

LAX APR 2017

PROJECT ID: 1640-01-60

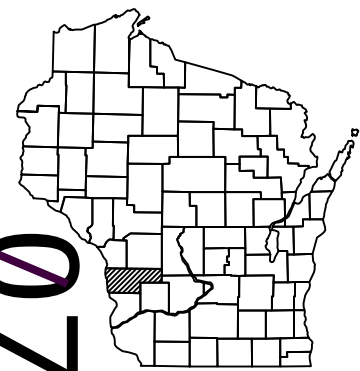
WITH: 07

COUNTY: VERNON

ORDER OF SHEETS

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

TOTAL SHEETS = 270



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

LA CROSSE — WESTBY
CTH P TO VANG STREET
USH 14
VERNON COUNTY

STATE PROJECT NUMBER
1640-01-60

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1640-01-60	WISC 2017160	1

DESIGN DESIGNATION

A.A.D.T. 2010	=	5402
A.A.D.T. 2032	=	6450
D.H.V.	=	10.3
D.D.	=	60/40
T.	=	11.8%
DESIGN SPEED	=	60 MPH
ESALS	=	1300000

CONVENTIONAL SYMBOLS

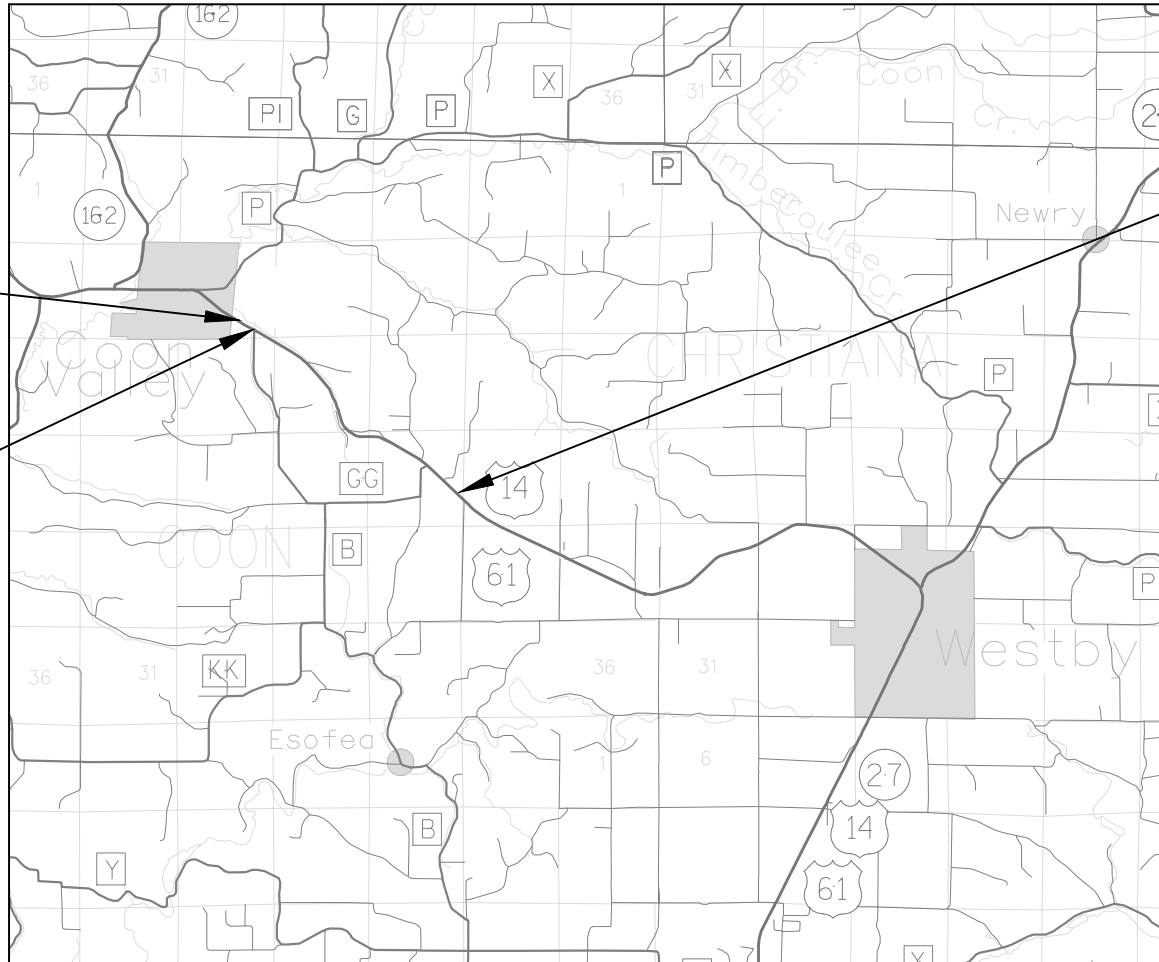
PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	---
LOT LINE	---
LIMITED HIGHWAY EASEMENT	---
EXISTING RIGHT OF WAY	---
PROPOSED OR NEW R/W LINE	---
SLOPE INTERCEPT	---
REFERENCE LINE	---
EXISTING CULVERT	---
PROPOSED CULVERT (Box or Pipe)	---
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	---
WOODED OR SHRUB AREA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

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

STRUCTURE
C-62-2234

BEGIN PROJECT STA 252+00
X=671406.34
Y=201848.47

END PROJECT STA 430+00



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 3.371 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO
THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS),
VERNON COUNTY, NAD 83 (2007), NAVD 88 (2007).

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	ANDREW PHILLIPS
Designer	DANIEL KLEINERTZ
Project Manager	JOSEPH GREGAS
Regional Examiner	
Regional Supervisor	
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 11/1/2016

(Signature)

E

GENERAL NOTES

- LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- WHEN PORTIONS OF 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.
- NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES.
- ALL PE'S SHALL BE REPLACED IN KIND (AGGREGATE OR ASPHALT).
- DIMENSIONS OF RIPRAP PLACEMENT SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- PRIOR TO THE PLACEMENT OF MGS OR STEEL PLATE BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- RIGHT OF WAY LINES SHOWN ON CROSS SECTIONS AND PLANS ARE APPROXIMATE.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE, OR PARKING LANE.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- APPLY TACK COAT TO MILLED SURFACES/CONCRETE AT A RATE OF 0.07 GAL/SY AND BETWEEN HMA PAVEMENT LAYERS AT A RATE OF 0.05 GAL/SY.
- HMA WEDGING LIFTS TO BE PLACED ACCORDING TO STANDARD SPECIFICATIONS, MULTIPLE LIFTS MAY BE NEEDED TO CORRECT SUPERELEVATIONS.
- EXISTING ASPHALT THICKNESS VARIES, SEE BORING LOG DETAIL.

UTILITY CONTACTS

Renita Williamson
Coon Valley Municipal Water Utility - Water
P.O. Box 129
Coon Valley, WI 54623-0129
(608) 452-3168
cyclerk@mwft.net

Doug Dickenson
Midwest Natural Gas Incorporated
3600 STH 157
P.O. Box 429
La Crosse, WI 54602
(608) 781-1011
doug@midwestnaturalgas.com

Todd Tunks
Vernon Telephone Cooperative - Communication Line
103 N Main St
P.O. Box 20
Westby, WI 54667
(800) 543-2029
ttunks@vernontel.com

Lenny Leis
Coon Valley Telecommunications Inc - Communication Line
P.O. Box 398
Coon Valley, WI 54623-0398
(608) 452-3121
lleis@mwft.net

Tim Orcutt
Mediacom LLC Wisconsin - Communication Line
3033 Asbury Rd
Dubuque, WI 52001
(608) 326-0478
torcutt@mediacomllc.com

Nathan Becker
Windstream KDL, Inc. - Communication Line
13935 Bishops Dr.
Brookfield, WI 53005
(414) 313-9032
nathan.becker@windstream.com

DNR CONTACT

KAREN KALVELAGE
ENVIRONMENTAL IMPACT COORDINATOR
DNR WEST CENTRAL REGION
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
Karen.Kalvelage@wisconsin.gov

DESIGN CONTACTS

DAN KLEINERTZ
PROJECT MANAGER
WISDOT SW REGION
PROJECT DEVELOPMENT
3550 MORMON COULEE RD
LA CROSSE, WI 54601
(608) 789-5709
Daniel.Kleinertz@dot.wi.gov

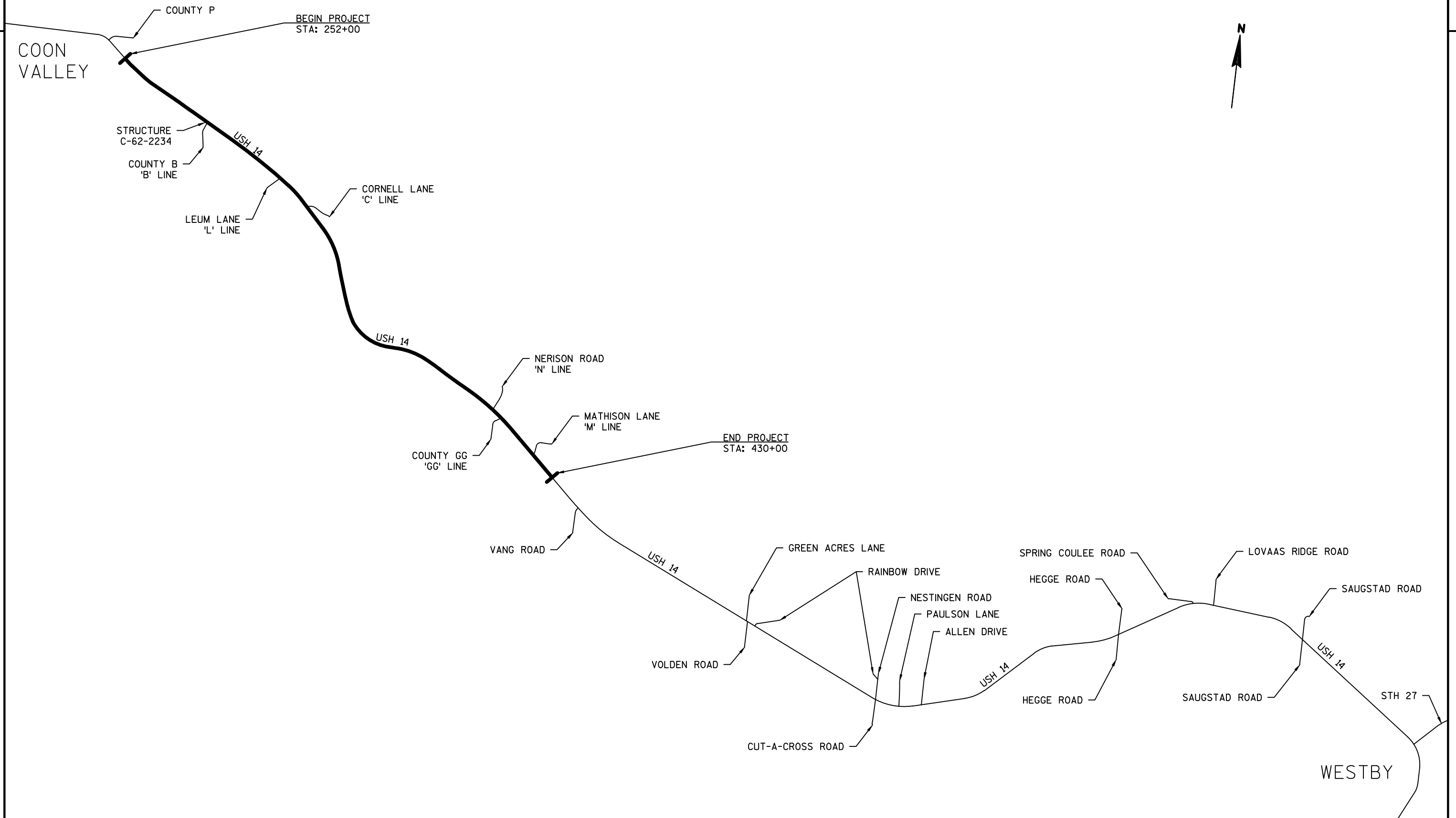
ANDREW PHILLIPS
PROJECT DESIGNER
WISDOT SW REGION
PROJECT DEVELOPMENT
3550 MORMON COULEE RD
LA CROSSE, WI 54601
(608) 386-0201
Andrew.Phillips@dot.wi.gov

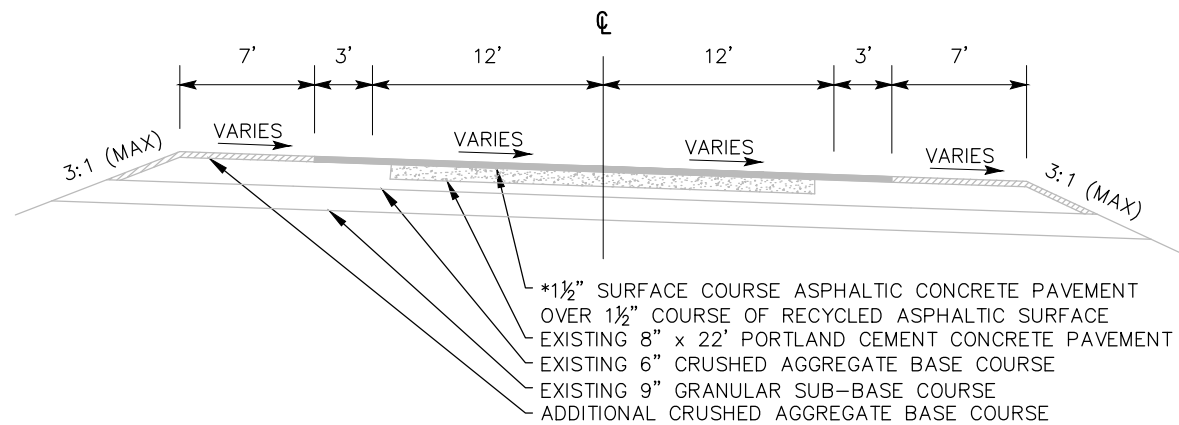
STANDARD ABBREVIATIONS

AC.	ACRE	MAX.	MAXIMUM
AGG.	AGGREGATE	MGAL	1000 GALLONS
AH	AHEAD	MIN.	MINIMUM
<	ANGLE	N.C.	NORMAL CROWN OR NO CHANGE
AE, AEW	APRON ENDWALL	N	NORTH
ASPH.	ASPHALTIC	NO.	NUMBER
A.D.T.	AVERAGE DAILY TRAFFIC	PAV'T	PAVEMENT
B.F.	BACK FACE	P.L.E.	PERMANENT LIMITED EASEMENT
BK.	BACK	P.C.	POINT OF CURVATURE
BEG.	BEGIN	P.I.	POINT OF INTERSECTION
B.M.	BENCH MARK	P.T.	POINT OF TANGENCY
C/L	CENTER LINE	V.P.C.	VERTICAL POINT OF CURVATURE
D	CENTRAL ANGLE OR DELTA	V.P.I.	VERTICAL POINT OF INTERSECTION
C.M.C.P.	CORRUGATED METAL CULVERT PIPE	V.P.T.	VERTICAL POINT OF TANGENCY
C.M.P.	CORRUGATED METAL PIPE	PCC	PORTLAND CEMENT CONCRETE
CO.	COUNTY	P.E.	PRIVATE ENTRANCE
CTH	COUNTY TRUNK HIGHWAY	P.L.	PROPERTY LINE
CR.	CREEK	R	RADIUS OR RANGE
C.A.B.C.	CRUSHED AGGREGATE BASE COURSE	R/L	REFERENCE LINE
C.Y.	CUBIC YARD	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
C.P.	CULVERT PIPE	RT	RIGHT
C. & G.	CURB AND GUTTER	REQ'D	REQUIRED
D	DEGREE OF CURVE	R.H.F.	RIGHT HAND FORWARD
D.H.V.	DESIGN HOUR VOLUME	R/W	RIGHT OF WAY
DIA.	DIAMETER	R.	RIVER
DISCH.	DISCHARGE	RD.	ROAD
EA	EACH	SHLD.	SHOULDER(S)
E	EAST	SHR.	SHRINKAGE
ELEC.	ELECTRIC(AL), ELEC. CABLE	S	SOUTH
EL., ELEV.	ELEVATION	S.F.	SQUARE FOOT (FEET)
EXC.	EXCAVATION	SDD	STANDARD DETAIL DRAWING(S)
F.F.	FACE TO FACE	STH	STATE TRUNK HIGHWAY
FERT.	FERTILIZER	STA.	STATION
F.E.	FIELD ENTRANCE	S.E.	SUPERELEVATION
F/L, F.L.	FLOW LINE	S/L	SURVEY LINE
CWT.	HUNDRED WEIGHT	T	TANGENT
INL	INLET	TEL.	TELEPHONE
INTER.	INTERSECTION	TEMP.	TEMPORARY
JT.	JOINT	T.L.E.	TEMPORARY LIMITED EASEMENT
LT	LEFT	T.O.C.	TOP OF CURB
L.H.F.	LEFT HAND FORWARD	T.	(TRUCKS) PERCENT OF
L.	LENGTH OF CURVE	TYP.	TYPICAL
L.F.	LINEAR FOOT(FEET)	UNCL.	UNCLASSIFIED
LC.	LONG CHORD	U.G.	UNDERGROUND (CABLE)
LS	LUMP SUM	V.C.	VERTICAL CURVE
M.P.	MARKER POST	W	WEST



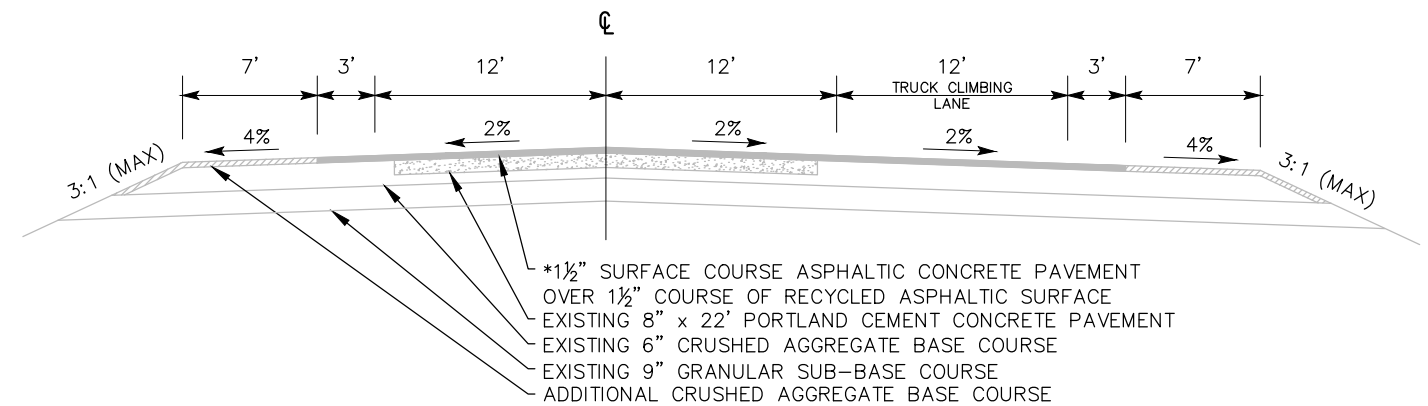
Dial 811 or (800) 242-8511
www.DiggersHotline.com





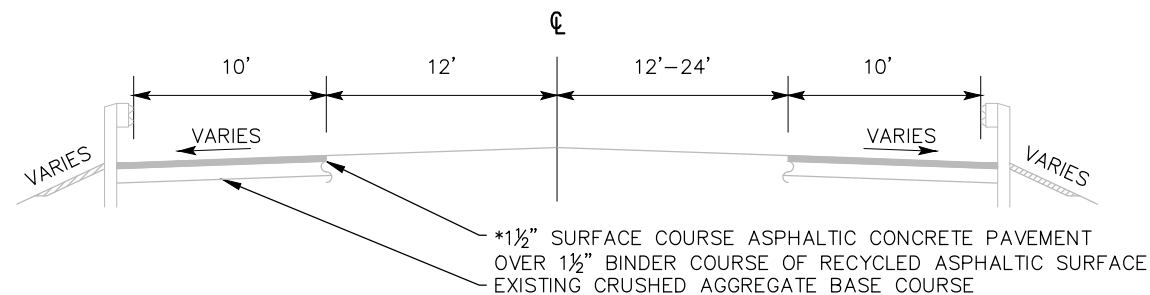
TYPICAL EXISTING SECTION
USH 14

RESURFACING AREA, SUPERELEVATION
STA 252+00 – STA 267+17
STA 305+84 – STA 321+18
STA 324+67 – STA 340+59



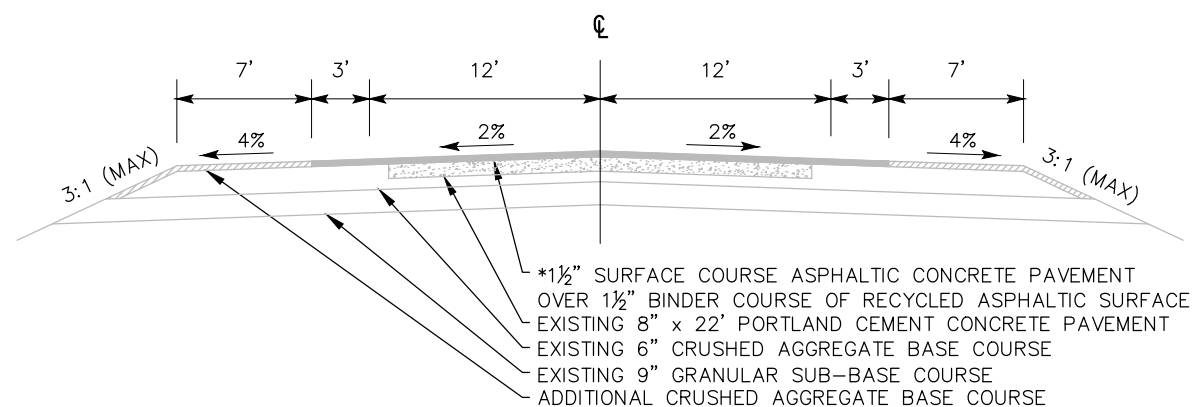
TYPICAL EXISTING SECTION
USH 14

RESURFACING AREA, CLIMBING LANE
STA 342+81 – STA 349+81
STA 383+82 – STA 393+07



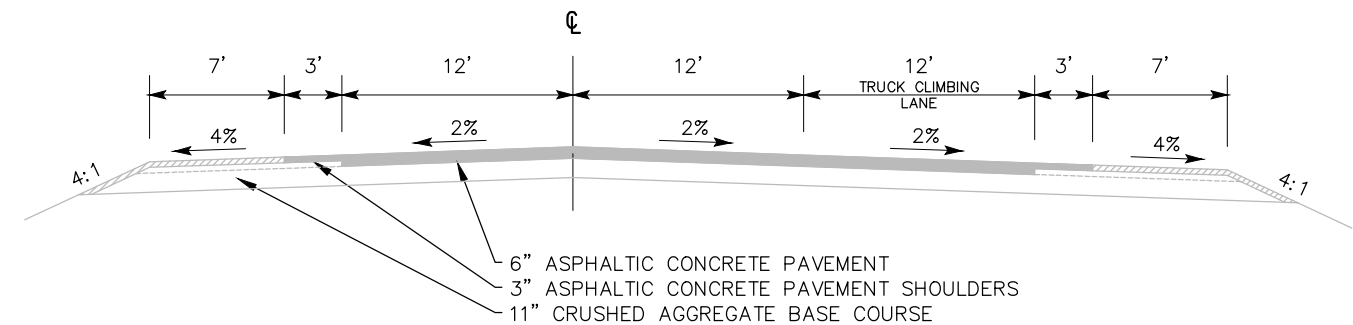
TYPICAL EXISTING SECTION
USH 14

BEAM GUARD



TYPICAL EXISTING SECTION
USH 14

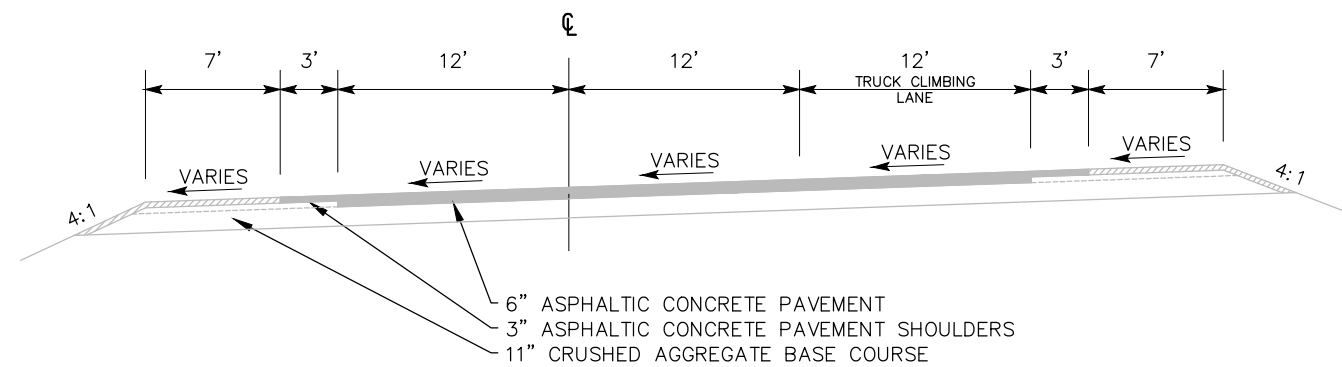
RESURFACING AREA
STA 267+17 – STA 305+84
STA 321+18 – STA 324+67
STA 340+59 – STA 342+81



TYPICAL EXISTING SECTION
USH 14

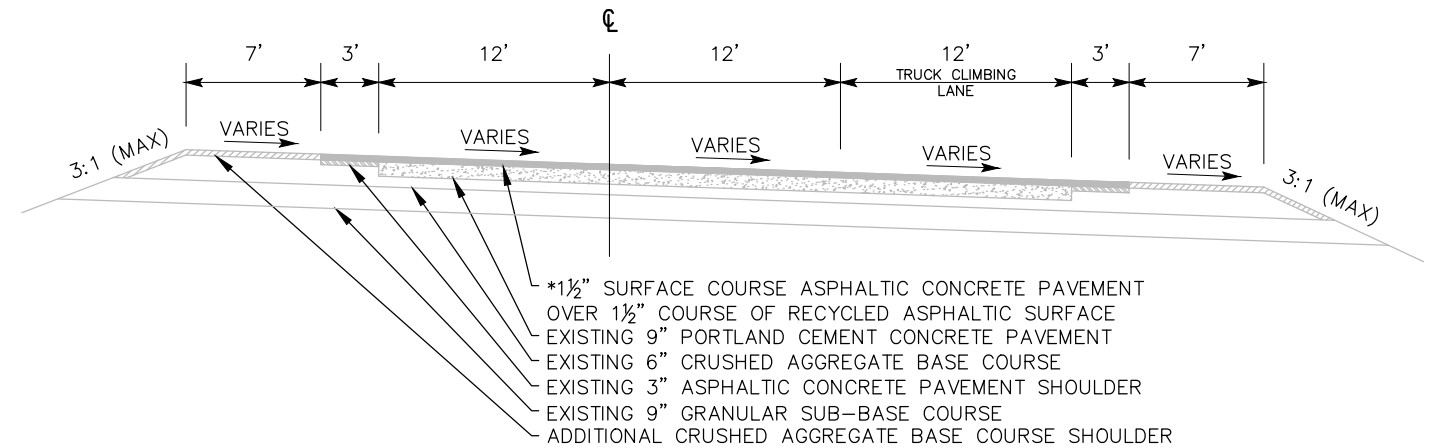
RECONSTRUCTION AREA, CLIMBING LANE
STA 349+81 – STA 349+96
STA 382+03 – STA 383+82

*ACTUAL THICKNESSES VARY. SEE BORING SUMMARY.



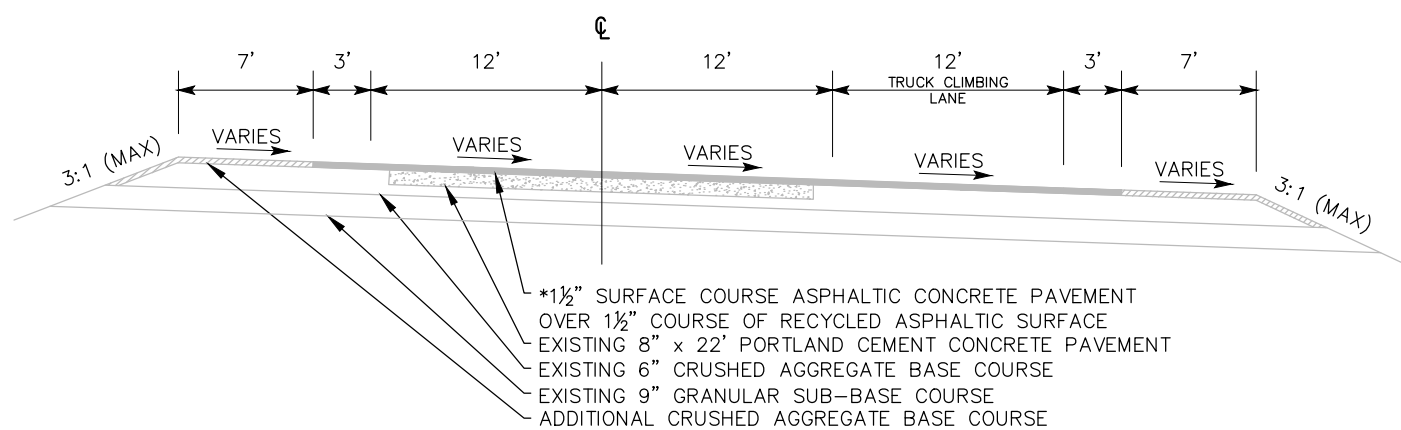
TYPICAL EXISTING SECTION
USH 14

RECONSTRUCTION AREA, SUPERELEVATION WITH CLIMBING LANE
STA 349+96 – STA 382+03



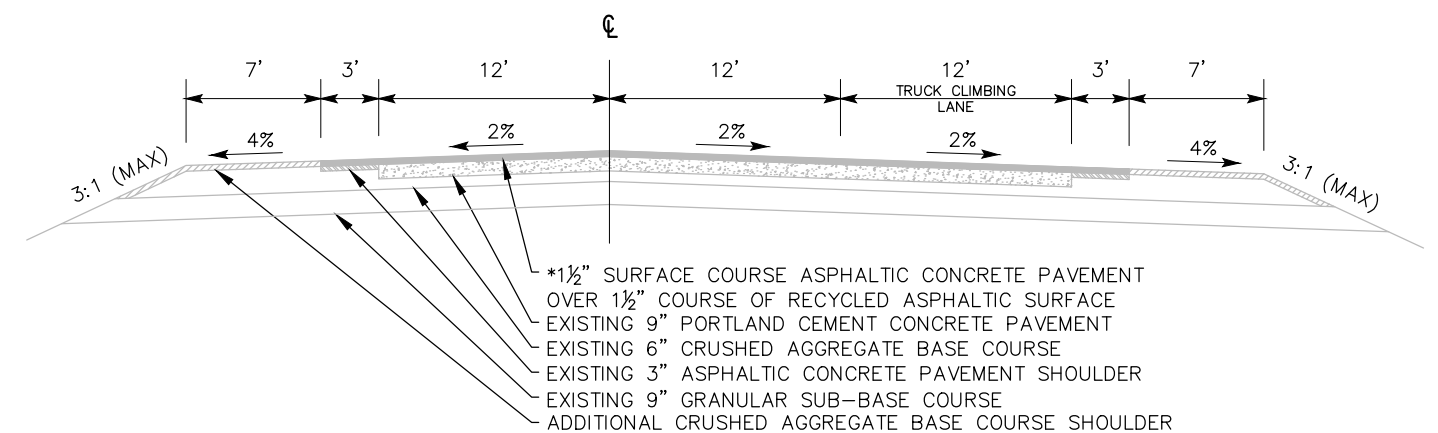
TYPICAL EXISTING SECTION
USH 14

RESURFACING AREA, SUPERELEVATION WITH CLIMBING LANE
STA 395+54 – STA 413+63



TYPICAL EXISTING SECTION
USH 14

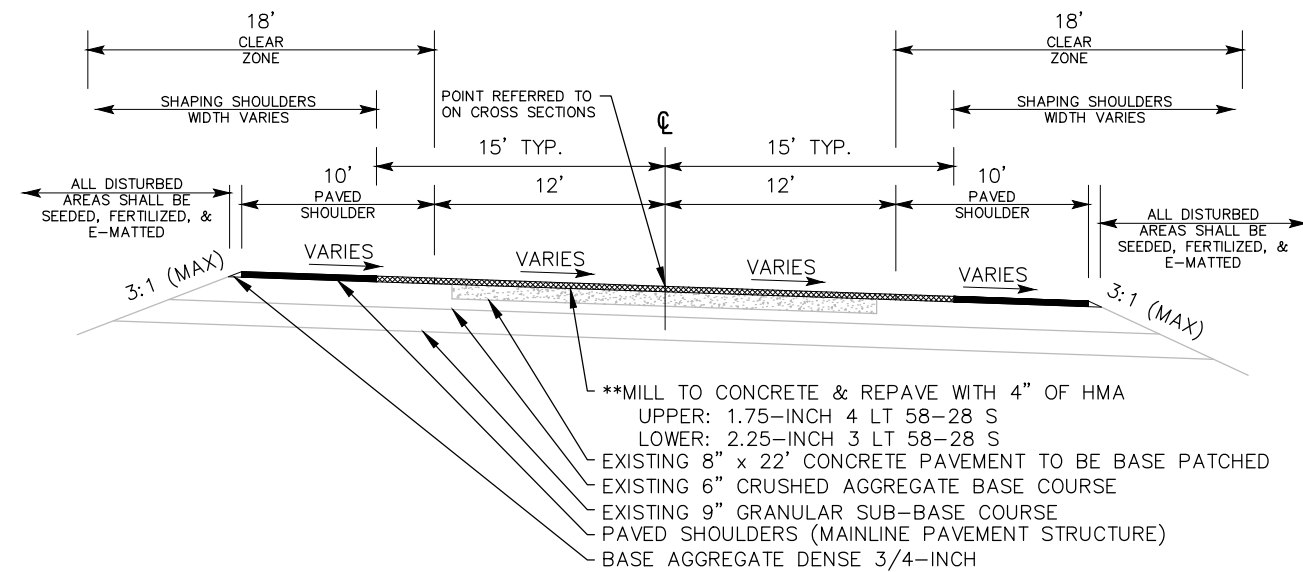
RESURFACING AREA, SUPERELEVATION WITH CLIMBING LANE
STA 393+07 – STA 395+53



TYPICAL EXISTING SECTION
USH 14

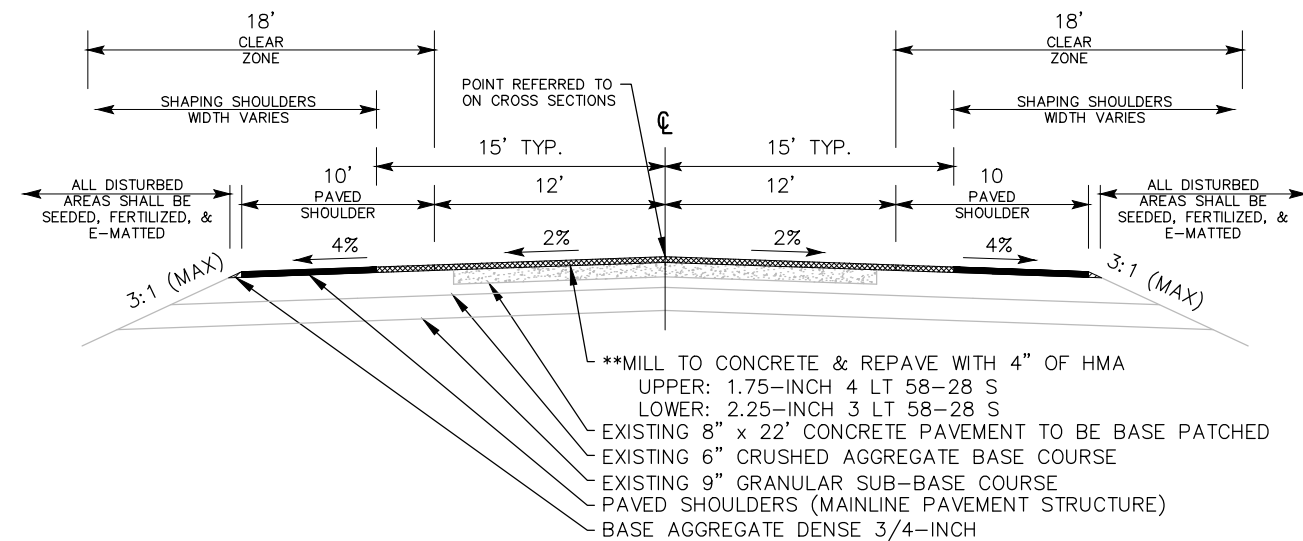
RESURFACING AREA, CLIMBING LANE
STA 413+63 – STA 427+54

*ACTUAL THICKNESSES VARY. SEE BORING SUMMARY.



TYPICAL PROPOSED SECTION
USH 14

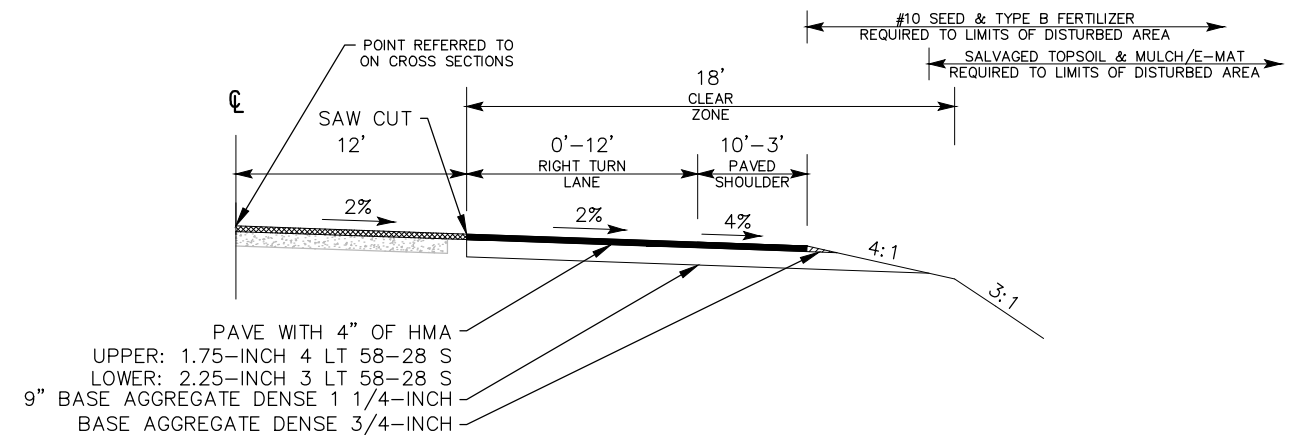
RESURFACING AREA, SUPERELEVATION
STA 252+00 - STA 267+17
STA 305+84 - STA 321+18
STA 324+67 - STA 340+59



TYPICAL PROPOSED SECTION
USH 14

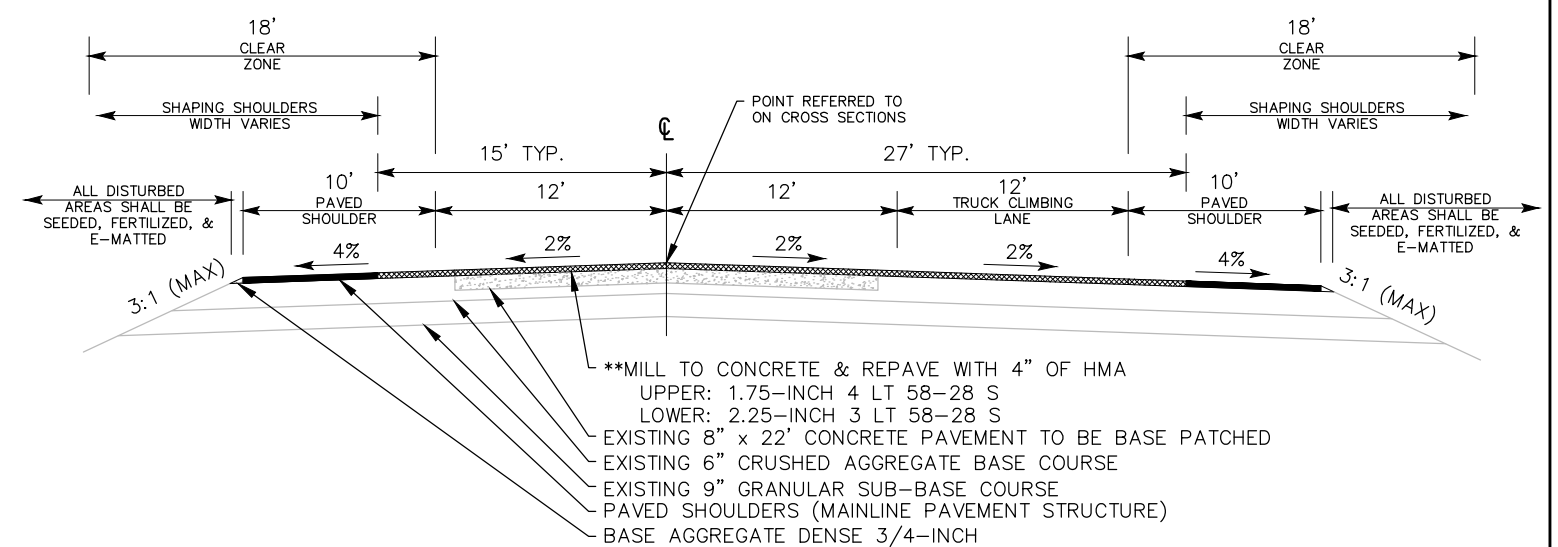
RESURFACING AREA
STA 267+17 - STA 277+54
STA 281+74 - STA 305+84
STA 321+18 - STA 324+67
STA 340+59 - STA 342+81

*ACTUAL THICKNESSES VARY. SEE BORING SUMMARY.



TYPICAL PROPOSED SECTION
USH 14

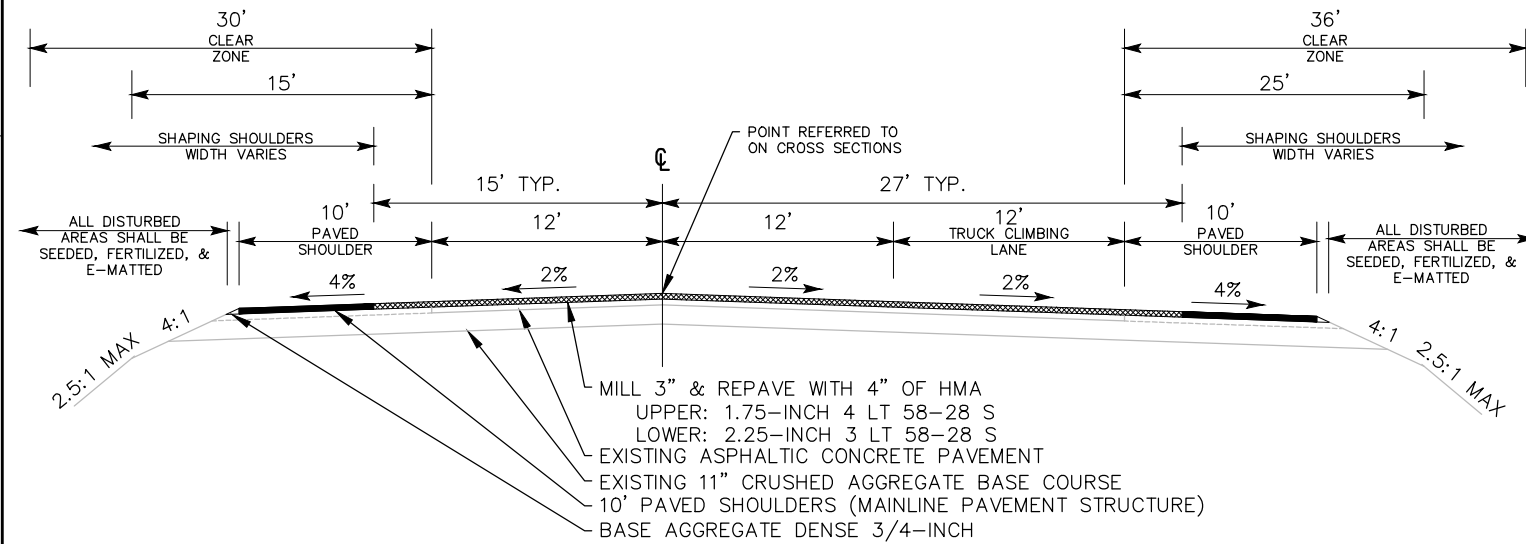
RIGHT TURN LANE AT CTH B
STA 276+58 - STA 281+08



TYPICAL PROPOSED SECTION
USH 14

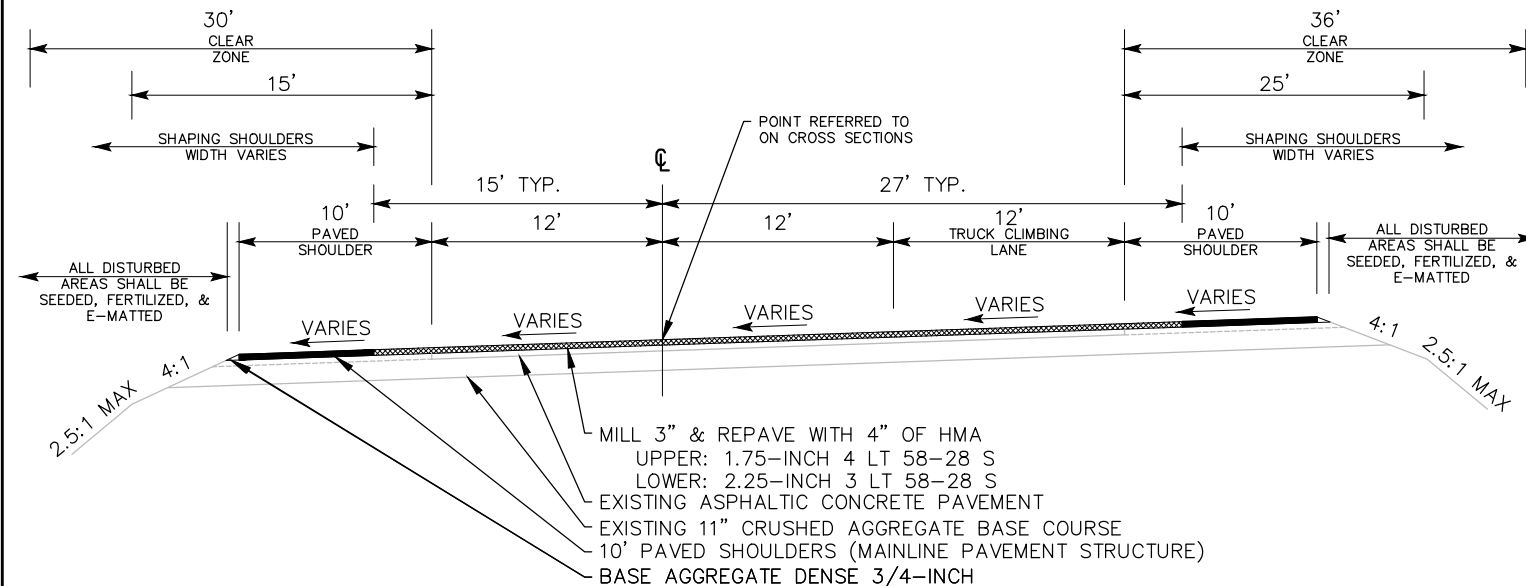
RESURFACING AREA, CLIMBING LANE
STA 342+81 - STA 349+81
STA 383+82 - STA 393+07

2



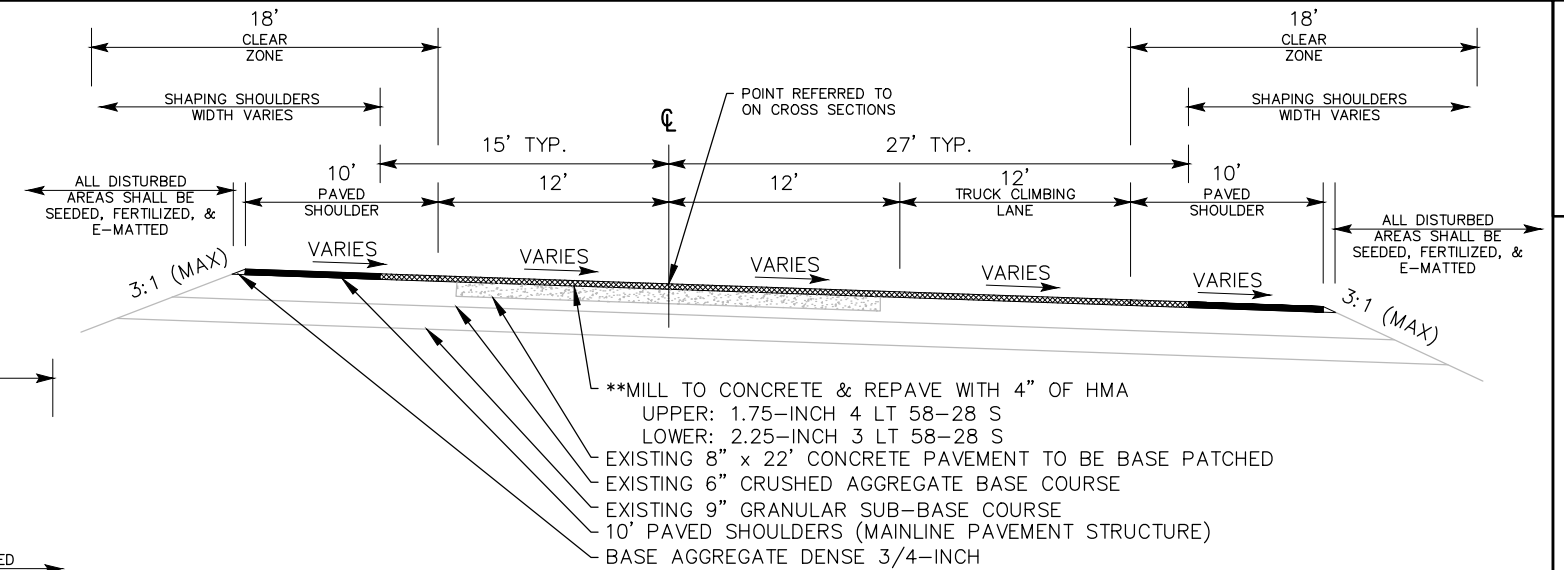
TYPICAL PROPOSED SECTION
USH 14

RECONSTRUCTION AREA, CLIMBING LANE
STA 349+81 – STA 349+96
STA 382+03 – STA 383+82



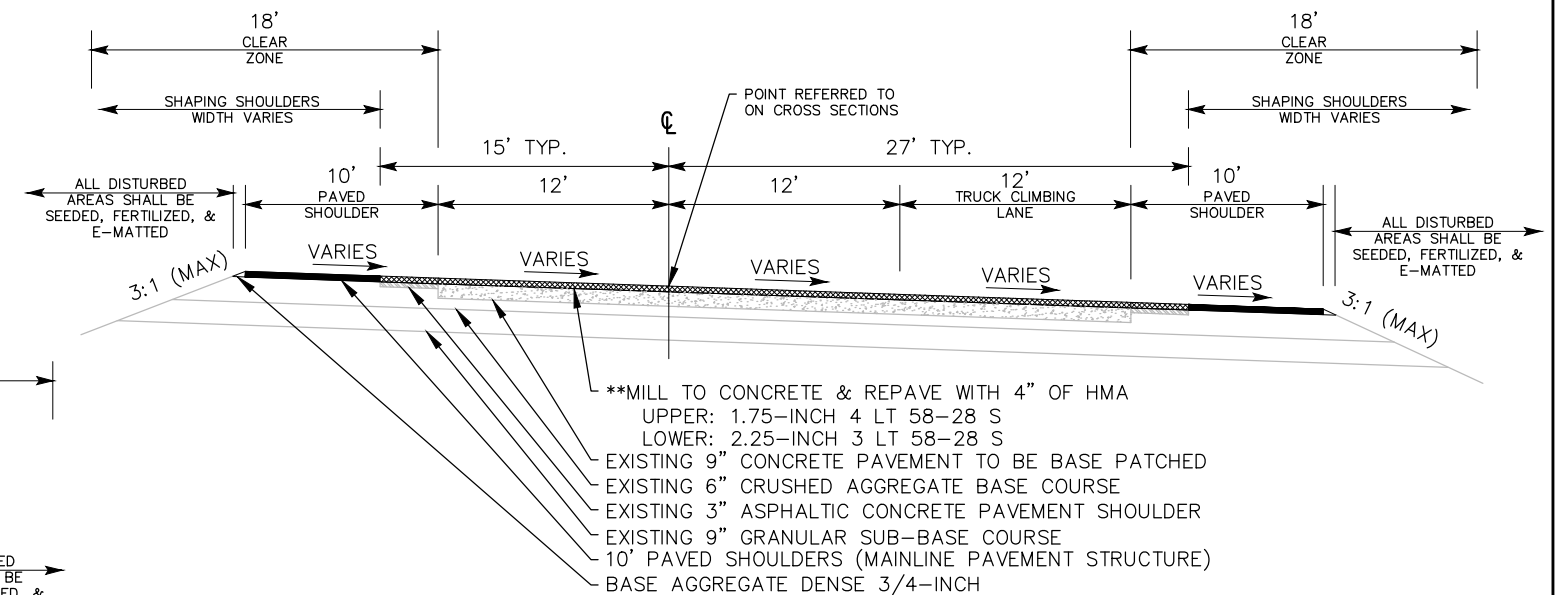
TYPICAL PROPOSED SECTION
USH 14

RECONSTRUCTION AREA, SUPERELEVATION WITH CLIMBING LANE
STA 349+96 - STA 382+03



TYPICAL PROPOSED SECTION
USH 14

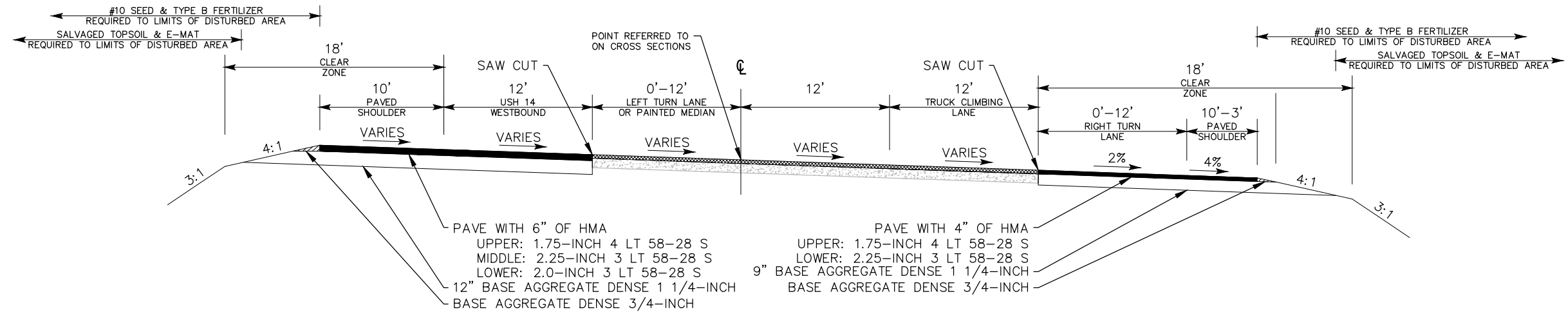
RESURFACING AREA, SUPERELEVATION WITH CLIMBING LANE
STA 393+07 - STA 395+53



TYPICAL PROPOSED SECTION
USH 14

RESURFACING AREA, SUPERELEVATION WITH CLIMBING LANE
STA 395+54 - 399+68

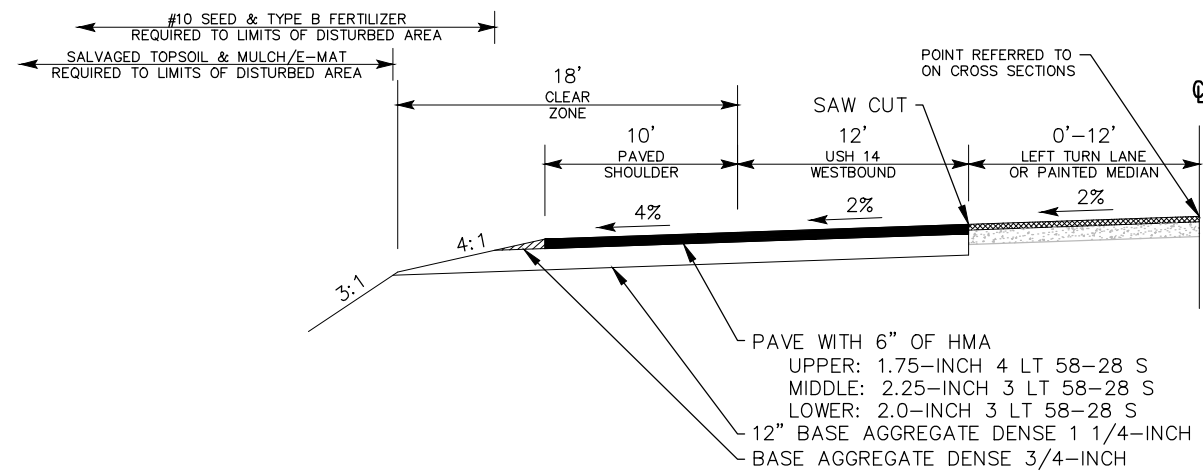
*ACTUAL THICKNESSES VARY. SEE BORING SUMMARY.



TYPICAL PROPOSED SECTION

USH 14

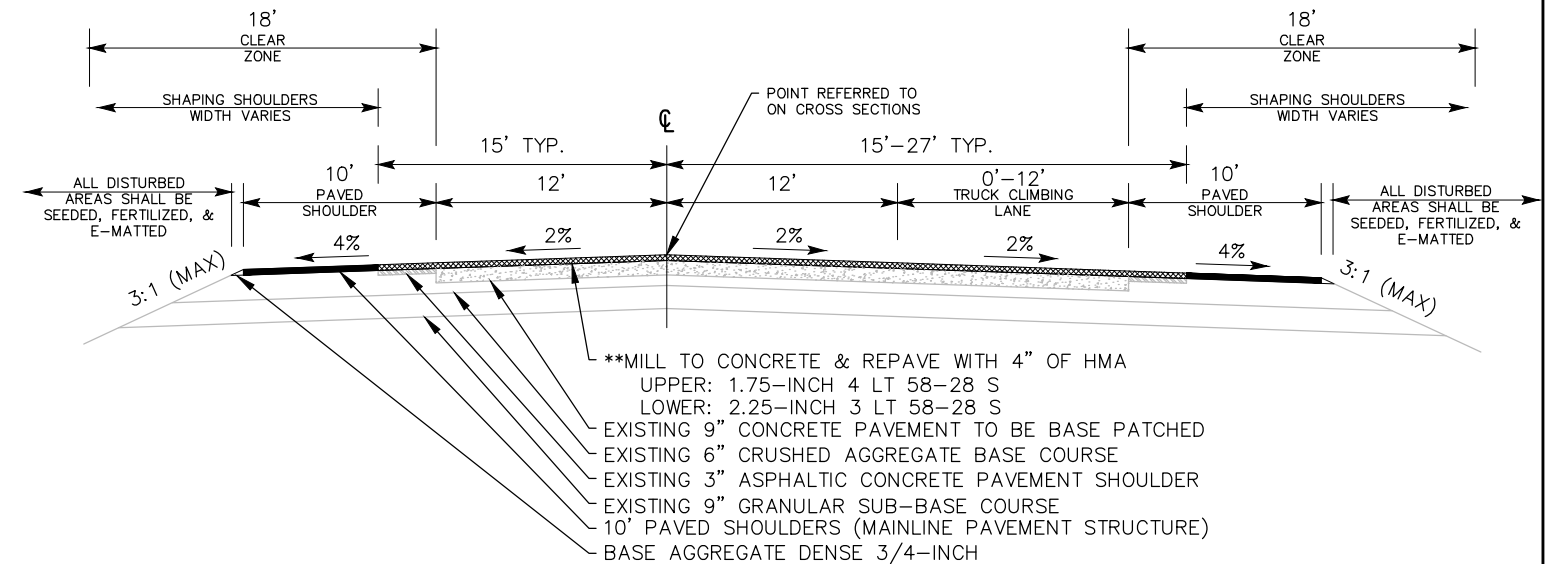
LEFT TURN LANE & RIGHT TURN LANE AT CTH GG
STAT 399+68 - STA 410+95



TYPICAL PROPOSED SECTION

USH 14

LEFT TURN LANE AT CTH GG
STA 410+95 - STA 418+58

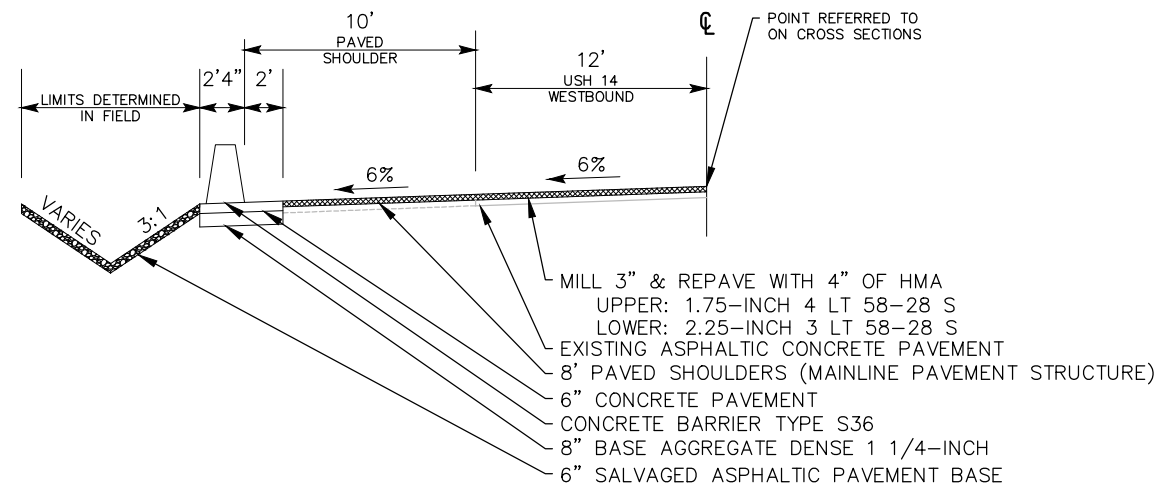


TYPICAL PROPOSED SECTION

USH 14

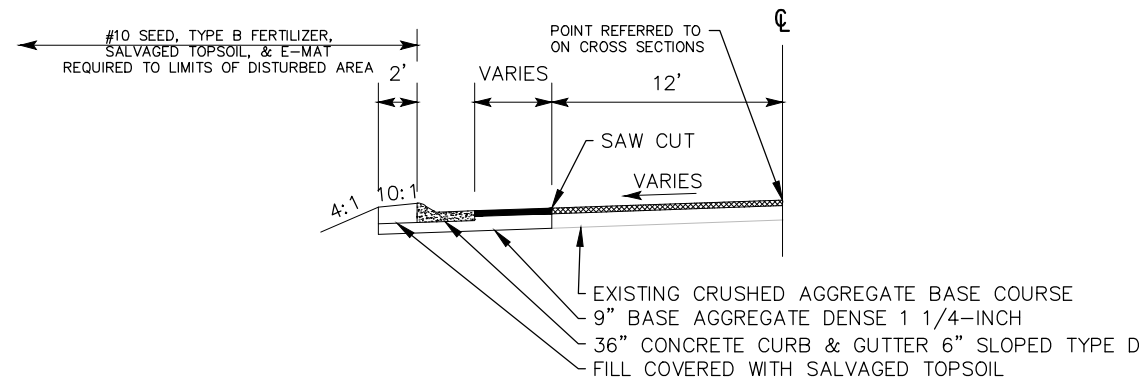
RESURFACING AREA, CLIMBING LANE
STA 418+58 - 430+00

*ACTUAL THICKNESSES VARY. SEE BORING SUMMARY.

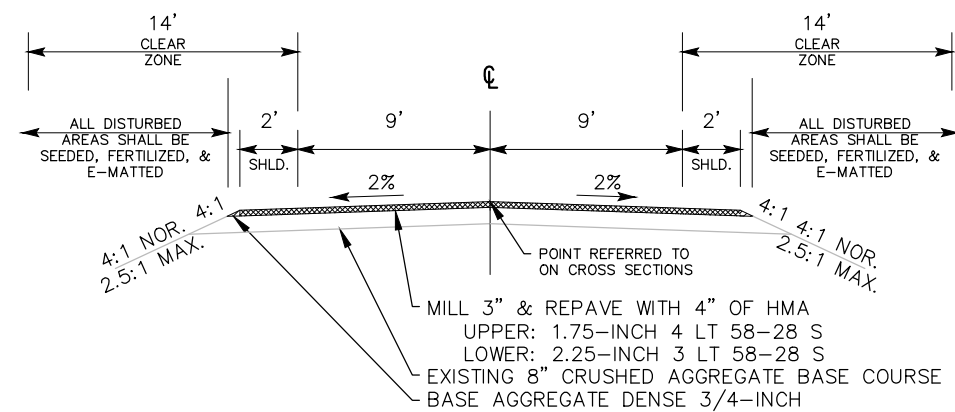


TYPICAL PROPOSED SECTION

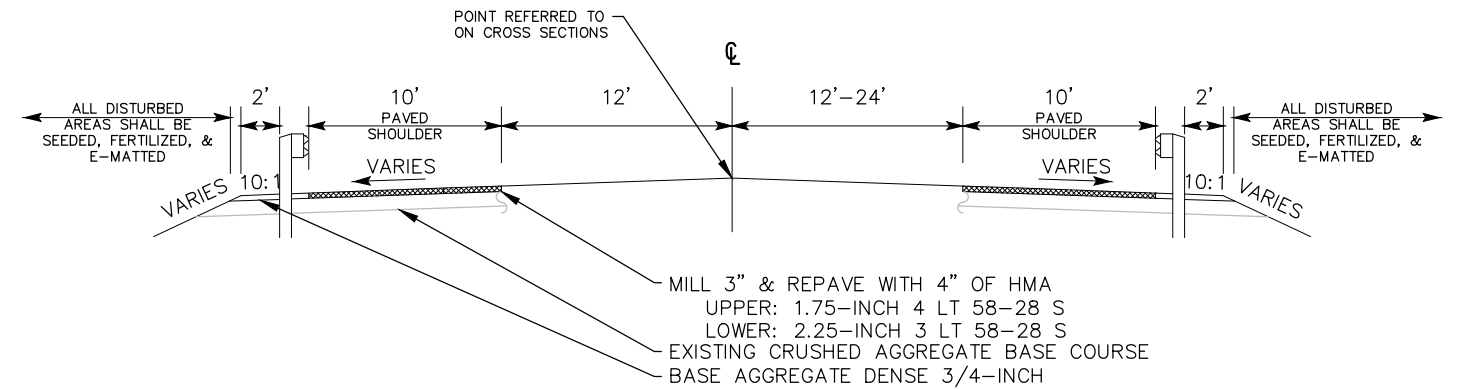
USH 14

CONCRETE BARRIER WALL
STA 353+72 - STA 360+25

TYPICAL PROPOSED SECTION

CONCRETE CURB & GUTTER SECTION
CTH B
CTHGG

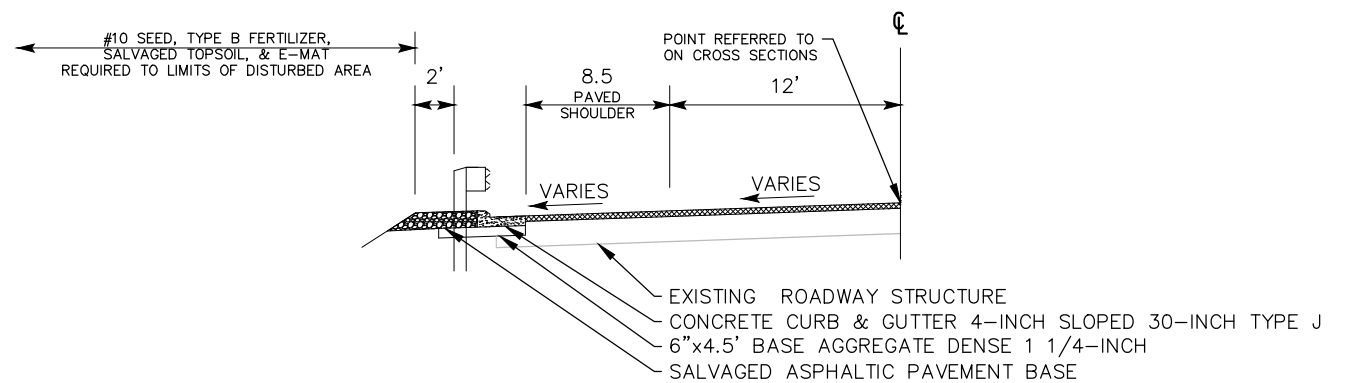
TYPICAL PROPOSED SECTION

LEUM LANE
CORNELL LANE
NERISON ROAD
MATHISON LANE

TYPICAL PROPOSED SECTION

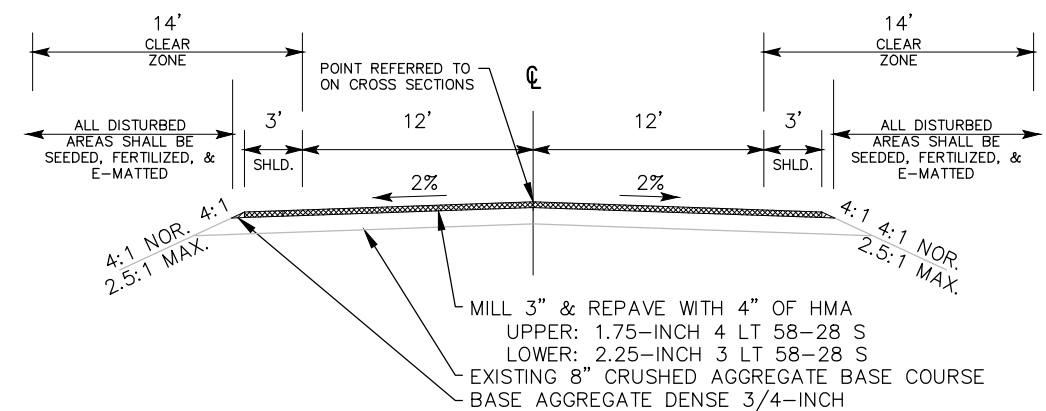
USH 14

BEAM GUARD



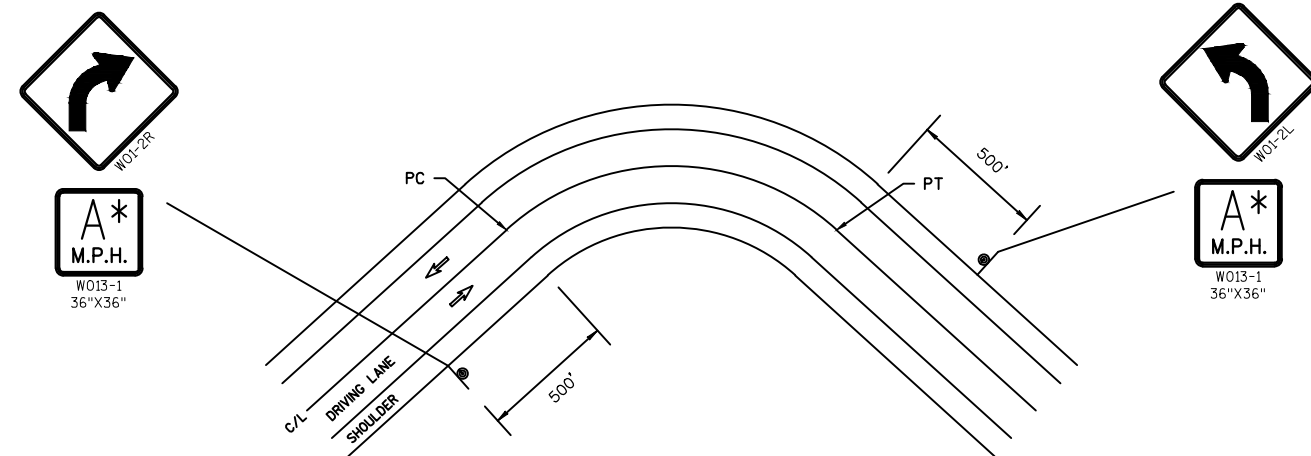
TYPICAL PROPOSED SECTION

USH 14

CONCRETE CURB & GUTTER SECTION
STA 342+31 - STA 346+40 LT
STA 364+00 - STA 370+70 LT
STA 387+17 - STA 397+17 RT

TYPICAL PROPOSED SECTION

CTH B
CTH GG

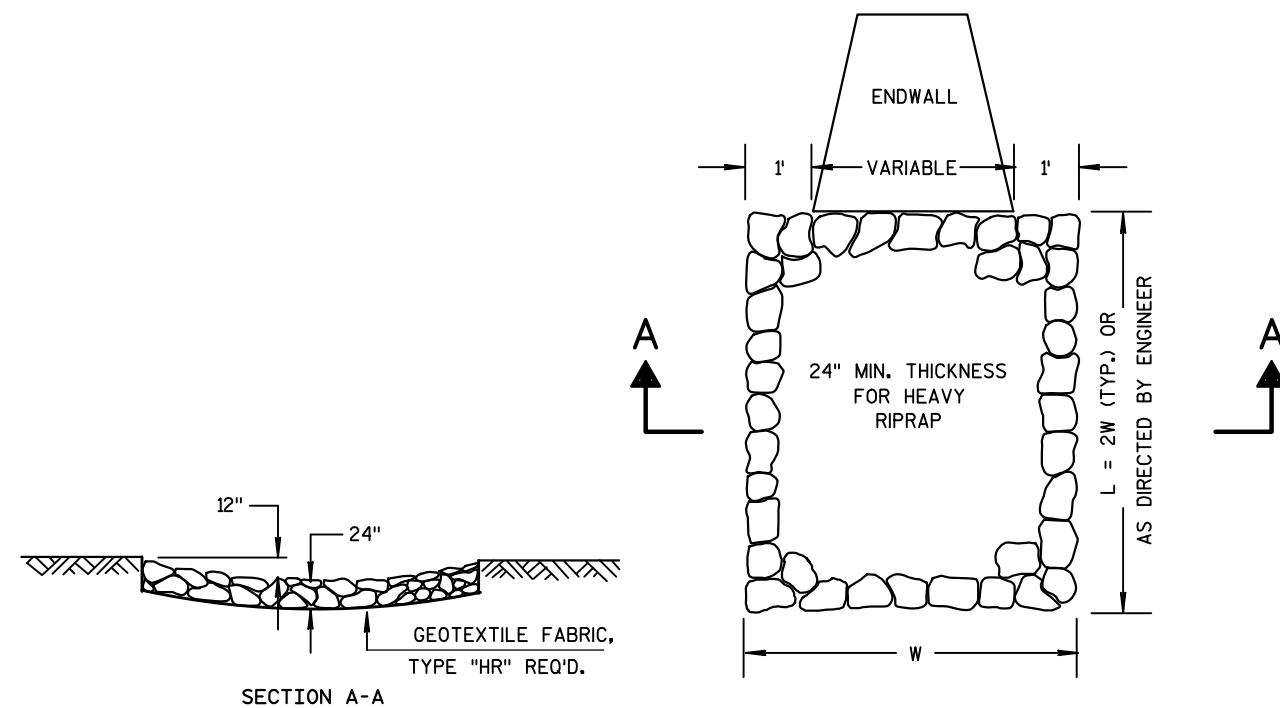


STATION	A	LOCATION	SIGN TYPE
246+70	50	RT	W01-2L
269+81	50	LT	W01-2R
303+01	50	RT	W01-2R
323+77	50	LT	W01-2L
321+55	35	RT	W01-2R
343+56	35	LT	W01-2L

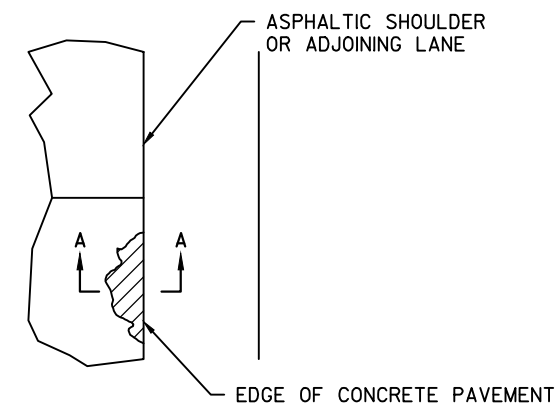
*POST ADVISORY SPEED FROM TABLE ABOVE
UNLESS OTHERWISE DIRECTED BY ENGINEER

REDUCED SPEED TRAFFIC CONTROL SIGNING AFTER MILLING

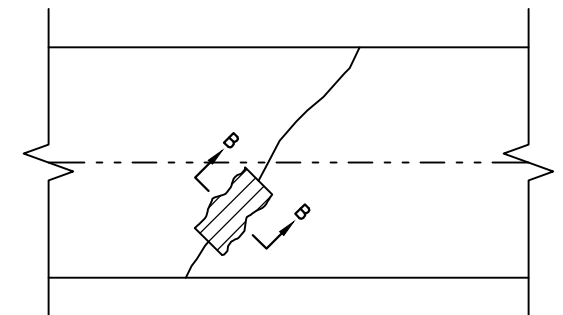
SIGNS TO BE IN PLACE BEFORE MILLING OPERATIONS AT LOCATIONS LISTED



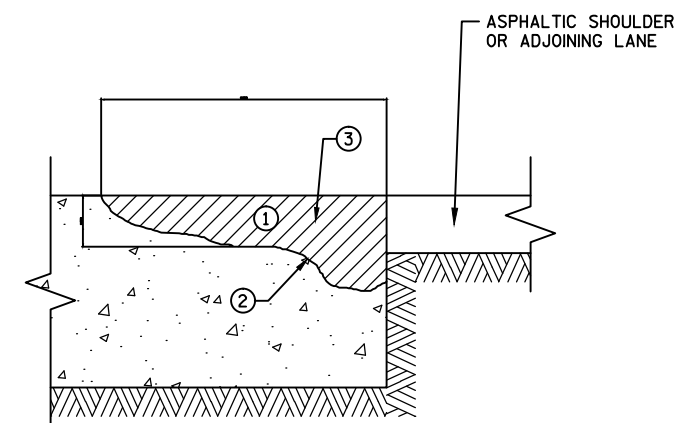
HEAVY RIPRAP TREATMENT AT CULVERTS



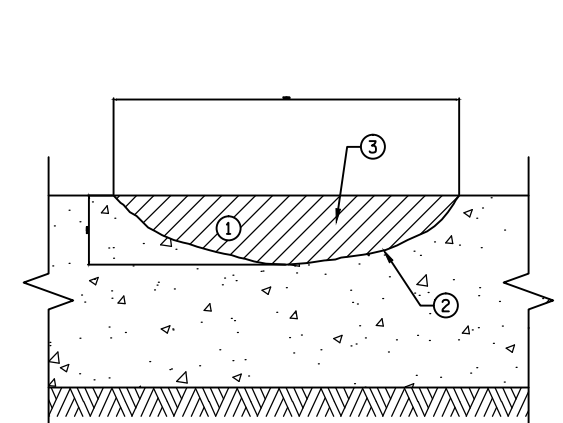
PLAN VIEW



PLAN VIEW



SECTION A-A



SECTION B-B

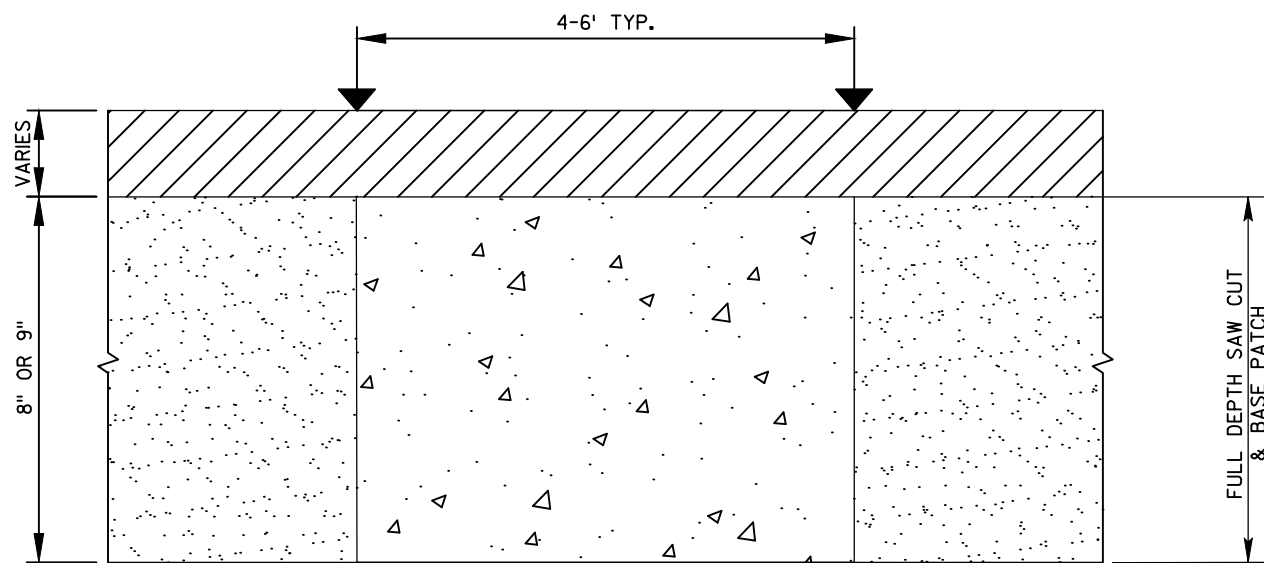
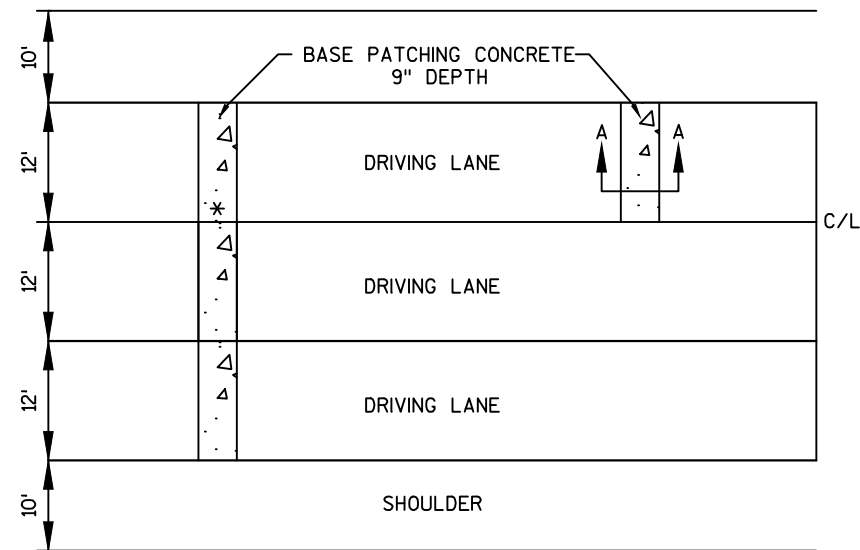
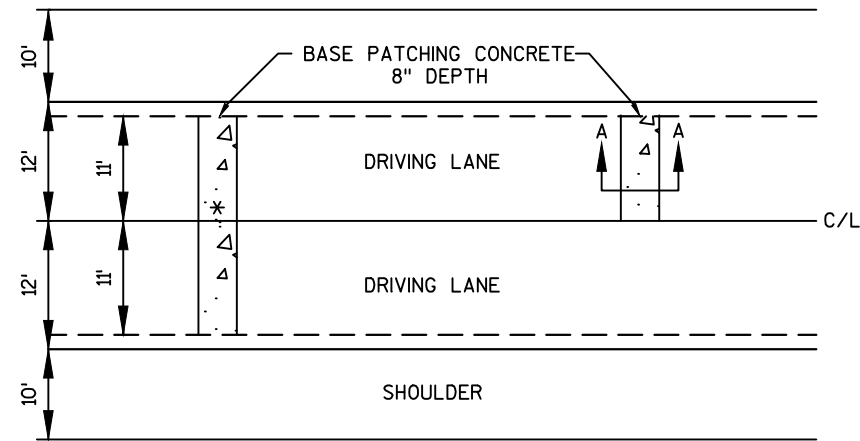
- ① REMOVE ALL UNSOUND AND DETERIORATED MATERIAL.
- ② BLOW OUT REPAIR AREAS WITH 80 PSI MINIMUM COMPRESSED AIR
AND APPLY TACK COAT.
- ③ ASPHALTIC SURFACE INCIDENTAL TO ITEM

EDGE REPAIR

- ① REMOVE ALL UNSOUND AND DETERIORATED MATERIAL.
- ② BLOW OUT REPAIR AREAS WITH 80 PSI MINIMUM COMPRESSED AIR
AND APPLY TACK COAT.
- ③ ASPHALTIC SURFACE INCIDENTAL TO ITEM

CRACK/JOINT REPAIR

CONCRETE JOINT AND CRACK CLEANING

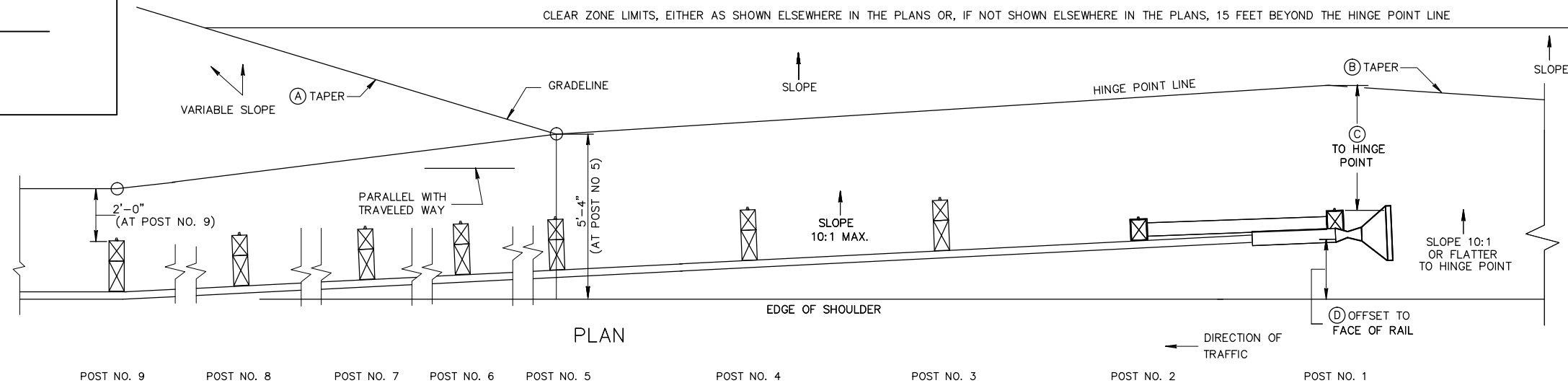


BASE PATCHING CONCRETE

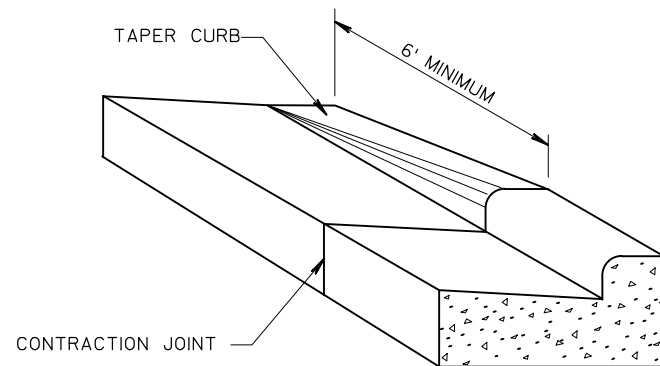
- EXISTING ASPHALT PAVEMENT TO BE MILLED AND REMOVED
- BASE PATCHING CONCRETE
- EXISTING P.C. CONCRETE PAVEMENT TO REMAIN
- FULL DEPTH SAW CUT REQUIRED

STATION	TAPER (A)	TAPER (B)	OFFSET (C)	OFFSET (D)
257+08 LT	*	10:1	*	*
293+11 LT	3:1	4:1	*	*
320+01 LT	3:1	4:1	*	*
342+92 LT	3:1	4:1	2'	1'
343+81 LT	**	**	**	1'

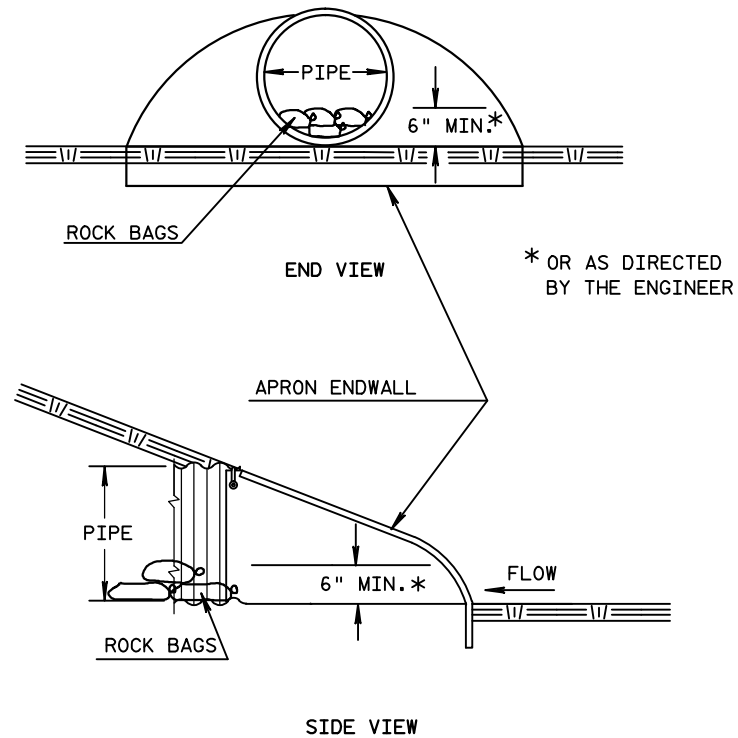
*USE TAPERS AND OFFSETS PER S.D.D.
 **NO GRADING AT LOCATION, INSTALL WITH EXISTING CONDITIONS



NONSTANDARD GUARDRAIL EAT LAYOUT & GRADING



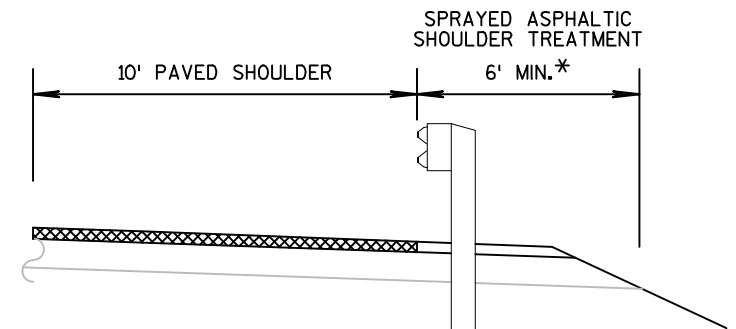
DETAIL OF CURB & GUTTER TERMINI



CULVERT PIPE CHECK

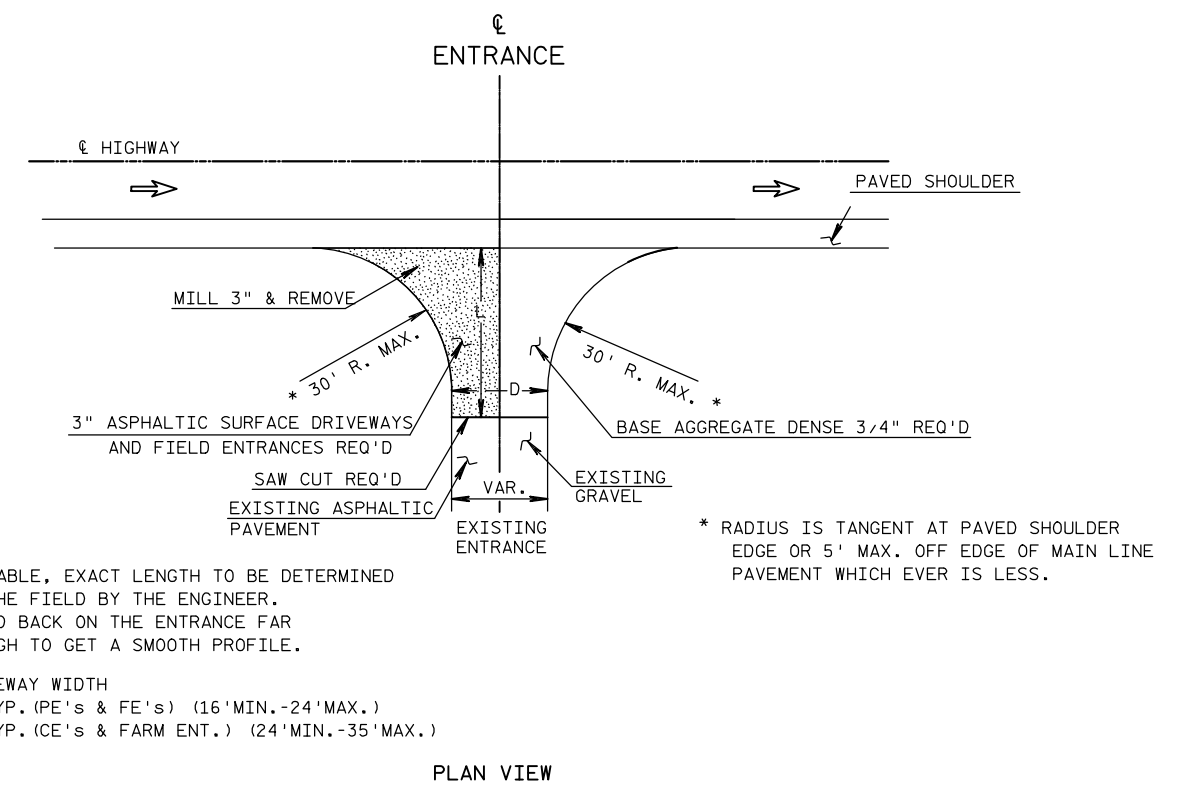
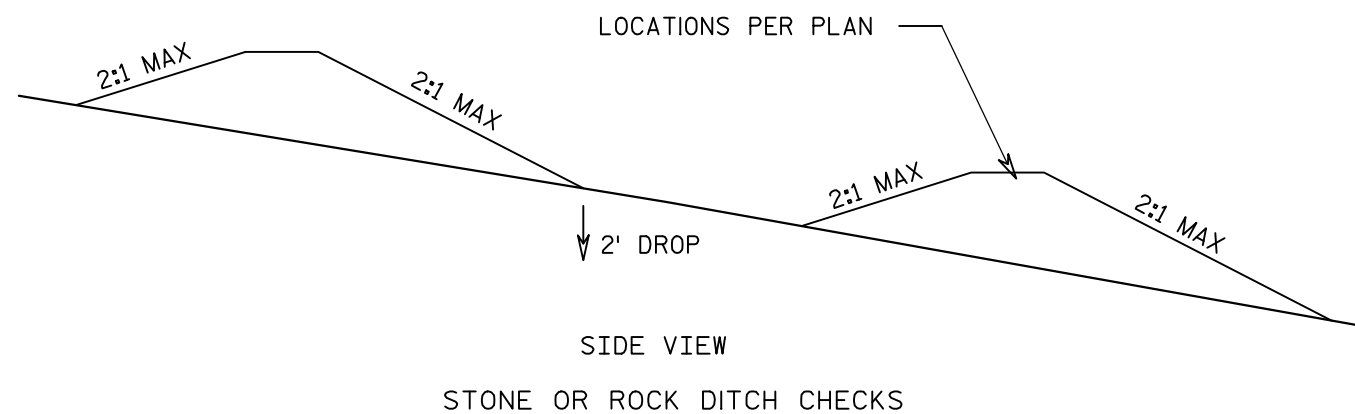
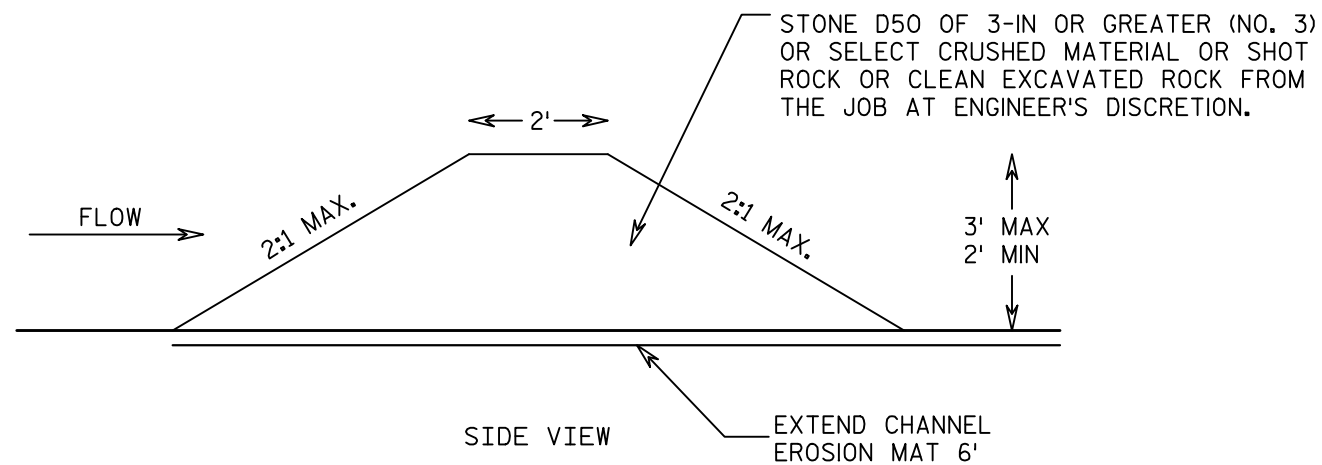
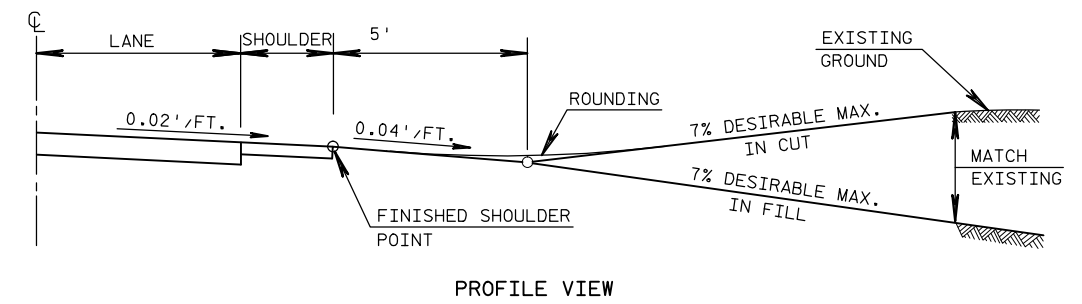
SEE EROSION CONTROL SHEETS FOR LOCATIONS

ESTIMATED BAG SIZE = 18" X 12" X 6"	
PIPE SIZE	ESTIMATED NO. OF BAGS
12"	1
15"	2
18"	2
21"	3
24"	3
27"	4
30"	5
36"	7
42"	8
48"	10
54"	13
60"	15
66"	19

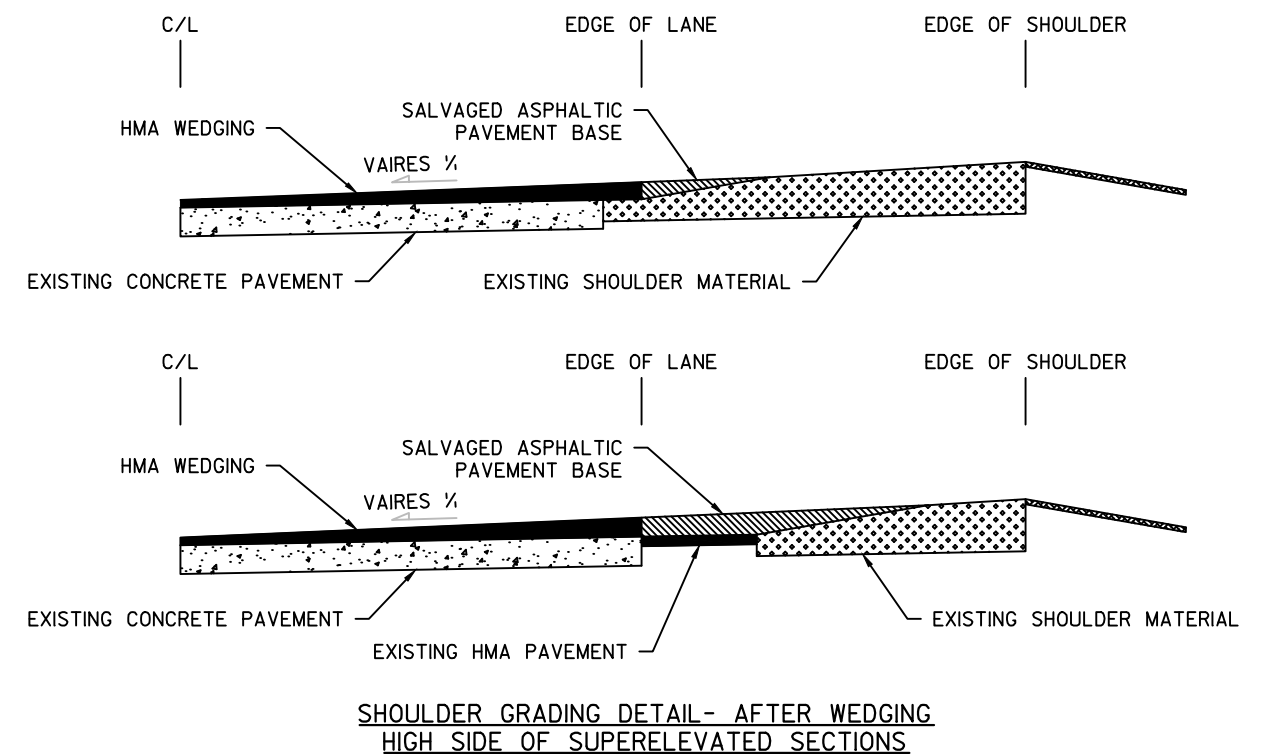
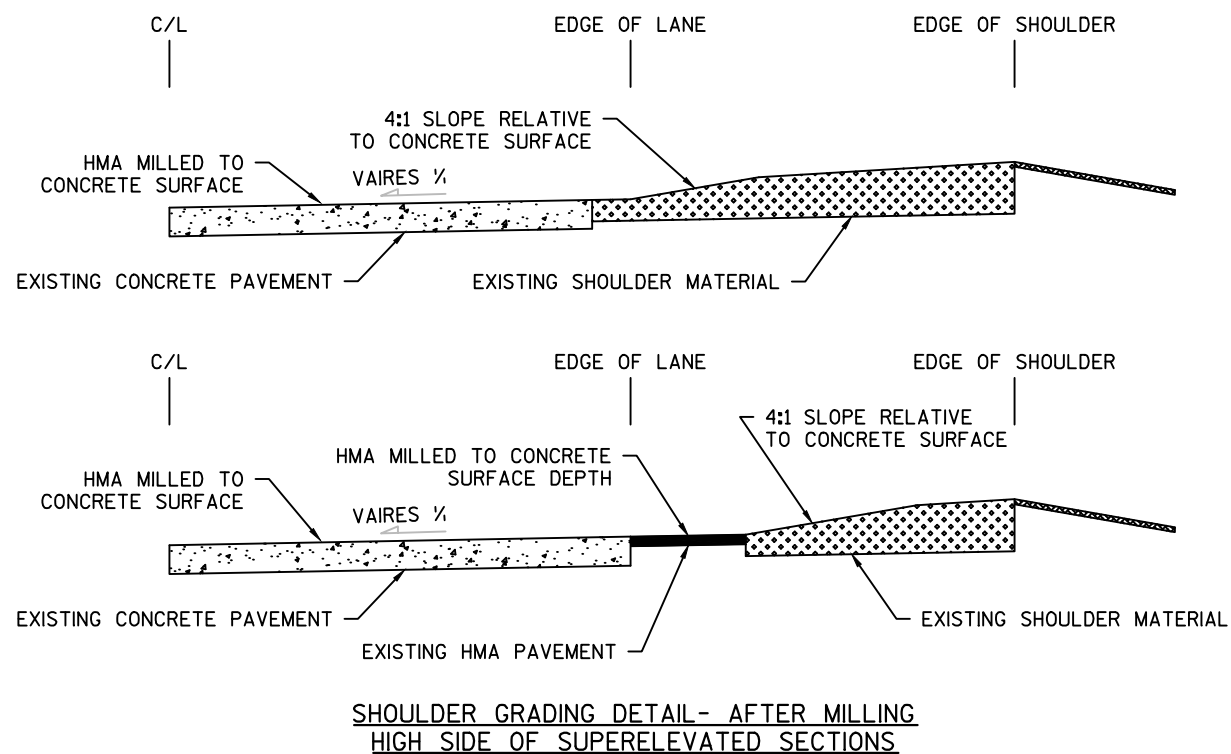
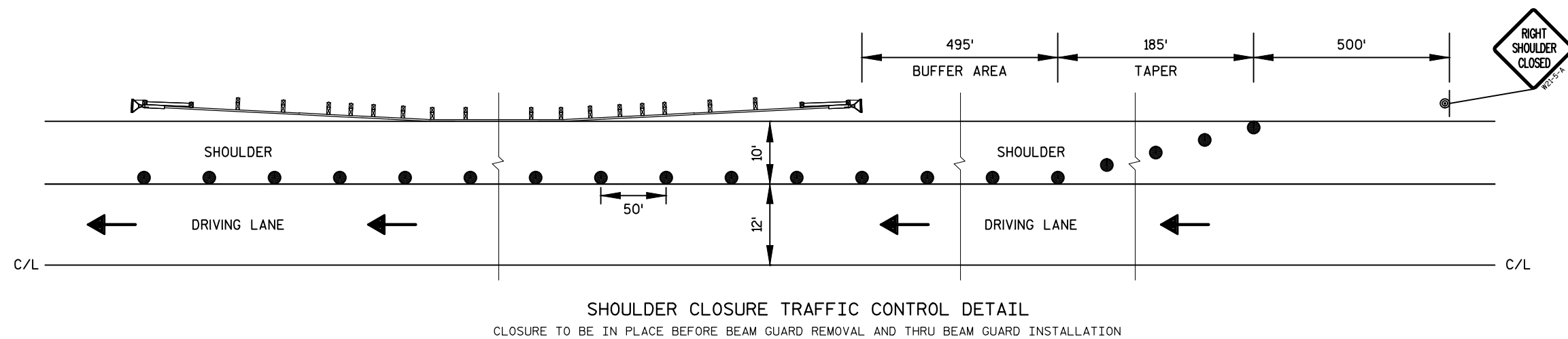
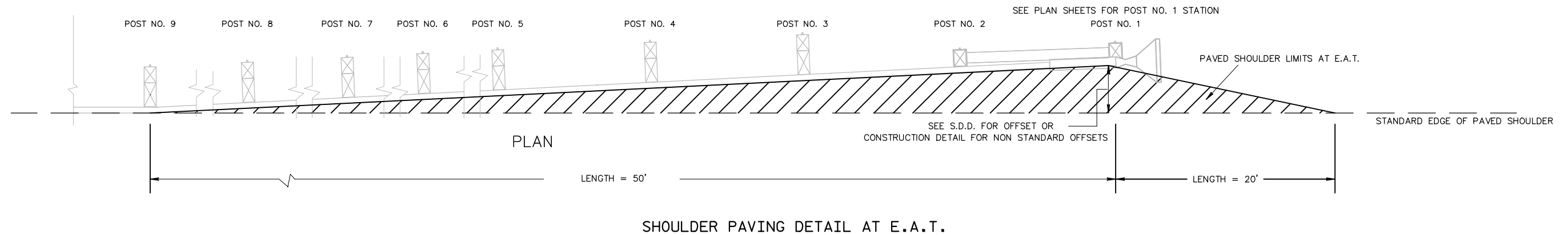


*4' MIN. FOR MGS GUARDRAIL TYPE 3K & GUARDRAIL STIFFENED LHW INSTALLATIONS.

SPRAYED ASPHALTIC SHOULDER TREATMENT DETAIL



RURAL DRIVEWAY INTERSECTION DETAIL
(PE'S, FE'S & CE'S)

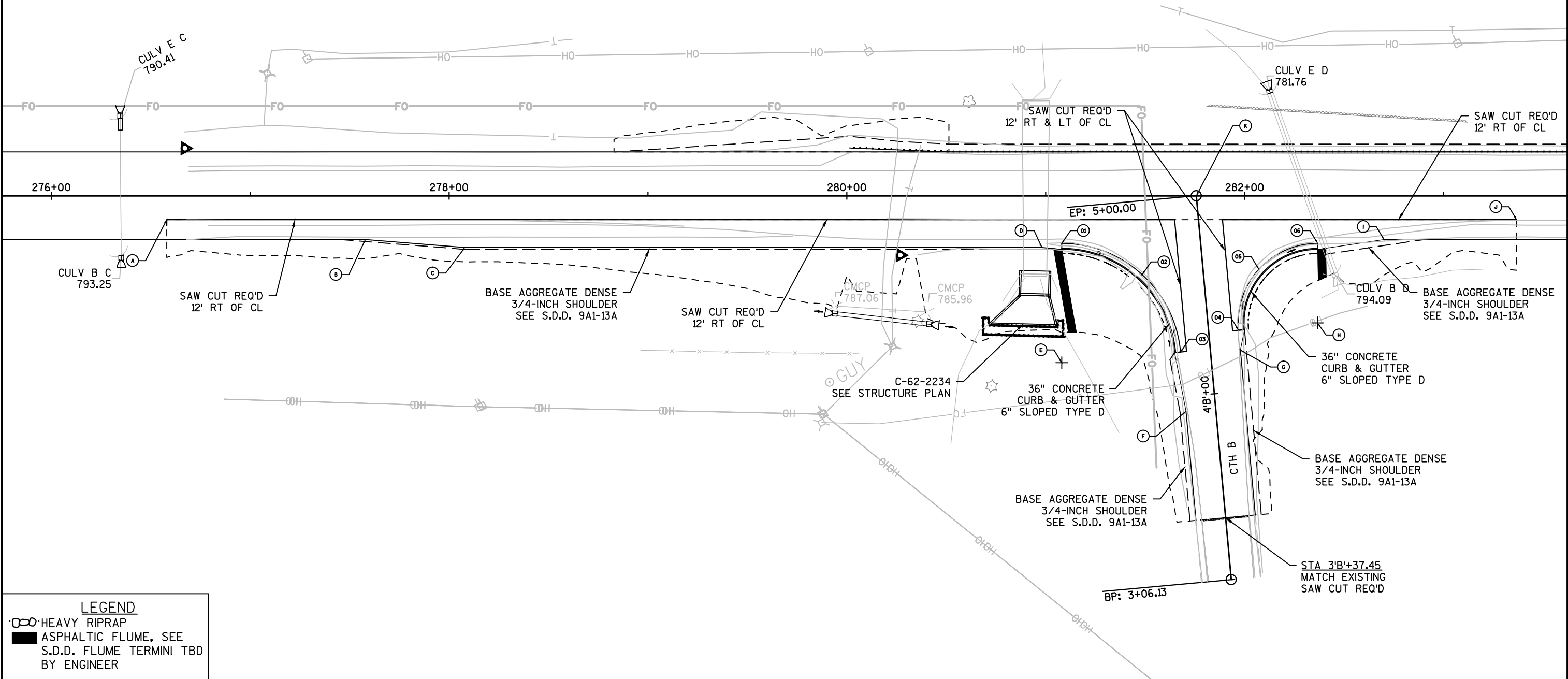


2

SOUTHWEST QUADRANT CURB & GUTTER			
POINT	STATION	OFFSET	ELEVATION
01	281+08.08	24.00' RT	797.51
02	281+48.55	39.70' RT	797.86
03	281+67.84	78.58' RT	798.22
SOUTHEAST QUADRANT CURB & GUTTER			
POINT	STATION	OFFSET	ELEVATION
04	281+96.97	67.62' RT	798.12
05	282+07.27	37.02' RT	798.02
06	282+36.80	24.00' RT	797.92

2

POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	276+58.00	12.0' RT	BEGIN TURN LANE TAPER
B	277+57.92	22.0' RT	-
C	278+07.92	26.0' RT	END TURN LANE TAPER
D	280+98.08	26.0' RT	10' TAPER TO BOC
E	281+08.08	84.0' RT	RADIUS: 60'
F	3'B'+92.46	15.0' LT	-
G	4'B'+20.75	15.0' RT	10' TAPER TO BOC
H	282+36.80	64.0' RT	RADIUS: 40'
I	282+70.14	22.0' RT	-
J	283+36.80	12.0' RT	-
K	281+75.77	-	INTERSECTION TYPE B1

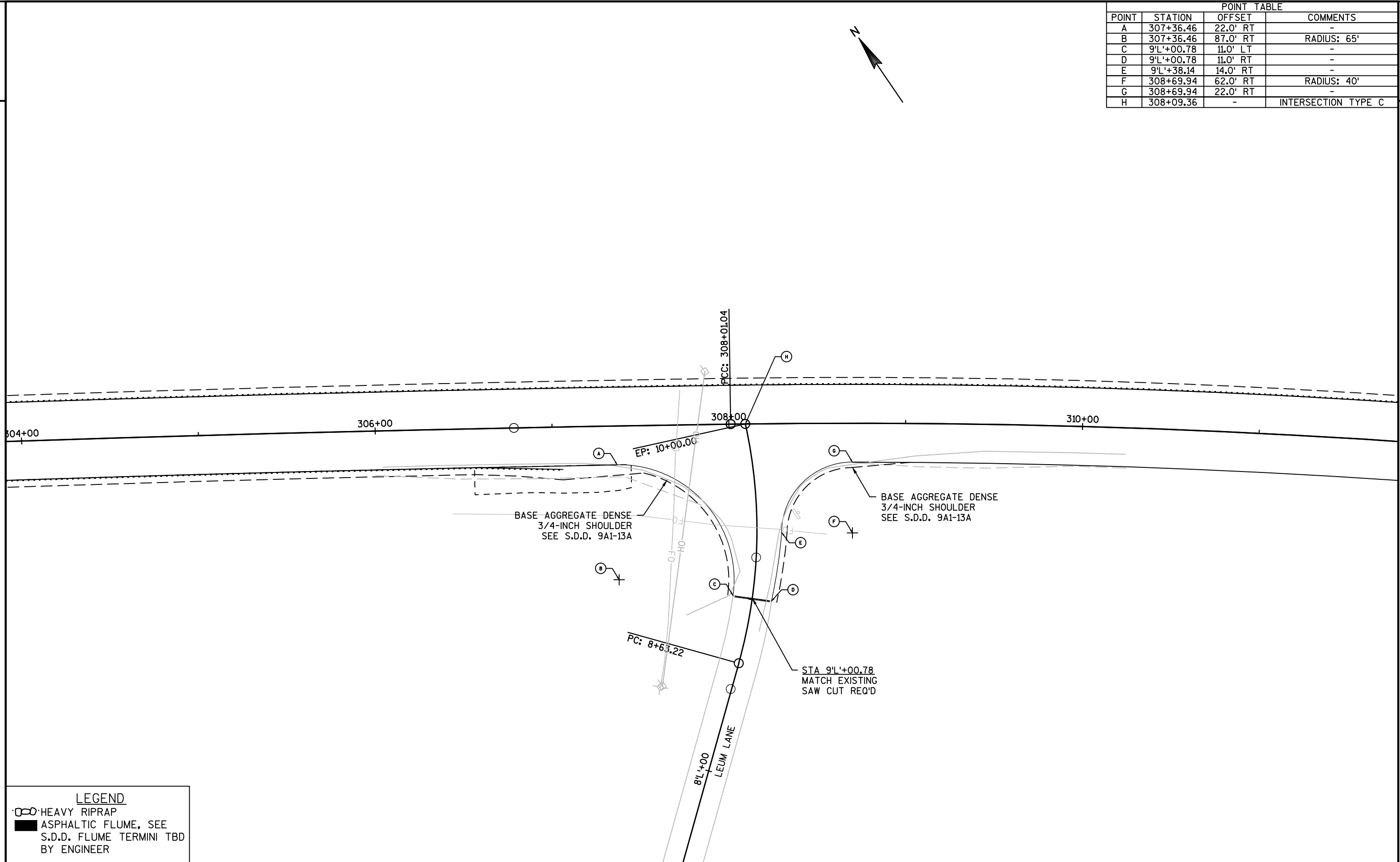


LEGEND

HEAVY RIPRAP

ASPHALTIC FLUME, SEE
S.D.D. FLUME TERMINI TBD
BY ENGINEER

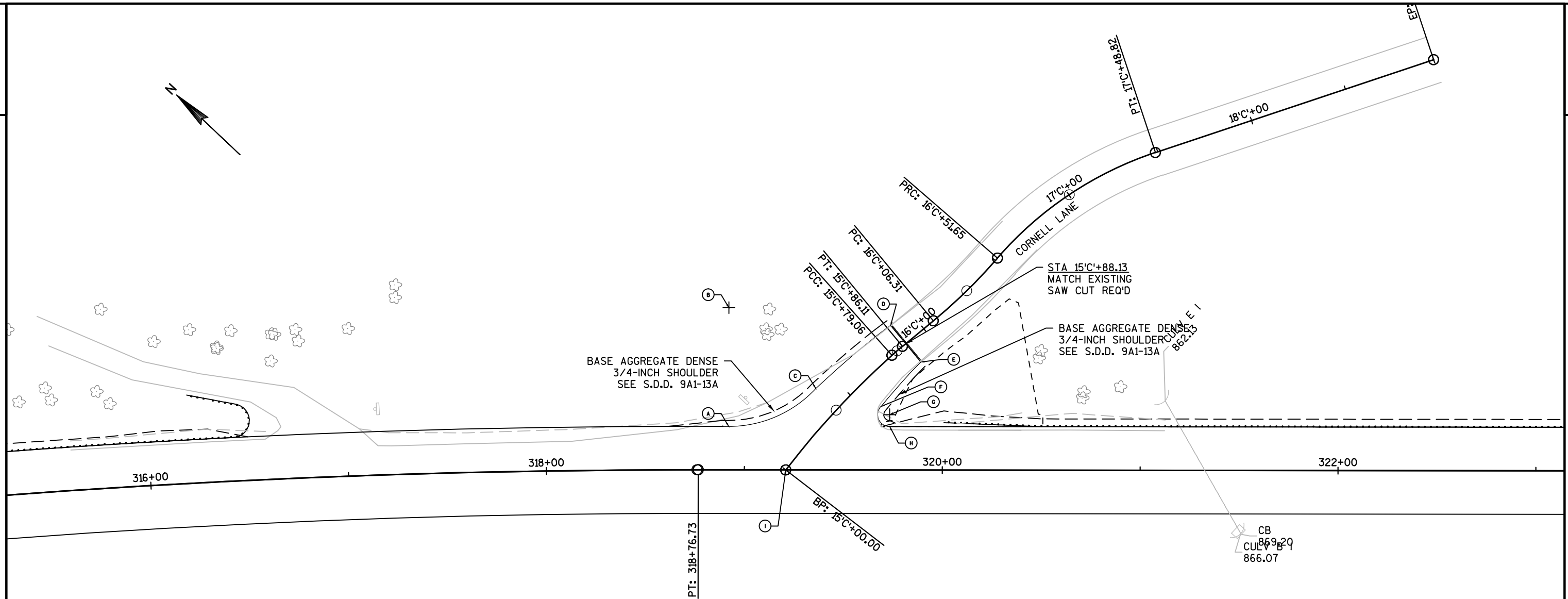
POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	307+36.46	22.0' RT	-
B	307+36.46	87.0' RT	RADIUS: 65'
C	9'L'+00.78	11.0' LT	-
D	9'L'+00.78	11.0' RT	-
E	9'L'+38.14	14.0' RT	-
F	308+69.94	62.0' RT	RADIUS: 40'
G	308+69.94	22.0' RT	-
H	308+09.36	-	INTERSECTION TYPE C



LEGEND

HEAVY RIPRAP

ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

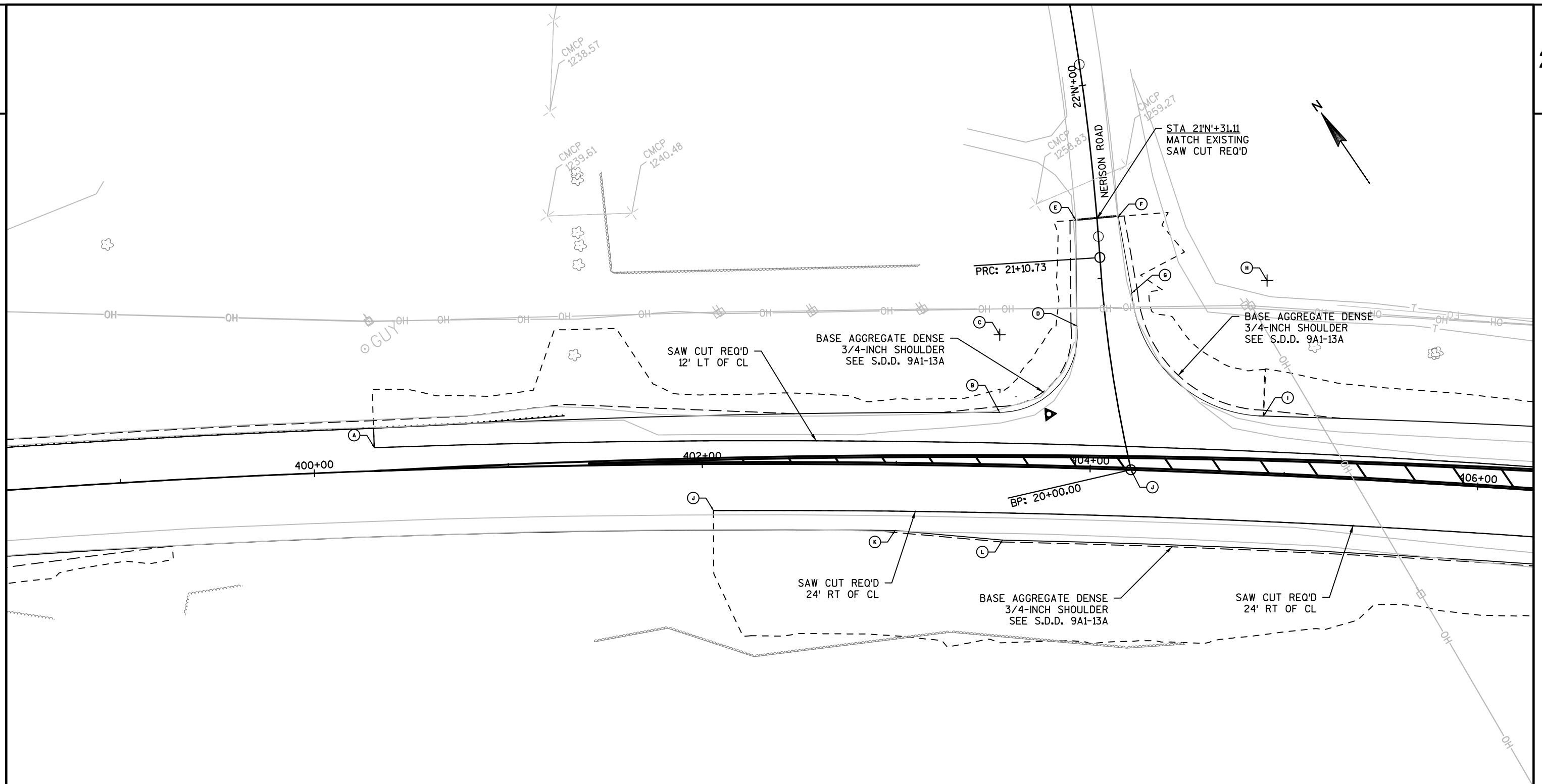


LEGEND

HEAVY RIPRAP

ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	318+92.12	22.0' LT	-
B	318+92.12	82.0' LT	RADIUS: 60'
C	15'C'+40.50	15.0' LT	-
D	15'C'+88.13	12.0' LT	-
E	15'C'+88.13	12.0' RT	-
F	15'C'+56.92	15.0' RT	-
G	319+73.42	28.0' LT	RADIUS: 6'
H	319+73.42	22.0' LT	-
I	319+20.94	-	INTERSECTION TYPE C



LEGEND
HEAVY RIPRAP
ASPHALTIC FLUME, SEE
S.D.D. FLUME TERMINI TBD
BY ENGINEER

POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	400+31.29	12.0' LT	-
B	403+52.70	27.84' LT	-
C	403+51.98	67.83' LT	RADIUS: 40'
D	20'N'+77.05	15.0' LT	-
E	21'N'+31.11	11.0' LT	-
F	21'N'+31.11	11.0' RT	-
G	20'N'+90.96	15.0' RT	-
H	404+86.87	100.29' LT	RADIUS: 70'
I	404+88.11	30.30' LT	-
J	404+21.08	-	INTERSECTION TYPE C
K	402+99.80	34.0' RT	-
L	403+55.57	38.0' RT	-

PROJECT NO:1640-01-60

HWY:USH 14

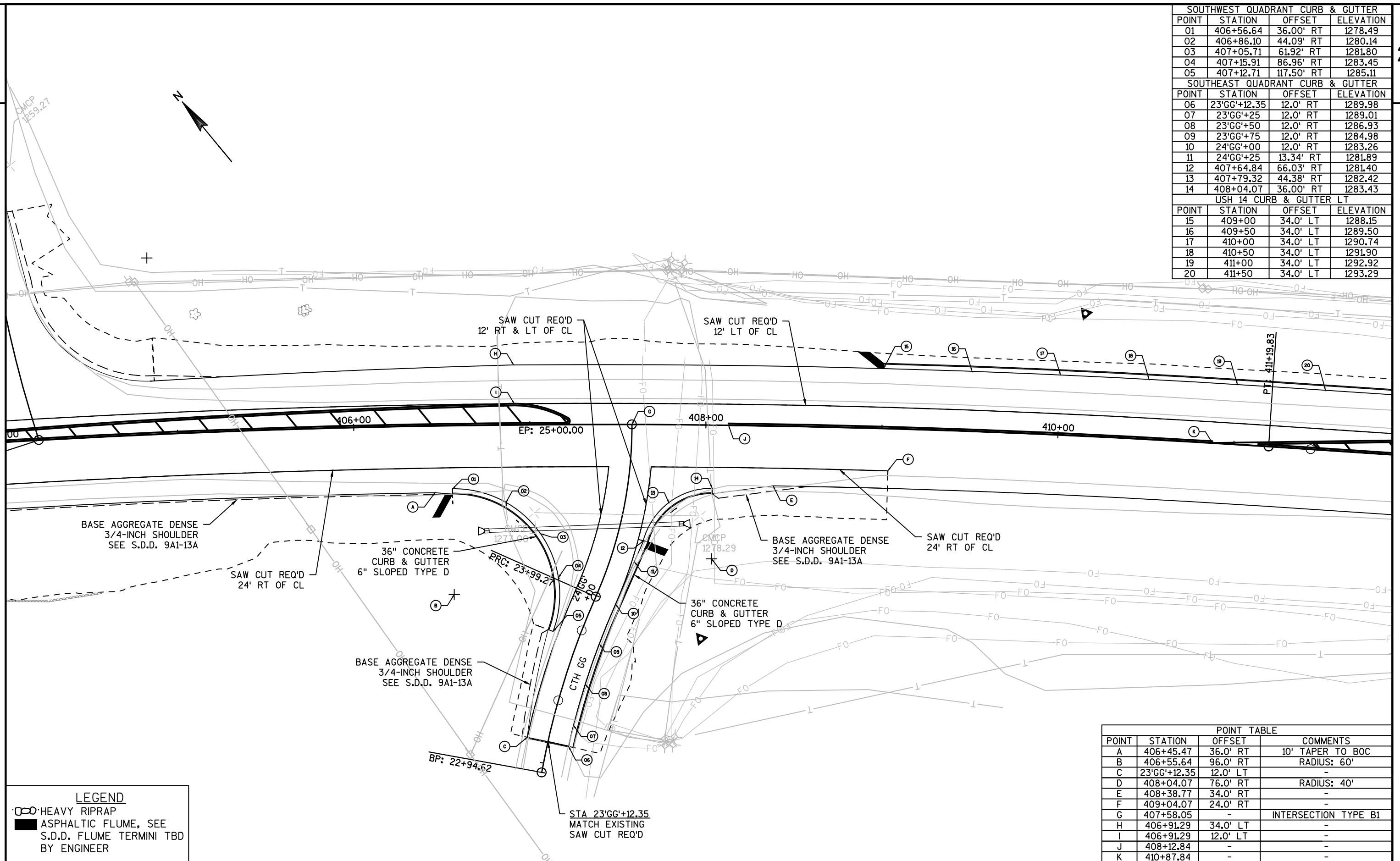
COUNTY:VERNON

INTERSECTION DETAIL - NERISON ROAD

SHEET

17

E



SOUTHWEST QUADRANT CURB & GUTTER			
POINT	STATION	OFFSET	ELEVATION
01	406+56.64	36.00' RT	1278.49
02	406+86.10	44.09' RT	1280.14
03	407+05.71	61.92' RT	1281.80
04	407+15.91	86.96' RT	1283.45
05	407+12.71	117.50' RT	1285.11
SOUTHEAST QUADRANT CURB & GUTTER			
POINT	STATION	OFFSET	ELEVATION
06	23'GG'+12.35	12.0' RT	1289.98
07	23'GG'+25	12.0' RT	1289.01
08	23'GG'+50	12.0' RT	1286.93
09	23'GG'+75	12.0' RT	1284.98
10	24'GG'+00	12.0' RT	1283.26
11	24'GG'+25	13.34' RT	1281.89
12	407+64.84	66.03' RT	1281.40
13	407+79.32	44.38' RT	1282.42
14	408+04.07	36.00' RT	1283.43
USH 14 CURB & GUTTER LT			
POINT	STATION	OFFSET	ELEVATION
15	409+00	34.0' LT	1288.15
16	409+50	34.0' LT	1289.50
17	410+00	34.0' LT	1290.74
18	410+50	34.0' LT	1291.90
19	411+00	34.0' LT	1292.92
20	411+50	34.0' LT	1293.29

POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	406+45.47	36.0' RT	10' TAPER TO BOC
B	406+55.64	96.0' RT	RADIUS: 60'
C	23'GG'+12.35	12.0' LT	-
D	408+04.07	76.0' RT	RADIUS: 40'
E	408+38.77	34.0' RT	-
F	409+04.07	24.0' RT	-
G	407+58.05	-	INTERSECTION TYPE B1
H	406+91.29	34.0' LT	-
I	406+91.29	12.0' LT	-
J	408+12.84	-	-
K	410+87.84	-	-

LEGEND
○ HEAVY RIPRAP
■ ASPHALTIC FLUME, SEE
S.D.D. FLUME TERMINI TBD
BY ENGINEER

PROJECT NO:1640-01-60

HWY:USH 14

COUNTY:VERNON

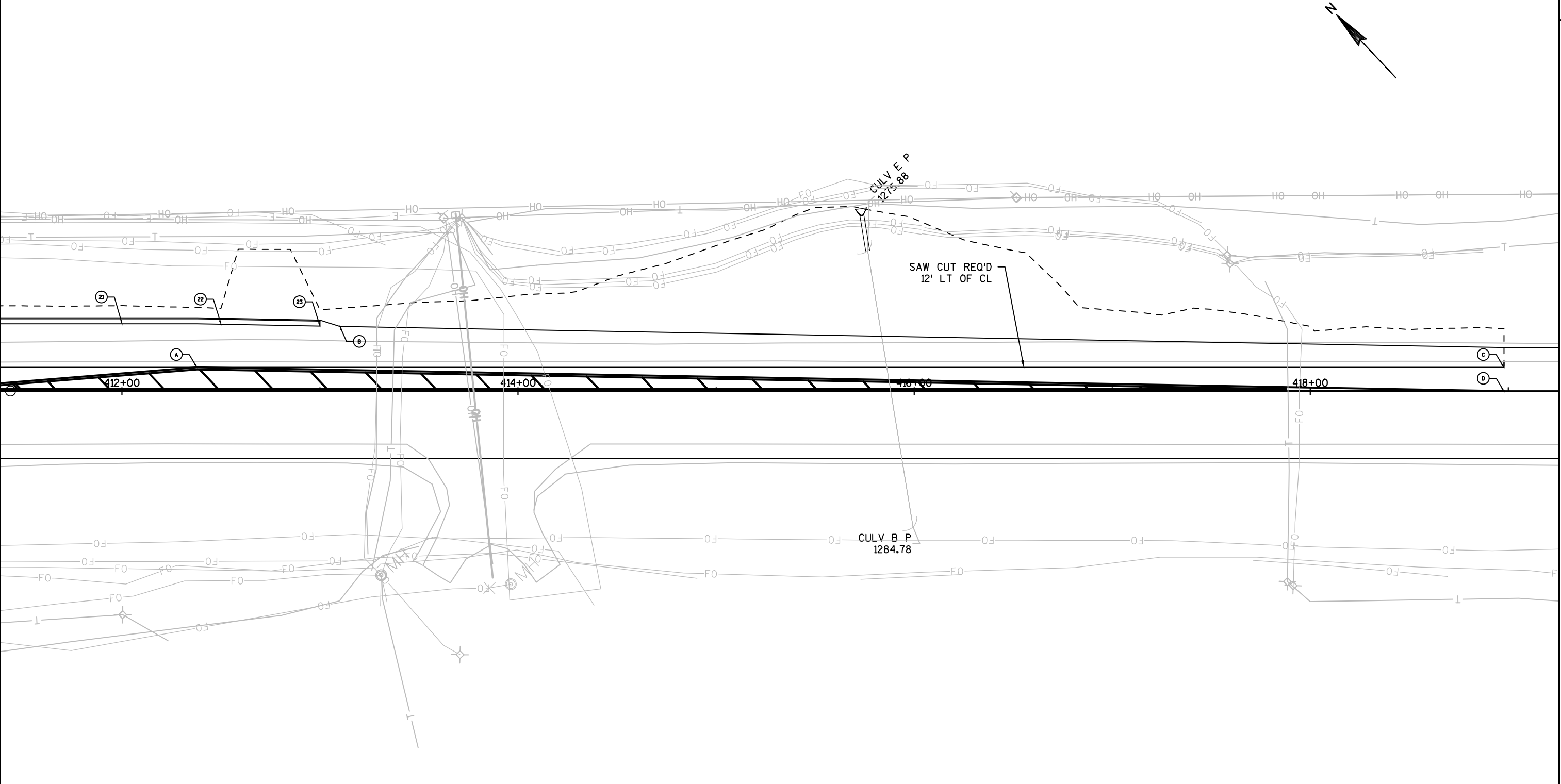
INTERSECTION DETAIL - CTH GG

SHEET

18

E

USH 14 CURB & GUTTER LT			
POINT	STATION	OFFSET	ELEVATION
21	412+00	34.0' LT	1293.45
22	412+50	33.78' LT	1293.88
23	413+00	32.87' LT	1294.49

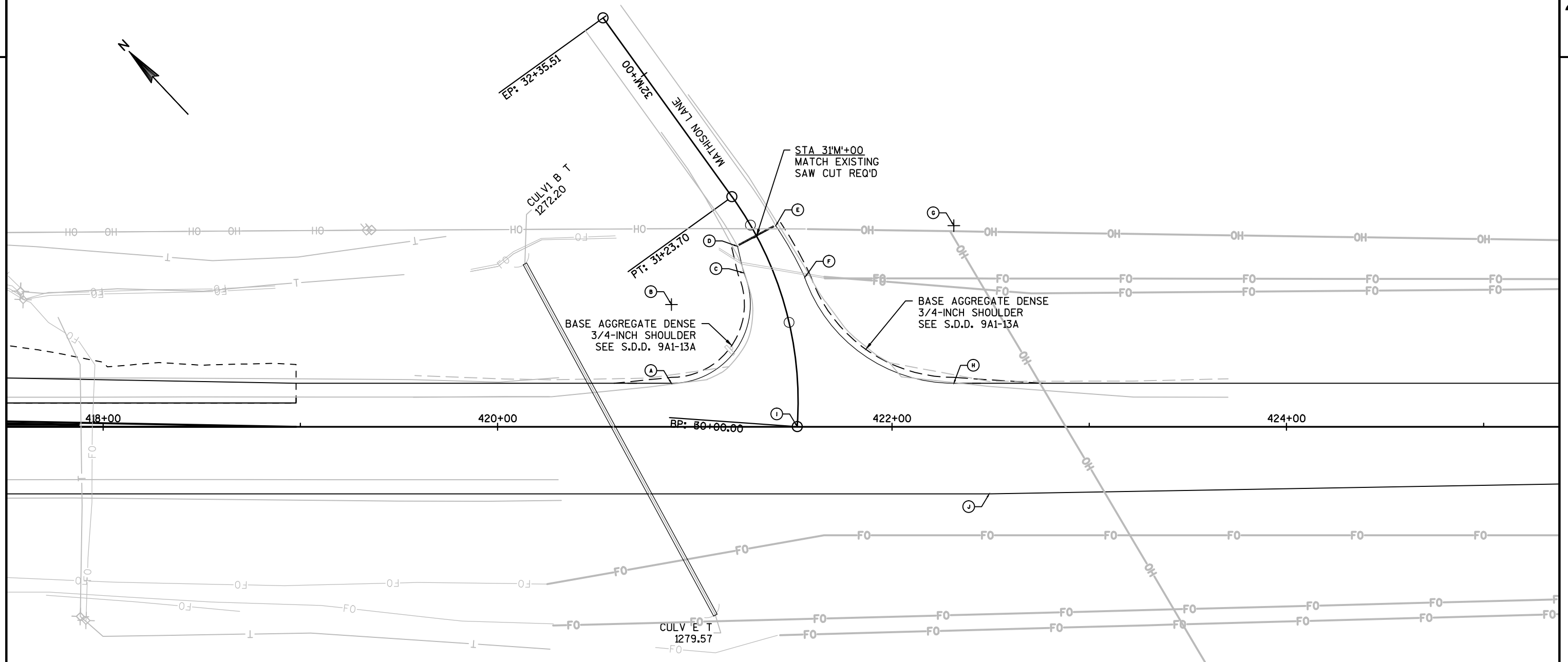


LEGEND

HEAVY RIPRAP

ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	412+37.84	12.0' LT	-
B	413+10.00	32.69' LT	-
C	418+97.84	12.0' LT	-
D	418+97.84	-	-

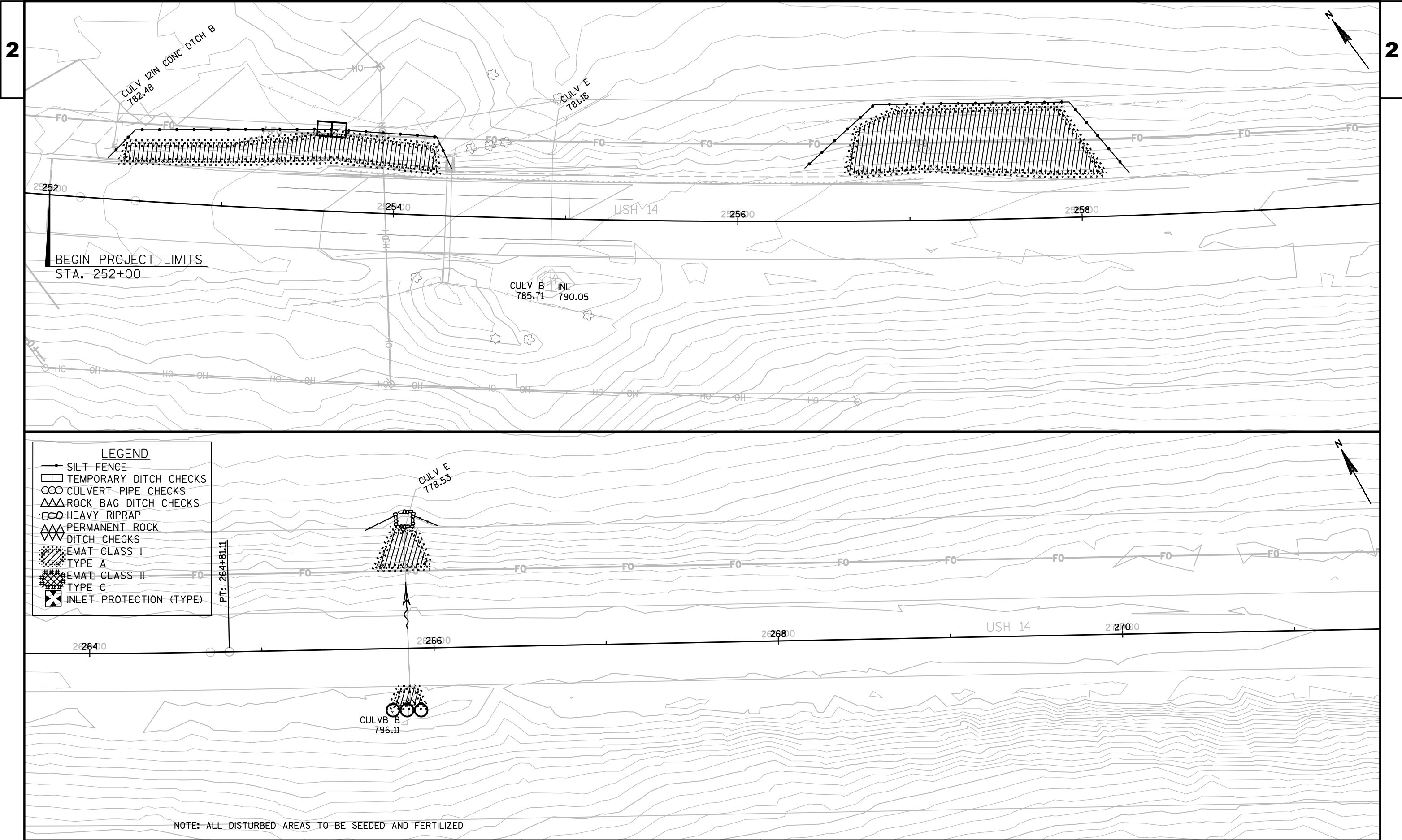


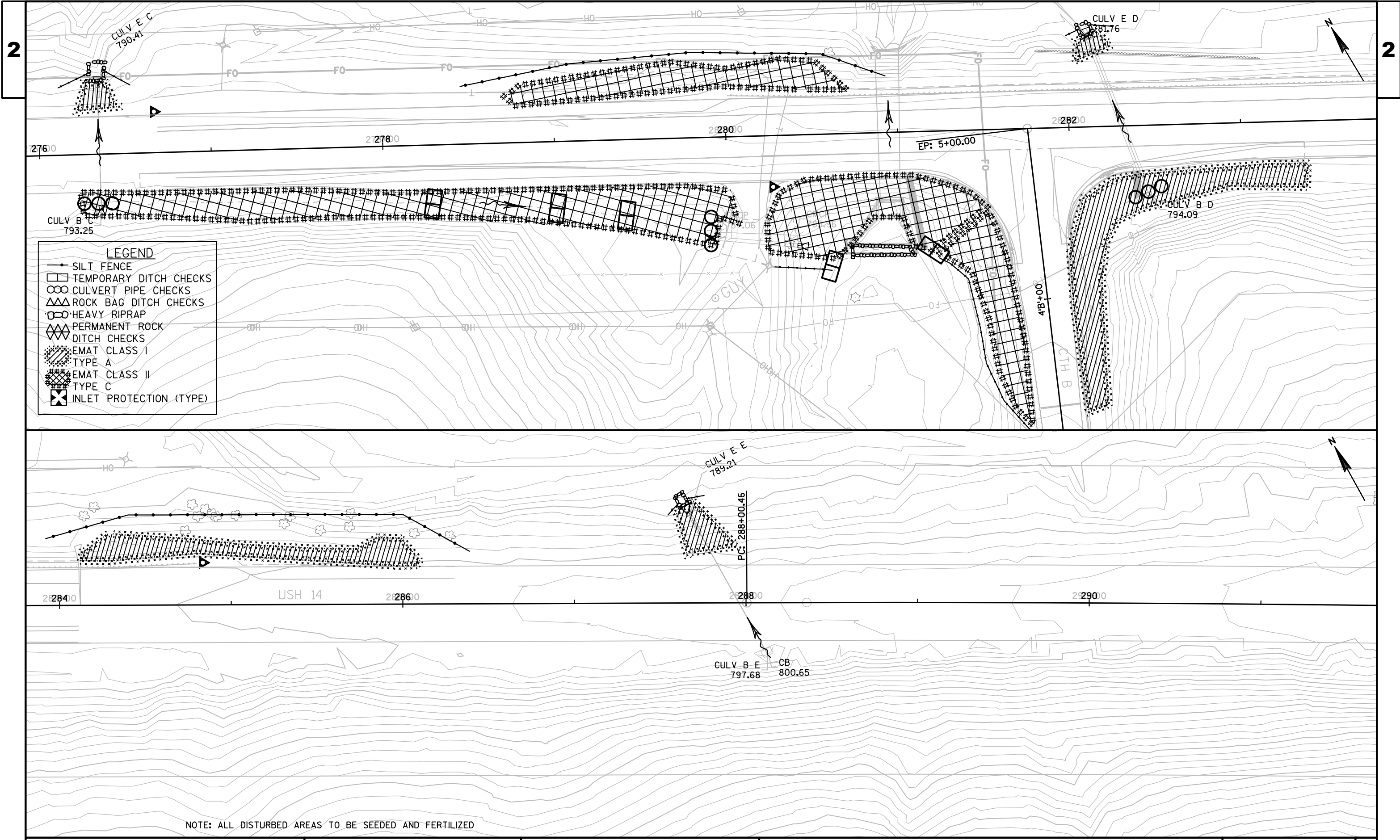
LEGEND

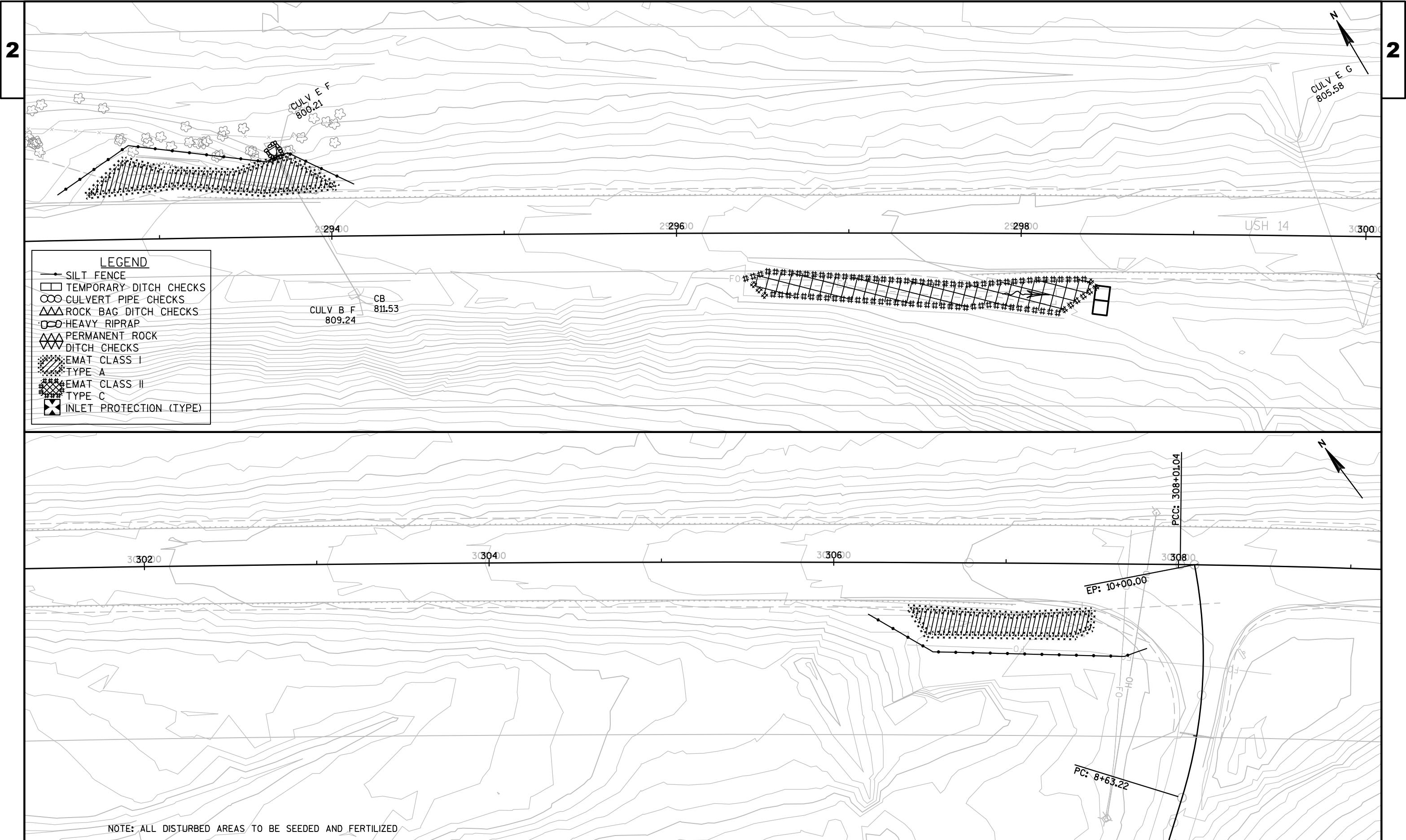
HEAVY RIPRAP

ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

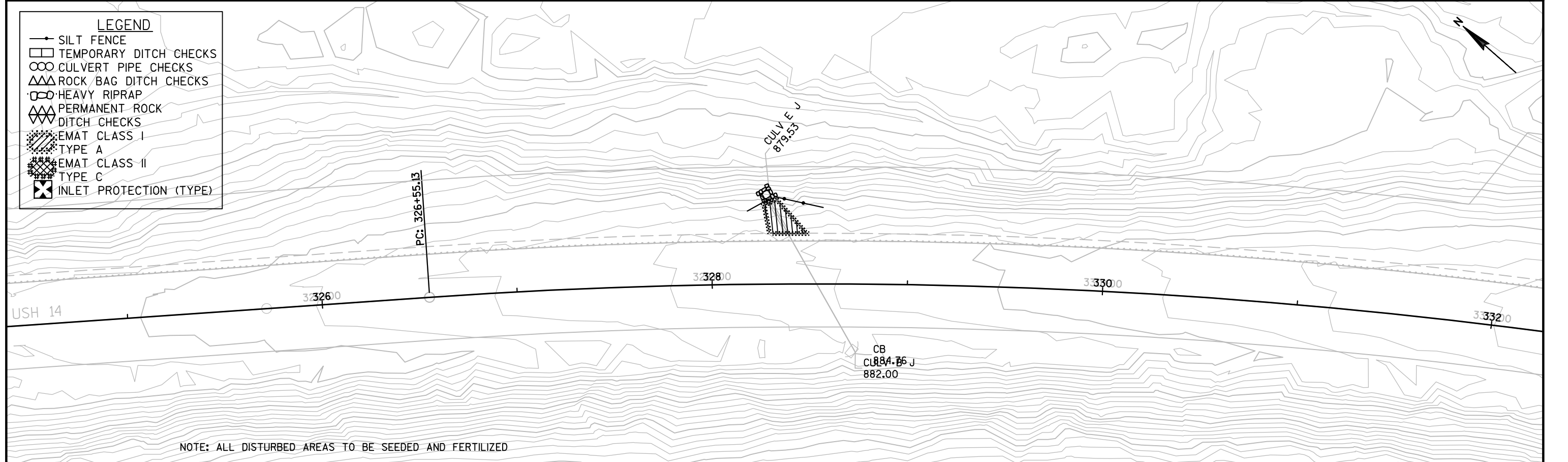
POINT TABLE			
POINT	STATION	OFFSET	COMMENTS
A	420+88.18	22.0' LT	-
B	420+88.18	62.0' LT	RADIUS: 40'
C	30'M+85.56	14.0' LT	-
D	31'M+00	11.0' LT	-
E	31'M+00	11.0' RT	-
F	30'M+72.22	14.0' RT	-
G	422+31.34	102.0' LT	RADIUS: 80'
H	422+31.34	22.0' LT	-
I	421+51.97	-	INTERSECTION TYPE C
J	422+49.35	34.0' RT	END OF CLIMBING LANE



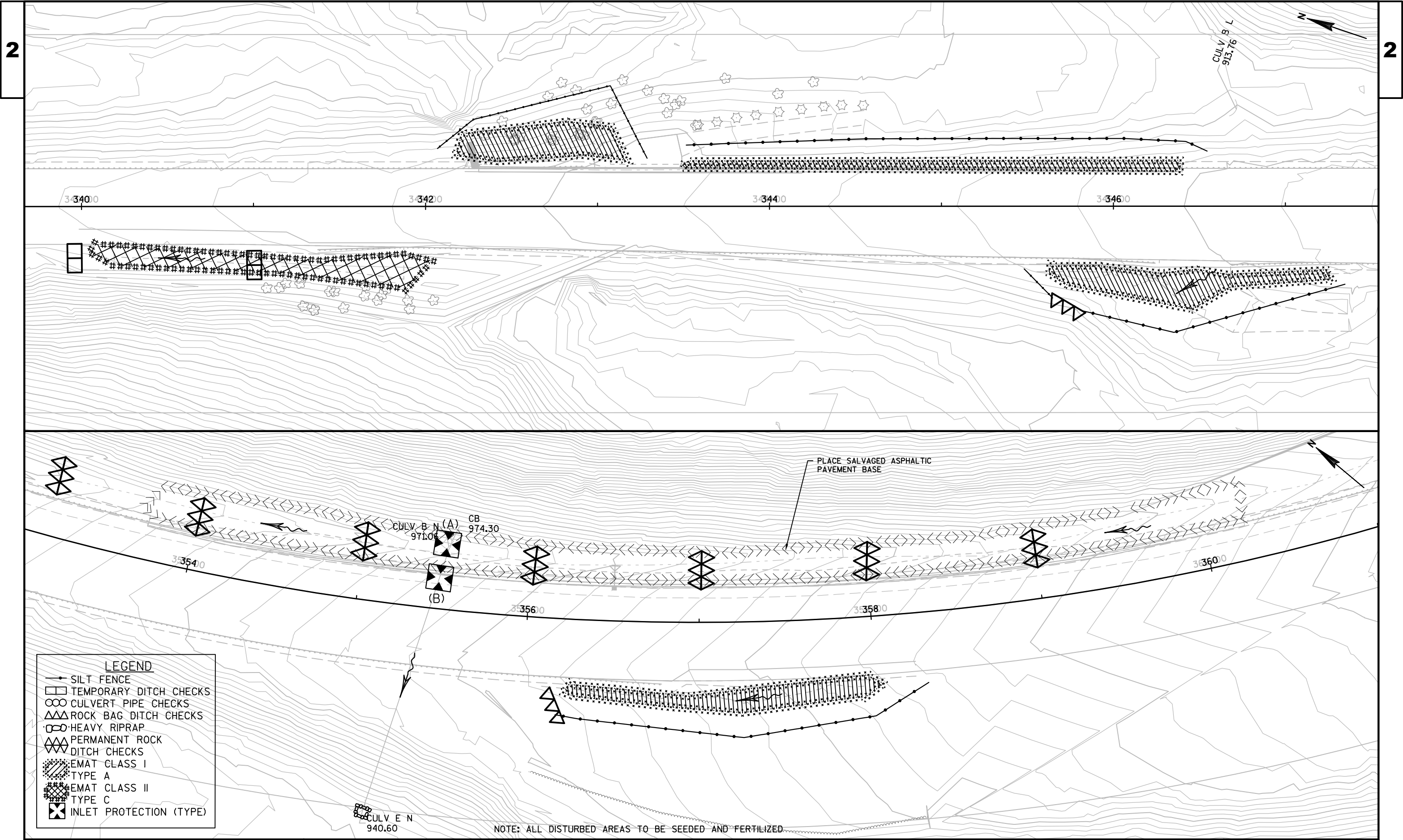


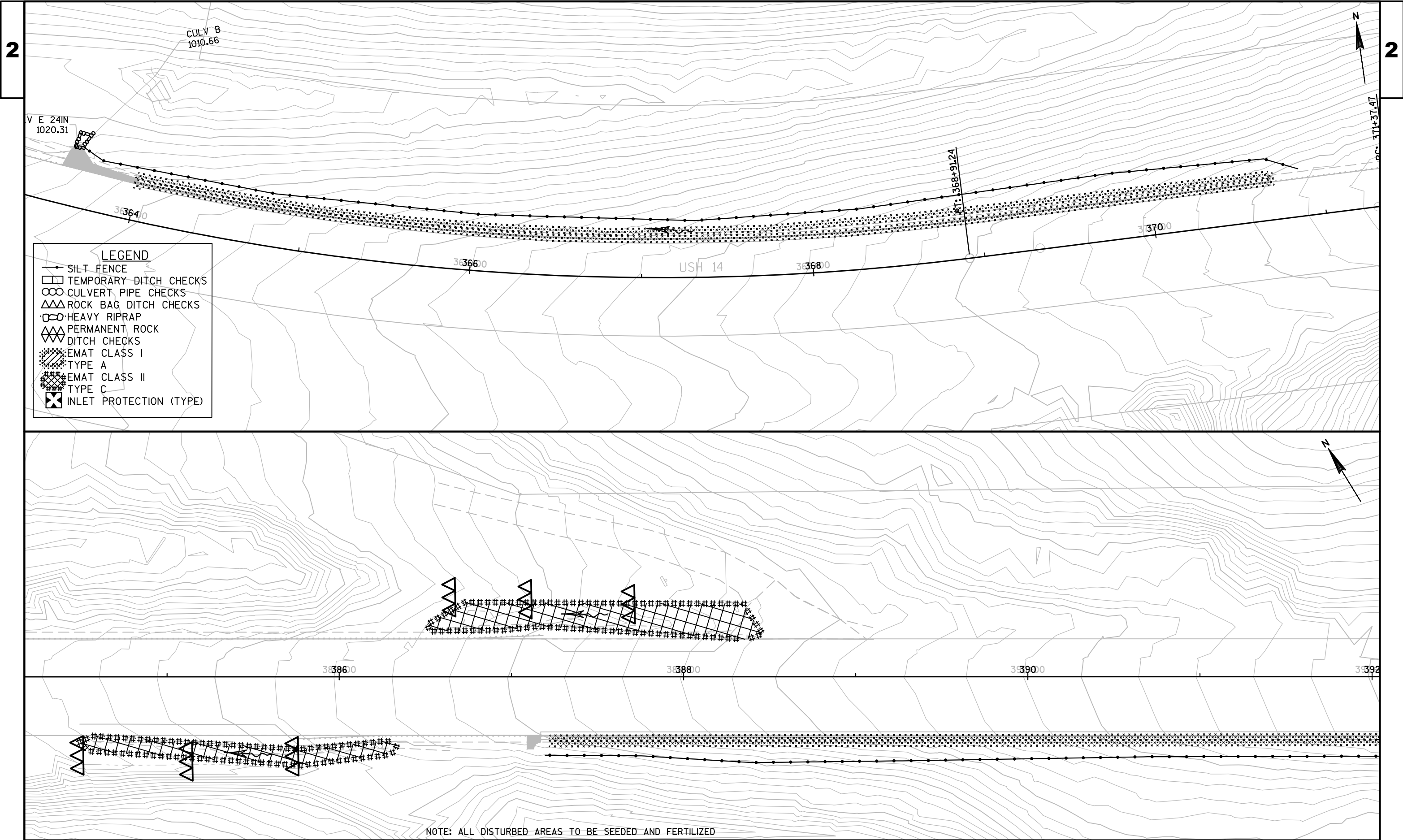


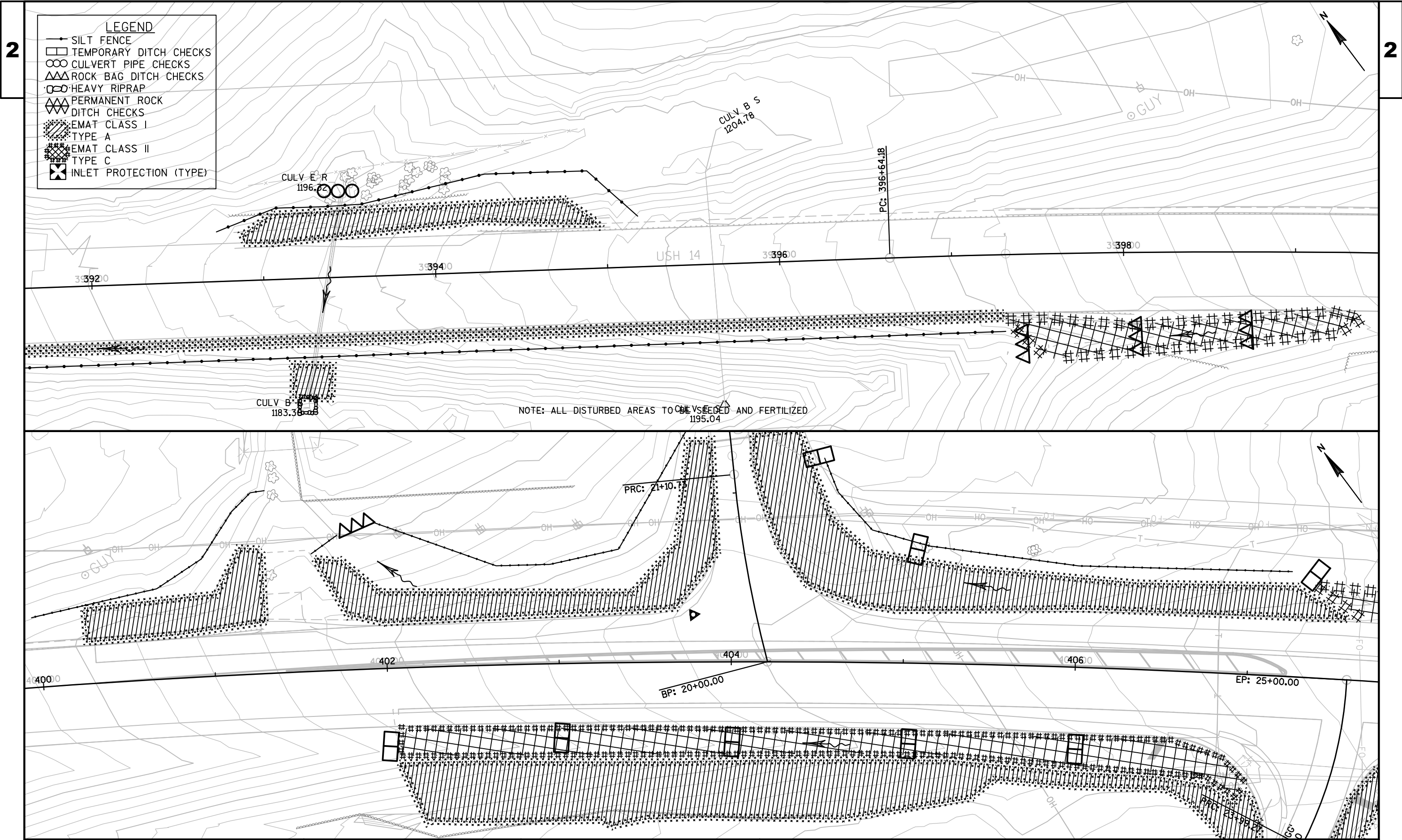
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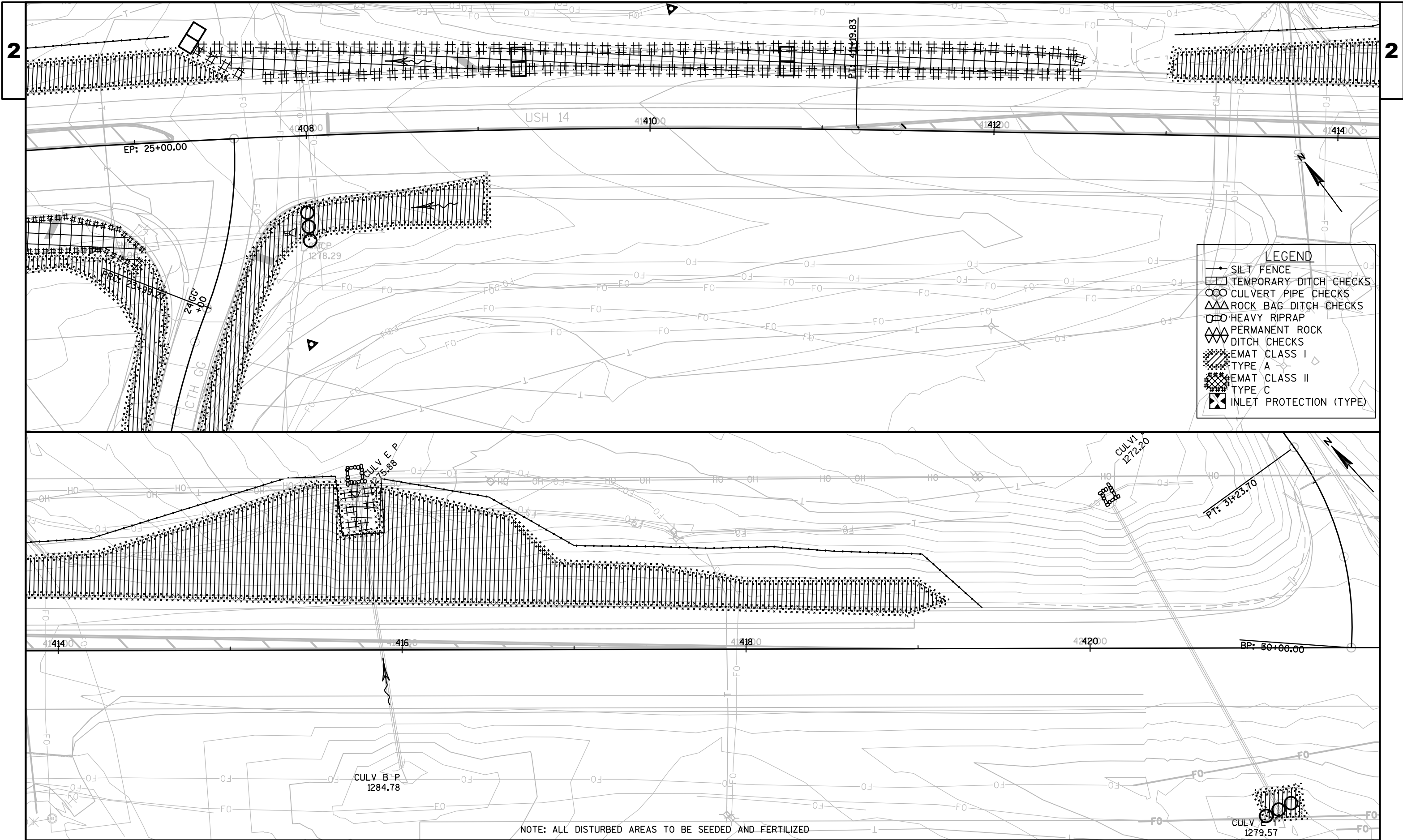


FILE NAME : N:\PDS\C3D\16400130\SHEETS\PLAN\022001-EC.DWG	PLOT DATE : 1/24/2017 3:54 PM	PLOT BY : PHILLIPS, ANDREW J	PLOT NAME :	PLOT SCALE : 1 IN:50 FT	WISDOT/CADD\$	SHEET 44
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PROJECT NO:1640-01-60

HWY:USH 14

COUNTY:VERNON

EROSION CONTROL

SHEET

28

E

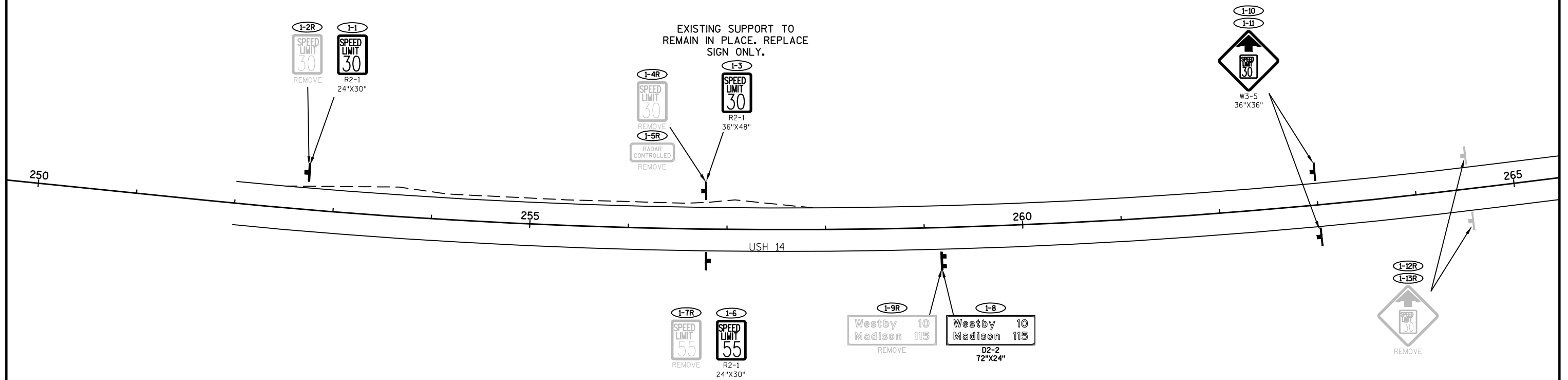
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LAYOUT NAME - *****

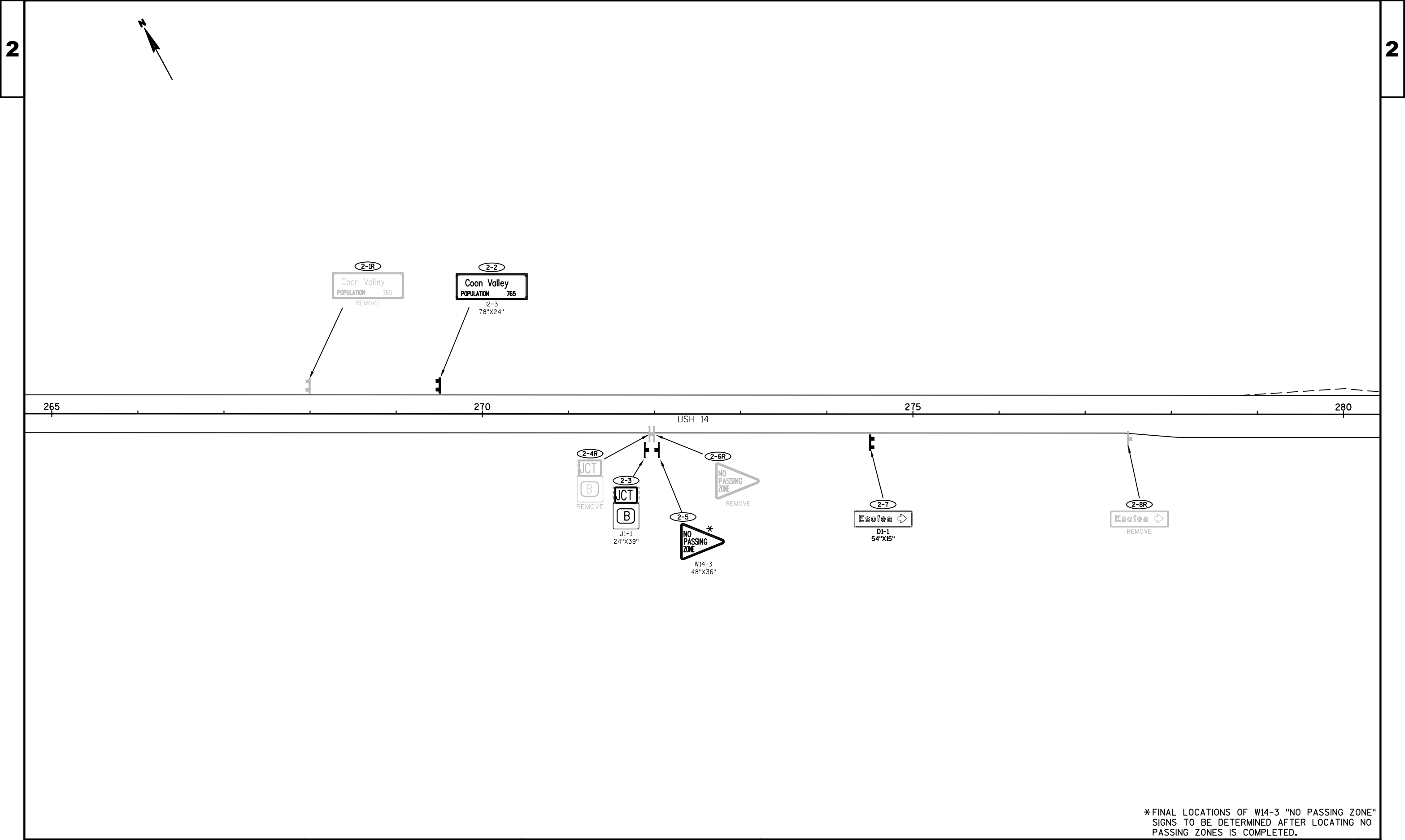
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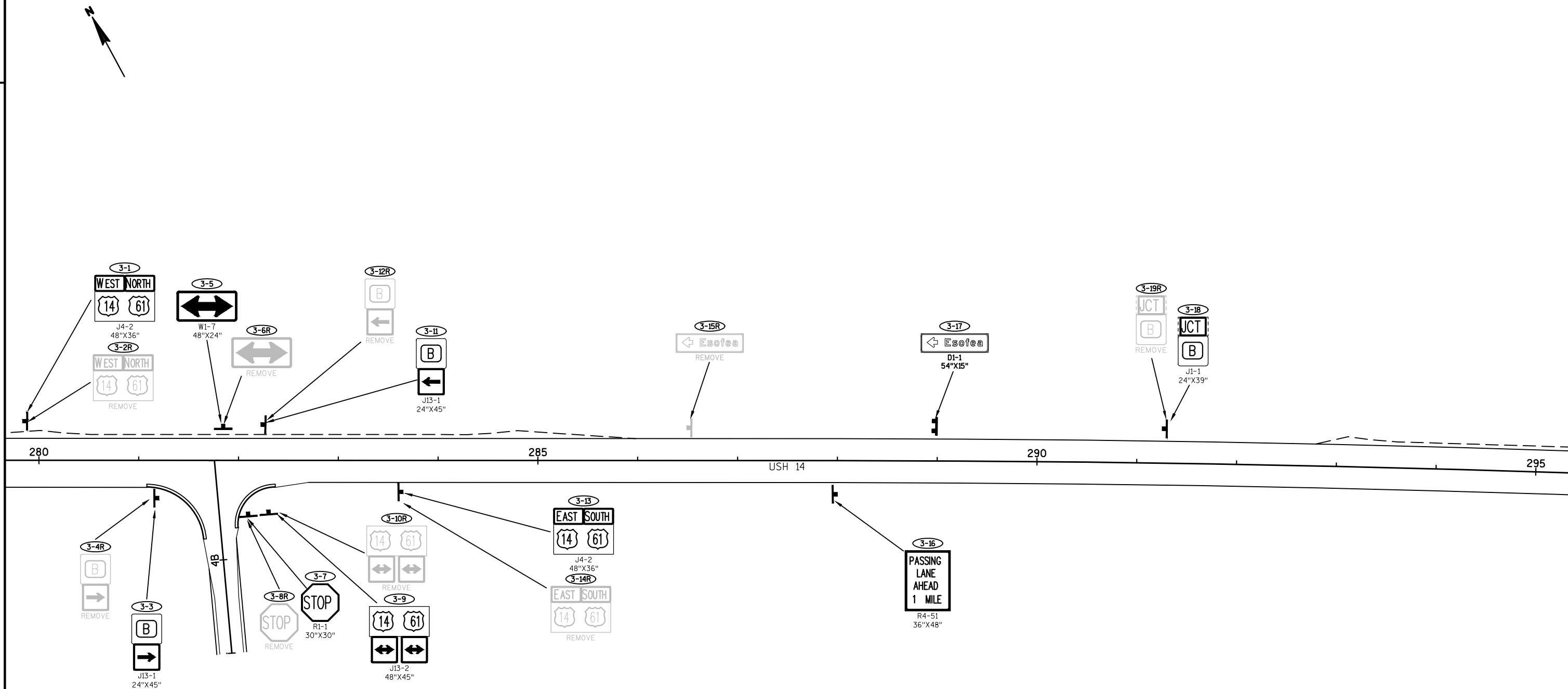
PLOT BY : PHILLIPS, ANDREW J PLOT NAME :

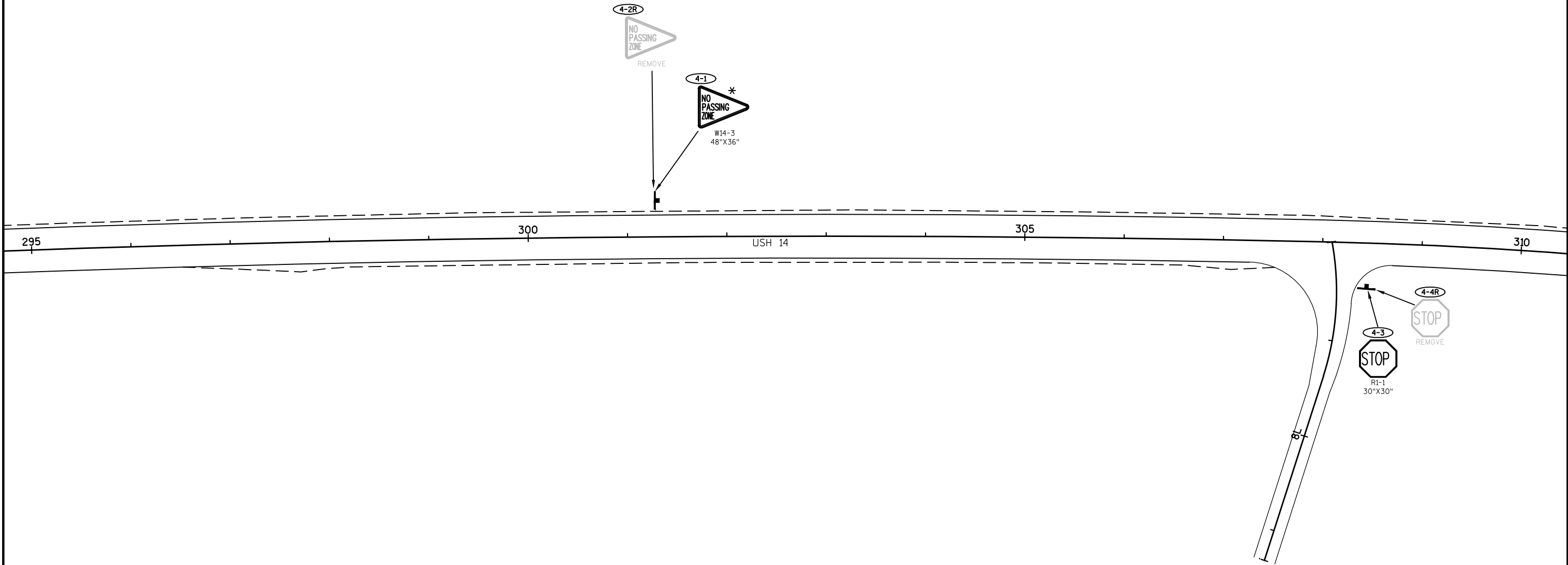
PLOT SCALE : 1 IN:50 FT

WISDOT/CADS SHEET 44

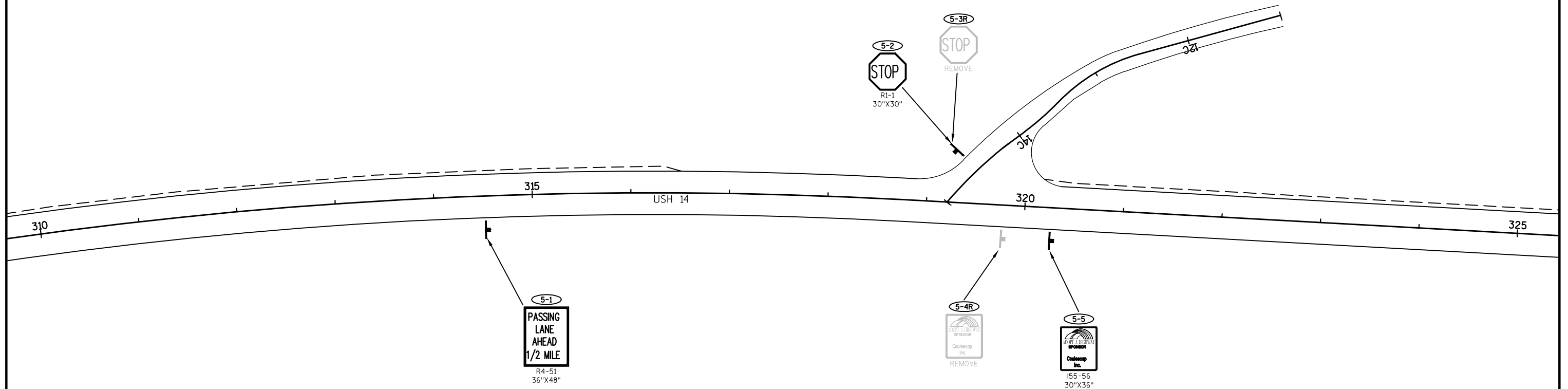


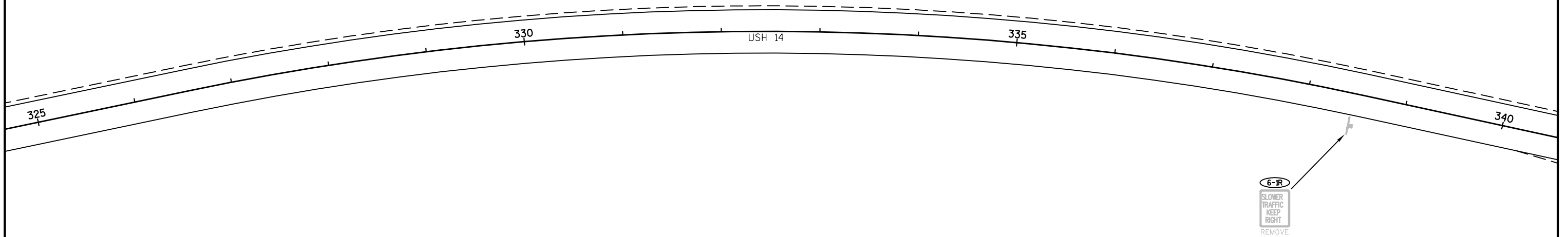
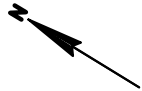


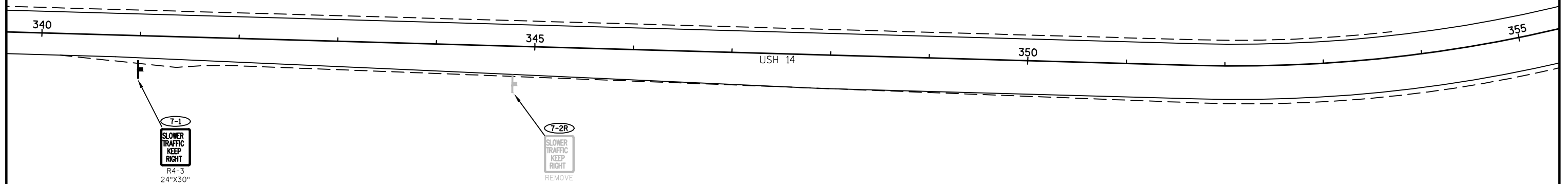




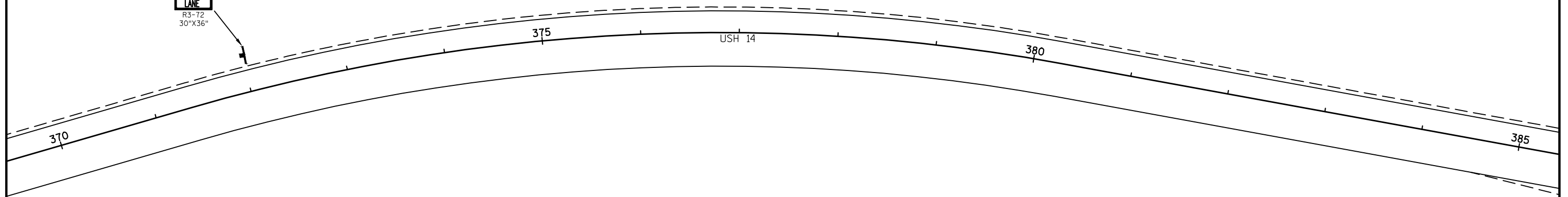
*FINAL LOCATIONS OF W14-3 "NO PASSING ZONE"
SIGNS TO BE DETERMINED AFTER LOCATING NO
PASSING ZONES IS COMPLETED.

