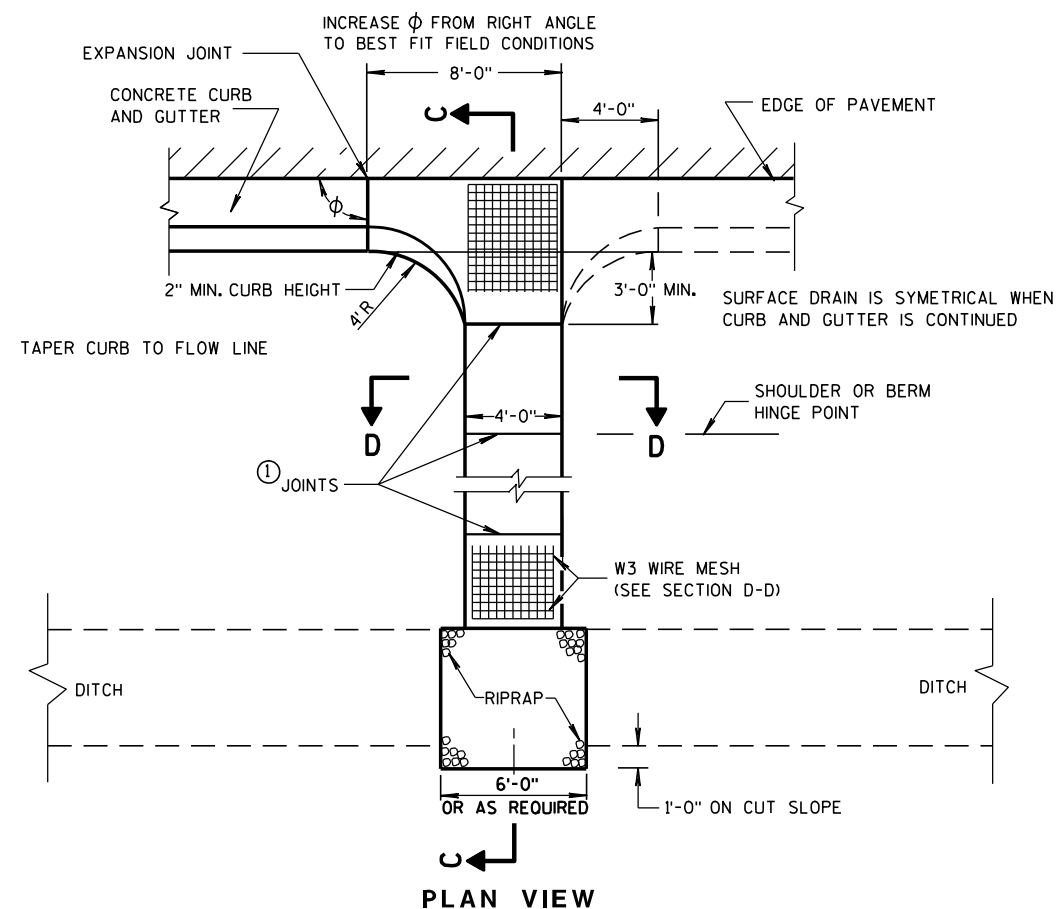
GENERAL NOTES

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

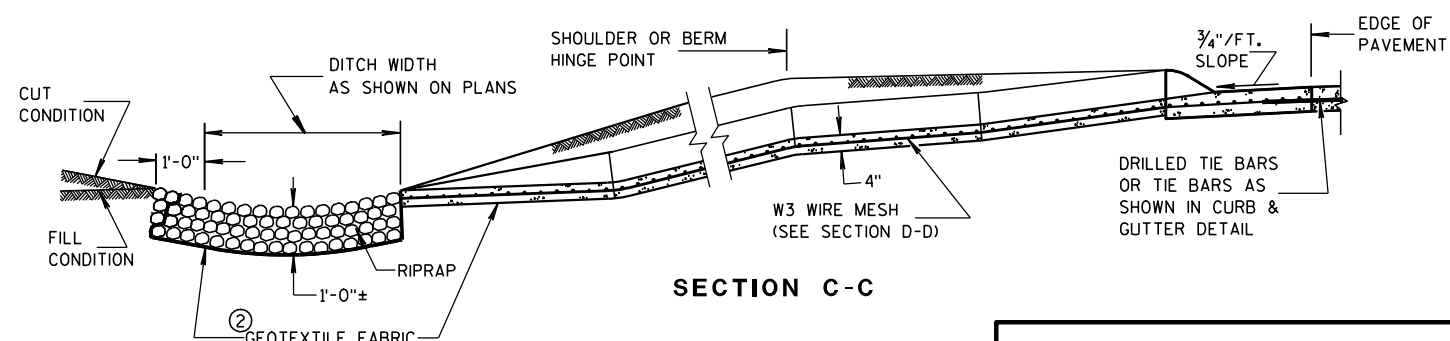
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8" TO 1/4" INCH WIDE BY 1 1/2" INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

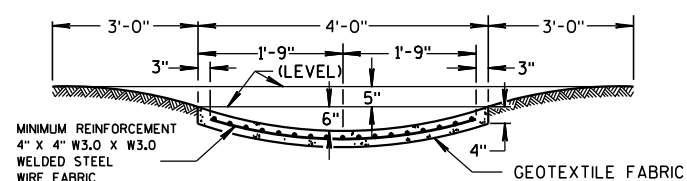
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

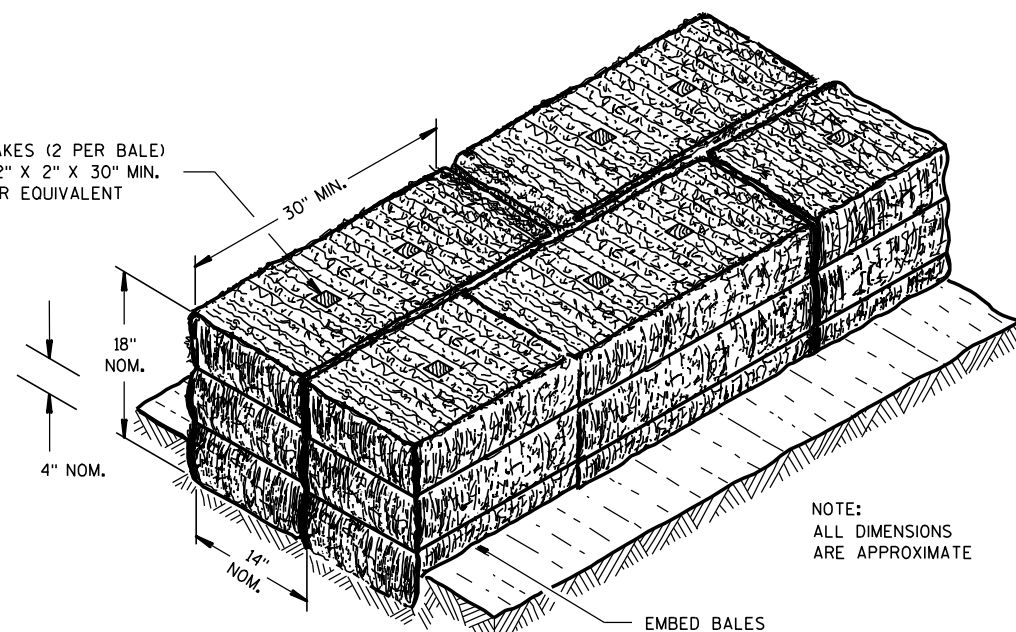
9-4-08

DATE

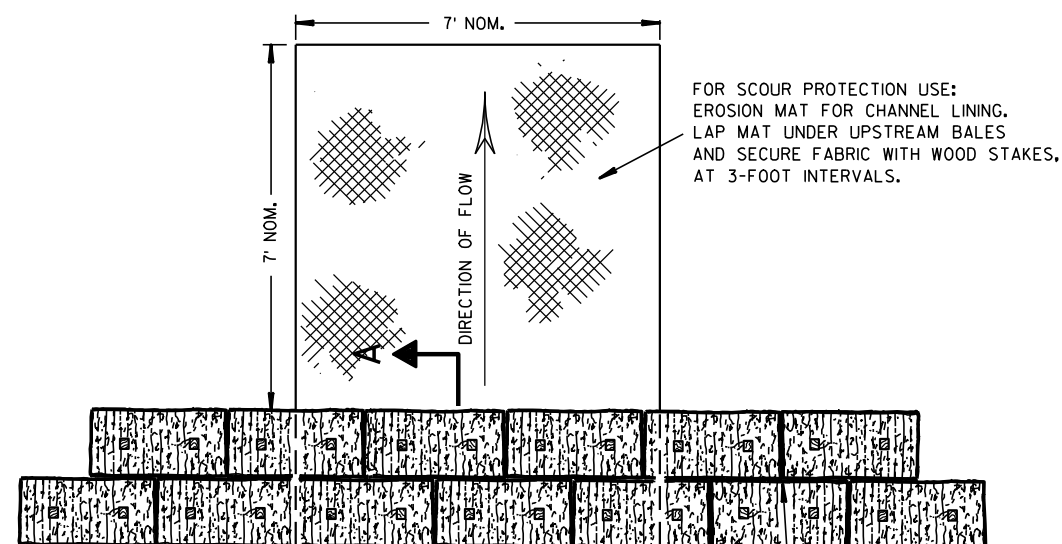
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

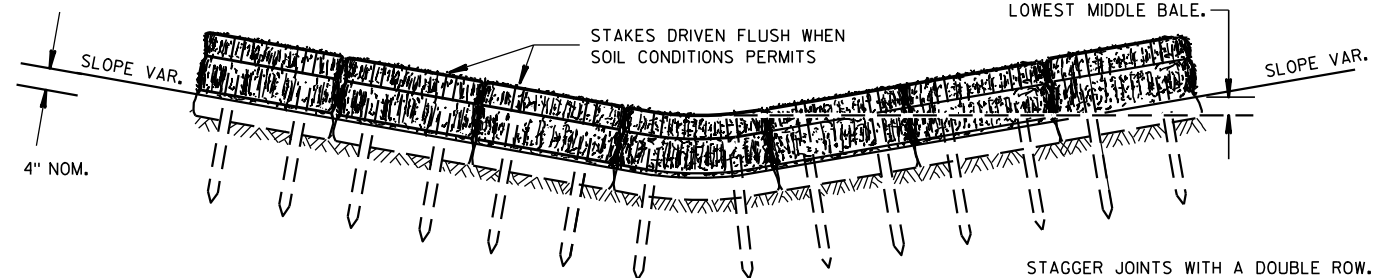
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



SECTION A-A



PLAN VIEW



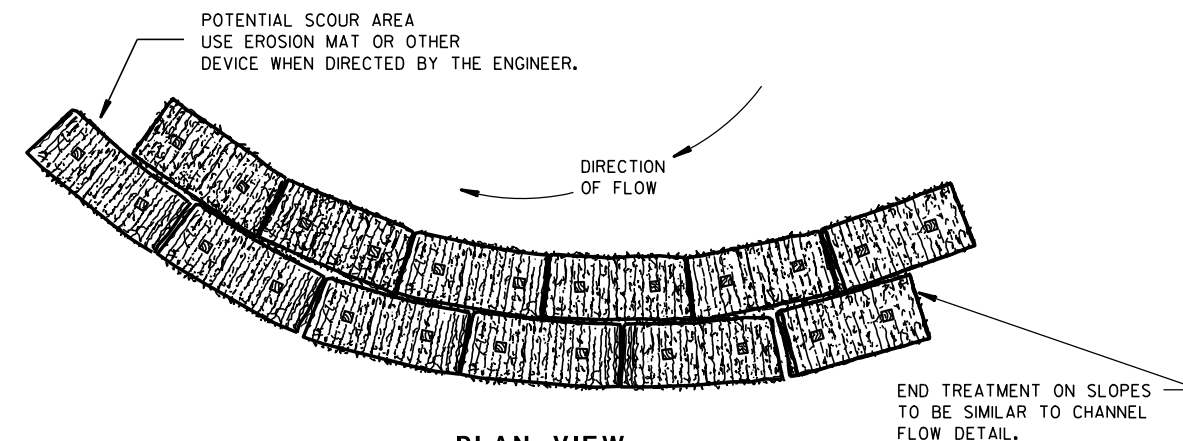
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

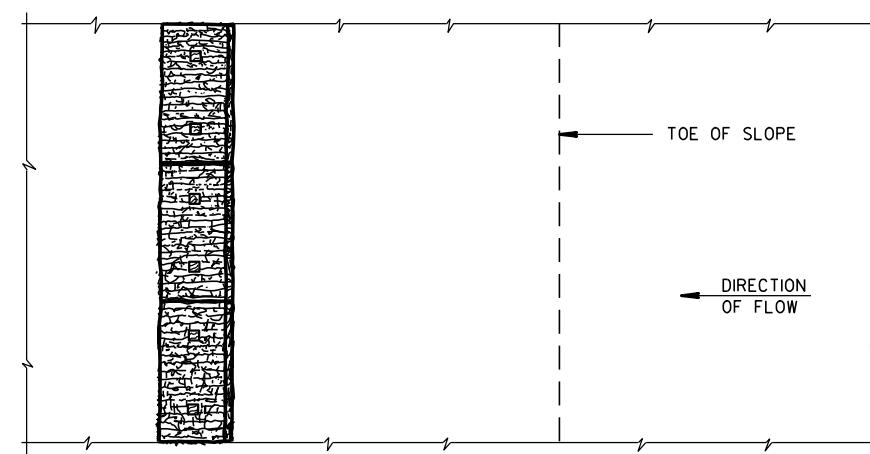
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

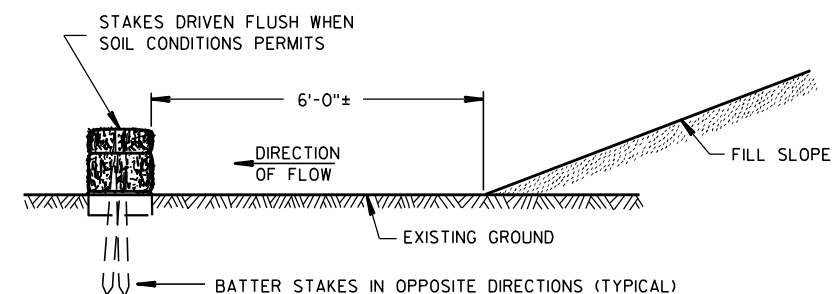


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

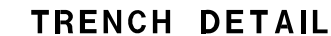
6/04/02
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



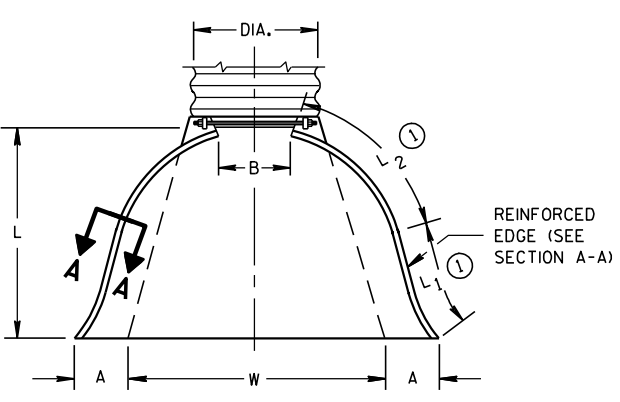
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



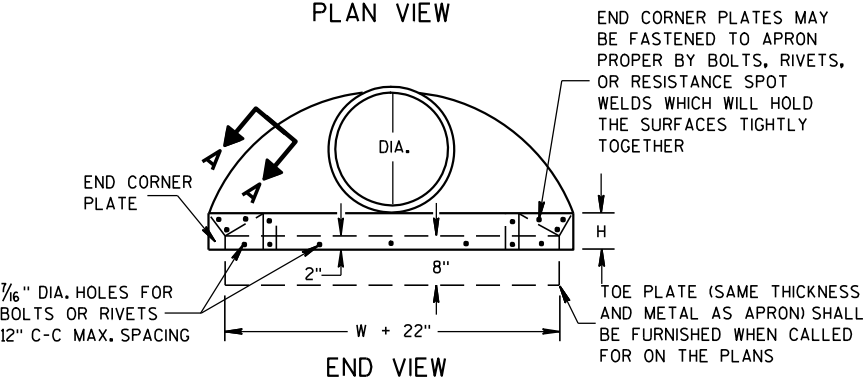
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Canestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

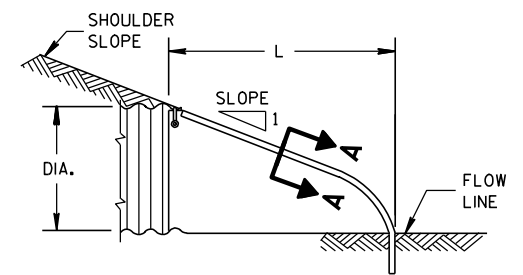
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



PLAN VIEW



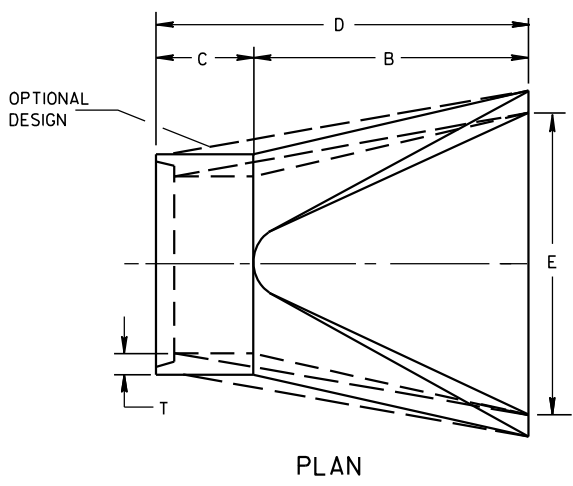
END VIEW



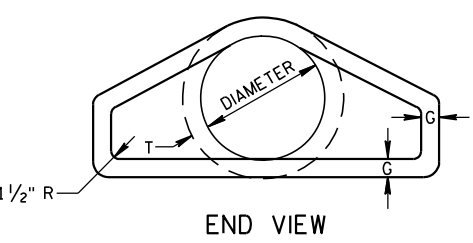
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 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 1/2 to 1			
60	6	30-35	60	39	99	96	5	2 to 1			
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1			
72	7	24-36	78	21	99	108	6	2 to 1			
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1			
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1			
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1			

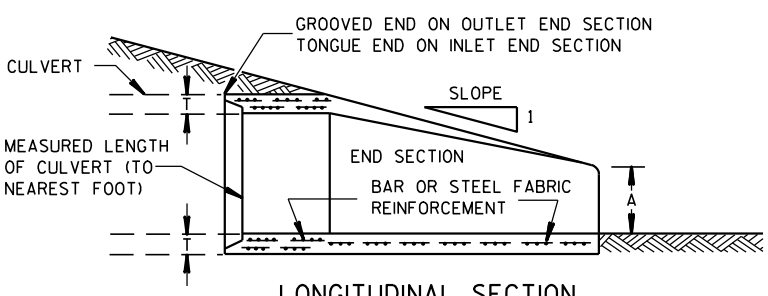
* MINIMUM
** MAXIMUM



PLAN

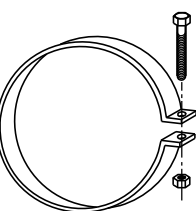


END VIEW

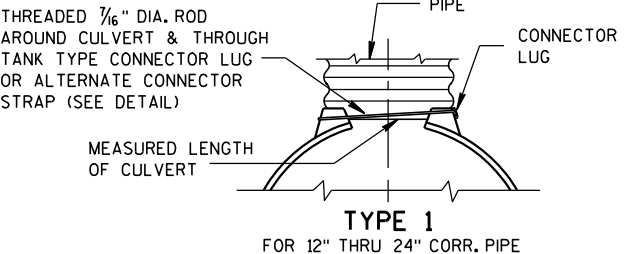


LONGITUDINAL SECTION
CONCRETE ENDWALLS

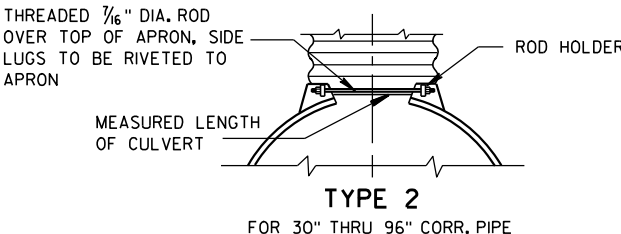
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



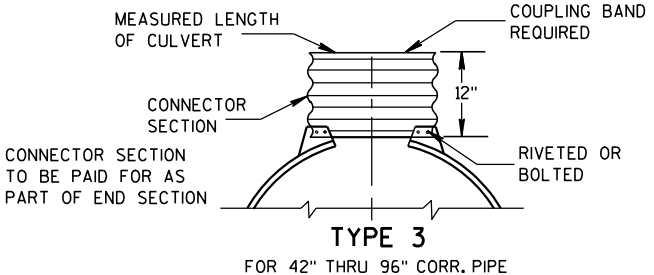
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



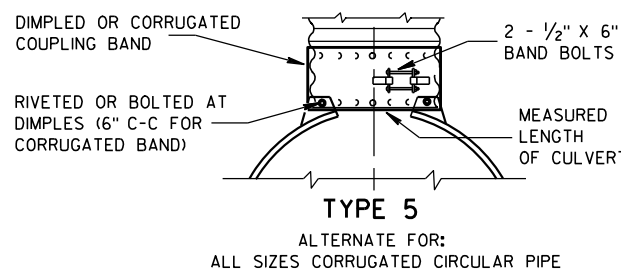
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

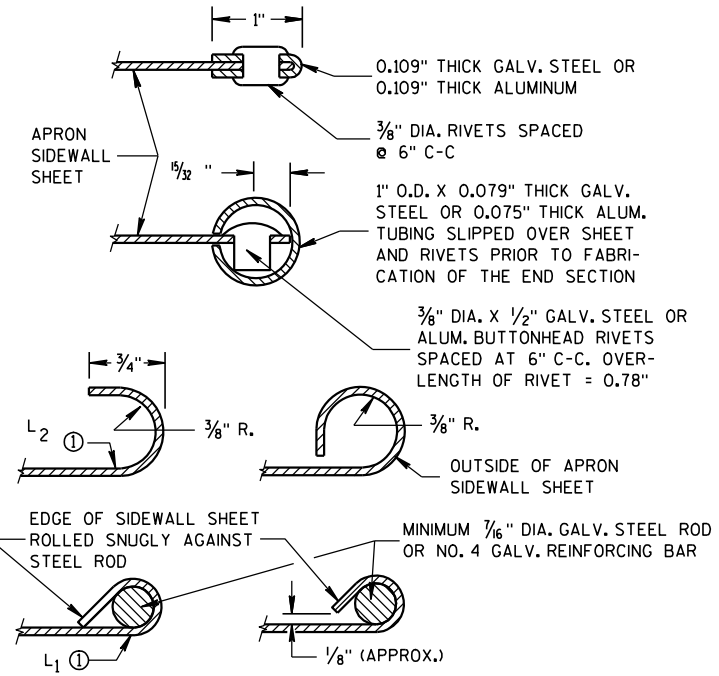
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

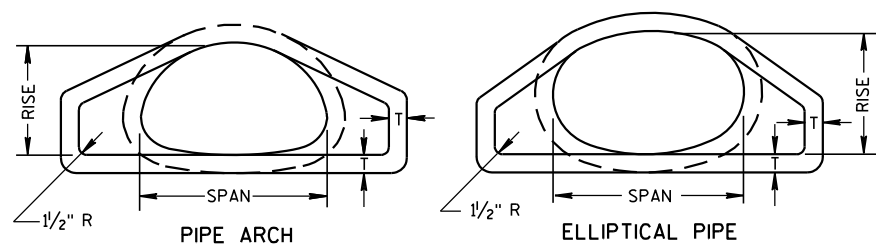
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

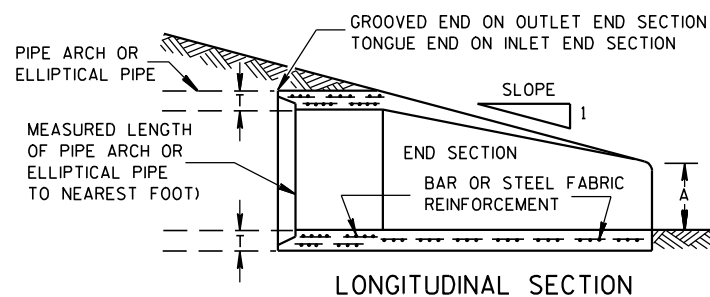
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinesmith CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

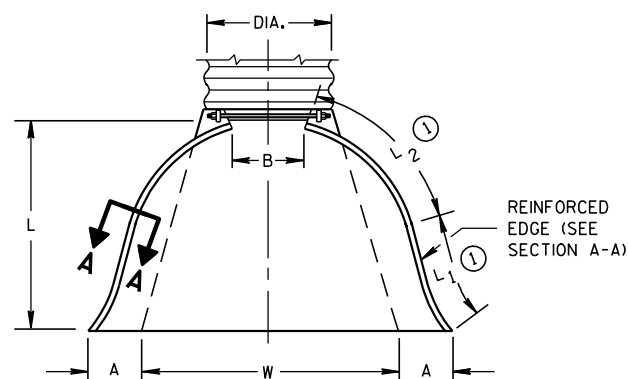


END VIEW



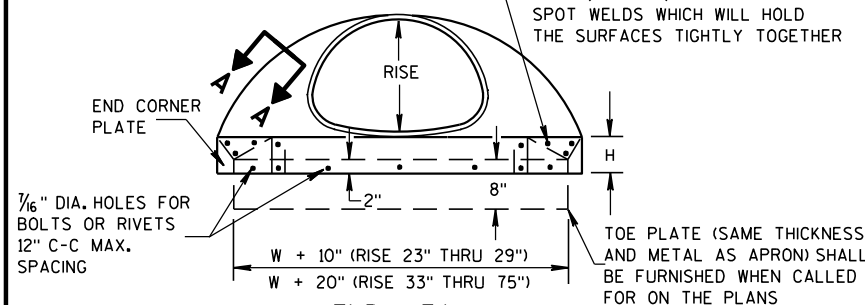
LONGITUDINAL SECTION

CONCRETE ENDWALLS

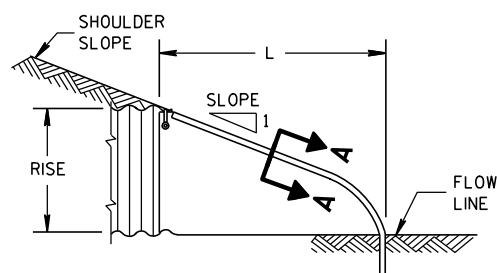
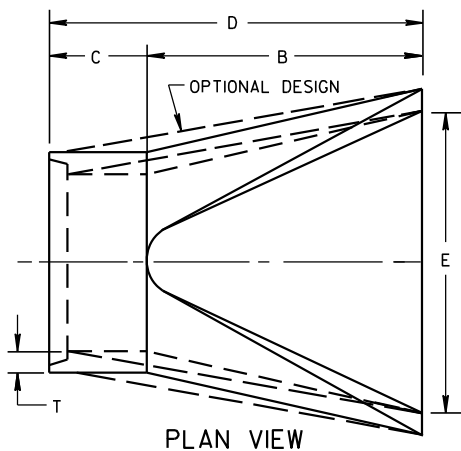


PLAN VIEW

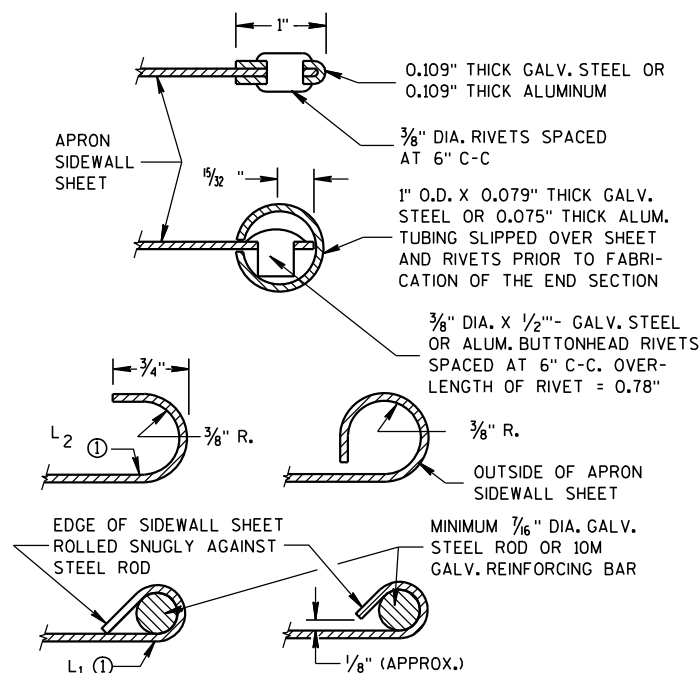
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW

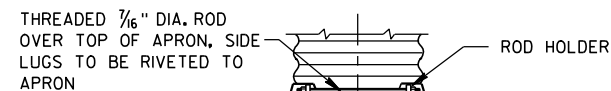


SECTION A-A

2- 2 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

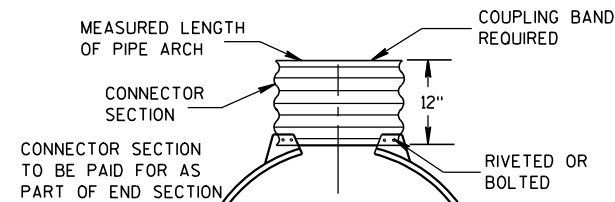
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

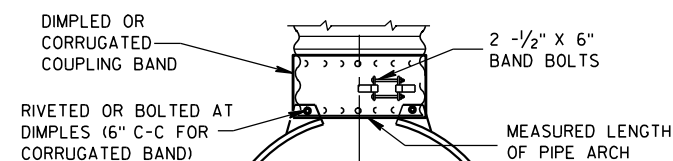
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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.

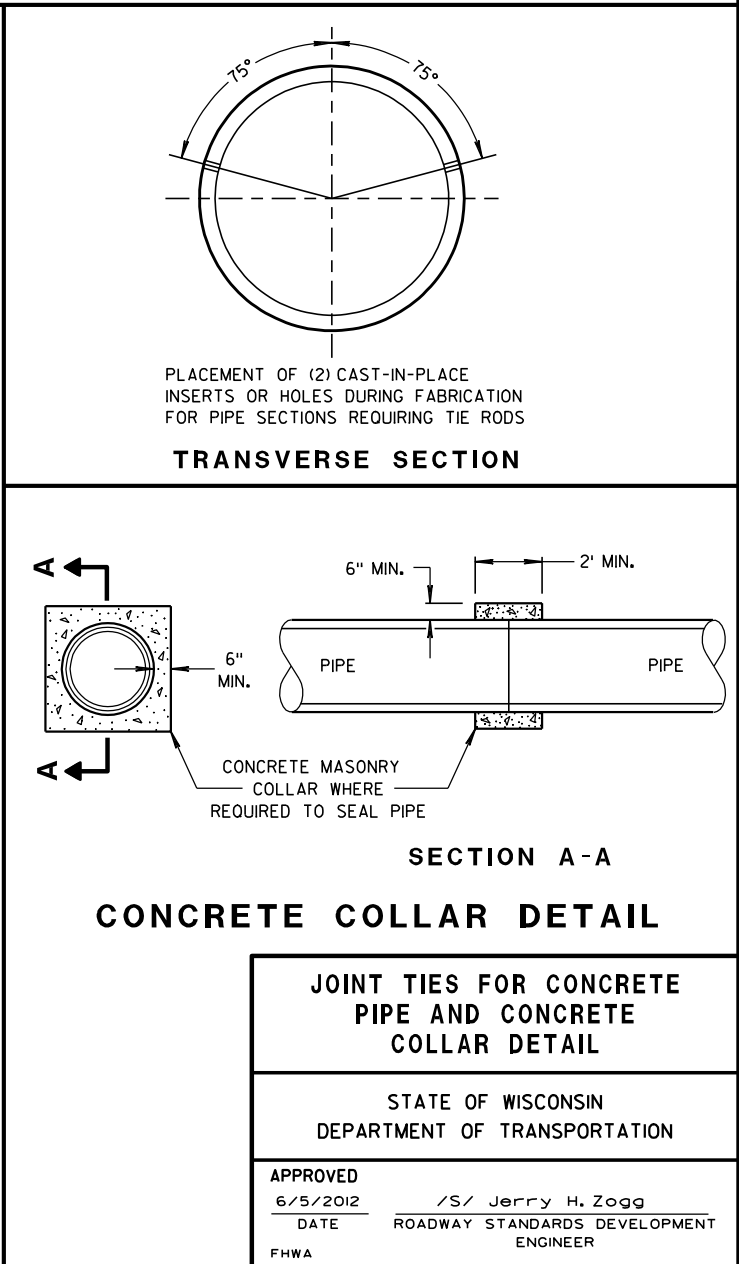
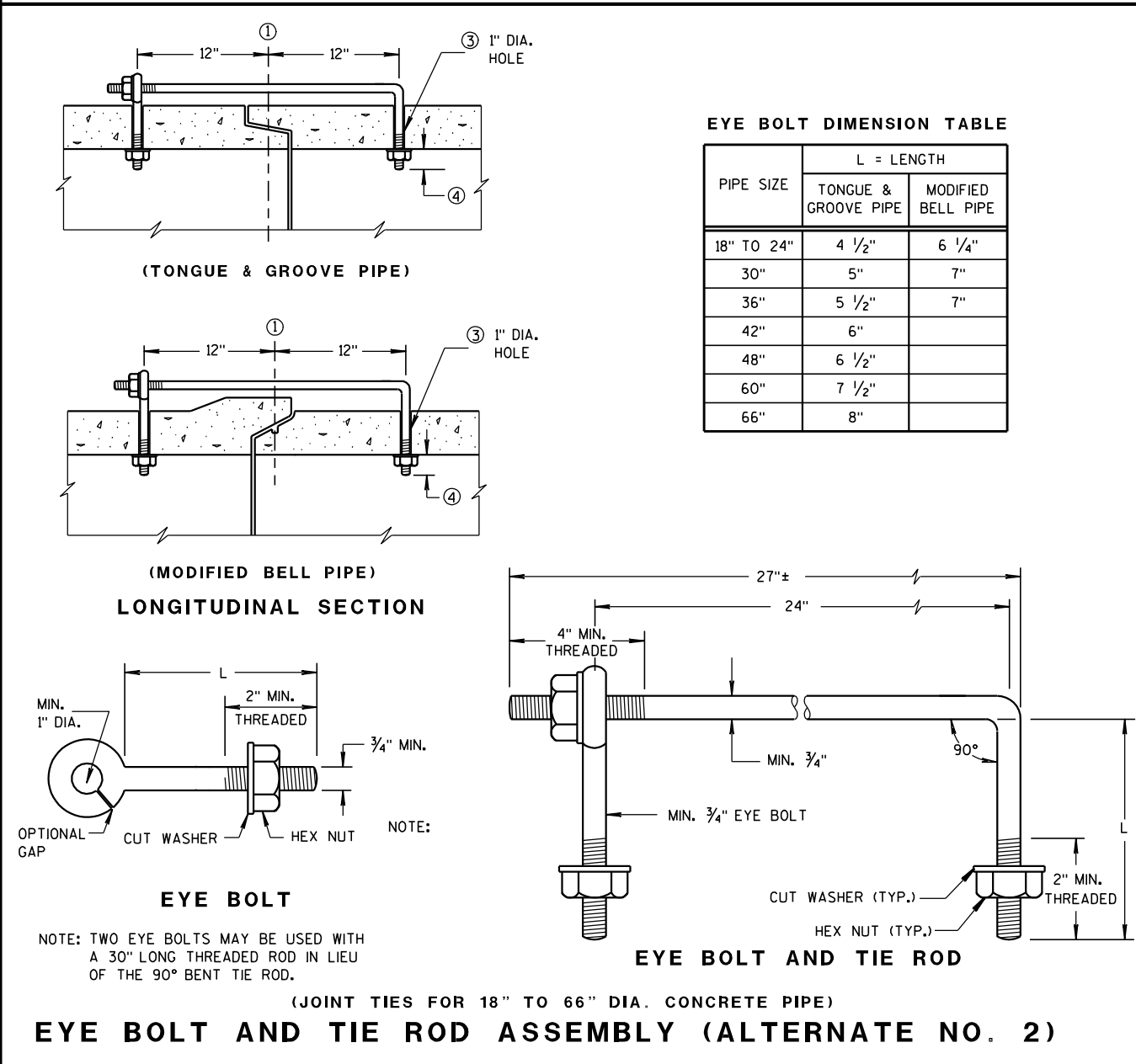
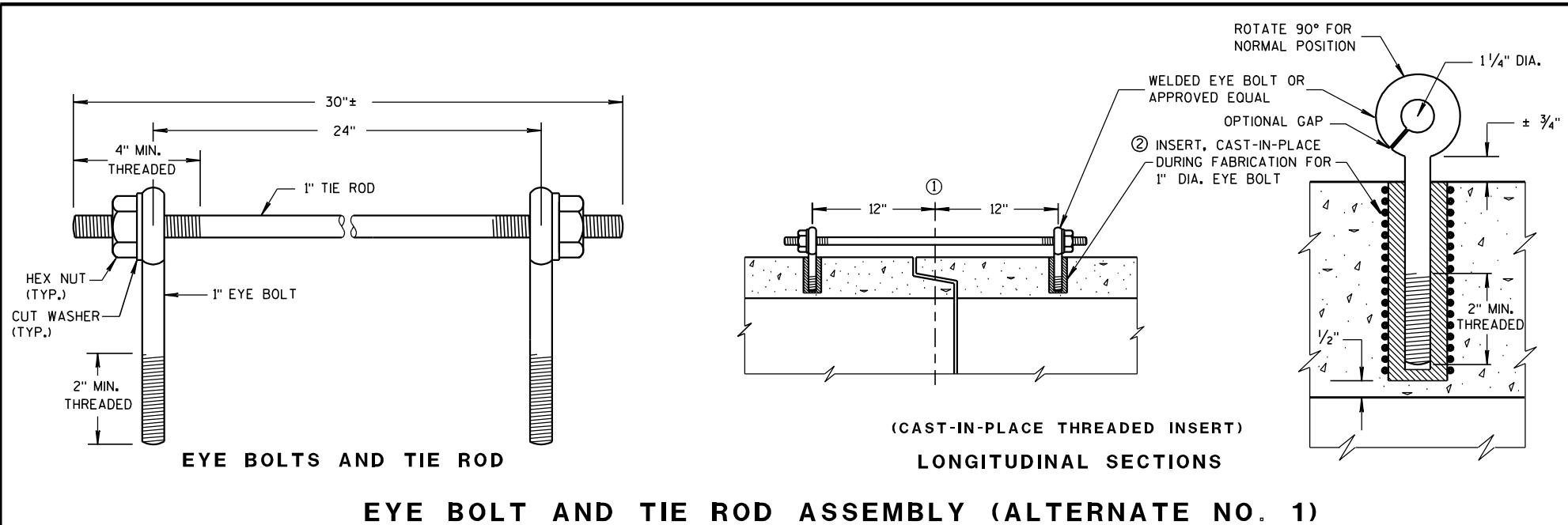
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

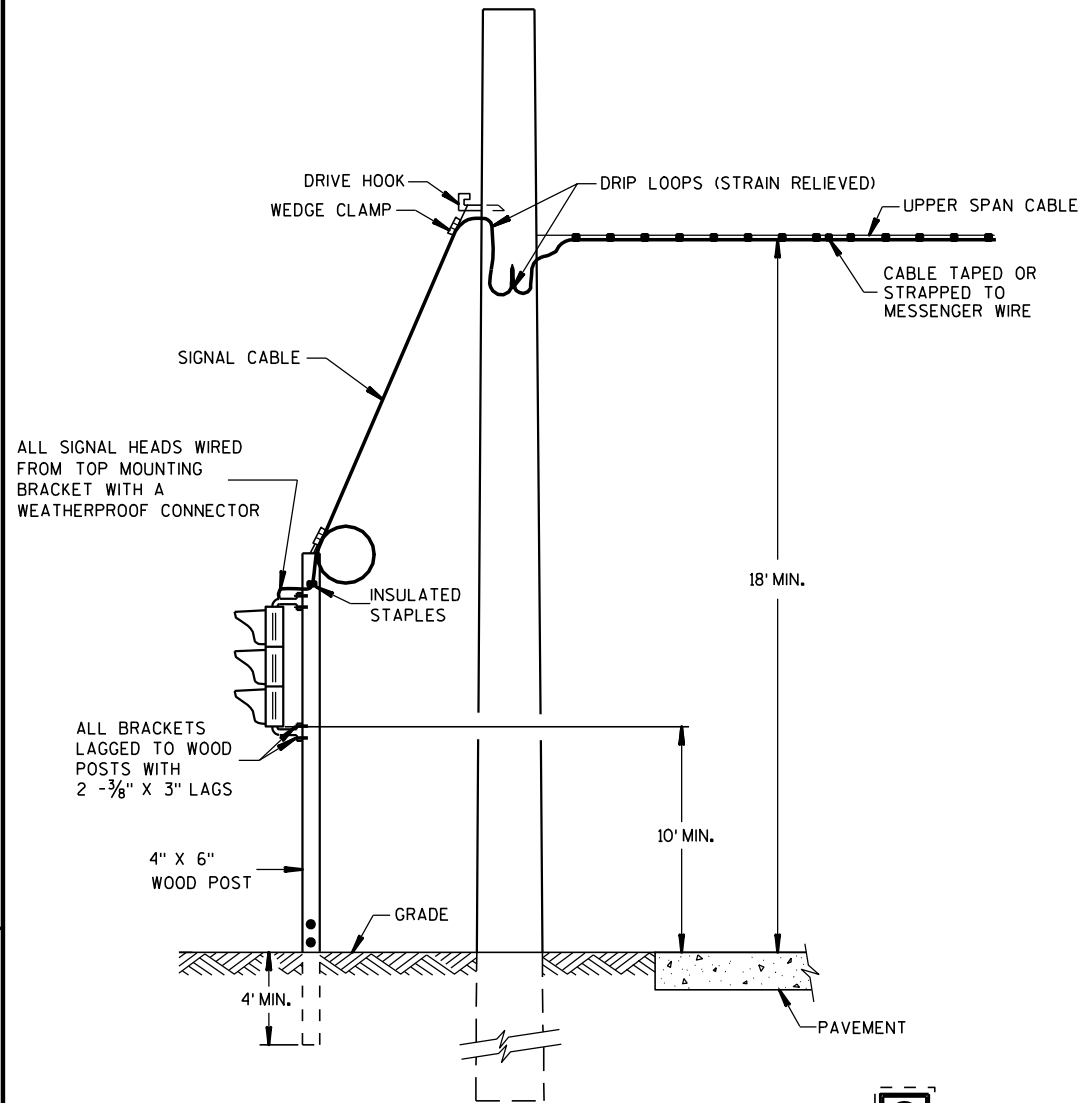
APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94
DATE/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

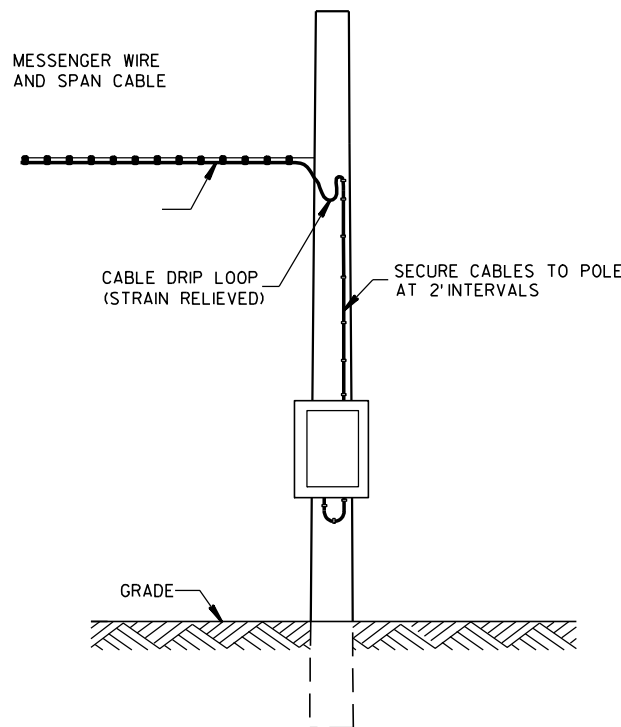




TYPICAL DROP TO TRAFFIC SIGNAL FACE

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT
**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.	

MINIMUM POLE LENGTHS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

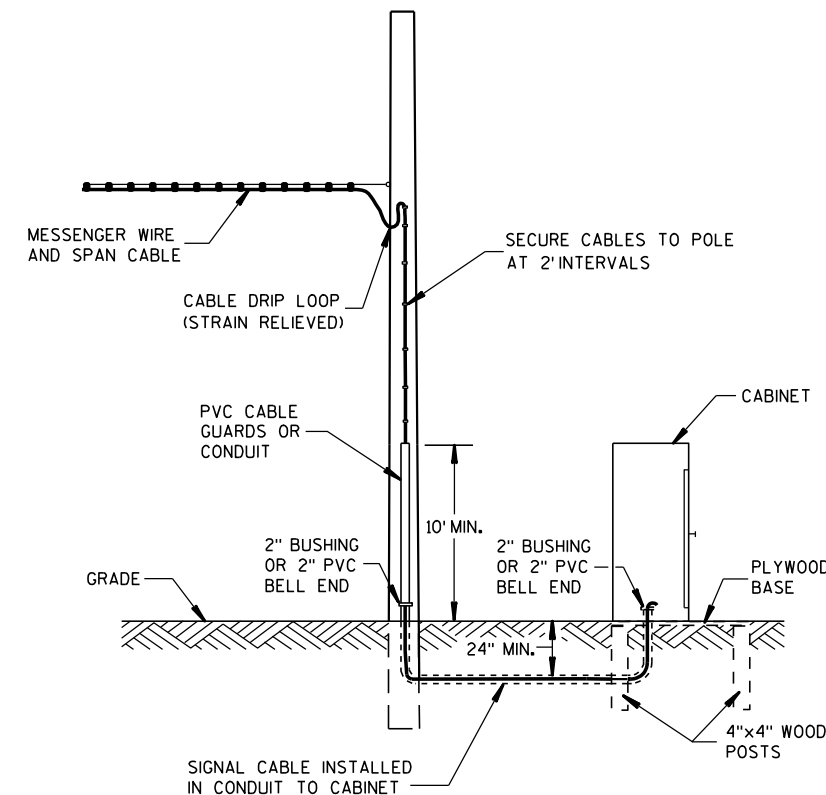
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

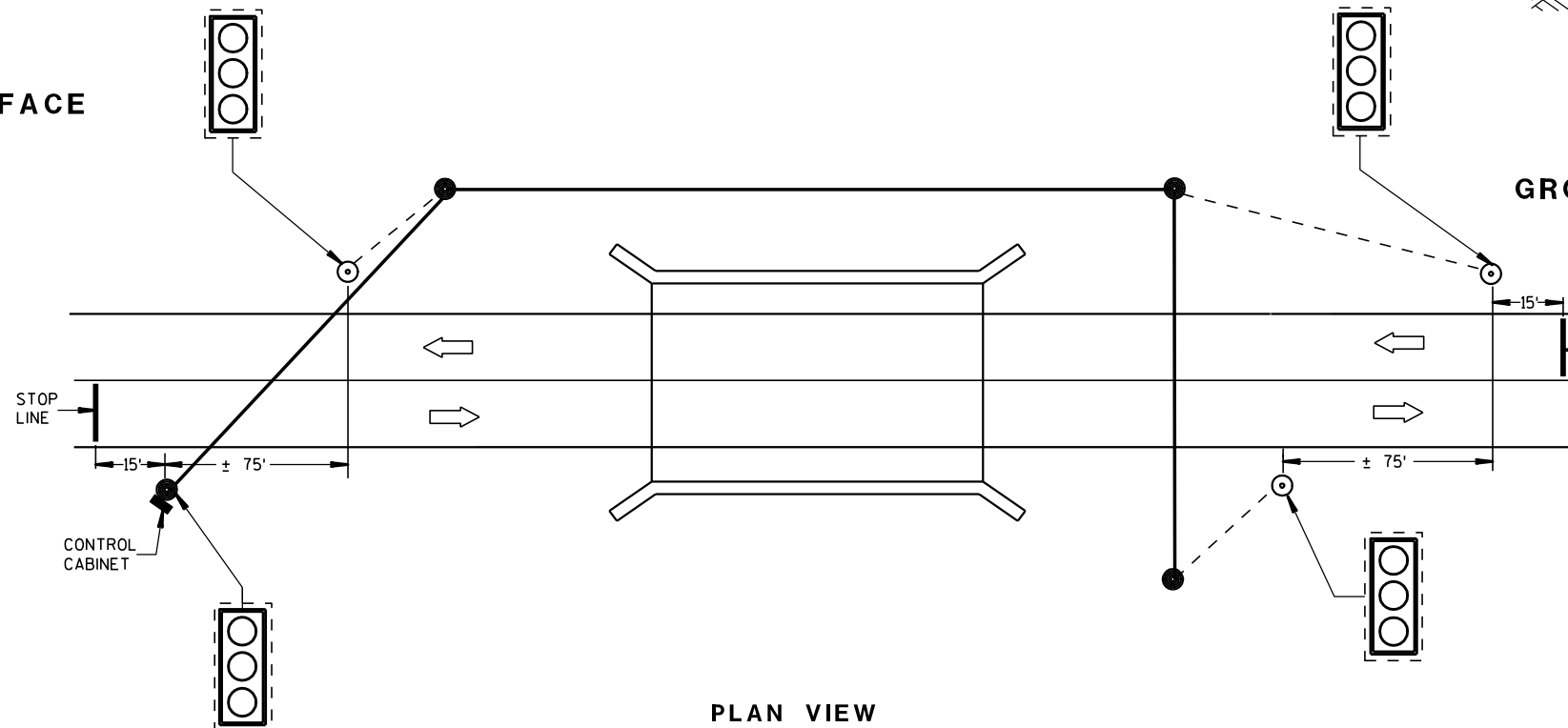
EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION

LEGEND

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE
- DIRECTION OF TRAFFIC

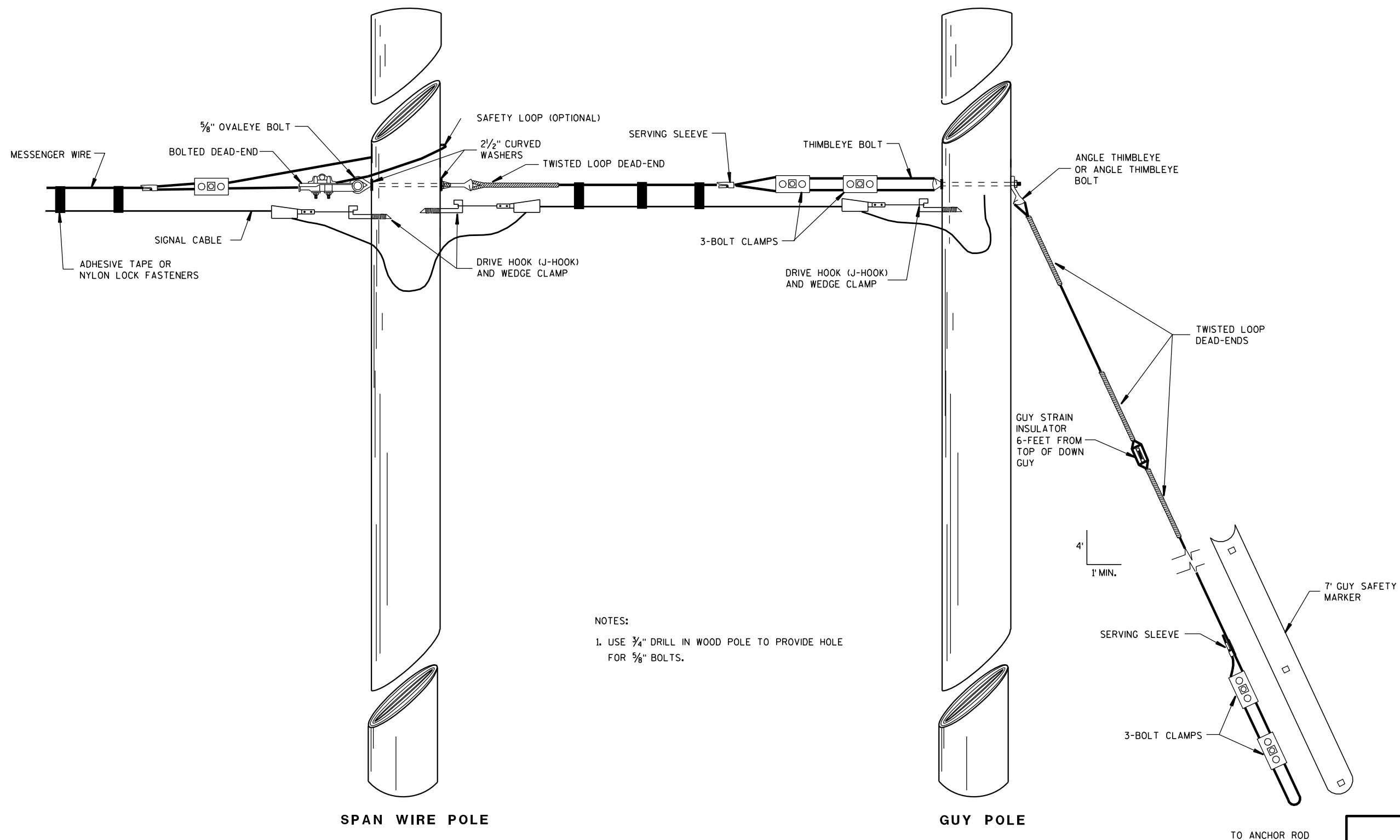


PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 DATE /S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



NOTES:
1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

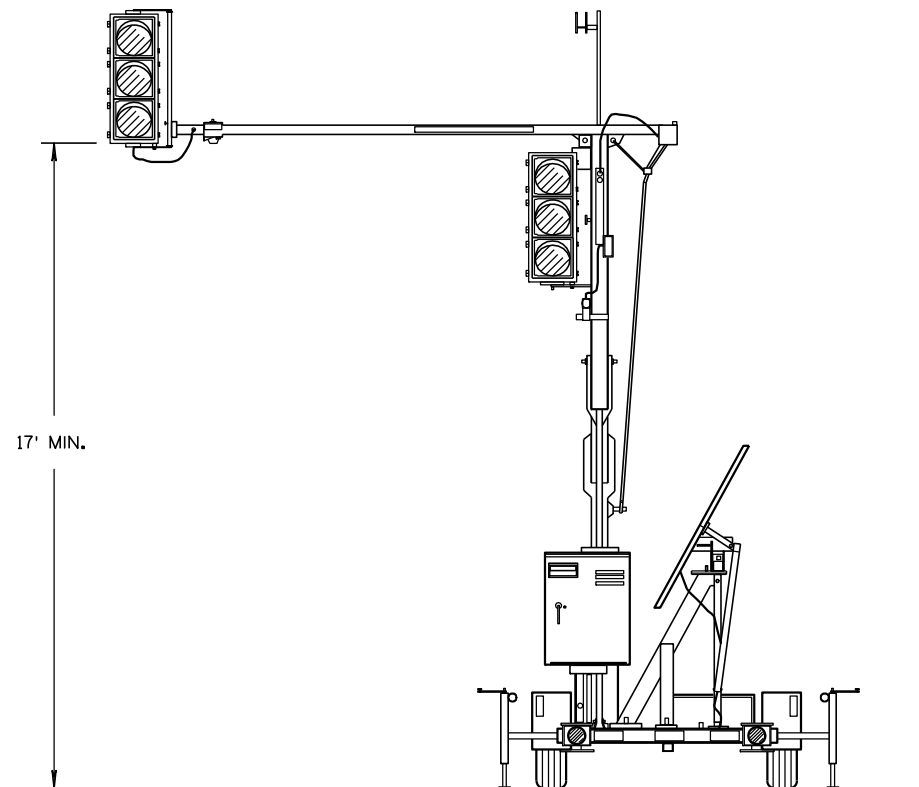
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/2/2011
DATE

FHWA

/S/ Thomas J. Goring
STATE ELECTRICAL ENGINEER FOR HWYS

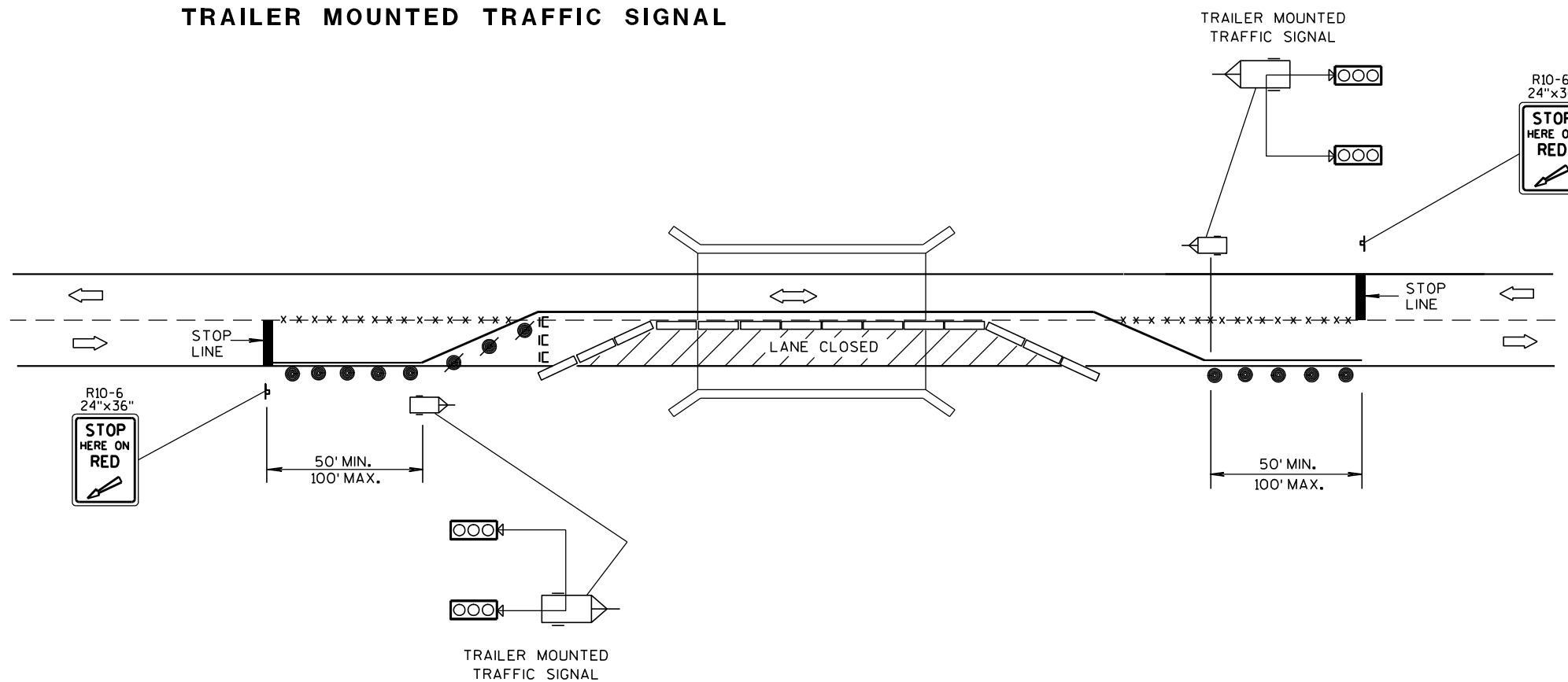


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

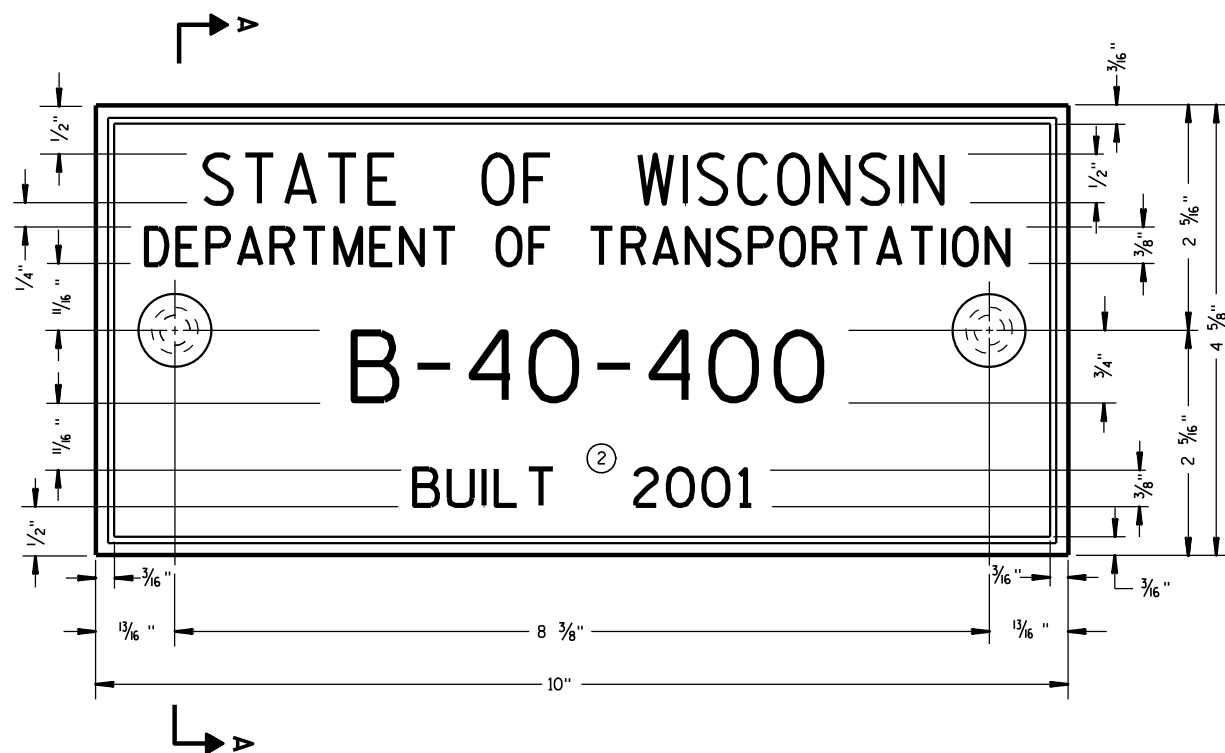
LEGEND

- POST MOUNTED SIGN
- *-x-* REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

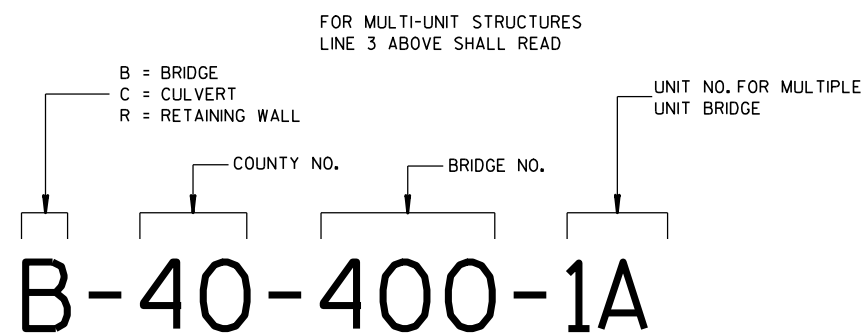
BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/2/2011 /S/ Thomas J. Goring
DATE STATE ELECTRICAL ENGINEER FOR HWYS
FHWA



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



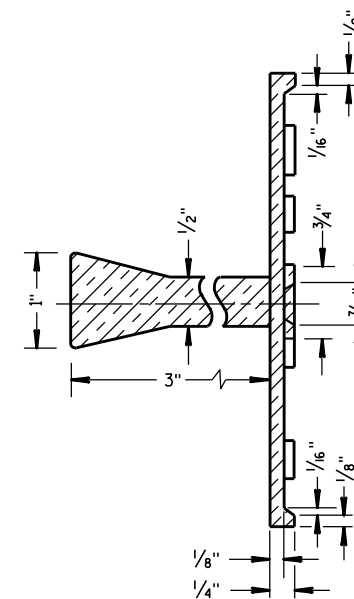
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

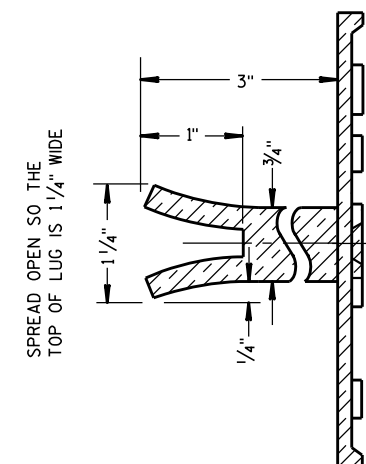
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

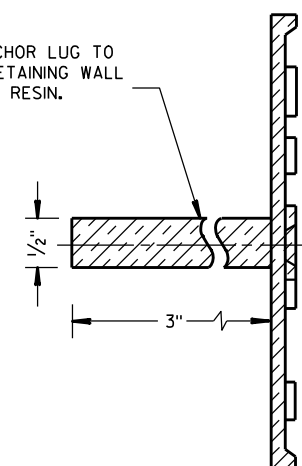


SECTION A-A



ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

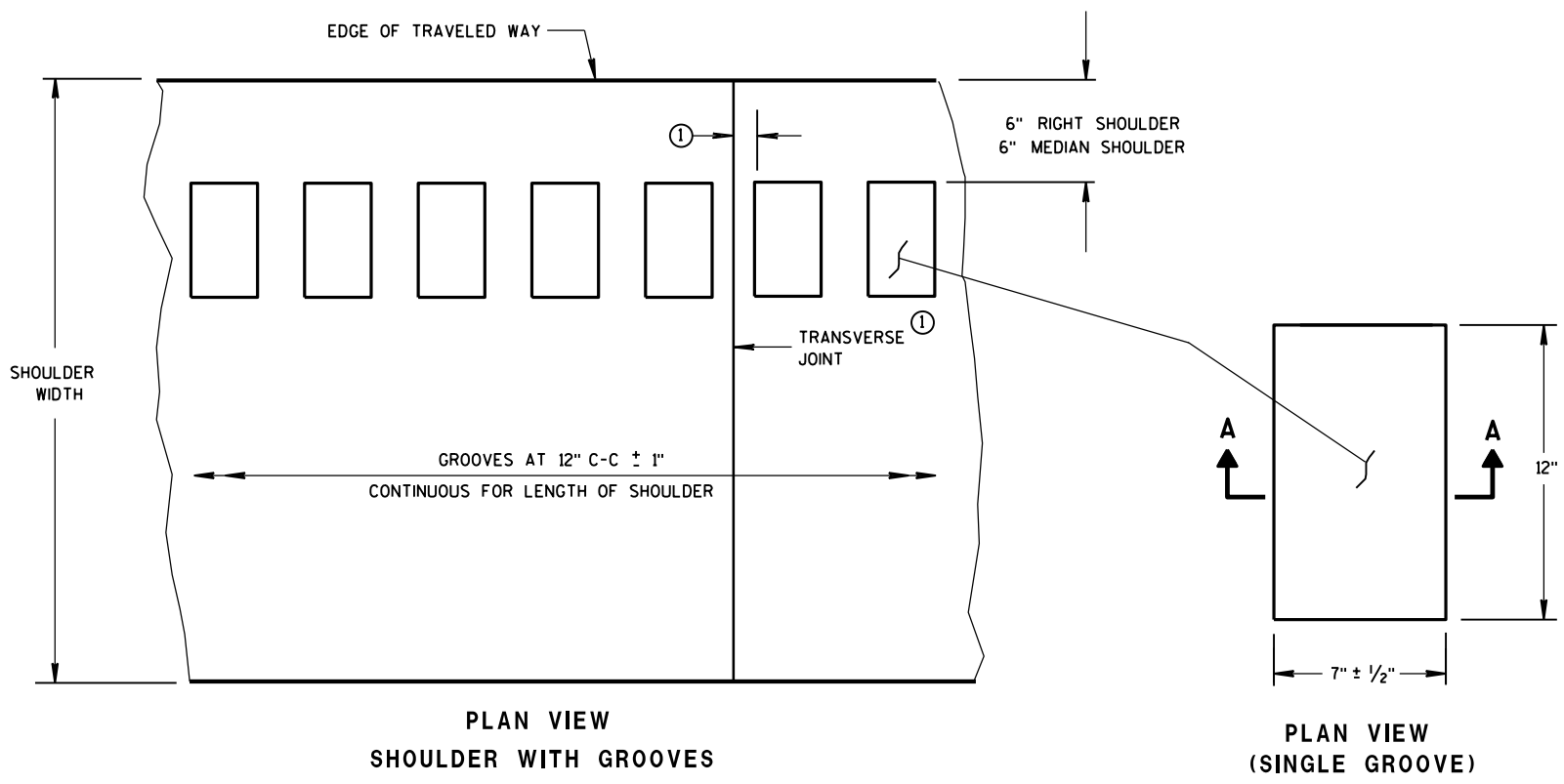
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



PLAN VIEW (SINGLE GROOVE)

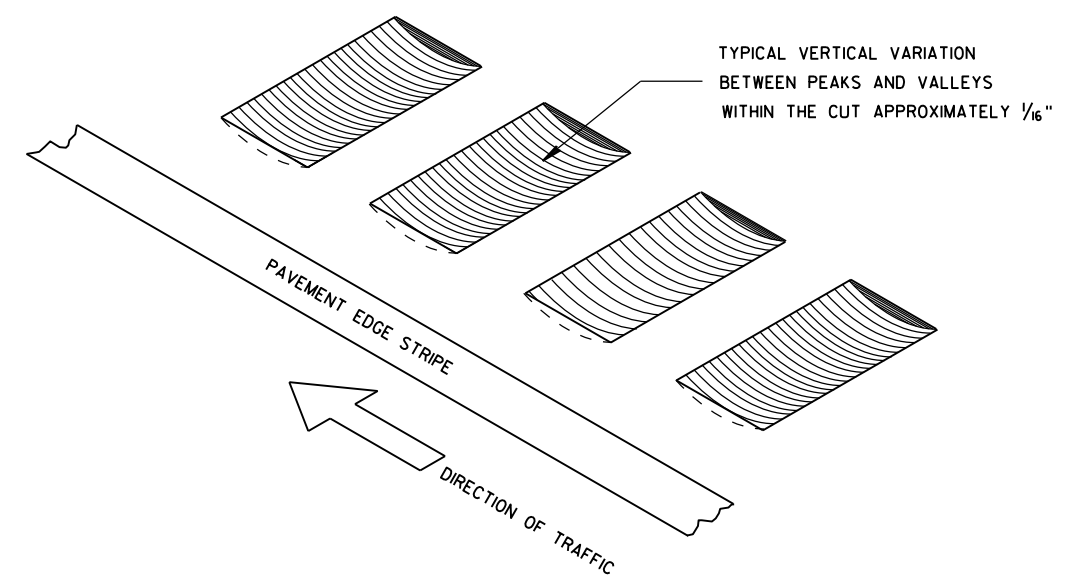
GENERAL NOTES

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

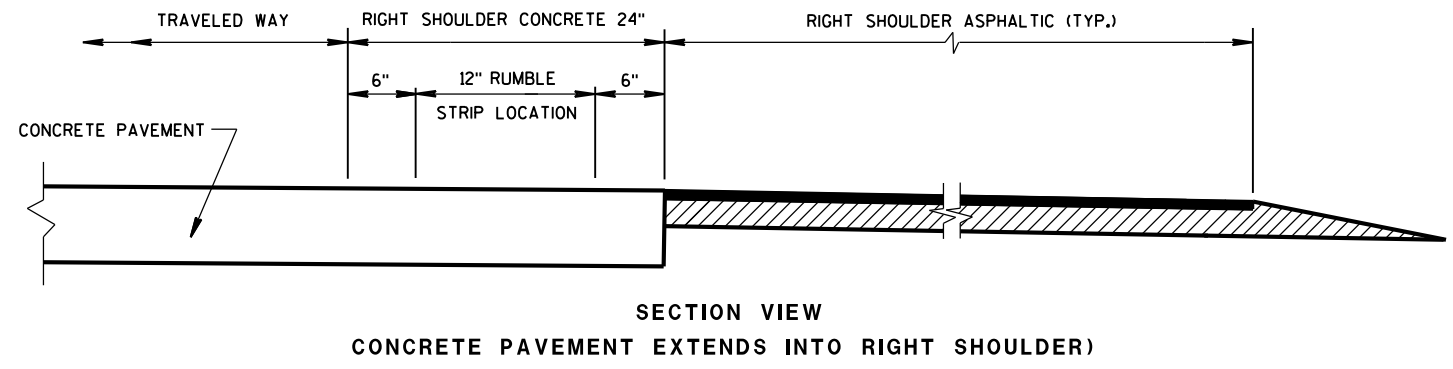
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

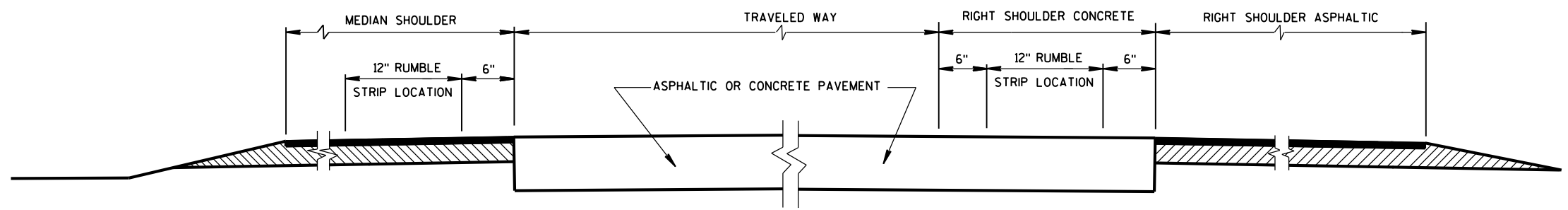
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



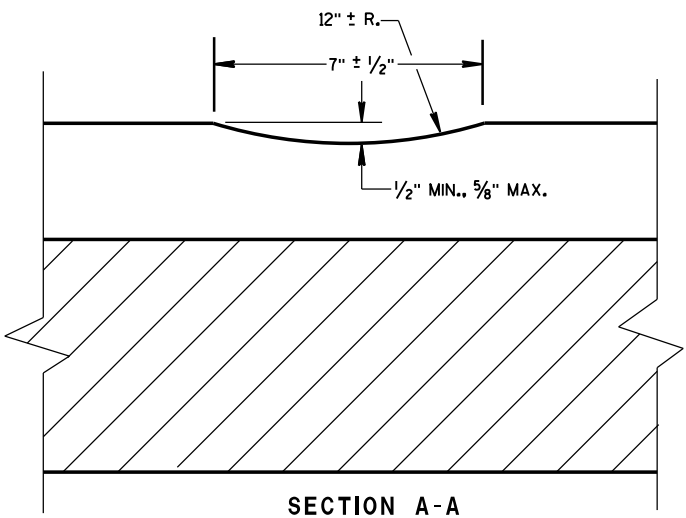
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)

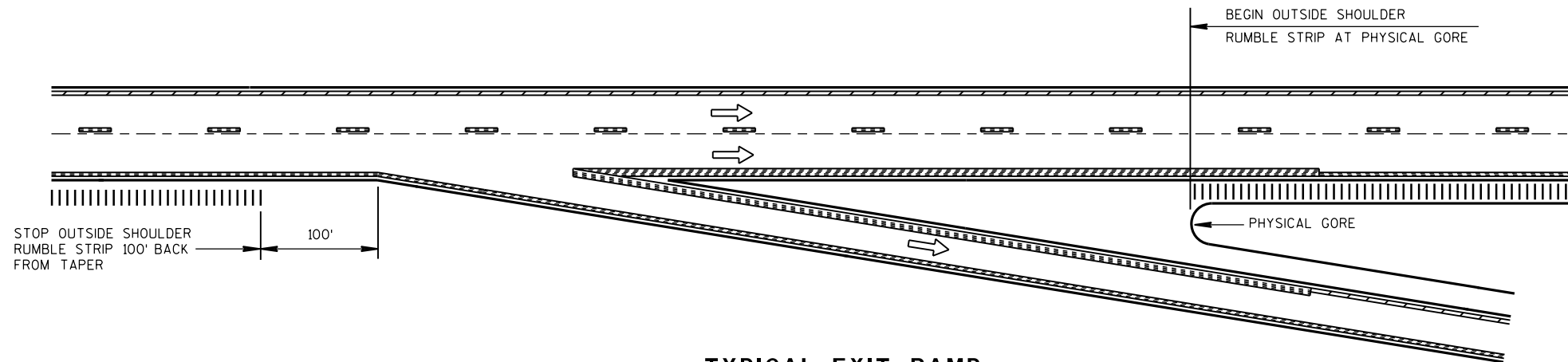


SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



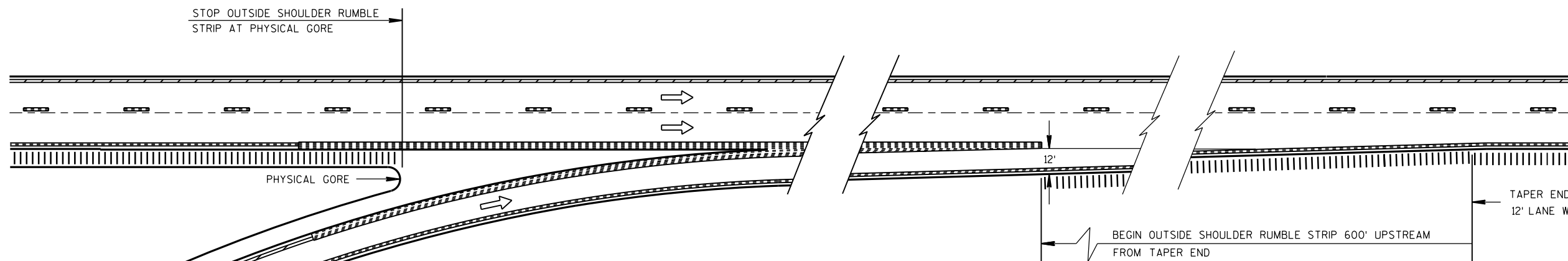
TYPICAL EXIT RAMP

NOTES:

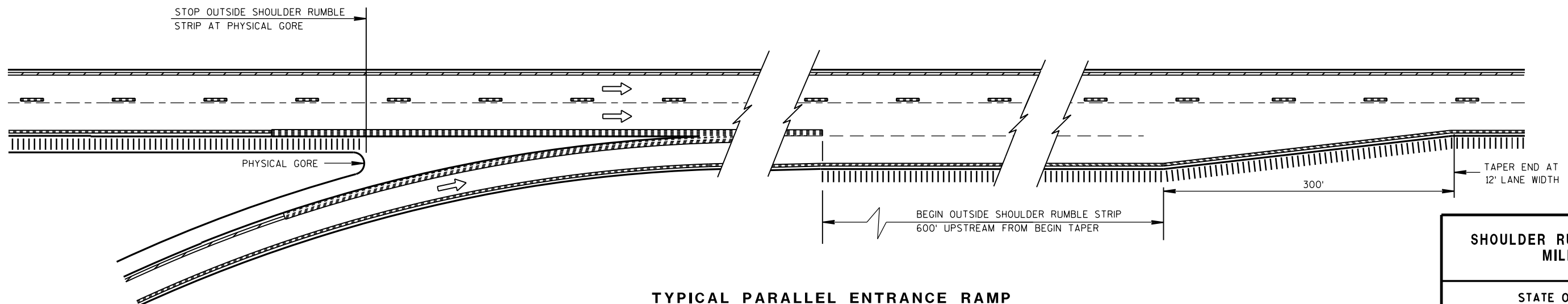
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**



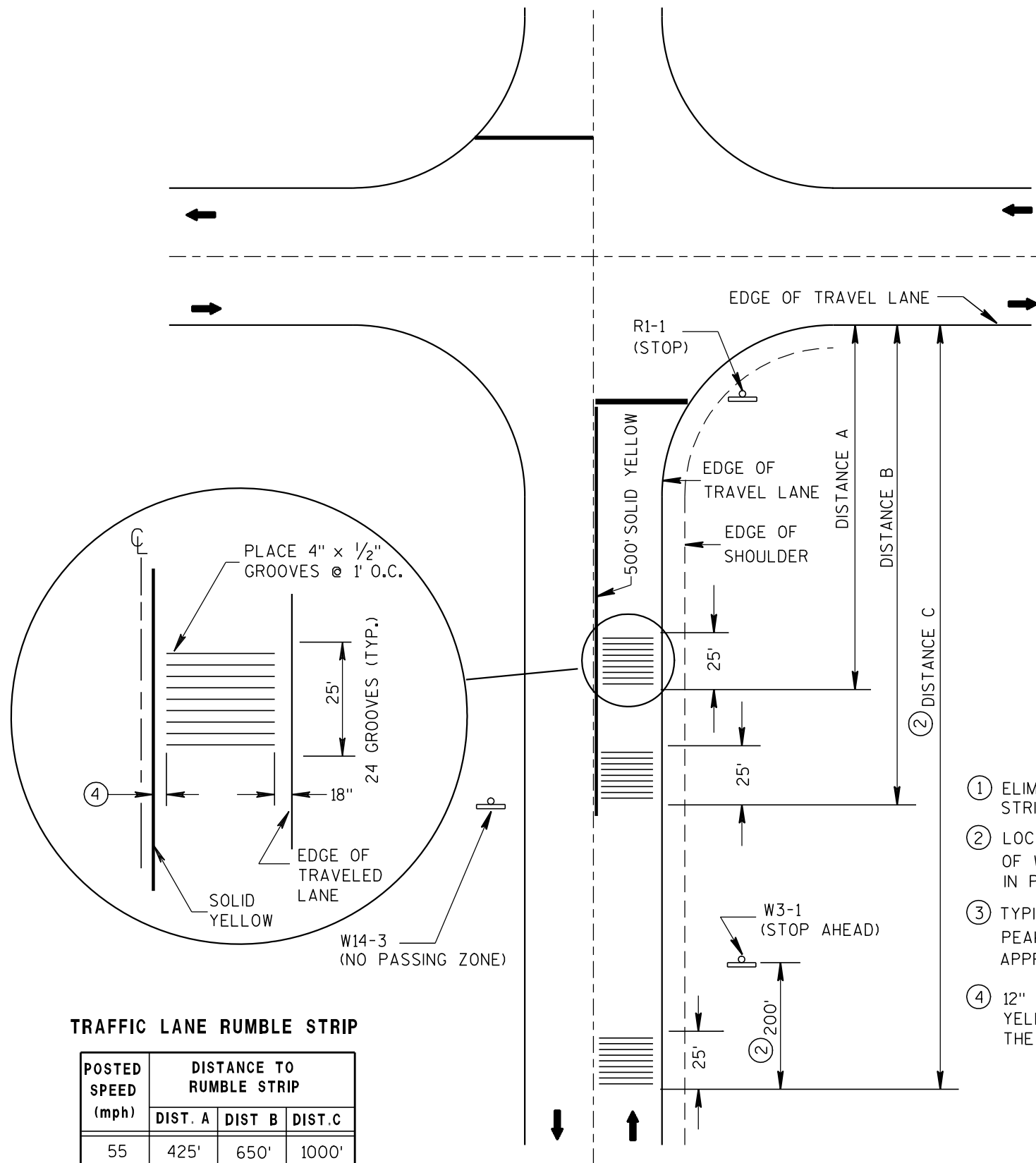
**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**

**SHOULDER RUMBLE STRIP,
MILLING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TRAFFIC LANE RUMBLE STRIP

POSTED SPEED (mph)	DISTANCE TO RUMBLE STRIP		
	DIST. A	DIST. B	DIST. C
55	425'	650'	1000'
50	325'	450'	800'
45	275'	400'	650'
40	225'	①	550'
35	175'	①	475'
≤ 30	125'	①	425'

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

PLAN VIEW RUMBLE STRIP LOCATION

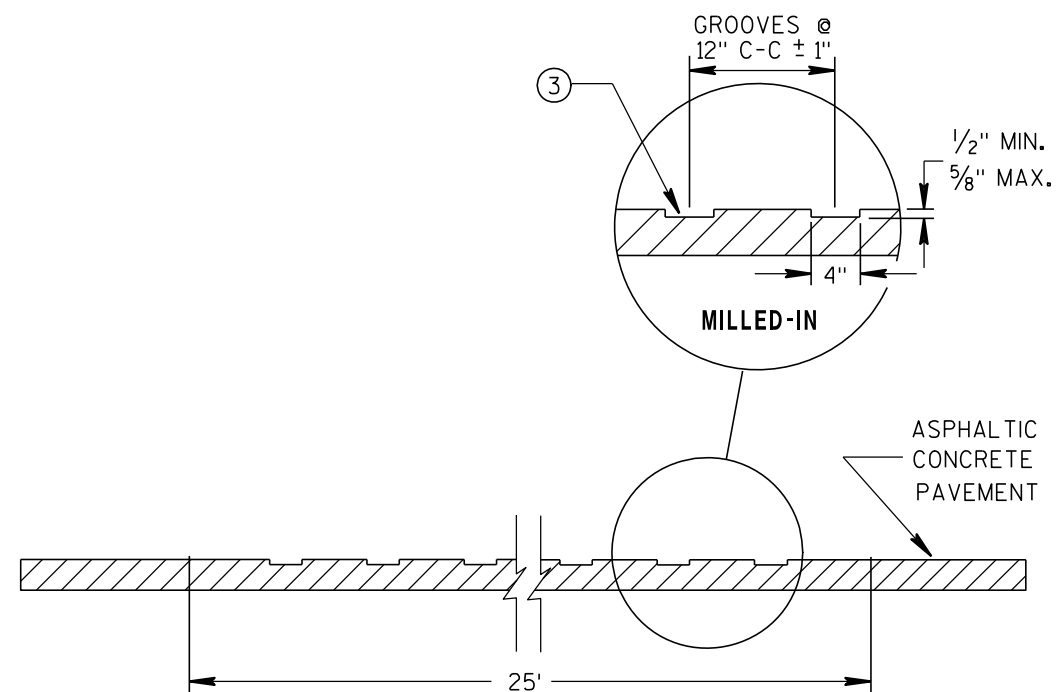
- ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
- LOCATE RUMBLE STRIP 200' IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE C.
- TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY $\frac{1}{16}$ "
- 12" CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.

GENERAL NOTES

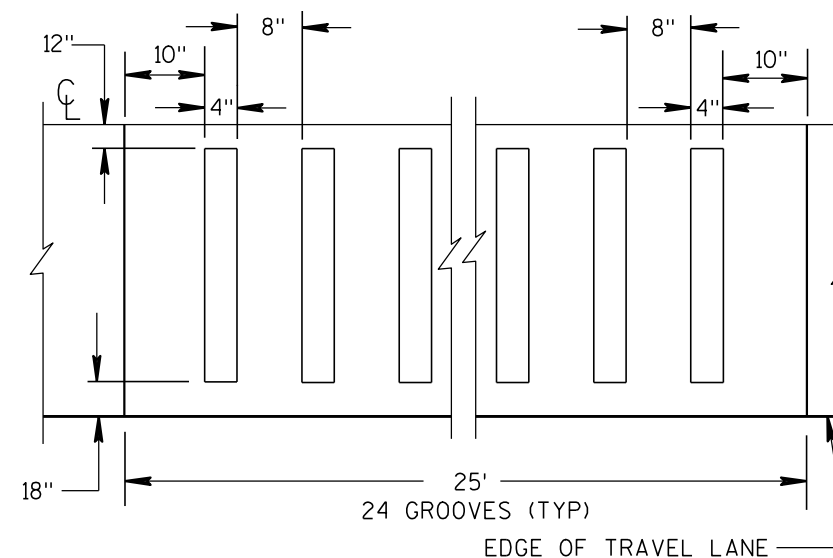
CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.

WHEN ASPHALTIC PAVEMENT IS NEW IN THE RUMBLE AREA THE CONTRACTOR SHALL ALLOW THE PAVEMENT TO CURE A MINIMUM OF 7 DAYS PRIOR TO RUMBLE INSTALLATION.

PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.



