

MAD

PROJECT ID: 5300-00-71

WITH: 5300-00-71

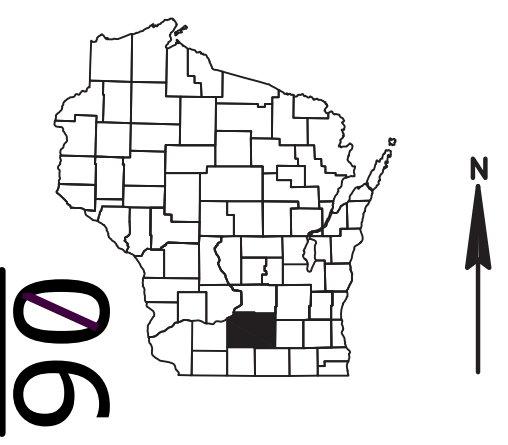
COUNTY: DANE

APRIL 2019

ORDER OF SHEETS

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

TOTAL SHEETS = 230



DESIGN DESIGNATION 5300-00-01

A.A.D.T. (2018) = 79030

A.A.D.T. (2038) = 90370

D.H.V. = 9308

D.D. = 54/46

T. = 4%

DESIGN SPEED = 60 MPH

ESALS = 7,700,000

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT (Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE (To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

300' EB

CAUTION

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SAUK CITY - MADISON

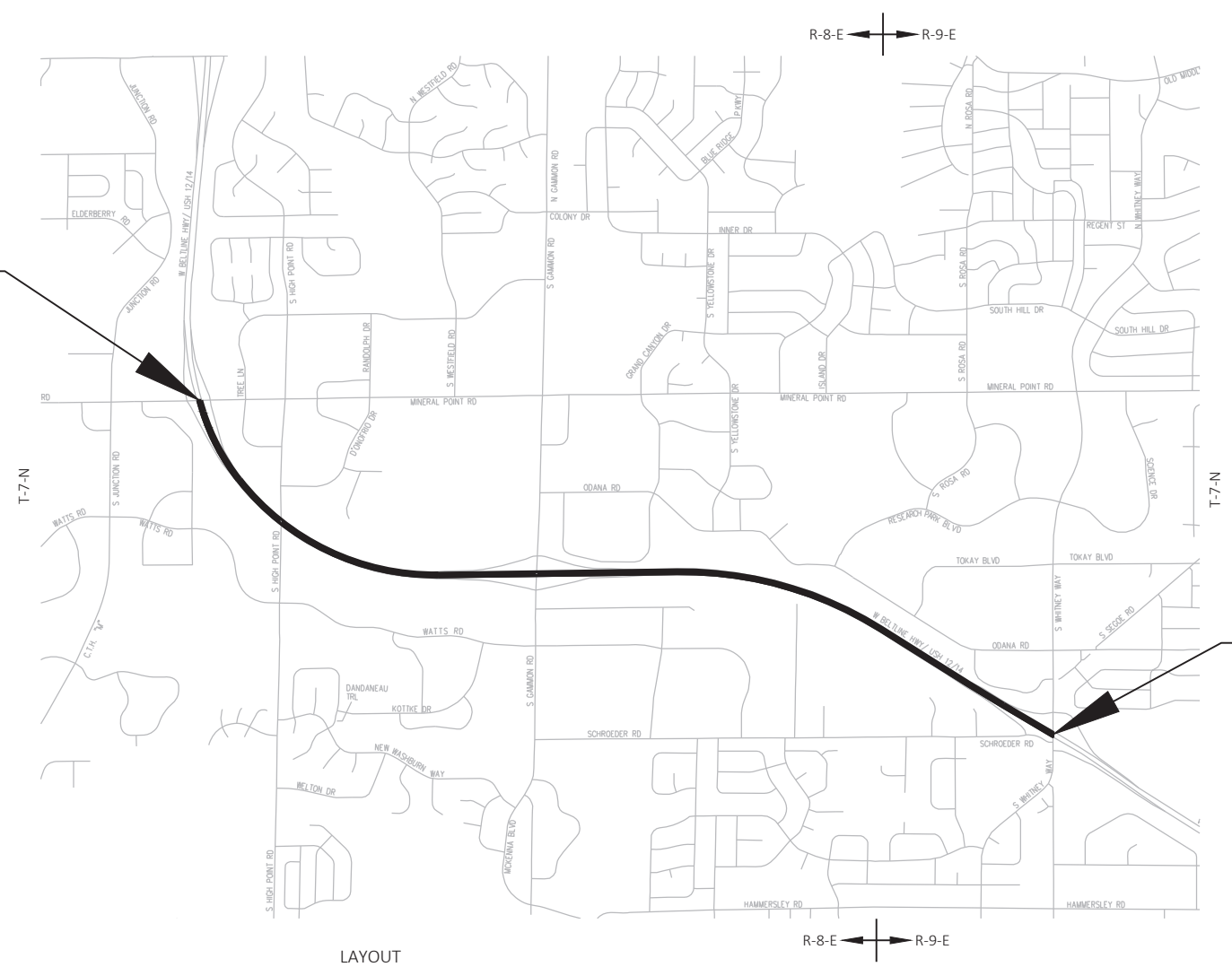
MINERAL POINT RD TO WHITNEY WAY

USH 12

DANE COUNTY

STATE PROJECT NUMBER

5300-00-71



BEGIN PROJECT

STA 179+62 EB

Y = 477323.382

X = 784298.399

END PROJECT

STA 323+17 EB

LAYOUT

SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 2.719 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), DANE COUNTY ZONE NAD83(2001)

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 2012 (NAVD 88).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
PROJECT ID	WISC 2019215	1
5300-00-71		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor

Designer

Project Manager

Regional Examiner

Regional Supervisor

PATRICK STANKIEWICZ

VALERIE GUIDER

VALERIE GUIDER

SW REGION

BRENDA SCHOENFELD

APPROVED FOR THE DEPARTMENT

DATE: 11/30/2018

Brenda Schoenfeld
(Signature)

E

GENERAL NOTES

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. THE PRIME CONTRACTOR IS RESPONSIBLE FOR REMOVING THESE ITEMS WHEN NO LONGER NECESSARY.

THE LOCATIONS OF EXISTING UTILITY FACILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. COORDINATE 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.

ADJUST THE LOCATIONS OF CONTRACT ITEMS UNDER THE CONTRACT TO AVOID CONFLICTS WITH THE EXISTING UTILITY FACILITIES, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT SPECIAL PROVISIONS.

THE CONTRACTORS PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT PAVEMENT 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.

THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH WERE DISTURBED BY HIS OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

NUMBER, LOCATION AND SPACING OF SIGNS AND DEVICES, AS SHOWN IN THE PLANS, SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

ALL DISTURBED AREAS SHALL BE RESTORED WITH SALVAGED TOPSOIL, FERTILIZER, SEEDING AND EROSION MAT.

SECTION 2 SHEETS:

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
EROSION CONTROL
PERMANENT SIGNING/PAVEMENT MARKING
TRAFFIC SIGNAL
TRAFFIC CONTROL
CONSTRUCTION STAGING
SOIL BORINGS
ALIGNMENT DETAIL

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SURVEY CONTACT

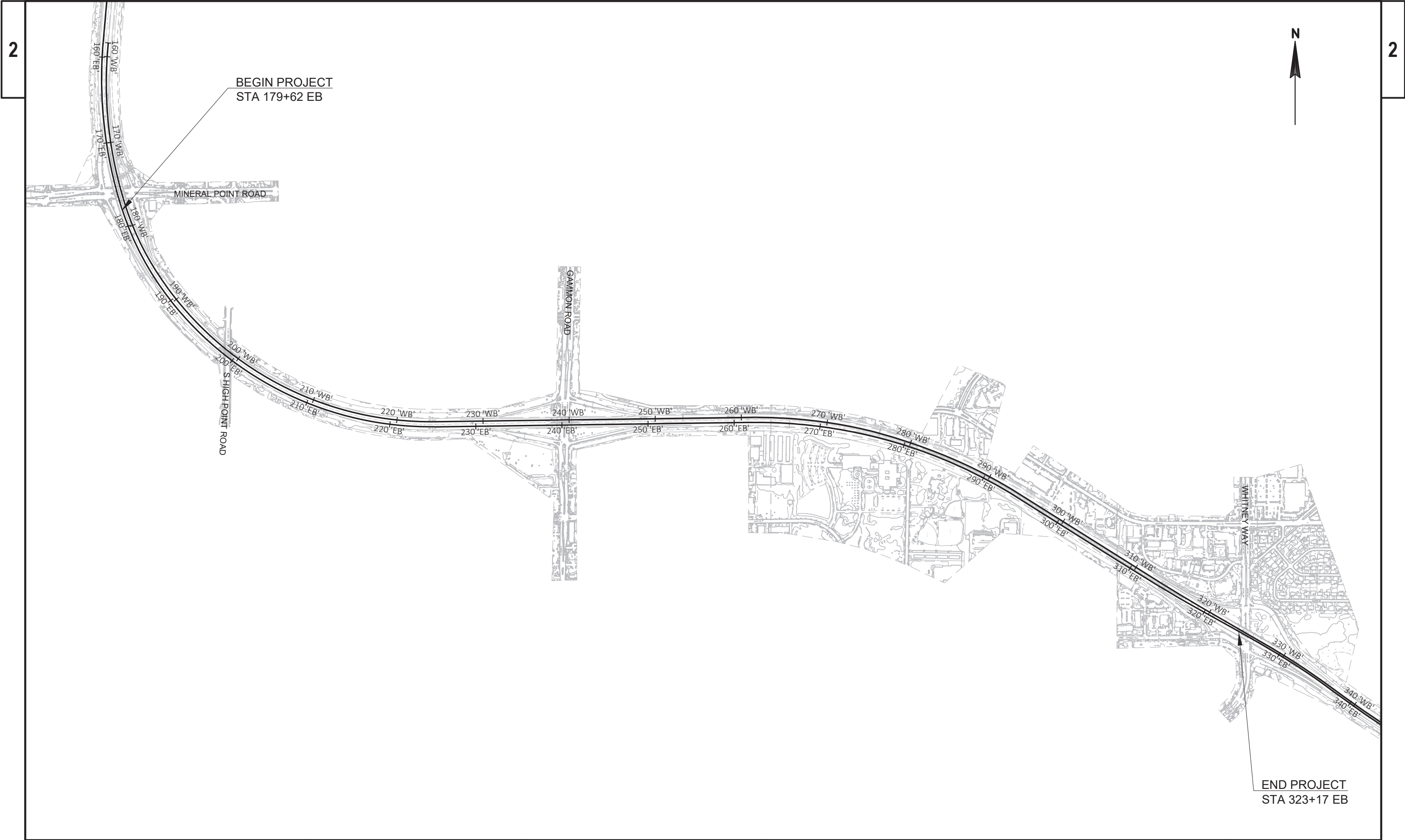
SURVEY COORDINATOR
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DEPT. OF TRANSPORTATION
2101 WRIGHT ST.
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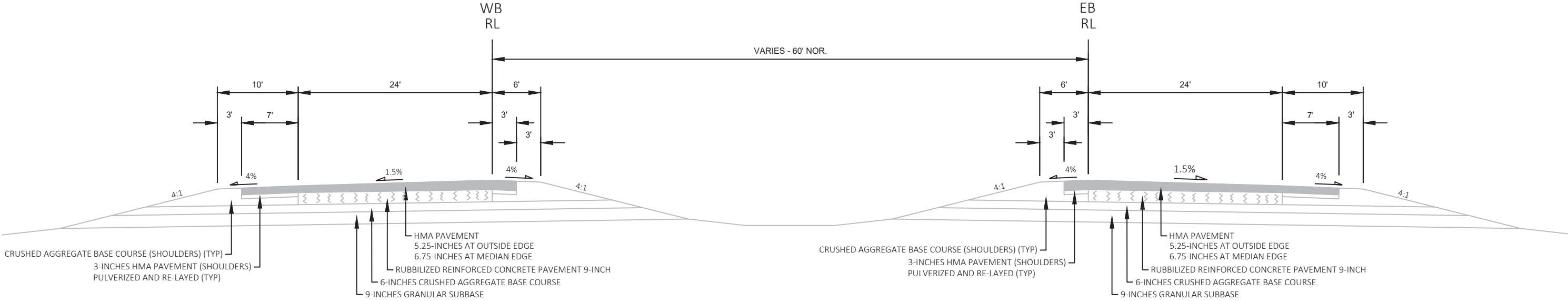
WI. DEPARTMENT OF NATURAL RESOURCES LIASON

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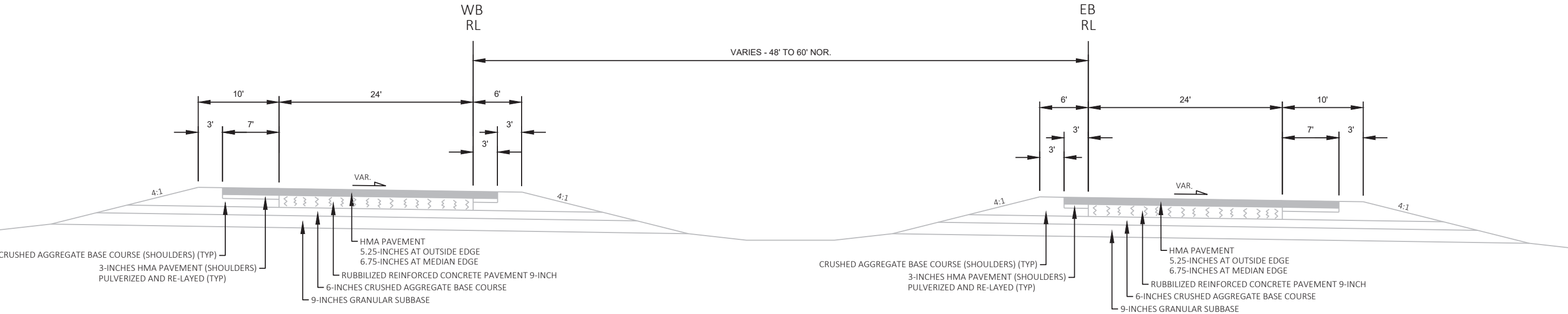
AP	ACCESS POINT	NOM	NOMINAL
AC	ACRE	NC	NORMAL CROWN
ADJ	ADJUST	N	NORTH
AECPRC	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE	Y	NORTH GRID COORDINATE
AH	AHEAD	NB	NORTHBOUND
AC	ASPHALT CEMENT	NO	NUMBER
ASPH	ASPHALTIC	OPT	OPTIONAL
ACP	ASPHALTIC PAVEMENT CONCRETE	OD	OUTSIDE DIAMETER
AVG	AVERAGE	PAVT	PAVEMENT
ADT	AVERAGE DAILY TRAFFIC	PLE	PERMANENT LIMITED EASEMENT
BK	BACK	PACS	PIPE ARCH CORRUGATED STEEL
BAD	BASE AGGREGATE DENSE	PT	POINT
BM	BENCH MARK	PC	POINT OF CURVATURE
CB	CATCH BASIN	PI	POINT OF INTERSECTION
C/L	CENTER LINE	PT	POINT OF TANGENCY
C/L CONST	CENTER LINE CONSTRUCTION CENTRAL ANGLE OR DELTA	PVC	POINT OF VERTICAL CURVE
CL	CLASS	PVI	POINT OF VERTICAL INTERSECTION
CONC	CONCRETE	PVT	POINT OF VERTICAL TANGENCY
CONST	CONSTRUCTION	PVC	POLYVINYLCHLORIDE
CMCP	CORRUGATED METAL CULVERT PIPE	PCC	PORTLAND CEMENT CONCRETE
CTH	COUNTY TRUNK HIGHWAY	LB	POUND
CABC	CRUSHED AGGREGATE BASE COURSE	PSF	POUNDS PER SQUARE FOOT
CFS	CUBIC FEET PER SECOND	PSI	POUNDS PER SQUARE INCH
CY	CUBIC YARD	PE	PRIVATE ENTRANCE
CP	CULVERT PIPE	PGL	PROFILE GRADE LINE
CPCS	CULVERT PIPE CORRUGATED STEEL	PL	PROPERTY LINE
CPRC	CULVERT PIPE REINFORCED CONCRETE	Q100	100 YEAR FLOW RATE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL	R	RADIUS
C & G	CURB AND GUTTER	RR	RAILROAD
D	DEGREE OF CURVE	R	RANGE
DRV	DESIGN HOUR VOLUME	R/L	REFERENCE LINE
DIA	DIAMETER	REINF	REINFORCING OR REINFORCEMENT
DD	DIRECTIONAL DISTRIBUTION	REQD	REQUIRED
DWY	DRIVEWAY	RT	RIGHT
E	EAST	R/W	RIGHT-OF-WAY
X	EAST GRID COORDINATE	RD	ROAD
EB	EASTBOUND	RDWY	ROADWAY
EL	ELEVATION	SEC	SECTION CORNER
ESALS	EQUIVALENT SINGLE AXLE LOADS	SHLDR	SHOULDER
EXC	EXCAVATION	S	SOUTH
EBS	EXCAVATION BELOW SUBGRADE	SB	SOUTHBOUND
EXIST	EXISTING	SQ	SQUARE
FPS	FEET PER SECOND	SF	SQUARE FEET
FERT	FERTILIZE	SW	SIDEWALK
FE	FIELD ENTRANCE	SY	SQUARE YARD
FL	FLOW LINE	SDD	STANDARD DETAIL DRAWINGS
FT	FOOT	STH	STATE TRUNK HIGHWAYS
GN	GRID NORTH	STA	STATION
HES	HIGH EARLY STRENGTH	SS	STORM SEWER
HP	HIGH POINT	SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
HW	HIGH WATER	ST	STREET
HMA	HOT MIX ASPHALT	STR	STRUCTURE OR STRUCTURAL
CWA	HUNDREDWEIGHT	SE	SUPERELEVATION
HYD	HYDRANT	T	TANGENT
INL	INLET	TEMP	TEMPORARY
ID	INSIDE DIAMETER	TI	TEMPORARY INTEREST
I	INTERSECTION ANGLE	TLE	TEMPORARY LIMITED EASEMENT
INV	INVERT	+	TON
IP	IRON PIPE OR PIN	T	TOWN
JT	JOINT	T/L	TRANSIT LINE
LT	LEFT	T	TRUCKS (PERCENT OF)
L	LENGTH OF CURVE	TYP	TYPICAL
LF	LINEAR FOOT	USH	UNITED STATES HIGHWAY
LP	LOW POINT	VAR	VARIABLE
LS	LUMP SUM	V	VELOCITY OF DESIGN SPEED
MH	MANHOLE	VERT	VERTICAL
MAX	MAXIMUM	VC	VERTICAL CURVE
Mgal	MEGAGALLON	VOL	VOLUME
MPH	MILES PER HOUR	WM	WATER MAIN
MIN	MINIMUM	WV	WATER VALVE
MON	MONUMENT	W	WEST
		WB	WESTBOUND
		Y	YARD





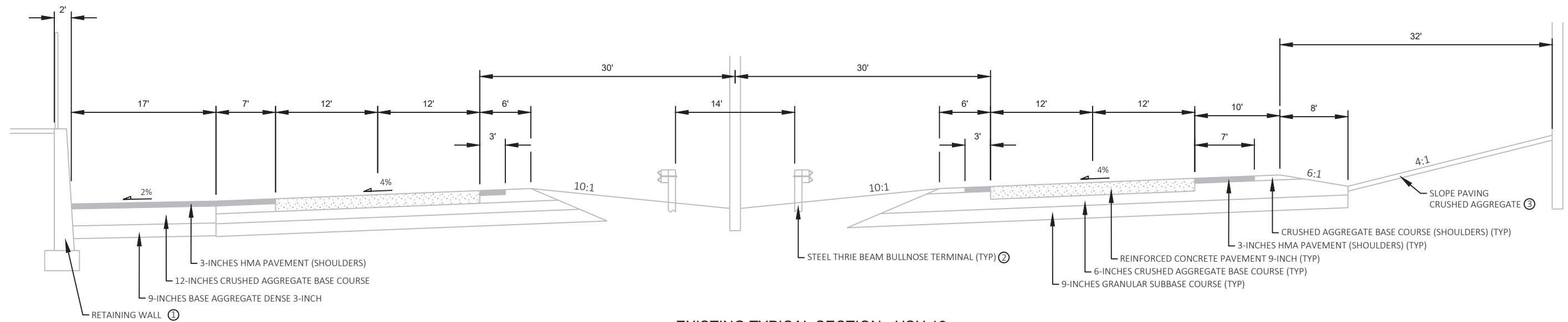
EXISTING TYPICAL SECTION - USH 12

STA. 227+18 EB - 233+29 EB



EXISTING TYPICAL SECTION - USH 12

STA. 179+35 EB - 196+14 EB
STA. 200+50 EB - 227+18 EB

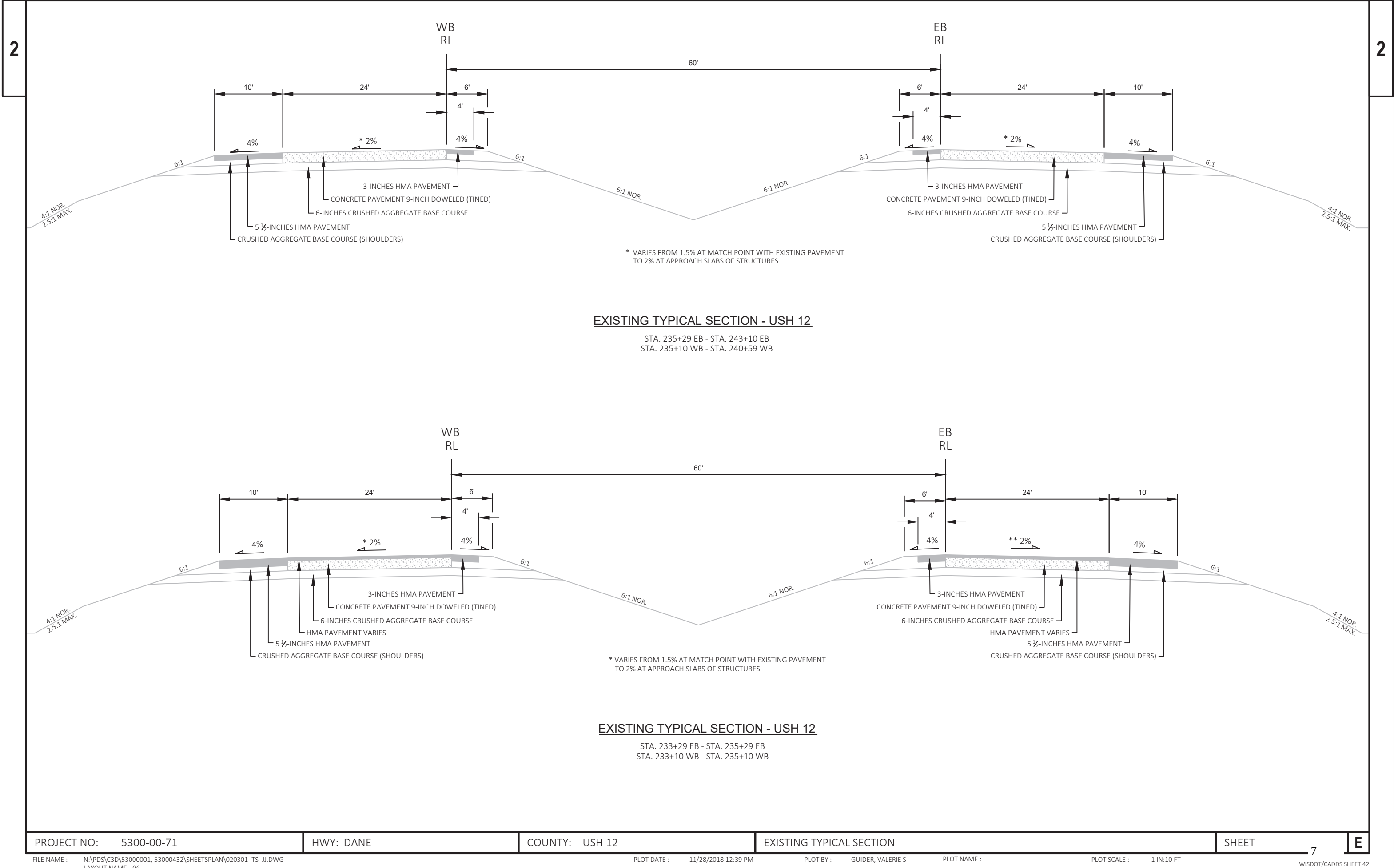
**EXISTING TYPICAL SECTION - USH 12**

STA. 196+14 EB - STA. 200+50 EB

① STA. 196+14 EB TO STA. 199+75 EB

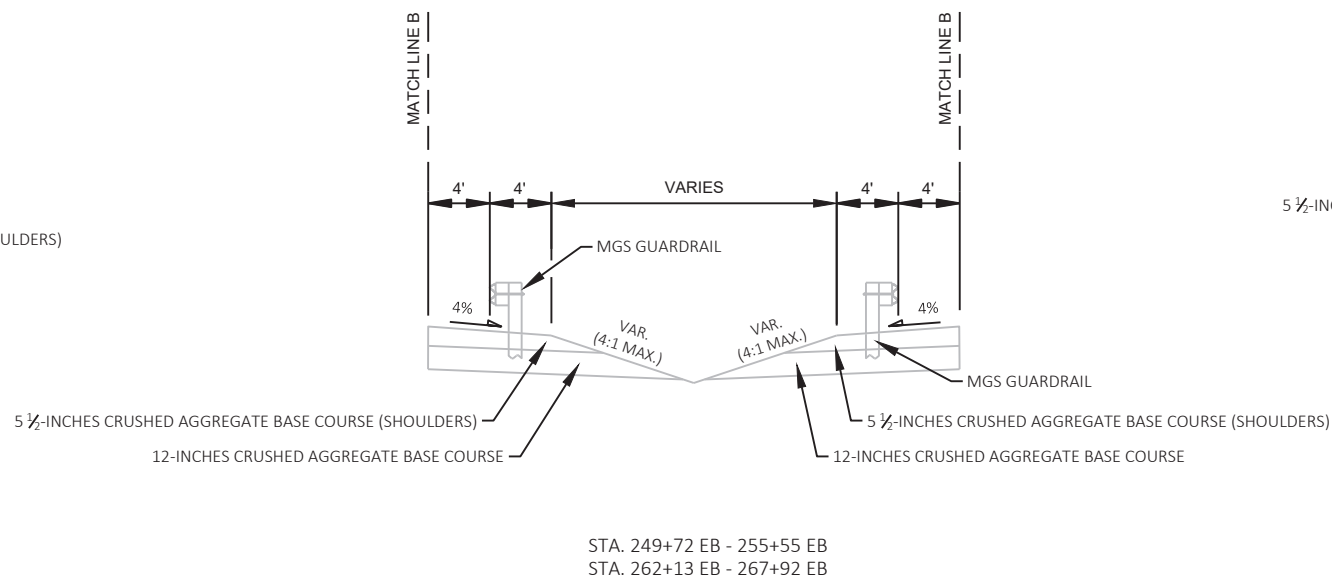
② STA. 197+91 EB TO STA. 200+27 EB

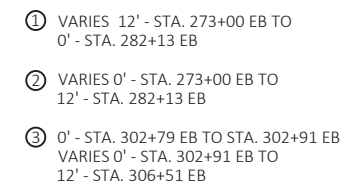
③ STA. 199+15 EB TO STA. 200+50 EB



2

2



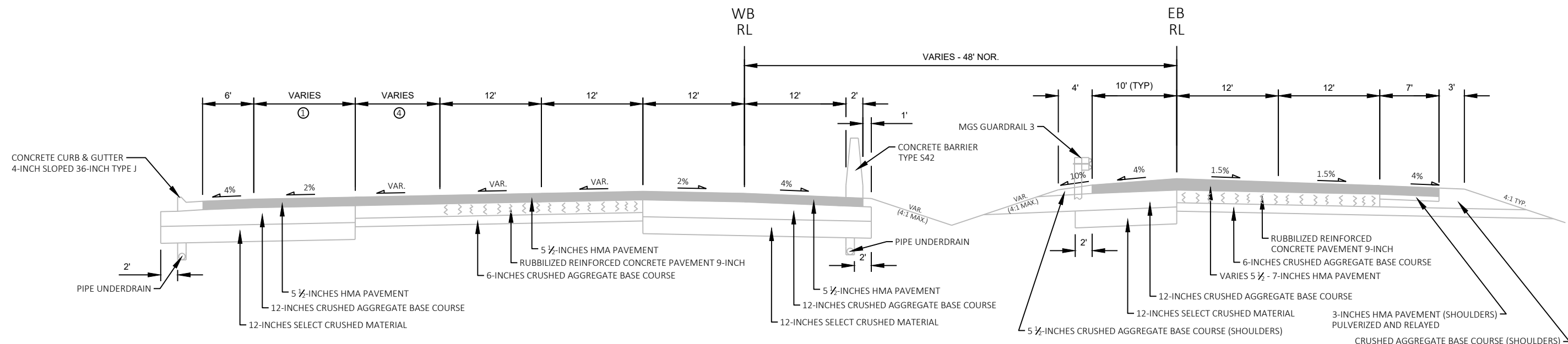


EXISTING TYPICAL SECTION - USH 12
STA. 271+91 EB - 283+00 EB



2

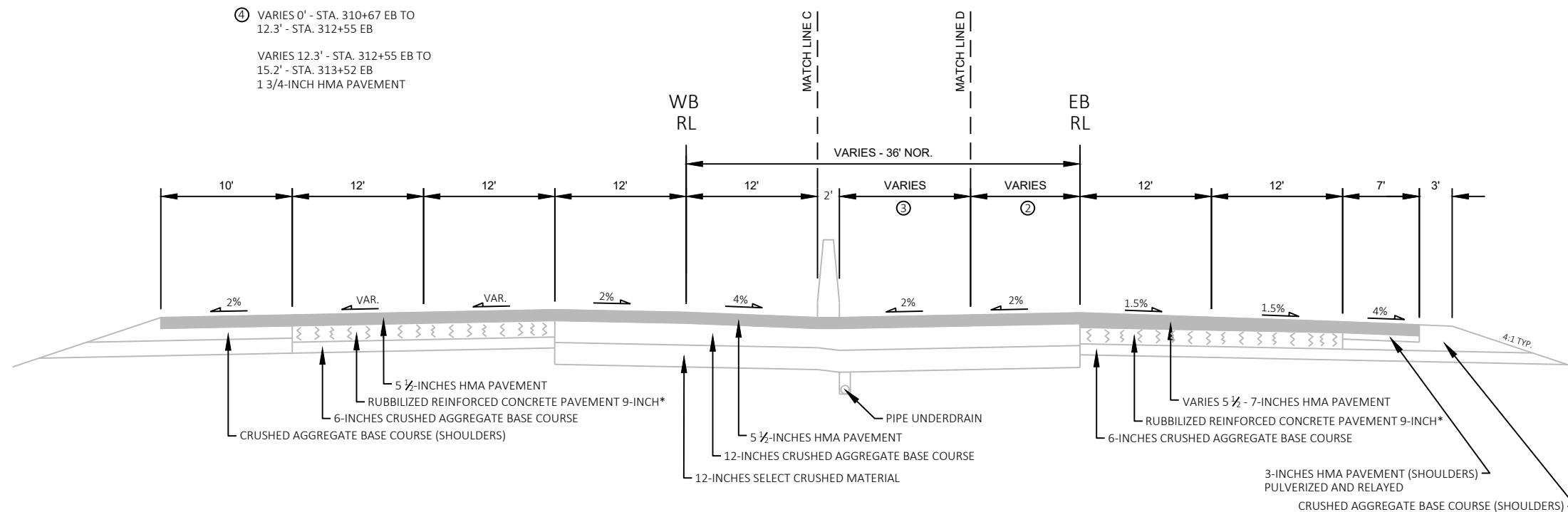
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EXISTING TYPICAL SECTION - USH 12

STA. 283+00 EB - 316+29 EB

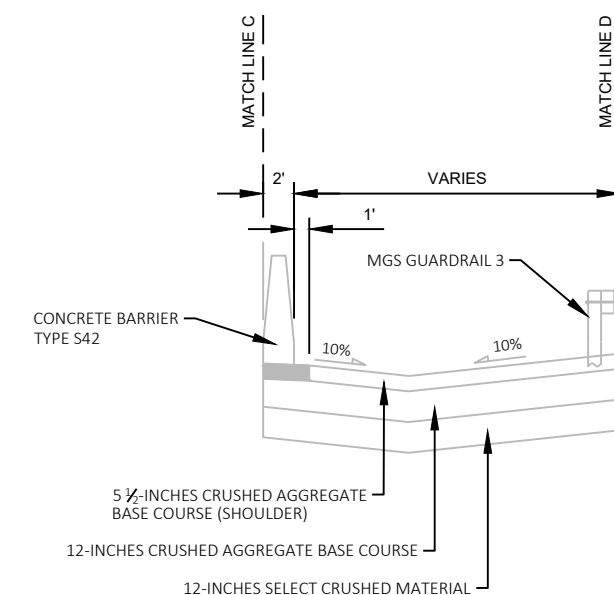
- ① VARIES 12' - STA. 310+67 EB TO 16' - STA. 312+55 EB
VARIES 3.7' - STA. 312+55 EB TO 2.4' - STA. 316+29 EB
- ② VARIES 0' - STA. 317+01 EB TO 12' - STA. 324+22 EB
- ③ VARIES 25.6' - STA. 317+02 EB TO 10' - STA. 324+22 EB
- ④ VARIES 0' - STA. 310+67 EB TO 12.3' - STA. 312+55 EB
VARIES 12.3' - STA. 312+55 EB TO 15.2' - STA. 313+52 EB
1 3/4-INCH HMA PAVEMENT



EXISTING TYPICAL SECTION - USH 12

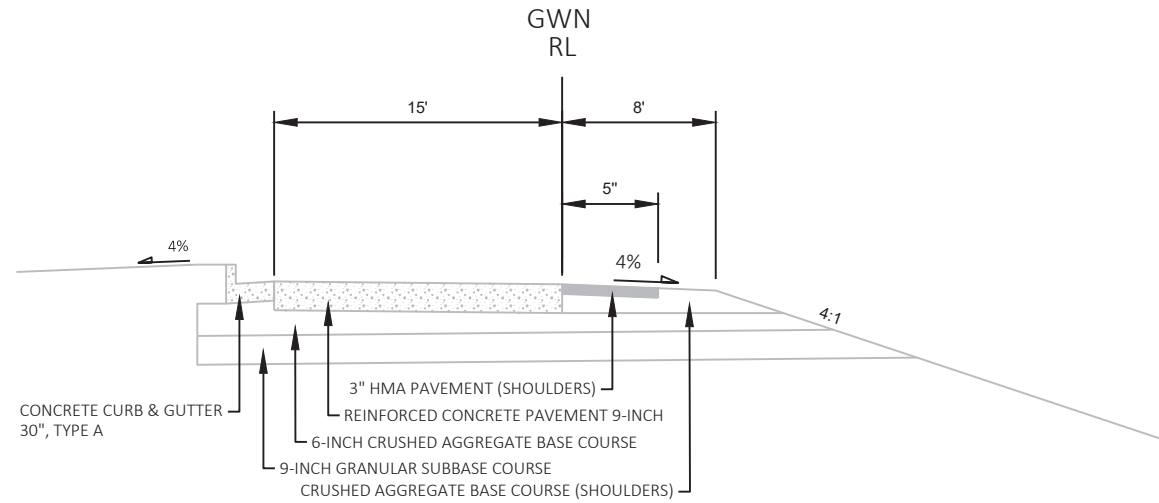
STA. 316+29 EB - 324+22 EB

*REINFORCED CONCRETE PAVEMENT 9-INCH
STA. 320+24 EB - 322+24 EB
STA. 320+53 WB - 322+53 WB

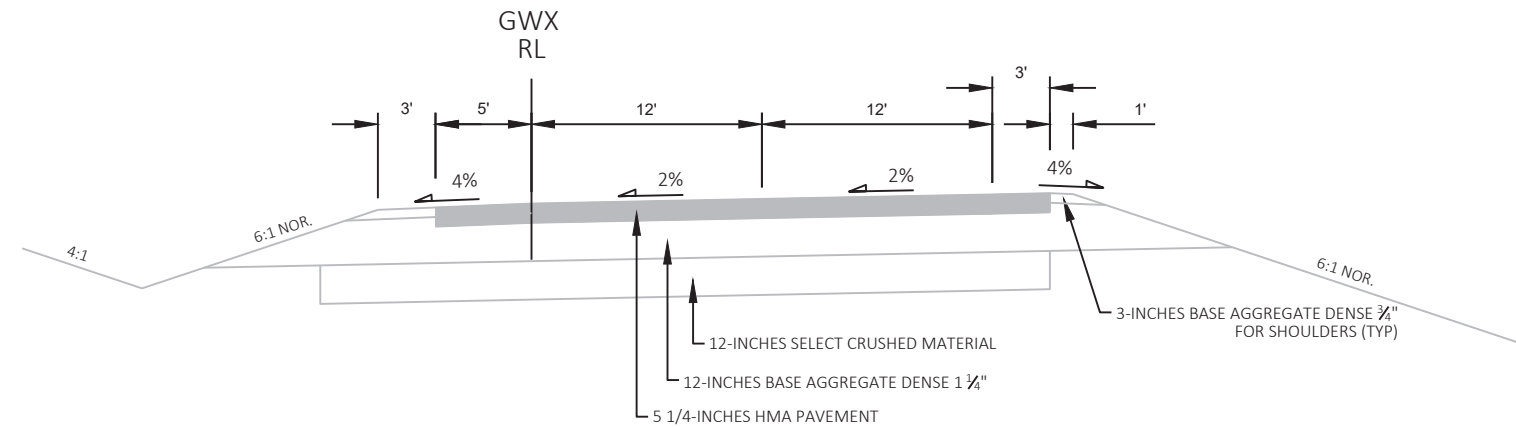


EXISTING MEDIAN TYPICAL SECTION - USH 12

STA. 316+29 EB - 317+02 EB

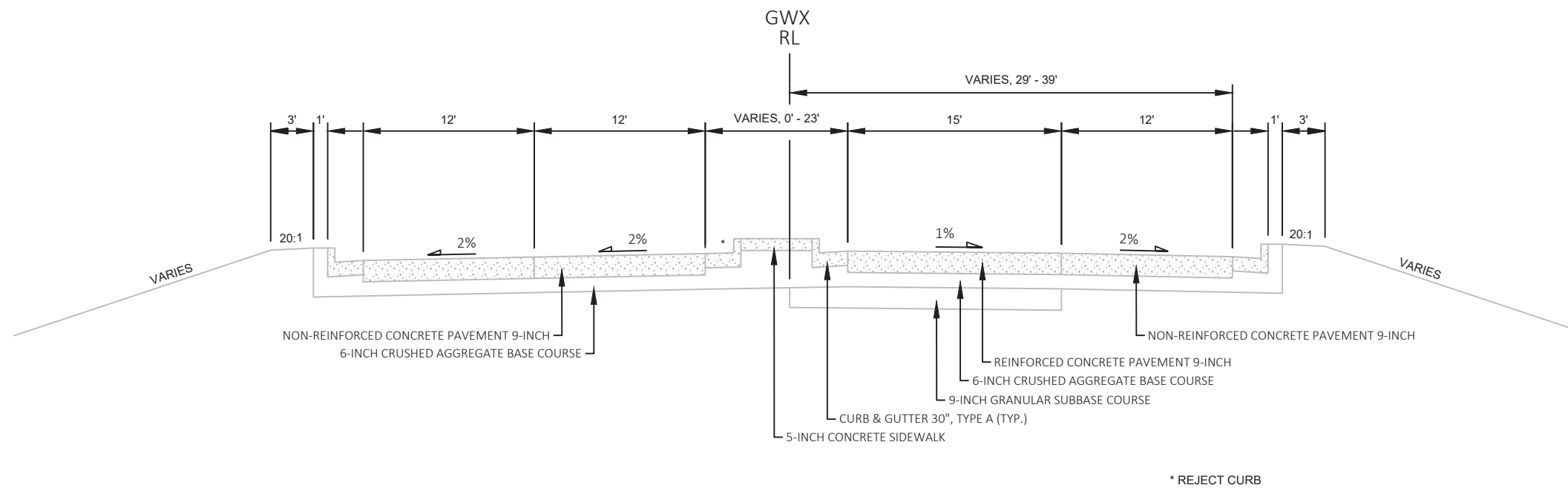


EXISTING TYPICAL SECTION - USH 12 WB ENTRANCE RAMP AT GAMMON RD.
STA. 236+90 GWN - STA. - 239+13 GWN



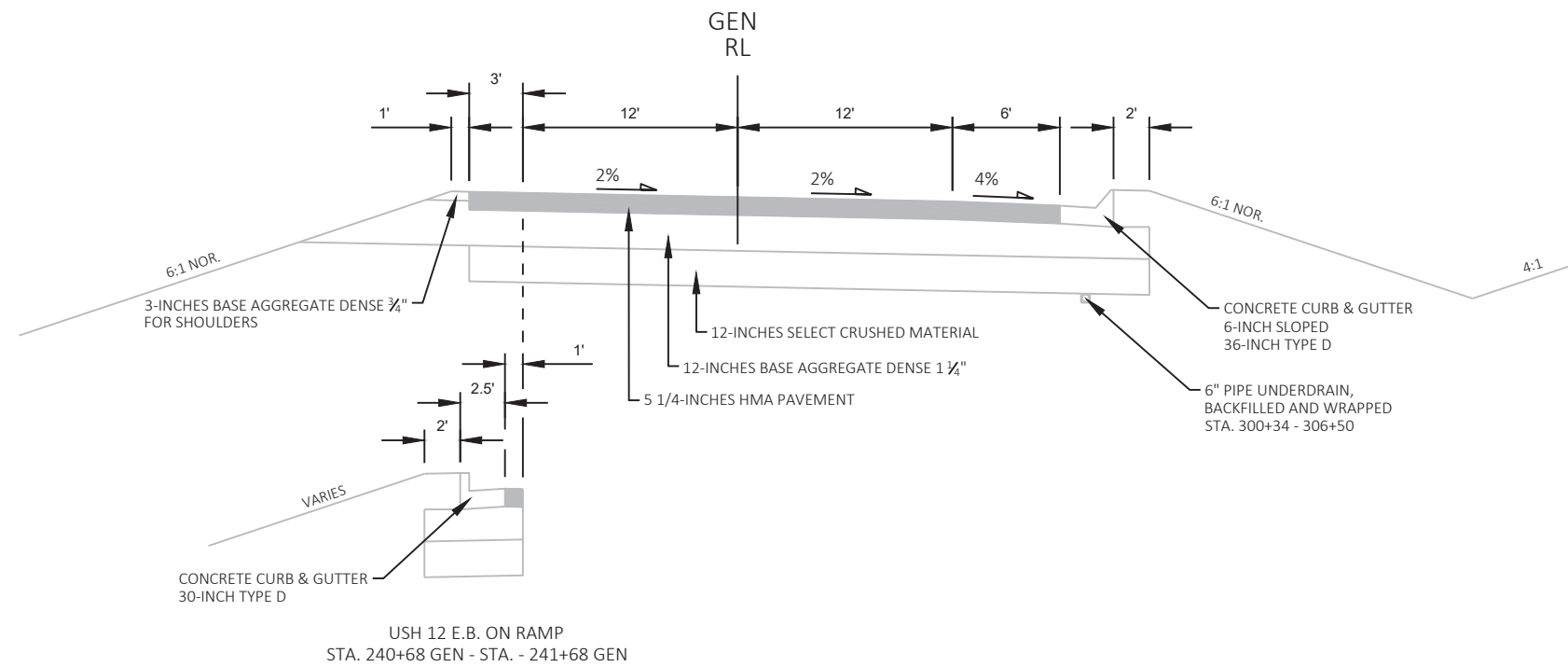
EXISTING TYPICAL SECTION - USH 12 WB EXIT RAMP AT GAMMON RD.

STA. 244+04 GWX - STA. - 251+20 GWX



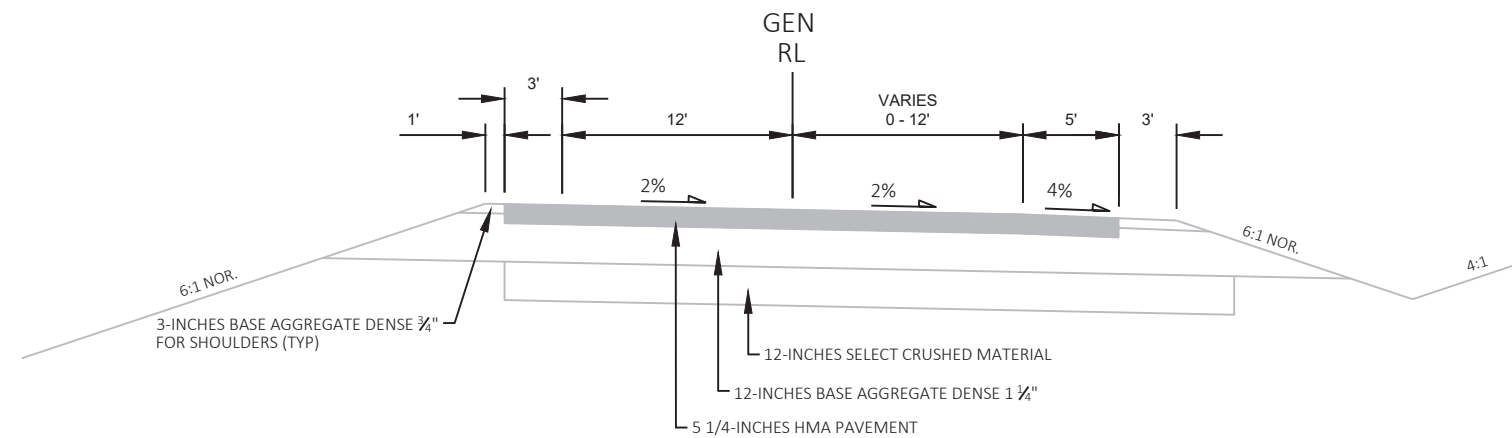
EXISTING TYPICAL SECTION - USH 12 WB EXIT RAMP AT GAMMON RD.

STA. 239+59 GWX - STA. - 243+48 GWX



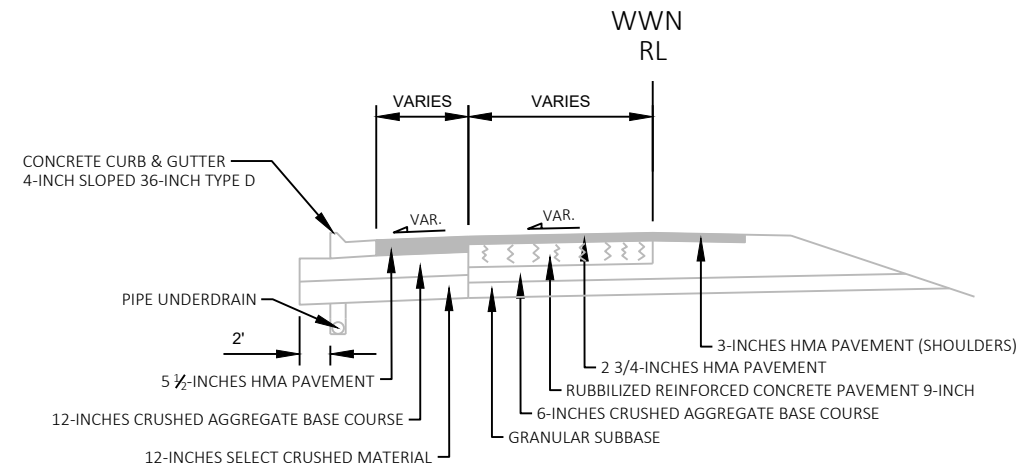
EXISTING TYPICAL SECTION - USH 12 EB ENTRANCE RAMP AT GAMMON RD.

STA. 240+68 GEN - STA. 247+25 GEN



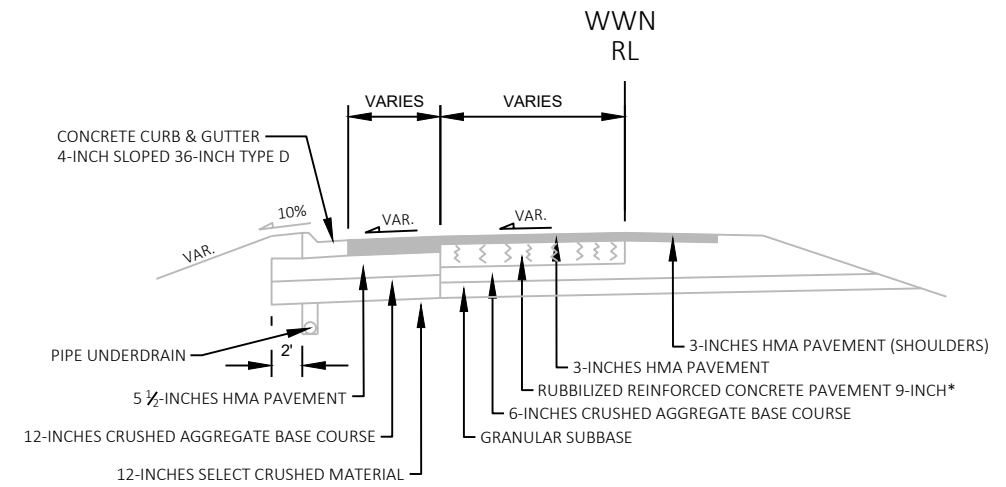
EXISTING TYPICAL SECTION - USH 12 EB ENTRANCE RAMP AT GAMMON RD.

STA. 247+25 GEN - STA. 257+57 GEN



EXISTING TYPICAL SECTION - USH 12 WB ENTRANCE RAMP AT WHITNEY WAY

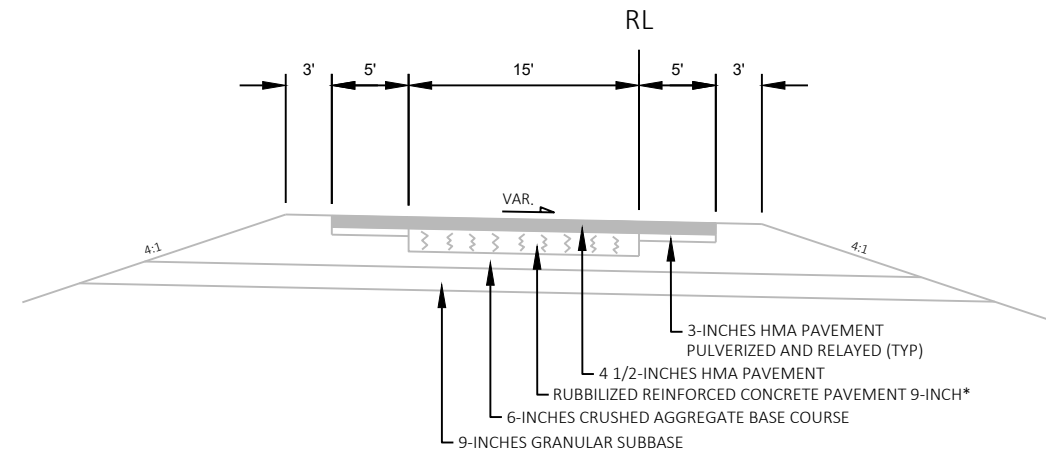
STA. 312+80 WWN - 317+88 WWN



EXISTING TYPICAL SECTION - USH 12 WB ENTRANCE RAMP AT WHITNEY WAY

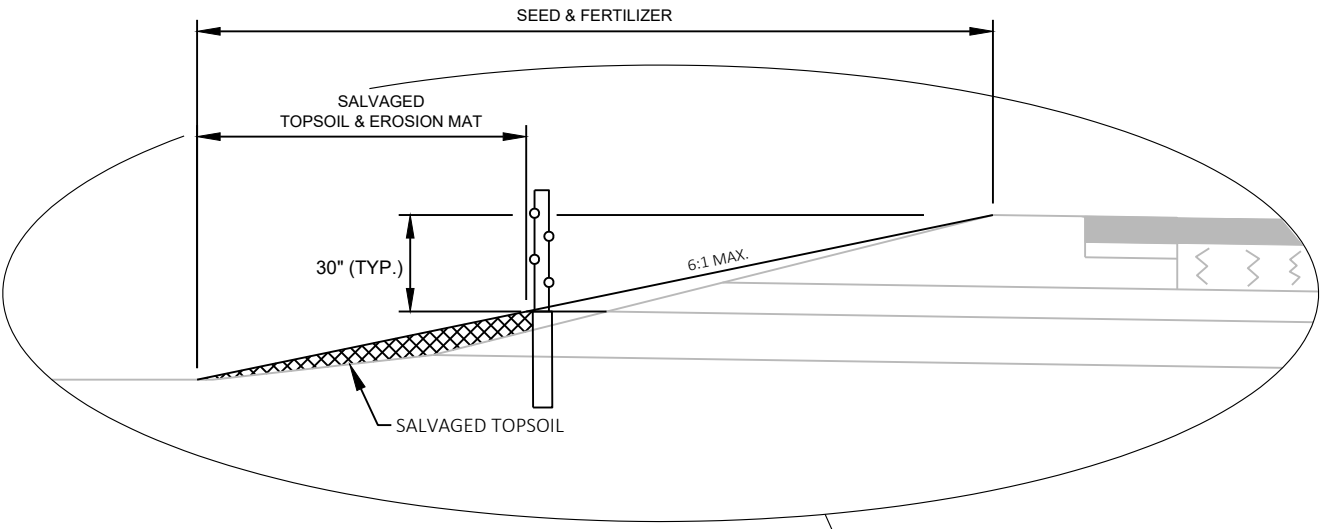
STA. 317+88 WWN - 322+32 WWN

*REINFORCED CONCRETE PAVEMENT 9-INCH
STA. 320+32 WWN - 322+32 WWN
STA. 318+36 WEX - 320+36 WEX



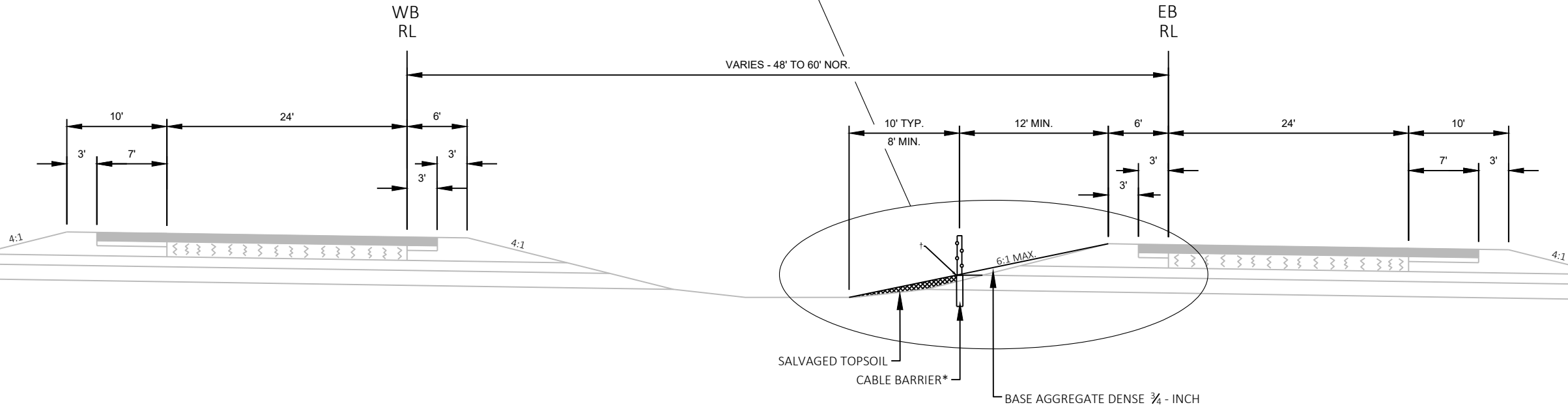
EXISTING TYPICAL SECTION - USH 12 EB EXIT RAMP AT WHITNEY WAY

STA. 313+94 WEX - STA. 320+36 WEX



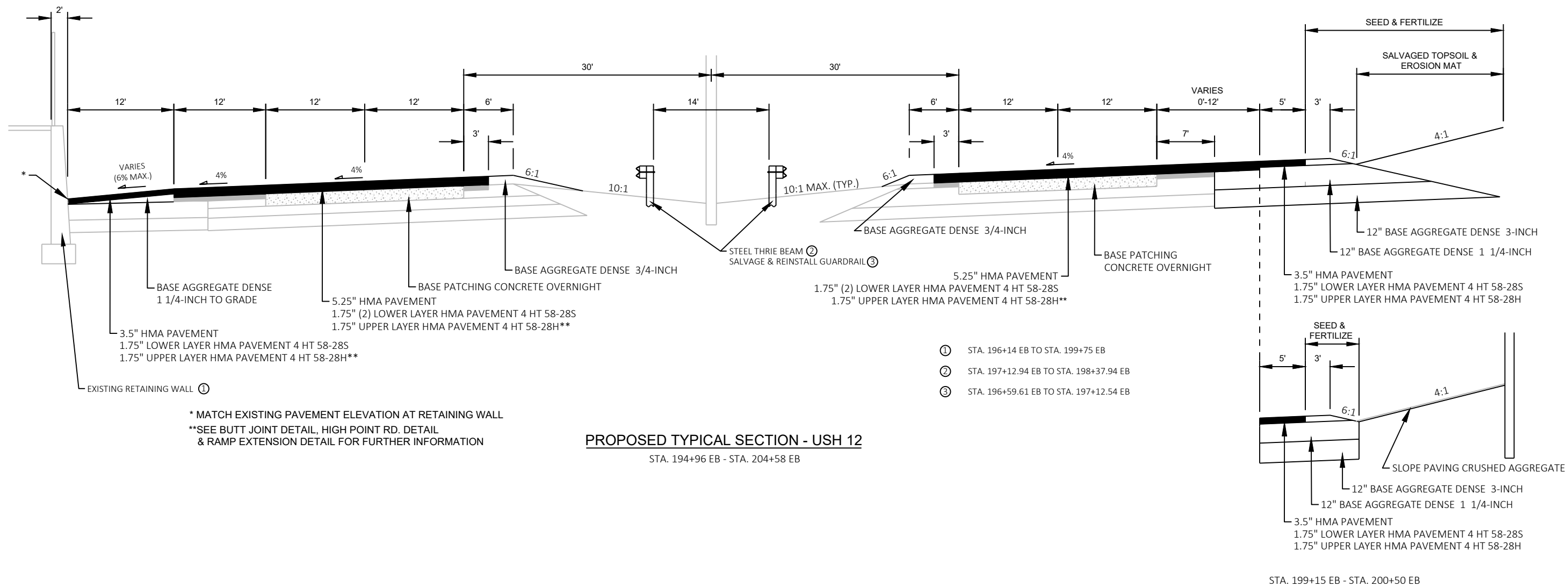
* PROPOSED CABLE BARRIER TYPE 1
(SIDE VARIES)
POST SPACING: MAX. 15', MIN. 7'

† SEE MANUFACTURER'S INFORMATION FOR
FOOTING DETAILS

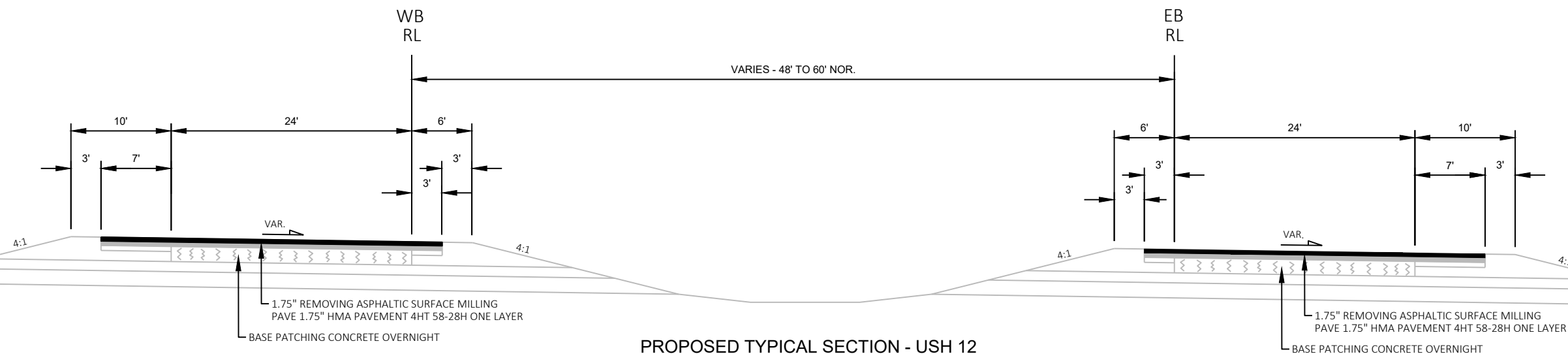


PROPOSED TYPICAL SECTION - USH 12

STA. 179+62 EB - 196+06 EB
STA. 200+18 EB - 238+44 EB

**PROPOSED TYPICAL SECTION - USH 12**

STA. 194+96 EB - STA. 204+58 EB

**PROPOSED TYPICAL SECTION - USH 12**STA. 195+59 EB - 196+19 EB
STA. 202+87 EB - 209+58 EB
STA. 194+52 WB - 195+12 WB
STA. 201+80 WB - 202+40 WB

PROJECT NO: 5300-00-71

HWY: DANE

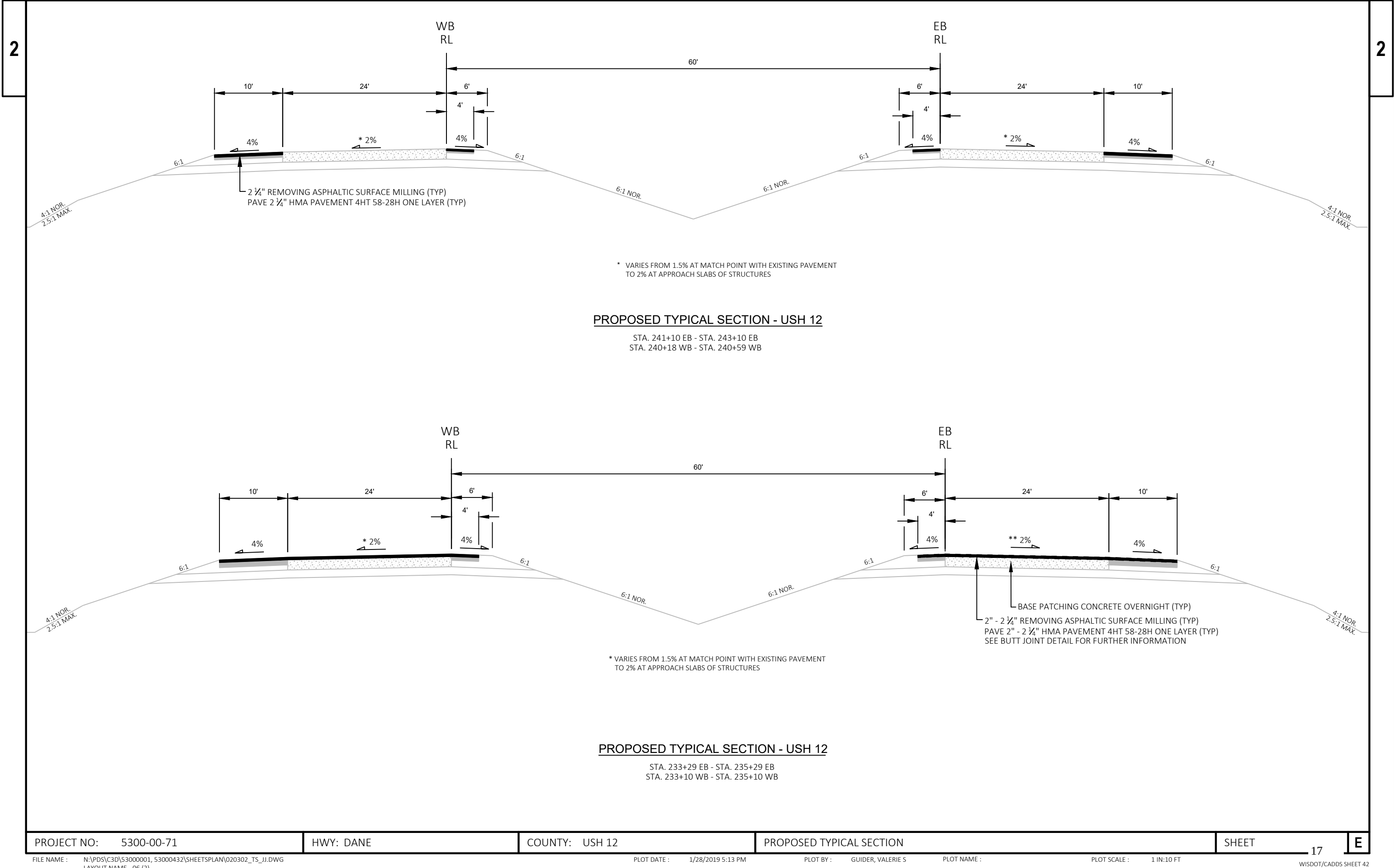
COUNTY: USH 12

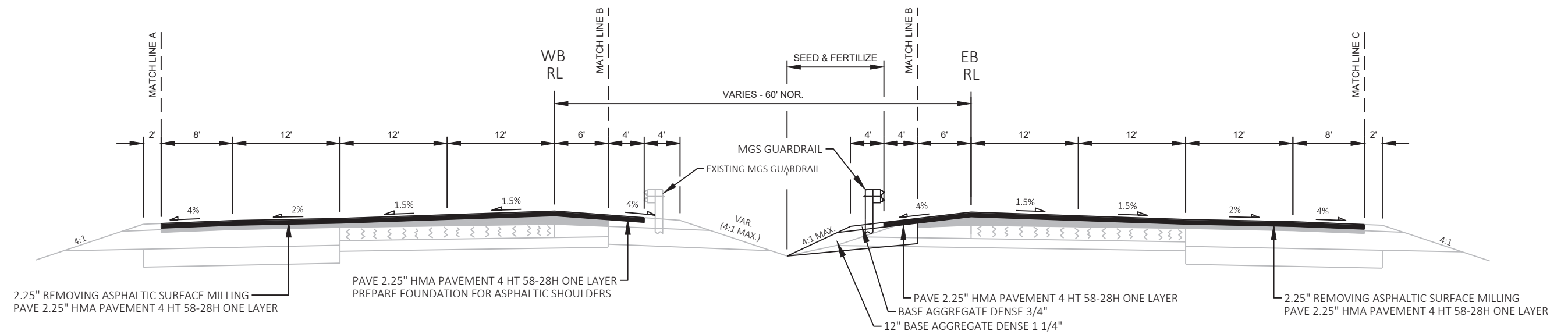
PROPOSED TYPICAL SECTION

SHEET

16

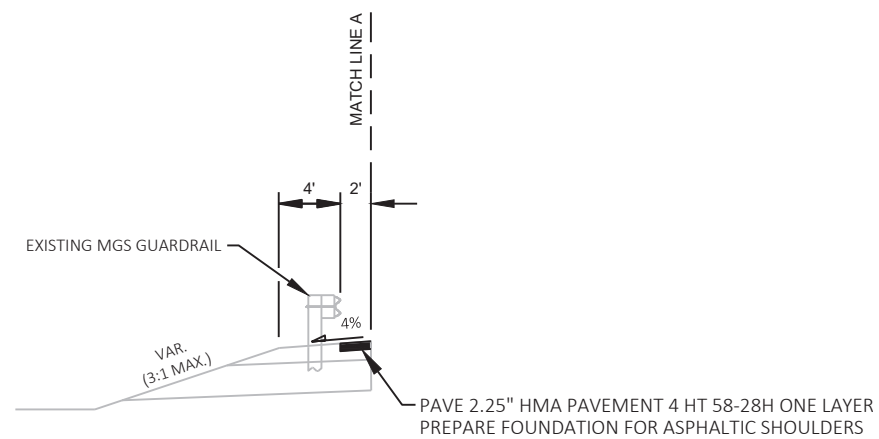
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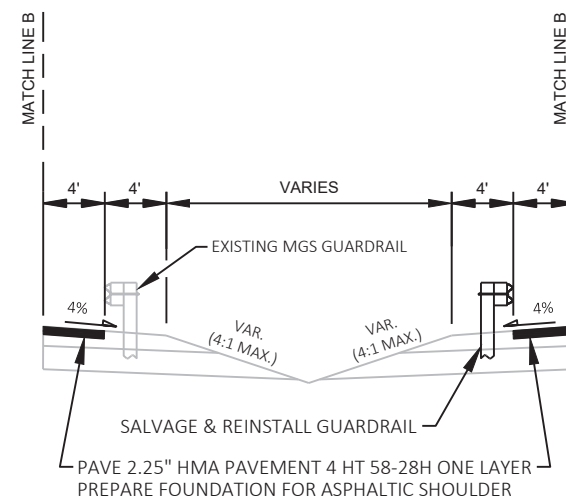


PROPOSED TYPICAL SECTION - USH 12

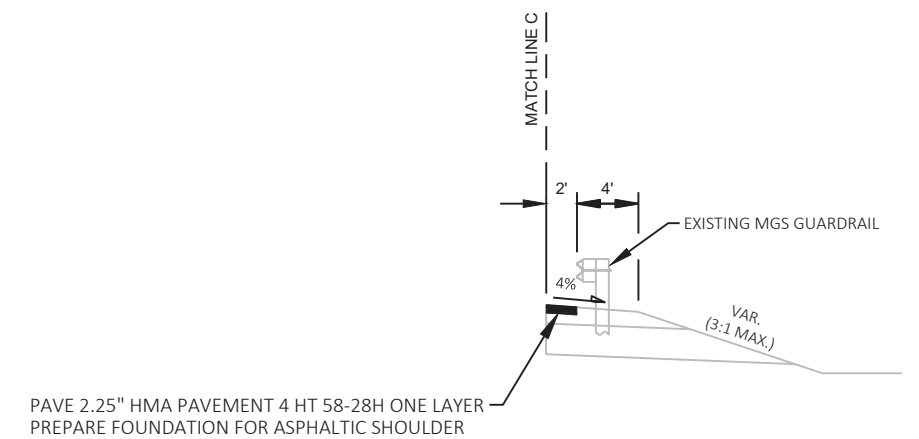
STA. 241+80 EB - 274+36 EB



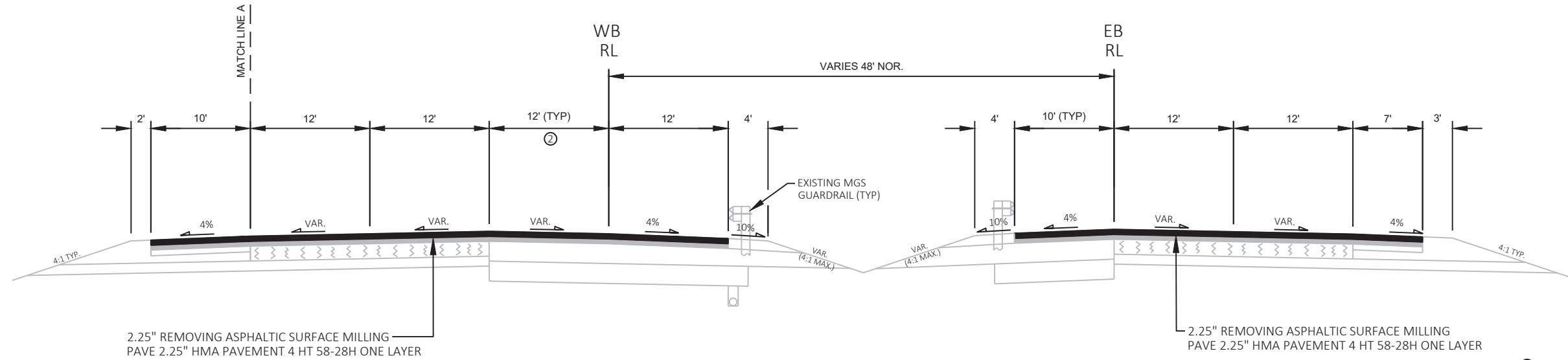
STA. 253+50 EB - 256+62 EB



STA. 249+72 EB - 255+55 EB
STA. 262+13 EB - 267+92 EB



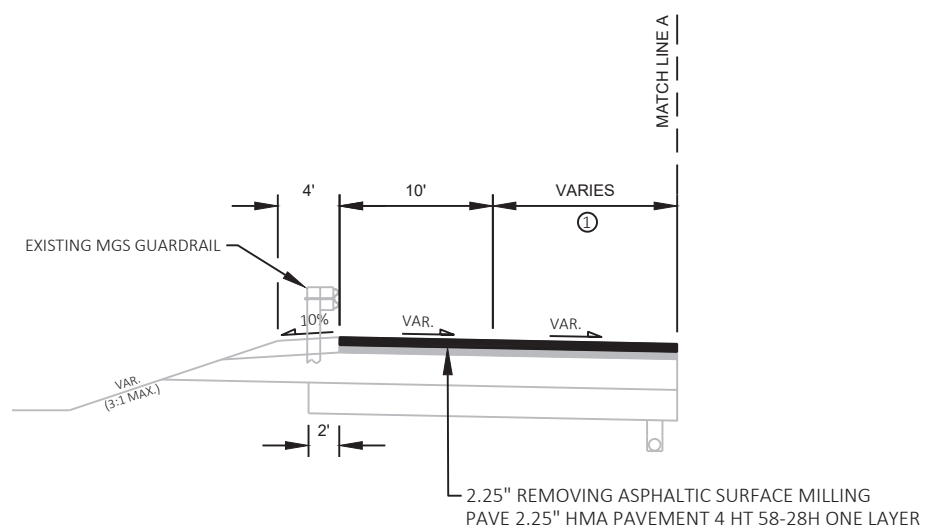
STA. 263+50 EB - 267+35 EB



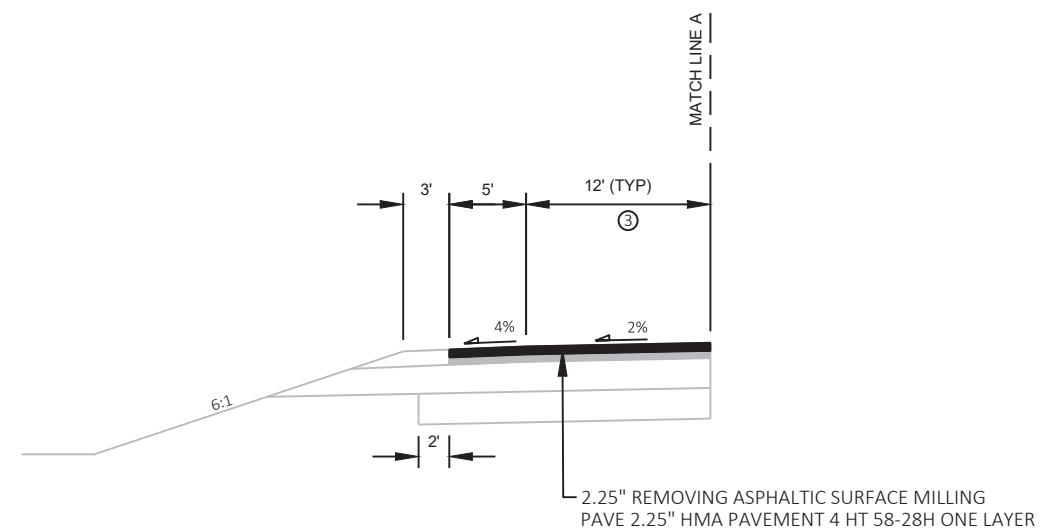
PROPOSED TYPICAL SECTION - USH 12

STA. 274+36 EB - 283+00 EB

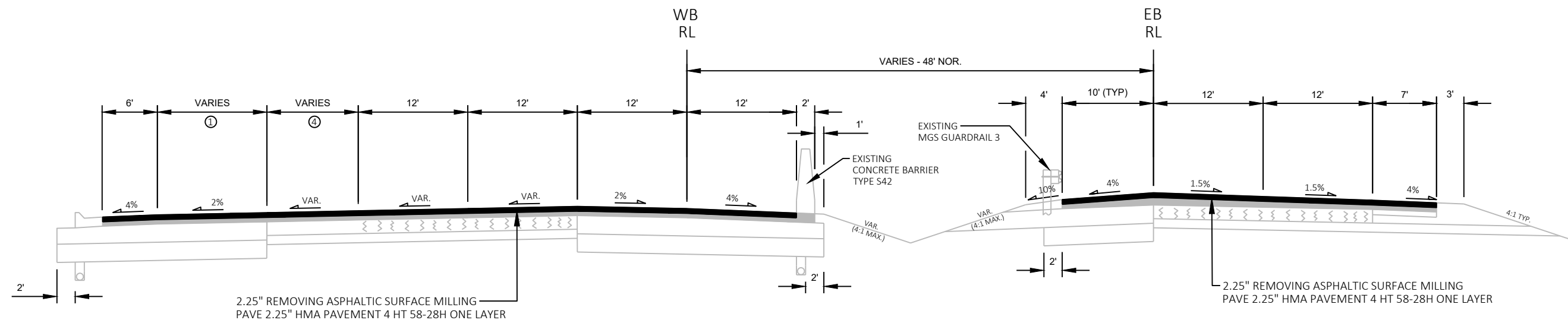
- ① VARIES 12' - STA. 273+00 EB TO 0' - STA. 282+13 EB
- ② VARIES 0' - STA. 273+00 EB TO 12' - STA. 282+13 EB
- ③ 0' - STA. 302+79 EB TO STA. 302+91 EB
VARIES 0' - STA. 302+91 EB TO 12' - STA. 306+51 EB



STA. 258+20 EB - 282+85 EB
STA. 300+54 EB - 302+79 EB



STA. 302+79 EB - 310+67 EB



PROPOSED TYPICAL SECTION - USH 12

STA. 283+00 EB - 316+29 EB

① VARIES 12' - STA. 310+67 EB TO 16' - STA. 312+55 EB

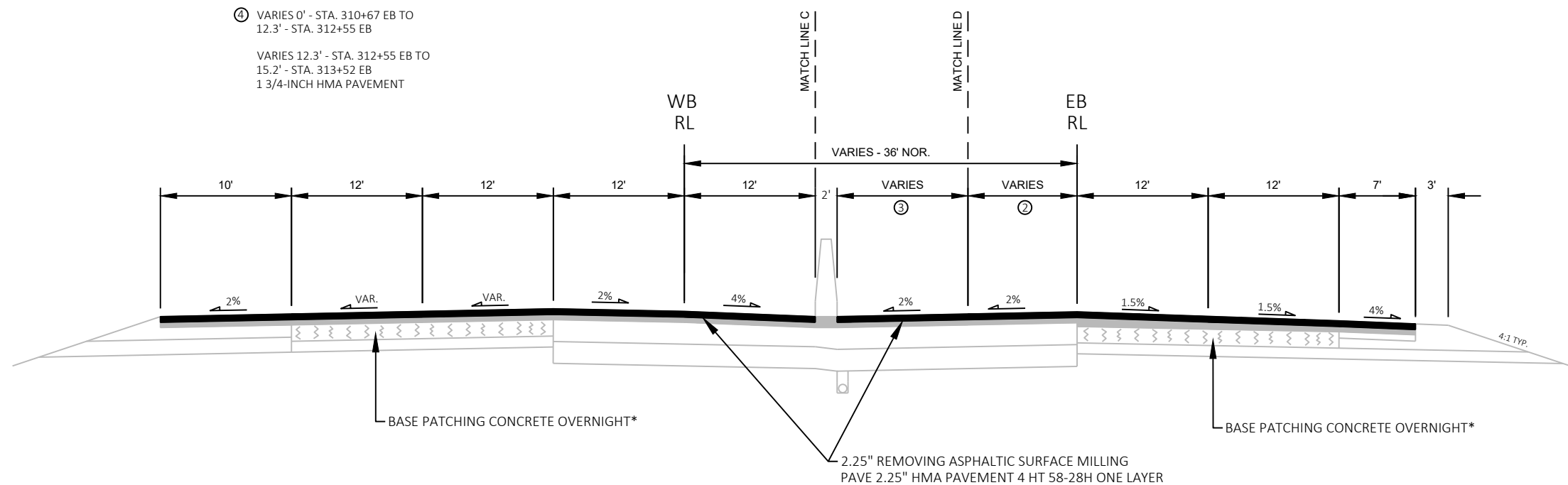
VARIES 3.7' - STA. 312+55 EB TO 2.4' - STA. 316+29 EB

② VARIES 0' - STA. 317+01 EB TO 12' - STA. 324+22 EB

③ VARIES 25.6' - STA. 317+02 EB TO 10' - STA. 324+22 EB

④ VARIES 0' - STA. 310+67 EB TO 12.3' - STA. 312+55 EB

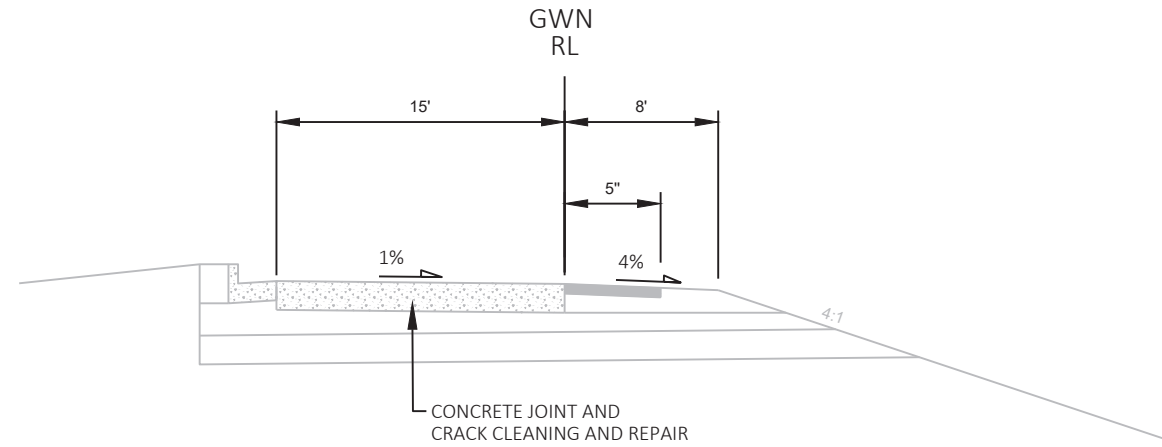
VARIES 12.3' - STA. 312+55 EB TO 15.2' - STA. 313+52 EB
1 3/4-INCH HMA PAVEMENT



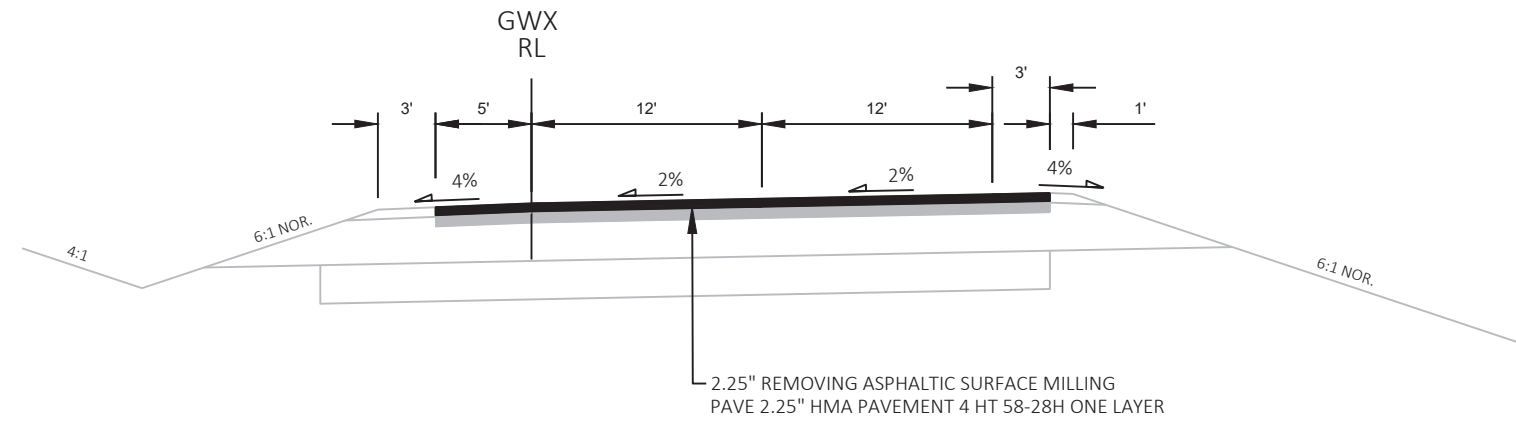
PROPOSED TYPICAL SECTION - USH 12

STA. 316+29 EB - 323+17 EB

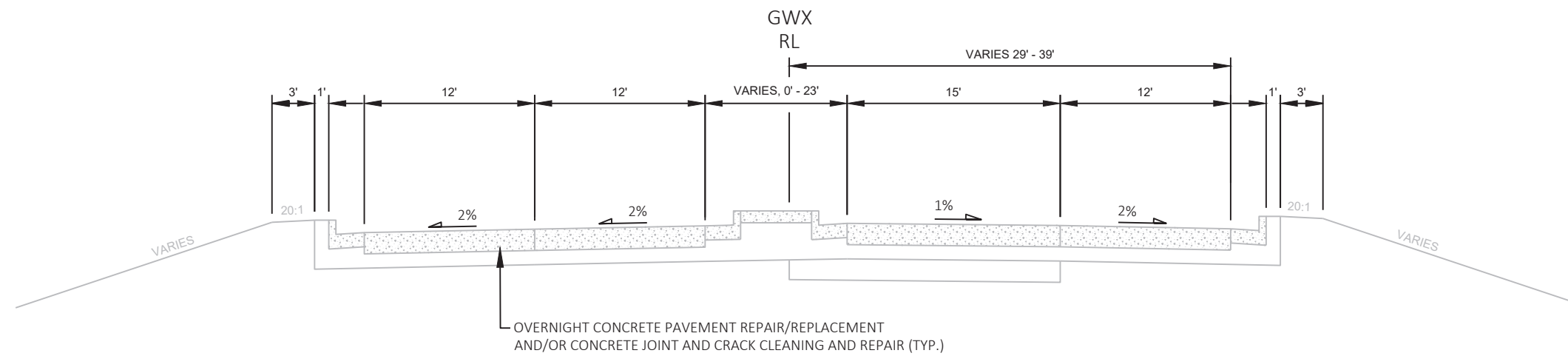
*STA. 320+24 EB - 322+24 EB
STA. 320+53 WB - STA. 322+53 WB



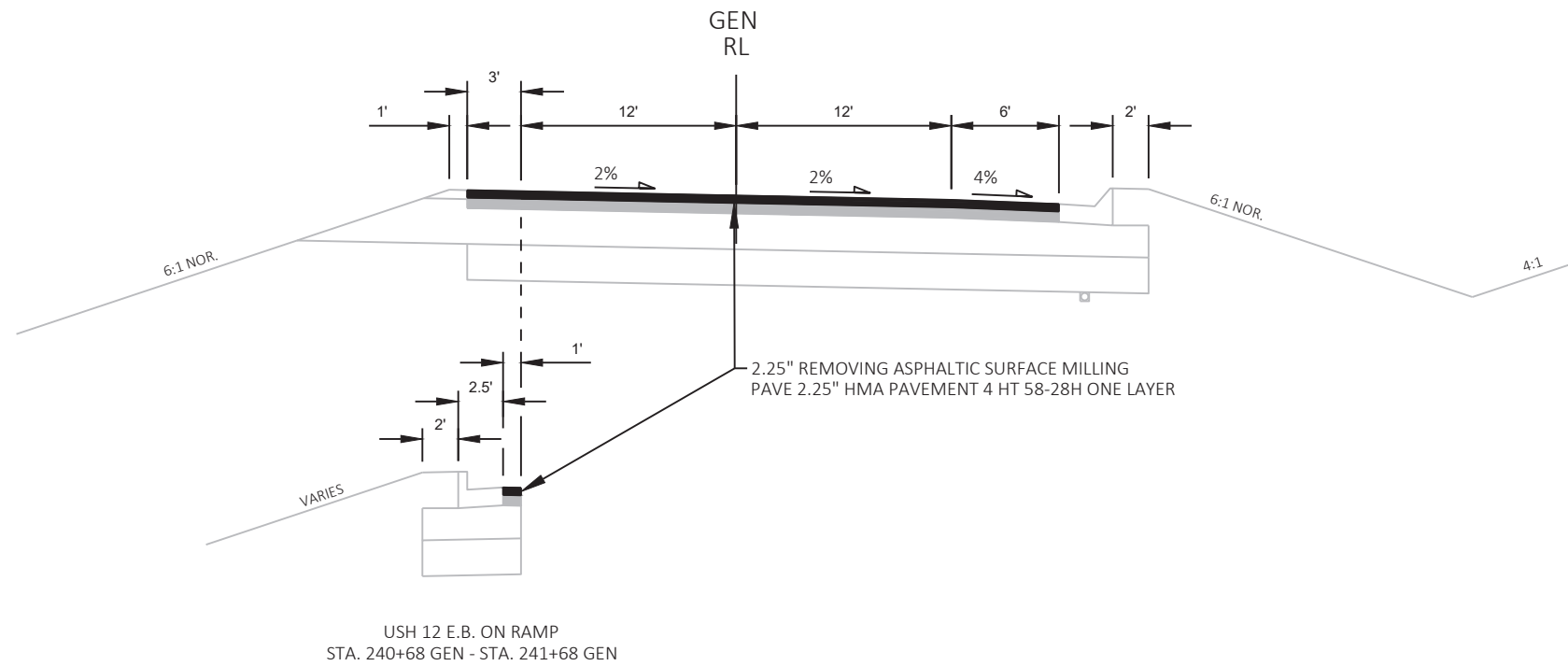
PROPOSED TYPICAL SECTION - USH 12 WB ENTRANCE RAMP AT GAMMON RD.
STA. 236+90 GWN - STA. 239+13 GWN



PROPOSED TYPICAL SECTION - USH 12 WB EXIT RAMP AT GAMMON RD.
STA. 244+04 GWX - STA. 251+20 GWX

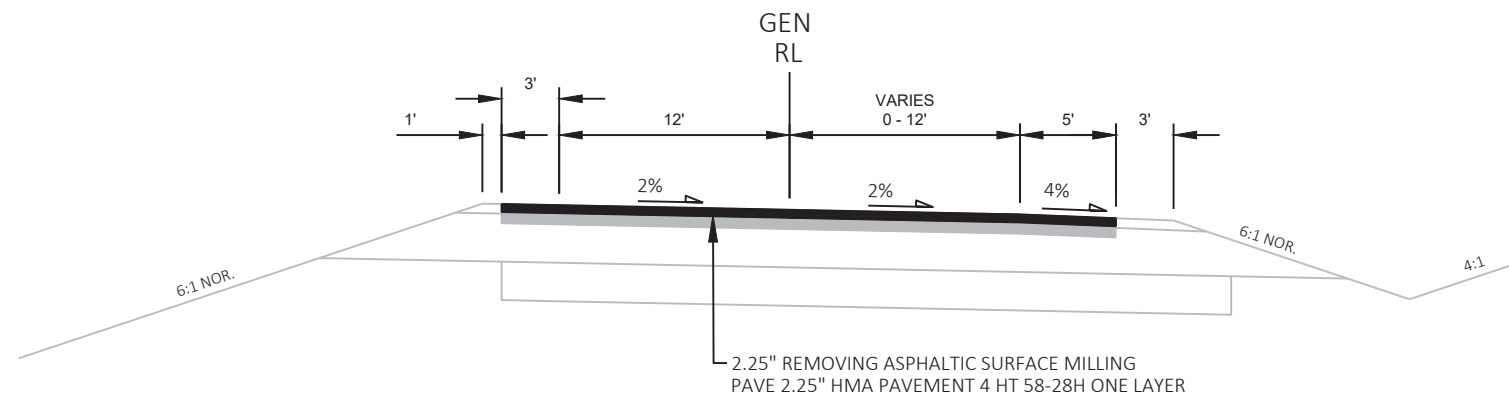


PROPOSED TYPICAL SECTION - USH 12 WB EXIT RAMP AT GAMMON RD.
STA. 239+59 GWX - STA. 243+48 GWX



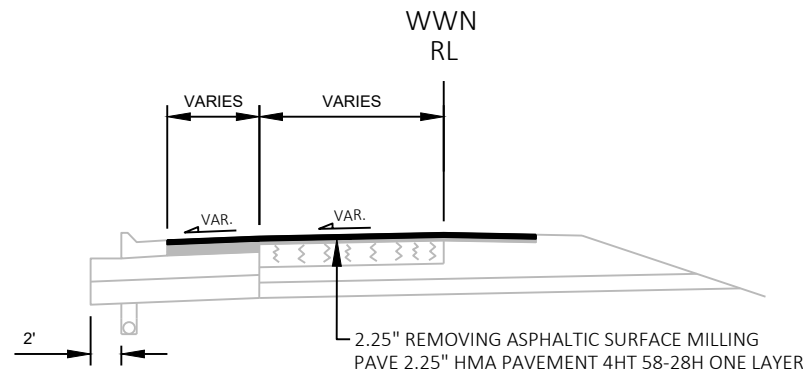
PROPOSED TYPICAL SECTION - USH 12 EB ENTRANCE RAMP AT GAMMON RD.

STA. 240+68 GEN - STA. 247+25 GEN



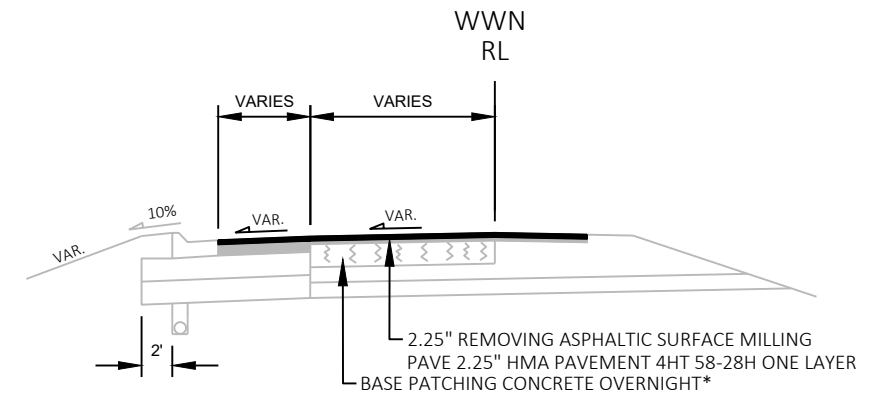
PROPOSED TYPICAL SECTION - USH 12 EB ENTRANCE RAMP AT GAMMON RD.

STA. 247+25 GEN - STA. 257+57 GEN



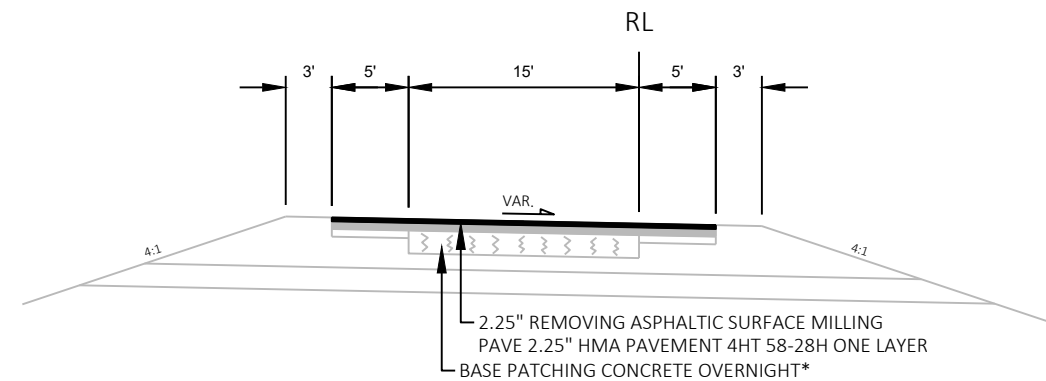
PROPOSED TYPICAL SECTION - USH 12 WB ENTRANCE RAMP AT WHITNEY WAY

STA. 312+80 WWN - 317+88 WWN



PROPOSED TYPICAL SECTION - USH 12 WB ENTRANCE RAMP AT WHITNEY WAY

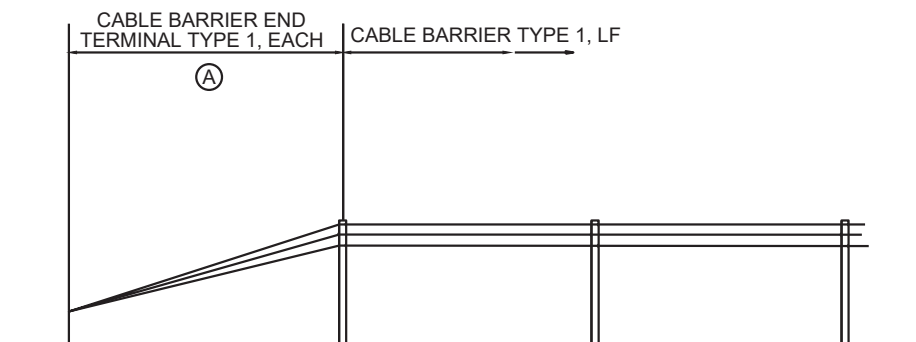
STA. 317+88 WWN - 322+32 WWN



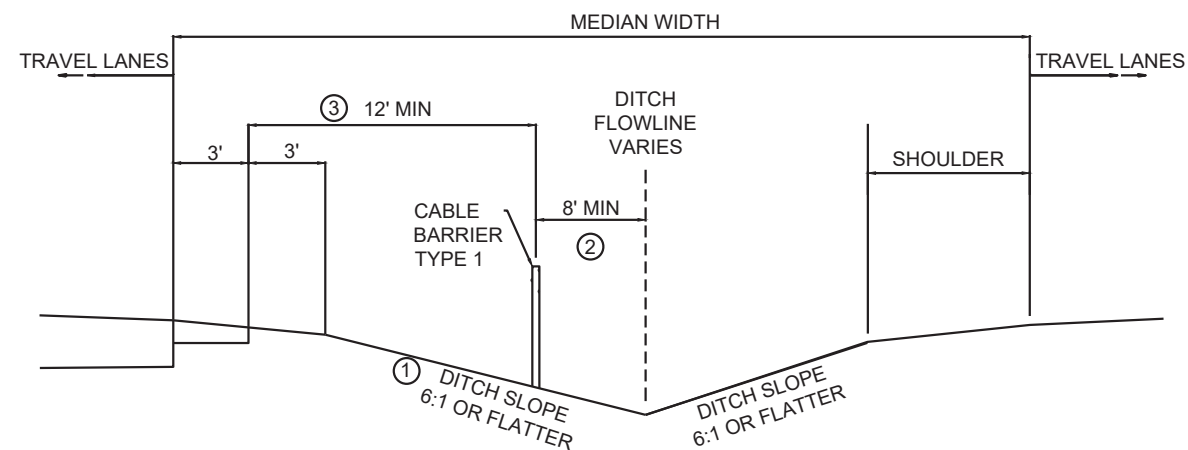
PROPOSED TYPICAL SECTION - USH 12 EB EXIT RAMP AT WHITNEY WAY

STA. 313+94 WEX - 320+26 WEX

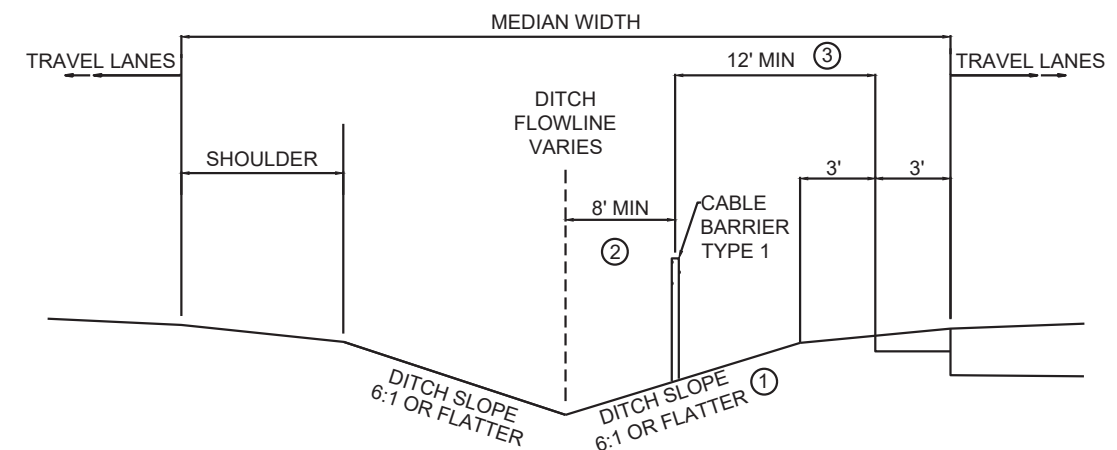
*STA. 320+32 WWN - STA. 322+32 WWN
STA. 318+26 WEX - STA. 320+26 WEX



Ⓐ CABLE BARRIER TYPE 1 THAT FALLS WITHIN THE CABLE BARRIER END TERMINAL TYPE 1 IS INCLUDED IN COST OF CABLE BARRIER END TERMINAL TYPE 1



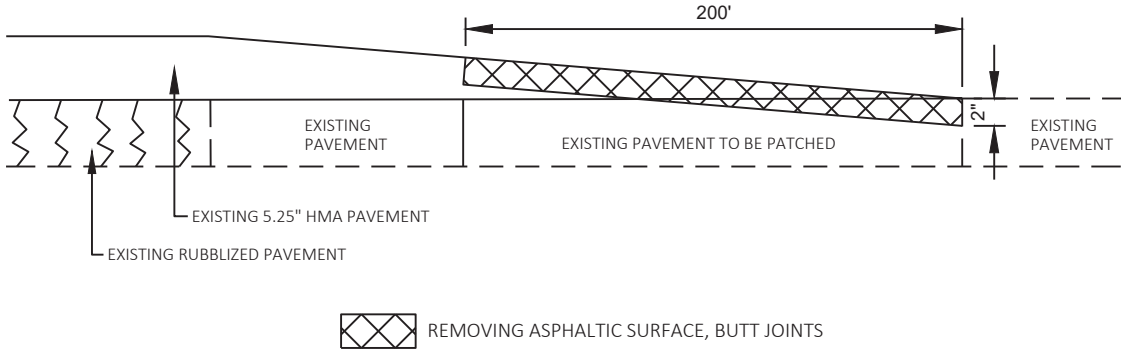
CABLE BARRIER OFFSET LOCATIONS
(LEFT OF DITCH)



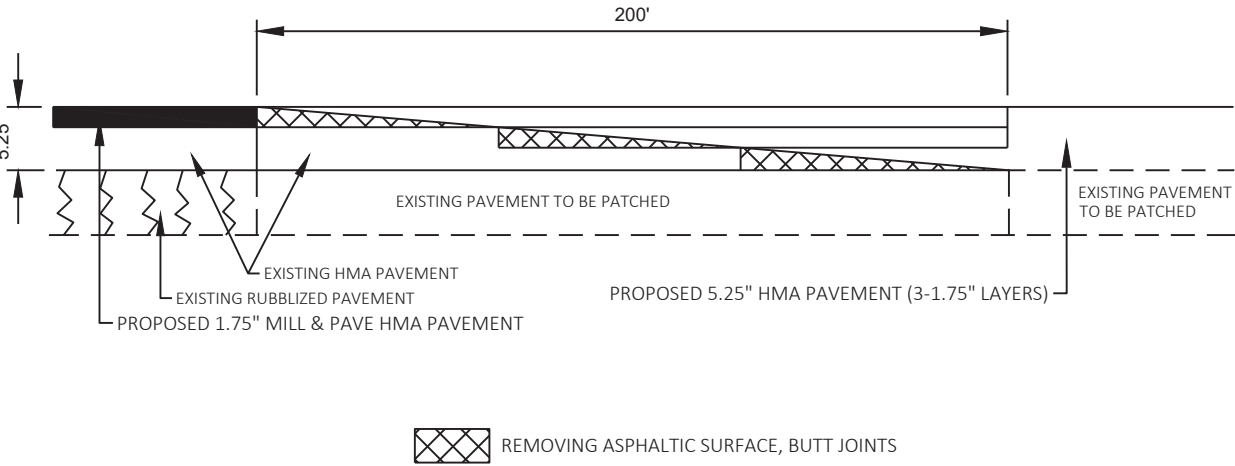
CABLE BARRIER OFFSET LOCATIONS
(RIGHT OF DITCH)

GENERAL NOTES

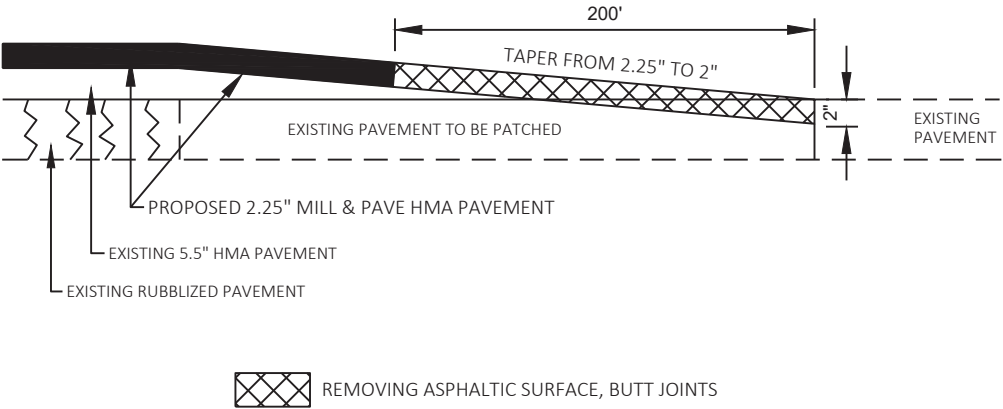
- ① DO NOT INSTALL CABLE BARRIER TYPE 1 ON SLOPES STEEPER THAN 6:1
- ② OFFSET CABLE BARRIER TYPE 1 TO EITHER SIDE OF MEDIAN CENTERLINE: USE 8-0" MIN. OFFSET FROM DITCH LINE
- ③ WORKING WIDTH OF CABLE BARRIER TYPE 1 IS 12' MINIMUM, MEASURED FROM THE MIDPOINT OF ROADWAY SHOULDER TO CABLE BARRIER TYPE 1



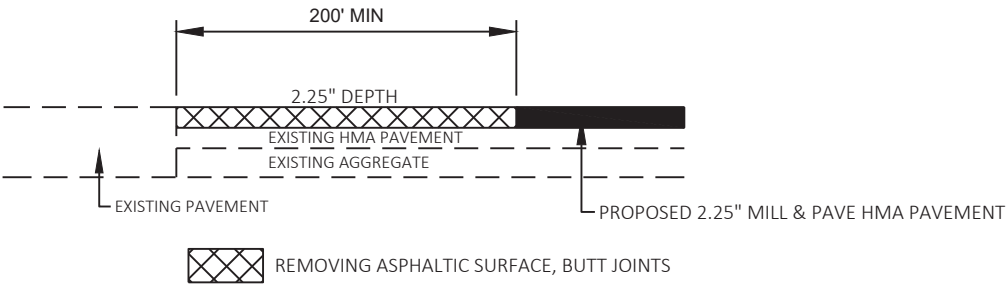
BUTT JOINT DETAIL
USH 12
STA. 233+29 EB - STA. 235+29 EB
STA. 233+10 WB - STA. 235+10 WB



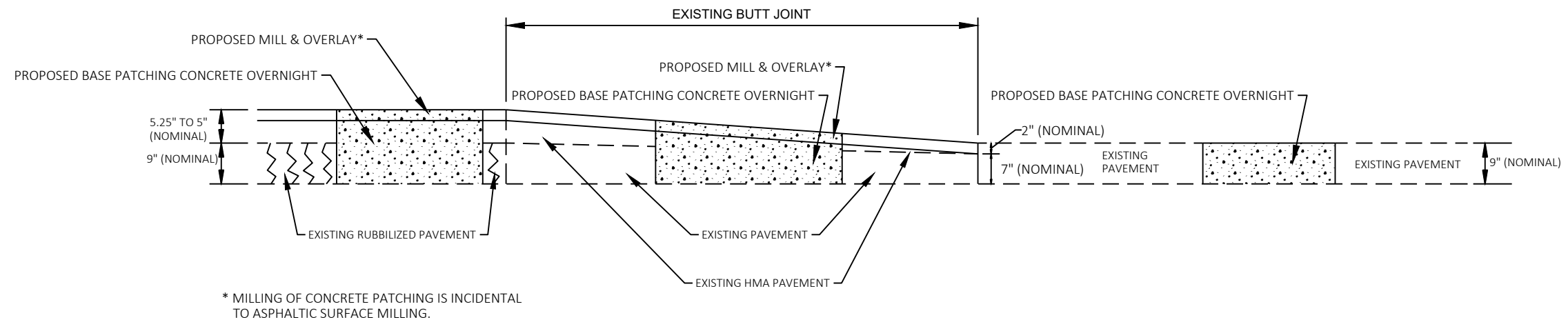
BUTT JOINT DETAIL
USH 12 AT HIGH POINT RD.
STA. 196+19 EB - STA. 198+19 EB
STA. 200+87 EB - STA. 202+87 EB
STA. 195+12 WB - STA. 197+12 WB
STA. 199+80 WB - STA. 201+80 WB



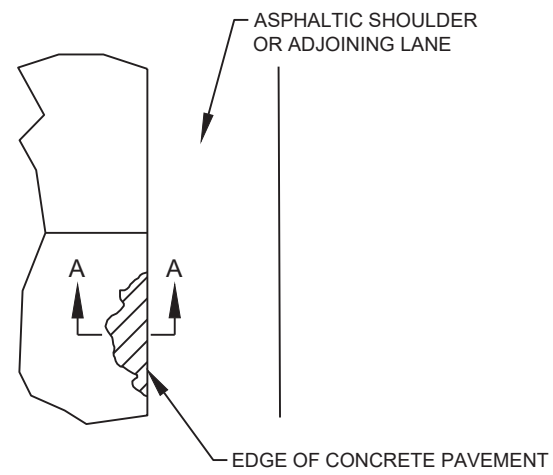
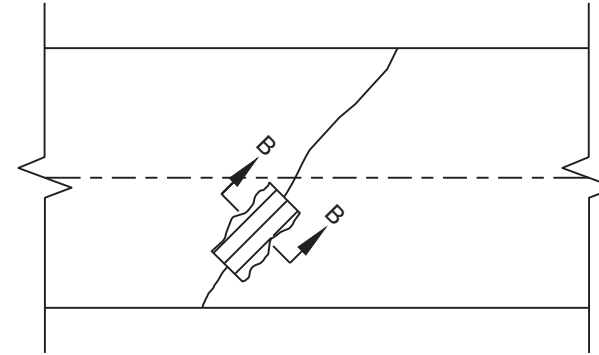
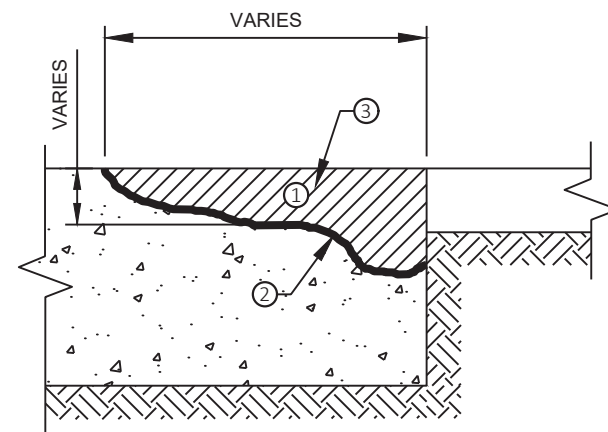
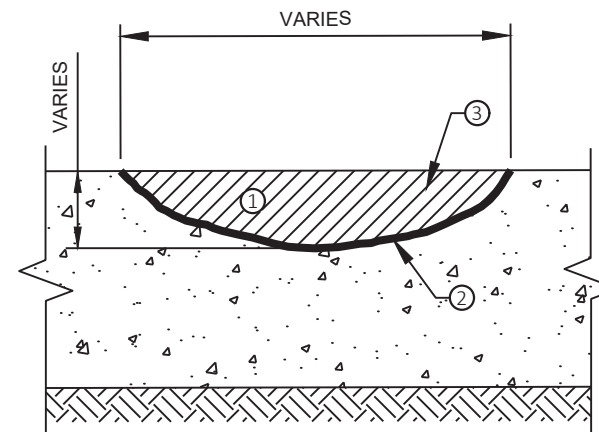
BUTT JOINT DETAIL
USH 12 AND WHITNEY WAY RAMPS
STA. 243+10 EB - STA. 245+10 EB
STA. 240+59 WB - STA. 242+59 WB
STA. 320+24 EB - STA. 322+24 EB
STA. 320+53 WB - STA. 322+53 WB
STA. 318+36 WEX - STA. 320+36 WEX
STA. 320+32 WVN - STA. 322+32 WVN



BUTT JOINT DETAIL
GAMMON RAMPS
STA. 240+68 GEN - STA. 242+68 GEN
STA. 244+04 GWX - STA. 246+04 GWX

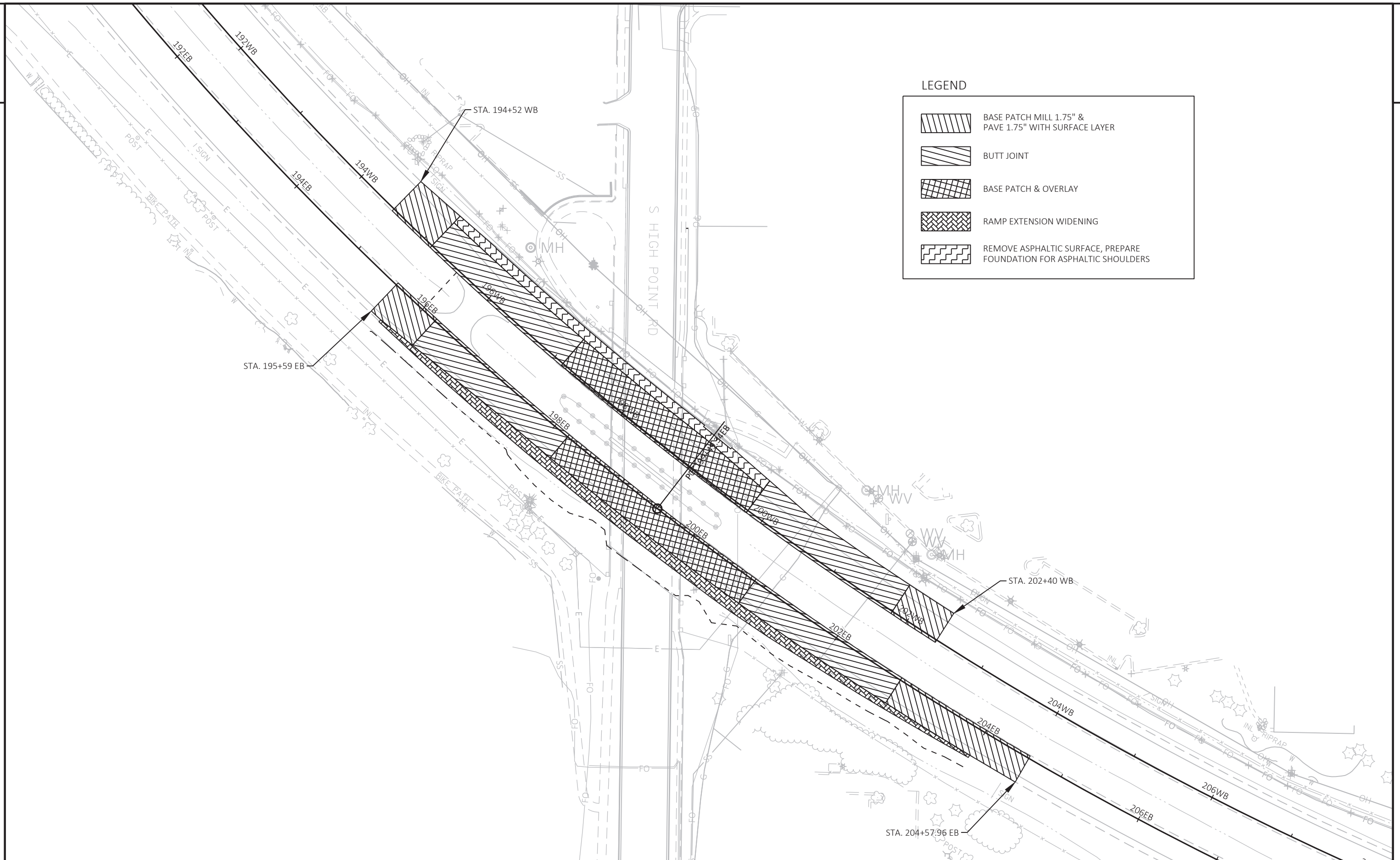


BASE PATCHING DETAIL

PLAN VIEWPLAN VIEWSECTION A-ASECTION B-B

- ① REMOVE ALL UNSOUND AND DETERIORATED MATERIAL
- ② BLOW OUT REPAIR AREAS WITH 80 PSI MINIMUM COMPRESSED AIR - TACK COAT REQUIRED - PAID FOR UNDER CONCRETE JOINT AND CRACK CLEANING AND REPAIR
- ③ ASPHALTIC SURFACE

CONCRETE JOINT AND CRACK CLEANING AND REPAIR



LEGEND

- BASE PATCH MILL 1.75" & PAVE 1.75" WITH SURFACE LAYER
- BUTT JOINT
- BASE PATCH & OVERLAY
- RAMP EXTENSION WIDENING
- REMOVE ASPHALTIC SURFACE, PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

CONSTRUCTION DETAILS - HIGH POINT RD

SHEET

29

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\021001-CD.DWG
LAYOUT NAME - CD 5

PLOT DATE : 11/29/2018 2:15 PM

PLOT BY : GUIDER, VALERIE S

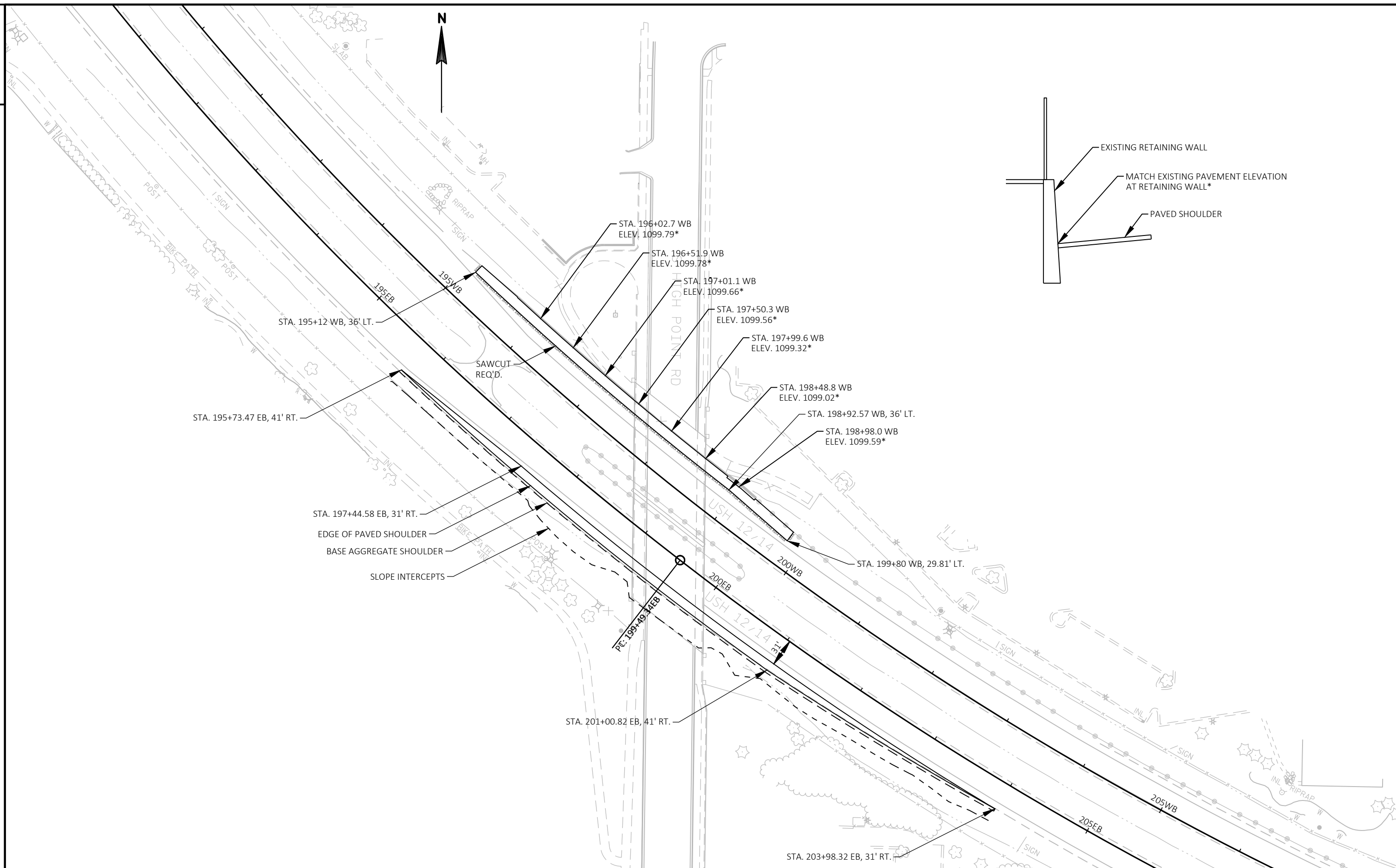
PLOT NAME :

PLOT SCALE : #####

WISDOT/CADDSS SHEET 42

2

2



PROJECT NO:	5300-00-71
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HWY: USH 12

COUNTY: DANE

CONSTRUCTION DETAIL - HIGH POINT RD.