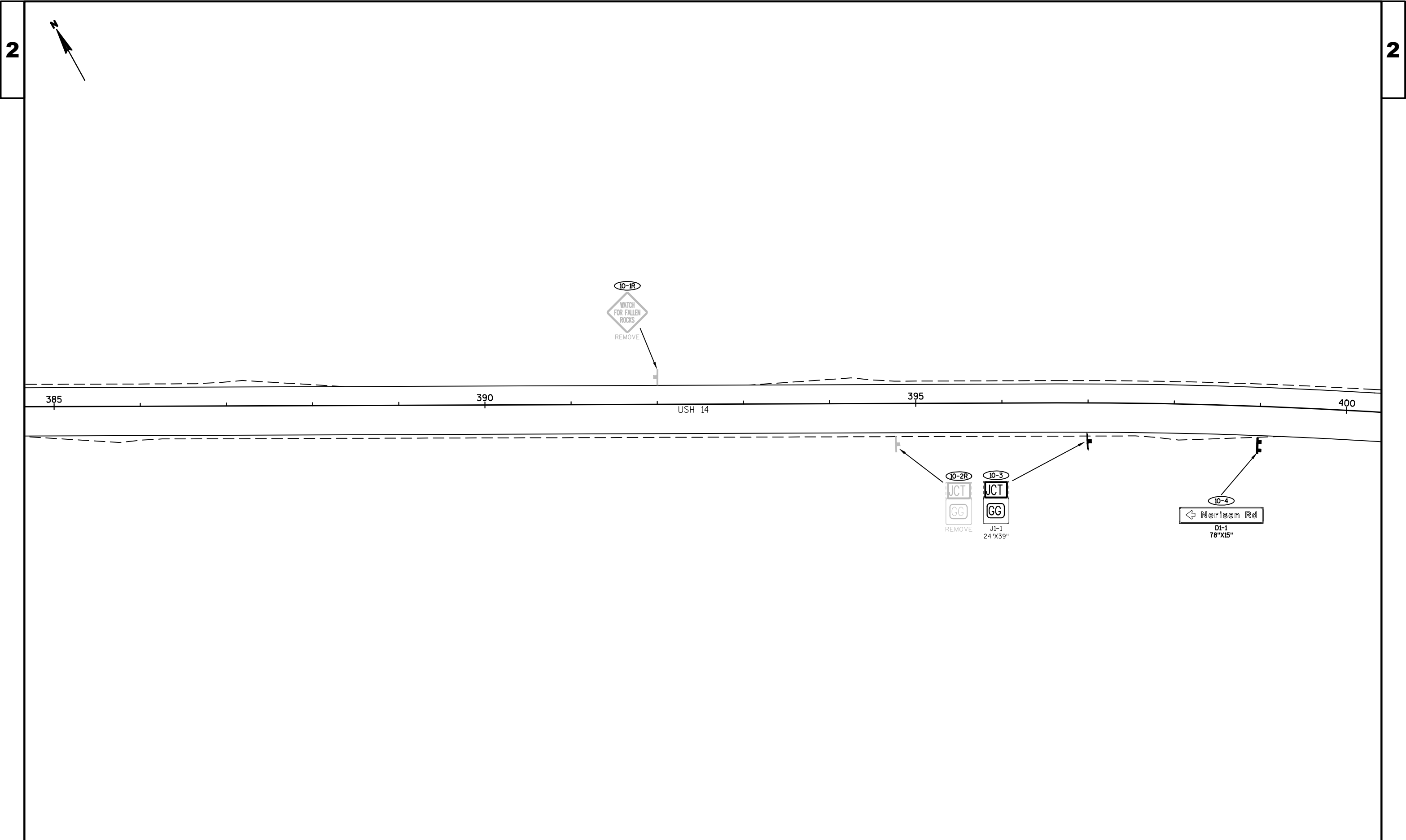


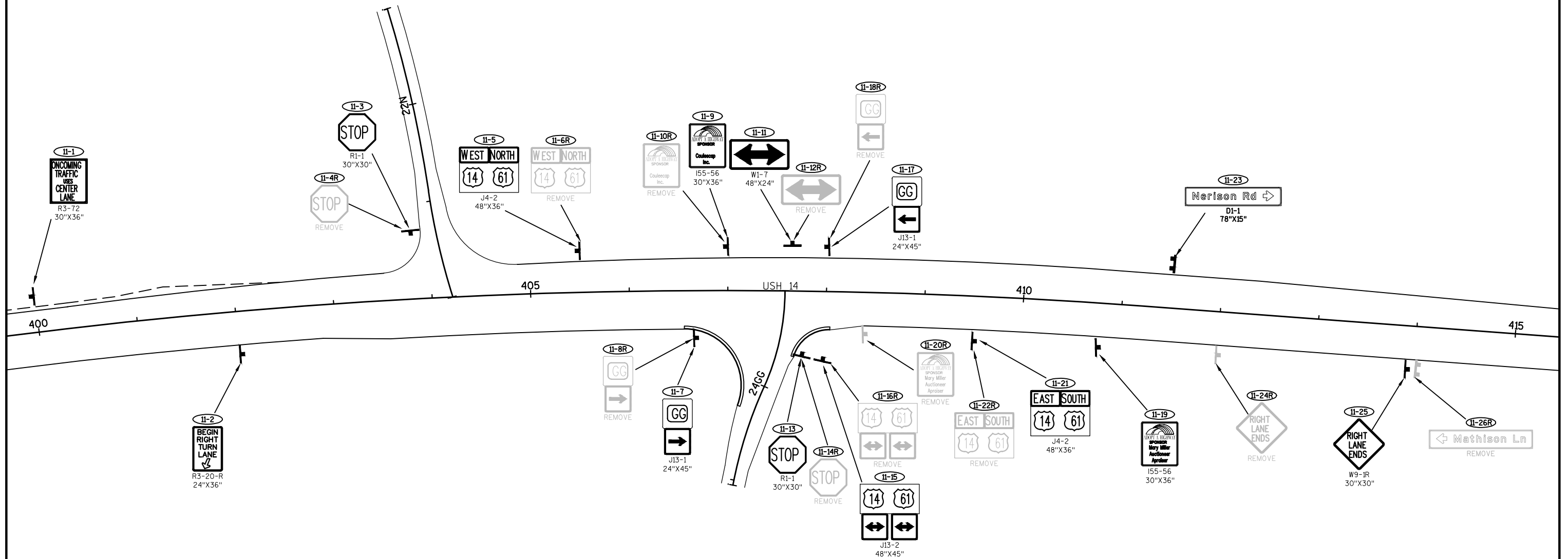


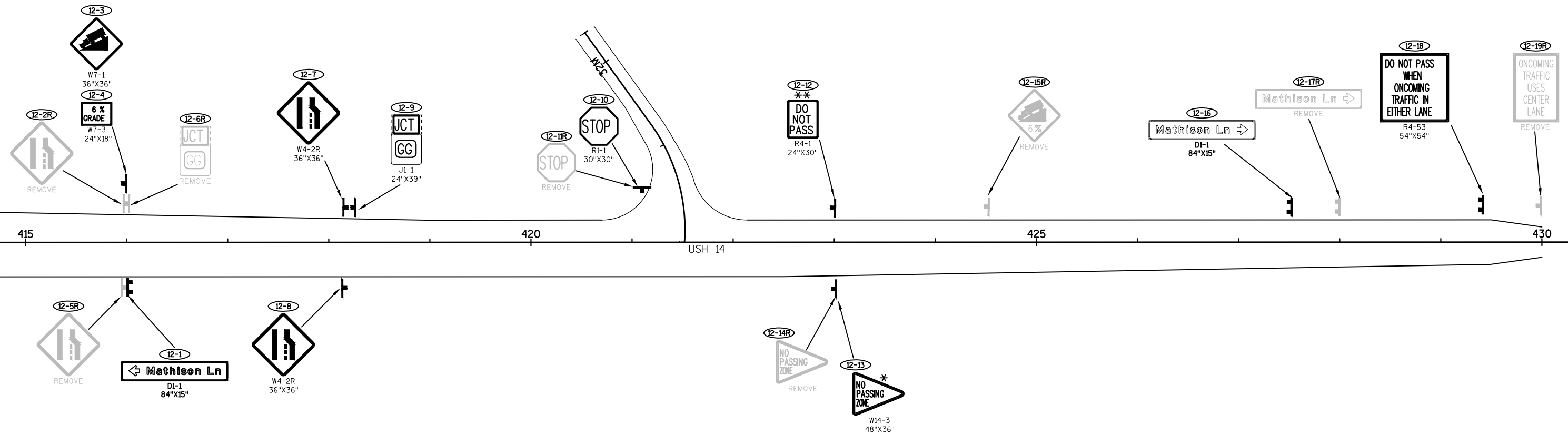






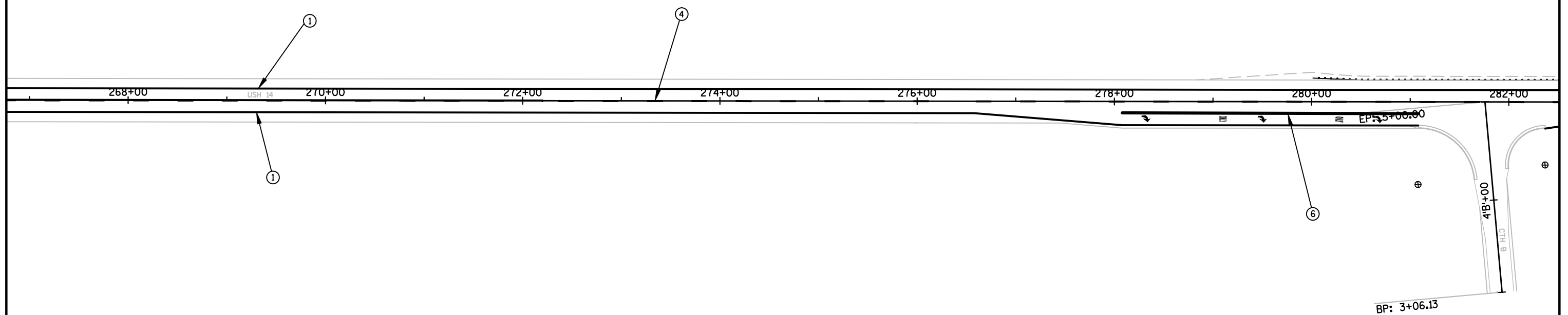
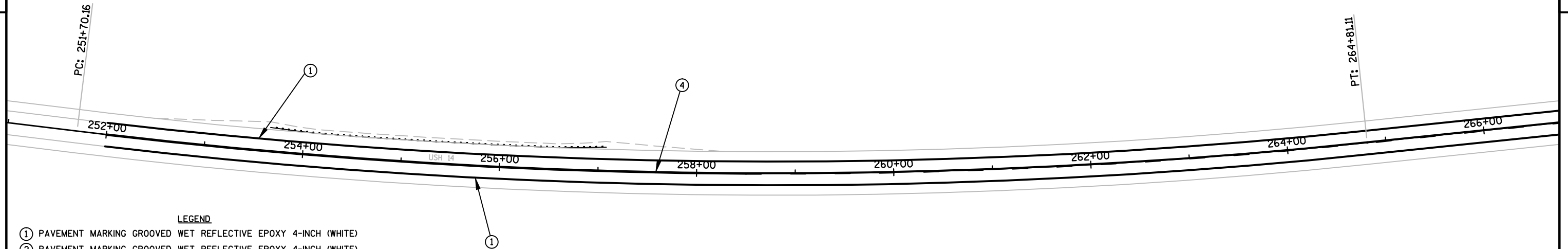


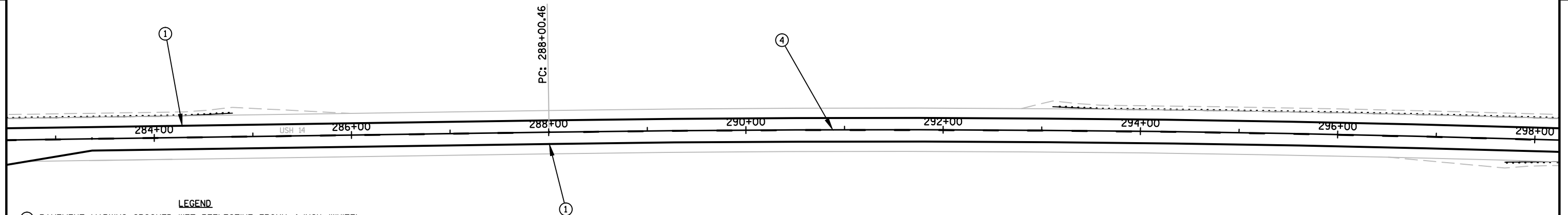




*FINAL LOCATIONS OF W14-3 "NO PASSING ZONE" SIGNS TO BE DETERMINED AFTER LOCATING NO PASSING ZONES IS COMPLETED.

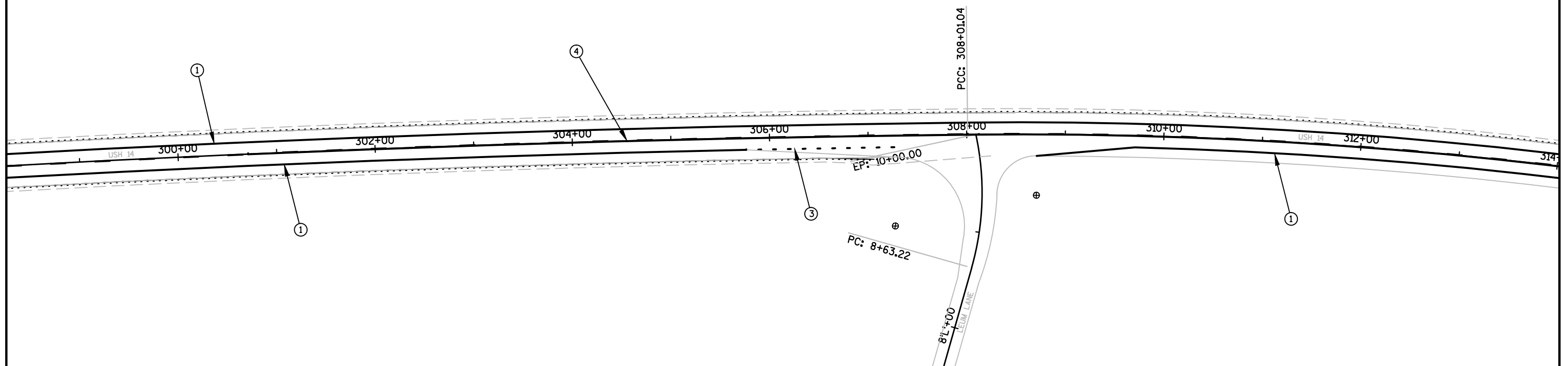
**FINAL LOCATIONS OF R4-1 "DO NOT PASS" SIGNS TO BE DETERMINED AFTER LOCATING NO PASSING ZONES IS COMPLETED.



**LEGEND**

- ① PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
- ② PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
LANE LINE MARKING 12.5' STRIP, 37.5' GAP
- ③ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
TAPER EDGE LINE 3' STRIP, 9' GAP
- ④ PAVEMENT MARKING EPOXY 4-INCH (YELLOW*)
- ⑤ PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
- ⑥ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8-INCH (WHITE)
- ⑦ PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

*MARKING TYPE DEPENDENT ON LIMITS DERIVED FROM ITEM LOCATING
NO PASSING ZONES.



PROJECT NO:1640-01-60

HWY:USH 14

COUNTY:VERNON

PERMANENT PAVEMENT MARKING

SHEET 42

E

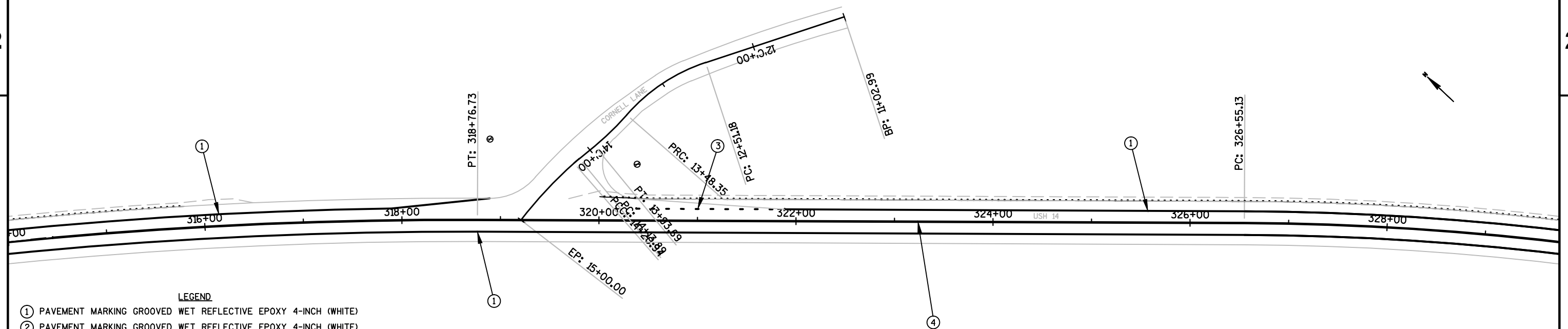
FILE NAME : N:\PDS\C3D\16400130\SHEETSPLAN\024501-PM.DWG
LAYOUT NAME - 050201-PN- (24)

PLOT DATE : 2/2/2017 3:38 PM

PLOT BY : PHILLIPS, ANDREW J PLOT NAME :

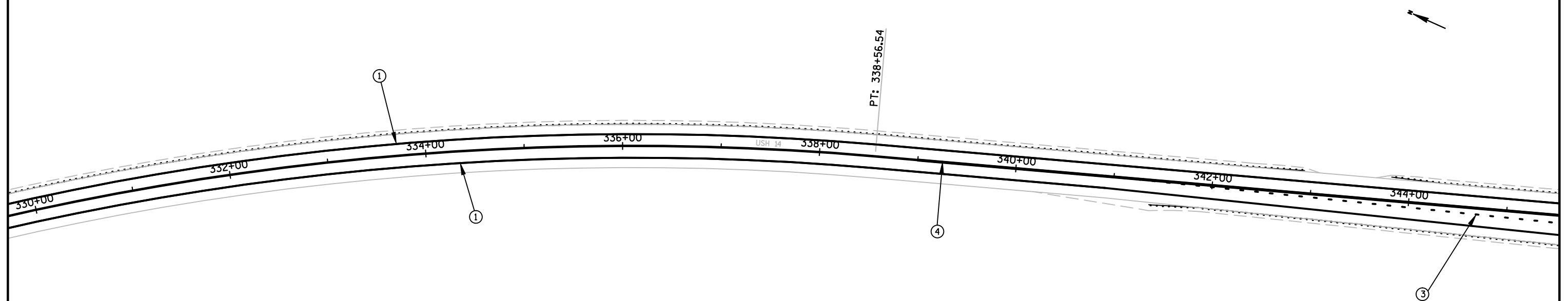
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 44

**LEGEND**

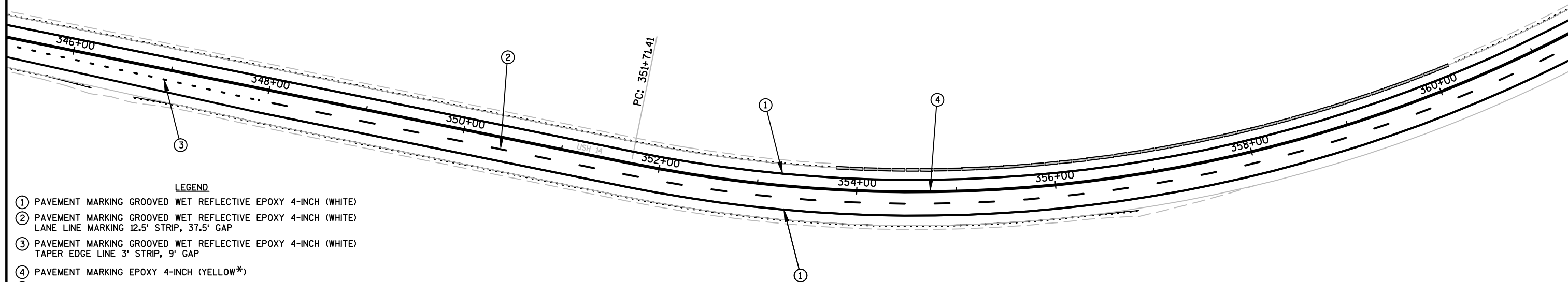
- ① PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
- ② PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
LANE LINE MARKING 12.5' STRIP, 37.5' GAP
- ③ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
TAPER EDGE LINE 3' STRIP, 9' GAP
- ④ PAVEMENT MARKING EPOXY 4-INCH (YELLOW*)
- ⑤ PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
- ⑥ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8-INCH (WHITE)
- ⑦ PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

*MARKING TYPE DEPENDENT ON LIMITS DERIVED FROM ITEM LOCATING
NO PASSING ZONES.



2

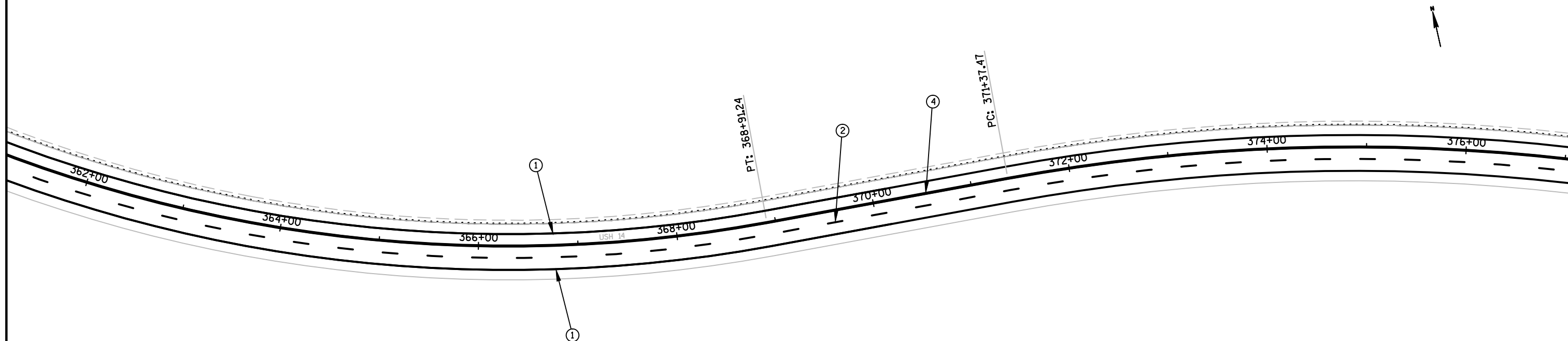
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LEGEND

- ① PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
- ② PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
LANE LINE MARKING 12.5' STRIP, 37.5' GAP
- ③ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
TAPER EDGE LINE 3' STRIP, 9' GAP
- ④ PAVEMENT MARKING EPOXY 4-INCH (YELLOW*)
- ⑤ PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
- ⑥ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8-INCH (WHITE)
- ⑦ PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

*MARKING TYPE DEPENDENT ON LIMITS DERIVED FROM ITEM LOCATING
NO PASSING ZONES.



PROJECT NO:1640-01-60

HWY:USH 14

COUNTY:VERNON

PERMANENT PAVEMENT MARKING

SHEET

44

E

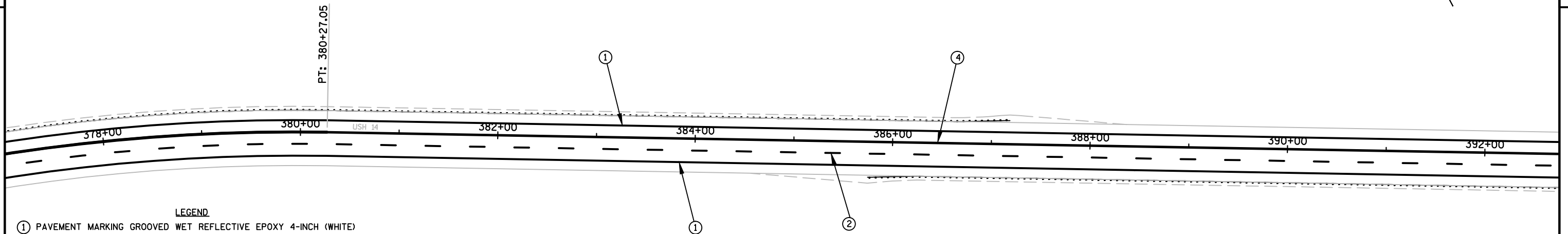
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LAYOUT NAME - 050201-PN- (28)

PLOT DATE : 2/2/2017 3:38 PM

PLOT BY : PHILLIPS, ANDREW J PLOT NAME :

PLOT SCALE : 1 IN:100 FT

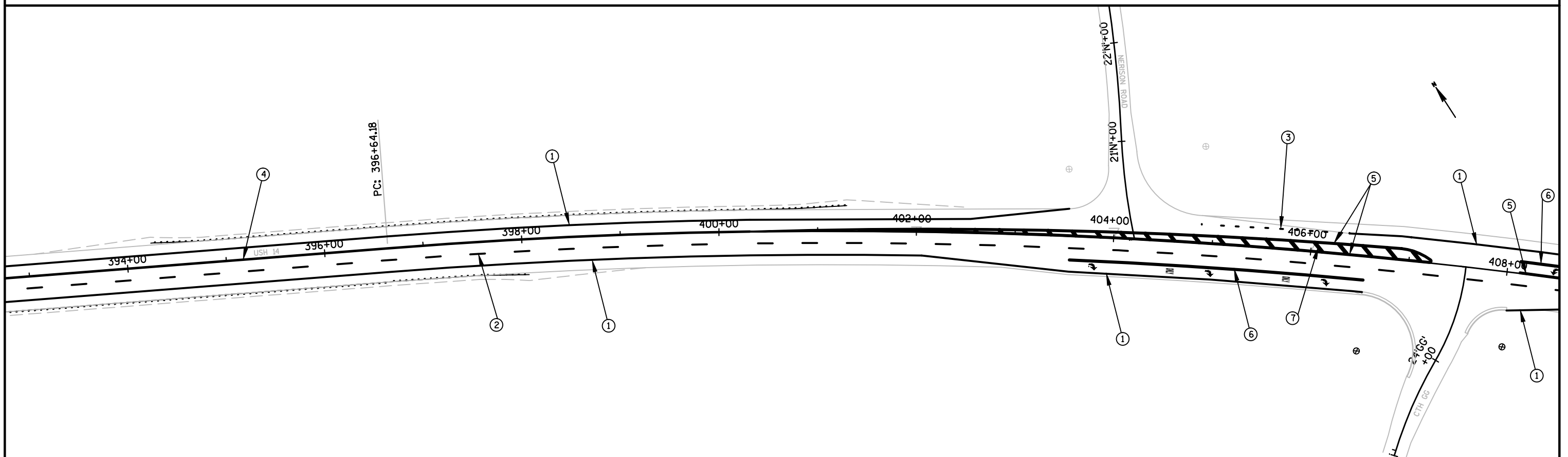
WISDOT/CADDs SHEET 44



LEGEND

- ① PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
- ② PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
LANE LINE MARKING 12.5' STRIP, 37.5' GAP
- ③ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
TAPER EDGE LINE 3' STRIP, 9' GAP
- ④ PAVEMENT MARKING EPOXY 4-INCH (YELLOW*)
- ⑤ PAVEMENT MARKING EPOXY 4-INCH (DOUBLE YELLOW)
- ⑥ PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8-INCH (WHITE)
- ⑦ PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

*MARKING TYPE DEPENDENT ON LIMITS DERIVED FROM ITEM LOCATING
NO PASSING ZONES.



PROJECT NO:1640-01-60

HWY:USH 14

COUNTY:VERNON

PERMANENT PAVEMENT MARKING

SHEET 45

E

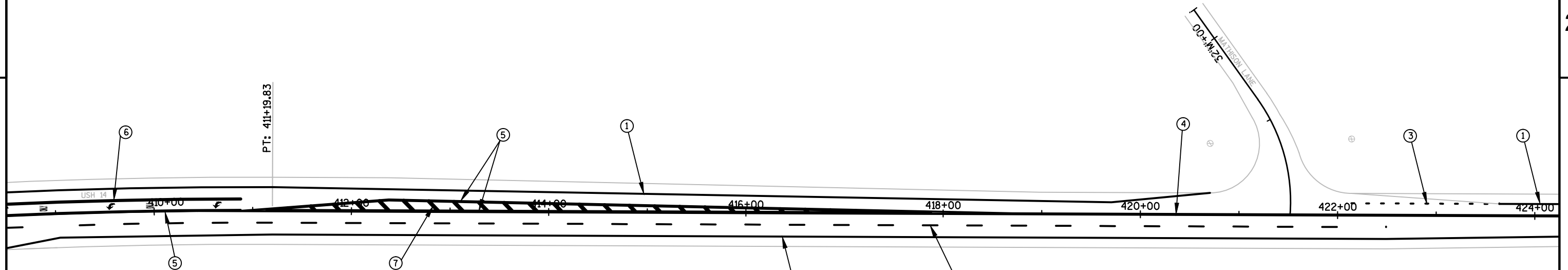
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LAYOUT NAME - 050201-PN- (30)

PLOT DATE : 2/2/2017 3:38 PM

PLOT BY : PHILLIPS, ANDREW J PLOT NAME :

PLOT SCALE : 1 IN:100 FT

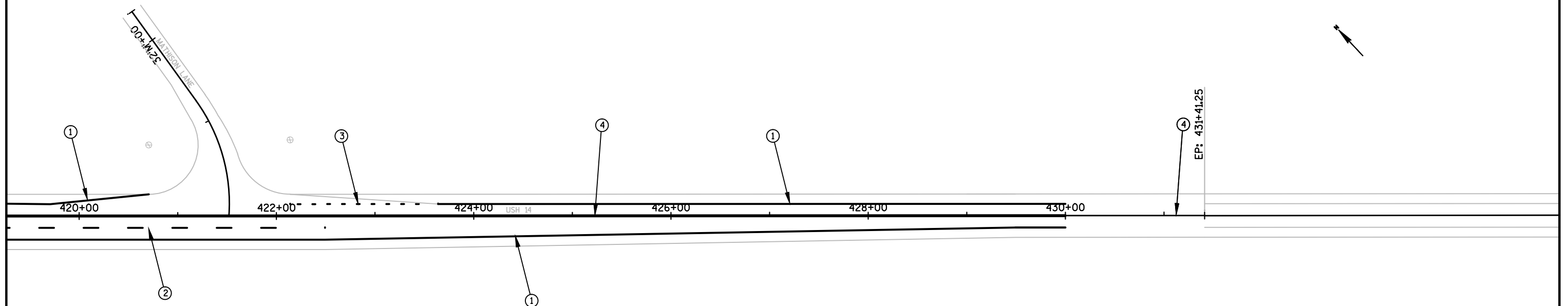
WISDOT/CADDs SHEET 44

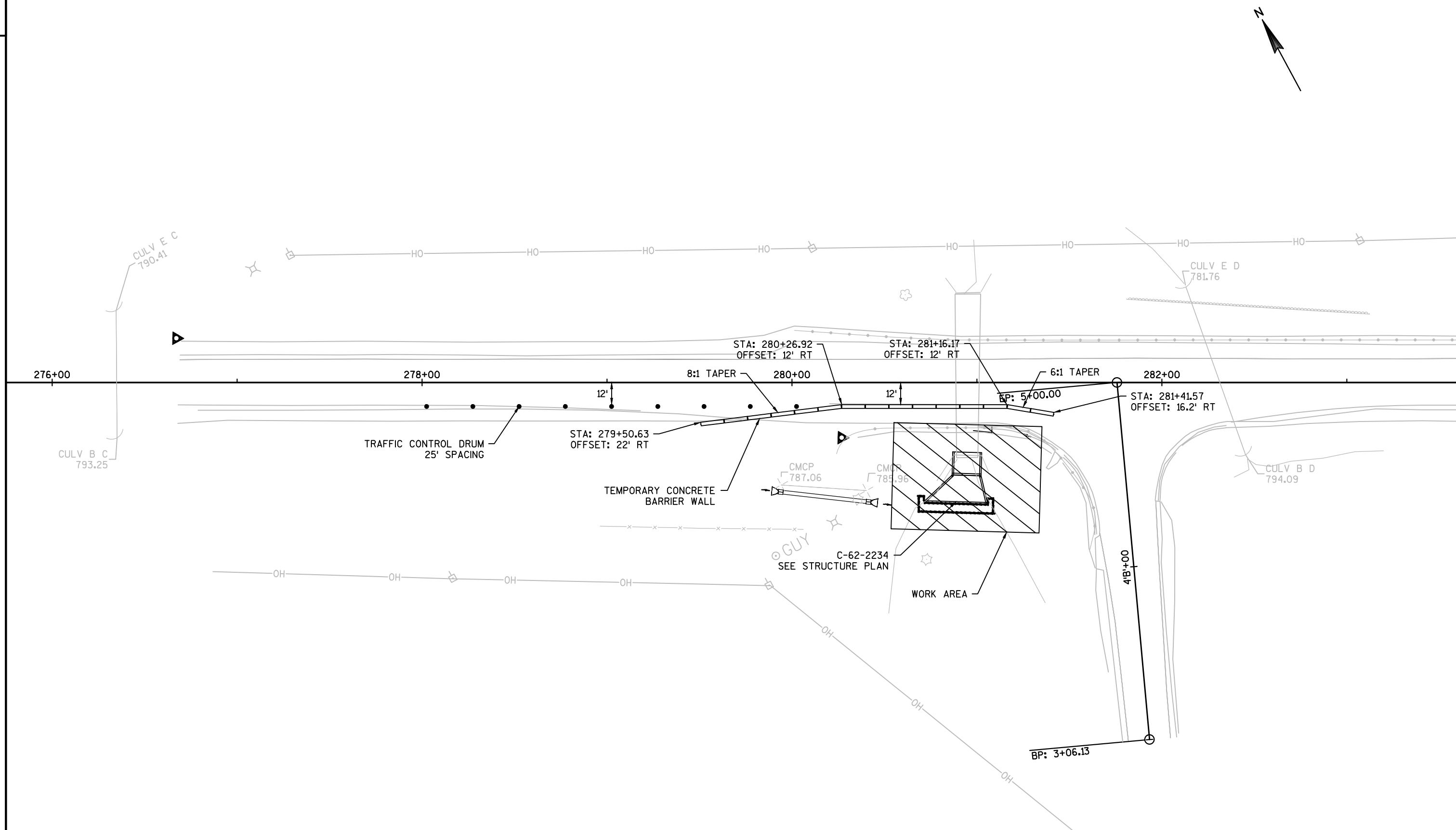


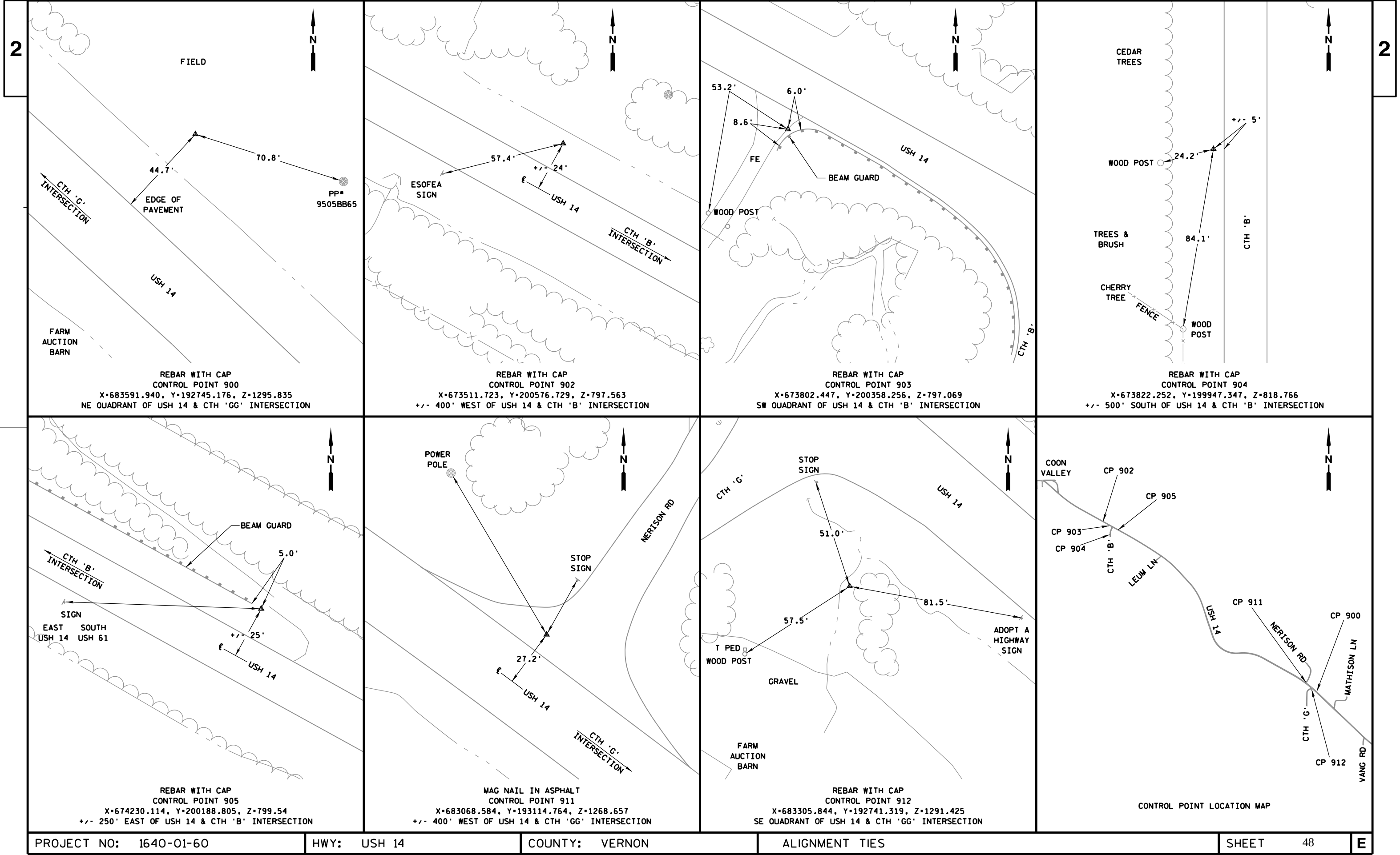
LEGEND

- ① PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE)
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- ⑦ PAVEMENT MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

*MARKING TYPE DEPENDENT ON LIMITS DERIVED FROM ITEM LOCATING
NO PASSING ZONES.

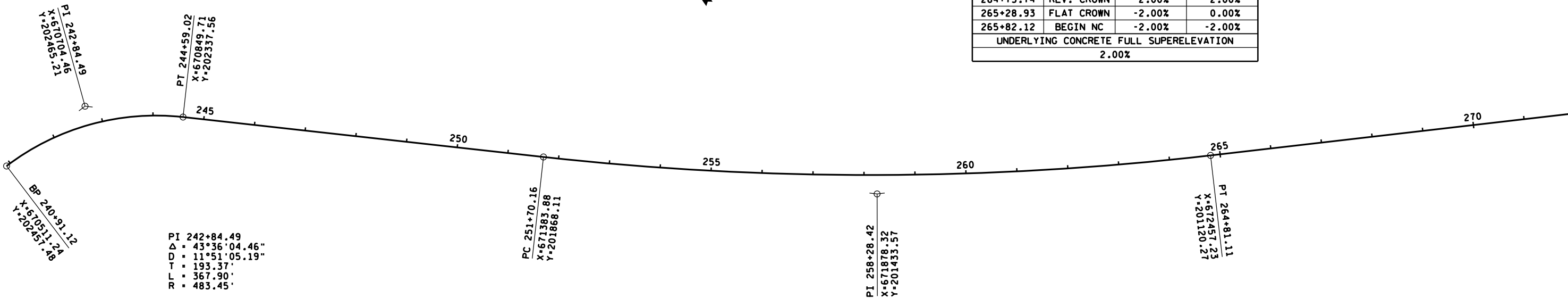
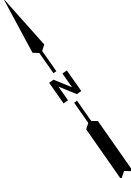






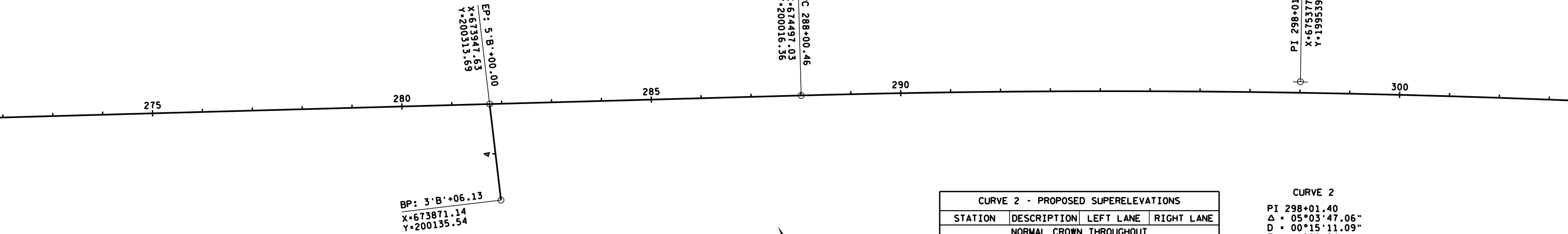
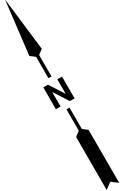
CURVE 1 - PROPOSED SUPERELEVATIONS			
STATION	DESCRIPTION	LEFT LANE	RIGHT LANE
250+69.17	END NC	-2.00%	-2.00%
251+22.36	FLAT CROWN	-2.00%	0.00%
251+75.55	REV. CROWN	-2.00%	2.00%
251+94.17	BEGIN FS	-2.70%	2.70%
264+57.12	END FS	-2.70%	2.70%
264+75.74	REV. CROWN	-2.00%	2.00%
265+28.93	FLAT CROWN	-2.00%	0.00%
265+82.12	BEGIN NC	-2.00%	-2.00%
UNDERLYING CONCRETE FULL SUPERELEVATION			
2.00%			

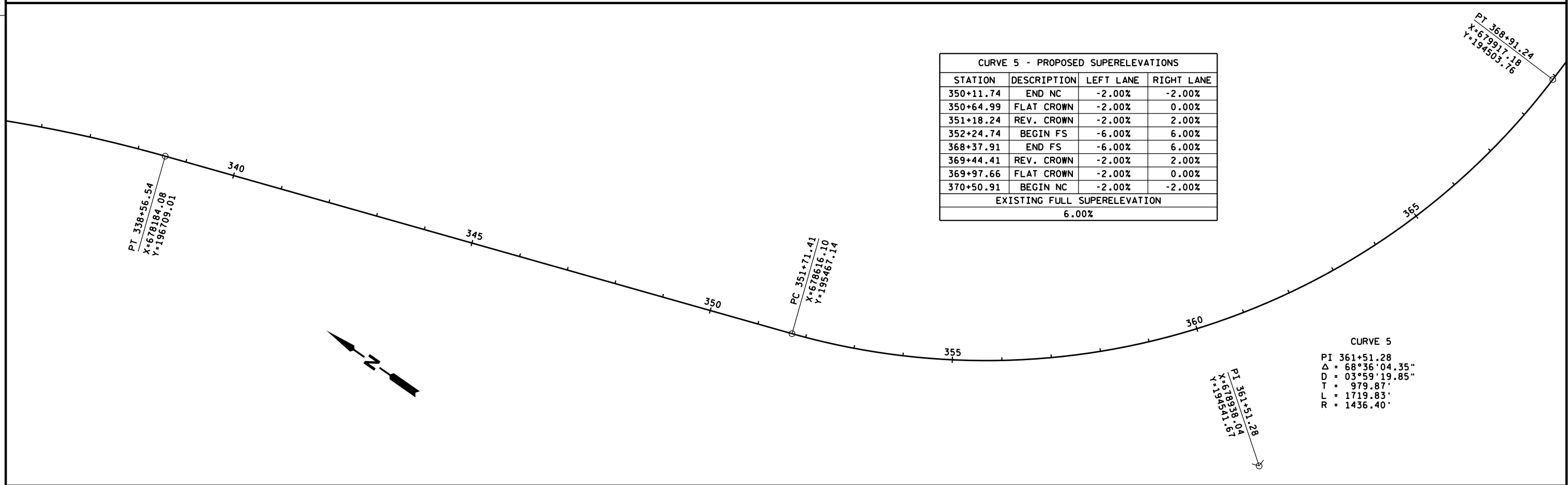
CURVE 1
PI 258+28.42
Δ = 12°53'19.03"
D = 00°58'59.34"
T = 658.25'
L = 1310.95'
R = 5827.78'

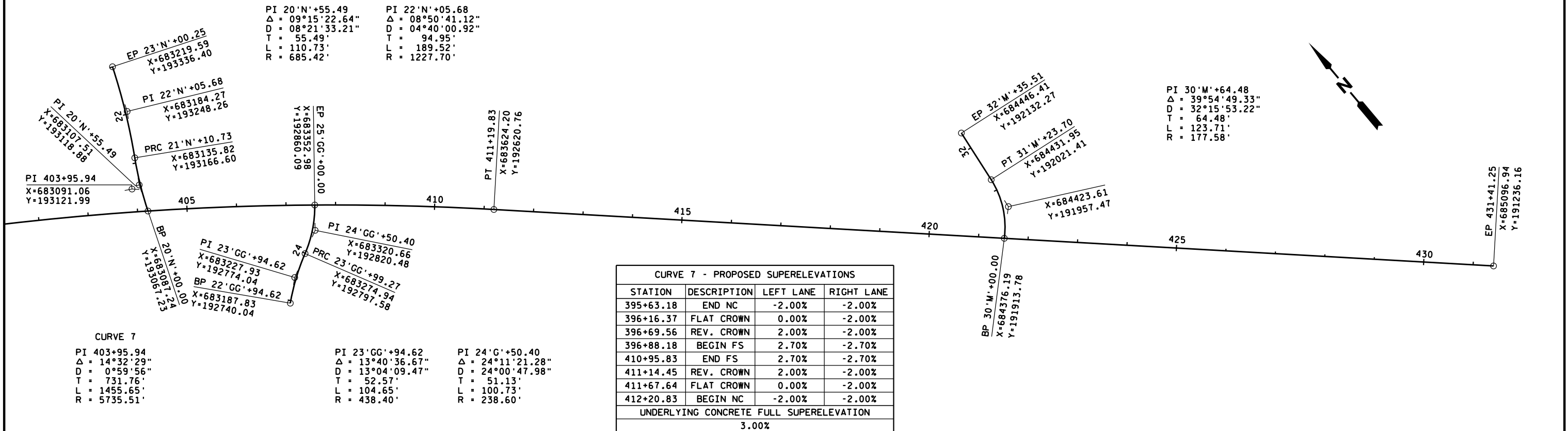
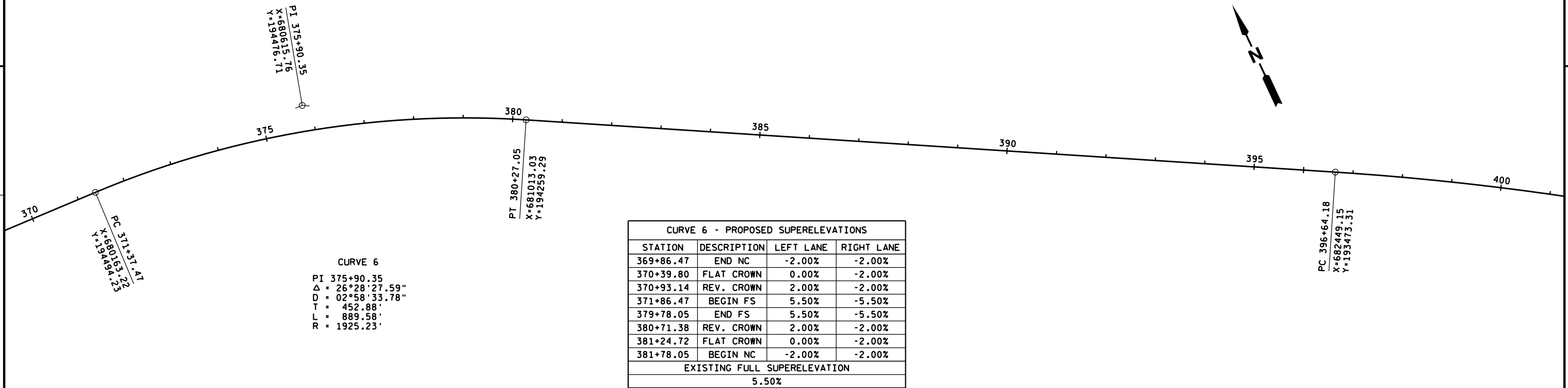


CURVE 2 - PROPOSED SUPERELEVATIONS			
STATION	DESCRIPTION	LEFT LANE	RIGHT LANE
NORMAL CROWN THROUGHOUT			
UNDERLYING CONCRETE FULL SUPERELEVATION			
NORMAL CROWN THROUGHOUT			

CURVE 2
PI 298+01.40
Δ = 05°03'47.06"
D = 00°15'11.09"
T = 1000.94'
L = 2000.57'
R = 22639.31'







BORINGS TAKEN AUGUST 2013
FOR INFORMATIONAL PURPOSES ONLY

BORING NUMBER	GPS	LOG MILE	APPROXIMATE STATION	OFFSET	CURVE OR TANGENT	R OR L CURVE	ASPHALT THICKNESS	CONCRETE THICKNESS	CABC THICKNESS	SAND THICKNESS	REMARKS
----	-----	0.000	244+38	-----	-	-	-----	-----	-----	-----	BEGIN PROJECT CTH 'P'
B-1	N43°42.099' W091°00.380'	0.500	247+02	9' RT	T	-	6 1/2"	-----	9"	44"	URBAN FILL - CUT
B-1A	-----	0.500	247+02	17' RT	T	-	-----	-----	-----	-----	SHOULDER
----	-----	0.124	250+93	LT	-	-	-----	-----	-----	-----	CHURCH ROAD
B-2	N43°42.011' W091°00.235'	0.203	255+10	9' LT	C	L	4 1/4"	7"	-----	18"	FILL - CUT
B-3	N43°41.945' W091°00.098'	0.341	262+38	9' RT	C	L	6 3/4"	8"	-----	8"	FILL - CUT
B-4	N43°41.879' W090°59.934'	0.501	270+83	5' LT	T	-	4 1/2"	8 1/4"	-----	6"	FILL - CUT
B-5	N43°41.834' W090°59.817'	0.605	276+32	5' RT	T	-	4"	8"	3"	9"	FILL - CUT
----	-----	0.708	281+76	-----	-	-	-----	-----	-----	-----	CTH 'B'
B-6	N43°41.780' W090°59.679'	0.740	283+45	5' LT	T	-	4"	10"	-----	12"	FILL - CUT
B-6A	N43°41.780' W090°59.679'	0.740	283+45	15' LT	T	-	3 1/2"	-----	4 1/2"	16"	SHOULDER
B-7	N43°41.734' W090°59.564'	0.850	289+26	9' RT	T	-	4"	9"	3"	10"	FILL - CUT
B-8	N43°41.690' W090°59.453'	0.960	295+07	9' LT	T	-	4 1/2"	8"	-----	-----	FILL - CUT
B-9	N43°41.638' W090°59.333'	1.070	300+88	5' RT	C	R	4"	8"	-----	3"	FILL
B-10	N43°41.591' W090°59.231'	1.170	306+16	5' LT	C	R	4 1/4"	9"	-----	11"	FILL
----	-----	1.207	308+11	RT	-	-	-----	-----	-----	-----	LEUM LANE
B-11	N43°41.537' W090°59.128'	1.280	311+96	9' RT	C	R	4"	8"	5"	10"	FILL - CUT
B-12	N43°41.474' W090°59.033'	1.391	317+82	9' LT	C	R	4"	9"	7 1/2"	10"	FILL - CUT
B-13	N43°41.404' W090°58.939'	1.500	323+58	5' RT	T	-	5"	9 1/2"	-----	-----	FILL - CUT
B-13A	N43°41.404' W090°58.939'	1.500	323+58	15' RT	T	-	1 1/4"	-----	14"	-----	SHOULDER
B-14	N43°41.354' W090°58.875'	1.610	329+39	9' LT	C	R	7 1/2"	8 1/2"	-----	3"	FILL - CUT
B-15	N43°41.255' W090°58.785'	1.721	335+25	9' RT	C	R	4 1/2"	8"	-----	-----	FILL - CUT
B-16	N43°41.160' W090°58.732'	1.825	340+74	5' LT	T	-	5 1/2"	8 1/2"	-----	10"	FILL - CUT
B-16A	N43°41.160' W090°58.732'	1.825	340+74	15' LT	-	-	2 3/4"	-----	12"	9"	SHOULDER
B-17	N43°41.071' W090°58.692'	1.940	346+81	20' RT	T	-	14"	-----	8"	-----	FILL
B-18	N43°40.989' W090°58.653'	2.040	352+09	9' RT	C	L	15"	-----	-----	9"	CUT - FILL
B-19	N43°40.917' W090°58.592'	2.142	357+48	9' LT	C	L	6 1/2"	-----	3"	50"	CUT - FILL
B-20	N43°40.861' W090°58.494'	2.243	362+81	17' RT	C	L	7"	-----	6 1/2"	46"	CUT - FILL
B-21	N43°40.839' W090°58.391'	2.340	367+93	9' LT	C	L	7"	-----	-----	53"	CUT
B-22	N43°40.834' W090°58.276'	2.440	373+21	5' RT	C	R	8"	-----	7"	-----	CUT
B-23	N43°40.817' W090°58.168'	2.540	378+49	22' RT	C	R	7"	-----	9"	-----	CUT
B-24	N43°40.772' W090°58.047'	2.650	384+30	5' LT	T	-	5"	8"	-----	-----	FILL - CUT
B-25	N43°40.687' W090°57.831'	2.760	390+11	9' RT	T	-	4 1/2"	8 1/2"	-----	29"	CUT - FILL
B-26	N43°40.687' W090°57.831'	2.870	395+92	20' RT	T	-	3 1/2"	9"	8"	-----	FILL
B-27	N43°40.626' W090°57.689'	2.980	401+72	9' LT	C	R	5 1/4"	11"	-----	15"	FILL - CUT
----	-----	3.095	407+80	RT	-	-	-----	-----	-----	-----	CTH 'GG'
B-28	N43°40.553' W090°57.557'	3.125	409+38	5' RT	C	R	6"	7 1/2"	-----	10 1/2"	CUT
B-29	N43°40.489' W090°57.461'	3.230	414+92	22' RT	T	-	2"	9 1/2"	6"	6 1/2"	FILL - AT GRADE
B-30	N43°40.441' W090°57.389'	3.330	420+20	5' LT	T	-	3"	9 1/2"	10"	12"	FILL
B-31	N43°40.361' W090°57.268'	3.450	426.54	9' RT	T	-	3"	9"	12"	36"	CUT
B-32	N43°40.256' W090°57.117'	3.620	435+52	9' LT	T	-	2"	8 1/4"	10"	4"	FILL
----	-----	3.742	441+96	RT	-	-	-----	-----	-----	-----	VANG ROAD

Estimate Of Quantities

1640-01-60

Line	Item	Item Description	Unit	Total	Qty
0010	201.0105	Clearing	STA	32.000	32.000
0020	201.0205	Grubbing	STA	32.000	32.000
0030	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0040	203.0200	Removing Old Structure (station) 01. 280+95	LS	1.000	1.000
0050	204.0120	Removing Asphaltic Surface Milling	SY	86,871.000	86,871.000
0060	204.0150	Removing Curb & Gutter	LF	470.000	470.000
0070	204.0157	Removing Concrete Barrier	LF	620.000	620.000
0080	204.0165	Removing Guardrail	LF	481.000	481.000
0090	204.0190	Removing Surface Drains	EACH	1.000	1.000
0100	205.0100	Excavation Common **P**	CY	4,165.000	4,165.000
0110	206.2000	Excavation for Structures Culverts (structure) 01. C-62-2234	LS	1.000	1.000
0120	210.2500	Backfill Structure Type B	TON	125.000	125.000
0130	213.0100	Finishing Roadway (project) 01. 1640-01-60	EACH	1.000	1.000
0140	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,712.000	1,712.000
0150	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	5,448.000	5,448.000
0160	305.0500	Shaping Shoulders	STA	336.000	336.000
0170	311.0115	Breaker Run	CY	28.000	28.000
0180	390.0403	Base Patching Concrete Shes	SY	3,945.000	3,945.000
0190	415.0060	Concrete Pavement 6-Inch	SY	314.000	314.000
0200	416.1725	Concrete Pavement Replacement SHES	SY	200.000	200.000
0210	440.4410	Incentive IRI Ride	DOL	27,084.000	27,084.000
0220	455.0605	Tack Coat	GAL	13,348.000	13,348.000
0230	460.2000	Incentive Density HMA Pavement	DOL	27,084.000	27,084.000
0240	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	17,800.000	17,800.000
0250	460.5223	HMA Pavement 3 LT 58-28 S	TON	16,960.000	16,960.000
0260	460.5224	HMA Pavement 4 LT 58-28 S	TON	10,124.000	10,124.000
0270	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	53.000	53.000
0280	465.0315	Asphaltic Flumes	SY	103.000	103.000
0290	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	31,425.000	31,425.000
0300	465.0475	Asphalt Center Line Rumble Strips 2-Lane Rural	LF	14,112.000	14,112.000
0310	502.4205	Adhesive Anchors No. 5 Bar	EACH	30.000	30.000
0320	504.0100	Concrete Masonry Culverts	CY	47.000	47.000
0330	505.0400	Bar Steel Reinforcement HS Structures	LB	4,090.000	4,090.000
0340	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	890.000	890.000
0350	516.0500	Rubberized Membrane Waterproofing	SY	15.000	15.000
0360	520.8700	Cleaning Culvert Pipes	EACH	5.000	5.000
0370	520.9700.S	Culvert Pipe Liners (size) 01. 24-Inch	LF	124.000	124.000
0380	520.9700.S	Culvert Pipe Liners (size) 02. 30-Inch	LF	200.000	200.000
0390	520.9700.S	Culvert Pipe Liners (size) 03. 42-Inch	LF	120.000	120.000

Estimate Of Quantities

1640-01-60

Line	Item	Item Description	Unit	Total	Qty
0400	520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH	3.000	3.000
0410	521.0124	Culvert Pipe Corrugated Steel 24-Inch	LF	66.000	66.000
0420	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	4.000	4.000
0430	522.0324	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	108.000	108.000
0440	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	1.000	1.000
0450	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	6.000	6.000
0460	522.1030	Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch	EACH	1.000	1.000
0470	524.0124	Culvert Pipe Salvaged 24-Inch	LF	80.000	80.000
0480	524.0624	Apron Endwalls for Culvert Pipe Salvaged 24-Inch	EACH	3.000	3.000
0490	524.0630	Apron Endwalls for Culvert Pipe Salvaged 30-Inch	EACH	1.000	1.000
0500	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	447.000	447.000
0510	601.0576	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type J	LF	2,480.000	2,480.000
0520	603.1136	Concrete Barrier Type S36	LF	653.000	653.000
0530	603.8000	Concrete Barrier Temporary Precast Delivered	LF	188.000	188.000
0540	603.8125	Concrete Barrier Temporary Precast Installed	LF	188.000	188.000
0550	606.0300	Riprap Heavy	CY	91.000	91.000
0560	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	8.000	8.000
0570	611.0642	Inlet Covers Type MS	EACH	1.000	1.000
0580	611.0651	Inlet Covers Type S	EACH	1.000	1.000
0590	611.3225	Inlets 2x2.5-FT	EACH	1.000	1.000
0600	614.0305	Steel Plate Beam Guard Class A	LF	537.000	537.000
0610	614.0345	Steel Plate Beam Guard Short Radius	LF	31.000	31.000
0620	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000
0630	614.0390	Steel Plate Beam Guard Short Radius Terminal	EACH	1.000	1.000
0640	614.0515	Guardrail Stifened LHW	LF	1,820.000	1,820.000
0650	614.0920	Salvaged Rail	LF	12,703.000	12,703.000
0660	614.0925	Salvaged Guardrail End Treatments	EACH	13.000	13.000
0670	614.2300	MGS Guardrail 3	LF	8,317.000	8,317.000
0680	614.2330	MGS Guardrail 3 K	LF	1,930.000	1,930.000
0690	614.2500	MGS Thrie Beam Transition	LF	80.000	80.000
0700	614.2610	MGS Guardrail Terminal EAT	EACH	18.000	18.000
0710	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1640-01-60	EACH	1.000	1.000
0720	619.1000	Mobilization	EACH	1.000	1.000
0730	624.0100	Water	MGAL	37.000	37.000
0740	625.0500	Salvaged Topsoil	SY	18,743.000	18,743.000
0750	628.1104	Erosion Bales	EACH	100.000	100.000

Estimate Of Quantities

1640-01-60

Line	Item	Item Description	Unit	Total	Qty
0760	628.1504	Silt Fence	LF	8,296.000	8,296.000
0770	628.1520	Silt Fence Maintenance	LF	8,296.000	8,296.000
0780	628.1905	Mobilizations Erosion Control	EACH	7.000	7.000
0790	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0800	628.2002	Erosion Mat Class I Type A	SY	12,781.000	12,781.000
0810	628.2027	Erosion Mat Class II Type C	SY	5,946.000	5,946.000
0820	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0830	628.7010	Inlet Protection Type B	EACH	1.000	1.000
0840	628.7504	Temporary Ditch Checks	LF	488.000	488.000
0850	628.7515.S	Stone or Rock Ditch Checks	CY	44.000	44.000
0860	628.7555	Culvert Pipe Checks	EACH	35.000	35.000
0870	628.7560	Tracking Pads	EACH	2.000	2.000
0880	628.7570	Rock Bags	EACH	341.000	341.000
0890	629.0210	Fertilizer Type B	CWT	12.800	12.800
0900	630.0110	Seeding Mixture No. 10	LB	273.000	273.000
0910	630.0200	Seeding Temporary	LB	547.000	547.000
0920	633.0500	Delineator Reflectors	EACH	13.000	13.000
0930	633.1000	Delineator Brackets	EACH	13.000	13.000
0940	633.5200	Markers Culvert End	EACH	44.000	44.000
0950	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	29.000	29.000
0960	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	29.000	29.000
0970	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	5.000	5.000
0980	637.2210	Signs Type II Reflective H	SF	355.000	355.000
0990	637.2230	Signs Type II Reflective F	SF	109.000	109.000
1000	638.2602	Removing Signs Type II	EACH	46.000	46.000
1010	638.3000	Removing Small Sign Supports	EACH	49.000	49.000
1020	642.5201	Field Office Type C	EACH	1.000	1.000
1030	643.0100	Traffic Control (project) 01. 1640-01-60	EACH	1.000	1.000
1040	643.0300	Traffic Control Drums	DAY	40,338.000	40,338.000
1050	643.0900	Traffic Control Signs	DAY	3,391.000	3,391.000
1060	643.1050	Traffic Control Signs PCMS	DAY	31.000	31.000
1070	645.0105	Geotextile Type C	SY	94.000	94.000
1080	645.0120	Geotextile Type HR	SY	157.000	157.000
1090	646.0106	Pavement Marking Epoxy 4-Inch	LF	30,895.000	30,895.000
1100	646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF	36,363.000	36,363.000
1110	646.2308.S	Pavement Marking Grooved Wet Reflective Epoxy 8-Inch	LF	873.000	873.000
1120	647.0166	Pavement Marking Arrows Epoxy Type 2	EACH	9.000	9.000
1130	647.0356	Pavement Marking Words Epoxy	EACH	6.000	6.000

Estimate Of Quantities

1640-01-60					
Line	Item	Item Description	Unit	Total	Qty
1140	647.0726	Pavement Marking Diagonal Epoxy 12-Inch	LF	355.000	355.000
1150	648.0100	Locating No-Passing Zones	MI	3.370	3.370
1160	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	119,706.000	119,706.000
1170	650.4000	Construction Staking Storm Sewer	EACH	2.000	2.000
1180	650.4500	Construction Staking Subgrade	LF	1,549.000	1,549.000
1190	650.5000	Construction Staking Base	LF	4,028.000	4,028.000
1200	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	2,926.000	2,926.000
1210	650.6000	Construction Staking Pipe Culverts	EACH	3.000	3.000
1220	650.6500	Construction Staking Structure Layout (structure) 01. C-62-2234	LS	1.000	1.000
1230	650.7000	Construction Staking Concrete Pavement	LF	661.000	661.000
1240	650.8000	Construction Staking Resurfacing Reference	LF	17,800.000	17,800.000
1250	650.9910	Construction Staking Supplemental Control (project) 01. 1640-01-60	LS	1.000	1.000
1260	650.9920	Construction Staking Slope Stakes	LF	5,894.000	5,894.000
1270	690.0150	Sawing Asphalt	LF	3,941.000	3,941.000
1280	690.0250	Sawing Concrete	LF	17,508.000	17,508.000
1290	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,400.000	1,400.000
1300	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	990.000	990.000
1310	SPV.0070	Special 01. Sprayed Asphaltic Shoulder Treatment	GAL	754.000	754.000
1320	SPV.0090	Special 01. Concrete Joint And Crack Cleaning	LF	7,077.000	7,077.000
1330	SPV.0090	Special 02. Removing HMA Pavement Notched Wedge Longitudinal Joint Milling	LF	26,657.000	26,657.000
1340	SPV.0195	Special 01. Salvaged Asphaltic Pavement Base	TON	1,863.000	1,863.000

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CLEARING & GRUBBING

STATION		201.0105 CLEARING STA	201.0205 GRUBBING STA	COMMENTS
253+00	- 254+00	1	1	LEFT ONLY
265+00	- 266+00	1	1	LEFT ONLY
276+00	- 277+00	1	1	LEFT ONLY
278+00	- 280+00	2	2	LEFT ONLY
280+00	- 283+00	3	3	
3'B'+00	- 4'B'+00	1	1	LEFT ONLY
284+00	- 286+00	2	2	LEFT ONLY
287+00	- 288+00	1	1	LEFT ONLY
292+00	- 294+00	2	2	LEFT ONLY
315+00	- 317+00	2	2	LEFT ONLY
320+00	- 321+00	1	1	LEFT ONLY
328+00	- 329+00	1	1	LEFT ONLY
342+00	- 344+00	2	2	LEFT ONLY
351+00	- 353+00	2	2	
355+00	- 356+00	1	1	RIGHT ONLY
385+00	- 388+00	3	3	
393+00	- 396+00	3	3	
402+00	- 405+00	3	3	RIGHT ONLY
TOTAL		32	32	

REMOVING CURB & GUTTER

STATION		204.0150 REMOVING CURB & GUTTER LF	COMMENTS
280+34	- 281+00	96	CTH B, WEST QUADRANT
281+97	- 282+35	60	CTH B, SOUTH QUADRANT
342+31	- 344+19	188	USH 14 LEFT
406+87	- 407+38	70	CTH GG, WEST QUADRANT
407+66	- 408+08	56	CTH GG, SOUTH QUADRANT
TOTAL		470	

REMOVING SURFACE DRAINS

204.0190 REMOVING SURFACE DRAINS		
STATION	EACH	COMMENTS
342+27	1	USH 14 LEFT
TOTAL	1	

REMOVING CONCRETE BARRIER

STATION		204.0157 REMOVING CONCRETE BARRIER LF	COMMENTS
353+62	- 359+72	620	62 SECTIONS AT 10' EACH
TOTAL		620	

BASE COURSE

STATION		305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	COMMENTS
252+00	- 267+17	100	SHOULDERS
267+17	- 276+54	62	SHOULDERS
276+54	- 281+08	30	SHOULDERS
281+08	- 305+84	163	SHOULDERS
305+84	- 321+18	101	SHOULDERS
321+18	- 324+67	23	SHOULDERS
324+67	- 340+59	105	SHOULDERS
340+59	- 342+81	15	SHOULDERS
342+81	- 349+81	46	SHOULDERS
349+81	- 349+96	1	SHOULDERS
349+96	- 382+03	211	SHOULDERS
382+03	- 383+82	12	SHOULDERS
383+82	- 393+07	61	SHOULDERS
393+07	- 395+54	16	SHOULDERS
395+54	- 399+68	27	SHOULDERS
399+68	- 410+95	74	SHOULDERS
410+95	- 418+58	50	SHOULDERS
418+58	- 430+00	75	SHOULDERS
3'B'+37	- 4'B'+30	21	CTH B SHOULDERS
9'L'+00	- 9'L'+88	20	LEUM LANE SHOULDERS
15'C'+10	- 15'C'88	17	CORNELL LANE SHOULDERS
20'N'+20	- 21'N'31	25	NERISON ROAD SHOULDERS
23'GG'+12	- 23'GG'+72	7	CTH GG SHOULDERS
30'M'+19	- 31'M'+00	18	MATHISON LANE SHOULDERS
280+15		40	FE RIGHT
292+50		40	PE LEFT
346+50		40	PE RIGHT
388+75		40	CE LEFT
401+50		40	FE LEFT
412+75		40	FE LEFT
422+75		40	PE RIGHT
UNDISTRIBUTED		156	
TOTAL		1,712	

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ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

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AREAS	From / To Station	Location	Common Excavation **P** (1)	(item # 205.0100)	Salvaged / Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate + / - (14)	Waste	Borrow
			Cut (2)	EBS Excavation (3)				Factor			
Area 1								1.25			(item #208.0100)
Beam Guard Sections	252+46.5/399+24.9	LT/RT	666	0	0	666	745	931	-266		
Area 1 Subtotal			666	0	0	666	745	931		0	0
AREA 2											
USH 14 & CTH B											
USH 14	276+58/283+36.8	LT/RT	389	0	0	389	527	659	-535		
CTH B	03+37.45/04+85	LT/RT	87	0	0	87	16	20	-468		
Area 2 Subtotal			476	0	0	476	543	679		0	0
AREA 3											
USH 14 @ Conc. Barrier	353+72.32/360+24.51	LT/RT	61	0	0	61	46	57	-464		
Area 3 Subtotal			61	0	0	61	46	57		0	0
AREA 4											
USH 14, Nerison, CTH GG											
USH 14	400+31.29/418+97.84	LT/RT	2,518	0	0	2,518	1,371	1,714	340		
Nerison	20+30/21+31.11	LT/RT	83	0	0	83	19	24	399		
CTH GG	23+12.35/24+75	LT/RT	105	0	0	105	8	10	494		
Area 4 Subtotal			2,706	0	0	2,706	1,398	1,748		0	0
AREA 5											
USH 14 Curb & Gutter											
USH 14	342+31/346+40	LT	50	0	0	50		0	544		
USH 14	364+00/370+70	LT	83	0	0	83		0	627		
USH 14	387+17/397+17	RT	123	0	0	123		0	750		
Area 5 Subtotal			256	0	0	256	0	0		0	0
Grand Total			4,165	0	0	4,165	2,732	3,415	750	750	0
		Total Common Exc **P**		4,165							
1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100											
2) Salvaged/Unsuable Pavement Material is included in Cut.											
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.											
4) Salvaged/Unusable Pavement Material											
5) Available Material = Cut - Salvaged/Unusuable Pavement Material											
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 20505											
7) Rock Excavation item number 205.0200											
8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6											
9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8											
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.1100											
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.1100											
12) Expanded Rock - Factor = 1.1											
13) Expanded Fill. Factor = 1.25											
Depending on selections:		Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor									
	Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor									
	Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor									
	Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor									
14) The Mass Ordinate + or - Qty calculated for the Area. Plus quantity indicates an excess of material within the Area. Minus indicates a shortage of material within the Area.											

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

STATE PROJECT NO: 1640-01-60

HWY: USH 14

COUNTY: VERNON

MISCELLANEOUS QUANTITIES

SHEET NO: 58

E

FILE NAME : _____

PLOT DATE : _____

PLOT BY : _____

PLOT NAME : _____

ORG DATE : _____

ORIGINATOR : DIST _

PLOT SCALE : 1:1

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BASE COURSE (CONT.)

305.0120 BASE AGGREGATE DENSE 1 1/4-INCH				
STATION	SIDE	TON	COMMENTS	
276+58 - 283+37	RIGHT	716	CTH B RIGHT TURN LANE	
353+72 - 360+25	LEFT	130	CONCRETE BARRIER WALL	
400+31 - 418+58	LEFT	3,325	CTH GG LEFT TURN LANE	
402+06 - 409+04	RIGHT	782	CTH GG RIGHT TURN LANE	
UNDISTRIBUTED		495		
TOTAL		5,448		

BASE PATCHING

390.0403 BASE PATCHING CONCRETE SHES*		690.0250 SAWING CONCRETE	SPV.0090.01 CONCRETE JOINT AND CRACK CLEANING	416.1725 CONCRETE PAVEMENT REPLACEMENT SHES		
STATION	SY	LF	LF	SY	COMMENTS	
252+50 - 267+17	359	1,298	689	-	8" CONCRETE DEPTH	
267+17 - 305+84	945	3,410	1,817	-	8" CONCRETE DEPTH	
305+84 - 321+18	375	1,364	721	-	8" CONCRETE DEPTH	
321+18 - 324+67	85	308	164	-	8" CONCRETE DEPTH	
324+67 - 340+59	389	1,408	748	-	8" CONCRETE DEPTH	
340+59 - 342+81	54	198	104	-	8" CONCRETE DEPTH	
342+81 - 349+81	171	638	329	-	8" CONCRETE DEPTH	
383+82 - 393+07	226	836	435	-	8" CONCRETE DEPTH	
393+07 - 395+53	60	220	116	-	8" CONCRETE DEPTH	
395+53 - 413+63	724	4,284	1,104	-	9" CONCRETE DEPTH	
413+63 - 427+54	556	3,312	849	-	9" CONCRETE DEPTH	
UNDISTRIBUTED	-	232	-	200		
TOTAL	3,945	17,508	7,077	200		

*FINAL LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER AFTER MILLING OPERATIONS.

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

SALVAGED ASPHALTIC PAVEMENT BASE

SPV.0195.01 SALVAGED ASPHALTIC PAVEMENT BASE			
STATION	TON	COMMENTS	
353+72 - 357+00	270	LEFT, BEHIND CONCRETE BARRIER WALL	
357+00 - 360+25	308	LEFT, BEHIND CONCRETE BARRIER WALL	
342+31 - 346+40	93	LEFT, CURB AND GUTTER	
364+00 - 370+70	152	LEFT, CURB AND GUTTER	
387+17 - 397+17	227	RIGHT, CURB AND GUTTER	
252+50 - 253+65	3	LEFT, SHOULDER SLOPE CORRECTION	
252+50 - 276+58	62	RIGHT, SHOULDER SLOPE CORRECTION	
257+07 - 280+01	59	LEFT, SHOULDER SLOPE CORRECTION	
283+37 - 297+70	37	RIGHT, SHOULDER SLOPE CORRECTION	
284+80 - 293+11	22	LEFT, SHOULDER SLOPE CORRECTION	
307+06 - 341+37	89	RIGHT, SHOULDER SLOPE CORRECTION	
316+45 - 320+00	9	LEFT, SHOULDER SLOPE CORRECTION	
356+79 - 385+75	75	RIGHT, SHOULDER SLOPE CORRECTION	
387+18 - 394+25	18	LEFT, SHOULDER SLOPE CORRECTION	
398+06 - 402+00	10	RIGHT, SHOULDER SLOPE CORRECTION	
409+04 - 430+00	54	RIGHT, SHOULDER SLOPE CORRECTION	
418+97 - 430+00	29	LEFT, SHOULDER SLOPE CORRECTION	
252+00 - 264+81	47	CURVE 1 SHOULDER AFTER WEDGING	
308+01 - 318+76	40	CURVE 3 SHOULDER AFTER WEDGING	
326+55 - 338+56	44	CURVE 4 SHOULDER AFTER WEDGING	
UNDISTRIBUTED	165		
TOTAL	1,863		

SHAPING SHOULDERS

305.0500 SHAPING SHOULDER S			
STATION	STA	COMMENTS	
252+00 - 281+00	29	RIGHT	
282+00 - 388+00	106	RIGHT	
397+00 - 407+00	10	RIGHT	
408+00 - 430+00	22	RIGHT	
252+00 - 343+00	91	LEFT	
346+00 - 364+00	18	LEFT	
370+00 - 430+00	60	LEFT	
TOTAL	336		

STATE PROJECT NO: 1640-01-60

HWY: USH 14

COUNTY: VERNON

MISCELLANEOUS QUANTITIES

SHEET NO: 59

E

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STATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING*	455.0605 TACK COAT	460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS	460.5223 HMA PAVEMEN T 3 LT 58-28 S	460.5224 HMA PAVEMEN T 4 LT 58-28 S	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	SPV.0090.02 REMOVING HMA PAVEMENT NOTCHED WEDGE LONGITUDINAL JOINT MILLING	COMMENTS
	SY	GAL	LF	TON	TON	TON	LF	
252+00 - 277+45	8938	1,471	2,545	1,545	1,201	-	-	USH 14
277+45 - 282+70	2806	417	525	454	341	-	-	USH 14 & CTH B
282+70 - 307+25	10278	1,440	2,455	1,512	1,176	-	-	USH 14
307+25 - 308+71	1066	155	146	178	127	-	-	USH 14 & LEUM LANE
308+71 - 318+89	4209	597	1,018	627	488	-	-	USH 14
318+89 - 320+38	851	161	149	188	131	-	-	USH 14 & CORNELL LANE
320+38 - 402+86	43384	5,782	8,248	6,071	4,722	-	-	USH 14
402+86 - 417+17	9296	1,419	1,431	1,617	1,159	-	-	SH 14, NERISON ROAD, & CTH G
417+17 - 430+00	6043	955	1,283	1,015	780	-	-	USH 14 & MATHISON LANE
252+00 - 349+81	-	-	-	888	-	-	-	22' PCC SLOPE CORRECTION
383+82 - 395+53	-	-	-	106	-	-	-	22' PCC SLOPE CORRECTION
395+53 - 427+54	-	-	-	1,210	-	-	-	36' PCC SLOPE CORRECTION
252+00 - 264+81	-	219	-	304	-	-	-	WEDGING SUPER ELEVATION
288+00 - 308+01	-	342	-	391	-	-	-	WEDGING SUPER ELEVATION
308+01 - 318+76	-	184	-	218	-	-	-	WEDGING SUPER ELEVATION
326+55 - 338+56	-	206	-	636	-	-	-	WEDGING SUPER ELEVATION
316+85	-	-	-	-	-	15	-	PE LEFT
343+24	-	-	-	-	-	13	-	PE LEFT
413+90	-	-	-	-	-	25	-	CE RIGHT
252+00 - 430+00	-	-	-	-	-	-	17,800	CL JOINT
340+92 - 429+49	-	-	-	-	-	-	8,857	CLIMBING LANE JOINT
	86,871	13,348	17,800	16,960	10,124	53	26,657	

465.0315 ASPHALTIC FLUMES			
STATION	LOCATION	SY	COMMENTS
281+43	RT	23	SW QUADRANT OF CTH B
282+39	RT	8	SE QUADRANT OF CTH B
342+29	LT	8	USH 14
363+76	LT	37	USH 14
387+13	RT	7	USH 14
406+54	RT	7	SW QUADRANT OF CTH GG
407+67	RT	6	SE QUADRANT OF CTH GG
408+99	LT	7	USH 14
TOTAL		103	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

3

RUMBLE STRIPS					
465.0425 ASPHALTIC SHOULDER RUMBLE STRIP 2-LANE RURAL TYPE 1			465.0475 ASPHALTIC CENTER LINE RUMBLE STRIP 2- LANE RURAL		
STATION	STATION	LF	LF	COMMENTS	
252+00	- 279+76	-	2776	CL	
252+00	- 276+58	2461	-	RT	
252+50	- 291+96	3944	-	LT	
283+76	- 306+09	-	2234	CL	
283+87	- 305+76	2188	-	RT	
293+05	- 316+17	2315	-	LT	
310+09	- 317+21	-	712	CL	
310+21	- 345+99	3570	-	RT	
321+21	- 387+60	-	6639	CL	
321+88	- 342+67	2084	-	LT	
343+73	- 387+79	4397	-	LT	
346+93	- 402+06	5529	-	RT	
389+60	- 400+06	-	1046	CL	
389+91	- 402+03	1213	-	LT	
406+38	- 419+21	1285	-	LT	
409+54	- 412+44	289	-	RT	
414+87	- 430+00	1514	-	RT	
418+95	- 419+52	-	57	CL	
423+52	- 430+00	-	648	CL	
423+64	- 430+00	636	-	LT	
TOTAL	TOTAL	31425	14112		

RIPRAP AND GEOTEXTILE						
606.0300 HEAVY RIPRAP				645.0120 GEOTEXTILE TYPE HR		
STATION	CY	L (FT)	W (FT)	D (FT)	SY	COMMENTS
265+84 LT	4	10	6	2	7	CULVERT
276+35 LT	4	10	6	2	7	CULVERT
280+85 RT	17	40	6	2	39	C-62-2234, Cat. 0020
282+70 LT	8	13	8	2	12	CULVERT
287+67 LT	4	10	6	2	7	CULVERT
293+70 LT	4	10	6	2	7	CULVERT
328+29 LT	4	10	6	2	7	CULVERT
351+97 RT	4	10	6	2	7	CULVERT
355+42 RT	4	10	6	2	7	CULVERT
363+55 LT	9	16	8	2	14	FLUME
393+50 RT	13	17	10	2	19	CULVERT
416+00 LT	8	13	8	2	12	CULVERT
420+10 LT	8	13	8	2	12	CULVERT
CAT. 0010 TOTAL	74					118
CAT. 0020 TOTAL	17					39

CURB & GUTTER				
		601.0576 CONCRETE CURB & GUTTER 4-INCH SLOPED 30- INCH TYPE J	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D	
STATION		LF	LF	COMMENTS
280+34	- 281+00	-	89	CTH B, WEST QUADRANT
281+97	- 282+35	-	67	CTH B, SOUTH QUADRANT
342+31	- 344+19	188	-	USH 14 LEFT
344+19	- 346+40	221	-	USH 14 LEFT
364+00	- 370+70	670	-	USH 14 LEFT
387+17	- 397+17	1000	-	USH 14 RIGHT
406+87	- 407+38	-	117	CTH GG, WEST QUADRANT
407+66	- 408+08	-	174	CTH GG, SOUTH QUADRANT
409+00	- 413+00	401	-	USH 14 LEFT
TOTAL		2,480	447	

CONCRETE BARRIER					
		415.0060 CONCRETE PAVEMENT 6-INCH SY	603.1136 CONCRETE BARRIER TYPE S36 LF	633.0500 DELINEATOR REFLECTORS EACH	633.1000 DELINEATOR BRACKETS EACH
STATION					COMMENTS
353+72	- 360+25	314	653	13	13
TOTAL		314	653	13	13

TEMPORARY CONCRETE BARRIER			
		603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF
STATION			COMMENTS
279+69	- 281+43	188	188
TOTAL		188	188

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CULVERT MAINTENANCE												
		520.8700	520.9700.S.01	520.9700.S.02	520.9700.S.03	520.9750.S	524.0124	524.0624	524.0630	611.0642		
		CLEANING CULVERT PIPES	CULVERT PIPE LINERS (24-INCH)*	CULVERT PIPE LINERS (30-INCH)**	CULVERT PIPE LINERS (42-INCH)***	CLEANING CULVERT PIPES FOR LINER VERIFICATION	CULVERT PIPE SALVAGED 24-INCH	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 24-INCH	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 30-INCH	INLET COVERS TYPE MS	JOINT TIES (FOR INFORMATION ONLY)	
STATION	OFFSET	EACH	LF	LF	LF	EACH	LF	EACH	EACH	EACH		COMMENTS
265+87	29.4' RT	-	-	-	-	-	-	1	-	-	2	TIE SECTION TO EXISTING CULVERT
265+84	68.0' LT	-	-	-	-	-	8	1	-	-	4	TIE SECTION TO EXISTING CULVERT
276+35	29.8" RT	-	-	-	-	-	-	1	-	-	2	TIE SECTION TO EXISTING CULVERT
276+35	39.0' LT	-	-	-	-	-	8	-	-	-	2	TIE SECTION TO EXISTING CULVERT
280+95	-	1	-	-	-	-	-	-	-	-	-	14'X7' BOX CULVERT
287+67	51.5' LT	-	-	-	-	-	16	-	-	-	4	TIE SECTION TO EXISTING CULVERT
293+69	46.0' LT	1	-	-	-	-	24	-	-	-	6	TIE SECTION TO EXISTING CULVERT
314+42	32.5' RT	1	-	-	-	-	-	-	-	1	-	REPLACE BROKEN GRATE
328+30	41.9' LT	-	-	-	-	-	24	-	-	-	6	TIE SECTION TO EXISTING CULVERT
351+97	85.0' RT	-	124	-	-	1	-	-	-	-	-	LINE EXISTING PIPE
381+15	60.0' LT	1	-	-	-	-	-	-	-	-	-	CLEAN PIPE
393+16	69.0' RT	-	-	-	120	1	-	-	-	-	-	LINE EXISTING PIPE
395+62	79.7' RT	1	-	-	-	-	-	-	-	-	-	CLEAN PIPE
420+60	94.9' RT	-	-	200	-	1	-	-	1	-	-	TIE SECTION TO EXISTING CULVERT
		-	-	-	-	-	-	-	-	-	-	
TOTALS		5	124	200	120	3	80	3	1	1	26	

*THE CONTRACTOR SHALL USE A PRODUCT ON THE DEPARTMENT'S APPROVED PRODUCTS LIST, AND THE PRODUCT SHALL HAVE AN INSIDE DIAMETER OF APPROXIMATELY 18-INCHES OR GREATER.
**THE CONTRACTOR SHALL USE A PRODUCT ON THE DEPARTMENT'S APPROVED PRODUCTS LIST, AND THE PRODUCT SHALL HAVE AN INSIDE DIAMETER OF APPROXIMATELY 24-INCHES OR GREATER.
***THE CONTRACTOR SHALL USE A PRODUCT ON THE DEPARTMENT'S APPROVED PRODUCTS LIST, AND THE PRODUCT SHALL HAVE AN INSIDE DIAMETER OF APPROXIMATELY 36-INCHES OR GREATER.

NEW CULVERT INSTALLATIONS												
			203.0100	521.0124	521.1024	522.0324	522.1024	522.1030				
			REMOVING SMALL PIPE CULVERTS	CULVERT PIPE CORRUGATED STEEL 24-INCH	APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH				
STATION	INLET OFFSET	INVERT	STATION	OUTLET OFFSET	INVERT	EACH	LF	EACH	EACH	EACH		COMMENTS
-	-	-	276+35	39.0' LT	790.41'	-	-	-	1	-	-	ADD ENDWALL
279+92.44	59.1' RT	787.00'	280+40.12	64.5' RT	786.00'	1	48	2	-	-	-	NEW INSTALLATION
-	-	-	282+13	51.6' LT	781.76'	-	-	-	-	-	1	ADD ENDWALL
-	-	-	287+67	51.5' LT	789.09'	-	-	-	-	-	-	ADD ENDWALL
-	-	-	293+69	46.0' LT	800.21'	-	-	-	-	-	-	ADD ENDWALL
-	-	-	328+30	41.9' LT	879.53'	-	-	-	1	-	-	ADD ENDWALL
-	-	-	395+62	79.7' RT	1195.01'	-	-	1	-	-	-	ADD ENDWALL
24'GG'+50	32.5' RT	1278.50'	24'GG'+13	70.3' LT	1277.59'	1	-	-	108	2	-	NEW INSTALLATION
-	-	-	415+74	88.8' LT	1275.25'	-	18	1	-	-	-	EXTENSION
TOTALS						2	66	4	108	6	1	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

3

STORM SEWER									
STRUCTURE	STATION	OFFSET	611.0651	611.3225	608.0312	522.1012	RIM ELEVATION	INVERT ELEVATION	SLOPE FT/FT
			INLET COVERS TYPE S	INLETS 2X2.5-FT	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH			
			EACH	EACH	LF	EACH			
1.0	356+50	21.0' LT	-	1	-	-	982.5	980.2	-
1.0 TO 1.1	356+50	-	-	-	8	-	-	-	0.025
1.1	356+50	29.0' LT	1	-	-	1	-	980	-
TOTALS			1	1	8	1			

EXISTING GUARDRAIL

STATION	LF	204.0165	614.0920	614.0925	COMMENTS
		REMOVING GUARDRAIL	SALVAGED RAIL	SALVAGED GUARDRAIL END TREATMENTS	
			LF	EACH	
252+95 - 256+36	-		241	2	USH 14 LEFT
252+99 - 253+88	-		63	2	USH 14 RIGHT
280+02 - 284+79	-		377	2	USH 14 @ CTH B LEFT
280+25 - 281+59	37		83	1	USH 14 @ CTH B RIGHT
293+11 - 316+29	37		2,263	1	USH 14 LEFT
297+71 - 308+13	37		1,007	1	USH 14 RIGHT
320+37 - 342+91	37		2,200	1	USH 14 LEFT
341+38 - 346+26	37		437	1	USH 14 RIGHT
343+79 - 352+70	37		840	1	USH 14 LEFT
346+70 - 356+80	37		959	1	USH 14 RIGHT
363+18 - 387+18	74		2,375	-	USH 14 LEFT
385+74 - 398+06	74		1,158	-	USH 14 RIGHT
393+52 - 401+28	74		700	-	USH 14 LEFT
TOTAL	481		12,703	13	

WATER

STATION	SIDE	624.0100	COMMENTS
		WATER MGAL	
252+50 - 427+54	BOTH	13.61	SHOULDER BASE COURSE COMPACTION
276+58 - 283+37	RIGHT	2.11	CTH B RIGHT TURN LANE COMPACTION
276+58 - 283+37	RIGHT	1.36	CTH B RIGHT TURN LANE DUST ABATEMENT
353+72 - 360+25	LEFT	0.43	CONCRETE BARRIER WALL COMPACTION
353+72 - 360+25	LEFT	0.28	CONCRETE BARRIER WALL ABATEMENT
400+31 - 418+58	LEFT	7.35	CTH GG LEFT TURN LANE COMPACTION
400+31 - 418+58	LEFT	4.72	CTH GG LEFT TURN LANE ABATEMENT
402+06 - 409+04	RIGHT	2.30	CTH GG RIGHT TURN LANE COMPACTION
402+06 - 409+04	RIGHT	1.48	CTH GG RIGHT TURN LANE ABATEMENT
UNDISTRIBUTED		3.37	
TOTAL		37	

3

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

3

CLASS A BEAM GUARD

	614.0305 STEEL PLATE BEAM GUARD CLASS A	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH	614.0515 GUARDRAIL STIFFENED LHW	
STATION	LF	LF	EACH	EACH		COMMENTS
293+11 - 316+51	537	31	1	1	1,820	USH 14 LEFT
TOTAL	537	31	1	1	1,820	

EROSION CONTROL MOBILIZATIONS

	628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL	
STATION	EACH	EACH	COMMENTS
PROJECT	7	4	
TOTALS	7	4	

3

MGS GUARDRAIL

	614.2300 MGS GUARDRAIL 3	614.2330 MGS GUARDRAIL 3K	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT	
STATION	LF	LF	LF	EACH	COMMENTS
253+65 - 257+08	235	-	-	2	USH 14 LEFT
280+01 - 284+80	372	-	-	2	USH 14 LEFT
297+70 - 307+06	829	-	-	2	USH 14 RIGHT
320+01 - 342+92	745	1,450	-	2	USH LEFT
341+38 - 346+24	381	-	-	2	USH 14 RIGHT
343+81 - 353+72	636	310	40	1	USH 14 LEFT
346+68 - 356+79	917	-	-	2	USH 14 RIGHT
360+25 - 387+18	2,478	170	40	1	USH 14 LEFT
385+75 - 398+06	1,124	-	-	2	USH 14 RIGHT
394+25 - 401+29	600	-	-	2	USH 14 LEFT
TOTAL	8,317	1,930	80	18	

CULVERT MARKERS

	633.5200 MARKERS CULVERT END	
STATION	EACH	COMMENTS
248+00	2	RIGHT & LEFT
254+90	2	RIGHT & LEFT
265+85	2	RIGHT & LEFT
276+35	2	RIGHT & LEFT
282+35	2	RIGHT & LEFT
287+95	2	RIGHT & LEFT
293+95	2	RIGHT & LEFT
299+80	2	RIGHT & LEFT
314+30	2	RIGHT & LEFT
321+33	2	RIGHT & LEFT
328+53	2	RIGHT & LEFT
334+83	2	RIGHT & LEFT
347+00	2	RIGHT & LEFT
351+97	2	RIGHT & LEFT
355+43	2	RIGHT & LEFT
377+15	2	RIGHT & LEFT
381+14	2	RIGHT & LEFT
393+37	2	RIGHT & LEFT
395+61	2	RIGHT & LEFT
24'GG'+50	2	RIGHT & LEFT
415+85	2	RIGHT & LEFT
420+60	2	RIGHT & LEFT
TOTAL	44	

TRACKING PADS

	628.7560 TRACKING PADS	
STATION	EACH	COMMENTS
-	2	UNDISTRIBUTED
TOTAL	2	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

3

EROSION CONTROL																	
		625.0500	628.1104	628.1504	628.1520	628.2002	628.2027	628.7005	628.7010	628.7504	628.7515.S	628.7555	628.7570	629.0210	630.0110	630.0200	
		SALVAGED	EROSION	SILT	SILT FENCE	EROSION	EROSION	INLET	INLET	TEMPORARY	STONE OR	CULVERT	ROCK	FERTILIZER	SEEDING	SEEDING	
		TOPSOIL	BALES	FENCE	MAINTENANCE	MAT	MAT	PROTECTION	PROTECTION	DITCH	ROCK	PIPE	BAGS	TYPE B	MIXTURE	TEMPORARY	
						CLASS I	CLASS II	TYPE A	TYPE B	CHECKS	DITCH	CHECKS	CHECKS		NO. 10		
						TYPE A	TYPE C				CHECKS						
STATION	SIDE	SY	EACH	LF	LF	SY	SY	EACH	EACH	LF	CY	EACH	EACH	CWT	LB	LB	COMMENTS
253+40	LT	260	-	220	220	-	-	-	-	21	-	-	-	0.16	3.5	7.0	GUARDRAIL EAT
257+30	LT	527	-	225	225	-	-	-	-	-	-	-	-	0.33	7.1	14.2	GUARDRAIL EAT
265+85	RT	16	-	30	30	16	-	-	-	-	-	3	-	0.01	0.2	0.4	CULVERT
265+85	LT	60	-	-	-	60	-	-	-	-	-	-	-	0.04	0.8	1.6	CULVERT
276+35	RT	0	-	-	-	-	-	-	-	-	-	3	-	0.00	0.0	0.0	CULVERT
276+35	LT	30	-	30	30	30	-	-	-	-	-	-	-	0.02	0.4	0.8	CULVERT
278+45	RT	777	-	-	-	444	333	-	-	63	-	3	-	0.49	10.5	21.0	CTH B
279+80	LT	298	-	260	260	-	298	-	-	-	-	-	-	0.19	4.0	8.1	CTH B
281+10	RT	710	-	155	155	-	710	-	-	30	-	-	-	0.45	9.6	19.2	CTH B
282+13	LT	30	-	30	30	30	-	-	-	-	-	-	-	0.02	0.4	0.8	CULVERT
282+70	RT	437	-	-	-	437	-	-	-	-	-	3	-	0.28	5.9	11.8	CTH B
285+20	LT	222	-	250	250	222	-	-	-	-	-	-	-	0.14	3.0	6.0	GUARDRAIL EAT
287+67	LT	65	-	30	30	65	-	-	-	-	-	-	-	0.04	0.9	1.8	CULVERT
293+35	LT	164	-	205	205	164	-	-	-	-	-	-	-	0.10	2.2	4.4	GUARDRAIL EAT
297+50	RT	297	-	-	-	-	297	-	-	21	-	-	-	0.19	4.0	8.0	GUARDRAIL EAT
307+00	RT	146	-	170	170	146	-	-	-	-	-	-	-	0.09	2.0	3.9	LEON LANE
316+50	LT	256	-	40	40	256	-	-	-	-	-	-	21	0.16	3.5	6.9	GUARDRAIL EAT
320+30	LT	258	-	150	150	258	-	-	-	15	-	-	-	0.16	3.5	7.0	CORNELL AVE
328+29	LT	24	-	40	40	24	-	-	-	-	-	-	-	0.02	0.3	0.6	CULVERT
341+00	RT	261	-	-	-	-	261	-	-	30	-	-	-	0.16	3.5	7.0	GUARDRAIL EAT
342+75	LT	189	-	155	155	189	-	-	-	-	-	-	-	0.12	2.6	5.1	GUARDRAIL EAT
345+00	LT	164	-	300	300	164	-	-	-	-	-	-	-	0.10	2.2	4.4	CURB & GUTTER
346+50	RT	218	-	185	185	218	-	-	-	-	-	-	21	0.14	2.9	5.9	GUARDRAIL EAT
357+00	LT	0	-	-	-	-	-	1	1	-	35	-	-	0.00	0.0	0.0	CONCRETE BARRIER
357+10	RT	201	-	225	225	201	-	-	-	-	-	-	21	0.13	2.7	5.4	GUARDRAIL EAT
367+50	LT	148	-	730	730	148	-	-	-	-	-	-	-	0.09	2.0	4.0	CURB & GUTTER
385+50	RT	180	-	-	-	-	180	-	-	-	-	-	63	0.11	2.4	4.9	GUARDRAIL EAT
387+50	LT	338	-	-	-	-	338	-	-	-	-	-	63	0.21	4.6	9.1	GUARDRAIL EAT
393+50	RT	384	-	1,010	1,010	49	-	-	-	-	-	-	-	0.24	5.2	10.4	CURB & GUTTER
394+00	LT	284	-	260	260	284	-	-	-	-	-	10	-	0.18	3.8	7.7	GUARDRAIL EAT
398+40	RT	338	-	-	-	-	338	-	-	-	-	-	63	0.21	4.6	9.1	GUARDRAIL EAT
400+80	LT	288	-	190	190	288	-	-	-	-	-	-	-	0.18	3.9	7.8	GUARDRAIL EAT
402+80	LT	554	-	230	230	554	-	-	-	-	-	-	21	0.35	7.5	15.0	NERISON ROAD
404+50	RT	2,338	-	-	-	1,520	818	-	-	105	-	-	-	1.47	31.6	63.1	CTH GG RIGHT TURN LANE
408+00	LT	1,800	-	300	300	998	803	-	-	105	-	-	-	1.13	24.3	48.6	CTH GG LEFT TURN LANE
408+00	RT	496	-	-	-	496	-	-	-	-	-	3	-	0.31	6.7	13.4	CTH GG RIGHT TAPER LANE
416+00	LT	2,196	-	725	725	2,167	30	-	-	-	-	-	-	1.38	29.6	59.3	CTH GG LEFT TURN LANE
420+60	RT	41	-	-	-	41	-	-	-	-	-	3	-	0.03	0.6	1.1	CULVERT
WASTE SITES		-	-	615	615	947	440	-	-	-	-	-	-	0.9	20	40	
UNDISTRIBUTED		3,749	100	1,536	1,536	2,367	1,101	-	-	98	9	7	68	2.36	50.6	101.2	
TOTALS		18,743	100	8,296	8,296	12,781	5,946	1	1	488	44	35	341	12.8	273	547	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

STATE PROJECT NO: 1640-01-60

HWY: USH 14

COUNTY: VERNON

MISCELLANEOUS QUANTITIES

SHEET NO: 65

E

FILE NAME : _____

PLOT DATE : _____

PLOT BY : _____

PLOT NAME : _____

ORG DATE : _____

ORIGINATOR : DIST _

PLOT SCALE : 1:1

3

SIGNING															
SIGN NUMBER	STATION	LOCATION	SIGN CODE	SIZE	DESCRIPTION	ORDER LINES	634.0614	634.0616	634.0618	637.2210	637.2230	638.2602	638.3000	COMMENTS	
							POSTS WOOD 4 x 6 - INCH 14 FOOT EACH	POSTS WOOD 4 x 6 - INCH 16 FOOT EACH	POSTS WOOD 4 x 6 - INCH 18 FOOT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH		
1-1	252+70	USH 14, LEFT	R2-1	24" x 30"	Speed Limit __	30	1	-	-	5.00	-	-	-		
1-2R	252+70	USH 14, LEFT	R2-1	24" x 30"	SPEED LIMIT __	30	-	-	-	-	-	1	1		
1-3	256+75	USH 14, LEFT	R2-1	36" x 48"	Speed Limit __	30	-	-	-	12.00	-	-	-	Replace Sign on Existing Post	
1-4R	256+75	USH 14, LEFT	R2-1	36" x 48"	Speed Limit __	30	-	-	-	-	-	1	-		
1-5R	256+75	USH 14, LEFT	SP	24" x 18"	RADAR CONTROLLED	-	-	-	-	-	-	-	-	Attached to the Same Post as Sign 1-4R	
1-6	256+75	USH 14, RIGHT	R2-1	24" x 30"	Speed Limit __	55	1	-	-	5.00	-	-	-		
1-7R	256+75	USH 14, RIGHT	R2-1	24" x 30"	Speed Limit __	55	-	-	-	-	-	1	1		
1-8	259+20	USH 14, RIGHT	D2-2	72" x 24"	Destination Distances (Two)	Westby 9	2	-	-	12.00	-	-	-		
-	-	-	-	-	-	Madison 115	-	-	-	-	-	-	-		
1-9R	259+20	USH 14, RIGHT	D2-2	72" x 24"	Destination Distances (Two)	Westby 10	-	-	-	-	-	1	2		
-	-	-	-	-	-	Madison 115	-	-	-	-	-	-	-		
1-10	263+00	USH 14, RIGHT	W3-5	36" x 36"	Speed Limit __ Ahead	30	-	1	-	-	9.00	-	-		
1-11	263+00	USH 14, LEFT	W3-5	36" x 36"	Speed Limit __ Ahead	30	-	1	-	-	9.00	-	-		
1-12R	264+50	USH 14, RIGHT	W3-5	36" x 36"	Speed Limit __ Ahead	30	-	-	-	-	-	1	1		
1-13R	264+50	USH 14, LEFT	W3-5	36" x 36"	Speed Limit __ Ahead	30	-	-	-	-	-	1	1		
2-1R	268+00	USH 14, LEFT	I-2-3	78" x 24"	Population Sign	Coon Valley	-	-	-	-	-	1	2		
-	-	-	-	-	-	POPULATION 765	-	-	-	-	-	-	-		
2-2	269+50	USH 14, LEFT	I-2-3	78" x 24"	Population Sign	Coon Valley	2	-	-	13.00	-	-	-		
-	-	-	-	-	-	POPULATION 765	-	-	-	-	-	-	-		
2-3	271+90	USH 14, RIGHT	J1-1	24" x 39"	Junction Assembly	JCT	-	1	-	6.50	-	-	-		
-	-	-	-	-	-	B	-	-	-	-	-	-	-		
2-4R	271+90	USH 14, RIGHT	J1-1	24" x 39"	Junction Assembly	JCT	-	-	-	-	-	1	1		
-	-	-	-	-	-	B	-	-	-	-	-	-	-		
2-5	272+00	USH 14, RIGHT	W14-3	48" x 36"	No Passing Zone Pennant	-	-	1	-	-	6.00	-	-		
2-6R	272+00	USH 14, RIGHT	W14-3	48" x 36"	No Passing Zone Pennant	-	-	-	-	-	-	-	-	Attached to the Same Post as Sign 2-4R	
2-7	274+50	USH 14, RIGHT	D1-1	54" x 15"	Destination Arrow	Esofea (Right Arrow)	2	-	-	5.63	-	-	-		
2-8R	276+50	USH 14, RIGHT	D1-1	54" x 15"	Destination Arrow	Esofea (Right Arrow)	-	-	-	-	-	1	1		
3-1	279+80	USH 14, LEFT	J4-2	48" x 36"	Reassurance Assembly	WEST NORTH	-	1	-	12.00	-	-	-		
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-		
3-2R	279+80	USH 14, LEFT	J4-2	48" x 36"	Reassurance Assembly	WEST NORTH	-	-	-	-	-	1	1		
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-		
3-3	281+15	USH 14, RIGHT	J13-1	24" x 45"	Directional Without Cardinals	B	-	-	1	7.50	-	-	-		
-	-	-	-	-	-	(Right Arrow)	-	-	-	-	-	-	-		
3-4R	281+15	USH 14, RIGHT	J13-1	24" x 45"	Directional Without Cardinals	B	-	-	-	-	-	1	1		
-	-	-	-	-	-	(Right Arrow)	-	-	-	-	-	-	-		
3-5	281+95	USH 14, LEFT	W1-7	48" x 24"	Large Night Arrow (Double)	-	1	-	-	-	8.00	-	-		
3-6R	281+95	USH 14, LEFT	W1-7	48" x 24"	Large Night Arrow (Double)	-	-	-	-	-	-	1	1		
3-7	282+05	CTH B, RIGHT	R1-1	30" x 30"	Stop	-	1	-	-	5.18	-	-	-		
3-8R	282+05	CTH B, RIGHT	R1-1	30" x 30"	Stop	-	-	-	-	-	-	1	1		
SUBTOTAL 1=							10	5	1	84	32	13	14		
ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED															
STATE PROJECT NO: 1640-01-60					HWY: USH 14		COUNTY: VERNON			MISCELLANEOUS QUANTITIES			SHEET NO: 66		E

3

3

SIGNING																				
						634.0614		634.0616		634.0618		637.2210		637.2230		638.2602		638.3000		
						POSTS		POSTS		POSTS		SIGNS		SIGNS		REMOVING		REMOVING		
						WOOD 4 x 6 -		WOOD 4 x 6 -		WOOD 4 x 6 -		TYPE II		TYPE II		SIGNS		SMALL SIGN		
						INCH 14		INCH 16		INCH 18		REFLECTIVE		REFLECTIVE		TYPE II		SUPPORTS		
						FOOT		FOOT		FOOT		H		F						
						EACH		EACH		EACH		SF		SF		EACH		EACH		
SIGN	STATION	LOCATION	SIGN	SIZE	DESCRIPTION	ORDER LINES													COMMENTS	
3-9	282+10	CTH B, RIGHT	J13-2	48" x 45"	Directional Without Cardinals	14 61	-	1	-	15.00	-	-	-							
-	-	-	-	-	-	(Double Arrow) (Double Arrow)	-	-	-	-	-	-	-							
3-10R	282+10	CTH B, RIGHT	J13-2	48" x 45"	Directional Without Cardinals	14 61	-	-	-	-	-	-	1	1						
-	-	-	-	-	-	(Double Arrow) (Double Arrow)	-	-	-	-	-	-	-							
3-11	282+20	USH 14, LEFT	J13-1	24" x 45"	Directional Without Cardinals	B	-	-	1	7.50	-	-	-							
-	-	-	-	-	-	(Left Arrow)	-	-	-	-	-	-	-							
3-12R	282+20	USH 14, LEFT	J13-1	24" x 45"	Directional Without Cardinals	B	-	-	-	-	-	-	1	1						
-	-	-	-	-	-	(Left Arrow)	-	-	-	-	-	-	-							
3-13	283+50	USH 14, RIGHT	J4-2	48" x 36"	Reassurance Assembly	EAST SOUTH	-	1	-	12.00	-	-	-							
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-							
3-14R	283+50	USH 14, RIGHT	J4-2	48" x 36"	Reassurance Assembly	EAST SOUTH	-	-	-	-	-	-	1	1						
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-							
3-15R	286+50	USH 14, LEFT	D1-1	54" x 15"	Destination Arrow	(Left Arrow) Esofea	-	-	-	-	-	-	1	1						
3-16	288+00	USH 14, RIGHT	R4-51	36" x 48"	Passing Lane __ Mile Ahead	1 MILE	-	1	-	12.00	-	-	-							
3-17	289+00	USH 14, LEFT	D1-1	54" x 15"	Destination Arrow	(Left Arrow) Esofea	2	-	-	5.63	-	-	-							
3-18	291+25	USH 14, LEFT	J1-1	24" x 39"	Junction Assembly	JCT	-	1	-	6.50	-	-	-							
-	-	-	-	-	-	B	-	-	-	-	-	-	-							
3-19R	291+25	USH 14, LEFT	J1-1	24" x 39"	Junction Assembly	JCT	-	-	-	-	-	-	1	1						
-	-	-	-	-	-	B	-	-	-	-	-	-	-							
4-1	301+25	USH 14, LEFT	W14-3	48" x 36"	No Passing Zone Pennant	-	-	1	-	-	6.00	-	-							
4-2R	301+25	USH 14, LEFT	W14-3	48" x 36"	No Passing Zone Pennant	-	-	-	-	-	-	1	1							
4-3	308+35	Leum Rd, RIGHT	R1-1	30" x 30"	Stop	-	1	-	-	5.18	-	-	-							
4-4R	308+35	Leum Rd, RIGHT	R1-1	30" x 30"	Stop	-	-	-	-	-	-	1	1							
5-1	314+50	USH 14, RIGHT	R4-51	36" x 48"	Passing Lane __ Mile Ahead	1/2 MILE	-	1	-	12.00	-	-	-							
5-2	319+15	Cornell Ln, RIGHT	R1-1	30" x 30"	Stop	-	1	-	-	5.18	-	-	-							
5-3R	319+15	Cornell Ln, RIGHT	R1-1	30" x 30"	Stop	-	-	-	-	-	-	1	1							
5-4R	319+85	USH 14, RIGHT	I55-56	30" x 36"	Adopt A Highway	COULEECAP	-	-	-	-	-	1	1							
-	-	-	-	-	-	INC	-	-	-	-	-	-	-							
5-5	320+35	USH 14, RIGHT	I55-56	30" x 36"	Adopt A Highway	COULEECAP	-	1	-	7.50	-	-	-							
-	-	-	-	-	-	INC	-	-	-	-	-	-	-							
6-1R	338+50	USH 14, RIGHT	R4-3	36" x 48"	Slower Traffic Keep Right	-	-	-	-	-	-	1	1							
7-1	341+00	USH 14, RIGHT	R4-3	24" x 30"	Slower Traffic Keep Right	-	1	-	-	5.00	-	-	-							
7-2R	344+90	USH 14, RIGHT	R4-3	36" x 48"	Slower Traffic Keep Right	-	-	-	-	-	-	1	1							
8-1	360+00	USH 14, LEFT	S3-1	36" x 36"	School Bus Stop Ahead	-	-	1	-	-	9.00	-	-							
8-2R	360+00	USH 14, LEFT	S3-1	36" x 36"	School Bus Stop Ahead	-	-	-	-	-	-	1	1							
8-3	368+00	USH 14, LEFT	W8-14	36" x 36"	Fallen Rocks	-	-	1	-	-	9.00	-	-							
9-1	372+00	USH 14, LEFT	R3-72	30" x 36"	Oncoming Traffic Uses Center Line	-	-	1	-	7.50	-	-	-							
10-1R	392+00	USH 14, LEFT	W8-54	36" x 36"	Watch for Fallen Rocks	-	-	-	-	-	-	1	1							
SUBTOTAL 2=							5	10	1	101	24	13	13							
ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED																				
STATE PROJECT NO: 1640-01-60					HWY: USH 14			COUNTY: VERNON				MISCELLANEOUS QUANTITIES				SHEET NO:		67		E

3

SIGNING																
								634.0614	634.0616	634.0618	637.2210	637.2230	638.2602	638.3000		
								POSTS	POSTS	POSTS	SIGNS	SIGNS	REMOVING	REMOVING		
								WOOD 4 x 6 -	WOOD 4 x 6 -	WOOD 4 x 6 -	TYPE II	TYPE II	SIGNS	SMALL SIGN		
								INCH 14	INCH 16	INCH 18	REFLECTIVE	REFLECTIVE	TYPE II	SUPPORTS		
								FOOT	FOOT	FOOT	H	F				
								EACH	EACH	EACH	SF	SF	EACH	EACH		
SIGN	STATION	LOCATION	SIGN	SIZE	DESCRIPTION	ORDER LINES									COMMENTS	
10-2R	394+80	USH 14, RIGHT	J1-1	24" x 39"	Junction Assembly	JCT	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	GG	-	-	-	-	-	-	-	-		
10-3	397+00	USH 14, RIGHT	J1-1	24" x 39"	Junction Assembly	JCT	-	1	-	6.50	-	-	-	-		
-	-	-	-	-	-	GG	-	-	-	-	-	-	-	-		
10-4	399+00	USH 14, RIGHT	D1-1	78" x 15"	Destination Arrow	(Left Arrow) Nerison Rd	2	-	-	8.13	-	-	-	-		
11-1	400+00	USH 14, LEFT	R3-72	30" x 36"	Oncoming Traffic Uses Center Line	-	-	1	-	7.50	-	-	-	-		
11-2	402+00	USH 14, RIGHT	R3-20R	24" x 36"	Begin Right Turn Lane (Tilt Left Arrow)	-	-	1	-	6.00	-	-	-	-		
11-3	403+90	Nerison Rd, RIGHT	R1-1	30" x 30"	Stop	-	1	-	-	5.18	-	-	-	-		
11-4R	403+90	Nerison Rd, RIGHT	R1-1	30" x 30"	Stop	-	-	-	-	-	-	-	1	1		
11-5	405+75	USH 14, LEFT	J4-2	48" x 36"	Reassurance Assembly	WEST NORTH	-	1	-	12.00	-	-	-	-		
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-	-		
11-6R	405+75	USH 14, LEFT	J4-2	48" x 36"	Reassurance Assembly	WEST NORTH	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-	-		
11-7	406+65	USH 14, RIGHT	J13-1	24" x 45"	Directional Without Cardinals	GG	-	1	-	7.50	-	-	-	-		
-	-	-	-	-	-	(Right Arrow)	-	-	-	-	-	-	-	-		
11-8R	406+65	USH 14, RIGHT	J13-1	24" x 45"	Directional Without Cardinals	GG	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	(Right Arrow)	-	-	-	-	-	-	-	-		
11-9	407+00	USH 14, LEFT	I55-56	30" x 36"	Adopt A Highway	COULEECAP	-	1	-	7.50	-	-	-	-		
-	-	-	-	-	-	INC	-	-	-	-	-	-	-	-		
11-10R	407+00	USH 14, LEFT	I55-56	30" x 36"	Adopt A Highway	COULEECAP	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	INC	-	-	-	-	-	-	-	-		
11-11	407+75	USH 14, LEFT	W1-7	48" x 24"	Large Night Arrow (Double)	-	1	-	-	-	8.00	-	-	-		
11-12R	407+75	USH 14, LEFT	W1-7	48" x 24"	Large Night Arrow (Double)	-	-	-	-	-	-	-	1	1		
11-13	407+85	CTH GG, RIGHT	R1-1	30" x 30"	Stop	-	1	-	-	5.18	-	-	-	-		
11-14R	407+85	CTH GG, RIGHT	R1-1	30" x 30"	Stop	-	-	-	-	-	-	-	1	1		
11-15	407+90	CTH GG, RIGHT	J13-2	48" x 45"	Directional Without Cardinals	14 61	-	1	-	15.00	-	-	-	-		
-	-	-	-	-	-	(Double Arrow) (Double Arrow)	-	-	-	-	-	-	-	-		
11-16R	407+90	CTH GG, RIGHT	J13-2	48" x 45"	Directional Without Cardinals	14 61	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	(Double Arrow) (Double Arrow)	-	-	-	-	-	-	-	-		
11-17	408+00	USH 14, LEFT	J13-1	24" x 45"	Directional Without Cardinals	GG	-	1	-	7.50	-	-	-	-		
-	-	-	-	-	-	(Left Arrow)	-	-	-	-	-	-	-	-		
11-18R	408+00	USH 14, LEFT	J13-1	24" x 45"	Directional Without Cardinals	GG	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	(Left Arrow)	-	-	-	-	-	-	-	-		
11-19	410+75	USH 14, RIGHT	I55-56	30" x 36"	Adopt A Highway	MARY MILLER	1	-	-	7.50	-	-	-	-		
-	-	-	-	-	-	AUCTIONEER APPRAISER	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	VIROQUA	-	-	-	-	-	-	-	-		
11-20R	408+20	USH 14, RIGHT	I55-56	30" x 36"	Adopt A Highway	MARY MILLER	-	-	-	-	-	-	1	1		
-	-	-	-	-	-	AUCTIONEER APPRAISER	-	-	-	-	-	-	-	-		
-	-	-	-	-	-	VIROQUA	-	-	-	-	-	-	-	-		
SUBTOTAL 3=							6	8	0	95	8	10	10			
ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED																
STATE PROJECT NO: 1640-01-60					HWY: USH 14			COUNTY: VERNON			MISCELLANEOUS QUANTITIES			SHEET NO: 68		E

3

SIGNING														
SIGN NUMBER	STATION	LOCATION	SIGN CODE	SIZE	DESCRIPTION	ORDER LINES	634.0614	634.0616	634.0618	637.2210	637.2230	638.2602	638.3000	COMMENTS
							POSTS WOOD 4 x 6 - INCH 14 FOOT EACH	POSTS WOOD 4 x 6 - INCH 16 FOOT EACH	POSTS WOOD 4 x 6 - INCH 18 FOOT EACH	SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
11-21	409+60	USH 14, RIGHT	J4-2	48" x 36"	Reassurance Assembly	EAST SOUTH	-	1	-	12.00	-	-	-	
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-	
11-22R	409+60	USH 14, RIGHT	J4-2	48" x 36"	Reassurance Assembly	EAST SOUTH	-	-	-	-	-	1	1	
-	-	-	-	-	-	14 61	-	-	-	-	-	-	-	
11-23	411+50	USH 14, LEFT	D1-1	78" x 15"	Destination Arrow	Nerison Rd (Right Arrow)	2	-	-	8.13	-	-	-	
11-24R	412+00	USH 14, RIGHT	W9-1-R	36" x 36"	Right Lane Ends	-	-	-	-	-	-	1	1	
11-25	414+00	USH 14, RIGHT	W9-1-R	36" x 36"	Right Lane Ends	-	-	1	-	-	9.00	-	-	
11-26R	414+00	USH 14, RIGHT	D1-1	84" x 15"	Destination Arrow	(Left Arrow) Mathison Ln	-	-	-	-	-	1	2	
12-1	416+00	USH 14, RIGHT	D1-1	84" x 15"	Destination Arrow	(Left Arrow) Mathison Ln	2	-	-	8.75	-	-	-	
12-2R	416+00	USH 14, RIGHT	W4-2-R	36" x 36"	Lane Transition Symbol (Right)	-	-	-	-	-	-	1	1	
12-3	416+00	USH 14, LEFT	W7-1	36" x 36"	Hill Symbol	-	-	-	1	-	9.00	-	-	
12-4	416+00	USH 14, LEFT	W7-3	24" x 18"	Percent Grade Plaque	6%	-	-	-	-	3.00	-	-	Attached to the Same Post as Sign 12-3
12-5R	416+00	USH 14, LEFT	W4-2-R	36" x 36"	Lane Transition Symbol (Right)	-	-	-	-	-	-	1	1	
12-6R	416+00	USH 14, LEFT	J1-1	24" x 39"	Junction Assembly	JCT	-	-	-	-	-	-	-	Attached to the Same Post as Sign 12-5R
-	-	-	-	-	-	GG	-	-	-	-	-	-	-	
12-7	418+25	USH 14, RIGHT	W4-2-R	36" x 36"	Lane Transition Symbol (Right)	-	-	1	-	-	9.00	-	-	
12-8	418+25	USH 14, LEFT	W4-2-R	36" x 36"	Lane Transition Symbol (Right)	-	-	1	-	-	9.00	-	-	
12-9	418+30	USH 14, LEFT	J1-1	24" x 39"	Junction Assembly	JCT	-	1	-	6.50	-	-	-	
-	-	-	-	-	-	GG	-	-	-	-	-	-	-	
12-10	421+00	Mathison Ln, RIGHT	R1-1	30" x 30"	Stop	-	1	-	-	5.18	-	-	-	
12-11R	421+00	Mathison Ln, RIGHT	R1-1	30" x 30"	Stop	-	-	-	-	-	-	1	1	
12-12	423+00	USH 14, LEFT	R4-1	24" x 30"	Do Not Pass	-	1	-	-	5.00	-	-	-	
12-13	423+00	USH 14, RIGHT	W14-3	48" x 36"	No Passing Zone Pennant	-	-	1	-	-	6.00	-	-	
12-14R	423+00	USH 14, RIGHT	W14-3	48" x 36"	No Passing Zone Pennant	-	-	-	-	-	-	1	1	
12-15R	424+50	USH 14, LEFT	W7-1	36" x 36"	Hill Symbol	-	-	-	-	-	-	1	1	
12-16	427+50	USH 14, LEFT	D1-1	84" x 15"	Destination Arrow	Mathison Ln (Right Arrow)	2	-	-	8.75	-	-	-	
12-17R	428+00	USH 14, LEFT	D1-1	84" x 15"	Destination Arrow	Mathison Ln (Right Arrow)	-	-	-	-	-	1	2	
12-18	429+35	USH 14, LEFT	R4-53	54" x 54"	Do Not Pass When Oncoming Traffic in Either Lane	-	-	-	2	20.25	-	-	-	
12-19R	430+00	USH 14, LEFT	R3-72	30" x 36"	Oncoming Traffic Uses Center Line	-	-	-	-	-	-	1	1	
SUBTOTAL 4=							8	6	3	75	45	10	12	
SUBTOTAL 1=							10	5	1	84	32	13	14	
SUBTOTAL 2=							5	10	1	101	24	13	13	
SUBTOTAL 3=							6	8	0	95	8	10	10	
PROJECT TOTALS=							29	29	5	355	109	46	49	
ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED														
STATE PROJECT NO: 1640-01-60			HWY: USH 14			COUNTY: VERNON			MISCELLANEOUS QUANTITIES			SHEET NO: 69		E

3

3

TRAFFIC CONTROL								
643.0300			643.0900			643.1050		
TRAFFIC CONTROL DRUMS			TRAFFIC CONTROL SIGNS			TRAFFIC CONTROL SIGNS PCMS		
PURPOSE	DURATION DAYS	DAYS	EACH	DAYS	EACH	DAYS	EACH	COMMENTS
ADVANCE NOTIFICATION	14	-	0	-	0	28	2	
ADVANCE WARNING	88	-	0	1,408	16	-	0	
C-62-0234	21	210	10	63	3	-	0	
FLAGGING CREW 1	40	-	0	240	6	-	0	SHORT WORK ZONE
FLAGGING CREW 2	30	15,821	527	180	6	-	0	LONG WORK ZONE
MILLING/PAVING	24	-	0	144	6	-	0	
SHOULDER CLOSURE	86	20,640	240	688	8	-	0	
REDUCED SUPERS	60	-	0	360	6	-	0	
UNDISTRIBUTED		3,667		308		3		
TOTAL		40,338		3,391		31		

SAWCUT			
		690.0150 SAWING ASPHALT LF	COMMENTS
STATION	STATION		
252+00	-	30	USH 14
276+58	- 281+65	582	CTH B RT TURN LANE
3'B'+37	-	24	CTH B
281+89	- 283+37	213	CTH B SE INT.
8'L'+95	-	28	LEUM LANE
316+52	-	11	PE LT
16'C'+80	-	22	CORNELL LANE
21'N'+25	-	22	NERISON ROAD
400+31	- 418+98	1882	CTH GG RECONST. RT
402+06	- 407+45	701	CTH GG RT TURN LANE
23'GG'+10	-	24	CTH GG
407+69	- 409+05	303	CTH GG SE INT.
413+90	-	43	CE RT
31'M'+10	-	26	MATHISON LANE
430+00	-	30	USH 14
TOTAL		3941	

SPRAYED ASPHALTIC SHOULDER TREATMENT					
SPV.0070.01 SPRAYED ASPHALTIC SHOULDER TREATMENT					
STATION			GAL	COMMENTS	
293+60	-	311+80	243	GUARDRAIL STIFFENED LHW LT	
321+00	-	326+05	67	MGS GUARDRAIL 3K LT	
328+85	-	331+35	33	MGS GUARDRAIL 3K LT	
332+60	-	335+80	43	MGS GUARDRAIL 3K LT	
337+15	-	340+90	50	MGS GUARDRAIL 3K LT	
344+20	-	347+30	41	MGS GUARDRAIL 3K LT	
347+30	-	353+72	128	MGS GUARDRAIL LT	
384+60	-	386+30	23	MGS GUARDRAIL 3K LT	
UNDISTRIBUTED			126		
TOTAL			754		

LOCATING NO-PASSING ZONES			
648.0100 LOCATING NO-PASSING ZONES			
STATION		MI	COMMENTS
252+00	- 430+00	3.37	SPOTTING SIGHT DISTANCE 0.26 MILES (1373 FEET)
TOTAL		3.37	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

3

PAVEMENT MARKING																	
		646.0106		646.2304.S			646.2308.S		647.0166		647.0356		647.0726		649.0402*		
		PAVEMENT MARKING EPOXY 4-INCH		PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 4-INCH			PAVEMENT MARKING GROOVED WET REFLECTIVE EPOXY 8-INCH		PAVEMENT MARKING ARROWS EPOXY TYPE 2		PAVEMENT MARKING WORDS EPOXY		PAVEMENT MARKING DIAGONAL EPOXY 12-INCH		TEMPORARY PAVEMENT MARKING PAINT 4-INCH		
		YELLOW	YELLOW 12.5' SKIP	WHITE 3' SKIP	WHITE 12.5' SKIP	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	
STATION	LENGTH (FT)	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	EACH	LF	LF	LF	LF	LF	COMMENTS
252+00 - 258+50	650	1,300	-	-	-	1,300	-	-	-	-	-	-	-	-	-	5,200	
258+50 - 272+25	1375	1,375	344	-	-	2,750	-	-	-	-	-	-	-	-	-	9,512	
272+25 - 276+60	435	-	109	-	-	870	-	-	-	-	-	-	-	-	-	2,610	
276+60 - 283+30	670	-	168	-	-	1,231	300	-	-	-	-	-	-	-	-	4,020	CTH B
283+30 - 300+70	1740	-	435	-	-	3,480	-	-	-	-	-	-	-	-	-	12,980	
300+70 - 305+75	505	505	126	-	-	1,010	-	-	-	-	-	-	-	-	-	4,040	
305+75 - 309+70	395	395	99	38	-	495	-	-	-	-	-	-	-	-	-	3,160	LEUM LANE
309+70 - 314+45	475	475	119	-	-	950	-	-	-	-	-	-	-	-	-	3,800	
314+45 - 321+90	745	1,490	-	38	-	1,191	-	-	-	-	-	-	-	-	-	5,332	CORNELL LANE
321+90 - 340+90	1900	3,800	-	-	-	3,800	-	-	-	-	-	-	-	-	-	13,802	
340+90 - 400+30	5940	11,880	-	175	1312	11,880	-	-	-	-	-	-	-	1,257	35,640		
400+30 - 409+05	875	2,734	-	38	219	1,315	389	-	-	-	-	165	-	210	5,250		NERISON ROAD/CTH GG
409+05 - 430+00	2095	5,542	-	38	336	3,899	184	-	-	-	-	190	-	323	12,570		MATHISON LANE
278+28 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	RT TURN LANE CTH B
279+06 -	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	RT TURN LANE CTH B
279+46 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	RT TURN LANE CTH B
280+24 -	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	RT TURN LANE CTH B
280+64 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	RT TURN LANE CTH B
403+76 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	RT TURN LANE CTH GG
404+55 -	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	RT TURN LANE CTH GG
404+95 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	RT TURN LANE CTH GG
405+73 -	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	RT TURN LANE CTH GG
406+13 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	RT TURN LANE CTH GG
408+52 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	LT TURN LANE CTH GG
408+92 -	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	LT TURN LANE CTH GG
409+60 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	LT TURN LANE CTH GG
410+00 -	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	LT TURN LANE CTH GG
410+68 -	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	LT TURN LANE CTH GG
SUBTOTAL		29,496	1,399	325	1,867	34,171								1,790	117,916		
TOTAL		30,895			36,363		873	9	6	355	119,706						

*TEMPORARY PAVEMENT MARKING QTY INCLUDES PLACEMENT AFTER MILLING, WEDGING, FIRST LIFT, AND SECOND/FINAL LIFT OF HMA

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

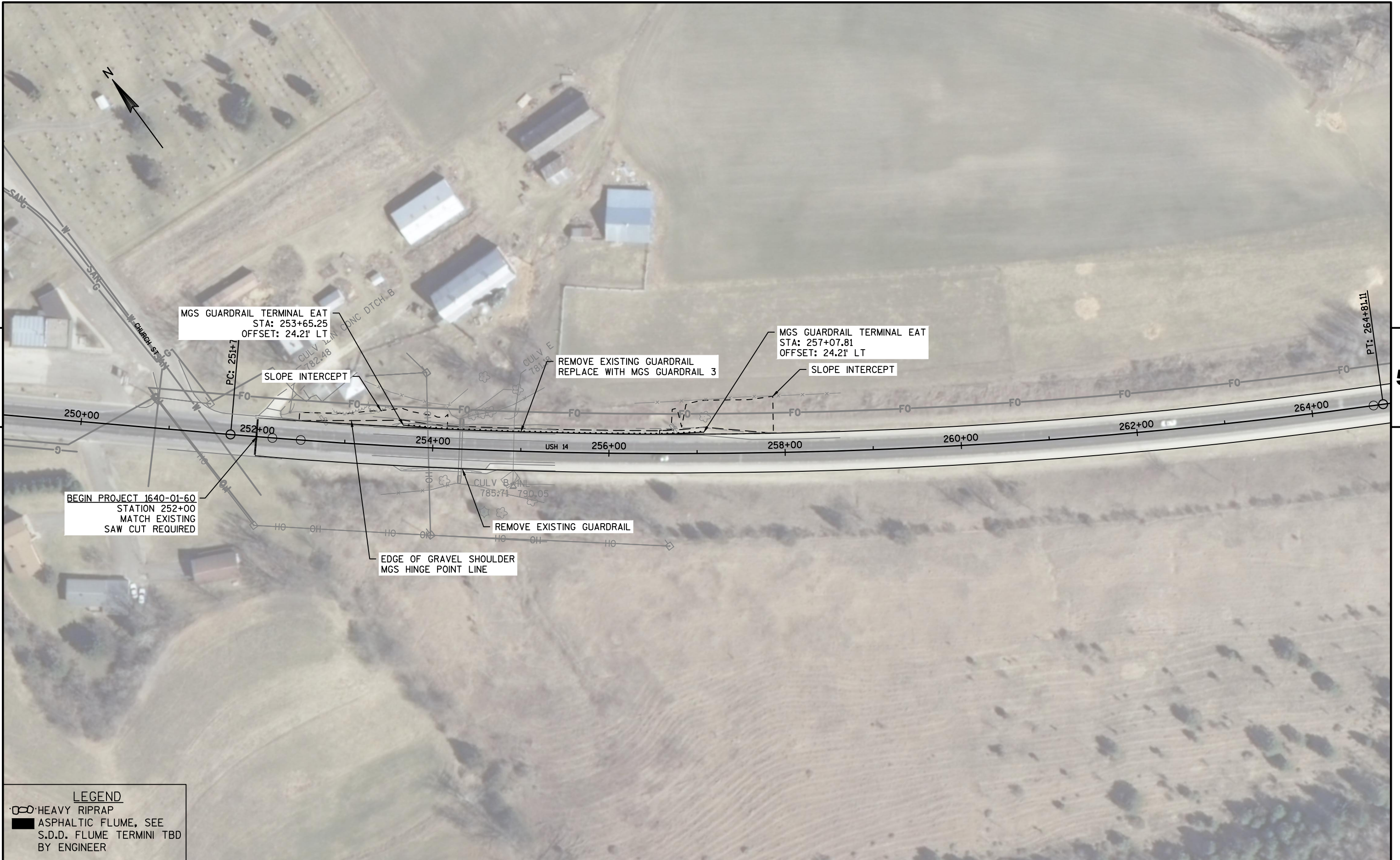
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CONSTRUCTION STAKING								
		650.4500	650.5000	650.5500	650.7000	650.8000	650.9920	
		CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING RESURFACING REFERENCE	CONSTRUCTION STAKING SLOPE STAKES	
STATION		LF	LF	LF	LF	LF	LF	COMMENTS
252+44	- 254+18	-	-	-	-	-	174	GUARDRAIL EAT
256+58	- 257+88	-	-	-	-	-	130	GUARDRAIL EAT
275+85	- 282+71	686	686	156	-	-	686	CTH B INTERSECTION
3'B'+37	- 4'B'+00	63	63	-	-	-	63	CTH B INTERSECTION
284+29	- 286+00	-	-	-	-	-	171	GUARDRAIL EAT
292+78	- 293+62	-	-	-	-	-	84	GUARDRAIL EAT
296+50	- 298+20	-	-	-	-	-	170	GUARDRAIL EAT
306+53	- 307+56	-	-	-	-	-	103	GUARDRAIL EAT
315+41	- 316+56	-	-	-	-	-	115	GUARDRAIL EAT
319+50	- 321+00	-	-	-	-	-	150	GUARDRAIL EAT
340+20	- 343+06	-	-	-	-	-	286	GUARDRAIL EAT
342+31	- 346+40	-	409	409	-	-	-	CURB & GUTTER
343+48	- 347+28	-	-	-	-	-	380	GUARDRAIL EAT
353+65	- 360+26	-	-	-	661	-	661	CONCRETE BARRIER
364+00	- 370+70	-	670	670	-	-	-	CURB & GUTTER
384+50	- 388+05	-	-	-	-	-	355	GUARDRAIL EAT
387+17	- 397+17	-	1,000	1,000	-	-	-	CURB & GUTTER
392+84	- 394+87	-	-	-	-	-	203	GUARDRAIL EAT
397+42	- 399+31	-	-	-	-	-	189	GUARDRAIL EAT
400+30	- 419+04	-	-	-	-	-	1,874	CTH GG INTERSECTION
402+05	- 409+05	700	700	291	-	-	-	CTH GG INTERSECTION
23'GG'+00	- 24'GG'+00	100	100	-	-	-	100	CTH GG INTERSECTION
409+00	- 413+00	-	400	400	-	-	-	CURB & GUTTER
252+00	- 430+00	-	-	-	-	17,800	-	PROJECT LIMITS
TOTALS		1,549	4,028	2,926	661	17,800	5,894	

CONSTRUCTION STAKING					
	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT (C- 62-2234) LS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (1640-01-60) LS	
LOCATION					COMMENTS
PROJECT	-	-	-	1	FE
280+10	-	1	-	-	
STA. 280+95	-	-	1	-	
24'GG'+42	-	1	-	-	
356+50	1	-	-	-	STRUCTURE 1.0
356+50	1	-	-	-	STRUCTURE 1.1
415+74	-	1	-	-	EXTENSION
TOTALS	2	3	1	1	

ALL ITEMS CATEGORY 0010 UNLESS OTHERWISE STATED

3



LEGEND

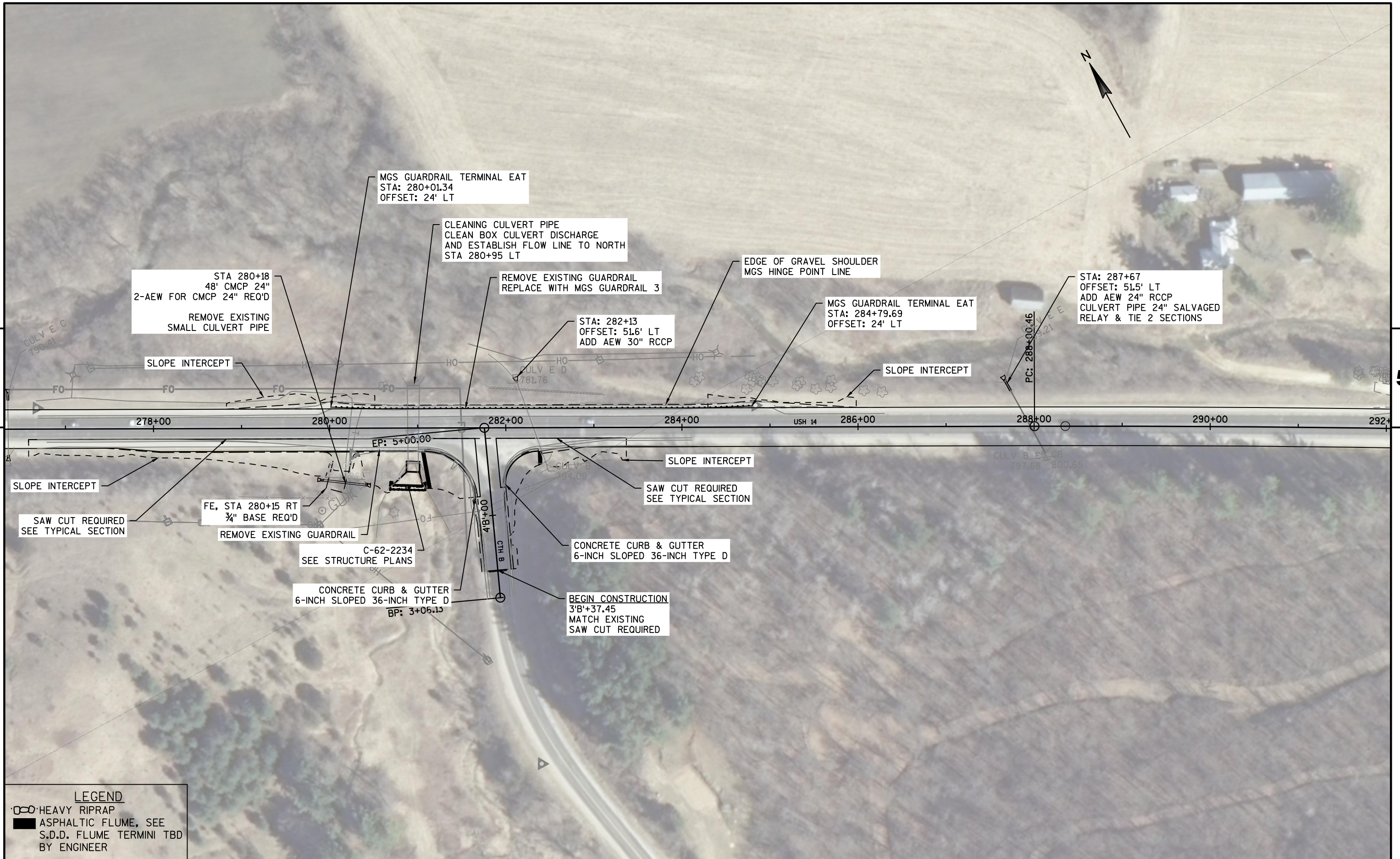
- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER



LEGEND

HEAVY RIPRAP

ASPHALTIC FLUME, SEE
S.D.D. FLUME TERMINI TBD
BY ENGINEER



LEGEND

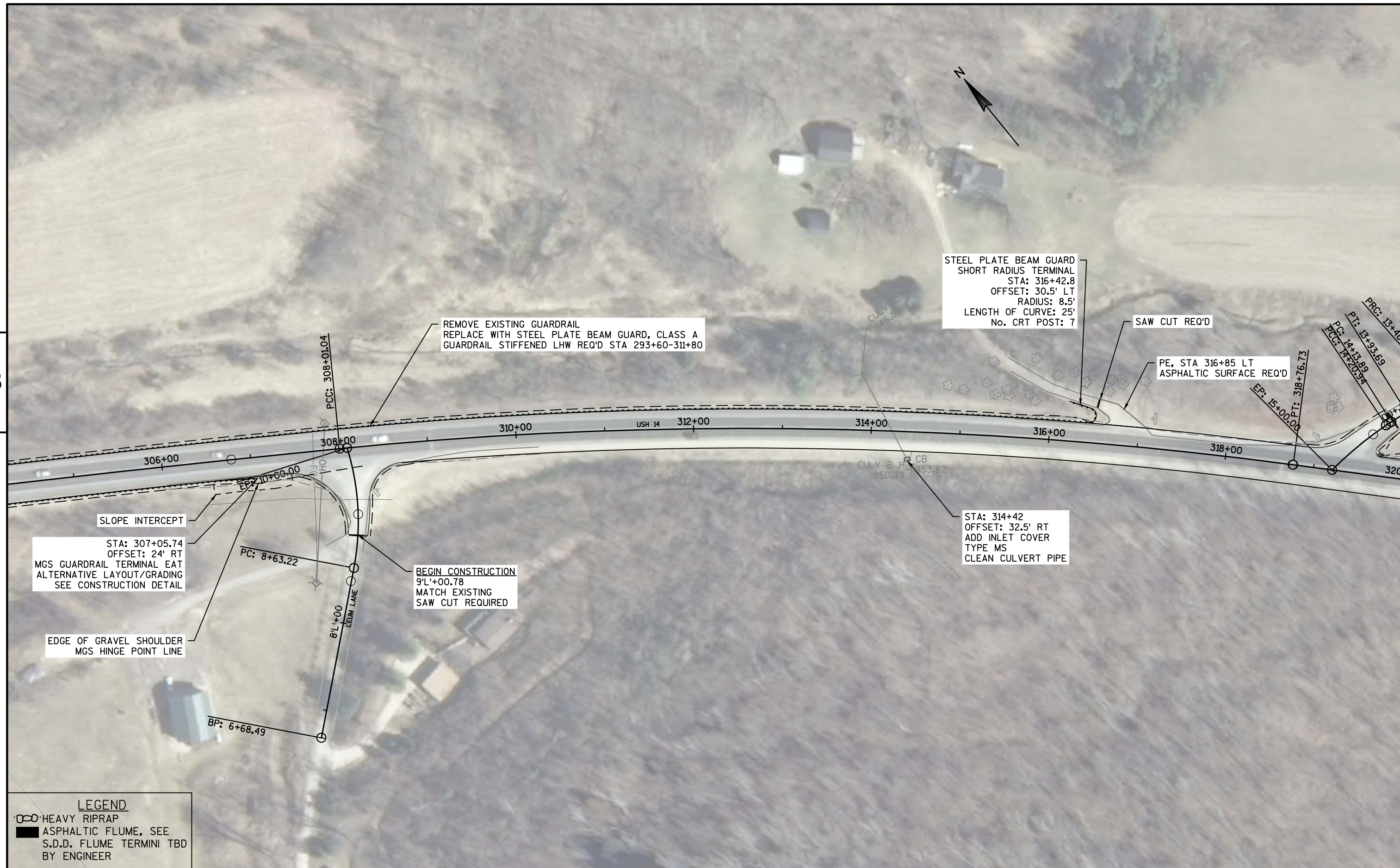
- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER



LEGEND

- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

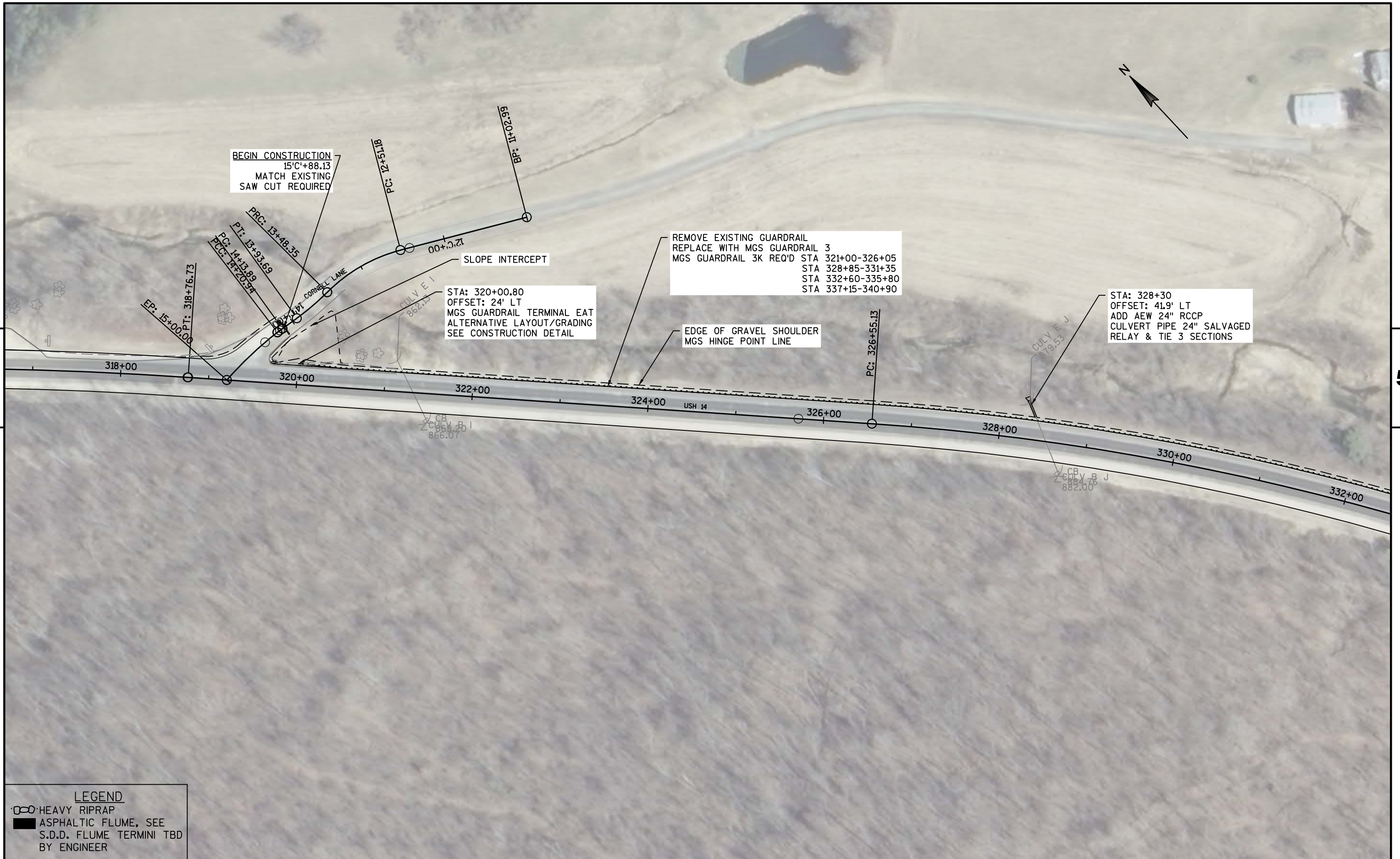
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5