ELEVATION VIEW



PLAN VIEW
ASPHALTIC PAVEMENT
MILLED-IN

ASPHALTIC RUMBLE STRIPS AT INTERSECTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/17/2011

DATE

FHWA

/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER

GENERAL NOTES

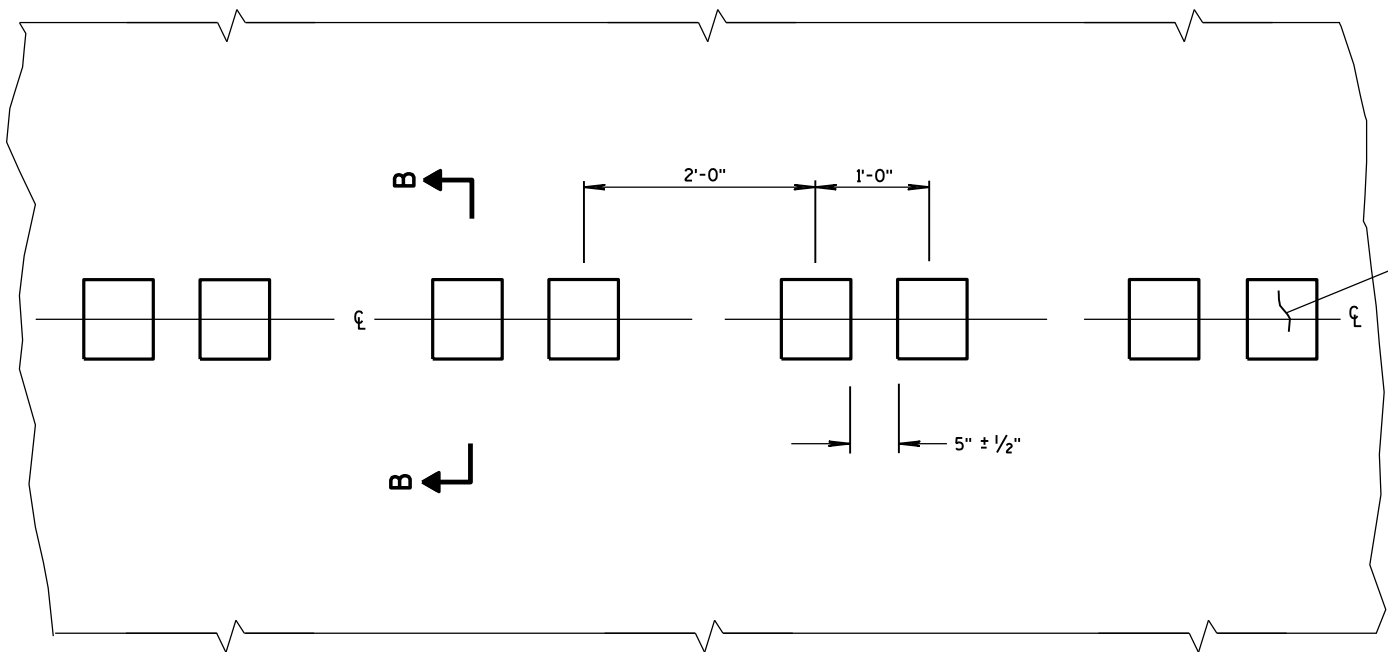
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

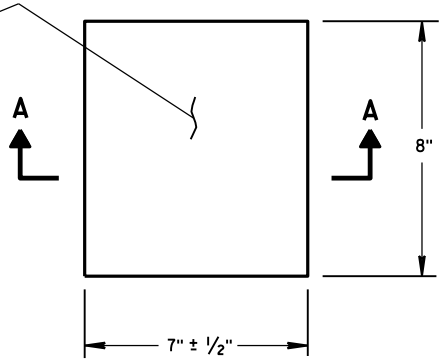
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

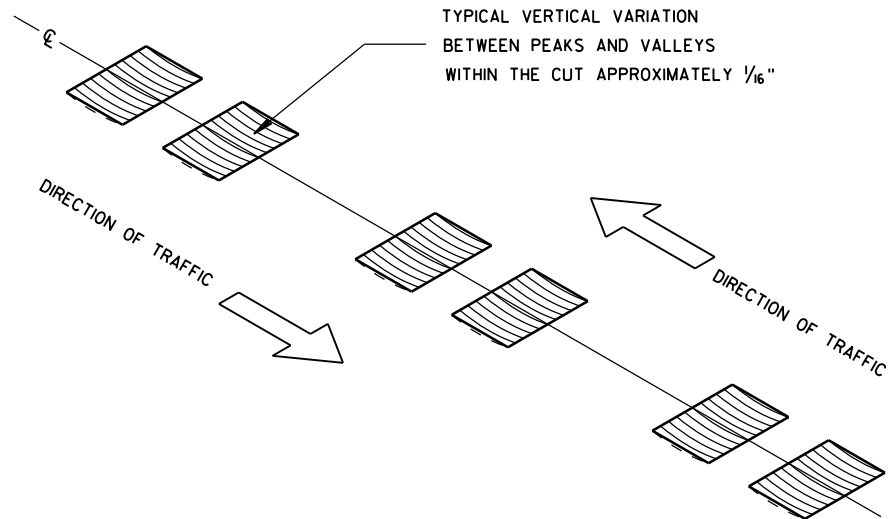
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



PLAN VIEW
CENTER LINE WITH GROOVES

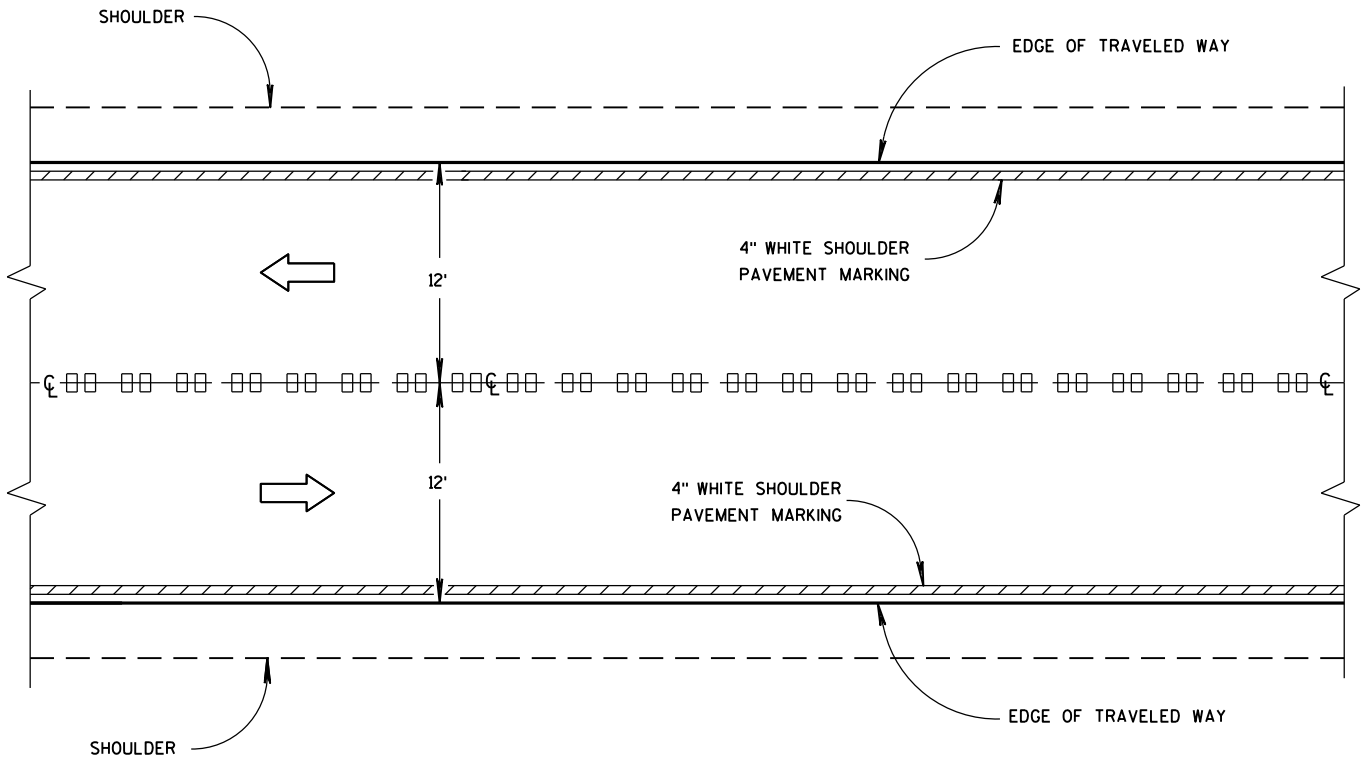


PLAN VIEW
(SINGLE GROOVE)

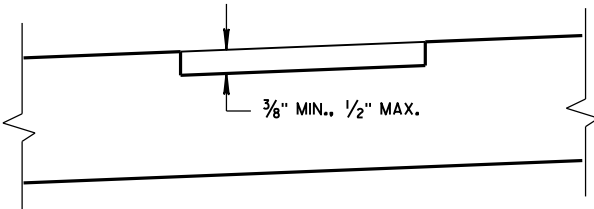


ISOMETRIC

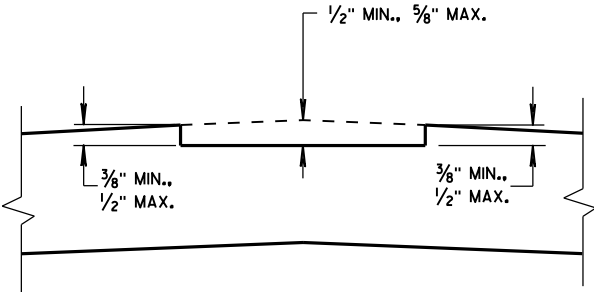
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP



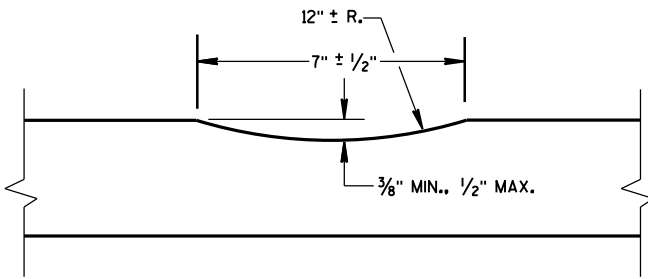
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



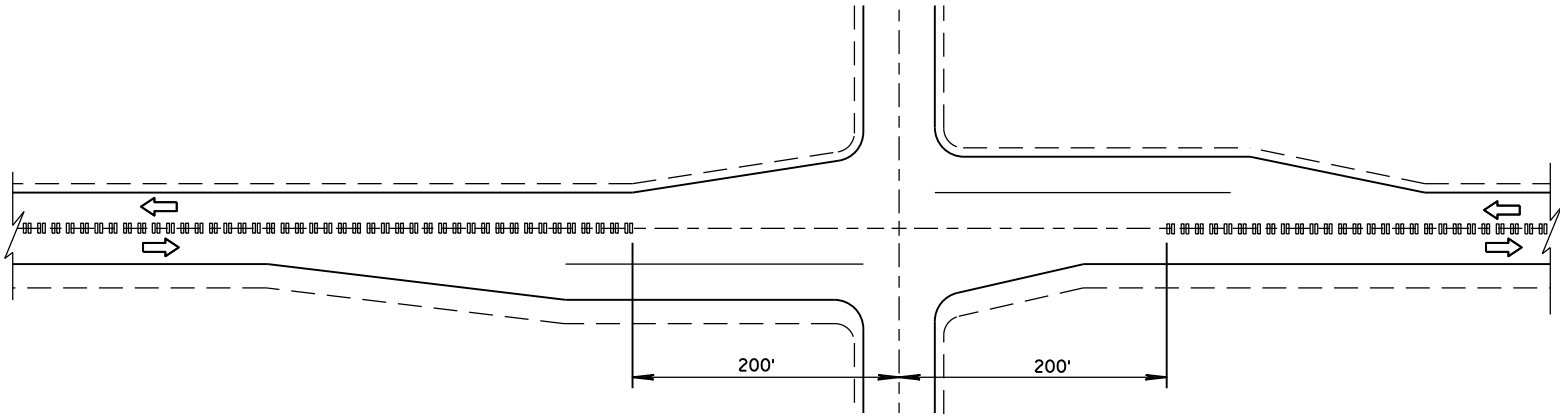
SECTION B-B
CROWNED ROADWAY



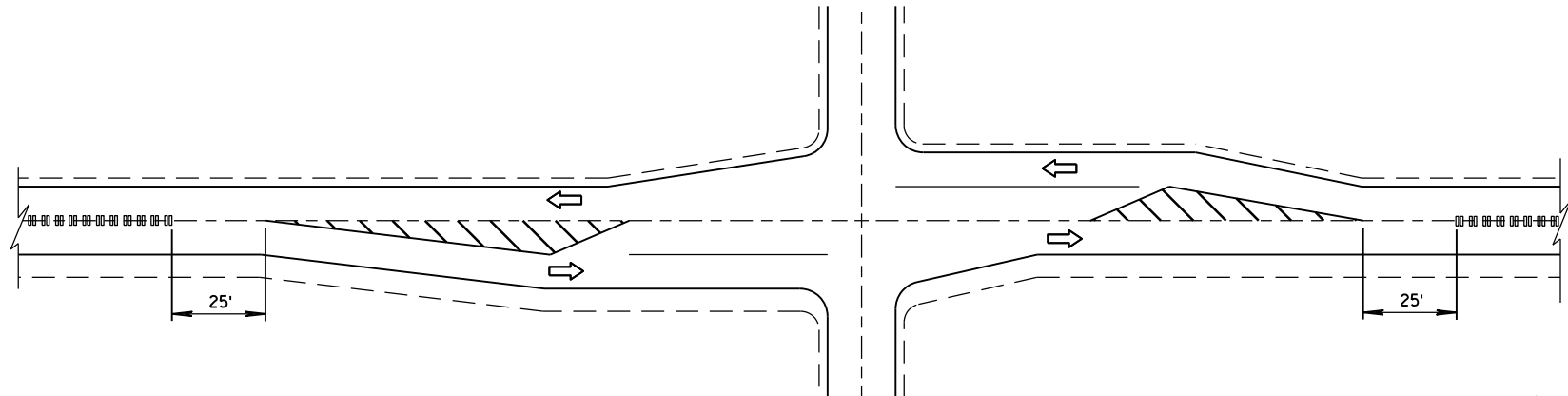
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

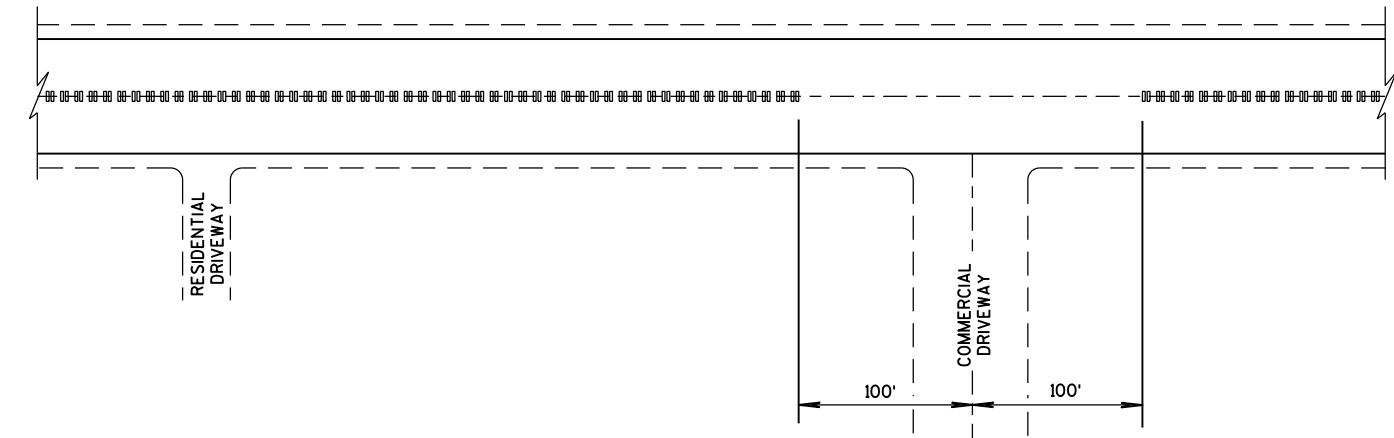
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

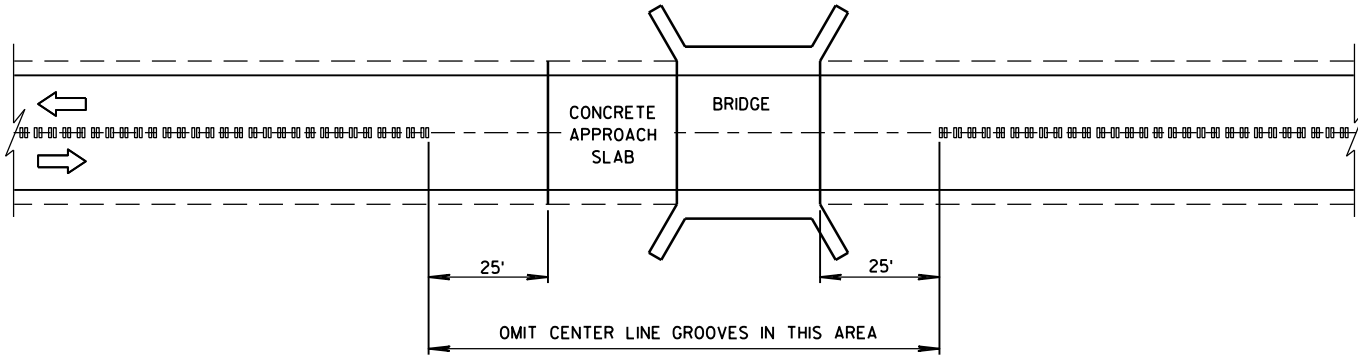


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

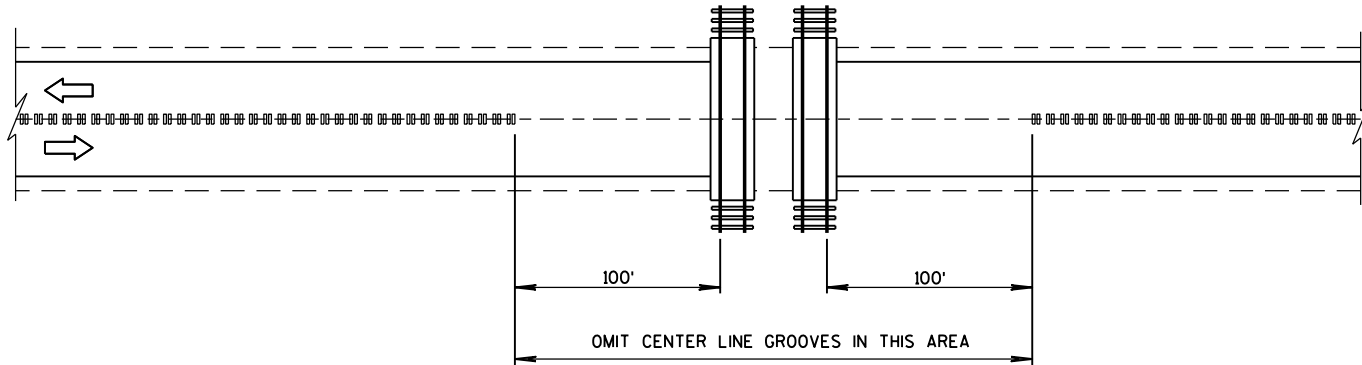


CENTER LINE GROOVES AT DRIVEWAYS^①

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

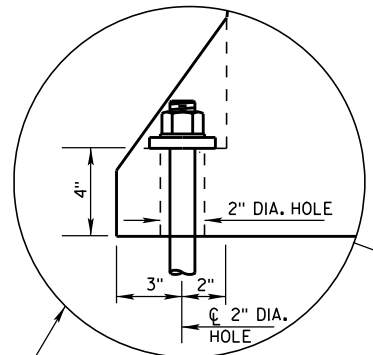


CENTER LINE GROOVES AT BRIDGES

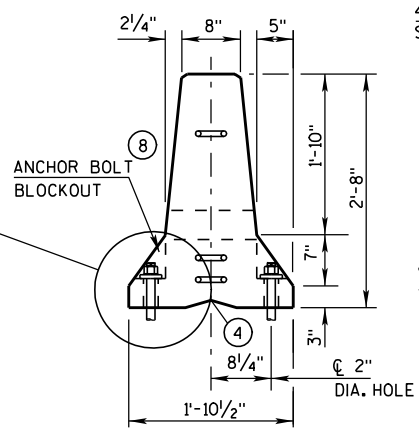


CENTER LINE GROOVES AT RAILROADS

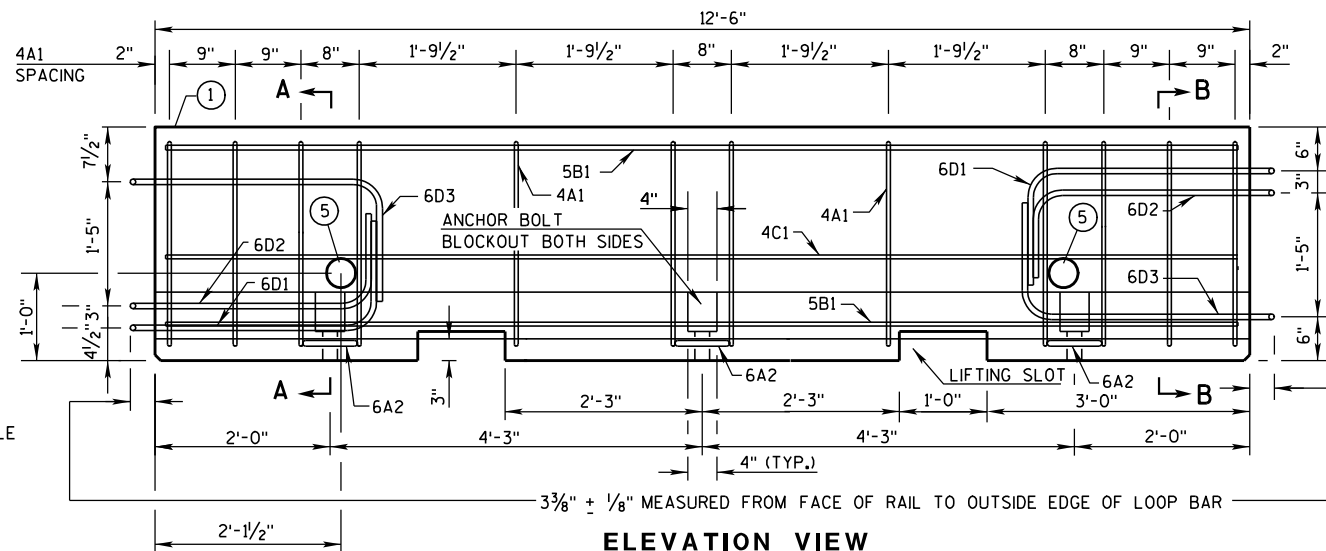
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/15/2013 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



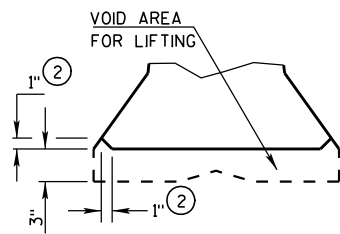
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



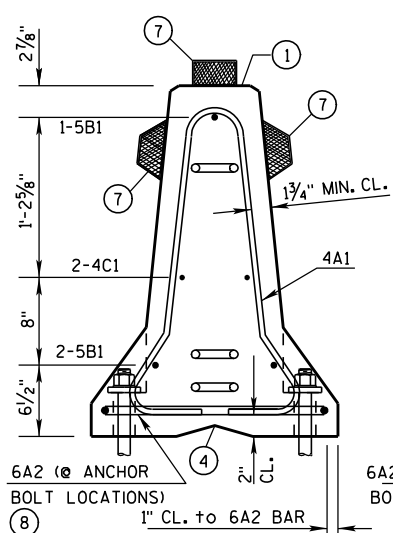
END VIEW



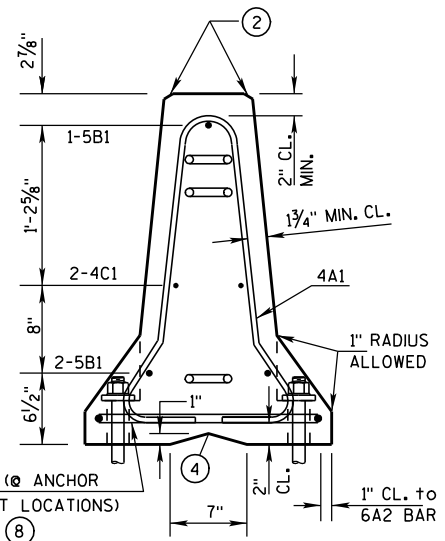
ELEVATION VIEW



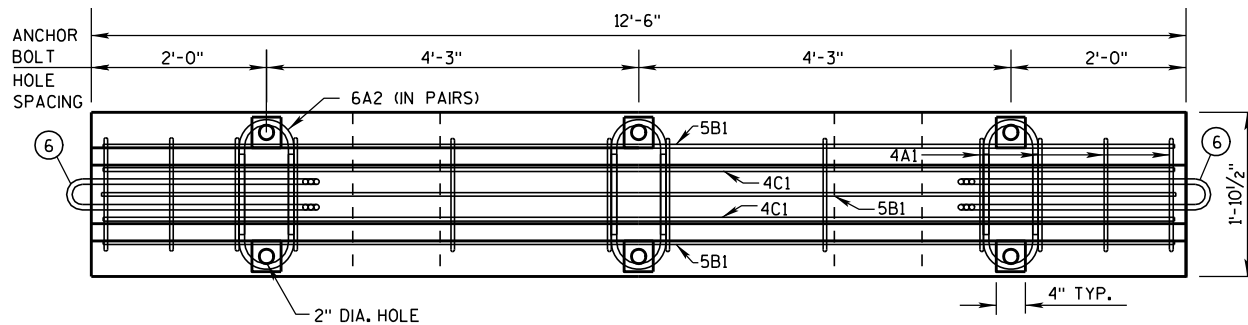
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

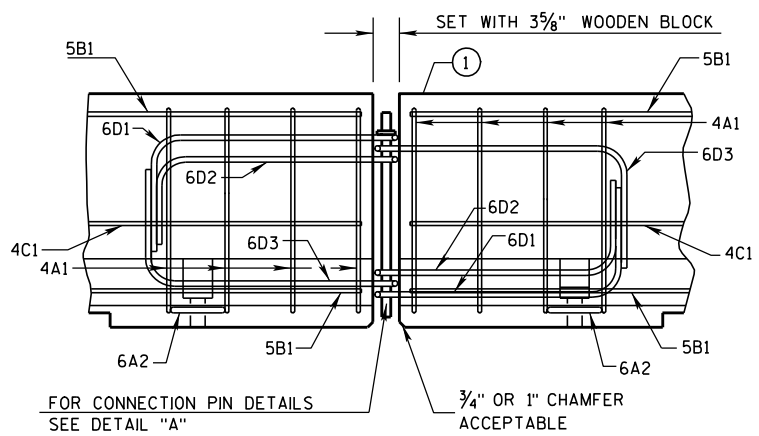


SECTION B-B
(STIRRUP PLACEMENT)

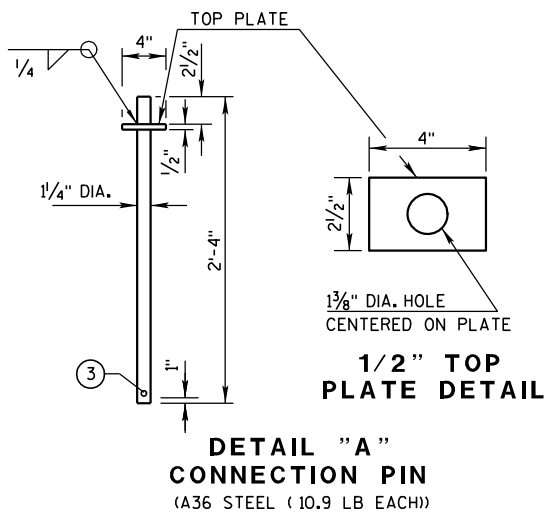


PLAN VIEW

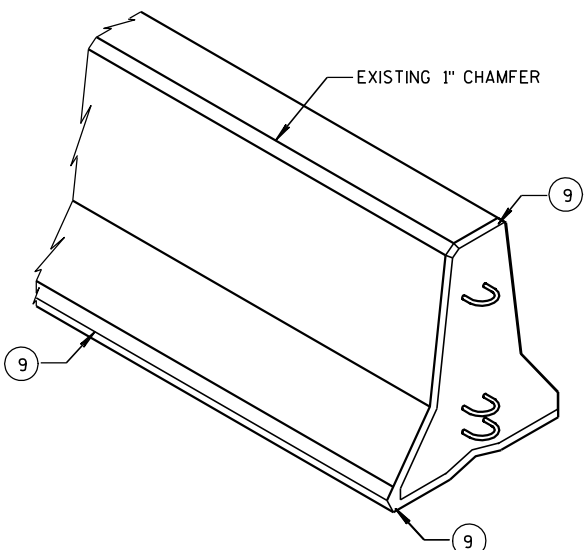
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(g) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

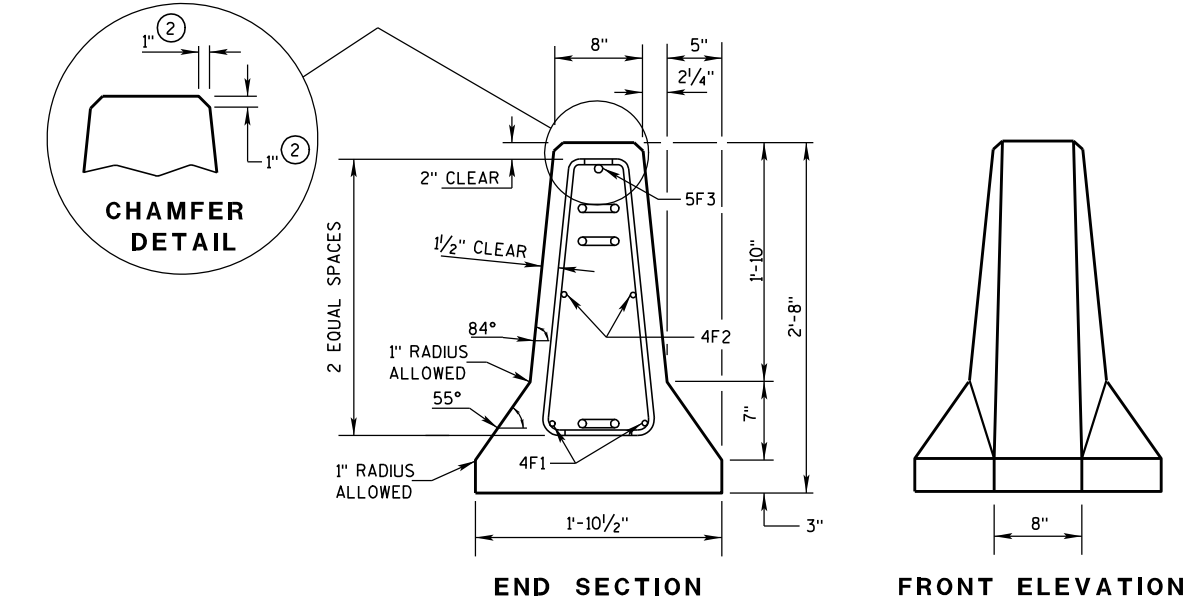
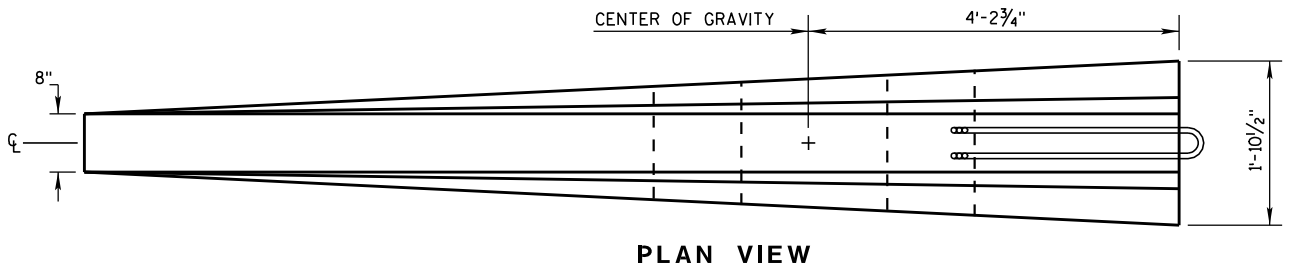
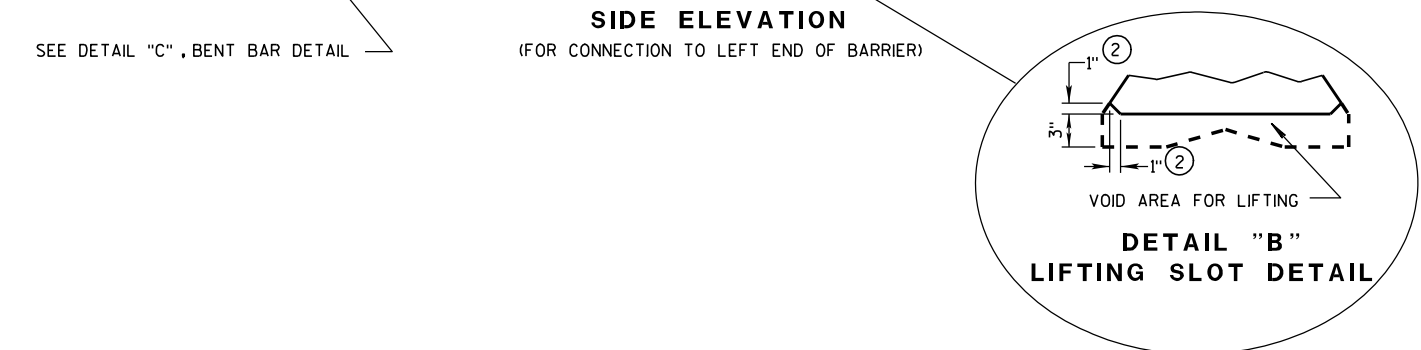
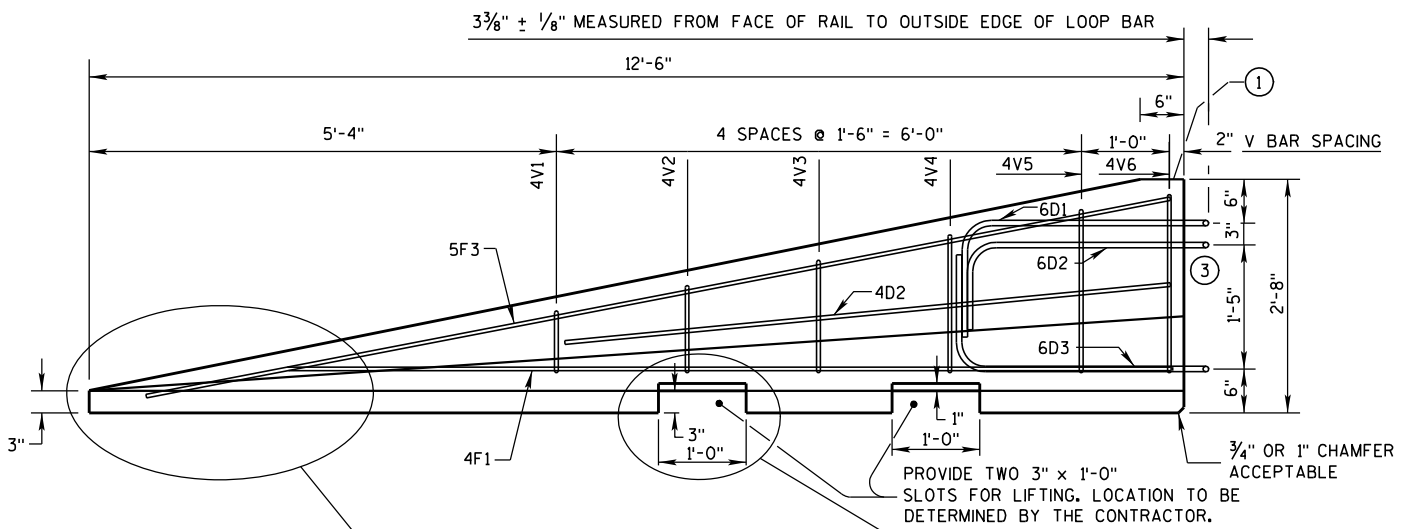
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

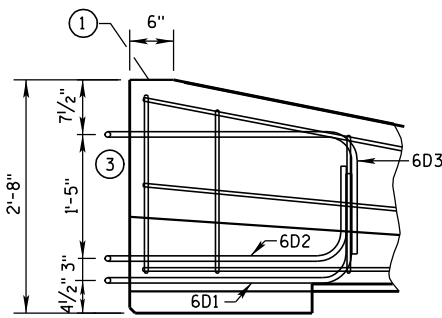
- 1 MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE: WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- 2 1" CHAMFER TO PREVENT SPALLING.
- 3 A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- 4 "V" NOTCH IS OPTIONAL.
- 5 THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- 6 NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- 7 USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- 8 SEE SHEET D FOR ANCHORING CRITERIA.
- 9 1" CHAMFER OPTIONAL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



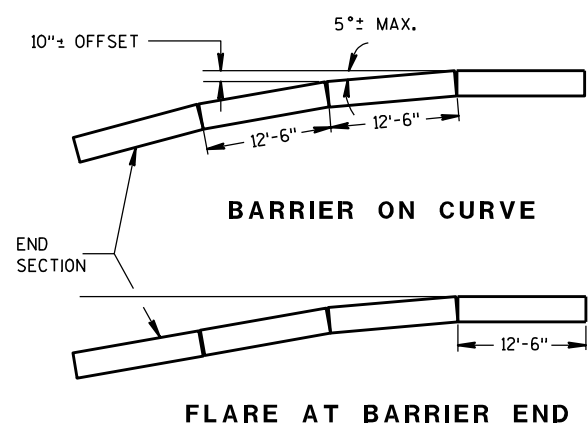
DETAILS OF BARRIER TAPER SECTION



SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
a. TYPE WICBTP
b. MANUFACTURER
c. DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

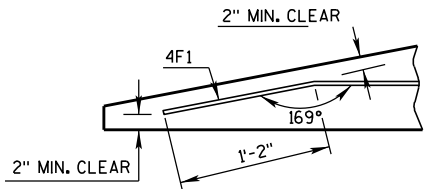
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

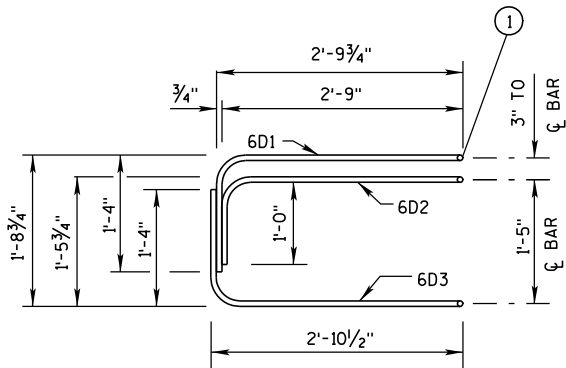
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

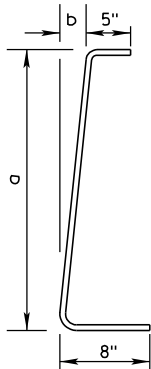
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

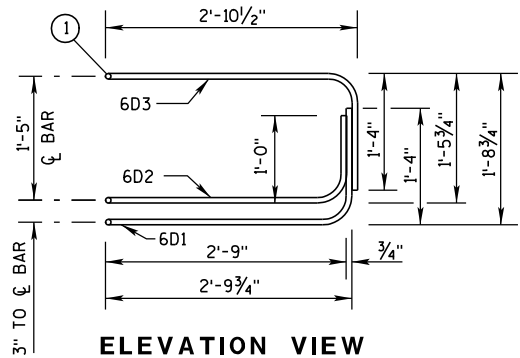
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

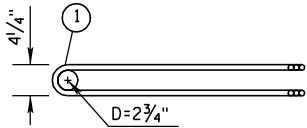
BARRIER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

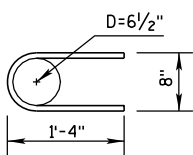


ELEVATION VIEW

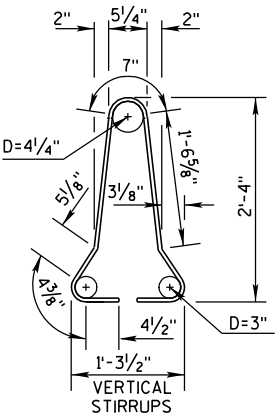


PLAN VIEW
LOOP BAR ASSEMBLY

(MARKED END SHOWN, INVERT FOR OTHER END)



6A2

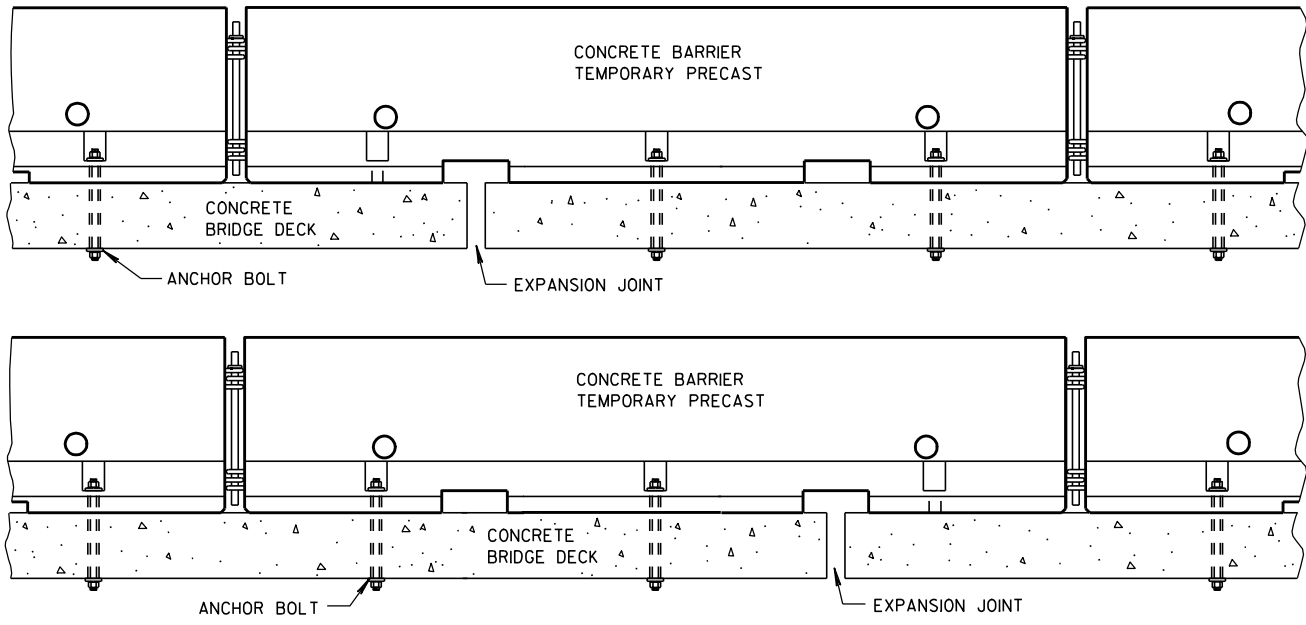


4A1

BARRIER SECTION

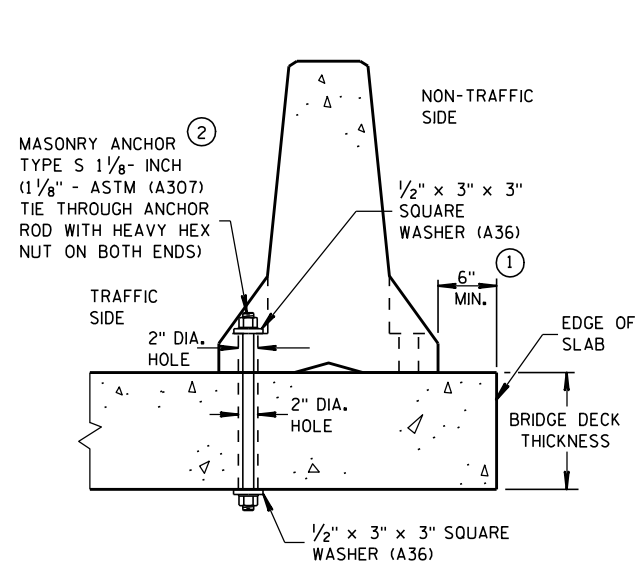
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



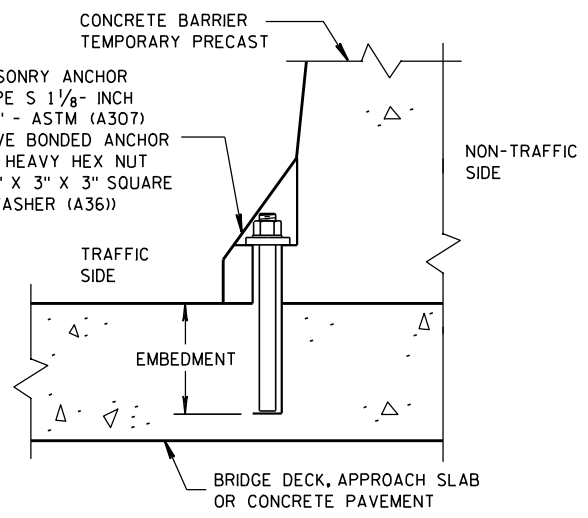
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



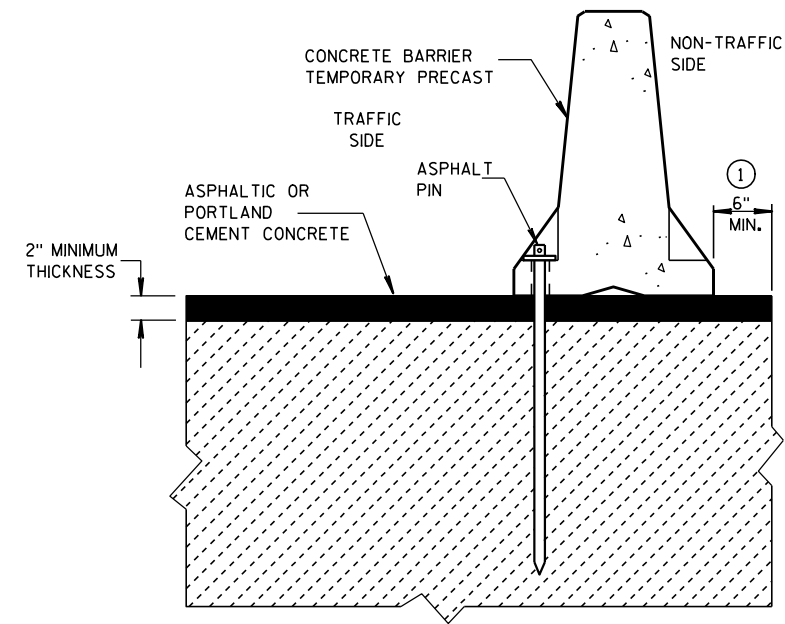
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



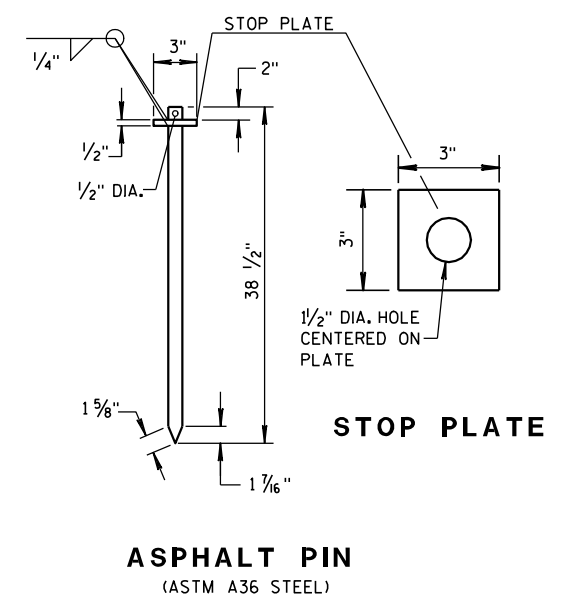
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

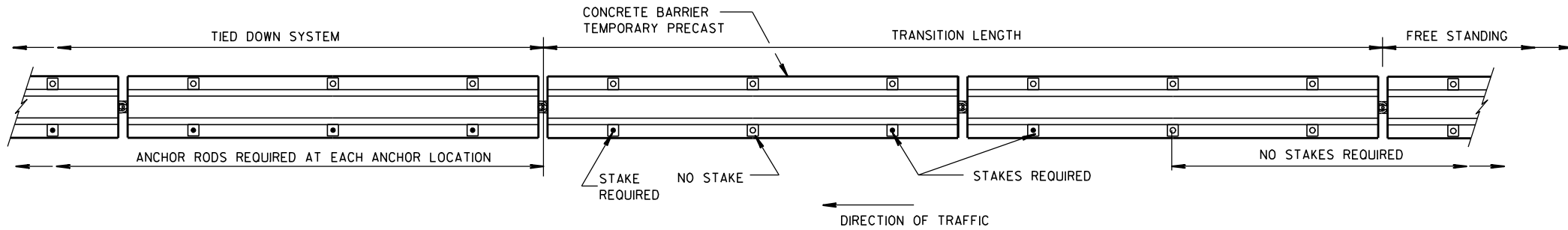


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN (ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

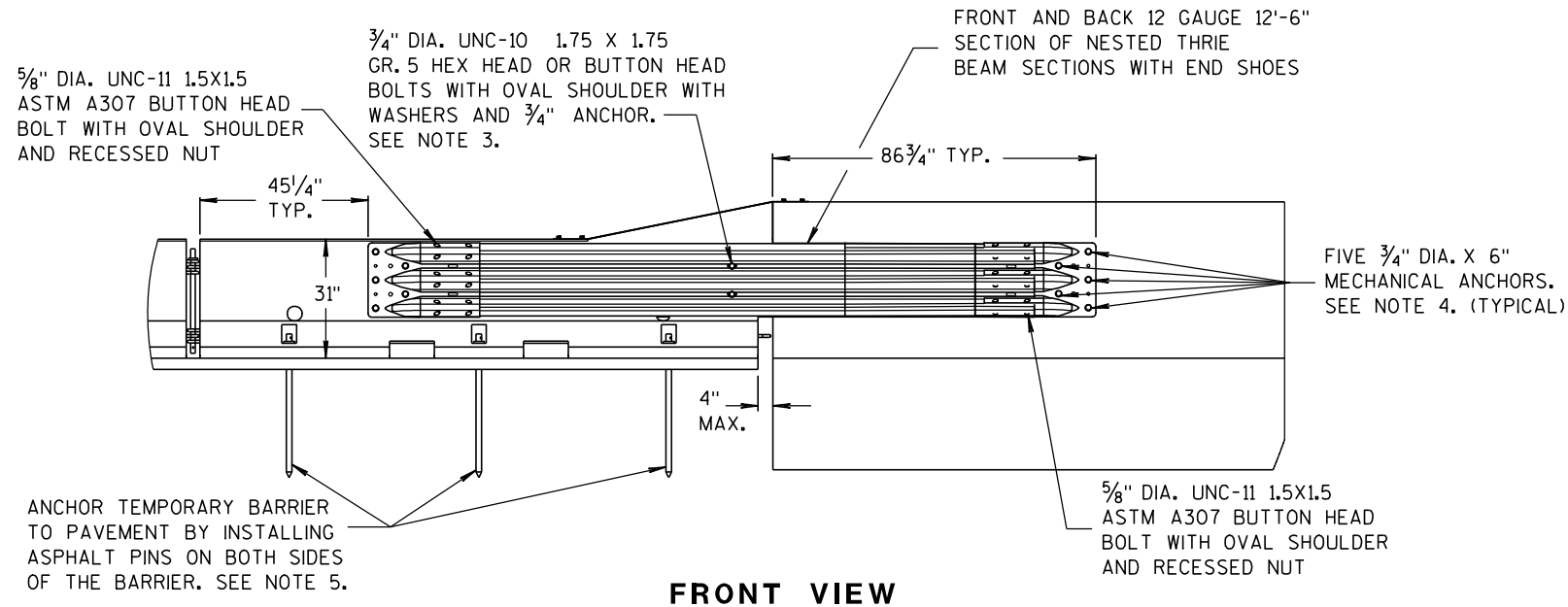
GENERAL NOTES

- 1 CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.
- 2 ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

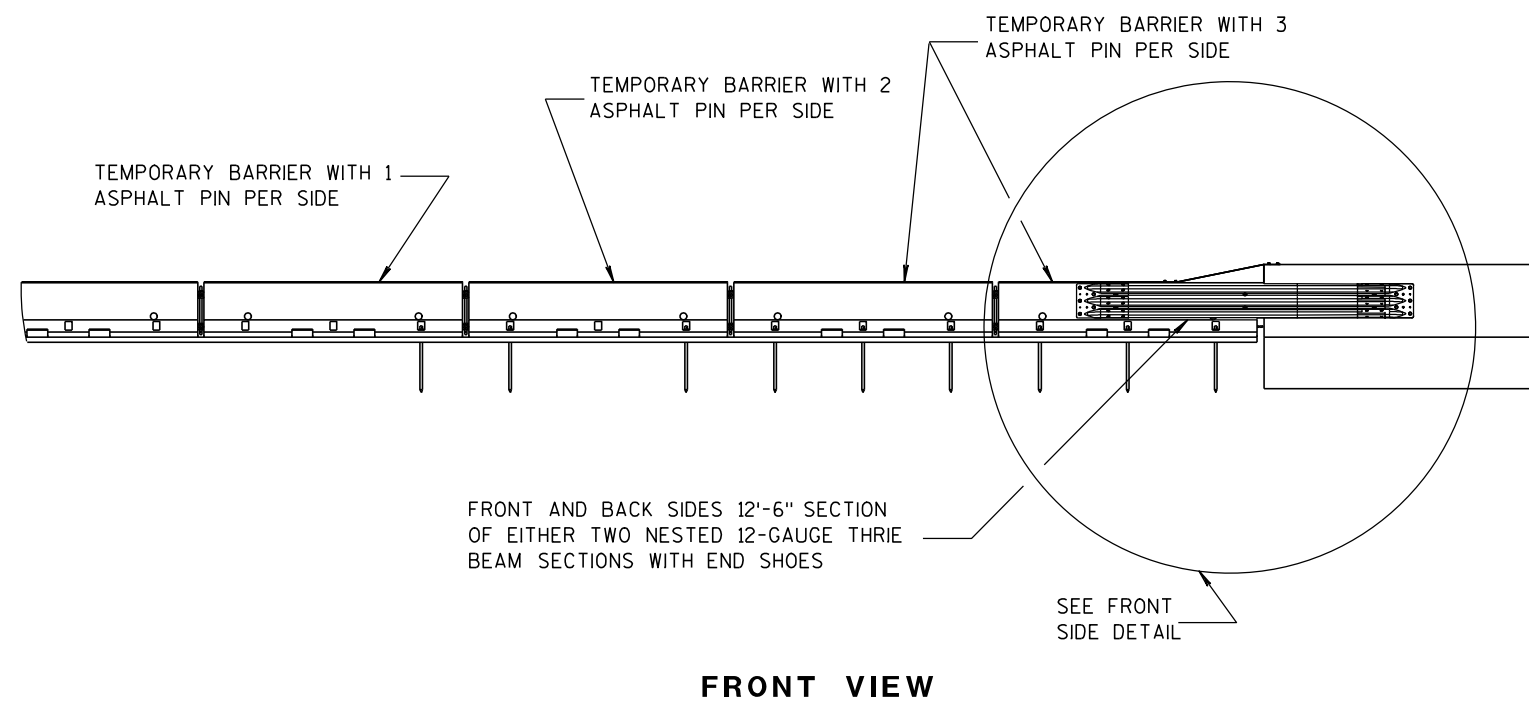
WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1 1/8-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

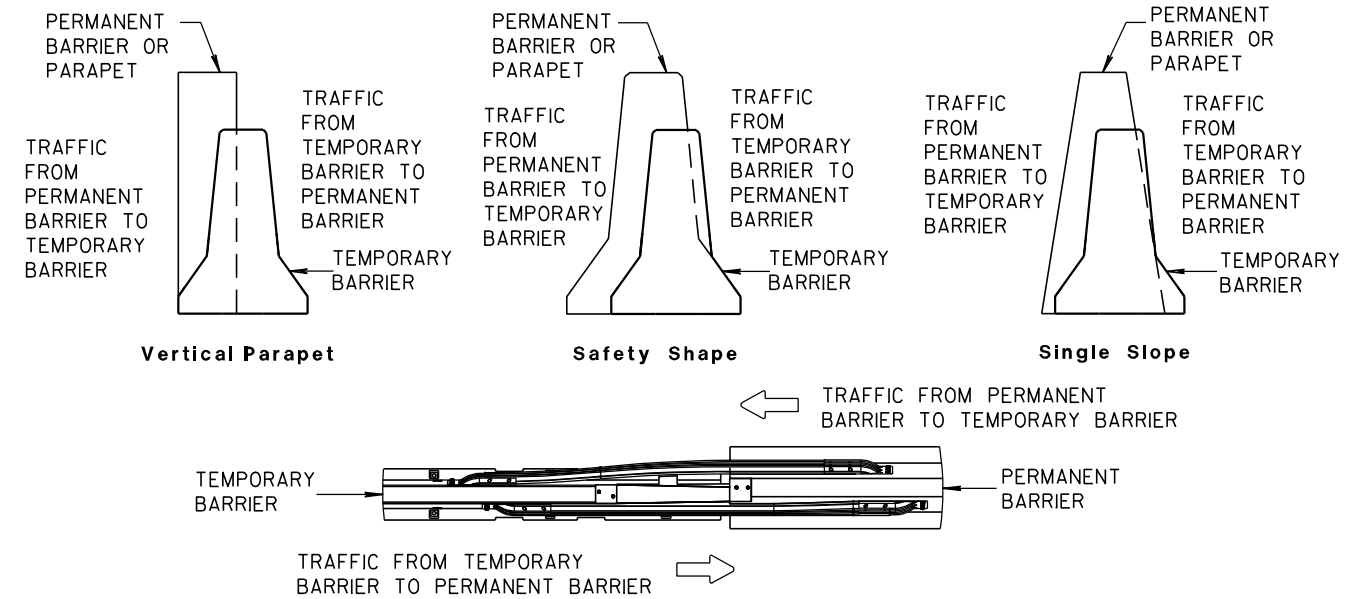


NOTES

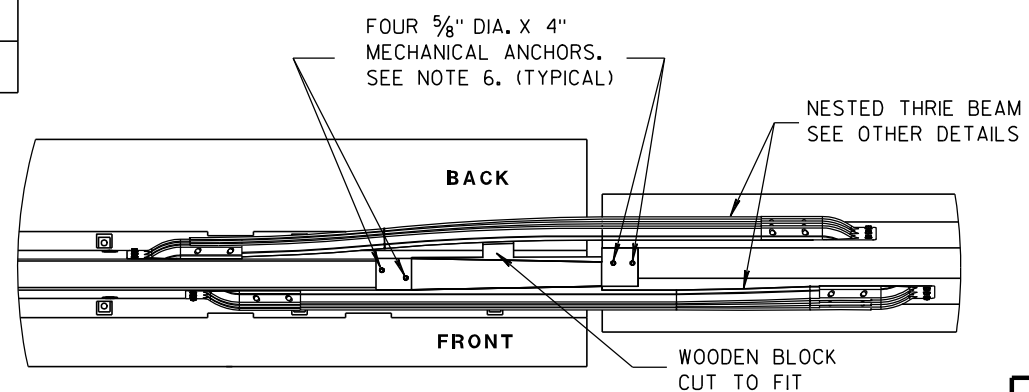
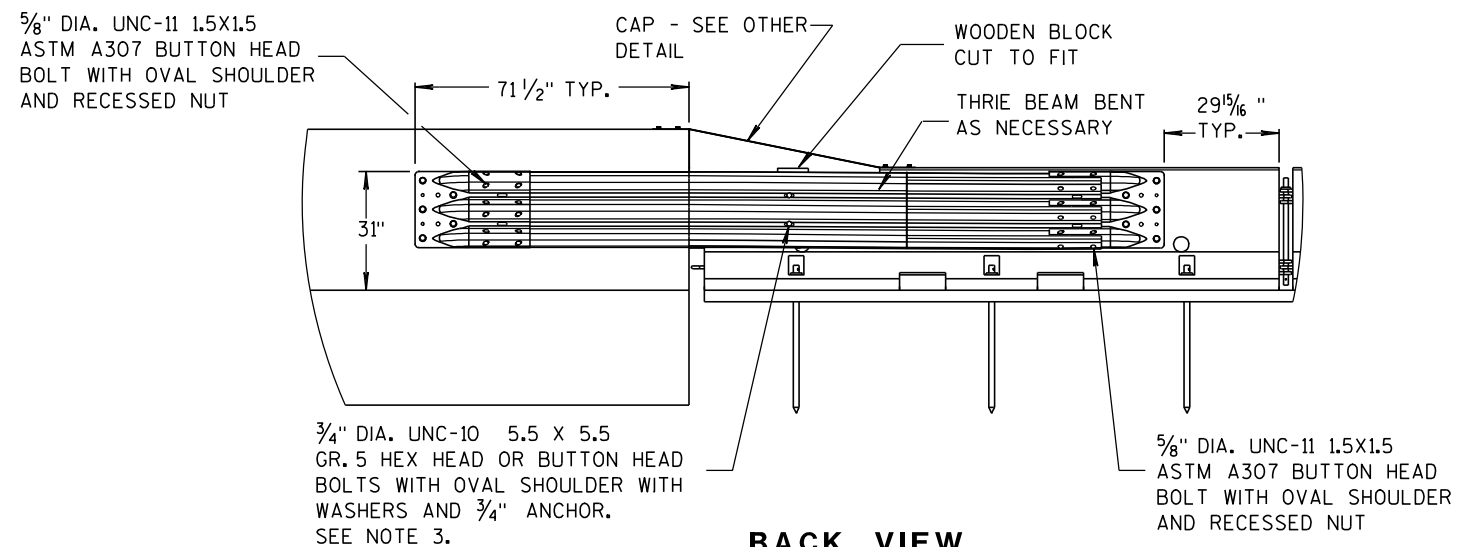
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

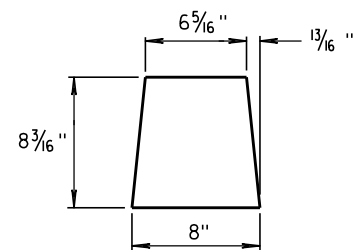
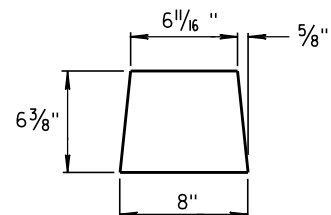
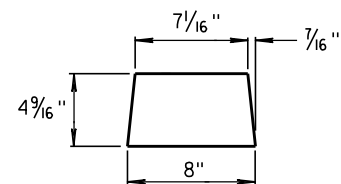
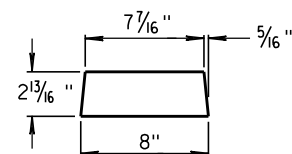
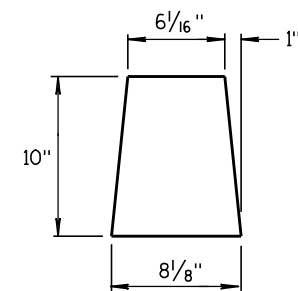
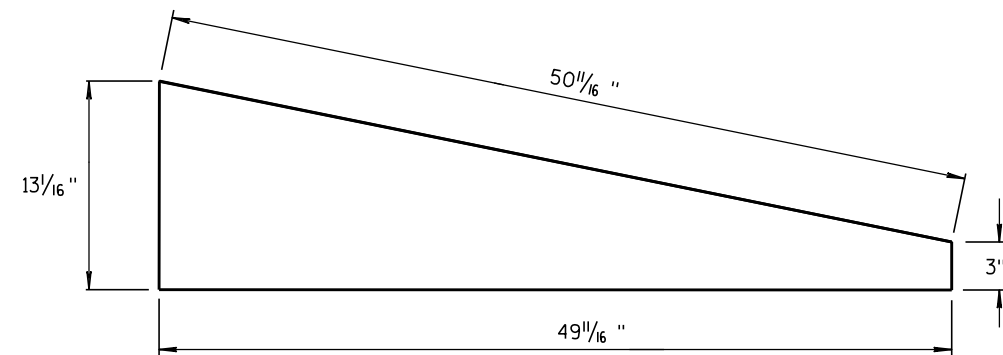
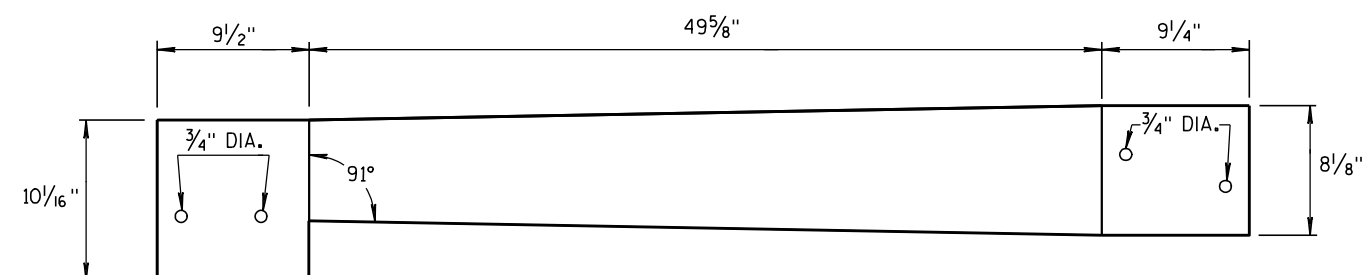
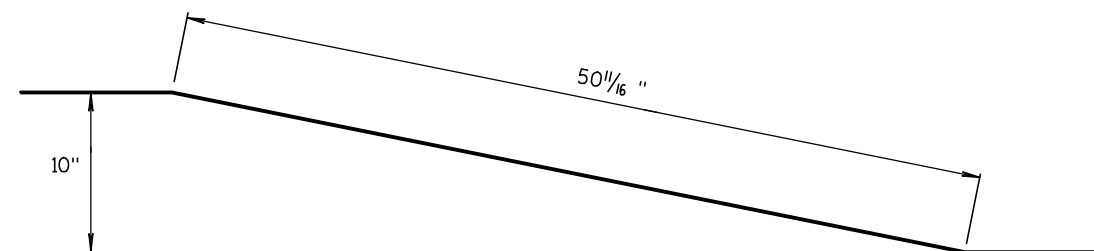


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



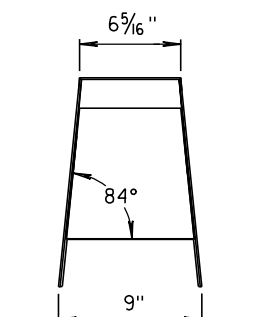
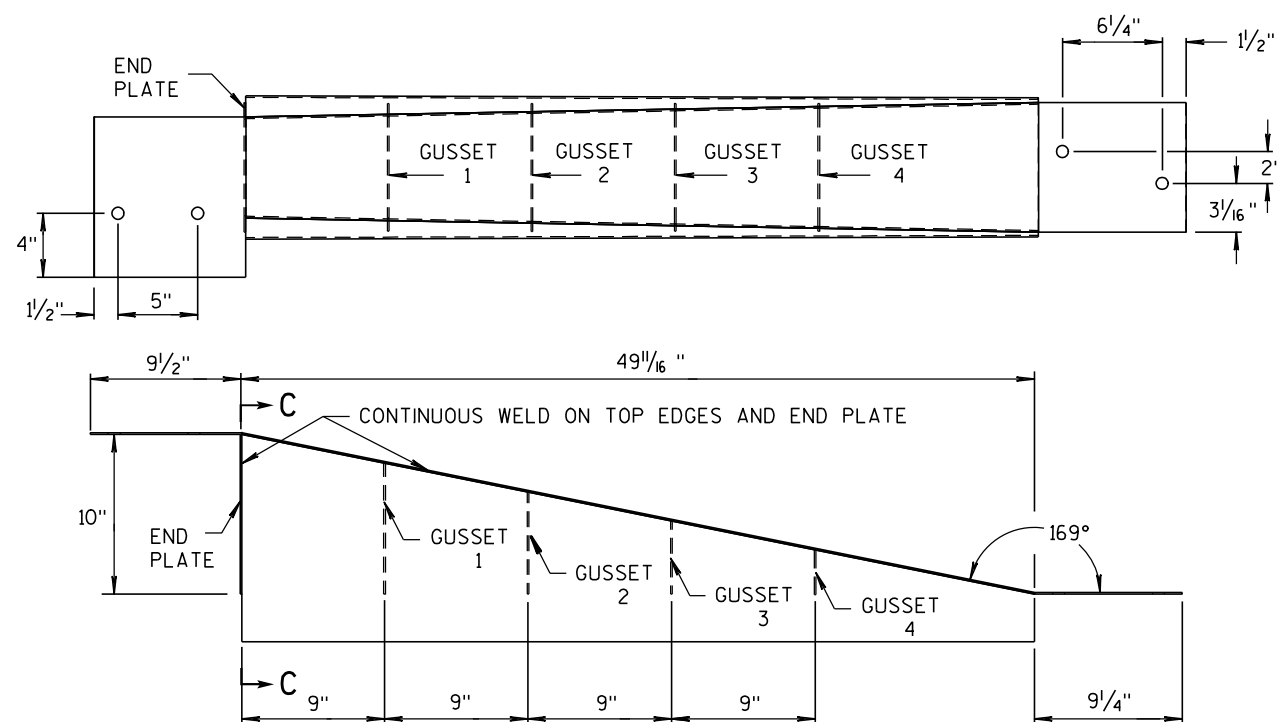
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**GUSSET 1****GUSSET 2****GUSSET 3****GUSSET 4****GUSSETS****END PLATE****SIDE PLATE****TOP PLATE**

**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

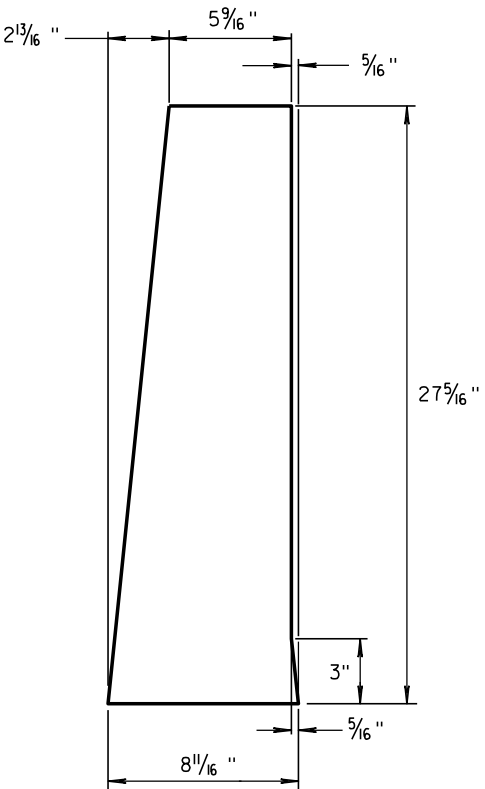
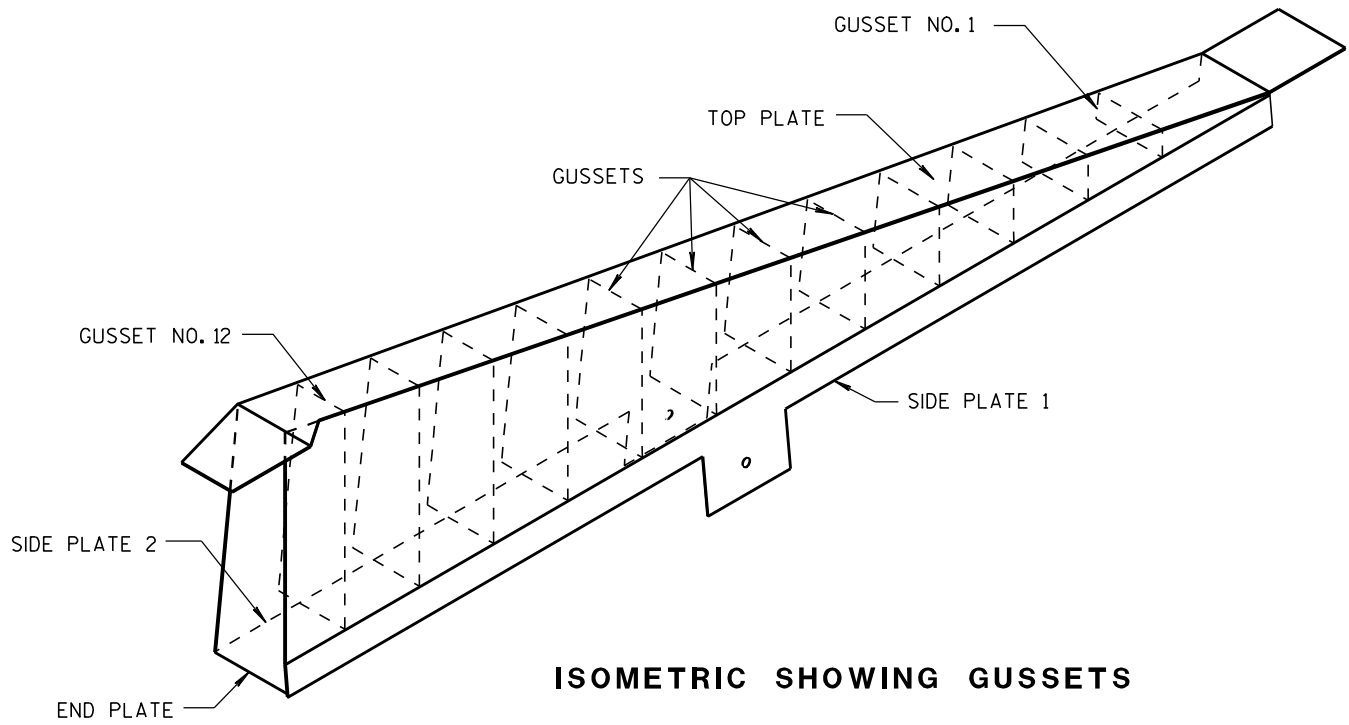
**SECTION C-C****NOTES**

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

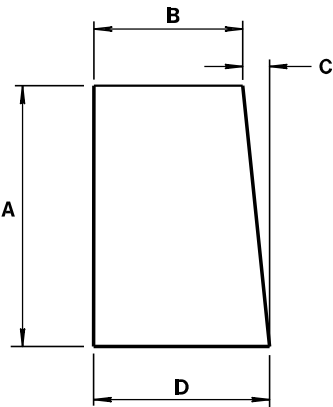
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

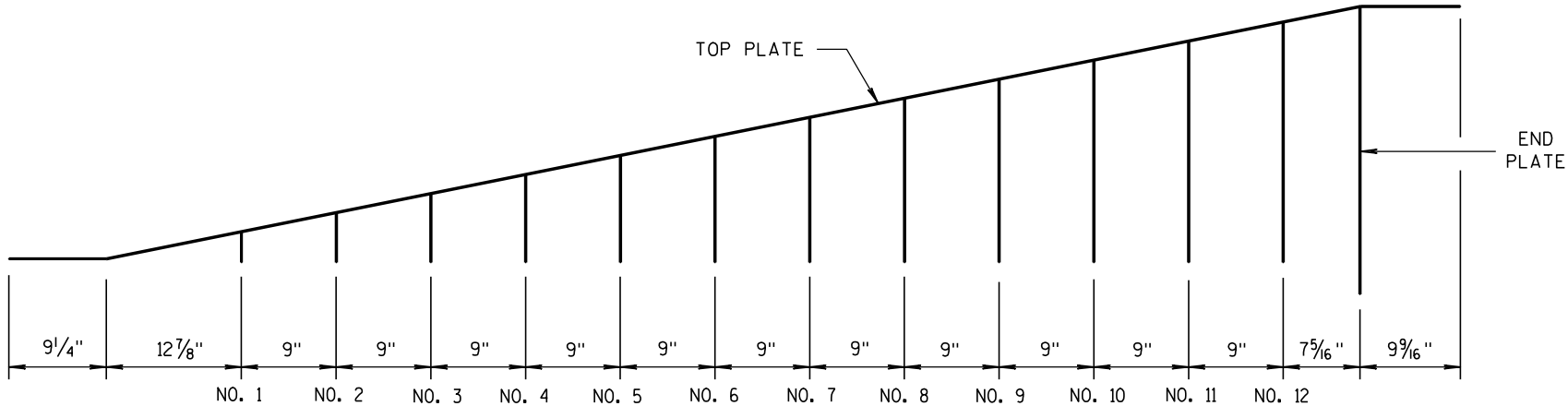


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8 "	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

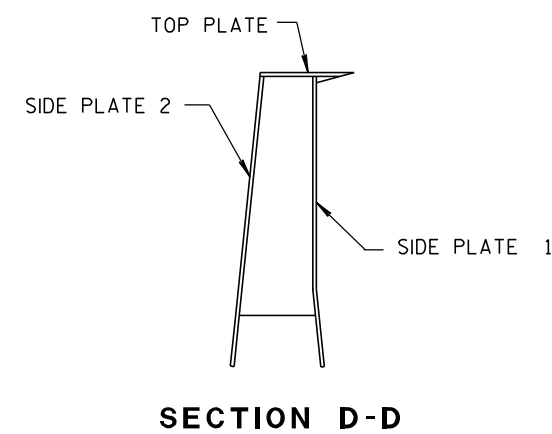
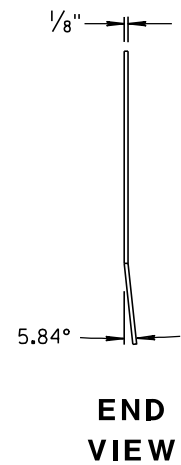
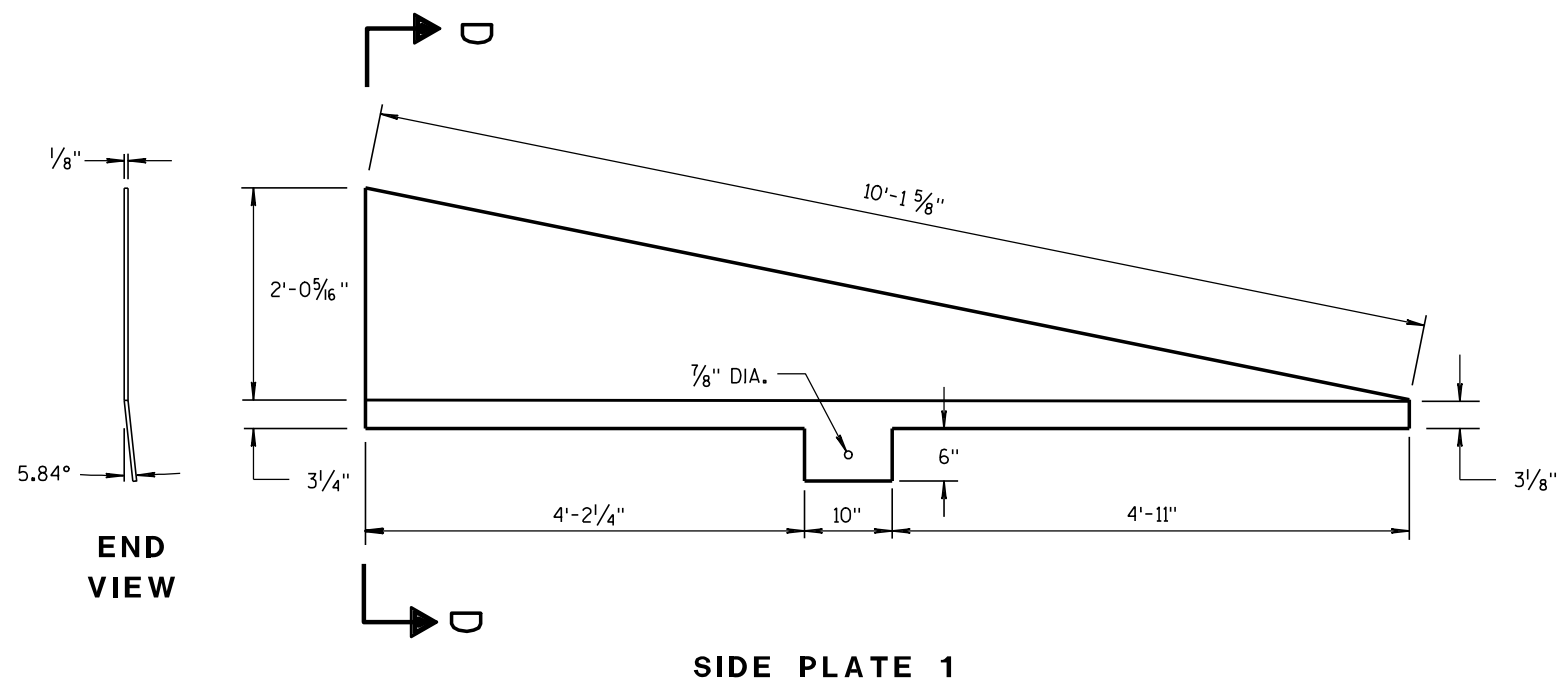
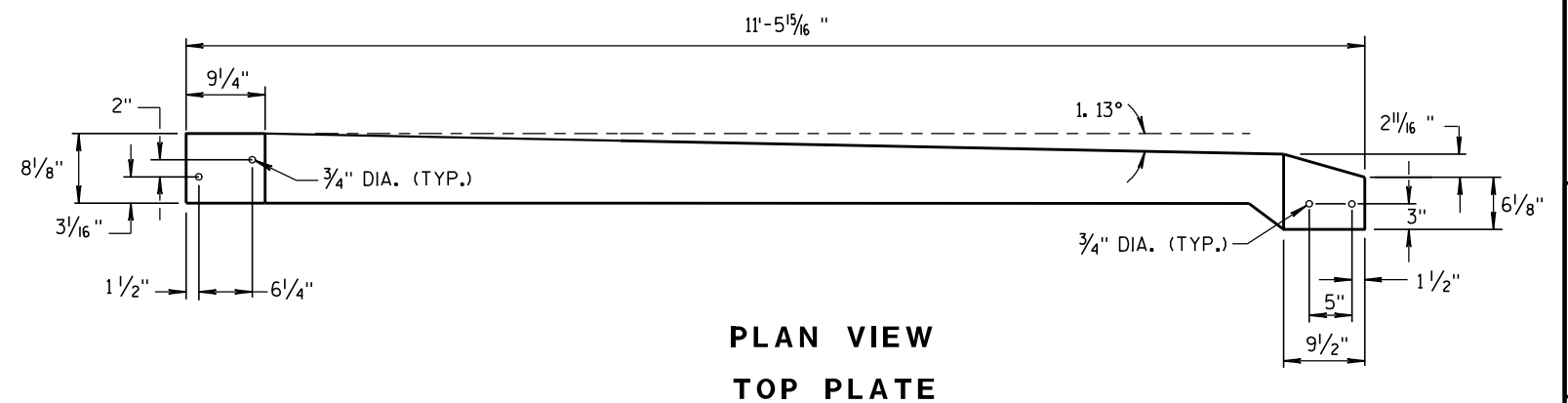
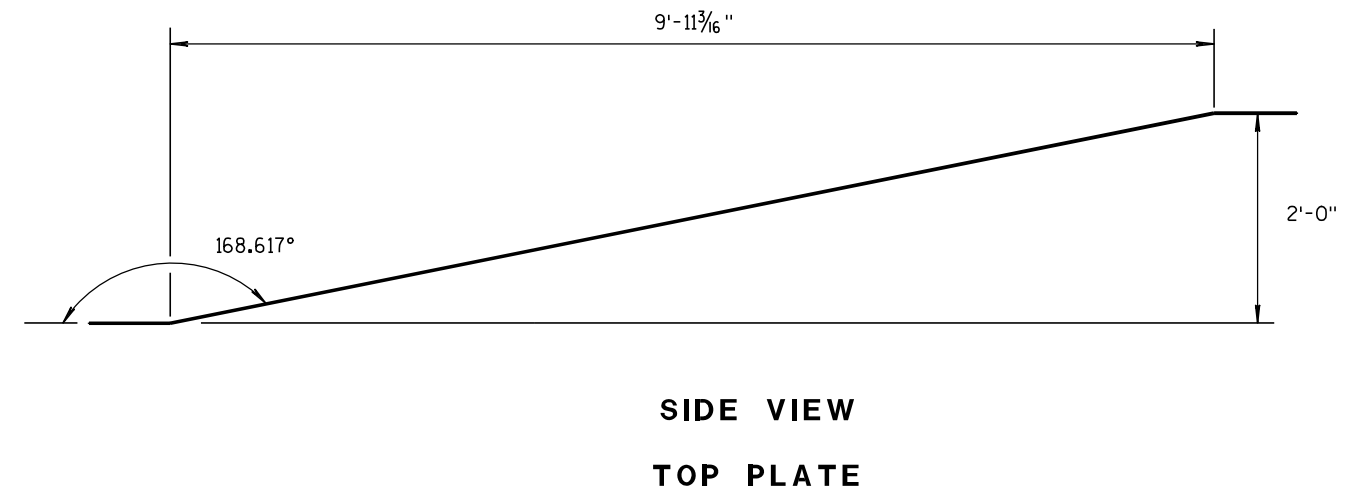
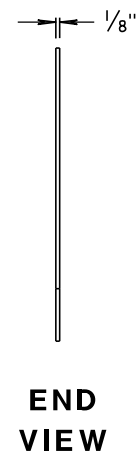
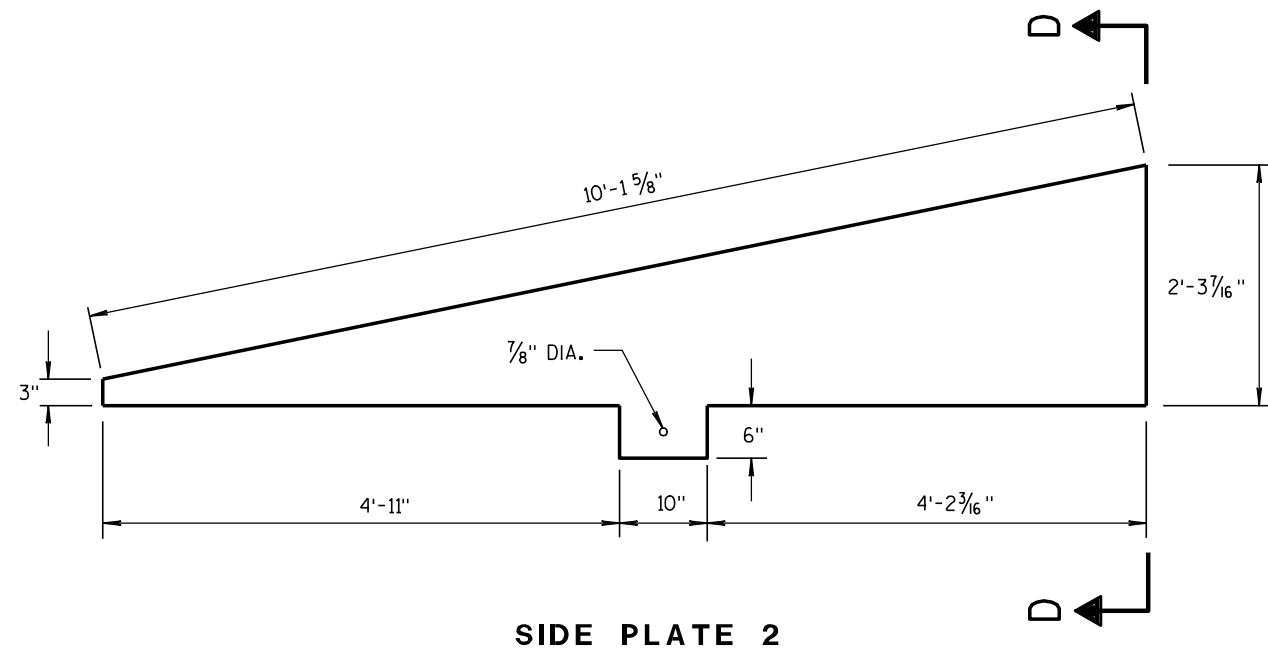
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARD DEVELOPMENT

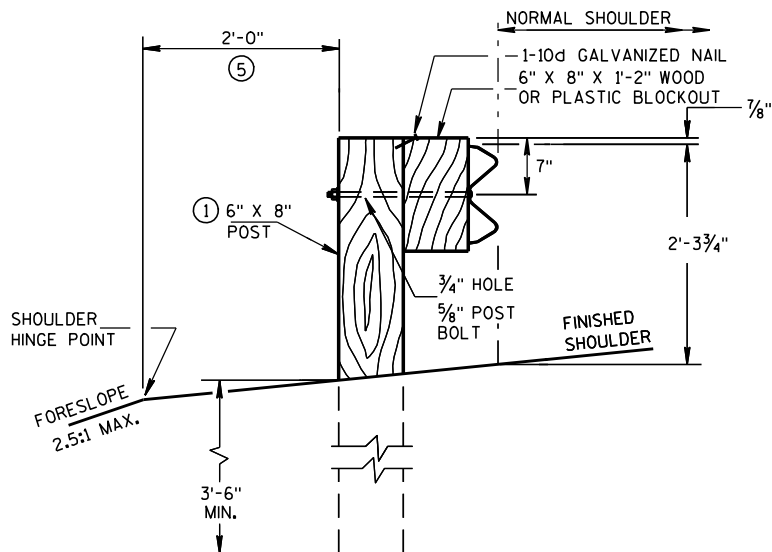
ENGINEER

GENERAL NOTES

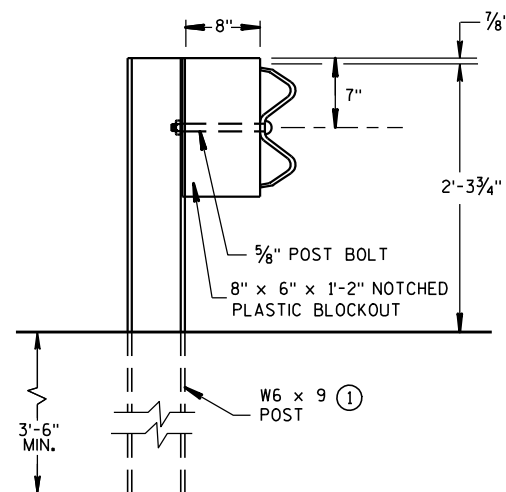
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

- ① W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.
DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- ② USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111 EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPALTER COATING ON GALVANIZED POSTS.
- ③ INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ④ USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- ⑤ IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- ⑥ IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.