SHEET

— 30

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FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\021003-CD.DWG
LAYOUT NAME - Plan 1 IN 100 FT

PLOT DATE : 12/4/2018 12:47 PM

PLOT BY : GUIDER, VALERIE S

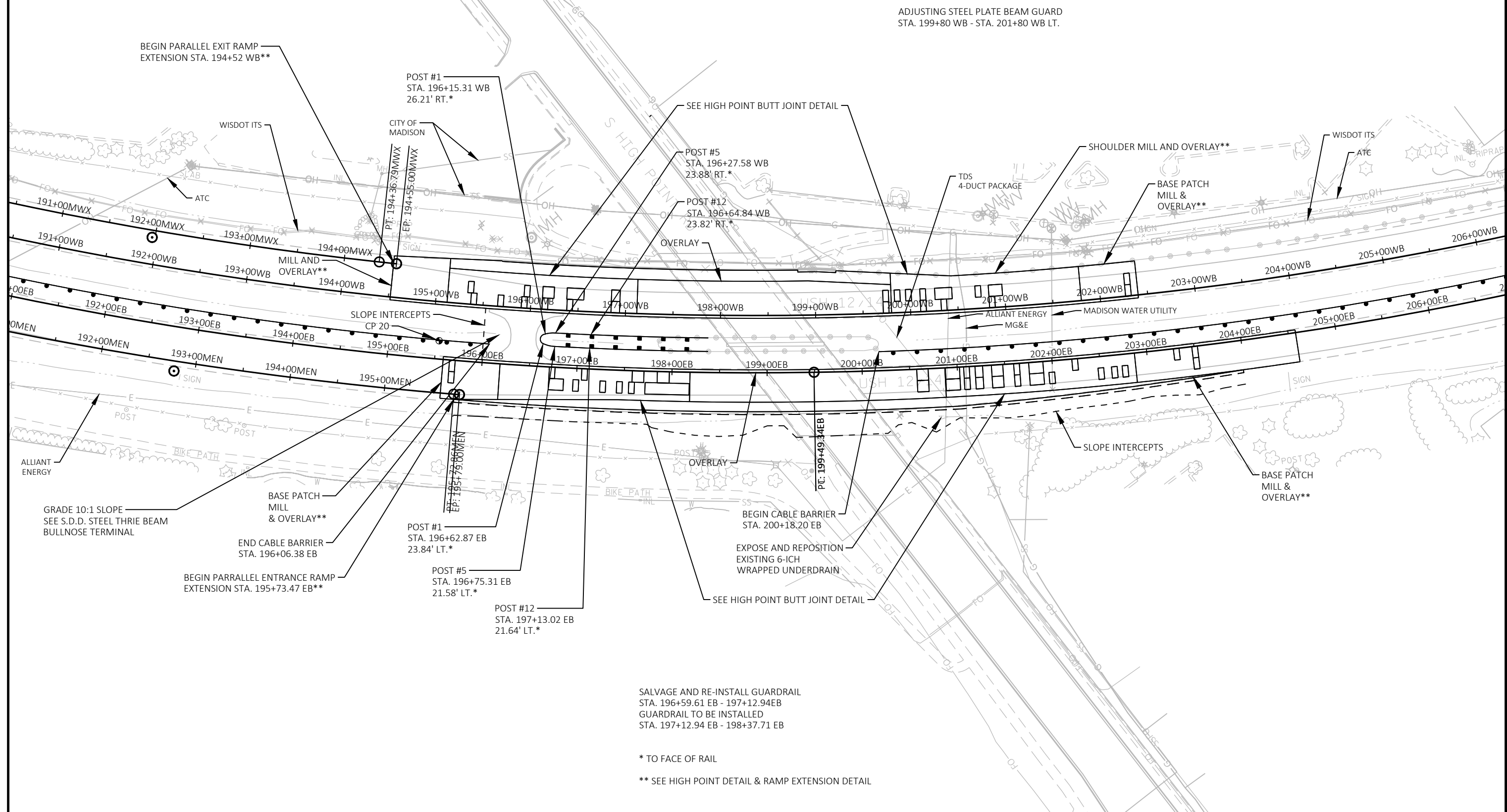
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

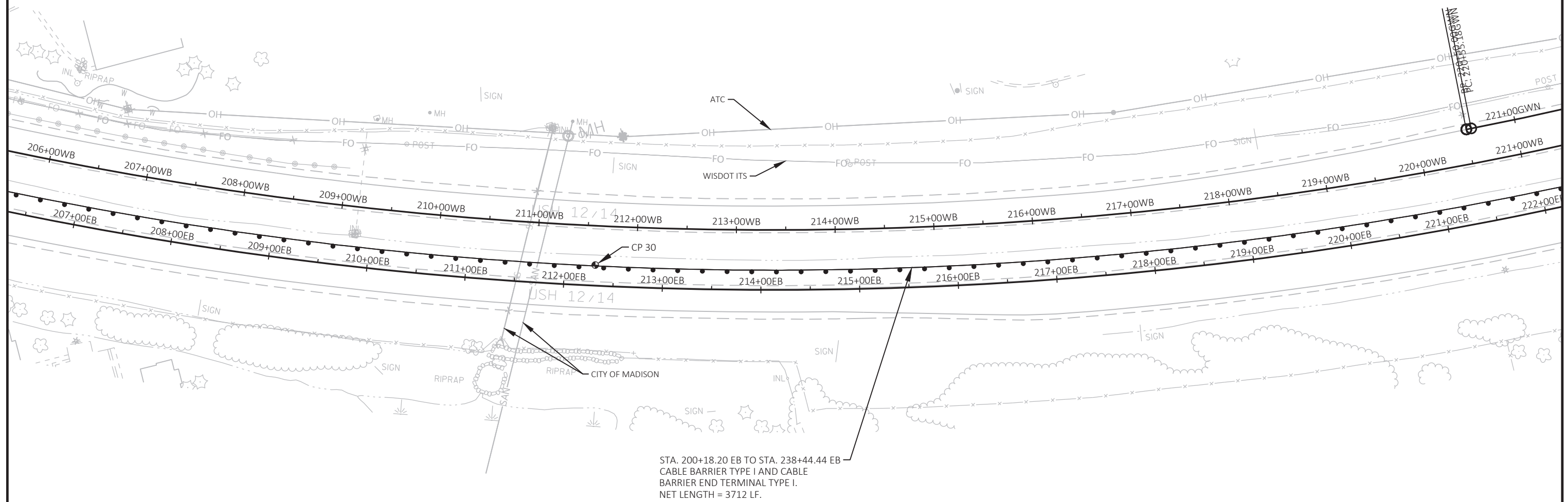
WISDOT/CADDS SHEET 42

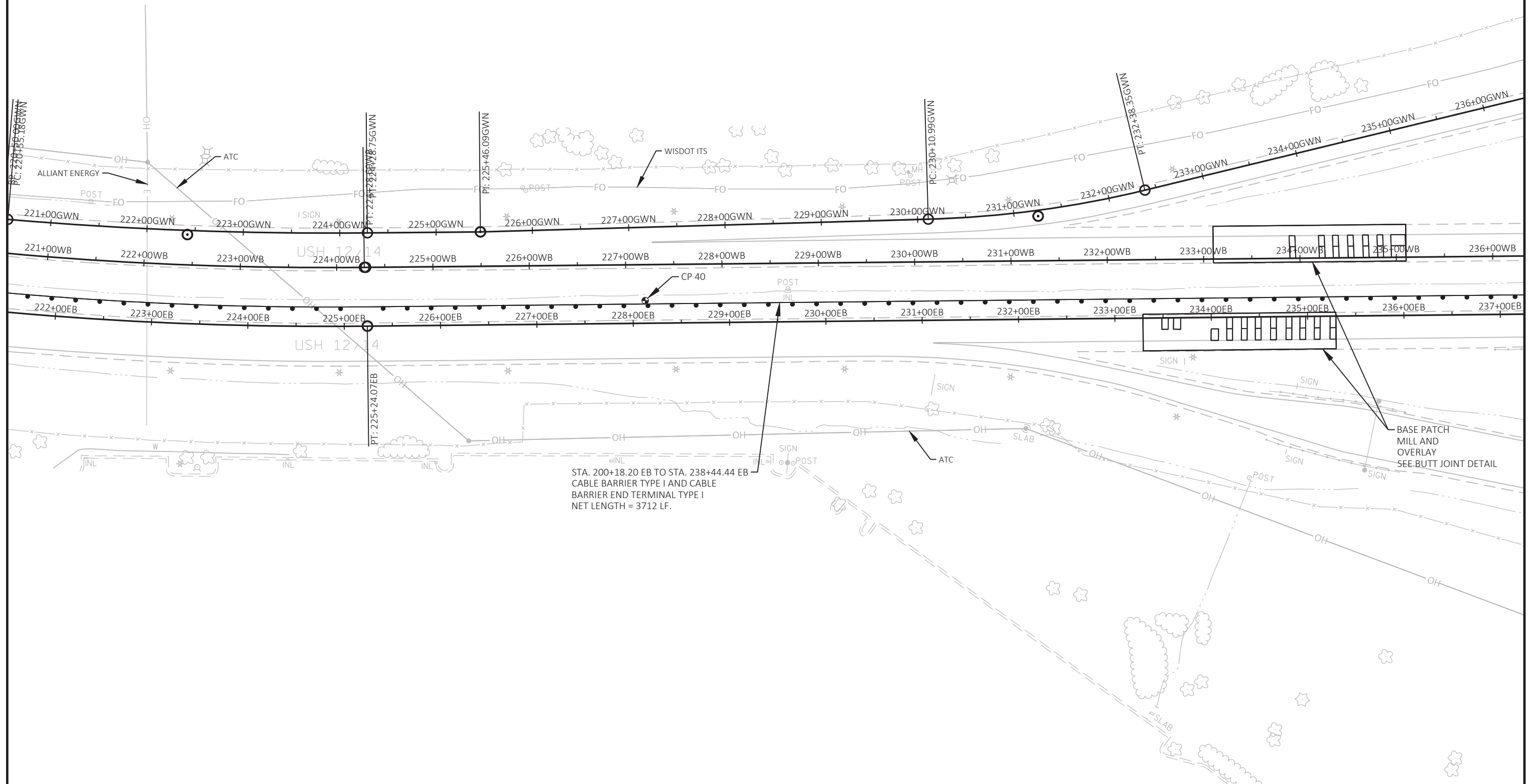
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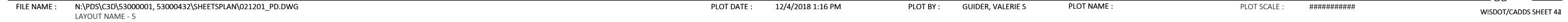
CONTROL POINTS						
NO.	STATION	OFFSET	Y	X	ELEV	DESCRIPTION
20	195+53 EB	19' LT.	476,029.051	785,192.326	1099.62	MON.



CONTROL POINTS						
NO.	STATION	OFFSET	Y	X	ELEV	DESCRIPTION
30	212+31 EB	21' LT.	475,175.476	786,611.188	1082.85	MON.







2

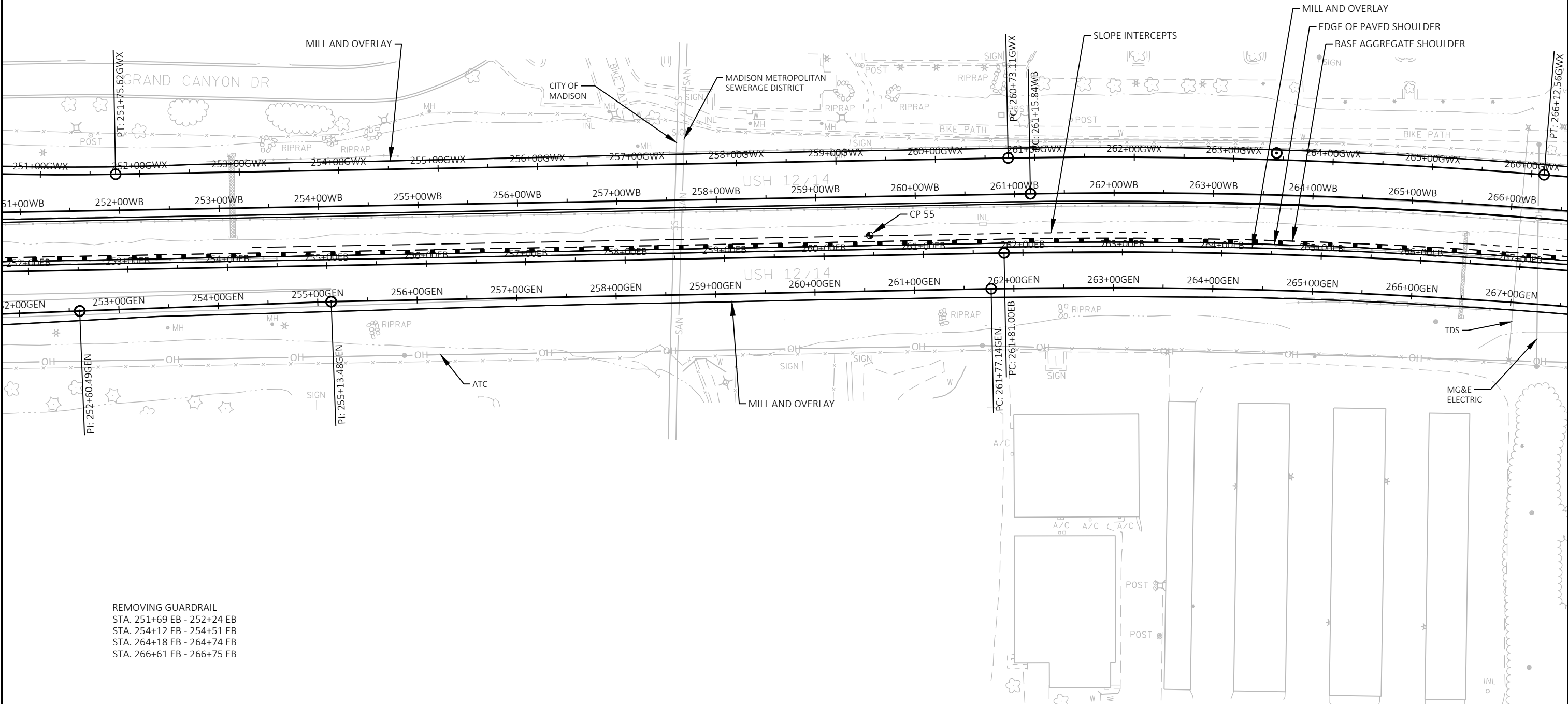
CONTROL POINTS						
NO.	STATION	OFFSET	Y	X	ELEV	DESCRIPTION
55	260+46 EB	20' LT.	475,026.522	791,397.189	1042.70	MON.

GUARDRAIL TO BE INSTALLED
STA. 241+08 EB - 252+24 EB
STA. 254+12 EB - 264+74 EB
STA. 266+61 EB - 274+97 EB

SALVAGE AND REINSTALL GUARDRAIL
STA. 252+24 EB - 254+12 EB
STA. 264+74 - 266+61 EB



2



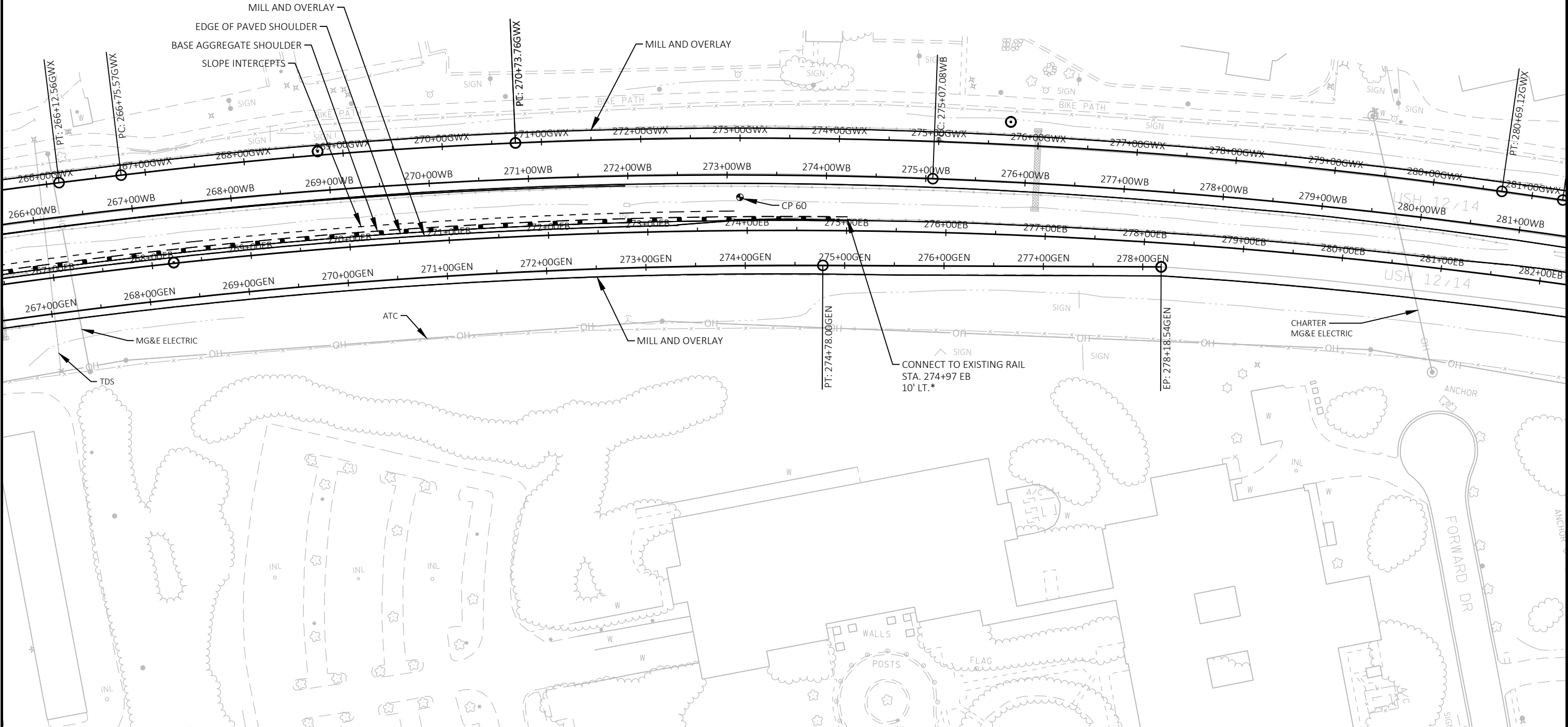
REMOVING GUARDRAIL
STA. 251+69 EB - 252+24 EB
STA. 254+12 EB - 254+51 EB
STA. 264+18 EB - 264+74 EB
STA. 266+61 EB - 266+75 EB

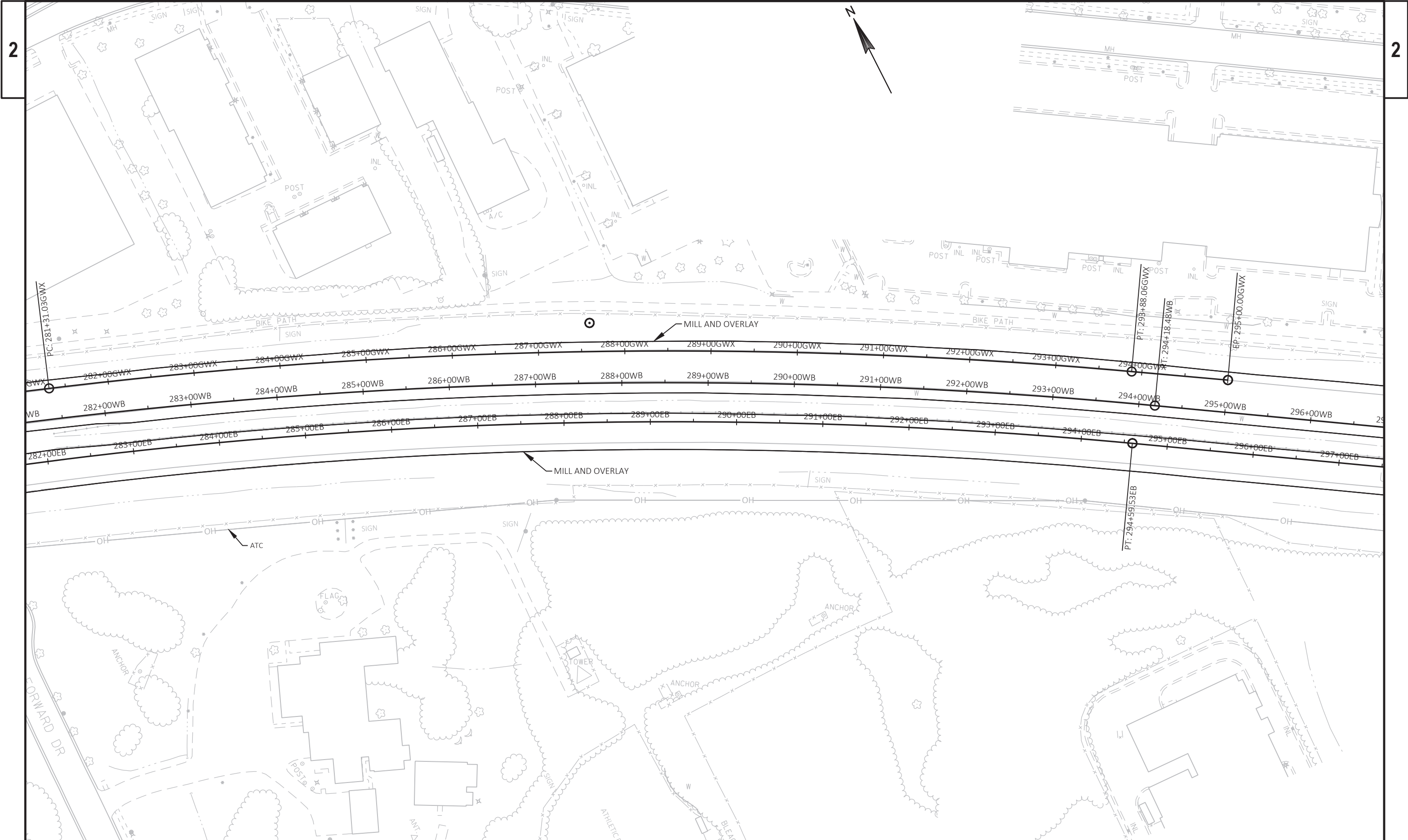
GUARDRAIL TO BE INSTALLED
STA. 266+61 EB - 274+97 EB
*TO FACE OF RAIL

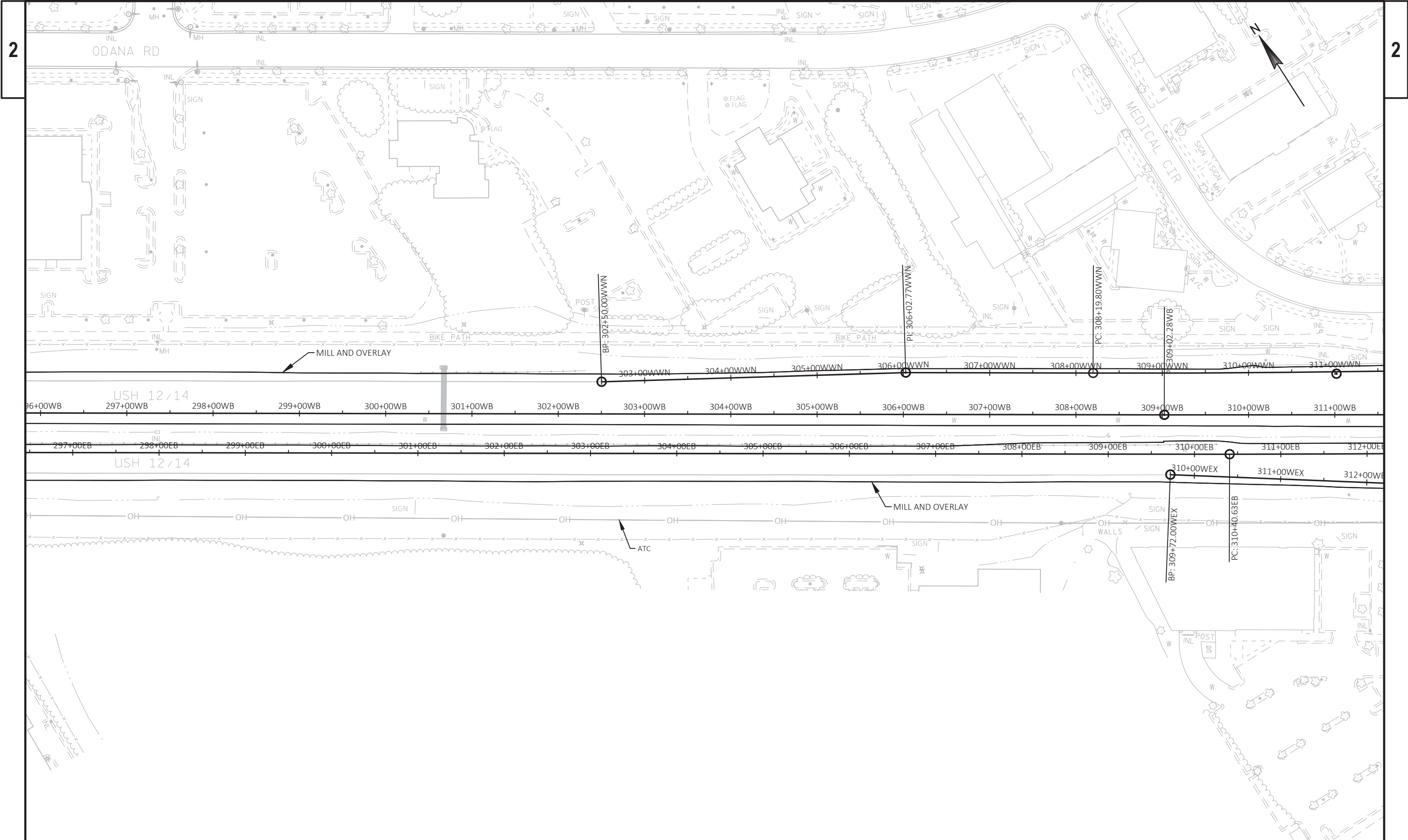
SALVAGE AND REINSTALL GUARDRAIL:
STA. 264+74 EB - 266+61 EB

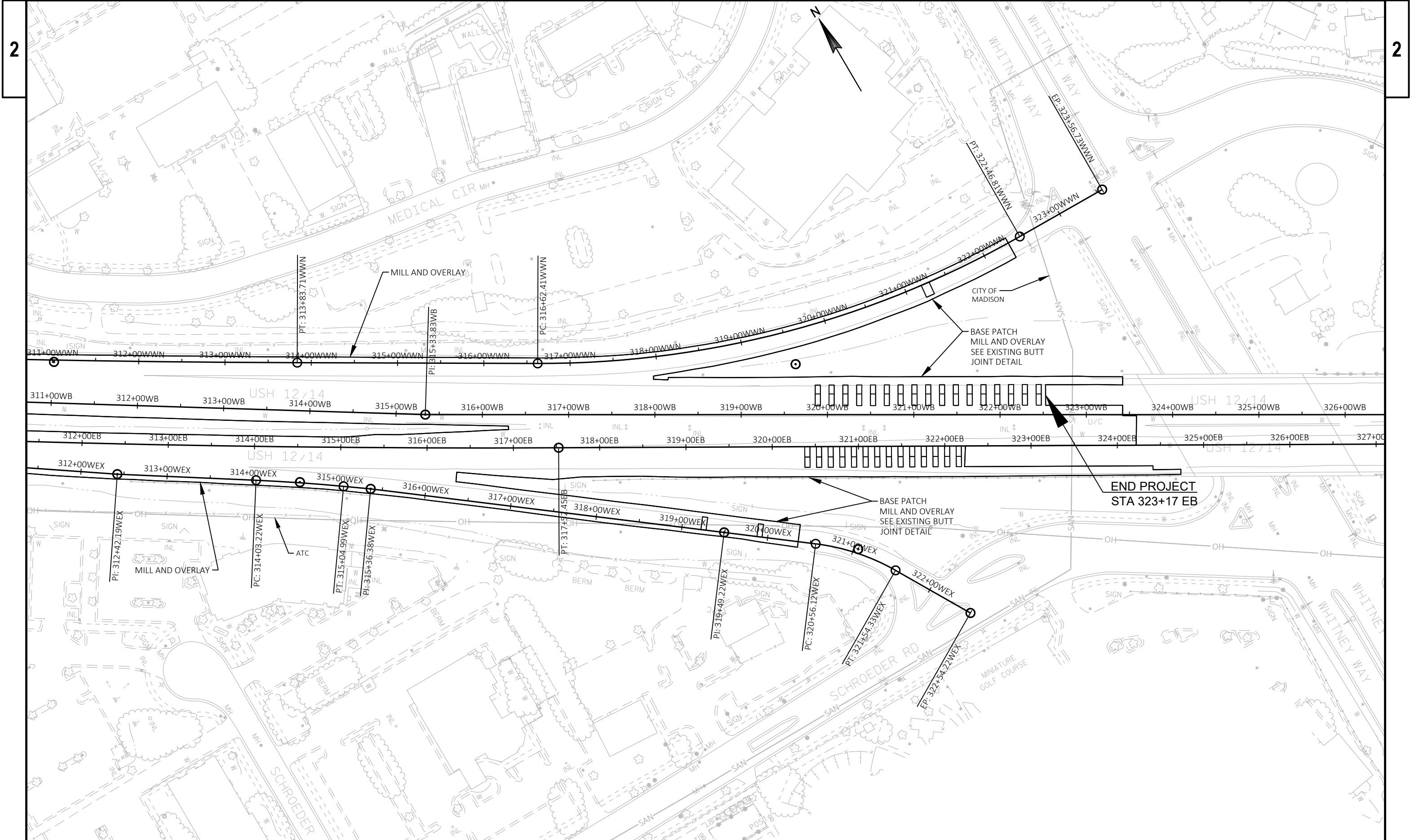
ADJUSTING STEEL PLATE BEAM GUARD
STA. 274+97 EB - STA. 275+47 EB LT.

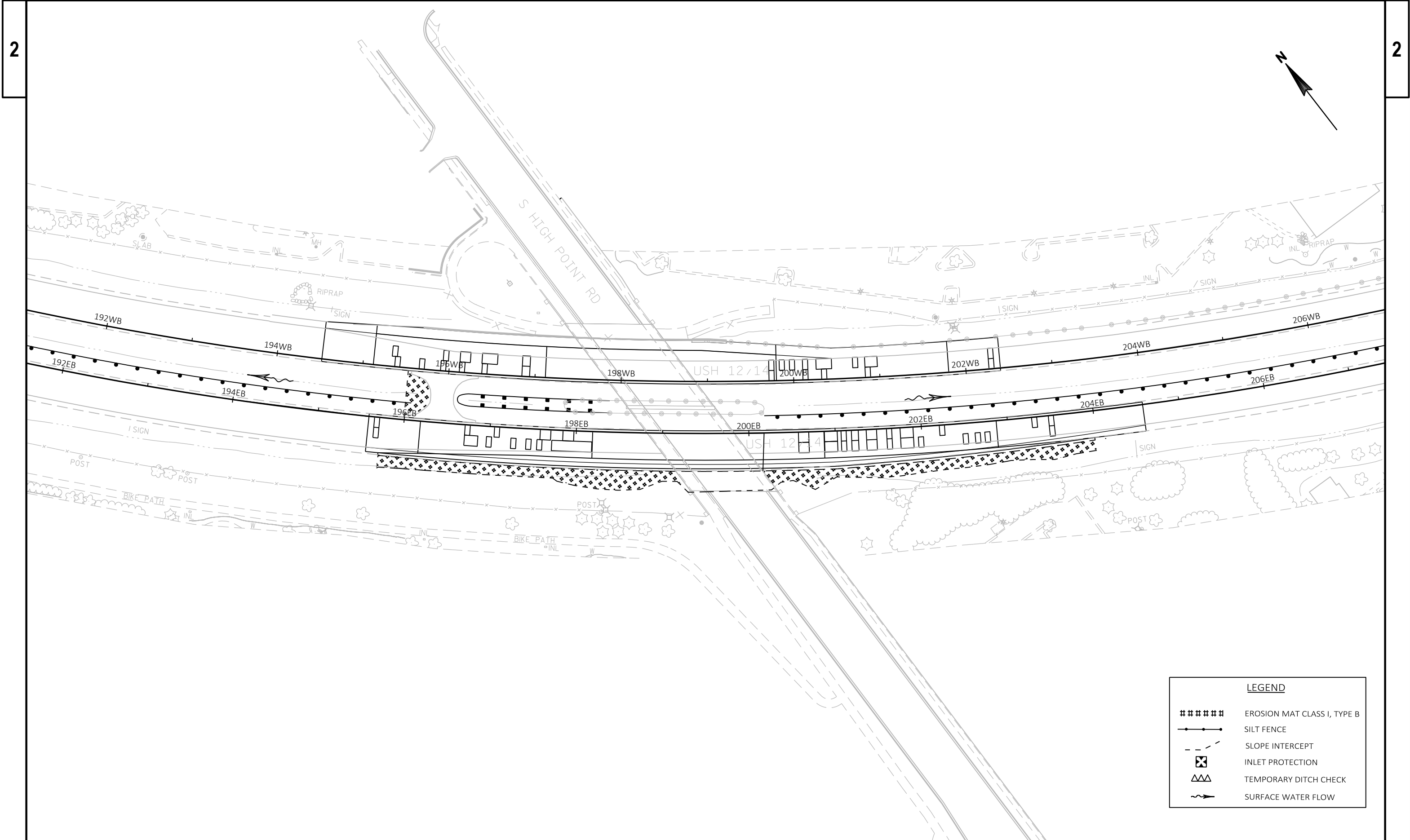
CONTROL POINTS						
NO.	STATION	OFFSET	Y	X	ELEV	DESCRIPTION
60	273+13 WB	22' RT.	479,929.382	792,743.672	1058.38	MON.





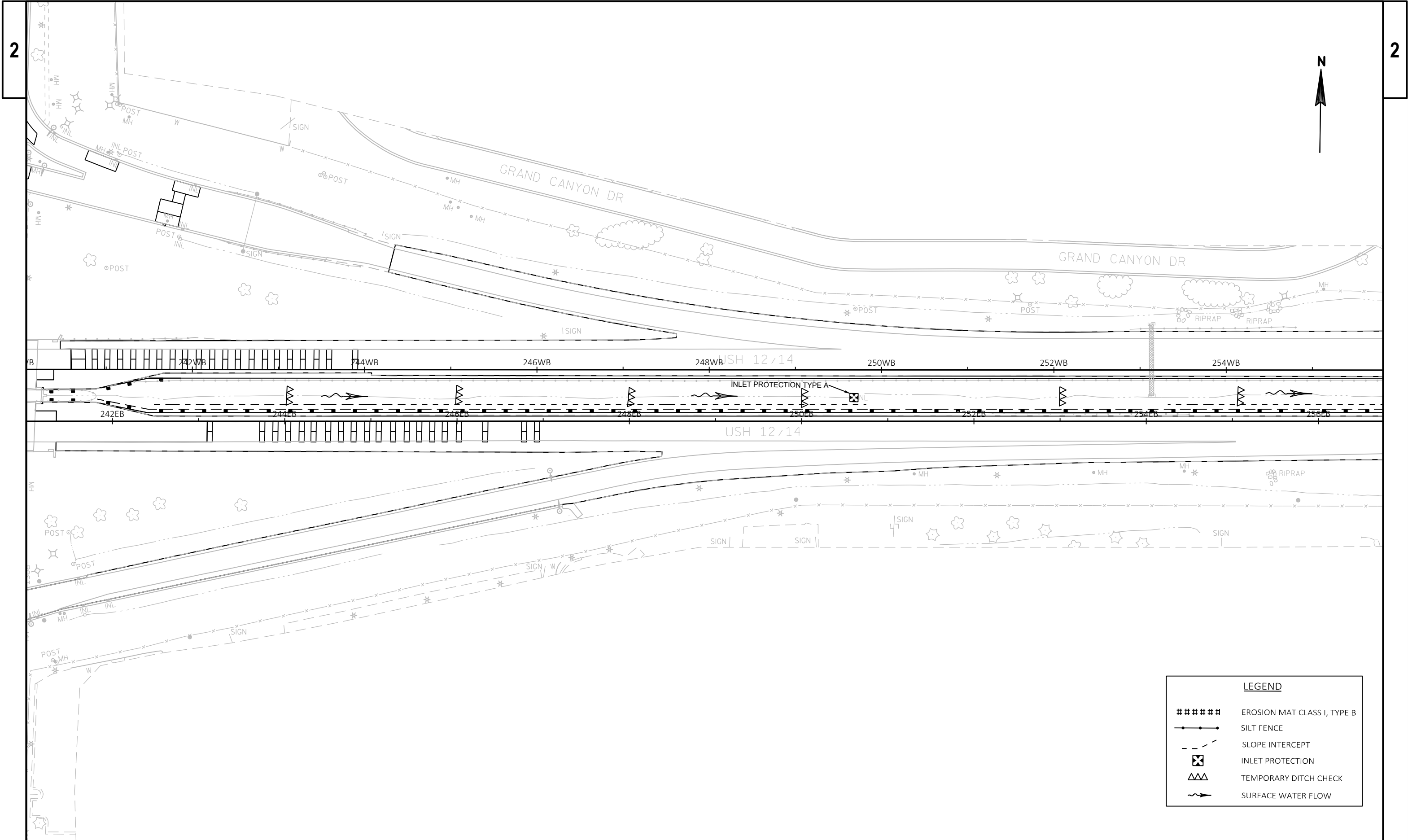






LEGEND

#####	EROSION MAT CLASS I, TYPE B
—●—●—●—	SILT FENCE
- - - - -	SLOPE INTERCEPT
⊗	INLET PROTECTION
△△△	TEMPORARY DITCH CHECK
~>	SURFACE WATER FLOW



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

EROSION CONTROL

SHEET

42

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - EC 2

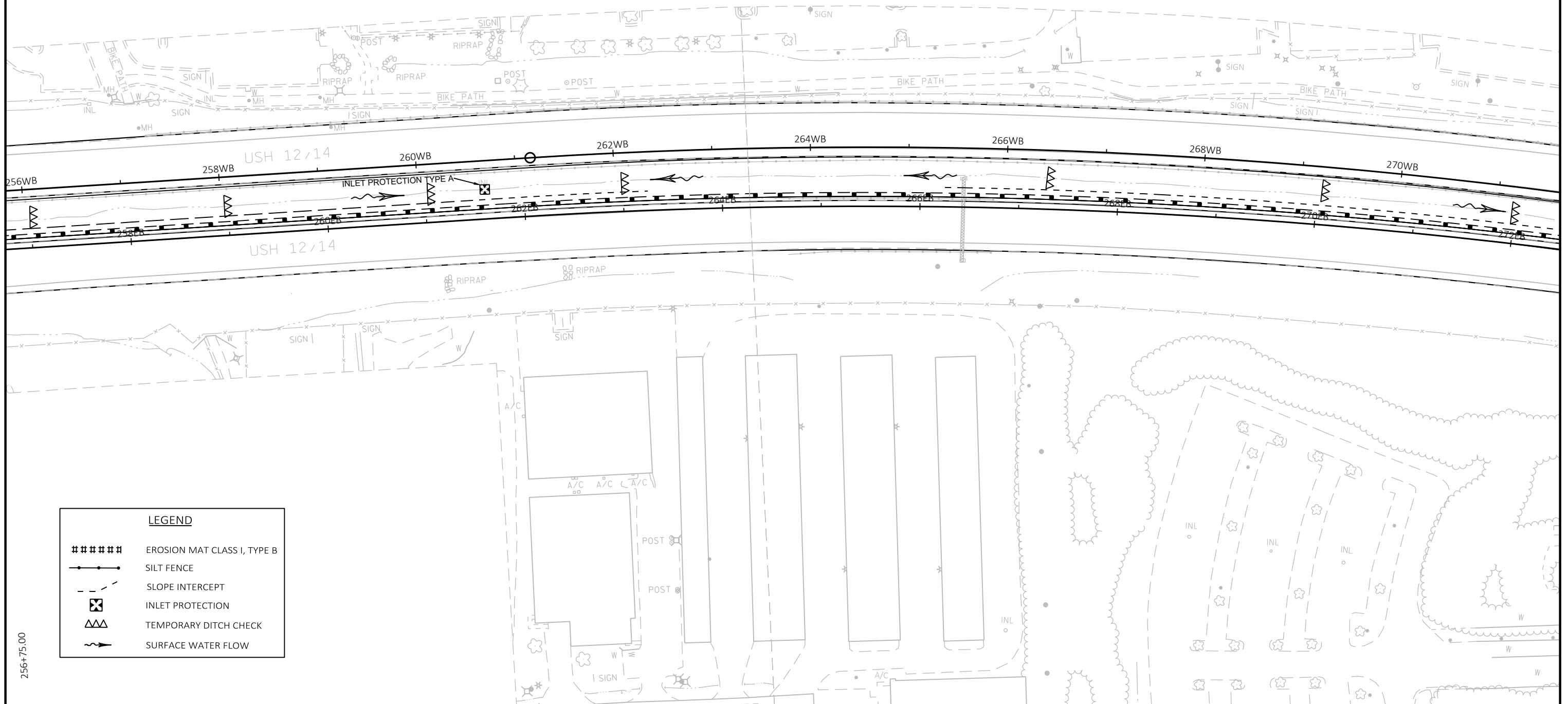
PLOT DATE : 1/30/2019 4:26 PM

PLOT BY : GUIDER, VALERIE S

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADD5 SHEET 42



LEGEND

#####

EROSION MAT CLASS I, TYPE B

—●—

SILT FENCE

- - -

SLOPE INTERCEPT

⊠

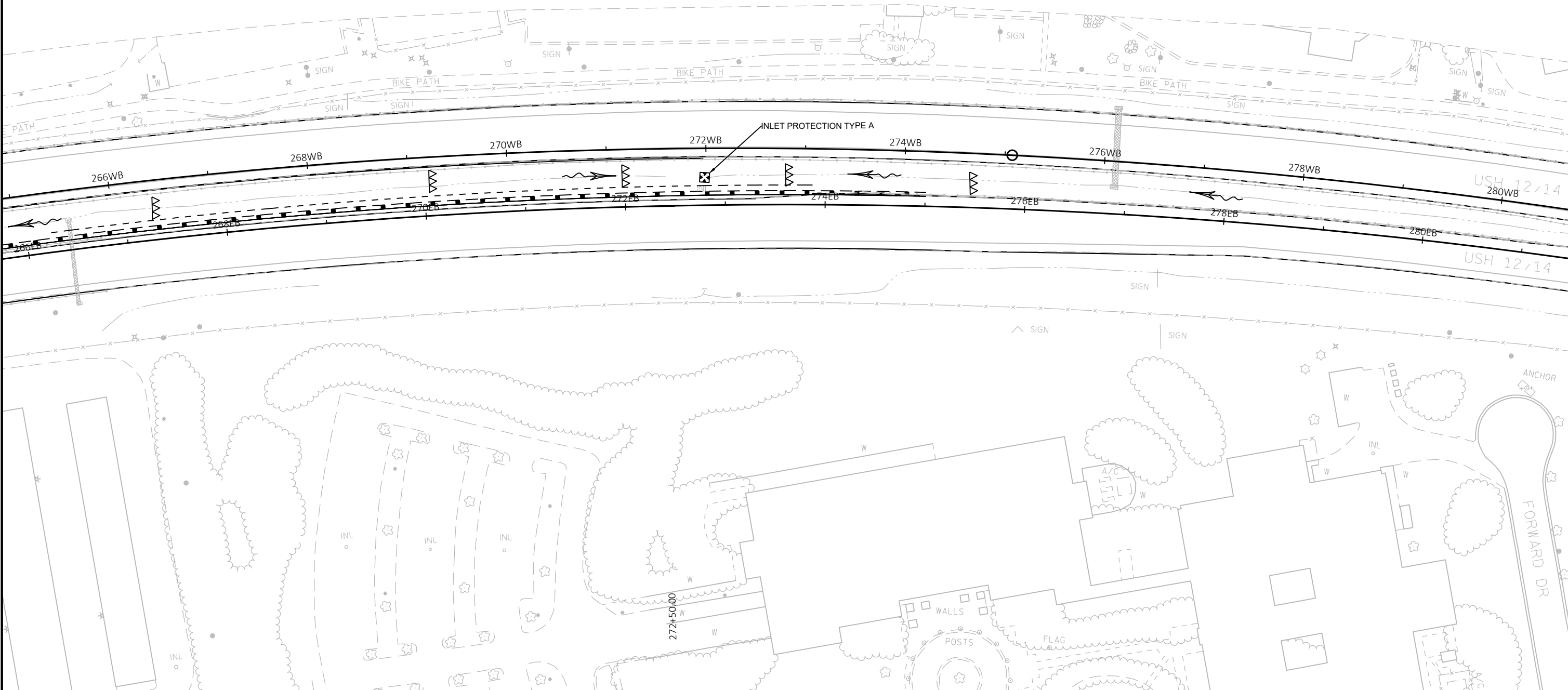
INLET PROTECTION

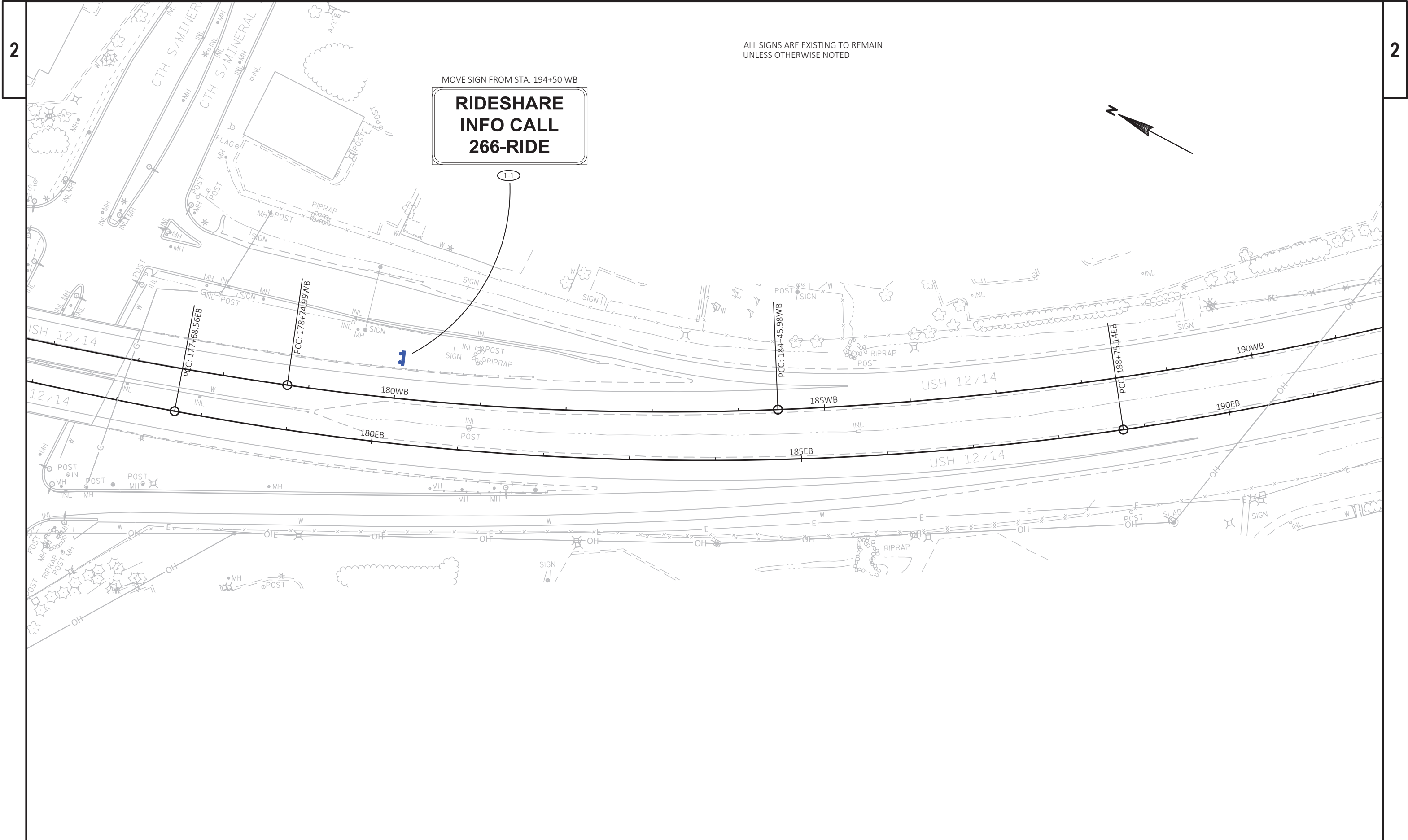
△△△

TEMPORARY DITCH CHECK

~>

SURFACE WATER FLOW

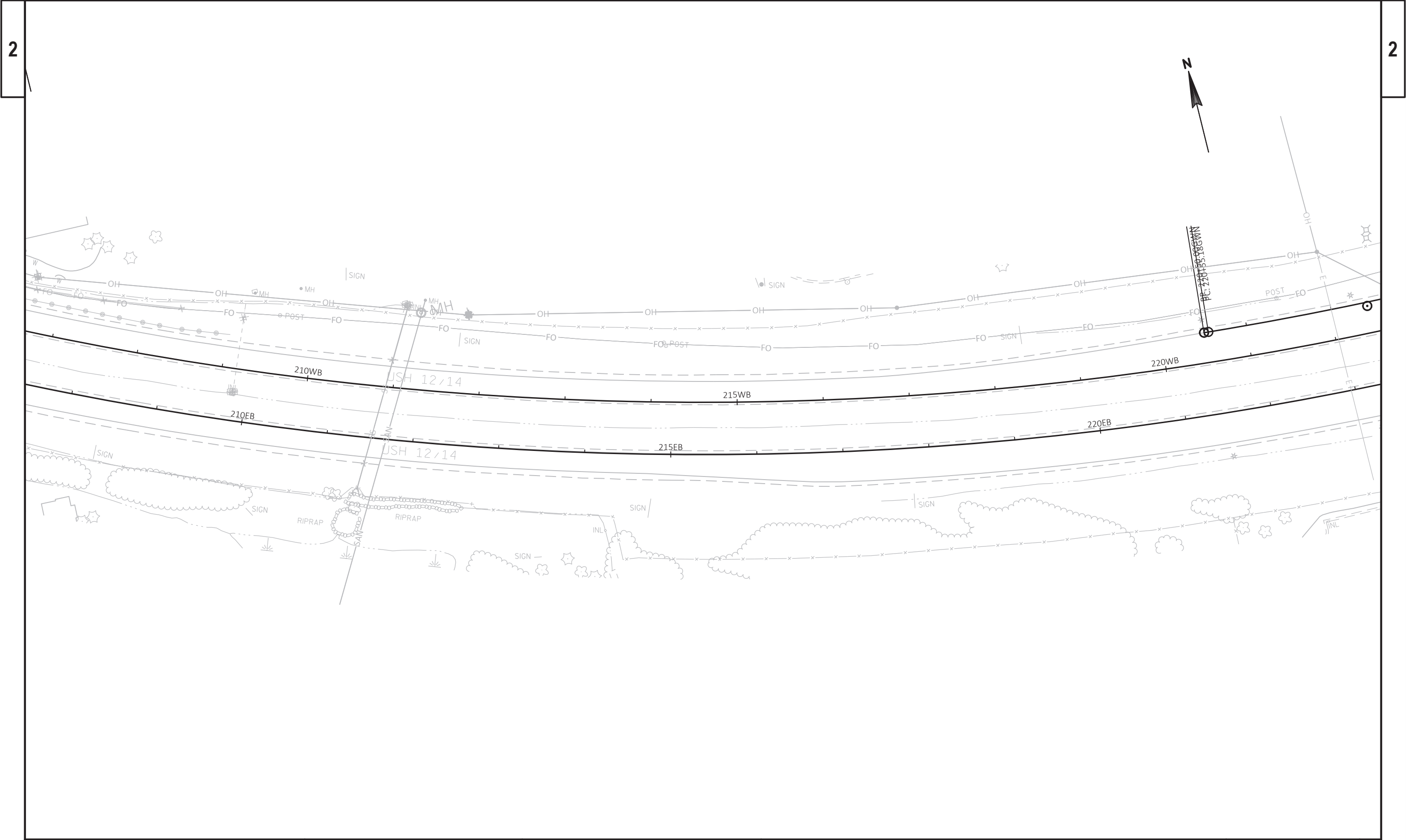


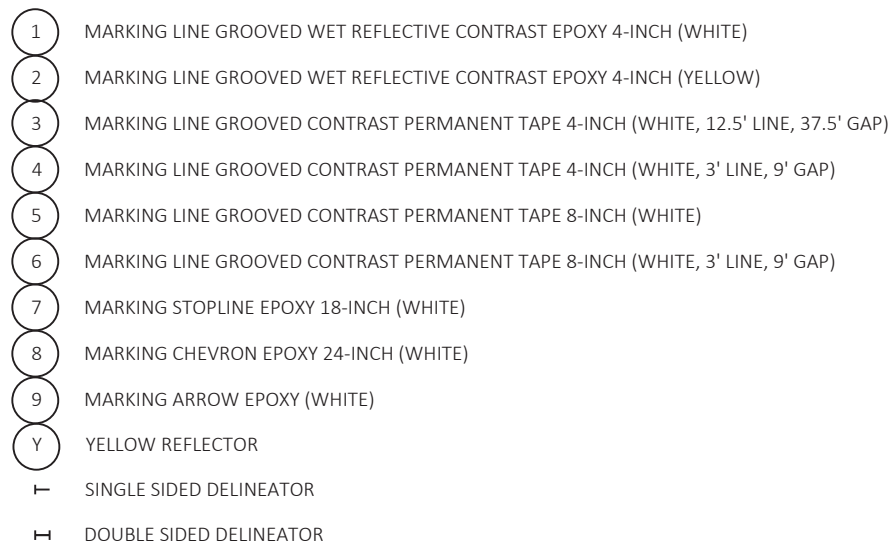


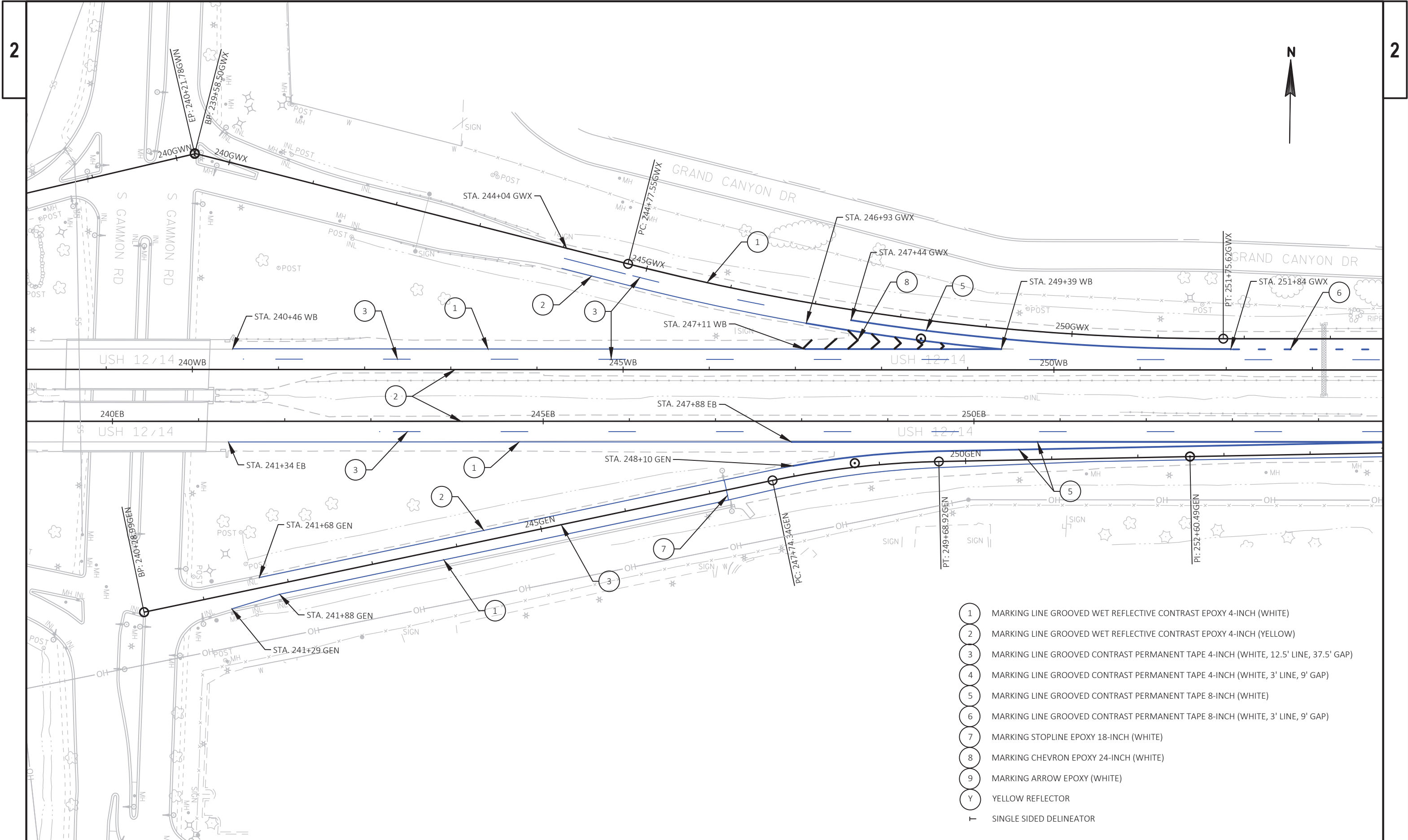
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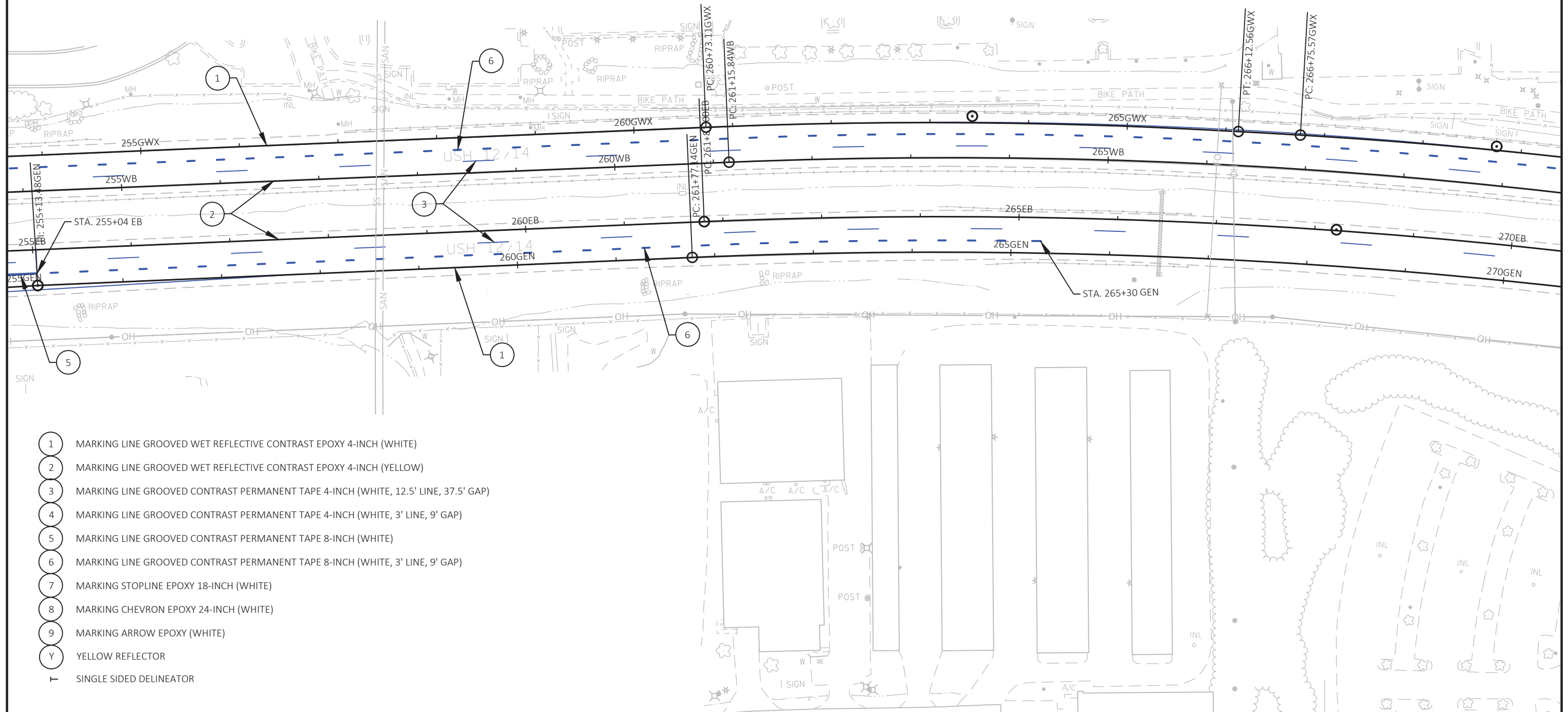
2











- 1 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE)
- 2 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE, 12.5' LINE, 37.5' GAP)
- 4 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE, 3' LINE, 9' GAP)
- 5 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE)
- 6 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE, 3' LINE, 9' GAP)
- 7 MARKING STOPLINE EPOXY 18-INCH (WHITE)
- 8 MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 9 MARKING ARROW EPOXY (WHITE)
- Y YELLOW REFLECTOR
- SINGLE SIDED DELINEATOR

PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

PERMANENT SIGNING/PAVEMENT MARKING

SHEET

50

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETS\PLAN\024501-PM.DWG
LAYOUT NAME - 9

PLOT DATE : 11/30/2018 12:58 PM

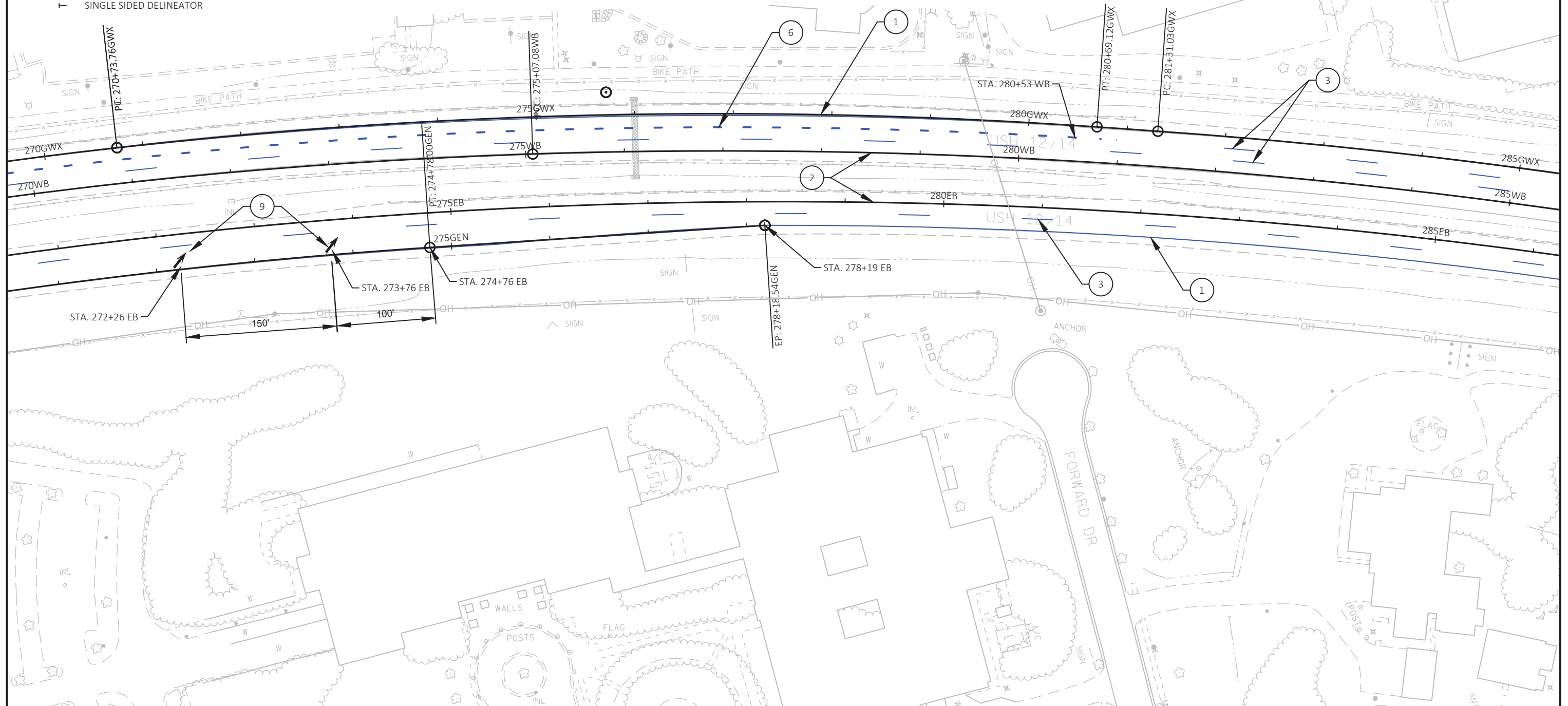
PLOT BY : GUIDER, VALERIE S

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDIS SHEET 42

- 1 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE)
- 2 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE, 12.5' LINE, 37.5' GAP)
- 4 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE, 3' LINE, 9' GAP)
- 5 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE)
- 6 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE, 3' LINE, 9' GAP)
- 7 MARKING STOPLINE EPOXY 18-INCH (WHITE)
- 8 MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 9 MARKING ARROW EPOXY (WHITE)
- Y YELLOW REFLECTOR
- T SINGLE SIDED DELINEATOR



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

PERMANENT SIGNING/PAVEMENT MARKING

SHEET

51

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETS\PLAN\024501-PM.DWG
LAYOUT NAME - 10

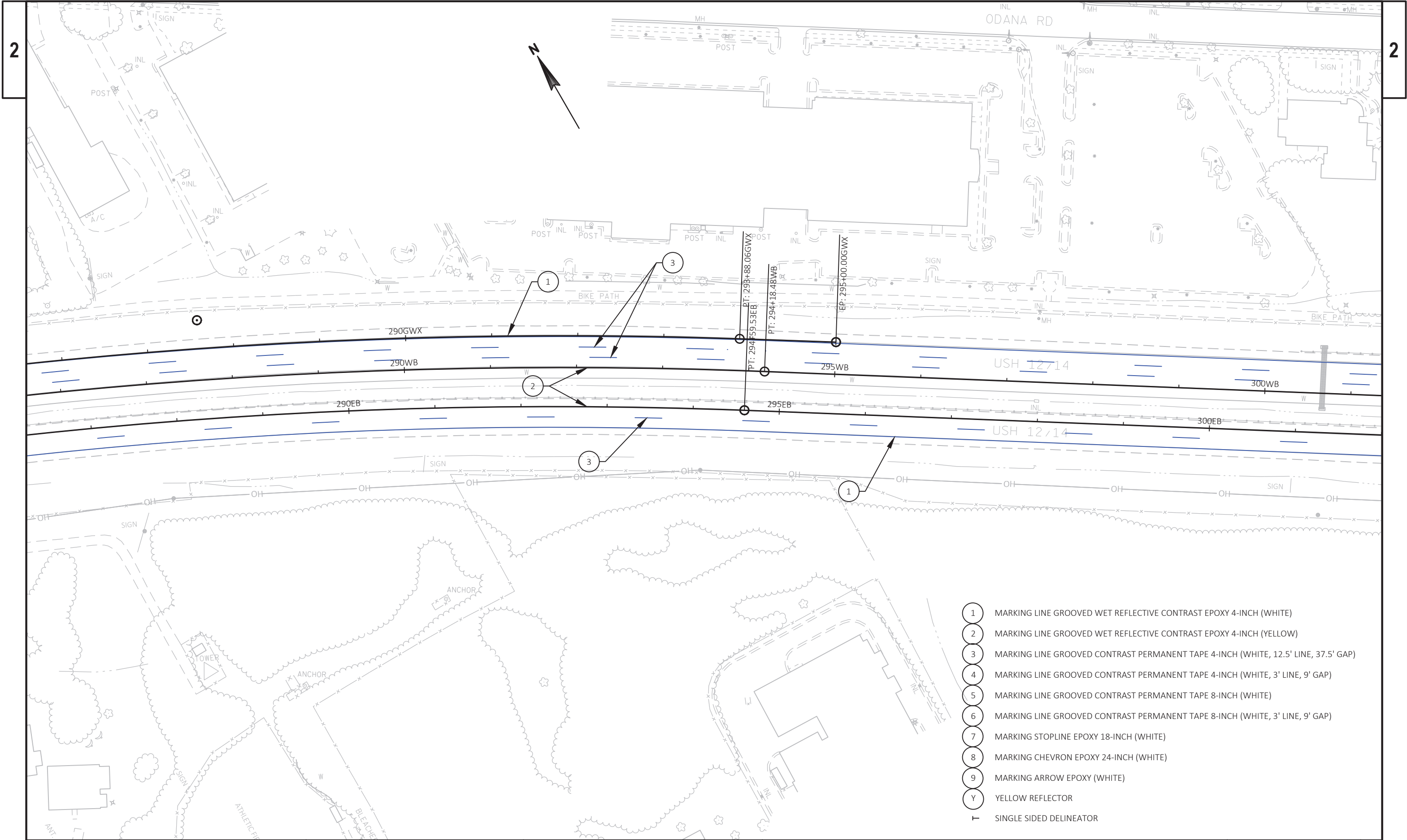
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PLOT BY : GUIDER, VALERIE S

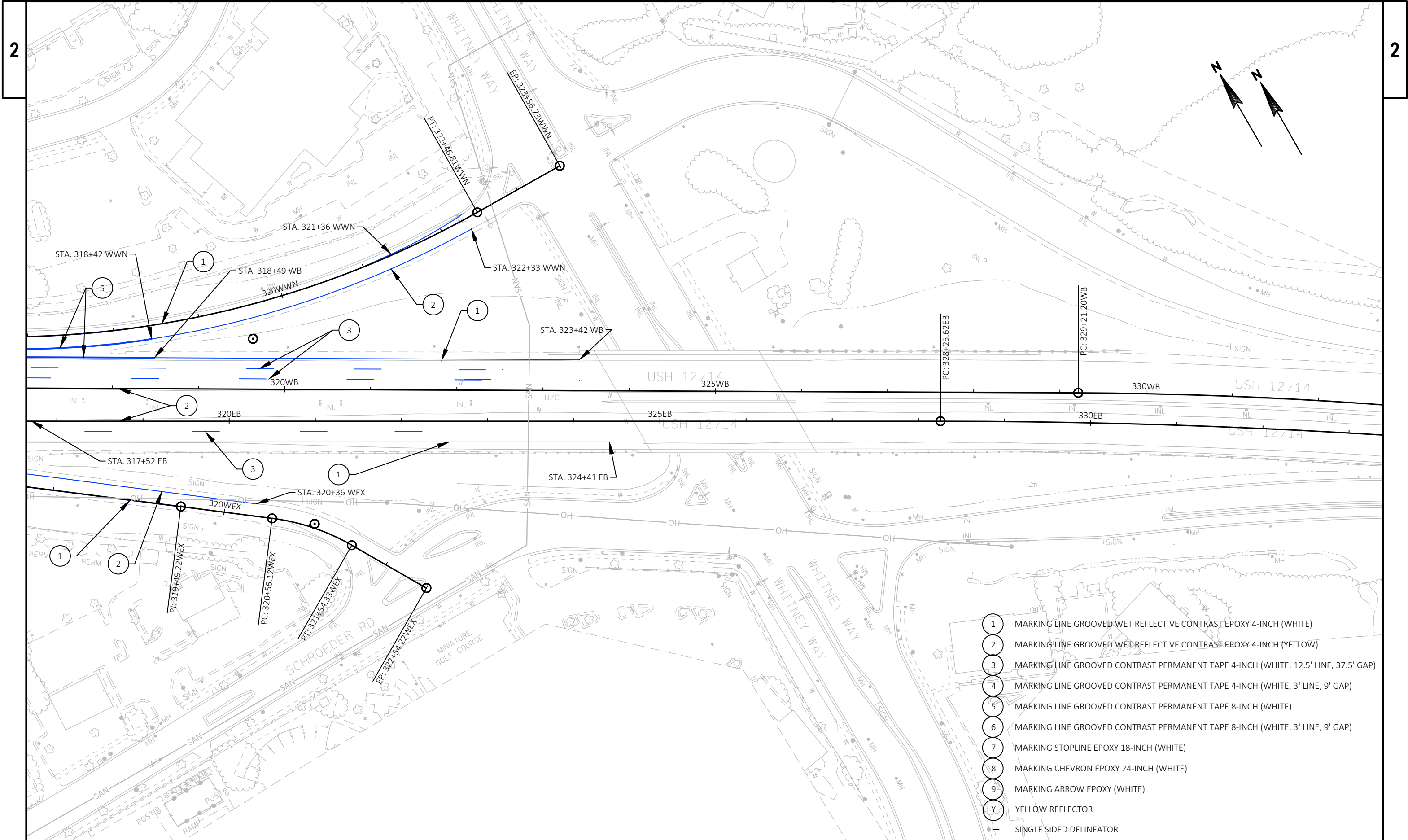
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

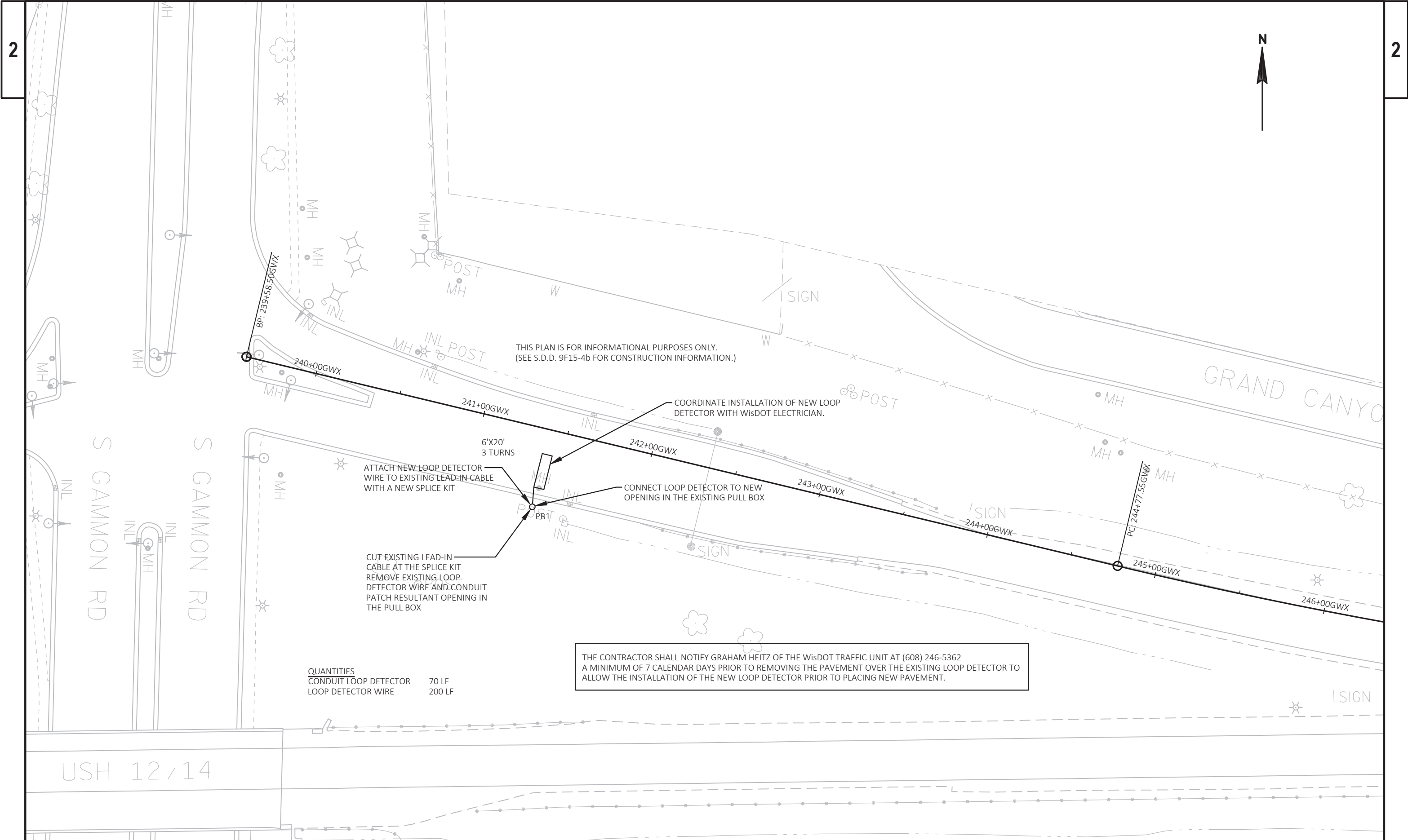
WISDOT/CADDs SHEET 42

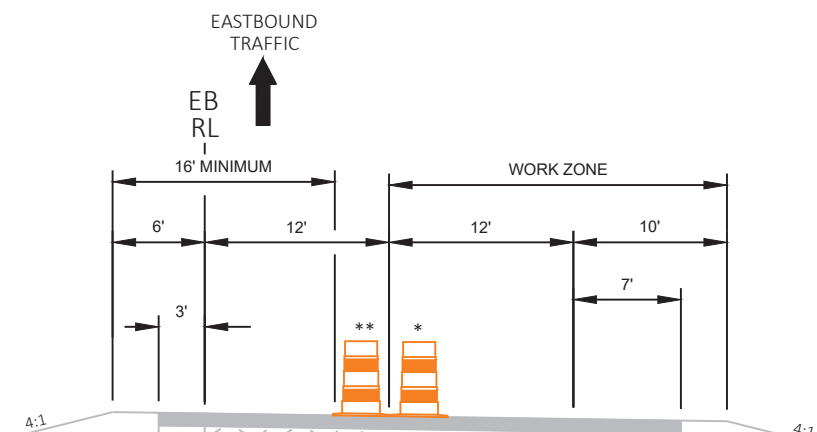
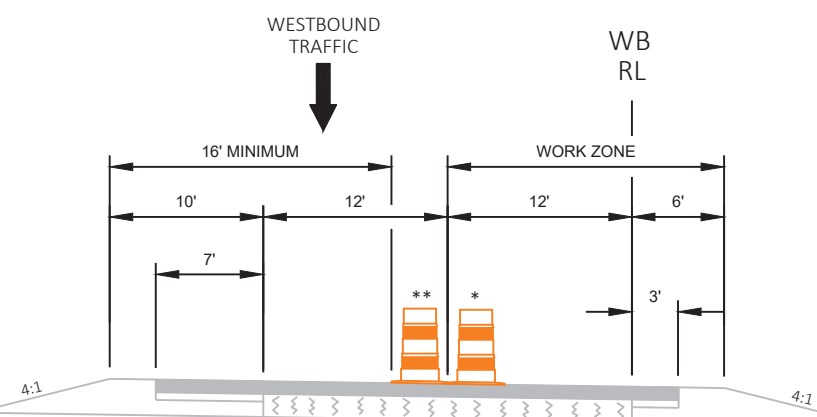






- 1 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (WHITE)
- 2 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE, 12.5' LINE, 37.5' GAP)
- 4 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE, 3' LINE, 9' GAP)
- 5 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE)
- 6 MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH (WHITE, 3' LINE, 9' GAP)
- 7 MARKING STOPLINE EPOXY 18-INCH (WHITE)
- 8 MARKING CHEVRON EPOXY 24-INCH (WHITE)
- 9 MARKING ARROW EPOXY (WHITE)
- Y YELLOW REFLECTOR
- SINGLE SIDED DELINEATOR





WESTBOUND

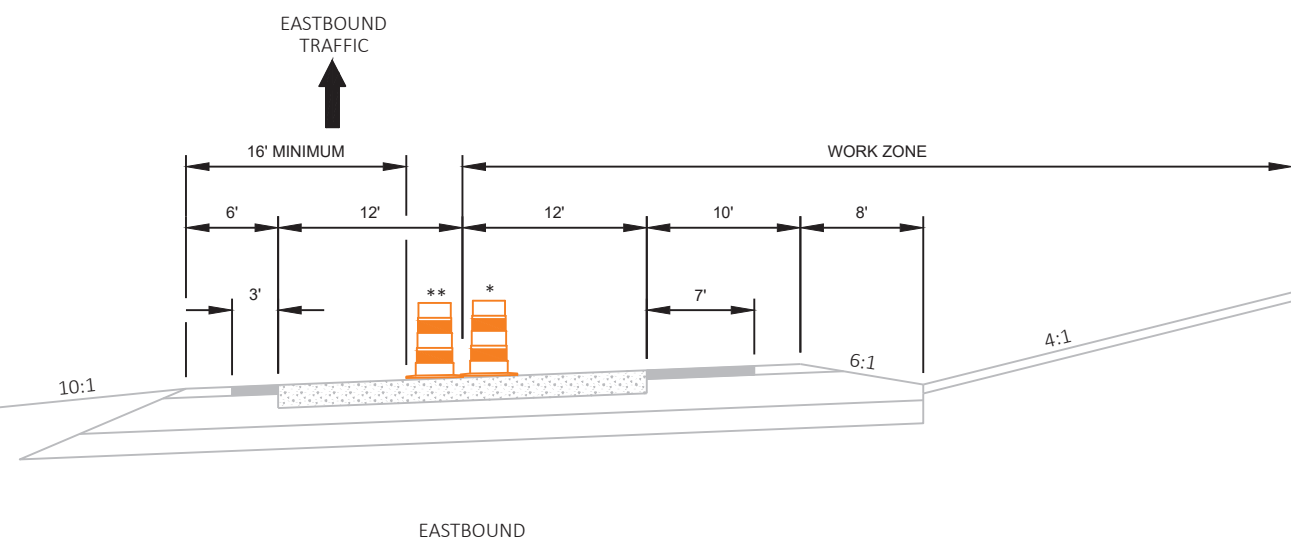
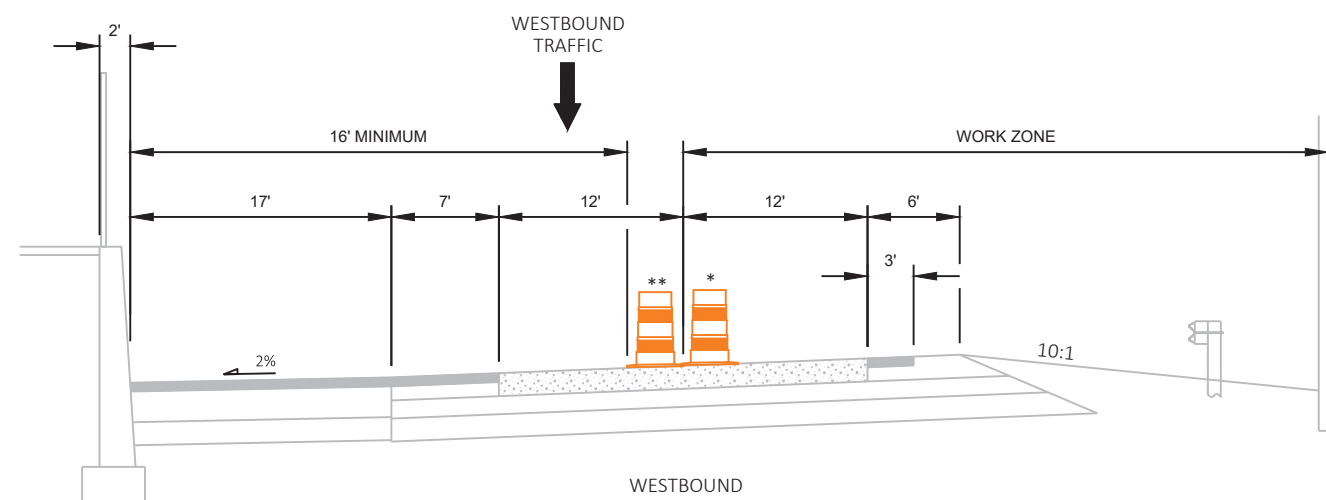
EASTBOUND

STAGE 1

MAINLINE

* NORMAL DRUM AND LANE LOCATION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION PASSES

** TEMPORARY DRUM AND LANE LOCATION. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.



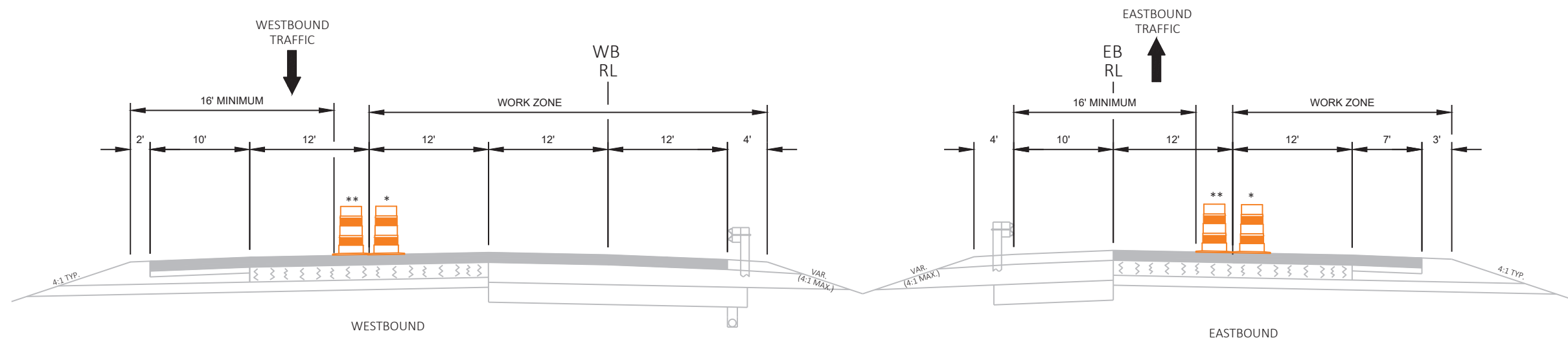
WESTBOUND

EASTBOUND

STAGE 1

MAINLINE AT HIGH POINT RD.

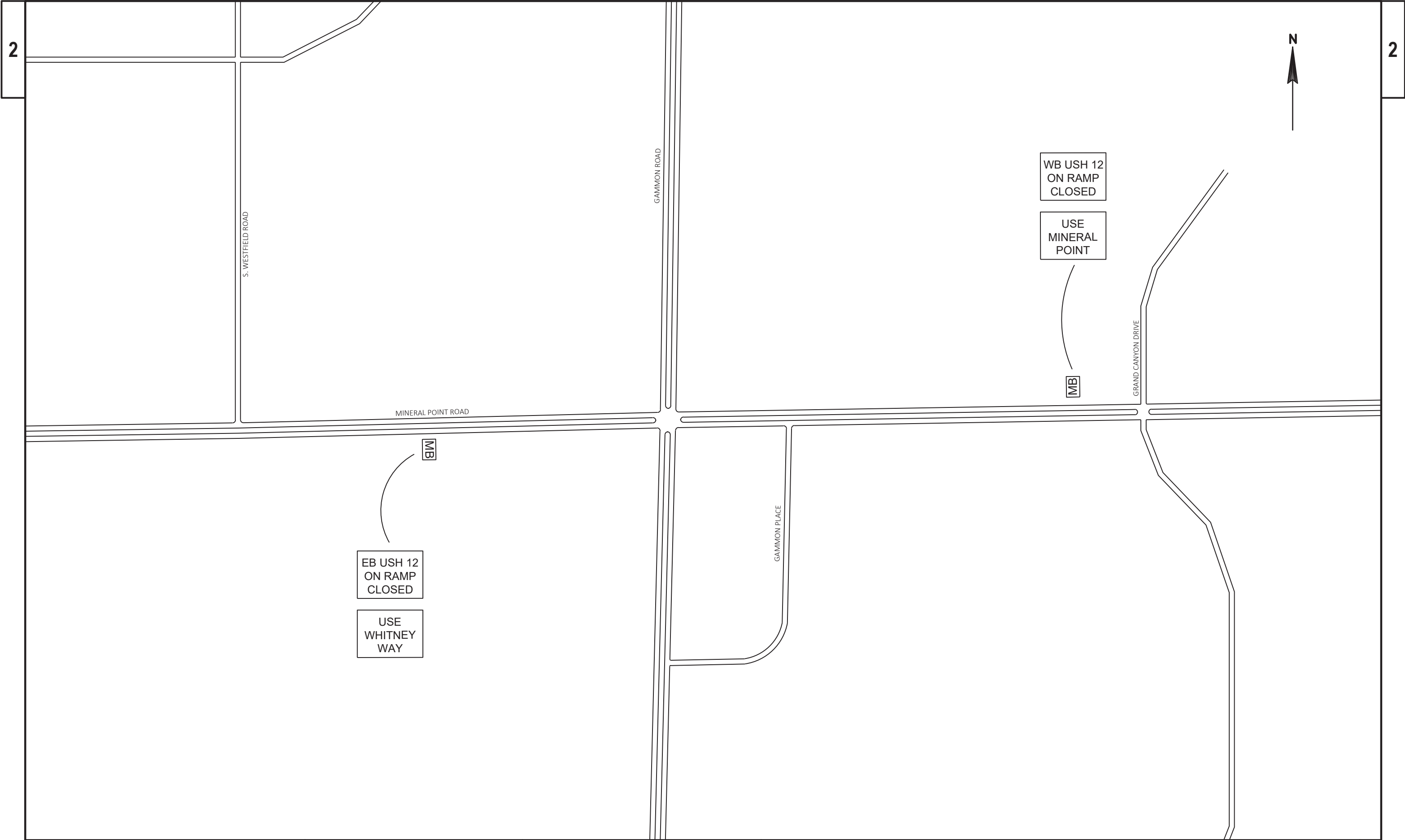
WHEN RAISING THE PAVEMENT ELEVATION, PAVING OPERATIONS MUST MAINTAIN DRAINAGE BY PAVING THE HIGHER LANES FIRST.

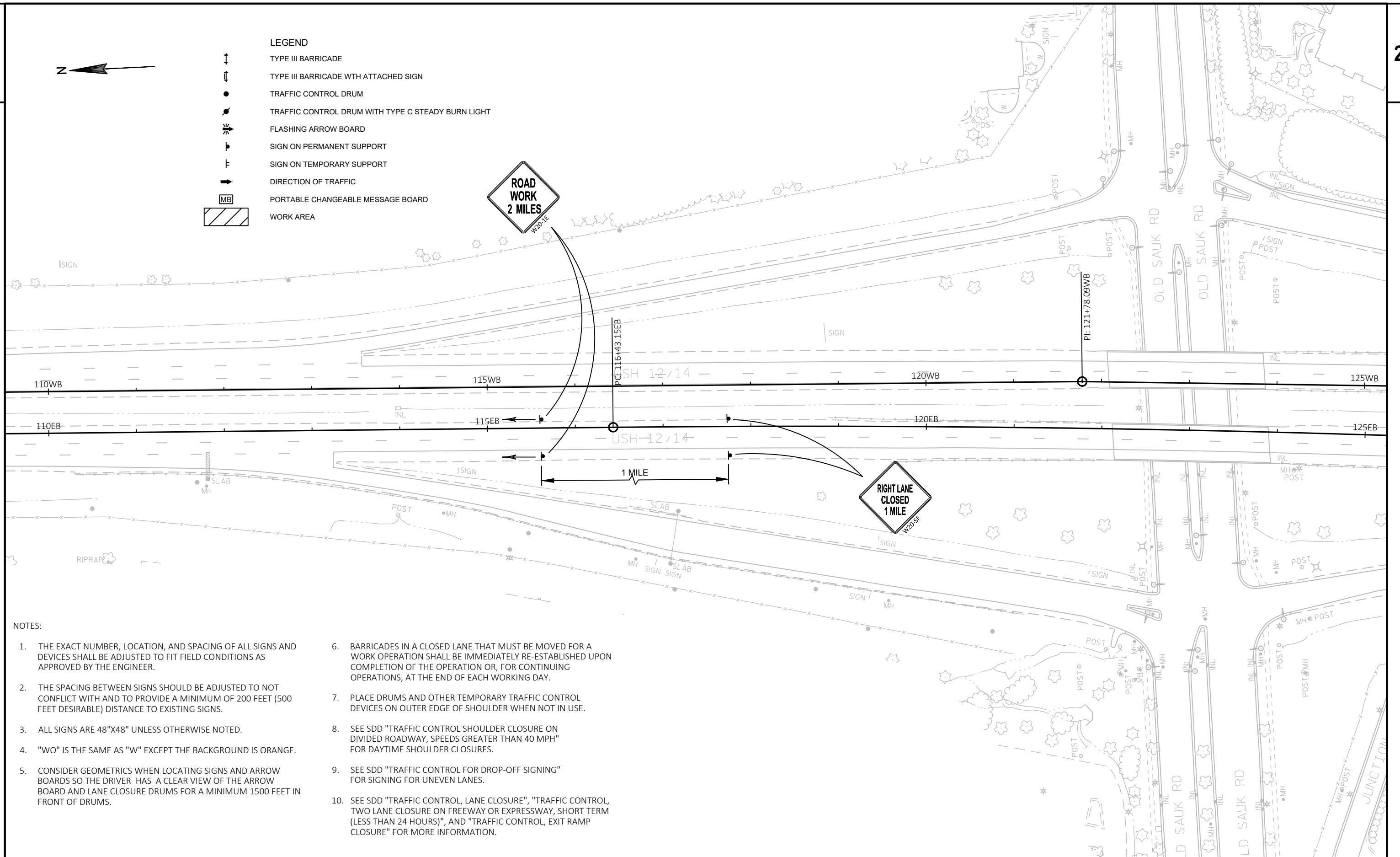


* NORMAL DRUM AND LANE LOCATION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION PASSES

** TEMPORARY DRUM AND LANE LOCATION.
DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.

STAGE 1
MAINLINE





PROJECT NO: 5300-00-71

HWY: USH 12

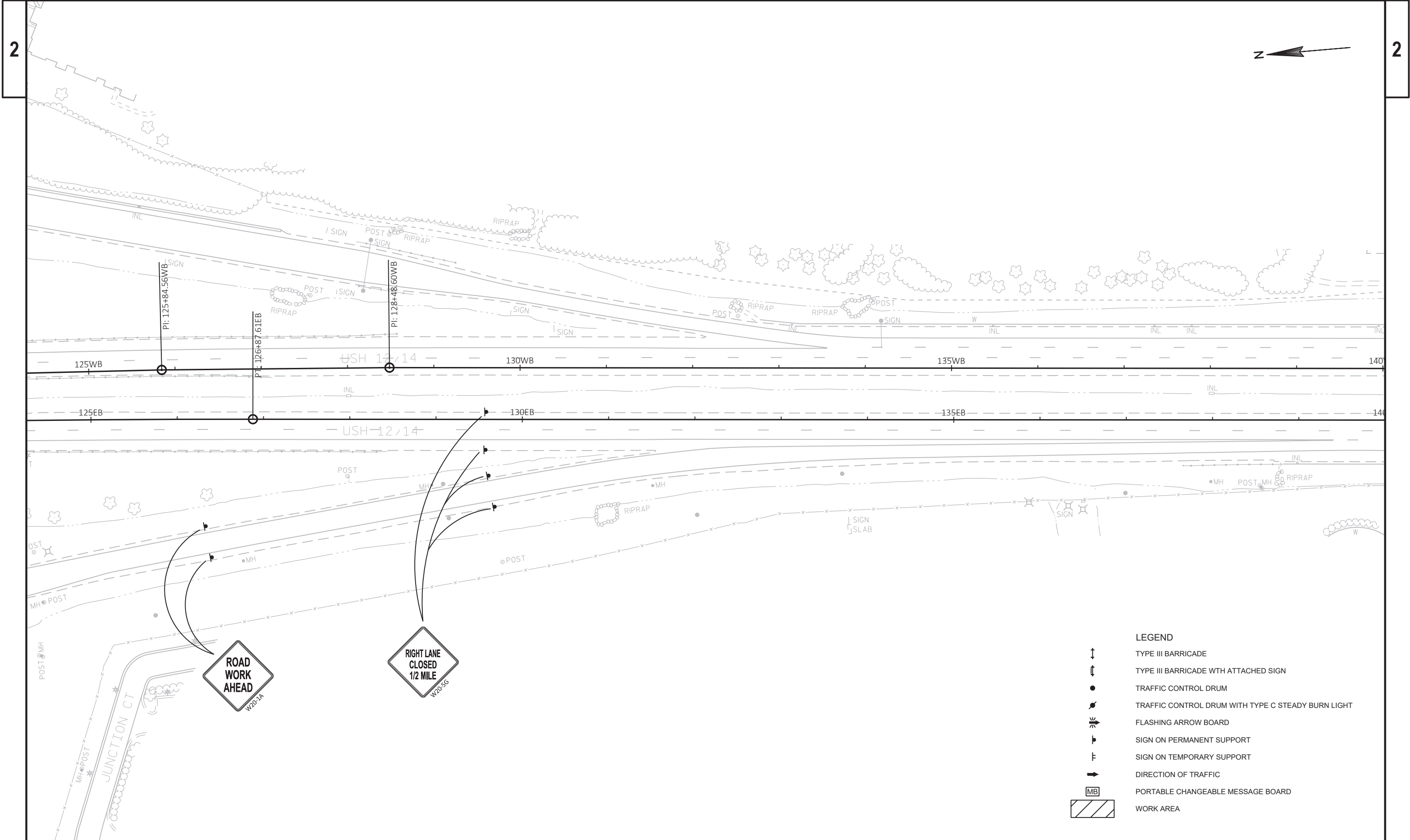
COUNTY: DANE

STAGE 1

SHEET

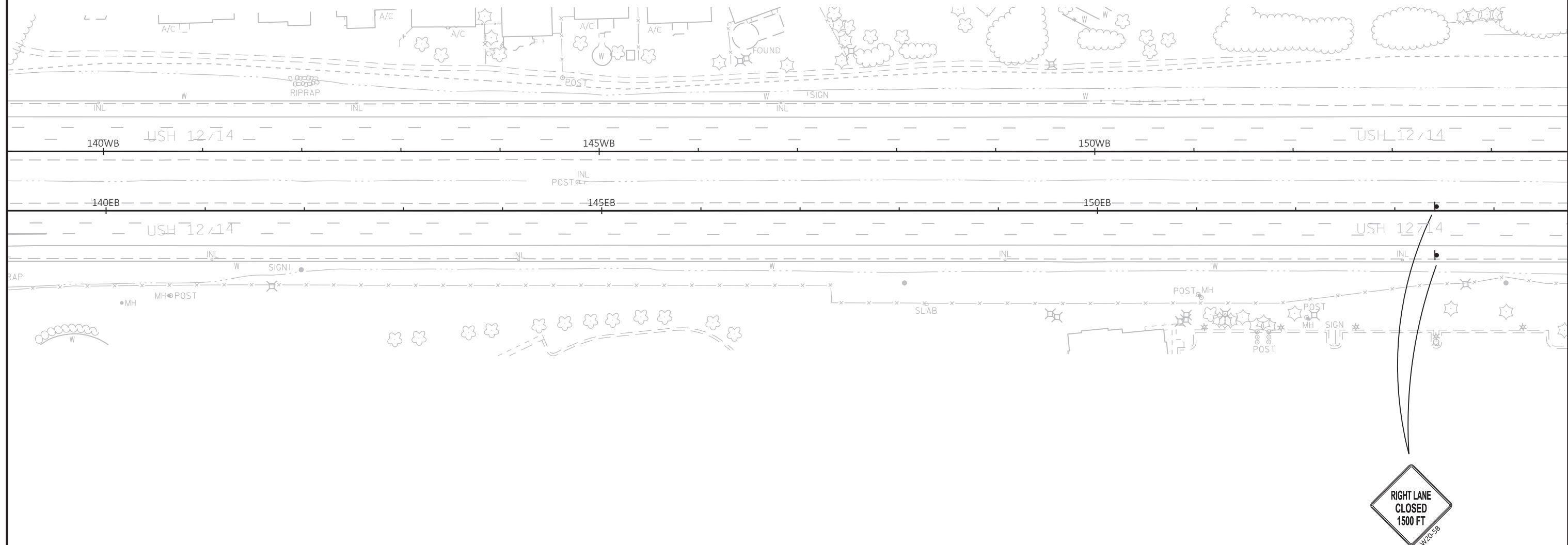
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E



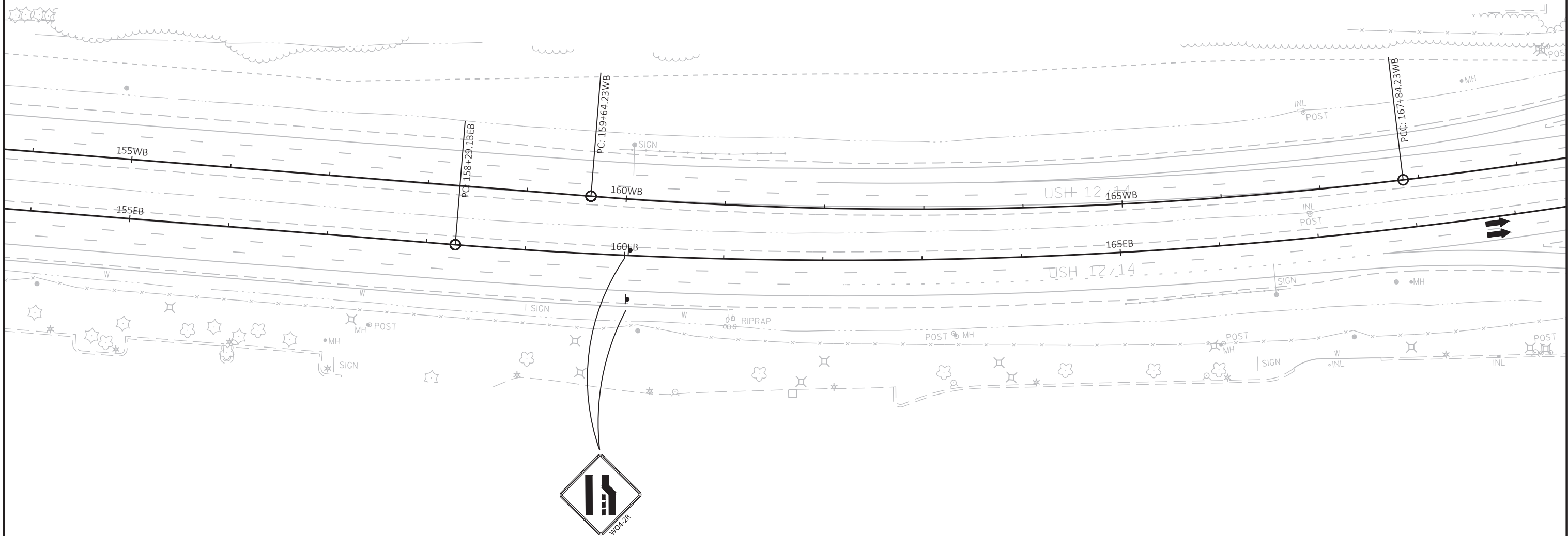
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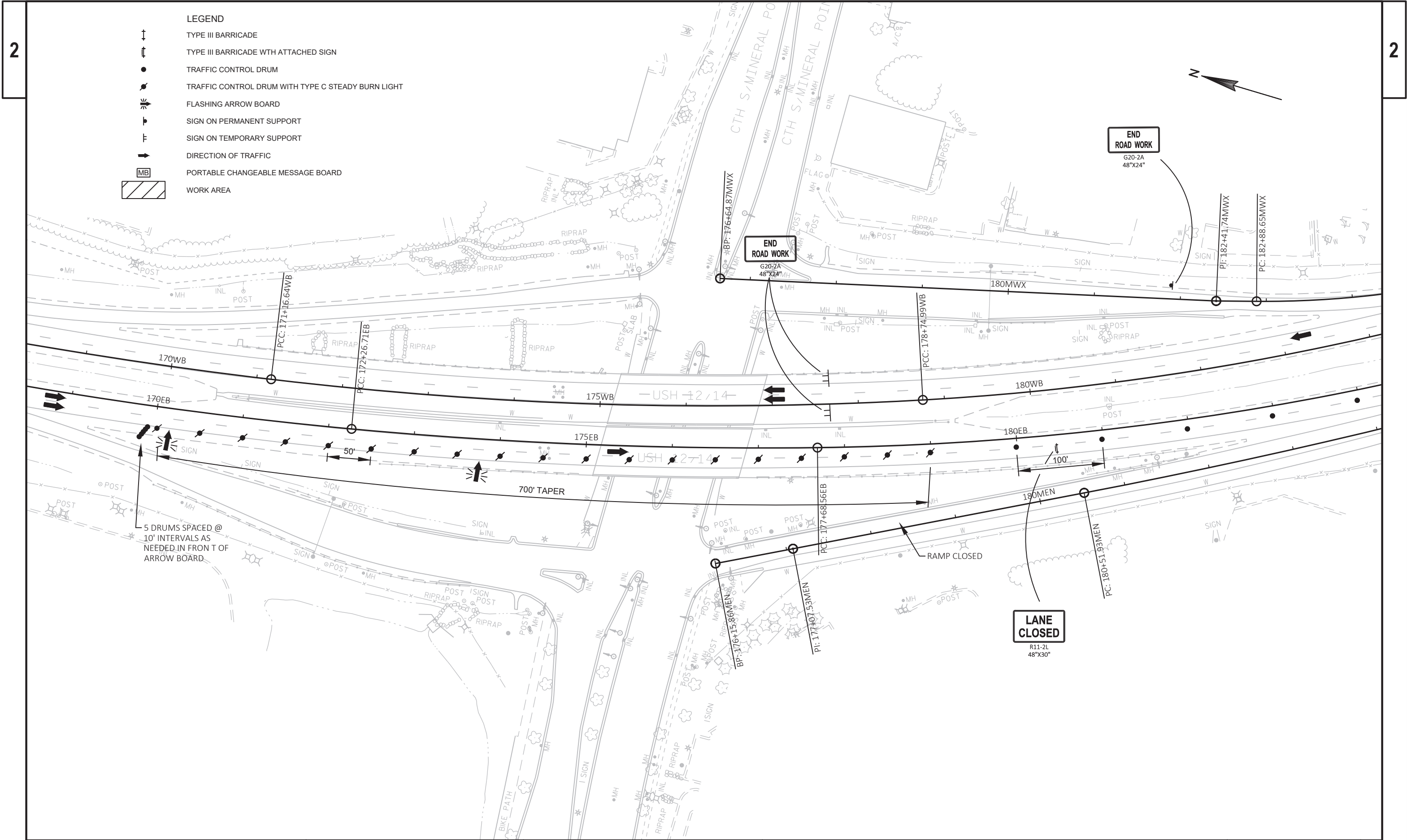
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
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- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA





- LEGEND
- TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - SIGN ON TEMPORARY SUPPORT
 - DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE BOARD
 - WORK AREA

PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 1

SHEET

63

E

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LAYOUT NAME - 05

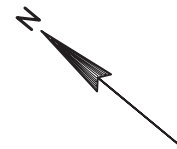
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PLOT BY : GUIDER, VALERIE S

PLOT NAME :

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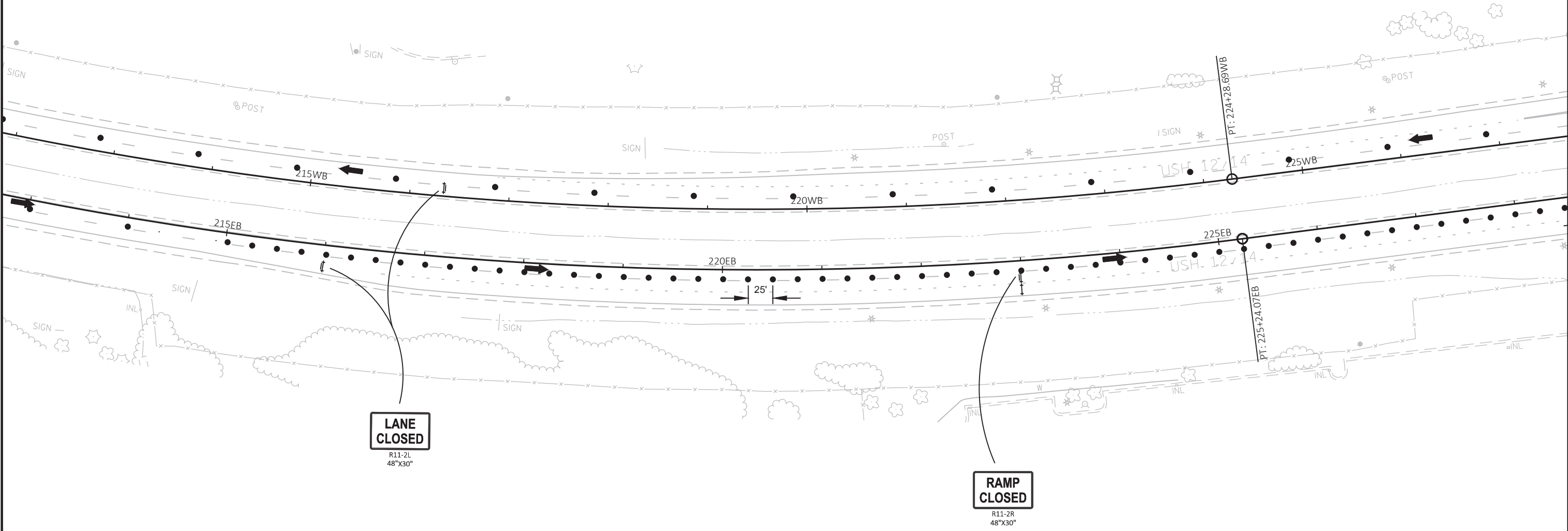
WISDOT/CADD5 SHEET 42





LEGEND

- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ↔ FLASHING ARROW BOARD
- └ SIGN ON PERMANENT SUPPORT
- └ SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- ▨ WORK AREA



TYPE III BARRICADE

TYPE III BARRICADE WTH ATTACHED SIGN

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

FLASHING ARROW BOARD

SIGN ON PERMANENT SUPPORT

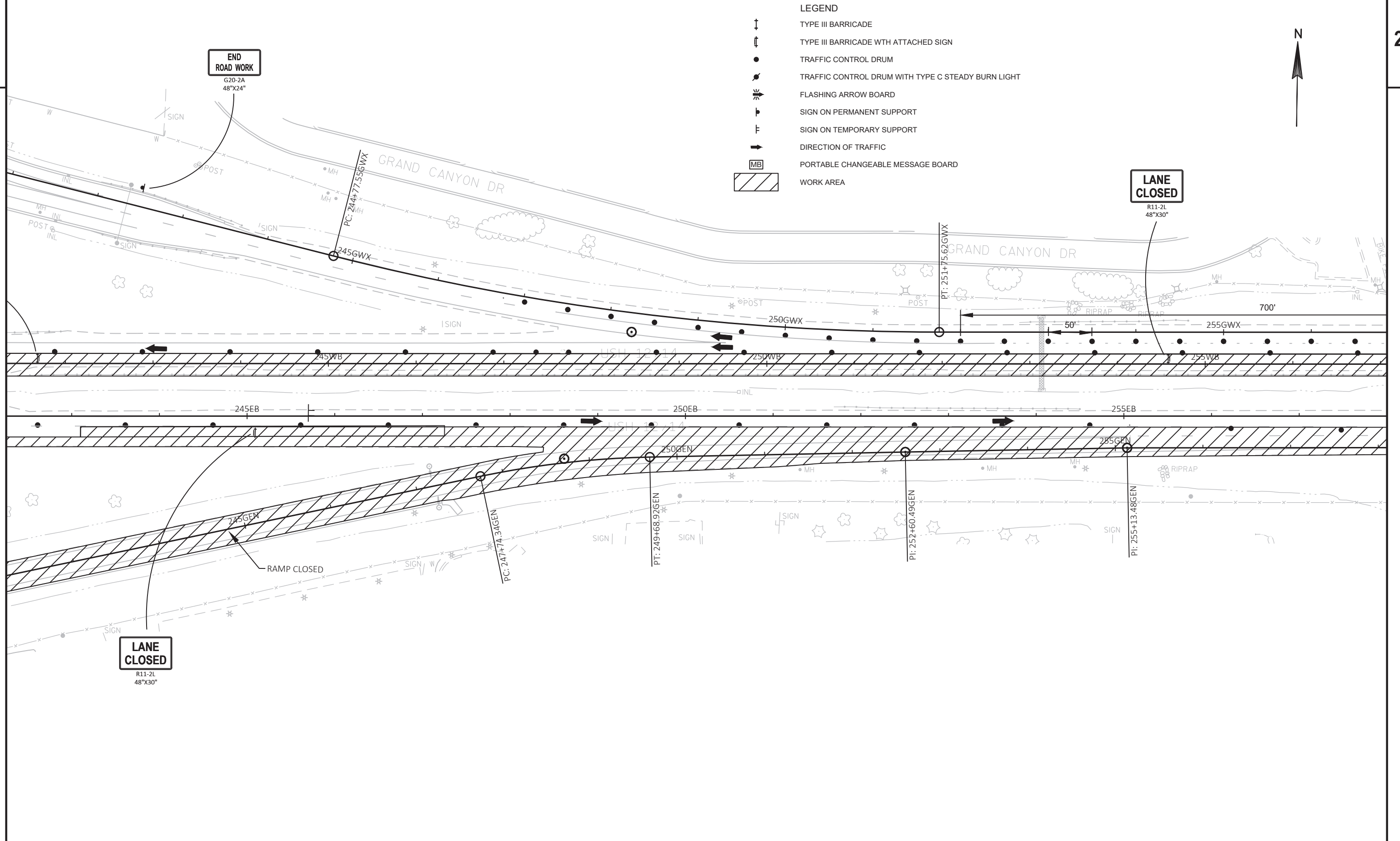
SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

PORTABLE CHANGEABLE MESSAGE BOARD

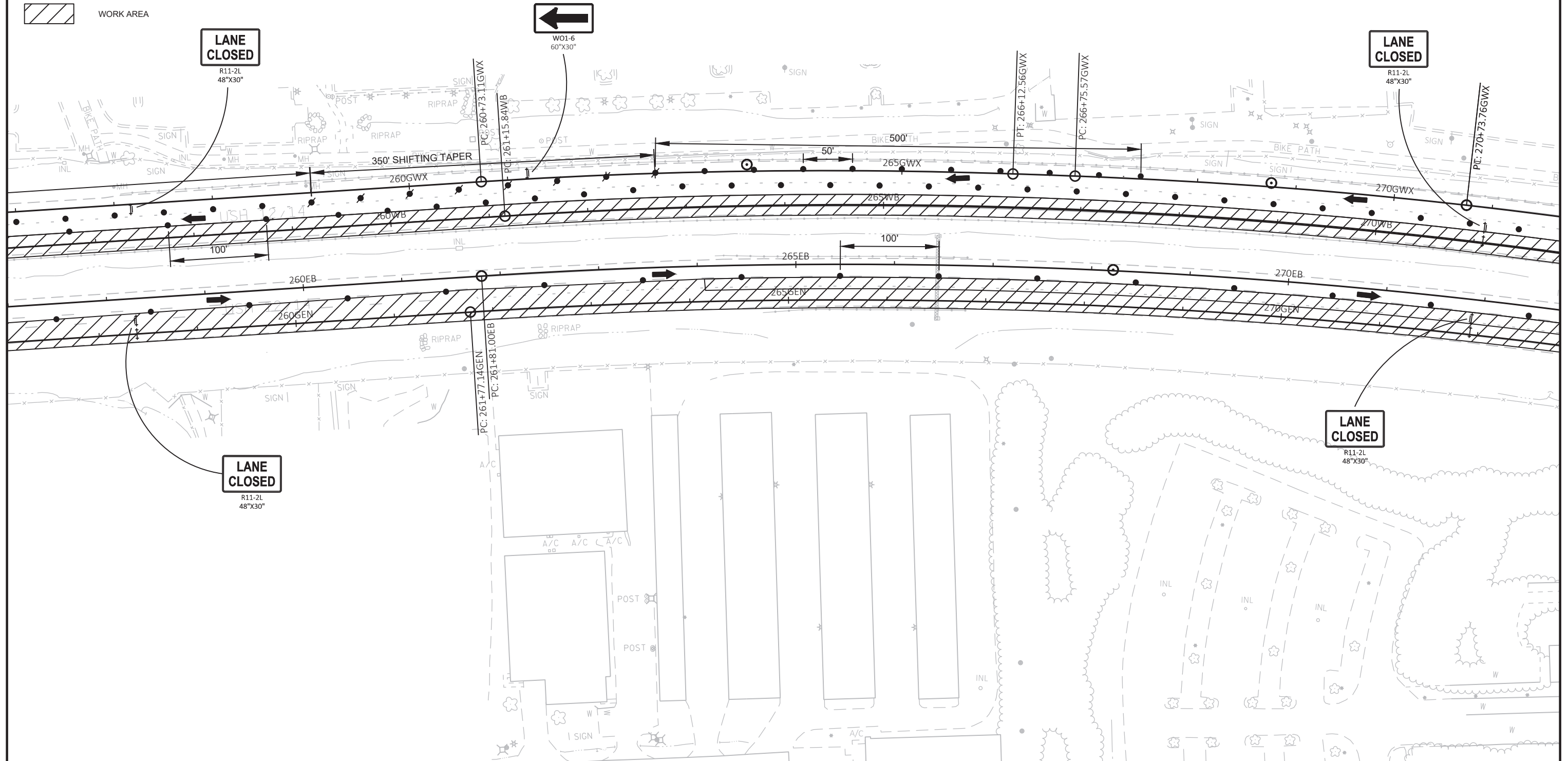
WORK AREA





LEGEND

	TYPE III BARRICADE
	TYPE III BARRICADE WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 1