LEGEND

- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER



LEGEND

- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

5

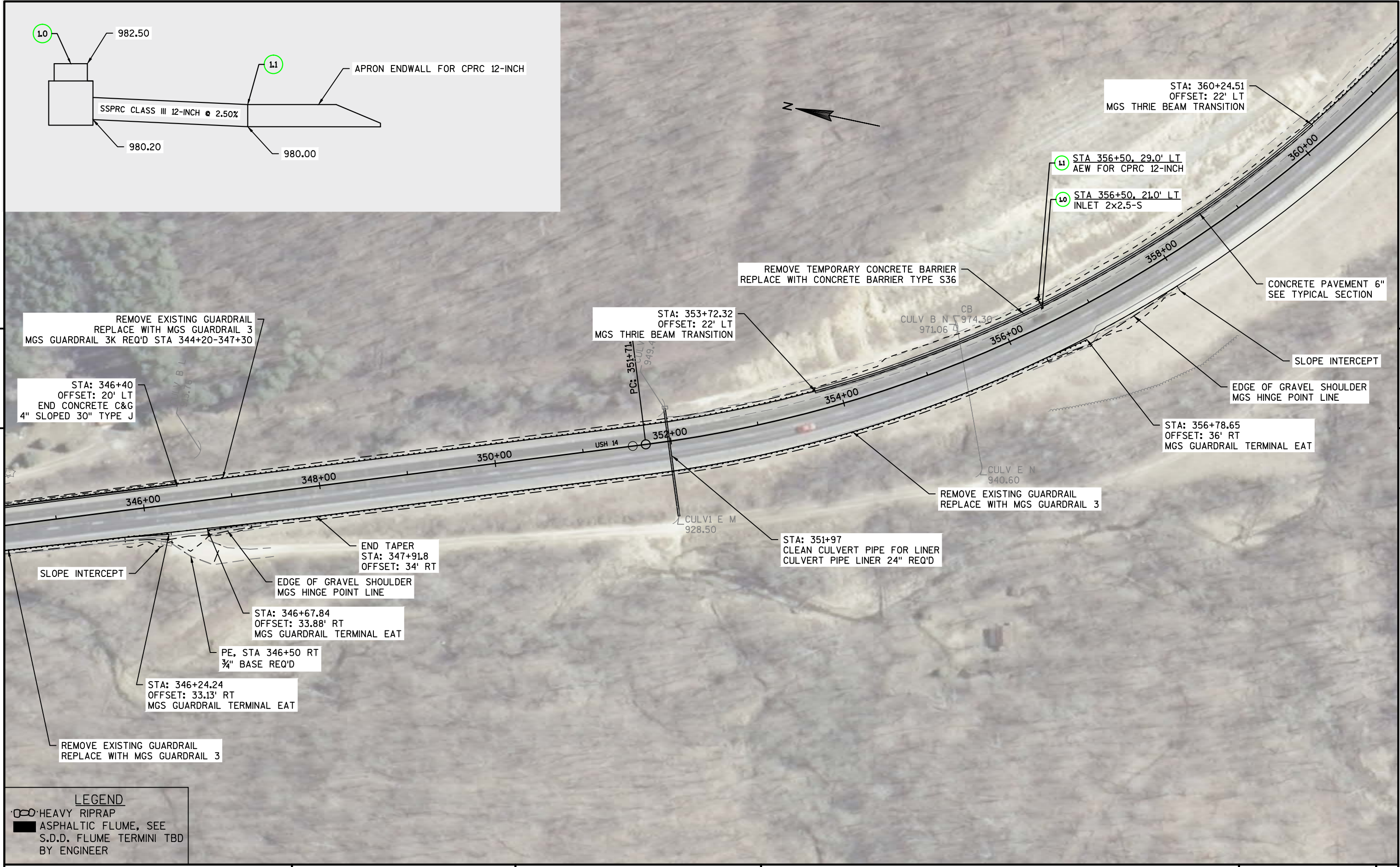


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LEGEND

HEAVY RIPRAP

ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER

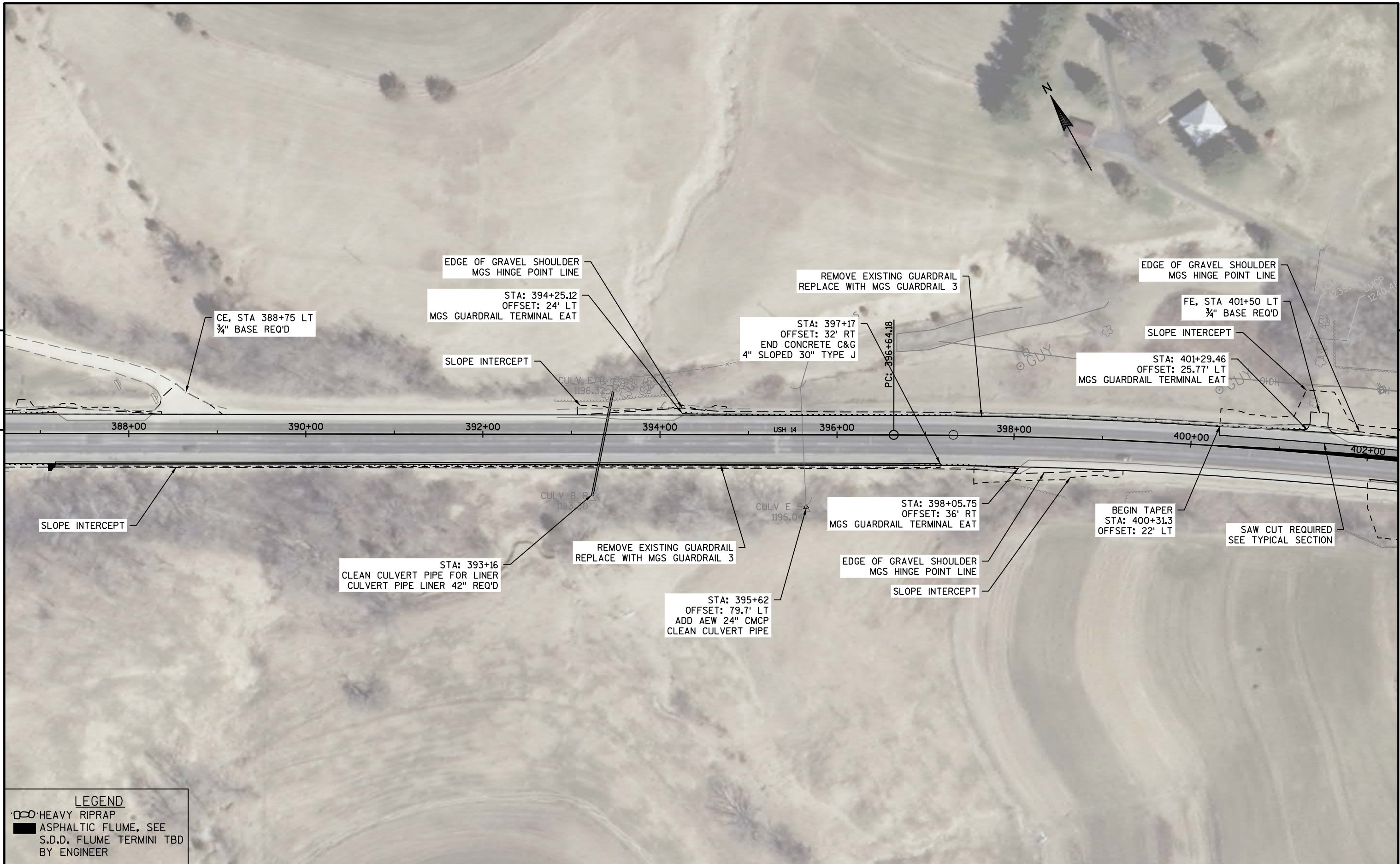




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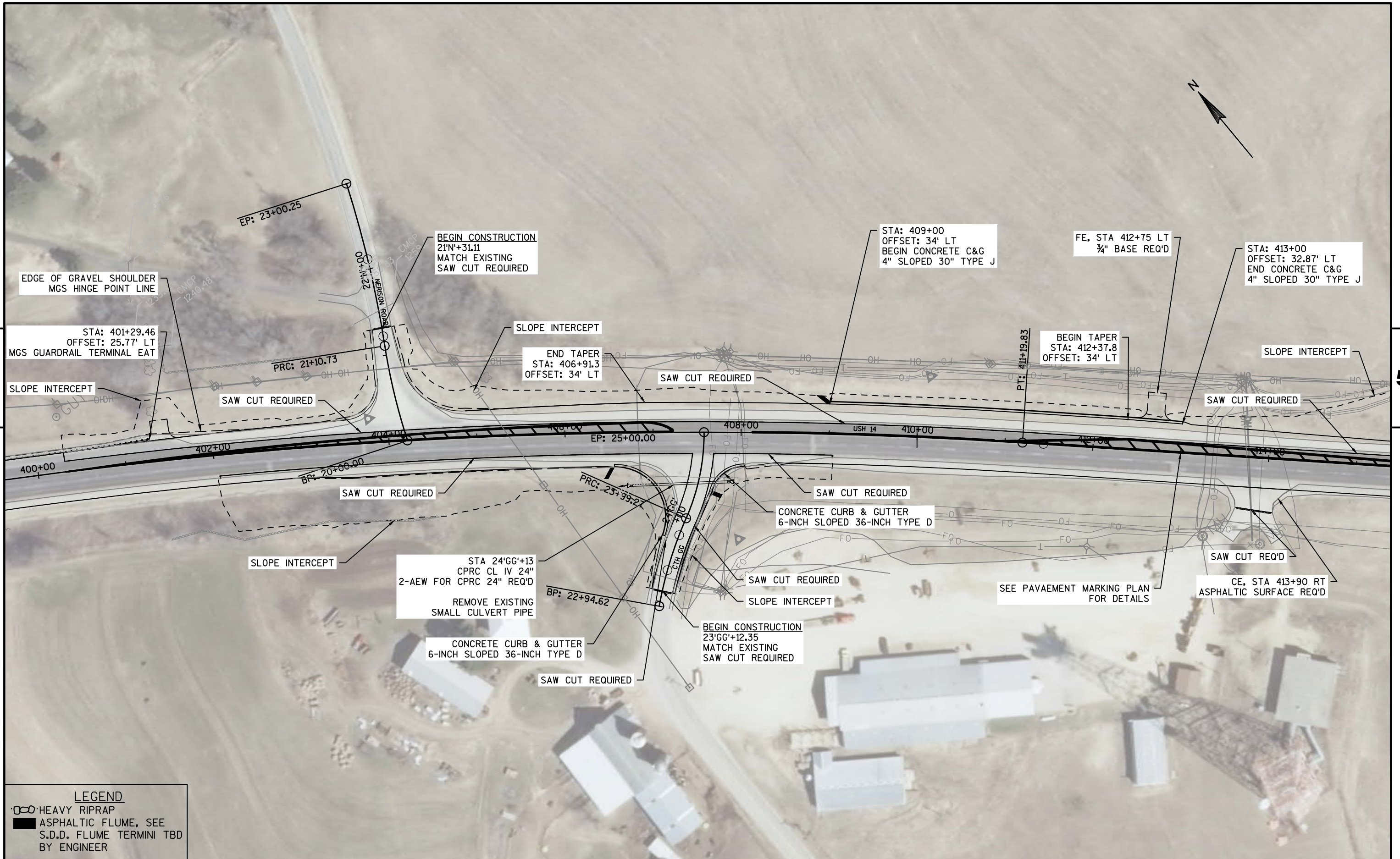
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LEGEND

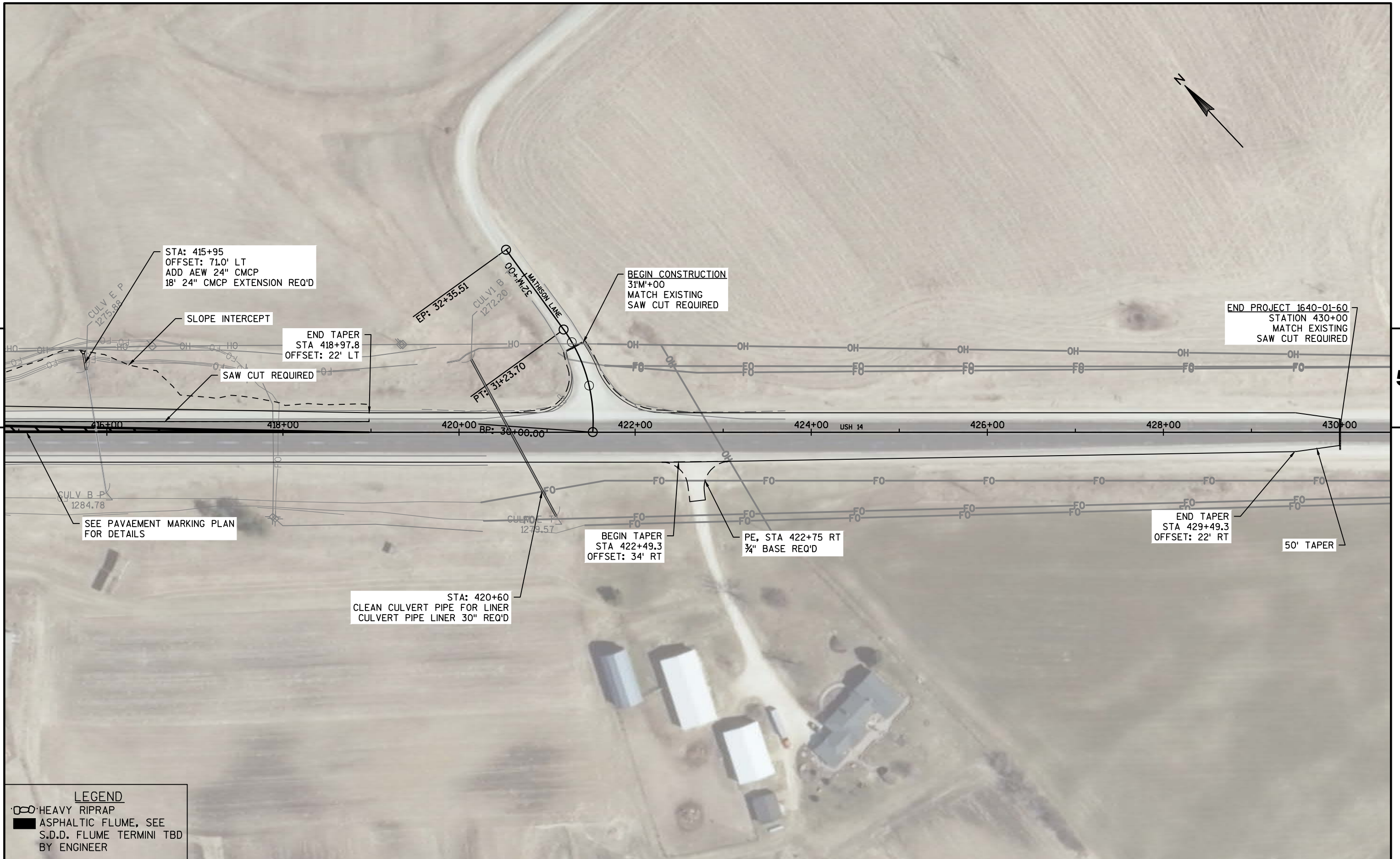
HEAVY RIPRAP

ASPHALTIC FLUME, SEE
S.D.D. FLUME TERMINI TBD
BY ENGINEER



LEGEND

- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE S.D.D. FLUME TERMINI TBD BY ENGINEER



STA: 415+95
OFFSET: 71.0' LT
ADD AEW 24" CMCP
18' 24" CMCP EXTENSION REQ'D

SLOPE INTERCEPT

END TAPER
STA 418+97.8
OFFSET: 22' LT

SAW CUT REQUIRED

BEGIN CONSTRUCTION
31'M+00
MATCH EXISTING
SAW CUT REQUIRED

END PROJECT 1640-01-60
STATION 430+00
MATCH EXISTING
SAW CUT REQUIRED

SEE PAVEMENT MARKING PLAN
FOR DETAILS

BEGIN TAPER
STA 422+49.3
OFFSET: 34' RT

PE, STA 422+75 RT
¾" BASE REQ'D

END TAPER
STA 429+49.3
OFFSET: 22' RT

50' TAPER

STA: 420+60
CLEAN CULVERT PIPE FOR LINER
CULVERT PIPE LINER 30" REQ'D

LEGEND

- HEAVY RIPRAP
- ASPHALTIC FLUME, SEE
S.D.D. FLUME TERMINI TBD
BY ENGINEER

PROJECT NO:1640-01-60

HWY:USH 14

COUNTY:VERNON

PLAN (USH 14)

SHEET

85

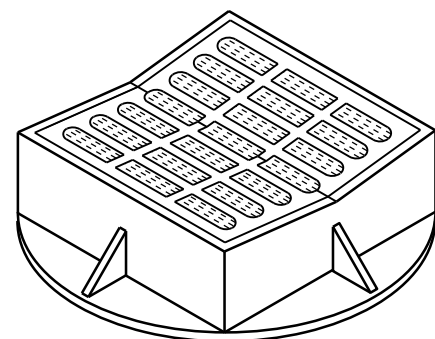
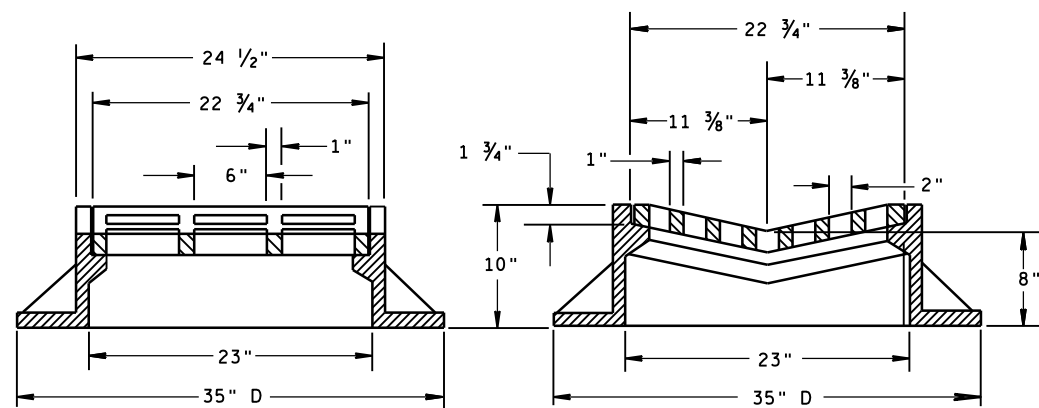
E

Standard Detail Drawing List

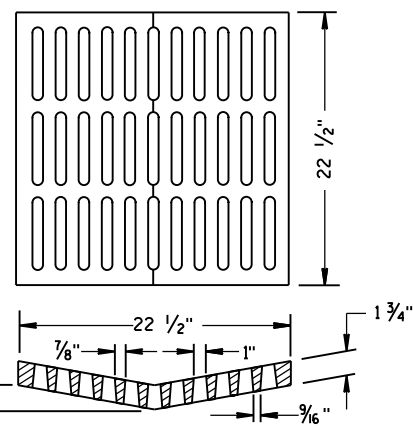
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C14-06A	BASE PATCHING CONCRETE
13C14-06B	BASE PATCHING CONCRETE
13C14-06C	BASE PATCHING CONCRETE
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B15-09A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B32-04A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-04B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-04C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-04D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-04E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A02-09	DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-13B	PAVEMENT MARKING WORDS
15C07-13C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)

Standard Detail Drawing List

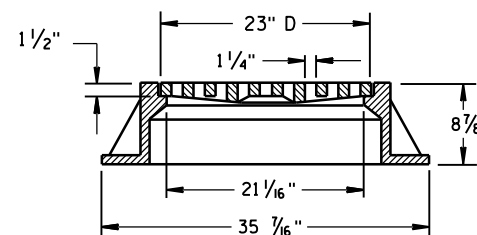
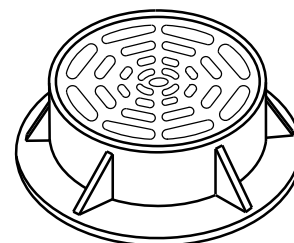
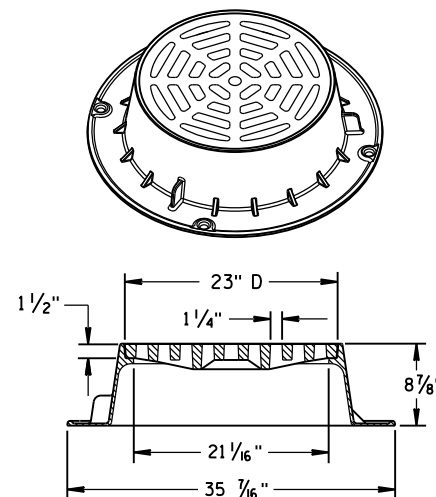
15C08-16C	PAVEMENT MARKING (CLIMBING LANE & PASSING LANE)
15C08-16D	PAVEMENT MARKING (CLIMBING LANE & PASSING LANE)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D38-01B	ATTACHMENT OF SIGNS TO POSTS



TYPE "B"

ALTERNATIVE GRATE FOR
TYPE "B" COVER

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



TYPE "C"

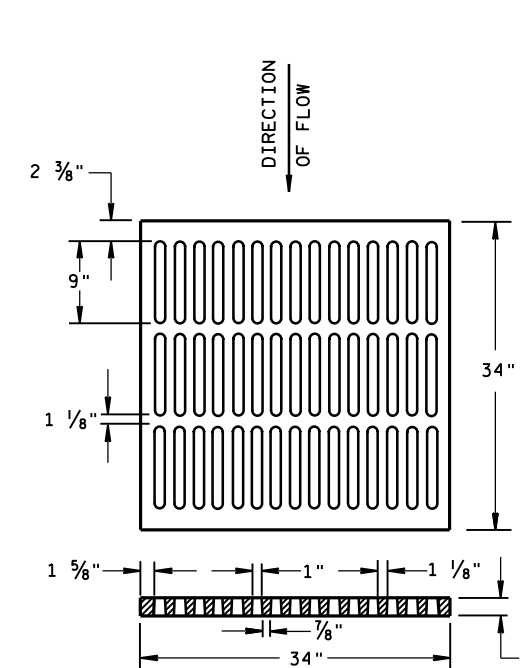
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

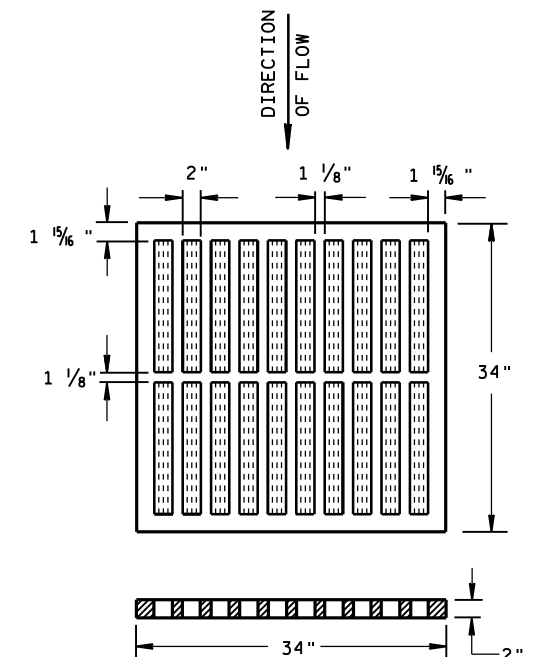
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



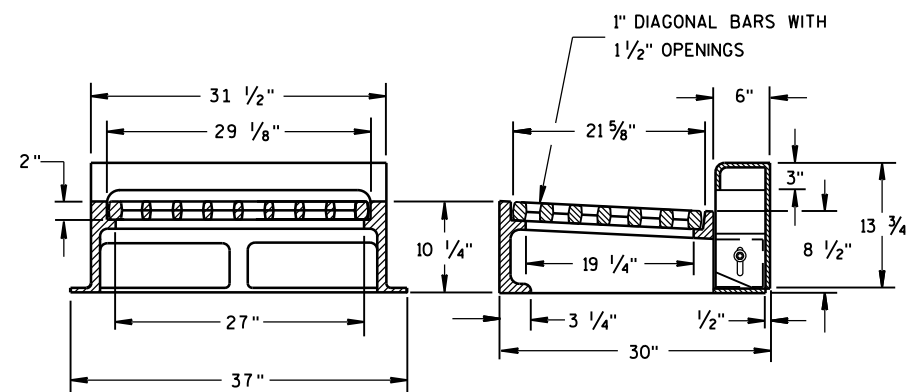
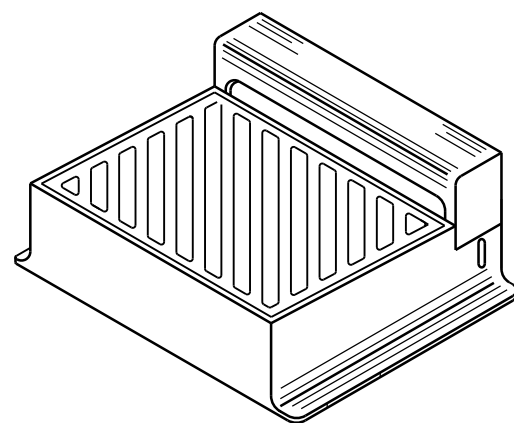
ALTERNATIVE TYPE "MS"

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



TYPE "MS"

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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

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

DIRECTION
OF FLOW

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

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED

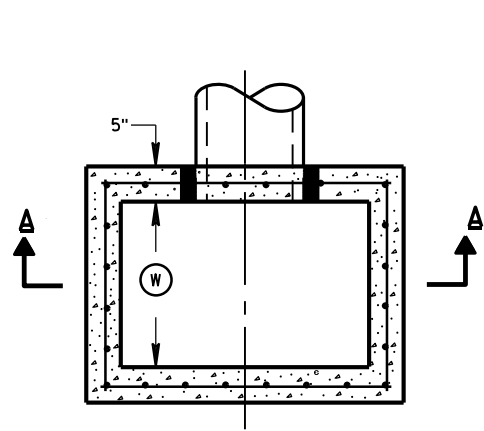
DATE 11/27/2013

FHWA

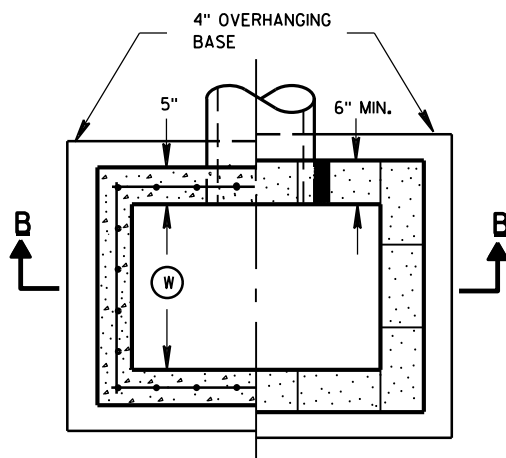
/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

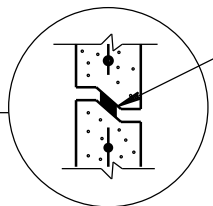
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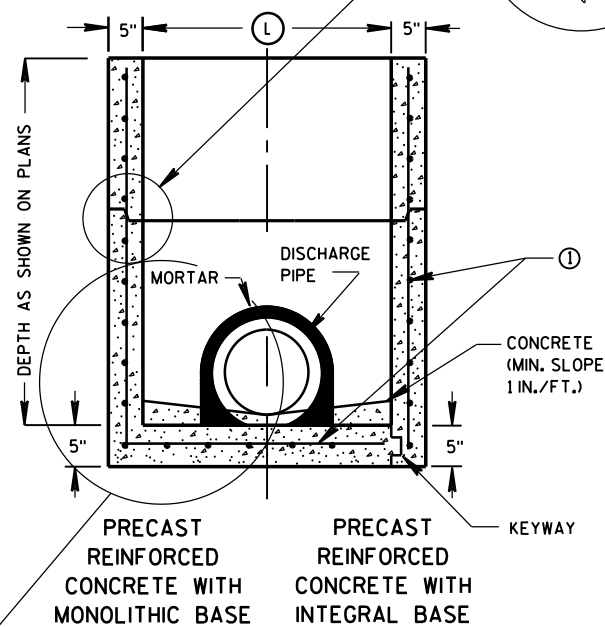
PLAN VIEW



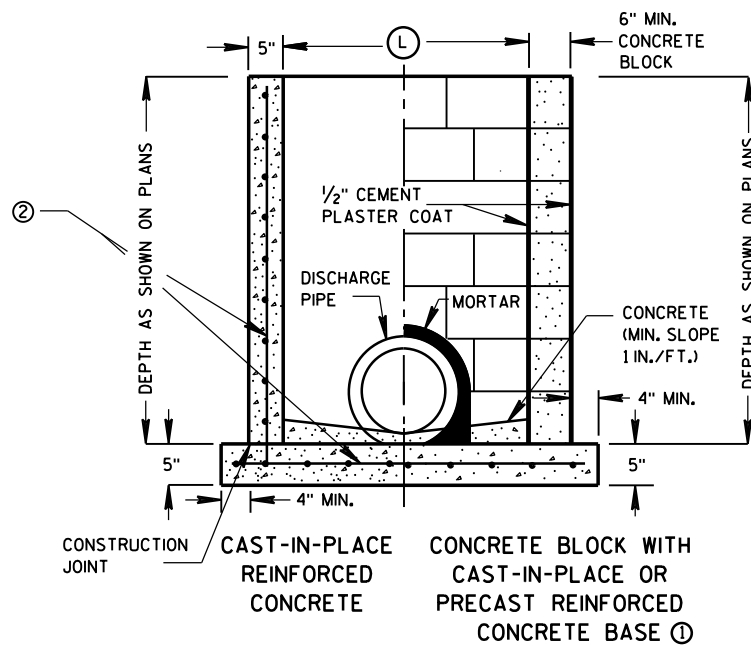
PLAN VIEW



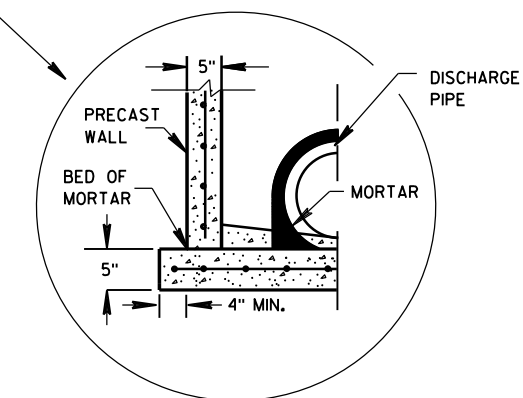
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

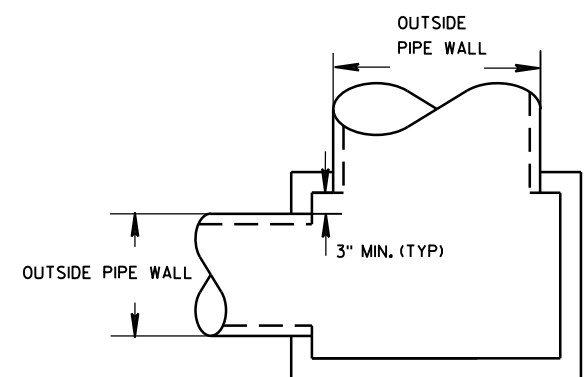
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

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

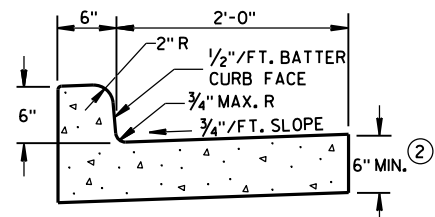


DETAIL "A"

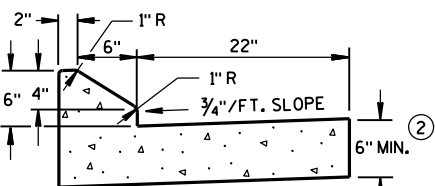
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

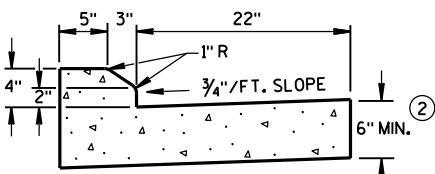
APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DE
FHWA ENGINEER 89



TYPES A & D ①

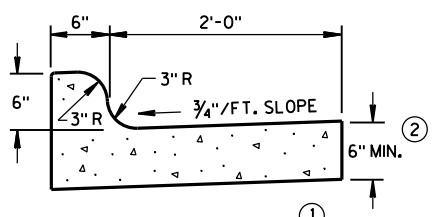


6" SLOPED CURB TYPES G & J ①



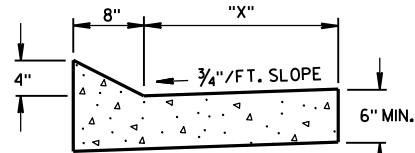
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



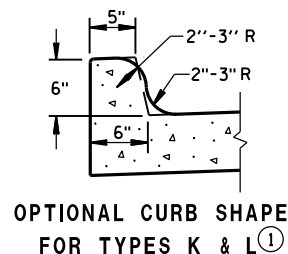
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

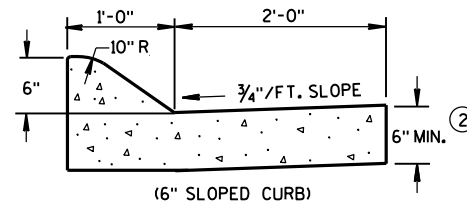


TYPES TBT & TBTT ①
CONCRETE CURB & GUTTER

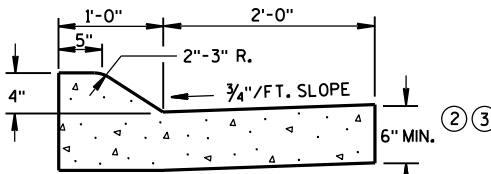
TBT & TBTT	"X"
30"	22"
36"	28"



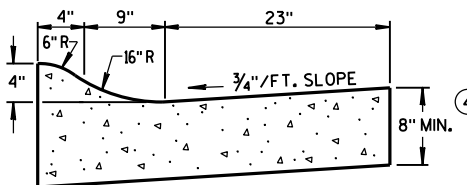
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



(6" SLOPED CURB)

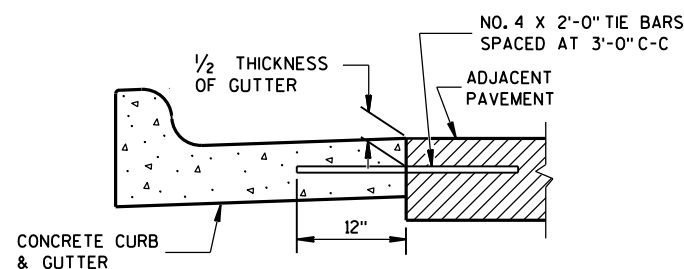


TYPES A & D ①

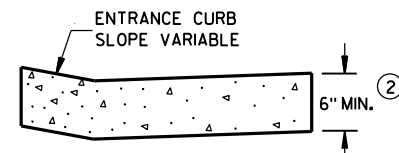


4" SLOPED CURB TYPES R & T ① ⑤

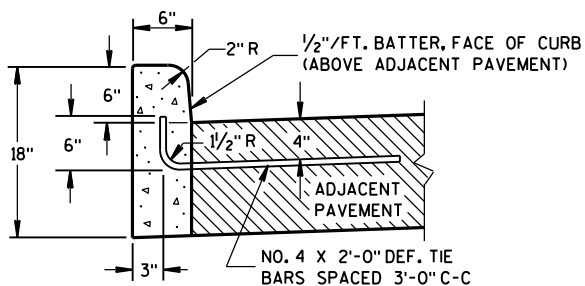
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION ①

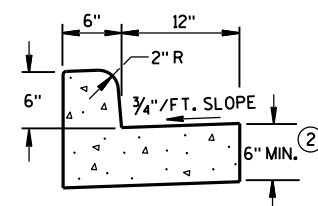


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

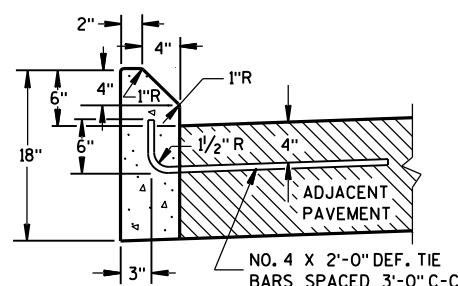


TYPES A & D ①

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.

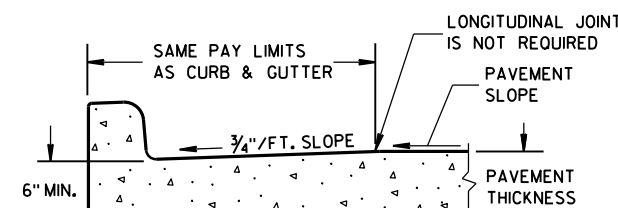
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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.

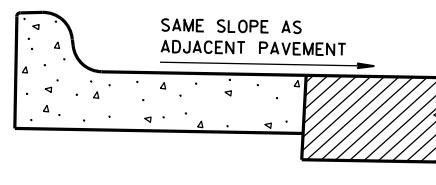
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

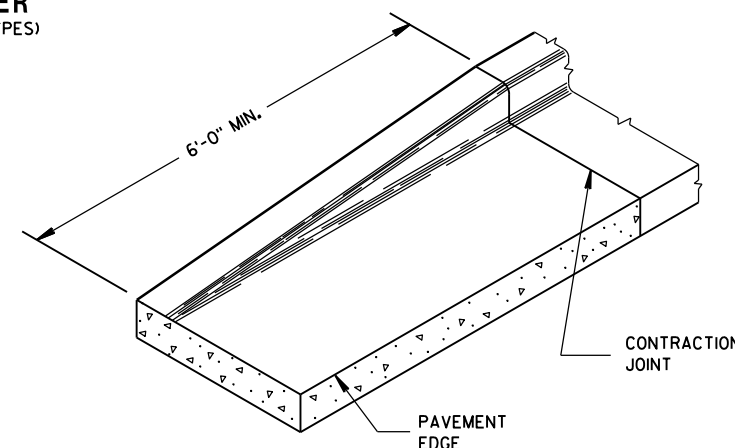
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- 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.
- THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



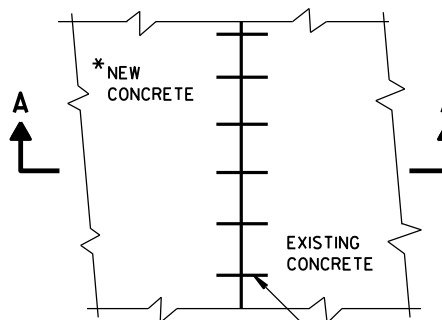
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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



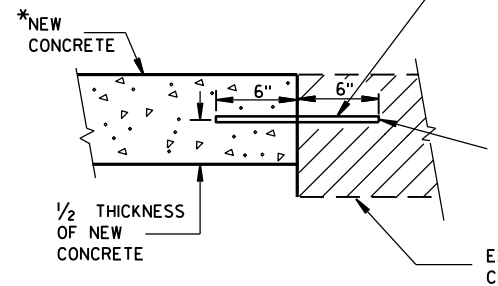
END SECTION CURB & GUTTER



PLAN VIEW

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

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



SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

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

EXISTING CONCRETE

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2016

DATE

FHWA

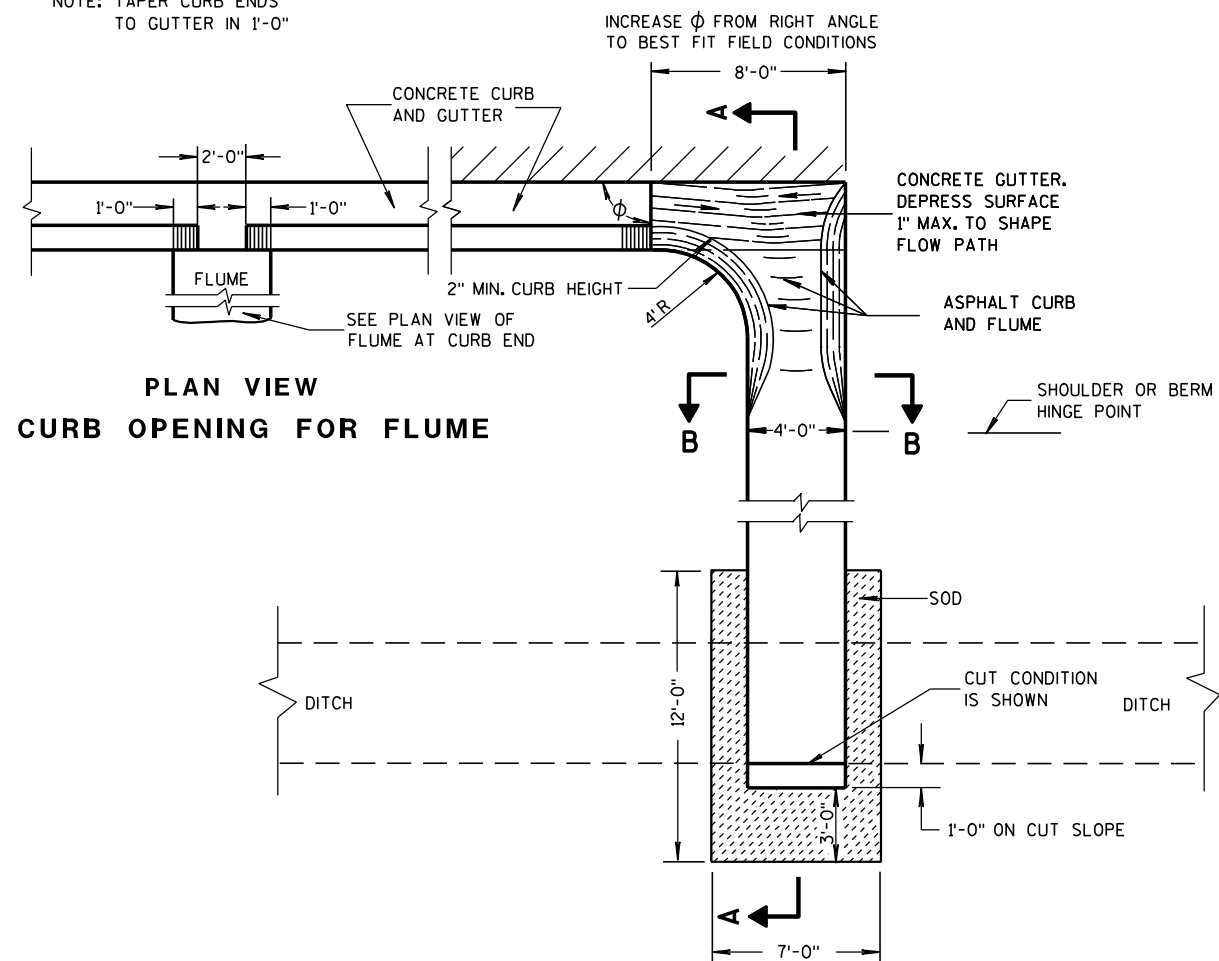
/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

90 INT

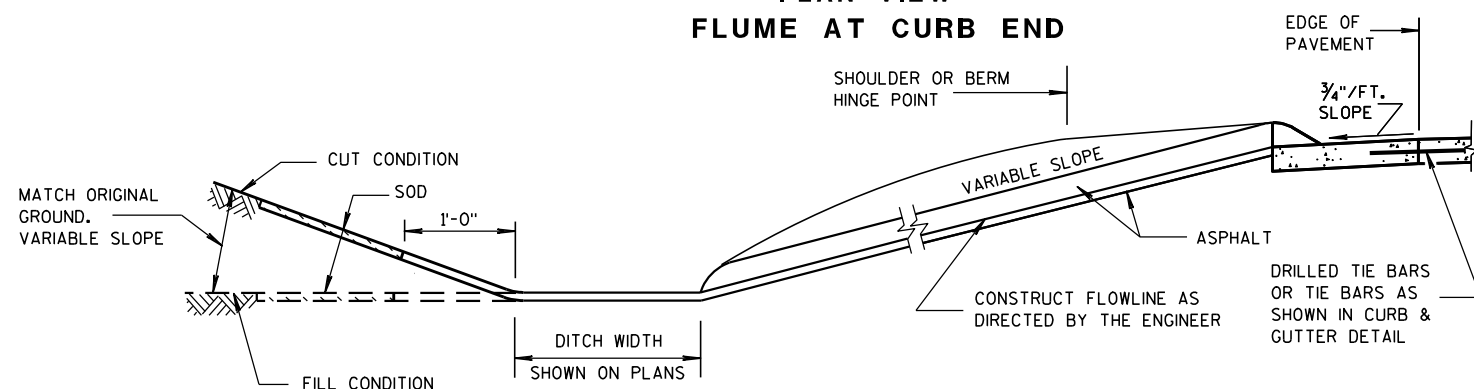
ASPHALTIC FLUME

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

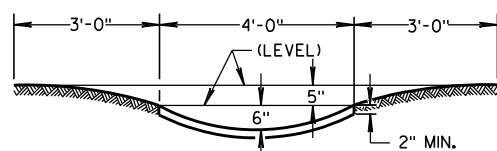


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

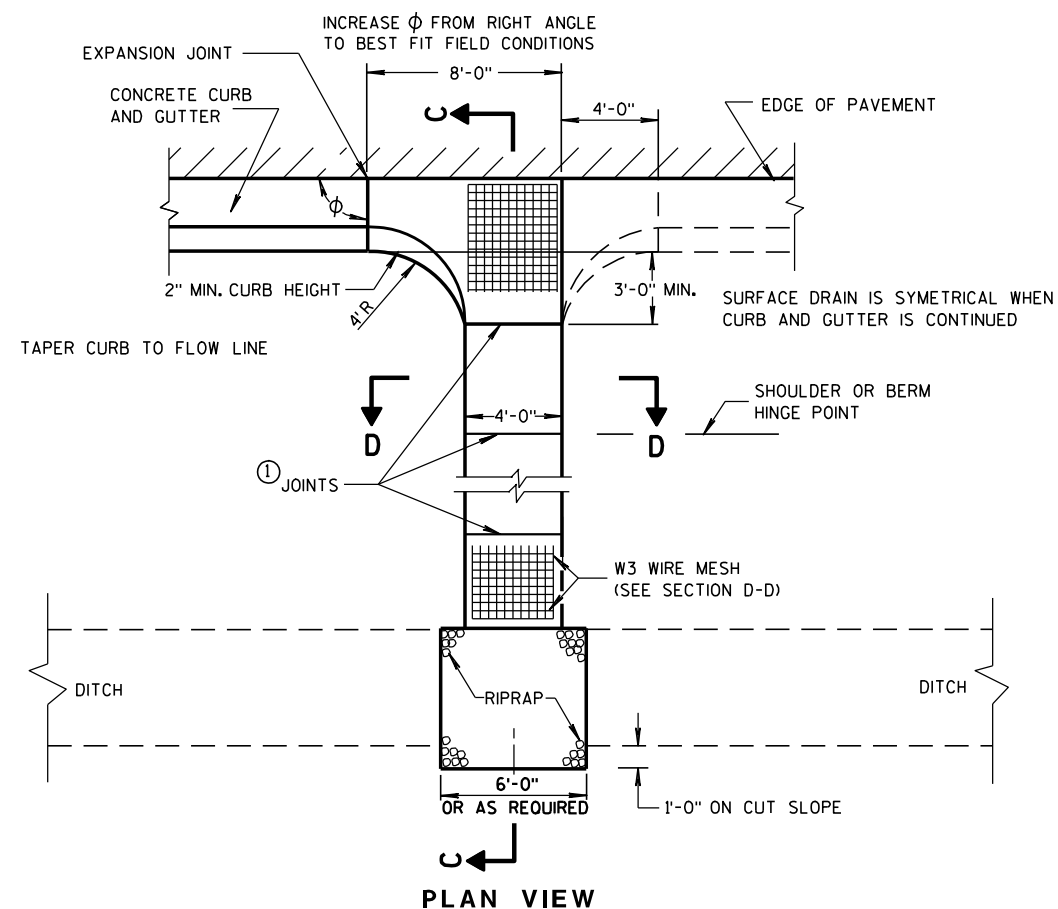
GENERAL NOTES

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

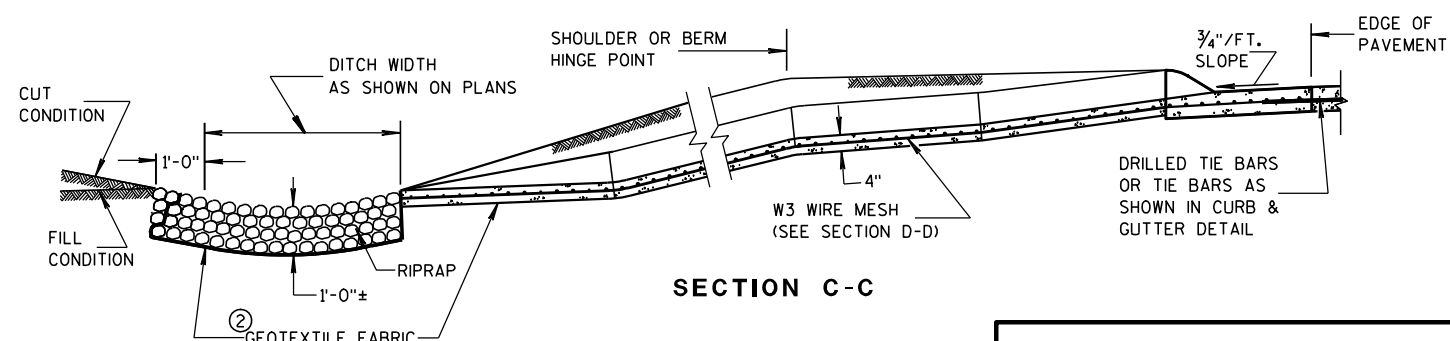
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- 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

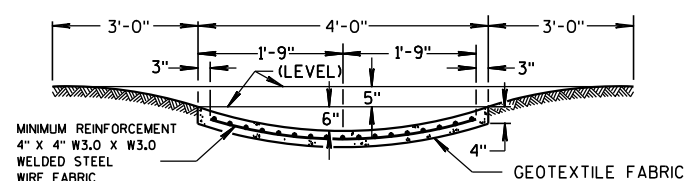
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

DATE

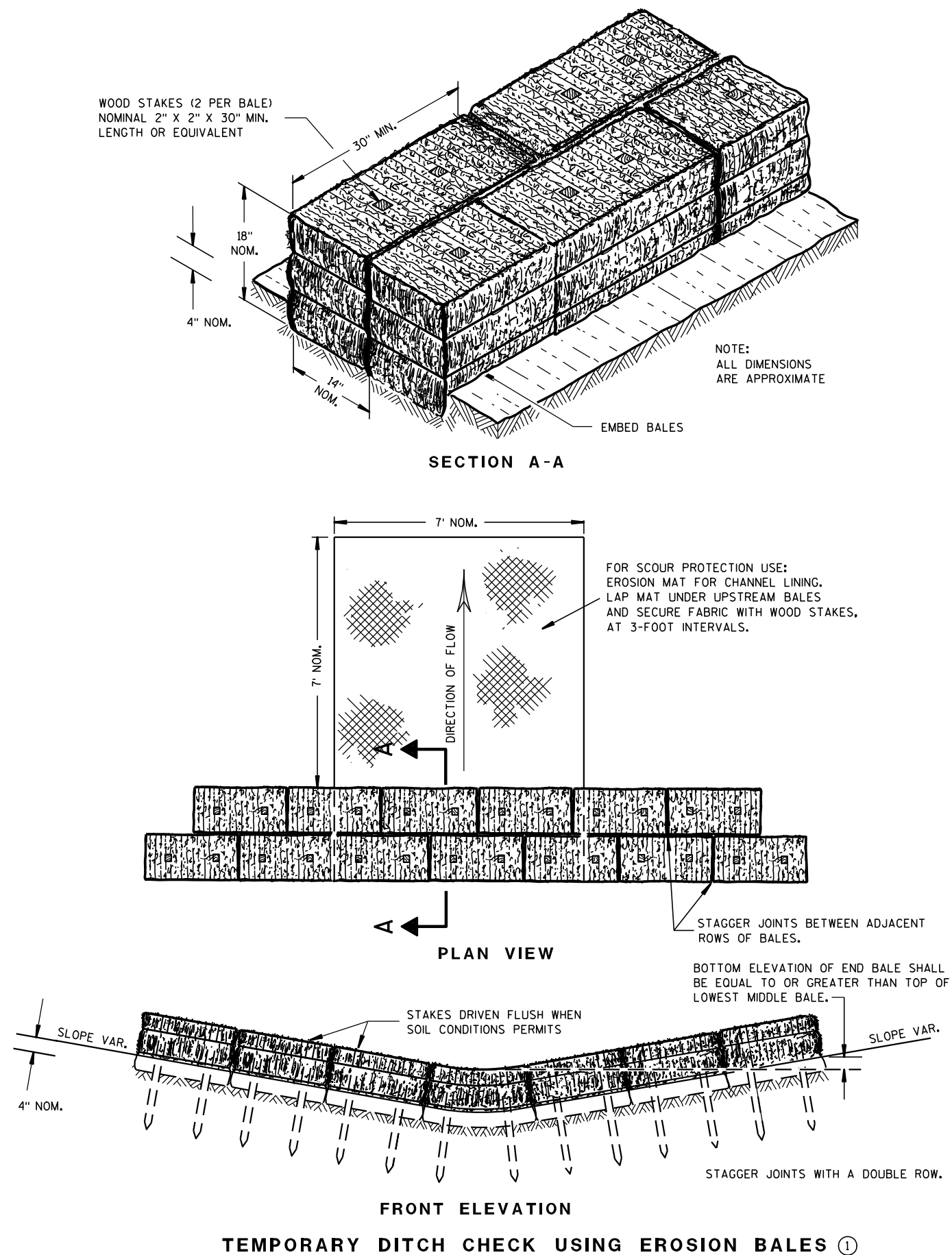
/S/ Jerry H. Zapp

ROADWAY STANDARDS 91

FHWA

ENGINEER

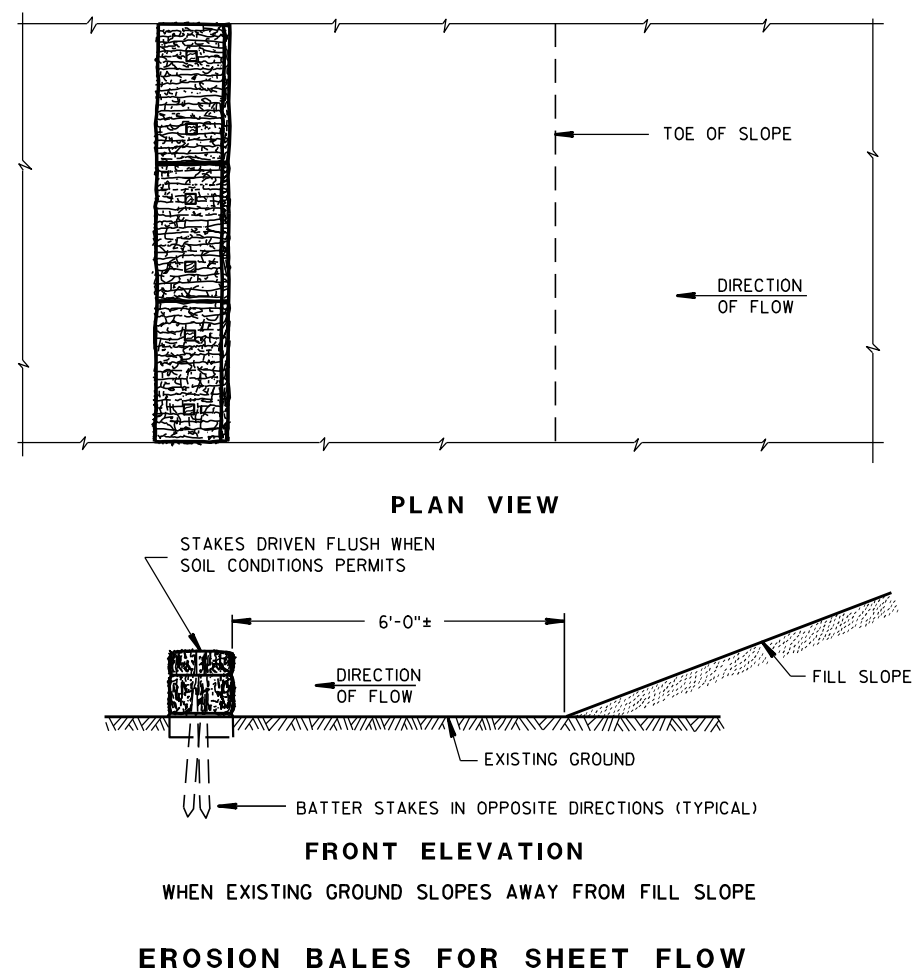
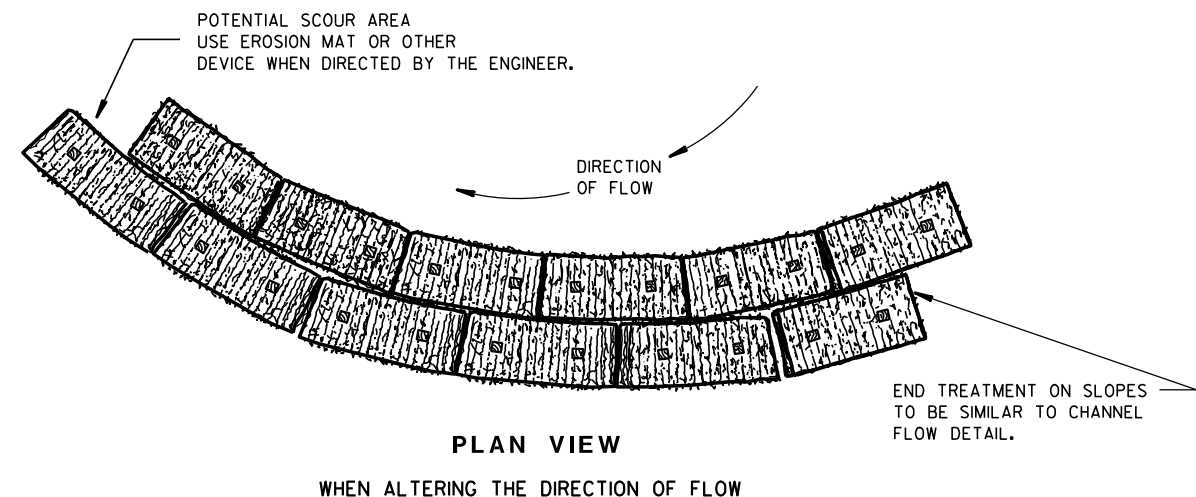
MENT



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

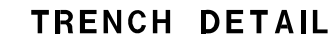
/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

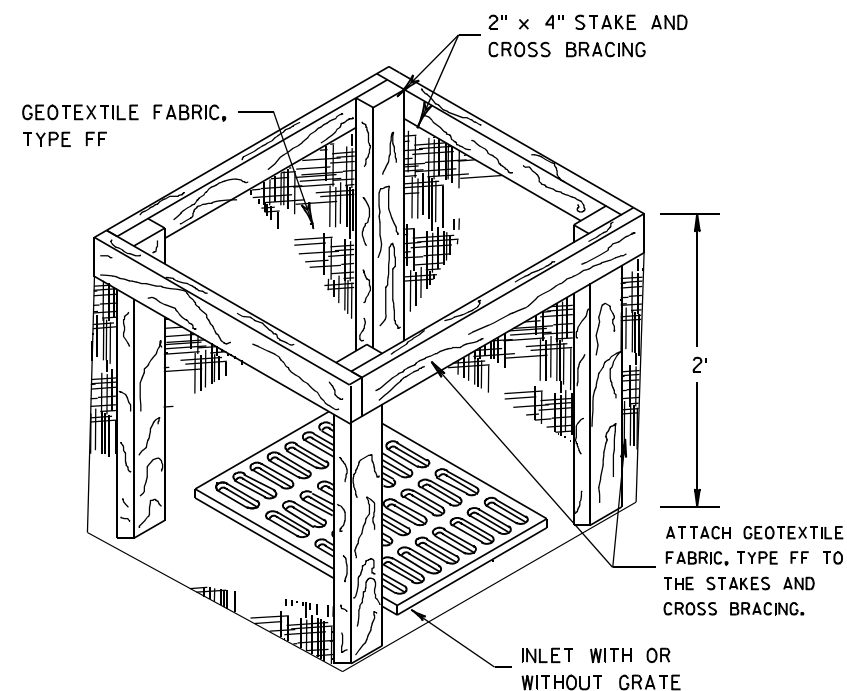
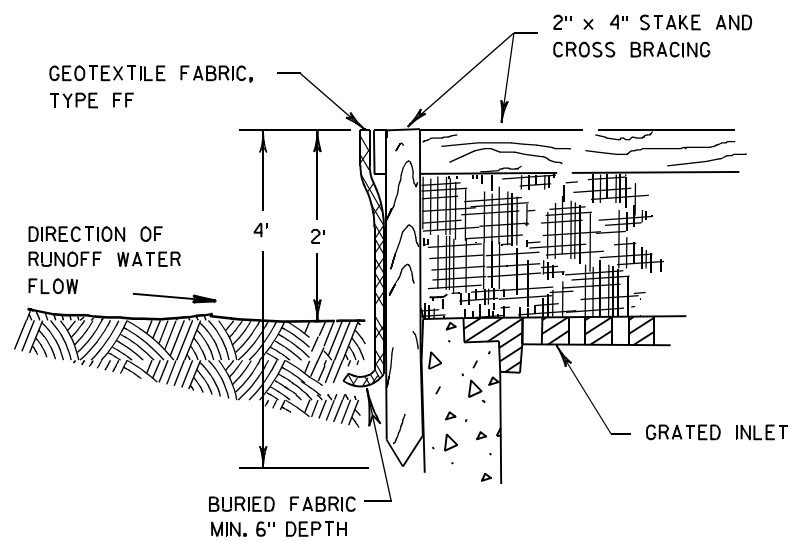
APPROVED
4-29-05
DATE

/S/ Beth Cannata
CHIEF ROADWAY DEVELOPMENT

93

ENGINEER

FHWA



INLET PROTECTION, TYPE A

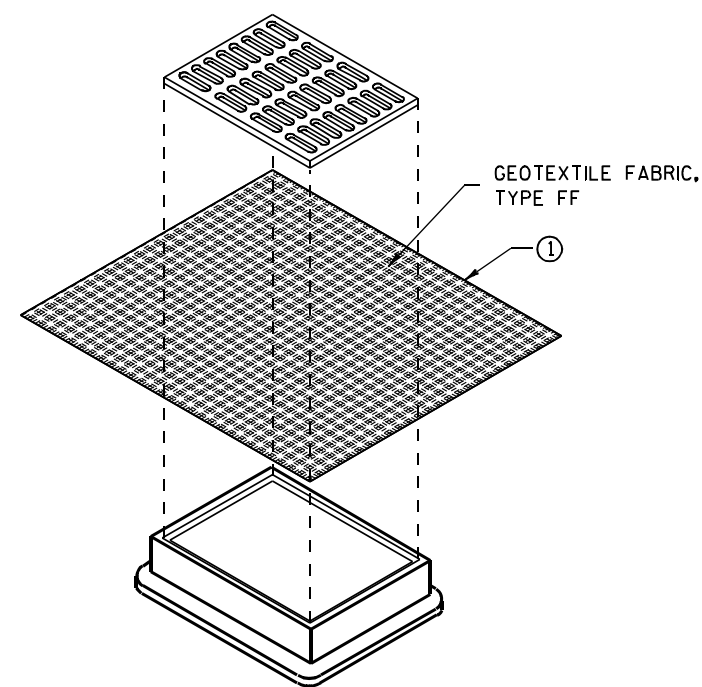
GENERAL NOTES

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

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

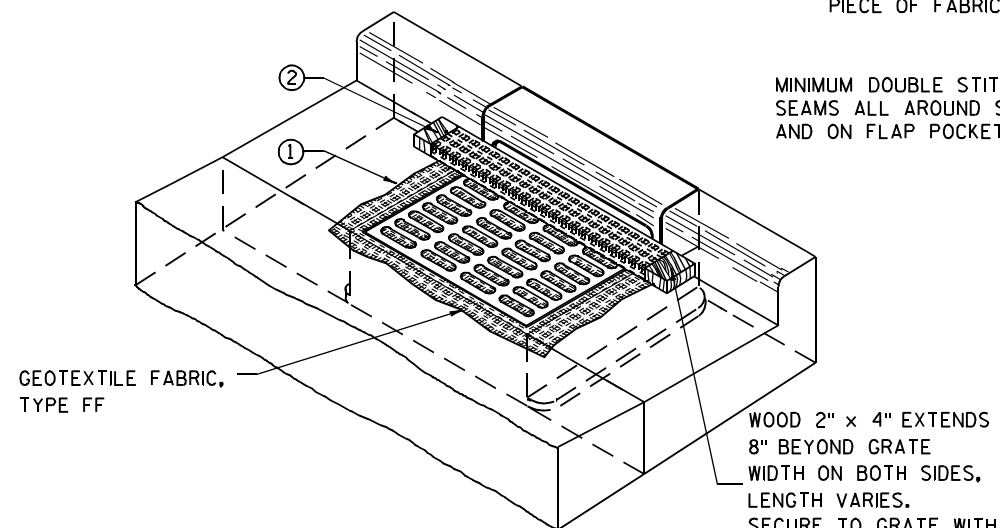
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

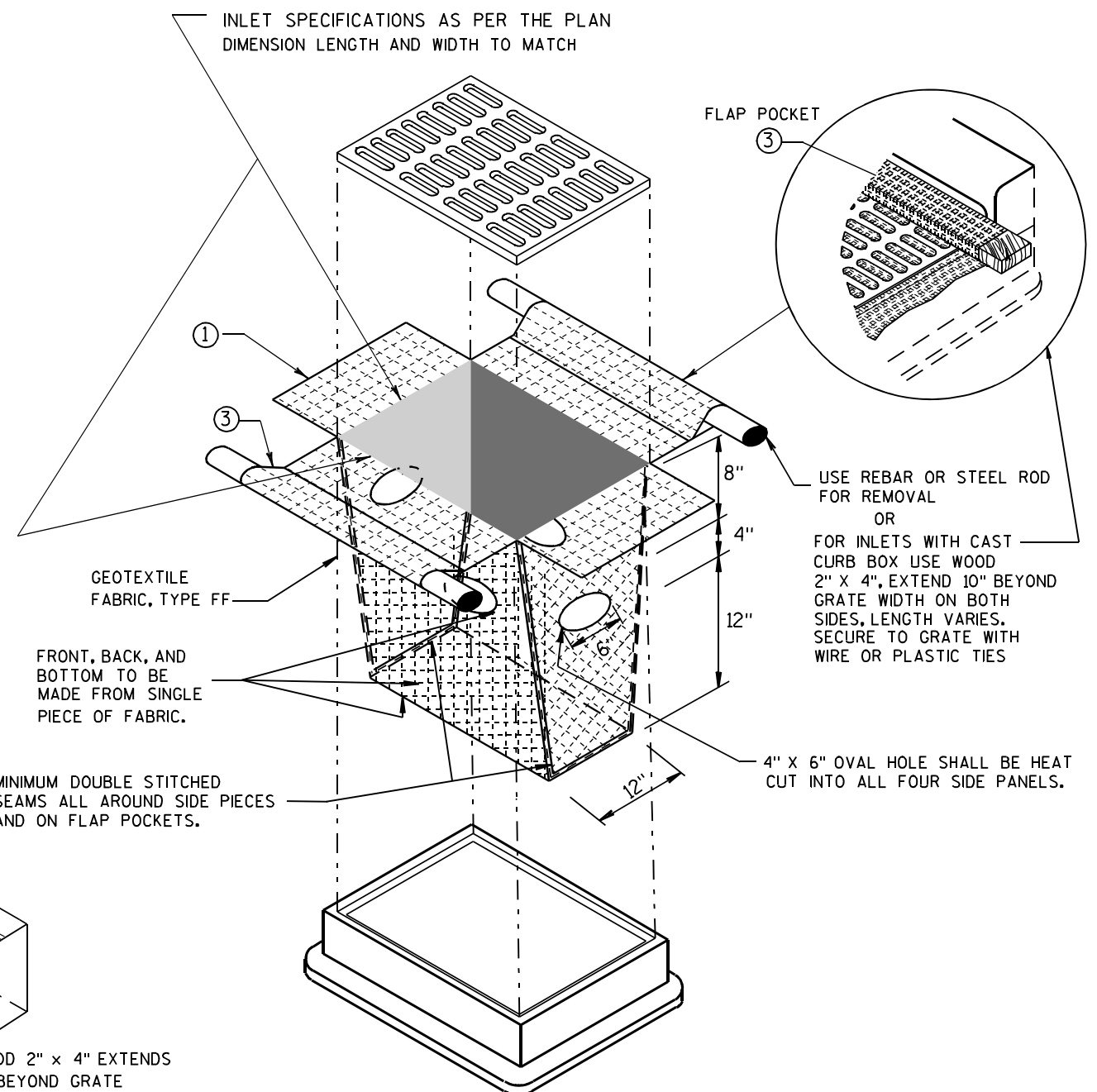
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



INLET PROTECTION, TYPE D

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

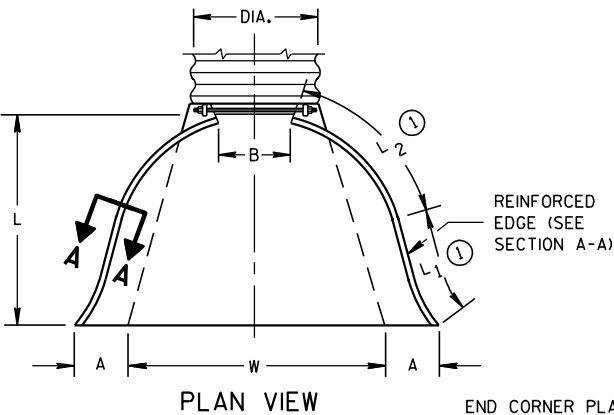
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 94
FHWA 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")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85½	102	2¼ 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	1½ to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1½ to 1	3 Pc.	

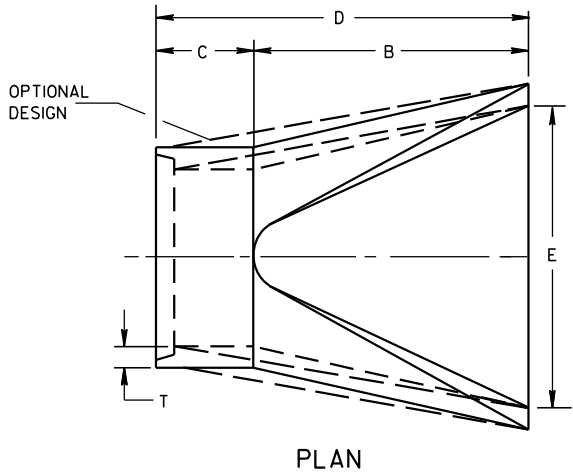
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



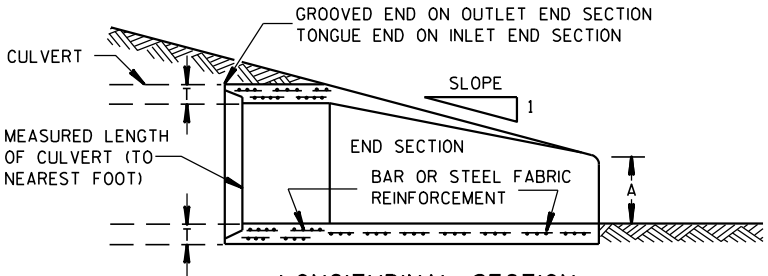
SIDE ELEVATION
METAL ENDWALLS

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

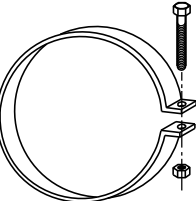
*MINIMUM
**MAXIMUM



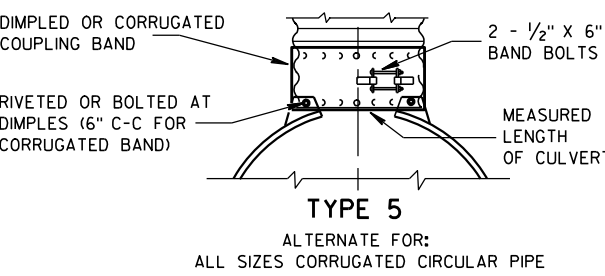
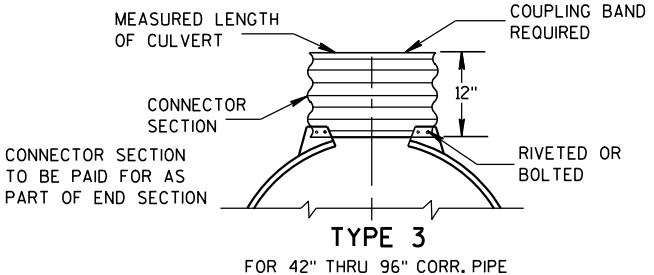
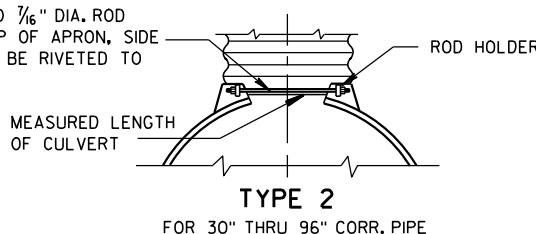
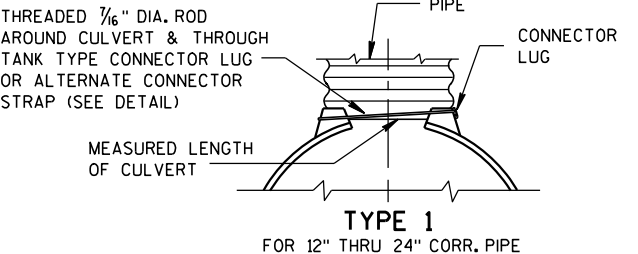
LONGITUDINAL SECTION
CONCRETE ENDWALLS



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



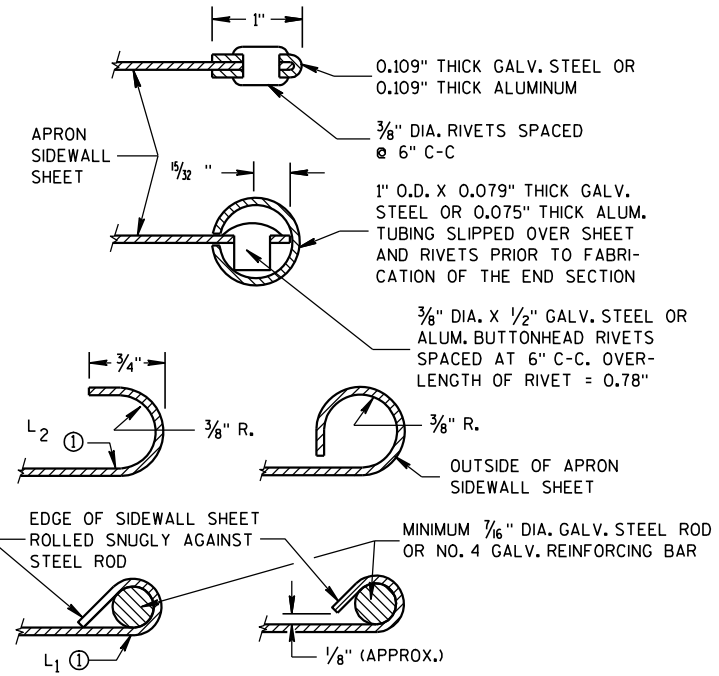
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

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

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

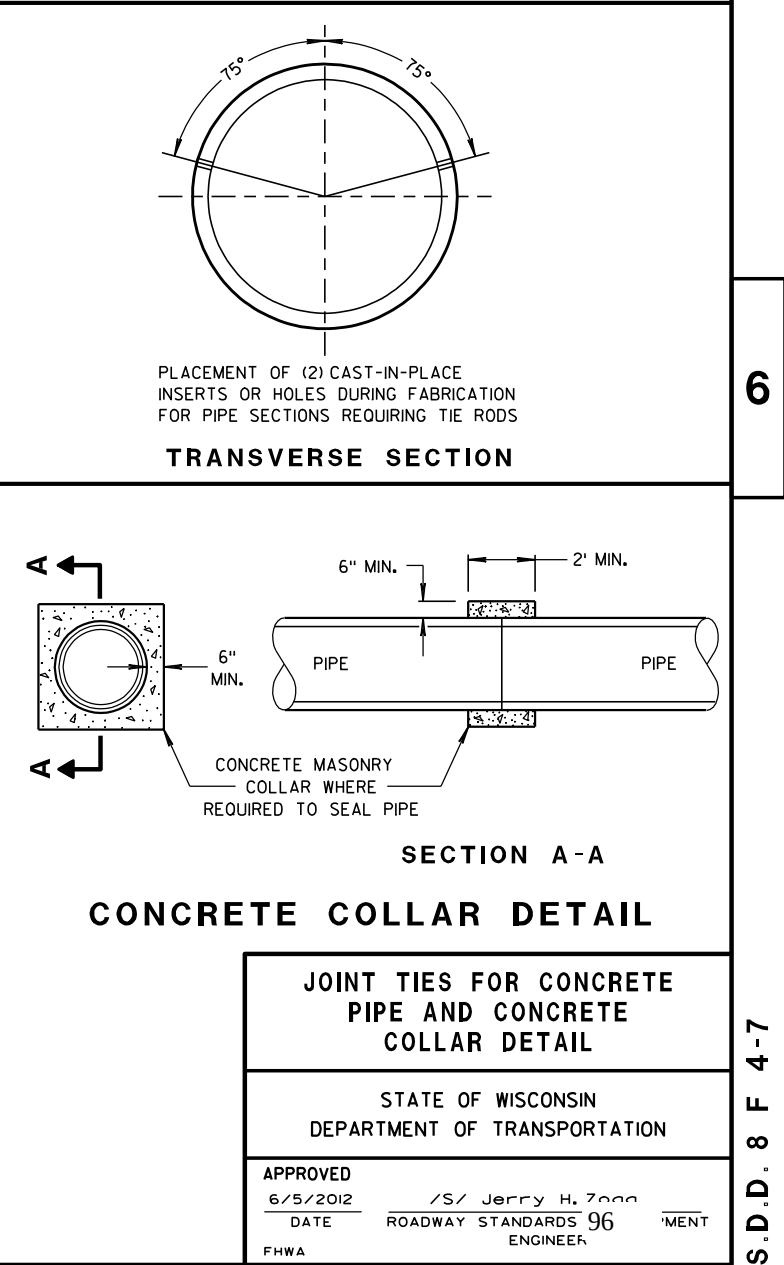
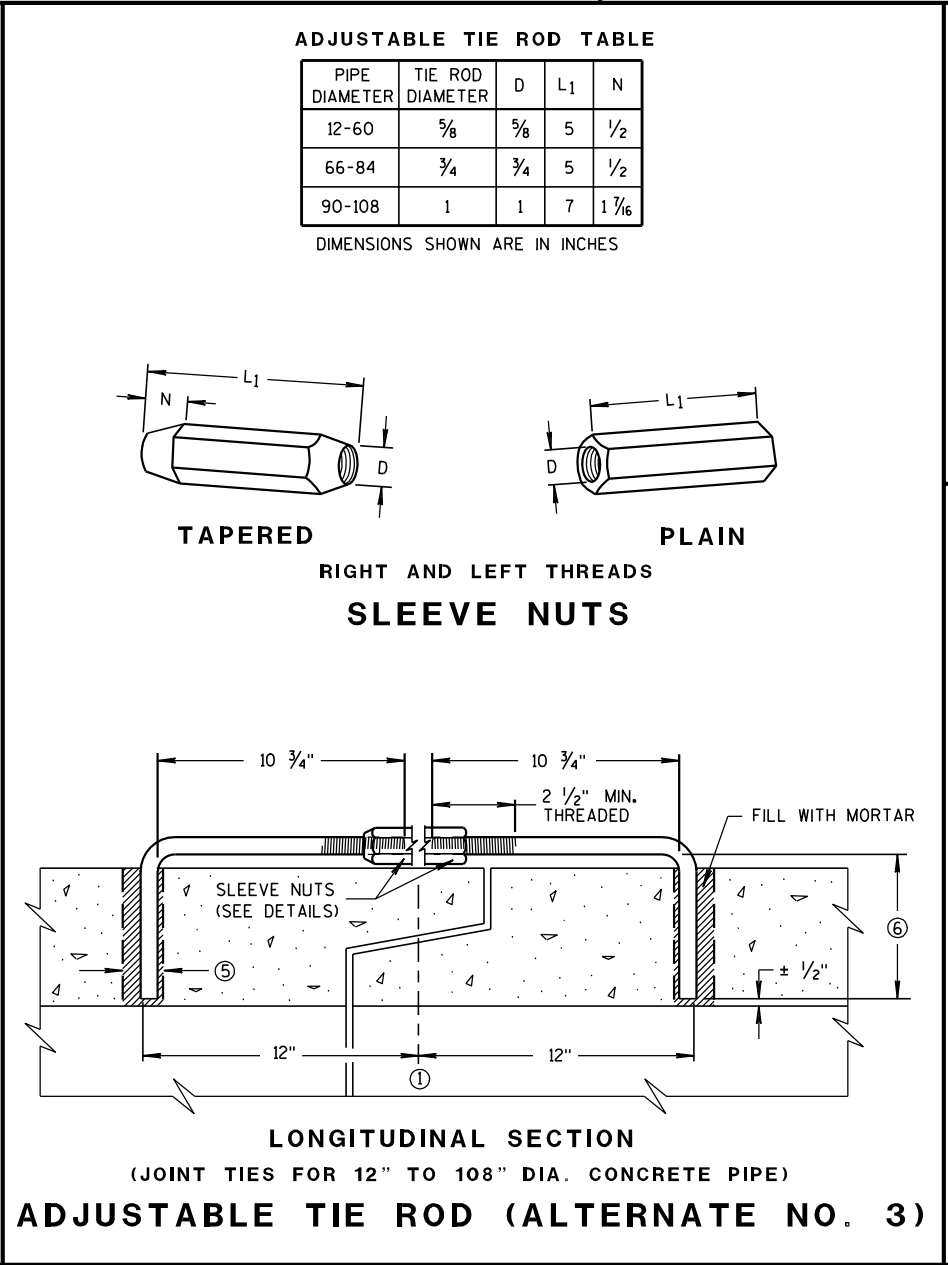
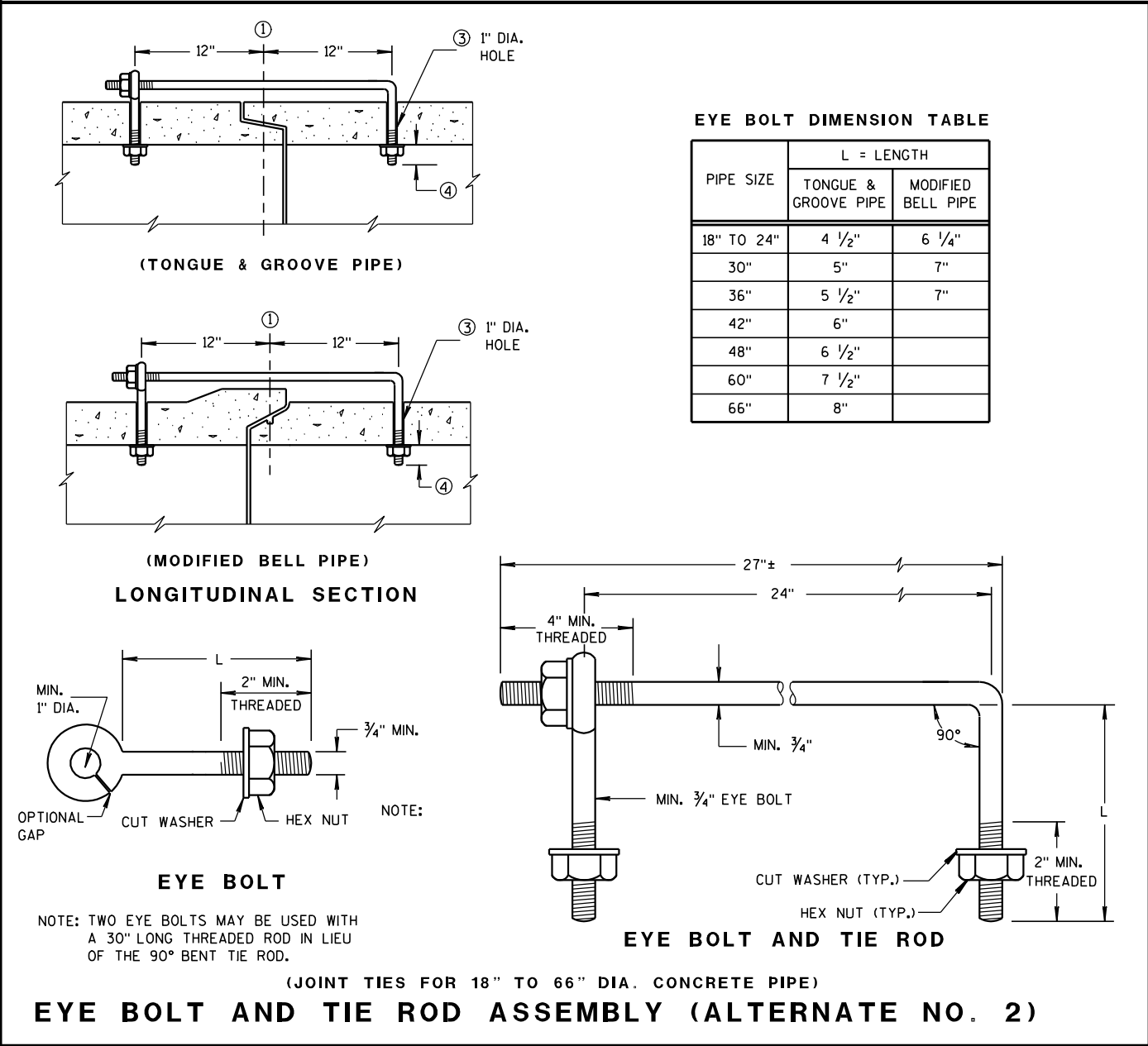
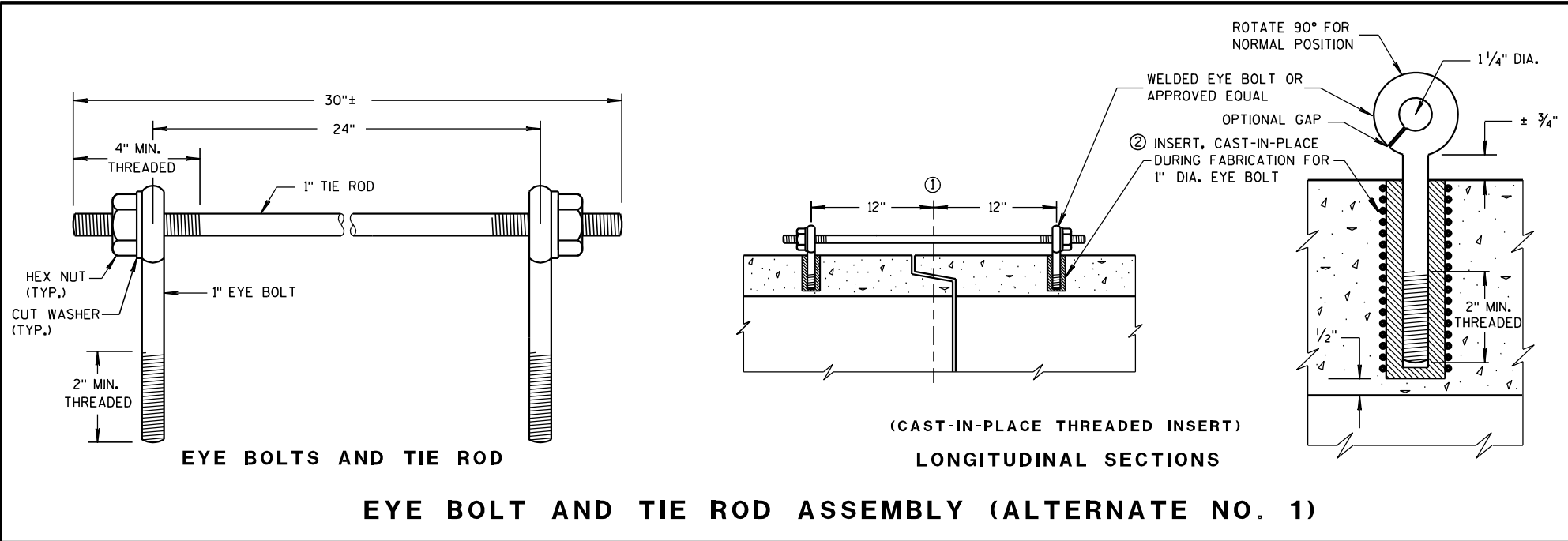
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

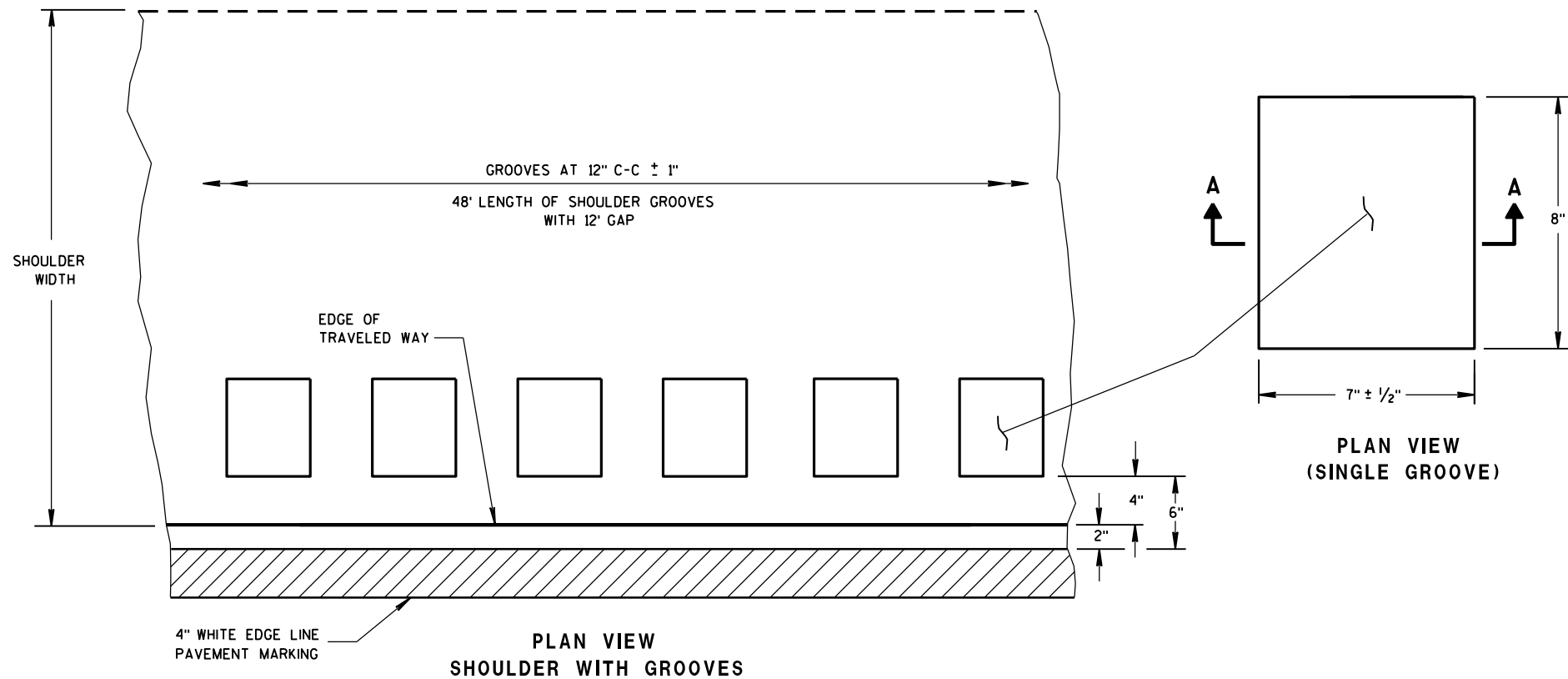
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOP 95
NEER
FHWA

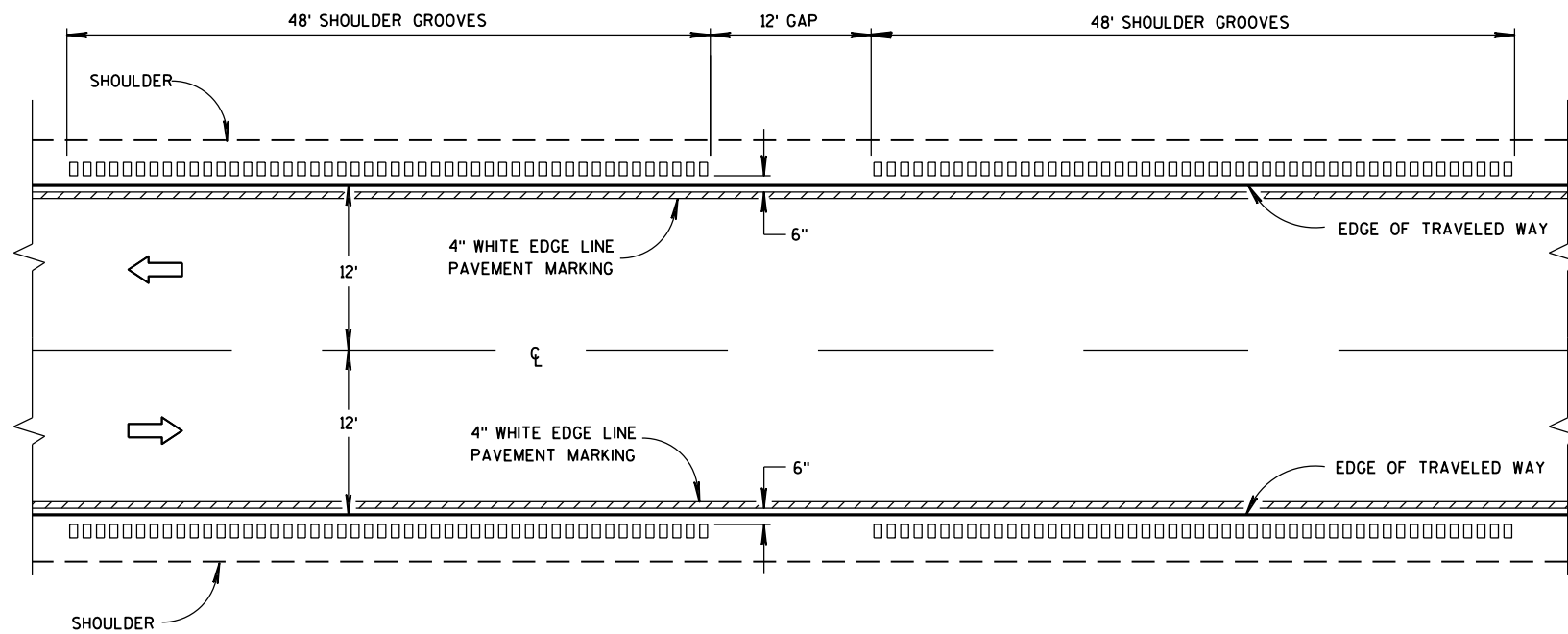




PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

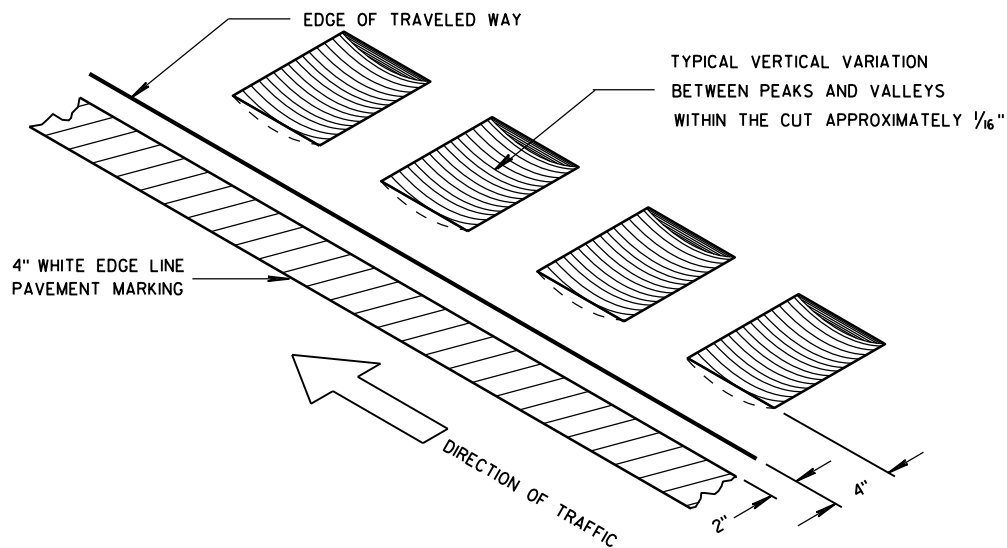


TYPE 1
2-LANE SHOULDER RUMBLE STRIP

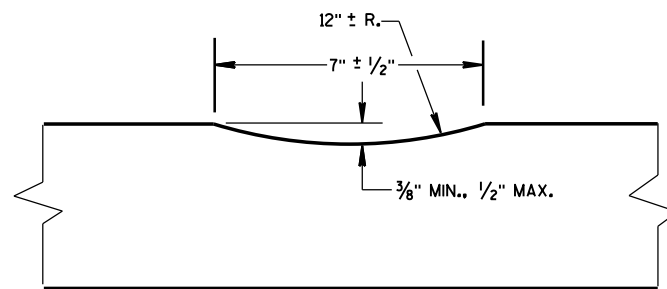
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

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



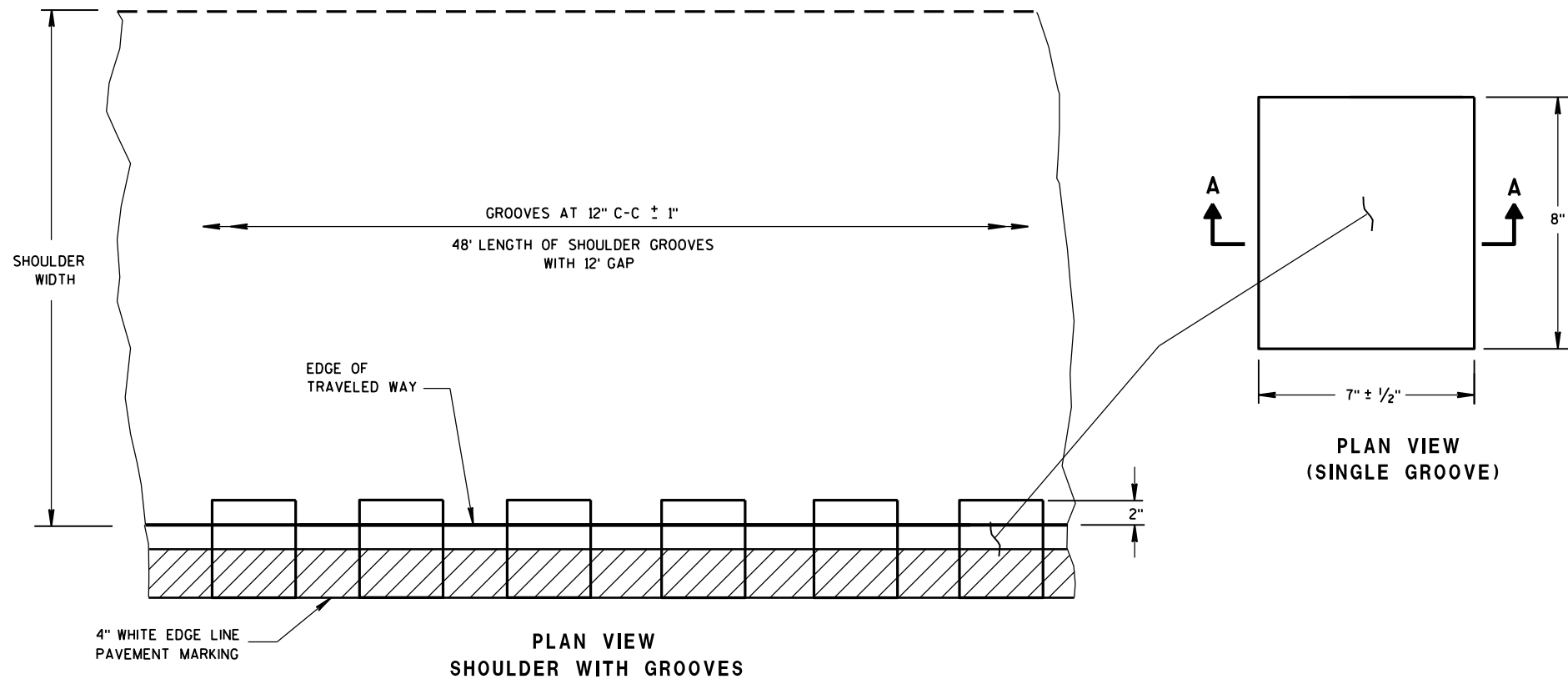
ISOMETRIC



SECTION A-A

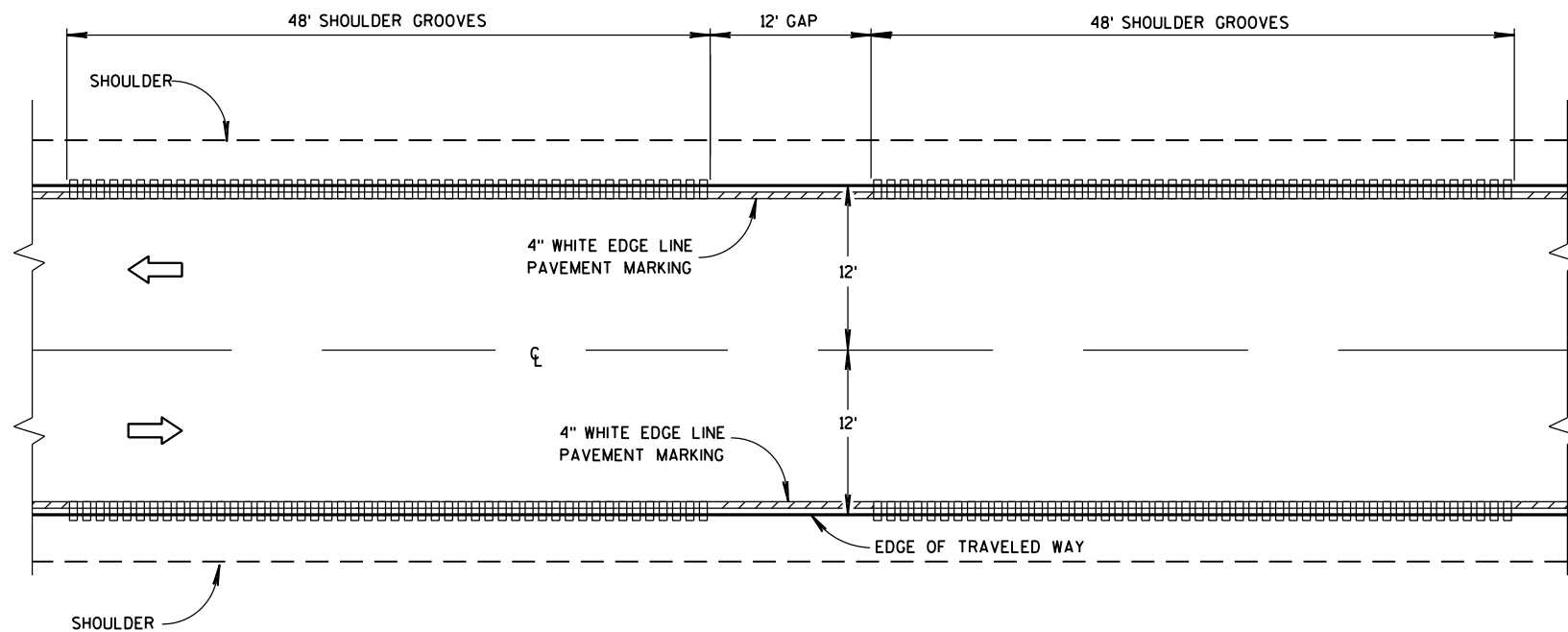
2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



6

PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP



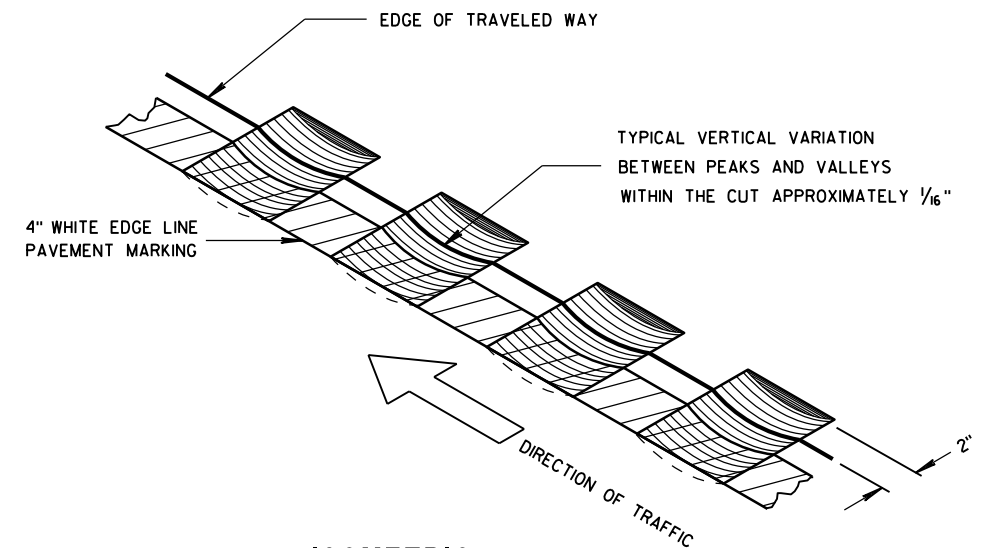
TYPE 2
2-LANE SHOULDER RUMBLE STRIP

GENERAL NOTES

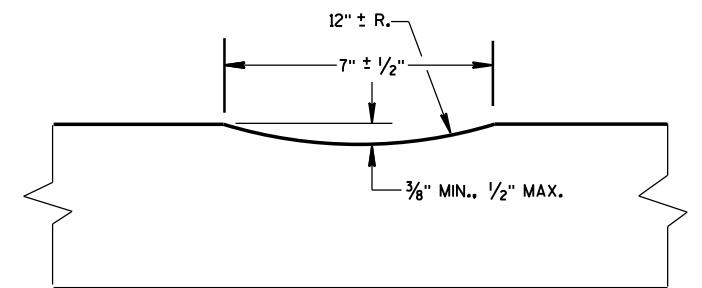
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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



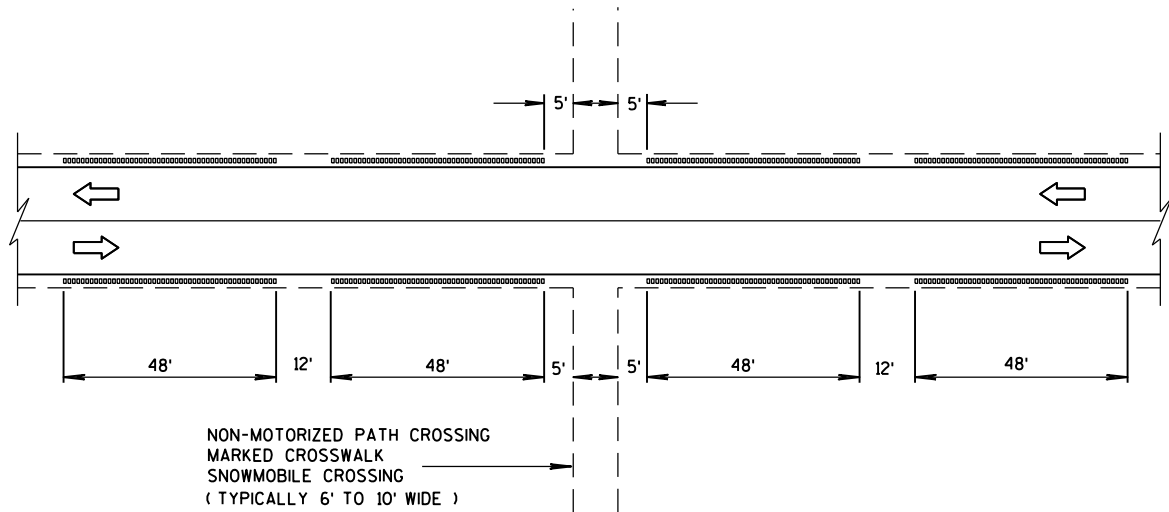
ISOMETRIC



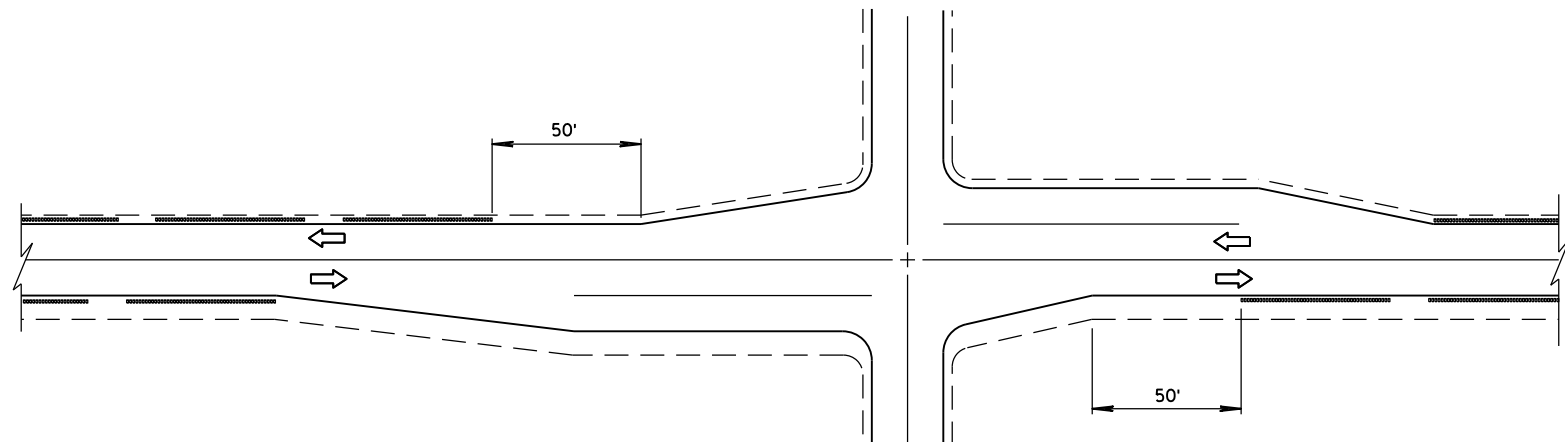
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

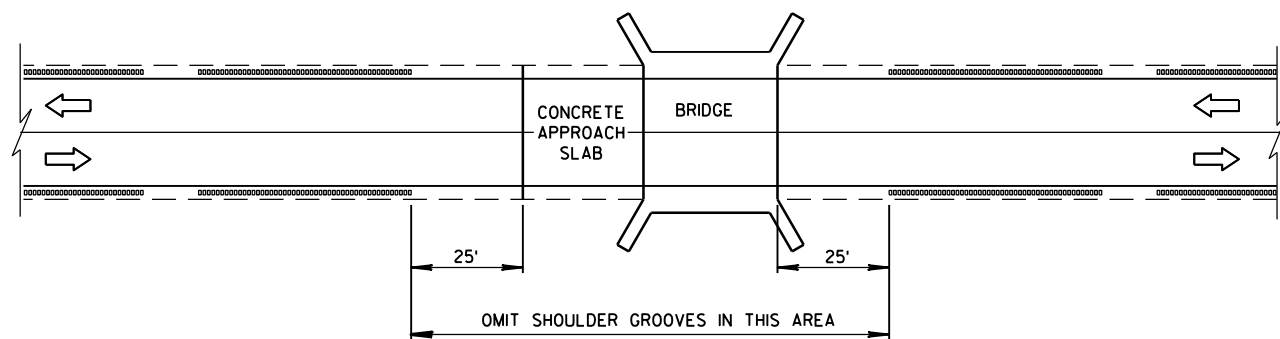
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



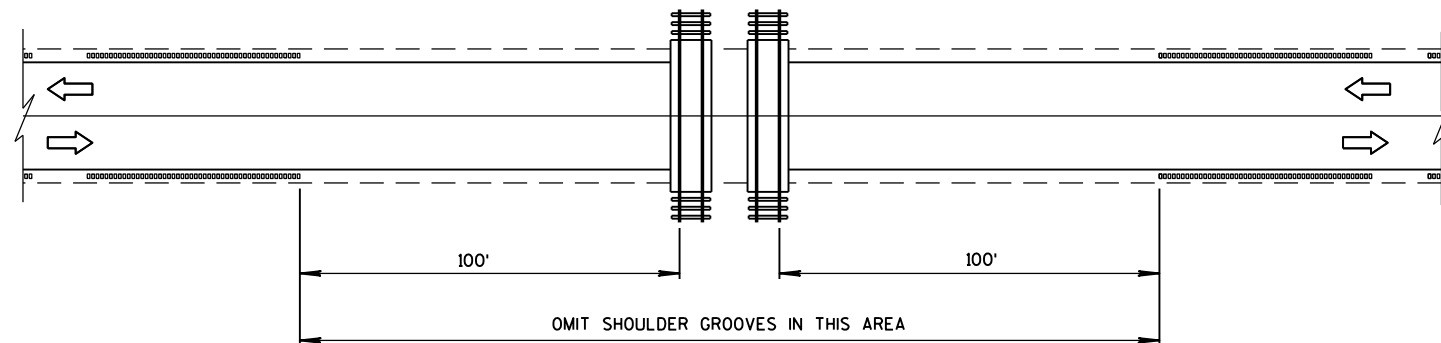
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



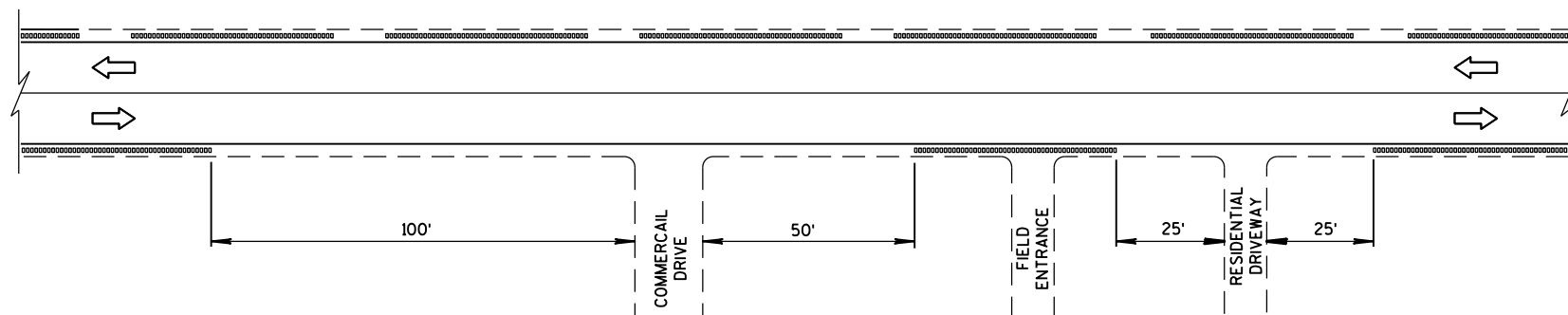
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



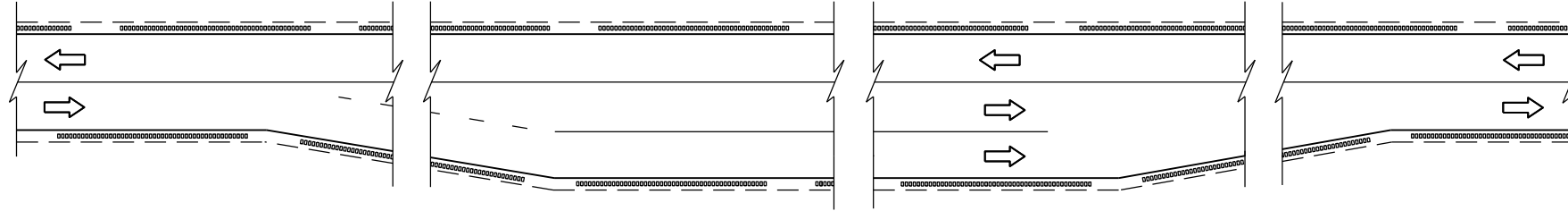
SHOULDER GROOVES AT RAILROADS



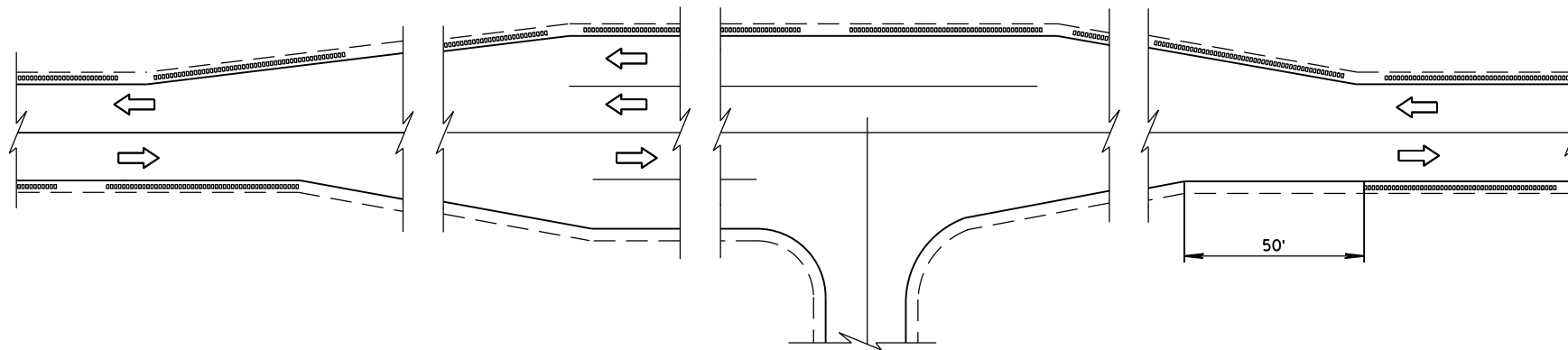
SHOULDER GROOVES AT DRIVEWAYS^①

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 12/17/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS ENGINEER	101 ENT
FHWA		

GENERAL NOTES

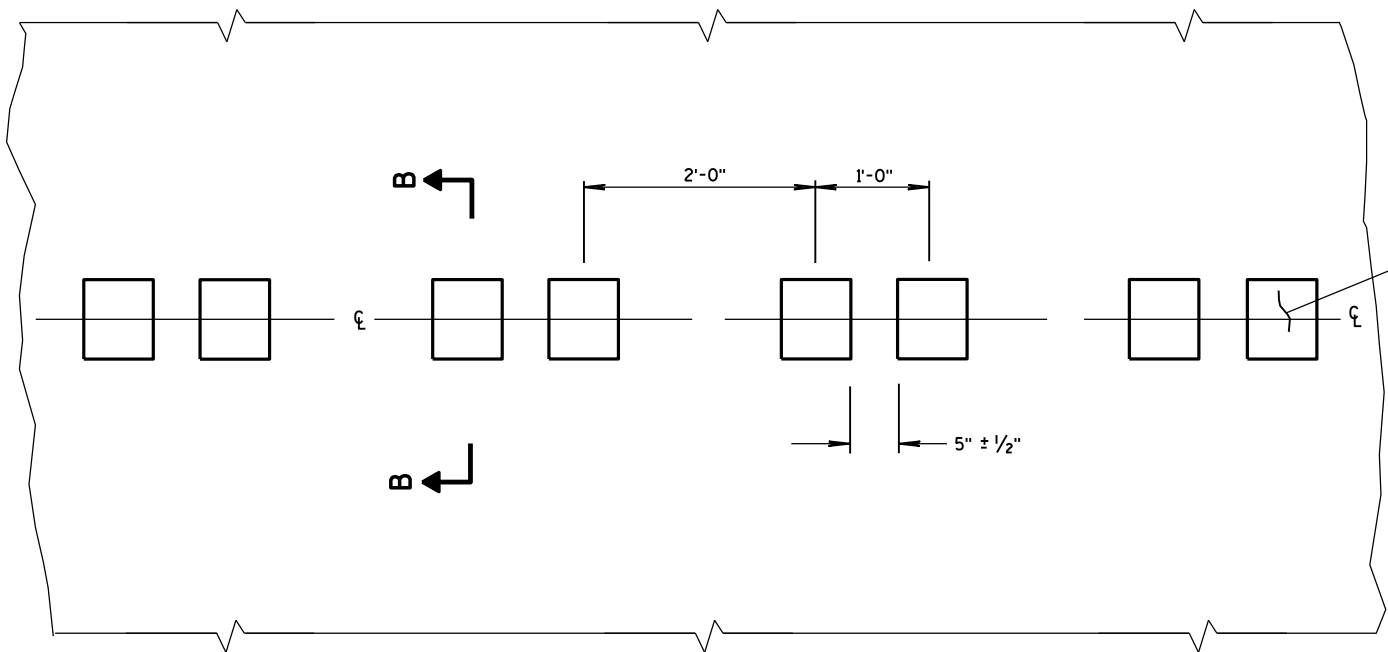
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

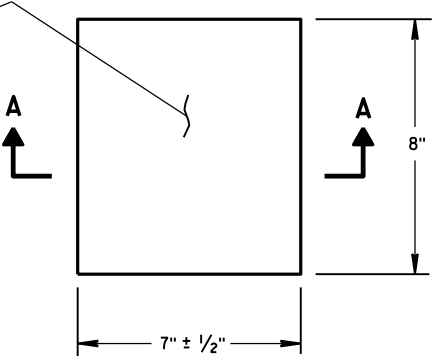
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

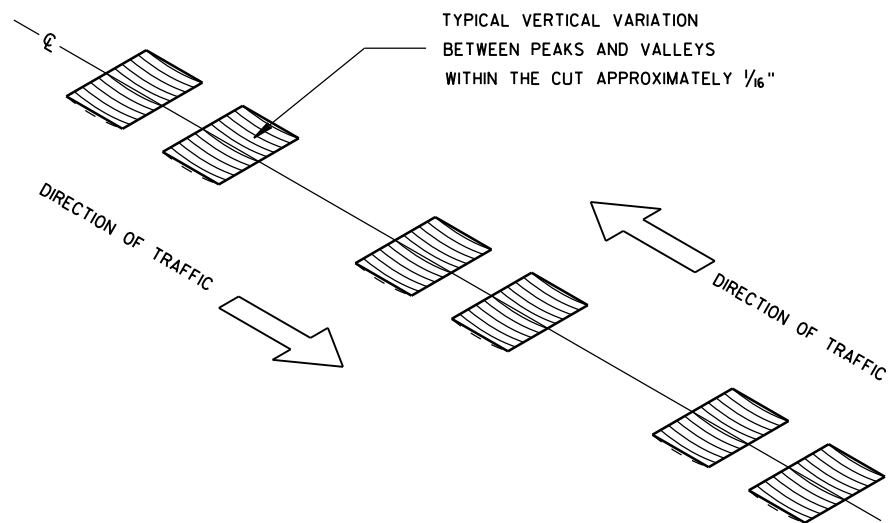
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



PLAN VIEW
CENTER LINE WITH GROOVES

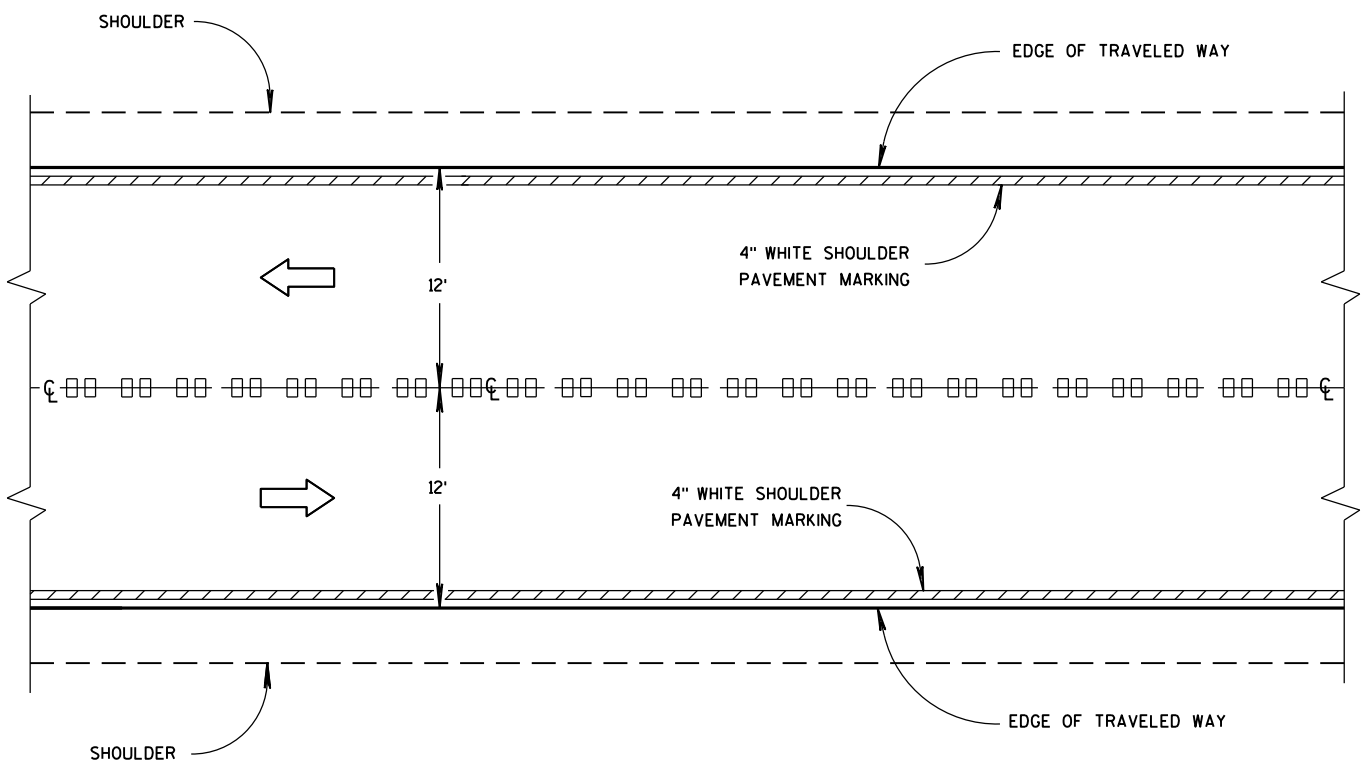


PLAN VIEW
(SINGLE GROOVE)

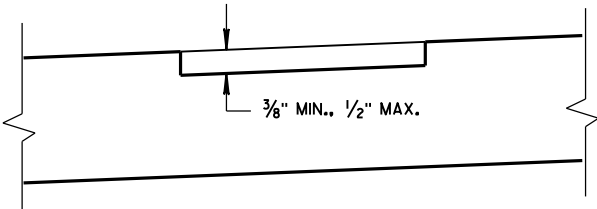


ISOMETRIC

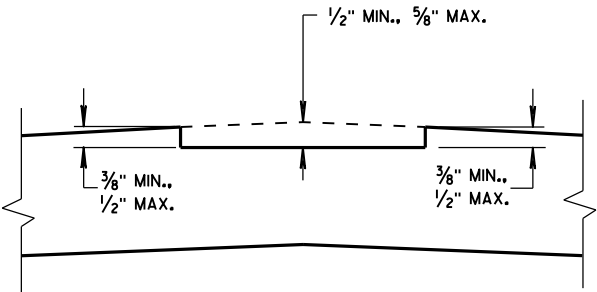
PLACEMENT DETAIL FOR MILLED RUMBLE STRIP



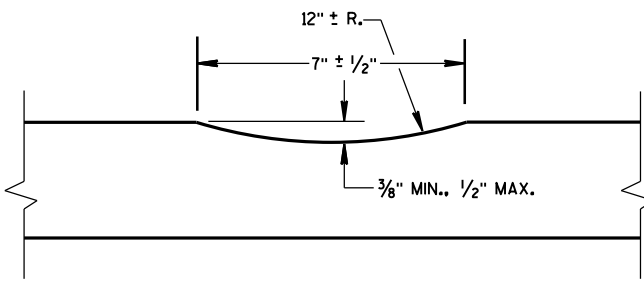
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



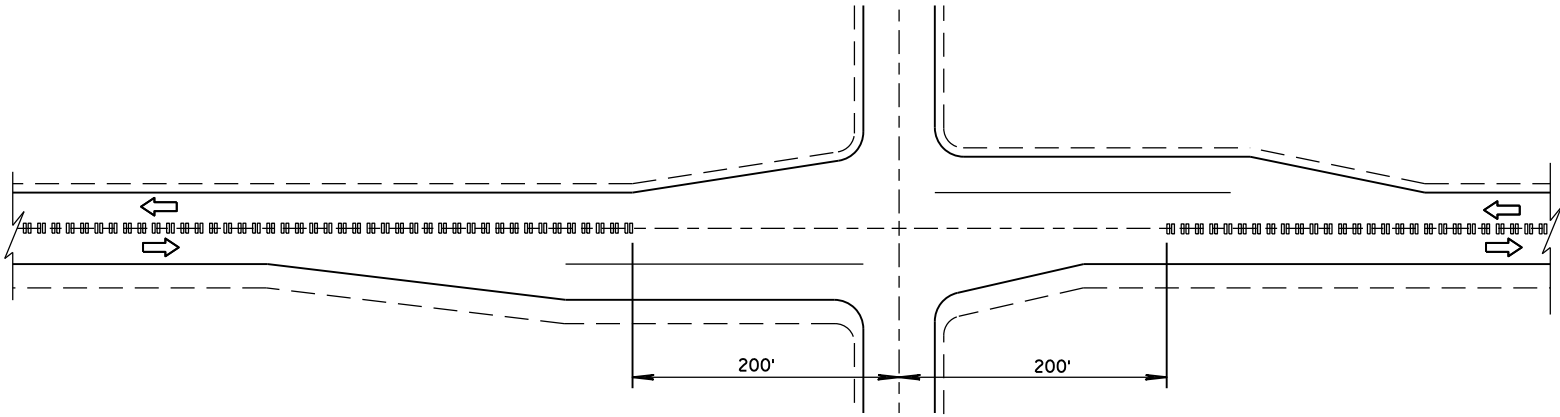
SECTION B-B
CROWNED ROADWAY



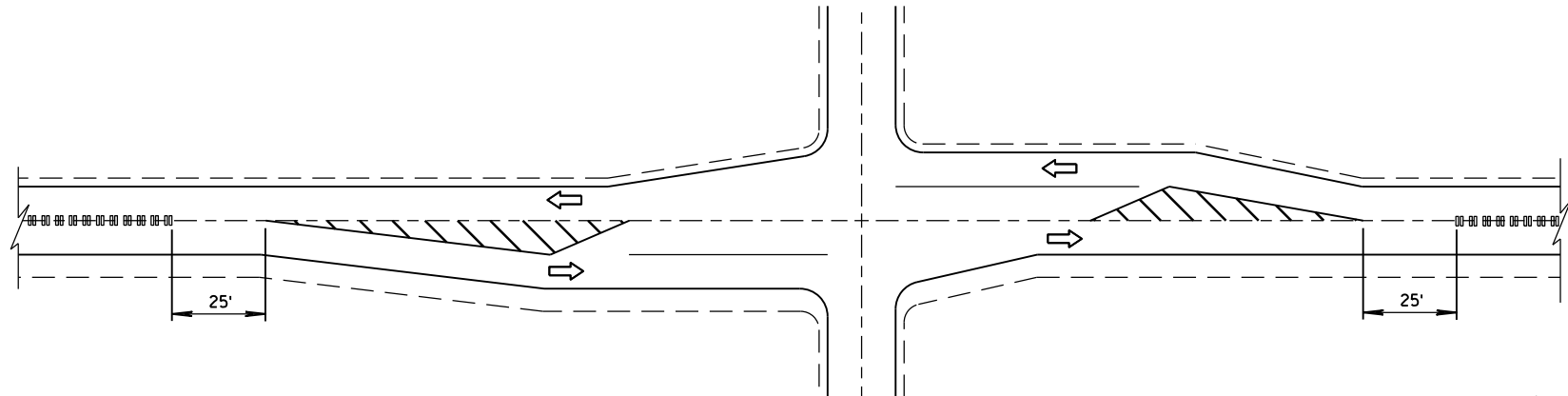
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

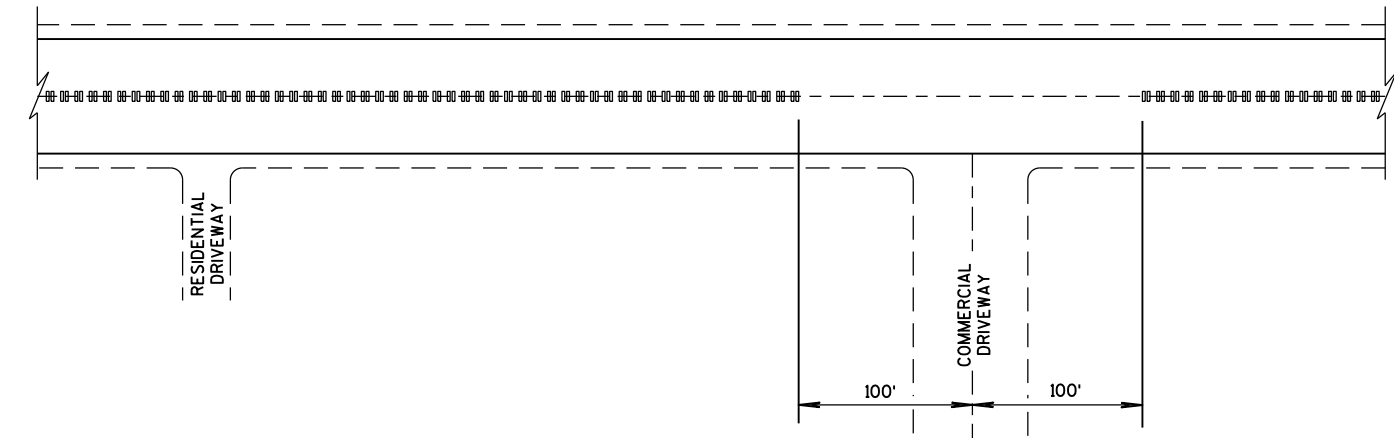
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 102



CENTER LINE GROOVES AT INTERSECTIONS

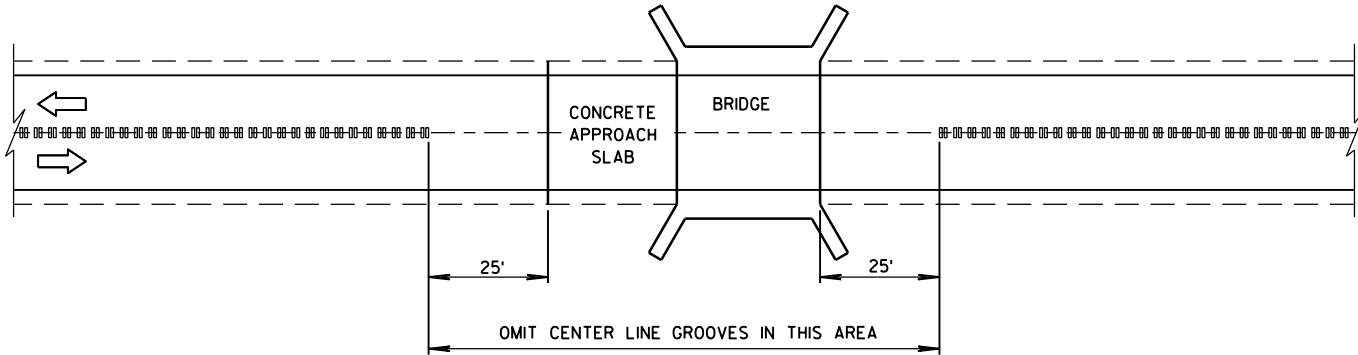


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

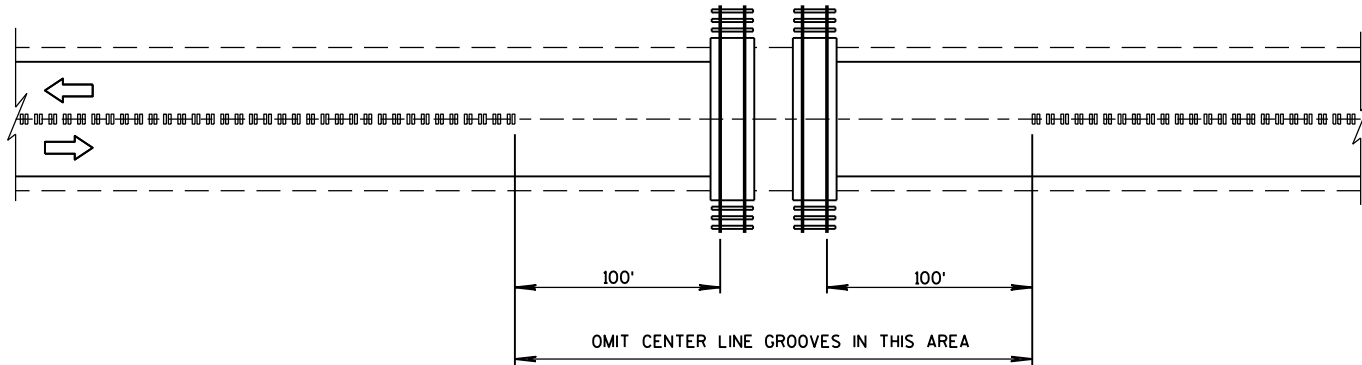


CENTER LINE GROOVES AT DRIVEWAYS¹

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

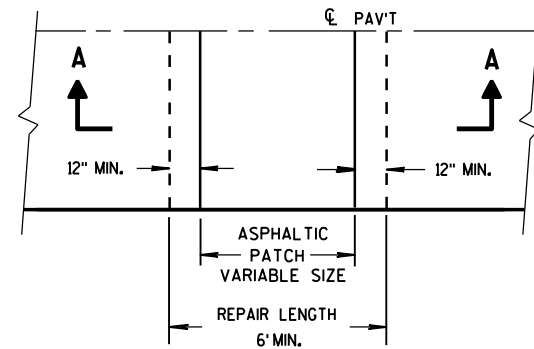


CENTER LINE GROOVES AT BRIDGES

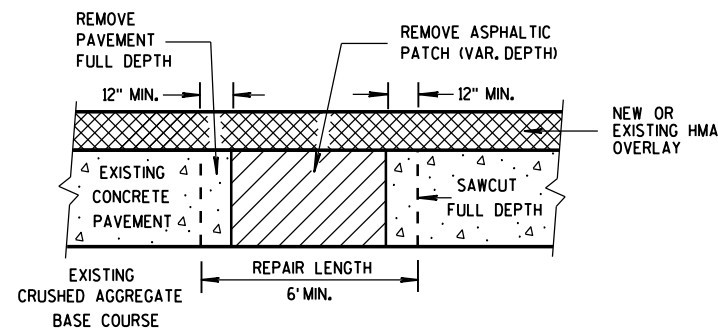


CENTER LINE GROOVES AT RAILROADS

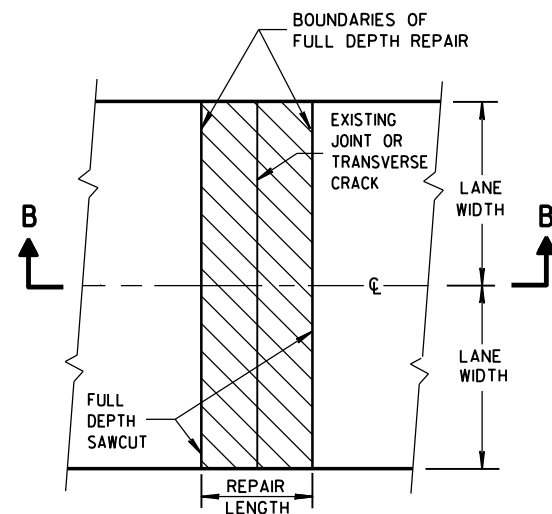
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 5/15/2013	/S/ Jerry H. Zoog ROADWAY STANDARDS ENGINEER 103 NT
FHWA	



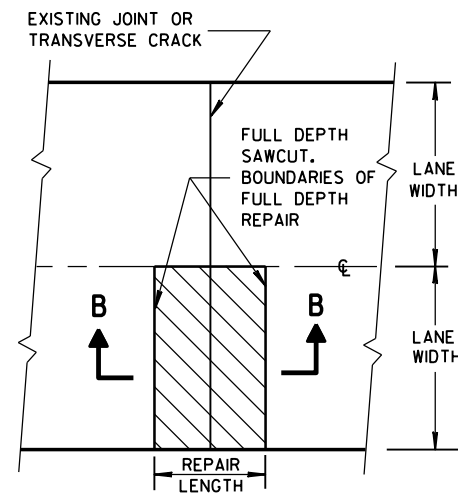
PLAN VIEW



SECTION A-A
HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

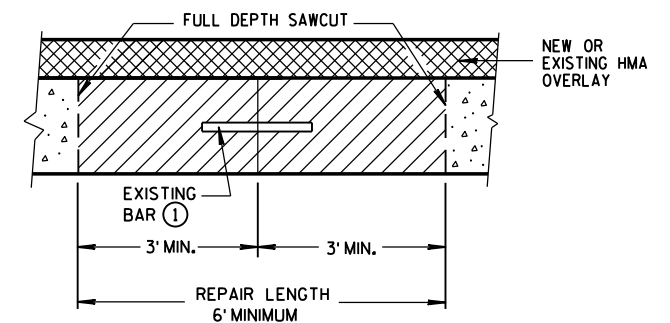
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

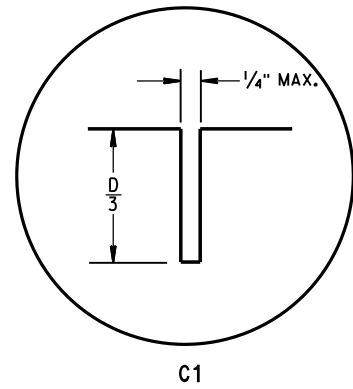
① DOWEL BARS MIGHT NOT EXIST.



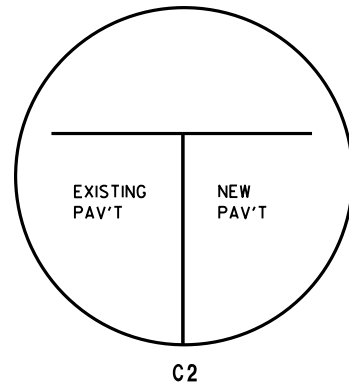
SECTION B-B
CONCRETE REMOVAL

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 104

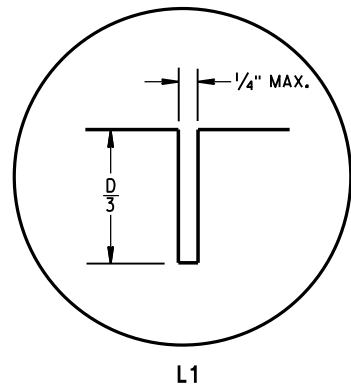


C1

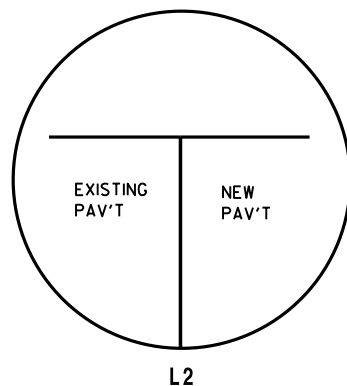


C2

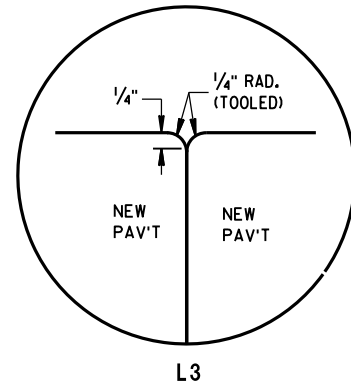
TRANSVERSE JOINTS



L1

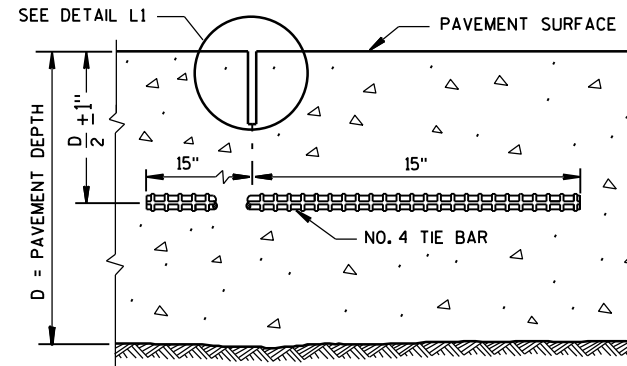


L2

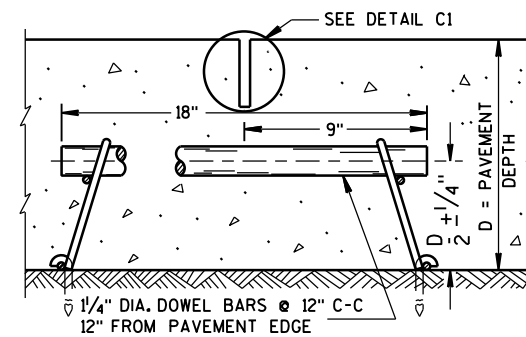


L3

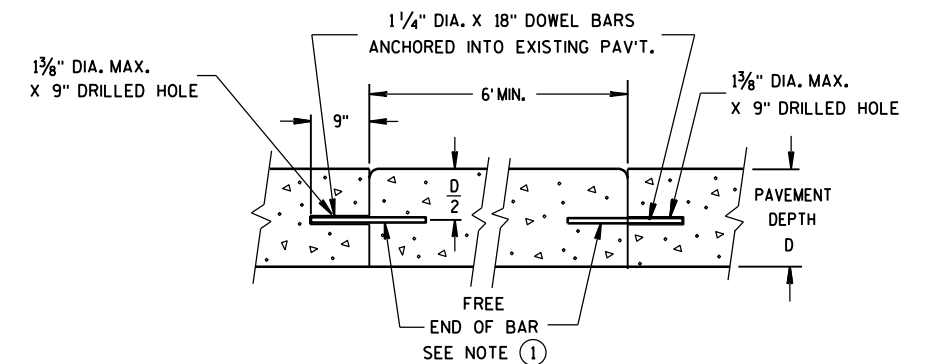
LONGITUDINAL JOINTS



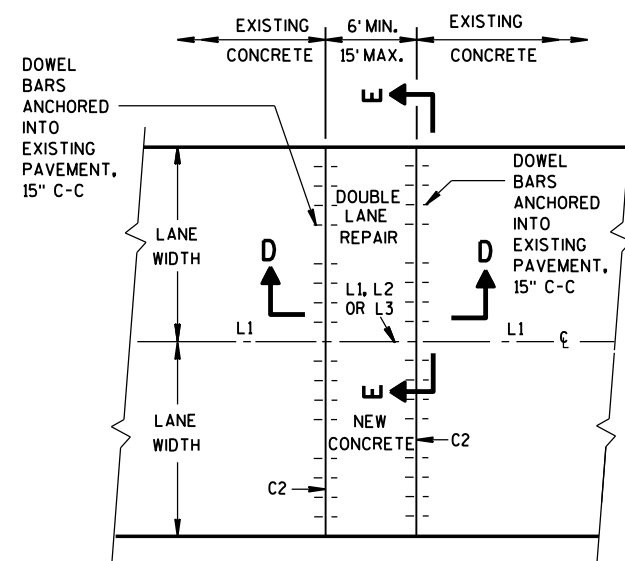
SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

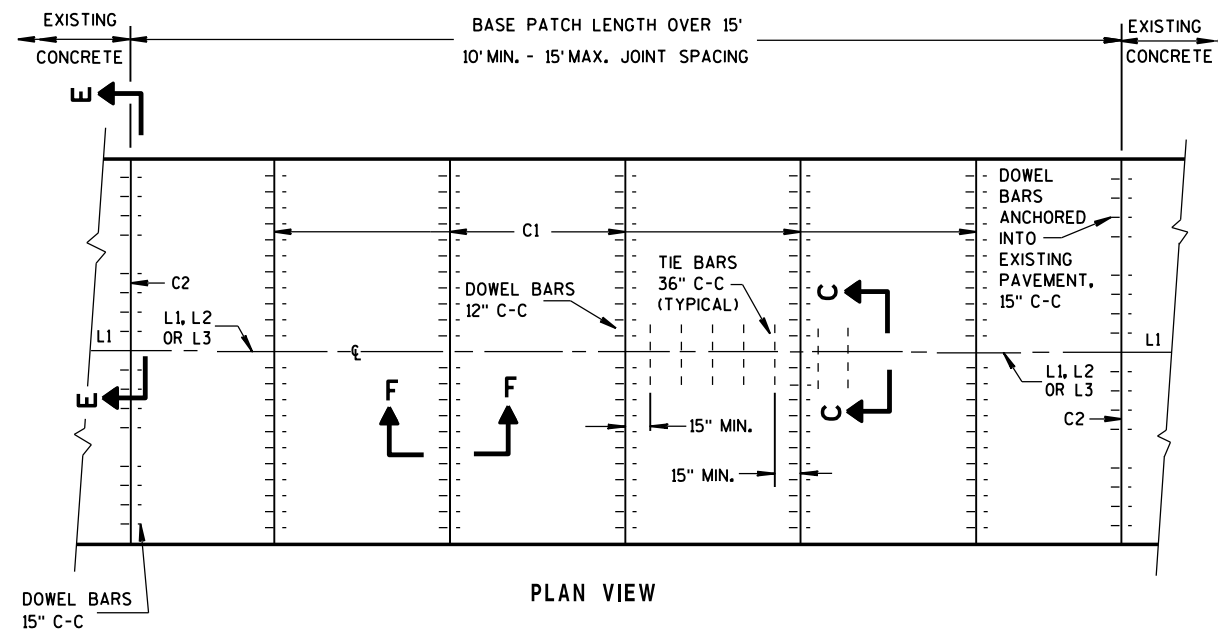


SECTION D-D



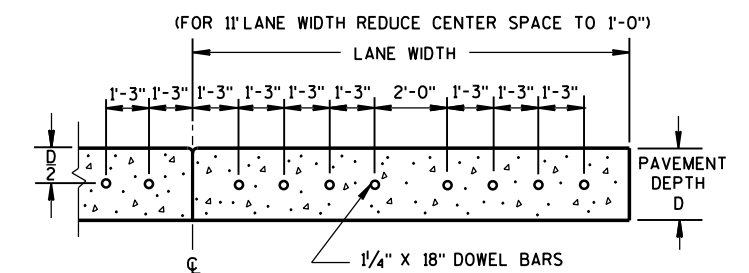
PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH



PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH



SECTION E-E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

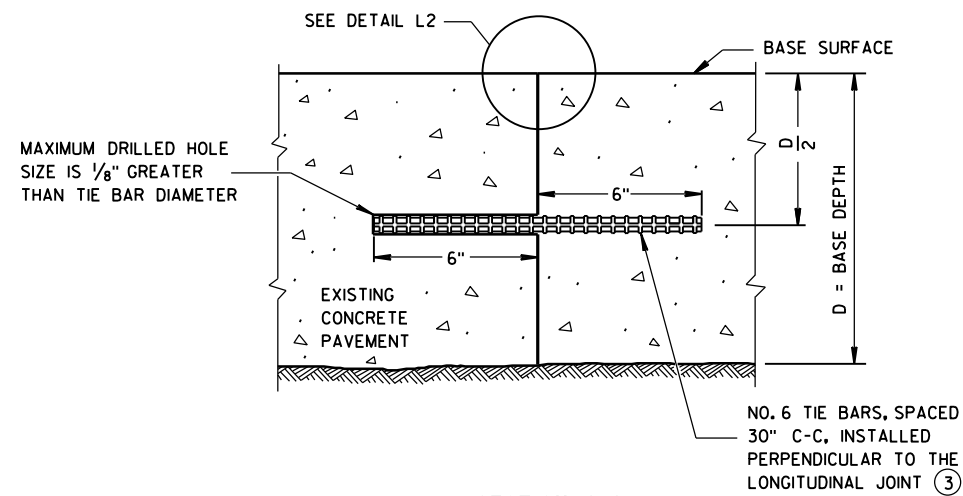
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

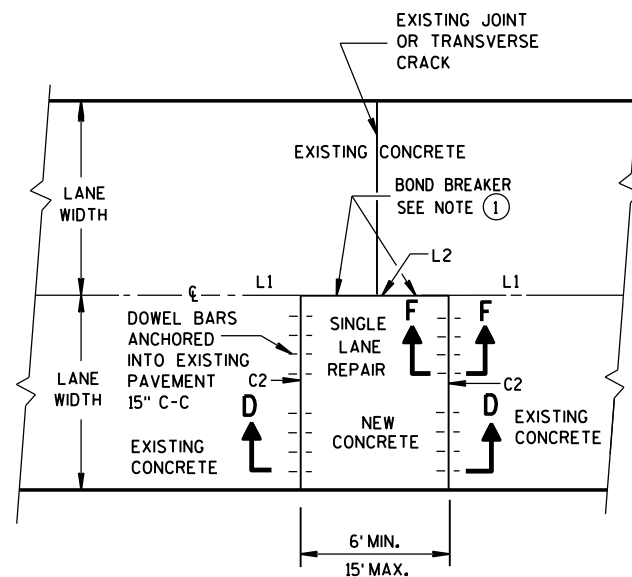
① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



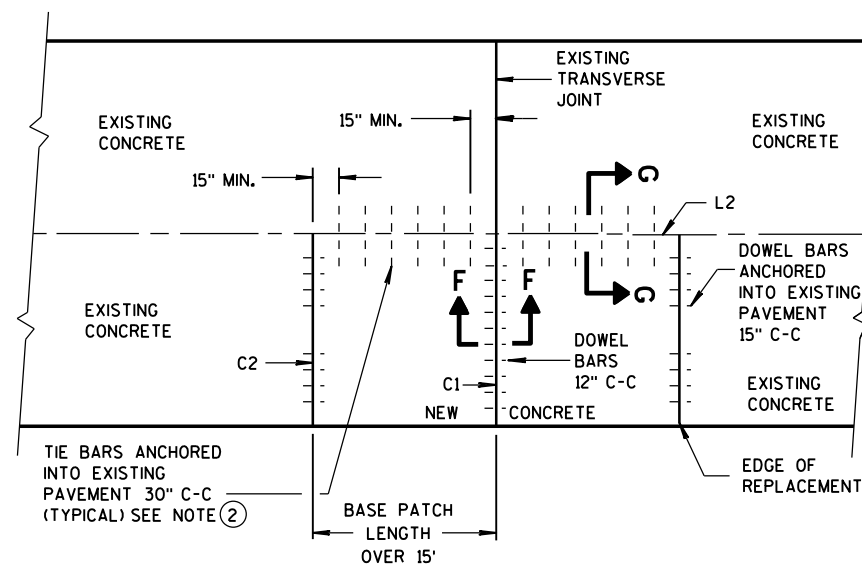
SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

GENERAL NOTES

- ① USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.
- ② WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH

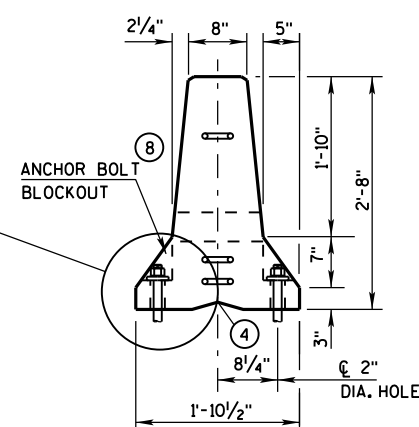
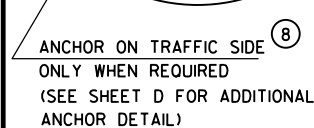


PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH

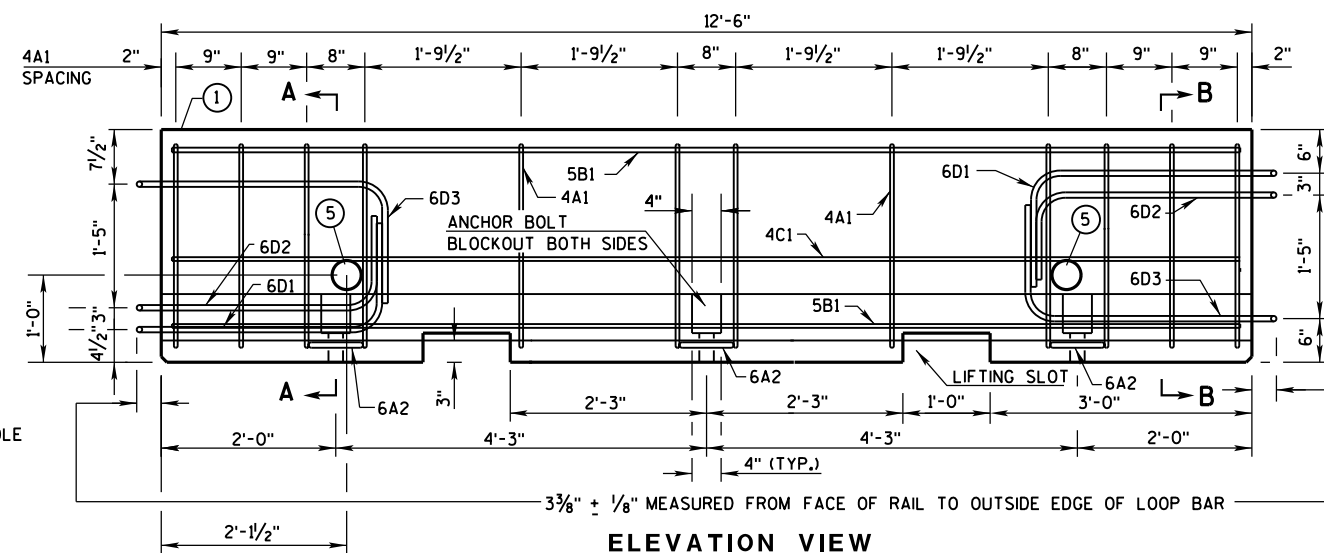
BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

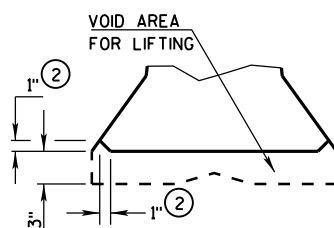
APPROVED
DATE Sept., 2015 /S/ Peter Kemp, P.E.
FHWA PAVEMENT SUPER 106



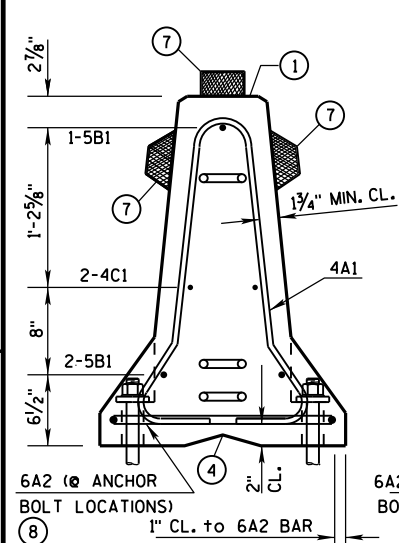
END VIEW



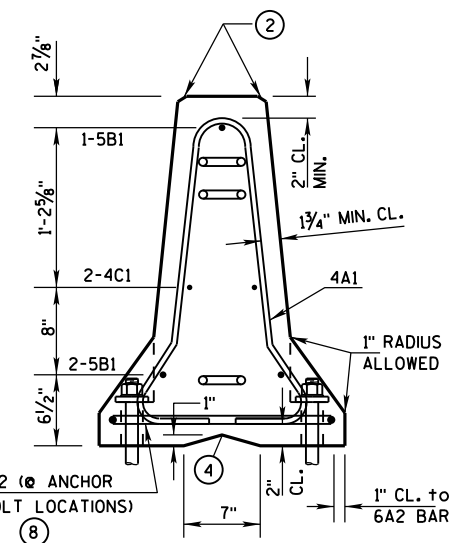
ELEVATION VIEW



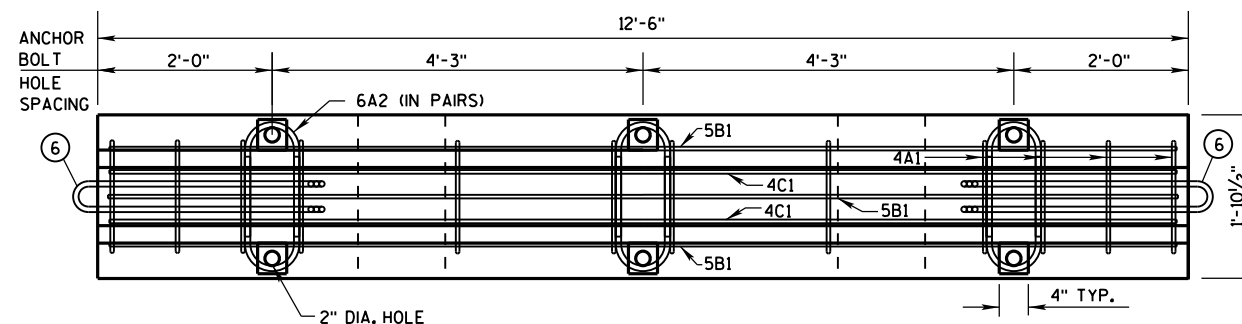
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

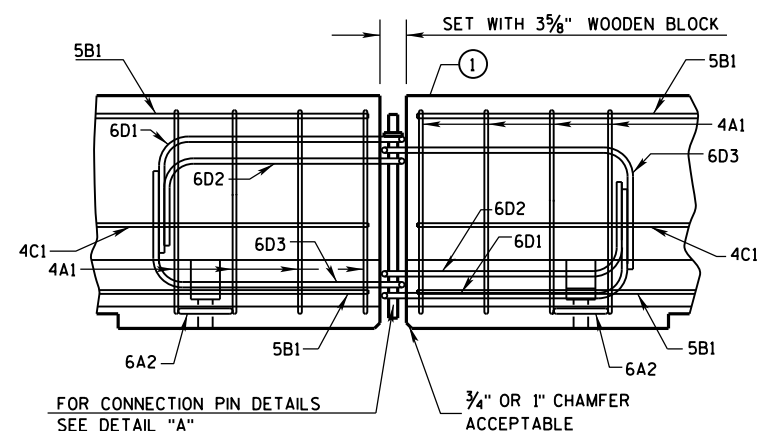


SECTION B-B
(STIRRUP PLACEMENT)

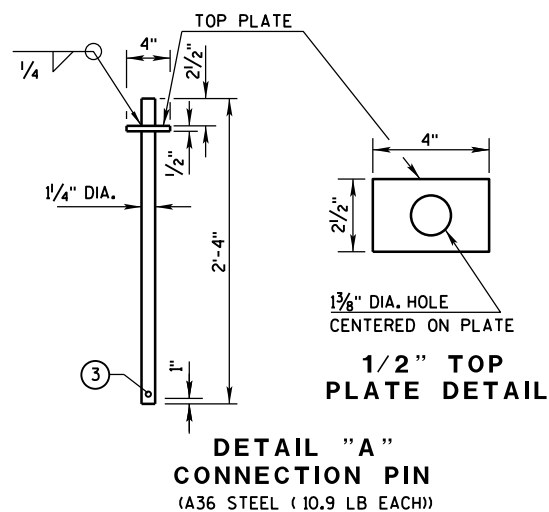


PLAN VIEW

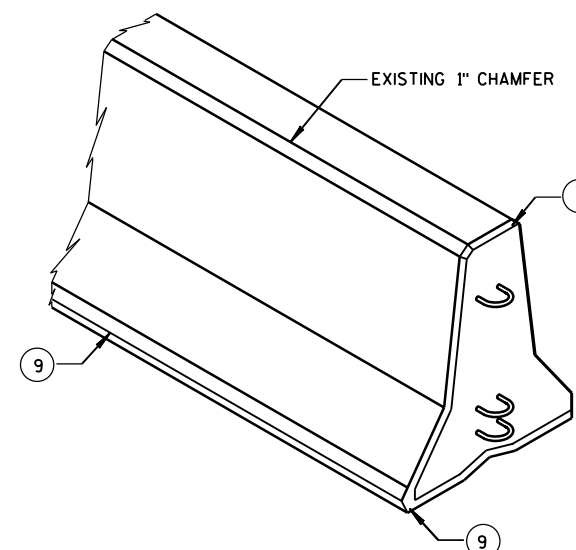
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(d) THRU 14B7-14(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 $\frac{3}{4}$ " 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- $\frac{1}{2}$ " PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN $\frac{1}{8}$ " OF THE PLAN DIMENSION.

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

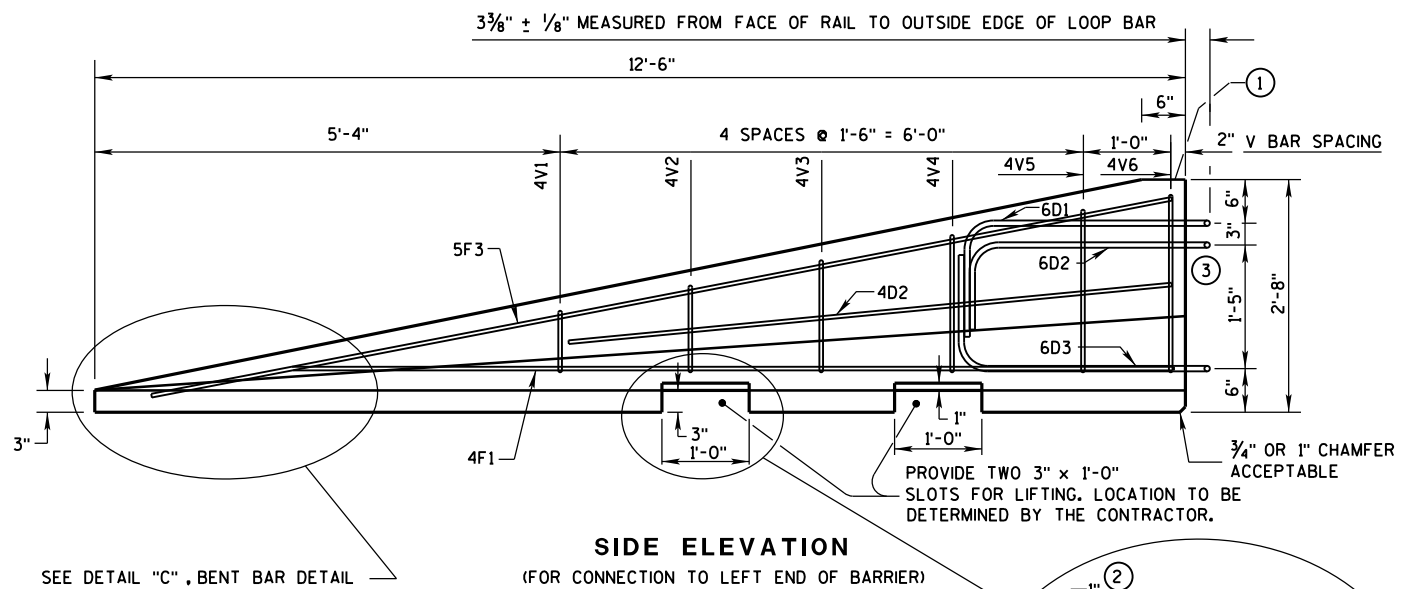
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE 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 $\frac{3}{8}$ " 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.

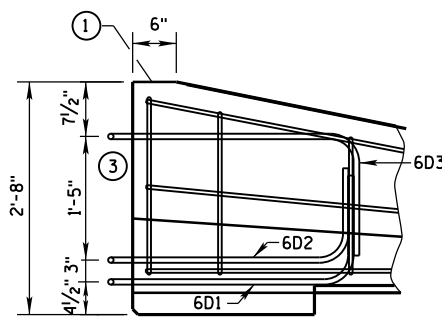
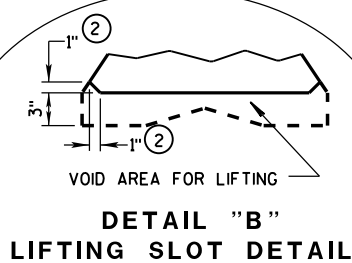
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 107



SIDE ELEVATION

(FOR CONNECTION TO LEFT END OF BARRIER)



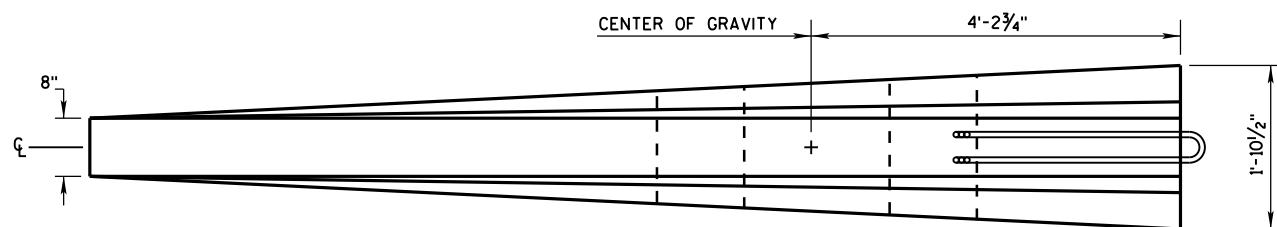
SIDE ELEVATION

LOOP BAR ASSEMBLY INVERTED FOR OPPOSITE END.