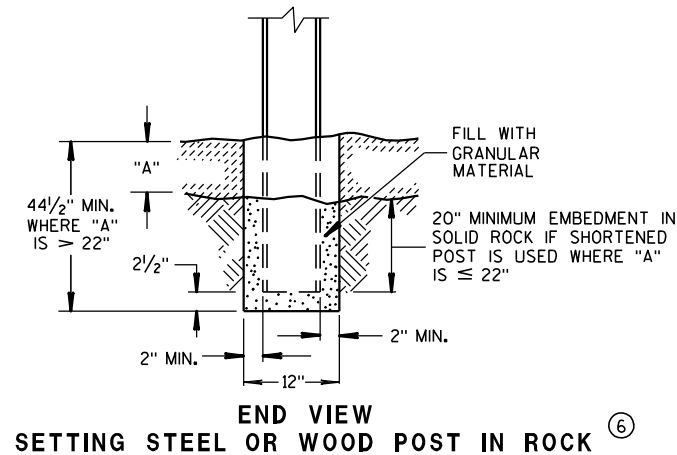
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



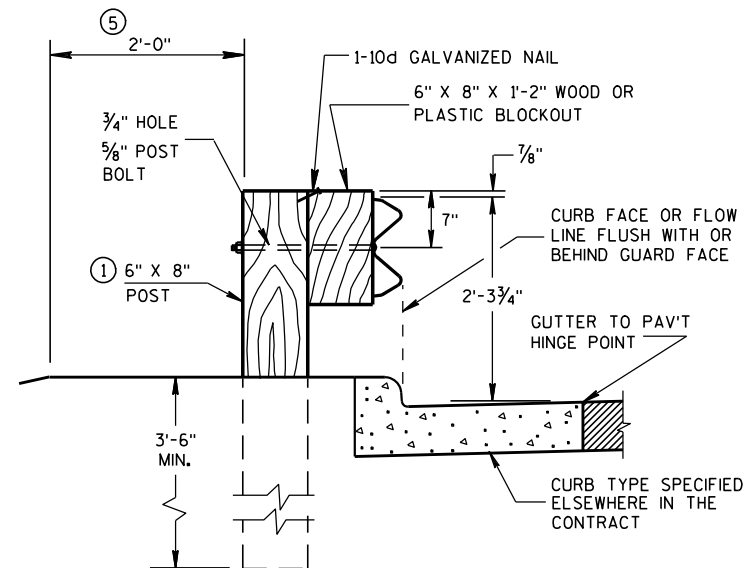
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



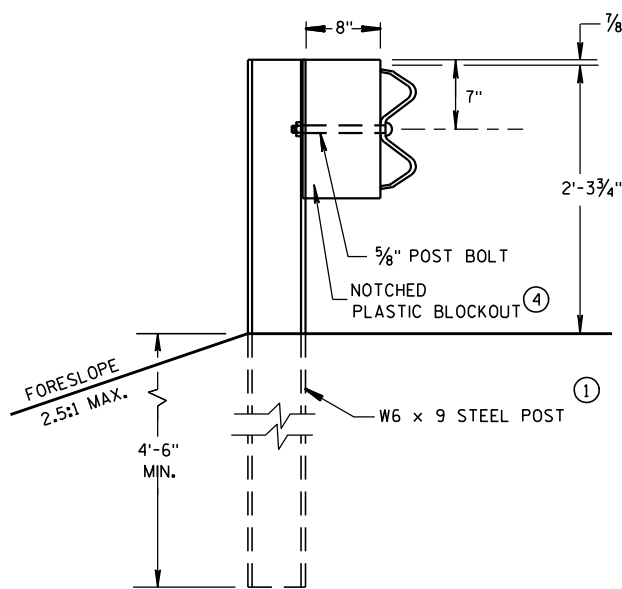
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



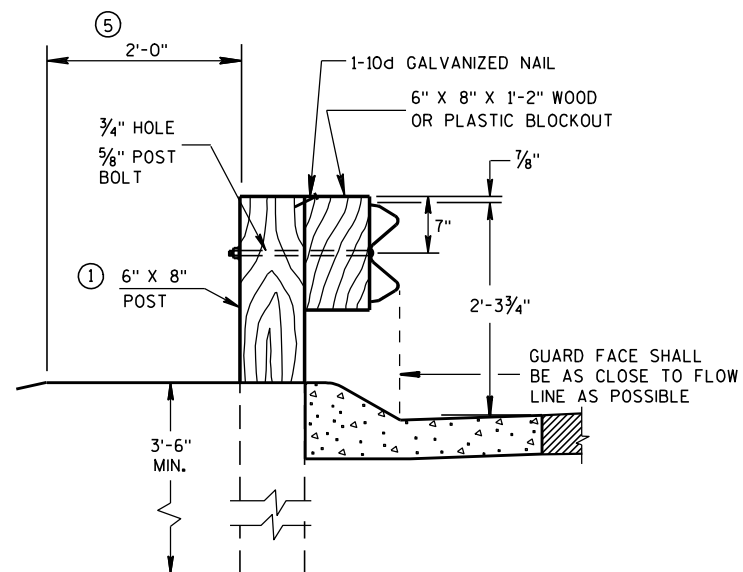
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



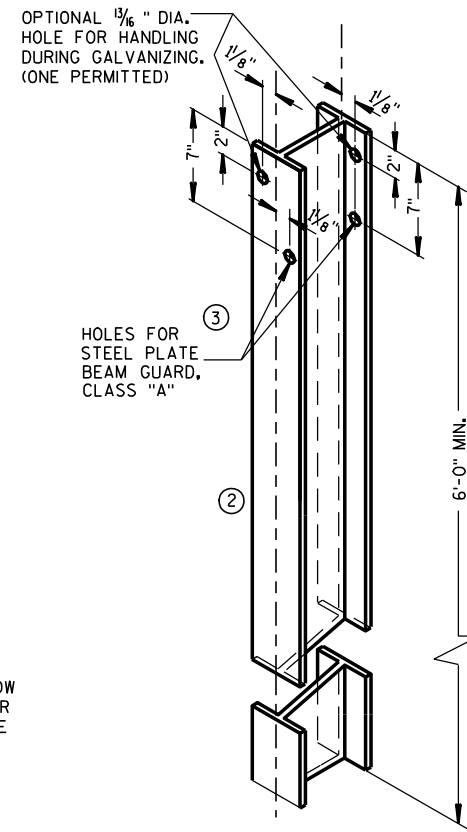
END VIEW
LOCATED ALONG A CURBED ROADWAY



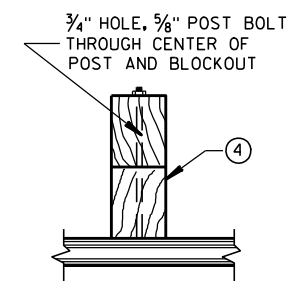
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



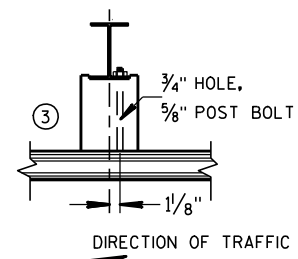
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY



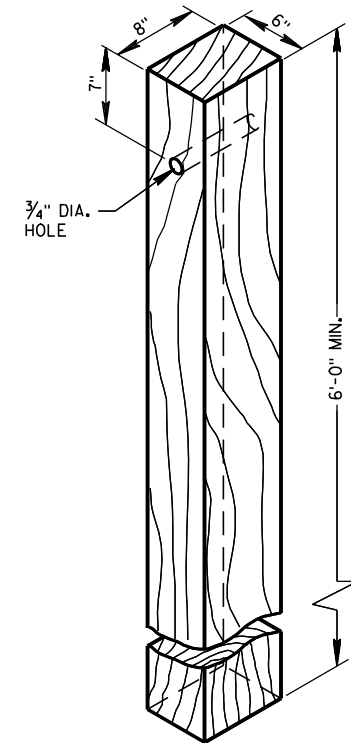
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 1/8" DIAMETER EXCEPT AS NOTED



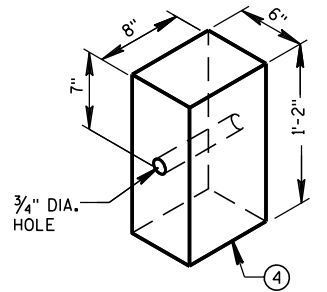
PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



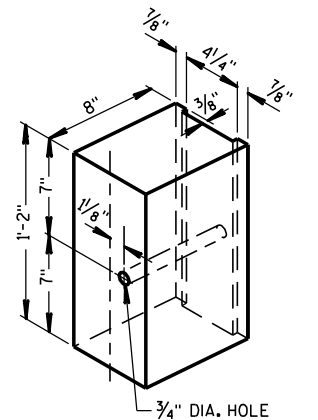
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL



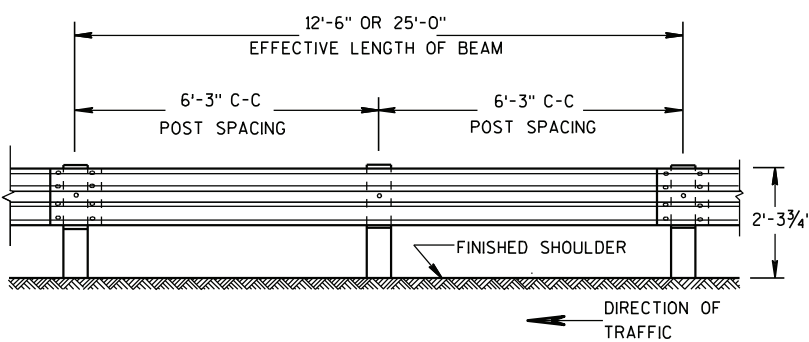
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED
PLASTIC BLOCKOUT
FOR STEEL POSTS ①

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

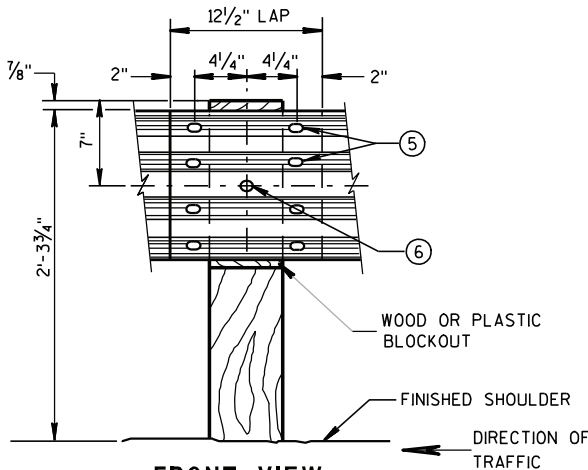
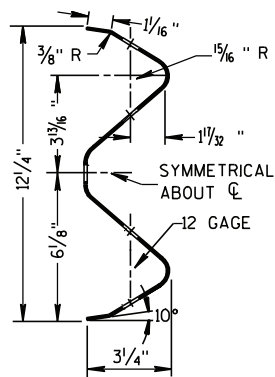
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



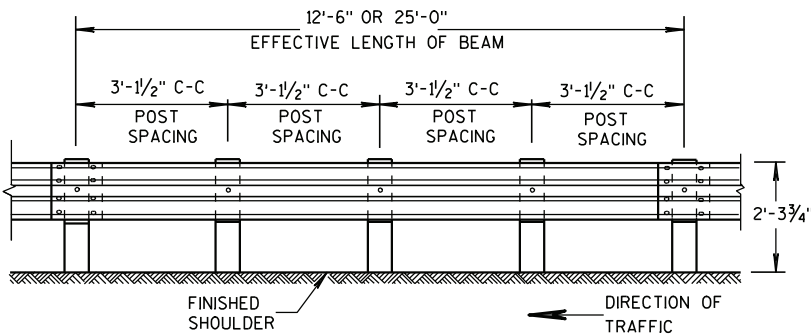
FRONT VIEW

POST SPACING STANDARD INSTALLATION

SECTION THRU W BEAM

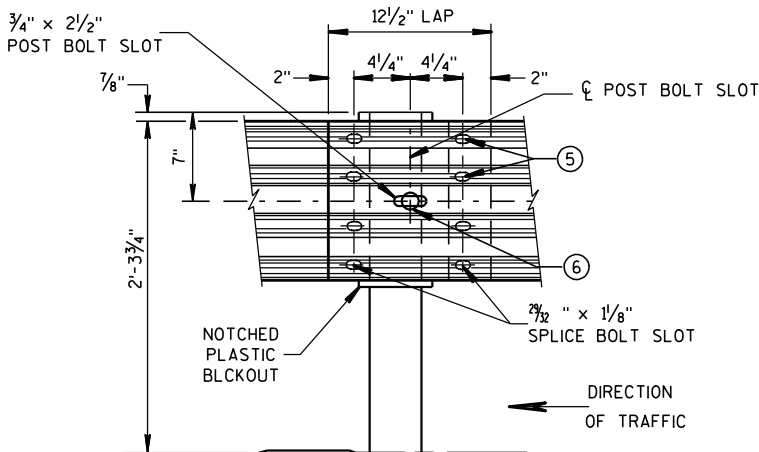


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW

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

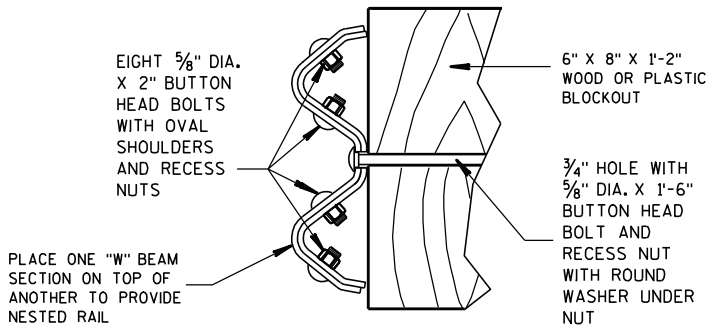


FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

- 1 PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- 2 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 3 REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- 4 PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- 5 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- 6 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.

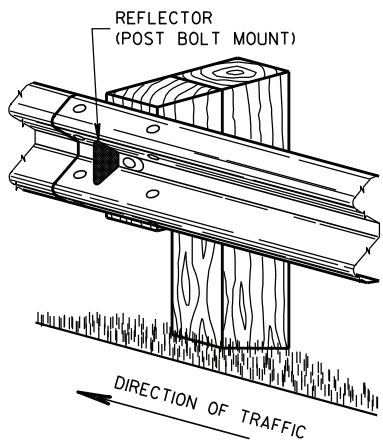


NESTED W BEAM (NW)

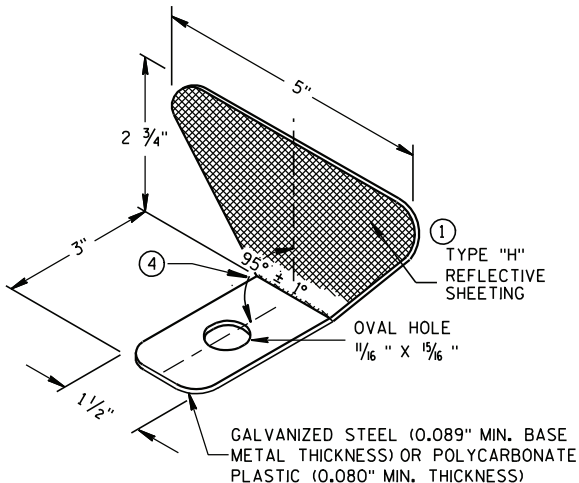
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING²

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ³ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 ⁴ 2	3

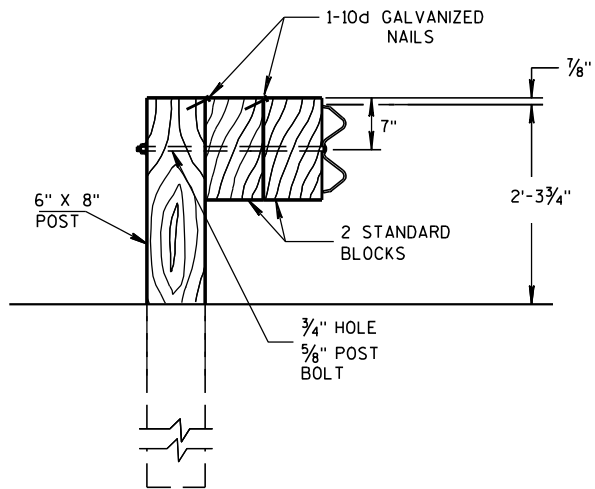


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



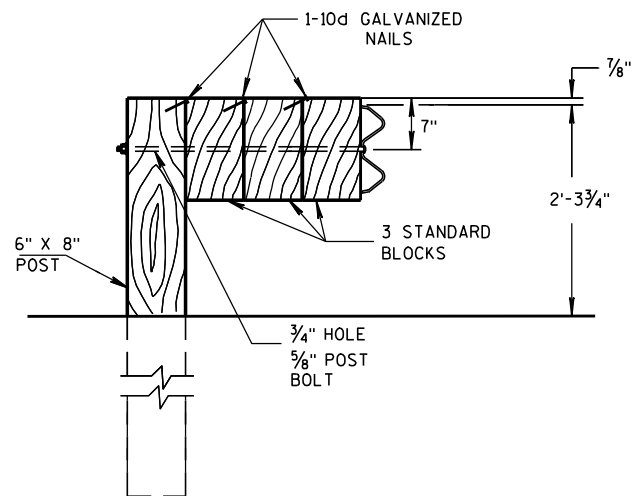
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

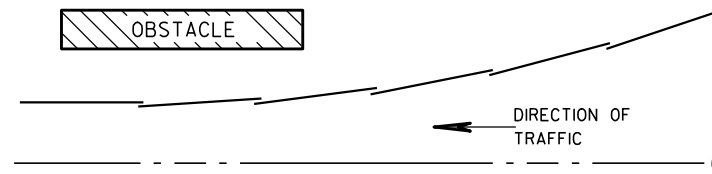


DETAIL FOR TRIPLE BLOCKS

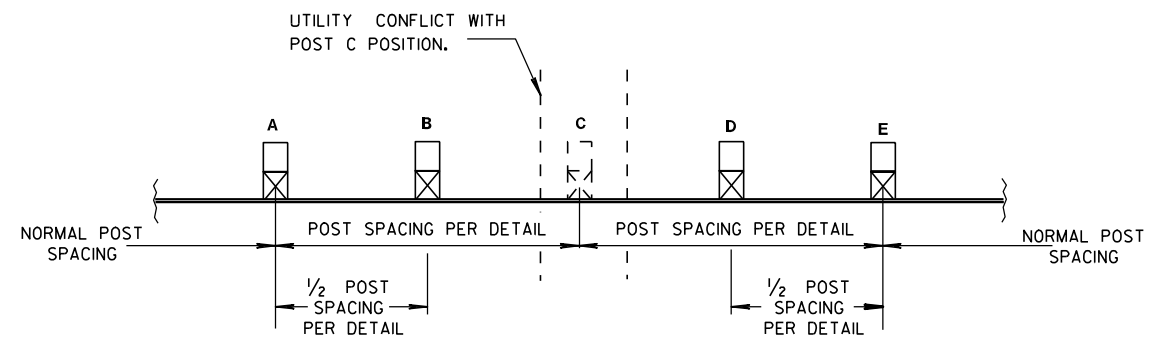
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

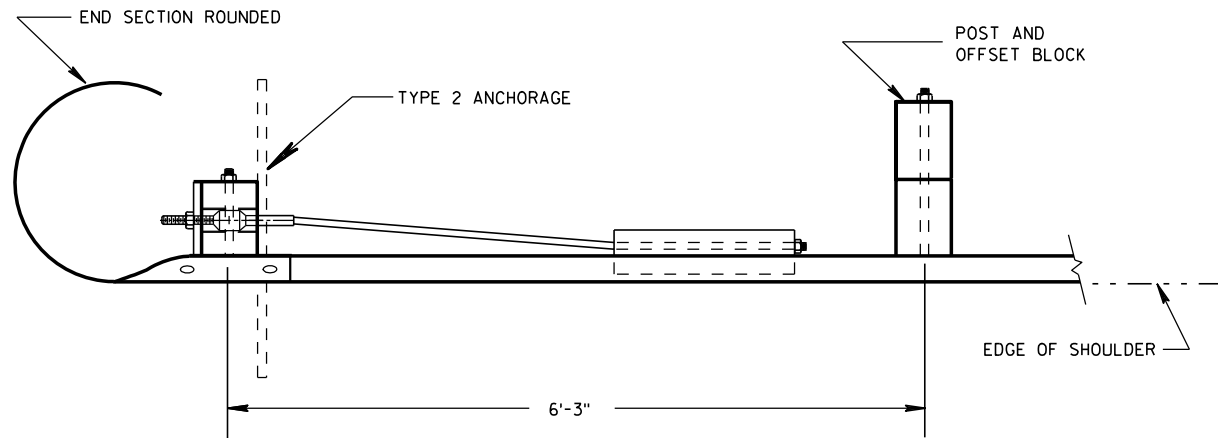
APPROVED

5/23/11

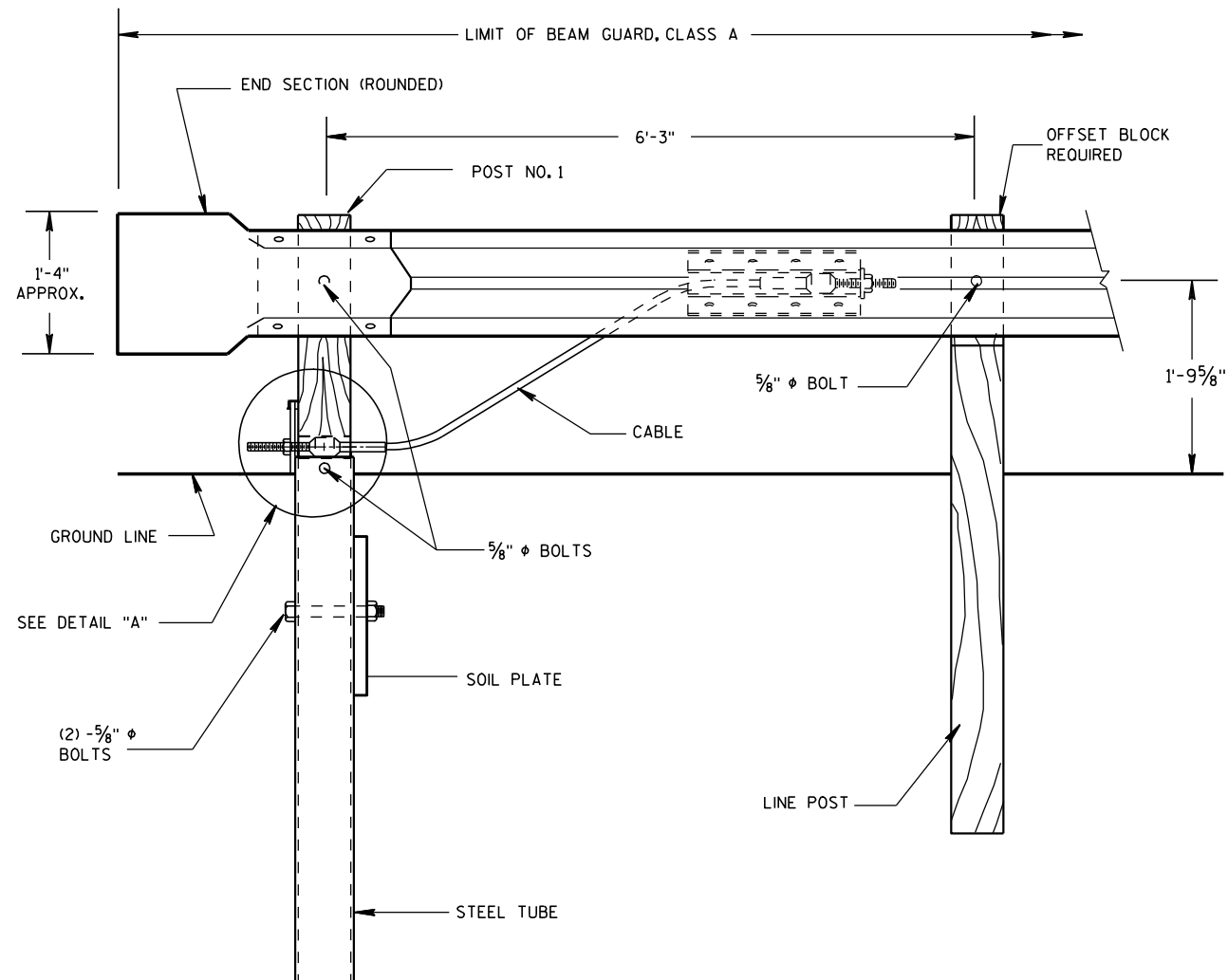
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



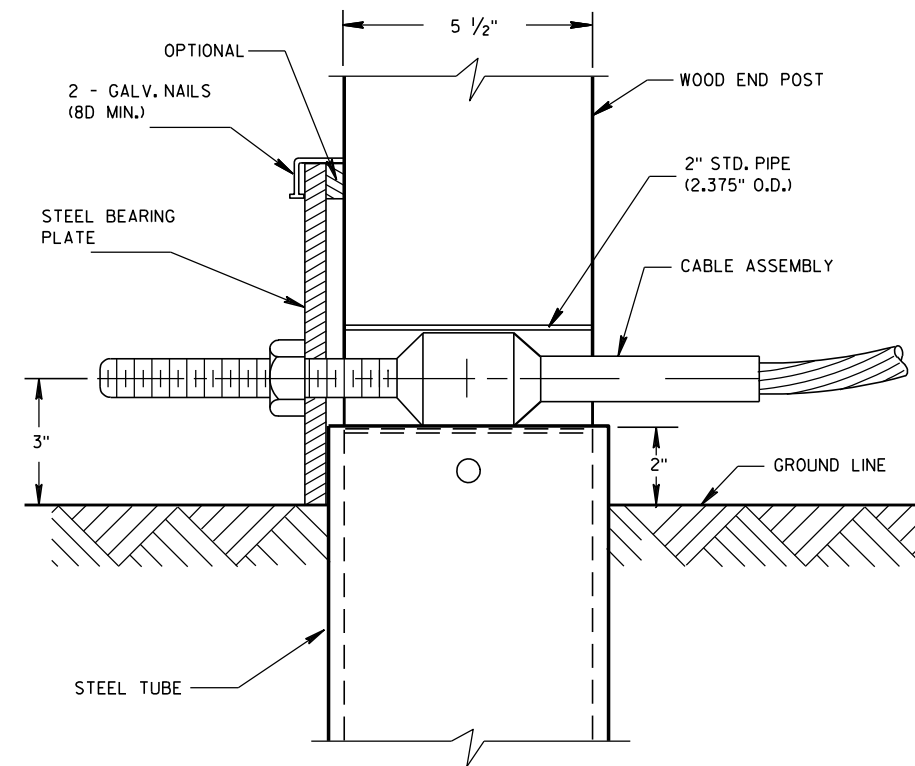
PLAN VIEW



FRONT VIEW

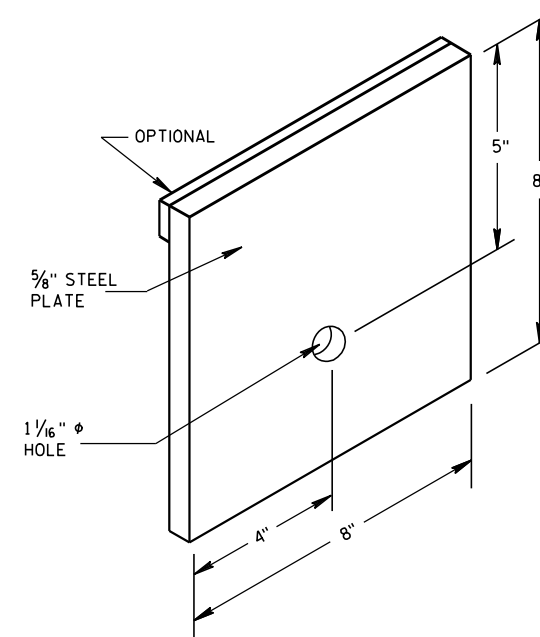
END TREATMENT WITH TYPE 2 ANCHORAGE

(USE ON ONE-WAY ROADWAYS ONLY - DEPARTING END)



DETAIL "A"

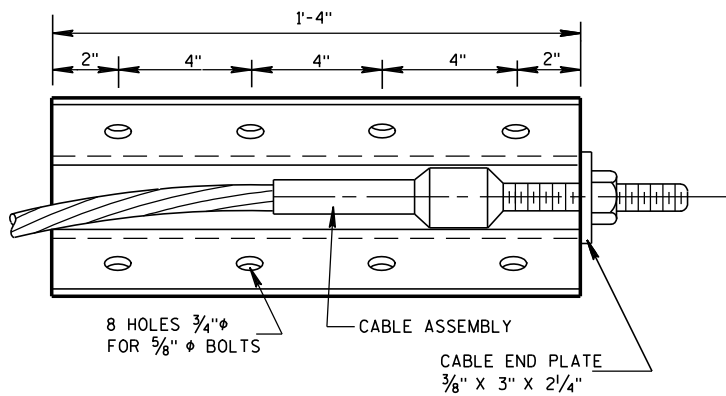
POST NO. 1



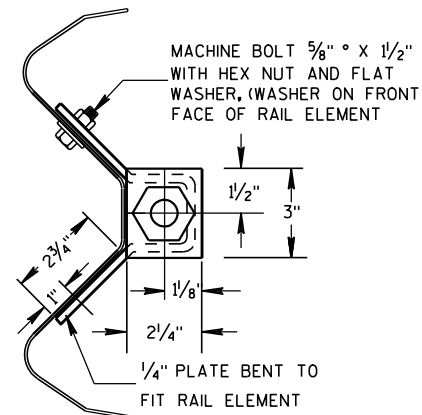
STEEL BEARING PLATE

**ANCHORAGE FOR STEEL
PLATE BEAM GUARD
TYPE 2**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

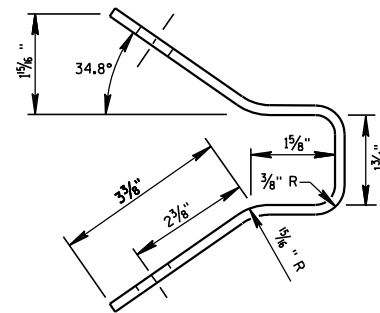


FRONT VIEW

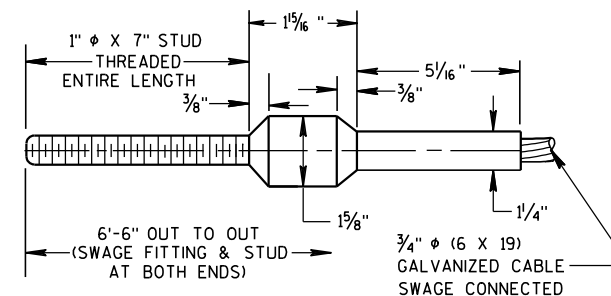


END VIEW

ANCHOR PLATE DETAIL



END VIEW OF BRACKET



CABLE ASSEMBLY

CABLE, SWAGE FITTING, STUD AND NUT SHALL DEVELOP A MINIMUM BREAKING STRENGTH OF 40,000 LB (TIGHTEN UNTIL TAUT)

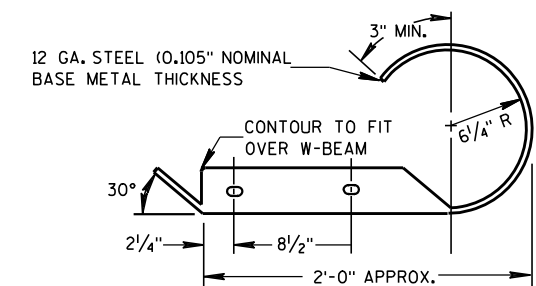
GENERAL NOTES

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

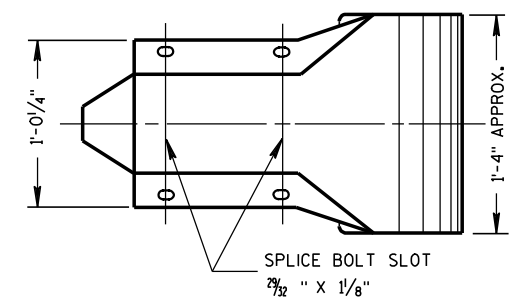
STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-500 GRADE B OR ASTM A-501.

POST NO. 1 SHALL BE WOOD BREAKAWAY POST INSERTED AND BOLTED INTO STEEL TUBE.

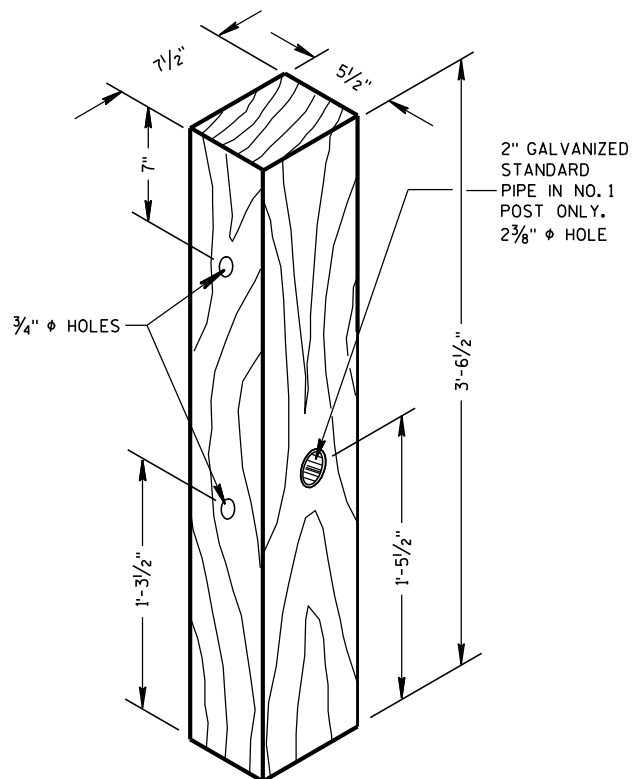
TYPE 2 ANCHORAGE SHALL CONSIST OF A STEEL TUBE, SOIL PLATE, WOOD BREAKAWAY POST, BEARING PLATE, ANCHOR PLATE, CABLE ASSEMBLY AND ALL ASSOCIATED HARDWARE, ALL STEEL PARTS SHALL BE GALVANIZED.



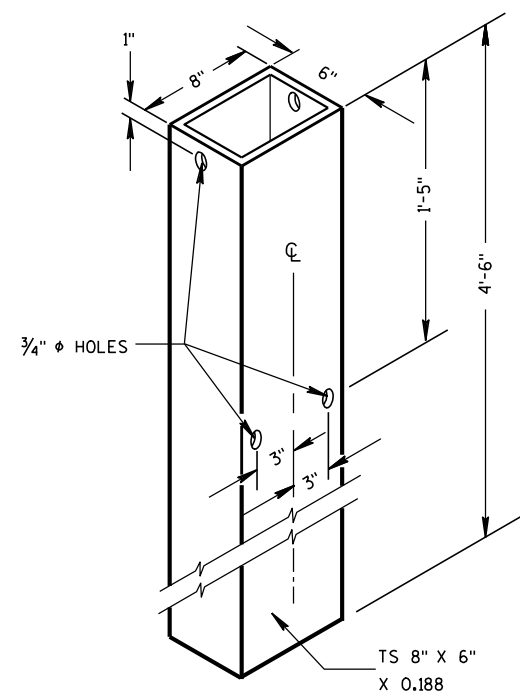
PLAN VIEW



FRONT VIEW
W BEAM END SECTION ROUNDED

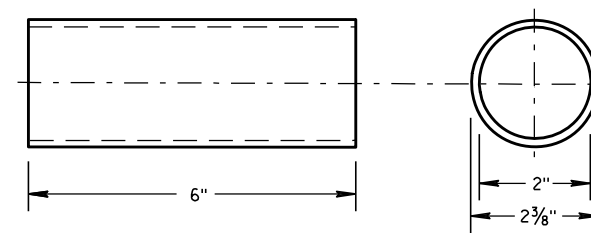


WOOD BREAKAWAY POST



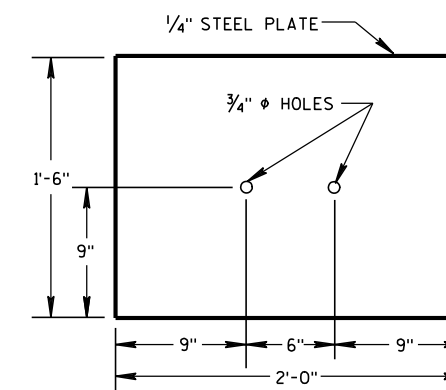
STEEL TUBE

STEEL TUBE SHALL CONFORM TO REQUIREMENTS OF ASTM A500



BREAKAWAY TERMINAL POST SLEEVE

GALVANIZED STANDARD STRENGTH STEEL PIPE, ASTM 53 GRADE "B"



SOIL PLATE

ANCHORAGE FOR STEEL
PLATE BEAM GUARD
TYPE 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

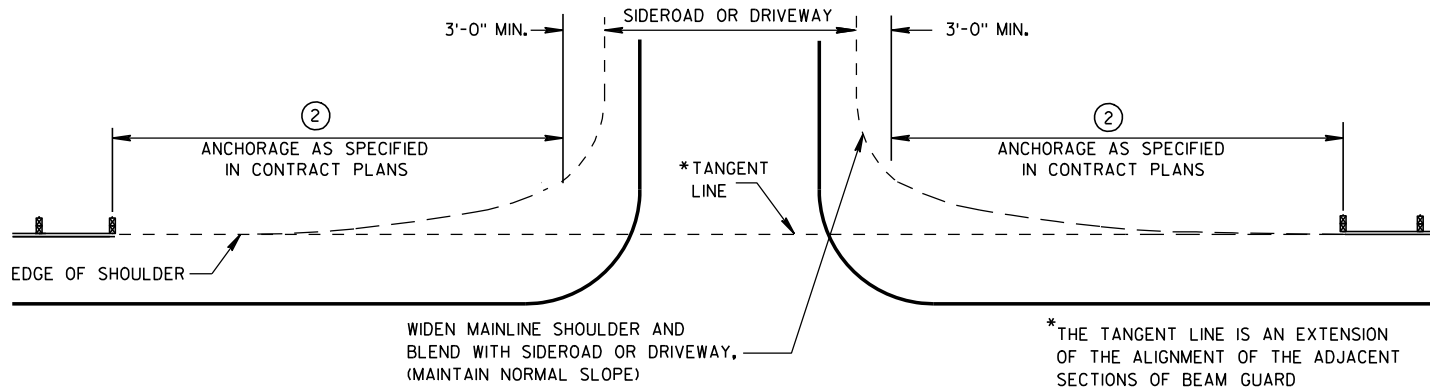
APPROVED

8/21/2007

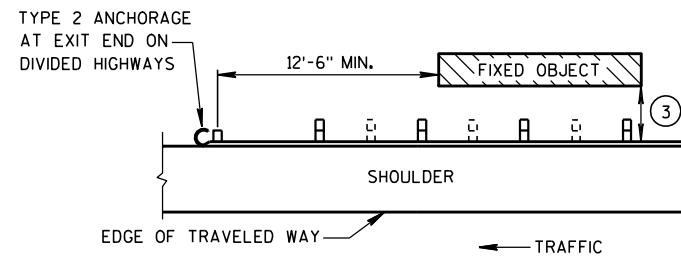
DATE

FHWA

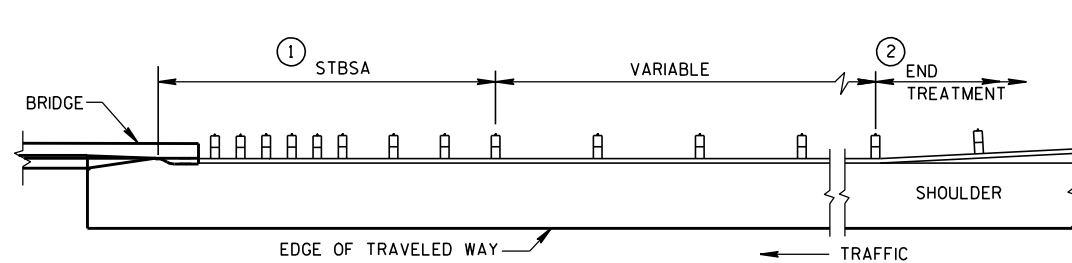
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



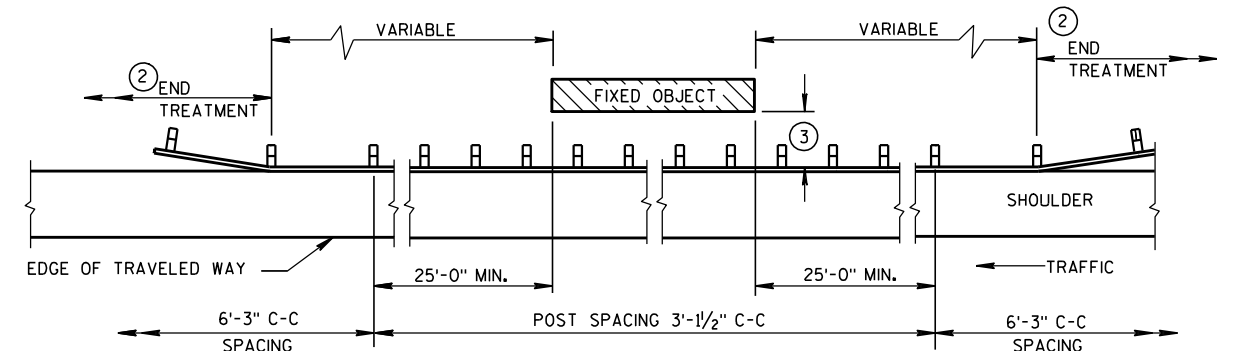
BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC



BEAM GUARD AT FULL WIDTH BRIDGES

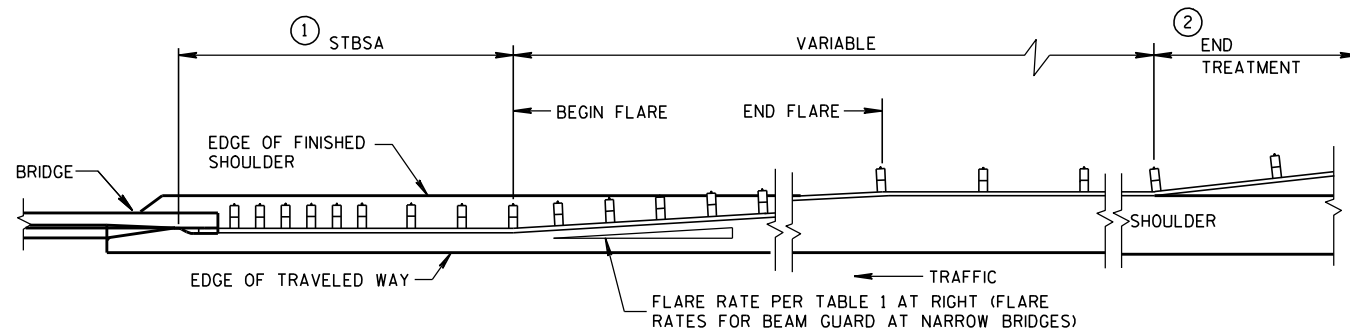


BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

TABLE 1
FLARE RATES FOR BEAM
GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



BEAM GUARD AT NARROW BRIDGES (FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"

STEEL PLATE BEAM GUARD
CLASS "A"
AT BRIDGES, OBSTACLES
AND SIDEROADS/DRIVEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-21-07
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

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

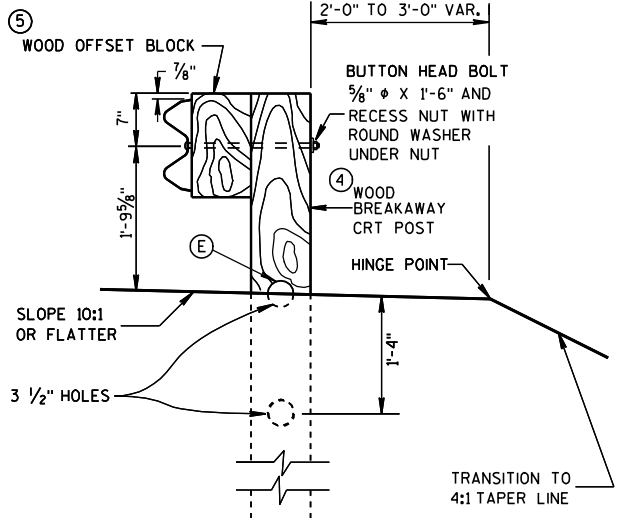
GENERAL NOTES

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.

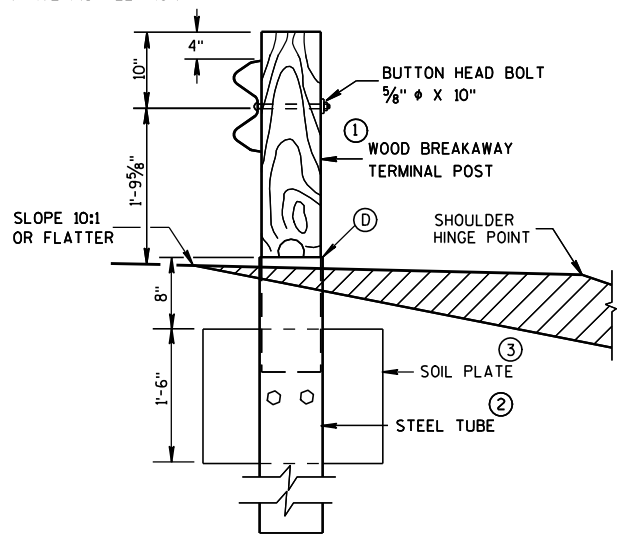
- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU 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.

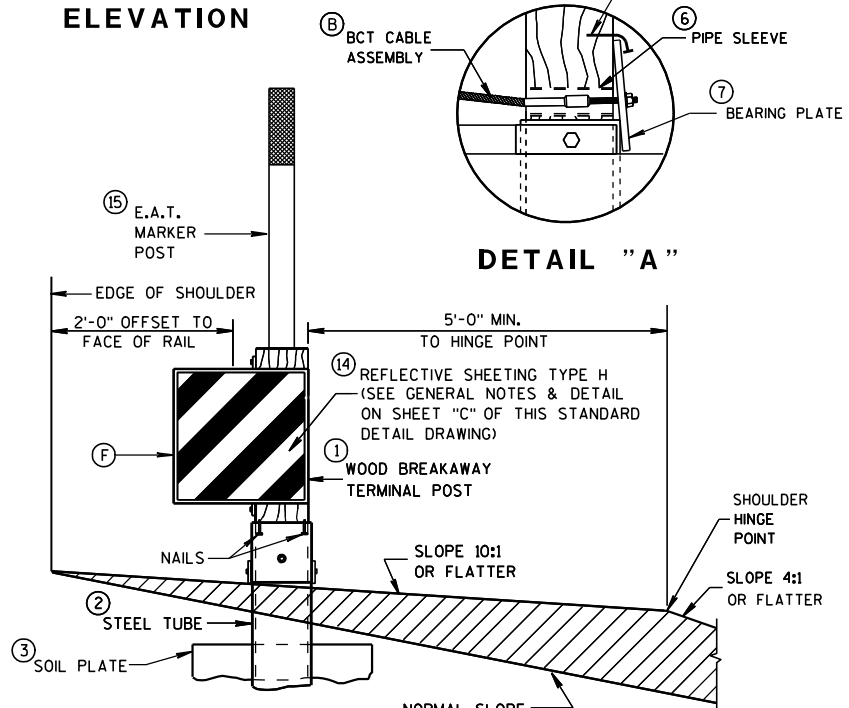
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



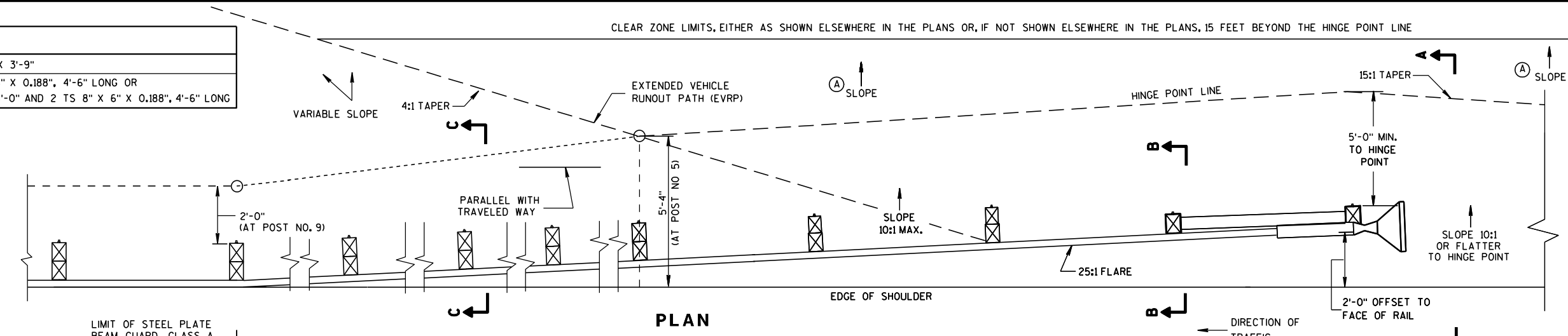
SECTION C-C
TYPICAL AT POST NOS. 6, 8



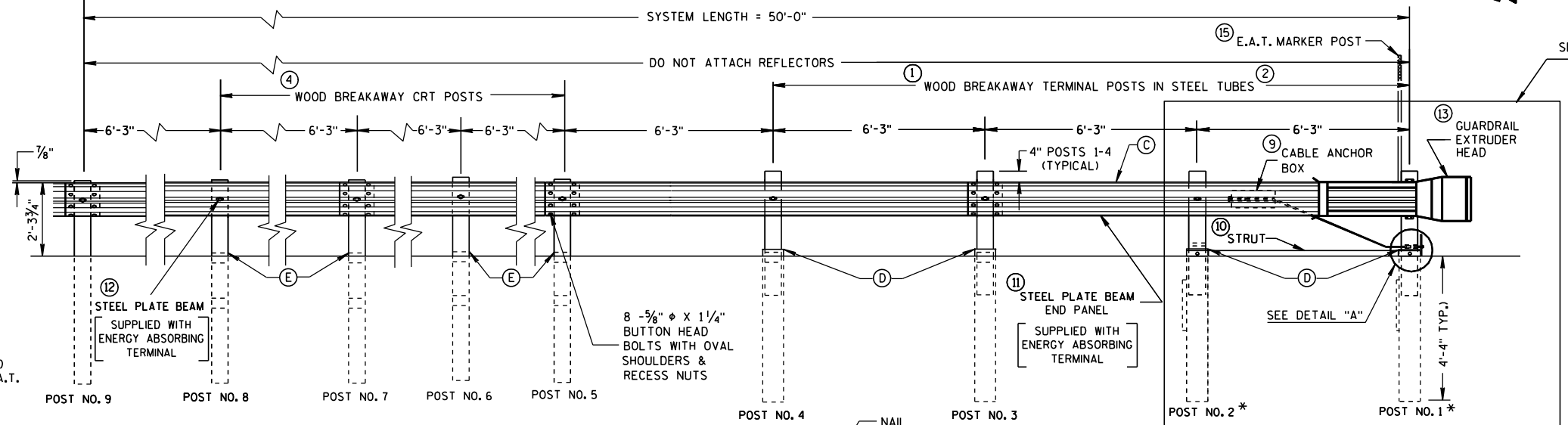
SECTION B-B
TYPICAL AT POST NO. 2*



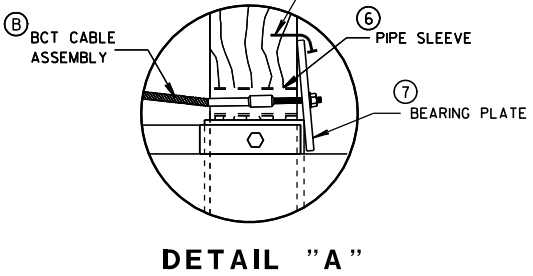
SECTION A-A
TYPICAL AT POST NO. 1*



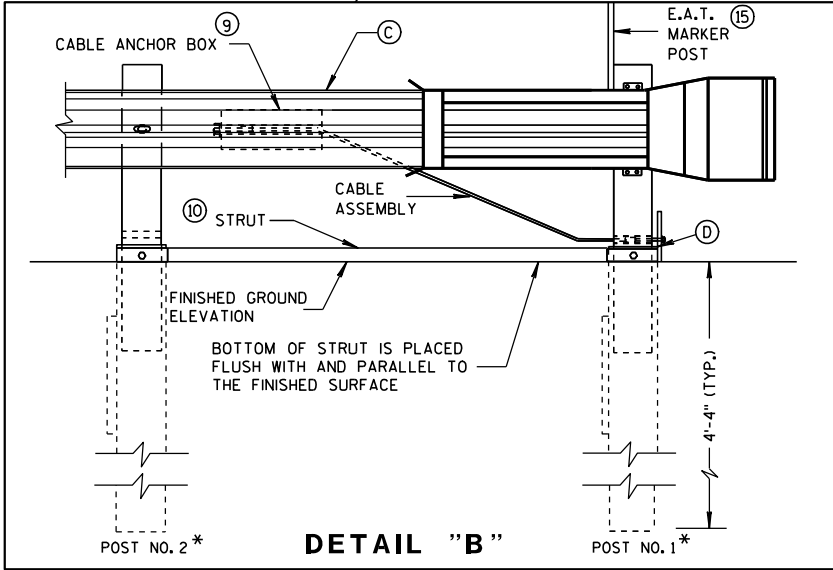
PLAN



ELEVATION



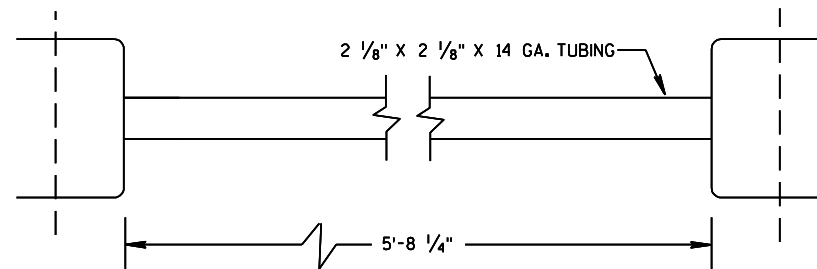
DETAIL "A"



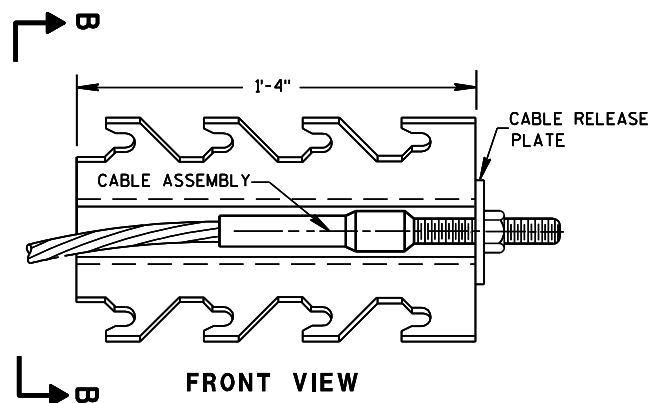
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

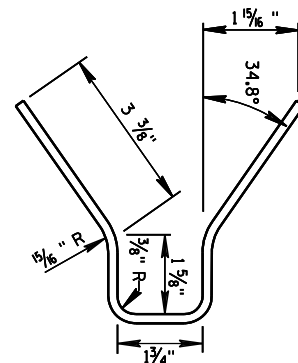
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



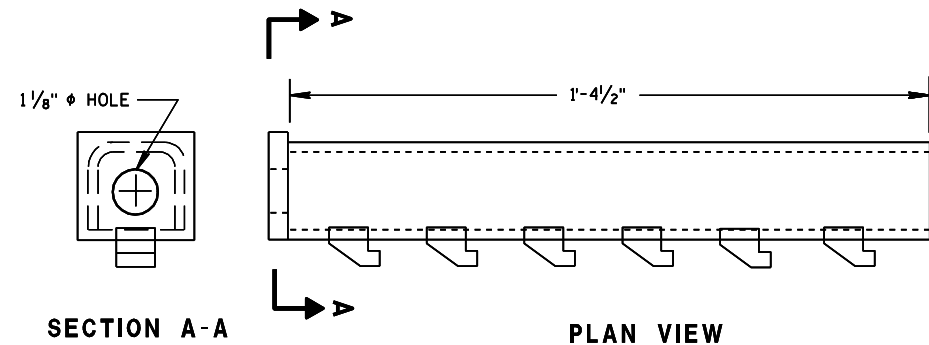
⑩ STRUT DETAIL (SKT-350)



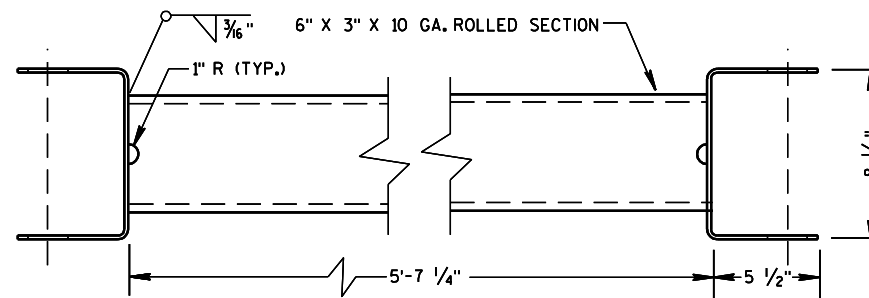
⑨ CABLE ANCHOR BOX (SKT-350)
(SKT-350)



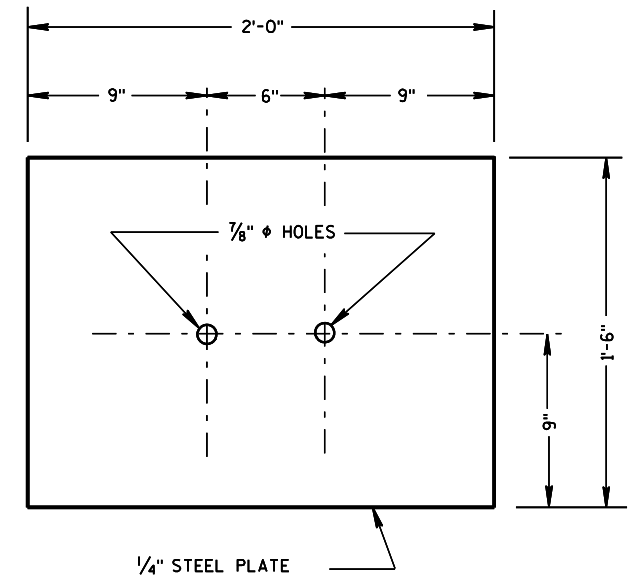
SECTION B-B



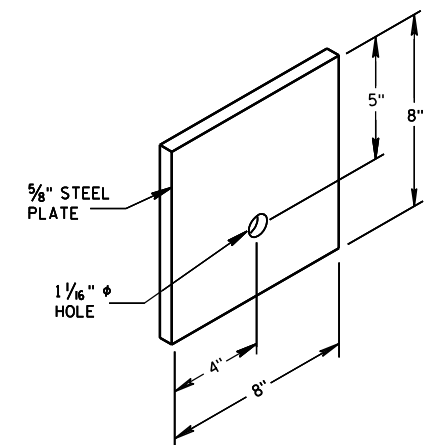
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)
(ET-2000/ET-2000 PLUS)



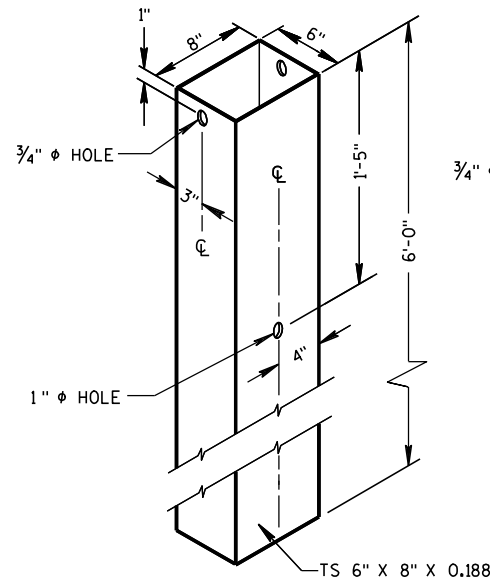
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



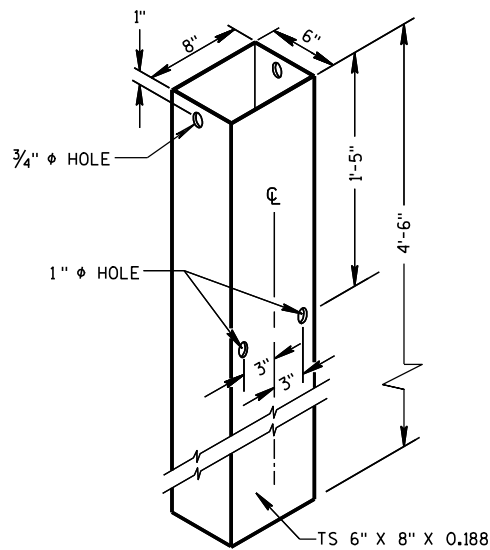
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

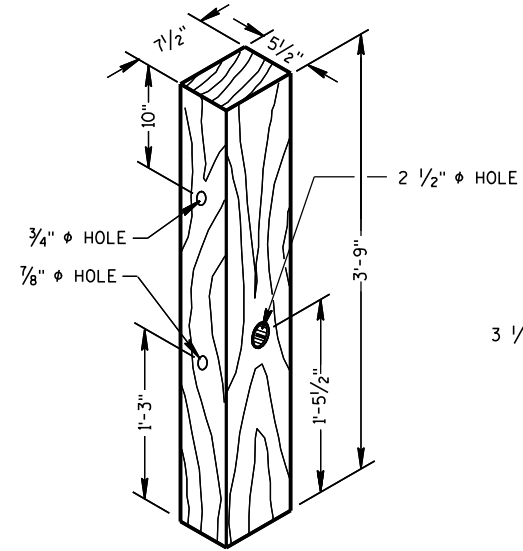
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



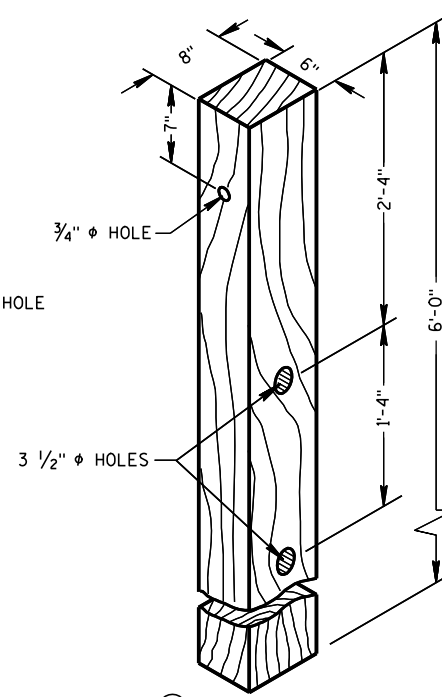
② 72" STEEL TUBE
(POSTS NO. 1-4)



② 54" STEEL TUBE
(POSTS NO. 1-4)

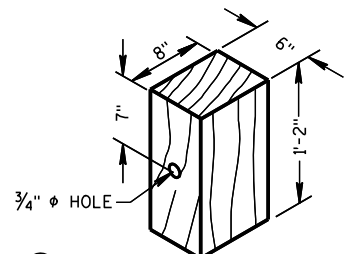


① TERMINAL POST
(POSTS NO. 1-4)

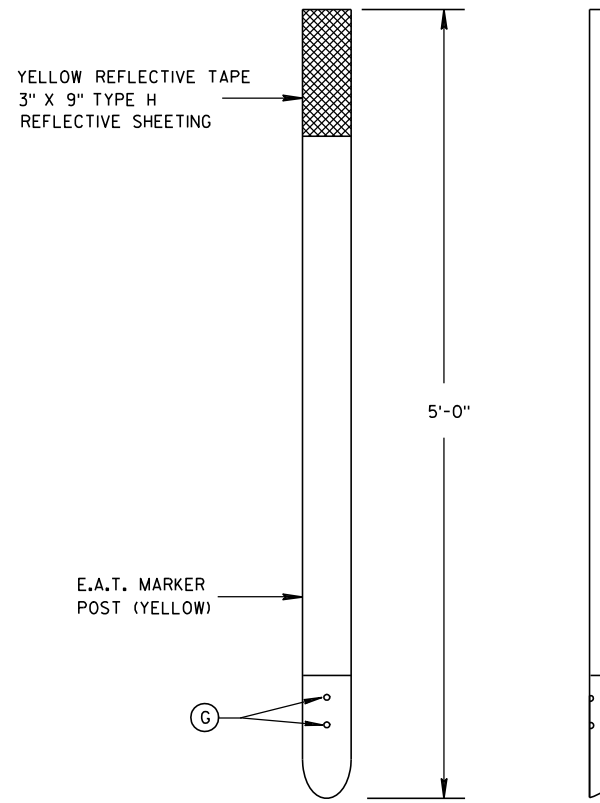


④ CRT POST
(POSTS NO'S 5-8)

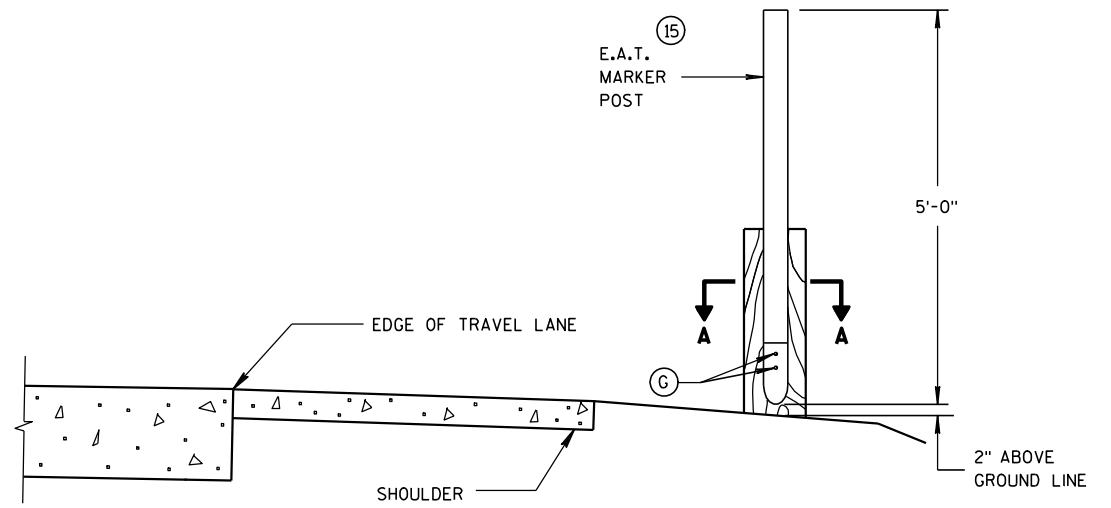
WOOD BREAKAWAY POSTS



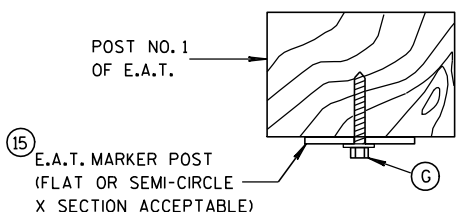
⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



FRONT VIEW SIDE VIEW
⑮ E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

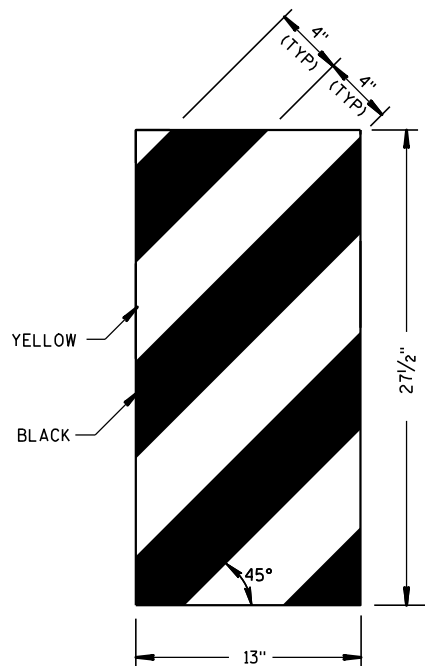
GENERAL NOTES

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.

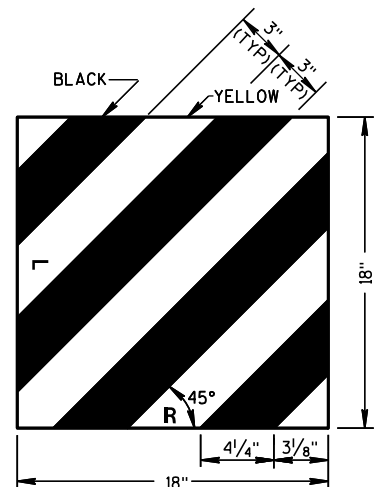
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH,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

⑮ 1/2" DIA. X 3" LAG BOLT WITH WASHER.



ET-2000 PLUS ONLY



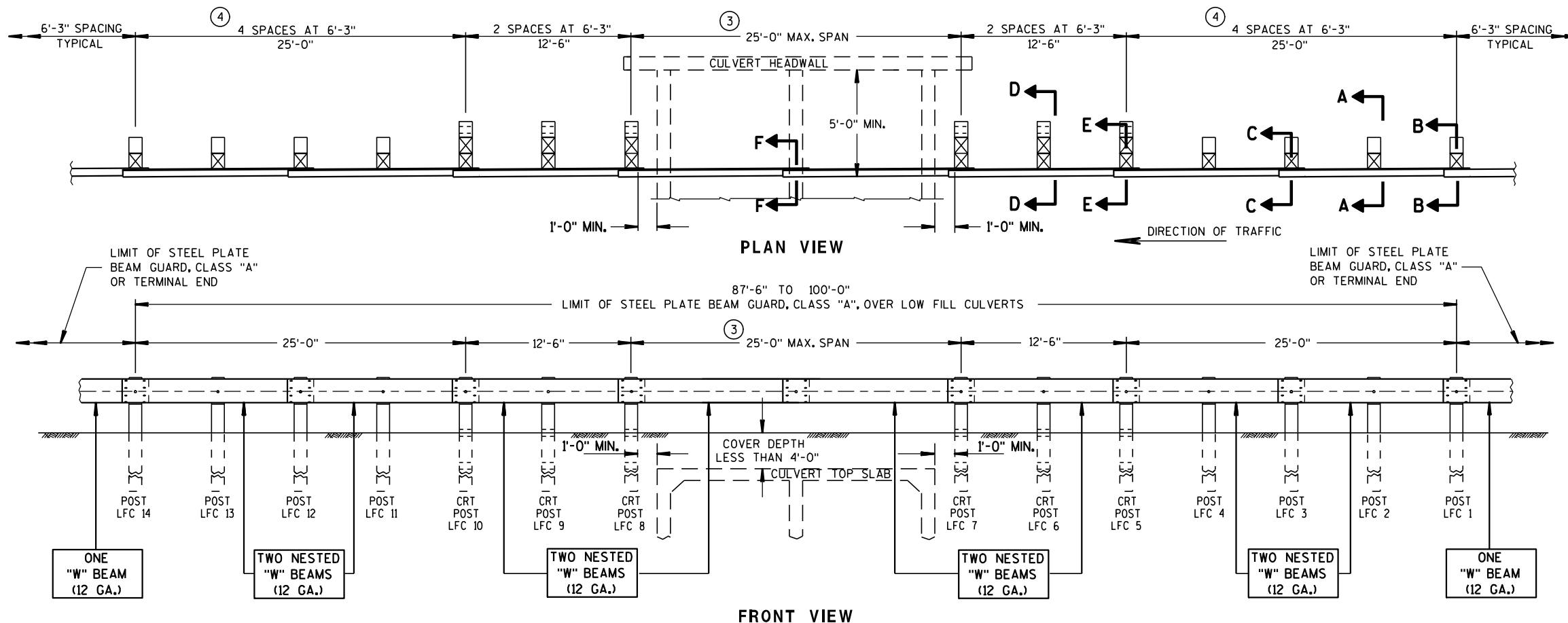
ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

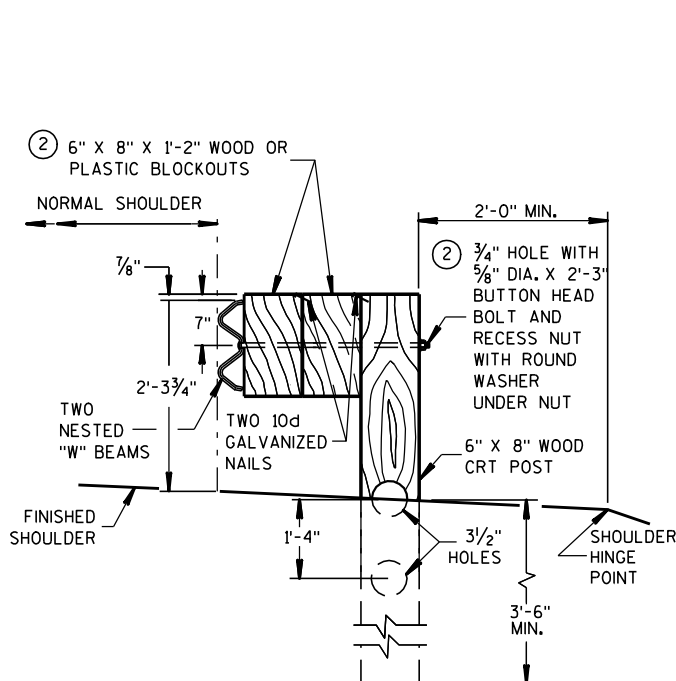
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

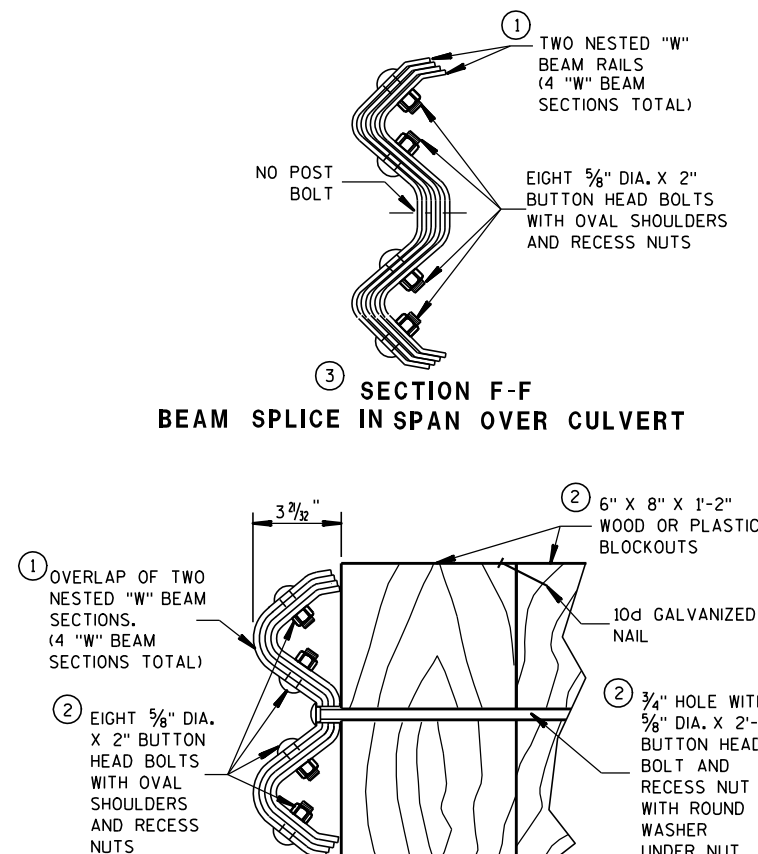
APPROVED
DATE 4-12-10
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



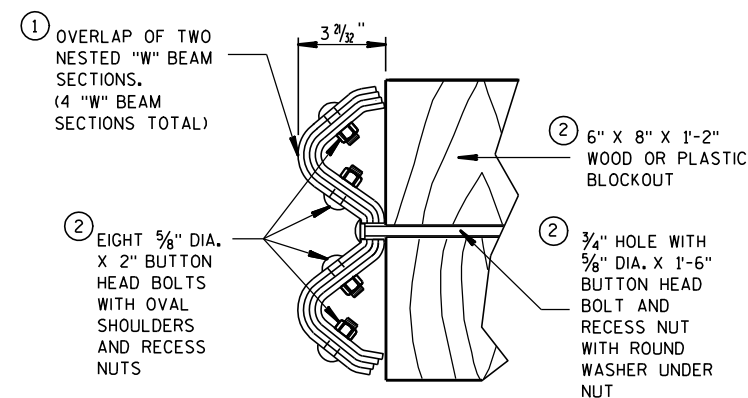
TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS



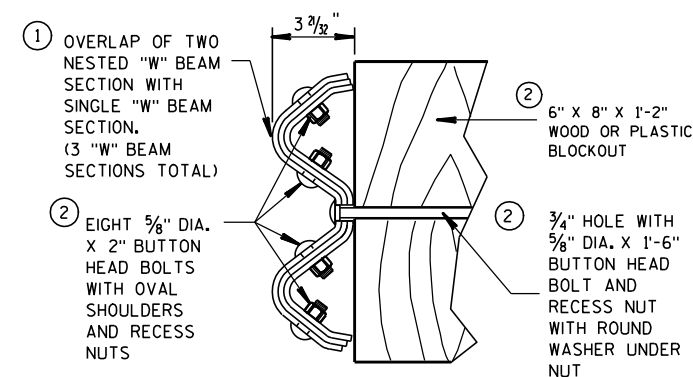
SECTION D-D
TYPICAL CRT POST LFC 6 AND 9



SECTION E-E
TYPICAL CRT POST LFC 5, 7, 8 AND 10



SECTION C-C
TYPICAL AT POSTS LFC 3 AND 12

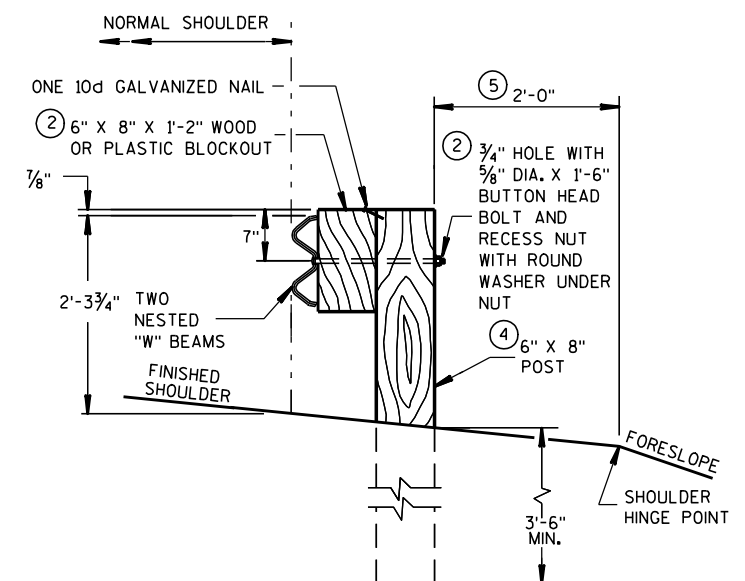


SECTION B-B
TYPICAL AT POSTS LFC 1 AND 14

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 MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.
- ② THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.
- ③ PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.
- ④ IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.
- ⑤ WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.



SECTION A-A
TYPICAL AT POST LFC 2, 4, 11, 13

**STEEL PLATE BEAM GUARD,
CLASS "A", OVER LOW
FILL CULVERTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

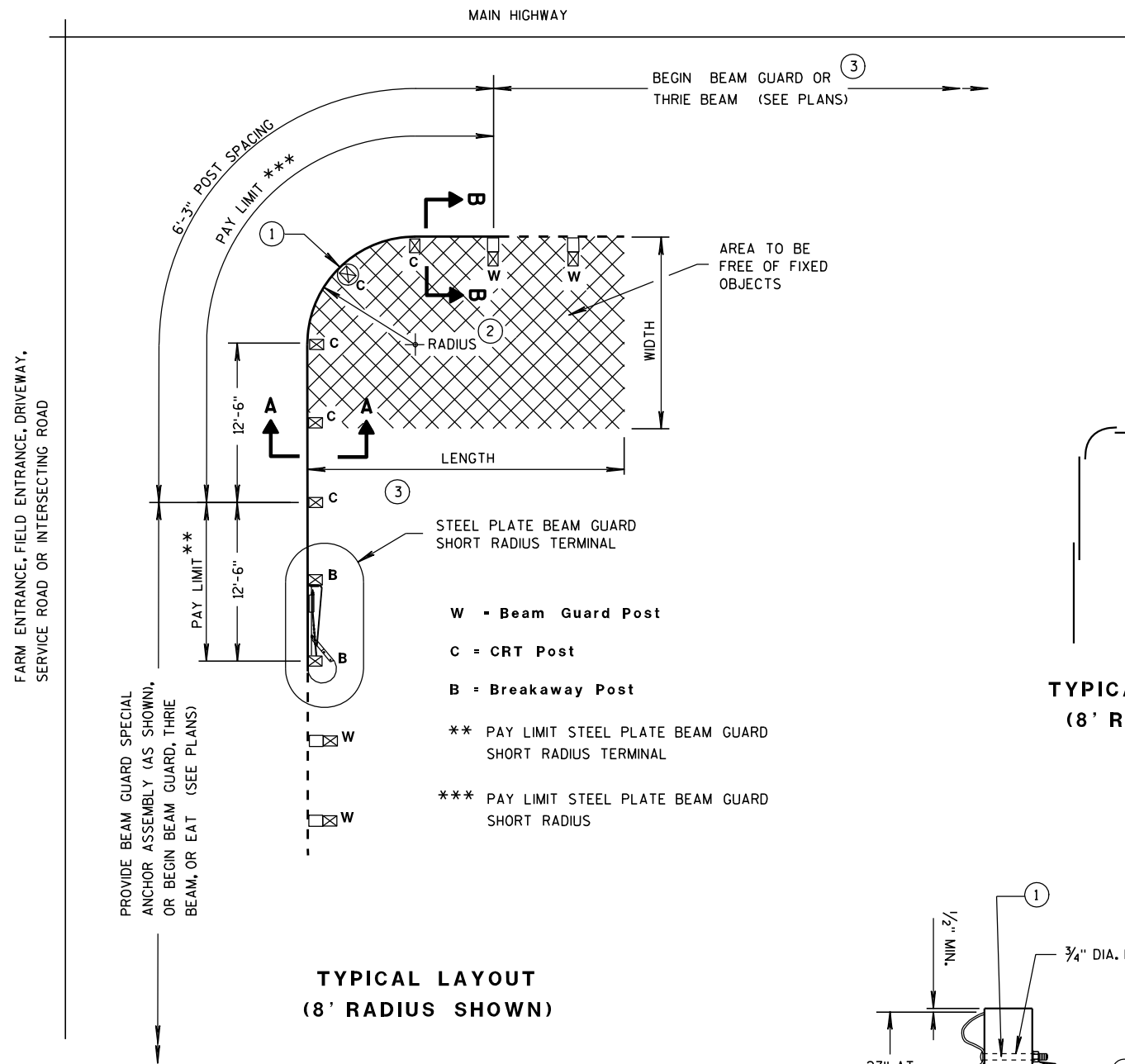
APPROVED

12/8/00

DATE

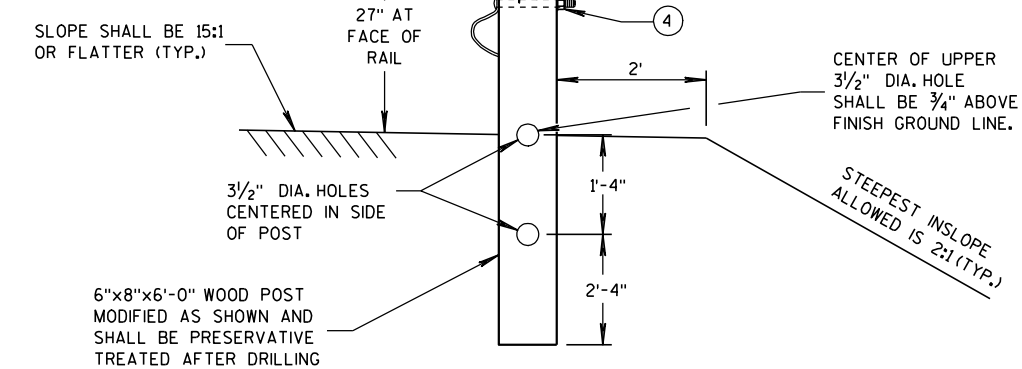
FHWA

/S/ John Haverberg
CHIEF ROADWAY DEVELOPMENT ENGINEER



TYPICAL LAYOUT
(8' RADIUS SHOWN)

- W - Beam Guard Post
C = CRT Post
B = Breakaway Post
** PAY LIMIT STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
*** PAY LIMIT STEEL PLATE BEAM GUARD SHORT RADIUS



SECTION A-A
(CRT POST)

TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

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.