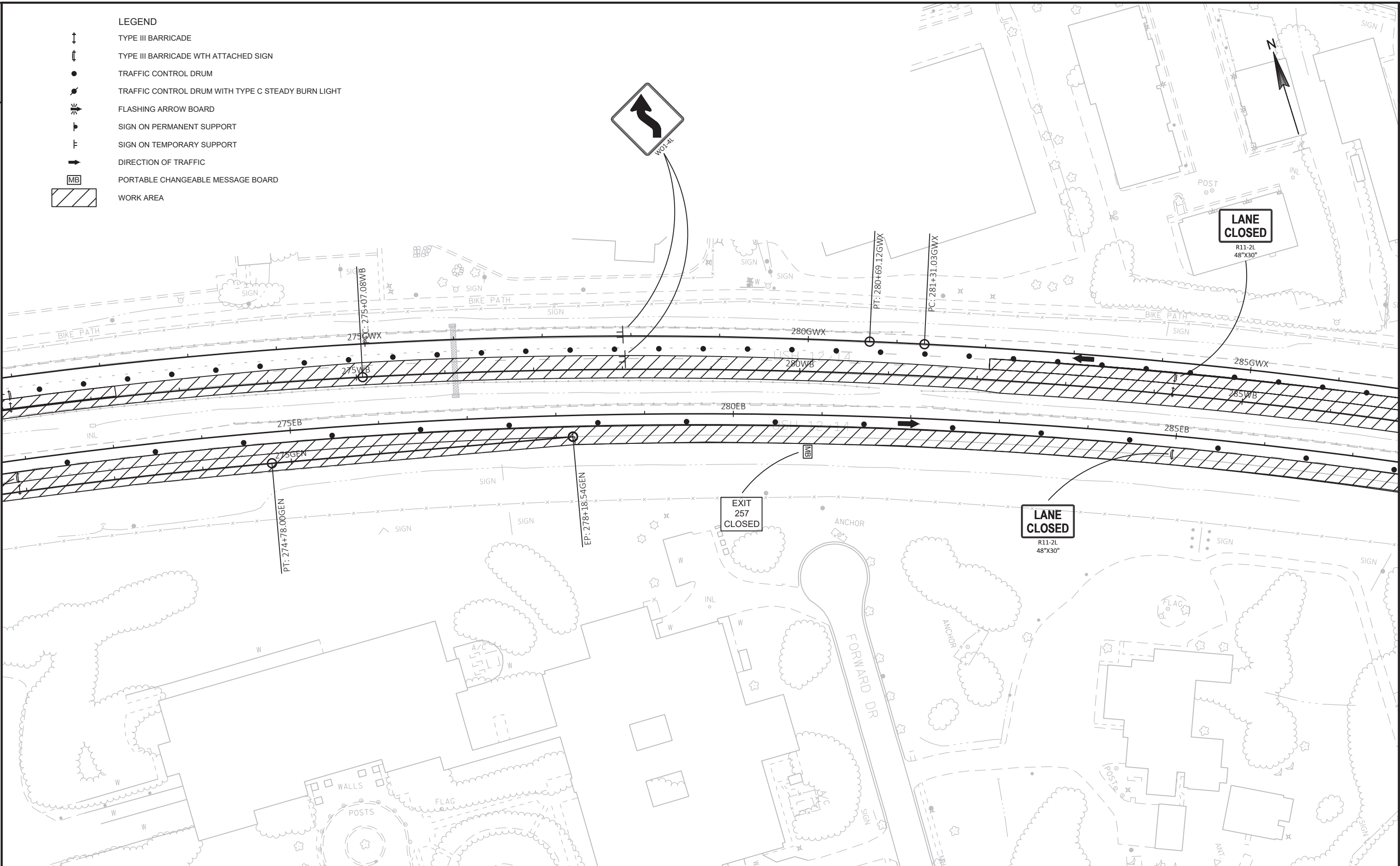
SHEET

69

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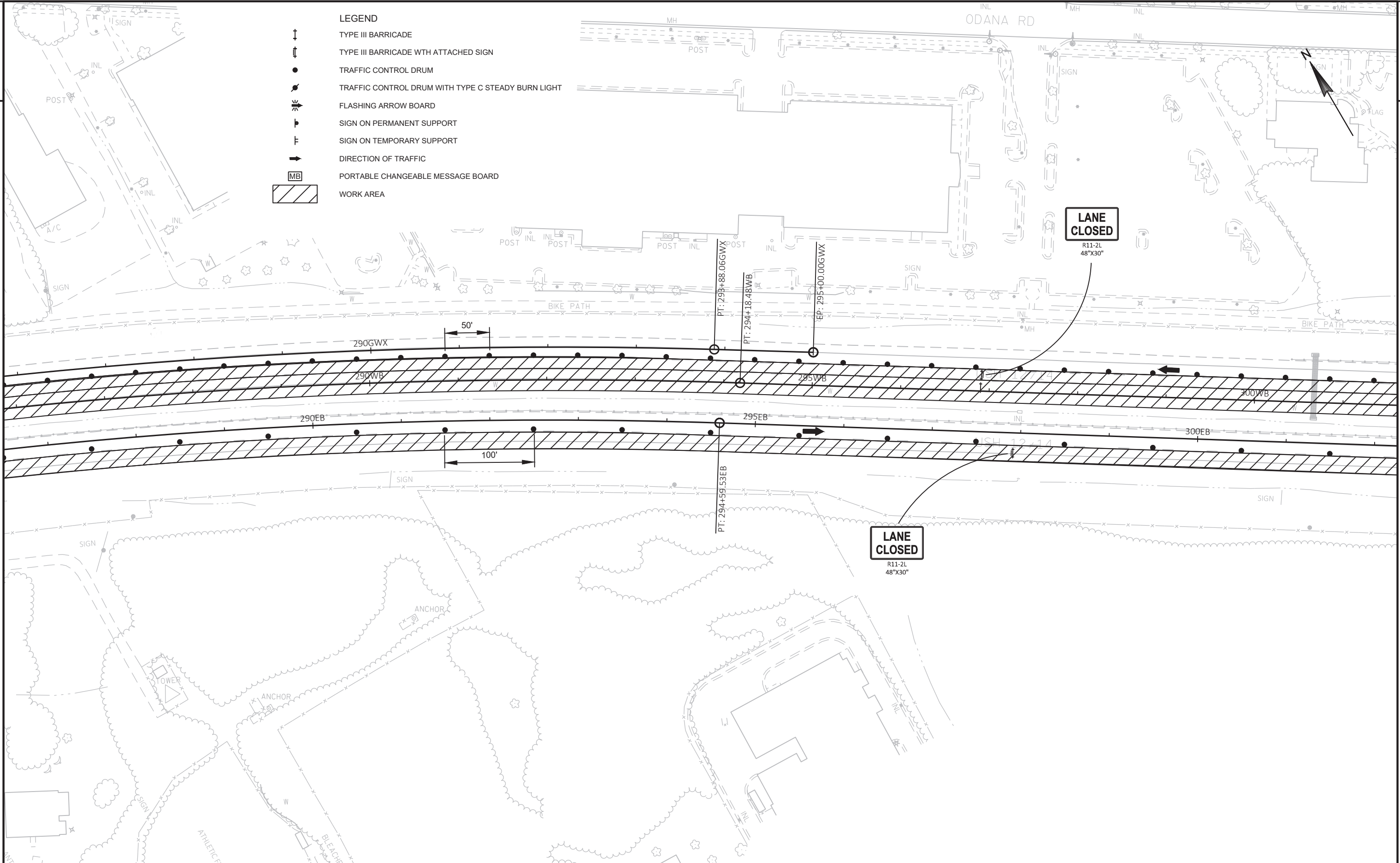
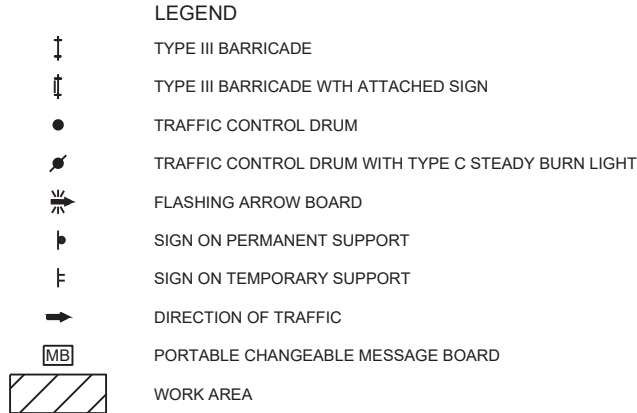
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



2

2



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 1

SHEET

71

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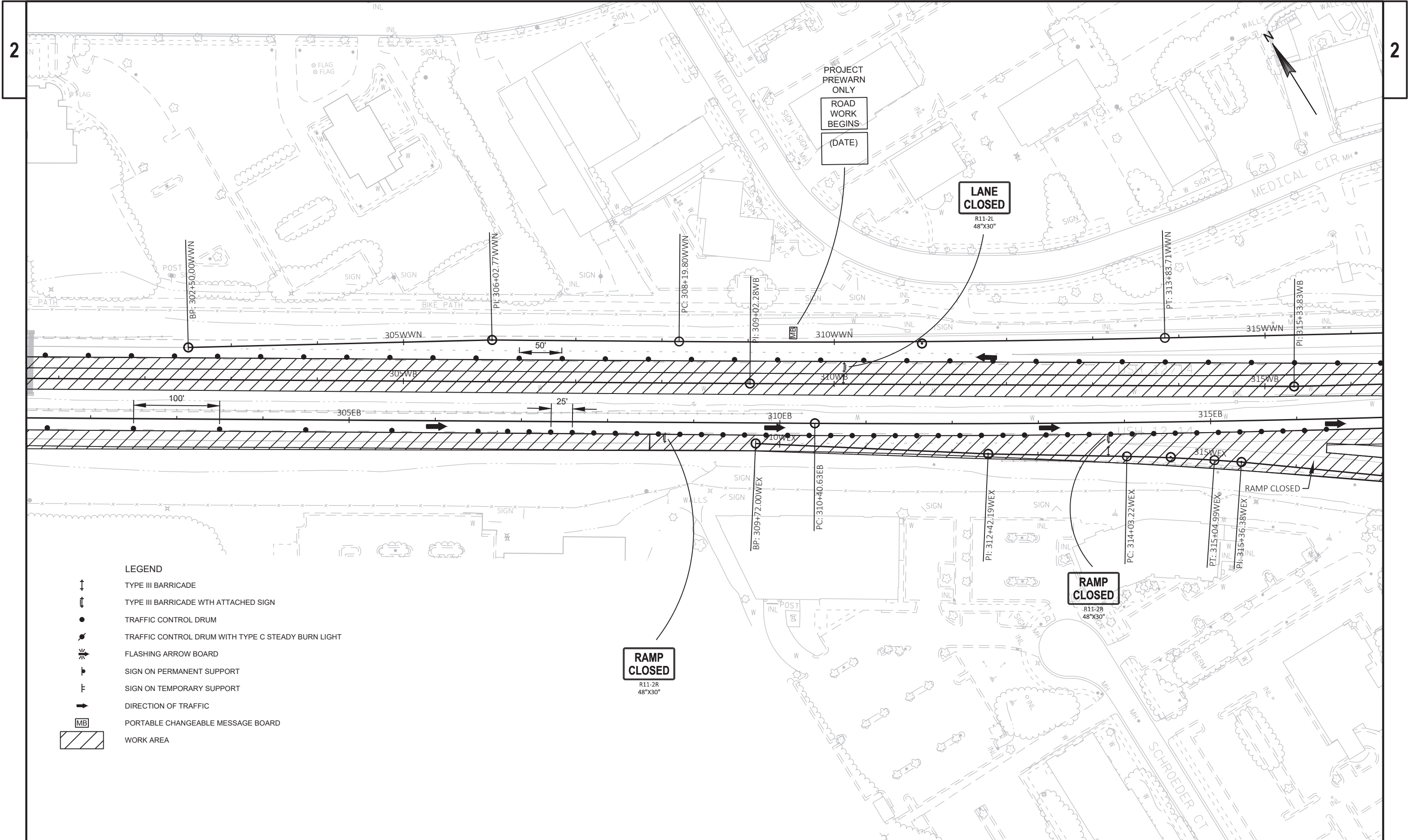
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PLOT BY : GUIDER, VALERIE S

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 1

SHEET

72

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\026001-S1.DWG
LAYOUT NAME - 14

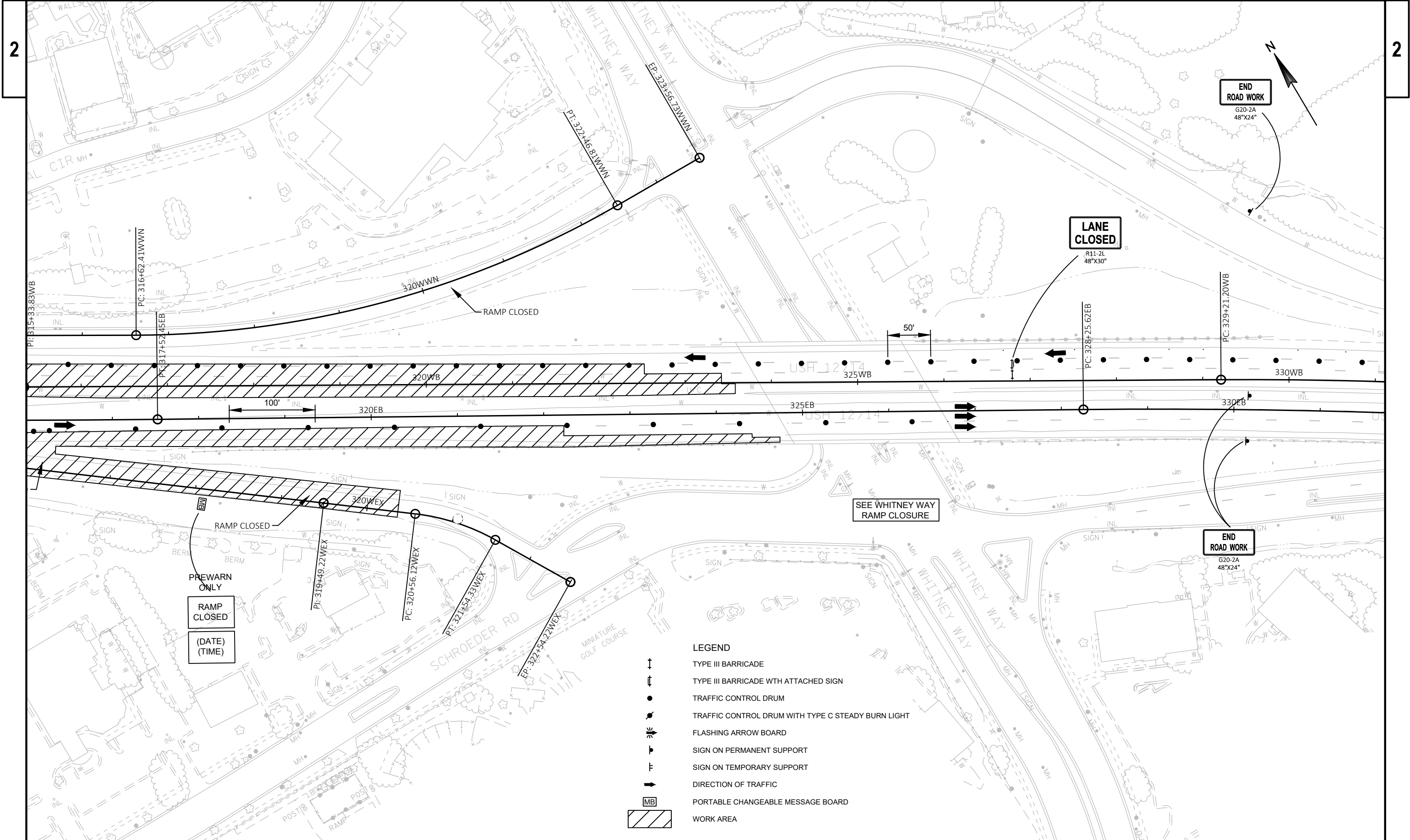
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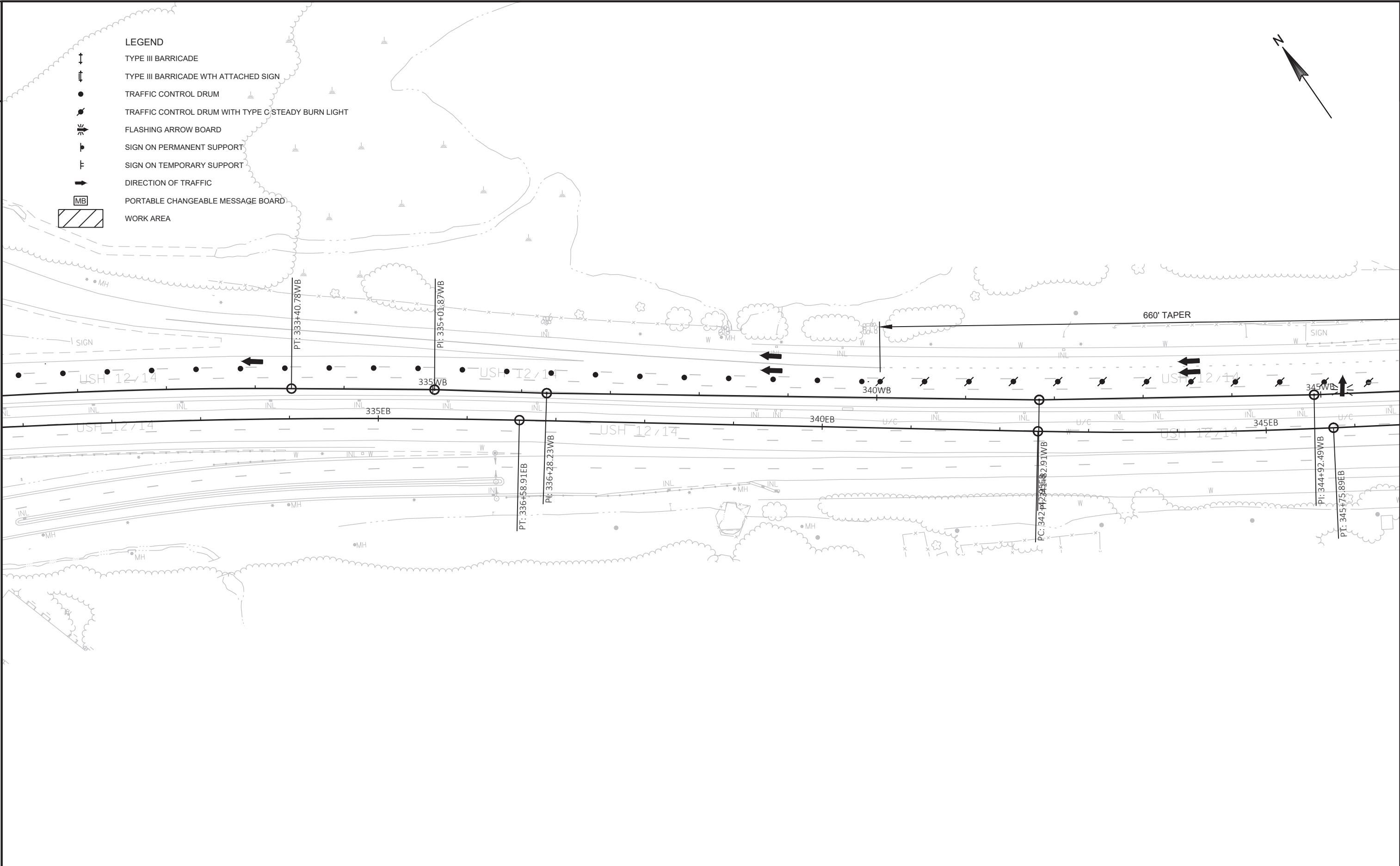
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WISDOT/CADDs SHEET 42



2

2



PROJECT NO:	5300-00-71
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HWY: USH 12

COUNTY: DANE

STAGE 1

SHEET	74
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E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSP\PLAN\026001-S1.DWG
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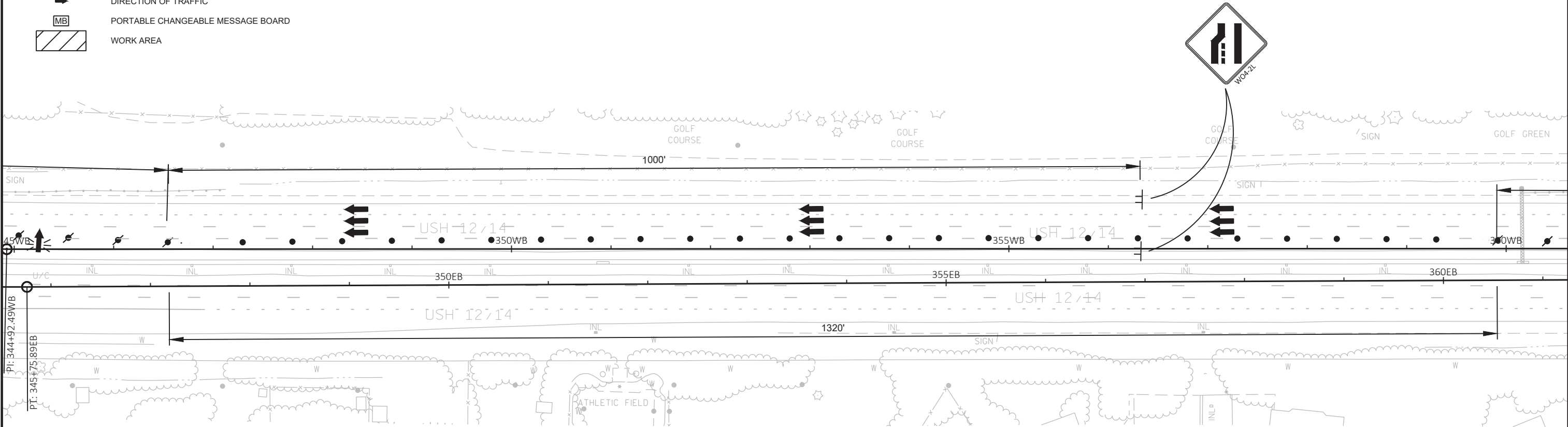
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PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

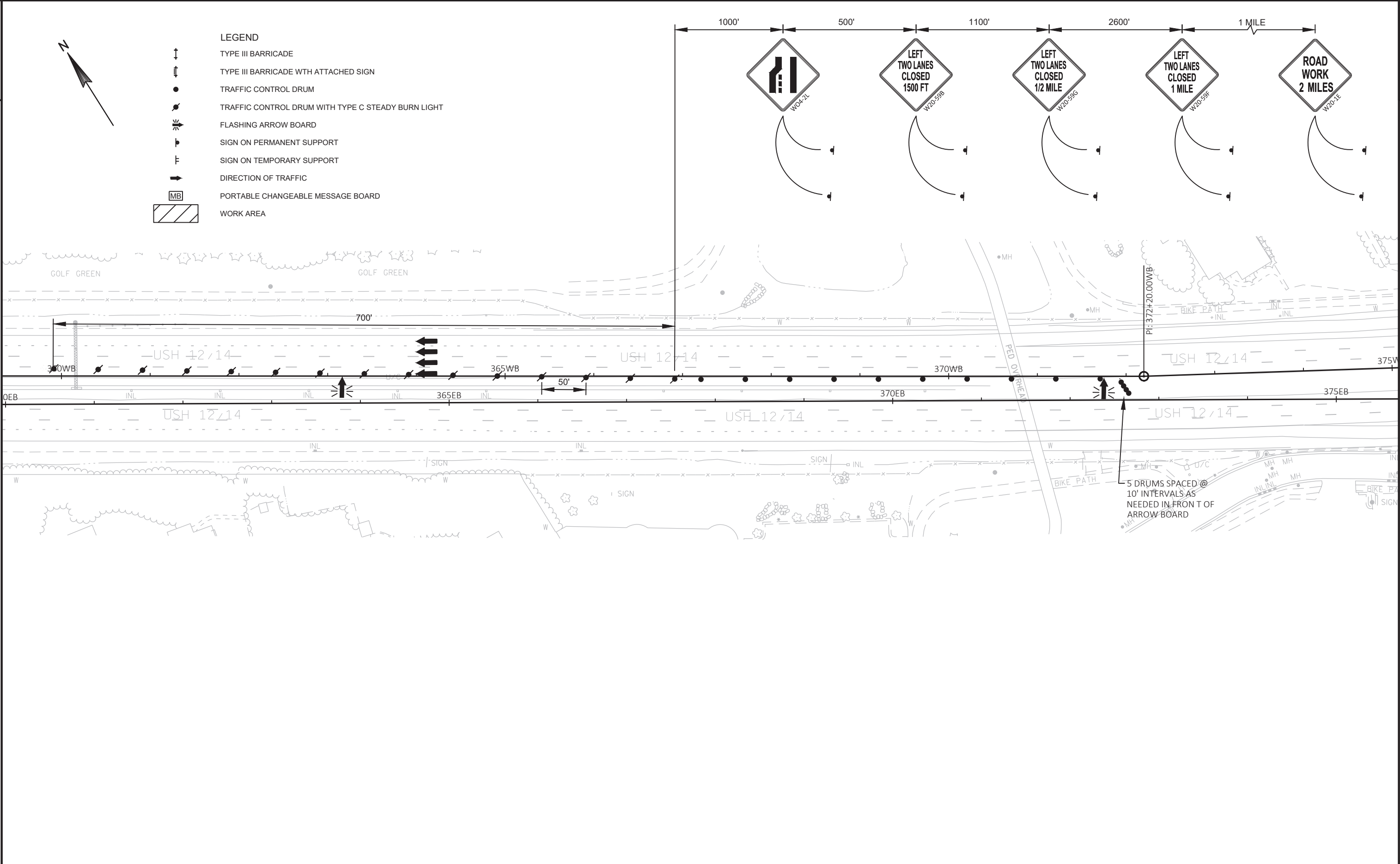
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



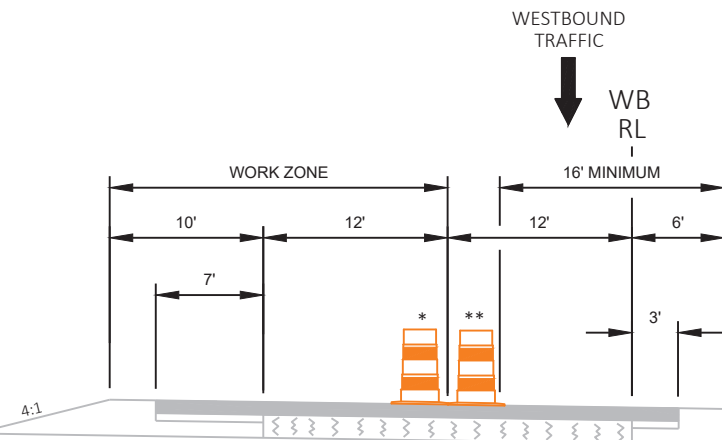
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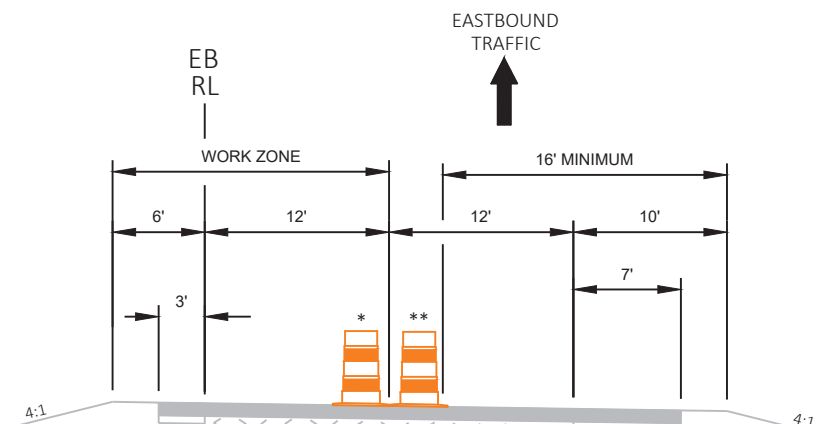


PROJECT NO: 5300-00-71	HWY: USH 12	COUNTY: DANE	STAGE 1	SHEET 76	E
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WESTBOUND

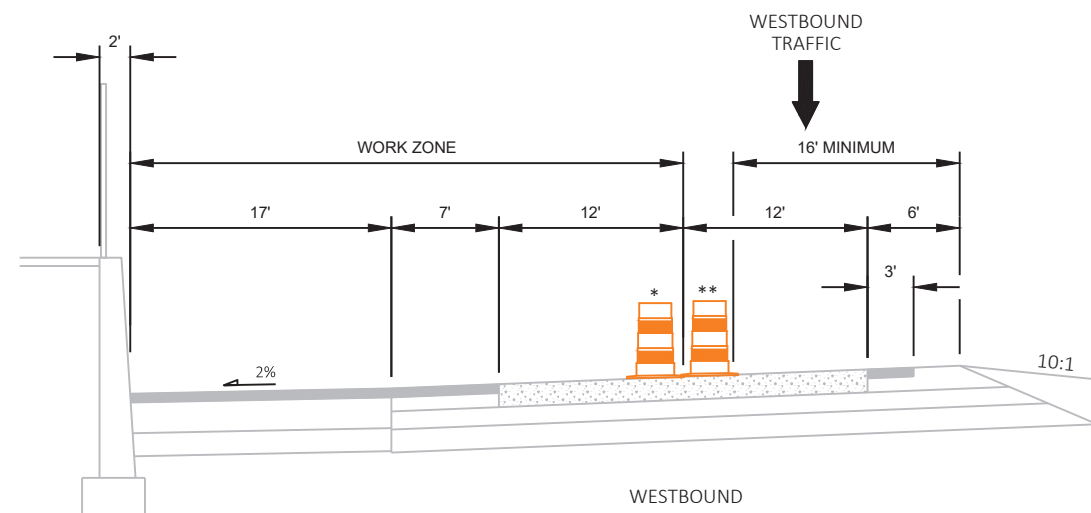


EASTBOUND

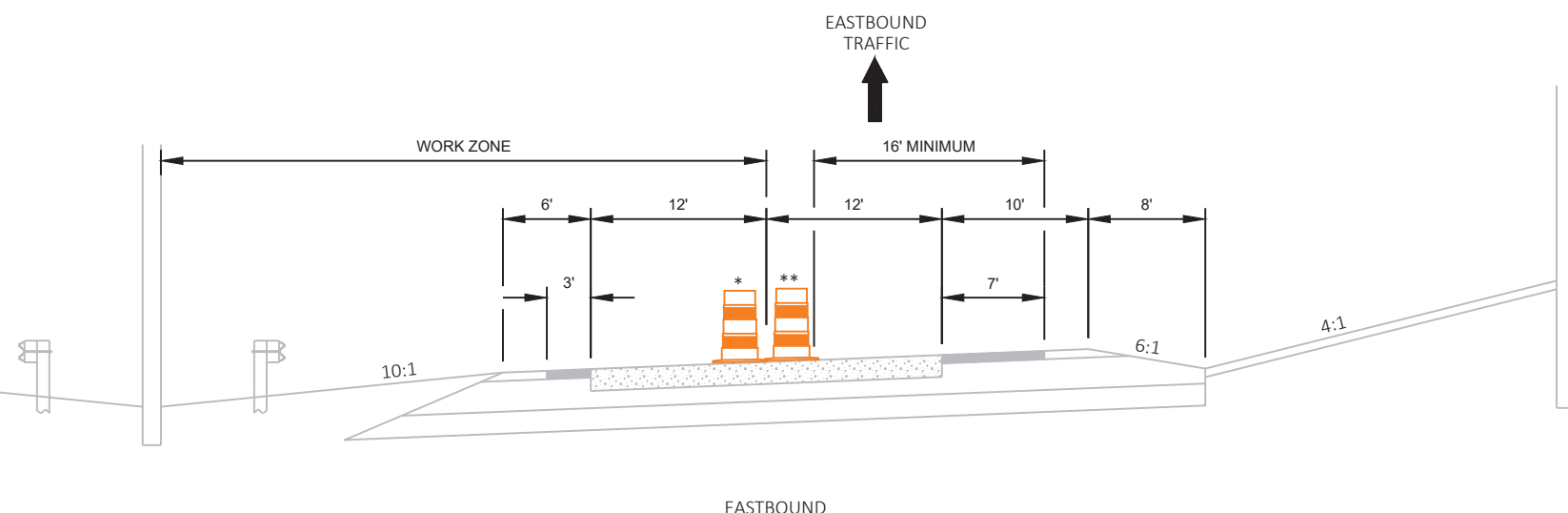
STAGE 2
MAINLINE

* NORMAL DRUM AND LANE LOCATION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION PASSES

** TEMPORARY DRUM AND LANE LOCATION. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.



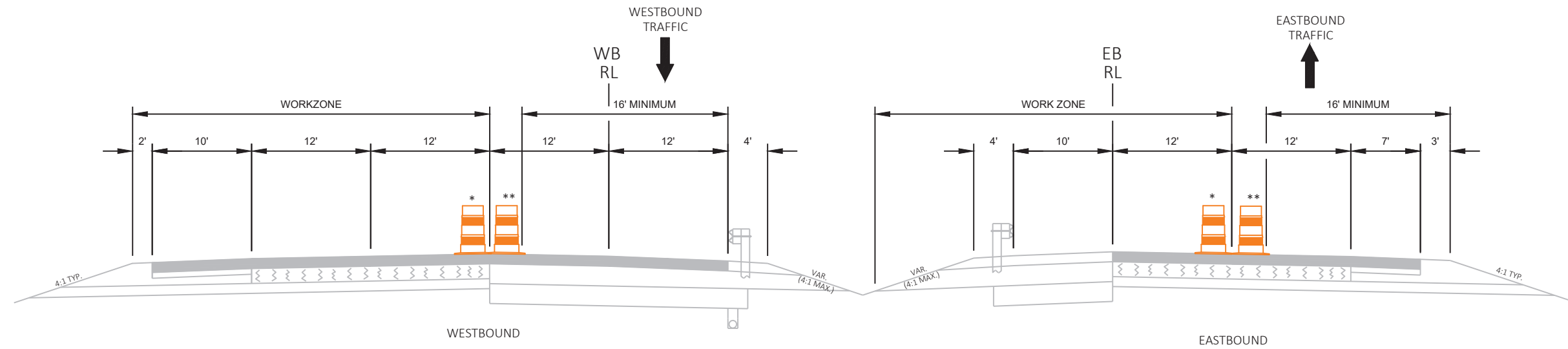
WESTBOUND



EASTBOUND

STAGE 2
MAINLINE AT HIGH POINT RD.

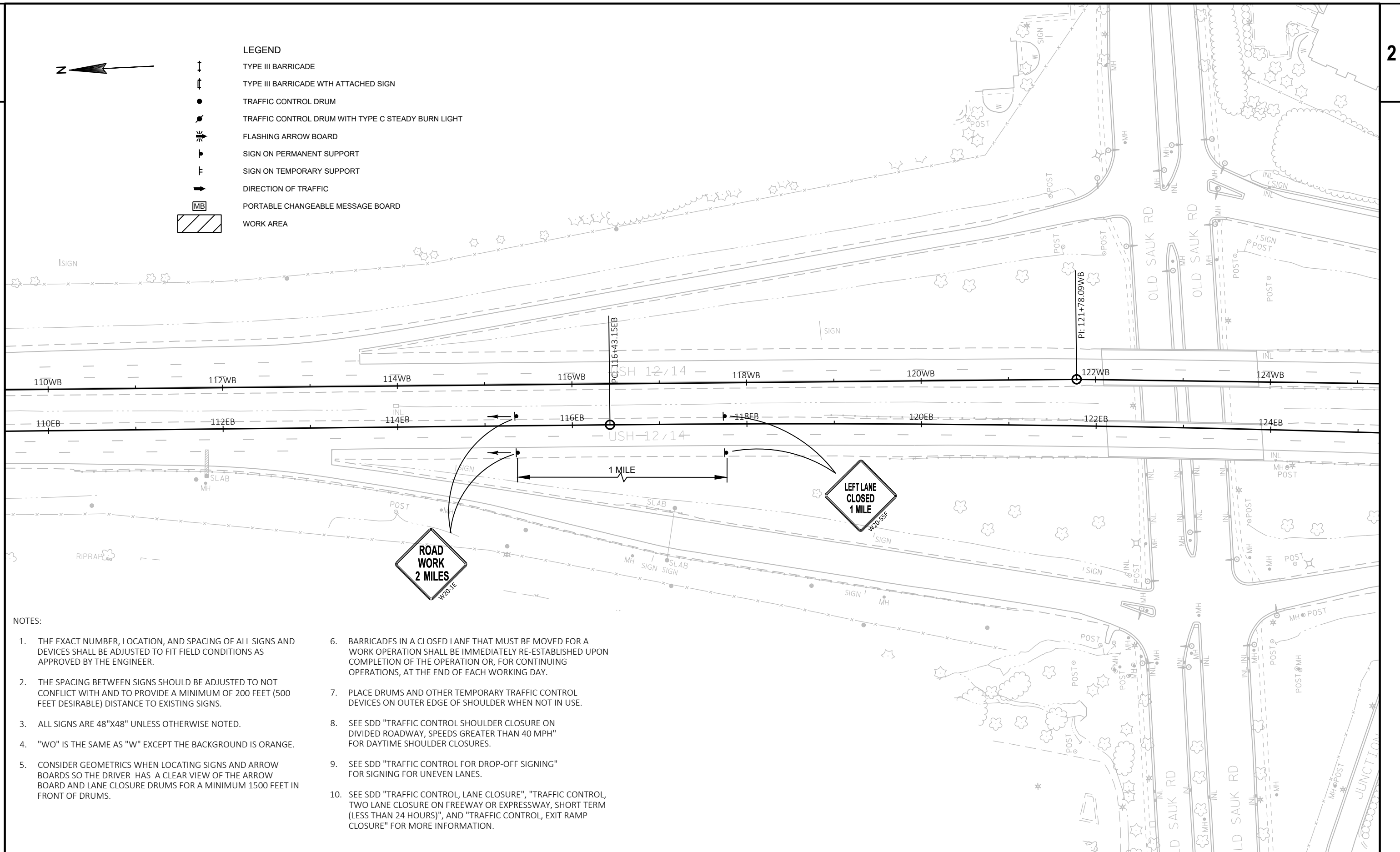
WHEN RAISING THE PAVEMENT ELEVATION, PAVING OPERATIONS MUST MAINTAIN DRAINAGE BY PAVING THE HIGHER LANES FIRST.



- * NORMAL DRUM AND LANE LOCATION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION PASSES
- ** TEMPORARY DRUM AND LANE LOCATION. DRUM SHALL BE MOVED AND RETURNED TO NORMAL POSITION IMMEDIATELY PRECEDING AND IMMEDIATELY AFTER CONSTRUCTION OPERATION HAS PASSED. TRAFFIC EXPECTED TO SHIFT ONTO SHOULDER TO BYPASS CONSTRUCTION OPERATIONS.

STAGE 2

MAINLINE



PROJECT NO: 5300-00-71

HWY: USH 12

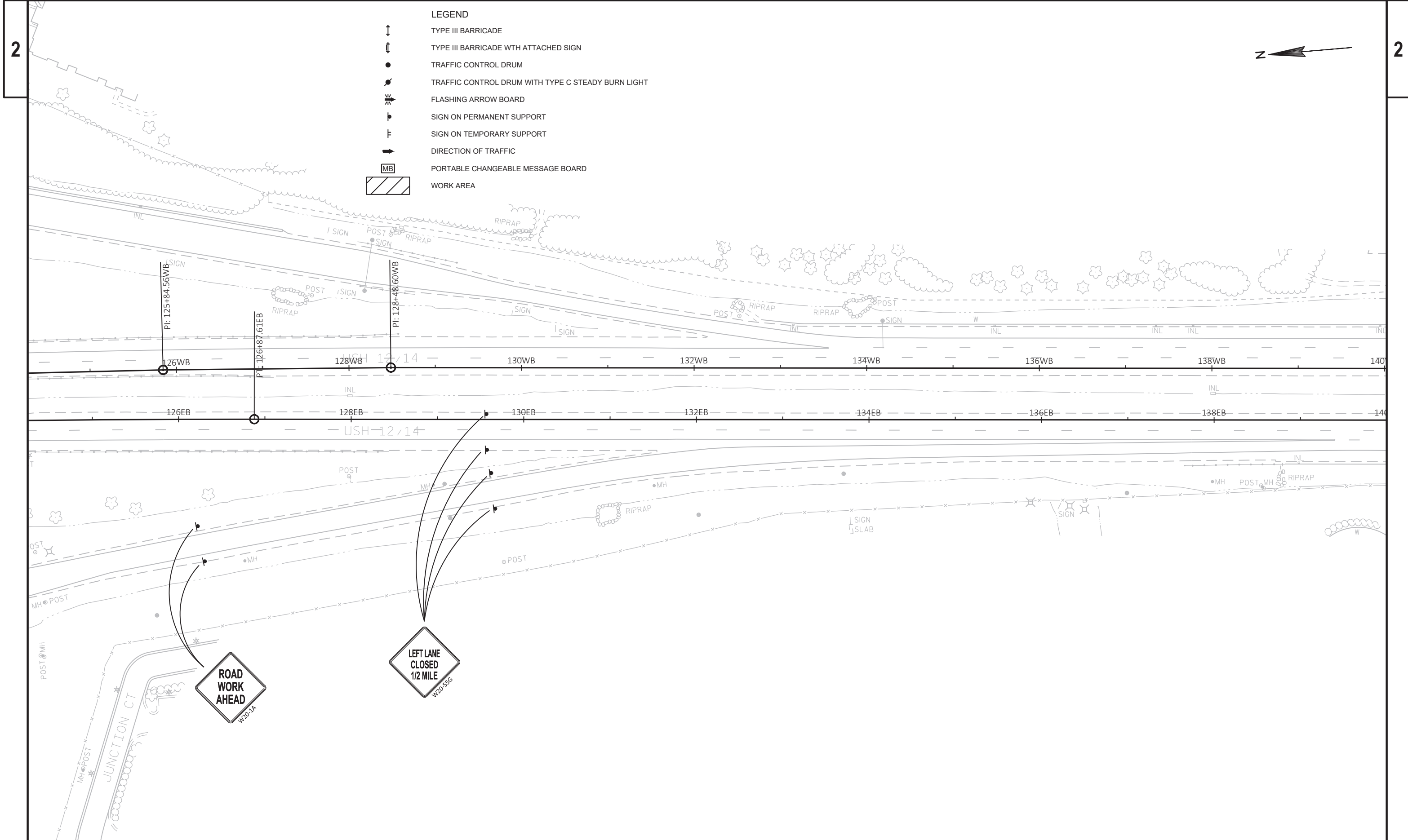
COUNTY: DANE

STAGE 2

SHEET

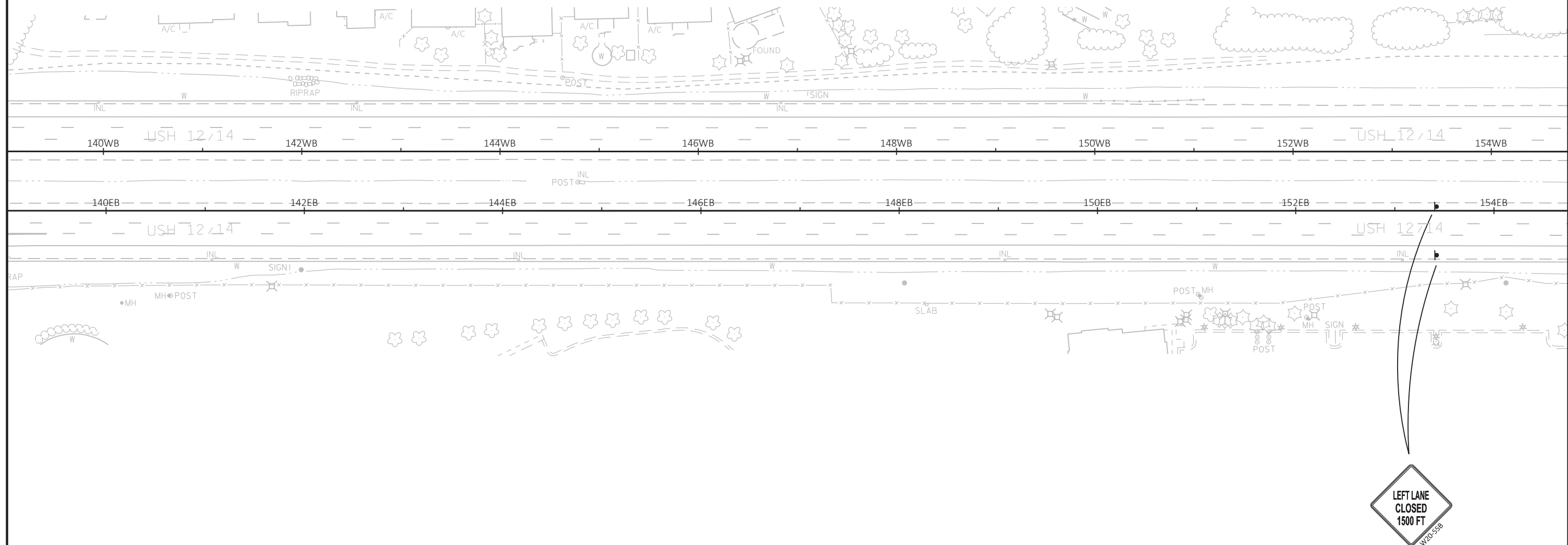
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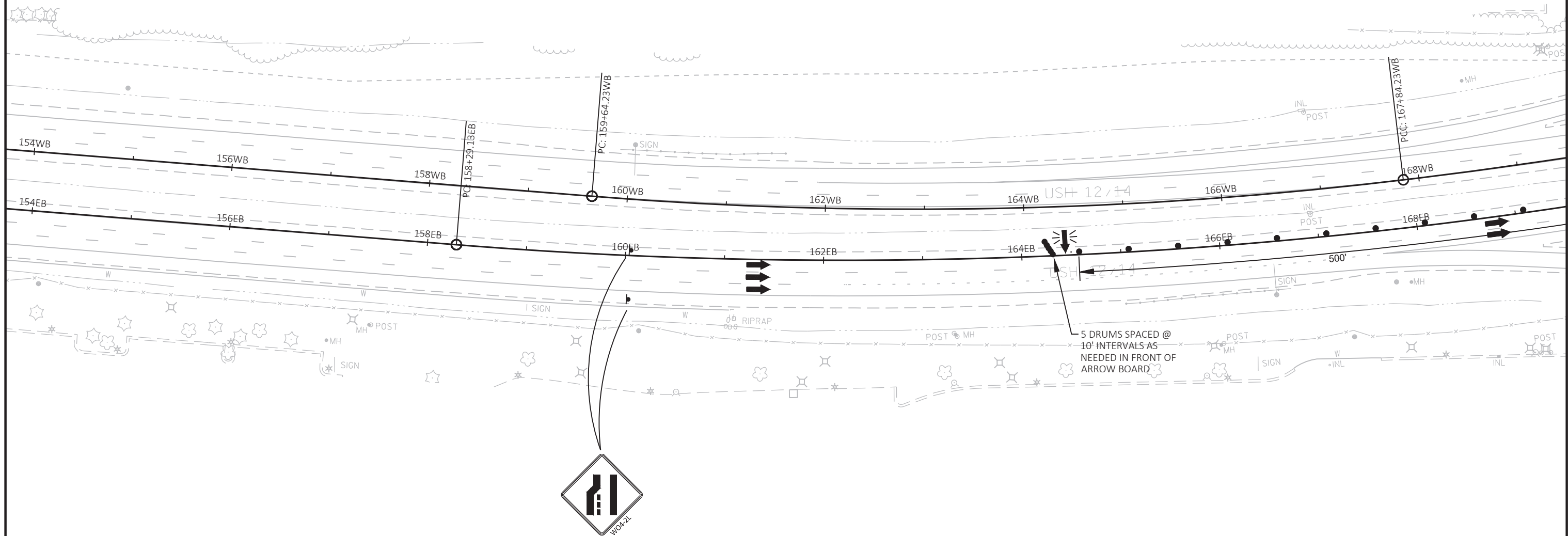


LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA

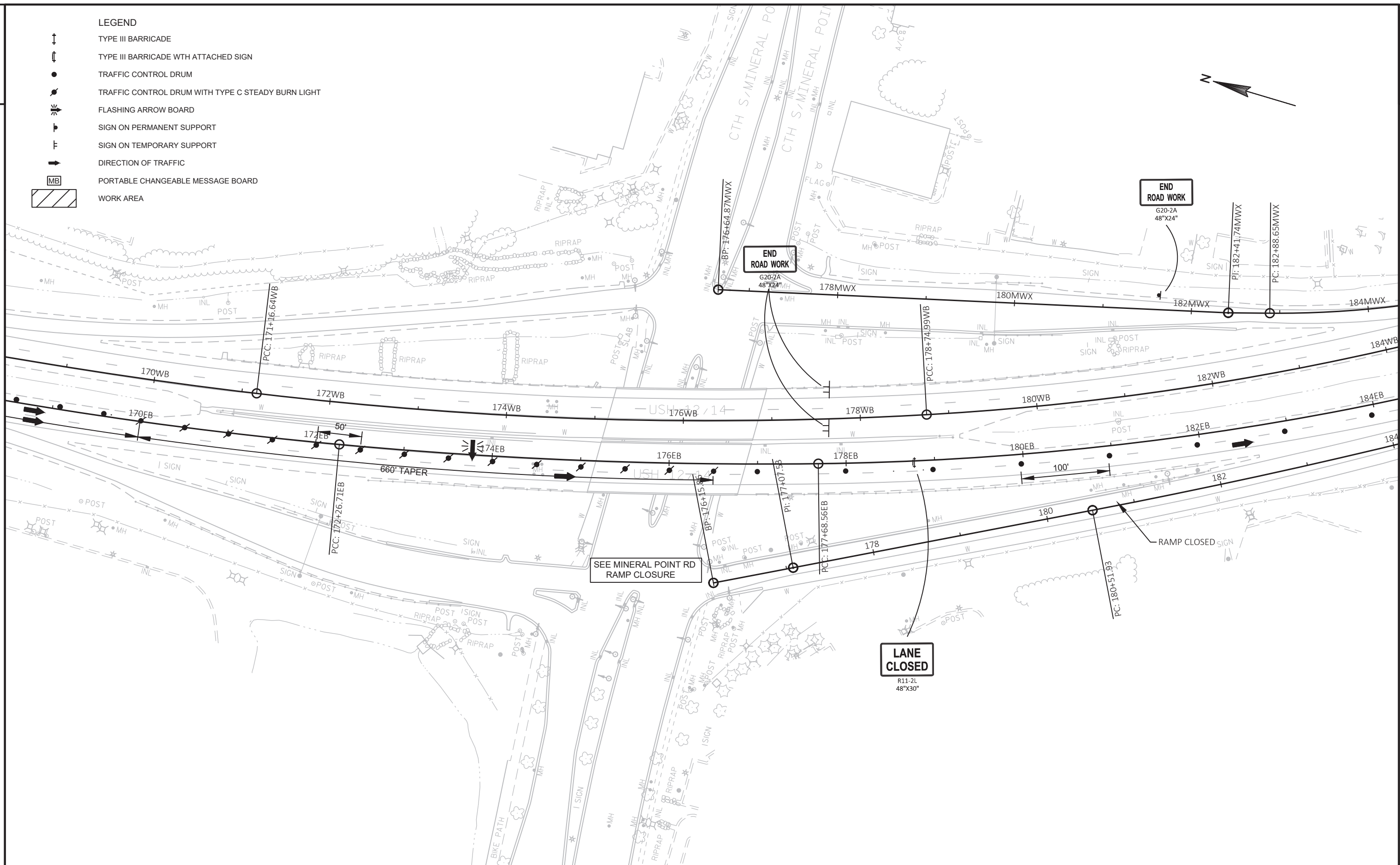


- LEGEND
- TYPE III BARRICADE
 - TYPE III BARRICADE WTH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
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- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 2

SHEET

83

E

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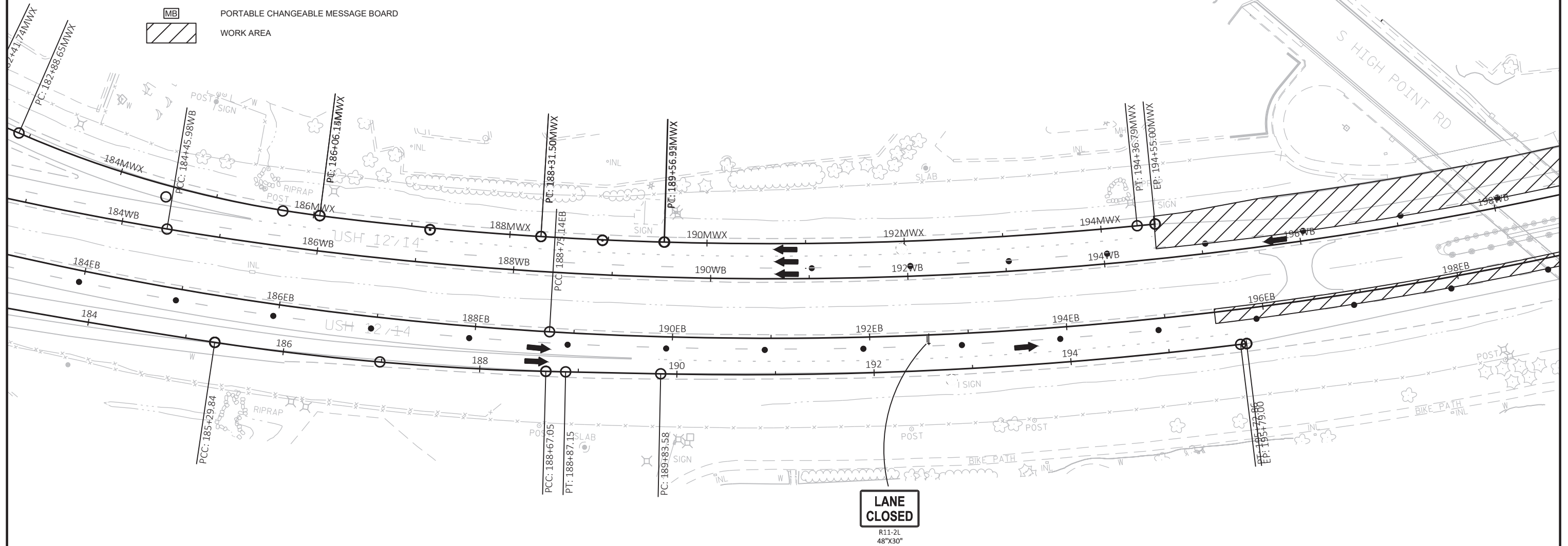
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADD5 SHEET 42

LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  PORTABLE CHANGEABLE MESSAGE BOARD
-  WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 2

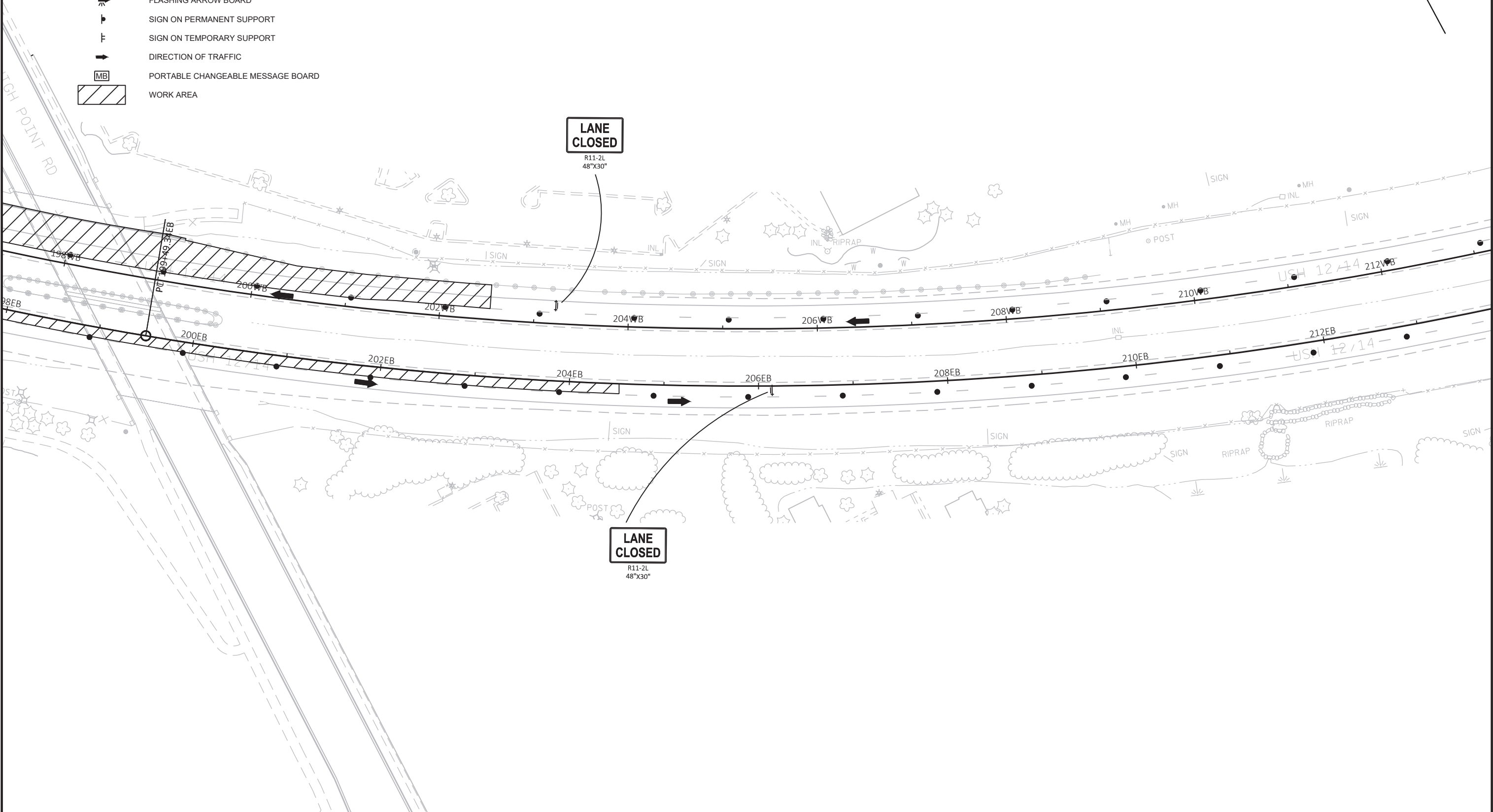
SHEET

84

E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

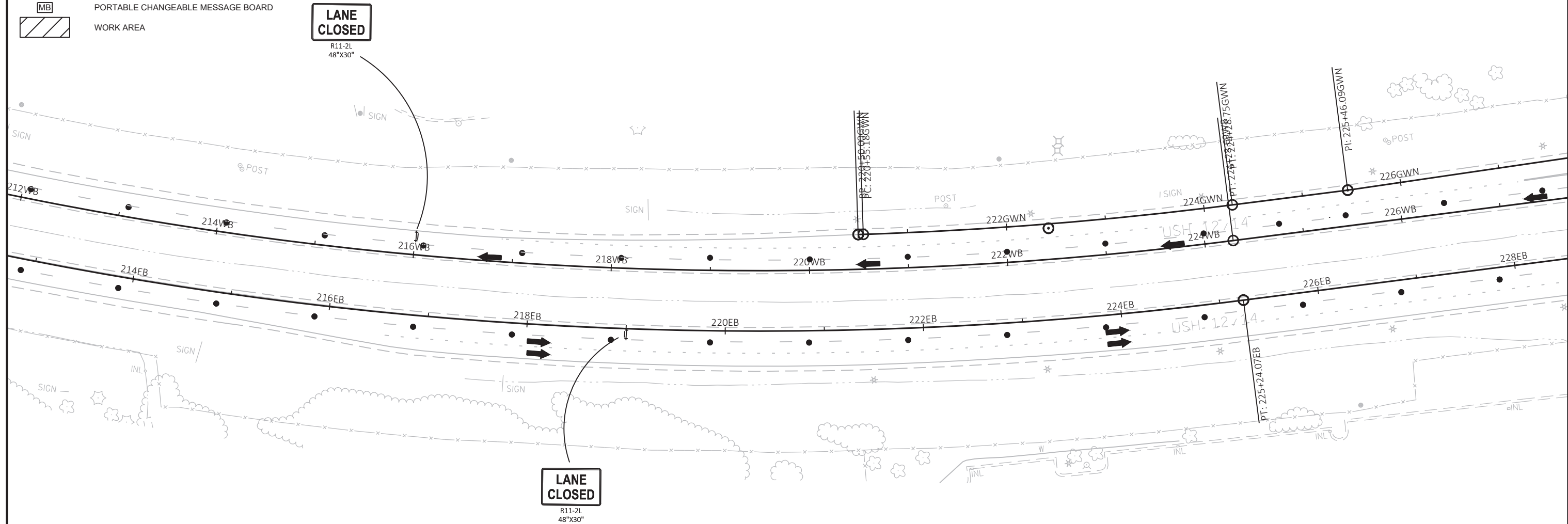
COUNTY: DANE

STAGE 2

SHEET

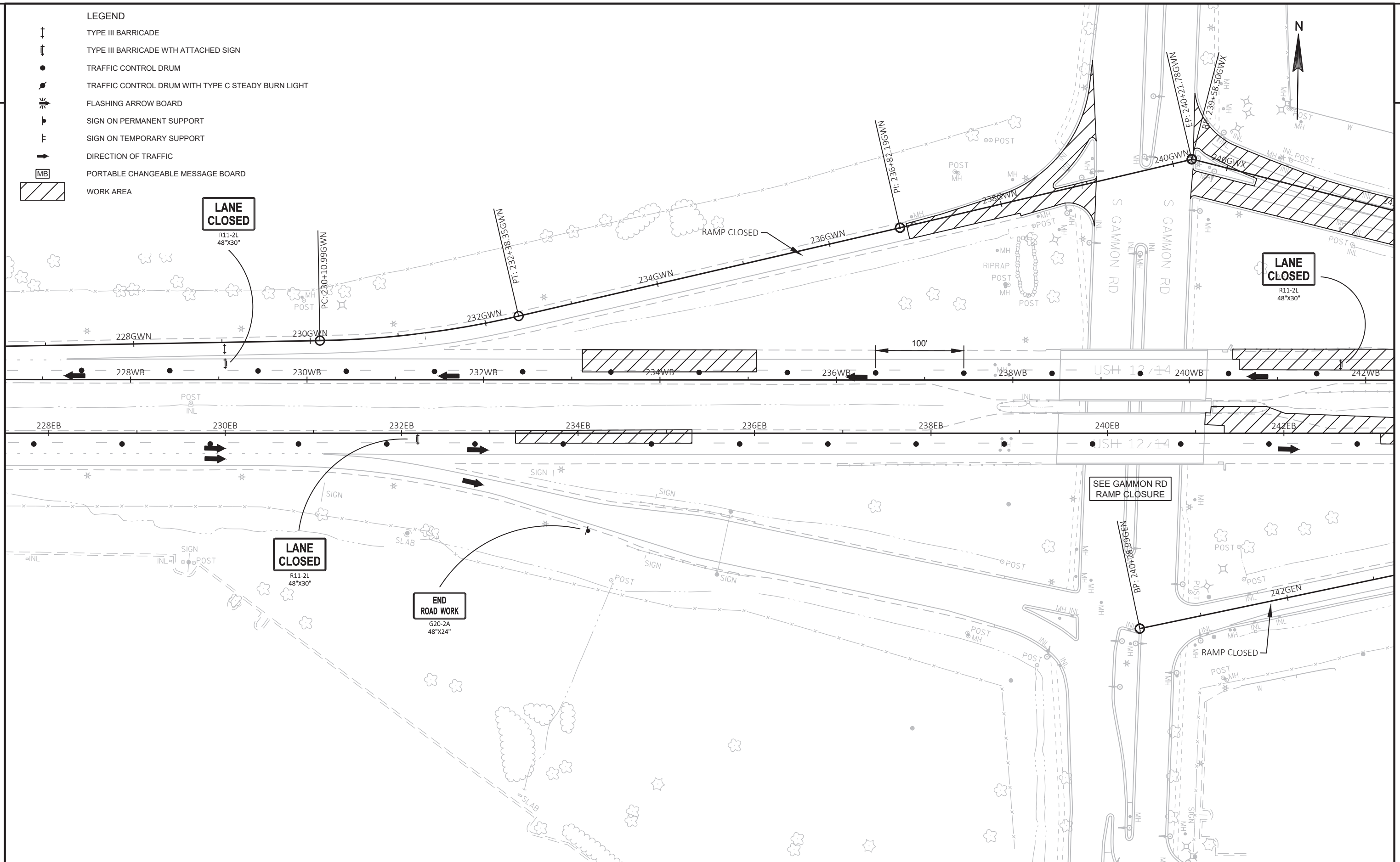
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
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- WORK AREA



LEGEND

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- TYPE III BARRICADE WITH ATTACHED SIGN
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- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

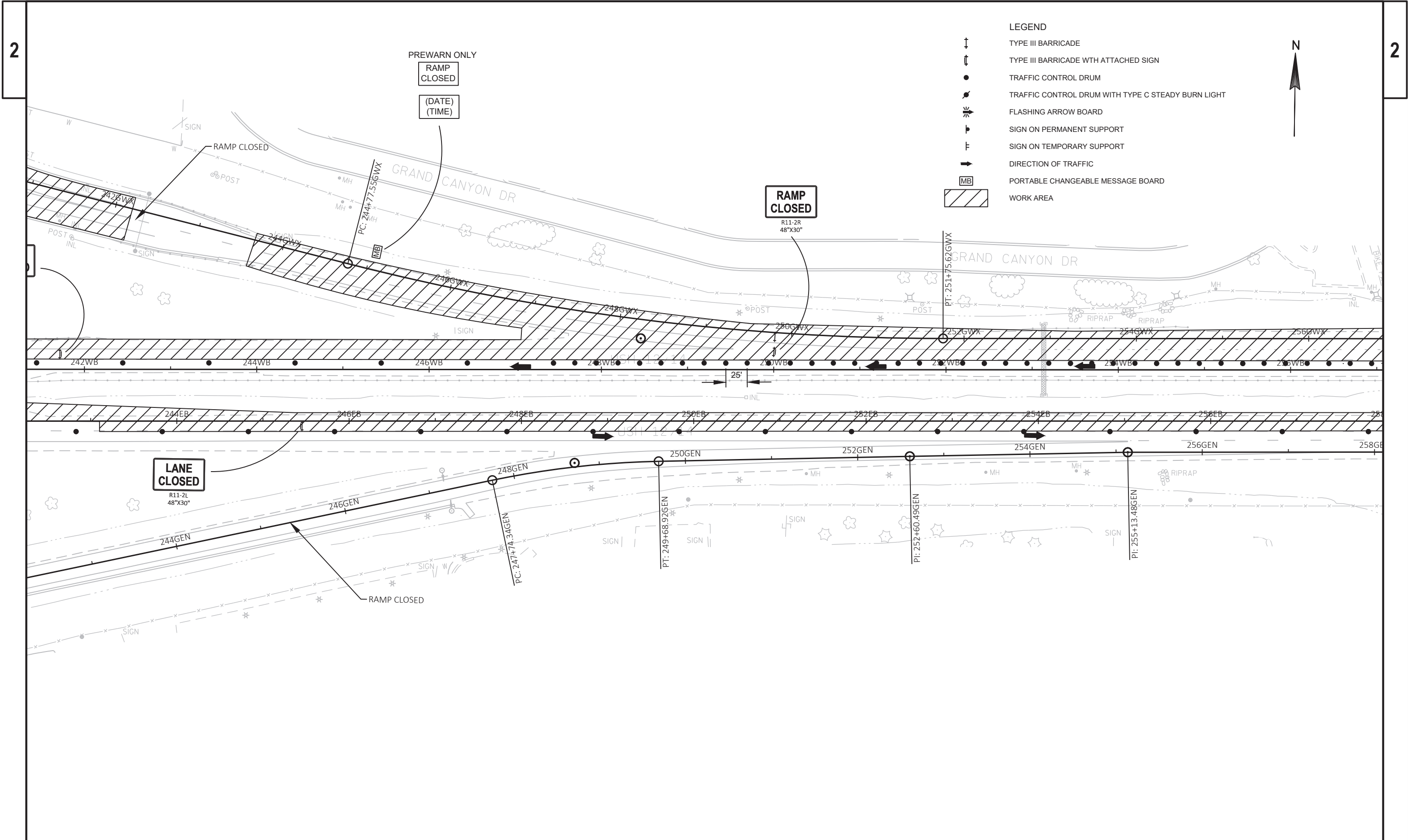
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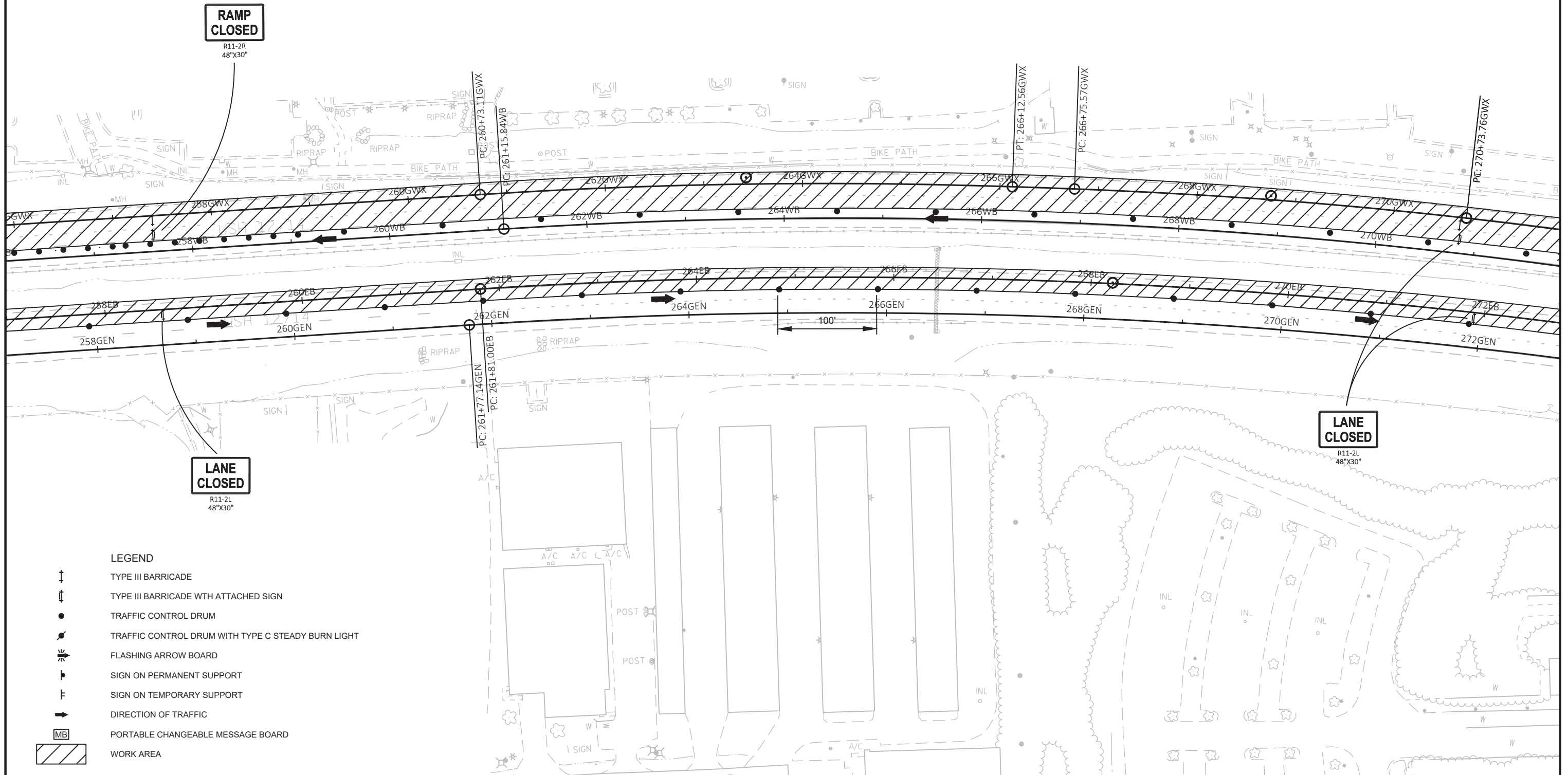
STAGE 2

SHEET

87

E

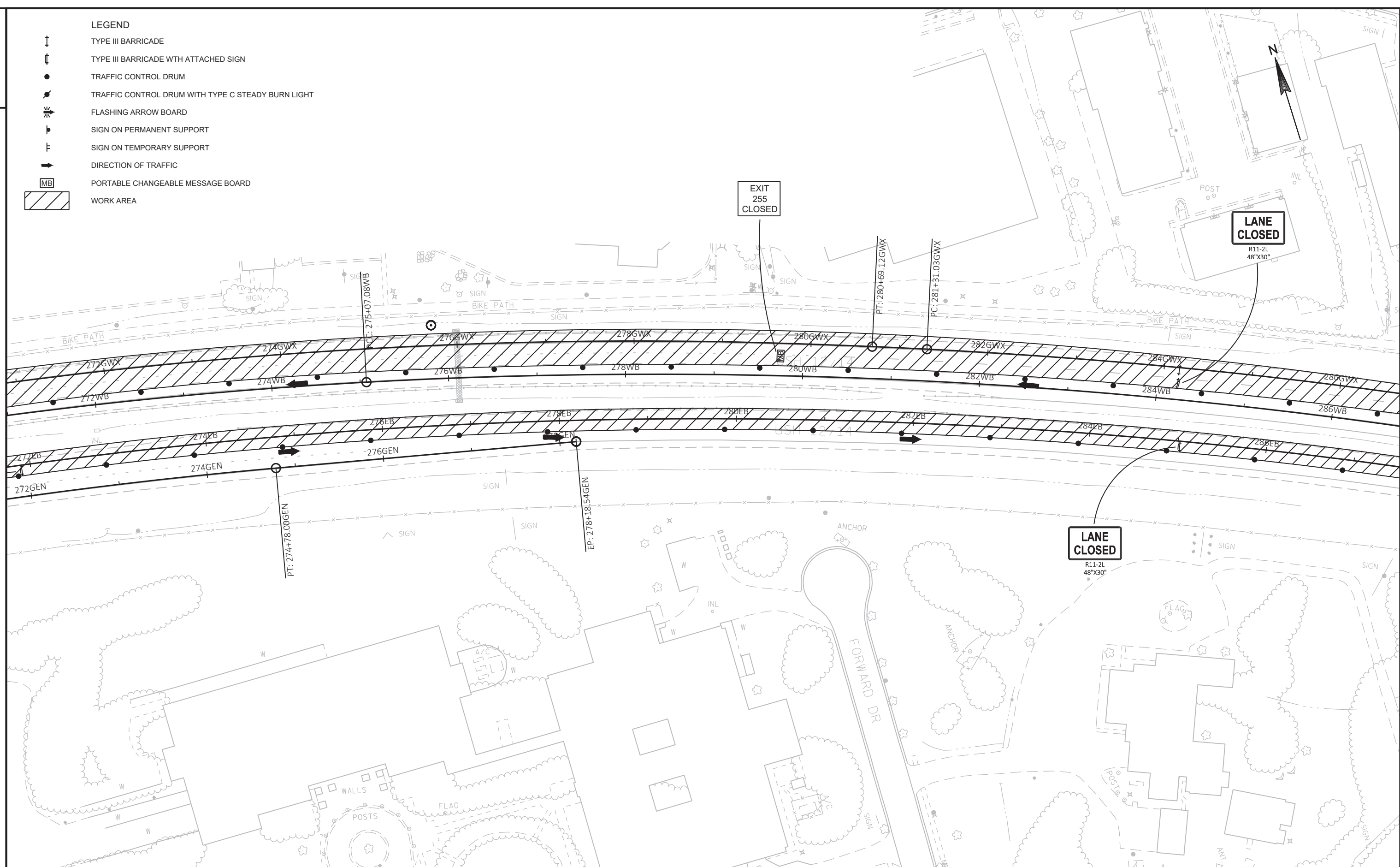


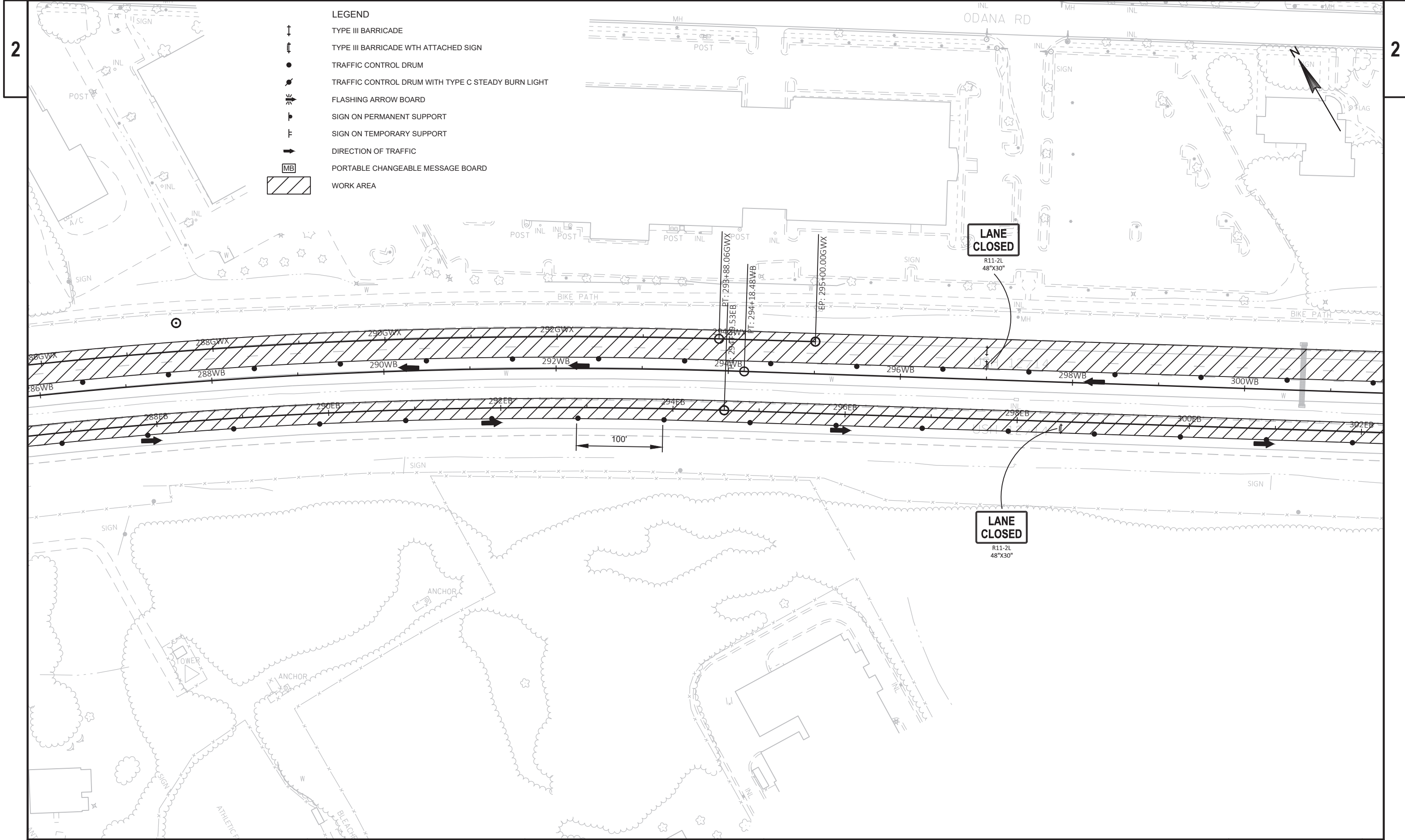


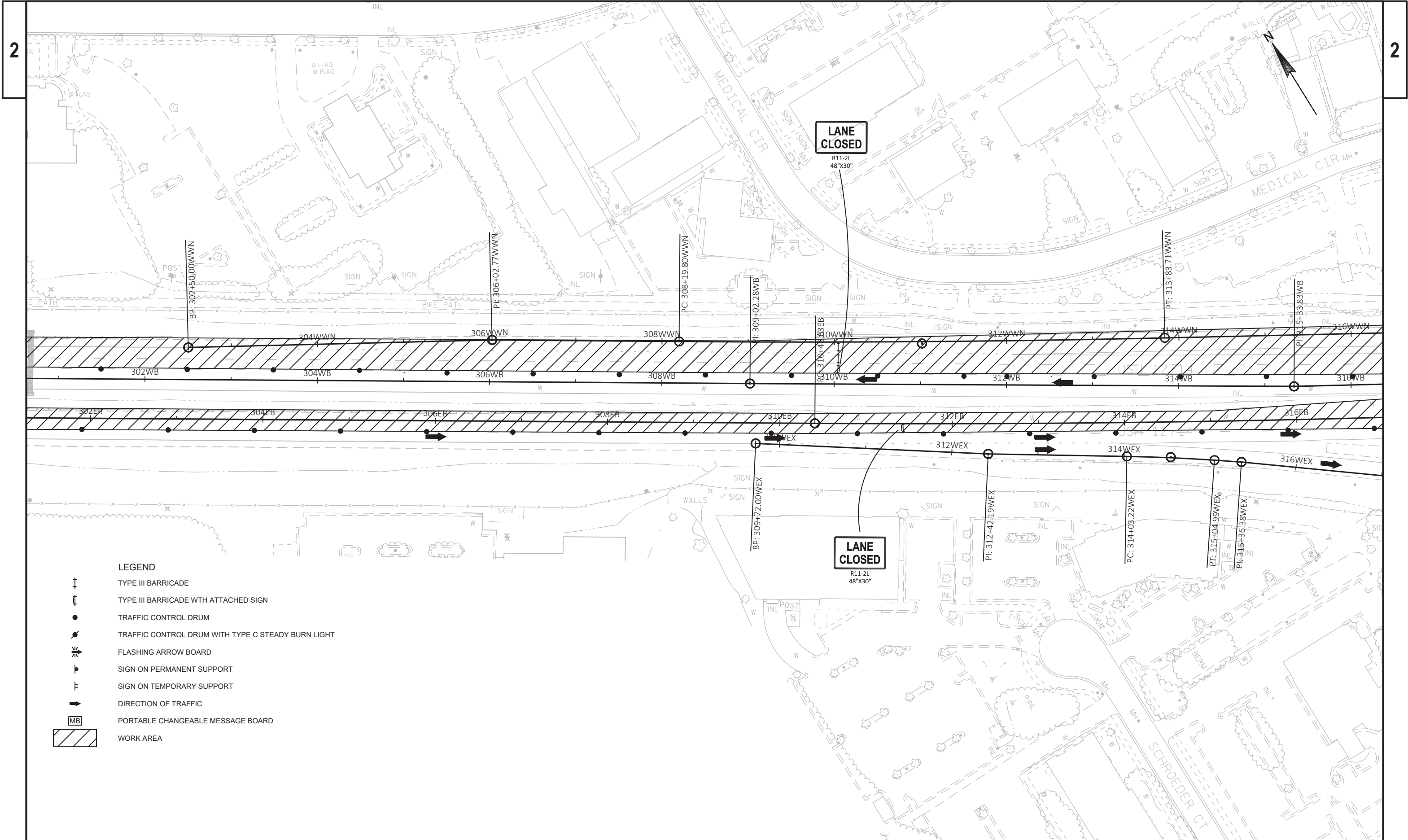
PROJECT NO: 5300-00-71	HWY: USH 12	COUNTY: DANE	STAGE 2	SHEET 89	E
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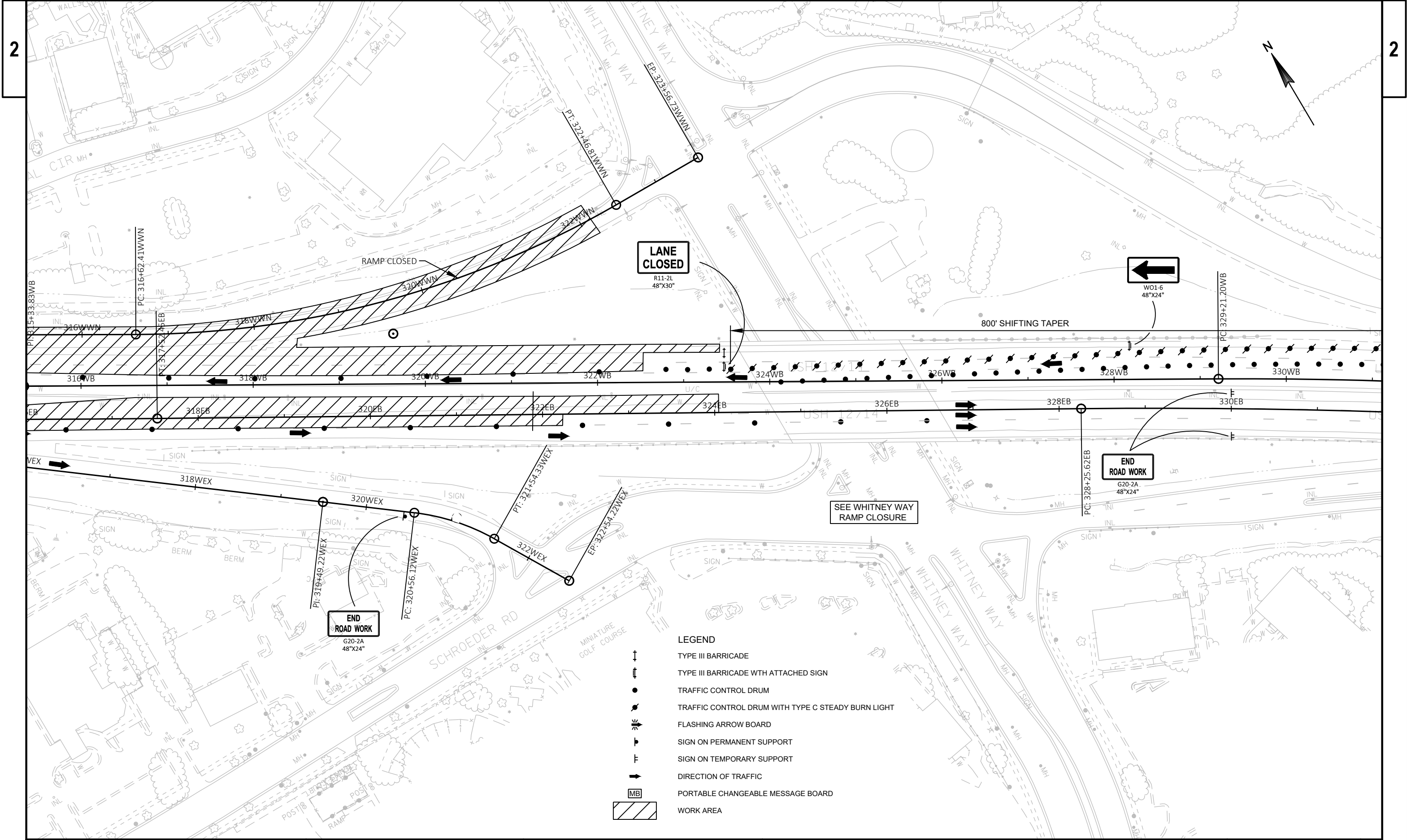
LEGEND

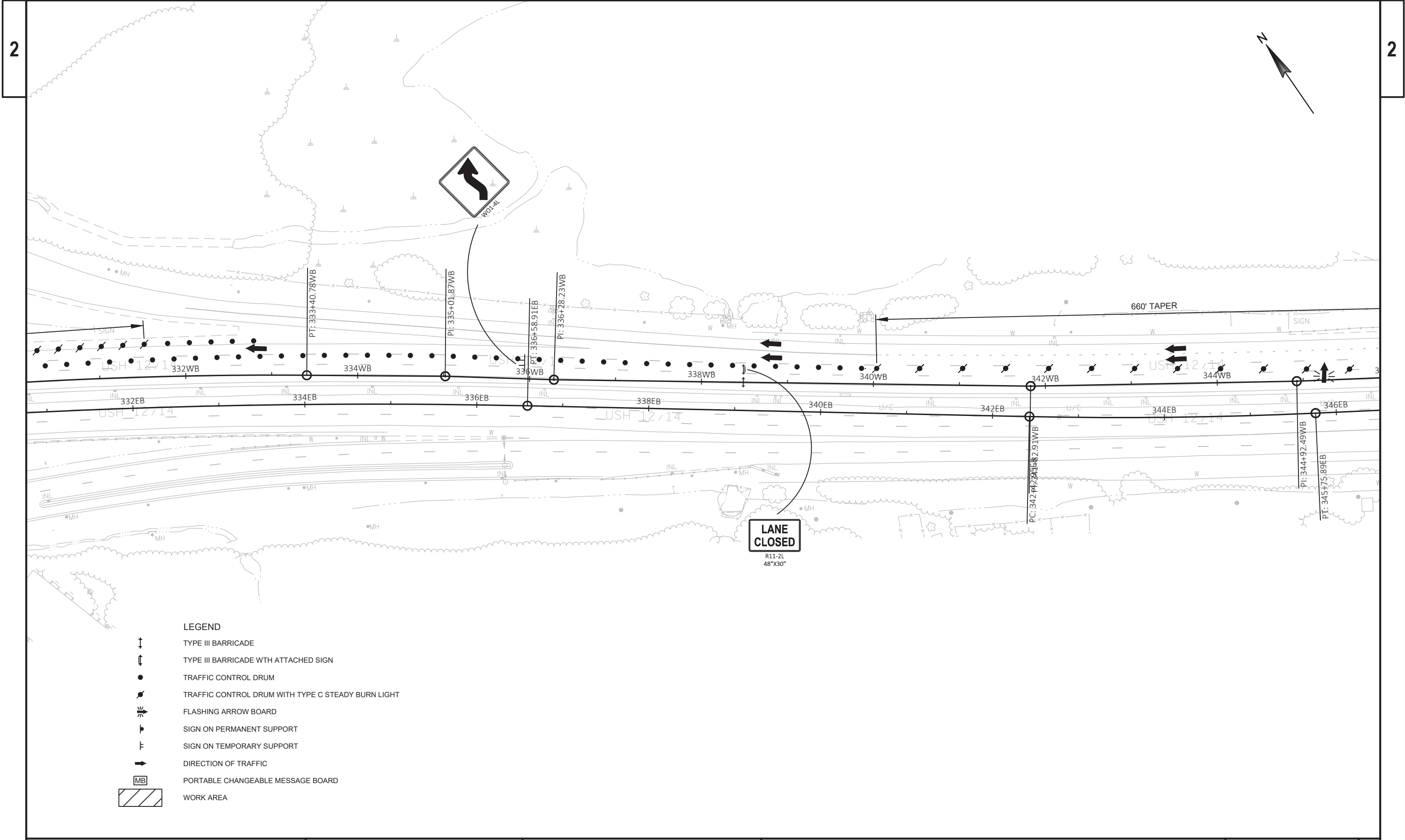
- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ↔ FLASHING ARROW BOARD
- └ SIGN ON PERMANENT SUPPORT
- └ SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- MB PORTABLE CHANGEABLE MESSAGE BOARD
- ▨ WORK AREA











TYPE III BARRICADE

TYPE III BARRICADE WTH ATTACHED SIGN

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

FLASHING ARROW BOARD

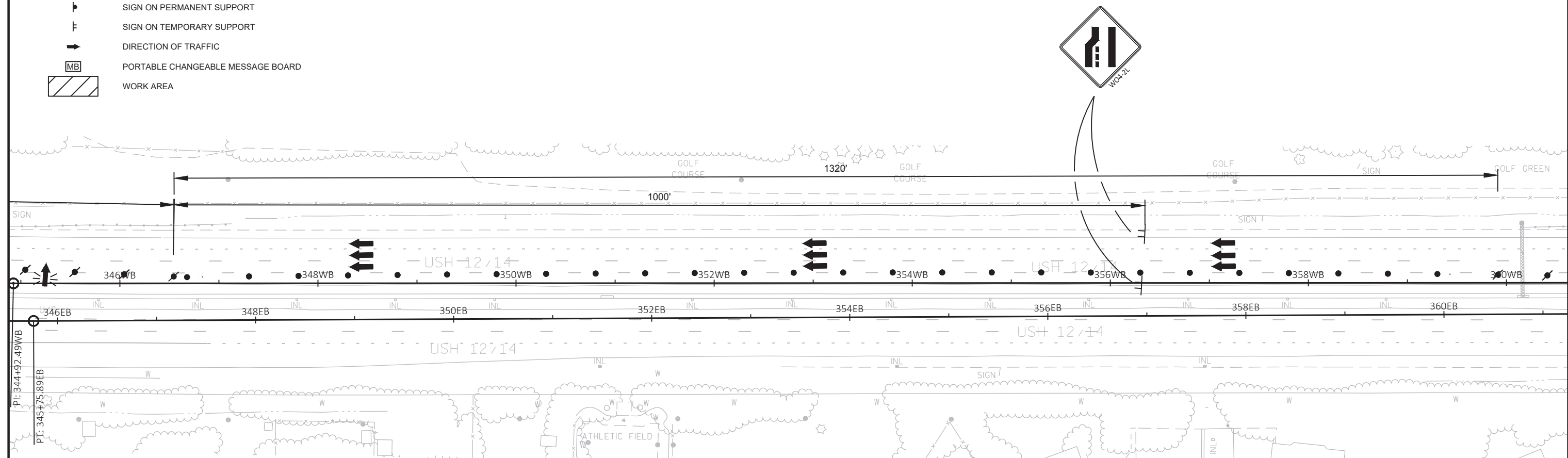
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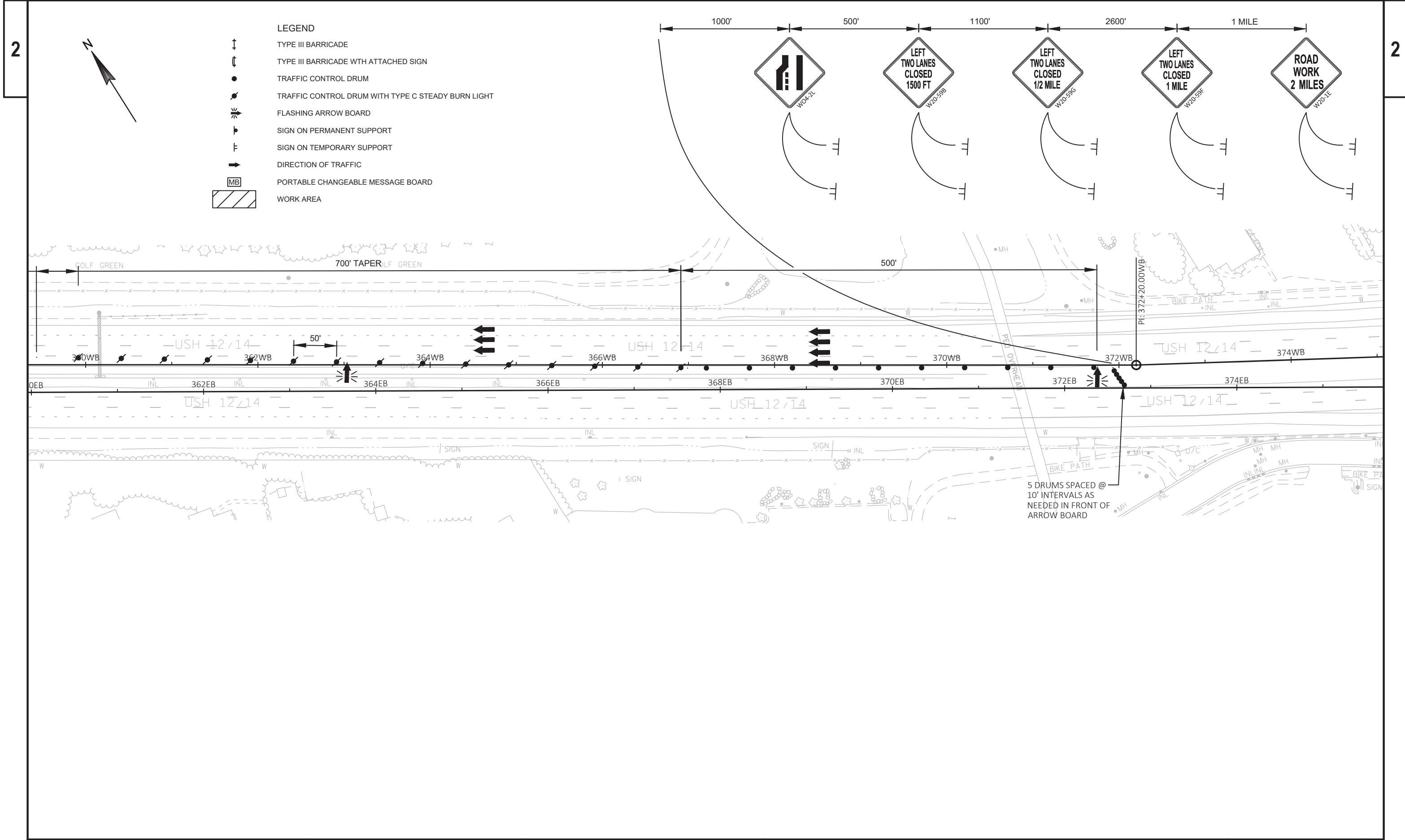
SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

PORTABLE CHANGEABLE MESSAGE BOARD

WORK AREA

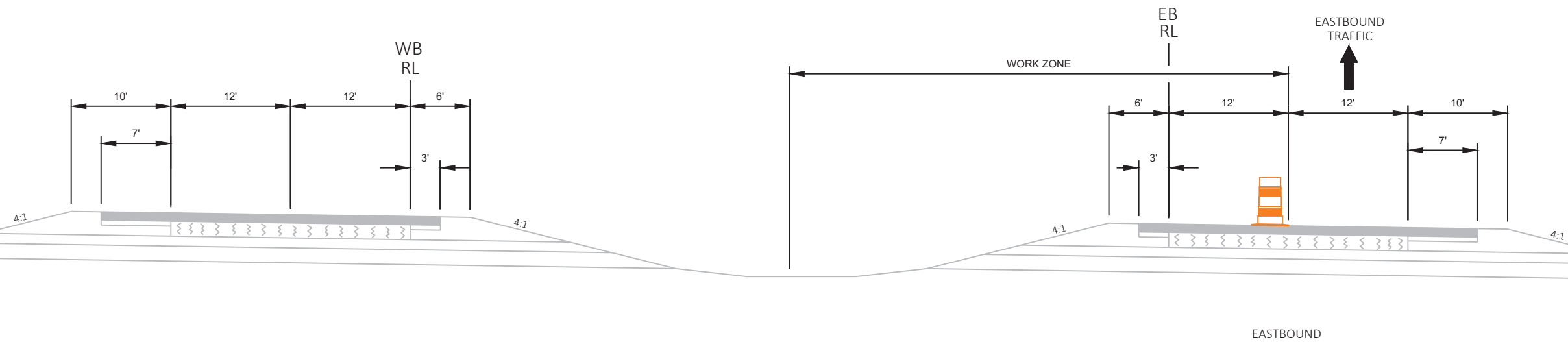




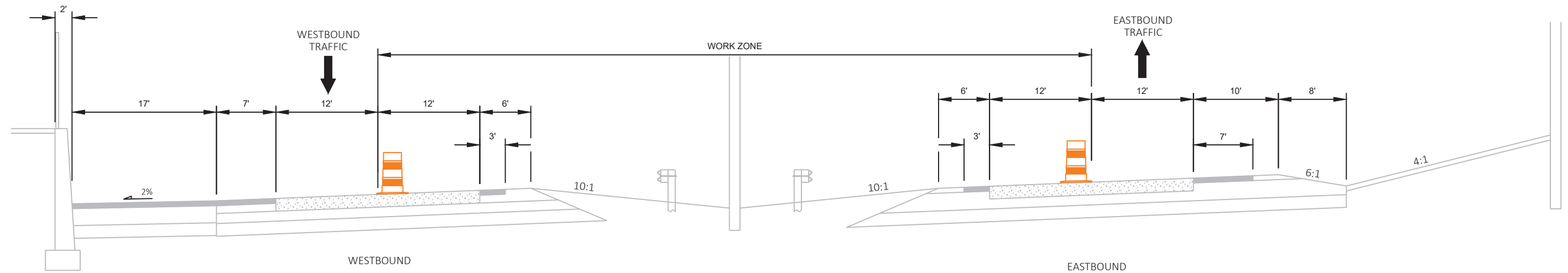
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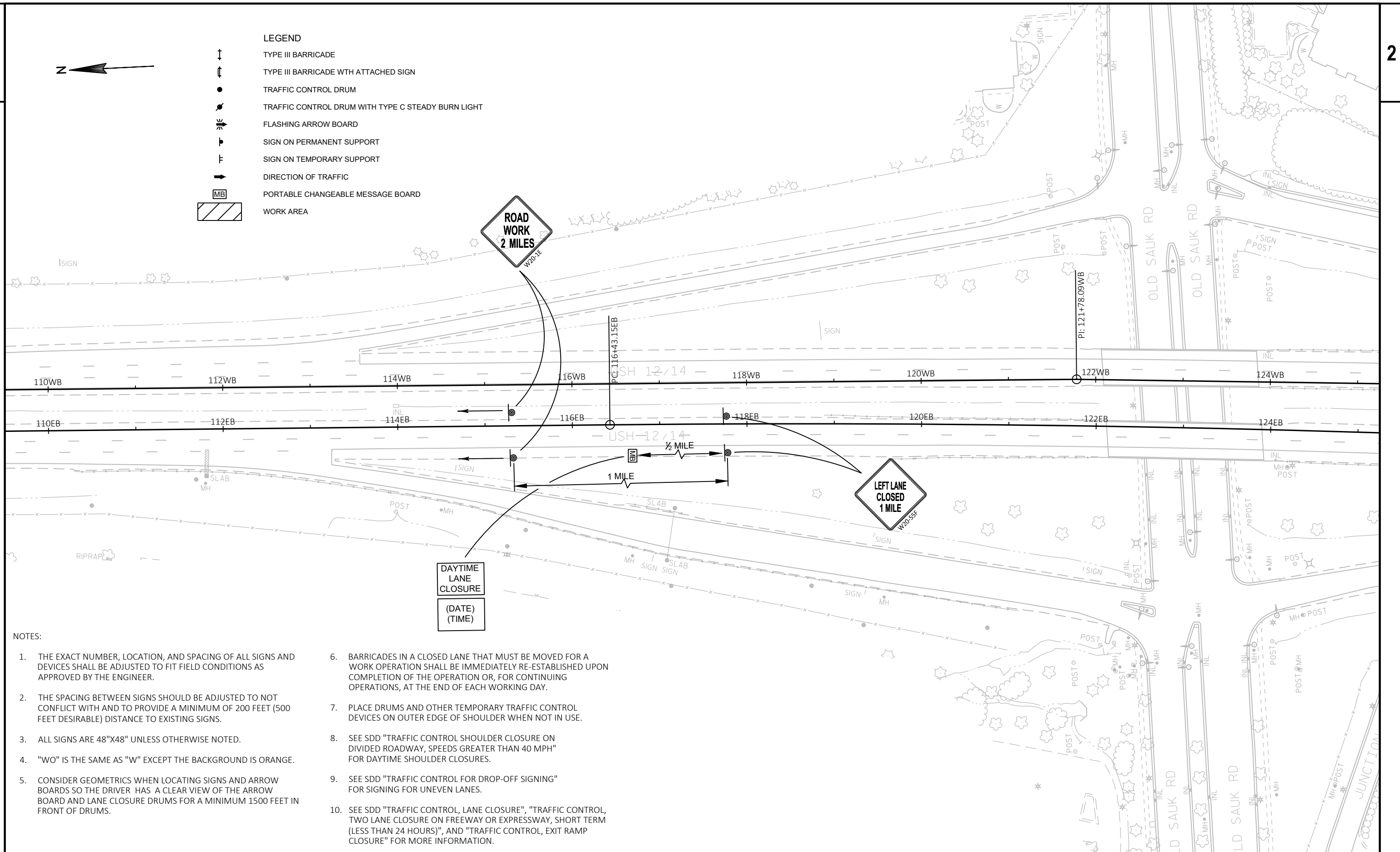
- LEGEND
- TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - SIGN ON TEMPORARY SUPPORT
 - DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE BOARD
 - WORK AREA



STAGE 3
MAINLINE
DAYTIME LANE CLOSURES
MINERAL POINT RD TO GAMMON RD.



STAGE 3
MAINLINE
DAYTIME LANE CLOSURES
MINERAL POINT RD TO GAMMON RD



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

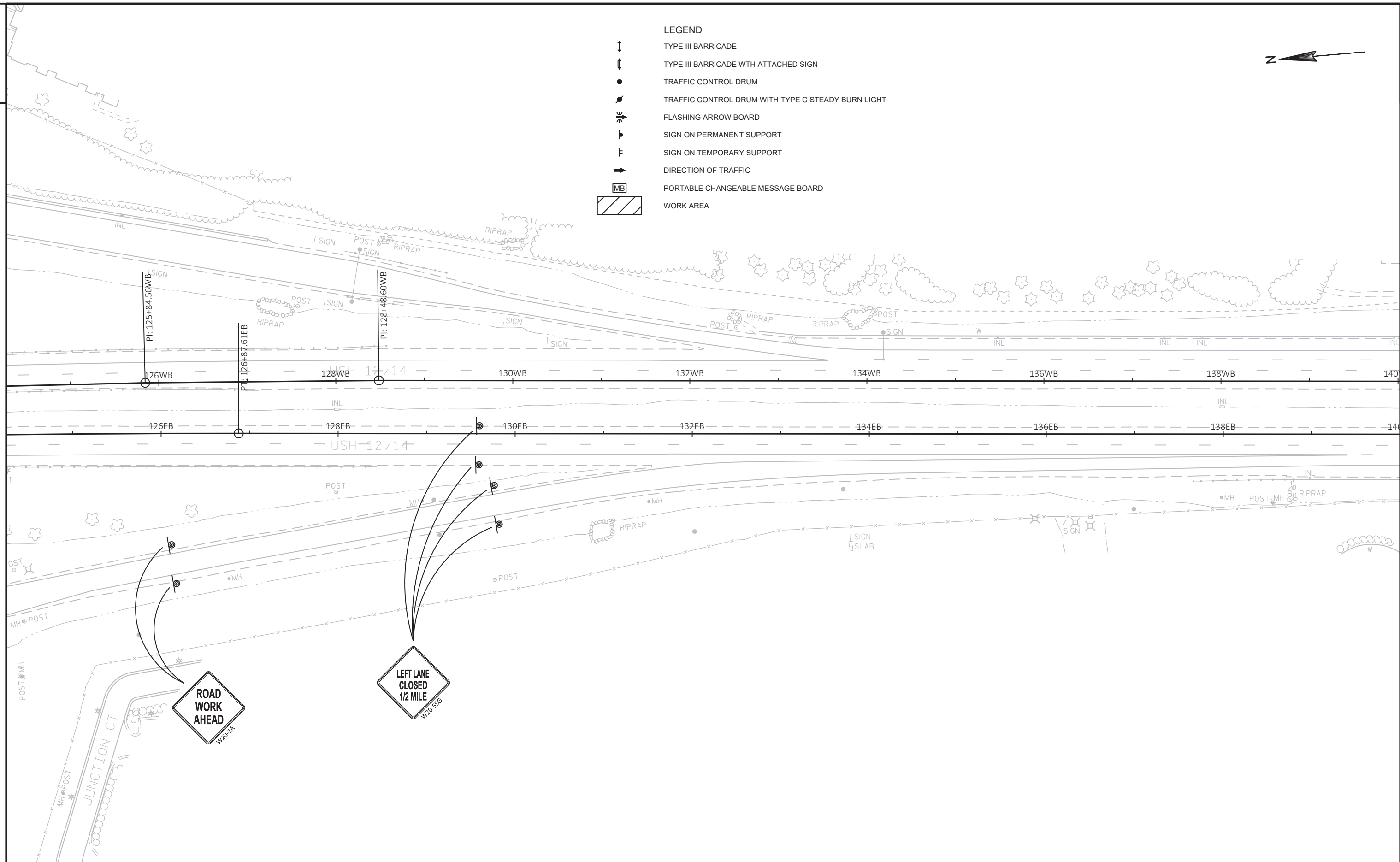
STAGE 3

SHEET

98

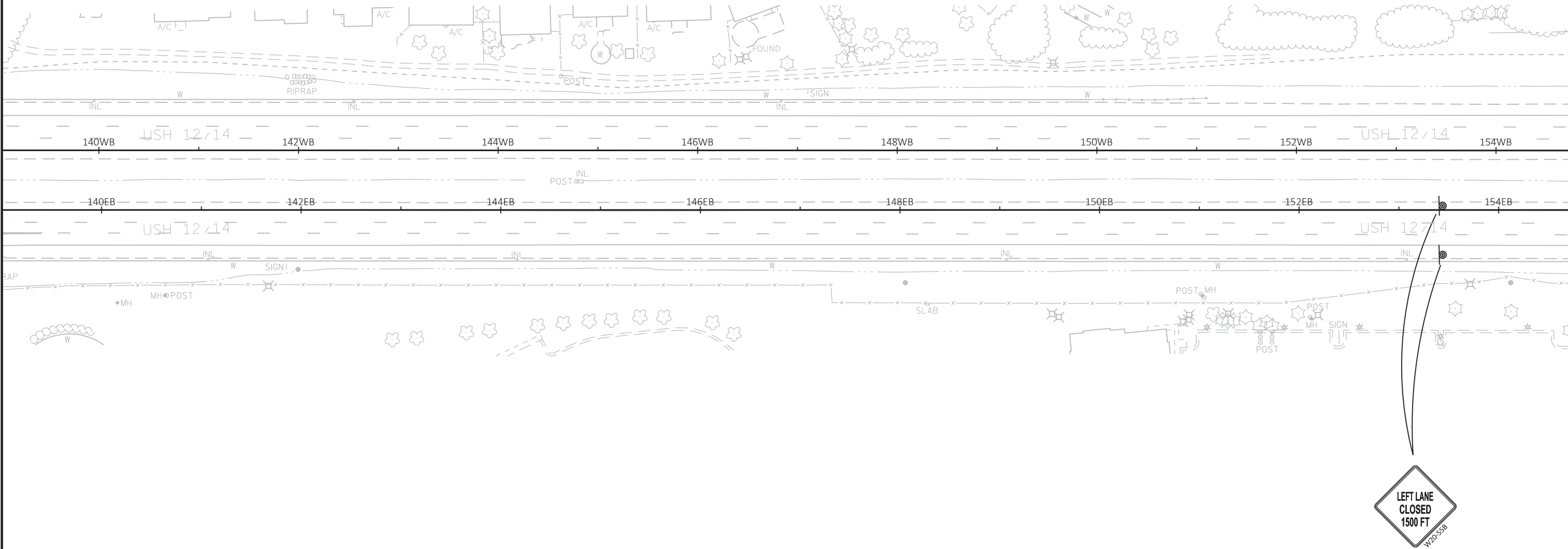
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- LEGEND
- TYPE III BARRICADE
 - TYPE III BARRICADE WTH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - SIGN ON TEMPORARY SUPPORT
 - DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE BOARD
 - WORK AREA



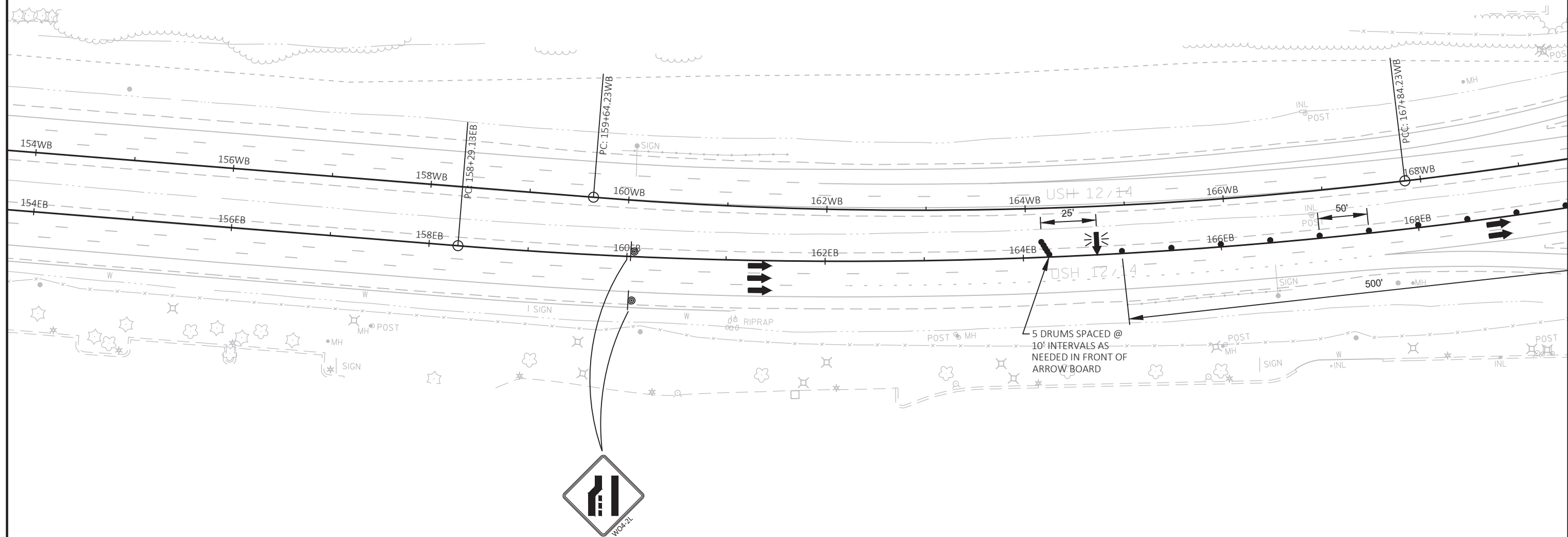
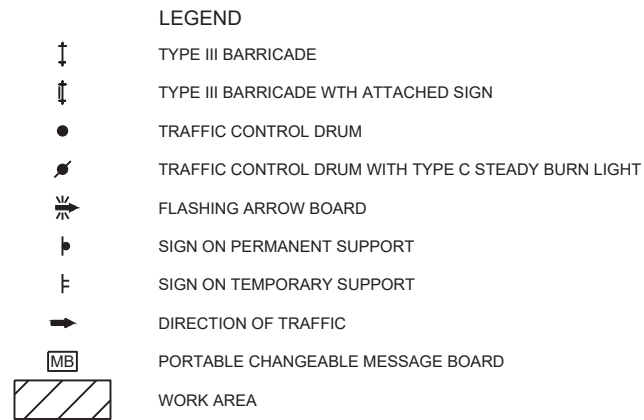
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
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2

2



PROJECT NO:	5300-00-71
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HWY: USH 12

COUNTY: DANE

STAGE 3

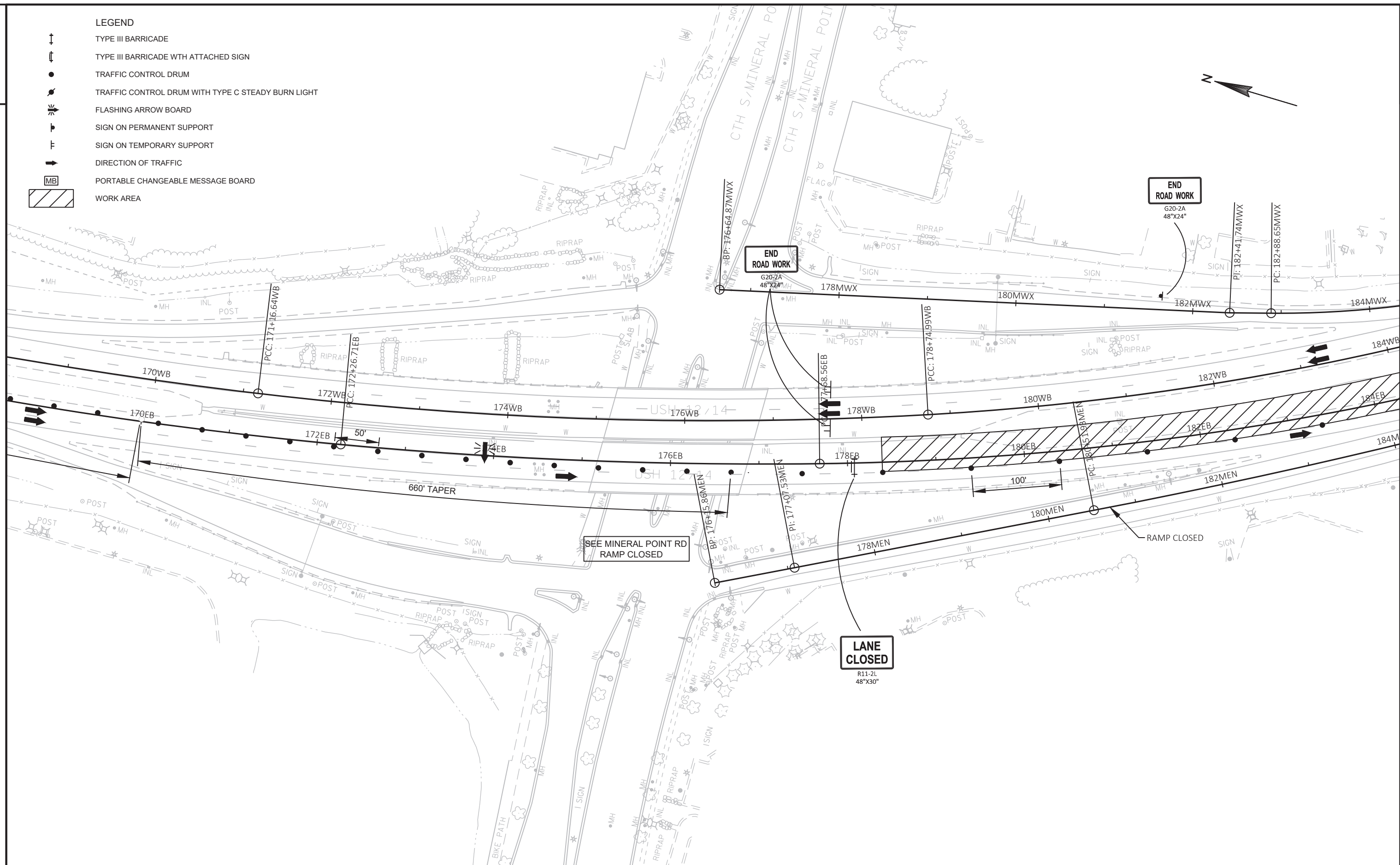
SHEET

— 101

E

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

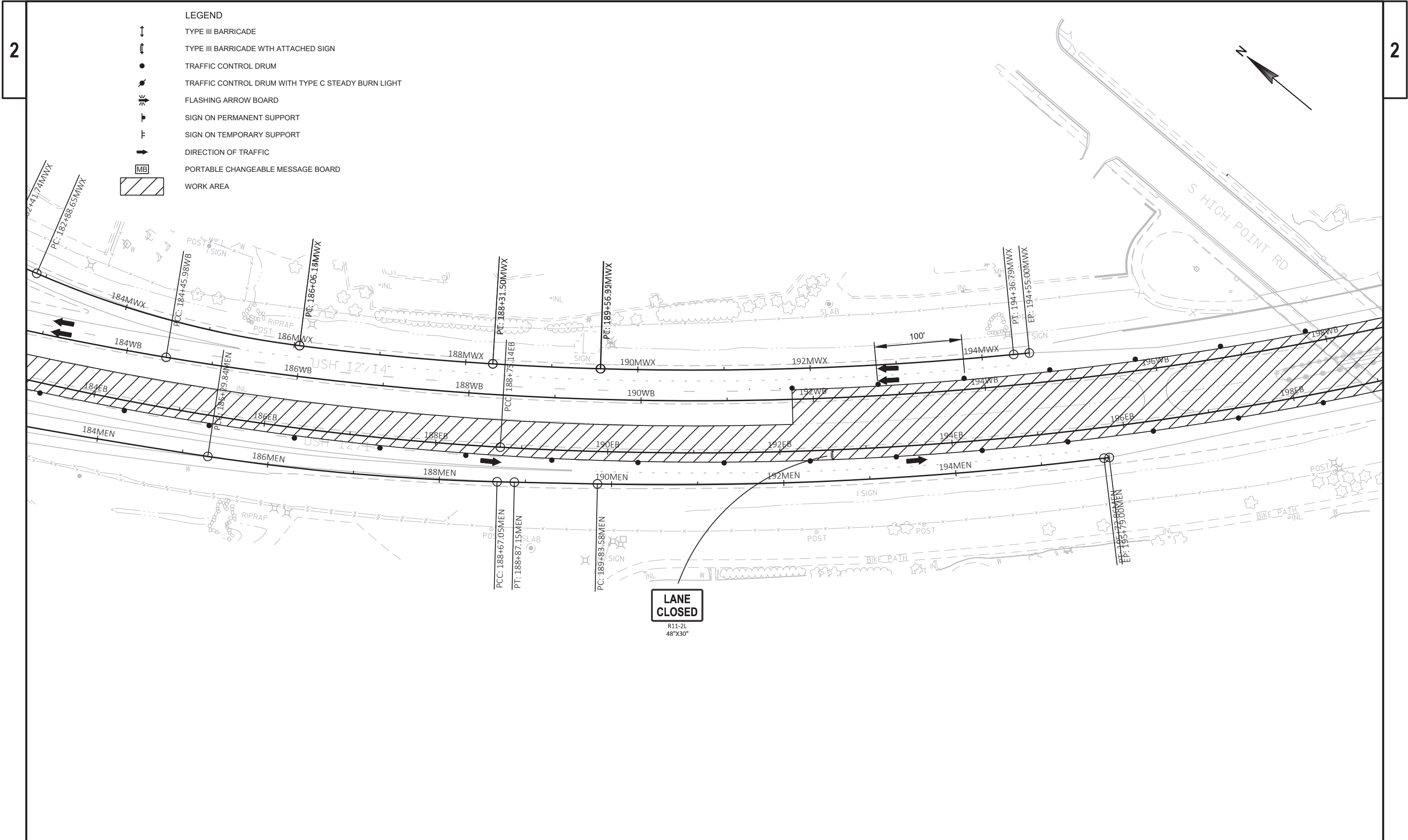
COUNTY: DANE

STAGE 3

SHEET

102

E



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

STAGE 3

SHEET

103

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\026201-S3.DWG
LAYOUT NAME - 06