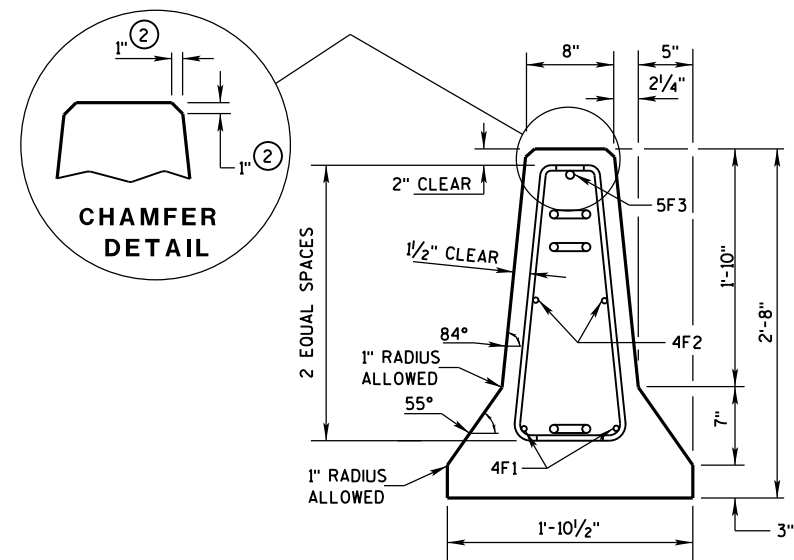
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

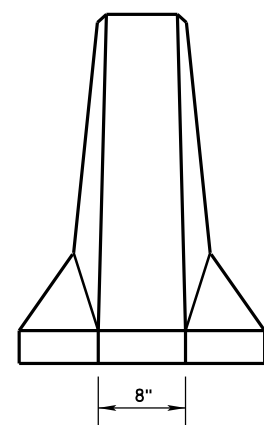
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



PLAN VIEW

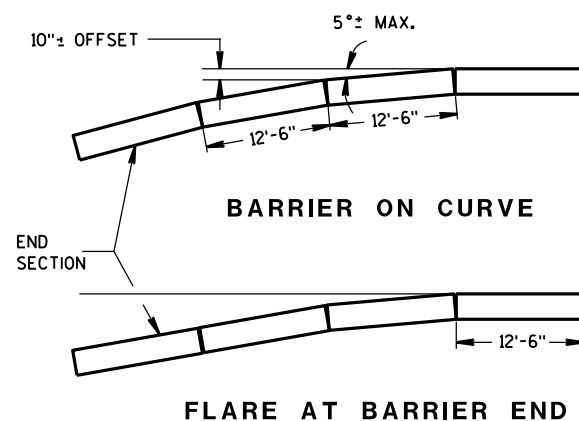


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



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

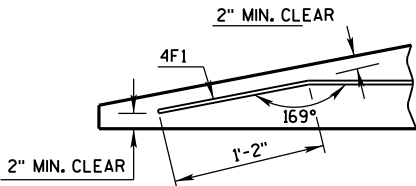
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 108

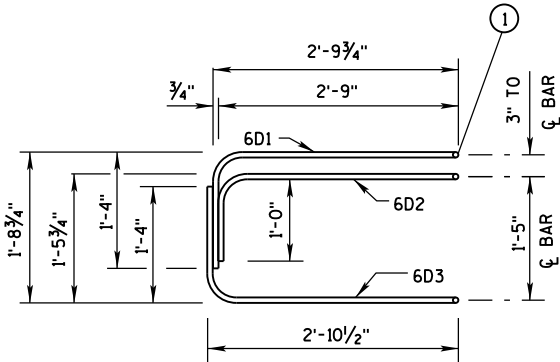
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

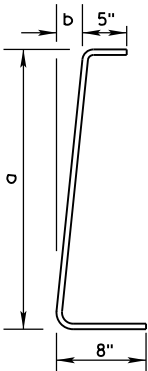
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

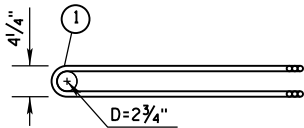
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

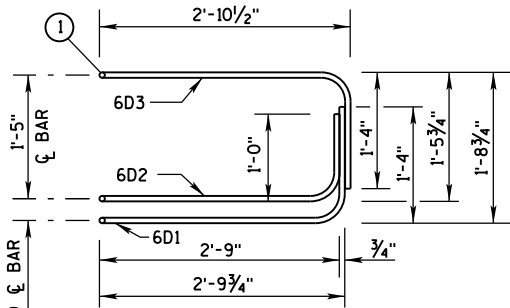
(PER 12'-6" BARRIER SECTION)

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"

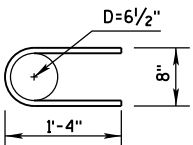


PLAN VIEW
LOOP BAR ASSEMBLY

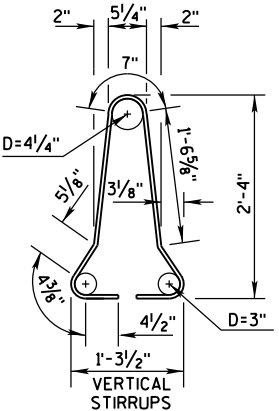
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

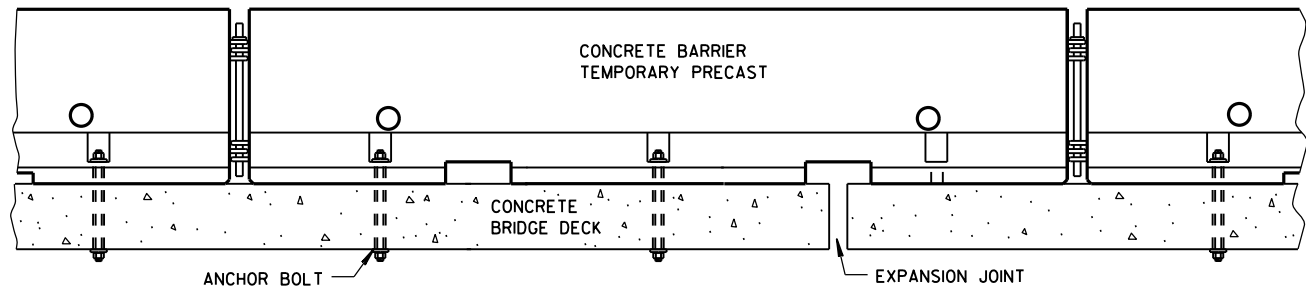
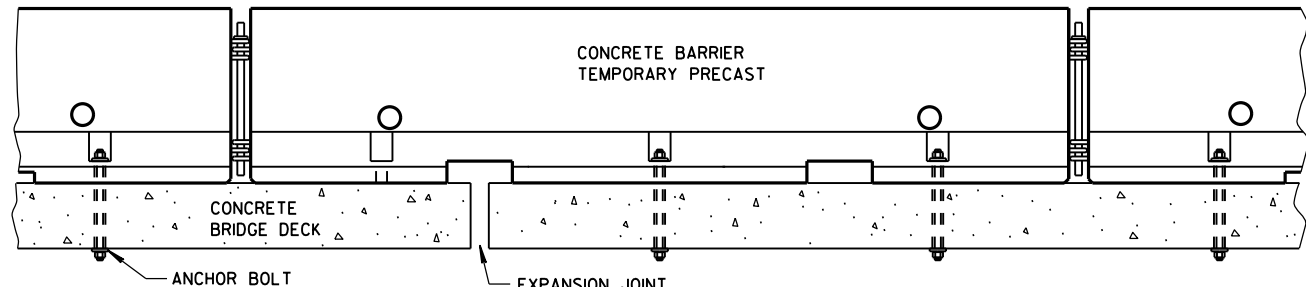


4A1

BARRIER SECTION

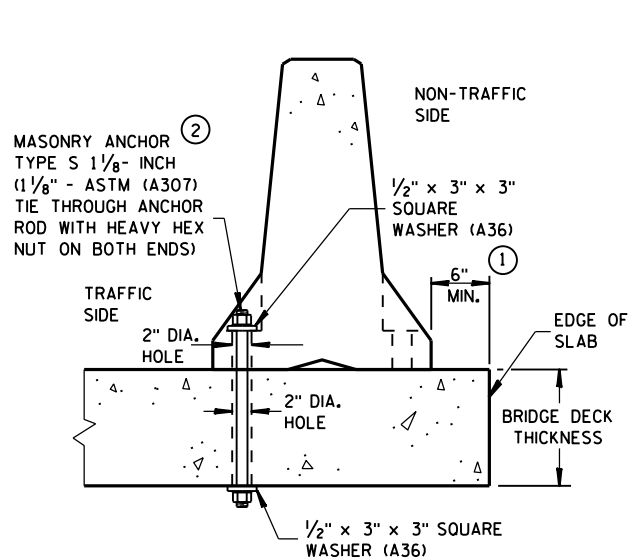
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 109



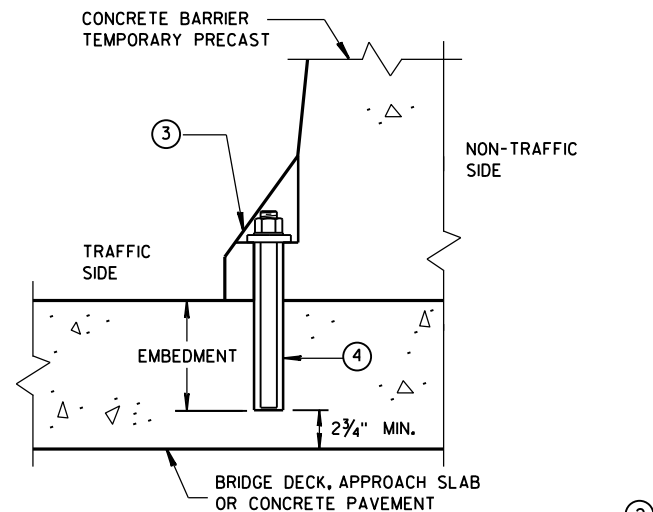
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



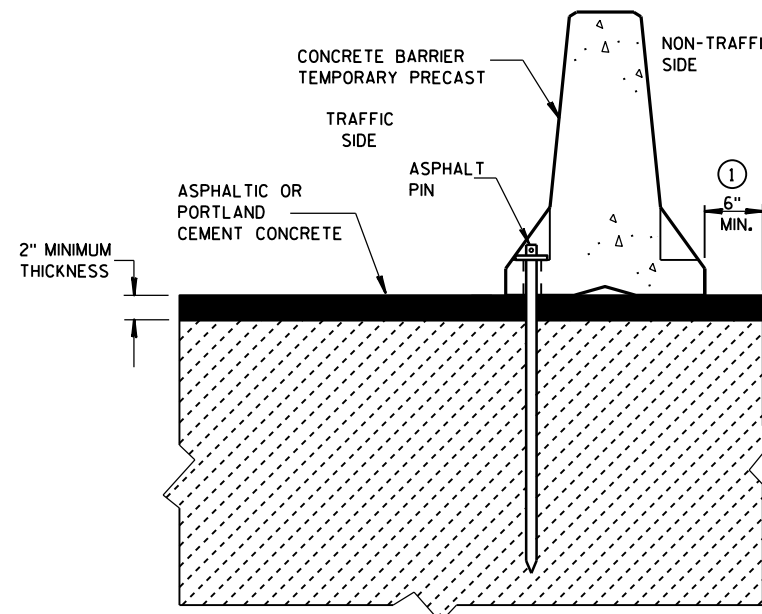
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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



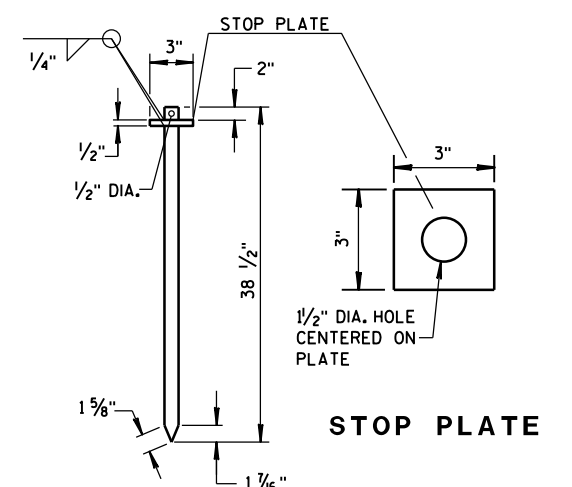
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

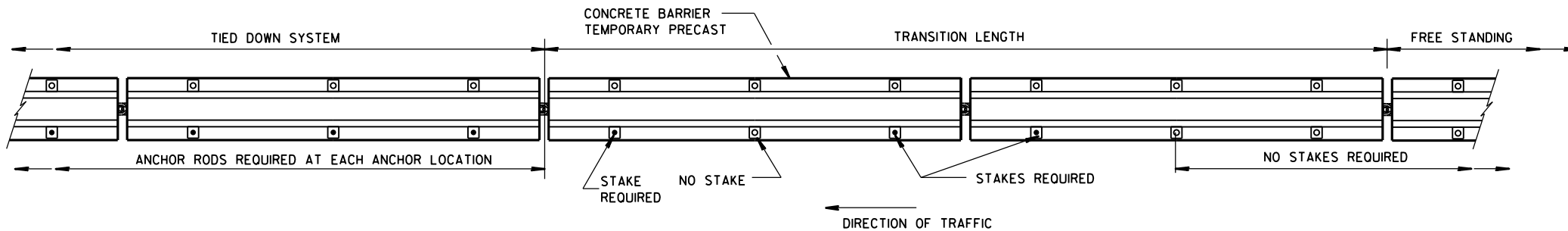


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN
(ASTM A36 STEEL)



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

- 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

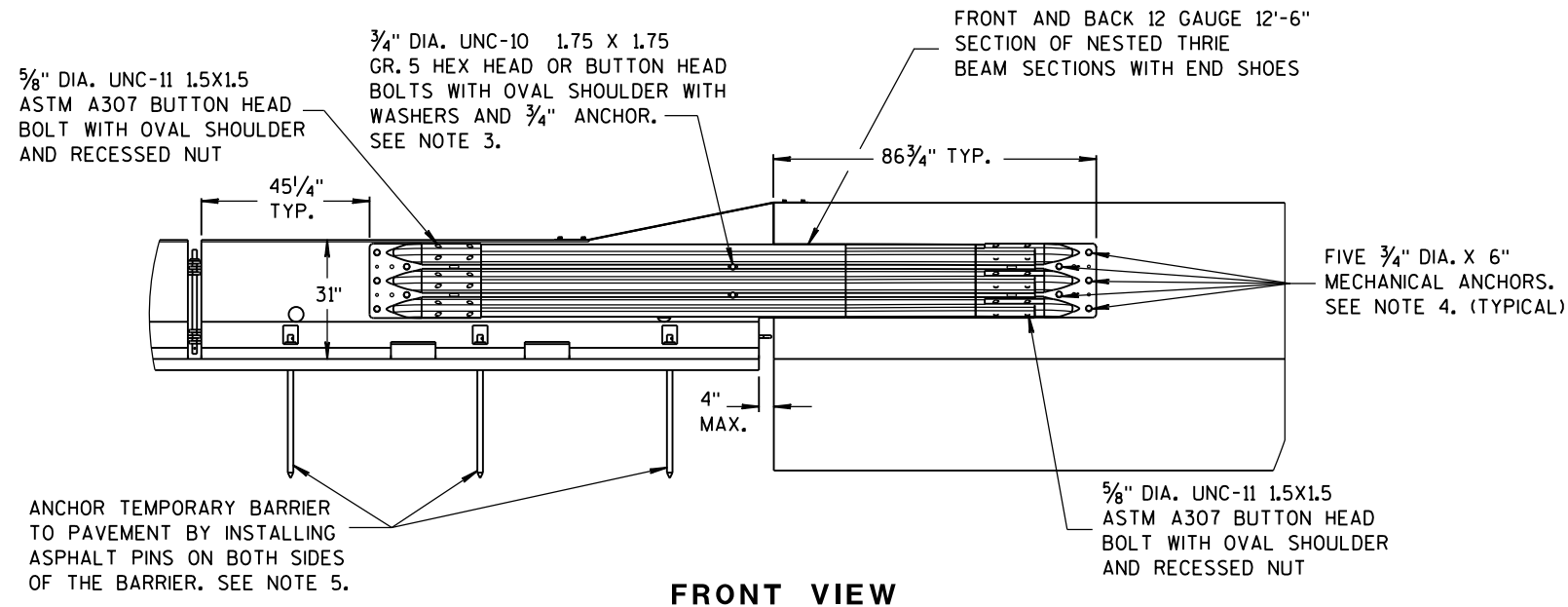
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.
- ANCHORING IS INCIDENTAL TO CONCRETE BARRIER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

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED 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.

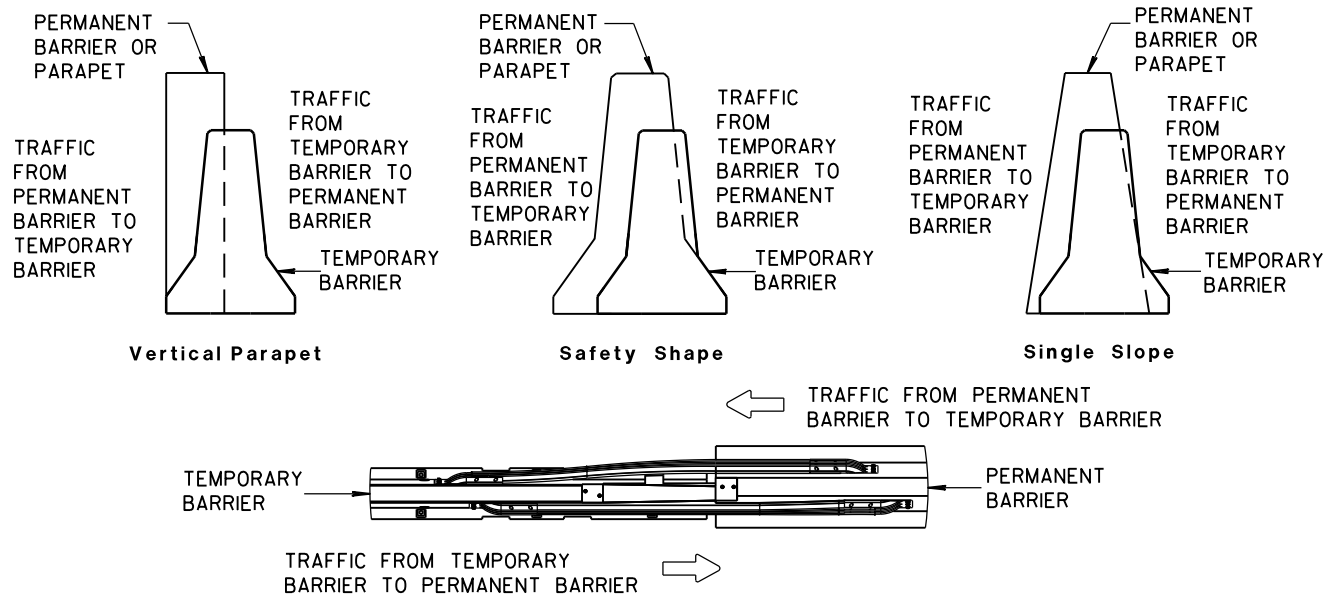
UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 110



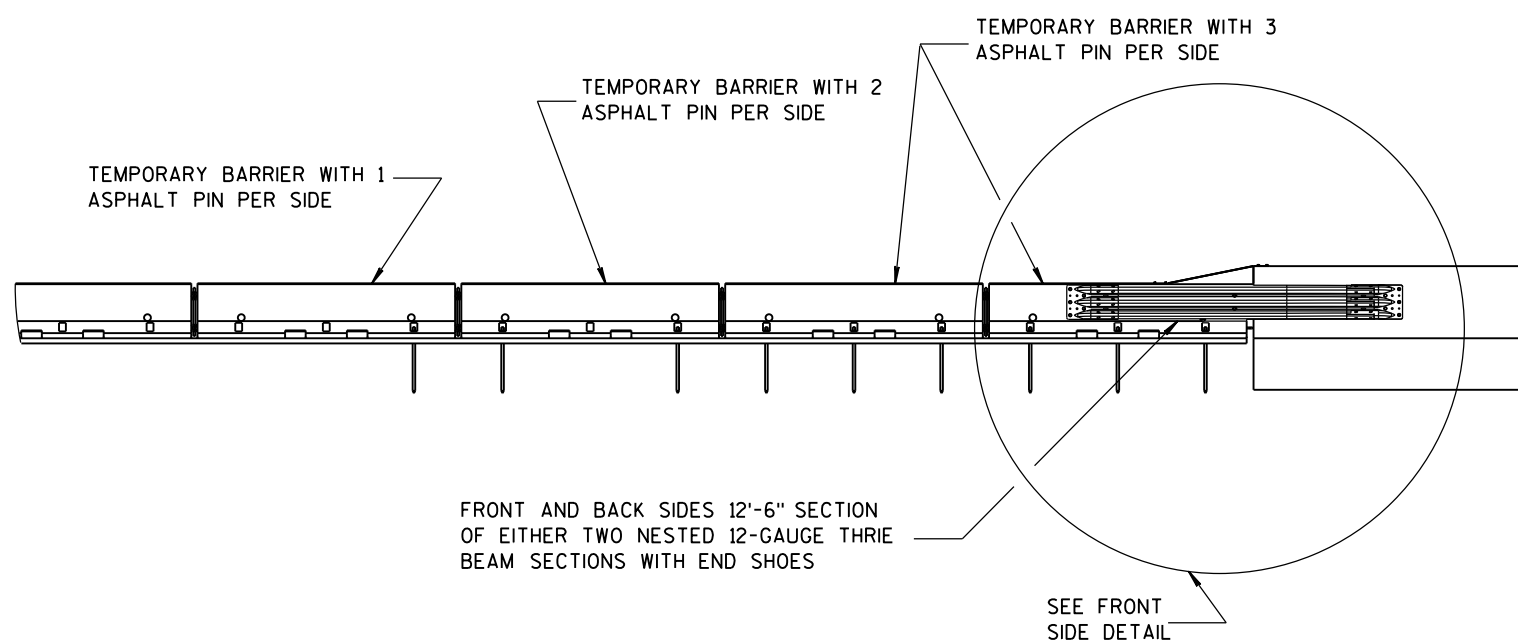
FRONT VIEW



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

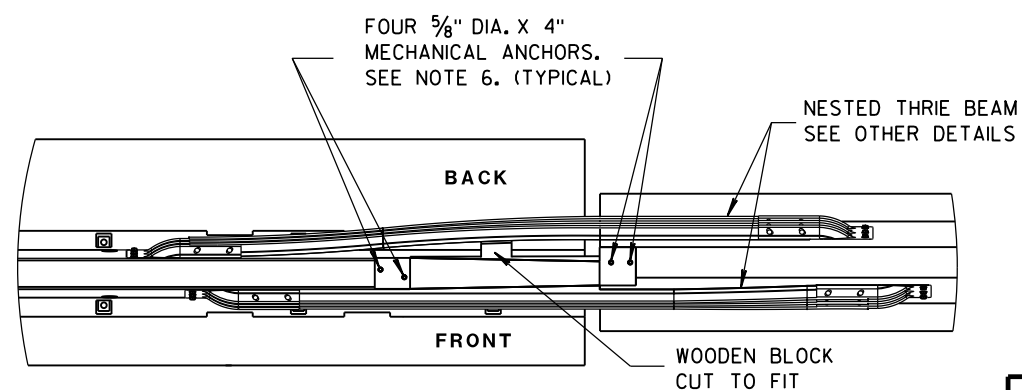
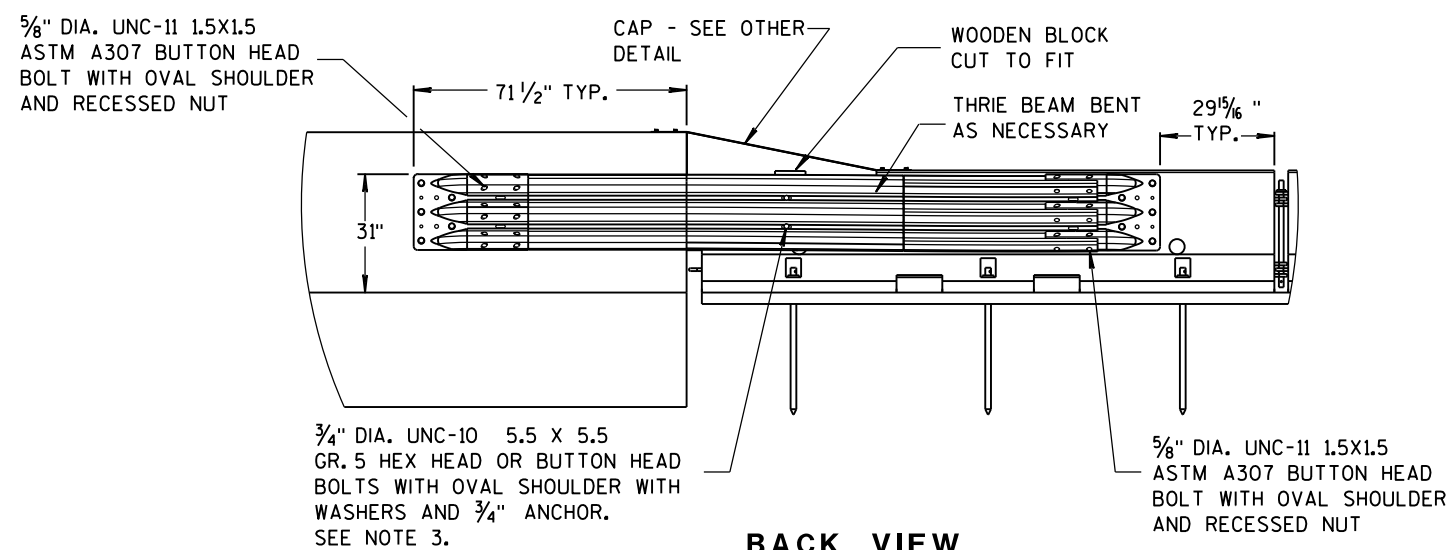
NOTES

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 ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE 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 ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



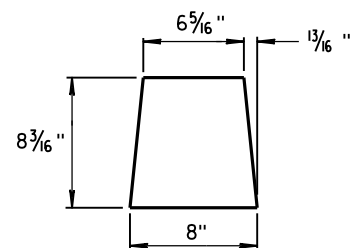
FRONT VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

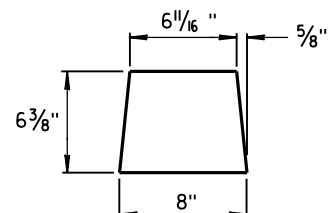


CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

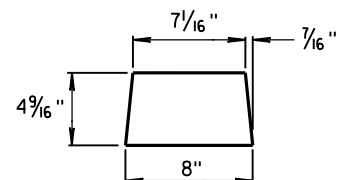
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



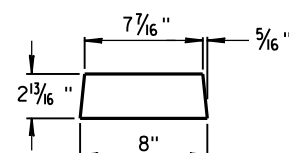
GUSSET 1



GUSSET 2

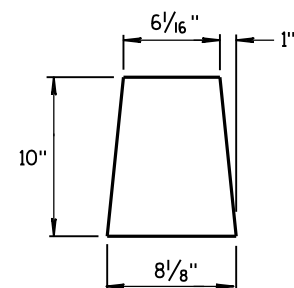


GUSSET 3

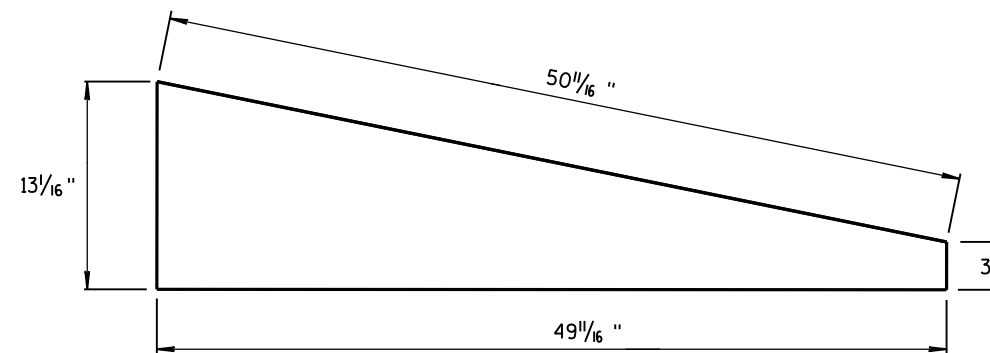


GUSSET 4

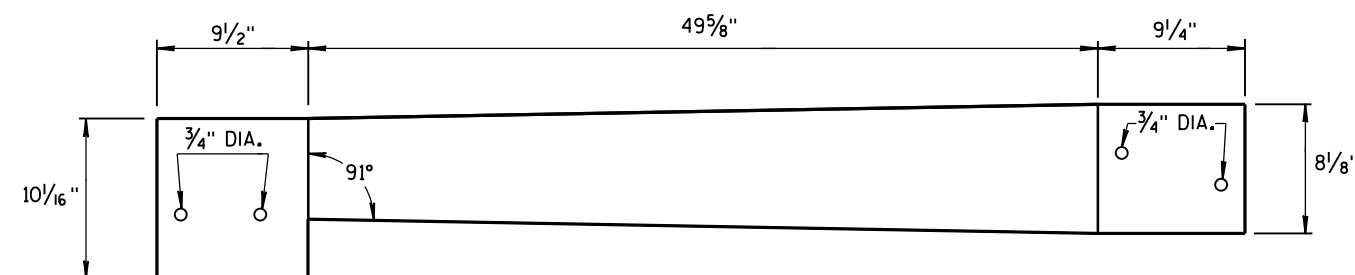
GUSSETS



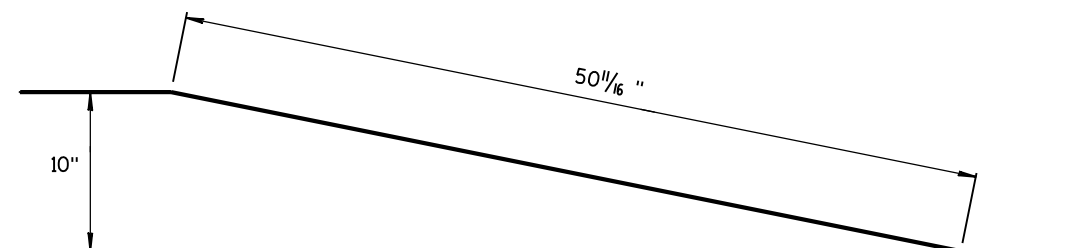
END PLATE



SIDE PLATE

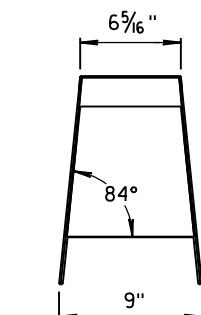
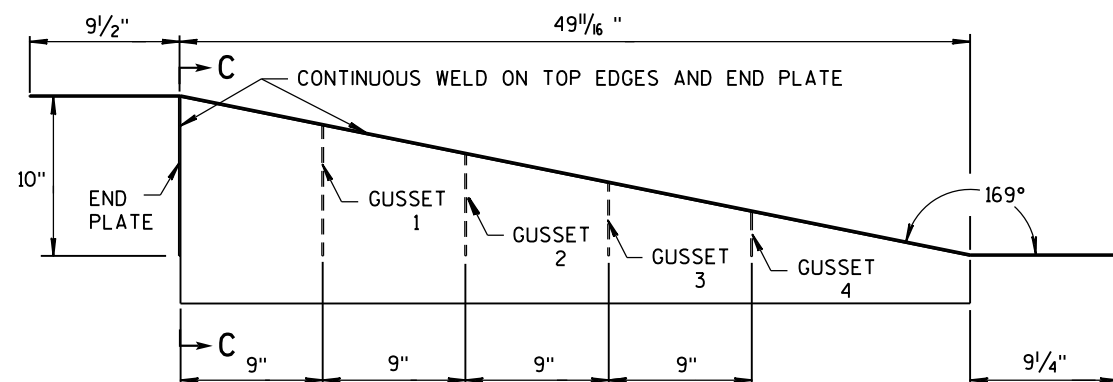
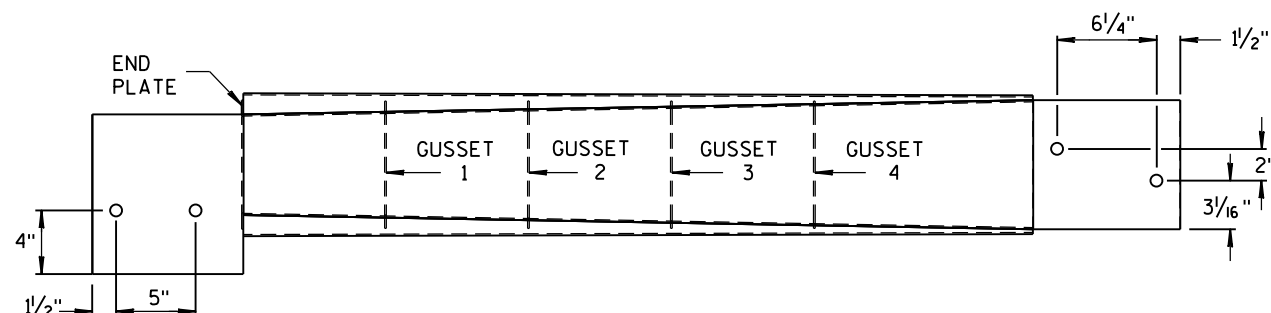


TOP PLATE



**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

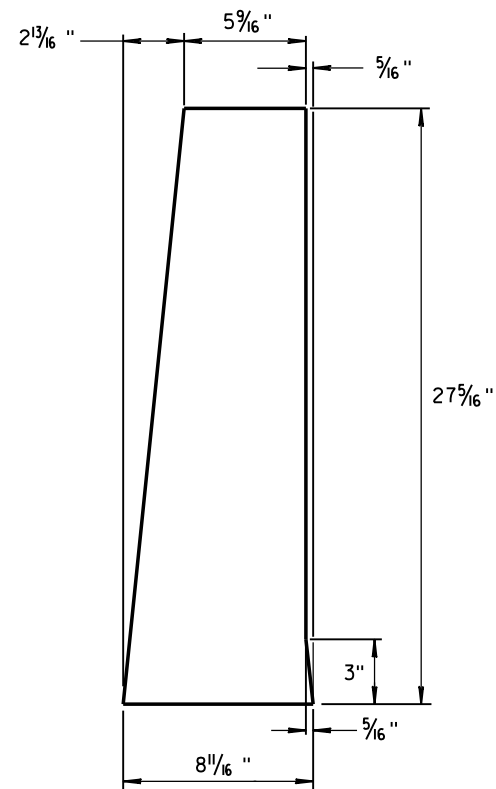
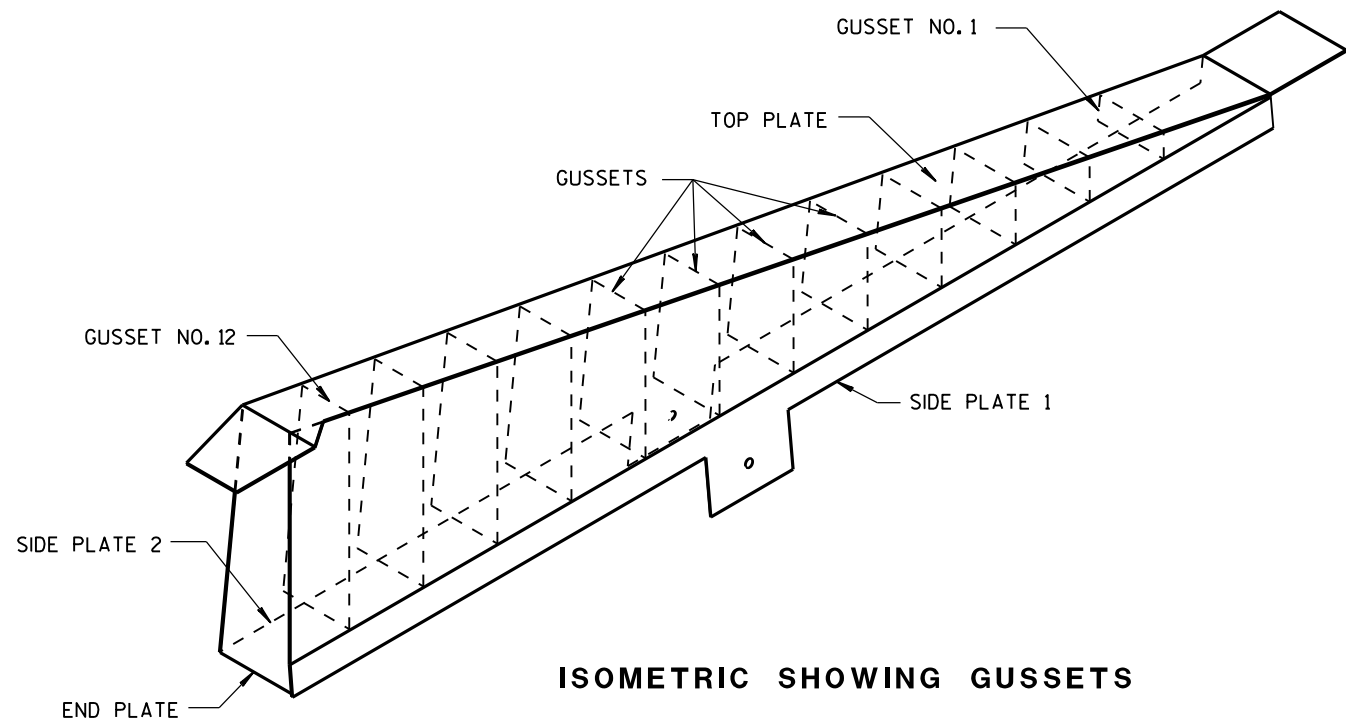
NOTES

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.

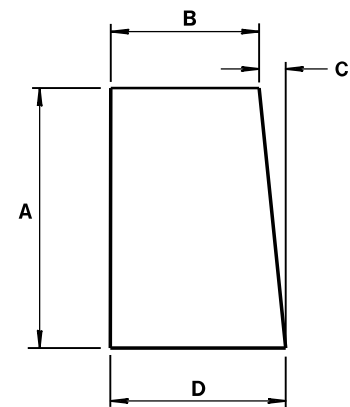
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 112



1/8" STEEL PLATE

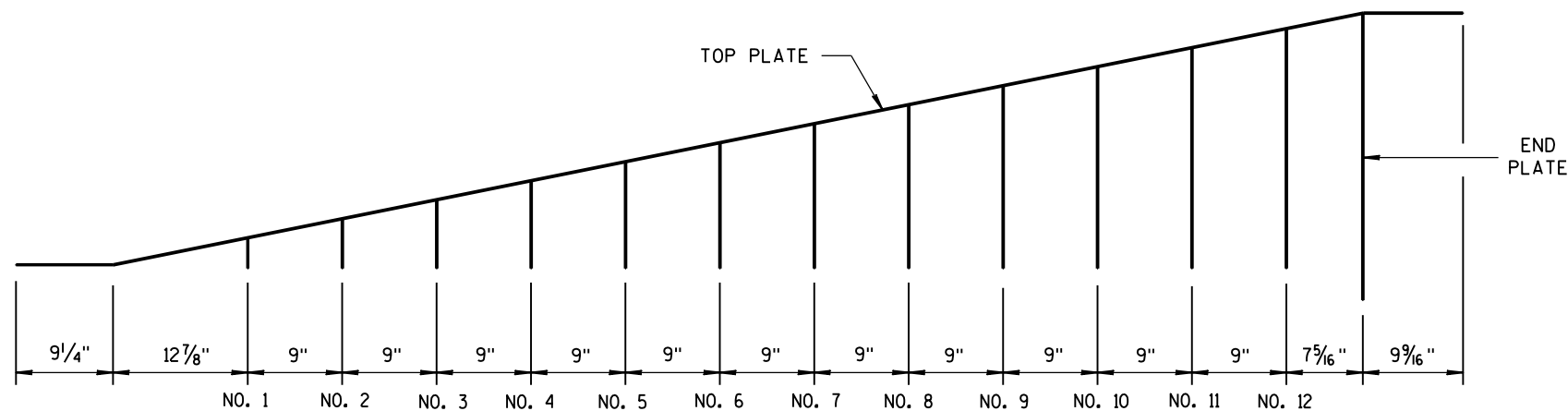


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8 "	1 1/16 "	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.

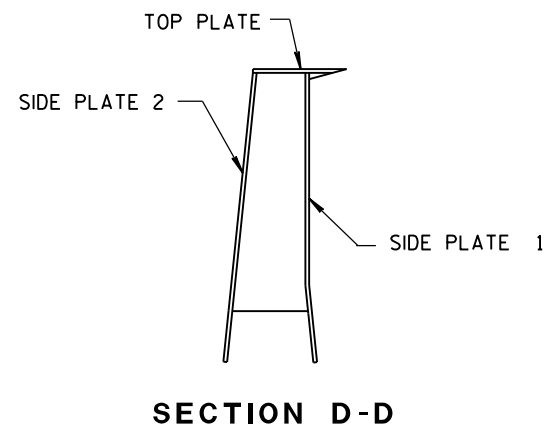
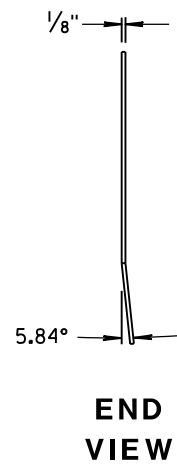
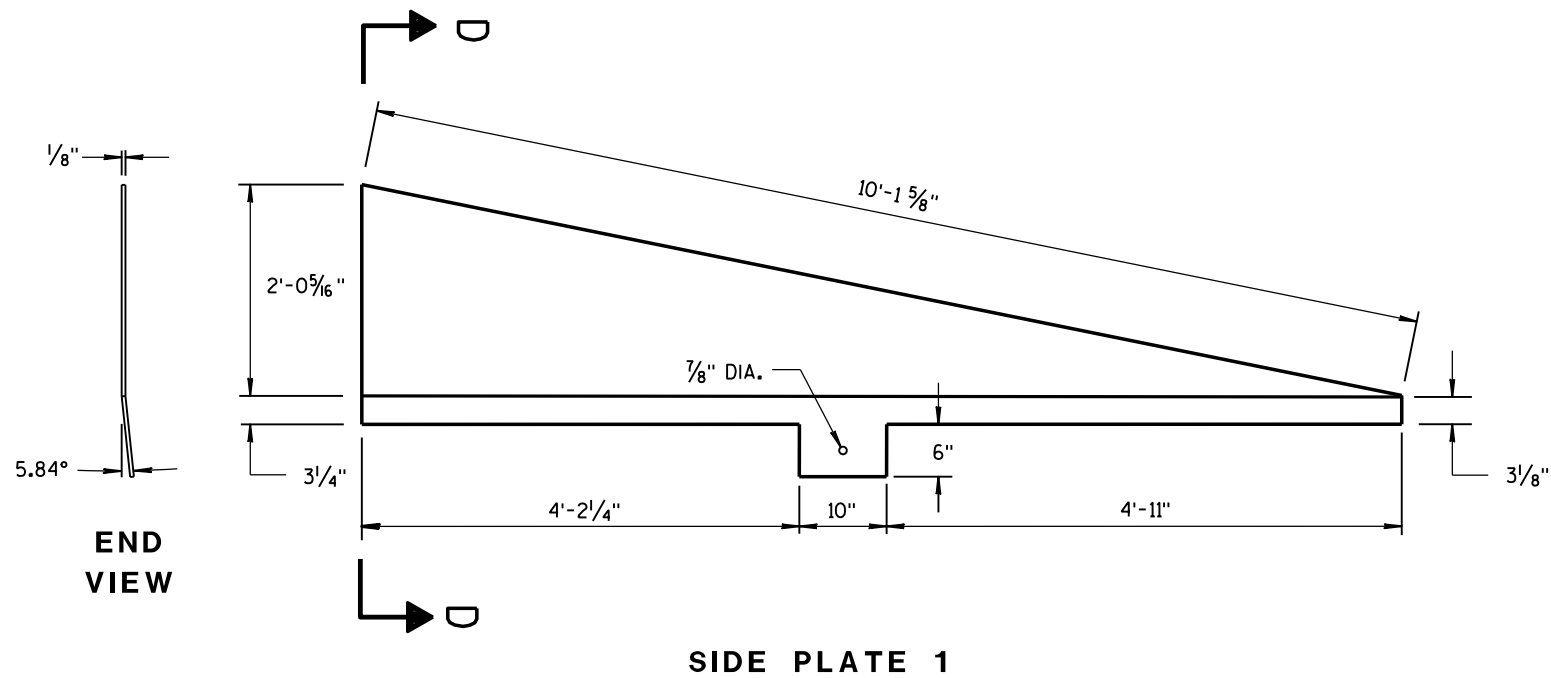
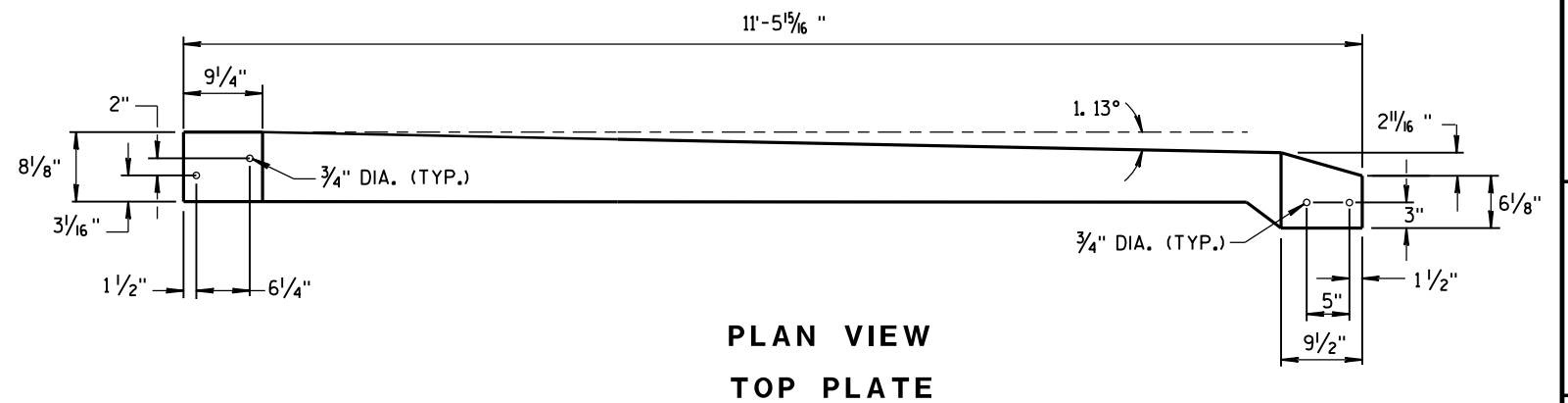
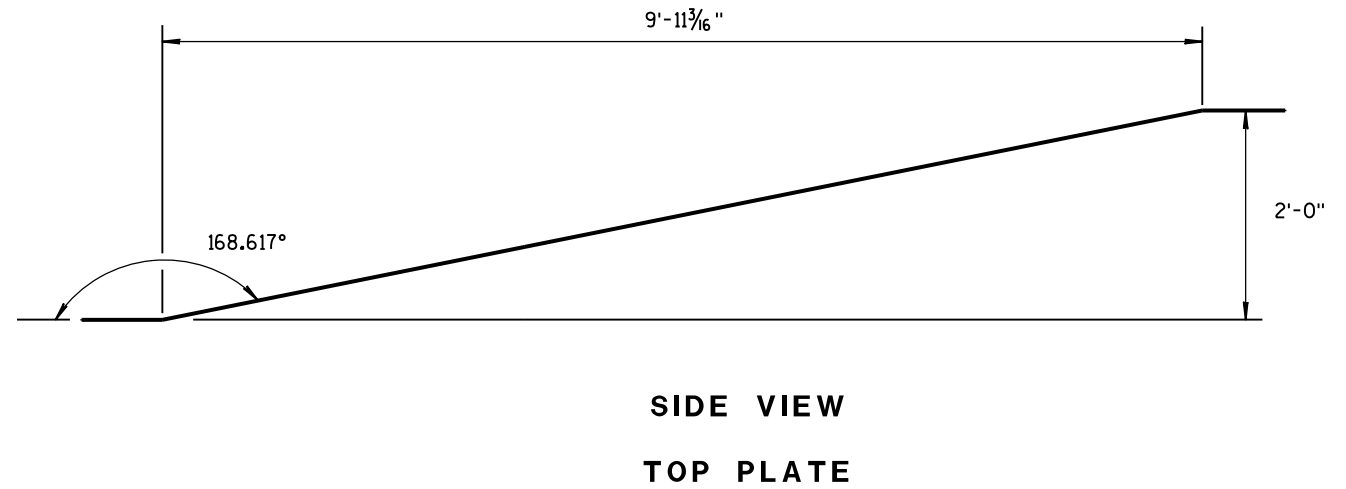
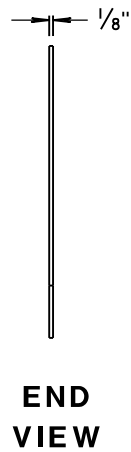
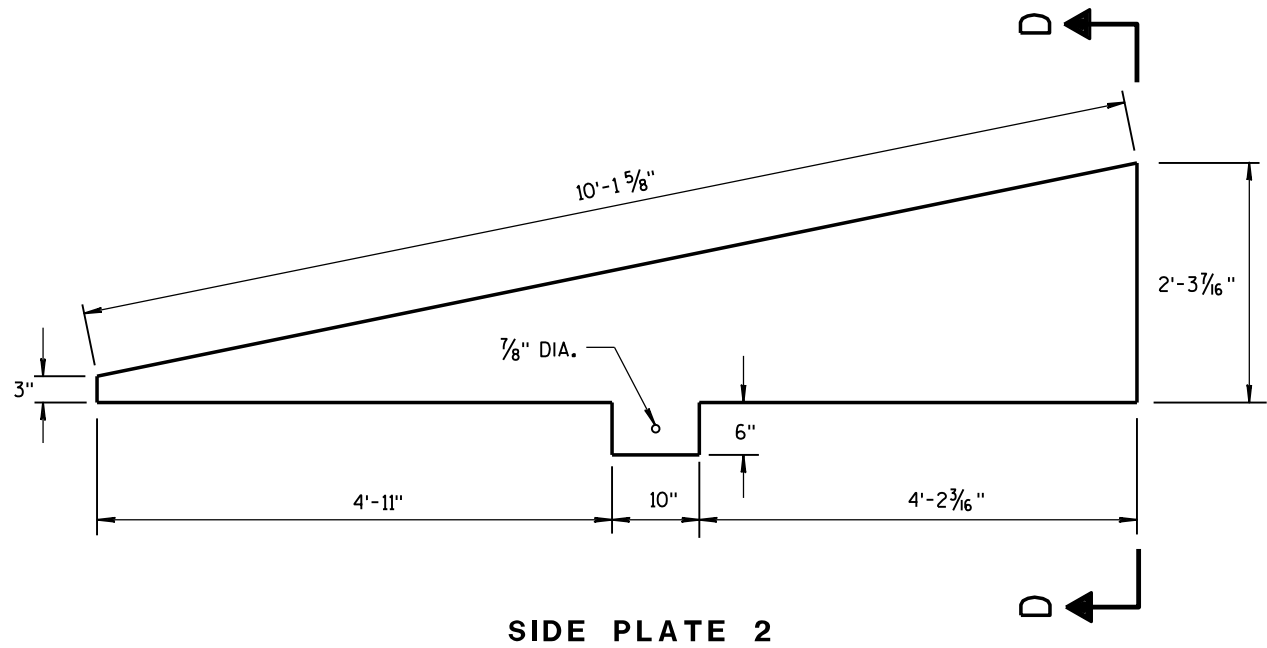


CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

113



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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED June 2014 DATE	/S/ Jerry H. Zoog ROADWAY STANDARD ENGINEER	114 INT
FHWA		

6

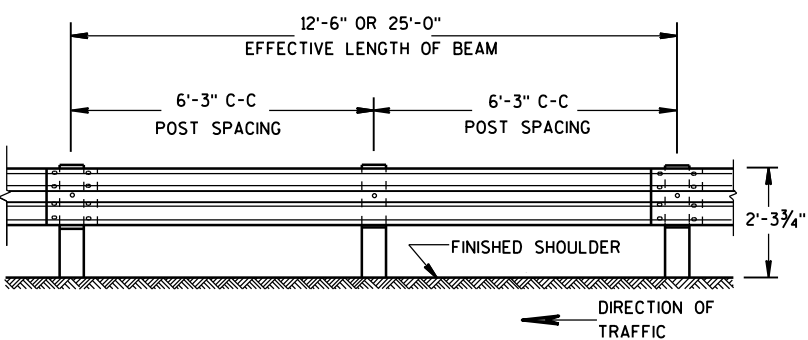
- S.D.D. 14 B 15-9a



TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

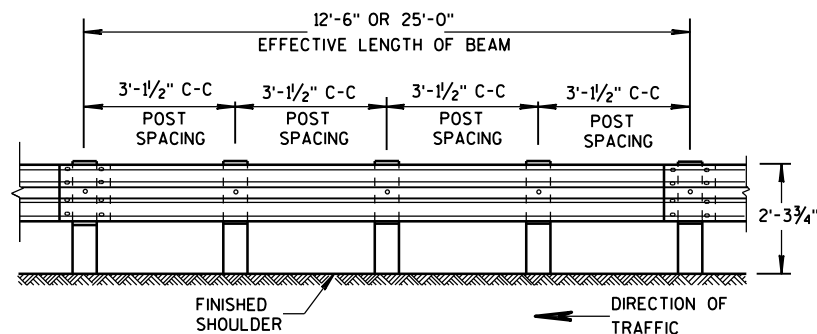


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 115



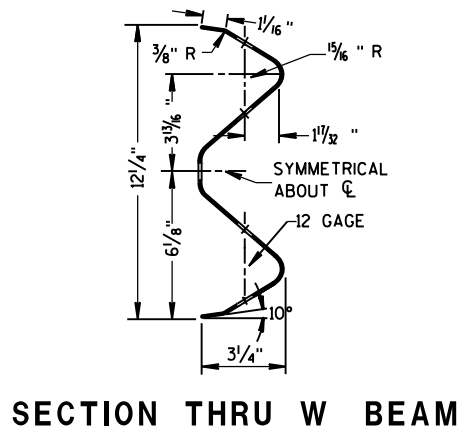
FRONT VIEW

POST SPACING STANDARD INSTALLATION

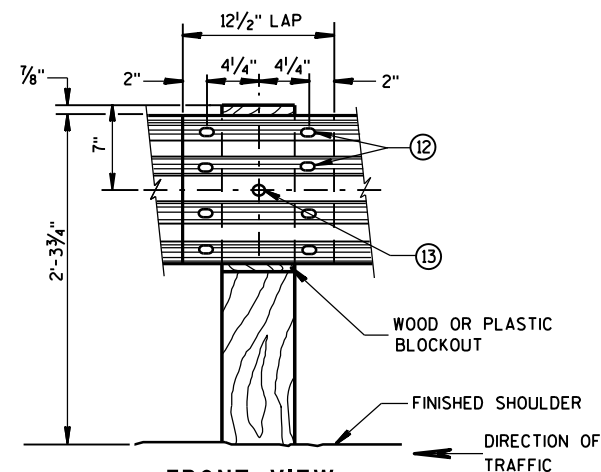


FRONT VIEW

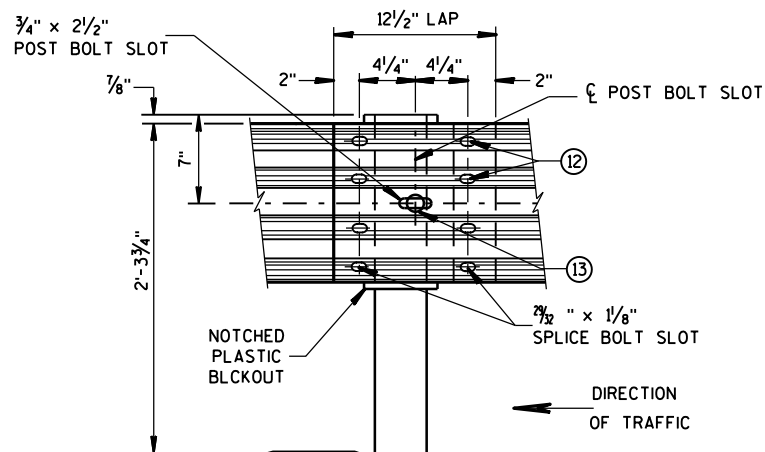
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



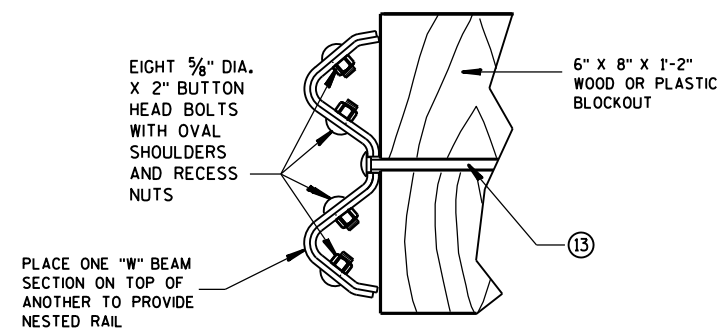
FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

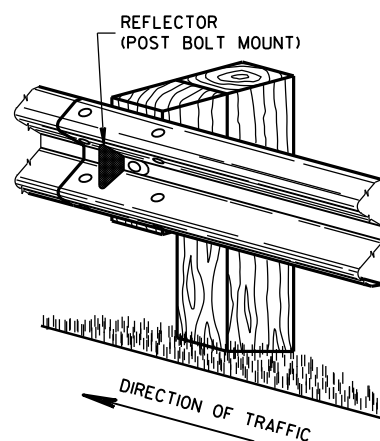
- ⑧ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF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



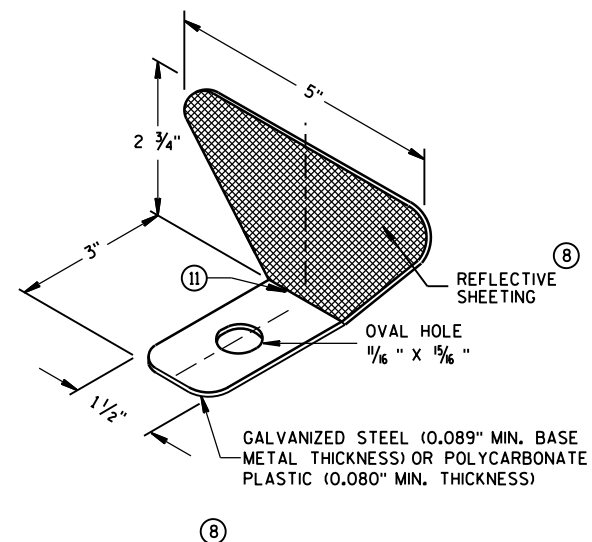
NESTED W BEAM (NW)
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING ⑨

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

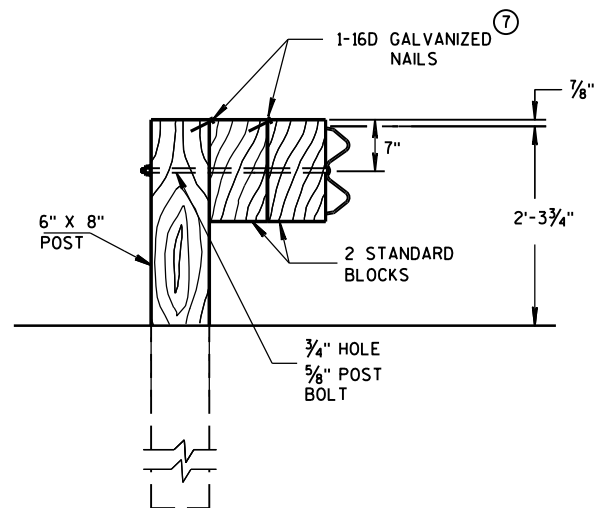


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION



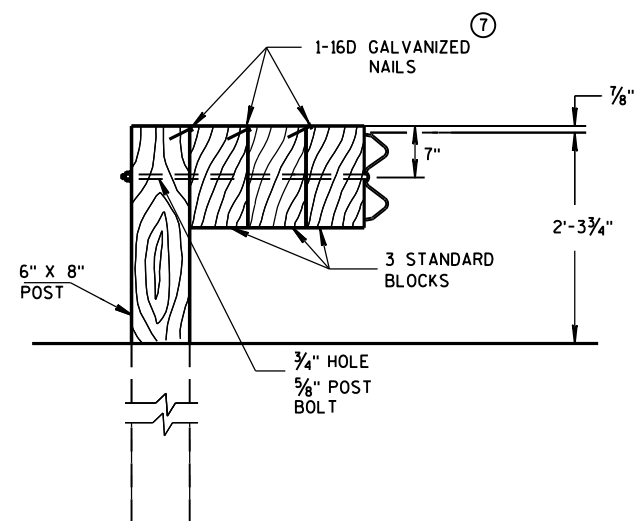
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 116



DETAIL FOR DOUBLE BLOCKS

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

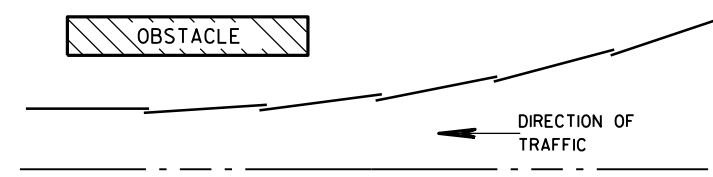


DETAIL FOR TRIPLE BLOCKS

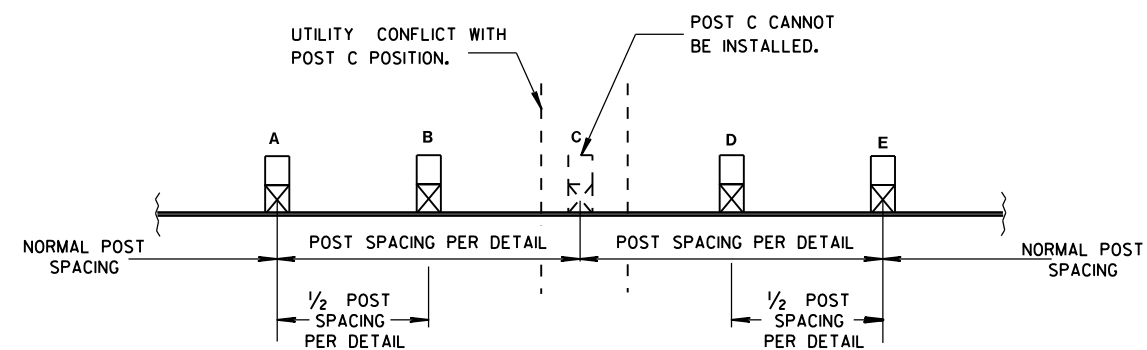
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

117

INT

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	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑮	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS, IF NONE ARE AVAILABLE, INSTALL 3/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) 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 3/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.

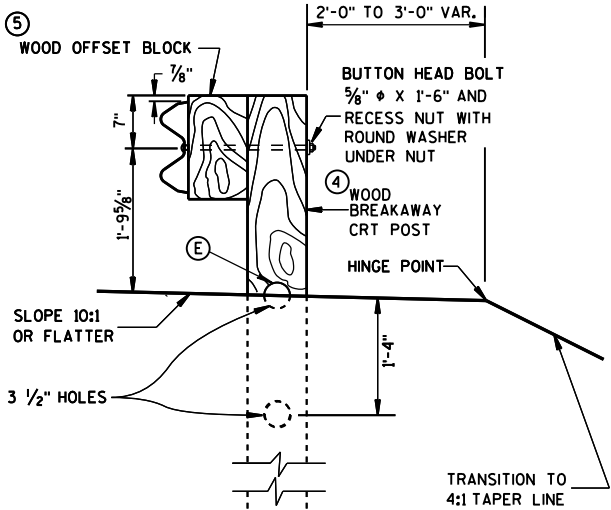
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

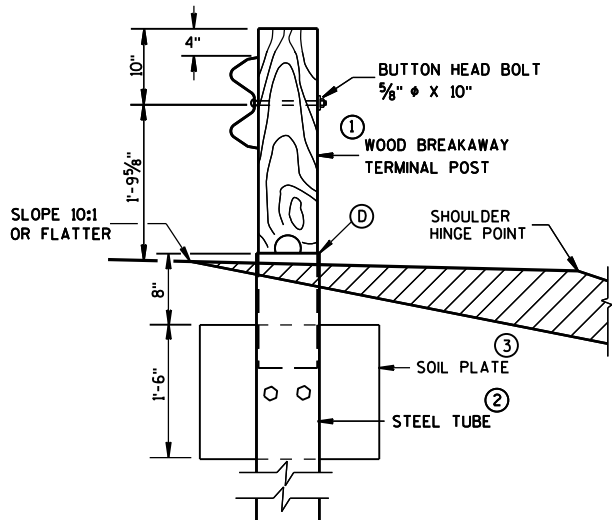
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

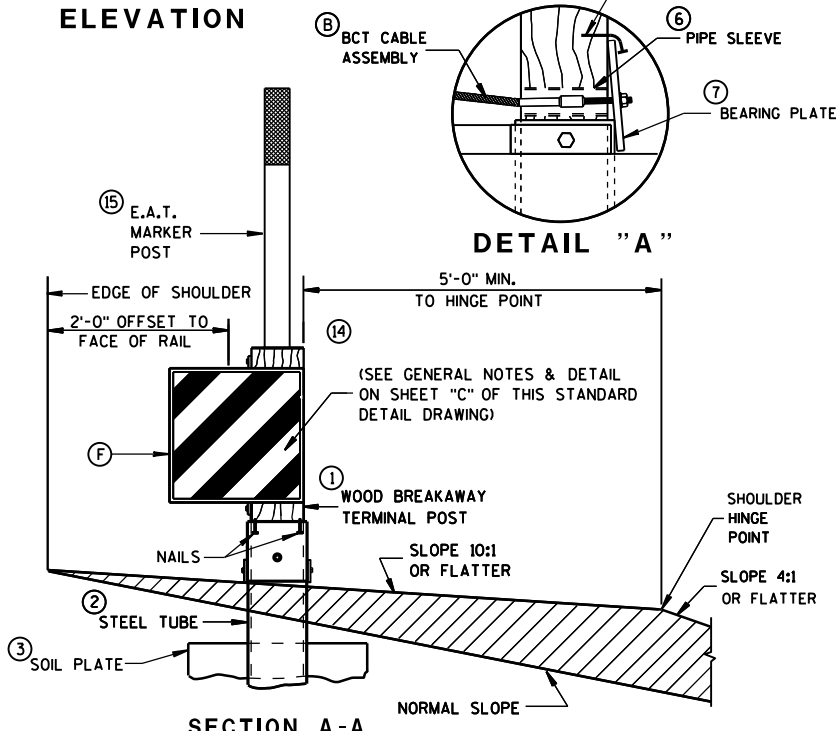
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE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



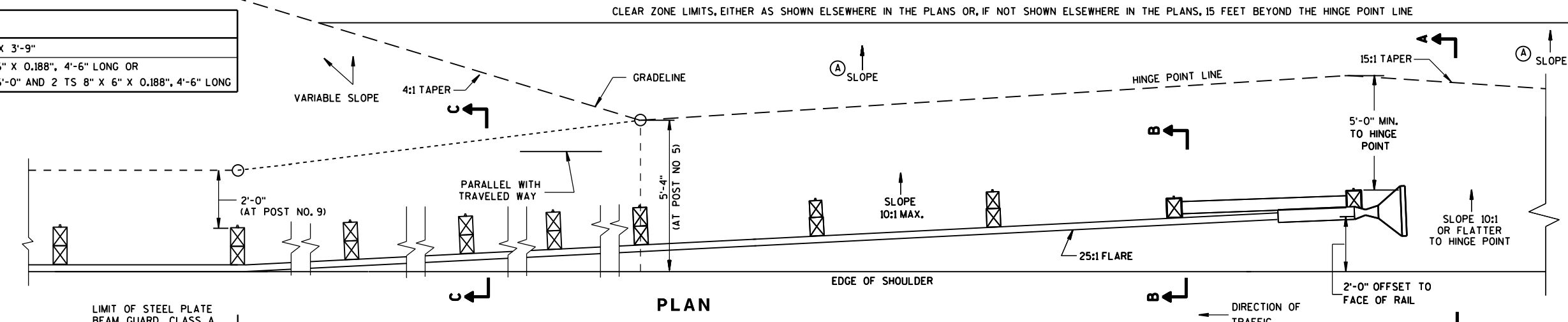
SECTION C-C
TYPICAL AT POST NOS. 6, 8



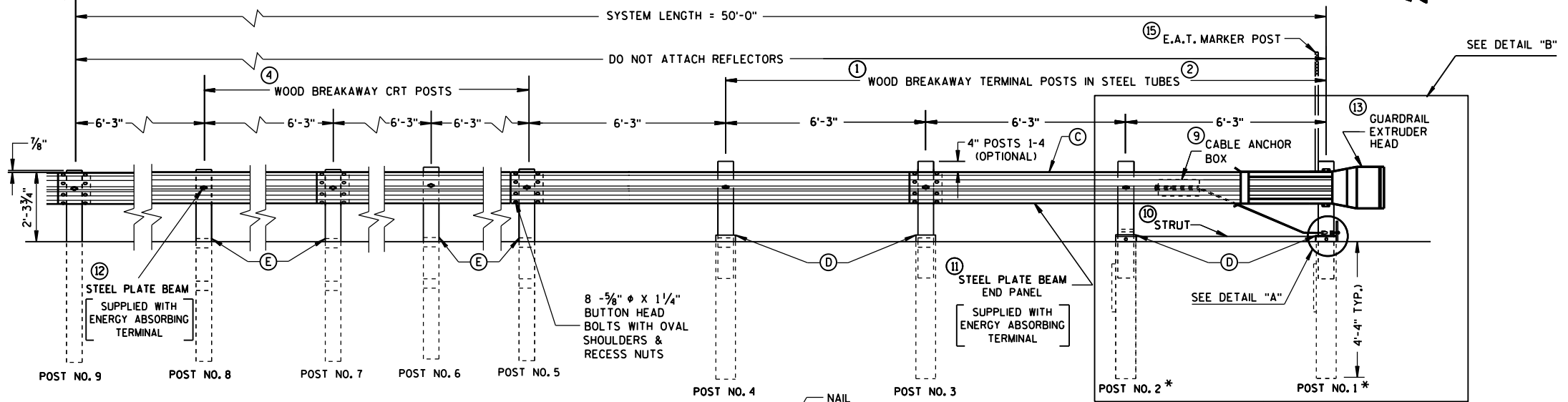
SECTION B-B
TYPICAL AT POST NO. 2 *



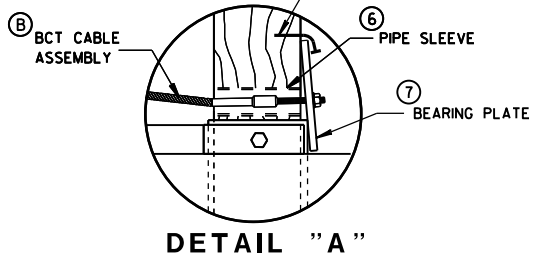
SECTION A-A
TYPICAL AT POST NO. 1 *



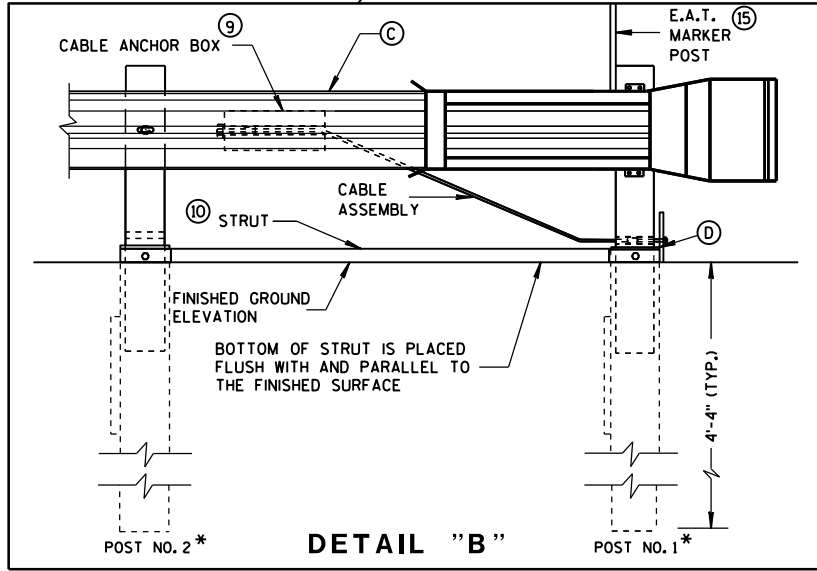
PLAN



ELEVATION



DETAIL "A"

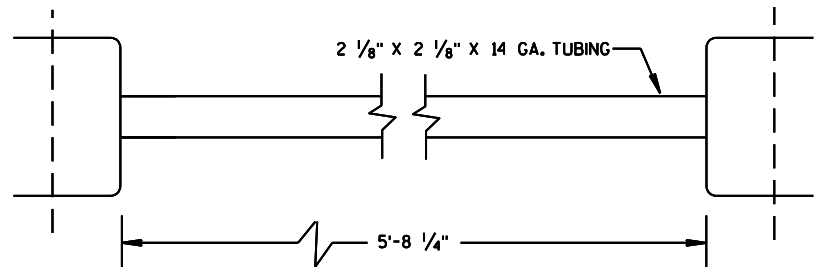


DETAIL "B"

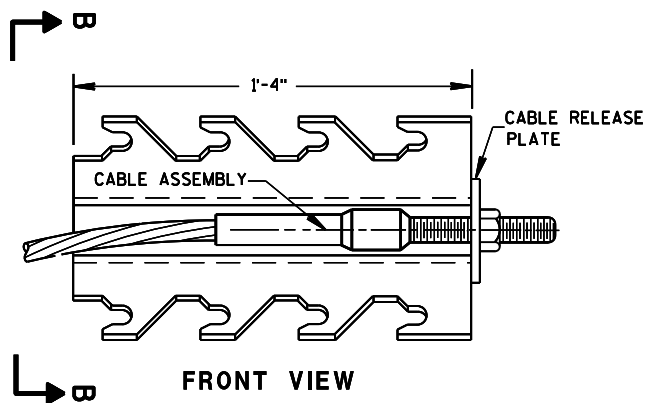
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

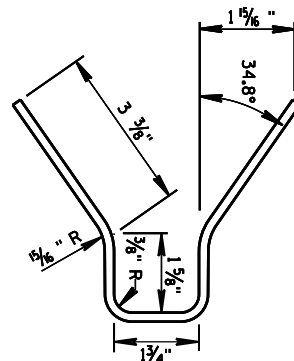
118



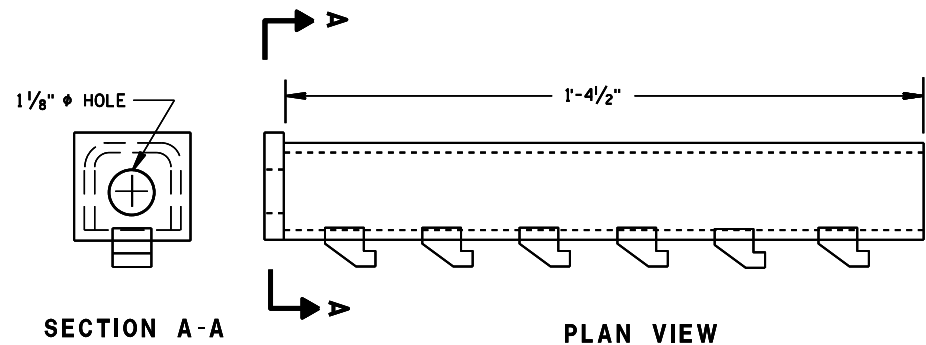
⑩ STRUT DETAIL (SKT-350)



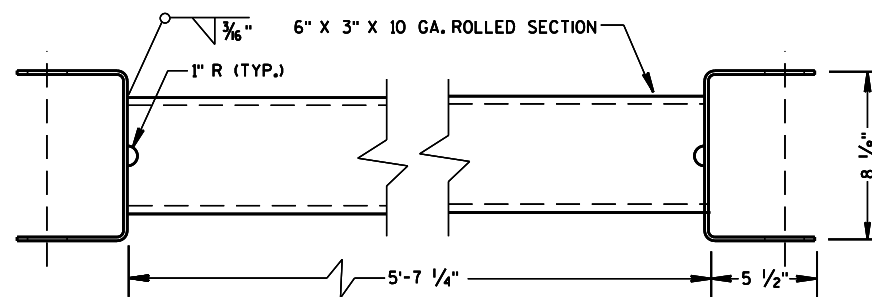
⑨ CABLE ANCHOR BOX (SKT-350)
(SKT-350)



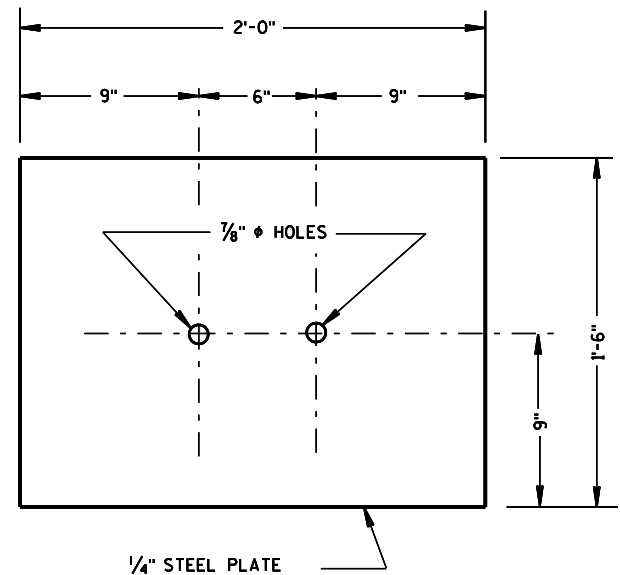
SECTION B-B



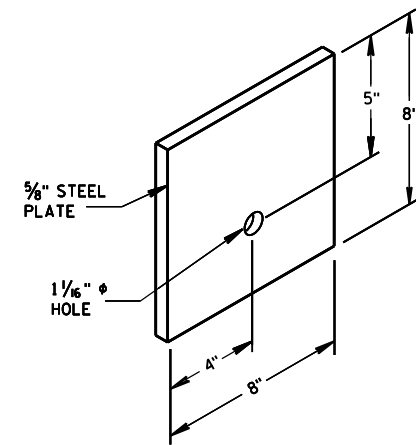
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



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



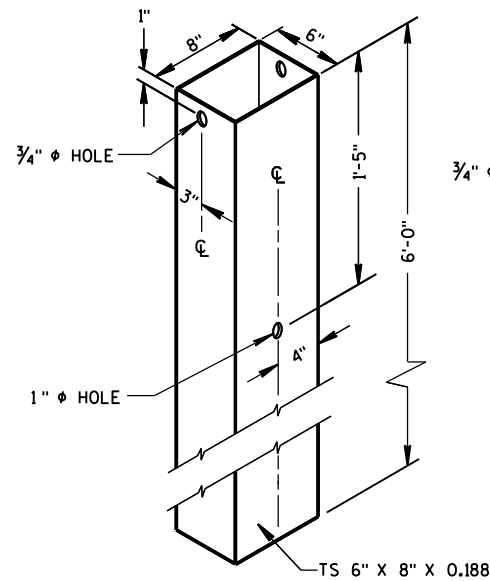
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



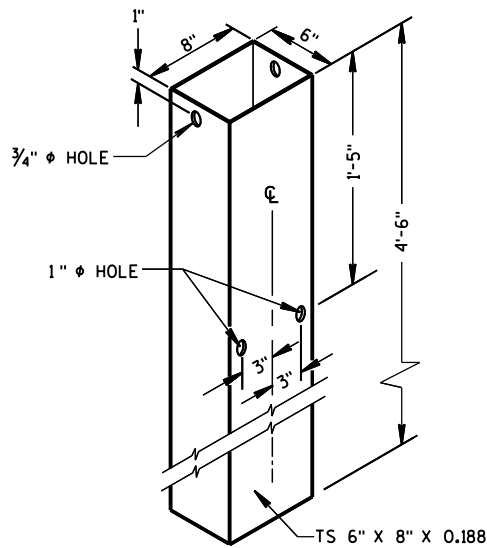
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

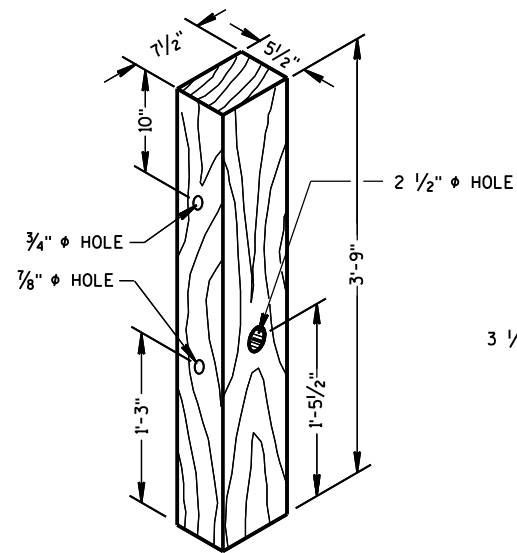
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 119



② 72" STEEL TUBE
(POSTS NO. 1-4)

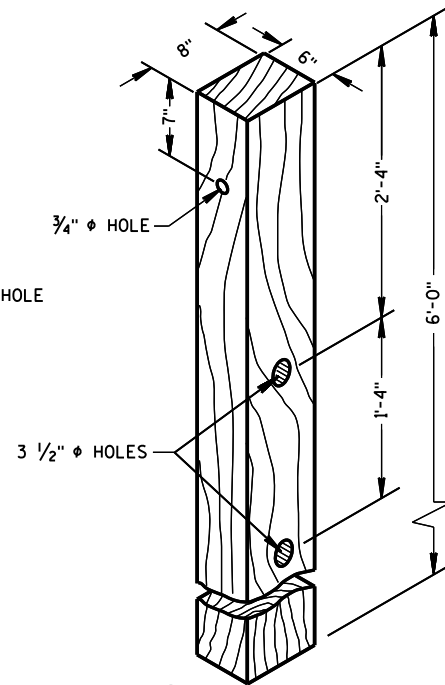


② 54" STEEL TUBE
(POSTS NO. 1-4)



① TERMINAL POST
(POSTS NO. 1-4)

WOOD BREAKAWAY POSTS



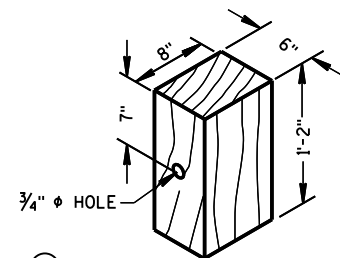
④ CRT POST
(POSTS NO'S 5-8)

GENERAL NOTES

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.

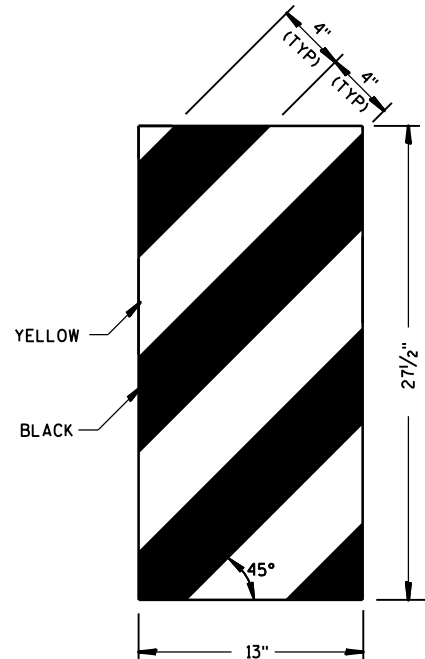
SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

⑥ 1/2" DIA. X 3" LAG BOLT WITH WASHER.

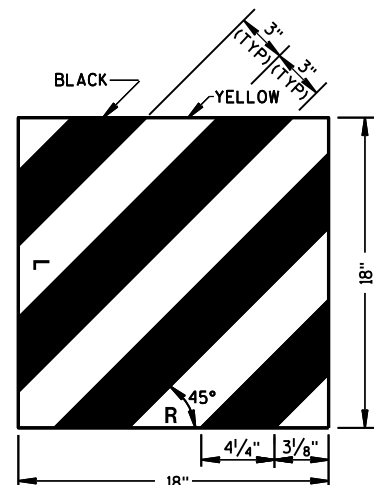


⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9"
SEE STANDARD
SPECIFICATION 637

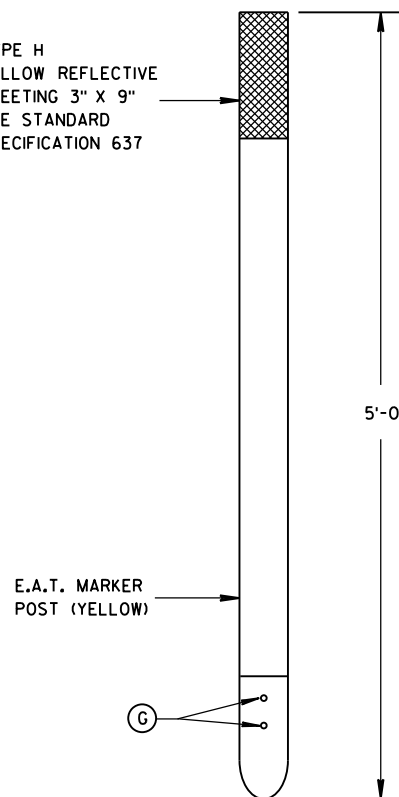


ET-2000 PLUS ONLY

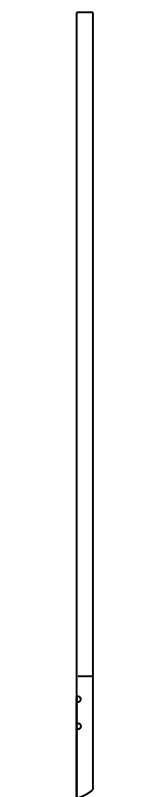


ET-2000 AND SKT-350

⑭ REFLECTIVE SHEETING DETAILS

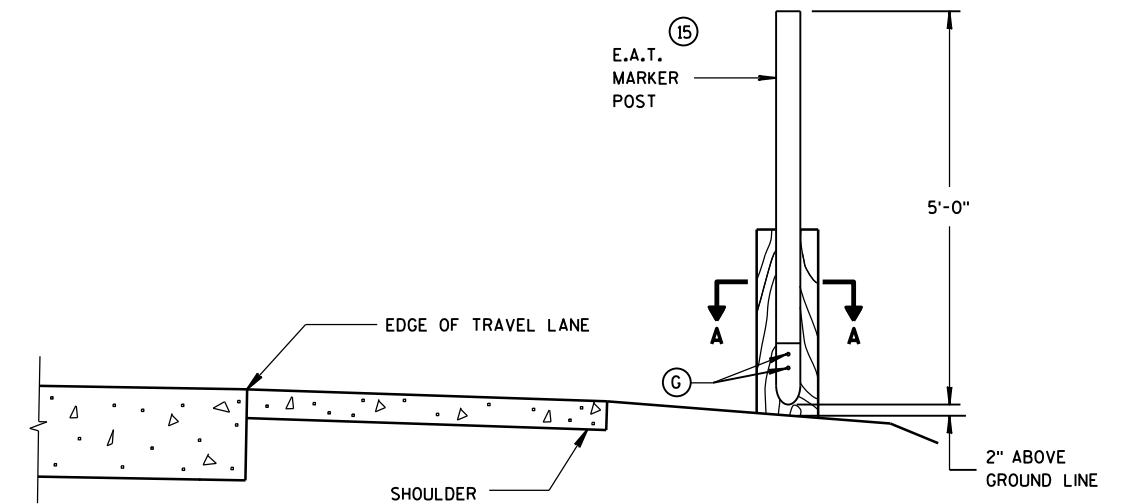


FRONT VIEW

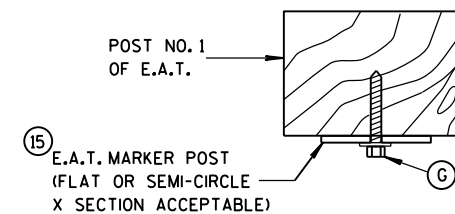


SIDE VIEW

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

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

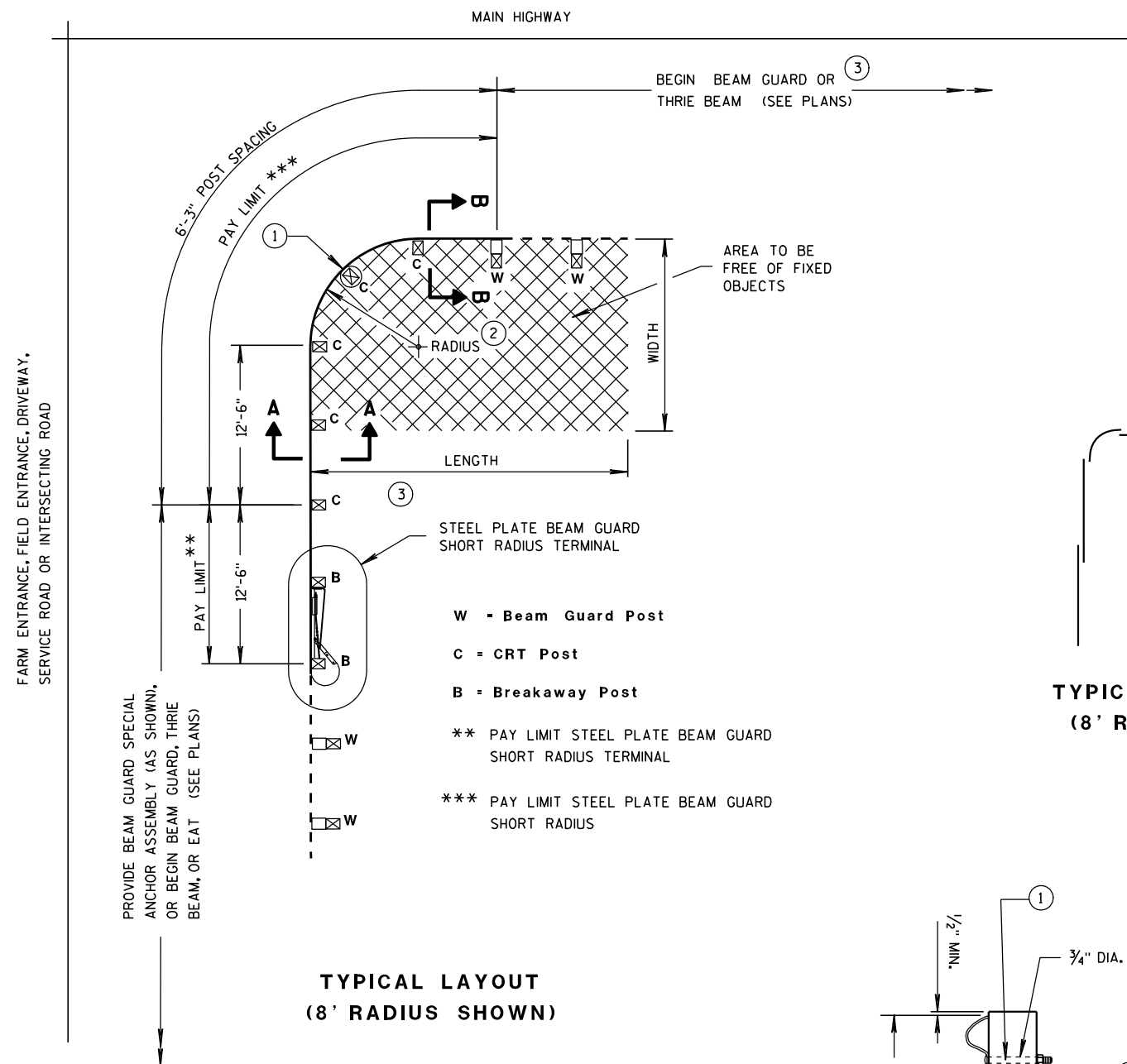
APPROVED

June 2014
DATE

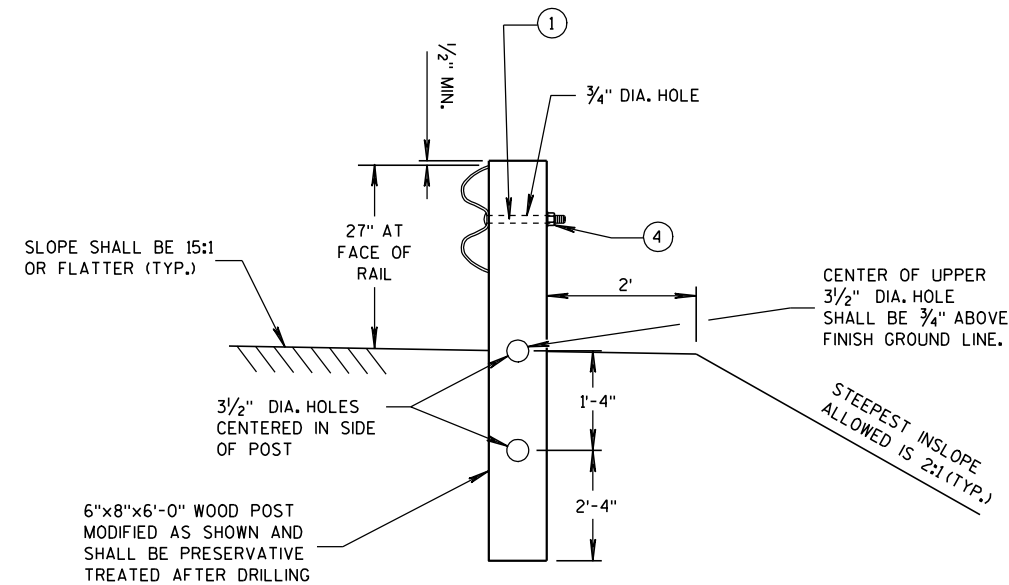
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

ENT



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



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

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

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

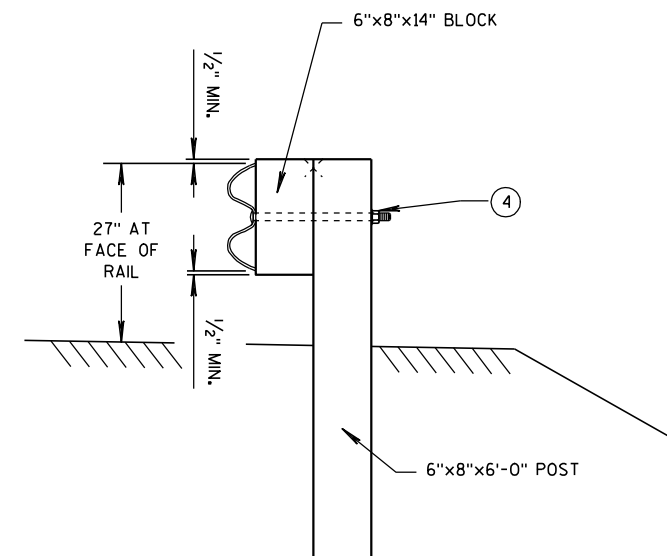
SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

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

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

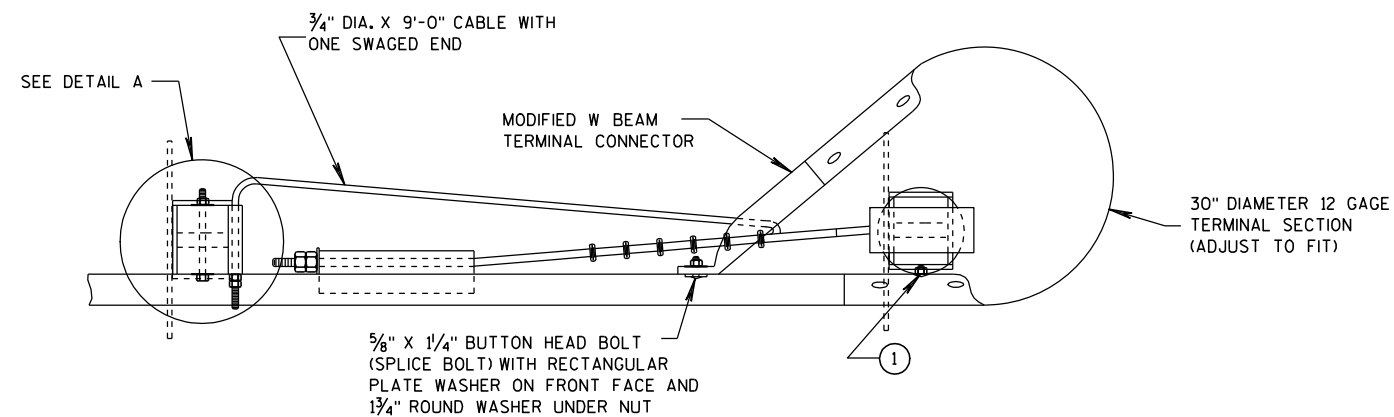
* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



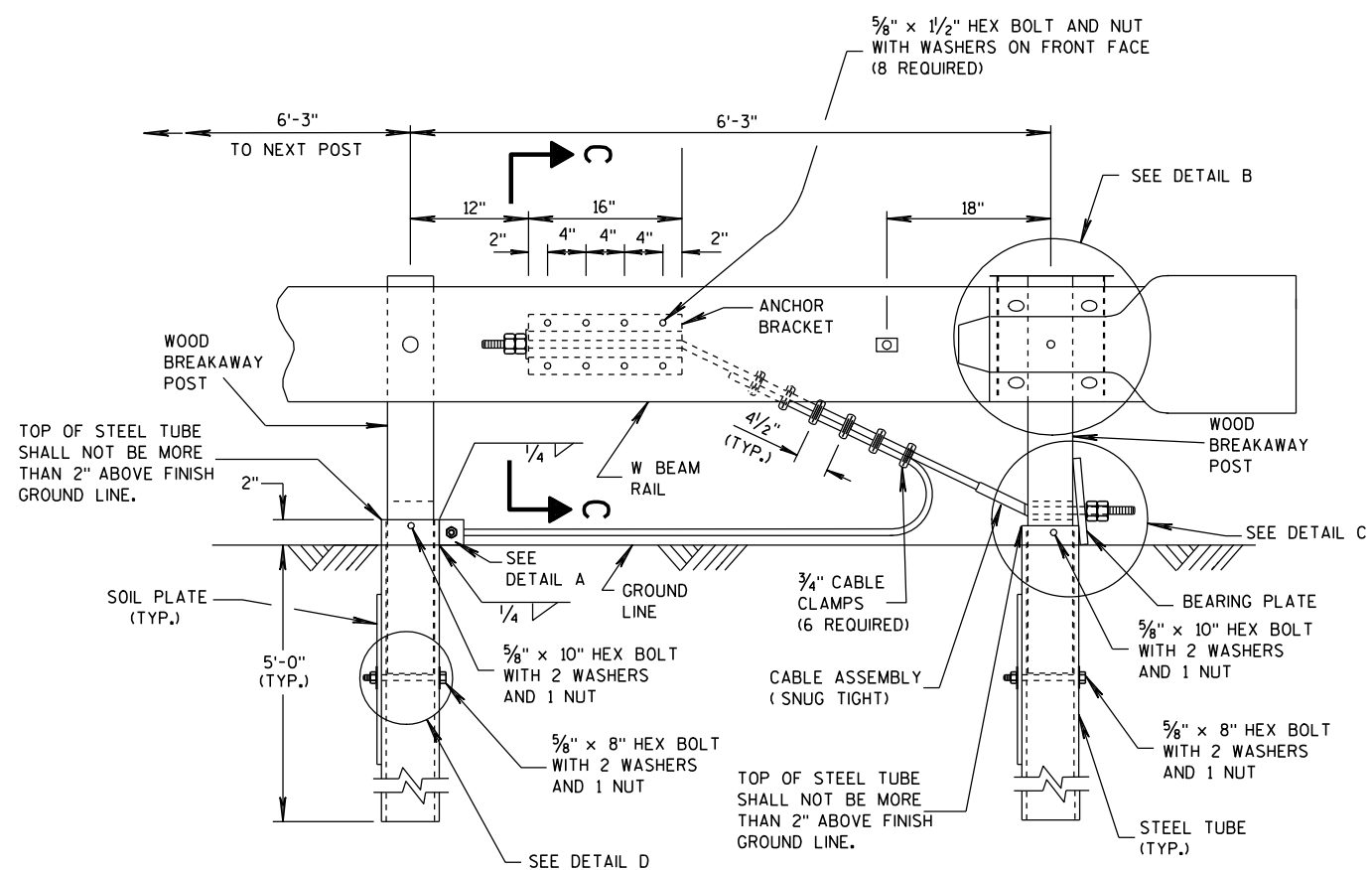
**SECTION B-B
(BEAM GUARD POST)**

**STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

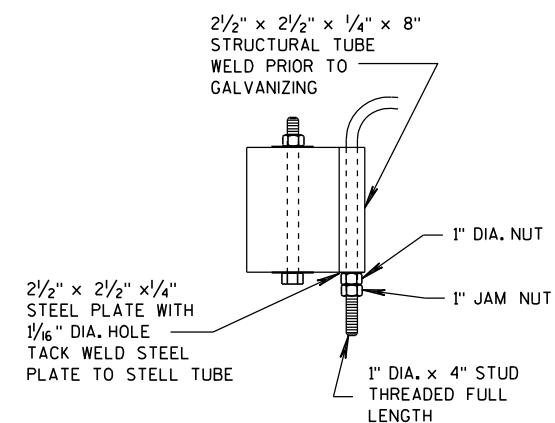


ELEVATION VIEW

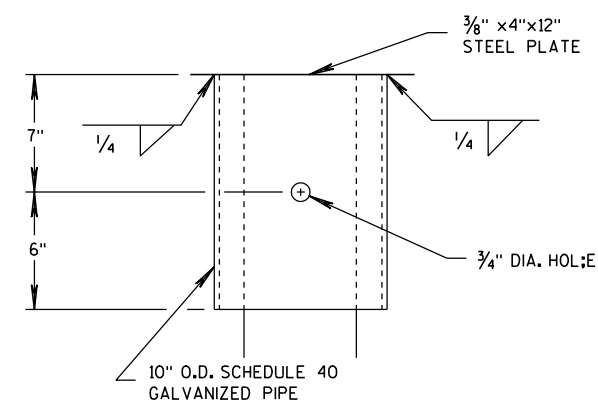
STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

GENERAL NOTES

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



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

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



STEEL PLATE BEAM GUARD
SHORT RADIUS TERMINAL

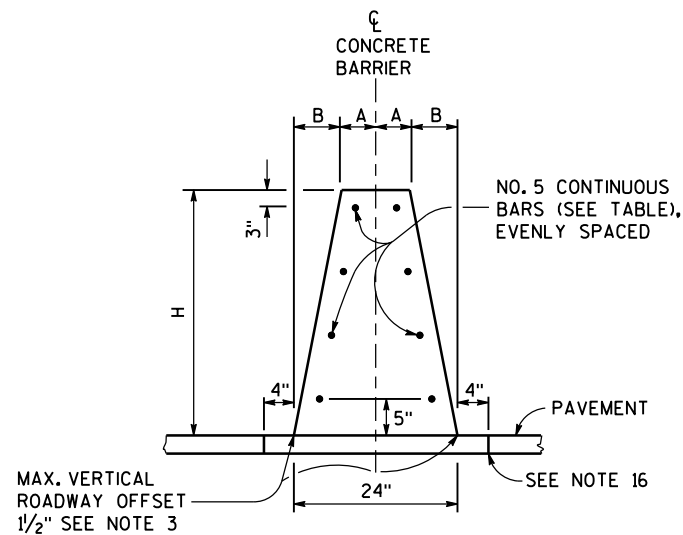
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/18/08
DATE

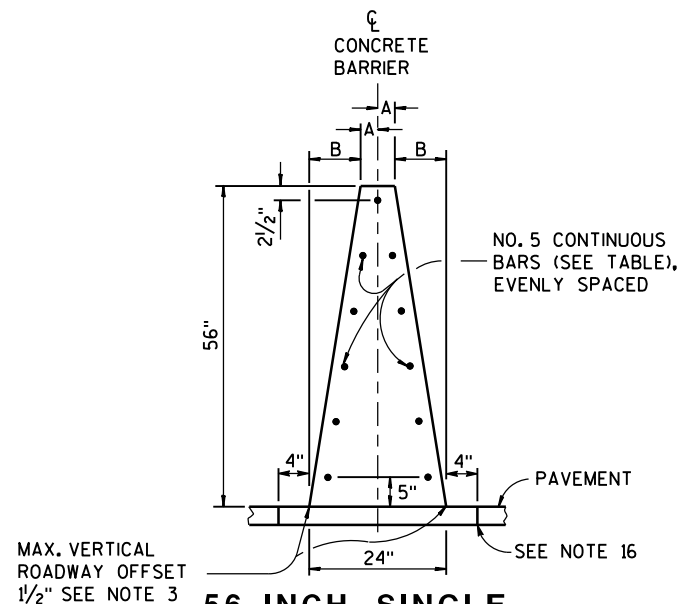
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER 123

INT

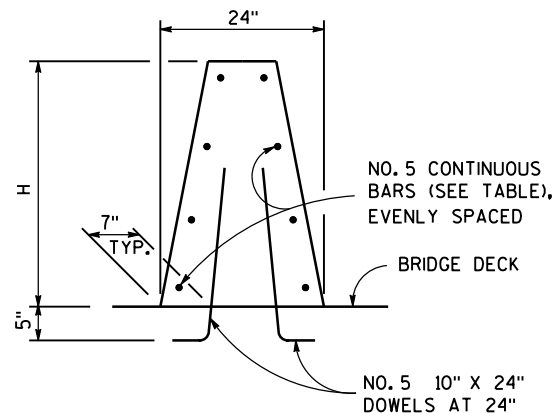
FHWA



**32-INCH, 36-INCH OR 42-INCH
SINGLE SLOPE CONCRETE BARRIER
(TYPE S32, TYPE S36, AND
TYPE S42)**



**56-INCH SINGLE
SLOPE CONCRETE BARRIER
(TYPE S56)**

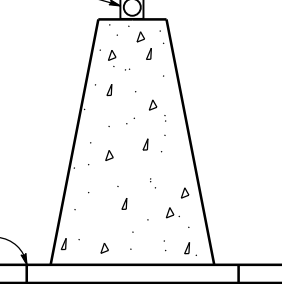


**SINGLE SLOPE
CONCRETE BARRIER
ON BRIDGE**

SEE STANDARD
DETAIL DRAWING 15A2
FOR DELINEATOR
DETAILS

NON OUTER PARAPET APPLICATION

SEE OTHER
DETAILS



14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.

15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.

16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.

GENERAL NOTES

- WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
- EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR 1/2" MINIMUM.
- WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1 1/2", USE TYPE A
- PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
- EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
- FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 X 8" @ 2'-0".
- STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
- 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
- WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
- USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
- 2" CLEAR COVER TYPICAL.
- COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
- IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL.

DELINEATOR SPACING ON HORIZONTAL CURVES

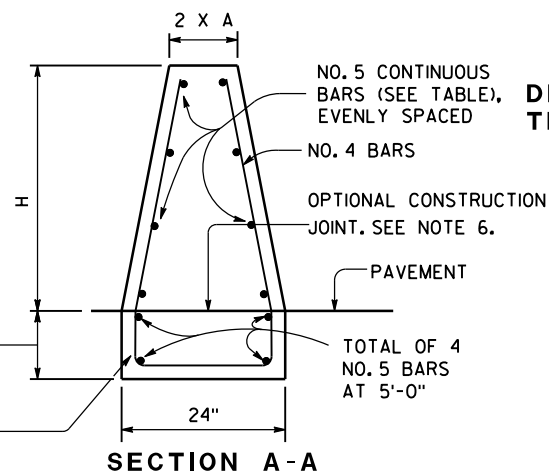
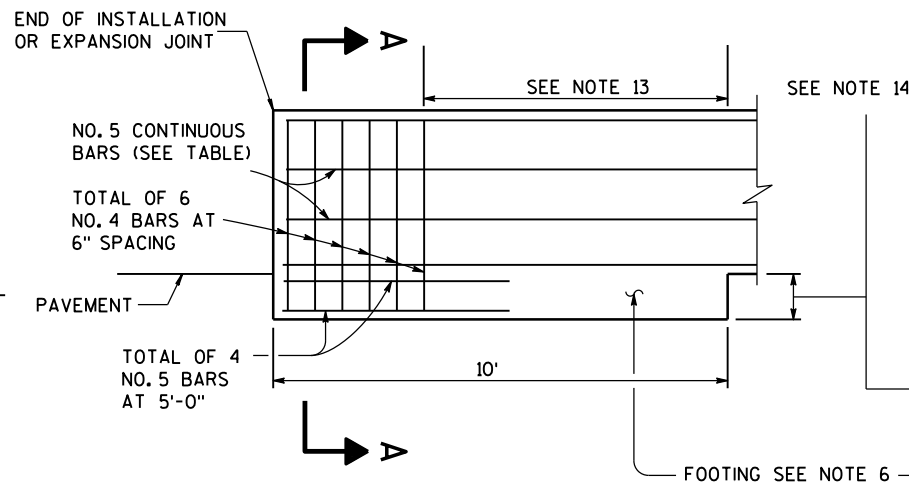
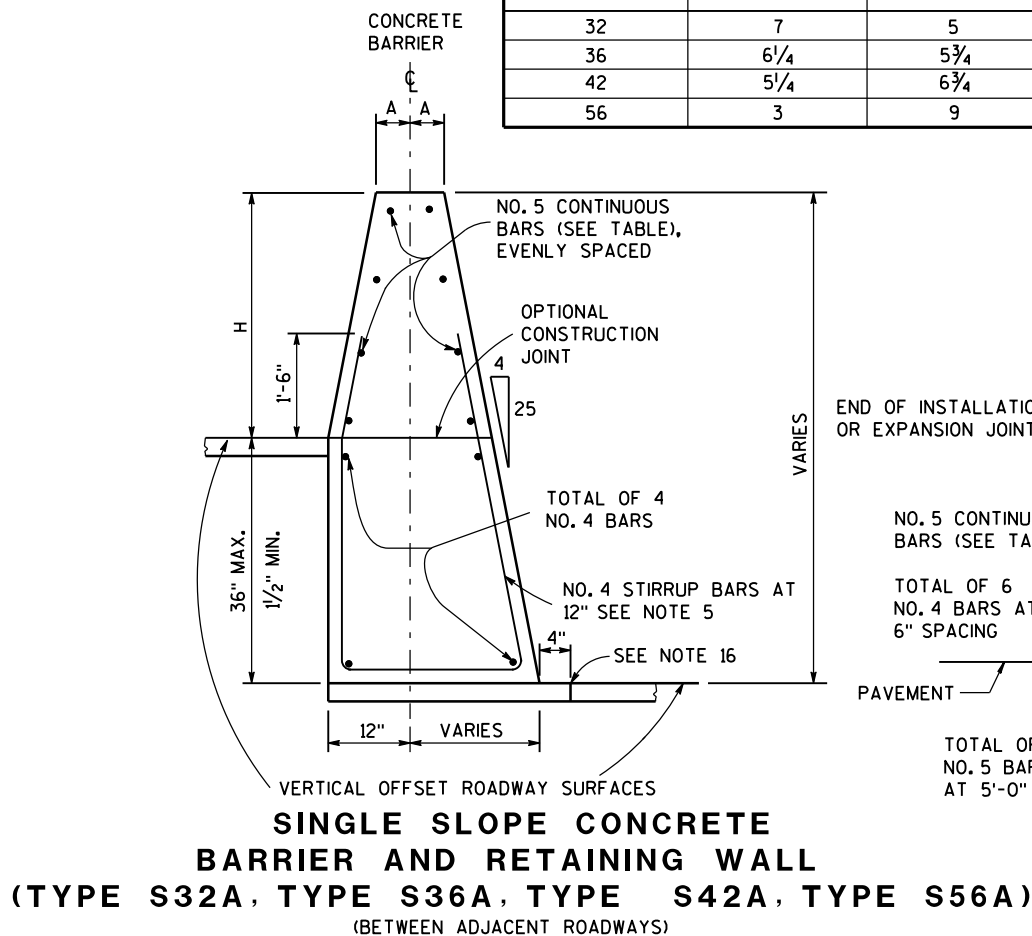
RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

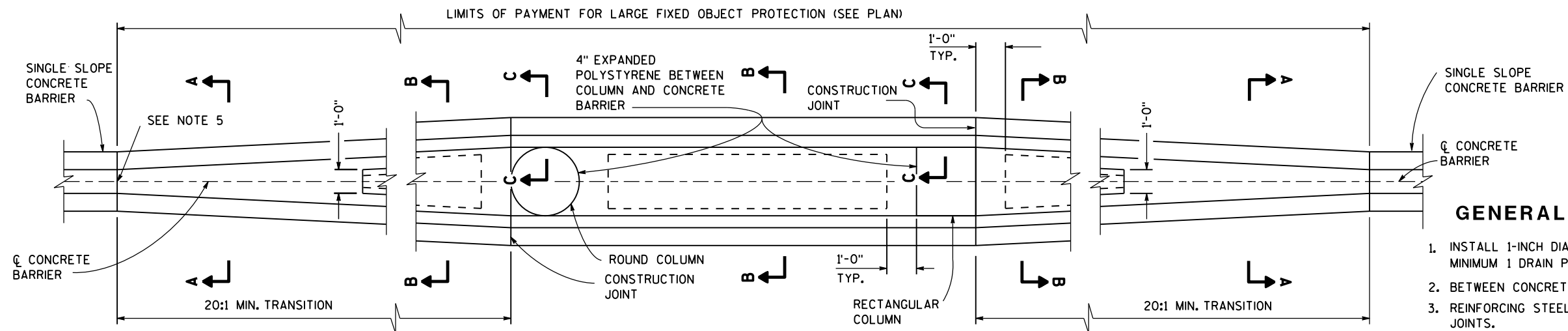
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

	LENGTH OF BARRIER	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 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2	3

CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 124

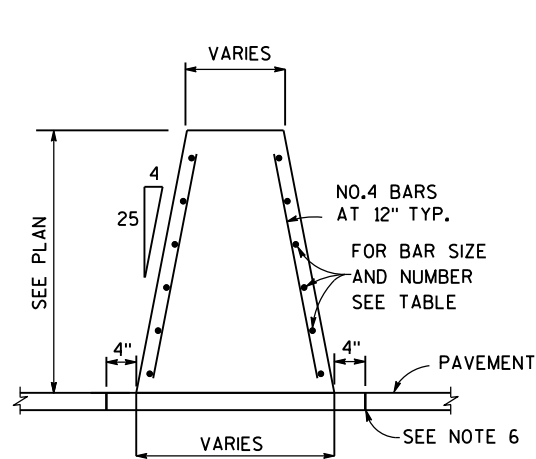




LARGE FIXED OBJECTS PROTECTION

TYPE S32, TYPE S36, TYPE S42, TYPE S56

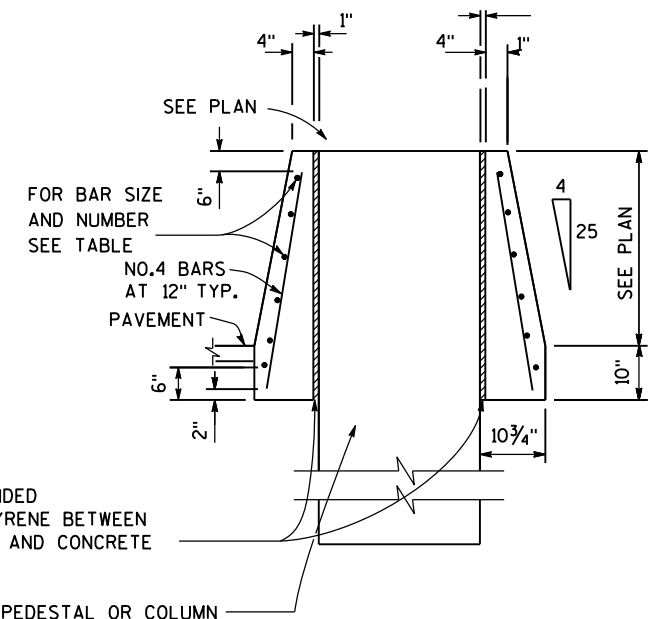
GENERAL NOTES



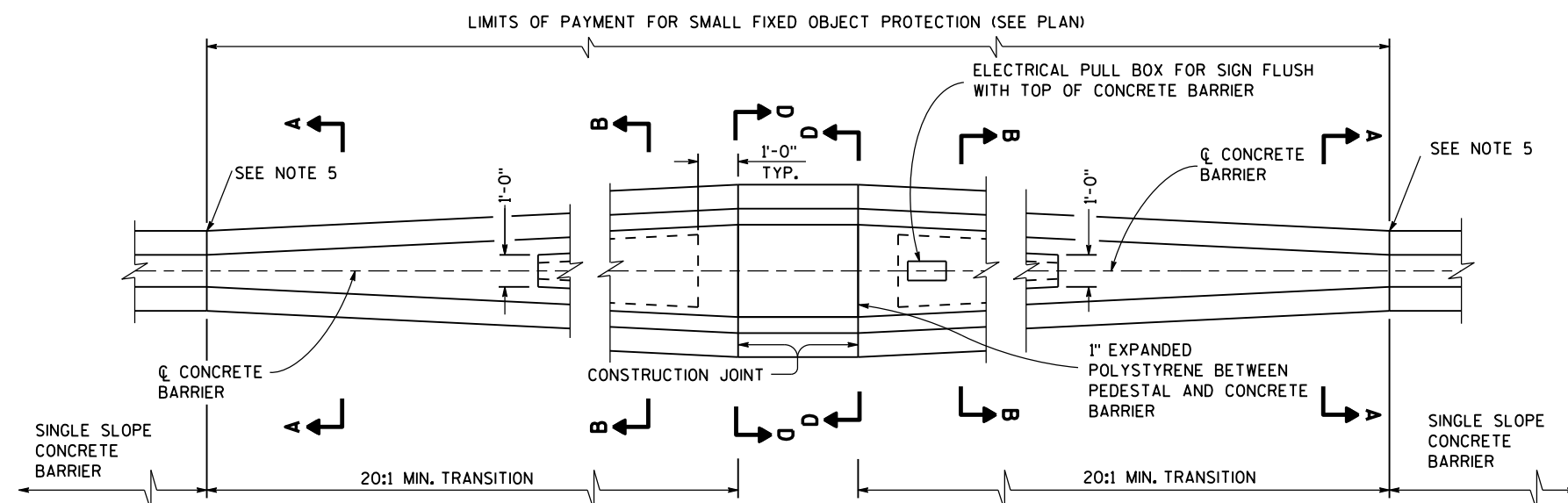
SECTION A-A

SECTION B-B

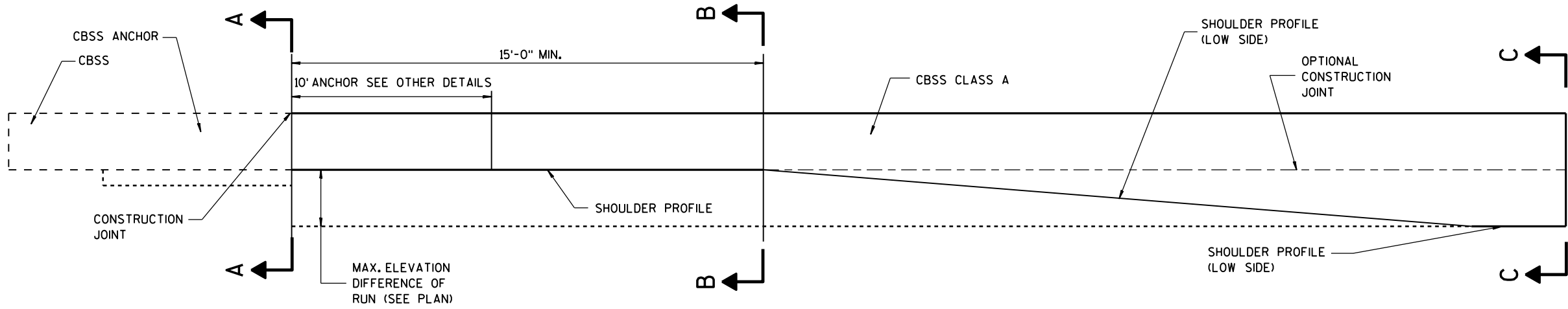
SECTION C-C



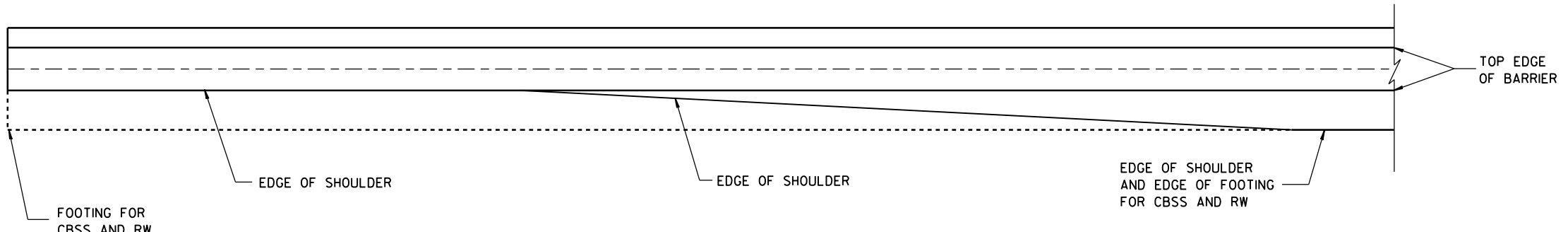
SECTION D-D



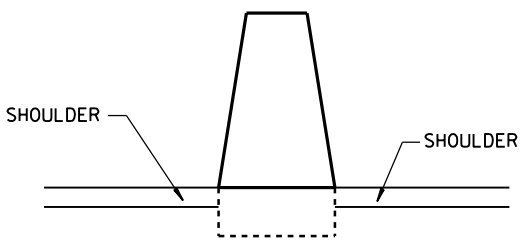
SMALL FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56



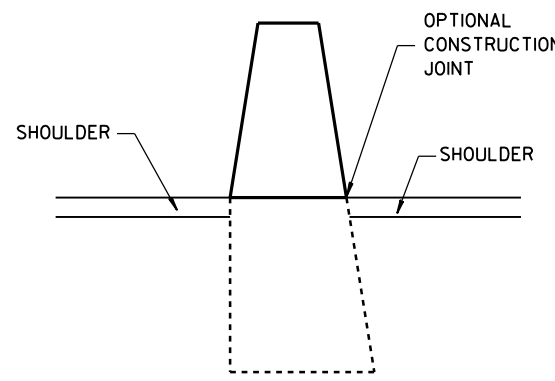
ELEVATION VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



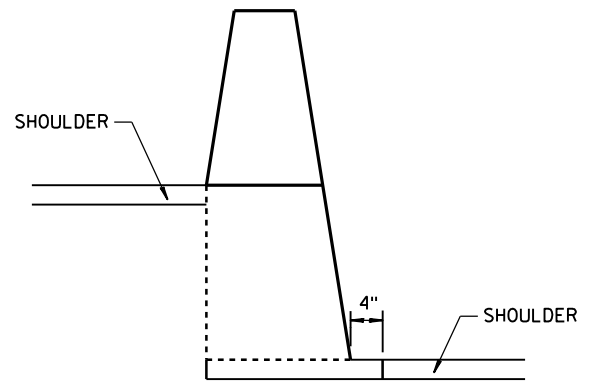
PLAN VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



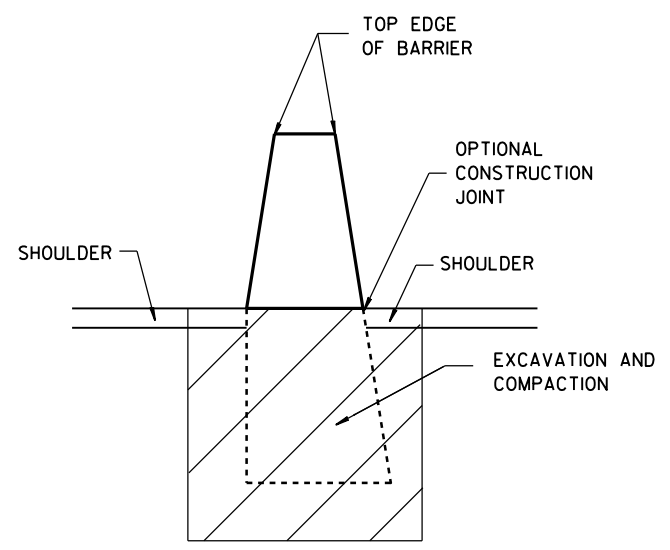
SECTION A-A



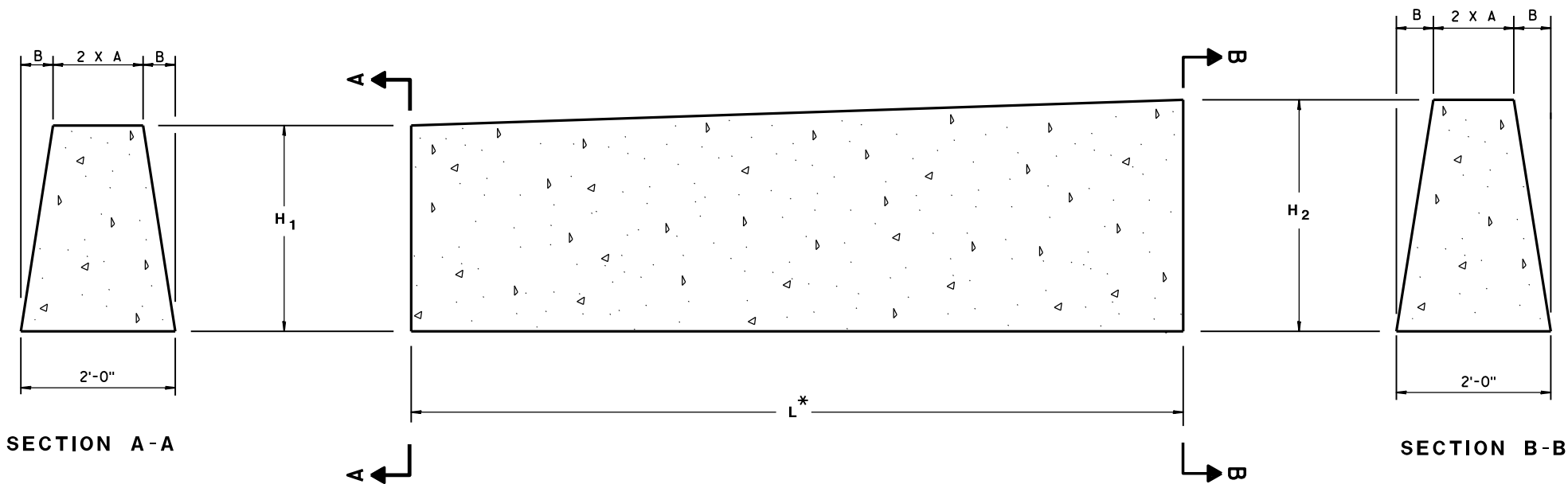
SECTION B-B



SECTION C-C



CONCRETE BARRIER SINGLE SLOPE (CBSS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 126



SECTION A-A

SECTION B-B

DOUBLE COLD JOINT HEIGHT TRANSITION

BARRIER DIMENSIONS

BARRIER HEIGHT INCHES	A INCHES	B INCHES
32	7	5
36	6 $\frac{1}{4}$	5 $\frac{3}{4}$
42	5 $\frac{1}{4}$	6 $\frac{3}{4}$
56	3	9

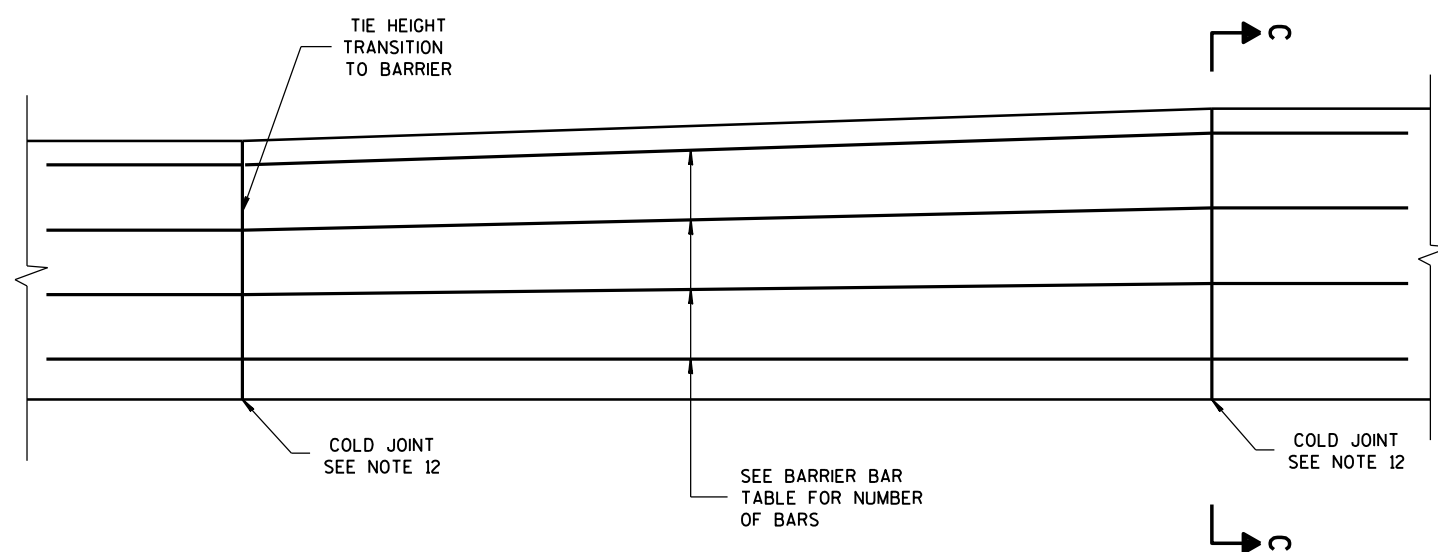
MULTIPLE HEIGHT TRANSITIONS MAY BE USED IN SEQUENCE TO GET TO APPROPRIATE HEIGHT.

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

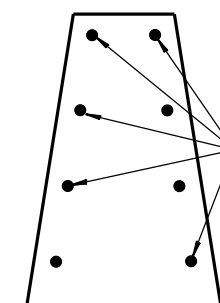
BARRIER BARS

H ₁	H ₂	L *	NUMBER OF NO. 5 BARS
32"	36"	10'-0"	8
36"	42"	10'-6"	10
42"	56"	24'-6"	11

*
LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



STEEL REINFORCEMENT DETAIL



SECTION C-C

SEE BARRIER BAR
TABLE FOR NUMBER
OF BARS

CONCRETE BARRIER
SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016

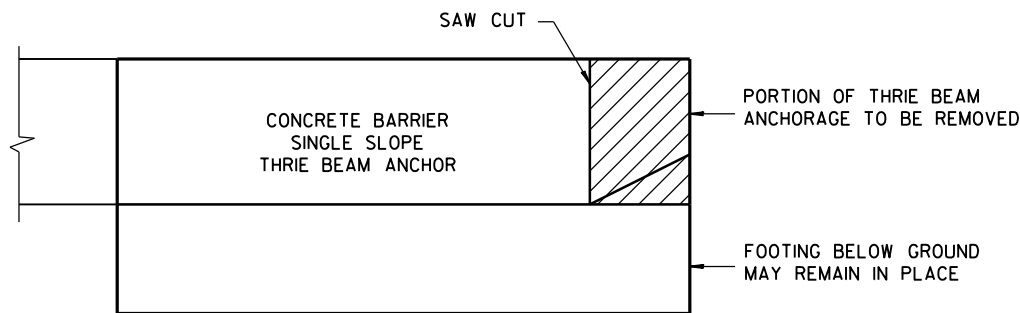
DATE

FHWA

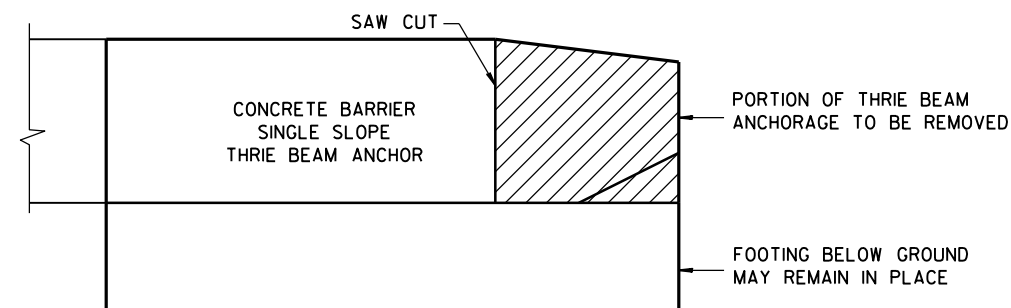
/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

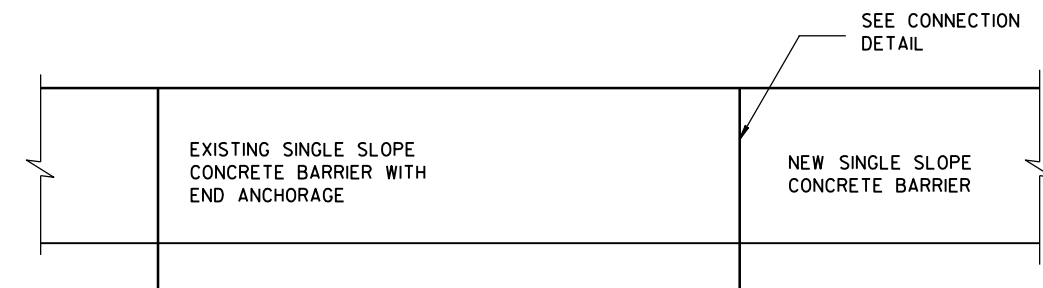
127 INT



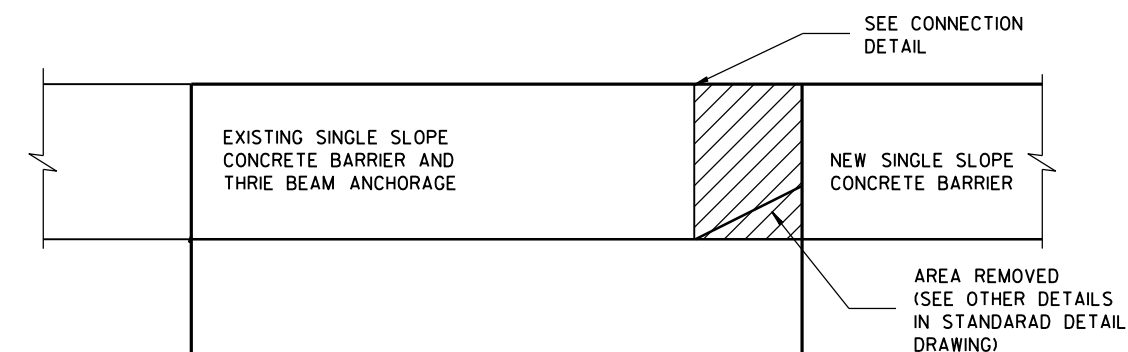
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



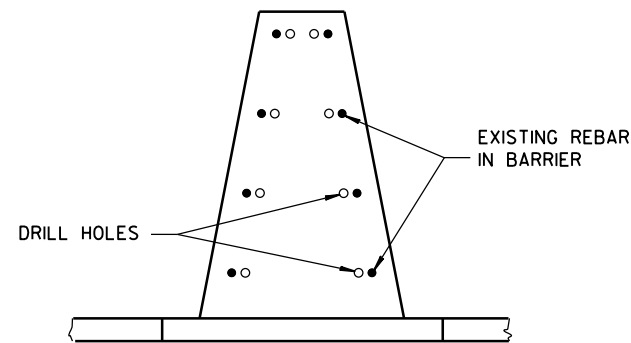
REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR END ANCHORAGE



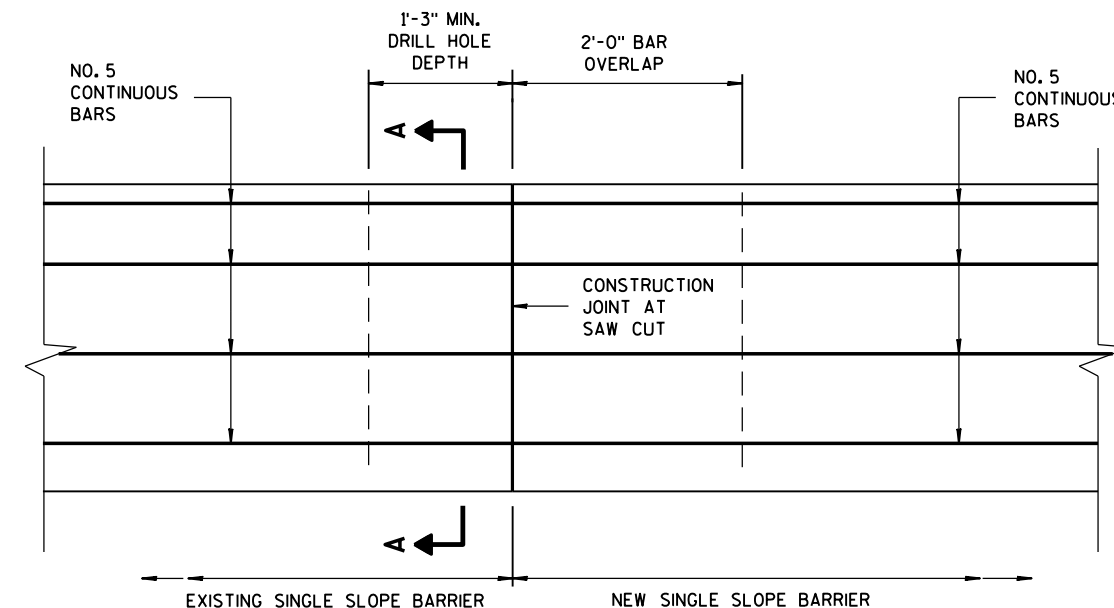
ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR THRIE BEAM TERMINAL



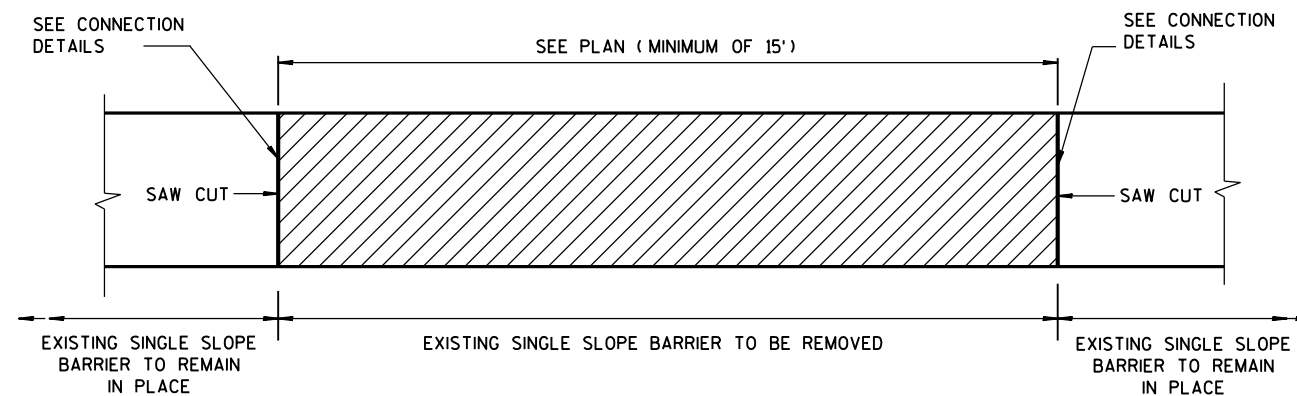
SECTION A-A

GENERAL NOTES

1. THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF REBAR IN BARRIER (SEE OTHER DETAILS).
2. MINIMUM DEPTH OF DRILL HOLES IS 1'-3".
3. DRILL HOLES TO BE A MINIMUM OF 4 INCHES FROM THE EDGE OF CONCRETE.
4. INSTALL EPOXY COATED NO. 5 BARS IN DRILL HOLES.
5. END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.
6. REMOVE THRIE BEAM ANCHORAGE AS SHOWN.



CONNECTION OF EXISTING SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



ELEVATION VIEW
BARRIER REMOVAL AND REPLACEMENT

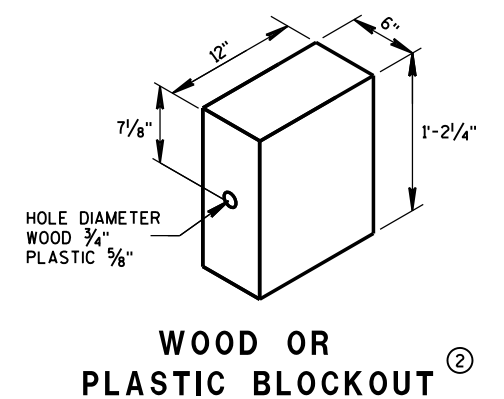
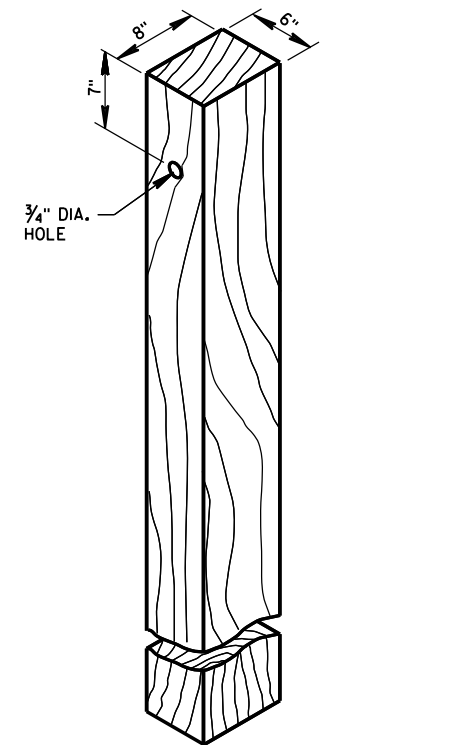
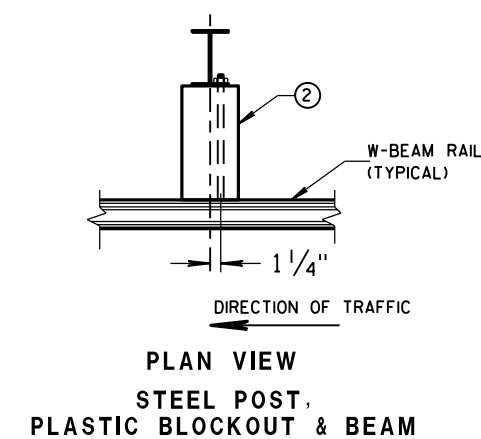
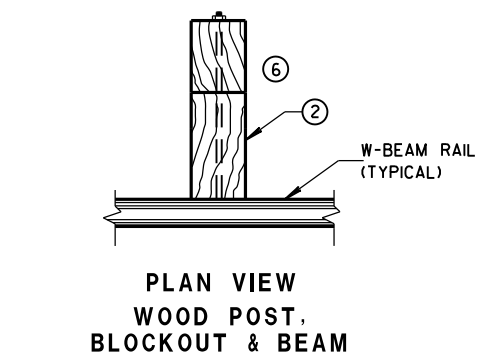
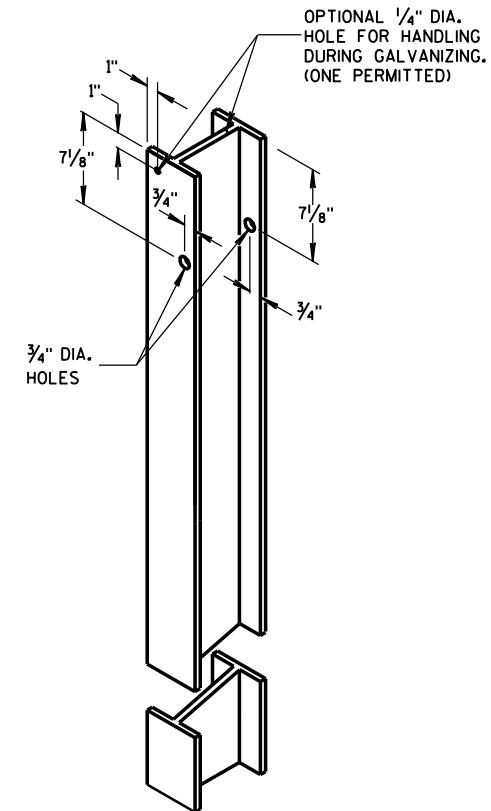
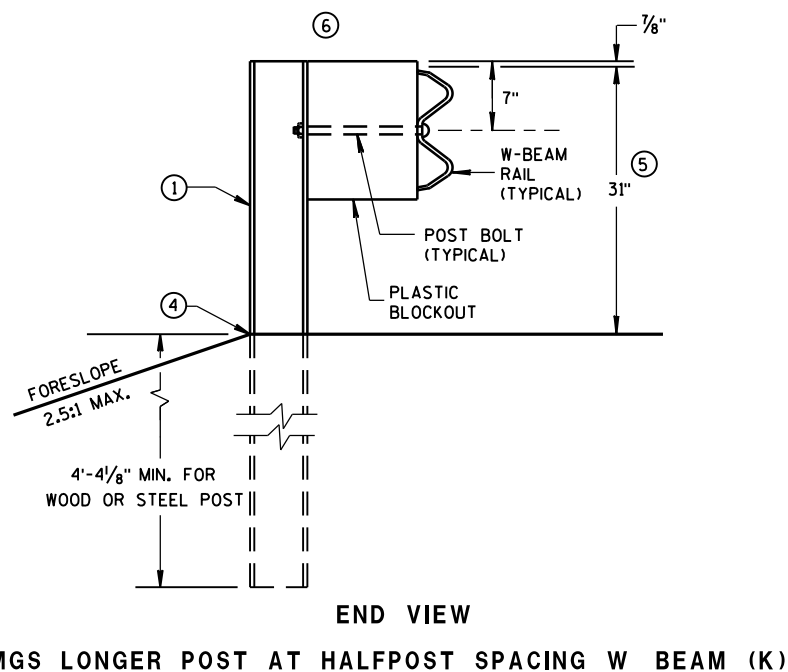
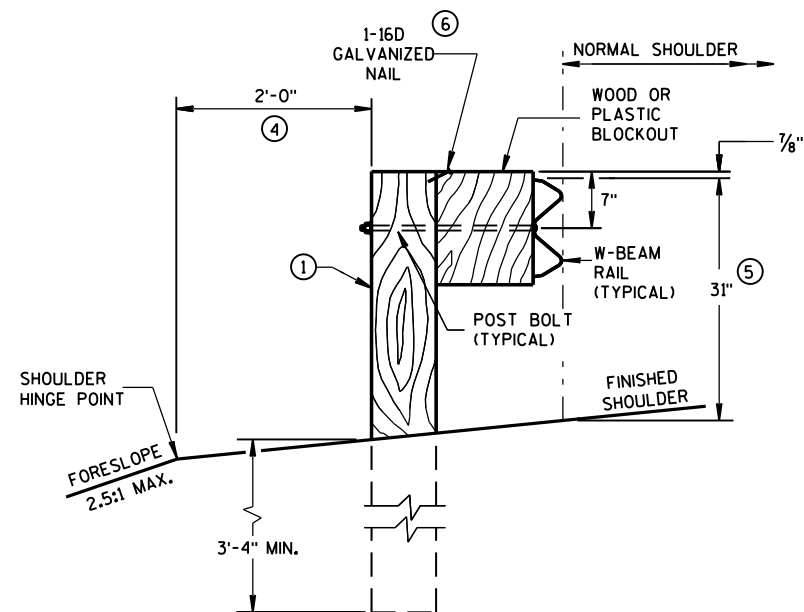
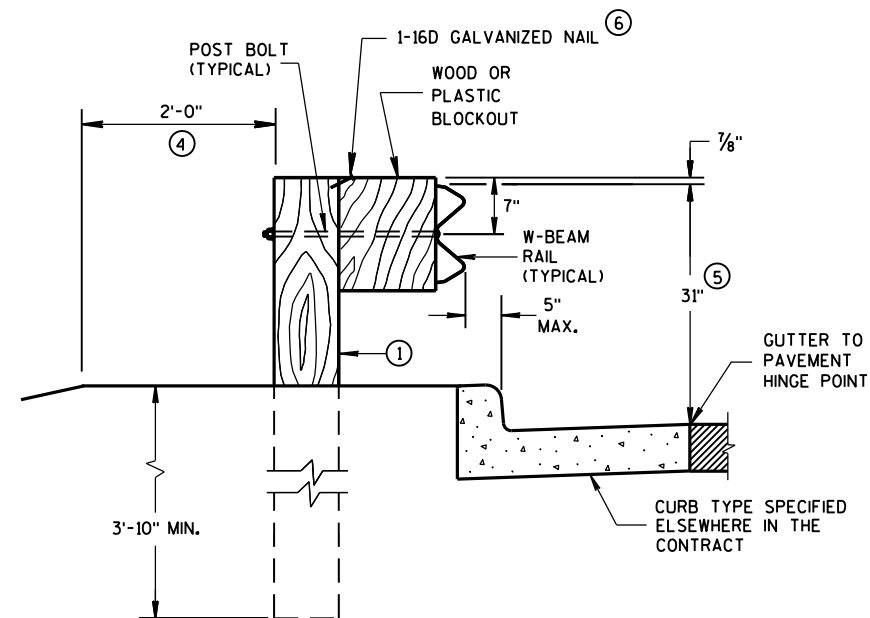
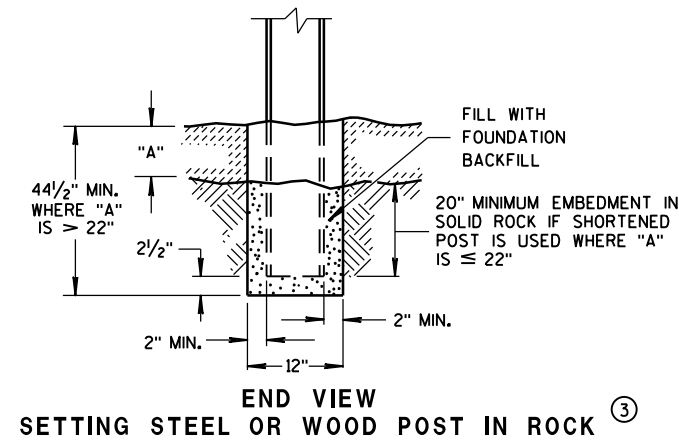
CONCRETE BARRIER
SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
FHWA

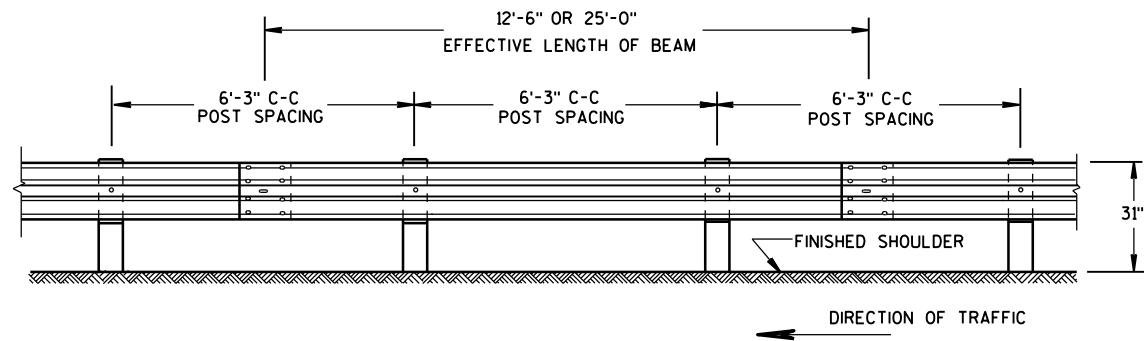
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
128 INT

- ① WOOD OR STEEL POSTS (W6X9 OR W6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY $2\frac{1}{2}$ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN $27\frac{3}{4}"$ TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



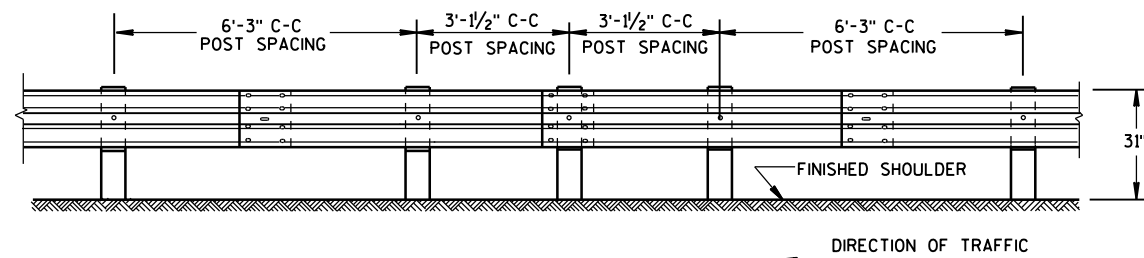
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 129



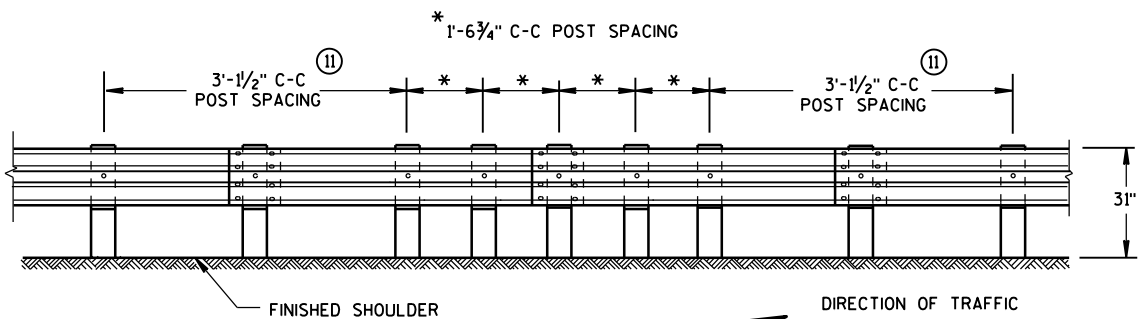
FRONT VIEW

POST SPACING STANDARD INSTALLATION



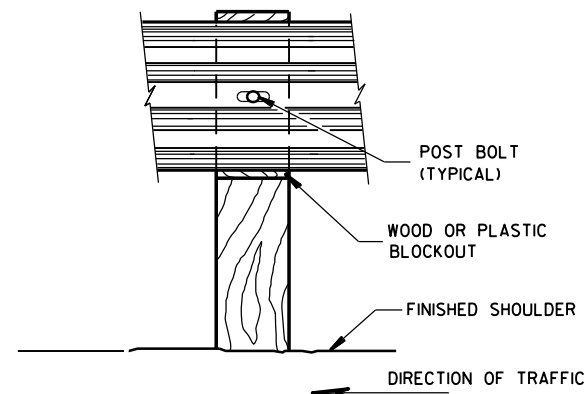
FRONT VIEW

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

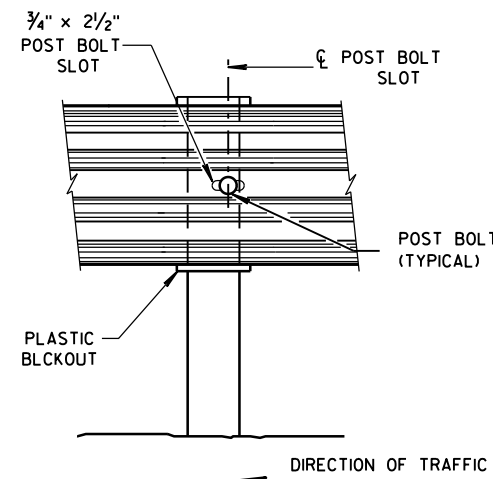


FRONT VIEW

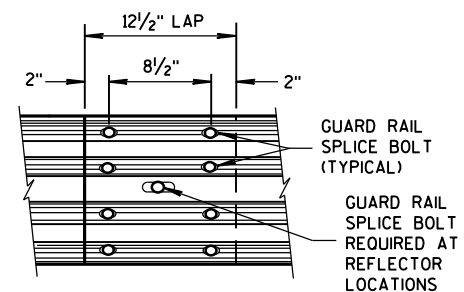
QUARTER POST SPACING (QS)



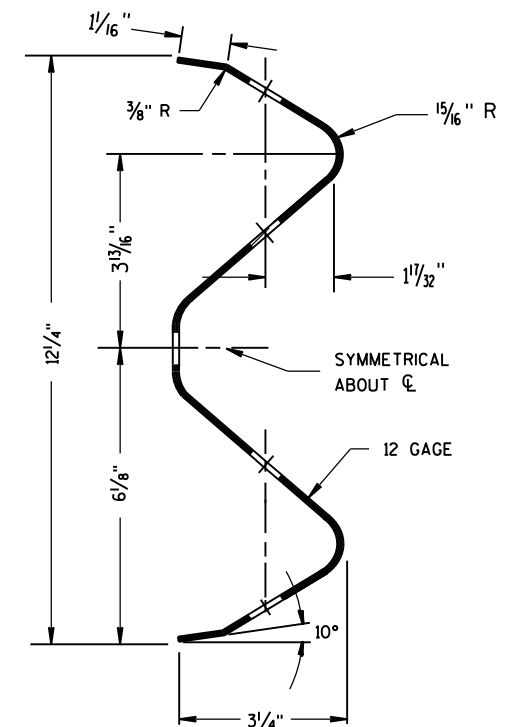
FRONT VIEW AT WOOD POST



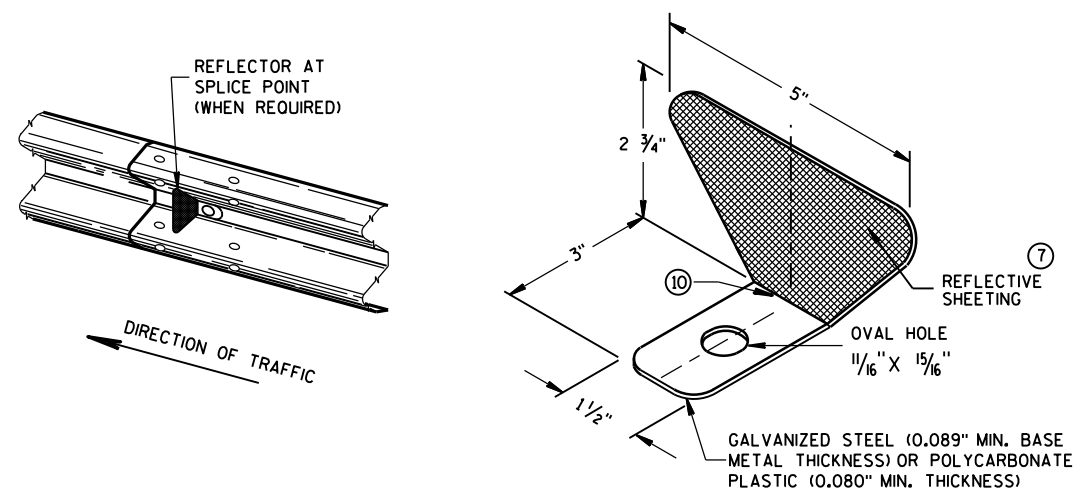
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



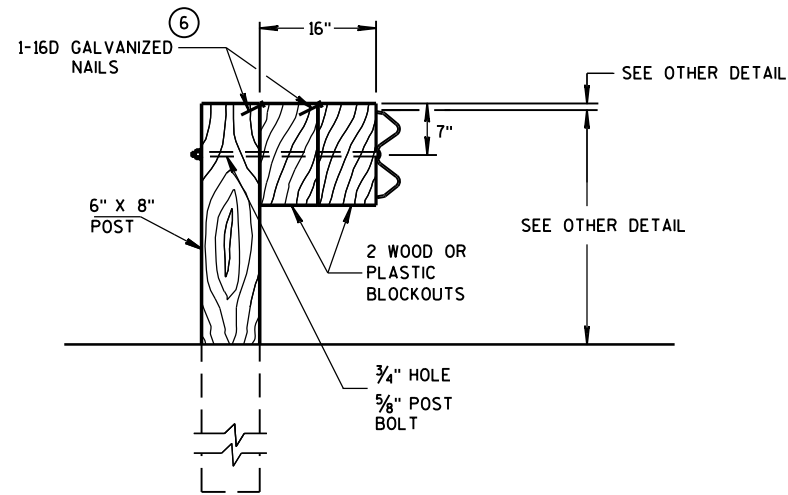
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ^⑧				
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ^⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ^⑩	3
	> 200'	100' C-C	2	

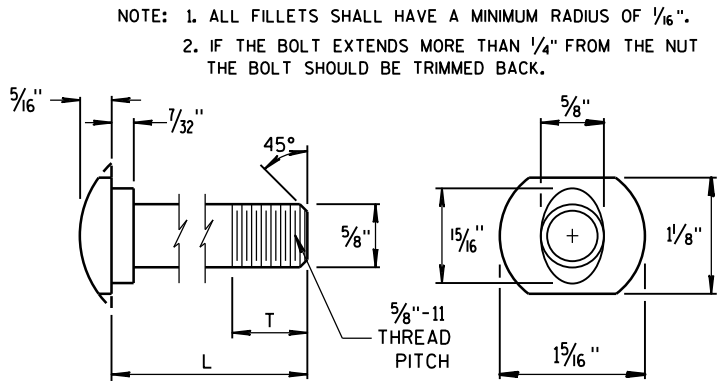
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

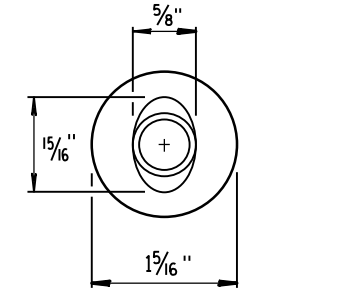


DETAIL FOR 16" BLOCKOUT DEPTH

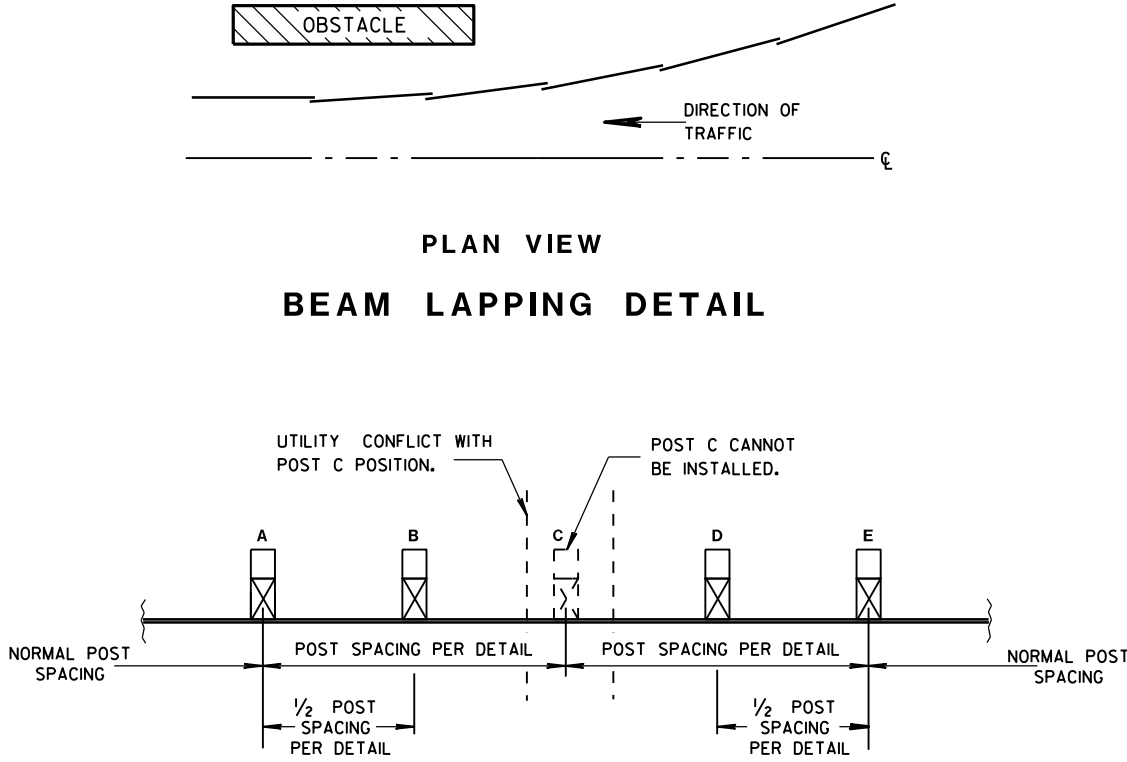
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



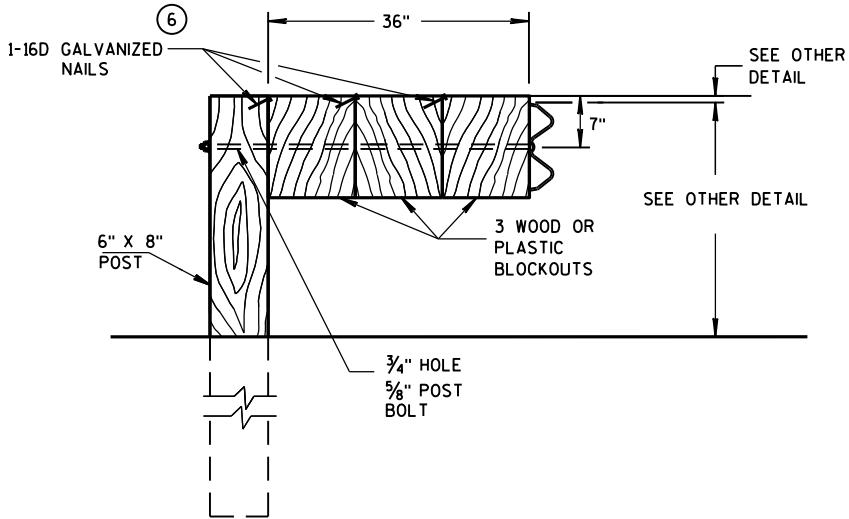
POST BOLT TABLE



ALTERNATE BOLT HEAD



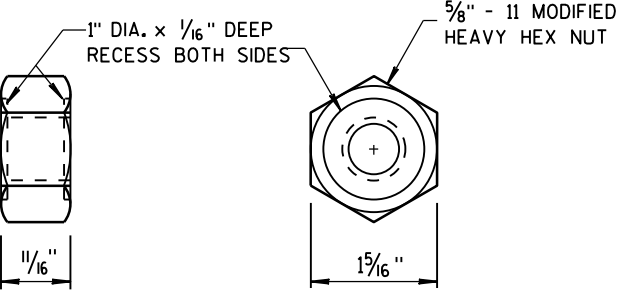
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