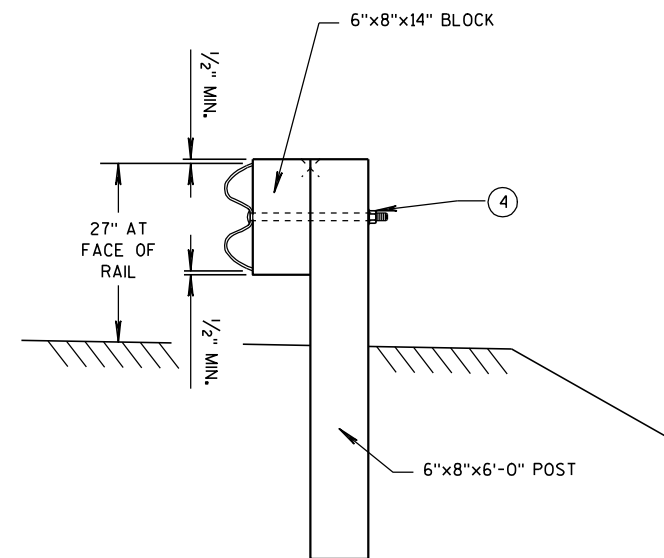
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

- ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.
- RADIUS FROM 8' - 36'. SEE PLAN.
- HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.
- 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



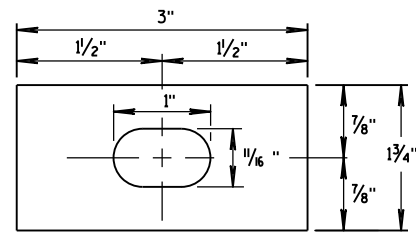
GENERAL NOTES

-
- Diagram illustrating the repair of a structural tube using a steel plate and nut/jam nut assembly. The diagram shows a cross-section of a structural tube with a vertical crack. A steel plate is welded to the tube, and a nut/jam nut assembly is used to secure the repair.
- Labels and dimensions:
- $2\frac{1}{2}" \times 2\frac{1}{2}" \times \frac{1}{4}"$ STEEL PLATE WITH $\frac{1}{16}"$ DIA. HOLE
 - TACK WELD STEEL PLATE TO STEEL TUBE
 - $2\frac{1}{2}" \times 2\frac{1}{2}" \times \frac{1}{4}" \times 8"$ STRUCTURAL TUBE WELD PRIOR TO GALVANIZING
 - 1" DIA. NUT
 - 1" JAM NUT
 - 1" DIA. $\times$ 4" STUD THREADED FULL LENGTH

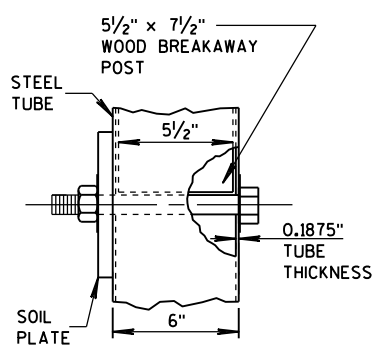
DETAIL A



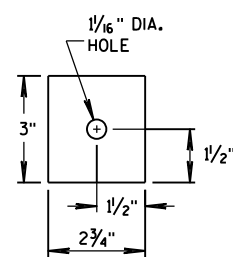
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



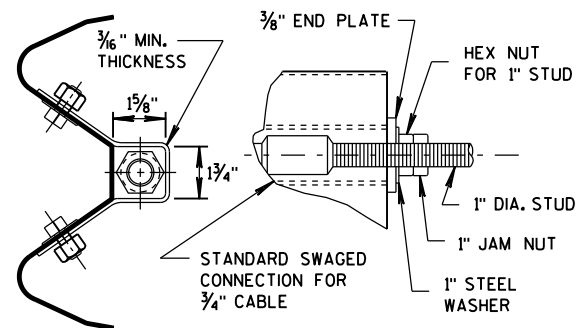
**RECTANGULAR
PLATE WASHER**



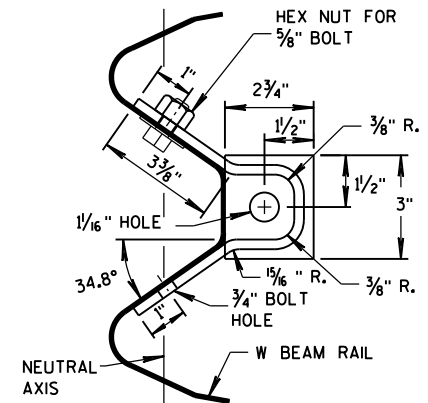
DETAIL D



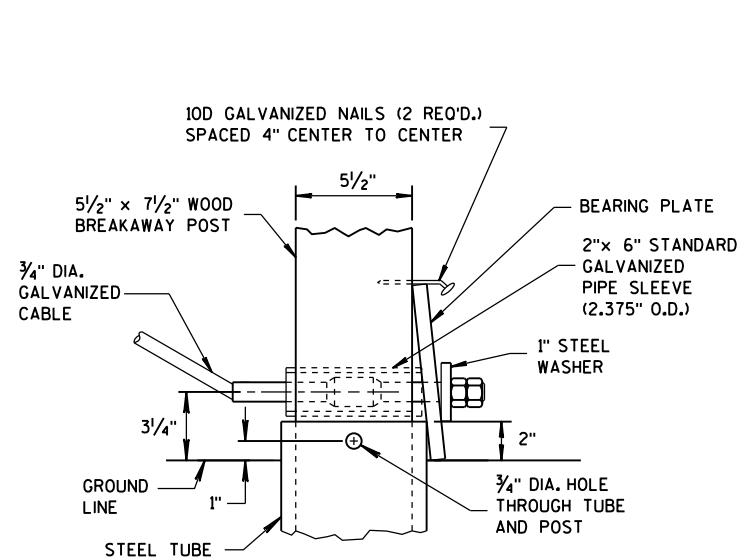
END PLATE



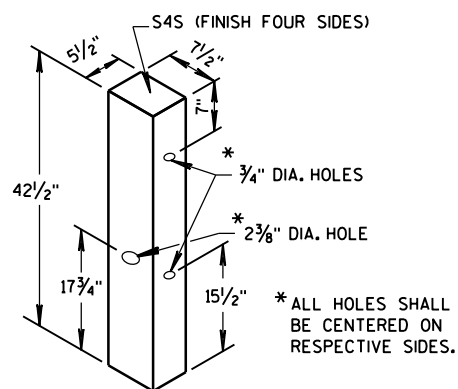
**SECTION C-C
(END PLATE REMOVED)**



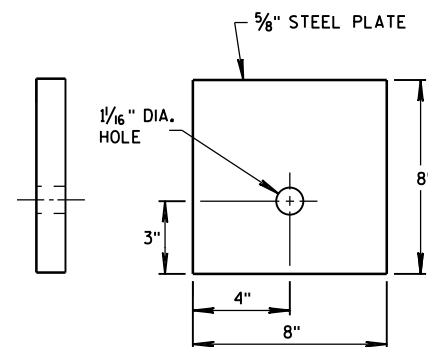
ANCHOR BRACKET



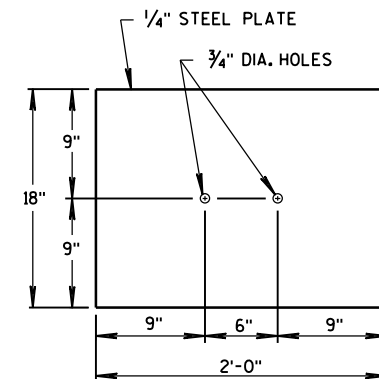
DETAIL C



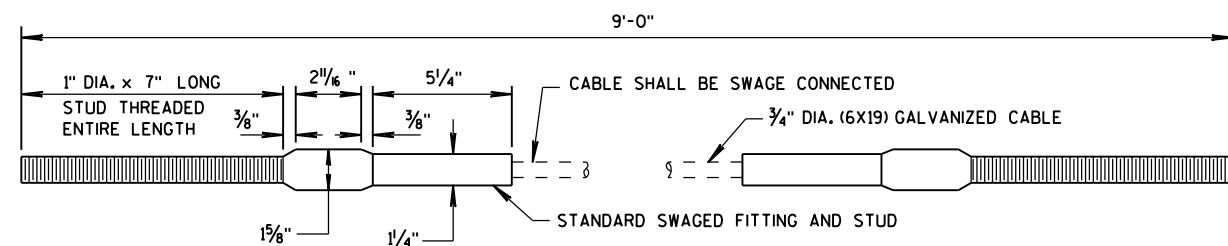
WOOD BREAKAWAY POST



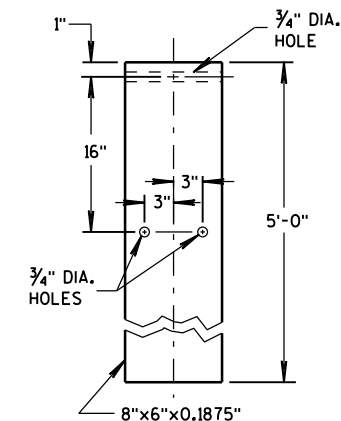
BEARING PLATE



SOIL PLATE



CABLE ASSEMBLY

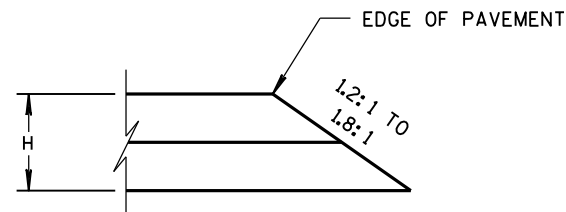


STEEL TUBE

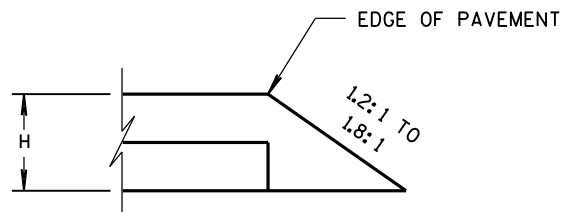
**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

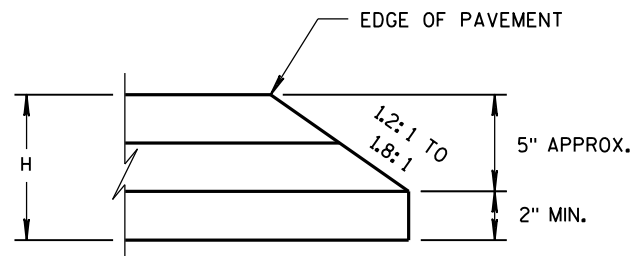
APPROVED
DATE 12/18/08 /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



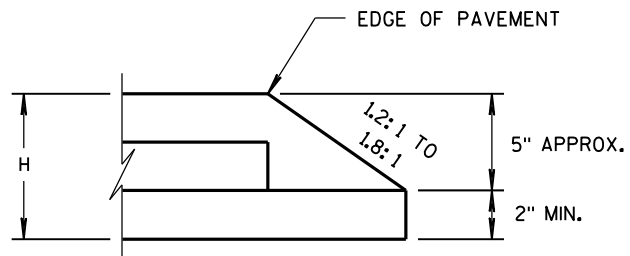
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

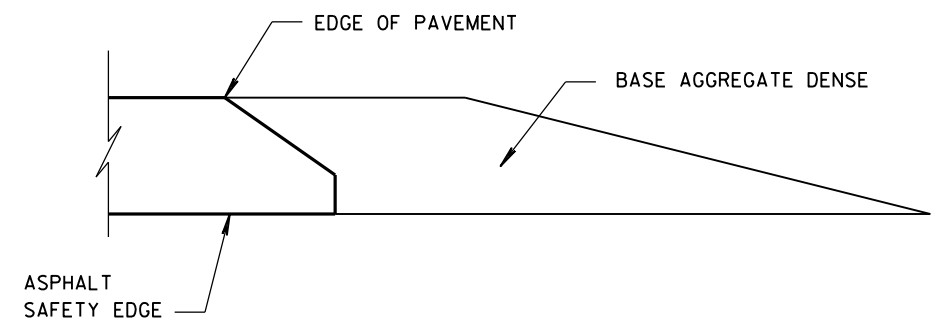


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

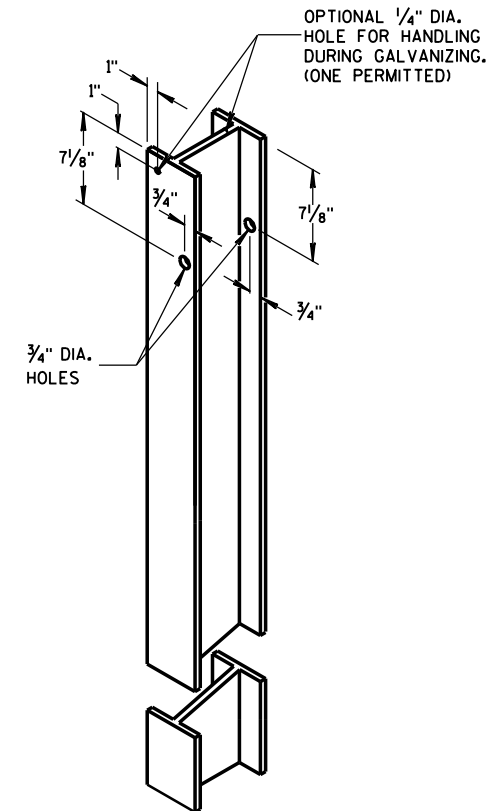
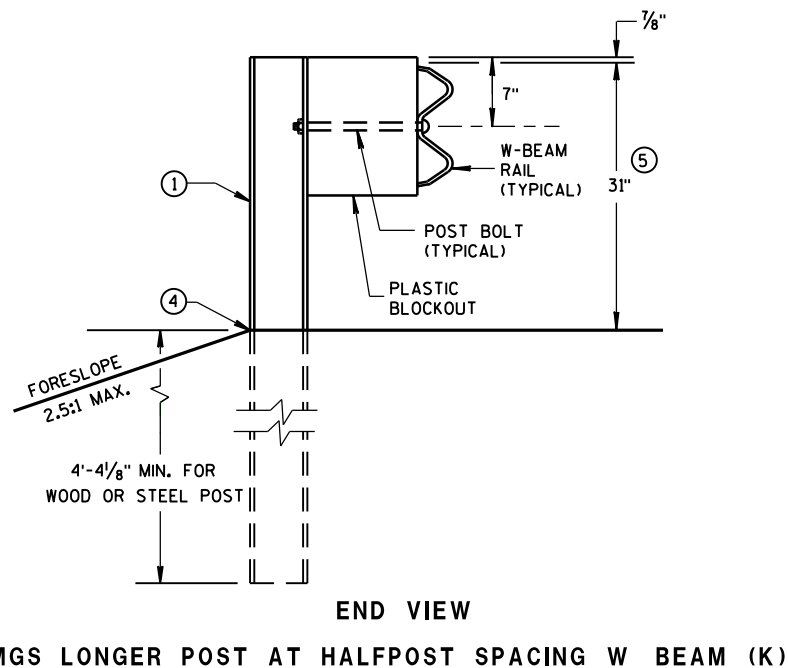
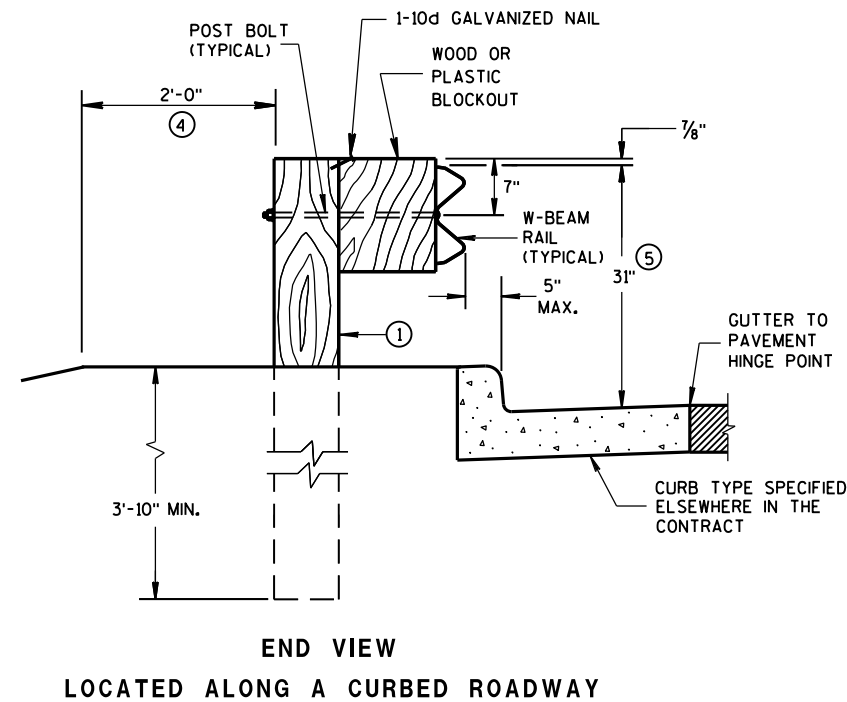
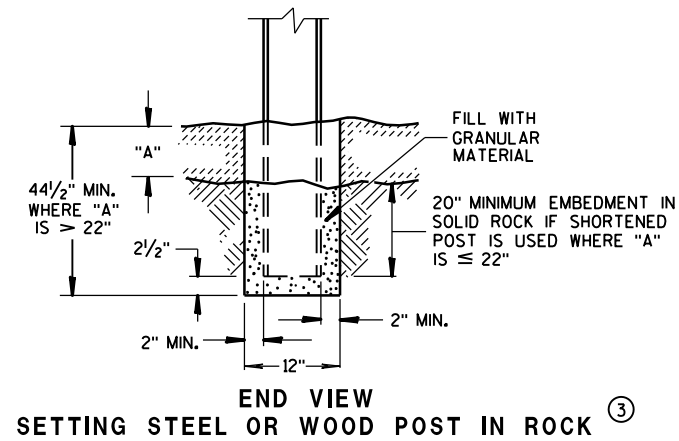
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE
FHWA

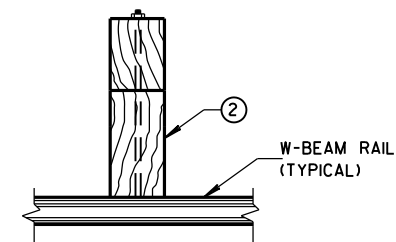
/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

S.D.D. 14 B 42-2a

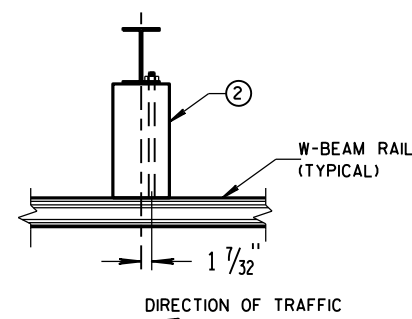
- S.D.D. 14 B 42-2a**



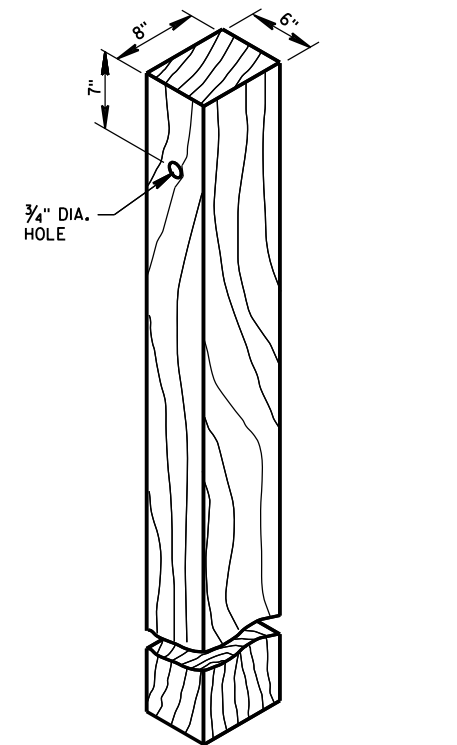
**STEEL POST &
HOLE PUNCHING DETAIL
(w6X9)^①**



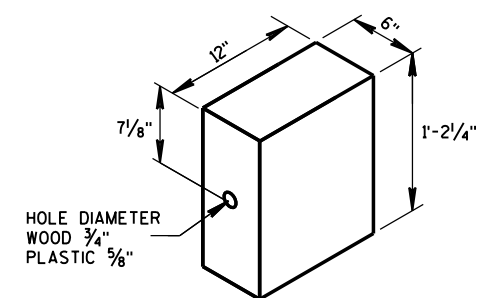
**PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM**



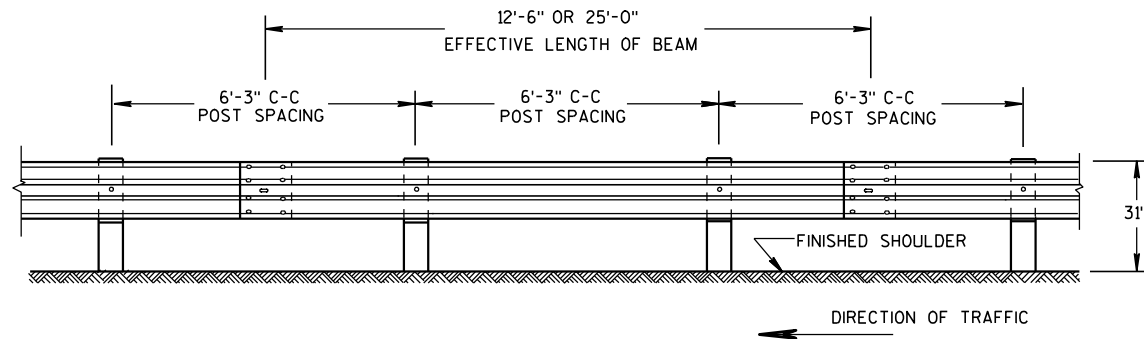
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL ①

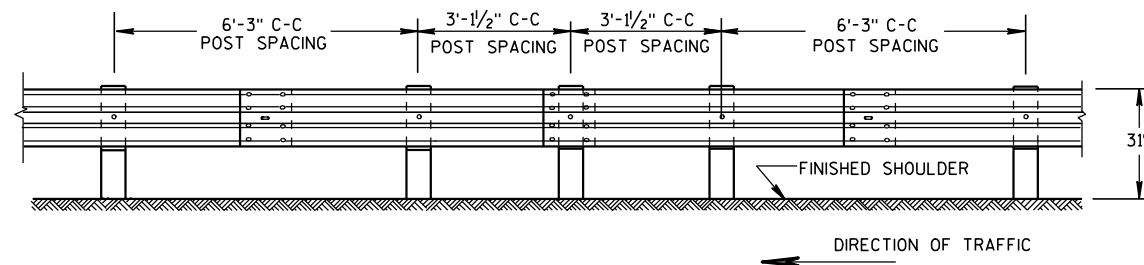


**WOOD OR
PLASTIC BLOCKOUT** ⁽²⁾



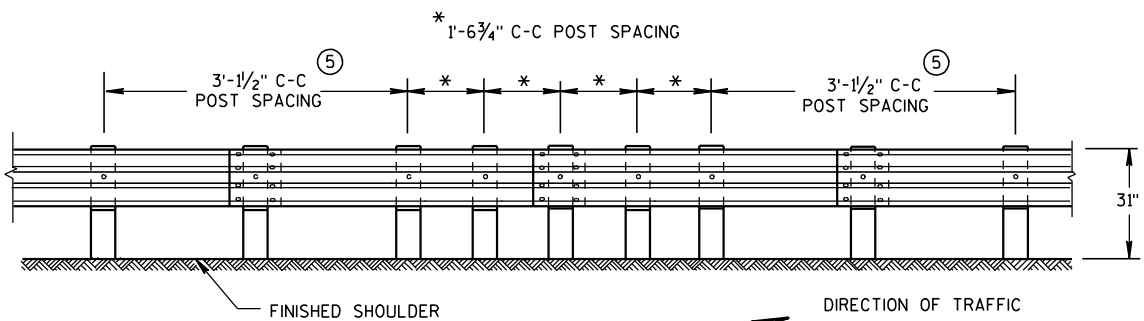
FRONT VIEW

POST SPACING STANDARD INSTALLATION



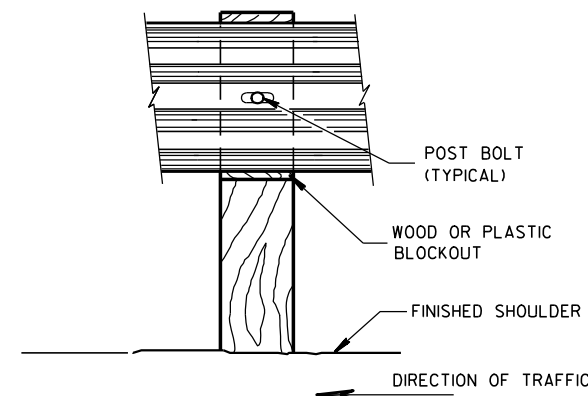
FRONT VIEW

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

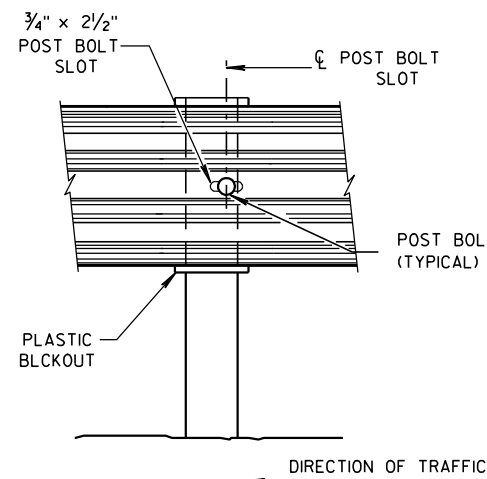


FRONT VIEW

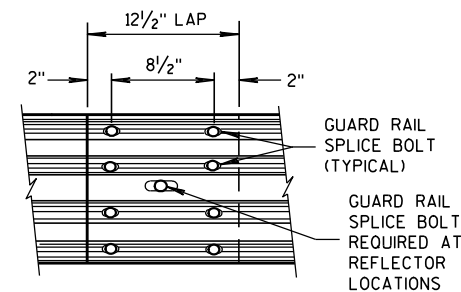
QUARTER POST SPACING (QS)



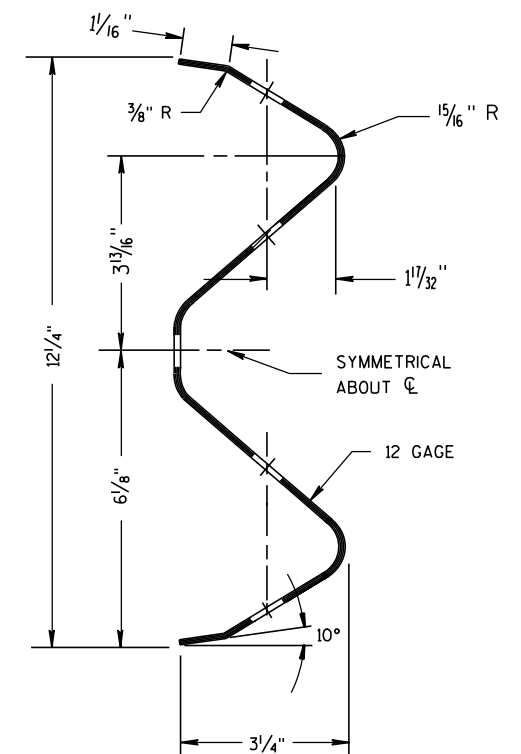
FRONT VIEW AT WOOD POST



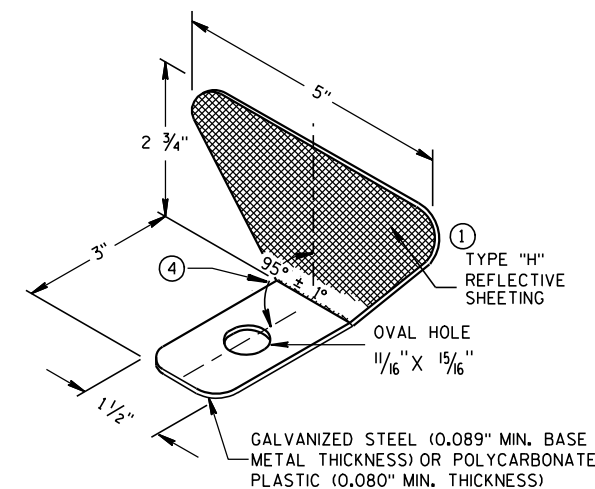
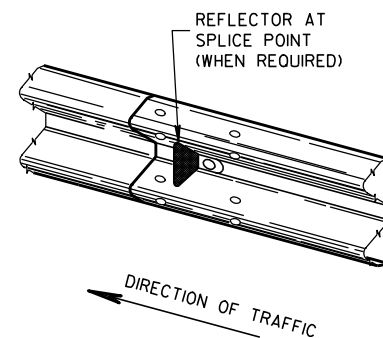
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- ① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- ② 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.
- ③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ④ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑤ 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.

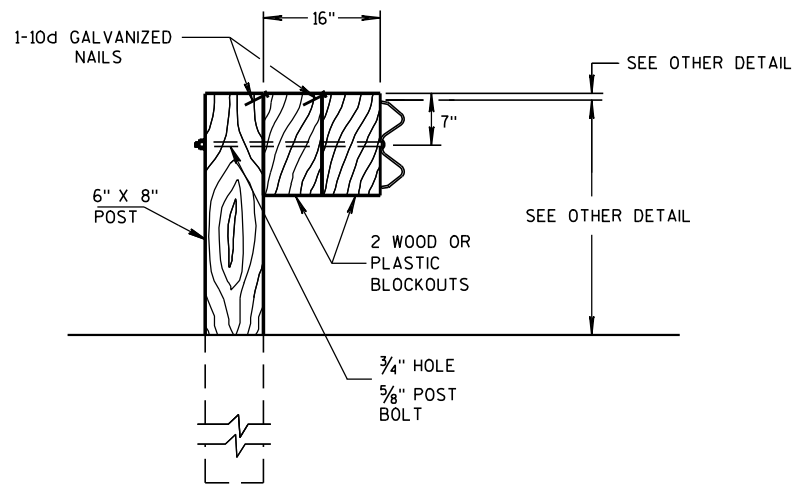
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

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 ③	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ④	3
	> 200'	100' C-C	2	

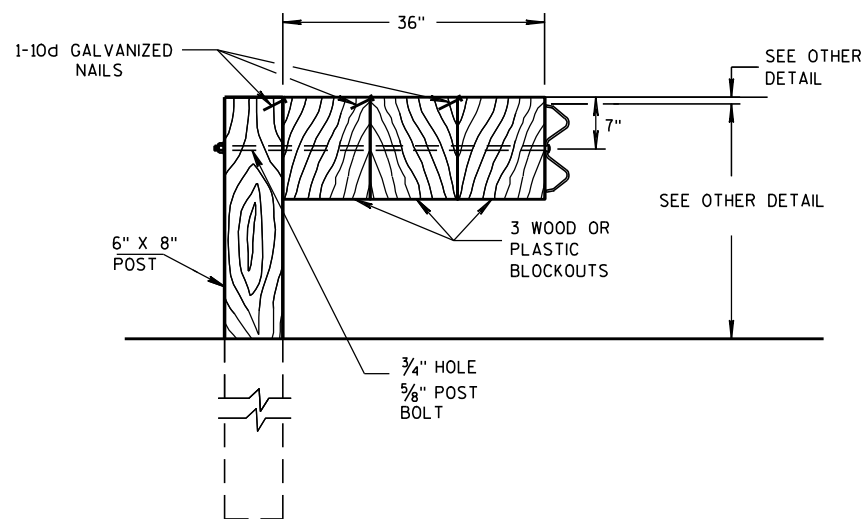
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

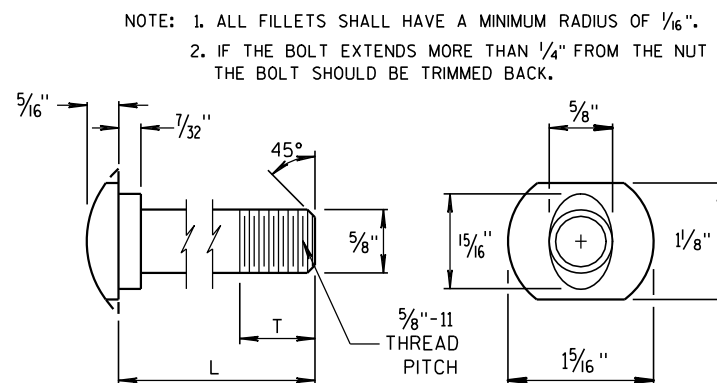
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



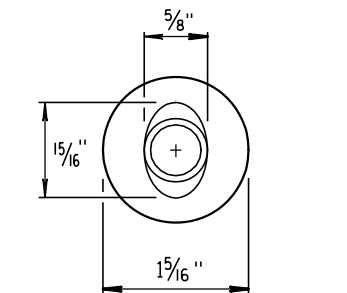
DETAIL FOR 36" BLOCKOUT DEPTH

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.

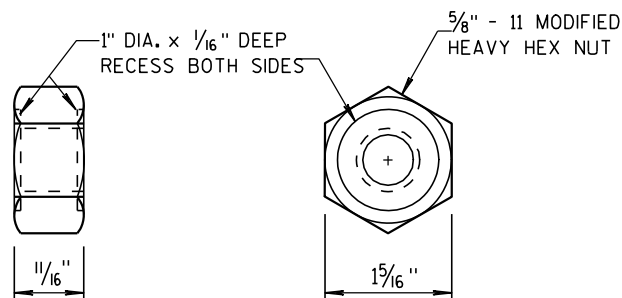
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



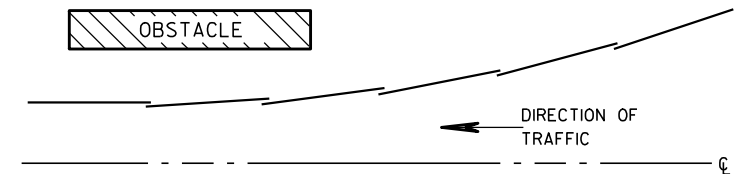
POST BOLT TABLE



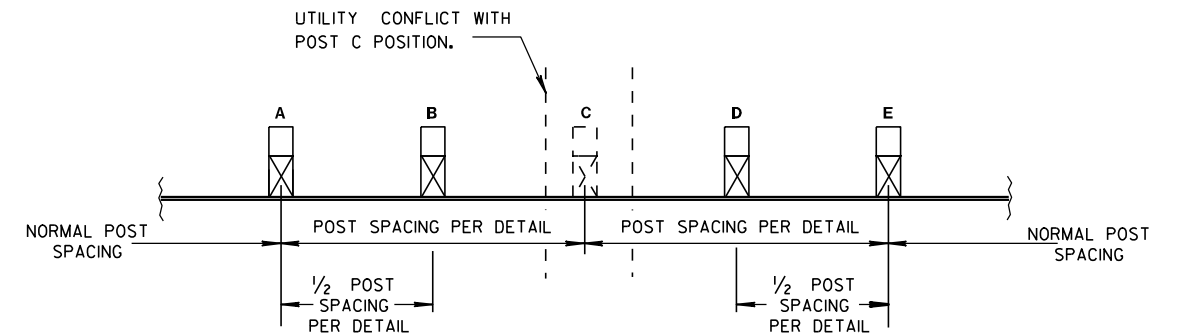
ALTERNATE BOLT HEAD



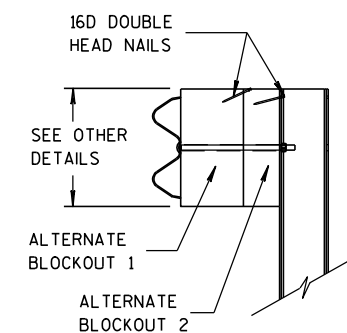
POST BOLT AND RECESS NUT



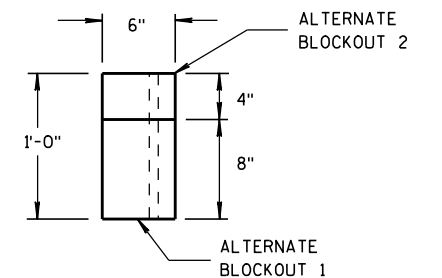
PLAN VIEW
BEAM LAPPING DETAIL



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

11/15/2011
DATE

FHWA

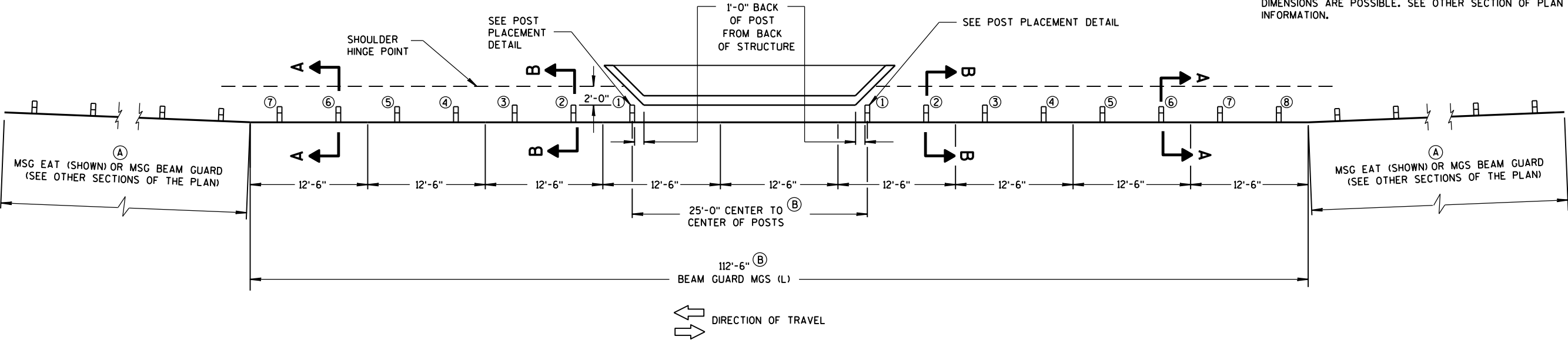
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

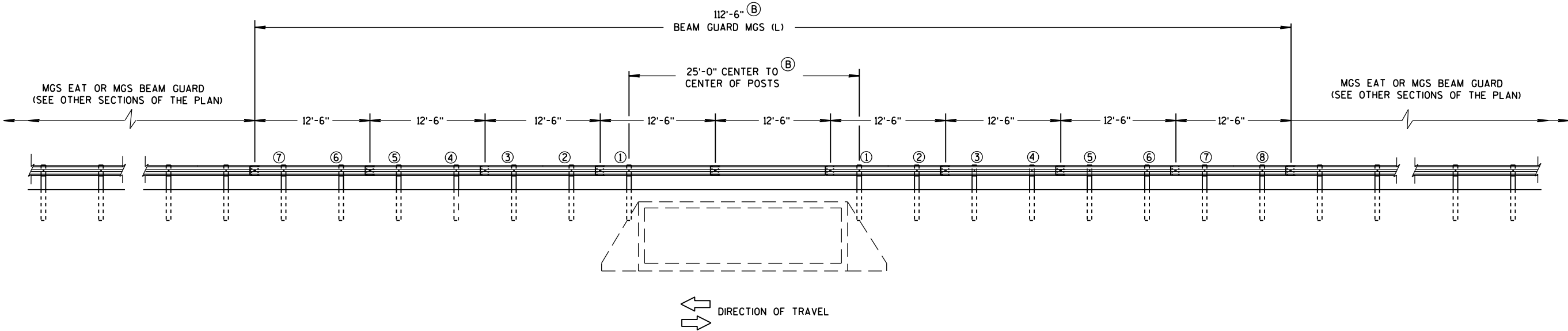
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

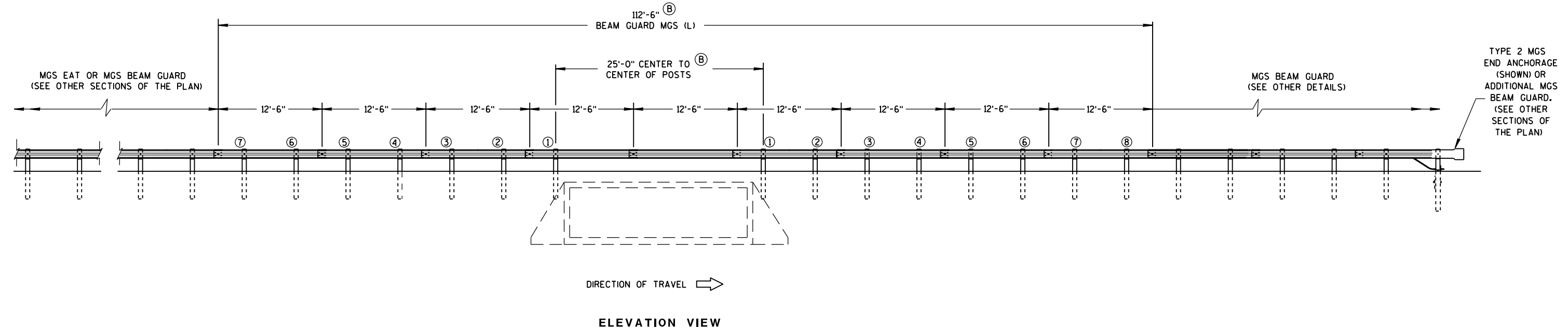
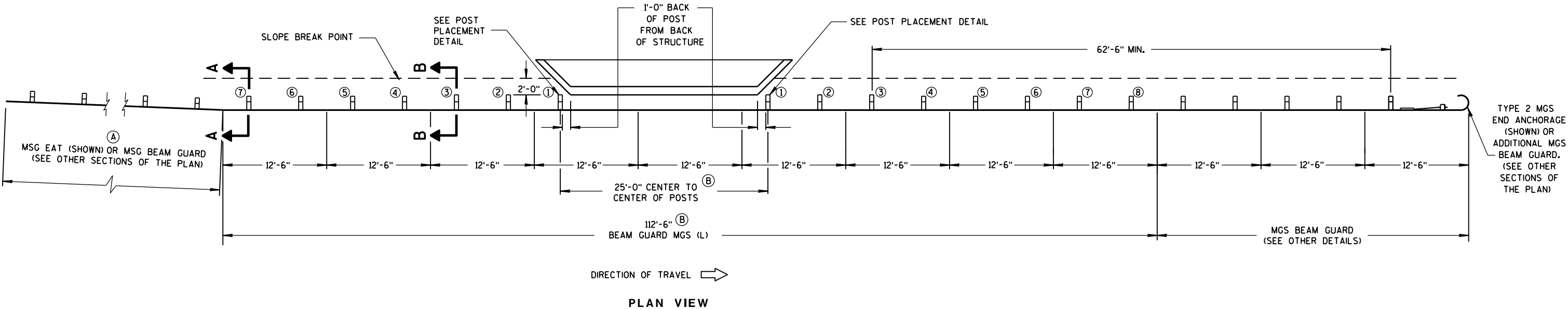
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

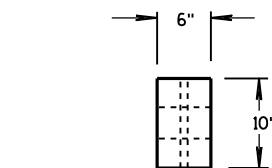
- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



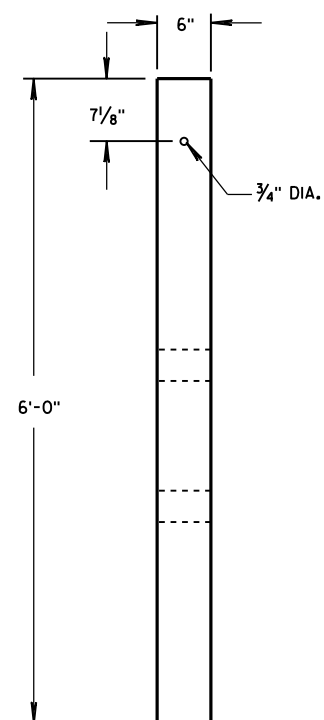
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

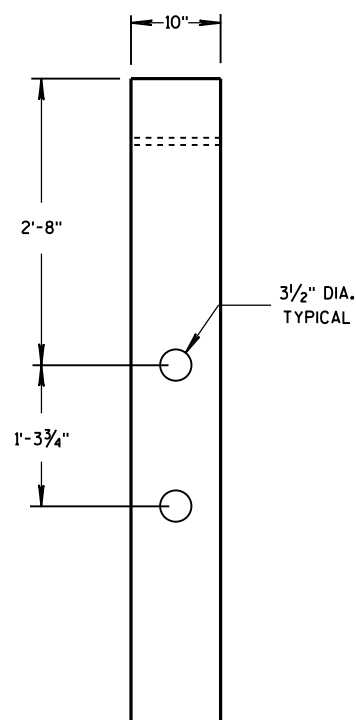


PLAN VIEW

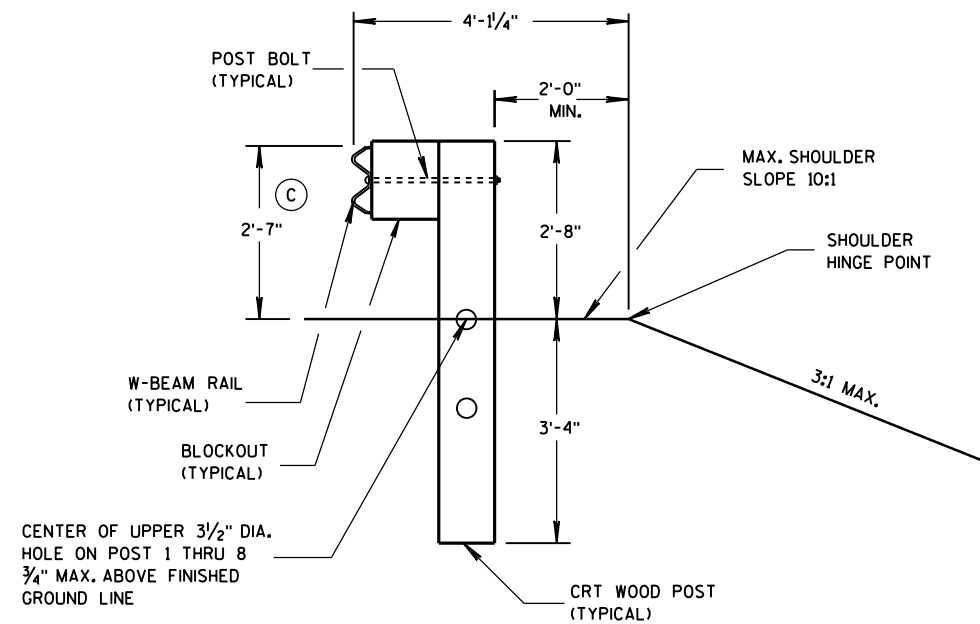


FRONT VIEW

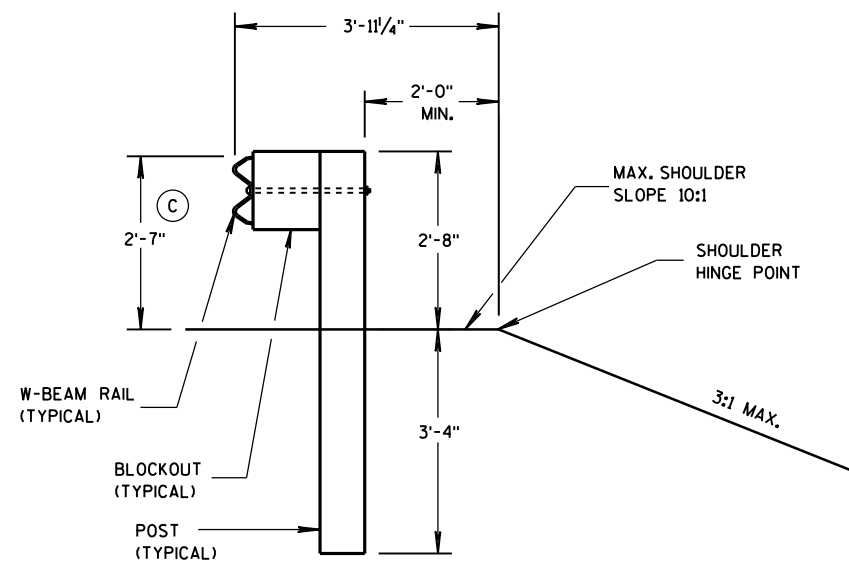
CRT WOOD POST



SIDE VIEW

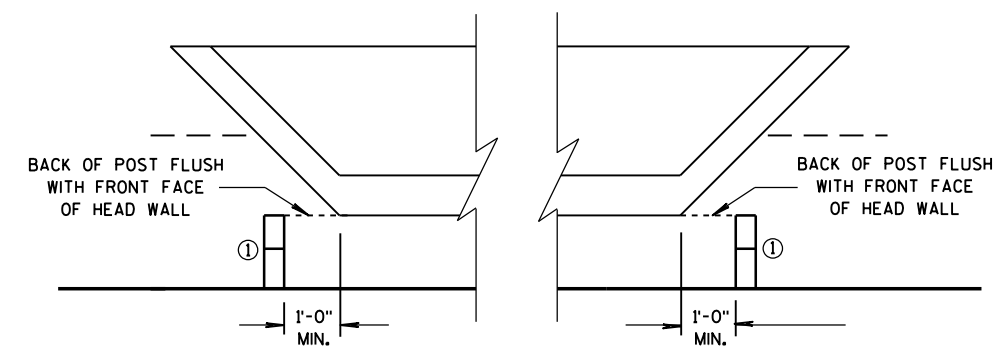
SECTION B-B
POSTS NO. 1-3

SEE OTHER DETAILS

SECTION A-A
POSTS NO. 4-8

SEE OTHER DETAILS

GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
5/10/2013
DATE
FHWA/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

- (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) 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) 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.
- (F) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (G) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (H) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

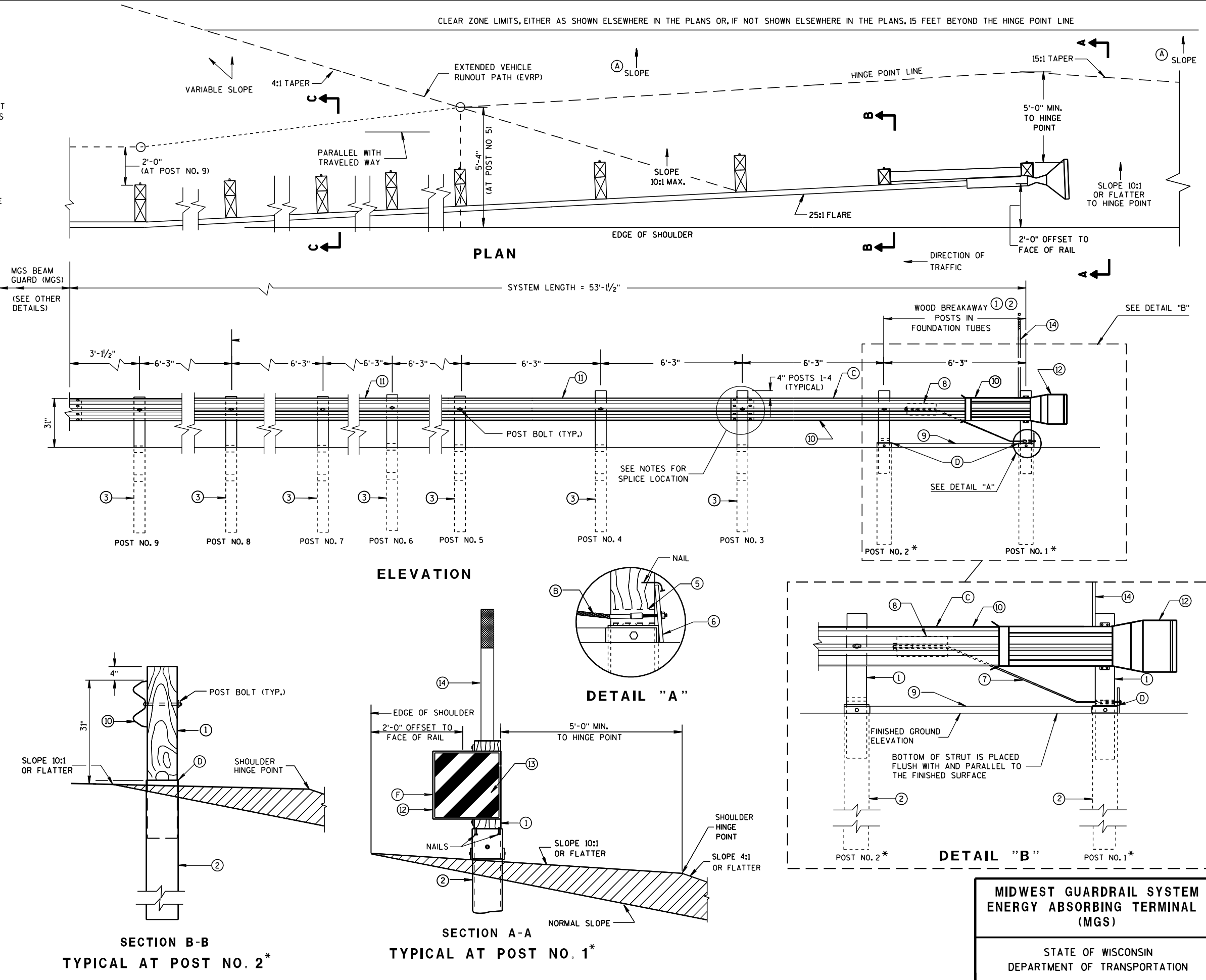
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

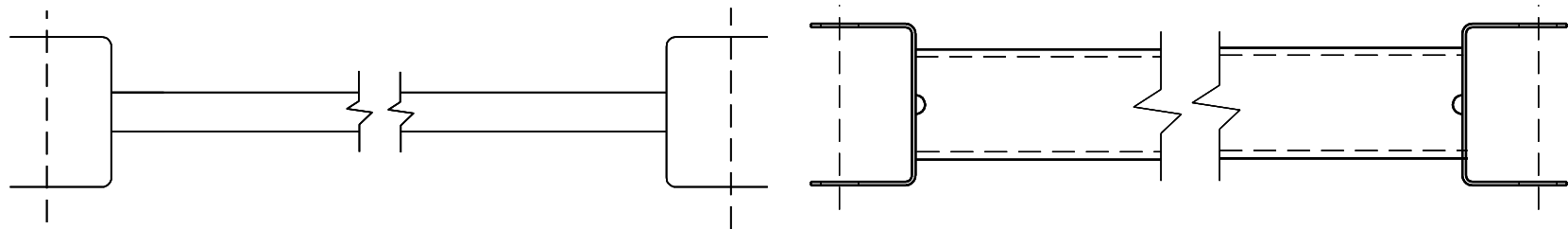
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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.

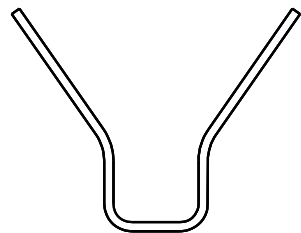
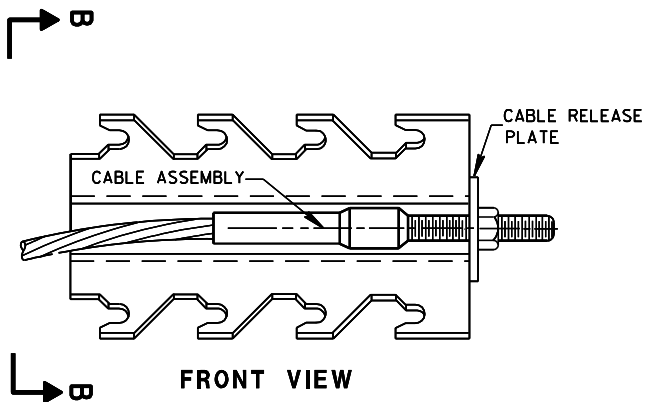
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE ($\pm \frac{3}{4}$ ")

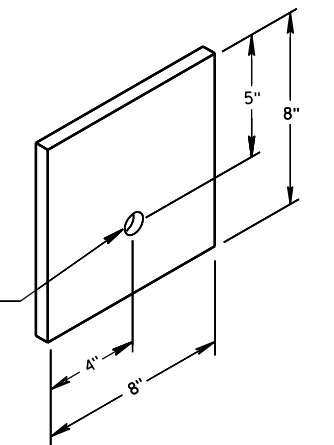
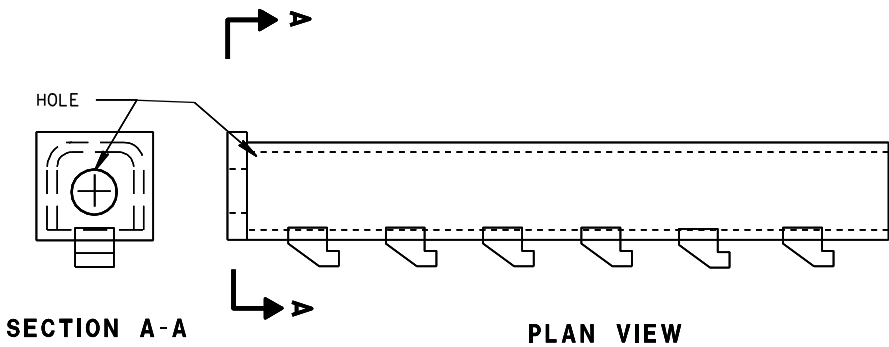




9 H
GENERIC GROUND STRUT

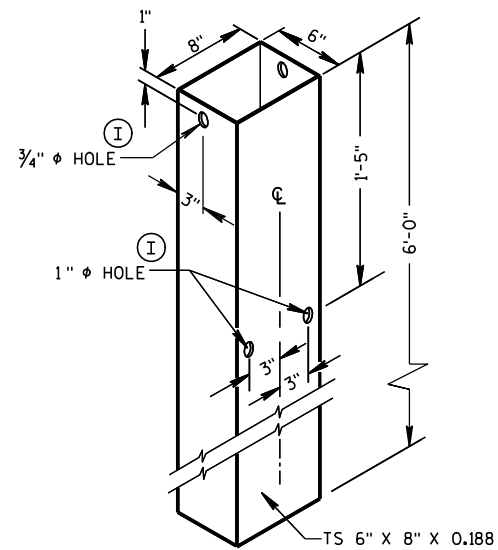


SECTION B-B
8 H
GENERIC ANCHOR CABLE BOX

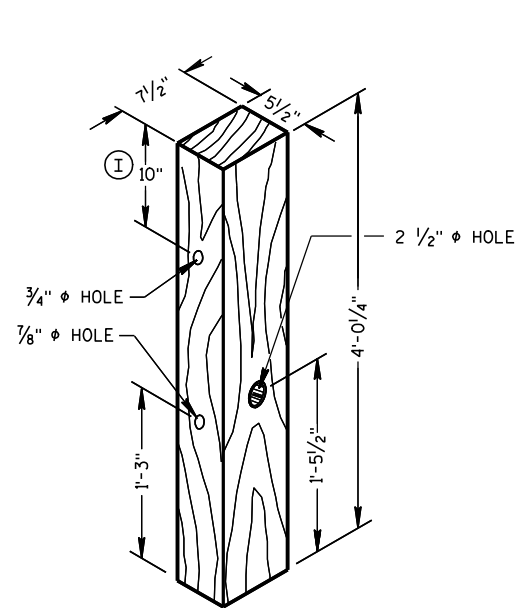


6
BEARING PLATE

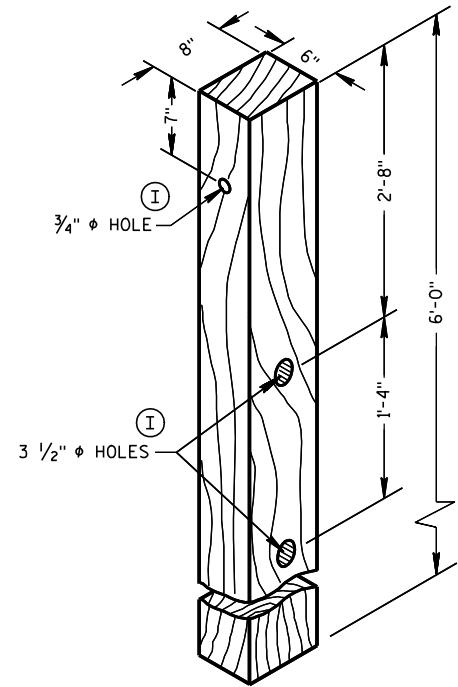
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR 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 H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



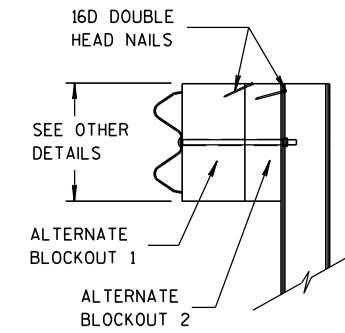
FOUNDATION TUBE ②



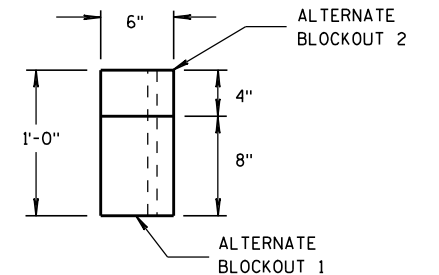
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

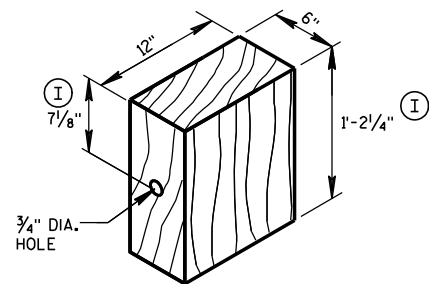


SIDE VIEW



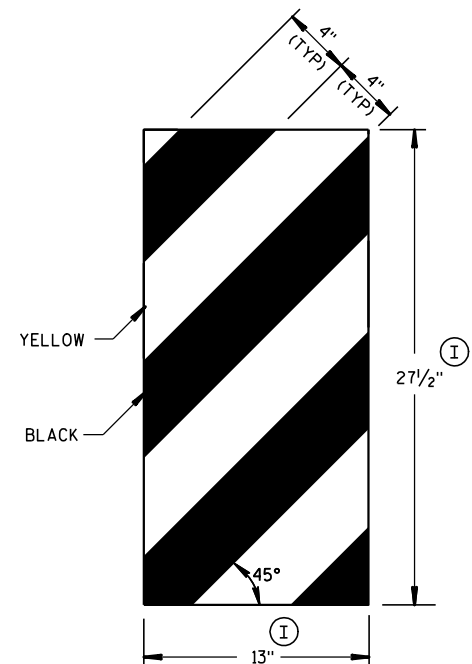
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

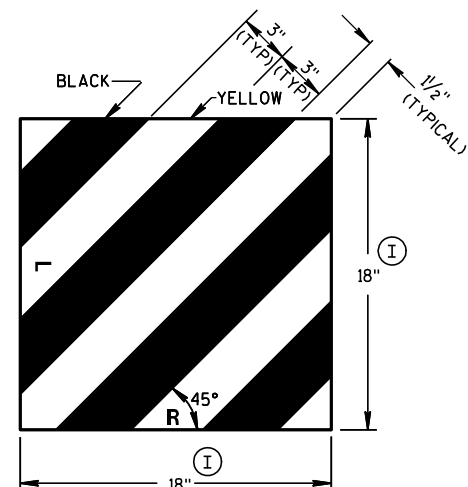


WOOD BLOCKOUT ④

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING



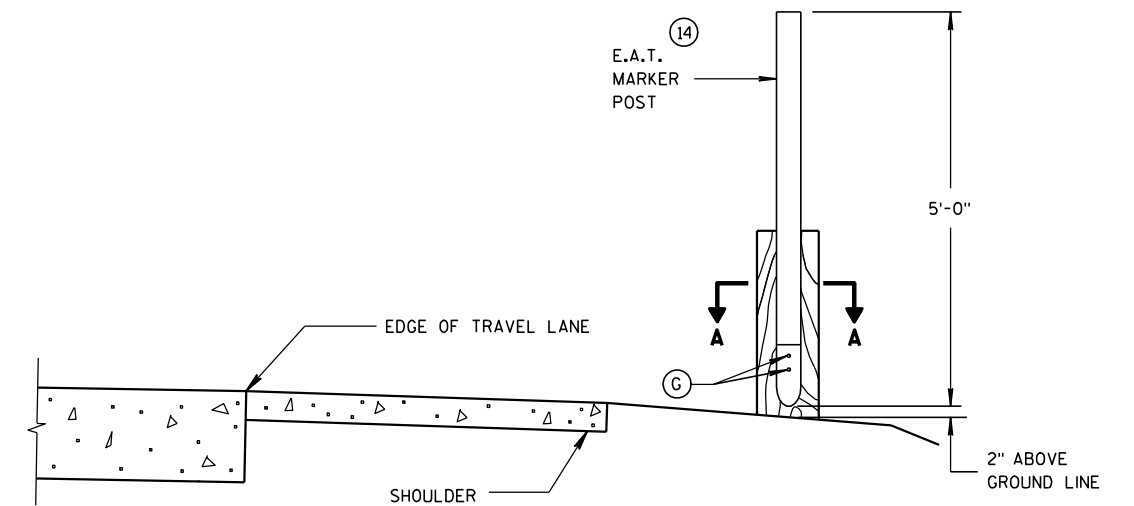
GENERIC REFLECTIVE SHEETING ⑬ ④



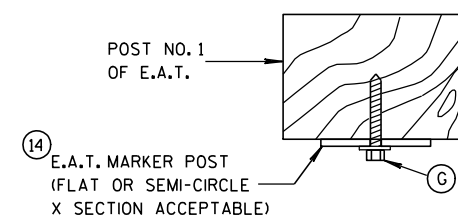
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

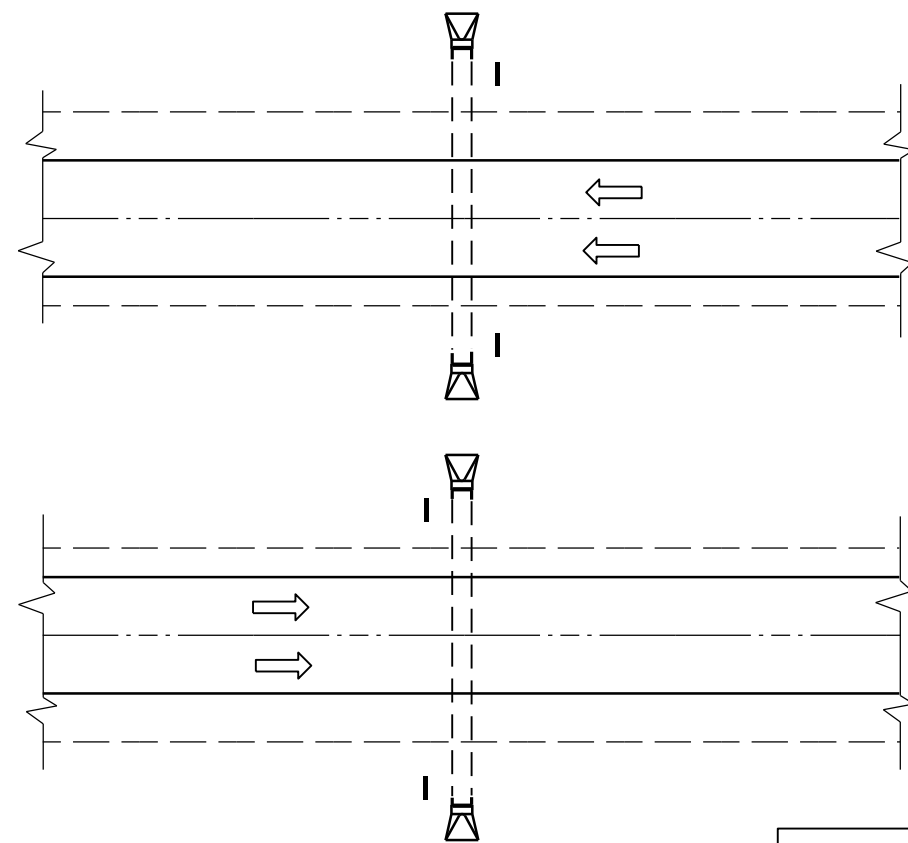
APPROVED

5/23/2011

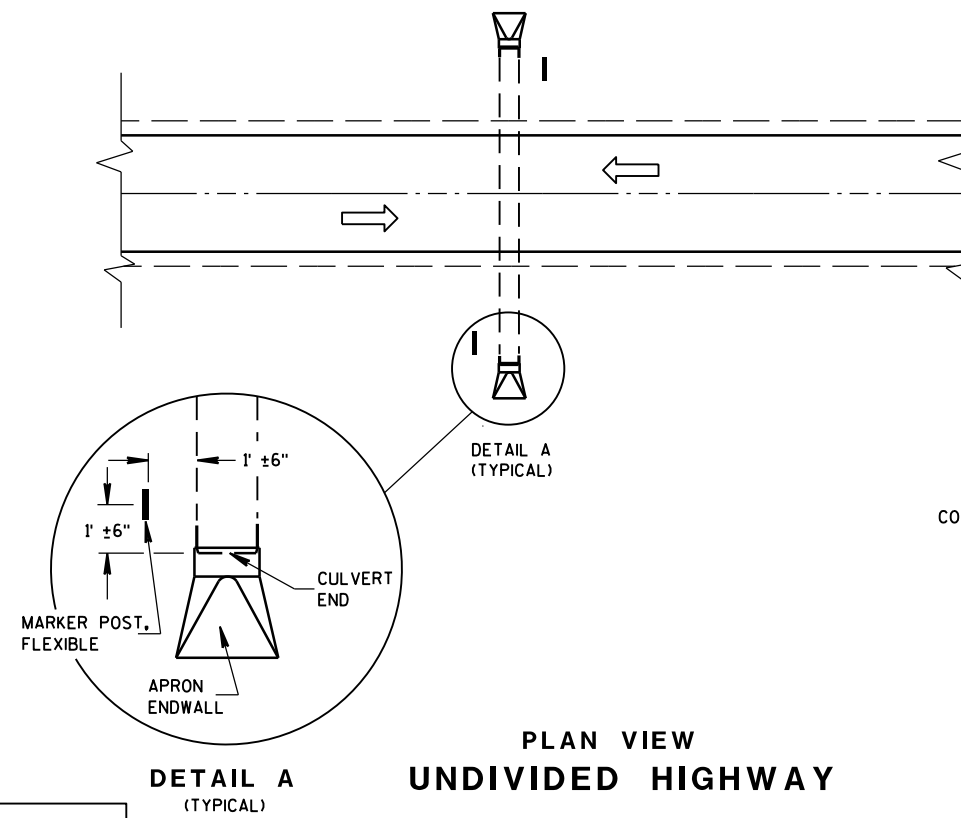
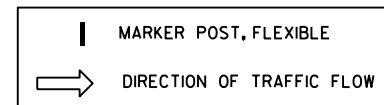
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
DIVIDED HIGHWAY

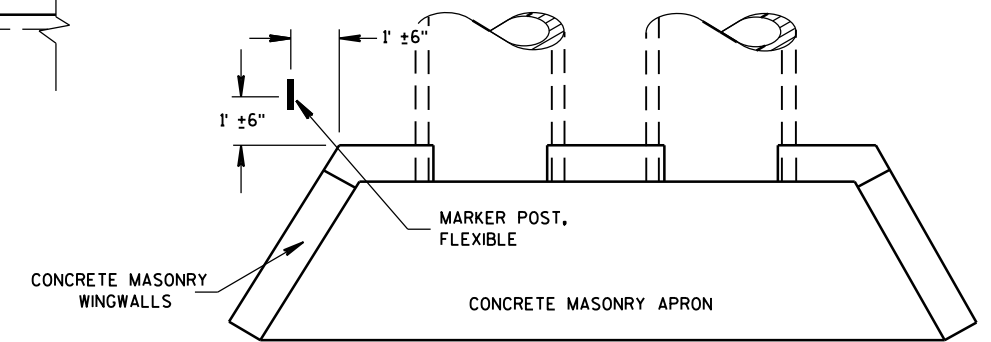


PLAN VIEW
UNDIVIDED HIGHWAY

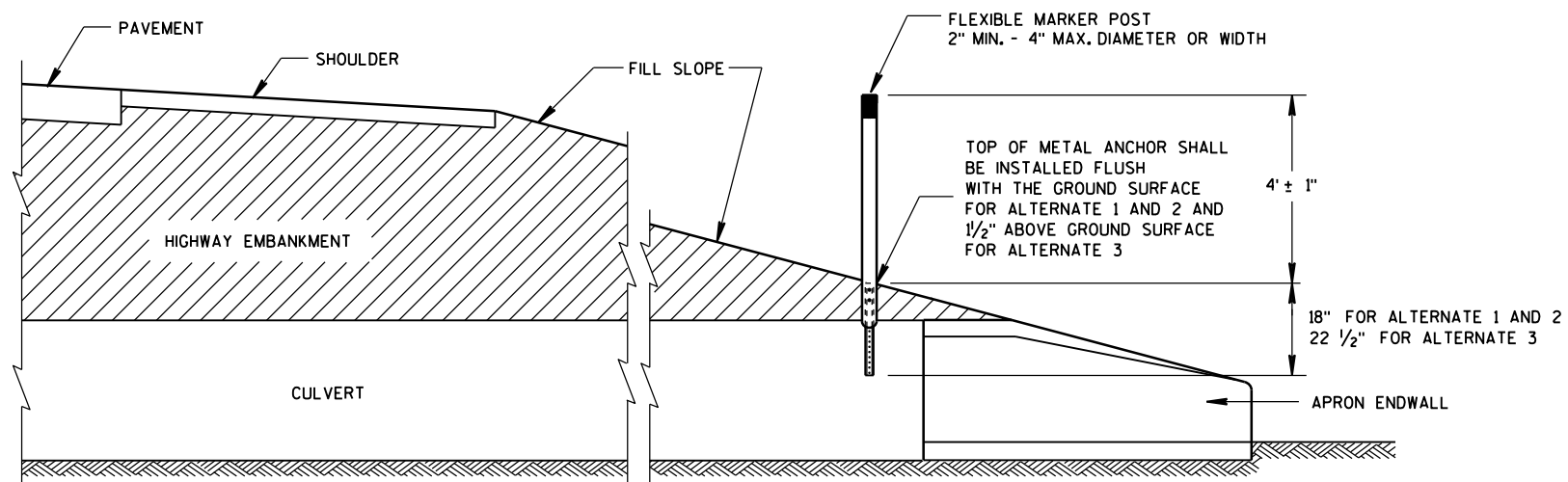
FLEXIBLE MARKER POST LOCATION

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.



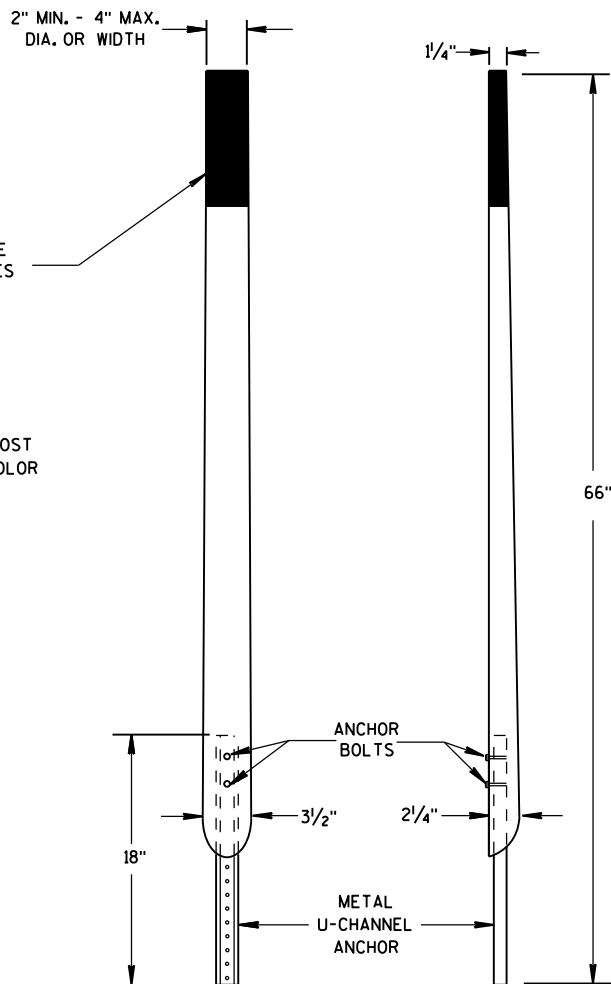
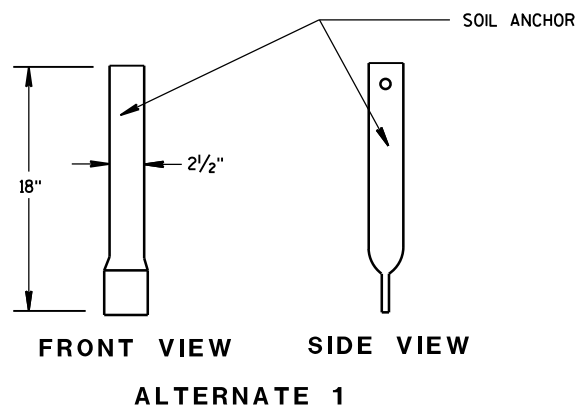
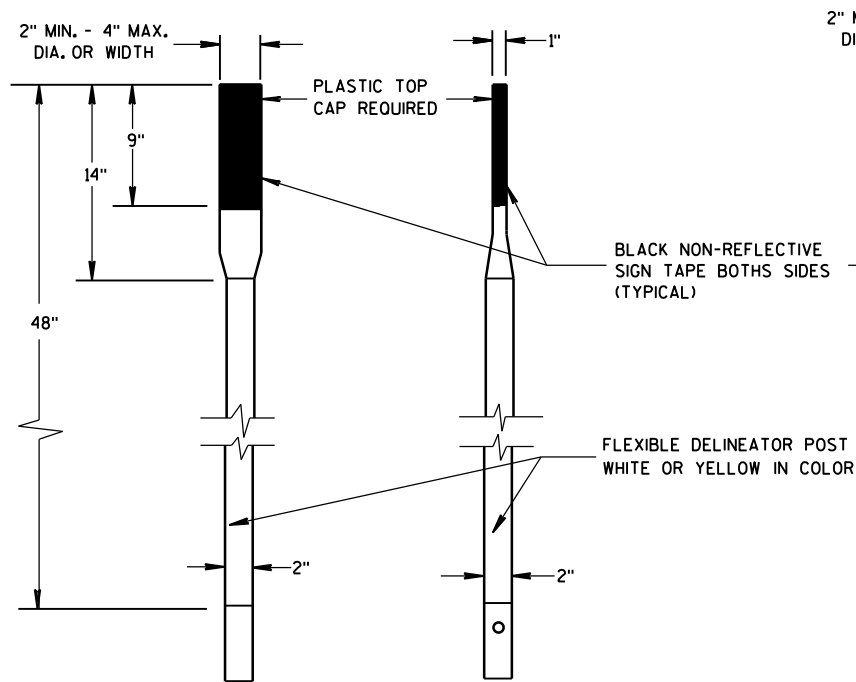
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

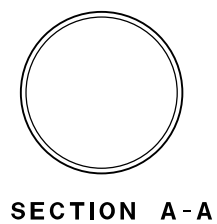
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

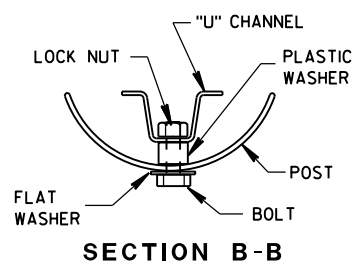
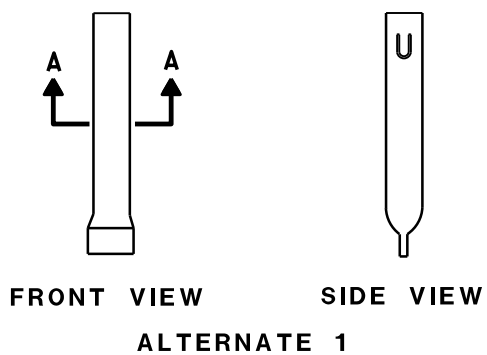


FRONT VIEW SIDE VIEW
ALTERNATE 2

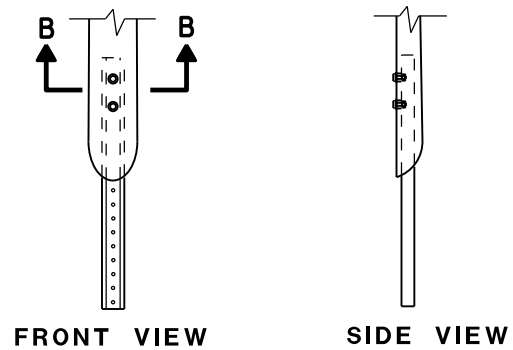
FLEXIBLE MARKER POSTS



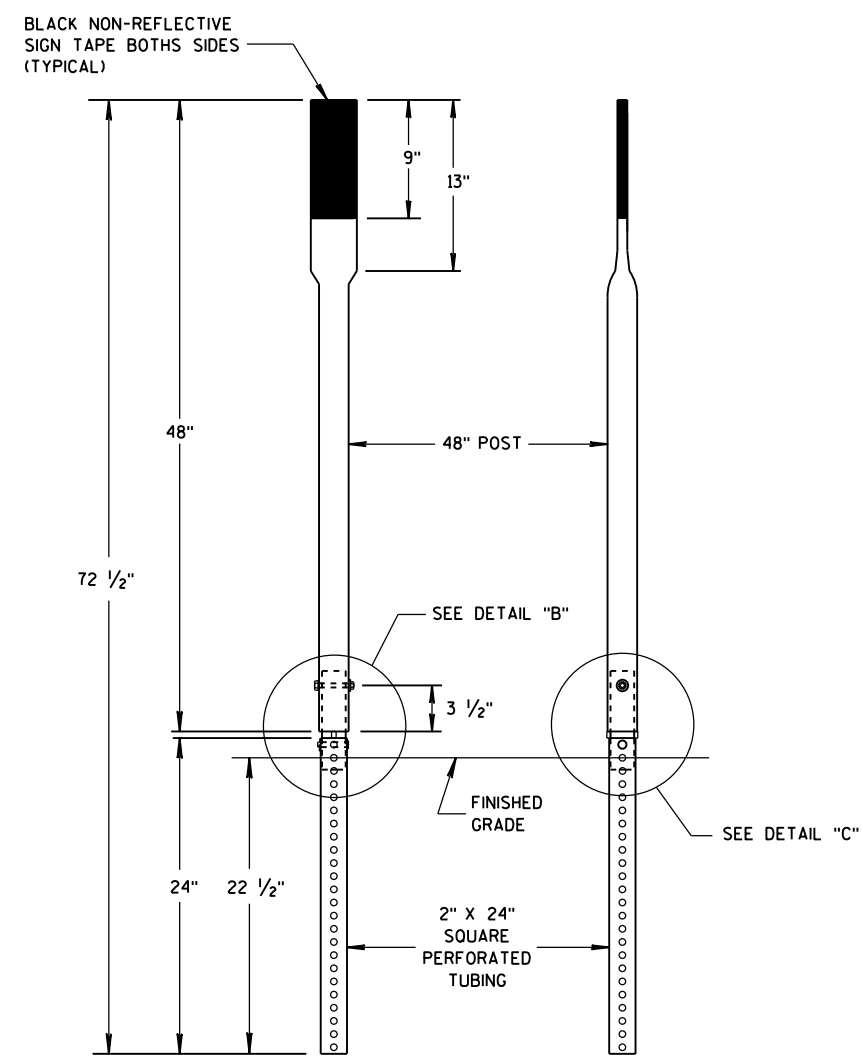
SECTION A-A



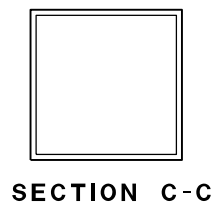
SECTION B-B



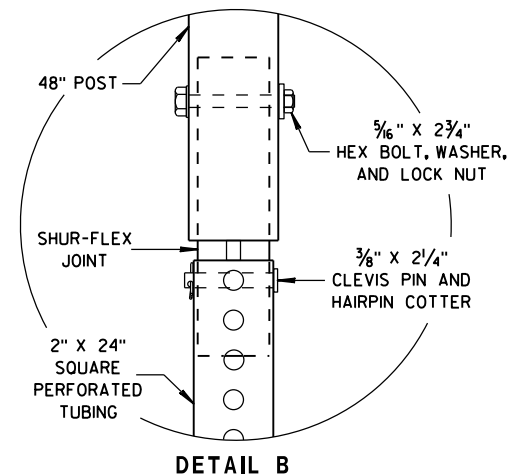
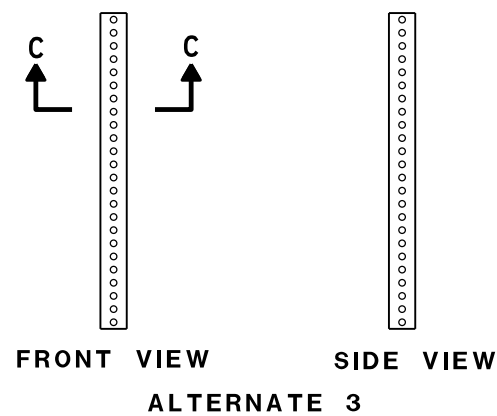
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



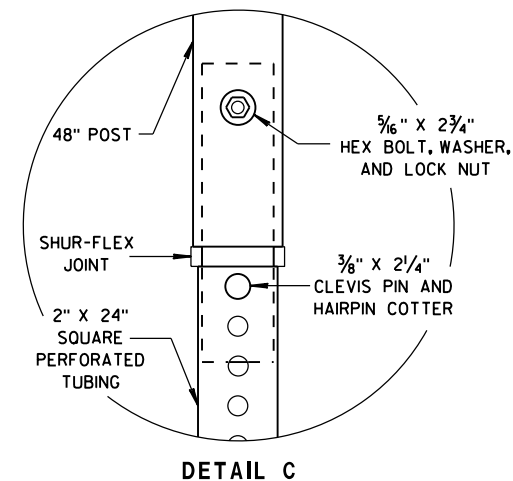
FRONT VIEW SIDE VIEW
ALTERNATE 3



SECTION C-C



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

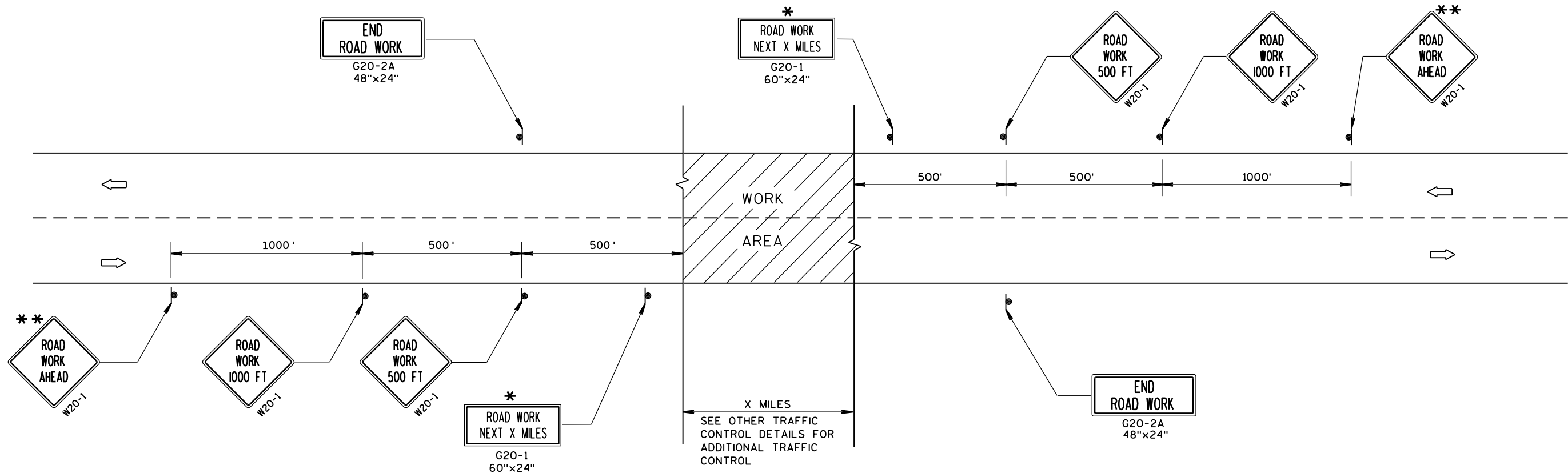
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN



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.

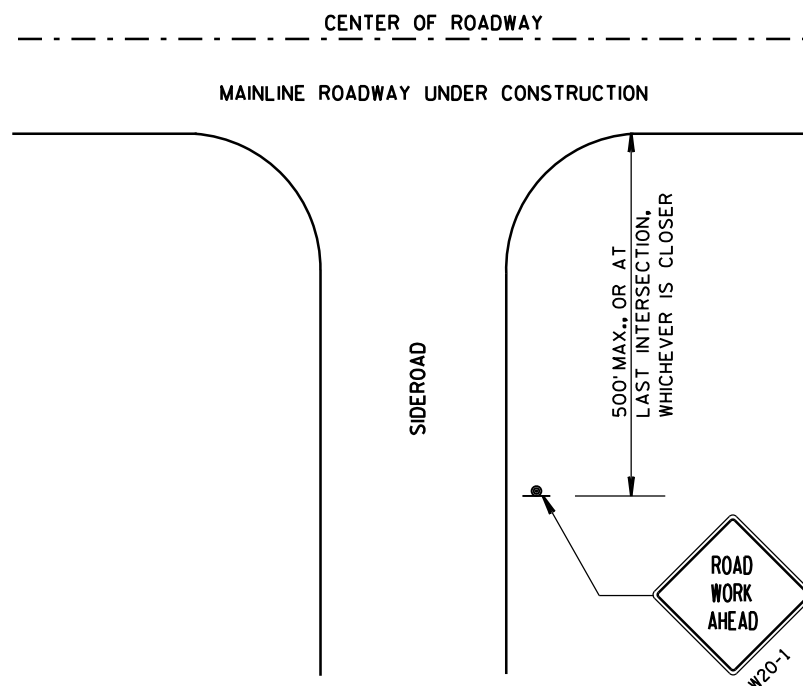
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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.

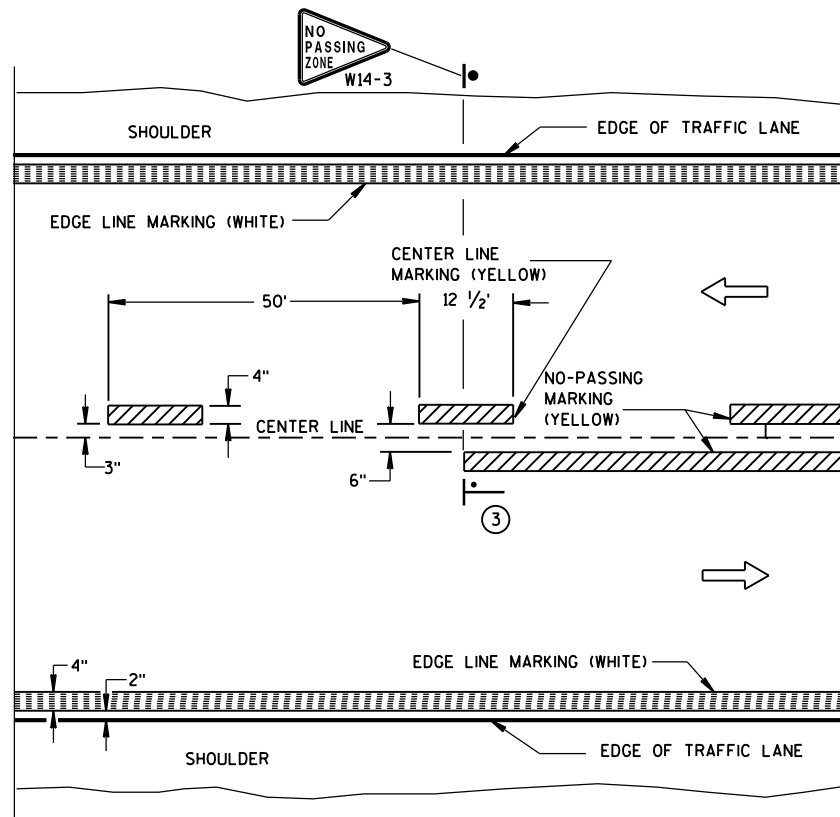
** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



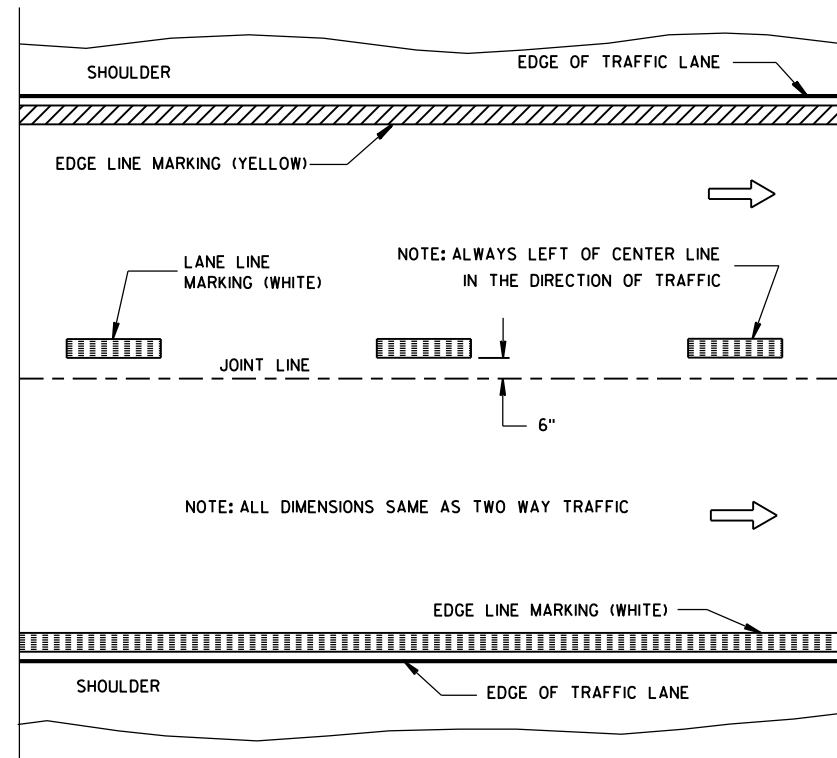
LEGEND

- 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 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

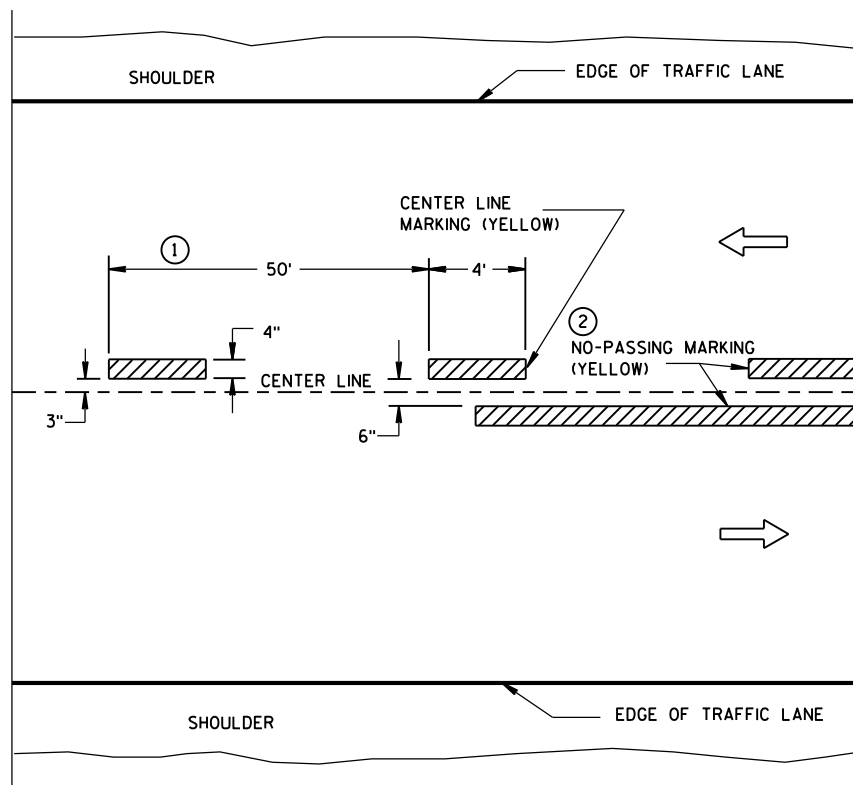


TWO WAY TRAFFIC

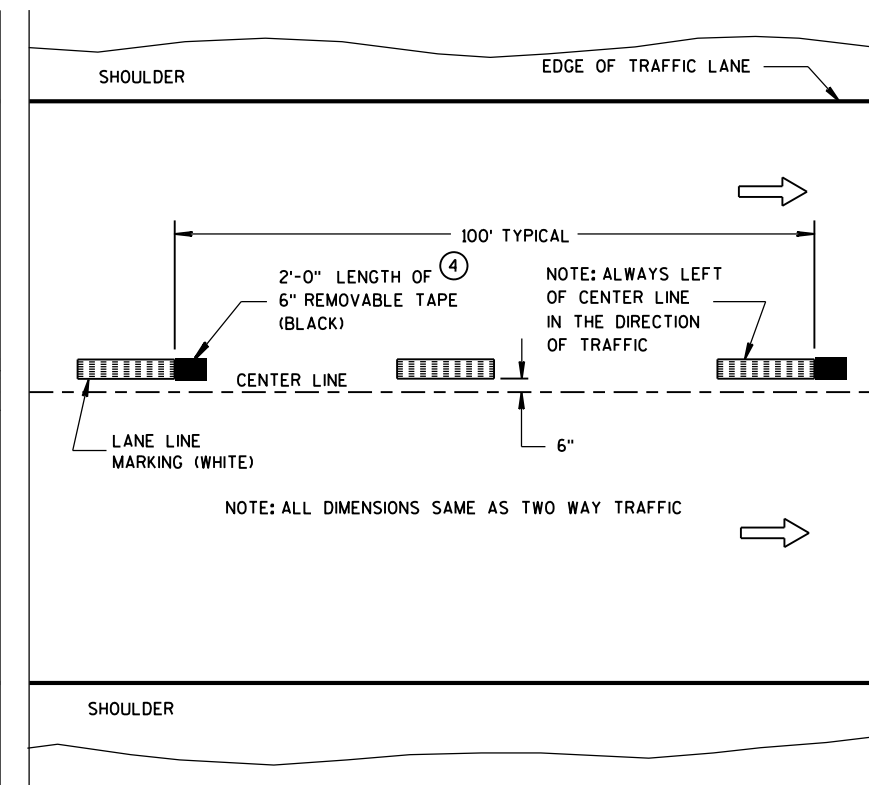


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

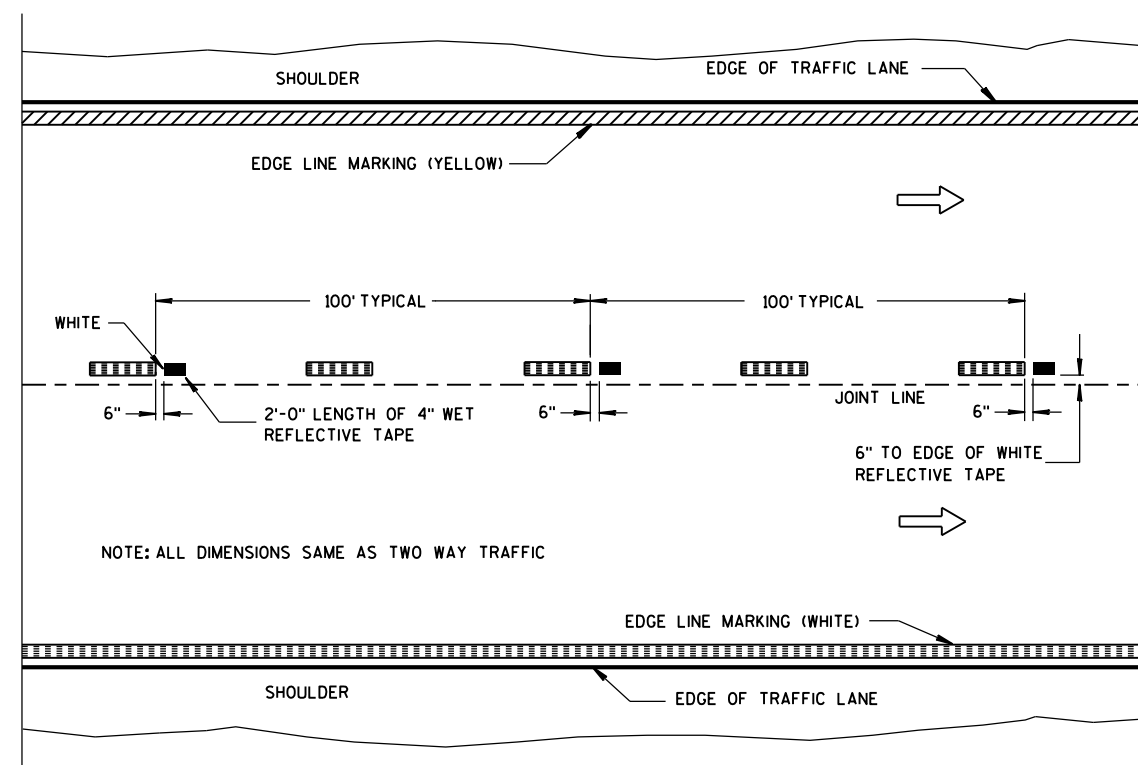
GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



**WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE**

LEGEND

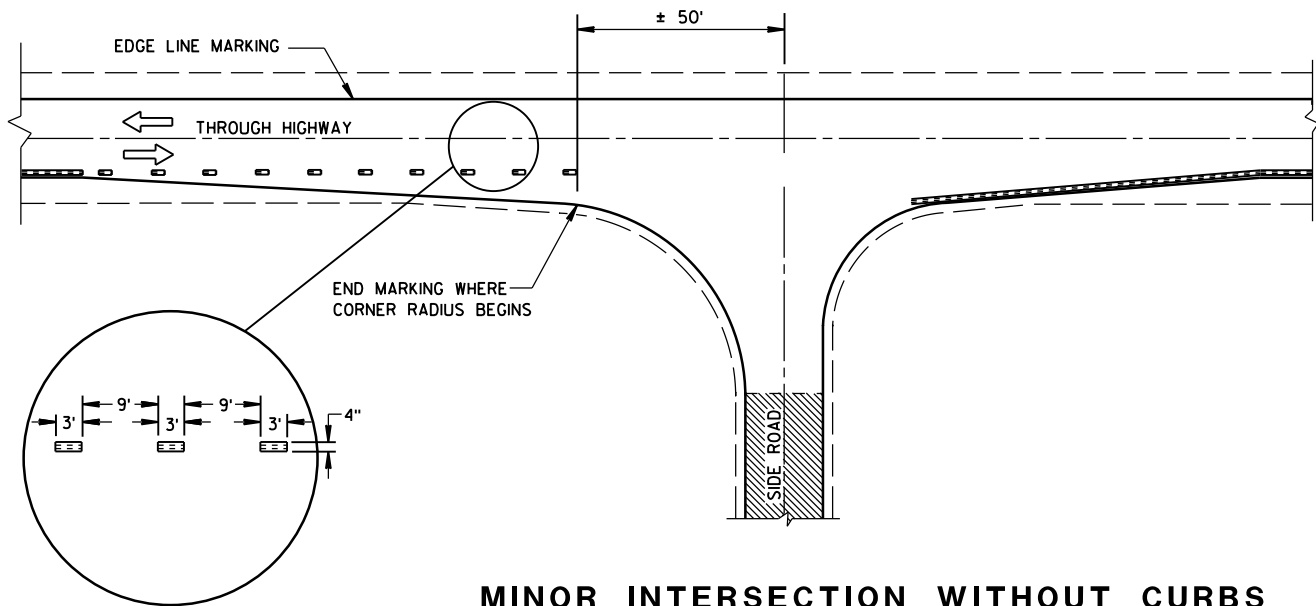
- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