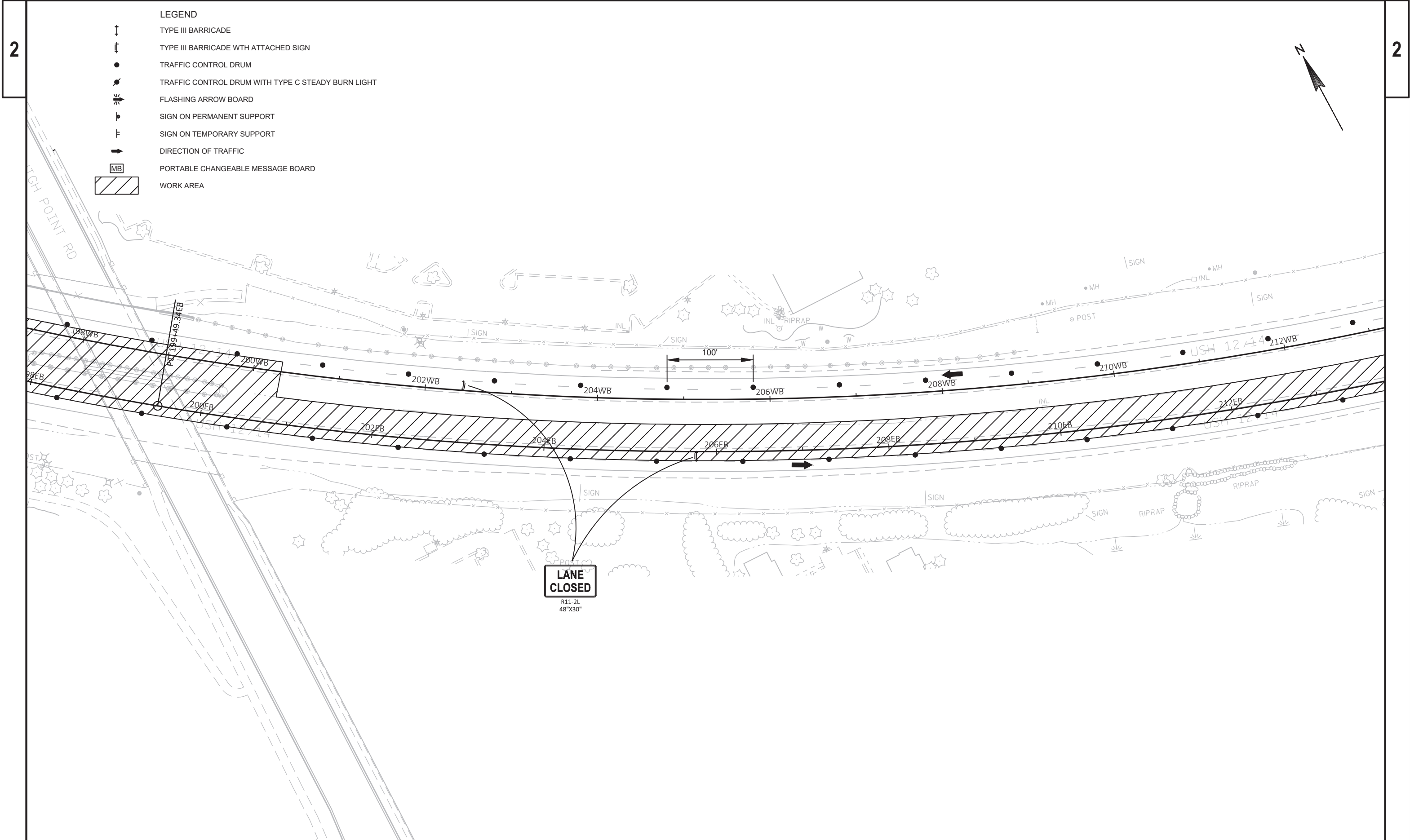
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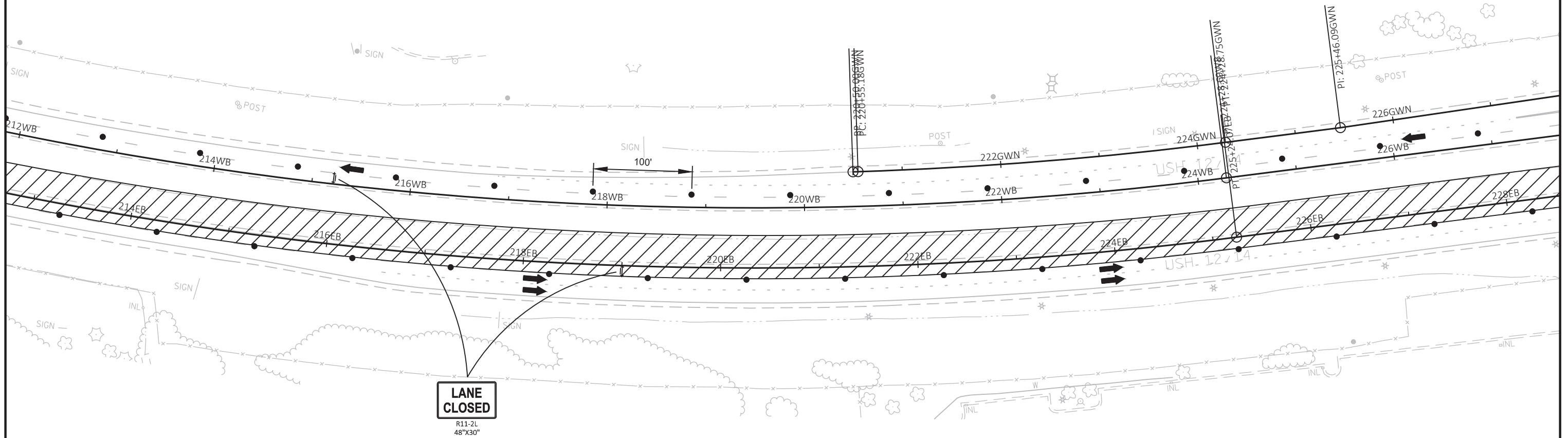
PLOT BY : GUIDER, VALERIE S

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADD5 SHEET 42





TYPE III BARRICADE

TYPE III BARRICADE WITH ATTACHED SIGN

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

FLASHING ARROW BOARD

SIGN ON PERMANENT SUPPORT

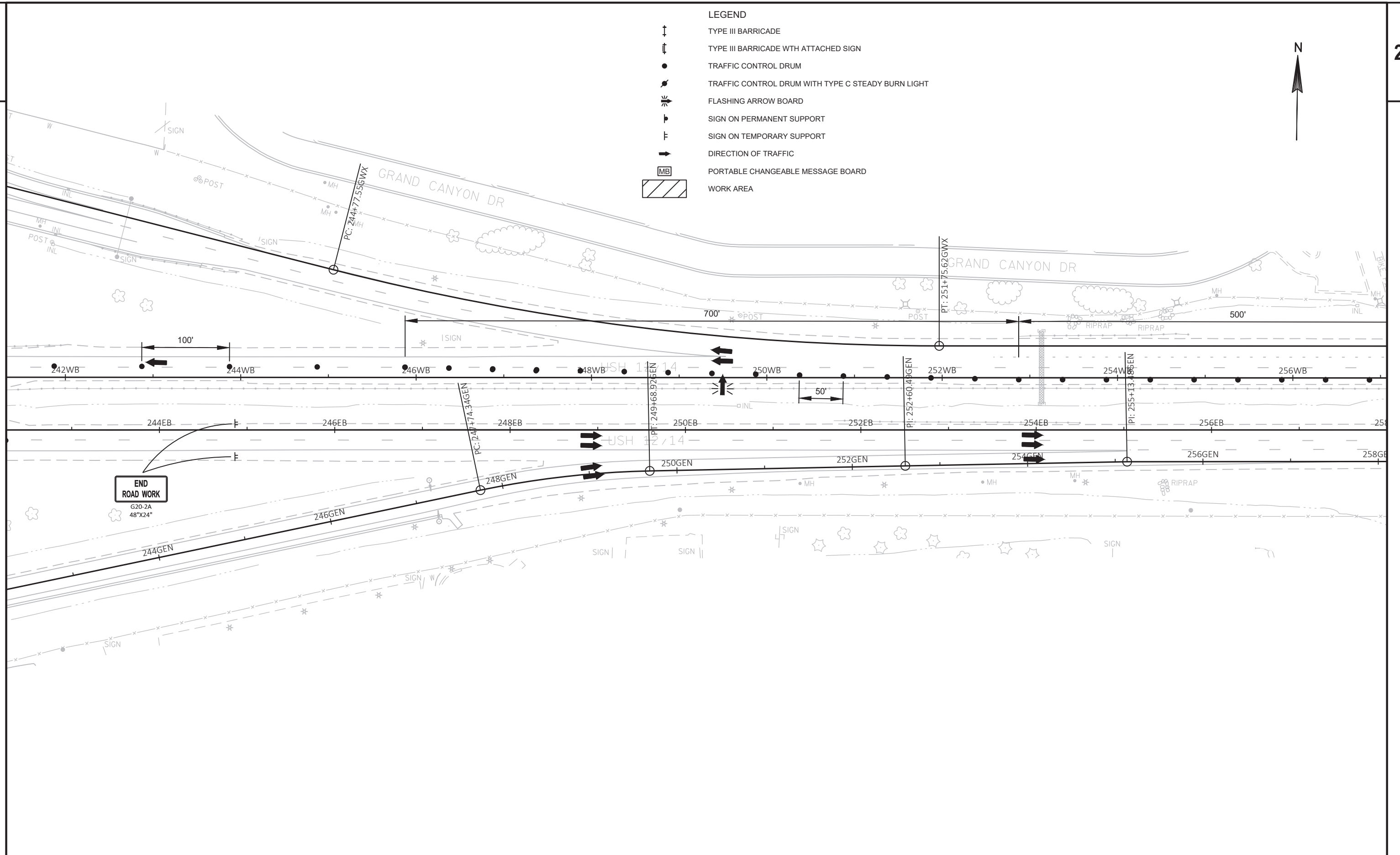
SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

PORTABLE CHANGEABLE MESSAGE BOARD

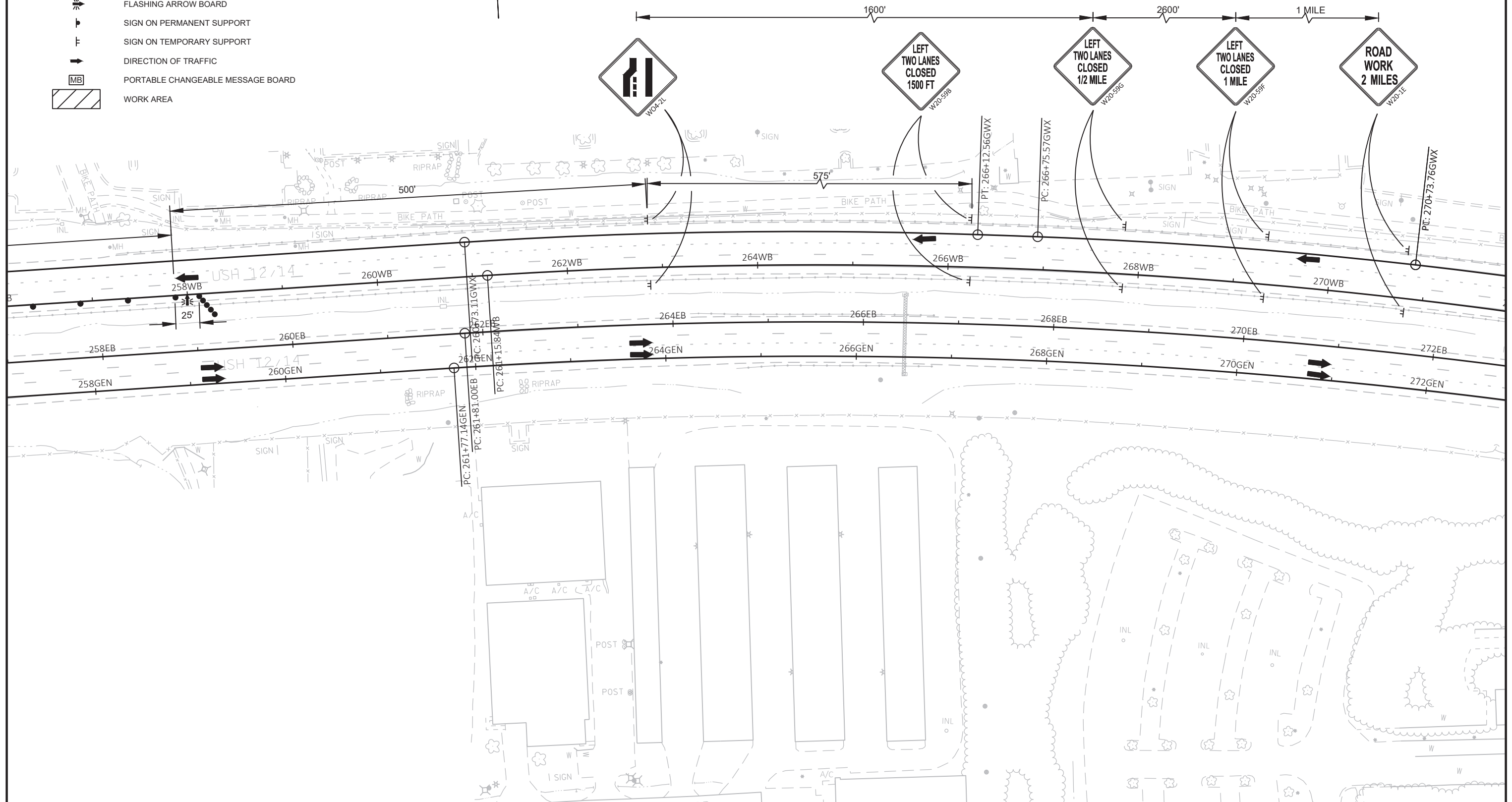
WORK AREA





LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  PORTABLE CHANGEABLE MESSAGE BOARD
-  WORK AREA



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

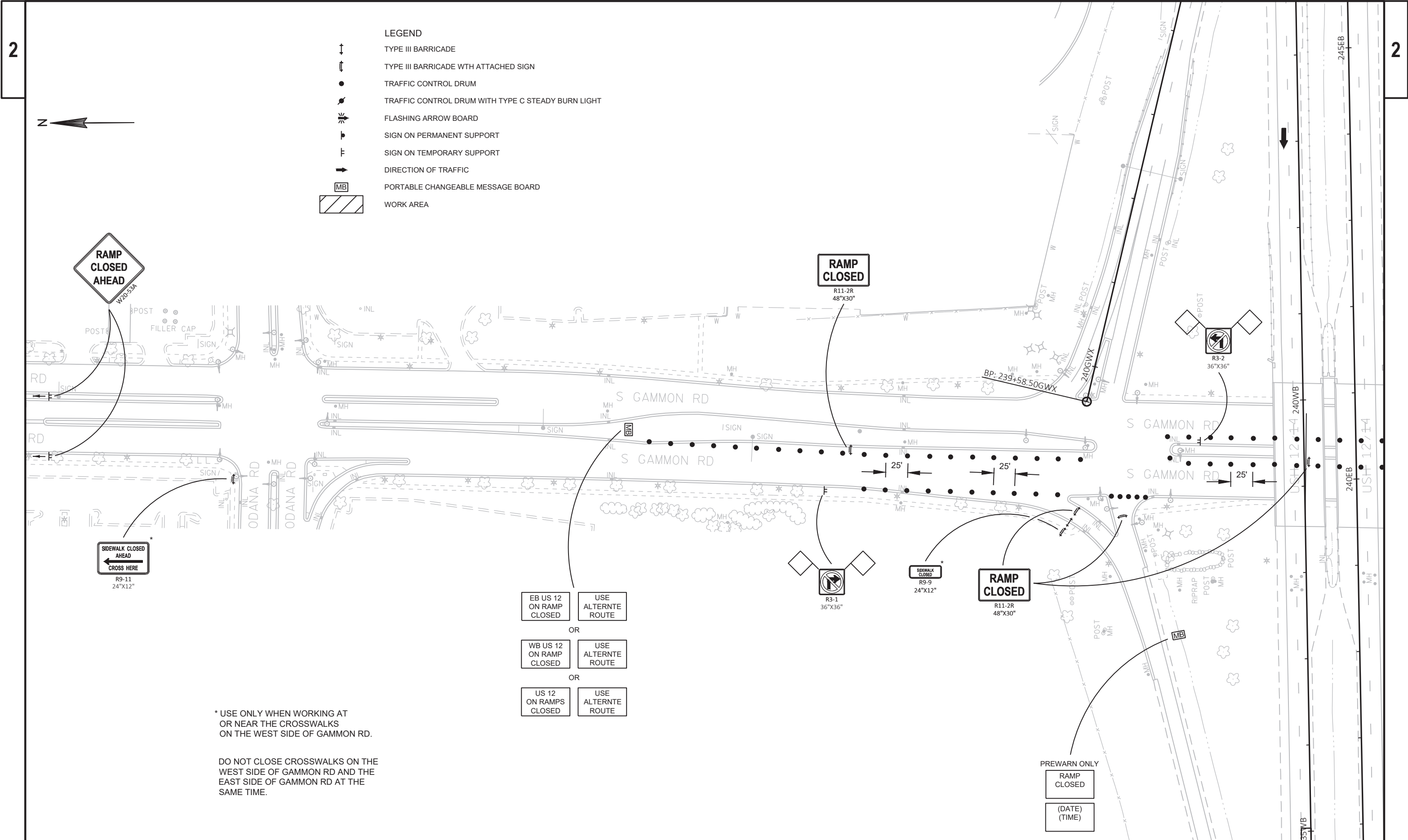
STAGE 3

SHEET

108

E





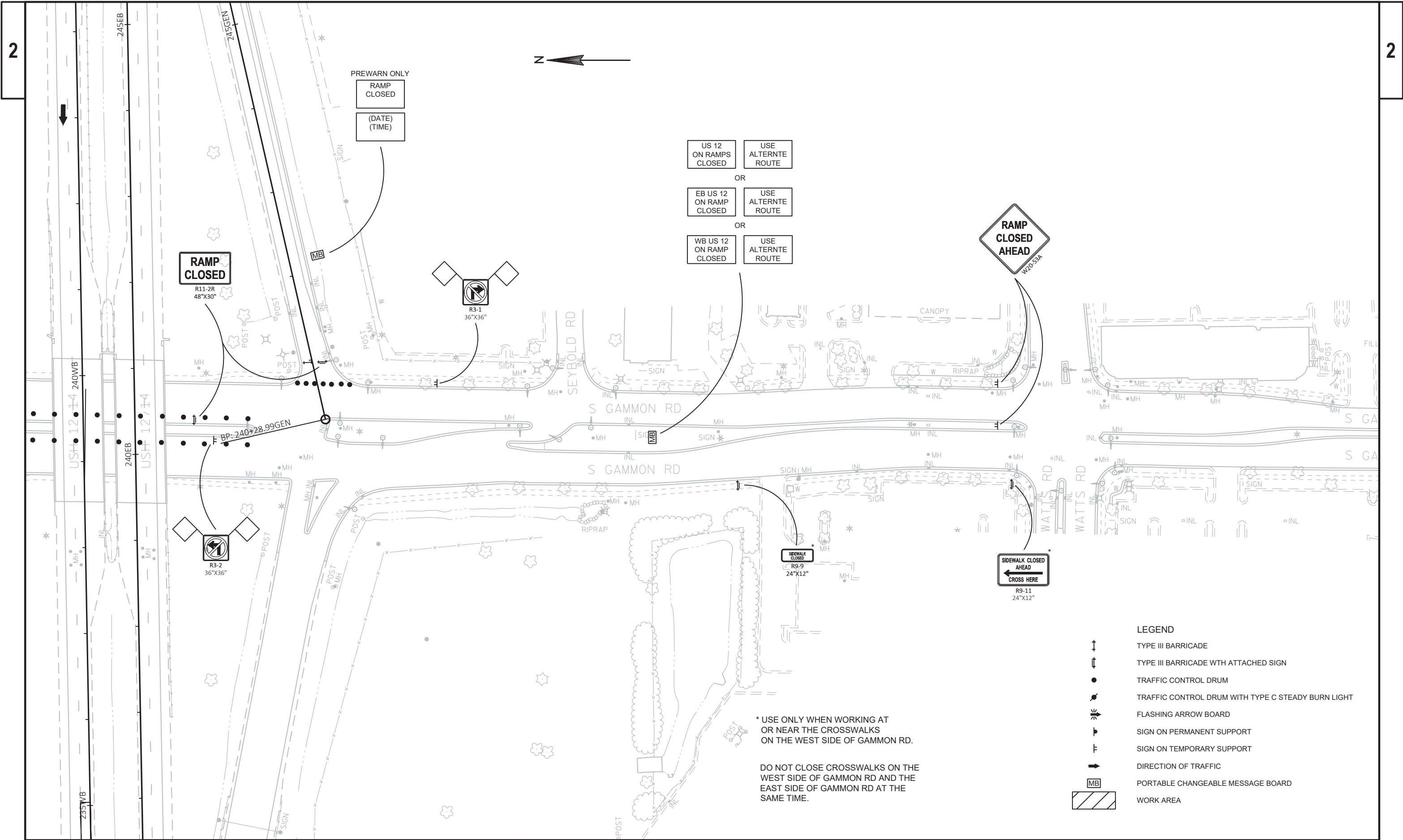
- LEGEND
- TYPE III BARRICADE
 - TYPE III BARRICADE WTH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - SIGN ON TEMPORARY SUPPORT
 - DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE BOARD
 - WORK AREA

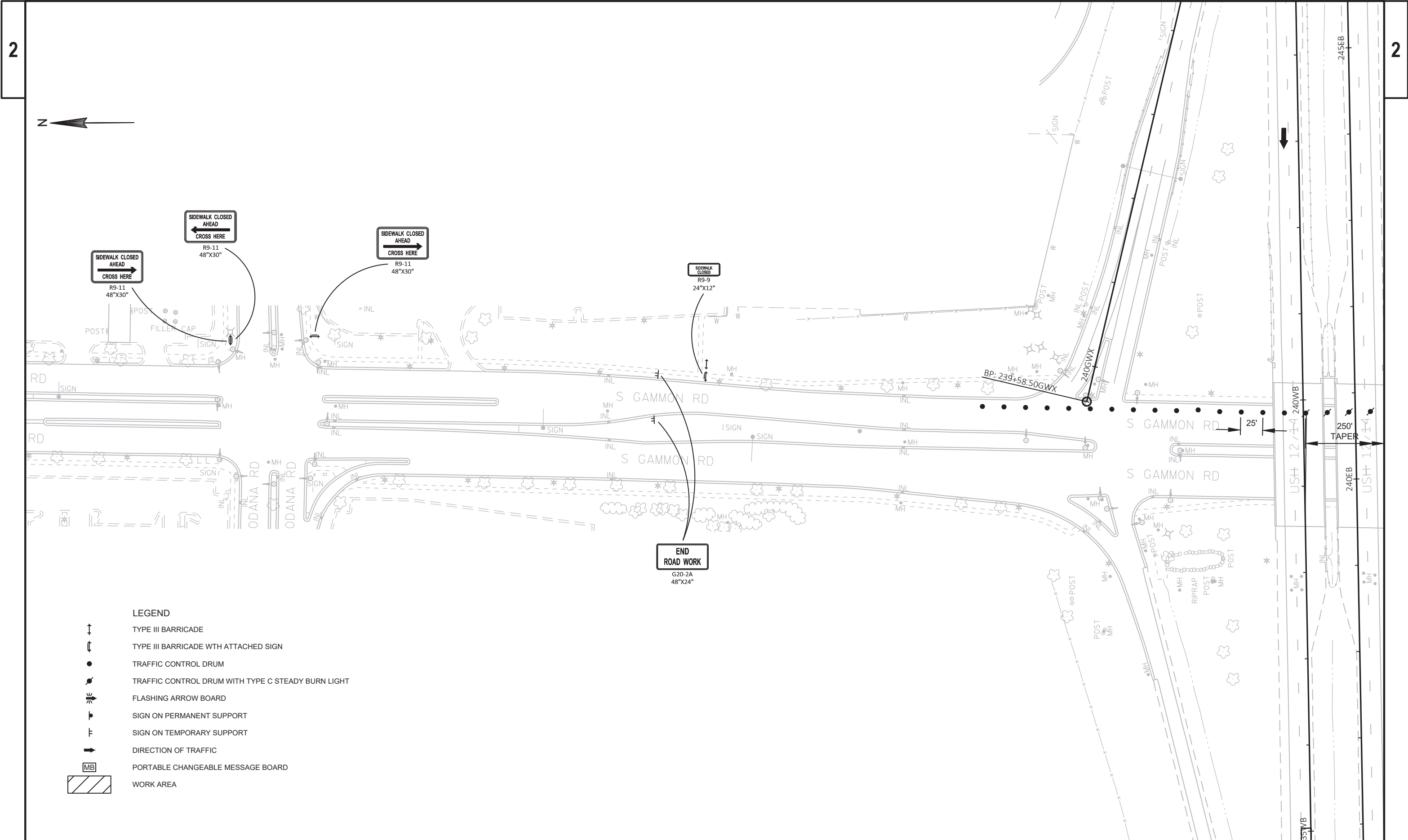
* USE ONLY WHEN WORKING AT OR NEAR THE CROSSWALKS ON THE WEST SIDE OF GAMMON RD.

DO NOT CLOSE CROSSWALKS ON THE WEST SIDE OF GAMMON RD AND THE EAST SIDE OF GAMMON RD AT THE SAME TIME.

- | | |
|-------------------------|--------------------|
| EB US 12 ON RAMP CLOSED | USE ALTERNTE ROUTE |
| OR | |
| WB US 12 ON RAMP CLOSED | USE ALTERNTE ROUTE |
| OR | |
| US 12 ON RAMPS CLOSED | USE ALTERNTE ROUTE |

PREWARN ONLY
RAMP CLOSED
(DATE)
(TIME)

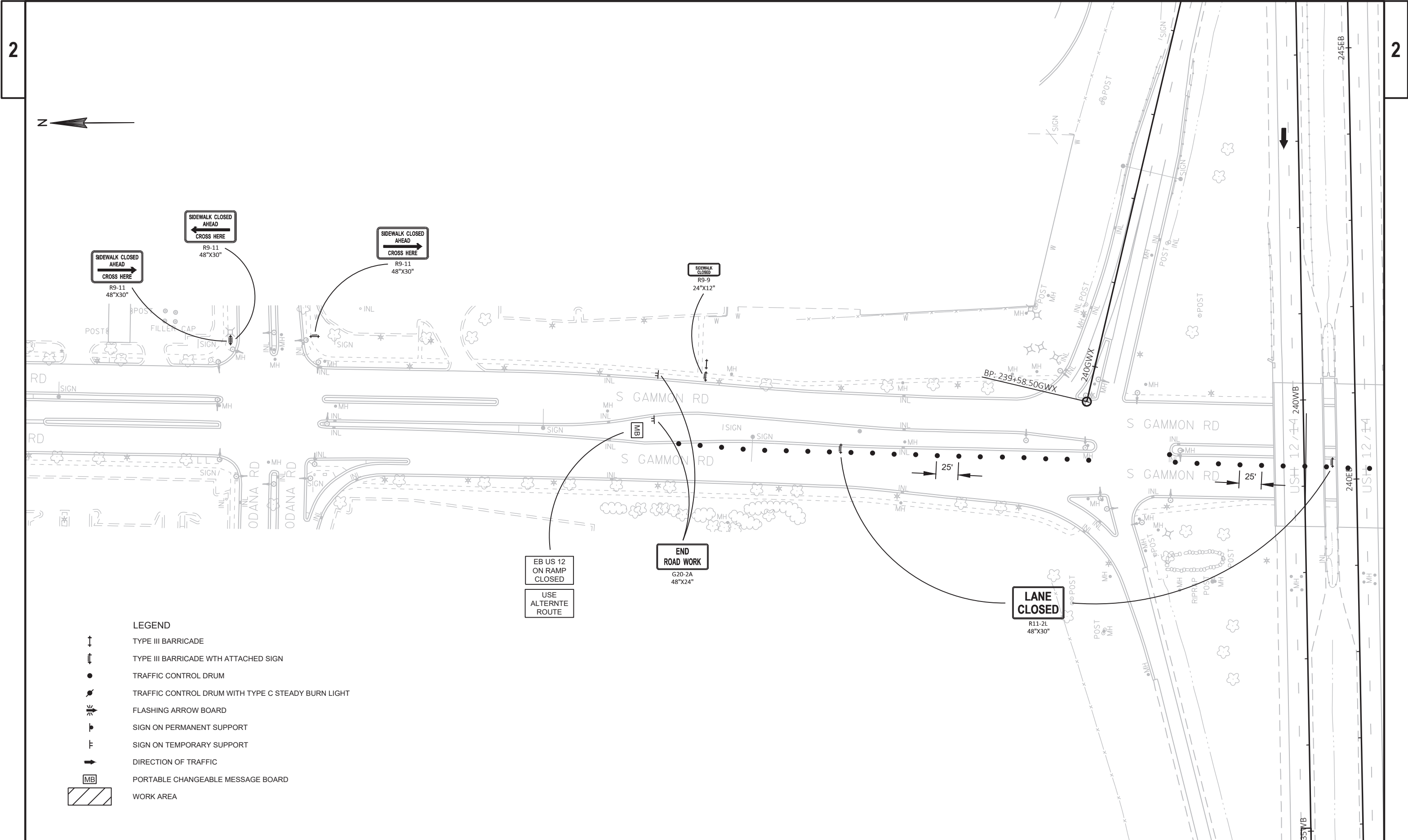


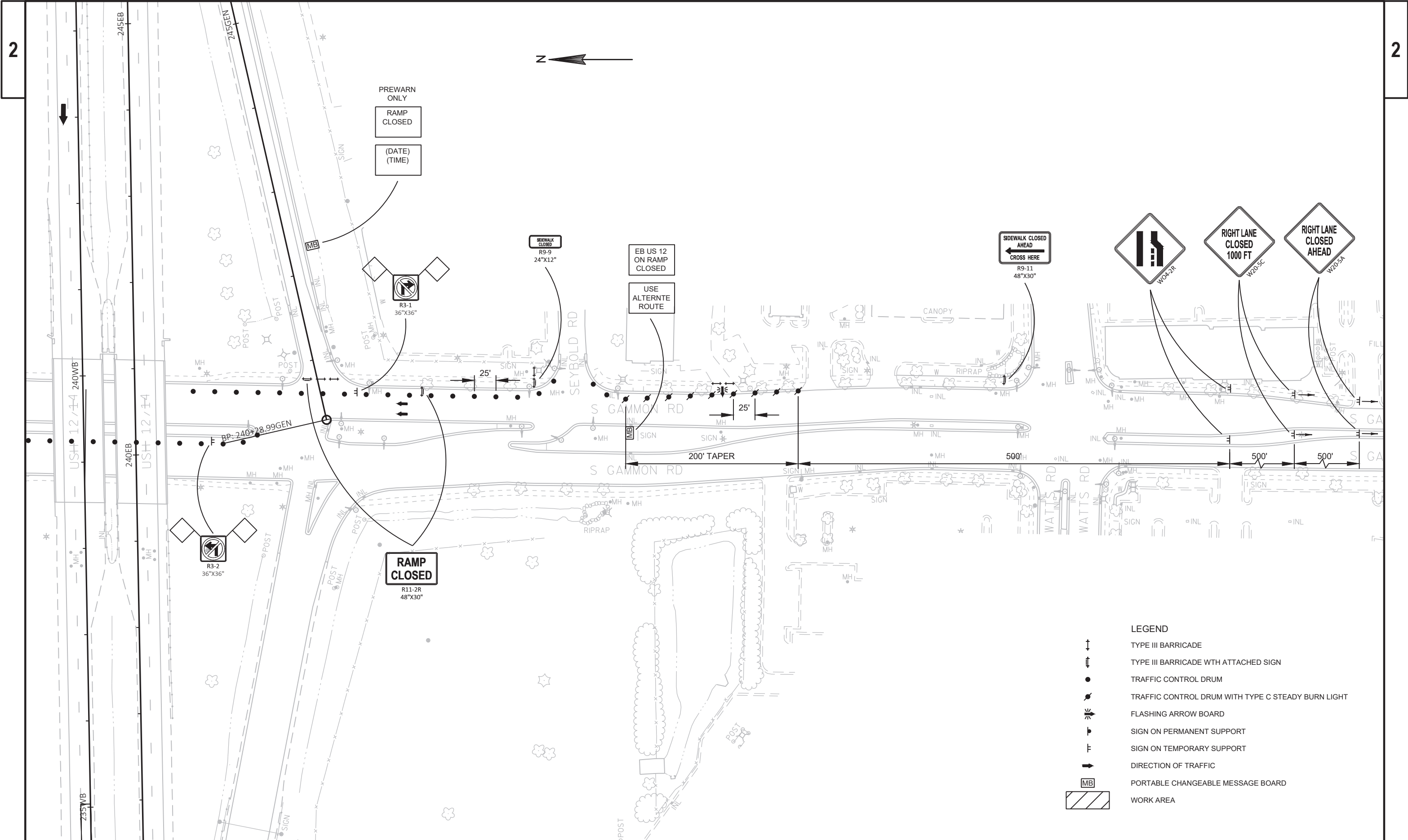


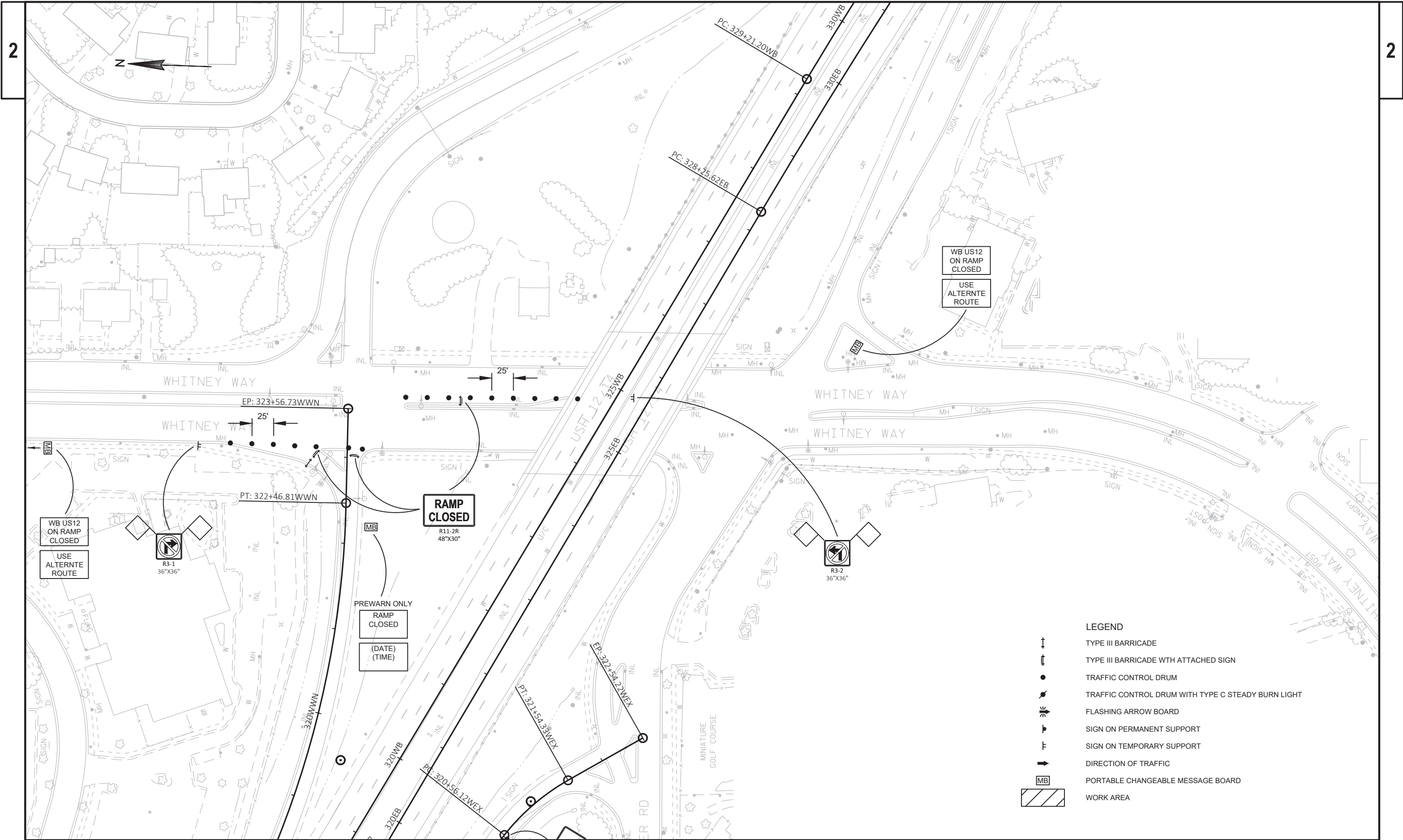
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
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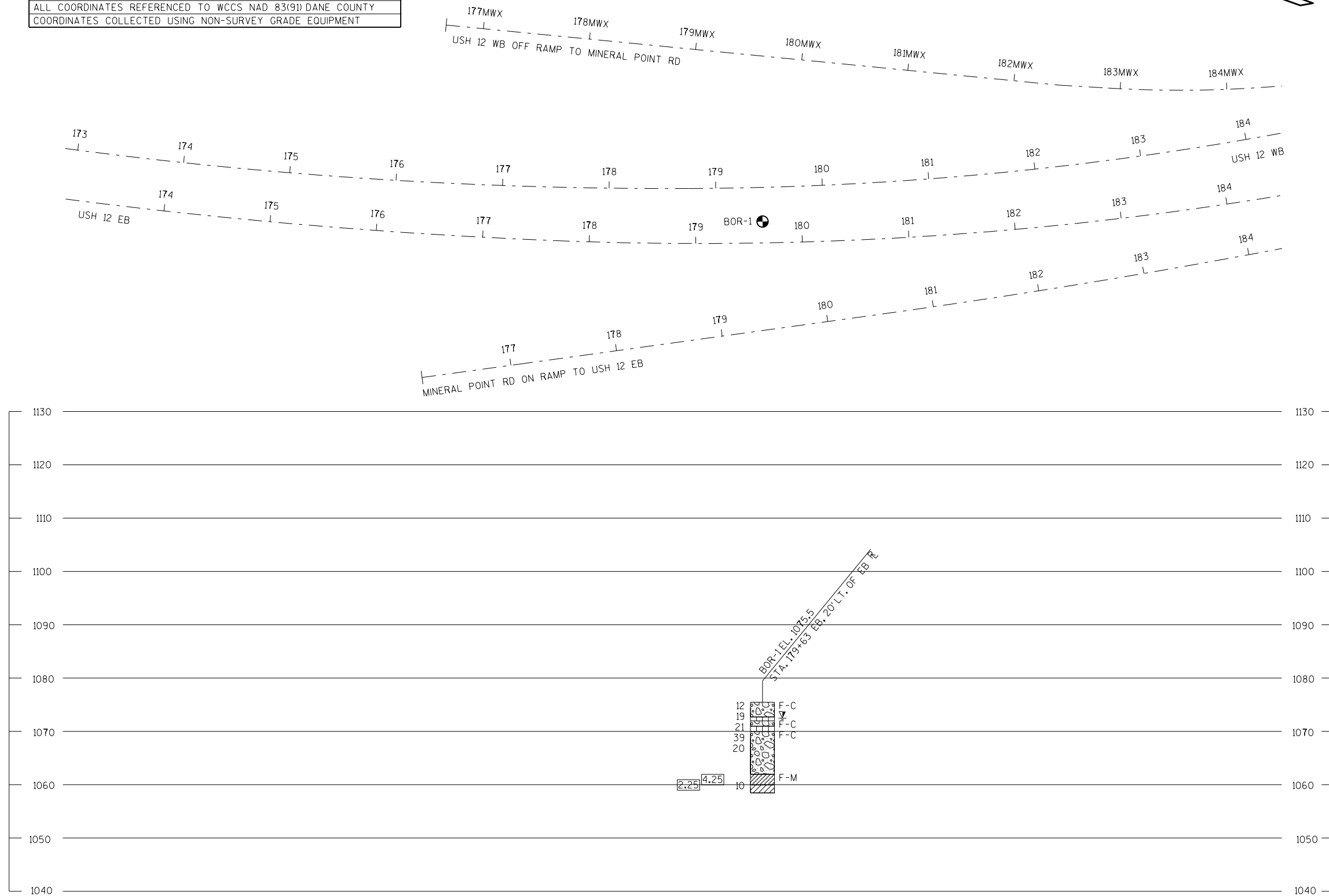








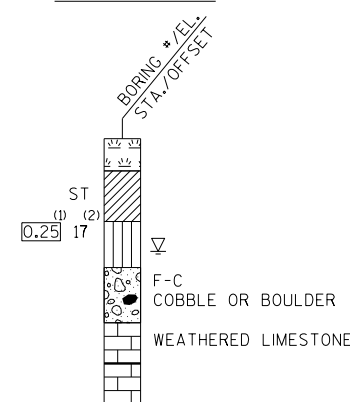
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	12/06/2018	472397	841793
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
▼ END OF DRILLING
▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

PROJECT NO:5300-00-01

HWY: USH 12

COUNTY: DANE

CABLE BARRIER BORING LOGS

SHEET

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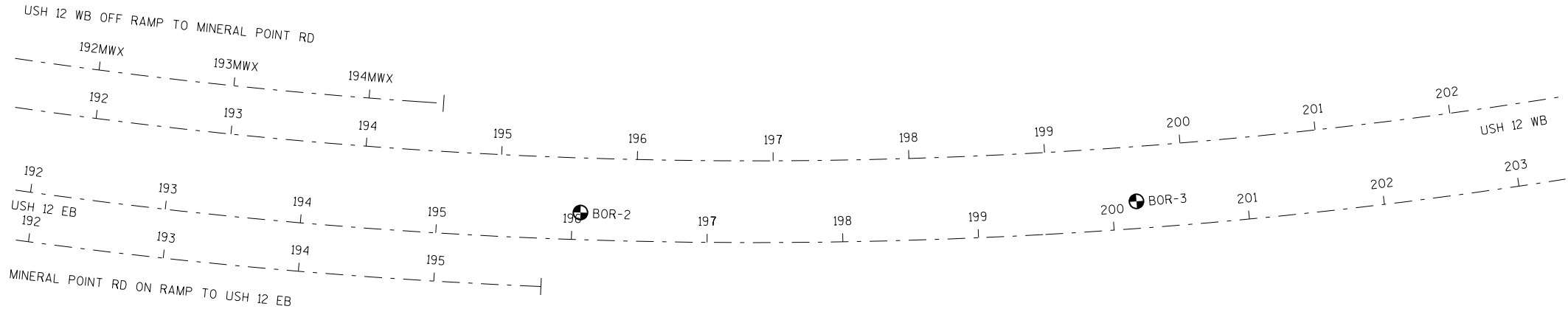
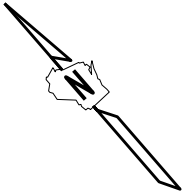
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
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3	12/06/2018	472958	843772

BORINGS COMPLETED BY: WISDOT

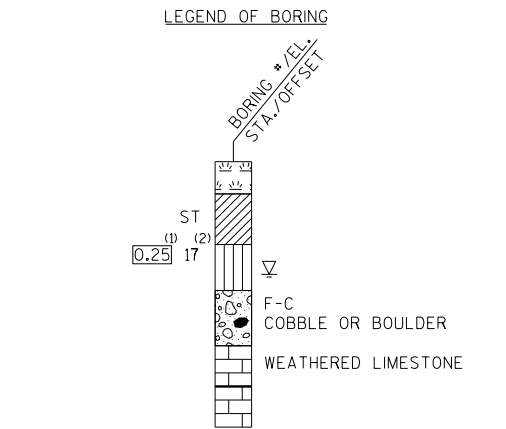
REPORT COMPLETED BY: WISDOT

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY

COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT



MATERIAL SYMBOLS		
ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META



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GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▼ END OF DRILLING

▼ AFTER DRILLING

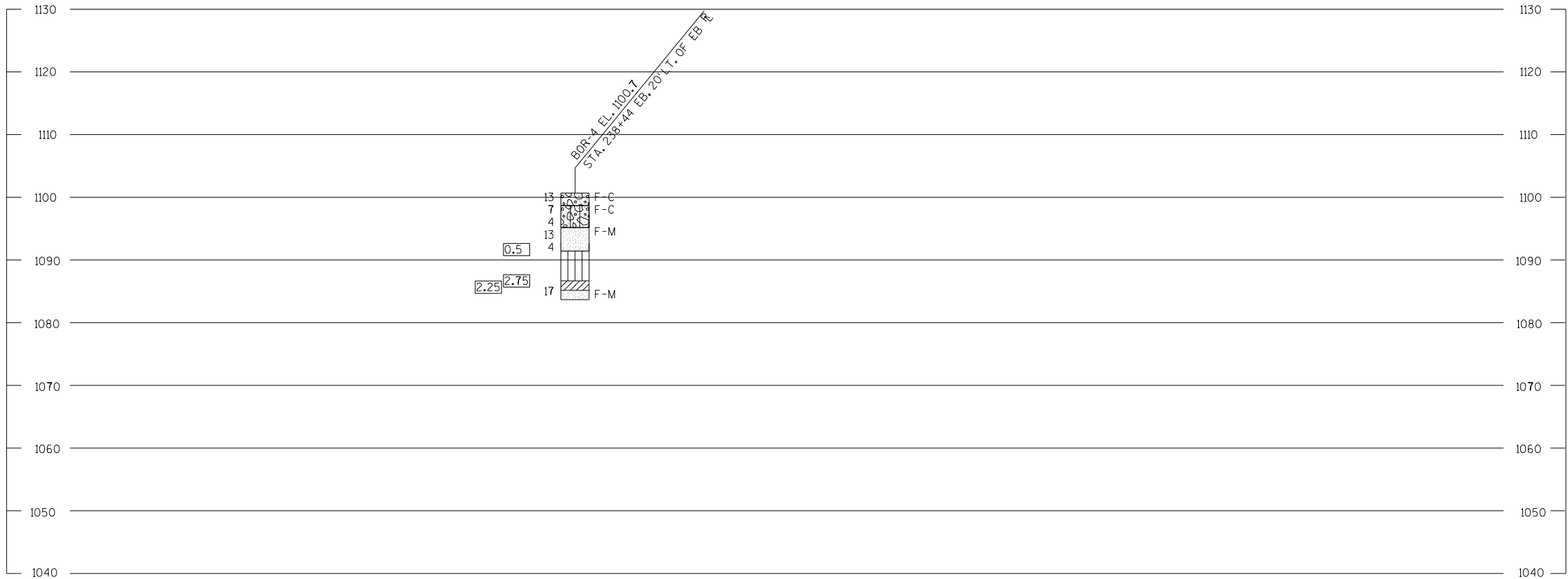
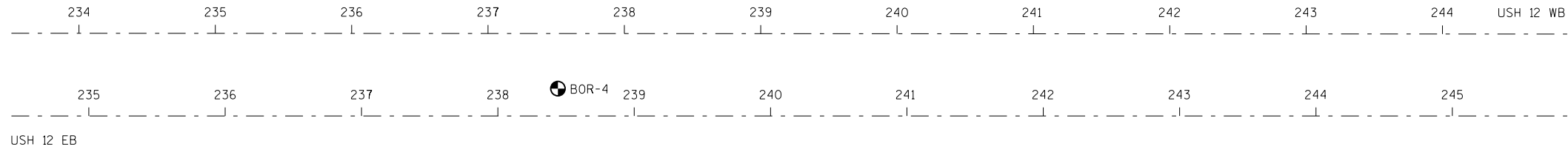
ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
4	12/06/2018	472847	847596
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



MATERIAL SYMBOLS					
	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING

GROUND WATER ELEVATION

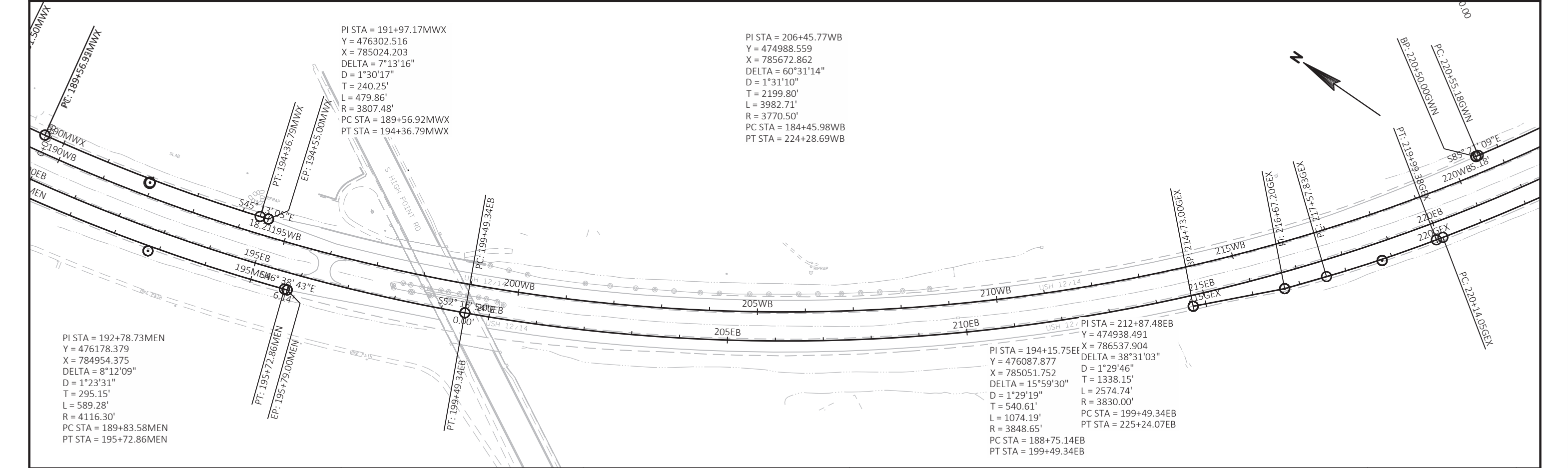
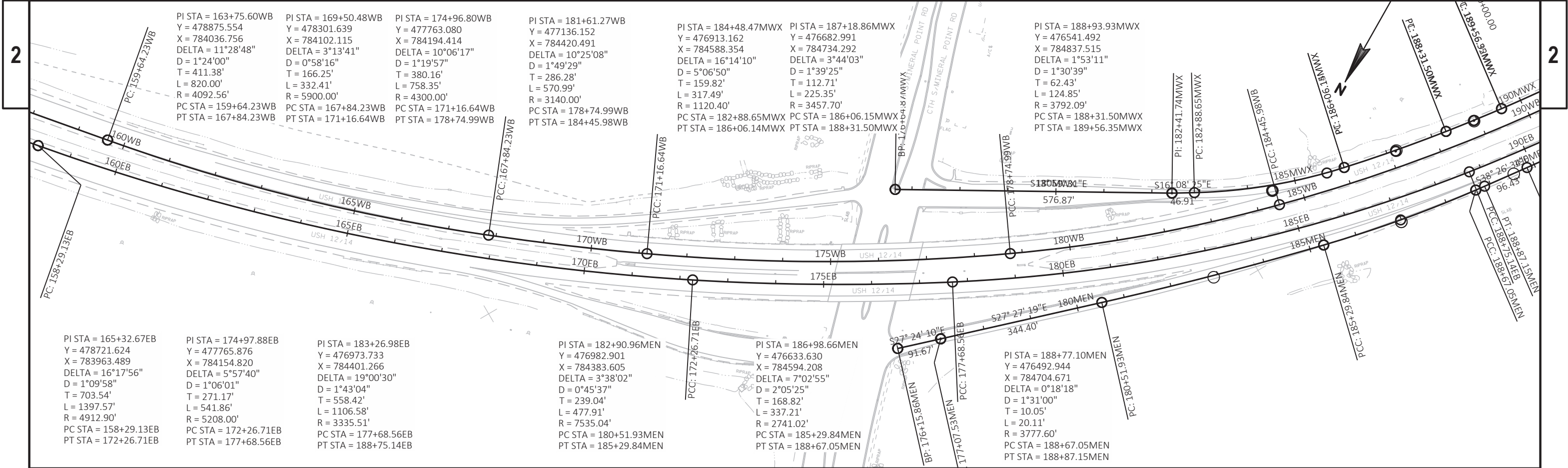
- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

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SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

ALIGNMENT DETAILS

SHEET

120

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LAYOUT NAME - AD 1

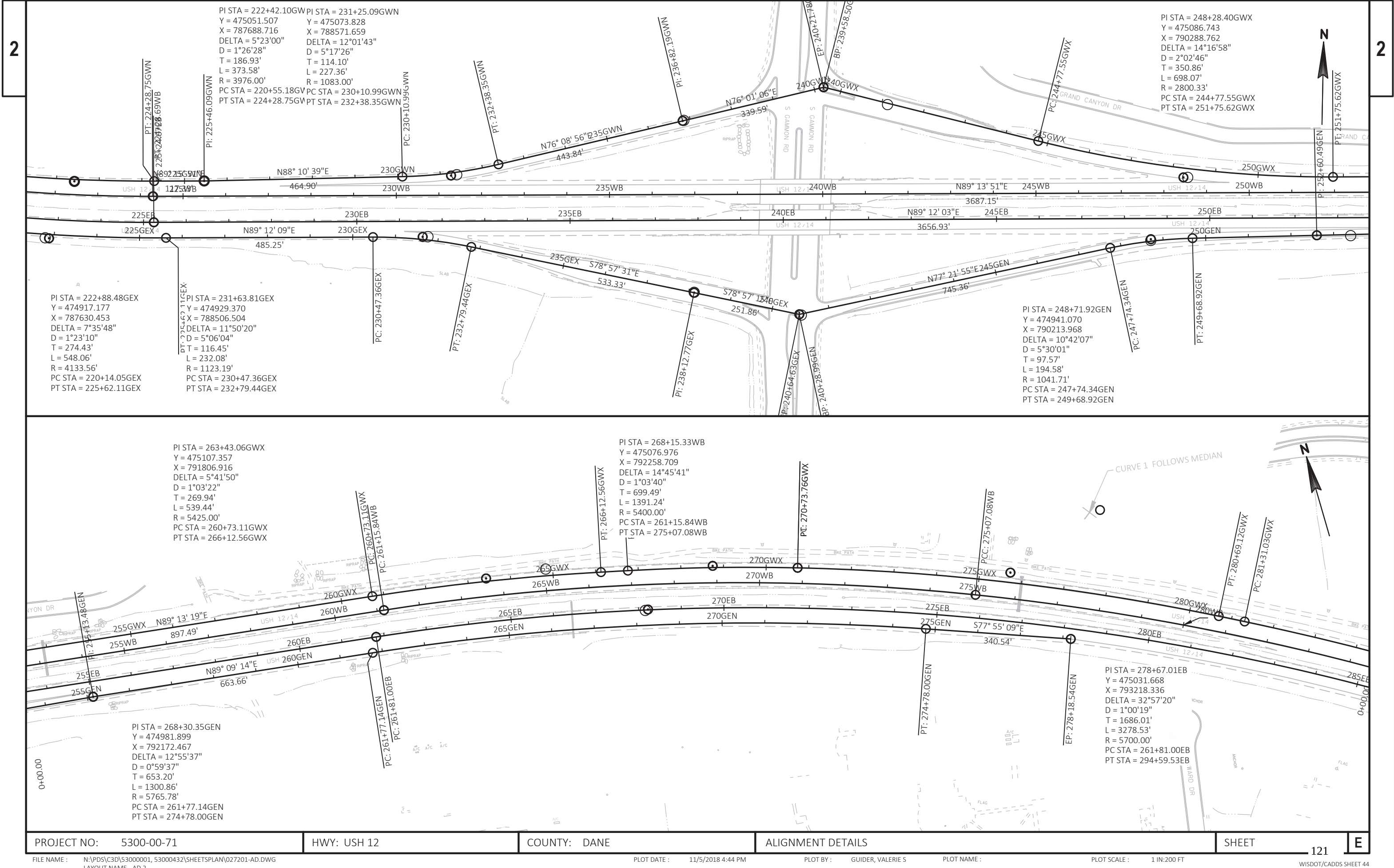
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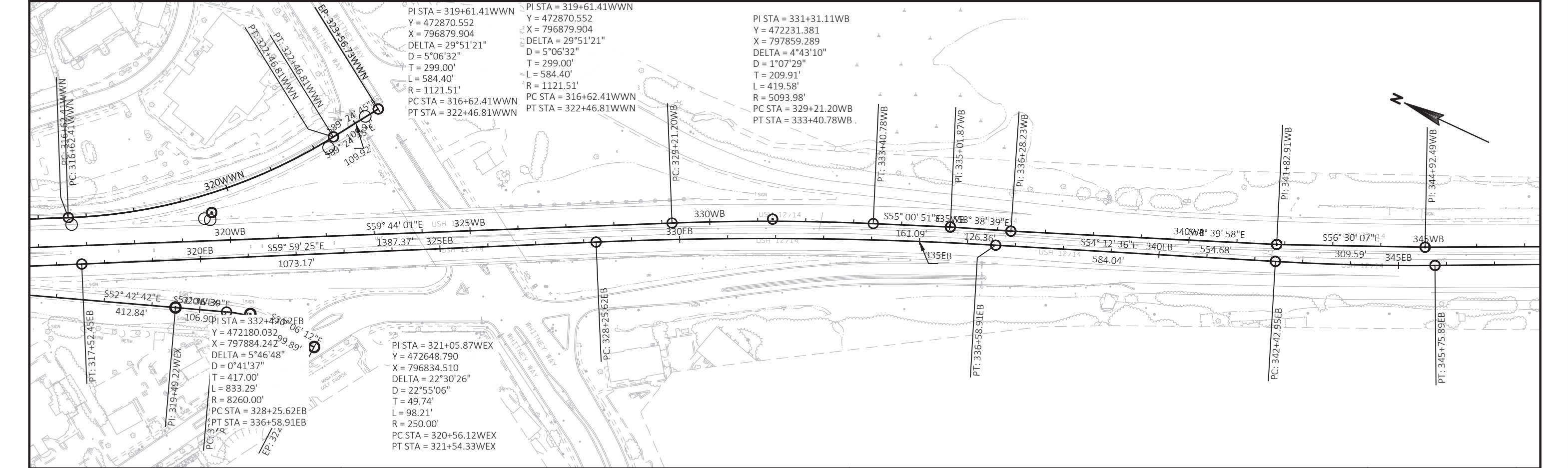
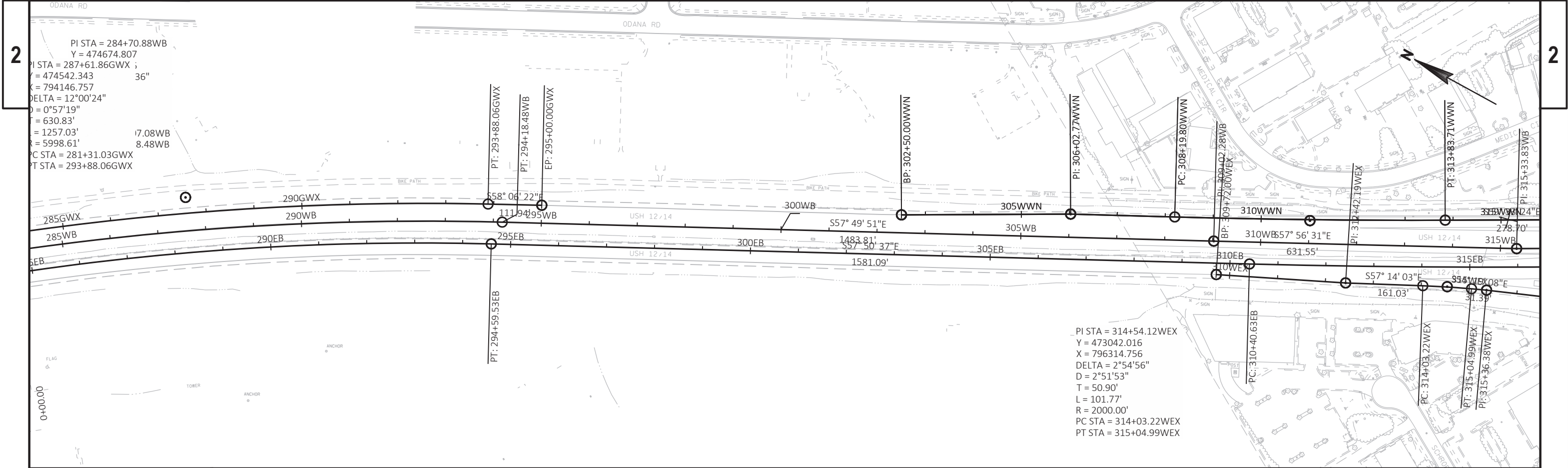
PLOT BY : GUIDER, VALERIE S

PLOT NAME :

PLOT SCALE : 1 IN:200 FT

WISDOT/CADD5 SHEET 44





Estimate Of Quantities

5300-00-71

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	624.000	624.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	11,709.000	11,709.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	98,848.000	98,848.000
0008	204.0150	Removing Curb & Gutter	LF	3.000	3.000
0010	204.0165	Removing Guardrail	LF	424.000	424.000
0012	204.0180	Removing Delineators and Markers	EACH	100.000	100.000
0014	205.0100	Excavation Common	CY	1,792.000	1,792.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	32.000	32.000
0018	213.0100	Finishing Roadway (project) 01. 5300-00-71	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	725.000	725.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,710.000	3,710.000
0024	305.0130	Base Aggregate Dense 3-Inch	TON	156.000	156.000
0026	305.0500	Shaping Shoulders	STA	220.000	220.000
0028	416.0610	Drilled Tie Bars	EACH	70.000	70.000
0030	416.0620	Drilled Dowel Bars	EACH	5,320.000	5,320.000
0032	455.0605	Tack Coat	GAL	8,814.000	8,814.000
0034	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0036	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0038	460.2000	Incentive Density HMA Pavement	DOL	902.000	902.000
0040	460.2005	Incentive Density PWL HMA Pavement	DOL	7,222.000	7,222.000
0042	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	11,407.000	11,407.000
0044	460.2010	Incentive Air Voids HMA Pavement	DOL	14,119.000	14,119.000
0046	460.7224	HMA Pavement 4 HT 58-28 S	TON	1,409.000	1,409.000
0048	460.7424	HMA Pavement 4 HT 58-28 H	TON	14,119.000	14,119.000
0050	465.0400	Asphaltic Shoulder Rumble Strips	LF	35,494.000	35,494.000
0052	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	3.000	3.000
0054	604.0500	Slope Paving Crushed Aggregate	SY	555.000	555.000
0056	613.1100.S	Cable Barrier Type 1	LF	5,244.000	5,244.000
0058	613.1200.S	Cable Barrier End Terminal Type 1	EACH	4.000	4.000
0060	614.0230	Steel Thrie Beam	LF	250.000	250.000
0062	614.0400	Adjusting Steel Plate Beam Guard	LF	275.000	275.000
0064	614.2300	MGS Guardrail 3	LF	3,100.000	3,100.000
0066	614.2500	MGS Thrie Beam Transition	LF	78.800	78.800
0068	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5300-00-71	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	30.000	30.000
0074	625.0500	Salvaged Topsoil	SY	2,530.000	2,530.000
0076	628.1504	Silt Fence	LF	200.000	200.000
0078	628.1520	Silt Fence Maintenance	LF	200.000	200.000

Estimate Of Quantities

5300-00-71

Line	Item	Item Description	Unit	Total	Qty
0080	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0082	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0084	628.2004	Erosion Mat Class I Type B	SY	2,780.000	2,780.000
0086	628.7005	Inlet Protection Type A	EACH	3.000	3.000
0088	628.7504	Temporary Ditch Checks	LF	365.000	365.000
0090	629.0210	Fertilizer Type B	CWT	5.100	5.100
0092	630.0130	Seeding Mixture No. 30	LB	132.000	132.000
0094	630.0200	Seeding Temporary	LB	66.000	66.000
0096	633.0100	Delineator Posts Steel	EACH	140.000	140.000
0098	633.0500	Delineator Reflectors	EACH	142.000	142.000
0100	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	2.000	2.000
0102	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	2.000	2.000
0104	637.2210	Signs Type II Reflective H	SF	19.500	19.500
0106	638.2102	Moving Signs Type II	EACH	1.000	1.000
0108	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0110	642.5201	Field Office Type C	EACH	1.000	1.000
0112	643.0300	Traffic Control Drums	DAY	29,911.000	29,911.000
0114	643.0420	Traffic Control Barricades Type III	DAY	2,284.000	2,284.000
0116	643.0705	Traffic Control Warning Lights Type A	DAY	4,296.000	4,296.000
0118	643.0715	Traffic Control Warning Lights Type C	DAY	2,680.000	2,680.000
0120	643.0800	Traffic Control Arrow Boards	DAY	231.000	231.000
0122	643.0900	Traffic Control Signs	DAY	3,824.000	3,824.000
0124	643.1050	Traffic Control Signs PCMS	DAY	898.000	898.000
0126	643.1051	Traffic Control Signs PCMS with Cellular Communications	DAY	10.000	10.000
0128	643.5000	Traffic Control	EACH	1.000	1.000
0130	646.1020	Marking Line Epoxy 4-Inch	LF	400.000	400.000
0132	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	40,747.000	40,747.000
0134	646.1555	Marking Line Grooved Contrast Permanent Tape 4-Inch	LF	6,005.000	6,005.000
0136	646.3020	Marking Line Epoxy 8-Inch	LF	200.000	200.000
0138	646.3555	Marking Line Grooved Contrast Permanent Tape 8-Inch	LF	5,332.000	5,332.000
0140	646.5020	Marking Arrow Epoxy	EACH	10.000	10.000
0142	646.5120	Marking Word Epoxy	EACH	3.000	3.000
0144	646.6120	Marking Stop Line Epoxy 18-Inch	LF	50.000	50.000
0146	646.7220	Marking Chevron Epoxy 24-Inch	LF	273.000	273.000
0148	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	50.000	50.000
0150	646.9400	Marking Removal Plowable Raised Pavement Markers	EACH	24.000	24.000
0152	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	53,631.000	53,631.000
0154	649.0220	Temporary Marking Line Epoxy 8-Inch	LF	5,626.000	5,626.000
0156	650.8000	Construction Staking Resurfacing Reference	LF	22,770.000	22,770.000

Estimate Of Quantities

5300-00-71					
Line	Item	Item Description	Unit	Total	Qty
0158	650.9910	Construction Staking Supplemental Control (project) 01. 5300-00-71	LS	1.000	1.000
0160	650.9920	Construction Staking Slope Stakes	LF	4,099.000	4,099.000
0162	690.0150	Sawing Asphalt	LF	492.000	492.000
0164	690.0250	Sawing Concrete	LF	9,404.000	9,404.000
0166	740.0440	Incentive IRI Ride	DOL	17,080.000	17,080.000
0168	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	250.000	250.000
0170	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	250.000	250.000
0172	SPV.0060	Special 01. Repositioning Traffic Control Devices For Mainline Closures	EACH	51.000	51.000
0174	SPV.0060	Special 02. Traffic Control Close-open Freeway Entrance Ramp	EACH	176.000	176.000
0176	SPV.0060	Special 03. Expose And Reposition Existing 6-inch Wrapped Underdrain	EACH	1.000	1.000
0178	SPV.0090	Special 01. Concrete Joint And Crack Cleaning And Repair	LF	1,606.000	1,606.000
0180	SPV.0090	Special 02. Removing Hma Pavement Notched Wedge Longitudinal Joint Milling	LF	4,008.000	4,008.000
0182	SPV.0090	Special 03. Salvage And Reinstall Guardrail	LF	513.500	513.500
0184	SPV.0090	Special 04. Construction Staking Cable Barrier Type 1	LF	5,470.000	5,470.000
0186	SPV.0180	Special 01. Concrete Pavement Repair Overnight	SY	34.000	34.000
0188	SPV.0180	Special 02. Concrete Pavement Replacement Overnight	SY	197.000	197.000
0190	SPV.0180	Special 03. Base Patching Concrete Overnight	SY	2,185.000	2,185.000

3

REMOVING ASPHALTIC SURFACE					
CATEGORY	STATION	TO	STATION	LOCATION	204.0110 SY
0010	195+12 WB	-	199+80 WB	LT	624
TOTAL 0010					624

REMOVING CURB & GUTTER					
CATEGORY	STATION	TO	STATION	LOCATION	204.0150 LF
0010	241+37 GWX	-	241+40 GWX	RT	3
TOTAL 0010					3

REMOVING GUARDRAIL					
CATEGORY	STATION	TO	STATION	LOCATION	204.0165 LF
0020	241+08 EB	-	241+83 EB	LT	150
	251+69 EB	-	252+24 EB	LT	55
	254+12 EB	-	254+51 EB	LT	39
	264+18 EB	-	264+74 EB	LT	55
	266+61 EB	-	266+75 EB	LT	15
	274+45 EB	-	274+97 EB	LT	55
0020	241+31 WB	-	241+87 WB	RT	55
	TOTAL 0020				424

REMOVING ASPHALTIC SURFACE BUTT JOINTS					
CATEGORY	STATION	TO	STATION	LOCATION	204.0115 SY
0010	196+19 EB	-	198+19 EB		756
	200+87 EB	-	202+87 EB		756
	233+29 EB	-	235+29 EB		844
	243+10 EB	-	245+10 EB		844
	320+24 EB	-	322+24 EB		1,333
0010	195+12 WB	-	197+12 WB		867
	199+80 WB	-	201+80 WB		600
	233+10 WB	-	235+10 WB		844
	240+59 WB	-	242+59 WB		844
	320+53 WB	-	322+53 WB		1,333
0010	240+68 GEN	-	242+68 GEN		622
	244+04 GWX	-	246+04 GWX		822
	318+36 WEX	-	320+36 WEX		622
	320+32 WVN	-	322+32 WVN		622
TOTAL 0010					11,709

REMOVING ASPHALTIC SURFACE MILLING					
CATEGORY	STATION	TO	STATION	LOCATION	204.0120 SY
0010	195+59 EB	-	196+19 EB		325
	202+87 EB	-	204+58 EB		646
	241+11 EB	-	274+36 EB		14,853
	274+36 EB	-	283+00 EB		4,470
	283+00 EB	-	324+74 EB		19,103
0010	194+52 WB	-	195+12 WB		325
	201+80 WB	-	202+40 WB		441
	240+19 WB	-	273+56 WB		16,398
	273+56 WB	-	282+28 WB		5,454
	282+28 WB	-	323+58 WB		25,877
0010	242+68 GEN	-	257+57 GEN		4,882
	246+04 GWX	-	254+61 GWX		2,533
	313+96 WEX	-	318+36 WEX		1,233
	312+80 WVN	-	320+32 WVN		2,307
TOTAL 0010					98,848

DELINEATOR ITEMS					
CATEGORY	LOCATION	204.0180 REMOVING DELINEATORS AND MARKERS EACH	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS (WHITE) EACH	(YELLOW) EACH
0010	EB MAINLINE AND RAMPS	65	80	78	3
	WB MAINLINE AND RAMPS	35	60	58	3
TOTAL 0010		100	140	142	

EARTHWORK										
CATEGORY	STAGE	STATION	TO	STATION	LOCATION	(1)	(2)	(3)	(4)	
						205.0100 EXCAVATION COMMON CY	UNEXPANDED FILL CY	EXPANDED (FACTOR = 1.25) CY	FILL MASS ORDINATE BALANCE CY	
0010	1	194+97	EB -	204+58	EB	922	60	75	847	
TOTAL 0010						922	60	75	847	
0020	2	241+11	EB -	275+00	EB	870	0	0	870	
TOTAL 0020						870	0	0	870	
PROJECT TOTAL						1792	60	75	1717	
COLUMN (3) = COLUMN (2) X 1.25										
COLUMN (4) = COLUMN (1) - COLUMN (3)										

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PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS						
CATEGORY	STATION	TO	STATION	LOCATION	211.0400 STA	
0010	251+00	EB -	255+00	EB	LT	4
	263+00	EB -	267+00	EB	LT	4
	194+52	WB -	200+44	WB	LT	6
	241+25	WB -	258+75	WB	RT	18
TOTAL 0010						32

BASE COURSE ITEMS						
CATEGORY	STATION TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0130 BASE AGGREGATE DENSE 3-INCH TON
0010	195+51 -	204+58	EB & WB	250 225	1,460 -	156 -
TOTAL 0010				475	1,460	156
0020	229+00 -	235+00	EB LT	90	-	-
	242+50 -	274+34	EB LT	160	2,250	-
TOTAL 0020				250	2,250	0

SHAPING SHOULDERS					
CATEGORY	STATION	TO	STATION	LOCATION	305.0500 STA
0010	196+00	EB			1
	203+00	EB -	204+00	EB	2
	233+29	EB -	235+29	EB	2
	241+08	EB -	249+00	EB	8
	258+00	EB -	324+74	EB	67
	195+00	WB			1
	202+00	WB			1
	233+18	WB -	235+18	WB	2
	241+31	WB -	248+00	WB	7
	255+00	WB -	323+58	WB	69
	240+69	GEN -	258+00	GEN	18
	244+04	GWX -	255+00	GWX	11
	310+00	WEX -	320+40	WEX	11
	303+00	WWN -	322+32	WWN	20
TOTAL 0010					220

BASE PATCHING ITEMS										
CATEGORY	STATION	TO	STATION	LOCATION	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	SPV.0090.01 CONCRETE JOINT AND CRACK CLEANING AND REPAIR LF	SPV.0180.01 CONCRETE PAVEMENT REPAIR OVERNIGHT SY	SPV.0180.02 CONCRETE PAVEMENT REPLACEMENT OVERNIGHT SY	SPV.0180.03 BASE PATCHING CONCRETE OVERNIGHT SY
0010	195+59	EB -	198+19	EB	RT	24	264	-	-	180
	200+57	EB -	203+48	EB	RT	-	484	-	-	280
	233+49	EB -	246+90	EB	RT	-	1,276	-	-	480
	320+37	EB -	322+13	EB	RT	-	616	-	-	224
	194+52	WB -	202+40	WB	LT	14	528	-	-	252
	233+98	WB -	243+94	WB	LT	-	1,188	-	-	460
	319+94	WB -	322+50	WB	LT	-	748	-	-	272
	239+58	GWN -	241+75	GWN		-	-	628	-	-
	239+69	GWX -	241+69	GWX		32	132	978	34	197
	319+17	WEX -	319+82	WEX		-	56	-	-	20
	321+19	WWN				-	28	-	-	17
TOTAL 0010					70	5,320	1,606	34	197	2,185

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ASPHALTIC ITEMS								
CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.7224	460.7424	
					TACK COAT GAL	HMA PAVEMENT 4 HT 58-28 S TON	HMA PAVEMENT 4 HT 58-28 H TON	
0010	195+59	EB	-	204+58	EB	737	740	409
	233+29	EB	-	235+29	EB	59	-	106
	241+11	EB	-	274+36	EB	1099	-	1796
	274+36	EB	-	283+00	EB	313	-	563
	283+00	EB	-	324+74	EB	1431	-	2575
	194+52	WB	-	202+40	WB	680	669	396
	233+10	WB	-	235+10	WB	59	-	106
	241+11	WB	-	273+56	WB	1206	-	2172
	273+56	WB	-	282+28	WB	382	-	687
	282+28	WB	-	323+58	WB	1905	-	3429
	240+69	GEN	-	257+57	GEN	385	-	693
	244+04	GWX	-	254+61	GWX	233	-	420
	313+96	WEX	-	320+40	WEX	125	-	224
	312+80	WWN	-	322+32	WWN	200	-	361
	TOTAL 0010				8814	1409	13937	
0020	241+80	EB	-	274+36	EB	-	-	182
TOTAL 0020					0	0	182	

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PWL ITEMS						
CATEGORY	LOCATION	460.0105.S	460.0110.S	460.2000	460.2005	460.2010
		HMA PWL TEST STRIP VOLUMETRICS EACH	HMA PWL TEST STRIP DENSITY EACH	DENSITY HMA INCENTIVE PAVEMENT DOL	DENSITY INCENTIVE PWL HMA PAVEMENT DOL	INCENTIVE AIR VOIDS HMA PAVEMENT DOL
0010	PROJECT	1	1	902	7,222	14,119
TOTAL 0010		1	1	902	7,222	14,119
ASPHALTIC SHOULDER RUMBLE STRIPS						
CATEGORY	STATION	TO	STATION	LOCATION	465.0400	
					LF	
0010	195+59	EB	-	204+58	EB	1,800
0010	233+29	EB	-	235+29	EB	400
0010	241+25	EB	-	324+42	EB	15,517
0010	194+52	WB	-	202+40	WB	1,576
0010	233+10	WB	-	235+10	WB	400
0010	240+50	WB	-	323+58	WB	15,801
TOTAL 0010					35,494	

INCENTIVE DENSITY HMA PAVEMENT LONGITUDINAL JOINTS		
CATEGORY	LOCATION	460.2007 DOL
0010	PROJECT	11,407
TOTAL 0010		11,407

CONCRETE CURB & GUTTER 30-INCH TYPE A				
CATEGORY	STATION	TO	STATION	601.0409 LF
0010	241+37	GWX	- 241+40	GWX 3
TOTAL 0010				3

SLOPE PAVING CRUSHED AGGREGATE				
CATEGORY	STATION	TO	STATION	604.0500 SY
0010	198+00	-	200+50	555
TOTAL 0010				555

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GUARDRAIL ITEMS											
				613.1100.S	613.1200.S	614.0230	614.0400	614.2300	614.2500	SPV.0090.03	
				CABLE	CABLE BARRIER	STEEL	ADJUSTING		MGS	MGS THRIE	SALVAGE
				BARRIER	END TERMINAL	THRIE	STEEL PLATE		GUARDRAIL 3	BEAM	AND
				TYPE 1	TYPE 1	BEAM	BEAM GUARD			TRANSITION	REINSTALL
CATEGORY	STATION	TO	STATION	LOCATION	LF	EACH	LF	LF	LF	LF	GUARDRAIL
0010	199+80 WB	-	201+80 WB	LT	-	-	-	200	-	-	-
TOTAL 0010					0	0	0	200	0	0	0
0020	179+63 EB	-	196+06 EB	LT	1,532	2	-	-	-	-	-
	196+60 EB	-	198+38 EB	LT/BULLNOSE	-	-	250	-	-	-	137.5
	200+18 EB	-	238+44 EB	LT	3,712	2	-	-	-	-	-
	241+08 EB	-	252+24 EB	LT	-	-	-	-	1,075.0	39.4	-
	252+24 EB	-	264+74 EB	LT	-	-	-	-	1,062.5	-	188.0
	264+74 EB	-	266+61 EB	LT	-	-	-	-	-	-	188.0
	266+61 EB	-	274+97 EB	LT	-	-	-	-	837.5	-	-
	274+97 EB	-	275+50 EB	LT	-	-	-	50	-	-	-
	240+19 WB	-	242+08 WB	RT	-	-	-	25	125.0	39.4	-
	TOTAL 0020				5,244	4	250	75	3,100	78.8	513.5

WATER		
CATEGORY	LOCATION	624.0100 MGAL
0010	PROJECT	15
TOTAL 0010		15
0020	PROJECT	15
TOTAL 0020		15

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LANDSCAPING ITEMS								
					625.0500	629.0210	630.0130	630.0200
					SALVAGED	FERTILIZER	SEEDING	
					TOPSOIL	TYPE B	MIXTURE	SEEDING
CATEGORY	STATION	TO	STATION	LOCATION	SY	CWT	NO. 30	TEMPORARY
							LB	LB
0010	195+59 EB	-	204+59 EB		2280	2.0	54	28
	195+12 WB	-	201+80 WB		-	0.3	7	3
	UNDISTRIBUTED				250	1.0	20	10
TOTAL 0010					2530	3.3	81	41
0020	229+00 EB	-	235+00 EB	LT	-	0.5	15	7
	241+80 EB	-	274+36 EB	LT	-	1.3	36	18
TOTAL 0020					0	1.8	51	25

EROSION CONTROL MOBILIZATION						
				628.1905	628.1910	
				MOBILIZATIONS	MOBILIZATIONS	
				EROSION	EMERGENCY	
				CONTROL	EROSION CONTROL	
CATEGORY	STATION	TO	STATION	LOCATION	LF	EACH
0010	195+51	-	204+58	EB	1	1
	241+80	-	274+36	EB	1	1
TOTAL 0010					2	2

EROSION CONTROL ITEMS									
					628.1504	628.1520	628.2004	628.7005	628.7504
					SILT	SILT FENCE	EROSION MAT	INLET	TEMPORARY
					FENCE	MAINTENANCE	CLASS I	PROTECTION	DITCH
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	TYPE B	TYPE A	CHECKS
					LF	LF	SY	EACH	LF
0010	195+59 EB	-	199+00 EB	RT	-	-	1200	-	-
	200+18 EB	-	204+59 EB	RT	-	-	1080	-	-
	UNDISTRIBUTED			PROJECT	200	200	500	-	50
TOTAL 0010					200	200	2780	0	50
0020	242+00 EB	-	256+74 EB	LT	-	-	-	-	126
	250+59 EB			LT	-	-	-	1	-
	256+74 EB	-	272+49 EB	LT	-	-	-	-	147
	261+61 EB			LT	-	-	-	1	-
	272+79 EB			LT	-	-	-	1	-
	272+91 EB	-	274+34 EB	LT	-	-	-	-	42
TOTAL 0020					0	0	0	3	315

SIGNING ITEMS												
CATEGORY	NUMBER ON		STATION	LOCATION	SIGN IN	SIZE IN	SIGN PLATE NUMBER	634.0618	634.0622	637.2210	638.2102	638.3000
	PLAN							POSTS WOOD	POSTS WOOD	SIGNS TYPE II	MOVING	REMOVING
								4X6-INCH X 18-FT EACH	4X6-INCH X 22-FT EACH			
0010	1-1	180+00 WB	LT	-	-	-	-	2	-	1	2	
	2-1	194+50 WB	LT	78 x 36	R3-33R	2	-	19.5	-	-		
TOTAL 0010								2	2	19.5	1	2

TRAFFIC CONTROL																				
CATEGORY	STAGE	LOCATION	LENGTH CALENDAR DAYS	643.0300		643.0420		643.0705		643.0715		643.0800		643.0900		643.1050		643.1051		REMARKS
				TRAFFIC CONTROL DRUMS QTY	DAY	BARRICADES TYPE III QTY	DAY	WARNING LIGHTS TYPE A QTY	DAY	WARNING LIGHTS TYPE C QTY	DAY	TRAFFIC CONTROL ARROW BOARDS QTY	DAY	TRAFFIC CONTROL SIGNS QTY	DAY	TRAFFIC CONTROL SIGNS PCMS DAY	TRAFFIC CONTROL SIGNS PCMS DAY	TRAFFIC CONTROL SIGNS PCMS WITH CELLULAR COMMUNICATIONS DAY		
0010	PREWARN	PROJECT	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-			
	1	MAINLINE	19	589	11191	37	703	74	1406	52	988	5	95	61	1159	114	-			
	1	ON RAMP CLOSURES	19	136	2584	17	323	34	646	-	-	-	-	25	475	304	-			
	2	MAINLINE	22	520	11440	34	748	68	1496	76	1672	5	110	58	1276	66	-			
	2	ON RAMP CLOSURES	22	136	2992	17	374	34	748	-	-	-	-	25	550	352	-			
	2	GAMMON RD	3	-	50	-	20	-	-	-	20	-	2	-	32	-	-	INCLUDES SIDEWALK CLOSURE		
TOTAL 0010				28257		2168		4296		2680		207		3492		850		0		
0020	3	EB MAINLINE	10	95	950	5	50	-	-	-	-	2	20	22	220	-	10			
	3	EB ON RAMP CLOSURE	10	47	470	5	50	-	-	-	-	-	-	6	60	40	-			
	3	WB MAINLINE	2	87	174	4	8	-	-	-	-	2	4	17	34	-	-			
	3	WB ON RAMP CLOSURE	2	30	60	4	8	-	-	-	-	-	-	9	18	8	-			
TOTAL 0020				1654		116		0		0		24		332		48		10		

PAVEMENT MARKING ITEMS																					
CATEGORY	LOCATION	646.1020		646.1545		646.1555		646.3020		646.3555		646.5020	646.5120	646.6120	646.7220	646.7420	649.0120			649.0220	
		MARKING LINE		MARKING LINE		MARKING LINE		MARKING LINE		MARKING LINE		MARKING ARROW	WORD EPOXY	MARKING STOP LINE EPOXY 18- INCH	MARKING CHEVRON EPOXY 24-INCH	MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH	TEMPORARY MARKING LINE			TEMPORARY MARKING LINE	
		EPOXY 4-INCH		GROOVED WET REF CONTRAST EPOXY 4-INCH		GROOVED CONTRAST PERMANENT TAPE 4- INCH		LINE EPOXY 8-INCH		GROOVED CONTRAST PERMANENT TAPE 8- INCH							EPOXY 4-INCH			EPOXY 8-INCH	
		WHITE	YELLOW	WHITE	YELLOW	WHITE	WHITE 3'	WHITE	WHITE	WHITE 3'	WHITE						WHITE	WHITE	WHITE	WHITE	WHITE
		LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	LF	LF	LF	LF	LF	LF	LF
0010	EB MAINLINE AND RAMPS	-	-	10,415	10,372	2,437.5	105	-	2,012	255	4	-	24	165	-	12,012	11,972	2,887.5	2,012	255	
	WB MAINLINE AND RAMPS	-	-	9,966	9,994	3,462.5	-	-	2,126	939	2	-	-	108	-	11,441	11,481	3,837.5	2,126	1,233	
	GAMMON RD RAMPS	200	200	-	-	-	-	200	-	-	4	3	26	-	50	-	-	-	-	-	IMPACTED BY CONCRETE WORK
TOTAL 0010		400		40,747		6,005		200		5,332		10	3	50	273	50	53,631			5,626	

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MARKING REMOVAL PLOWABLE RAISED PAVEMENT MARKERS						
CATEGORY	STATION	TO	STATION	LOCATION	646.9400 EACH	
0010	131+90 EB	-	316+40 EB	RT	12	
	313+94 WEX	-	316+34 WEX	LT	12	
TOTAL 0010					24	

SAWING ITEMS							
CATEGORY	STATION	TO	STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	
0010	195+66 EB	-	198+19 EB	RT	-	556	
0010	200+57 EB	-	203+48 EB	RT	-	948	
0010	233+49 EB	-	246+90 EB	RT	-	2,136	
0010	320+37 EB	-	322+13 EB	RT	-	1,008	
0010	195+41 WB	-	202+35 WB	LT	-	954	
0010	195+12 WB	-	199+80 WB	LT	492	-	
0010	233+98 WB	-	243+94 WB	LT	-	1,944	
0010	319+94 WB	-	322+50 WB	LT	-	1,224	
0010	239+58 GWX	-	241+75 GWX		-	500	
0010	319+17 WEX	-	319+82 WEX	LT	-	84	
0010	321+19 WWN			RT	-	50	
TOTAL 0010					492	9,404	

EXPOSE AND REPOSITION EXISTING 6-INCH WRAPPED UNDERDRAIN				
CATEGORY	STATION	LOCATION	SPV.0060.03 EACH	
0010	200+80	EB 50' RT	1	
TOTAL 0010			1	

REPOSITIONING TRAFFIC CONTROL FOR MAINLINE CLOSURES		
CATEGORY	LOCATION	SPV.0060.01 EACH
0010	PROJECT	41
TOTAL 0010		41
0020	PROJECT	10
TOTAL 0020		10

TRAFFIC CONTROL CLOSE-OPEN FREEWAY ENTRANCE RAMP		
CATEGORY	LOCATION	SPV.0060.02 EACH
0010	PROJECT	164
TOTAL 0010		164
0020	PROJECT	12
TOTAL 0020		12

REMOVING HMA PAVEMENT NOTCHED WEDGE LONGITUDINAL JOINT MILLING								
CATEGORY	STATION	TO	STATION	LOCATION	SPV.0090.02 LF	REMARKS		
0010	196+19 EB	-	202+87 EB	CENTERLINE	2,004	THREE LIFTS		
0010	195+12 WB	-	201+80 WB	CENTERLINE	2,004	THREE LIFTS		
TOTAL 0010					4,008			

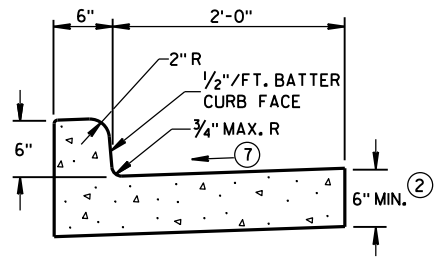
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PWL MIXTURE USE TABLE

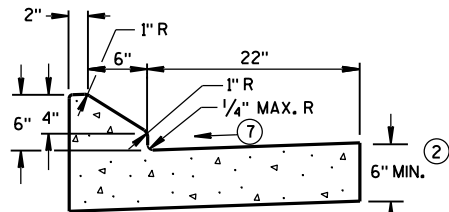
Location	Station	Mixture Use	Underlying Surface	Bid Item	Tons	Thickness	Quality Management Program to be used for	
							Mixture Acceptance	Density Acceptance
Driving Lanes, ramp and shoulder	195+59 EB - 204+58 EB	Lower Layer	Concrete and Base Aggregate 1 1/4 inch	HMA Pavement 4 HT 58-28 S	740	2 lifts @ 1.75"	QMP as per SS 460	Incentive Density HMA Pavement 460.2000
Driving Lanes, ramp and shoulder	194+52 WB - 202+40 WB	Lower Layer	Concrete	HMA Pavement 4 HT 58-28 S	669	2 lifts @ 1.75"	QMP as per SS 460	Incentive Density HMA Pavement 460.2000
Driving Lanes, 2 - 12 foot lanes	195+59 EB - 204+58 EB	Upper Layer	HMA Pavement 4 HT 58-28 S	HMA Pavement 4 HT 58-28 H	235	1.75"	Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Mainline shoulder and ramp	195+59 EB - 204+58 EB	Upper layer	HMA Pavement 4 HT 58-28 S	HMA Pavement 4 HT 58-28 H	174	1.75"	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Driving Lanes, 2 - 12 foot lanes	194+52 WB - 202+40 WB	Upper Layer	HMA Pavement 4 HT 58-28 S	HMA Pavement 4 HT 58-28 H	206	1.75"	Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Mainline shoulder and ramp	194+52 WB - 202+40 WB	Upper Layer	HMA Pavement 4 HT 58-28 S	HMA Pavement 4 HT 58-28 H	190	1.75"	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Driving Lanes, 2 - 12 foot lanes	233+29 EB - 235+29 EB	Upper Layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	106	2.25	Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 2 - 12 foot lanes	233+10 WB - 235+10 WB	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	106	2.25	Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Driving Lanes, 2 - 12 foot lanes	243+10 EB - 322+22 EB	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	2659	2.25	Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Mainline shoulders	241+11 EB - 324+74 EB	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	2457	2.25	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Driving Lanes, 2 - 12 foot lanes	240+60 WB - 323+42 WB	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	3910	2.25	Incentive Air Voids HMA Pavement 460.2010	Incentive Density PWL HMA Pavement 460.2005
Mainline shoulders	240+19 WB - 323+58 WB	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	2378	2.25	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Ramp Lane & shoulders	240+69 GEN - 257+57 GEN	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	693	2.25	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Ramp Lane & shoulders	244+04 GWX - 254+61 GWX	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	420	2.25	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Ramp Lane & shoulders	313+96 WEX - 320+40 WEX	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	224	2.25	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive
Ramp Lane & shoulders	312+80 WWN - 322+32 WWN	Upper layer	Milled existing HMA surface	HMA Pavement 4 HT 58-28 H	361	2.25	Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by the department; Not eligible for incentive

Standard Detail Drawing List

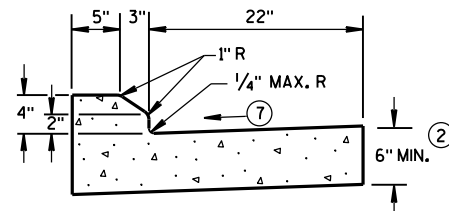
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13C09-15A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C14-07A	BASE PATCHING CONCRETE
13C14-07B	BASE PATCHING CONCRETE
13C14-07C	BASE PATCHING CONCRETE
14B26-03A	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03B	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03C	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03D	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03E	STEEL THRIE BEAM BULLNOSE TERMINAL
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A04-04A	FLEXIBLE DELINEATOR POST
15A04-04B	DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A04-04C	DELINEATOR POST WITH REFLECTIVE SHEETING
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C31-03A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-03C	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D14-03	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D16-03	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



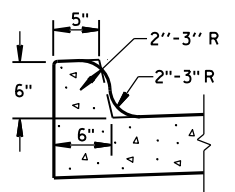
TYPES A^① & D



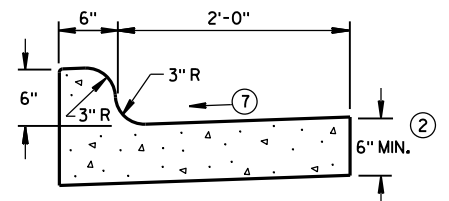
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

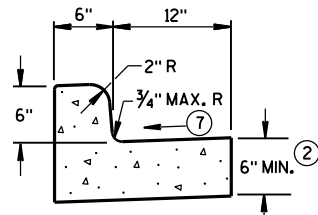


TYPES K^① & L
(OPTIONAL CURB SHAPE)



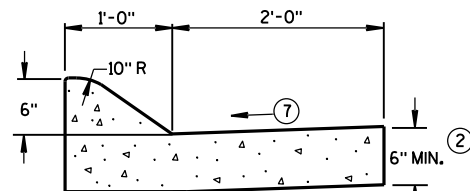
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

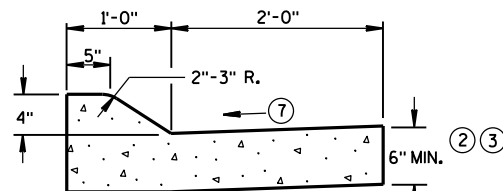


TYPES A^① & D

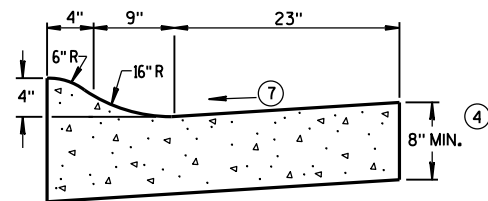
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

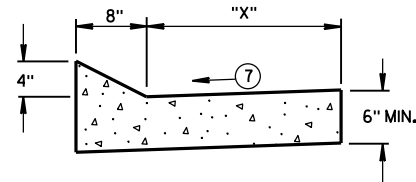


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

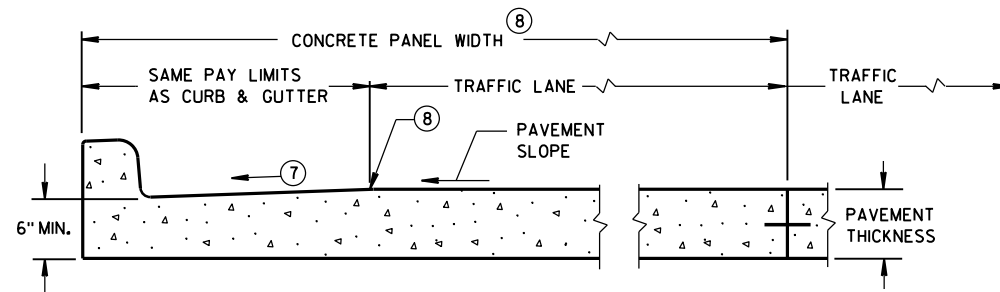
CONCRETE CURB & GUTTER 36"



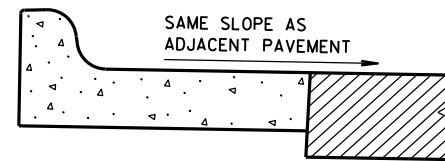
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT^{*}
WITH INTEGRAL CURB & GUTTER



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

GENERAL NOTES

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

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

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

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

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

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

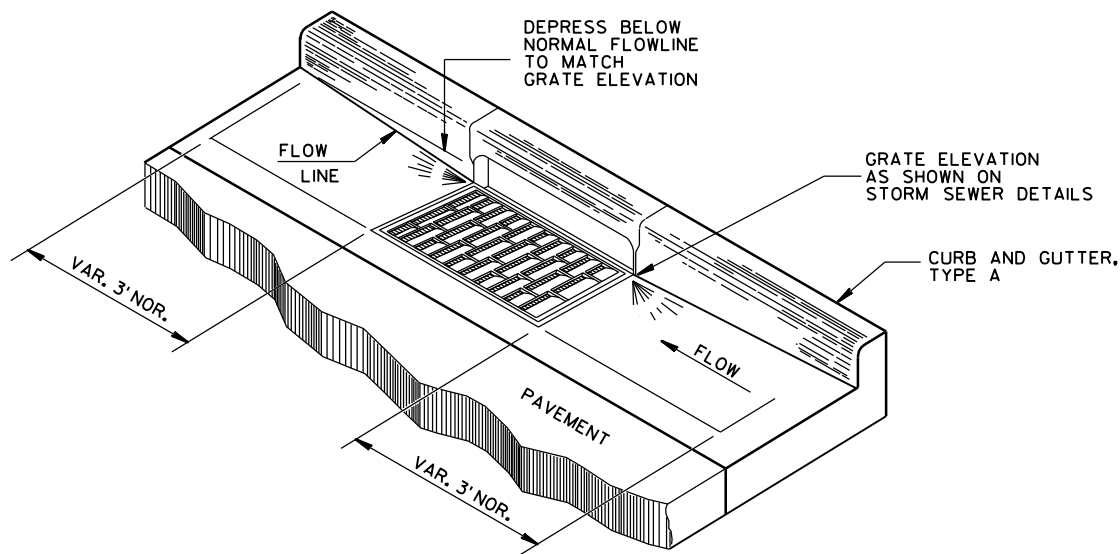
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

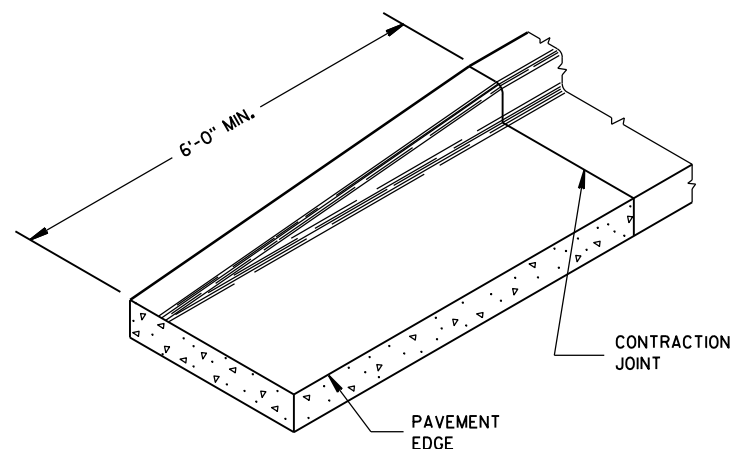
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

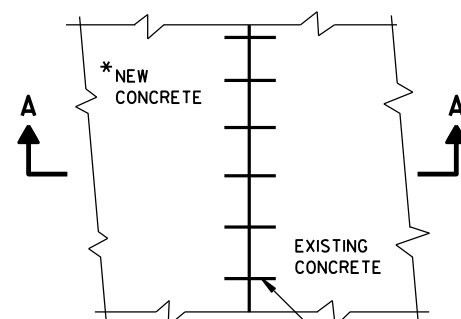
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



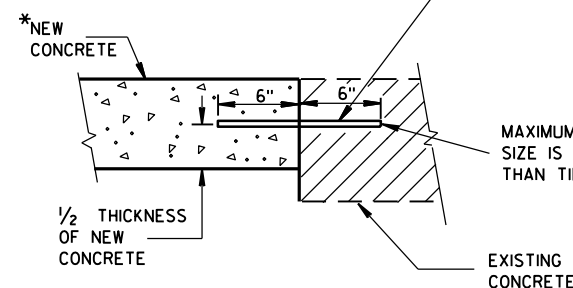
DETAIL OF CURB AND GUTTER AT INLETS
(TYPE H INLET COVER SHOWN)



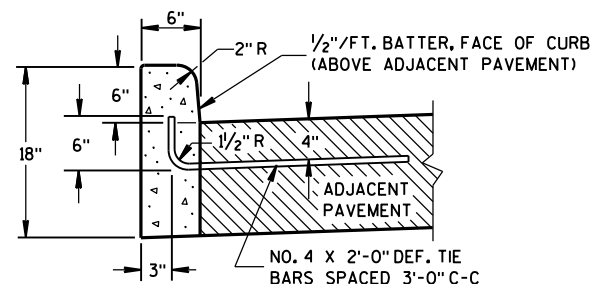
END SECTION CURB & GUTTER



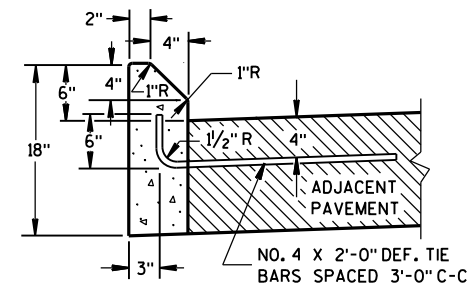
PLAN VIEW



TIE BARS DRILLED
INTO EXISTING PAVEMENT



TYPES A^① & D



TYPES G^① & J

GENERAL NOTES

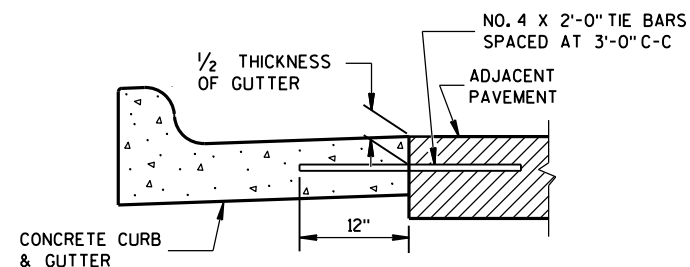
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

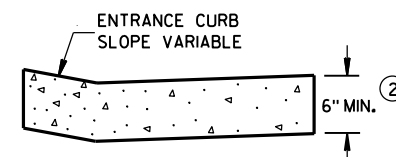
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

CONCRETE CURB

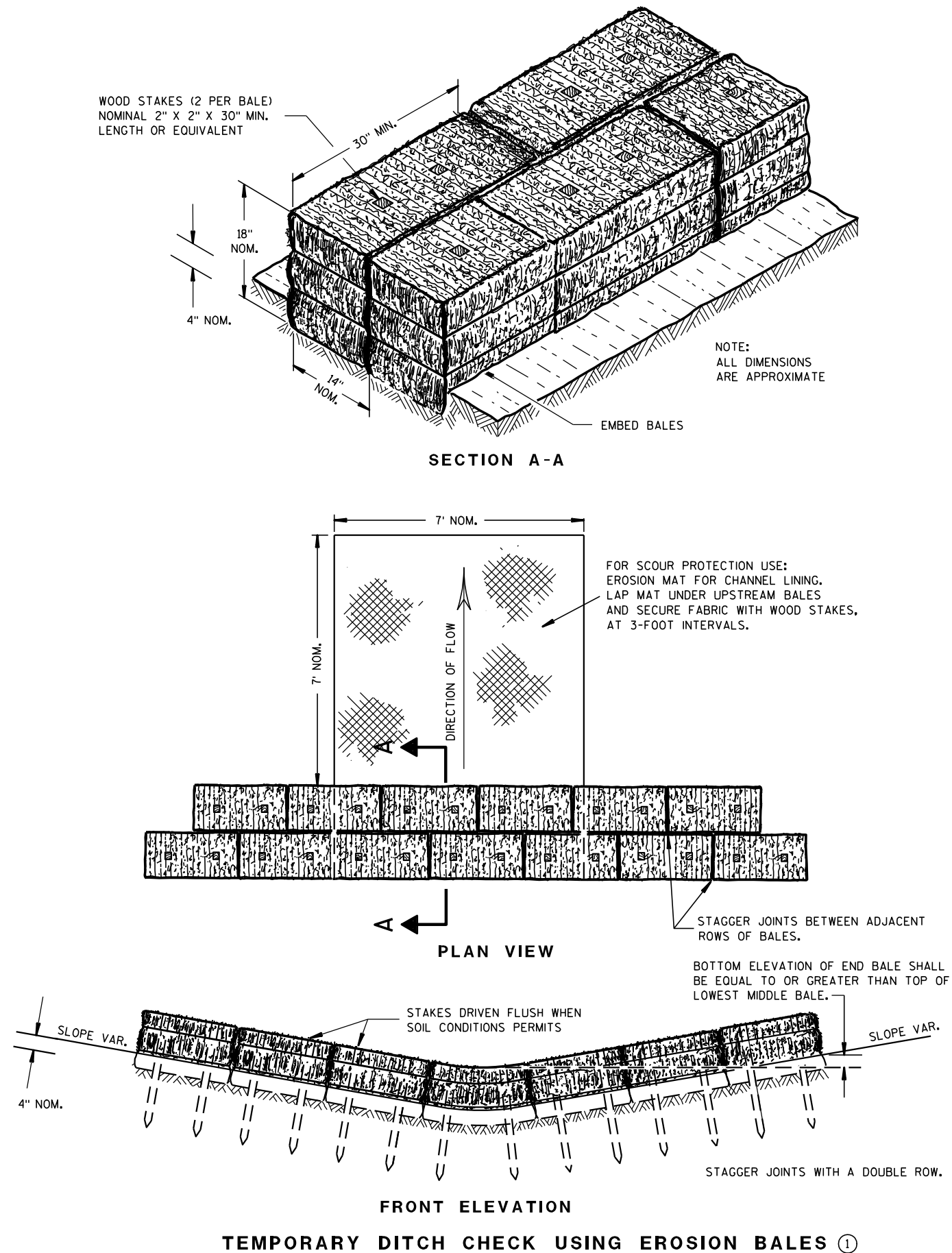


TYPICAL TIE BAR LOCATION^①



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

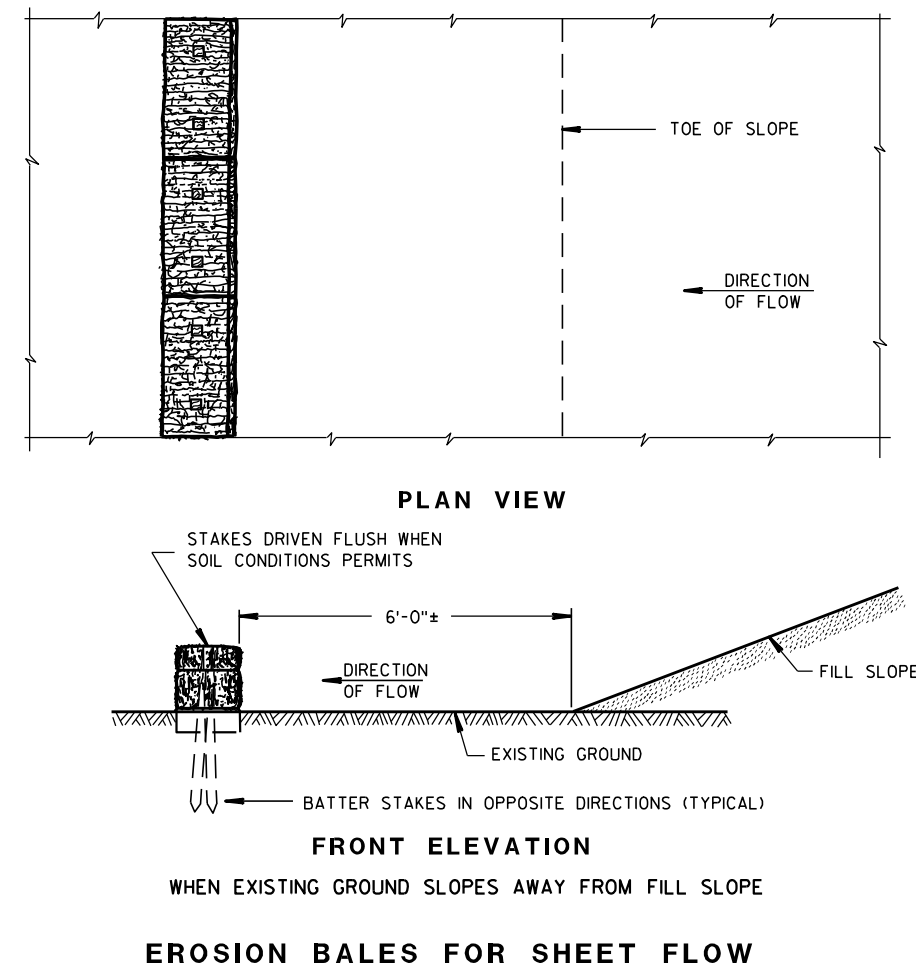
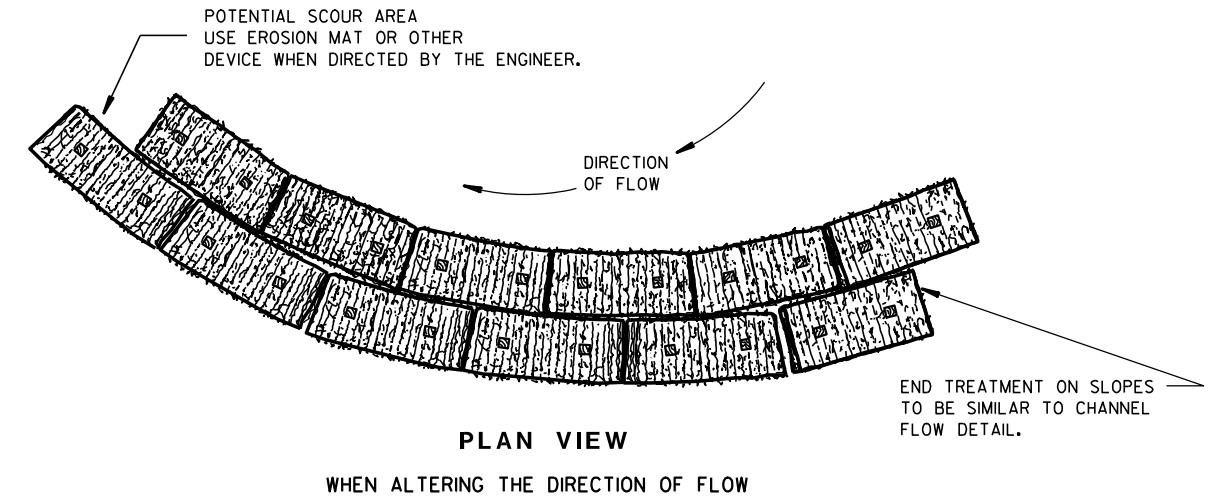
CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June, 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS 135 UNIT SUPERVISOR	ENT	
FHWA			



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

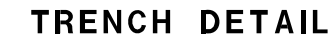
6/04/02
DATE

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOPER 136 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.

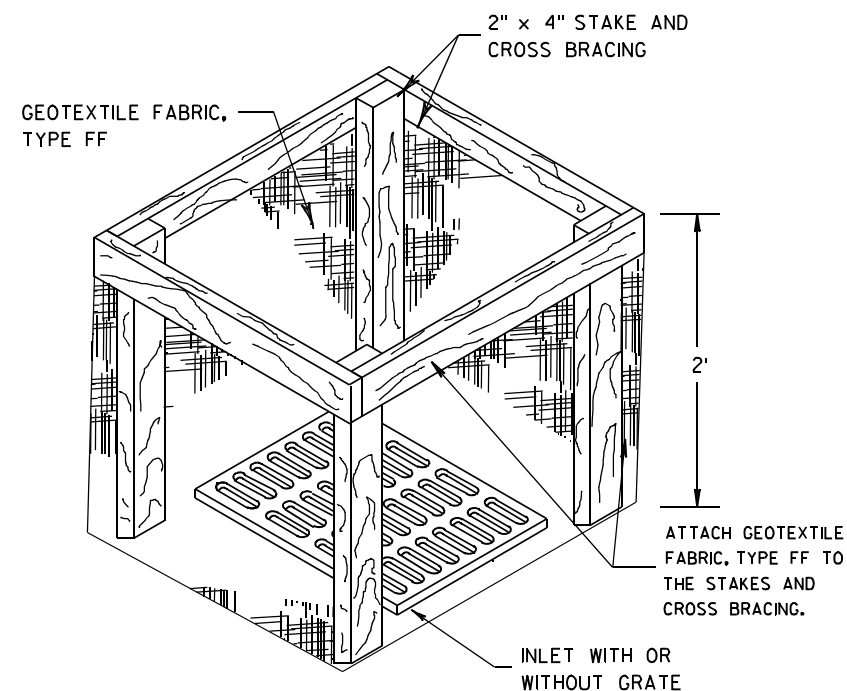
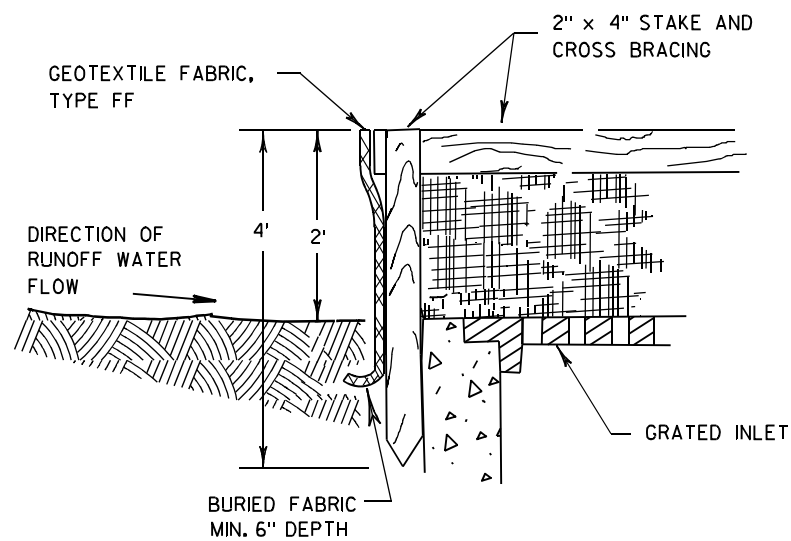


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPMENT 137 JINEER

FHWA



INLET PROTECTION, TYPE A

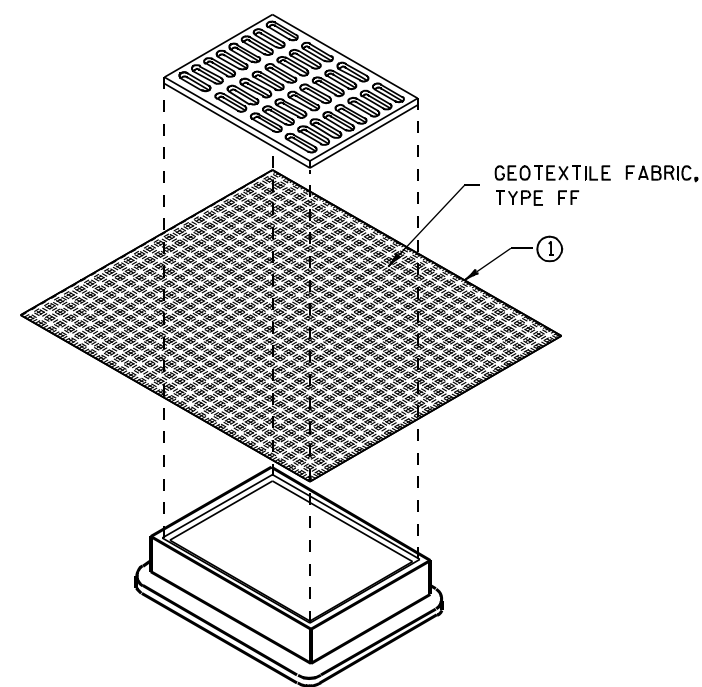
GENERAL NOTES

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.

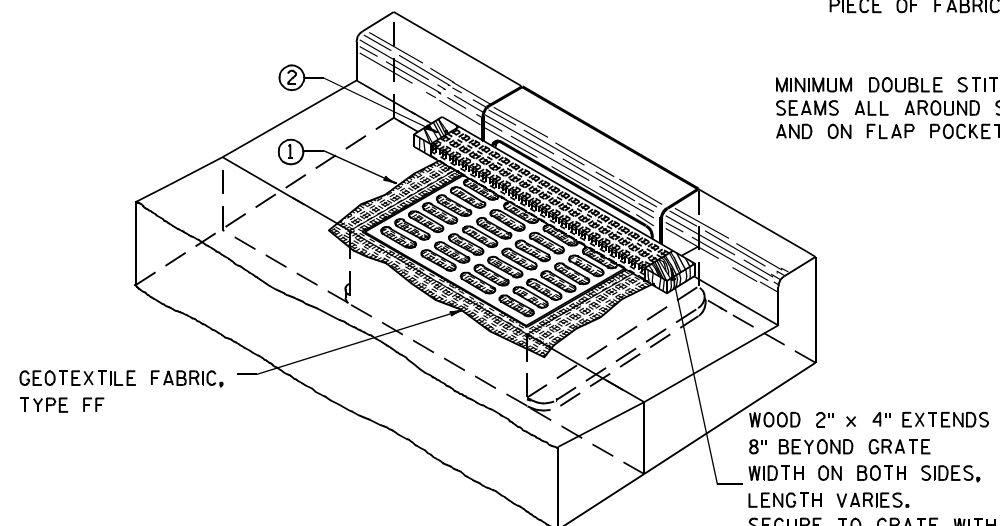
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

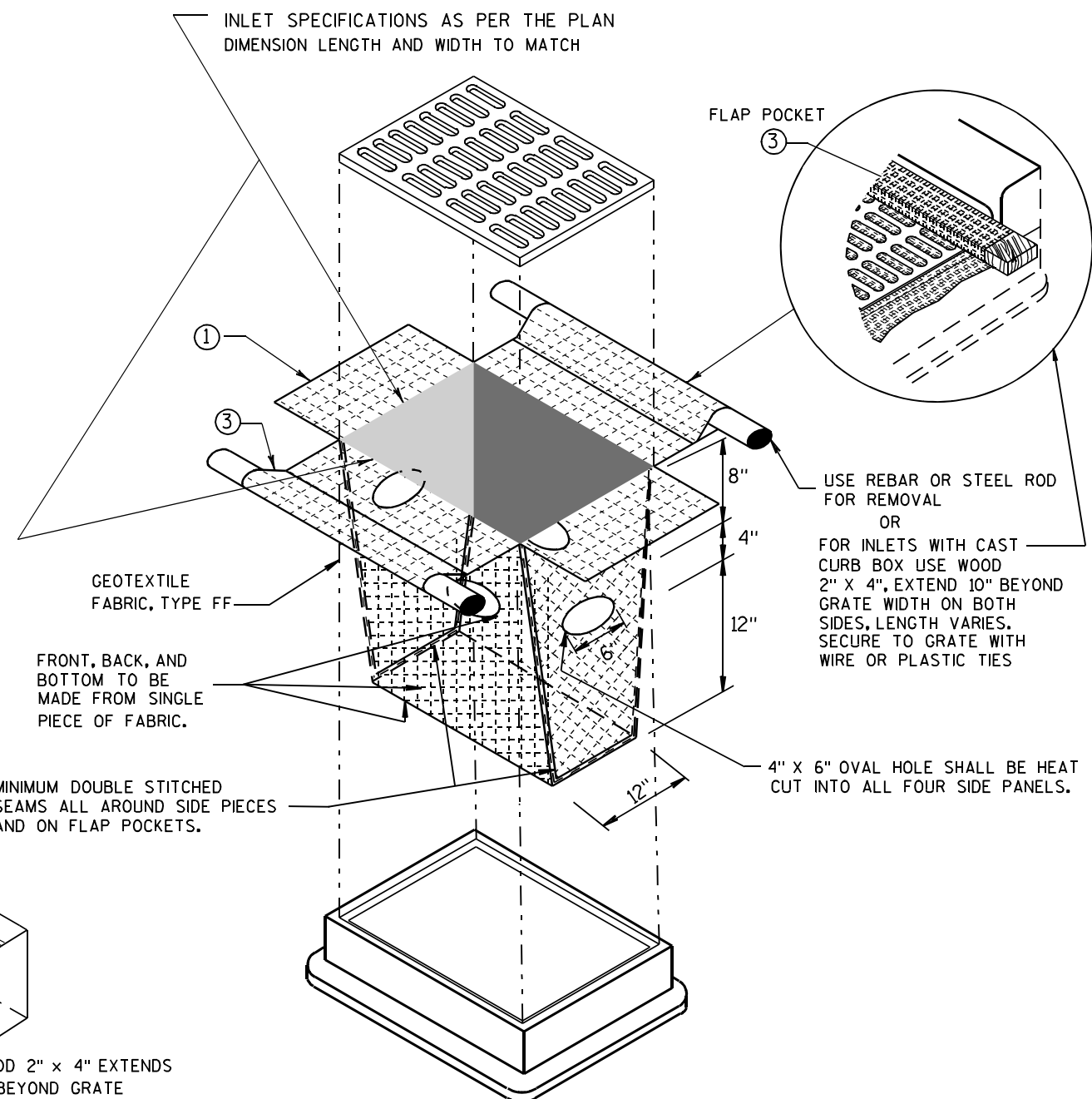
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



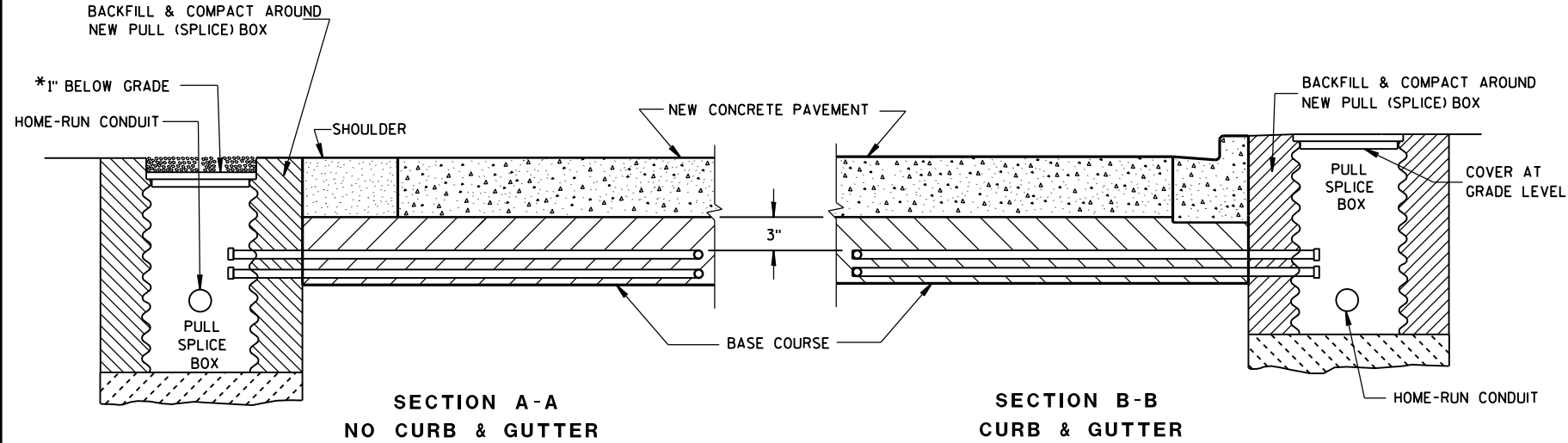
INLET PROTECTION, TYPE D

(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 138
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



*RECESS PULL (SPlice) BOX SO THAT THE COVER IS 3\"/>

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPlice) BOX.