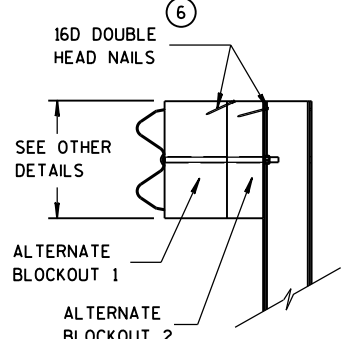
DETAIL FOR 36" BLOCKOUT DEPTH

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

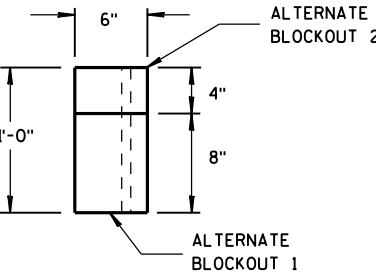
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS (131) ENT ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

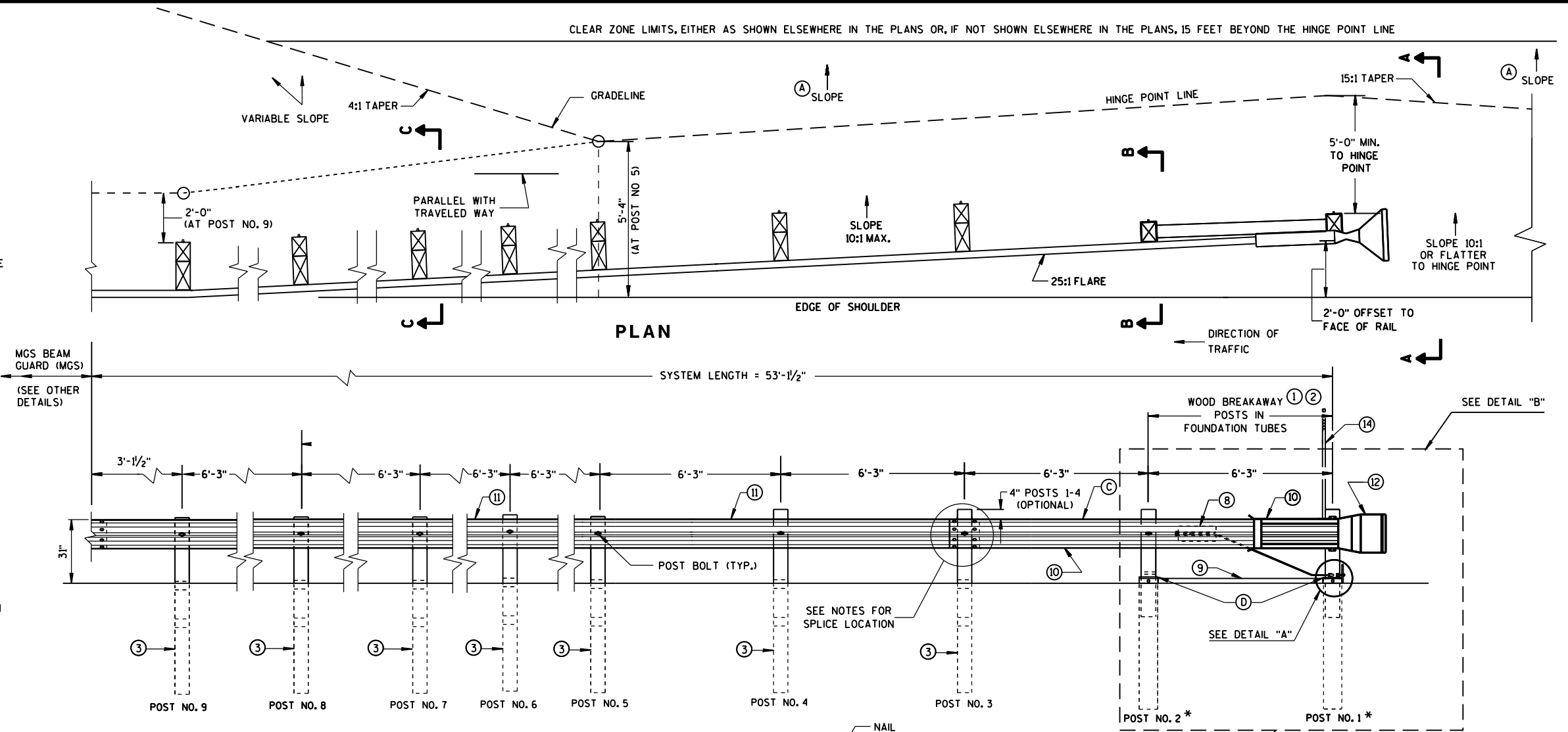
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

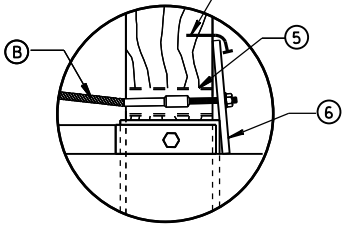
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

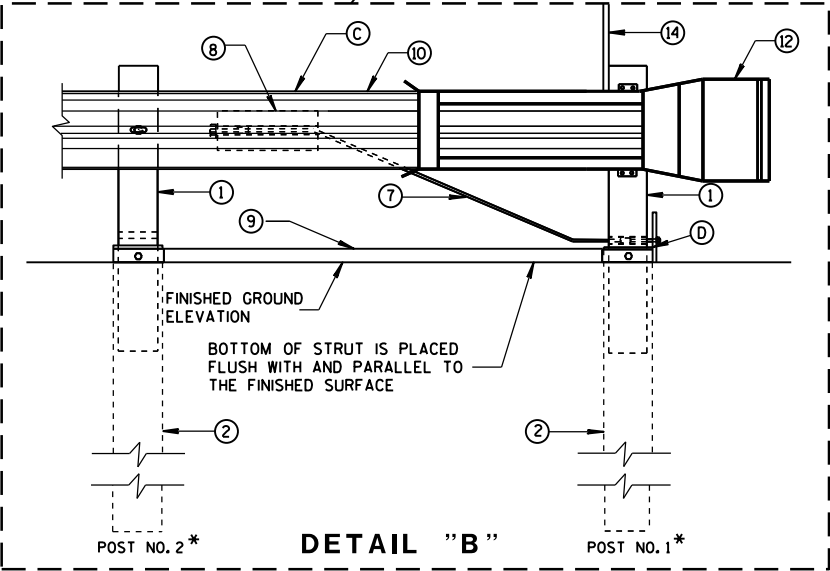
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



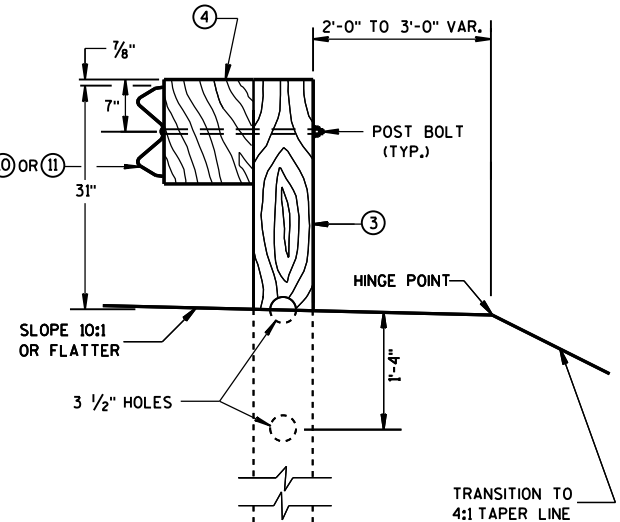
ELEVATION



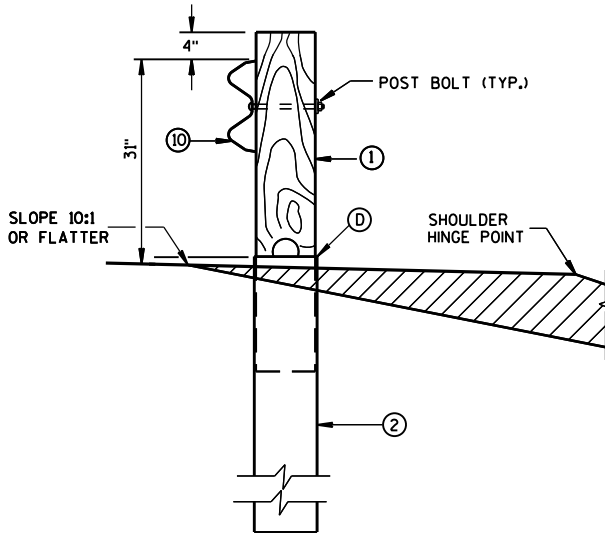
DETAIL "A"



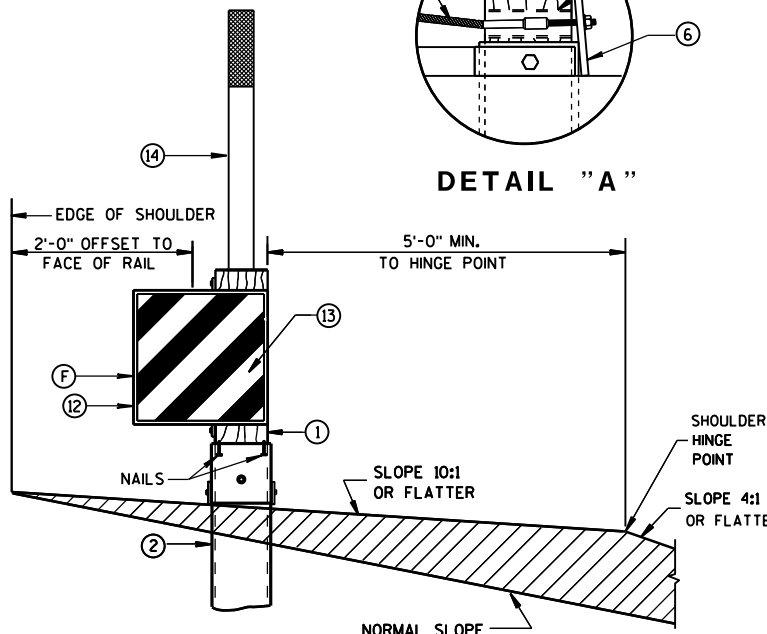
DETAIL "B"



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



SECTION B-B
TYPICAL AT POST NO. 2*

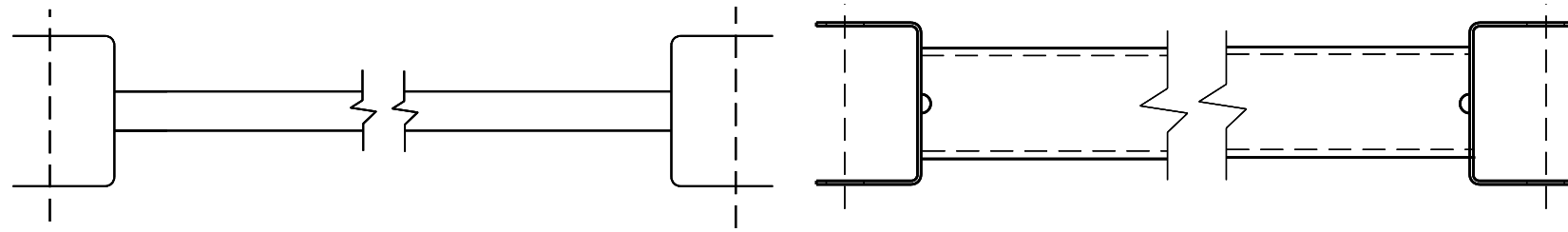


SECTION A-A
TYPICAL AT POST NO. 1*

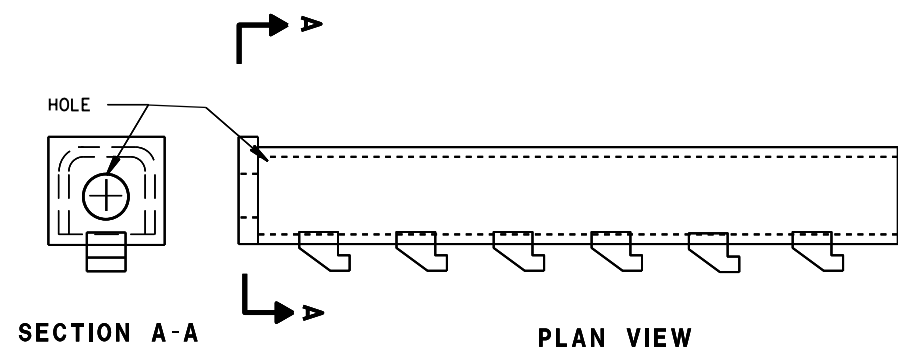
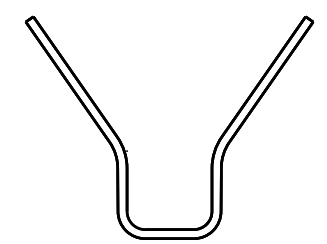
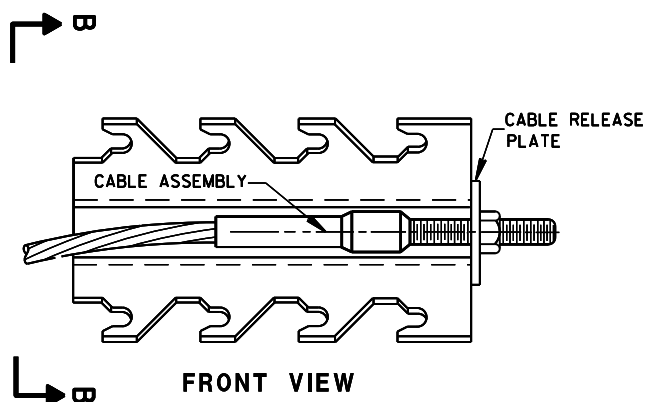
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

132



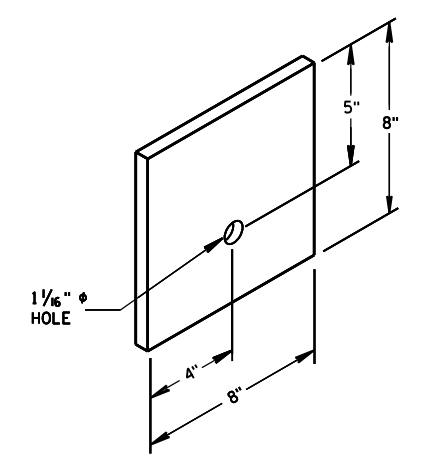
9 H
GENERIC GROUND STRUT



8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

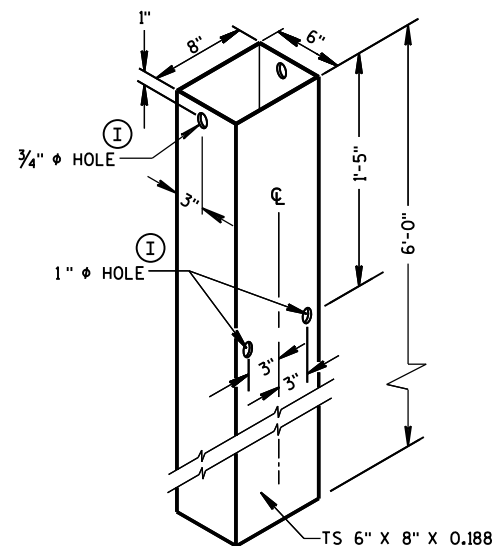
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND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



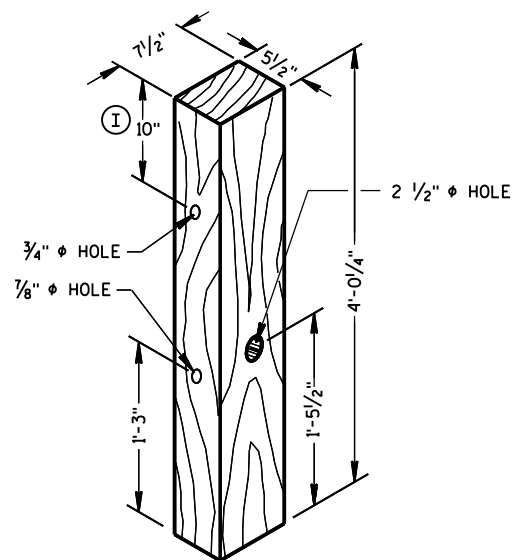
⑥
BEARING PLATE

6

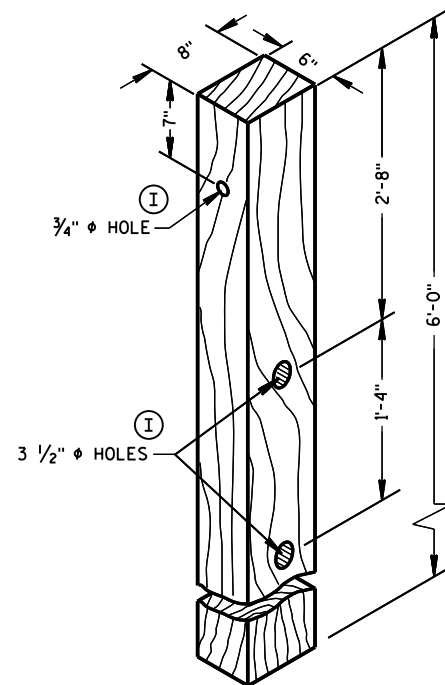
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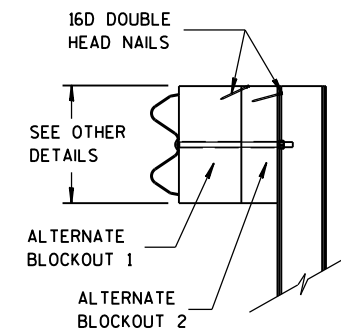
FOUNDATION TUBE ②



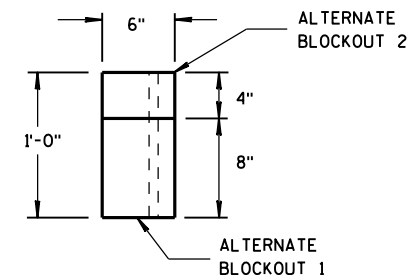
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

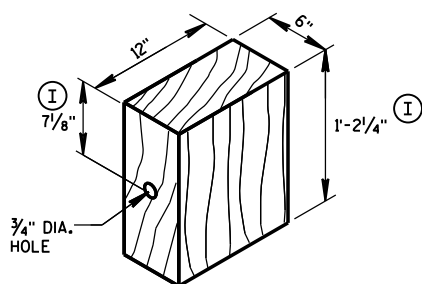


SIDE VIEW



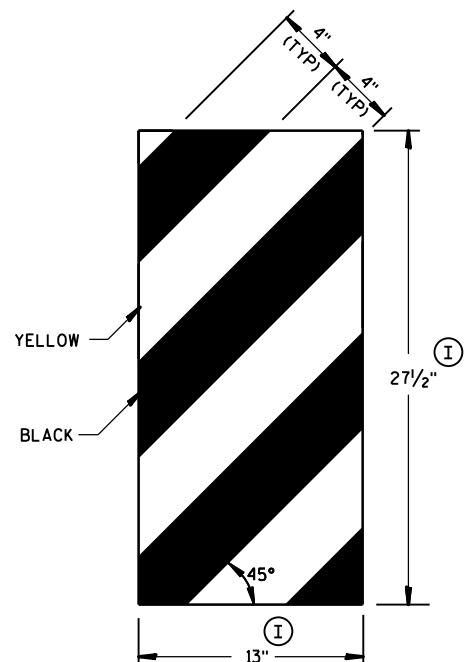
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

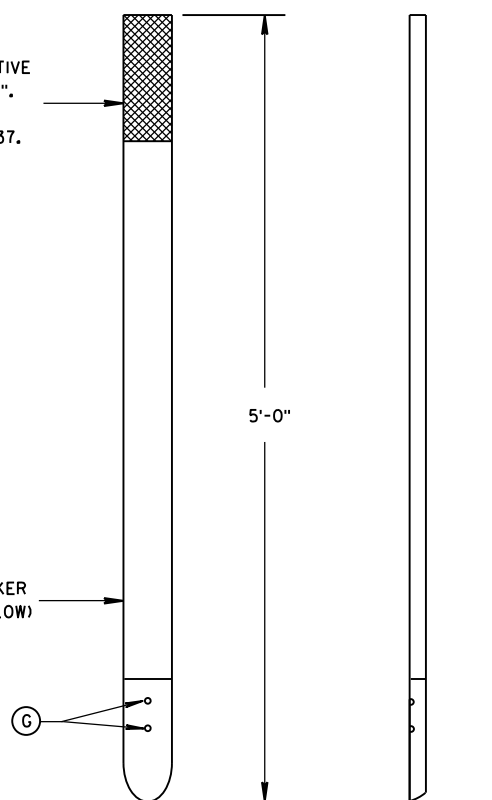
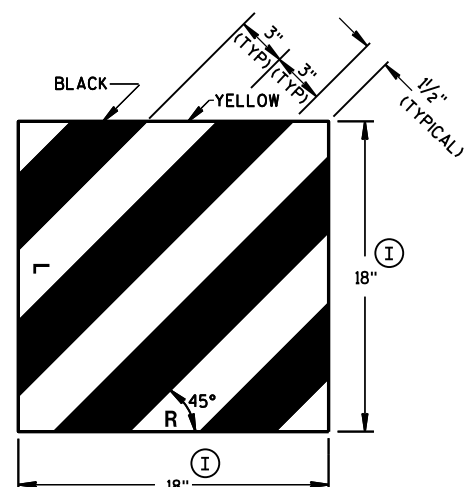


WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

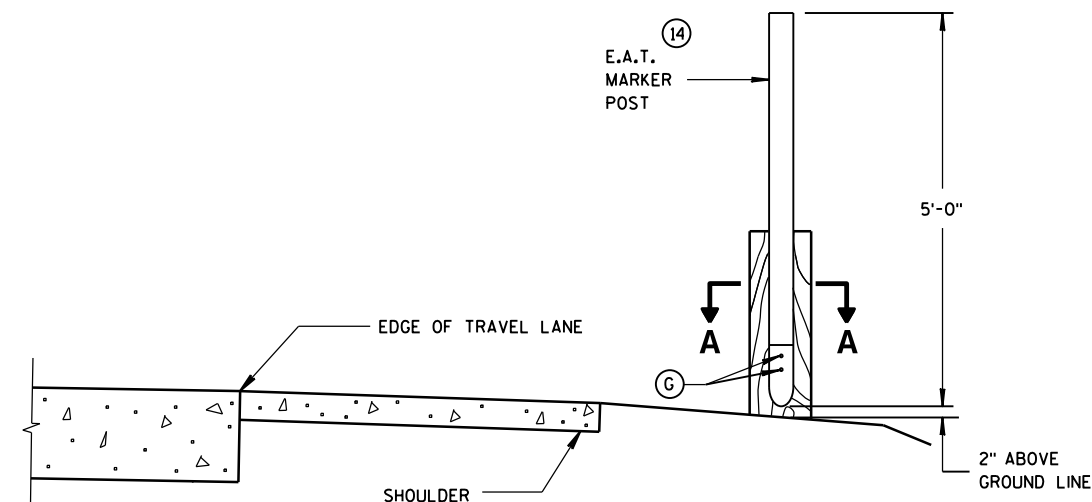
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



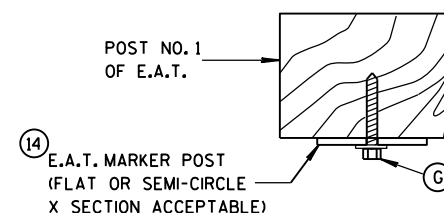
GENERIC REFLECTIVE SHEETING ⑬ ①



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)

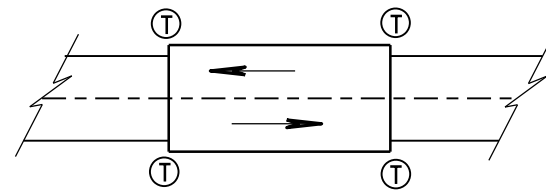


SECTION A-A

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

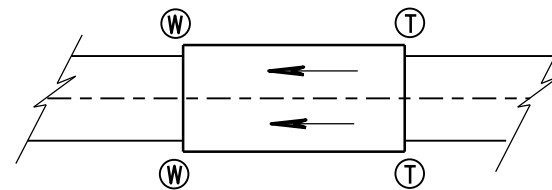
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 134 ENT
FHWA ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

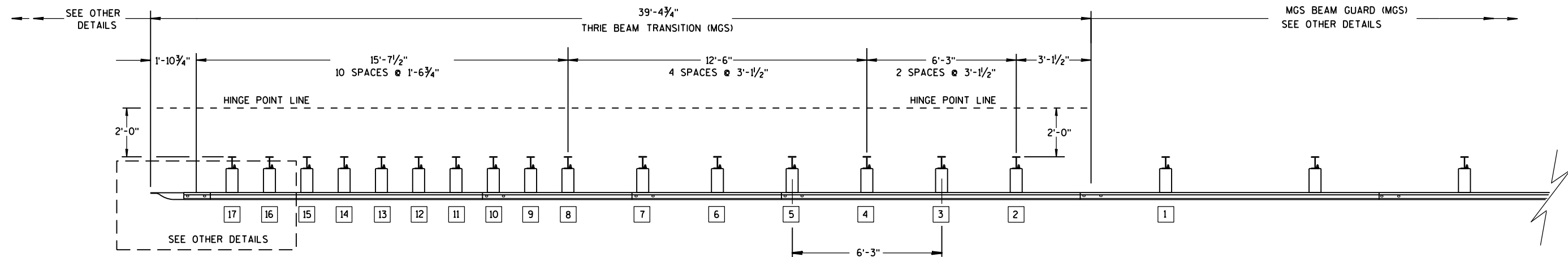
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

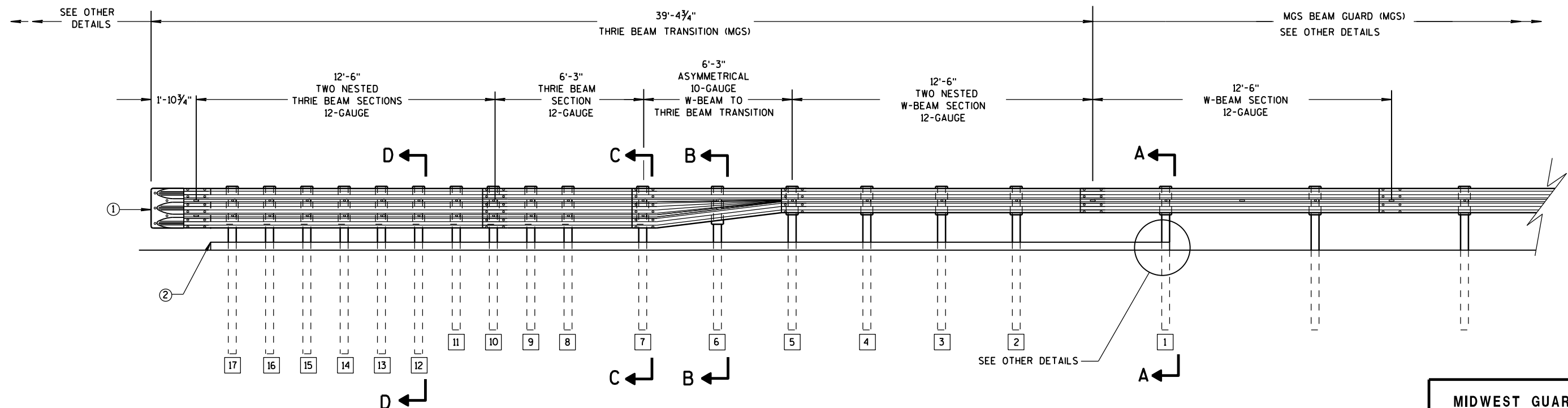
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

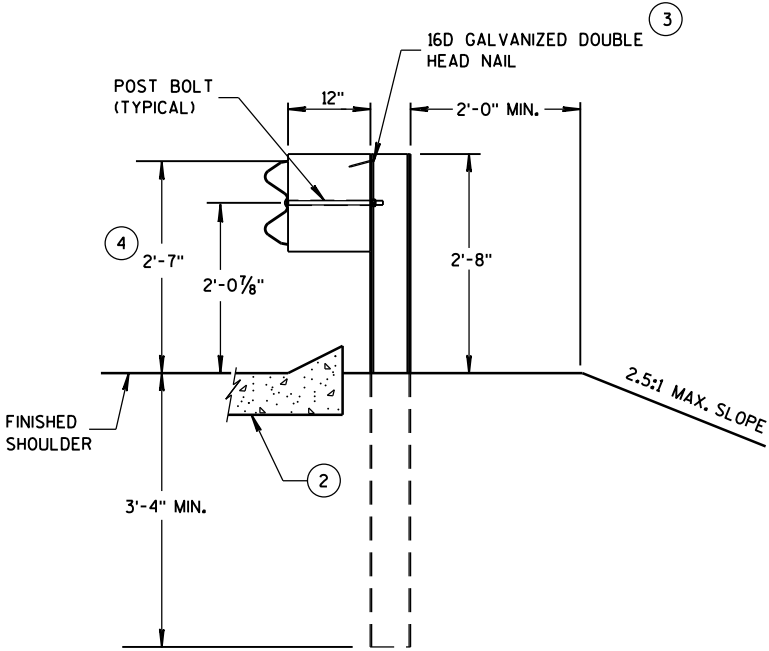
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

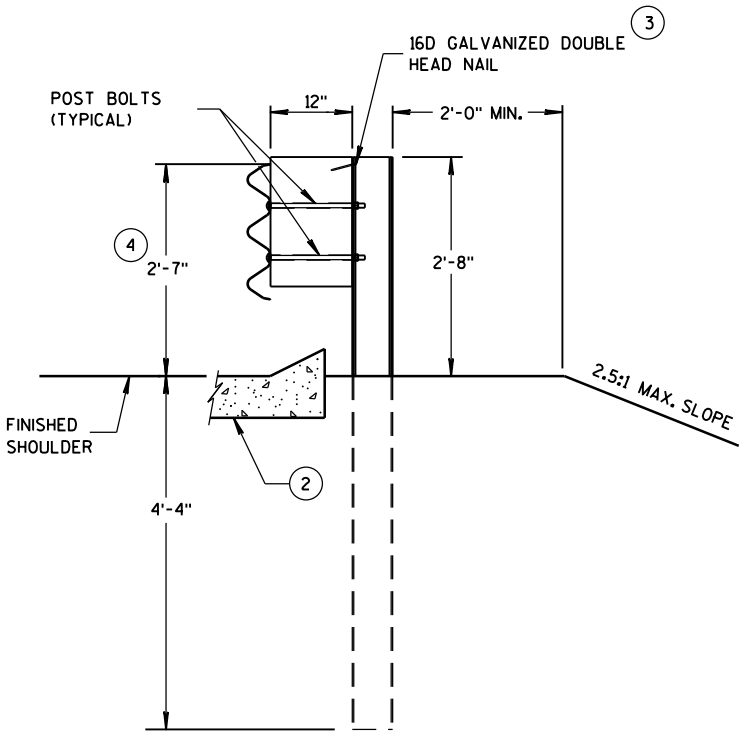
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 135

GENERAL NOTES

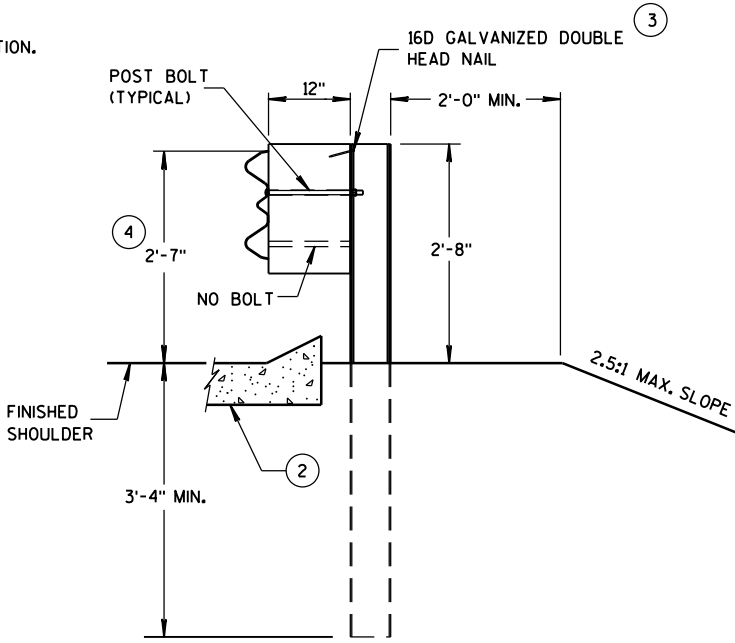
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



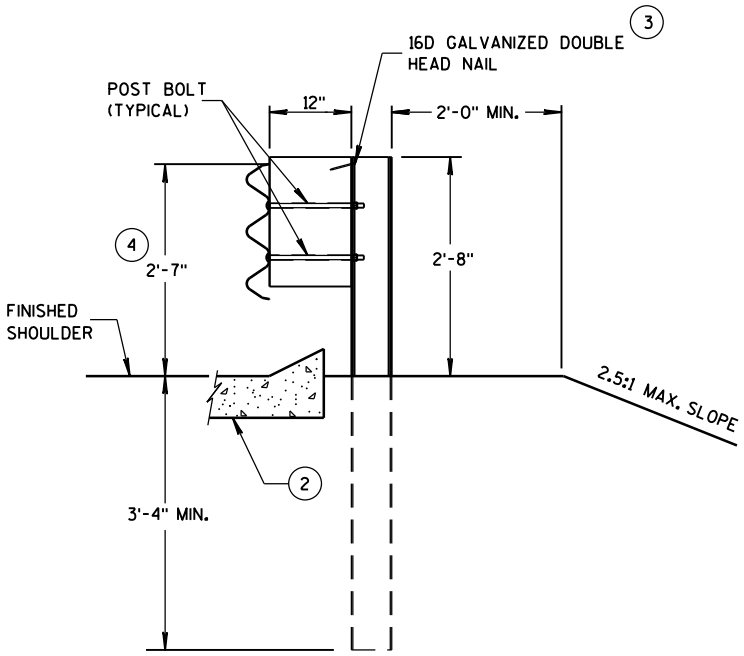
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

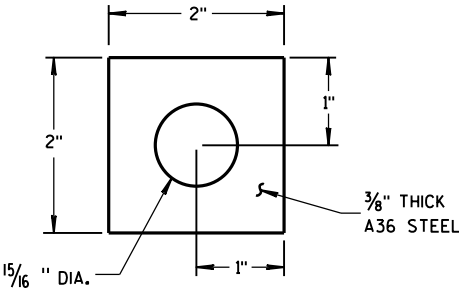
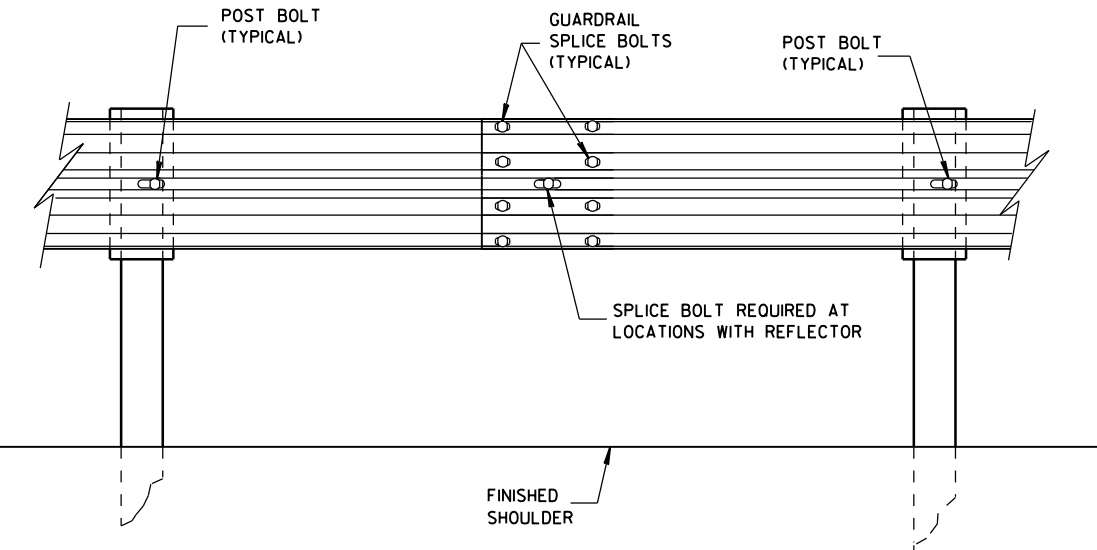
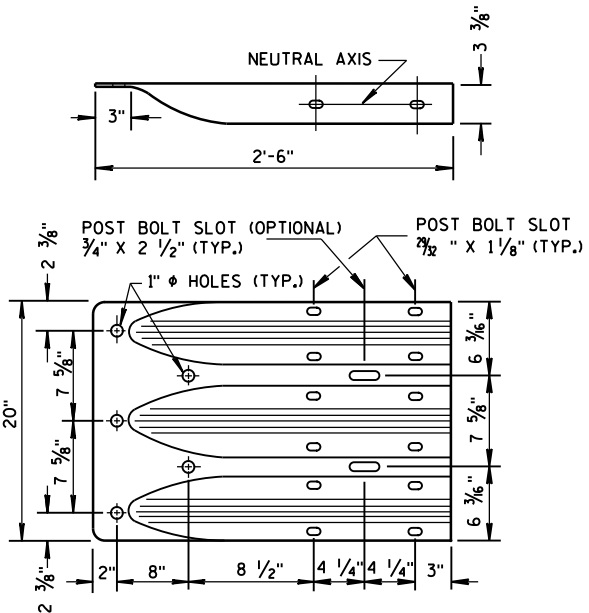


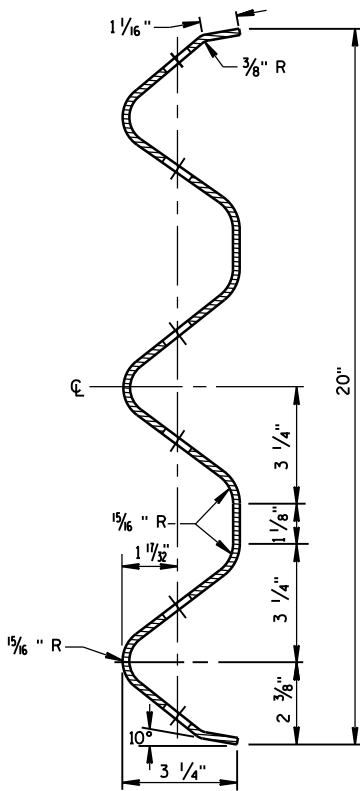
PLATE WASHER DETAIL



SPlice DETAIL



THRIE BEAM
TERMINAL CONNECTOR

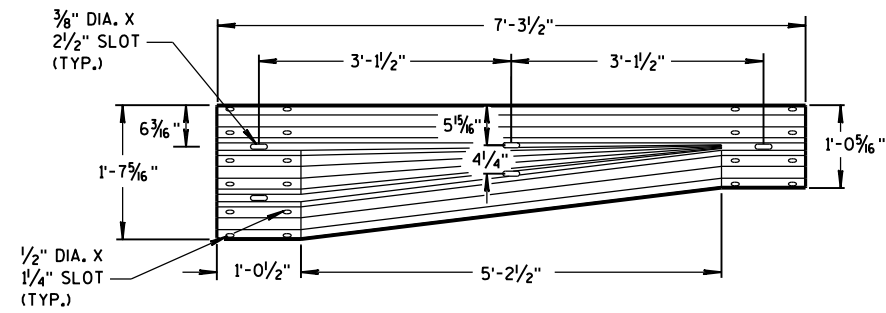


SECTION THRU THRIE
BEAM RAIL ELEMENT

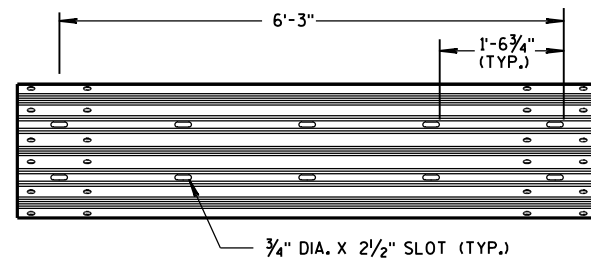
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

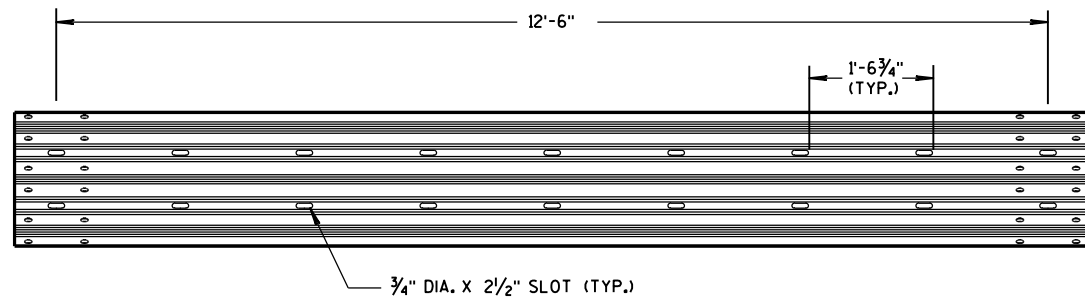
136



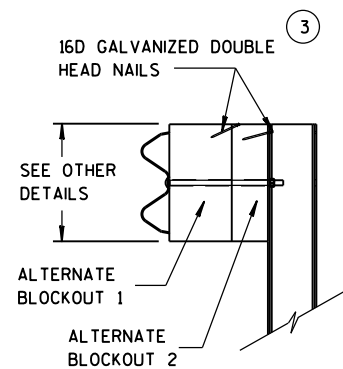
W-BEAM TO THRIE BEAM TRANSITION SECTION



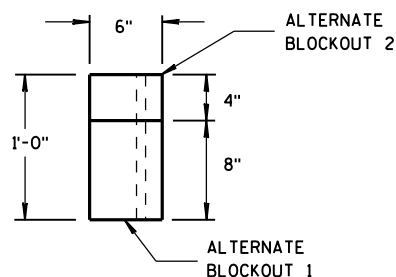
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

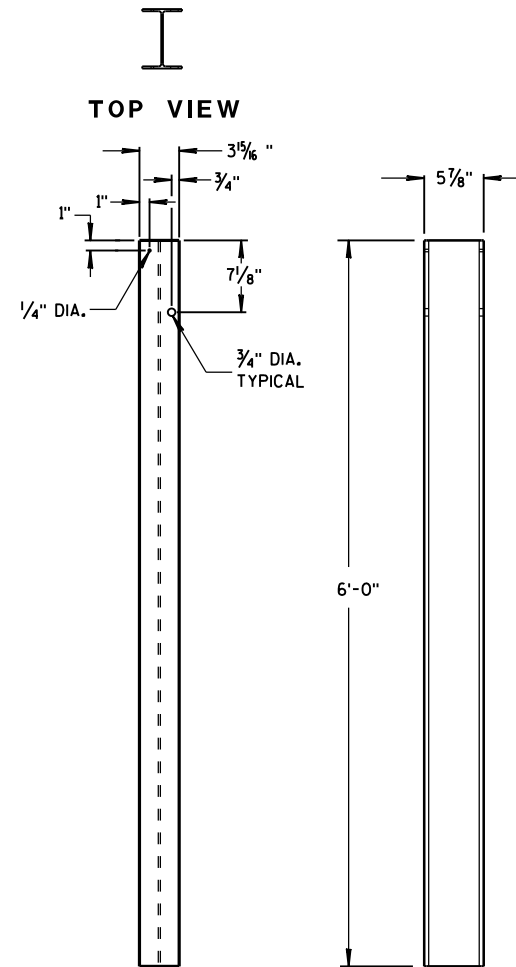


SIDE VIEW



TOP VIEW

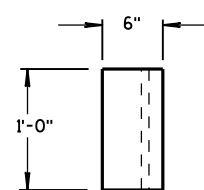
ALTERNATE WOOD BLOCKOUT DETAIL



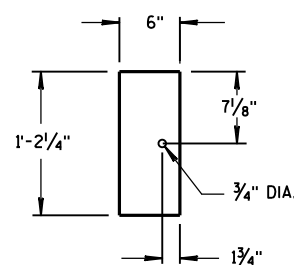
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

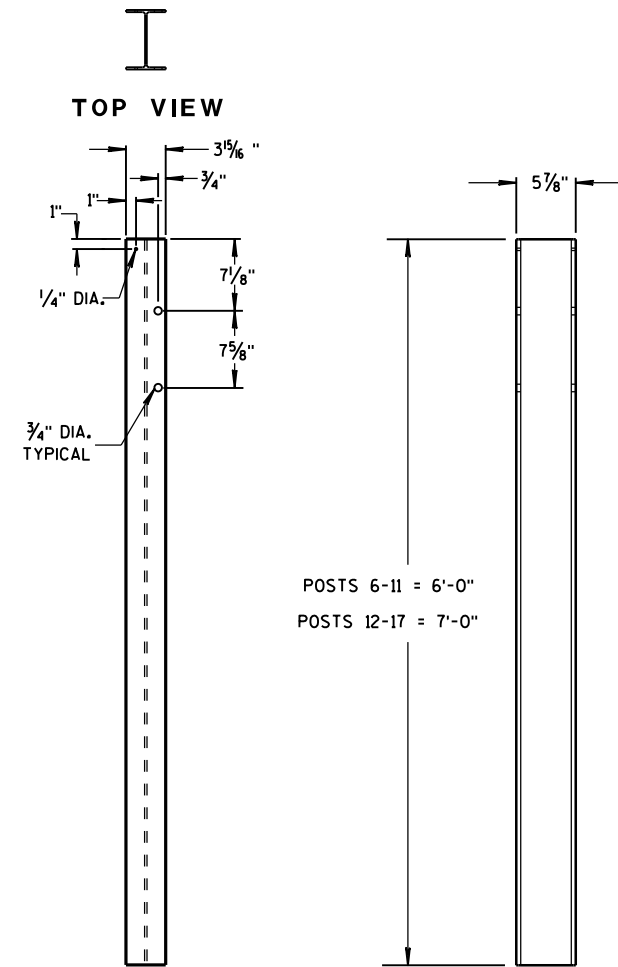


TOP VIEW



FRONT VIEW

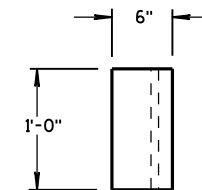
BLOCKOUT
POSTS 1-5



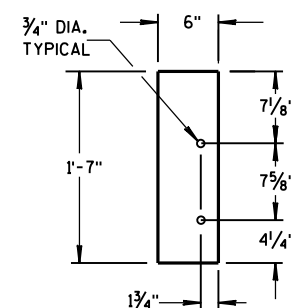
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

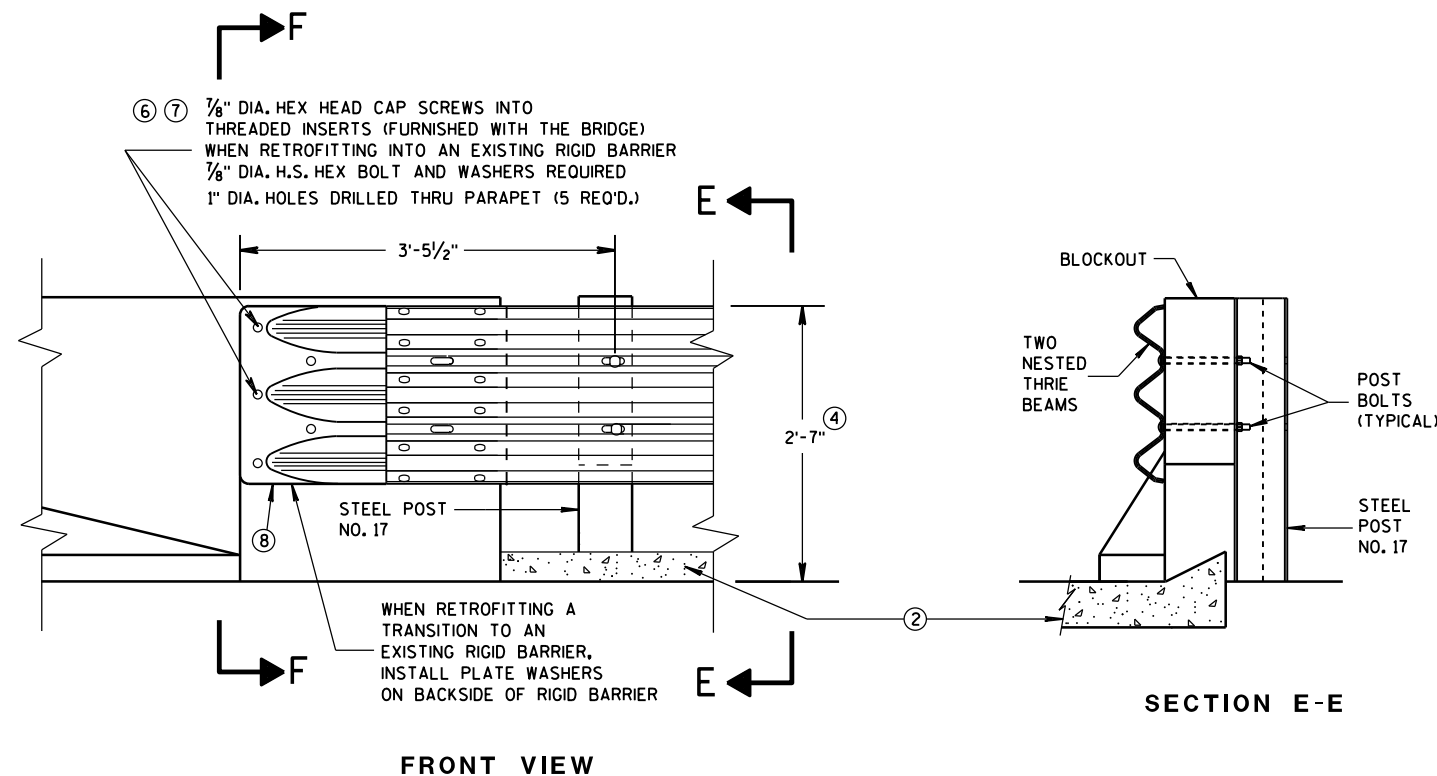
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 137

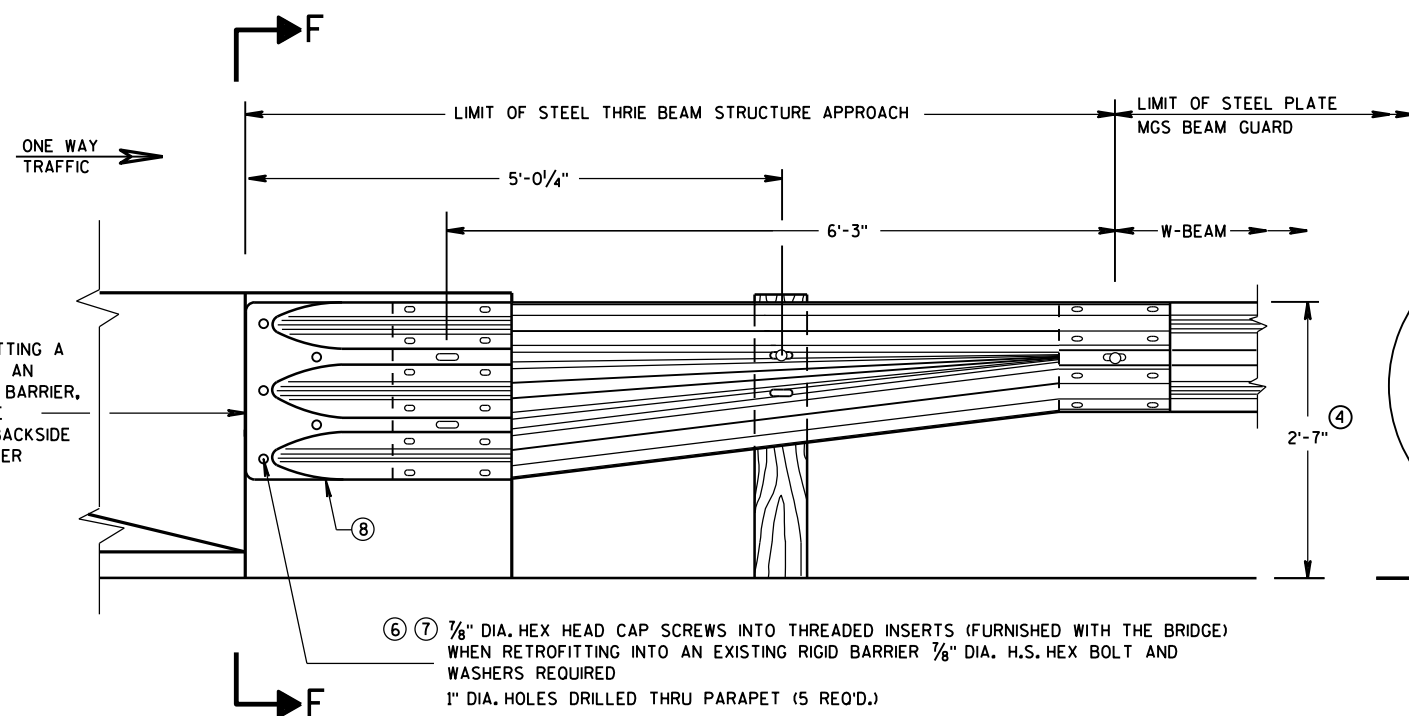
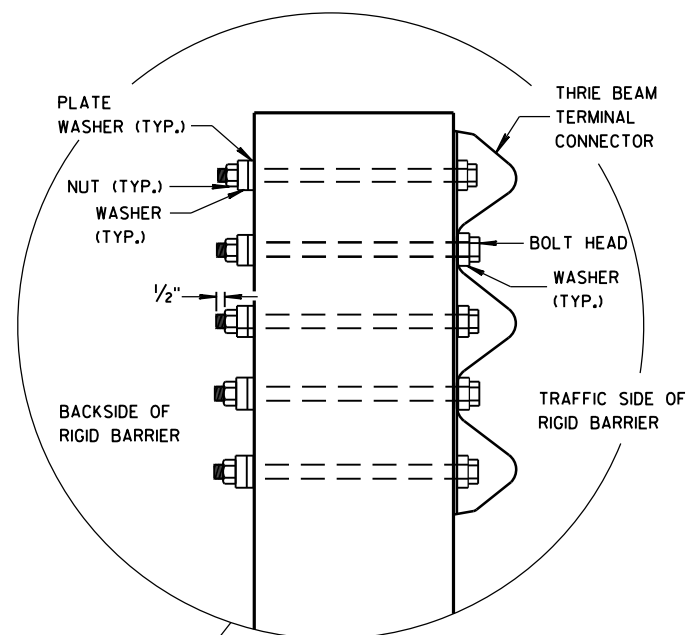


THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

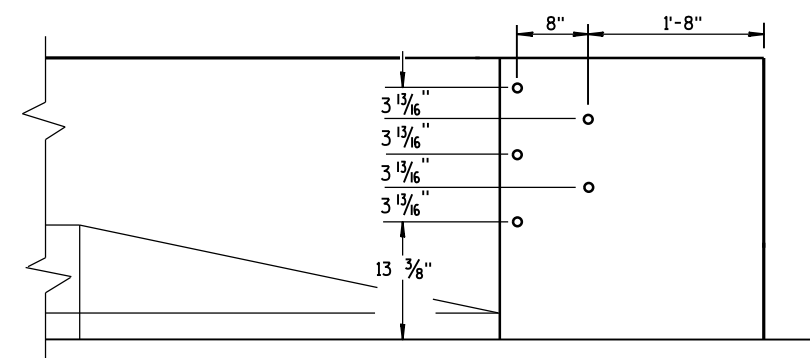
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

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



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS 0138

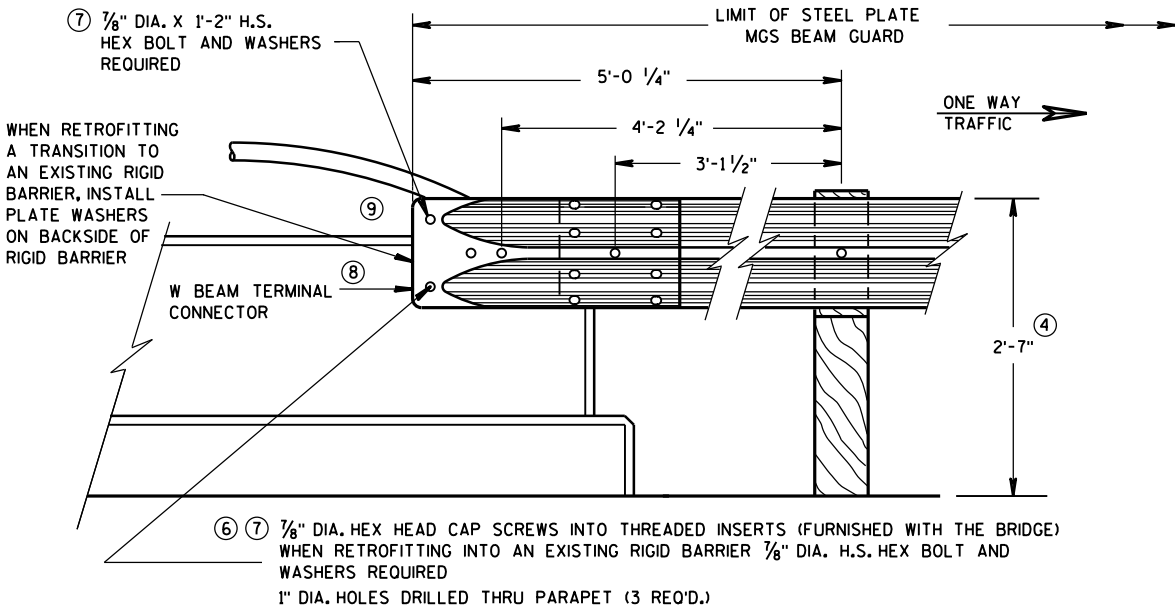
ENGINEER

NT

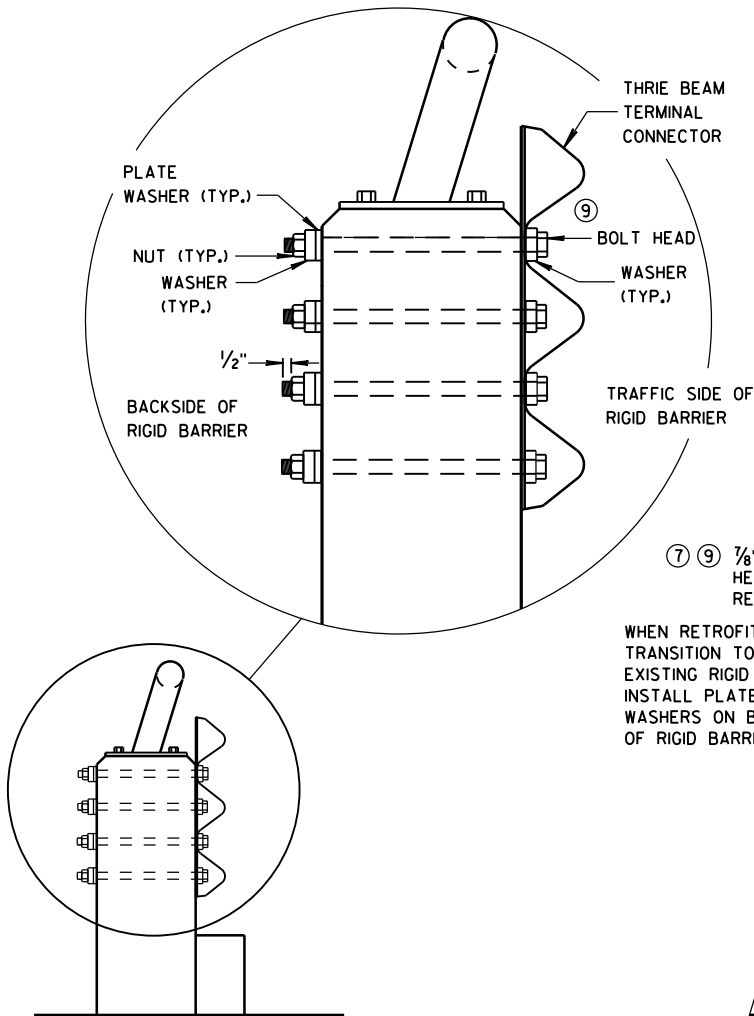
GENERAL NOTES

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

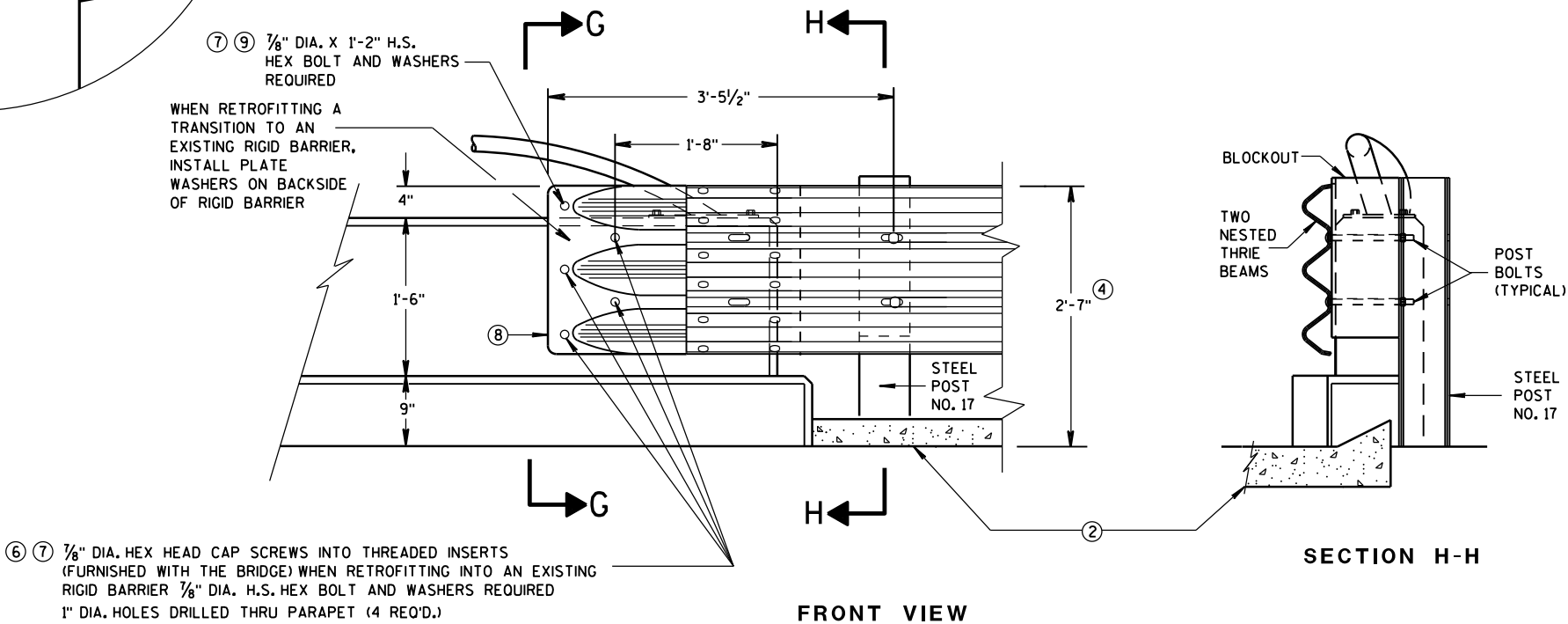
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH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



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



SECTION G-G



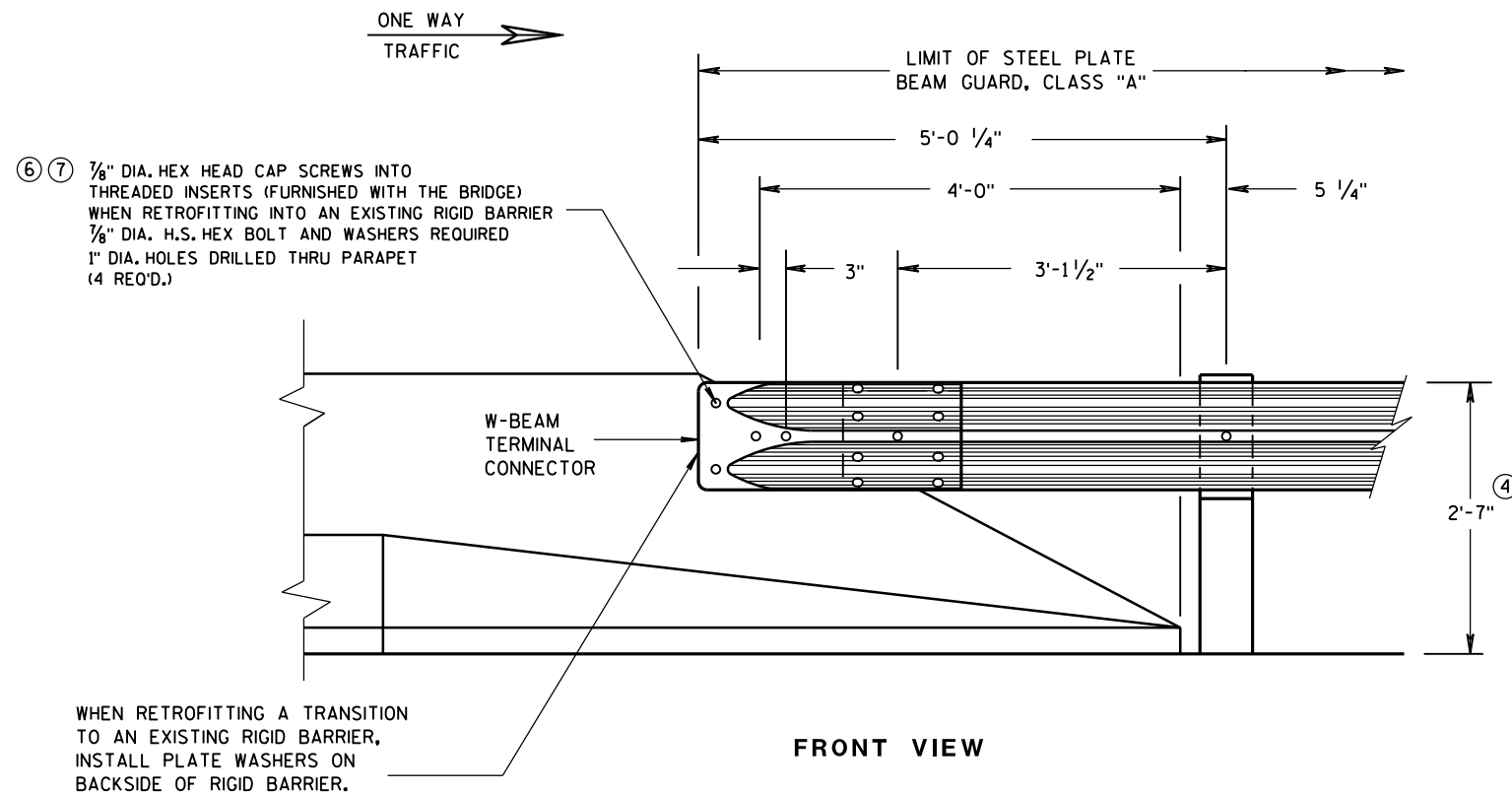
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

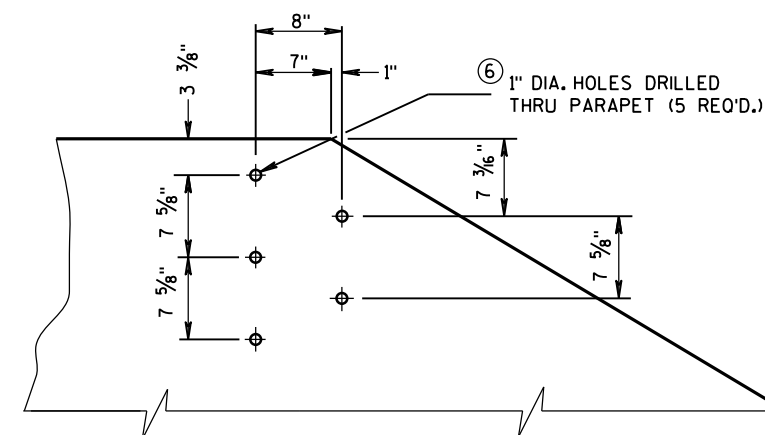
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 139 NT
FHWA ENGINEER

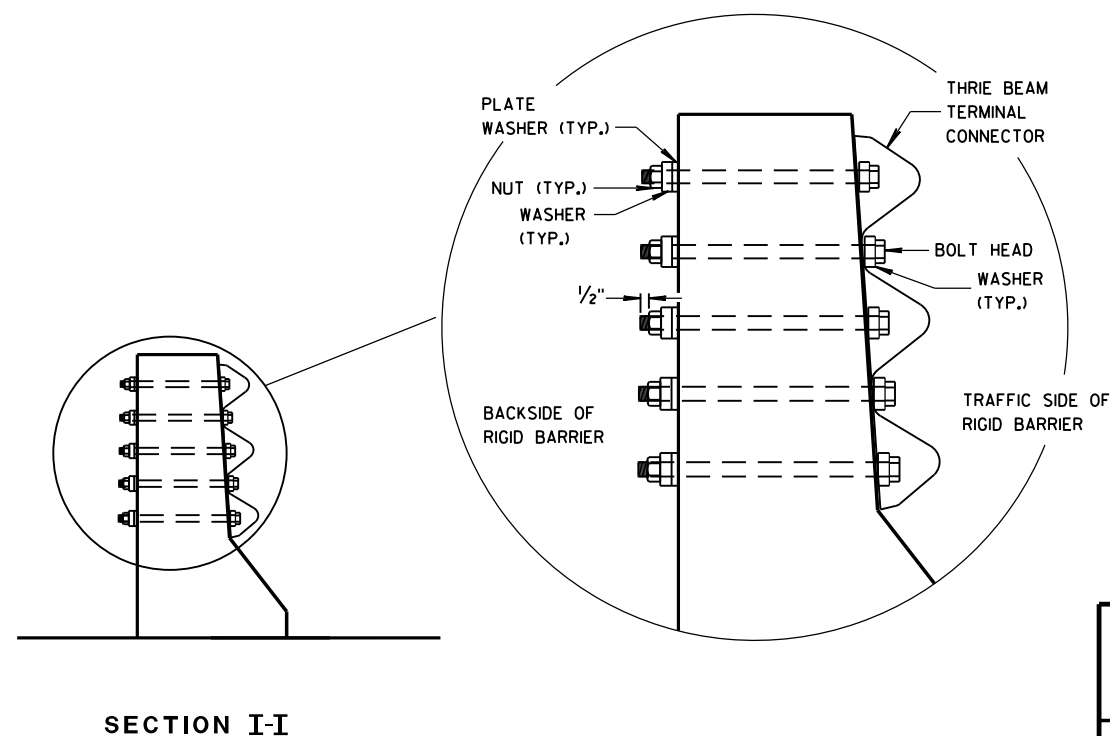
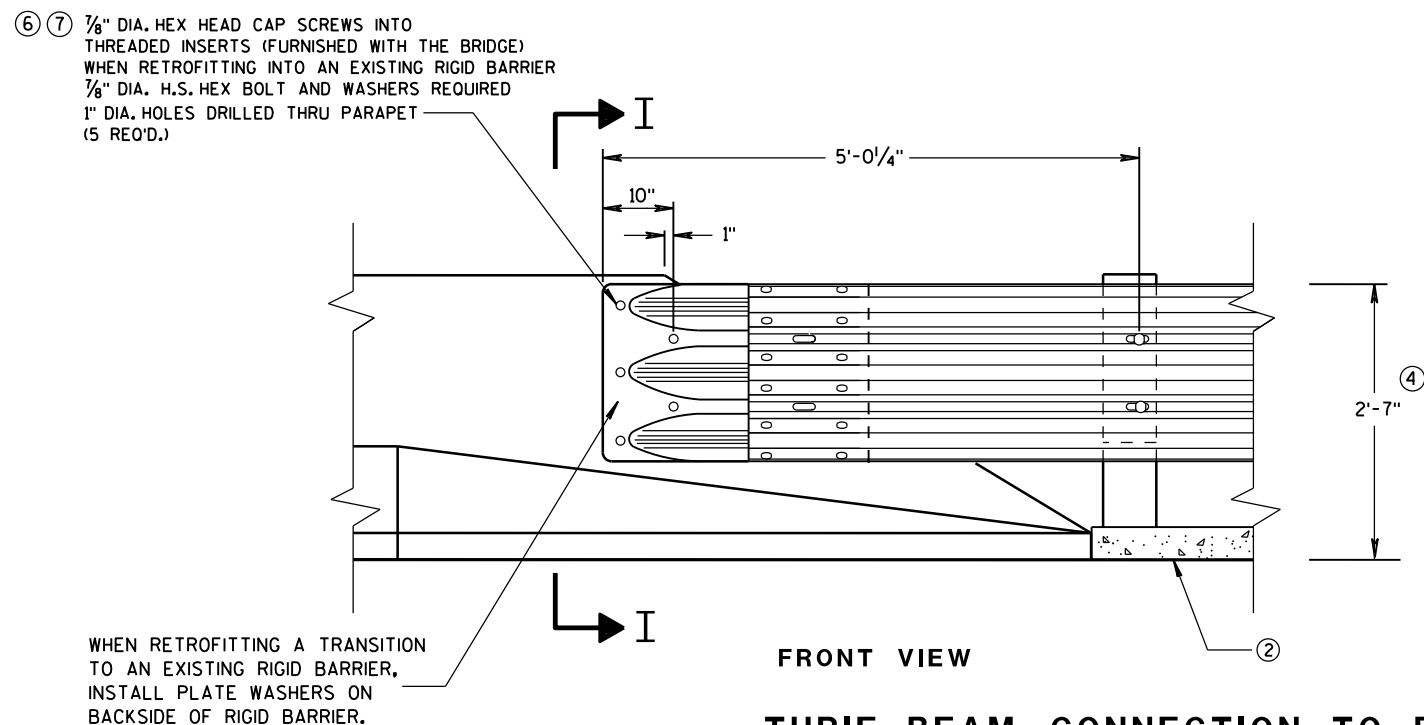


GENERAL NOTES

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



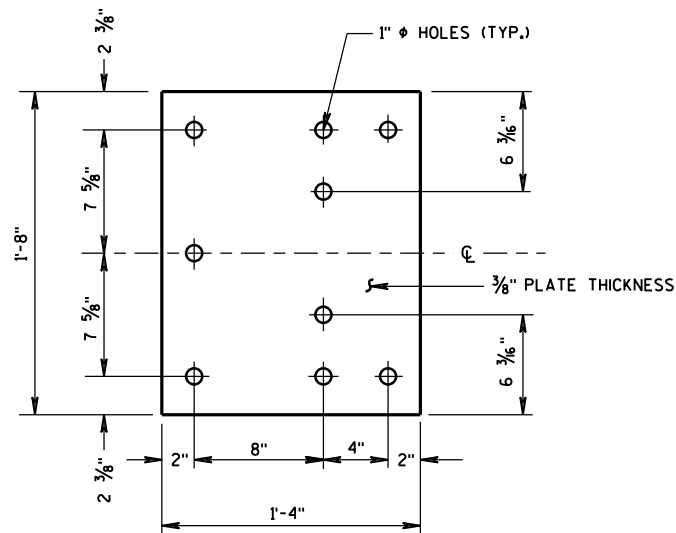
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



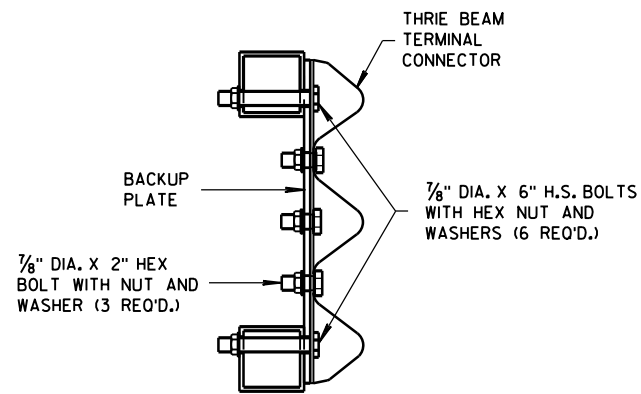
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

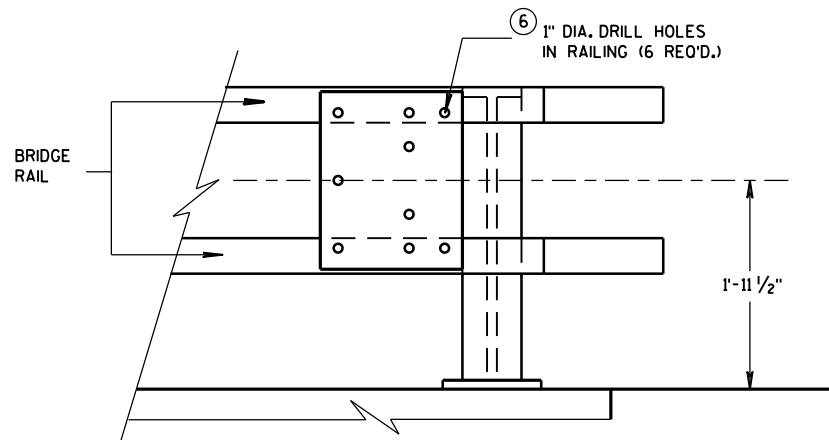
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 140 INT
FHWA



BACK-UP PLATE DETAIL



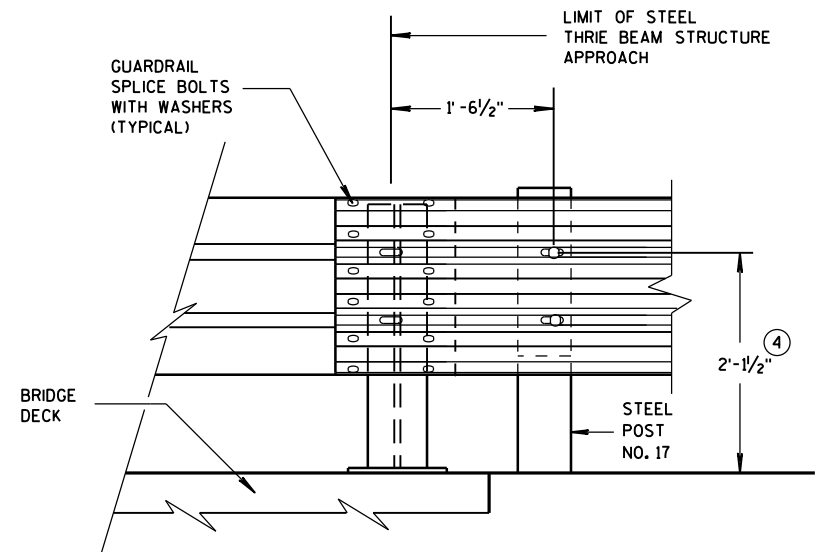
SECTION J-J



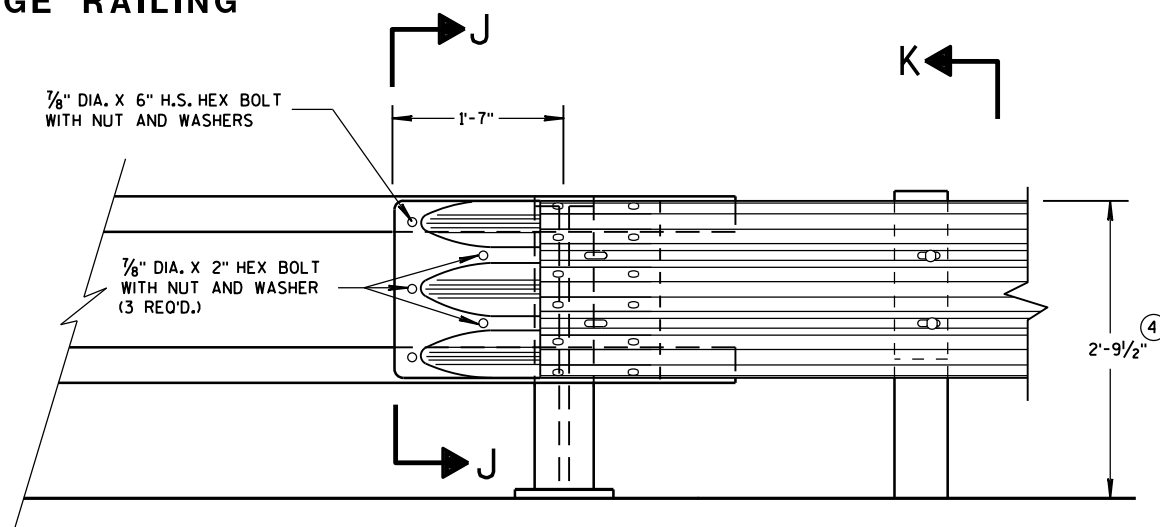
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

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

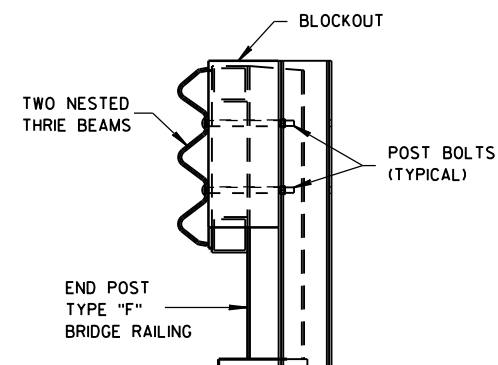


FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"



FRONT VIEW

THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"



SECTION K-K

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 141 NT
FHWA ENGINEER

6

- S.D.D. 14 B 45-4h**



6



5-4h



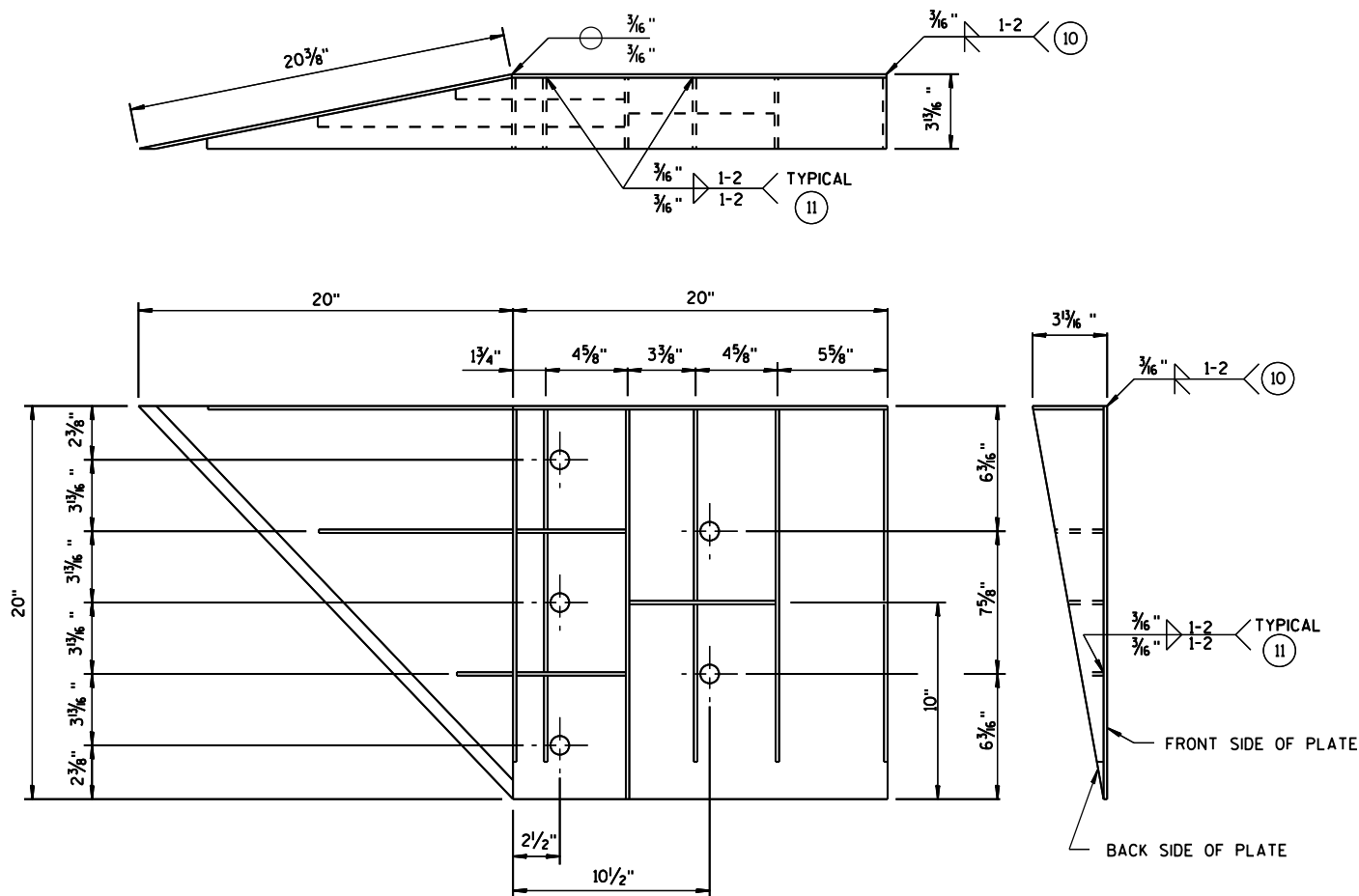
6



S.D.D. 14 B 45-4h

APPROVED
June, 2015
DATE
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS (142) INT
ENGINEER



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

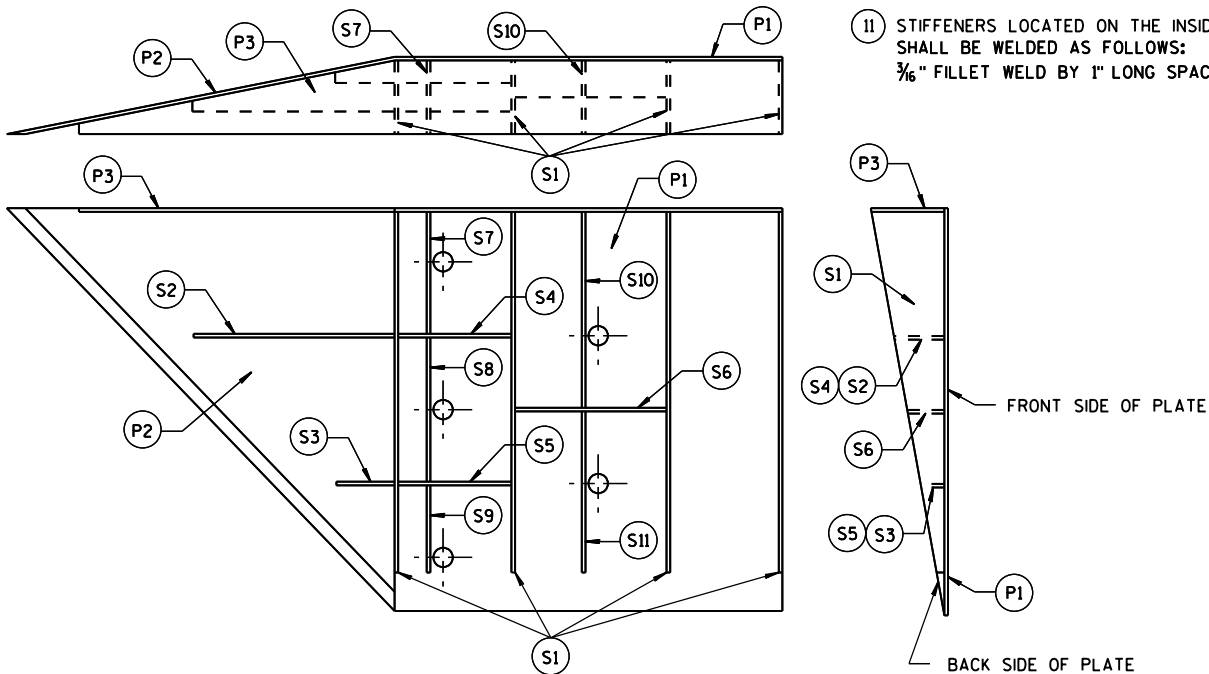


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

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

SINGLE SLOPE CONNECTION PLATE

GENERAL NOTES

- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

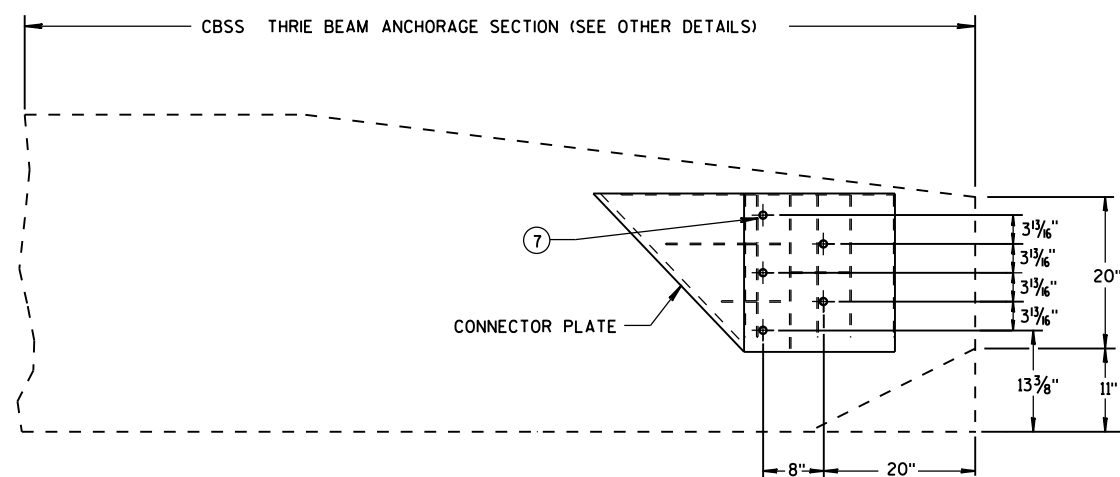
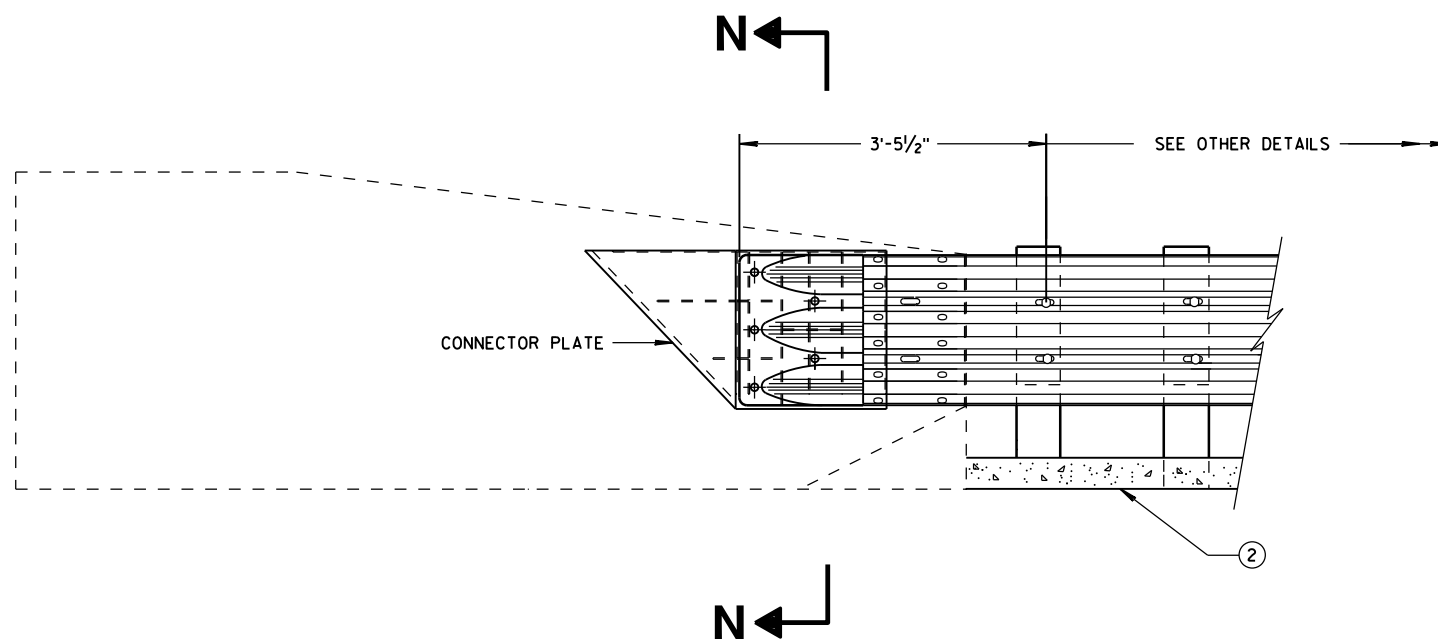
- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 143
FHWA

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



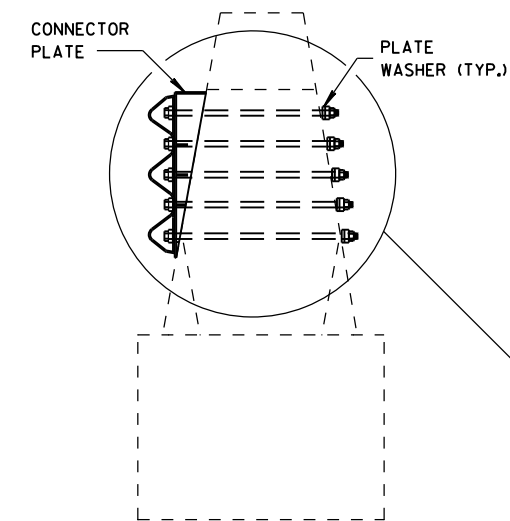
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

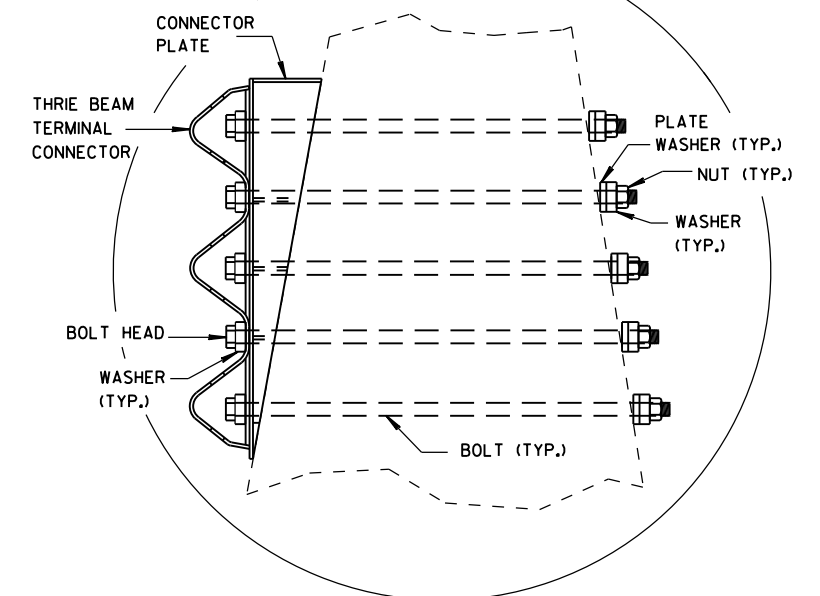
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/s/ Jerry H. Zoog

ROADWAY STANDARDS D 144

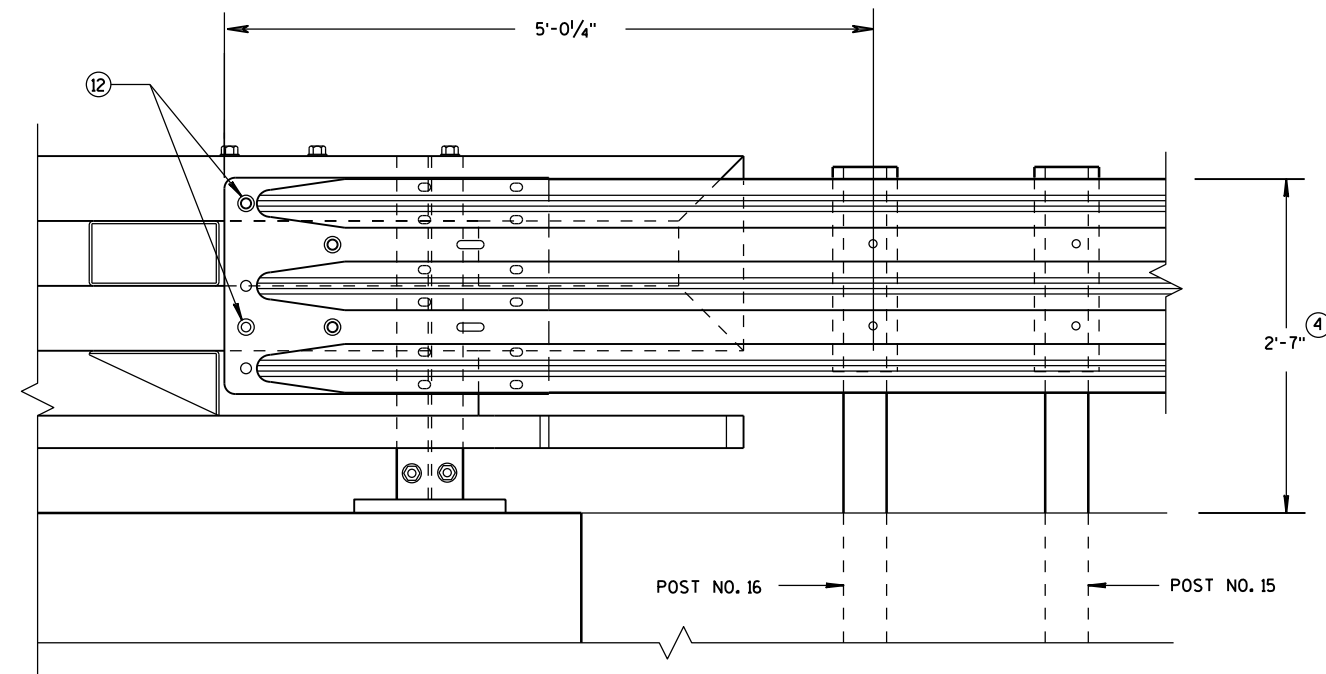
ENGINEER

NT

GENERAL NOTES

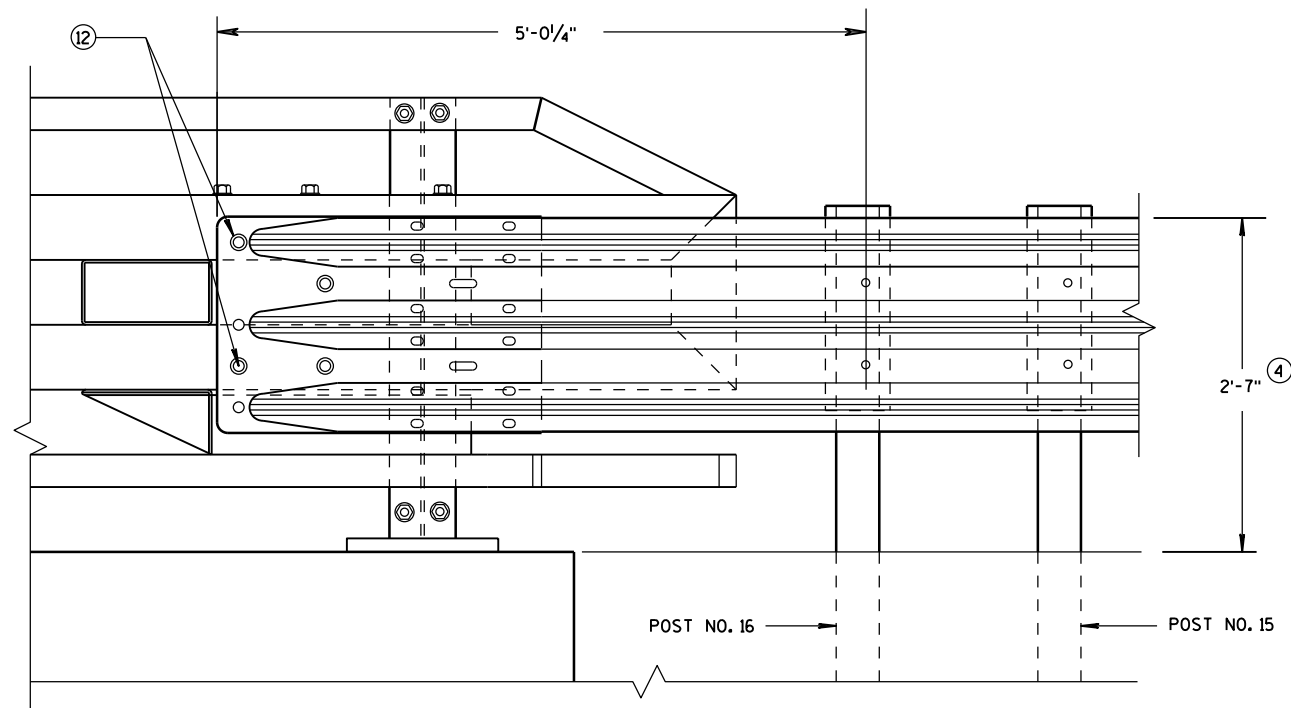
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

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



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



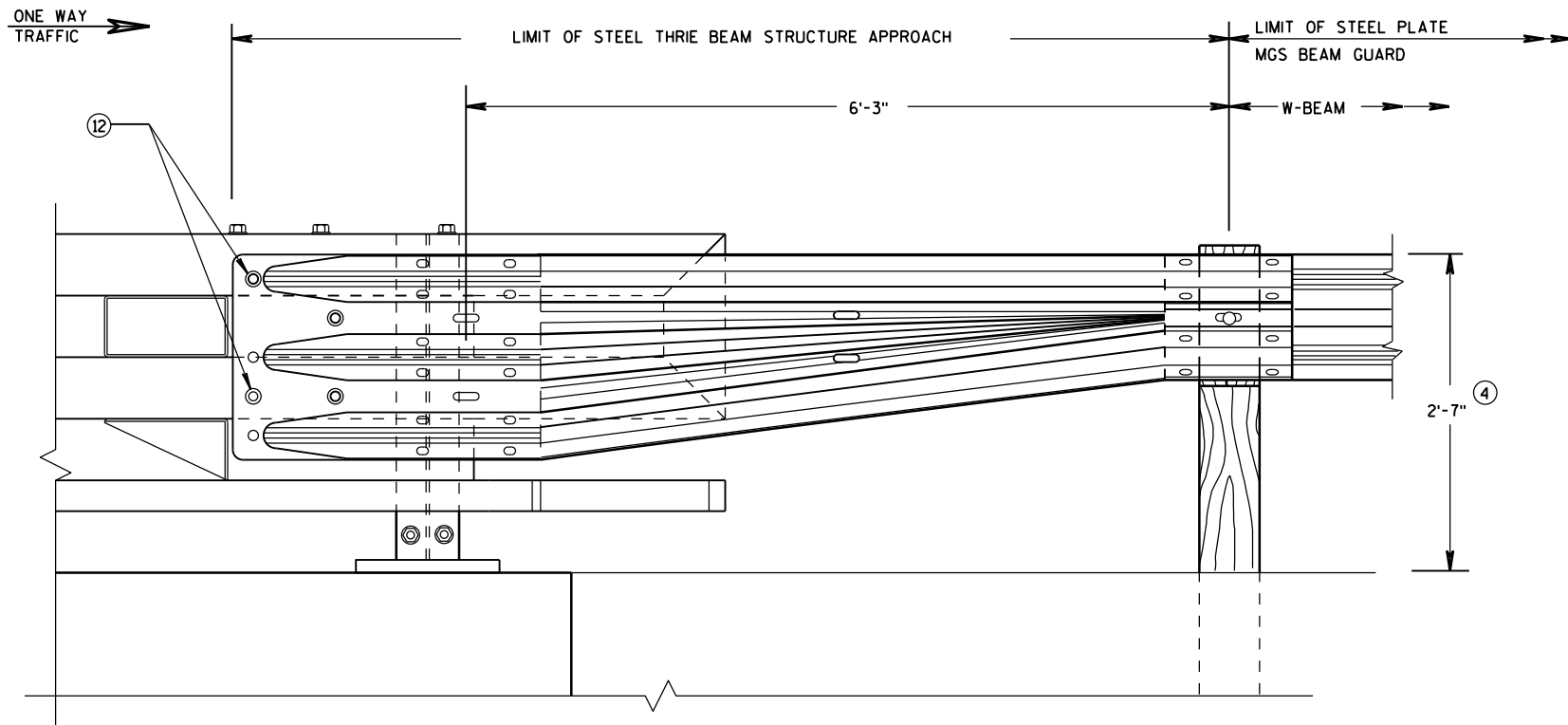
ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 145 NT
FHWA ENGINEER

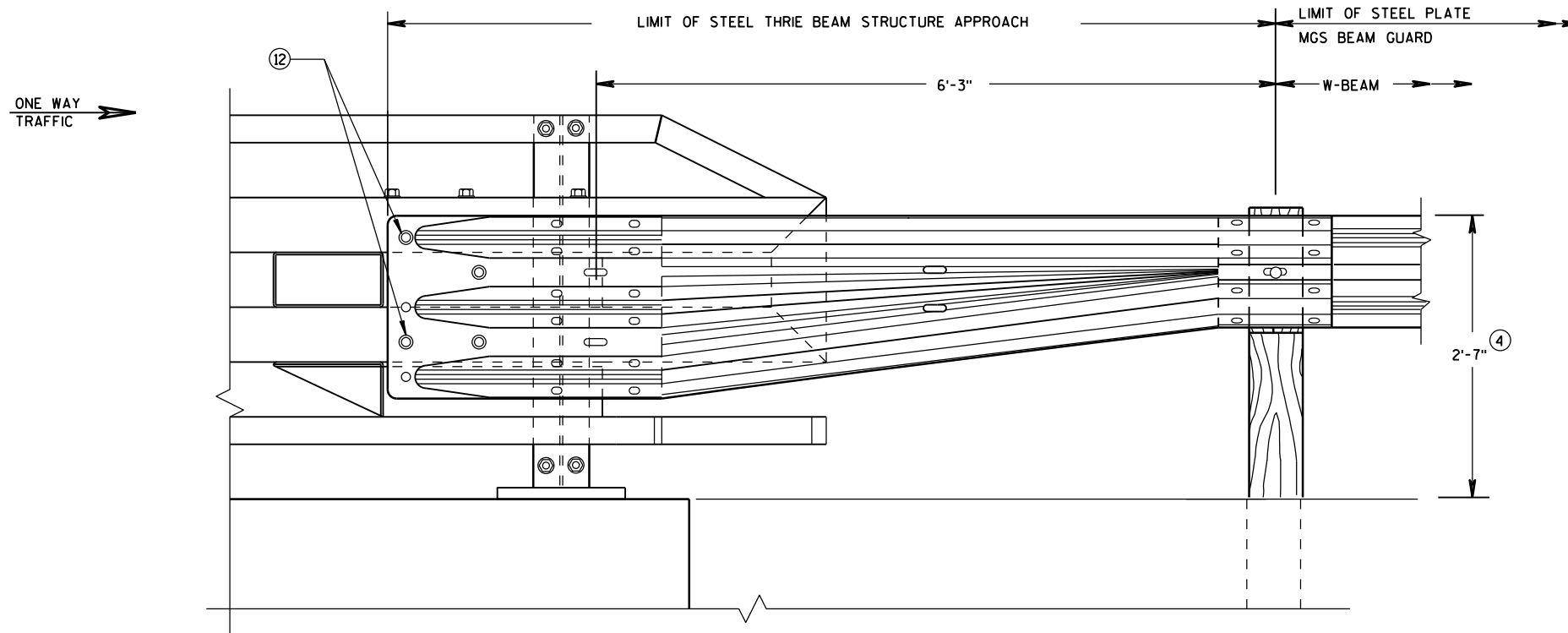


FRONT VIEW

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

GENERAL NOTES

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



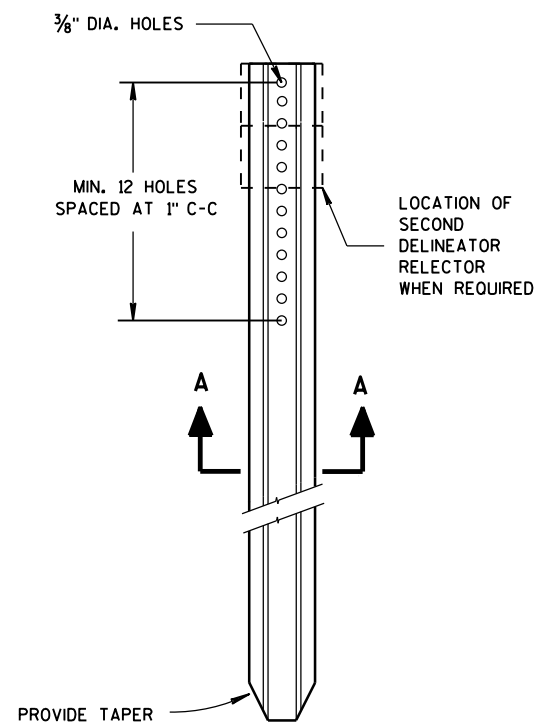
FRONT VIEW

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

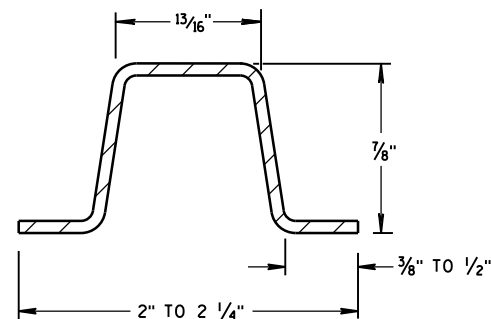
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Jerry H. Zogg	NT
June, 2015	DATE	ROADWAY STANDARDS D 146
FHWA	ENGINEER	

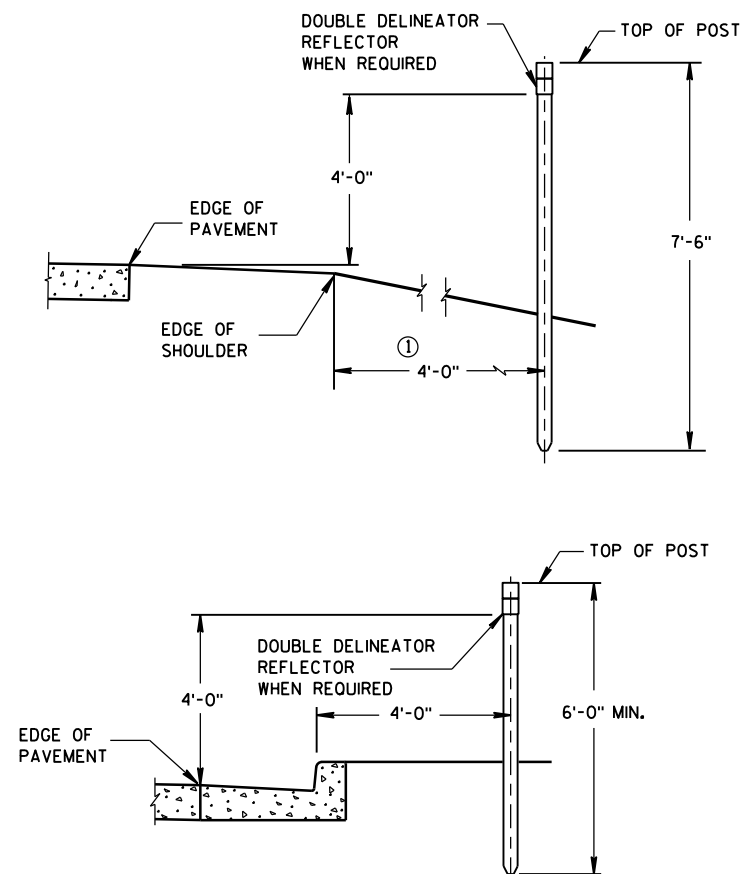


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

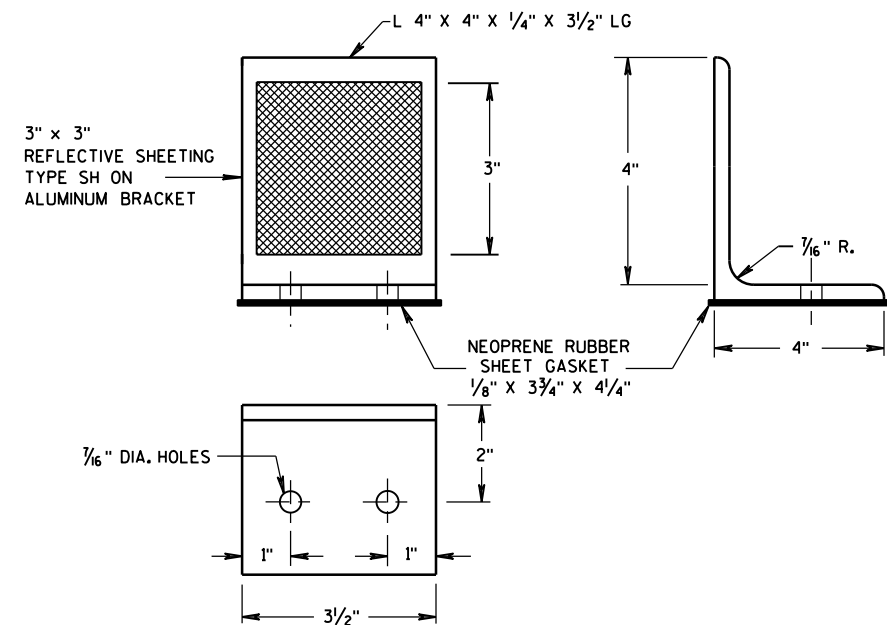


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

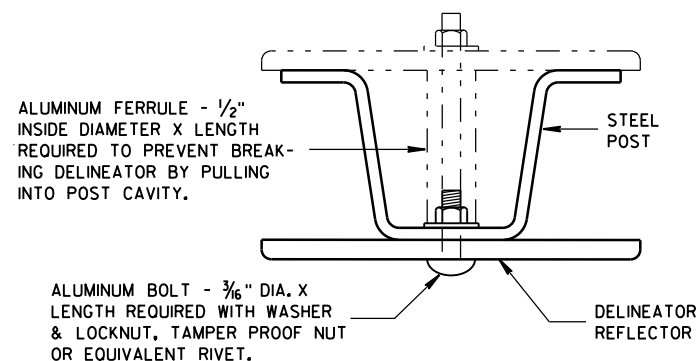
GENERAL NOTES

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

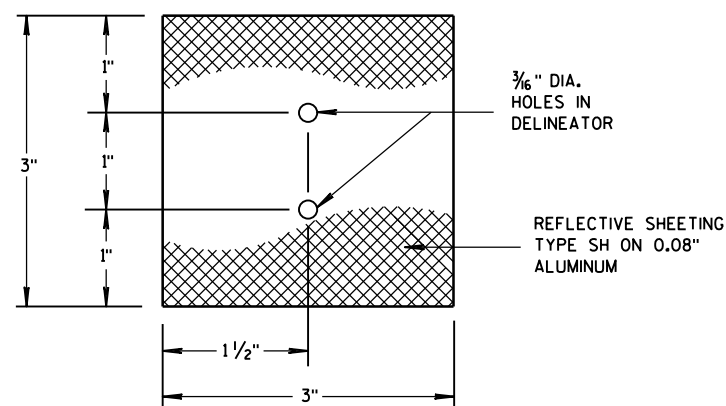
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



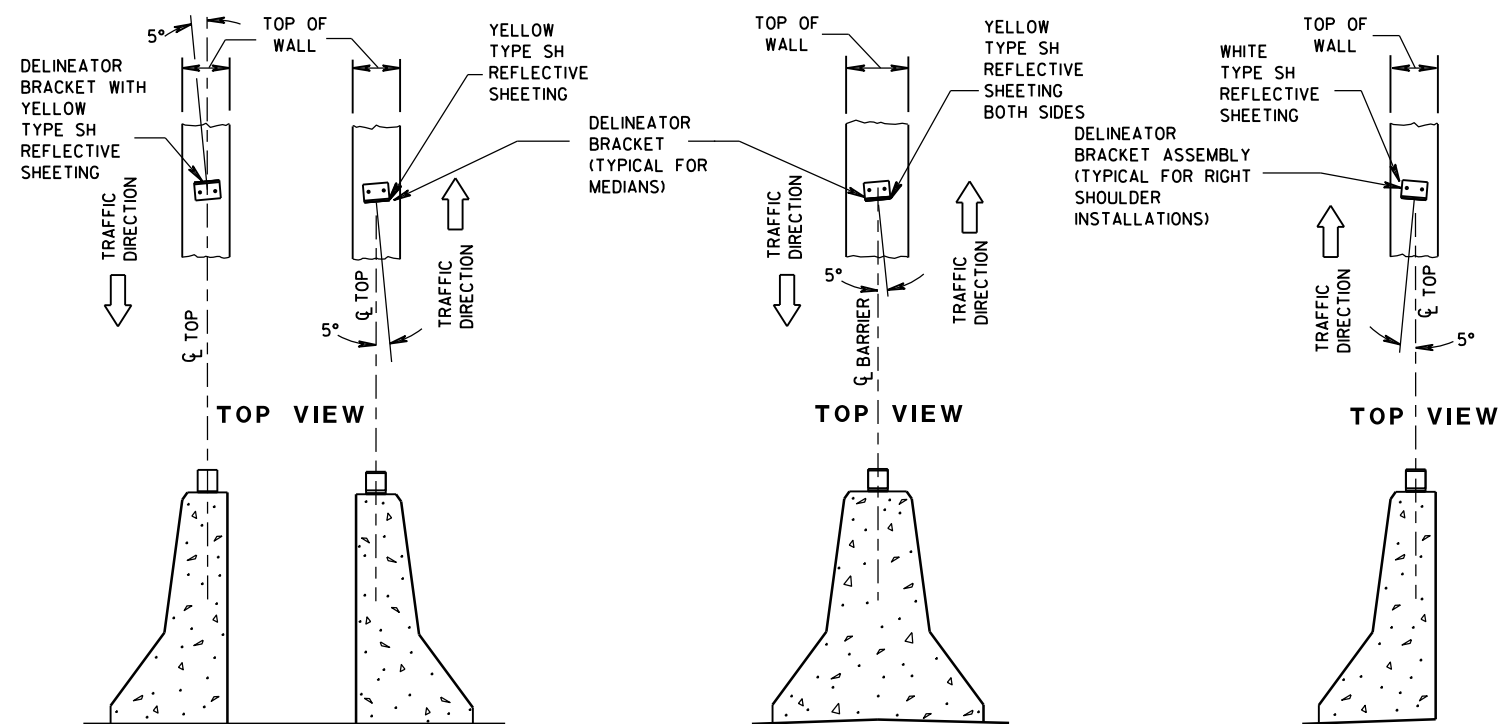
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR REFLECTOR



3" x 3" DELINEATOR REFLECTOR

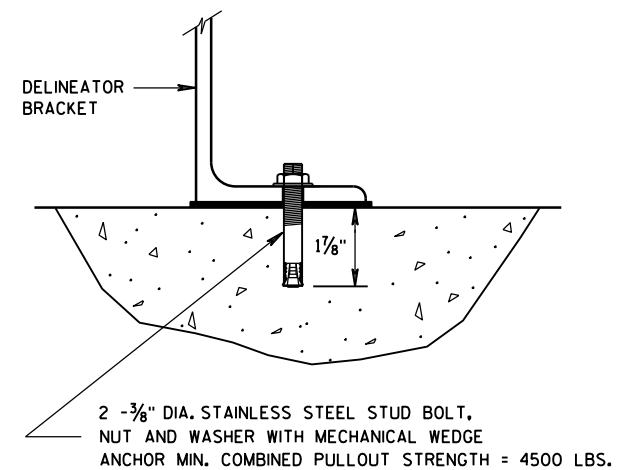


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST,
DELINEATOR REFLECTOR AND
DELINEATOR BRACKET
WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-16

DATE

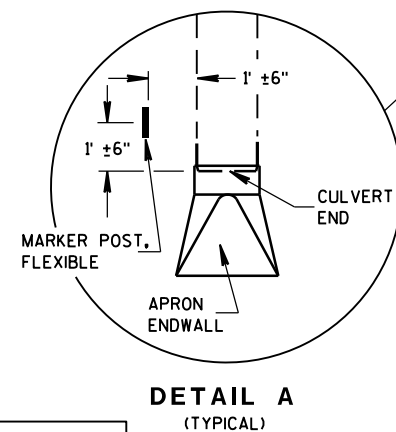
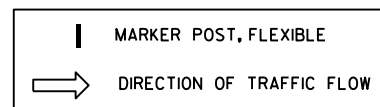
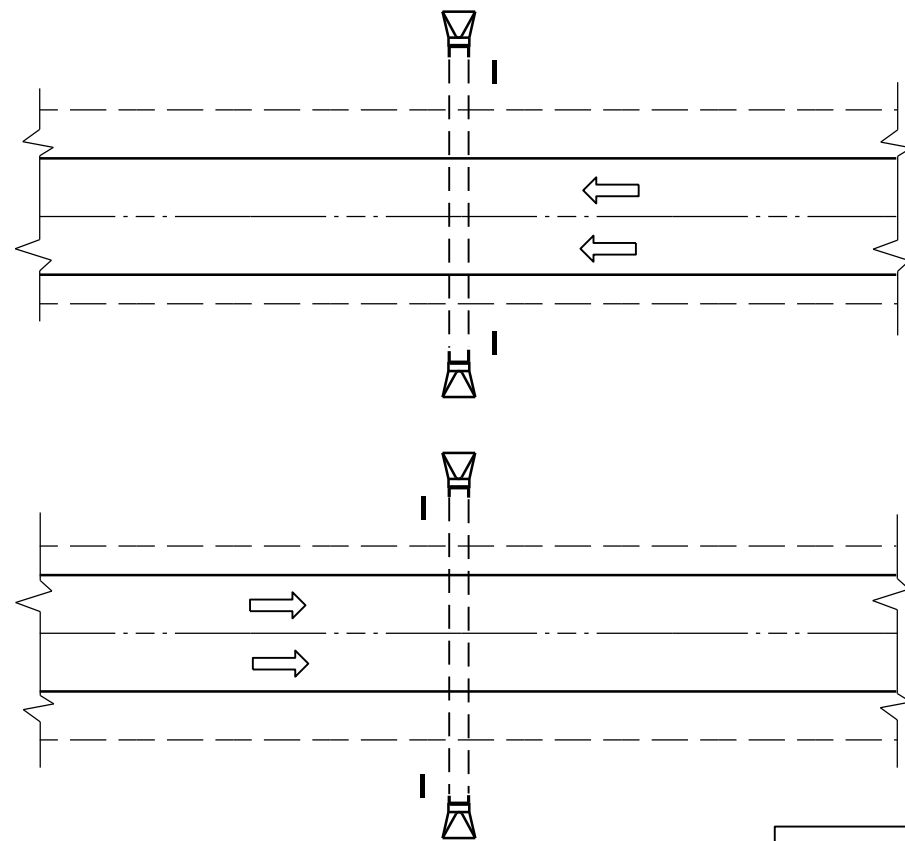
/S/ Matthew R. Rauch

STATE SIGNING AND MAIL

FHWA

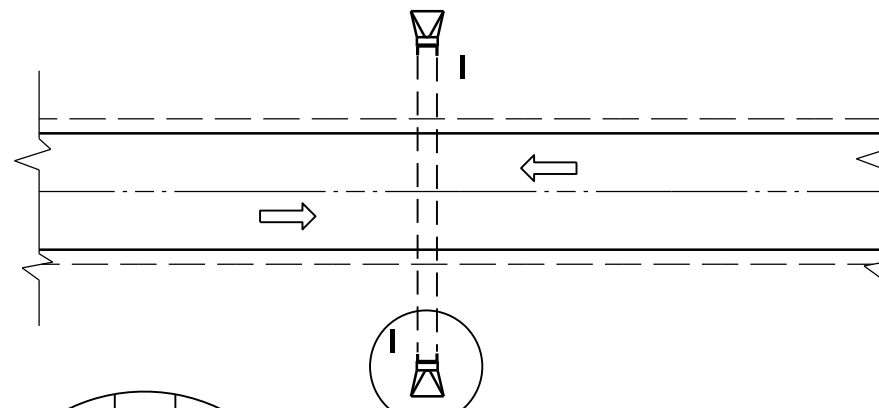
ENGINEER

PLAN VIEW
DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

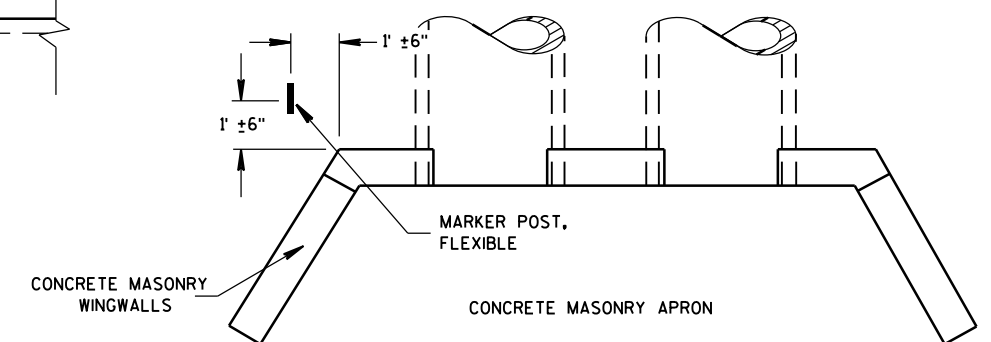
PLAN VIEW
UNDIVIDED HIGHWAY



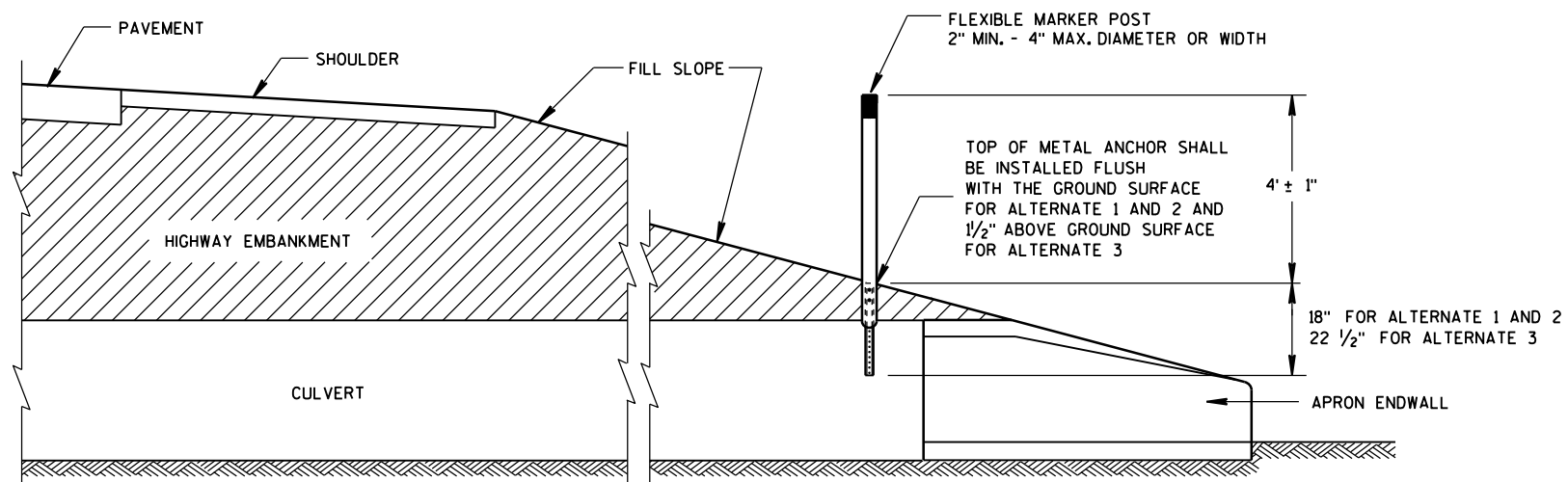
FLEXIBLE MARKER POST LOCATION

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.



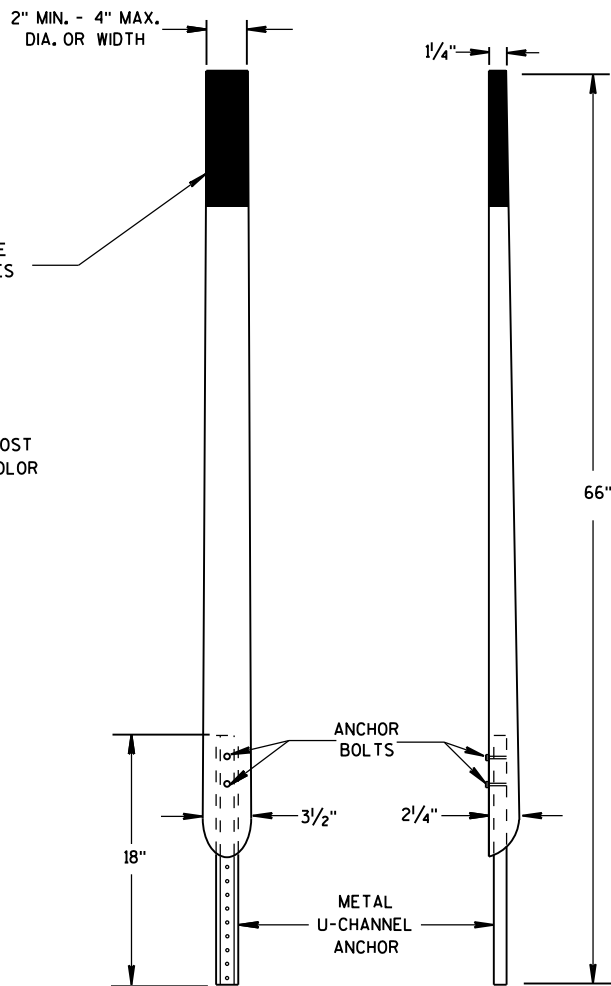
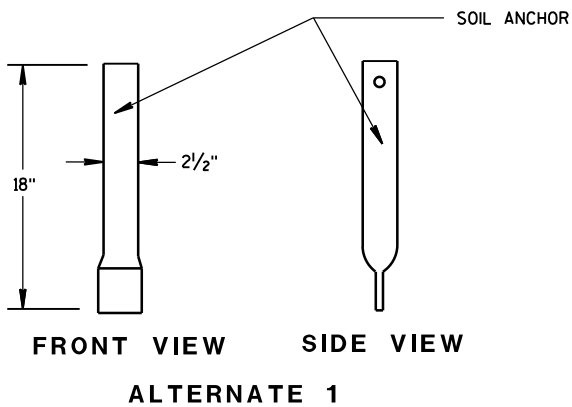
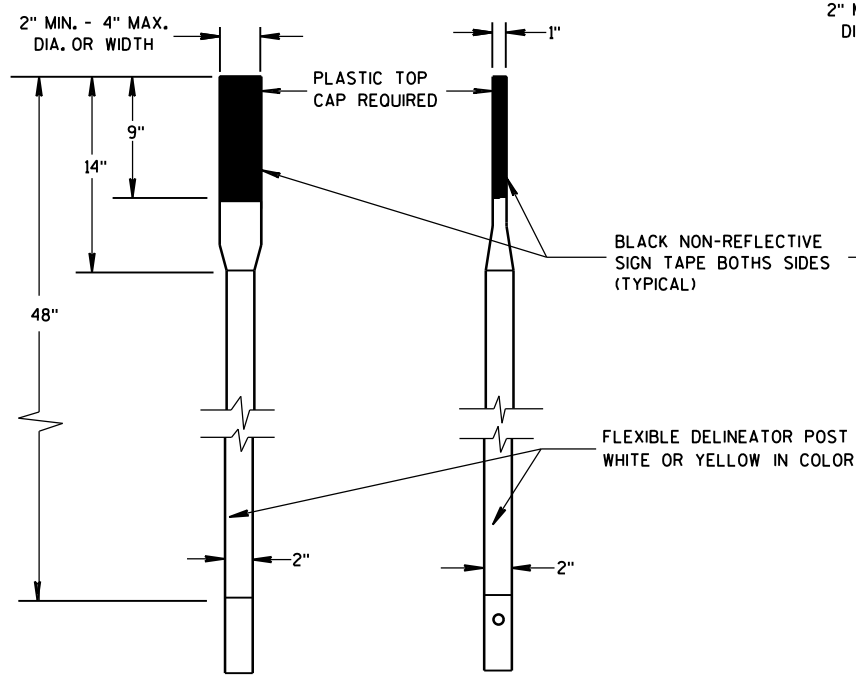
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

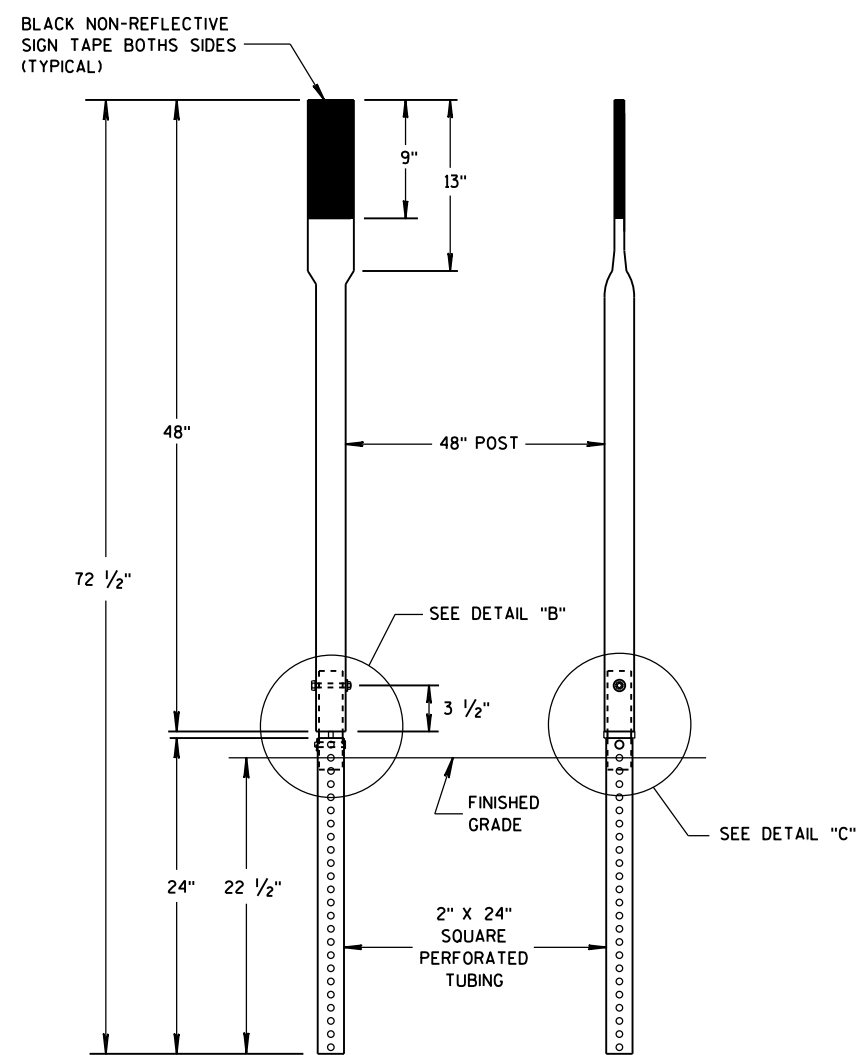
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 148

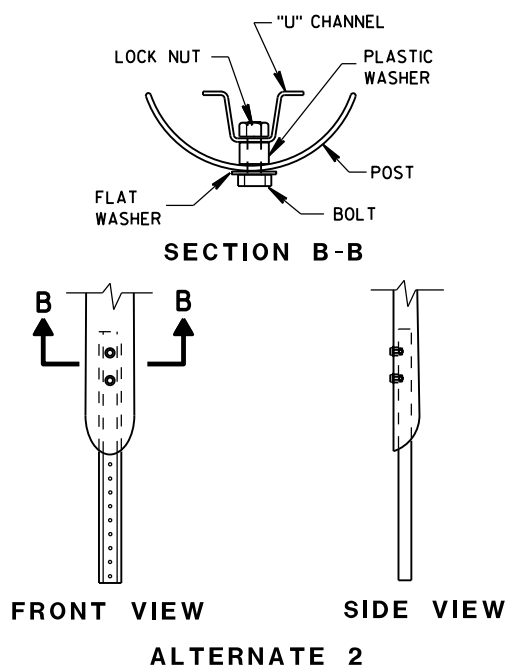
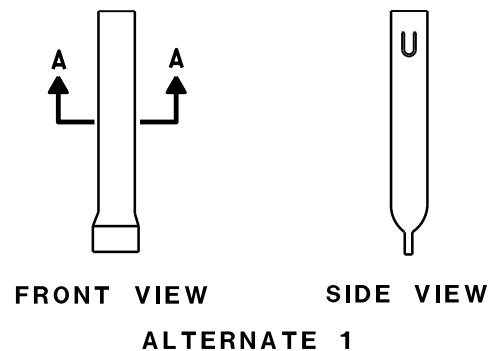
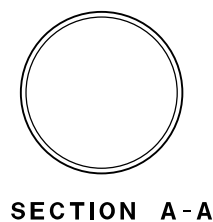
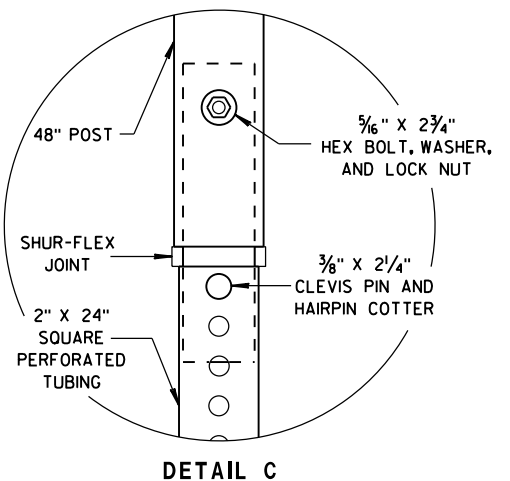
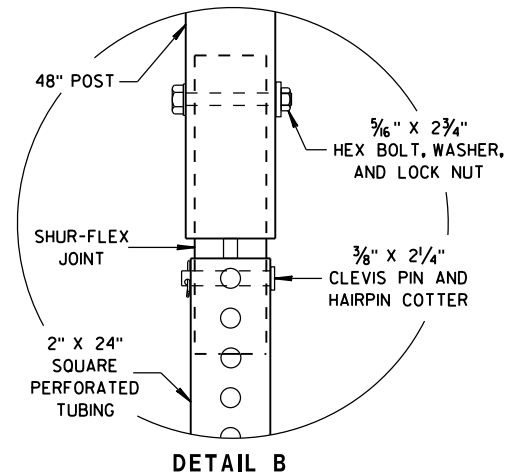
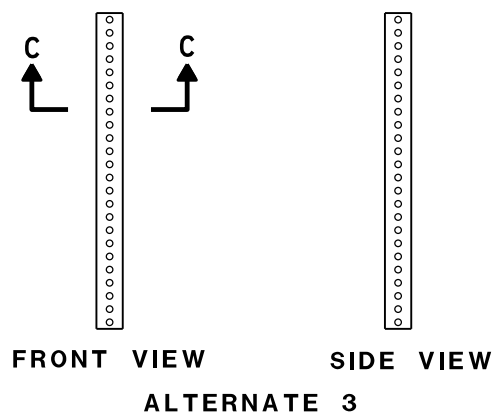
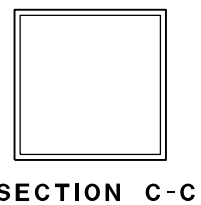


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS

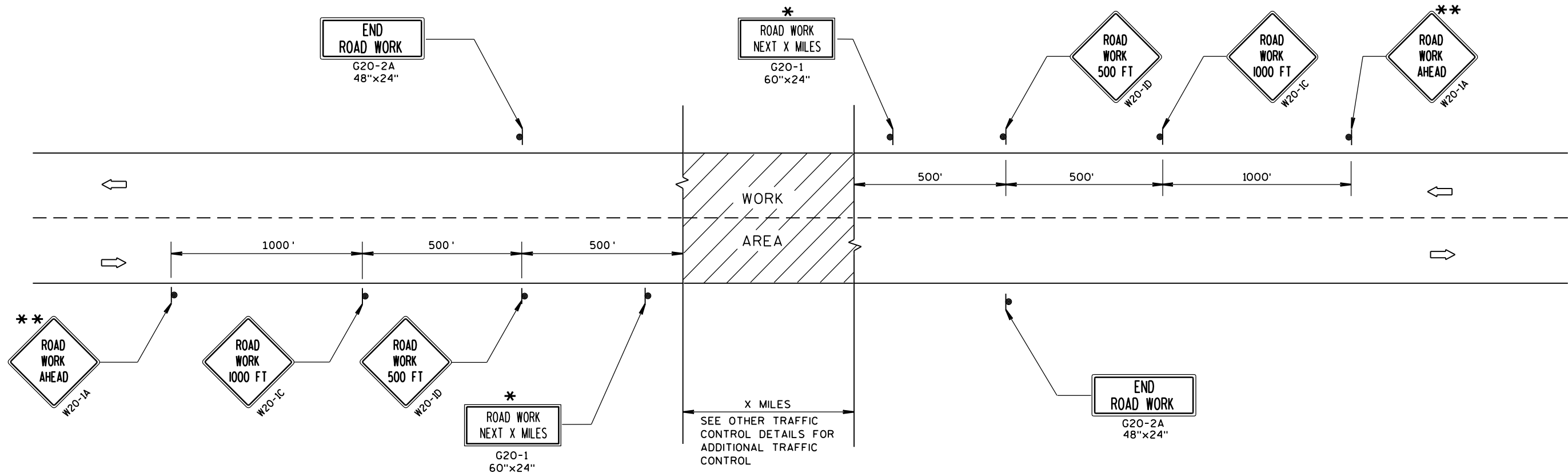


FRONT VIEW SIDE VIEW
ALTERNATE 3



FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 149	IGN
FHWA		



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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

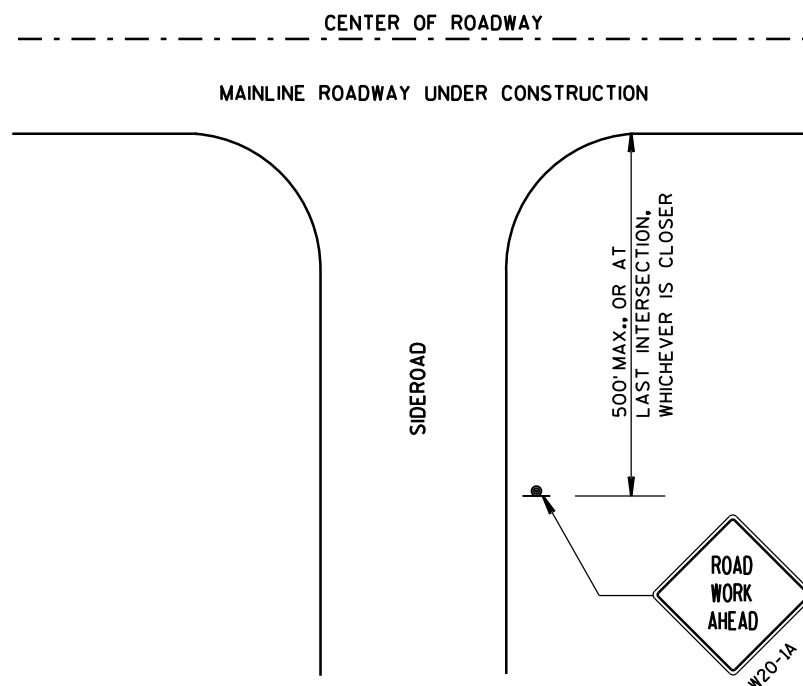
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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



LEGEND

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

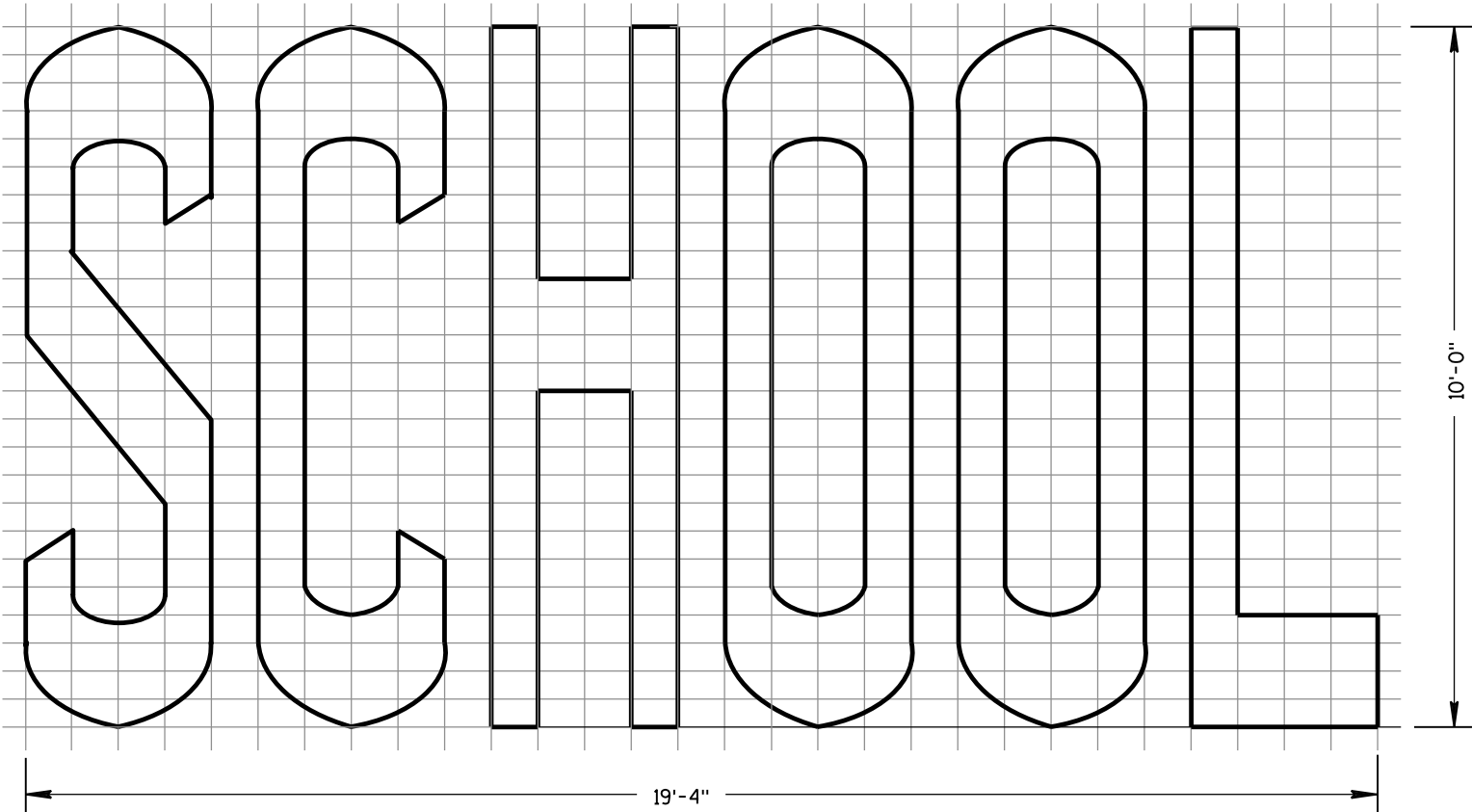
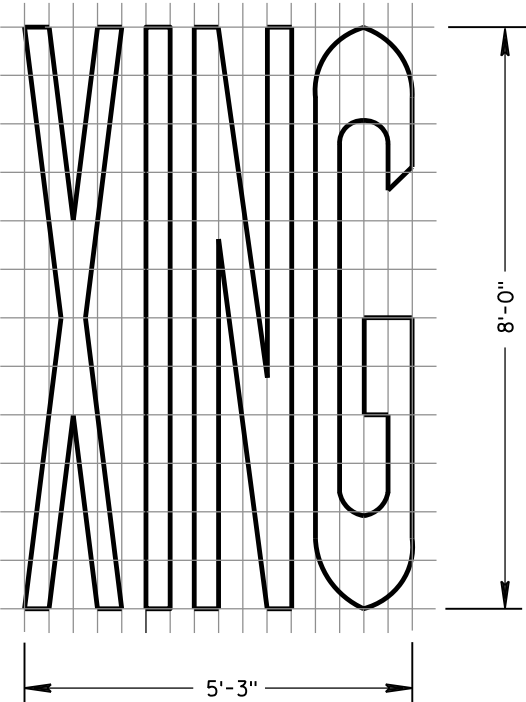
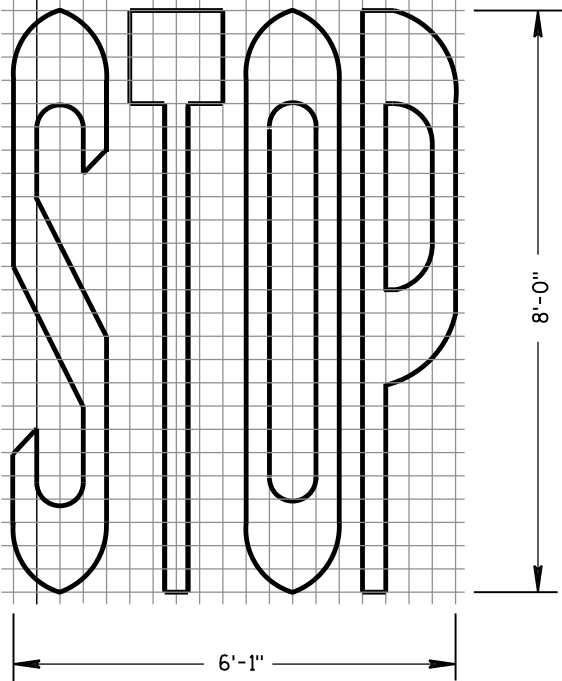
**TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

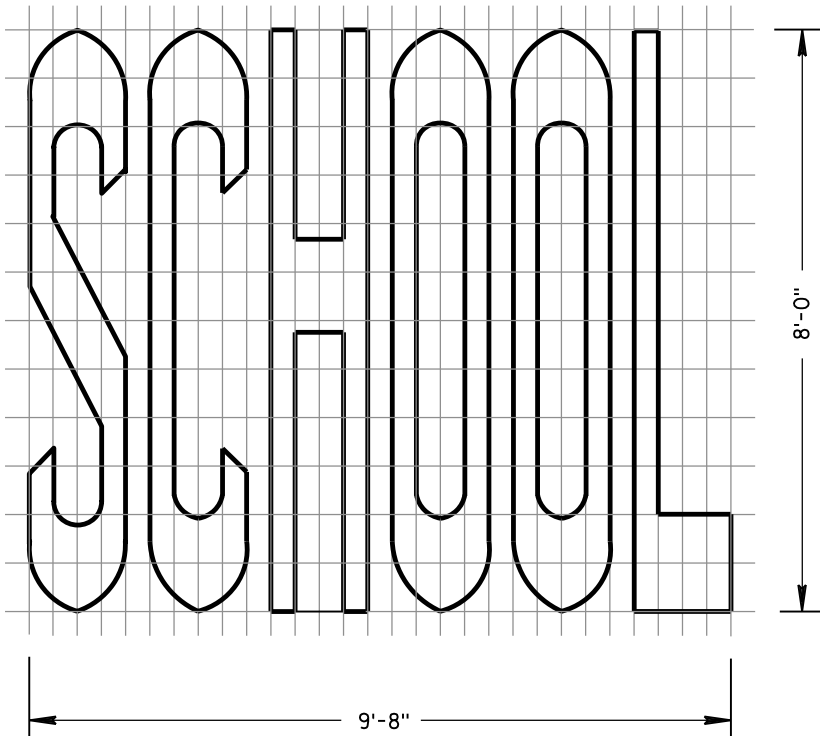
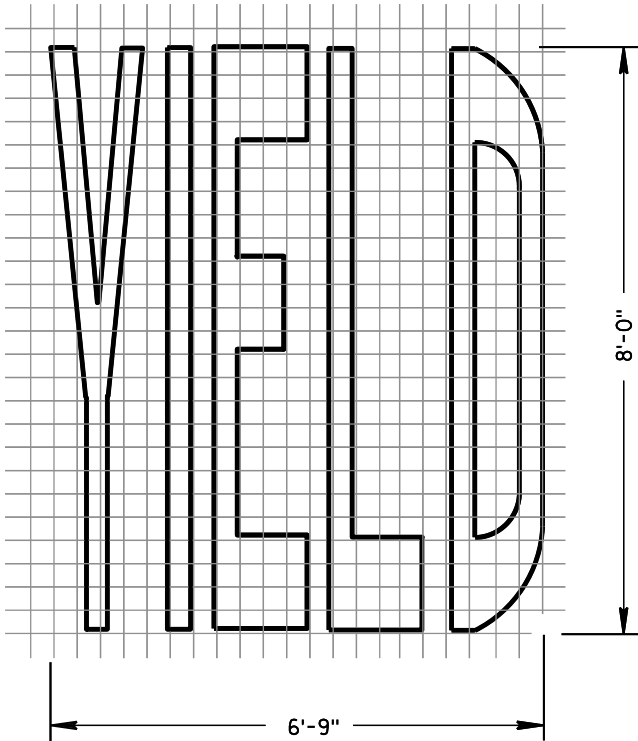
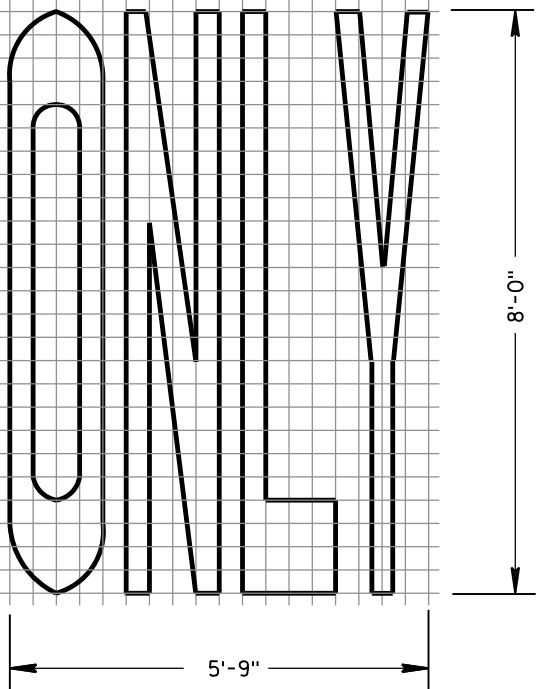
APPROVED
DATE Sept. 2015 /S/ Peter Amokobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

GENERAL NOTES

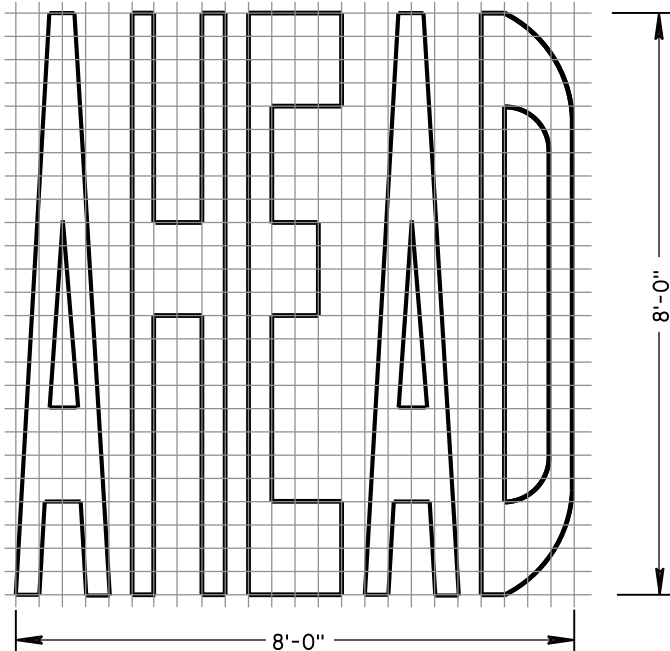
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

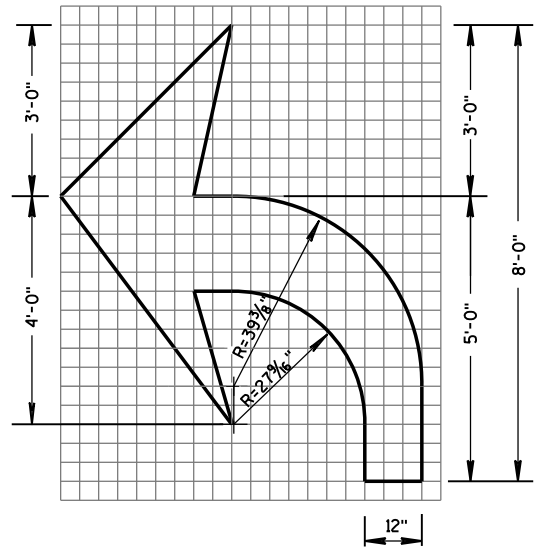
4-18-16

DATE

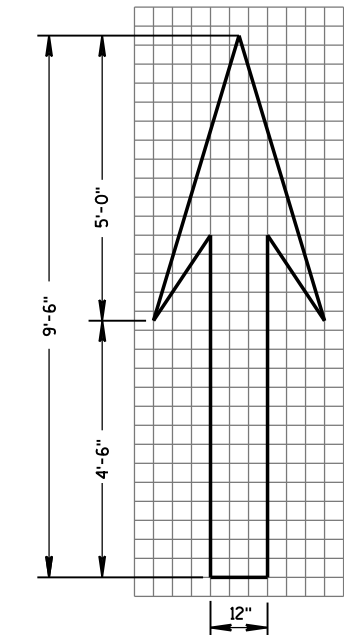
/S/ Matthew R. Rauch

STATE SIGNING AND MARK 151 EER

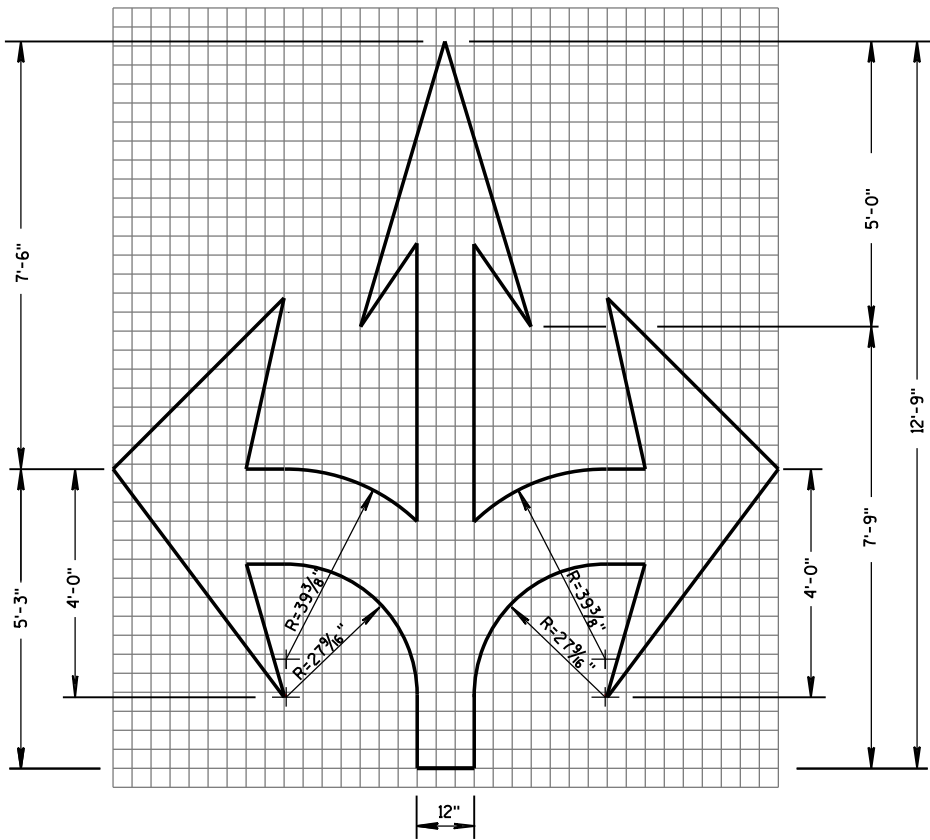
FHWA



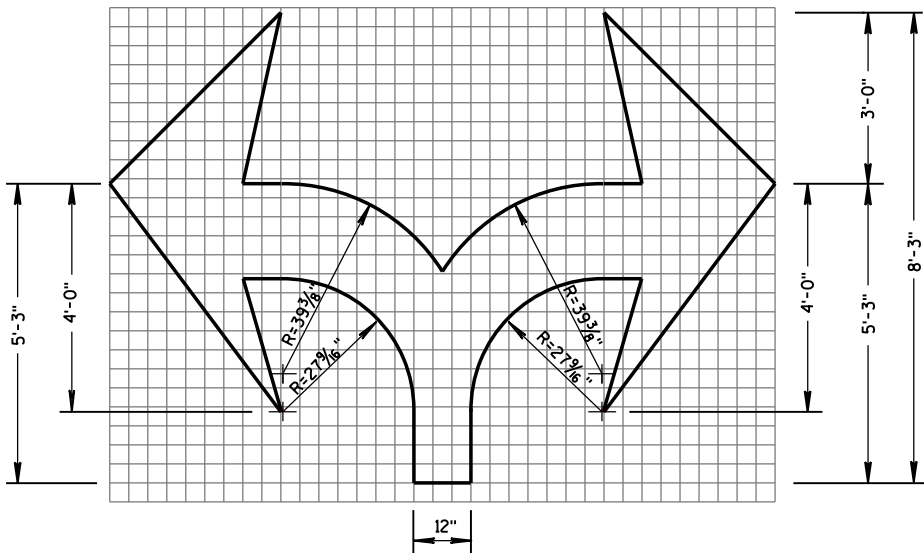
TYPE 2



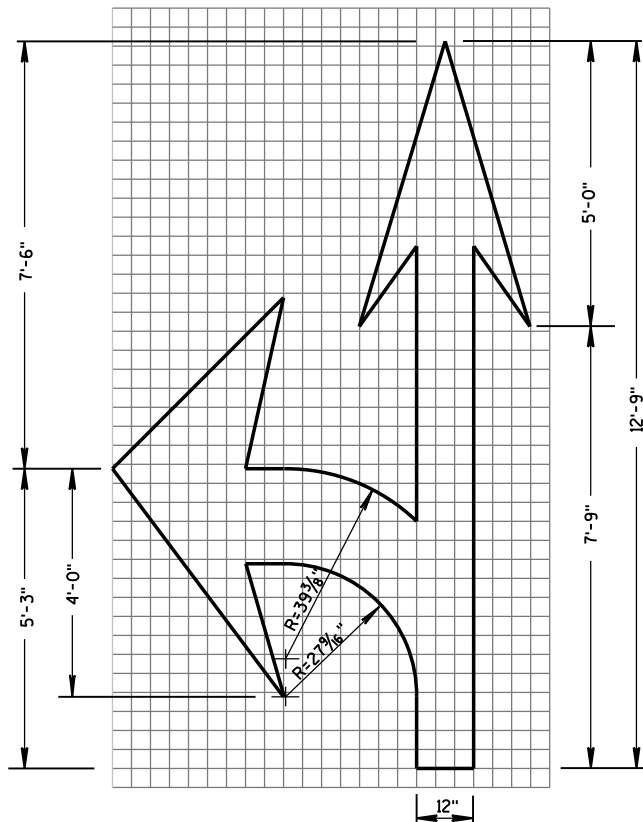
TYPE 1



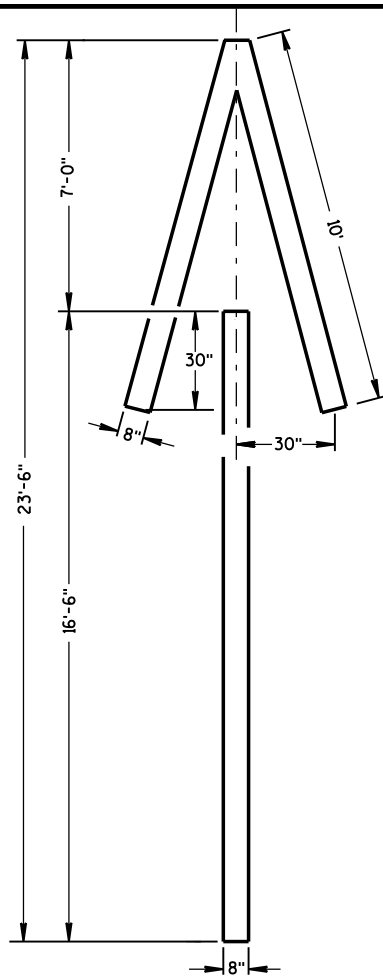
TYPE 6



TYPE 7



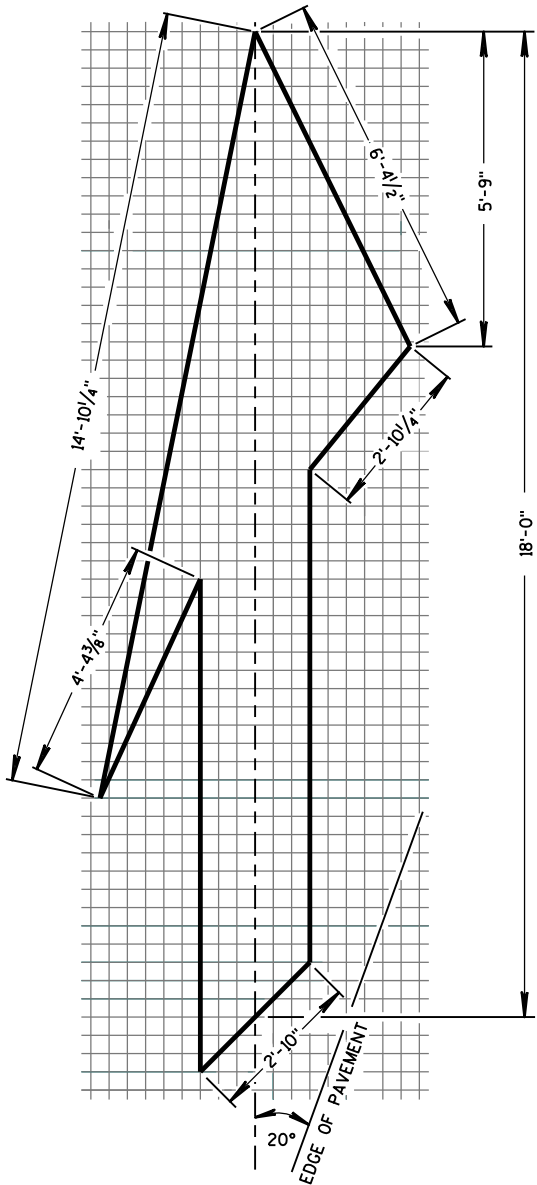
TYPE 3



TYPE 4

GENERAL NOTES

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

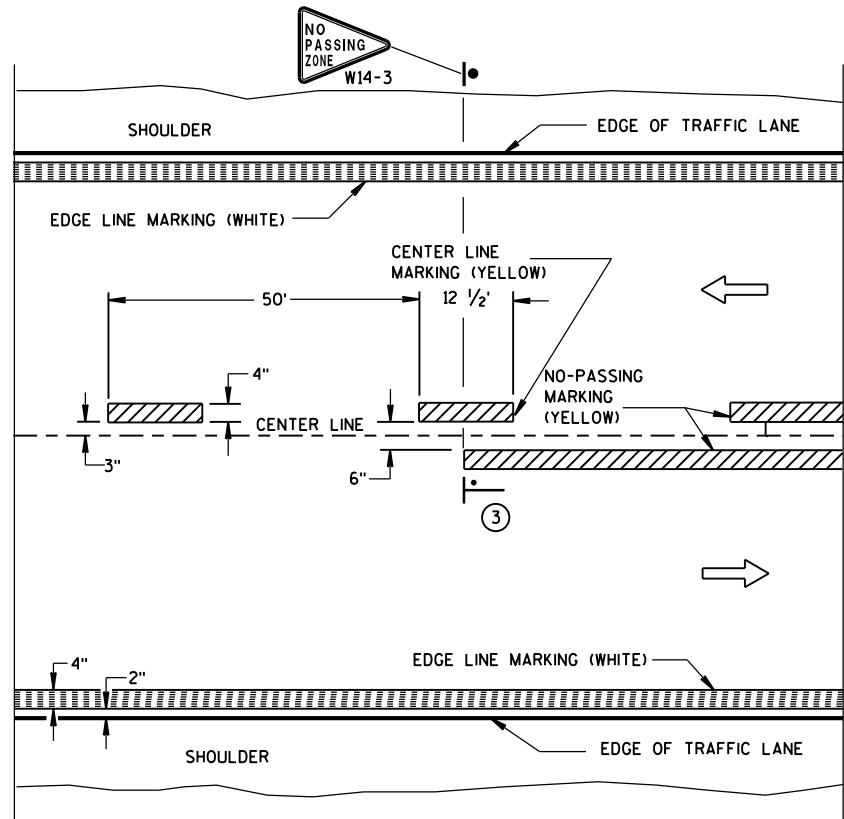


TYPE 5 LANE DROP ARROW

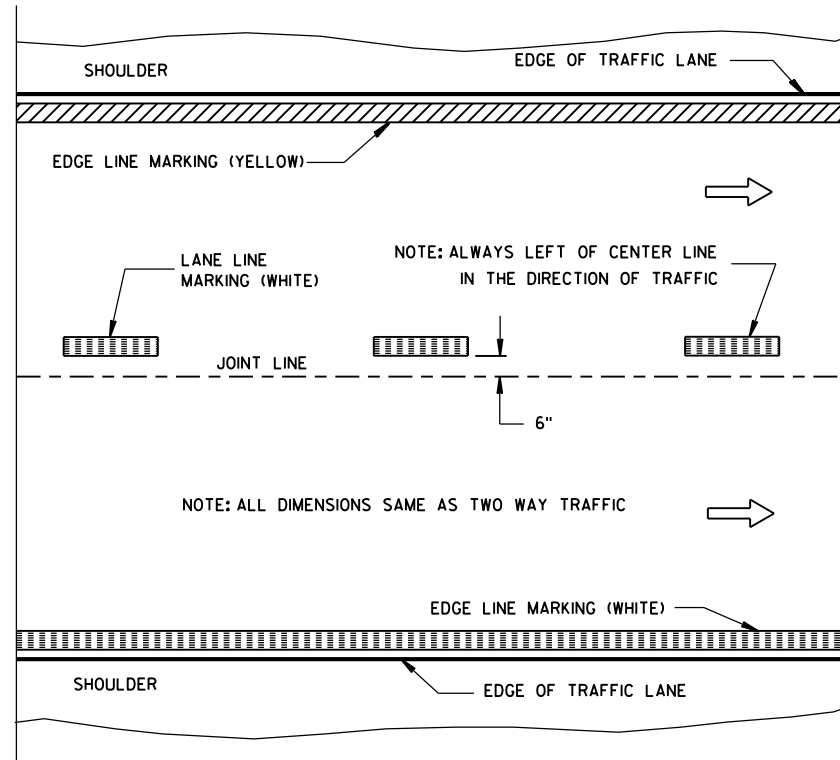
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 152
FHWA