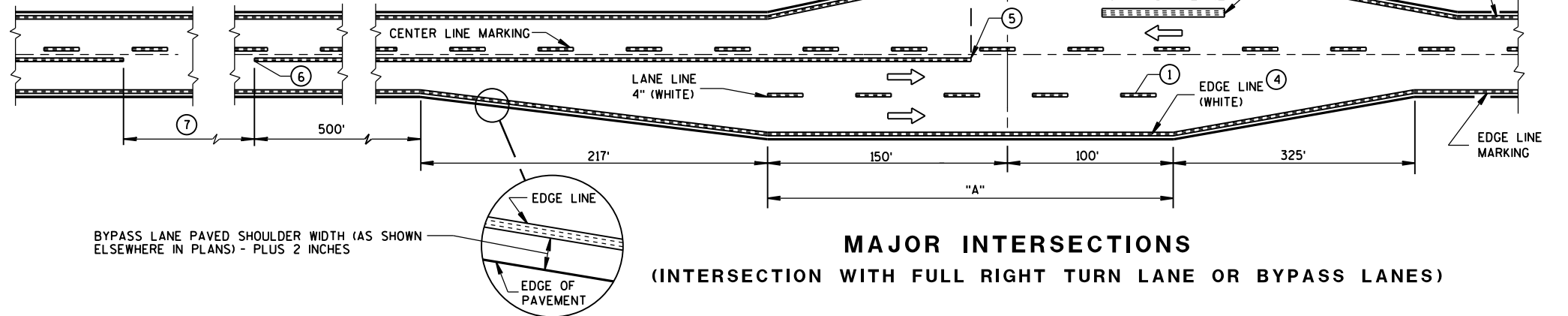
APPROVED
5-13-2013
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

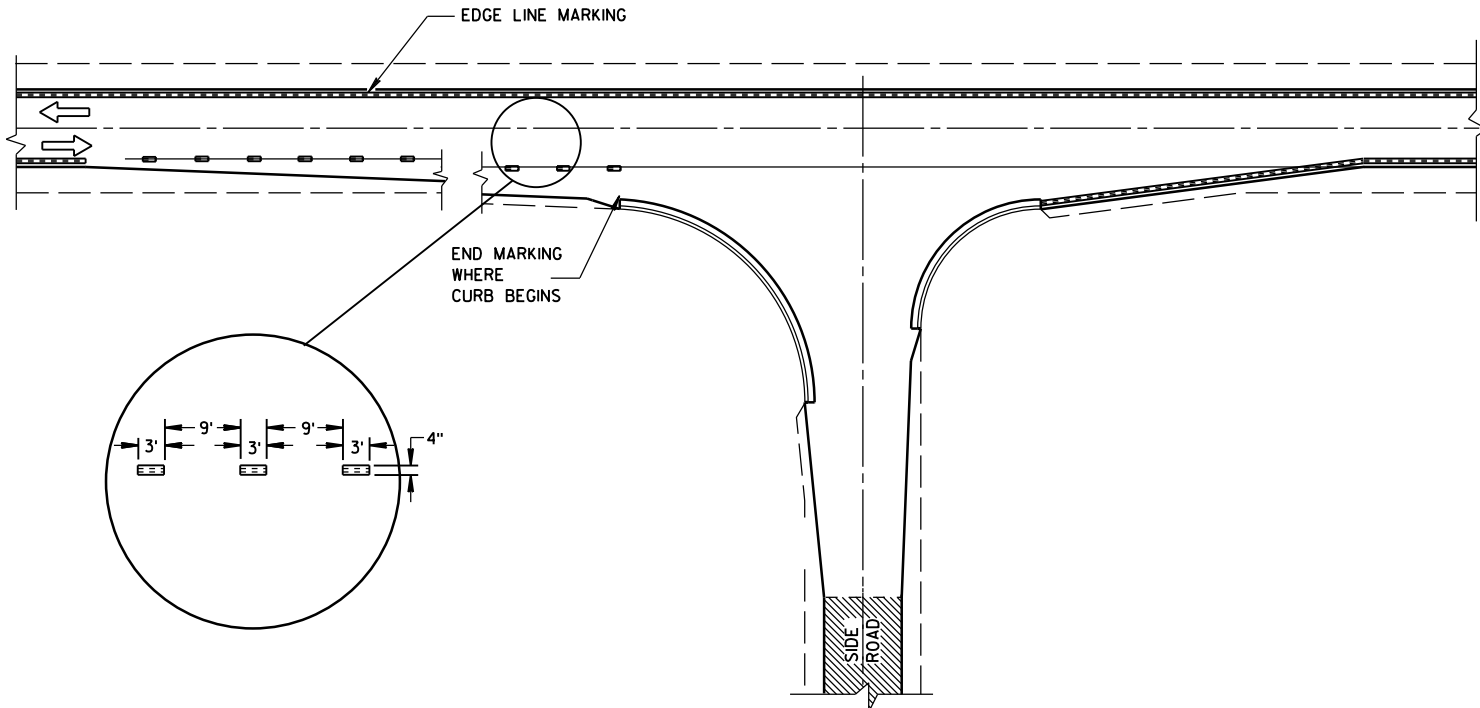


MINOR INTERSECTION WITHOUT CURBS

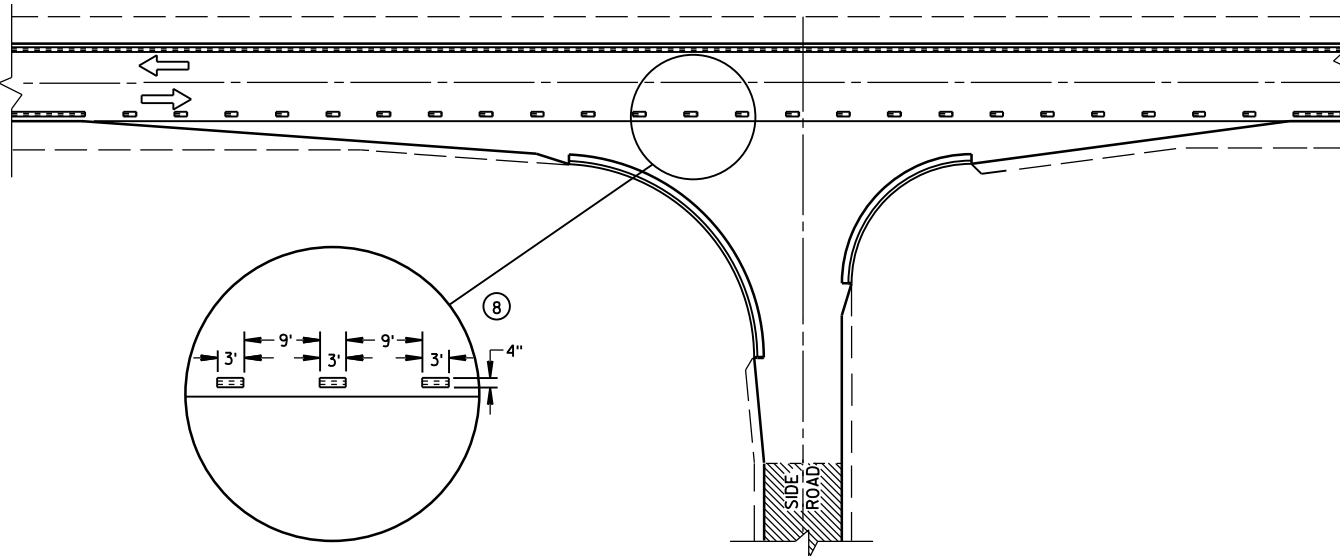
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



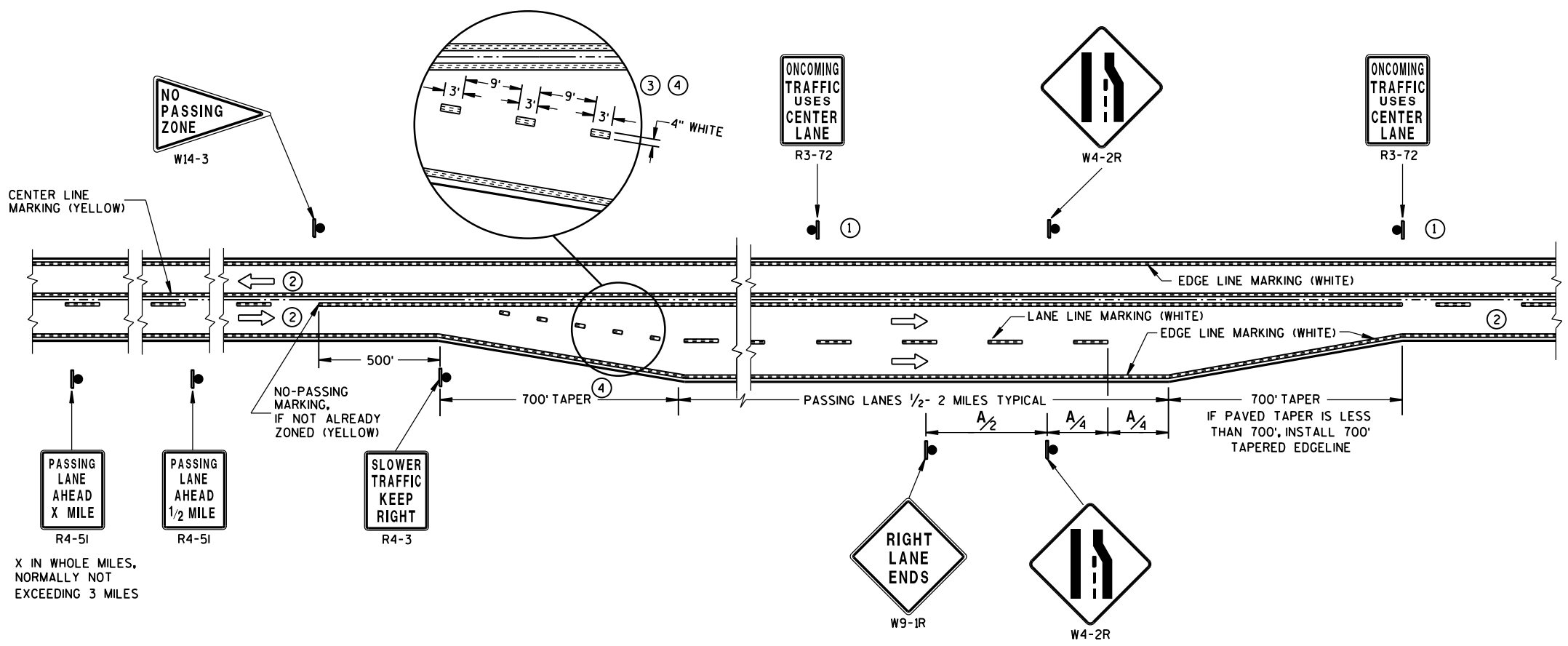
MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS
(FOR SPECIAL CONDITIONS AS SPECIFIED)

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 ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - 4 THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - 5 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - 6 BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - 7 IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - 8 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



**SOLID DOUBLE-YELLOW LINE
(THROUGHOUT ENTIRE PASSING/CLIMBING LANE)**

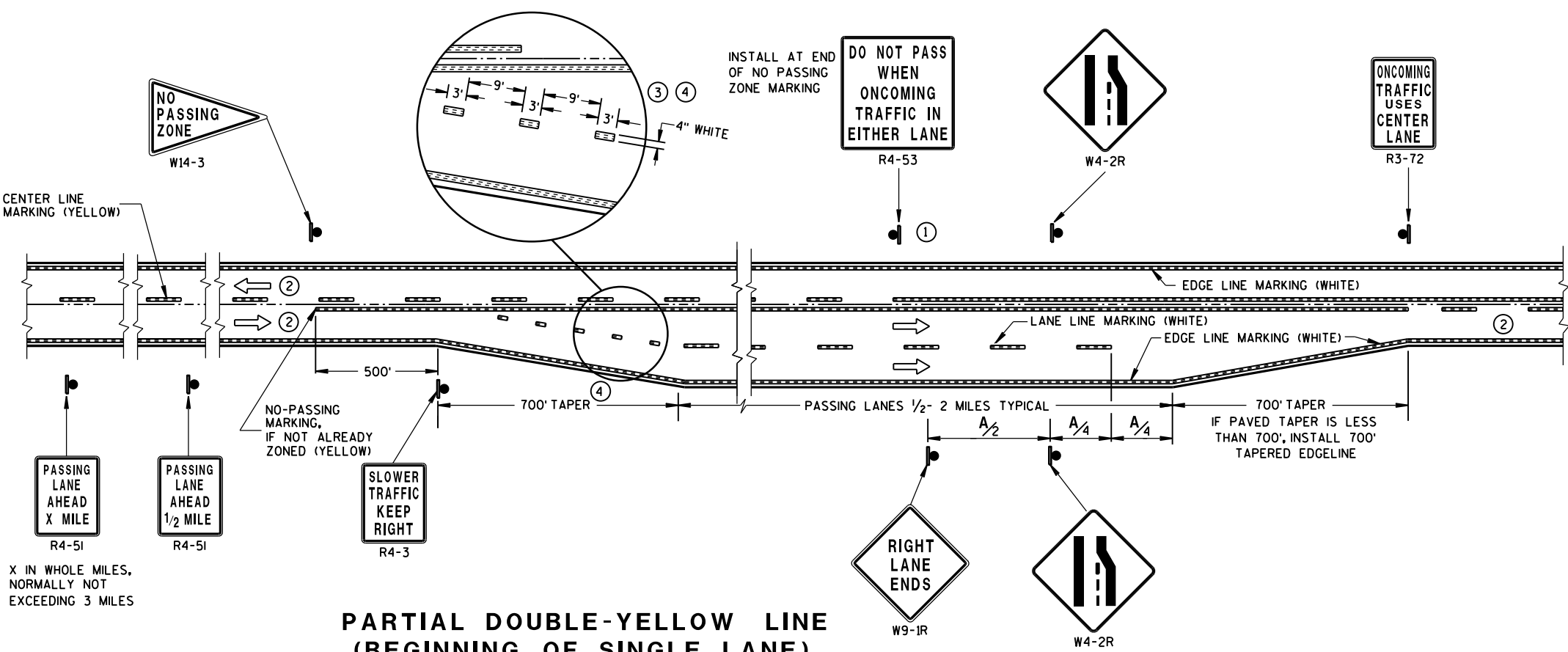
GENERAL NOTES

- ① SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- ② THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
- ③ THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ④ WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING/CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

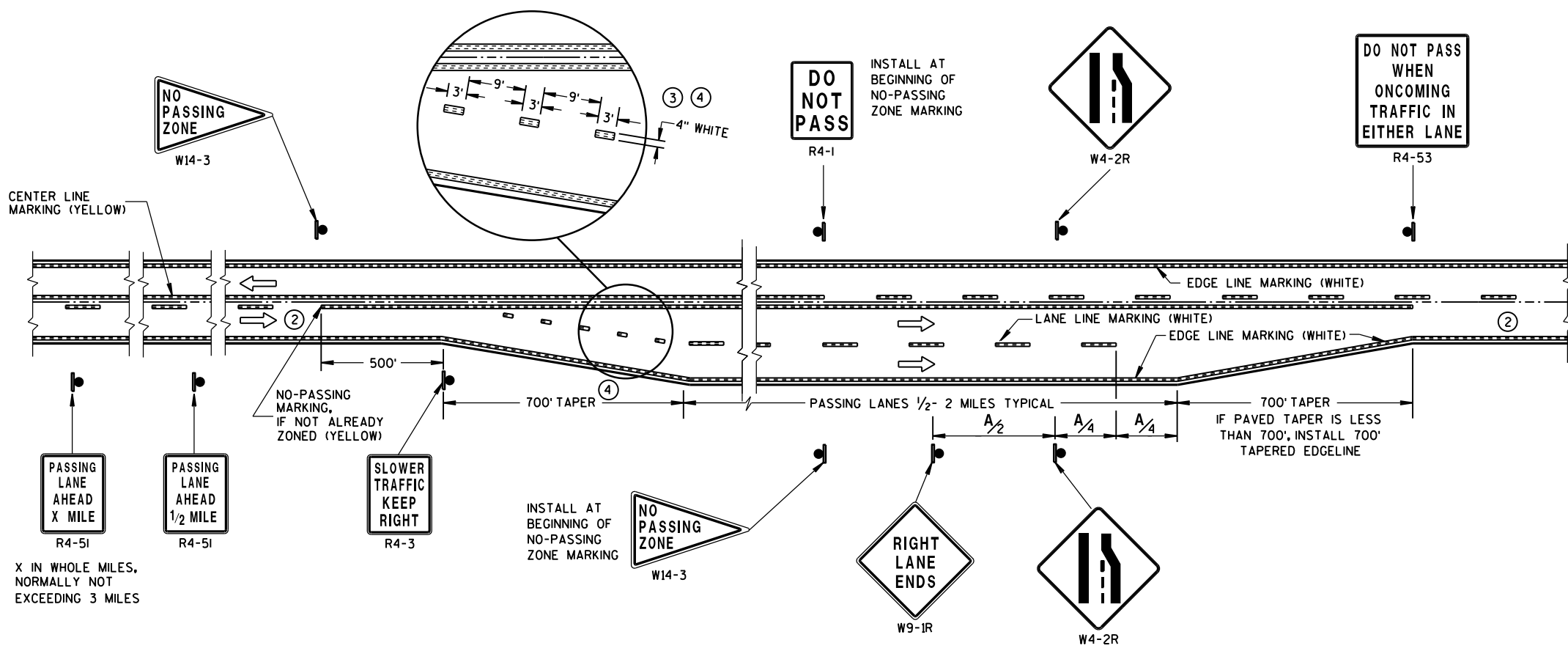
POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	750
50	850
55	950



**PARTIAL DOUBLE-YELLOW LINE
(BEGINNING OF SINGLE LANE)**

**PAVEMENT MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**SOLID DOUBLE-YELLOW LINE
(END OF SINGLE LANE)**

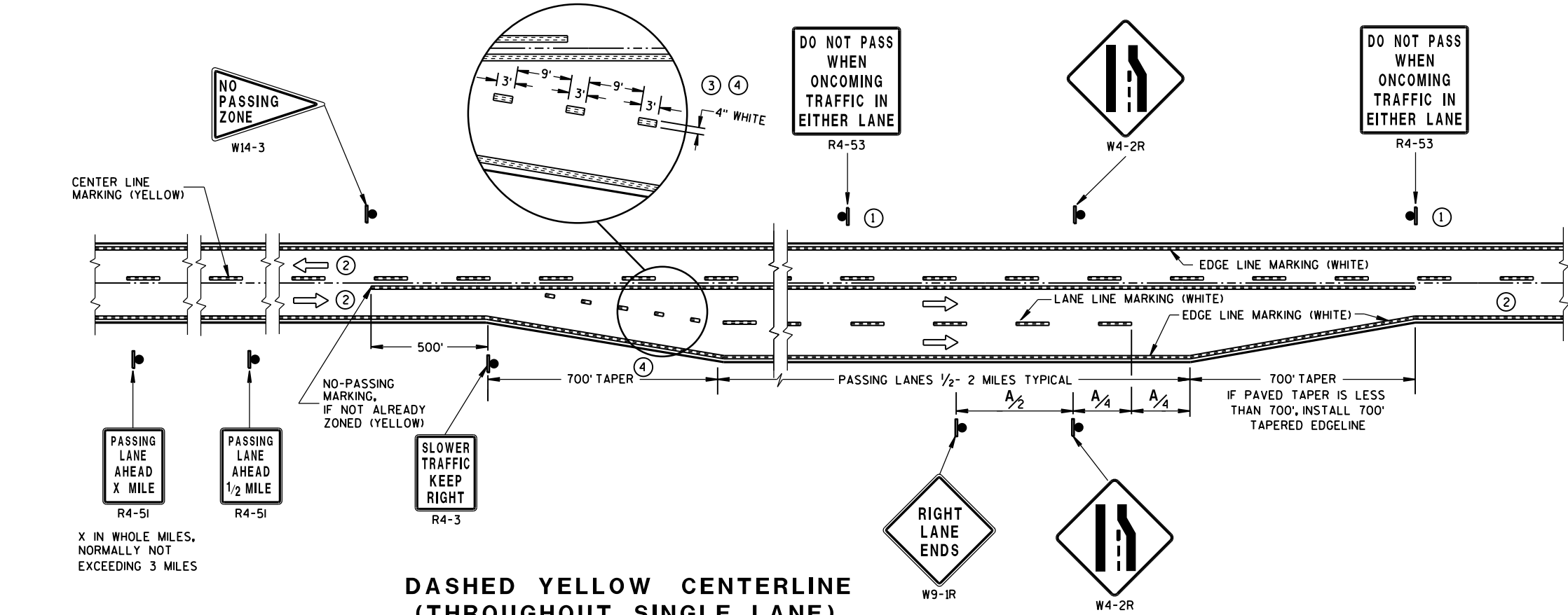
GENERAL NOTES

- ① SIGN SHALL BE REPEATED AT 1/2 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
- ② THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
- ③ THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3" LINE 9" GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ④ WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING/CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	750
50	850
55	950



**DASHED YELLOW CENTERLINE
(THROUGHOUT SINGLE LANE)**

**PAVEMENT MARKING & SIGNING
(CLIMBING LANE &
PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

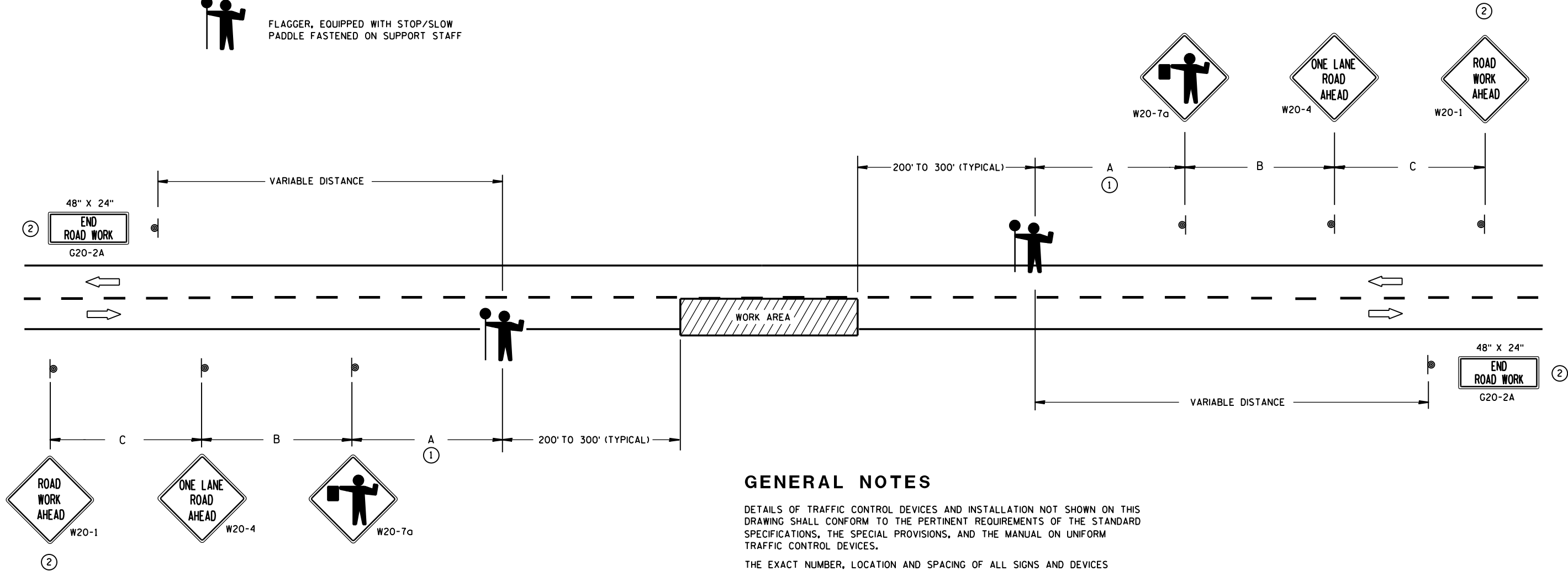
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
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 W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



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.

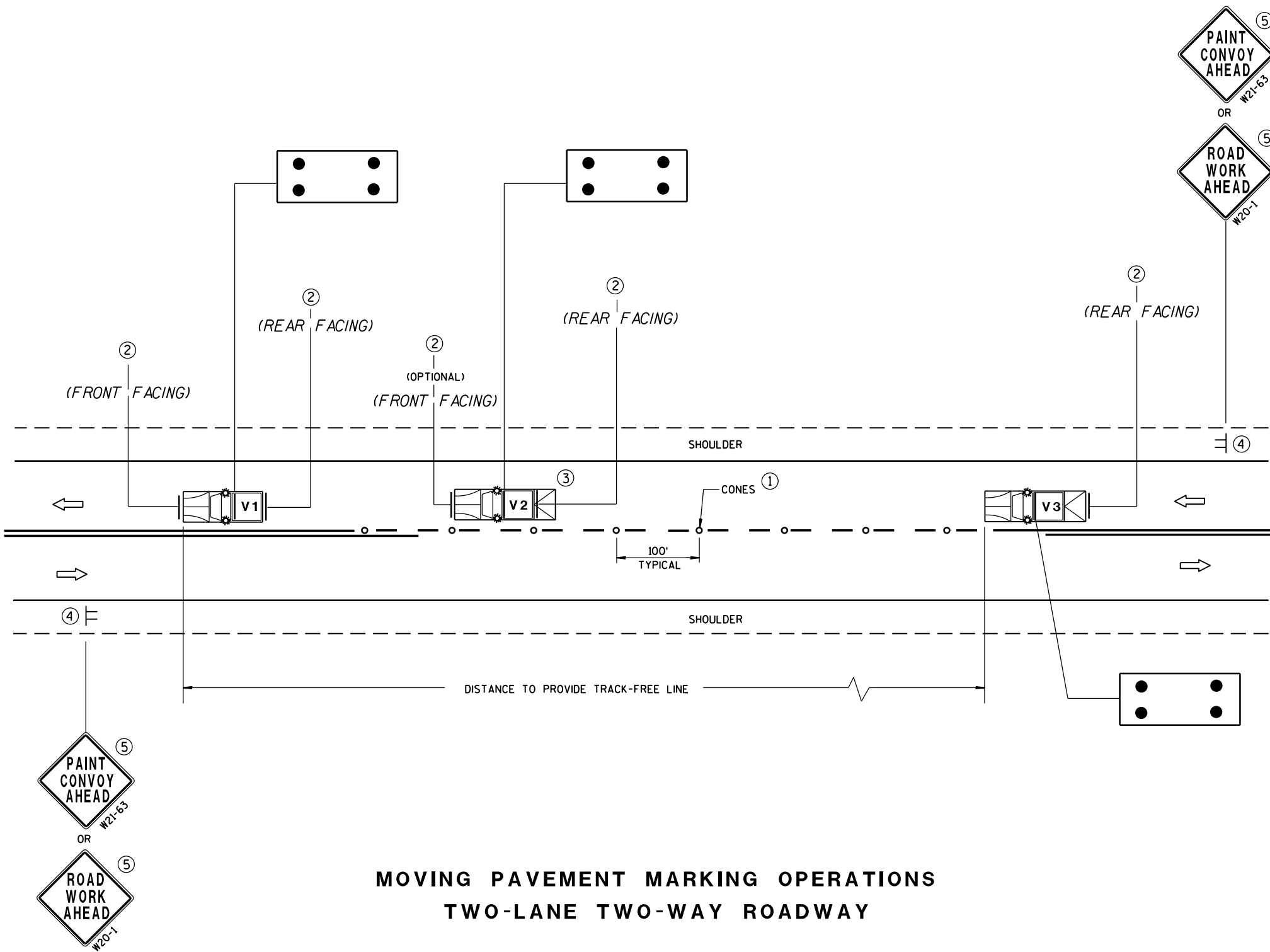
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

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, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 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.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
 OR 
W21-64 W21-64
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

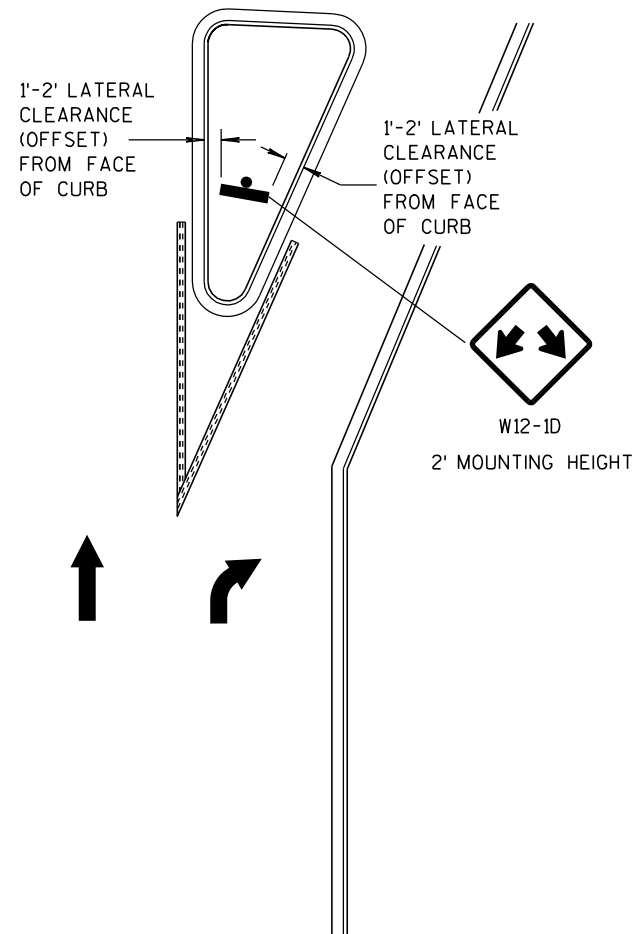
LEGEND

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
-  **TMA** TRUCK-MOUNTED ATTENUATOR
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  CONES
-  FLASHING ARROW PANEL (CAUTION)

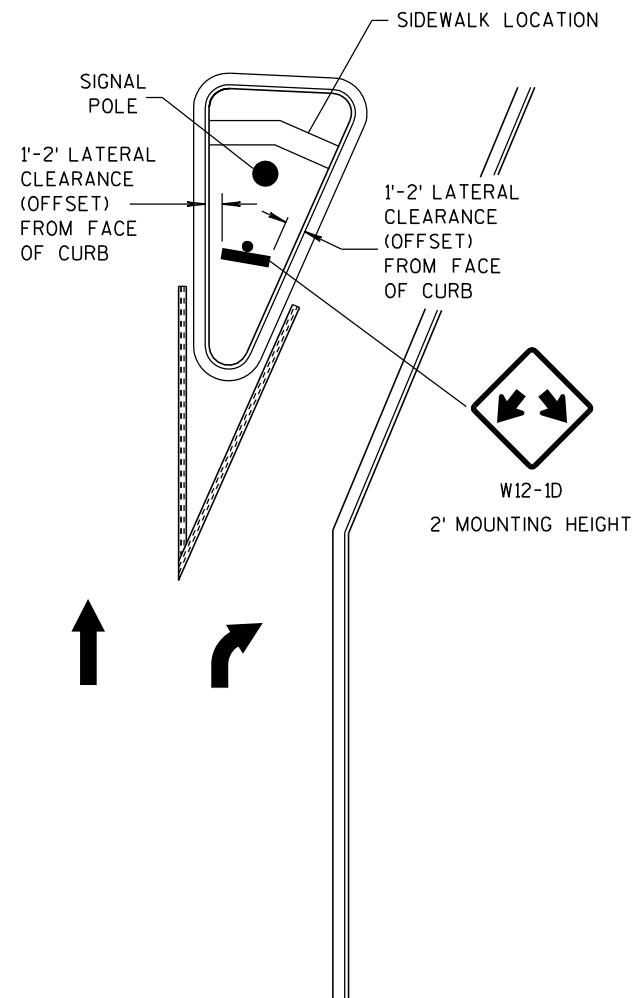
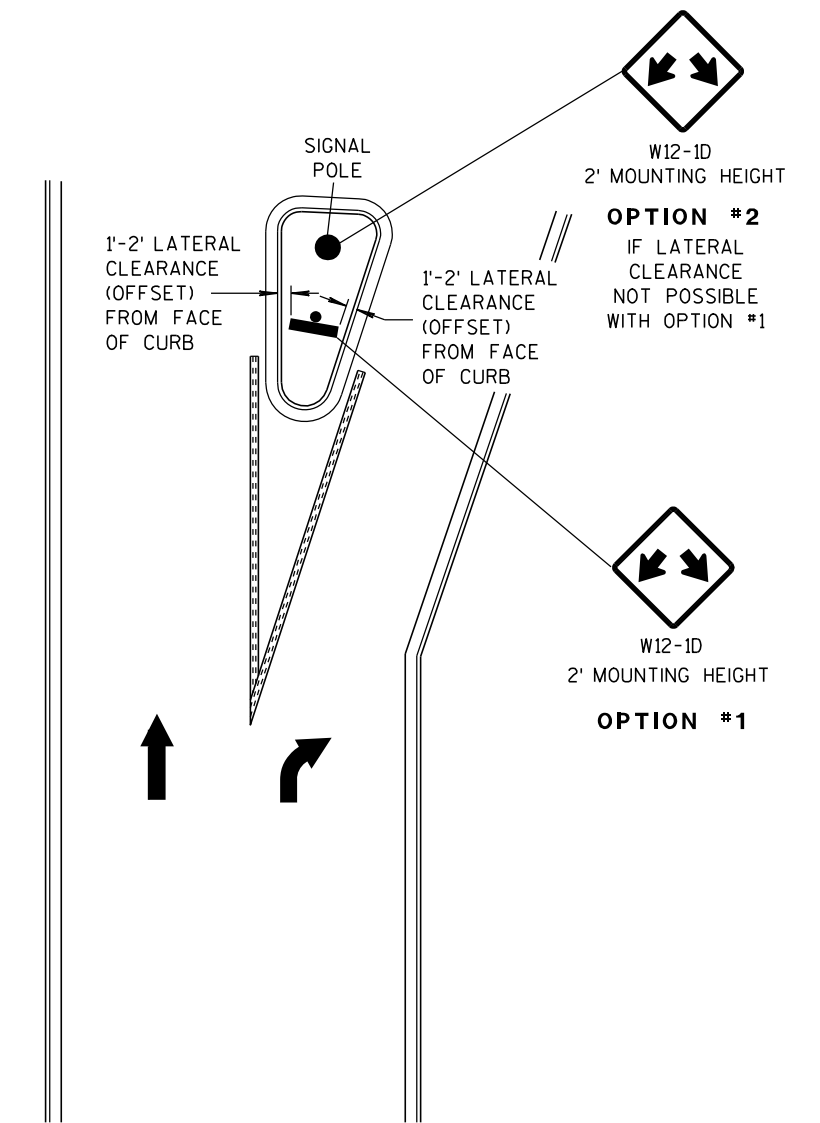
MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER
FHWA



LARGE RIGHT TURN ISLAND

LARGE RIGHT TURN ISLAND
WITH SIGNAL POLE

SMALL RIGHT TURN ISLAND

GENERAL NOTE

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

SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

DOUBLE ARROW WARNING SIGN PLACEMENT**DOUBLE ARROW
WARNING SIGN PLACEMENT**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10-22-08
DATE

FHWA

/S/ Thomas N. Notbohm
STATE TRAFFIC ENGINEER OF DESIGN

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.

W20-1 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.

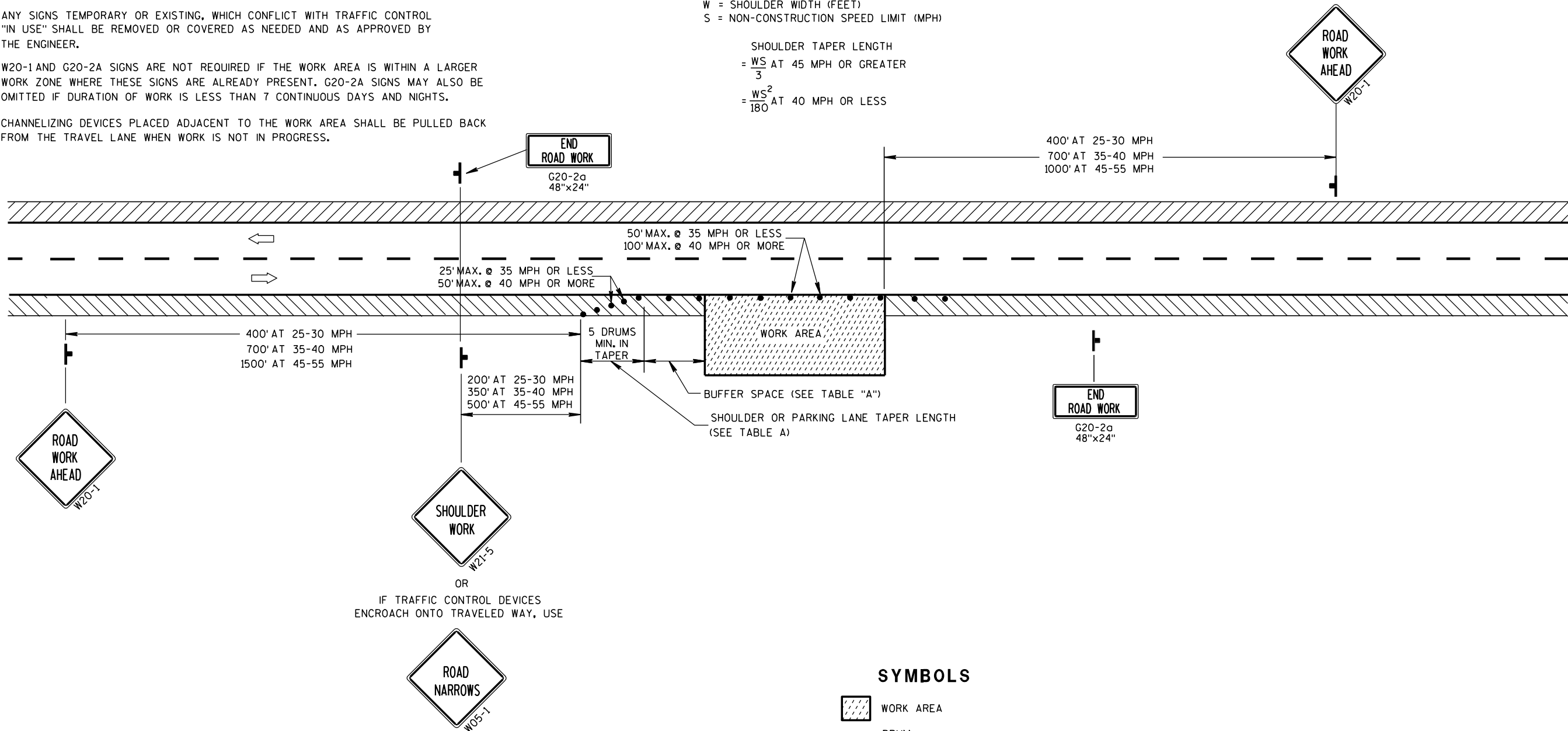
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

S \ W		SHOULDER TAPER LENGTH (FEET)				BUFFER SPACE (FEET)
		4	6	8	10	
30	20	30	40	50		85
35	30	45	55	70		120
40	40	55	75	90		170
45	60	90	120	150		220
50	70	100	135	170		280
55	75	110	150	185		335

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

SHOULDER TAPER LENGTH
= $\frac{WS}{3}$ AT 45 MPH OR GREATER
= $\frac{WS^2}{180}$ AT 40 MPH OR LESS



SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. Spang
DATE CHIEF SIGNS AND MARKING ENGINEER
FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE



INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

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.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

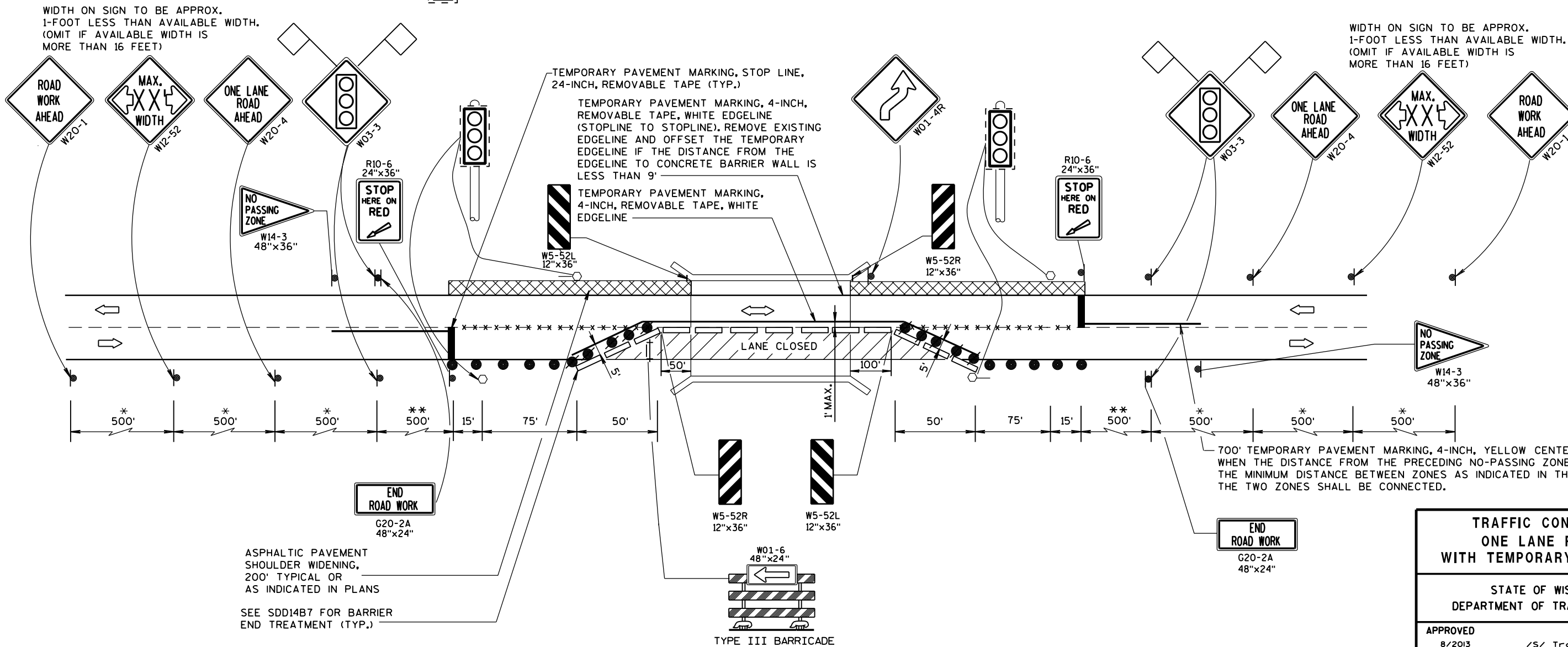
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.

6



6

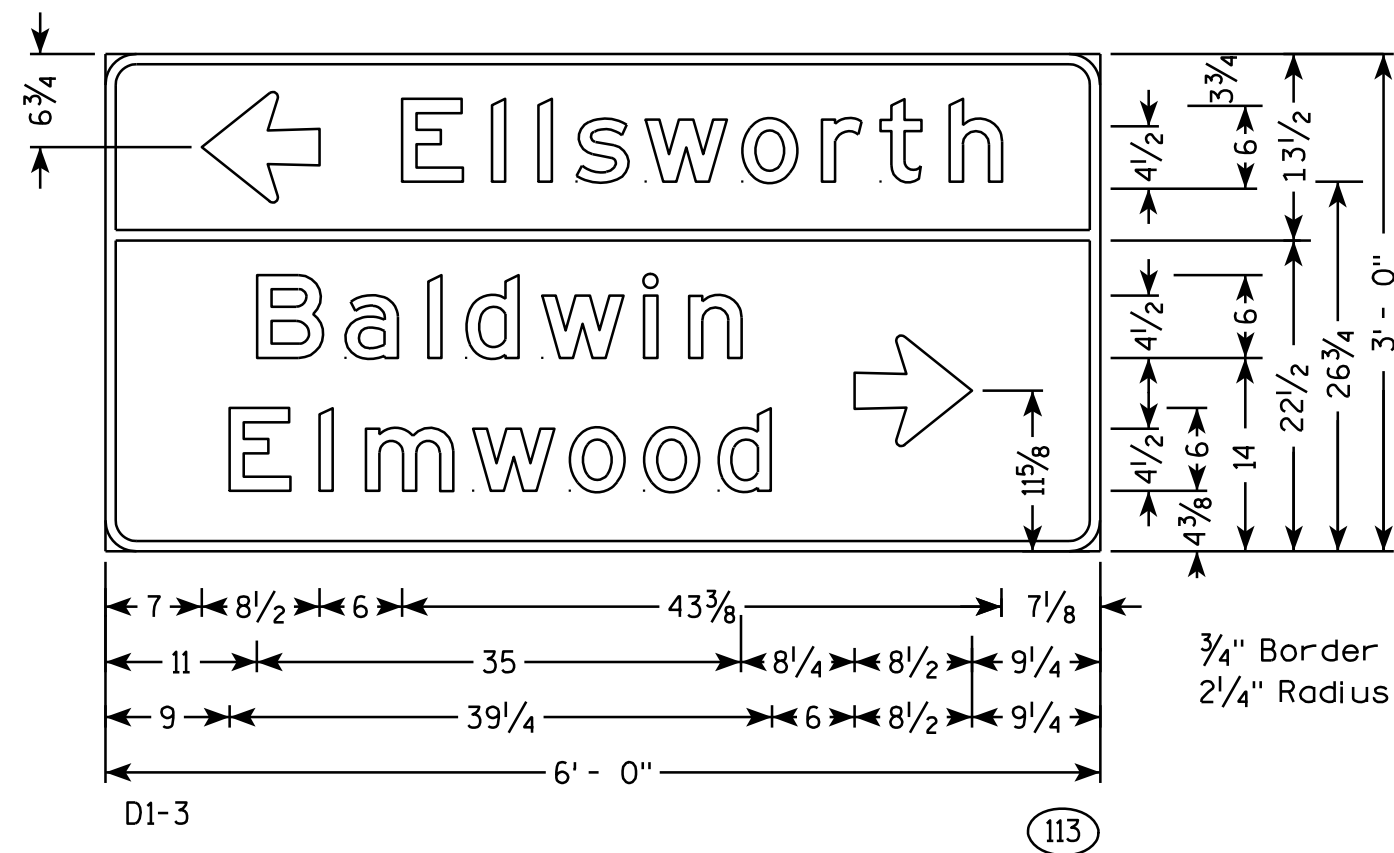
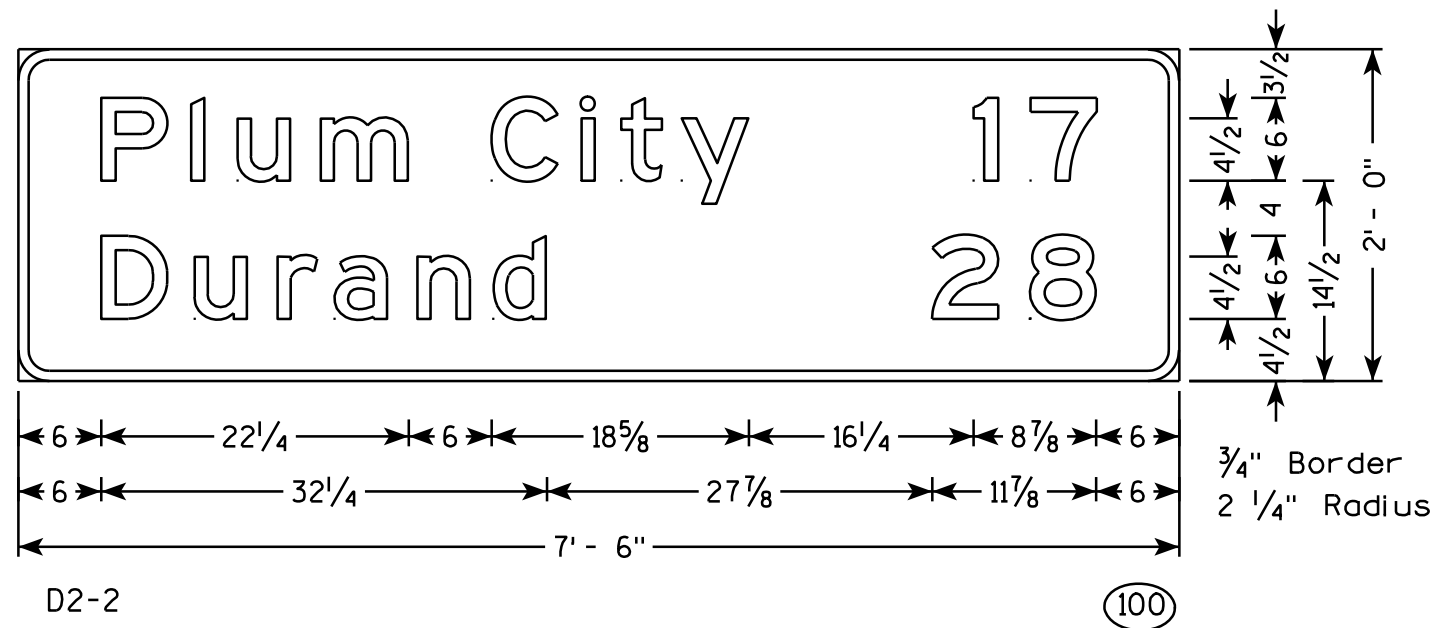
TRAFFIC CONTROL,
ONE LANE ROAD
WITH TEMPORARY SIGNALS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

NOTES

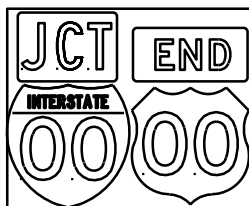
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - GREEN
Message - WHITE
3. Message Series - E



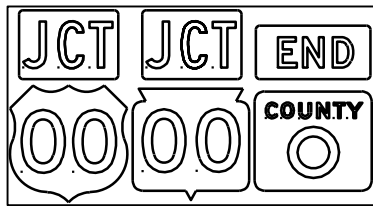
TYPICAL ASSEMBLIES



J1-1



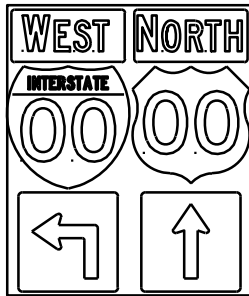
J1-2



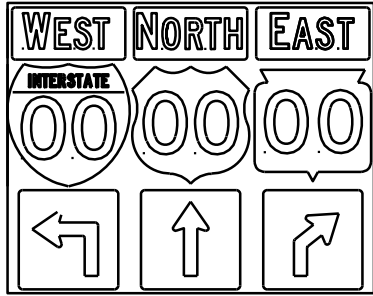
J1-3



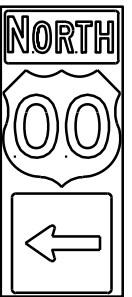
J2-1



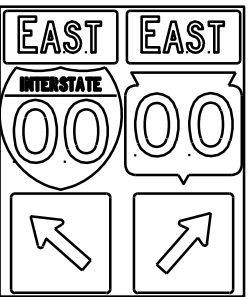
J2-2



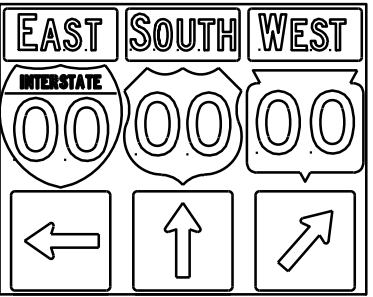
J2-3



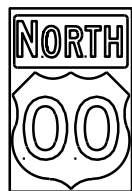
J3-1



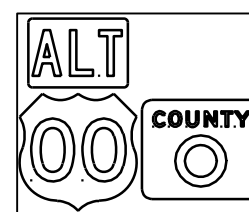
J3-2



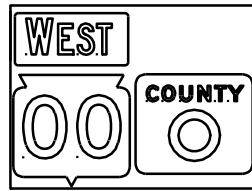
J3-3



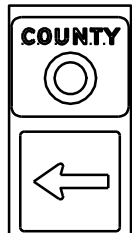
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1



J22-1



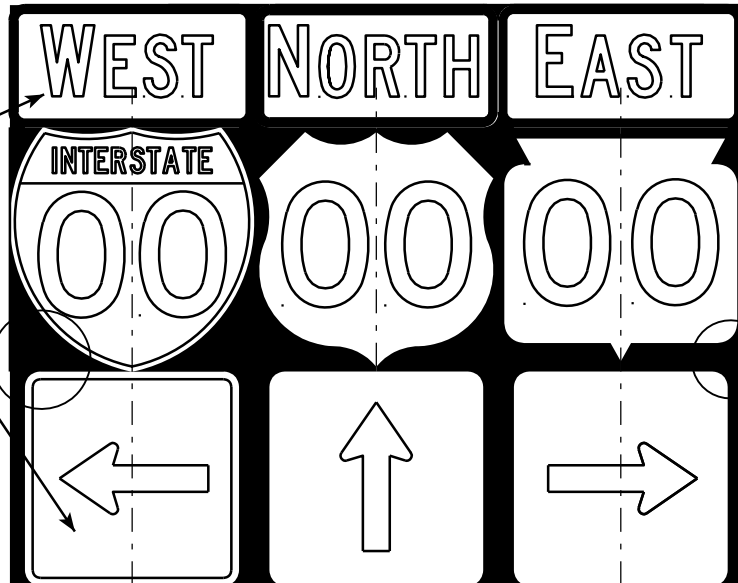
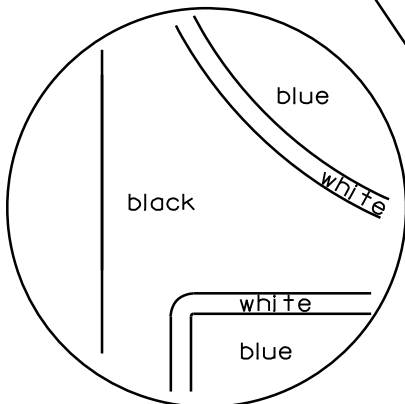
JV

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

NOTES

- Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Black Non-reflective
Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

[blue background
with interstate]



black

white

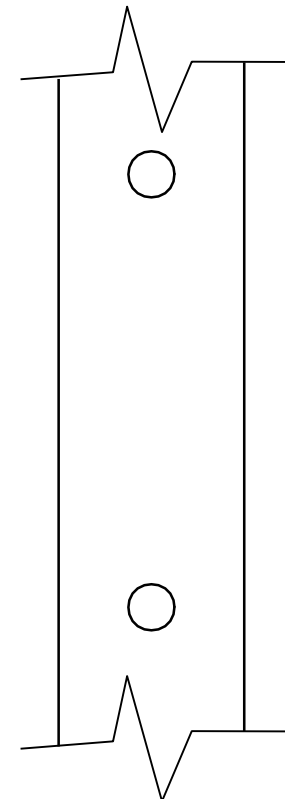
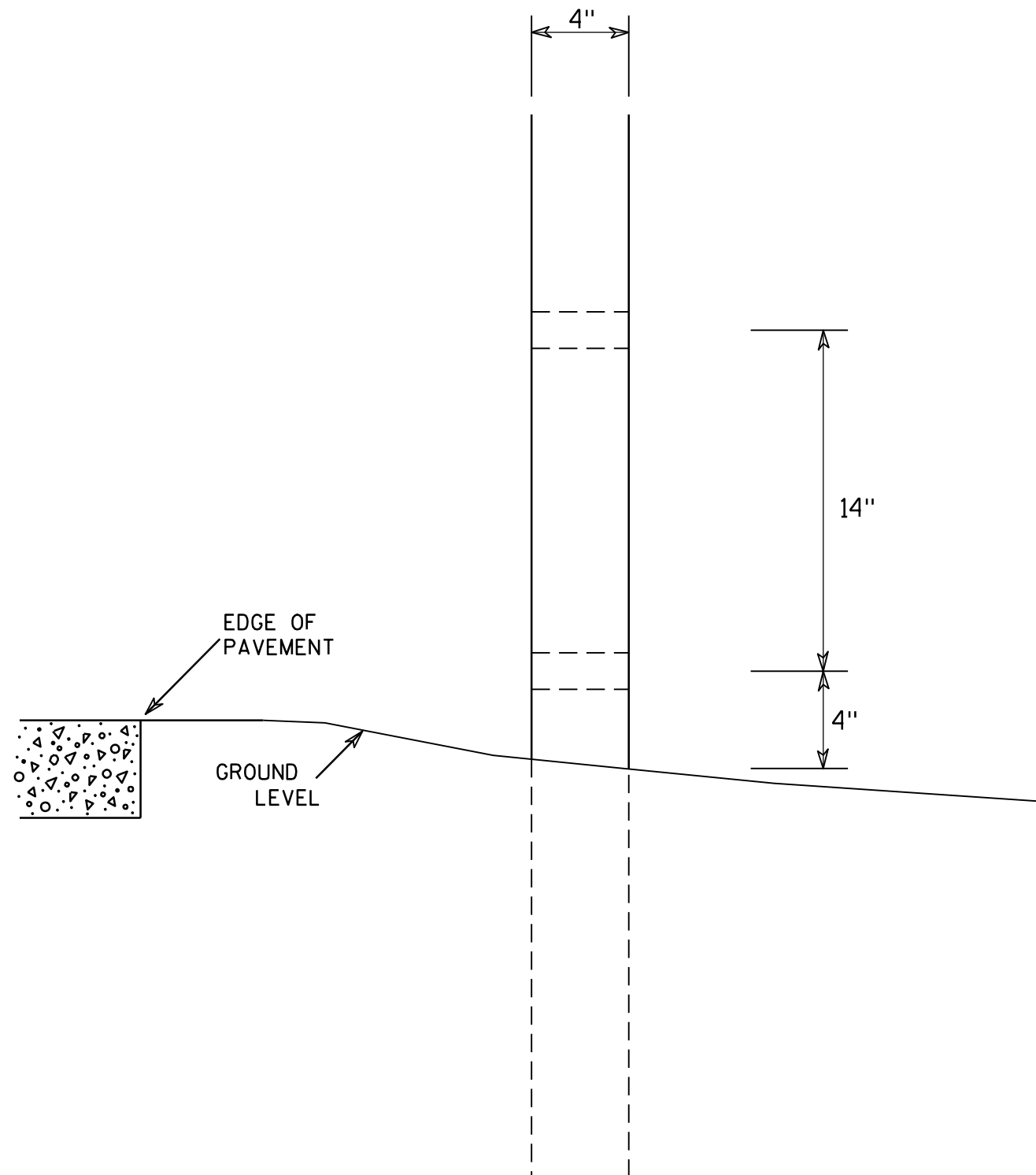
[black background]

ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/25/13	PLATE NO. A2-1S.7

PROJECT NO:

SHEET NO:

E



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" 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:

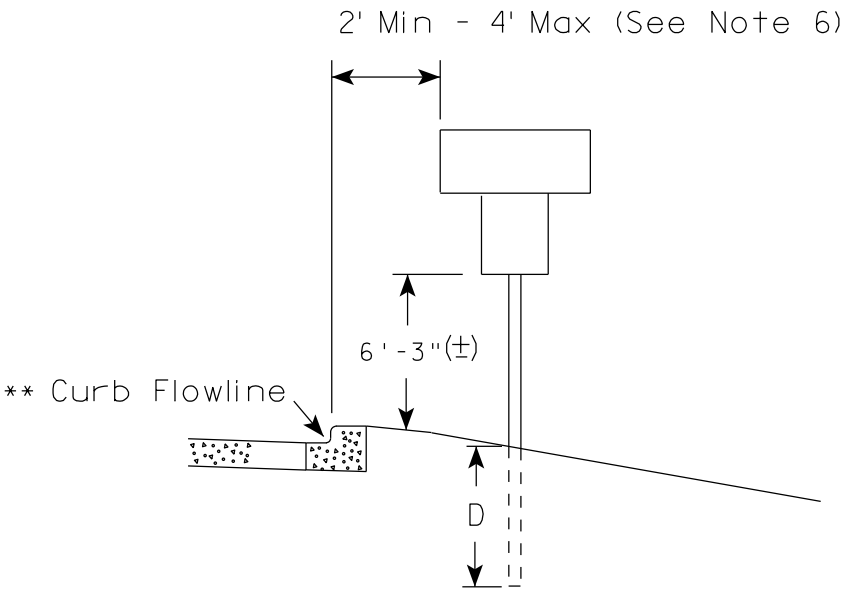
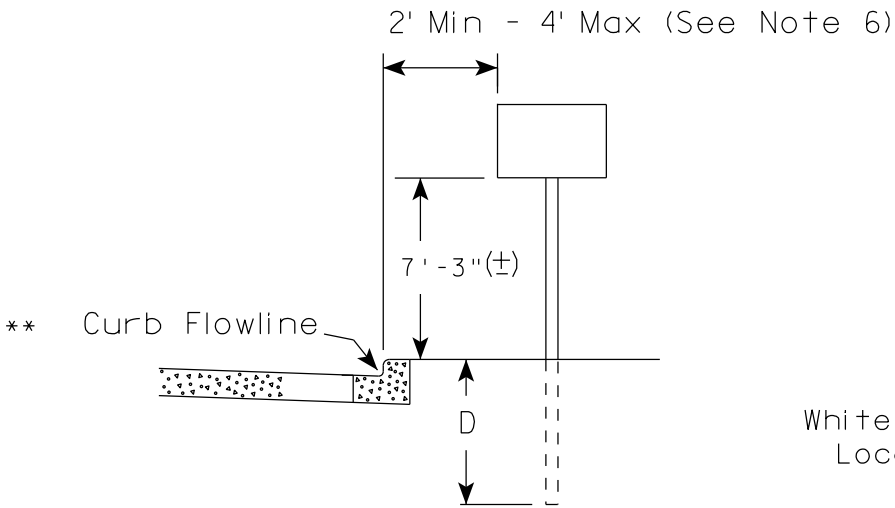
HWY:

COUNTY:

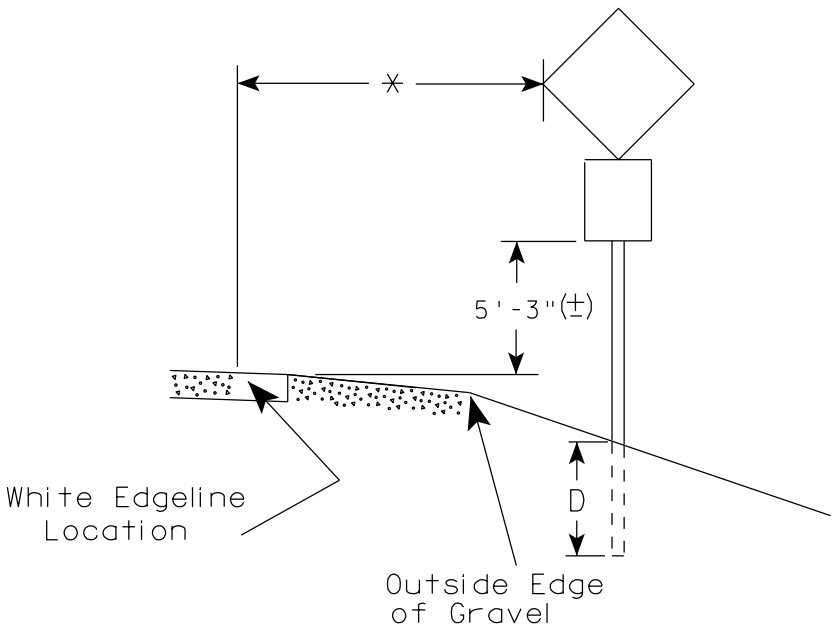
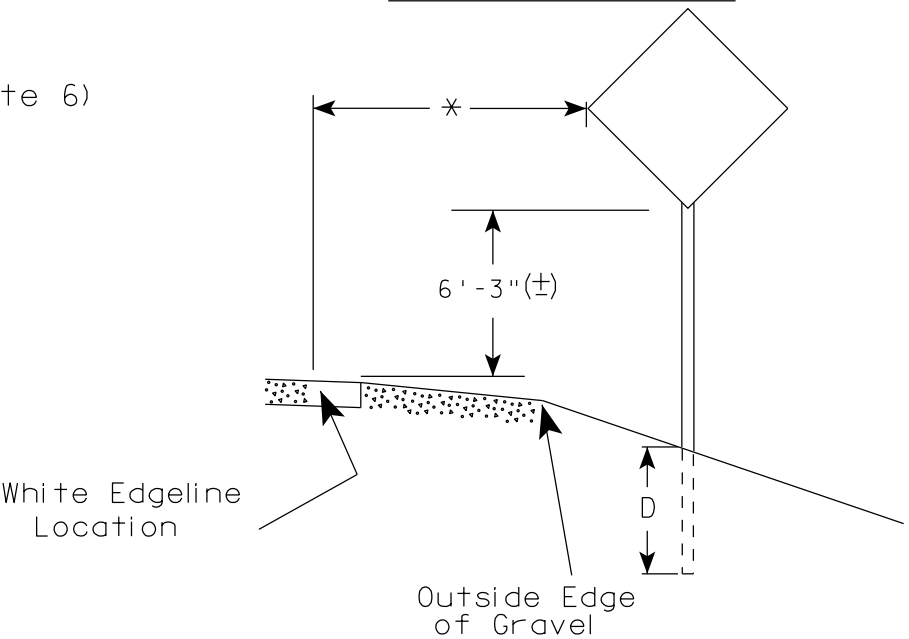
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 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 (A4-5) 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 stop signs (R1-1F) 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) & End of Rod Markers (W5-56 & W5-56A) 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.

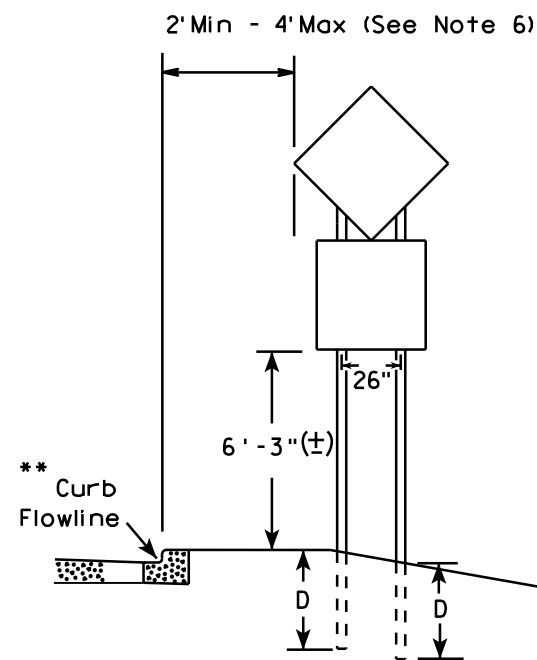
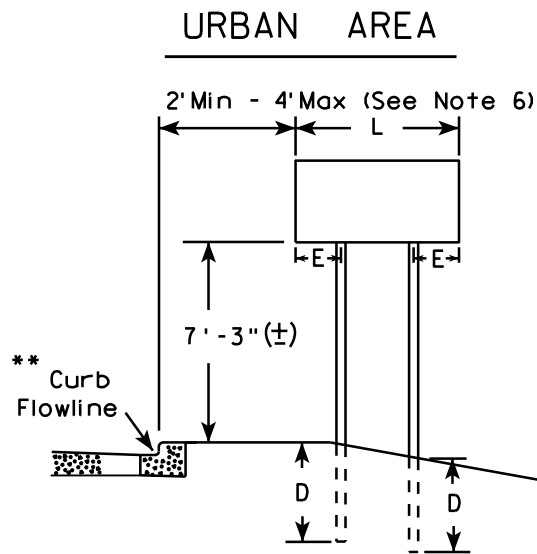
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

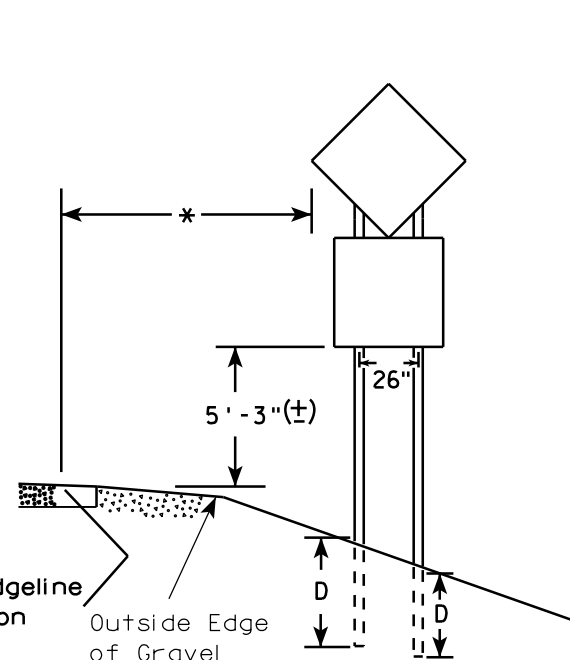
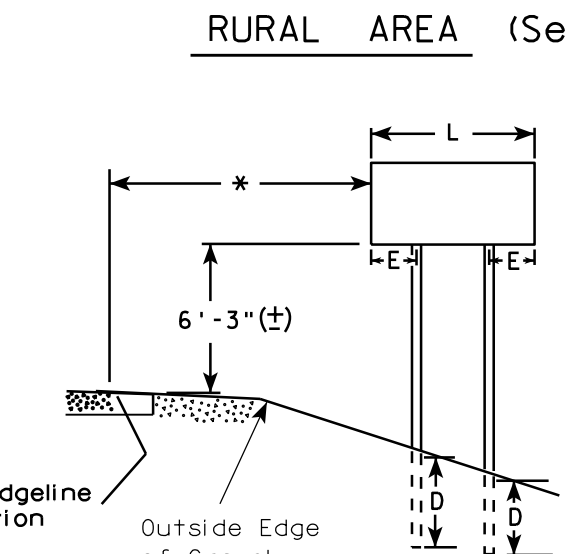
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-3.18



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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 (A4-5) 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 stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) 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 or 20 S.F. or less 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 9/30/13

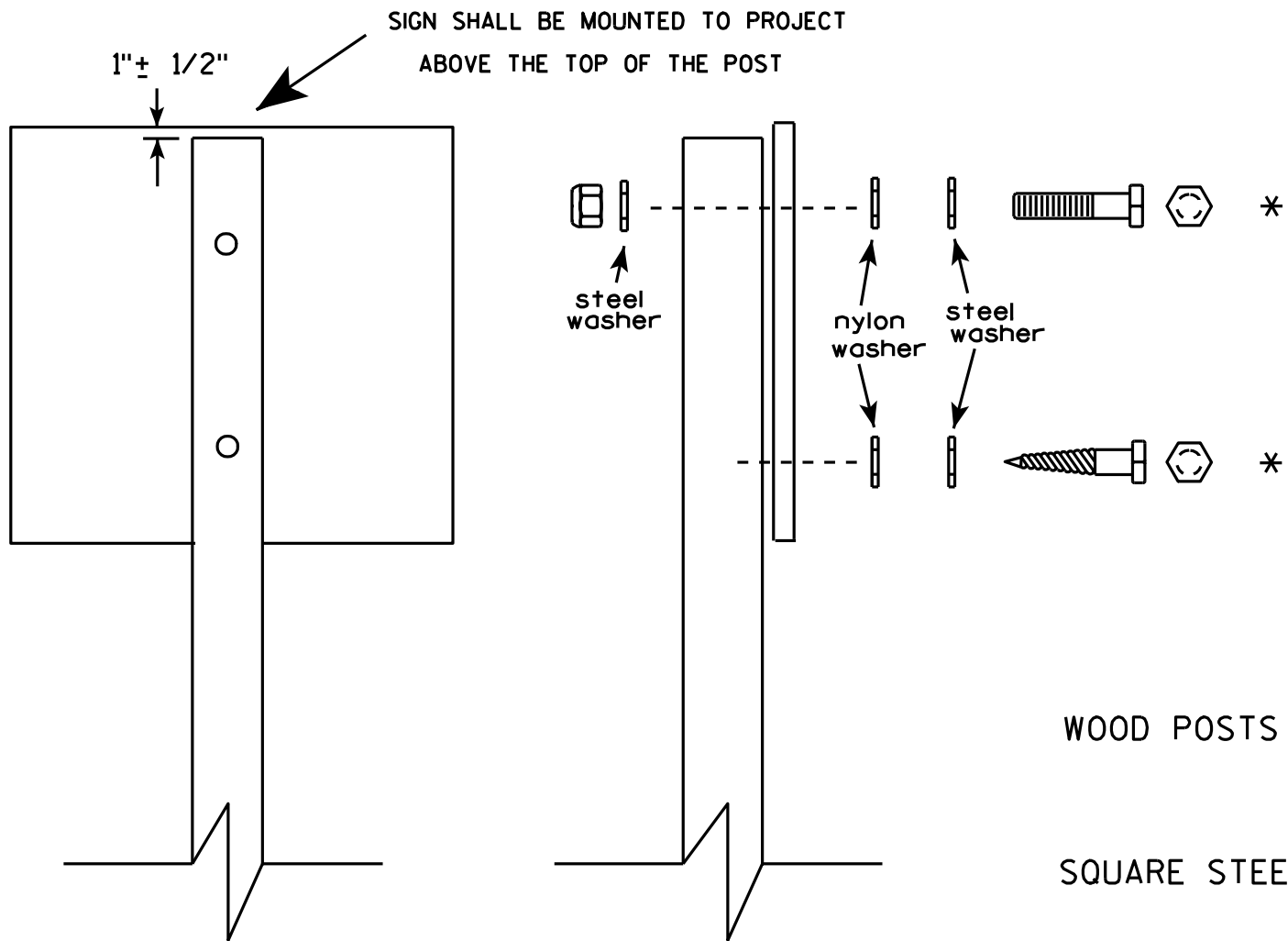
PLATE NO. A4-4.12

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

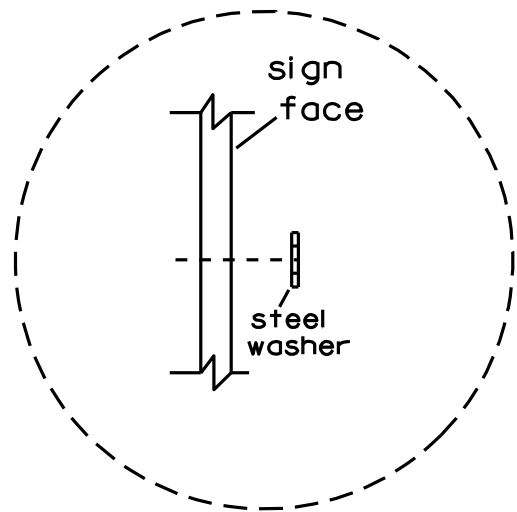


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
- MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
- 1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



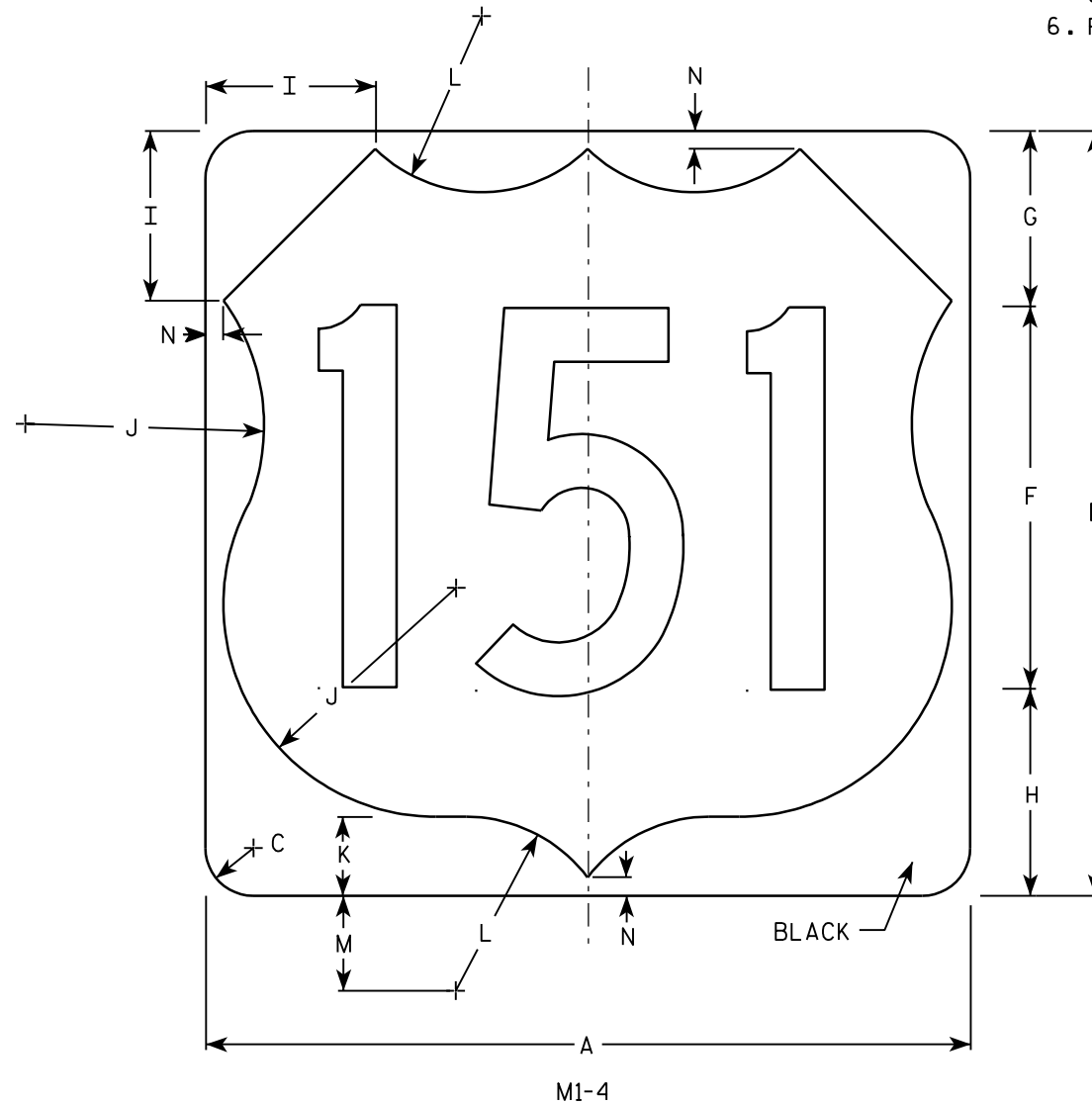
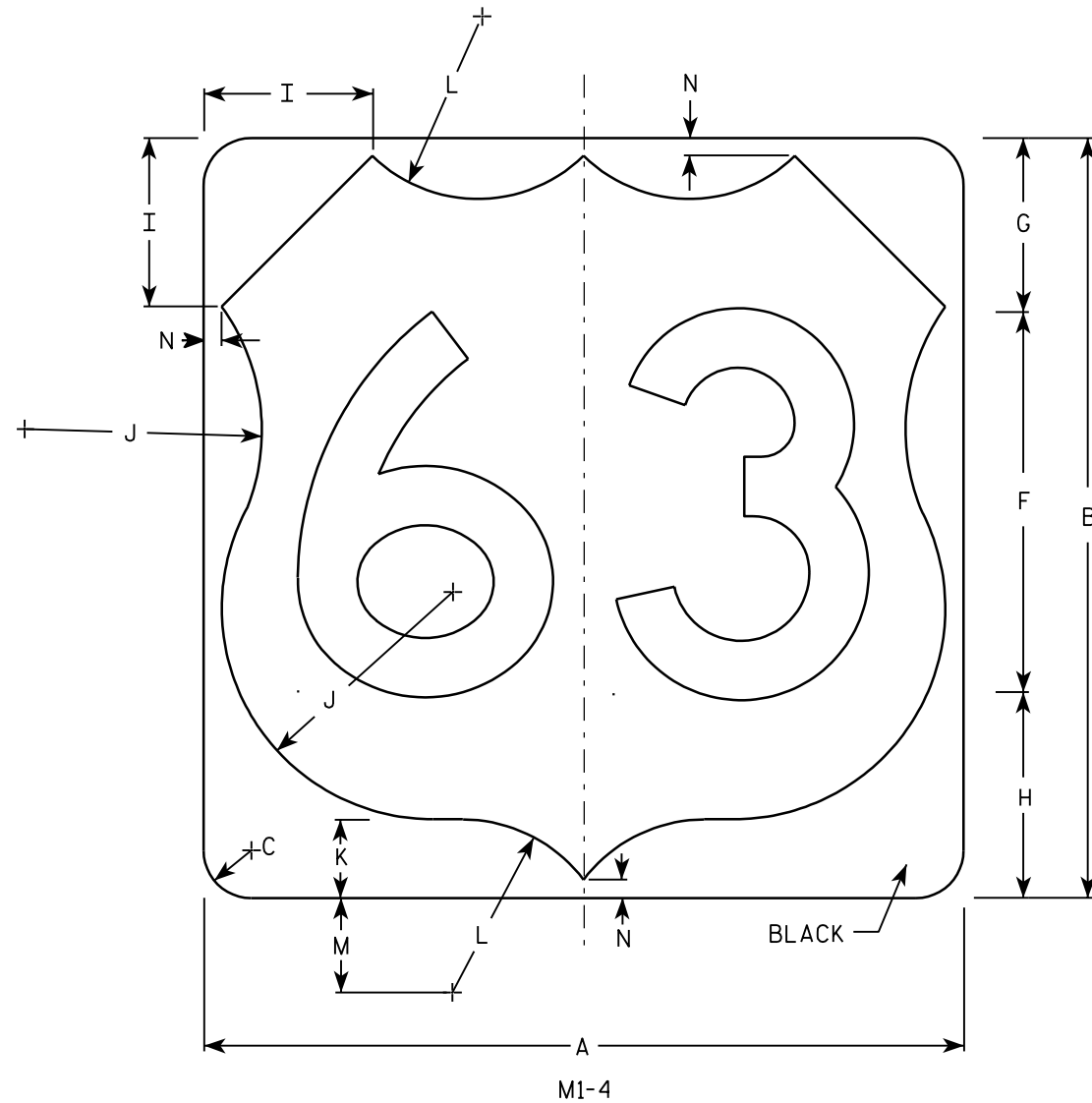
Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

NOTES

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



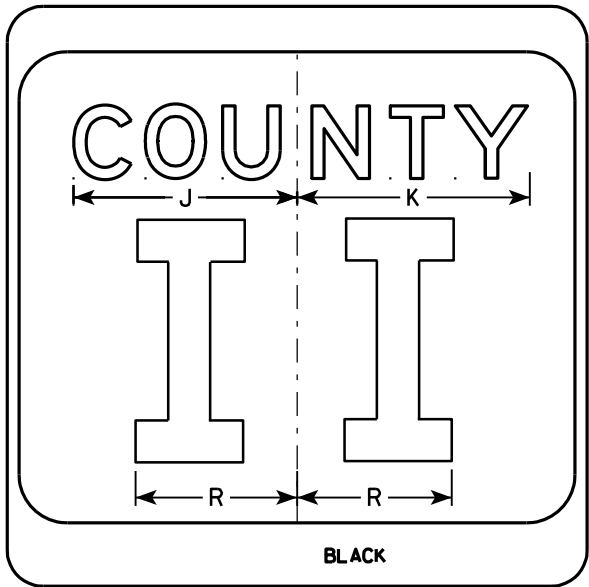
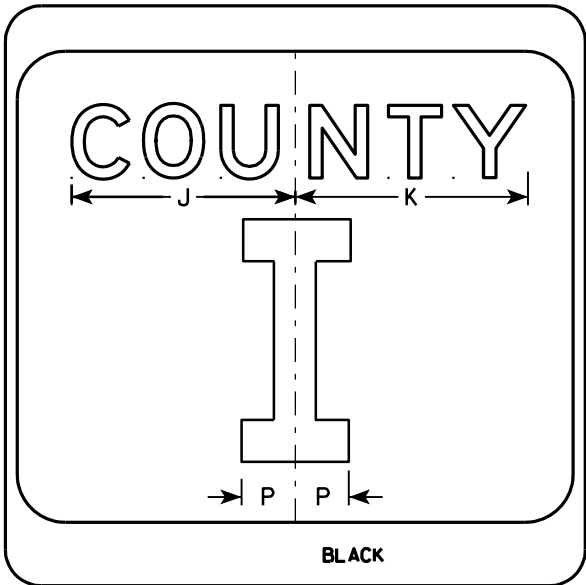
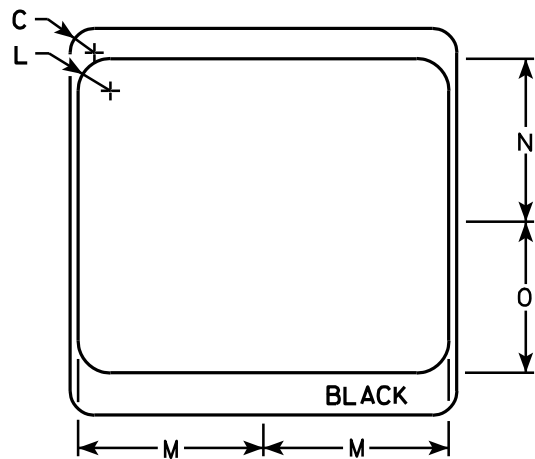
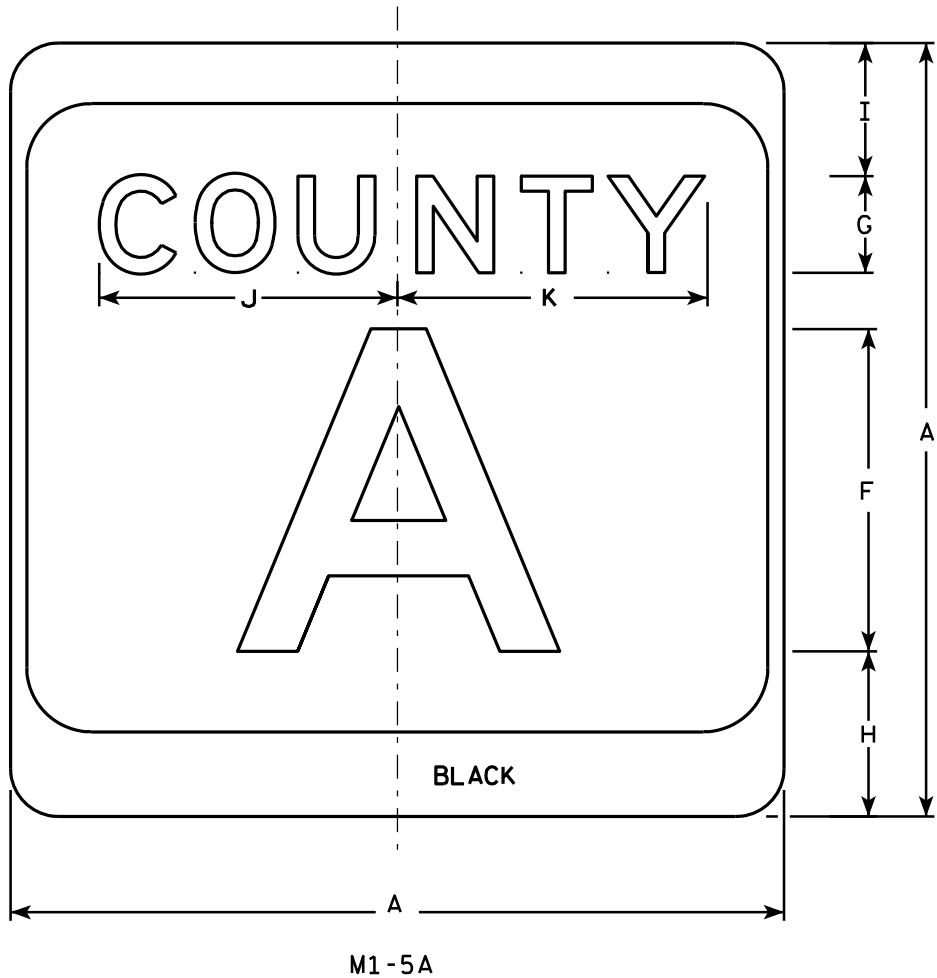
Metric equivalent
for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Areq sq. ft.	Area m ²
1																												
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

PROJECT NO: HWY: COUNTY: SHEET NO: 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

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:

E

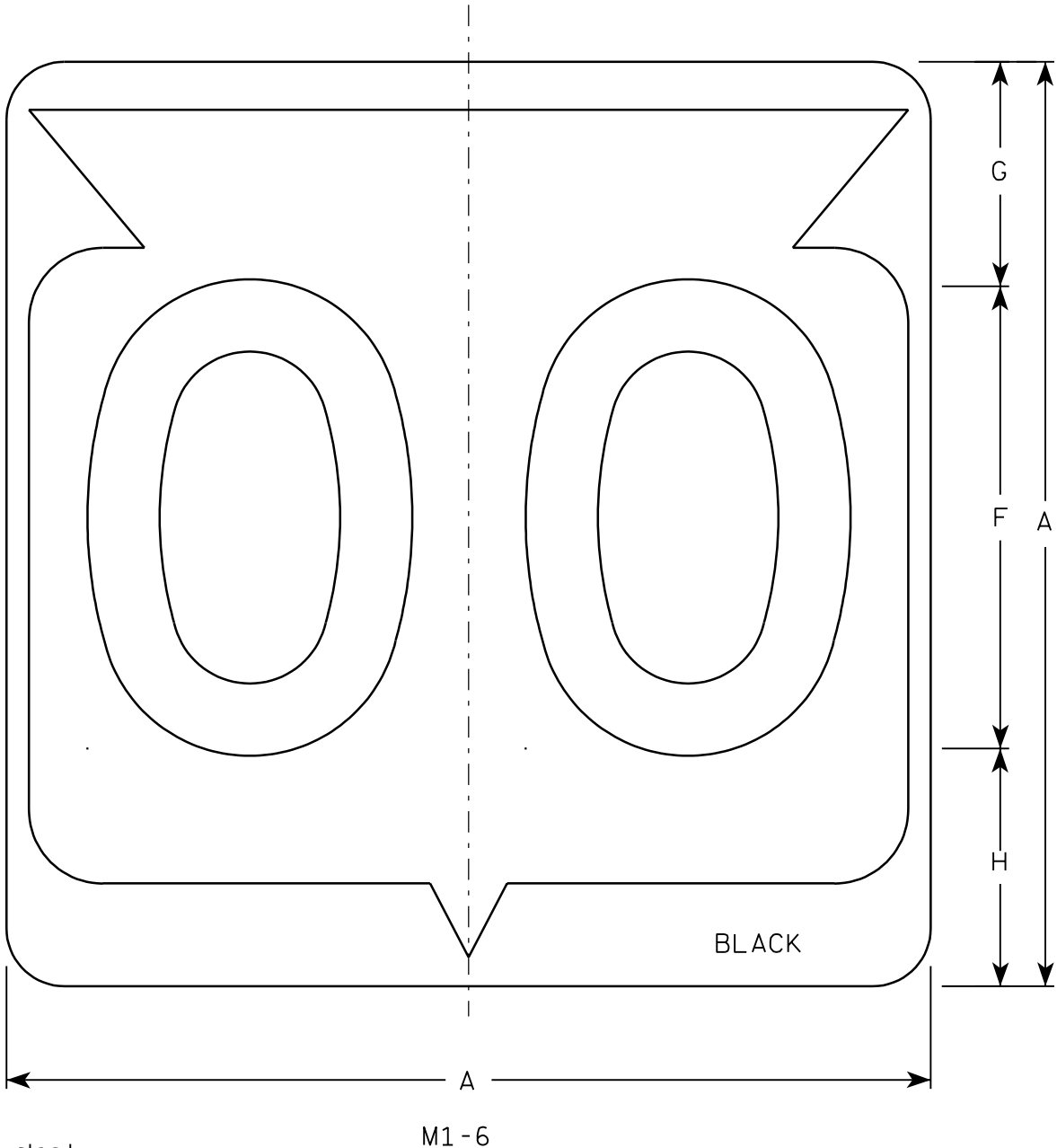
CTH MARKER
M1-5A FOR ASSEMBLIES

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:

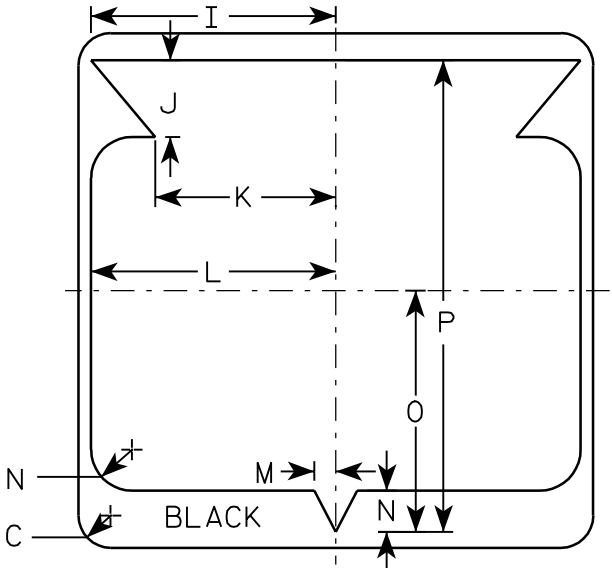
SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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:	E
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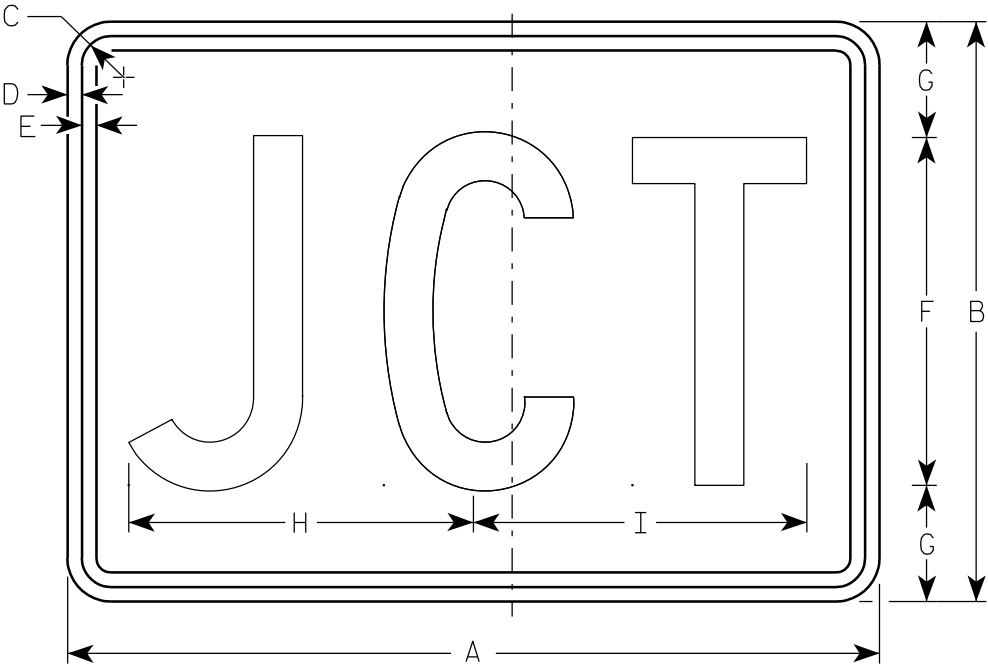
NOTES

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

7



M2-1
MK2-1
MM2-1
MR2-1

Metric equivalent
for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 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	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
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	0.20
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	0.20
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	0.20

PROJECT NO:

HWY:

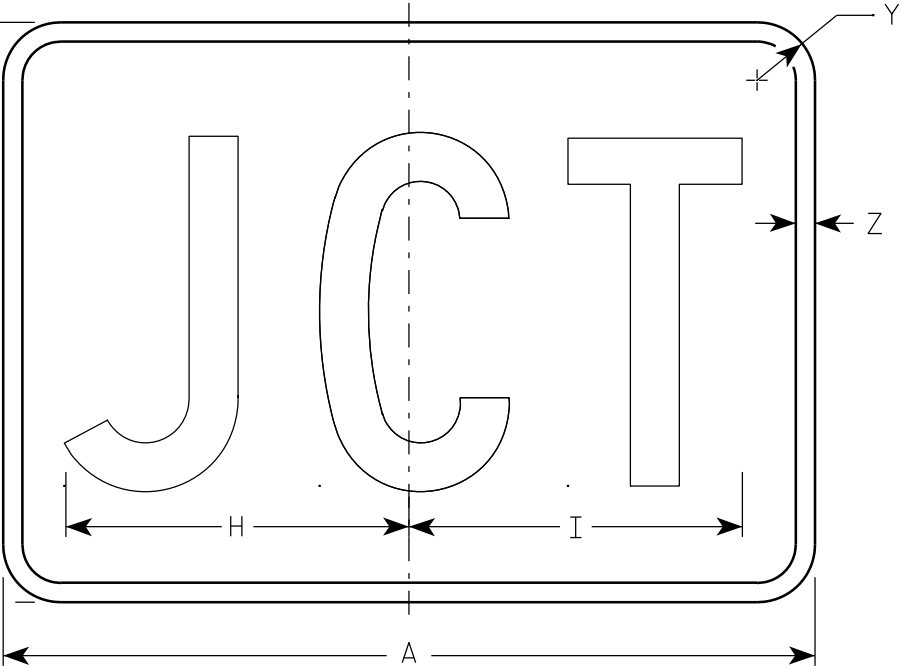
COUNTY:

SHEET NO:

E

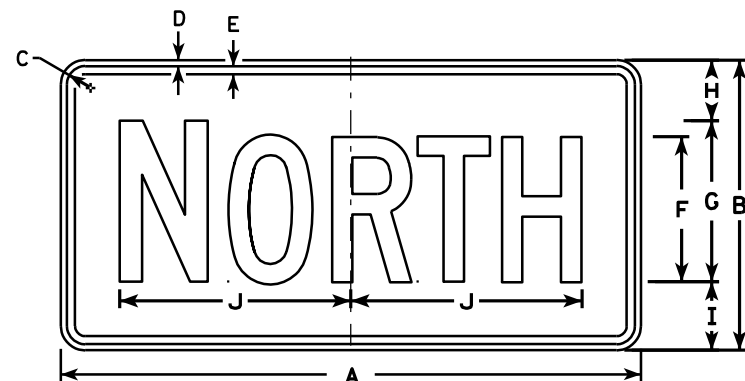
NOTES

- Sign is Type II - See Note 5 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See note 5
Message - See note 5
- Message Series - C
- Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
- M2-1 Background - White - Type H Reflective
(Detour or temporary Signs - Reflective)
Message - Black
MB2-1 Background - Blue
Message - White - Type H Reflective
(Detour or temporary Signs - Reflective)
MG2-1 Background - Green
Message - White - Type H Reflective
MK2-1 Background - Green
Message - White - Type H Reflective
MM2-1 Background - White - Type H Reflective
Message - Green
MN2-1 Background - Brown
Message - White - Type H Reflective
MR2-1 Background - Brown
Message - Yellow - Type H Reflective



MB2-1
MG2-1
MN2-1

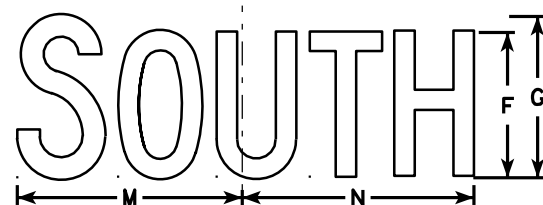
7



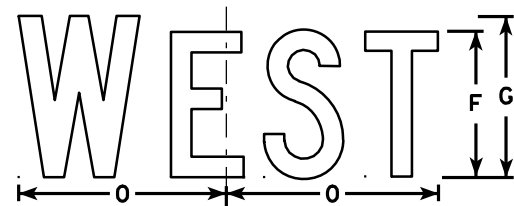
M3-1
MK3-1
M03-1



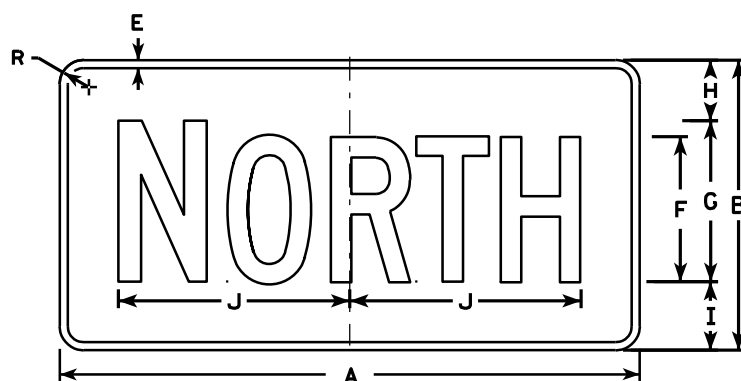
M3-2
MK3-2
M03-2



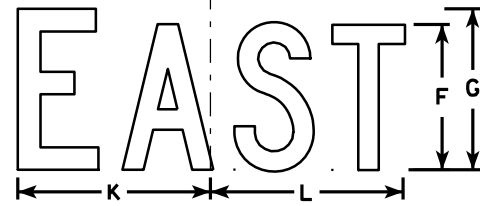
M3-3
MK3-3
M03-3



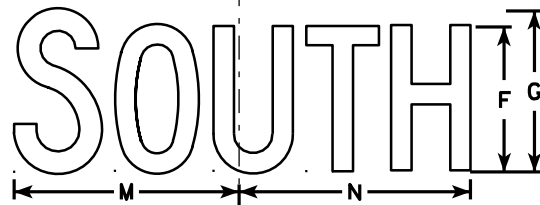
M3-4
MK3-4
M03-4



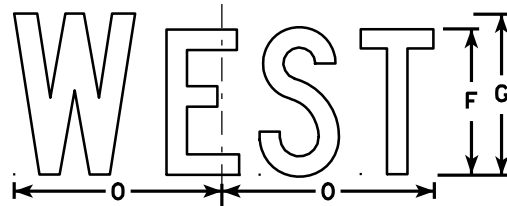
MB3-1
MG3-1
MM3-1
MN3-1



MB3-2
MG3-2
MM3-2
MN3-2



MB3-3
MG3-3
MM3-3
MN3-3



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
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 - Type H Reflective (Detour or temporary signs - Reflective)
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White - Type H Reflective (Detour or temporary signs - Reflective)
MG3-1 thru MG3-4 Background - Green
Message - White - Type H Reflective
MK3-1 thru MK3-4 Background - Green
Message - White - Type H Reflective
MM3-1 thru MM3-4 Background - White - Type H Reflective
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White - Type H Reflective
M03-1 thru M03-4 Background - Orange - Reflective
Message - Black
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

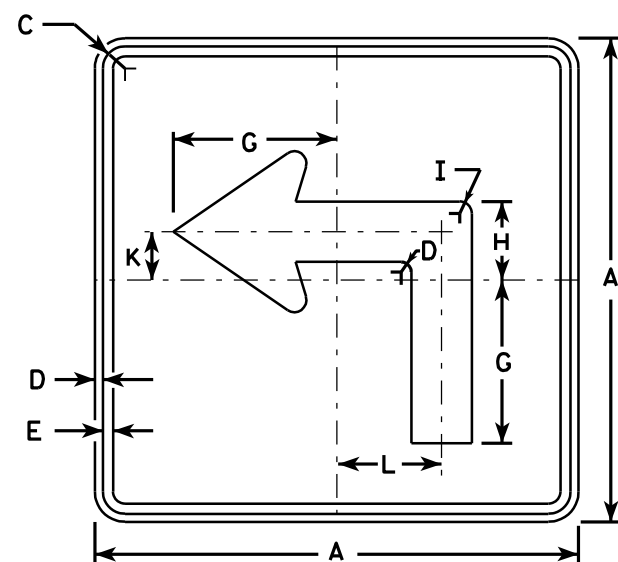
PROJECT NO: HWY: COUNTY: SHEET NO: E

STANDARD SIGNS M3-1 thru M3-4 SERIES

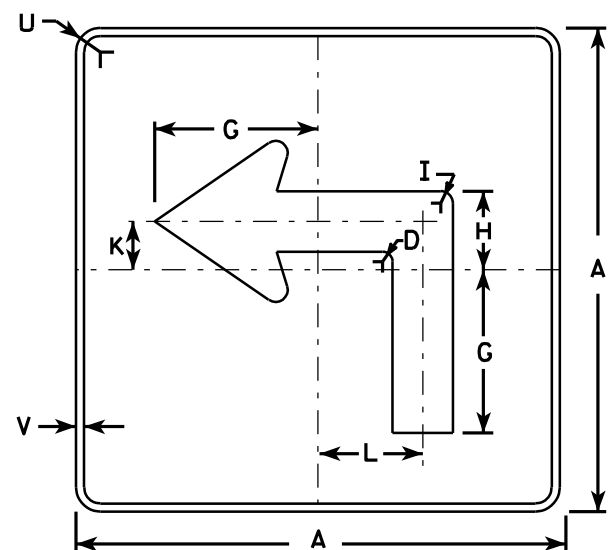
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

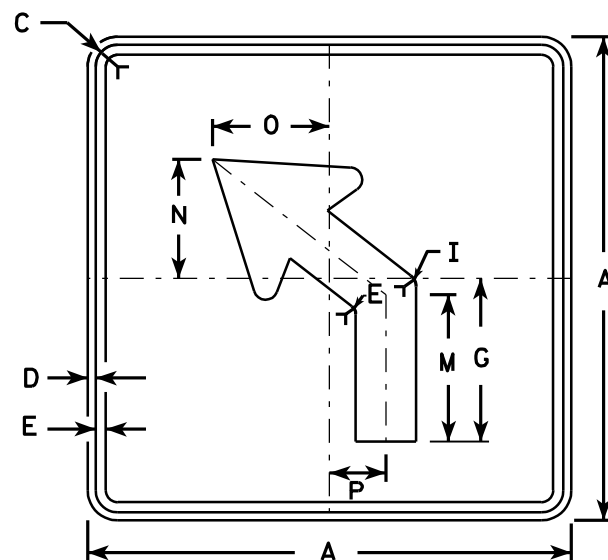
DATE 11/10/10 PLATE NO. M3-1.12



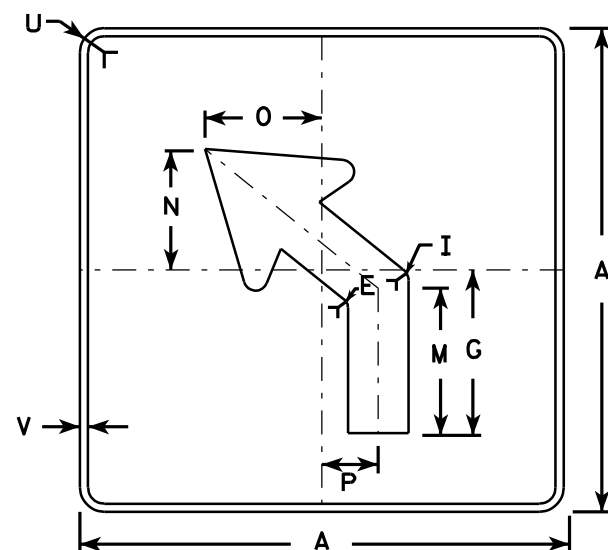
M5-1L
MK5-1L
MM5-1L
M05-1L
MP5-1L
MR5-1L



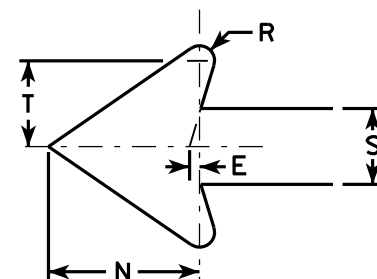
MB5-1L
MG5-1L
MN5-1L



M5-2L
MK5-2L
MM5-2L
M05-2L
MP5-2L
MR5-2L



MB5-2L
MG5-2L
MN5-2L



NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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 - Type H Reflective
Message - Black
MB5-1 and MB5-2 Background - Blue
Message - White - Type H Reflective
MG5-1 and MG5-2 Background - Green
Message - White - Type H Reflective
MK5-1 and MK5-2 Background - Green
Message - White Type H Reflective
MM5-1 and MM5-2 Background - White - Type H Reflective
Message - Green
MN5-1 and MN5-2 Background - Brown
Message - White - Type H Reflective
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 - Type H Reflective
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

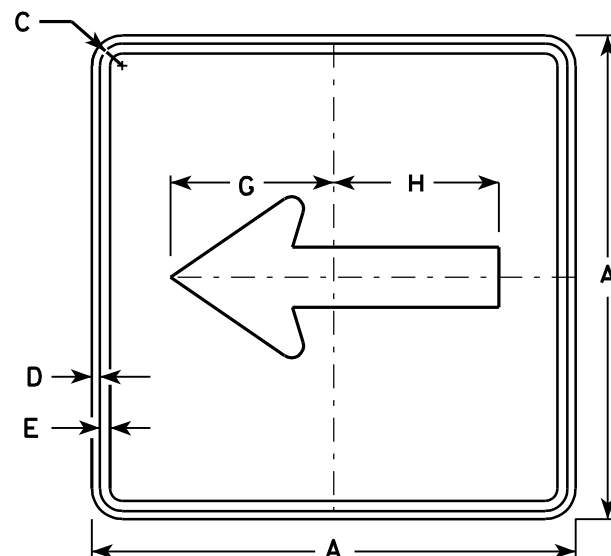
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25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

STANDARD SIGN
M5-1 & M5-2

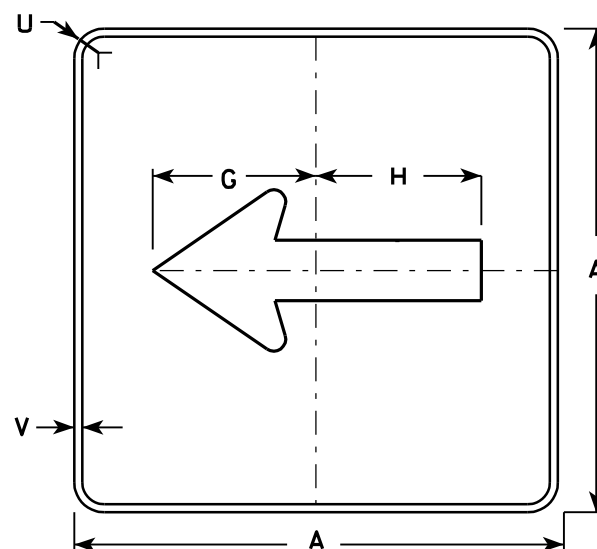
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

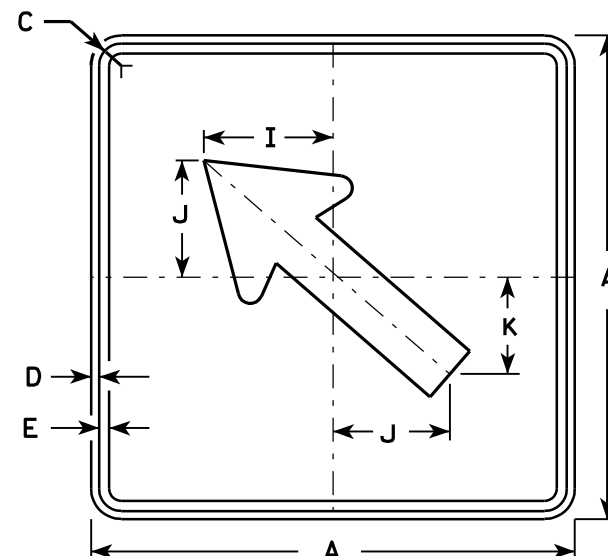
DATE 7/29/13 PLATE NO. M5-1.12



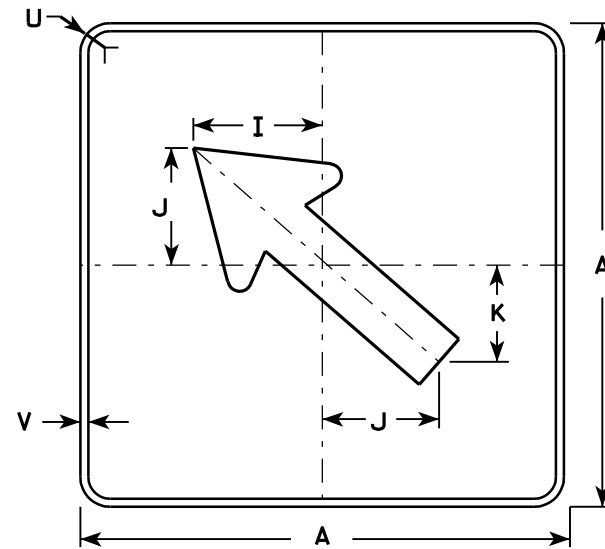
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



MB6-1
MG6-1
MN6-1



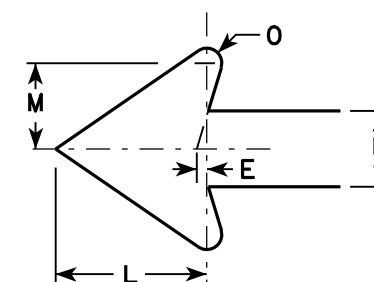
M6-2
MK6-2
MM6-2
MO6-2
MP6-2
MR6-2



MB6-2
MG6-2
MN6-2

NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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 - Type H Reflective Message - Black
 - MB6-1 and MB6-2 Background - Blue Message - White - Type H Reflective
 - MG6-1 and MG6-2 Background - Green Message - White - Type H Reflective
 - MK6-1 and MK6-2 Background - Green Message - White - Type H Reflective
 - MM6-1 and MM6-2 Background - White - Type H Reflective Message - Green
 - MN6-1 and MN6-2 Background - Brown Message - White - Type H Reflective
 - MO6-1 and MO6-2 Background - Orange - Type F Reflective Message - Black
 - MP6-1 and MP6-2 Background - White - Type H Reflective Message - Blue
 - MR6-1 and MR6-2 Background - Brown Message - Yellow - Type H Reflective



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

STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-1.13

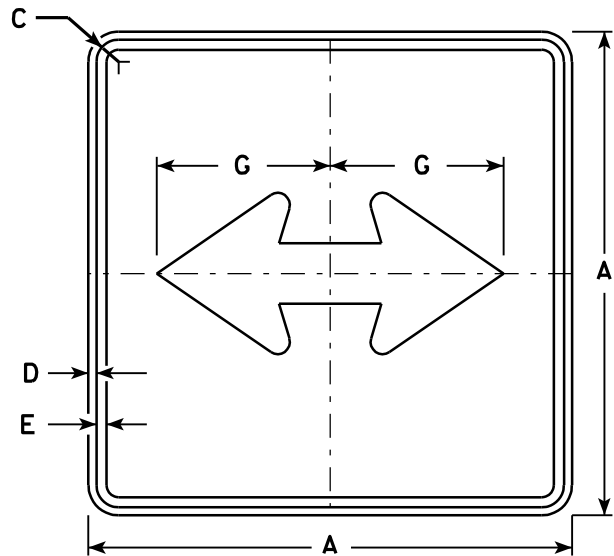
PROJECT NO:

HWY:

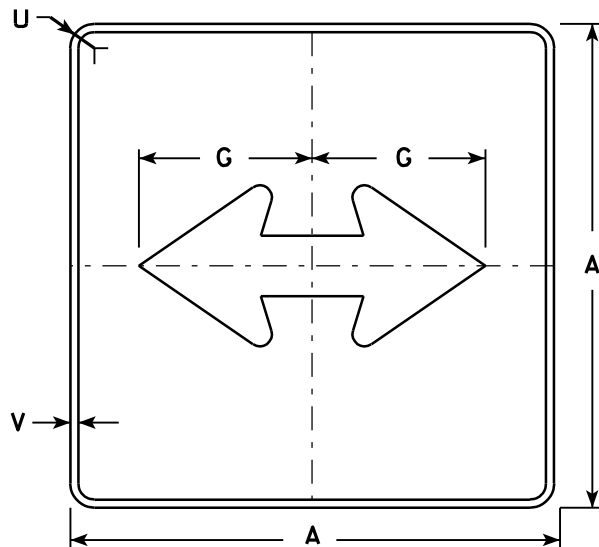
COUNTY:

SHEET NO:

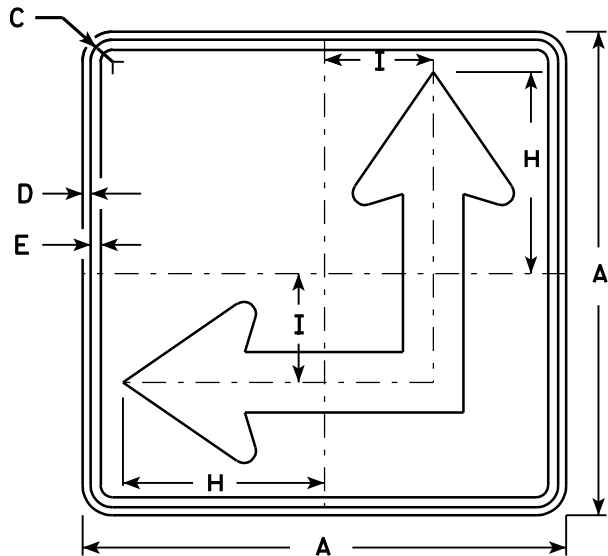
E



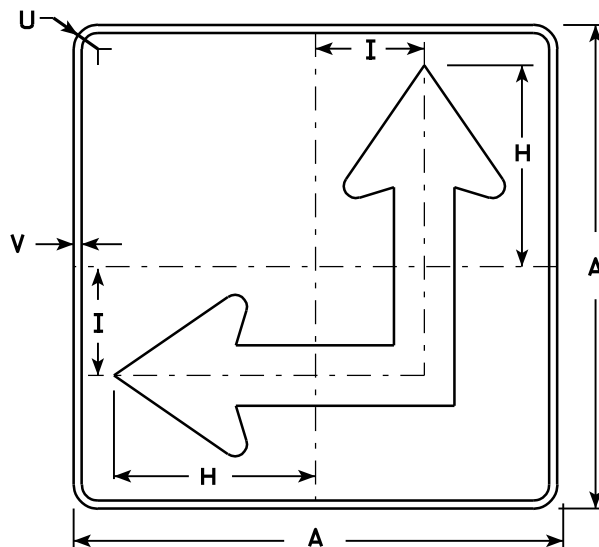
M6 - 4
MK6 - 4
MM6 - 4
MO6 - 4
MP6 - 4
MR6 - 4



MB6 - 4
MG6 - 4
MN6 - 4



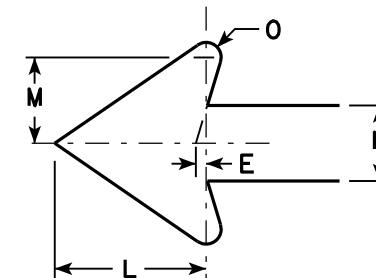
M6 - 6
MK6 - 6
MM6 - 6
MO6 - 6
MP6 - 6
MR6 - 6



MB6 - 6
MG6 - 6
MN6 - 6

NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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 - Type H Reflective
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White - Type H Reflective
MG6-4 and MG6-6 Background - Green
Message - White - Type H Reflective
MK6-4 and MK6-6 Background - Green
Message - White - Type H Reflective
MM6-4 and MM6-6 Background - White - Type H Reflective
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White - Type H Reflective
MO6-4 and MO6-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White - Type H Reflective
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow - Type H Reflective
- 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

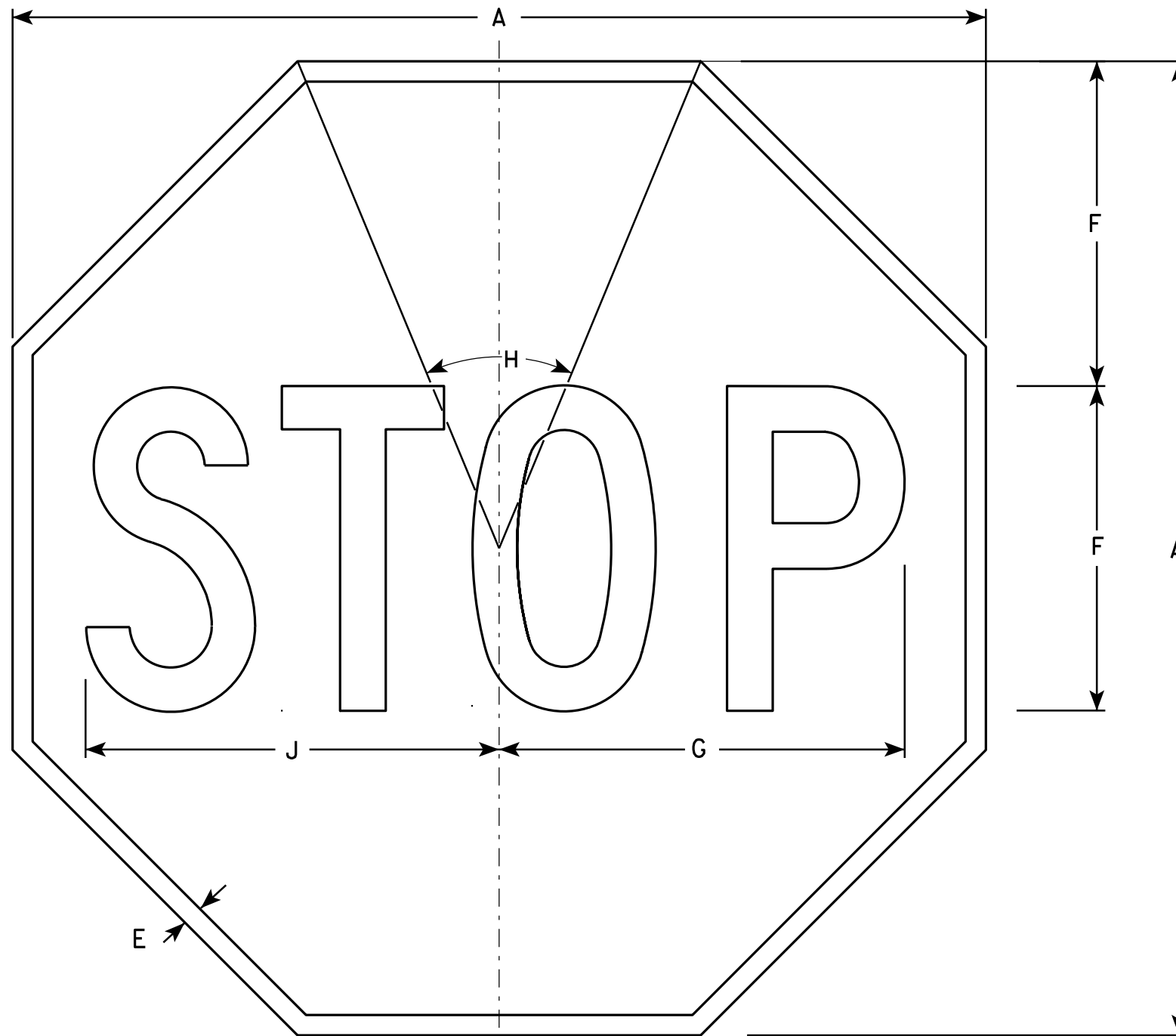
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-4.8



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - C

R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
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 12/03/10 PLATE NO. R1-1.12

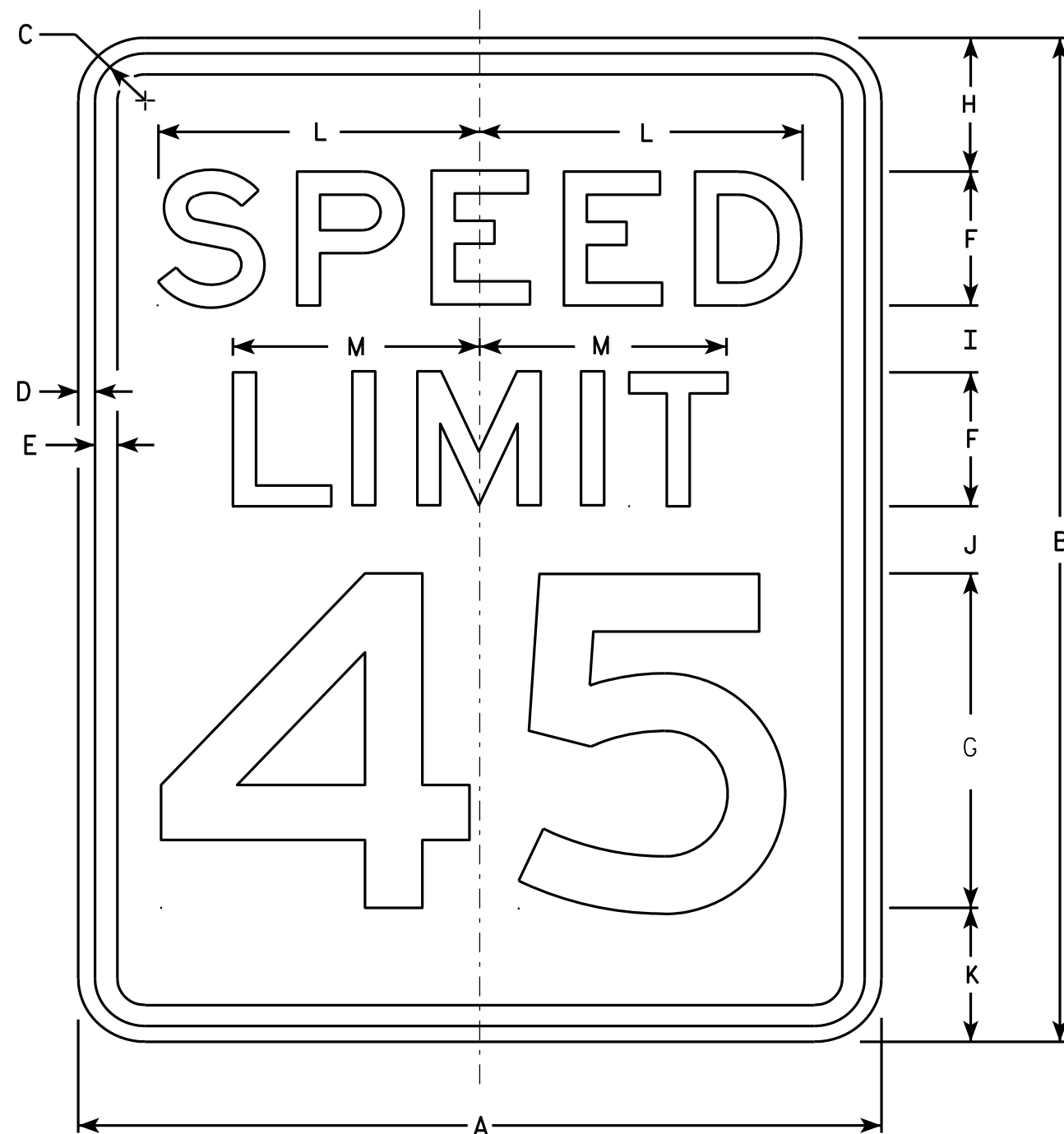
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

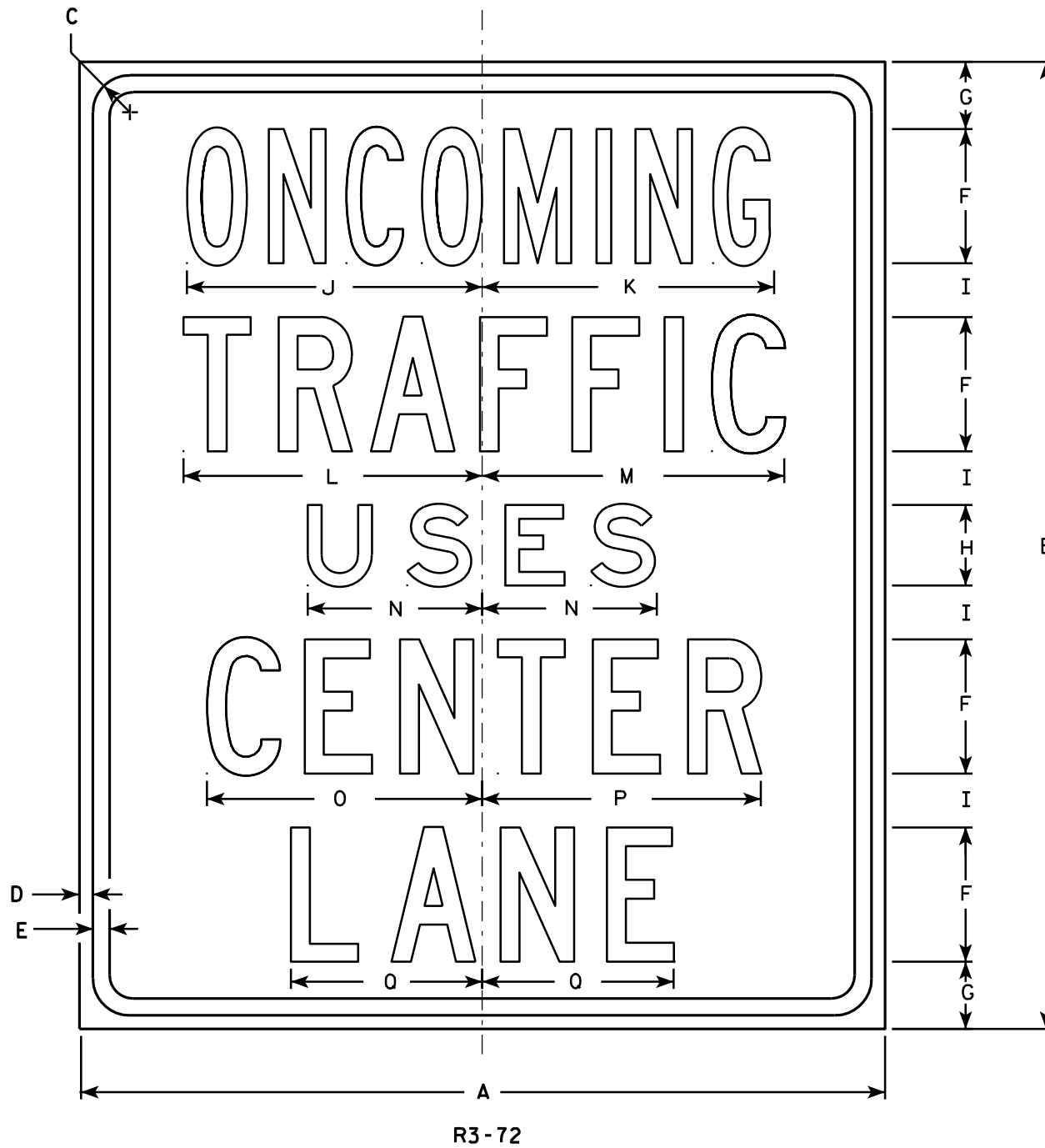
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - Line 1 is Series B, Lines 2, 4 and 5 are Series C, and Line 3 is 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.

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	36	1 3/8	1/2	5/8	5	2 1/2	3	2	11	10 7/8	11 1/8	11 1/4	6 1/2	10 1/4	10 3/8	7 1/8										7.50
2S	30	36	1 3/8	1/2	5/8	5	2 1/2	3	2	11	10 7/8	11 1/8	11 1/4	6 1/2	10 1/4	10 3/8	7 1/8										7.50
2M	30	36	1 3/8	1/2	5/8	5	2 1/2	3	2	11	10 7/8	11 1/8	11 1/4	6 1/2	10 1/4	10 3/8	7 1/8										7.50
3																											
4																											
5																											

STANDARD SIGN R3-72

WISCONSIN DEPT OF TRANSPORTATION

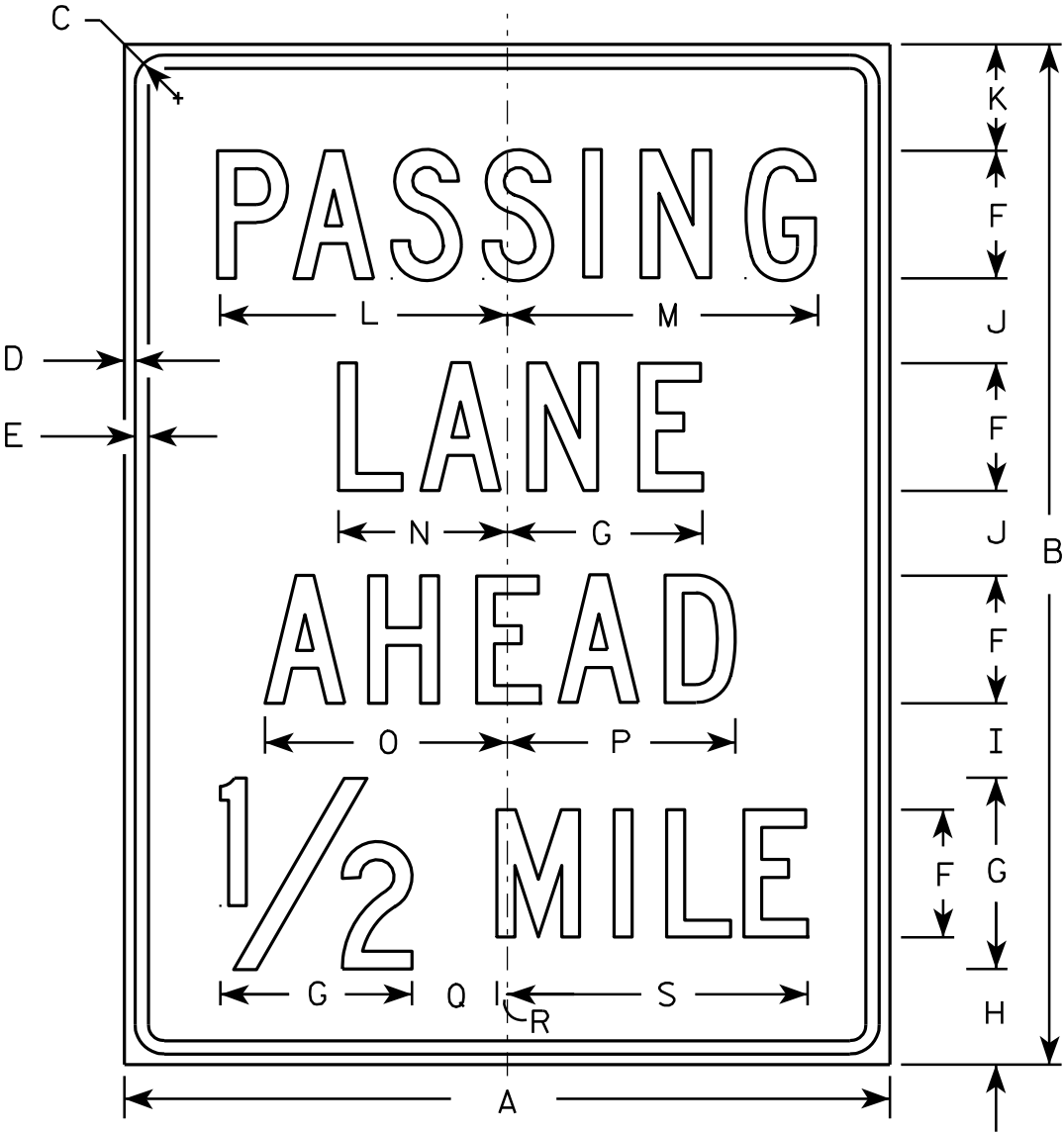
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R3-72.5

PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

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



R4-51

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	48	1 ³ / ₈	¹ / ₂	⁵ / ₈	6	9	4 ¹ / ₂	3 ¹ / ₂	4	5	13 ⁵ / ₈	14 ¹ / ₂	8	11 ³ / ₈	10 ³ / ₄	4	¹ / ₂	14 ¹ / ₈								12.0
2M	36	48	1 ³ / ₈	¹ / ₂	⁵ / ₈	6	9	4 ¹ / ₂	3 ¹ / ₂	4	5	13 ⁵ / ₈	14 ¹ / ₂	8	11 ³ / ₈	10 ³ / ₄	4	¹ / ₂	14 ¹ / ₈								12.0
3																											
4																											
5																											

STANDARD SIGN
R4-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

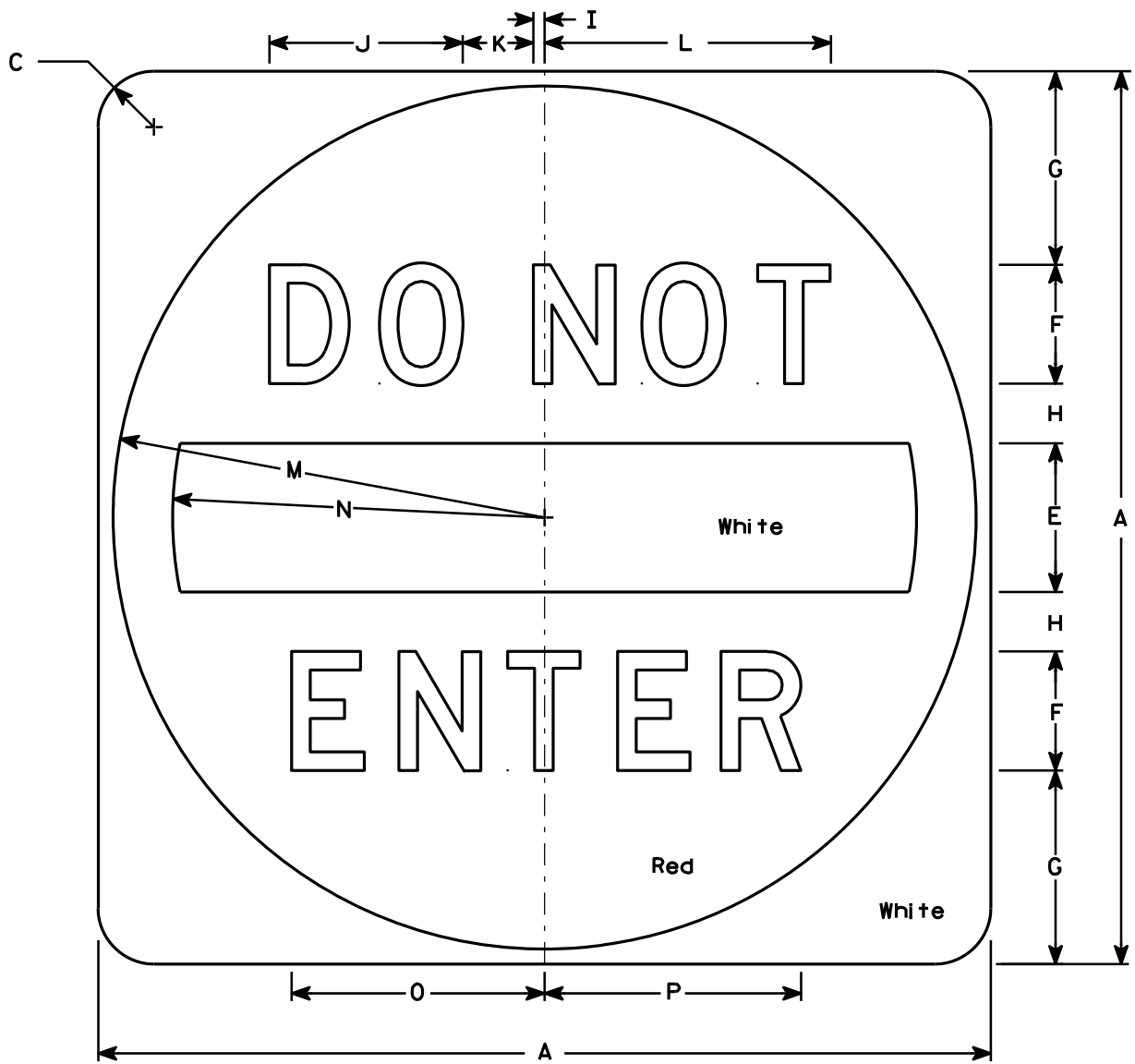
DATE 3/29/2011 PLATE NO. R4-51.4

NOTES

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

Background - See detail

Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the corners shall be rounded.



R5 - 1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7⁄8		5	4	6 1⁄2	2	3⁄8	6 1⁄2	2 3⁄8	9 5⁄8	14 1⁄2	12 1⁄2	8 1⁄2	8 5⁄8											6.26
2M	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
3	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
4	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
5	48		3		8	6	11	3	5⁄8	9 3⁄4	3 5⁄8	14 1⁄2	23 1⁄2	20	12 3⁄4	12 7⁄8											16.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

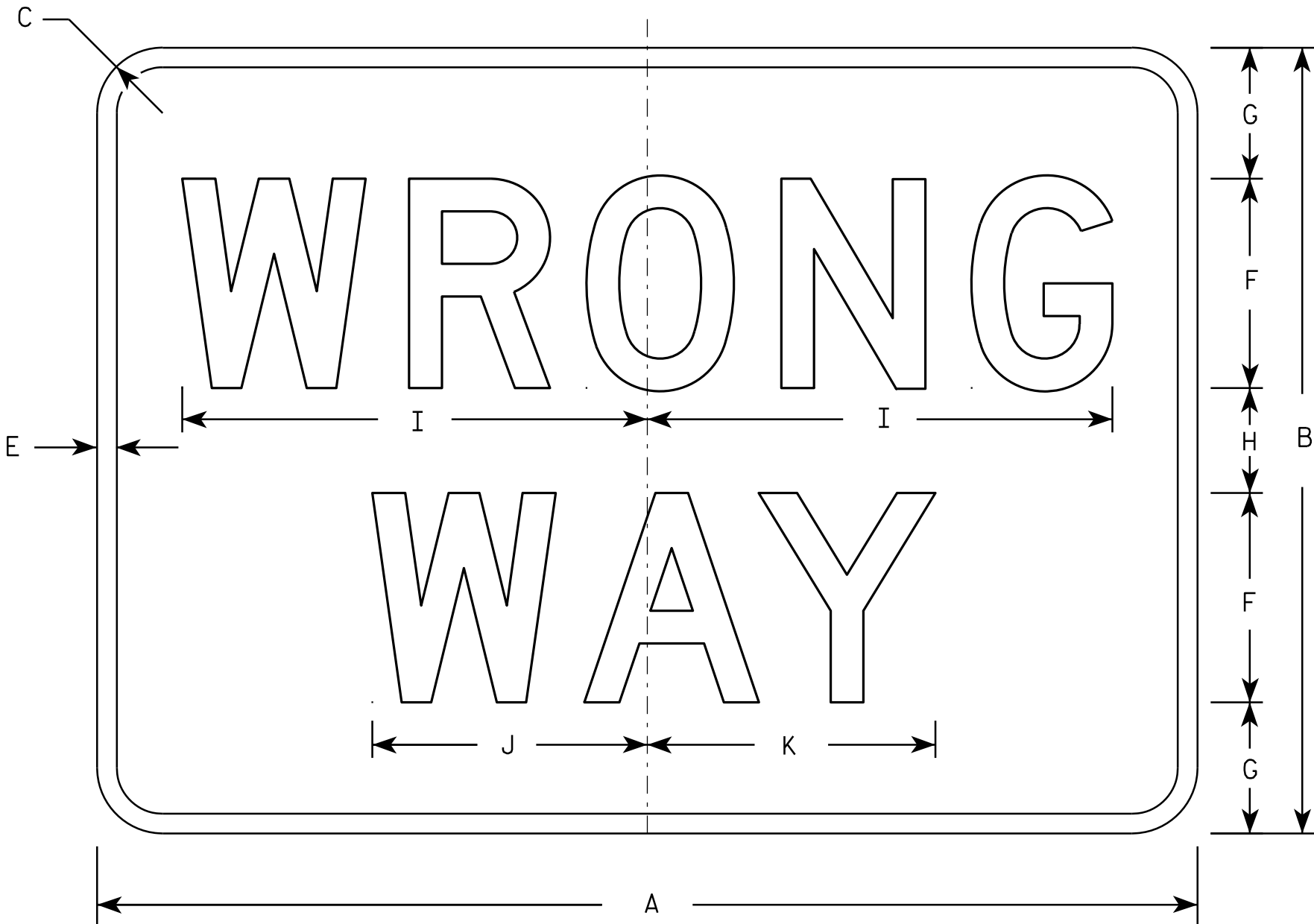
STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



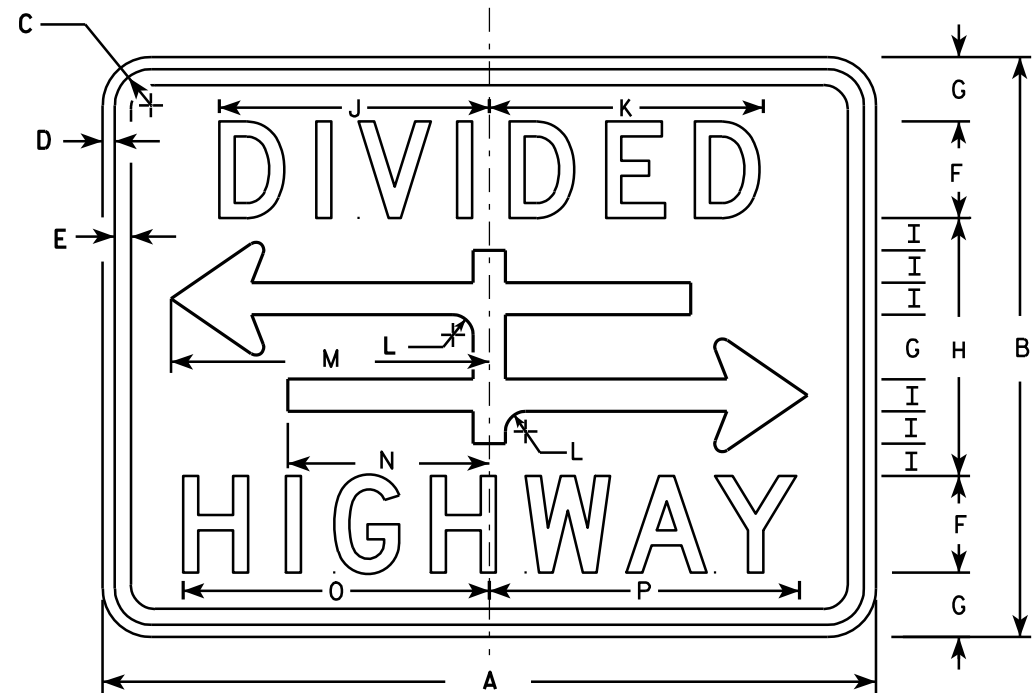
R5-1A

NOTES

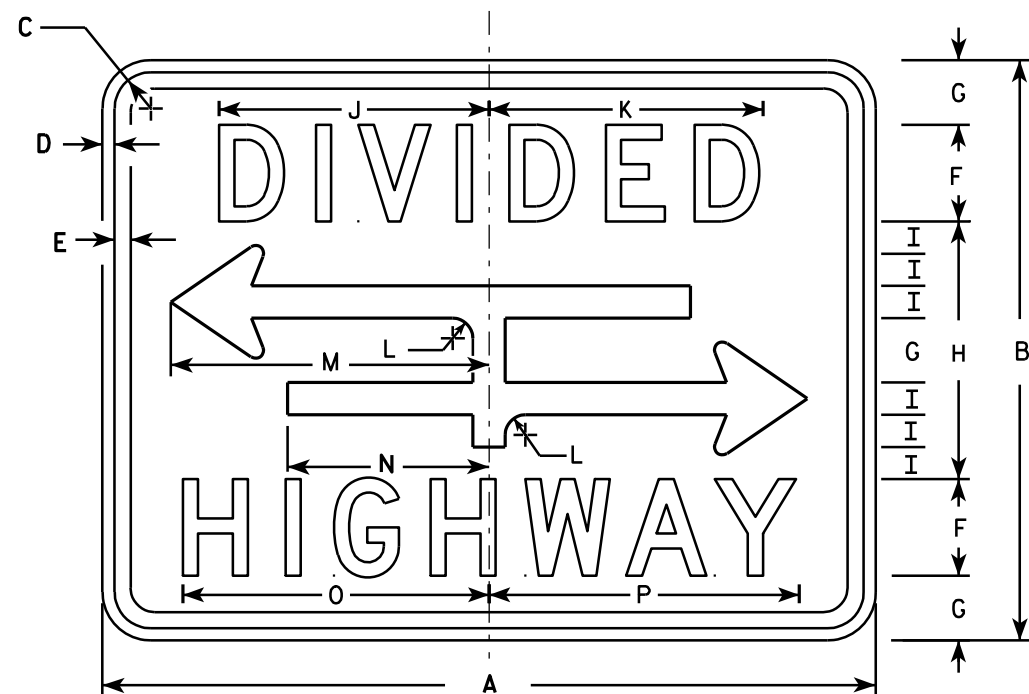
- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

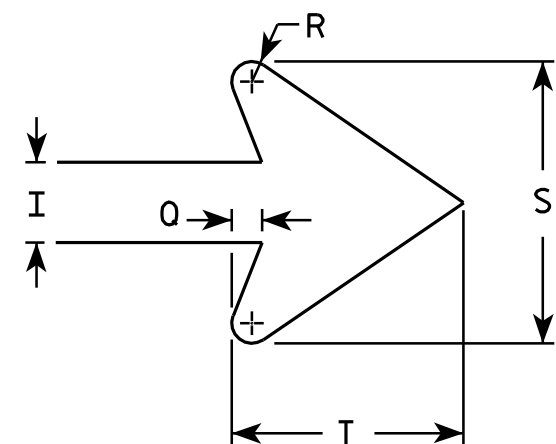
STANDARD SIGN R5-1A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/17/10	PLATE NO. R5-1A.2



R6-3



R6-3A



ARROW DETAIL

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	24	18	1 1/8	3/8	3/8	3	2	8	1	8 3/8	8 1/2	5/8	9 7/8	6 1/4	9 1/2	9 5/8	3/8	1/4	3 1/2	2 3/4							3.0
2S	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
2M	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
3																											
4																											
5																											

PROJECT NO:

STANDARD SIGN
R6-3 & R6-3A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R6-3.5

SHEET NO:

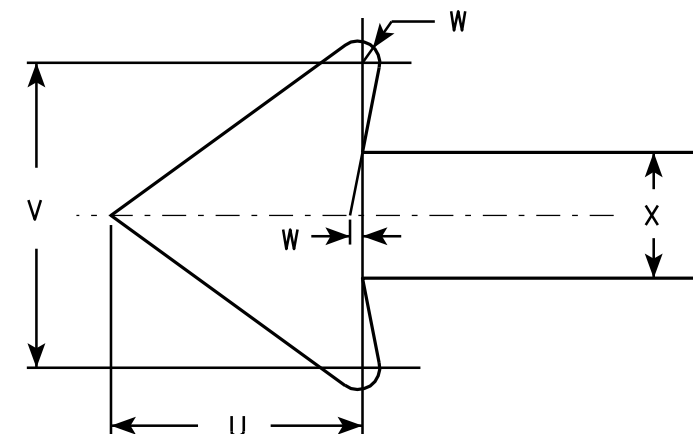
E



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

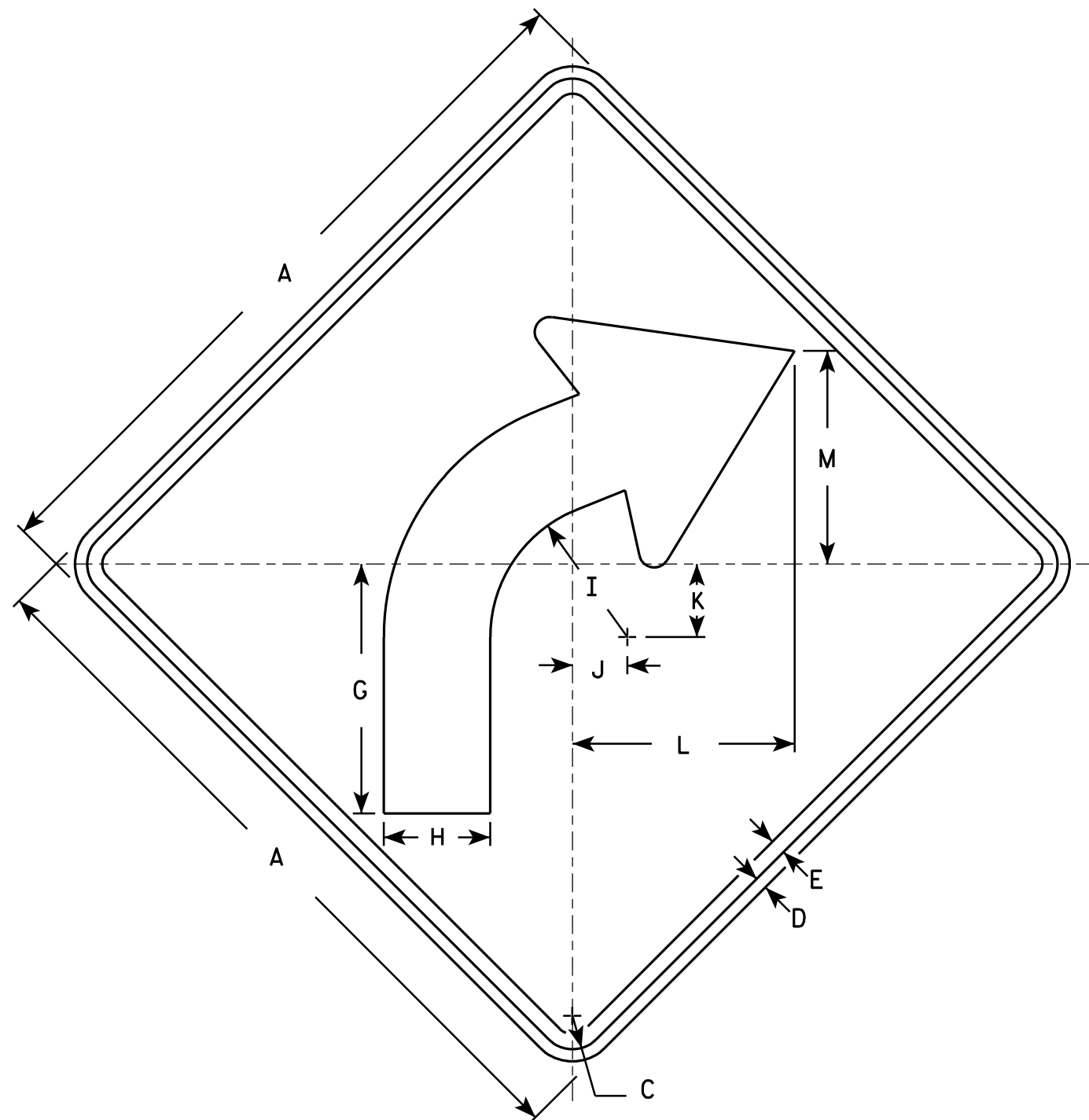
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

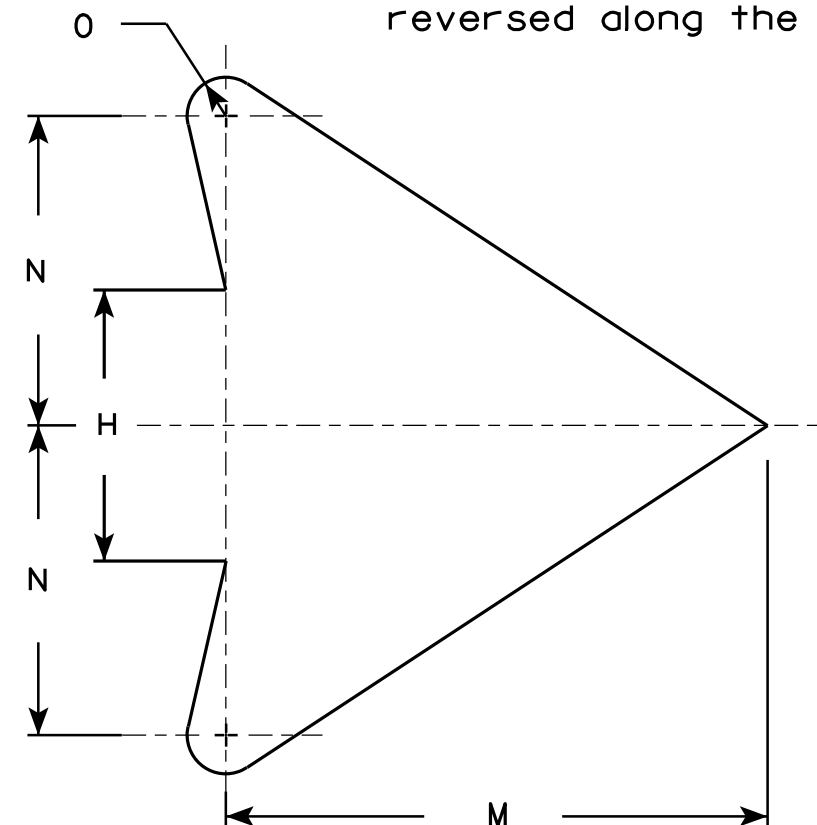
PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - Black
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- W1-2L 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

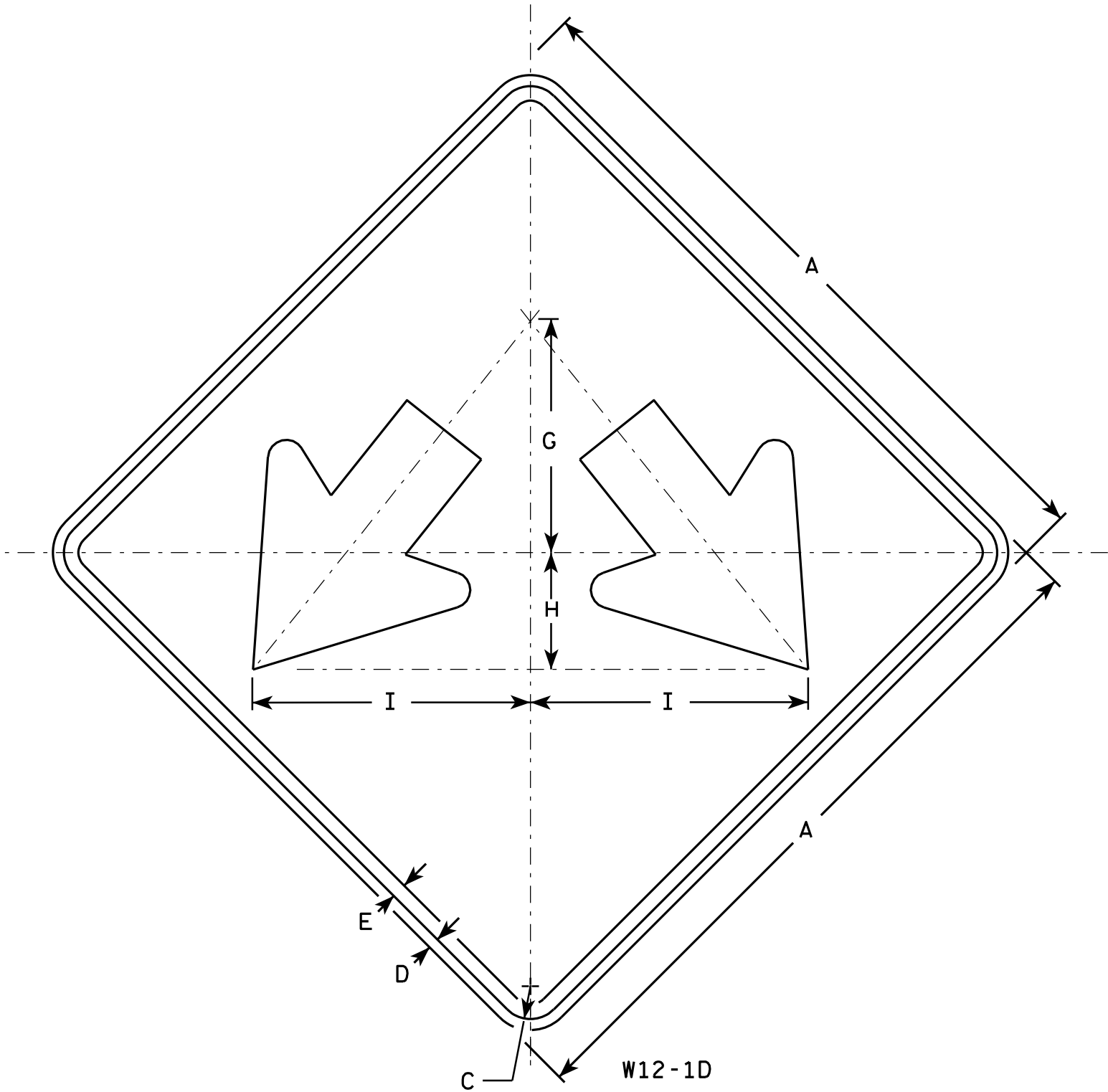
PROJECT NO:

HWY:

COUNTY:

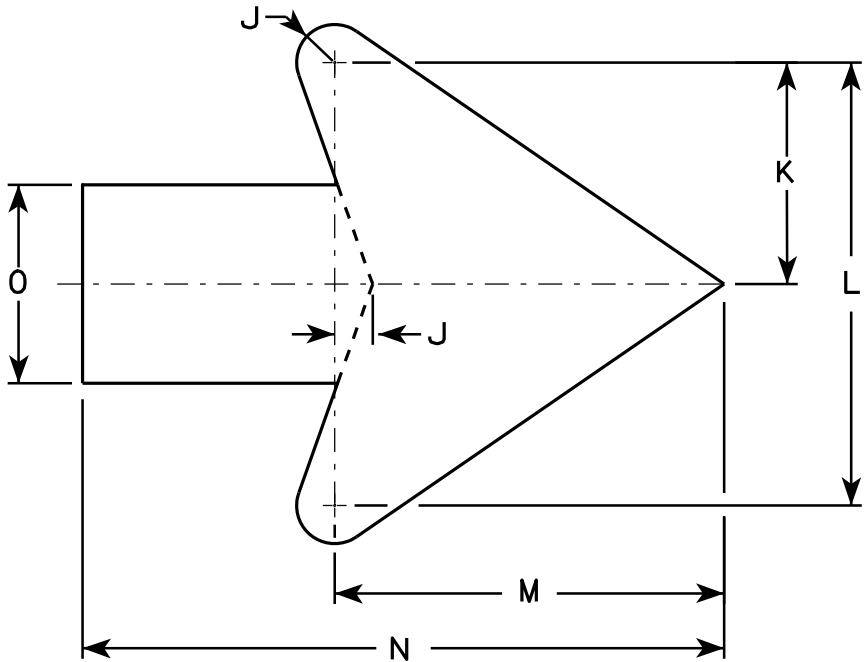
SHEET NO:

E



NOTES

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



Arrow Detail

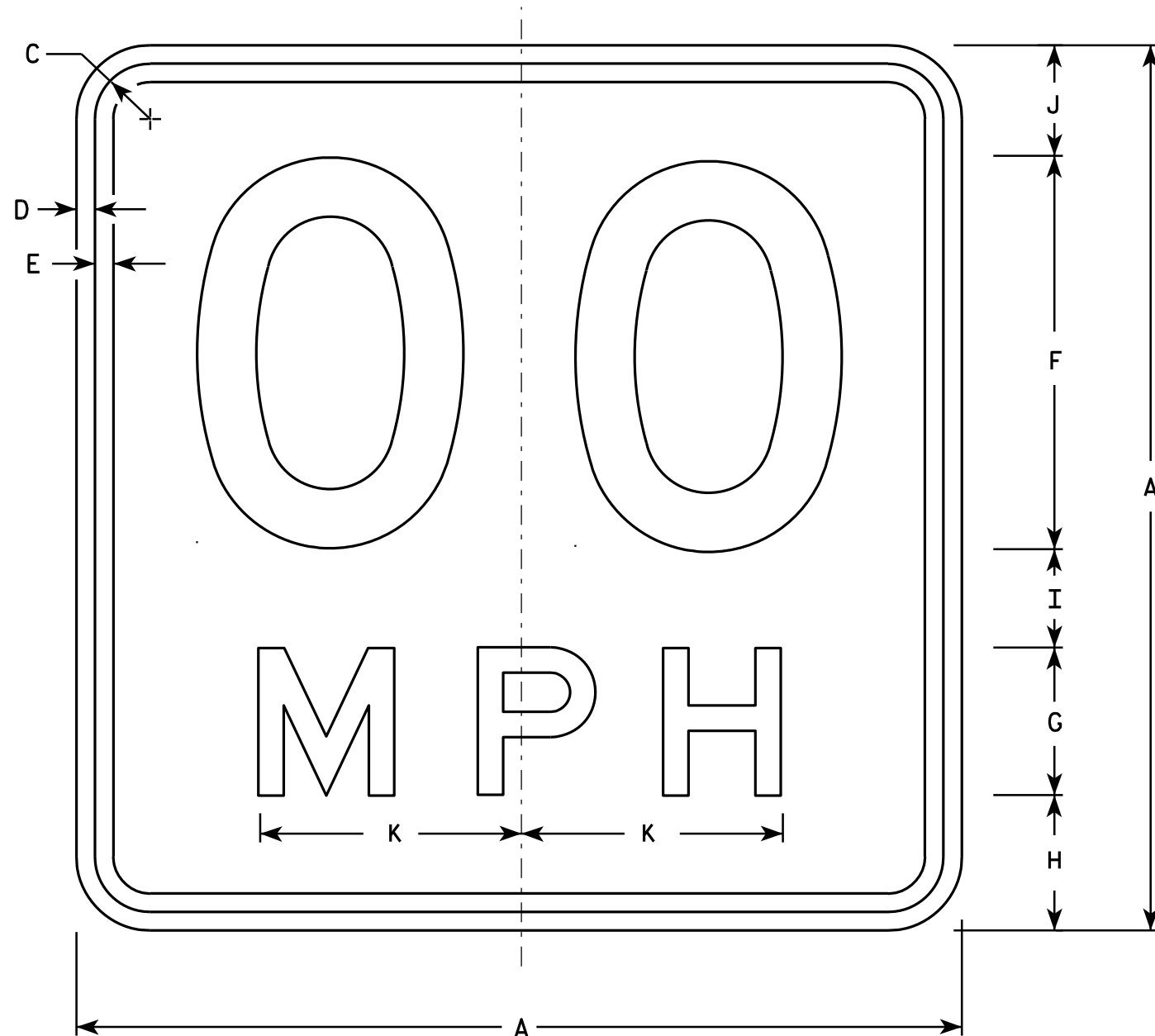
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	48		2 1/4	3/4	1		16	8	19	1 1/4	7 1/4	14 1/2	12 3/4	21	6 1/4												16.0

STANDARD SIGN
W12-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1D.15



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.
1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

PROJECT NO:

HWY:

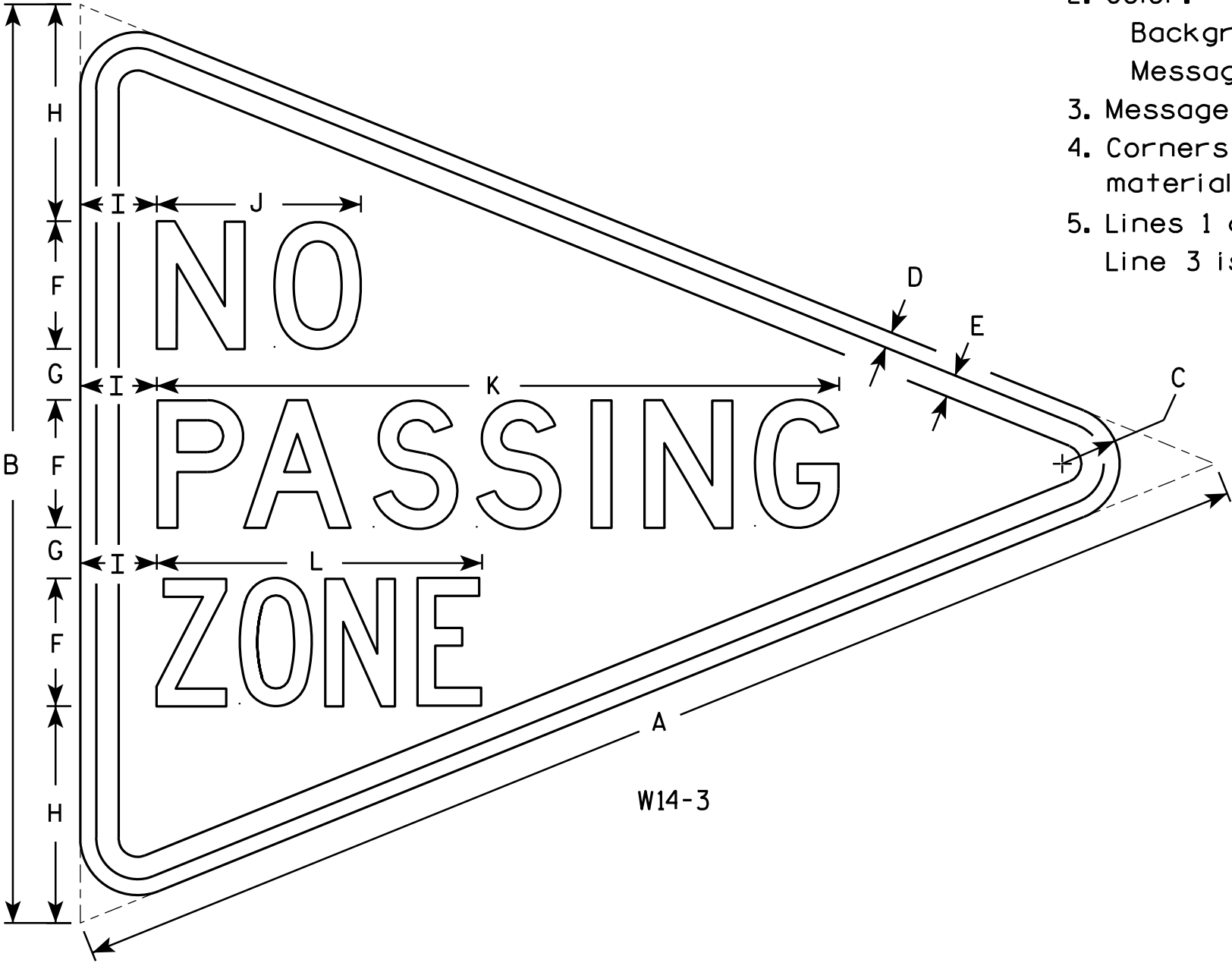
COUNTY:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - See note 5
- 4. Corners and borders shall be rounded on all base materials for this sign.
- 5. Lines 1 and 2 are Series D.
Line 3 is 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																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

PROJECT NO:

HWY:

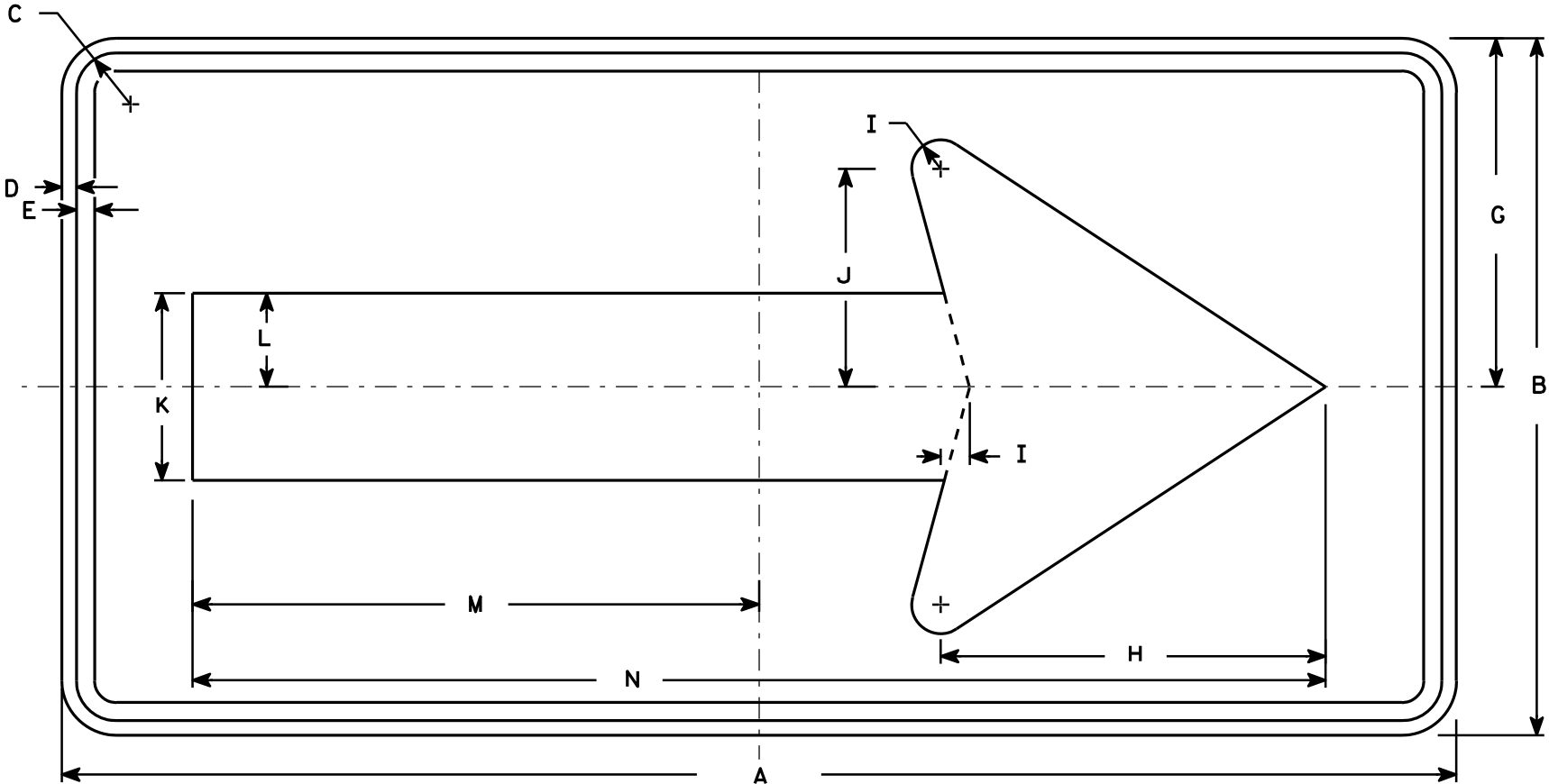
COUNTY:

SHEET NO:

E

NOTES

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



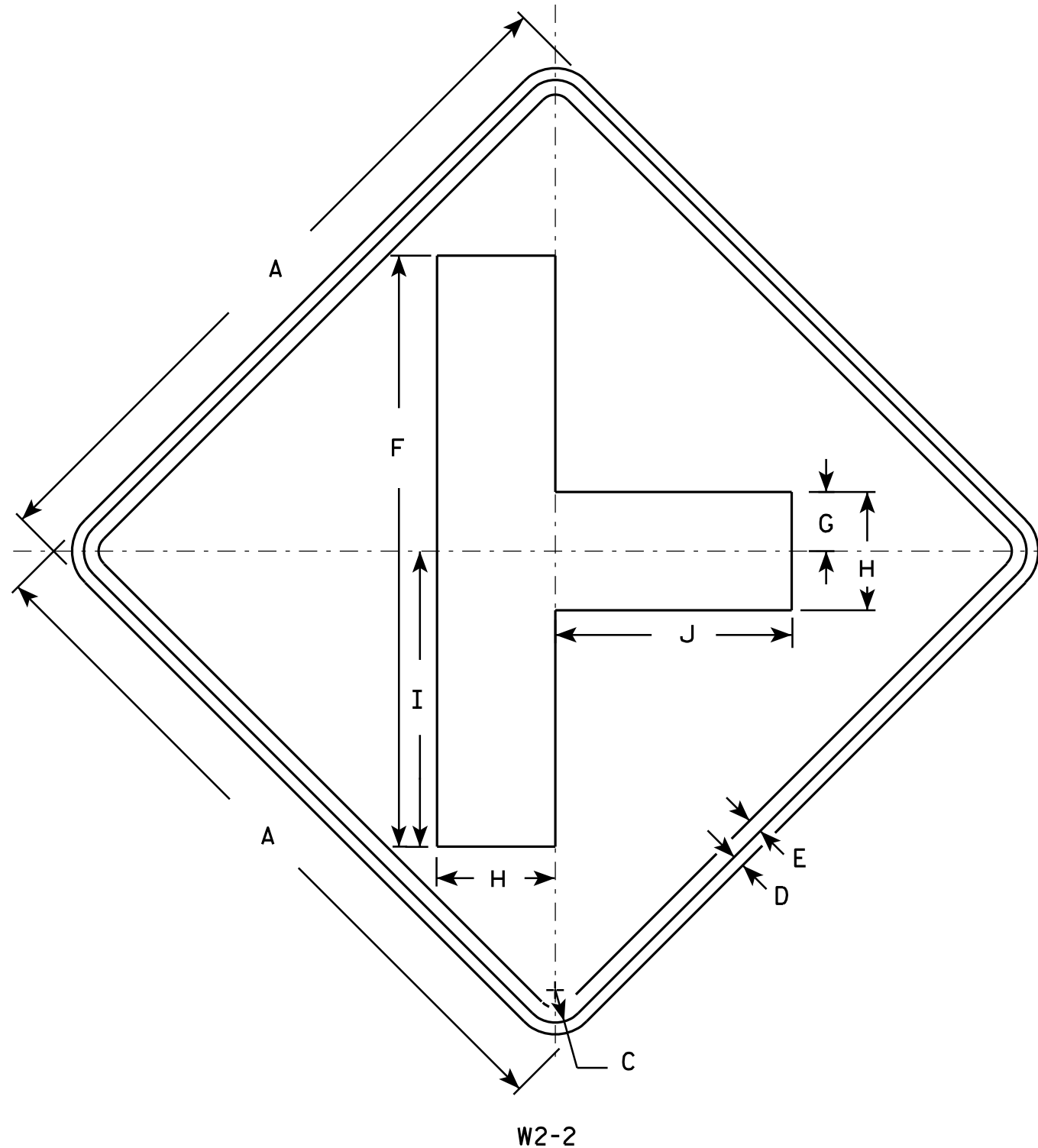
W1-6

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	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W1-6.8



NOTES

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

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																											

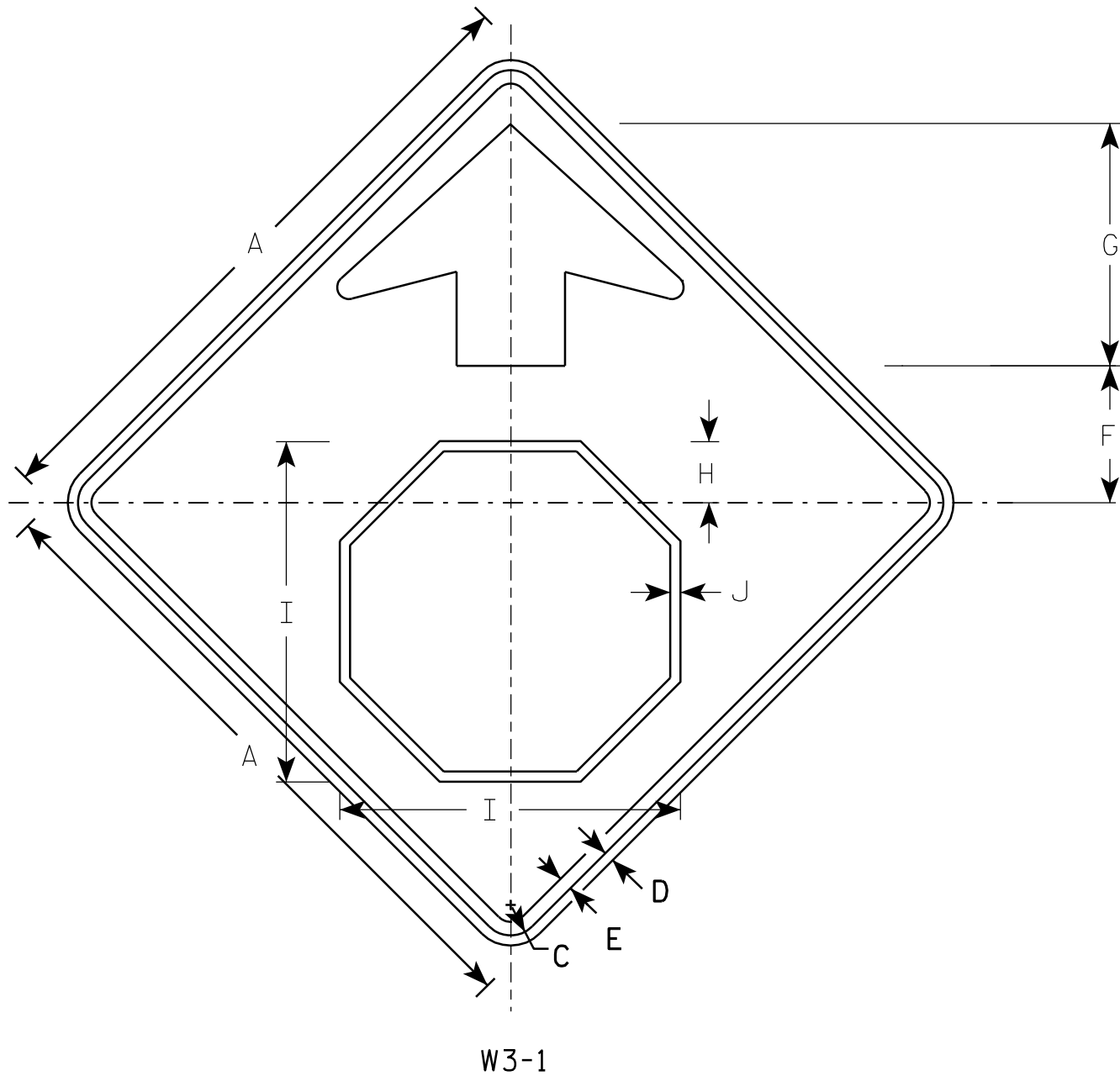
STANDARD SIGN W2-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

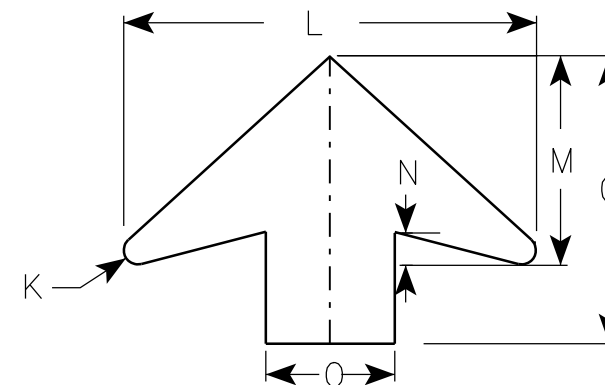
DATE 5/29/12 PLATE NO. W2-2.6

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

STANDARD SIGN W3-1

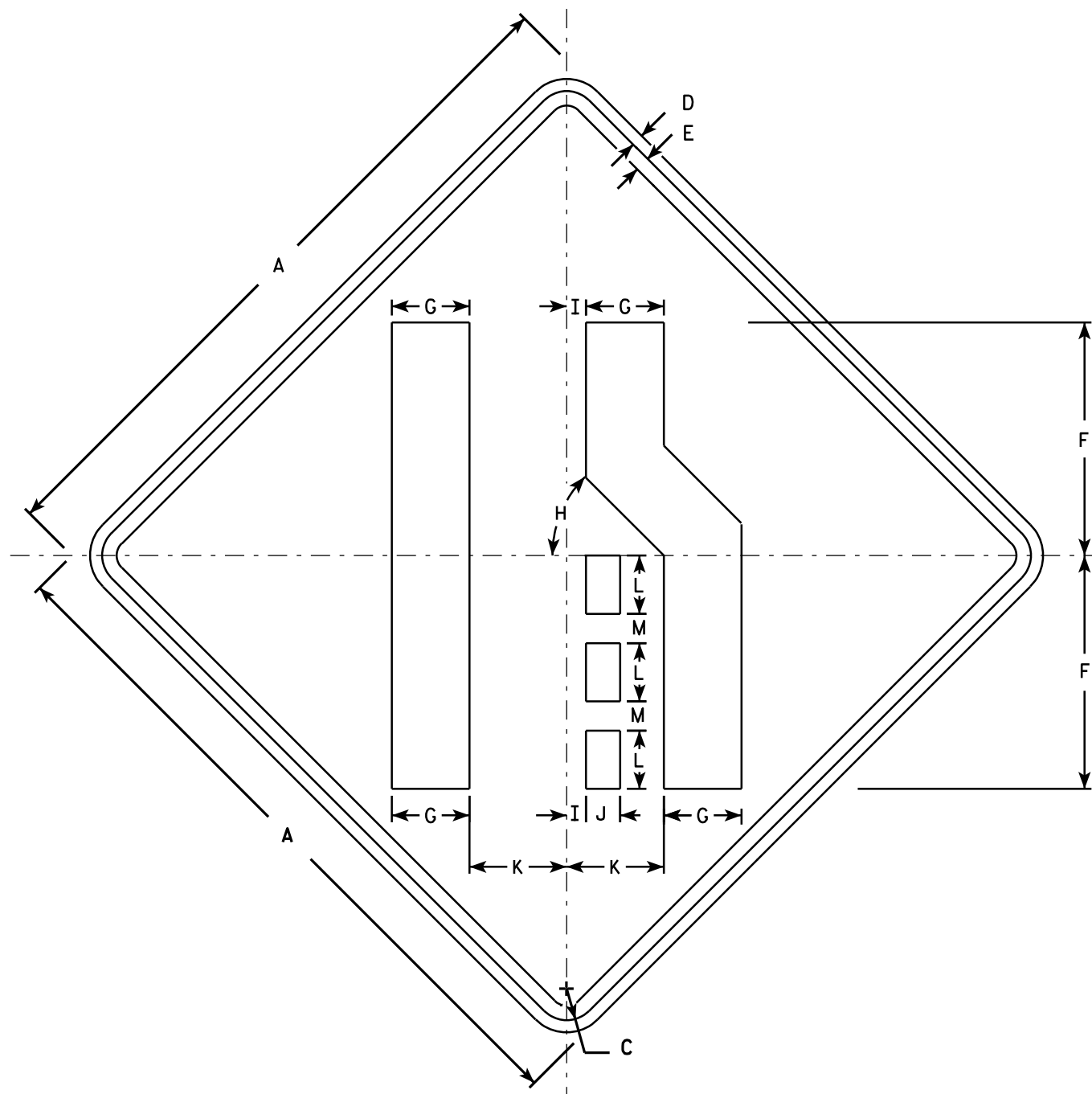
WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO:

SHEET NO:

E



W4-2R

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. W4-2L is the same as W4-2R except the symbols is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	10	3 3/8	45°	7/8	1 1/2	4 1/4	2 1/2	1 1/4														6.25
2S	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2M	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
3	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN W4-2

WISCONSIN DEPT OF TRANSPORTATION

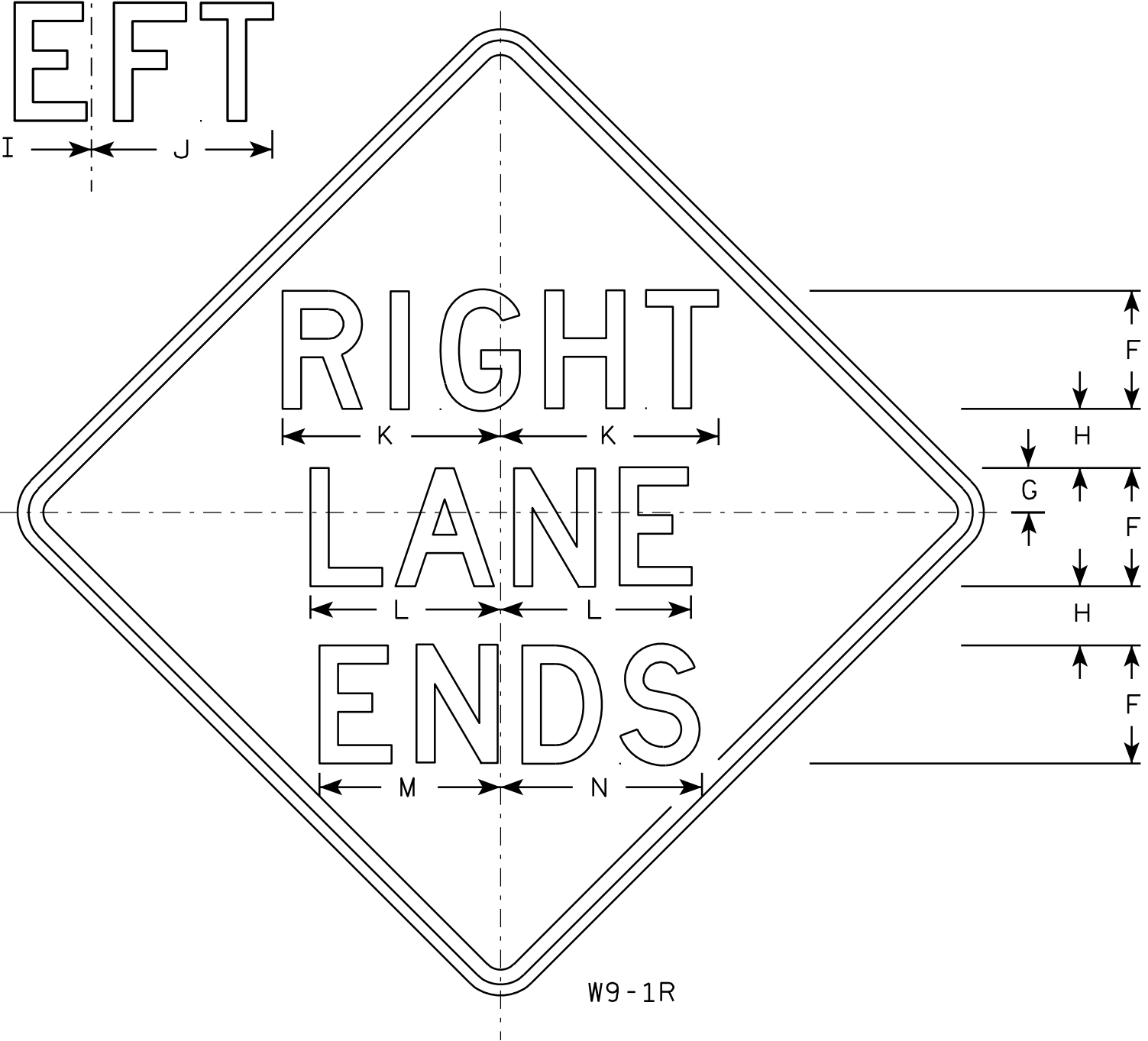
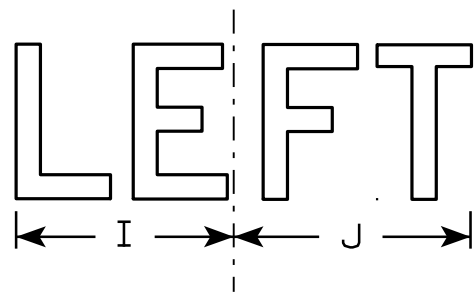
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/12/13 PLATE NO. W4-2.14

PROJECT NO:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - 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. W9-1L same as W9-1R except the word Left replaces Right.