SPICES SHALL BE INSTALLED BY USING CAST IN PLACE SPICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPlicing THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

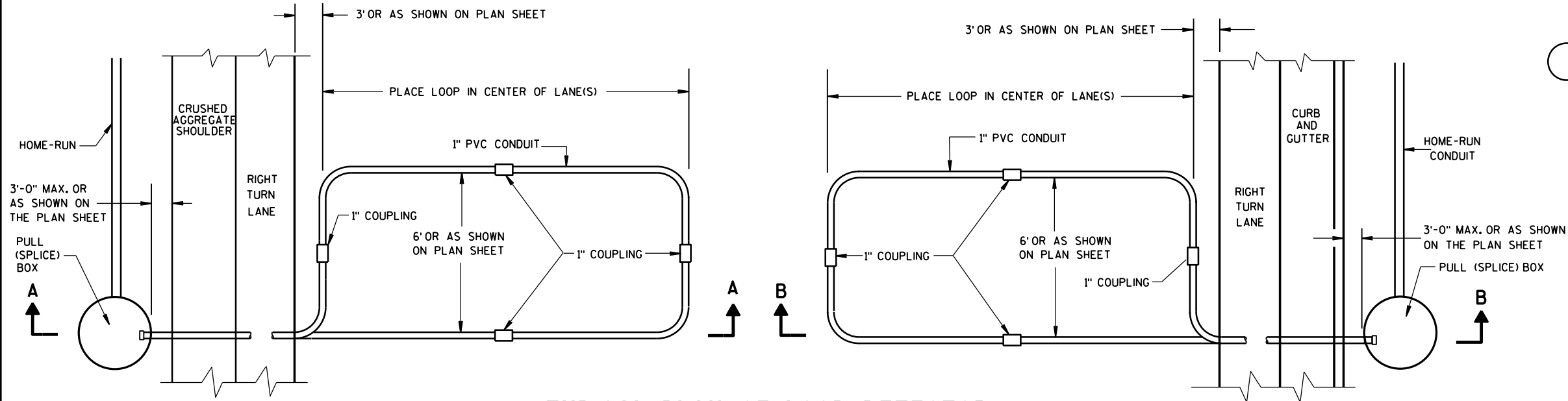
THE #12 AWG. LOOP WIRE IN THE PULL (SPlice) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPliced TO THE LOOP LEAD-IN CABLE.

SPICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPlice) BOXES AT THE SIDE OF THE ROAD.

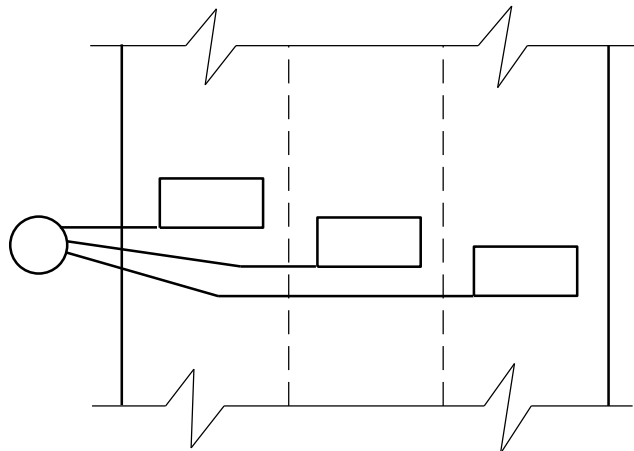
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPlice) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPlice) BOX, AND BE INSTALLED IN ONE, NON-SPliced CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



**TYPICAL PLAN OF LOOP DETECTOR
WITH 24\"/>**

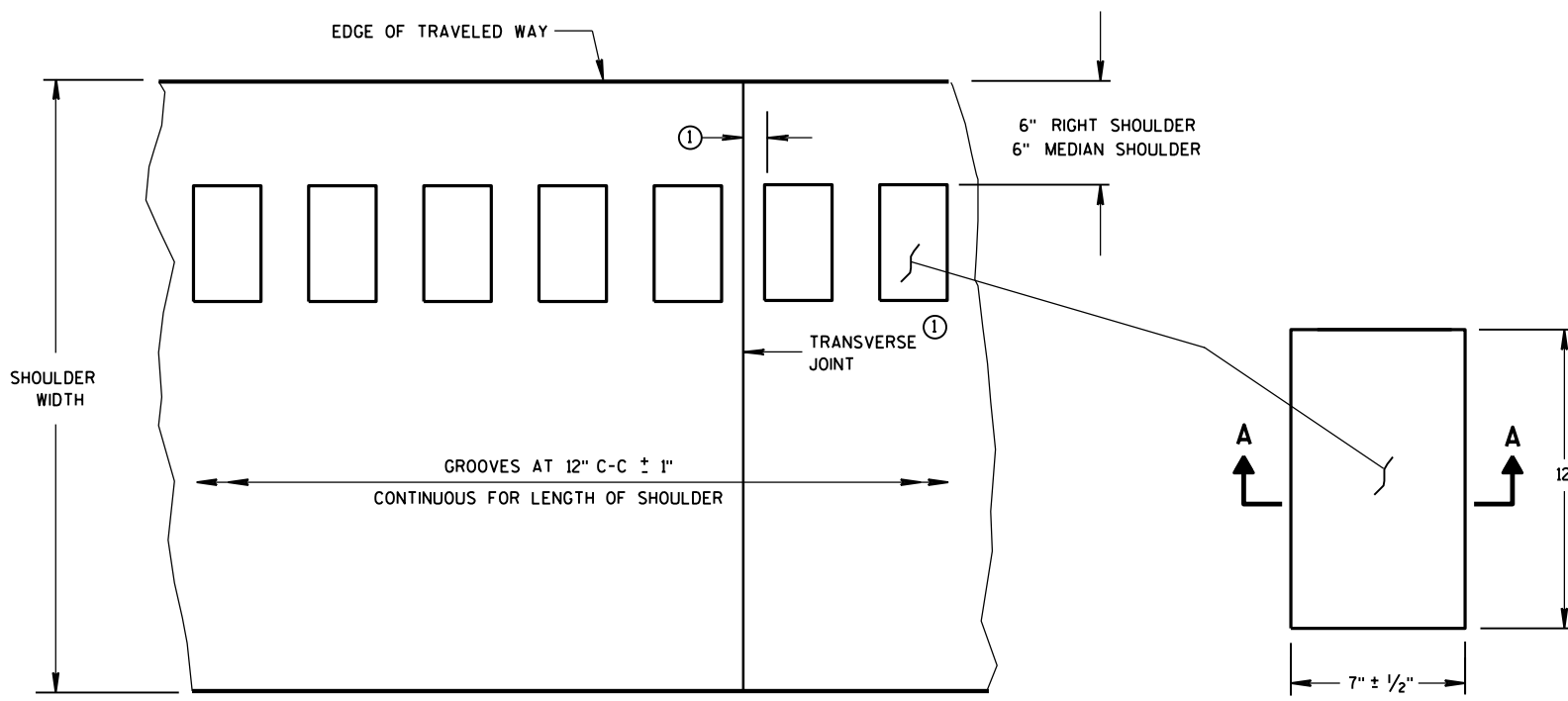


MULTI-LANE INSTALLATION

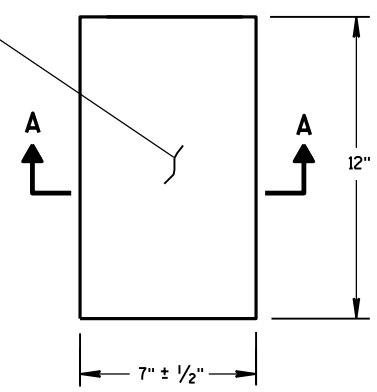
LOOP DETECTOR INSTALLED IN
BASE COURSE WITH PULL (SPlice)
BOX OFF ROADWAY
(OPTION 2)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: Sept. 2014 /S/ Ahmet Demirelek
STATE ELECTRICAL 139
FHWA



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

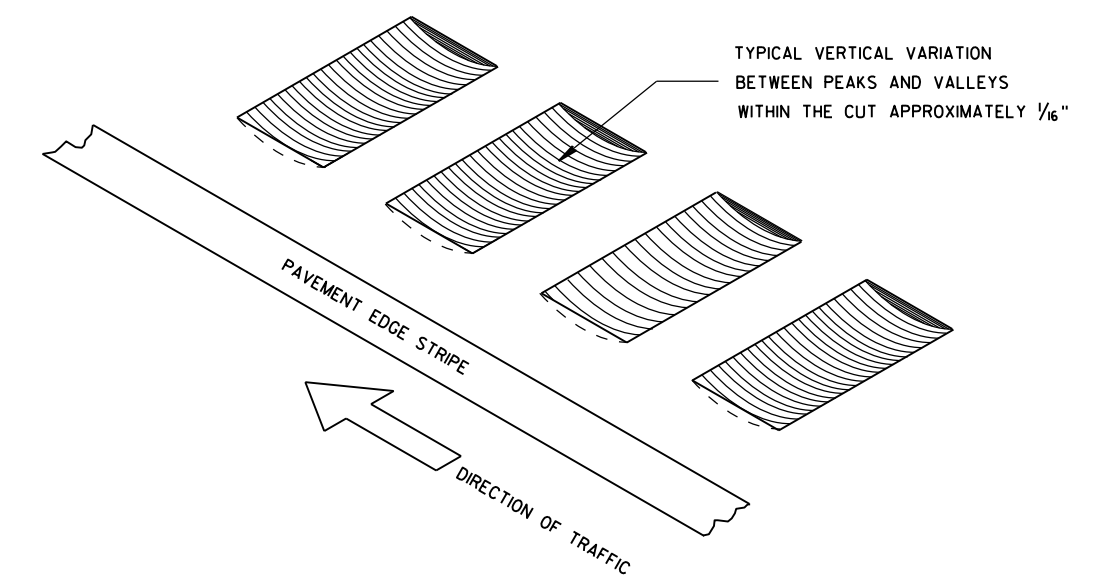
GENERAL NOTES

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

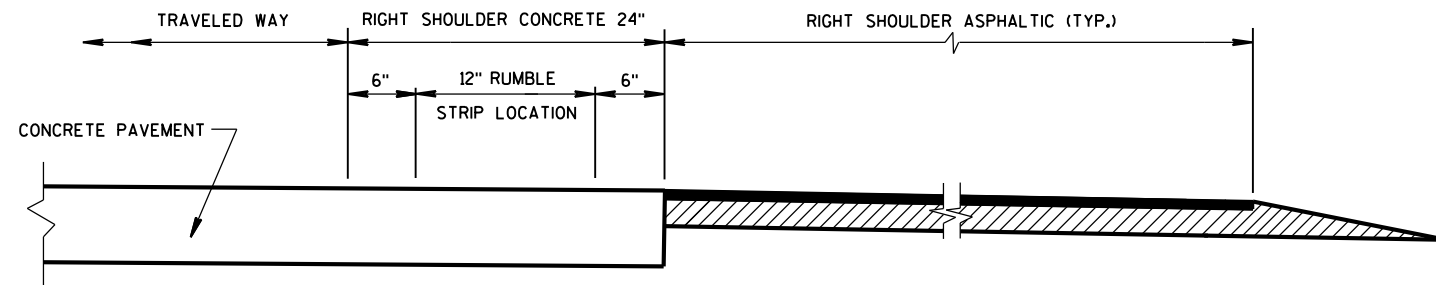
RUMBLE STRIPS ON EXPRESSWAYS

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

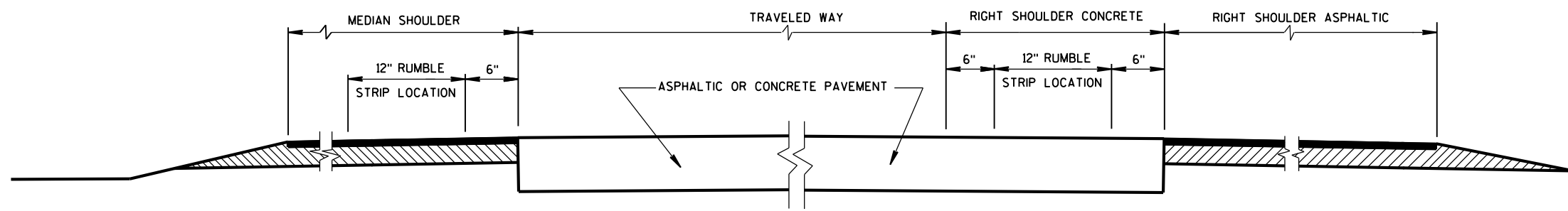
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



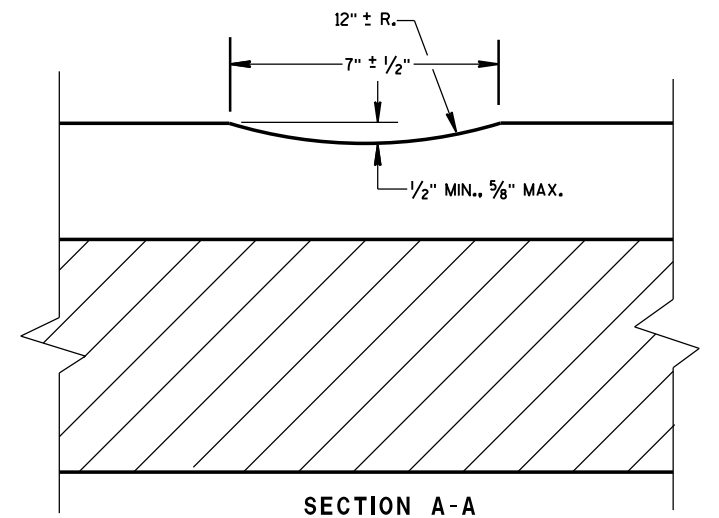
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



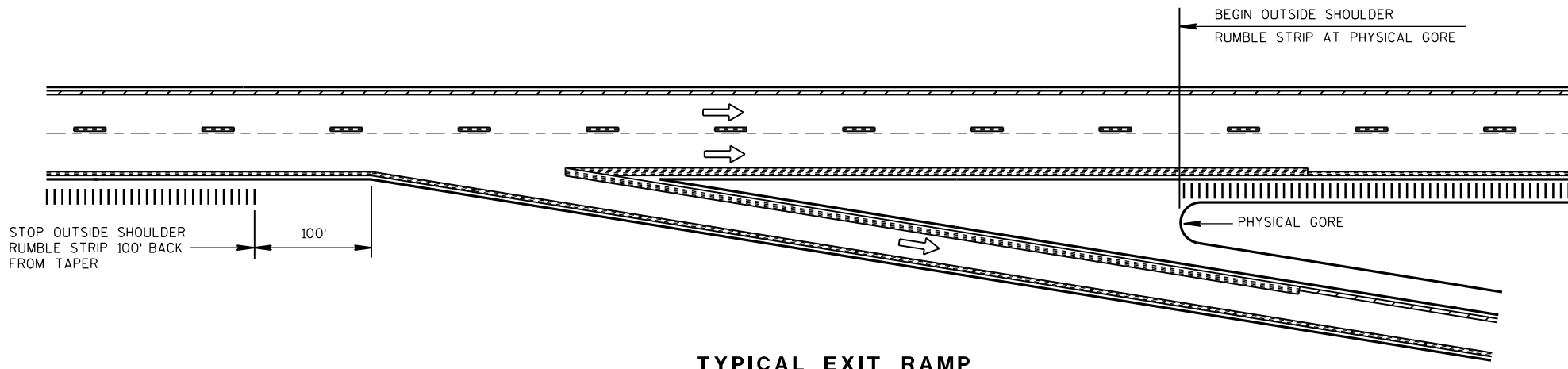
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

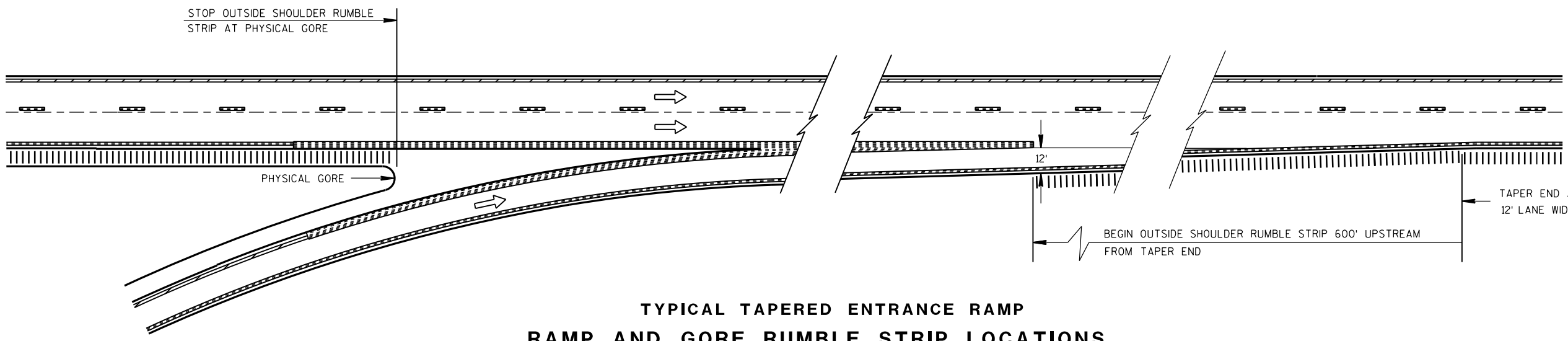
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 140



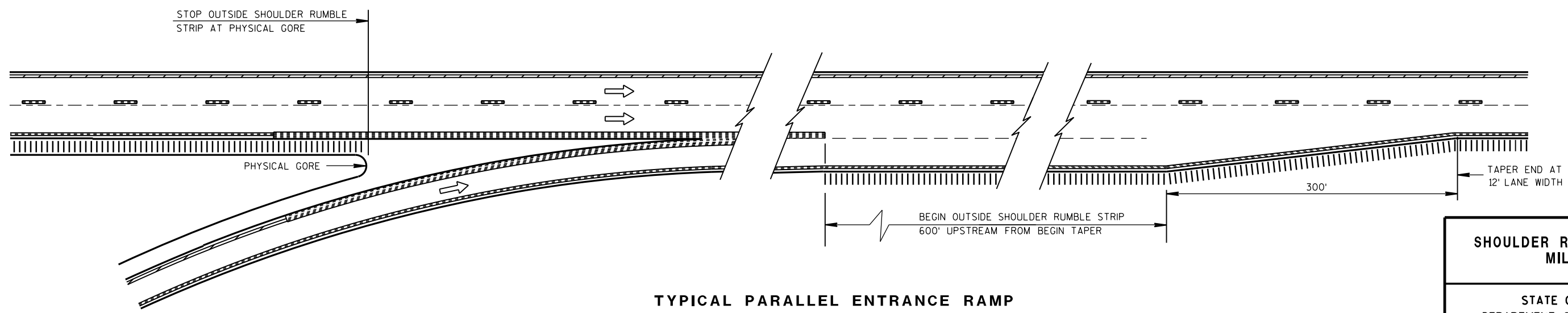
TYPICAL EXIT RAMP

NOTES:
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (➡)
SHOWS DIRECTION OF TRAVEL

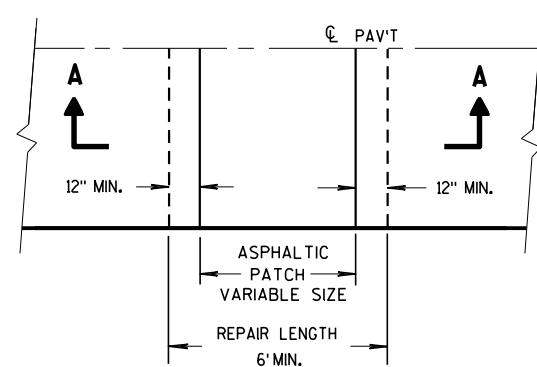


TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS

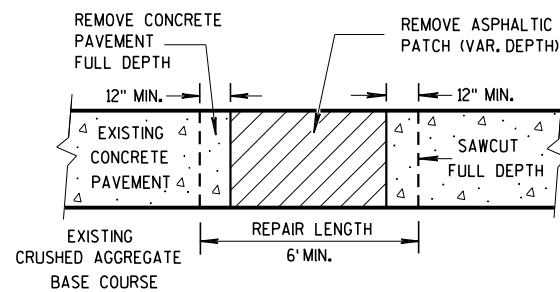


TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIP, MILLING			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
12/17/2012	/S/ Jerry H. Zoagg		
DATE	ROADWAY STANDARDS	141	ENT
FHWA	ENGINEER		

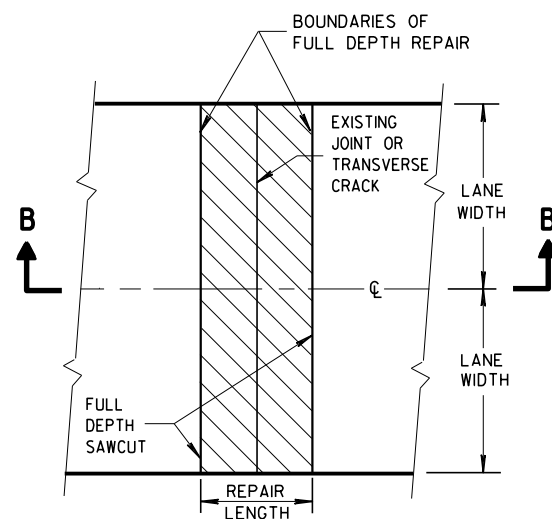
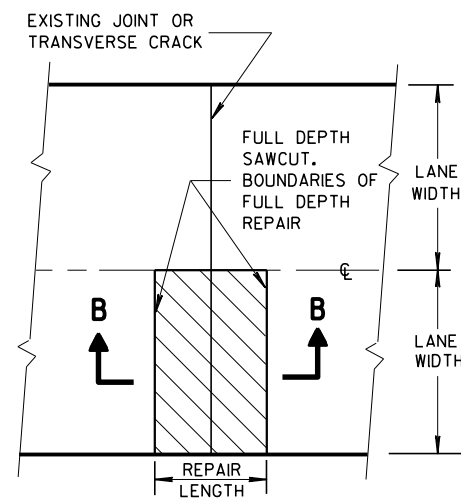


PLAN VIEW



SECTION A-A

HMA PATCH REMOVAL

PLAN VIEW
(DOUBLE LANE REPAIR)PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

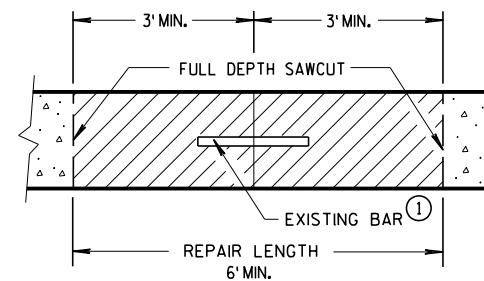
GENERAL NOTES

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 A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

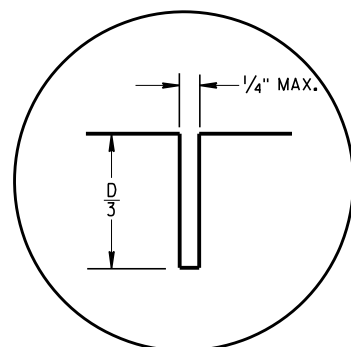
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

① DOWEL BARS MIGHT NOT EXIST.

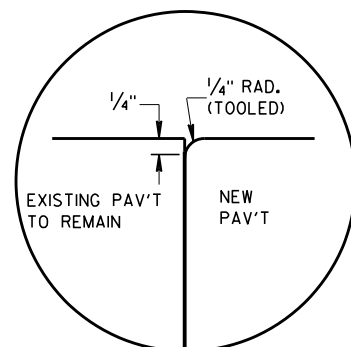
SECTION B-B
CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR
AND REPLACEMENT

STATE OF WISCONSIN¹⁴²
DEPARTMENT OF TRANSPORTATION

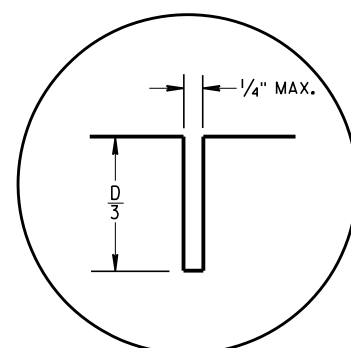


C1

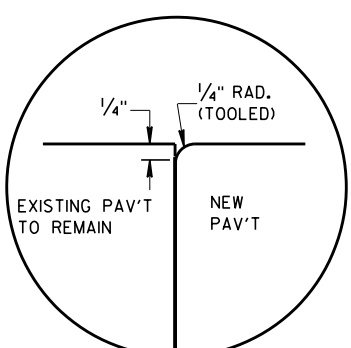


C2

TRANSVERSE JOINTS

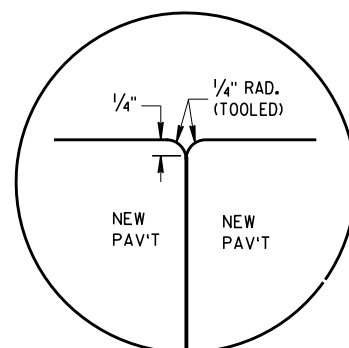


L1



L2

LONGITUDINAL JOINTS



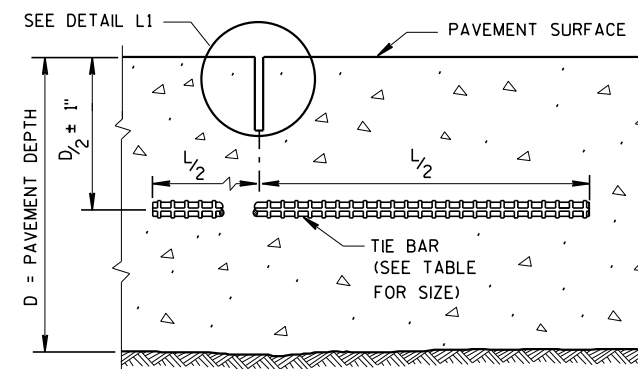
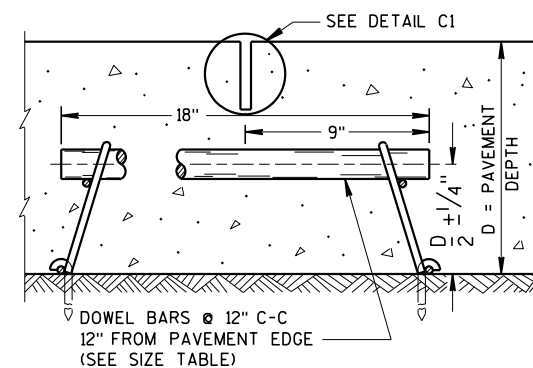
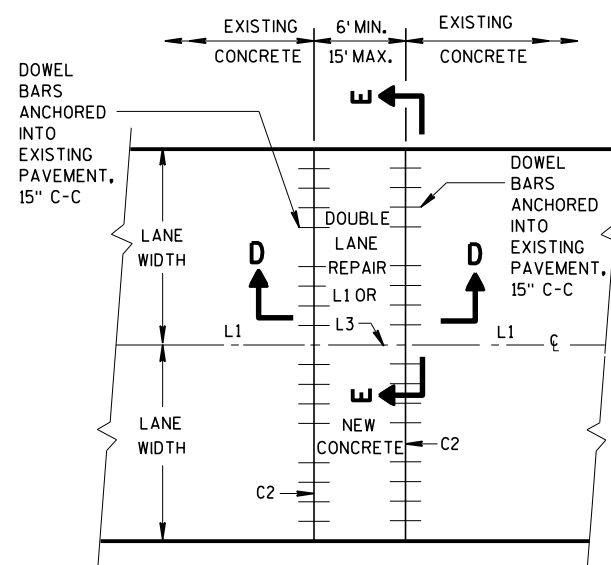
L3

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

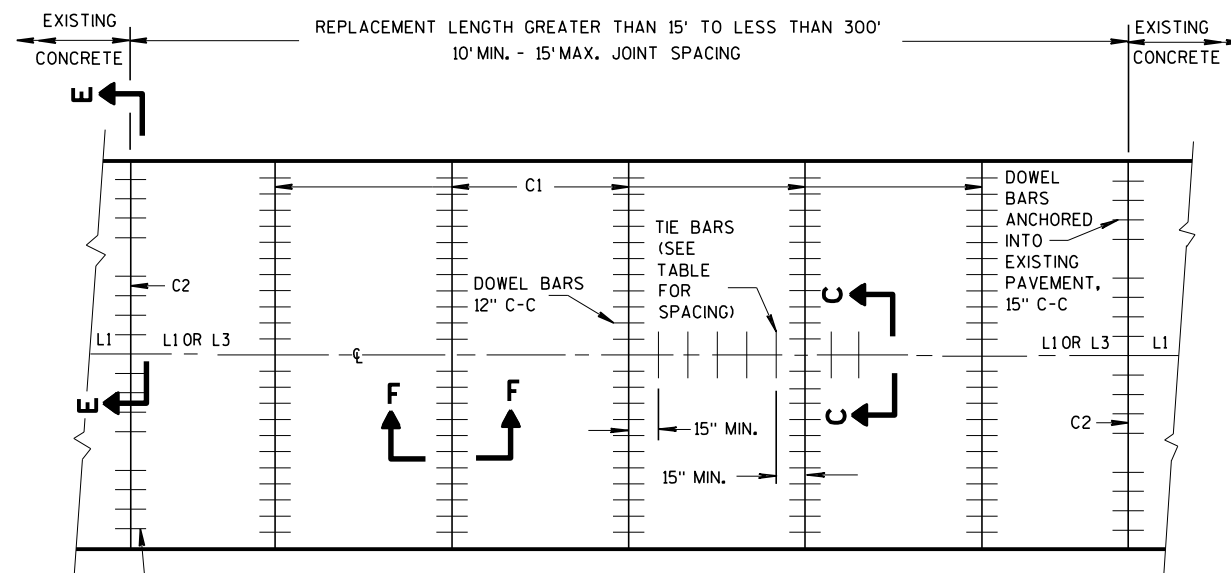
* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

SECTION C-C
SAWED LONGITUDINAL JOINTSECTION F-F
CONTRACTION JOINT

PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

GENERAL NOTES

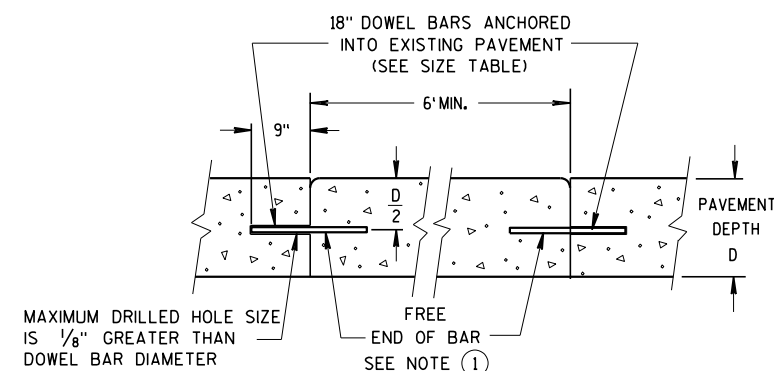
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

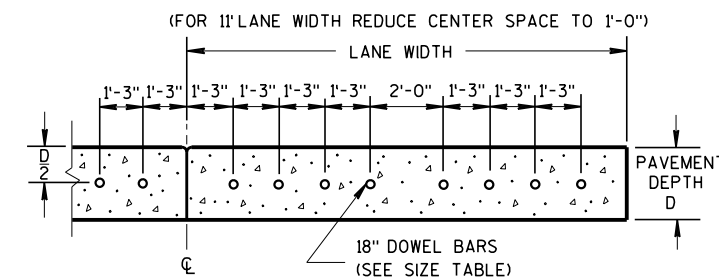
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES 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 D-D

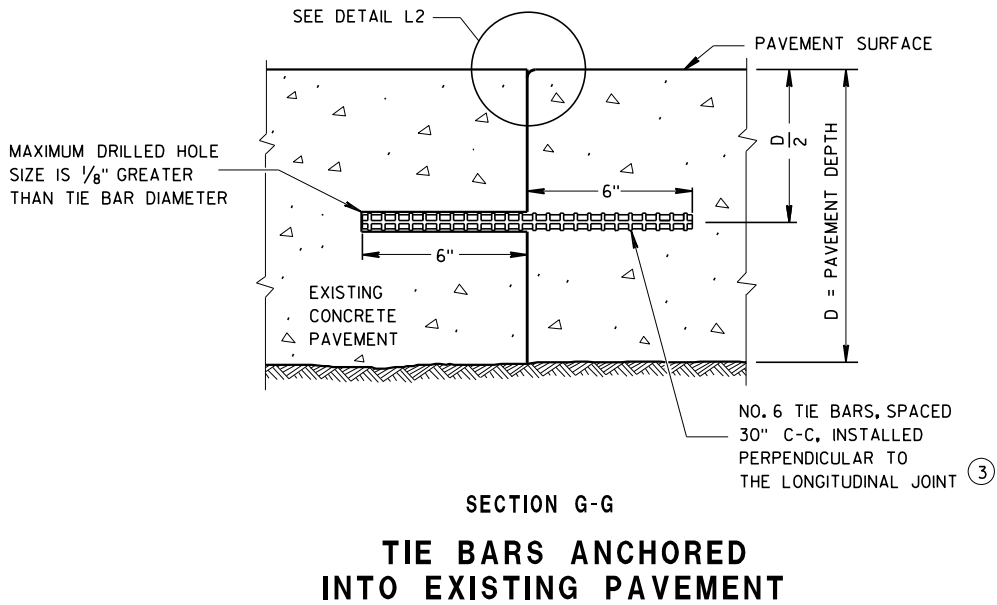
SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	NONE	12'
7", 7 1/2"	1"	1"	14'
8", 8 1/2"	1 1/4"	1 1/4"	15'
9", 9 1/2"	1 1/4"	1 1/4"	15'
10" & ABOVE	1 1/2"	1 1/4"	15'

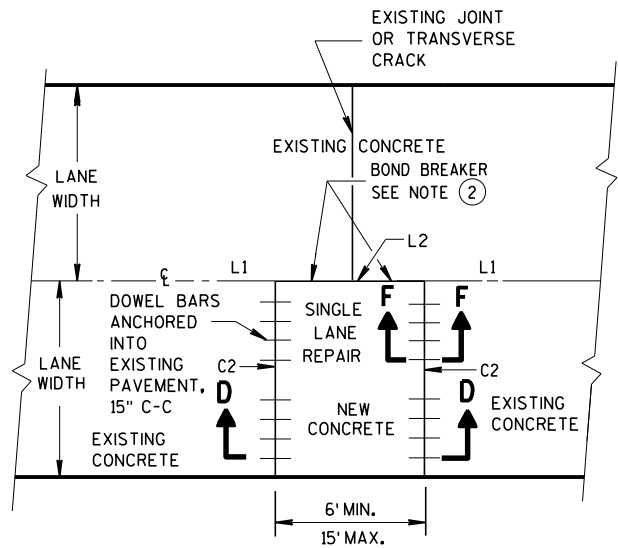
CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

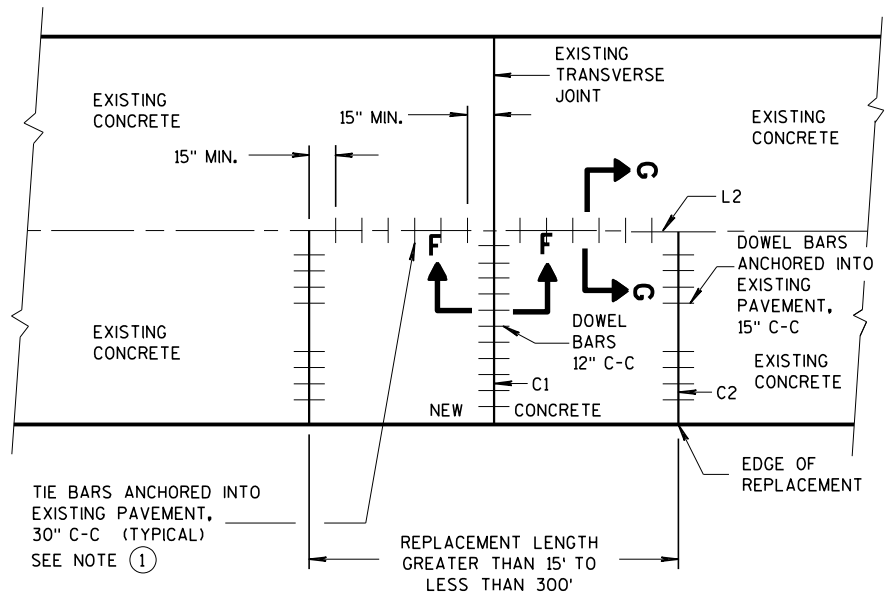


GENERAL NOTES

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS 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.
- ② USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

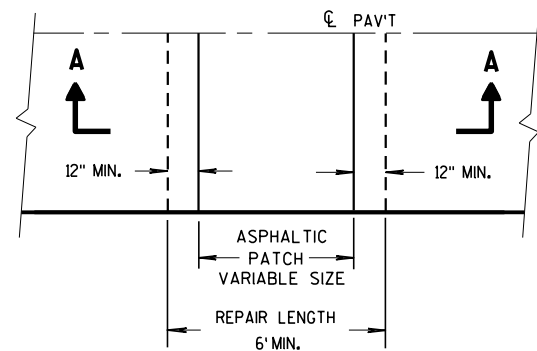


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR

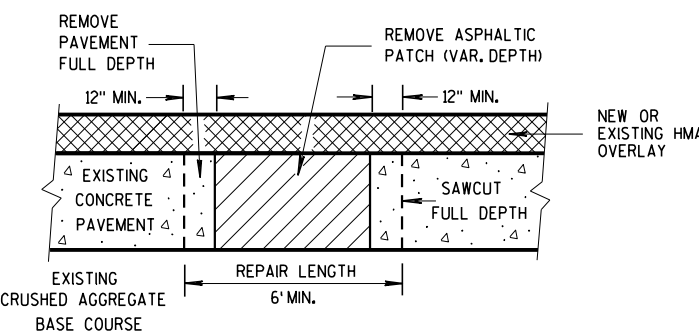


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
March 2018 DATE	/S/ Peter Kenney PAVEMENT SUPERVISOR 144
FHWA	

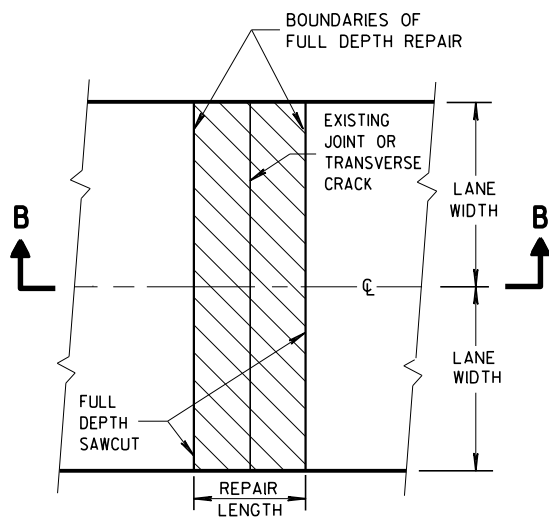


PLAN VIEW

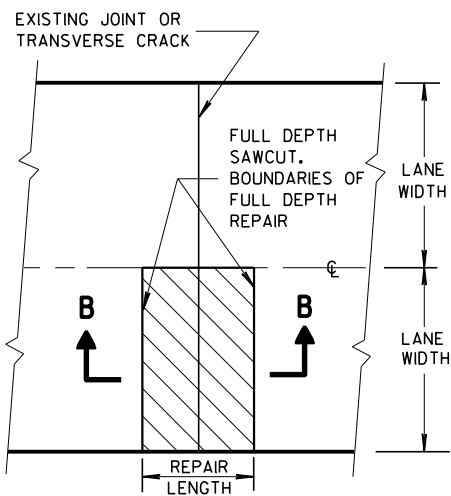


SECTION A-A

HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

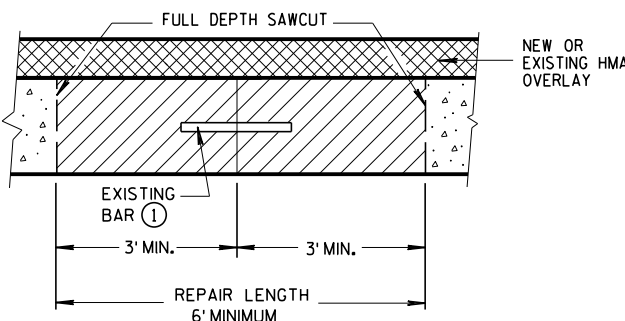
GENERAL NOTES

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.

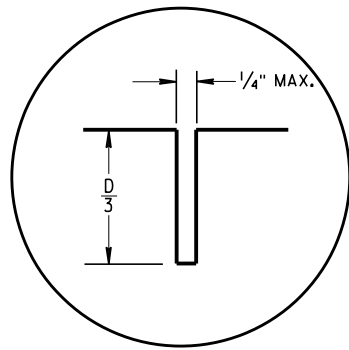
① DOWEL BARS MIGHT NOT EXIST.



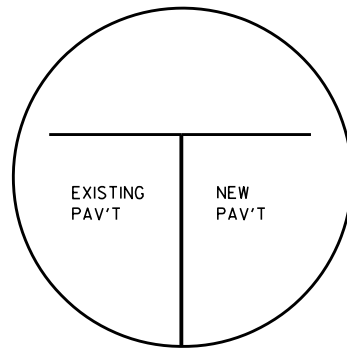
SECTION B-B
CONCRETE REMOVAL

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

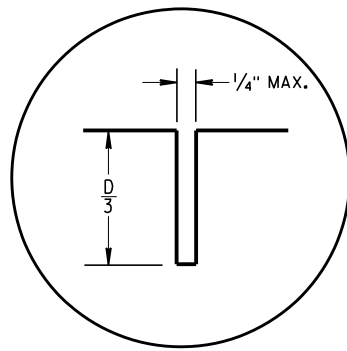


C1

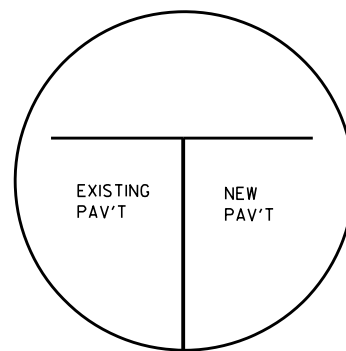


C2

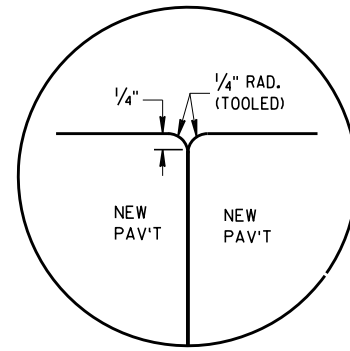
TRANSVERSE JOINTS



L1

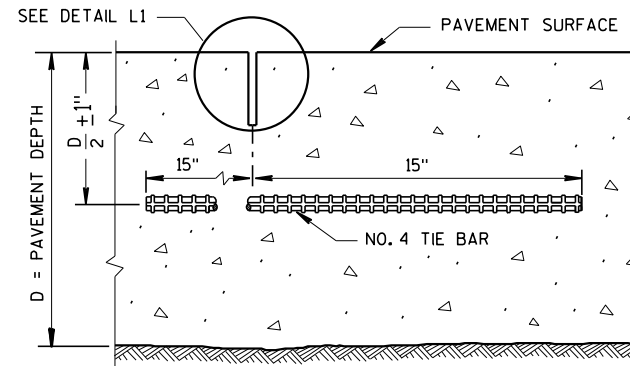


L2

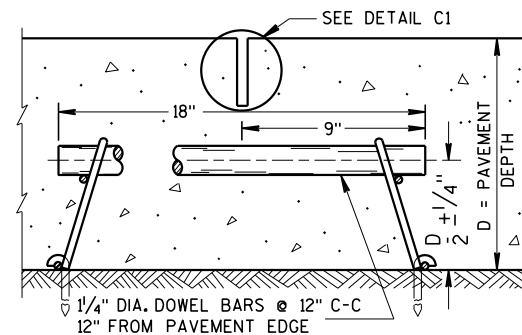


L3

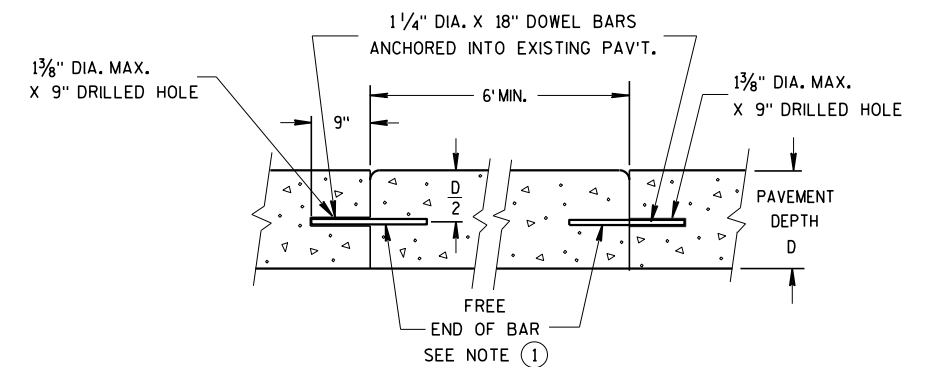
LONGITUDINAL JOINTS



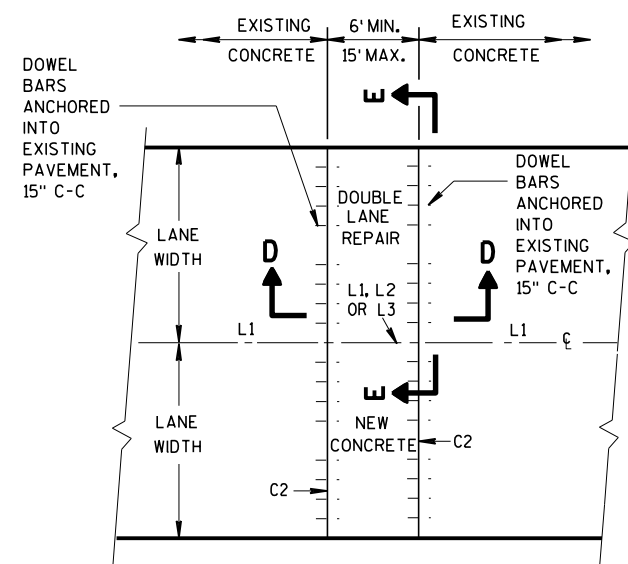
SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

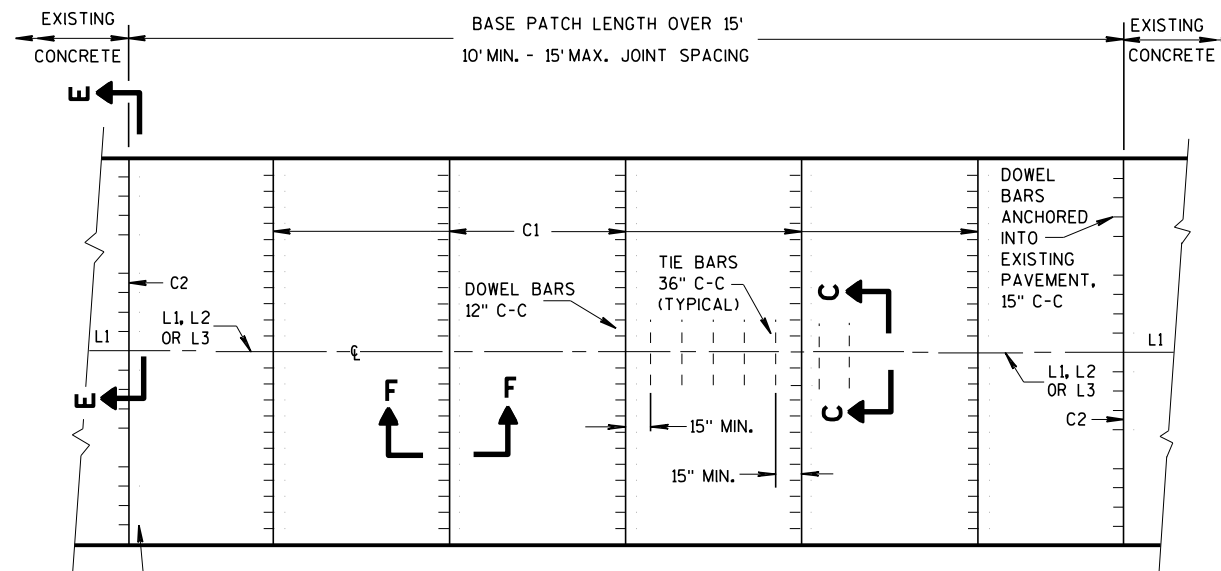


SECTION D-D



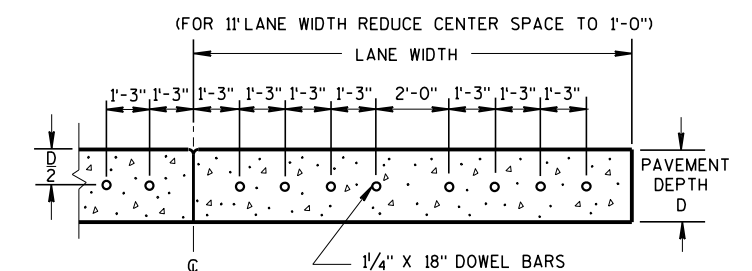
PLAN VIEW

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

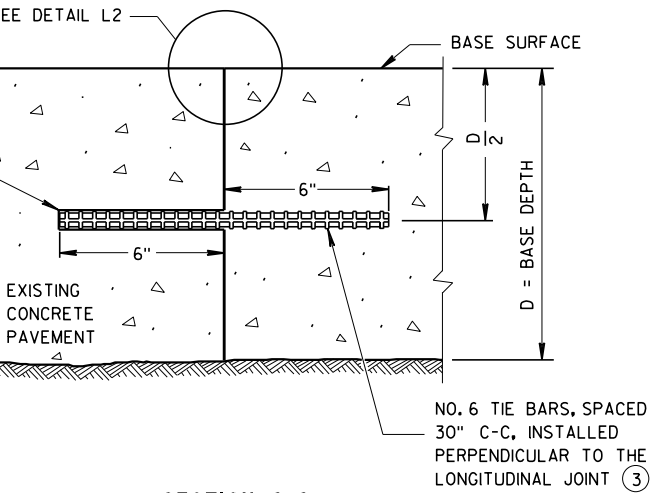
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

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.

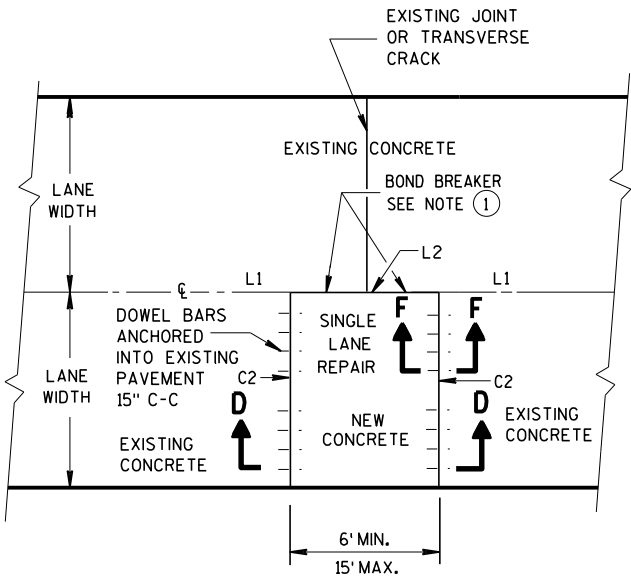
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



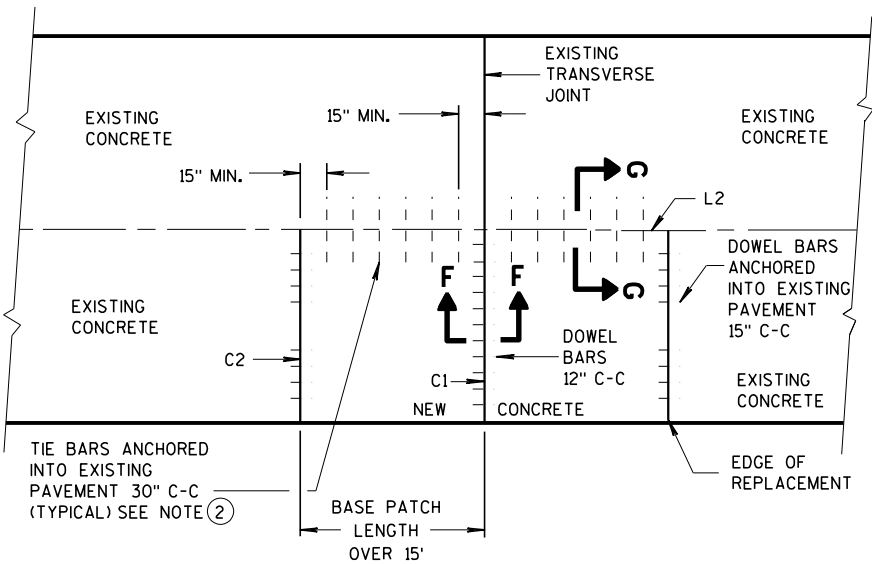
SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

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

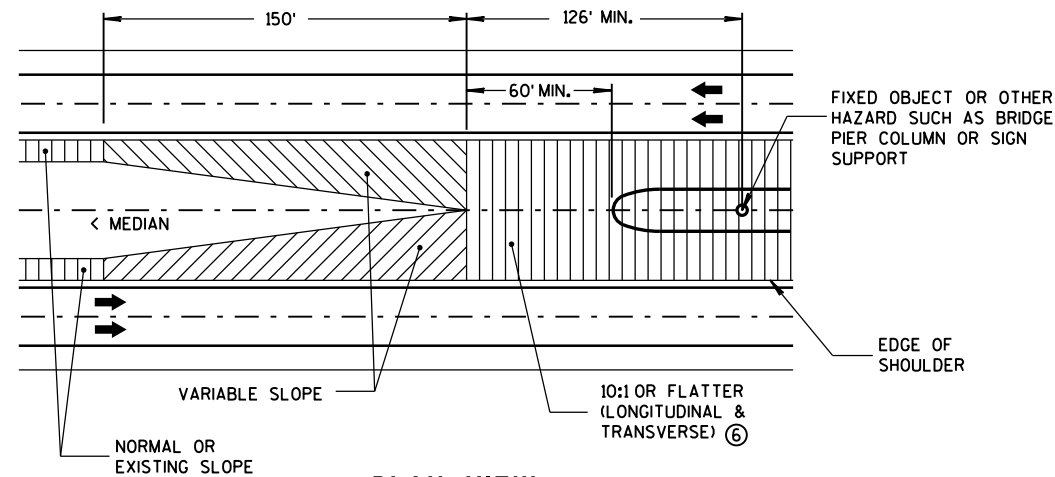


PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH

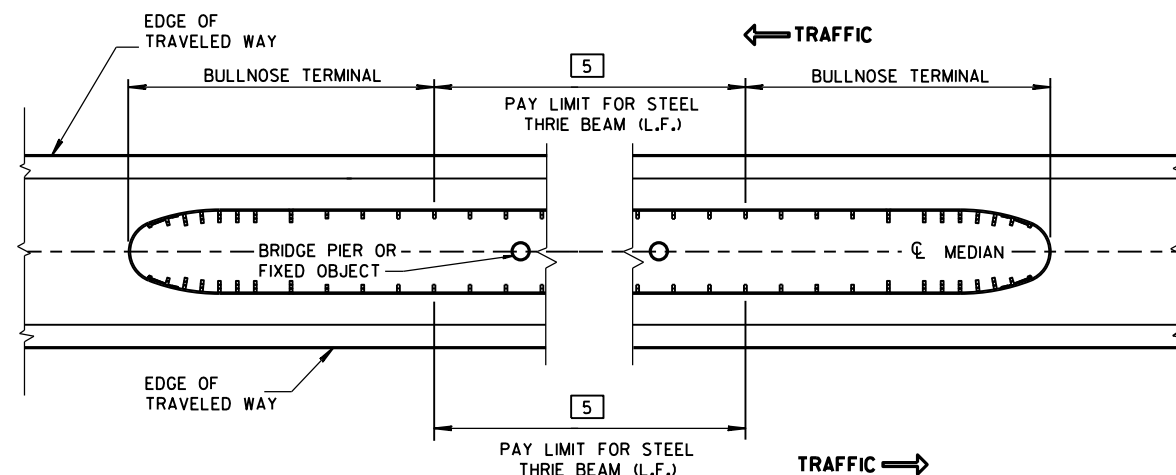
BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

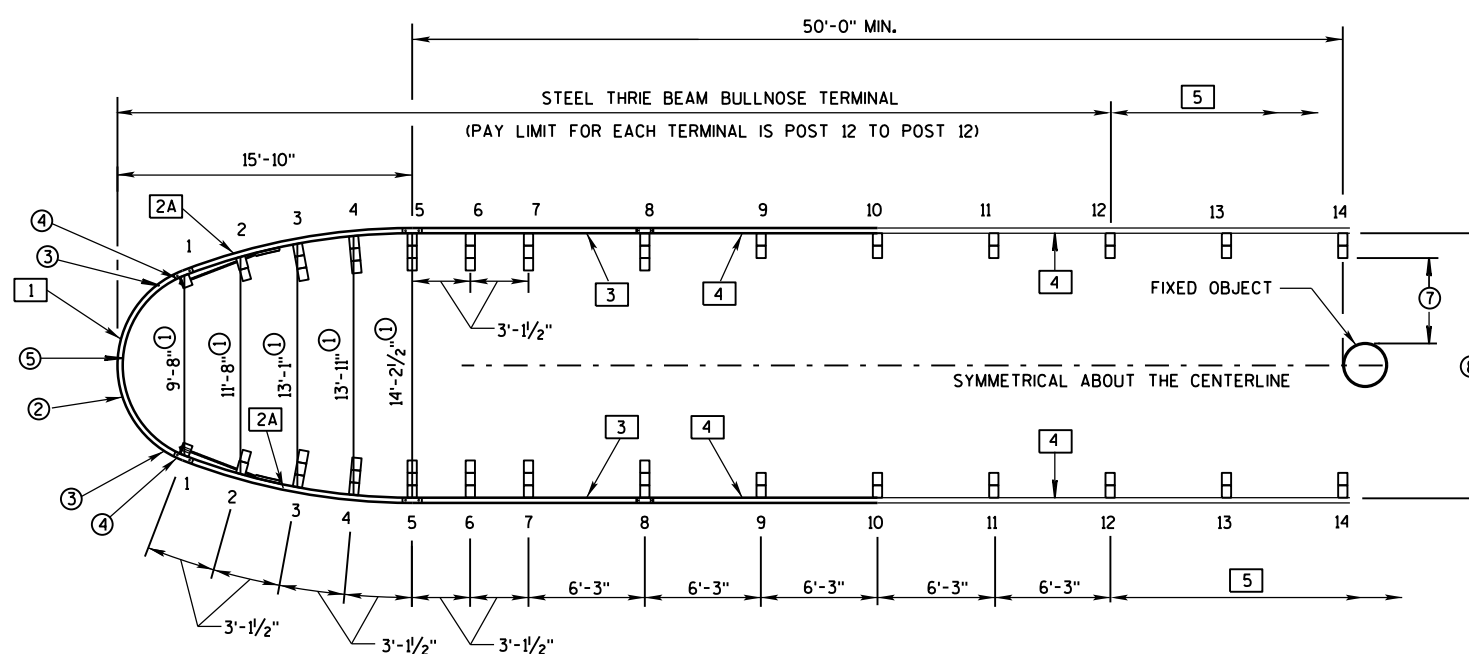
APPROVED
March 2018 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPER 147
FHWA



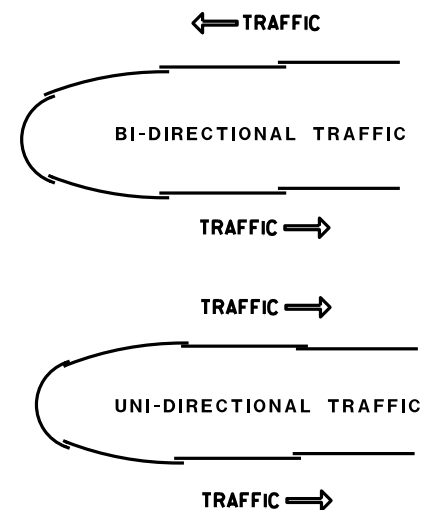
**PLAN VIEW
GRADING AT BULLNOSE
(ALL INSTALLATIONS)**



MEDIAN HAZARD PROTECTION PAY LIMITS



**PLAN VIEW
TYPICAL BULLNOSE LAYOUT**



**LAPPING DETAIL
(ALL INSTALLATIONS)**

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

PUNCHING, DRILLING, CUTTING OR WELDING IS NOT PERMITTED ON ANY GALVANIZED THRIE BEAM ACCESSORY OR TERMINAL ACCESSORY.

OTHER ANCHOR CABLE ASSEMBLIES HAVING 40,000 LBS. MIN. BREAKING STRENGTH MAY BE USED.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

THE USE OF STEEL POSTS ON THE BULLNOSE IS NOT ALLOWED.

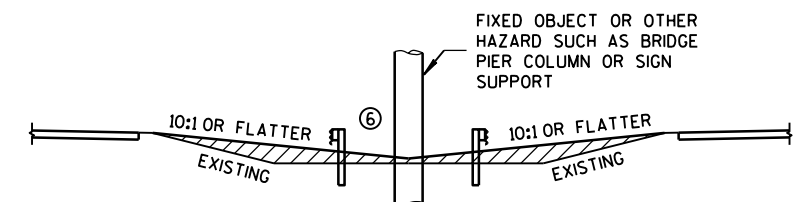
BOLTS AND ALL NECESSARY HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

ALL THRIE BEAM SHALL BE 12-GAUGE.

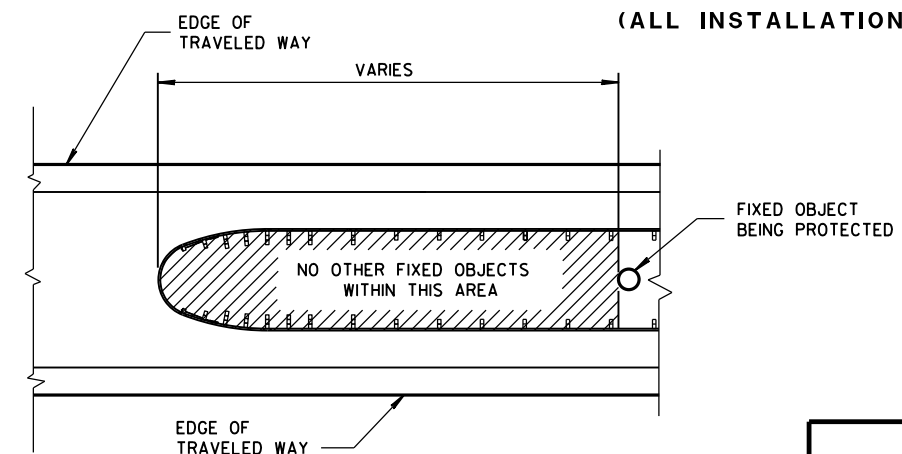
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" AND 12" DIAMETER AROUND POST. SEE SDD 14B15 OR SDD 14B42 FOR MORE INFORMATION.

- ① SLOTTED THRIE BEAM RAIL NO.1. (POST 1 TO POST 1)
- ②A SLOTTED THRIE BEAM RAIL NO.2A. (POST 1 TO POST 5)
- ③ SLOTTED THRIE BEAM RAIL NO.3. (POST 5 TO POST 8)
- ④ UNBENT STANDARD THRIE-BEAM RAIL NO.4. (POST 8 TO POST 10 & POST 10 TO POST 12)
- ⑤ BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO.5.

- ① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST OR BLOCK.
- ② U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.
- ③ NOSE CABLE W/SWAGGED END BUTTONS.
- ④ NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).
- ⑤ THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO.1 ON EITHER SIDE OF THE NOSE.
- ⑥ PROVIDE SUITABLE DRAINAGE WHEN MEDIAN GRADING IMPEDES NORMAL FLOW.
- ⑦ 2'-6" MINIMUM LATERAL DISTANCE BETWEEN BACK OF POST AND FACE OF FIXED OBJECT.
- ⑧ MAXIMUM WIDTH OF SYSTEM IS 14'-2 1/2" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



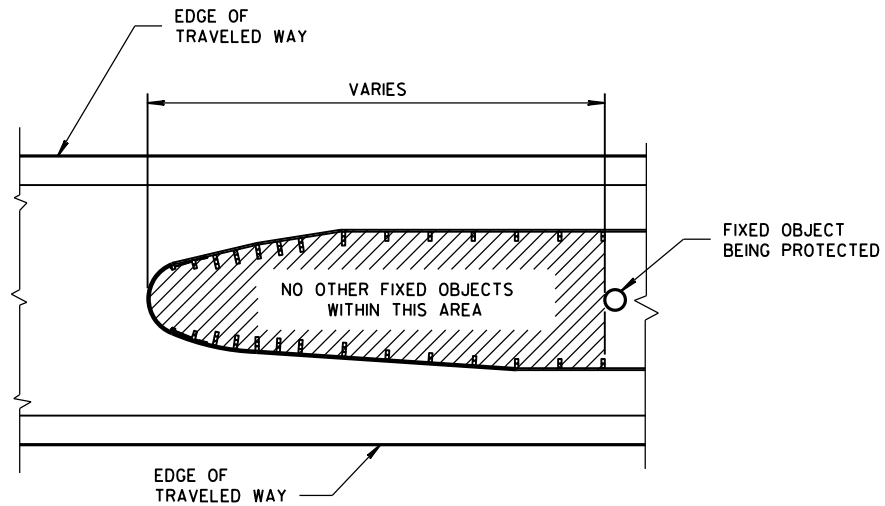
**MEDIAN GRADING SECTION
(ALL INSTALLATIONS)**



**HAZARD FREE
AREA INSIDE BULLNOSE**

**STEEL THRIE BEAM
BULLNOSE TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 148



HAZARD FREE AREA INSIDE BULLNOSE

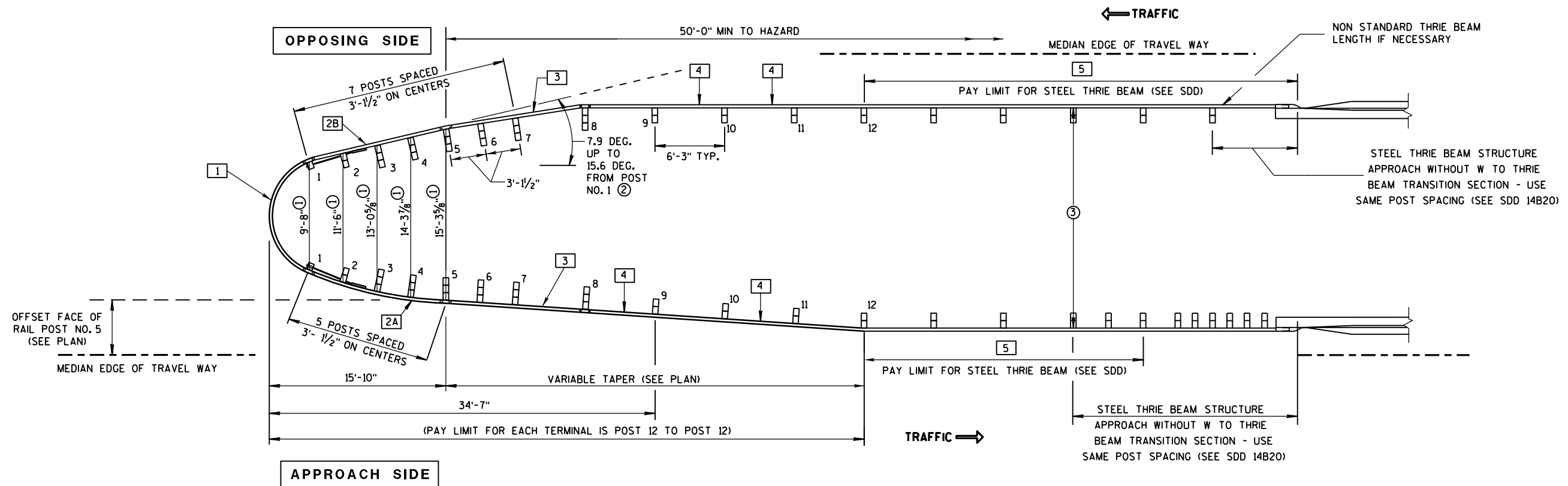
GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

- [1] SLOTTED THRIE BEAM RAIL NO. 1, (POST 1 TO POST 1)
- [2A] SLOTTED THRIE BEAM RAIL NO. 2A, (POST 1 TO POST 5)
- [2B] SLOTTED THRIE BEAM RAIL NO. 2B, (POST 1 TO POST 5)
- [3] SLOTTED THRIE BEAM RAIL NO. 3, (POST 5 TO POST 8)
- [4] UNBENT STANDARD THRIE-BEAM RAIL NO. 4, (POST 8 TO POST 10 & POST 10 TO POST 12)
- [5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

- ① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST.
- ② TAPER BEGINNING AT POST NO. 1 MUST CONTINUE TO POST NO. 5. PAST POST NO. 5 TAPER MAY END OR BE EXTENDED UP TO 15.6 DEGREES TO FIT VARIABLE MEDIAN WIDTHS. (SEE PLAN)
- ③ FOR MEDIANS WIDER THAN 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



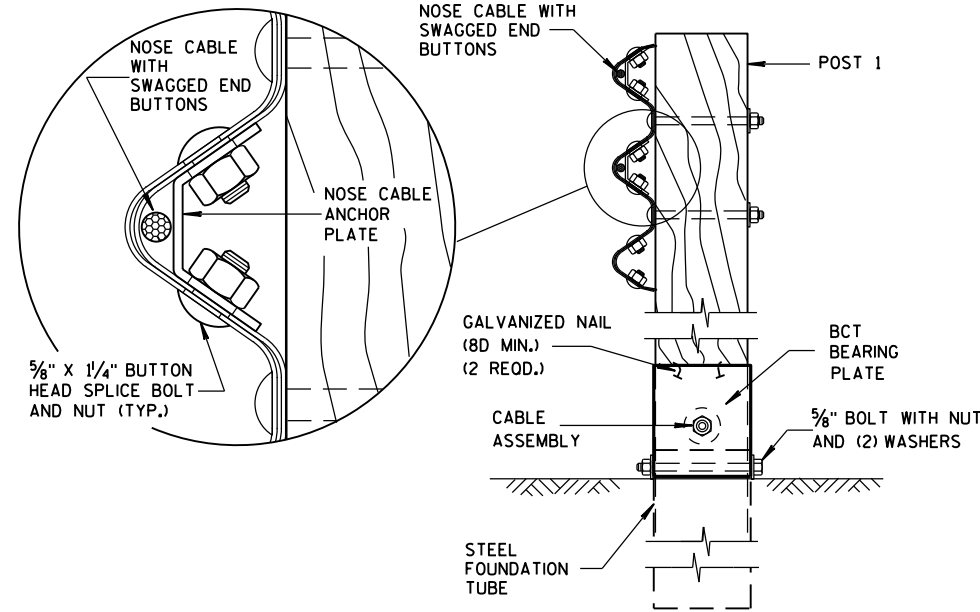
PLAN VIEW

WIDENED BULLNOSE DESIGN

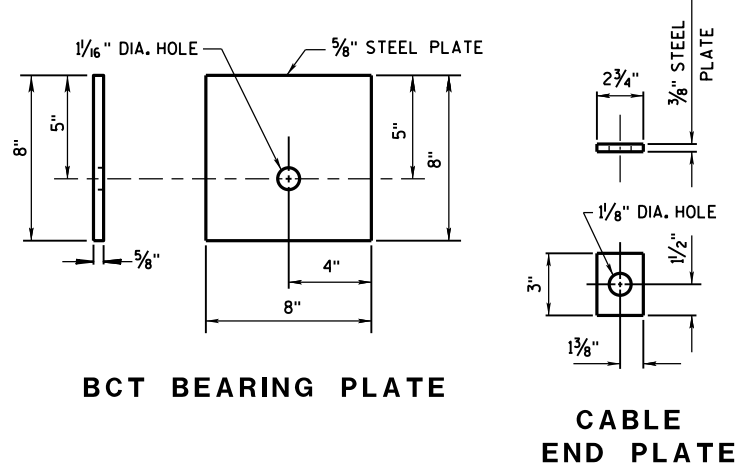
(INSTALLATION AT TWIN BRIDGES WITH BI-DIRECTIONAL TRAFFIC SHOWN)

STEEL THRIE BEAM
BULLNOSE TERMINAL

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DEPARTMENT OF TRANSPORTATION 149

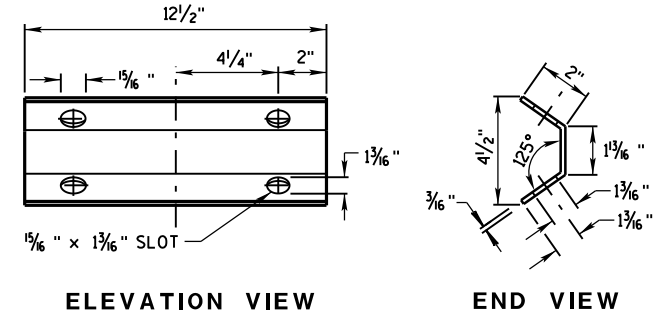


NOSE CABLE ASSEMBLY AT POST NO. 1



BCT BEARING PLATE

CABLE END PLATE

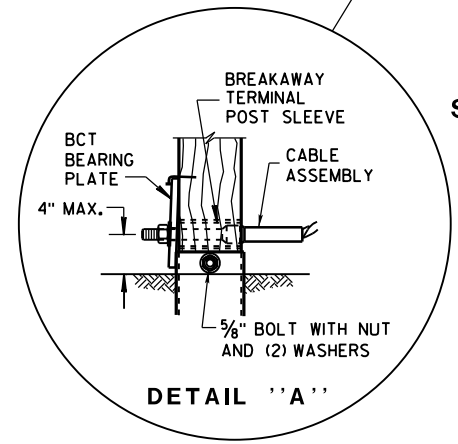


ELEVATION VIEW

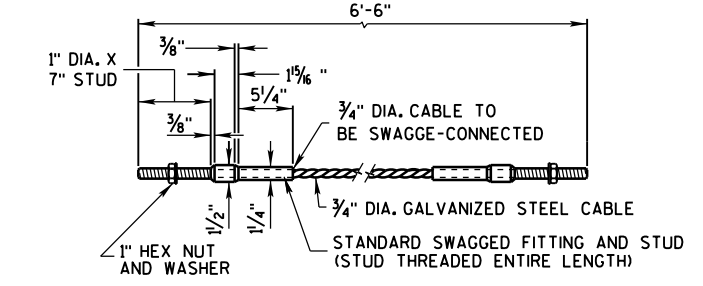
END VIEW

NOSE CABLE ANCHOR PLATE

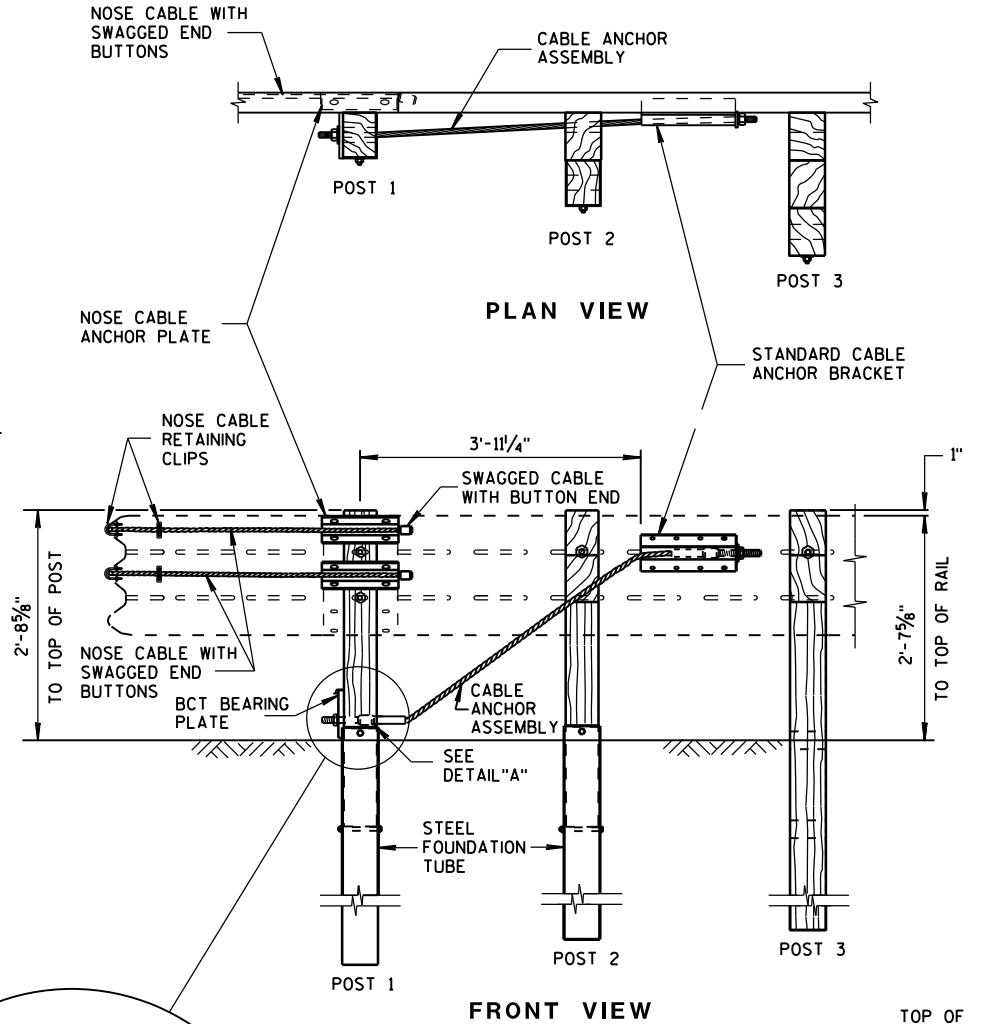
NOTE: 12 1/2" x 5 1/8" x 3/16" STEEL PLATE (A306)



DETAIL 'A'



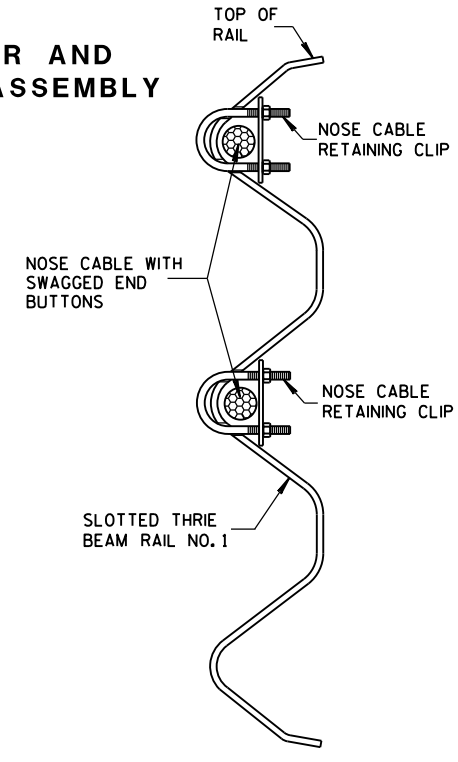
DETAILS OF CABLE ANCHOR ASSEMBLY



PLAN VIEW

FRONT VIEW

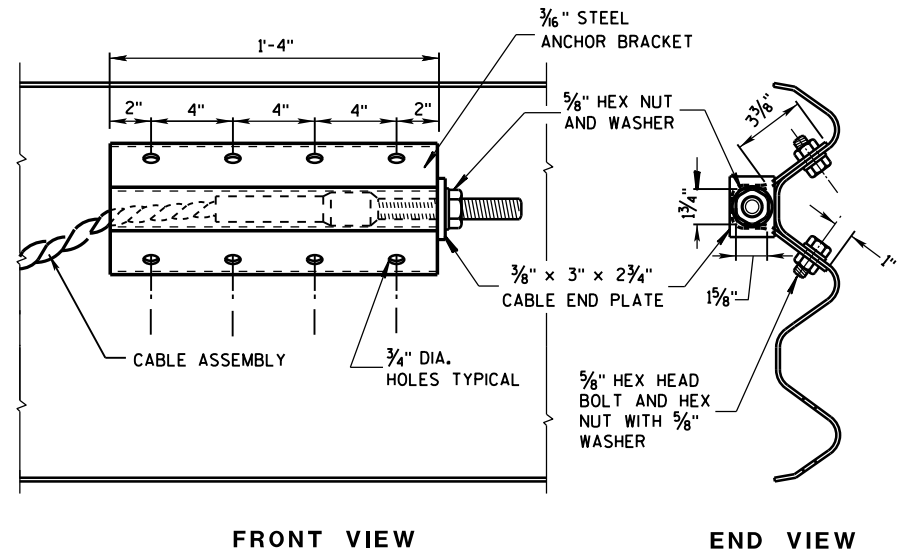
NOSE CABLE ANCHOR AND STANDARD BRACKET ASSEMBLY



PLACEMENT OF NOSE CABLE RETAINING CLIP

GENERAL NOTES

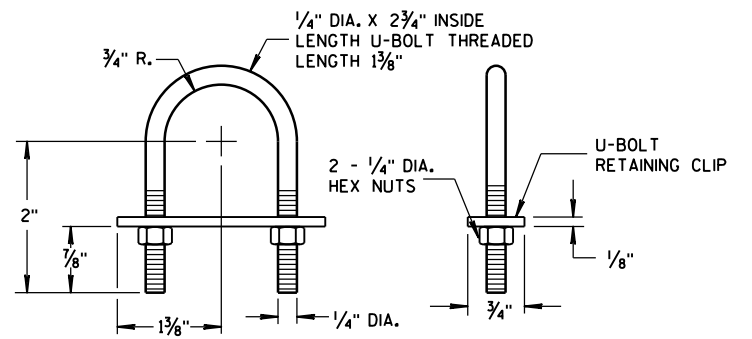
SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



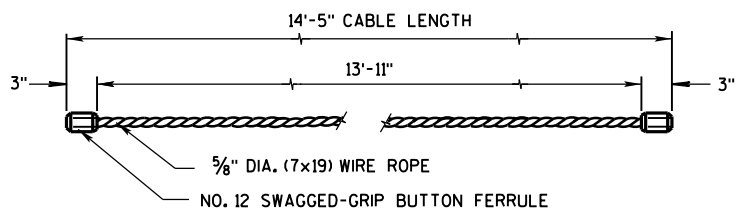
FRONT VIEW

END VIEW

DETAILS OF CABLE ANCHOR BRACKET



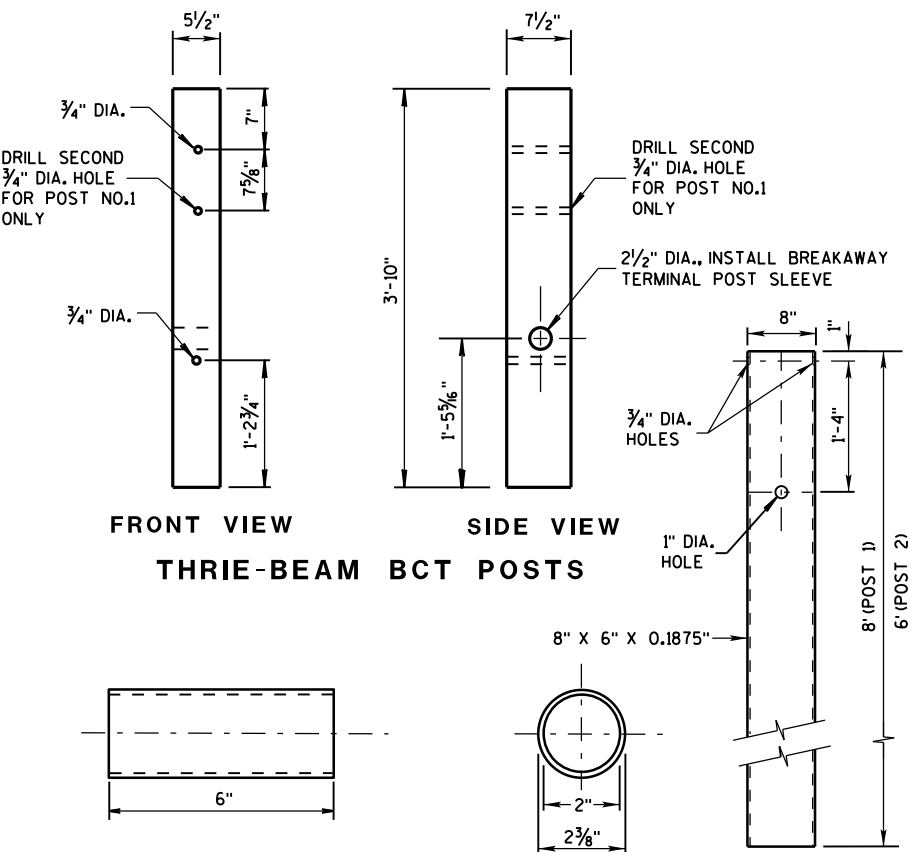
NOSE CABLE RETAINING CLIP



NOSE CABLE WITH SWAGGED END BUTTONS

TO PULL OFF SWAGGED GRIP BUTTON FERRULE FROM WIRE ROPE REQUIRES A FORCE EQUAL TO 98% OF THE WIRE ROPE'S BREAKING STRENGTH.

STEEL THRIE BEAM BULLNOSE TERMINAL
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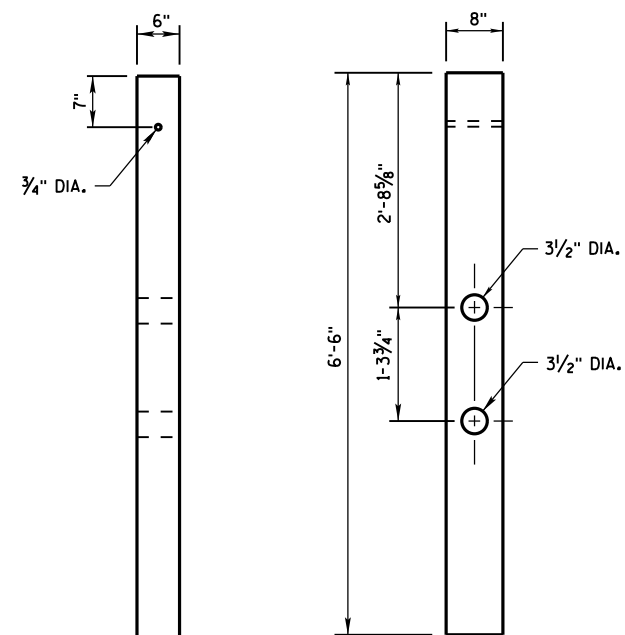


FRONT VIEW
THRIE-BEAM BCT POSTS

SIDE VIEW

BREAKAWAY TERMINAL
POST SLEEVE

STEEL
FOUNDATION TUBE



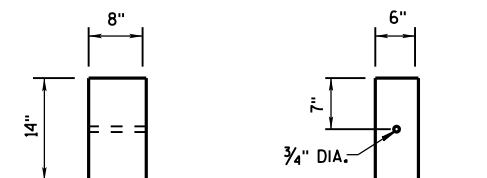
FRONT VIEW

SIDE VIEW

THRIE-BEAM CRT WOOD POSTS

GENERAL NOTES

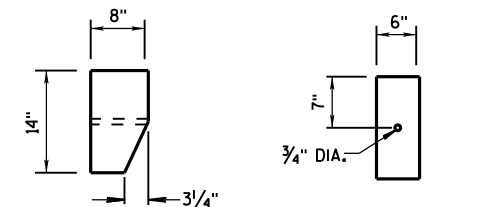
SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



SIDE VIEW

FRONT VIEW

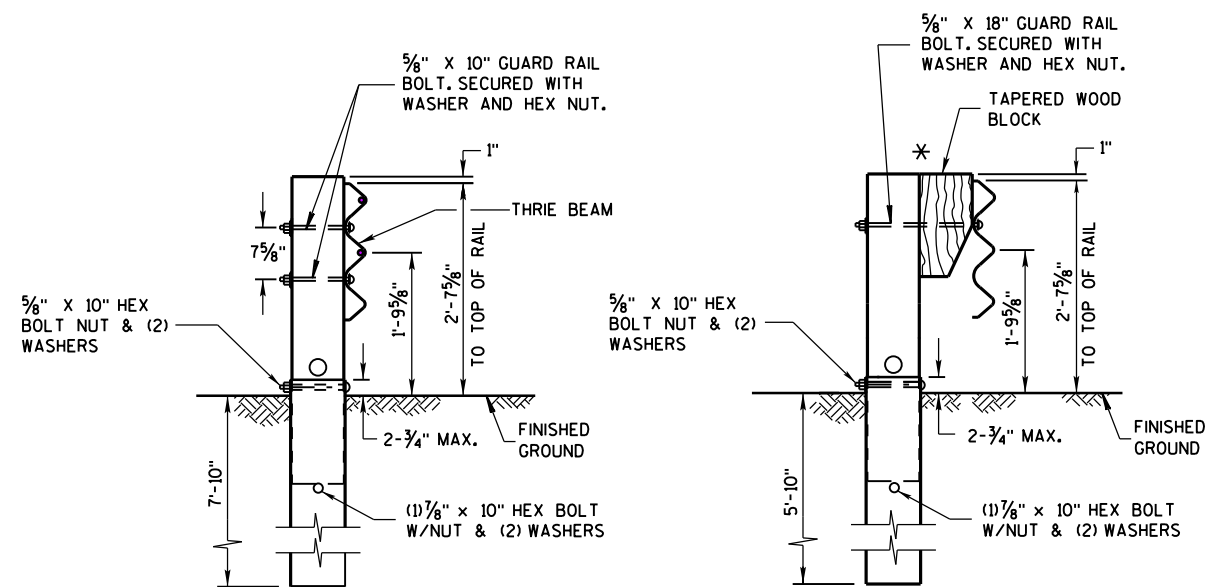
STANDARD WOOD BLOCK



SIDE VIEW

FRONT VIEW

TAPERED WOOD BLOCK

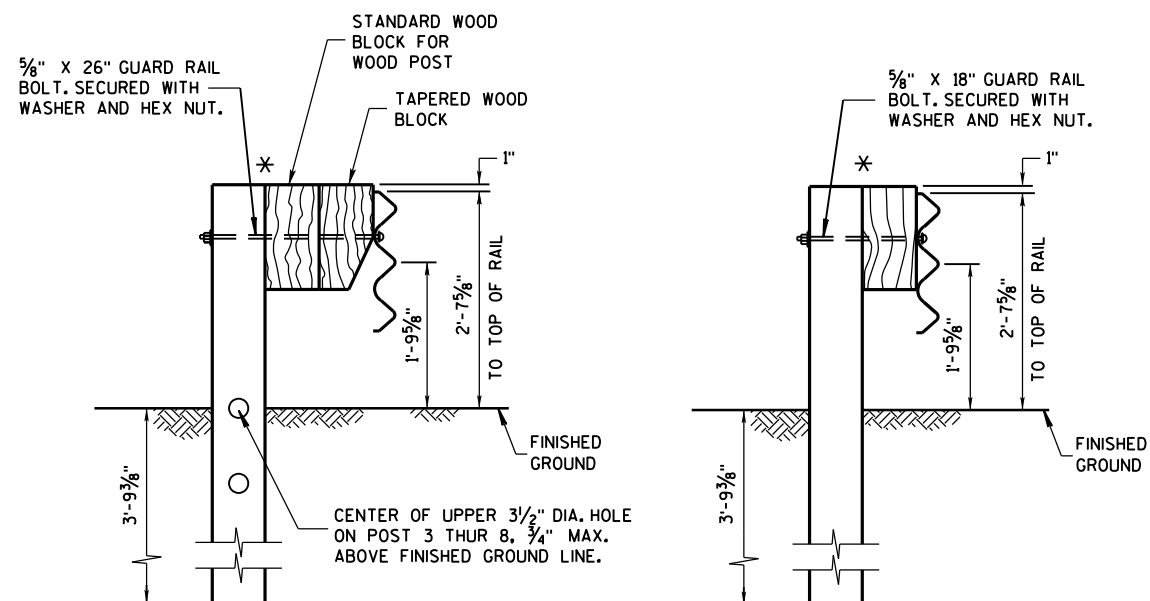


THRIE-BEAM BCT POST
(WITH 8'-0" FOUNDATION TUBE)

POST NO. 1

THRIE-BEAM BCT POST
(WITH 6'-0" FOUNDATION TUBE
AND 1'-2" TAPERED BLOCK)

POST NO. 2



THRIE-BEAM CRT POST
(6'-6" LONG POST WITH 1'-2" BLOCK
AND 1'-2" TAPERED BLOCK)

POST NO. 3,4,5,6,7, & 8

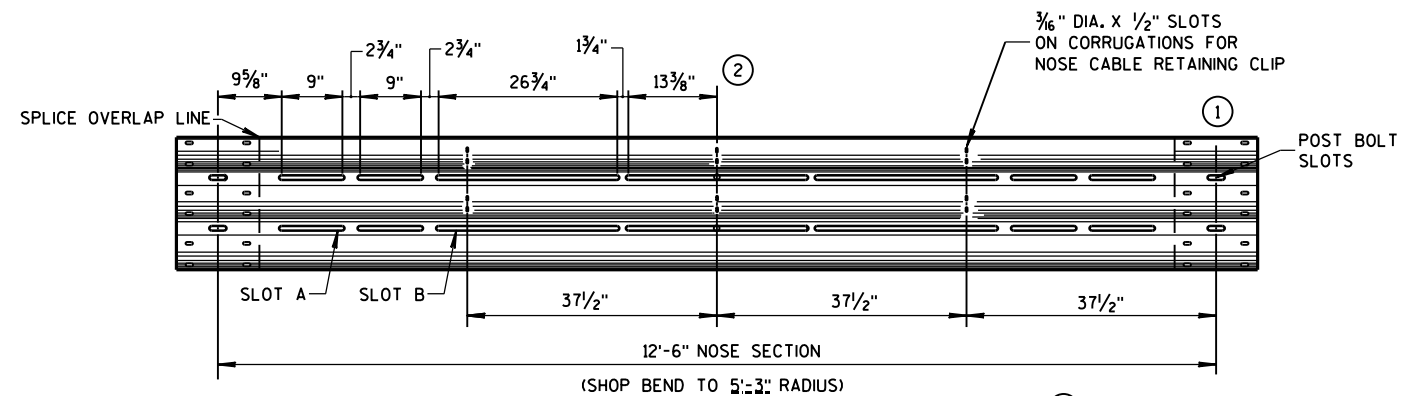
THRIE-BEAM POST
(6'-6" LONG POST
WITH 1'-2" BLOCK)

POST NO. 9,10,11, & 12
(ALSO USE FOR STEEL
THRIE BEAM BEYOND POST 12)

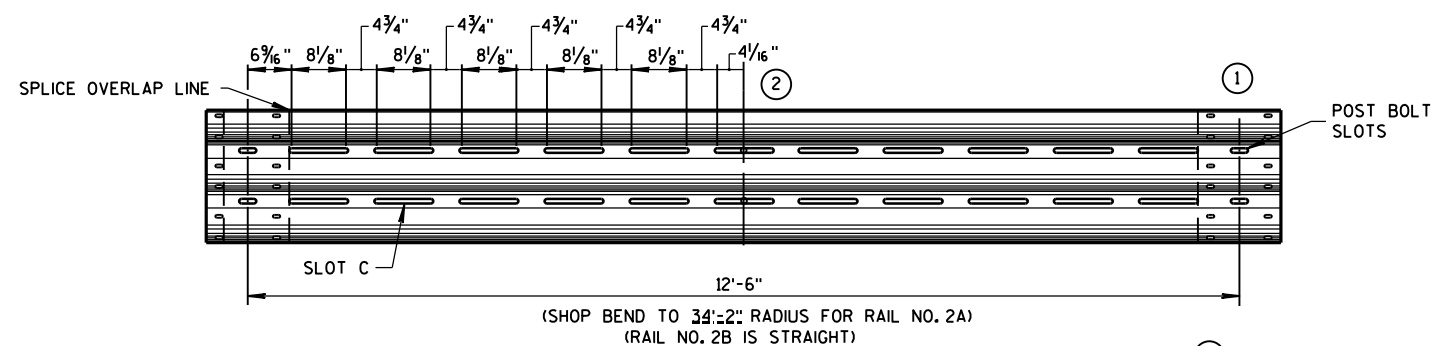
* IF NEEDED DUE TO AN UNDERGROUND
OBSTACLE ADD 1 ADDITIONAL STANDARD
BLOCKOUT TO POST.

STEEL THRIE BEAM
BULLNOSE TERMINAL

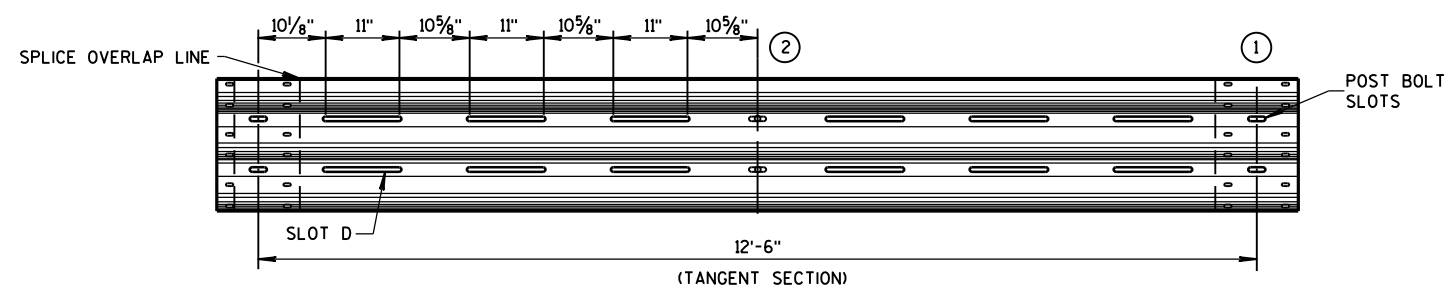
STATE OF WISCONSIN
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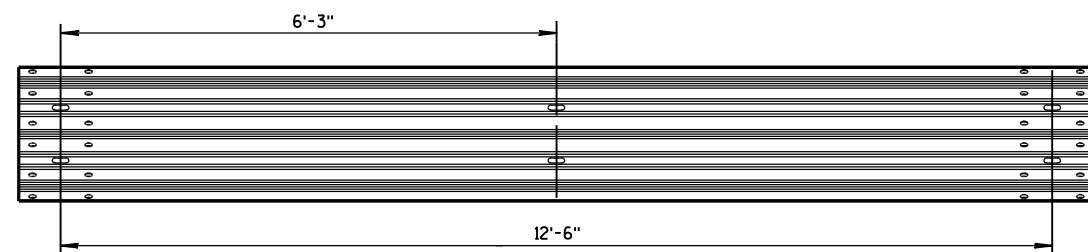
SLOTTED THRIE BEAM RAIL NO. 1 ③



SLOTTED THRIE BEAM RAILS NO. 2A AND NO. 2B ④



SLOTTED THRIE BEAM RAIL NO. 3 ⑤

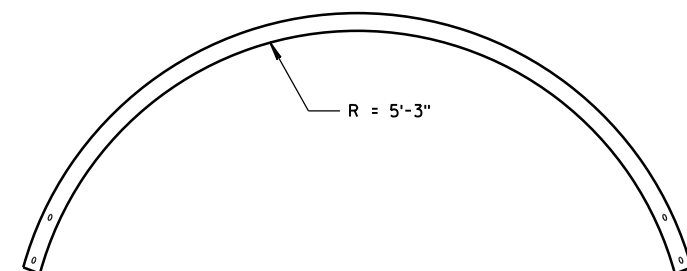


UNBENT STANDARD THRIE BEAM RAIL NO. 4 AND NO. 5

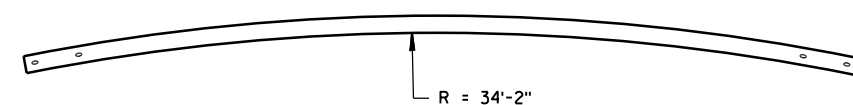
GENERAL NOTES

SEE STANADRD DETAIL DRAWINGS 14 B 26a-e.

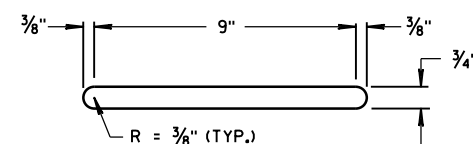
- ① SLOTTED THRIE BEAM RAIL DIMENSIONS SHOWN ARE BEFORE BENDING TO THE RADIUS SHOWN.
- ② SLOT SIZE AND SPACING SYMMETRIC.
- ③ SLOTTED THRIE BEAM RAIL NO. 1, 12'-6", SHOP BEND TO R=5'-3".
- ④ SLOTTED THRIE BEAM RAIL NO. 2A, 12'-6", SHOP BEND TO R=34'-2".
SLOTTED THRIE BEAM RAIL NO. 2B, 12'-6", RAIL IS STRAIGHT.
- ⑤ SLOTTED THRIE BEAM RAIL NO. 3, 12'-6", TANGENT.



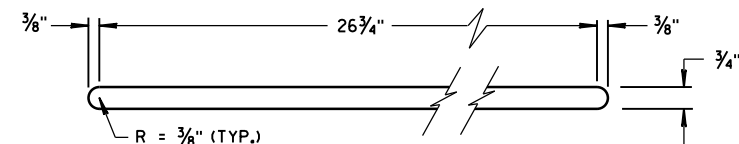
**PLAN VIEW
SLOTTED THRIE BEAM RAIL NO. 1**



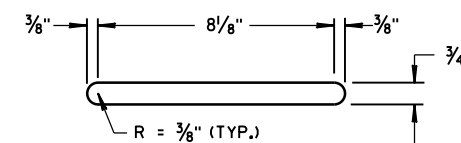
**PLAN VIEW
SLOTTED THRIE BEAM RAIL NO. 2A**



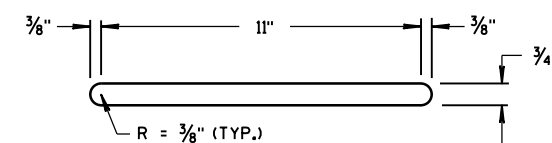
SLOT A



SLOT B



SLOT C



SLOT D

SLOT DETAILS

**STEEL THRIE BEAM
BULLNOSE TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014
DATE

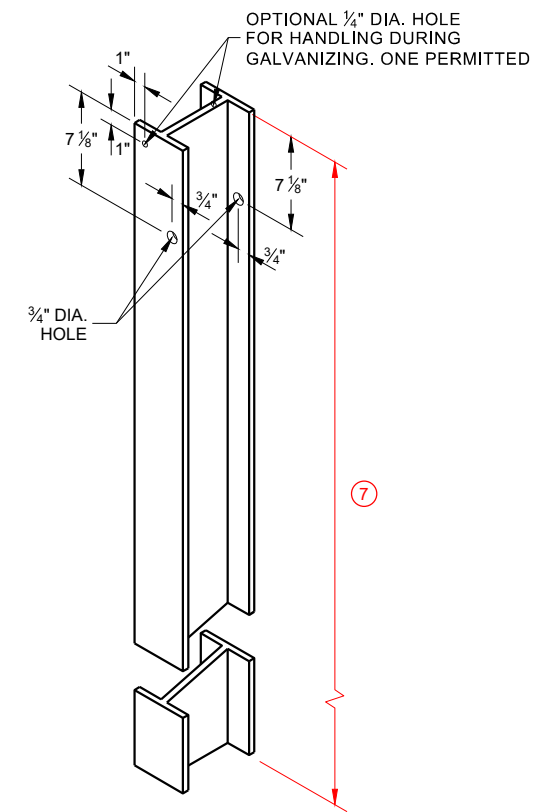
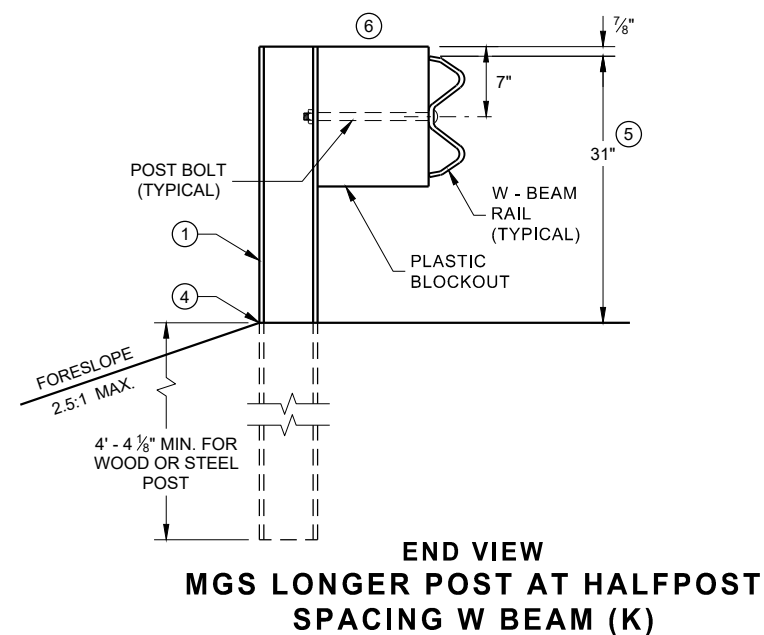
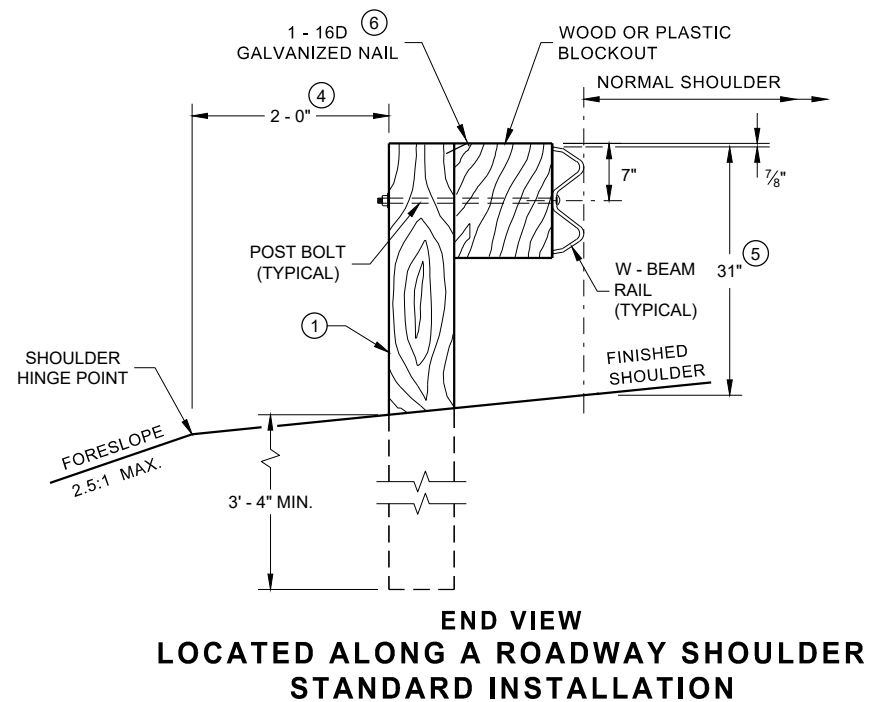
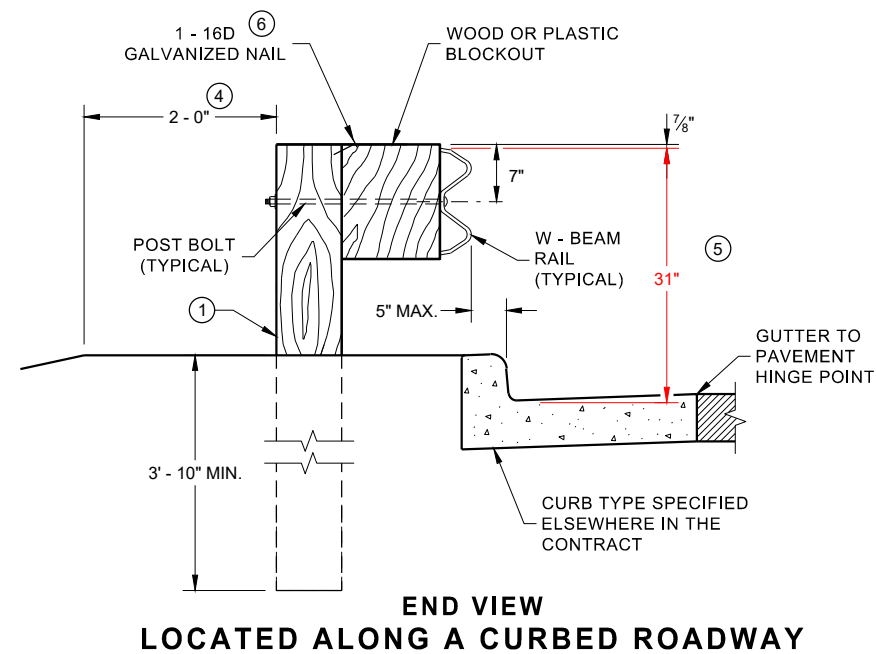
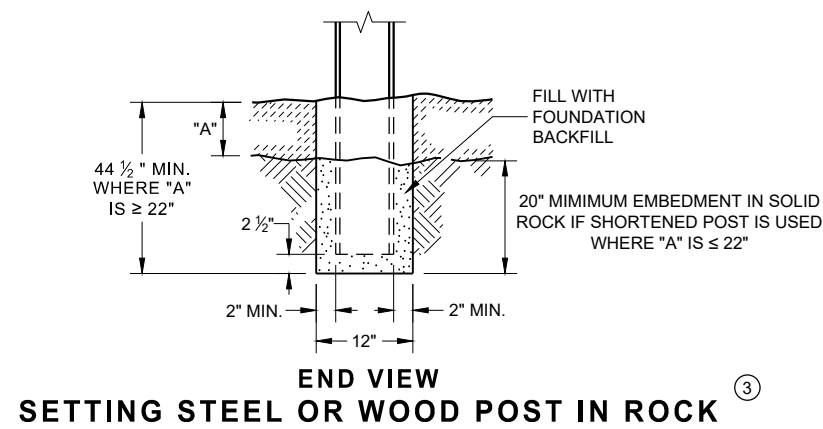
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

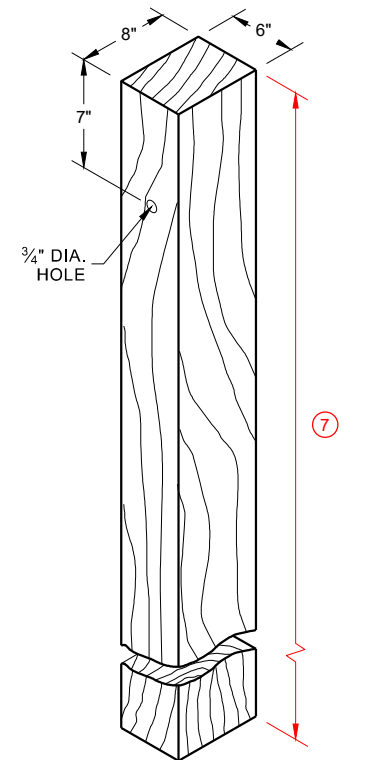
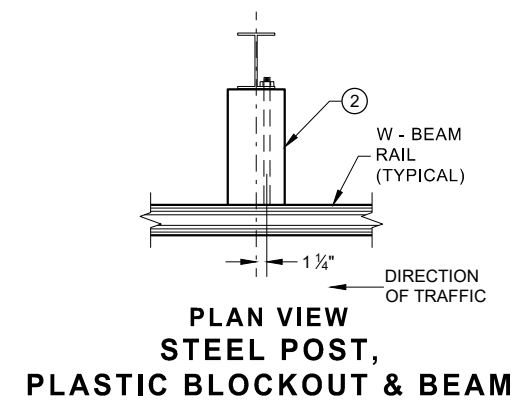
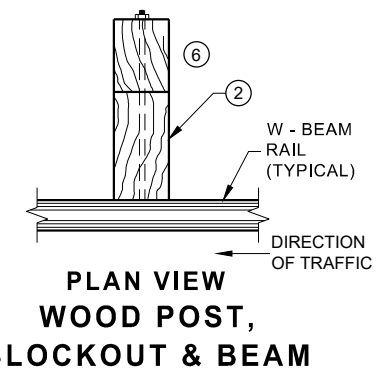
152

NT

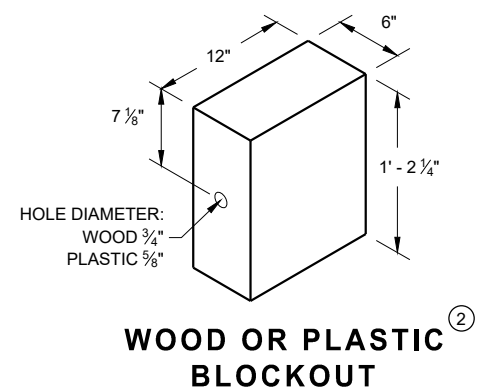
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

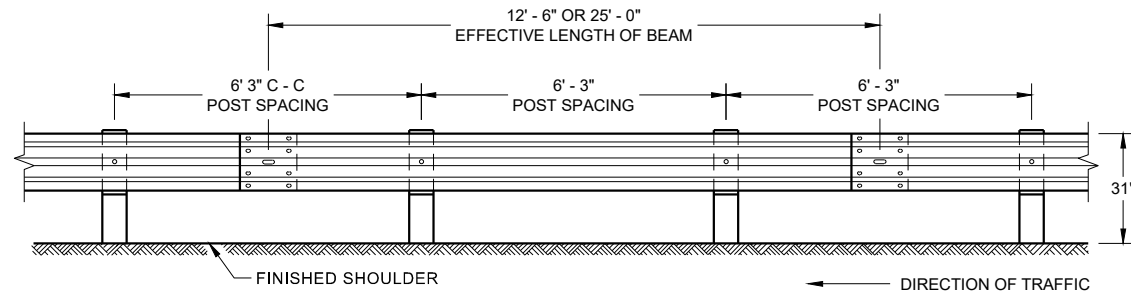


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

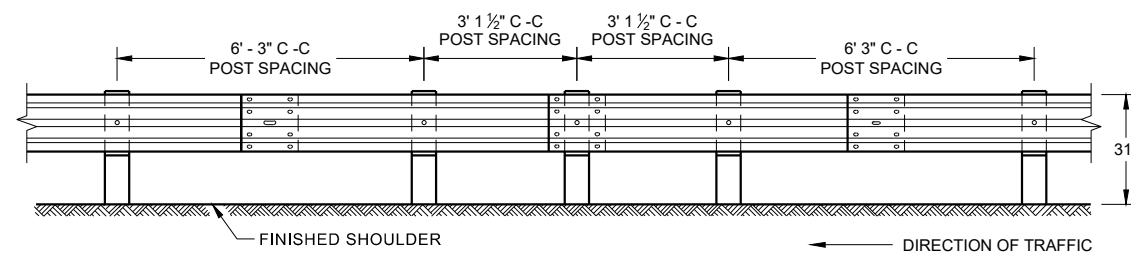


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

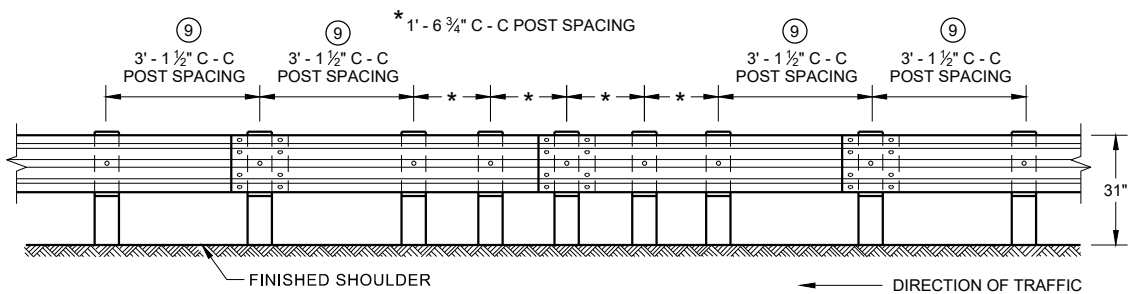
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 153



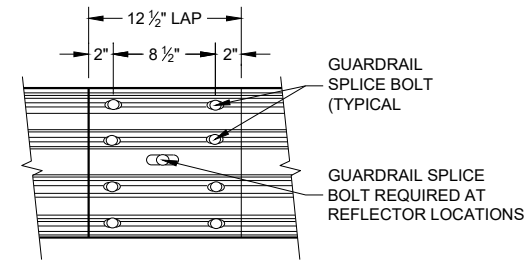
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



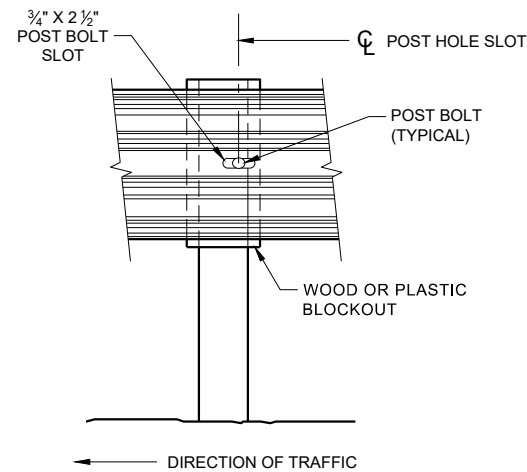
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



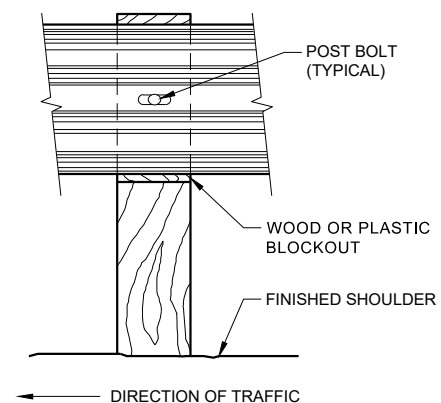
**FRONT VIEW
QUARTER POST SPACING (QS)**



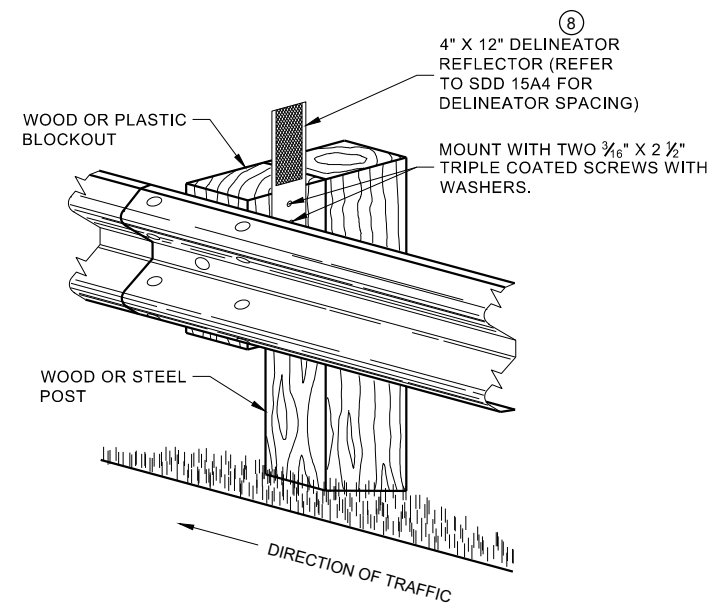
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



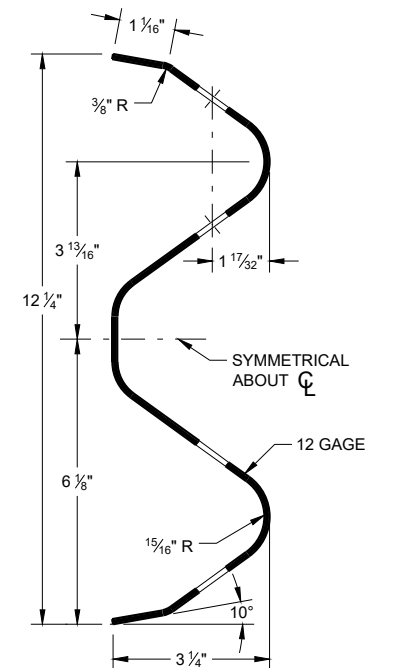
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

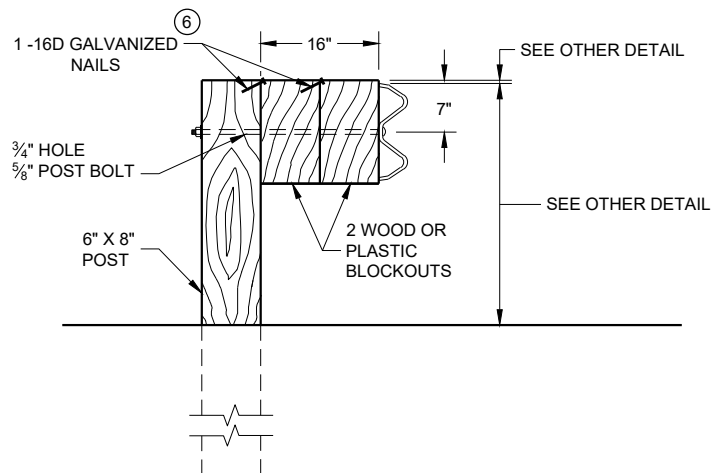
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

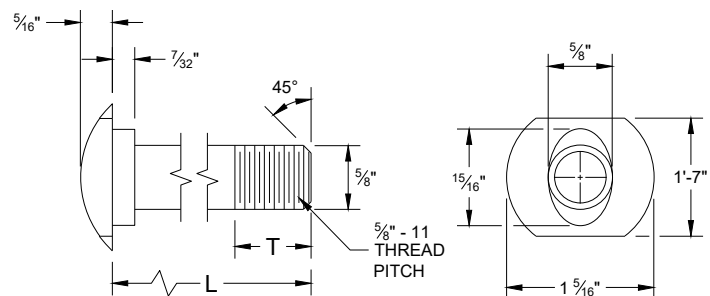
STATE OF WISCONSIN
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DETAIL FOR 16" BLOCKOUT DEPTH

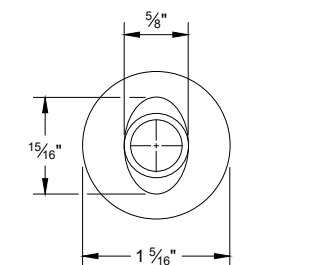
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

- NOTE:
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
 2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

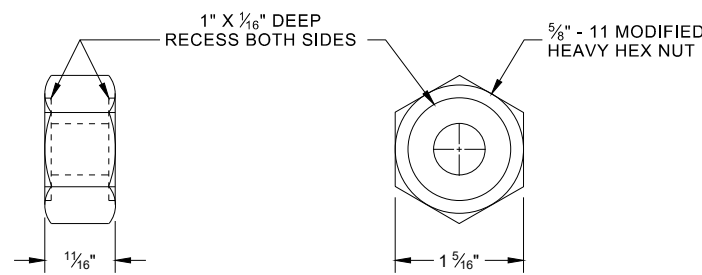


POST BOLT TABLE

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

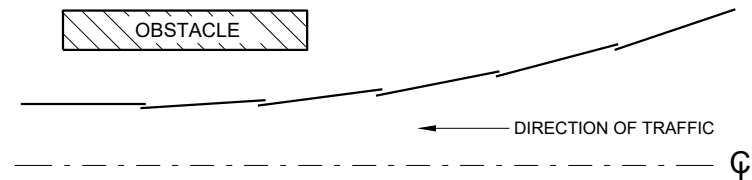


ALTERNATE BOLT HEAD

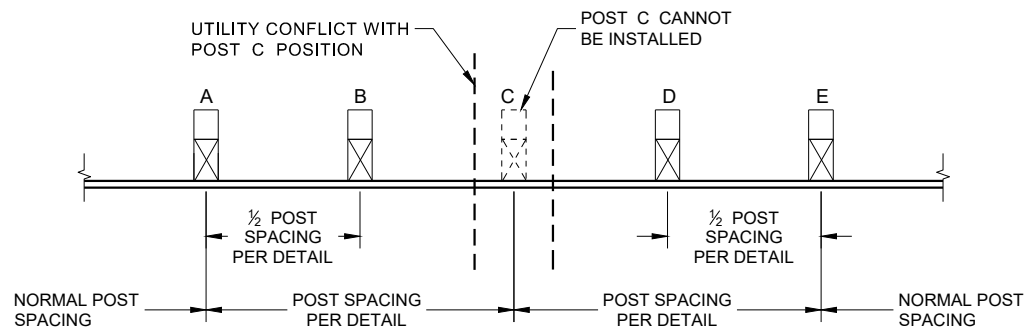


POST BOLT, SPLICE BOLT AND RECESS NUT

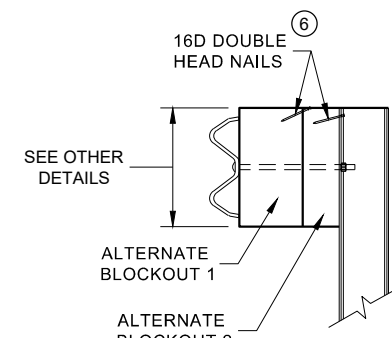
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



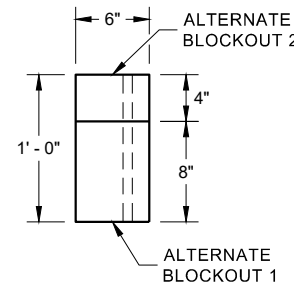
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

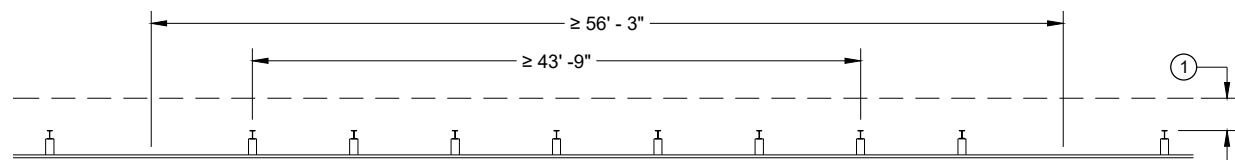
ALTERNATE WOOD
BLOCKOUT DETAIL

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.