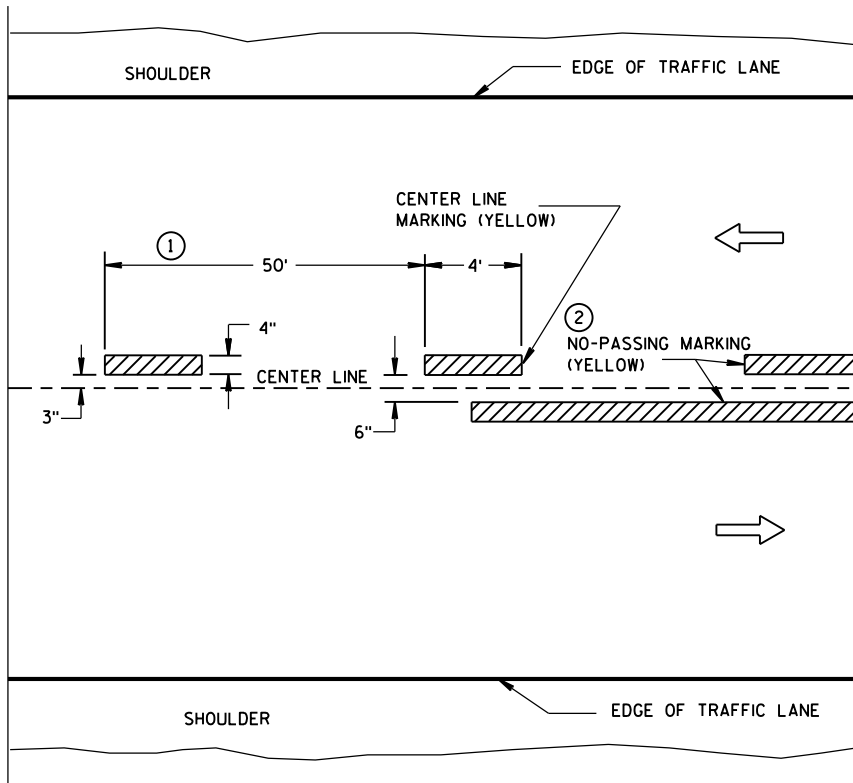


TWO WAY TRAFFIC

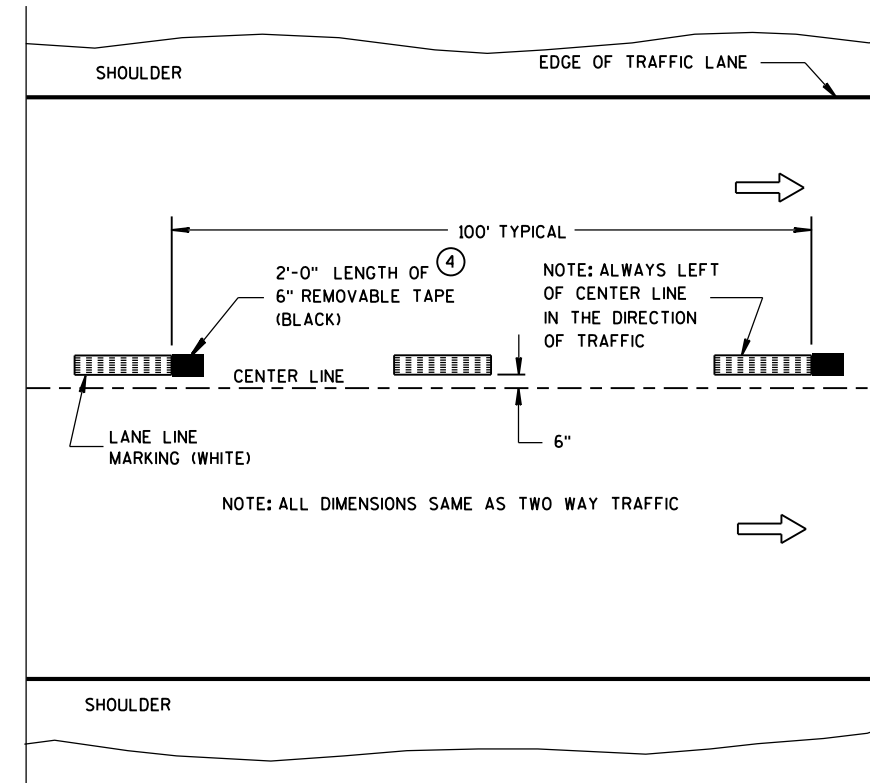


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

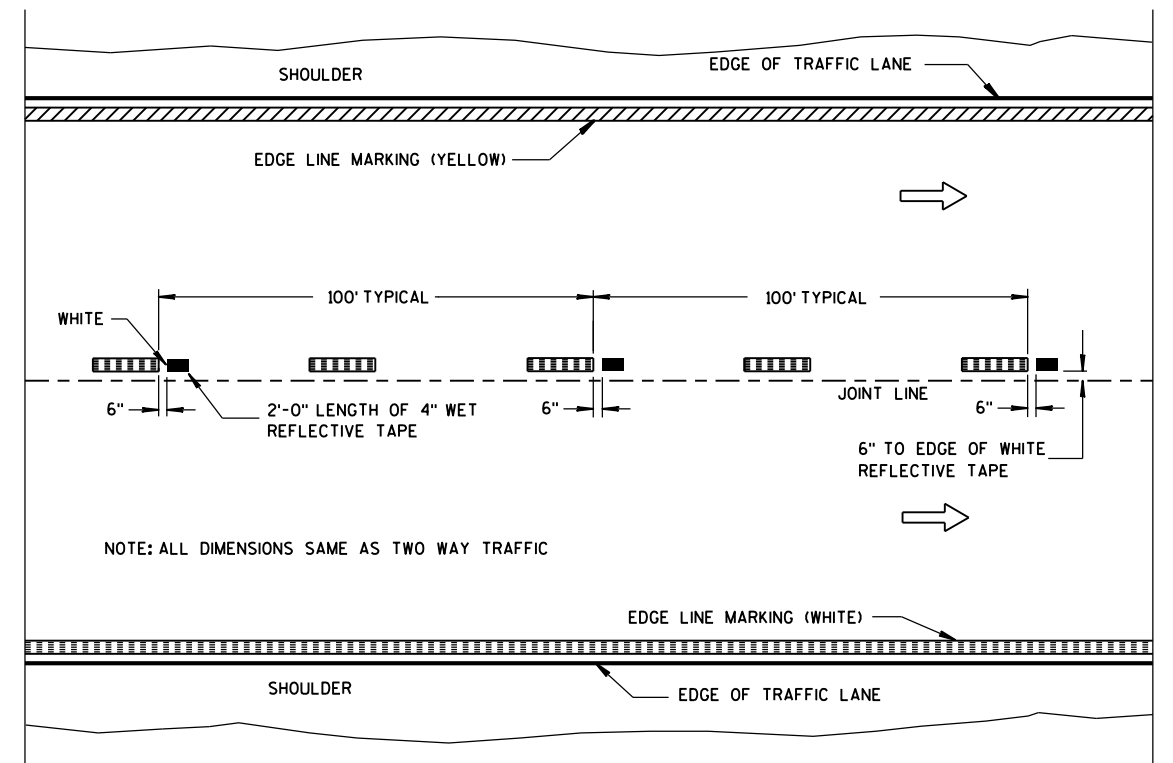
GENERAL NOTES

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

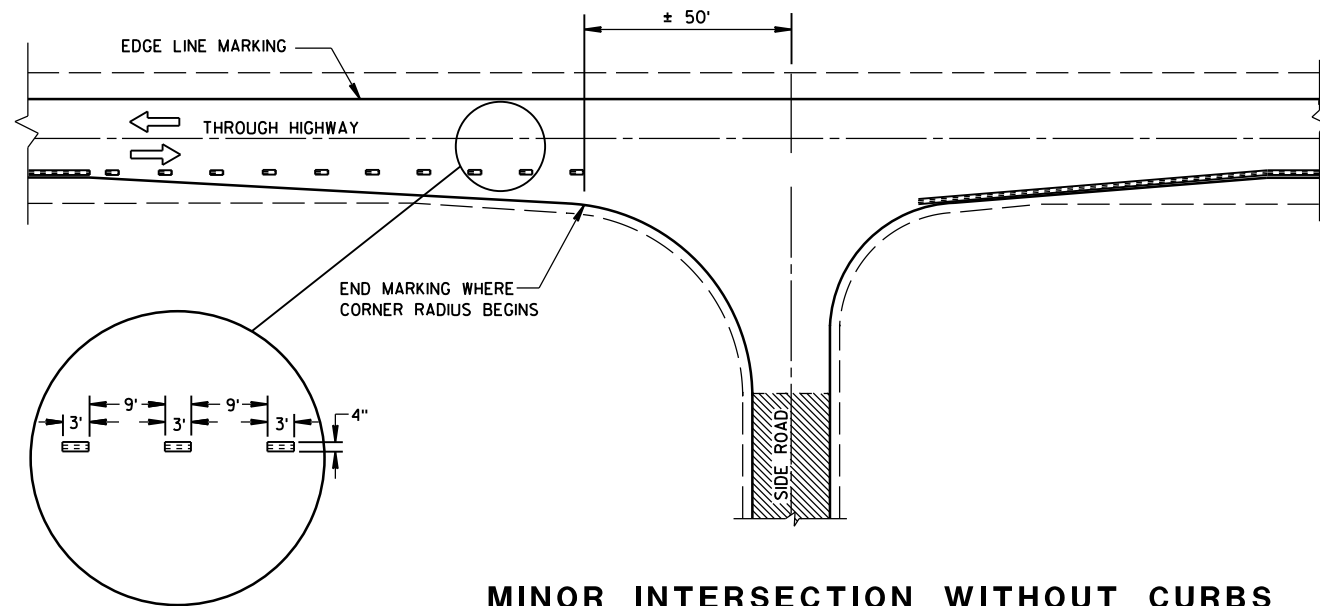
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

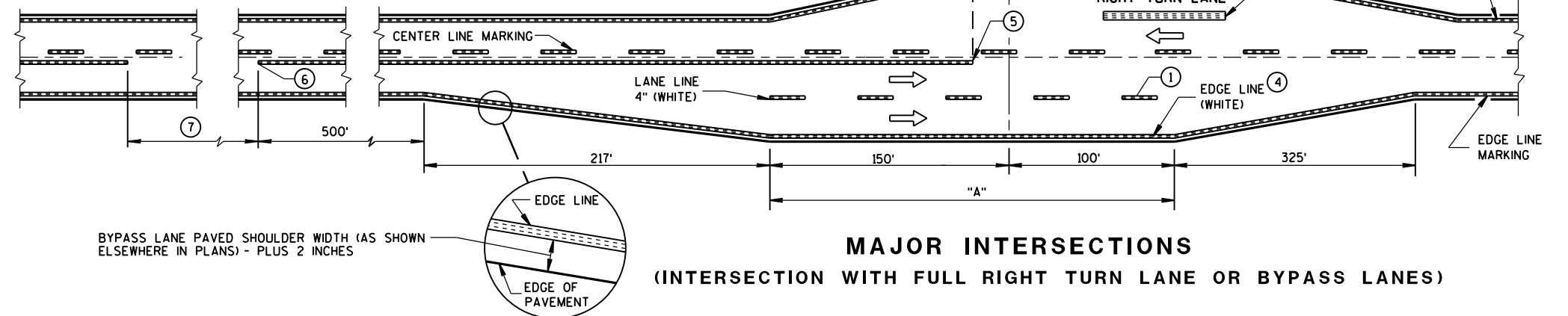
APPROVED
5-13-2013 /S/ Travis Feltes
DATE STATE TRAFFIC E 153
FHWA



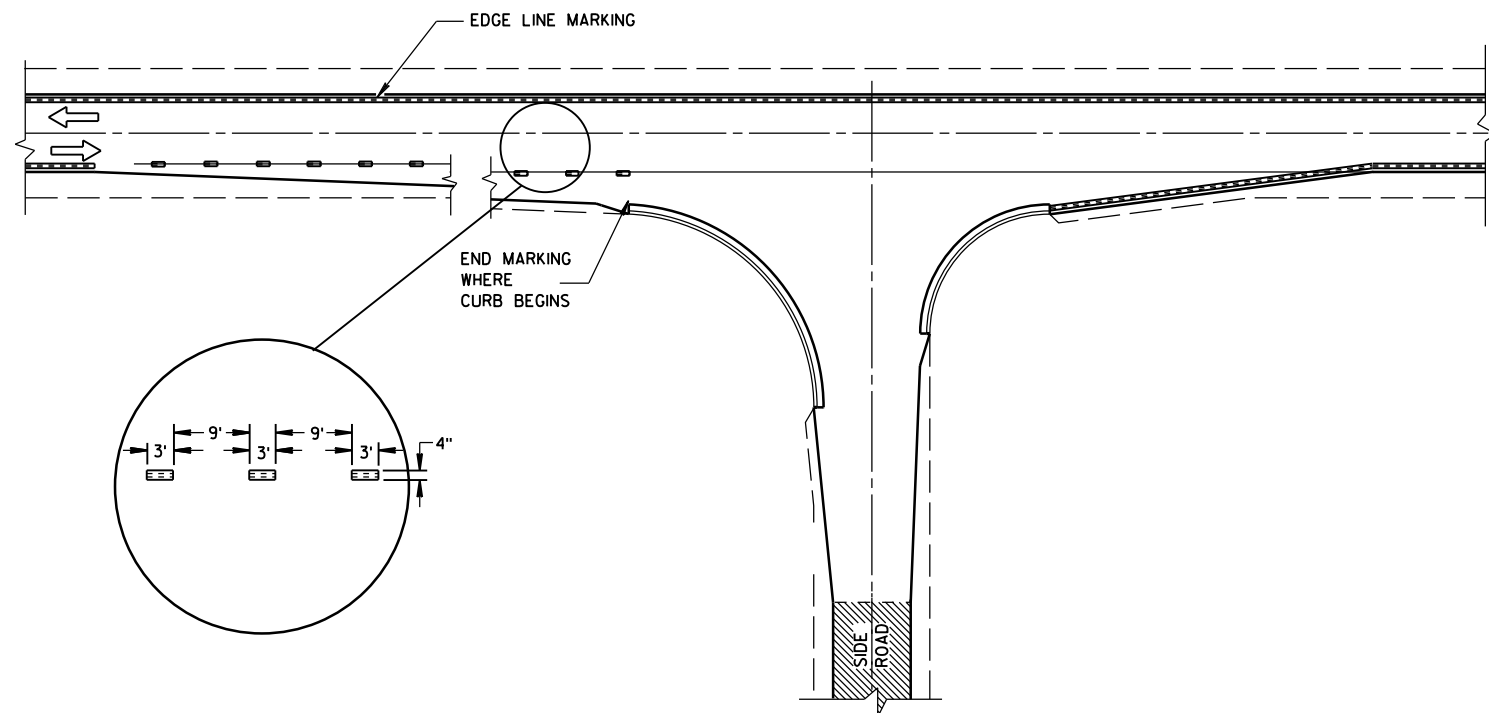
MINOR INTERSECTION WITHOUT CURBS

⑦

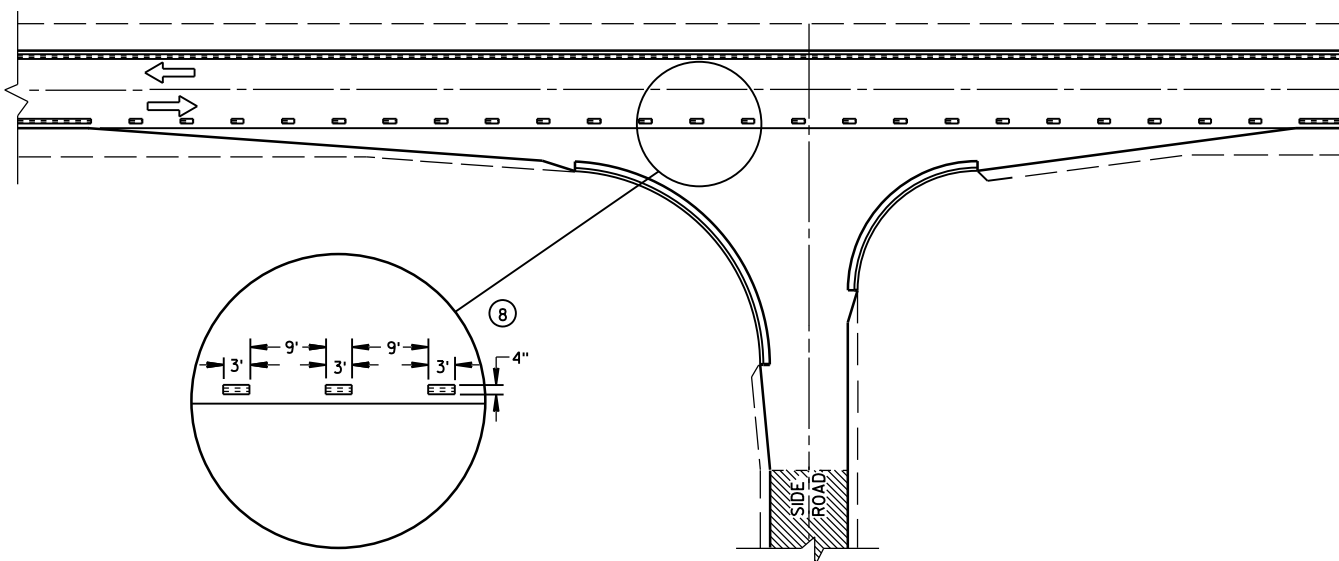
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)



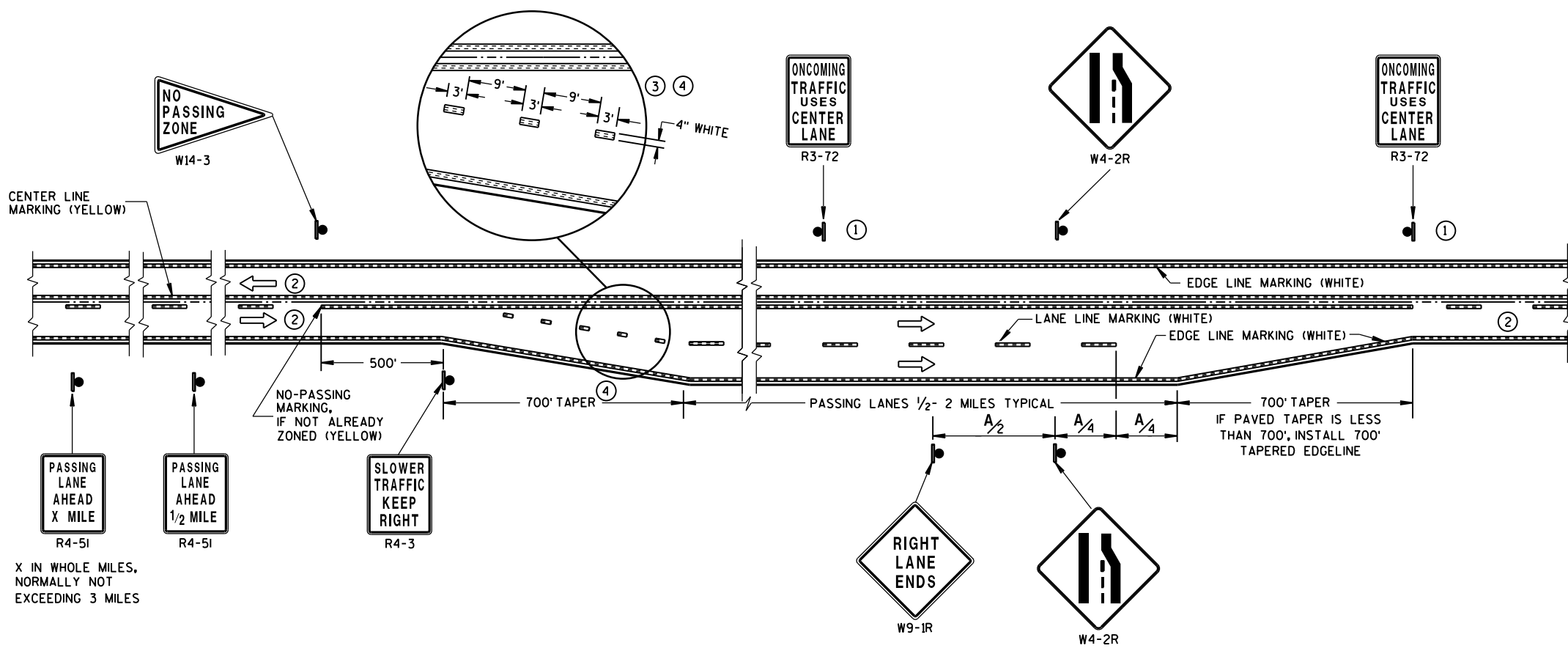
MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

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

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 154



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

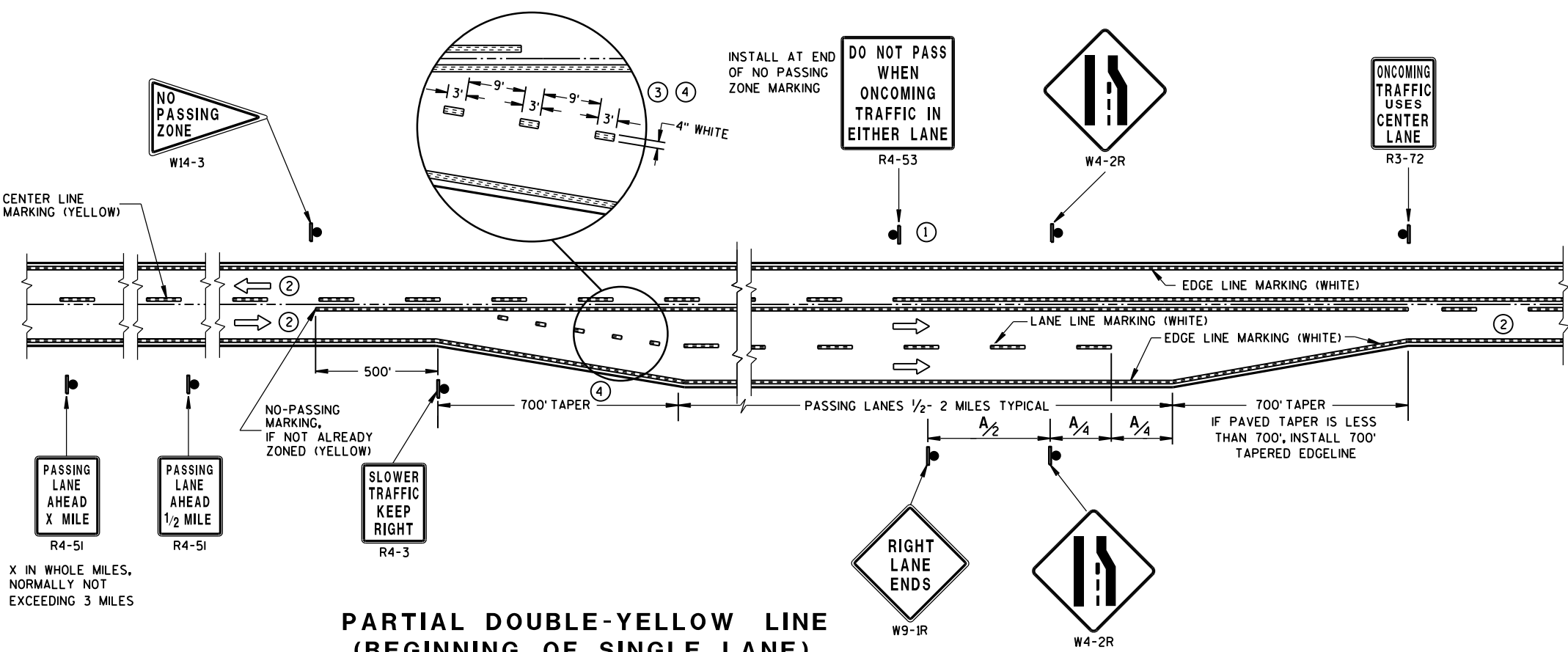
GENERAL NOTES

- 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

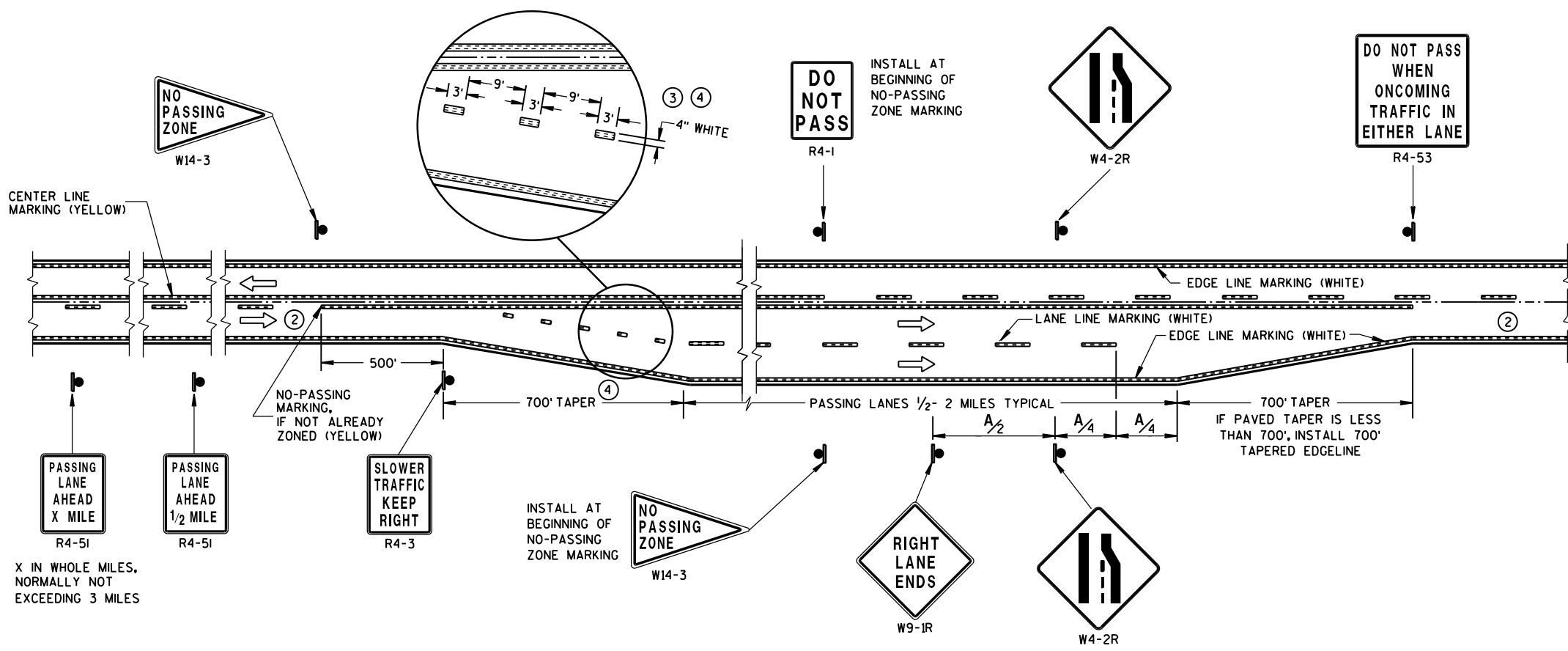
POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	750
50	850
55	950



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 155



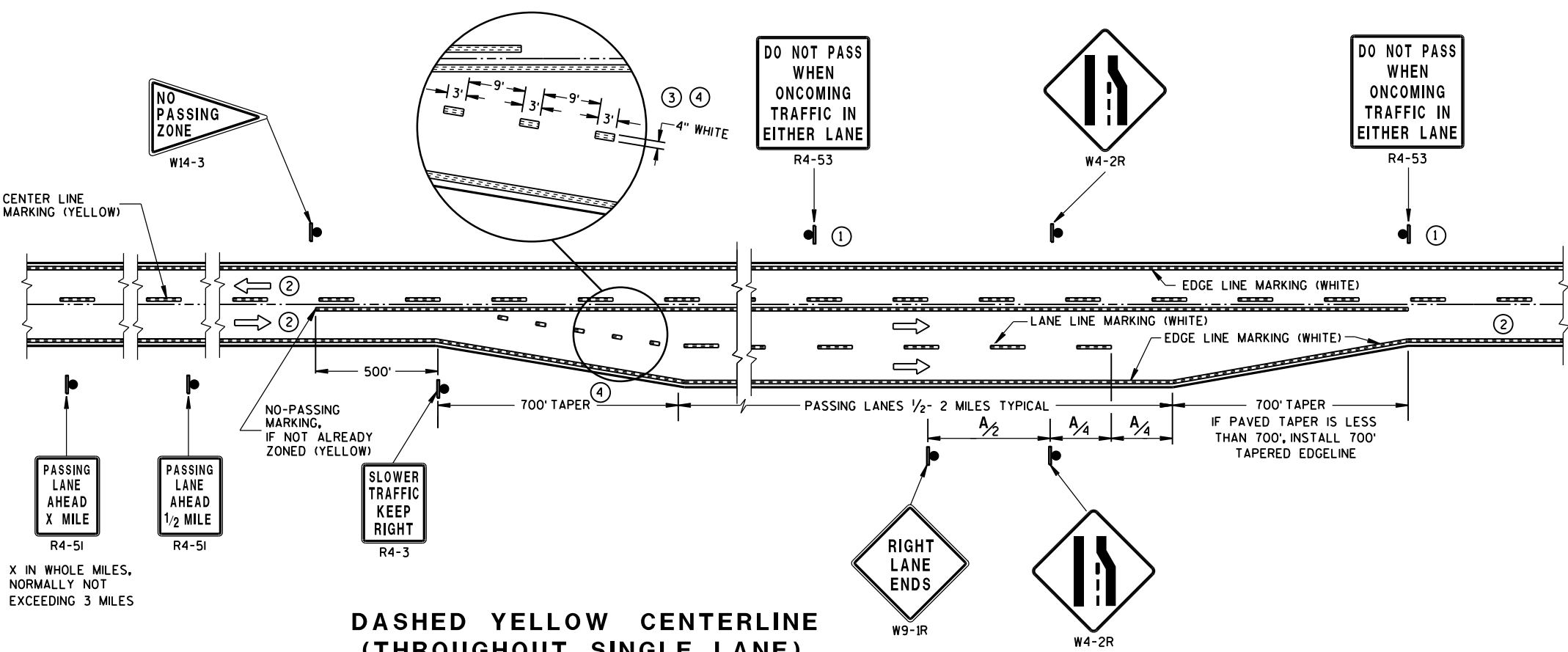
**SOLID DOUBLE-YELLOW LINE
(END OF SINGLE LANE)**

- 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.

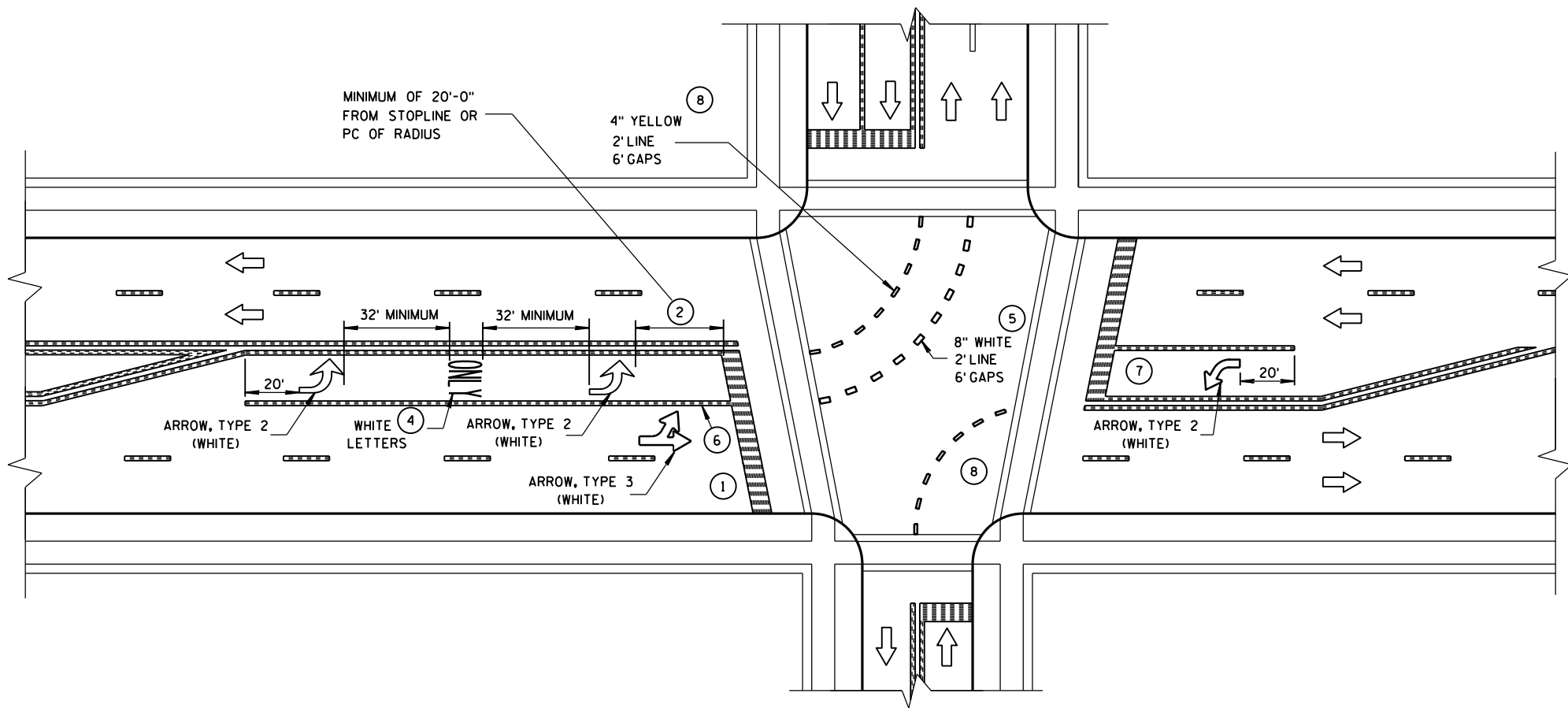
ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

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



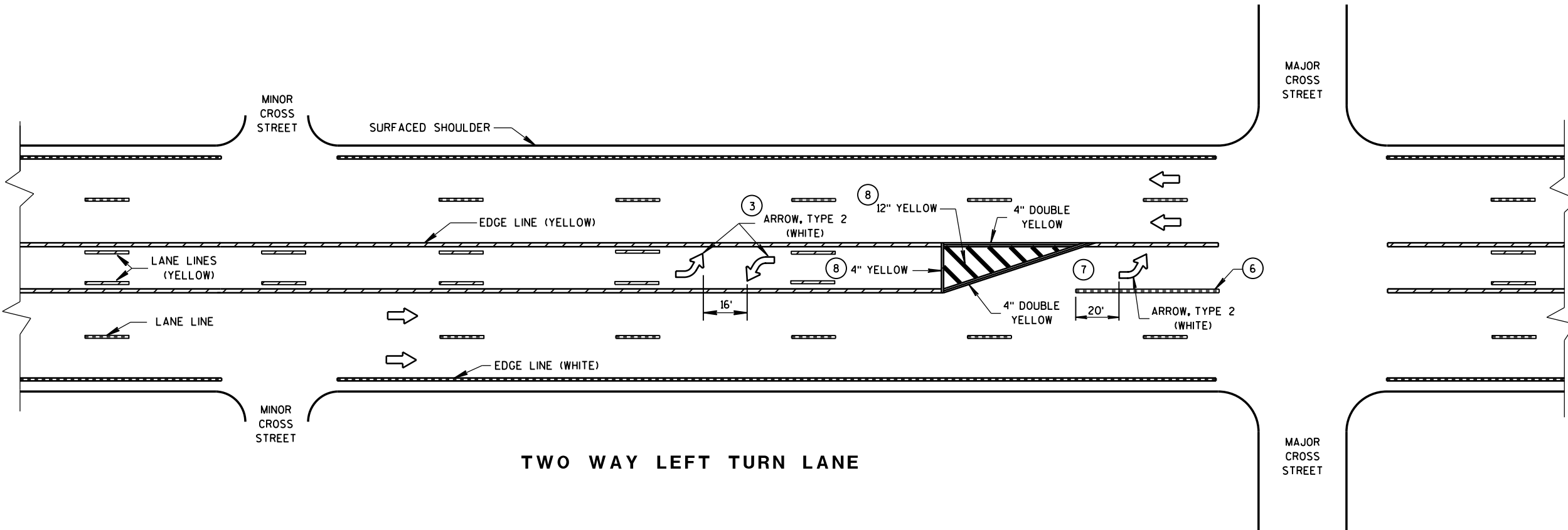
**DASHED YELLOW CENTERLINE
(THROUGHOUT SINGLE LANE)**



GENERAL NOTES

- 1 STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- 2 DISTANCE MAY BE ADJUSTED TO ACCOMMODATE SHORT LEFT TURN LANES, AS APPROVED BY THE ENGINEER.
- 3 A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- 4 ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
- 5 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
- 6 8" WHITE
- 7 ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
- 8 REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (➡)
SHOWS DIRECTION OF TRAVEL



PAVEMENT MARKING
(LEFT TURN LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

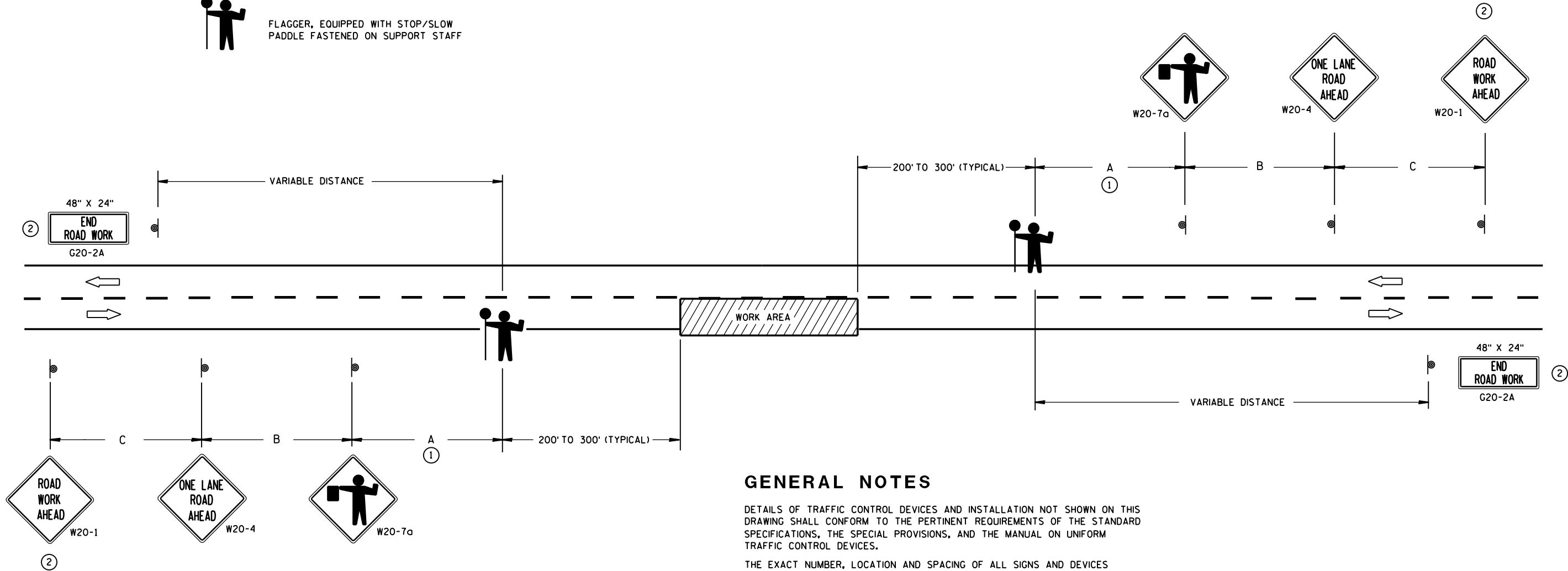
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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.

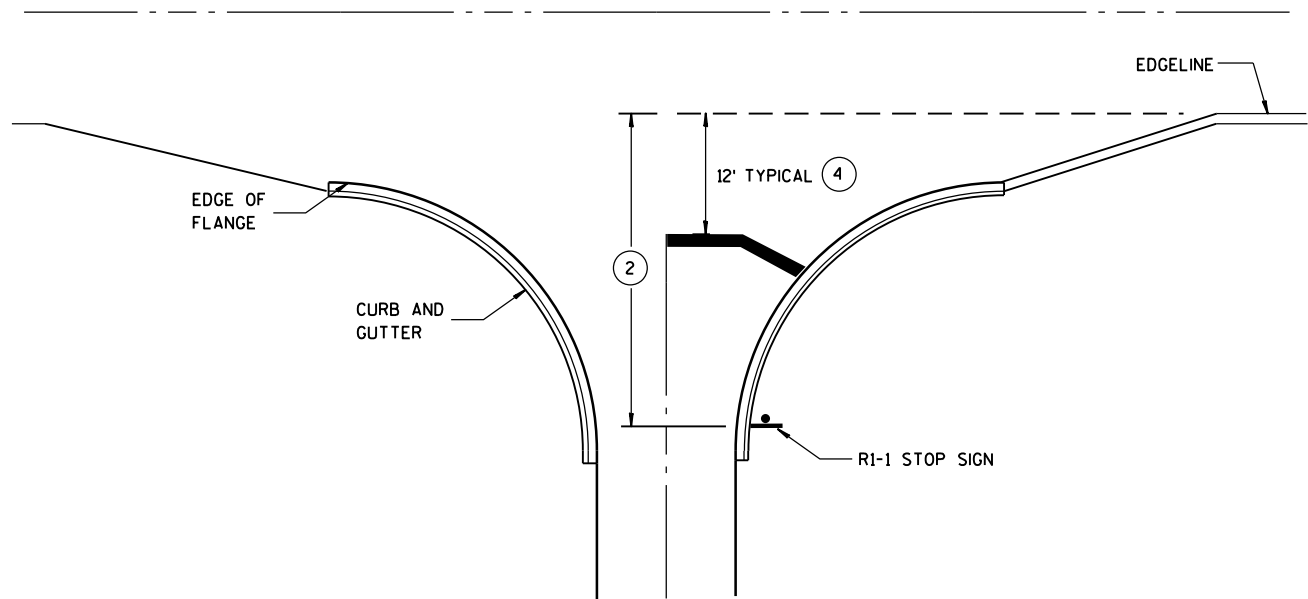
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

- 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.

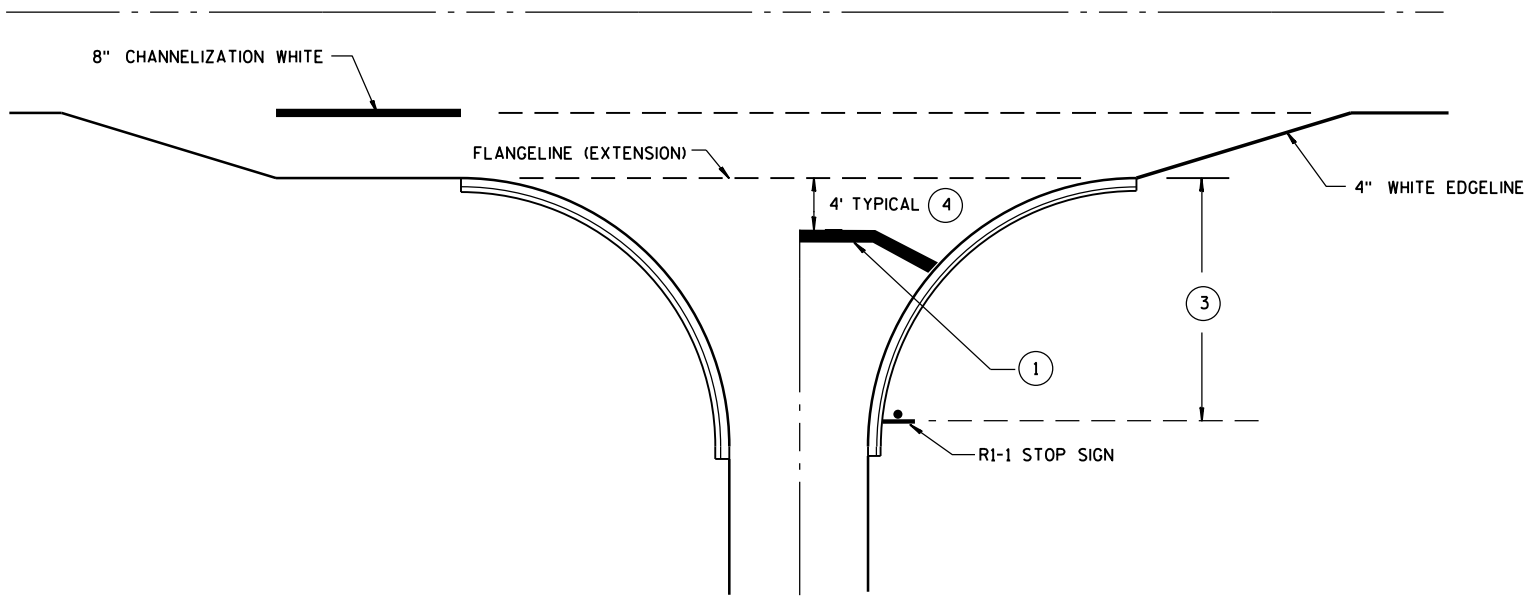
TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

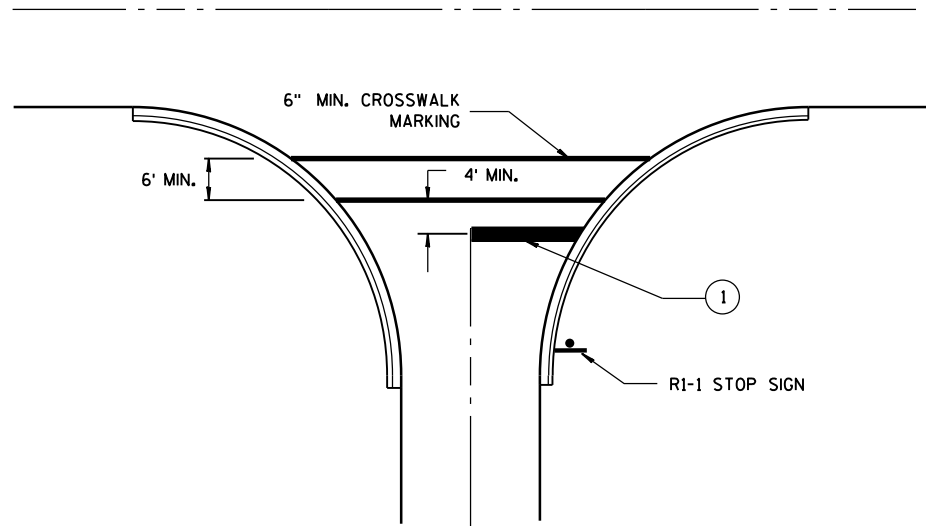
APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 158 SIGN
FHWA



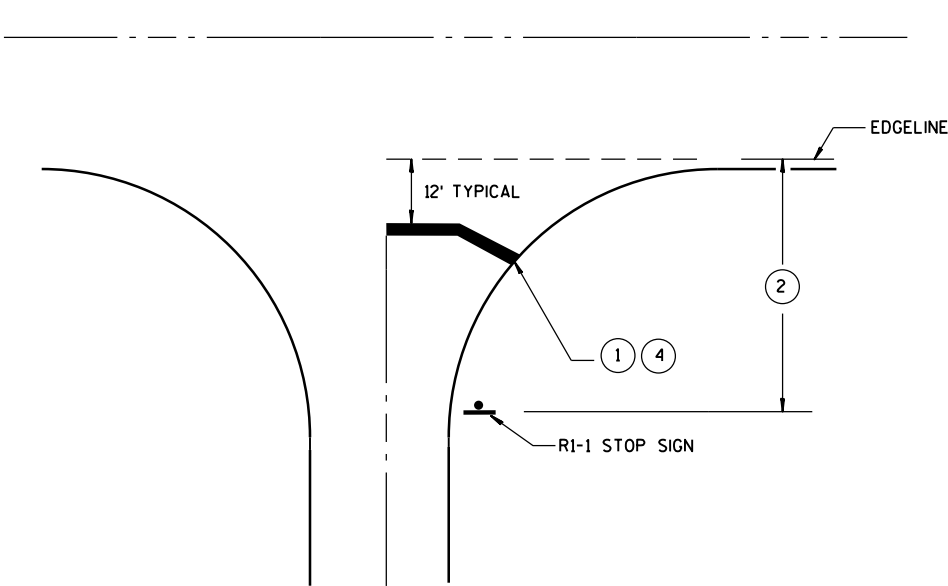
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH CROSSWALK MARKING

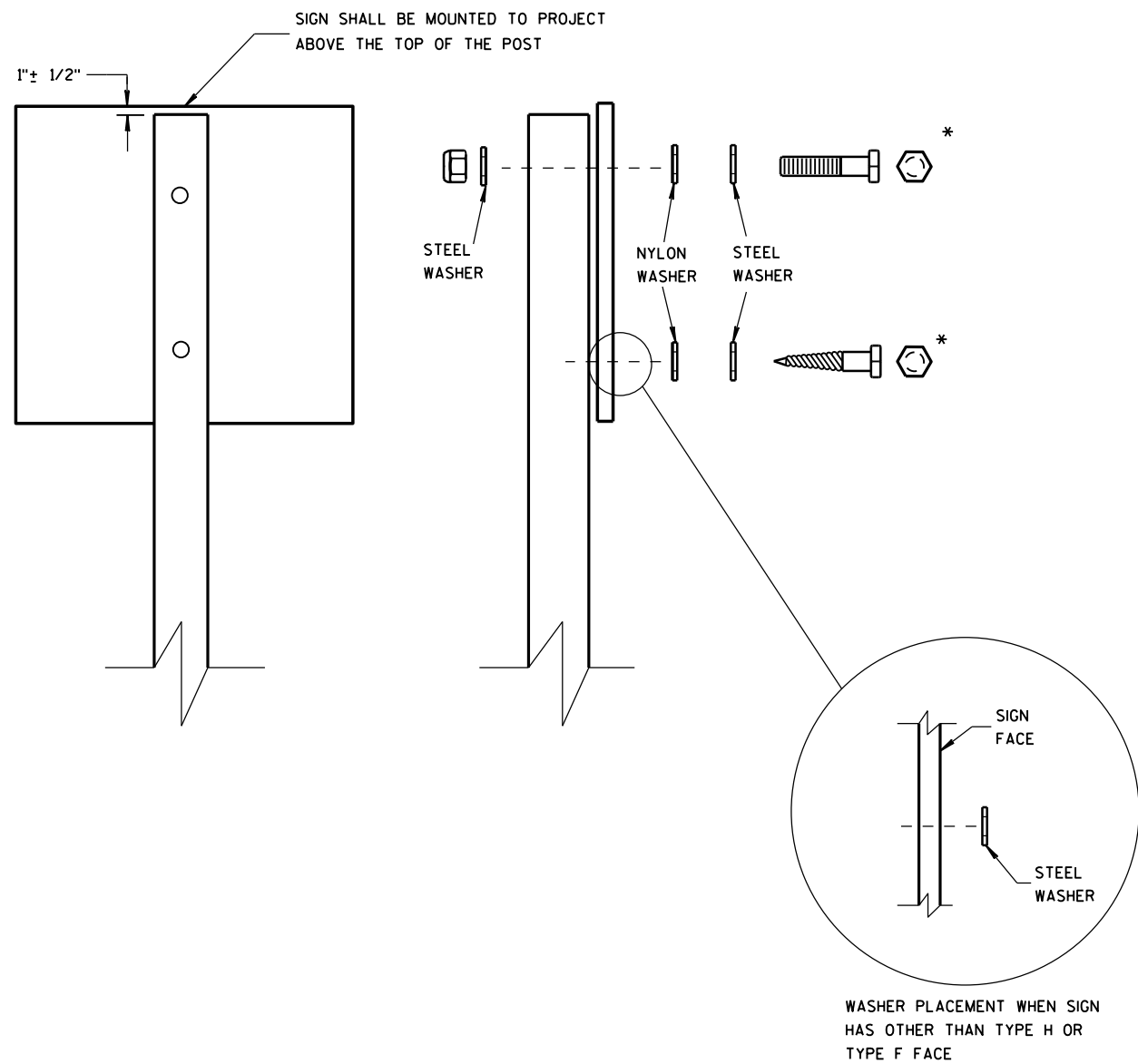


TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- 3 IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- 4 MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
4-18-2016	/S/ Matthew R. Rauch		
DATE	STATE SIGNING AND MAR 159		
FHWA	JEER		



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

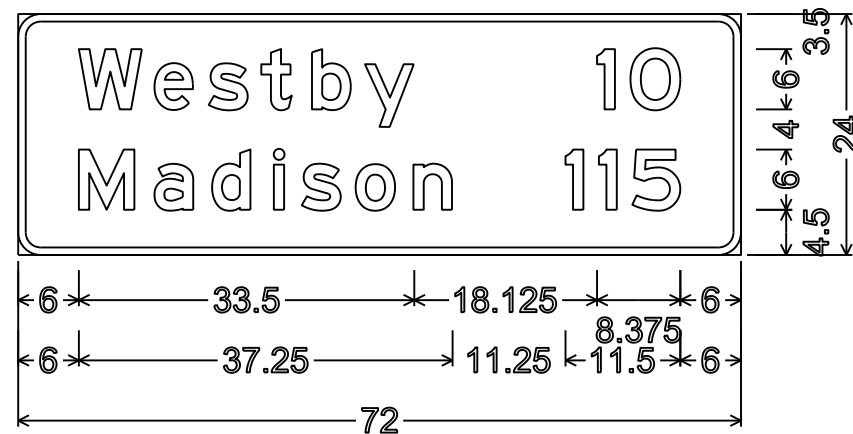
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
 - MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

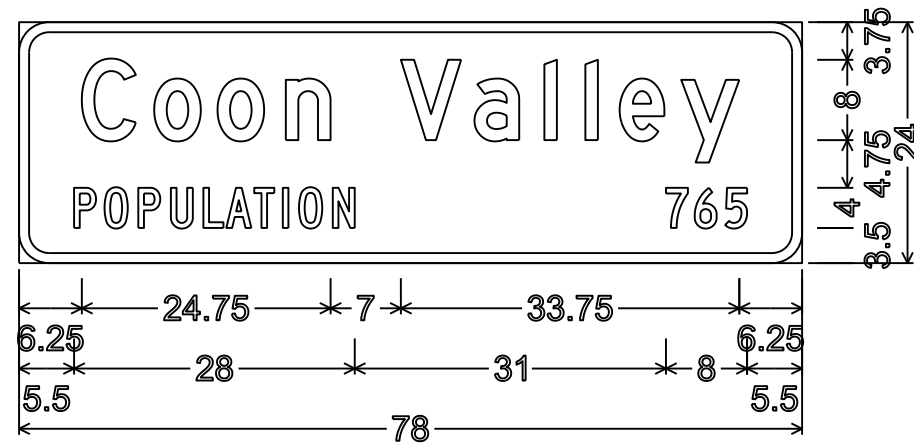
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED Feb. 2015	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINE	160 SIGN
FHWA		



D2-2;
2.250" Radius, 0.750" Border



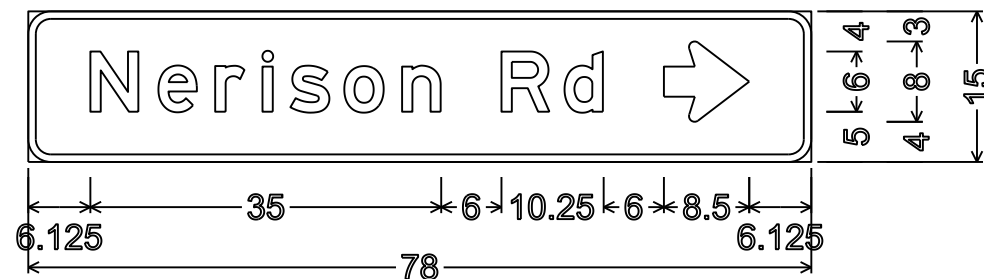
12-3;
3.000" Radius, 1.000" Border
"Coon" D; "Valley" D; "POPULATION" C; "765" C

NOTES

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



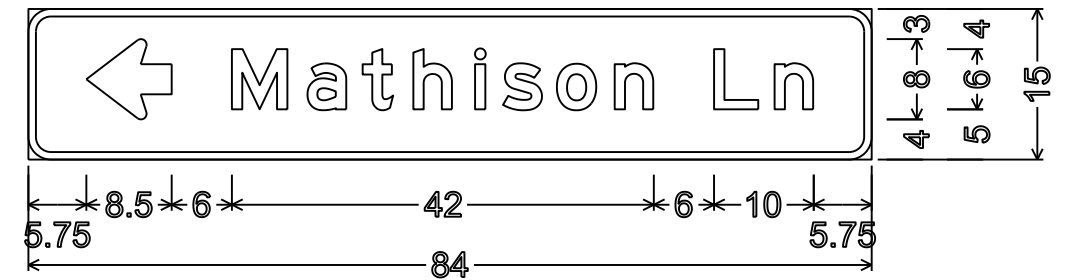
D1-1;
2.250" Radius, 0.750" Border



D1-1;
2.250" Radius, 0.750" Border



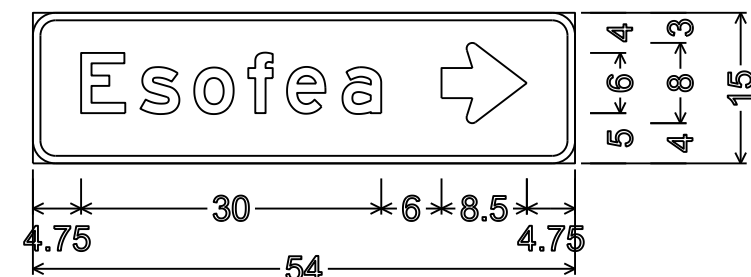
D1-1;
2.250" Radius, 0.750" Border



D1-1;
2.250" Radius, 0.750" Border

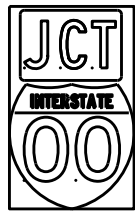


D1-1;
2.250" Radius, 0.750" Border

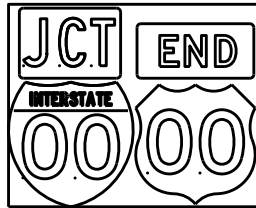


D1-1;
2.250" Radius, 0.750" Border

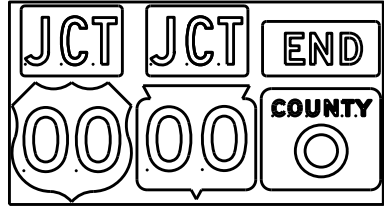
TYPICAL ASSEMBLIES



J1-1



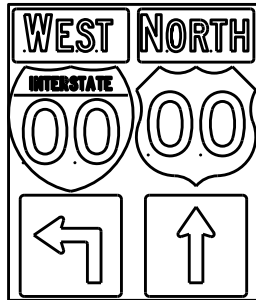
J1-2



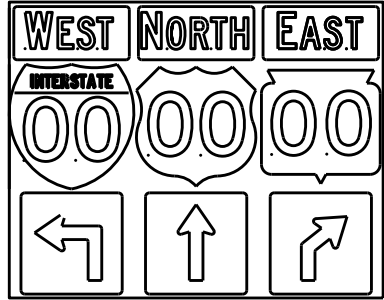
J1-3



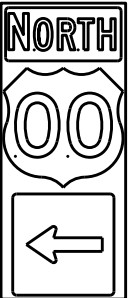
J2-1



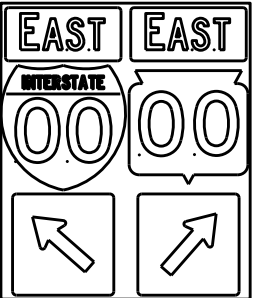
J2-2



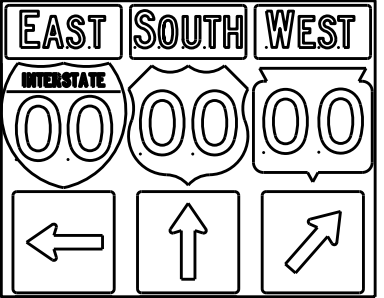
J2-3



J3-1



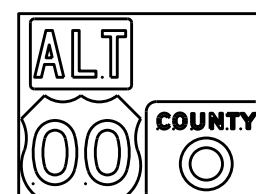
J3-2



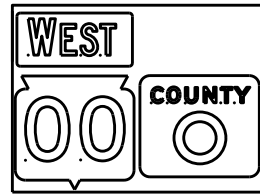
J3-3



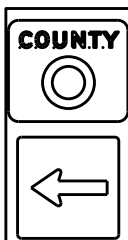
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

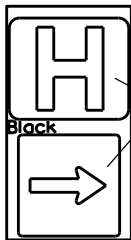


J22-1



JV

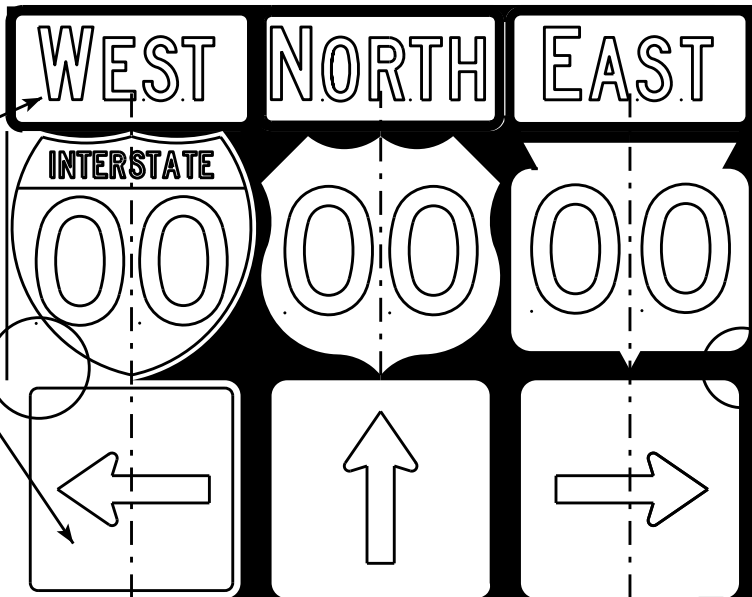
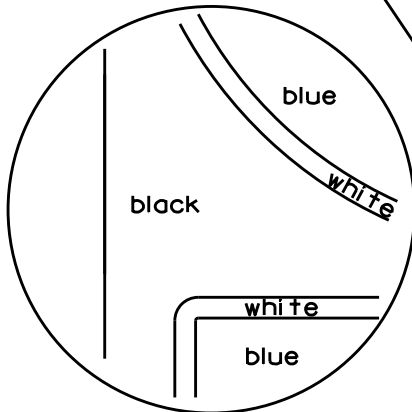
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

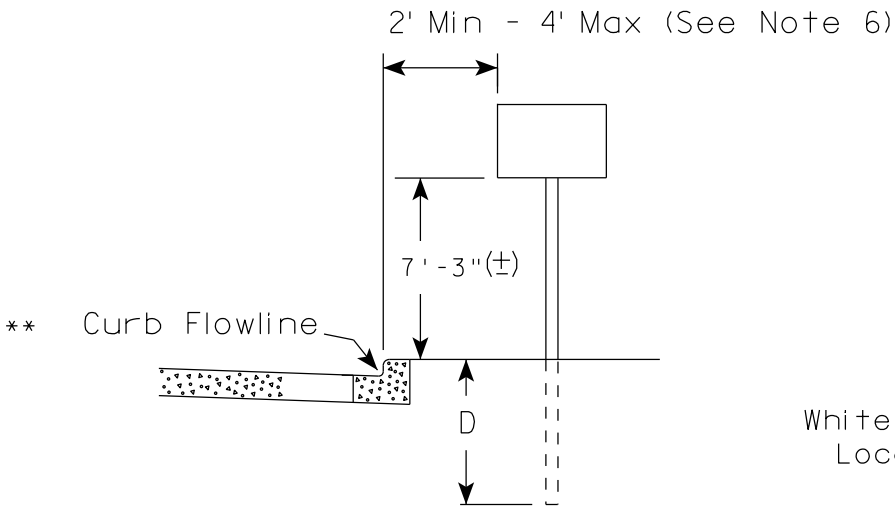
DATE 2/06/14 PL 162 A2-1S.8

SHEET NO: E

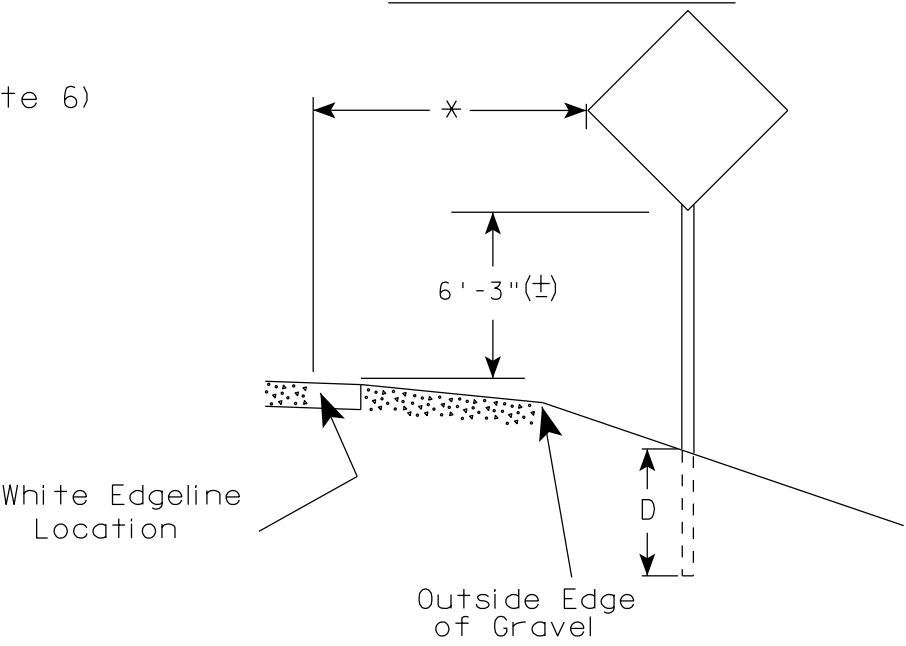
NOTES

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

URBAN AREA

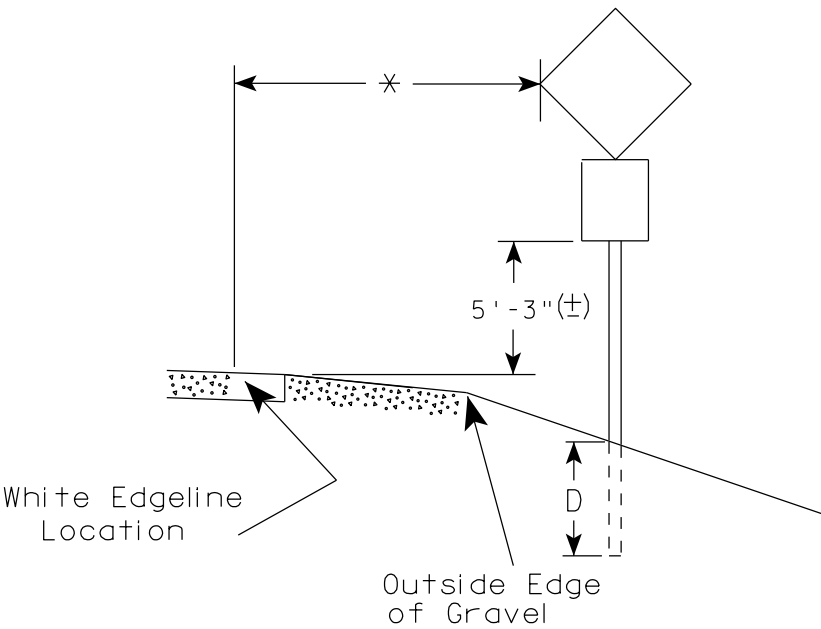
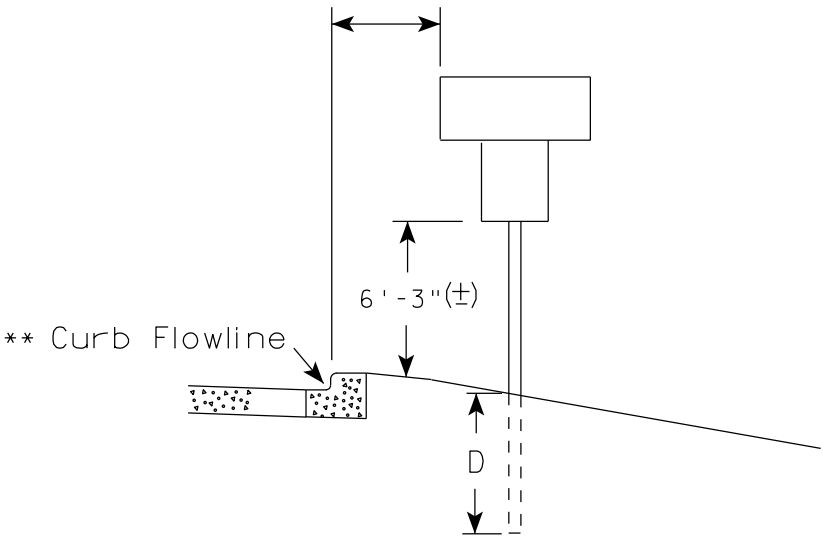


RURAL AREA (See Note 2)



- GENERAL NOTES
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
 2. If signs are mounted on barrier wall, see A4-10 sign plate.
 3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
 4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. The (±) tolerance for mounting height is 3 inches.
 8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
 9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

2' Min - 4' Max (See Note 6)



POST EMBEDMENT DEPTH

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

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

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

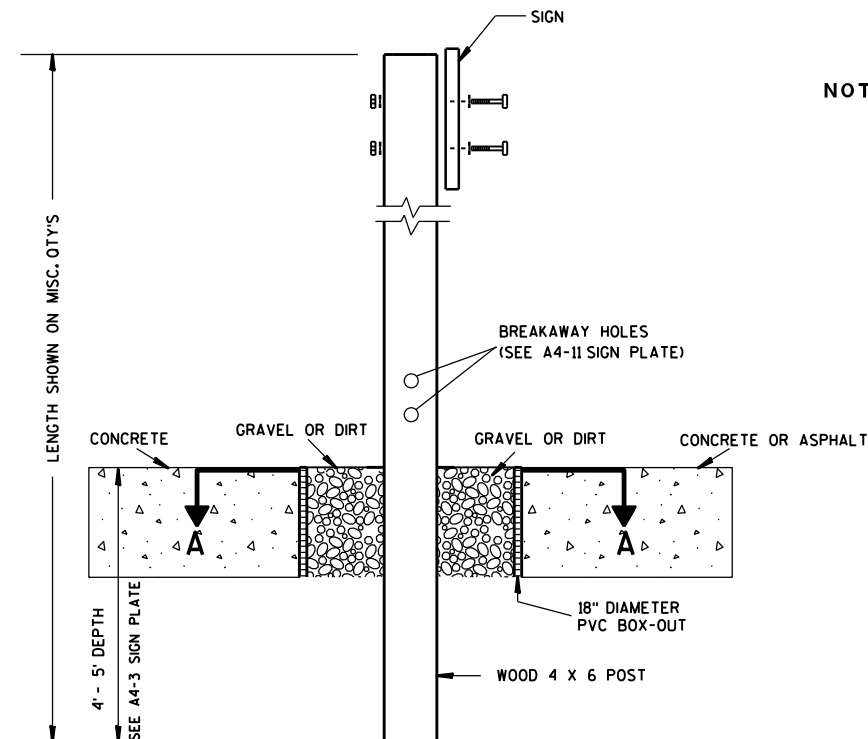
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

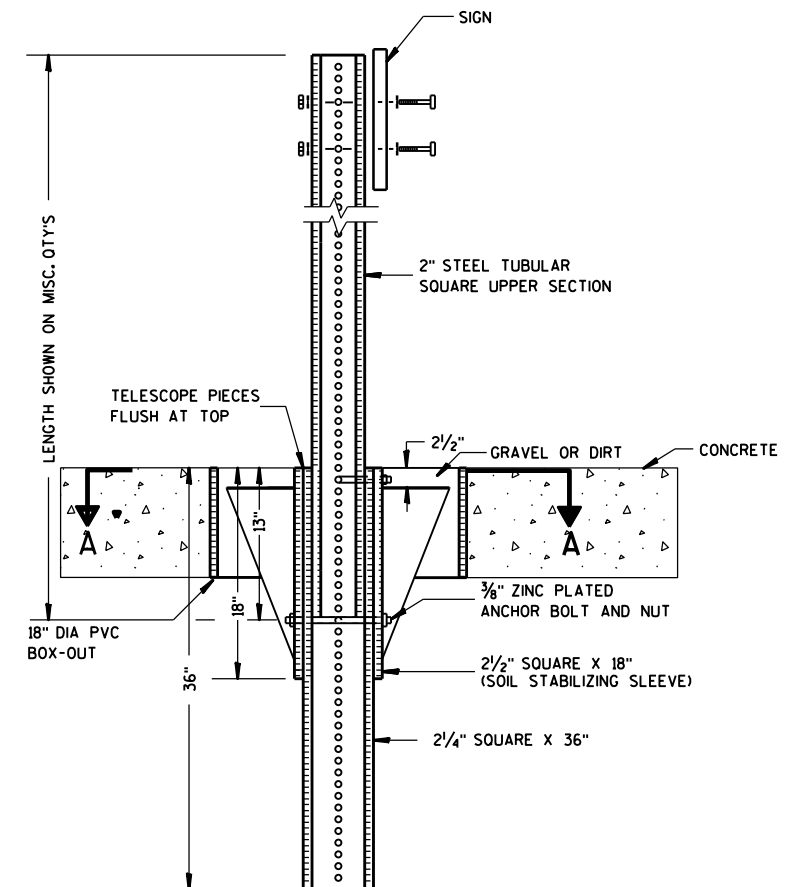
163



ELEVATION VIEW

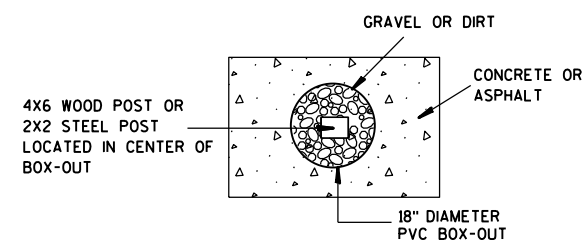
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 164 A4-3B.1

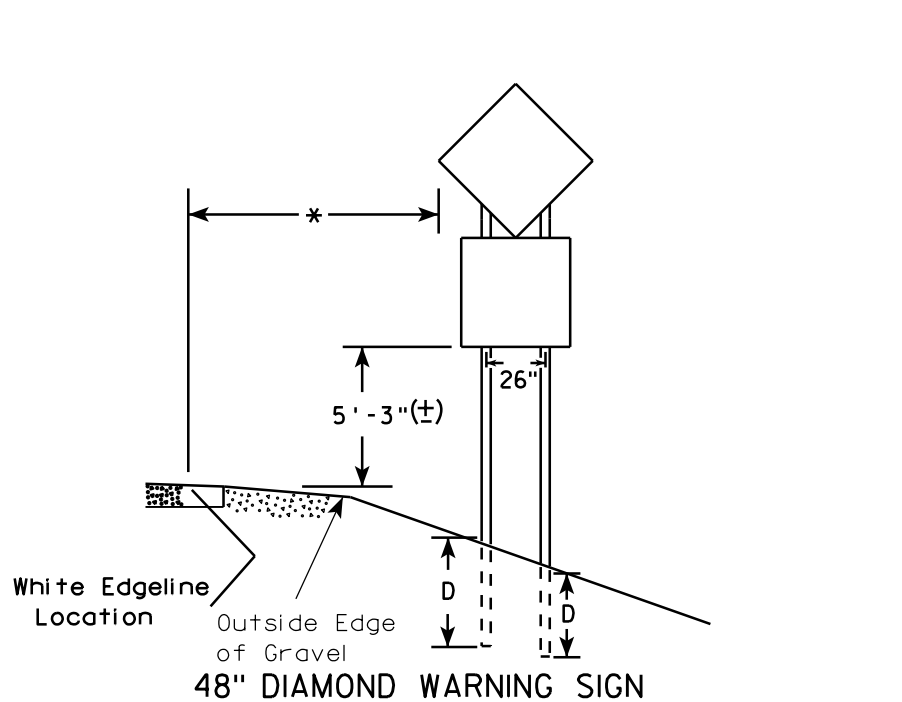
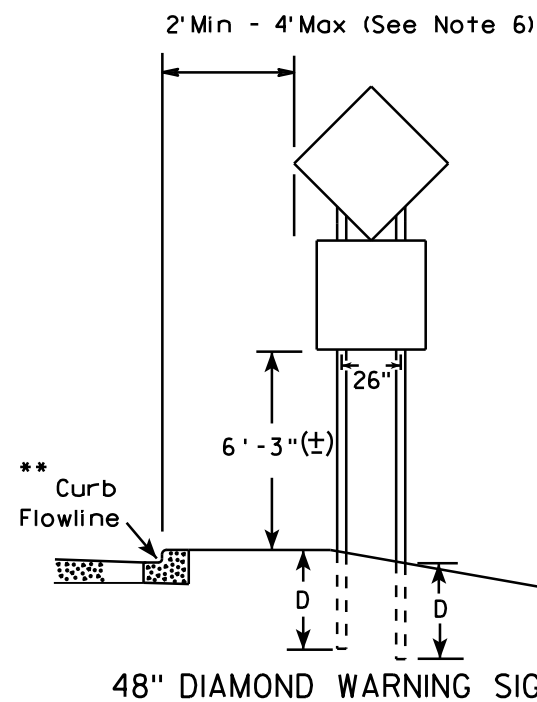
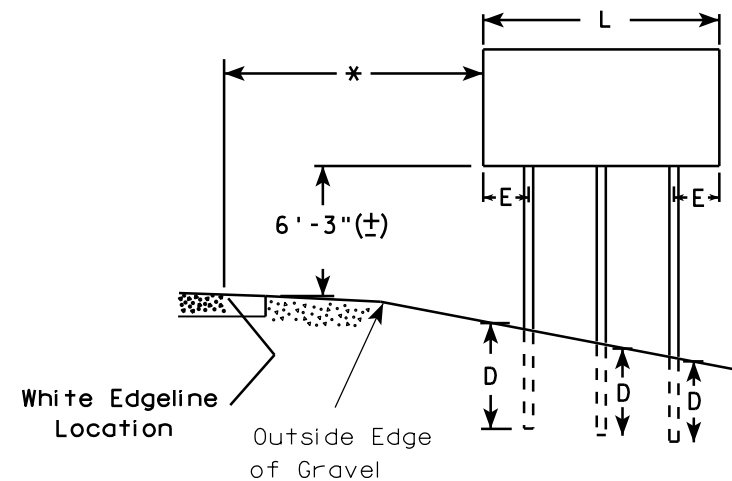
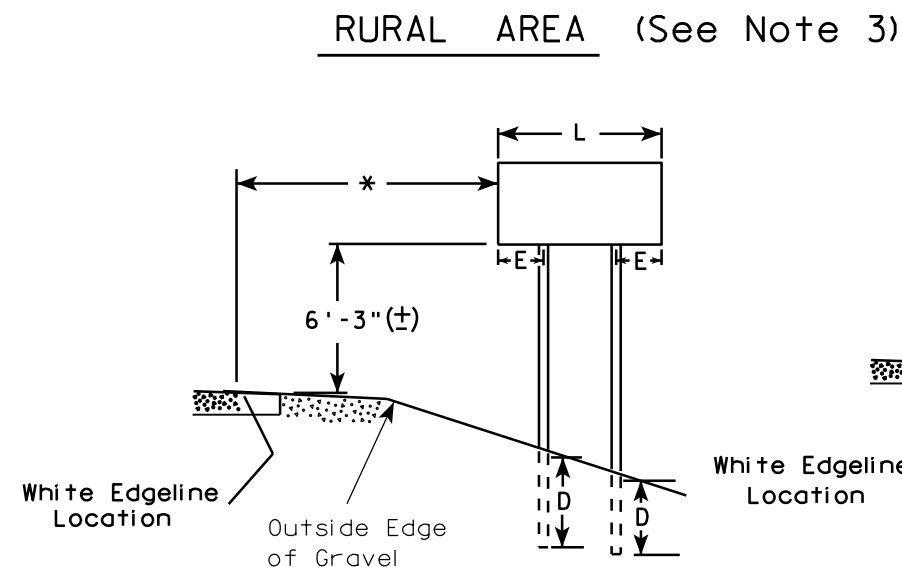
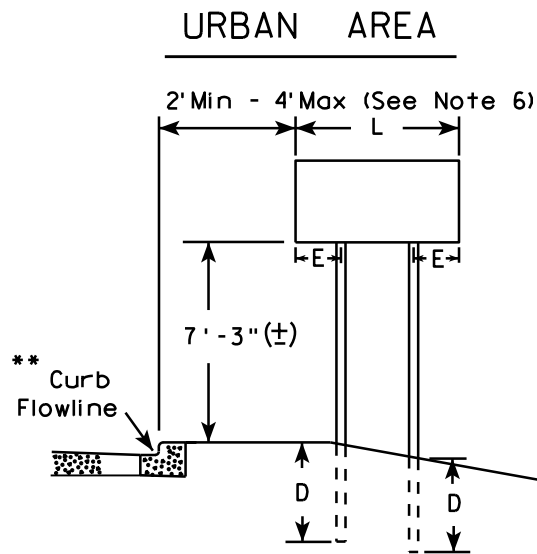
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/23/15 PLATE NO. 14-165

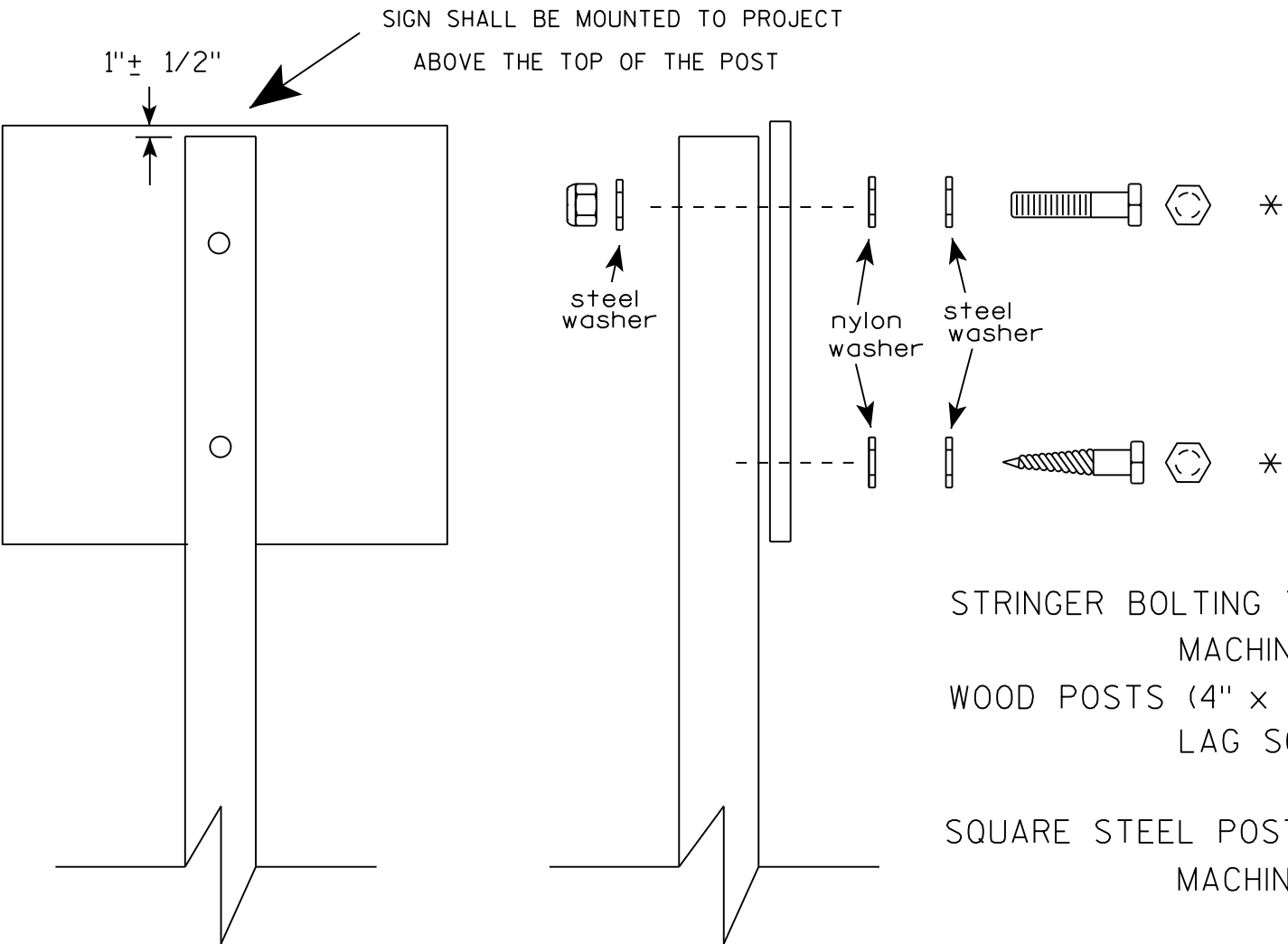
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE <u>8/11/16</u>	PLATE NO. <u>A4-8.8</u> 166

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

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

2 1/2" TELESPEAR TUBE

4"

2 1/2"

10"

1 1/2"

12 1/2"

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELESPEAR TUBE

LENGTH SHOWN ON MISC. Q'TYS

TELESCOPE PIECES FLUSH AT TOP

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

2 1/2"

2 1/4" SQUARE X 36"

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

3/8" ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES

3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT

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

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

Side View Dimensions:

- Overall height: LENGTH SHOWN ON MISC. QTY'S
- Section 1: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Section 2: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Section 3: 2 1/4" SQUARE X 36"
- Section 4: 36" (Total length of the bottom section)
- Section 5: 18"
- Section 6: 12"

End View Details:

- SIGN
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- ALL HOLES 7/16" SPACED 1" C-C
- ALL FOUR SIDES
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
- 1"
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT
- TELESCOPE PIECES FLUSH AT TOP

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

SECTION A-A

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

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 167 14-9.9

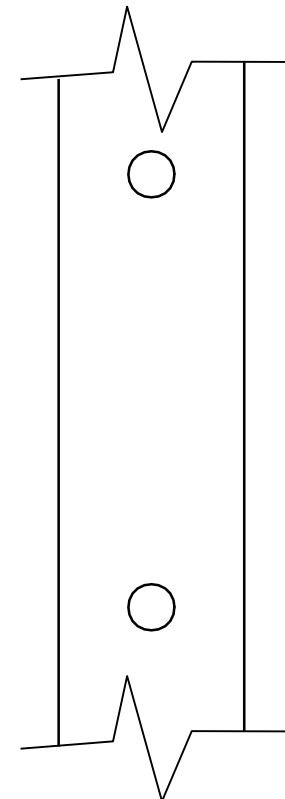
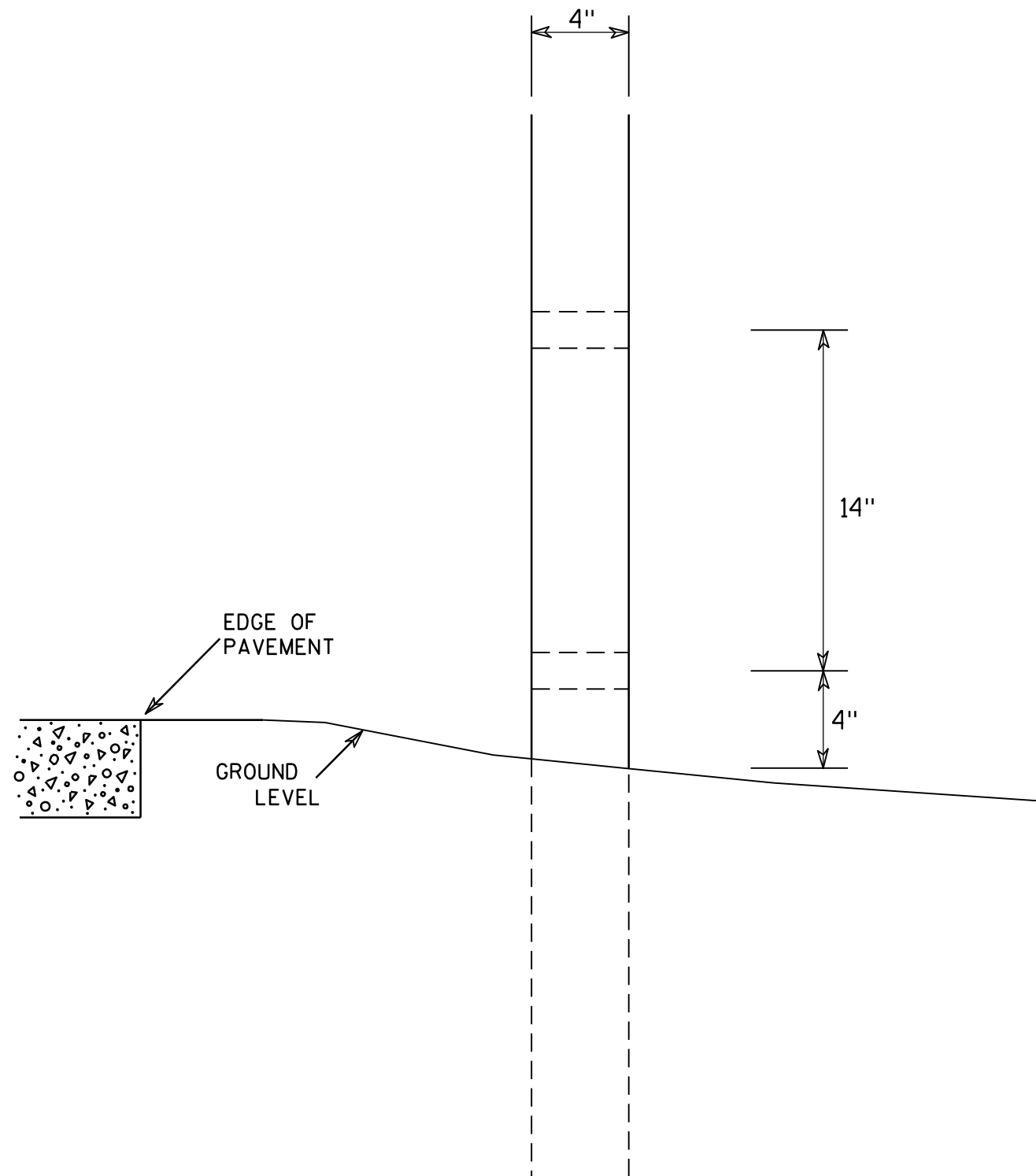
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

T



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

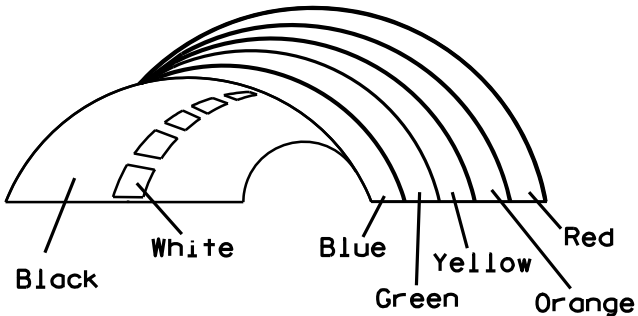
SHEET NO: 168

E



* VARIES

Background Colors of Symbol*



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

NOTES

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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 169

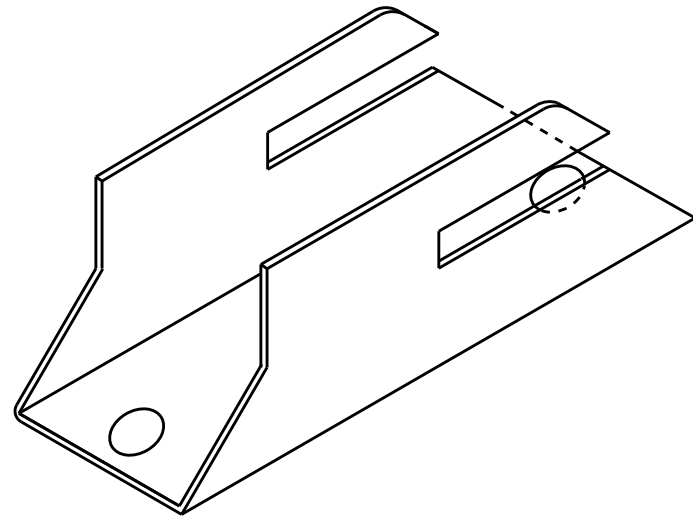
STANDARD SIGN
I55-56

WISCONSIN DEPT OF TRANSPORTATION

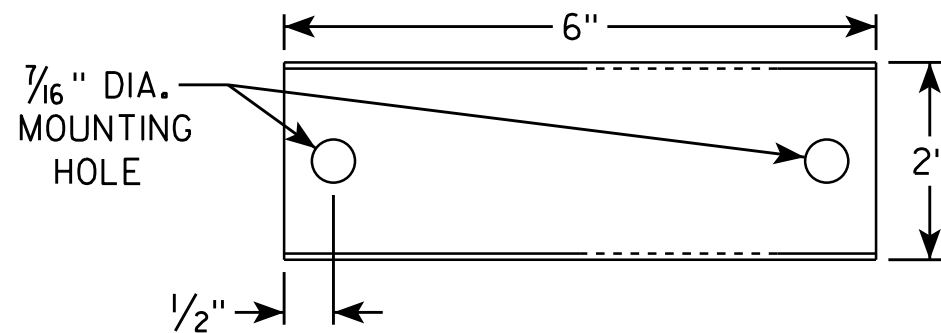
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

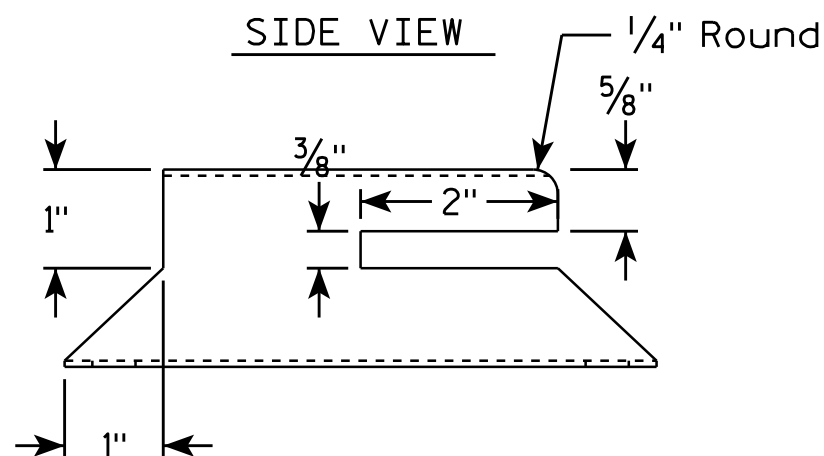
ISOMETRIC VIEW



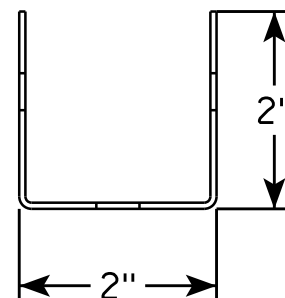
TOP VIEW



SIDE VIEW



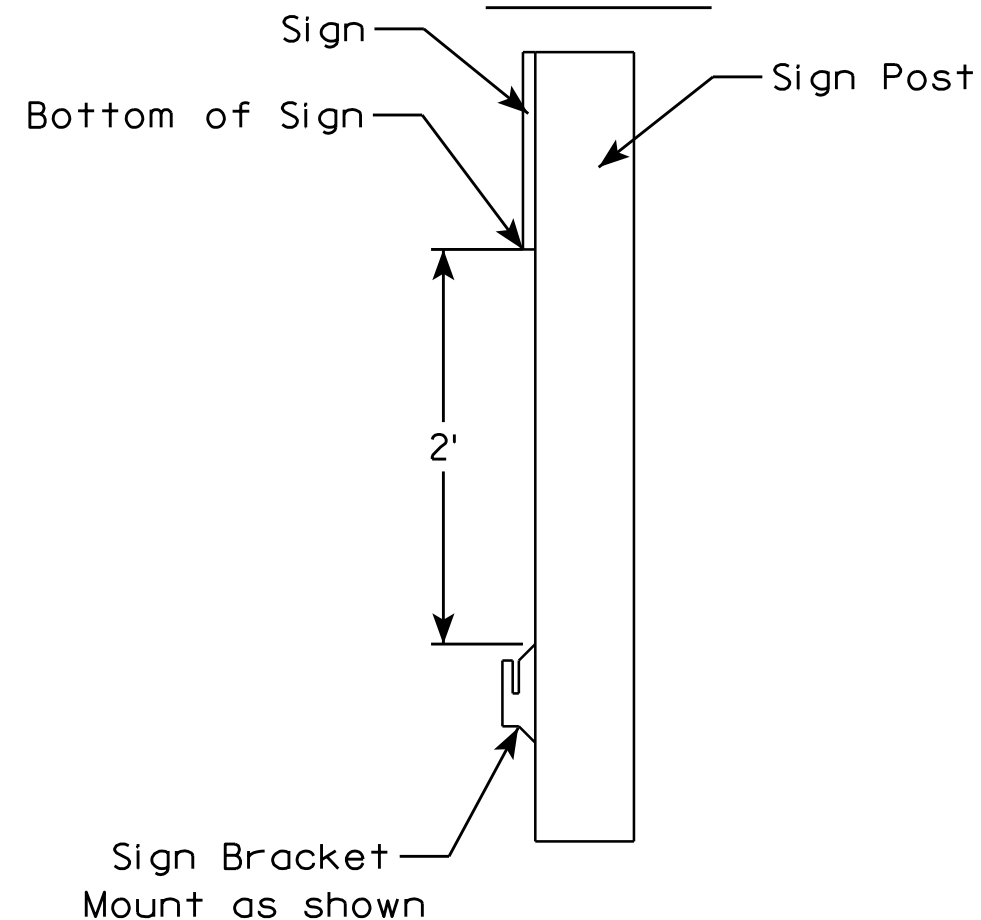
END VIEW



NOTES

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

SIDE VIEW



ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLA 170 5-56B.2

PROJECT NO:

HWY:

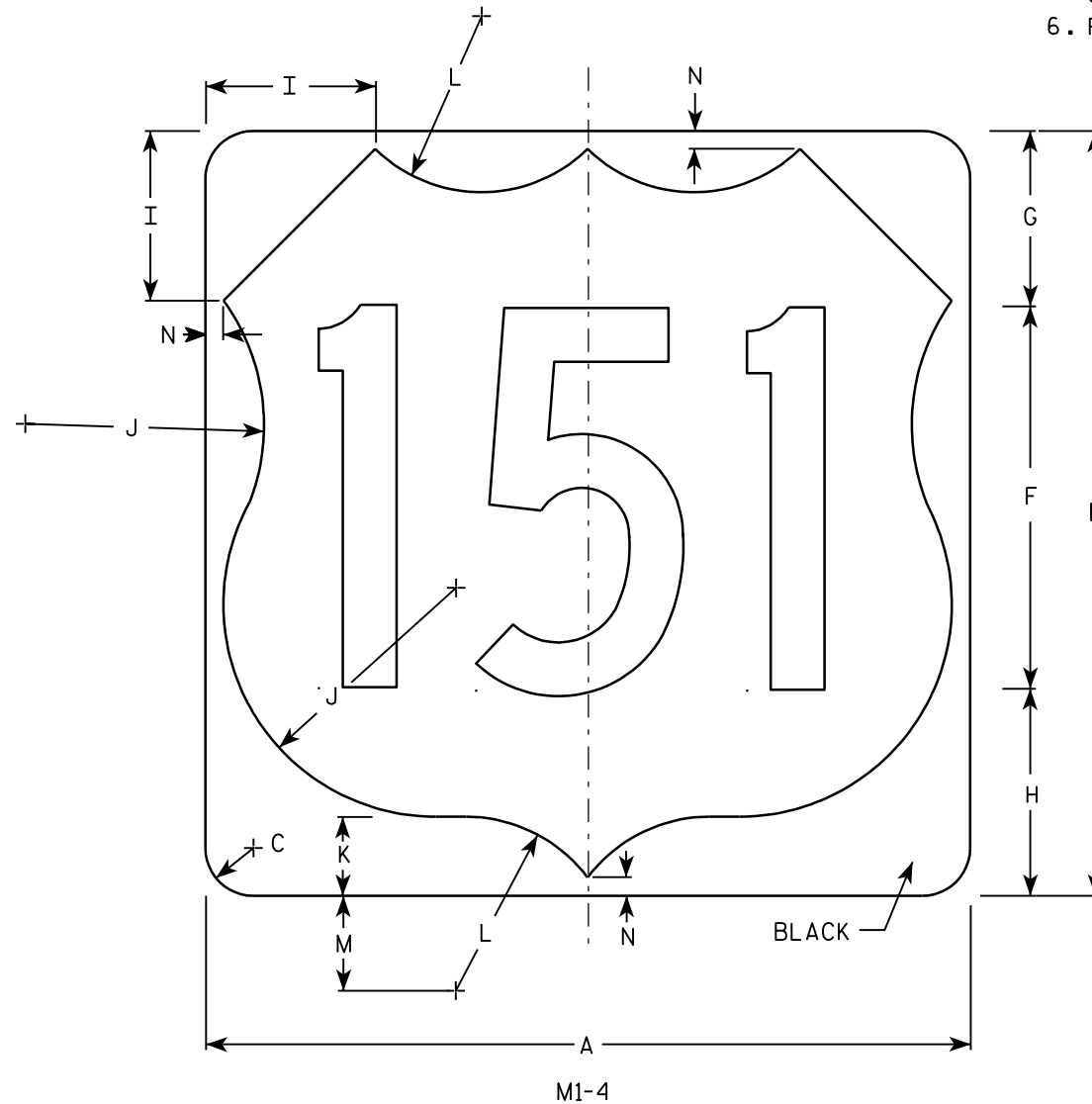
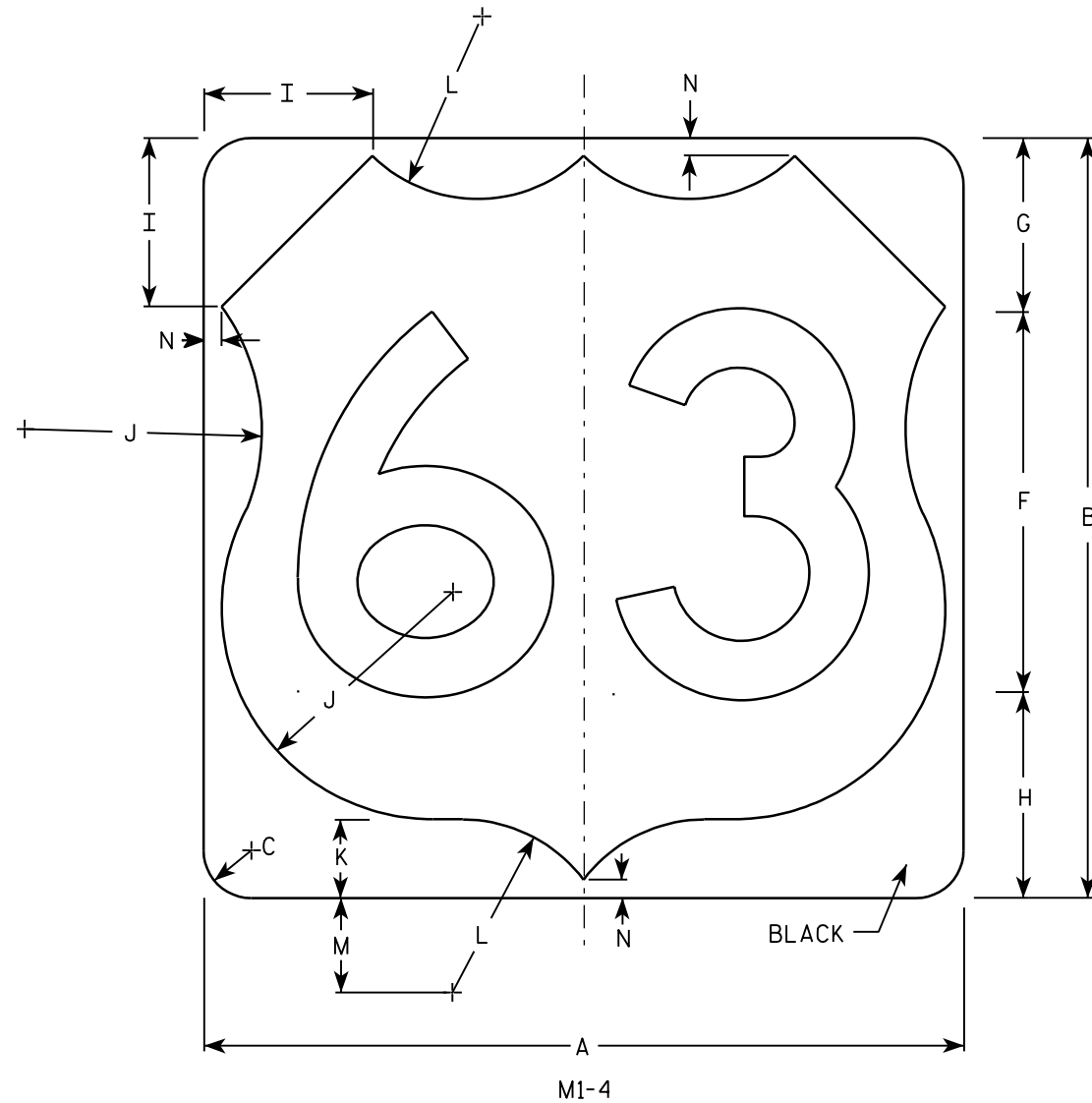
COUNTY:

SHEET NO:

E

NOTES

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



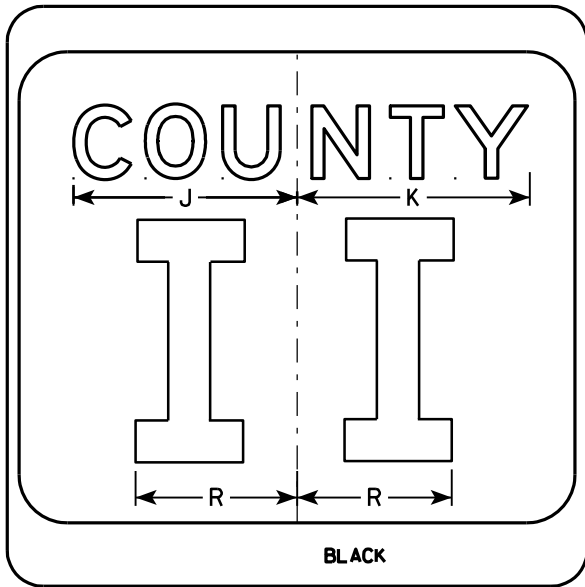
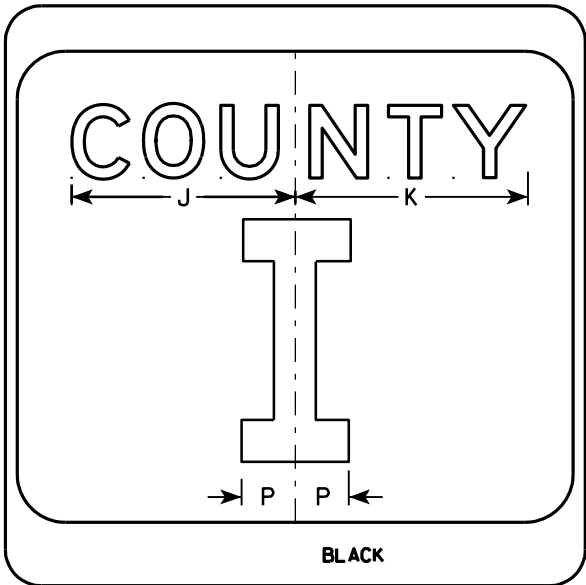
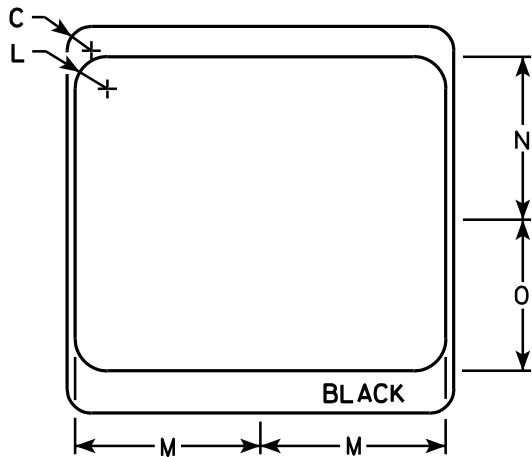
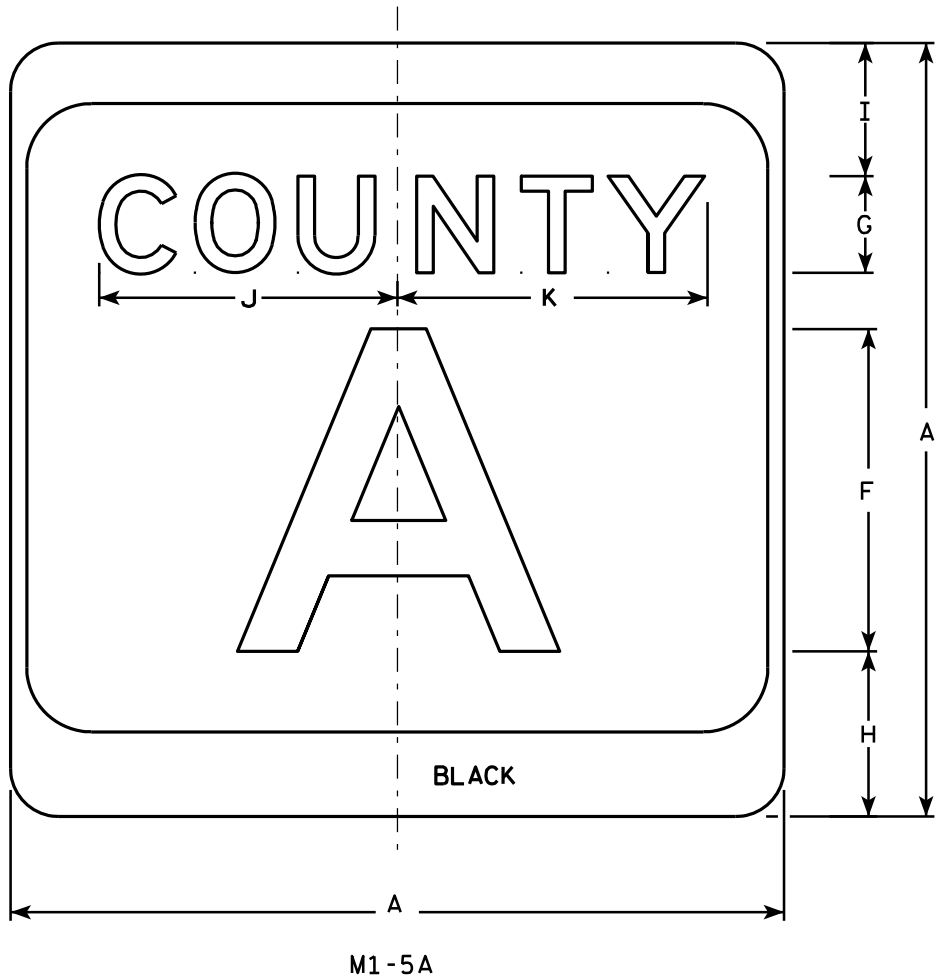
Metric equivalent
for this sign is:

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

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

PROJECT NO: HWY: COUNTY: SHEET NO: 171 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: 172	E
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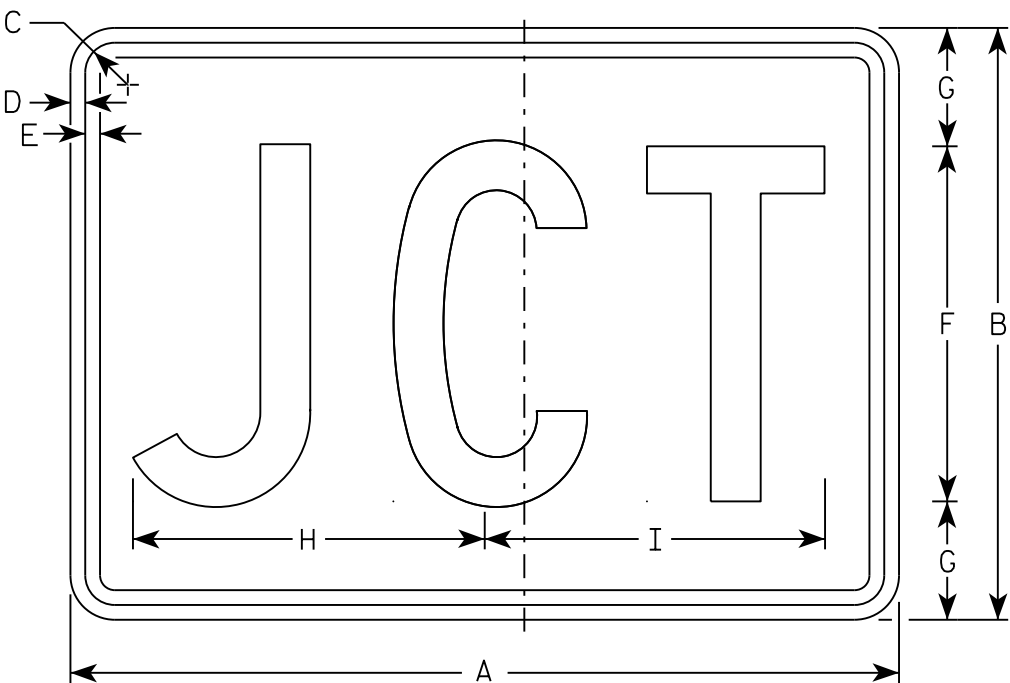
CTH MARKER

M1-5A FOR ASSEMBLIES

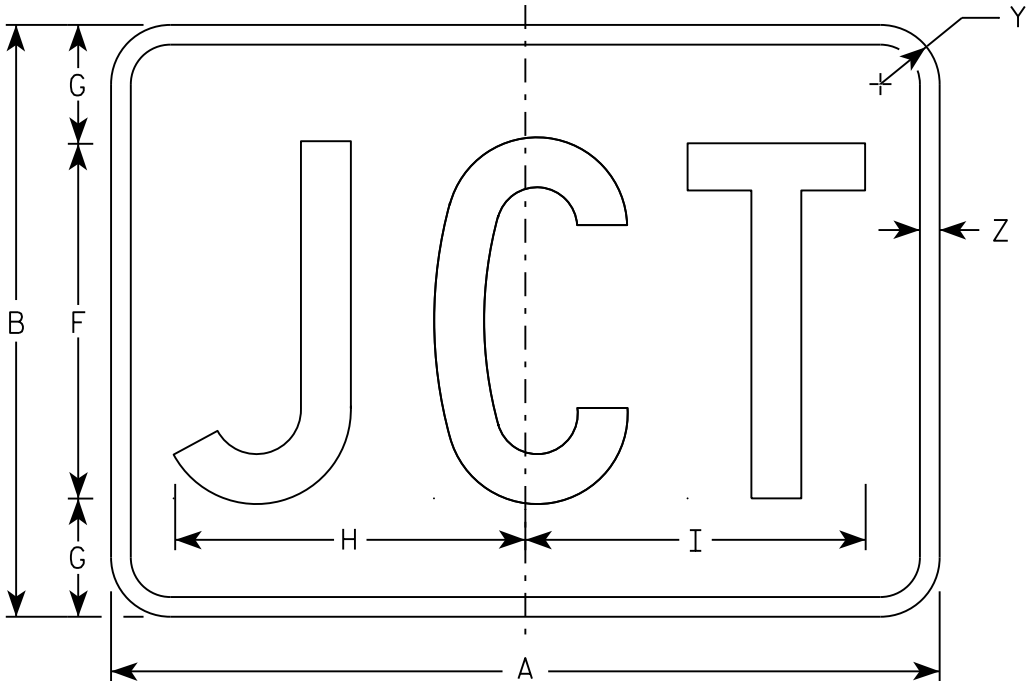
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



M2-1
MM2-1
MP2-1



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

NOTES

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

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

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

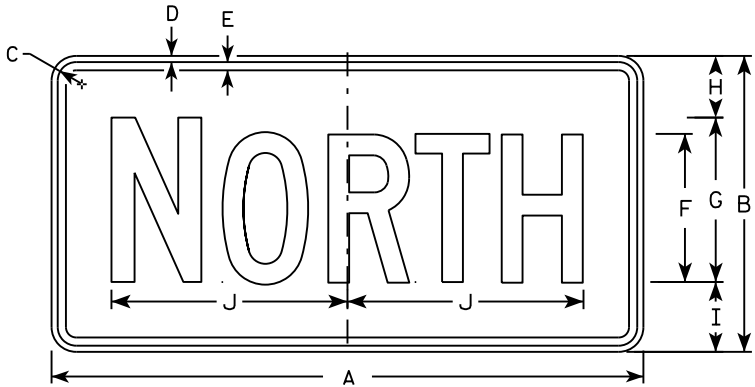
Matthew R. Rauch

For State Traffic Engineer

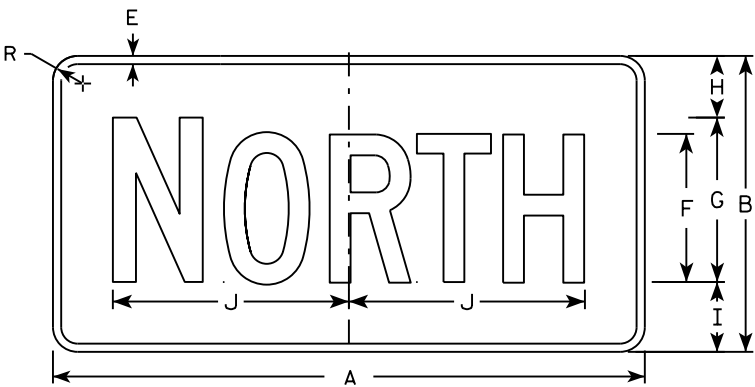
DATE 10/15/15

PLATE 173

'2-1.12



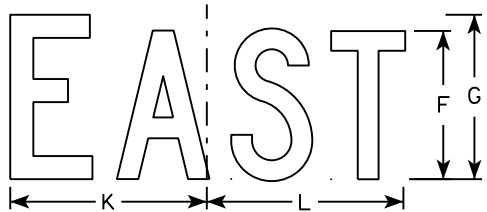
M3-1
MM3-1
MP3-1



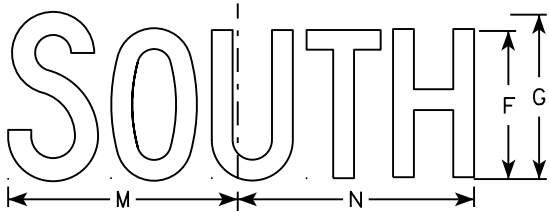
MB3-1
MK3-1
MN3-1



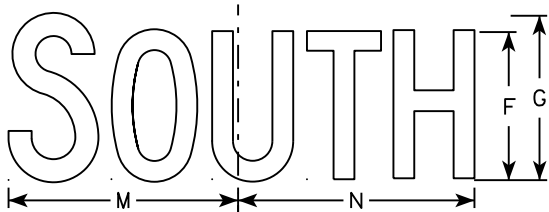
M3-2
MM3-2
MP3-2



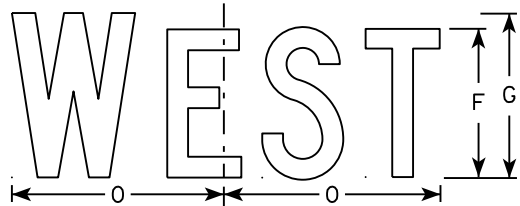
MB3-2
MK3-2
MN3-2



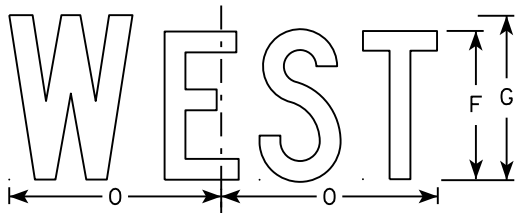
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

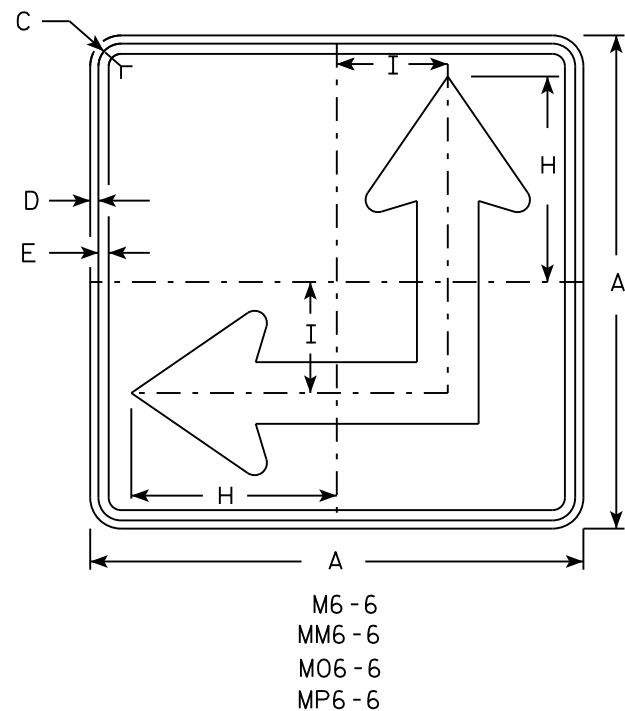
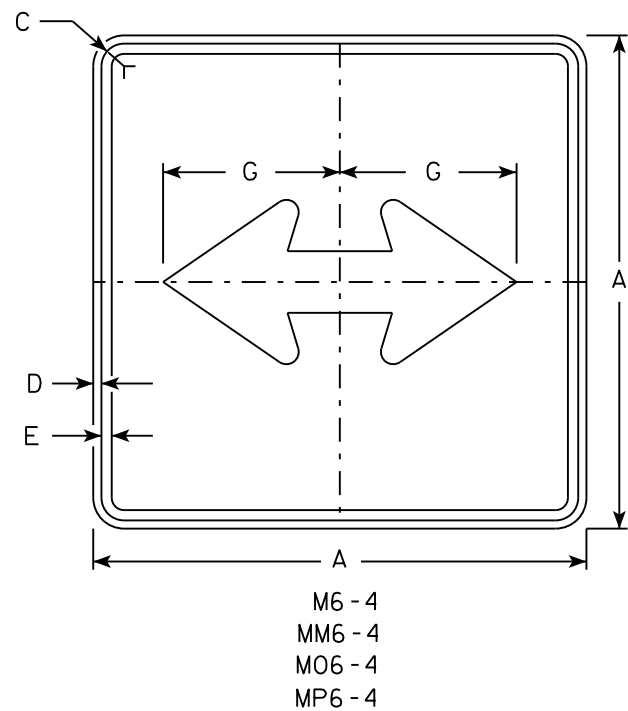
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

STANDARD SIGNS
M3-1 thru M3-4
SERIES

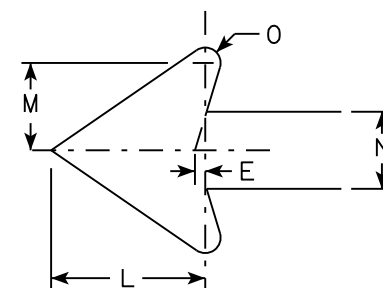
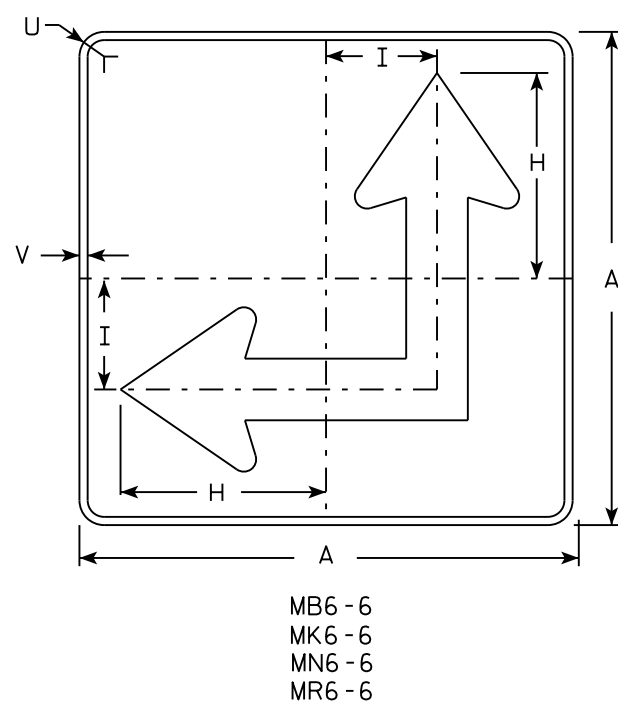
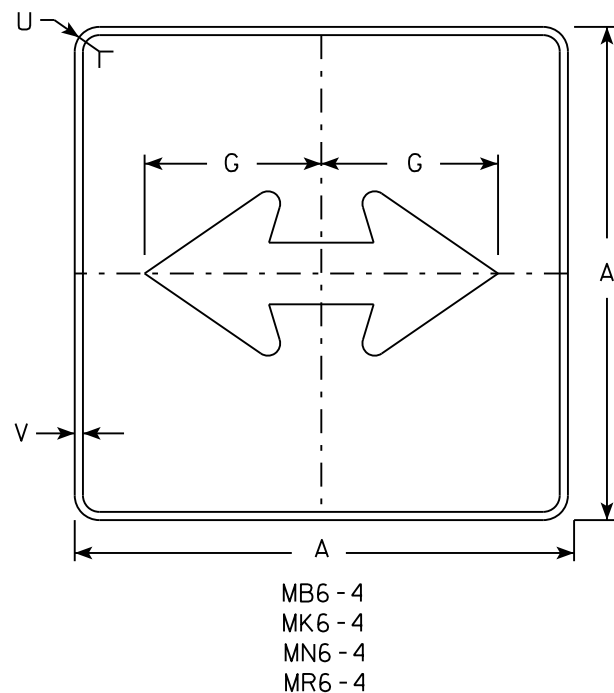
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 174 M3-1.14



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



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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

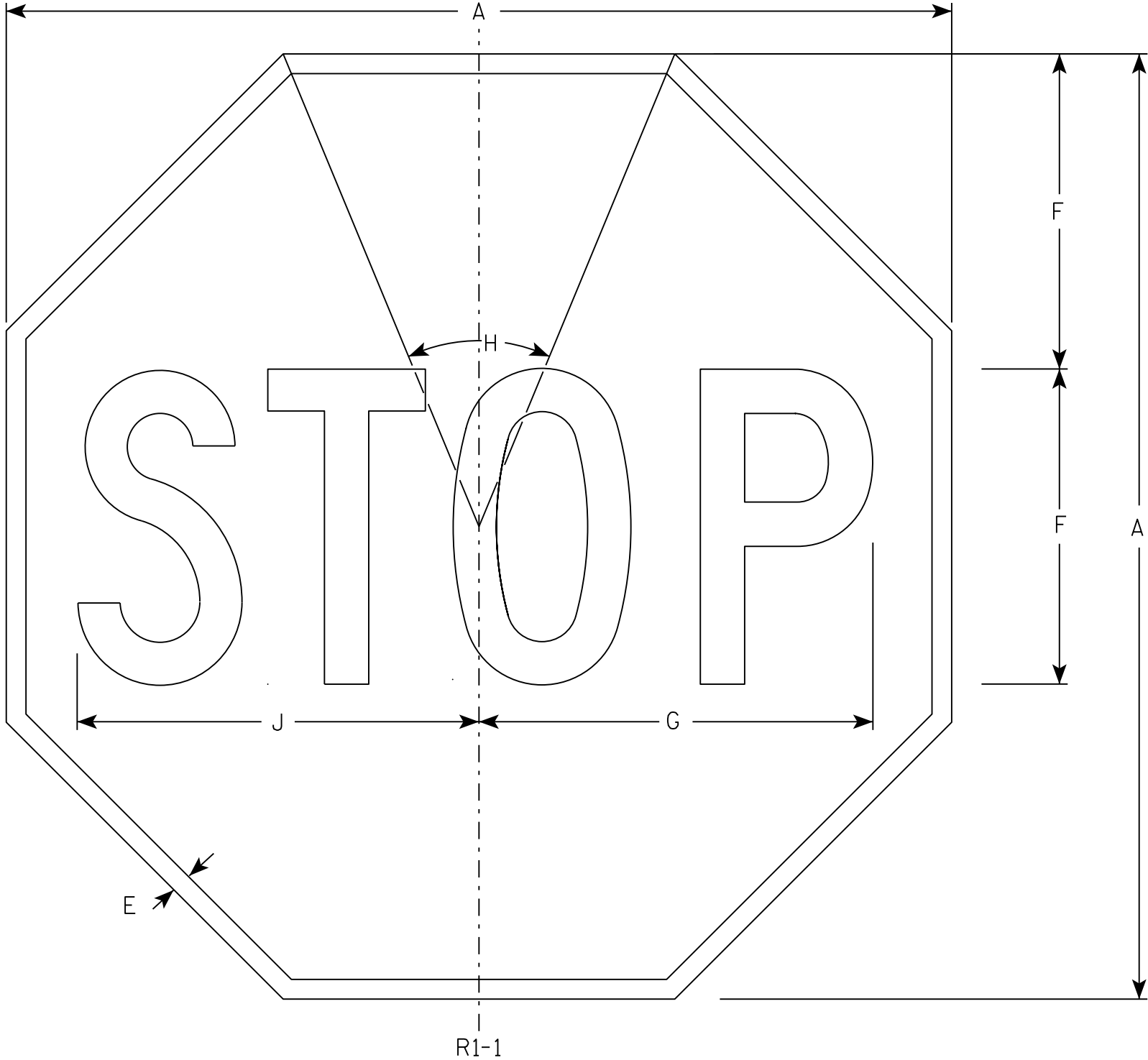
STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLAT 175

M6-4.10



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

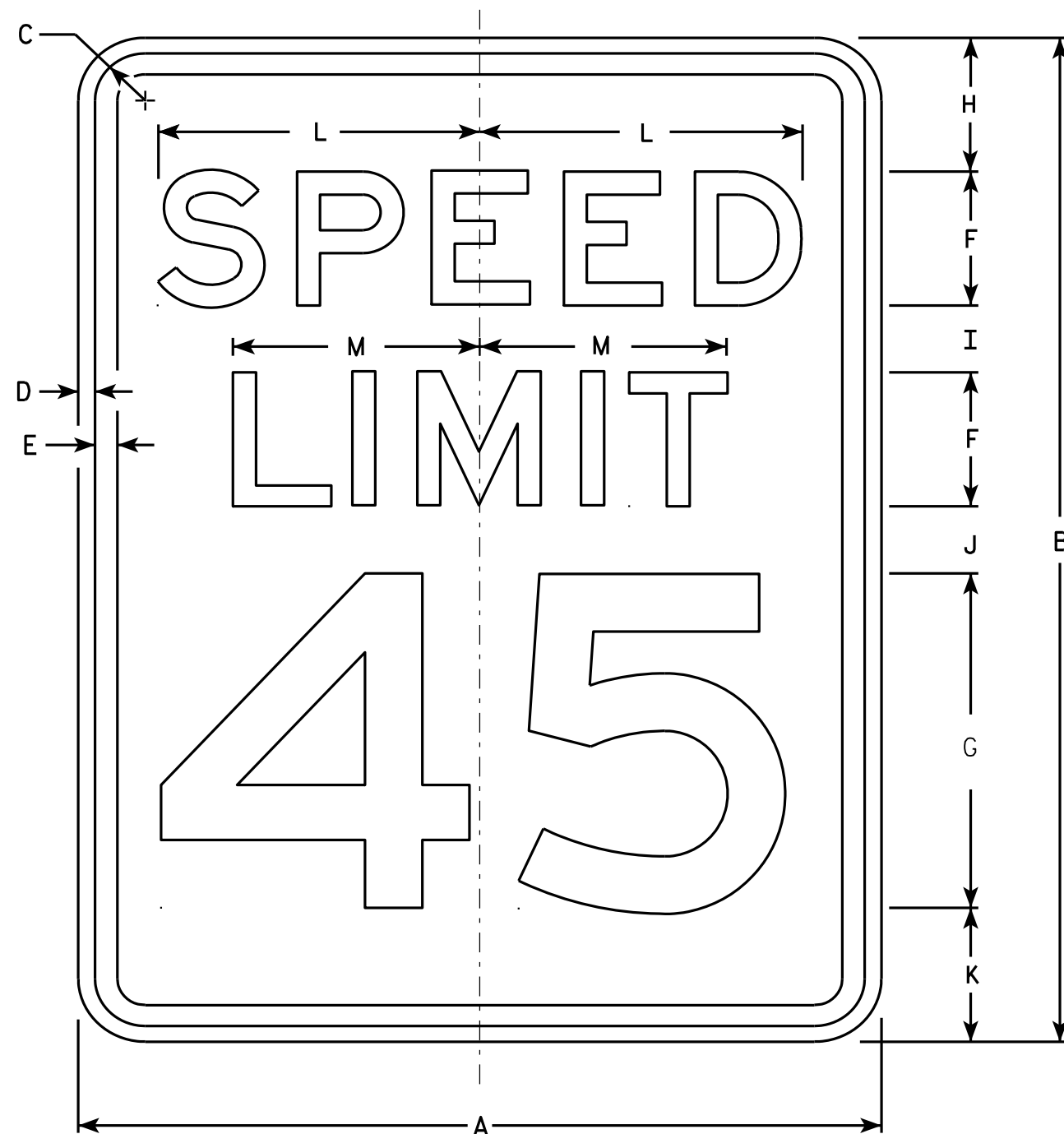
STANDARD SIGN

R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE 176 R1-1.13



R2-1

NOTES

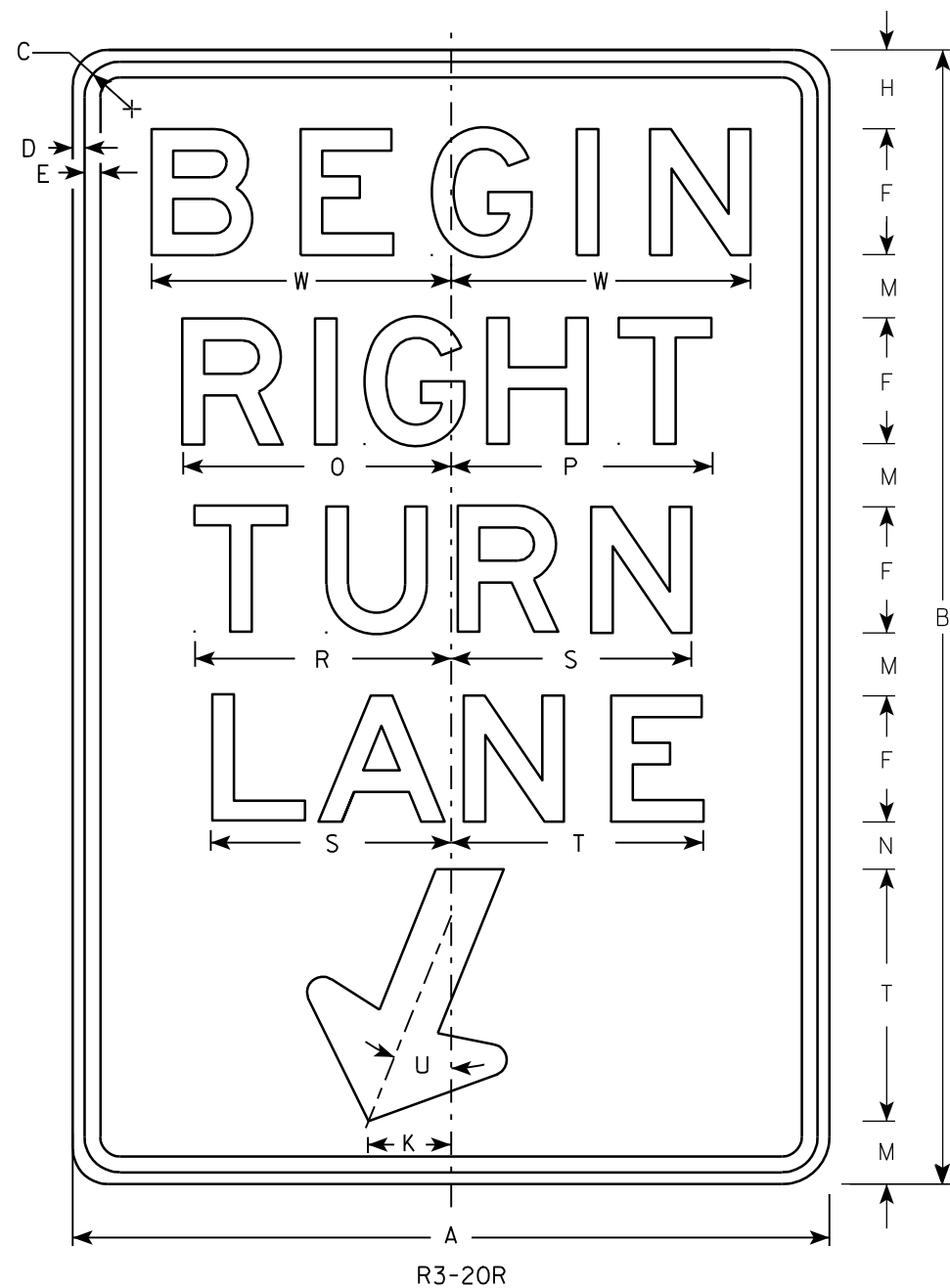
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as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

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

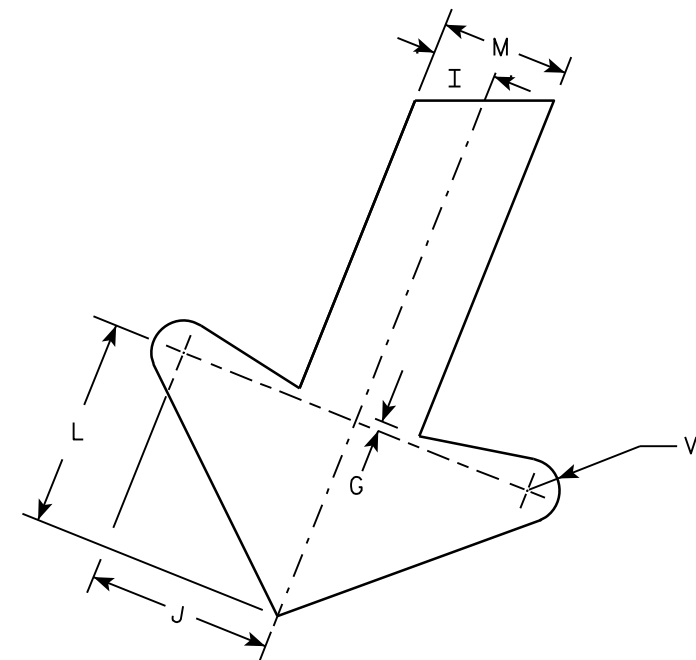
STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: 177 E



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



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	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	8 1/2	8 1/4		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	12 3/4	12 1/2		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

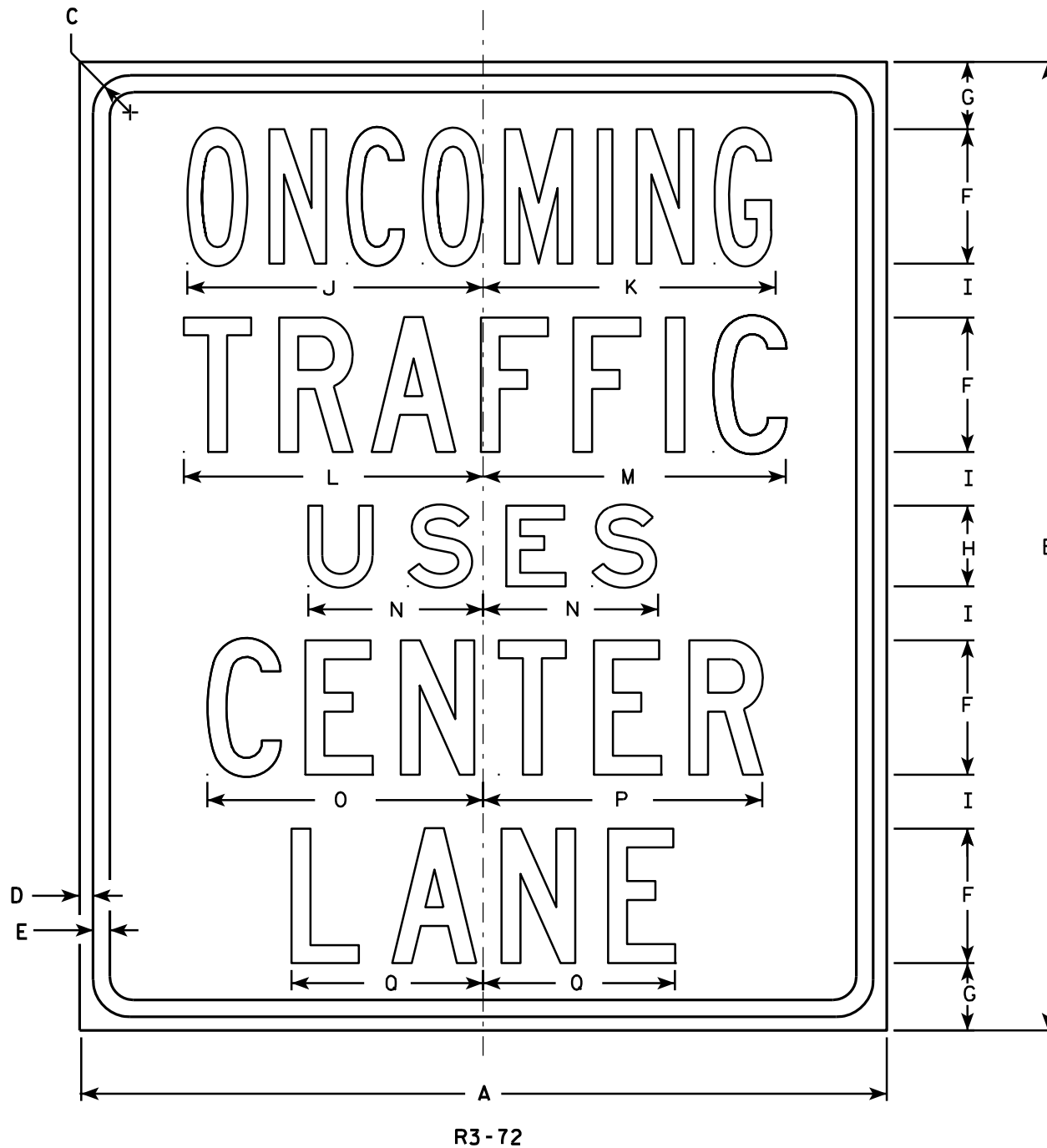
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 178	E
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STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6



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: 179 E



R4-3

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
2M	24	30	1 1/8	3/8	1/2	4	3 5/8	2 1/4	9 3/4	10	6 1/4	6 3/4	7 1/8	7 5/8													5.0
3	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
4	36	48	1 5/8	5/8	3/4	6	6	4	14 5/8	15	9 3/8	10	10 3/4	11 3/8													12.0
5	48	60	2 1/4	3/4	1	8	7 1/4	4 1/2	19 1/2	20	12 1/2	13 1/2	14 1/4	15 1/4													20.0

STANDARD SIGN R4-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-3.8

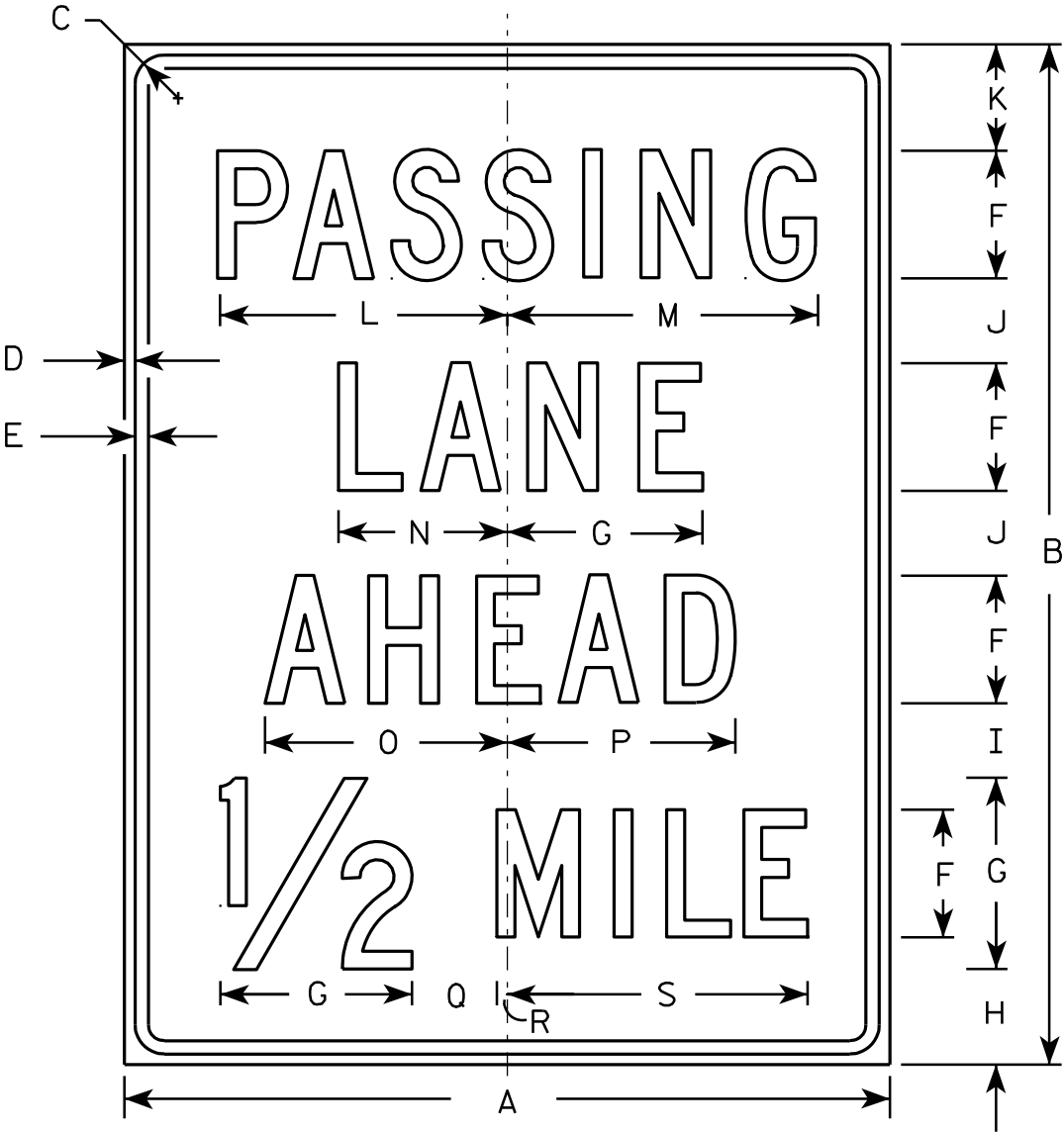
PROJECT NO:

SHEET NO: 180

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

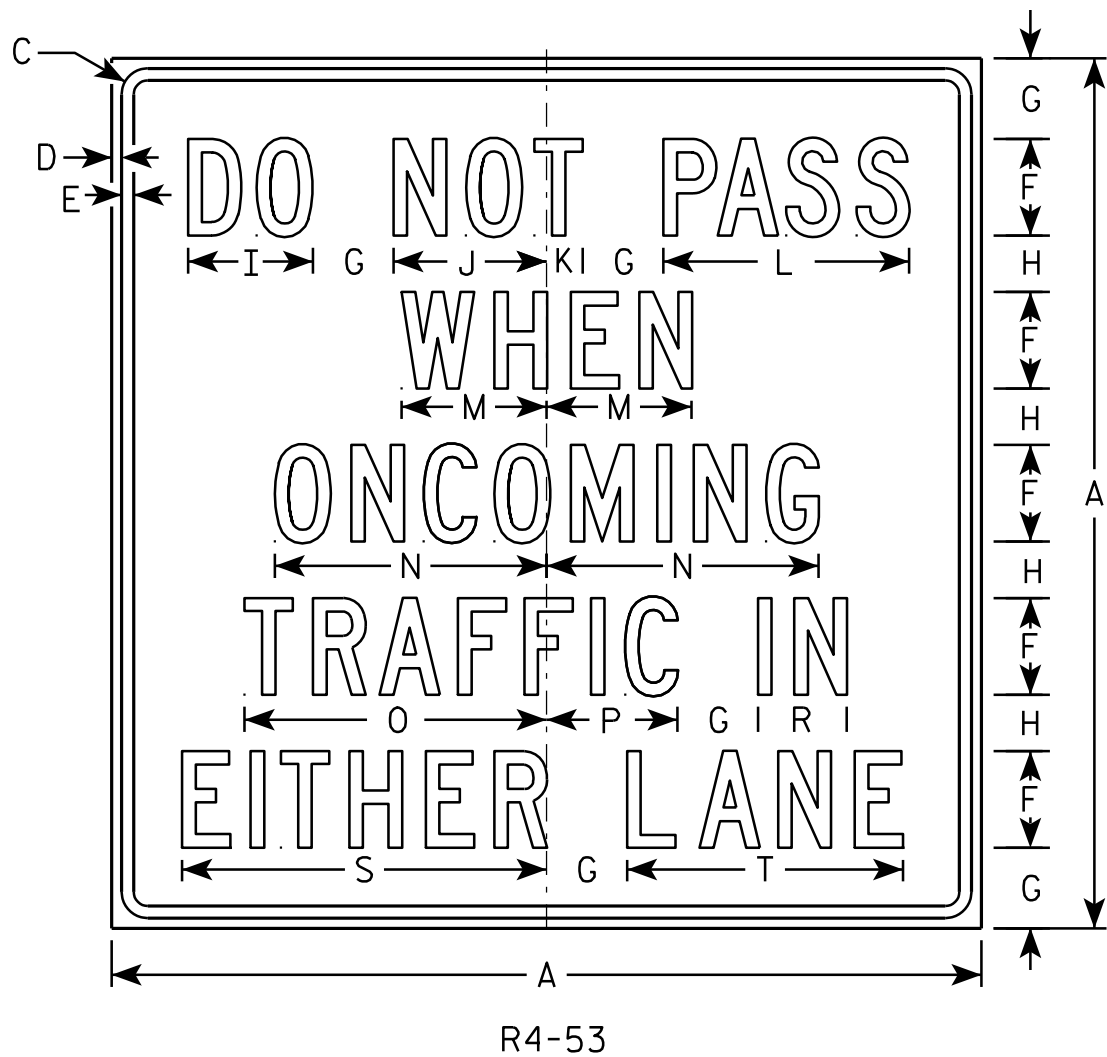
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	48	1 3/8	1/2	5/8	6	9	4 1/2	3 1/2	4	5	13 5/8	14 1/2	8	11 3/8	10 3/4	4	1/2	14 1/8								12.0
2M	36	48	1 3/8	1/2	5/8	6	9	4 1/2	3 1/2	4	5	13 5/8	14 1/2	8	11 3/8	10 3/4	4	1/2	14 1/8								12.0
3																											
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 - WHITE
Message - BLACK
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	54		1 5/8	5/8	3/4	6	5	3 1/2	7 3/4	9 1/2	2 1/4	15 1/4	9	16 7/8	18 3/4	8 1/8		5 1/2	22 5/8	17 1/8							20.25
2M	54		1 5/8	5/8	3/4	6	5	3 1/2	7 3/4	9 1/2	2 1/4	15 1/4	9	16 7/8	18 3/4	8 1/8		5 1/2	22 5/8	17 1/8							20.25
3																											
4																											
5																											

STANDARD SIGN
R4-53

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/2/10 PLATE NO. R4-53.1

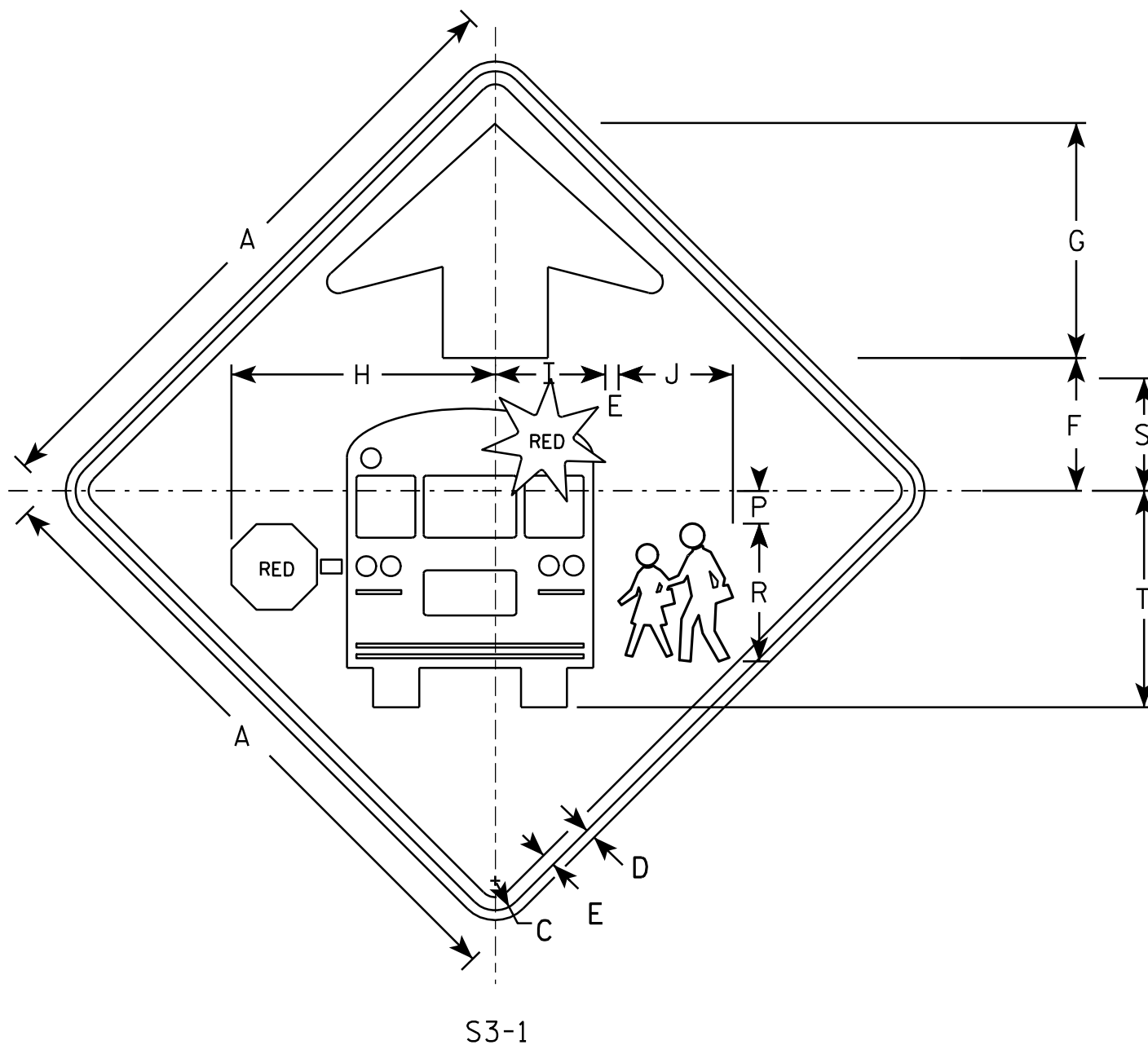
PROJECT NO:

HWY:

COUNTY:

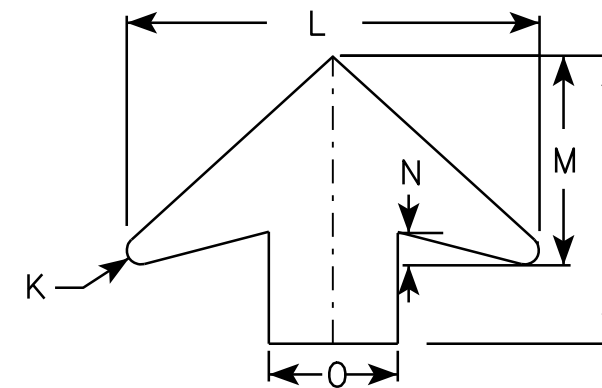
SHEET NO: 182

E

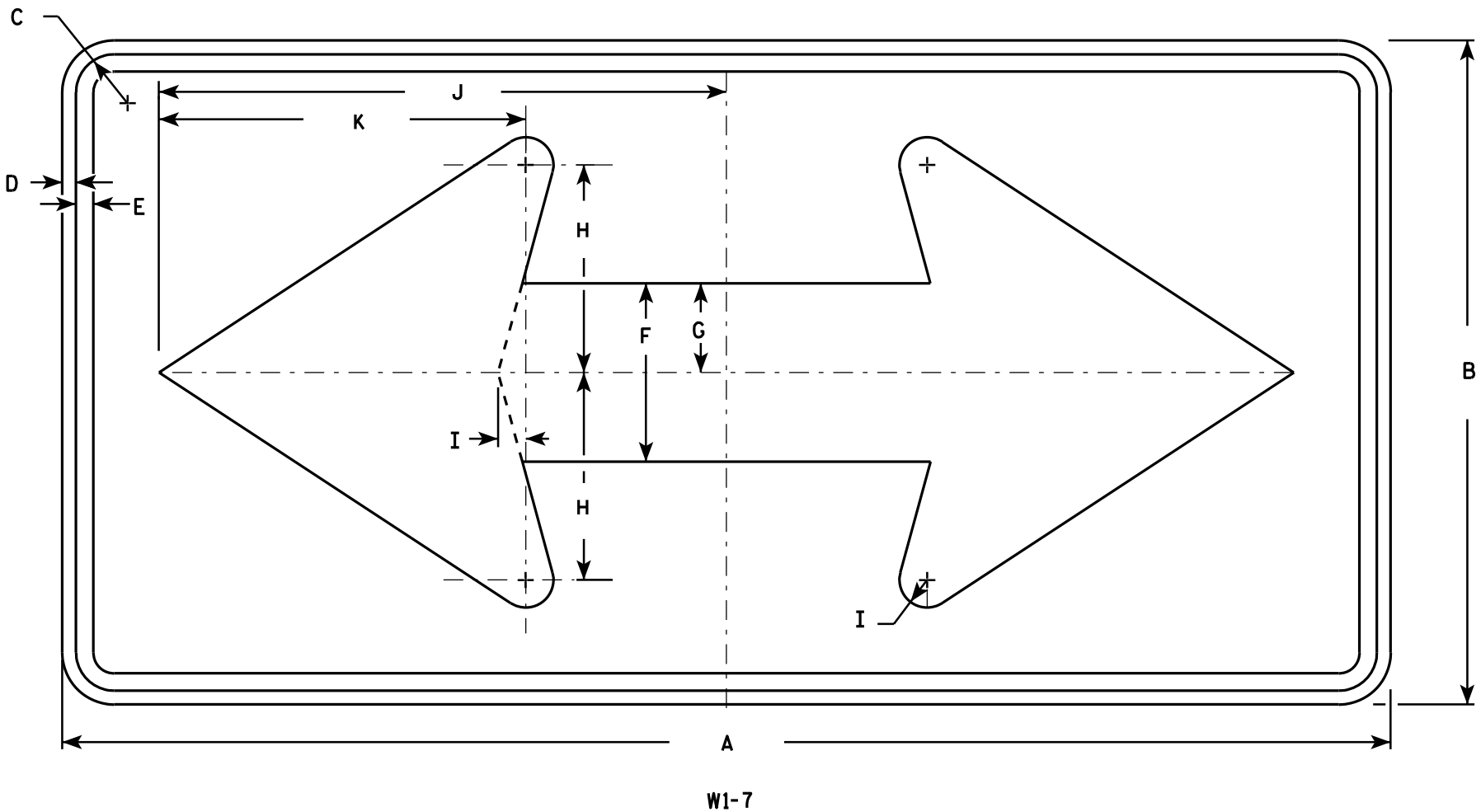


NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - YELLOW-GREEN
 - Message - BLACK except as noted
 - Circles except PEDS- RED BACKGROUND
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

[illegible]

STANDARD SIGN	
S3-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R. Rauch</u> for State Traffic Engineer
DATE <u>6/8/10</u>	PLATE NO. <u>S3-16</u>



NOTES

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

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

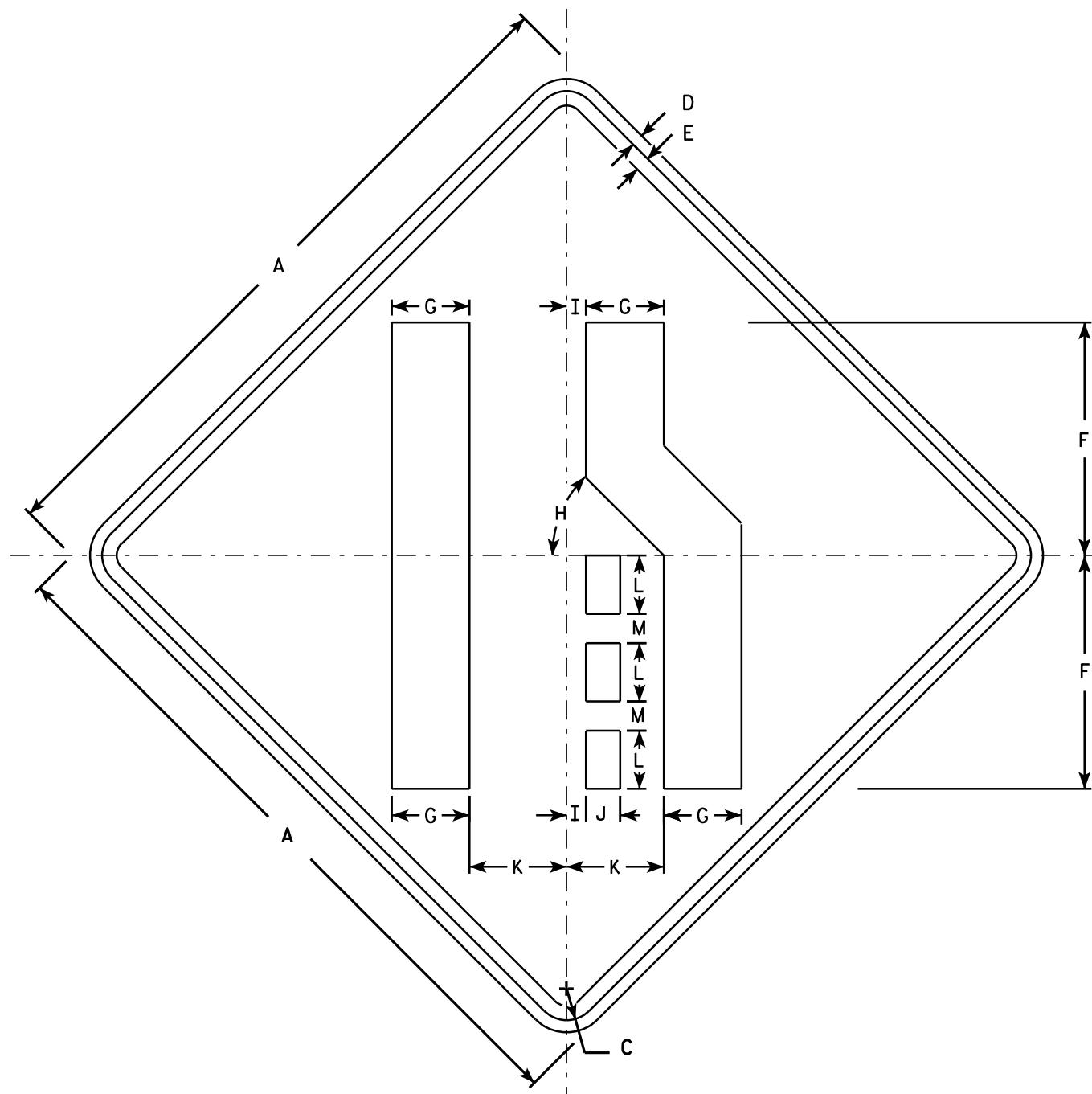
STANDARD SIGN

W1 - 7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

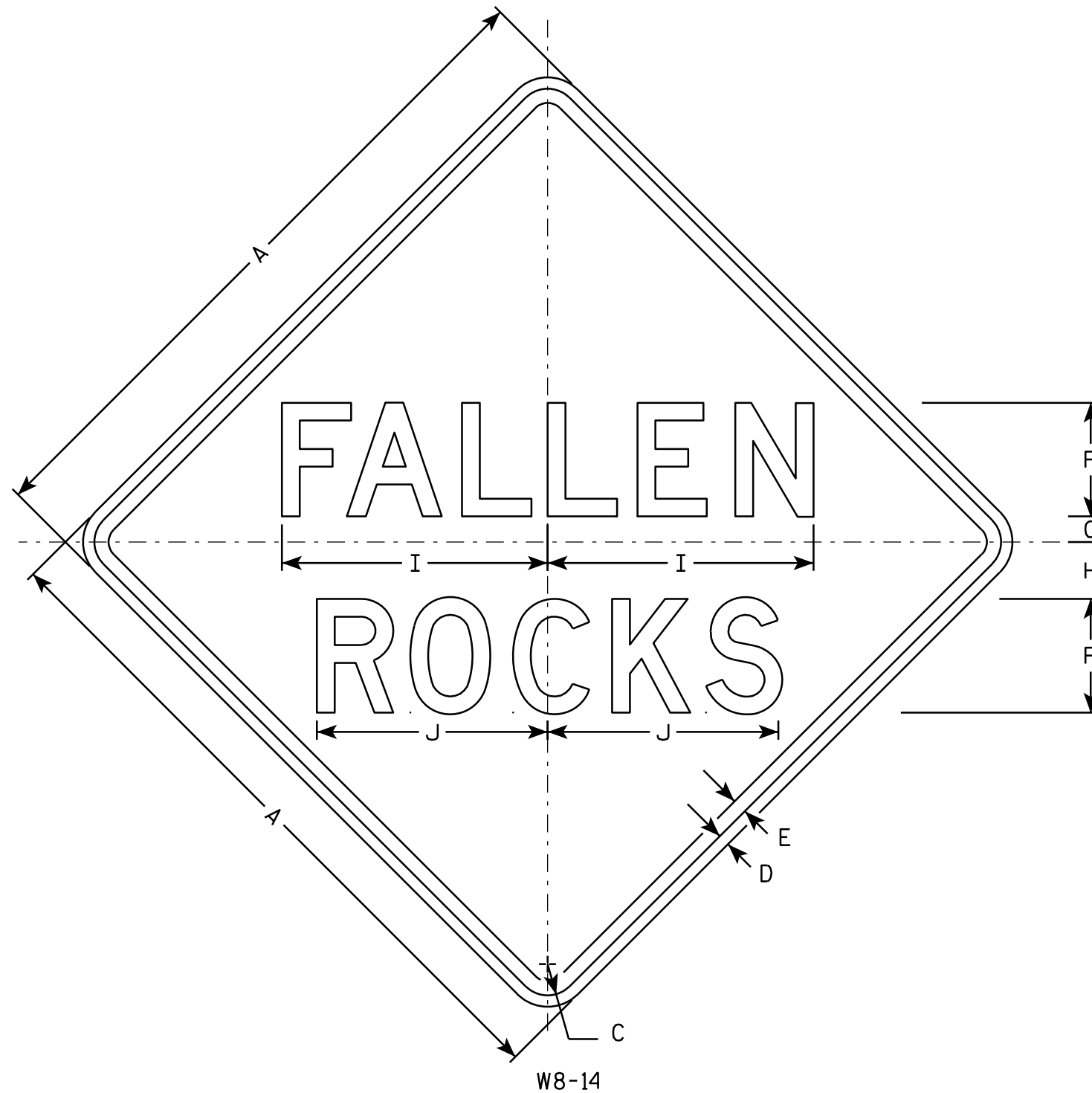
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 185



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.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 3/8	1/2	5/8	5	1 1/8	2 1/2	11 3/4	10 1/8																	6.25
2M	36		1 5/8	5/8	3/4	6	1 3/8	3	14	12 1/8																	9.0
3	36		1 5/8	5/8	3/4	6	1 3/8	3	14	12 1/8																	9.0
4	36		1 5/8	5/8	3/4	6	1 3/8	3	14	12 1/8																	9.0
5	48		2 1/4	3/4	1	8	1 3/4	4	18 3/4	16 1/4																	16.0

STANDARD SIGN

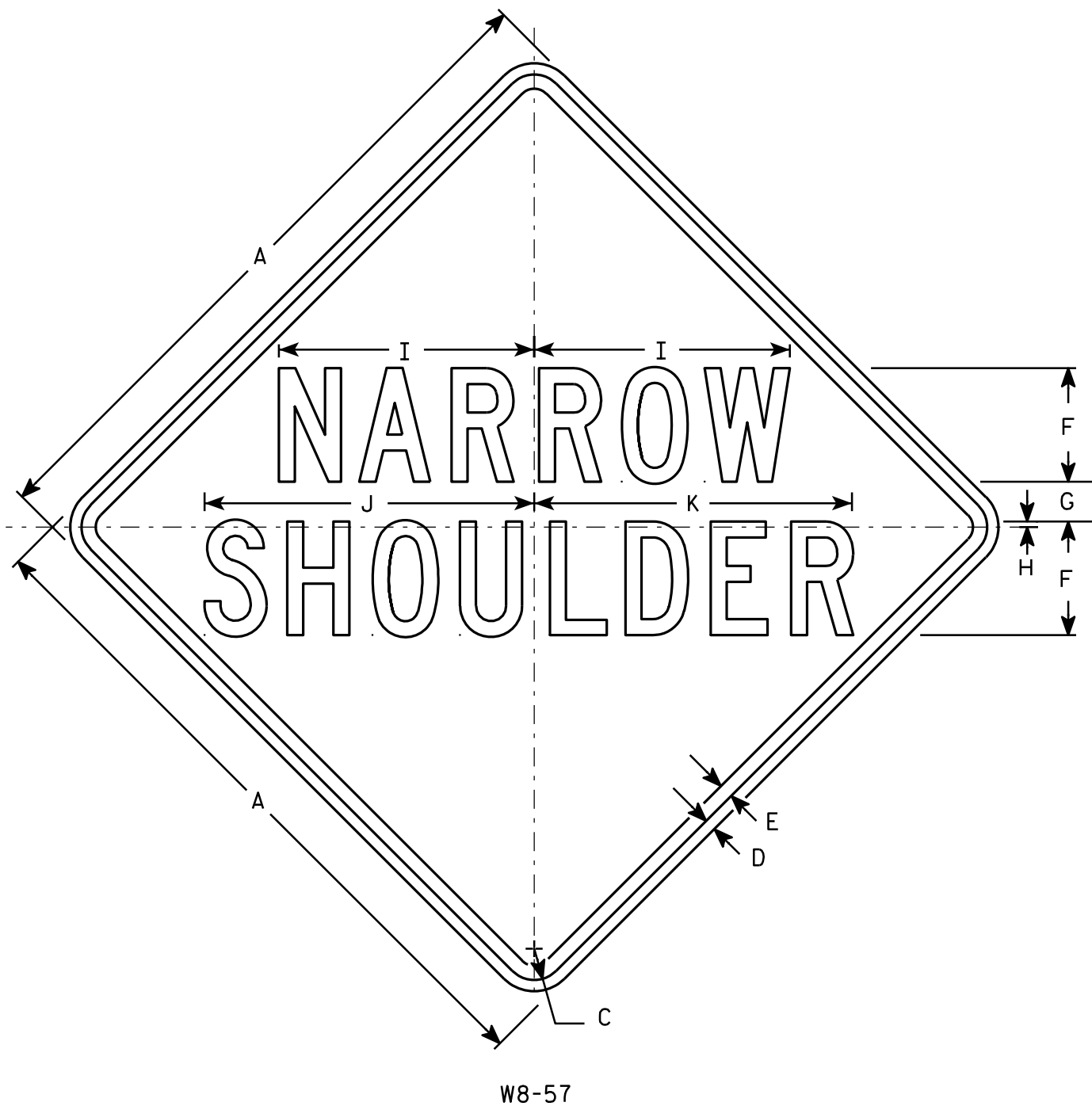
W8-14

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 03/14/13 PLATE NO. W8-14.2

PROJECT NO: HWY: COUNTY: SHEET NO: 186 E



NOTES

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

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	3/8	4	1 3/8	1/4	9	11 5/8	11																4.0
2S	30		1 3/8	1/2	5/8	5	1 3/4	1/4	11 1/4	14 1/2	14																6.25
2M	36		1 5/8	5/8	3/4	6	2	3/8	13 1/2	17 1/2	16 3/4																9.0
3	36		1 5/8	5/8	3/4	6	2	3/8	13 1/2	17 1/2	16 3/4																9.0
4																											
5																											

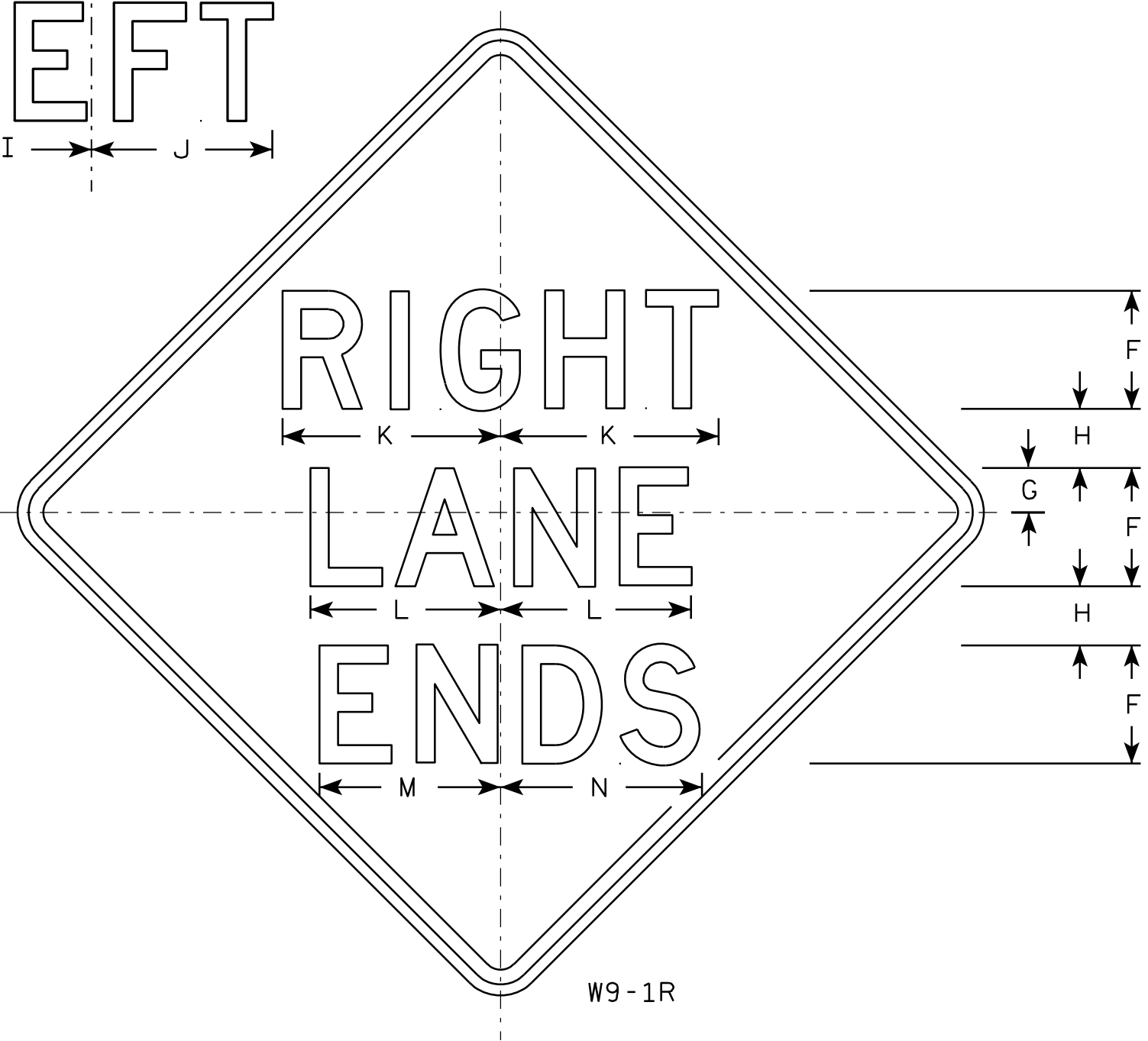
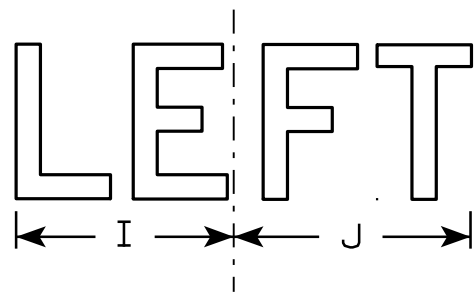
STANDARD SIGN
W8-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew P. Rauch
for State Traffic Engineer

DATE 03/14/13 PLATE NO. W8-57.7

PROJECT NO: HWY: COUNTY: SHEET NO: 187 E



W9-1R

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

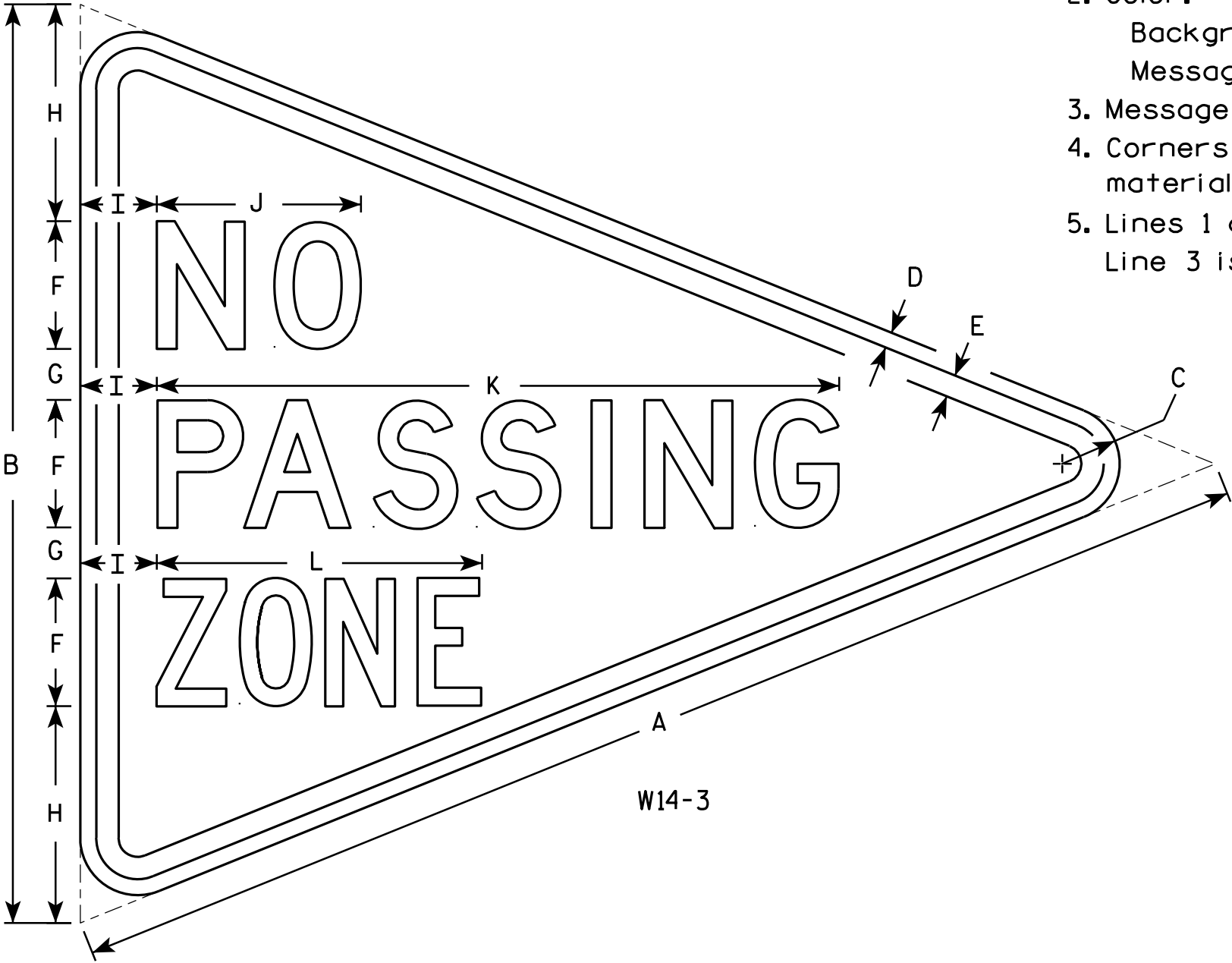
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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.