7

7

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

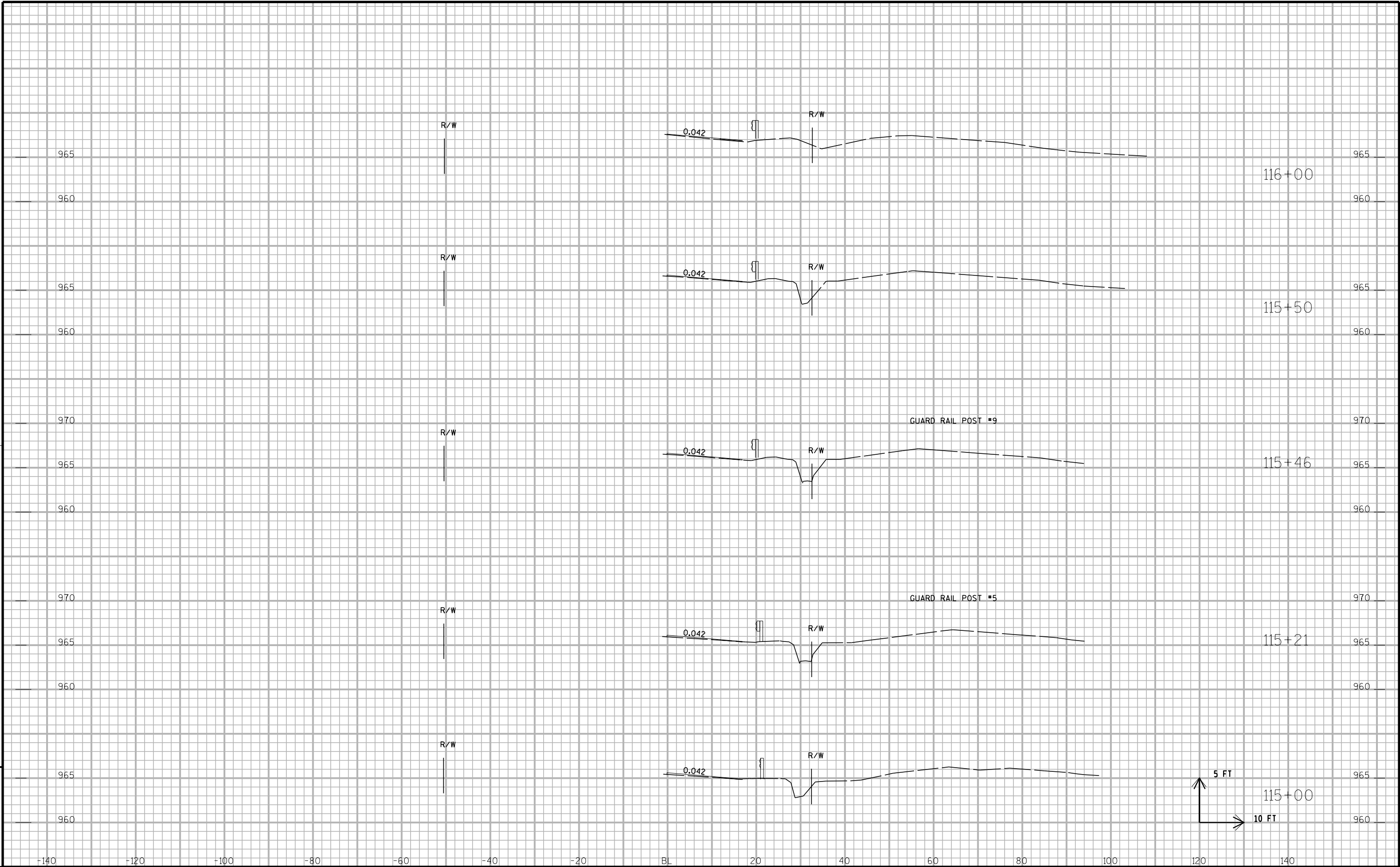
STANDARD SIGN
W9-1

WISCONSIN DEPT OF TRANSPORTATION

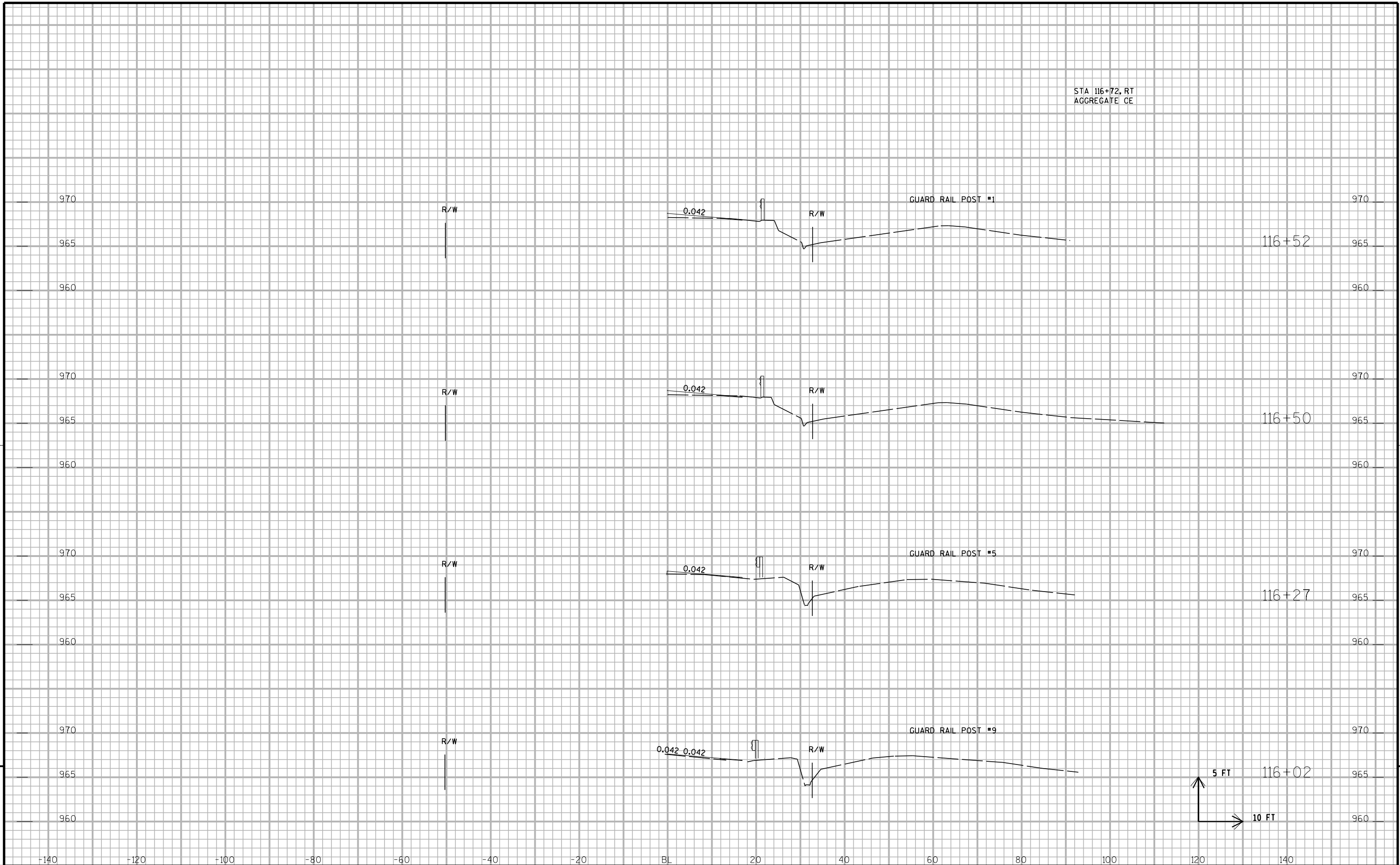
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 03/18/13 PLATE NO. W9-1.8

9



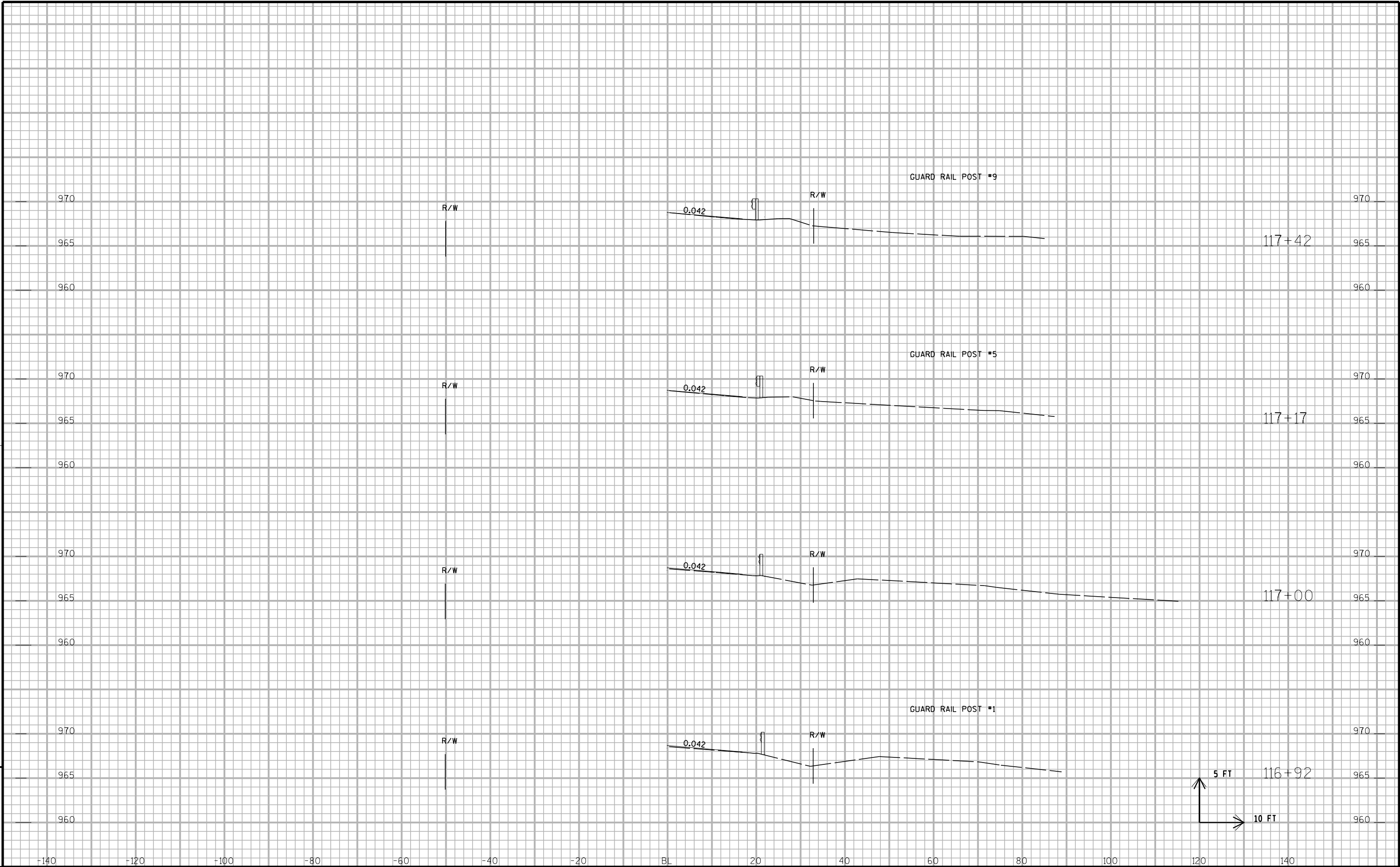
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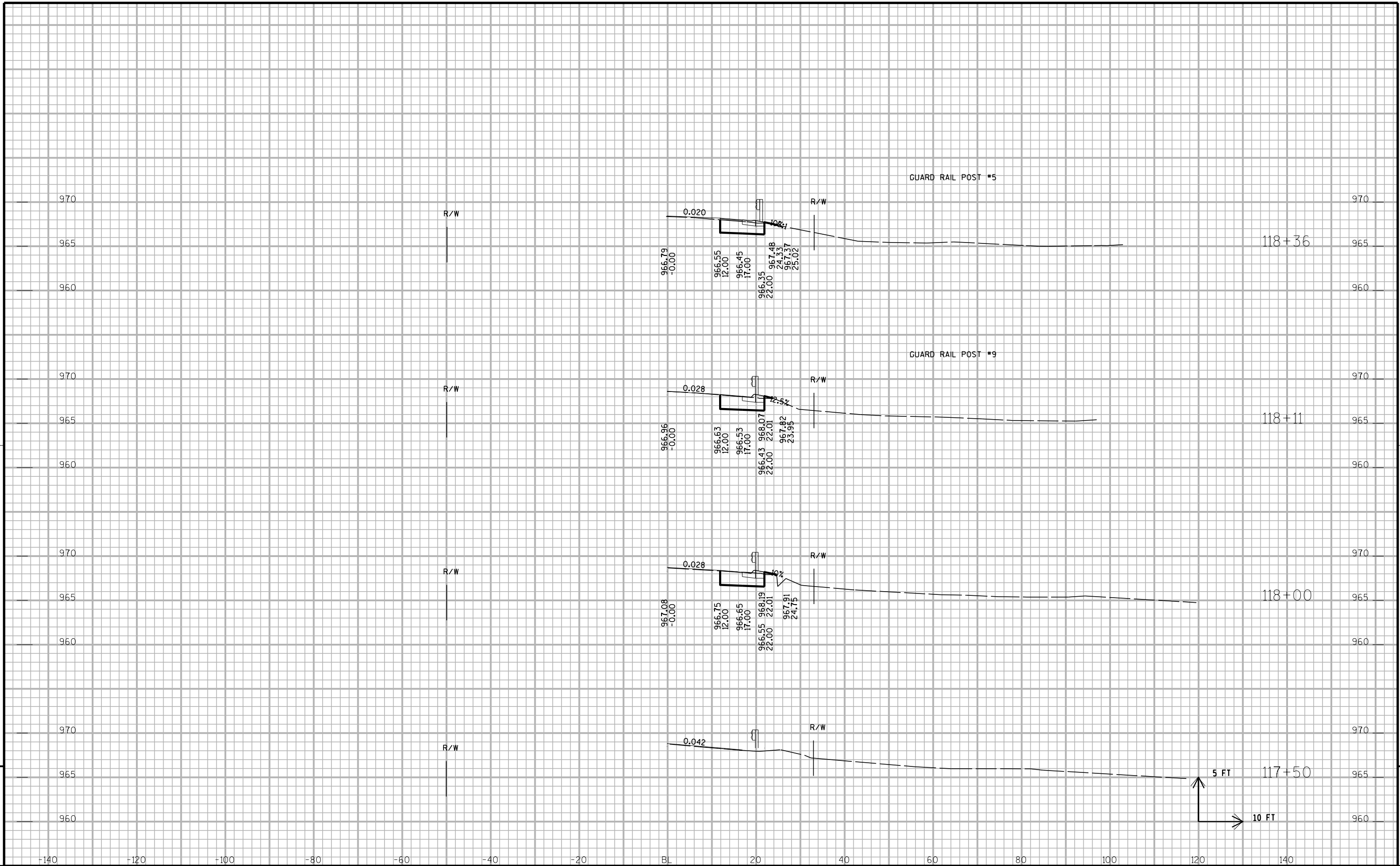
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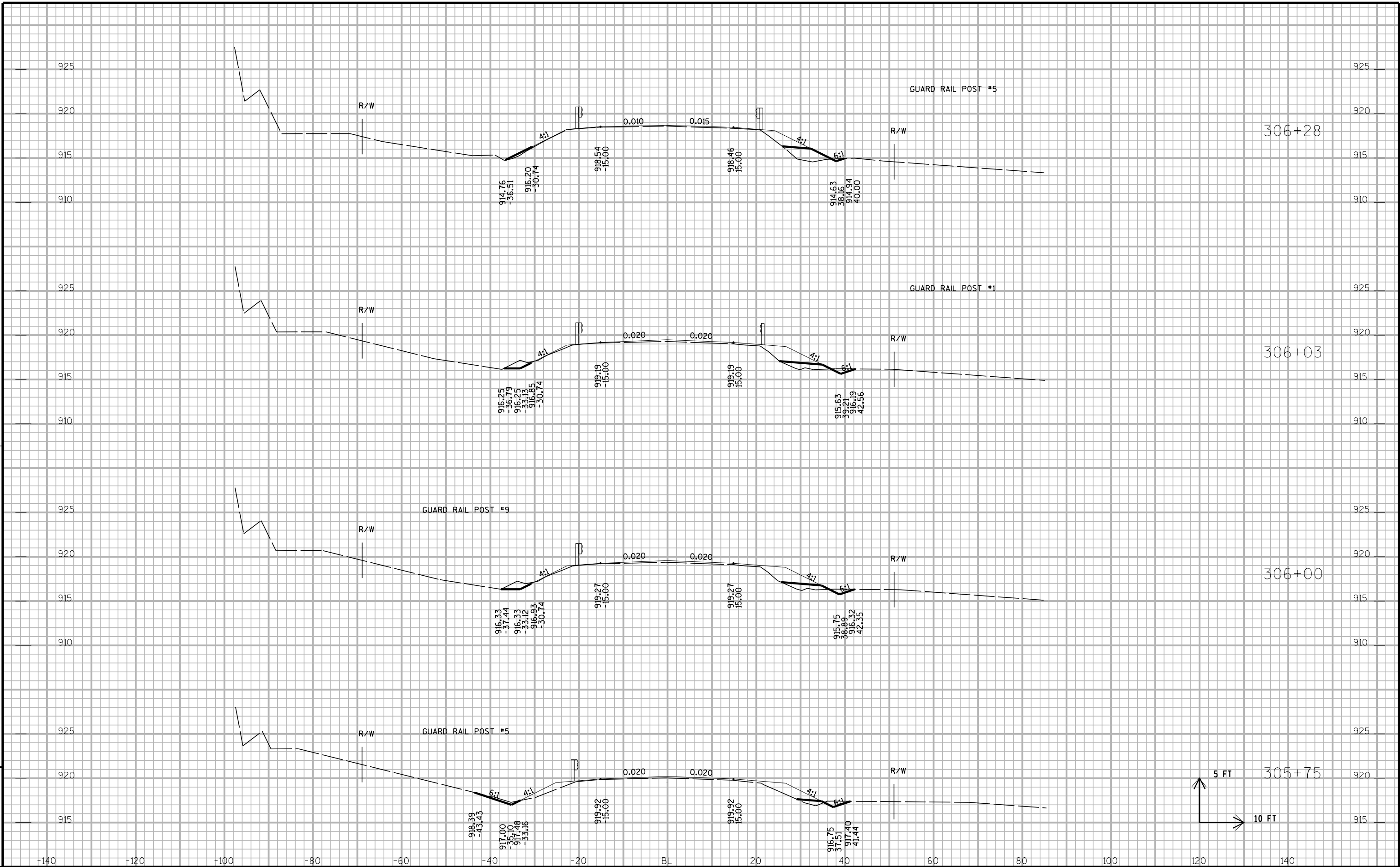
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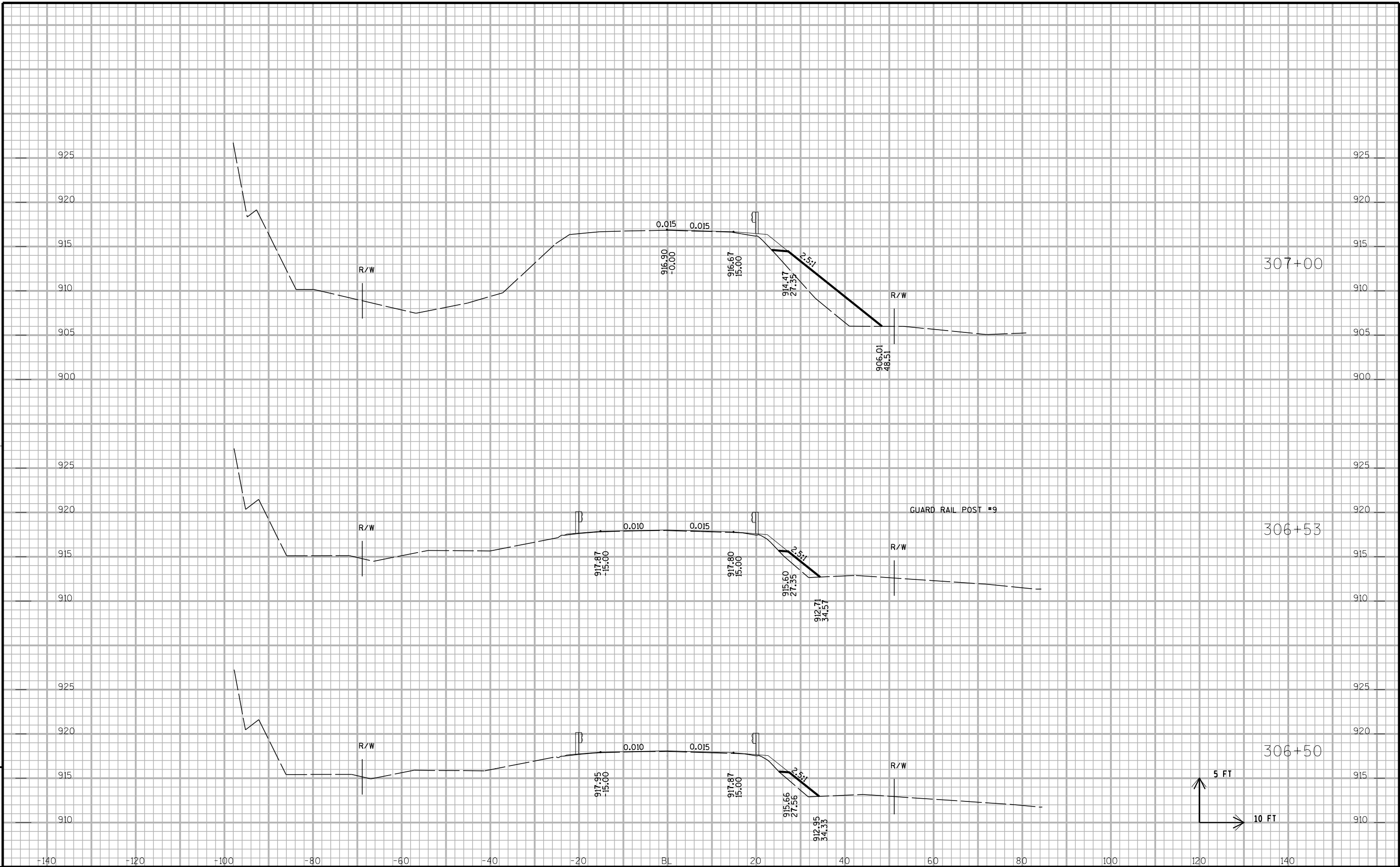


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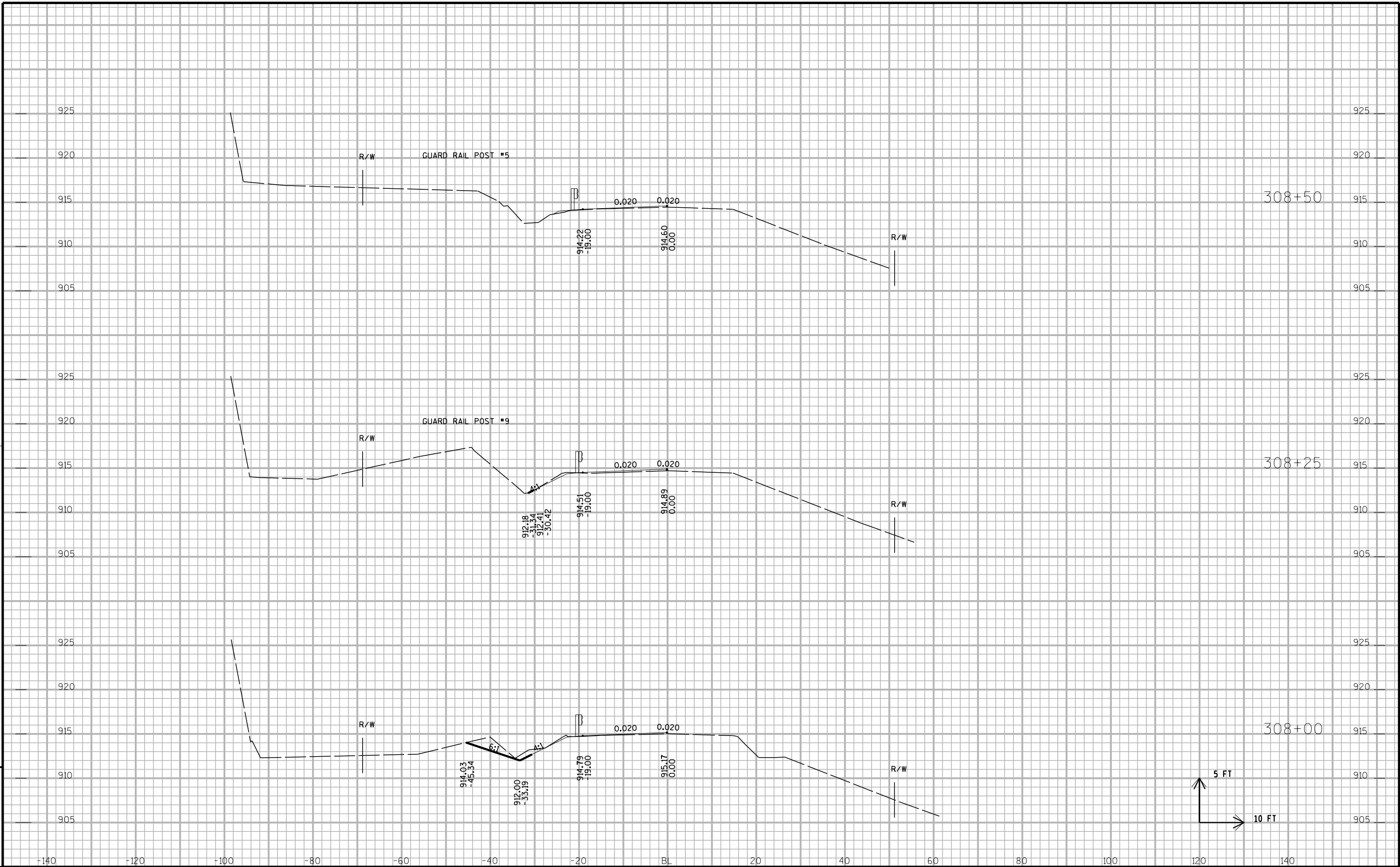
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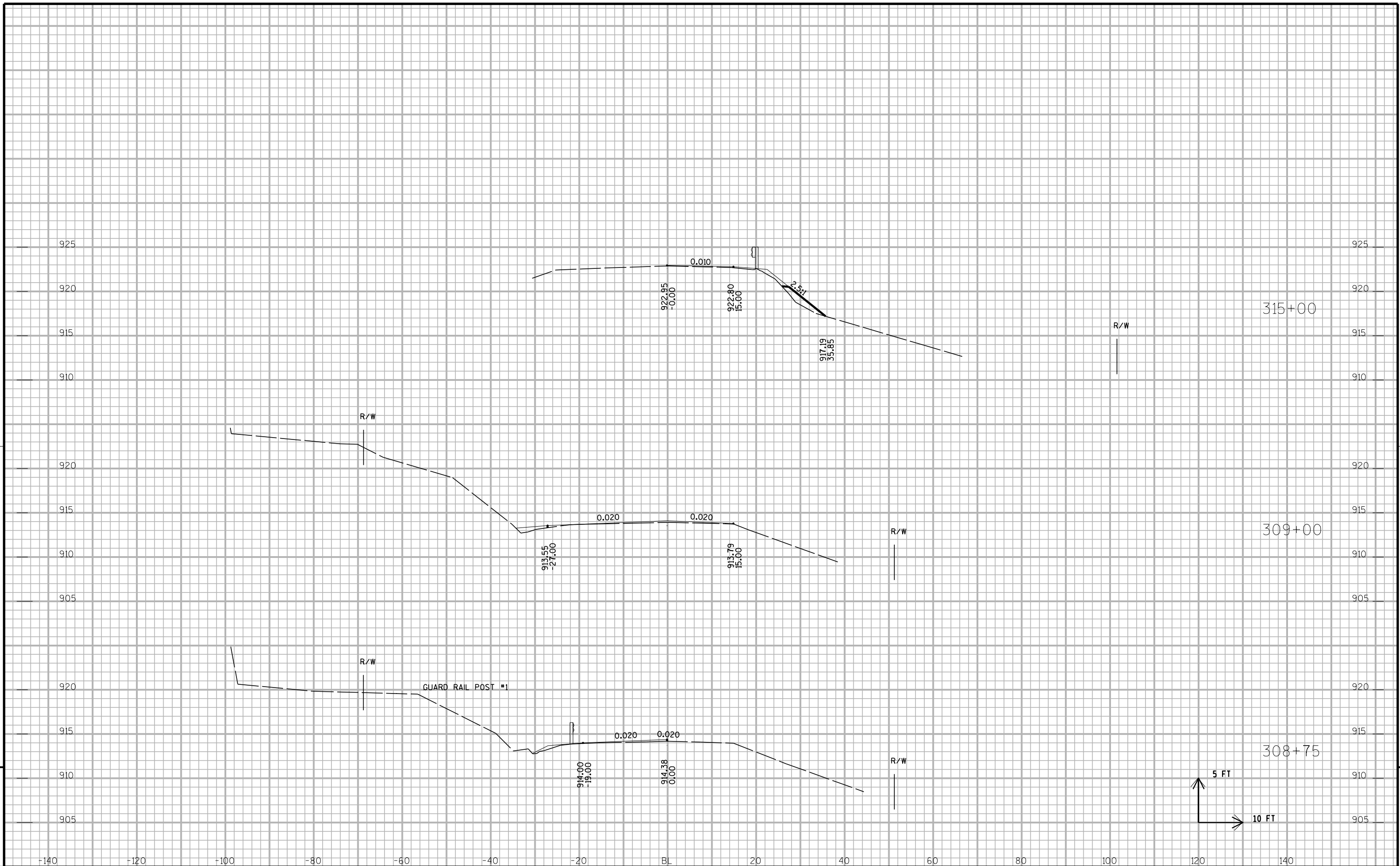


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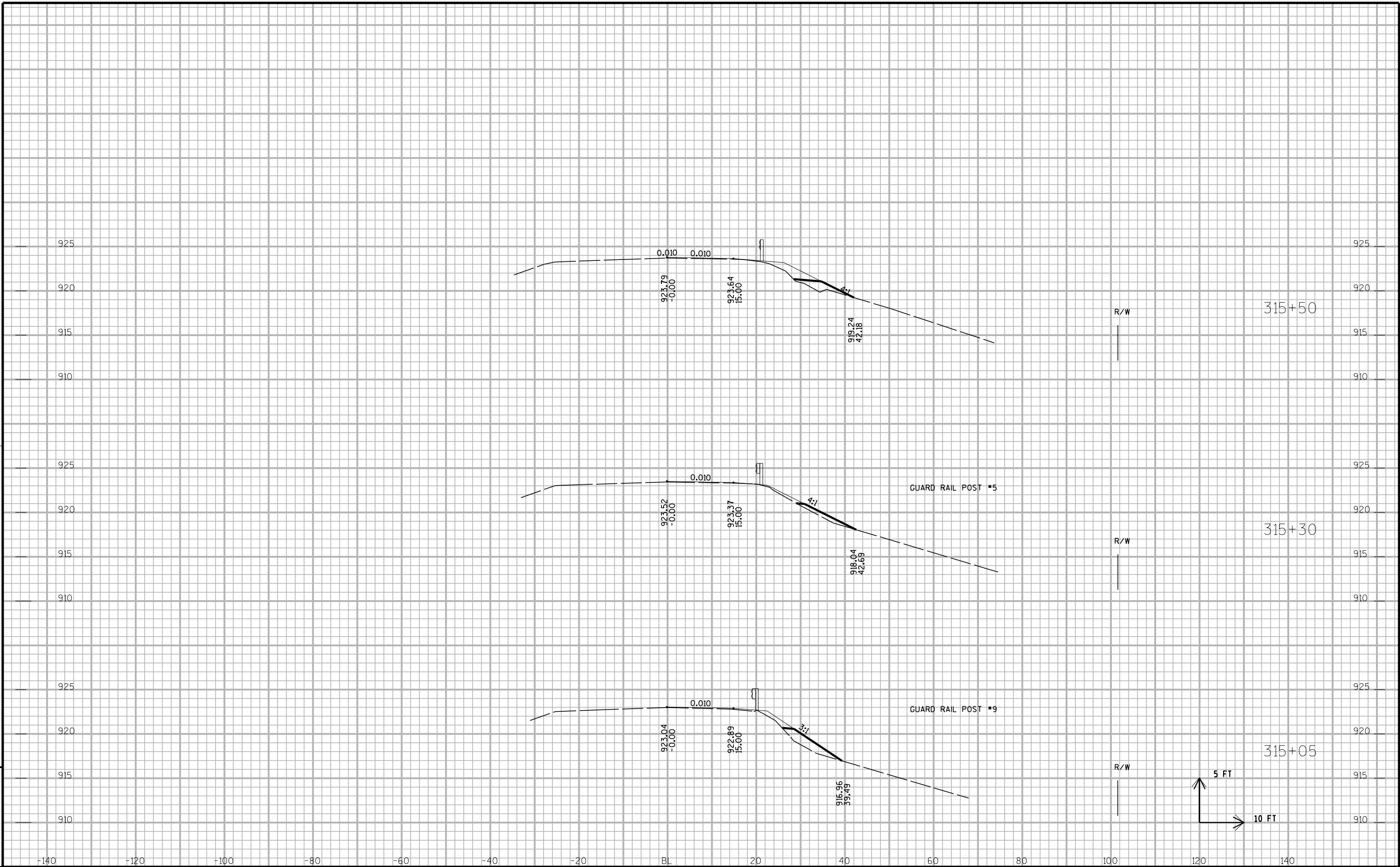
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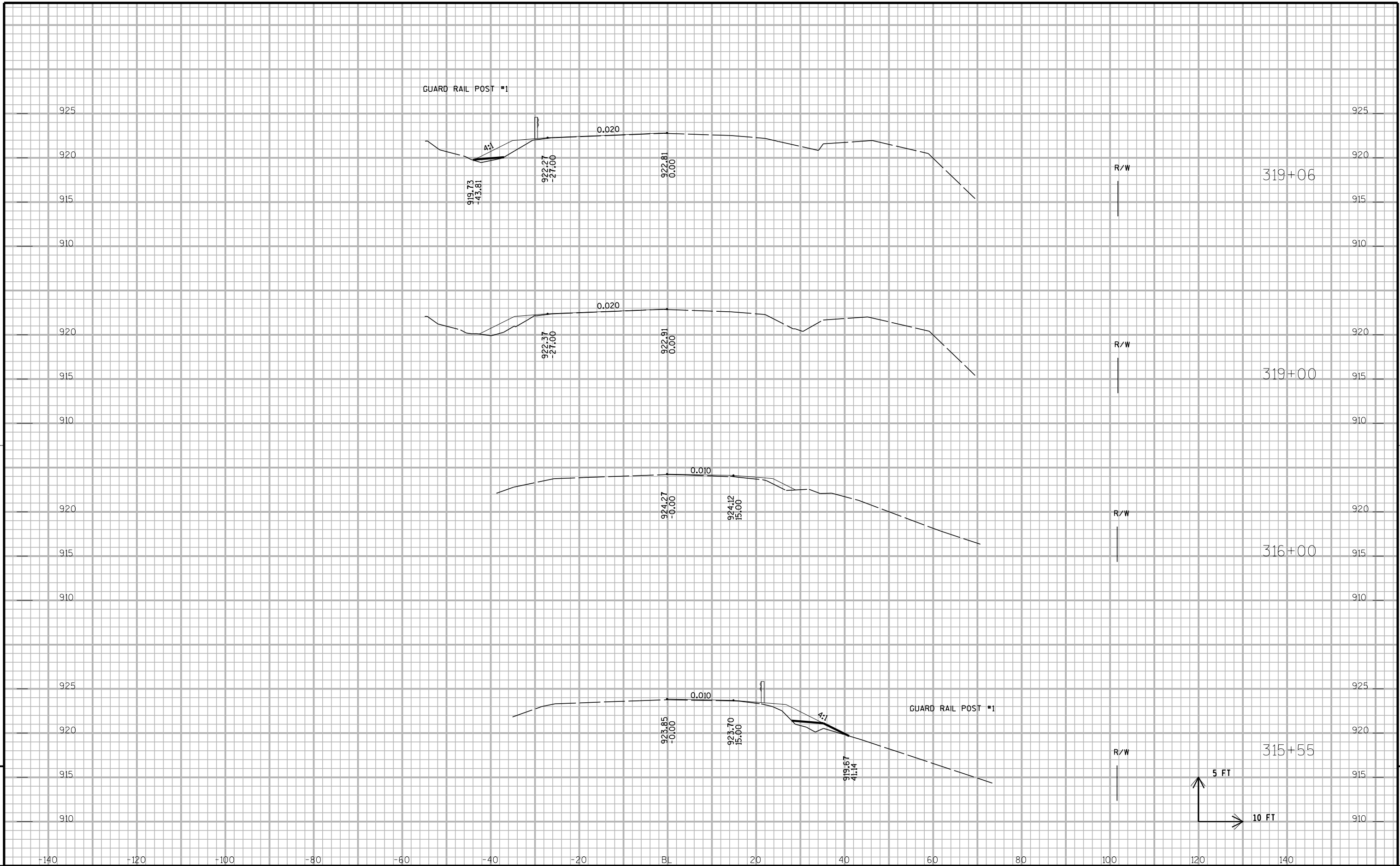
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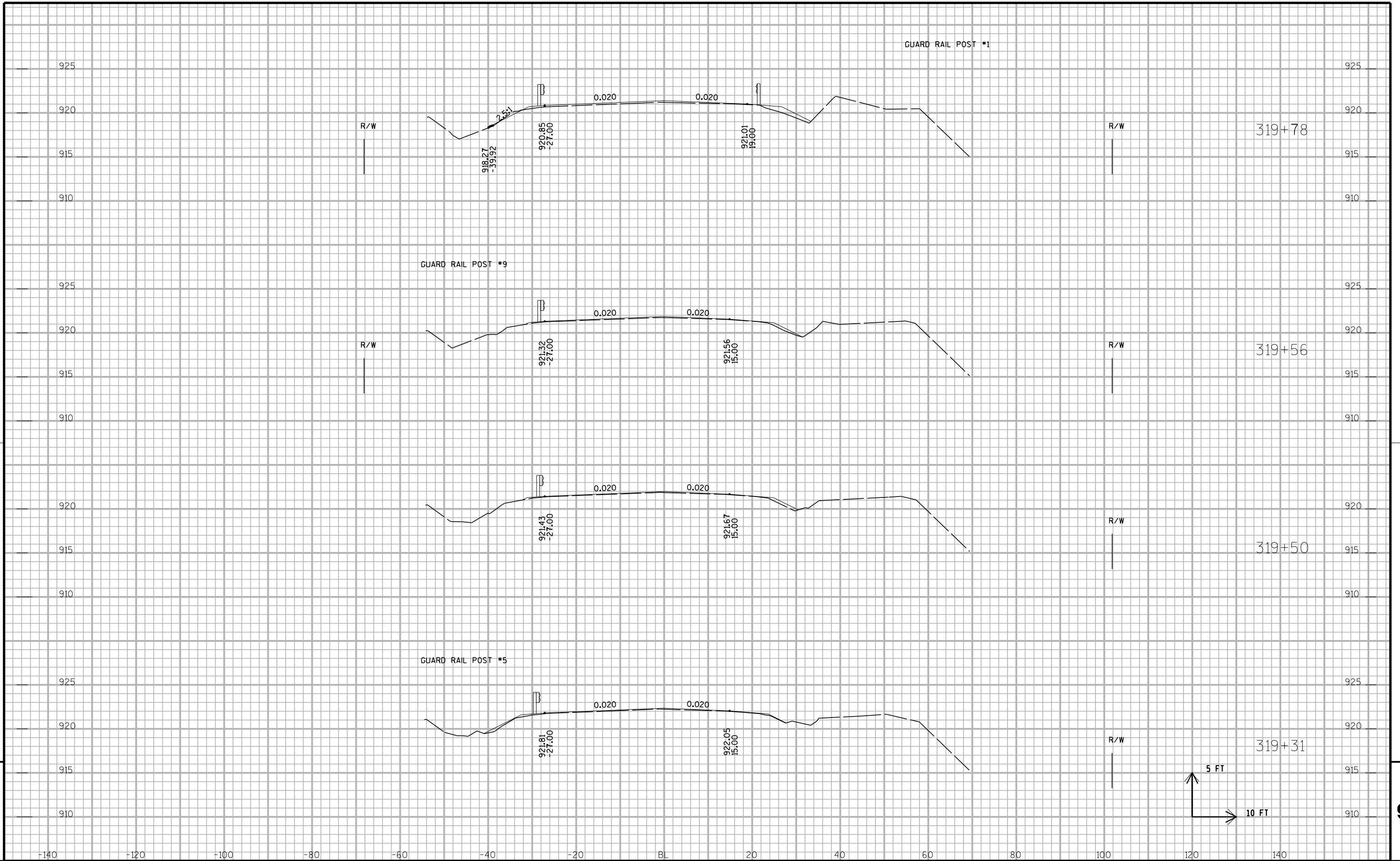


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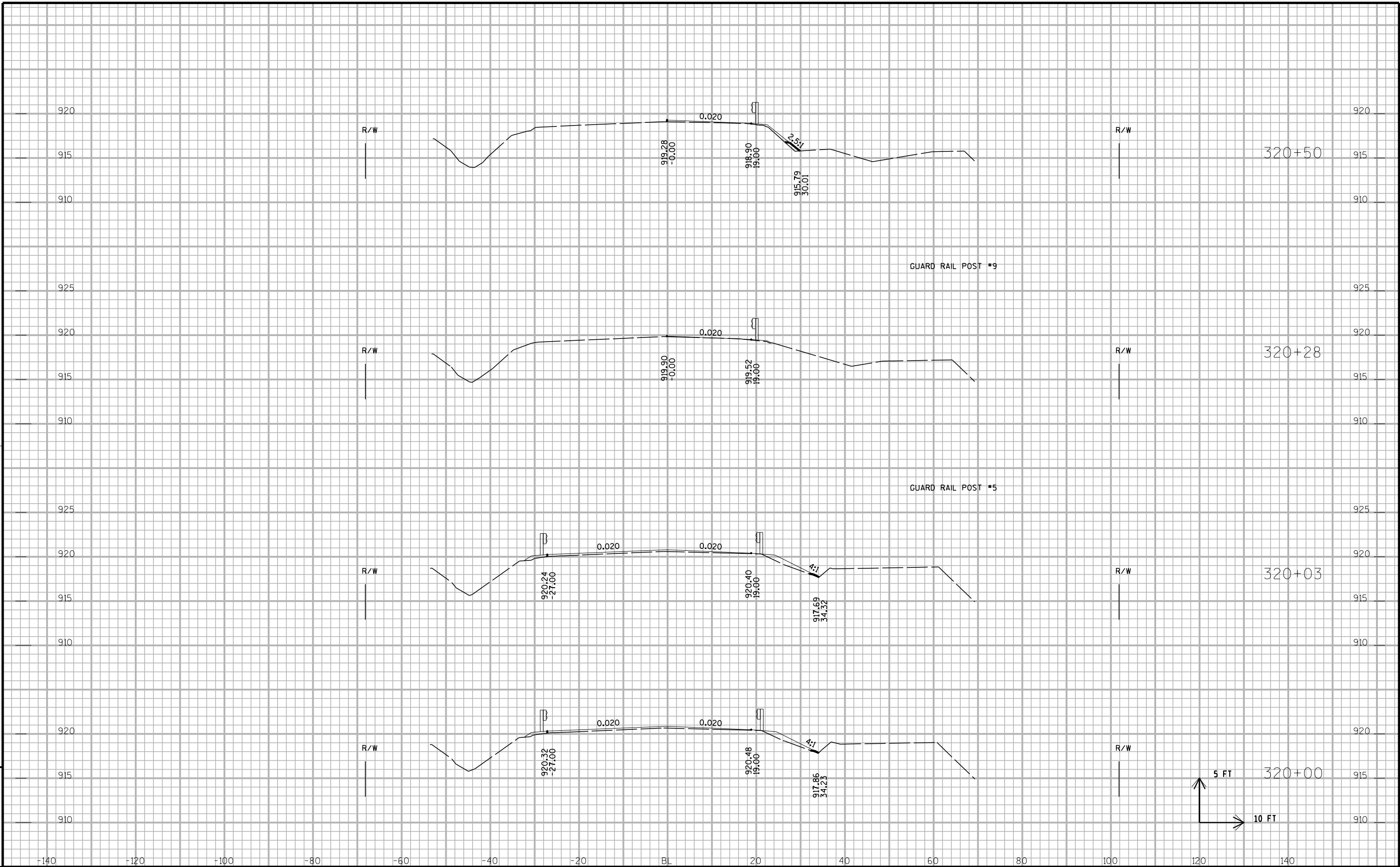


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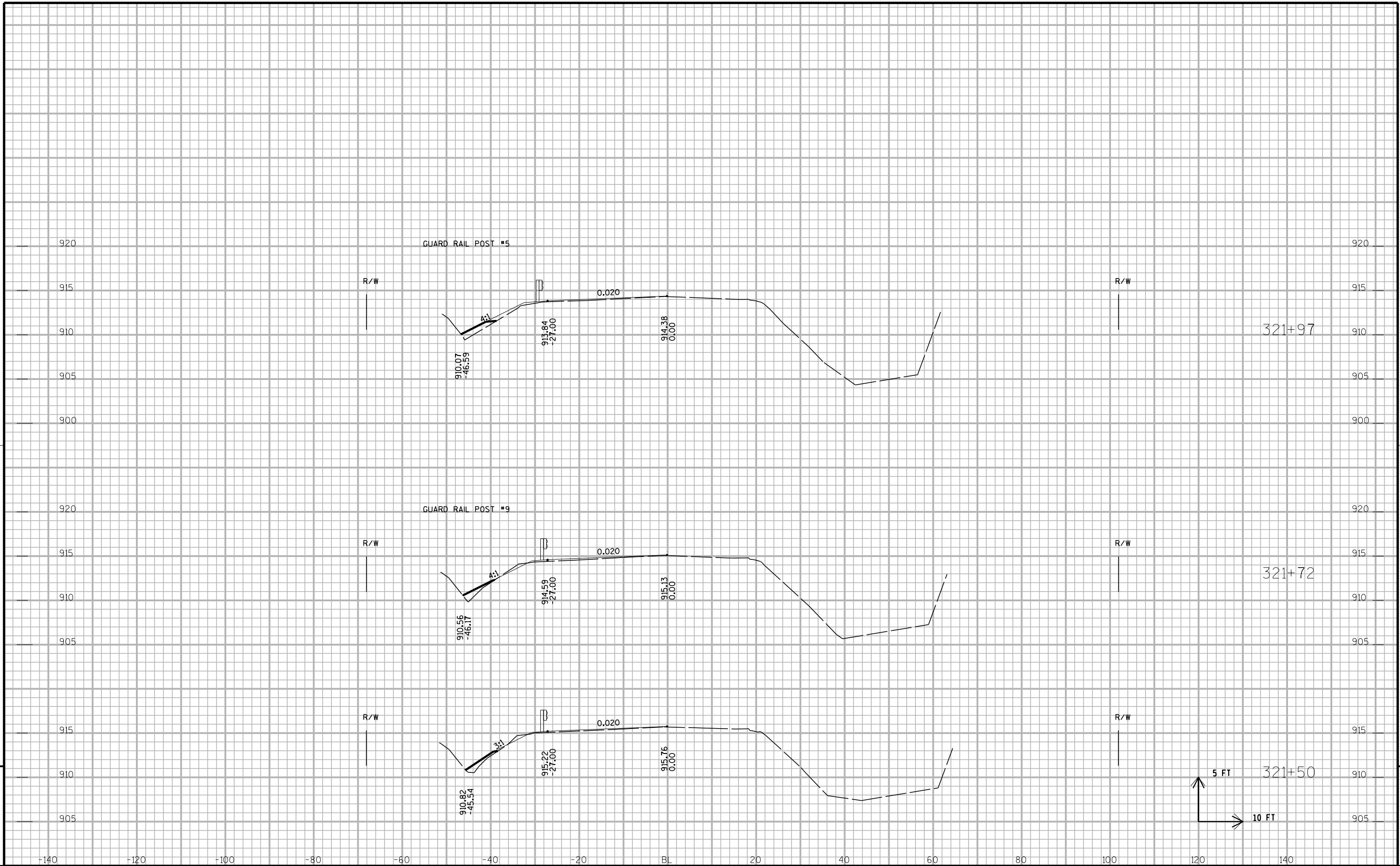
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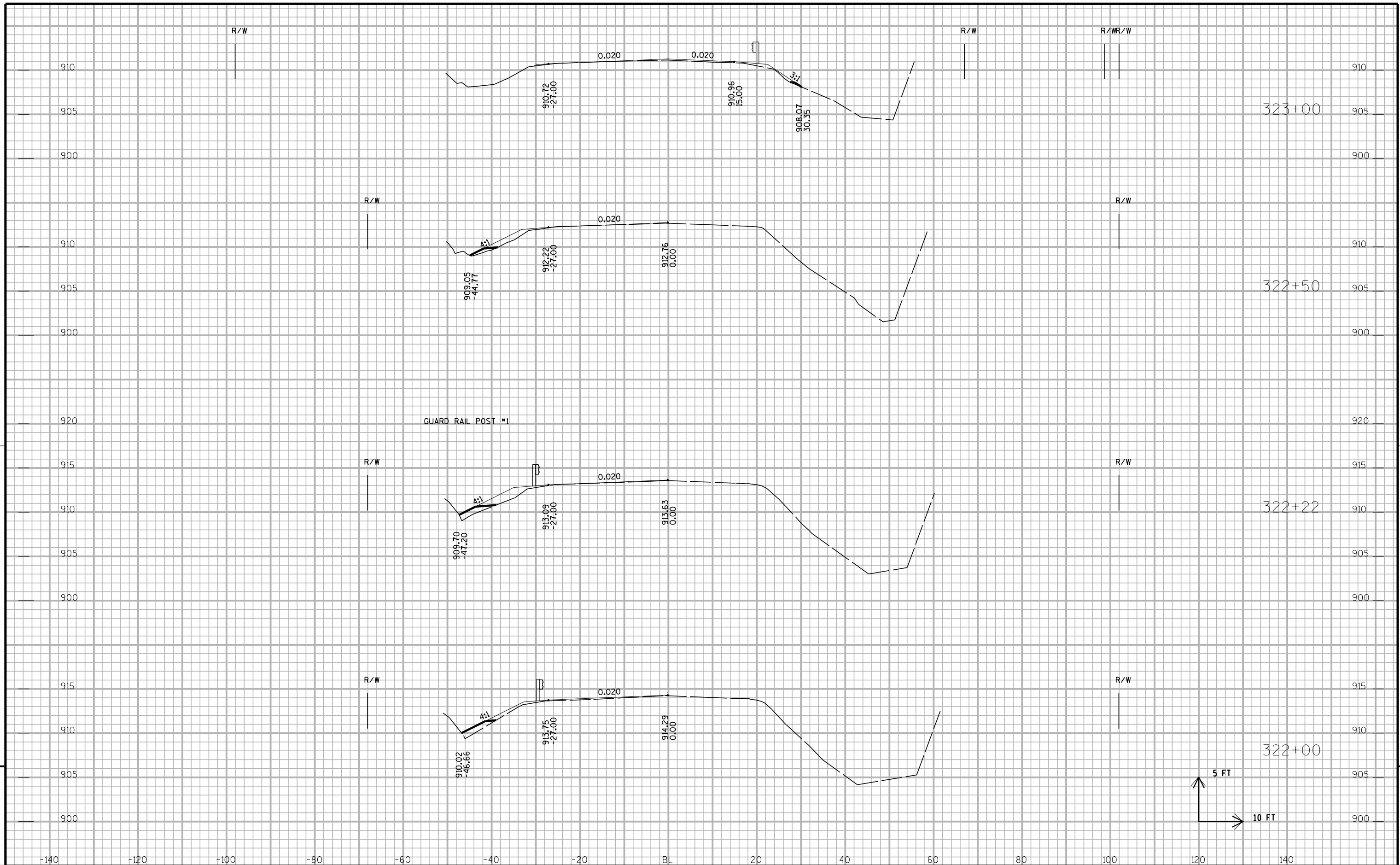


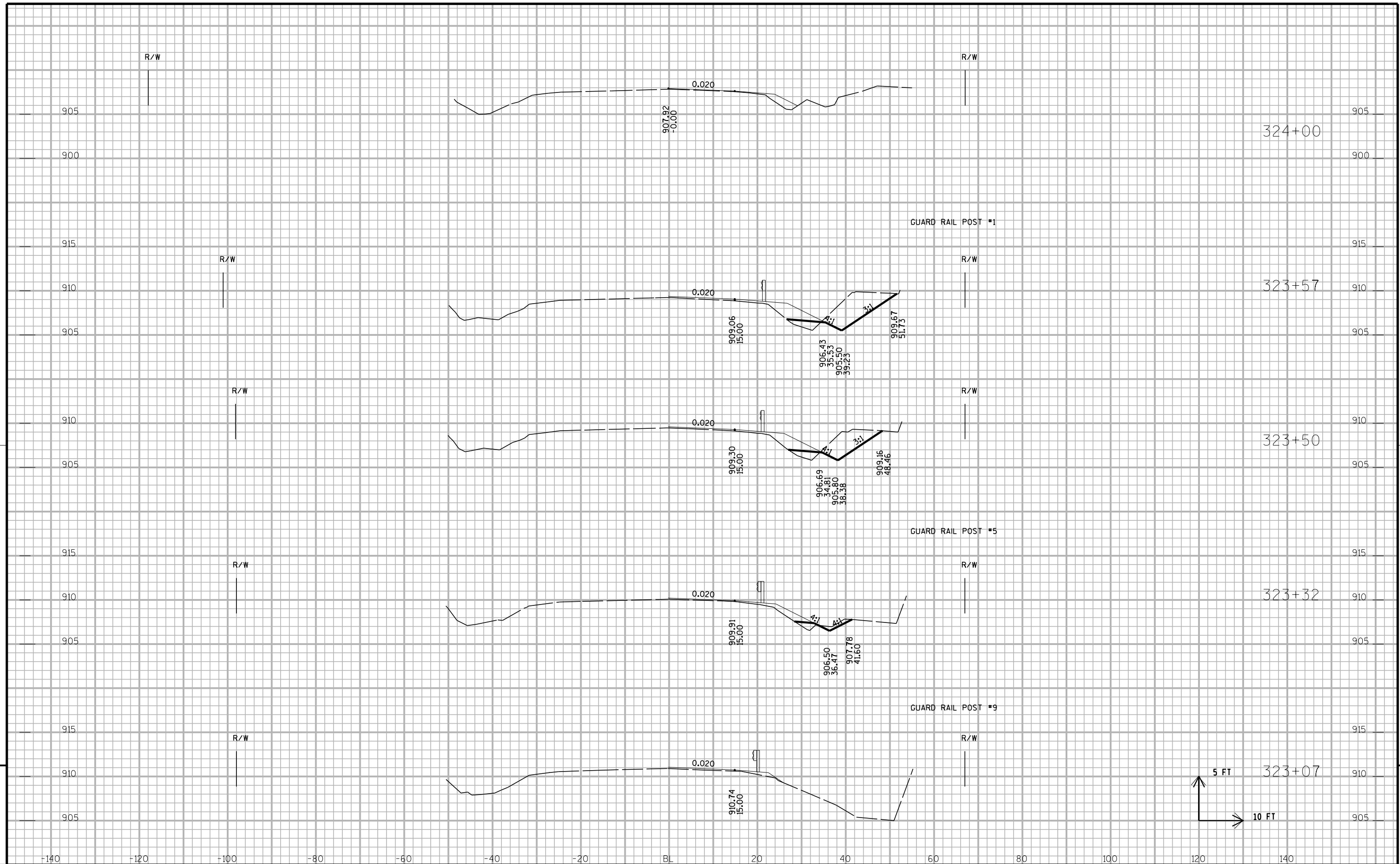
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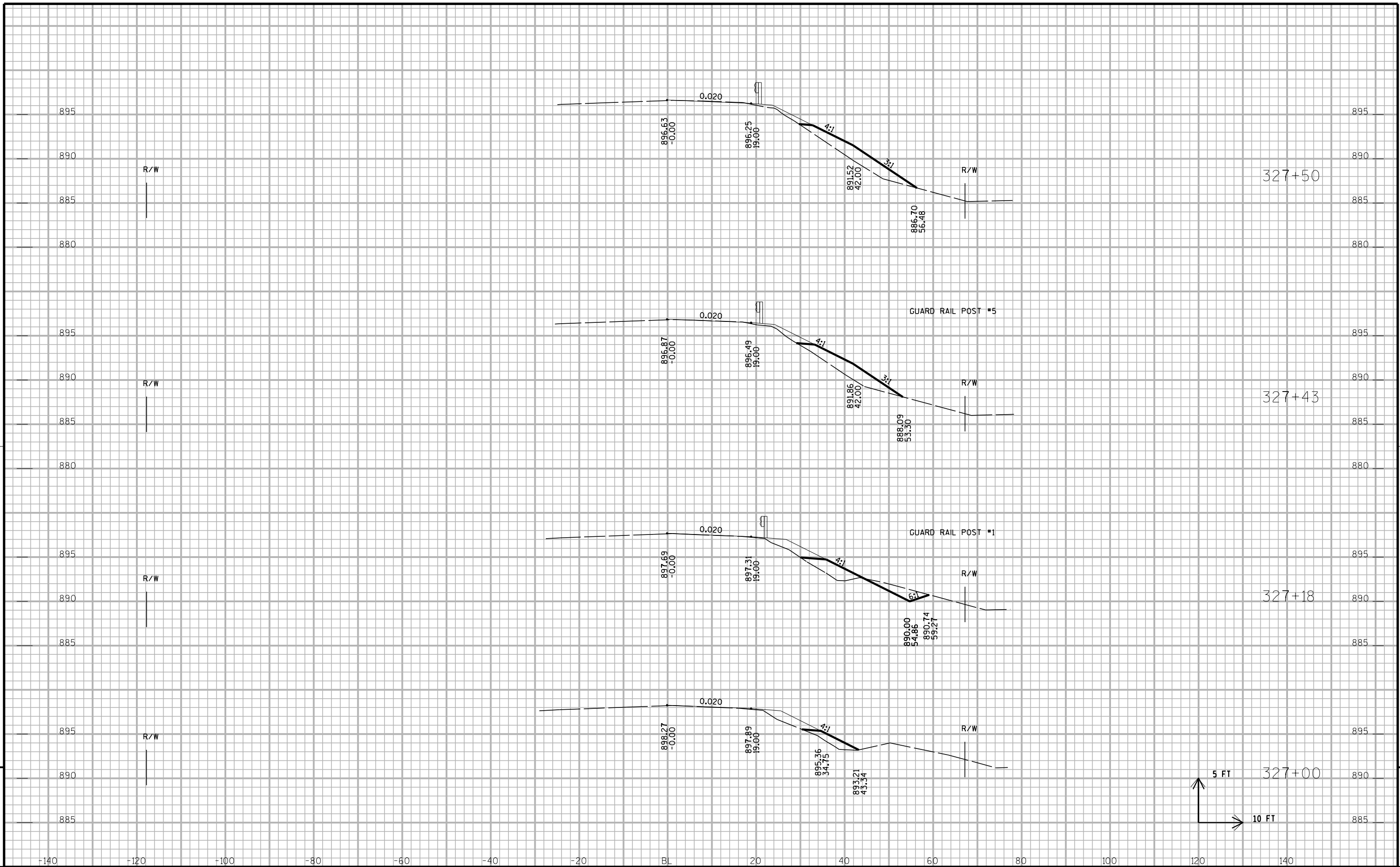


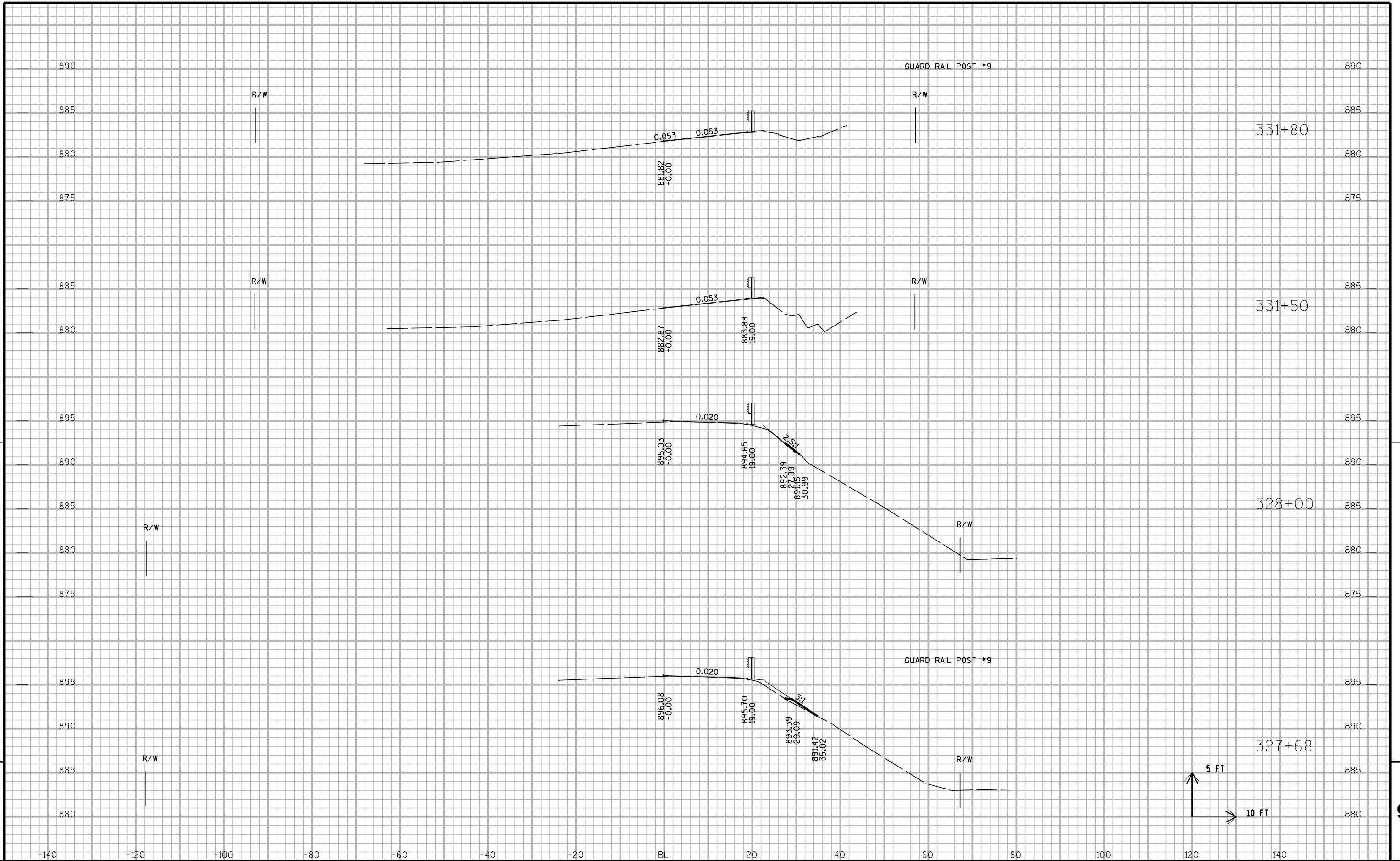
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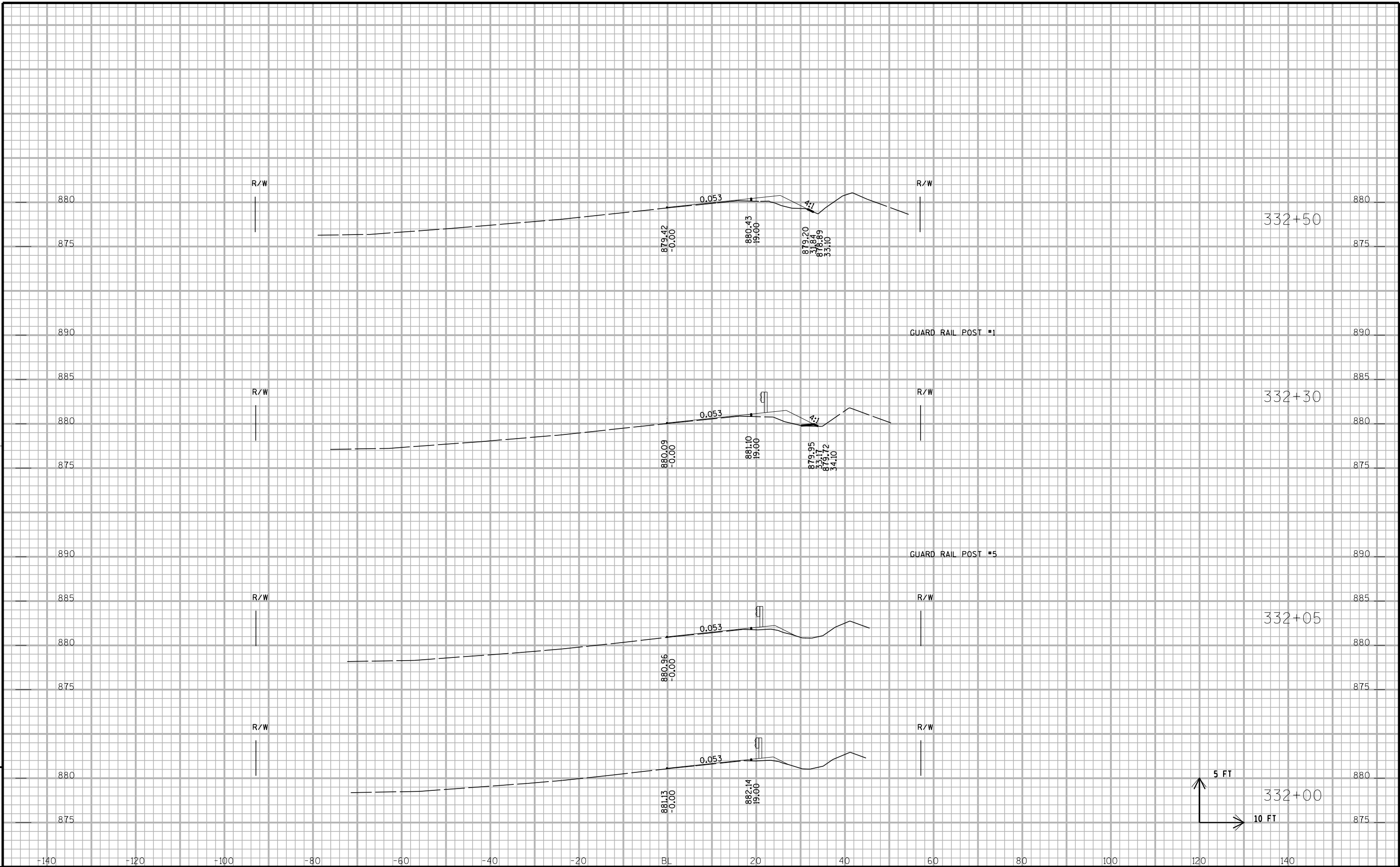




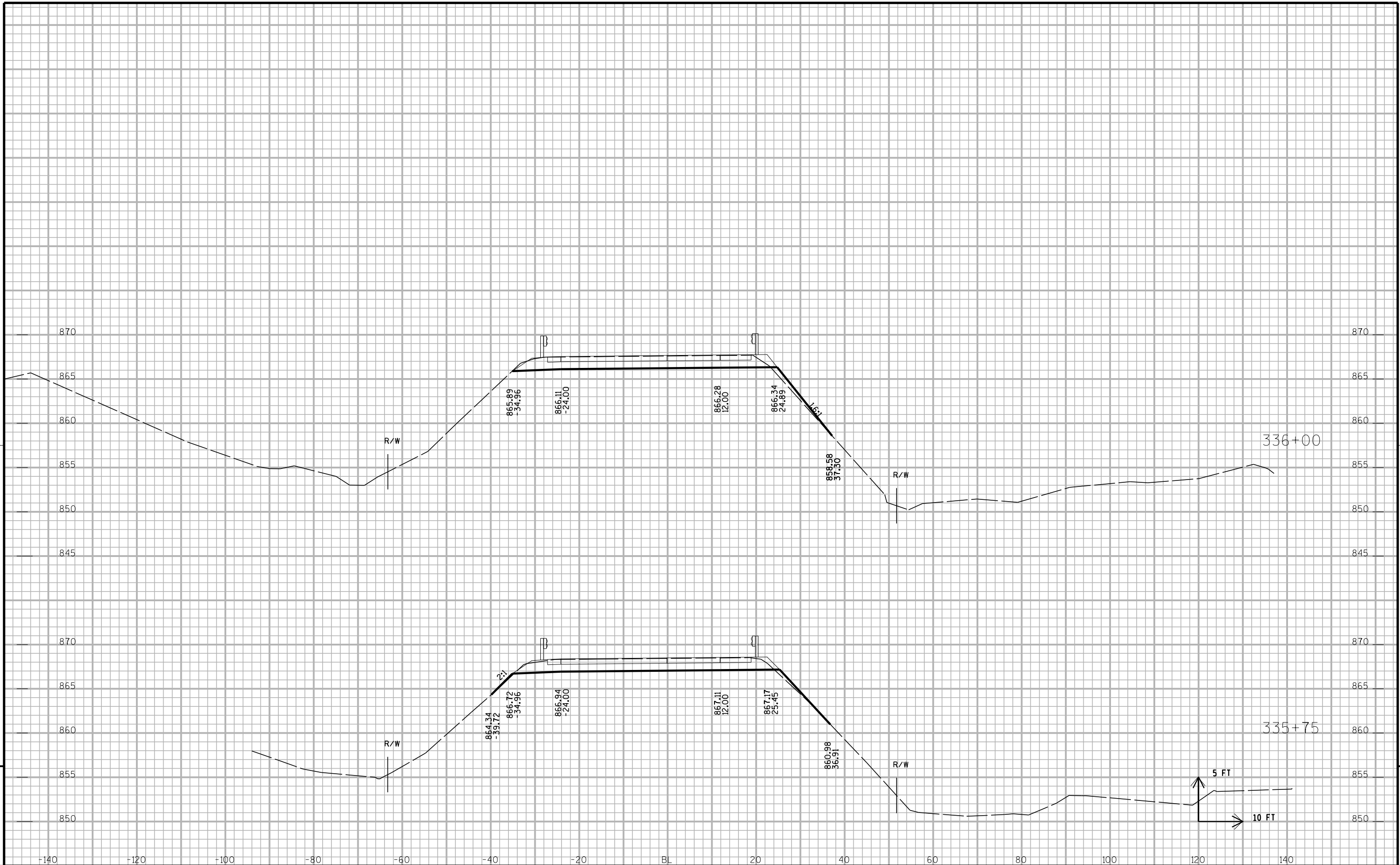


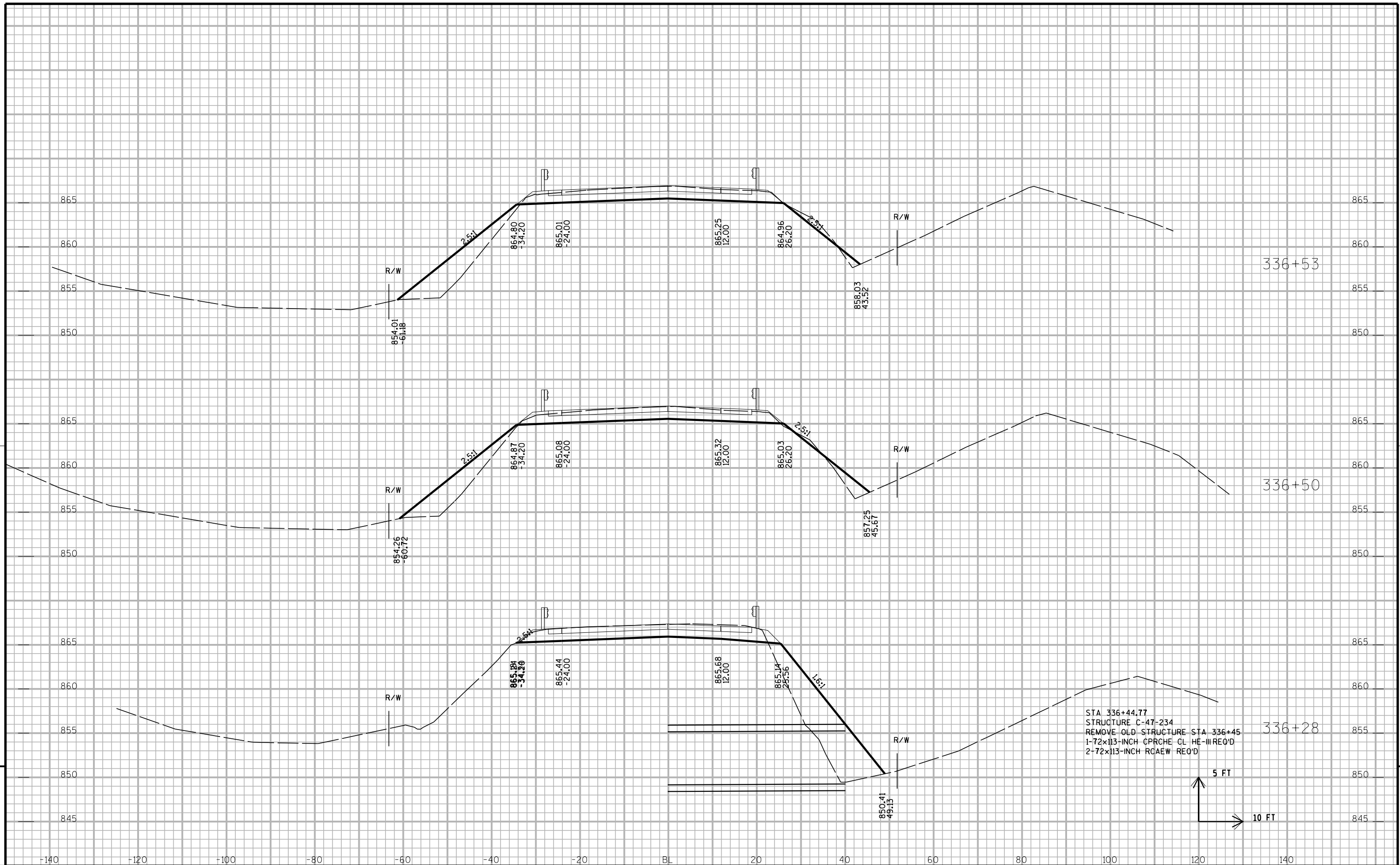


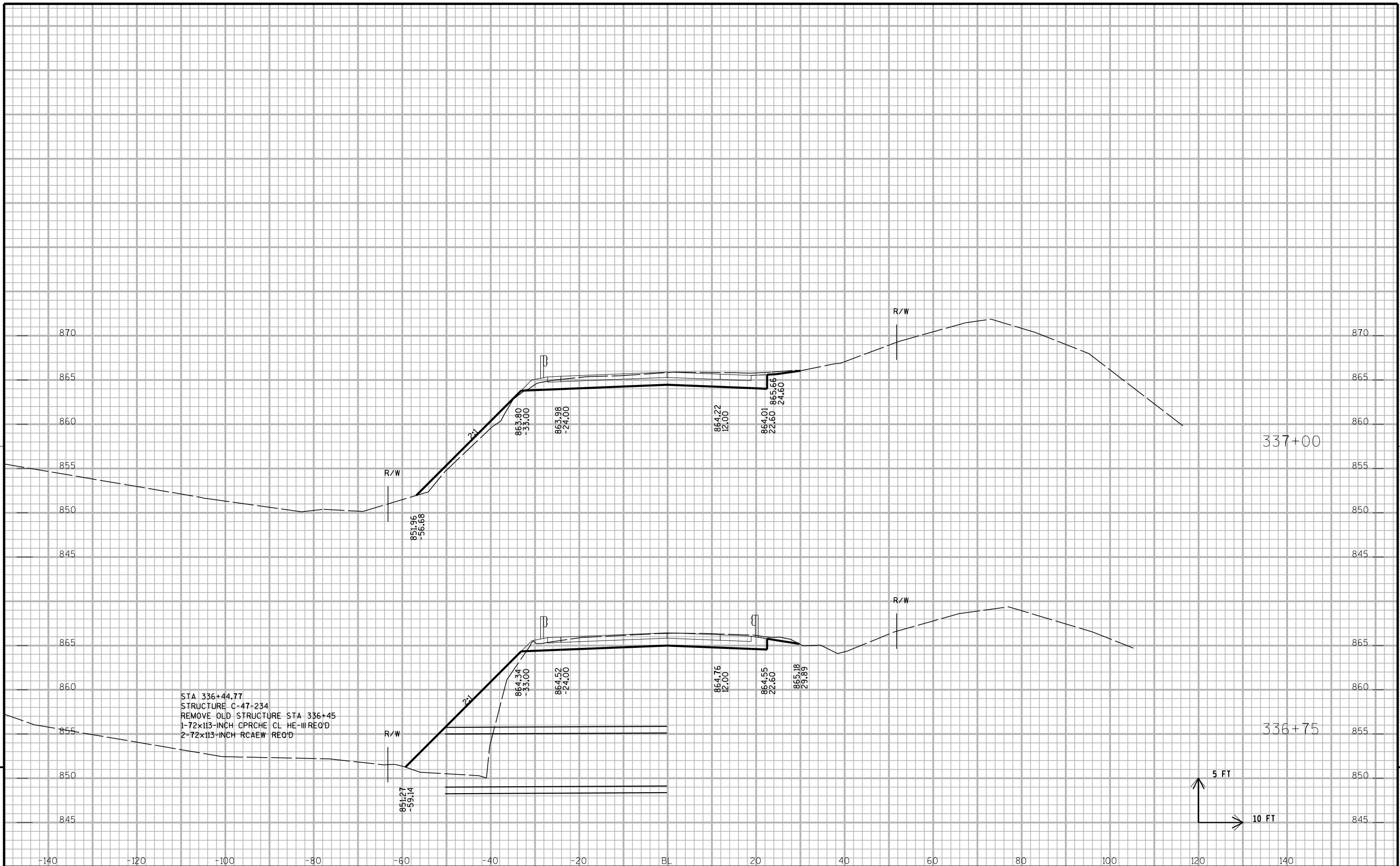
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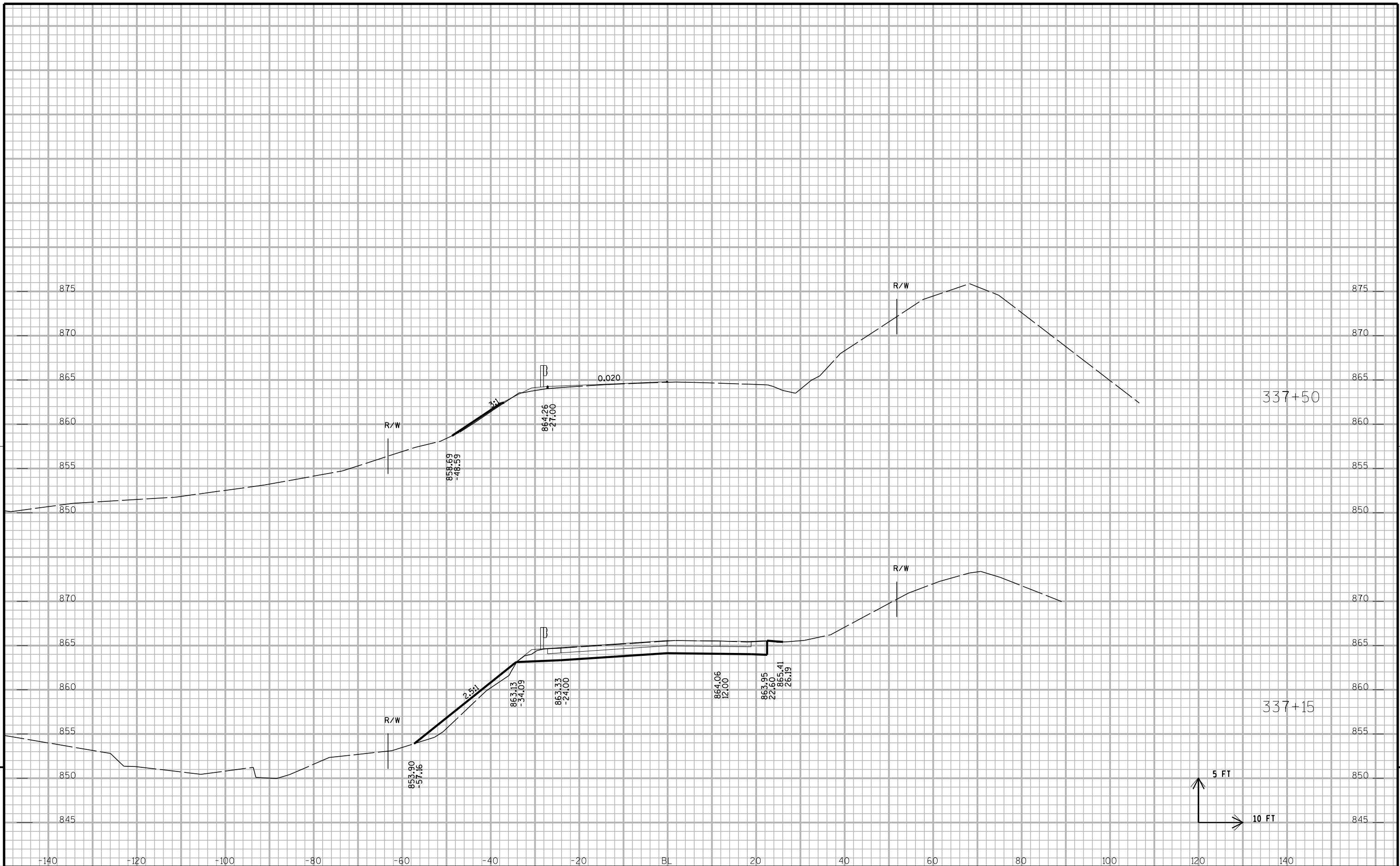


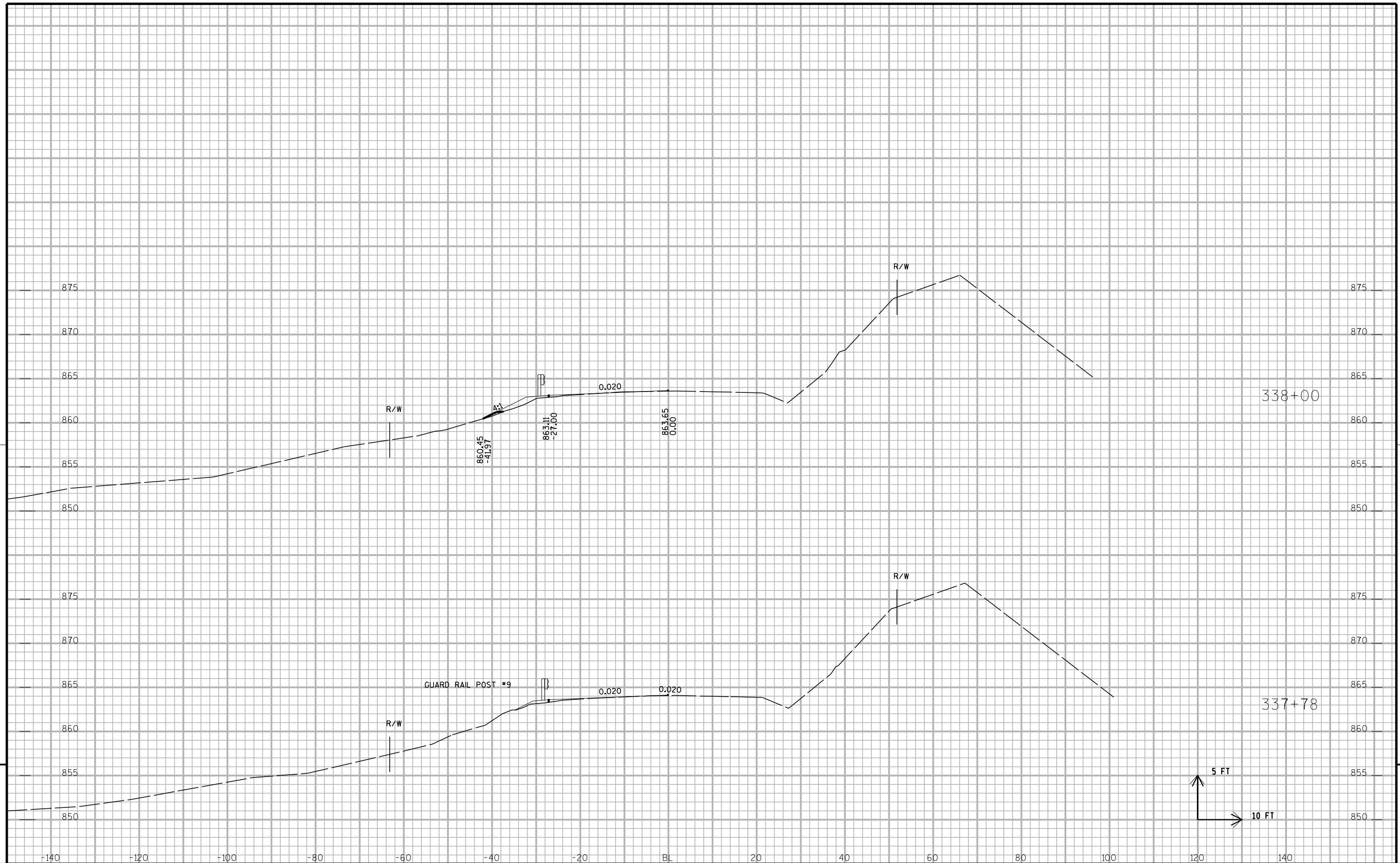
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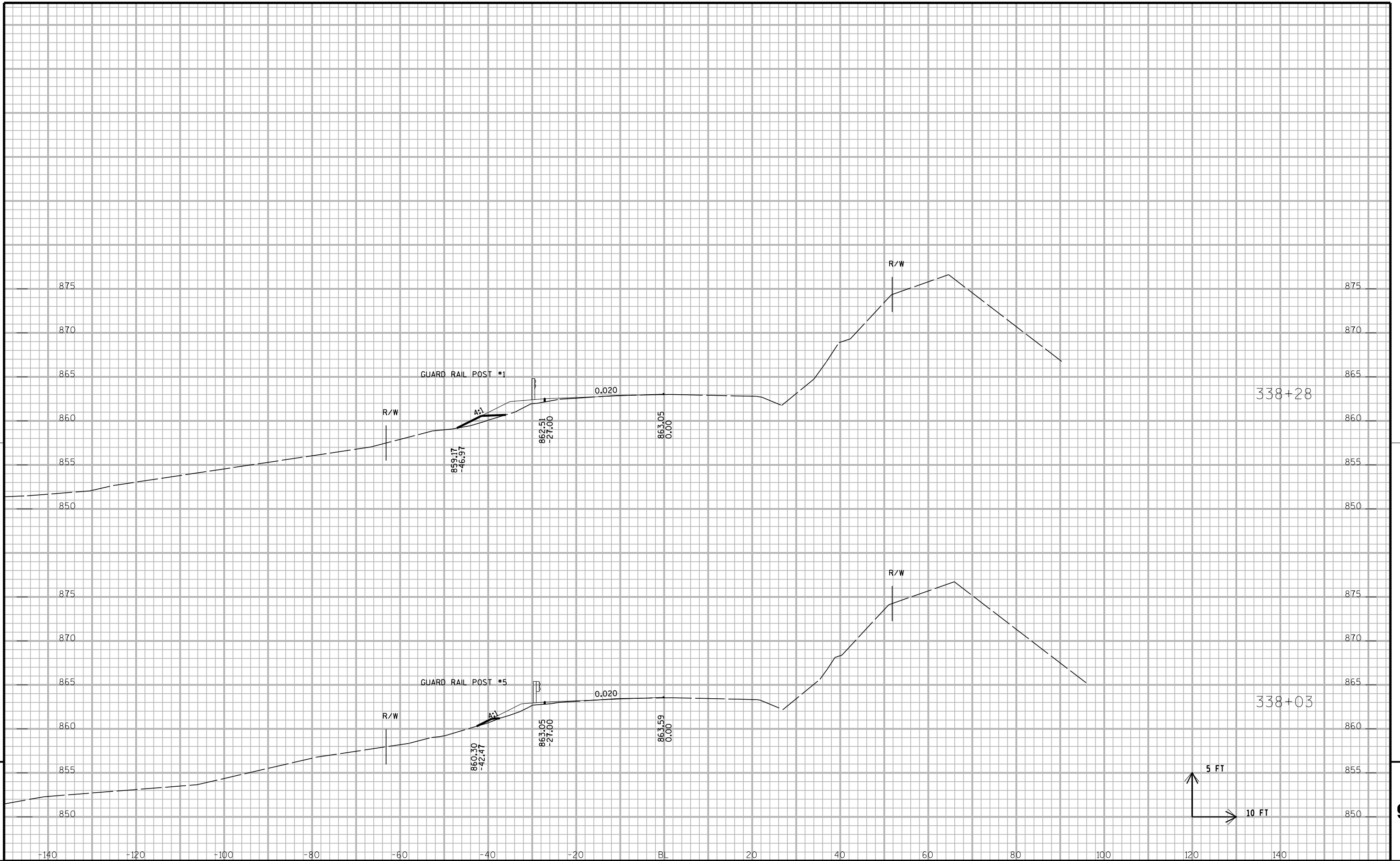