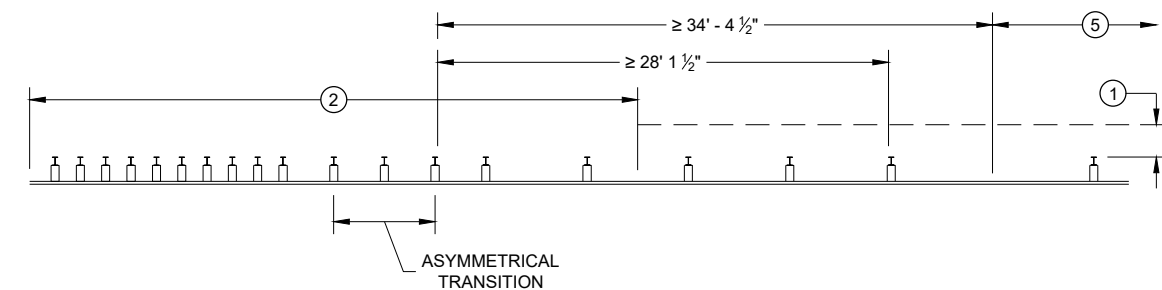
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

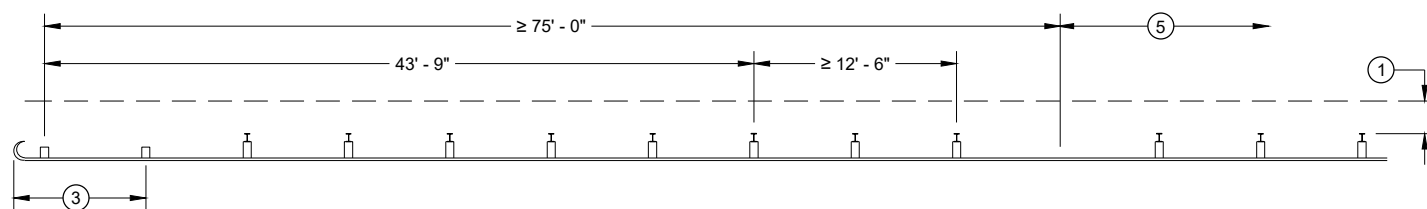
STATE OF WISCONSIN
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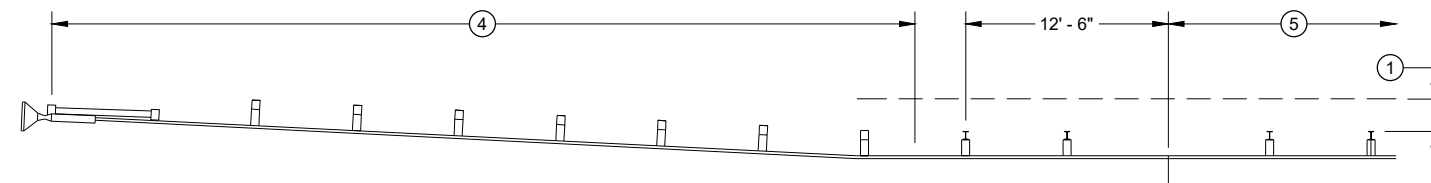
MISSING POST IN NORMAL BEAM GUARD RUN



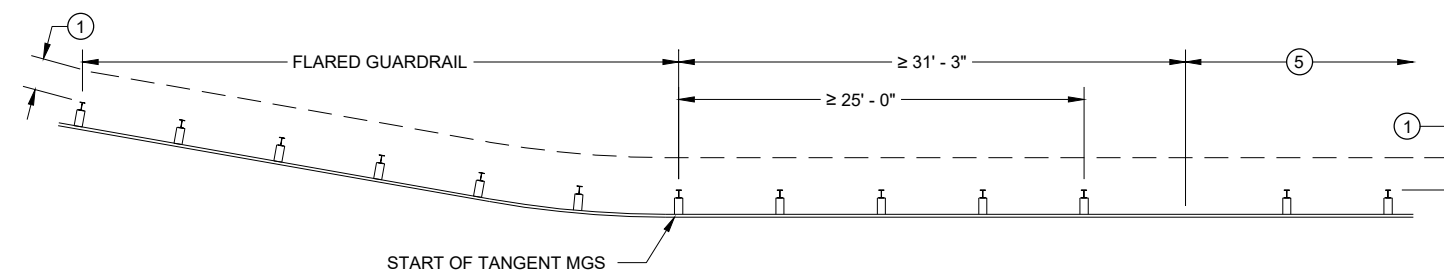
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



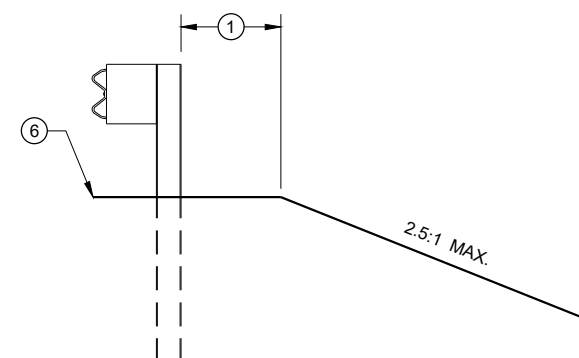
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



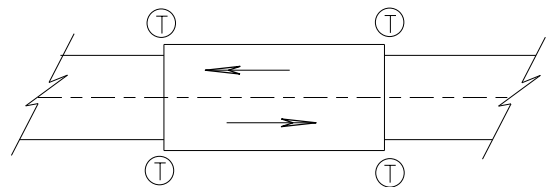
CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

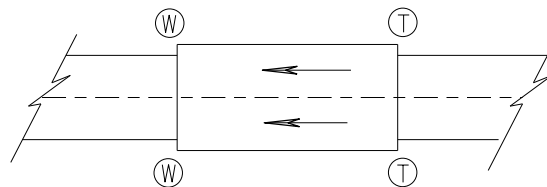
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR 156
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

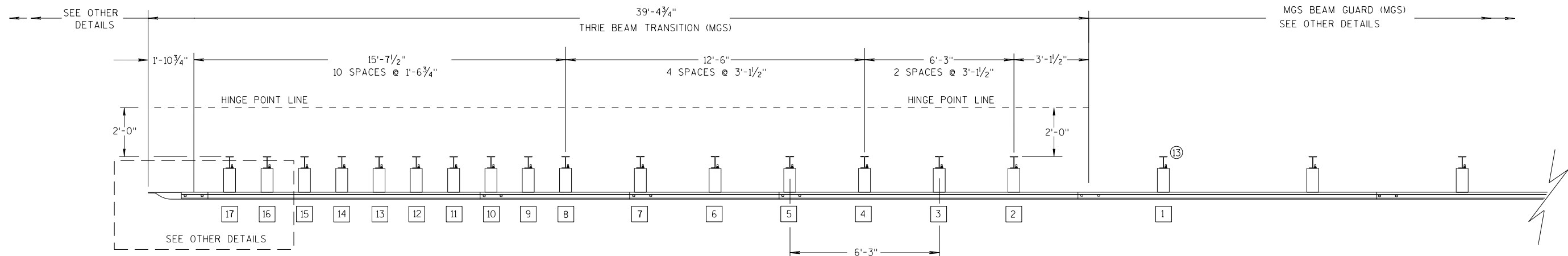
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

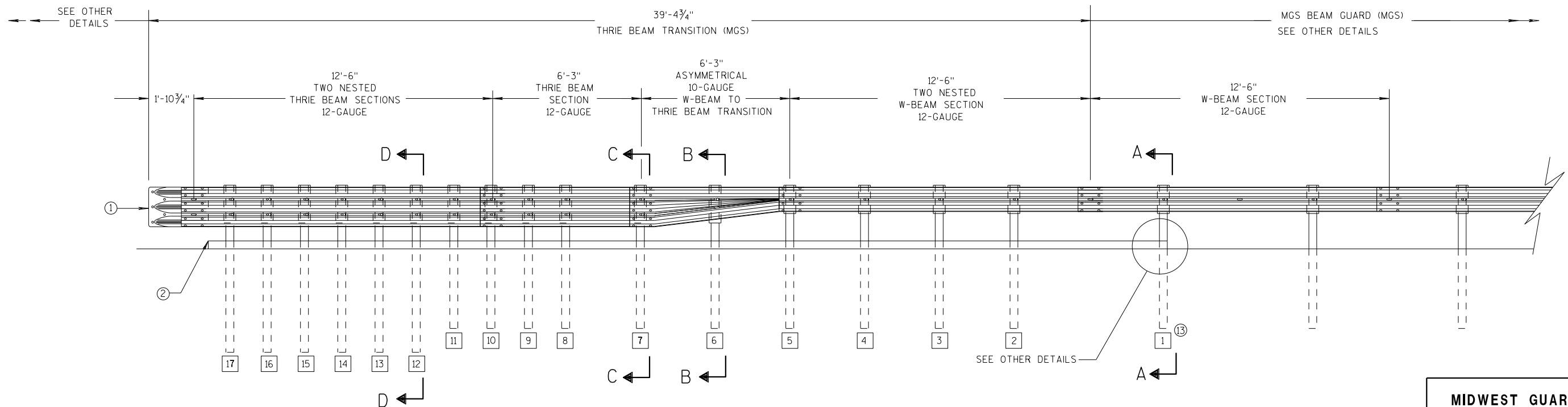
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 157

6

- S.D.D. 14 B 45-5b**

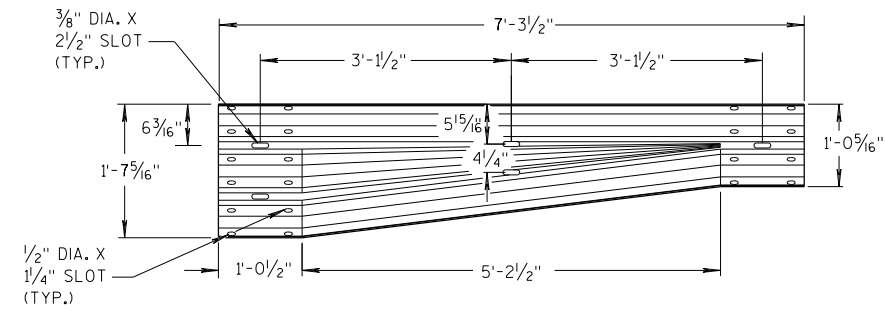


S.D.D. 14 B 45-5b

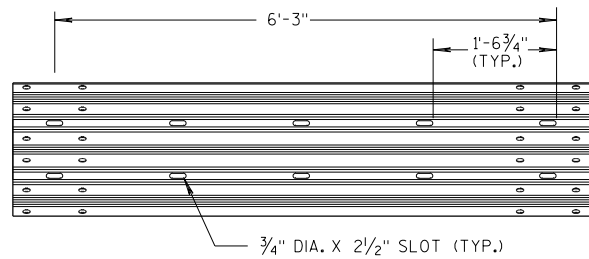


S.D.D. 14 B 45-5b

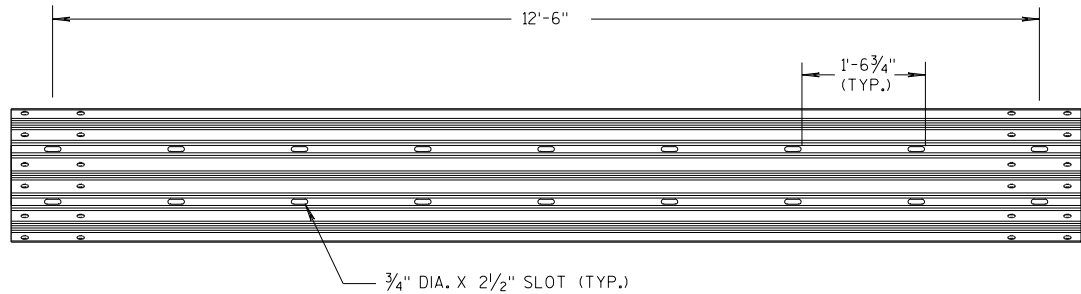




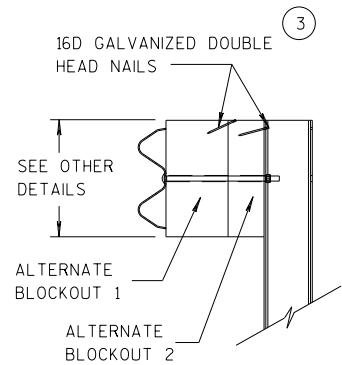
W-BEAM TO THRIE BEAM TRANSITION SECTION



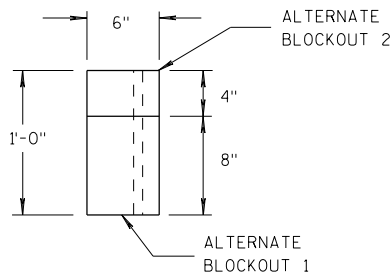
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

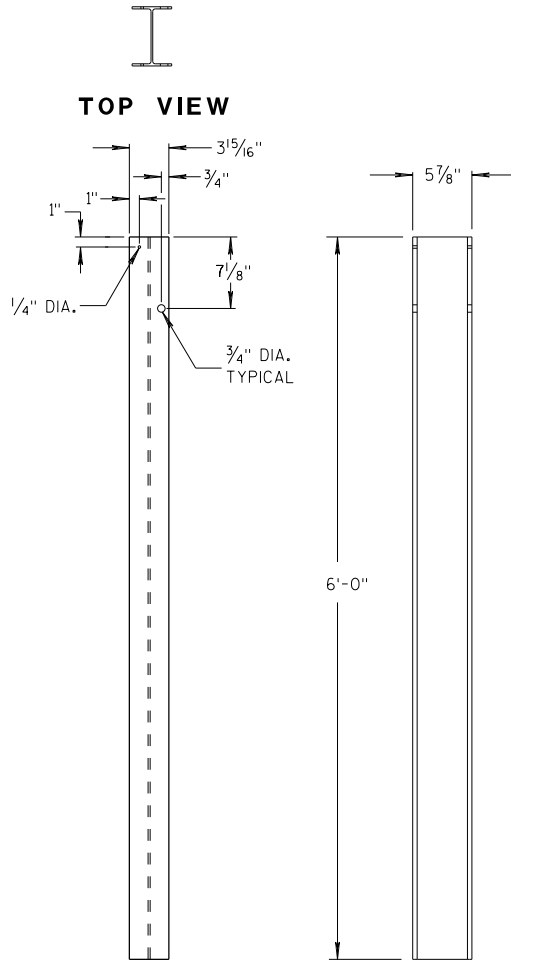


SIDE VIEW



TOP VIEW

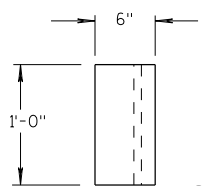
ALTERNATE WOOD BLOCKOUT DETAIL



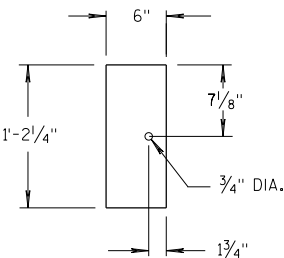
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

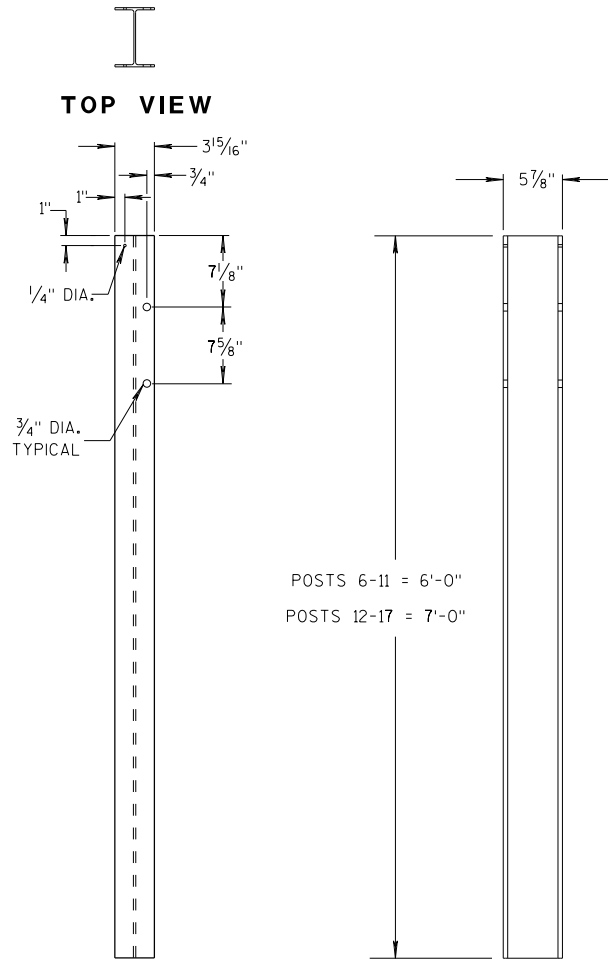


TOP VIEW



FRONT VIEW

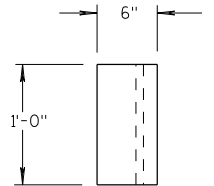
BLOCKOUT POSTS 1-5



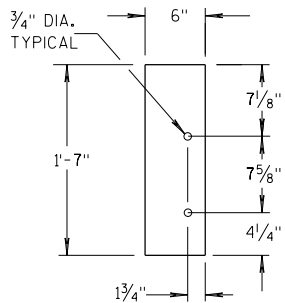
FRONT VIEW

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.

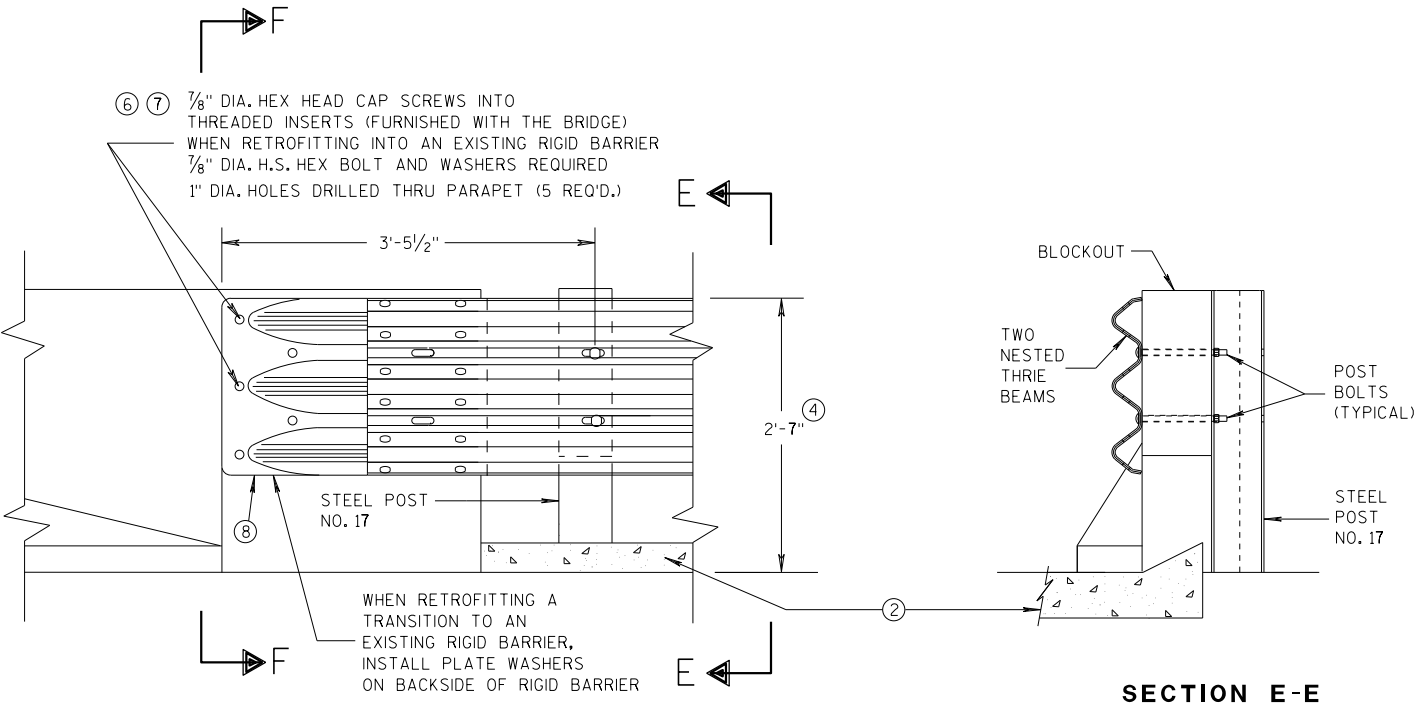
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

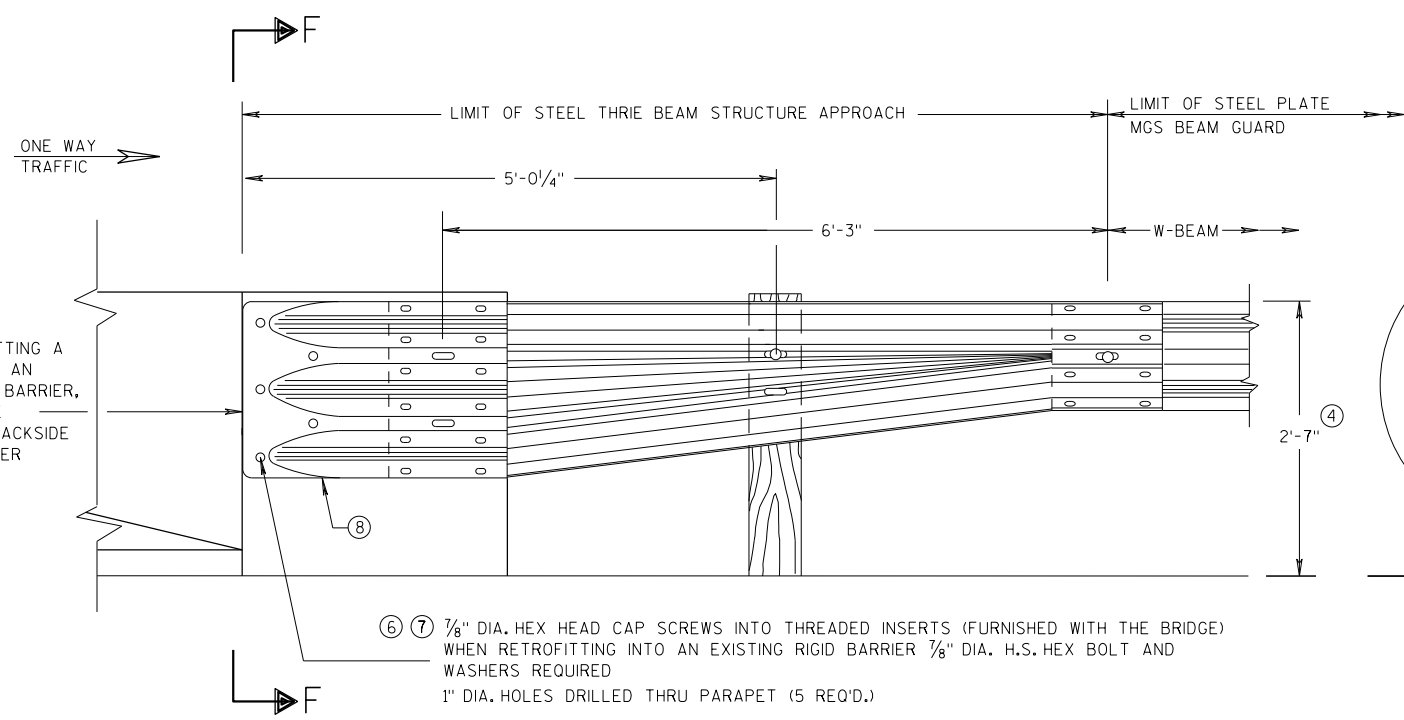
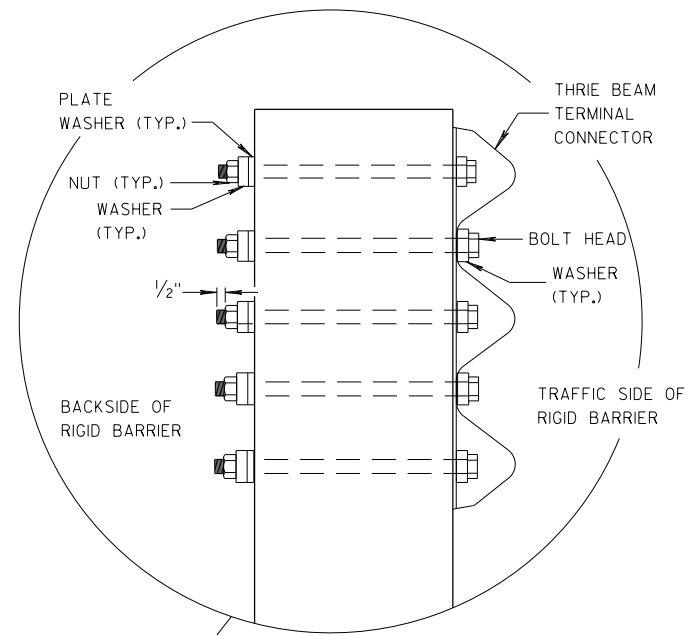
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 159

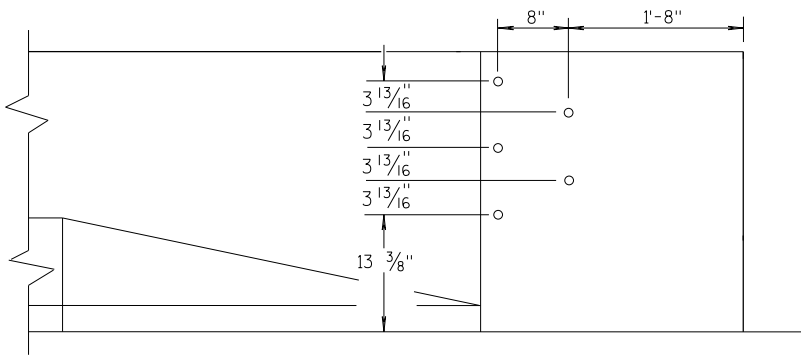


GENERAL NOTES

- 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 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F



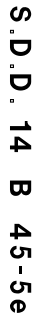
DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	160	NT	

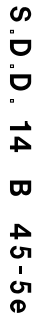
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S.D.D. 14 B 45-5e

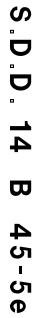
- S.D.D. 14 B 45-5e**



S.D.D. 14 B 45-5e

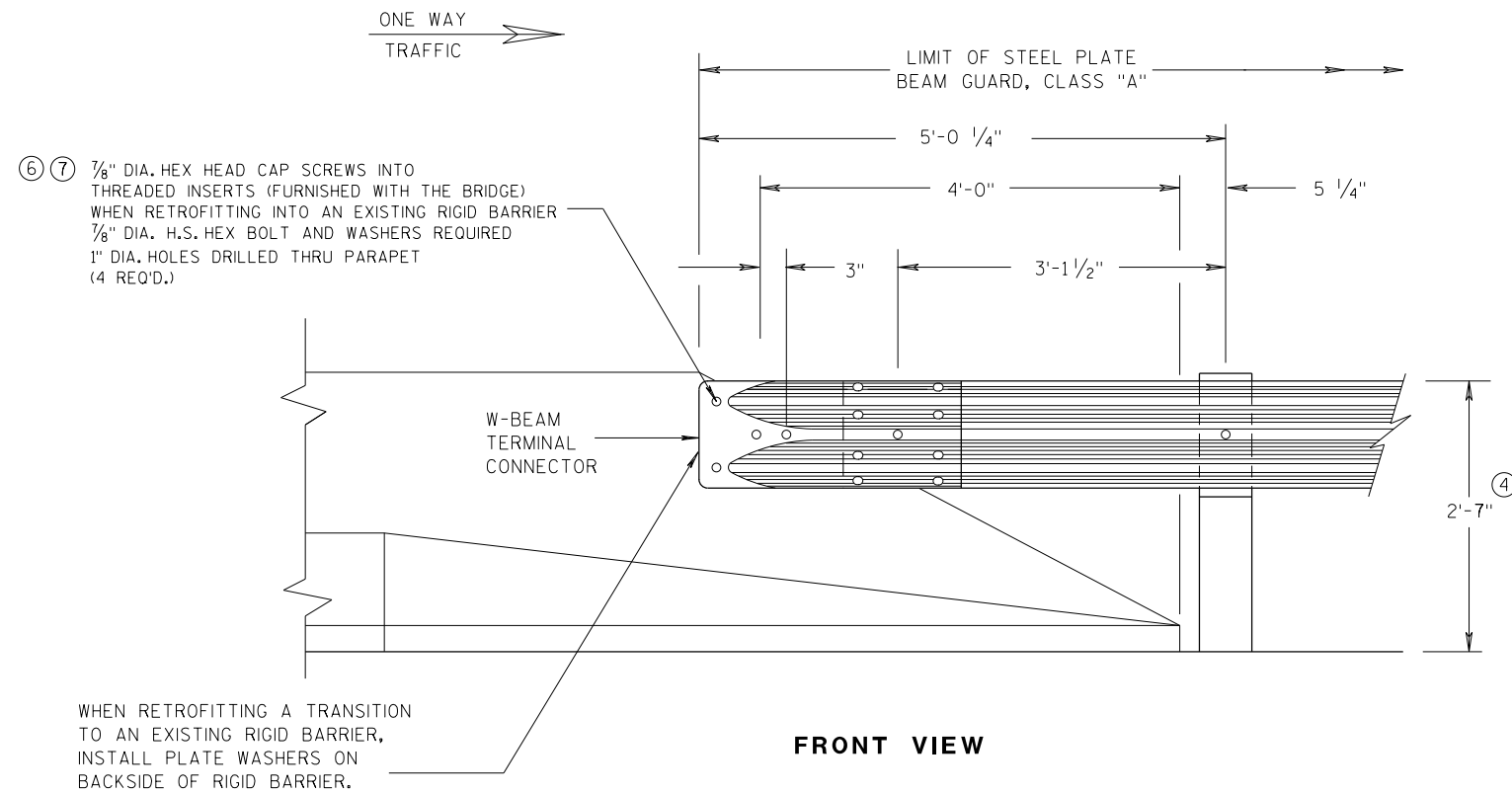


S.D.D. 14 B 45-5e



S.D.D. 14 B 45-5e

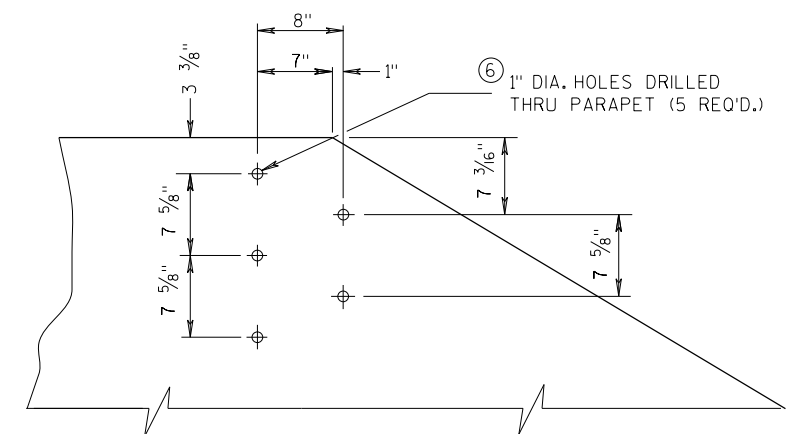
S.D.D. 14 B 45-5e



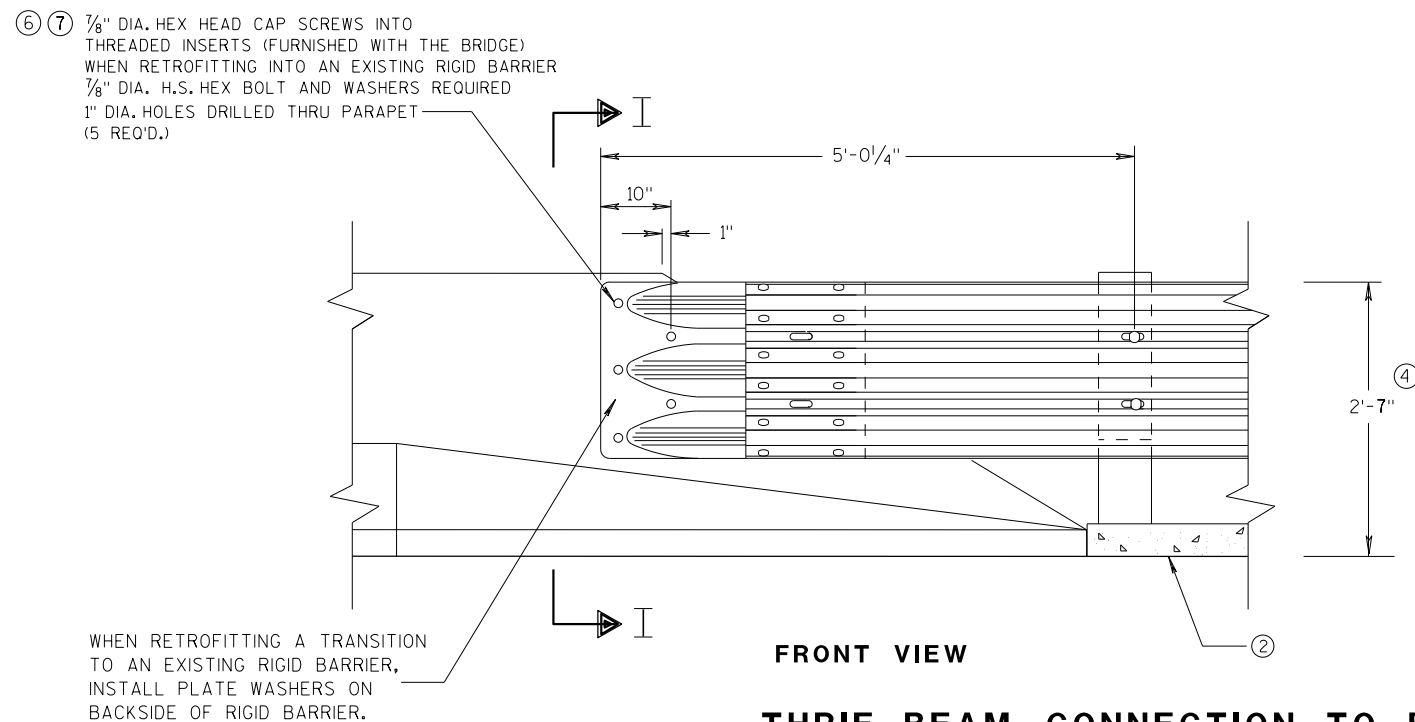
**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS**
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

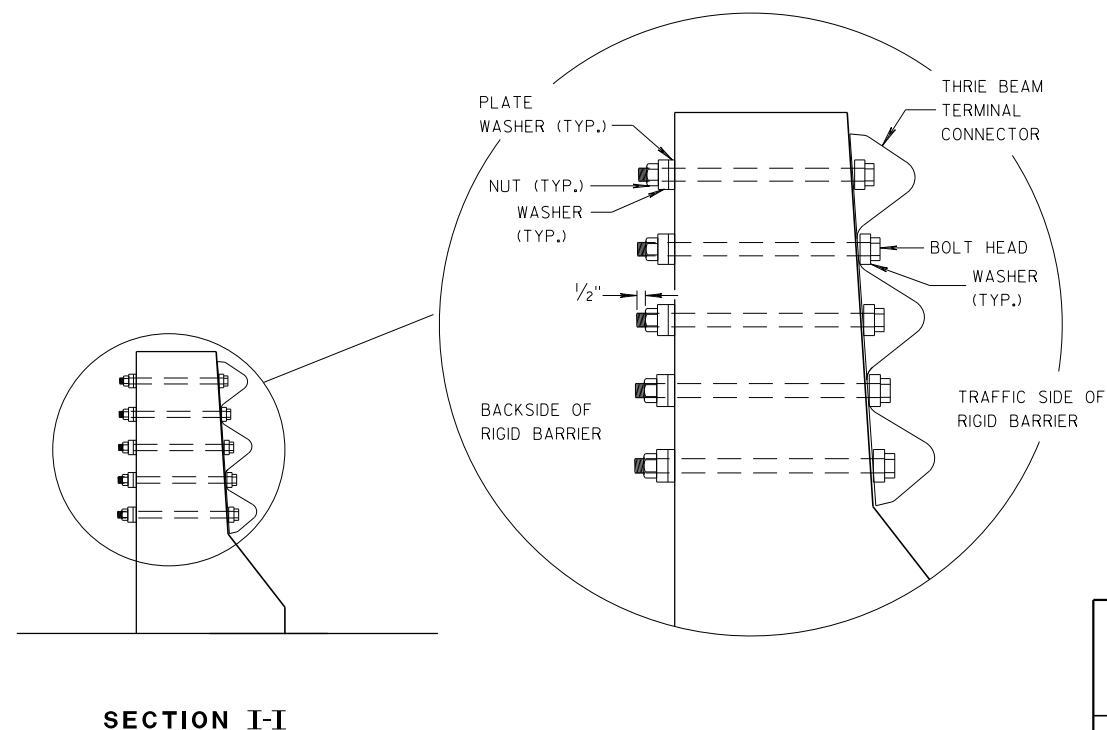
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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**



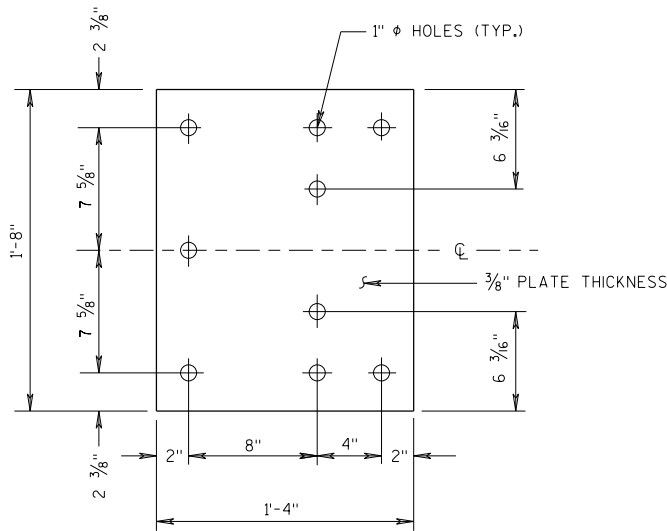
**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



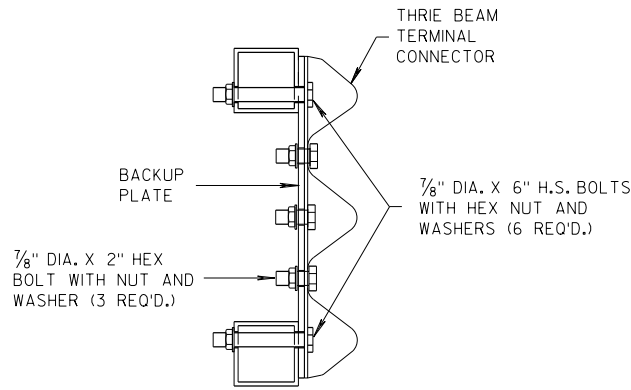
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

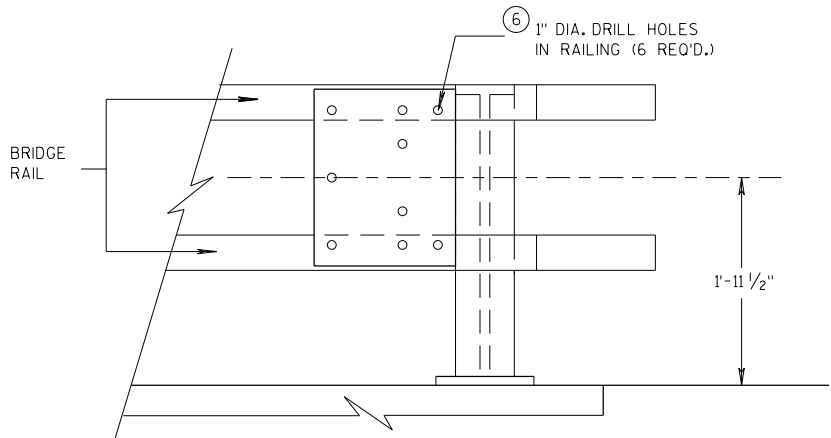
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 162
FHWA



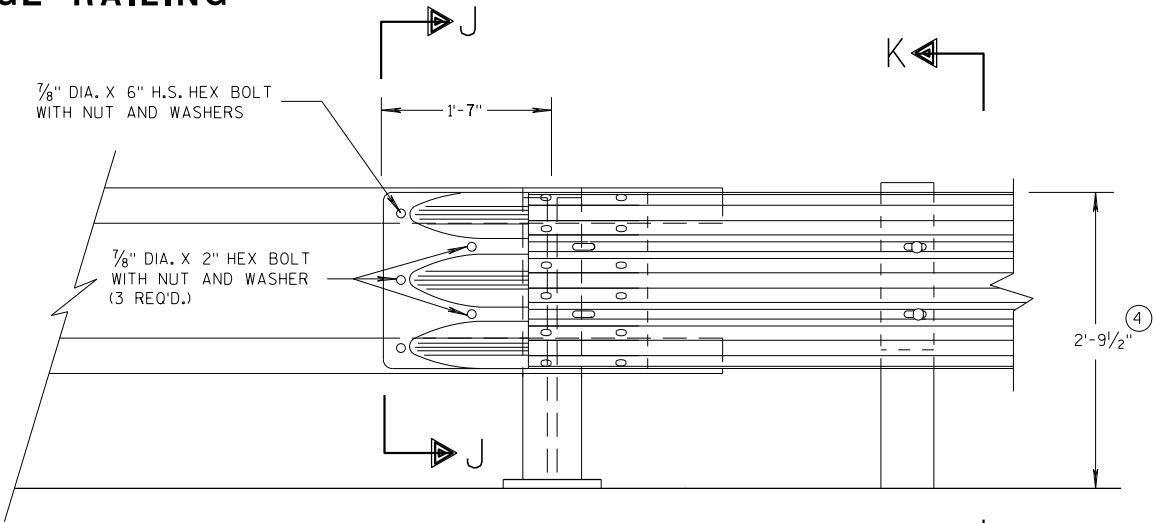
BACK-UP PLATE DETAIL



SECTION J-J

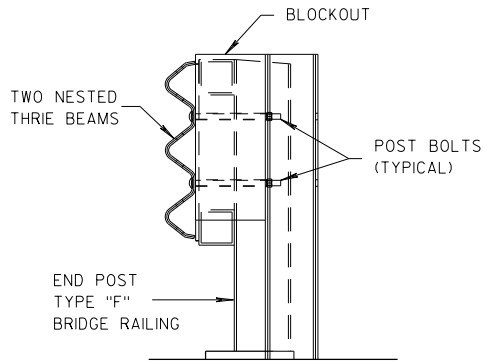


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

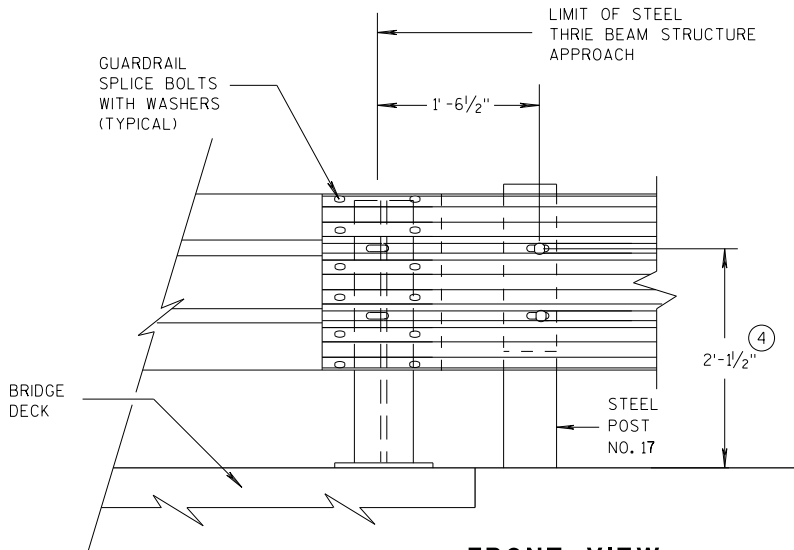
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



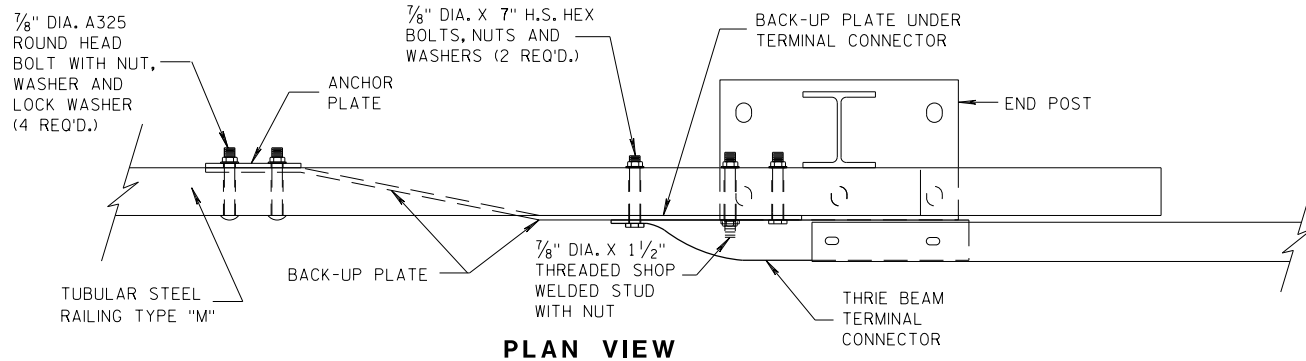
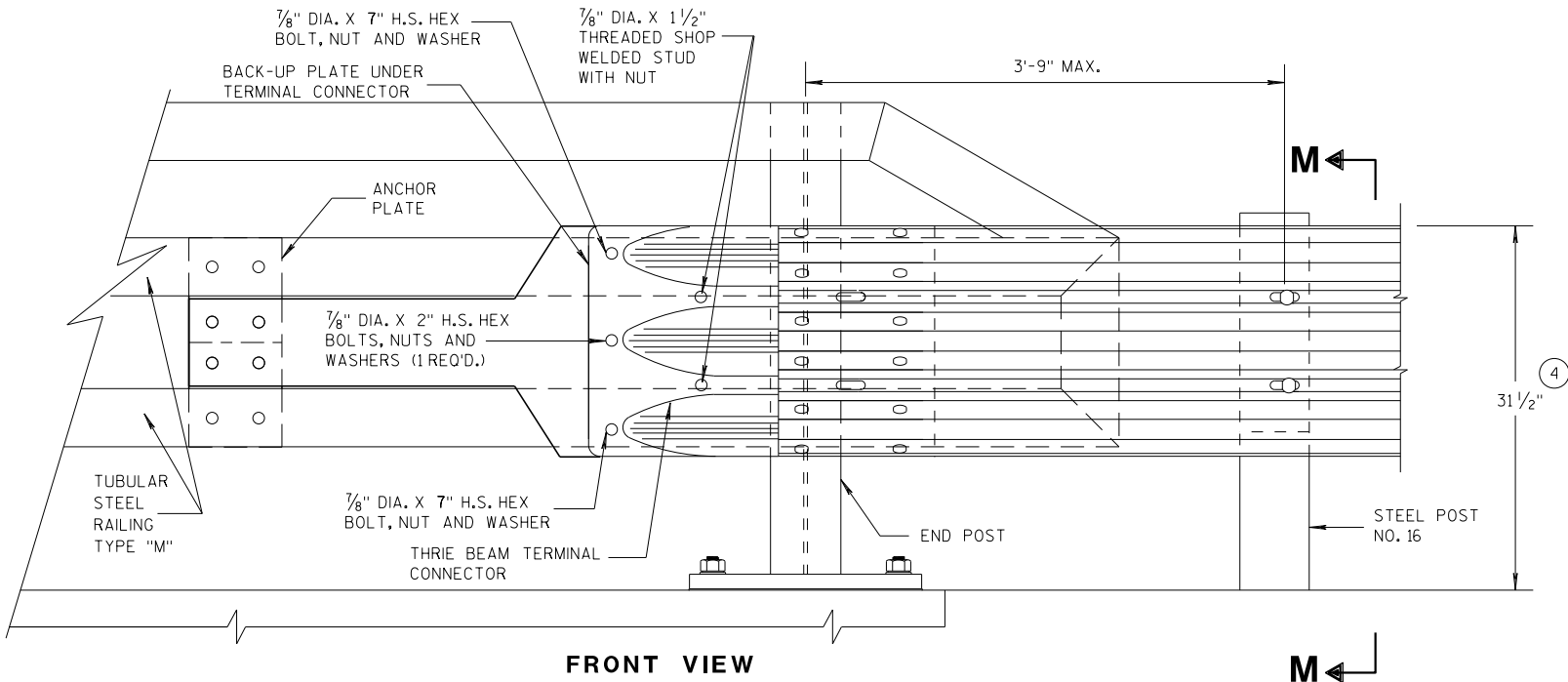
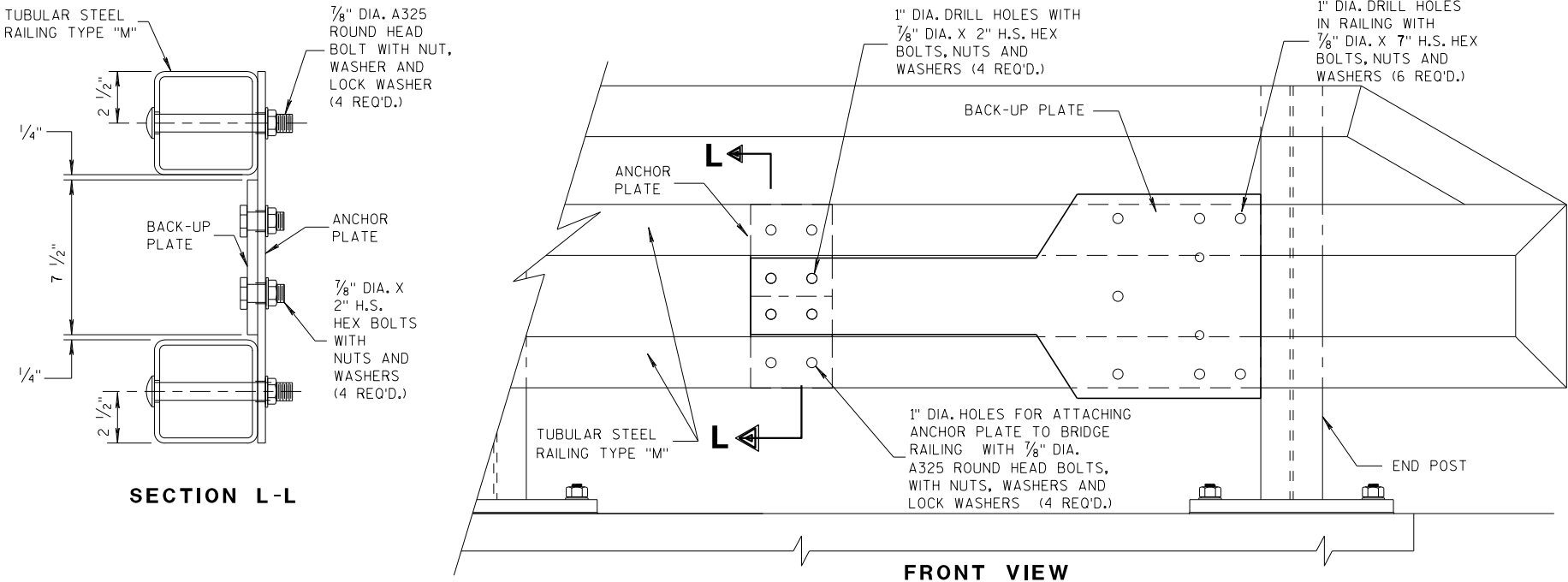
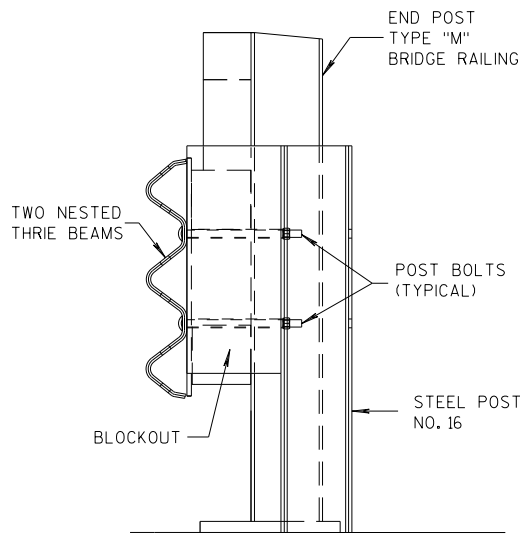
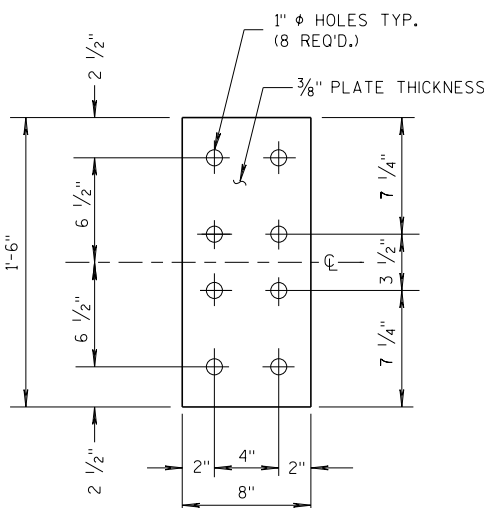
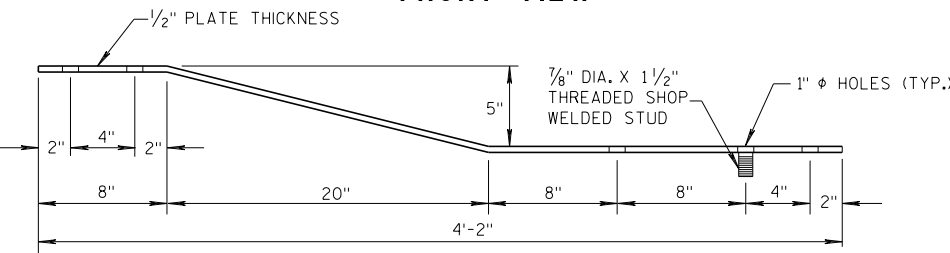
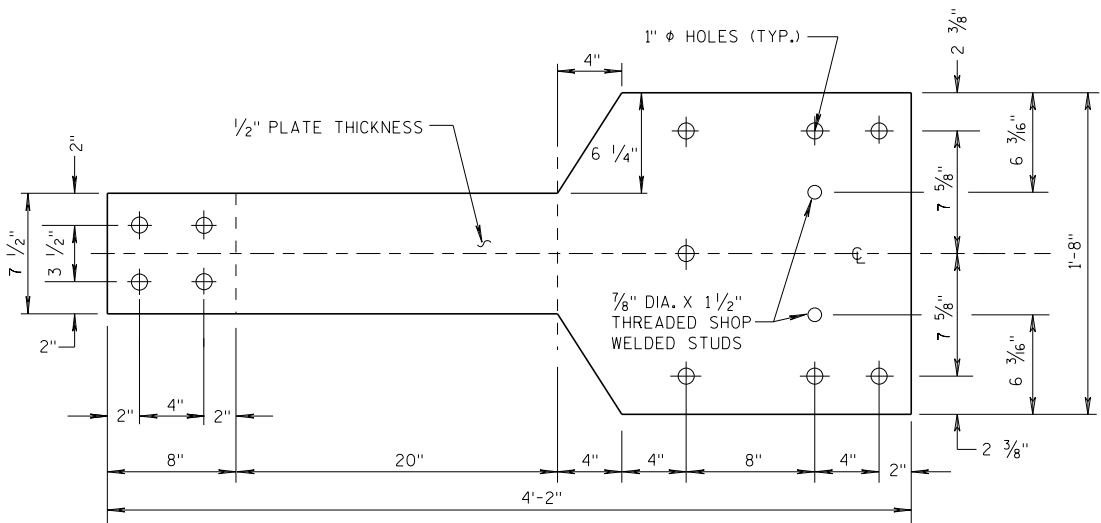
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 07/2018	/S/ Rodney Taylor	163
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FHWA		

GENERAL NOTES

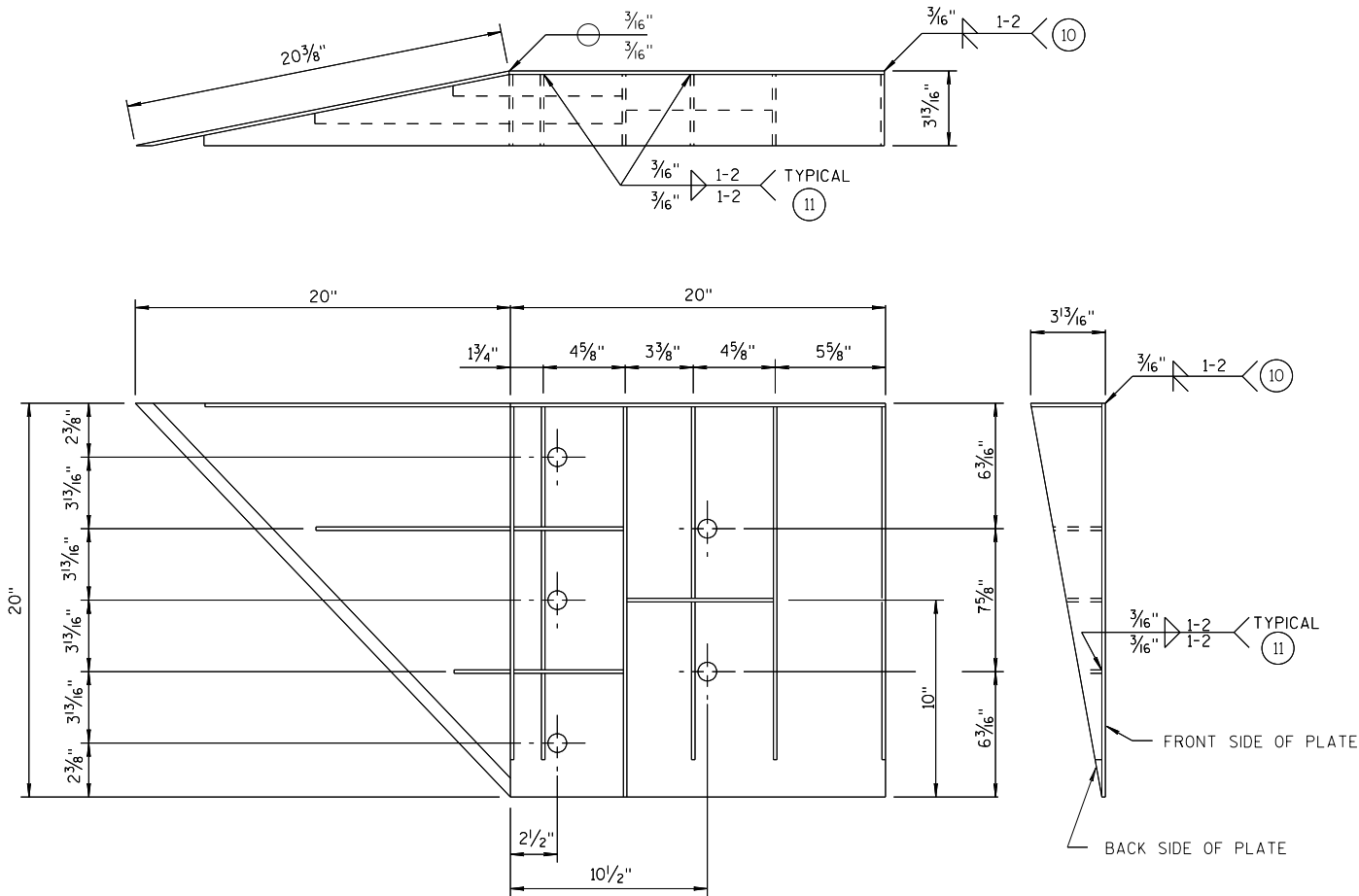
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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FHWA 164 ENT

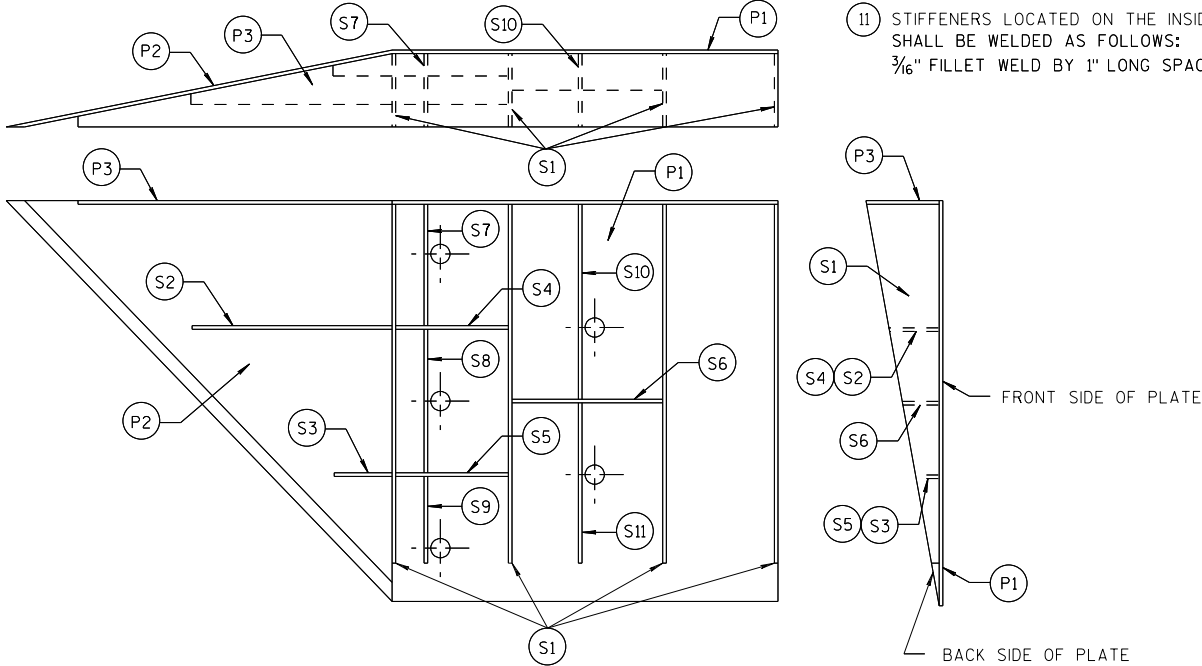


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION 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 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	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 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF 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.

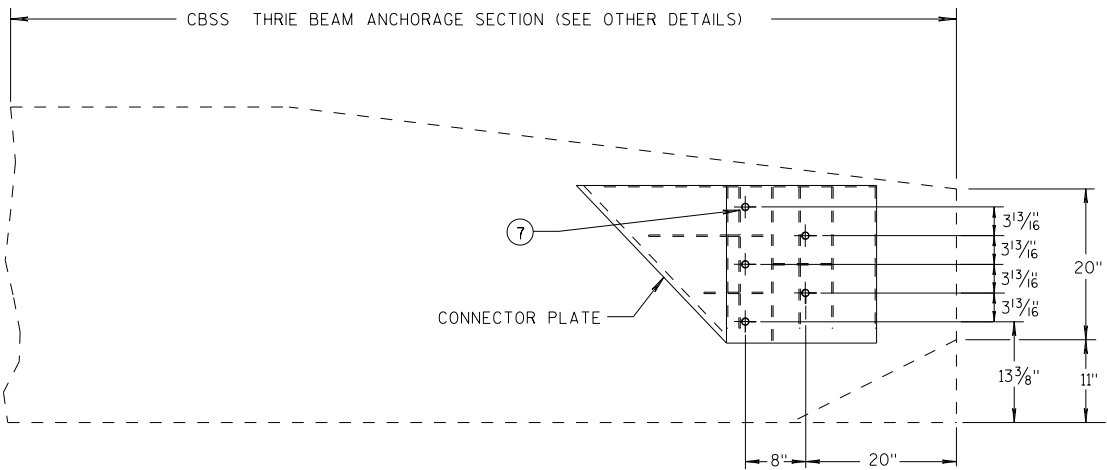
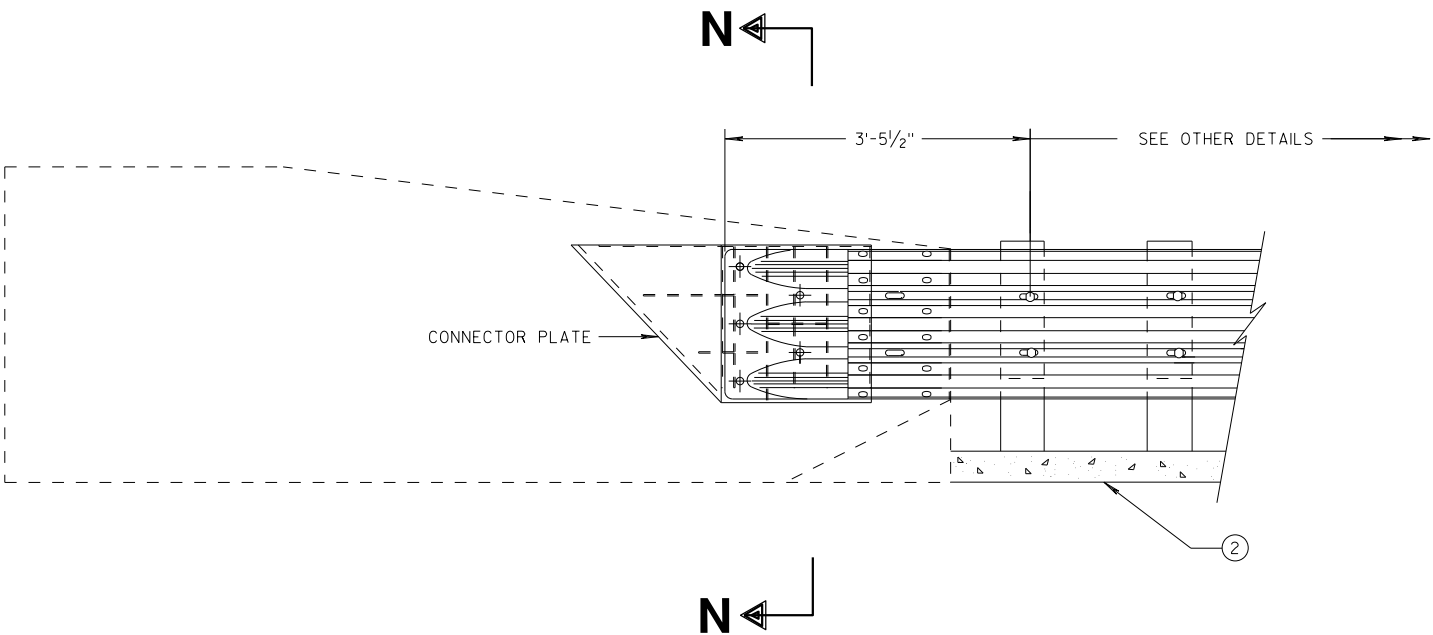
- STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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FHWA 165 ENT

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



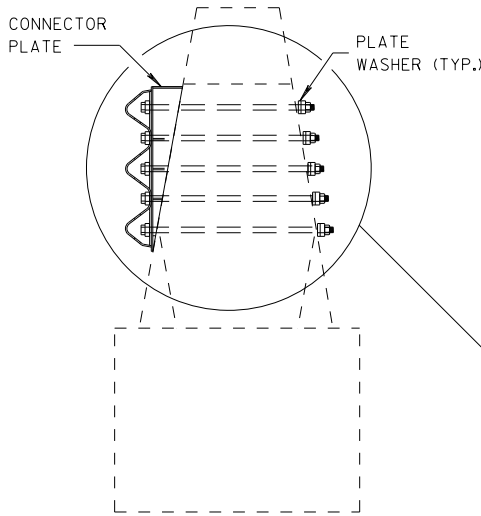
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

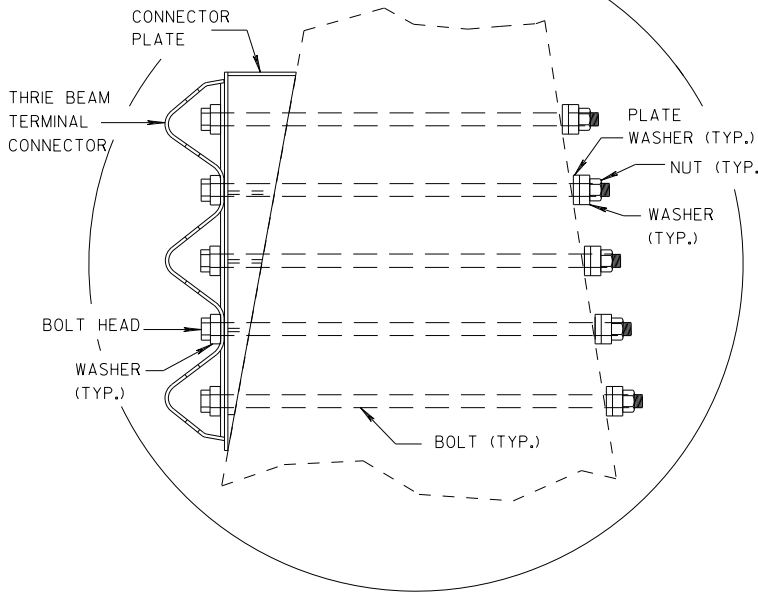
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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



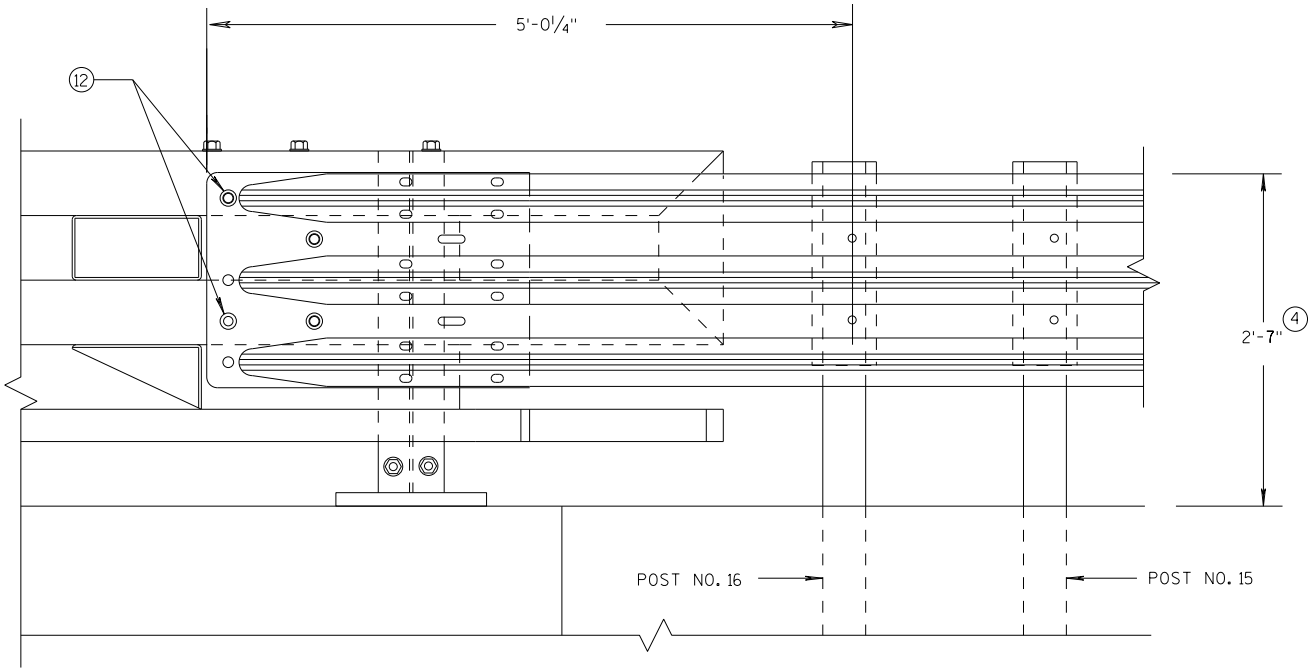
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

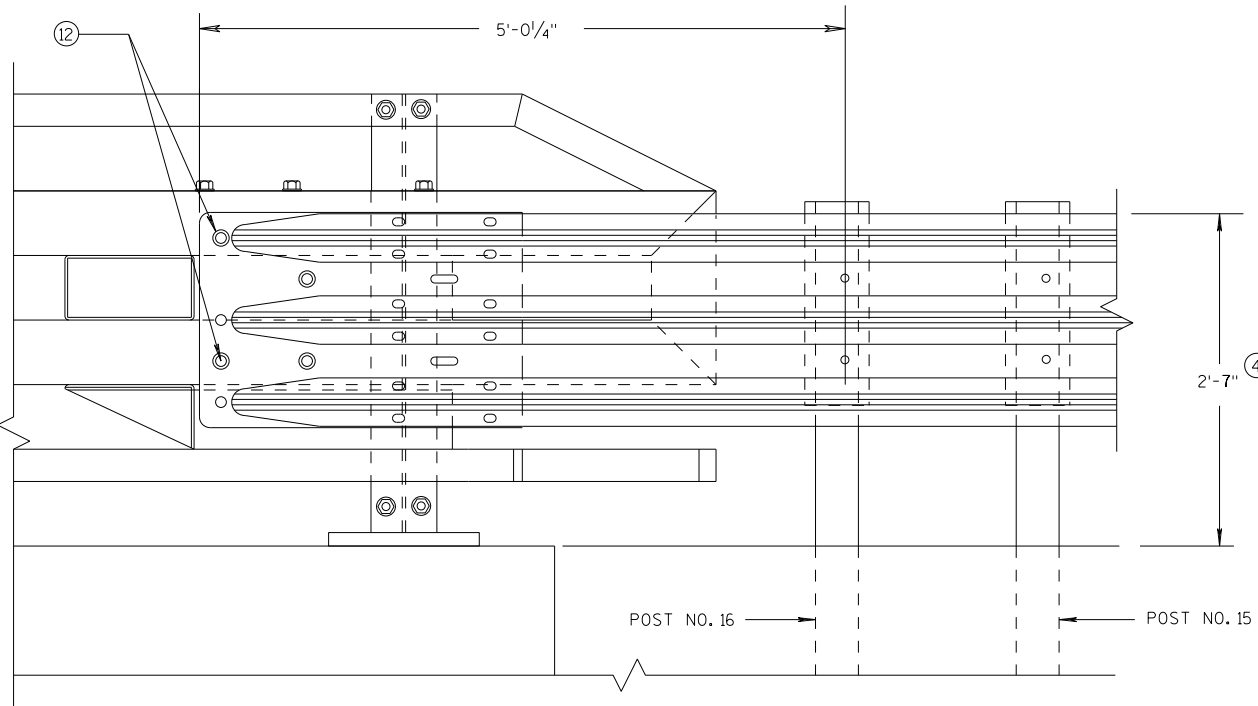
APPROVED
DATE 7/2018
ROADWAY STANDARDS DIVISION
UNIT SUPERVISOR /S/ Rodney Taylor
166

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

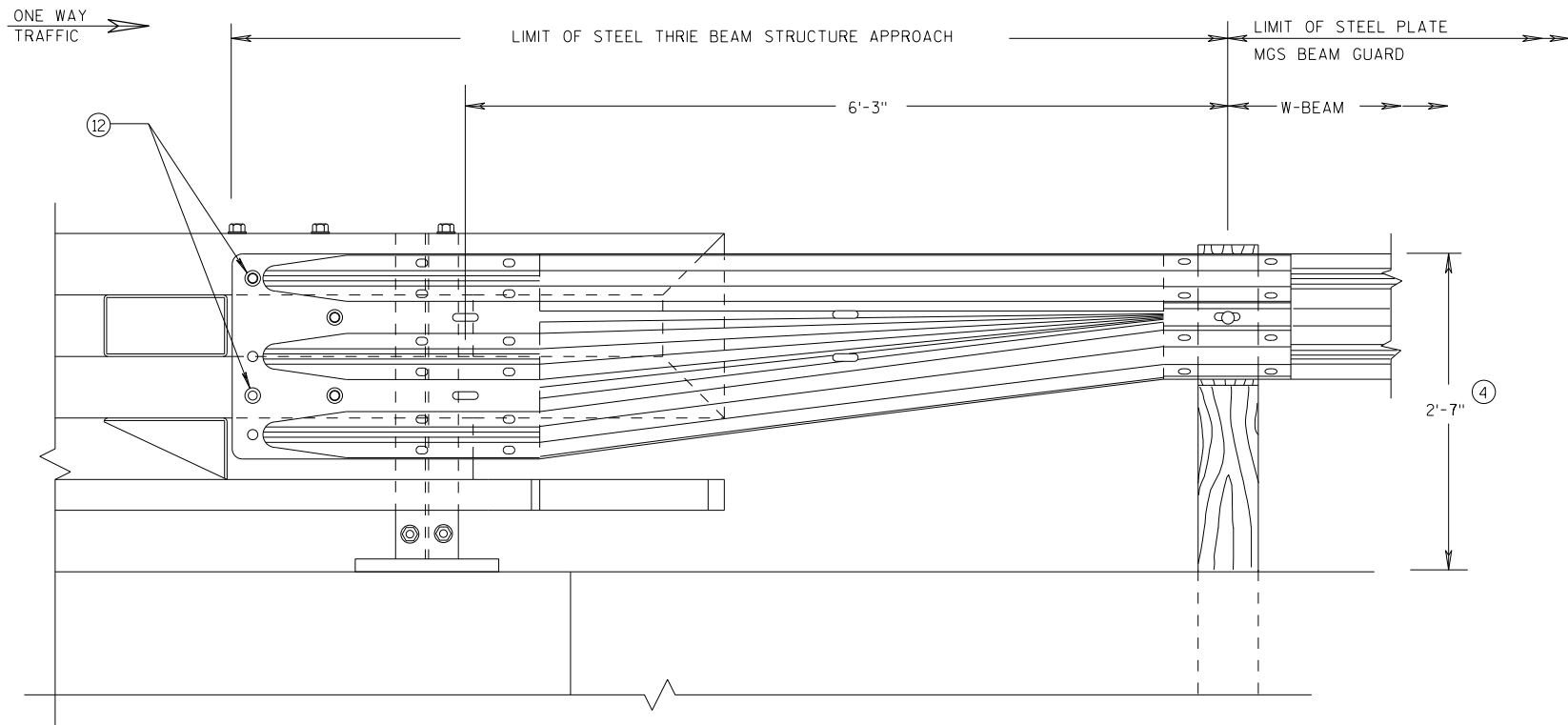


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

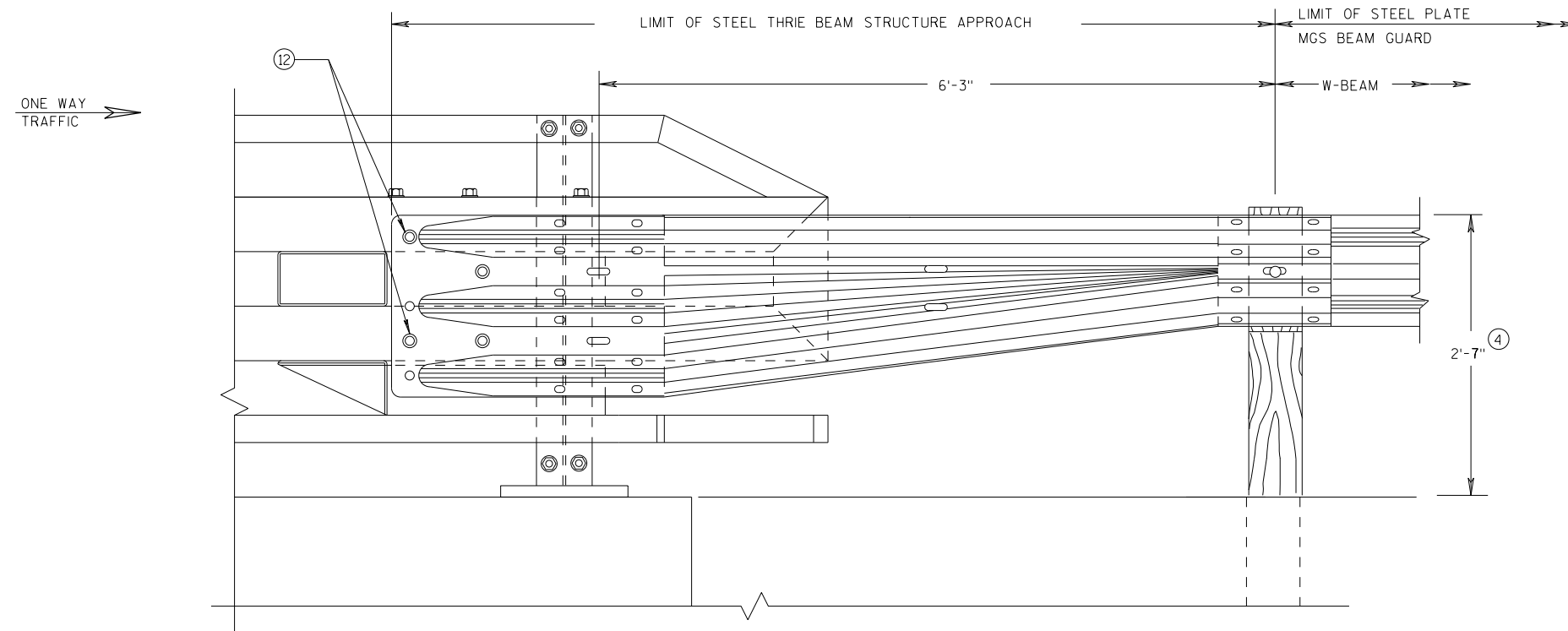
APPROVED
DATE 7/2018
UNIT SUPERVISOR /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 167 NT
FHWA



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 "NY3"
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

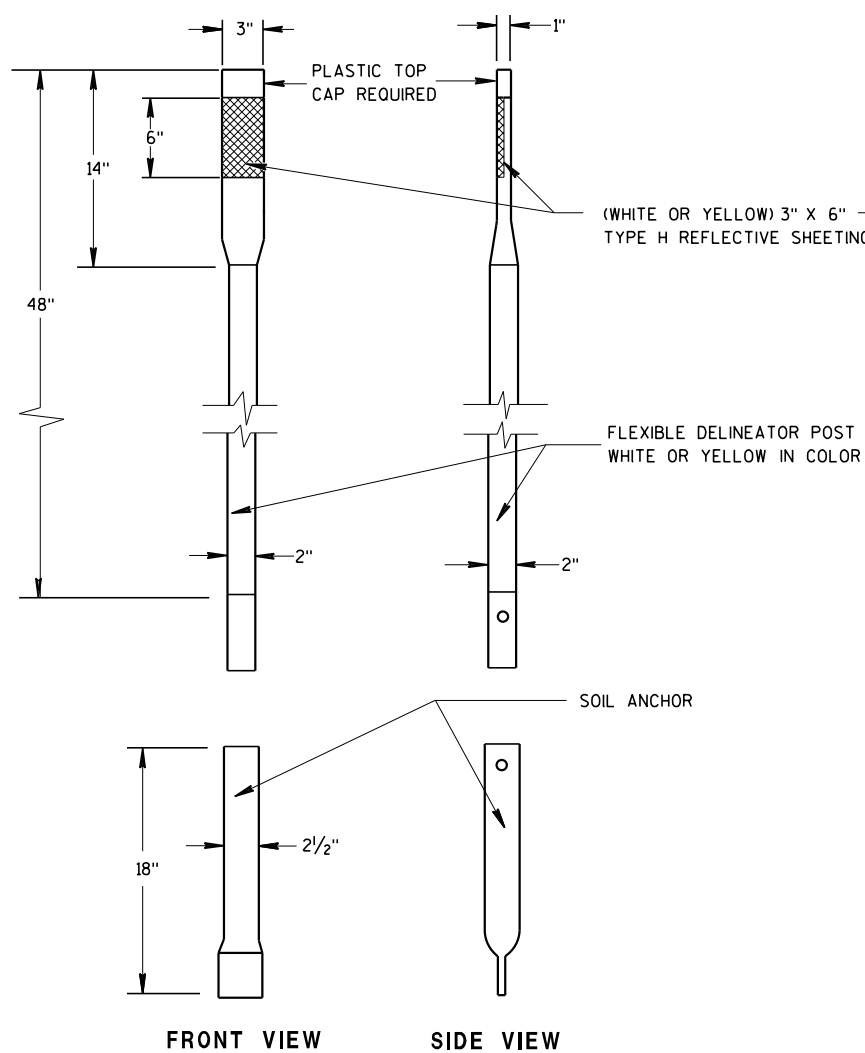


FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

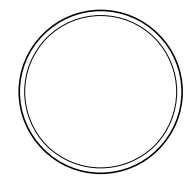
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

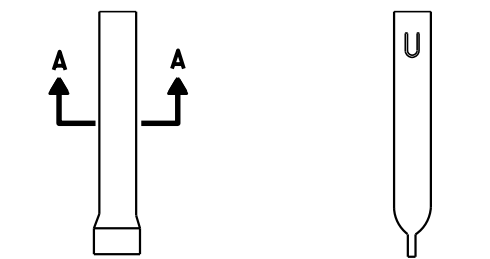
APPROVED
 DATE 7/2018 /S/ Rodney Taylor
 ROADWAY STANDARDS C 168 NT
 FHWA UNIT SUPERVISOR



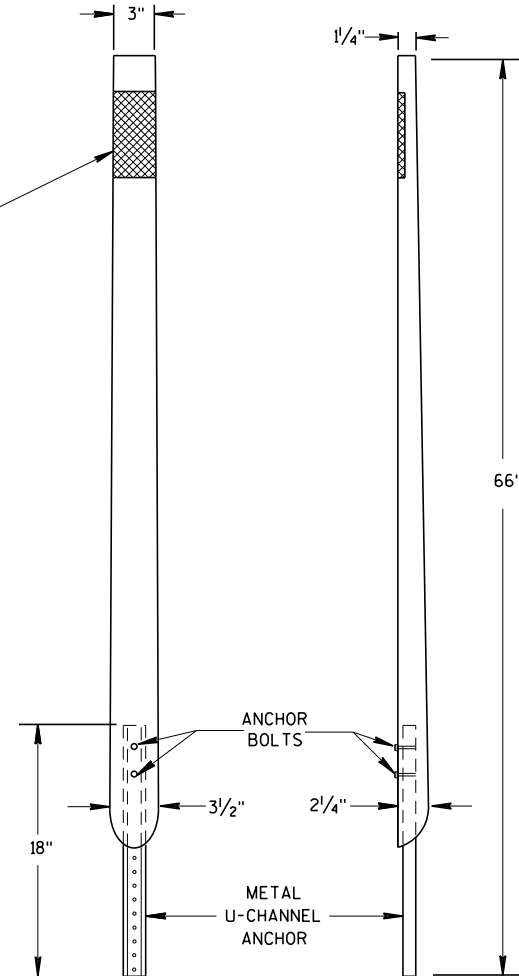
ALTERNATE 1



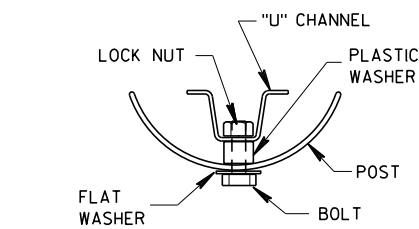
SECTION A-A



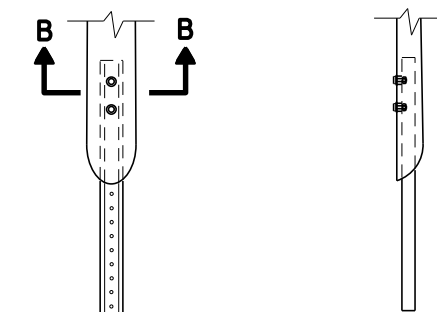
ALTERNATE 1



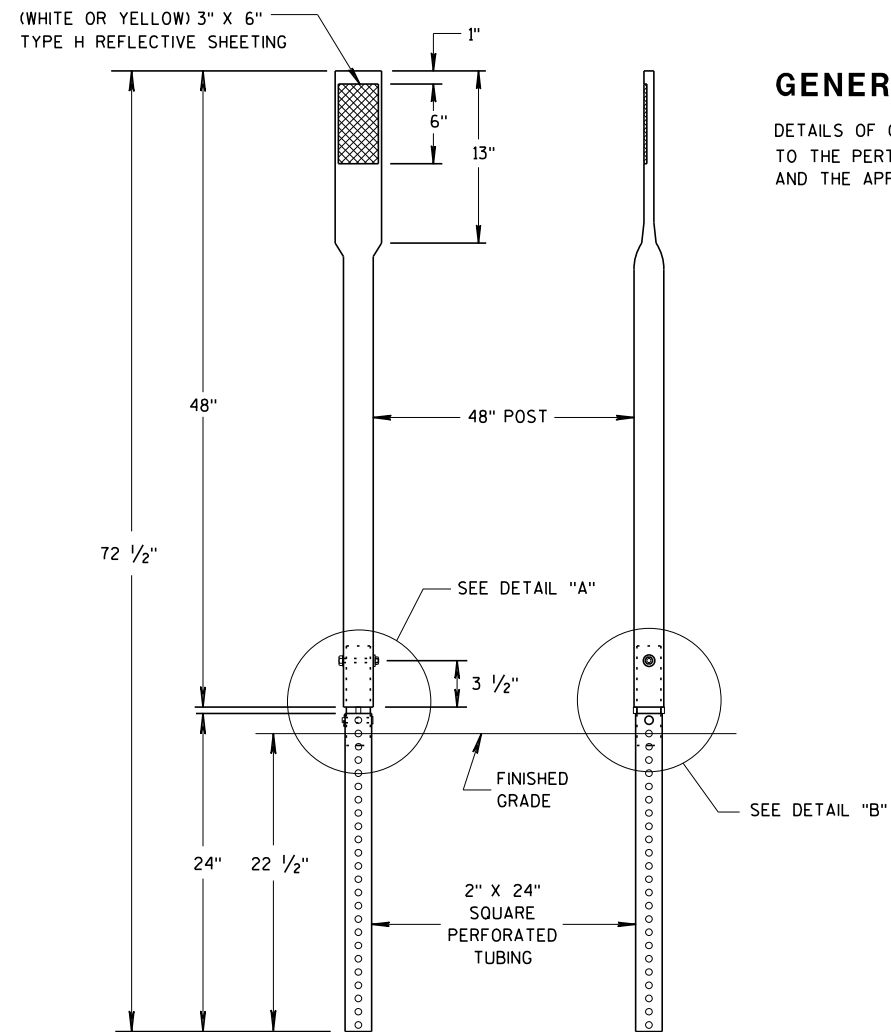
ALTERNATE 2
FLEXIBLE DELINEATOR POSTS



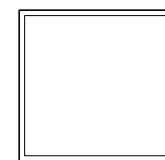
SECTION B-B



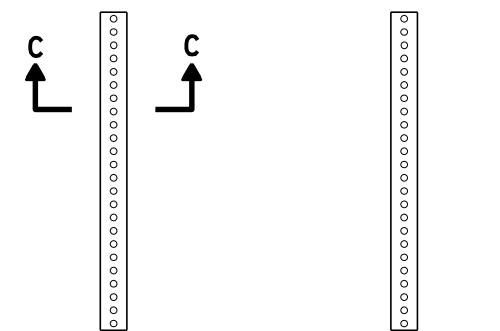
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



ALTERNATE 3



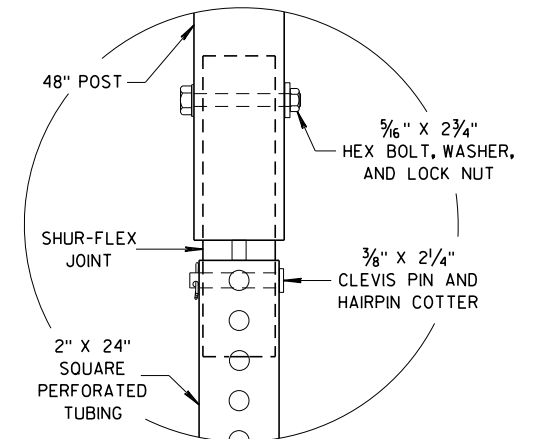
SECTION C-C



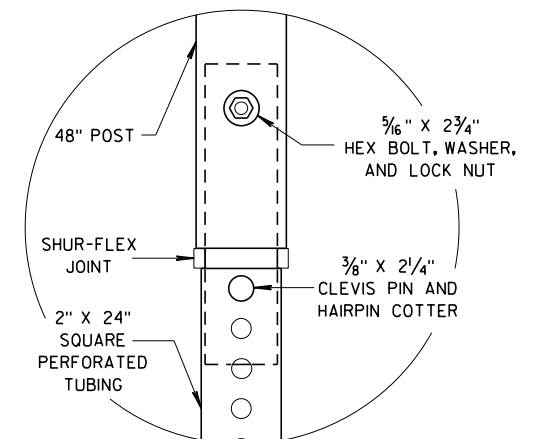
ALTERNATE 3

GENERAL NOTES

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



DETAIL A



DETAIL B

REFLECTOR SPACING TABLE

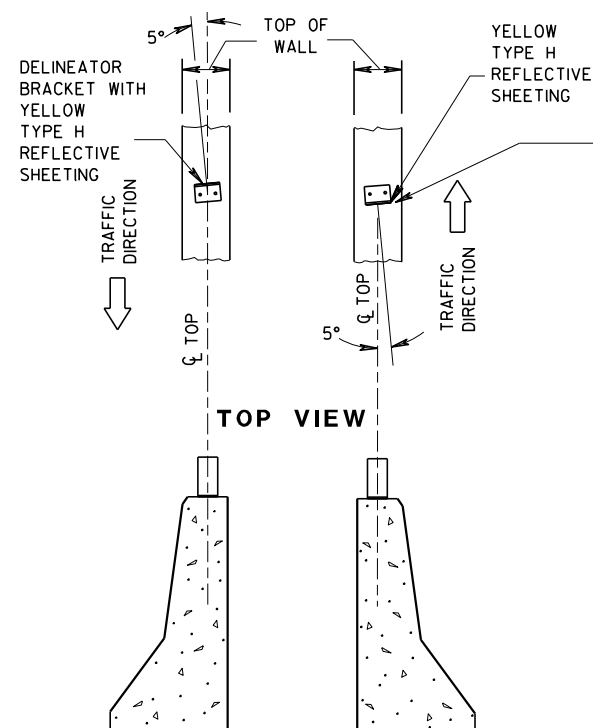
REFLECTOR SPACING	LOCATION
*100' C-C	RAMPS
400' C-C	MAINLINE

*START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

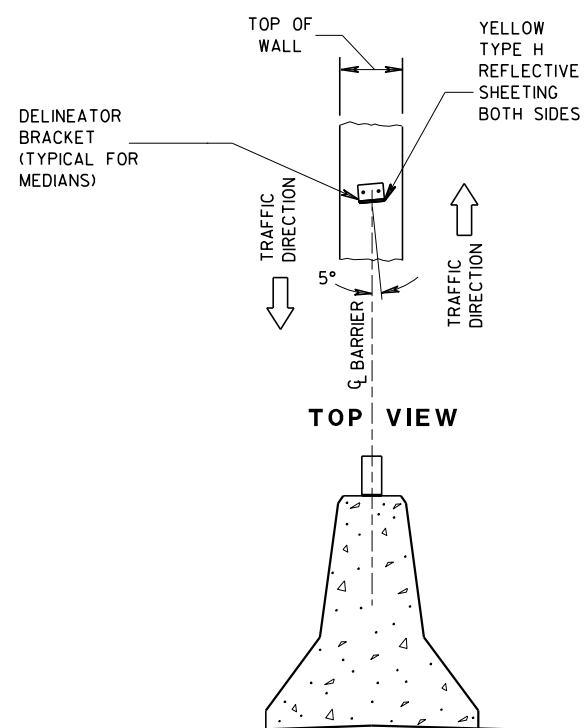
FLEXIBLE DELINEATOR POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

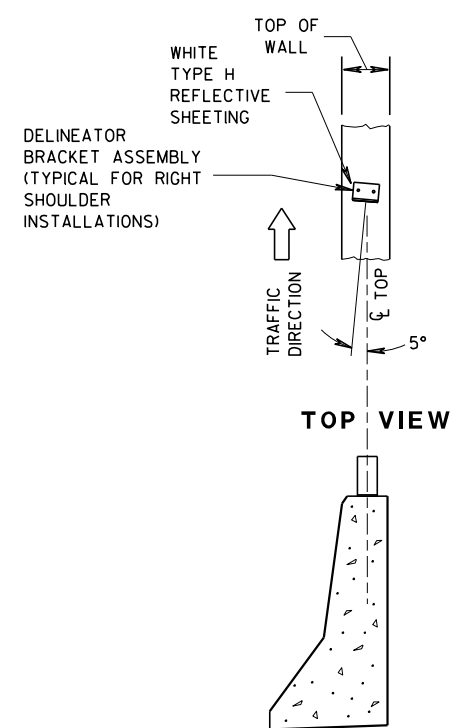
APPROVED
March 2018 /S/ Matt Rauch
DATE STATE SIGNING AND MA 169 INEER
FHWA



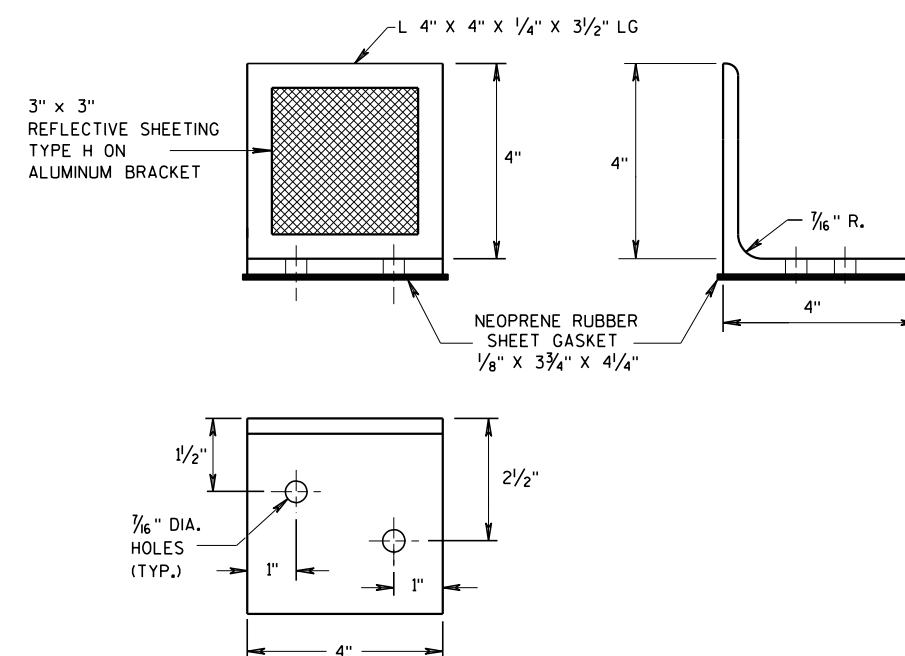
DOUBLE BARRIERS IN MEDIAN



MEDIAN BARRIER



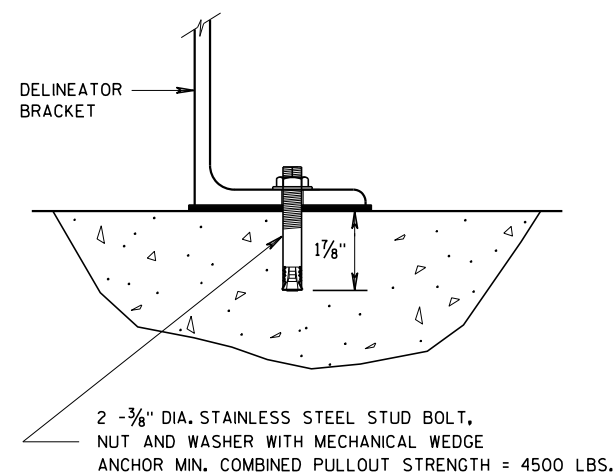
BARRIER LOCATED
TO RT. OF TRAFFIC FLOW



DELINEATOR BRACKET

REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3

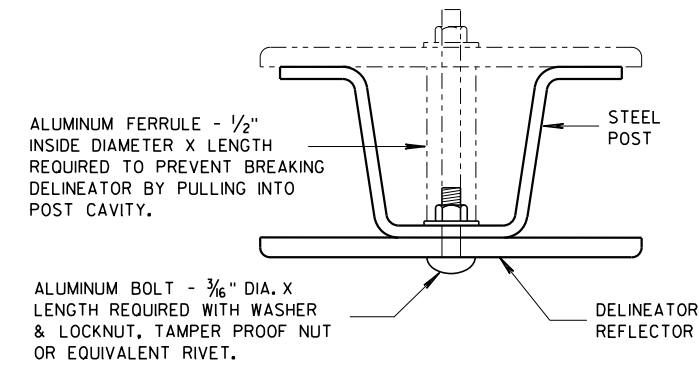


DELINEATOR BRACKET
MOUNTING DETAIL

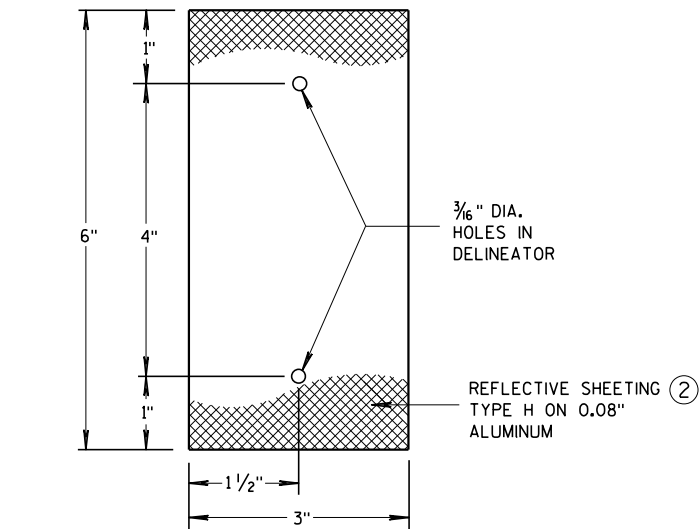
DELINEATOR BRACKET
WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

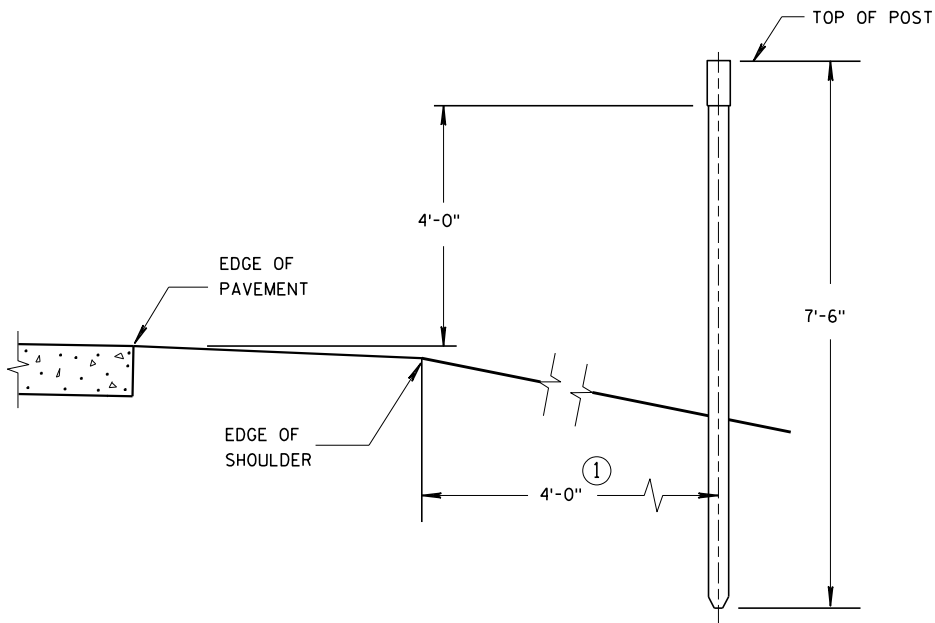
APPROVED
March 2018 /S/ Matthew P. Bouch
DATE STATE SIGNING AND M. 170 NGINEER
FHWA



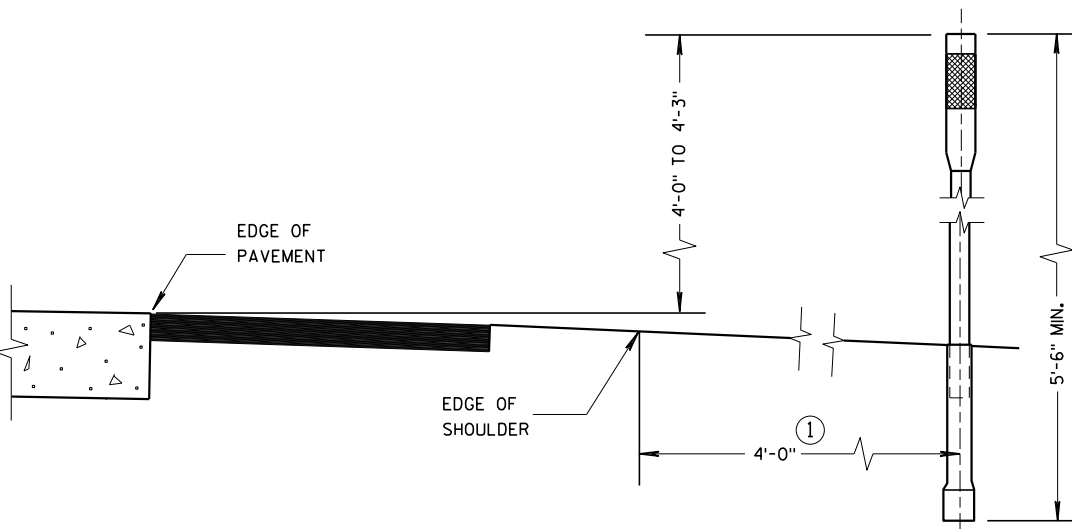
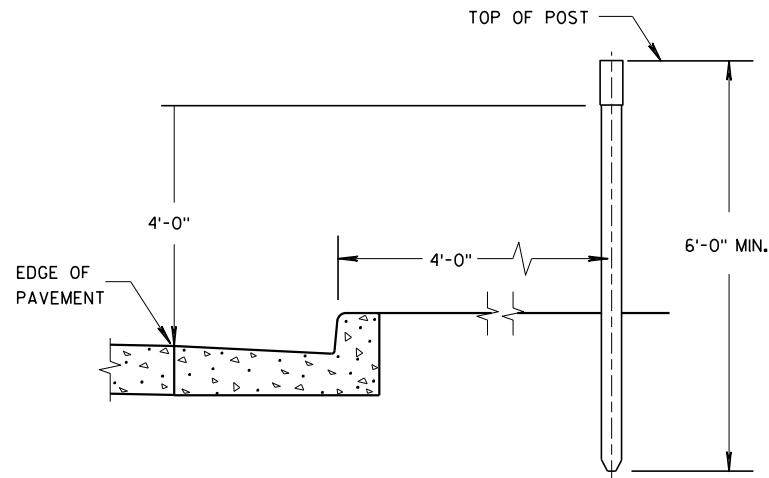
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



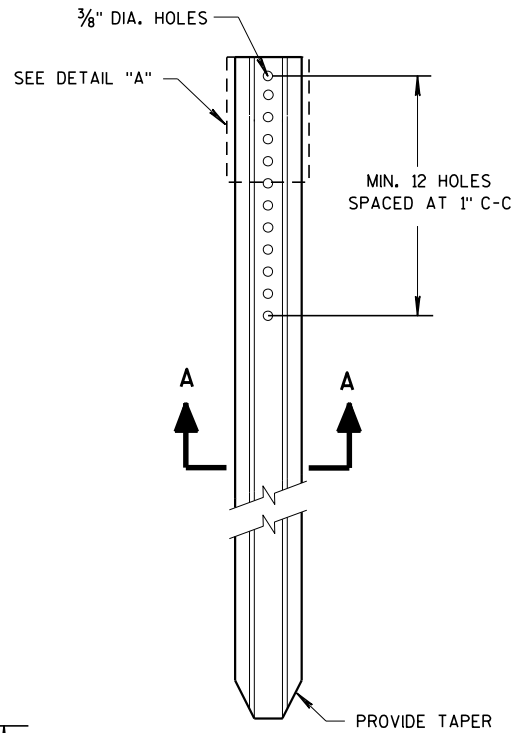
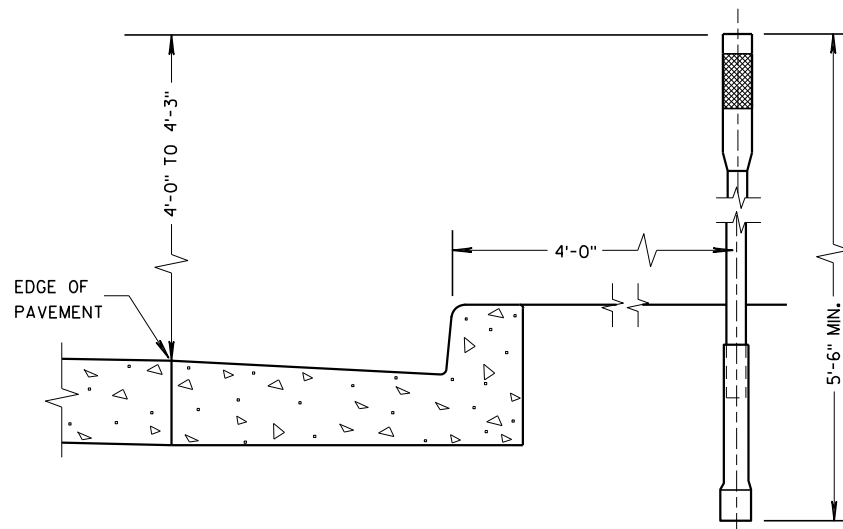
DETAIL "A" 3" X 6" DELINEATOR REFLECTOR



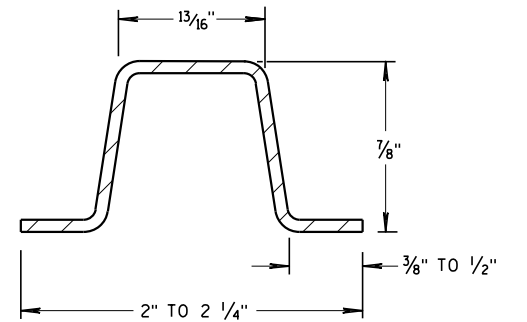
TYPICAL INSTALLATIONS OF DELINEATOR POSTS



TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS



DELINEATOR POST



SECTION A-A WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

REFLECTOR SPACING TABLE

REFLECTOR SPACING	LOCATION
400'	MAINLINE
100'	RAMPS *

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER.

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.
- ② FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.