W14-3

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

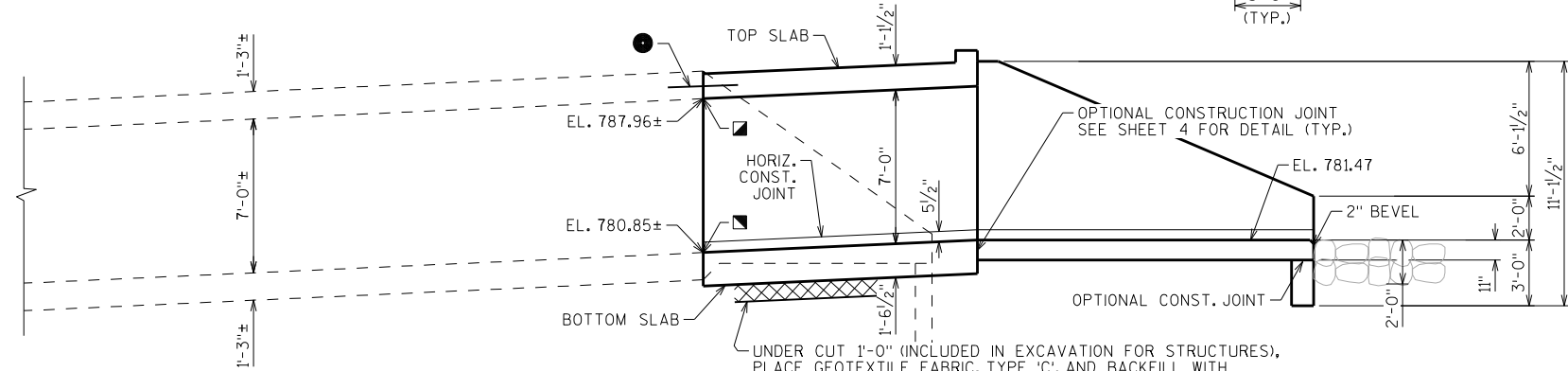
DESIGN DATA

LIVELOAD:
DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.35
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)
EARTHLOAD: DESIGNED FOR 8 FT. TO 12 FT. OF FILL
MATERIAL PROPERTIES:
CONCRETE MASONRY, GRADE A-FA ————— f'c = 3,500 P.S.I.
HIGH STRENGTH BAR STEEL REINFORCEMENT — fy = 60,000 P.S.I.

TRAFFIC VOLUME

USH 14
A.D.T. = 6,450 (2032)
R.D.S. = 60 M.P.H.

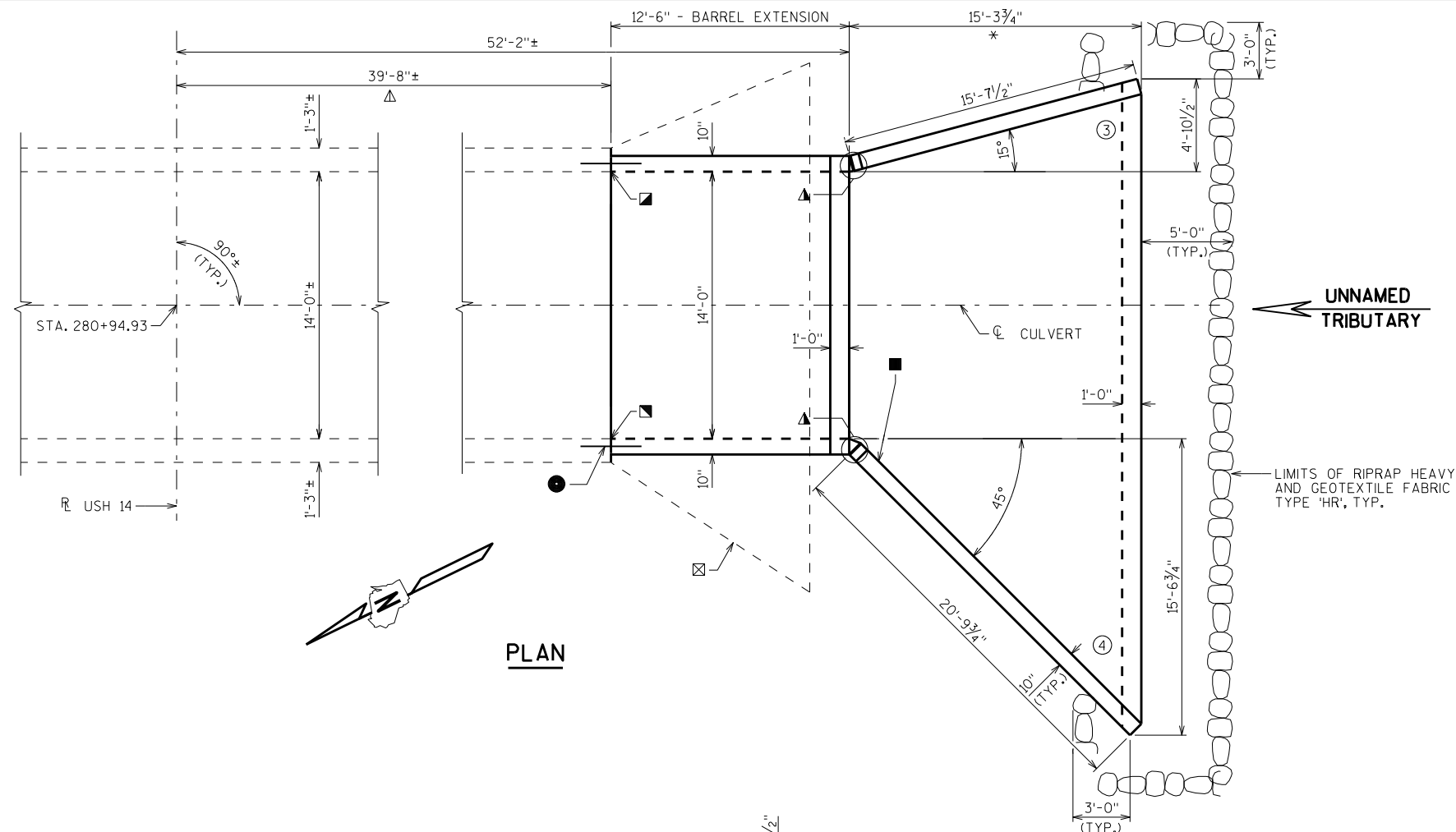
ELEVATION



INLET

TOTAL ESTIMATED QUANTITIES

BID ITEMS				
203.0200	REMOVING OLD STRUCTURE STA. 280+95	1	LS	
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-62-2234	1	LS	
210.2500	BACKFILL STRUCTURE TYPE B	125	TON	
311.0115	BREAKER RUN	28	CY	
502.4205	ADHESIVE ANCHORS NO. 5 BAR	30	EACH	
504.0100	CONCRETE MASONRY CULVERTS	47	CY	
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	4,090	LB	
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	890	LB	
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	15	SY	
606.0300	RIPRAP HEAVY	17	CY	
645.0105	GEOTEXTILE TYPE C	94	SY	
645.0120	GEOTEXTILE TYPE HR	39	SY	
NON-BID ITEMS				
	FILLER	3/4"	SIZE	



PLAN

NOTE: STRUCTURE BACKFILL TYPE B
REQUIRED BEHIND ALL WING WALLS.

STATE PROJECT NUMBER

1640-01-60

- △ EXISTING BARREL TO REMAIN IN PLACE
- NAME PLATE LOCATION (SEE SHT 4)
- * BUILD APRON AND END OF BOX LEVEL
- ▣ INSIDE OF WALLS TO MATCH EXISTING (TYP.)
- ☒ REMOVE EXISTING APRON AND WINGS. PRESERVE AND INCORPORATE EXISTING BAR STEEL REINFORCEMENT IN BOTTOM SLAB 2'-0" INTO NEW WORK.
- INDICATES WING NUMBER
- ADHESIVE ANCHORS NO.5 BAR, EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB)
- ▲ SEE CORNER DETAILS ON SHEET 4

LIST OF DRAWINGS

1. LAYOUT
2. BOX DETAILS
3. APRON
4. APRON DETAILS

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-62-2234" SHALL BE THE EXISTING GROUNDLINE.
ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE B TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.
THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.
PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.
THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".
IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE REGION GEOTECHNICAL ENGINEER MAY BE CONTACTED TO DETERMINE IF "OTHER GRANULAR MATERIAL" IS ACCEPTABLE.
ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF "STRUCTURE BACKFILL TYPE B" OF 6" MINIMUM DEPTH.

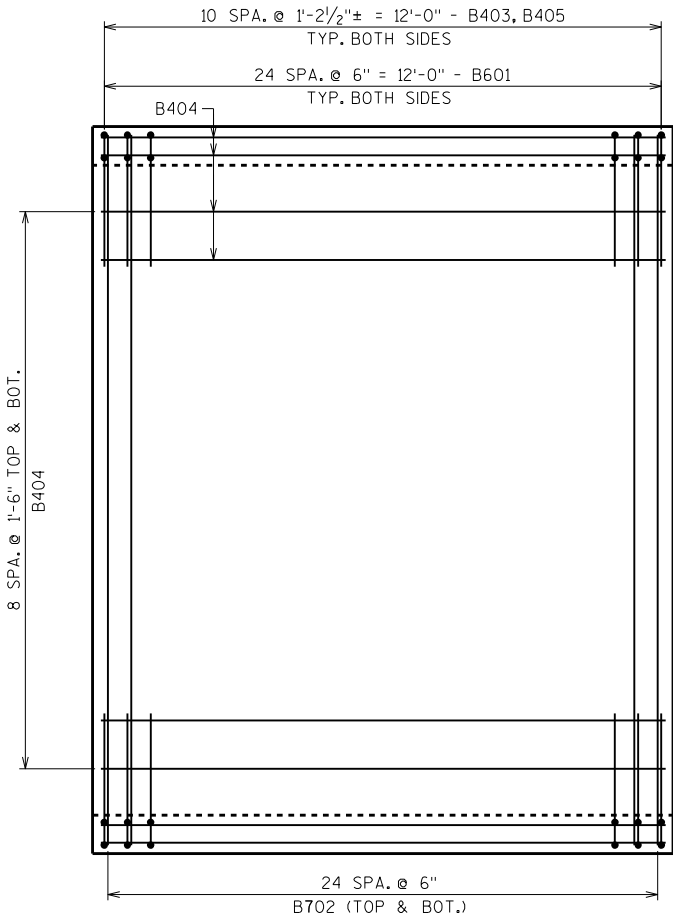
STRUCTURE DESIGN CONTACTS:
MICHAEL LARSON (608) 267-4539
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
ACCEPTED  Plans Prepared By WISDOT BUREAU OF STRUCTURES <i>William C. Dehn</i> 11/16/16 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE C-62-2234			
USH 14 OVER UNNAMED TRIBUTARY			
COUNTY	VERNON	TOWN/CITY/VILLAGE	COON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	MJL	DESIGN CKD.	DFD
DRAWN BY	MJL	PLANS CKD.	DFD
LAYOUT			SHEET 1 OF 4
			190

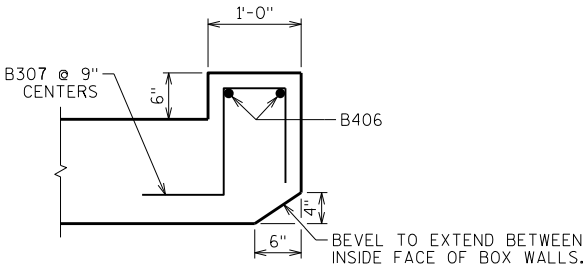
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

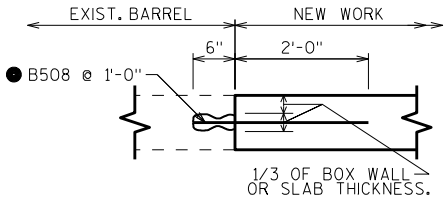
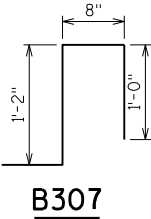
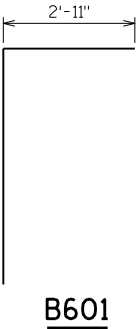
BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
B601		100	8'-5"	X		CORNERS
B702		50	15'-4"			TOP & BOTTOM SLAB TRANS.
B403		22	2'-10"			WALLS - DOWELS VERT.
B404		40	12'-2"			TOP & BOTTOM SLAB & WALL
B405		22	7'-6"			WALLS VERT.
B406		2	15'-4"			HEADER HORIZ.
B307		21	3'-2"	X		HEADER STIRRUPS VERT.
B508		30	2'-6"			VERT. CONST. JOINT



PLAN VIEW OF EXTENSION PANEL
(APRON AND HEADERS ARE NOT SHOWN)

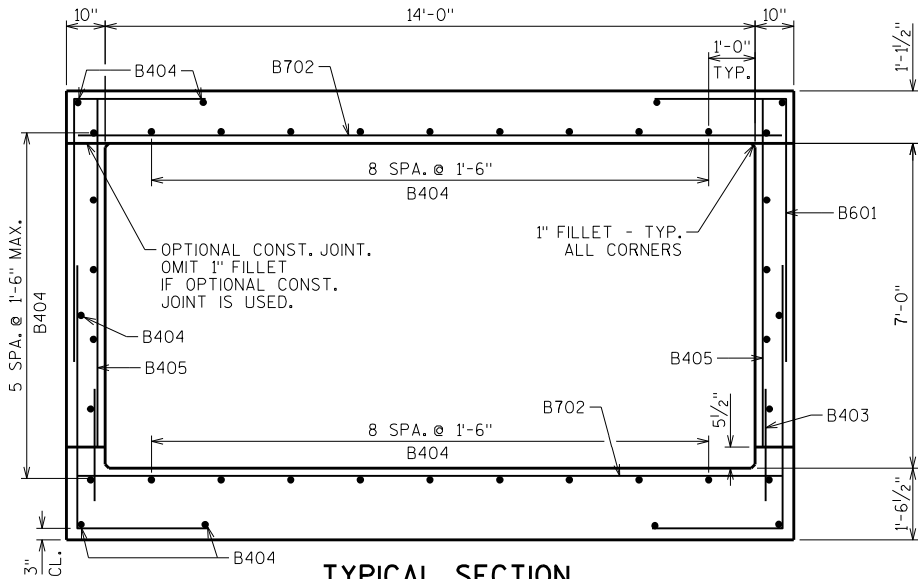


SECTION THRU
TOP HEADER



VERTICAL CONSTRUCTION JOINT
TYP. WALLS AND TOP SLAB

- ADHESIVE ANCHORS NO. 5 BAR, EMBED 6" INTO SOUND CONCRETE AND SPACE AT 1'-0" CENTERS. (TYP. IN ALL WALLS AND TOP SLAB).



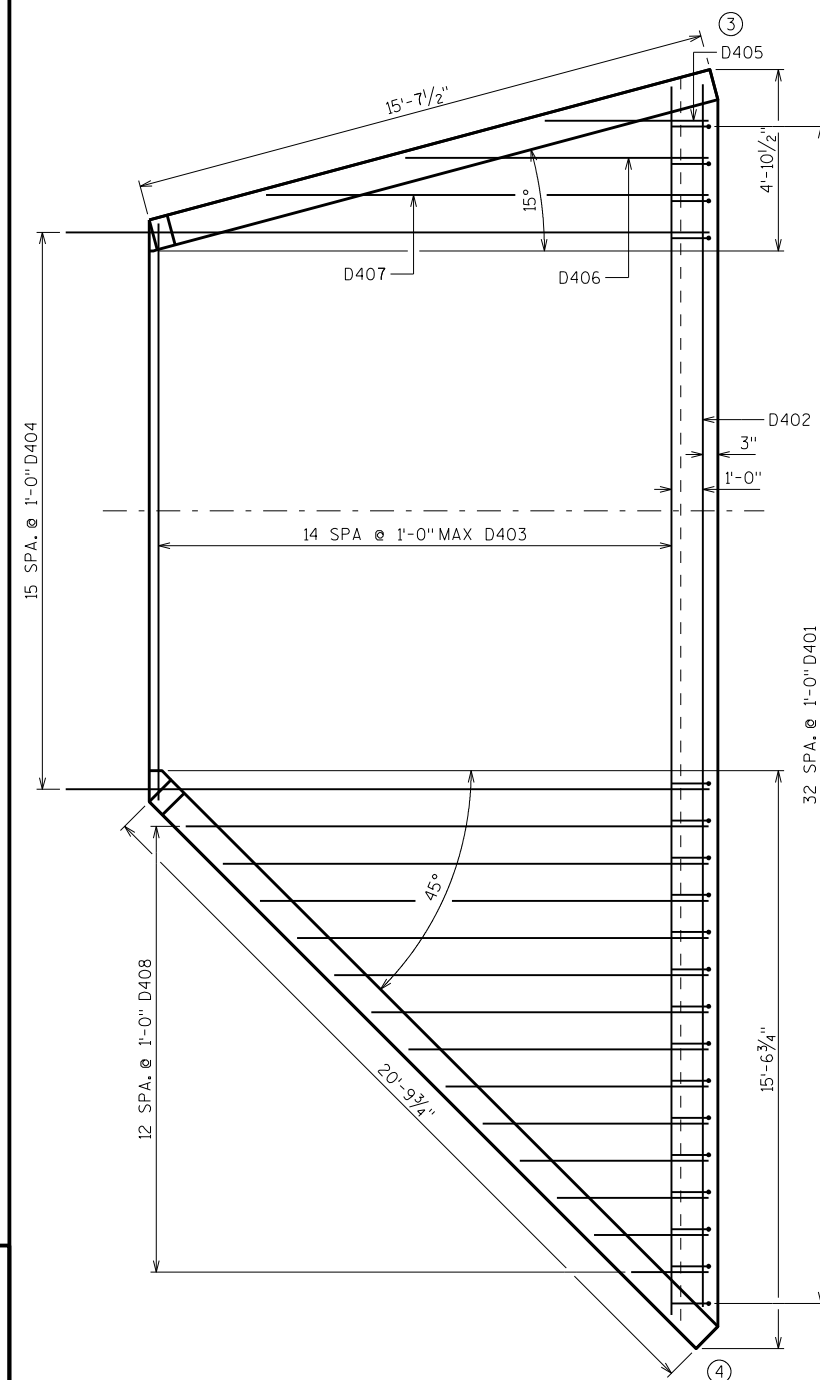
TYPICAL SECTION
THRU EXTENSION PANEL
ALL LONGITUDINAL BARS NOT LABELED
ARE B404 BARS AS SHOWN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-62-2234			
DRAWN BY MJL		PLANS CK'D. DFD	
BOX DETAILS		SHEET 2	
		191	

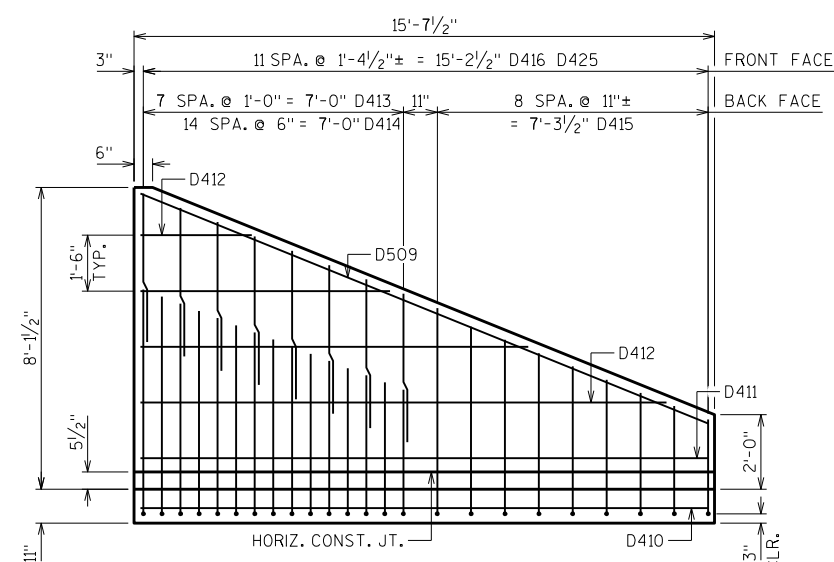
○ INDICATES WING NUMBER

STATE PROJECT NUMBER

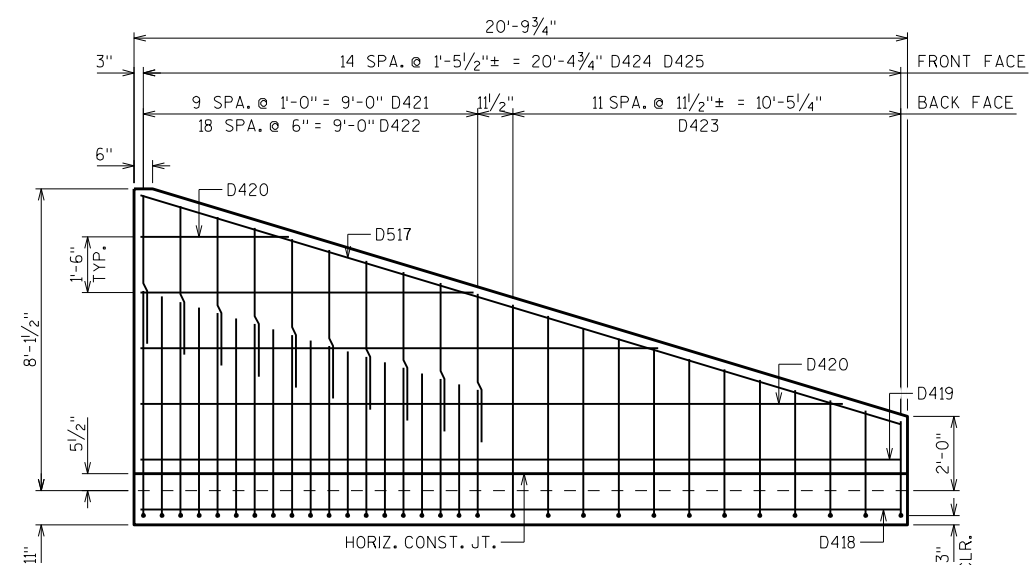
1640-01-60



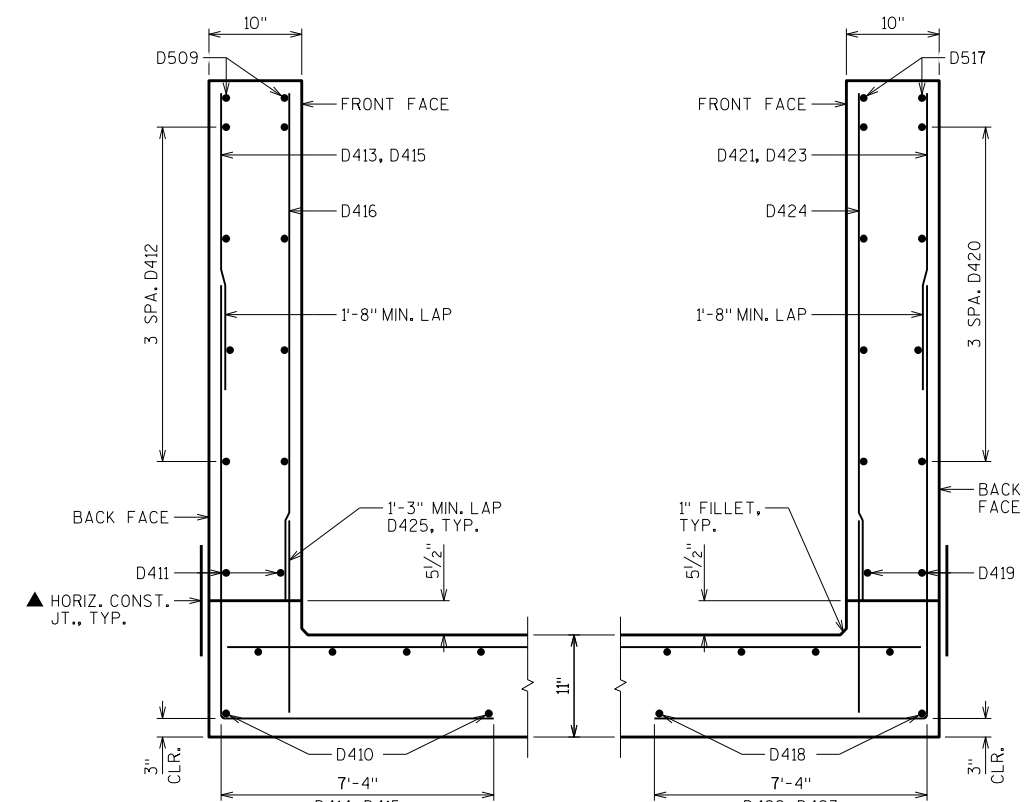
INLET APRON PLAN



WING 3



WING 4



WING 3 SECTION

WING 4 SECTION

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING, PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH, TYP.

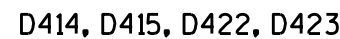
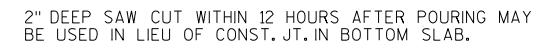
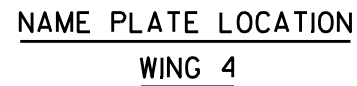
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-62-2234			
DRAWN BY MJL		PLANS CK'D. DFD	
APRON		SHEET 3	
		192	

SCALE = 2.5

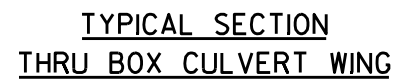
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE
BAR MARK SIGNIFIES THE BAR SIZE

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BUNDLE AND TAG EACH SERIES SEPERATELY



☆ UNDER CUT 1'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".



3/4" FILLER, TYP. EXTEND
FILLER FROM HORIZ. CONST.
JT. TO TOP OF WING.

 1" BEVEL, TYP.

▲ 18" RUBBERIZED MEMBRANE
WATERPROOFING. EXTEND
FROM HORIZ. CONST. JT. TO
TOP OF WALL.

DRAWN BY	M.H.	PLANS CK'D	DFD
----------	------	------------	-----

APRON DETAILS

EET 4

193

AREAS	From / To Station	Location	Common Excavation **P** (1)	(item # 205.0100)	Salvaged / Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate + / - (14)	Waste	Borrow
			Cut (2)	EBS Excavation (3)				Factor			
Area 1								1.25			(item #208.0100)
Beam Guard Sections	252+46.5/399+24.9	LT/RT	666	0	0	666	745	931	-266		
Area 1 Subtotal			666	0	0	666	745	931		0	0
AREA 2											
USH 14 & CTH B											
USH 14	276+58/283+36.8	LT/RT	389	0	0	389	527	659	-535		
CTH B	03+37.45/04+85	LT/RT	87	0	0	87	16	20	-468		
Area 2 Subtotal			476	0	0	476	543	679		0	0
AREA 3											
USH 14 @ Conc. Barrier	353+72.32/360+24.51	LT/RT	61	0	0	61	46	57	-464		
Area 3 Subtotal			61	0	0	61	46	57		0	0
AREA 4											
USH 14, Nerison, CTH GG											
USH 14	400+31.29/418+97.84	LT/RT	2,518	0	0	2,518	1,371	1,714	340		
Nerison	20+30/21+31.11	LT/RT	83	0	0	83	19	24	399		
CTH GG	23+12.35/24+75	LT/RT	105	0	0	105	8	10	494		
Area 4 Subtotal			2,706	0	0	2,706	1,398	1,748		0	0
AREA 5											
USH 14 Curb & Gutter											
USH 14	342+31/346+40	LT	50	0	0	50		0	544		
USH 14	364+00/370+70	LT	83	0	0	83		0	627		
USH 14	387+17/397+17	RT	123	0	0	123		0	750		
Area 5 Subtotal			256	0	0	256	0	0		0	0
Grand Total			4,165	0	0	4,165	2,732	3,415	750	750	0
		Total Common Exc **P**		4,165							
1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100											
2) Salvaged/Unsuable Pavement Material is included in Cut.											
3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.											
4) Salvaged/Unusable Pavement Material											
5) Available Material = Cut - Salvaged/Unusuable Pavement Material											
6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 20505											
7) Rock Excavation item number 205.0200											
8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6											
9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8											
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.1100											
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.1100											
12) Expanded Rock - Factor = 1.1											
13) Expanded Fill. Factor = 1.25											
Depending on selections:		Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor									
	Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor									
	Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor									
	Or	Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor									
14) The Mass Ordinate + or - Qty calculated for the Area. Plus quantity indicates an excess of material within the Area. Minus indicates a shortage of material within the Area.											

9

BEAM GUARD SECTIONS CONT. - FOR INFORMATION ONLY							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS
	(SF)		(CY)		(CY)		HAUL
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	(CY)
					1.00	1.25	
252+46.5	8	1	0	0	0	0	0
252+50	8	1	1	0	1	0	1
252+75	7	4	7	2	8	3	5
253+00	5	8	6	5	13	10	3
253+25	5	12	5	9	18	21	-3
253+50	6	8	5	9	23	32	-9
253+75	4	9	5	8	28	42	-14
254+00	4	9	3	8	31	52	-21
254+15.5	4	16	2	7	33	61	-28
256+57.56	5	0	0	0	33	61	-28
256+75	4	8	3	3	37	64	-28
257+00	2	16	3	11	40	78	-38
257+25	2	31	2	22	42	105	-63
257+50	2	36	2	31	43	144	-101
257+75	2	41	2	36	45	189	-144
257+87.12	2	45	1	19	46	213	-167
278+82.9	5	0	0	0	46	213	-167
279+00	5	3	3	1	49	215	-165
279+25	8	7	6	4	55	220	-165
279+50	9	10	8	8	63	230	-167
279+75	10	5	8	7	71	239	-167
280+00	15	0	11	2	83	242	-159
280+25	23	0	17	0	100	242	-141
280+50	24	0	22	0	122	242	-120
280+51.34	24	0	1	0	123	242	-118
284+29.69	2	7	0	0	123	242	-118
284+50	4	2	2	3	126	246	-120
284+75	6	1	5	1	130	247	-117
285+00	5	0	5	0	135	248	-113
285+25	5	0	5	0	140	248	-108
285+50	5	1	5	0	145	248	-104
285+75	5	1	5	1	150	249	-100
285+98.13	5	2	5	1	154	251	-97
292+79.3	14	0	0	0	154	251	-97
293+00	9	0	9	0	163	251	-88
293+25	7	0	7	0	170	251	-81
293+50	7	0	7	0	177	251	-74
293+60.81	7	0	3	0	179	251	-71
296+51.9	5	3	0	0	179	251	-71
296+75	4	3	4	3	183	255	-71
297+00	4	4	4	4	187	259	-72
297+25	4	7	4	5	191	265	-74
297+50	5	7	4	6	196	273	-78
297+75	5	3	5	4	200	279	-79
298+00	6	6	5	4	205	284	-79
298+20.46	6	14	4	7	209	293	-84
306+55.69	5	17	0	0	209	293	-84
306+75	5	17	3	12	213	308	-96
307+00	5	19	5	17	217	330	-112
307+25	5	15	4	16	222	349	-127

BEAM GUARD SECTIONS CONT. - FOR INFORMATION ONLY							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS
	(SF)		(CY)		(CY)		HAUL
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	(CY)
					1.00	1.25	
307+50	5	0	4	7	226	358	-132
307+75	4	0	4	0	231	358	-128
308+00	5	0	4	0	235	358	-124
308+24.33	6	0	5	0	240	358	-119
315+80.3	3	14	0	0	240	358	-119
316+00	4	35	2	18	242	380	-138
316+25	3	23	3	27	245	414	-168
316+49.97	3	1	3	11	248	427	-179
319+69.21	6	0	0	0	248	427	-179
319+75	6	0	1	0	250	427	-177
320+00	7	58	6	27	256	461	-205
320+25	6	144	6	93	262	577	-315
320+50	6	2	6	67	267	661	-394
320+50.8	6	2	0	0	268	661	-394
340+18.96	4	3	0	0	268	661	-394
340+25	6	5	1	1	269	662	-394
340+50	6	4	5	4	274	667	-394
340+75	7	6	6	5	280	673	-393
341+00	8	2	7	4	287	678	-391
341+25	8	3	8	2	294	681	-386
341+50	10	6	9	4	303	686	-383
341+75	12	10	10	7	313	695	-382
341+87.4	0	0	3	2	315	697	-382
342+42.15	6	0	6	0	321	698	-377
342+50	6	0	2	0	323	698	-375
342+75	11	0	8	0	331	698	-367
343+00	14	0	12	0	343	698	-355
343+07.65	16	0	4	0	347	698	-351
343+65.15	8	0	26	0	373	698	-325
343+75	7	3	3	1	375	698	-323
344+00	6	28	6	14	382	716	-334
344+25	5	52	5	37	387	762	-375
344+30.67	5	57	1	11	388	776	-388
345+74.28	14	0	0	0	388	776	-388
345+75	14	0	0	0	388	776	-388
346+00	13	0	13	0	401	776	-375
346+25	14	0	12	0	413	776	-363
346+50	13	0	12	0	426	776	-351
346+75	8	2	10	1	435	778	-342
347+00	9	2	8	2	443	780	-337
347+17.87	10	0	6	1	450	781	-331
356+29.9	8	0	0	0	450	781	-331
356+50	7	4	6	1	455	782	-327
356+75	11	1	8	2	464	785	-321
357+00	9	4	9	2	473	788	-315
357+25	10	8	9	6	482	795	-313
357+50	11	11	10	8	492	805	-314
357+75	13	2	11	6	503	813	-310
357+94.35	9	6	8	3	510	816	-306
384+56.8	7	1	0	0	510	816	-306

BEAM GUARD SECTIONS CONT. - FOR INFORMATION ONLY							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS HAUL
	(SF)		(CY)		(CY)		
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	
					1.00	1.25	(CY)
384+75	7	2	5	1	515	817	-302
385+00	8	3	7	2	522	820	-298
385+25	7	4	7	3	529	824	-295
385+50	7	7	6	5	535	831	-295
385+75	7	5	6	5	542	837	-296
386+00	7	3	6	4	548	842	-294
386+25	7	2	6	3	554	845	-291
386+25.19	7	2	0	0	554	845	-291
386+68.5	5	0	0	0	554	845	-291
386+75	7	0	1	0	556	845	-290
387+00	5	0	6	0	561	845	-284
387+25	4	3	4	1	565	847	-282
387+50	5	0	4	2	569	849	-280
387+75	5	0	5	0	574	849	-275
388+00	4	0	4	0	578	850	-271
388+25	2	0	3	0	581	850	-269
388+36.87	2	1	1	0	582	850	-268
393+06.7	10	0	0	0	582	850	-268
393+25	8	0	6	0	588	850	-262
393+50	5	0	6	0	594	850	-256
393+75	5	0	5	0	599	850	-252
394+00	5	0	5	0	603	851	-247
394+25	3	4	4	2	607	853	-246
394+50	7	0	4	2	611	855	-244
394+75	9	0	7	0	619	855	-237
394+75.12	9	0	0	0	619	855	-236
397+55.45	9	13	0	0	619	855	-236
397+75	7	12	6	9	625	867	-242
398+00	7	11	6	11	631	880	-248
398+25	7	14	6	12	637	895	-257
398+50	7	14	6	13	644	911	-267
398+75	7	5	7	9	651	922	-272
399+00	8	5	7	5	658	928	-270
399+24.9	9	1	8	3	666	931	-266

9

9

USH 14 @ COUNTY B INTERSECTION - USH 14							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS HAUL
	(SF)		(CY)		(CY)		
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	
					1.00	1.25	(CY)
276+58	6	2	0	0	0	0	0
276+75	10	0	5	1	5	1	4
277+00	12	0	10	0	15	1	14
277+25	12	0	11	0	26	1	26
277+50	13	0	12	0	38	1	37
277+75	12	0	12	0	50	1	49
278+00	12	1	11	0	61	1	59
278+25	12	1	11	1	72	2	69
278+50	11	2	10	1	82	4	78
278+75	10	6	10	4	92	8	83
279+00	10	13	9	8	101	19	82
279+25	11	19	10	15	111	37	73
279+50	13	30	11	23	122	66	56
279+75	14	42	12	33	134	108	27
280+00	21	4	16	21	150	134	16
280+25	28	0	23	2	173	137	36
280+50	19	52	22	24	195	166	28
280+75	17	163	17	99	211	291	-79
281+00	19	199	16	167	228	500	-272
281+07.27	20	133	5	45	233	556	-323
281+10	20	120	2	13	235	572	-337
281+15	20	112	4	21	239	598	-360
281+20	20	83	4	18	242	621	-379
281+25	19	54	4	13	246	637	-391
281+30	18	35	3	8	250	647	-398
281+35	18	19	3	5	253	654	-401
281+40	20	9	3	3	256	657	-401
281+45	21	0	4	1	260	658	-398
281+50	19	0	4	0	264	658	-394
281+55	16	0	3	0	267	658	-391
281+60	13	0	3	0	270	658	-388
281+65	8	0	2	0	272	658	-386
281+70	0	1	1	0	272	658	-386
281+75	0	0	0	0	272	658	-386
281+80	0	0	0	0	272	658	-386
281+85	1	0	0	0	273	658	-386
281+90	11	0	1	0	274	658	-385
281+95	14	0	2	0	276	658	-382
282+00	18	0	3	0	279	658	-379
282+05	22	0	4	0	283	658	-376
282+10	26	0	4	0	287	658	-371
282+15	27	1	5	0	292	658	-366
282+20	26	1	5	0	297	659	-362
282+25	30	0	5	0	302	659	-356
282+30	31	0	6	0	308	659	-351
282+35	34	0	6	0	314	659	-345
282+40	36	0	6	0	320	659	-338
282+45	32	0	6	0	327	659	-332
282+50	34	0	6	0	333	659	-326
282+55	31	0	6	0	339	659	-320

USH 14 @ COUNTY B INTERSECTION - USH 14 CONT.							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS
	(SF)		(CY)		(CY)		HAUL
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	(CY)
					1.00	1.25	
282+57.88	30	0	3	0	342	659	- 317
282+75	20	0	16	0	358	659	- 301
283+00	13	0	15	0	373	659	- 286
283+25	13	0	12	0	385	659	- 274
283+36.8	7	0	4	0	389	659	- 270

USH 14 @ COUNTY B INTERSECTION - COUNTY B							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS HAUL
	(SF)		(CY)		(CY)		
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	
					1.00	1.25	(CY)
03+37.45	4	1	0	0	0	0	0
03+50	7	2	2	1	2	1	1
03+75	8	0	7	1	9	2	7
04+00	12	0	9	0	18	2	16
04+17.89	13	0	8	0	27	2	24
04+20	12	0	1	0	28	2	25
04+25	28	0	4	0	31	2	29
04+30	34	2	6	0	37	3	34
04+35	42	2	7	0	44	3	41
04+40	36	10	7	1	51	5	47
04+45	32	17	6	2	58	8	50
04+50	29	22	6	4	63	12	51
04+55	32	17	6	4	69	17	52
04+60	32	4	6	2	75	19	56
04+65	25	1	5	0	80	20	60
04+70	17	1	4	0	84	20	64
04+75	8	1	2	0	86	20	66
04+80	1	1	1	0	87	20	67
04+85	0	0	0	0	87	20	67

USH 14 @ CONCRETE BARRIER WALL							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS
	(SF)		(CY)		(CY)		HAUL
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	(CY)
					1.00	1.25	
353+72.32	0	0	0	0	0	0	0
353+75	4	0	0	0	0	0	0
354+00	3	1	3	0	3	0	3
354+25	3	1	3	1	6	1	5
354+50	3	1	2	1	8	3	5
354+75	2	6	2	4	11	7	3
355+00	2	5	2	5	13	14	-1
355+25	2	4	2	4	15	20	-5
355+50	3	2	2	3	17	23	-6
355+75	3	1	3	1	20	25	-5
356+00	3	1	3	1	23	26	-3
356+25	3	1	3	1	26	27	-1
356+50	3	1	3	1	29	28	1
356+75	3	1	3	1	31	29	3
357+00	2	1	2	1	34	30	4
357+25	2	2	2	1	36	31	5
357+50	2	2	2	2	38	33	5
357+75	2	1	2	1	41	35	5
358+00	2	2	2	1	43	37	6
358+25	2	2	2	2	44	39	5
358+50	2	3	2	3	46	43	3
358+75	2	4	2	3	48	47	1
359+00	2	3	2	3	50	50	0
359+25	2	1	2	2	52	53	0
359+50	3	1	2	1	54	54	0
359+75	2	1	2	1	56	55	1
360+00	3	1	2	1	59	56	3
360+24.51	3	0	3	0	61	57	5

9

USH 14 @ NERISON & CTH GG INTERSECTION - USH 14							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS HAUL
	(SF)		(CY)		(CY)		
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	
					1.00	1.25	(CY)
400+31.29	8	0	0	0	0	0	0
400+50	31	0	14	0	14	0	14
400+75	28	0	27	0	41	0	41
401+00	29	0	26	0	68	0	68
401+25	35	2	30	1	97	1	96
401+50	49	0	39	1	137	2	135
401+75	28	0	36	0	172	2	170
402+00	20	0	22	0	195	2	193
402+02.61	22	0	2	0	197	2	195
402+25	65	0	36	0	233	2	231
402+50	60	0	58	0	291	2	289
402+75	54	0	53	0	343	2	341
403+00	55	0	50	0	394	2	391
403+25	78	0	61	0	455	3	452
403+31.18	92	1	19	0	475	3	472
403+35	93	1	13	0	488	3	485
403+40	92	0	17	0	505	3	502
403+45	96	0	17	0	522	3	519
403+50	101	0	18	0	540	3	537
403+55	100	0	19	0	559	3	556
403+60	109	0	19	0	578	3	575
403+65	115	0	21	0	599	3	596
403+70	123	0	22	0	621	3	618
403+75	125	0	23	0	644	3	641
403+80	121	0	23	0	667	3	664
403+85	114	0	22	0	689	3	685
403+90	108	0	21	0	709	3	706
403+95	103	0	20	0	729	4	725
404+00	100	0	19	0	748	4	744
404+05	97	0	18	0	766	4	762
404+10	95	0	18	0	784	4	780
404+15	93	0	17	0	801	4	797
404+20	90	1	17	0	818	4	814
404+25	88	2	17	0	834	4	830
404+30	88	4	16	1	851	5	846
404+35	87	5	16	1	867	6	861
404+40	88	5	16	1	883	7	876
404+45	87	6	16	1	899	8	891
404+50	86	13	16	2	915	10	905
404+55	84	23	16	3	931	15	916
404+60	82	24	15	4	946	20	926
404+65	80	20	15	4	962	25	936
404+70	78	15	15	3	976	29	947
404+75	75	12	14	2	990	32	958
404+80	72	11	14	2	1004	35	969
404+80.84	72	11	2	0	1006	35	971
405+00	71	32	51	15	1057	54	1002
405+25	67	24	64	26	1121	87	1034
405+50	48	18	53	20	1174	112	1063
405+75	49	14	45	15	1219	130	1089

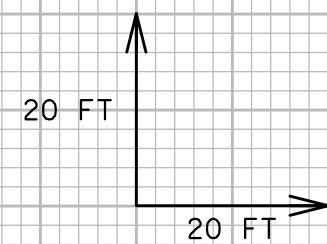
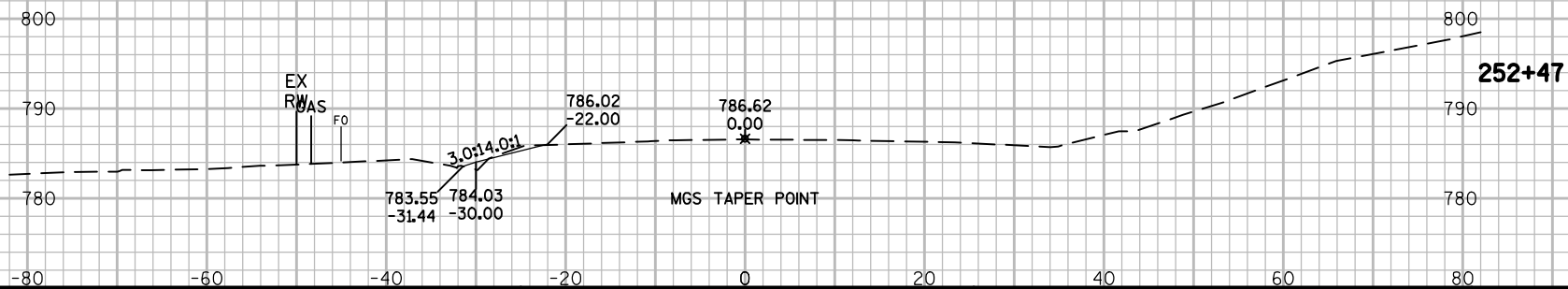
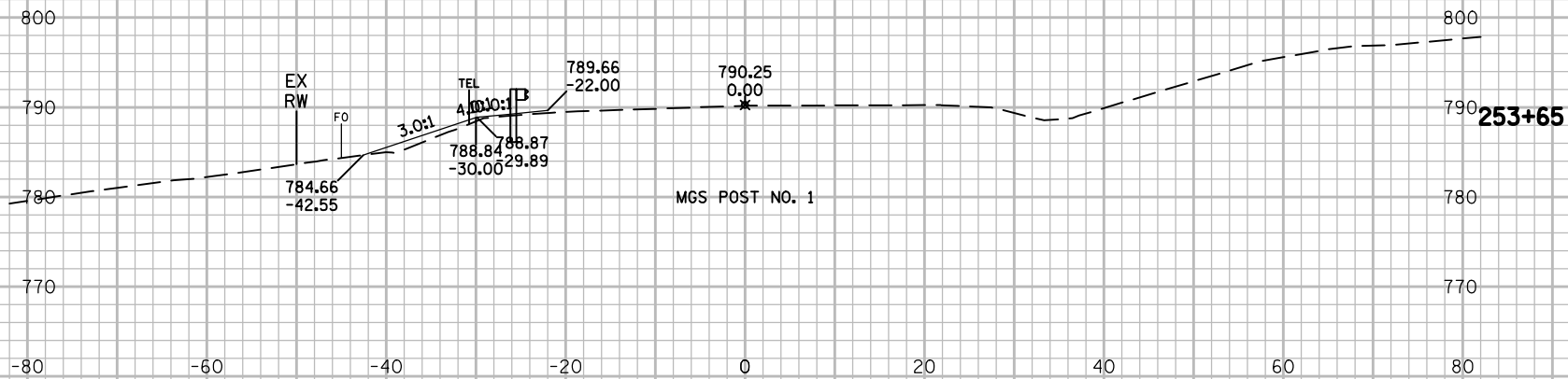
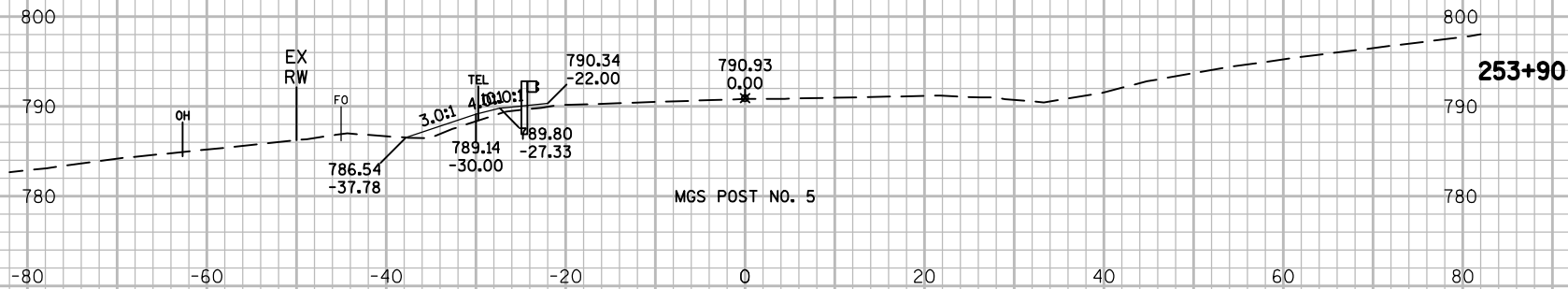
USH 14 @ NERISON & CTH GG INTERSECTION - USH 14 - CONT.							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS HAUL
	(SF)		(CY)		(CY)		
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	
406+00	56	11	49	11	1268	144	1124
406+25	57	7	52	8	1320	154	1166
406+50	57	5	53	6	1373	161	1212
406+54.07	57	6	9	1	1382	162	1219
406+55	57	6	2	0	1384	163	1221
406+60	51	8	10	1	1393	164	1229
406+65	47	9	9	2	1403	166	1236
406+70	44	12	8	2	1411	169	1242
406+75	42	16	8	3	1419	172	1247
406+80	45	24	8	4	1427	177	1250
406+85	41	31	8	5	1435	183	1252
406+90	33	36	7	6	1442	191	1251
406+95	29	41	6	7	1448	200	1248
407+00	46	45	7	8	1455	209	1245
407+05	29	27	7	7	1462	218	1244
407+10	30	11	5	4	1467	222	1245
407+15	31	8	6	2	1473	224	1248
407+20	31	8	6	1	1478	226	1252
407+25	33	7	6	1	1484	228	1256
407+30	34	8	6	1	1490	230	1261
407+35	35	9	6	2	1497	232	1265
407+40	29	10	6	2	1503	234	1269
407+45	20	12	5	2	1507	236	1271
407+50	20	14	4	2	1511	239	1272
407+55	20	13	4	2	1515	242	1272
407+60	20	15	4	3	1518	246	1273
407+65	19	16	4	3	1522	249	1272
407+70	35	16	5	3	1527	253	1274
407+75	41	16	7	3	1534	257	1277
407+80	40	16	7	3	1541	260	1281
407+85	51	16	8	3	1550	264	1286
407+90	55	16	10	3	1560	268	1292
407+95	47	16	9	3	1569	271	1298
408+00	32	23	7	4	1576	276	1300
408+05	37	18	6	4	1583	281	1302
408+10	41	18	7	3	1590	285	1305
408+15	40	18	8	3	1597	289	1308
408+18.21	39	19	5	2	1602	292	1310
408+25	39	19	10	5	1612	298	1314
408+50	42	17	37	17	1649	319	1331
408+75	39	15	38	15	1687	337	1350
409+00	36	13	35	13	1722	353	1368
409+04.98	17	21	5	3	1727	357	1369
409+25	17	20	12	15	1739	376	1363
409+50	16	18	15	18	1754	399	1356
409+75	16	20	15	18	1770	421	1349
410+00	16	22	15	19	1785	445	1340
410+25	16	24	15	21	1799	471	1328
410+50	15	27	14	24	1813	500	1313
410+75	14	27	13	25	1827	532	1295

USH 14 @ NERISON & CTH GG INTERSECTION - USH 14 - CONT.							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS
	(SF)		(CY)		(CY)		HAUL
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	(CY)
					1.00	1.25	
411+00	13	27	13	25	1839	563	1276
411+25	15	23	13	23	1852	592	1261
411+50	17	22	15	21	1867	618	1249
411+75	21	20	18	19	1885	642	1243
412+00	25	19	21	18	1906	665	1242
412+25	30	15	25	16	1932	685	1247
412+50	34	10	30	11	1961	699	1262
412+75	44	0	36	5	1997	704	1293
413+00	30	2	35	1	2032	706	1326
413+25	25	4	26	3	2058	709	1348
413+50	23	7	23	5	2080	716	1365
413+75	22	9	21	7	2101	725	1377
414+00	22	11	20	9	2122	736	1386
414+25	22	12	20	10	2142	748	1393
414+50	22	28	20	19	2162	772	1390
414+75	21	43	20	33	2182	813	1369
415+00	21	62	20	49	2202	874	1328
415+25	21	85	19	68	2221	959	1263
415+50	21	140	19	104	2241	1089	1152
415+75	21	240	19	176	2260	1309	951
416+00	21	136	20	174	2280	1526	753
416+25	22	52	20	87	2300	1635	664
416+50	22	27	20	36	2320	1681	639
416+75	22	9	20	17	2340	1702	639
417+00	22	2	20	5	2361	1708	652
417+25	22	1	21	2	2381	1710	671
417+50	22	2	21	2	2402	1712	689
417+75	22	1	20	1	2422	1714	708
418+00	22	0	20	0	2442	1714	728
418+25	22	0	20	0	2463	1714	748
418+50	21	0	20	0	2482	1714	768
418+75	20	0	19	0	2502	1714	787
418+97.84	18	0	16	0	2518	1714	803

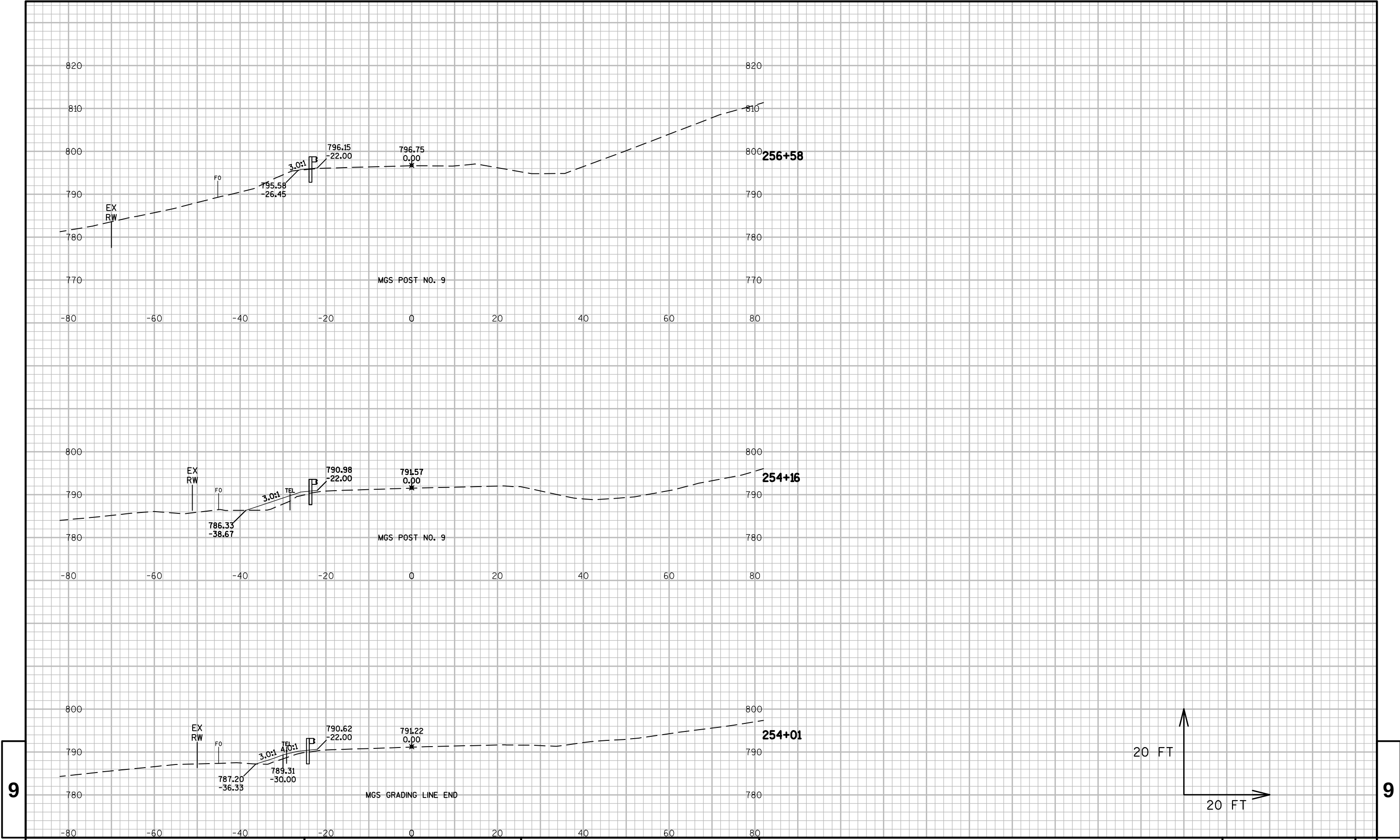
USH 14 @ NERISON & CTH GG INTERSECTION - NERISON							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS
	(SF)		(CY)		(CY)		HAUL
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	(CY)
					1.00	1.25	
20+30	0	0	0	0	0	0	0
20+35	2	1	0	0	0	0	0
20+40	6	4	1	0	1	1	0
20+45	12	10	2	1	2	2	0
20+50	20	28	3	3	5	7	-1
20+55	31	23	5	5	10	12	-2
20+60	39	14	7	3	17	17	0
20+65	37	11	7	2	24	20	4
20+70	31	9	6	2	30	22	8
20+75	20	3	5	1	35	23	12
20+80	19	0	4	0	38	24	15
20+85	20	0	4	0	42	24	18
20+85.96	20	0	1	0	43	24	19
21+00	19	1	10	0	53	24	29
21+25	36	0	25	0	78	24	54
21+31.11	11	0	5	0	83	24	59

USH 14 @ NERISON & CTH GG INTERSECTION - CTH GG							
STATION	AREA		INCR. VOL.		CUM. VOL.		MASS HAUL (CY)
	(SF)		(CY)		(CY)		
	CUT	FILL	CUT	FILL	CUT	ADJ. FILL	
					1.00	1.25	
23+12.35	6	0	0	0	0	0	0
23+25	12	1	4	0	4	0	4
23+50	14	1	12	1	16	1	16
23+68.69	16	0	10	0	27	1	26
23+70	16	0	1	0	28	1	26
23+75	17	1	3	0	31	1	29
23+80	19	1	3	0	34	1	32
23+85	23	1	4	0	38	2	36
23+90	30	1	5	0	43	2	41
23+95	36	1	6	0	49	2	46
24+00	31	3	6	0	55	3	52
24+05	20	6	5	1	59	4	56
24+10	18	8	3	1	63	5	57
24+15	21	7	4	1	66	7	59
24+20	19	4	4	1	70	8	62
24+25	22	5	4	1	74	10	64
24+30	22	0	4	1	78	10	68
24+35	25	0	4	0	82	10	72
24+40	29	0	5	0	87	10	77
24+45	37	0	6	0	93	10	83
24+50	22	0	5	0	99	10	89
24+55	15	0	3	0	102	10	92
24+60	7	0	2	0	104	10	94
24+65	0	0	1	0	105	10	95
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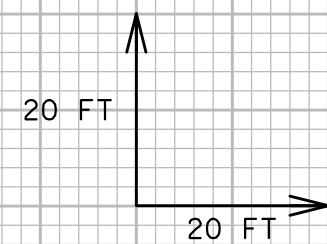
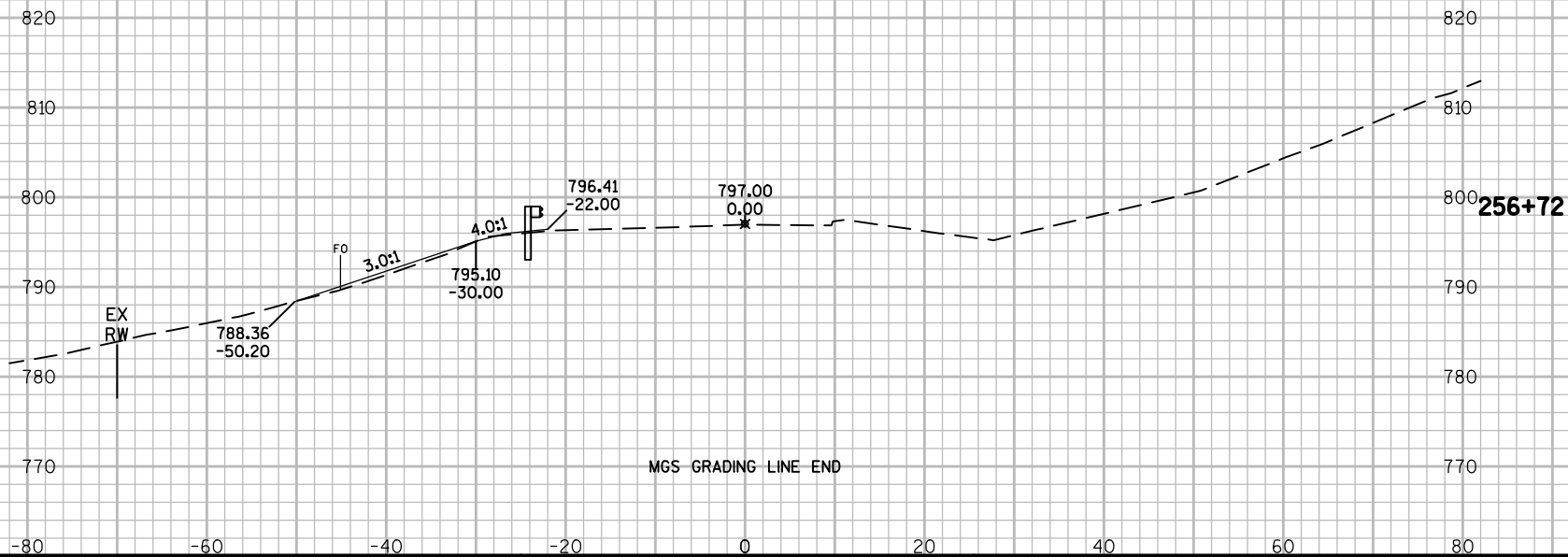
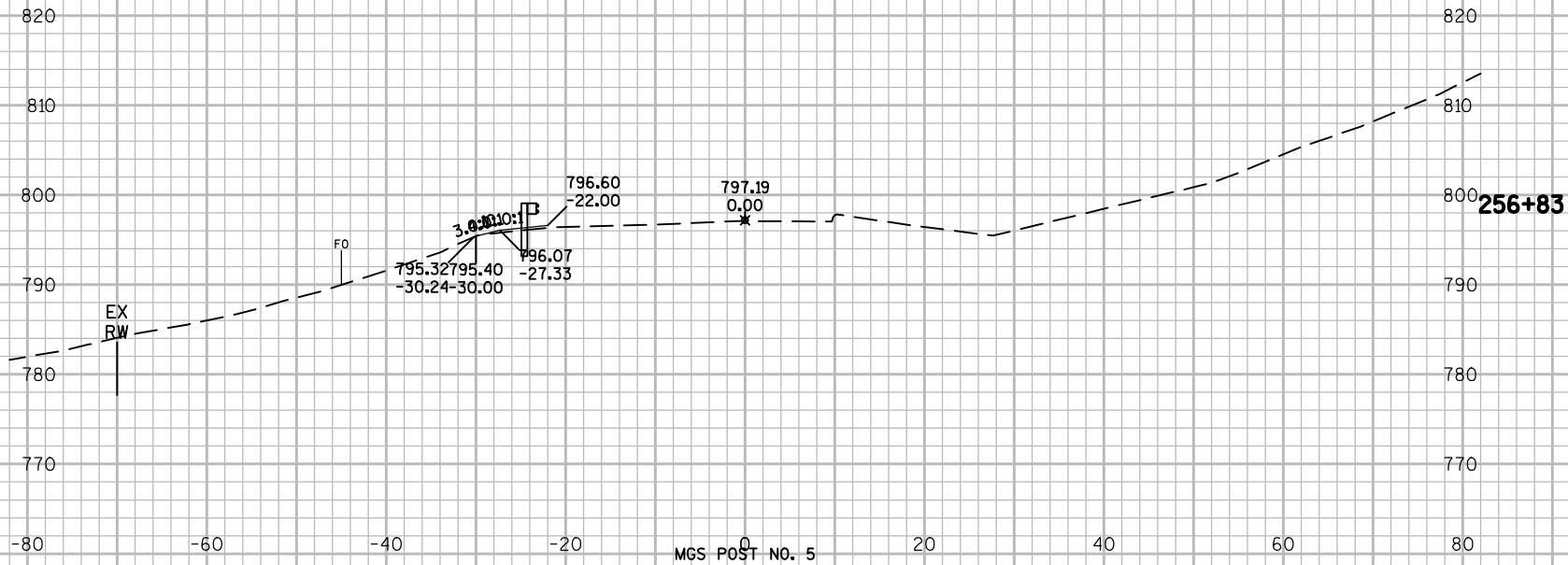
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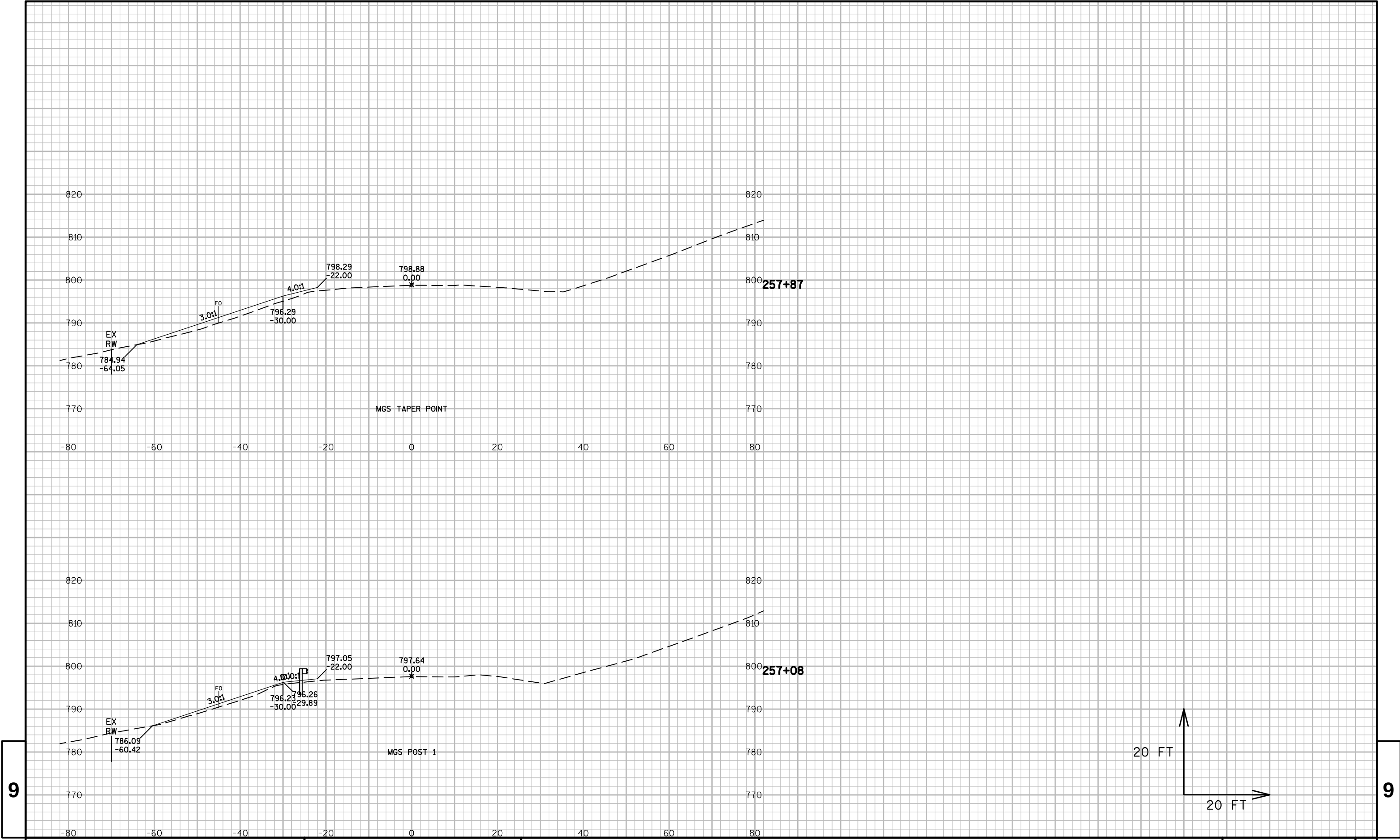
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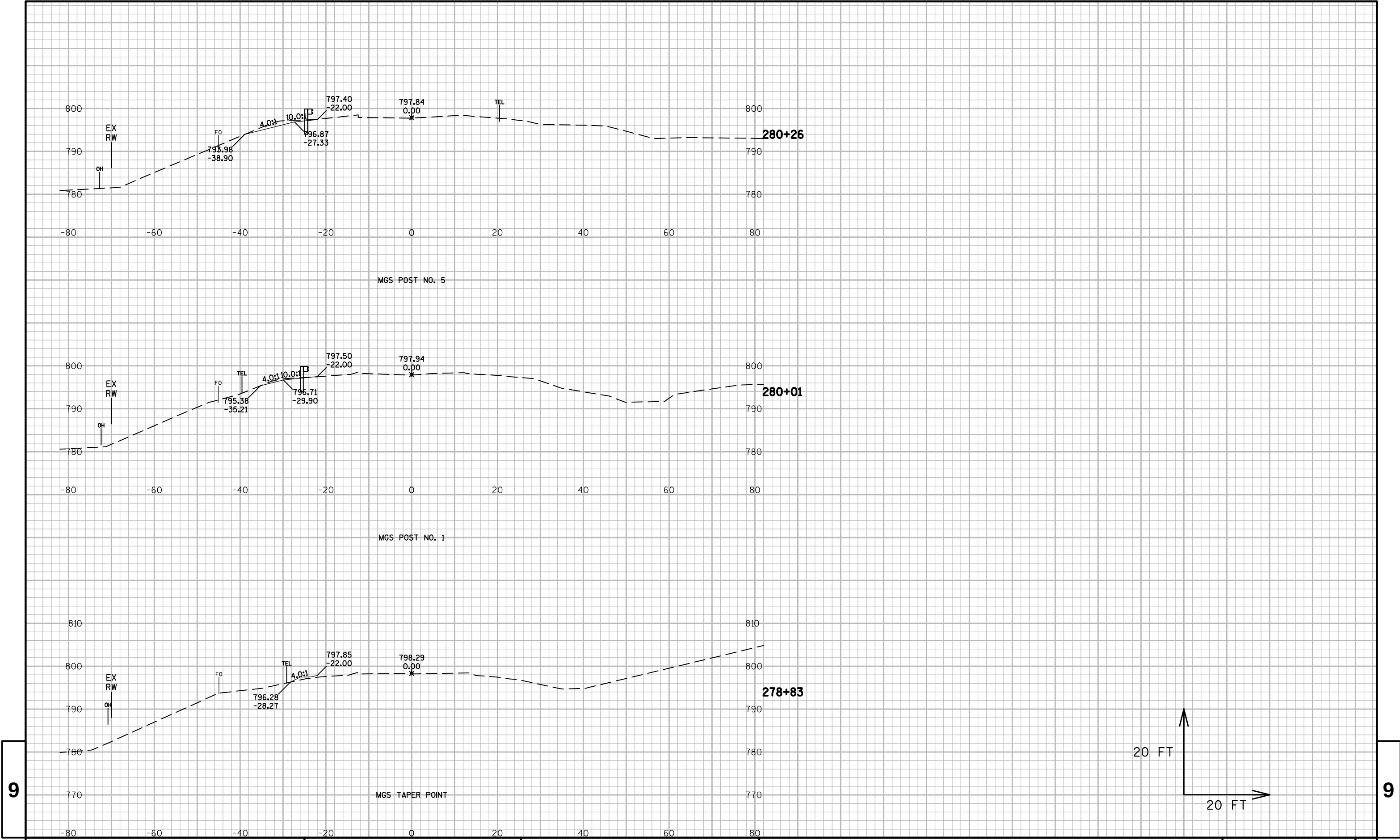
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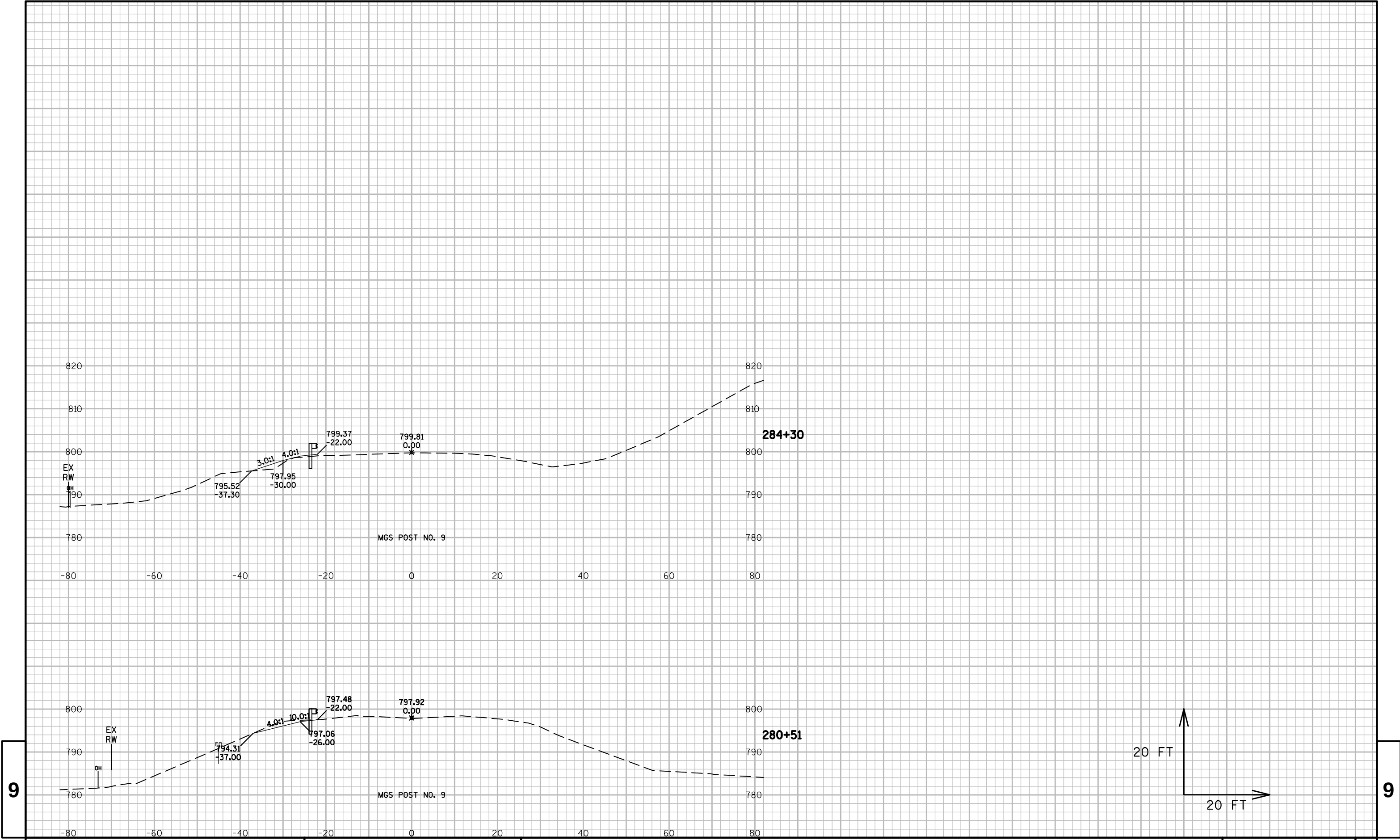
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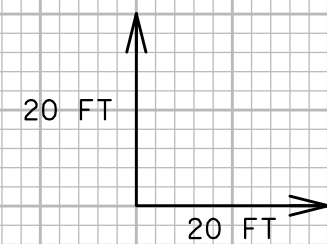
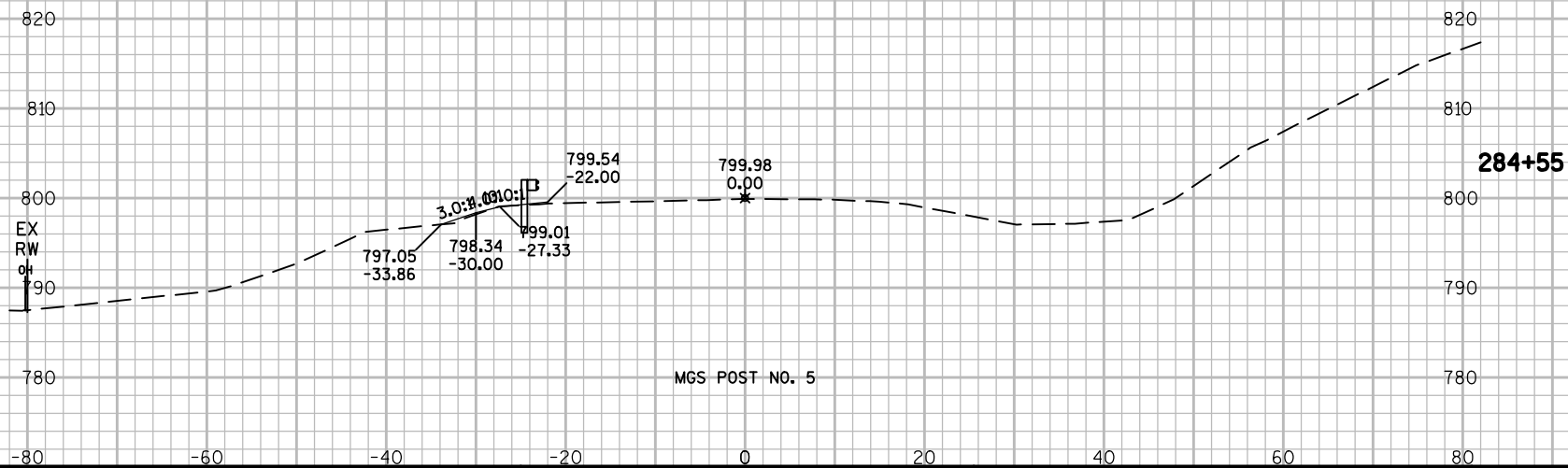
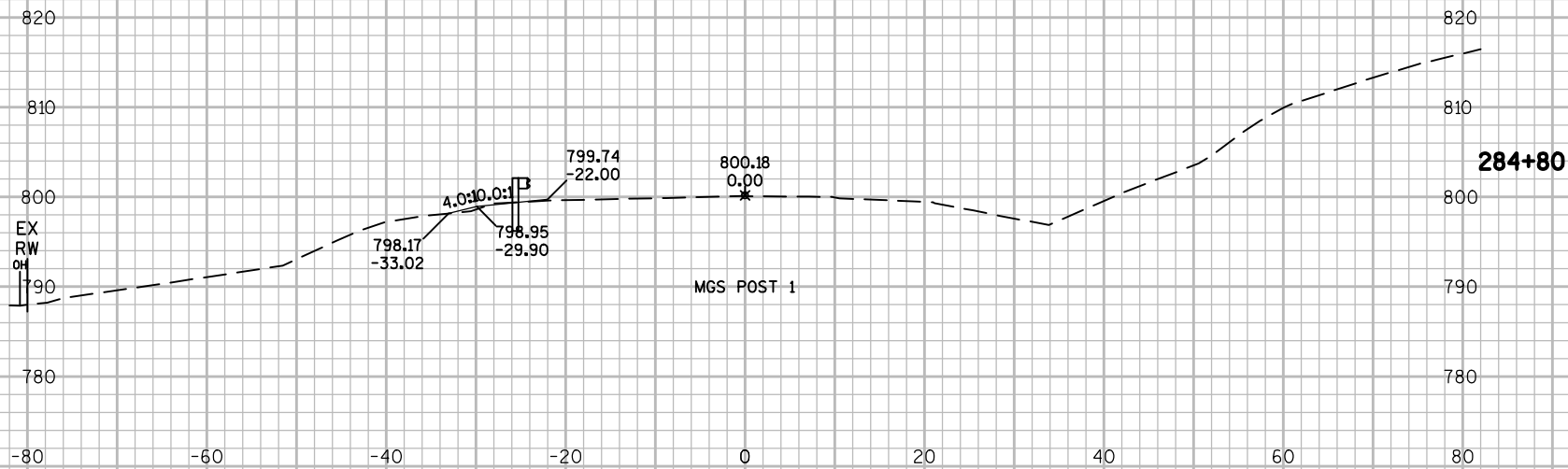


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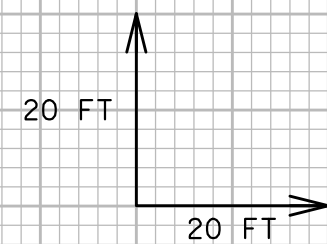
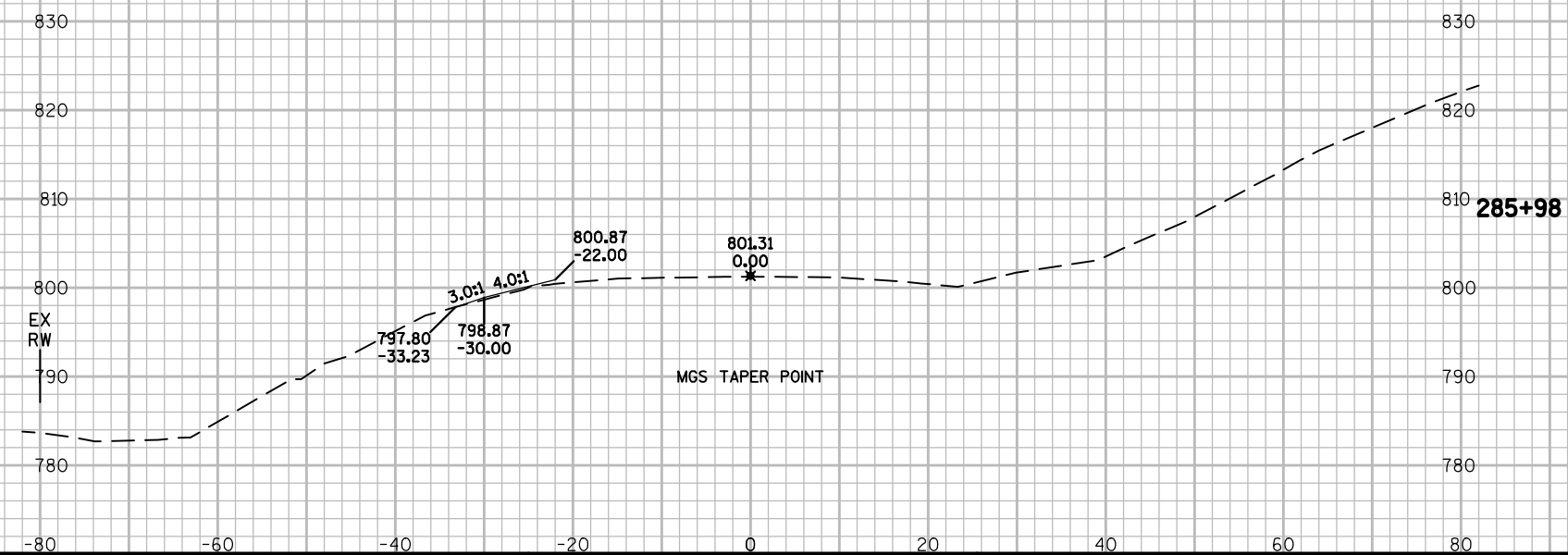
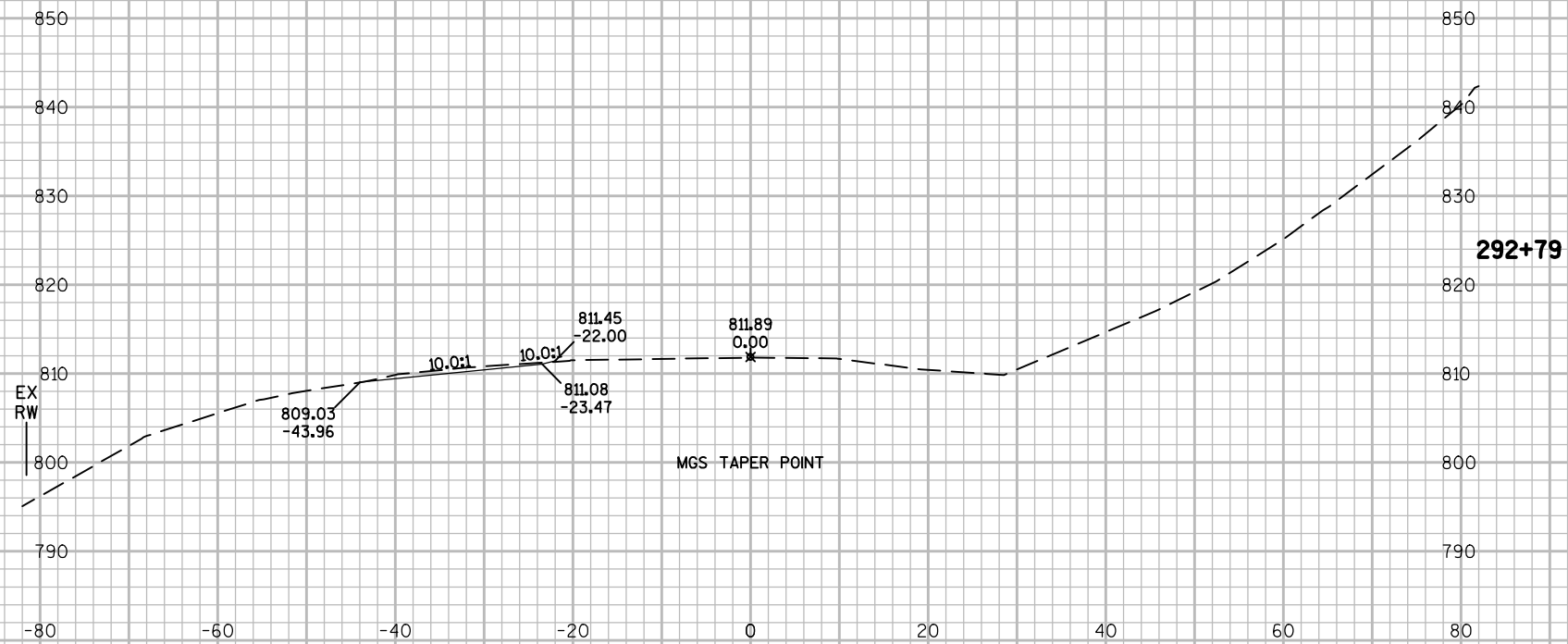
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PROJECT NO:1640-01-60

HWY: USH 14

COUNTY: VERNON

CROSS SECTIONS: USH 14

SHEET 206

E

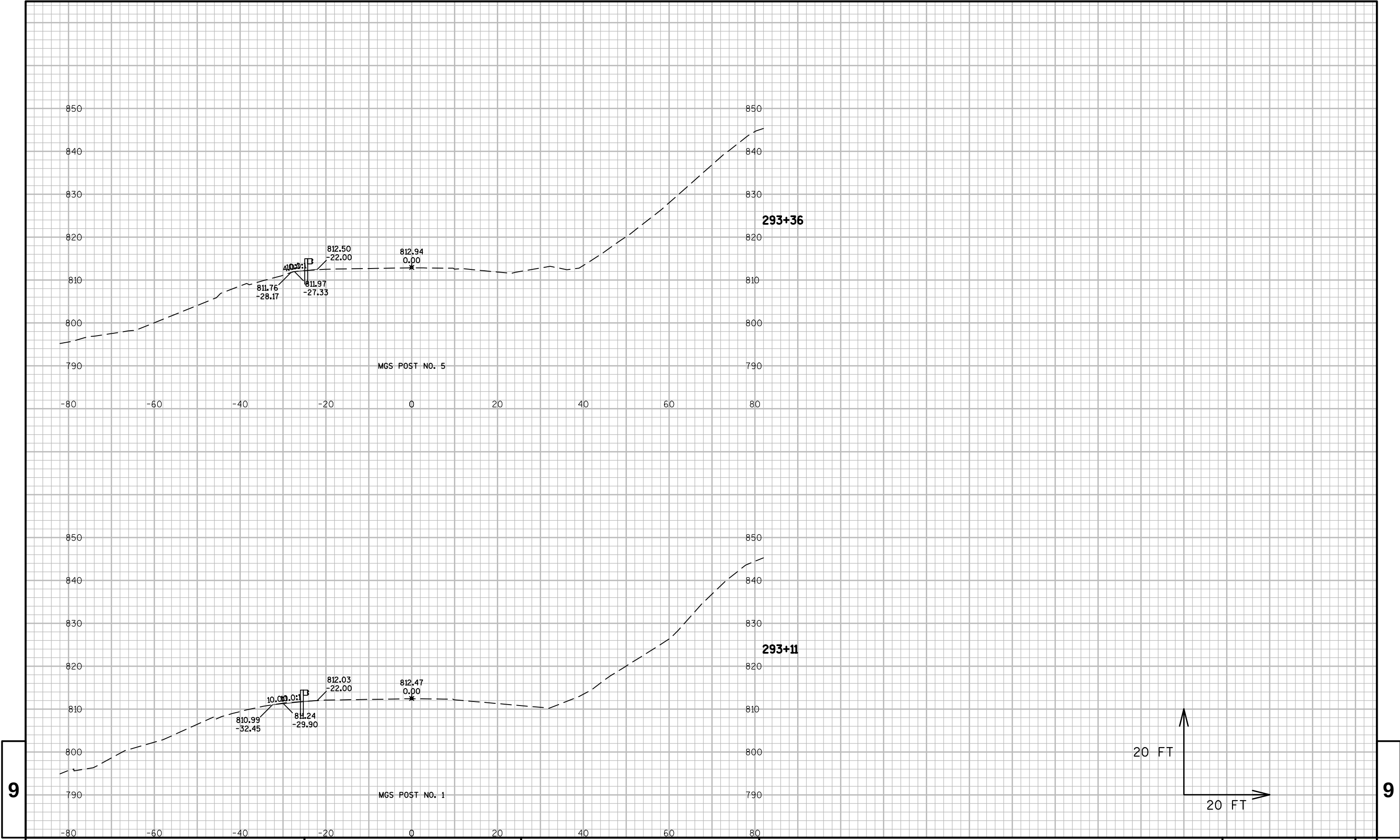
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PLOT DATE : 10/31/2016 7:36 AM

PLOT BY : PHILLIPS, ANDREW J PLOT NAME :

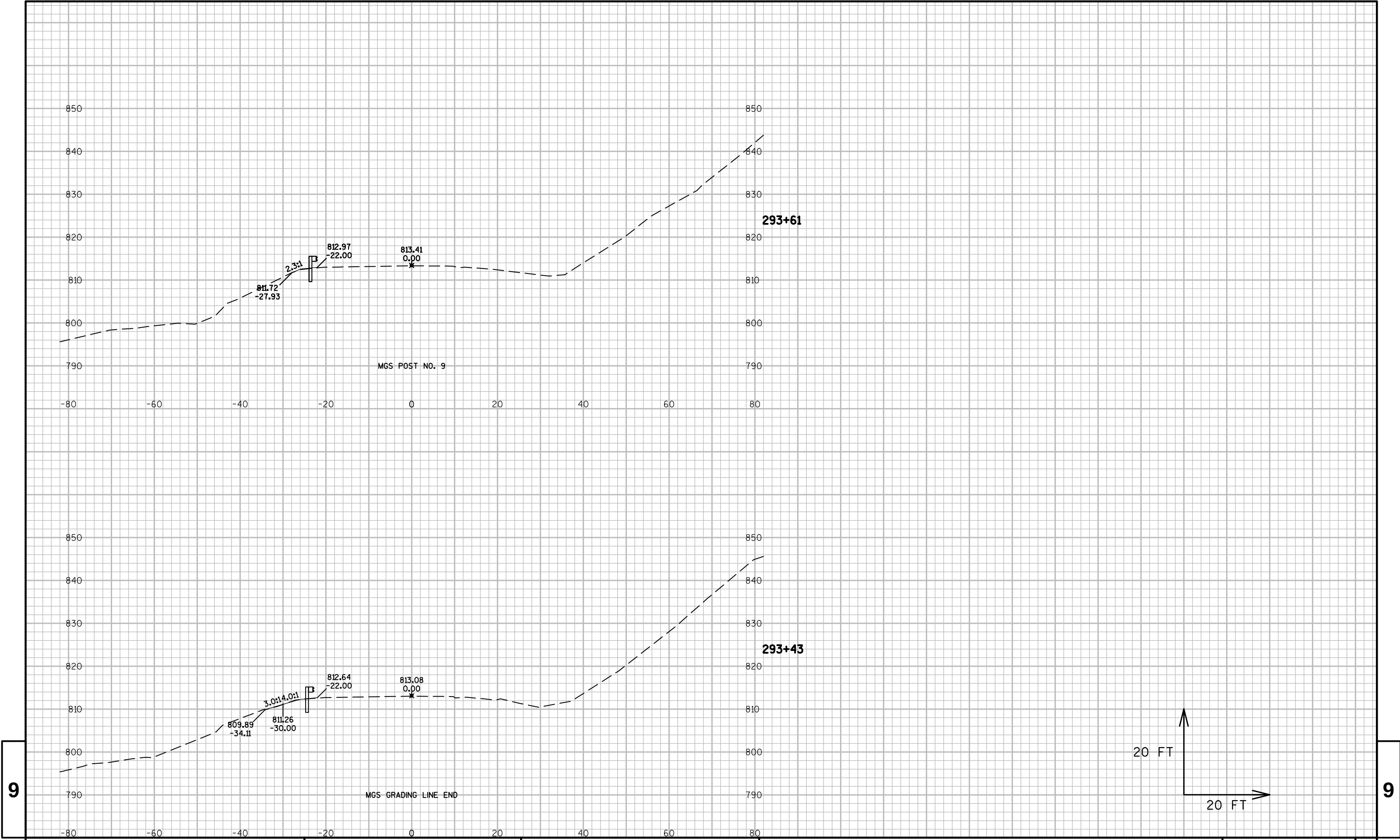
PLOT SCALE : 1 IN:20 FT

WISDOT/CADDs SHEET 49



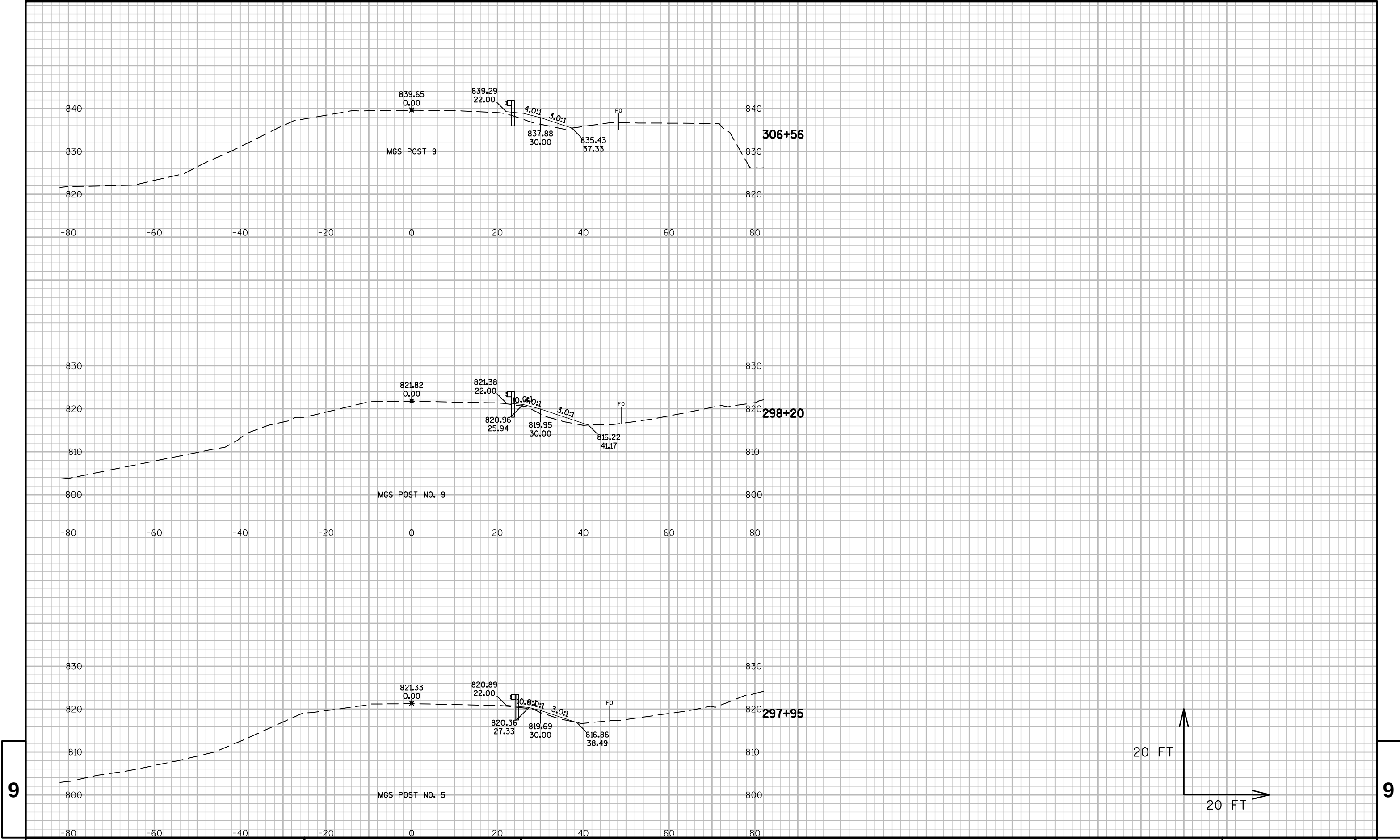
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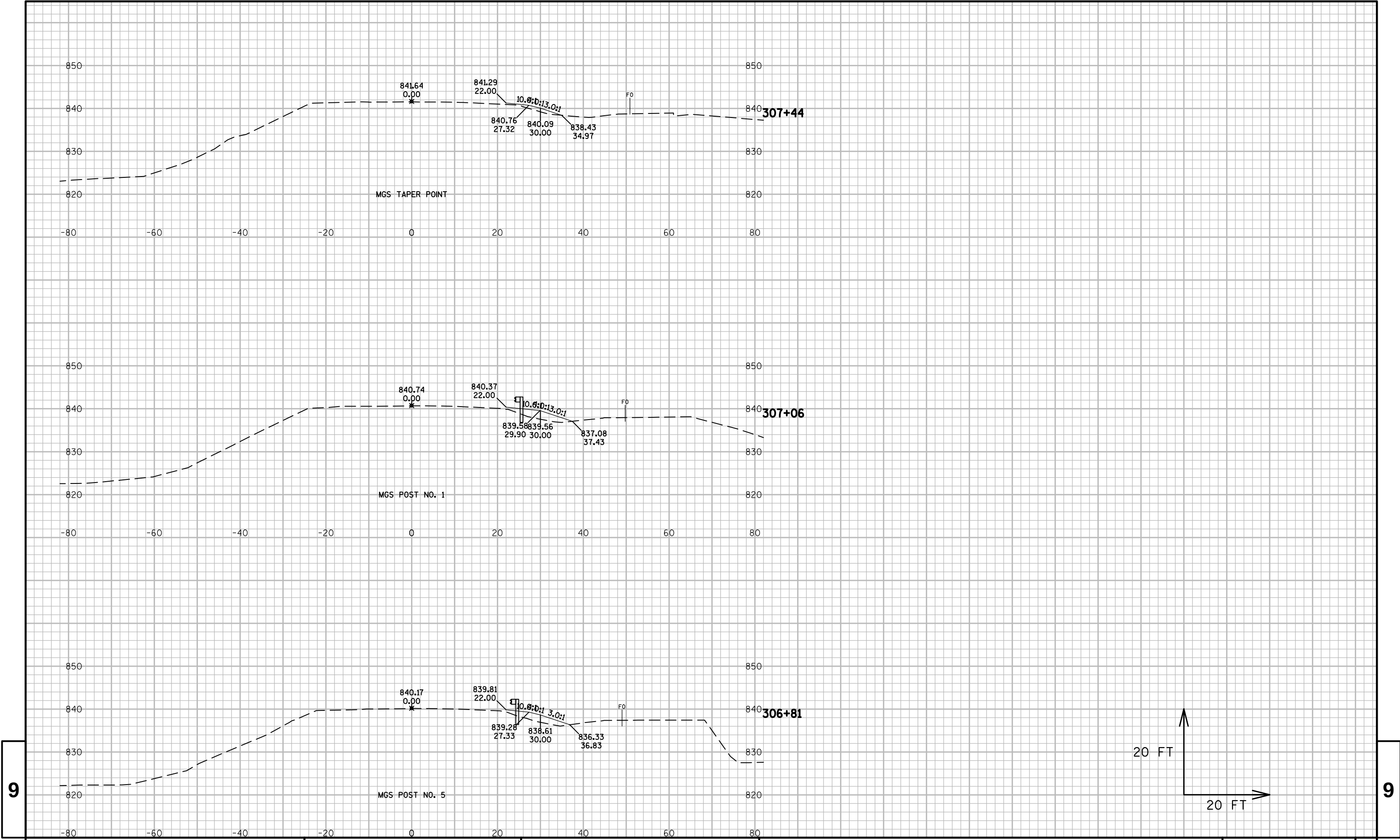
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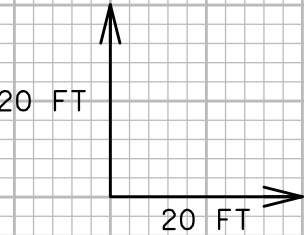
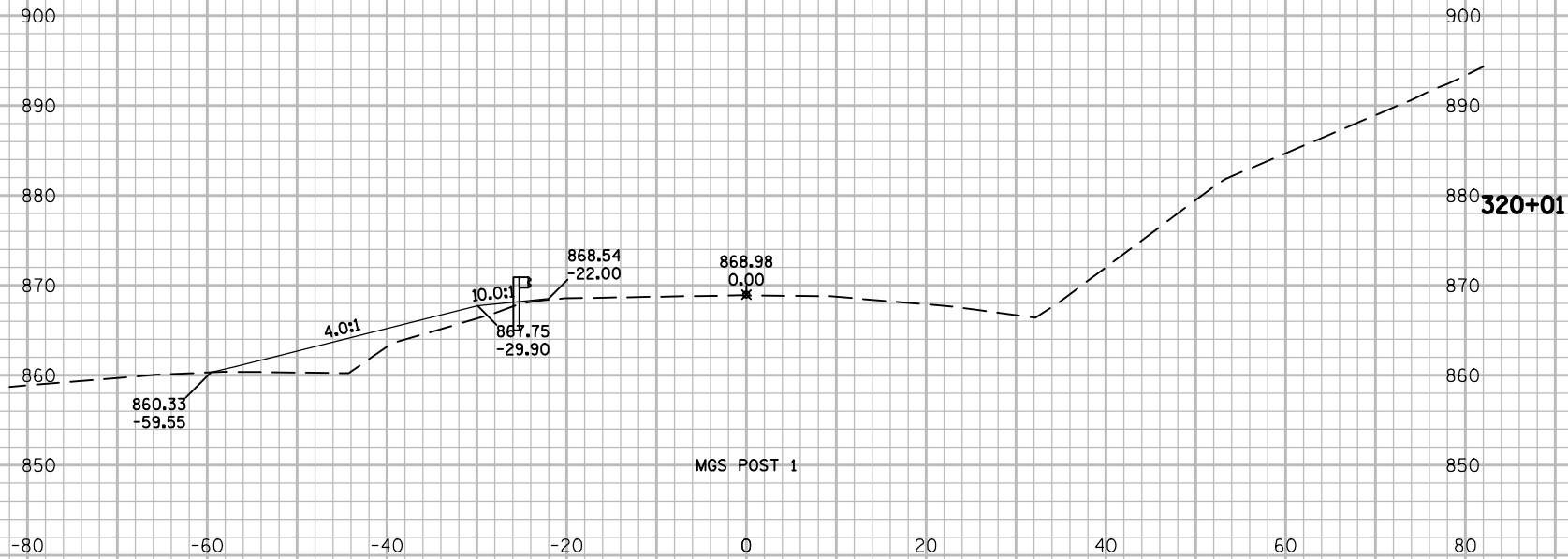
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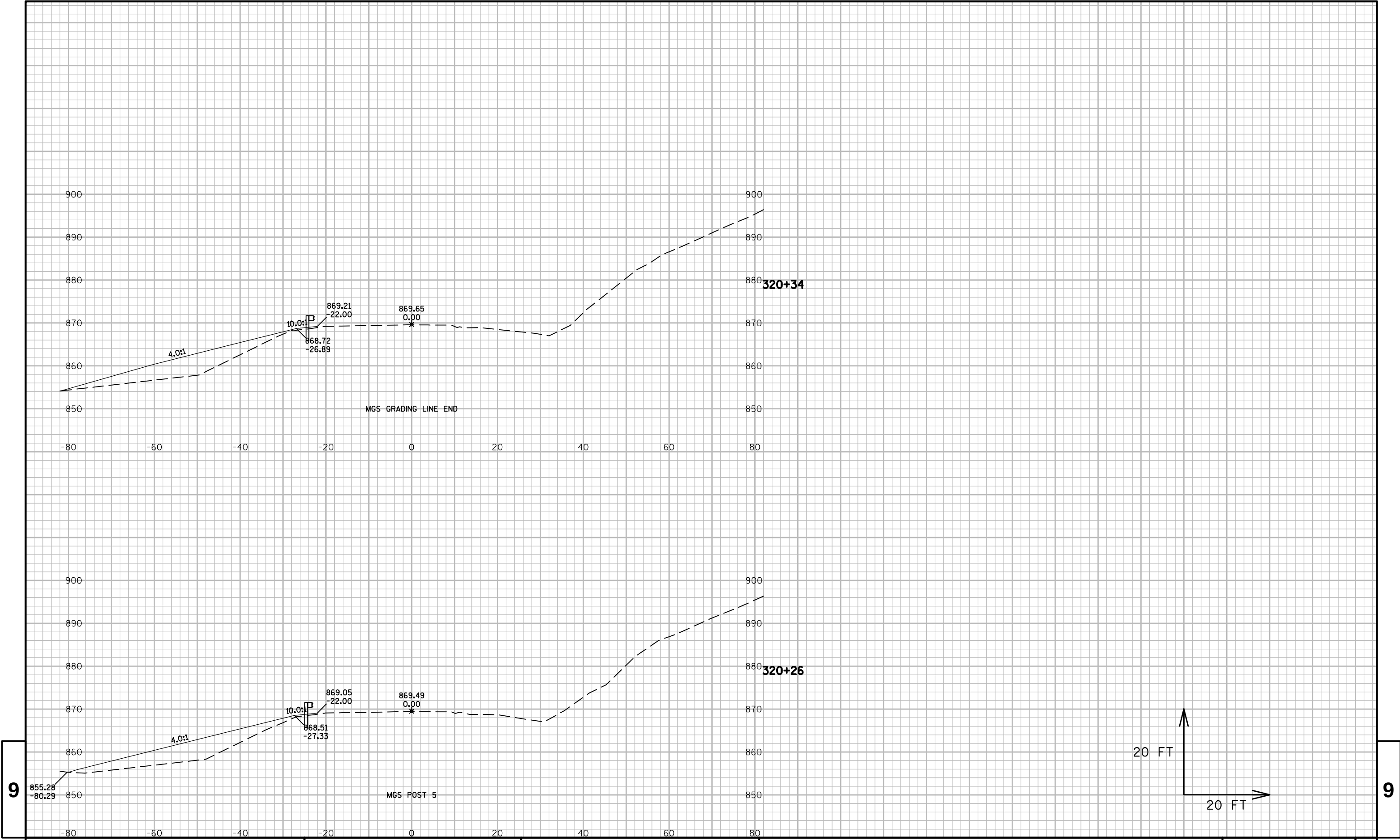


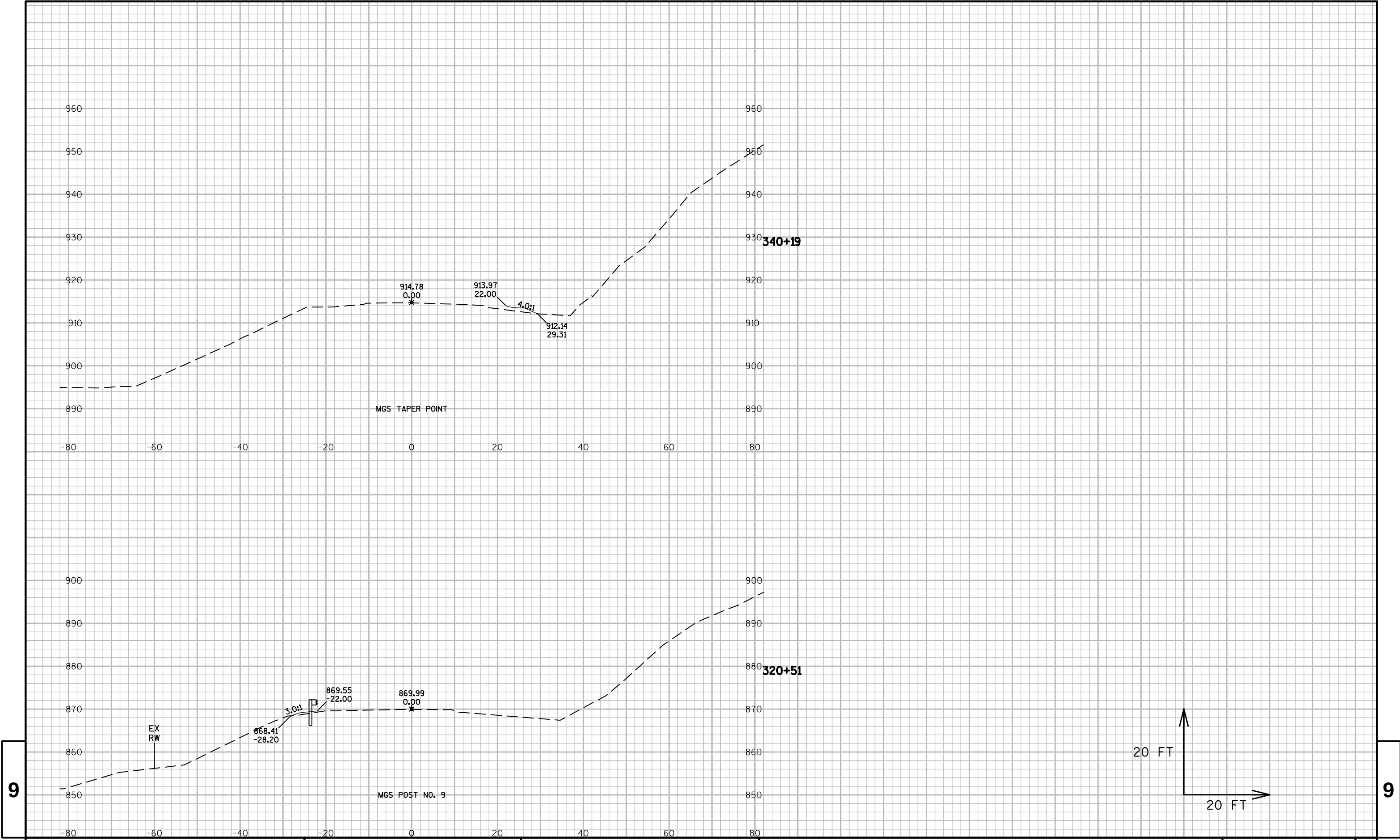


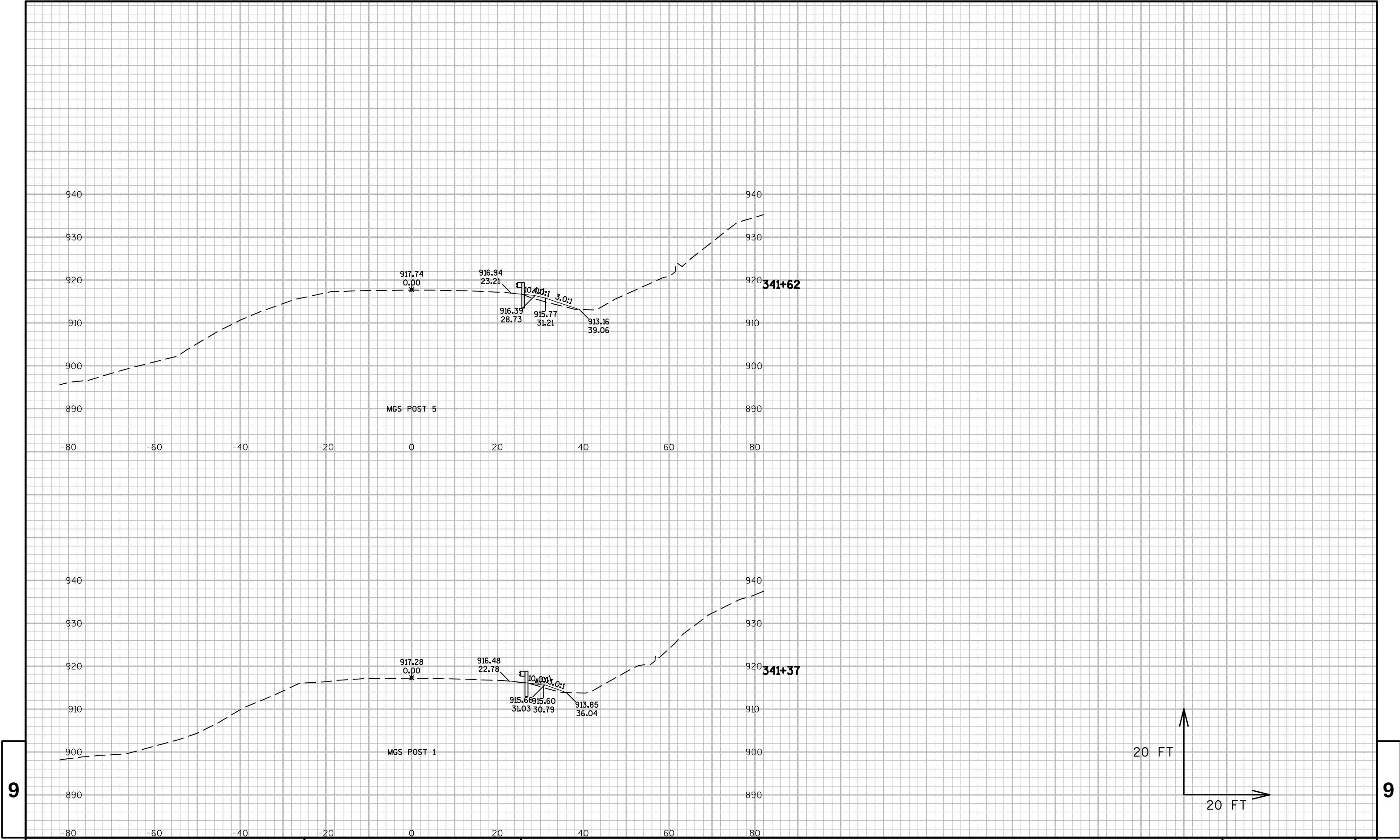
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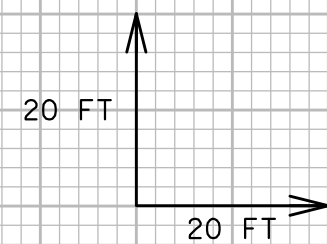
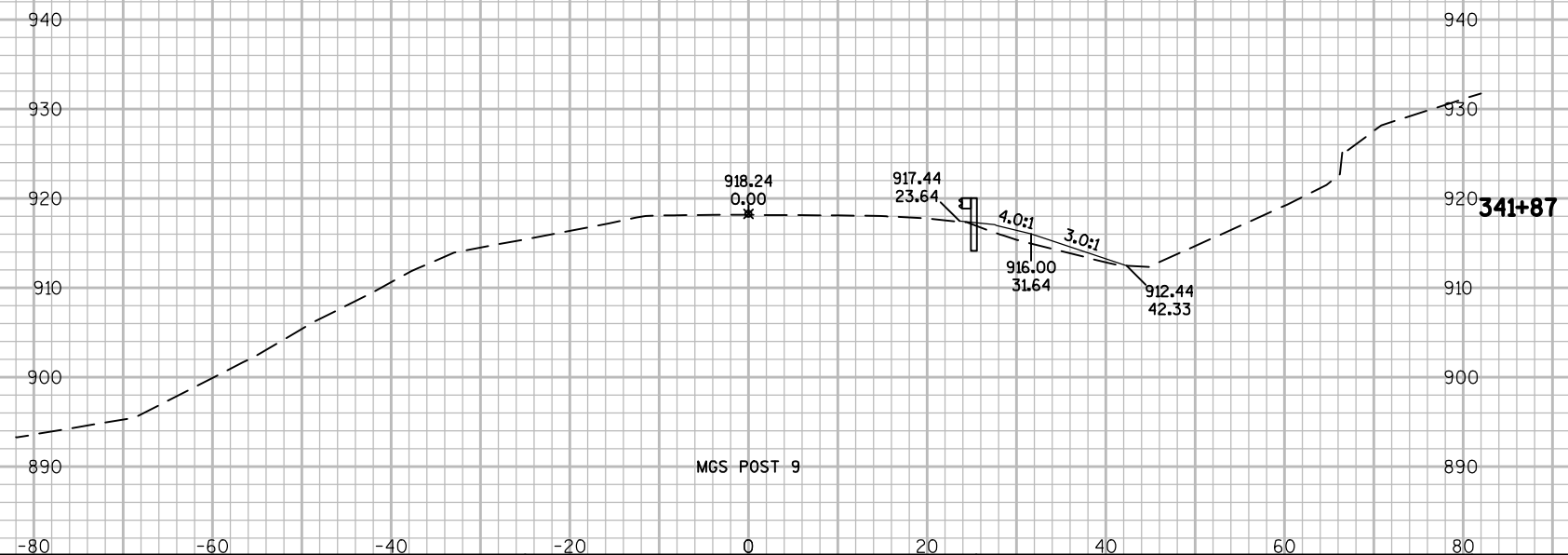
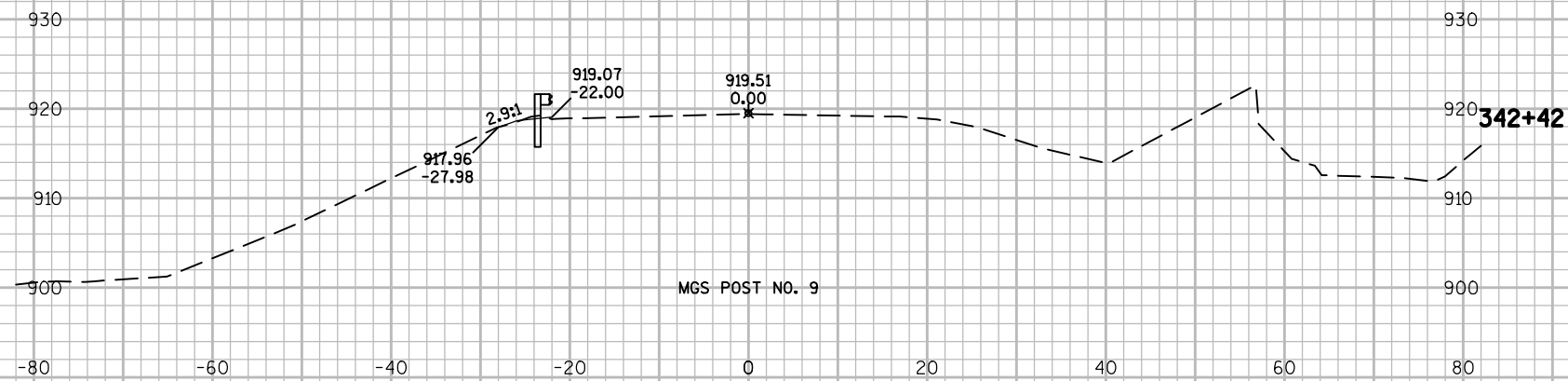
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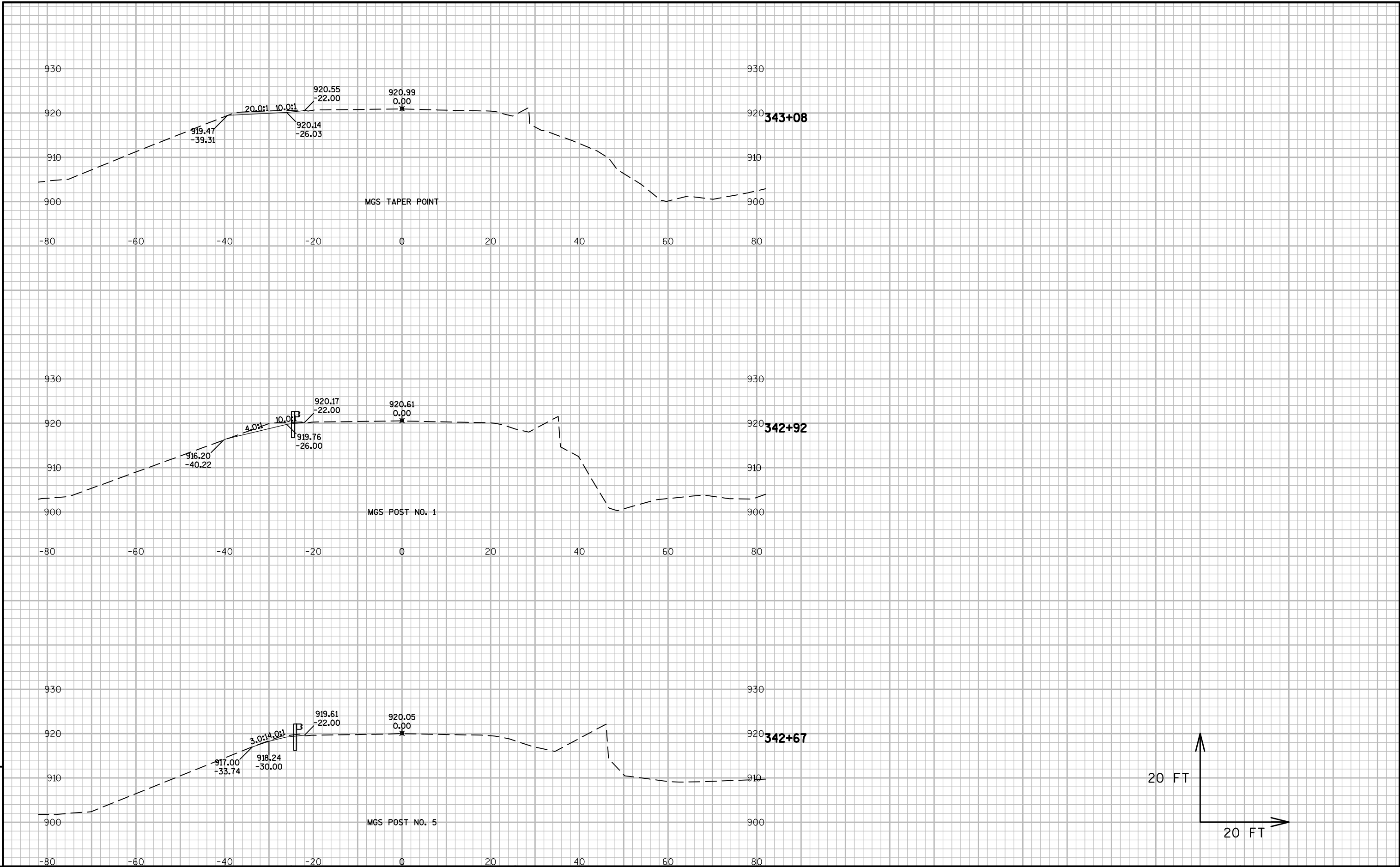




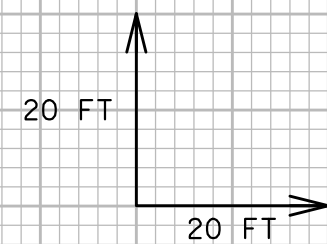
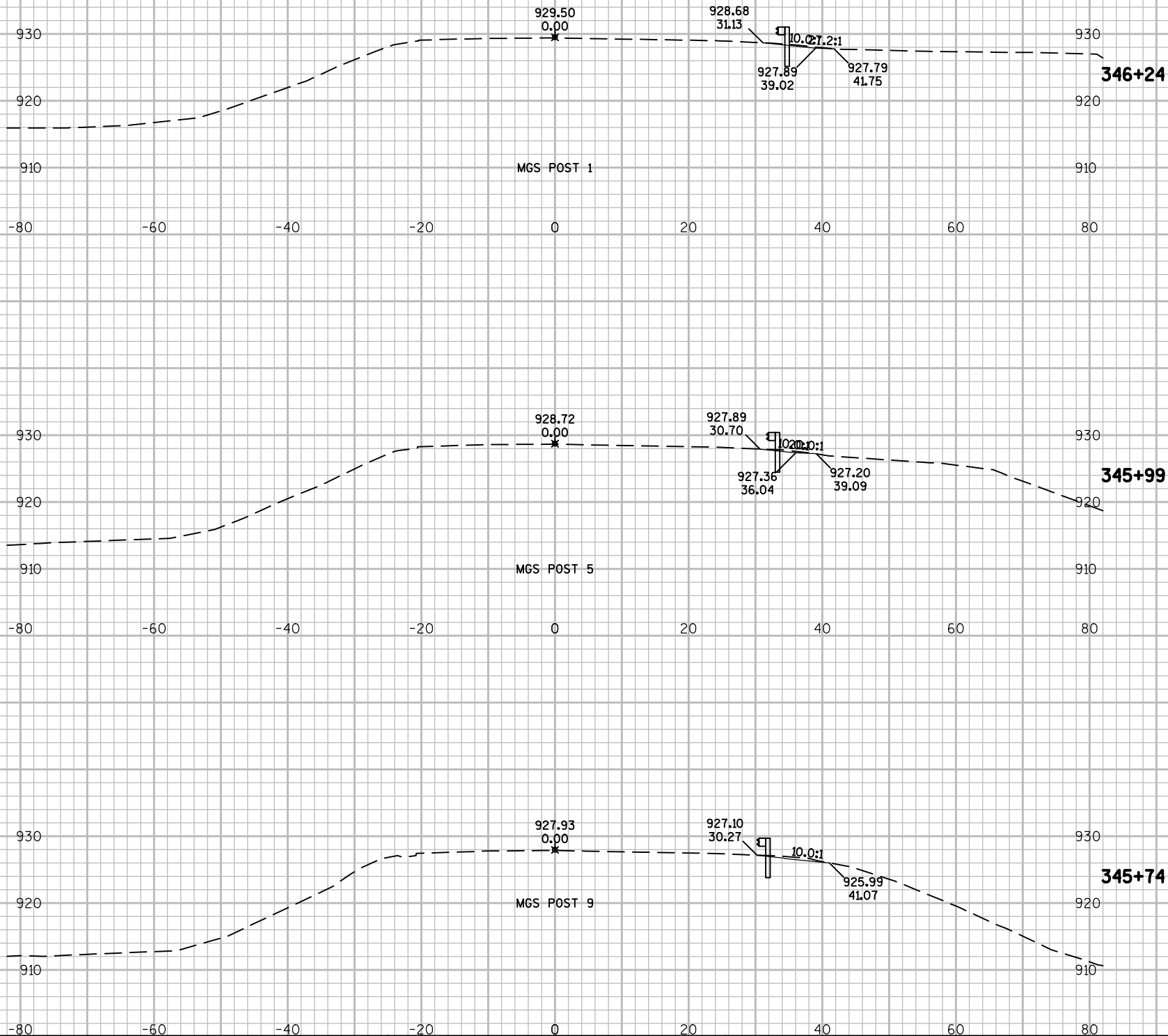
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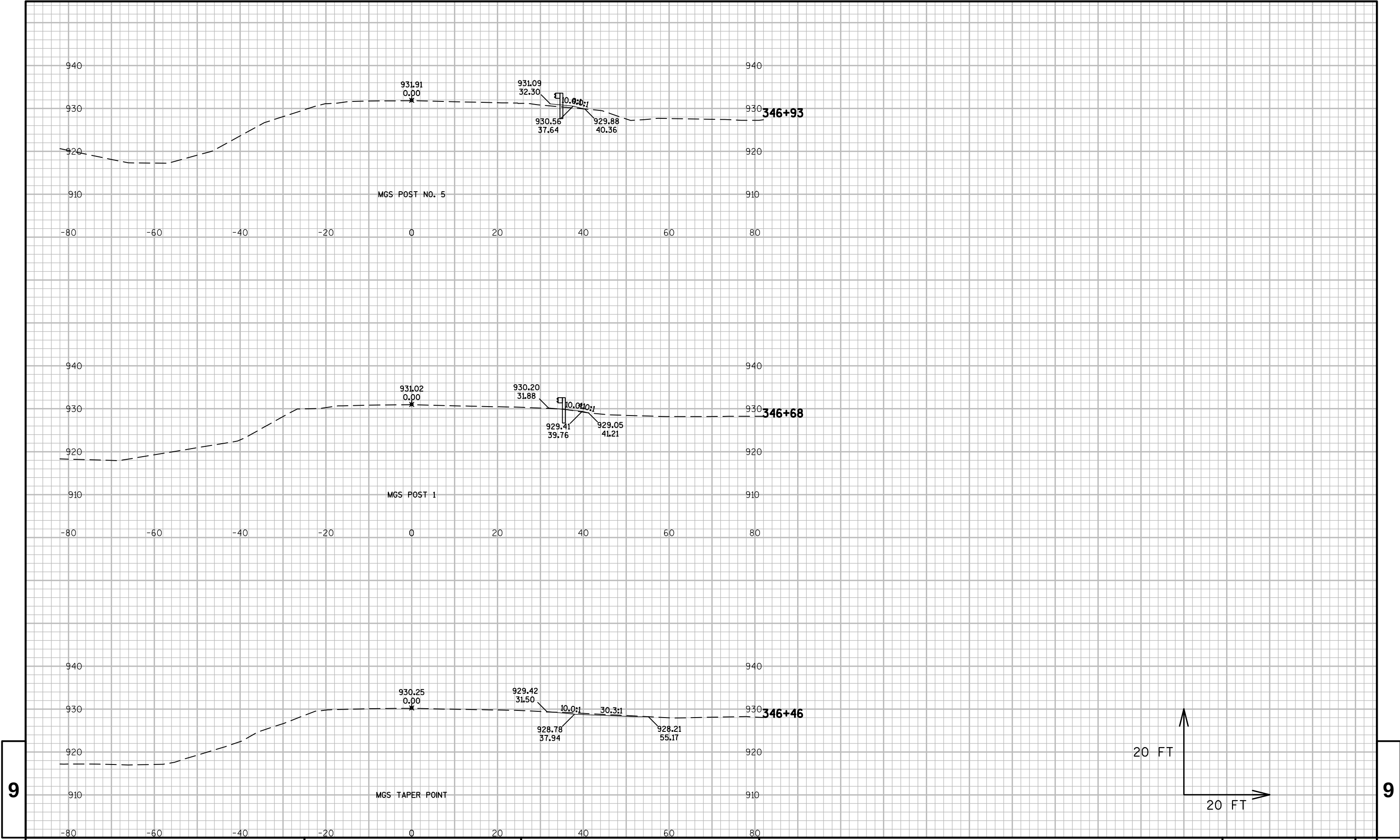
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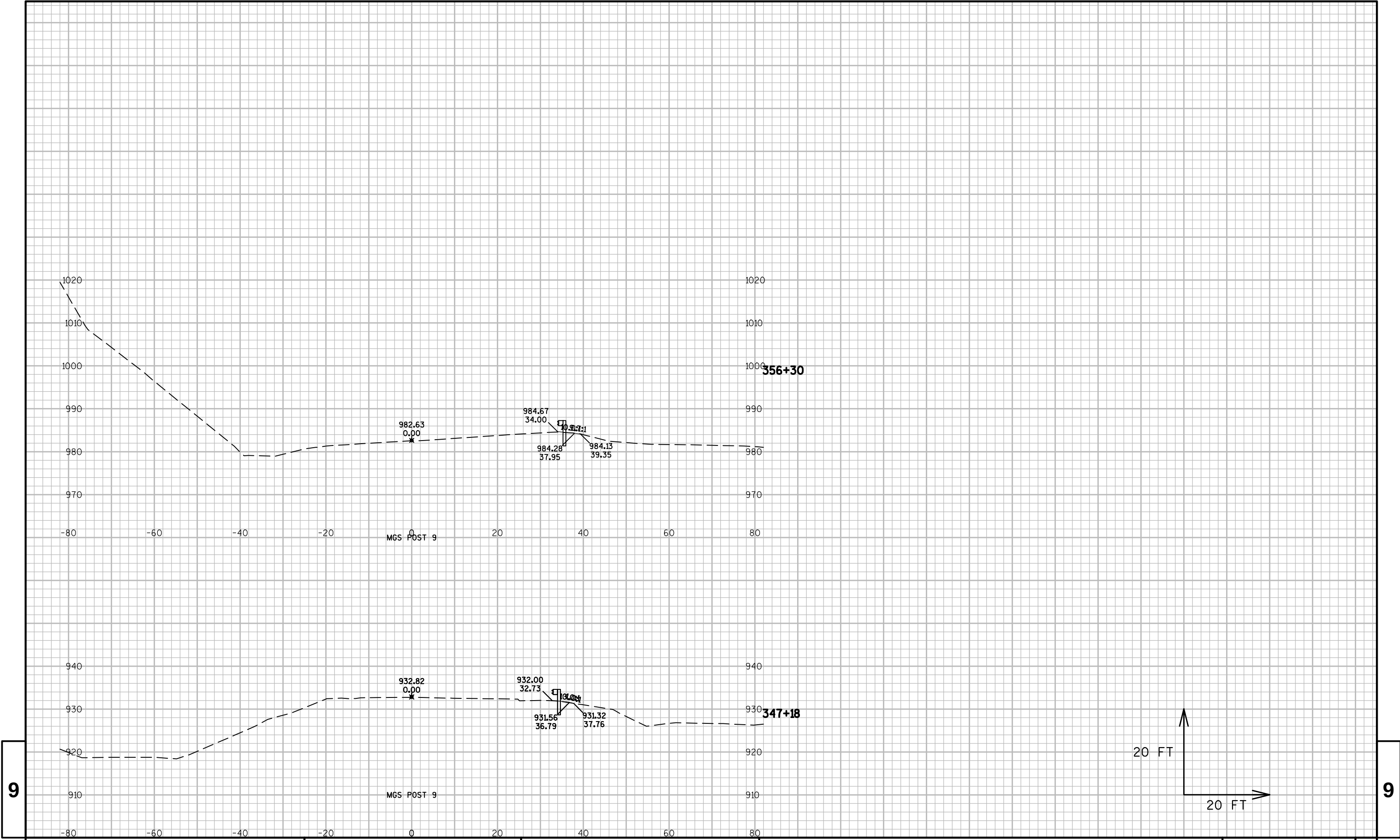


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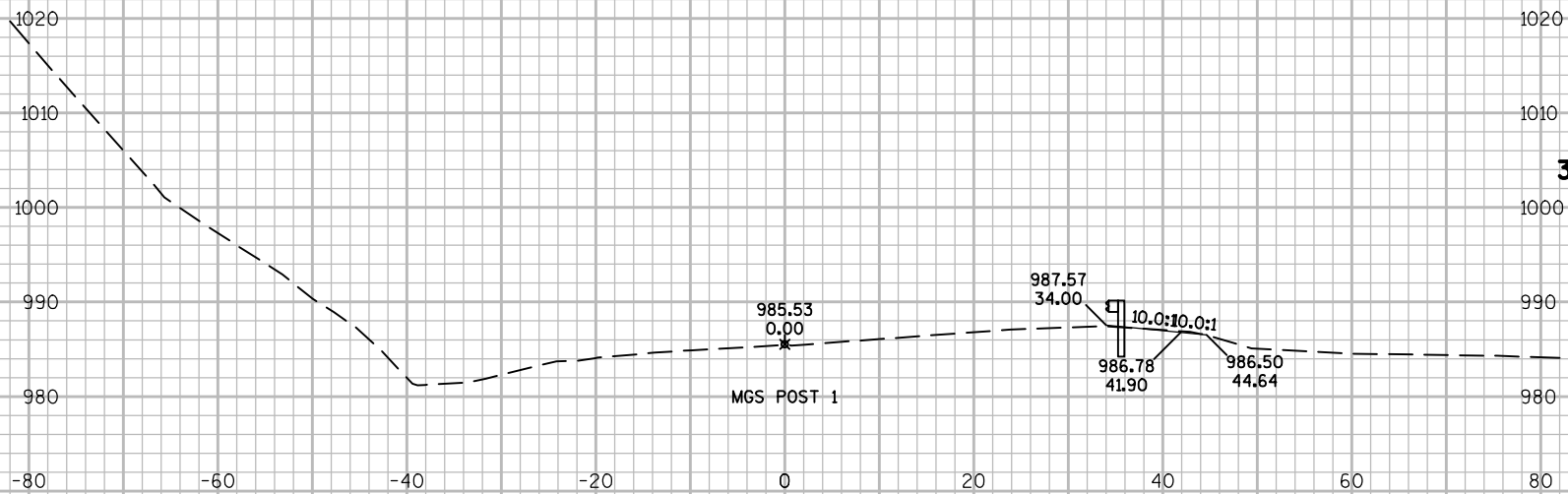
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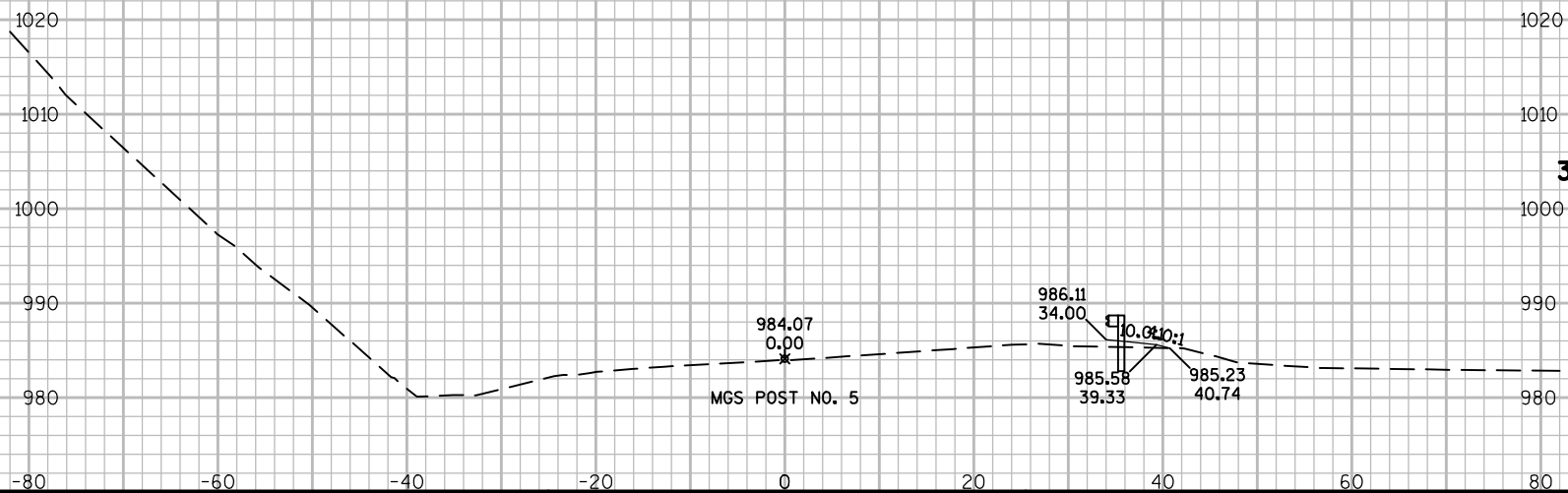
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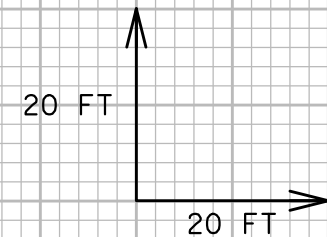
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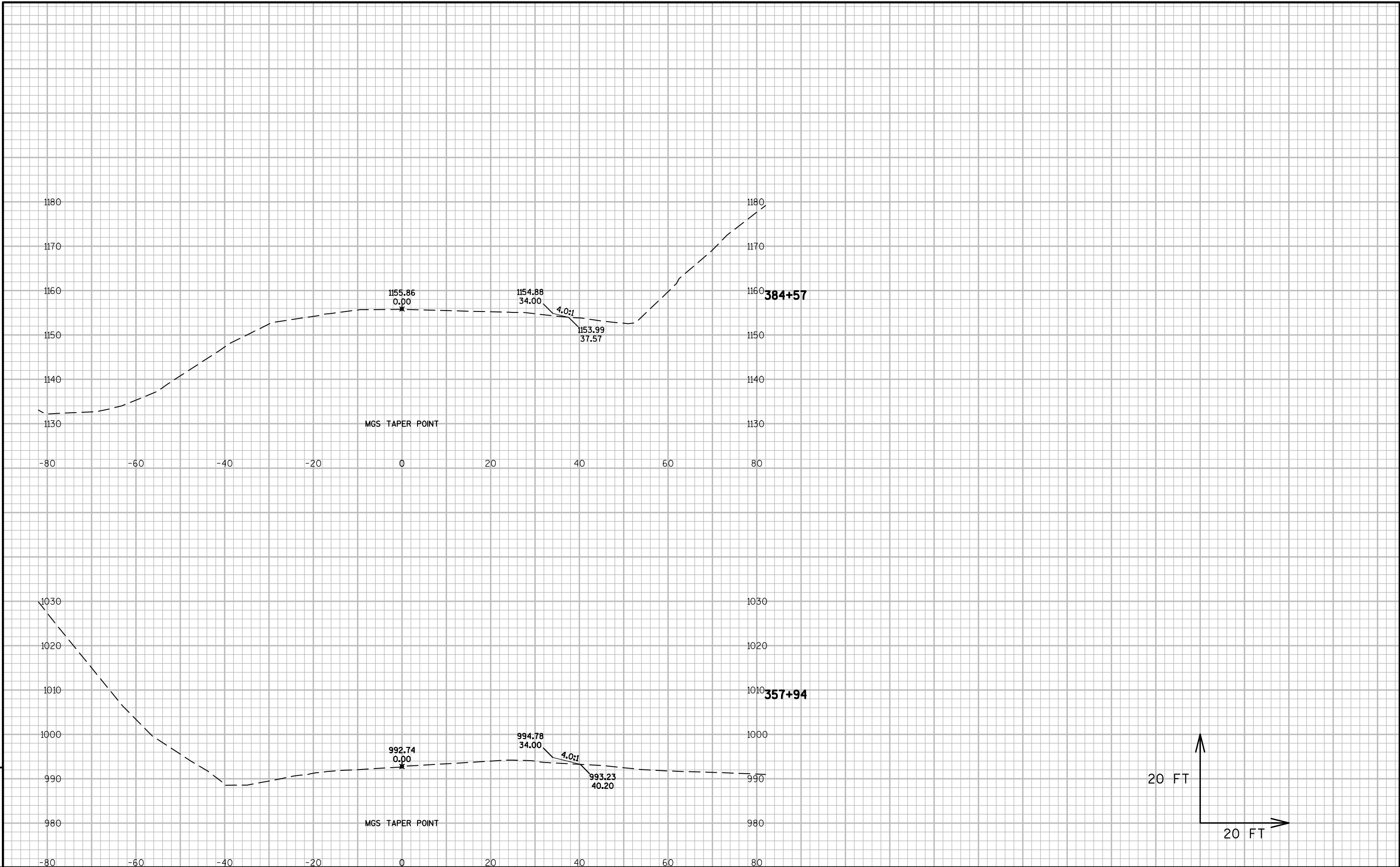