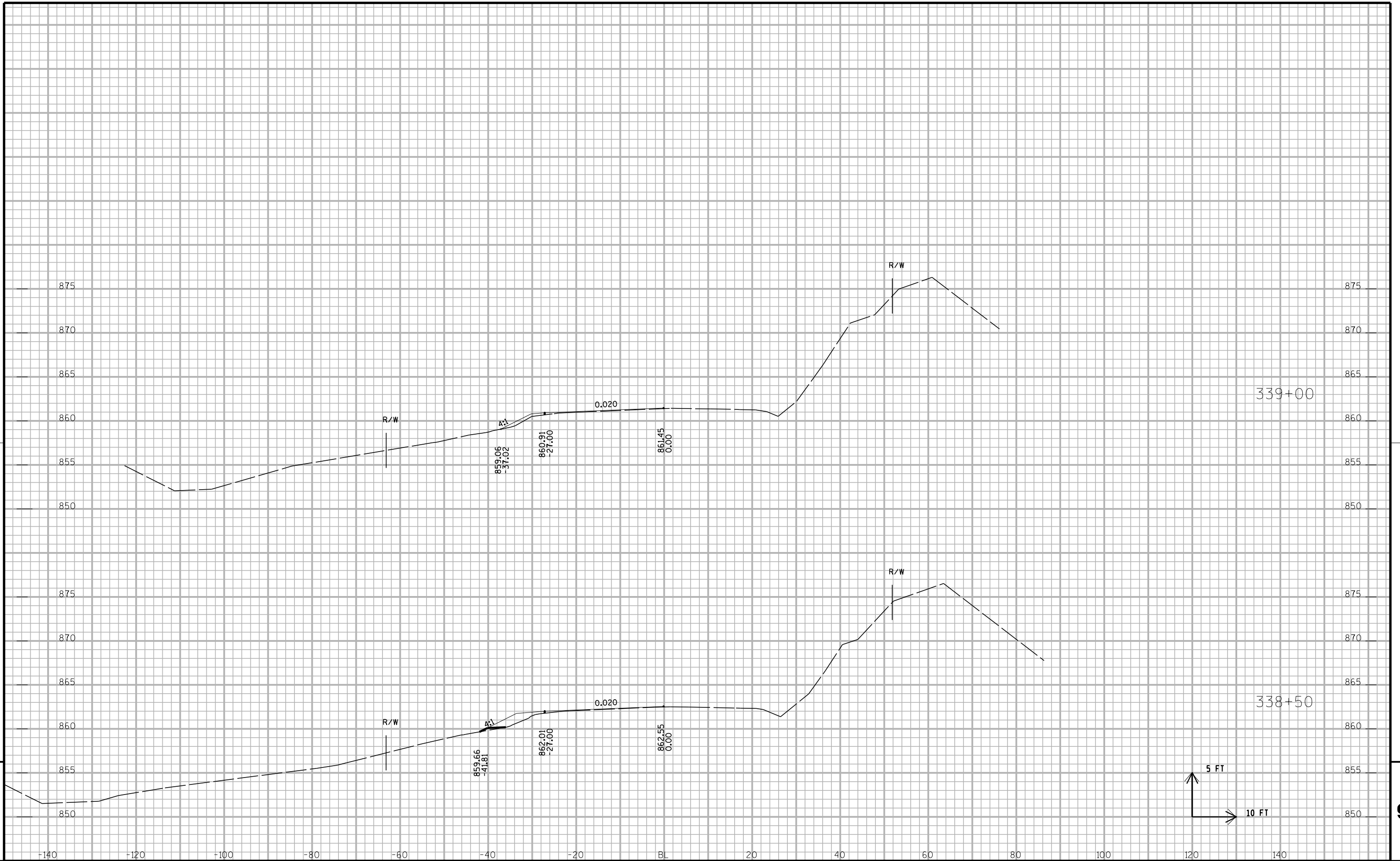


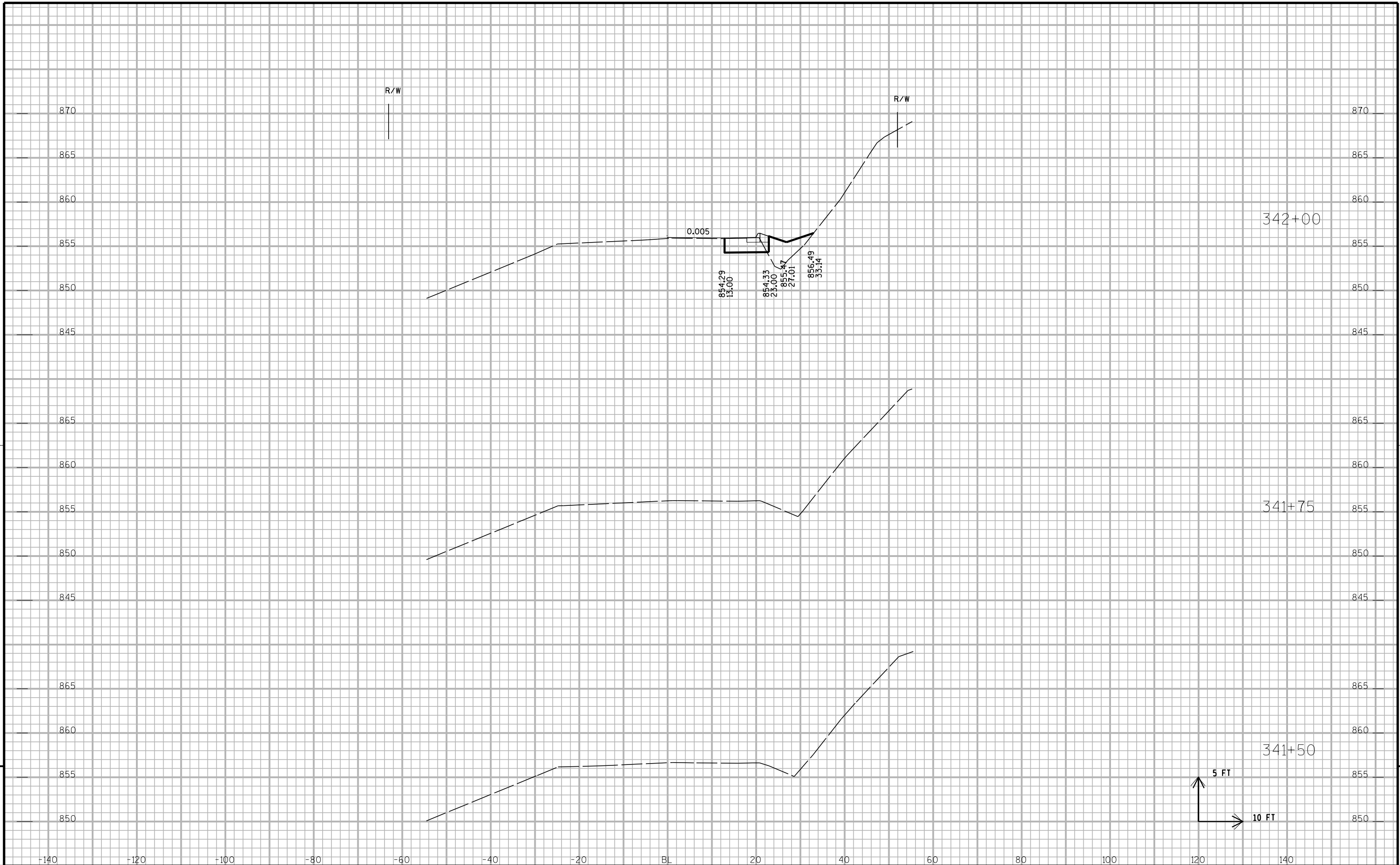


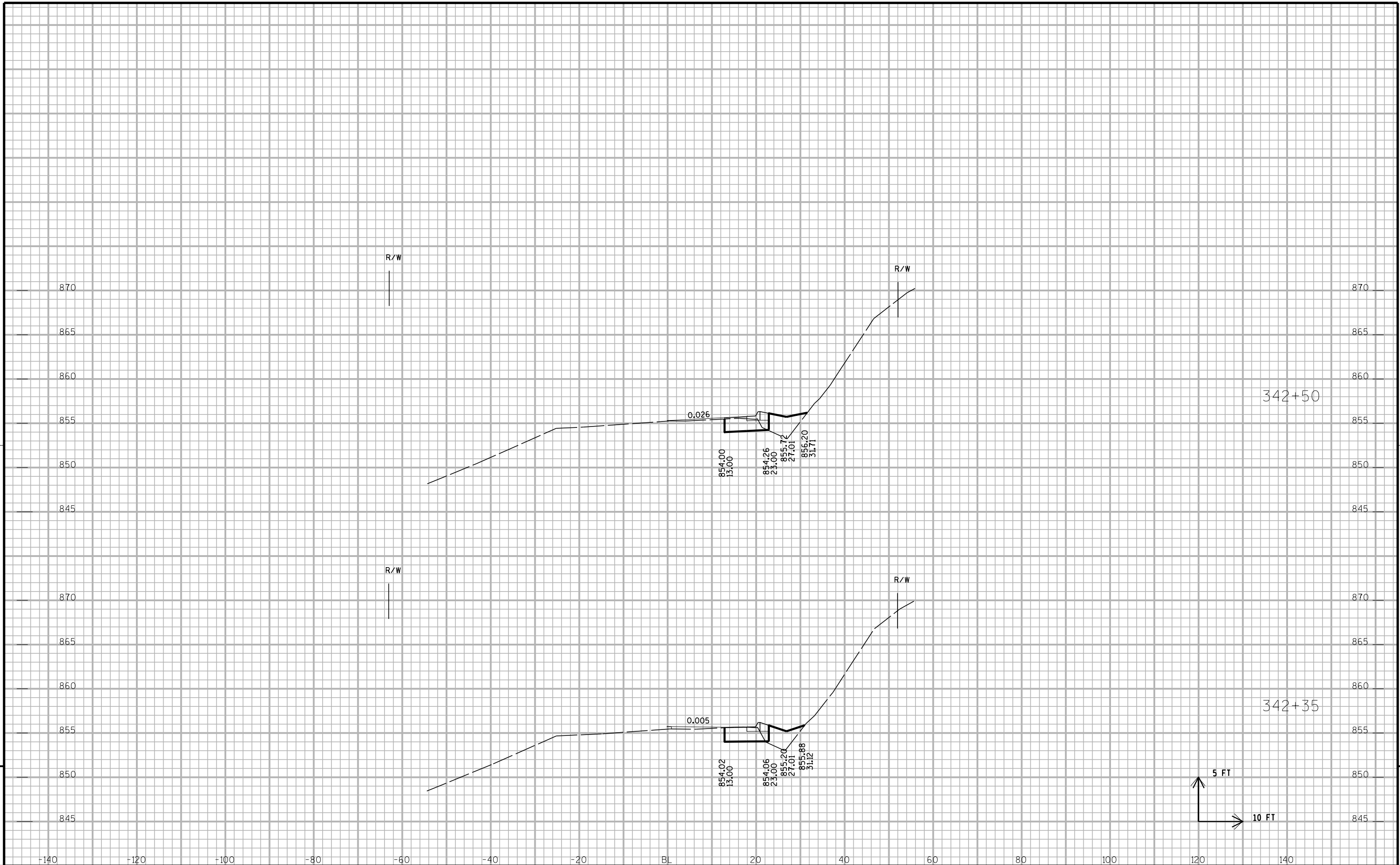




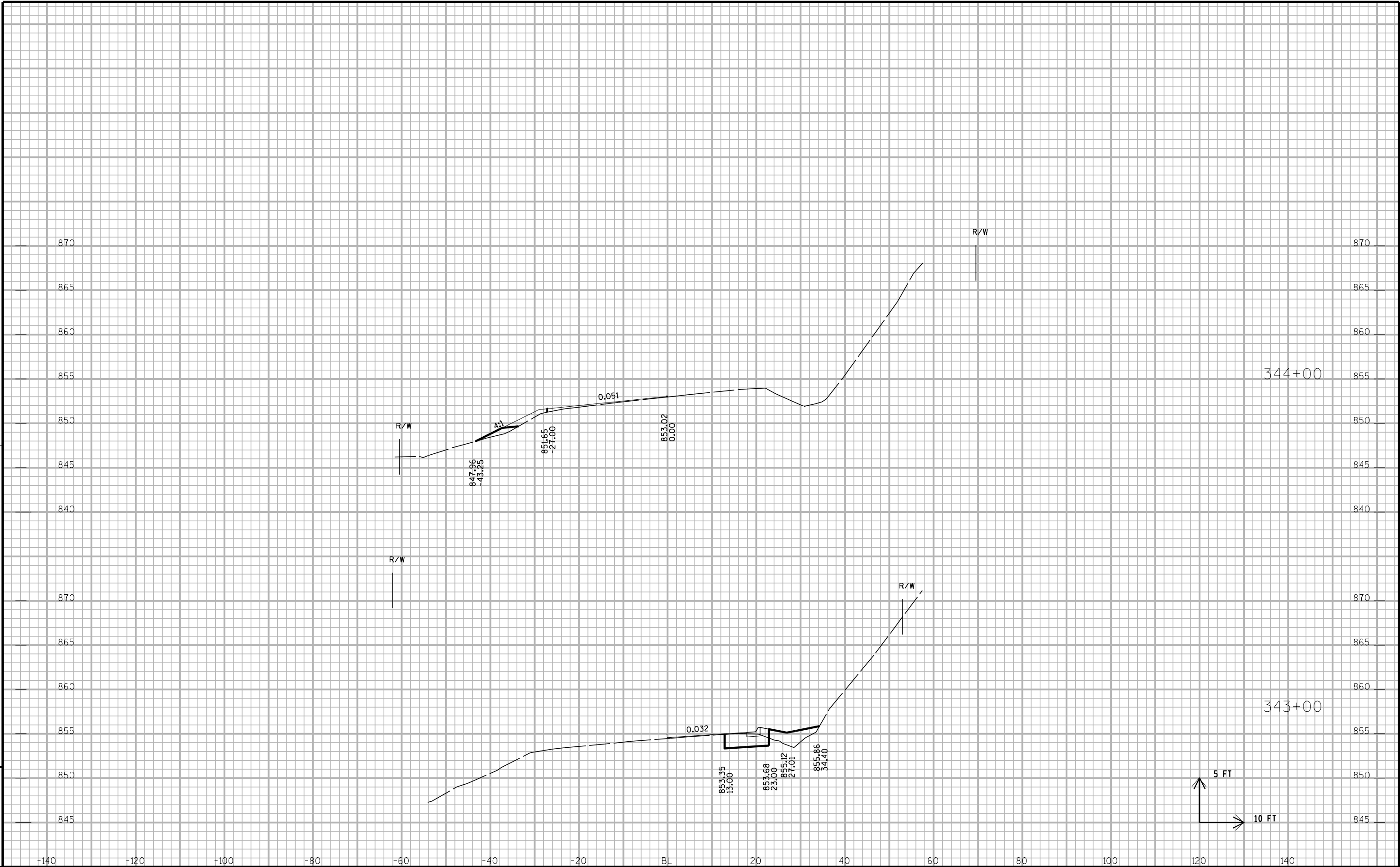




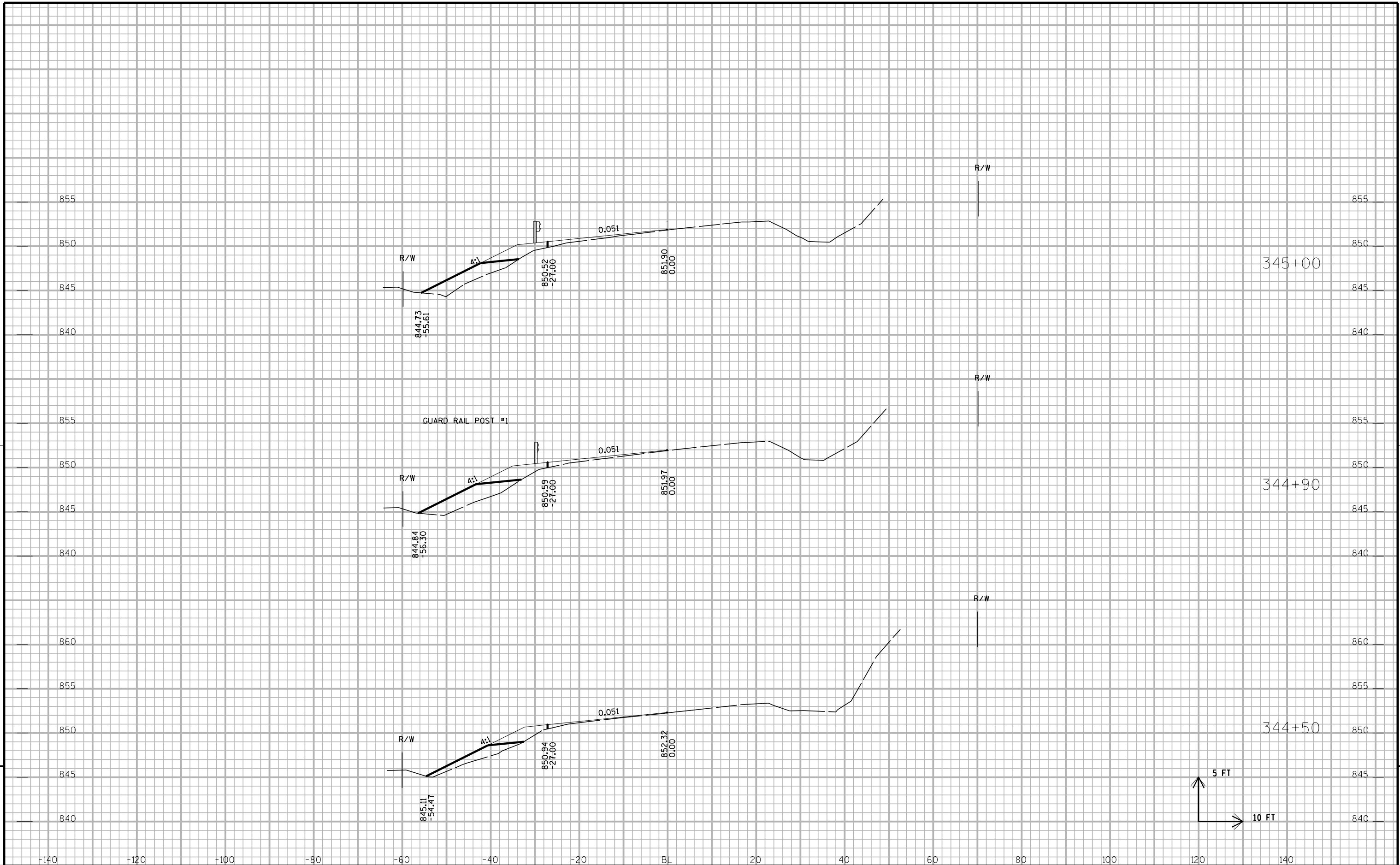


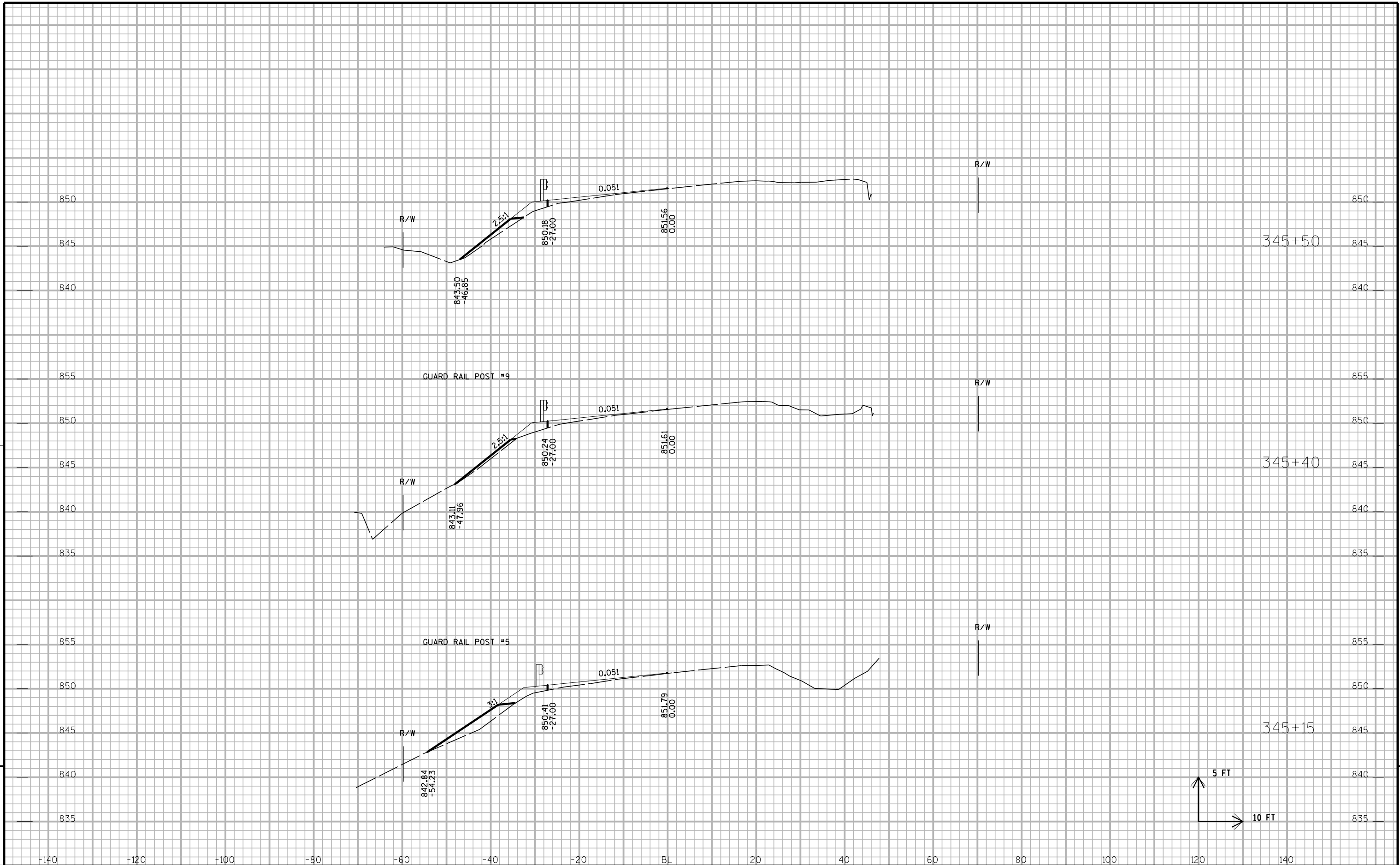


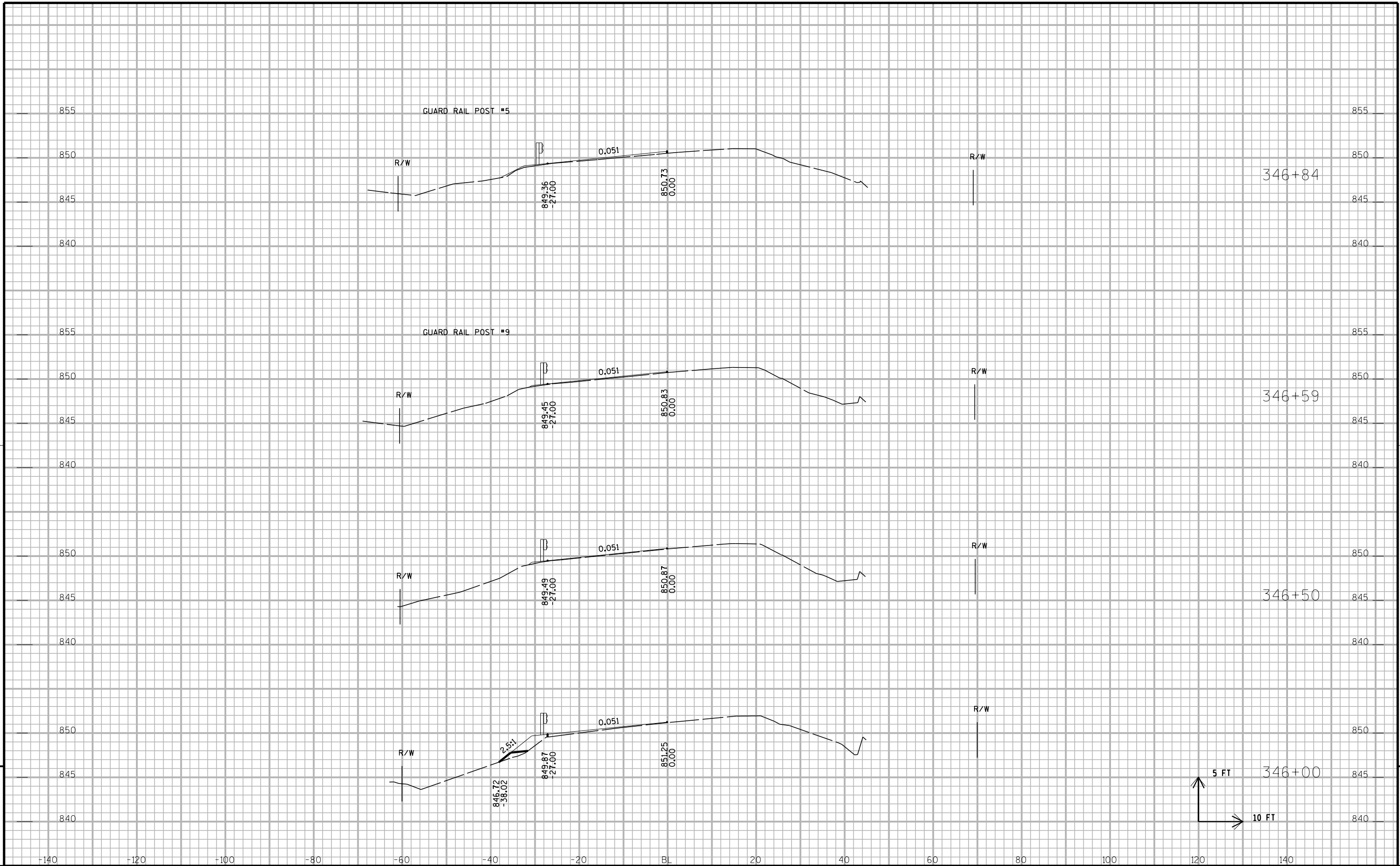
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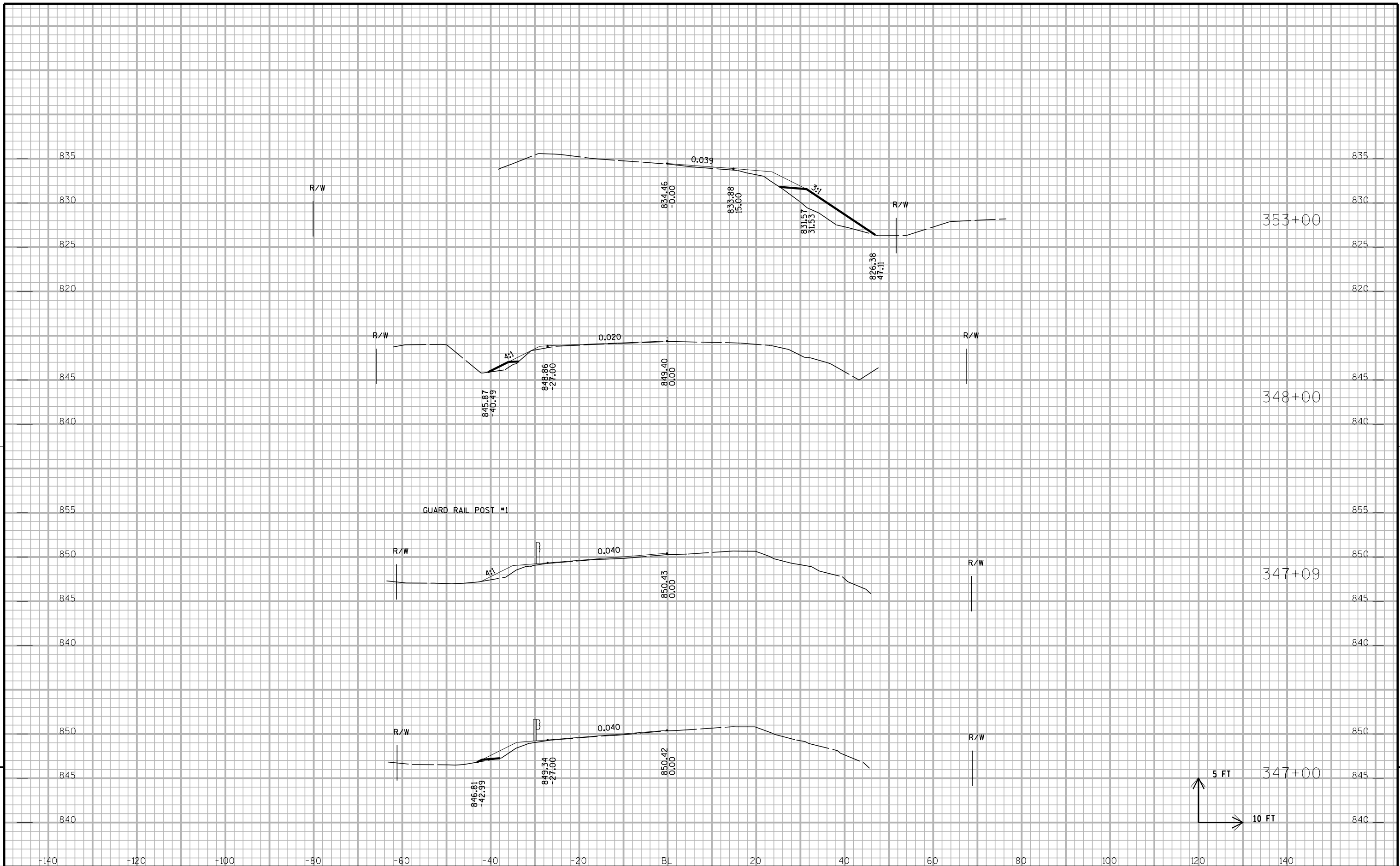


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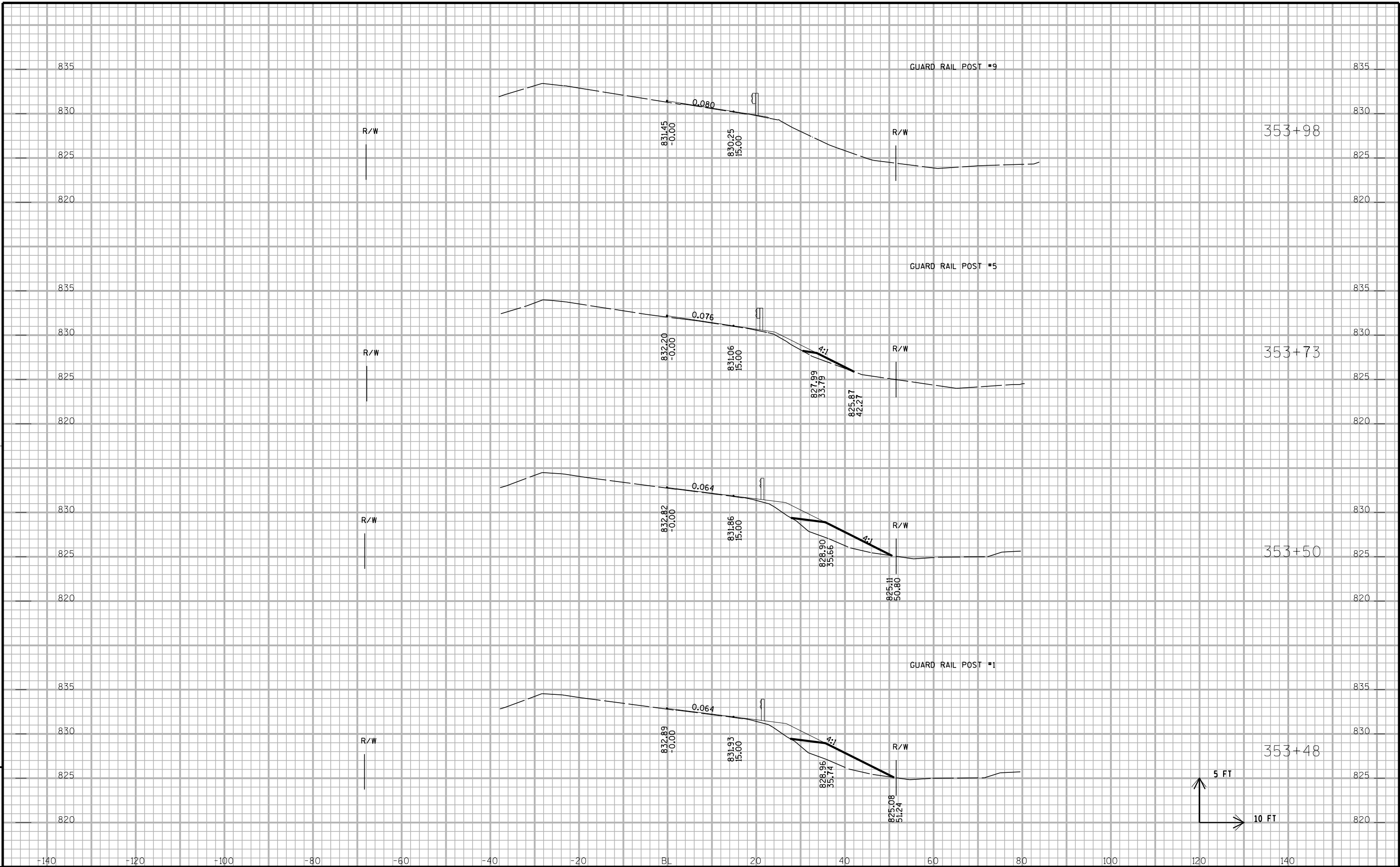




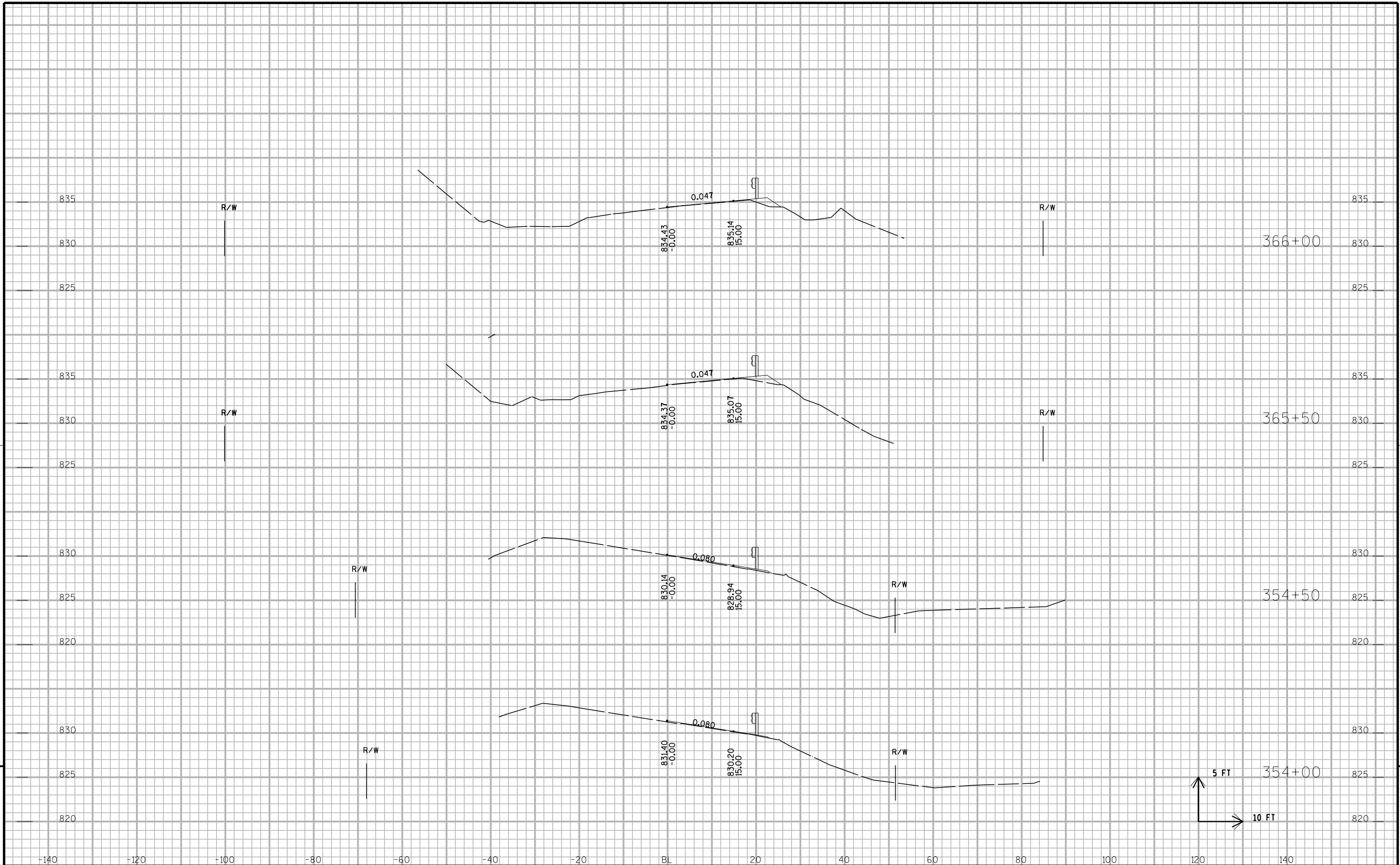
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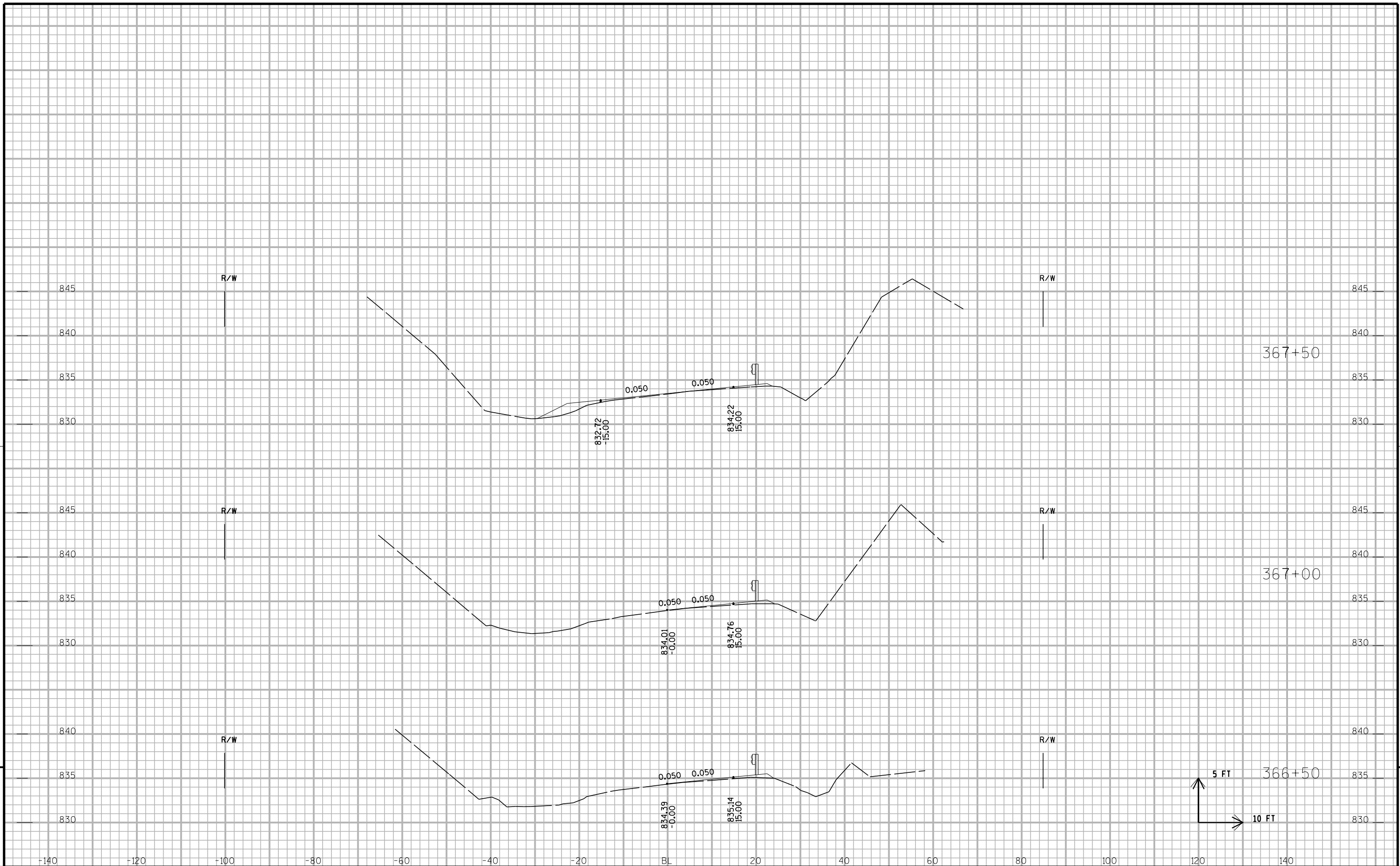
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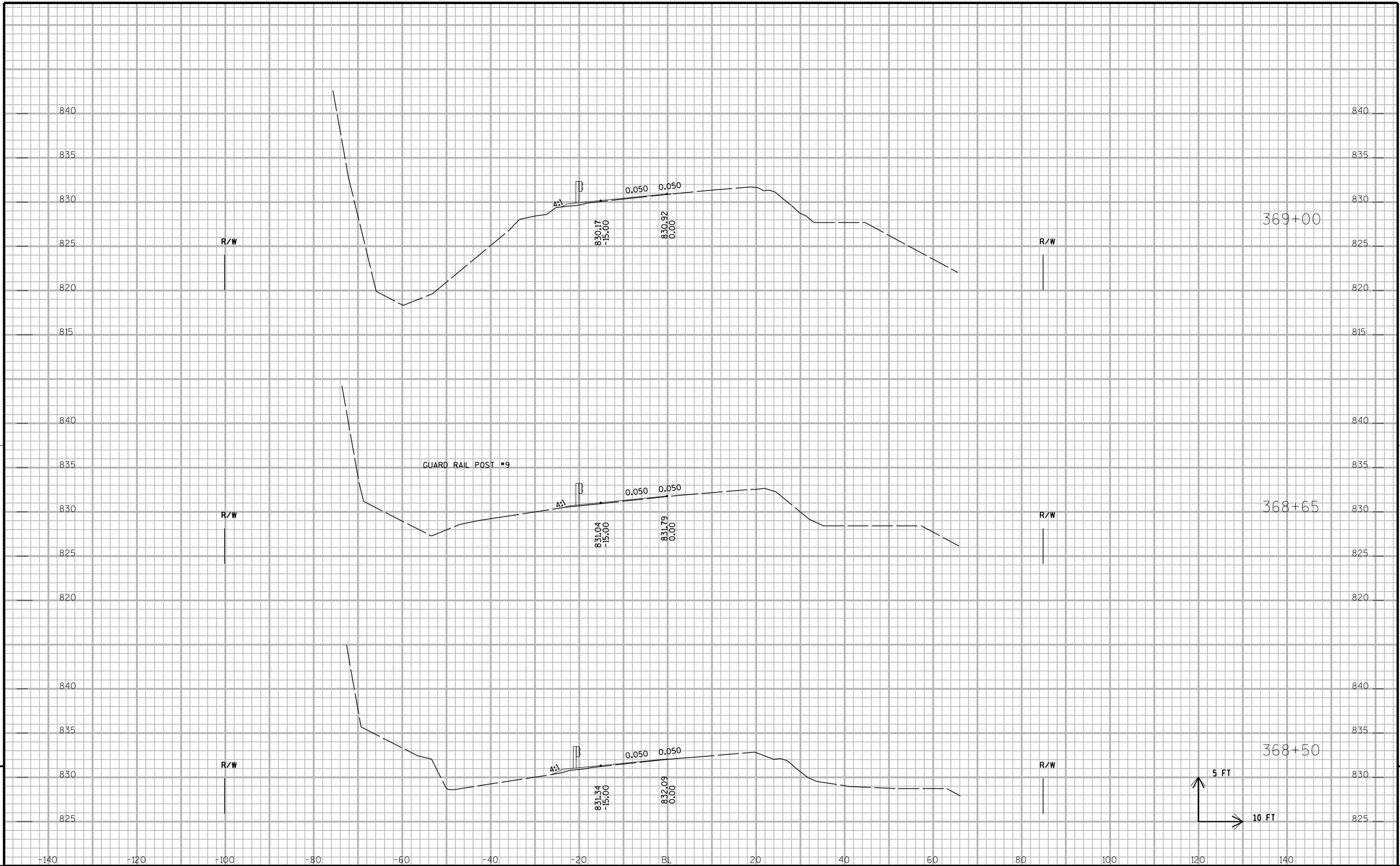
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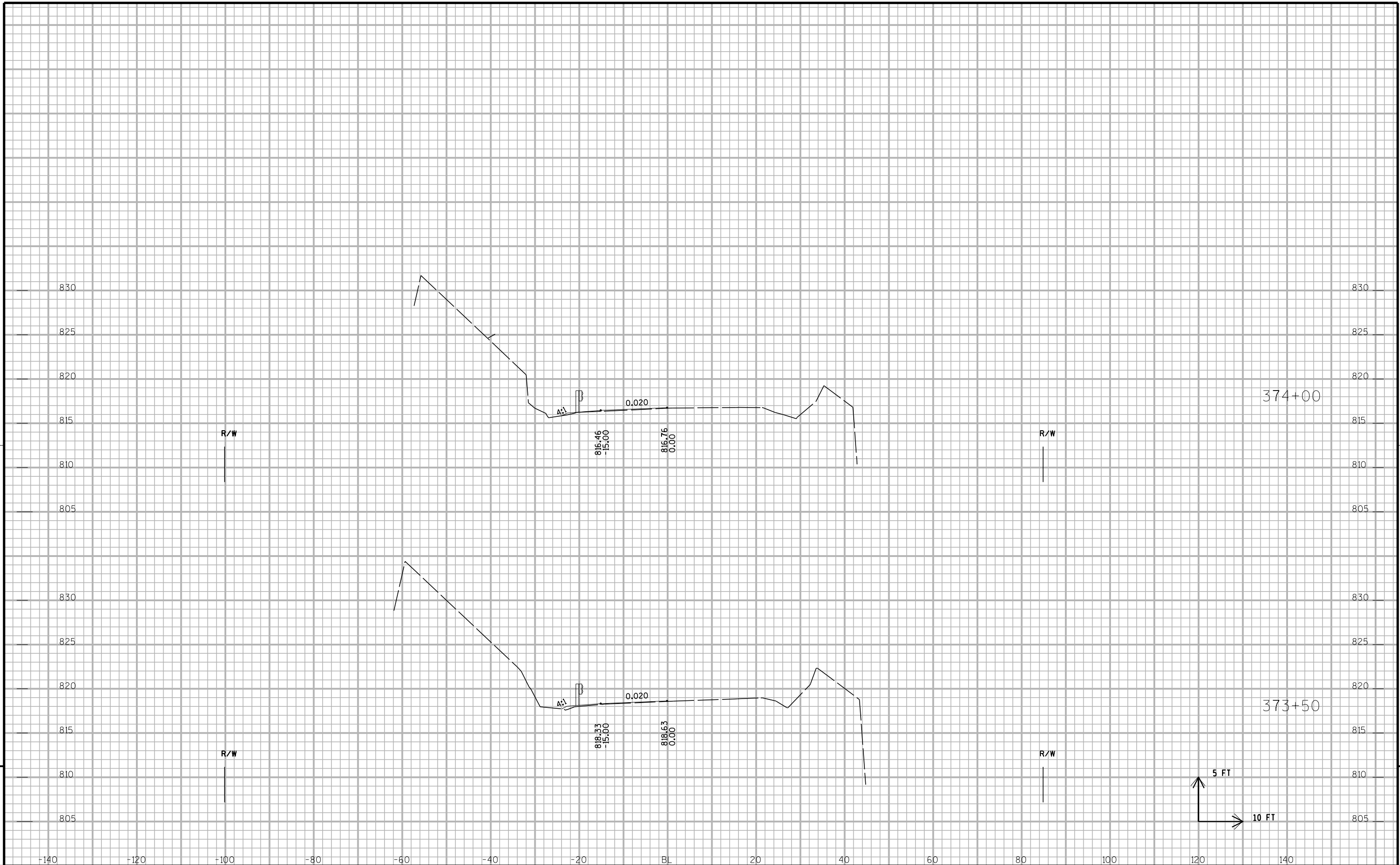
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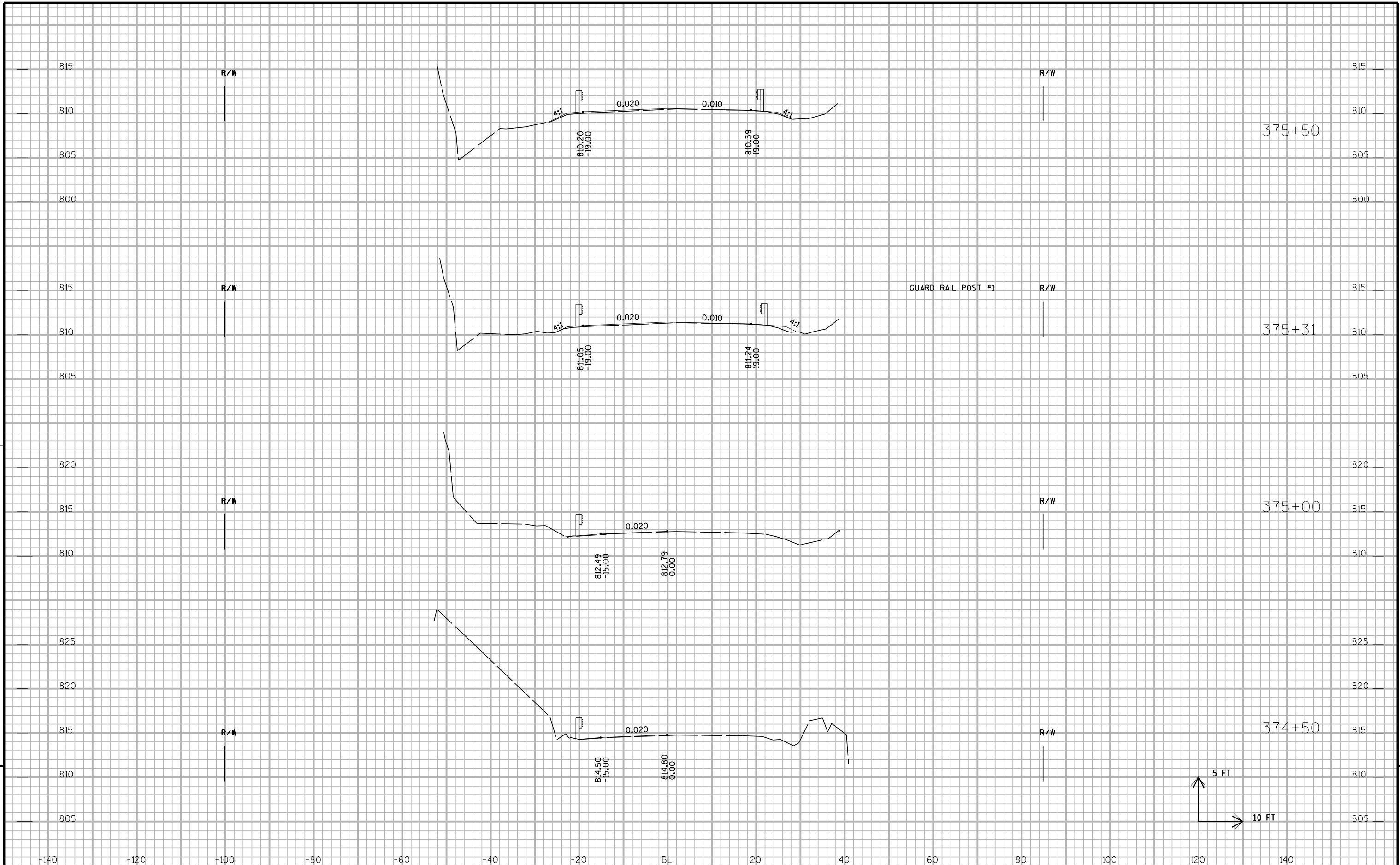


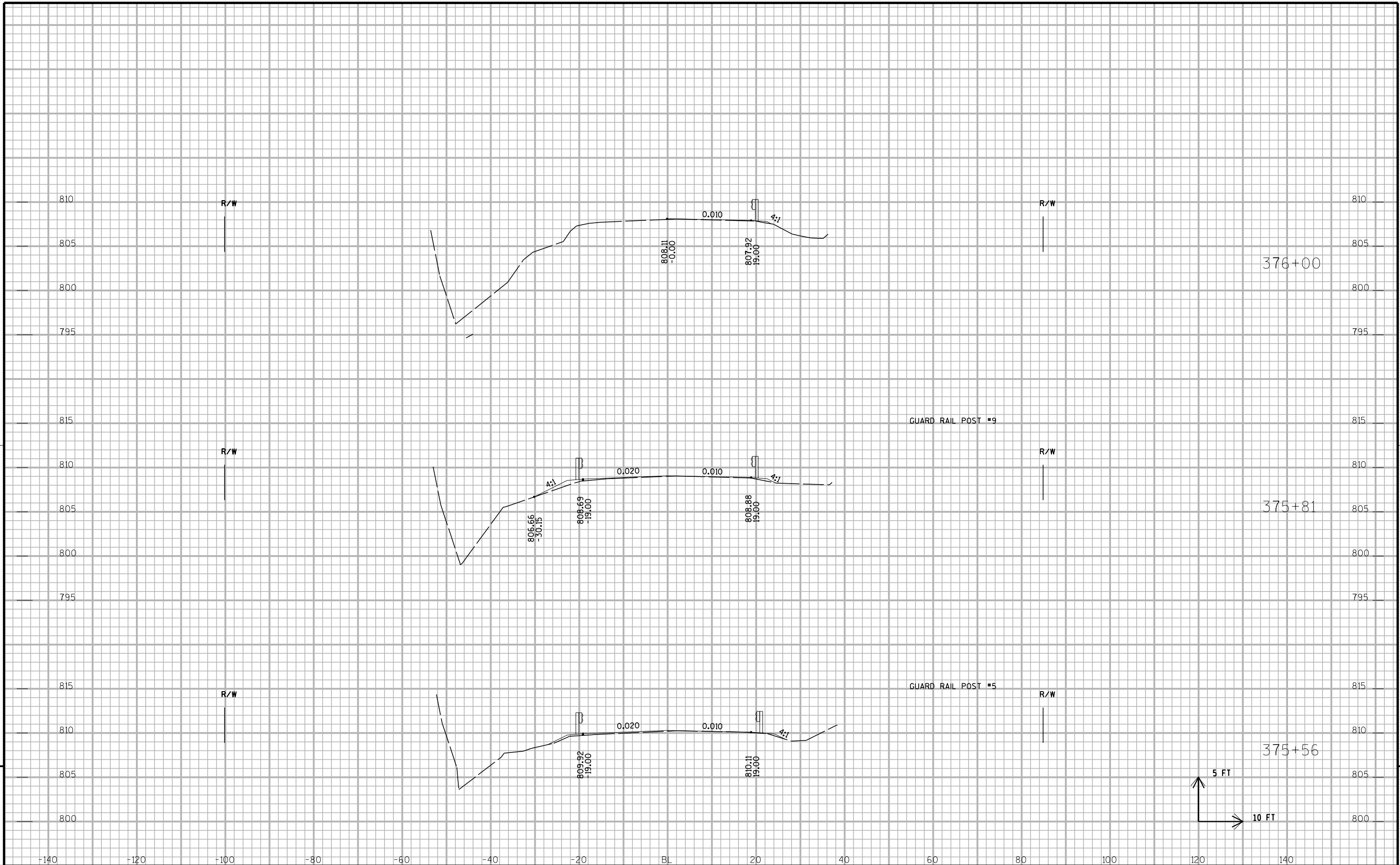


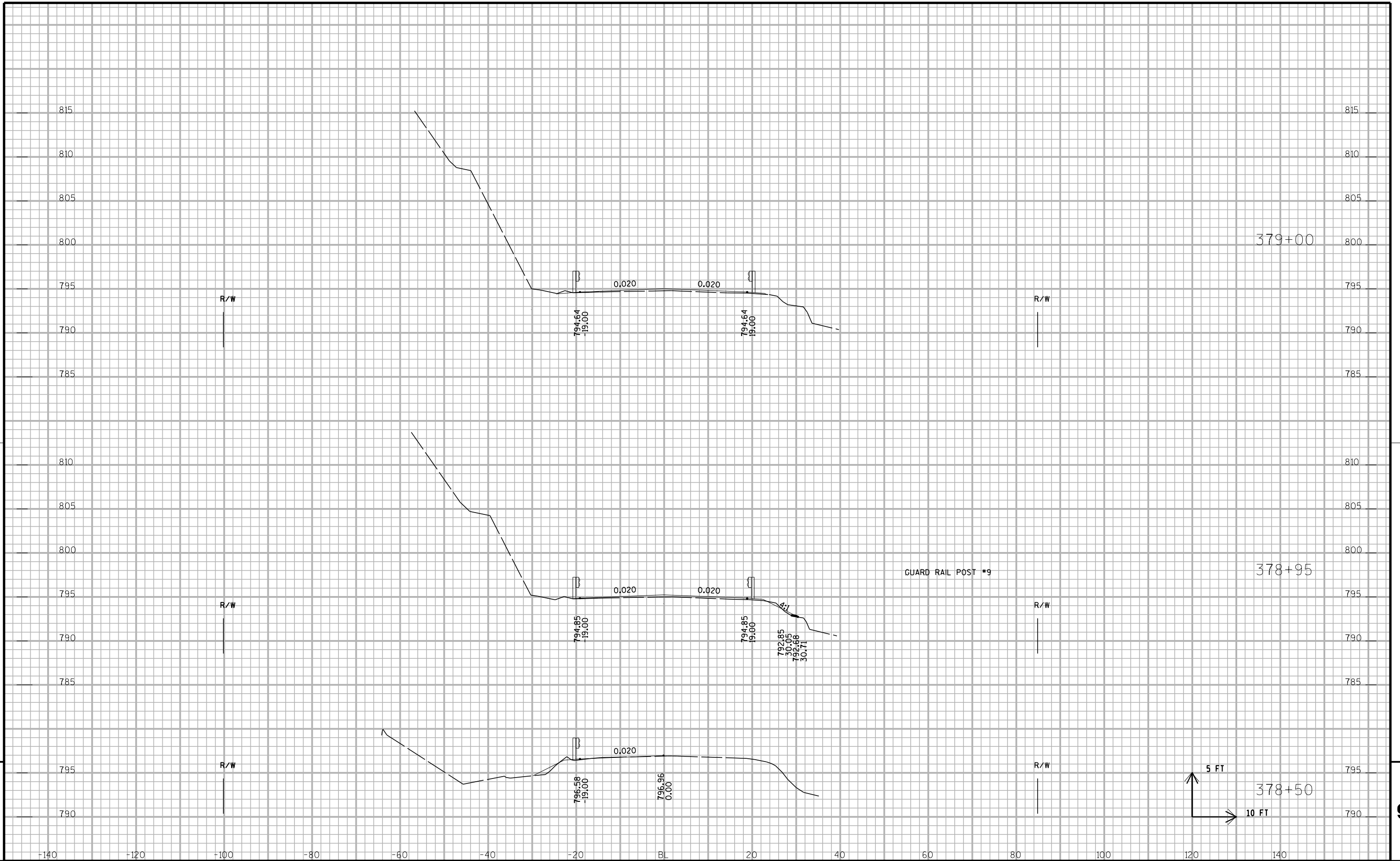


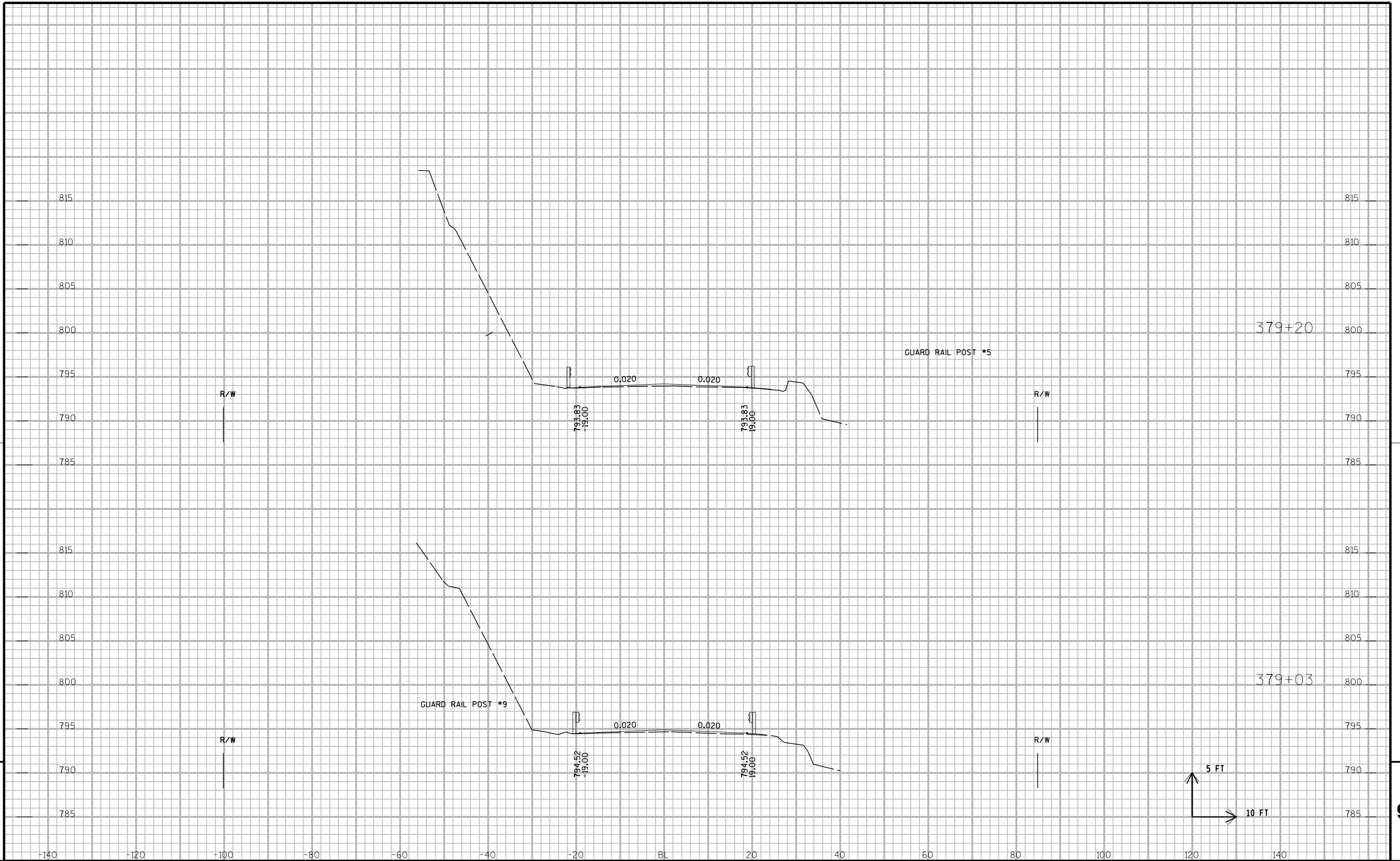


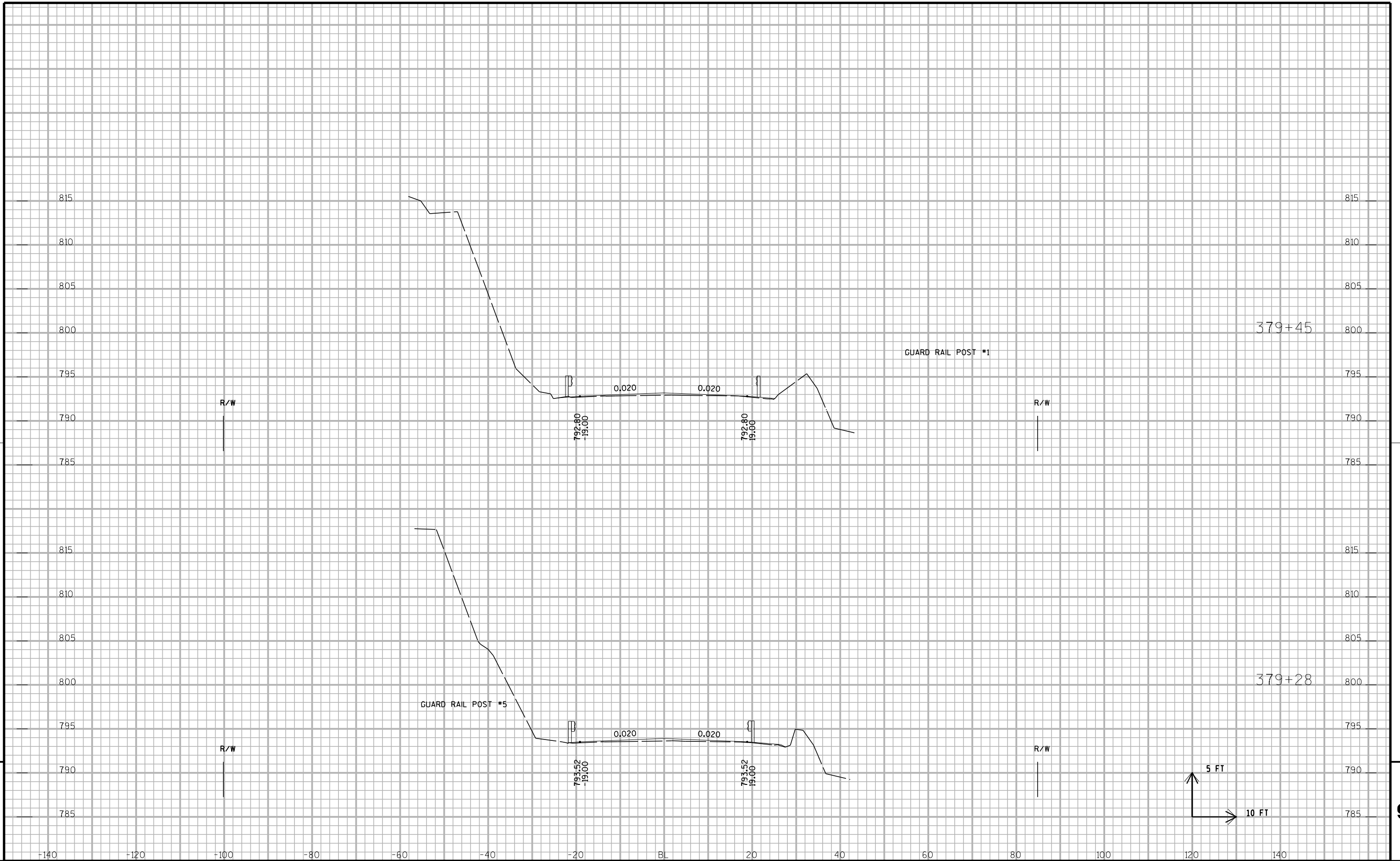






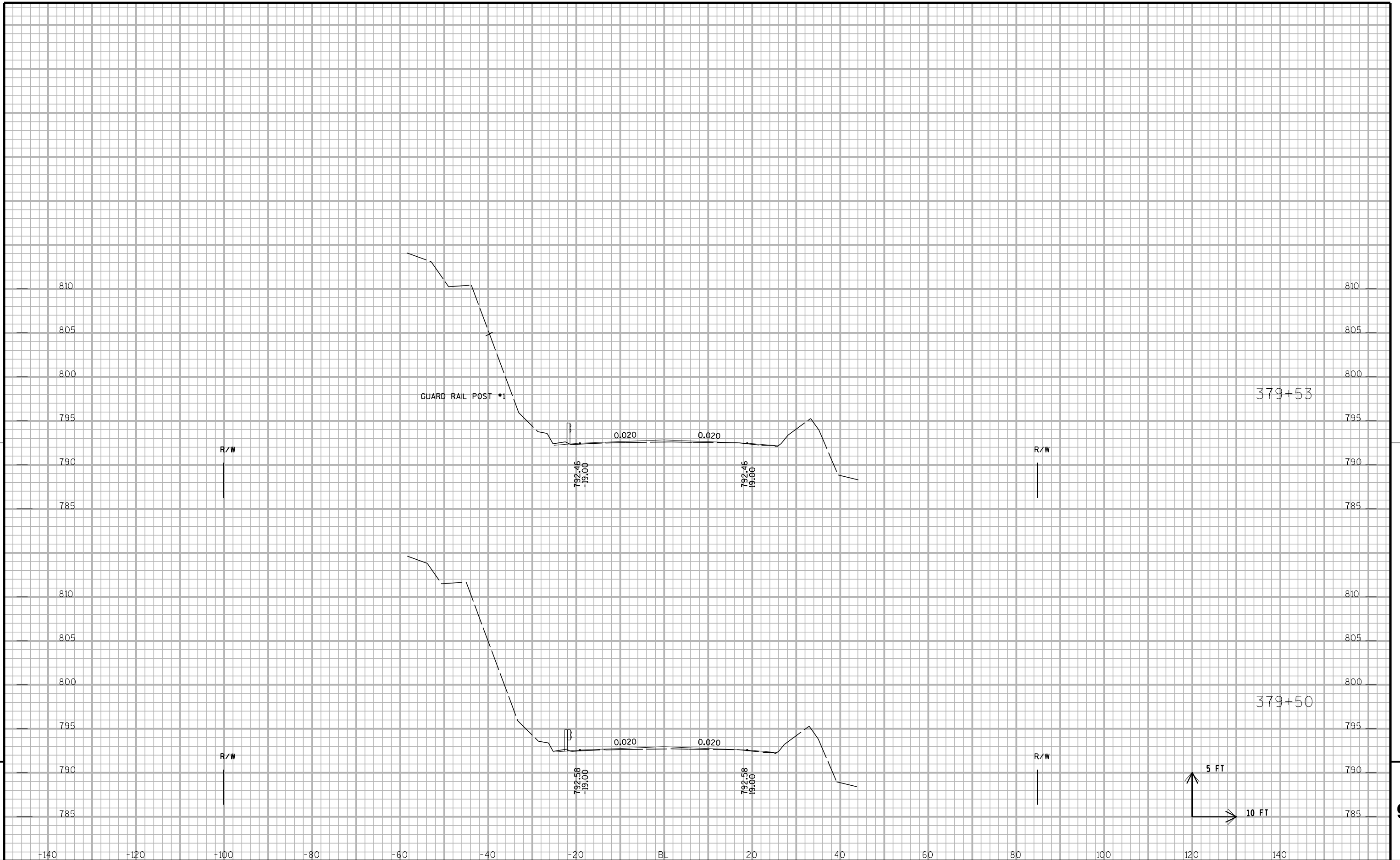


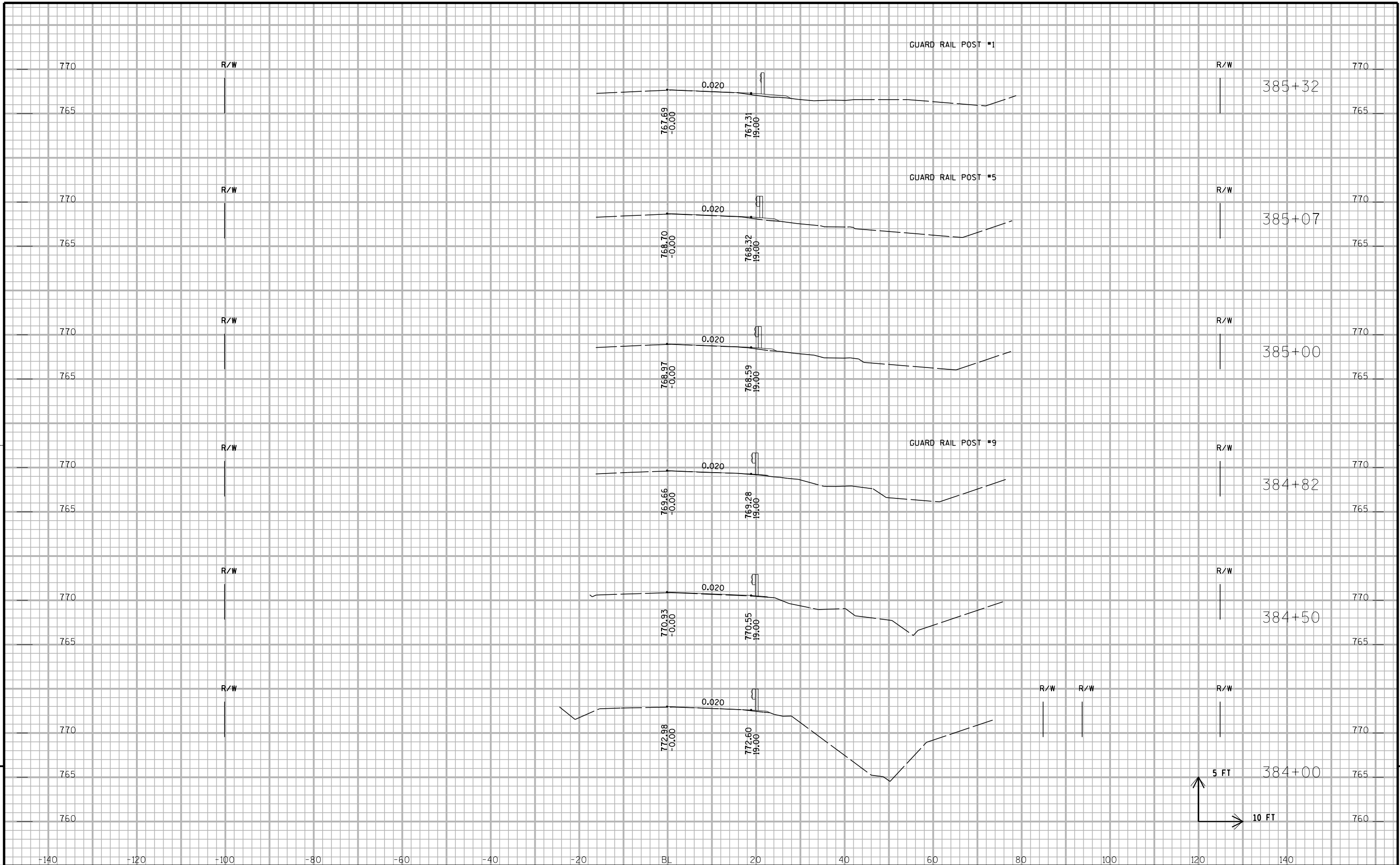


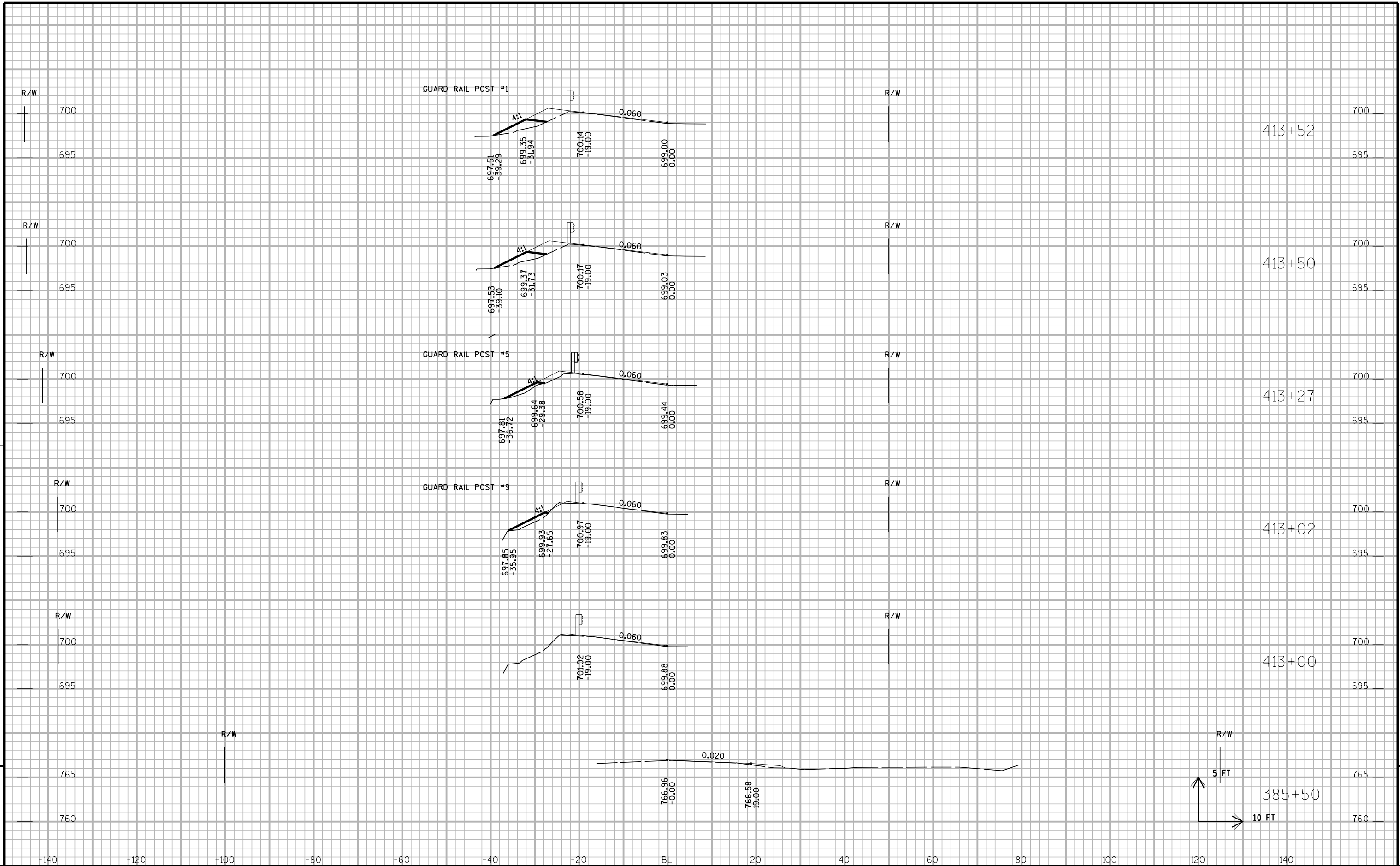


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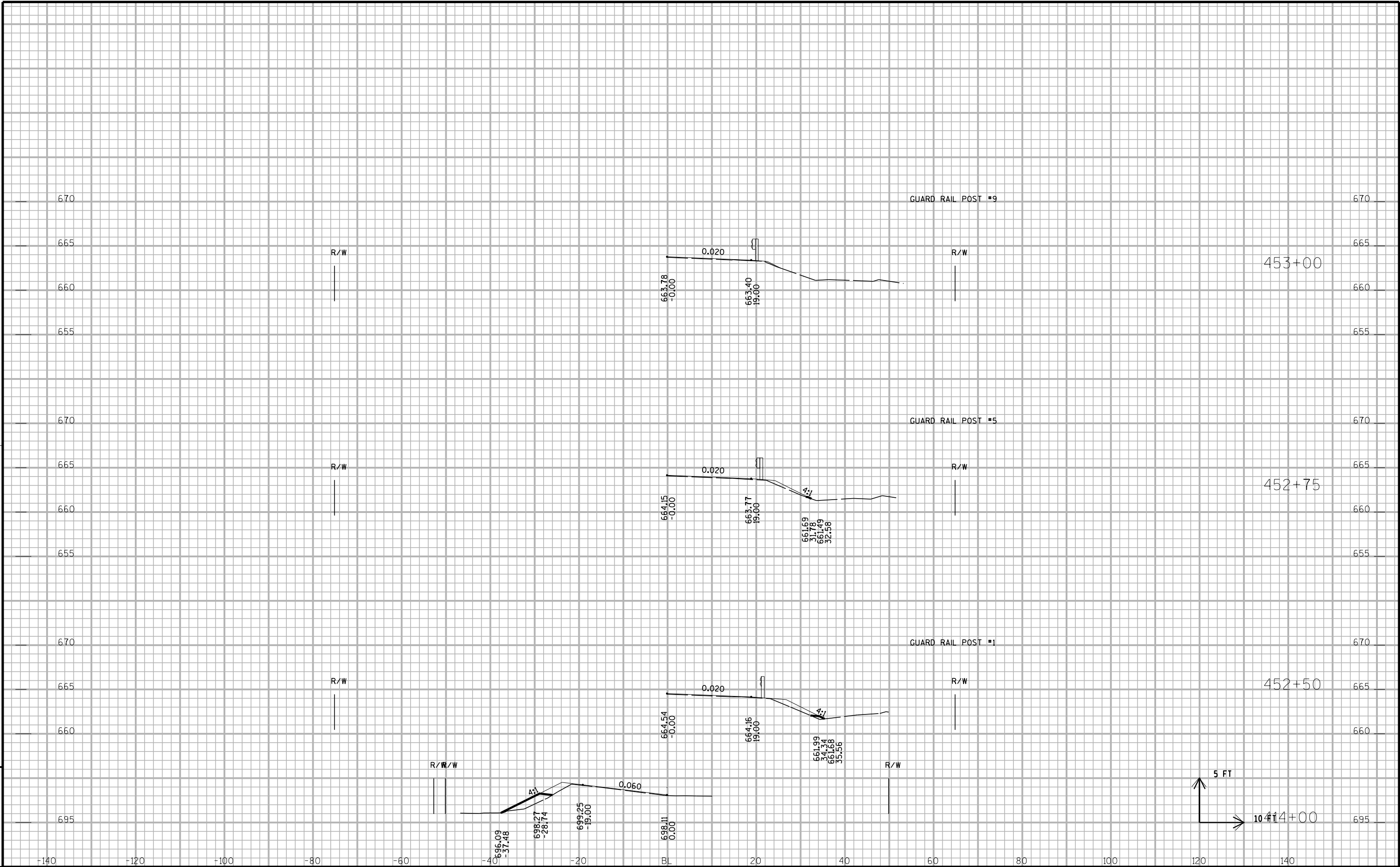
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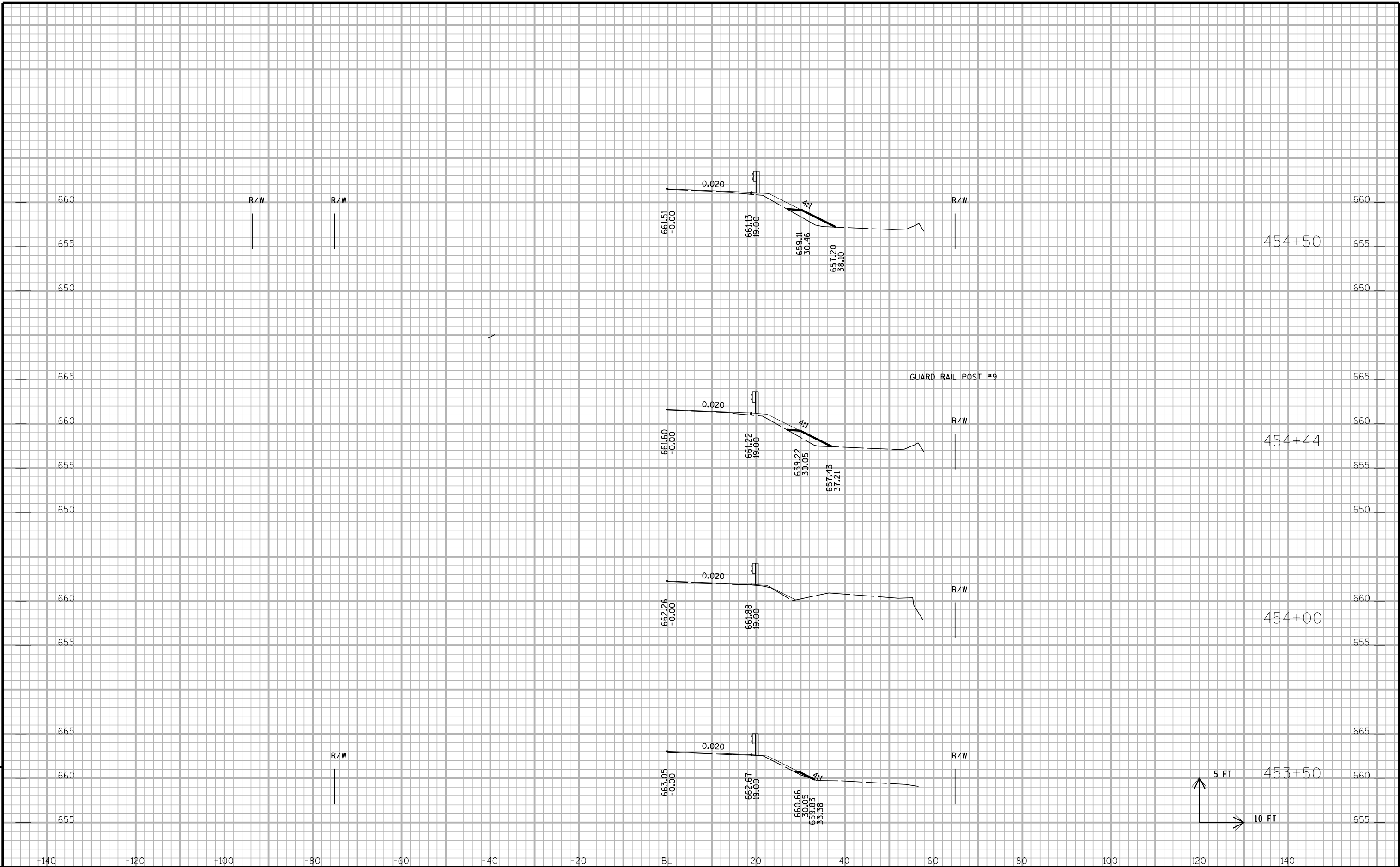


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9

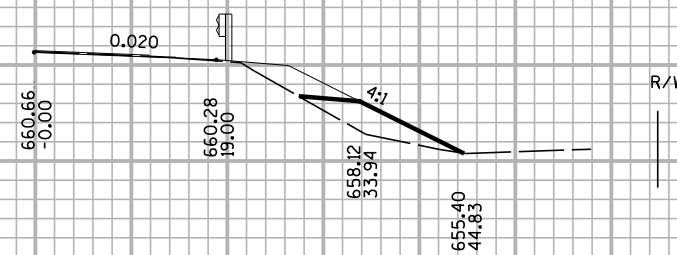
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9

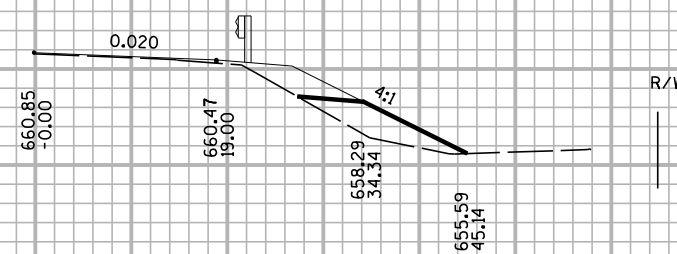
END PROJECT 1530-07-62
STA 502+02.88

R/W



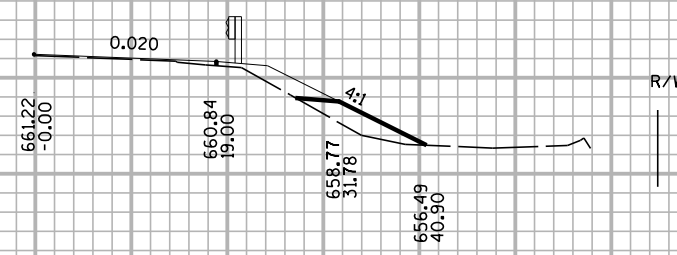
455+00

R/W

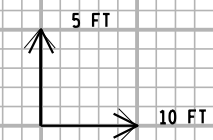


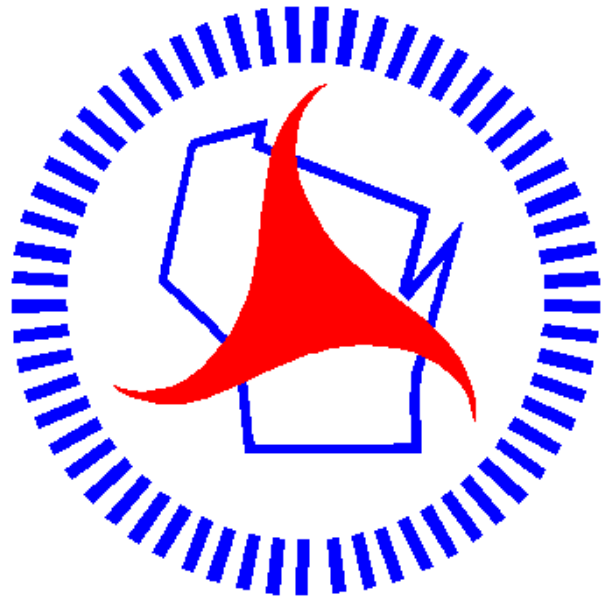
454+94

R/W



454+69





Wisconsin Department of Transportation

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