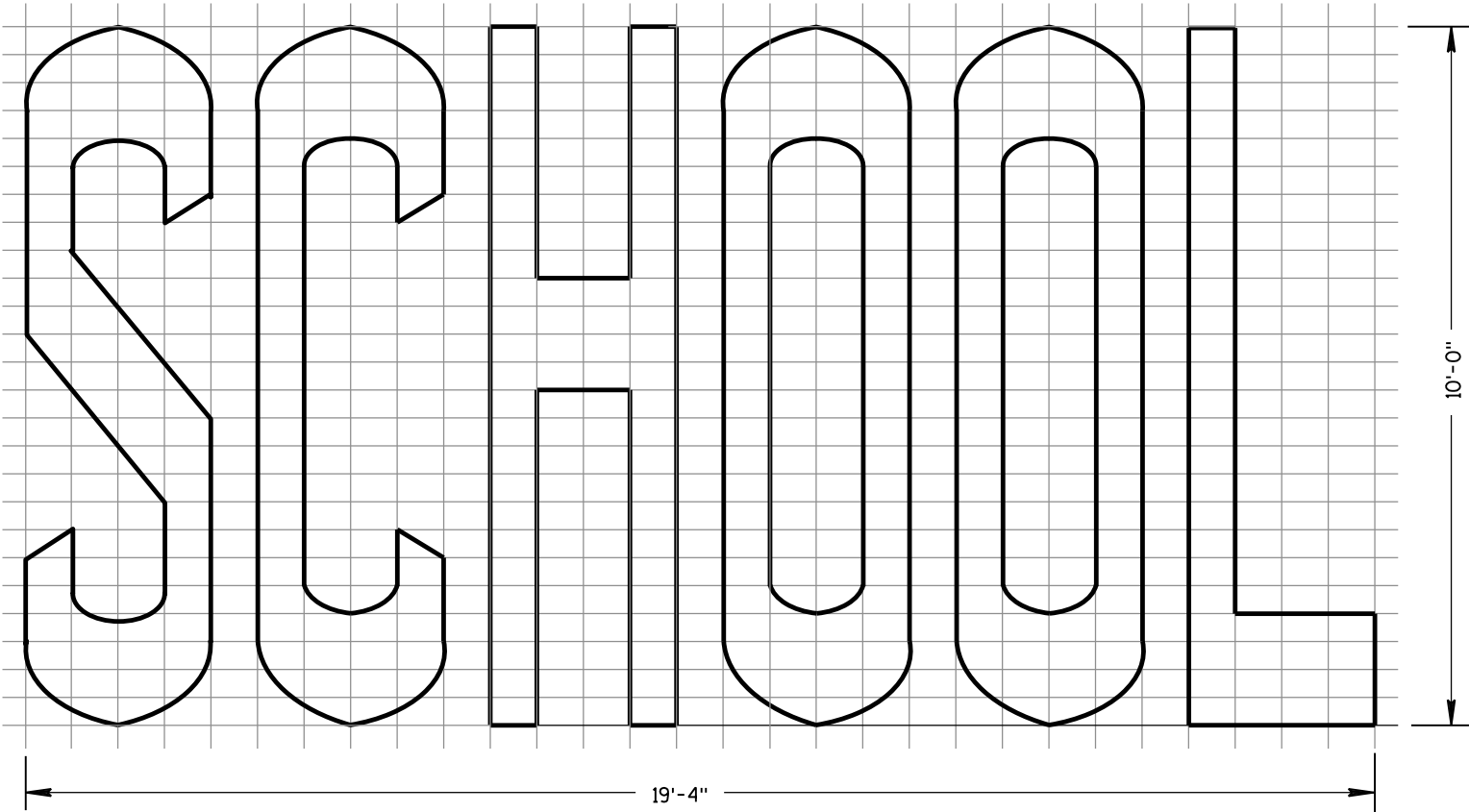
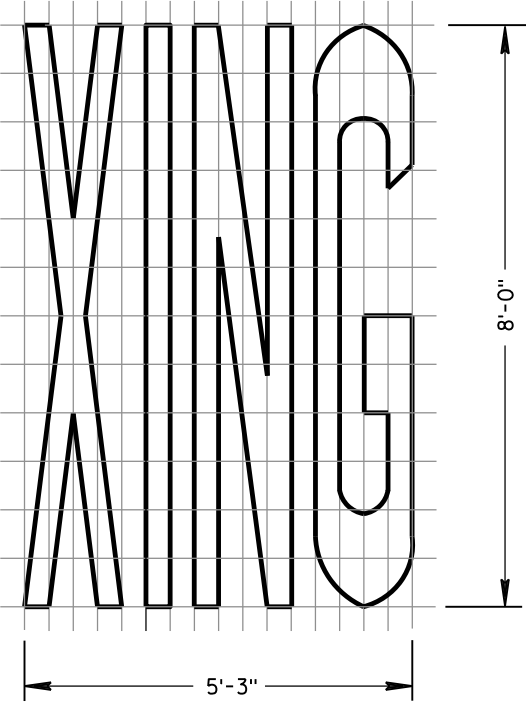
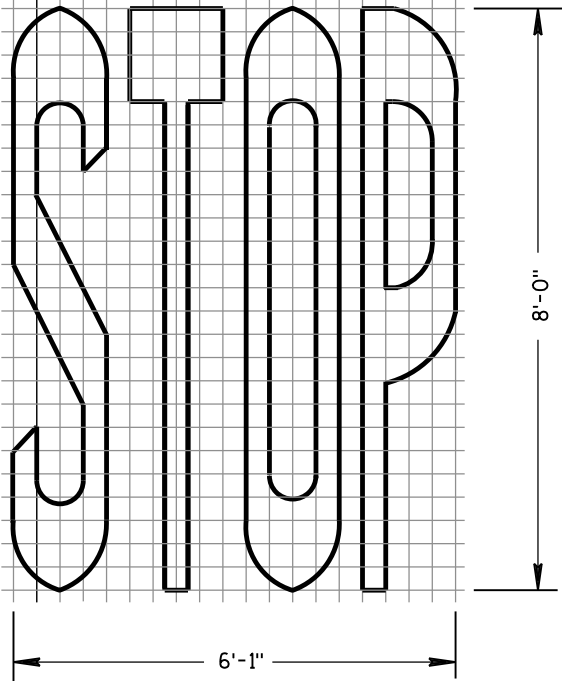
DELINEATOR POST WITH REFLECTIVE SHEETING

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

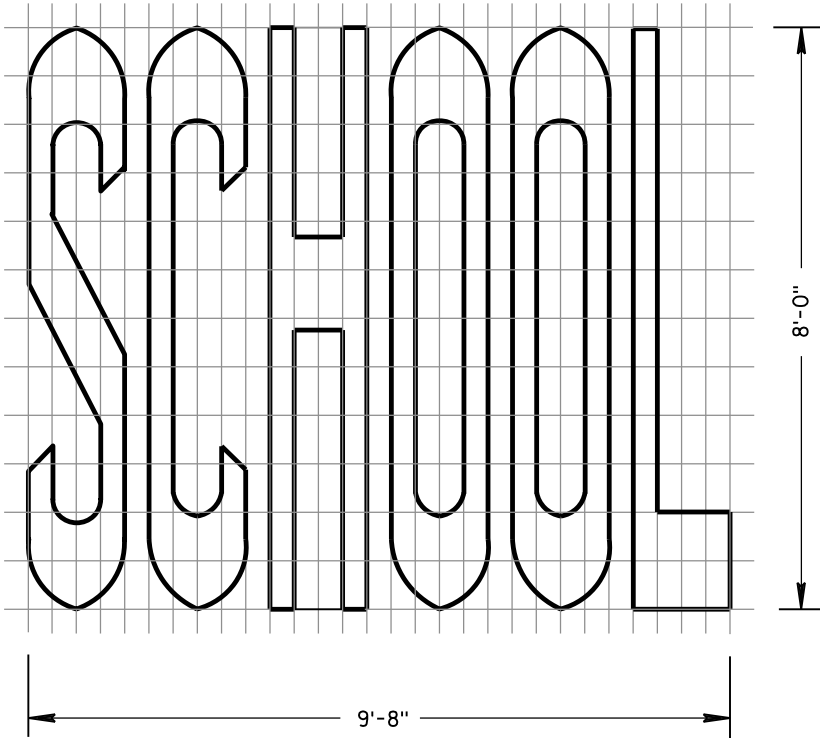
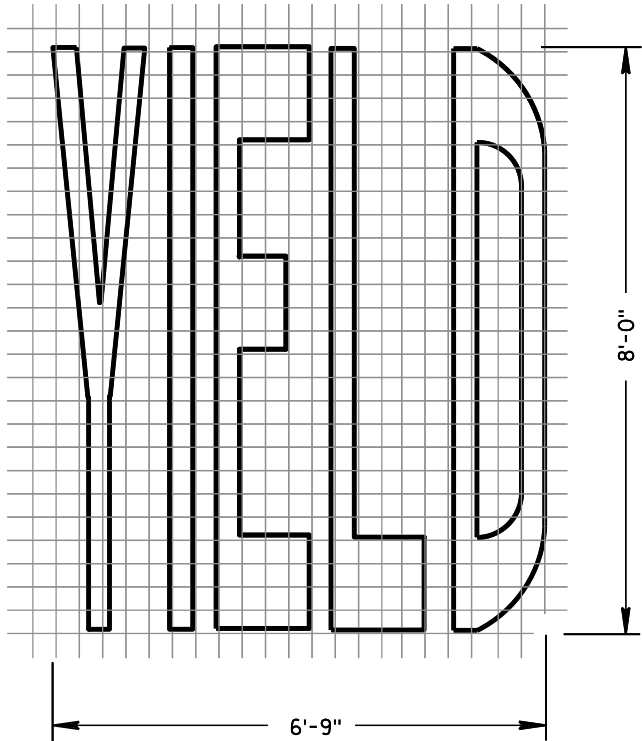
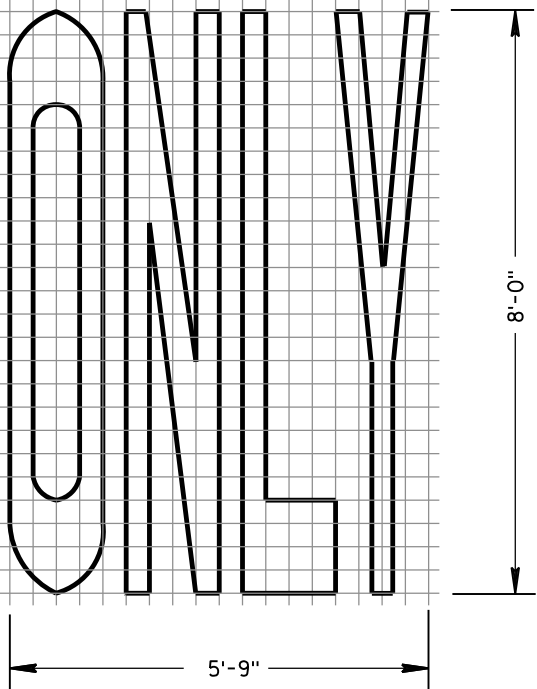
APPROVED March 2018 /S/ Matthew P. Pouch DATE STATE SIGNING AND M. 171 NGINEER FHWA

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

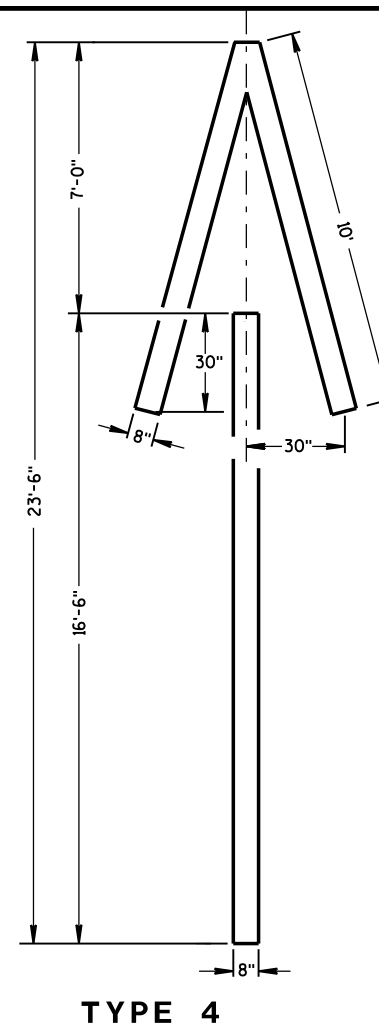
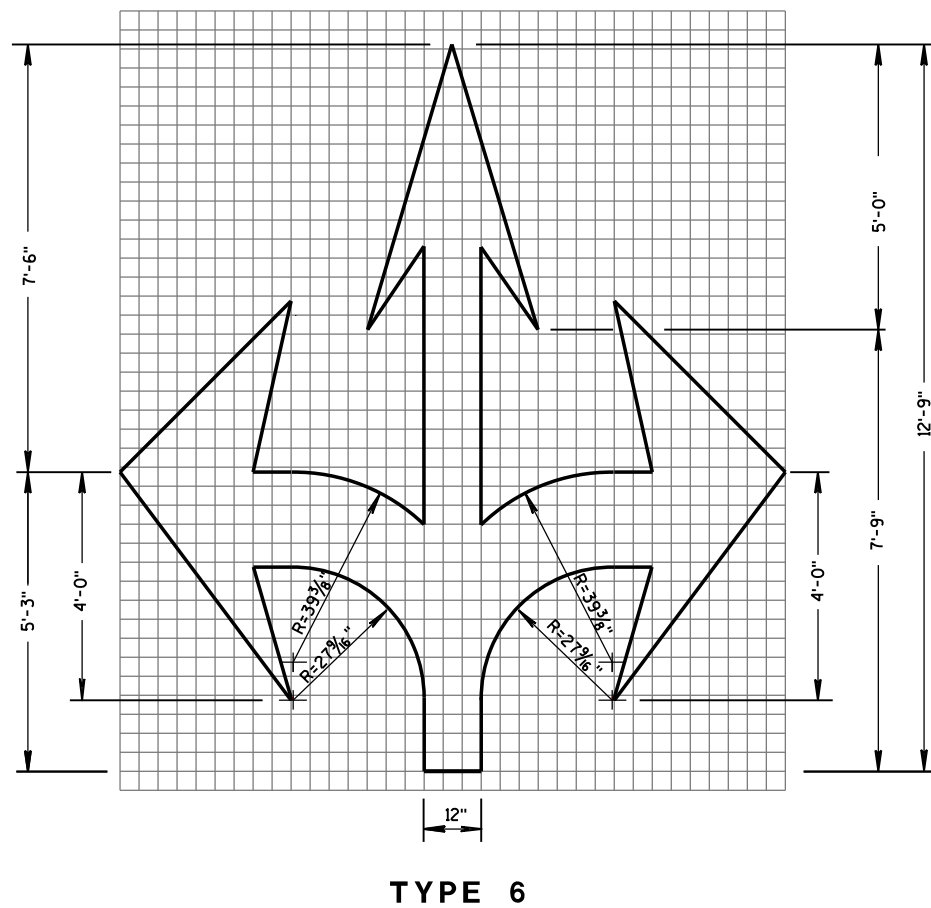
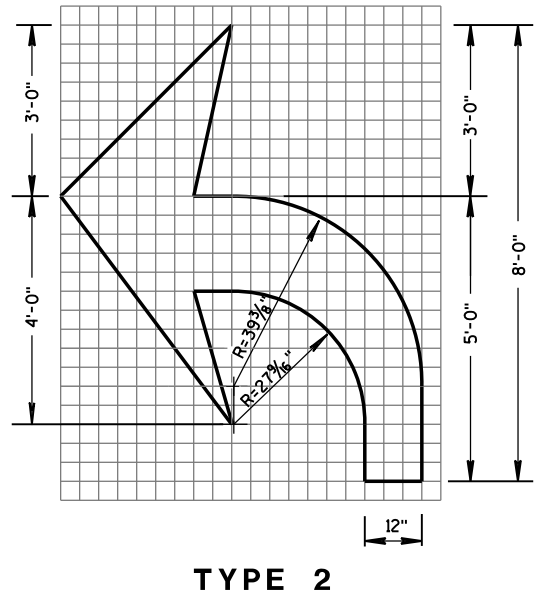


SINGLE-LANE

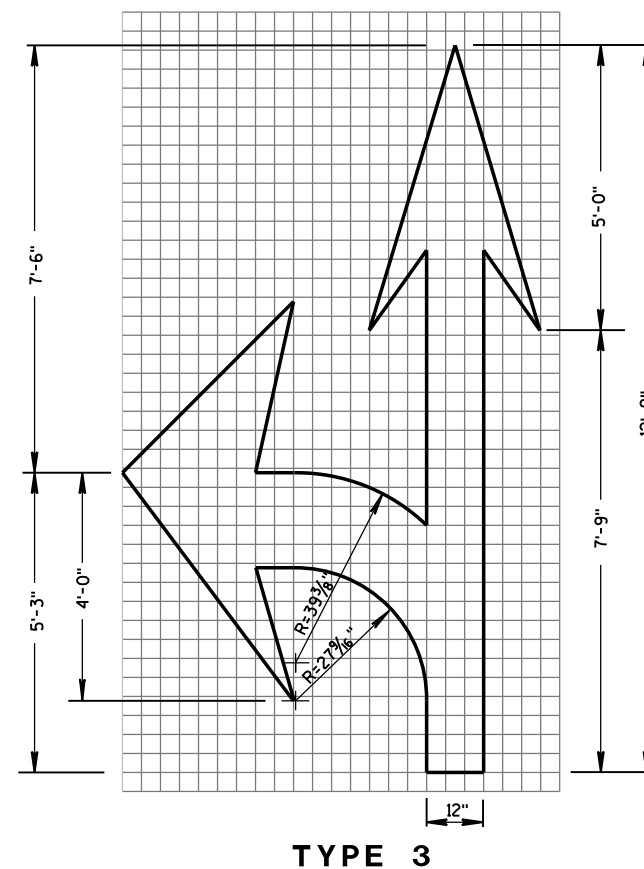
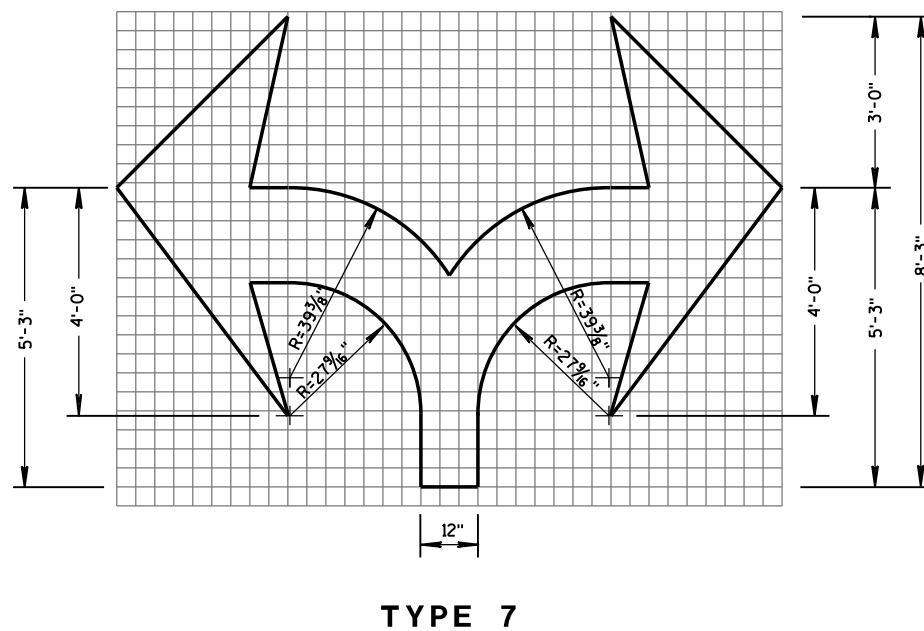
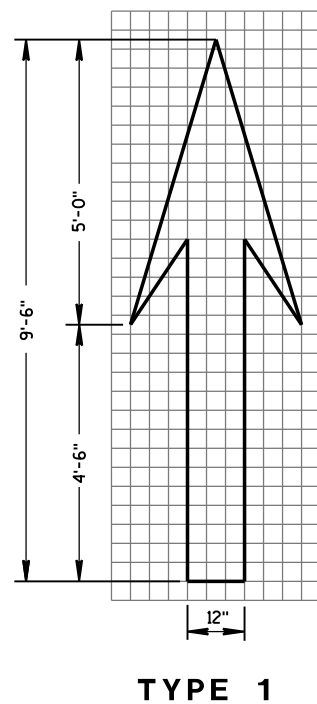
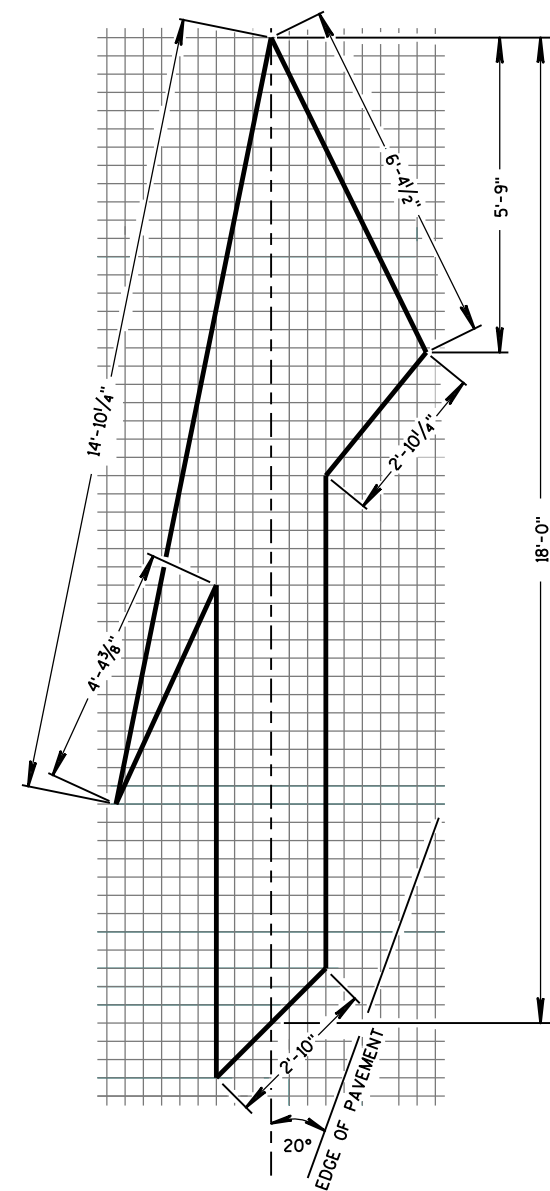
PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARK 172 EER
FHWA

**GENERAL NOTES**

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

**PAVEMENT MARKING ARROWS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

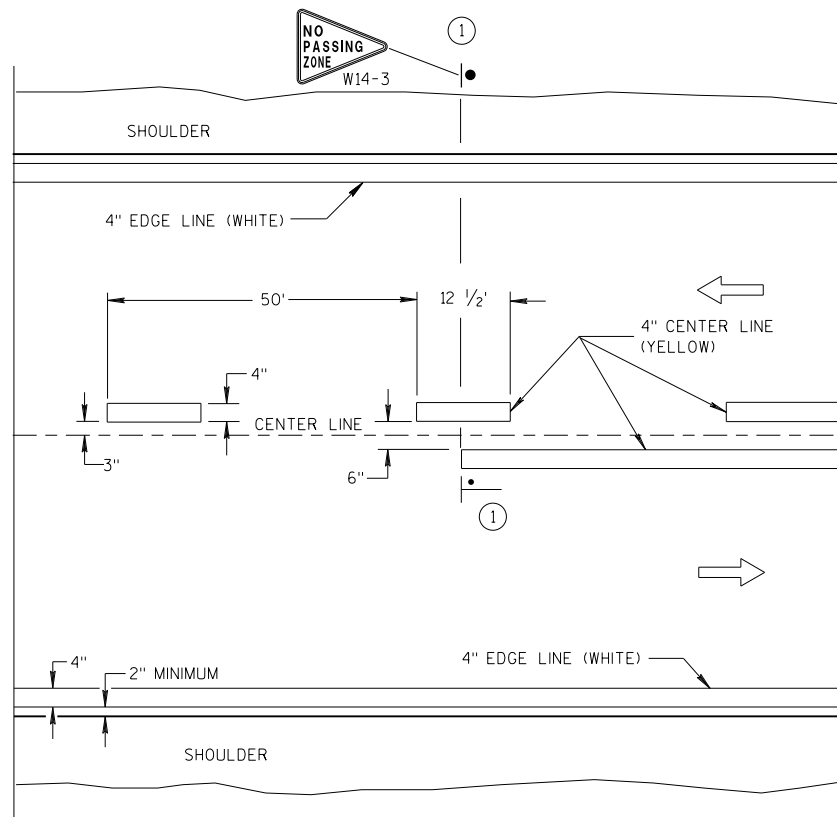
APPROVED

June 2017
DATE

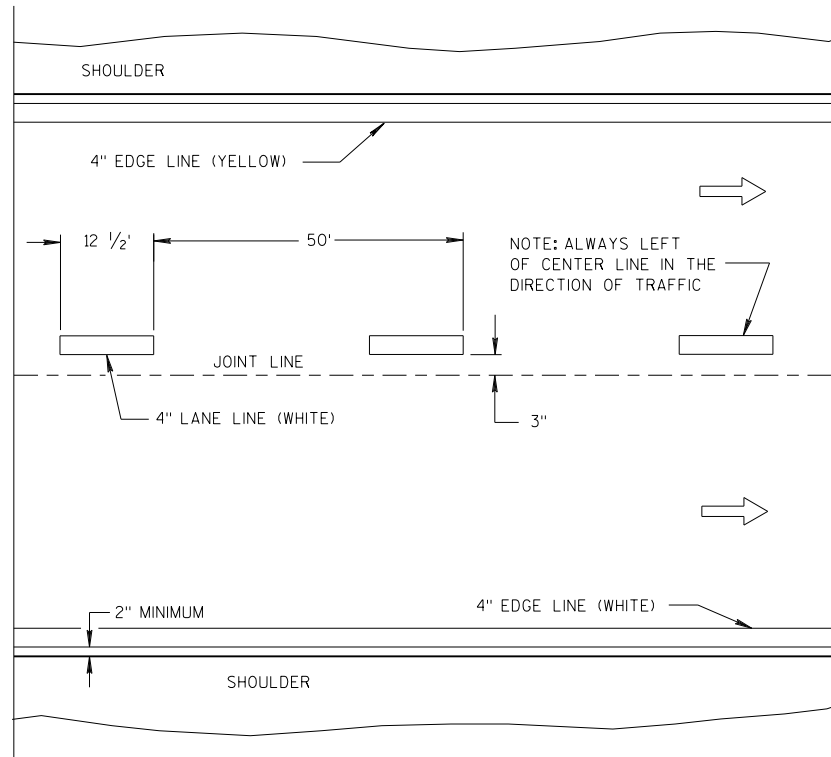
/S/ Matthew R. Rauch
STATE SIGNING AND MAR 173

VEER

FHWA

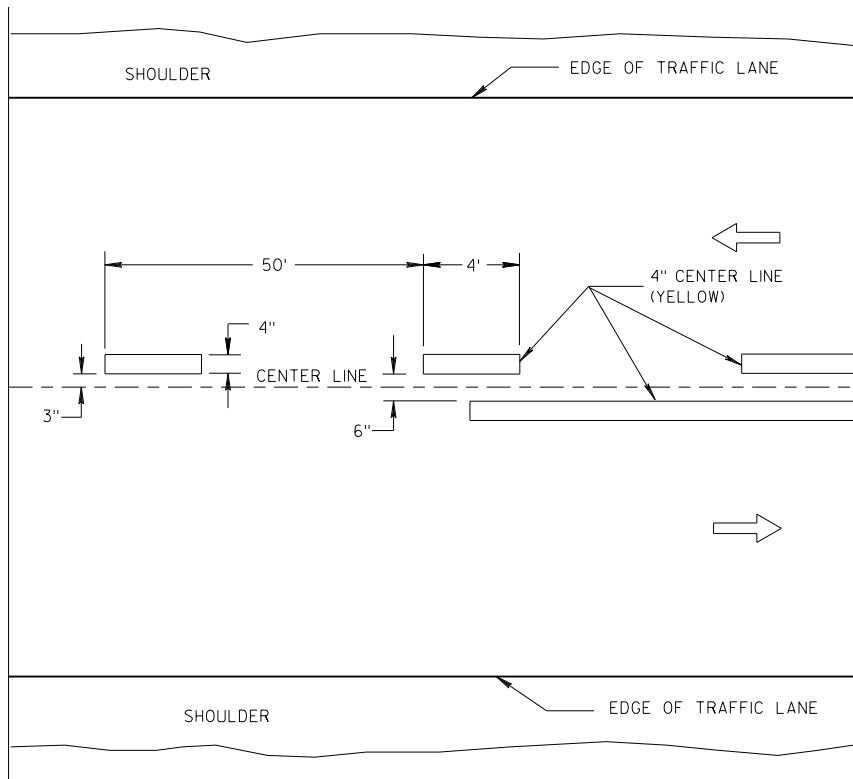


TWO WAY TRAFFIC

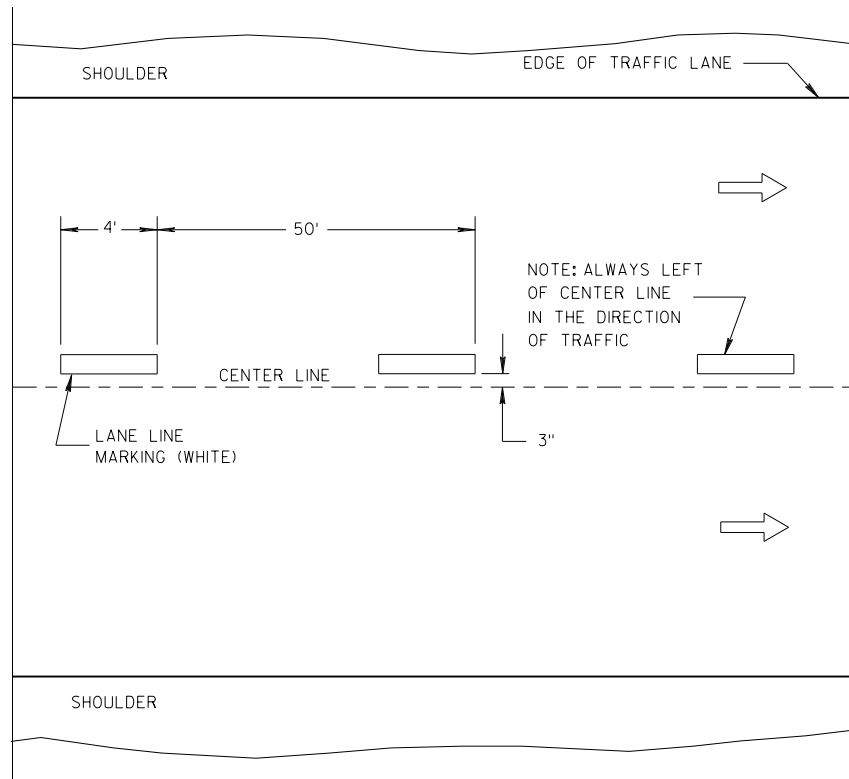


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

LEGEND

 "T" MARKING

 POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

DATE

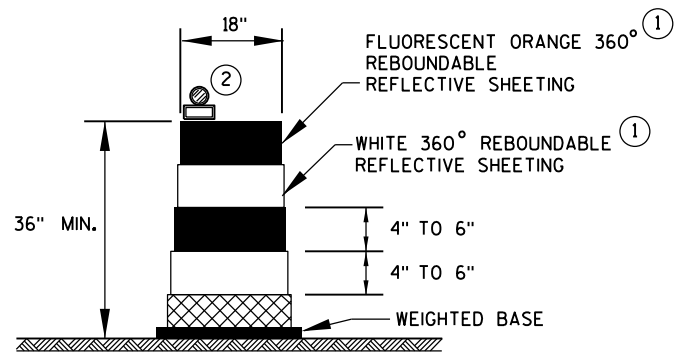
FHWA

/S/ Matthew R. Rauch

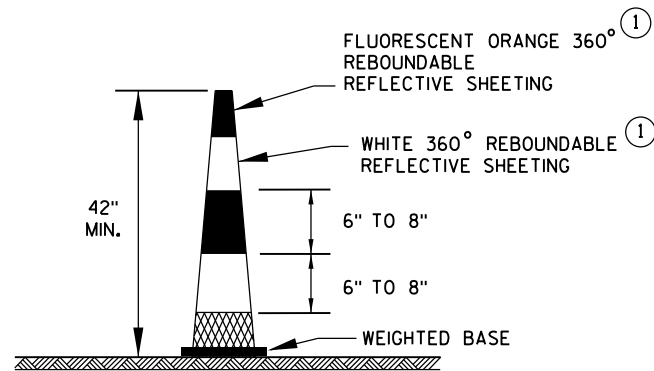
STATE SIGNING AND MAR

174

INEER



DRUM

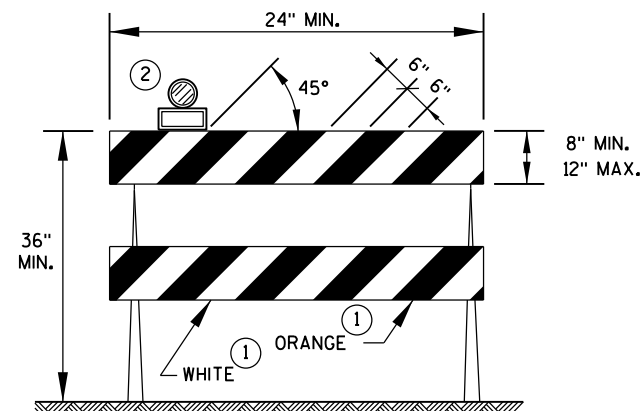


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

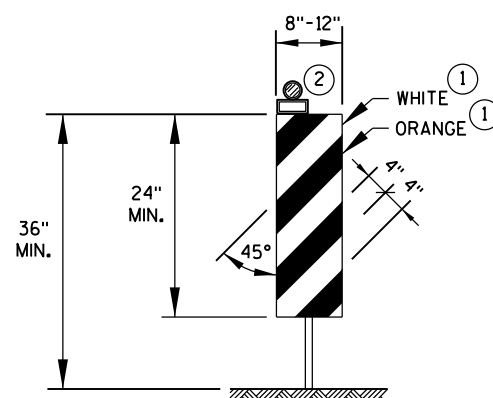
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



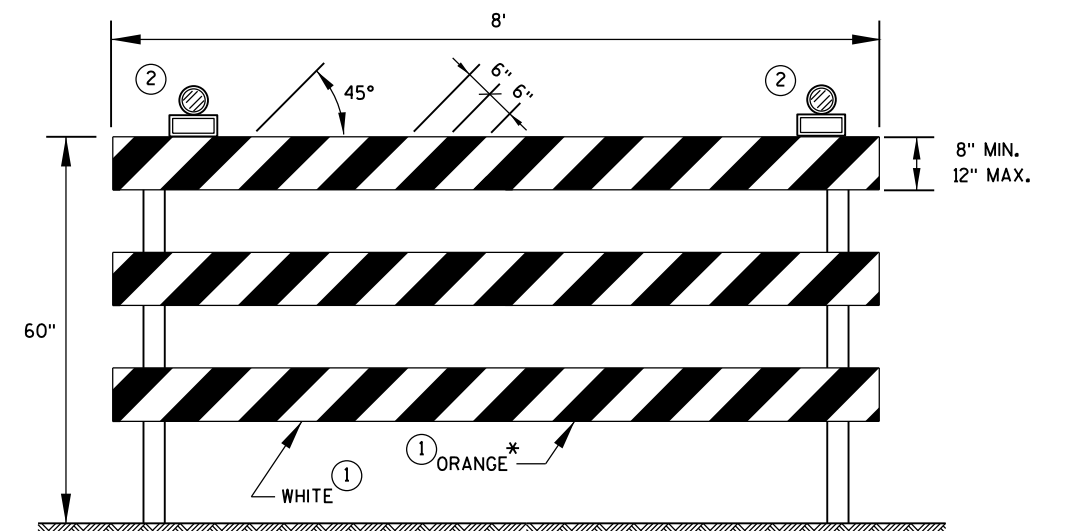
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

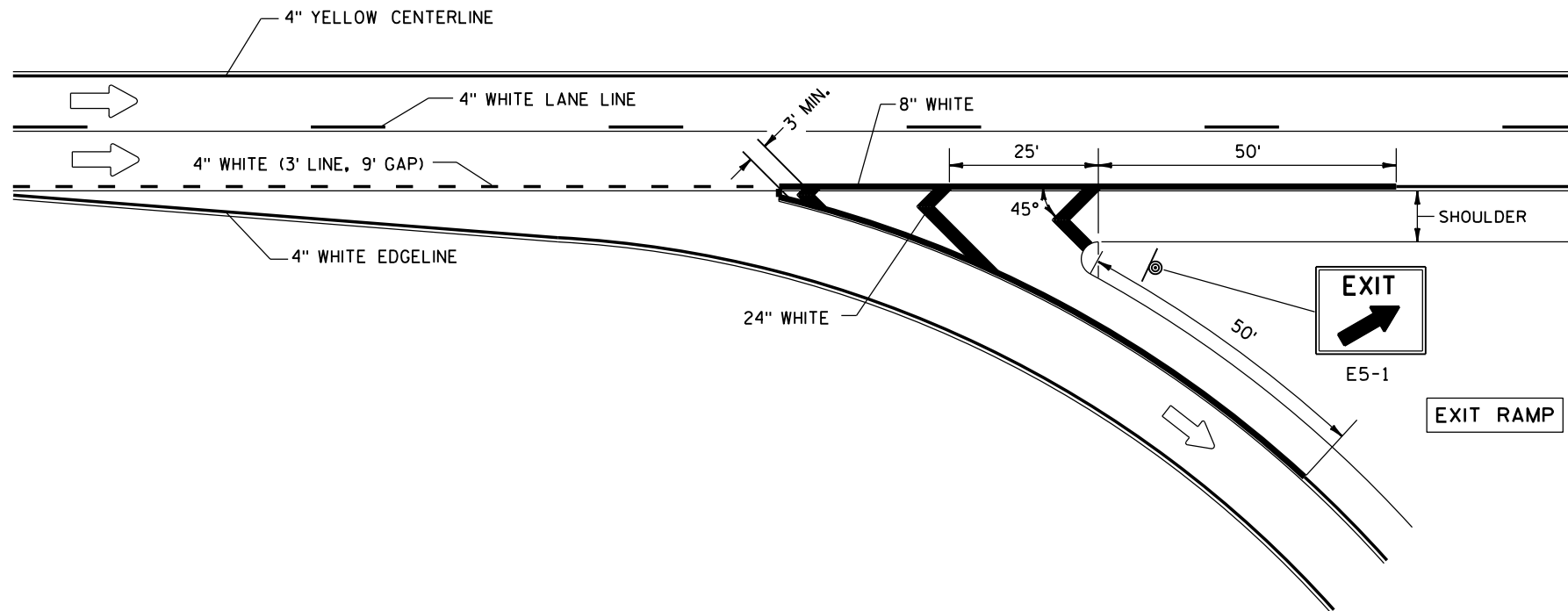
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 175

FHWA

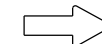


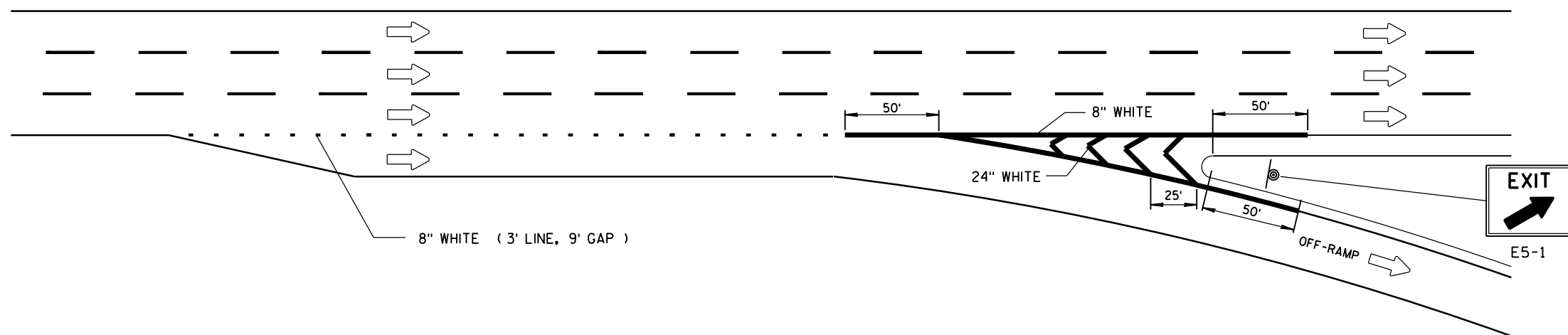
PAVEMENT MARKING FOR EXIT RAMP

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

-  DIRECTION OF TRAVEL
-  SIGN ON PERMANENT SUPPORT



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING
(RAMPS AND GOES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 176

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

① 1/2 LENGTH OF FULL WIDTH ACCELERATION LANE.

PAVEMENT MARKING FOR ENTRANCE RAMP

LEGEND

➡ DIRECTION OF TRAVEL

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP

**PAVEMENT MARKING FOR
PARALLEL ON-RAMP AND
PARALLEL OFF-RAMP**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAP 177 NEER
FHWA

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

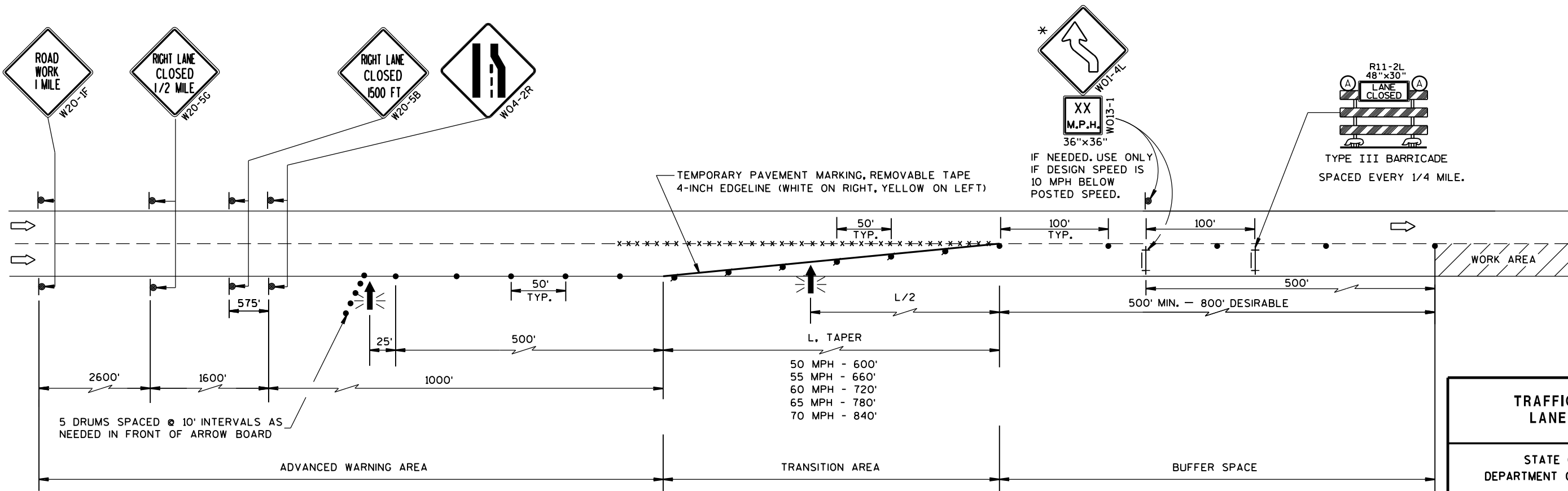
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

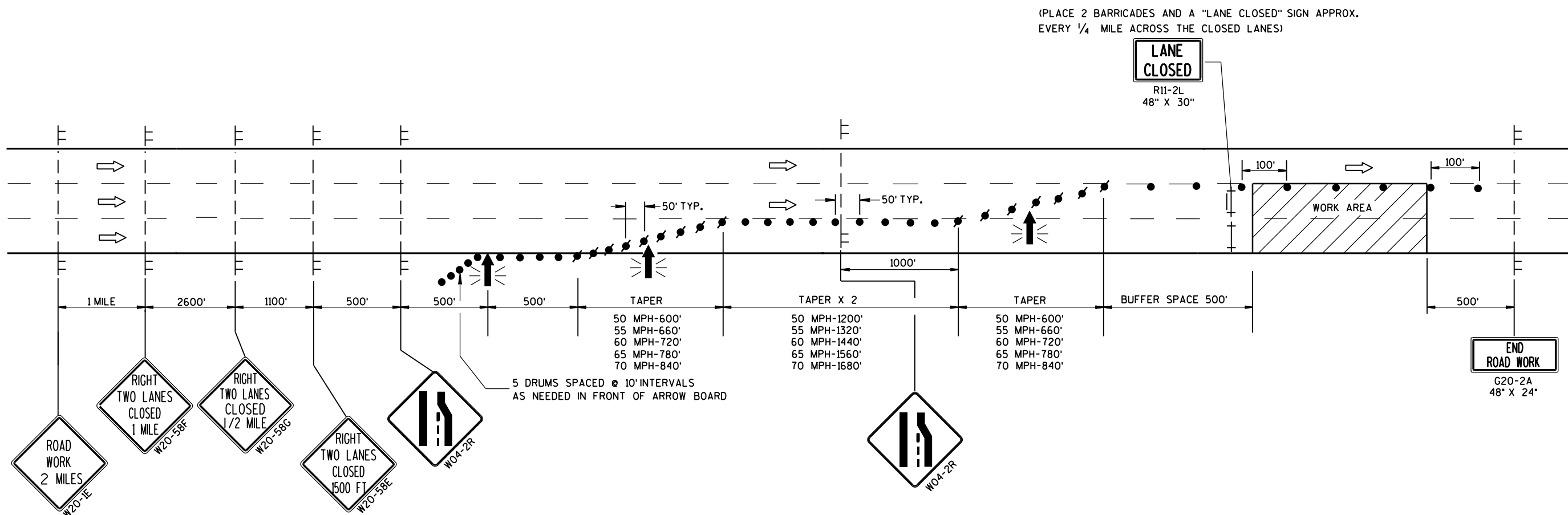
* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 179
FHWA	

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- WORK AREA



GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT TWO LANES. FOR CLOSING THE LEFT TWO LANES, REVERSE THE TRAFFIC CONTROL.

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

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

ALL SIGNS ARE 48\"

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

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

W20-1E AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

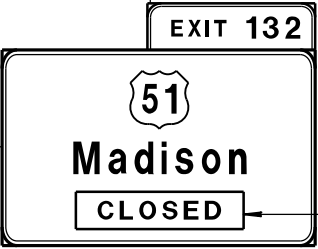
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL. TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY. SHORT TERM (LESS THAN 24 HOURS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 180
FHWA	



G20-60
108"x24"

OR



G20-60
108"x24"

PLACE SIGN G20-60 OVER MILEAGE
ON EXISTING E1-1A SIGN



COVER ARROW ON
EXISTING E4-1A
SIGN (COVERING
SIGNS TYPE I)

G20-61
120"x30"

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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

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

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

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

PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

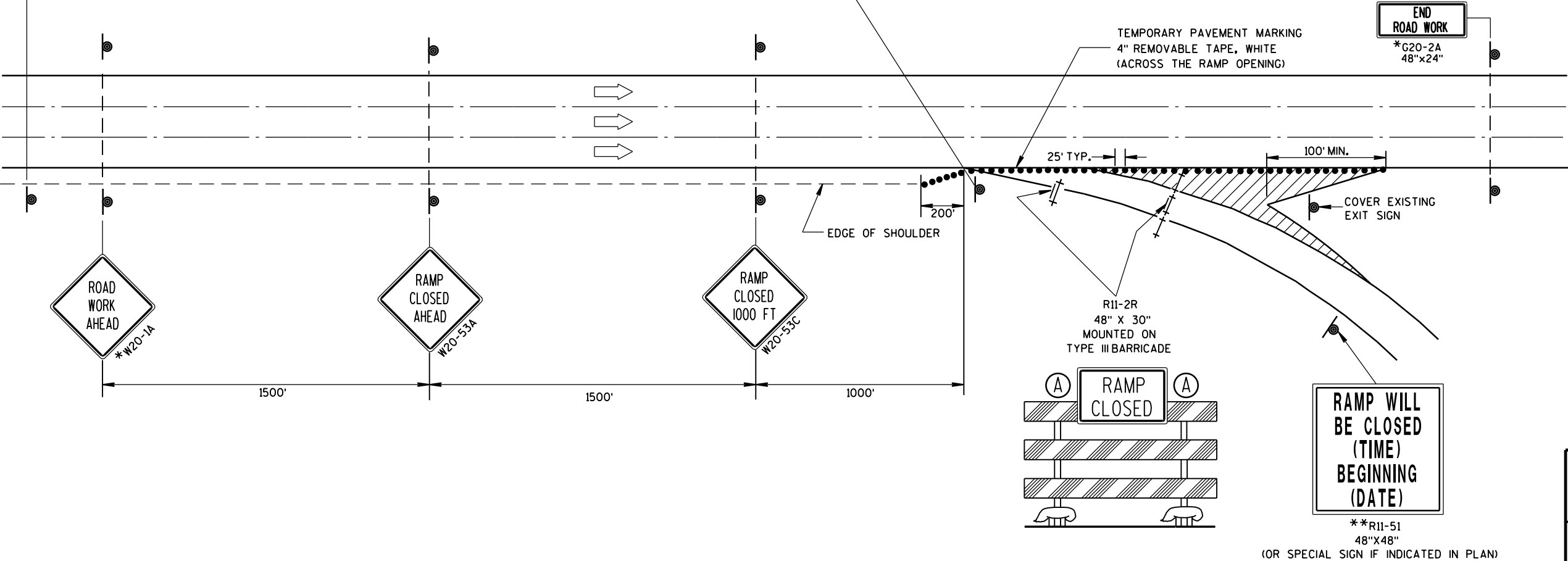
WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

* W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

** PLACE "RAMP WILL BE CLOSED" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

6

6



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC

TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

S.D.D. 15 D 16-3

S.D.D. 15 D 16-3

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

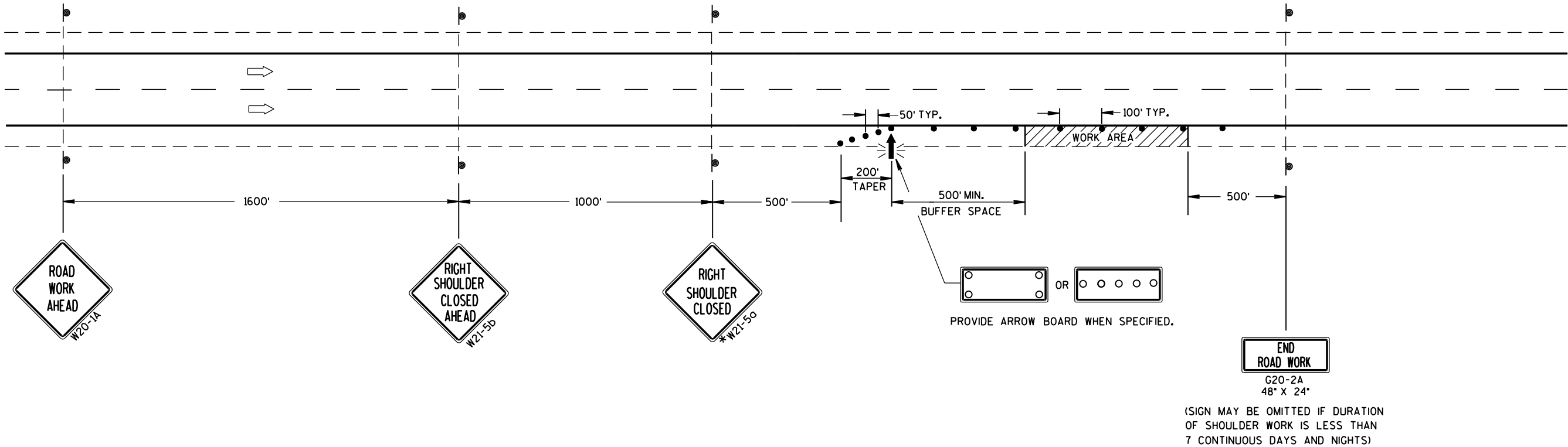
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

WHEN A 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.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



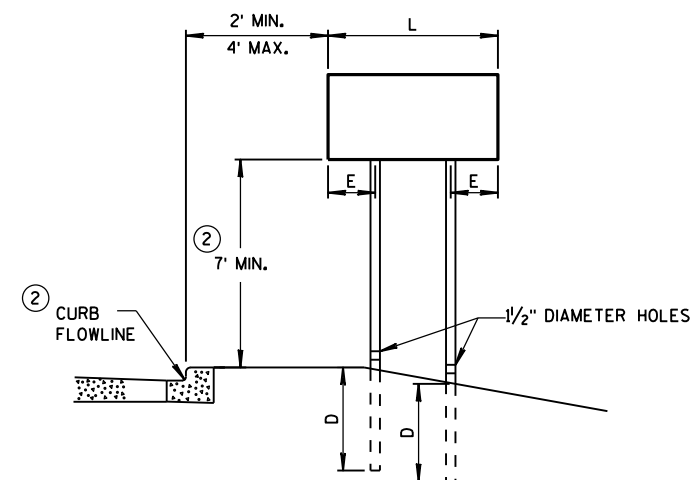
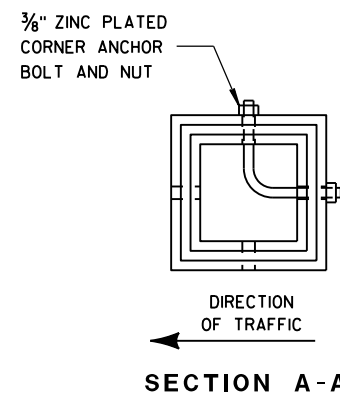
TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 182
FHWA	IC



TUBULAR STEEL POSTS

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

SIGNS LARGER THAN 27 SQ.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

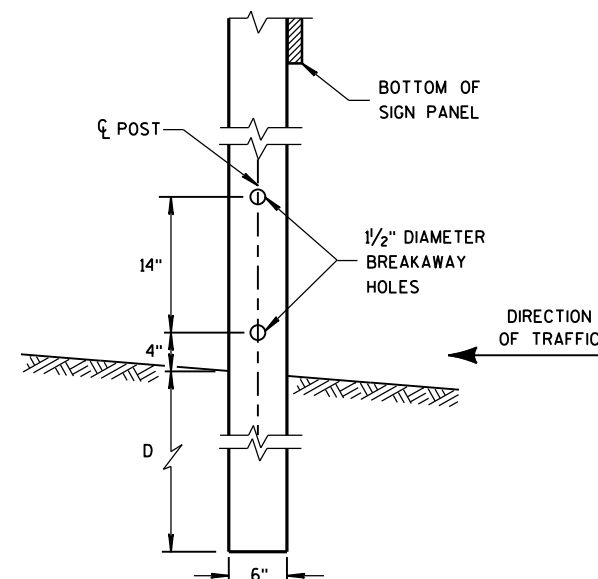


URBAN AREA

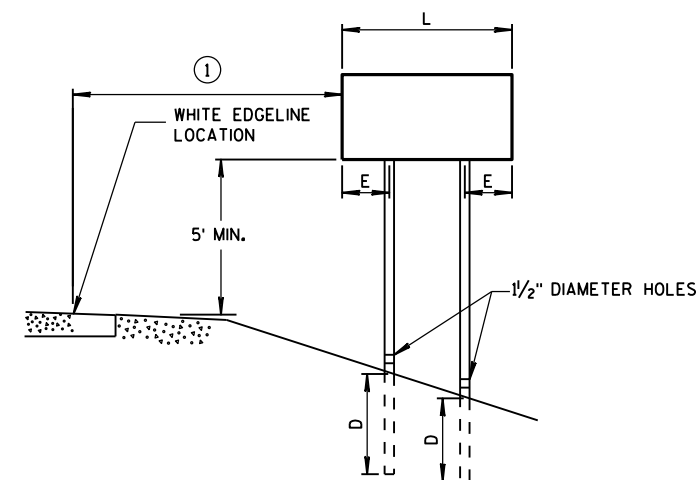
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

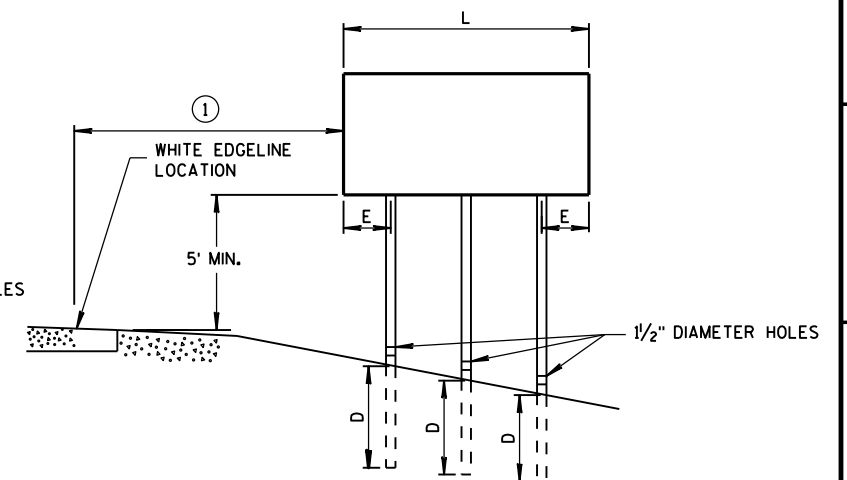
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

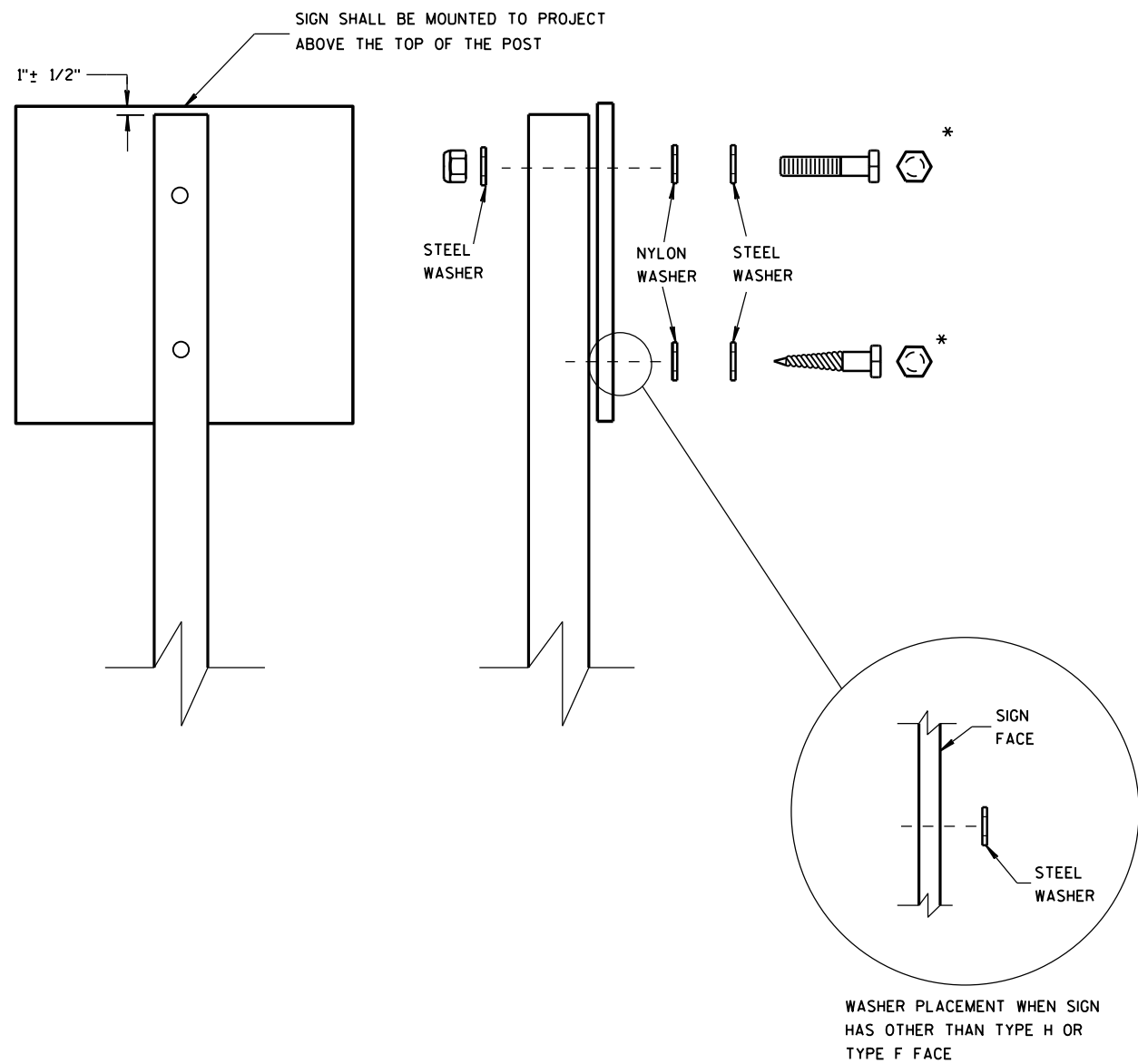
4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 183



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

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

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

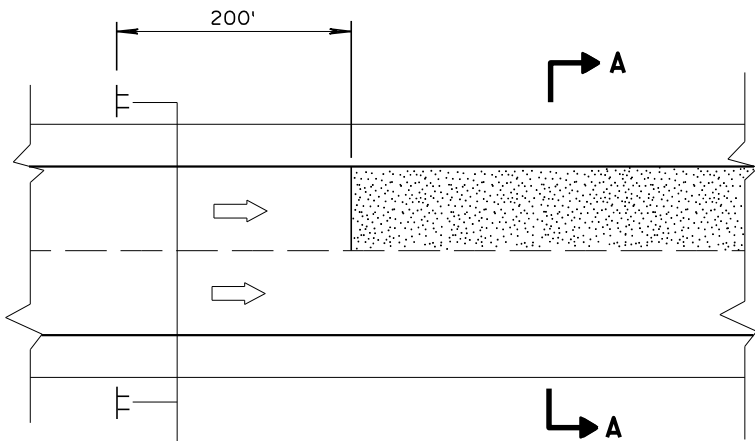
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

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

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

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

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE EN 184
FHWA	

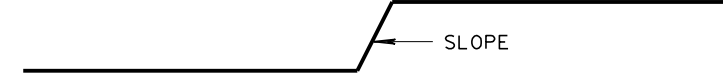


MULTI-LANE

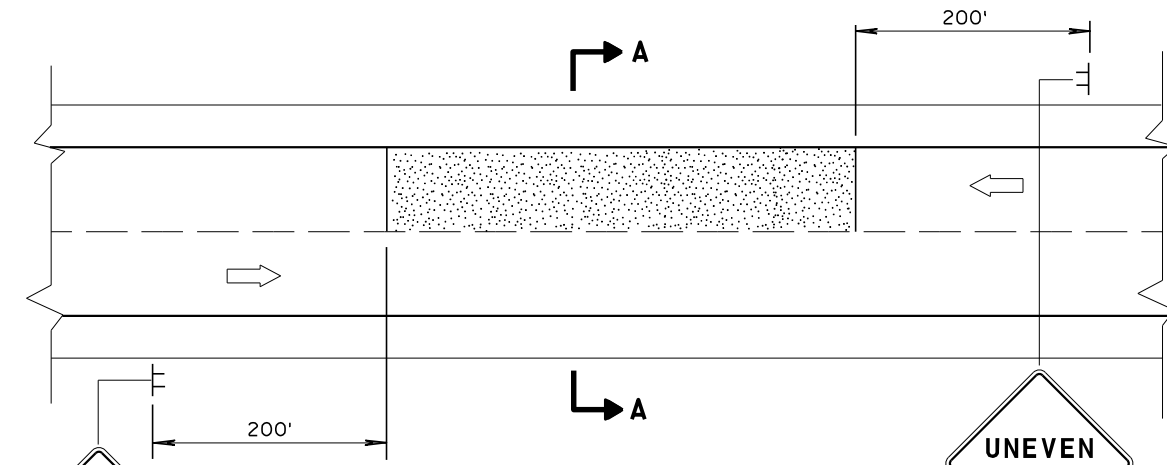


SECTION A-A

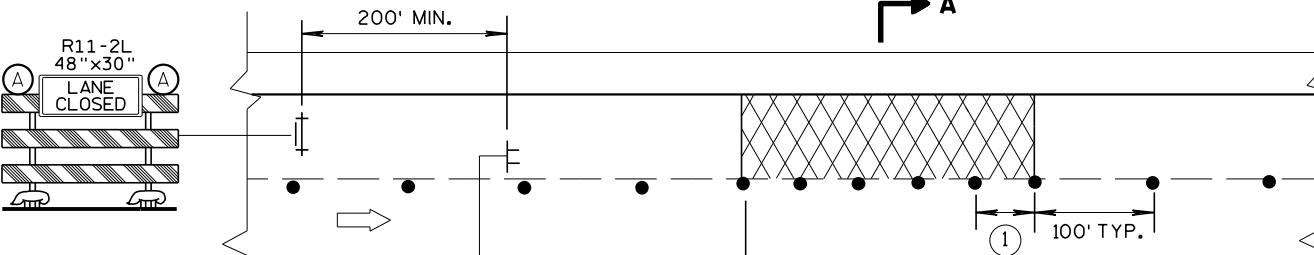
OR



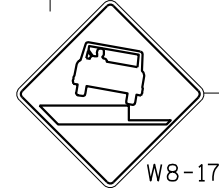
SECTION A-A



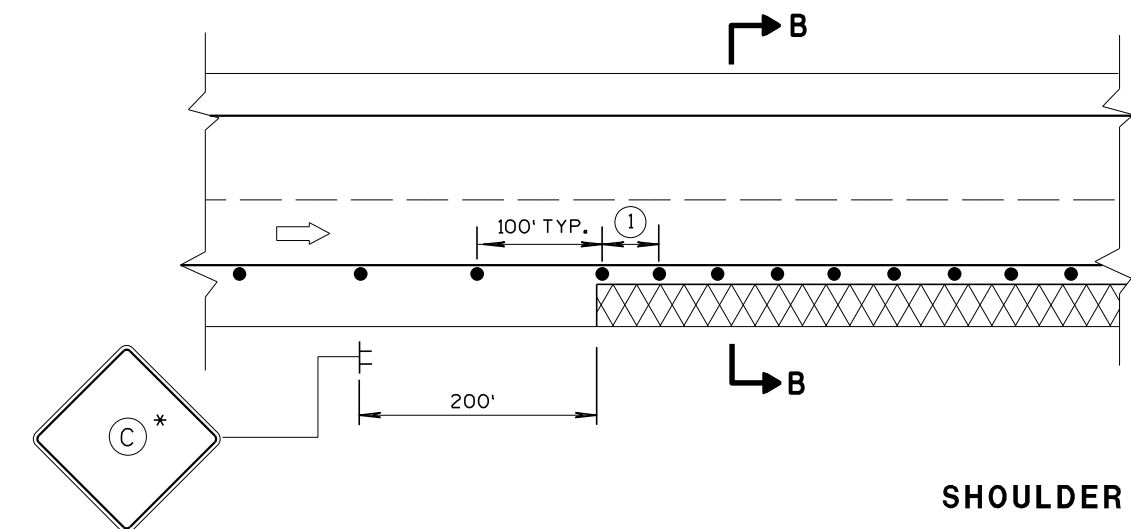
TWO-WAY TWO LANE



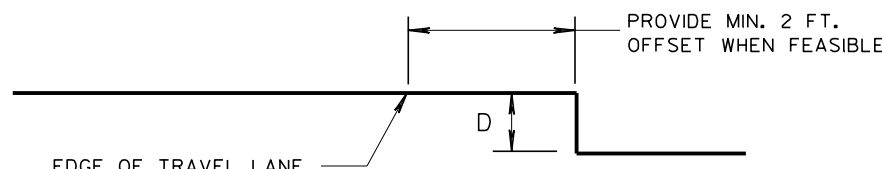
MULTI-LANE BASE PATCHING



ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B-B

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EACH ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

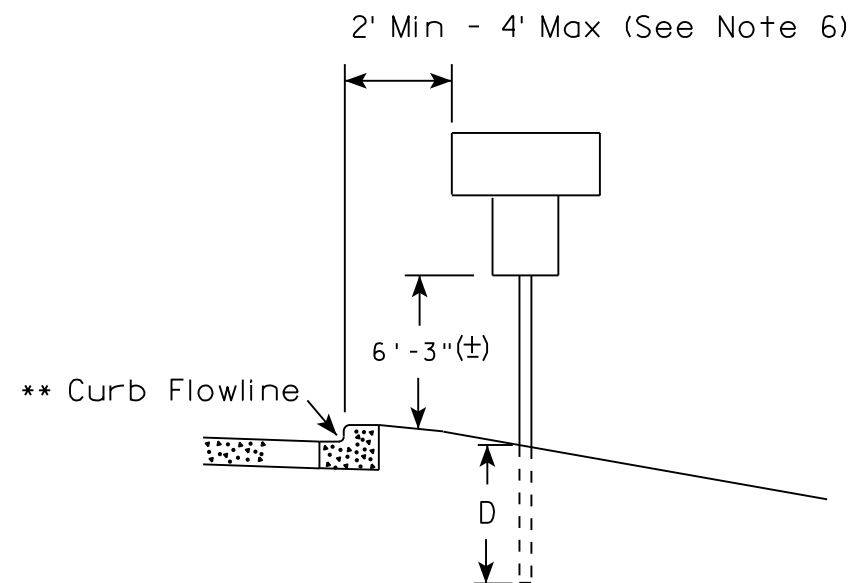
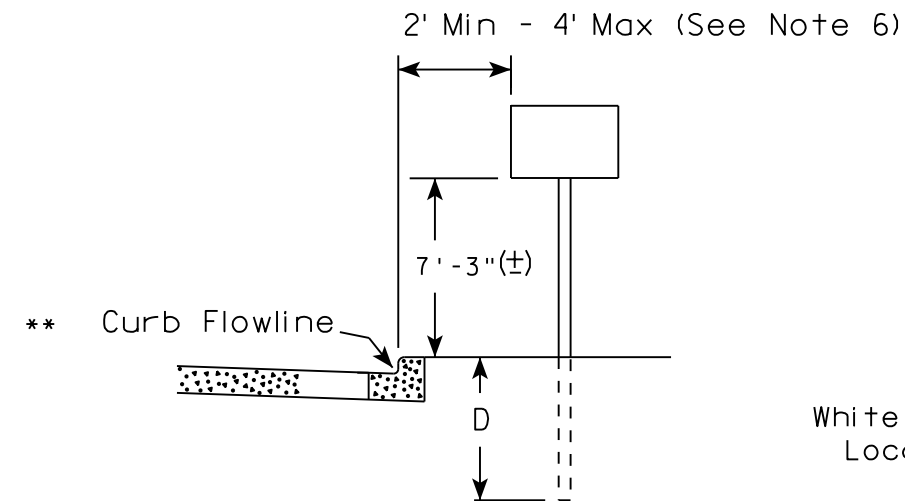
D	SIGN C
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

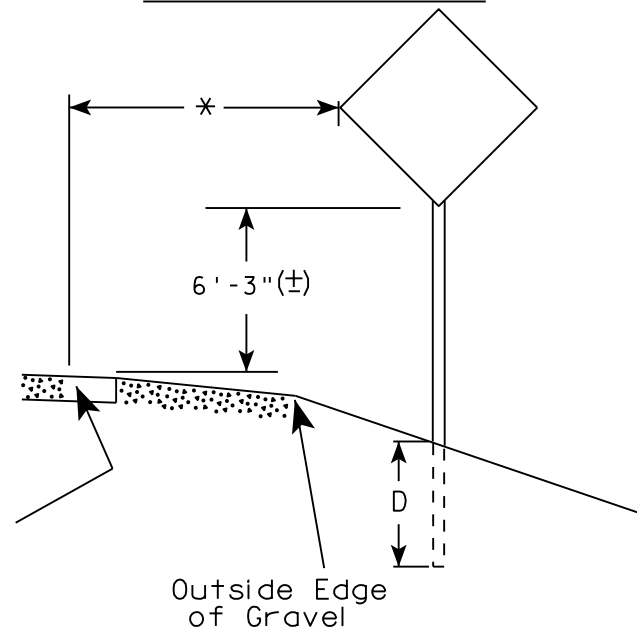
APPROVED
March 2018 /S/ Andrew H
DATE WORK ZONE EN 185
FHWA

URBAN AREA

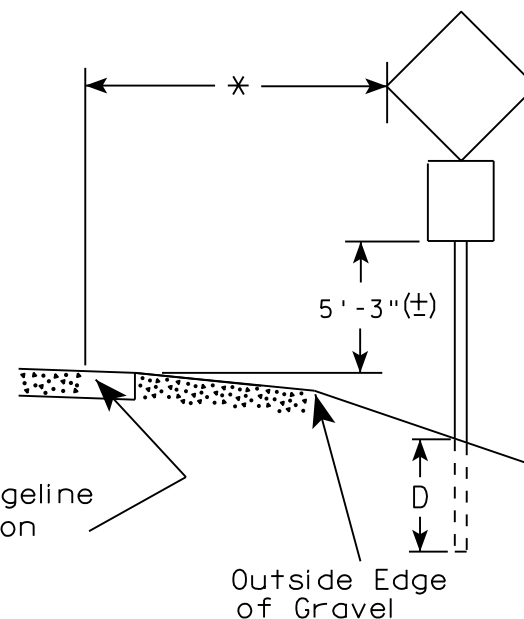


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

* 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.

GENERAL NOTES

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

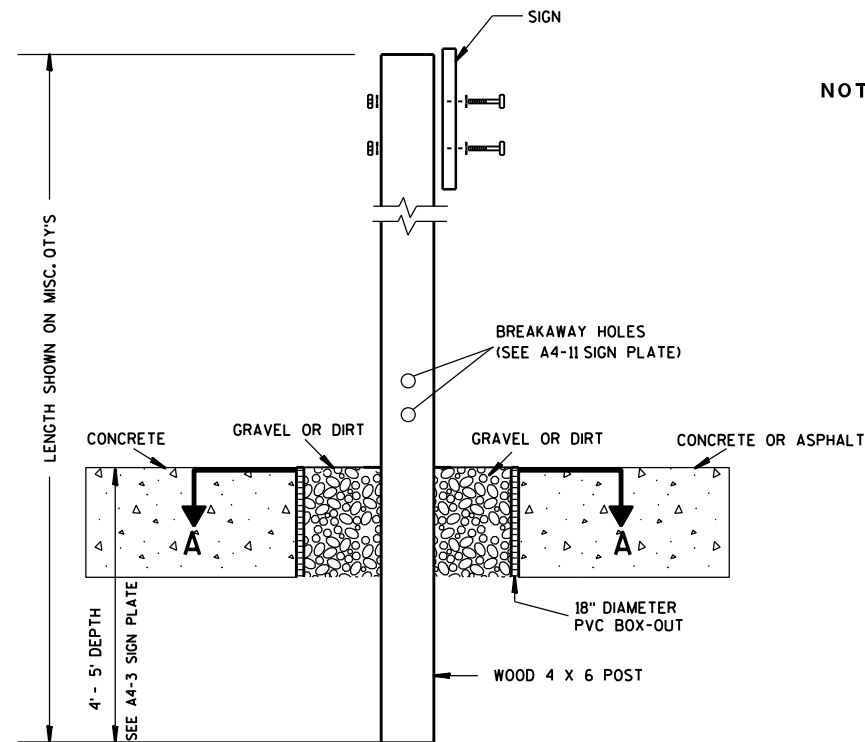
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

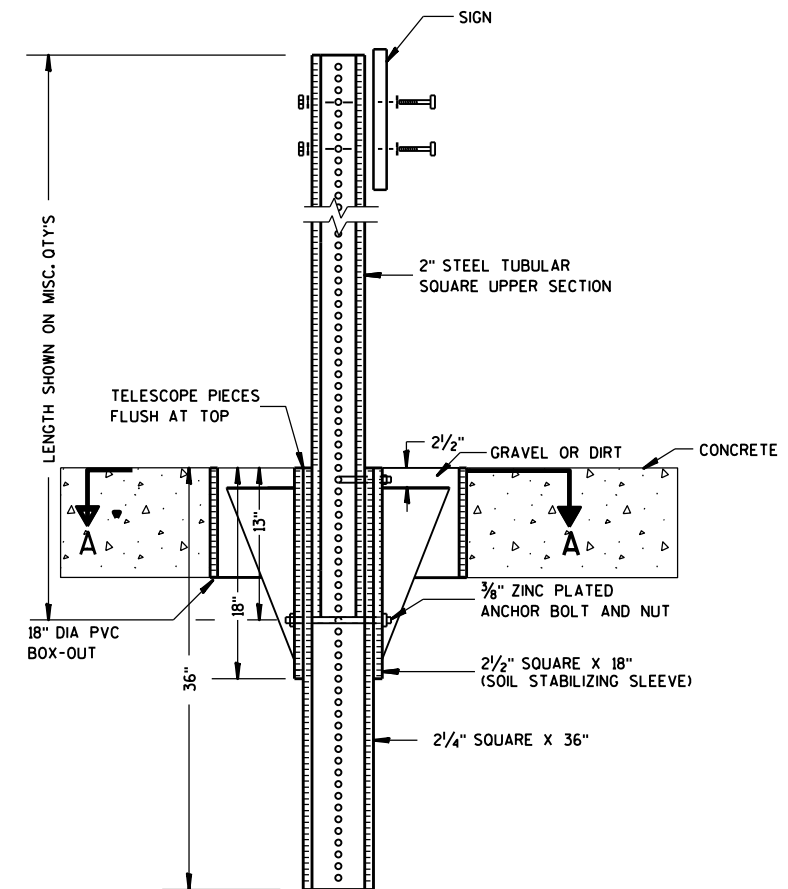
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

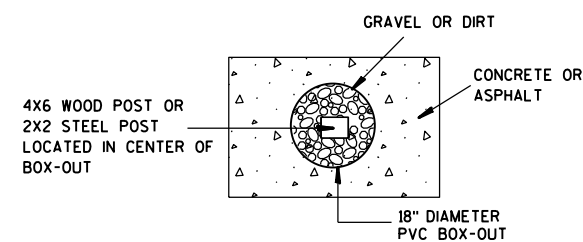
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 187 A4-3B.1

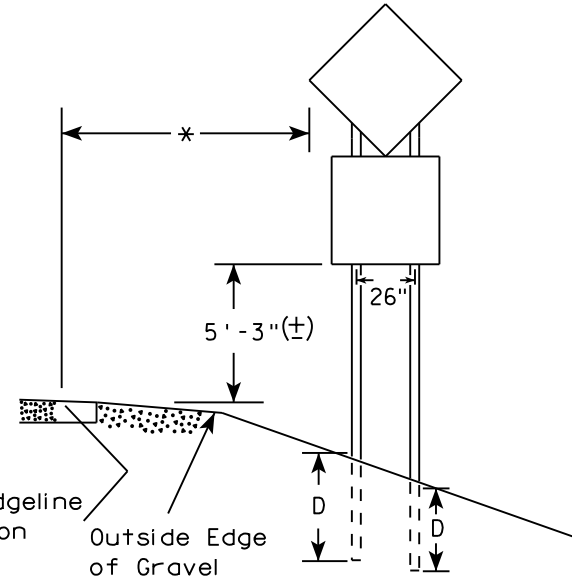
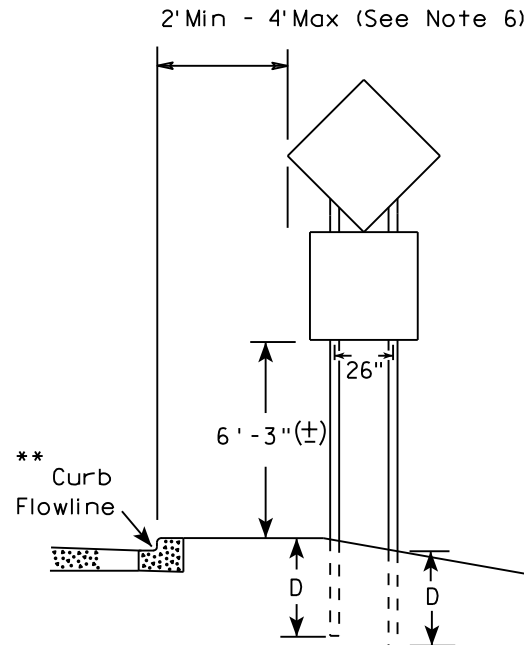
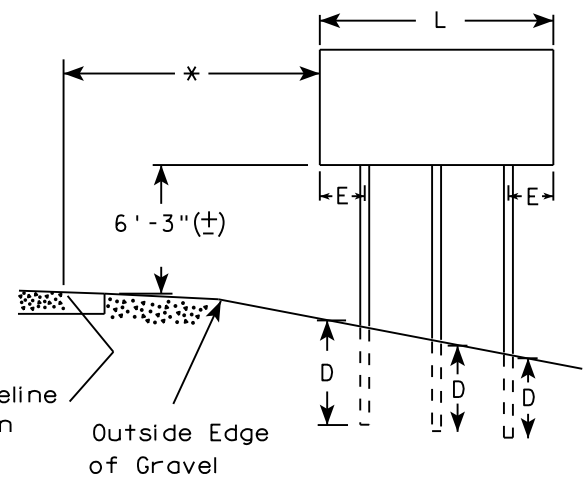
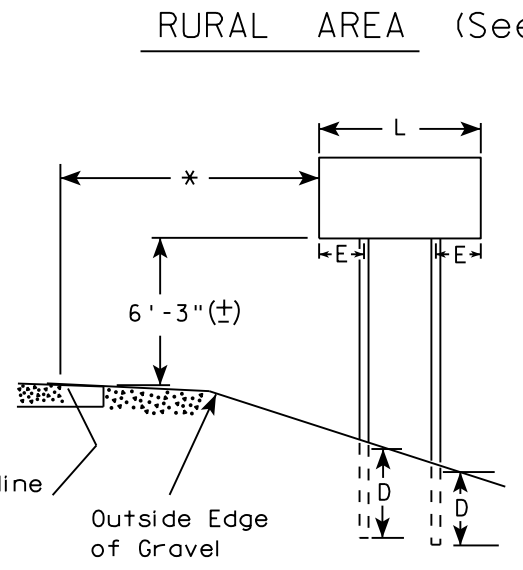
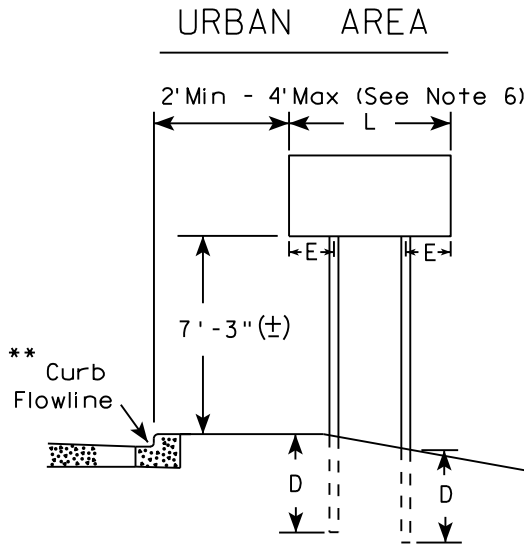
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

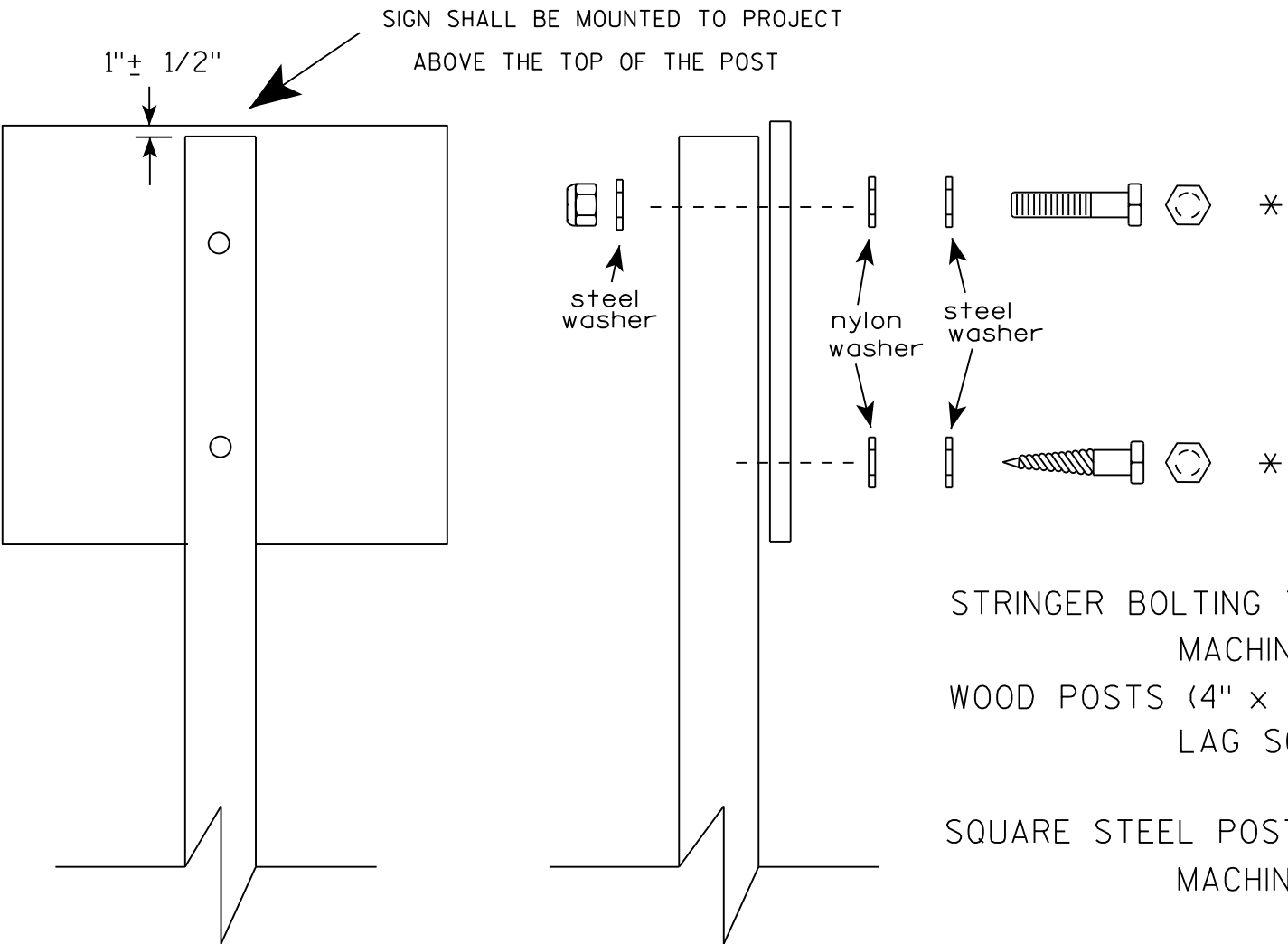
DATE 8/21/17 PLATE NO. A4-4.15

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

* 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.



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

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

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

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

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

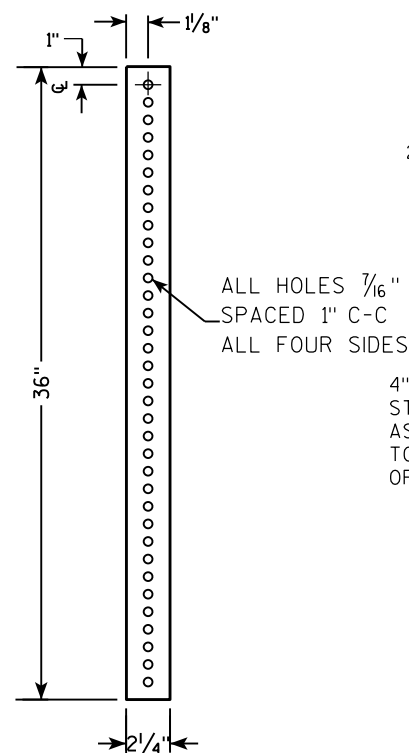
ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

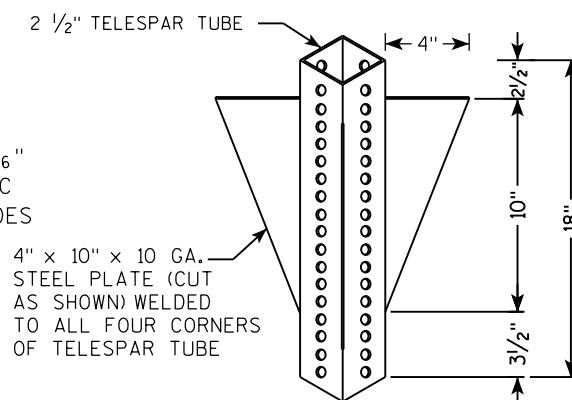
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8
189

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



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

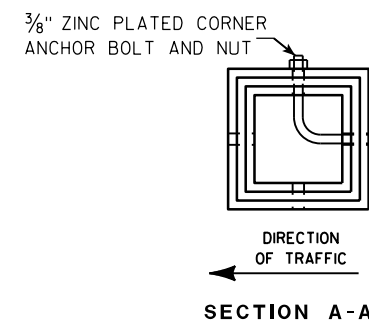


TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- SIGN**: Indicated at the top of the post.
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL**: Reference to sign plate details.
- 2" STEEL TUBULAR SQUARE UPPER SECTION**: The main vertical support.
- ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES**: Specification for the upper section's holes.
- $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT**: Detail of the corner fastener.
- 2 $\frac{1}{2}$ " GRAVEL OR DIRT**: Material filling the base around the anchor bolts.
- TELESCOPE PIECES FLUSH AT TOP**: Description of the joint between sections.
- 18" DIA SCHEDULE 40 PVC BOX-OUT**: The lower section of the post.
- $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT**: Detail of the anchor bolt.
- 2 $\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)**: Sleeve surrounding the lower section.
- 2 $\frac{1}{4}$ " SQUARE X 36"**: Dimension for the sleeve length.
- Dimensions**:
 - Overall height: 36"
 - Upper section height: 18"
 - Lower section height: 13"
 - Box-out width: 18"

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. Q'TYS
 - Section A-A: 36" (total), 18" (upper), 12" (lower)
 - Section B-B: 1"
- Components:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - 2" STEEL TUBULAR SQUARE UPPER SECTION
 - ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C
 - ALL FOUR SIDES
 - $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
 - $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 - 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - 2 1/4" SQUARE X 36"
 - TELESCOPE PIECES FLUSH AT TOP



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 190 14-9.9

PROJECT NO:

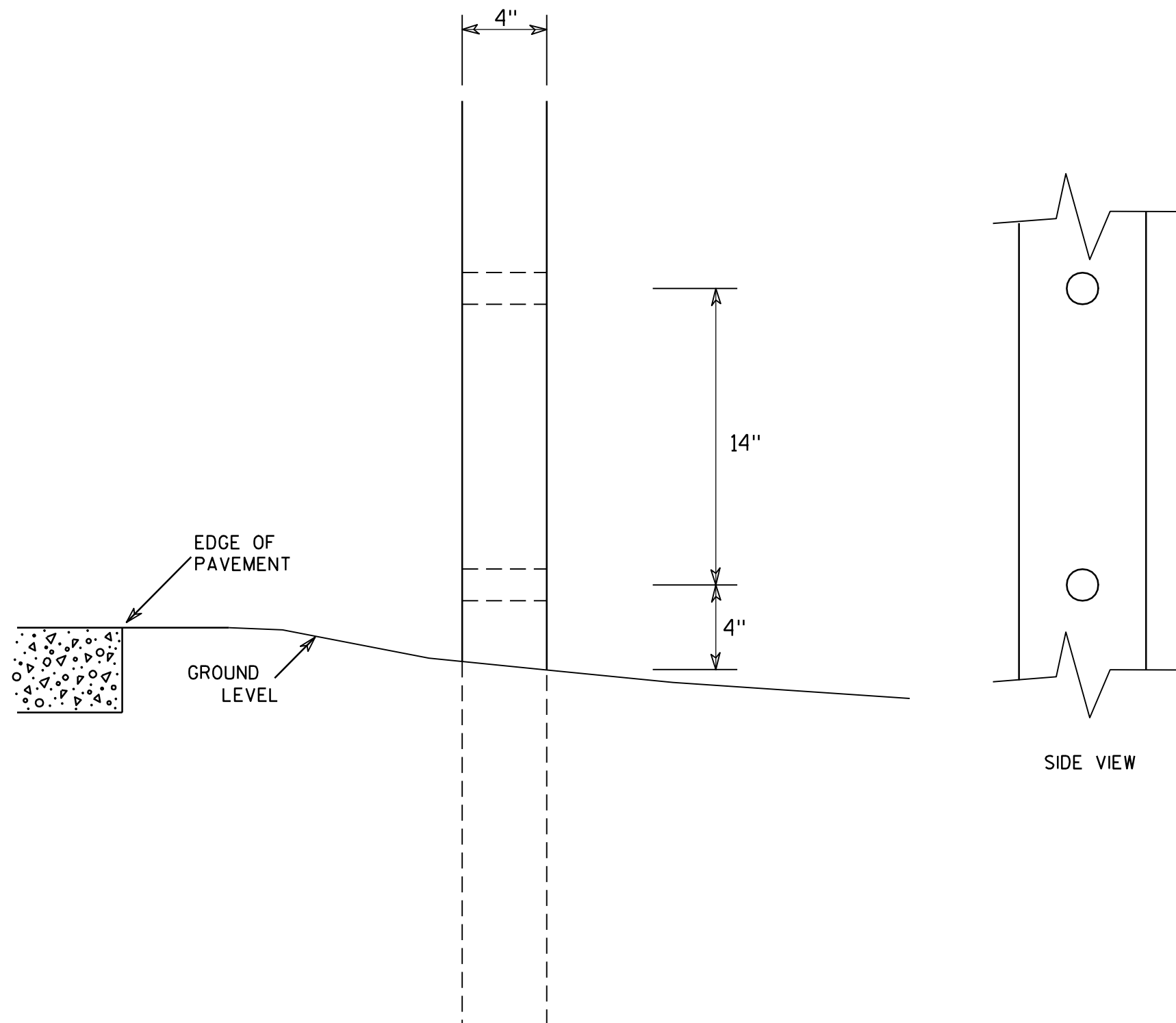
HWY:

COUNTY:

SHEET NO:

E

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

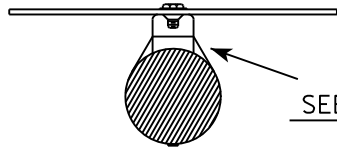
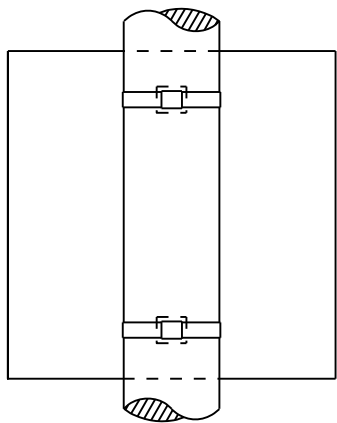
COUNTY:

SHEET NO: 191

E

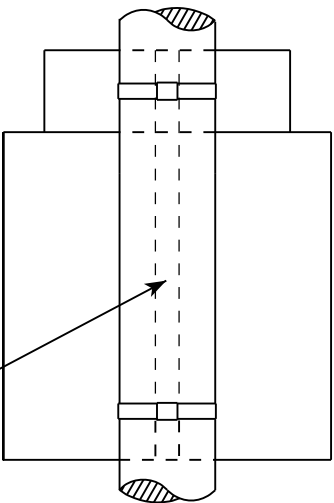
BANDING

SINGLE SIGN

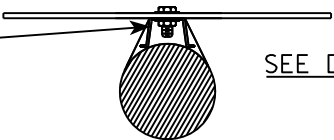


SEE DETAIL A

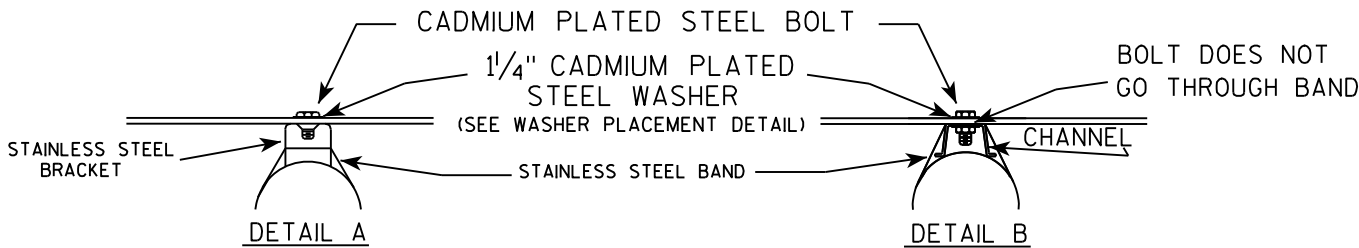
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



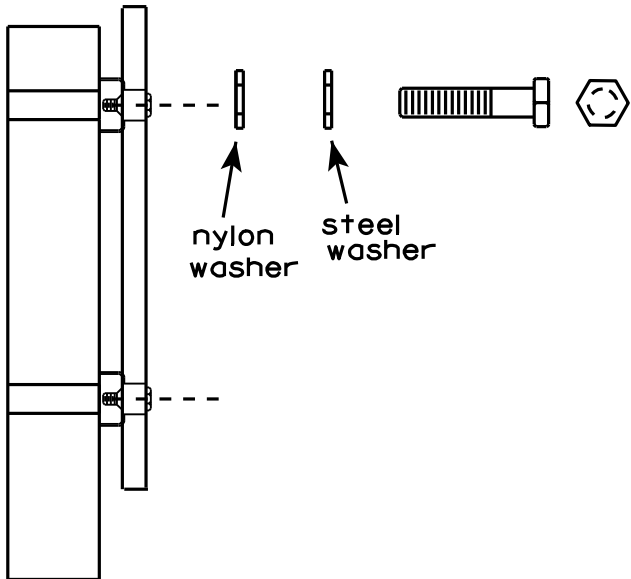
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



nylon washer
steel washer

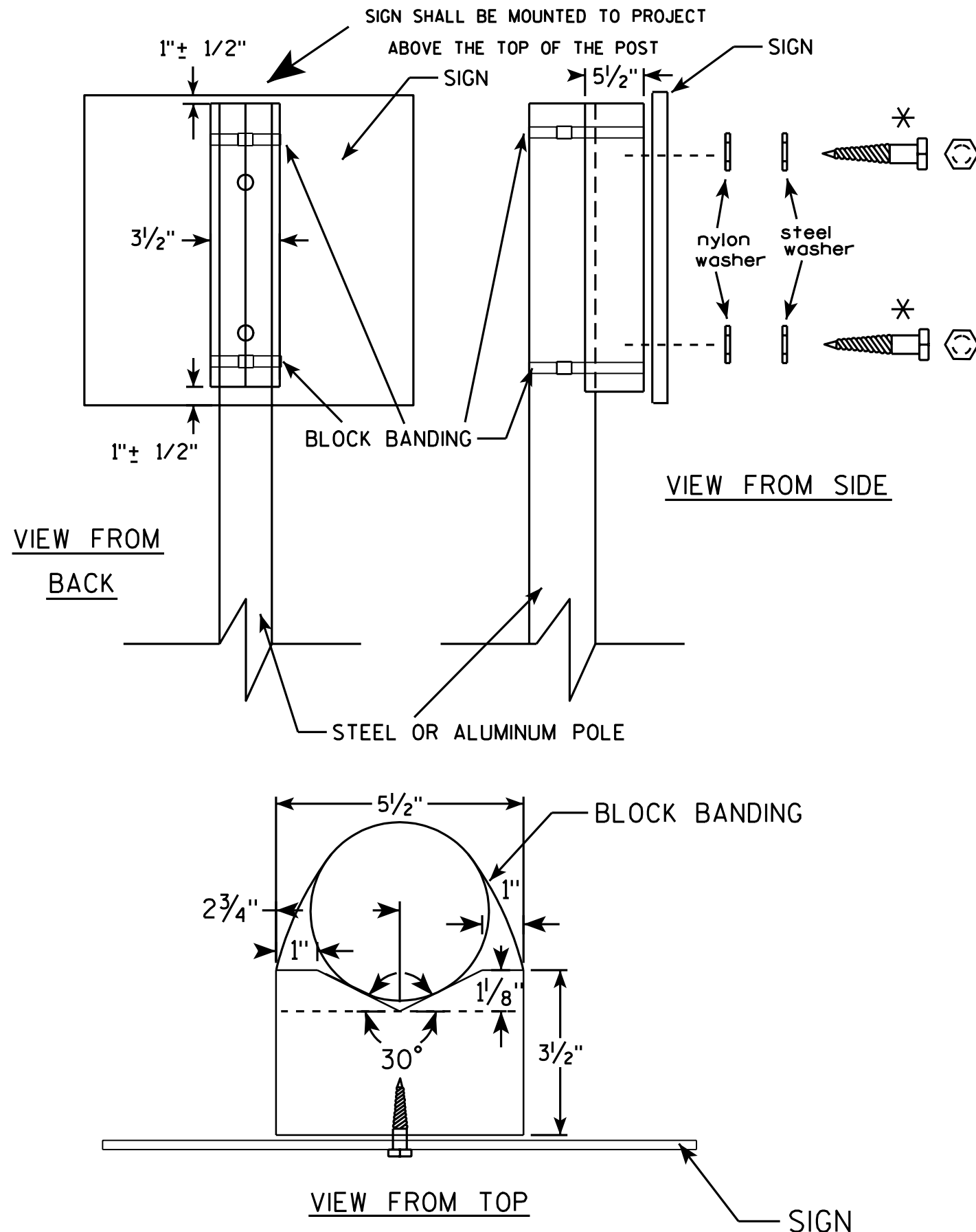
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

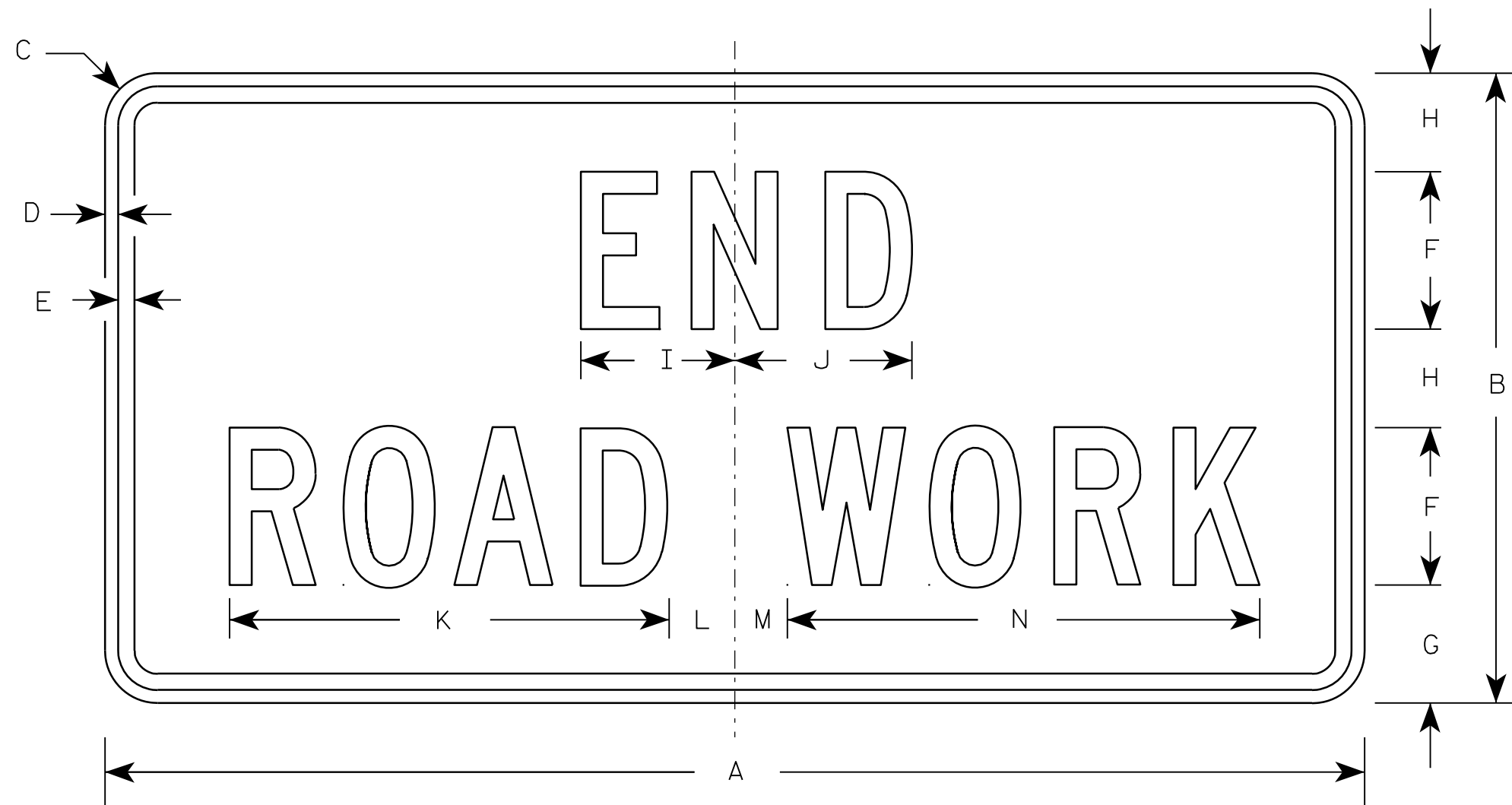
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 193

E

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m ²
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

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

7

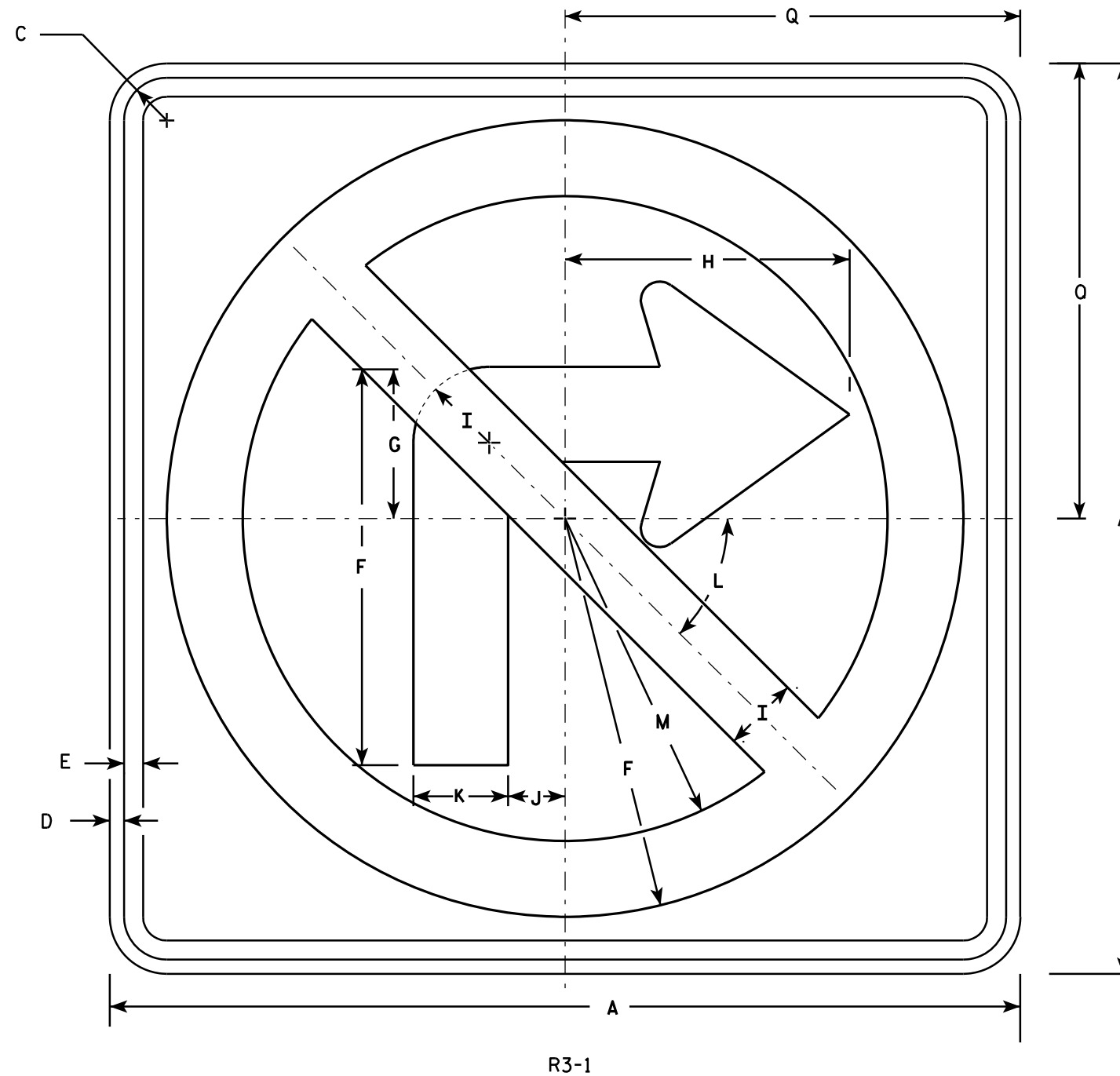
PROJECT NO:

HWY:

COUNTY:

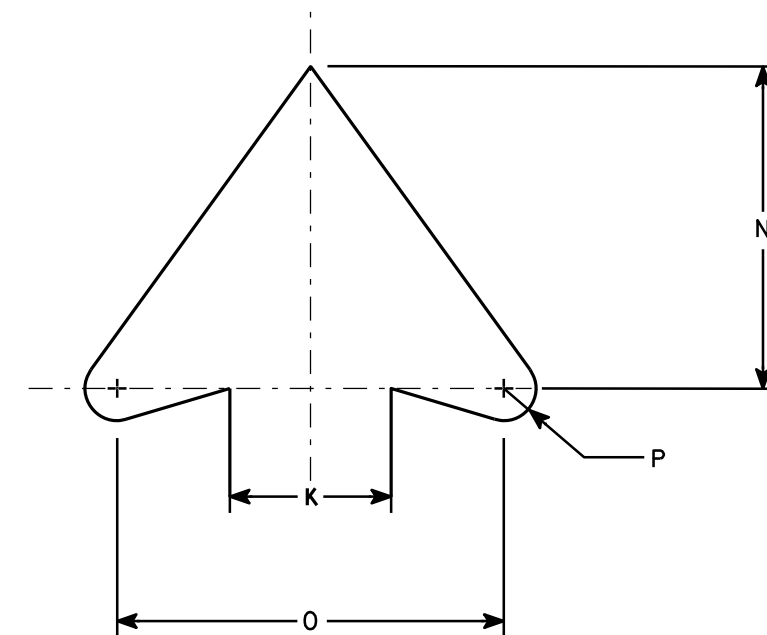
SHEET NO: 194

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

STANDARD SIGN

R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

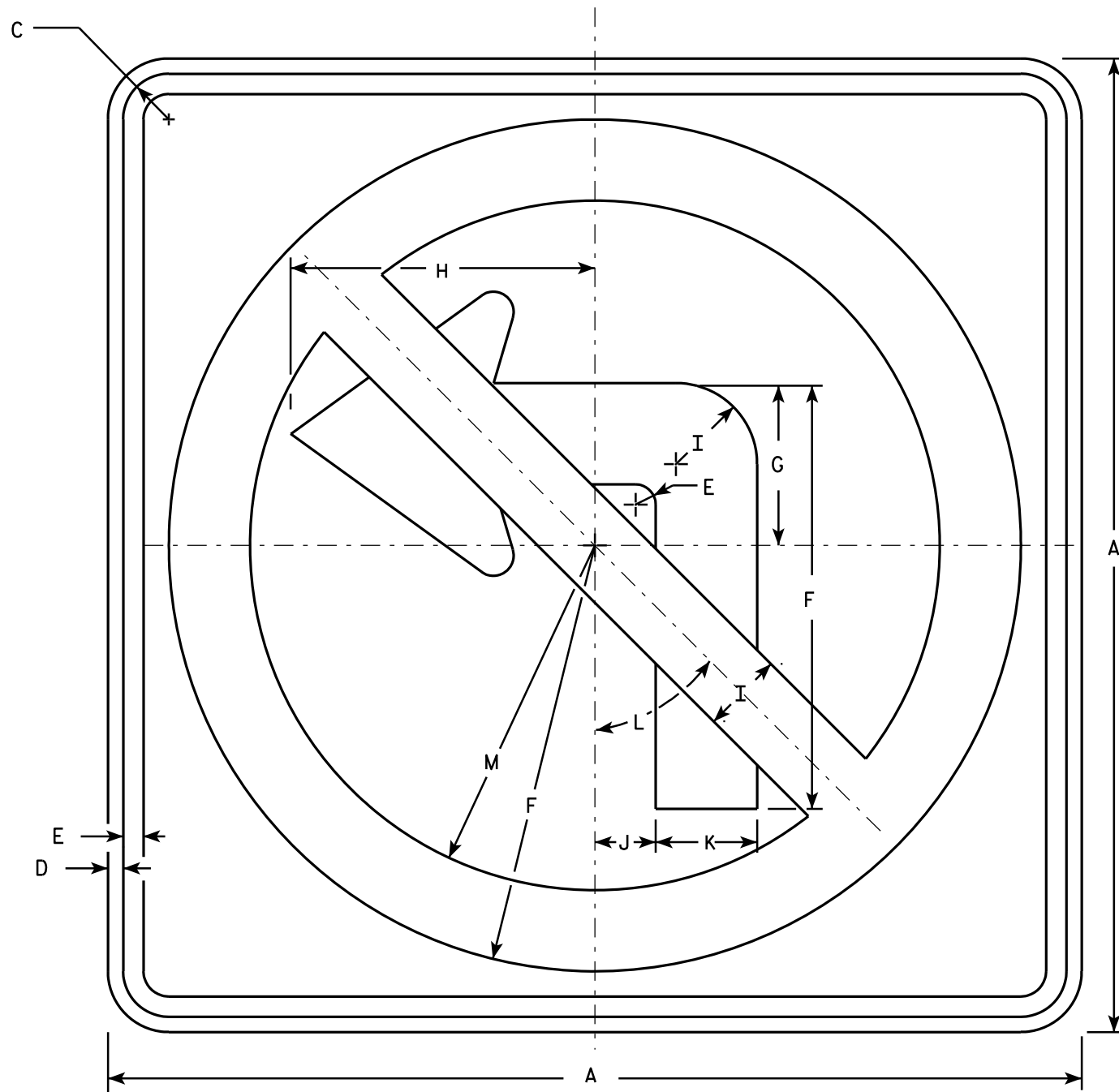
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 195

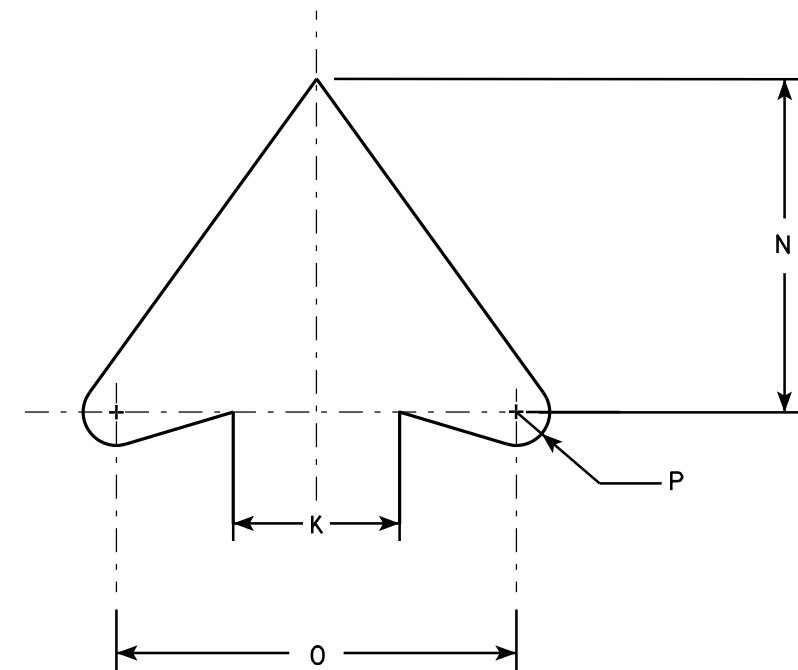
E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1 1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1 1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

STANDARD SIGN R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO:

HWY:

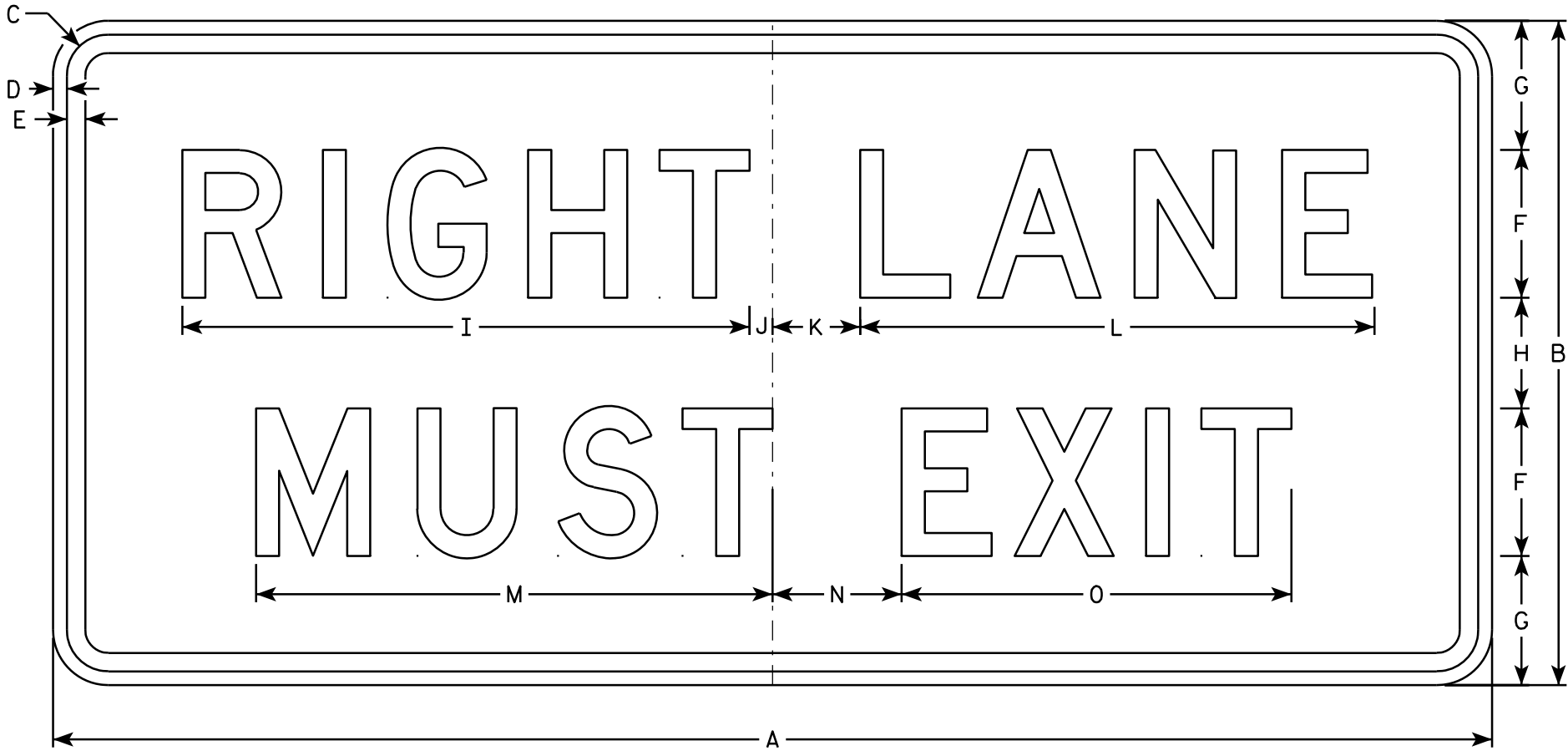
COUNTY:

SHEET NO: 196

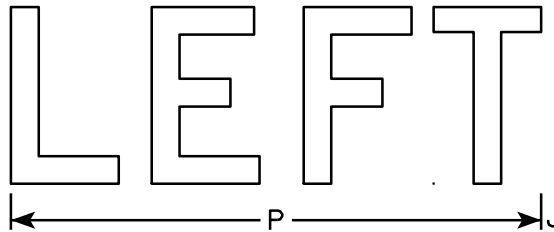
E

NOTES

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



R3-33R



R3-33L

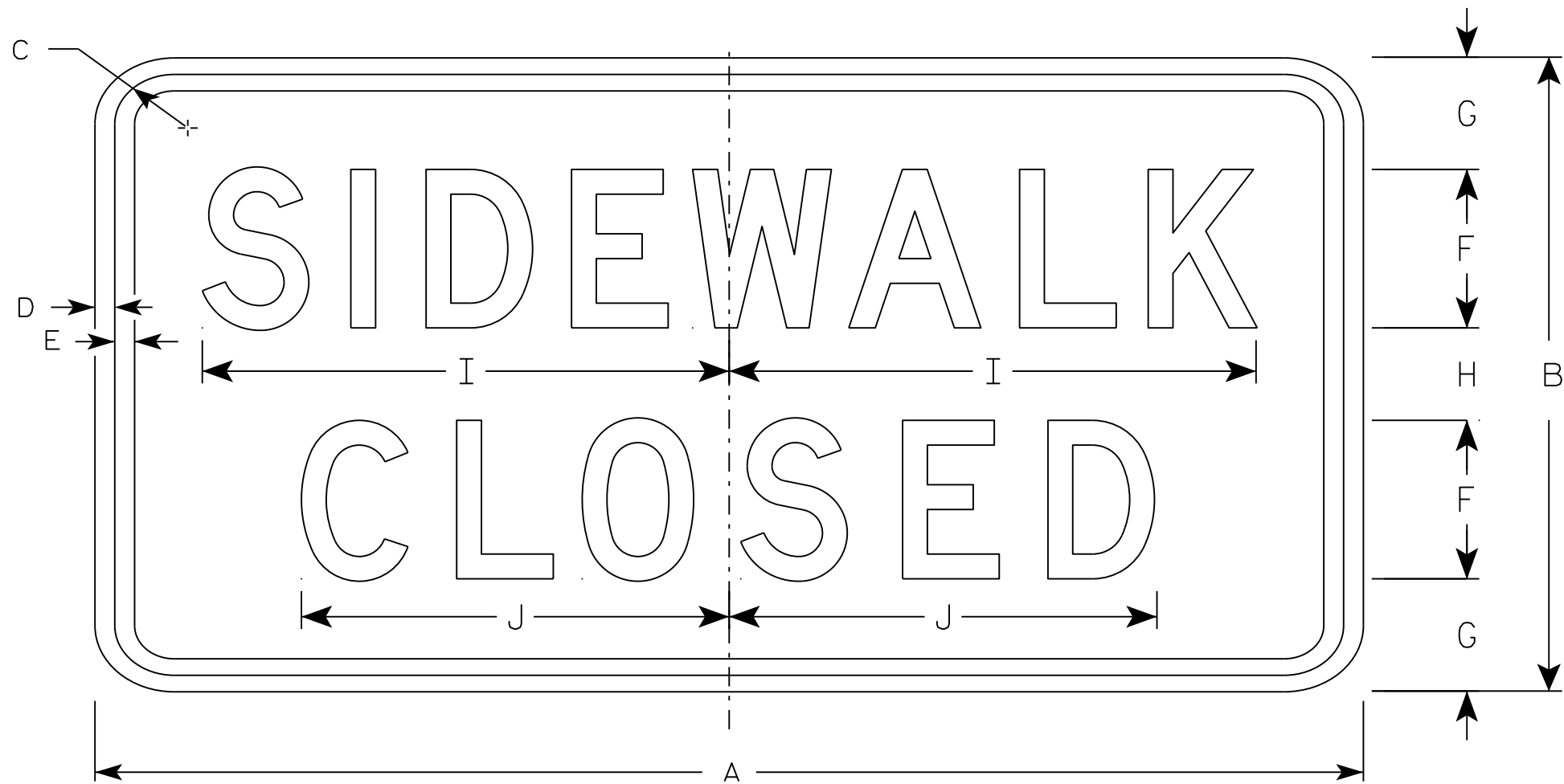
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3																											
4	78	36	2 1/4	3/4	1	8	7	6	30 3/4	1 1/4	4 3/4	27 7/8	28	7	21 1/8	24											19.5
5	78	36	2 1/4	3/4	1	8	7	6	30 3/4	1 1/4	4 3/4	27 7/8	28	7	21 1/8	24											19.5

STANDARD SIGN
R3-33

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/7/10 PLATE NO. R3-33.1



R9-9

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

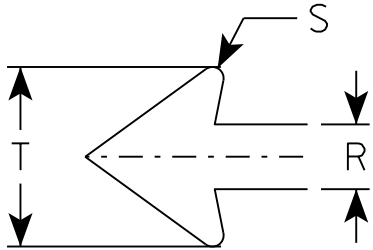
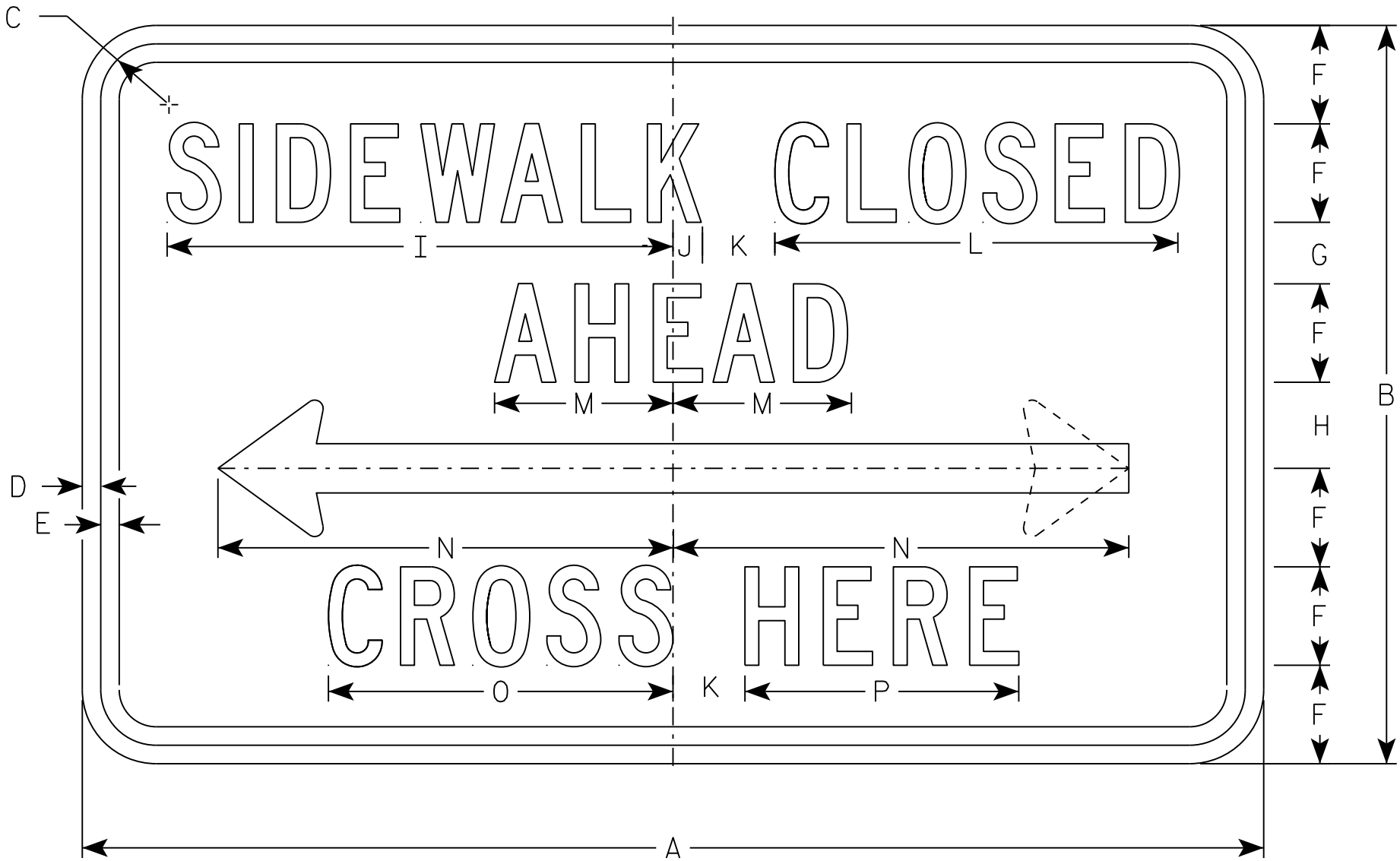
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 198 R9-9.6

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C except Size 1 is Series D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.