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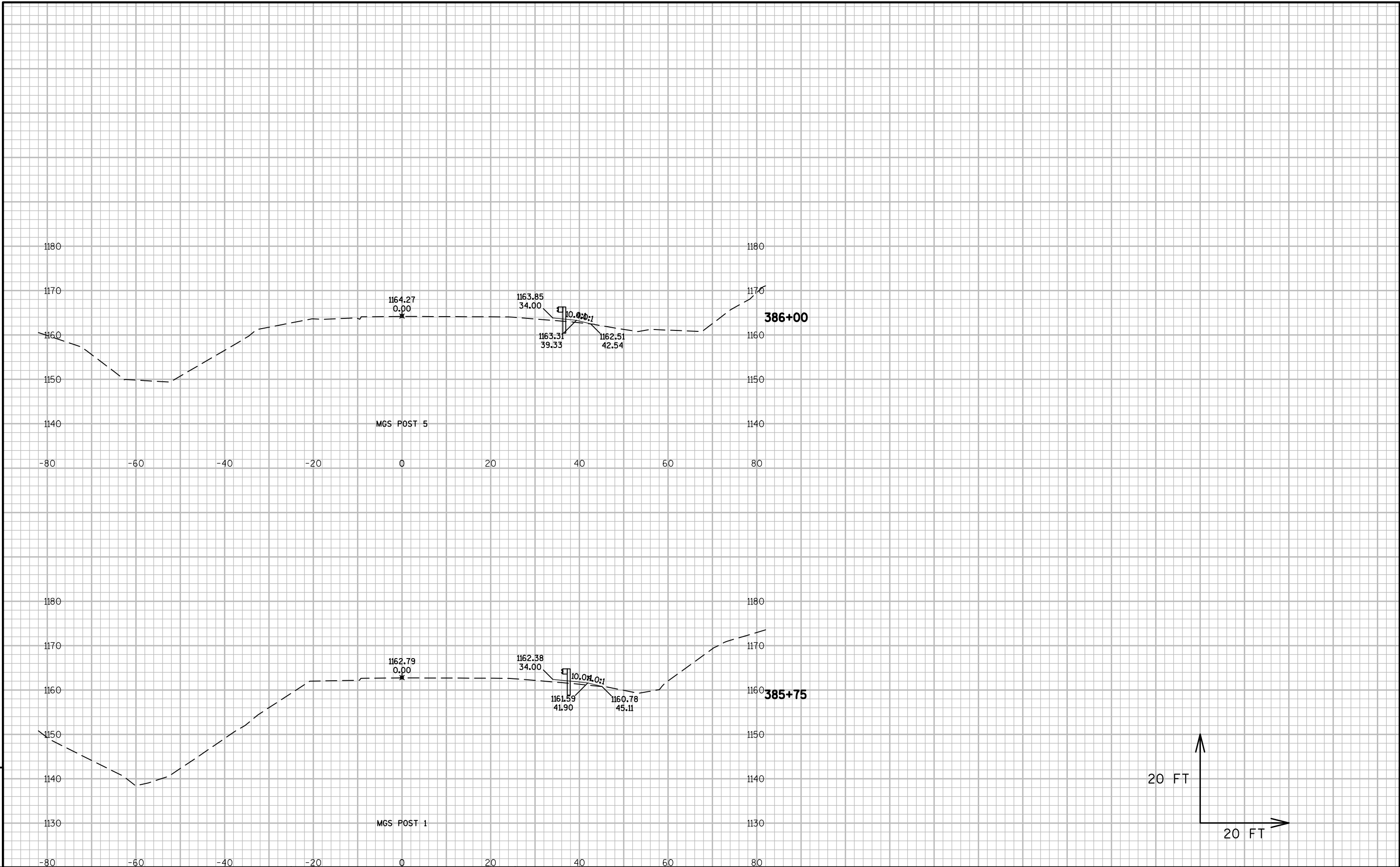
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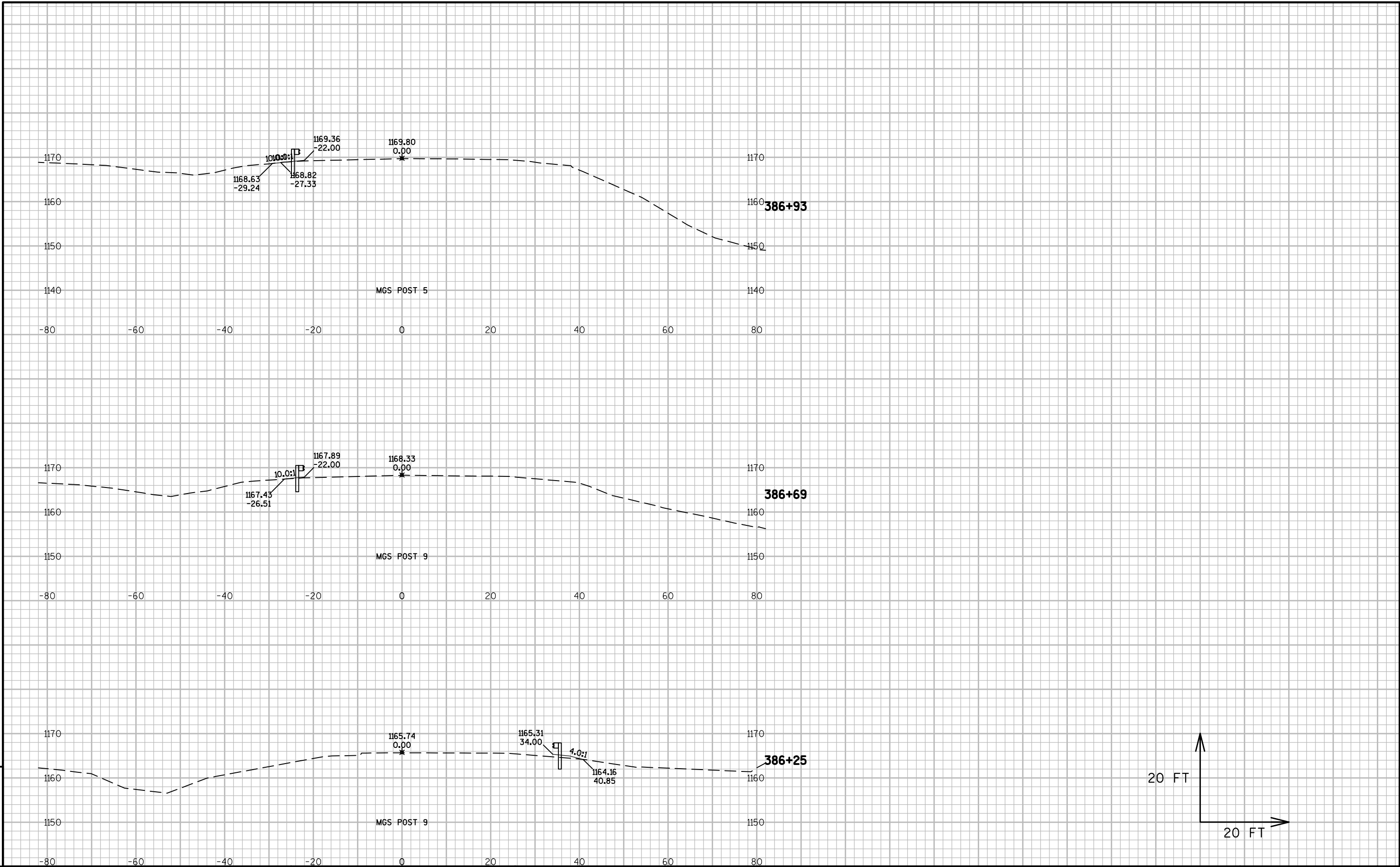
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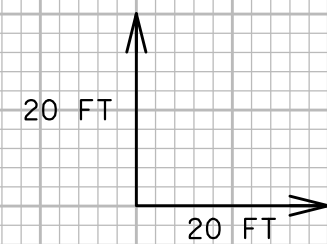
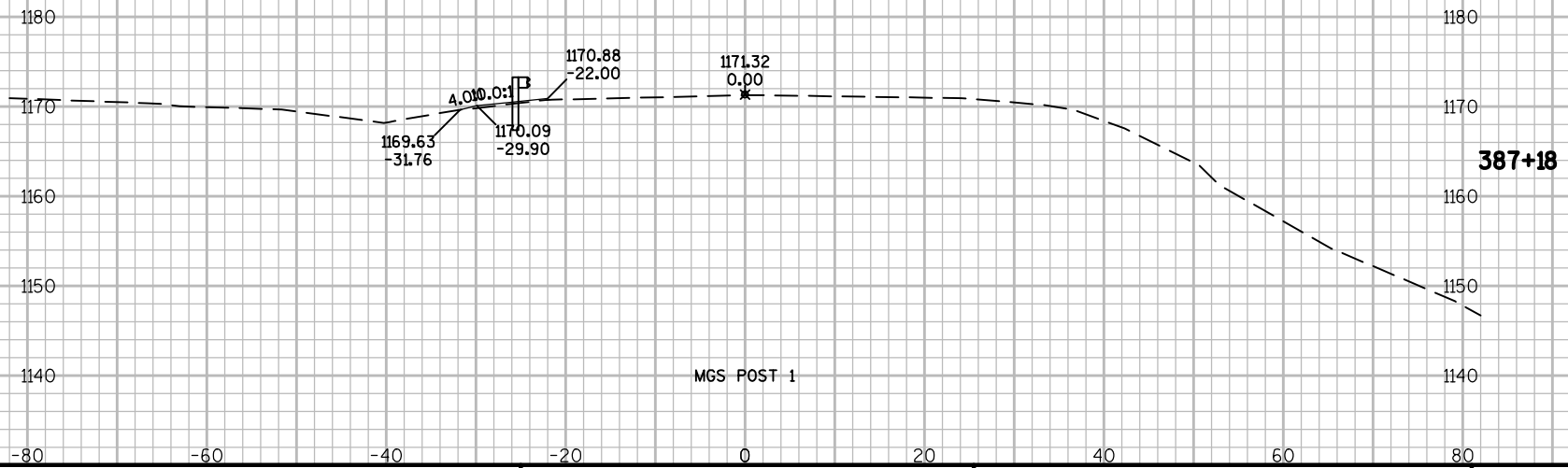
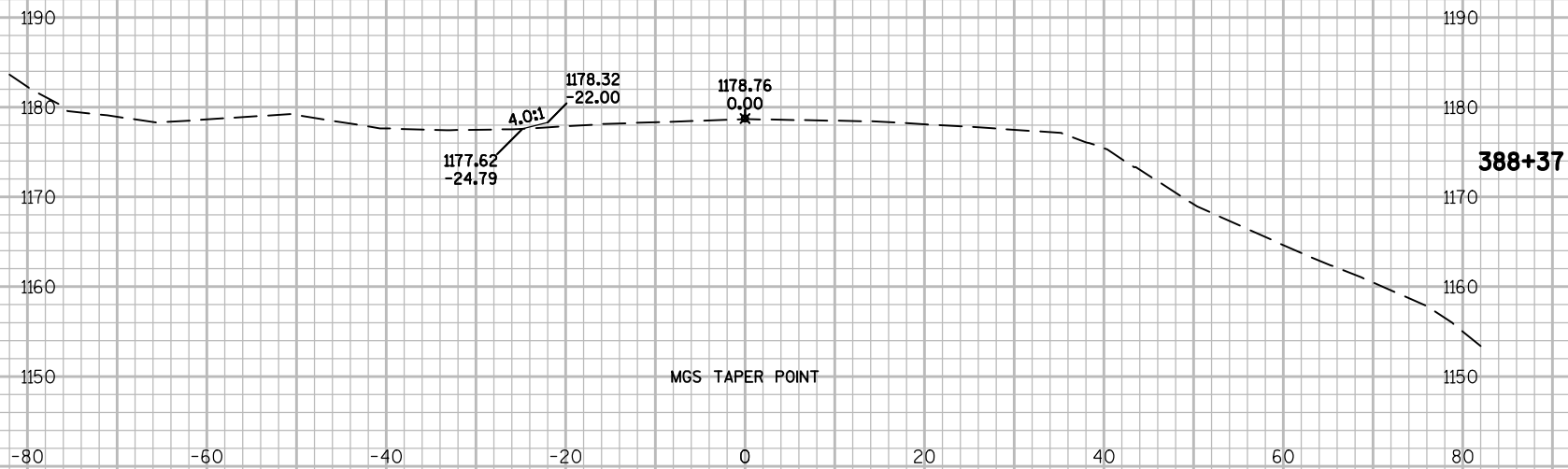
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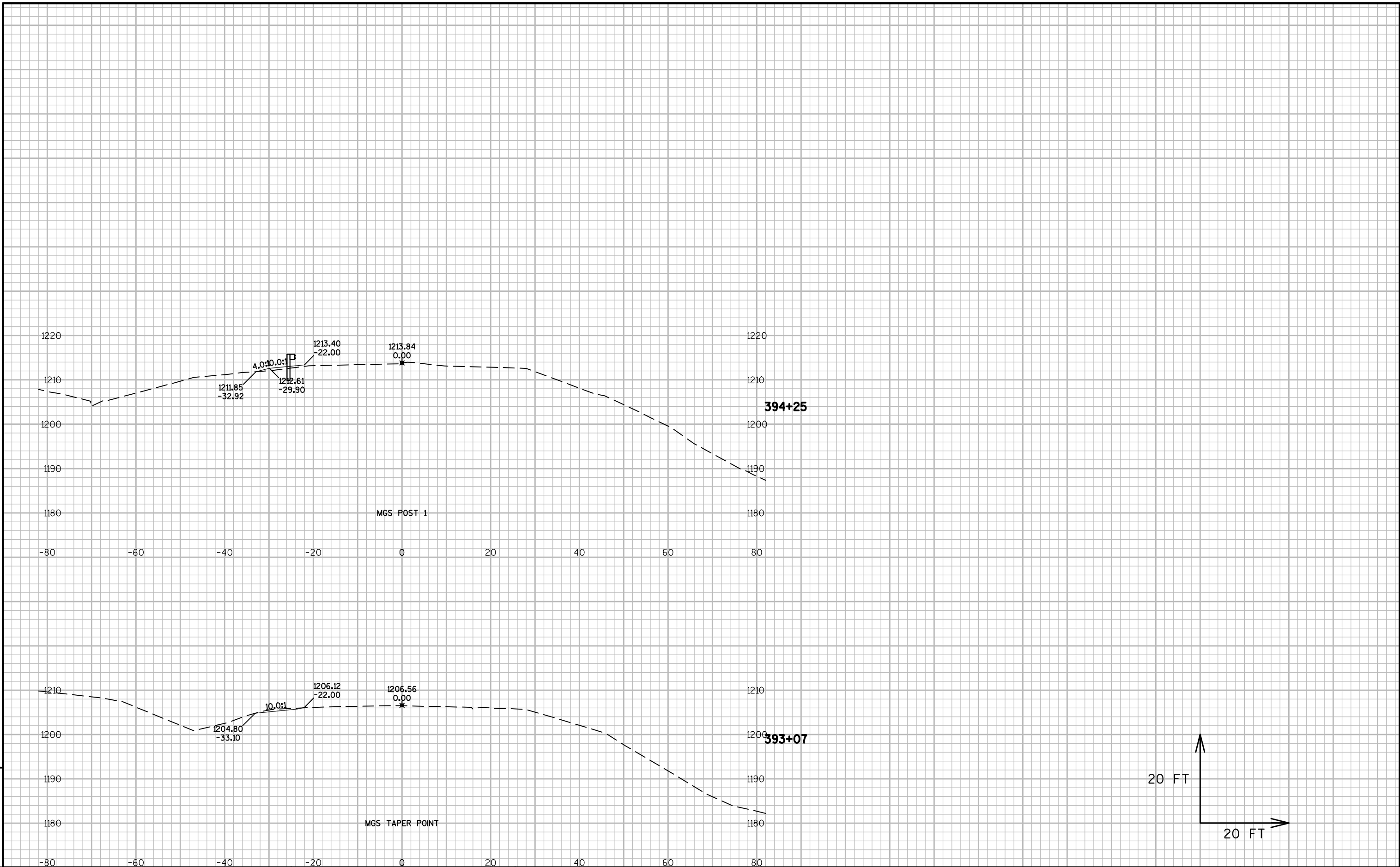
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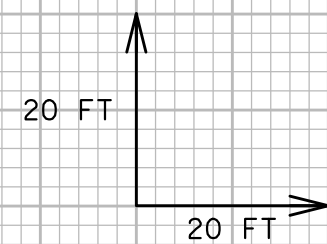
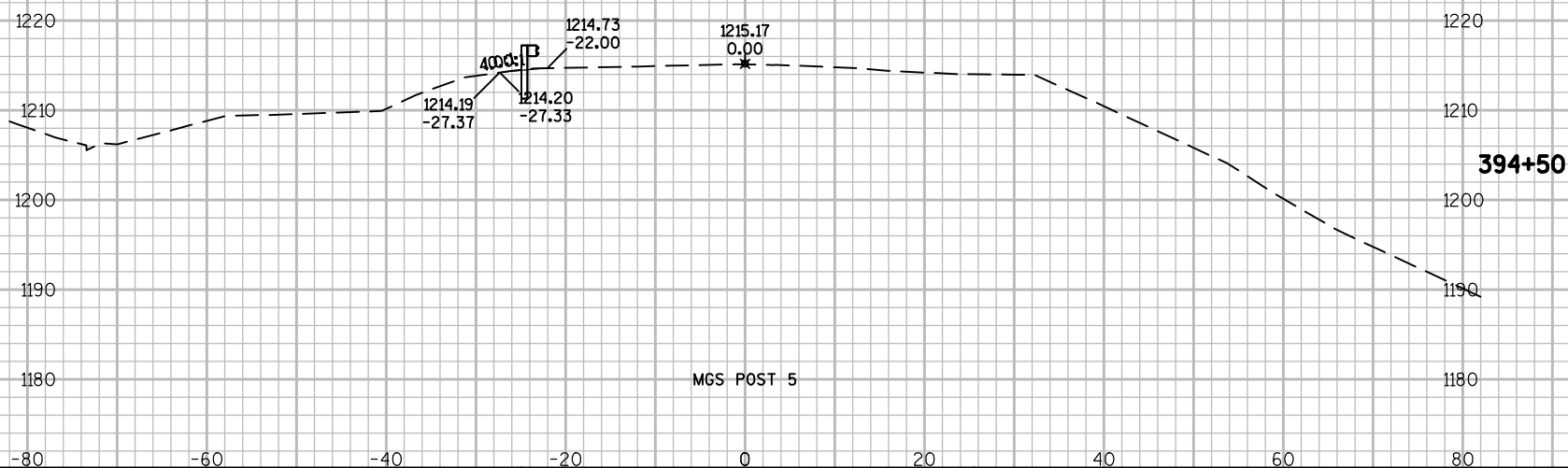
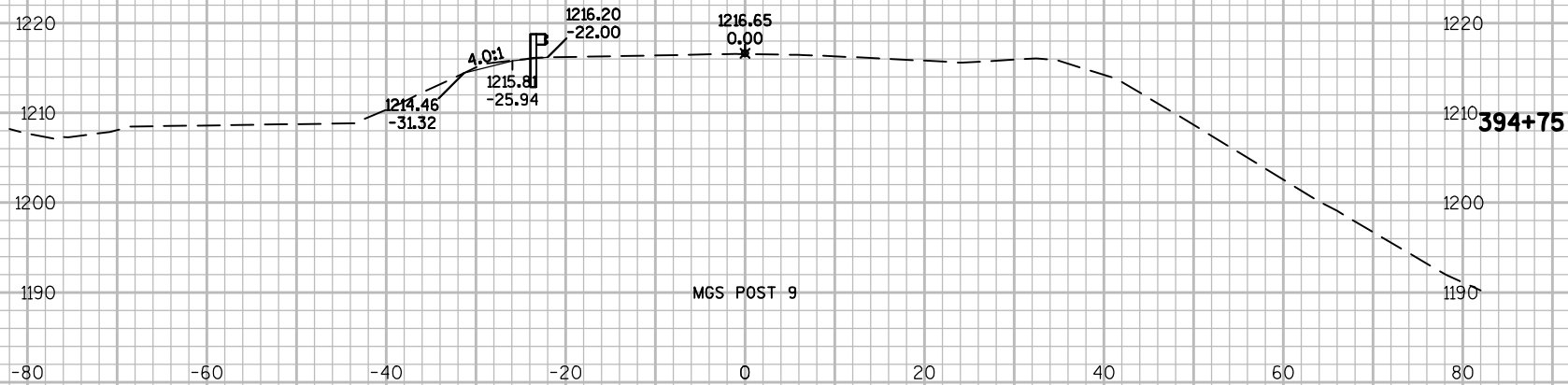
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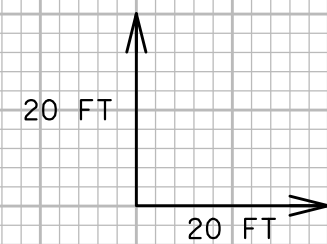
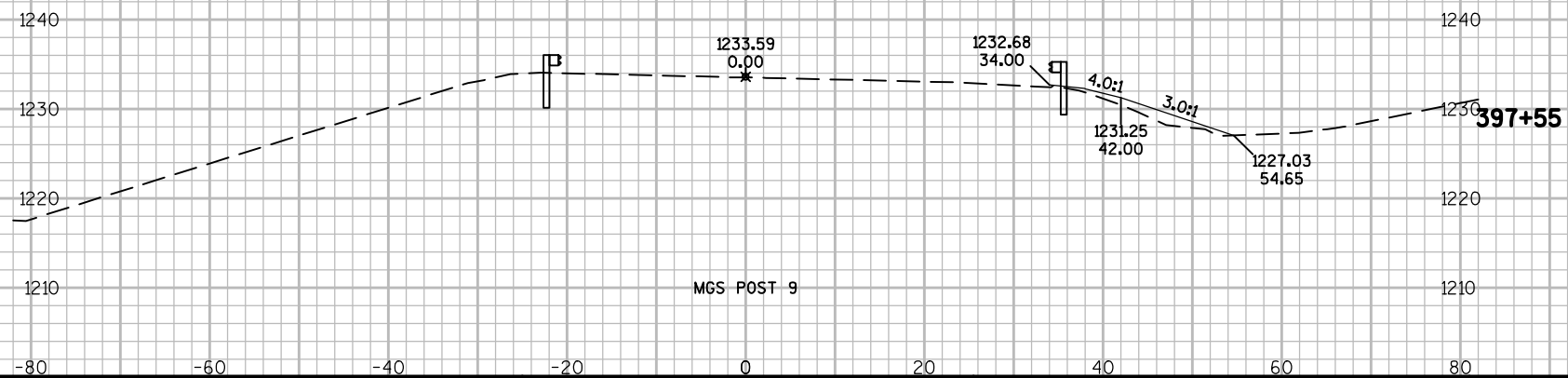
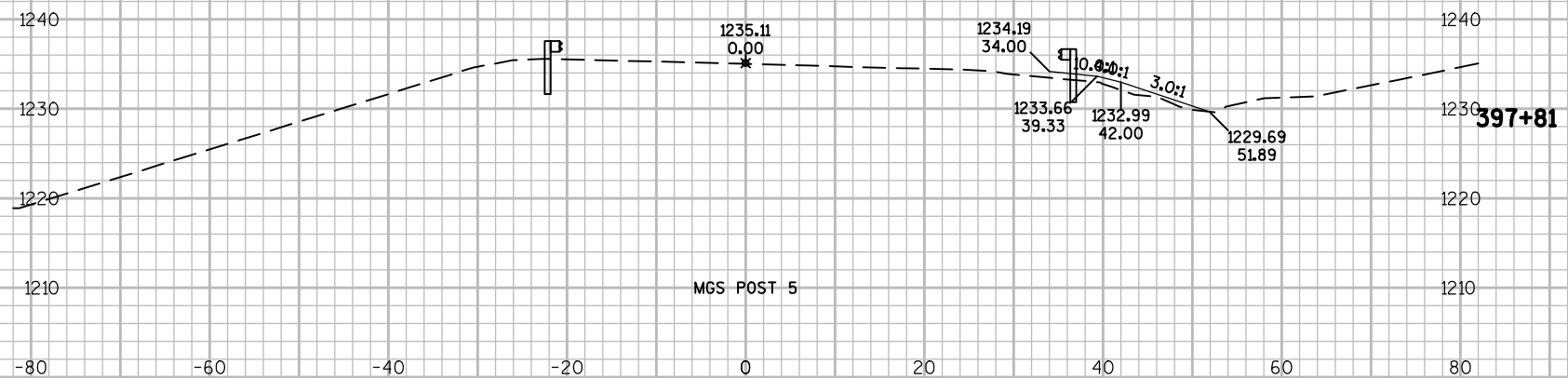
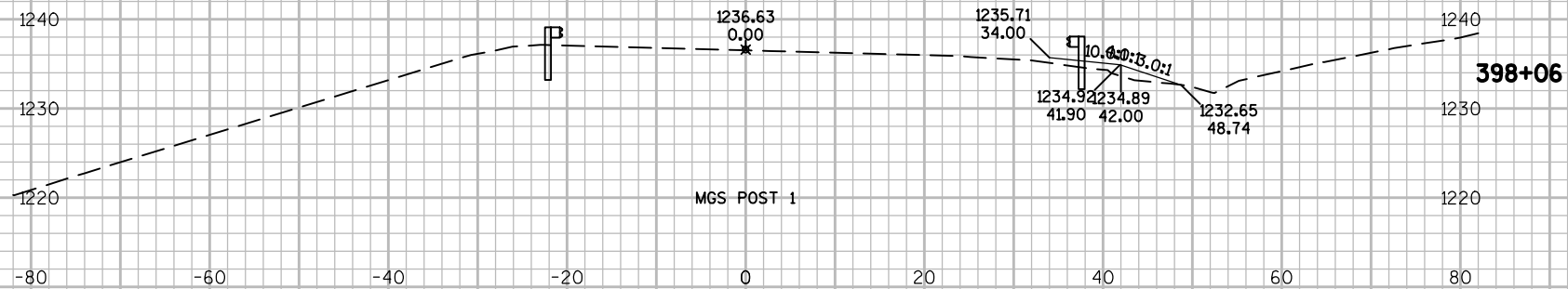


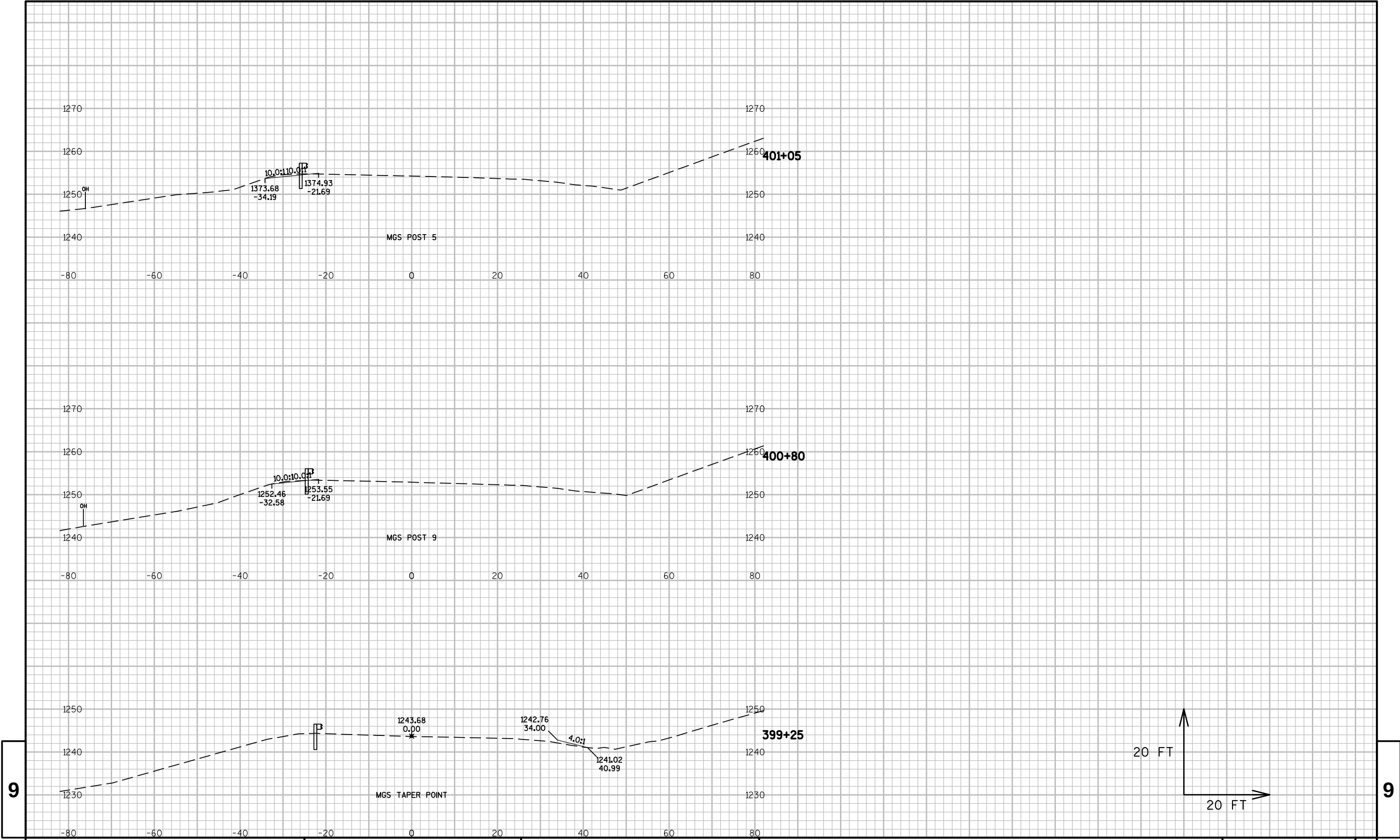
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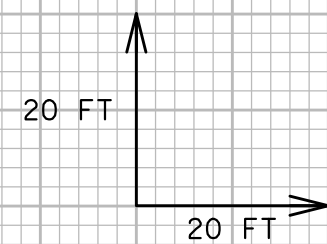
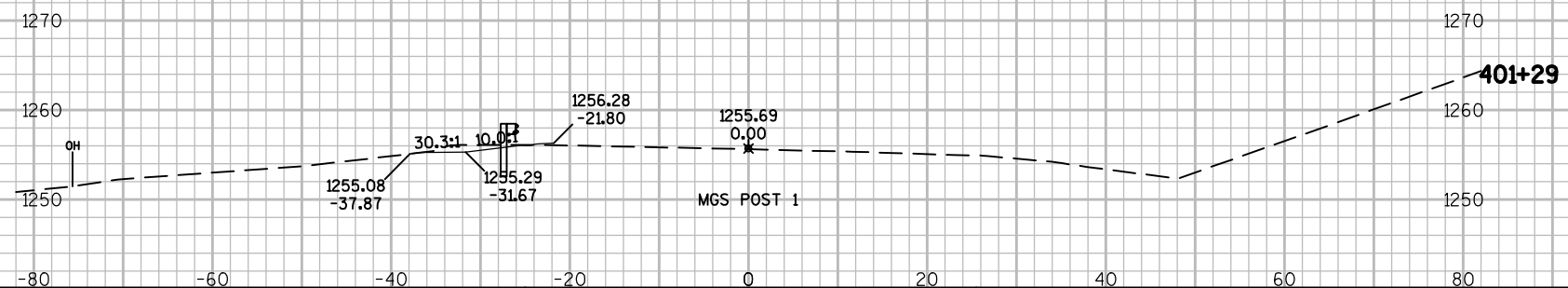
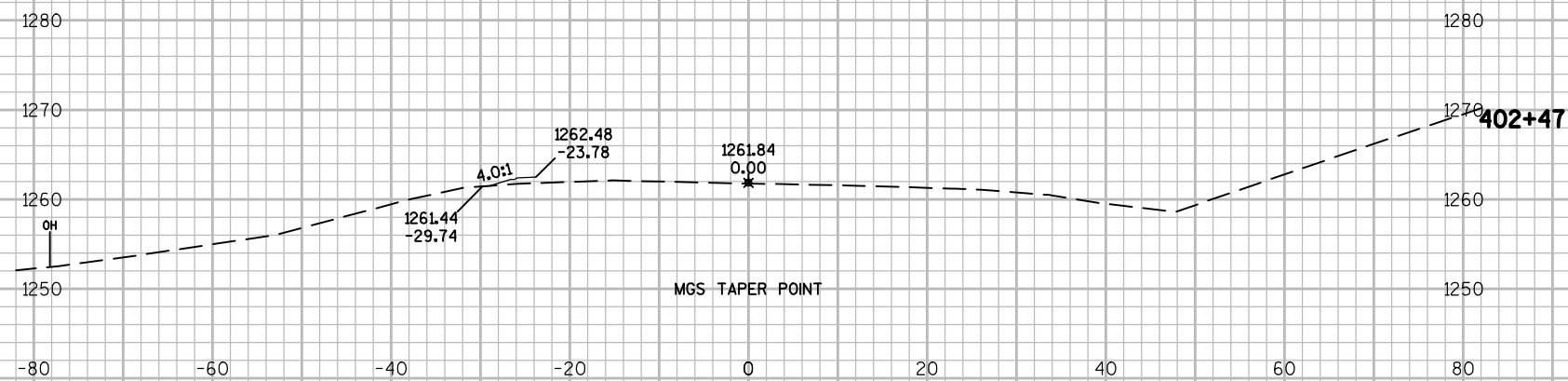




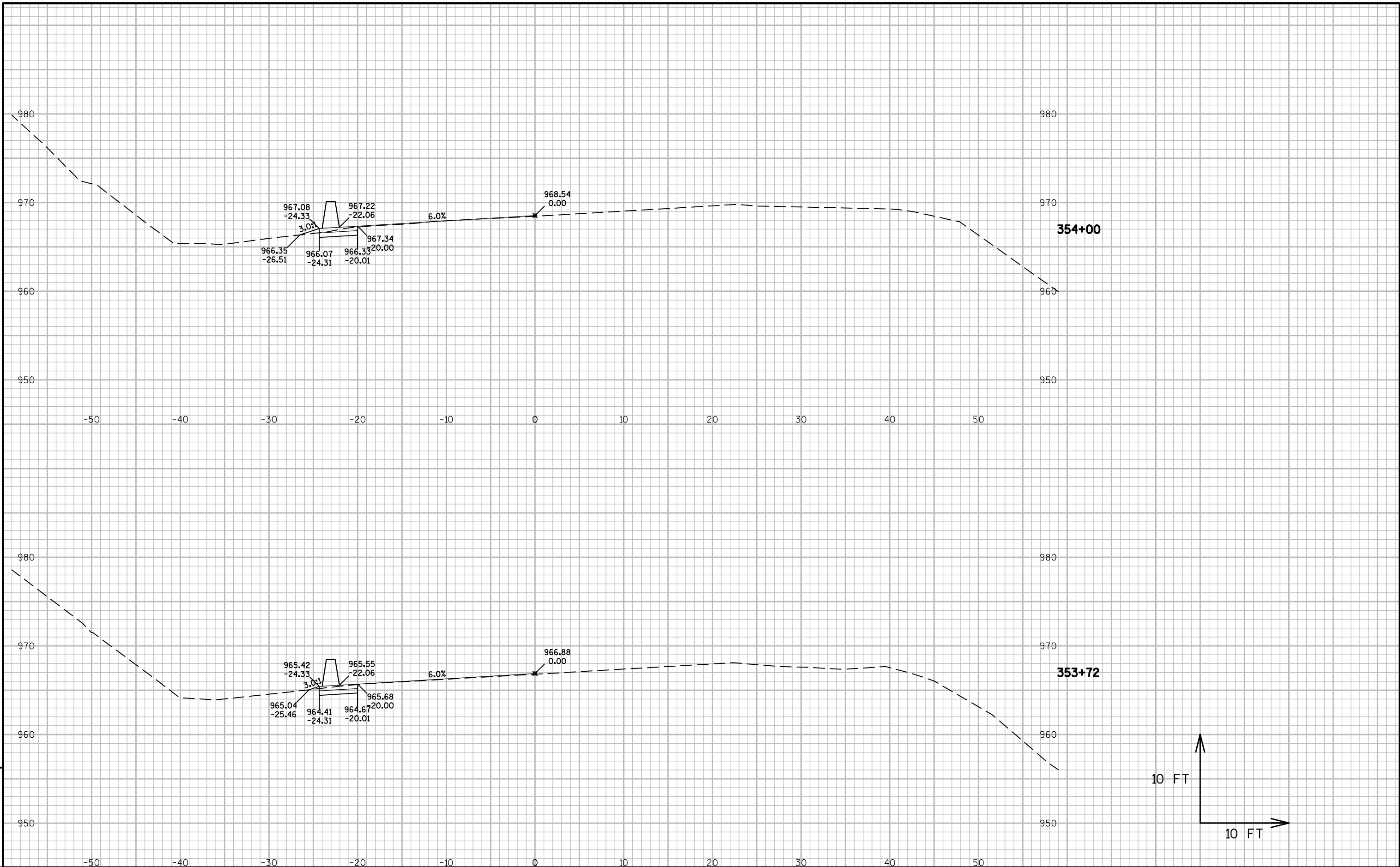
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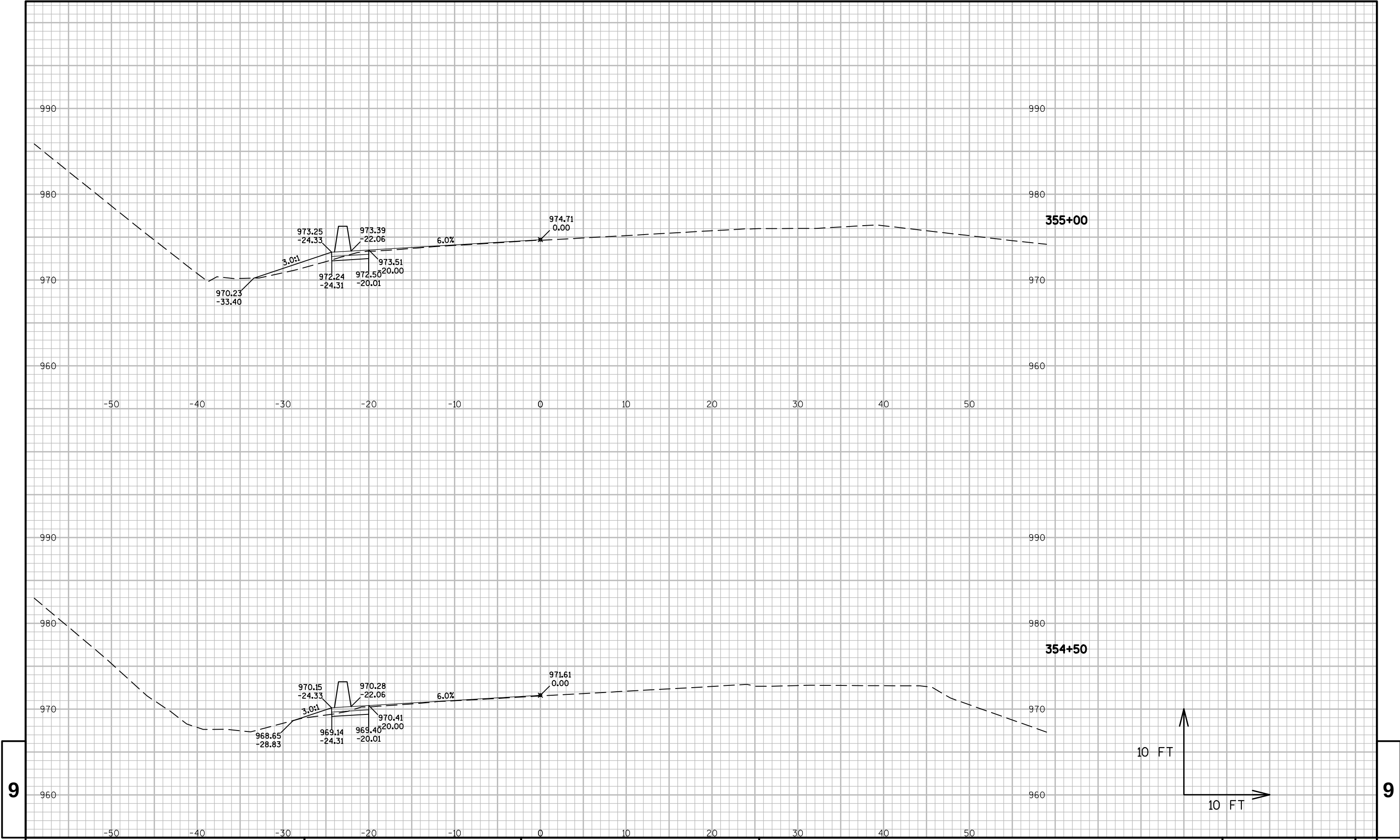
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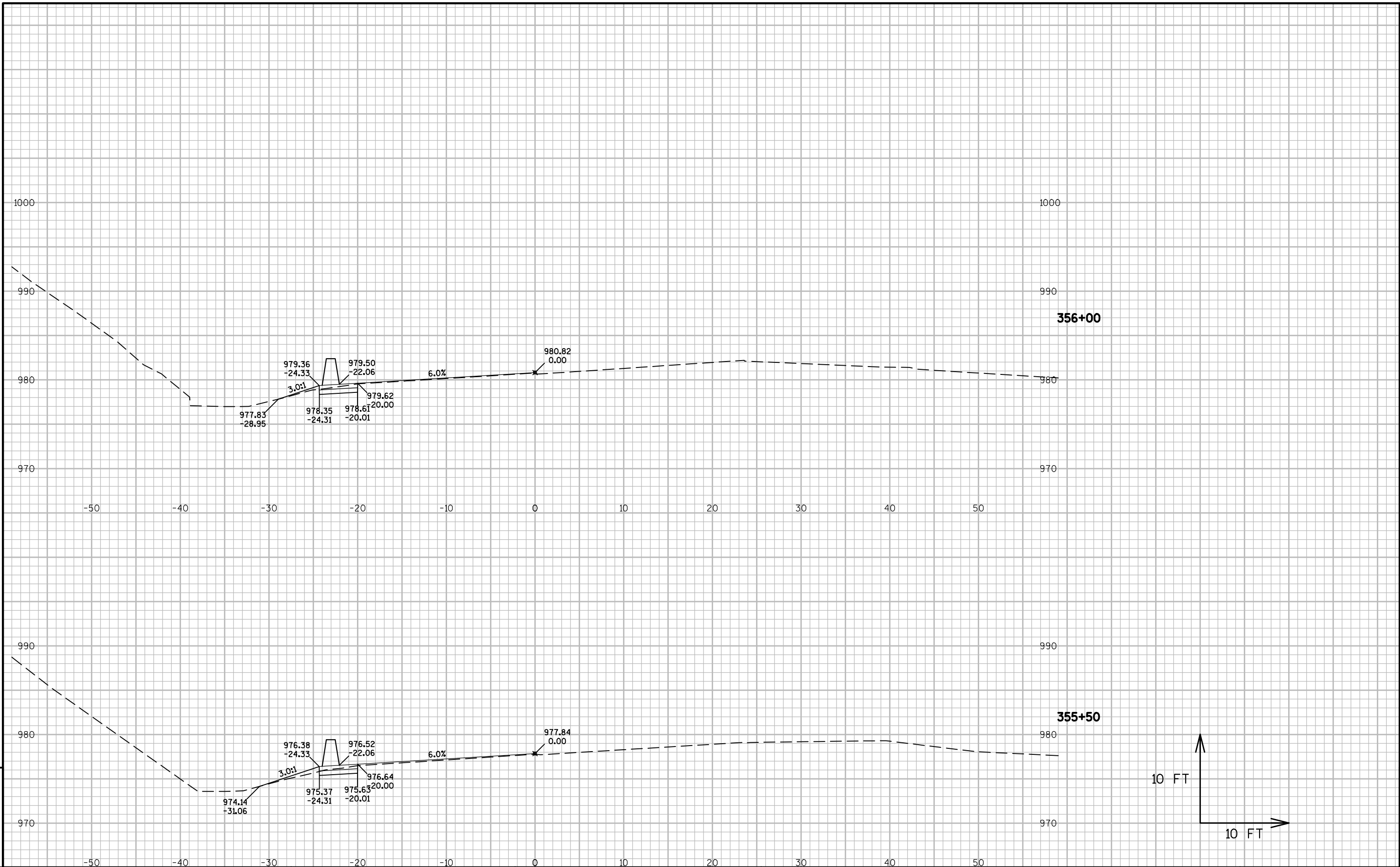
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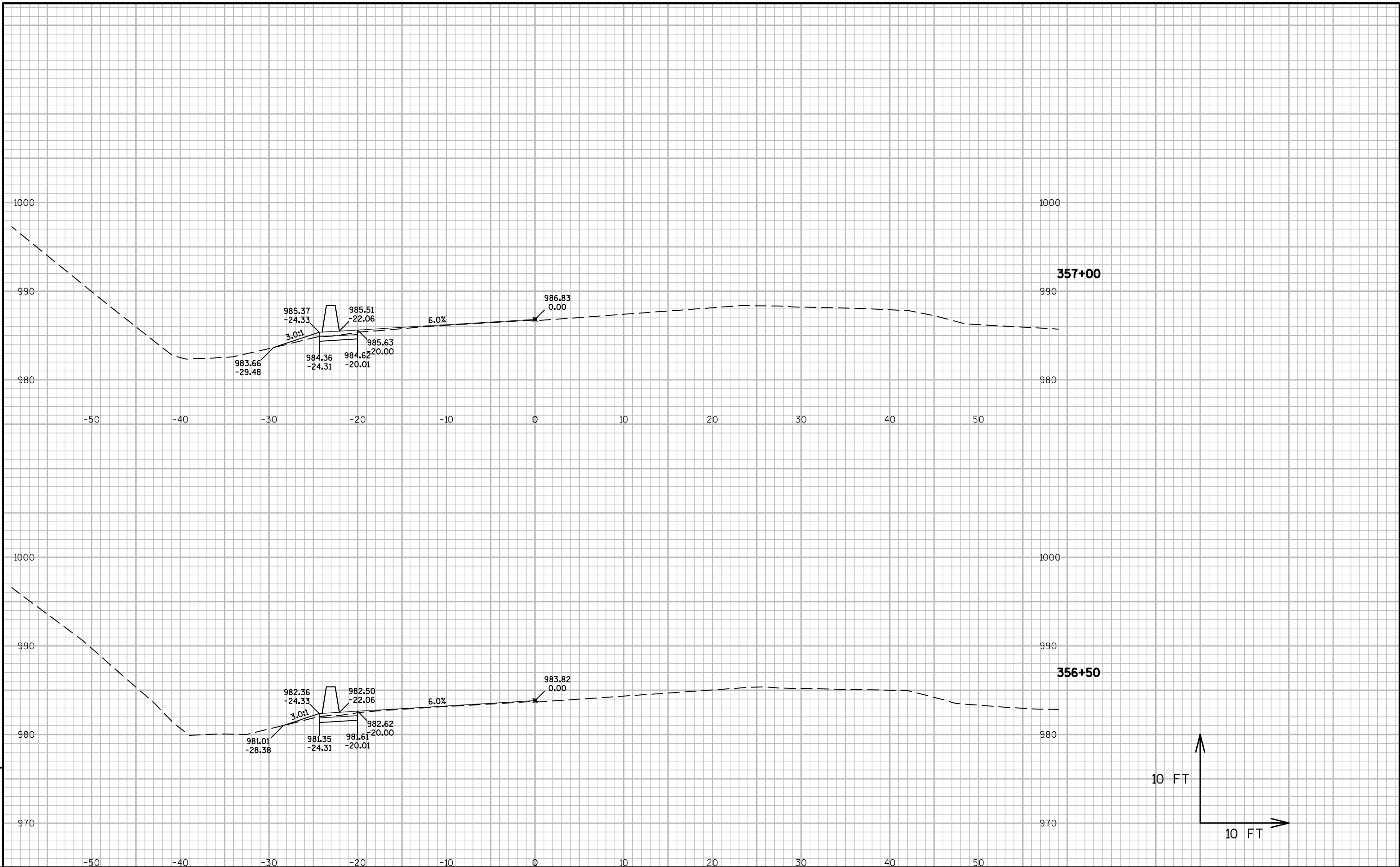


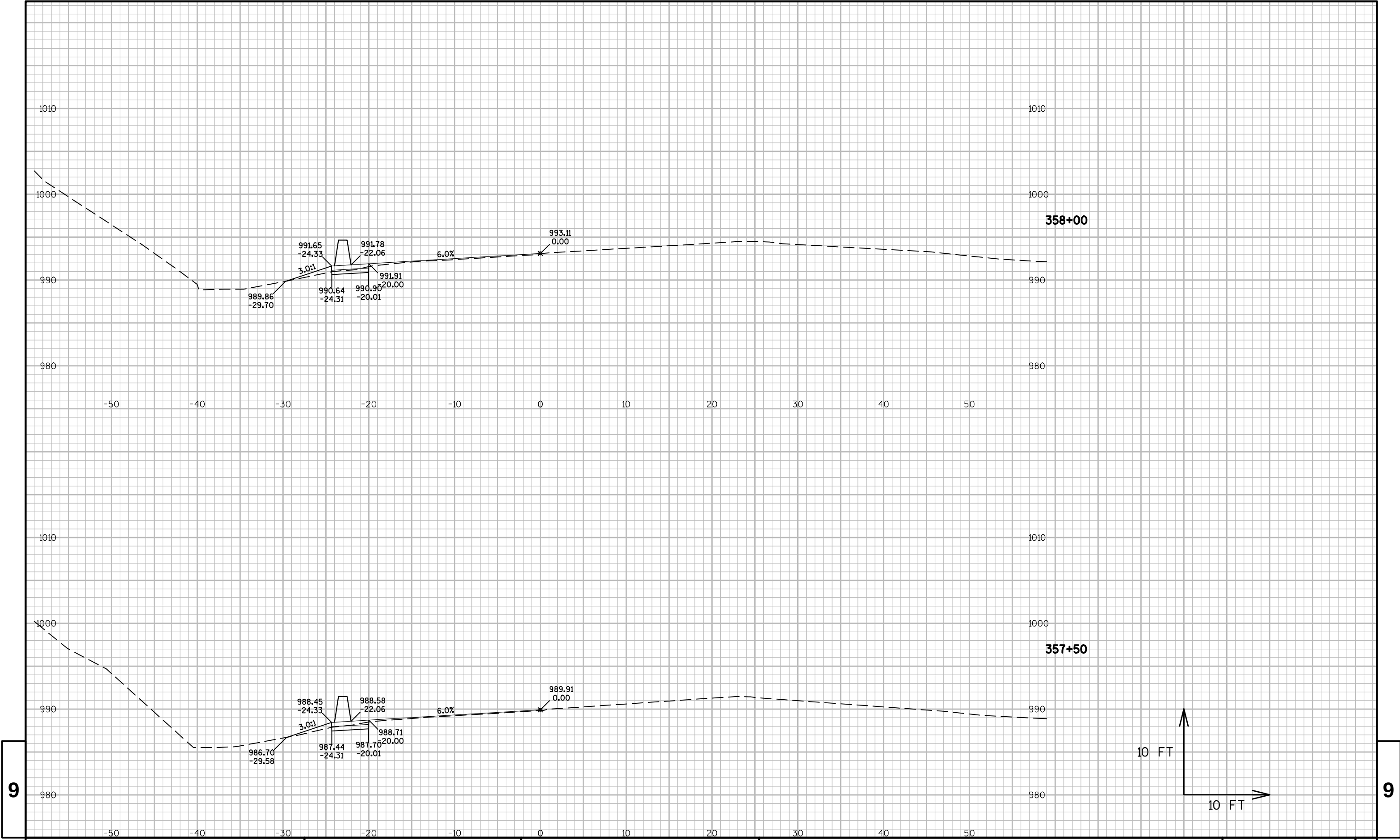


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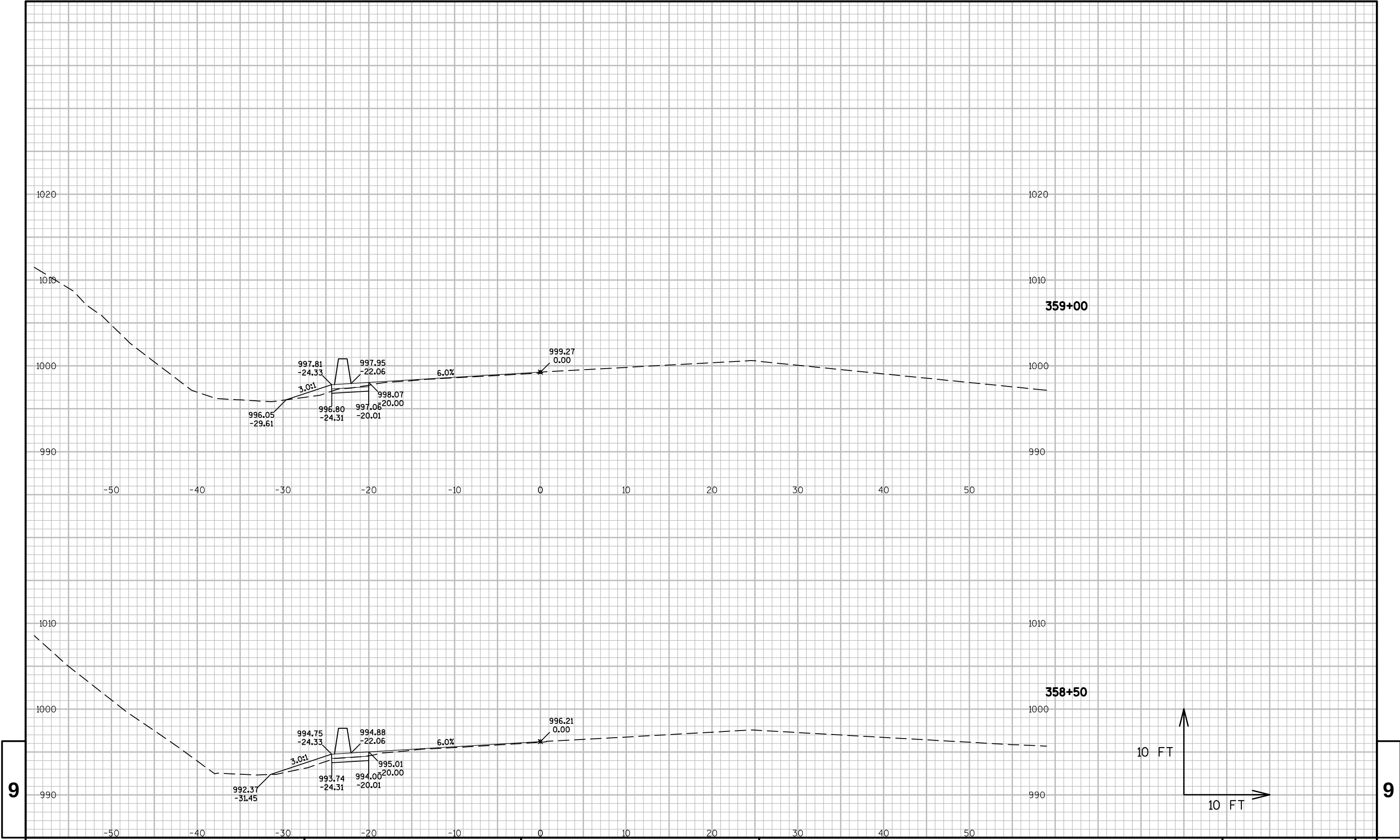






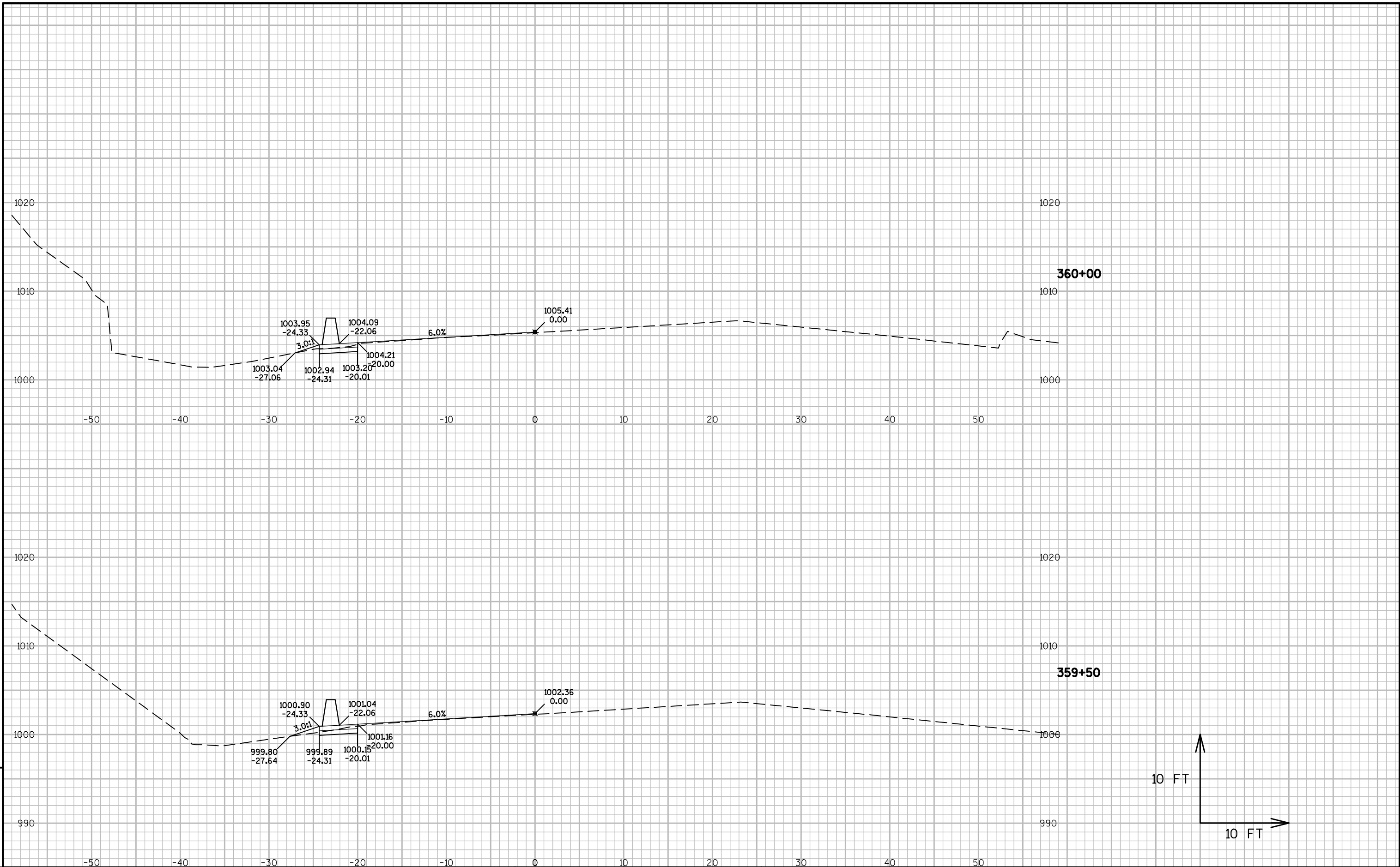
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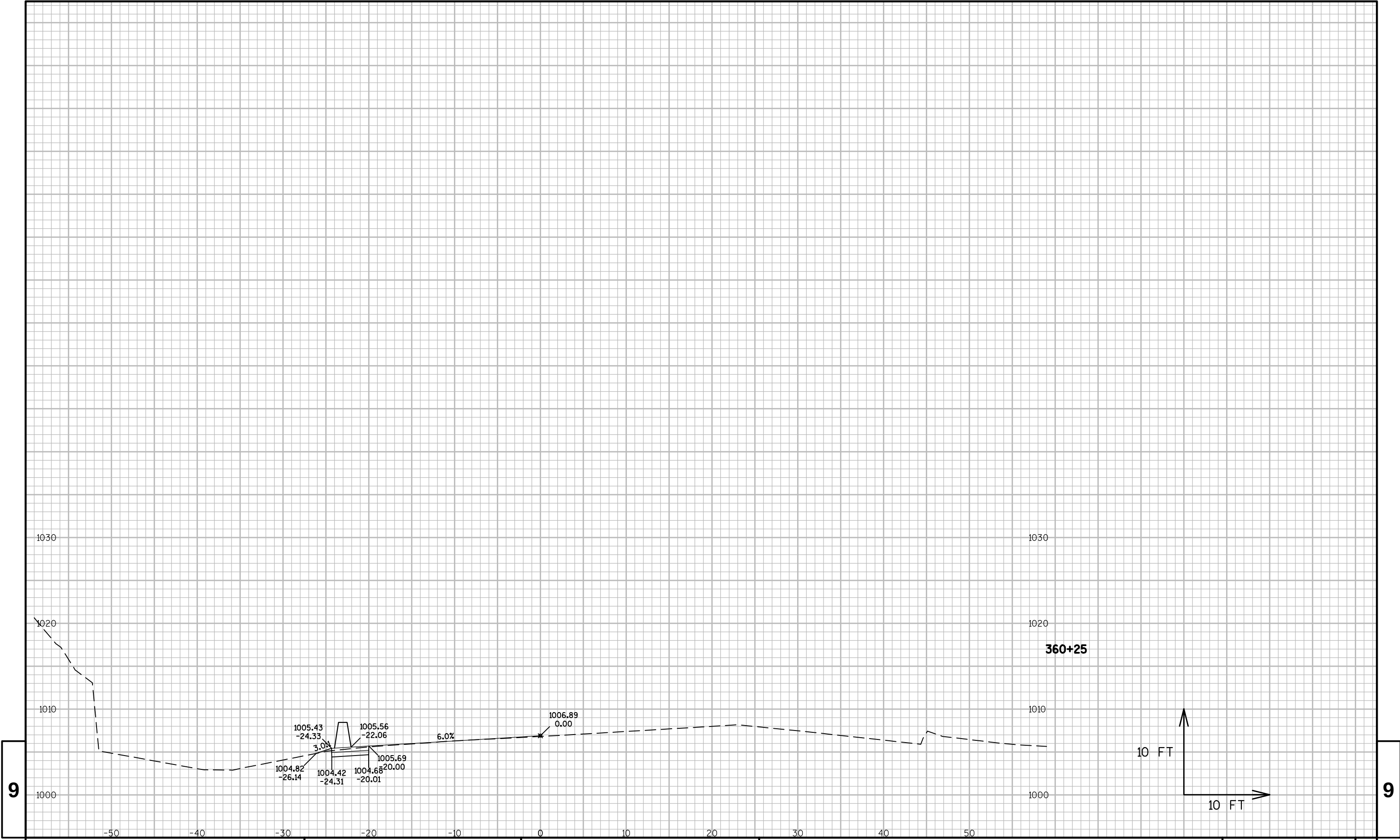
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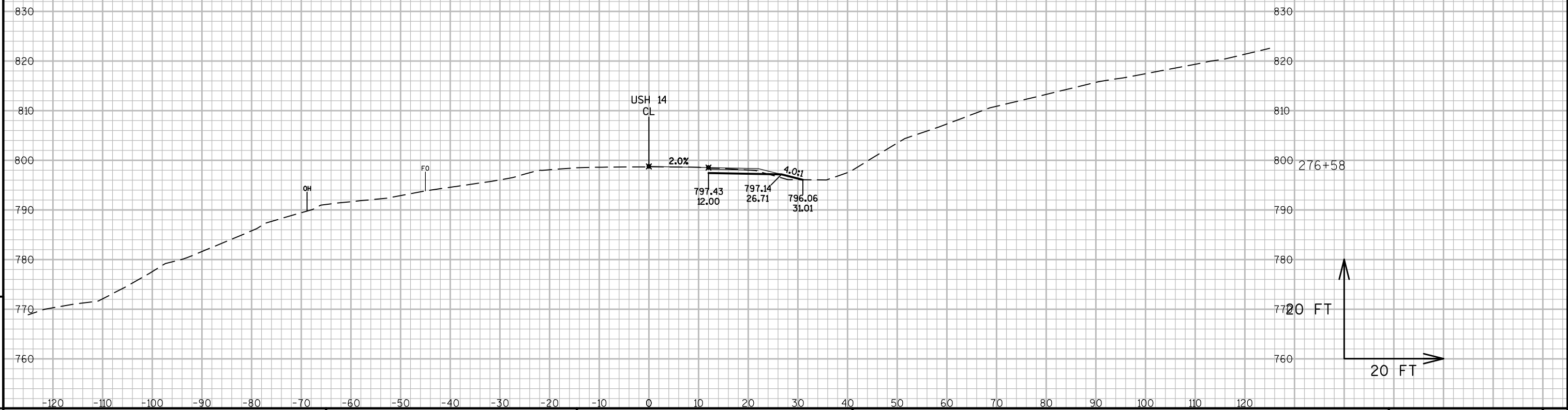
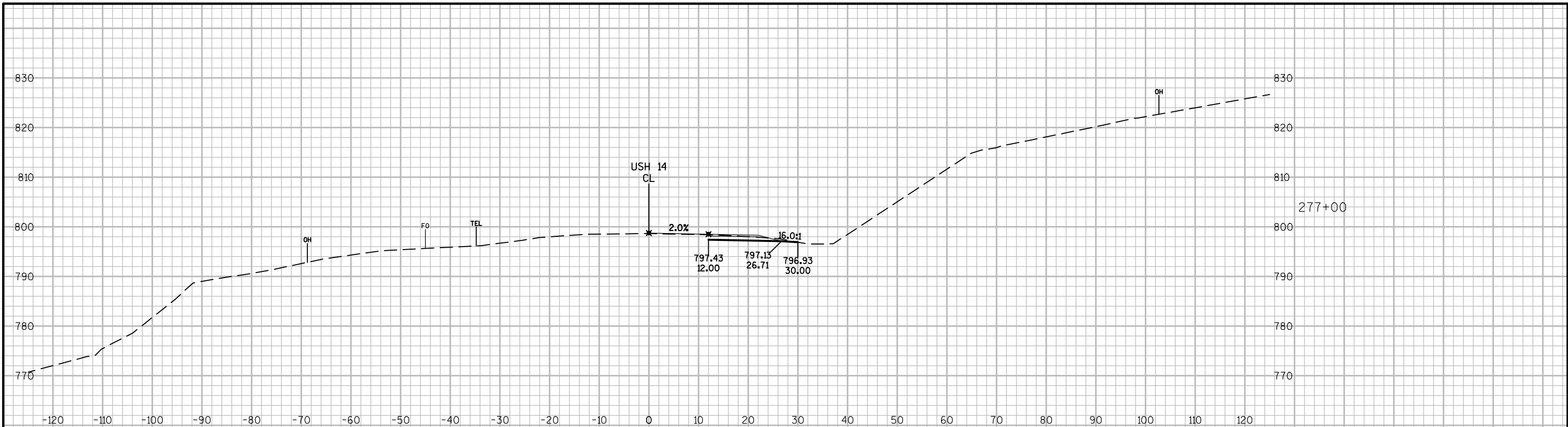


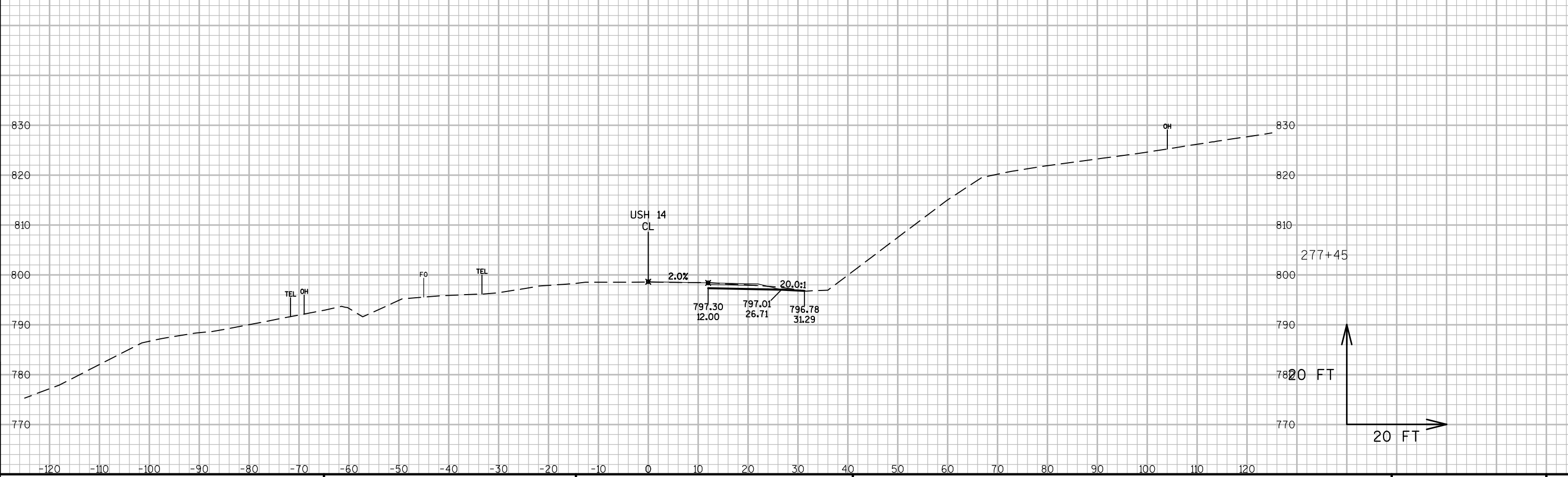
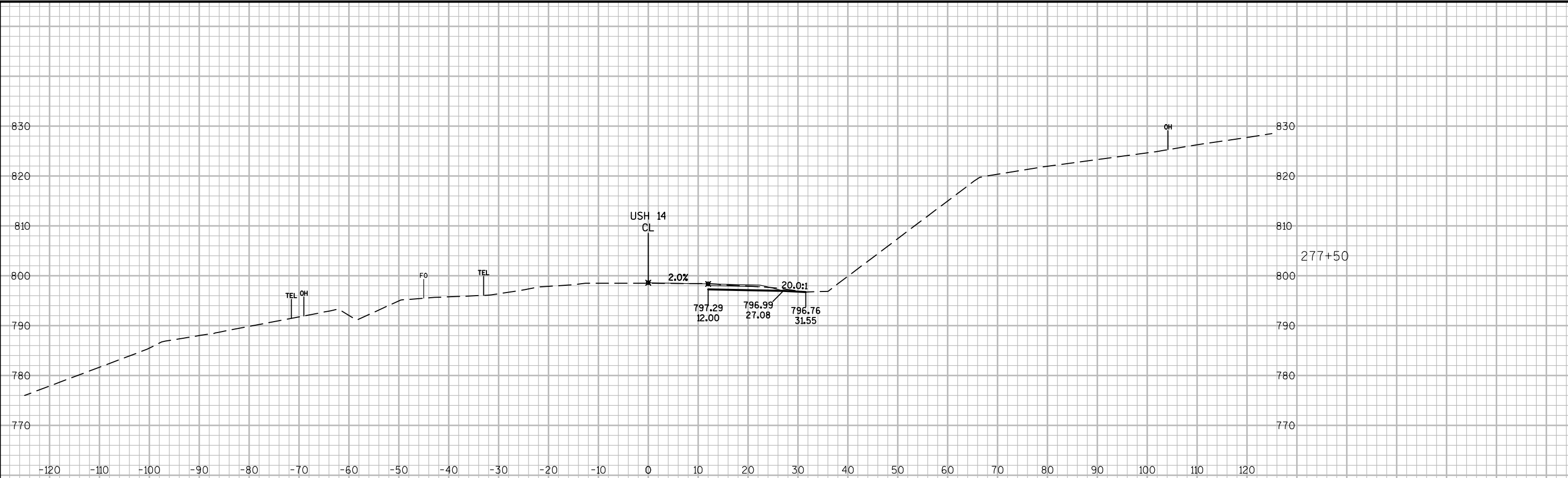
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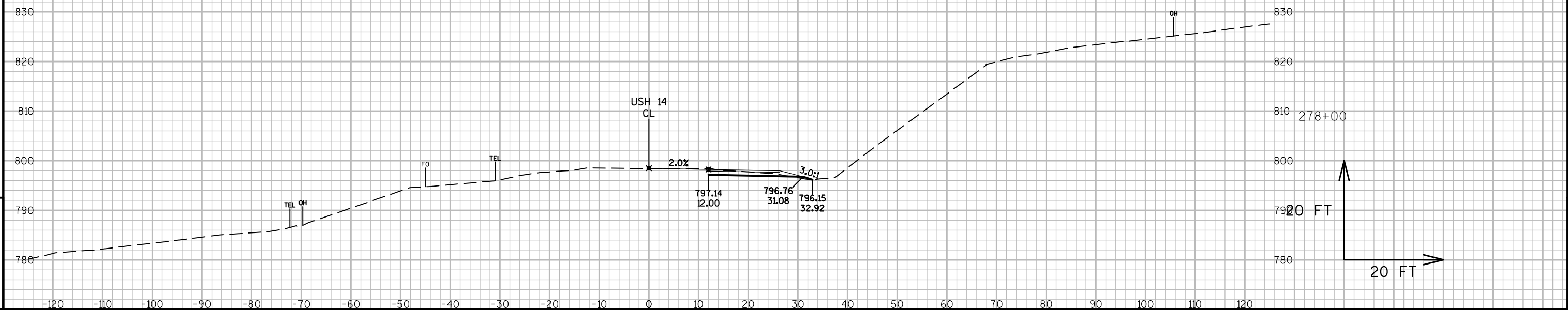
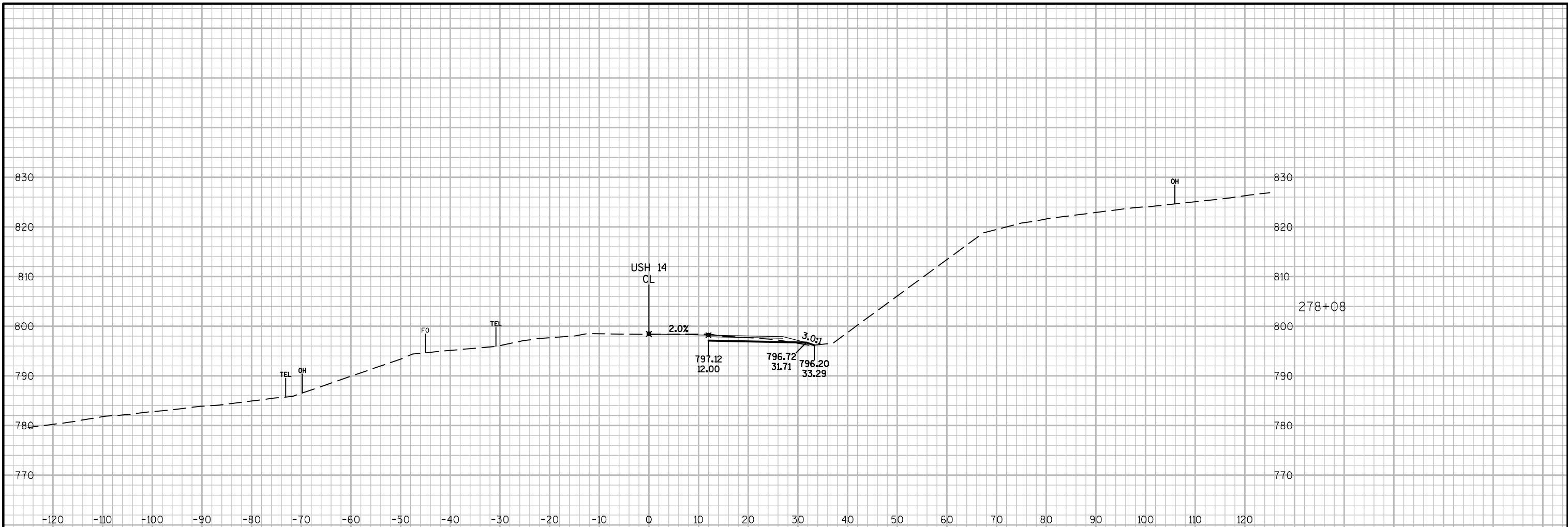
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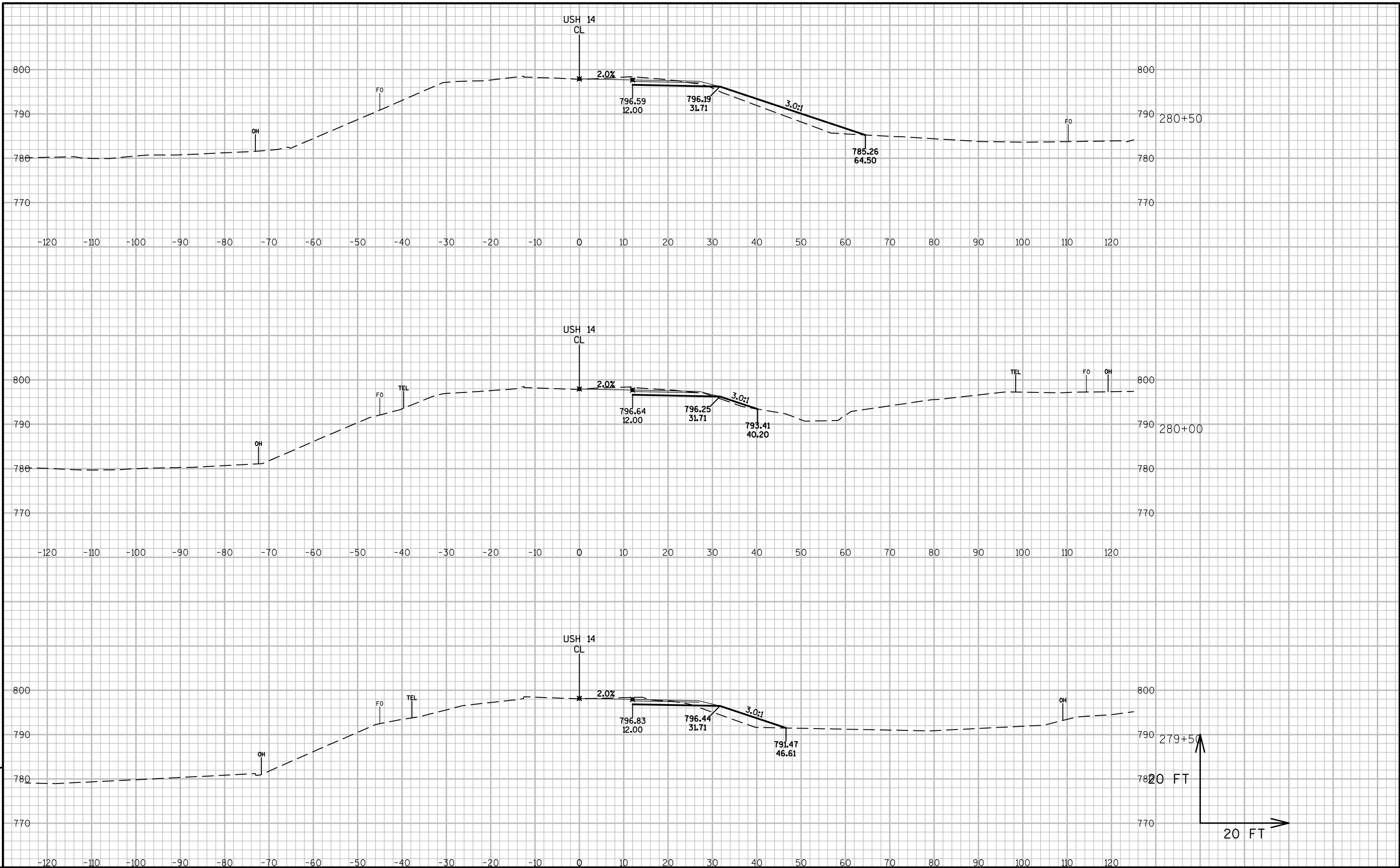




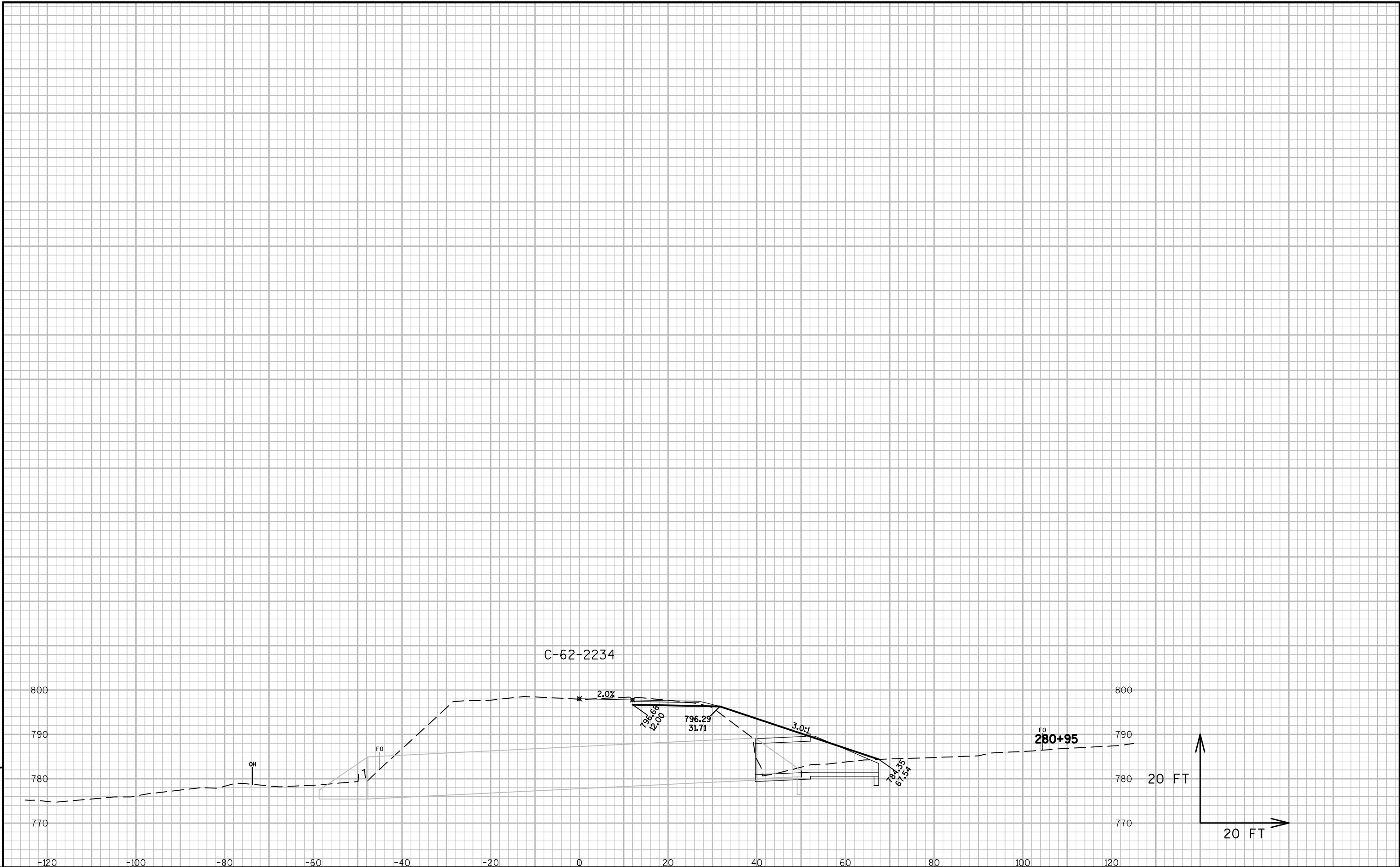




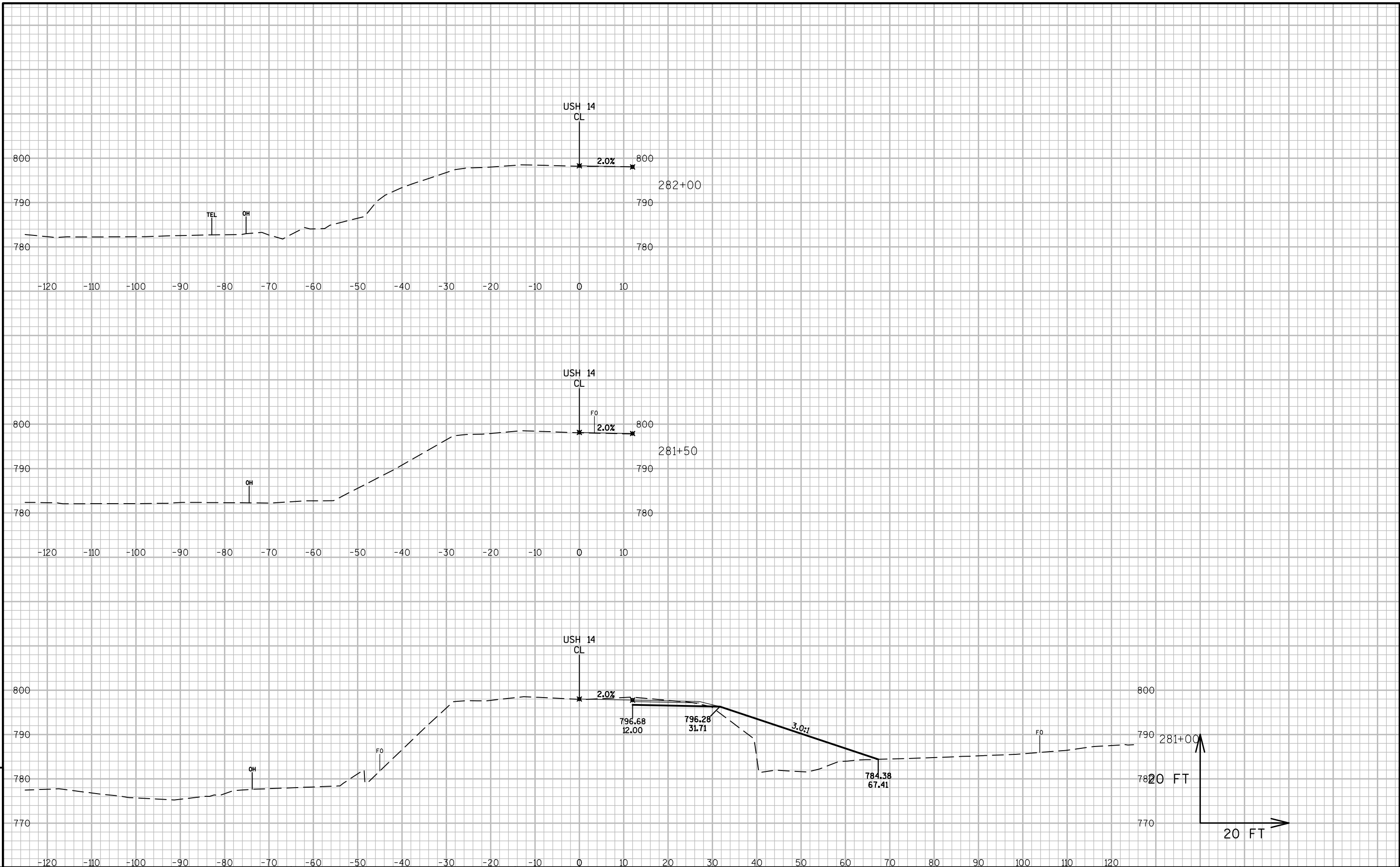


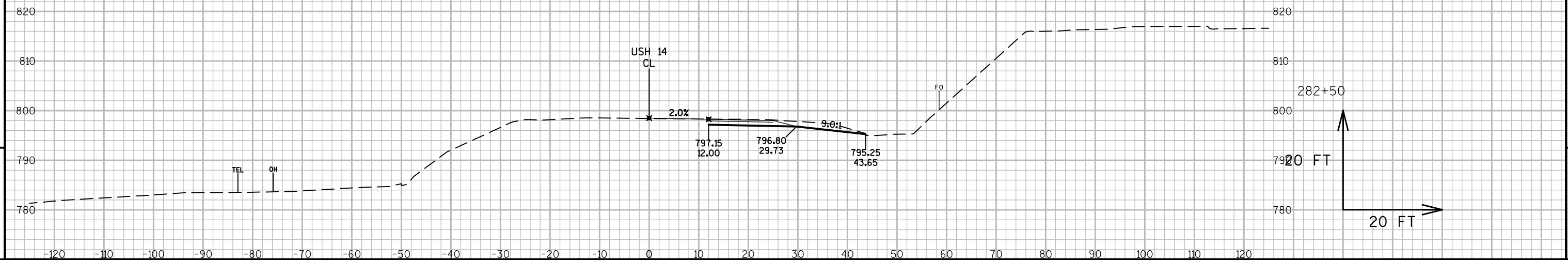
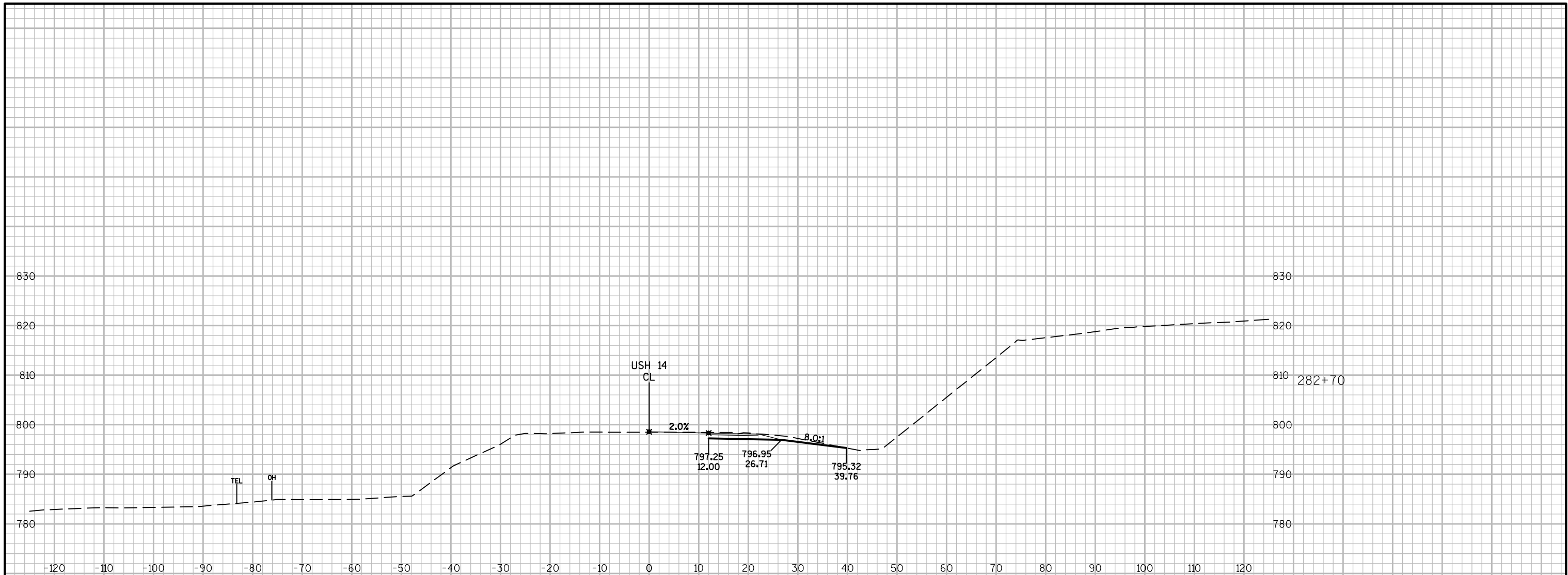


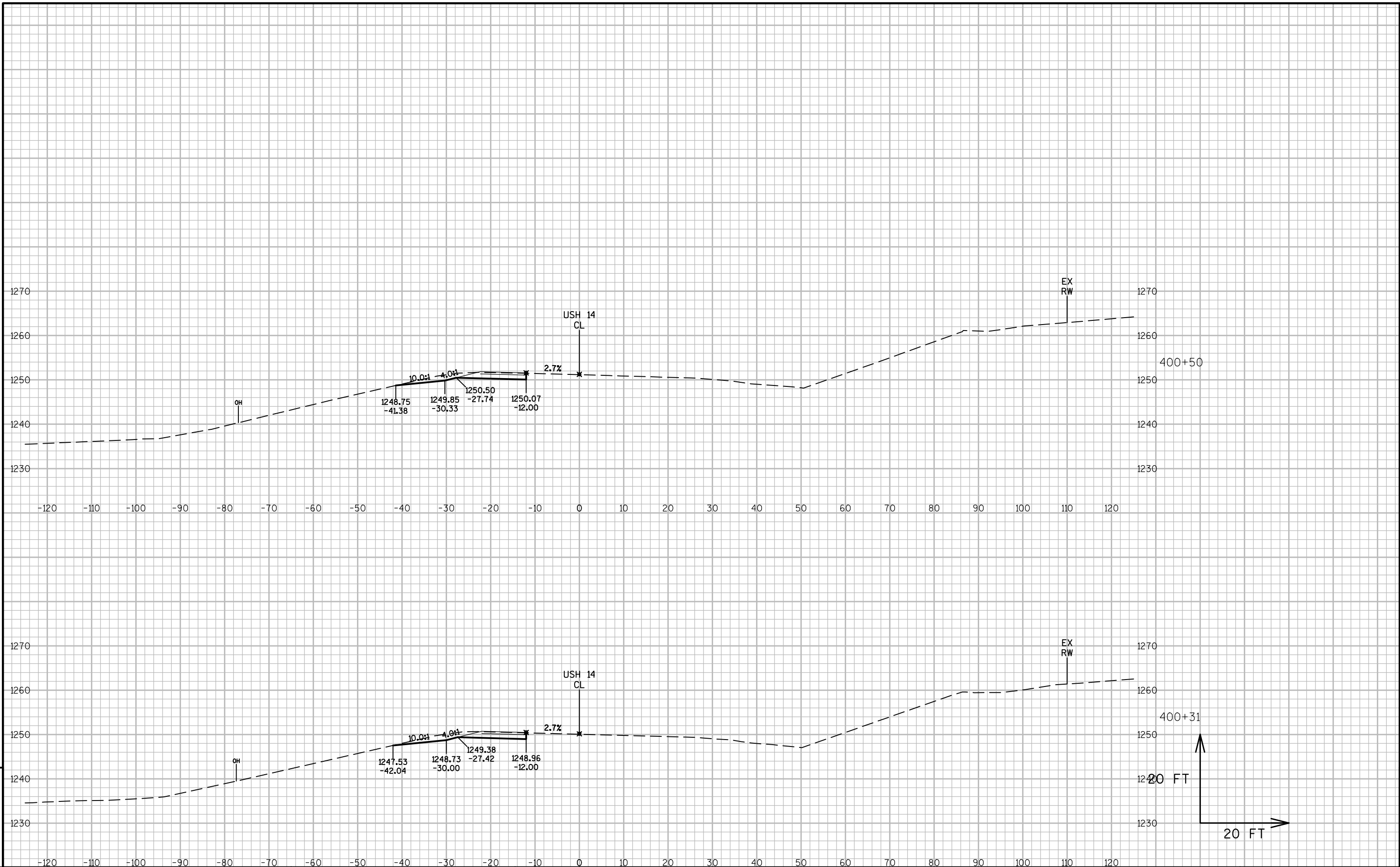
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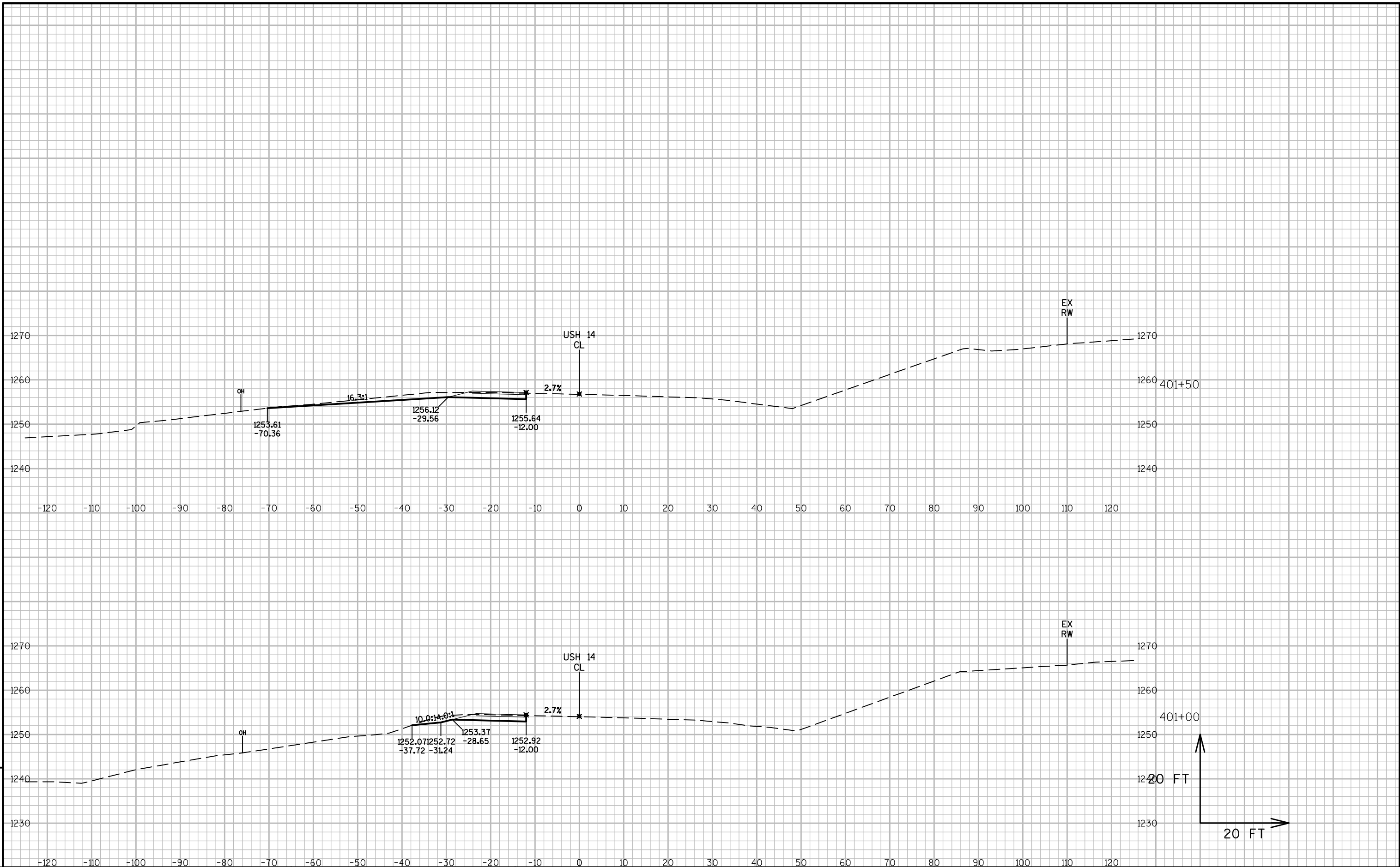


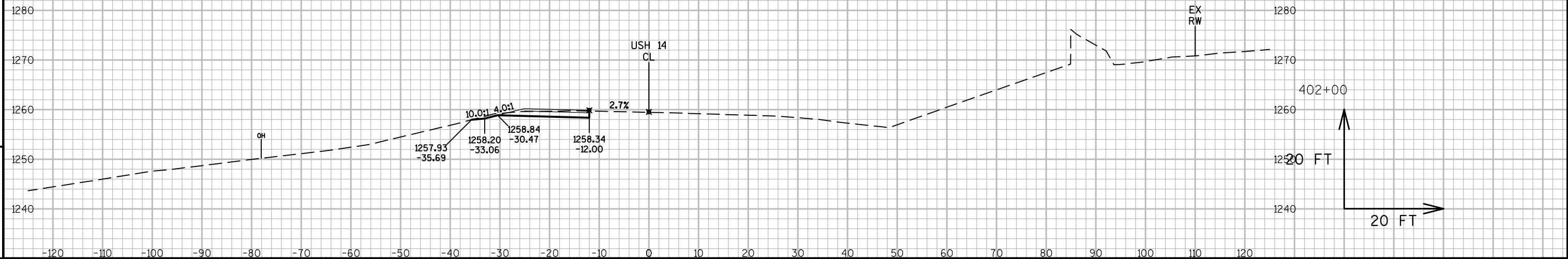
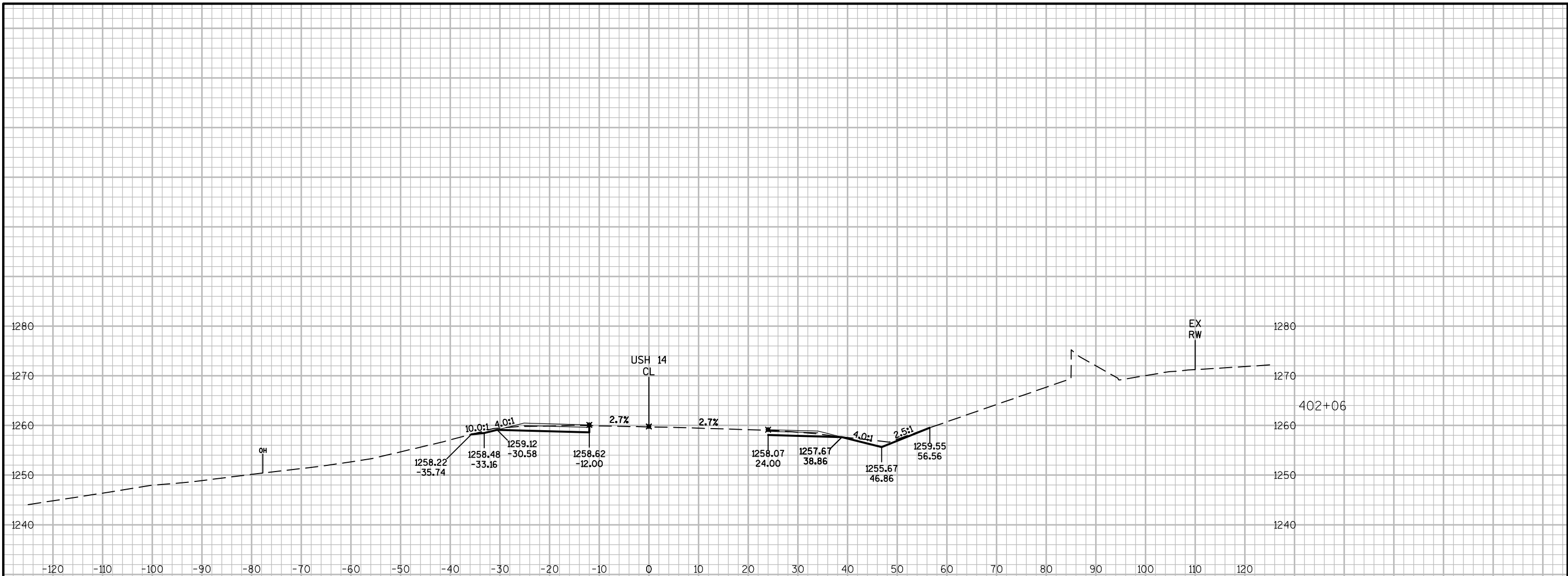
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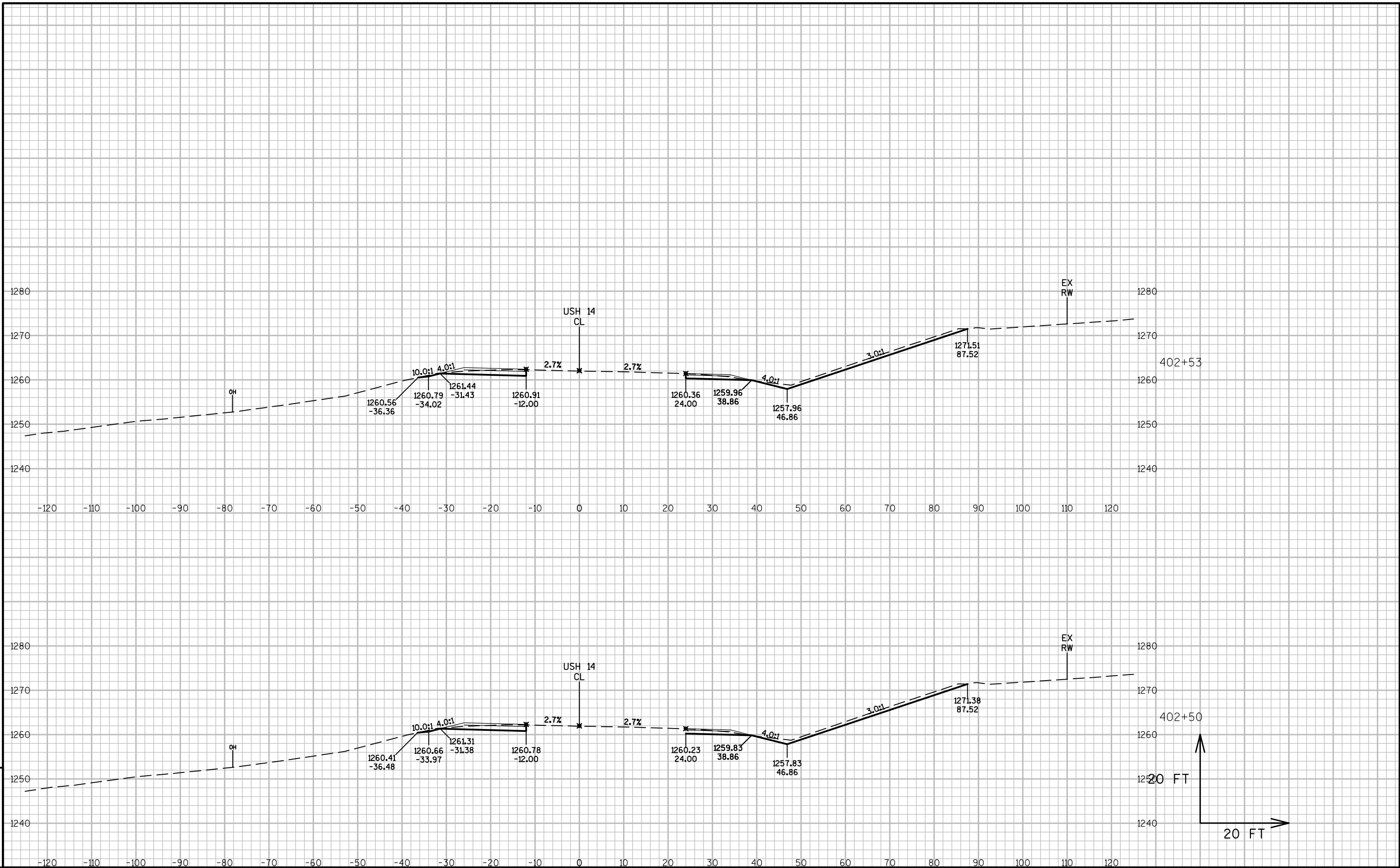


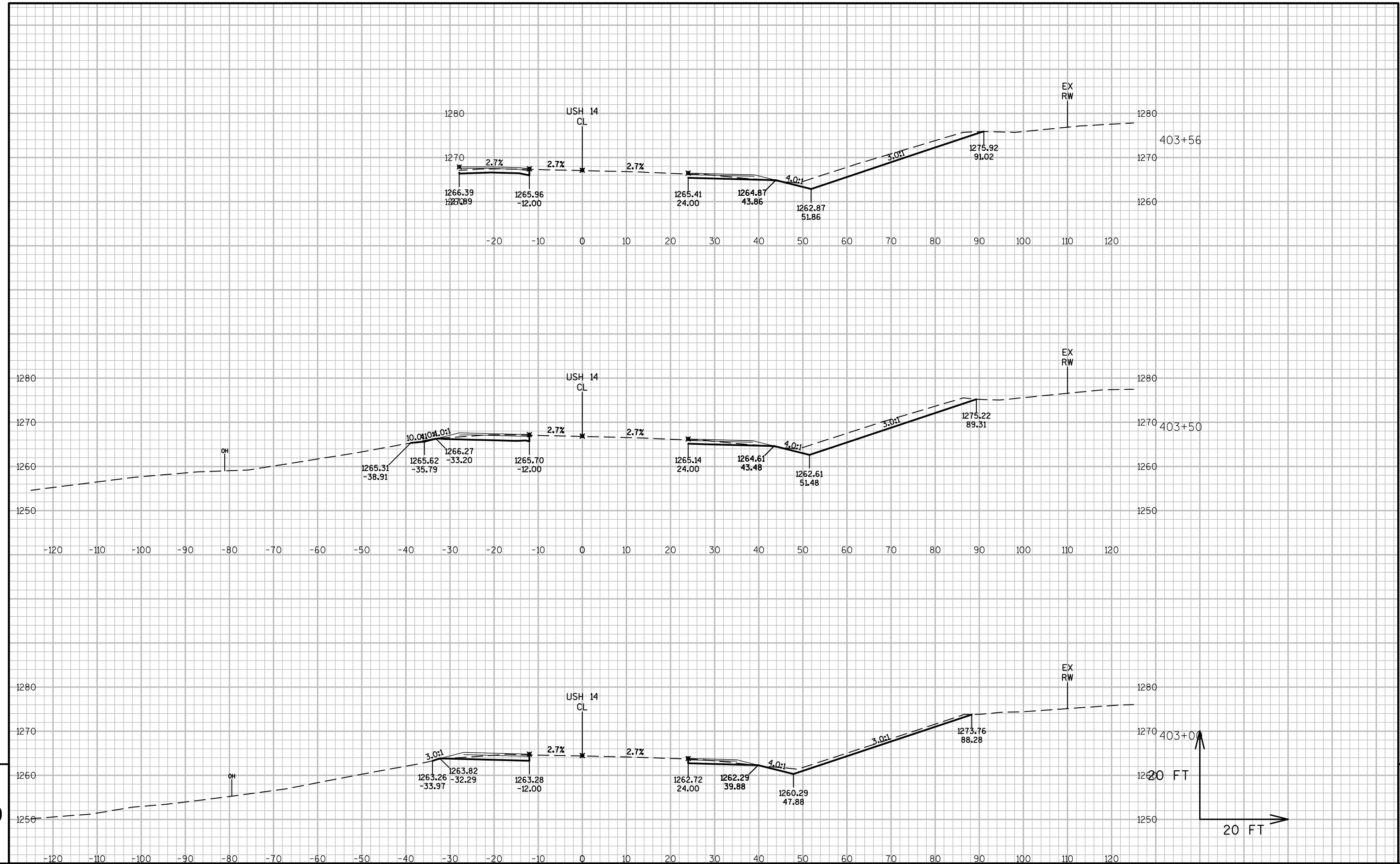


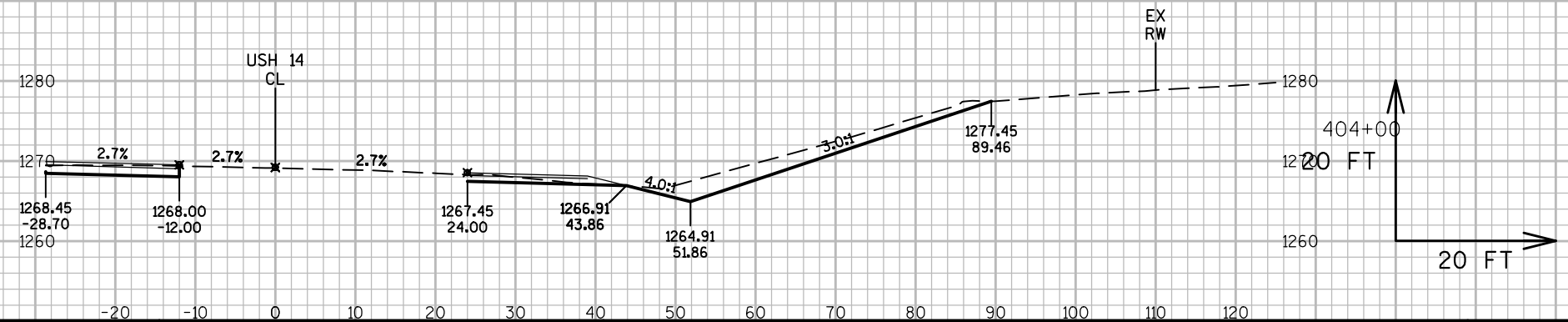
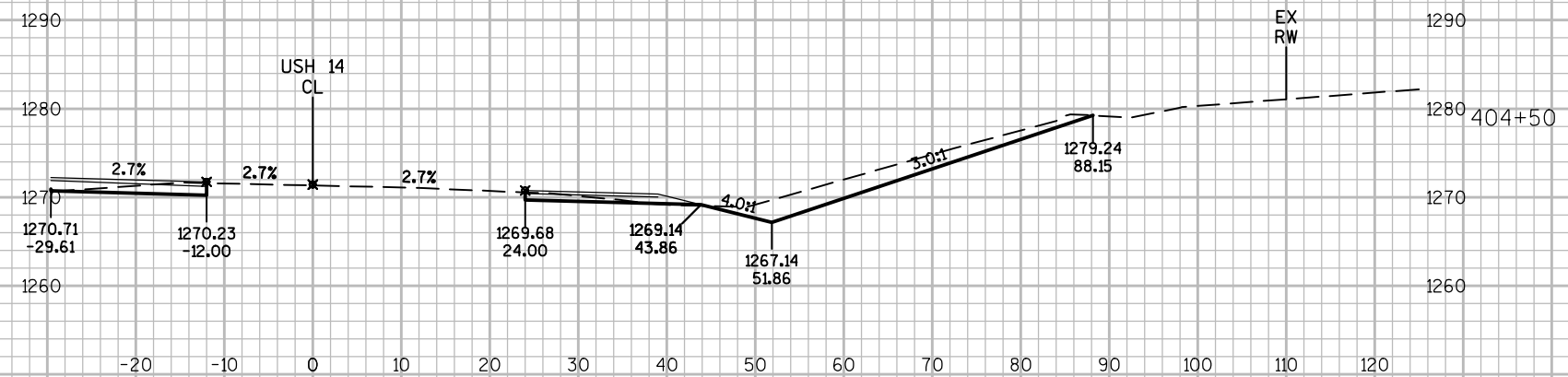
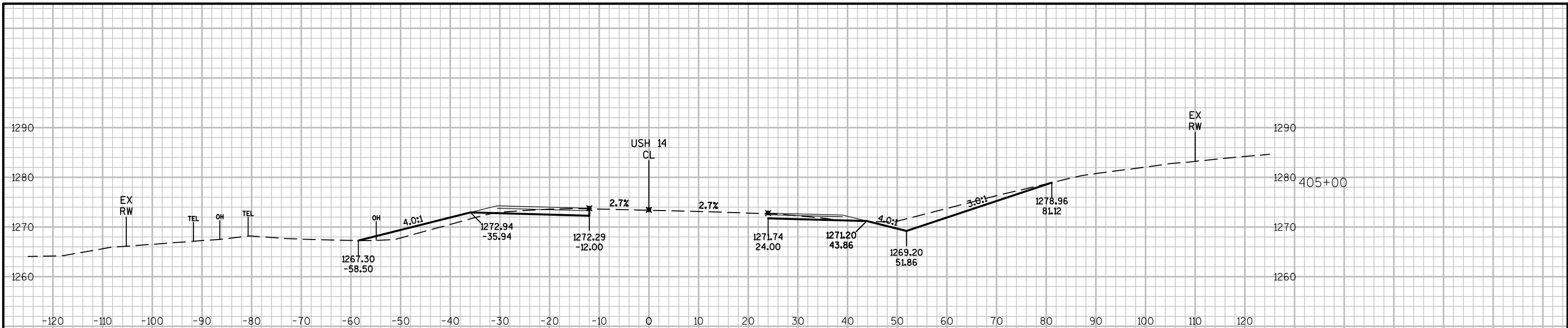












PROJECT NO:1640-01-60

HWY: USH 14

COUNTY: VERNON

CROSS SECTIONS: USH 14

SHEET 253

E

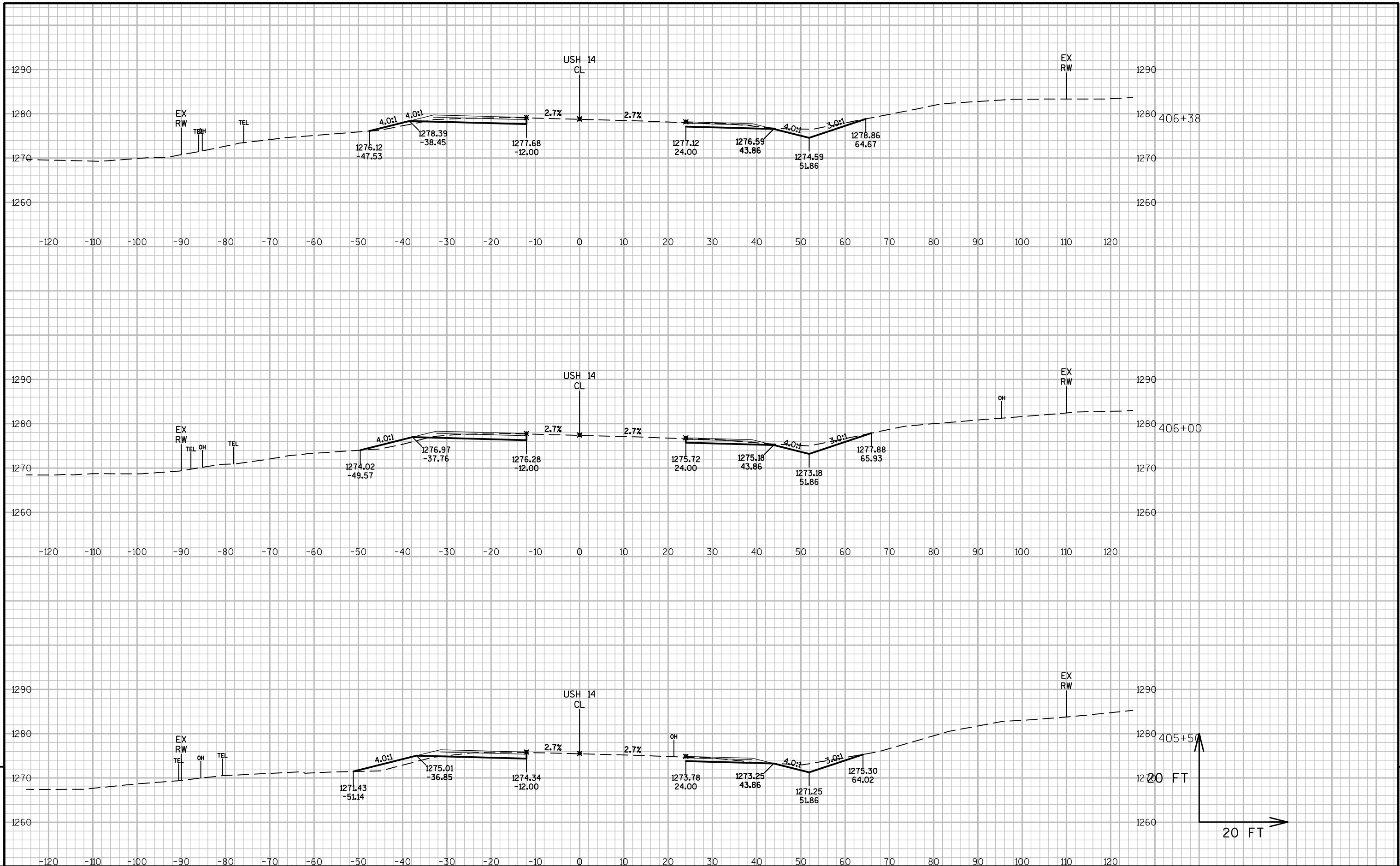
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LAYOUT NAME - 090203_XS- (14)

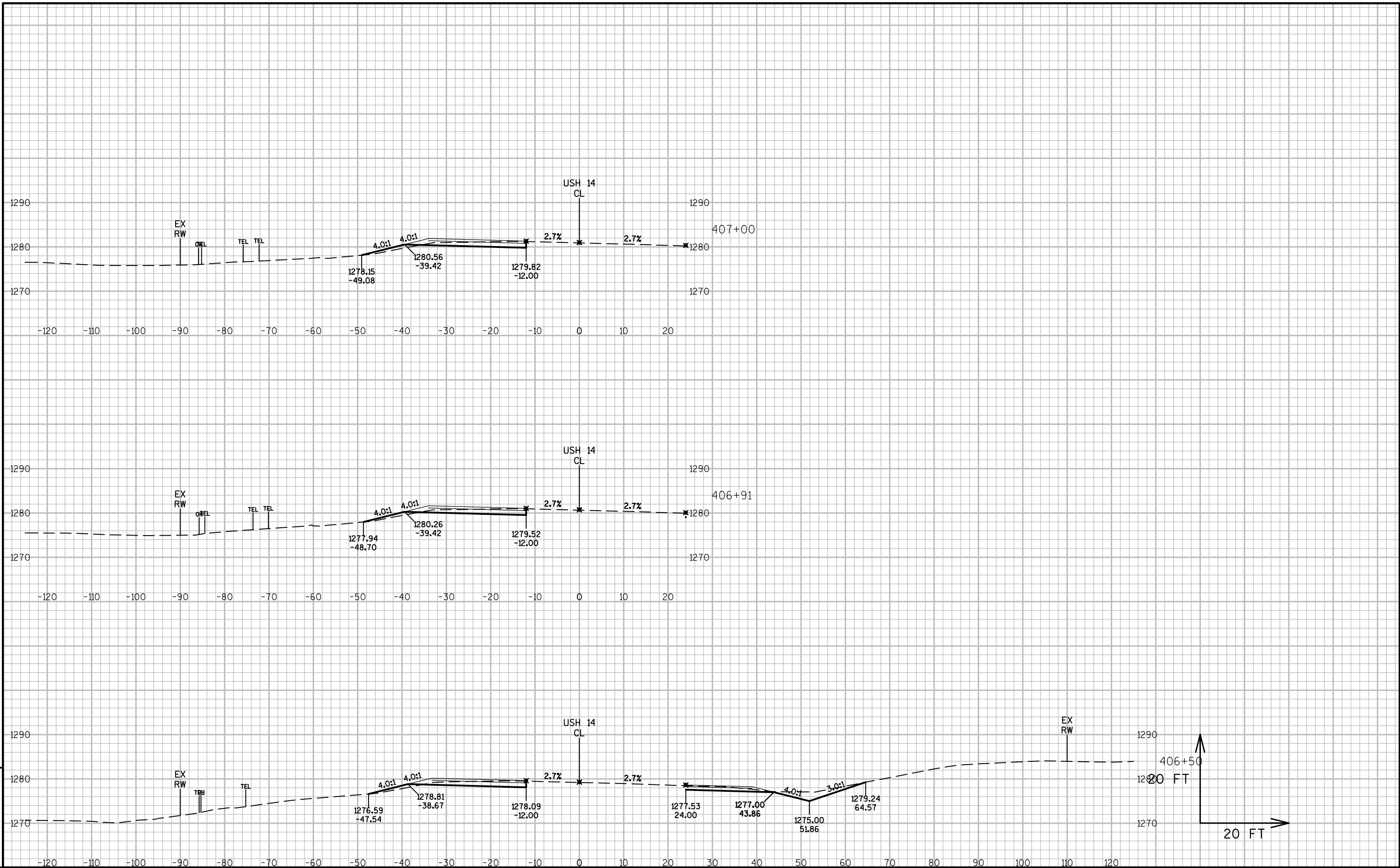
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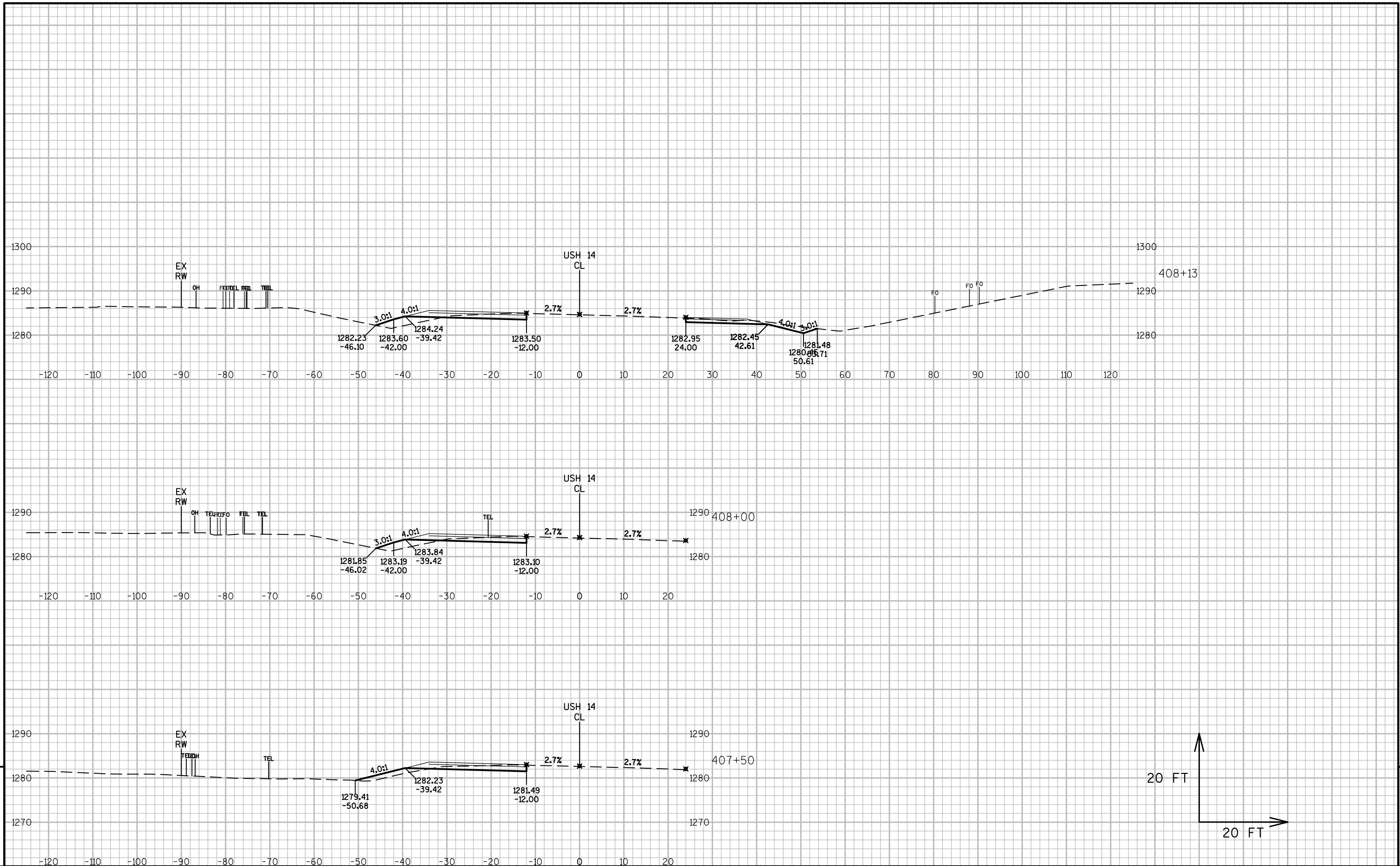
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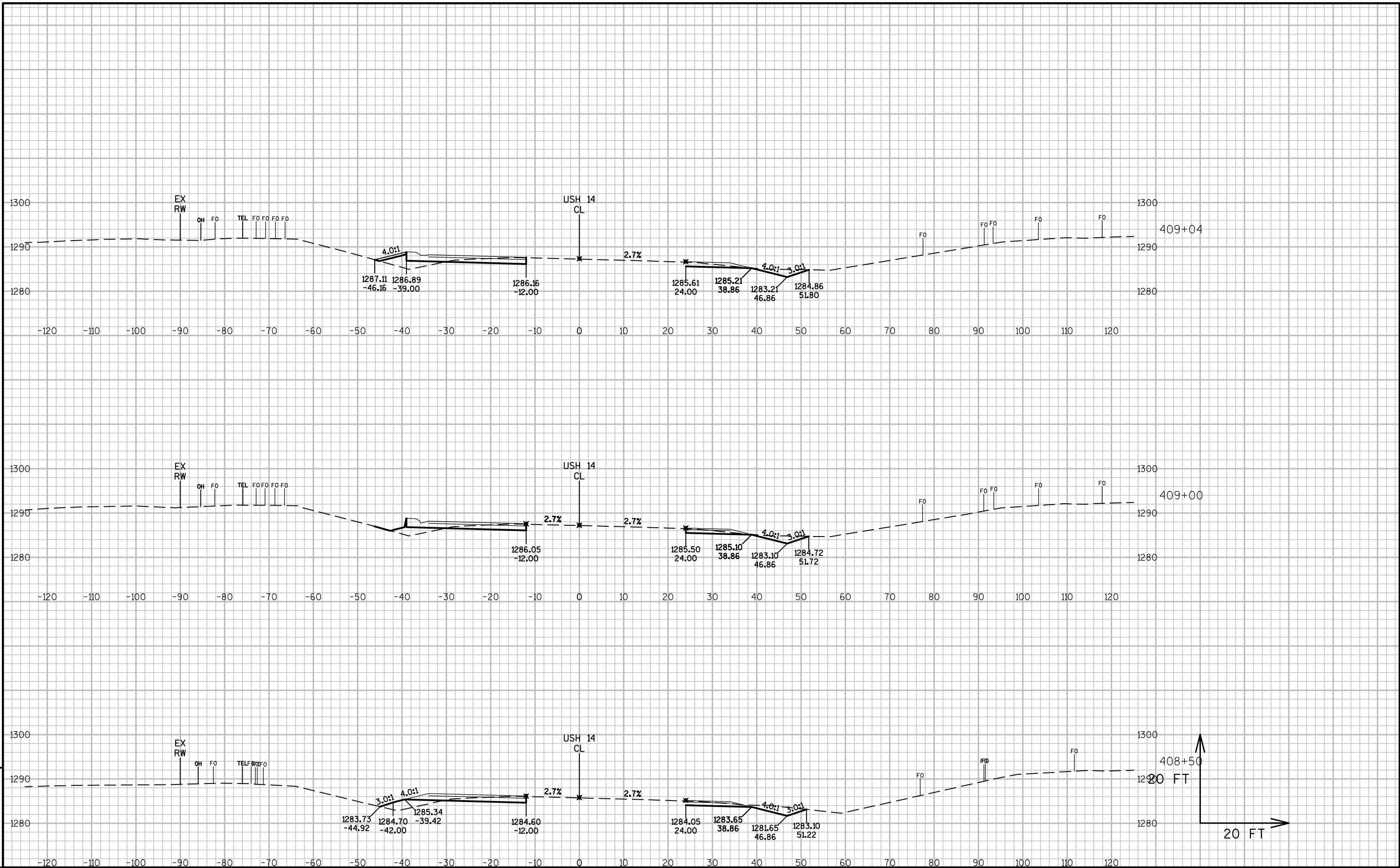
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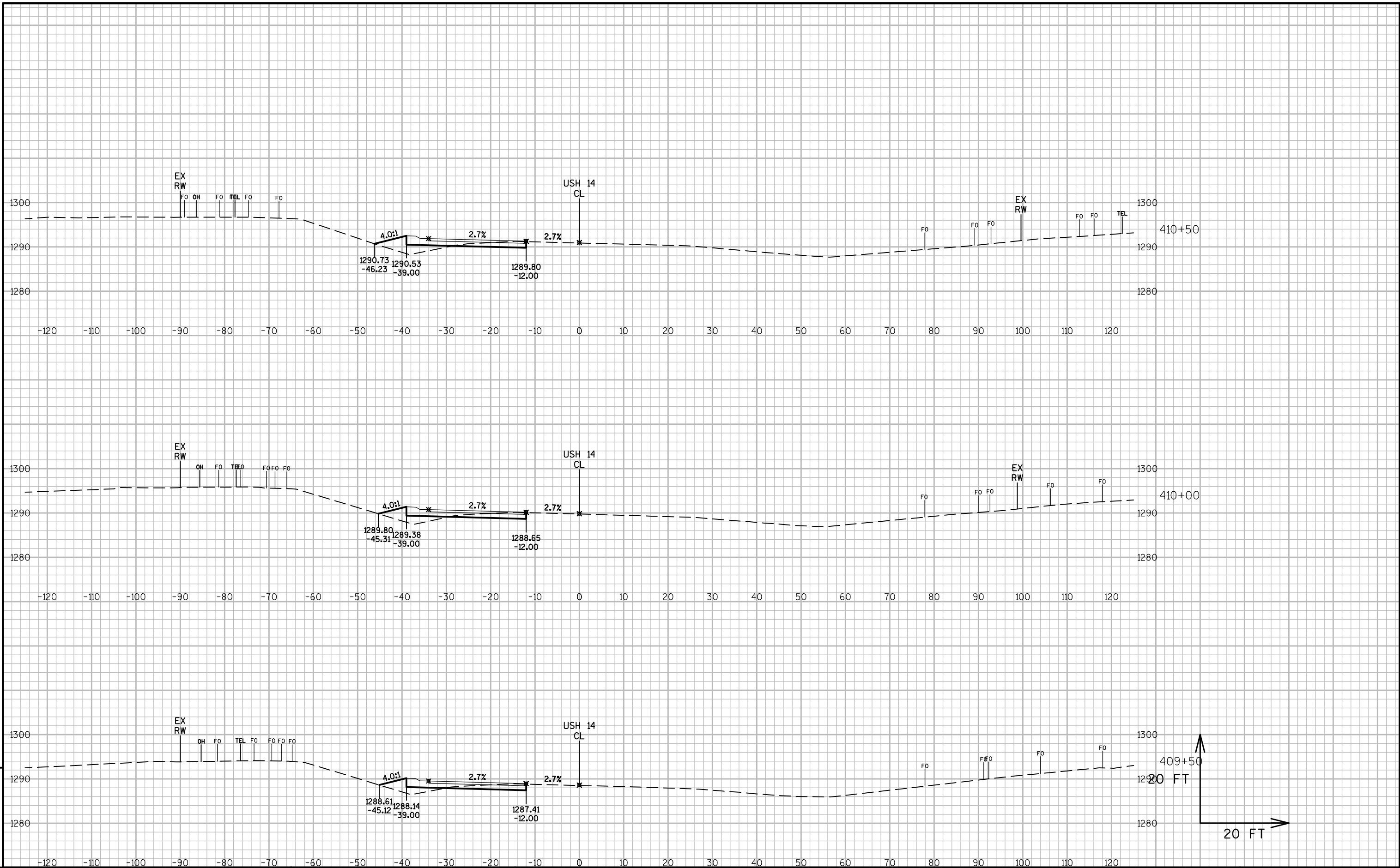
WISDOT/CADDs SHEET 49

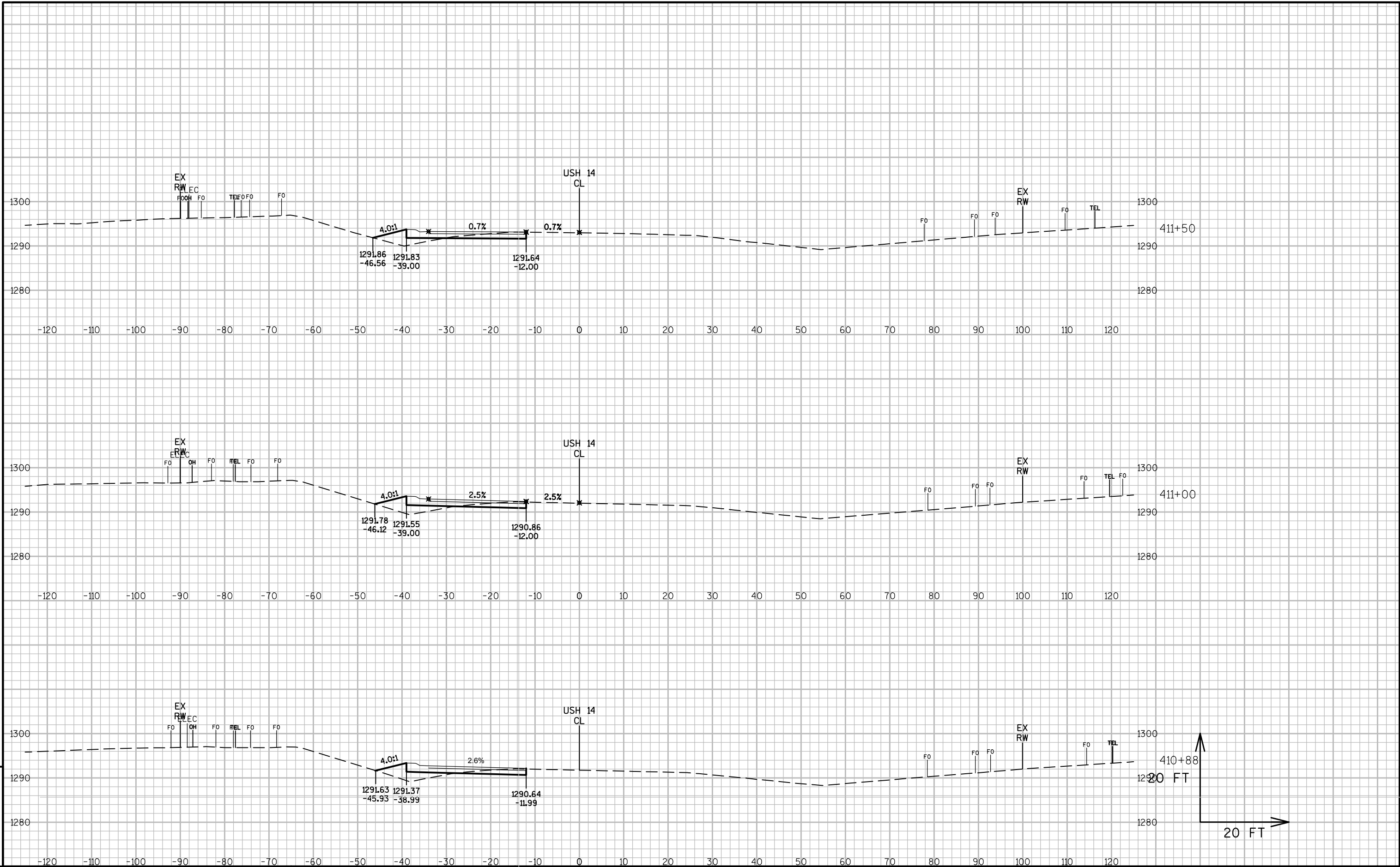


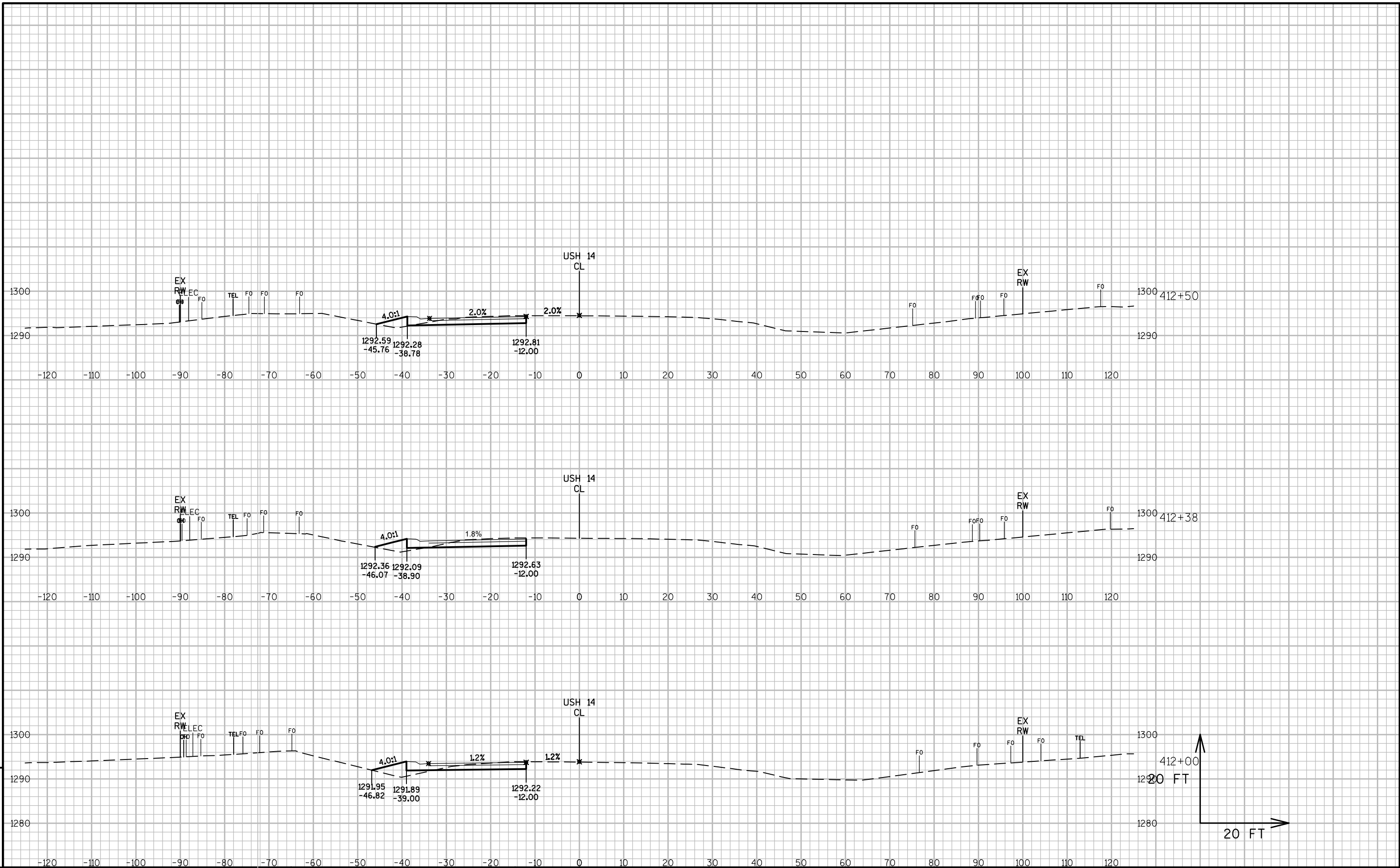


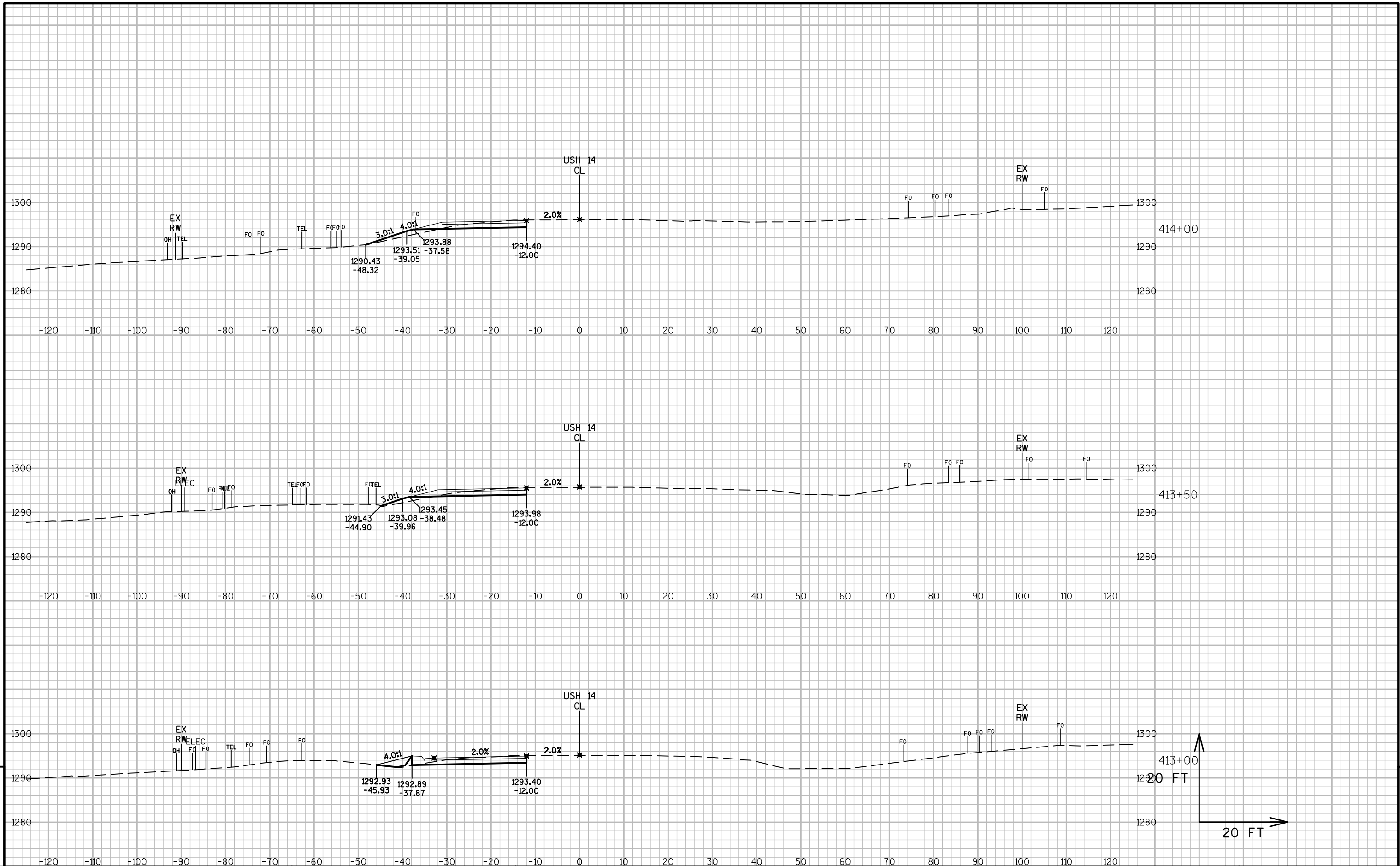


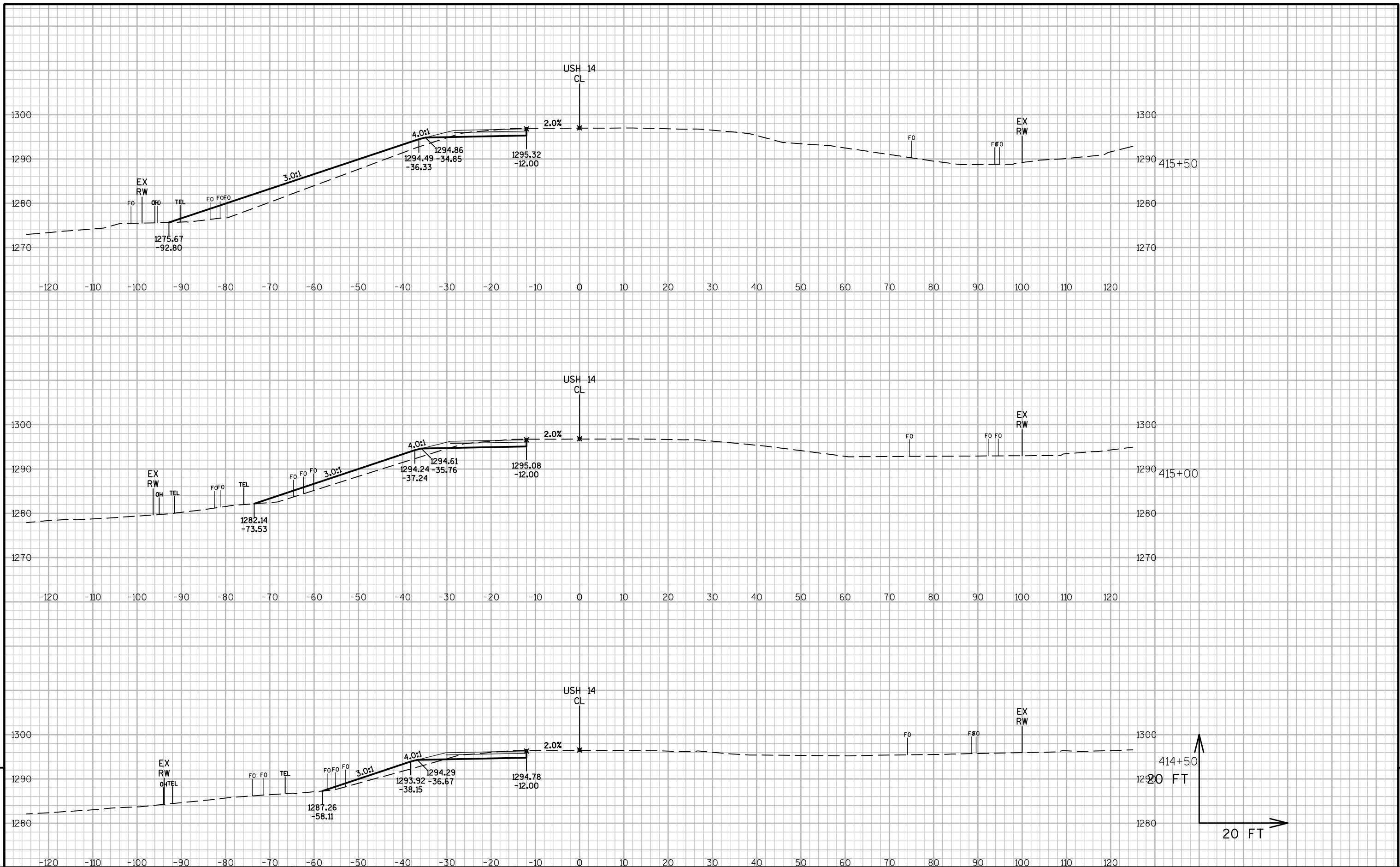


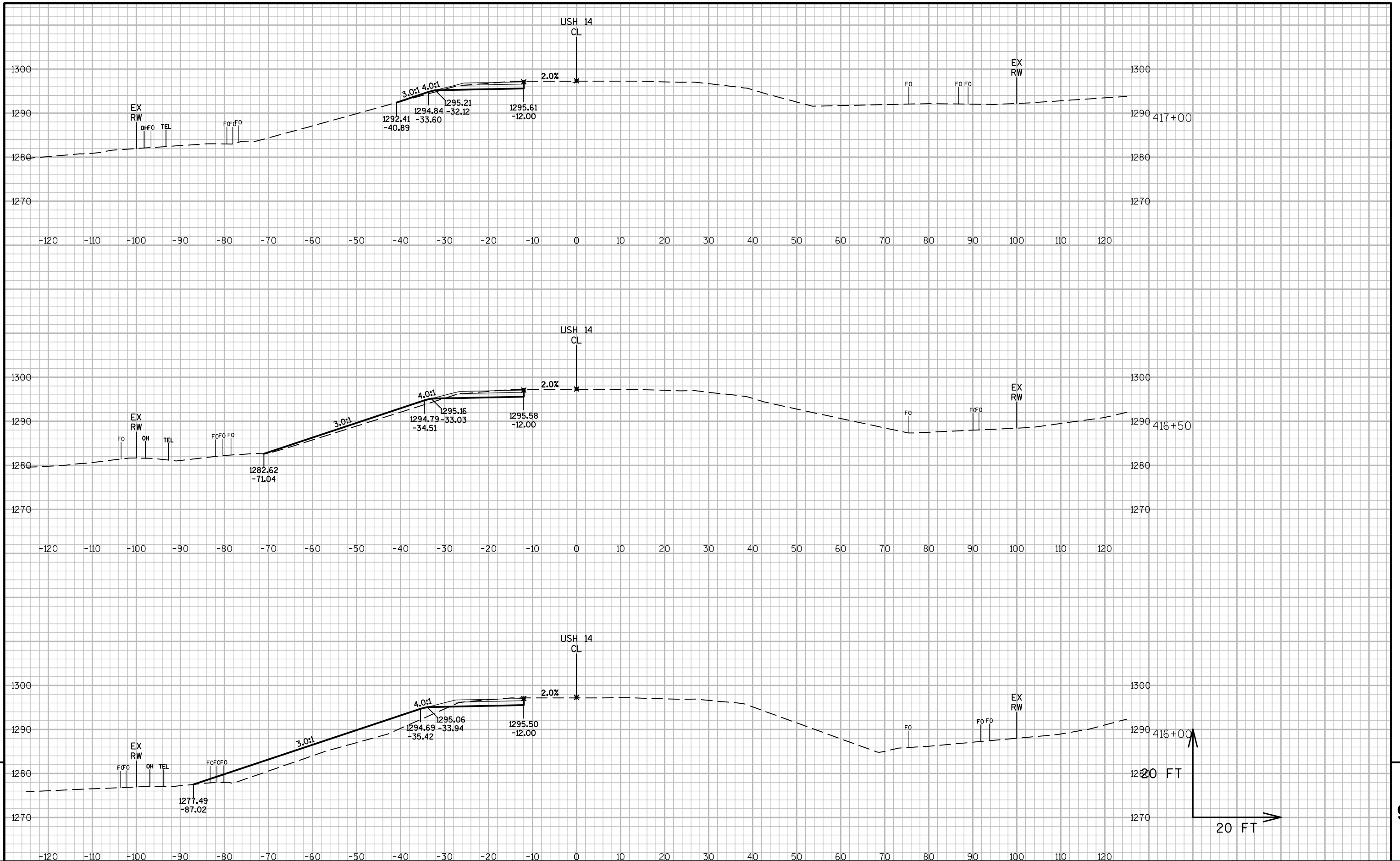




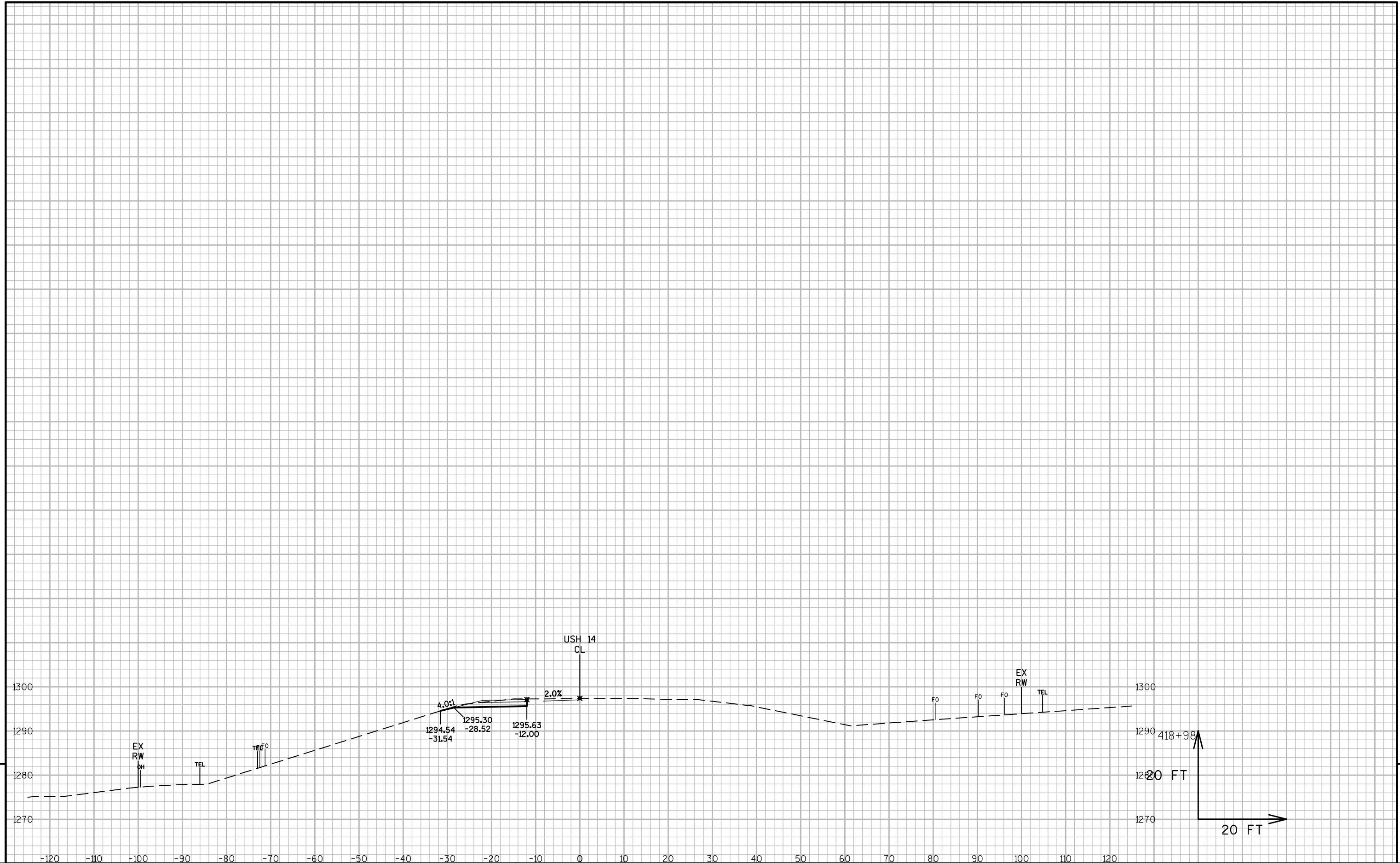




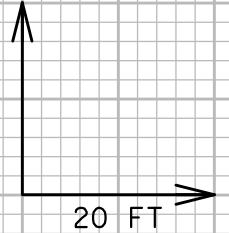
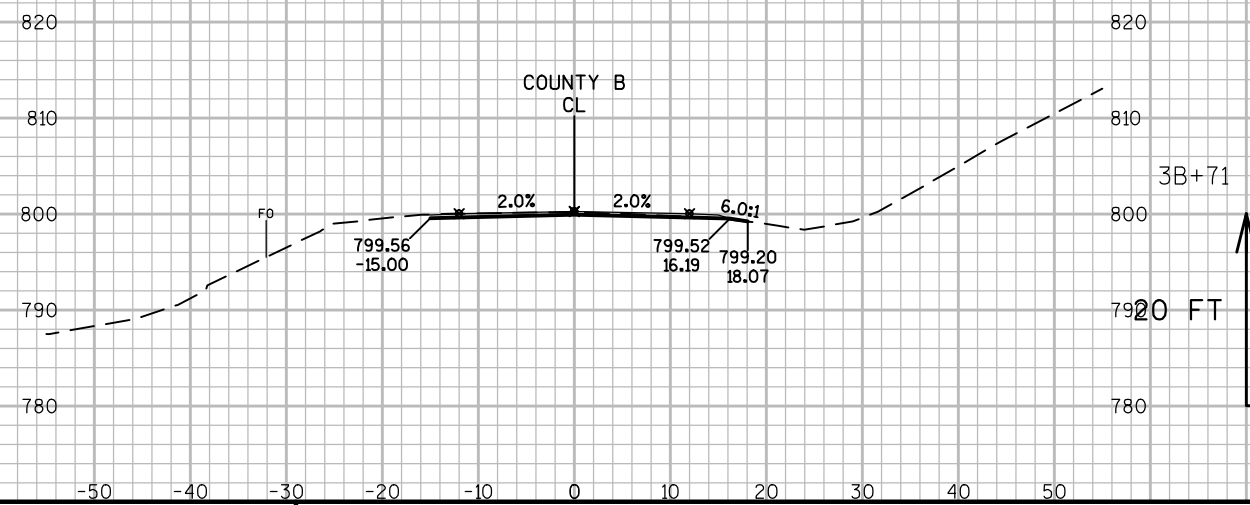
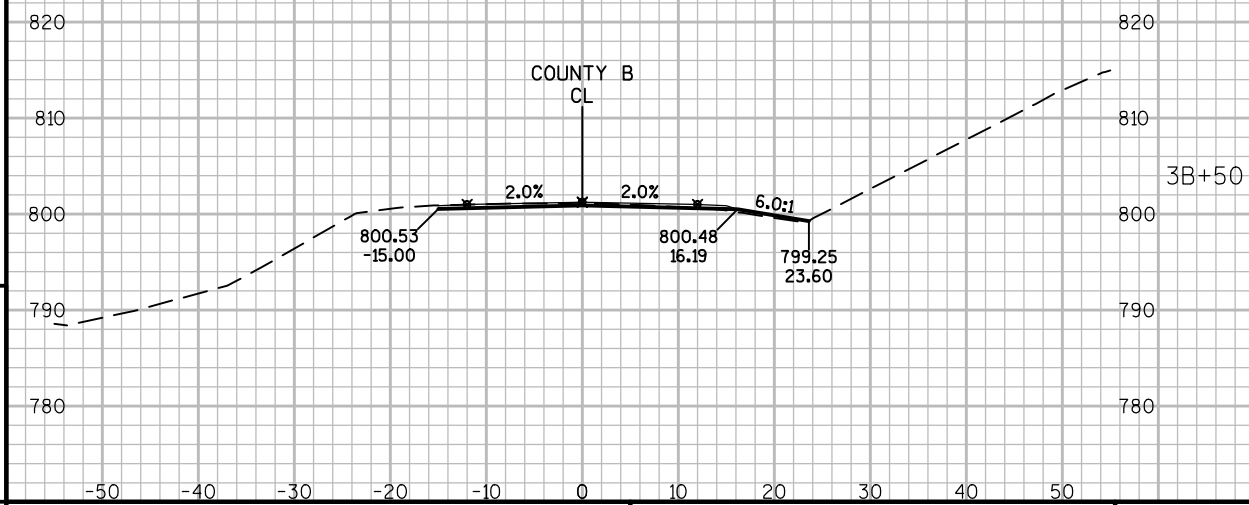
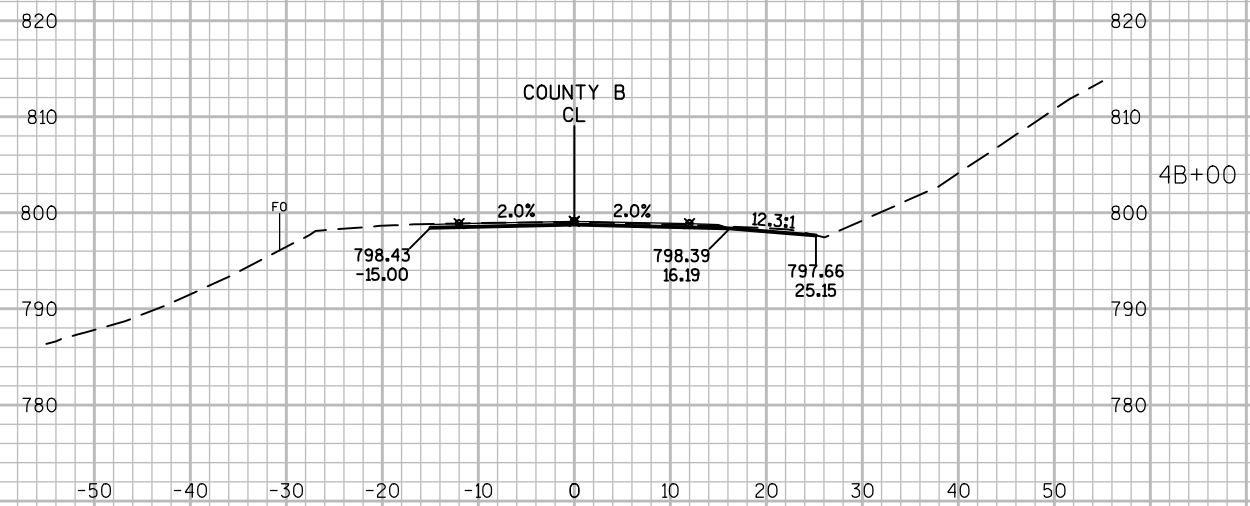
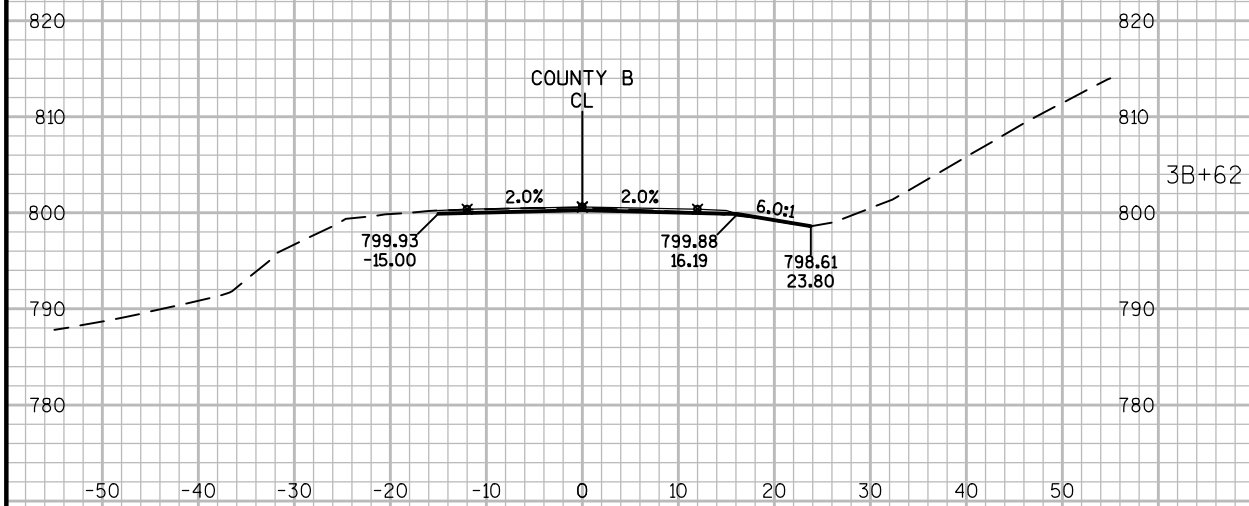


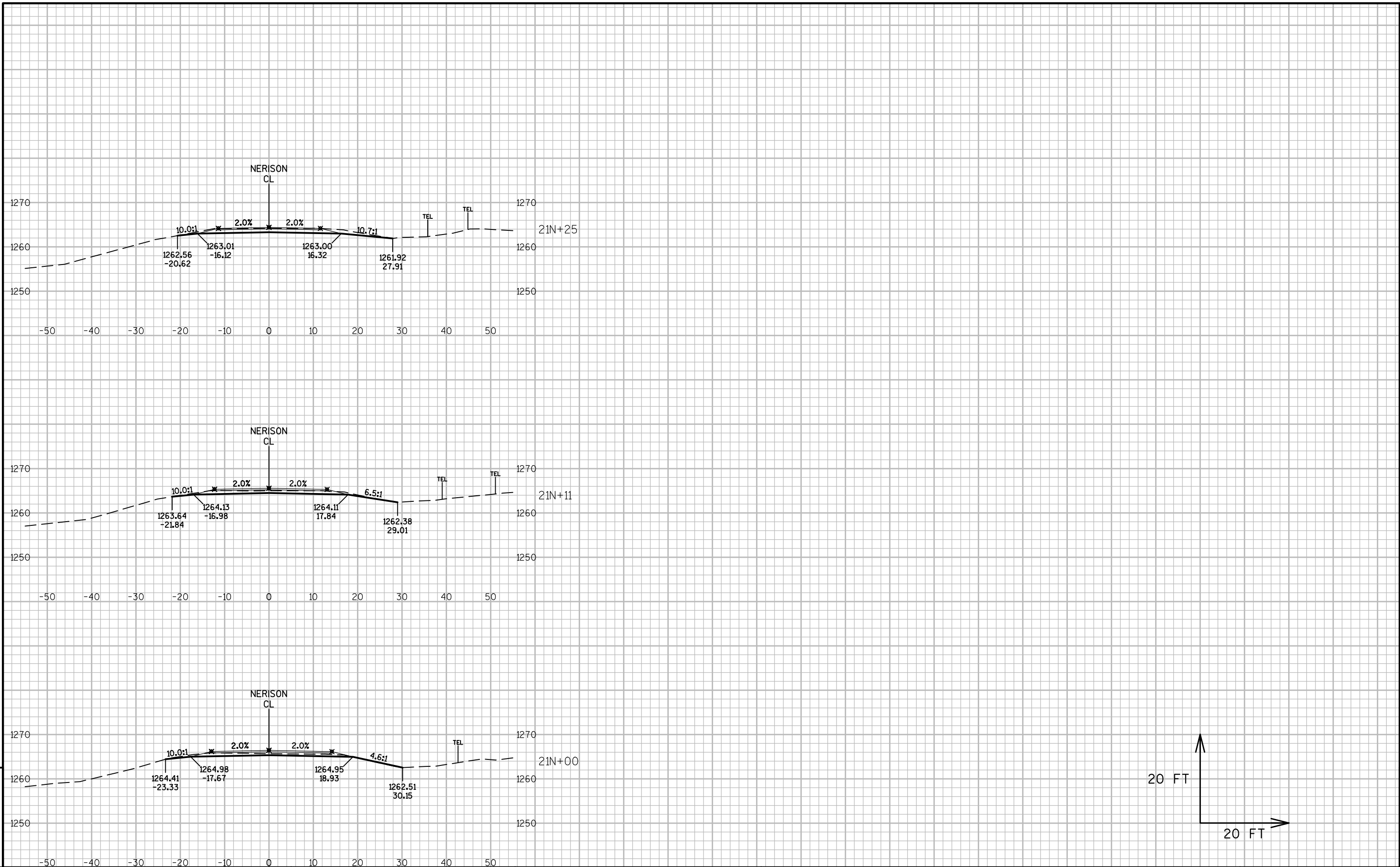


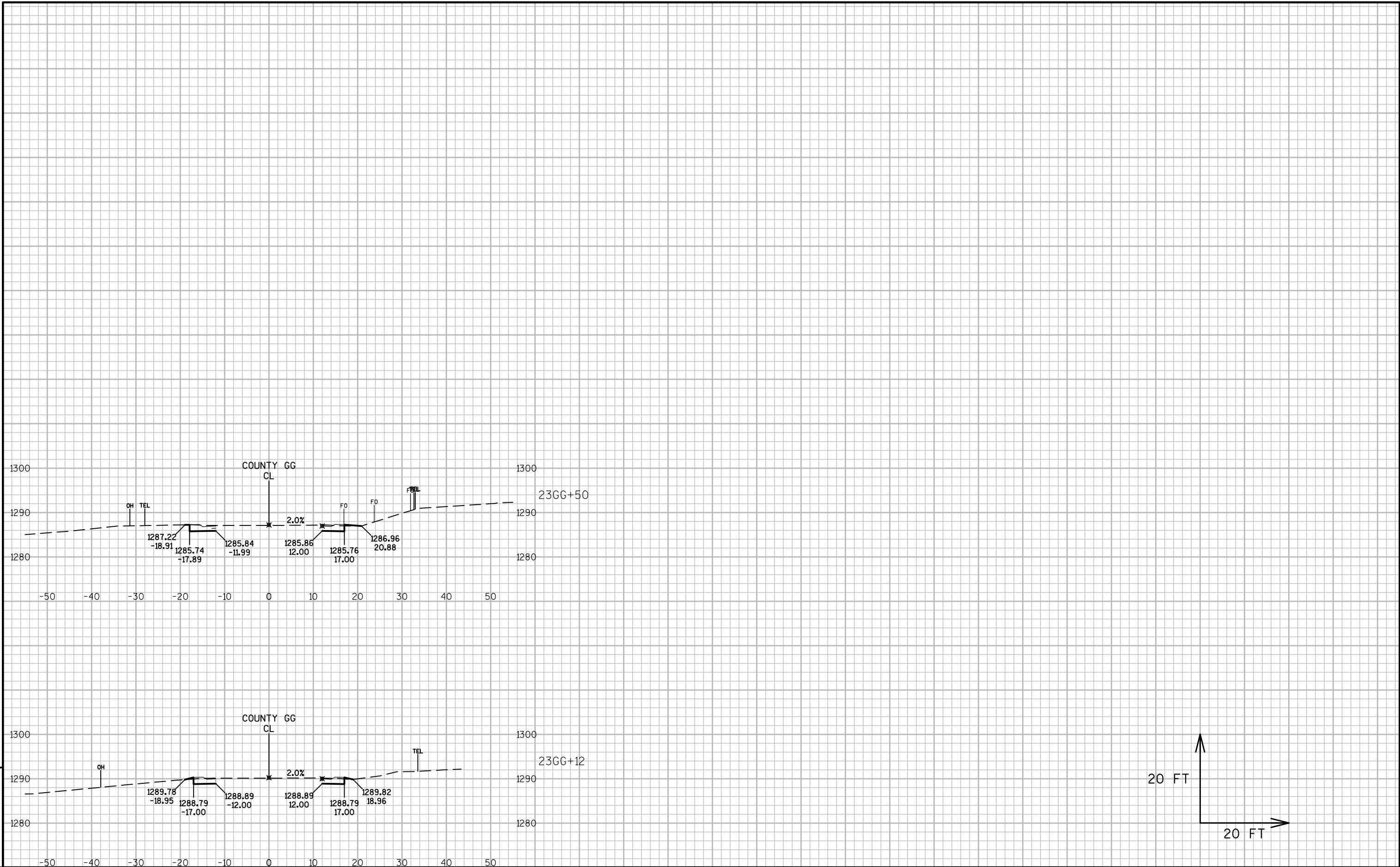
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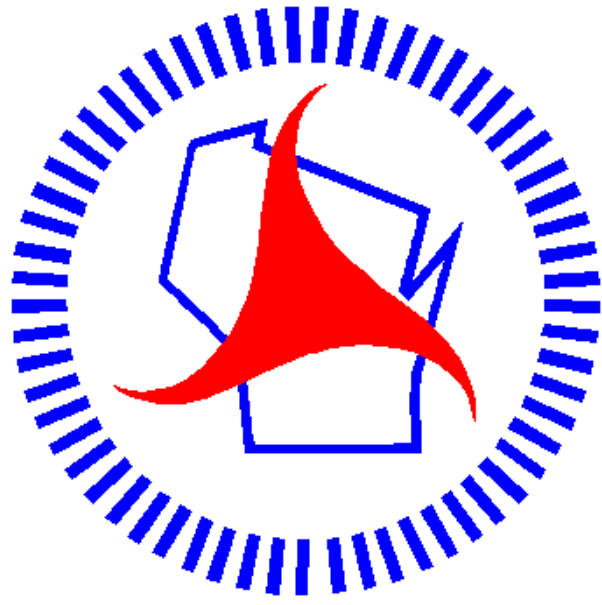
9







Notes



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