R9-11

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
2M	24	12	1 1/8	3/8	3/8	1 1/2	1 1/2	1 1/2	9 3/4	5/8	1 1/2	7 5/8	3 1/2	9 1/4	6 5/8	5 1/8		1	1/8	2 3/4							2.0
3	30	15	1 1/8	3/8	1/2	2	1 1/2	1 1/2	13	3/4	2	10 1/4	4 5/8	12 3/8	8 7/8	6 7/8		1 1/4	1/4	3 5/8							3.125
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 199

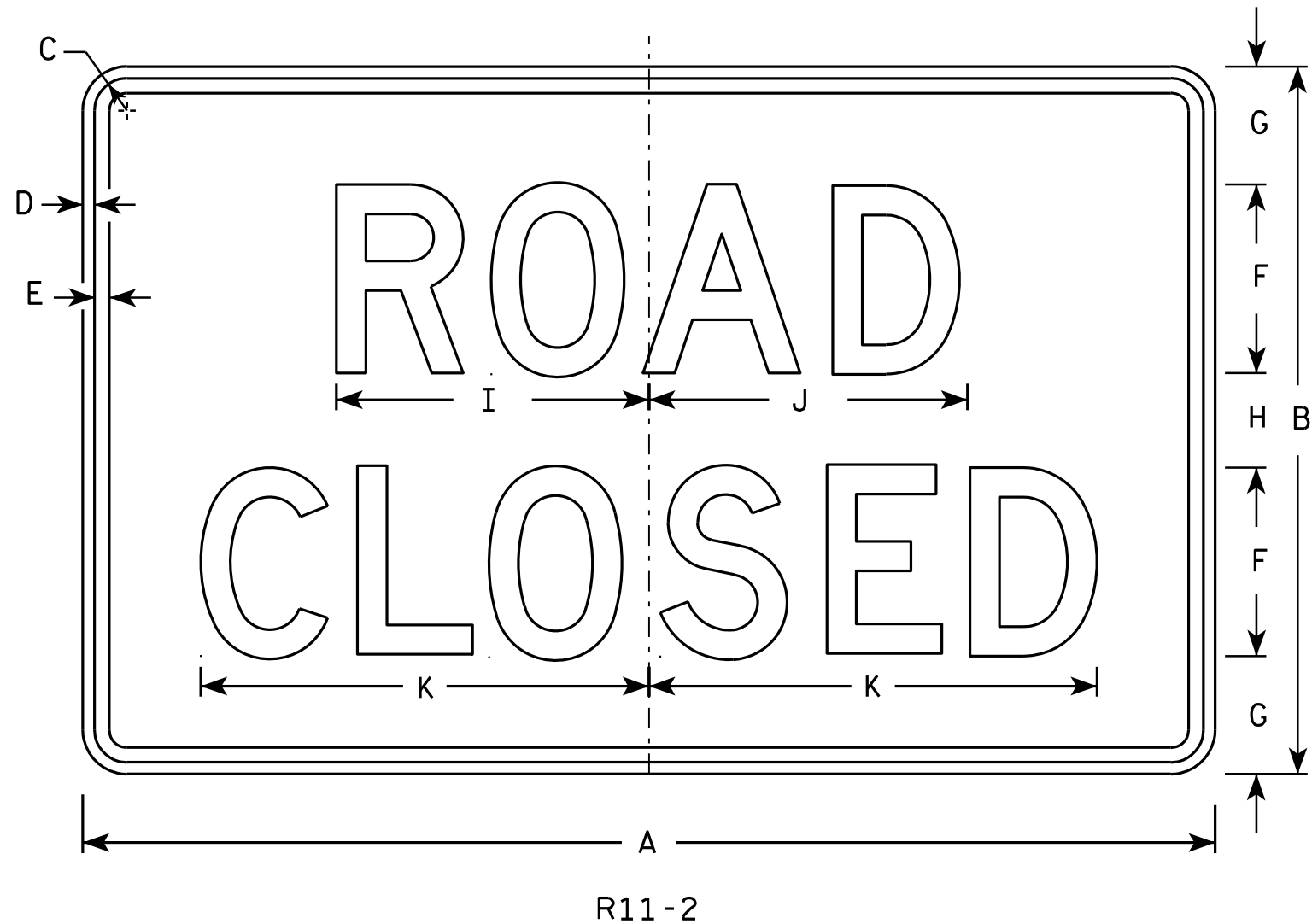
E

STANDARD SIGN
R9-11

WISCONSIN DEPT OF TRANSPORTATION

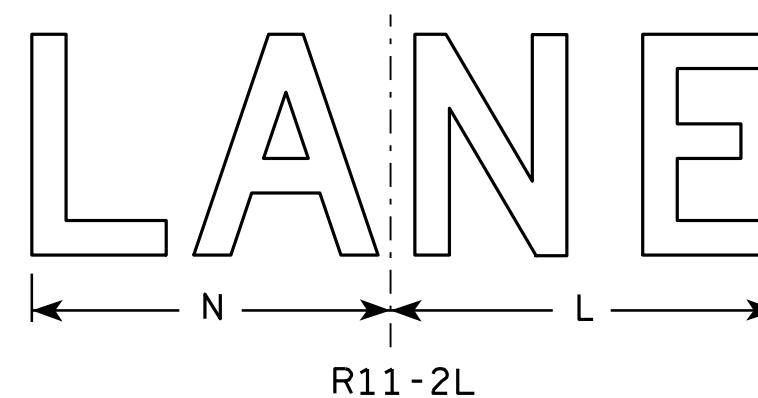
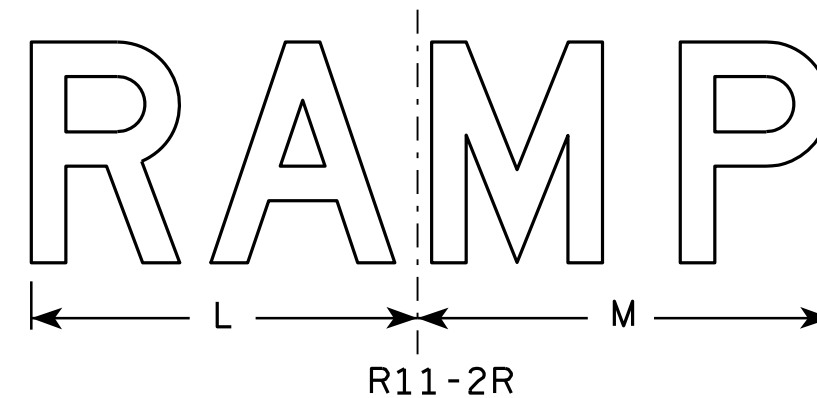
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R9-11.3



NOTES

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

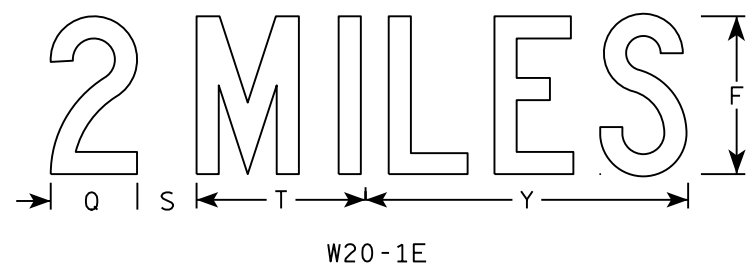
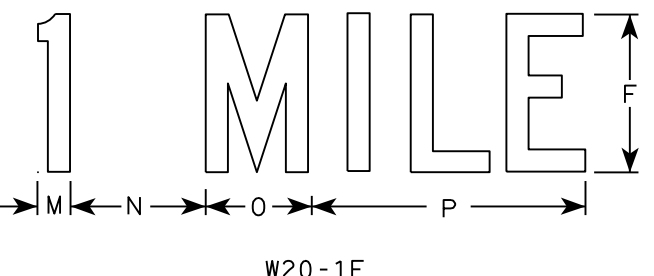
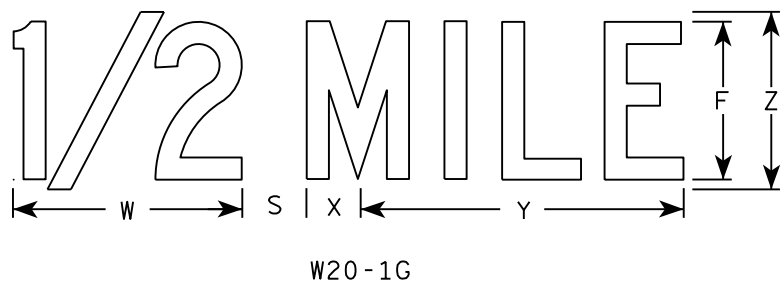
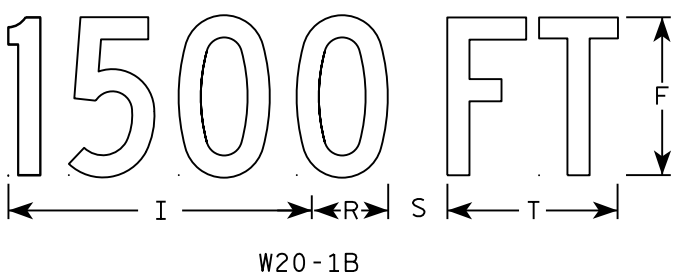
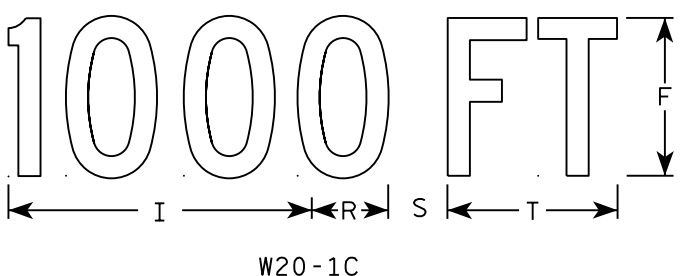
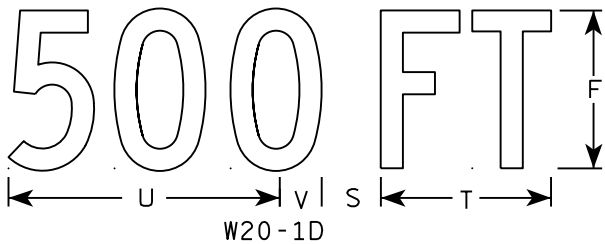
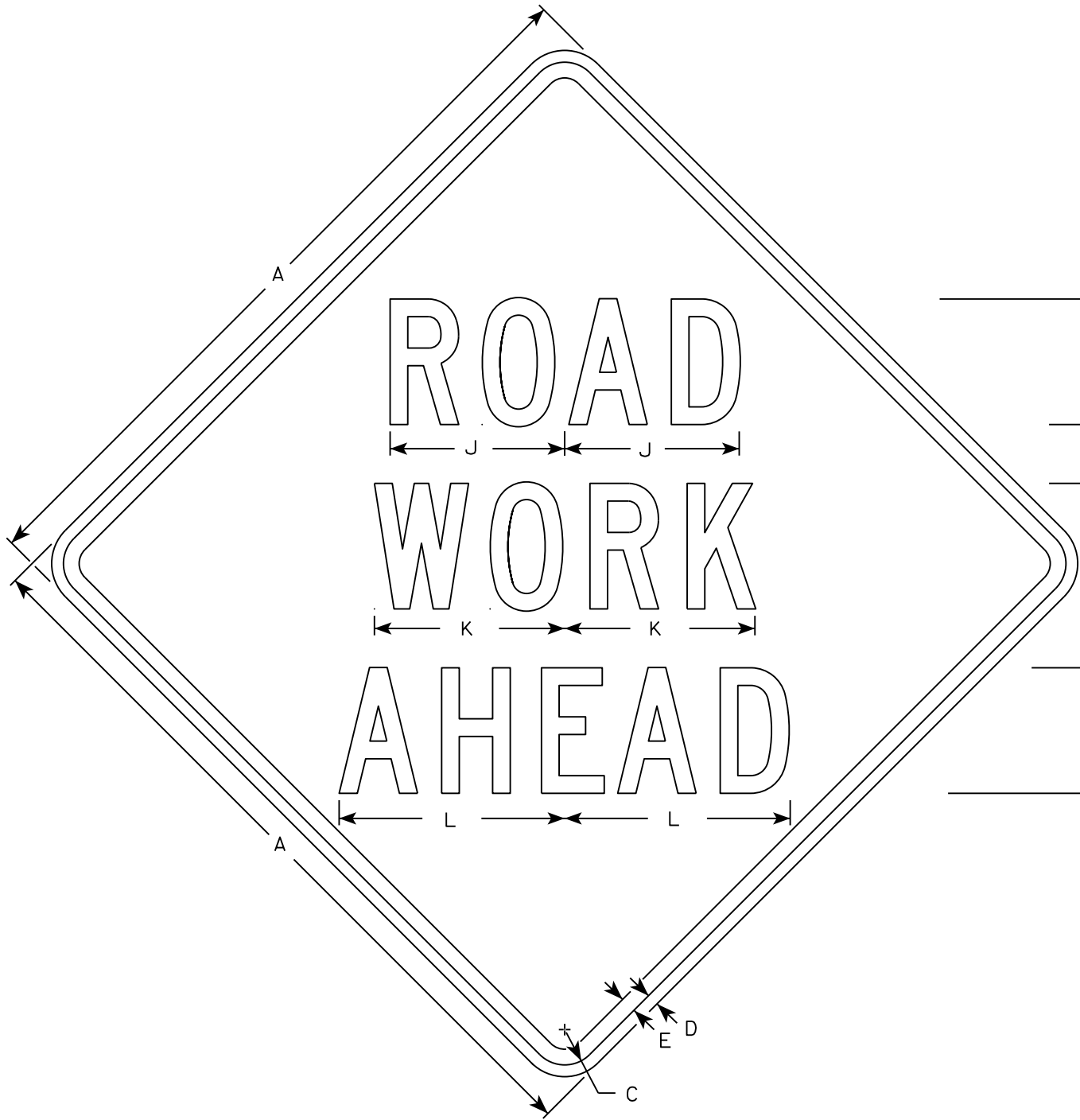


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: HWY: COUNTY: SHEET NO: 200 E



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

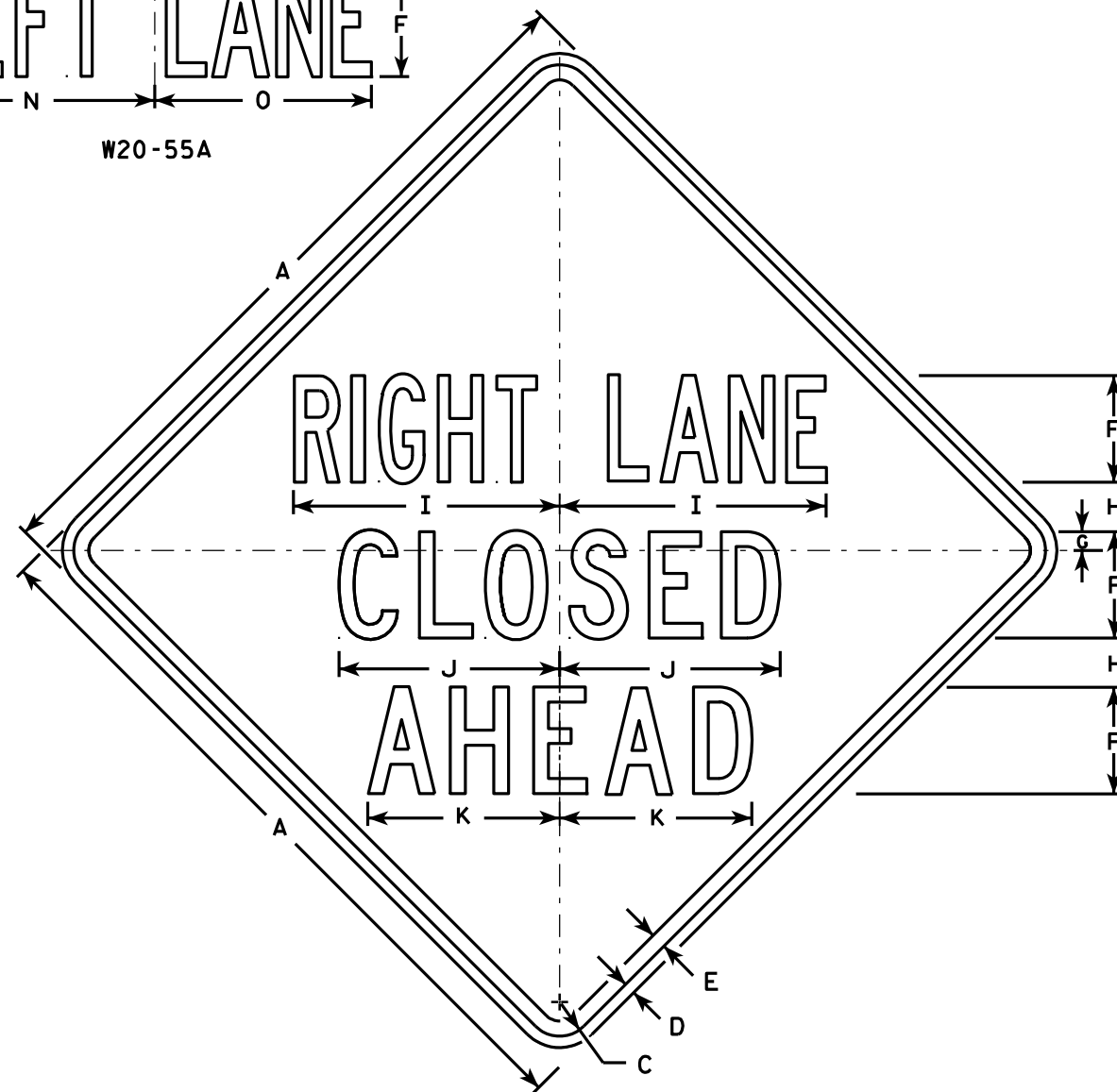
201

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. "----- LANE" is Series B.
All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO:

HWY:

COUNTY:

STANDARD SIGN
W20-5A, B, C, D, F & G

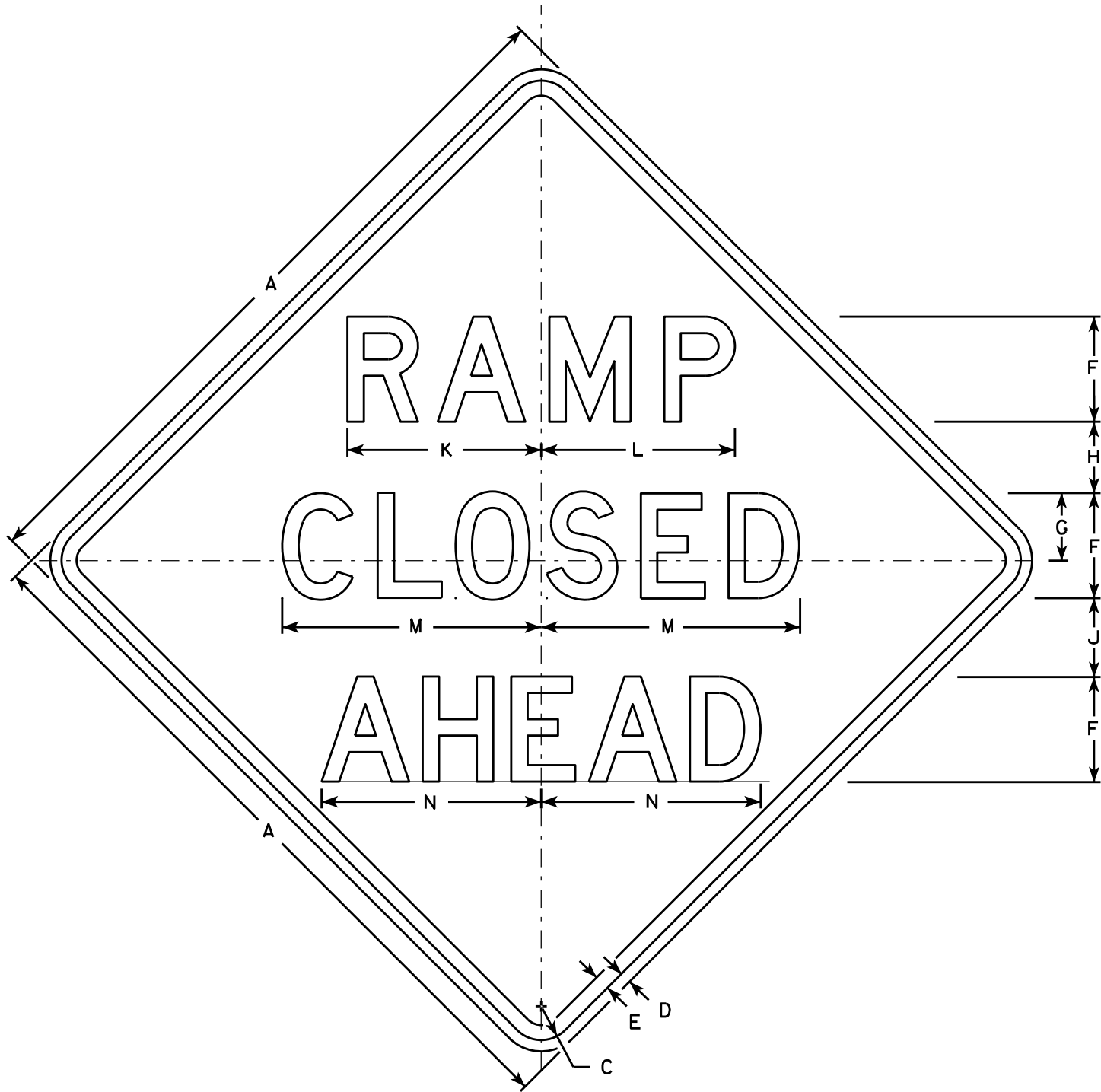
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

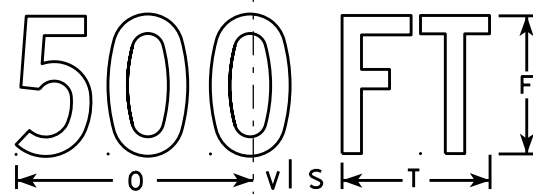
DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO: 202

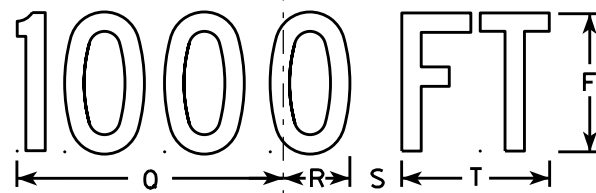
E



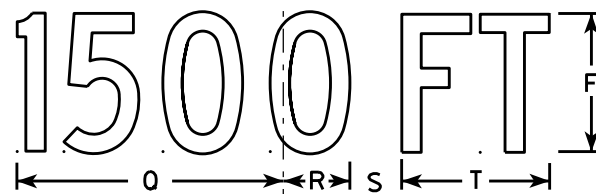
W20-53A



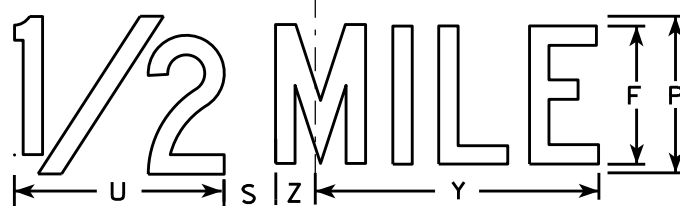
W20-53D



W20-53C



W20-53B



W20-53G



W20-53F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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

STANDARD SIGN
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/27/15 PLATE NO. W20-53.1

203

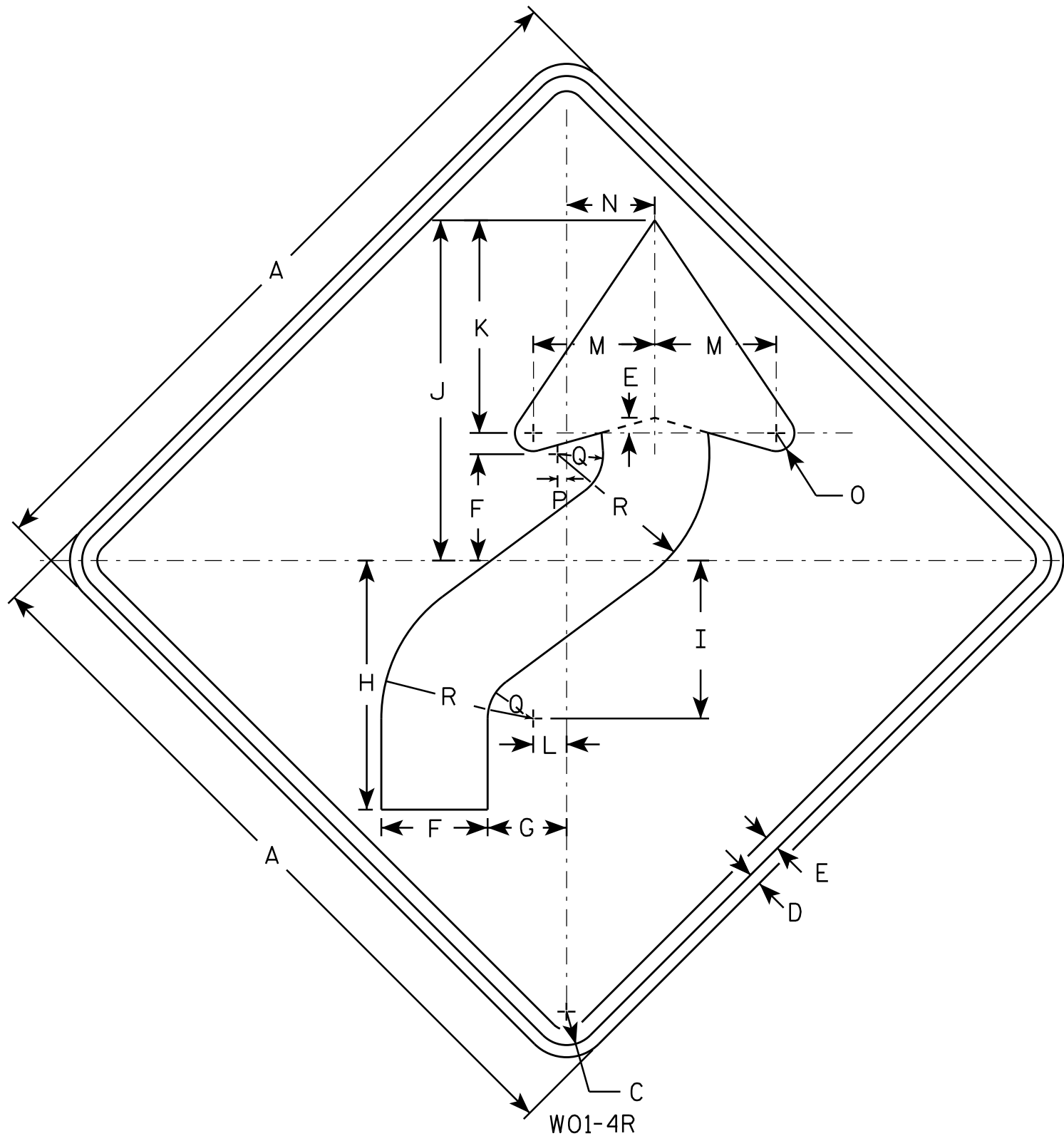
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

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

STANDARD SIGN W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1
204

PROJECT NO:

HWY:

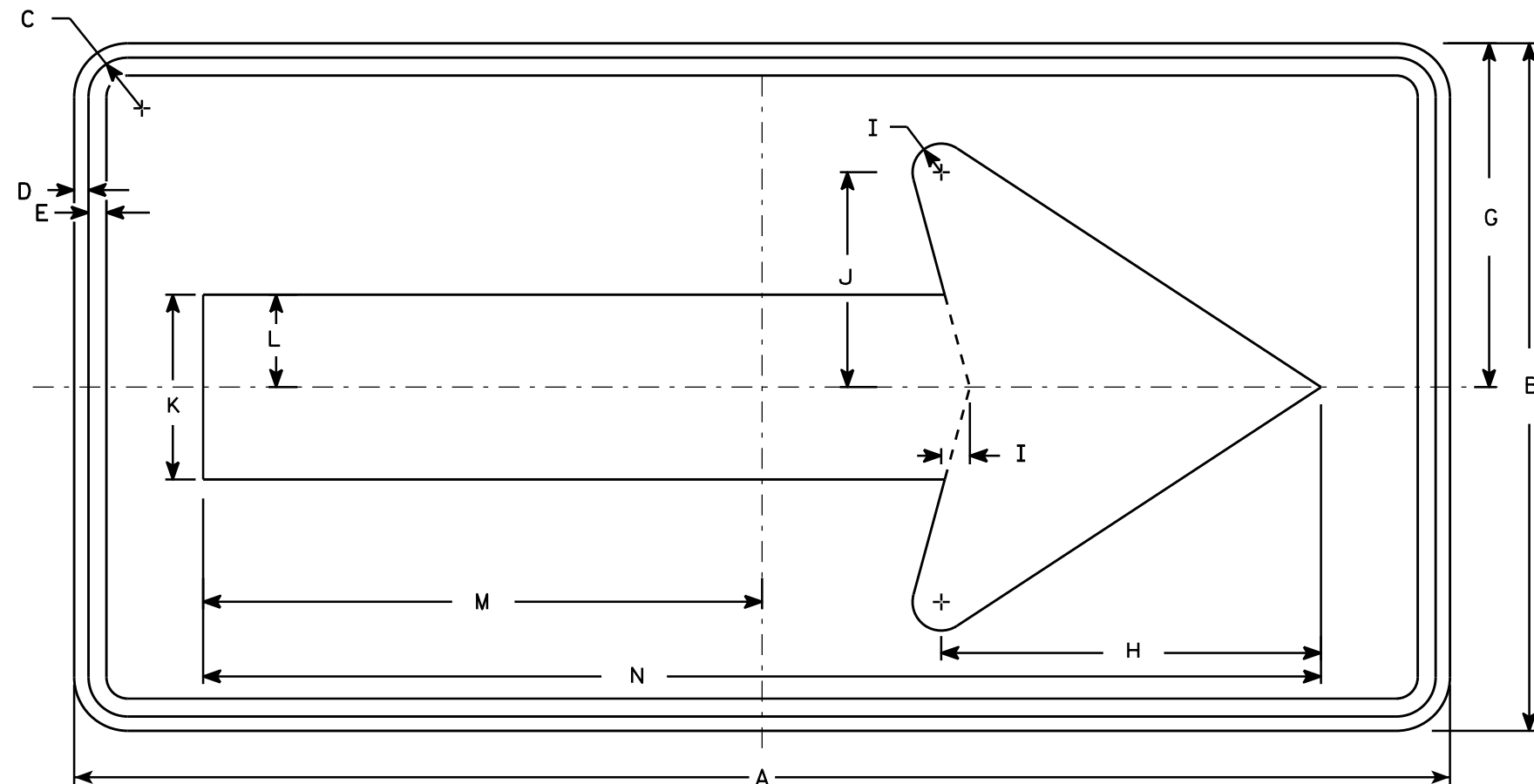
COUNTY:

SHEET NO:

E

NOTES

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



W01-6

[illegible]

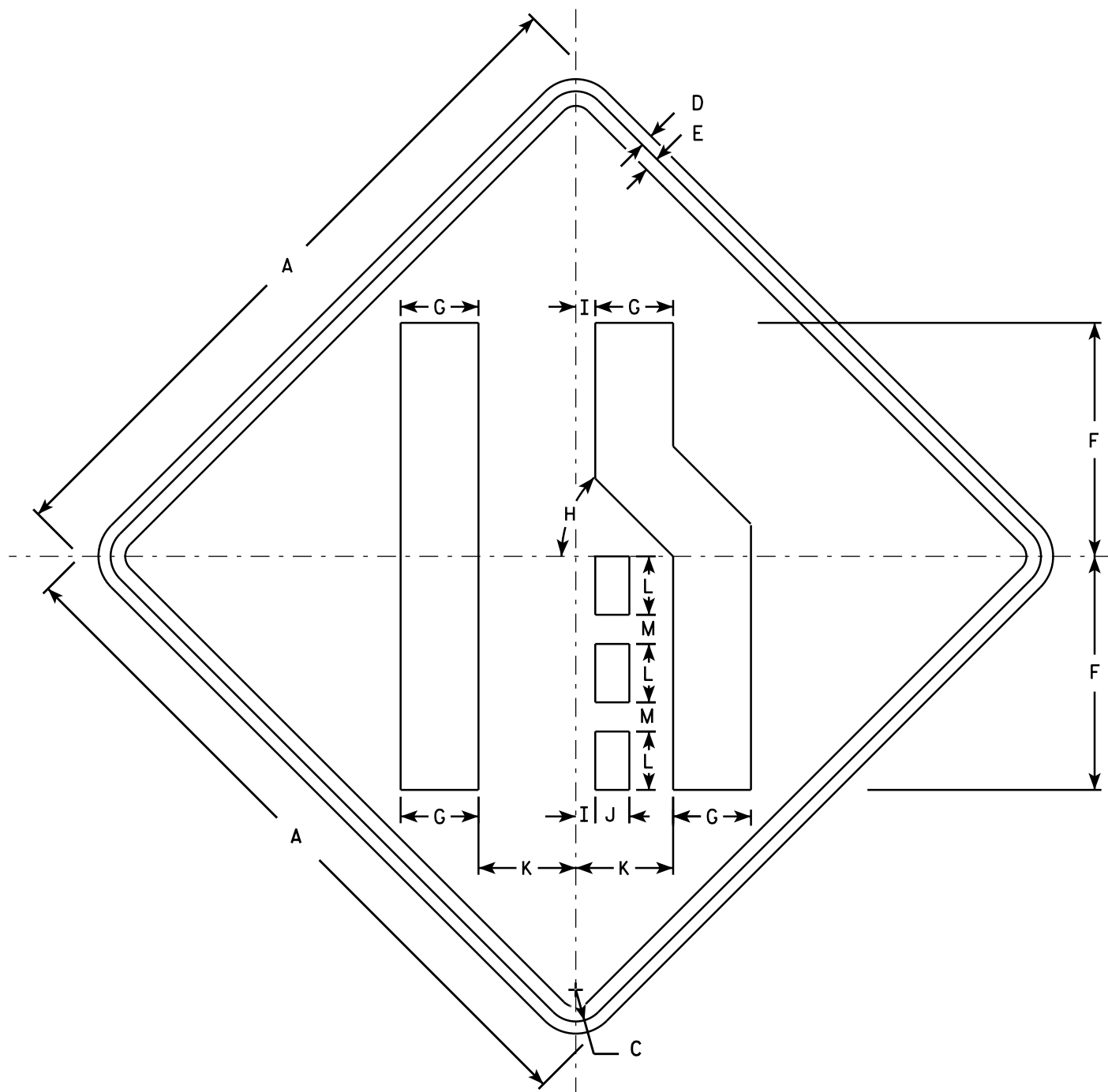
STANDARD SIGN
WO1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO 205 W01-6.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

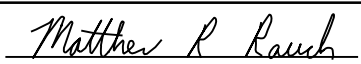
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5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

W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED



For State Traffic Engineer

DATE 11/20/13

PLATE 206

W04-2.1

PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

EARTHWORK SUMMARY

SHEET NO: 207

Earthwork Summary
EB-Line, Sta. 194+97 EB to Sta. 204+58 EB

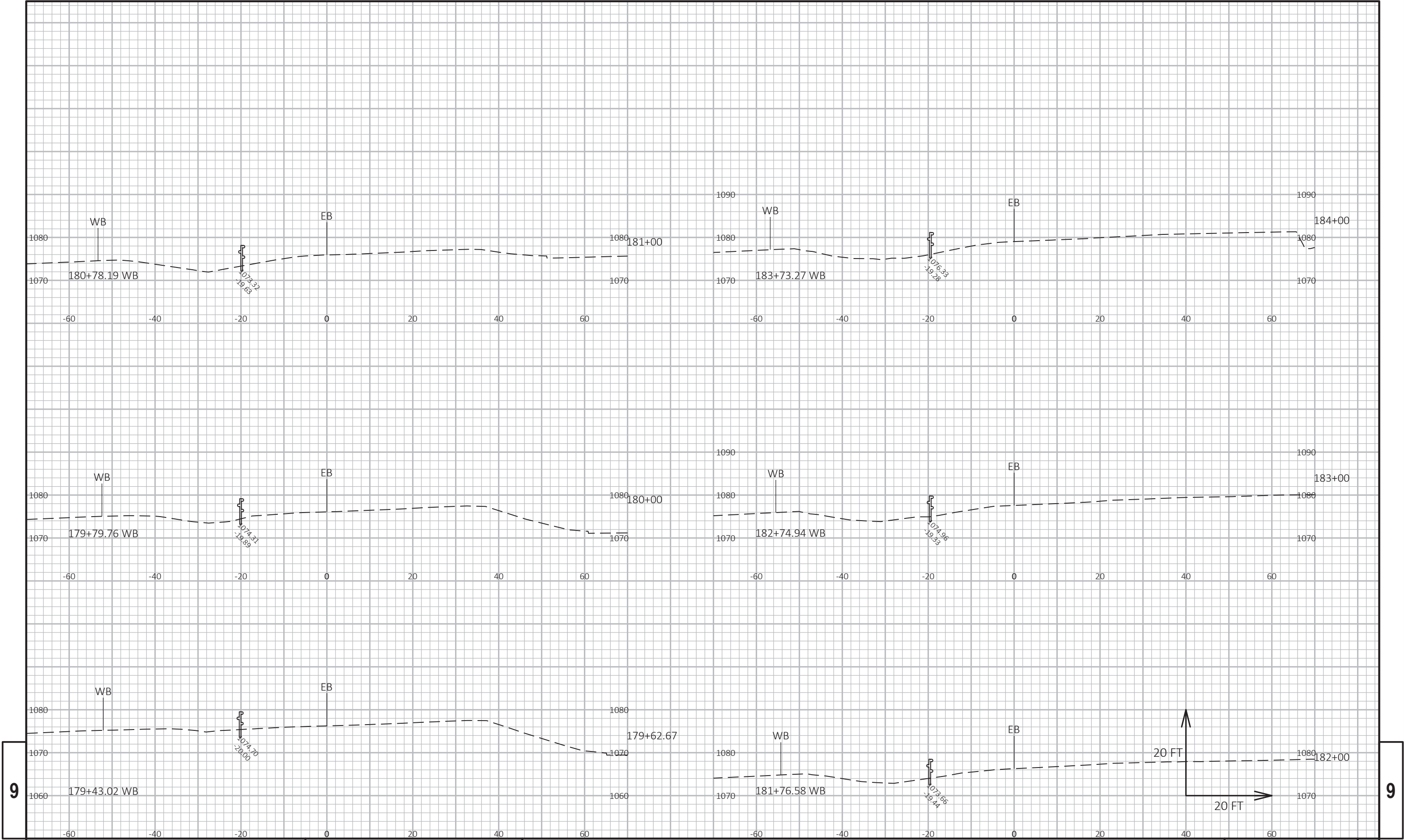
STATION	Cut Area (Sq. ft.)	Fill Area (Sq. ft.)	Cut Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)	Cumulative Cut Volume (Cu. Yd.)	Cumulative Fill Volume (Cu. Yd.)	Cumulative Net Volume (Cu. Yd.)
194+97 EB	0	0.0	0	0	0	0	0
195+00 EB	0	0.0	0	0	0	0	0
196+00 EB	25	3.0	46	6	46	6	41
197+00 EB	36	0.0	113	6	159	11	148
198+00 EB	30	5.8	122	11	282	22	260
199+00 EB	41	0.0	131	11	413	33	380
200+00 EB	22	0.0	117	0	529	33	497
201+00 EB	23	4.0	83	7	612	40	572
202+00 EB	27	3.0	92	13	704	53	651
203+00 EB	22	0.5	91	6	795	59	735
204+00 EB	22	0.0	81	1	876	60	816
204+58 EB	21	0.0	46	0	922	60	862

Earthwork values in table have not been expanded
Fill Expansion Factor for Common Excavation = 1.25
See Earthwork in Miscellaneous Quantities

Earthwork Summary
EB-Line, Sta. 241+11 EB to Sta. 275+00 EB

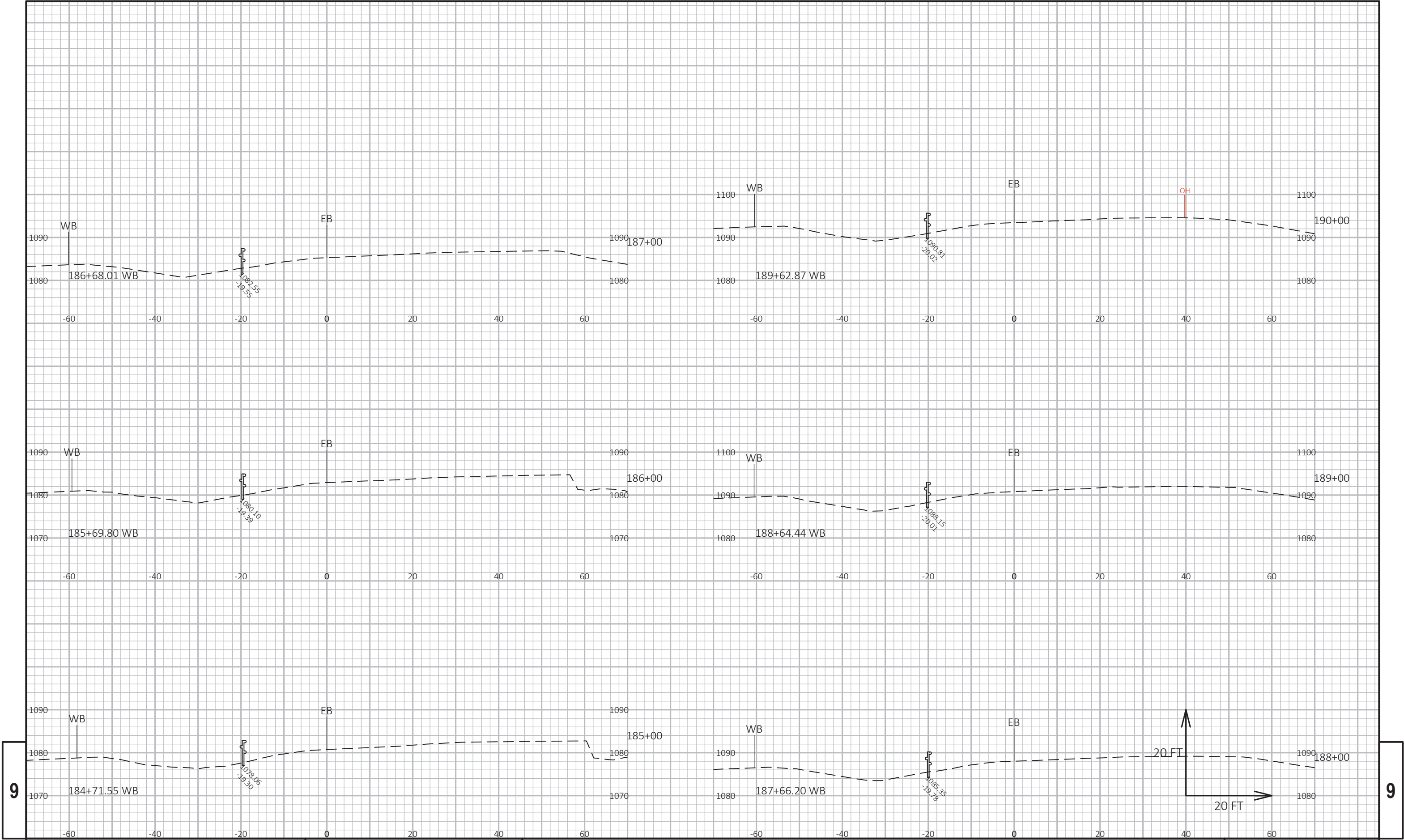
Station	Cut Area (Sq. ft.)	Fill Area (Sq. ft.)	Cut Volume (Cu. Yd.)	Fill Volume (Cu. Yd.)	Cumulative Cut Volume (Cu. Yd.)	Cumulative Fill Volume (Cu. Yd.)	Cumulative Net Volume (Cu. Yd.)
241+11 EB	0	0					
242+00 EB	0	0	0	0	0	0	0
243+00 EB	5	0	9	0	9	0	9
244+00 EB	9	0	26	0	35	0	35
245+00 EB	11	0	37	0	72	0	72
246+00 EB	11	0	41	0	113	0	113
247+00 EB	6	0	31	0	144	0	144
248+00 EB	7	0	24	0	169	0	169
249+00 EB	8	0	28	0	196	0	196
250+00 EB	9	0	31	0	228	0	228
251+00 EB	0	0	17	0	244	0	244
252+00 EB	0	0	0	0	244	0	244
253+00 EB	0	0	0	0	244	0	244
254+00 EB	0	0	0	0	244	0	244
255+00 EB	12	0	22	0	267	0	267
256+00 EB	10	0	41	0	307	0	307
257+00 EB	10	0	37	0	344	0	344
258+00 EB	10	0	37	0	381	0	381
259+00 EB	10	0	37	0	419	0	419
260+00 EB	10	0	37	0	456	0	456
261+00 EB	11	0	39	0	494	0	494
262+00 EB	10	0	39	0	533	0	533
263+00 EB	11	0	39	0	572	0	572
264+00 EB	0	0	20	0	593	0	593
265+00 EB	0	0	0	0	593	0	593
266+00 EB	0	0	0	0	593	0	593
267+00 EB	13	0	24	0	617	0	617
268+00 EB	12	0	46	0	663	0	663
269+00 EB	8	0	37	0	700	0	700
270+00 EB	8	0	30	0	730	0	730
271+00 EB	11	0	35	0	765	0	765
272+00 EB	12	0	43	0	807	0	807
273+00 EB	11	0	43	0	850	0	850
274+00 EB	0	0	20	0	870	0	870
275+00 EB	0	0	0	0	870	0	870

Earthwork values in table have not been expanded
Fill Expansion Factor for Common Excavation = 1.25
See Earthwork in Miscellaneous Quantities



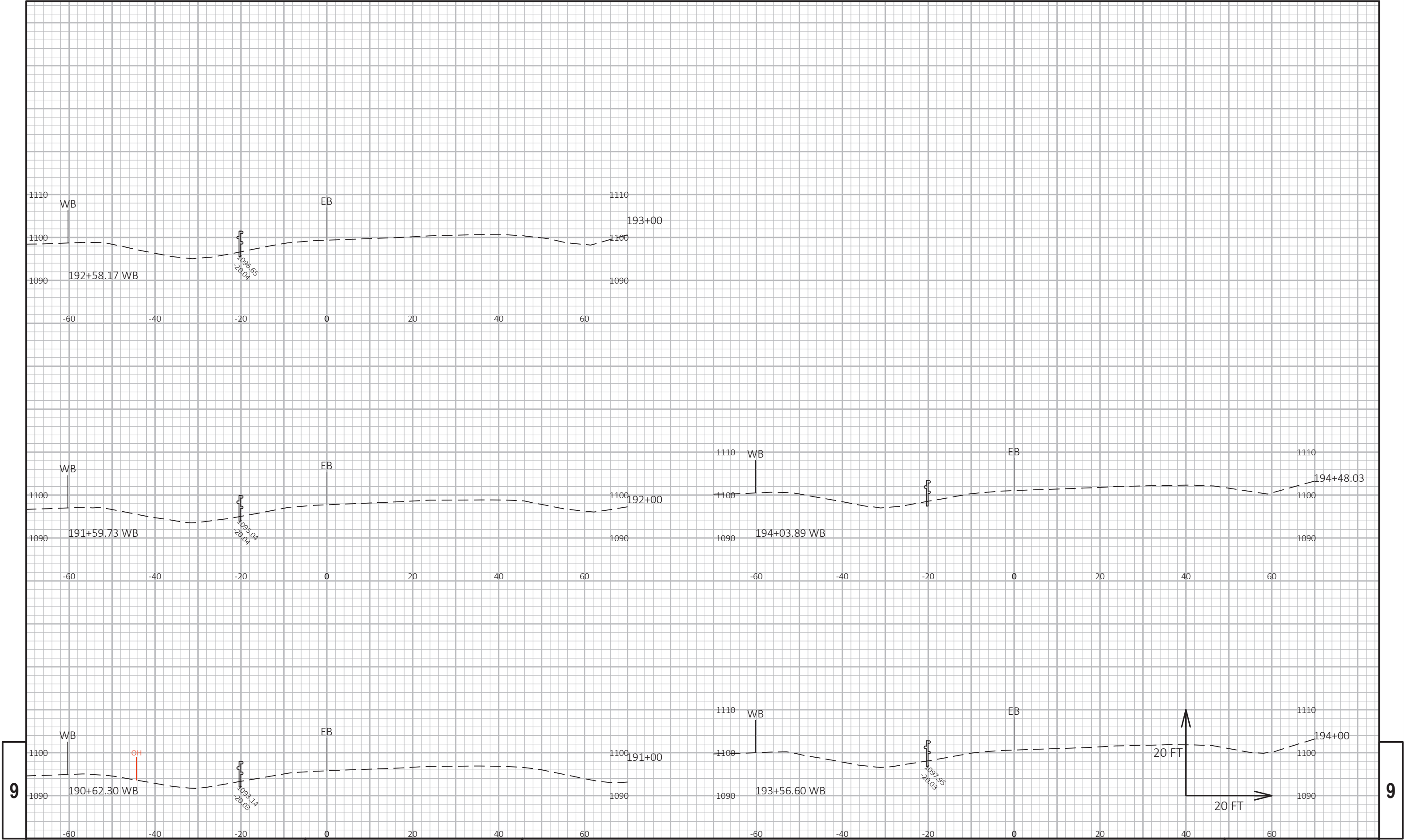
9

9



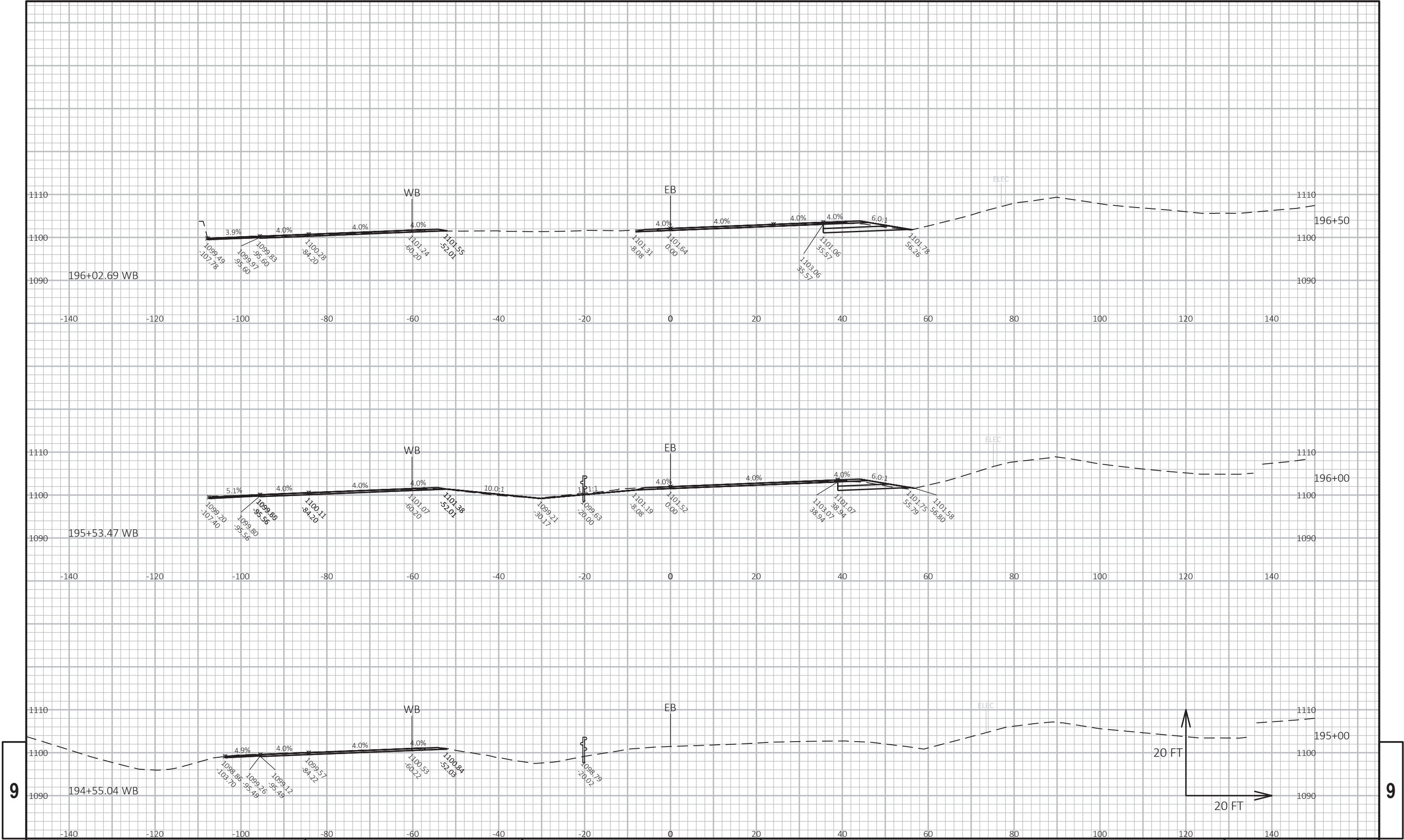
9

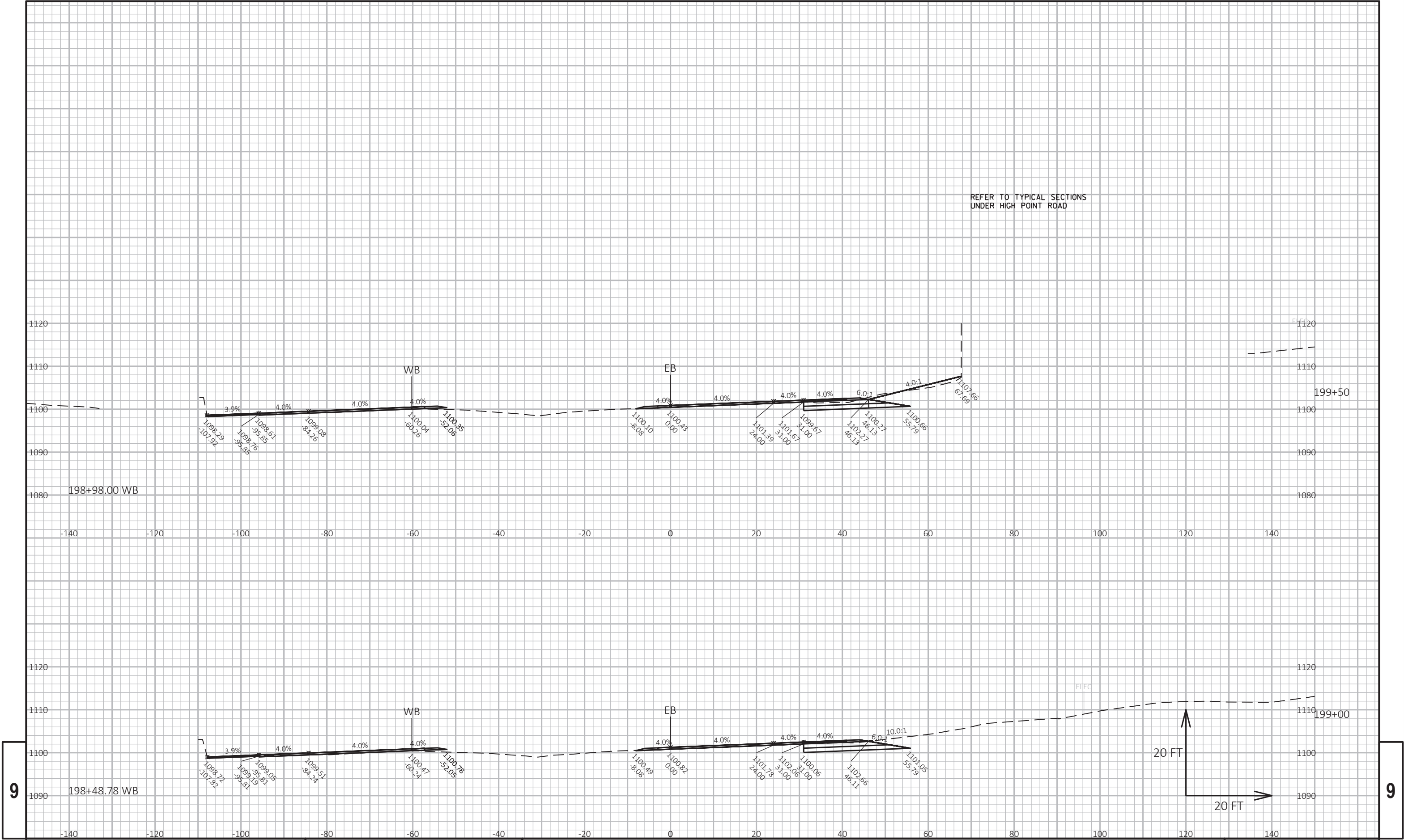
9



9

9





REFER TO TYPICAL SECTIONS
UNDER HIGH POINT ROAD

PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

CROSS SECTIONS: USH 12

SHEET

214

E

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - USH 12 - (7)

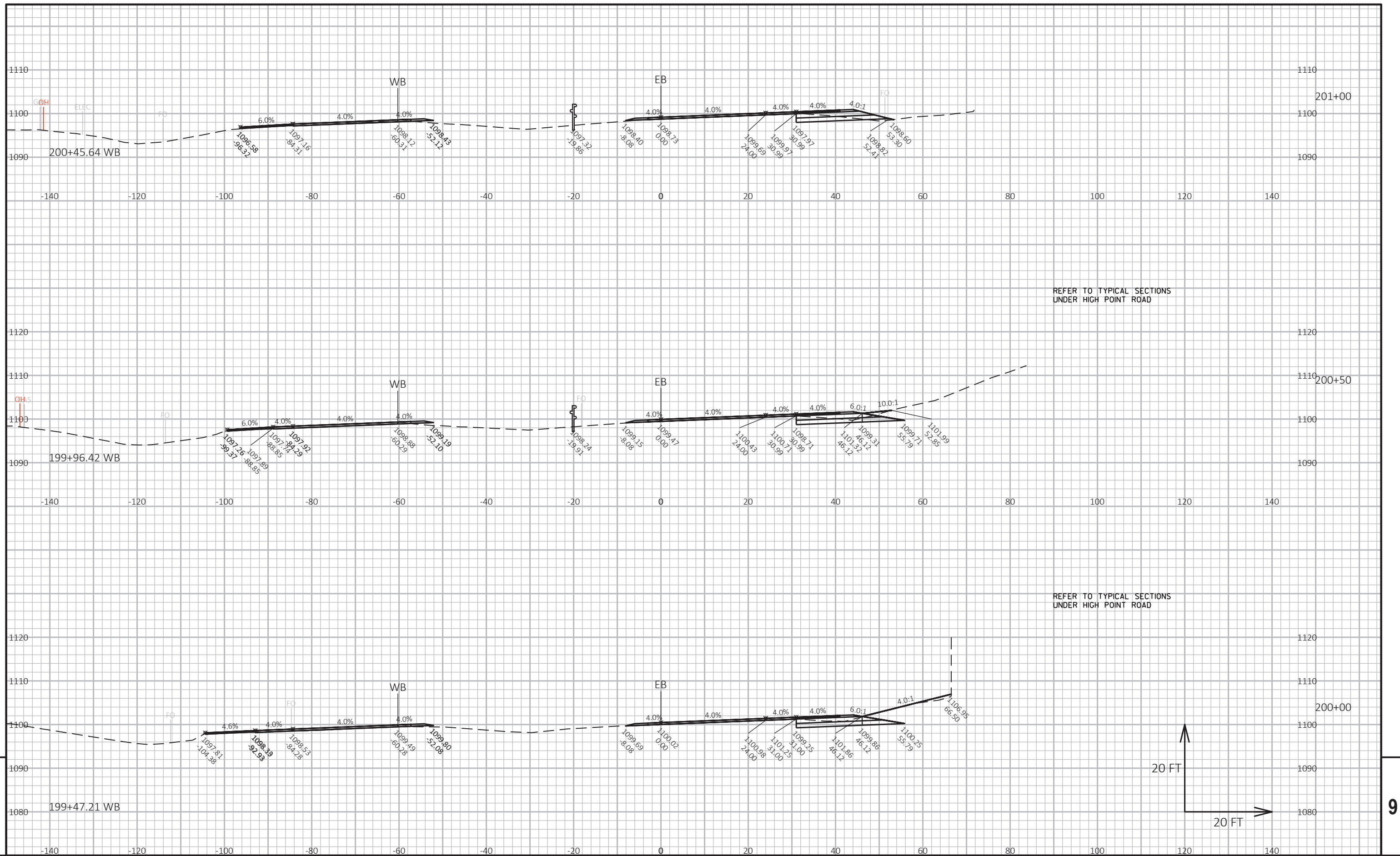
PLOT DATE : 11/28/2018 2:40 PM

PLOT BY : KOENIG, DELLA M

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDIS SHEET 49



PROJECT NO: 5300-00-71

HWY: USH 12

COUNTY: DANE

CROSS SECTIONS: USH 12

SHEET 215

■

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - USH 12 - (8)

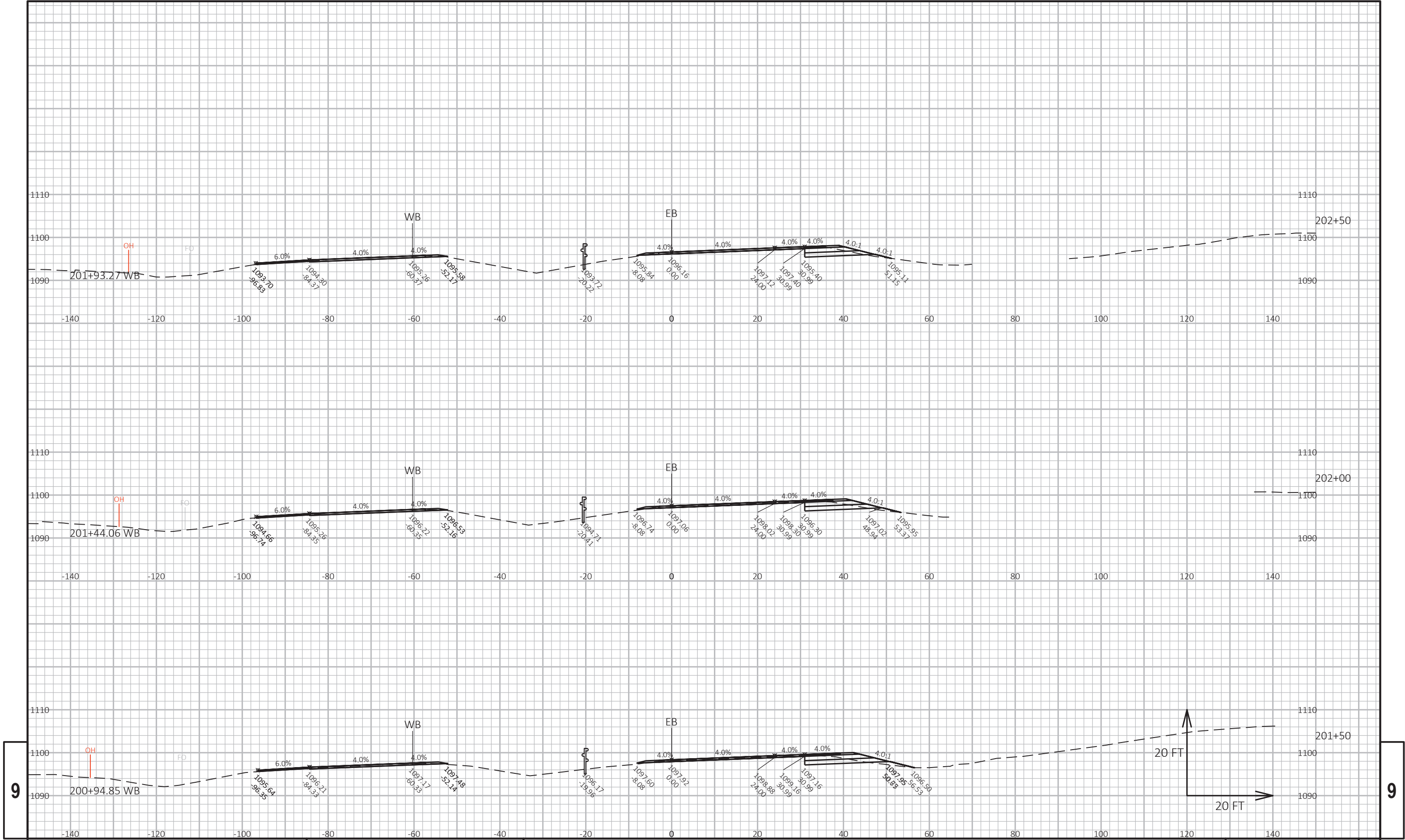
PLOT DATE : 11/28/2018 2:40 PM

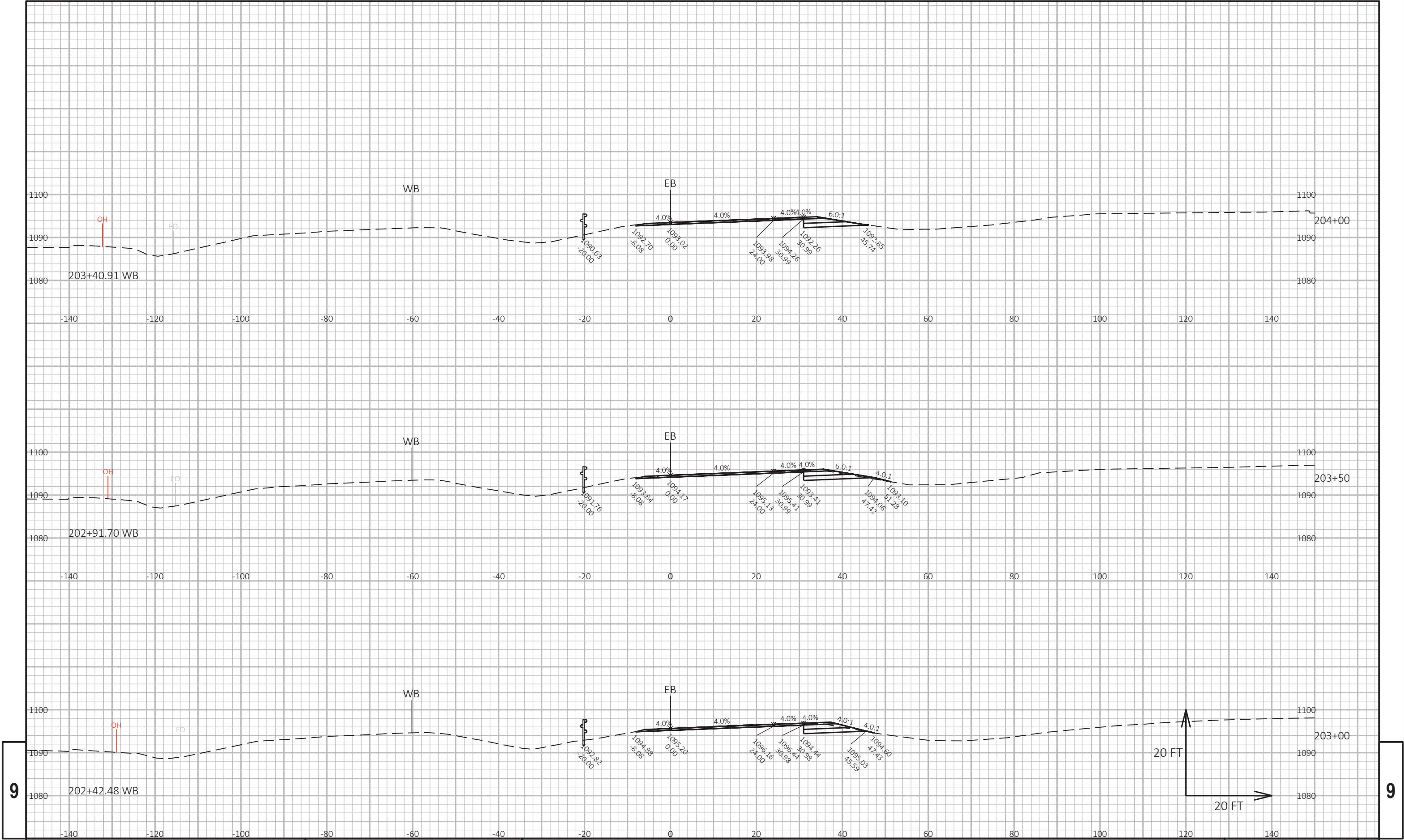
PLOT BY : KOENIG, DELLA M

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

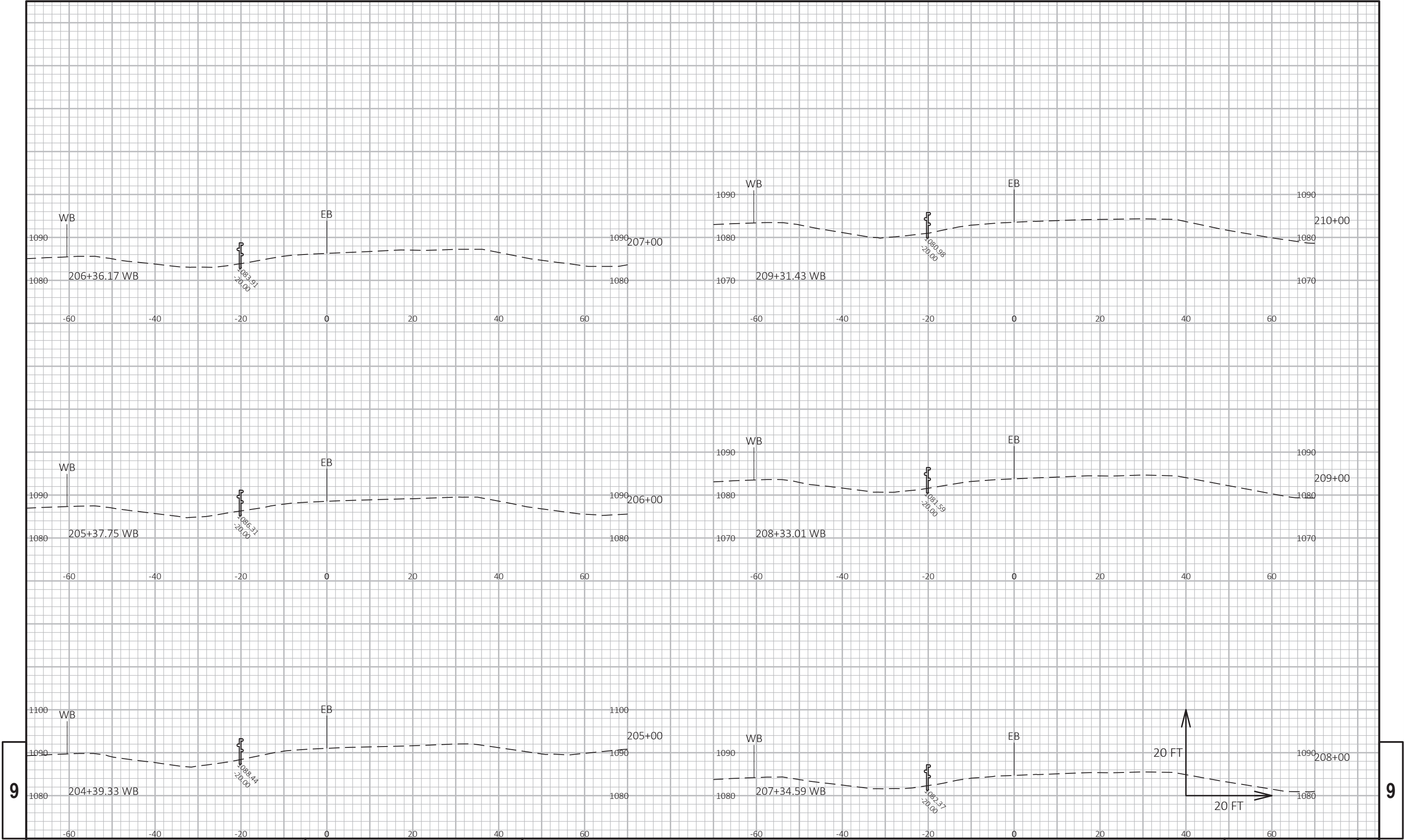
WISDOT/CADDS SHEET 49





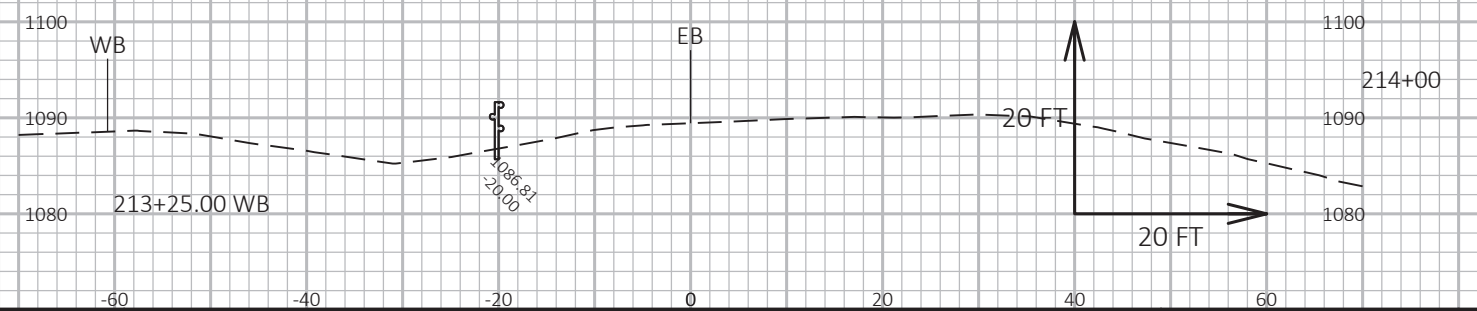
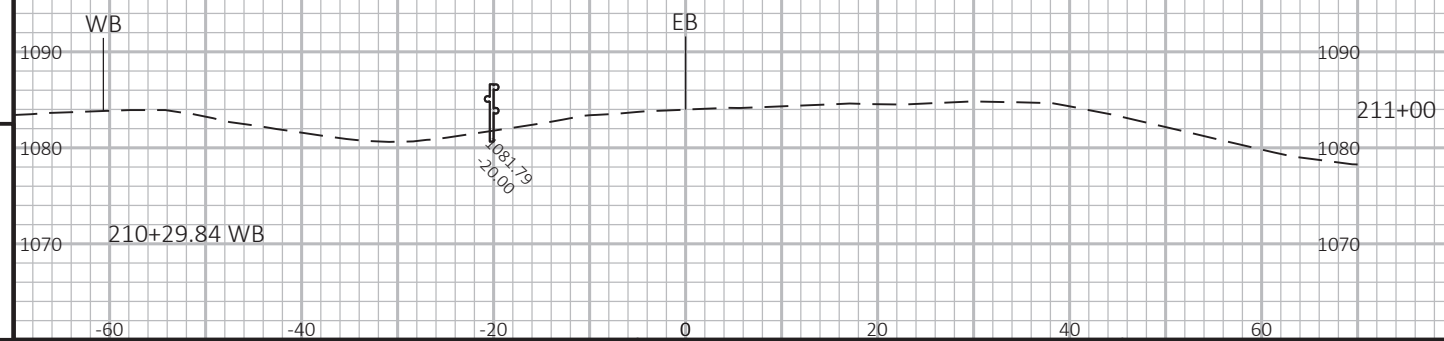
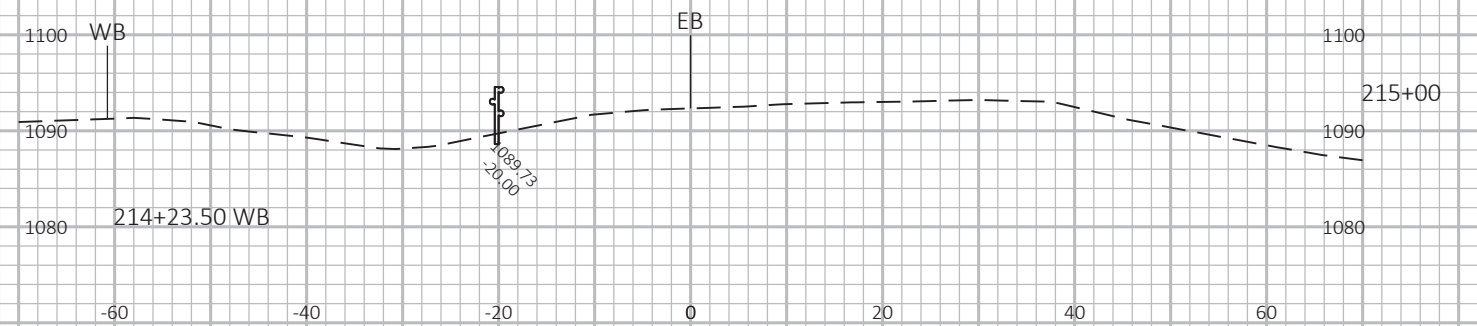
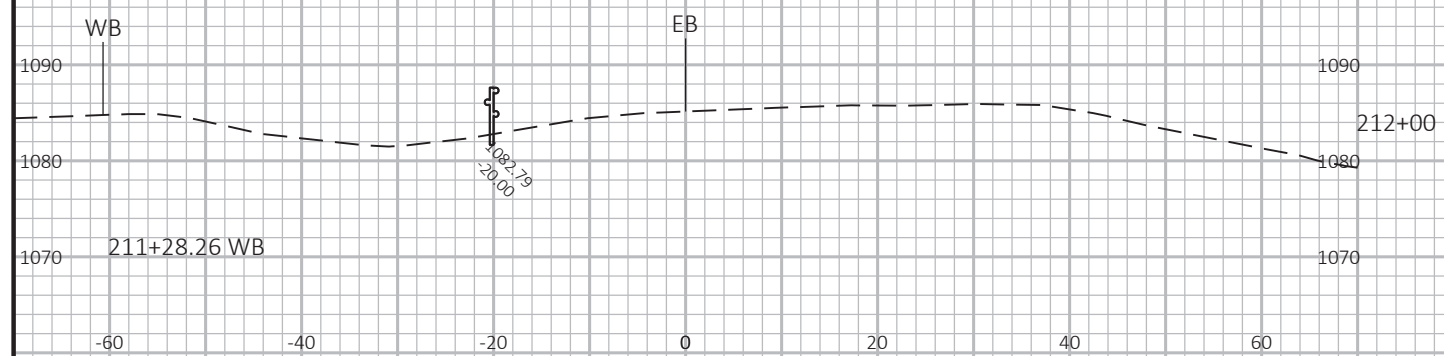
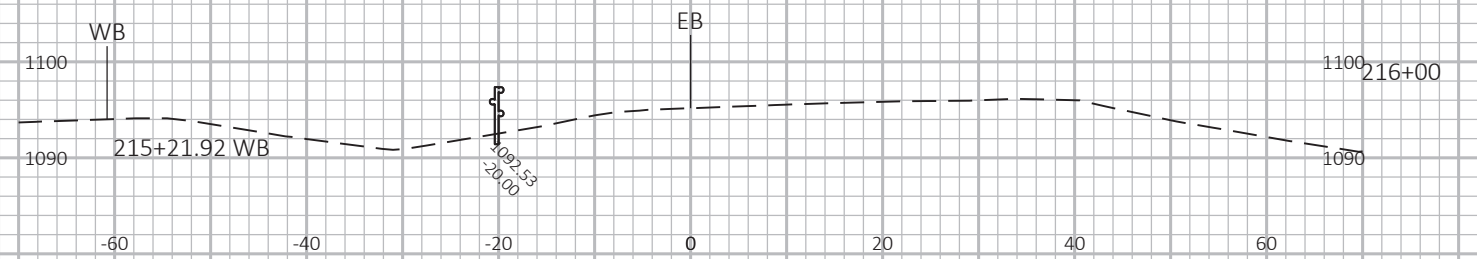
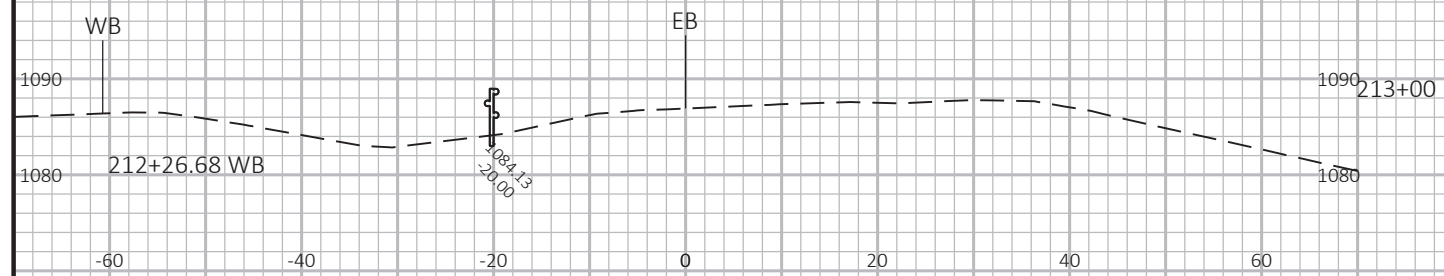
9

9



9

9



9

PROJECT NO:	5300-00-71
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HWY: USH 12

COUNTY: DANE

CROSS SECTIONS: USH 12

SHEET

219

9

FILE NAME : N:\PDS\C3D\53000001, 53000432\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - USH 12 - (12)

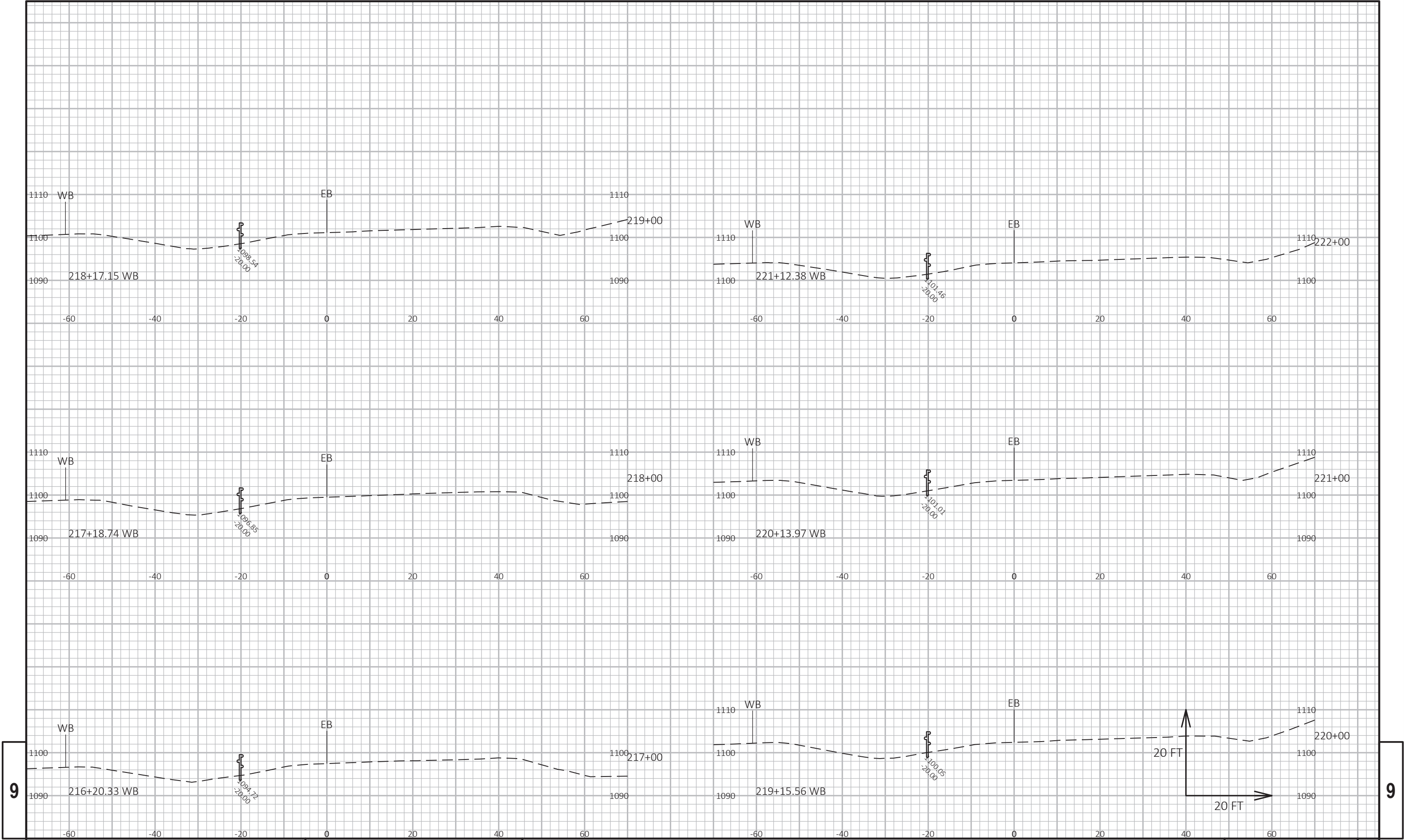
PLOT DATE : 11/28/2018 2:41 PM

PLOT BY : KOENIG, DELLA M

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

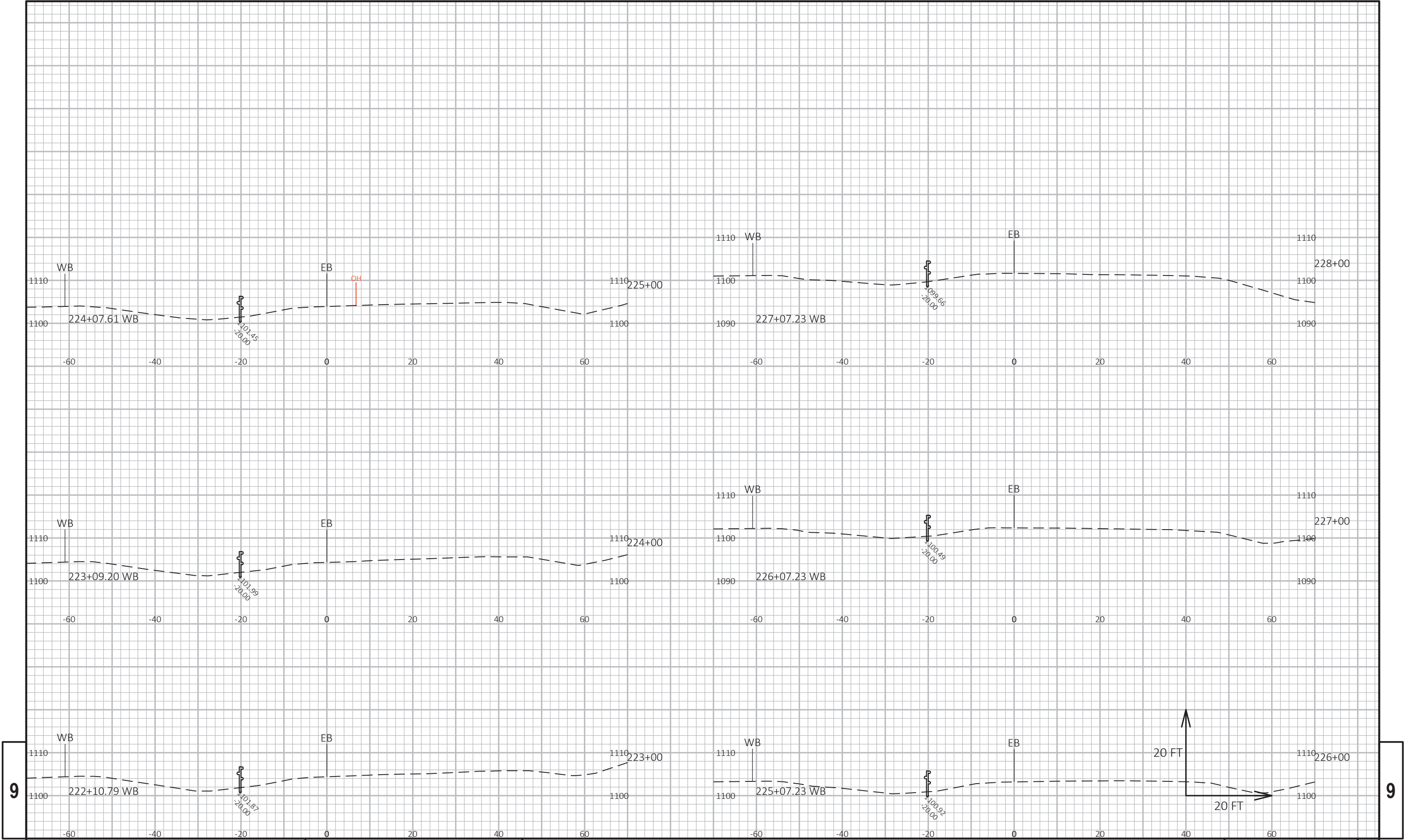


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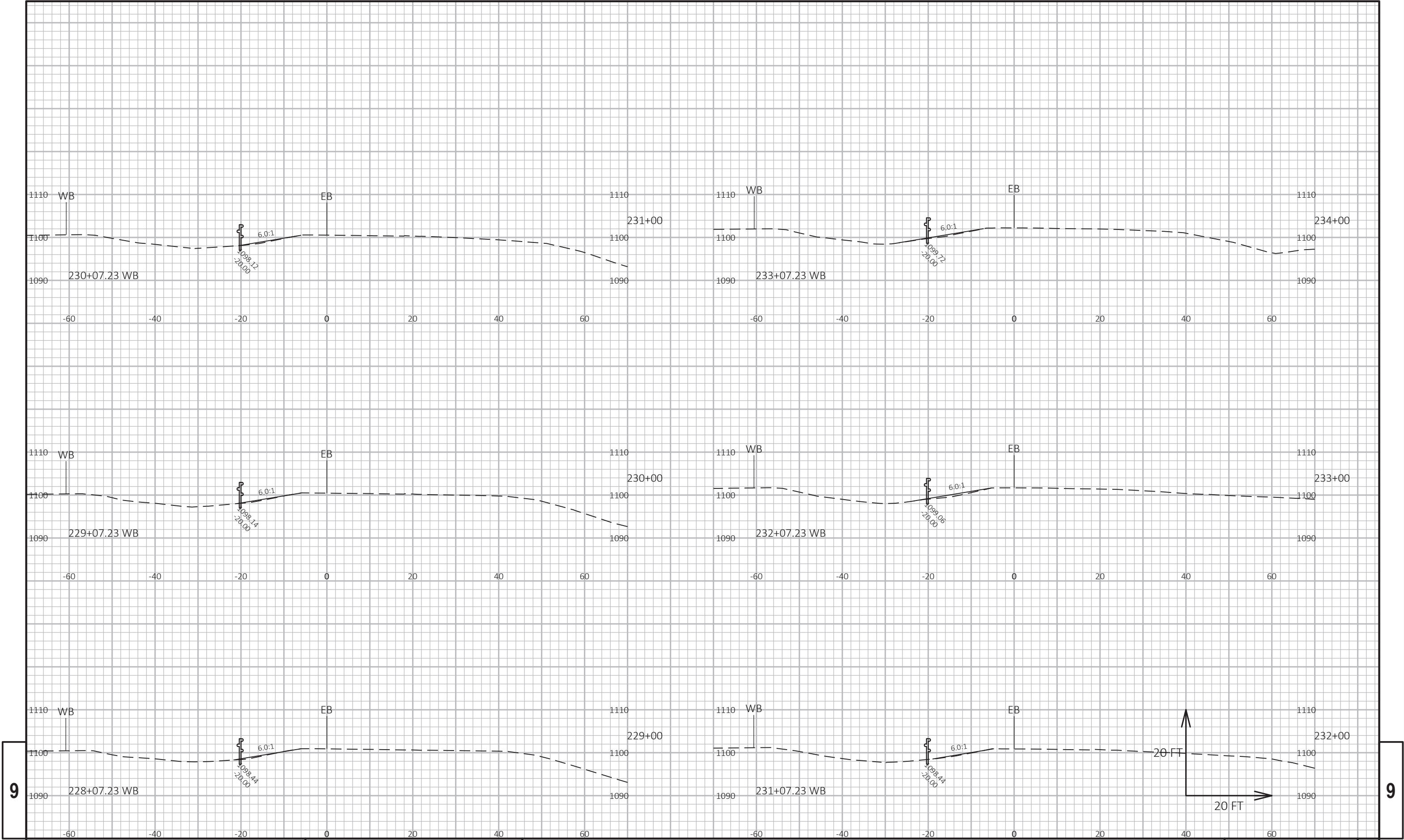
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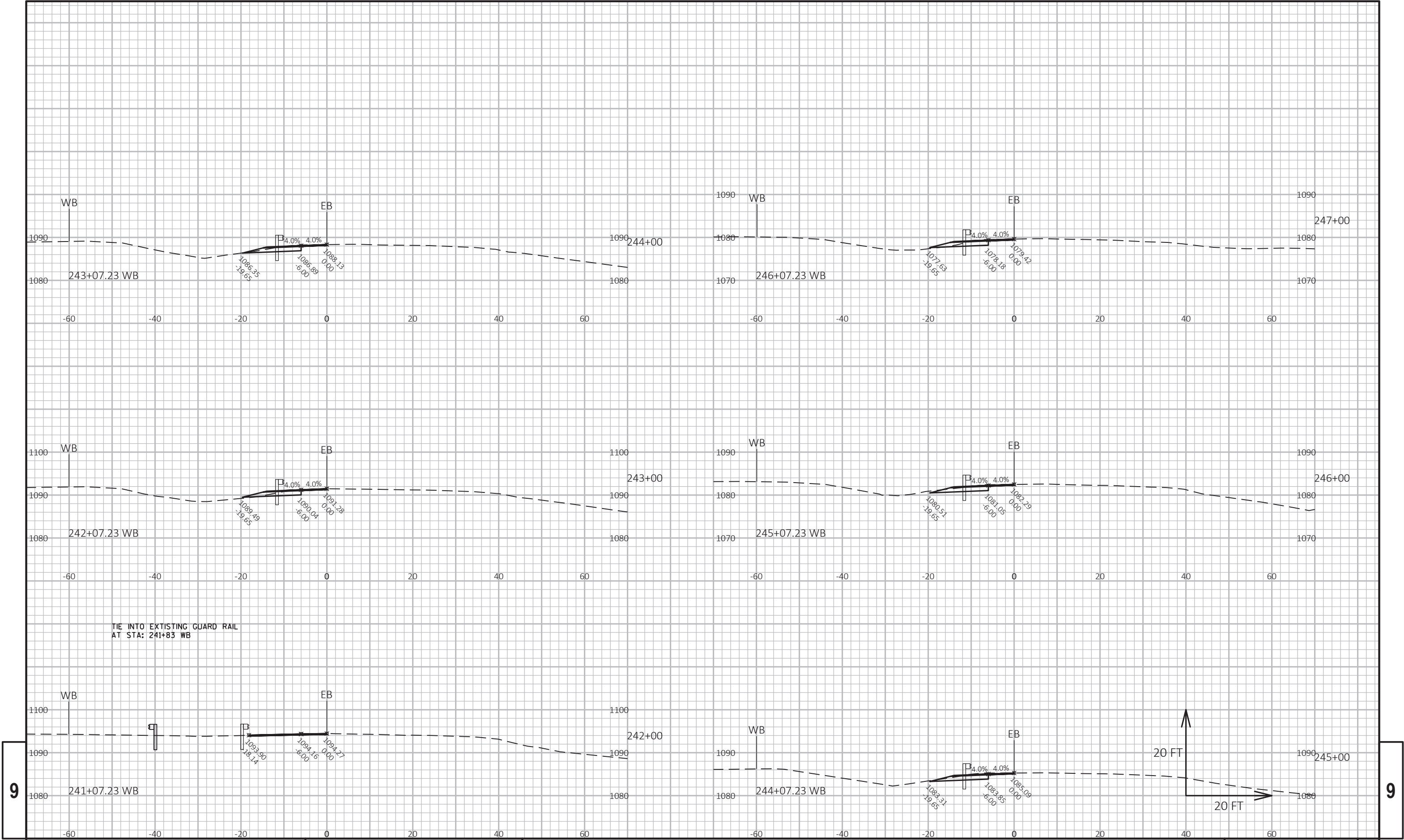
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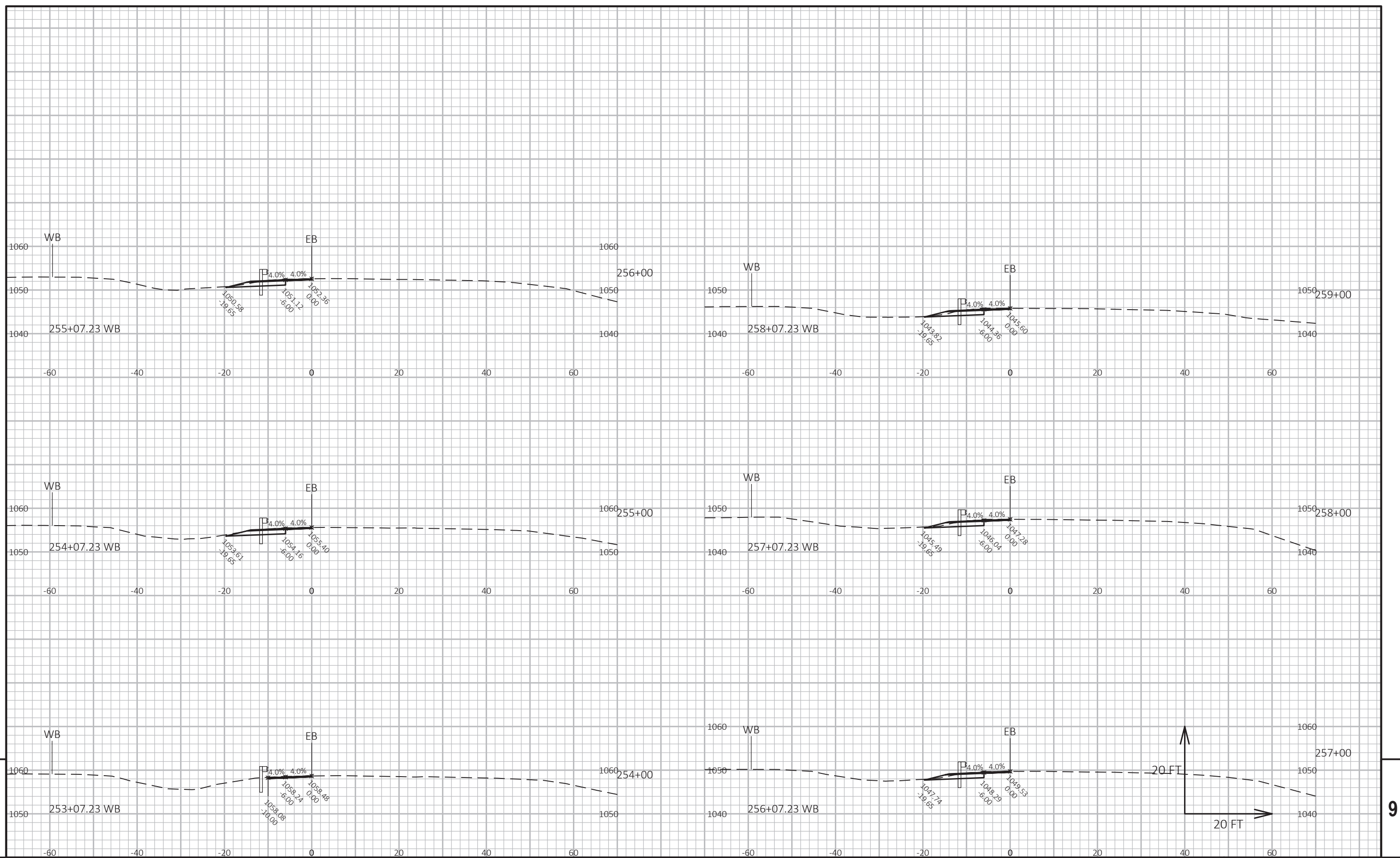
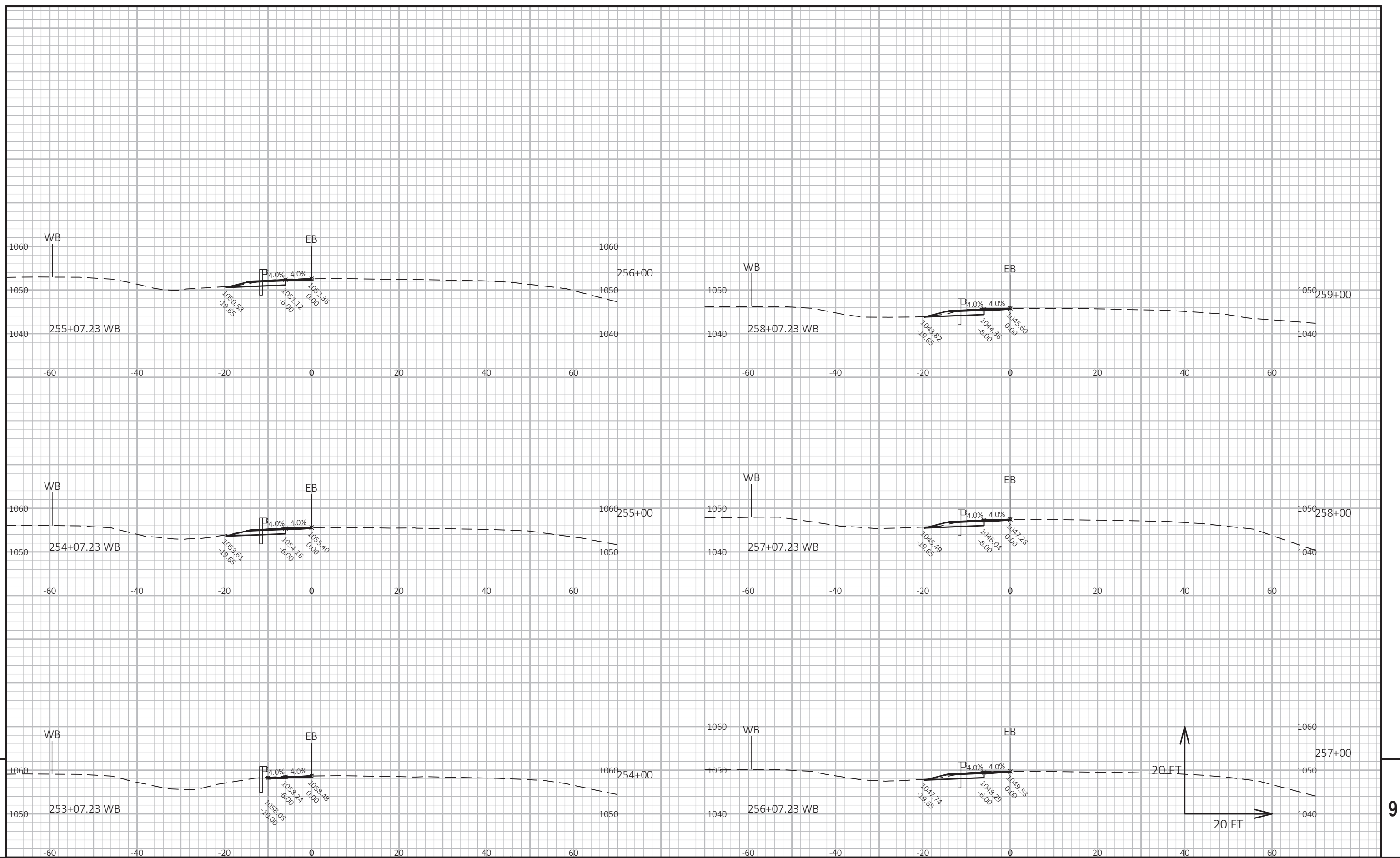
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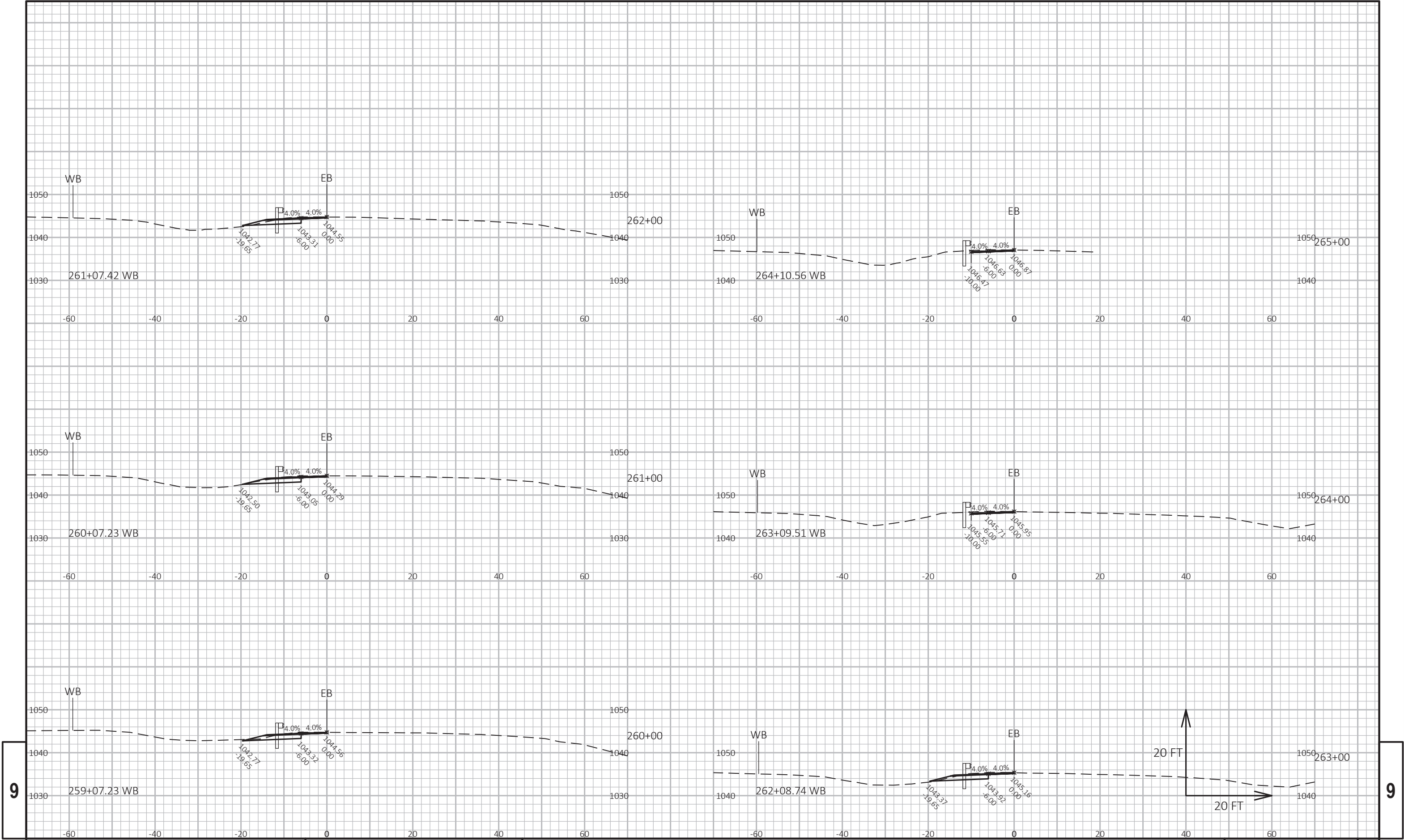
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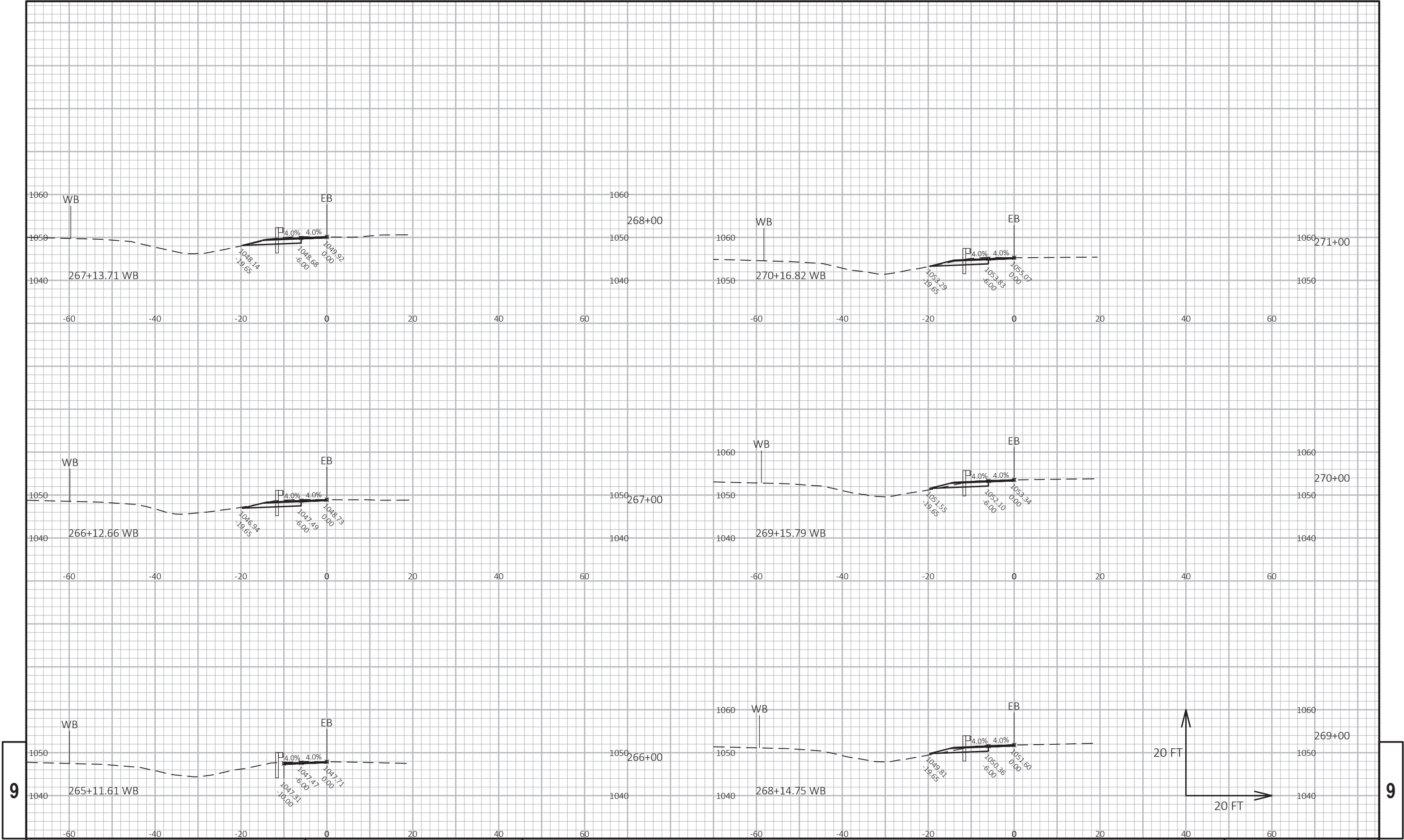
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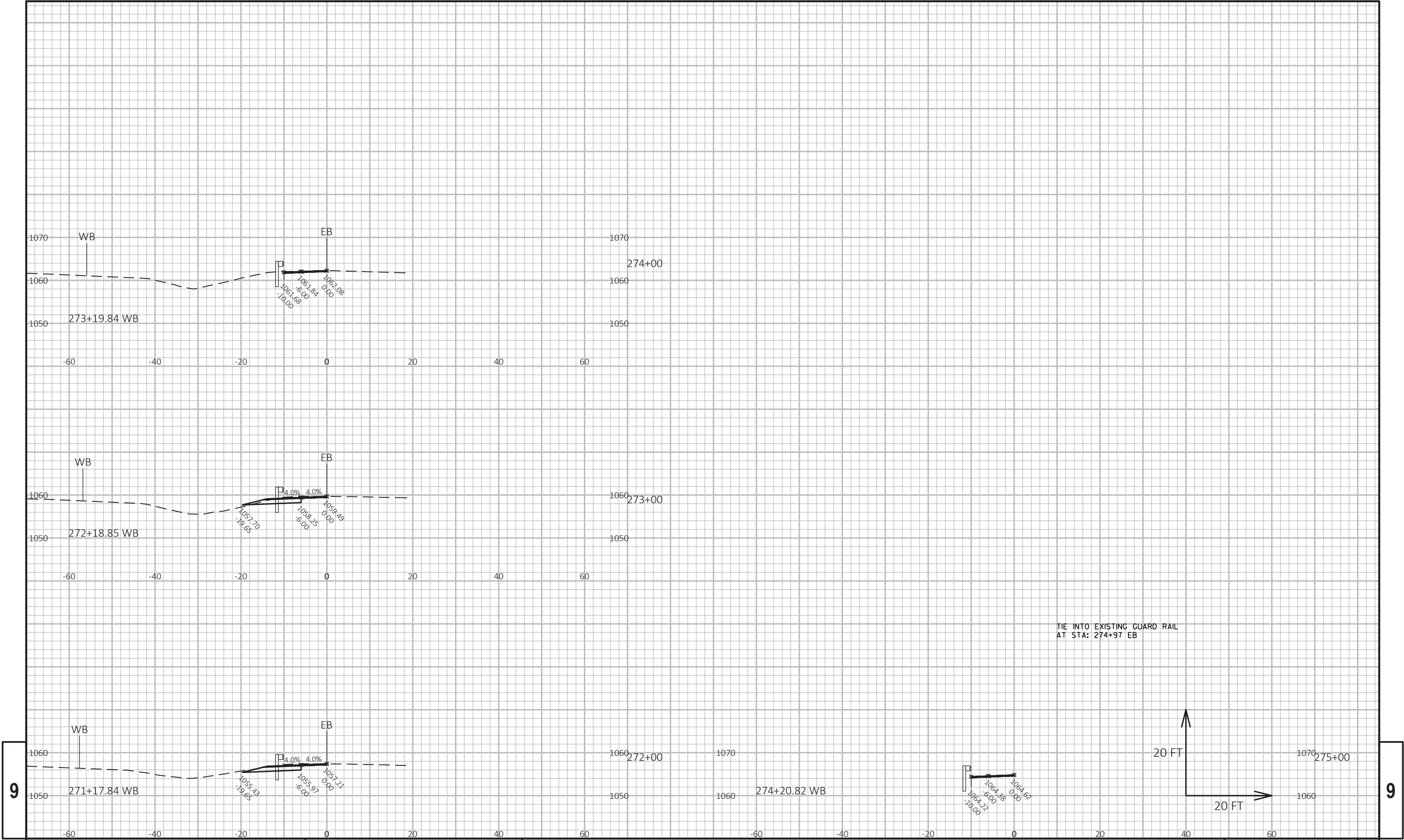




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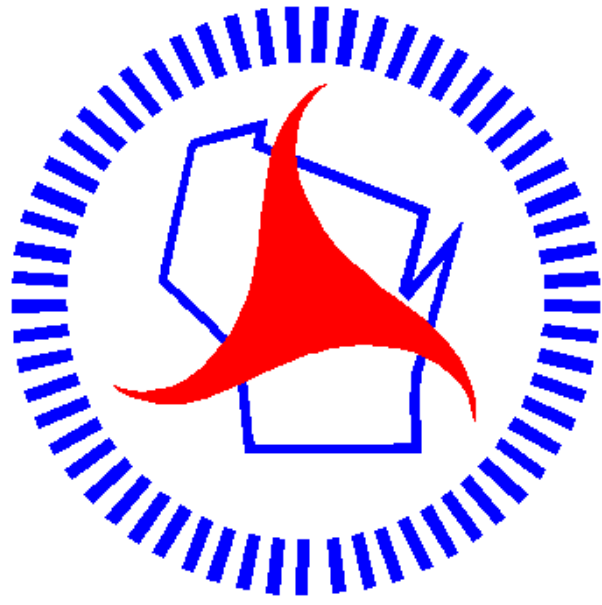
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